NP37 A02

LOGIC DIAGRAM

MACHINE LIST FOR NP37-A02

SER NO- 0141 MACHINE REV-

OPTION- NONE, SSW HDA- FRT, TFH, NONE

CTRY- CUST-

PAGE NO	FIG NO	SHEET REV	PARTS NO	PCB REVISION (ACTUAL)	PCB REVISION (LOL)	TITLE	REMARKS
0 -		0				GUIDANCE OF LOGIC DIA	
CZ-1	NC-21441	1				DC PWR-CTRL B/B INTERFACE	
-2,3	"	1		-		RELAY BOX	
-4	"	1		-		DC PWR SUPPLY A	
-5	"	1	NP441	B		OP PANEL	
CX-1 - 8	NC-21445	0		-		CTRL INTERFACE	
CU-1 - 4	NC-29430	0	NP430	B		CTLI-1B	SSW only
CT-1 - 5	NC-29431	0	NP431	C		CTLI-2B	SSW only
CR-1 - 4	NC-28430	0	NP430	B		CTLI-1A	
CQ-1 - 5	NC-28431	0	NP431	C		CTLI-2A	
CN-1 - 5	NC-28432	0	NP432	B		MPU-1	
CM-1 - 5	NC-28433	0	NP433	A		MPU-2	
CL-1 - 4	NC-28434	0	NP434	A		MPU-3	
CL-1 - 4	NC-28484	0	NP484			X CALL	
CJ-1 - 4	NC-28435	0	NP435	B		DEVI	
CH-1 - 5	NC-28436	0	NP436	B		REG	
CG-1 - 7	NC-28437	0	NP437	B		ECC	
CF-1 - 5	NC-28438	0	NP438	A		SERDES-1	
CE-1 - 5	NC-28439	0	NP439	C		SERDES-2	
CD-1 - 5	NC-28440	1	NP440	D		VFO	
CC-1 - 5	NC-28481	0	NP481	A		XCALL-2	
CB-1 - 5	NC-28479	0	NP479	A		XCALL-1	
CA-1,2	NC-21446	0				DEVICE INTERFACE	
Z-1,2		2				DC PWR SUPPLY B	
-3,4	NC-20408	2	NP408	C		POWER AMP	
-5	NC-20419	0	NP419	A		OP PANEL	
-6 - 9		0				HDA INTERFACE A,B	
X-1 - 3		0				DRIVE INTERFACE	
A-1 - 9	NC-21410	4	NP410	F		INTERFACE	
A-1 - 10	NC-20460	3	NP460	C		INTERFACE - A	XCL only
B-1 - 6	NC-20469	3	NP469	C		INTERFACE - C	XCL only
C-1 - 6	NC-20411	6	NP411	E		HAR/CAR A	
D-1 - 10	NC-22462	1	NP462	G		SRV VEL A	
E-1 - 7	NC-20463	2	NP463	B		SRV POS A	
F-1 - 6	NC-22414	2	NP414	H		R/W CTRL A	
J-1 - 9	NC-20425/	11	NP425/	K		RD DTCT	

PAGE NO	FIG NO	SHEET REV	PARTS NO	PCB REVISION (AUTUAL)	PCB REVISION (LOL)	TITLE	REMARKS
K-1 - 6	NC-23414	2	NP414	H		R/W CTRL B	
L-1 - 7	NC-21463	2	NP463	B		SRV POS B	
M-1 - 10	NC-23462	1	NP462	G		SRV VEL B	
N-1 - 6	NC-21411	6	NP411	E		HAR/CAR B	

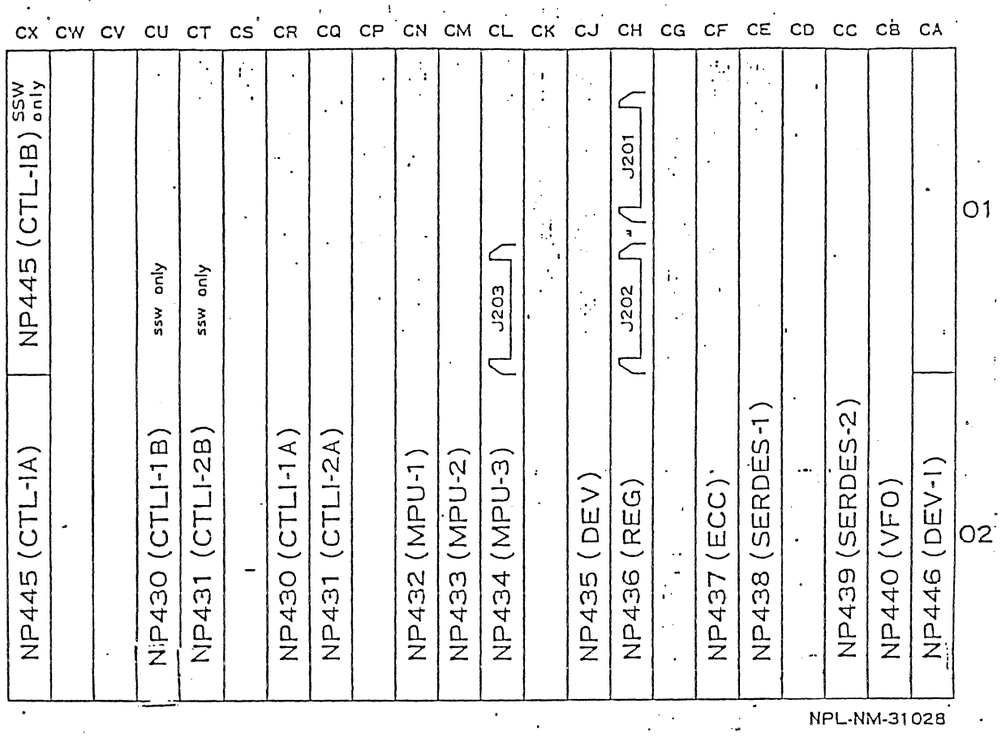
						REV 1 MAR'85	REV 0 OCT'84

REV No.	DATE	DRAWN	APPD

GUIDANCE OF LOGIC DIAGRAM

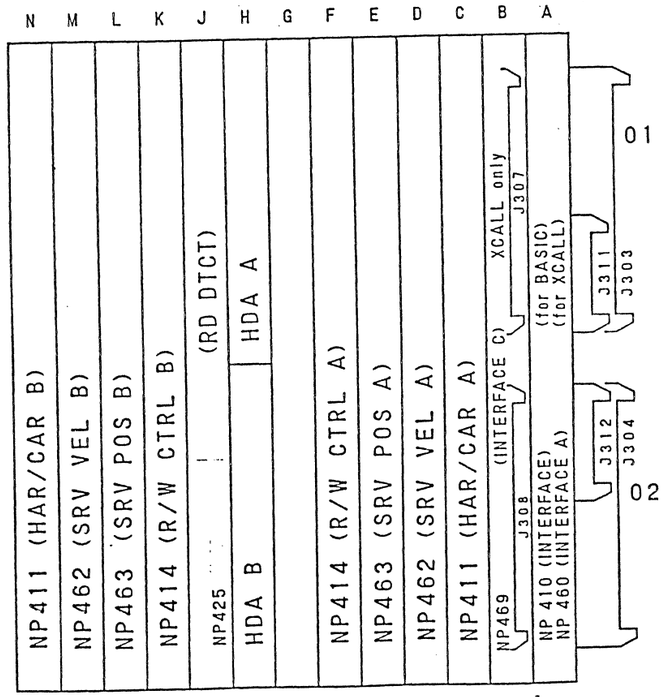
(1) PACKAGE LOCATION

CONTROL BACK BOARD PACKAGE LOCATION



NPL-NM-31028

DRIVE BACK BOARD PACKAGE LOCATION



NPL-NM-31177 REV. 0

Notes:

(1) The upper diagram shows the drive back board and the lower diagram shows the controller back board, both viewed from the package insertion side.

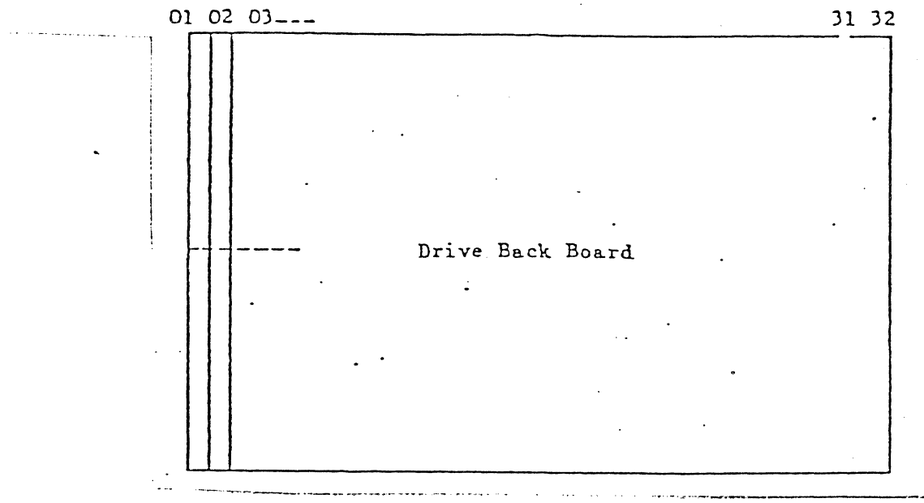
(2) The card mounted in A and B positions indicates the twin size card while the card mounted in either A or B position indicates the single size card.

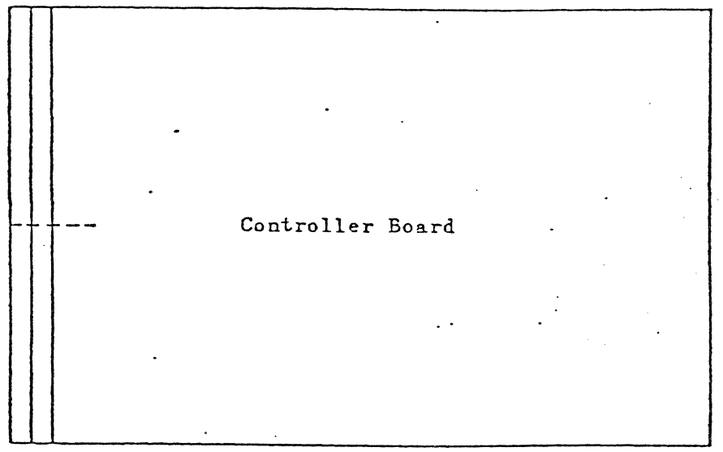
(3) In these diagrams NP XXX "package" denotes package name, and the card with letters "EDGE" shows the edge card of each interface.

P/N REV	TITLE GUIDANCE OF LOGIC DIAGRAM	SHEET 1 / 4	DRAWN		
		REV 0	CHECK		
			APPD		
	DRAWING NO	Nippon Peripherals Limited			

REV No.	DATE	DRAWN	APPD

(2) Back Board Card Pin Location





This diagram is viewed from the wiring side.

Single card ↓ 01

Twin card ↓ 02

CARD PIN LOCATION

SINGLE CARD		TWIN CARD	
01	02	101	102
03	04	103	104
05	06	105	106
07	08	107	108
09	10	109	110
11	12	111	112
13	14	113	114
15	16	115	116
17	18	117	118
19	20	119	120
21	22	121	122
23	24	123	124
25	26	125	126
27	28	127	128
29	30	129	130
31	32	131	132
33	34	133	134
35	36	135	136
37	38	137	138
39	40	139	140
41	42	141	142
43	44	143	144
45	46	145	146
47	48	147	148
49	50	149	150
51	52	151	152
53	54	153	154
55	56	155	156
57	58	157	158
59	60	159	160
61	62	161	162
63	64	163	164
65	66	165	166
67	68	167	168

01	02	201	202
03	04	203	204
05	06	205	206
07	08	207	208
09	10	209	210
11	12	211	212
13	14	213	214
15	16	215	216
17	18	217	218
19	20	219	220
21	22	221	222
23	24	223	224
25	26	225	226
27	28	227	228
29	30	229	230
31	32	231	232
33	34	233	234
35	36	235	236
37	38	237	238
39	40	239	240
41	42	241	242
43	44	243	244
45	46	245	246
47	48	247	248
49	50	249	250
51	52	251	252
53	54	253	254
55	56	255	256
57	58	257	258
59	60	259	260
61	62	261	262
63	64	263	264
65	66	265	266
67	68	267	268

Note:

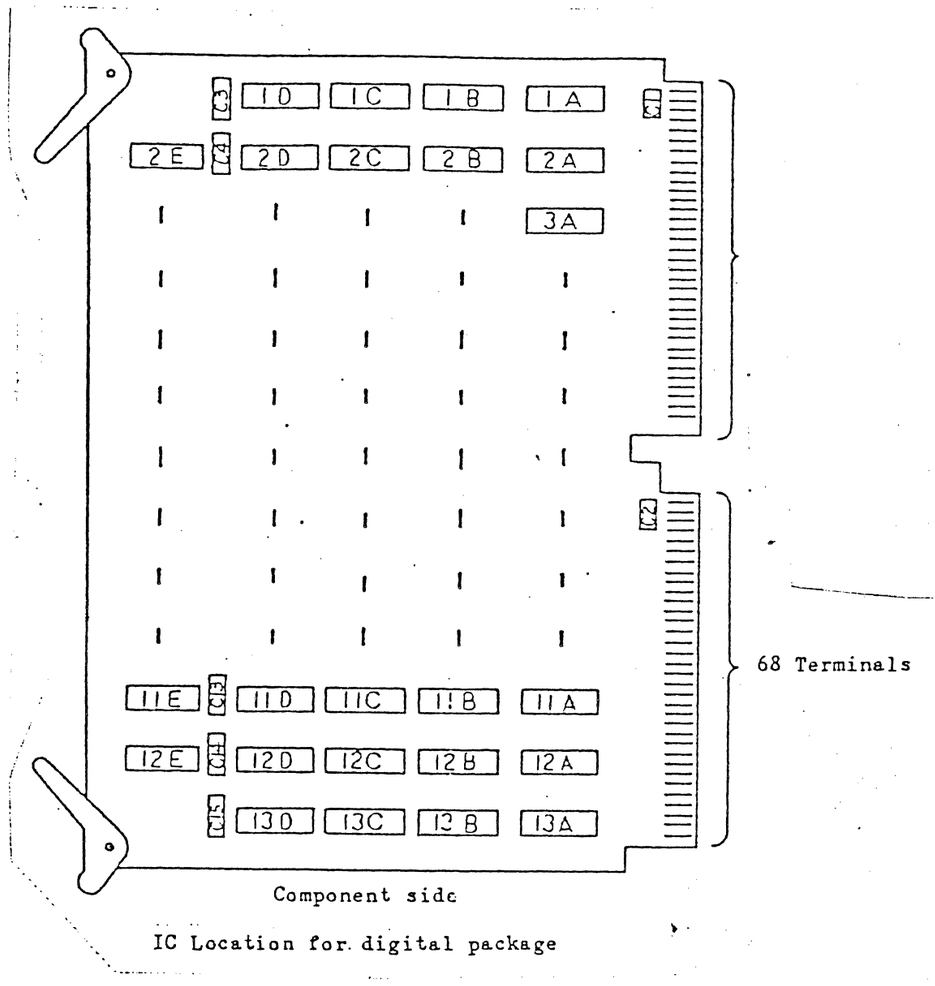
(1) The number of signal pins is 68 in a single card and 136 in a twin card. Of these pins 24 pins are used for power supply (+5V, GND) and the special power supply pin is assigned among 112 effective signal pins.

P/N REV	TITLE GUIDANCE OF LOGIC DIA	SHEET 2 / 4 REV	DRAWN CHECK APPD		
	DRAWING NO	Nippon Peripherals Limited			

3S

REV No.	DATE	DRAWN	APPD

(3) IC Location

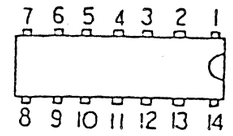


IC Location for digital package

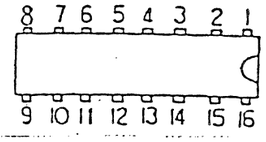
Note:

(1) The IC location applies to digital packages.

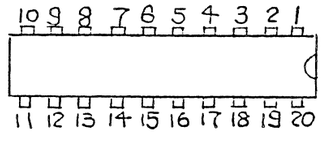
(2) Numbering of DIL Type IC Pins is as follows.
(Top View)



14 Pin IC



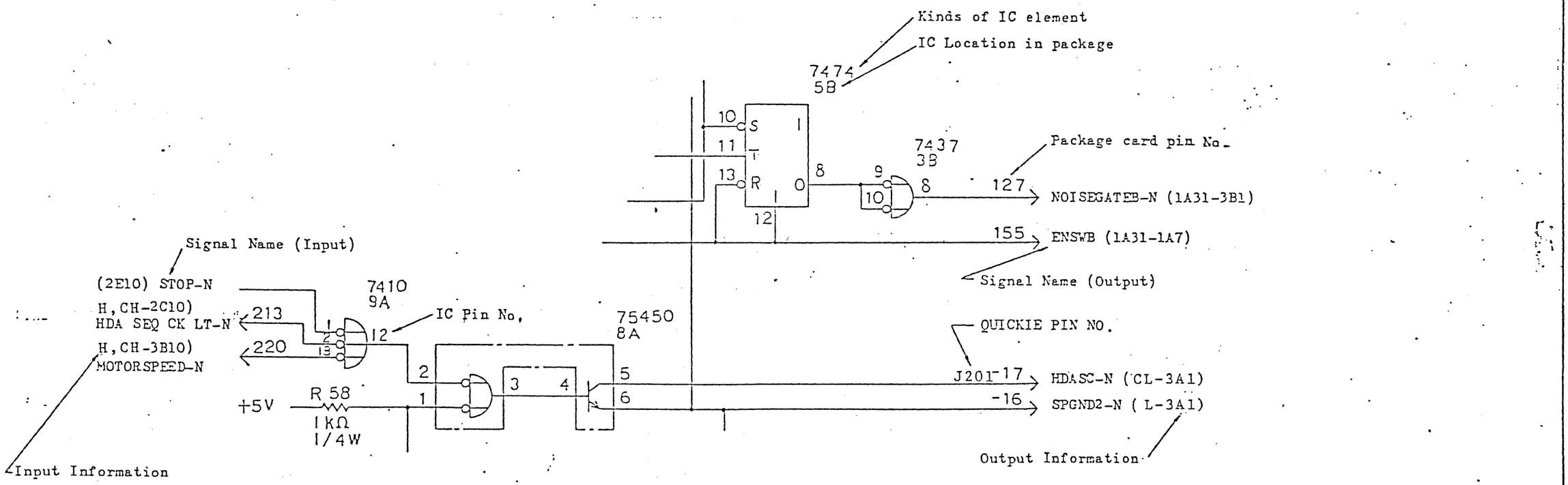
16 Pin IC



20 Pin IC

P/N REV	TITLE GUIDANCE OF LOGIC DIA	SHEET 3 / 4	DRAWN		
		REV	CHECK		
			APPD		
	DRAWING NO	Nippon Peripherals Limited			

(4) Guidance of Logic Dia



H,CH: Package Location and Source Gate Page No. in Logic Dia.
3B10: Source Gate Location

L-3,CL-3: Cable Connection Dia Page No.
A1: Sink Terminal Location

P/N REV	TITLE GUIDANCE OF LOGIC DIA	SHEET 4 / 4 REV 0	DRAWN CHECK APPD
	DRAWING NO	Nippon Peripherals Limited	

NO	DATE	DRAWN	APPD
Sheet 6/6 : REV 0 → 1			
ADD. : PORSW-N			
1	82.6.5	Maruta	

D.C. POWER SUPPLY

CONTROLLER BACK BOARD

(CZ-4G9) PORSW-N △ ——— PORSW-N △ (CR-4F2, CU-4F2)

(CZ-4F9) DATA PATH ONA-N ——— ENABLE SWA-N (CQ-5E6)

(CZ-4F9) DATA PATH ONB-N ——— ENABLE SWB-N (CT-5E6)

(CZ-4B9) +5VDC ——— +5V

(CZ-4B9) +5VDC ——— ALL PACKAGE CARD PIN ; 101, 167, 201, 267

(CZ-4C9) -5.2VDC ——— -5.2V

NP440 CARD PIN ; CB-161, 261

5.2V-N (CB-3C2)

(CZ-4B9) +5V DC RTN ——— GND

(CZ-4C9) +5V DC RTN ——— ALL PACKAGE CARD PIN ; 106, 111, 116, 126, 131, 136, 146, 151, 156, 166
206, 211, 216, 226, 231, 236, 246, 251, 256, 266

(CZ-4C9) -5.2V DC RTN

(CZ-4G9) GRD

(CZ-4F9) GATE THERMAL IN-P ——— GATE THERMAL SW

(CZ-4F9) GATE THERMAL OUT-P

D.C. POWER SUPPLY-CTLR
BACK BOARD INTERFACE

CZ-1

P/N / REV	TITLE: NP3T CTLR LOGIC DIA	SHEET 1 /6	DRAWN: A.DAIJO 82.2.2
		REV 1	CHECK: A.DAIJO 82.2.2
	DRAWING NO: NPL-NC-21441		APPD: K.Jisaiji 82.6.15

Nippon Peripherals Limited

NO	DATE	DRAWN	APPD
		R2 510K→2.2M	
1	JUN 92		

AC PŌWER

(LINE FILTER) FIL1 — R2, S2, T2, N, GRŌUND → R1, S1, T1, N

TB1

CB1 (MAIN LINE SWITCH) 20A

K2

J1-2, J1-1, J1-5, J1-3, J1-4, J1-6 — AC PŌWER TŌ DC PŌWER SUPPLY B

J2-1 P2-1, J2-2 P2-2, J2-3 P2-3 — M51 — (LŌGIC GATE FAN)

J4-1 P4-1, J4-2 P4-2, J4-3 P4-3 — TŌ DC PŌWER SUPPLY A (CZ-4C1)

F1 5A

SVC1

TB2 (380~408V) (200~235V) (380~408V) (200~235V) (235V,408V) (220V,380V) (200V) (200~235V)

T1

F2 5A

SQ4

RC1

C1 33000 μF 35V

R1 680Ω 3W

TB3

R2 2.2MΩ

J20-2 P20-2 F3 5A (+24V BS) → A CZ-3A3

J20-1 P20-1 (+24V BS RTN) → B CZ-3B3

(+12V DC) → C CZ-3B3, CZ-3G1

P20-5 J20-5 RC5 — CZ3B3 F — R62 22KΩ — D31 — R23 2.2KΩ ½W — D28 — Q10 — PHASE ROTATION ERR LED (RED) — R63 4.7KΩ

R68 2.2KΩ ½W — R64 10KΩ — R65 4.7KΩ — D30 — D29 — C30 1μF 50V — R66 4.7KΩ — Q11 — R67 10KΩ — C31 10μF 35V

P20-6 J20-6

P33-4 J33-4 — R1 510KΩ 2W — R2 510KΩ 2W — R5 56KΩ — C1 0.001μF 100V — D1 — RC1

P33-2 J33-2 — R7 330KΩ — R9 10KΩ — R12 100KΩ — Q1 — R11 33KΩ — C3 0.001μF 100V

P33-6 J33-6 — R3 510KΩ 2W — R4 510KΩ 2W — R6 56KΩ — C2 0.001μF 100V — D2 — RC2

R8 330KΩ — R10 10KΩ — R14 100KΩ — Q2 — R13 33KΩ — C4 0.001μF 100V

M14B — M14A — C28 0.001μF 100V

MB84013BM M2A — MB840049BM M1A — MB840049BM M1B — MB840049BM M2E

MB84013BM M2B — MB840049BM M1C — MB840049BM M1D — C27 0.001μF 100V

D3 — K1 1150 — R15 33KΩ — Q3 — C29 100μF 35V — R16 33KΩ

R18 2.2KΩ — R22 10KΩ — MB840049BM M1F — C6 10μF 35V — D4 — R19 330Ω — C5 10μF 35V — R17 15KΩ — Q4 — R20 1KΩ — R21 4.7KΩ

D5 — μPC14312H M13 — C8 47μF 35V — C7 47μF 35V — C9 100μF 35V

(+12V RTN) → D CZ-3G1, E CZ-3B6

RELAY BŌX-1 (FŌR 400V)

CZ-2

P/N	TITLE	SHEET 2 /6	DRAWN
REV	NP37 CTLR LŌGIC DIA	REV 1	CHECK
	DRAWING NO NPL-NC-21441		APPD

Nippon Peripherals Limited

NO.	DATE	DRAWN	APPD
R2 510K → 2.2MΩ			
1 VDW. 82'1			

AC POWER
LINE FILTER
FIL1
R2
S2
T2
GROUND
R1
S1
T1
TB1
CB1 (MAIN LINE SWITCH)
20A
K2
AC POWER TO DC POWER SUPPLY B
J1-2
J1-1
J1-5
J1-4
J1-6
J2-1
J2-2
J2-3
P2-1
P2-2
P2-3
M51
LOGIC GATE FAN
J4-1
J4-2
J4-3
P4-1
P4-2
P4-3
TO DC POWER SUPPLY A (CZ-4C1)
F1 5A
SVC1
TB2
(115V)
(100V)
(235V)
(230V)
(220V)
(208V)
(200V)
T1
F2 5A
SQ4
RC1
C1 33000 μF 35V
R1 680Ω 3W
TB3
R2 2.2MΩ
J20-2
J20-1
P20-2
P20-1
F3 5A
(+24V BS) → A CZ-3A3
(+24V BS RTN) → B CZ-3B3
(+12V DC) → C CZ-3B3 CZ-3G1
(+12V RTN) → D CZ-3G1 E CZ-3B6
P20-5
P20-6
J20-5
J20-6
RC5
CZ3B3 F
R62 22KΩ
D31
D18
R23 2.2KΩ V2W
PHASE ROTATION ERR LED (RED)
Q10
R63 4.7KΩ
R68 2.2KΩ V2W
R64 10KΩ
D29
R65 4.7KΩ
D30
C30 1μF 50V
R66 4.7KΩ
Q11
R67 10KΩ
C31 10μF 35V
P33-4
J33-4
P33-2
J33-2
P33-6
J33-6
R1 510KΩ 2W
R2 510KΩ 2W
R3 510KΩ 2W
R4 510KΩ 2W
R5 56KΩ
R6 56KΩ
C1 0.001μF 100V
C2 0.001μF 100V
D1
D2
RC1
RC2
M14B
M14A
C28 0.001μF 100V
MB84013BM M2A
MB84049BM M1A
MB84049BM M1B
MB84049BM M3E
R7 330KΩ
R9 10KΩ
R11 33KΩ
R12 100KΩ
Q1
C3 0.001μF 100V
MB84013BM M2B
MB84049BM M1C
MB84049BM M1D
R8 330KΩ
R10 10KΩ
R13 33KΩ
R14 100KΩ
Q2
C4 0.001μF 100V
C27 0.001μF 100V
D3
K1
R15 33KΩ
Q3
C29 100μF 35V
R16 33KΩ
R18 2.2KΩ
R22 10KΩ
MB84047BM M1F
C6 10μF 35V
D4
R19 330Ω
C5 10μF 35V
R17 15KΩ
R20 1KΩ
R21 4.7KΩ
Q4
D5
μPC14512H M13
C8 47μF 35V
C7 47μF 35V
C9 100μF 35V

RELAY BOX-1 (FOR 200V)

CZ-2

P/N	TITLE	SHEET 3/6	DRAWN
REV	NP37 CTLR LOGIC DIA	REV 1	CHECK
	DRAWING NO NPL-NC-21441		APPD

Nippon Peripherals Limited

NO.	DATE DRAWN	APPD
	ADD PCB SW-N SIG	
1	JUN.92	

+24V BS (CX1C11)
+24V BS RTN (CX1D11)
+12V (CX1E11)
CX1G11
CZ2D3
TO DRV POWER (AZ2E1) (AZ2F1)
+24V 1ST DRV-P
+24V 2ND DRV-P
+24V 3RD DRV-P
+24V 4TH DRV-P
+24V BS RTN-N
POW ON DRV MTR SEQ-N
ERR SEQ 1ST DRV
ERR SEQ 2ND DRV
ERR SEQ 3RD DRV
ERR SEQ 4TH DRV
POWER SEQ COMPLETE
POWER OFF TIMER ACTIVE
ERR SEQ STATUS
LOGIC GATE THERM
DC POW ALM
FROM HOST (A)
FROM HOST (B)
UNIT SOURCE
POWER HOLD
POWER PICK
POWERING COMPLETE
SYSTEM SOURCE
REMOTE
LOCAL
(CZ-5A1) +24V BS RTN-N
(CZ-5B1) +24V BS OK-P
(CZ-5B1) POWER SW ON-P
(CZ-5B1) POW COMPA
(CZ-5C1) SYS SOURCE A
(CZ-5C1) POW COMP B
(CZ-5D1) SYS SOURCE B
(CZ-5E7) POR SW-N
(CZ-2E11) +12V
(CZ-2G11) 0V
(CZ-5B6) POWER ON LED-P
(CZ-5B6) POWER ON LED-N
(CZ-5C6) DATA PATH ON A-N
(CZ-5C6) DATA PATH ON B-N
GRD
GRD
GATE THERMAL IN-P (CZ-4E1)
GATE THERMAL OUT-P (CZ-4E1)
+24V TO DC POW A-P (CZ-4E1)
DC POW A ALM1-P (CZ-4E1)
POR SW-N (CZ-4G1)
DC POW A ALM2-P (CZ-4E1)
(CZ-4F1)
RELAY BOX-2
CZ-3.

P/N REV	TITLE NP3F CTLR LOGIC DIA	SHEET 4/6 REV 1	DRAWN CHECK APPD
	DRAWING NO NPL-NC-21441	Nippon Peripherals Limited	

NO	BY	DATE	DRAWN	APPD
	ADD PoR SW-N SIG'			
1		JUN.82		

AC POWER

FROM RELAY BOX (CZ-2C10)

P4-1 P5-1 — J5-1 — L1 — C34 0.1μF 125V — C35 0.1μF 125V — C32 3300PF 1.5KV — C33 3300PF 1.5 KV

P4-2 P5-2 — J5-2

P4-3 P5-3 — J5-3

T1 — CT1 — CT2 — T2 — T3

RC3: R11 10Ω ½W, C27 4700PF 500V, L2, C28 4700PF 500V, R12 10Ω ½W, C7 2200μF 10V, C8 2200μF 10V, C9 2200μF 10V, C10 2200μF 10V, R3 22Ω 5W, R4 33Ω 5W, C13 0.1μF 630V, C14 0.1μF 630V

RC4: R13 10Ω ½W, C29 4700PF 500V, L2, C30 4700PF 500V, R14 10Ω ½W, C11 2200μF 10V, C12 2200μF 10V, R5 22Ω 5W, R6 33Ω 5W, C15 0.1μF 630V, C16 0.1μF 630V

R31 10Ω

R36 220

TB11-1 — +5V DC (CZ-1D2)

TB11-2 — +5V DC (CD-1D2)

TB11-3 — +5V DC RTN (CZ-1F2)

TB11-4 — +5V DC RTN (CZ-1F2)

TB11-5 — -5.2V DC RTN (CZ-1F2)

TB11-6 — -5.2V DC (CZ-1E2)

R.G

C20 0.01μF 50V — R25 1KΩ — Q4 — D17 — RL1 5Ω — D11 — R27 1KΩ — THZ — 100Ω — D15 — D16 — C23 0.1μF 50V — 1KΩ — R26 330Ω

P21 P22 J22

(CZ-3G10) DC POW A ALM 2-P — 5 5 5

(CZ-3F10) DC POW A ALM 1-P — 4 4 4 — THS1 — HZ1

(CZ-3F10) +24V TO DC POW A-P — 3 3 3

YR1

(CZ-3F10) GATE THERMAL IN-P — 2 2 2 — TB11-7 — GATE THERMAL IN-P (CZ-1G2)

(CZ-3F10) GATE THERMAL OUT-P — 1 1 1 — TB11-8 — GATE THERMAL OUT-P (CZ-1G2)

(CZ-3G10) DATA PATH ON A-N — 6 6 6 — TB11-9 — DATA PATH ON A-N (CZ-1C2)

(CZ-3G10) DATA PATH ON B-N — 7 7 7 — TB11-10 — DATA PATH ON B-N (CZ-1C2)

P21 P22 J22

GRD — 8 8 8 — TB11-11 — GRD (CZ-1F2)

(CZ-3F10) PoR SW-N — 9 9 9 — TB12-12 — PoR SW-N (CZ-1B2)

DC POWER SUPPLY A

CZ-4

P/N REV	TITLE NP3T CTLR LOGIC DIA	SHEET 5/6 REV 1	DRAWN / CHECK / APPD
	DRAWING NO NPL-NC-21441	Nippon Peripherals Limited	

REV No.	DATE	DRAWN	APPD
Addition PORSW-N			
1	82·6·8	Haruta	

POWER SW

(CZ-3E1)+24VBSRTN-N P40-3 ← J40-3 — OFF 1
(CZ-3E1)+24VBSOK-P -4 ← -4 — SW40 — ON 3 — 2
(CZ-3E1)POWERSWON-P -5 ← -5

(CZ-3F1)POWCOMPA -9 ← -9 — OFF 4
SW40 — 5
(CZ-3F1)SYSSOURCEA -11 ← -11

(CZ-3F1)POWCOMPB -12 ← -12 — OFF 7
SW40 — 8
(CZ-3F1)SYSSOURCEB P40-14 ← J40-14

OFF 10
SW40 — 11
12
△

POWER ON

R1 2KΩ 1/2W
R2 2KΩ 1/2W
LED1
J40-2 → P40-2 POWERONLED-N(CZ-3G5)
-1 → -1 POWERONLED-P(CZ-3G5)

(DATA PATH SW)
A
OFF 1
SW41 — 2
ON 3
-15 → -15 DATAPATHONA-N(CZ-3G5)

(DATA PATH SW)
B
OFF 1
SW42 — 2
ON 3
-17 → -17 DATAPATHONB-N(CZ-3G5)

-16 → -16 GRD
J40-18 → P40-18 GRD

△
J40-19 → P40-19 PORSW-N(CZ-3G1)

NP441 (CTLR OPERATOR PANEL)

CZ-5

P/N REV	TITLE NP37CTLR LOGIC DIA	SHEET 6/16	DRAWN	
		REV 1	CHECK	
			APPD	
	DRAWING NO NPL-NC-21441	Nippon Peripherals Limited		

△

3S

	CTL-IF CONNECTOR (TAG IN A)	NP444 LINE CONNECTOR (24P)	NP444 3M CONNECTOR (26P)	CTL-IEDGE 3M (NP445) CONNECTOR (26P)	CTL-IEDGE (NP445) 2CX-7	CONTROLLER BACK BOARD	NP443 3M CONNECTOR (26P)	NP443 LINE CONNECTOR (24P)	CTL-IF CONNECTOR (TAG OUT A)	
FROM SCU OR THE PRECEDING A I DEVICE										TO THE NEXT A I DEVICE OR CTL-IF TERM
TAG BUS A BIT 0	G-B03	B/G03	G2-04	1-04		← TAG BIT 0 NPLA-P (CR-1A2)	E2-04	B/G03	E-B03	TAG BUS A BIT 0
GND	-B02	B/G02	-03	-03			-03	B/G02	-B02	GND
					-	←				
TAG BUS A BIT 1	-D02	D/J02	-02	-02			-02	D/J02	-D02	TAG BUS A BIT 1
GND	-D03	D/J03	-01	-01			-01	D/J03	-D03	GND
					-	← (NOT USED)				
TAG BUS A BIT 2	-B06	B/G06	-10	-10			-10	B/G06	-B06	TAG BUS A BIT 2
GND	-B07	B/G07	-09	-09			-09	B/G07	-B07	GND
					-13	← TAG BIT 4 NPLA-P (CR-1B2)				
TAG BUS A BIT 4	-B05	B/G05	-08	-08			-08	B/G05	-B05	TAG BUS A BIT 4
GND	-B04	B/G04	-07	-07			-07	B/G04	-B04	GND
					-9	← TAG BIT 5 NPLA-P (CR-1B2)				
TAG BUS A BIT 5	-D04	D/J04	-06	-06			-06	D/J04	-D04	TAG BUS A BIT 5
GND	-D05	D/J05	-05	-05			-05	D/J05	-D05	GND
					-19	← TAG BIT 6 NPLA-P (CR-1B2)				
TAG BUS A BIT 6	-B08	B/G08	-14	-14			-14	B/G08	-B08	TAG BUS A BIT 6
GND	-B09	B/G09	-13	-13			-13	B/G09	-B09	GND
					-17	← TAG BIT 7 NPLA-P (CR-1B2)				
TAG BUS A BIT 7	-D06	D/J06	-12	-12			-12	D/J06	-D06	TAG BUS A BIT 7
GND	-D07	D/J07	-11	-11			-11	D/J07	-D07	GND
					-23	← TAG BIT P NPLA-P (CR-1C2)				
TAG BUS A BIT P	-D09	D/J09	-16	-16			-16	D/J09	-D09	TAG BUS A BIT P
GND	-D08	D/J08	-15	-15			-15	D/J08	-D08	GND
					-25	← TAG GATE NPLA-P (CQ-3F2)				
TAG GATE A	-B10	B/G10	-18	-18			-18	B/G10	-B10	TAG GATE A
GND	-B11	B/G11	-17	-17			-17	B/G11	-B11	GND
					-27	← SEL HOLD NPLA-P (CQ-3F2)				
SELECT HOLD A	-D11	D/J11	-20	-20			-20	D/J11	-D11	SELECT HOLD A.
GND	-D10	D/J10	-19	-19			-19	D/J10	-D10	GND
					-29	← ENDRES P NPLA-P (CQ-3F2)				
END RESPONSE A	-B12	B/G12	-22	-22			-22	B/G12	-B12	END RESPONSE A
GND	-B13	B/G13	-21	-21			-21	B/G13	-B13	GND
					2CX-30	← RECYCLE NPLA-P (CQ-3G2)				
RECYCLE TAG A	-D13	D/J13	-24	-24			-24	D/J13	-D13	RECYCLE TAG A
GND	G-D12	D/J12	G2-23	1-23	2CX-	GND ←	E2-23	D/J12	E-D12	GND

(CTL INTERFACE A I)

CX-1

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 1 /8	DRAWN A.OGI 6/82.7.2
		REV O	CHECK
			APPD
CTL INTERFACE	DRAWING NO: NPL-NC-21445	Nippon Peripherals Limited	

CTL-IF CONNECTOR (TAG IN A)	NP444 LINE CONNECTOR (24P)	NP444 3M CONNECTOR (26P)	CTL-IEDGE 3M (NP445) CONNECTOR (26P)	CTL-IEDGE (NP445)	CONTROLLER BACK BOARD	NP443 3M CONNECTOR (26P)	NP443 LINE CONNECTOR (24P)	CTL-IF CONNECTOR (TAG OUT A)	
(NOT USED) G-J02	D/J02	G1-02	3-02			E1-02	D/J02	E-J02	(NOT USED)
GND -J03	D/J03	-01	-01			-01	D/J03	-J03	GND
				2CX-37	SEL ACT NPLA-P (CR-4D9)				
SELECT ACTIVE A -G03	B/G03	-04	-04			-04	B/G03	-G03	SELECT ACTIVE A
GND -G02	B/G02	-03	-03			-03	B/G02	-G02	GND
				-39	TAG VALID NPLA-P (CR-4C9)				
TAG VALID A -J04	D/J04	-06	-06			-06	D/J04	-J04	TAG VALID A
GND -J05	D/J05	-05	-05			-05	D/J05	-J05	GND
				-43	NORMEND NPLA-P (CR-4B9)				
-G05	B/G05	-08	-08			-08	B/G05	-G05	NORMAL END A
GND -G04	B/G04	-07	-07			-07	B/G04	-G04	GND
				-	(NOT USED)				
METERING IN A -G06	B/G06	-10	-10			-10	B/G06	-G06	METERING IN A
GND -G07	B/G07	-09	-09			-09	B/G07	-G07	GND
				-47	CHECK END NPLA-P (CR-4B9)				
CHECK END A -J06	D/J06	-12	-12			-12	D/J06	-J06	CHECK END A
GND -J07	D/J07	-11	-11			-11	D/J07	-J07	GND
				-49	ERROR ALT NPLA-P (CR-4D9)				
ERROR ALERT A -G08	B/G08	-14	-14			-14	B/G08	-G08	ERROR ALERT A
GND -G09	B/G09	-13	-13			-13	B/G09	-G09	GND
				-53	INDEX ALT NPLA-P (CR-4C9)				
INDEX ALERT A -J09	D/J09	-16	-16			-16	D/J09	-J09	INDEX ALERT A
GND -J08	D/J08	-15	-15			-15	D/J08	-J08	GND
				-	(NOT USED)				
SELECTED ALERT 3A -G10	B/G10	-18	-18			-18	B/G10	-G10	SELECTED ALERT 3A
GND -G11	B/G11	-17	-17			-17	B/G11	-G11	GND
				-	(NOT USED)				
METERING IN B -J11	D/J11	-20	-20			-20	D/J11	-J11	
GND -J10	D/J10	-19	-19			-19	D/J10	-J10	GND
				-59	CEALERT NPLA-P (CR-4E9)				
CEALERT EXEC A -G12	B/G12	-22	-22			-22	B/G12	-G12	CEALERT EXEC A
GND -G13	B/G13	-21	-21			-21	B/G13	-G13	GND
				2CX-	(NOT USED)				
UNSELECT ALERT 2 -J13	D/J13	-24	-24			-24	D/J13	-J13	UNSELECT ALERT 2
GND G-J12	D/J12	G1-23	3-23	2CX- GND		E1-23	D/J12	E-J12	GND

FROM SCU OR THE PRECEDING AI DEVICE

TO THE NEXT AI DEVICE OR CTL-IF TERM

(CTL INTERFACE A2)

CX-2

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 2/8 REV O	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-21445	Nippon Peripherals Limited	

	CTL-IF CONNECTOR (BUS IN A)	NP444 LINE CONNECTOR (24P)	NP444 3M CONNECTOR (26P)	CTL-IEDGE 3M (NP445) CONNECTOR (26P)	CTL-IEDGE (NP445) 2CX-2	CONTROLLER BACK BOARD	NP443 3M CONNECTOR (26P)	NP443 LINE CONNECTOR (24P)	CTL-IF CONNECTOR (BUS OUT A)	
FROM SCU OR THE PRECEDING A1 DEVICE										TO THE NEXT A1 DEVICE OR CTL-IF TERM
TAG BUS A BIT 3	H-D02	D/J02	H2-02	2-02			F2-02	D/J02	F-D02	TAG BUS A BIT 3
GND	-D03	D/J03	-01	-01			-01	D/J03	-D03	GND
					-8	BUS OUT 0 NPLA-P (CR-3B2)				
BUS OUT A BIT 0	-D04	D/J04	-06	-06			-06	D/J04	-D04	BUS OUT A BIT 0
GND	-D05	D/J05	-05	-05			-05	D/J05	-D05	GND
					-10	BUS OUT 1 NPLA-P (CR-3B2)				
BUS OUT A BIT 1	-B05	B/G05	-08	-08			-08	B/G05	-B05	BUS OUT A BIT 1
GND	-B04	B/G04	-07	-07			-07	B/G04	-B04	GND
					-14	BUS OUT 2 NPLA-P (CR-3B2)				
BUS OUT A BIT 2	-D06	D/J06	-12	-12			-12	D/J06	-D06	BUS OUT A BIT 2
GND	-D07	D/J07	-11	-11			-11	D/J07	-D07	GND
					-18	BUS OUT 3 NPLA-P (CR-3B2)				
BUS OUT A BIT 3	-B08	B/G08	-14	-14			-14	B/G08	-B08	BUS OUT A BIT 3
GND	-B09	B/G09	-13	-13			-13	B/G09	-B09	GND
					-20	BUS OUT 4 NPLA-P (CR-3C2)				
BUS OUT A BIT 4	-D09	D/J09	-16	-16			-16	D/J09	-D09	BUS OUT A BIT 4
GND	-D08	D/J08	-15	-15			-15	D/J08	-D08	GND
					-22	BUS OUT 5 NPLA-P (CR-3C2)				
BUS OUT A BIT 5	-B10	B/G10	-18	-18			-18	B/G10	-B10	BUS OUT A BIT 5
GND	-B11	B/G11	-17	-17			-17	B/G11	-B11	GND
					-28	BUS OUT 6 NPLA-P (CR-3C2)				
BUS OUT A BIT 6	-D11	D/J11	-20	-20			-20	D/J11	-D11	BUS OUT A BIT 6
GND	-D10	D/J10	-19	-19			-19	D/J10	-D12	GND
					-32	BUS OUT 7 NPLA-P (CR-3D2)				
BUS OUT A BIT 7	-B12	B/G12	-22	-22			-22	B/G12	-B12	BUS OUT A BIT 7
GND	-B13	B/G13	-21	-21			-21	B/G13	-B13	GND
					-4	BUS OUT P NPLA-P (CR-3D2)				
BUS OUT A BIT P	-B03	B/G03	-04	-04			-04	B/G03	-B03	BUS OUT A BIT P
GND	-B02	B/G02	-03	-03			-03	B/G02	-B02	GND
					-34	SYNC OUT NPLA-P (CQ-3G1)				
SYNC OUT A	-D13	D/J13	-24	-24			-24	D/J13	-D13	SYNC OUT A
GND	-D12	D/J12	-23	-23			-23	D/J12	-D12	GND
					2CX-	(NOT USED)				
CECOMM A	-B06	B/G06	-10	-10			-10	B/G06	-B06	CECOMM A
GND	H-B07	B/G07	H1-09	2-09	2CX-	GND	F1-09	B/G07	F-B07	GND

(CTL INTERFACE A3)

CX-3

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 3 /8	DRAWN / CHECK / APPD
		REV 0	
	DRAWING NO: NPL-NC-21445	Nippon Peripherals Limited	

	CTL-IF CONNECTOR (BUS IN A)	NP444 LINE CONNECTOR (24P)	NP444 3M CONNECTOR (26P)	CTL-IEDGE 3M (NP445) CONNECTOR (26P)	CTL-IEDGE (NP445) 2CX-42	CONTROLLER BACK BOARD	NP443 3M CONNECTOR (26P)	NP443 LINE CONNECTOR (24P)	CTL-IF CONNECTOR (BUS OUT A)	
FROM SCU OR THE PRECEDING A1 DEVICE										TO THE NEXT A1 DEVICE OR CTL-IF TERM
CONA BUS IN BIT 0	H-J04	D/J04	H1-06	4-06		BIN BIT 0 NPL A-P (CR-4B5)	F1-06	D/J04	F-J04	CONA BUS IN BIT 0
GND	-J05	D/J05	-05	-05	-44		-05	D/J05	-J05	GND
CONA BUS IN BIT 1	-G05	B/G05	-08	-08		BIN BIT 1 NPL A-P (CR-4B5)	-08	B/G05	-G05	CONA BUS IN BIT 1
GND	-G04	B/G06	-07	-07	-50		-07	B/G04	-G04	GND
CONA BUS IN BIT 2	-J06	D/J06	-12	-12		BIN BIT 2 NPL A-P (CR-4B5)	-12	D/J06	-J06	CONA BUS IN BIT 2
GND	-J07	D/J07	-11	-11	-52		-11	D/J07	-J07	GND
CONA BUS IN BIT 3	-G08	B/G08	-14	-14		BIN BIT 3 NPL A-P (CR-4C5)	-14	B/G08	-G08	CONA BUS IN BIT 3
GND	-G09	B/G09	-13	-13	-54		-13	B/G09	-G09	GND
CONA BUS IN BIT 4	-J09	D/J09	-16	-16		BIN BIT 4 NPL A-P (CR-4C5)	-16	D/J09	-J09	CONA BUS IN BIT 4
GND	-J08	D/J08	-15	-15	-60		-15	D/J08	-J08	GND
CONA BUS IN BIT 5	-G10	B/G10	-18	-18		BIN BIT 5 NPL A-P (CR-4D5)	-18	B/G10	-G10	CONA BUS IN BIT 5
GND	-G11	B/G11	-17	-17	-62		-17	B/G11	-G11	GND
CONA BUS IN BIT 6	-J11	D/J11	-20	-20		BIN BIT 6 NPL A-P (CR-4E5)	-20	D/J11	-J11	CONA BUS IN BIT 6
GND	-J10	D/J10	-19	-19	-64		-19	D/J10	-J10	GND
CONA BUS IN BIT 7	-G12	B/G12	-22	-22		BIN BIT 7 NPL A-P (CR-4E5)	-22	B/G12	-G12	CONA BUS IN BIT 7
GND	-G13	B/G13	-21	-21	-40		-21	B/G13	-G13	GND
CONA BUS IN BIT P	-G03	B/G03	-04	-04		BIN BIT P NPL A-P (CR-4E5)	-04	B/G03	-G03	CONA BUS IN BIT P
GND	-G02	B/G02	-03	-03	-68		-03	B/G02	-G02	GND
SYNC IN A	-J13	D/J13	-24	-24		SYNC IN NPL A-P (CR-4B9)	-24	D/J13	-J13	SYNC IN A
GND	-J12	D/J12	-23	-23	2CX-	(NOT USED)	-23	D/J12	-J12	GND
(NOT USED)	-G06	B/G06	-10	-10			-10	B/G06	-G06	(NOT USED)
GND	-G07	B/G07	-09	-09			-09	B/G07	-G07	GND
(NOT USED)	-J02	D/J02	-02	-02			-02	D/J02	-J02	(NOT USED)
GND	H-J03	D/J03	H1-01	4-01	2CX-	GND	F1-01	D/J03	F-J03	GND

(CTL INTERFACE A4)

CX-4

P/N	TITLE NP37 CTLR LOGIC DIA	SHEET 4/8	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-21445		APPD

Nippon Peripherals Limited

	CTL-IF CONNECTOR (TAG IN B)	NP444 LINE CONNECTOR (24P)	NP444 3M CONNECTOR (26P)	CTL-IEDGE 3M (NP445) CONNECTOR (26P)	CTL-IEDGE (NP445) 1CX-7	CONTROLLER BACK BOARD	NP443 3M CONNECTOR (26P)	NP443 LINE CONNECTOR (24P)	CTL-IF CONNECTOR (TAG OUT B)	
TAG BUS B BIT 0	C-B03	B/G03	C2-04	1-04		TAG BIT ONPL B-P (CU-1A2)	A2-04	B/G03	A-B03	TAG BUS B BIT 0
GND	-B02	B/G02	-03	-03			-03	B/G02	-B02	GND
					-	(NOT USED)				
TAG BUS B BIT 1	-D02	D/J02	-02	-02			-02	D/J02	-D02	TAG BUS B BIT 1
GND	-D03	D/J03	-01	-01			-01	D/J03	-D03	GND
					-	(NOT USED)				
TAG BUS B BIT 2	-B06	B/G06	-10	-10			-10	B/G06	-B06	TAG BUS B BIT 2
GND	-B07	B/G07	-09	-09			-09	B/G07	-B07	GND
					-13	TAG BIT 4 NPL B-P (CU-1B2)				
TAG BUS B BIT 4	-B05	B/G05	-08	-08			-08	B/G05	-B05	TAG BUS B BIT 4
GND	-B04	B/G06	-07	-07			-07	B/G04	-B04	GND
					-9	TAG BIT 5 NPL B-P (CU-1B2)				
TAG BUS B BIT 5	-D04	D/J04	-06	-06			-06	D/J04	-D04	TAG BUS B BIT 5
GND	-D05	D/J05	-05	-05			-05	D/J05	-D05	GND
					-19	TAG BIT 6 NPL B-P (CU-1B2)				
TAG BUS B BIT 6	-B08	B/G08	-14	-14			-14	B/G08	-B08	TAG BUS B BIT 6
GND	-B09	B/G09	-13	-13			-13	B/G09	-B09	GND
					-17	TAG BIT 7 NPL B-P (CU-1C2)				
TAG BUS B BIT 7	-D06	D/J06	-12	-12			-12	D/J06	-D06	TAG BUS B BIT 7
GND	-D07	D/J07	-11	-11			-11	D/J07	-D07	GND
					-23	TAG BIT P NPL B-P (CU-1C2)				
TAG BUS B BIT P	-D09	D/J09	-16	-16			-16	D/J09	-D09	TAG BUS B BIT P
GND	-D08	D/J08	-15	-15			-15	D/J08	-D08	GND
					-25	TAG GATE NPL B-P (CT-3F2)				
TAG GATE B	-B10	B/G10	-18	-18			-18	B/G10	-B10	TAG GATE B
GND	-B11	B/G11	-17	-17			-17	B/G11	-B11	GND
					-27	SEL HOLD NPL B-P (CT-3F2)				
SELECT HOLD B	-D11	D/J11	-20	-20			-20	D/J11	-D11	SELECT HOLD B
GND	-D10	D/J10	-19	-19			-19	D/J10	-D10	GND
					-29	END RES P NPL B-P (CT-3F2)				
END RESPONSE B	-B12	B/G12	-22	-22			-22	B/G12	-B12	END RESPONSE B
GND	-B13	B/G13	-21	-21			-21	B/G13	-B13	GND
					1CX-30	RECYCLE NPL B-P (CT-3G2)				
RECYCLE TAG B	-D13	D/J13	-24	-24			-24	D/J13	-D13	RECYCLE TAG B
GND	C-D12	D/J12	C2-23	1-23	1CX-	GND	A2-23	D/J12	A-D12	GND

FROM SCU OR THE PRECEDING A I DEVICE

TO THE NEXT A I DEVICE OR CTL-IF TERM

(CTL INTERFACE B I)

CX-5

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 5/8 REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-21445	Nippon Peripherals Limited	

CTL-IF CONNECTOR (TAG IN B)	NP444 LINE CONNECTOR (24P)	NP444 3M CONNECTOR (26P)	CTL-IEDGE 3M (NP445) CONNECTOR (26P)	CTL-IEDGE (NP445)	CONTROLLER BACK BOARD	NP443 3M CONNECTOR (26P)	NP443 LINE CONNECTOR (24P)	CTL-IF CONNECTOR (TAG OUT B)	
C-J02	D/J02	C1-02	3-02			A1-02	D/J02	E-J02	(NOT USED)
-J03	D/J03	-01	-01			-01	D/J03	-J03	GND
-G03	B/G03	-03	-03	ICX-37	SELACT NPL B-P (CU-4C9)	-04	B/G03	-G03	SELECT ACTIVE B
-G02	B/G02	-04	-04			-03	B/G02	-G02	GND
-J04	D/J04	-06	-06	-39	TAG VALID NPL B-P (CU-4C9)	-06	D/J04	-J04	TAG VALID B
-J05	D/J05	-05	-05			-05	D/J05	-J05	GND
-G05	B/G05	-08	-08	-43	NORM END NPL B-P (CU-4B9)	-08	B/G05	-G05	NORMAL END B
-G04	B/G04	-07	-07			-07	B/G04	-G04	GND
-G06	B/G06	-10	-10	-	(NOT USED)	-10	B/G06	-G06	METERING IN B
-G07	B/G07	-09	-09			-09	B/G07	-G07	GND
-J06	D/J06	-12	-12	-47	CHECK END NPL B-P (CU-4B9)	-12	D/J06	-J06	CHECK END B
-J07	D/J07	-11	-11			-11	D/J07	-J07	GND
-G08	B/G08	-14	-14	-49	ERROR ALT NPL B-P (CU-4E9)	-14	B/G08	-G03	ERROR ALERT B
-G09	B/G09	-13	-13			-13	B/G09	-G09	GND
-J09	D/J09	-16	-16	-53	INDEX ALT NPL B-P (CU-4C9)	-16	D/J09	-J09	INDEX ALERT B
-J08	D/J08	-15	-15			-15	D/J08	-J08	GND
-G10	B/G10	-18	-18	-	(NOT USED)	-18	B/G10	-G10	SELECTED ALERT3B
-G11	B/G11	-17	-17			-17	B/G11	-G11	GND
-J11	D/J11	-20	-20	-	(NOT USED)	-20	D/J11	-J11	METERING IN B
-J10	D/J10	-19	-19			-19	D/J10	-J10	GND
-G12	B/G12	-22	-22	-59	CE ALERT NPL B-P (CU-4E9)	-22	B/G12	-G12	CEALERT EXEC B
-G13	B/G13	-21	-21			-21	B/G13	-G13	GND
-J13	D/J13	-24	-24	ICX-	(NOT USED)	-24	D/J13	-J13	UN SELECT ALERT2
C-J12	D/J12	C1-23	3-23	ICX-	GND	A1-23	D/J12	E-J12	GND

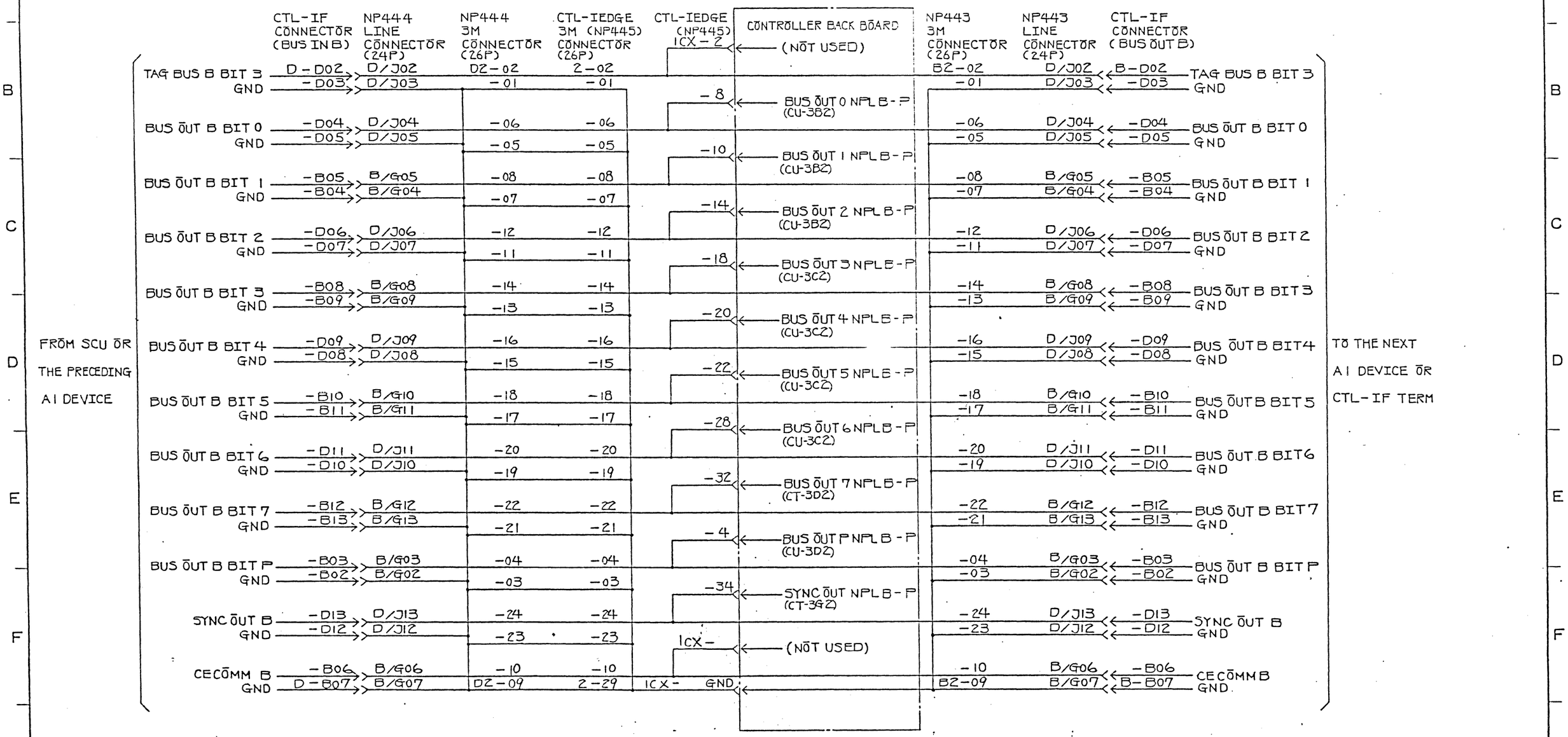
FROM SCU OR THE PRECEDING A1 DEVICE

TO THE NEXT A1 DEVICE OR CTL-IF TERM

(CTL INTERFACE B 2.)

CX-6

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 6/8	DRAWN
		REV -0-	CHECK
			APPD
	DRAWING NO: NPL-NC-21445	Nippon Peripherals Limited	



(CTL INTERFACE B3)

CX-7

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 7 / 8	DRAWN
		REV -0	CHECK
			APPD
	DRAWING NO: NPL-NC-21445	Nippon Peripherals Limited	

	CTL-IF CONNECTOR (BUS IN B)	NP444 LINE CONNECTOR (24P)	NP444 3M CONNECTOR (26P)	CTL-IEDGE 3M (NP445) CONNECTOR (26P)	CTL-IEDGE (NP445) ICX-42	CONTROLLER BACK BOARD	NP443 3M CONNECTOR (26P)	NP443 LINE CONNECTOR (24P)	CTL-IF CONNECTOR (BUS OUT B)	
FROM SCU OR THE PRECEDING A I DEVICE										TO THE NEXT A I DEVICE OR CTL-IF TERM
CON B BUS IN BIT 0	D-J04	D/J04	D1-06	4-06		BIN BIT0 NPL B-P (CU-4B5)	B1-06	D/J04	B-J04	CON B BUS IN BIT 0
GND	-J05	D/J05	-05	-05			-05	D/J05	-J05	GND
CON B BUS IN BIT 1	-G05	B/G05	-08	-08	-44	BIN BIT 1 NPL B-P (CU-4B5)	-08	B/G05	-G05	CON B BUS IN BIT 1
GND	-G04	B/G04	-07	-07			-07	B/G06	-G04	GND
CON B BUS IN BIT 2	-J06	D/J06	-12	-12	-50	BIN BIT 2 NPL B-P (CU-4B5)	-12	D/J06	-J06	CON B BUS IN BIT 2
GND	-J07	D/J07	-11	-11			-11	D/J07	-J07	GND
CON B BUS IN BIT 3	-G08	B/G08	-14	-14	-52	BIN BIT 3 NPL B-P (CU-4C5)	-14	B/G08	-G08	CON B BUS IN BIT 3
GND	-G09	B/G09	-13	-13			-13	B/G09	-G09	GND
CON B BUS IN BIT 4	-J09	D/J09	-16	-16	-54	BIN BIT 4 NPL B-P (CU-4C5)	-16	D/J09	-J09	CON B BUS IN BIT 4
GND	-J08	D/J08	-15	-15			-15	D/J08	-J08	GND
	-G10	B/G10	-18	-18	-60	BIN BIT 5 NPL B-P (CU-4D5)	-18	B/G10	-G10	CON B BUS IN BIT 5
GND	-G11	B/G11	-17	-17			-17	B/G11	-G11	GND
CON B BUS IN BIT 6	-J11	D/J11	-20	-20	-62	BIN BIT 6 NPL B-P (CU-4E5)	-20	D/J11	-J11	CON B BUS IN BIT 6
GND	-J10	D/J10	-19	-19			-19	D/J10	-J10	GND
CON B BUS IN BIT 7	-G12	B/G12	-22	-22	-64	BIN BIT 7 NPL B-P (CU-4E5)	-22	B/G12	-G12	CON B BUS IN BIT 7
GND	-G13	B/G13	-21	-21			-21	B/G13	-G13	GND
CON B BUS IN BIT P	-G03	B/G03	-04	-04	-40	BIN BIT P NPL B-P (CU-4E5)	-04	B/G03	-G03	CON B BUS IN BIT P
GND	-G02	B/G02	-03	-03			-03	B/G02	-G02	GND
SYNC IN B	-J13	D/J13	-24	-24	-68	SYNC IN NPL B-P (CU-4B9)	-24	D/J13	-J13	SYNC IN B
GND	-J12	D/J12	-23	-23			-23	D/J12	-J12	GND
(NOT USED)	-G06	B/G06	-10	-10	ICX-	(NOT USED)	-10	B/G06	-G06	(NOT USED)
GND	-G07	B/G07	-09	-09			-09	B/G07	-G07	GND
(NOT USED)	-J02	D/J02	-02	-02			-02	D/J02	-J02	(NOT USED)
GND	D-J03	D/J03	D1-01	4-01	ICX-	GND	B1-01	D/J03	B-J03	GND

(CTL INTERFACE B4)

CX-8

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 8 /8	DRAWN / CHECK / APPD
		REV: C	
	DRAWING NO: NPL-NC-21445	Nippon Peripherals Limited	

REV NO	DATE	DRAWN	APPD

(CX-5B6) TAGBIT0NFLB-F 159
(CX-5C6) TAGBIT4NFLB-F 144
(CX-5C6) TAGBIT5NFLB-F 165
(CX-5D6) TAGBIT6NFLB-F 168
(CX-5D6) TAGBIT7NFLB-F 152
(CX-5E6) TAGBITFNFLB-F 145

74LS14 7D

TAGBIT0B-N (CU-2E2)
TAGBIT4B-N (CU-2F2)
TAGBIT5B-N (CU-2F2)
TAGBIT6B-N (CU-2F2)
TAGBIT7B-N (CU-2F2)

74LS04 6E
74LS04 6E
74LS04 6E

74LS32 5B
(CT-4C8) GATEDFNL2B-N 150
(CL-1E7) EXTSELF-N 149

GATEDFSELF2B-N (CU-2C6)

74LS244 6C

(CT-2D9) LONGBUSYB-F 148
NC
(CT-1D6) ERROR ALERT1B-F 164
NC
NC

ALUBUS2-F (CU-2G3)(CU-3B7) 128
ALUBUS1-F (CU-2G3)(CU-3B7) 127
ALUBUS0-F (CU-2G3)(CU-3B7) 126
(CQ-2B8)
ALUBUS1-F (CQ-2B8)
ALUBUS2-F (CQ-2C8) 204
ALUBUS3-F (CQ-2C8) 205
ALUBUS3-F (CU-2G3)(CU-3B7)
ALUBUS4-F (CQ-2C8) 202
ALUBUS5-F (CQ-2E8) 130
ALUBUS6-F (CQ-2E8) 122
ALUBUS7-F (CQ-2E8) 208
ALUBUS7-F (CU-2H3)(CU-3C7)
ALUBUS6-F (CU-2G3)(CU-3C7)
ALUBUS5-F (CU-2G3)(CU-3C7)
ALUBUS4-F (CU-2G3)(CU-3C7)

+5V
R1 560Ω 1/4W
TIE UP (H) (M)
C1 C2 C3 SSW
TIEUP-P (CU-2E2)

74LS11 5D
147 → POLL DEVICEB-F (CT-4E2)

74LS21 7E
74LS11 5D
143 → POLL CTLB-F (CT-4F2)

74LS04 6E
74LS21 7E
74LS00 4E
139 → SELECTIONB-N (CT-1F6)(CT-4F2)

74LS280 8D
FCG
EV
OD

(CT-4D8) GATET/BCHKB-F 242
(CU-3A7) BOFMISB-N
(CT-4D8) ENBDTAGGATEB-F 222

74LS00 1E
74LS10 9D
74LS00 6E
74LS08 8E
217 → TAGPARCHKB-N (CT-1B2)

(CU-2C6) GATEDFSEL0B-N
(CU-3F6) BOUTFB-N
(CU-2B9) ALUBUSF-F

74LS04 9E
74LS04 9E
74LS04 9E
74LS00 11E
74LS86 10E
74LS86 10E
74LS00 11E
74LS08 8E
209 → SETFNL01PCKB-N (CT-1E2)
BOUTFB-P (CU-3G3)

(CU-2C6) GATEDFSEL1B-N

74LS86 6D
74LS86 6D
74LS86 6D
74LS11 5D

(CU-3F6) BOUT2B-N
(CU-3F6) BOUT1B-N
(CU-3F6) BOUT0B-N

101 167 201 267
106 111 116 126 131 136 146 151
156 166 206 211 216 226
231 236 246 251 256 266
+5V
C1 +3.3μF -35V
C4 +3.3μF -35V
C5 0.022μF 50V
C11 0.022μF 50V
0V

NP430(CTLI-1B)

CU-1

P/N NP430 REV B	TITLE NP37CTLR LOGIC DIA	SHEET 1/4 REV 0	DRAWN CHECK APPD
CTLI-1B	DRAWING NO NPL-NC-29430	Nippon Peripherals Limited	

REV No	DATE	DRAWN	APPD

(CM-3F5) GATEREG -N 107
(CT-5G8) GATEDSEL7B -N 108
74LS02 2C
74LS32 9B
(CL-1C7) EXT SEL0-N 214
(CT-5G8) GATEDFNLB -N 215
74LS240 7C
(CU-3F6) BOUT0B -N
(CU-3F6) BOUT1B -N
(CU-3F6) BOUT2B -N
(CU-3F6) BOUT3B -N
(CU-3F6) BOUT4B -N
(CU-3F6) BOUT5B -N
(CU-3F6) BOUT6B -N
(CU-3F6) BOUT7B -N
(CT-4H6) CHKEREGPARB-P 203
74LS04 2B
74LS08 8E
74LS280 3C
FCG
A B C D E F G H I
EV ŌD
74LS125 3D
74LS86 6D
74LS00 4E
142 REG7FCHKB-N (CT-2H5)
120 ALUBUSP-F (CQ-2G5)
ALUBUSP-F (CU-1F6)(CU-3G2)
74LS10 9D
74LS04 6E
(GATEDFSEL0B-N)
(GATEDFSEL1B-N)
(GATEDFSELF2B-N)
(CT-4E8) CTLBIBIT0B-N 129
74LS273 10C
REG
1D 2D 3D 4D 5D 6D 7D 8D CK CLR
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
74LS157 12C
SEL
1A 1B 2A 2B 3A 3B 4A 4B S G
1Y 2Y 3Y 4Y
74LS04 2B
74LS00 3B
FWR ŌNRST - N (CU-4F2)
(CH-5G5) PWR ŌNRST- N 232
74LS32 9B
74LS240 8C
(CL-1C7) EXT SEL1-N 220
(CU-1F5) TIE UP-P
(CU-1A4) TAGBIT 0B-N
(CU-1A4) TAGBIT4B-N
(CU-1B4) TAGBIT5B-N
(CU-1B4) TAGBIT6B-N
(CU-1C4) TAGBIT7B-N
(CU-1D5) ALUBUS0 -F
(CU-1D5) ALUBUS1 -F
(CU-1D5) ALUBUS2 -F
(CU-1E5) ALUBUS3 -F
(CU-1F5) ALUBUS4 -F
(CU-1F5) ALUBUS5 -F
(CU-1F5) ALUBUS6 -F
(CU-1F5) ALUBUS7 -F
(CF-1G7) SERDES0-F 254
(CF-1G7) SERDES1-F 255
(CF-1G7) SERDES2-F 262
(CF-1G7) SERDES3-F 260
(CF-1G7) SERDES4-F 227
(CF-1G7) SERDES5-F 233
(CF-1G7) SERDES6-F 224
(CF-1G7) SERDES7-F 228
(CT-5B10) GATEDBYTEB-F 218
74LS157 11D
74LS280 12D
BUSINŌDB-N (G7)
74LS04 9E
74LS08 8E
74LS00 4E
(CT-5A10) GATEDBUSB-F 113
(CT-4B8) DEGATEBUSB-N 114
74LS02 2C
(E10) BUSINŌDB-N
BUSINBIT0B-F (CU-4B2)
BUSINBIT1B-F (CU-4B2)
BUSINBIT2B-F (CU-4B2)
BUSINBIT3B-F (CU-4C2)
BUSINBIT4B-F (CU-4C2)
BUSINBIT5B-F (CU-4D2)
BUSINBIT6B-F (CU-4D2)
BUSINBIT7B-F (CU-4E2)
BUSINBITPB-F (CU-4E2)

NF450(CTLI-1B)

CU-2

P/N	TITLE	SHEET 21	DRAWN
REV	NF37CTLR LOGIC DIA	REV O	CHECK
	DRAWING NO NFL-KC-29430		APPD

Nippon Peripherals Limited

22

REV NO	DATE	DRAWN	APPD

(CX-7B6) BUSOUT0NFLB-F ← 162
(CX-7C6) BUSOUT1NFLB-F ← 160
(CX-7C6) BUSOUT2NFLB-F ← 153
(CX-7D6) BUSOUT3NFLB-F ← 154
(CX-7D6) BUSOUT4NFLB-F ← 155
(CX-7D6) BUSOUT5NFLB-F ← 157
(CX-7E6) BUSOUT6NFLB-F ← 158
(CX-7E6) BUSOUT7NFLB-F ← 213
(CX-7E6) BUSOUTFNFLB-F ← 212
(CT-2B9) FULL SELB-P ← 123
(CT-4G8) SELFCTLDB-N ← 118

74LS14 6A
74LS14 9A
74LS14 5A
74LS14 9A
74LS14 9A

74LS280 8A
FCG
A B C D E F G H I
ŌD
EV

74LS86 10E
74LS04 9E
74LS04 2B
74LS00 3B
74LS00 3B

219 → BŌFMISB-F (CT-3F6)
BŌFMISB-N (CU-1E6)

ALU BUS0-F (CU-1D5)
(CU-1D5) ALU BUS1-F
(CU-1D5) ALU BUS2-F
(CU-1E5) ALU BUS3-F
(CU-1F5) ALU BUS4-F
(CU-1F5) ALU BUS5-F
(CU-1F5) ALU BUS6-F
ALU BUS7-F (CU-1F5)

74LS240 4A

74LS244 4C

132 → M/BUSBIT0-F (CR-3B10)
140 → M/BUSBIT1-F (CR-3B10)
135 → M/BUSBIT2-F (CR-3B10)
137 → M/BUSBIT3-F (CR-3B10)
134 → M/BUSBIT4-F (CR-3C10)
135 → M/BUSBIT5-F (CR-3C10)
124 → M/BUSBIT6-F (CR-3C10)
130 → M/BUSBIT7-F (CR-3C10)

BŌUT7B-N (CU-2C2)
BŌUT6B-N (CU-2C2)
BŌUT5B-N (CU-2C2)
BŌUT4B-N (CU-2C2)
BŌUT3B-N (CU-2B2)
BŌUT2B-N (CU-1G6)(CU-2B2)
BŌUT1B-N (CU-1G6)(CU-2B2)
BŌUT0B-N (CU-1G6)(CU-2B2)
BŌUTFB-N (CU-1E6)

BŌUTPB-P (CU-1F10)

74LS125 3D

125 → M/BUSBITP-P (CR-3G6)

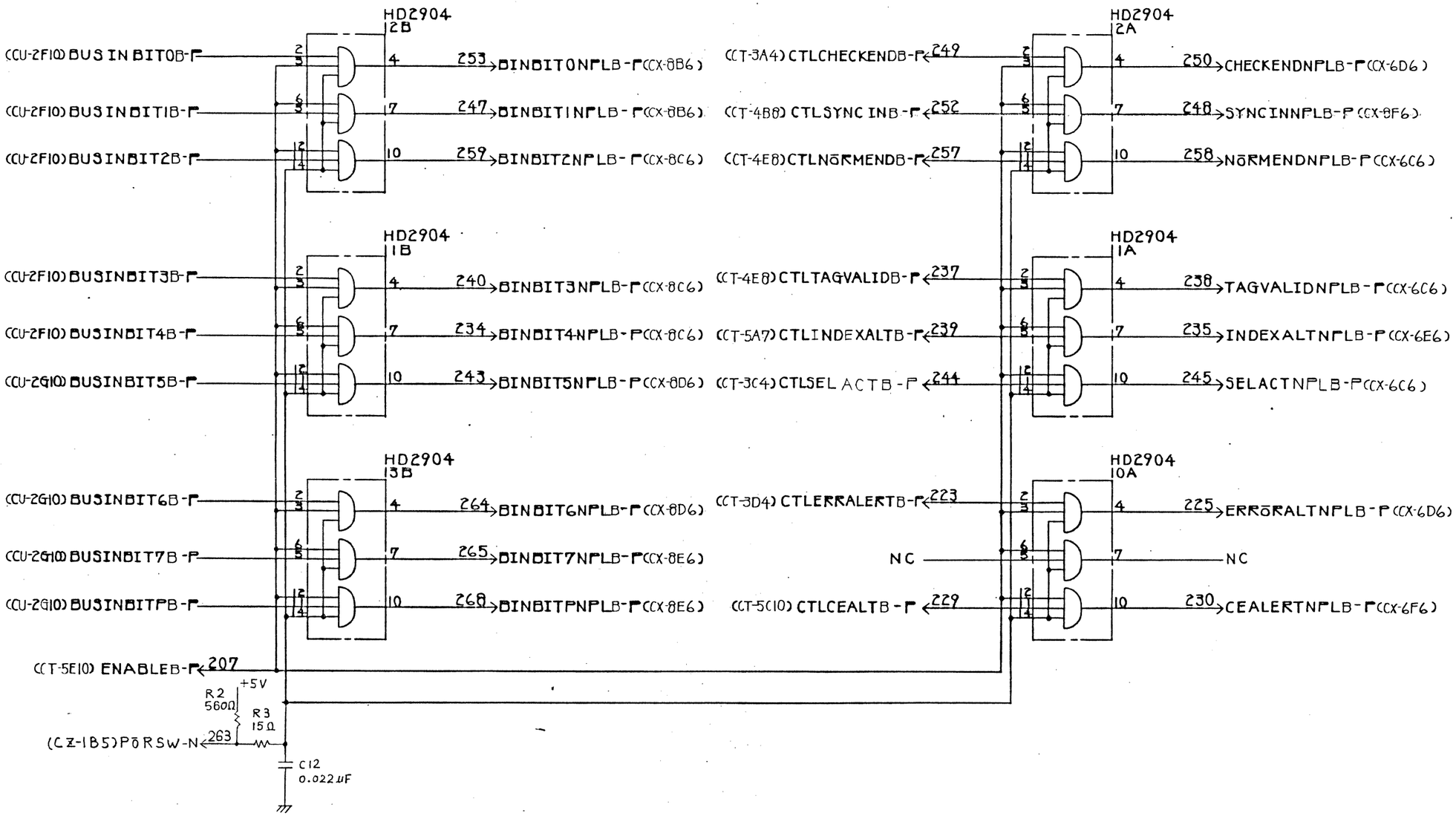
(CU-2B9) ALUBUSP-P

74LS125 3D

NP430(CTLI-1B)

CU-3

P/N	TITLE	SHEET 3 /	DRAWN		
REV	NP37CTLR LOGIC DIA	REV O	CHECK		
			APPD		
	DRAWING NO NFL-NC-29430	Nippon Peripherals Limited			



REV No	DATE	DRAWN	APPD

NP430(CTLI-1B)

CU-4

P/N REV	TITLE NP37CTLR LOGIC DIA	SHEET 4/4 REV 0	DRAWN CHECK APPD
	DRAWING NO NPL-NC-29430	Nippon Peripherals Limited	

REV NO	DATE	DRAWN	APPD

(CT-2B9) FULL SELB -Γ

(CT-3F10) BOUT ΓARERRB -Γ

TIE UP

+5V — R2 560Ω 1/4W

(CU-1D10) TAGΓARCHKB -N ← 230

(CT-2H8) REGIZEΓCHKB -N

(CT-2A9) FORCERRALTB -Γ

(CT-3G10) FNL01PGATEB-P

(CE-1F10) BITRING4-P ← 128

(CN-2C10) ALUASEL-P ← 130

(CU-1E10) SETFNL01ΓCKB -N ← 229

(CT-4G8) SELFCTLDB -N

(CG-7D9) EXTCTLIS-P ← 149

(CT-4B8) SYNC OUT-N

(CT-3F10) CTRLRSTB -N

(CH-5G5) ΓWRONRST -N ← 217

74LS04 11C

74LS04 11C

74LS04 13B

74LS04 5B

74LS04 13B

74LS11 5D

74LS20 4C

74LS279 10C

74LS279 10C

74LS279 10C

74LS279 10C

74LS279 11B

74LS10 12B

74LS30 12C

74LS00 9C

74LS04 11C

74LS04 11C

74LS04 11C

74LS04 13B

74LS10 12B

74LS08 11A

74LS03 13C

74LS00 9C

74LS279 9B

74LS279 9B

74LS279 9B

74LS279 9B

74LS279 9B

74LS20 8B

74LS00 9C

74LS00 9C

74LS04 6C

7438 10B

7438 10B

7438 10B

R3 560Ω 1/4W

R5 1.6KΩ 1/4W

239 → ERRORALERT-N (CQ-1A8)
ERRORALERT-N (CT-2C2)

INHIΓROCHKB-Γ (CT-2C9)

(CL-1B7) ΓRCCHK-Γ ← 243

TAGΓARERRB -Γ (CT-2B2)

(CE-1E10) BITRING6-Γ ← 220
ERRORALERT1B-P)

(CT-3D10) RSTΓORLCHB-N

154 → ERRORALERT1B-Γ (CT-1D6)
ERRORALERT1B-Γ (CT-3D2)

FNL01ΓERRB-Γ (CT-2B2)

TRNSFRCHKB-Γ (CT-2C2)

(CU-1C8) SELECTIONB-N ← 265

(CC-1D10) BITRING7-Γ ← 258

GNRCTRLRSTB-N (CT-3F6)

ΓRROCCHKLCHB-Γ (CT-4C2)

BITRING6-P (CT-3G6)

ΓORLATCHB-N (CT-4C2)

+5V — 245 → GENRESET-N (CQ-1E10)

234 → STOPMPCLOCK-P (CQ-1F10)

BITRING7-Γ (CT-4H2)

ΓWRONRST-N (CT-2E6) (CT-5E7)

101, 167, 201, 267 — +5V

C1 +3.3μF −35V

C4 +3.3μF −35V

C5 0.022μF 50V

C11 0.022μF 50V

106, 111, 116, 126, 131, 136, 146, 151 — 0V

156, 166, 206, 211, 216, 226

231, 236, 246, 251, 256, 266

NP431 (CTLI-2B)

CT - 1

P/N NP431 REV C	TITLE NP37CTLR LOGIC DIA	SHEET 1/5	DRAWN
		REV 0	CHECK
			APPD
CTLI-2B	DRAWING NO NPL-NC-29431	Nippon Peripherals Limited	

REV NO	DATE	DRAWN	APPD

(CT-4B8) GATED FNLIB-N
(CT-4G3) EXT SELF-N
74S32 13D
(CT-1B6) ERROR ALERT 1B-F
(CT-1E6) FNL01 PERRB-F
(CT-1A6) TAG PARERRB-F
(CT-3F10) BOUT PARERRB-F
(CT-4F3) FOLLDEVICEB-F
(CT-1A8) ERROR ALERT-N
(CT-1F6) TRNSFR CHKB-F
(CT-1A10) FRC CHK-F
74LS244 1E
(CT-5G8) GATED FNLB-N
(CT-5G8) EXT SELZ-N
74S32 13D
(CT-4F8) TRUN CAT SELB-N
(CT-5B7) ATTENTION B-N
(CT-3F10) SELHOLDB-N
(CT-3B10) NOVALIDB-N
(CT-3B10) TAG VALID 1B-F
(CU-1E10) STRING SWB-F 235
STRINGSWB-F (CT-5G1)
74LS244 10E
GATE REG-N (CT-4G2)
(CM-3F5) GATE REG-N 257
74LS02 7E
74LS02 7E
(CT-1G10) FWRONRST-N
74LS273 8E
REG
1D 1Q 12
2D 2Q 6
3D 3Q 15
4D 4Q 5
5D 5Q 9
6D 6Q 2
7D 7Q 19
8D 8Q
CK
CLR
ENABLE BINB-F (CT-5A7)
FORCERRALTB-F (CT-1D2)
RST ENABLEB-F (CT-5E7)
ENBTAGVALIDB-F (CT-3C2)
SYINTO SYOUTB-F (CT-4A2)
253 FULLSELB-F (CU-3E2)
IMMOP-F (CT-3E6)
FULLSELB-F (CT-1A2) (CT-4C2) (CT-5E2)
150 ALUBUS0-F (CQ-2B8)
157 ALUBUS1-F (CQ-2B8)
209 ALUBUS2-F (CQ-2C8)
244 ALUBUS3-F (CQ-2C8)
242 ALUBUS4-F (CQ-2C8)
74LS273 9E
REG
INHIPROCHKB-F (CT-1A8)
7438 10B
(INHIPROCHK-N)
+5V 1.6K Ω 1/4W
SWITCH 0IB-F (CT-5F1)
SWITCH TIB-F (CT-5F1)
215 LONG BUSYB-F (CU-1D2)
SHORT BUSYB-F (CT-4F2)(CT-5A1)
264 ALUBUS5-F (CQ-2E8)
213 ALUBUS6-F (CQ-2E8)
232 ALUBUS7-F (CQ-2E8)
74LS280 12E
PCG
A B C D E F G H I
EV
OD
74LS00 10D
74LS00 10D
74LS125 12D
74LS86 11D
74LS10 12B
74LS00 10D
74LS04 11C
(CT-5H7) GATE FNL-N
(CL-1E7) EXTSELE-N 219
(CT-5F8) GATEDSELIB-N
CHKEREGPARB-F (CT-4H6)
240 ALUBUSP-F (CQ-2G5)
74LS00 11A
(CU-2G9) REG7 FCHKB-N 230
ALUBUS7-F (CT-5C2)
ALUBUS6-F (CT-3B6)
ALUBUS5-F (CT-5D2)
ALUBUS4-F (CT-3F6)
ALUBUS3-F (CT-3D6)
ALUBUS2-F (CT-3E6)
ALUBUS1-F (CT-3C6)
ALUBUS0-F (CT-3C6)
REGI7EFCHKB-N (CT-1C2)
NP431 (CTLI-2B)

CT-2

P/N REV	TITLE: NP37CTLR LOGIC DIA	SHEET 21 REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-29431	Nippon Peripherals Limited	

REV NO	DATE	DRAWN	APPD

(CT-5B10) CTLBIN GATEB-P
(CT-4B8) DEGATE BUSB-N
74LS11 5D
155 → CTLCHECKENDB-P (CU-4B7)

74LS10 5C
CTLNORMENDIB-N (CT-4F2)

74LS20 4C
(CT-2A9) ENBTAGVALIDB-P
CTLTAGVALIDIB-N (CT-4E2)

74LS08 6E
164 → CTLSELACTB-P (CU-4D7)

74LS10 5C
74LS00 4D
(CT-1D6) ERROR ALERTIB-P
(CT-4D8) PROC CHKALTB-N
132 → CTLERRALERTB-P (CU-4D7)

74LS14 10A
(CX-5E6) TAGGATENPLB-P 225
(CX-5E6) SELHOLDNPLB-P 228
(CX-5F6) ENDRESPNPLB-P 223
(CX-5F6) RECYCLE NPLB-P 227
(CX-7F6) SYNC OUTNPLB-P 224
TAGGATEB-N (CT-4D2)
233 → RECYCLEB-NTP
248 → SYNC OUTB-NTP
SYNC OUTB-N

(CT-2G8) ALUBUS6-P
REGSEL2B-P (CT-4G8)
74LS00 8A
74LS279 11B
74LS04 6C
TAGVALIDIB-P (CT-2E2) (CT-5B7)
74LS00 2D
NOVALIDB-N (CT-2E2) (CT-4F2)

(CT-4D8) ENBDTAGGATEB-P
74LS10 5C
(CT-2G8) ALUBUS1-P
TAGVALIDIB-N (CT-5B1)

(CT-2H8) ALUBUS0-P
74LS10 5E
74LS279 4E
74LS04 6C
152 → SELACTIVEB-PTP
SELACTIVEB-P (CT-5A7)

74LS04 6C
74LS279 4E
(CT-2G8) ALUBUS3-P
74LS10 5E
74LS04 6C
158 → CHECKENDB-PTP
RSTFORLCHB-N (CT-1C6)

(CT-2B9) IMMOP-P
74LS00 4D
74LS20 3D
(NORMALENDIB-N)

(CT-2G8) ALUBUS2-P
74LS10 5E
74LS00 4D
74LS00 4D

(CT-2G8) ALUBUS4-P
74LS00 4D
CTRLRSTB-N (CT-1G2)
208 → SELHOLDB-NTP
SELHOLDB-N (CT-2D2) (CT-5B1)

(CT-1G4) GNRCTRLRSTB-N
(CT-4D8) GATET/BCHKB-P
(CU-3A7) BOPMISB-P 142
74LS00 4B
74LS279 11B
BOUTPARERRB-P (CT-1A2) (CT-2B2)

(CT-1C10) BITRING6-P
(CT-4A2)
ENBDTAGGATEB-P (CT-4D8)
74LS08 6E
74LS04 1D
74LS279 4E
FNL01PGATEB-P (CT-1D1)

NP451 (CTLI-2B)

CT-3

P/N REV	TITLE NP37CTLR LOGC DIA	SHEET 3 / REV 0	DRAWN / CHECK / APPD
	DRAWING NO NPL-NC-29451	Nippon Peripherals Limited	

REV No	DATE	DRAWN	APPD

(CF-2B10) SYNC IN-P ← 125
SYNC IN-P (CT-5C7)
74LS00 2D
74LS04 3C
(CT-2B9) SYINTŌSYŌUTB-P
74LS04 2A
74LS08 1C
(CT-3G4) SYNC ŌUTB-N
74LS10 1B
74LS09 1A
105 → SYNC ŌUT-N (CQ-4A8)
SYNC ŌUT-N (CT-1F2)
115 → DEGATE BUSB-N (CU-2G6)
DEGATE BUSB-N (CT-3A2)(CT-5G1)
74LS08 1C
(CT-5C10) ENAB SYNCINB-P
104 → CTLSYNC INB-P (CU-4B7)
74LS04 2A
(CT-5H7) GATE FNL-N
74LS10 1B
GATED FNL1B-N (CT-2A2)
(CT-2B9) FULL SELB-P
74LS10 1B
108 → GATED FNL2B-N (CU-1C2)
74LS04 2A
(CT-5G6) SS WGATEREGB-P
(CT-1C10) FŌR LATCHB-N
(DEGATE BUSB-P)
74LS04 2A
74LS00 2D
74LS04 2A
(CT-1B10) FRŌC CHKLCHB-P
(CT-5F10) ENABLEB-P
74LS20 3B
74LS04 2A
GATET/B CHKB-P (CT-3F6)
120 → GATET/B CHKB-P (CU-1E6)
74LS04 3C
74LS08 1C
(CT-3F4) TAG GATEB-N
ENBD TAG GATEB-P (CT-3B6)(CT-5B1)(CT-3G6)
(CE-1E10) BIT RING1-P ← 123
122 → ENBD TAG GATEB-P (CU-1E6)
PRŌC CHKALTB-N (CT-3D2)
74LS00 3A
74LS00 3A
(CT-5B7) ATTENTIŌNB-N
74LS10 2C
74LS04 3C
74LS00 2D
74LS10 2C
117 → CTL TAGVALIDB-P (CU-4C7)
74LS00 3A
114 → CTLBIBIT0B-N (CU-2C6)
74LS04 3C
(CT-3C4) CTL TAGVALIDIB-N
74LS20 3B
74LS04 3C
74LS00 3A
(CU-1A8) PŌLL DEVICEB-P ← 133
74LS00 4A
74LS00 4A
74LS04 3C
(CT-3B10) NŌ VALIDB-N
127 → CTL NŌRMENDB-P (CU-4B7)
PŌLL DEVICEB-P (CT-2B2)
74LS00 4A
PŌLL TI SSWB-P (CT-5A1)
(CU-1B8) PŌLL CTLB-P ← 139
(CT-2D10) SHŌRT BUSYB-P
74LS04 5A
74LS00 4A
(CU-1C8) SELECTIŌNB-N ← 148
TRUNCATSELB-N (CT-2D2)(CT-5A1)
(CT-3B4) CTL NŌRMENDIB-N
74LS08 1C
74LS04 1D
(CM-1G10) EXT REG CTL-P ← 102
137 → SELFCTLDB-N (CU-3F2)
SELFCTLDB-N (CT-1E2)
EXT SELF-N (CT-2A2)
74LS04 5A
(CL-1E7) EXT SELF-N ← 147
74LS04 13B
(CT-2A7) GATE REG-N
(GATE REGB-P)
74LS04 13B
74LS00 8A
74LS04 5B
REG SEL2B-P (CT-3B6)(CT-5D2)
(CT-5F8) GATED SEL2B-N
207 → REG SEL2B-PTP
74LS11 5D
NF431 (CTLI-2B)
74LS04 5B
74LS04 5A
74LS02 7E
(CT-1F10) BITRING7-P
159 → CHKEREGPARB-P (CT-2F4)(CU-2A5)
560P C13

CT-4

P/N REV	TITLE NF37CTLR LŌGIC DIA	SHEET 4/ REV 0	DRAWN CHECK APPD
	DRAWING NO NFL-NC-29431	Nippon Peripherals Limited	

REV NO	DATE	DRAWN	APPD

(CT-2D10) SHORT BUSYB-P
(CT-4F8) FULL TI SSWB-P
(CT-4F8) TRUNCATSELB-N
(CT-3C10) TAGVALIDIB-N
(CT-4D8) ENBDTAGGATEB-P
(CT-3F10) SELHOLDB-N
(CE-1E10) BITRING1-P ← 205
(CT-2G6) ALUBUS7-P
(CT-2G6) ALUBUS5-P
(CT-4G8) REG SEL2B-P
(CT-2B9) FULL SELB-P
(CJ-3C10) INDEX-P ← 204
(CT-2D9) SWITCH 0IB-P
(CT-2D9) SWITCH 1IB-P
(CT-2F3) STRING SWB-P
(CT-4B8) DEGATE BUSB-N
(E10) ENABLEB-P ← 145

74LS04 8C
74LS10 7C
74LS04 8C
74LS00 6B
74LS10 7C
74LS04 8C
74LS04 8C
74LS04 8C
74LS08 9A
74LS04 1D
74LS279 4E
74LS08 11A
74LS04 5B
74LS04 9D
74LS08 9A
74LS04 9D
74LS03 8D
74LS04 9D
74LS03 8D
74LS04 9D
74LS03 8D
74LS04 9D
74LS04 6C
74LS04 5B
74LS00 6B
74LS08 6E
74LS04 5B
74LS00 6B
74LS279 1B
74LS03 8D
74LS12 7D
74LS12 7D
74LS03 8D
74LS08 6E
74LS20 8B
74LS08 6E
74LS00 6B
74LS00 6B
74LS04 5A
74LS00 8A
74LS08 9A
74LS04 5A
74LS11 7A
74LS00 8A
74LS00 10D
74LS08 9A
74LS04 1D
74LS11 7A
74LS11 7A
74LS08 9A
74LS10 7C
74LS00 4B
74LS04 5A
74LS00 4B
74LS20 3D
74LS00 4B
74LS32 12A
74LS32 12A
74LS32 12A
74LS32 12A
74LS32 13A

R7 1.6KΩ 1/4W +5V
R8 1.6KΩ 1/4W +5V
R9 1.6KΩ 1/4W +5V
C12 0.022μF 50V
R1 100Ω 1/4W
R4 560Ω 1/4W +5V

(NOT USED)

162 → CTLINDEXALTB-P (CU-4C7)
(CT-3C10) SELACTIVE-P
(CT-2A9) ENABLEBINB-P
ATTENTIONB-N (CT-2D2) (CT-4D2)
153 → GATEDBUSB-P (CU-2G6)
168 → GATEDBYTEB-P (CU-2F6)
(CT-3B10) TAGVALIDIB-P
CTLBINGATEB-P (CT-3A2)
214 → TAGGATETRAP1-N (CN-2C2)
(CT-4A5) SYNCIN-P
(CG-7D6) ENABLCTLSYIN-P ← 202
ENABSYNCINB-P (CT-4B2)
212 → CTLCEALTB-P (CU-4E7)
268 → SELHOLDTRAP5-N (CQ-5D7)
(CJ-1G7) INTF SELB-P ← 218
134 → ENABLEB-P (CT-5G2) (CU-4E2)
ENABLEB-P (CT-4D2)
(CE-1C6) ENABLE SWB-N ← 160
(CT-1G10) PWRONRST-N
(ENABLEB-N)
(CT-2A9) RST ENABLEB-P
(CL-1C7) EXT SEL1-N ← 247
(CL-1C7) EXT SEL0-N ← 250
(CL-1C7) EXT SEL2-N ← 260
(CL-1C7) EXT SEL7-N ← 255
(CM-3G5) GATE FNL-N ← 262
SSWGATEREGB-P (CJ-4C2)
252 → GATEDSELIB-NTP
GATEDSELIB-N (CT-2F4)
249 → GATED SEL0B-NTP
GATED SEL2B-N (CT-4G2)
254 → GATED SEL7B-N (CU-2A2)
259 → GATEDFNLB-N (CU-2A2)
GATEDFNLB-N (CT-2C2)
EXT SEL2-N (CT-2D2)
GATE FNL-N (CT-2G2) (CT-4B2)

NP431 (CTLI-2B)

CT-5

P/N REV	TITLE	SHEET 5/5	DRAWN
	NP37CTLR LOGIC DIA	REV 0	CHECK
	DRAWING NO NPL-NC-29431		APPD
		Nippon Peripherals Limited	

REV NO | DATE | DRAWN | APPD

(CX-1B6) TAGBIT0NPLA-P ← 159
(CX-1C6) TAGBIT4NPLA-P ← 144
(CX-1C6) TAGBIT5NPLA-P ← 165
(CX-1B6) TAGBIT6NPLA-P ← 168
(CX-1B6) TAGBIT7NPLA-P ← 152
(CX-1E6) TAGBITPNPLA-P ← 145

74LS14 7D

TAGBIT0A-N (CR-2E2)
TAGBIT4A-N (CR-2F2)
TAGBIT5A-N (CR-2F2)
TAGBIT6A-N (CR-2F2)
TAGBIT7A-N (CR-2F2)

74LS04 6E
74LS04 6E
74LS04 6E

74LS11 5D → 147 → POLL DEVICEA-P (CQ-4E2)
74LS21 7E
74LS11 5D → 143 → POLL CTLA-P (CQ-4F2)
74LS04 6E
74LS21 7E
74LS00 4E → 139 → SELECTIONA-N (CQ-1F6)(CQ-4F2)

74LS32 5B
(CQ-4C8) GATEDFNL2A-N ← 150
(CL-1E7) EXTSELF-N ← 149
GATEDFSELF2A-N (CR-2C6)

74LS244 6C

(CQ-2D9) LONG BUSYA-P ← 148
N C
(CQ-1D6) ERROR ALERT1A-P ← 164
N C
N C

ALUBUS0-P (CR-2G3)(CR-3B7) → 128 → ALUBUS0-P (CQ-2B8)
ALUBUS1-P (CR-2G3)(CR-3B7) → 127 → ALUBUS1-P (CQ-2B8)
ALUBUS2-P (CR-2G3)(CR-3B7) → 204 → ALUBUS2-P (CQ-2C8)
ALUBUS3-P (CR-2G3)(CR-3B7) → 205 → ALUBUS3-P (CQ-2C8)
ALUBUS4-P (CR-2G3)(CR-3B7) → 202 → ALUBUS4-P (CQ-2C8)
ALUBUS5-P (CR-2G3)(CR-3C7) → 130 → ALUBUS5-P (CQ-2E8)
ALUBUS6-P (CR-2H3)(CR-3C7) → 122 → ALUBUS6-P (CQ-2E8)
ALUBUS7-P (CR-2H3)(CR-3C7) → 208 → ALUBUS7-P (CQ-2E8)

74LS280 8D
FCG
EV → 5
ODD

(CQ-4D8) GATET/BCHKA-P ← 242
(CR-3A7) BOPMISA-N
(CQ-4D8) ENBDTAGGATEA-P ← 222

74LS00 11E
74LS10 9D
74LS00 6E
74LS08 8E → 217 → TAGPARCHKA-N (CQ-1B2)

(CR2C6) GATEDFSEL0A-N
(CR-3F6) BOUTPA-N
(CR2B9) ALUBUSP-P
(CR2C6) GATEDFSEL1A-N
(CR-3F6) BOUT2A-N
(CR-3F6) BOUT1A-N
(CR-3F6) BOUT0A-N

74LS04 9E
74LS04 9E
74LS04 9E
74LS04 9E
74LS00 11E
74LS86 10E
74LS86 10E
74LS08 8E → 209 → SETFNL01PCKA-N (CQ-1E2)
74LS00 11E
74LS86 6D
74LS86 6D
74LS86 6D
74LS11 5D

BOUTPA-P (CR-3G3)

+5V
R1 560Ω 1/4W
TIE UP (H側)
(L側)
SSW
TIE UP-P (CR-2E2)
112 → STRINGSWA-P (CQ-2E2)

+5V
C1 +3.3μF -35V
C4 +3.3μF -35V
C5 0.022μF 50V
C11 0.022μF 50V
0V

101 167 201 267
106 111 116 126 131 136 146 151
156 166 206 211 216 226
231 236 246 251 256 266

NP430(CTLI-1A)

CR-1

P/N NP430 REV B	TITLE NP37CTLR LOGIC DIA	SHEET 1/4 REV 0	DRAWN CHECK APPD
CTLI-1A	DRAWING NO NPL-NC-28430	Nippon Peripherals Limited	

(CM-3F5) GATEREG - N 107
(CQ-5G8) GATEDSEL7A - N 108
(CL-IC7) EXT SEL0-N 214
(CQ-5G8) GATEDFNLA-N 215
74LS02 2C
74S32 9B
74LS240 7C
74LS280 3C
PCG
(CR-3F6) BOUT0A-N
(CR-3F6) BOUT1A-N
(CR-3F6) BOUT2A-N
(CR-3F6) BOUT3A-N
(CR-3F6) BOUT4A-N
(CR-3F6) BOUT5A-N
(CR-3F6) BOUT6A-N
(CR-3F6) BOUT7A-N
(CQ-4H6) CHKEREG PARA-P 203
74LS04 2B
74LS08 11E
74LS86 6D
74LS00 4E
142 → REG7FCHKA-N (CQ-2H5)
74LS125 3D
120 → ALUBUSP-P (CQ 2G5)
ALUBUSP-P (CR-1F6)(CR-3G3)
74LS10 9D
74LS04 6E
(GATEDFSEL0A-N)
(GATEDFSEL1A-N)
(GATEDFSEL2A-N)
(CQ-4E8) CTLBIBIT0A-N 129
74LS273 10C
REG
74LS157 12C
SEL
74LS04 2B
74LS00 3B
PWR ONRST-N (CR-4F2)
(CH-5G5) PWR ONRST-N 232
74S32 9B
74LS240 8C
(CL-IC7) EXT SEL1-N 220
(CR-1F5) TIE UP-P
(CR-1A4) TAGBIT0A-N
(CR-1A4) TAGBIT4A-N
(CR-1B4) TAGBIT5A-N
(CR-1B4) TAGBIT6A-N
(CR-1C4) TAGBIT7A-N
(CR-1D5) ALUBUS0-P
(CR-1D5) ALUBUS1-P
(CR-1D5) ALUBUS2-P
(CR-1E5) ALUBUS3-P
(CR-1F5) ALUBUS4-P
(CR-1F5) ALUBUS5-P
(CR-1F5) ALUBUS6-P
(CR-1F5) ALUBUS7-P
(CF-1G7) SERDES0-P 254
(CF-1G7) SERDES1-P 255
(CF-1G7) SERDES2-P 262
(CF-1G7) SERDES3-P 260
(CF-1G7) SERDES4-P 227
(CF-1G7) SERDES5-P 233
(CF-1G7) SERDES6-P 224
(CF-1G7) SERDES7-P 228
(CQ-5B10) GATEDBYTEA-P 218
74LS157 11D
74LS280 12D
BUSINBIT0A-P (CR-4B2)
BUSINBIT1A-P (CR-4B2)
BUSINBIT2A-P (CR-4B2)
BUSINBIT3A-P (CR-4C2)
BUSINBIT4A-P (CR-4C2)
BUSINBIT5A-P (CR-4D2)
BUSINBIT6A-P (CR-4D2)
BUSINBIT7A-P (CR-4E2)
BUSINBITPA-P (CR-4E2)
BUSINODA-N (G7)
74LS04 9E
74LS08 8E
74LS00 4E
74LS02 2C
(CQ-5A10) GATEDBUSA-P 113
(CQ-4B8) DEGATEBUSA-N 114
(E11) BUSINODA-N

NP430(CTLI-1A)

CR-2

P/N	TITLE NP37CTLR LOGIC DIA	SHEET 2/	DRAWN
REV		REV O	CHECK
	DRAWING NO NPL-KC-28430		APPD

Nippon Peripherals Limited

(CX-3B6) BUSOUT0NPLA-P ← 162
(CX-3C6) BUSOUT1NPLA-P ← 160
(CX-3C6) BUSOUT2NPLA-P ← 153
(CX-3C6) BUSOUT3NPLA-P ← 154
(CX-3B6) BUSOUT4NPLA-P ← 155
(CX-3B6) BUSOUT5NPLA-P ← 157
(CX-3E6) BUSOUT6NPLA-P ← 158
(CX-3E6) BUSOUT7NPLA-P ← 213
(CX-3F6) BUSOUTPNPLA-P ← 212
(CQ-2B9) FULL SELA-P ← 123
(CQ-4G8) SELFCTLDA-N ← 118
(CR-1E10) BOUTPA-P
(CR-2B9) ALUBUSP-P

74LS14 6A
74LS14 9A
74LS14 9A
74LS14 6A
74LS14 9A
74LS14 9A
74LS00 3B
74LS00 3B
74LS04 2B
74LS125 3D
74LS125 3D

74LS280 8A
PCG
A B C D E F G H I
ōD
EV

74LS86 10E

74LS04 9E

74LS240 4A

74LS244 4C

219 → BOPMISA-P (CQ-3F6)
BOPMISA-N (CR-1E6)

ALU BUS0-P (CR-1D5)
(CR-1D5) ALU BUS1-P
(CR-1D5) ALU BUS2-P
(CR-1E5) ALU BUS3-P
(CR-1F5) ALU BUS4-P
(CR-1F5) ALU BUS5-P
(CR-1F5) ALU BUS6-P
ALU BUS7-P (CR-1F5)

132 → M/BUSBIT0-P (CF-4E7)(CU-3B10)
140 → M/BUSBIT1-P (CF-4E7)(CU-3B10)
133 → M/BUSBIT2-P (CF-4E7)(CU-3B10)
137 → M/BUSBIT3-P (CF-4F7)(CU-3B10)
134 → M/BUSBIT4-P (CF-4F7)(CU-3C10)
135 → M/BUSBIT5-P (CF-4F7)(CU-3C10)
124 → M/BUSBIT6-P (CF-4F7)(CU-3C10)
138 → M/BUSBIT7-P (CF-4F7)(CU-3C10)

BOUT7A-N (CR-2C2)
BOUT6A-N (CR-2C2)
BOUT5A-N (CR-2C2)
BOUT4A-N (CR-2C2)
BOUT3A-N (CR-2B2)
BOUT2A-N (CR-1G6)(CR-2B2)
BOUT1A-N (CR-1G6)(CR2B2)
BOUT0A-N (CR-1G6)(CR-2B2)
BOUTPA-N (CR-1E6)

125 → M/BUSBITP-P (CF-4G7)(CU-3G6)

NP430(CTLI-1A)

CR-3

P/N	TITLE NP37CTLR LOGIC DIA	SHEET 3/	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-28430		APPD

Nippon Peripherals Limited

REV NO	DATE	DRAWN	APPD

HD2904 2B

(CR-2F10) BUS IN BIT0A-P → 2,3 → 4 → 253 → BINBIT0NPLA-P (CX-4B6)

(CR-2F10) BUSINBITIA-P → 6,5 → 7 → 247 → BINBITINPLA-P (CX-4B6)

(CR-2F10) BUSINBIT2A-P → 12,11,14 → 10 → 259 → BINBIT2NPLA-P (CX-4C6)

HD2904 2A

(CQ-3A4) CTLCHECKENDA-P ← 249 → 2,3 → 4 → 250 → CHECKENDNPLA-P (CX-2D6)

(CQ-4B8) CTLSYNC INA-P ← 252 → 6,5 → 7 → 248 → SYNCINNPLA-P (CX-4F6)

(CQ-4E8) CTLNORMENDA-P ← 257 → 12,11,14 → 10 → 258 → NORMENDNPLA-P (CX-2C6)

HD2904 1B

(CR-2F10) BUSINBIT3A-P → 2,3 → 4 → 240 → BINBIT3NPLA-P (CX-4C6)

(CR-2F10) BUSINBIT4A-P → 6,5 → 7 → 234 → BINBIT4NPLA-P (CX-4C6)

(CR-2G10) BUSINBIT5A-P → 12,11,14 → 10 → 243 → BINBIT5NPLA-P (CX-4D6)

HD2904 1A

(CQ-4E8) CTLTAGVALIDA-P ← 237 → 2,3 → 4 → 238 → TAGVALIDNPLA-P (CX-2C6)

(CQ-5A7) CTLINDEXALTA-P ← 239 → 6,5 → 7 → 235 → INDEXALTNPLA-P (CX-2E6)

(CQ-3C4) CTL SELACTA-P ← 244 → 12,11,14 → 10 → 245 → SELACTNPLA-P (CX-2B6)

HD2904 3B

(CR-2G10) BUSINBIT6A-P → 2,3 → 4 → 264 → BINBIT6NPLA-P (CX-4D6)

(CR-2G10) BUSINBIT7A-P → 6,5 → 7 → 265 → BINBIT7NPLA-P (CX-4E6)

(CR-2G10) BUSINBITPA-P → 12,11,14 → 10 → 268 → BINBITPNPLA-P (CX-4E6)

HD2904 10A

(CQ-3D4) CTLERRALERTA-P ← 223 → 2,3 → 4 → 225 → ERRORALTNPLA-P (CX-2D6)

NC → 6,5 → 7 → NC

(CQ-5C10) CTLCEALTA-P ← 229 → 12,11,14 → 10 → 230 → CEALERTNPLA-P (CX-2F6)

(CQ-5E10) ENABLEA-P ← 207

+5V

R2 560Ω

R3 15Ω

(CZ-1B5) PORSW-N ← 263

C 12 0.022μF

NP430(CTLI-1A)

CR-4

P/N REV	TITLE NP37CTLR LOGIC DIA	SHEET 4/4 REV 0	DRAWN CHECK APPD
	DRAWING NO NPL-NC-28430	Nippon Peripherals Limited	

NO.	DATE	DRAWN	APPD

(CQ-2B9) FULL SELA -P

(CQ-3F10) BOUT PARERRA -P

74LS04 11C

74LS03 13C

74LS04 11C

TAGPARERRA -P (CQ-2B2)

239 → ERROR ALERT-N (CF-5D7)(CJ-3A7)(CN-2B2)(CT-1A8)
ERROR ALERT-N (CQ-2C2)

INHIPROCHKA-P (CQ-2C9)

74LS04 13B

74LS08 11A

(CL-1B7) PRCCHK-P ← 243

PRCCHK - P (CQ-2C2)

TIE UP

+5V

R2 560Ω 1/4W

74LS279 10C

74LS330 12C

(CR-1D10) TAGPARCHKA-N ← 230

(CE-1E10) BITRING6-P ← 220
(ERROR ALERT1A-P)

+5V

R3 560Ω 1/4W

74LS00 9C

74LS279 9B

PROCCHKLCHA-P (CQ-4C2)

BITRING6 - P (CQ-3G6)

74LS279 10C

(CQ-2H8) REGI7EPCHKA-N

(CQ-3D10) RST FORLCHA-N

74LS38 10B

74LS279 9B

FORLATCHA-N (CQ-4C2)

74LS279 10C

74LS00 9C

154 → ERROR ALERT1A-P (CR-1D2)
ERROR ALERT1A-P (CQ-3D2) (CQ-2A2)

74LS20 8B

74LS279 9B

74LS04 11C

(CQ-2A9) FORCERRALTA-P

FNL01PGATEA-P (CQ-3G10)

74LS20 4C

(CE-1F10) BITRING4 - P ← 120

(CN-2C10) ALUASEL-P ← 130

74LS04 5B

(CR-1E10) SETFNL01PCKA-N ← 229

74LS279 10C

74LS04 11C

FNL01PERRA-P (CQ-2B2)

74LS279 9B

74LS04 1D

(CQ-4G8) SELFCTLDA-N

74LS00 9C

74LS00 9C

7438 10B

+5V

R5 1.6KΩ 1/4W

74LS11 5D

(CG-7D9) EXTCTLI5-P ← 149

74LS279 11B

74LS04 11C

TRNSFRCHKA-P (CQ-2C2)

74LS10 12B

74LS04 6C

245 → GENRESET-N (CE-2G3)(CG-6E7)(CJ-3B1) (CL-3E2)(CF-1F7)(CT-1E1) (CD-1F2)

74LS04 13B

(CQ-4B8) SYNC OUT-N

74LS04 13B

74LS10 12B

7438 10B

(CR-1C8) SELECTI6NA-N ← 265

234 → STOPMPCLOCK-P (CE-4B6)(CT-1F10)

(CE-1D10) BITRING7-P ← 258

BITRING7-P (CS-4H2)

74LS08 11A

(CQ-3F10) CTRLRSTA-N

(CH-5G5) PWRONRST-N ← 217

GNRCTRLRSTA-N (CQ-3F6)

PWRONRST-N (CQ-2E6)(CQ-5E7)

101 167 201 267

+5V

C1 3.3μF 35V

C4 3.3μF 35V

C5 0.022μF 50V

C11 0.022μF 50V

106 111 116 126 131 136 146 151

0V

156 166 206 211 216 226

231 236 246 251 256 266

NP431 (CTLI-2A)

CQ - 1

P/N NP431 REV C	TITLE NP37CTLR LOGIC DIA	SHEET 1/5	DRAWN
		REV 0	CHECK
			APPD
CTLI-2A	DRAWING NO NPL-NC-28431	Nippon Peripherals Limited	

REV NO	DATE	DRAWN	APPD

74S32 13D
(CQ-4B8) GATEDFNLIA-N
(CQ-4G3) EXT SELF-N

74LS244 1E
(CQ-1D6) ERRORALERT1A-P
(CQ-1E6) FNL01PERRA-P
(CQ-1A6) TAGPARERRA-P
(CQ-3F10) BOUTPARERRA-P
(CQ-4F3) POLLDEVICEA-P
(CQ-1A8) ERRORALERT-N
(CQ-1F6) TRNSFRCHKA-P
(CQ-1A10) PRCCHK-P

74S32 15D
(CQ-5G8) GATEDFNLA-N
(CQ-5G8) EXT SEL2-N

74LS244 10E
(CQ-4F8) TRUNCAT SELA-N
(CQ-5B7) ATTENTIONA-N
(CQ-3F10) SELHOLDA-N
(CQ-3B10) NOVALIDA-N
(CQ-3B10) TAGVALIDIA-P
(CR-1F5) STRINGSWA-P 235
STRINGSWA-P (CQ-5G1)

GATEREG-N (CQ-4G2)

74LS273 8E
REG
ENABLEBINA-P (CQ-5A7)
FORCERRALTA-P (CQ-1D2)
RSTENABLEA-P (CQ-5E7)
ENBTAGVALIDA-P (CQ-3C2)
SYINTOSYOUTA-P (CQ-4A2)
253 FULLSELA-P (CR-3E2)
IMMOP-P (CQ-3E6)
FULLSELA-P (CQ-1A2)(CQ-4C2)(CQ-5E2)

150 ALUBUS0-P (CE-4F3)(CF-5E4)(CG-7B3)(CH-5B10)(CJ-1G10)(CL-3A5)(CN-4B10)(CR-1D5)(CT-2B8)(CU-1D5)
157 ALUBUS1-P (CE-4F3)(CF-5E4)(CG-7B3)(CH-5B10)(CJ-1E10)(CL-3B5)(CN-4B10)(CR-1D5)(CT-2B8)(CU-1D5)
209 ALUBUS2-P (CE-4F3)(CF-5F4)(CG-7B3)(CH-5B10)(CJ-1G10)(CL-3B5)(CN-4A10)(CR-1D5)(CT-2C8)(CU-1D5)
244 ALUBUS3-P (CE-4G3)(CF-5F4)(CG-7B3)(CH-5B10)(CJ-1F10)(CL-3B5)(CN-4A10)(CR-1D5)(CT-2C8)(CU-1D5)
242 ALUBUS4-P (CE-4G3)(CF-5F4)(CG-7B3)(CH-5B10)(CJ-1G10)(CL-3B5)(CN-4B10)(CR-1E5)(CT-2C8)(CU-1E5)

74LS02 7E
(CM-3F5) GATEREG-N 257

74LS273 9E
REG
INHIPROCHKA-P (CQ-1A8)
7438 10B
(INHIPROCHK-N)
+5V R6 1.6KΩ 1/4W
SWITCHOIA-P (CQ-5F1)
SWITCHTIA-P (CQ-5F1)
215 LONGBUSYA-P (CR-1D2)
SHORTBUSYA-P (CQ-4F2)(CQ-5A1)

(CQ-1G10) PWRONRST-N

264 ALUBUS5-P (CE-4G3)(CF-5F4)(CG-7B3)(CH-5B10)(CJ-1F10)(CL-3B5)(CN-4B10)(CR-1E5)(CT-2E8)(CU-1E5)
213 ALUBUS6-P (CE-4G3)(CF-5G4)(CG-7B3)(CH-5B10)(CJ-1F10)(CL-3C5)(CN-4A10)(CR-1E5)(CT-2E8)(CU-1E5)
232 ALUBUS7-P (CE-4G3)(CF-5G4)(CG-7B3)(CH-5B10)(CJ-1E10)(CL-3C5)(CN-4A10)(CR-1E5)(CT-2E8)(CU-1E5)

74LS280 12E
PCG
EV 5
OD

74LS00 10D
(CL-1E7) EXT SELE-N 219
(CQ-5F8) GATEDSELIA-N
(CQ-4H6) CHKEREGPARA-P

74LS125 12D
74LS86 11D
74LS10 12B
74LS00 10D
74LS00 10D
74LS04 11C
(CQ-5H7) GATE FNL-N

240 ALUBUSP-P (CH-5E5)(CJ-2F7)(CL-4B2)(CN-4G4)(CR-2B9)(CT-2G5)(CU-2B9)

74LS08 11A
(CR-2B9) REG7PCHKA-N 238
REG7EPCHKA-N (CQ-1C2)

ALUBUS7-P (CQ-5C1)
ALUBUS6-P (CQ-3B6)
ALUBUS5-P (CQ-5D1)
ALUBUS4-P (CQ-3F6)
ALUBUS3-P (CQ-3D6)
ALUBUS2-P (CQ-3E6)
ALUBUS1-P (CQ-3C6)
ALUBUS0-P (CQ-3C6)

NP431 (CTLI-2A)

CQ-2

P/N REV	TITLE	SHEET 21	DRAWN	
	NP37CTLR LOGIC DIA	REV O	CHECK	
	DRAWING NO NPL-NC-28431		APPD	Nippon Peripherals Limited

35

BY	DATE	DRAWN	APPD

(CQ-5B10) CTLBIN GATEA-P
(CQ-4B8) DEGATE BUSA-N
74LS11 5D
155 → CTLCHECKENDA-P (CR-4B7)

74LS10 5C
CTLNORMENDIA-N (CQ-4F2)

(CQ-2A9) ENBTAGVALIDA-P
74LS20 4C
CTLTAGVALIDIA-N (CQ-4E2)

(CQ-1D6) ERROR ALERTIA-P
(CQ-4D8) PROC CHKALTA-N
74LS10 5C
74LS00 4D
132 → CTLERRALERTA-P (CR-4D7)

(CQ-2G8) ALUBUS6-P
REGSEL2A-P (CQ-4G8)
74LS00 8A
74LS279 11B
74LS04 6C
TAGVALIDIA-P (CQ-2E2) (CQ-5B7)

(CQ-4D8) ENBD TAGGATEA-P
74LS00 2D
NOVALIDA-N (CQ-2E2) (CQ-4F2)

(CQ-2G8) ALUBUS1-P
74LS10 5C
TAGVALIDIA-N (CQ-5B1)

(CQ-2H8) ALUBUS0-P
74LS10 5E
74LS279 4E
74LS04 6C
152 → SELACTIVEA-PTP
SELACTIVEA-P (CQ-5A7)

(CQ-2G8) ALUBUS3-P
74LS10 5E
74LS279 4E
74LS04 6C
158 → CHECKENDA-PTP
RSTFORLCHA-N (CQ-1C6)

(CQ-2B7) IMMOP-P
74LS00 4D
74LS20 3D
(NORMALENDIA-N)

(CQ-2G8) ALUBUS2-P
74LS10 5E
74LS00 4D
74LS00 4D

(CQ-2G8) ALUBUS4-P
CTRLRSTA-N (CQ-1G2)

(CQ-1G4) GNRCTRLRSTA-N
208 → SELHOLDA-NTP
SELHOLDA-N (CQ-2D2) (CQ-5B1)

(CQ-4D8) GATET/BCHKA-P
(CR-3A7) BOPMISA-P ← 142
74LS00 4B
74LS279 11B
BOUTPARERRA-P (CQ-1A2) (CQ-2B2)

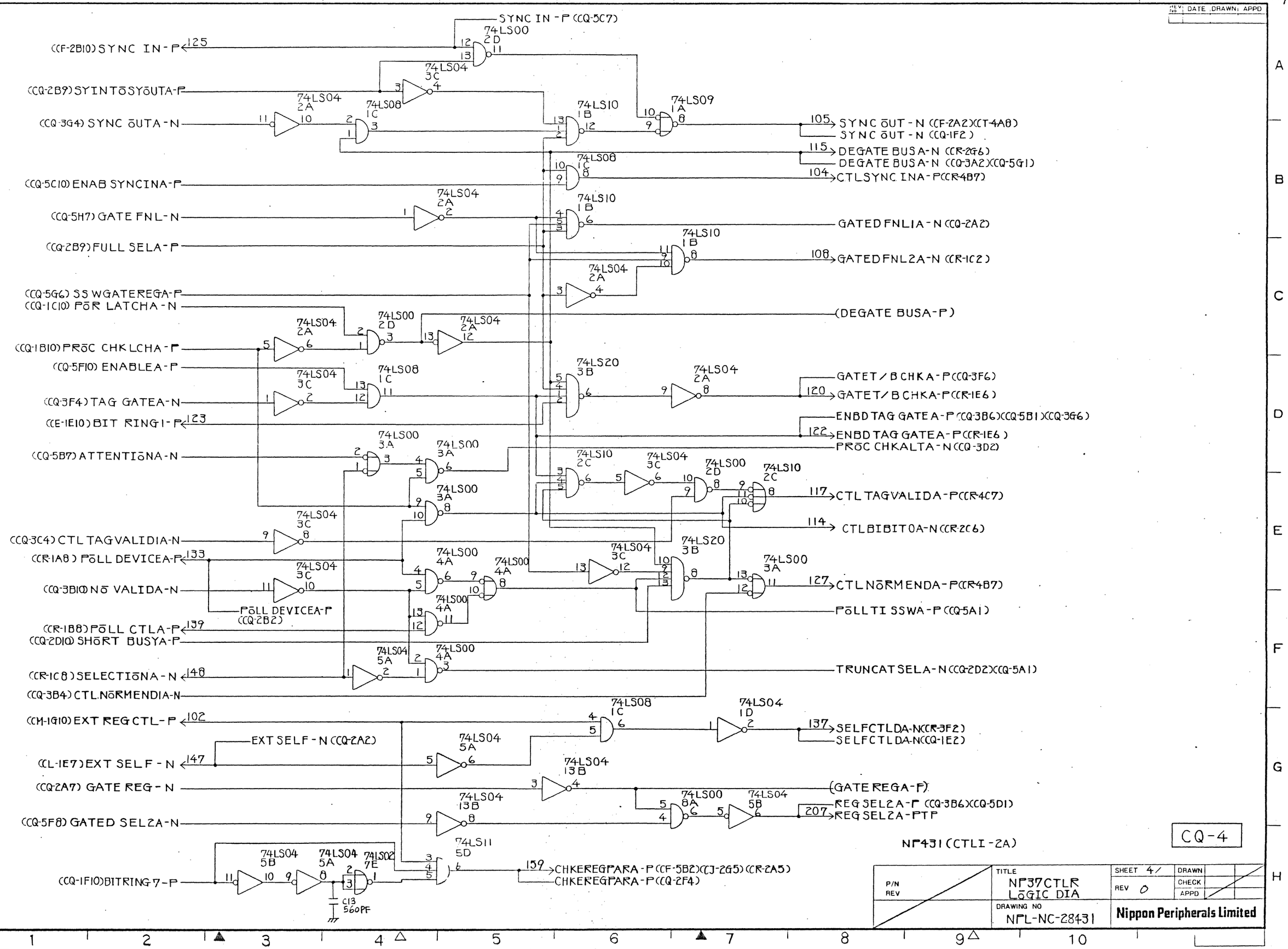
(CQ-1C10) BIT RING6-P
ENBD TAGGATEA-P (CQ-4D8)
74LS08 6E
74LS04 1D
74LS279 4E
FNL01PGATEA-P (CQ-1D1)

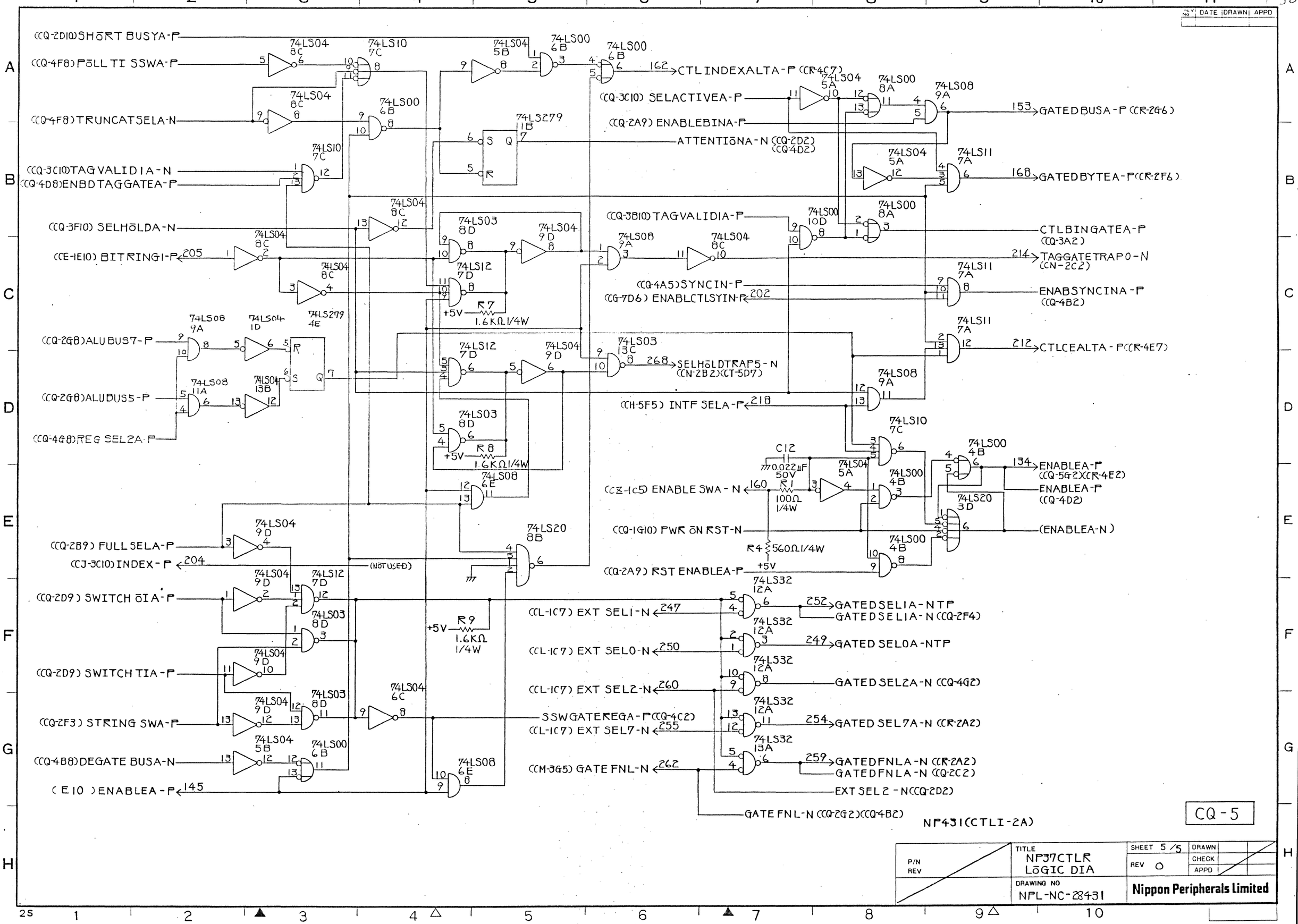
(CX-1E6) TAGGATENPLA-P ← 225
(CX-1F6) SELHOLD NPLA-P ← 228
(CX-1F6) END RESP NPLA-P ← 223
(CX-1F6) RECYCLE NPLA-P ← 227
(CX-1F6) SYNC OUT NPLA-P ← 224
74LS14 10A
TAGGATEA-N (CQ-4D2)
233 → RECYCLEA-NTP
248 → SYNC OUTA-NTP
SYNC OUTA-N ~~(CQ-1F2)~~ (CQ-4A2)

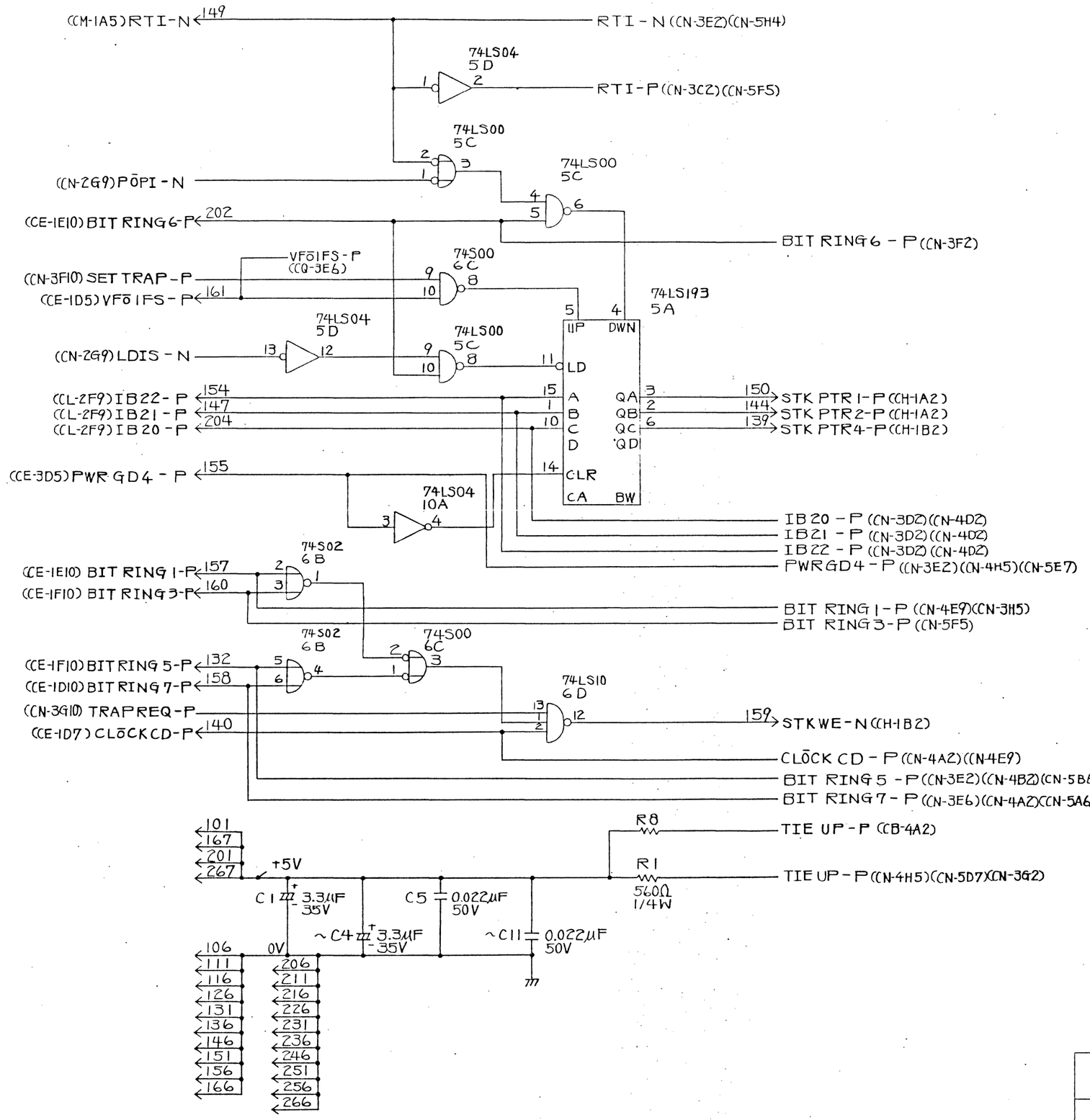
NP431 (CTLI-2A)

CQ-3

P/N REV	TITLE NP37CTLR LOGC DIA	SHEET 3 / REV 0	DRAWN / CHECK / APPD
	DRAWING NO NPL-NC-28431	Nippon Peripherals Limited	


SYNC IN-P (CQ-5C7)
74LS00 2D
(CF-2B10) SYNC IN-P 125
74LS04 3C
(CQ-2B9) SYINTŌSYŌUTA-P
74LS04 2A
74LS08 1C
(CQ-3G4) SYNC ŌUTA-N
74LS10 1B
74LS09 1A
105 SYNC ŌUT-N (CF-2A2)(CT-4A8)
SYNC ŌUT-N (CQ-1F2)
115 DEGATE BUSA-N (CR-2G6)
DEGATE BUSA-N (CQ-3A2)(CQ-5G1)
74LS08 1C
(CQ-5C10) ENAB SYNCINA-P
104 CTLSYNC INA-P (CR-4B7)
74LS04 2A
(CQ-5H7) GATE FNL-N
74LS10 1B
GATED FNLIA-N (CQ-2A2)
(CQ-2B9) FULL SELA-P
74LS10 1B
108 GATED FNL2A-N (CR-1C2)
74LS04 2A
(CQ-5G6) SS WGATEREGA-P
(CQ-1C10) PŌR LATCHA-N
(DEGATE BUSA-P)
74LS04 2A
74LS00 2D
74LS04 2A
(CQ-1B10) PRŌC CHK LCHA-P
(CQ-5F10) ENABLEA-P
74LS20 3B
74LS04 2A
GATET/B CHKA-P (CQ-3F6)
74LS04 3C
74LS08 1C
(CQ-3F4) TAG GATEA-N
120 GATET/B CHKA-P (CR-1E6)
ENBD TAG GATE A-P (CQ-3B6)(CQ-5B1)(CQ-3G6)
(CE-1E10) BIT RING1-P 123
122 ENBD TAG GATEA-P (CR-1E6)
PRŌC CHKALTA-N (CQ-3D2)
74LS00 3A
74LS00 3A
(CQ-5B7) ATTENTIŌNA-N
74LS10 2C
74LS04 3C
74LS00 2D
74LS10 2C
117 CTL TAGVALIDA-P (CR-4C7)
74LS00 3A
114 CTL BIBIT0A-N (CR-2C6)
74LS04 3C
(CQ-3C4) CTL TAGVALIDIA-N
74LS04 3C
74LS20 3B
(CR-1A8) PŌLL DEVICEA-P 133
74LS00 4A
74LS00 4A
74LS04 3C
74LS00 3A
127 CTL NŌRMENDA-P (CR-4B7)
(CQ-3B10) NŌ VALIDA-N
PŌLL DEVICEA-P (CQ-2B2)
74LS00 4A
PŌLLTI SSWA-P (CQ-5A1)
(CR-1B8) PŌLL CTLA-P 139
(CQ-2D10) SHŌRT BUSYA-P
74LS04 5A
74LS00 4A
(CR-1C8) SELECTIŌNA-N 148
TRUNCAT SELA-N (CQ-2D2)(CQ-5A1)
(CQ-3B4) CTL.NŌRMENDIA-N
74LS08 1C
74LS04 1D
(CH-1G10) EXT REG CTL-P 102
137 SELFCTLDA-N (CR-3F2)
SELFCTLDA-N (CQ-1E2)
EXT SELF-N (CQ-2A2)
74LS04 5A
(CL-1E7) EXT SELF-N 147
74LS04 13B
(CQ-2A7) GATE REG-N
(GATE REGA-P)
74LS04 13B
74LS00 8A
74LS04 5B
REG SEL2A-P (CQ-3B6)(CQ-5D1)
(CQ-5F8) GATED SEL2A-N
207 REG SEL2A-PTP
74LS11 5D
74LS04 5B
74LS04 5A
74LS02 7E
(CQ-1F10) BITRING7-P
159 CHKEREGPARA-P (CF-5B2)(CJ-2G5)(CR-2A5)
CHKEREGPARA-P (CQ-2F4)
C13 560PF
NF431 (CTLI-2A)
CQ-4
P/N
REV
TITLE
NF37CTLR LŌGIC DIA
SHEET 4/
REV 0
DRAWN
CHECK
APPD
DRAWING NO
NFL-NC-28431
Nippon Peripherals Limited
REV NO DATE DRAWN APPD

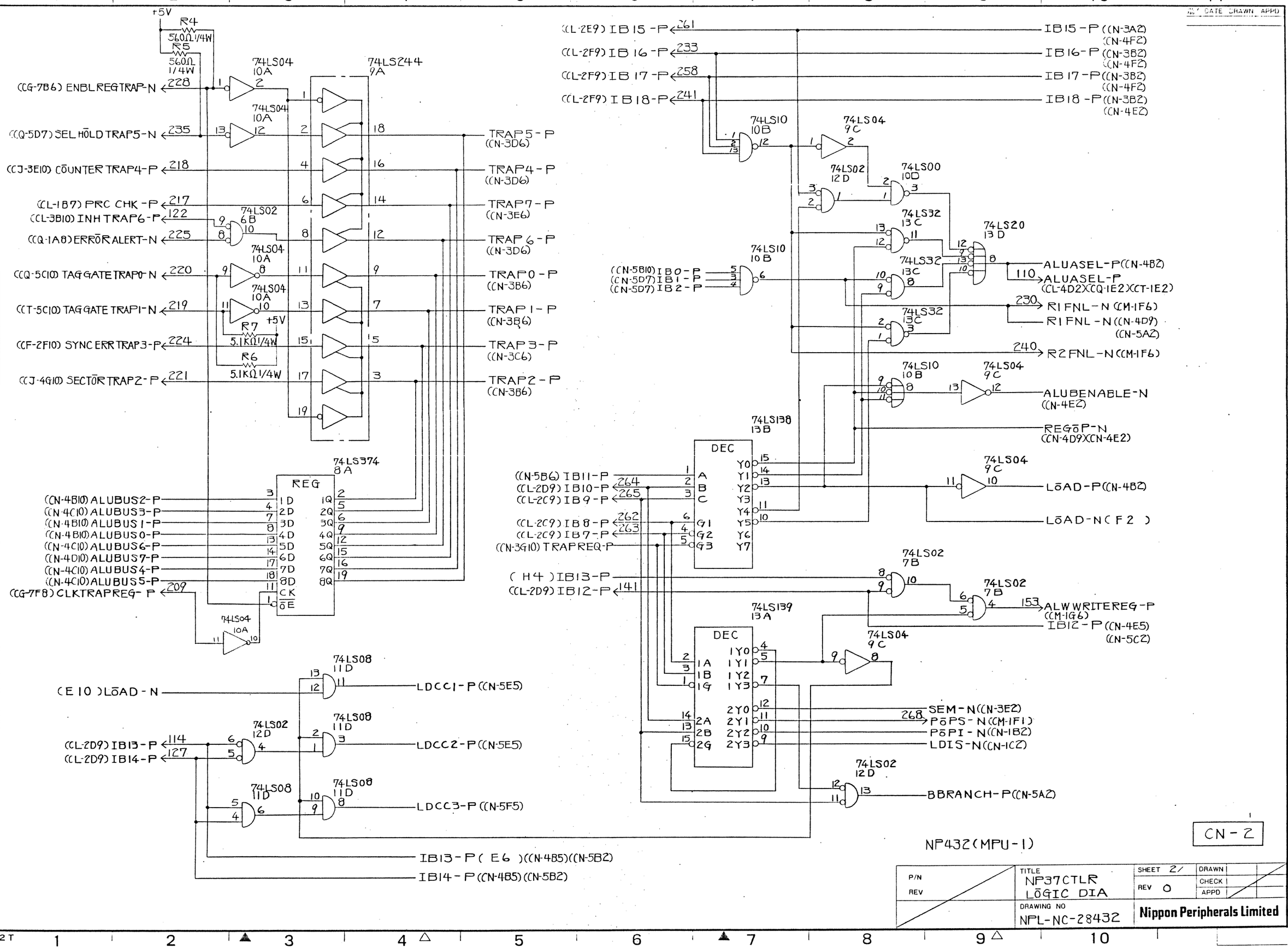

(CQ-2D10) SHORT BUSYA-P
(CQ-4F8) FULL TI SSWA-P
(CQ-4F8) TRUNCATSELA-N
(CQ-3C10) TAGVALIDIA-N
(CQ-4D8) ENBDTAGGATEA-P
(CQ-3F10) SELHOLDA-N
(CE-1E10) BITRING1-P 205
(CQ-2G8) ALU BUS7-P
(CQ-2G8) ALU BUS5-P
(CQ-4G8) REG SEL2A-P
(CQ-2B9) FULL SELA-P
(CJ-3C10) INDEX-P 204
(CQ-2D9) SWITCH 0IA-P
(CQ-2D9) SWITCH TIA-P
(CQ-2F3) STRING SWA-P
(CQ-4B8) DEGATE BUSA-N
(E10) ENABLEA-P 145
(NOT USED)
+5V
1.6KΩ 1/4W
R7
R8
R9
74LS04 8C
74LS10 7C
74LS00 6B
74LS279 1B
74LS08 9A
74LS04 1D
74LS279 4E
74LS08 11A
74LS04 13B
74LS03 8D
74LS04 9D
74LS12 7D
74LS08 6E
74LS20 8B
74LS00 6B
74LS04 5B
74LS03 13C
74LS00 10D
74LS00 8A
74LS11 7A
74LS04 5A
74LS00 8A
74LS08 9A
74LS10 7C
74LS00 4B
74LS20 3D
74LS32 12A
74LS32 13A
C12 0.022μF 50V
R1 100Ω 1/4W
R4 560Ω 1/4W
162 CTLINDEXALTA-P (CR-4C7)
153 GATEDBUSA-P (CR-2G6)
ATTENTIONA-N (CQ-2D2) (CQ-4D2)
168 GATEDBYTEA-P (CR-2F6)
CTLBINGATEA-P (CQ-3A2)
214 TAGGATETRAP0-N (CN-2C2)
(CQ-4A5) SYNCIN-P
(CG-7D6) ENABLCTLSYIN-P 202
ENABSYNCINA-P (CQ-4B2)
212 CTLCEALTA-P (CR-4E7)
268 SELHOLDTRAP5-N (CN-2B2) (CT-5D7)
(CH-5F5) INTF SELA-P 218
134 ENABLEA-P (CQ-5G2) (CR-4E2)
ENABLEA-P (CQ-4D2)
(ENABLEA-N)
(CE-1C5) ENABLE SWA-N 160
(CQ-1G10) PWR ON RST-N
(CQ-2A9) RST ENABLEA-P
(CL-1C7) EXT SEL1-N 247
(CL-1C7) EXT SEL0-N 250
(CL-1C7) EXT SEL2-N 260
(CL-1C7) EXT SEL7-N 255
(CM-3G5) GATE FNL-N 262
252 GATEDSELIA-NTP
GATEDSELIA-N (CQ-2F4)
249 GATED SEL0A-NTP
GATED SEL2A-N (CQ-4G2)
254 GATED SEL7A-N (CR-2A2)
259 GATEDFNLA-N (CR-2A2)
GATEDFNLA-N (CQ-2C2)
SSWGATEREGA-P (CQ-4C2)
EXT SEL2-N (CQ-2D2)
GATE FNL-N (CQ-2G2) (CQ-4B2)
NP431 (CTLI-2A)
CQ-5
P/N
REV
TITLE
NP317CTLR
LOGIC DIA
SHEET 5/5
REV O
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-28431
Nippon Peripherals Limited



NP432(MPU-1)

CN-1

P/N NP432	TITLE NP37CTLR LOGIC DIA	SHEET 1/5	DRAWN A.OGINO 82.1.28
REV B		REV 0	CHECK
			APPD K.HASHI 82.1.28
MPU-1	DRAWING NO NPL-NC-28432	Nippon Peripherals Limited	


+5V
R4 560Ω 1/4W
R5 560Ω 1/4W
74LS04 10A
74LS244 9A
(CG-7B6) ENBL REGTRAP-N 228
(CQ-5D7) SEL HOLD TRAP5-N 235
(CJ-3E10) COUNTER TRAP4-P 218
(CL-1B7) PRC CHK-P 217
(CL-3B10) INH TRAP6-P 122
(CQ-1A8) ERROR ALERT-N 225
(CQ-5C10) TAG GATE TRAP0-N 220
(CT-5C10) TAG GATE TRAP1-N 219
(CF-2F10) SYNC ERR TRAP3-P 224
(CJ-4G10) SECTOR TRAP2-P 221
74LS02 6B
R7 5.1KΩ 1/4W
R6 5.1KΩ 1/4W
TRAP5-P (CN-3D6)
TRAP4-P (CN-3D6)
TRAP7-P (CN-3E6)
TRAP6-P (CN-3D6)
TRAP0-P (CN-3B6)
TRAP1-P (CN-3B6)
TRAP3-P (CN-3C6)
TRAP2-P (CN-3B6)
74LS374 8A
REG
(CN-4B10) ALUBUS2-P
(CN-4C10) ALUBUS3-P
(CN-4B10) ALUBUS1-P
(CN-4B10) ALUBUS0-P
(CN-4C10) ALUBUS6-P
(CN-4D10) ALUBUS7-P
(CN-4C10) ALUBUS4-P
(CN-4C10) ALUBUS5-P
(CG-7F8) CLKTRAPREG-P 209
(CL-2E9) IB15-P 261
(CL-2F9) IB16-P 233
(CL-2F9) IB17-P 258
(CL-2F9) IB18-P 241
IB15-P ((N-3A2) (N-4F2)
IB16-P ((N-3B2) (N-4F2)
IB17-P ((N-3B2) (N-4F2)
IB18-P ((N-3B2) (N-4E2)
74LS10 10B
74LS04 9C
74LS02 12D
74LS00 10D
74LS32 13C
74LS20 13D
(CN-5B10) IB0-P
(CN-5D7) IB1-P
(CN-5D7) IB2-P
ALUASEL-P (CN-4B2)
110 ALUASEL-P (CL-4D2)(CQ-1E2)(CT-1E2)
230 RIFNL-N (CM-1F6)
RIFNL-N ((N-4D9) (CN-5A2)
240 R2FNL-N (CM-1F6)
ALUBENABLE-N (CN-4E2)
REGOP-N (CN-4D9)(CN-4E2)
74LS138 13B
DEC
(CN-5B6) IB11-P
(CL-2D9) IB10-P 264
(CL-2C9) IB9-P 265
(CL-2C9) IB8-P 262
(CL-2C9) IB7-P 263
(CN-3G10) TRAPREQ-P
LOAD-P (CN-4B2)
LOAD-N (F2)
(H4) IB13-P
(CL-2D9) IB12-P 141
74LS139 13A
SEM-N (CN-3E2)
268 POPS-N (CM-1F1)
POPI-N (CN-1B2)
LDIS-N (CN-1C2)
BBRANCH-P (CN-5A2)
(E10) LOAD-N
74LS08 11D
LDCC1-P (CN-5E5)
LDCC2-P (CN-5E5)
LDCC3-P (CN-5F5)
(CL-2D9) IB13-P 114
(CL-2D9) IB14-P 127
IB13-P (E6) (CN-4B5) (CN-5B2)
IB14-P (CN-4B5) (CN-5B2)
NP432 (MPU-1)
CN-2
P/N
REV
TITLE NP37CTLR LOGIC DIA
SHEET 2/
REV 0
DRAWN
CHECK
APPD
DRAWING NO NPL-NC-28432
Nippon Peripherals Limited

74LS298 12A
(CN-2A10) IB15-P
(CH-1D6) STACKOUT0-P ← 250
(CN-2A10) IB16-P
(CH-1D6) STACKOUT1-P ← 249
(CN-2A10) IB17-P
(CH-1D6) STACKOUT2-P ← 252
(CN-2A10) IB18-P
(CH-1E6) STACKOUT3-P ← 247
(CN-1B5) RTI-P
SEL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B, CK, S
1Q → 238 → MASK0-P (CH-2F2)
2Q → 242 → MASK1-P (CH-2G2)
3Q → 239 → MASK2-P (CH-2G2)
4Q → 259 → MASK3-P (CH-2G2)

74LS00 11A
(CN-2C5) TRAP0-P
(CN-2C5) TRAP1-P
(CN-2D5) TRAP2-P
(CN-2C5) TRAP3-P

(CL-2F9) IB19-P ← 244 → IB19-P (CN-4E2)

74LS298 12B
(CH-1F6) STACKOUT4-P ← 245
(CN-1D7) IB20-P
(CH-1F6) STACKOUT5-P ← 248
(CN-1D7) IB21-P
(CH-1F6) STACKOUT6-P ← 243
(CN-1E7) IB22-P
(CH-1F6) STACKOUT7-P ← 253
SEL, 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B, CK, S
1Q → 254 → MASK4-P (CH-2G2)
2Q → 260 → MASK5-P (CH-2G2)
3Q → 255 → MASK6-P (CH-2G2)
4Q → 257 → MASK7-P (CH-2G2)

74LS00 12C
(CN-2B5) TRAP4-P
(CN-2B5) TRAP5-P
(CN-2B5) TRAP6-P
(CN-2B5) TRAP7-P

74S374 11C
REG
1D 2D 3D 4D 5D 6D 7D 8D CK OE
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q

74LS148 10C
D0 D1 D2 D3 D4 D5 D6 D7 EI
Y0 → 232 → INTLEVEL1-N (CM-4A5)
Y1 → 229 → INTLEVEL2-N (CM-4B5)
Y2 → 227 → INTLEVEL4-N (CM-4D5)
EO GS
EO → 15 → ANYTRAP-P (F6)

74LS00 5E
(CN-1A5) RTI-N
(CN-2F9) SEM-N

74LS00 5E
(CN-1F7) BITRING5-P

74LS08 7C
(CN-1E7) PWRGD4-P
(CM-2D6) DISABLETRAP-N ← 203

74LS10 6D
(CQ-1F10) STOPMPCLOCK-P ← 124
(CN-1C7) BITRING6-P
(CJ-1A4) 5MINUTETM-N ← 117

74LS08 7C

74LS279 3E
S, Q, R

74LS00 5E

74S08 4D
(CN-1C3) VFOIFS-P
(CN-1F7) BITRING7-P

74LS08 7C

74LS04 5D

74S04 8E → SETTRAP-P (CN-1C2)

74S10 7E
(E10) ANYTRAP-P
(CE-1D10) BITRING0-P ← 165

74LS00 6E

74S08 4D

74S10 7E → 234 → TRAPREQ-N (CM-4G3)

74LS00 6E

74S04 8E → TRAPREQ-P (CN-1F2)(CN-2E6)

74S86 4E
(CM-2C6) RETURN-P ← 121
(CN-1G7) TIEUP-P

NP432 (MPU-1)

CN-3

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 3/ REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-28432	Nippon Peripherals Limited	

(CN-1F7) BIT RING7-P
(CN-1F7) CLOCK CD-P
(CN-1F7) TIEUP-P
74LS00 4B
74LS279 3E
74LS00 4B
ENBLALUBUS-N (F2)

74S157 1C SEL
(G7) LSDATA7-P
(D10) ALUBUS7-P
(G7) LSDATA6-P
(C10) ALUBUS6-P
(G7) LSDATA5-P
(C10) ALUBUS5-P
(G7) LSDATA4-P
(C10) ALUBUS4-P
(CN-2C10) ALUASEL-P
(CN-2E10) LOAD-P
1A 1B 2A 2B 3A 3B 4A 4B S G
1Y 2Y 3Y 4Y
ALUA7-P(A5)
ALUA6-P(A5)
ALUA5-P(A5)
ALUA4-P(A5)

74S381 3C
(A3) ALUA7-P
(A3) ALUA6-P
(B3) ALUA5-P
(B3) ALUA4-P
(D3) ALUB7-P
(D3) ALUB6-P
(D3) ALUB5-P
(E3) ALUB4-P
(CN-2H4) IB14-P
(CN-2H4) IB13-P
A0 A1 A2 A3 B0 B1 B2 B3 S0 S1 S2 Cn
F0 F1 F2 F3 P G

74S374 3A REG
1D 2D 3D 4D 5D 6D 7D 8D CK OE
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
137 ALUBUS3-P(CQ-2C8)
120 ALUBUS7-P(CQ-2E8)
135 ALUBUS2-P(CQ-2C8)
119 ALUBUS6-P(CQ-2E8)
138 ALUBUS0-P(CQ-2B8)
133 ALUBUS1-P(CQ-2B8)
145 ALUBUS5-P(CQ-2E8)
129 ALUBUS4-P(CQ-2C8)
ALUBUS0-P (C2)(G2) ((N-2E2)(CN-5C2)
ALU BUS1-P (C2)(G2) ((N-2E2)(CN-5C2)
ALU BUS2-P (C2)(G2) ((N-2E2)(CN-5C2)
ALU BUS3-P (C2)(G2) ((N-2E2)(CN-5C2)
ALU BUS4-P (B2)(G2) ((N-2E2)(CN-5D2)
ALU BUS5-P (B2)(G2) ((N-2E2)(CN-5D2)
ALU BUS6-P (A2)(G2) ((N-2E2)(CN-5D2)
ALU BUS7-P (A2)(H2) ((N-2E2)(CN-5D2)

74S157 1A SEL
(G7) LSDATA3-P
(C10) ALUBUS3-P
(G7) LSDATA2-P
(B10) ALUBUS2-P
(G7) LSDATA1-P
(B10) ALUBUS1-P
(G7) LSDATA0-P
(B10) ALUBUS0-P
ALUA3-P(C5)
ALUA2-P(C5)
ALUA1-P(C5)
ALUA0-P(C5)

74S08 4D
(D9) BITRING4-P

74S381 2A
(C3) ALUA3-P
(C3) ALUA2-P
(C3) ALUA1-P
(C3) ALUA0-P
(E3) ALUB3-P
(F3) ALUB2-P
(F3) ALUB1-P
(F3) ALUB0-P

74LS00 5C

74S157 2D SEL
(G10) LSDREG7-P
(CN-1E7) IB22-P
(G10) LSDREG6-P
(CN-1D7) IB21-P
(G10) LSDREG5-P
(CN-1D7) IB20-P
(G10) LSDREG4-P
(CN-3C5) IB19-P
(CN-2D10) REGOP-N
(CN-2D10) ALUBENABLE-N
ALUB7-P(B5)
ALUB6-P(B5)
ALUB5-P(B5)
ALUB4-P(B5)

74LS02 12D
(CN-2D10) REG OP-N
(CN-2C10) R1 FNL-N

74S00 6C
(CE-1F10) BIT RING4-P ←164

74S00 6E
(CN-1E7) BIT RING1-P
(CN-1F7) CLOCK CD-P

74S00 6E

74S157 3D SEL
(G10) LSDREG3-P
(CN-2A10) IB18-P
(G10) LSDREG2-P
(CN-2A10) IB17-P
(G10) LSDREG1-P
(CN-2A10) IB16-P
(F10) LSDREG0-P
(CN-2A10) IB15-P
ALUB3-P(C5)
ALUB2-P(C5)
ALUB1-P(C5)
ALUB0-P(C5)

74S08 4D
(CN-5F10) CC3CARRY-P
(CN-2F10) IB12-P

74S182 4C
Cn CG0 CP0 CG1 CP1 CG2 CP2 CG3 CP3
Cn+X Cn+Y Cn+Z G P
CARRY OUT-P (CN-5G4)

74S374 2C REG
(CH-4G10) LS DATA 7-P ← 109
(CH-4G10) LS DATA 6-P ← 115
(CH-4G10) LS DATA 5-P ← 105
(CH-4G10) LS DATA 4-P ← 108
(CH-4G10) LS DATA 1-P ← 113
(CH-4G10) LS DATA 2-P ← 102
(CH-4G10) LS DATA 3-P ← 112
(CH-4G10) LS DATA 0-P ← 107
1D 2D 3D 4D 5D 6D 7D 8D CK OE
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
134 LSDREG7-P(CM-4A1)
118 LSDREG6-P(CM-4B1)
103 LSDREG5-P(CM-4C1)
104 LSDREG4-P(CM-4D1)
130 LSDREG1-P(CM-4C5)
125 LSDREG2-P(CM-4B5)
123 LSDREG3-P(CM-4A5)
128 LSDREG0-P(CM-4D5)
LSDREG0-P (F2)
LSDREG1-P (F2)
LSDREG2-P (F2)
LSDREG3-P (E2)
LSDREG4-P (E2)
LSDREG5-P (D2)
LSDREG6-P (D2)
LSDREG7-P (D2)

LS DATA0-P (C2) (CN-5B2)
LS DATA1-P (C2) (CN-5B2)
LS DATA2-P (C2) (CN-5B2)
LS DATA3-P (C2) (CN-5B2)
LS DATA4-P (B2) (CN-5B2)
LS DATA5-P (B2) (CN-5B2)
LS DATA6-P (A2) (CN-5B2)
LS DATA7-P (A2) (CN-5B2)

(A10) ENBLALUBUS-N

74S280 7A PCG
(B10) ALUBUS0-P
(B10) ALUBUS1-P
(B10) ALUBUS2-P
(C10) ALUBUS3-P
(C10) ALUBUS4-P
(C10) ALUBUS5-P
(C10) ALUBUS6-P
(D10) ALUBUS7-P
(CJ-1B4) FRCABUSPCHK-P ← 163
A B C D E F G H I
EV ODD

74LS125 9E
168 → ALUBUSP-P(CQ-2G5)

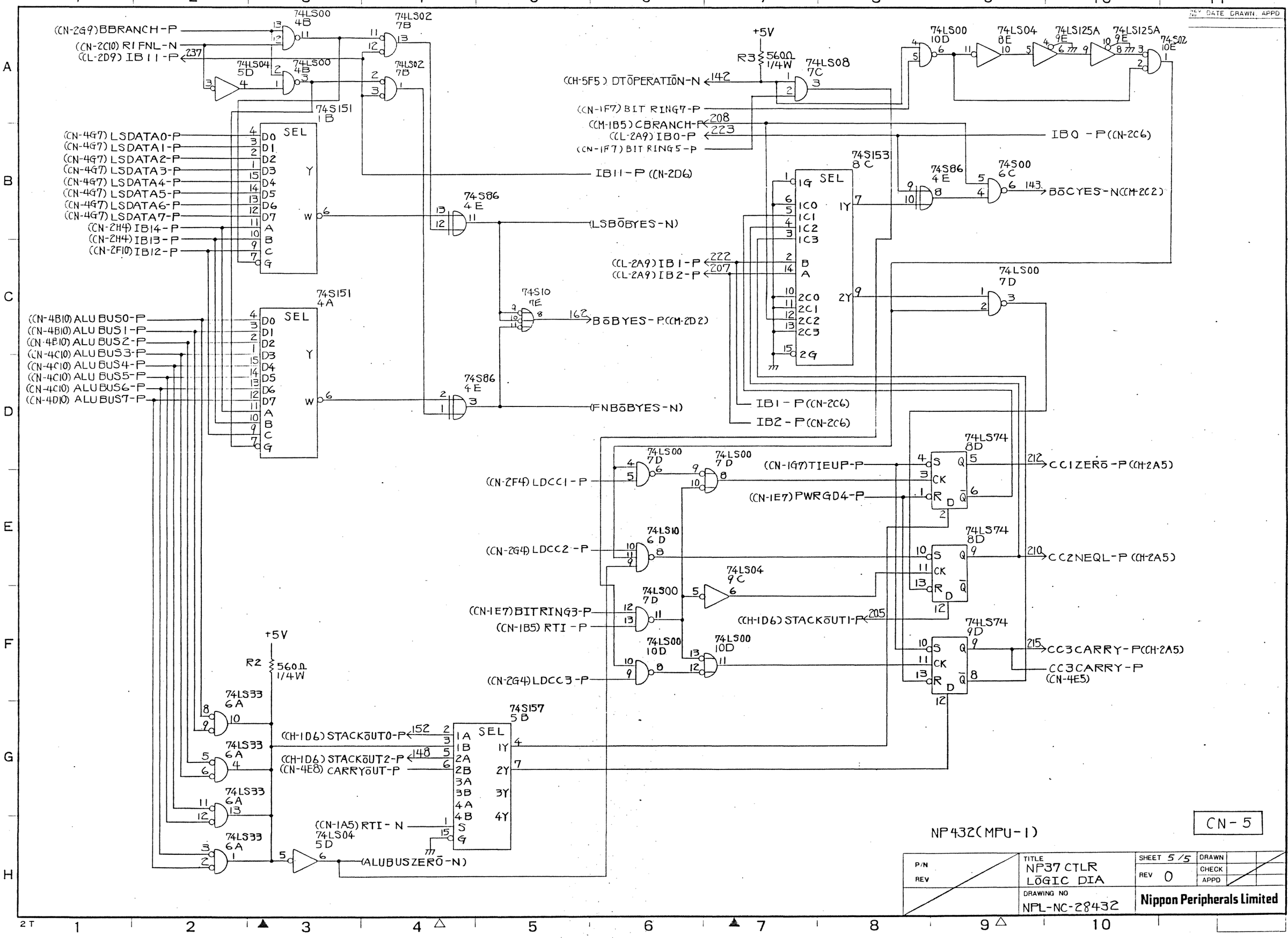
74LS74 9D
(CN-1G7) TIE UP-P
(CN-1E7) PWRGD4-P
(CH-4G10) LS DATAP-P ← 213
214 → LS DREGP-P (CM-3D6)

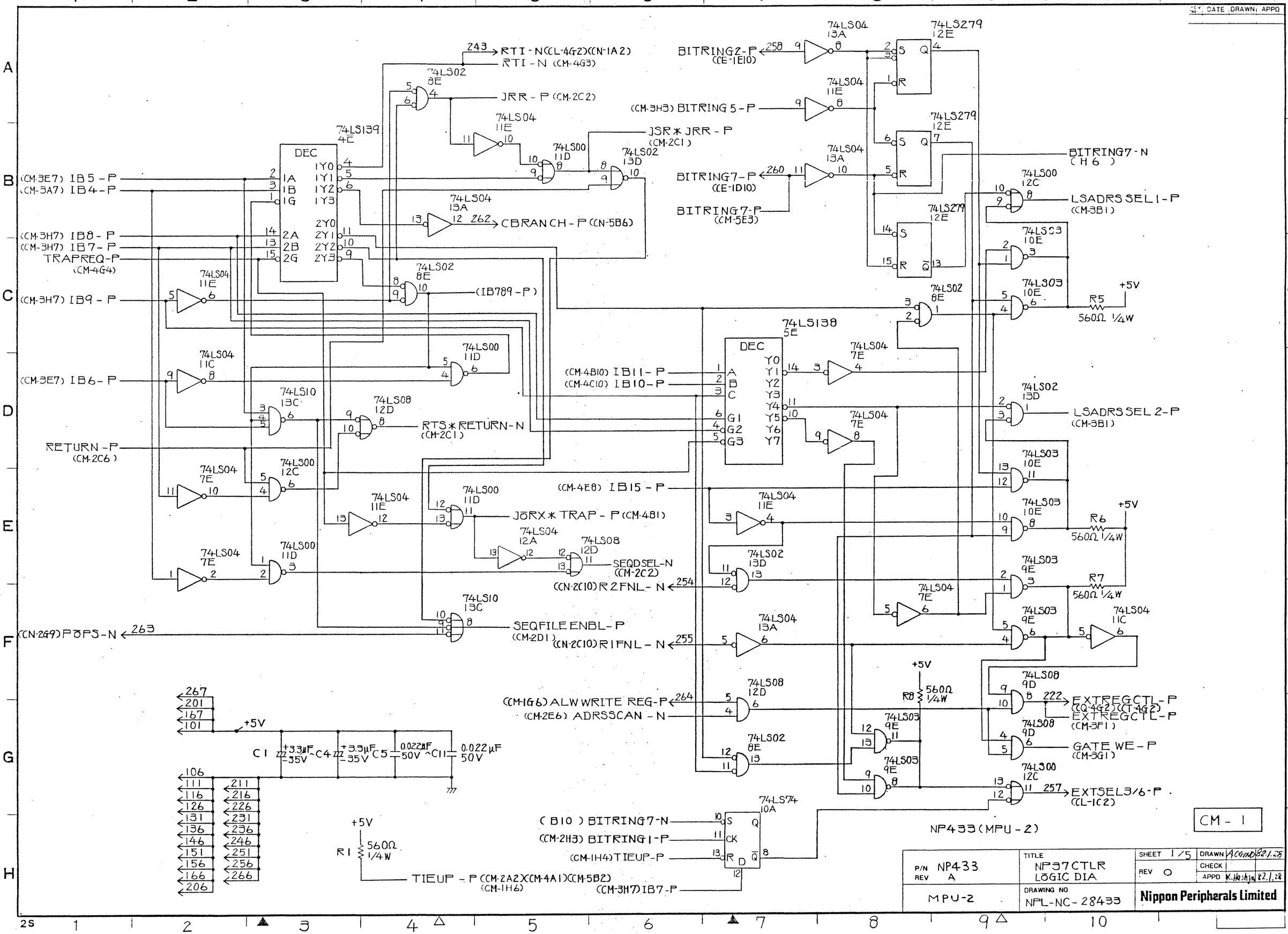
NP432(MPU-1)

CN-4

P/N	TITLE NP37CTLR LOGIC DIA	SHEET 4/	DRAWN
REV		REV O	CHECK
	DRAWING NO NPL-NC-28432		APPD

Nippon Peripherals Limited


(CN-2G9)BBRANCH-P
(CN-2C10) RIFNL-N
(CL-2D9) IB11-P
237
74LS00 4B
74LS02 7B
74LS04 5D
74LS00 4B
74LS02 7B
74S151 1B
SEL
(CN-4G7) LSDATA0-P
(CN-4G7) LSDATA1-P
(CN-4G7) LSDATA2-P
(CN-4G7) LSDATA3-P
(CN-4G7) LSDATA4-P
(CN-4G7) LSDATA5-P
(CN-4G7) LSDATA6-P
(CN-4G7) LSDATA7-P
(CN-2H4) IB14-P
(CN-2H4) IB13-P
(CN-2F10) IB12-P
D0 D1 D2 D3 D4 D5 D6 D7 A B C G
Y
W
IB11-P (CN-2D6)
74S86 4E
(LSBŌBYES-N)
74S10 7E
162
BŌBYES-P(CM-2D2)
74S151 4A
(CN-4B10) ALU BUS0-P
(CN-4B10) ALU BUS1-P
(CN-4B10) ALU BUS2-P
(CN-4C10) ALU BUS3-P
(CN-4C10) ALU BUS4-P
(CN-4C10) ALU BUS5-P
(CN-4C10) ALU BUS6-P
(CN-4D10) ALU BUS7-P
74S86 4E
(FNBŌBYES-N)
+5V
R3 560Ω 1/4W
74LS08 7C
(CH-5F5) DTŌPERATIŌN-N
142
(CN-1F7) BIT RING7-P
(CM-1B5) CBRANCH-P
208
(CL-2A9) IB0-P
223
(CN-1F7) BIT RING5-P
74LS00 10D
74LS04 8E
74LS125A 9E
74LS125A 9E
74LS02 10E
IB0-P (CN-2C6)
74S153 8C
1G SEL 1Y
1C0 1C1 1C2 1C3
2 B
14 A
2C0 2C1 2C2 2C3
2Y
2G
74S86 4E
74S00 6C
143
BŌCYES-N(CM-2C2)
(CL-2A9) IB1-P
222
(CL-2A9) IB2-P
207
74LS00 7D
IB1-P (CN-2C6)
IB2-P (CN-2C6)
74LS00 7D
74LS00 7D
(CN-2F4) LDCC1-P
(CN-1G7) TIEUP-P
(CN-1E7) PWRGD4-P
74LS574 8D
S Q CK R D
212
CC1ZERŌ-P (CH-2A5)
74LS10 6D
(CN-2G4) LDCC2-P
74LS574 8D
210
CC2NEQL-P (CH-2A5)
74LS04 9C
74LS00 7D
(CN-1E7) BITRING3-P
(CN-1B5) RTI-P
(CH-1D6) STACKŌUT1-P
205
74LS00 10D
74LS00 10D
74LS574 9D
215
CC3CARRY-P(CH-2A5)
CC3CARRY-P (CN-4E5)
(CN-2G4) LDCC3-P
+5V
R2 560Ω 1/4W
74LS33 6A
74LS33 6A
74LS33 6A
74LS33 6A
74S157 5B
(CH-1D6) STACKŌUT0-P
152
(CH-1D6) STACKŌUT2-P
148
(CN-4E8) CARRYŌUT-P
1A 1B 2A 2B 3A 3B 4A 4B S
1Y 2Y 3Y 4Y
(CN-1A5) RTI-N
74LS04 5D
(ALUBUSZERŌ-N)
NP432(MPU-1)
CN-5
P/N
REV
TITLE
NP37 CTLR LŌGIC DIA
SHEET 5/5
REV 0
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-28432
Nippon Peripherals Limited


243 RTI-N(CL-4G2)(CN-1A2)
RTI-N (CM-4G3)
74LS02 8E
JRR-P (CM-2C2)
74LS04 11E
74LS139 4E
DEC
JSR*JRR-P (CM-2C1)
74LS00 11D
74LS02 13D
74LS04 13A
CBRANCH-P (CN-5B6)
(CM-3E7) IB5-P
(CM-3A7) IB4-P
(CM-3H7) IB8-P
(CM-3H7) IB7-P
TRAPREQ-P (CM-4G4)
(CM-3H7) IB9-P
74LS04 11E
74LS02 8E
(IB789-P)
74LS04 11C
74LS00 11D
(CM-3E7) IB6-P
74LS10 13C
74LS08 12D
RTS*RETURN-N (CM-2C1)
RETURN-P (CM-2C6)
74LS04 7E
74LS00 12C
74LS04 11E
74LS00 11D
JORX*TRAP-P (CM-4B1)
74LS04 12A
74LS08 12D
SEQDSEL-N (CM-2C2)
74LS04 7E
74LS00 11D
74LS10 13C
SEQFILE ENBL-P (CM-2D1)
(CN-2G9) POPS-N 263
(CN-2C10) R2FNL-N 254
(CN-2C10) R1FNL-N 255
(CM-1G6) ALW WRITE REG-P 264
(CM-2E6) ADRSSCAN-N
74LS04 13A
74LS279 12E
BITRING2-P (CE-1E10) 258
(CM-3H3) BITRING5-P
BITRING7-P (CE-1D10) 260
BITRING7-N (CM-5E3)
BITRING7-N (H6)
74LS00 12C
LSADRS SEL 1-P (CM-3B1)
74LS03 10E
74LS02 8E
+5V
R5 560Ω 1/4W
74LS138 5E
(CM-4B10) IB11-P
(CM-4C10) IB10-P
74LS04 7E
74LS02 13D
LSADRS SEL 2-P (CM-3B1)
(CM-4E8) IB15-P
R6 560Ω 1/4W
R7 560Ω 1/4W
74LS04 11C
R8 560Ω 1/4W
74LS08 9D
222 EXTREGCTL-P (CQ-4G2)(CT-4G2)
EXTREGCTL-P (CM-3F1)
GATE WE-P (CM-3G1)
74LS00 12C
257 EXTSEL3/6-P (CL-1C2)
267 201 167 101
106 111 116 126 131 136 146 151 156 166 206
211 216 226 231 236 246 251 256 266
C1 +33μF 35V C4 +33μF 35V C5 0.022μF 50V C11 0.022μF 50V
R1 560Ω 1/4W
TIEUP-P (CM-2A2X(CM-4A1)(CM-5B2) (CM-1H6)
74LS74 10A
(B10) BITRING7-N
(CM-2H3) BITRING1-P
(CM-1H4) TIEUP-P
(CM-3H7) IB7-P
NP433 (MPU-2)
CM-1
P/N NP433
REV A
TITLE NP33 CTLR LOGIC DIA
SHEET 1/5
REV 0
DRAWN ACG/MD 82.1.25
CHECK
APPD K.Ishihara 82.1.28
MPU-2
DRAWING NO NPL-NC-28433
Nippon Peripherals Limited

NO | DATE | DRAWN | APPD

(CE-1E10) BITRING 1 - P 240
(CE-1D7) CLOCKCD - P 239
CLOCKCD - P (CM-3F2)
(CM-1H4) TIEUP - P
(CN-5B10) BOCYES - N 228
(CM-1E6) SEQDSEL - N
RTS * RETURN - N (CM-1D4)
(CM-1A5) JRR - P
(CM-1B6) JSR * JRR - P
SEQFILE ENBL - P (CM-1F5)
(CN-5C6) BOBYES - P 232
DSBL TRAP - NTP 213
(CM-3F5) GATE REG - N
(CL-1C7) EXTSEL 6 - N 265
(CQ-2E8) ALUBUS 5 - P 242
(CE-3D5) PWRGD4 - P 220
(F10) CSADRS1 - P
(CE-1G10) BITRING 0 - N 223
(CE-1F10) BITRING 3 - P 208
(CM-4H4) TRAP REQ - N
BITRING 1 - P (CM-5C2)(CP-1H6)

74LS00 11A
74S04 10C
74S04 10C
74S74 9B
74LS00 12B
74S08 10B
74S74 9B
74S10 13B
74S08 10B
74S04 10C
74S08 10B
74S04 10C
74S04 10C
74S174 10D
REG
74S04 12A
74LS08 9A
74LS02 13D
74LS00 11A
74LS08 9A
74LS74 10A
74LS00 11A
74LS04 11C
74LS74 8A
74LS08 9A
74LS08 9A
74LS74 8A

+5V R2 560Ω 1/4W
+5V R3 560Ω 1/4W
+5V R4 560Ω 1/4W

SEQSOL - P (CM-5B7)
SEQSIL - P (CM-5B7)
252 → RETURN - P (CN-3G2).
SEQSOH - P (CM-5D7)
SEQSIH - P (CM-5D7)
RETURN - P (CM-1D1)
(FEPOP - P)
(SEQ FE - N)
214 → DISABLE TRAP - N (CN-2F2)
(ADRSSCAN - P)
219 → ADRSSCAN - N (CL-4D2)
ADRSSCAN - N (CM-1G6)
BITRING 0 - P (CM-3G2)(CM-5D2)
SEQ ZERO H - N (CM-5B10)
(SEQ ZERO L - N)

(CM-4A3) SEQDIN13 - P
(CM-4B3) SEQDIN12 - P
(CM-4C3) SEQDIN11 - P
(CM-4D3) SEQDIN10 - P
(CM-4A7) SEQDIN 9 - P
(CM-4B7) SEQDIN 8 - P
(CM-4C7) SEQDIN 7 - P
(CM-4D7) SEQDIN 6 - P
(CM-4A10) SEQ DIN 5 - P
(CM-4A10) SEQ DIN 4 - P
(CM-4A10) SEQ DIN 3 - P
(CM-4B10) SEQ DIN 2 - P
(CM-4C10) SEQ DIN 1 - P

μPB2911AD 6B
μPB2911AD 7B
μPB2911AD 6D
μPB2911AD 7D
CP, Cn, D0, D1, D2, D3, S0, S1, PUP, FE, RE, ZERO, OE, Y0, Y1, Y2, Y3, Cn+4

152 → CSADRS 13 - P (CH-2B2)(CL-2A2)
CSADRS 13 - P (CM-5F2)
163 → CSADRS 12 - P (CH-2A2)(CL-2A2)
CSADRS 12 - P (CM-5F2)
158 → CSADRS 11 - P (CH-2A2)(CL-2A2)
CSADRS 11 - P (CM-5F2)
162 → CSADRS 10 - P (CH-2A2)(CL-2A2)
CSADRS 10 - P (CM-5F2)
218 → CSADRS 9 - P (CH-2A2)(CL-2A2)
CSADRS 9 - P (CM-5F2)
217 → CSADRS 8 - P (CH-2A2)(CL-2A2)
CSADRS 8 - P (CM-5F2)
215 → CSADRS 7 - P (CH-2A2)(CL-2A2)
CSADRS 7 - P (CM-5F2)
212 → CSADRS 6 - P (CH-2E2)(CL-2A2)
CSADRS 6 - P (CM-5E2)
104 → CSADRS 5 - P (CH-2E2)(L-2B2)
CSADRS 5 - P (CM-5H2)
205 → CSADRS 4 - P (CH-2E2)(CL-2B2)
CSADRS 4 - P (CM-5H2)
165 → CSADRS 3 - P (CH-2E2)(CL-2B2)
CSADRS 3 - P (CM-5H2)
168 → CSADRS 2 - P (CH-2E2)(L-2B2)
CSADRS 2 - P (CM-5G2)
238 → CSADRS 1 - P (CH-2E2)(CL-2B2)
CSADRS 1 - P (E 1)(CM-5G2)
209 → CSADRS0 - PTP

NP433 (MPU - 2)

CM - 2

P/N REV	TITLE: NP37CTLR LOGIC DIA	SHEET 2/ REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-28433	Nippon Peripherals Limited	

REV	DATE	DRAWN	APPD

74S153 2D

(CM-4E6) IB16 - P
(CL-2A9) IB 0 - P ← 140
(CM-4C6) LSDREG 1 - P
(CM-1B10) LSADRS SEL 1 - P
(CM-1D10) LSADRS SEL 2 - P
(CM-4E6) IB17 - P
(CL-2A9) IB 1 - P ← 107
(CM-4C6) LSDREG 2 - P

1G SEL, 1C0, 1C1, 1C2, 1C3, 1Y, A, B, 2C0, 2C1, 2C2, 2C3, 2Y, 2G

1Y → 7 → 105 → LSADRS 0 - P (CH-4A2)
2Y → 9 → 120 → LSADRS 1 - P (CH-4B2)

74S153 3D

(CM-4E6) IB18 - P
(CL-2A9) IB 2 - P ← 109
(CM-4C6) LSDREG 3 - P
(CM-4E3) IB19 - P
(CL-2A9) IB 3 - P ← 113
(CM-4E3) LSDREG 4 - P

1G SEL, 1C0, 1C1, 1C2, 1C3, 1Y, A, B, 2C0, 2C1, 2C2, 2C3, 2Y, 2G

1Y → 7 → 121 → LSADRS 2 - P (CH-4B2)
2Y → 9 → 130 → LSADRS 3 - P (CH-4B2)

IB 4 - P (CM-1B1)

74S153 4D

(CM-4E3) IB 20 - P
(CL-2B9) IB 4 - P ← 112
(CM-4C3) LSDREG 5 - P
(CM-4E3) IB 21 - P
(CL-2B9) IB 5 - P ← 110
(CM-4C3) LSDREG 6 - P

1G SEL, 1C0, 1C1, 1C2, 1C3, 1Y, A, B, 2C0, 2C1, 2C2, 2C3, 2Y, 2G

1Y → 7 → 135 → LS ADRS 4 - P (CH-4B2)
2Y → 9 → 142 → LS ADRS 5 - P (CH-4B2)

74S153 5D

(CM-4E3) IB 22 - P
(CL-2B9) IB 6 - P ← 115
(CM-4C3) LSDREG 7 - P
(CM-4E8) IB16 * 22E - P
(CN-4H7) LSDREG P - P ← 103

1G SEL, 1C0, 1C1, 1C2, 1C3, 1Y, A, B, 2C0, 2C1, 2C2, 2C3, 2Y, 2G

1Y → 7 → 133 → LS ADRS 6 - P (CH-4B2)
2Y → 9 → 154 → LS ADRS P - P (CH-4B2)

IB 5 - P (CM-1B1)
IB 6 - P (CM-1D1)
LSDREG P - P (CM-4F7)

74LS280 1D

PCG, A, B, C, D, E, F, G, H, I, EV, ØD → 5

74LS280 3E

PCG, A, B, C, D, E, F, G, H, I, EV, ØD → 6 → 108 → GIBP - P (CL-4C2)

BITRING 6 - P (CM-5G2)

(CE-1E10) BITRING 6 - P ← 247
74S10 13B
(CM-2A3) CLOCKCD - P
(CM-1G10) EXTREGCTL - P
→ GATE REG - N (CM-2E2)
→ 259 → GATE REG - N (CE-4G3)(CF-4A6)(CG-7E2)(CH-3C2)(CJ-1A1)(CL-1A4)(CQ-2C5)(CR-2A2)(CT-2C5)(CU-2A2)

74LS00 12C
74LS04 12A
74LS04 12A
(CM-1G10) GATE WE - P
→ 4 248 → LS WE - N (CH-4D2)

74LS04 12A
74LS279 12E
74S04 10C
(CM-2F6) BITRING 0 - P
→ 227 → GATEFNL - N (CF-5E2)(CH-3D6)(CJ-2A7)(CL-3A2)(CQ-5G6)(CT-5G6)

74LS00 12B
(CE-1F10) BITRING 4 - P ← 253
74LS04 11E
(CE-1F10) BITRING 5 - P ← 268
→ BITRING 5 - N (NOT USED)
→ BITRING 5 - P (CM-5G3)

(CL-2C9) IB 7 - P ← 224
(CL-2C9) IB 8 - P ← 102
(CL-2C9) IB 9 - P ← 235
(CM-4D10) IB10 * 14E - P
(CM-4E8) IB15 * 22E - P

IB 7 - P (CM-1C1)(CM-1H6)
IB 8 - P (CM-1C1)
IB 9 - P (CM-1C1)

NP433 (MPU - 2)

CM - 3

P/N REV	TITLE	SHEET 31	DRAWN
	NP37CTLR LOGIC DIA	REV 0	CHECK
	DRAWING NO NPL-NC-28433		APPD

Nippon Peripherals Limited

NO	DATE	DRAWN	APPD

74S153 5C
(CL-2F9) IB22-P 118
(CN-4F10) LSDREG7-P 155
(CM-5B5) ISTKD13-P
(CM-1H4) TIEUP-P
JORX*TRAP-P (CM-1E5)
(CL-2F9) IB21-P 141
(CN-4F10) LSDREG6-P 147
ISTKD12-P (CM-5B5)
SEQDIN13-P (CM-2A7)
SEQDIN12-P (CM-2A7)
LSDREG7-P (CM-3C6)
LSDREG6-P (CM-3B6)
LSDREG5-P (CM-3A6)

74S153 3C
(CL-2F9) IB18-P 123
(CN-4F10) LSDREG3-P 150
(CM-5B5) ISTKD9-P
(CN-3D10) INT LEVEL1-N 153
(CL-2F9) IB17-P 119
(CN-4B5) LSDREG2-P 132
(CM-5B5) ISTKD8-P
(CN-3D10) INT LEVEL2-N 129
SEQDIN9-P (CM-2C7)
SEQDIN8-P (CM-2C7)
LSDREG3-P (CM-3C1)
LSDREG2-P (CM-3B1)
LSDREG1-P (CM-3A1)
LSDREG0-P (CM-3A1)

74S153 4C
(CL-2F9) IB20-P 138
(CN-4F10) LSDREG5-P 137
ISTKD11-P (CM-5B5)
(CL-2F9) IB19-P 122
(CN-4F10) LSDREG4-P 139
ISTKD10-P (CM-5B5)
SEQDIN11-P (CM-2A7)
SEQDIN10-P (CM-2A7)
LSDREG4-P (CM-3D2)
IB22-P (CM-3C6)
IB21-P (CM-3B6)
IB20-P (CM-3A6)
IB19-P (CM-3D2)

74S153 2C
(CL-2F9) IB16-P 114
(CN-4F10) LSDREG1-P 148
(CM-5B5) ISTKD7-P
(CN-3D10) INT LEVEL4-N 117
(CL-2E9) IB15-P 160
(CN-4F10) LSDREG0-P 144
ISTKD6-P (CM-5D5)
SEQDIN7-P (CM-2C7)
SEQDIN6-P (CM-2C7)
IB18-P (CM-3C2)
IB17-P (CM-3B2)
IB16-P (CM-3A2)

74S157 5A
(CM-5C5) ISTKD5-P
(CL-2D9) IB14-P 157
(CM-5C5) ISTKD4-P
(CL-2D9) IB13-P 204
(CM-5C5) ISTKD3-P
(CL-2D9) IB12-P 164
(CM-5C5) ISTKD2-P
(CL-2D9) IB11-P 159
SEQDIN5-P (CM-2E7)
SEQDIN4-P (CM-2E7)
SEQDIN3-P (CM-2E7)
SEQDIN2-P (CM-2E7)
IB11-P (CM-1D6)

74S157 7A
(CM-5D5) ISTKDPH-P
(CM-5C5) ISTKD1-P
(CL-2D9) IB10-P 202
SEQDINPH-P (CM-5D7)
SEQDIN1-P (CM-2F7)
IB10-P (CM-1D6)

74LS280 6A
PCG
IB10*14E-P (CM-3G5)

74LS86 2B
IB15-P (CM-1E6)
IB16*22E-P (CM-3D6)
IB15*22E-P (CM-3G5)

74LS280 2A
PCG
(CM-3E7) LSDREGP-P
ISTKDPL-P (CM-5B5)

74LS153 2E
SEQDINPL-P (CM-5A7)

74LS04 12A
TRAPREQ-P (CM-1C1)

74LS00 11A
(CN-3G10) TRAPREQ-N 244
(CM-1A5) RTI-N
TRAP REQ-N (CM-2G2)

74LS86 2B

74LS86 2B

NP433 (MPU-2)

CM-4

P/N REV	TITLE: NP37CTLR LOGIC DIA	SHEET 47	DRAWN
		REV 0	CHECK
	DRAWING NO: NPL-NC-28433		APPD
	Nippon Peripherals Limited		

NO | DATE | DRAWN | APPD

74LS273 3A
REG
(CH-1D6) STACK OUT 0-P 149
(CH-1D6) STACK OUT 1-P 134
(CH-1D6) STACK OUT 2-P 145
(CH-1E6) STACK OUT 3-P 128
(CH-1F6) STACK OUT 4-P 143
(CH-1F6) STACK OUT 5-P 124
(CH-1F6) STACK OUT 6-P 127
(CH-1F6) STACK OUT 7-P 125
(CM-1H4) TIEUP-P
1D 2D 3D 4D 5D 6D 7D 8D CK CLR
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
ISTK D7-P (CM-4D5)
ISTK D8-P (CM-4B5)
ISTK D9-P (CM-4A5)
ISTK D10-P (CM-4D1)
ISTK D11-P (CM-4D1)
ISTK D12-P (CM-4B1)
ISTK D13-P (CM-4A1)
ISTK DPL-P (CM-4F7)

74LS86 2B
(CM-2H3) BITRING1-P

74LS273 4A
REG
1D 2D 3D 4D 5D 6D 7D 8D CK CLR
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
ISTK D1-P (CM-4C8)
ISTK D2-P (CM-4A8)
ISTK D3-P (CM-4A8)
ISTK D4-P (CM-4A8)
ISTK D5-P (CM-4A8)
ISTK D6-P (CM-4D5)
ISTK DPH-P (CM-4C8)
(CM-2F6) BITRING 0-P

74LS153 8B
1G SEL 1C0 1C1 1C2 1C3 2C0 2C1 2C2 2C3 2G 1Y 2Y
(CM-4F10) SEQDINPL-P
(CM-2A6) SEQS0L-P
(CM-2B6) SEQS1L-P
(L-3E10) CSADRSPL-P 250

74LS153 8D
1G SEL 1C0 1C1 1C2 1C3 2C0 2C1 2C2 2C3 1Y 2Y
(CM-4C10) SEQDINPH-P
(CM-2C5) SEQS0H-P
(CM-2C5) SEQS1H-P
(L-3C10) CSADRSPH-P 249

74LS86 11B
74LS04 11C
74LS10 13B
74LS04 13A
(CM-2G6) SEQZEROH-N
245 CSADRSPARERR-P (CJ-2A4)(CL-3D2)
74LS00 12B

(CM-1B7) BITRING7-P

74LS148 5B
(CM-2C10) CSADRS6-P
(CM-2C10) CSADRS7-P
(CM-2C10) CSADRS8-P
(CM-2C10) CSADRS9-P
(CM-2B10) CSADRS10-P
(CM-2B10) CSADRS11-P
(CM-2A10) CSADRS12-P
(CM-2A10) CSADRS13-P
D0 D1 D2 D3 D4 D5 D6 D7 EI
Y0 Y1 Y2 EO GS
74LS04 11C
74LS08 9D
74LS00 9C
74LS374 8C

(CM-3H3) BITRING5-P

74LS148 6E
(CM-2F10) CSADRS1-P
(CM-2E10) CSADRS2-P
(CM-2E10) CSADRS3-P
(CM-2E10) CSADRS4-P
(CM-2E10) CSADRS5-P
74LS00 12B
74LS08 9D
74LS00 9C
74LS374 8C

NP433 (MPU-2)

CM-5

P/N / REV	TITLE: NP37CTLR LOGIC DIA	SHEET 5/5	DRAWN
		REV 0	CHECK
	DRAWING NO: NPL-NC-28433		APPD

Nippon Peripherals Limited

REV No	DATE	DRAWN	APPD
Add of destination of "PRCCHK-P"			
1	82.5.7	A.OGINO	

(CM-3F5) GATEREG - N ← 153

(CL-3A5) GATEFNL - N

(CL-4B10) PRC CHK 1 - P

(CL-3G8) PRC CHK 2 - P

(G 4) TIEUP - P

74S02 5B

74S04 6C

74L502 4D

7406 4E

+5V

R8 3KΩ 1/4W → J203-2

R9 3KΩ 1/4W → -3

R10 3KΩ 1/4W → J203-4

(NOT USED)

162 → PRC CHK - P (CN-2B2)(CQ-1A8)(CT-1A8)(CF-7G2) △

74S157 9A

(CL-2F9) IB22 - P
(CL-2B9) IB6 - P
(CL-2F9) IB21 - P
(CL-2B9) IB5 - P
(CL-2F9) IB20 - P
(CL-2B9) IB4 - P
(CL-2E9) IB19 - P
(CL-2A9) IB3 - P
(CM-1G10) EXTSEL3/6 - P ← 214

1A 1B 2A 2B 3A 3B 4A 4B S G
1Y 2Y 3Y 4Y

74S138 8A

A B C G1 G2 G3
Y0 Y1 Y2 Y3 Y4 Y5 Y6 Y7

209 → EXTSEL 0 - N(CJ-2B1)(CQ-5F6)(CR-2A2)(CT-5F6)(CU-2A2)
207 → EXTSEL 1 - N(CQ-5F6)(CR-2E2)(CT-5F6)(CU-2E2)
205 → EXTSEL 2 - N(CH-5H6)(CQ-5F6)(CT-5F6)
212 → EXTSEL 3 - N(CH-5A6)(CE-4A6)(CL-4D2)
208 → EXTSEL 4 - N(CH-5A6)(CE-5C2)(CF-7D2)(CL-4E2)
204 → EXTSEL 5 - N(CH-5E6)(CC-4G3)(CE-5C2)
213 → EXTSEL 6 - N(CJ-2A4)(CM-2E2)
222 → EXTSEL 7 - N(CJ-1A8)(CQ-5G6)(CT-5G6)

J203-1 -5 -19 -31 -39 J203-49 (NOT USED)

+5V

R3 240Ω 1/4W

RAMCONTROL-NTP ← 165 → J203-50 → RAMCONTROL-N (NOT USED)

R4 360Ω 1/4W → RAMCONTROL-N (CL-2C2)

EXTSEL4-N(CL-4E2)
EXTSEL3-N(CL-4D2)

74S138 6A

EXTSEL8-N(CL-4E2)

157 → EXTSEL 8 - N(CH-3D6)(CJ-3B7)
160 → EXTSEL 9 - N(CJ-1D1)
159 → EXTSEL A - N(CH-3C2)(CJ-1D8)
158 → EXTSEL B - N(CJ-2A1)
154 → EXTSEL C - N(CH-5H6)(CJ-2A7)
150 → EXTSEL D - N(CH-5H6)(CJ-2H5)
147 → EXTSEL E - N(CQ-2F4)(CJ-2F4)
148 → EXTSEL F - N(CE-5C2)(CF-7E2)(CQ-4G2)(CT-4G2)(CU-1C2)

74LS280 7A

PCG
A B C D E F G H I
EV ŌD
5

(CL-3B10) FRC EXT ADRCHK - P

74LS280 5A

PCG
A B C D E F G H I
EV ŌD
5

EXTDBLSEL - N (CL-3E2)

101 167 201 267 106 111 116 126 131 136 146 151 156 166 206 211 216 226 231 236 246 251 256 266

+5V 0V

C1 +3.3μF -35V
C4 +3.3μF -35V
C5 0.022μF 50V
C11 0.022μF 50V

R5 560Ω 1/4W (BZ) (CL-4G2) → TIE UP - P

NP434 (MPU-3)

CL - 1

P/N NP434 REV A	TITLE NP37CTLR LOGIC DIA	SHEET 1/4	DRAWN A.OGINO 82.1.28
		REV 1	CHECK
			APPD K.HOSHI 82.1.29
MPU-3	DRAWING NO NPL-NC-21434	Nippon Peripherals Limited	

(CM-2A10) CS ADRS 13 - P ← 218
(CM-2A10) CS ADRS 12 - P ← 217
(CM-2A10) CS ADRS 11 - P ← 232
(CM-2B10) CS ADRS 10 - P ← 202
(CM-2C10) CS ADRS 9 - P ← 224
(CM-2C10) CS ADRS 8 - P ← 250
(CM-2C10) CS ADRS 7 - P ← 260
(CM-2C10) CS ADRS 6 - P ← 235
(CM-2D10) CS ADRS 5 - P ← 264
(CM-2E10) CS ADRS 4 - P ← 215
(CM-2E10) CS ADRS 3 - P ← 265
(CM-2E10) CS ADRS 2 - P ← 268
(CM-2F10) CS ADRS 1 - P ← 225

RAMCONTROL-N (CL-109)

74LS04 6C
74LS00 7C
74LS00 7C

TMS2532-35 12C
TMS2532-35 12D
TMS2532-35 8D
TMS2532-35 10D
TMS2532-35 8C
TMS2532-35 10C

ROM: A0–A11, CE, VPP, D0–D7; +5V

(CC-1D10) BITRING0-P ← 262
BITRING0-P (CL-4A7)

74S374 12A
74S374 11A
74S374 10A

REG: 1D–8D, CK, OE; 1Q–8Q

IB3 - P (CL-1C2)
IB P - PTP
IB P - P (CL-4C2)
IB0 - P (CM-3A2 XCN-5B6)
IB1 - P (CM-3B2 XCN-5C6)
IB2 - P (CM-3C2 XCN-5C6)
IB3 - P (CM-3D2)
IB4 - P (CM-3A6)
IB5 - P (CM-3B6)
IB6 - P (CM-3C6)
IB6 - P (CL-1C2)
IB5 - P (CL-1C2)
IB4 - P (CL-1C2)

J203-6 → CS DATA P - P
J203-7 → CS DATA 0 - P
J203-8 → CS DATA 1 - P
J203-9 → CS DATA 2 - P
J203-10 → CS DATA 3 - P
J203-11 → CS DATA 4 - P
J203-12 → CS DATA 5 - P
J203-13 → CS DATA 6 - P
(NOT USED)

IB7 - P (CM-3G6 XCN-2E6)
IB8 - P (CM-3G6 XCN-2E6)
IB9 - P (CM-3G6 XCN-2E6)
IB10 - P (CM-4C8 XCN-2E6)
IB11 - P (CM-4B8 XCN-5A2)
IB12 - P (CM-4A8 XCN-2E6)
IB13 - P (CM-4A8 XCN-2G2)
IB14 - P (CM-4A8 XCN-2G2)

J203-14 → CS DATA 7 - P
J203-15 → CS DATA 8 - P
J203-16 → CS DATA 9 - P
J203-17 → CS DATA 10 - P
J203-18 → CS DATA 11 - P
J203-20 → CS DATA 12 - P
J203-21 → CS DATA 13 - P
J203-22 → CS DATA 14 - P
(NOT USED)

IB19 - P (CL-1C2)
IB15 - P (CM-4D5 XCN-2A6)
IB16 - P (CM-4C5 XCN-2A6)
IB17 - P (CM-4B5 XCN-2A6)
IB18 - P (CM-4A5 XCN-2A6)
IB19 - P (CM-4D1 XCN-3C2)
IB20 - P (CM-4C1 XCN-1D2)
IB21 - P (CM-4B1 XCN-1D2)
IB22 - P (CM-4A1 XCN-1D2)
IB22 - P (CL-1C2)
IB21 - P (CL-1C2)
IB20 - P (CL-1C2)

J203-23 → CS DATA 15 - P
J203-24 → CS DATA 16 - P
J203-25 → CS DATA 17 - P
J203-26 → CS DATA 18 - P
J203-27 → CS DATA 19 - P
J203-28 → CS DATA 20 - P
J203-29 → CS DATA 21 - P
J203-30 → CS DATA 22 - P
(NOT USED)

CS ADRS 13 - P (CL-3E8)
CS ADRS 12 - P (CL-3E8)
CS ADRS 11 - P (CL-3E8)
CS ADRS 10 - P (CL-3E8)
CS ADRS 9 - P (CL-3E8)
CS ADRS 8 - P (CL-3E8)
CS ADRS 7 - P (CL-3E8)
CS ADRS 6 - P (CL-3E8)
CS ADRS 5 - P (CL-3C8)
CS ADRS 4 - P (CL-3C8)
CS ADRS 3 - P (CL-3C8)
CS ADRS 2 - P (CL-3C8)
CS ADRS 1 - P (CL-3C8)

NP434 (MPU-3)

CL-2

P/N / REV	TITLE: NP37CTLR LOGIC DIA	SHEET 2/ REV O	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-21434	Nippon Peripherals Limited	

+5V
R6 560Ω 1/4W
GATE FNL-N (CL-1A4)
74S02 5B
74S04 6B
(CL-1E7) EXTSELE-N 149
(CH-5G5) GATE FNL-N 155
(CL-4D10) LS DATA CHK-N
(CL-4C8) CS DATA CHK-N
(CL-4B8) FNL DATA CHK-N
(CL-4E10) STK PAR CHK-N
(CL-4B10) ALU REG CHK-N
74LS240 5A
130 → ALUBUS 0-P (CQ-2B8)
129 → ALUBUS 1-P (CQ-2B8)
137 → ALUBUS 2-P (CQ-2C8)
119 → ALUBUS 3-P (CQ-2C8)
120 → ALUBUS 4-P (CQ-2C8)
123 → ALUBUS 5-P (CQ-2E8)
118 → ALUBUS 6-P (CQ-2E8)
139 → ALUBUS 7-P (CQ-2E8)

ALUBUS 0-P (CL-4A2)
ALUBUS 1-P (CL-4A2)
ALUBUS 2-P (CL-4A2)
ALUBUS 3-P (CL-4A2)
ALUBUS 4-P (CL-4A2)
ALUBUS 5-P (CL-4B2)
ALUBUS 6-P (CL-4B2)
ALUBUS 7-P (CL-4B2)
74LS273 4A
REG
1D 2D 3D 4D 5D 6D 7D 8D CK CLK
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
135 → FRC LS DATA CHK-P (CH-4D2)
FRC CS DATA CHK-P (CL-4C2)
FRC FNL CHK-P (CL-4B2)
FRC STACK CHK-P (CL-4F2)
FRC EXT ADR CHK-P (CL-1F4)
142 → INH TRAP 6-P (CCN-2B2)
(FRC CS ADR CHK1-P)
(FRC CS ADR CHK2-P)

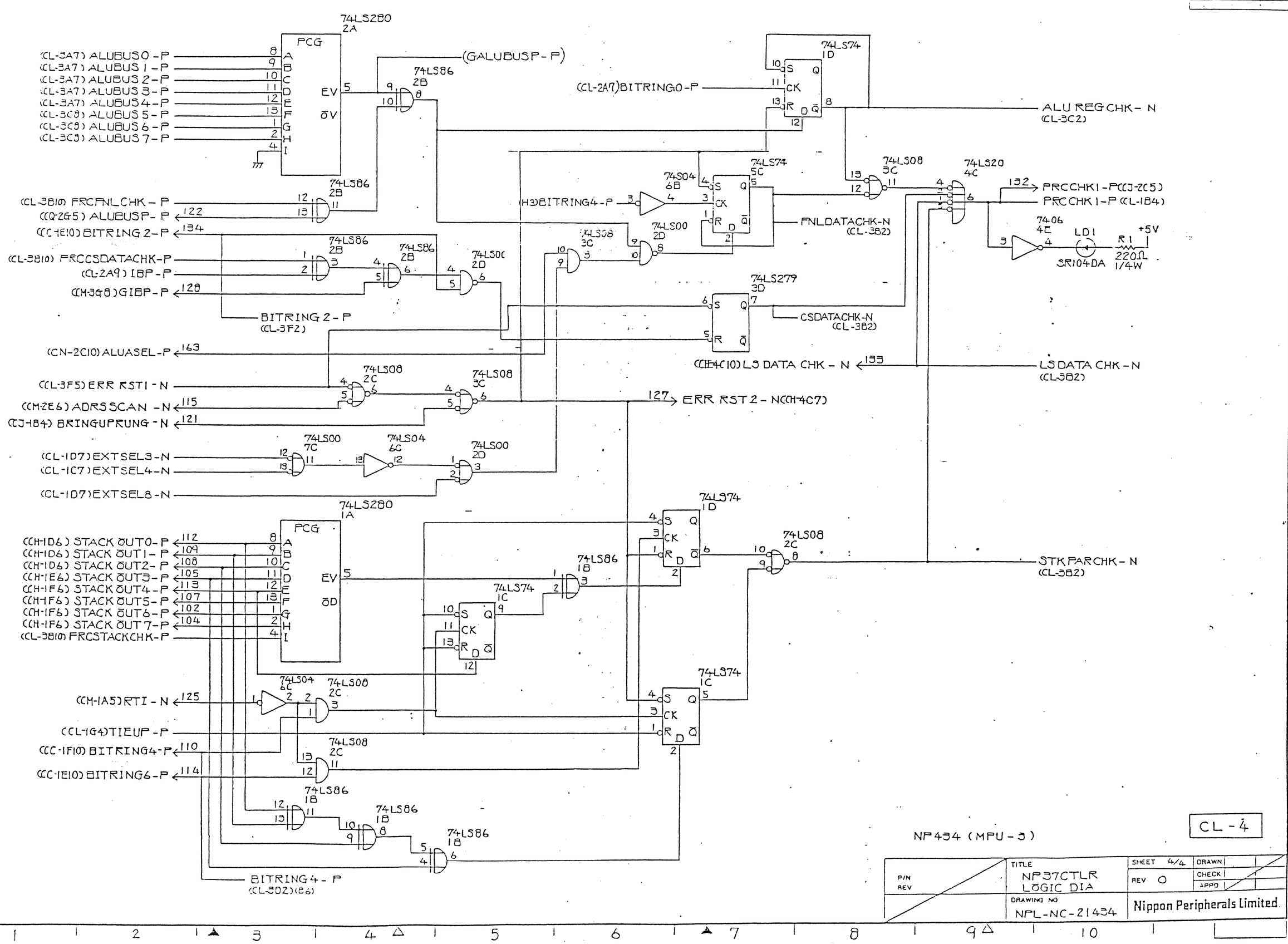
(CF-7F8) CLKREG18-N ← 144

J203-35 → CSADRS4-P
J203-34 → CSADRS3-P
J203-33 → CSADRS2-P
J203-32 → CSADRS1-P
(NOT USED)
74LS280 7D
PCG
(CL-2H6) CSADRS1-P
(CL-2H6) CSADRS2-P
(CL-2H6) CSADRS3-P
(CL-2H6) CSADRS4-P
(CL-2H6) CSADRS5-P
A B C D E F G H I
EV ōD
5 164 → CSADRSPH-P (CH-2E2 XCH-5E7)
J203-37 → CSADRSPH-P (NOT USED)
J203-36 → CSADRS5-P
74LS280 7B
PCG
(CL-2H6) CSADRS6-P
(CL-2H6) CSADRS7-P
(CL-2H6) CSADRS8-P
(CL-2G6) CSADRS9-P
(CL-2G6) CSADRS10-P
(CL-2G6) CSADRS11-P
(CL-2G6) CSADRS12-P
(CL-2G6) CSADRS13-P
A B C D E F G H I
EV ōD
5 168 → CSADRSPL-P (CM-5C7)
J203-47 → CSADRSPL-P (NOT USED)
J203-38 → CSADRS6-P
J203-40 → CSADRS7-P
J203-41 → CSADRS8-P
J203-42 → CSADRS9-P
J203-43 → CSADRS10-P
J203-44 → CSADRS11-P
J203-45 → CSADRS12-P
J203-46 → CSADRS13-P
(NOT USED)

(CH-5C10) CSADRS PAR ERR-P ← 145
(CL-4H3) BITRING4-P
74LS00 2D
74LS279 3D
R7 +5V 560Ω 1/4W
INHIPROCHK-NTF ← 152
(CQ-1E10) GEN RESET-N ← 138
74LS08 3C
74LS04 6C
74LS02 4D
(CL-1G7) EXT DBLSEL-N
74LS279 5D
(CC-3D5) PWR GD4-P ← 203
(CL-4C3) BITRING2-P
74LS00 7C
ERR RSTI-N (CL-4D2)
(CH-4B10) LS ADR PAR CHK-N ← 143
74LS20 4C
PRC CHK 2-P (CL-1B4)
7406 4E
140 → PRC CHK 2-P (CCJ-2C5)
LD2 SR104DA
R2 +5V 220Ω 1/4-W

NP434 (MPU-3)
CL-3

P/N REV	TITLE NP37CTLR LOGIC DIA	SHEET 3/ REV 0	DRAWN CHECK APPD
	DRAWING NO NPL-NC-21434	Nippon Peripherals Limited	


74LS280 2A
PCG
(CL-3A7) ALUBUS0-P
(CL-3A7) ALUBUS1-P
(CL-3A7) ALUBUS2-P
(CL-3A7) ALUBUS3-P
(CL-3A7) ALUBUS4-P
(CL-3C8) ALUBUS5-P
(CL-3C8) ALUBUS6-P
(CL-3C8) ALUBUS7-P
EV
ōV
(GALUBUSP-P)
74LS86 2B
(CL-2A7)BITRING0-P
74LS74 1D
ALU REG CHK-N (CL-3C2)
(CL-3B10) FRCFNLCHK-P
(CQ-2G5) ALUBUSP-P 122
(CH-3E10) BITRING2-P 134
(CL-3B10) FRCCSDATACHK-P
(CL-2A9) IBP-P
(CH-3G8) GIBP-P 128
BITRING2-P (CL-3F2)
(H3)BITRING4-P
74LS04 6B
74LS74 5C
74LS08 3C
74LS00 2D
74LS08 3C
74LS279 3D
FNLDATACHK-N (CL-3B2)
CSDATACHK-N (CL-3B2)
74LS08 3C
74LS20 4C
132 PRCCHK1-P (CJ-2C5)
PRCCHK1-P (CL-1B4)
7406 4E
LD1
+5V
R1 220Ω 1/4W
SR104-DA
(CN-2C10) ALUASEL-P 163
(CH-4C10) LS DATA CHK-N 133
LS DATA CHK-N (CL-3B2)
(CL-3F5) ERR RST1-N
(CM-2E6) ADRS SCAN-N 115
(CJ-1B4) BRINGUPRUNG-N 121
74LS08 2C
74LS08 3C
127 ERR RST2-N (CH-4C7)
(CL-1D7) EXTSEL3-N
(CL-1C7) EXTSEL4-N
(CL-1D7) EXTSEL8-N
74LS00 7C
74LS04 6C
74LS00 2D
74LS280 1A
PCG
(CH-1D6) STACK OUT0-P 112
(CH-1D6) STACK OUT1-P 109
(CH-1D6) STACK OUT2-P 108
(CH-1E6) STACK OUT3-P 105
(CH-1F6) STACK OUT4-P 113
(CH-1F6) STACK OUT5-P 107
(CH-1F6) STACK OUT6-P 102
(CH-1F6) STACK OUT7-P 104
(CL-3B10) FRCSTACKCHK-P
74LS374 1D
74LS08 2C
STK PAR CHK-N (CL-3B2)
74LS86 1B
74LS374 1C
74LS04 6C
74LS08 2C
(CH-1A5) RTI-N 125
(CL-1G4) TIEUP-P
(CC-1F10) BITRING4-P 110
(CC-1E10) BITRING6-P 114
74LS08 2C
74LS86 1B
BITRING4-P (CL-3D2)(B6)
NP434 (MPU-3)
CL-4
P/N
REV
TITLE
NP37CTLR LOGIC DIA
SHEET 4/4
REV 0
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-21434
Nippon Peripherals Limited.

NO.	DATE	DRAWN	APPD
		Correct error in writing. Sheet 2,3 Rev 0→1	
1	85.2.8	RShono	A.Ogino

(CH-3F5) GATEREG - N 153
(CL-3A3) GATEFNL - N
(CL-4B10) PRC CHK 1 - P
(CL-3G8) PRC CHK 2 - P
(G 4) TIEUP - P

74S02 5B
74LS02 4D
74LS04 6C
7406 4E

+5V R8 3KΩ 1/4W J203-2
+5V R9 3KΩ 1/4W -3
R10 3KΩ 1/4W J203-4
(NOT USED)

162 PRC CHK - P (CN-2B2)(CQ-1A8)(CT-1A8)(CG-7G2)

74S157 9A
(CL-2F9) IB 22 - P
(CL-2B9) IB 6 - P
(CL-2F9) IB 21 - P
(CL-2B9) IB 5 - P
(CL-2F9) IB 20 - P
(CL-2B9) IB 4 - P
(CL-2E9) IB 19 - P
(CL-2A9) IB 3 - P
(CH-1G10) EXTSEL3/6-P 214

74S138 8A
74S138 6A

209 EXTSEL 0 - N (CJ-2B1)(CQ-5F6)(CR-2A2)(CT-5F6)(CU-2A2)
207 EXTSEL 1 - N (CQ-5F6)(CR-2E2)(CT-5F6)(CU-2E2)
205 EXTSEL 2 - N (CH-5H6)(CQ-5F6)(CT-5F6)
212 EXTSEL 3 - N (CH-5A6)(CF-4A6)(CL-4D2)
208 EXTSEL 4 - N (CH-5A6)(CF-5C2)(CG-7D2)(CL-4E2)
204 EXTSEL 5 - N (CH-5E6)(CE-4G3)(CF-5C2)
213 EXTSEL 6 - N (CJ-2A4)(CH-2E2)
222 EXTSEL 7 - N (CJ-1A8)(CQ-5G6)(CT-5G6)
EXTSEL 6 - N (E 2)
EXTSEL4 - N (CL-4E2)
EXTSEL 5 - N (CL-4D2)
EXTSEL9 - N (E 7)
EXTSEL8 - N (CL-4E2)
157 EXTSEL 8 - N (CH-3D6)(CJ-3B7)
160 EXTSEL 9 - N (CJ-1D1)
159 EXTSEL A - N (CH-3C2)(CJ-1D8)
158 EXTSEL B - N (CJ-2A1)
154 EXTSEL C - N (CH-5H6)(CJ-2A7)
150 EXTSEL D - N (CH-5H6)(CJ-2H5)
147 EXTSEL E - N (CQ-2F4)(CJ-2F4)
148 EXTSEL F - N (CF-5C2)(CG-7E2)(CQ-4G2)(CT-4G2)(CU-1C2)

J203-1 -5 -19 -31 -39 J203-49
(NOT USED)

+5V R3 240Ω 1/4W
RAMCONTROL-NTP 165 J203-50 RAMCONTROL-N (NOT USED)
R4 360Ω 1/4W
RAMCONTROL-N (CL-2C2)

74LS02 8B
(C 6) EXTSEL6-N

74LS74 5C
(G 4) TIEUP-P
(CL-3F3) PWRGD4-P
(CL-3A7) ALUBUS3-P
141 RSRCMPTC-P

74LS280 7A
74LS280 5A
PCG
(CL-3B10) FRC EXT ADRCHK - P
EV
OD

74S02 5B
74S04 6B
GATEFNL-N (CL-3A3)
(D 6) EXTSEL9-N

74LS125 13B
RSRREQFRMOC-N 239
RSRCMPFRMOC-N 241
PWRDFRMOC - N 243
DUALCTLPRSNT-N 263
R11 1.1KΩ
R14 1.1KΩ
R12 1.1KΩ
R13 1.1KΩ
+5V
ALU BUS4 - P (CL-3C6)
ALU BUS5 - P (CL-3C8)
ALU BUS6 - P (CL-3C8)
ALU BUS7 - P (CL-3C8)

101 167 201 267
106 111 116 126 131 136 146 151
0V
156 166 206 211 216 226
231 236 246 251 256 266
+5V
C1 3.3μF 35V ~C4 3.3μF 35V
C5 0.022μF 50V ~C14 0.022μF 50V
R5 560Ω 1/4W
TIEUP-P (B 2) (E 2) (CL-4G2)

EXTDBL SEL - N (CL-3E2)

NP484 (XCALL)

CL - 1

P/N NP484	TITLE NP37CTLR LOGIC DIA	SHEET 1/4	DRAWN Shiono 84.11.26
REV A		REV 1	CHECK Tsuzuki 84.11.27
	DRAWING NO NPL-NC-22484		APPD A.Ogino 84.11.27

Nippon Peripherals Limited

Changing point is marked by △

1	85.2.8	R.Shoda	A.Ogata

(CM-2A10) CSADRS13-P ← 218
(CM-2A10) CSADRS12-P ← 217
(CM-2A10) CSADRS11-P ← 232
(CM-2B10) CSADRS10-P ← 202
(CM-2C10) CSADRS 9-P ← 224
(CM-2C10) CSADRS 8-P ← 250
(CM-2C10) CSADRS 7-P ← 260
(CM-2C10) CSADRS 6-P ← 235
(CM-2D10) CSADRS 5-P ← 264
(CM-2E10) CSADRS 4-P ← 215
(CM-2E10) CSADRS 3-P ← 265
(CM-2E10) CSADRS 2-P ← 268
(CM-2A10) CSADRS 1-P ← 225

HN482764 12D
HN482764 10D
HN482764 8D
ROM
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12
D0 D1 D2 D3 D4 D5 D6 D7
CE OE P
VPP
+5V

74LS04 6C
RAMCONTROL-N (CL-1D9)

△ CSADRS 1-P (CL-3C8)

R15 560Ω

(CE-1D10) BITRING0-P ← 262
BITRING0-P (CL-4A7)

74S374 12A
74S374 11A
74S374 10A
REG
1D 2D 3D 4D 5D 6D 7D 8D CK OE
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q

252 IBP-PTP
IBP-P (CL-4C2)
249 IB0-P (CM-3A2)(CN-5B6)
253 IB1-P (CM-3B2)(CN-5C6)
254 IB2-P (CM-3C2)(CN-5C6)
255 IB3-P (CM-3D2)
259 IB4-P (CM-3A6)
258 IB5-P (CM-3B6)
257 IB6-P (CM-3C6)
IB6-P (CL-1C2)
IB5-P (CL-1C2)
IB4-P (CL-1C2)

J203-6 CS DATA P-P
-7 CS DATA 0-P
-8 CS DATA 1-P
-9 CS DATA 2-P
-10 CS DATA 3-P
-11 CS DATA 4-P
-12 CS DATA 5-P
J203-13 CS DATA 6-F
(NOT USED)

238 IB7-P (CM-3G6)(CN-2E6)
240 IB8-P (CM-3G6)(CN-2E6)
237 IB9-P (CM-3G6)(CN-2E6)
242 IB10-P (CM-4C8)(CN-2E6)
248 IB11-P (CM-4B8)(CN-5A2)
247 IB12-P (CM-4A8)(CN-2E6)
245 IB13-P (CM-4A8)(CN-2G2)
244 IB14-P (CM-4A8)(CN-2G2)

J203-14 CS DATA 7-P
-15 CS DATA 8-P
-16 CS DATA 9-P
-17 CS DATA 10-P
-18 CS DATA 11-P
-20 CS DATA 12-P
-21 CS DATA 13-P
J203-22 CS DATA 14-P
(NOT USED)

IB19-P (CL-1C2)
223 IB15-P (CM-4D5)(CN-2A6)
228 IB16-P (CM-4C5)(CN-2A6)
227 IB17-P (CM-4B5)(CN-2A6)
219 IB18-P (CM-4A5)(CN-2A6)
220 IB19-P (CM-4D1)(CN-3C2)
230 IB20-P (CM-4C1)(CN-1D2)
229 IB21-P (CM-4B1)(CN-1D2)
233 IB22-P (CM-4A1)(CN-1D2)
IB22-P (CL-1C2)
IB21-P (CL-1C2)
IB20-P (CL-1C2)

J203-23 CS DATA 15-P
-24 CS DATA 16-P
-25 CS DATA 17-P
-26 CS DATA 18-P
-27 CS DATA 19-P
-28 CS DATA 20-P
-29 CS DATA 21-P
J203-30 CS DATA 22-P
(NOT USED)

0 CSADRS13-P (CL-3E8)
1 CSADRS12-P (CL-3E8)
2 CSADRS11-P (CL-3E8)
3 CSADRS10-P (CL-3E8)
4 CSADRS 9-P (CL-3E8)
5 CSADRS 8-P (CL-3E8)
6 CSADRS 7-P (CL-3E8)
7 CSADRS 6-P (CL-3E8)
8 CSADRS 5-P (CL-3D8)
9 CSADRS 4-P (CL-3C8)
10 CSADRS 3-P (CL-3C8)
11 CSADRS 2-P (CL-3C8)

NP484 (XCALL)

CL-2

P.N	TITLE NP37CTLR LOGIC DIA	SHEET 2	DRAWN
REV		REV 1	CHECK
	DRAWING NO NPL-NC-22434		APPD

Nippon Peripherals Limited

50

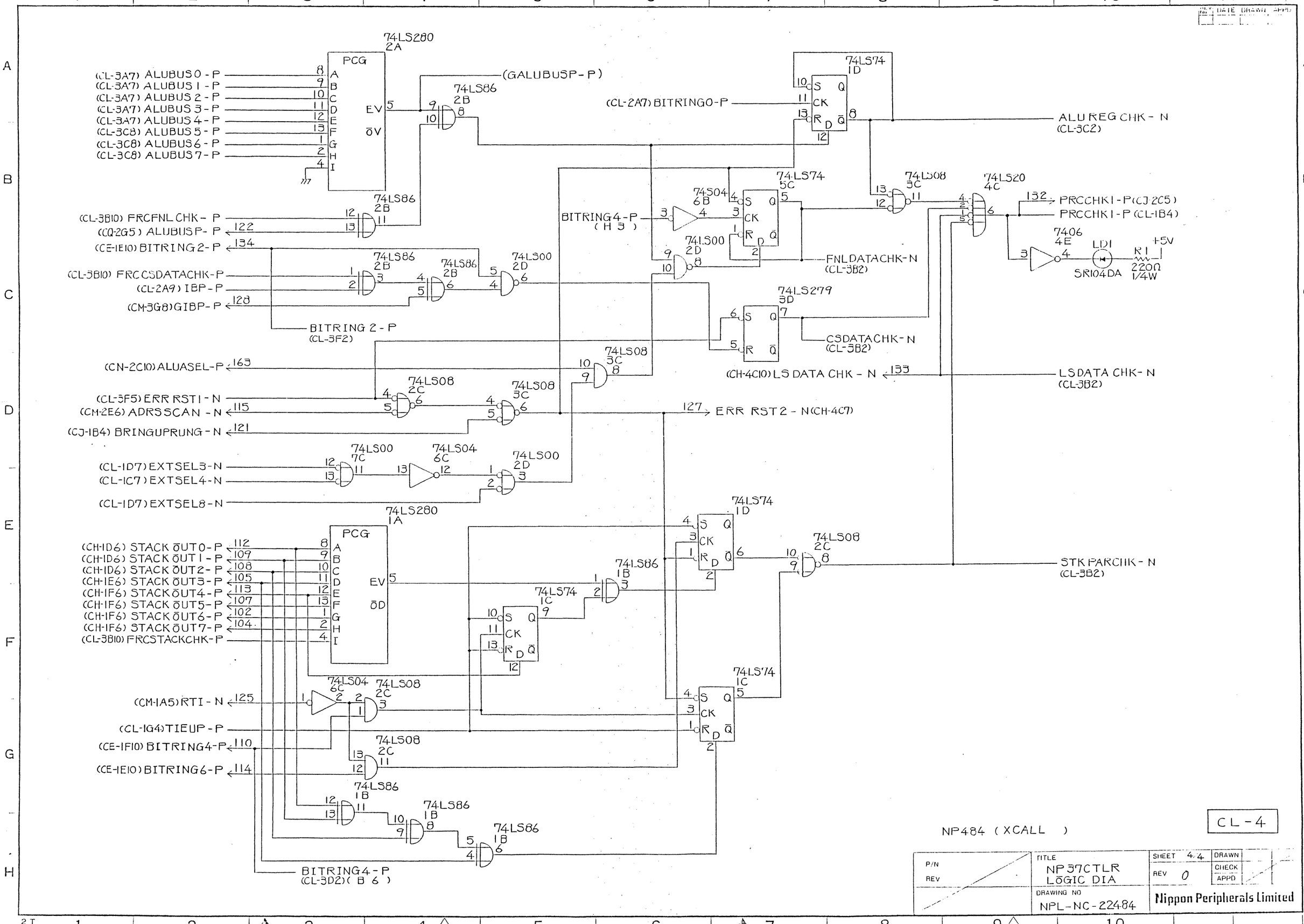
DATE DRAWN	APPD
Changing point is marked by △	
1 85.2.8	R Shiara A DWIND

+5V
R6 560Ω 1/4W
GATE FNL-N (CL-1A4)(CL-1E7) 74LS240 3A
74S02 5B
74S04 6B
(CL-1E7) EXT SELE-N 149
(CH-5G5) GATE FNL-N 155
(CL-4D10) LS DATA CHK-N
(CL-4C8) CS DATA CHK-N
(CL-4B8) FNL DATA CHK-N
(CL-4E10) STK PAR CHK-N
(CL-4B10) ALU REG CHK-N
130 → ALUBUS 0-P (CQ-2B8)
129 → ALUBUS 1-P (CQ-2B8)
137 → ALUBUS 2-P (CQ-2C8)
119 → ALUBUS 3-P (CQ-2C8)
120 → ALUBUS 4-P (CQ-2C8)
123 → ALUBUS 5-P (CQ-2E8)
118 → ALUBUS 6-P (CQ-2E8)
139 → ALUBUS 7-P (CQ-2E8)
ALUBUS 0-P (CL-4A2)
ALUBUS 1-P (CL-4A2)
ALUBUS 2-P (CL-4A2)
ALUBUS 3-P (CL-4A2)(CL-1F2)
ALUBUS 4-P (CL-4A2) (CL-1F9)
74LS273 4A
REG
1D 1Q 2
2D 2Q 5
3D 3Q 6
4D 4Q 9
5D 5Q 12
6D 6Q 15
7D 7Q 16
8D 8Q 19
CK
CLK
135 → FRC LS DATA CHK-P (CH-4D2)
FRC CS DATA CHK-P (CL-4C2)
FRC FNL CHK-P (CL-4B2)
FRC STACK CHK-P (CL-4F2)
FRC EXT ADR CHK-P (CL-1F4)
142 → INH TRAP 6-P (CN-2B2)
(FRC CS ADR CHK1-P)
(FRC CS ADR CHK2-P)
ALUBUS 5-P (CL-4B2)(CL-1F9)
ALUBUS 6-P (CL-4B2)(CL-1F9)
ALUBUS 7-P (CL-4B2)(CL-1G9)
(CG-7F8) CLK REG 18-N ← 144
J203-35 → CSADRS4-P
-34 → CSADRS3-P
-33 → CSADRS2-P
J203-32 → CSADRS1-P
(NOT USED)
74LS280 7D
△(CL-2C5) CSADRS1-P
(CL-2H6) CSADRS2-P
(CL-2H6) CSADRS3-P
(CL-2H6) CSADRS4-P
(CL-2H6) CSADRS5-P
PCG
A B C D E F G H I
EV
ōD
5 164 → J203 (CH-2E2)(CM-5E7) CSADRSPH-P
J203-37 → CSADRSPH-P (NOT USED)
J203-36 → CSADRS5-P
74LS280 13D
(CL-2H6) CSADRS6-P
(CL-2H6) CSADRS7-P
(CL-2H6) CSADRS8-P
(CL-2G6) CSADRS9-P
(CL-2G6) CSADRS10-P
(CL-2G6) CSADRS11-P
(CL-2G6) CSADRS12-P
(CL-2G6) CSADRS13-P
5 168 → J203 (CM-5C7) CSADRSPL-P
-47 → CSADRSPL-P (NOT USED)
J203-38 → CSADRS6-P
-40 → CSADRS7-P
-41 → CSADRS8-P
-42 → CSADRS9-P
-43 → CSADRS10-P
-44 → CSADRS11-P
-45 → CSADRS12-P
J203-46 → CSADRS13-P
(NOT USED)
(CM-5C10) CSADRS PARERR-P ← 145
(CL-4H3) BITRING4-P
INHIPROCHK-NTP ← 152
(CQ-1E10) GENRESET-N ← 138
(CL-1G7) EXT DBLSEL-N
(CE-3D5) PWR GD4-P ← 203
(CL-4C5) BITRING2-P
R7 +5V 560Ω 1/4W
74LS00 2D
74LS08 3C
74LS04 6C
74LS02 4D
74LS279 3D
74LS279 5D
PWRGD4-P (CL-1F2)
74LS00 7C
ERRRSTI-N (CL-4D2)
(CH-4B10) LS ADR PAR CHK-N ← 143
74LS20 4C
7406 4E
LD2 SR104-DA
R2 +5V 220Ω 1/4W
PRC CHK 2-P (CL-1B4)
140 → PRC CHK 2-P (CJ-2C5)

NP484 (XCALL)

CL-3

P/N	TITLE	SHEET 3 /	DRAWN	
REV	NP37CTLR LOGIC DIA	REV 1	CHECK	
	DRAWING NO NPL-NC-22484		APPD	Nippon Peripherals Limited


74LS280 2A
PCG
(CL-3A7) ALUBUS0-P
(CL-3A7) ALUBUS1-P
(CL-3A7) ALUBUS2-P
(CL-3A7) ALUBUS3-P
(CL-3A7) ALUBUS4-P
(CL-3C8) ALUBUS5-P
(CL-3C8) ALUBUS6-P
(CL-3C8) ALUBUS7-P
EV
ŌV
(GALUBUSP-P)
74LS86 2B
74LS86 2B
(CL-3B10) FRCFNLCHK-P
(CQ-2G5) ALUBUSP-P
122
(CE-1E10) BITRING2-P
134
74LS86 2B
74LS86 2B
74LS00 2D
(CL-3B10) FRCCSDATACHK-P
(CL-2A9) IBP-P
(CM-3G8) GIBP-P
128
BITRING2-P
(CL-3F2)
74LS08 3C
(CN-2C10) ALUASEL-P
165
74LS08 2C
74LS08 3C
(CL-3F5) ERRRST1-N
(CM-2E6) ADRSSCAN-N
115
(CJ-1B4) BRINGUPRUNG-N
121
74LS00 7C
74LS04 6C
74LS00 2D
(CL-1D7) EXTSEL3-N
(CL-1C7) EXTSEL4-N
(CL-1D7) EXTSEL8-N
74LS280 1A
PCG
(CH-1D6) STACKŌUT0-P
112
(CH-1D6) STACKŌUT1-P
109
(CH-1D6) STACKŌUT2-P
108
(CH-1E6) STACKŌUT3-P
105
(CH-1F6) STACKŌUT4-P
113
(CH-1F6) STACKŌUT5-P
107
(CH-1F6) STACKŌUT6-P
102
(CH-1F6) STACKŌUT7-P
104
(CL-3B10) FRCSTACKCHK-P
EV
ŌD
74LS04 6C
74LS08 2C
(CM-1A5) RTI-N
125
(CL-1G4) TIEUP-P
(CE-1F10) BITRING4-P
110
(CE-1E10) BITRING6-P
114
74LS08 2C
74LS86 1B
74LS86 1B
74LS86 1B
BITRING4-P
(CL-3D2) (B 6)
74LS74 1D
(CL-2A7) BITRING0-P
ALUREGCHK-N
(CL-3C2)
74LS74 5C
74LS04 6B
BITRING4-P
(H 5)
74LS00 2D
FNLDATACHK-N
(CL-3B2)
74LS08 3C
74LS20 4C
132
PRCCHK1-P (CJ-2C5)
PRCCHK1-P (CL-1B4)
7406 4E
LD1
SR104DA
R1
220Ω 1/4W
+5V
74LS279 3D
CSDATACHK-N
(CL-3B2)
(CH-4C10) LS DATA CHK-N
133
LSDATA CHK-N
(CL-3B2)
127
ERR RST2-N (CH-4C7)
74LS74 1D
74LS08 2C
STKPARCHK-N
(CL-3B2)
74LS74 1C
74LS74 1C
NP484 (XCALL)
CL-4
P/N
REV
TITLE
NP37CTLR LOGIC DIA
SHEET 4/4
REV 0
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-22484
Nippon Peripherals Limited

(CJ-2A7)EXTSEL6-N
(M-3F5)GATEREG-N
(F 10)ALUBUS5-P
(G 10)ALUBUS4-P
(F 10)ALUBUS3-P
(E 10)ALUBUS1-P
(G 10)ALUBUS0-P
(G 10)ALUBUS2-P
(E 10)ALUBUS7-P
(F 10)ALUBUS6-P
(CJ-4A4)PWRONRST-N
GATEREG-N (CJ-2A1)(CJ-3D7)(CJ-4H5)
(CL-1D7)EXTSEL9-N
DVATTN5NPL-P (CA-2C1)
DVATTN7NPL-P (CA-2C1)
DVATTN6NPL-P (CA-2C1)
SERVOPLSNPL-P (CA-2F1)
DVTAGVLDNPL-P (CA-2F1)
EXTSEL9-N (CJ-2G5)

74LS02 8D
74LS273 7C
74LS04 8E
74LS273 9C
74LS02 8D
74LS14 12B
74LS04 6D

REG
1D 2D 3D 4D 5D 6D 7D 8D CK CLR
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q

5MINUTETM-P(CJ-4D1)
5MINUTETM-P(CN-3F2)
DEVSELHOLD-P(CJ-4G1)
DEVTAGGATE-P(CJ-4G1)
BRINGUPRUNG-N(CL-4D2)
(NOT USED)
FRCABUSPCHK-P (N-4H2)

DEVSEL5-P(CJ-4C1)
DEVSEL4-P(CJ-4C1)
DEVSEL3-P(CJ-4B1)
DEVSEL1-P(CJ-4A1)
DEVSEL0-P(CJ-4A1)
DEVSEL2-P(CJ-4B1)
DEVSEL7-P(CJ-4D1)
DEVSEL6-P(CJ-4D1)

R15 R17 R16 R19 R18 100Ω 1/4W

DEVATTN5-N (F 7)
DEVATTN7-N (E 7)
DEVATTN6-N (F 7)
SERVOPULSE-N (CJ-4D5)
(DEVTAGVALID-N)
DEVTAGVALID-P (CJ-2C8)

101 167 201 267 +5V
C1 +3.3µF -35V
C4 +3.3µF -35V
C5 0.022µF 50V
C11 0.022µF 50V
R46 560Ω 1/4W
TIE UP (CJ-2G5)(CJ-3B1)(CJ-4A1)
106 111 116 126 131 136 146 151 156 166 206 0V
211 216 226 231 236 246 251 256 266

(CA-2E1)DVBIN6NPL-P
DVBIN5NPL-P (CA-2C2)
DVBIN4NPL-P (CA-2E1)
DVBIN3NPL-P (CA-2D1)
DVBIN2NPL-P (CA-2D1)
DVBIN1NPL-P (CA-2D1)
DVBIN0NPL-P (CA-2D1)
R7 R6 R5 R4 R3 R2 R1 100Ω 1/4W

74LS14 13C
74LS14 8B

DEVBIN6-N (CJ-2F8)(CJ-3C7)
DEVBIN5-N(CJ-2E8)(CJ-3B7)
DEVBIN4-N(CJ-2E8)
DEVBIN3-N(CJ-2E8)(CJ-3A1)
DEVBIN2-N(CJ-2E8)
DEVBIN1-N(CJ-2E8)
DEVBIN0-N(CJ-2E8)
DEVBIN7-N(CJ-2F8)

DV ATTN1NPL-P (CA-2B1)
DVBINPNPL-P (CA-2E1)
DVATTN0NPL-P (CA-2B1)
DVBIN7NPL-P (CA-2E1)
DVATTN2NPL-P (CA-2B1)
DVATTN3NPL-P (CA-2B1)
DVATTN4NPL-P (CA-2C1)
R11 R9 R10 R8 R12 R13 R14 100Ω 1/4W

74LS14 12A
74LS14 12B

(DEVATTN1-N)
DEVBINP-N(CJ-2F8)
(DEVATTN0-N)
(D 4)DEVATTN7-N
(DEVATTN2-N)
(DEVATTN3-N)
(E 4)DEVATTN6-N
(D 4)DEVATTN5-N
(DEVATTN4-N)

(CH-5F5)INTFSELA-P
74LS04 11E
INTFSELB-P(CT-5D6)

(CJ-2E10)GDEVBINP-P
(CL-1C7)EXTSEL7-N
(CJ-2A10)GATEFNL-N
(CL-1D7)EXTSELA-N

74S32 11D
74LS125 12D
74LS04 13D
74LS240 11C
74LS240 11A

ALUBUSP-P (CJ-2F8)
FNLSEL7-P (CJ-3B1)
(FNLSEL7-N)
FNLSELA-N (CJ-2D5)

240 ALUBUS1-P(CQ-2B8) ALUBUS1-P(A 1)(CJ-2B1)(CJ-2B7)(CJ-2C10)
239 ALUBUS7-P(CQ-2E8) ALUBUS7-P(B 1)(CJ-2B7)(CJ-2B10)(CJ-2C1)(CJ-3E7)
232 ALUBUS3-P(CQ-2C8) ALUBUS3-P(A 1)(CJ-2B1)(CJ-2C7)(CJ-2C10)
230 ALUBUS6-P(CQ-2E8) ALUBUS6-P(B 1)(CJ-2A7)(CJ-2A10)(CJ-2C1)
228 ALUBUS5-P(CQ-2E8) ALUBUS5-P(A 1)(CJ-2B1)(CJ-2C7)(CJ-2C10)
234 ALUBUS4-P(CQ-2C8) ALUBUS4-P(A 1)(CJ-2B1)(CJ-2C7)(CJ-2C10)
238 ALUBUS2-P(CQ-2C8) ALUBUS2-P(A 1)(CJ-2B7)(CJ-2B10)(CJ-2C1)(CJ-4E5)
237 ALUBUS0-P(CQ-2B8) ALUBUS0-P(A 1)(CJ-2B7)(CJ-2B10)(CJ-2C1)

NP435 (DEVI)

CJ-1

P/N NP435	TITLE NP37CTLR LOGIC DIA	SHEET 1/4	DRAWN
REV B		REV 0	CHECK
DEVI	DRAWING NO NPL-NC-28435		APPD

Nippon Peripherals Limited

EXTSELB-N(G 5)
EXTSEL0-N(G 5)
EXTSEL6-N(G 5)(CJ-1A1)

(CL-1D7)EXTSELB-N 218
(CJ-1B4)GATE REG-N
74LS02 4D
(CJ-3B10)EXTSEL8-N
74LS02 8D
(CL-1C7)EXTSEL0-N 214
74LS02 4D

(A10)GATE FNL-N
(CL-1C7) EXTSEL6-N 224
74S32 11D

(CM-5C10) CSADRSPARERR-P 150
(CJ-3C10) INDEX-P
(CJ-4H7) TESTIRUN-P
(CH-5F5) MB ALERT-N 152
+5V
R48 1.1kΩ

74LS244 5C
ALU BUS 6-P (CJ-1F10)
ALU BUS 7-P (CJ-1E10)
ALU BUS 2-P (CJ-1G10)
ALU BUS 1-P (CJ-1E10)
ALU BUS 0-P (CJ-1G10)
ALU BUS 3-P (CJ-1F10)
ALU BUS 4-P (CJ-1G10)
ALU BUS 5-P (CJ-1F10)

(CM-3G5)GATE FNL-N 233
(CL-1D7)EXTSELC-N 229
74S32 11D

GATE FNL-N(A 4)(H 5)(CJ-1A8)

74LS244 6C
ANY REG ERR-P (CJ-3B5)
(CG-5B10)ECC HDW CHK-P 164
(NOT USED) 162
(CH-3G10) COUNTER CHK-P 163
(CG-6F10) ECC DATA CHK-P 168
DEV BINP CHK-P (CJ-3C5)
DEV TAG VALID-P (CJ-1F4)

ALU BUS 6-P(CJ-1F10)
ALU BUS 7-P(CJ-1E10)
ALU BUS 2-P(CJ-1G10)
ALU BUS 0-P(CJ-1G10)
ALU BUS 1-P(CJ-1E10)
ALU BUS 3-P(CJ-1F10)
ALU BUS 4-P(CJ-1G10)
ALU BUS 5-P(CJ-1F10)

FNLSELC-N(E 5)
COUNTER CHK-P(CJ-3A1)

74LS273 4C
REG
(CJ-1F10)ALU BUS5-P
(CJ-1G10)ALU BUS4-P
(CJ-1F10)ALU BUS3-P
(CJ-1E10)ALU BUS1-P
(CJ-1G10)ALU BUS0-P
(CJ-1G10)ALU BUS2-P
(CJ-1E10)ALU BUS7-P
(CJ-1F10)ALU BUS6-P
(CJ-4A4)PWR ON RST-N
DEV TAG BIT2-P(CJ-4E1)
DEV TAG BIT1-P(CJ-4E1)
DEV TAG BIT0-P(CJ-4E1)
READ WRITE-P(CJ-3A1)
ALLOW BINP CHK-P(CJ-3B1)
DEV TAG BITP-P(CJ-4G1)
DEV TAG BIT4-P(CJ-4F1)
DEV TAG BIT3-P(CJ-4F1)
(CJ-4G10)SECTOR TRAP2-P
(CL-4B10) PRCCHK1-P 155
(CL-3G8) PRCCHK2-P 157

74LS273 8C
REG
ENABLE TRAP-P(CJ-3E7)
RD*WT-P(CJ-3C7)(CJ-4G5)
END DATA CTL-P(CJ-3D1)
CALIBRATION-P(CJ-4D5)
(NOT USED)
(NOT USED)
PRESET AT 255-P(CJ-3G1)

74LS273 3C
REG
DEV BOUT5-P(G 8)(CJ-4C6)
DEV BOUT4-P(G 8)(CJ-4B6)
DEV BOUT3-P(G 8)(CJ-4B6)
DEV BOUT1-P(F 8)(CJ-4A6)
DEV BOUT0-P(F 8)(CJ-4A6)
DEV BOUT2-P(G 8)(CJ-4A6)
DEV BOUT7-P(G 8)(CJ-4D6)
DEV BOUT6-P(G 8)(CJ-4C6)

74LS280 10C
FCG
EV
ŌD

74LS510 12E
74LS504 13D
(FNLSEL6-N)
((CJ-1D10)FNLSELA-N
(D10)FNLSELC-N

74LS586 10D
ALU PAR-N(G 5)

74LS280 12C
FCG
(CJ-1C7)DEV BIN0-N
(CJ-1C7)DEV BIN1-N
(CJ-1C7)DEV BIN2-N
(CJ-1B7)DEV BIN3-N
(CJ-1B7)DEV BIN4-N
(CJ-1B7)DEV BIN5-N
(CJ-1A7)DEV BIN6-N
(CJ-1C7)DEV BIN7-N
(CJ-1D7)DEV BINP-N
EV
ŌD
G DEV BINP-P (CJ-1A8)
DEV BINP CLK-P (CJ-3B1)

74LS125 12D
74LS86 10D
255 ALU BUS P-P(CQ-2G5)
ALU BUS P-P(CJ-1A10)

74LS280 2C
FCG
(E 4)DEV BOUT0-P
(E 4)DEV BOUT1-P
(E 4)DEV BOUT2-P
(E 4)DEV BOUT3-P
(E 4)DEV BOUT4-P
(E 4)DEV BOUT5-P
(F 4)DEV BOUT6-P
(F 4)DEV BOUT7-P
EV
ŌD
DEV BOUTP-P (CJ-4D6)

74LS30 9D
(CJ-1G4)TIE UP
(A 3)EXTSEL0-N
(A 7)EXTSEL6-N
(CJ-3B10)EXTSEL8-N
(CJ-1F4)EXTSEL9-N
(A 3)EXTSELB-N

74LS510 12E
(CQ-4H6)CHKEREG PARA-P 144
(E10)ALU PAR-N
REG0689ABPER-N(CJ-3B1)

74LS04 11E
(A10)GATE FNL-N
74LS510 12E
CE DATA P CLK-N(CJ-3C1)
74LS04 11E
(CL-1E7)EXTSELD-N 264

NP435(DEVI)

CJ-2

P/N	TITLE NP37CTLR LOGIC DIA	SHEET 21	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-28435		APPD

Nippon Peripherals Limited

(CJ-2D10)COUNTERCHK-P

(CJ-1B7)DEVBIN3-N

(CJ-2B4)READWRITE-P

(CQ-1E10)GENRESET-N 203

(CJ-2G7)REG0689ABPER-N

(CJ-2E10)DEVBINPCLK-P

(CJ-1G5)TIE UP-P

(CJ-2C4)ALLOWBINPCHK-P

(CJ-1A10)FNLSEL7-P

(CJ-4F10)LOADPRESET-P

(CJ-2D4)ENDDATACTL-P

(CE-1E10)BITRING6-P 113

(CJ-4G10)BITRING4-P

(CH-3E5)COUNTFF-P 114

(D 10)RSTCTRCTL-N

(CJ-2D4)PRESETAT255-P

(CE-1D10)BITRING7-P 109

(CE-4D6)DATAGOOD-P 115

74LS04 13D
74LS04 11E
74LS00 6E
74LS279 7D
74LS08 1B
74LS10 9E
74LS00 7E
74LS279 7D
74LS04 6D
74LS279 7D
74LS04 6D
74LS00 2D
74LS279 3D
74LS00 2D
74LS279 3D
74LS00 2D
74LS08 1B
74LS10 1C
74LS279 1D
74LS279 1D
74LS00 2D
74LS10 2E
74LS279 1D
74LS10 1C

+5V
R47 1.6KΩ 1/4W
74LS09 10E
74LS04 6D
74LS20 5D

221 → ERROR ALERT - N (CQ-1A8)
143 → FCI ERROR - PTP
ANYREGERR-P(CJ-2A8)
DEVBINPCHK-P (CJ-2C8)
123 → ENDDATA - P (CF-2A6)
END DATALCH - N(CJ-4G8)
DATAGOODLCH - N(CJ-4G8)

(CL-1D7)EXTSEL8-N 210
(CJ-1B7)DEVBIN5-N
(CJ-1A7)DEVBIN6-N
(CJ-2D4)RDXWT-P
(CJ-1B4)GATEREG-N
(CJ-1E10)ALUBUS7-P
(CJ-4F10)CLOCKCOUNT-P
(CJ-2D4)ENABLETRAP-P
(B 10)DEVBIN5-P

74LS04 13D
74LS04 13D
74LS10 9E
74LS279 3E
74LS04 8E
74LS04 8E
74LS10 9E
74LS02 4D
74LS10 1C
74LS279 1D
74LS04 13D
74LS00 7E
74LS279 7D
74LS00 7E
74LS00 7E

EXTSEL8-N (CJ-2A1) (CJ-2G5)
DEVBIN5-P(F7) (CJ-4G5)
147 → INDEX-P(CQ-5E8)(CT-5E2)
INDEX - P (CJ-2A4)
EXTSEL8 - P(CJ-4E5)
GATEREGA - P(CJ-4E5)
RSTCTRCTL-N(F1) (CJ-4F5)
137 → DISABLESBDET-P(CE-4B6)
105 → COUNTERTRAP4-P(CN-2B2)
GATERDXWT - P(CJ-4B6)

NP435 (DEVI)

CJ - 3

P/N	TITLE NP37CTLR LOGIC DIA	SHEET 3/	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-28435		APPD

Nippon Peripherals Limited

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(CH-5G5) PWRONRST-N 153
(CJ-1G4) TIE UP
PWRONRST-N (CJ-1B1) (CJ-2C1)

HD2904 10B
(CJ-1C4) DEVSEL0-P → R20 100Ω 1/4W → 215 DVSEL0NPL-P (CA-1F1)
(CJ-1C4) DEVSEL1-P → R21 100Ω 1/4W → 220 DVSEL1NPL-P (CA-1F1)
(CJ-1C4) DEVSEL2-P → R22 100Ω 1/4W → 223 DVSEL2NPL-P (CA-1F1)

HD2904 10A
(CJ-1C4) DEVSEL3-P → R23 100Ω 1/4W → 222 DVSEL3NPL-P (CA-1G1)
(CJ-1C4) DEV SEL4-P → R24 100Ω 1/4W → 219 DVSEL4NPL-P (CA-1G1)
(CJ-1C4) DEV SEL5-P → R25 100Ω 1/4W → 225 DVSEL5NPL-P (CA-1G1)

HD2904 8A
(CJ-1C4) DEV SEL6-P → R26 100Ω 1/4W → 209 DV SEL 6NPL-P (CA-1G1)
(CJ-1C4) DEV SEL7-P → R27 100Ω 1/4W → 212 DV SEL 7NPL-P (CA-1G1)
(CJ-1A4) 5MINUTETM-P → R28 100Ω 1/4W → 213 DV5MINTMNPL-P (CA-1H1)

HD2904 4A
(CJ-2B4) DEV TAGBIT0-P → R29 100Ω 1/4W → 135 DVTAGBIT0NPL-P (CA-1B1)
(CJ-2B4) DEV TAG BIT1-P → R30 100Ω 1/4W → 132 DVTAGBIT1NPL-P (CA-1B1)
(CJ-2B4) DEV TAG BIT2-P → R31 100Ω 1/4W → 145 DVTAGBIT2NPL-P (CA-1B1)

HD2904 5A
(CJ-2C4) DEV TAG BIT3-P → R32 100Ω 1/4W → 148 DVTAGBIT3NPL-P (CA-1C1)
(CJ-2C4) DEV TAG BIT4-P → R33 100Ω 1/4W → 161 DVTAGBIT4NPL-P (CA-1C1)
(CJ-2C4) DEV TAGBITP-P → R34 100Ω 1/4W → 165 DVTAGBITPNPL-P (CA-1C1)

HD2904 6A
(CJ-1A4) DEV TAG GATE-P → R44 100Ω 1/4W → 160 DV TAG GATE NPL-P (CA-1A1)
(CJ-1A4) DEVSEL HOLD-P → R45 100Ω 1/4W → 159 DV SEL HOLD NPL-P (CA-1A1)

HD2904 1A
(CJ-2E4) DEVBOUT0-P → R35 100Ω 1/4W → 119 DVBOUT0NPL-P (CCA-1D1)
(CJ-2E4) DEV BOUT1-P → R36 100Ω 1/4W → 120 DVBOUT1NPL-P (CCA-1D1)
(CJ-2E4) DEV BOUT2-P → R37 100Ω 1/4W → 118 DVBOUT2NPL-P (CCA-1D1)
(CJ-3G10) GATE RD*WT-P

HD2904 2A
(CJ-2E4) DEVBOUT3-P → R38 100Ω 1/4W → 112 DVBOUT3NPL-P (CCA-1D1)
(CJ-2E4) DEV BOUT4-P → R39 100Ω 1/4W → 122 DVBOUT4NPL-P (CCA-1E1)
(CJ-2E4) DEV BOUT5-P → R40 100Ω 1/4W → 130 DVBOUT5NPL-P (CCA-1E1)

HD2904 2B
(CJ-2F4) DEVBOUT6-P → R41 100Ω 1/4W → 125 DVBOUT6NPL-P (CCA-1E1)
(CJ-2F4) DEV BOUT7-P → R42 100Ω 1/4W → 128 DVBOUT7NPL-P (CCA-1F1)
(CJ-2G10) DEV BOUTP-P → R43 100Ω 1/4W → 127 DVBOUTPNPL-P (CCA-1F1)

(CJ-2D4) CALIBRATION-P
(CJ-1E4) SERVOPULSE-N → 74LS04 11E
(CE-4D10) CLKTOCTR-P 158
74LS04 8E → 74LS00 6E → 74LS10 5E → 74LS00 6E → 205 CALIBRATION-N (CH-3G6)

(CE-1D10) BITRING0-P 134 → 74LS04 8E → 74LS279 3E
(CJ-3D10) EXTSEL8-P
(CJ-3D10) GATE REGA-P
(CJ-1G10) ALU BUS2-P
→ 74LS10 5E

(CH-5F5) DTCLKCTRL-N 103 → 74LS08 1B → 104 CLOCKCOUNT-P (CH-3A6)
CLOCKCOUNT-P (CJ-3E7)

(G10) SETLOAD-P
(CE-1E10) BITRING2-P 142 → 74LS00 4E → 74LS279 3E → 74LS10 5E → 74LS00 6E → 74LS04 8E → 208 LOADPRESET-N (CH-3A6)
LOADPRESET-P (CJ-3D1)

(CJ-3D10) RSTCTRCTL-N
(CJ-2D4) RDXWT-P
(CJ-3B10) DEV BIN 5-P
→ 74LS00 4E → 74LS279 3D
74LS279 3D → 74LS02 4D (CE-1F10) BITRING4-P 108 → 74LS00 4E → BITRING4-P (CJ-3D1)

74LS04 6D → 154 SECTORTRAP2-P (CH-2D2)
SECTORTRAP2-P (CJ-2C5)
(CJ-3G5) ENDDATALCH-N
(CJ-3G5) DATAGOODLCH-N
→ 74LS10 2E → SETLOAD-P (F5)

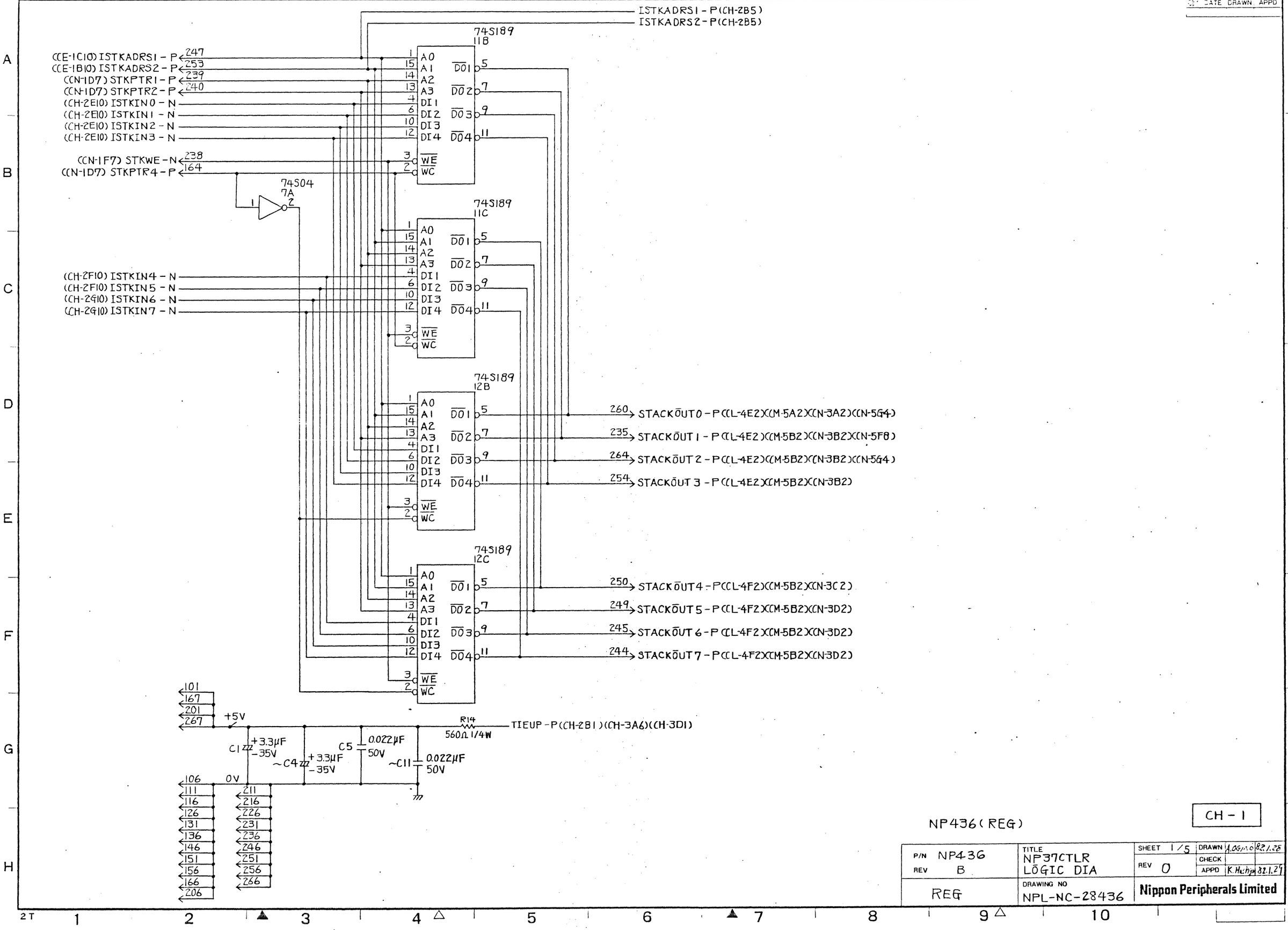
74LS279 3D
74LS279 3E → TEST1 RUN-P (CJ-2B4)
(CJ-1B4) GATEREG-N

NP 435 (DEVI)

CJ - 4

P/N / REV	TITLE: NP37CTLR LOGIC DIA	SHEET 4/4, REV 0	DRAWN, CHECK, APPD
	DRAWING NO: NPL-NC-28435	Nippon Peripherals Limited	

REV DATE DRAWN APPD


ISTKADRS1 - P(CH-2B5)
ISTKADRS2 - P(CH-2B5)
74S189 11B
74S189 11C
74S189 12B
74S189 12C
74S04 7A
(CE-1C10) ISTKADRS1 - P
(CE-1B10) ISTKADRS2 - P
(CN-1D7) STKPTR1 - P
(CN-1D7) STKPTR2 - P
(CH-2E10) ISTKIN0 - N
(CH-2E10) ISTKIN1 - N
(CH-2E10) ISTKIN2 - N
(CH-2E10) ISTKIN3 - N
(CN-1F7) STKWE - N
(CN-1D7) STKPTR4 - P
(CH-2F10) ISTKIN4 - N
(CH-2F10) ISTKIN5 - N
(CH-2G10) ISTKIN6 - N
(CH-2G10) ISTKIN7 - N
STACKOUT0 - P((L-4E2)(M-5A2)(N-3A2)(N-5G4))
STACKOUT1 - P((L-4E2)(M-5B2)(N-3B2)(N-5F8))
STACKOUT2 - P((L-4E2)(M-5B2)(N-3B2)(N-5G4))
STACKOUT3 - P((L-4E2)(M-5B2)(N-3B2))
STACKOUT4 - P((L-4F2)(M-5B2)(N-3C2))
STACKOUT5 - P((L-4F2)(M-5B2)(N-3D2))
STACKOUT6 - P((L-4F2)(M-5B2)(N-3D2))
STACKOUT7 - P((L-4F2)(M-5B2)(N-3D2))
+5V
0V
R14 560Ω 1/4W
TIEUP - P((CH-2B1)(CH-3A6)(CH-3D1))
C1 +3.3μF -35V
C4 +3.3μF -35V
C5 0.022μF 50V
C11 0.022μF 50V
NP436(REG)
CH - 1
P/N NP436
REV B
REG
TITLE NP37CTLR LOGIC DIA
DRAWING NO NPL-NC-28436
SHEET 1/5
REV 0
DRAWN A.Oshima 82.1.28
CHECK
APPD K.Hachiya 82.1.27
Nippon Peripherals Limited

REV No	DATE	DRAWN	APPD

74LS273 3A — REG

(CM-2C10)CSADRS7 - P ← 241 → 3 1D 1Q 2
(CM-2C10)CSADRS8 - P ← 252 → 4 2D 2Q 5
(CM-2C10)CSADRS9 - P ← 257 → 7 3D 3Q 6
(CM-2B10)CSADRS10 - P ← 258 → 8 4D 4Q 9
(CM-2A10)CSADRS11 - P ← 265 → 13 5D 5Q 12
(CM-2A10)CSADRS12 - P ← 263 → 14 6D 6Q 15
(CM-2A10)CSADRS13 - P ← 262 → 17 7D 7Q 16
(CL-3E10)CSADRSPL-P ← 261 → 18 8D 8Q 19
(CH-5C5)BITRING0-P → 11 CK
(CH-1G5)TIEUP - P → 1 CLR

74LS258A 12A — SEL

(CN-5D10)CC1ZERO - P ← 248 → 2 1A 1Y 4
(CN-5E10)CC2NEQL - P ← 237 → 3 1B
5 2A 2Y 7
6 2B
11 3A 3Y 9
10 3B
14 4A 4Y 12
13 4B
1 S
15 G

(CH-1A6)ISTKADRS1 - P
(CH-1A6)ISTKADRS2 - P

74LS86 9B

74LS86 9B

74LS04 9C

74LS04 7C

(CCPARITY-N)

74LS258A 13C — SEL

74LS258A 11A — SEL

ISTKIN0 - N(CH-1A1)
ISTKIN1 - N(CH-1A1)
ISTKIN2 - N(CH-1B1)
ISTKIN3 - N(CH-1B1)

74LS273 10A — REG

(CM-2F10)CSADRS1 - P ← 225
(CM-2E10)CSADRS2 - P ← 228
(CM-2E10)CSADRS3 - P ← 218
(CM-2E10)CSADRS4 - P ← 227
(CM-2D10)CSADRS5 - P ← 234
(CM-2C10)CSADRS6 - P ← 233
(CL-3C10)CSADRSPH - P ← 232

74LS258A 10C — SEL

ISTKIN4 - N(CH-1C1)
ISTKIN5 - N(CH-1C1)
ISTKIN6 - N(CH-1C1)
ISTKIN7 - N(CH-1C1)

74LS280 9A — PCG

(CN-3A5) MASK0 - P ← 221 → 8 A
(CN-3B5) MASK1 - P ← 219 → 9 B
(CN-3B5) MASK2 - P ← 243 → 10 C
(CN-3B5) MASK3 - P ← 242 → 11 D
(CN-3C5) MASK4 - P ← 222 → 12 E
(CN-3D5) MASK5 - P ← 220 → 13 F
(CN-3D5) MASK6 - P ← 214 → 1 G
(CN-3D5) MASK7 - P ← 215 → 2 H
4 I
EV → 5 → (MASKP-P)
ŌD

NP436 (REG)

CH-2

P/N REV	TITLE: NP37CTLR LOGIC DIA	SHEET 2/ REV O	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-28436	Nippon Peripherals Limited	

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DATE DRAWN APPD

(CH-1G5) TIEUP - P
(CJ-4E10) CLOCK COUNT - P 155
(CJ-4F10) LOAD PRESET-N 122

74LS193 2E
74LS193 3E

UP DWN LD A B C D CLR CA BW QA QB QC QD

COUNT1 - P(E1)
COUNT2 - P(E1)
COUNT4 - P(D1)
COUNT8 - P(D1)
COUNT16 - P(D1)
COUNT32 - P(D1)
COUNT64 - P(D1)
COUNT128 - P(D1)

(CH-5E10) ALU BUS 0 - P
(CH-5E10) ALU BUS 1 - P
(CH-5F10) ALU BUS 2 - P
(CH-5F10) ALU BUS 3 - P
(CH-5F10) ALU BUS 4 - P
(CH-5F10) ALU BUS 5 - P
(CH-5G10) ALU BUS 6 - P
(CH-5G10) ALU BUS 7 - P

74LS04 2C, 74LS04 2D

74LS273 1C
REG 1D 2D 3D 4D 5D 6D 7D 8D CK CLR 1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q

(CM-3F5) GATE REG - N 145
(CL-1D7) EXT SEL A - N 139
(CH-1G5) TIEUP - P

74LS02 4C

(CM-3G5) GATE FNL - N 135
(CL-1D7) EXT SEL 8 - N 229

74 S32 11D

GATE FNL - N (CH-5A6)
J201-4 >> GATE FNL - N (To FIELD TESTER)
GATE FNL SEL 8 - N (CH-5E5)

74LS244 3C

ALU BUS 0 - P (CH-5E10)
ALU BUS 1 - P (CH-5E10)
ALU BUS 2 - P (CH-5F10)
ALU BUS 3 - P (CH-5F10)
ALU BUS 4 - P (CH-5F10)
ALU BUS 5 - P (CH-5F10)
ALU BUS 6 - P (CH-5G10)
ALU BUS 7 - P (CH-5G10)

(C10) COUNT128 - P
(C10) COUNT 64 - P
(C10) COUNT 32 - P
(C10) COUNT 16 - P
(B10) COUNT 8 - P
(B10) COUNT 4 - P
(A10) COUNT 2 - P
(A10) COUNT 1 - P

74LS148 4D
D0 D1 D2 D3 D4 D5 D6 D7 EI Y0 Y1 Y2 EO GS

74LS04 2D

148 >> COUNTFF - P (CJ-3E1)

74LS280 3D
PCG A B C D E F G H I EV OD

COUNTP - P (CH-5E2)

74LS00 6D
74LS112 8C
74LS04 7A
74LS00 6D

74LS86 8D

74LS74 1D
74LS04 7A

(CJ-4D10) CALIBRATION - N 255
(CH-5C5) BIT RING 3 - P
(CH-4C10) ERR RST 2 - N

74LS10 11E
74LS279 8A

207 >> COUNTER CHK - P (CJ-2C8)

(CH-5E5) ALUBUS P - P

J201-2 >> GATE REG - N (To FIELD TESTER)

NP436 (REG)

CH-3

P/N	TITLE: NP37CTLR LOGIC DIA	SHEET 3/	DRAWN
REV		REV O	CHECK
	DRAWING NO: NPL-NC-28436		APPD

Nippon Peripherals Limited

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REV NO | DATE | DRAWN | APPD

(CH-5C5) BITRING1-P
(CH-5C5) BITRING3-P
(CH-5C5) BITRING6-P
74LS02 +C
74LS00 6D
74LS04 2D
74LS10 11E
74LS04 9C
74S32 11D
74LS280 8B PCG
74LS112 8C
168 → LSADR PAR CHK-N (CL-3G5)
(CM-3A4) LSADRS0-P 209
(CM-3B4) LSADRS1-P 140
(CM-3C4) LSADRS2-P 165
(CM-3D4) LSADRS3-P 127
(CM-3A8) LSADRS4-P 162
(CM-3B8) LSADRS5-P 159
(CM-3C8) LSADRS6-P 210
(CM-3D8) LSADRSP-P 204
74LS74 7D
(CL-4D7) ERR RST2-N 202
163 → LS DATA CHK-N (CL-4D8)
ERR RST2-N (CH-3H5)
MB7063 5C A0 RAM
MB7063 7C A0 RAM
(CH-5E10) ALUBUS 0-P
(CH-5E10) ALUBUS 1-P
(CH-5F10) ALUBUS 2-P
(CH-5F10) ALUBUS 3-P
(CH-5F10) ALUBUS 4-P
(CH-5F10) ALUBUS 5-P
(CH-5G10) ALUBUS 6-P
(CH-5G10) ALUBUS 7-P
+5V
R5 470Ω 1/4W
R6 470Ω 1/4W
R7 470Ω 1/4W
R8 470Ω 1/4W
R9 470Ω 1/4W
R10 470Ω 1/4W
R11 470Ω 1/4W
R12 470Ω 1/4W
R13 470Ω 1/4W
R24 750Ω 1/4W
R16 750Ω 1/4W
R17 750Ω 1/4W
R18 750Ω 1/4W
R19 750Ω 1/4W
R20 750Ω 1/4W
R21 750Ω 1/4W
R22 750Ω 1/4W
R23 750Ω 1/4W
74S04 5A 8
74S04 5A 6
74S04 5A 10
74S04 5A 4
74S04 5A 12
74S04 5A 2
74S04 7A 4
74S04 7A 6
74S04 7A 10
74LS280 4A PCG
(H6) GALUBUSP-P
(CL-3A9) FRCLS DATACHK-P 212
(CM-3F5) LSWE-N 158
74LS86 9B
74LS280 8C PCG
(CH-5E5) ALUBUSP-P
74LS86 9B
205 → R345 PERR-P (CF-5B2)
GALUBUSP-P(D1) (CH-5D2)
143 → LSDATA0-P (CN-4F5)
149 → LSDATA1-P (CN-4F5)
160 → LSDATA2-P (CN-4F5)
141 → LSDATA3-P (CN-4F5)
157 → LSDATA4-P (CN-4F5)
150 → LSDATA5-P (CN-4F5)
138 → LSDATA6-P (CN-4F5)
144 → LSDATA7-P (CN-4H5)
161 → LSDATAP-P (CN-4H5)

CH-4

NP436 (REG)

P/N	TITLE NP37CTLR LOGIC DIA	SHEET 4/	DRAWN
REV		REV O	CHECK
	DRAWING NO NPL-NC-28436		APPD

Nippon Peripherals Limited

09 96

7406 9D RZ9 3KΩ 1/4W +5V
7406 9D RZ5 3KΩ 1/4W
7406 9D RZ6 3KΩ 1/4W
7406 9D RZ7 3KΩ 1/4W RZ8 3KΩ 1/4W RZ7 3KΩ 1/4W

J202-12 BIT RING 0 -N
J202-14 BIT RING 4 -N
J202-16 BIT RING 5 -N
(NOT USED)
+5V
J202-18 BIT RING 6 -N (NOT USED)
BIT RING 7 -N (NOT USED) J202-20
(SYNC OUT 2 LTCD-P)
(SYNC OUT 1 LTCD-P)
(SYNC OUT 0 LTCD-P)

74LS273 3A
REG
1D 2D 3D 4D 5D 6D 7D 8D CK CLR
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q

(CE-1D10) BIT RING 0-P 124
(CE-1E10) BIT RING 1-P 123
(CE-1E10) BIT RING 2-P 125
(CE-1F10) BIT RING 3-P 121
(CE-1F10) BIT RING 4-P 132
(CE-1F10) BIT RING 5-P 128
(CE-1E10) BIT RING 6-P 129
(CE-1D10) BIT RING 7-P 130
(CF-4E10) CLK WR BUFFER-P 133

(SYNC OUT 3 LTCD-P)
(SYNC OUT 4 LTCD-P)
(SYNC OUT 5 LTCD-P)
(SYNC OUT 6 LTCD-P)
(SYNC OUT 7 LTCD-P)
BIT RING 0-P (CH-2B1)
BIT RING 1-P (CH-4A1)
BIT RING 3-P (CH-3G5)(CH-4A1)
BIT RING 6-P (CH-4A1)

74LS04 2D
74LS08 5D
(CF-4C10) RST SδLATCH-P 115
(G 5) PWRδNRST-N

74LS125A 10D
(CF-1F7) GSERDESP-P 230
(CH-4H6) GALUBUSP-P
(CH-3F5) CδUNTP-P 12

GATE FNL SEL 8-N (CH-3D10)
268 ALU BUS P-P (CG-2G5)
ALU BUS P-P (G 6) (CH-3G2) (CH-4G2)
J202-10 ALU BUS P-P (NOT USED)

74S32 4B
(CL-1C7) EXTSEL3-N 142
(CH-3D10) GATE FNL-N
EXTSEL4-N 137 (CL-1C7)

74LS244 2A
74LS240 1A

J201-3 ALU BUS0-P
J201-5 ALU BUS1-P
J201-7 ALU BUS2-P
J201-9 ALU BUS3-P
J201-13 ALU BUS4-P
J201-15 ALU BUS5-P
J201-17 ALU BUS6-P
J201-19 ALU BUS7-P
(TO/FROM FIELD TESTER)

J202-2 ALU BUS0-P
J202-3 ALU BUS1-P
J202-4 ALU BUS2-P
J202-5 ALU BUS3-P
J202-6 ALU BUS4-P
J202-7 ALU BUS5-P
J202-8 ALU BUS6-P
J202-9 ALU BUS7-P
(NOT USED)

110 ALU BUS0-P (CG-2B8)
120 ALU BUS1-P (CG-2B8)
119 ALU BUS2-P (CG-2C8)
108 ALU BUS3-P (CG-2C8)
105 ALU BUS4-P (CG-2C8)
114 ALU BUS5-P (CG-2E8)
118 ALU BUS6-P (CG-2E8)
113 ALU BUS7-P (CG-2E8)

(CE-5C8) SERDESERPAR-N 103
(CF-1F10) DREG PARCHK-P 224
(CF-5A7) WRDATA CHK-N 102
(CB-1F6) VFδ ERRδR-N 104
(CF-5C7) REG345PERR-N 112
(CF-2F10) SYNCERRTRAP3-P 217
(CF-2E10) ANYSδLTCHD-N 109
(CF-5C7) BFRREGPERR-N 107

74LS04 9C

ALU BUS0-P (CH-3A1)(CH-3E10)(CH-4C1)
ALU BUS1-P (CH-3A1)(CH-3E10)(CH-4C1)
ALU BUS2-P (CH-3A1)(CH-3E10)(CH-4C1)
ALU BUS3-P (CH-3B1)(CH-3E10)(CH-4C1)
ALU BUS4-P (CH-3B1)(CH-3F10)(CH-4C1)
ALU BUS5-P (CH-3B1)(CH-3F10)(CH-4D1)
ALU BUS6-P (CH-3C1)(CH-3F10)(CH-4D1)
ALU BUS7-P (CH-3C1)(CH-3G10)(CH-4D1)

J202-1
J202-11
J202-13
J202-15
J202-17
J202-19
J202-21
152 INTF SEL A-P (CJ-1G5)(CQ-5D7)

(FROM FIELD TESTER) J201-12, J201-16, J201-20
117 MDALERT-N (CJ-2B4)

(NOT USED) J202-22, J202-23, J202-24, J202-25

+5V R1 240Ω 1/4W
R2 240Ω 1/4W
R3 360Ω 1/4W
R4 360Ω 1/4W
208 DTCLK CTRL-N (CE-4A6)(CJ-4E8)
213 DTδPERATIδN-N (CN-5A6)

+5V HA17555 13D
R30 100KΩ 1/4W
C12 0.022MF 50V
7438 12D
+5V R15 560Ω 1/4W
259 PWRδNRST-N (CD-1B2)(CE-3D2)(CF-4B6)(CG-7C3)(CJ-4A1)(CQ-1G2)(CR-2D2)(CT-1G2)(CU-2D2)
J202-26 PWRONRST-N (NOT USED)
PWRδNRST-N (C1)
+33MF -10V C13

ALU BUS P-P (C5)
(CL-1E7) EXTSELD-N 154
(CL-1C7) EXTSEL2-N 153
+5V
(CL-1D7) EXTSELC-N 147
J201-1
J201-6
J201-8
J201-10
J201-11
J201-14
J201-18
(TO FIELD TESTER)

NP436 (REG)

CH-5

P/N	TITLE: NP37CTLR LOGIC DIA	SHEET 5/5	DRAWN
REV		REV 0	CHECK
	DRAWING NO: NPL-NC-28436		APPD
		Nippon Peripherals Limited	

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NO.	DATE	DRAWN	APPD

(CF-1G7) SER DES 0 - P ← 142 — SER DES 0 - P (CG-2B2) (CG-3D2)
(CF-1G7) SER DES 1 - P ← 138 — SER DES 1 - P (CG-2B2) (CG-3D2)
(CF-1G7) SER DES 2 - P ← 152 — SER DES 2 - P (CG-2C2) (CG-3D2)
(CF-1G7) SER DES 3 - P ← 135 — SER DES 3 - P (CG-2D2) (CG-3D2)
(CF-1G7) SER DES 4 - P ← 144 — SER DES 4 - P (CG-2E2) (CG-3B2)
(CF-1G7) SER DES 5 - P ← 134 — SER DES 5 - P (CG-2E2) (CG-3B2)
(CF-1G7) SER DES 6 - P ← 147 — SER DES 6 - P (CG-2F2) (CG-3A2)
(CF-1G7) SER DES 7 - P ← 148 — SER DES 7 - P (CG-2F2) (CG-3A2)

74S86 4B, 74S86 4B, 74S86 4B, 74S86 4B
74S86 4C, 74S86 4C, 74S86 4C, 74S86 4C

74S175 5B — REG: 1D 2D 3D 4D CK CLK; 1Q 1Q̄ 2Q 2Q̄ 3Q 3Q̄ 4Q 4Q̄
74S175 5C — REQ: 1D 2D 3D 4D CK CLK; 1Q 1Q̄ 2Q 2Q̄ 3Q 3Q̄ 4Q 4Q̄

74S74 7C: S CK R D Q Q̄

(H4) TIEUP
(CF-4C5) SRCLOCK 1 - P ← 149
(CF-3E10) PRESET SR - N ← 150 — PRESET SR - N (CG-2C6)
74S86 10A
74S04 11B
(CF-1E10) SER DES P - P ← 232
SERDESP - N (CG-2G2) (CG-3G5)

ECC RAM ADRS 1 - P (CG-4A3) (CG-5G6)
ECC RAM ADRS 2 - P (CG-4A3) (CG-5F6)

MB7063 6B — RAM
(CF-3A10) ECC RAM ADRS 1 - P ← 120
(CF-3B10) ECC RAM ADRS 2 - P ← 124
(CG-7B6) ECC RAM ADRS 4 - P
(CG-7B6) ECC RAM ADRS 8 - P
(CG-7B6) ECC RAM ADRS 16 - P
(CG-7B6) ECC RAM ADRS 32 - P
A0 A1 A2 A3 A4 A5 DI0 DI1 DI2 DI3 DI4 DI5 DI6 DI7 DI8 WE CE
DO0 DO1 DO2 DO3 DO4 DO5 DO6 DO7 DO8

164 RAM I BIT 0 - NTP
159 RAM I BIT 1 - NTP
163 RAM I BIT 2 - NTP
137 RAM I BIT 3 - NTP
157 RAM I BIT 4 - NTP
145 RAM I BIT 5 - NTP
158 RAM I BIT 6 - NTP
162 RAM I BIT 7 - NTP
229 RAM I BIT P - NTP

(CF-4B5) RAM WE - N ← 155
RAM I ENABLE - N ← 205 (CF-4F5)
RAM I ENABLE - N (CG-5G6)
RAM WE - N (CG-4C3)

RAM I BIT 0 - N (CG-5A2) (CG-6A2)
RAM I BIT 1 - N (CG-5A2) (CG-6A2)
RAM I BIT 2 - N (CG-5B2) (CG-6A2)
RAM I BIT 3 - N (CG-5B2) (CG-6A2)
RAM I BIT 4 - N (CG-5B2) (CG-6B2)
RAM I BIT 5 - N (CG-5B2) (CG-6B2)
RAM I BIT 6 - N (CG-5C2) (CG-6B2)
RAM I BIT 7 - N (CG-5C2) (CG-6B2)
RAM I BIT P - N (CG-6B2) (CG-7C7)

+5V
R17 820Ω 1/4W, R13 820Ω 1/4W, R9 820Ω 1/4W, R5 820Ω 1/4W, R1 820Ω 1/4W
R15 820Ω 1/4W, R11 820Ω 1/4W, R7 820Ω 1/4W, R3 820Ω 1/4W
R16 1.8KΩ 1/4W, R12 1.8KΩ 1/4W, R8 1.8KΩ 1/4W, R4 1.8KΩ 1/4W
R18 1.8KΩ 1/4W, R14 1.8KΩ 1/4W, R10 1.8KΩ 1/4W, R6 1.8KΩ 1/4W, R2 1.8KΩ 1/4W

267 201 167 101 → +5V
C1 +3.3μF −35V, C4 +3.3μF −35V, C5 0.022μF 50V, C11 0.022μF 50V
0V
106 111 116 126 131 136 146 151 156 166 206
211 216 226 231 236 246 251 256 266

+5V
R57 560Ω 1/4W
TIEUP - P (CG-3F7) (E1)

NP437(ECC)

CG-1

P/N NP437 REV B	TITLE NP37CTLR LOGIC DIA	SHEET 1/7 REV 0	DRAWN A.Ogawa 82.1.28 CHECK APPD K.Yashima 82.1.29
ECC	DRAWING NO NPL-NC-28437	Nippon Peripherals Limited	

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REVI NO	DATE	DRAWN	APPD

(CG-4B9) B RAM 2 BIT0 - P
(CG-4C8) RAM 2 BIT 0 - N
(CG-1B3) SERDES 0 - P
(CG-4C8) RAM 2 BIT 1 - N
(CG-1B3) SERDES 1 - P
(CG-4C8) RAM 2 BIT 2 - N
(CG-1B3) SERDES 2 - P
(CG-4C8) RAM 2 BIT 3 - N
(CG-1C3) SER DES 3 - P
(CG-4C8) RAM 2 BIT 4 - N
(CG-1C3) SER DES 4 - P
(CG-4C8) RAM 2 BIT 5 - N
(CG-1D3) SER DES 5 - P
(CG-4D8) RAM 2 BIT 6 - N
(CG-1D3) SER DES 6 - P
(CG-4D8) RAM 2 BIT 7 - N
(CG-1E3) SERDES 7 - P
(CG-4D8) RAM 2 BIT P - N
(CG-1F4) SERDES P - N

74S86 1A, 74S86 1A, 74S86 1A, 74S86 1A, 74S86 2A, 74S86 2A, 74S86 2A, 74S86 2A, 74S86 3A, 74S86 3A, 74S86 3A, 74S86 3A, 74S86 6A, 74S86 6A

74S157 1B SEL: 1A 1B 2A 2B 3A 3B 4A 4B S G → 1Y 2Y 3Y 4Y

74S157 1C SEL: 1A 1B 2A 2B 3A 3B 4A 4B S G → 1Y 2Y 3Y 4Y

74S175 2B REG: 1D 2D 3D 4D CK CLR → 1Q 1Q̄ 2Q 2Q̄ 3Q 3Q̄ 4Q 4Q̄

74S175 2C REG: 1D 2D 3D 4D CK CLK → 1Q 1Q̄ 2Q 2Q̄ 3Q 3Q̄ 4Q 4Q̄

(CF-4C5) SRCLOCK 2B - P ← 165
(CG-1E3) PRESETSR - N

SR 2 BIT 0 - P (CG-4B3)
SR 2 BIT 1 - P (CG-4B3)
SR 2 BIT 2 - P (CG-4B3)
SR 2 BIT 3 - P (CG-4B3)
SR 2 BIT 4 - P (CG-4B3)
SR 2 BIT 5 - P (CG-4B3)
SR 2 BIT 6 - P (CG-4C3)
SR 2 BIT 7 - P (CG-4C3)

Ⓐ CG-3A6
Ⓑ CG-3C7
Ⓒ CG-3C7
Ⓓ CG-3F5
Ⓔ CG-3F5

NP437 (ECC)

CG - 2

P/N REV	TITLE: NP37CTLR LOGIC DIA	SHEET 21	DRAWN
		REV O	CHECK
	DRAWING NO: NPL-NC-28437		APPD

Nippon Peripherals Limited

REV NO | DATE | DRAWN | APPD

(CG-1E3) SERDES 7 - P
(CG-1D3) SERDES 6 - P
(CG-1D3) SERDES 5 - P
(CG-1C3) SERDES 4 - P
(CG-1C3) SERDES 3 - P
(CG-1B3) SERDES 2 - P
(CG-1B3) SERDES 1 - P
(CG-1B3) SERDES 0 - P
ALW RUN ADRADV - N 133
(CF-3C10)

74S157 5A, 4A: SEL 1A 1B 2A 2B 3A 3B 4A 4B S G → 1Y 2Y 3Y 4Y

B RAM 3 BIT 0 - P (CG-4E9)
RAM 3 BIT 0 - N (CG-4F8)
RAM 3 BIT 1 - N (CG-4F8)
RAM 3 BIT 2 - N (CG-4F8)
RAM 3 BIT 3 - N (CG-4F8)
RAM 3 BIT 4 - N (CG-4F8)
RAM 3 BIT 5 - N (CG-4G8)
RAM 3 BIT 6 - N (CG-4G8)
RAM 3 BIT 7 - N (CG-4G8)
(CG-4G8) RAM 3 BIT P - N
(CG-1F4) SERDESP - N

74S86 8A, 9A, 10A, 6A

CG-2D4 (A)
CG-2D7 (B)
CG-2D7 (C)
CG-2G4 (D)
CG-2G4 (E)
(CE-1C9) BRCLOCKC - P 202

74S157 8B, 8C, 7A: SEL 1A 1B 2A 2B 3A 3B 4A 4B S G → 1Y 2Y 3Y 4Y

74S175 9B, 9C: REG 1D 2D 3D 4D CK CLR → 1Q 1Q̄ 2Q 2Q̄ 3Q 3Q̄ 4Q 4Q̄

SR 3 BIT 0 - P (CG-4E3)
SR 3 BIT 1 - P (CG-4E3)
SR 3 BIT 2 - P (CG-4E3)
SR 3 BIT 3 - P (CG-4E3)
SR 3 BIT 4 - P (CG-4E3)
SR 3 BIT 5 - P (CG-4E3)
SR 3 BIT 6 - P (CG-4F3)
SR 3 BIT 7 - P (CG-4F3)

74S74 7B: S CK R D → Q Q̄

TIEUP - P (CG-1H4)
SR 2 BIT P - P (CG-4C3)
SR 3 BIT P - P (CG-4F3)

NP437 (ECC)

CG-3

P/N / REV	TITLE: NP37CTLR LOGIC DIA	SHEET 37	DRAWN
		REV O	CHECK
	DRAWING NO: NPL-NC-28437		APPD

Nippon Peripherals Limited

MB7063
3B

(CG-1B8) ECC RAM ADRS 1 - P
(CG-1B8) ECC RAM ADRS 2 - P
(CG-7B6) ECC RAM ADRS 4 - P
(CG-7B6) ECC RAM ADRS 8 - P
(CG-7B6) ECC RAM ADRS 16 - P
(CG-7B6) ECC RAM ADRS 32 - P
(CG-2B9) SR 2 BIT 0 - P
(CG-2B9) SR 2 BIT 1 - P
(CG-2B9) SR 2 BIT 2 - P
(CG-2B9) SR 2 BIT 3 - P
(CG-2E9) SR 2 BIT 4 - P
(CG-2E9) SR 2 BIT 5 - P
(CG-2E9) SR 2 BIT 6 - P
(CG-2E9) SR 2 BIT 7 - P
(CG-3F10) SR 2 BIT P - P
(CG-1E8) RAMWE-N
(CF-4E5) RAM2ENABLE-N ← 125

25 A0 RAM
26 A1
27 A2
1 A3
2 A4
3 A5
4 DI0 DO0 24
5 DI1 DO1 23
6 DI2 DO2 22
7 DI3 DO3 21
8 DI4 DO4 20
9 DI5 DO5 19
10 DI6 DO6 18
11 DI7 DO7 17
12 DI8 DO8 16
13 WE
15 CE

RAM2ENABLE-N
(CG-6B7)

+5V

R19 820Ω 1/4W, R23 820Ω 1/4W, R27 820Ω 1/4W, R31 820Ω 1/4W, R35 820Ω 1/4W
R21 820Ω 1/4W, R25 820Ω 1/4W, R29 820Ω 1/4W, R33 820Ω 1/4W

74S04
2D
1 → 2 B RAM 2 BIT 0 - P (CG-2A2)

109 RAM 2 BIT 0 - NTP
105 RAM 2 BIT 1 - NTP
105 RAM 2 BIT 2 - NTP
117 RAM 2 BIT 3 - NTP
127 RAM 2 BIT 4 - NTP
108 RAM 2 BIT 5 - NTP
123 RAM 2 BIT 6 - NTP
130 RAM 2 BIT 7 - NTP
128 RAM 2 BIT P - NTP

R22 1.8KΩ 1/4W, R26 1.8KΩ 1/4W, R30 1.8KΩ 1/4W, R34 1.8KΩ 1/4W
R20 1.8KΩ 1/4W, R24 1.8KΩ 1/4W, R28 1.8KΩ 1/4W, R32 1.8KΩ 1/4W, R36 1.8KΩ 1/4W

RAM 2 BIT 0 - N (CG-2B2)(CG-5D2)(CG-6C2)
RAM 2 BIT 1 - N (CG-2B2)(CG-5D2)(CG-6C2)
RAM 2 BIT 2 - N (CG-2B2)(CG-5D2)(CG-6C2)
RAM 2 BIT 3 - N (CG-2C2)(CG-5D2)(CG-6C2)
RAM 2 BIT 4 - N (CG-2D2)(CG-5E2)(CG-6C2)
RAM 2 BIT 5 - N (CG-2E2)(CG-5E2)(CG-6C2)
RAM 2 BIT 6 - N (CG-2E2)(CG-5E2)(CG-6C2)
RAM 2 BIT 7 - N (CG-2F2)(CG-5E2)(CG-6C2)
RAM 2 BIT P - N (CG-2G2)(CG-6C2)(CG-7C7)

MB7063
10B

(CG-3B10) SR 3 BIT 0 - P
(CG-3B10) SR 3 BIT 1 - P
(CG-3B10) SR 3 BIT 2 - P
(CG-3B10) SR 3 BIT 3 - P
(CG-3D10) SR 3 BIT 4 - P
(CG-3D10) SR 3 BIT 5 - P
(CG-3D10) SR 3 BIT 6 - P
(CG-3D10) SR 3 BIT 7 - P
(CG-3G10) SR 3 BIT P - P
(CF-4E5) RAM3ENABLE-N ← 263

25 A0 RAM
26 A1
27 A2
1 A3
2 A4
3 A5
4 DI0 DO0 24
5 DI1 DO1 23
6 DI2 DO2 22
7 DI3 DO3 21
8 DI4 DO4 20
9 DI5 DO5 19
10 DI6 DO6 18
11 DI7 DO7 17
12 DI8 DO8 16
13 WE
15 CE

RAM3ENABLE-N
(CG-5F6)

+5V

R37 820Ω 1/4W, R41 820Ω 1/4W, R45 820Ω 1/4W, R49 820Ω 1/4W, R53 820Ω 1/4W
R39 820Ω 1/4W, R43 820Ω 1/4W, R47 820Ω 1/4W, R51 820Ω 1/4W

74S04
13C
13 → 12 B RAM 3 BIT 0 - P (CG-3A5)

228 RAM 3 BIT 0 - NTP
225 RAM 3 BIT 1 - NTP
203 RAM 3 BIT 2 - NTP
208 RAM 3 BIT 3 - NTP
224 RAM 3 BIT 4 - NTP
209 RAM 3 BIT 5 - NTP
223 RAM 3 BIT 6 - NTP
219 RAM 3 BIT 7 - NTP
233 RAM 3 BIT P - NTP

R40 1.8KΩ 1/4W, R44 1.8KΩ 1/4W, R48 1.8KΩ 1/4W, R52 1.8KΩ 1/4W
R38 1.8KΩ 1/4W, R42 1.8KΩ 1/4W, R46 1.8KΩ 1/4W, R50 1.8KΩ 1/4W, R54 1.8KΩ 1/4W

RAM 3 BIT 0 - N (CG-3A5)(CG-5F2)(CG-6D2)
RAM 3 BIT 1 - N (CG-3B5)(CG-5F2)(CG-6D2)
RAM 3 BIT 2 - N (CG-3B5)(CG-5G2)(CG-6D2)
RAM 3 BIT 3 - N (CG-3C5)(CG-5G2)(CG-6D2)
RAM 3 BIT 4 - N (CG-3C5)(CG-5G2)(CG-6E2)
RAM 3 BIT 5 - N (CG-3D5)(CG-5G2)(CG-6E2)
RAM 3 BIT 6 - N (CG-3E5)(CG-5G2)(CG-6E2)
RAM 3 BIT 7 - N (CG-3F5)(CG-5H2)(CG-6E2)
RAM 3 BIT P - N (CG-3G5)(CG-6E2)(CG-7D7)

NP437 (ECC)

CG - 4

P/N REV	TITLE: NP37CTLR LOGIC DIA	SHEET 41	DRAWN
		REV 0	CHECK
			APPD
	DRAWING NO: NPL-NC-28437	Nippon Peripherals Limited	

(CF-4F5) GATE OUT RAM 1 - N ← 102
(CG-1D10) RAM 1 BIT 0 - N
(CG-1D10) RAM 1 BIT 1 - N
(CG-1D10) RAM 1 BIT 2 - N
(CG-1E10) RAM 1 BIT 3 - N
(CG-1E10) RAM 1 BIT 4 - N
(CG-1E10) RAM 1 BIT 5 - N
(CG-1E10) RAM 1 BIT 6 - N
(CG-1E10) RAM 1 BIT 7 - N

74S240 5E

GATE OUT RAM 1 - N (CG-7C7)

(CF-4G5) GATE OUT RAM 2 - N ← 104
(CG-4C8) RAM 2 BIT 0 - N
(CG-4C8) RAM 2 BIT 1 - N
(CG-4C8) RAM 2 BIT 2 - N
(CG-4C8) RAM 2 BIT 3 - N
(CG-4C8) RAM 2 BIT 4 - N
(CG-4C8) RAM 2 BIT 5 - N
(CG-4D8) RAM 2 BIT 6 - N
(CG-4D8) RAM 2 BIT 7 - N

74S240 4E

GATE OUT RAM 2 - N (CG-7C7)

(CF-4G5) GATE OUT RAM 3 - N ← 122
(CG-4F8) RAM 3 BIT 0 - N
(CG-4F8) RAM 3 BIT 1 - N
(CG-4F8) RAM 3 BIT 2 - N
(CG-4F8) RAM 3 BIT 3 - N
(CG-4F8) RAM 3 BIT 4 - N
(CG-4G8) RAM 3 BIT 5 - N
(CG-4G8) RAM 3 BIT 6 - N
(CG-4G8) RAM 3 BIT 7 - N

74S240 8E

GATE OUT RAM 3 - N (CG-7D7)

143 → ECC DATA 0 - P (CF-1A5)
129 → ECC DATA 1 - P (CF-1B5)
54 → ECC DATA 2 - P (CF-1F2)
52 → ECC DATA 3 - P (CF-1F2)
213 → ECC DATA 4 - P (CF-1D2)
210 → ECC DATA 5 - P (CF-1E2)
168 → ECC DATA 6 - P (CF-1B2)
160 → ECC DATA 7 - P (CF-1C2)

74S280 8D
PCG
EV
ōD

+5V
R55 1KΩ 1/4W

74LS03 10E
74LS279 12E
217 → ECC HDW CHK - P (CF-5C2)(CJ-2B8)

(CG-7C10) ECC DATA P - P

74S08 11C
(CE-1E10) BIT RING 1 - P ← 220
(CF-3D6) ECC WR XFER - P ← 242

74S32 12C
(CG-6C9) ECC RUN - P
(CF-3E10) ECC PRESET - P ← 215

74LS03 11E
74S08 11C
(CG-6E9) ECC RD XFER - P

74LS03 11E
(CG-6E9) GEN RESET - N

74S04 13C
74LS03 11E
RAM3 ENABLE - P (CK-6C7)

74S04 13C
74S00 12D
(CG-4F5) RAM3 ENABLE - N
(CG-1B8) ECC RAM ADRS 2 - P

74LS279 12E
74S04 13C
CG-6E6 (F)

74S04 13C
74S20 13D
(CG-1D8) RAM1 ENABLE - N
(CG-1B8) ECC RAM ADRS 1 - P
(CF-4B10) ALW ECC ADR ADV - P ← 212

R56 +5V
560Ω 1/4W

RAM1 ENABLE - P (CG-6B7)

NP 437 (ECC)

CG - 5

P/N REV	TITLE: NP 37 CTLR LOGIC DIA	SHEET 5/ REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-KC-28437	Nippon Peripherals Limited	

REV	DATE	DRAWN	APPD

74S280 7D

(CG-1D10) RAM 1 BIT 0 - N
(CG-1D10) RAM 1 BIT 1 - N
(CG-1D10) RAM 1 BIT 2 - N
(CG-1E10) RAM 1 BIT 3 - N
(CG-1E10) RAM 1 BIT 4 - N
(CG-1E10) RAM 1 BIT 5 - N
(CG-1E10) RAM 1 BIT 6 - N
(CG-1E10) RAM 1 BIT 7 - N
(CG-1F10) RAM 1 BIT P - N

PCG
EV
ODD
74LS03 10E
74S280 3E

(CG-4C8) RAM 2 BIT 0 - N
(CG-4C8) RAM 2 BIT 1 - N
(CG-4C8) RAM 2 BIT 2 - N
(CG-4C8) RAM 2 BIT 3 - N
(CG-4C8) RAM 2 BIT 4 - N
(CG-4C8) RAM 2 BIT 5 - N
(CG-4D8) RAM 2 BIT 6 - N
(CG-4D8) RAM 2 BIT 7 - N
(CG-4D8) RAM 2 BIT P - N

74S280 9E

(CG-4F8) RAM 3 BIT 0 - N
(CG-4F8) RAM 3 BIT 1 - N
(CG-4F8) RAM 3 BIT 2 - N
(CG-4F8) RAM 3 BIT 3 - N
(CG-4F8) RAM 3 BIT 4 - N
(CG-4G8) RAM 3 BIT 5 - N
(CG-4G8) RAM 3 BIT 6 - N
(CG-4G8) RAM 3 BIT 7 - N
(CG-4G8) RAM 3 BIT P - N

74LS03 10E → (F) CG-5F10

74LS30 5D → 74S04 2D
74LS30 4D → 74S04 2D
74LS30 9D → 74S04 2D

74S10 1D
74S10 1D

(CE-1F10) BIT RING 5 - P 218
(CF-3D6) ECC RD XFER - P 234
(CG-5G8) RAM 1 ENABLE - P
(CG-4C5) RAM 2 ENABLE - N
(CG-5E8) RAM 3 ENABLE - P
(CF-3F10) ECC RUN - P 214
(CF-1A10) BR 7C - P 268

74S08 11C
74S00 11D
74S00 11D
74S04 11B
74S00 11D
74S00 12D
74S00 12D

ECC RUN - P (CG-5D6)

ECC RD XFER - P (CG-5D6)

(CQ-1E10) GEN RESET - N 230
GEN RESET - N (CG-5E6)

(CF-3B10) RSTRAMADRS - N 227

74LS279 12E
74S04 13C
ECC DATA CHK - P 262 (CJ-2C8)

115 → RAM1 ALL 0 - PTP
118 → RAM2 ALL 0 - PTP
113 → RAM3 ALL 0 - PTP

NP437 (ECC)

CG - 6

P/N REV	TITLE: NP37CTLR LOGIC DIA	SHEET 61	DRAWN
		REV 0	CHECK
	DRAWING NO: NPL-NC-28437		APPD

Nippon Peripherals Limited

REV NO	DATE	DRAWN	APPD

74LS273
11A
REG

(CQ-2B8) ALU BUS 0 - P 239
(CQ-2B8) ALU BUS 1 - P 238
(CQ-2C8) ALU BUS 2 - P 237
(CQ-2C8) ALU BUS 3 - P 235
(CQ-2C8) ALU BUS 4 - P 259
(CQ-2E8) ALU BUS 5 - P 260
(CQ-2E8) ALU BUS 6 - P 257
(CQ-2E8) ALU BUS 7 - P 258
(CH-5G5) PWRONRST - N 240

1D 2D 3D 4D 5D 6D 7D 8D CK CLK
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q

ECC RAM ADRS 4 - P (CG-1C7) (CG-4B3)
ECC RAM ADRS 8 - P (CG-1C7) (CG-4B3)
ECC RAM ADRS16 - P (CG-1C7) (CG-4B3)
ECC RAM ADRS32 - P (CG-1C7) (CG-4B3)

74S04
11B
243 ENBL REGTRAP - N (CN-2A2)
244 FRC CORR ERR - P (CF-1B7)

74S32
2E
(CG-5C3) GATE OUT RAM 1 - N
(CG-1F10) RAM 1 BIT P - N
(CG-5F3) GATE OUT RAM 2 - N
(CG-4D8) RAM 2 BIT P - N
(CG-5H3) GATE OUTRAM3 - N
(CG-4G8) RAM 3 BIT P - N

74S10
1D
204 ECC DATA P - P (CF-1D5)
ECC DATA P - P (CG-5C6)

74LS273
12A
REG

252 GATE SB DET - P (CE-4A1)
249 ALW ECC DCD - P (CF-3A2)
250 EXPCTSB - P (CF-2D6)
247 (NOT USED)
253 ENBL IF ALIGN - P (CE-5E5)
254 ENABL CTL SYIN - P (CQ-5C7) (CT-5C7)

74S02
13B
261 EXTCTL15 - P (CQ-1F2 XCT-1F2)

74S02
13B
(CL-1C7) EXT SEL 4 - N 265

74S139
12B
DEC
1Y0 1Y1 1Y2 1Y3 2Y0 2Y1 2Y2 2Y3
1A 1B 1G 2A 2B 2G

74S32
12C
(CL-1E7) EXT SELF - N 255
(CM-3F5) GATE REG - N 264

74S04
11B
74S08
11C
245 CLK REG15 - N (CF-4E7)
222 CLK REG17 - P (CF-4D7)
248 CLK REG18 - N (CL-3C6)
207 CLK TRAP REG - P (CN-2E2)

74S04
2D
74S32
2E
74S04
2D
(CL-1B7) PRCCHK-P 112

89

NP437 (ECC)

CG - 7

P/N REV	TITLE NP37CTLR LOGIC DIA	SHEET 7/7 REV 0	DRAWN CHECK APPD
	DRAWING NO NPL-NC-28437	Nippon Peripherals Limited	

REV NO	DATE	DRAWN	APPD

(G4)TIEUP-P

74S153 5A
74S153 6A
74S153 8A
74S153 9A
74S153 9E

(CE-2C6)ESR6-P 148
(CF-4F10)WRITE DATA6-P
(CG-5C5)ECC DATA6-P 145

(CE-2B10)ESR4-P 162
(CF-4F10)WRITE DATA4-P
(CG-5B5)ECC DATA4-P 159

(CE-2D8)ESR5-P 164
(CF-4F10)WRITE DATA5-P
(CG-5B5)ECC DATA5-P 161

(CE-2B10)ESR2-P 214
(CF-4E10)WRITE DATA2-P
(CG-5B5)ECC DATA2-P 208

(CE-2B10)ESR3-P 212
(CF-4F10)WRITE DATA3-P
(CG-5B5)ECC DATA3-P 213

(CE-2C6)ESR7-P 150
(CF-4F10)WRITE DATA7-P
(CG-5C5)ECC DATA7-P 152

(CE-2B10)ESR0-P 215
(CF-4E10)WRITE DATA0-P
(CG-5A5)ECC DATA0-P 217

(CE-2B10)ESR1-P 223
(CF-4E10)WRITE DATA1-P
(CG-5A5)ECC DATA1-P 221

(CE-5B4)ESRP-P 224
(CF-4G10)WRITE DATAP-P
(CG-7C10)ECC DATAP-P 232

101 167 201 267 +5V

C1 3.3µF ±35V
C4 3.5µF ±35V
C5 0.022µF 50V
C17 0.022µF 50V

R2 560Ω 1/4W

TIEUP-P (A2)
(CF-2B2)
(CF-2C6)
(CF-3A7)
(CF-3F2)
(CF-4A6)
(CF-4D2)
(CF-4G7)

106 111 116 126 131 136 146 151 0V
156 166 206 211 216 226 231
236 246 251 256 266

74S74 8C
74S374 7A
74S280 7C

207 SERDESP-P (CE-5B7)(CG-1E2)

74S86 4C

74S00 2A
74S32 8E
74S10 7D
74S11 5D
74S00 5B
74S04 2B
74S11 8D
74S02 9D
74S04 2B
74S00 2A
74S00 2A
74S00 2A
74S08 5C

(CF-2F3)BIT RING7-P
(CF-3D10)CLOCKC-P
BR7C-N (CF-3E7)
BR7C-P (CG-6C7)
BR7C-P (CF-3E2)
(CF-3D5)ECC WR XFER-N
(F10)DREG PARCHK-P
(CG-7C6)FRC CORR ERR-P 209
(CF-3F10)ECC RUN-P
(CF-4C10)BLK DREG CLK-P
INHDREGCLK-N (CF-5A2)
(CE-4G6)SERVO MODE-N 115
(DREGINSEL1-P)
SERVOMODE-P (CF-2B6) (CF-4D7)
(DREGINSEL2-P)
(CF-4B10)GATE W BFR TODR-P
SERVO MODE-N (CF-2B6)
(CF-2F3)BIT RING0-P
(CF-3E10)CLOCKC-P

74LS279 7B
74S04 11C
74S10 3C

(CQ-1E10)GENRESET-N 219
(CE-5C10)BR2TO5-P 129
109 GSERDESP-P (CH-5D2)
242 DREG PAR CHK-P (CH-5E6)
DREG PAR CHK-P(A7)(CF-5D1)
GEN RESET-N (CF-2E6) (CF-3F2) (CF-5B2)

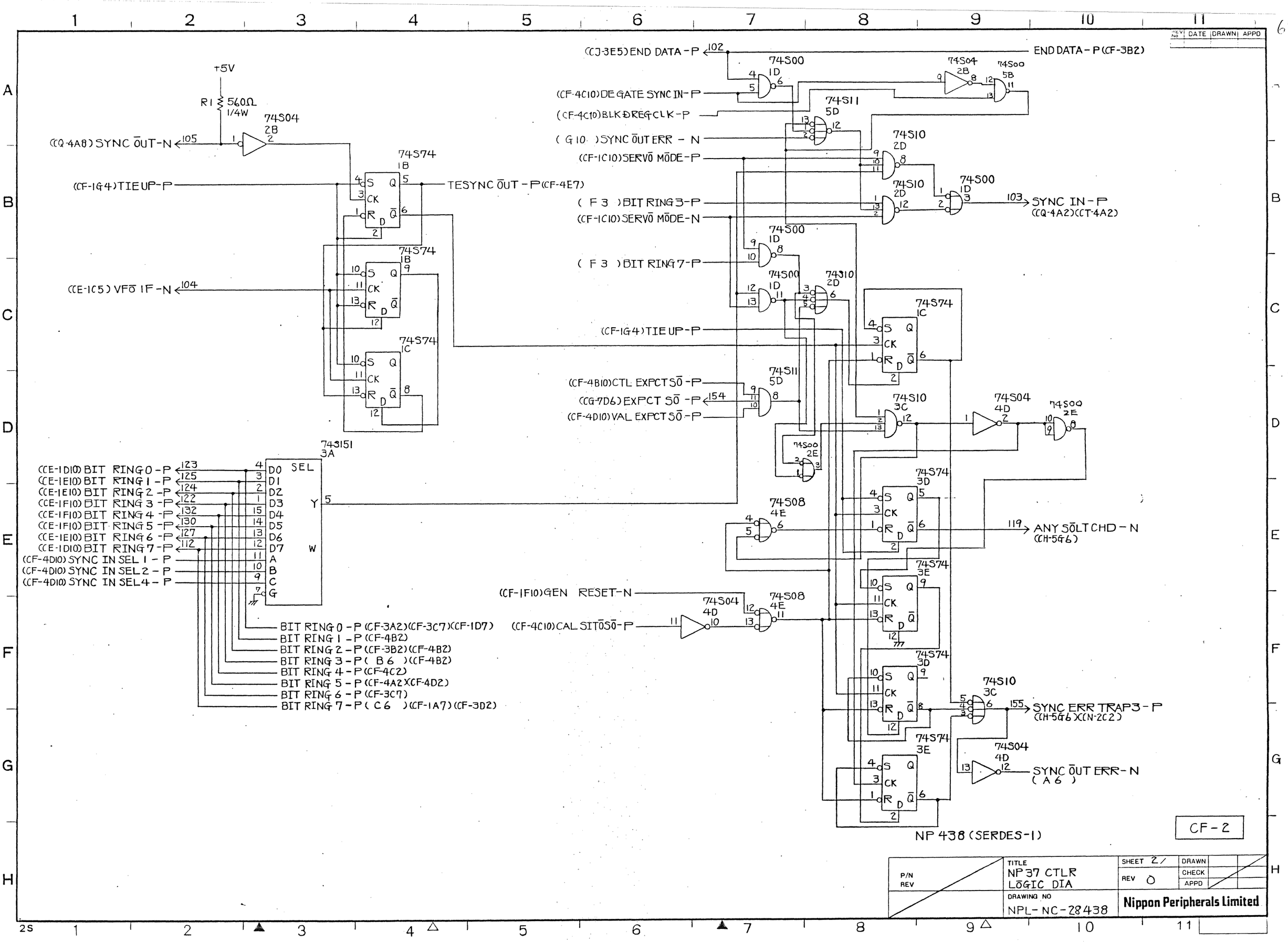
149 SERDES7-P (CE-2C1)(CG-1D2)(CR-2F6)(CU-2F6)
168 SERDES6-P (CE-2C1)(CG-1D2)(CR-2F6)(CU-2F6)
165 SERDES5-P (CE-2D1)(CG-1D2)(CR-2E6)(CU-2E6)
163 SERDES4-P (CE-2D1)(CG-1C2)(CR-2E6)(CU-2E6)
205 SERDES3-P (CE-2D1)(CG-1C2)(CR-2E6)(CU-2E6)
204 SERDES2-P (CE-2C1)(CG-1B2)(CR-2E6)(CU-2E6)
203 SERDES1-P (CE-2C1)(CG-1B2)(CR-2E6)(CU-2E6)
202 SERDES0-P (CE-2C1)(CG-1A2)(CR-2E6)(CU-2E6)

SERDES7-P (CF-5G2)
SERDES6-P (CF-5G2)
SERDES5-P (CF-5F2)
SERDES4-P (CF-5F2)
SERDES3-P (CF-5F2)
SERDES2-P (CF-5F2)
SERDES1-P (CF-5E2)
SERDES0-P (CF-5E2)

NP438 (SERDES-1)

CF-1

P/N NP438 REV A	TITLE NP37 CTLR LOGIC DIA	SHEET 1/5 REV 0	DRAWN A.OGINO 82.1.28 CHECK APPD K.Horiuchi 82.2.2
SERDES-1	DRAWING NO NPL-NC-28438	Nippon Peripherals Limited	


+5V
R1 560Ω 1/4W
74S04 2B
(CQ-4A8) SYNC OUT-N 105
74S74 1B
(CF-1G4) TIE UP-P
TESYNC OUT-P (CF-4E7)
74S74 1B
(CE-1C5) VFO IF-N 104
74S74 1C
74S151 3A
(CE-1D10) BIT RING 0-P 123
(CE-1E10) BIT RING 1-P 125
(CE-1E10) BIT RING 2-P 124
(CE-1F10) BIT RING 3-P 122
(CE-1F10) BIT RING 4-P 132
(CE-1F10) BIT RING 5-P 130
(CE-1E10) BIT RING 6-P 127
(CE-1D10) BIT RING 7-P 112
(CF-4D10) SYNC IN SEL 1-P
(CF-4D10) SYNC IN SEL 2-P
(CF-4D10) SYNC IN SEL 4-P
SEL
D0 D1 D2 D3 D4 D5 D6 D7
A B C G
Y
W
BIT RING 0-P (CF-3A2)(CF-3C7)(CF-1D7)
BIT RING 1-P (CF-4B2)
BIT RING 2-P (CF-3B2)(CF-4B2)
BIT RING 3-P (B6)(CF-4B2)
BIT RING 4-P (CF-4C2)
BIT RING 5-P (CF-4A2)(CF-4D2)
BIT RING 6-P (CF-3C7)
BIT RING 7-P (C6)(CF-1A7)(CF-3D2)
(CJ-3E5) END DATA-P 102
END DATA-P (CF-3B2)
74S00 1D
74S04 2B
74S00 5B
(CF-4C10) DE GATE SYNC IN-P
(CF-4C10) BLK DREG CLK-P
74S11 5D
(G10) SYNC OUT ERR-N
(CF-1C10) SERVO MODE-P
74S10 2D
74S10 2D
74S00 1D
(F3) BIT RING 3-P
(CF-1C10) SERVO MODE-N
103 SYNC IN-P (CQ-4A2)(CT-4A2)
74S00 1D
(F3) BIT RING 7-P
74S00 1D
74S10 2D
(CF-1G4) TIE UP-P
74S574 1C
(CF-4B10) CTL EXPCT SO-P
(CG-7D6) EXPCT SO-P 154
(CF-4D10) VAL EXPCT SO-P
74S11 5D
74S10 3C
74S04 4D
74S00 2E
74S00 2E
74S574 3D
74S08 4E
119 ANY SOLT CHD-N (CH-5G6)
74S574 3E
(CF-1F10) GEN RESET-N
74S04 4D
74S08 4E
(CF-4C10) CAL SITOSO-P
74S574 3D
74S10 3C
155 SYNC ERR TRAP3-P (CH-5G6)(CN-2C2)
74S574 3E
74S04 4D
SYNC OUT ERR-N (A6)
NP 438 (SERDES-1)
CF-2
P/N
REV
TITLE
NP37 CTLR LOGIC DIA
DRAWING NO
NPL-NC-28438
SHEET 2/
REV 0
DRAWN
CHECK
APPD
Nippon Peripherals Limited

(D 7)ECC WR XFER - P
(CF-2F3)BITRING 0 - P
(CG-7D6)ALWECCDCD - P
(CF-4A10)CTLECCWRXFER-P
(CF-2A10)END DATA - P
(E 10)PRESETSR - N
(CF-2F3)BIT RING 2 - P
(CF-2F3)BIT RING 7 - P
(CF-1A10)BR7C - P
(CF-4B10)CTLECCRDXFER-P
(CF-1G4) TIE UP-P
(CF-1F10)GEN RESET-N

74S10 7D
74S00 8B
74LS279 9B
74S11 8D
74S08 10A
74S04 10D
74S10 13C
74S32 12D
74S00 11D
74S74 11E

ECC WRXFER - P (CG-5D6)
ECC WRXFER - P
(A 2)(D 7)(CF-4F2)
ECC WRXFER - N
(CF-1A7)(CF-5A2)
ECC RDXFER - P(CG-6B7)
ECC RDXFER - N
(C 7)(CF-4B2)

(CF-1G4) TIE UP-P
(CF-4B10) ALW ECC ADR ADV-P
(E 6)ECC RDXFER-N
(CF-2F3)BIT RING 0 - P
(CF-2F3)BIT RING 6 - P
(D 6)ECC WRXFER-P
(CE-1F6)CLOCKC-P
(CE-1D10)BR24-P
(CF-1A10)BR7C - N
(CF-4B10)CTL ECC PRESET - P
(CF-4B10)CTL ECC RUN-P

74S112 10E
74S00 10C
74S04 4D
74S10 10B
74S74 8C

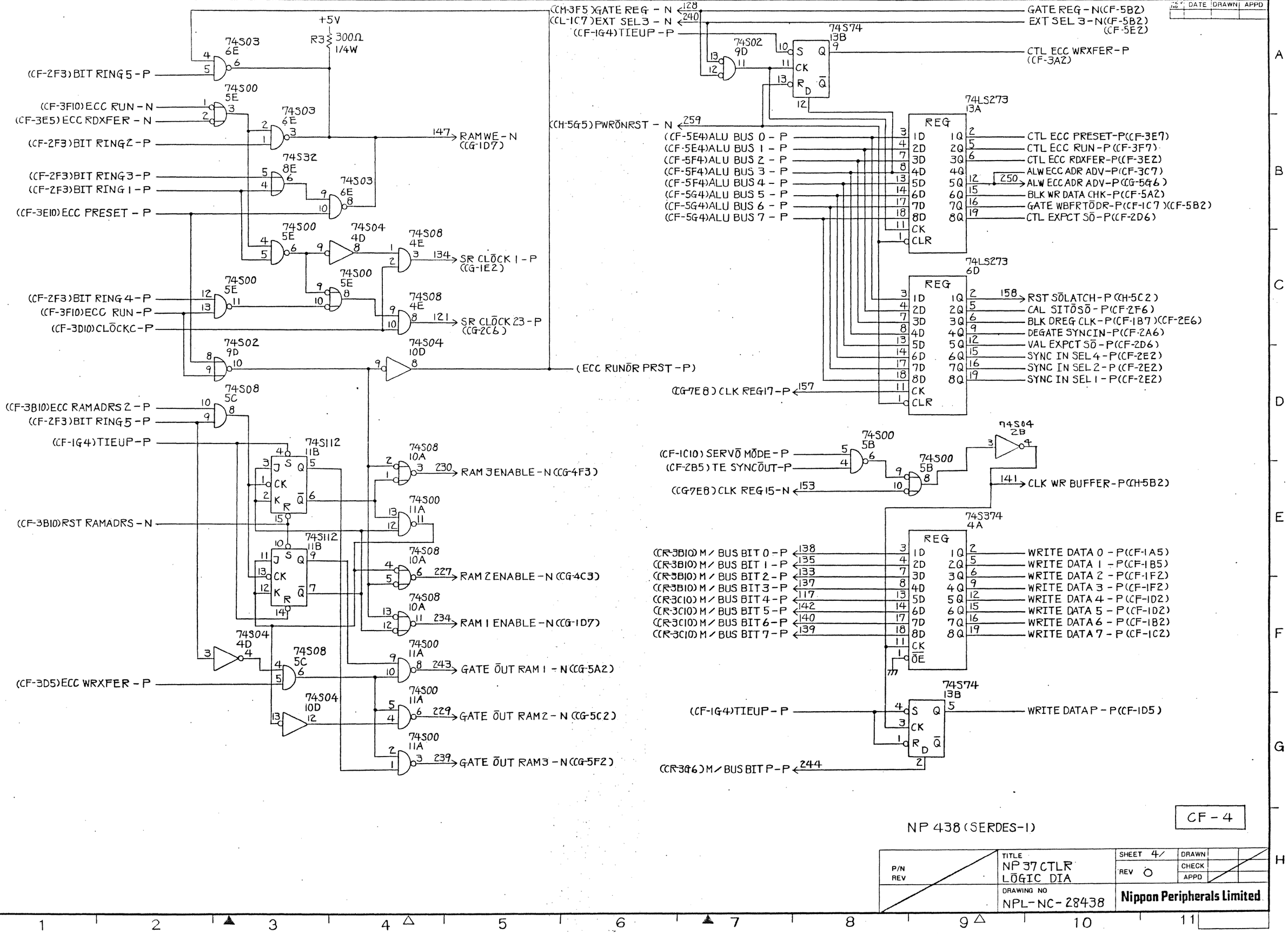
ECCRAMADRS1 - P(CG-1C7)
ECCRAMADRS2 - P(CG-1C7)
ECCRAMADRS2 - P(CF-4D2)
RSTRAMADRS - N(CG-6E7)
RSTRAMADRS - N(CF-4E2)
ALWRUNADRADV - N (CG-3D1)
(RAMADRSCLK-P)
CLOCKC - P(CF-1A7) (CF-4C2) (CF-1B7)
ECC PRESET - P(CG-5D6)
ECC PRESET - P(CF-4B2)
PRESET SR - N(CG-1E2)
PRESET SR - N(B 2)
ECC RUN - P(CG-6C7)
ECC RUN - P(CF-1B7) (CF-4C2)
ECC RUN - N(CF-4A2)

NP 438 (SERDES-1)

CF-3

P/N / REV	TITLE: NP37 CTLR LOGIC DIA	SHEET 31	DRAWN
		REV O	CHECK
	DRAWING NO: NPL-NC-28438		APPD

Nippon Peripherals Limited


+5V
R3 300Ω 1/4W
74S03 6E
(CF-2F3)BIT RING5-P
74S00 5E
(CF-3F10)ECC RUN-N
(CF-3E5)ECC RDXFER-N
74S03 6E
(CF-2F3)BIT RING2-P
147 RAMWE-N (CG-1D7)
74S32 8E
(CF-2F3)BIT RING3-P
(CF-2F3)BIT RING1-P
74S03 6E
(CF-3E10)ECC PRESET-P
74S00 5E
74S04 4D
74S08 4E
134 SR CLOCK 1-P (CG-1E2)
74S00 5E
(CF-2F3)BIT RING4-P
(CF-3F10)ECC RUN-P
(CF-3D10)CLOCKC-P
74S08 4E
121 SR CLOCK 23-P (CG-2C6)
74S02 9D
74S04 10D
(ECC RUNOR PRST-P)
74S08 5C
(CF-3B10)ECC RAMADRS2-P
(CF-2F3)BIT RING5-P
(CF-1G4)TIEUP-P
74S112 11B
74S08 10A
230 RAM 3 ENABLE-N (CG-4F3)
74S00 11A
(CF-3B10)RST RAMADRS-N
74S112 11B
74S08 10A
227 RAM 2 ENABLE-N (CG-4C3)
74S08 10A
234 RAM 1 ENABLE-N (CG-1D7)
74S04 4D
74S08 5C
(CF-3D5)ECC WRXFER-P
74S00 11A
243 GATE OUT RAM 1-N (CG-5A2)
74S04 10D
74S00 11A
229 GATE OUT RAM 2-N (CG-5C2)
74S00 11A
239 GATE OUT RAM 3-N (CG-5F2)
(CM-3F5)GATE REG-N
(CL-1C7)EXT SEL 3-N
(CF-1G4)TIEUP-P
74S02 9D
74S74 13B
GATE REG-N (CF-5B2)
EXT SEL 3-N (CF-5E2)
CTL ECC WRXFER-P (CF-3A2)
(CH-5G5)PWRONRST-N
74LS273 13A
REG
(CF-5E4)ALU BUS 0-P
(CF-5E4)ALU BUS 1-P
(CF-5F4)ALU BUS 2-P
(CF-5F4)ALU BUS 3-P
(CF-5F4)ALU BUS 4-P
(CF-5G4)ALU BUS 5-P
(CF-5G4)ALU BUS 6-P
(CF-5G4)ALU BUS 7-P
CTL ECC PRESET-P (CF-3E7)
CTL ECC RUN-P (CF-3F7)
CTL ECC RDXFER-P (CF-3E2)
ALW ECC ADR ADV-P (CF-3C7)
250 ALW ECC ADR ADV-P (CG-5G6)
BLK WR DATA CHK-P (CF-5A2)
GATE WBFRTODR-P (CF-1C7)(CF-5B2)
CTL EXPCT SO-P (CF-2D6)
74LS273 6D
158 RST SOLATCH-P (CH-5C2)
CAL SITOSO-P (CF-2F6)
BLK DREG CLK-P (CF-1B7)(CF-2E6)
DEGATE SYNCIN-P (CF-2A6)
VAL EXPCT SO-P (CF-2D6)
SYNC IN SEL 4-P (CF-2E2)
SYNC IN SEL 2-P (CF-2E2)
SYNC IN SEL 1-P (CF-2E2)
(CG-7E8)CLK REG17-P
74S00 5B
74S04 2B
(CF-1C10)SERVO MODE-P
(CF-2B5)TE SYNCOUT-P
(CG-7E8)CLK REG15-N
141 CLK WR BUFFER-P (CH-5B2)
74S374 4A
(CR-3B10)M/ BUS BIT 0-P
(CR-3B10)M/ BUS BIT 1-P
(CR-3B10)M/ BUS BIT 2-P
(CR-3B10)M/ BUS BIT 3-P
(CR-3C10)M/ BUS BIT 4-P
(CR-3C10)M/ BUS BIT 5-P
(CR-3C10)M/ BUS BIT 6-P
(CR-3C10)M/ BUS BIT 7-P
WRITE DATA 0-P (CF-1A5)
WRITE DATA 1-P (CF-1B5)
WRITE DATA 2-P (CF-1F2)
WRITE DATA 3-P (CF-1F2)
WRITE DATA 4-P (CF-1D2)
WRITE DATA 5-P (CF-1D2)
WRITE DATA 6-P (CF-1B2)
WRITE DATA 7-P (CF-1C2)
74S574 13B
(CF-1G4)TIEUP-P
WRITE DATA P-P (CF-1D5)
(CR-3G6)M/ BUS BIT P-P
NP 438 (SERDES-1)
CF-4
P/N
REV
TITLE
NP 37 CTLR LOGIC DIA
DRAWING NO
NPL-NC-28438
SHEET 4/
REV 0
DRAWN
CHECK
APPD
Nippon Peripherals Limited

(CE-4F6) WRITE GATE-P 268

(CF-4B10) BLK WR DATA CHK-P

(CE-5B10) WR DATAPAR ERR-P 218

(CF-1B10) INH DREGCLK-N

(CF-3D5) ECC WR XFER-N

(CF-4B10) GATE WBFR TO DR-P

(CF-1F10) GEN RESET-N

(CQ-4H6) CHK EREG PARA-P 110

(CH-4G6) R345PERR-P 143

(CF-4A10) EXT SEL 3-N

(CL-1C7) EXT SEL 4-N 253

(CL-1C7) EXT SEL 5-N 260

(CL-1E7) EXT SEL F-N 238

(CG-5B10) ECC HDW CHK-P 210

(CE-5C8) SERDES ERROR-N 265

(CD-1F6) VFO ERROR-N 252

(CF-1F10) DREG PARCHK-P

INH ERR ALT-NTP 118

74S04 11C

74S00 12C

74S11 8D

74S10 13C

74LS279 12A

74S08 5C

74S10 13C

74S00 12C

74LS279 12A

74S04 11C

74S00 12C

74LS279 12A

74S00 12C

74S32 12D

74S04 11C

74S20 12B

74S03 6E

+5V

R4 3KΩ 1/4W

R5 560Ω 1/4W

247 → WR DATA CHK-N (CH-5F6)

245 → REG 345 PERR-N (CH-5F6)

254 → BFR REG PERR-N (CH-5G6)

114 → ERROR ALERT-N (CQ-1A8)

74S32 8E

74LS244 6B

(CF-4A10) EXT SEL 3-N

(CM-3G5) GATE FNL-N 160

(CF-1H7) SERDES 0-P → 261 → ALU BUS 0-P (CQ-2B8), ALU BUS 0-P (CF-4B7)

(CF-1H7) SERDES 1-P → 257 → ALU BUS 1-P (CQ-2B8), ALU BUS 1-P (CF-4B7)

(CF-1H7) SERDES 2-P → 258 → ALU BUS 2-P (CQ-2C8), ALU BUS 2-P (CF-4B7)

(CF-1H7) SERDES 3-P → 255 → ALU BUS 3-P (CQ-2C8), ALU BUS 3-P (CF-4B7)

(CF-1H7) SERDES 4-P → 262 → ALU BUS 4-P (CQ-2C8), ALU BUS 4-P (CF-4B7)

(CF-1H7) SERDES 5-P → 263 → ALU BUS 5-P (CQ-2E8), ALU BUS 5-P (CF-4B7)

(CF-1H7) SERDES 6-P → 264 → ALU BUS 6-P (CQ-2E8), ALU BUS 6-P (CF-4B7)

(CF-1H7) SERDES 7-P → 248 → ALU BUS 7-P (CQ-2E8), ALU BUS 7-P (CF-4B7)

NP 438 (SERDES-1)

CF-5

P/N	TITLE NP37 CTLR LOGIC DIA	SHEET 5/5	DRAWN
REV		REV O	CHECK
	DRAWING NO NPL-NC-28438		APPD

Nippon Peripherals Limited

NO	DATE	DRAWN	APPD

VFŌ2FD-P(CE-2E8)

74S04 9A — 74S04 10C — 74S04 10C

(CD-4F10)VFŌ2F-P ←219

VFŌ2FD-N (CE-3B6)

74S08 6A

ESRCLK-P (CE-2D4) (CE-5A2)

74S00 7B

ESRCLK-N (CE-2B7) (CE-3G6)

74S74 9B

VFŌ1F-P (CE-4E7)

159 → VFŌ1F-PTP

(H5)TIEUP-2P

228 → VFŌ1F-N(CF-2C2)

VFŌ1F-N(CE-4F9) (CE-5F5)

74S112 8B

VFŌ1FS-P (CE-2G4)

165 → VFŌ1FS-P(CN-1C2)

VFŌ1FS-N (CE-5F2)

203 → VFŌ1FS-NTP

74S04 11C — 74S04 11C — 74S04 11C — 74S08 11B

225 → CLŌCKCD-P (CM-2A2X(CN-1F2)

VFŌ1FSDD-N(CE-2D8)

74S08 11B

ALWIFALIGN-P (CE-5E10)

74S74 10B

74S00 10A

UNDCD DATA-P (CD-4E10) 233

74S08 6A

ICLŌCKC-P (CE-4B2) (CE-5E6)

74S08 6A

163 → CLŌCKB-PTP

CLŌCKB-P (CE-4C7)

VFŌ1FSD-P(CE-2G8)

74S74 10B

74S08 6A

252 → CLŌCKC-P (CF-3D7)

CLŌCKC-P (CE-5D1)

UNDCD DATA-P (CE-3C2)

ALIGN PLS-N (CE-5E6)

74S112 12B — 74S112 12B

259 → BRCLŌCKA-PTP

BRCLŌCKA-P (CE-2D1)(CE-5G1)

74S74 13A

261 → ISTKADRS2-P (CH-1A2)

74S08 11B — 74S112 12A

247 → BRCLŌCKB-PTP

BRCLŌCKB-P (CE-2D1)(CE-5G1)

74S74 13A

232 → ISTKADRS1-P(CH-1A2)

74S08 11B — 74S112 12A

241 → BRCLŌCKC-P (CE-2D1)(CE-5G1)

BRCLŌCKC-P (CG-3G5)

RSTBITRING-N (CE-4D10)

74S138 5A

DEC

74S00 10A

250 → BR24-P (CF-3D7)

74S37 7A

207 → BITRING7-P(CF-2E2)(CH-5B2)(CJ-3G2)

BITRING7-P(CM-1B7)(CN-1E2)(CQ-1G6)

(CE-2A1)(CE-4A6)

74S37 7A

168 → BITRING0-P (CF-2D2)(CH-5B2) (CJ-4E5)(CL-2A7)(CN-3F6)

74S04 9A

213 → BITRING2-P (CD-1D2)(CF-2E2)(CH-5B2) (CJ-4F5)(CL-4C2)(CM-1A7)

74S37 7A

BITRING2-P(CE-5A5)

208 → BITRING1-P (CD-1B2)(CF-2D2)(CF-5C6)(CH-5B2) (CJ-3B1)(CM-2A2)(CN-1E2)(CQ-4D2) (CQ-5C2)(CT-4D2)(CT-5C2)

74S04 9A

220 → BITRING6-P (CF-2E2)(CH-5B2)(CL-4G2)(CM-3F2) (CN-1C2)(CQ-1B6)(CT-1B6)(CJ-3D1)

74S37 7A

BITRING5-P(CE-4D7)

229 → BITRING5-P (CF-2E2)(CG-6A7)(CH-5B2) (CH-3H2)(CN-1E2)

74S04 9A

218 → BITRING3-P (CF-2E2)(CH-5B2) (CM-2E2)(CN-1E2)

74S04 9A

BITRING4-P(CE-2B1)(CE-5B8)

215 → BITRING4-P (CF-2E2)(CH-5B2)(CJ-4F8) (CM-3G2)(CN-4D9)(CQ-1E2) (CT-1E2)(CL-4G2)

BITRING2-N(CE-5C7)

BITRING6-N(CE-5B7)

BITRING5-N(CE-5C7)

BITRING4-N(CE-3D2)

204 → BITRING0-N(CM-2F1)

101 167 201 267 106 111 116 126 131 136 146 151 156 166 206 211 216 226 231 236 246 251 256 266

+5V

C1 +3.3μF −35V ~C4 +3.3μF −35V

C5 0.022μF 50V ~C11 0.022μF 50V

R4 560Ω 1/4W

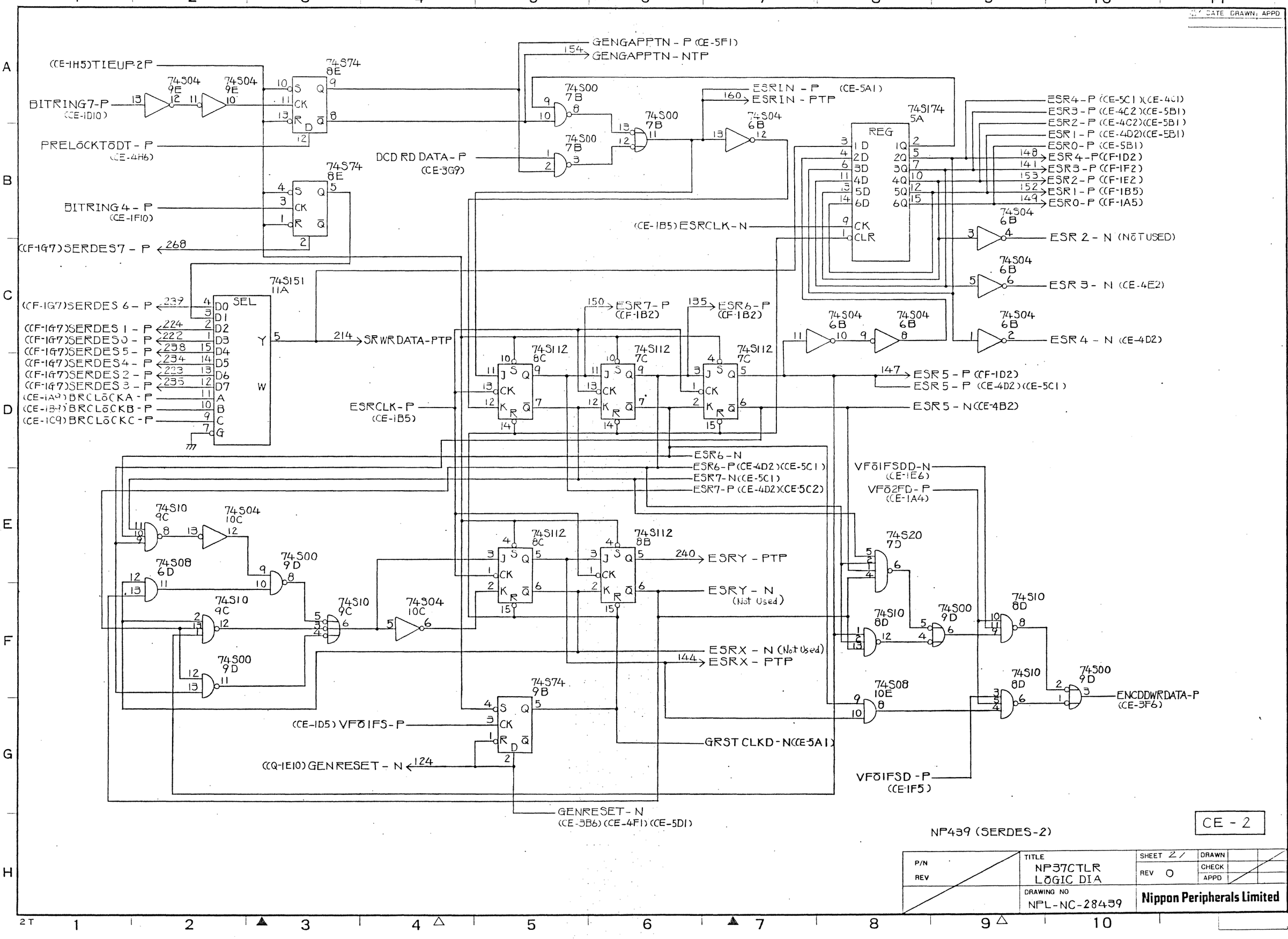
TIE UP-1P(CE-3G6)(CE-4A7)(CE-4H3)(CE-5D7)

+5V — R3 560Ω1/4W — TIEUP-2P(C1)(CE-2A2)(CE-4E7)(CE-5B2)(CE-5B7)(CE-5E2)

NP439(SERDES-2)

CE-1

P/N NP439 REV C	TITLE NP37CTLR LOGIC DIA	SHEET 1/5 REV 0	DRAWN A.OGAWA 82.1.28 CHECK APPD K.Hichiya 82.2.2
SERDES-2	DRAWING NO NPL-NC-28439	Nippon Peripherals Limited	

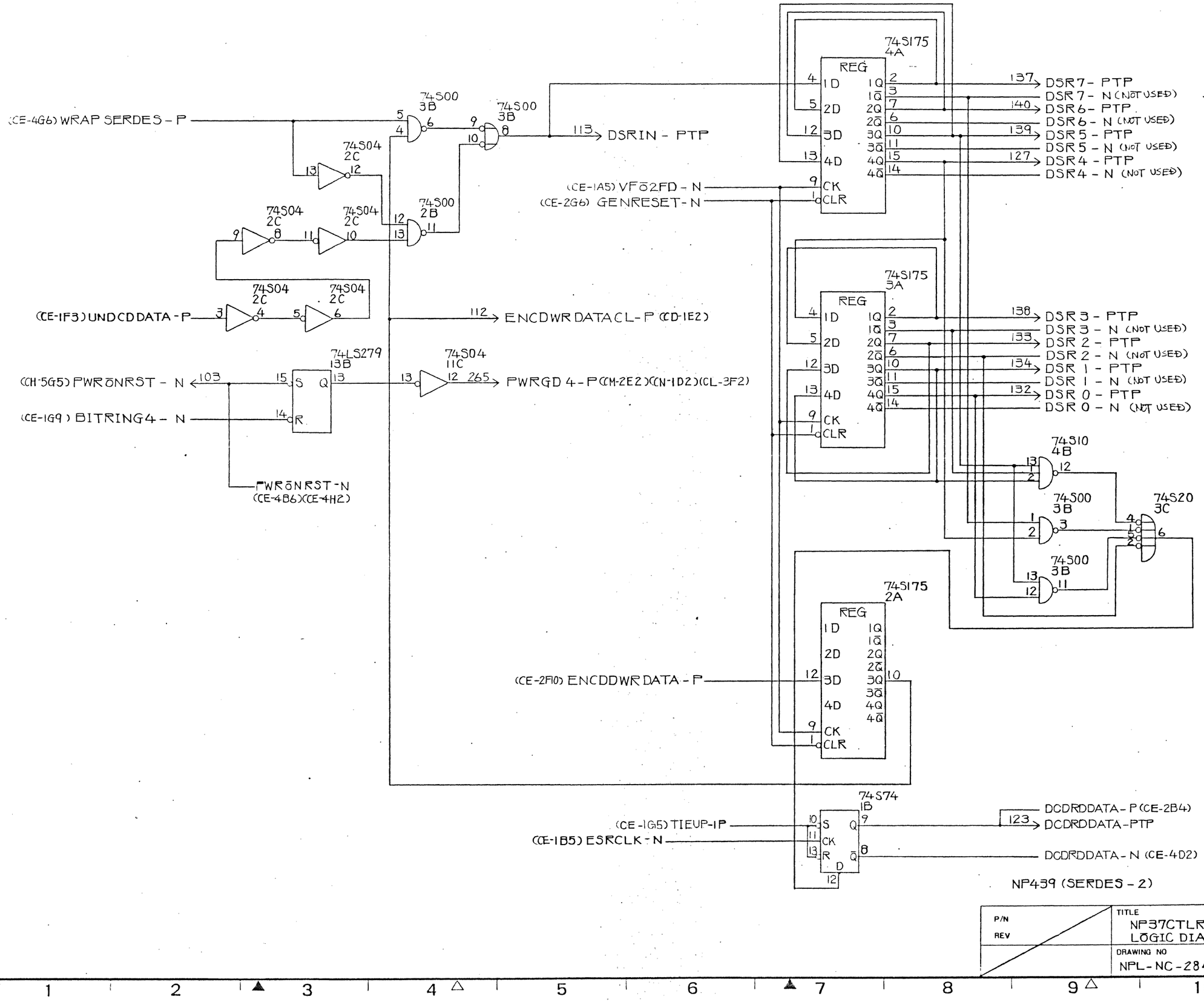


NP439 (SERDES-2)

CE - 2

P/N	TITLE NP37CTLR LOGIC DIA	SHEET 2 /	DRAWN
REV		REV O	CHECK
	DRAWING NO NPL-NC-28439		APPD

Nippon Peripherals Limited


(CE-4G6) WRAP SERDES - P
74S00 3B
74S00 3B
113 DSRIN - PTP
74S04 2C
74S04 2C
74S04 2C
74S00 2B
(CE-1A5) VFO2FD - N
(CE-2G6) GENRESET - N
74S175 4A
REG
137 DSR7 - PTP
DSR7 - N (NOT USED)
140 DSR6 - PTP
DSR6 - N (NOT USED)
139 DSR5 - PTP
DSR5 - N (NOT USED)
127 DSR4 - PTP
DSR4 - N (NOT USED)
74S175 3A
REG
136 DSR3 - PTP
DSR3 - N (NOT USED)
133 DSR2 - PTP
DSR2 - N (NOT USED)
134 DSR1 - PTP
DSR1 - N (NOT USED)
132 DSR0 - PTP
DSR0 - N (NOT USED)
(CE-1F3) UNDCDDATA - P
74S04 2C
74S04 2C
112 ENCDWR DATA CL - P (CD-1E2)
74LS279 13B
(CH-5G5) PWRONRST - N 103
(CE-1G9) BITRING4 - N
74S04 11C
PWRGD 4 - P (CM-2E2)(CN-1D2)(CL-3F2)
PWRONRST-N (CE-4B6)(CE-4H2)
74S10 4B
74S00 3B
74S20 3C
74S00 3B
74S175 2A
REG
(CE-2F10) ENCDDWR DATA - P
74S74 1B
(CE-1G5) TIEUP-1P
(CE-1B5) ESRCLK - N
DCDRDDATA - P (CE-2B4)
123 DCDRDDATA-PTP
DCDRDDATA - N (CE-4D2)
NP439 (SERDES - 2)
CE - 3
P/N
REV
TITLE
NP37CTLR
LOGIC DIA
SHEET 3/
REV O
DRAWN
CHECK
APPD
DRAWING NO
NPL - NC - 28439
Nippon Peripherals Limited

BY DATE DRAWN APPD

(CE-5G8) ALW SB DET - P

(CG-7C6) GATE SB DET - P ← 119

74S00 2B

74S04 2C

74S20 3C

74S04 4D

(CE-1D10) BIT RING 7 - P

(CE-1G5) TIE UP - 1P

74S10 2D

74S20 5D

(CH-5F5) DT CLK CTRL - N ← 128

+5V

R5 560Ω 1/4W

R2 560Ω 1/4W

74S00 2B

(CQ-1F10) STOP MP CLOCK - P ← 122

INH STOP BR - NTP ← 121

74S10 2D

74S00 2B

(CJ-3E10) DISABLE SB DET - P ← 117

74S10 2D

74S08 6D

(CE-1E6) IC LOCK C - P

(CE-2D9) ESR 5 - N

(CE-2N10) ESR 3 - P

(CE-2A10) ESR 4 - P

74S10 4B

74S02 1C

74S00 3D

74S00 3D

142 → PRED TGD - PTP

PWRONRST - N (CE-3E3)

74S08 6D

(CE-1F5) CLOCK B - P

+5V

R1 560Ω 1/4W

74S20 4C

74S00 10A

INH START BR - NTP ← 243

74S00 4E

74S10 4B

74S08 3E

262 → RST BIT RING - NTP

RST BIT RING - N (CE-1D6 X CE-5F2)

(CE-2B10) ESR 2 - P

(CE-3G9) DCD RD DATA - N

(CE-2B10) ESR 1 - P

(CE-2C10) ESR 4 - N

(CE-2D7) ESR 6 - P

(CE-2E7) ESR 7 - P

74S30 5B

74S04 4D

74S20 4C

74S00 3D

125 → DATA GOOD - P (CJ-3G1)

BIT RING 5 - P (CE-1F10)

74S00 4E

74S00 3D

DATA GOOD - N (CE-5C1)

74S00 4E

74S04 4D

74S00 4E

242 → CLK TO CTR - P (CJ-4E5)

74S20 5D

74S04 4D

(CE-2C10) ESR 3 - N

74S10 6C

74S00 12C

245 → DT PRESENT - P

74S574 7E

(CE-1H5) TIE UP - 2P

(CE-1C5) VFOIF - P

74S04 4D

74S10 6C

(CE-2G6) GEN RESET - N

74S112 12E

(CE-1C5) VFOIF - N

74LS273 1A

REG

(CQ-2B8) ALUBUS 0 - P ← 107

(CQ-2B8) ALUBUS 1 - P ← 106

(CQ-2C8) ALUBUS 2 - P ← 102

(CQ-2C8) ALUBUS 3 - P ← 115

(CQ-2C8) ALUBUS 4 - P ← 129

(CQ-2E8) ALUBUS 5 - P ← 105

(CQ-2E8) ALUBUS 6 - P ← 130

(CQ-2E8) ALUBUS 7 - P ← 120

1D 2D 3D 4D 5D 6D 7D 8D CK CLR

1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q

104 → WRITE GATE - P (CE-5D1)

104 → WRITE GATE - P (CD-1E2)(CF-5A2)

109 → VFO SQUELCH - N (CD-1D2)

114 → FAST SYNC - P (CD-1B2)

118 → SERVO MODE - N (CF-1C7)

WRAP SERDES - P (CE-3B2)(CE-5F1)

253 → LOCK TO DATA - P (CD-1C2)

249 → ALW VFO CHECK - P (CD-1F2)

74S02 1C

(CM-3F5) GATE REG - N ← 110

(CL-1C7) EXT SEL 5 - N ← 162

(CE-3E3) PWRON RST - N

74S574 1B

(CE-1G5) TIE UP - 1P

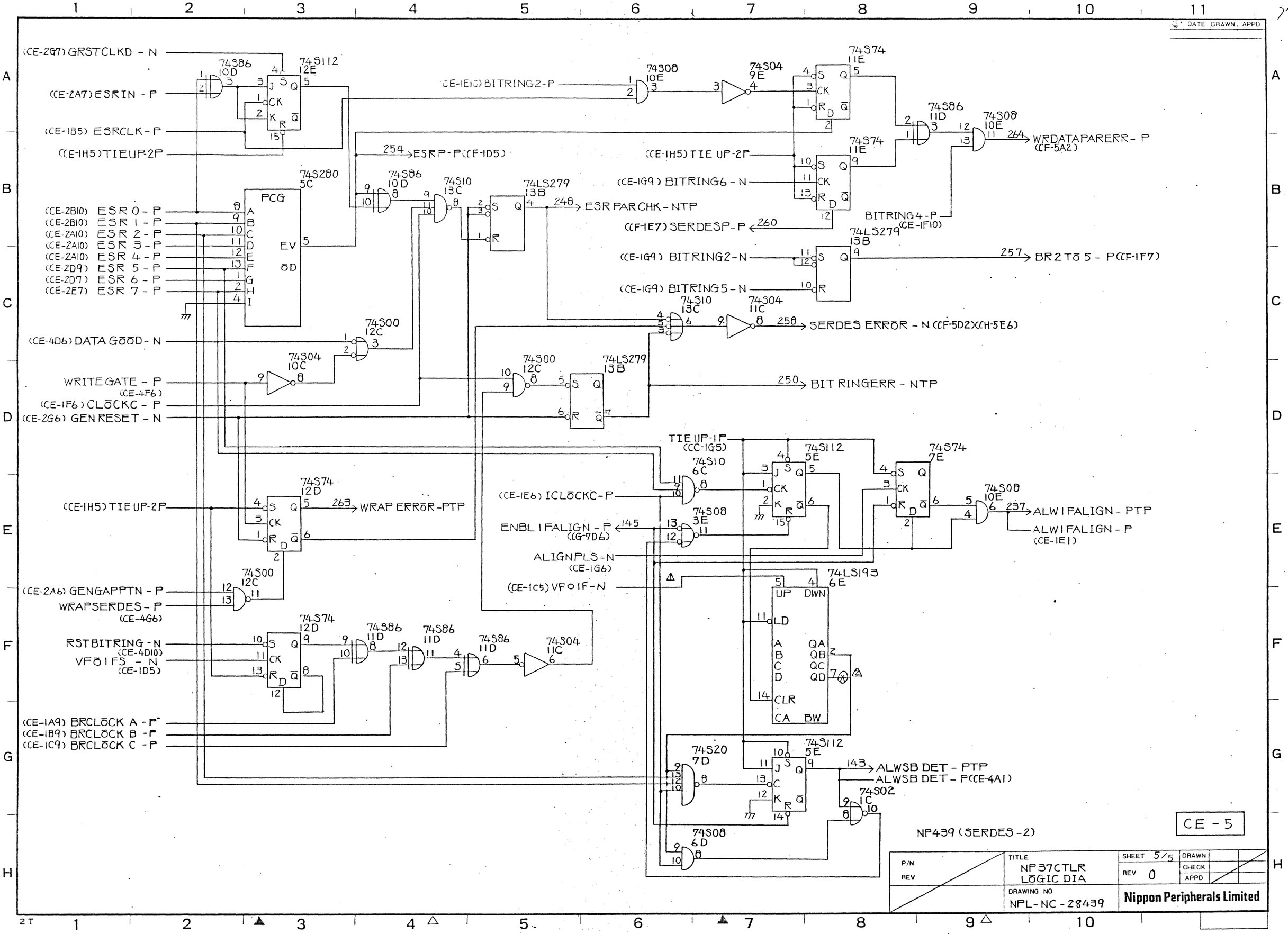
PRELOCK TO DT - P (CE-2B1)

NP439 (SERDES - 2)

CE - 4

P/N	TITLE NP37CTLR LOGIC DIA	SHEET 4/	DRAWN
REV		REV O	CHECK
	DRAWING NO NPL-NC-28439		APPD

Nippon Peripherals Limited


DATE DRAWN, APPD
(CE-2G7) GRSTCLKD - N
(CE-2A7) ESRIN - P
(CE-1B5) ESRCLK - P
(CE-1H5) TIEUP-2P
(CE-2B10) ESR 0 - P
(CE-2B10) ESR 1 - P
(CE-2A10) ESR 2 - P
(CE-2A10) ESR 3 - P
(CE-2A10) ESR 4 - P
(CE-2D9) ESR 5 - P
(CE-2D7) ESR 6 - P
(CE-2E7) ESR 7 - P
(CE-4D6) DATA GOOD - N
WRITE GATE - P
(CE-4F6)
(CE-1F6) CLOCKC - P
(CE-2G6) GEN RESET - N
(CE-2A6) GENGAPPTN - P
WRAPSERDES - P
(CE-4G6)
RSTBITRING - N
(CE-4D10)
VF01FS - N
(CE-1D5)
(CE-1A9) BRCLOCK A - P
(CE-1B9) BRCLOCK B - P
(CE-1C9) BRCLOCK C - P
(CE-1E10) BITRING2-P
254 ESRP-P (CF-1D5)
(CE-1H5) TIE UP-2P
(CE-1G9) BITRING6 - N
(CF-1E7) SERDESP-P
260
(CE-1G9) BITRING2-N
(CE-1G9) BITRING5 - N
BITRING4-P
(CE-1F10)
248 ESR PAR CHK - NTP
257 BR2 TO 5 - P (CF-1F7)
258 SERDES ERROR - N (CF-5D2)(CH-5E6)
250 BIT RINGERR - NTP
263 WRAP ERROR - PTP
264 WRDATAPARERR - P
(CF-5A2)
TIE UP-1P
(CC-1G5)
(CE-1E6) ICLOCKC-P
ENBL IFALIGN - P
(CG-7D6)
145
ALIGNPLS-N
(CE-1G6)
(CE-1C5) VF01F-N
237 ALWIFALIGN - PTP
ALWIFALIGN - P
(CE-1E1)
143 ALWSB DET - PTP
ALWSB DET - P (CE-4A1)
74S86 10D
74S112 12E
74S08 10E
74S04 9E
74S74 11E
74S86 11D
74S08 10E
74S74 11E
74S280 5C
PCG
EV
OD
74S86 10D
74S10 13C
74LS279 13B
74LS279 13B
74S10 13C
74S04 11C
74S00 12C
74S04 10C
74S00 12C
74LS279 13B
74S74 12D
74S00 12C
74S74 12D
74S86 11D
74S86 11D
74S86 11D
74S04 11C
74S10 6C
74S112 5E
74S74 7E
74S08 10E
74S08 3E
74LS193 6E
UP
DWN
LD
A
B
C
D
QA
QB
QC
QD
CLR
CA
BW
74S20 7D
74S112 5E
74S02 1C
74S08 6D
NP439 (SERDES-2)
CE - 5
P/N
REV
TITLE
NP37CTLR
LOGIC DIA
SHEET 5/5
REV 0
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-28439
Nippon Peripherals Limited

No.	DATE	DRAWN	APPD
Modification of the full-out current for Phase Comparator Function C→D Sheet 5 Rev 0→1			
1	82.2.18	K.Nishiya	

+5V
R36 560Ω 1/4W
TIEUP-P

10124 1C
74S74 1B
74S74 1B
74S74 2B
74S74 2B
74S74 2B

(CE-1E9) BITRING1-P ← 109
(CH-5G5) PWRONRST-N ← 108
(CE-4F6) FASTSYNC-P ← 115
(CE-4G6) LOCKTODATA-P ← 107
(CE-1E10) BITRING2-P ← 118
(CE-4F6) VFO SQUELCH-N ← 112
(CE-4F6) WRITE GATE-P ← 113
(CE-3C5) ENCDWRDATACL-P ← 114
(CE-4G7) ALWVFOCHECK-P ← 102
(CD-5G10) VFONOTSYNCD-P
(CQ-1F10) GENRESET-N ← 105

74S04 2A
74S04 2A
74S00 1A
74S00 1A
74S00 1A
74S00 1A
74S00 2A

FASTSYNCECL-N(CD-5B1)
SVMODEECL-P(CD-2D1)
SVMODEECL-N(CD-2C1)
VFORSTECL-P(CD-2D1)
VFO RST-P
VFOSQUELCH-N(CD-5D1)
WR GATE-P(CD-2G1)
VFO2FI-P (CD-4E10)
VFO ERROR-N (CE-5D2) (CH-5F6) → 104

74S174 2E
REG
1D 2D 3D 4D 5D 6D
1Q 2Q 3Q 4Q 5Q 6Q
CK R

+5V R39 560Ω 1/4W
INHCOMPE-NTP ← 122
101 167 201 267 → +5V
106 111 116 126 131 136 146 151 161 261 → 0V
156 166 206 211 216 226 231 236 246 251 256 266 → -5.2V

C8 3.3μF -35V
C10 3.3μF -35V
C31 0.022μF 50V
C32 0.022μF 50V
C11 3.3μF -35V
C13 3.3μF -35V
C33 0.022μF 50V
C47 0.022μF 50V

10124 2C

10174 8E
X0 X1 X2 X3 A B E Z

ZM10-10 11E
1 2 3 4 5 6 7 8 9 10 13 4 6 11 7 10E LTN

LTN 2 10E
10102 9E
10104 9D
10104 9D
LTN 3 10E
LTN 4 10E
10104 9D
10131 5B
WRDATA-P (CD-2E1)
WRDATA-N (CD-2E1)
10102 8B
ALWQMP-PTP ← 209
VFO2FD3-N (CD-3F4)

LTN 6 10E
LTN 3 6D
LTN 7 10E
LTN 14 10E
LTN 15 10E
LTN 13 10E

NP440 (VFO)
CD-1

P/N NP440 REV D	TITLE NP3?CTLR LOGIC DIA	SHEET 1/5 REV 1	DRAWN A.OGAWA 82.1.28 CHECK APPD K.Nishiya 82.2.18
VFO	DRAWING NO NPL-NC-28440	Nippon Peripherals Limited	

DATE DRAWN APPD

(CA-2F1)SERVO DATA-P ← 140
(CA-2F1)SERVO DATA-N ← 135

R6 100Ω 1/4W
R7 100Ω 1/4W
R8 100Ω 1/4W
R9 100Ω 1/4W
MB5365AMG 4A
R40 1KΩ 1/4W
R41 1KΩ 1/4W
C15 0.022μF 50V -5.2V

10116 4C

3C LTN 6
3C LTN 15
3C LTN 7
3C LTN 9

10102 1D

142 → SERVO DATA-PTP

(CD-1C8)SVMODEECL-N
(CD-1C8)SVMODEECL-P
(CD-1D8)VFORSTECL-P

VFO IN-P (CD-3B1) (CD-4C1)

(CA-2G1)RW DATA-P ← 124
(CA-2G1)RW DATA-N ← 125
(CD-1E11)WR DATA-P
(CD-1F11)WR DATA-N

R10 100Ω 1/4W
R11 100Ω 1/4W
MB5365AMG 3B
R12 100Ω 1/4W
R13 100Ω 1/4W
R14 100Ω 1/4W
R15 100Ω 1/4W
MB5365AMG 3A
R43 1KΩ 1/4W
R44 1KΩ 1/4W
-5.2V

10116 4C

130 → RAW RD DATA-PTP

3C LTN 13
3C LTN 1
3C LTN 14
3C LTN 5

R48 820Ω 1/4W -5.2V

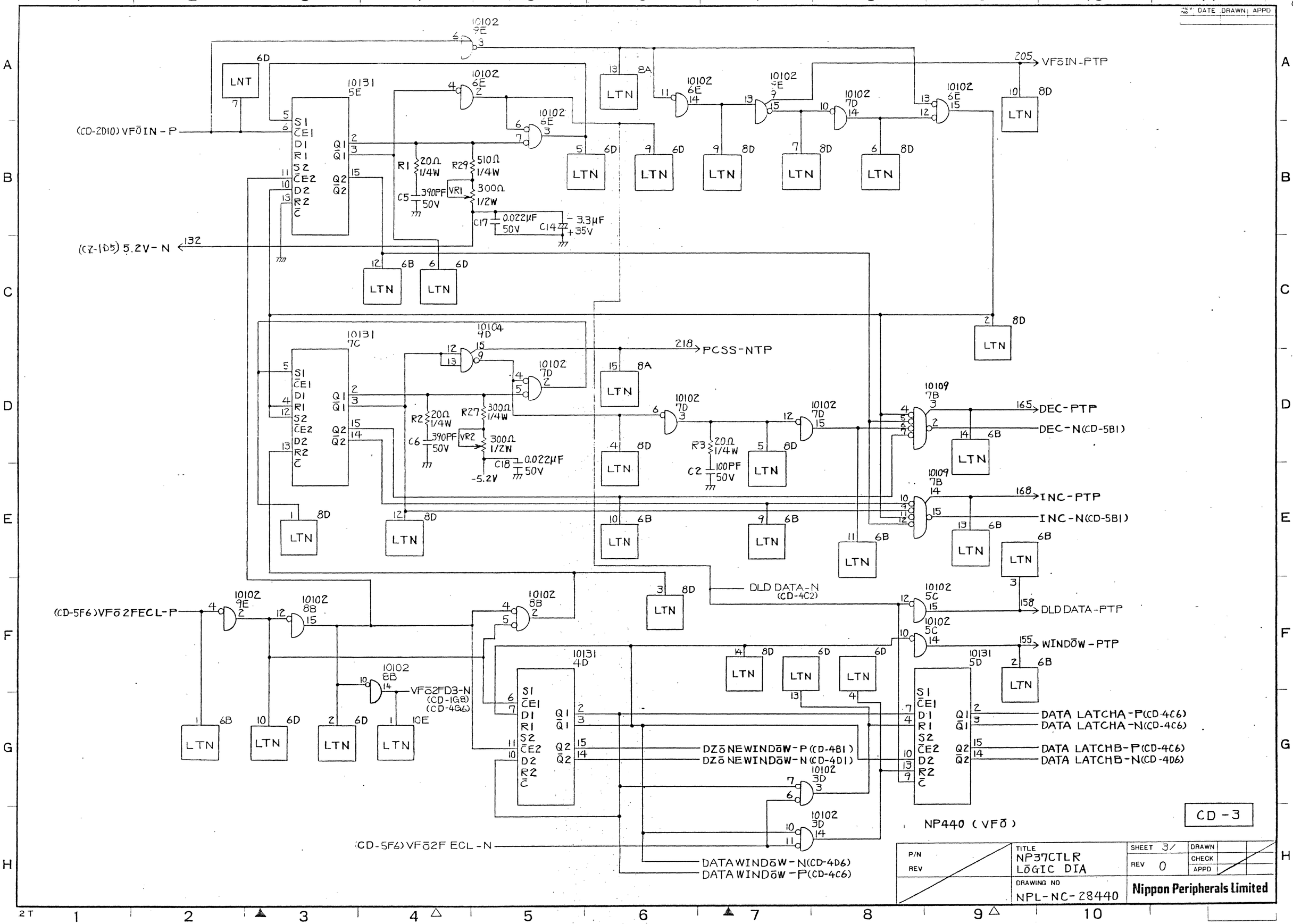
+5V
R42 1KΩ 1/4W
R23 180Ω 1/4W
(CD-1E6)WRGATE-P
R51 1.6KΩ 1/4W
C4 220PF 50V
Q1 2SA741®
R4 51Ω 1/4W
C16 0.022μF 50V
R5 51Ω 1/4W

NP440 (VFO)

CD-2

P/N / REV	TITLE: NP37CTLR LOGIC DIA	SHEET 2/ REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-28440	Nippon Peripherals Limited	

2T


(CD-2D10) VFŌIN-P
(CZ-1D5) 5.2V-N
(CD-5F6) VFŌ2FECL-P
(CD-5F6) VFŌ2F ECL-N
10131 5E
10131 7C
10131 4D
10131 5D
10104 4D
R1 20Ω 1/4W
R29 510Ω 1/4W
VR1 300Ω 1/2W
C5 390PF 50V
C17 0.022μF 50V
C14 3.3μF +35V
R2 20Ω 1/4W
R27 300Ω 1/4W
VR2 300Ω 1/2W
C6 390PF 50V
C18 0.022μF 50V
-5.2V
R3 20Ω 1/4W
C2 100PF 50V
205 VFŌIN-PTP
218 PCSS-NTP
165 DEC-PTP
DEC-N(CD-5B1)
168 INC-PTP
INC-N(CD-5B1)
DLD DATA-N (CD-4C2)
158 DLD DATA-PTP
155 WINDŌW-PTP
VFŌ2FD3-N (CD-1G8) (CD-4G6)
DZŌ NEWINDŌW-P (CD-4B1)
DZŌ NEWINDŌW-N (CD-4D1)
DATA WINDŌW-N (CD-4D6)
DATA WINDŌW-P (CD-4C6)
DATA LATCHA-P (CD-4C6)
DATA LATCHA-N (CD-4C6)
DATA LATCHB-P (CD-4C6)
DATA LATCHB-N (CD-4D6)
LTN
NP440 (VFŌ)
CD-3
P/N
REV
TITLE NP37CTLR LŌGIC DIA
SHEET 3/
REV 0
DRAWN
CHECK
APPD
DRAWING NO NPL-NC-28440
Nippon Peripherals Limited

(CD-3G7) DZ̄ONEWINDŌW-P
(CD-5F6) VFŌ2F ECL-P
(CD-3F7) DLD DATA-N
(CD-3G7) DZōNEWINDōW-N
(CD-5F6) VFŌ2F ECL-P
(CD-3H7) DATA WINDŌW-P
(CD-3G10) DATA LATCHA-N
(CD-3G10) DATA LATCHA-P
(CD-3G10) DATA LATCHB-P
(CD-3H7) DATA WINDŌW-N
(CD-3G10) DATA LATCHB-N
(CD-5F6) VFŌ2FECL-N
(CD-5F6) VFŌ2FECL-P
(CD-3G4) VFŌ2FD3-N

10102 3D
10102 ID
10102 5C
10131 2D
10131 5B
10109 6C
10125 6A
74S04 2A
LTN
VBB

162 → UNDCD DATA-P (CE-1E1)
164 → VFŌ2FI-PTP
VFŌ2FI-P (CD-1F5)
120 → VFŌ2F-P (CE-1A1)

NP440 (VFŌ)

CD-4

P/N / REV	TITLE: NP37CTLR LŌGIC DIA	SHEET 4/ REV O	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-28440	Nippon Peripherals Limited	

REV	DATE	DRAWN	APPD
R55 : 6.2K→2.7KΩ			
1	85.2.15	R.Aoki	

82

+5V
R39 820Ω 1/4W
R24 200Ω 1/4W
C19 0.022μF 50V
8A LTN 11
HD103106 9B
8 VO
(CD-3D10)DEC-N 7 IND
(CD-1B8)FASTSYNCECL-N 3 INH
(CD-3E10)INC-N 13 INI
9 8A LTN
R55 2.7KΩ 1/4W
R45 510Ω 1/4W
R33 470Ω 1/4W
15 VCS1
6 VCS2
14 VCS3
(F6)VBB 1 VBB
5 VEE
12 8A LTN
C20 0.022μF 50V
-5.2V
2 GND 9
11 OUT1
12 OUT2
10 OUT3
4 OUTD
16 OUTH
R50 1.5KΩ 1/4W +5V
C7 10000PF 50V
R31 430Ω 1/4W
Q3 2SC1707A
R49 1.1KΩ 1/4W
C3 100PF 50V
+5V
R22 110Ω 1/4W
R16 100Ω 1/4W
FT5714M 10C
R17 100Ω 1/4W
C21 0.022μF 50V
R38 680Ω 1/4W
+5V
D3 1S468
D2 1S468
D1 1S468
R25 150Ω 1/4W
+5V
R52 3.9KΩ 1/4W
R26 150Ω 1/4W
FT5714M 10C
+5V
R57 20KΩ 1/4W
C22 0.022μF 50V
R19 100Ω 1/4W
Q4 2SC1707A
R54 1.6KΩ 1/4W
R18 100Ω 1/4W
Q2 2SA742
R56 5.1KΩ 1/4W
R58 390KΩ 1/2W
-5.2V
C23 0.022μF 50V
R46 1KΩ 1/4W
74S04 2A
+5V
R28 300Ω 1/4W
(CD-1D6)VFOSQUELCH-N 1 2
D4 1S468
D5 1S468
Q5 2SC1374
R47 20Ω 1KΩ 1/4W → VCO CONTROL-PTP
R53 2.2KΩ 1/4W
-5.2V
+5V
R35 560Ω 1/4W
+5V
R30 390Ω 1/4W
R20 100Ω 1/4W
C24 0.022μF 50V
μPC271C 11B
C26 0.022μF 50V
+5V
R37 620Ω 1/4W
C27 0.022μF 50V
-5.2V
-5.2V
C30 0.022μF 50V
HD103107 12C
5 VEE
SAT1
SAT2
6 OUT1
12 OUT2
3 OUT3
C1 39PF 50V
8 OFC1
14 OFC2
VR3 500Ω 1/2W
R34 680Ω 1/4W
2 IFX
13 VCS
9 GND
14 6D LTN
15 6D LTN
10116 4C
10 7
9 6
11
VFO2FECL-P (CD-4C2)(CD-4B7) (CD-3F1)(CD-4F6)
VFO2FECL-N (CD-4F6)(CD-3H5)
VBB(C2)
+5V
C28 0.022μF 50V
μPC271C 11A
R21 100Ω 1/4W
R32 430Ω 1/4W
C25 0.022μF 50V
-5.2V
C29 0.022μF 50V
-5.2V
74S04 2A 10
VFONOTSYNCD-P(CD-1F1)

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NP440 (VFO)

CD-5

P/N	TITLE	SHEET 5/5	DRAWN	
REV	NP37CTLR LOGIC DIA	REV 1	CHECK	
	DRAWING NO NPL-NC-28440	Nippon Peripherals Limited	APPD	

(CL-4E5) DVTAGBITONPL-P ← 143 → 74LS14 4A 9,8 → 74LS04 4B 13,12 → TAG0TI-P
74LS04 (CC-2E1) (CC-5A6)

(CL-4F5) DVTAGBIT1NPL-P ← 145 → 74LS14 4A 5,6 → 74LS04 4B 11,10 → TAG1TI-P
74LS04 (CC-2C1) (CC-5A6)

(CL-4F5) DVTAGBIT2NPL-P ← 147 → 74LS14 4A 3,4 → 74LS04 4B 5,6 → TAG2TI-P
74LS04 (CC-2B1) (CC-5A6)

(CL-4F5) DVTAGBIT3NPL-P ← 149 → 74LS14 4A 11,10 → 74LS04 4B 9,8 → TAG3TI-P
74LS04 (CC-2B1) (CC-5A6) (CC-5B2)

(CL-4G5) DVTAGBIT4NPL-P ← 153 → 74LS14 4A 13,12 → 74LS04 4B 3,4 → TAG4TI-P
74LS04 (CC-2B1) (CC-5A6) (CC-5B2)

(CL-4G5) DVTAGBIT5NPL-P ← 155 → 74LS14 4A 1,2 → 74LS04 4B 1,2 → TAGPTI-P
(CC-5A6)

TAG0TI-N (CC-2C1)
(TAG1TI-N)
TAG2TI-N (CC-2E1) (CC-2B7)
TAG3TI-N (CC-2E1)
TAG4TI-N (CC-2E1)

(CL-4C10) DVBOUT0NPL-P ← 144 → 74LS14 5A 13,12 → 74LS04 5B 3,4 → BOUT0TI-P
74LS04 (CC-2F1) (CC-3A2) (CC-5B6) (CC-5F6)

(CL-4C10) DVBOUT1NPL-P ← 148 → 74LS14 5A 1,2 → 74LS04 5B 5,6 → BOUT1TI-P
74LS04 (CC-2F1) (CC-3A2) (CC-5B6) (CC-5F6)

(CL-4C10) DVBOUT2NPL-P ← 150 → 74LS14 5A 3,4 → 74LS04 5B 1,2 → BOUT2TI-P
74LS04 (CC-2F1) (CC-3A2) (CC-5C6) (CC-5F6)

(CL-4D10) DVBOUT3NPL-P ← 152 → 74LS14 5A 5,6 → 74LS04 5B 9,8 → BOUT3TI-P
74LS04 (CC-2F1) (CC-3A2) (CC-5C6) (CC-5F6)

(CL-4D10) DVBOUT4NPL-P ← 154 → 74LS14 5A 9,8 → 74LS04 5B 11,10 → BOUT4TI-P
74LS04 (CC-2F1) (CC-3B2) (CC-5C6) (CC-5F6)

(CL-4E10) DVBOUT5NPL-P ← 158 → 74LS14 5A 11,10 → 74LS04 5B 13,12 → BOUT5TI-P
74LS04 (CC-2G1) (CC-3B2) (CC-5C6) (CC-5G6)

(CL-4E10) DVBOUT6NPL-P ← 160 → 74LS14 6A 1,2 → 74LS04 6B 1,2 → BOUT6TI-P
74LS04 (CC-2G1) (CC-3B2) (CC-5C6) (CC-5G6)

(CL-4F10) DVBOUT7NPL-P ← 162 → 74LS14 6A 5,6 → 74LS04 6B 9,8 → BOUT7TI-P
74LS04 (CC-2G1) (CC-3B2) (CC-5C6) (CC-5G6)

(CL-4F10) DVBOUTPNPL-P ← 164 → 74LS14 6A 9,8 → 74LS04 6B 13,12 → BOUTPTI-P (CC-5C6)

(CL-4B5) DVSEL0NPL-P ← 108 → 74LS14 1B 3,4 → DVSEL0TI-N (CC-2B7)

(CL-4B5) DVSEL1NPL-P ← 110 → 74LS14 1B 13,12 → DVSEL1TI-N (CC-2C7)

(CL-4B5) DVSEL2NPL-P ← 118 → 74LS14 1B 5,6 → DVSEL2TI-N (CC-2D7)

101, 167, 201, 267 → +5V
C1 +3.3uF ±35V
C5 0.022uF 50V
R3 560Ω → TIEUP (CC-2B7) (CC-2H2)
~C4 +3.3uF ±35V
~C11 0.022uF 50V
106, 111, 116, 126, 131, 136, 146, 151 → 0V
156, 166, 206, 211, 216, 226, 231
236, 246, 251, 256, 266

DSBLBIN-N (CC-2F1)

(CB-1A5) DSBLBIN-N ← 268 → 74LS08 8E 12,13 → 11 → (DSBLBINTI-N)
(CC-4C11) SELHOLDTI-N ←

74LS14 1A 5,6 → BIOTI-N (CC-2H1)

HD2904 2A
(CC-5A4) BIT0-P → 14
(CC-5B4) BIT1-P → 5
(CC-5C4) BIT2-P → 12
4 → 127 → DVBIN0NPL-P (CA-2C1) (CL-1B6)
7 → 132 → DVBIN1NPL-P (CA-2D1) (CL-1B6)
10 → 129 → DV BIN2 NPL-P (CA-2D1) (CL-1C6)

HD2904 2B
(CC-5D4) BIT3-P → 14
(CC-5E4) BIT4-P → 5
(CC-5F4) BIT5-P → 12
4 → 134 → DV BIN3NPL-P (CA-2D1) (CL-1B6)
7 → 133 → DV BIN4NPL-P (CA-2D1) (CL-1C6)
10 → 138 → DV BIN5 NPL-P (CA-2E1) (CL-1C6)

HD2904 3B
(CC-5G4) BIT6-P → 14
(CC-5H4) BIT7-P → 5
(CC-4E11) BITP-P → 12
4 → 135 → DV BIN6 NPL-P (CA-2E1) (CL-1A6)
7 → 140 → DV BIN7 NPL-P (CA-2E1) (CL-1A6)
10 → 139 → DV BINPNPL-P (CA-2E1) (CL-1D6)

HD2904 3A
(CH-1E5) RSRREQ TC-P ← 137 → 14
(CC-2A4) TAGVLDTIDR-P → 5
(CS-4A10) PORSWR-N ← 125 → 12
4 → 163 → RSR REQ NPL-P (CA-1G2)
7 → R1 → 142 → DV TAGVLD NPL-P (CA-2F1) (CL-1D1)
DV TAGVLD NPL-P (CC-4C9)
10 → R2 → 168 → TC PWR DNPL-P (CA-2G1)

74LS14 1A
(CL-4C5) DVSEL3NPL-P ← 120 → 1 → 2 → DV SEL3 TI-N (CC-2E7)
(CL-4C5) DVSEL4NPL-P ← 122 → 11 → 10 → DV SEL4 TI-N (CC-2E7)
(CL-4C5) DVSEL5NPL-P ← 124 → 9 → 8 → DV SEL5 TI-N (CC-2F7)
(CL-4D5) DVSEL6NPL-P ← 128 → 13 → 12 → DV SEL6 TI-N (CC-2G7)
(CL-4D5) DVSEL7NPL-P ← 130 → 3 → 4 → DV SEL7 TI-N (CC-2G7)

(CB-1H6) XCALLPR-N ← 117 → 119 → DUAL CTLPR SNT-N (CH-6D2) (CL-5A8)
NP481 (XCALL-2)

CC-1

P/N NP481 REV A	TITLE NP75 CTLR LOGIC DIA	SHEET 15 REV 0	DRAWN CHECK APPD
X CALL-2	DRAWING NO NPL-NC-2[illegible]481	Nippon Peripherals Limited	

83-7

REV No	DATE	DRAWN	APPD

(CC-4H6)TAGGATETI-P
(CC-4C11)SELHOLDTI-N
74LS00 4E
74LS04 2C
TAGVLDTIDR-P (CC-1E6)(CC-5D6)
(CC-4H4)SENSEOI-N
(CC-4A6)SENSE-N
74LS00 1D
74LS04 3D
74LS08 8E
(CC-1A4)TAG2TI-P
C12
74LS138 4C
74LS20 3C
(CC-1B4)TAG4TI-P
(CC-1B4)TAG3TI-P
(CC-1A4)TAG1TI-P
(CC-1C4)TAGOTI-N
74LS04 3D
SETASGN-P(G1)
SETLONG-N(CC-3A7)
SETBUSY-P(CC-3B2)
SETCEDRV-P(CC-5G6)
74LS20 3C
74LS04 6E
74LS08 5E
(CC-4C11)SELHOLDTI-P
74LS04 2C
74LS08 5E
74LS00 4E
105→RSTERRTI-N(CB-1C6)
(ATTN RST-N)
74LS08 5E
(CC-1C4)TAG2TI-N
(CC-1C4)TAG4TI-N
(CC-1C4)TAG3TI-N
(CC-1A4)TAGOTI-P
5D
74LS04 6E
74LS10 7E
(CC-3A2)
RSTCNCT-N (CC-3A7)
121→RSTCNCT-N (CL-5B8)
(CC-5D7) PWRONRST-N
(CC-1A8)DSBLBIN-N
74LS08 8E
RST-N(CC-3A2)(CC-5G6)
74LS273 10A
(CC-1C4)BOUT0TI-P
(CC-1D4)BOUT1TI-P
(CC-1D4)BOUT2TI-P
(CC-1D4)BOUT3TI-P
(CC-1D4)BOUT4TI-P
(CC-1E4)BOUT5TI-P
(CC-1E4)BOUT6TI-P
(CC-1E4)BOUT7TI-P
(A7)SETASGN-P
243→ASGN0-PTP
242→ASGN1-PTP
238→ASGN2-PTP
244→ASGN3-PTP
240→ASGN4-PTP
245→ASGN5-PTP
239→ASGN6-PTP
237→ASGN7-PTP
ASGN0-P(CC-3D2)(CC-4A2)(CC-4C5)(CC-5A2)
ASGN1-P(CC-3D2)(CC-4B2)(CC-4D5)(CC-5B2)
ASGN2-P(CC-3E2)(CC-4C2)(CC-4D5)(CC-5C2)
ASGN3-P(CC-3E2)(CC-4D2)(CC-4D5)(CC-5D2)
ASGN4-P(CC-3E2)(CC-4E2)(CC-4D5)(CC-5E2)
ASGN5-P(CC-3E2)(CC-4F2)(CC-4E5)(CC-5F2)
ASGN6-P(CC-3E2)(CC-4G2)(CC-4E5)(CC-5G2)
ASGN7-P(CC-3E2)(CC-4H2)(CC-4E5)(CC-5H2)
(CC-1A10)BIO TI-N
74LS74 2D
(CC-1G4)TIEUP
102→AUAILABLE-PTP

(CB-2E5)BOUT7OI-P←235
(CB-2E5)BOUT6OI-P←228
(CB-2E5)BOUT5OI-P←234
(CB-1D10)SETPC-N←214
BOUT7OI-P(CC-3F2)
BOUT6OI-P(CC-3F2)
BOUT5OI-P(CC-3F2)
74LS138 8A
(CC-1C4)TAG2TI-N
SENSETI-N (CC-5A2)
(CC-1G4)TIEUP
74LS532 6C
74LS08 7C
(CC-1F4)DVSEL0TI-N
(CC-1F4)DVSEL1TI-N
(CC-1G4)DVSEL2TI-N
DVSEL3TI-N (CC-1F9)
74LS532 6D
74LS08 7D
(CC-1F9)DVSEL4TI-N
(CC-1G9)DVSEL5TI-N
(CC-1G9)DVSEL6TI-N
(CC-1G9)DVSEL7TI-N
74LS279 7A
74LS279 7B
202→PC0-PTP
PC0-P (CC-3E7)(CC-4A2)(CC-5A2)
204→PC1-PTP
PC1-P (CC-3E7)(CC-4B2)(CC-5B2)
205→PC2-PTP
PC2-P (CC-3E7)(CC-4C2)(CC-5C2)
208→PC3-PTP
PC3-P (CC-3E7)(CC-4D2)(CC-5D2)
255→PC4-PTP
PC4-P (CC-3E7)(CC-4E2)(CC-5E2)
254→PC5-PTP
PC5-P (CC-3E7)(CC-4F2)(CC-5F2)
253→PC6-PTP
PC6-P (CC-3F7)(CC-4G2)(CC-5G2)
252→PC7-PTP
PC7-P (CC-3F7)(CC-4H2)(CC-5H2)

NP481(XCALL-2)

CC-2

P/N REV	TITLE NP75 CTLR LOGIC DIA	SHEET 21 REV 0	DRAWN / CHECK / APPD
	DRAWING NO NPL-NC-28481	Nippon Peripherals Limited	

NO. | DATE | DRAWN | APPD

74LS08 8E
(CC-2E6)RST CNCT-N
(CC-2F4)RST-N

74LS273 9A
(CC-1C4)BOUT0 TI-P
(CC-1D4)BOUT1 TI-P
(CC-1D4)BOUT2 TI-P
(CC-1D4)BOUT3 TI-P
(CC-1D4)BOUT4 TI-P
(CC-1E4)BOUT5 TI-P
(CC-1E4)BOUT6 TI-P
(CC-1E4)BOUT7 TI-P
(CC-2C6)SET BUSY-P
1D 2D 3D 4D 5D 6D 7D 8D CK CLR
1Q 2Q 3Q 4Q 5Q 6Q 7Q 8Q
224 → BUSY0-PTP
223 → BUSY1-PTP
222 → BUSY2-PTP
220 → BUSY3-PTP
219 → BUSY4-PTP
218 → BUSY5-PTP
217 → BUSY6-PTP
215 → BUSY7-PTP

74LS279 1C
(CC-2E6)RST CNCT-N
(CC-2C6)SETLONG-N
S Q R

74LS151 12E
74LS151 11E
74LS151 10D
74LS151 9D
S0 S1 S2 D0 D1 D2 D3 D4 D5 D6 D7 G Y W
LONG CNTD TO OI-P (CC-4C2)
LONG CNTD TO TI-P (CC-5C2)
PC OI-P (CC-4D2)
PCTI-P (CC-5D2)

BUSY0-P (CC-4A2)(CC-4C5)(CC-5A2)
BUSY1-P (CC-4B2)(CC-4C5)(CC-5B2)
BUSY2-P (CC-4C2)(CC-4D5)(CC-5C2)
BUSY3-P (CC-4D2)(CC-4D5)(CC-5D2)
BUSY4-P (CC-4E2)(CC-4D5)(CC-5E2)
BUSY5-P (CC-4F2)(CC-4E5)(CC-5F2)
BUSY6-P (CC-4G2)(CC-4E5)(CC-5G2)
BUSY7-P (CC-4H2)(CC-4E5)(CC-5H2)

74LS151 11D
(CC-2G5)ASGN0-P
(CC-2G5)ASGN1-P
(CC-2G5)ASGN2-P
(CC-2G5)ASGN3-P
(CC-2G5)ASGN4-P
(CC-2G5)ASGN5-P
(CC-2H5)ASGN6-P
(CC-2H5)ASGN7-P
AS GND TO TI-P (CC-5E2)

74LS151 12D
(CC-2A7)BOUT7OI-P
(CC-2A7)BOUT6OI-P
(CC-2A7)BOUT5OI-P
AS GND TO OI-P (CC-4E2)

(CC-2B11)PC0-P
(CC-2C11)PC1-P
(CC-2D11)PC2-P
(CC-2D11)PC3-P
(CC-2E11)PC4-P
(CC-2F11)PC5-P
(CC-2G11)PC6-P
(CC-2G11)PC7-P

NP481(XCALL-2)

CC-3

P/N REV	TITLE NP75 CTLR LOGIC DIA	SHEET 3/ REV 0	DRAWN / CHECK / APPD
	DRAWING NO NPL-NC-28481	Nippon Peripherals Limited	

2S

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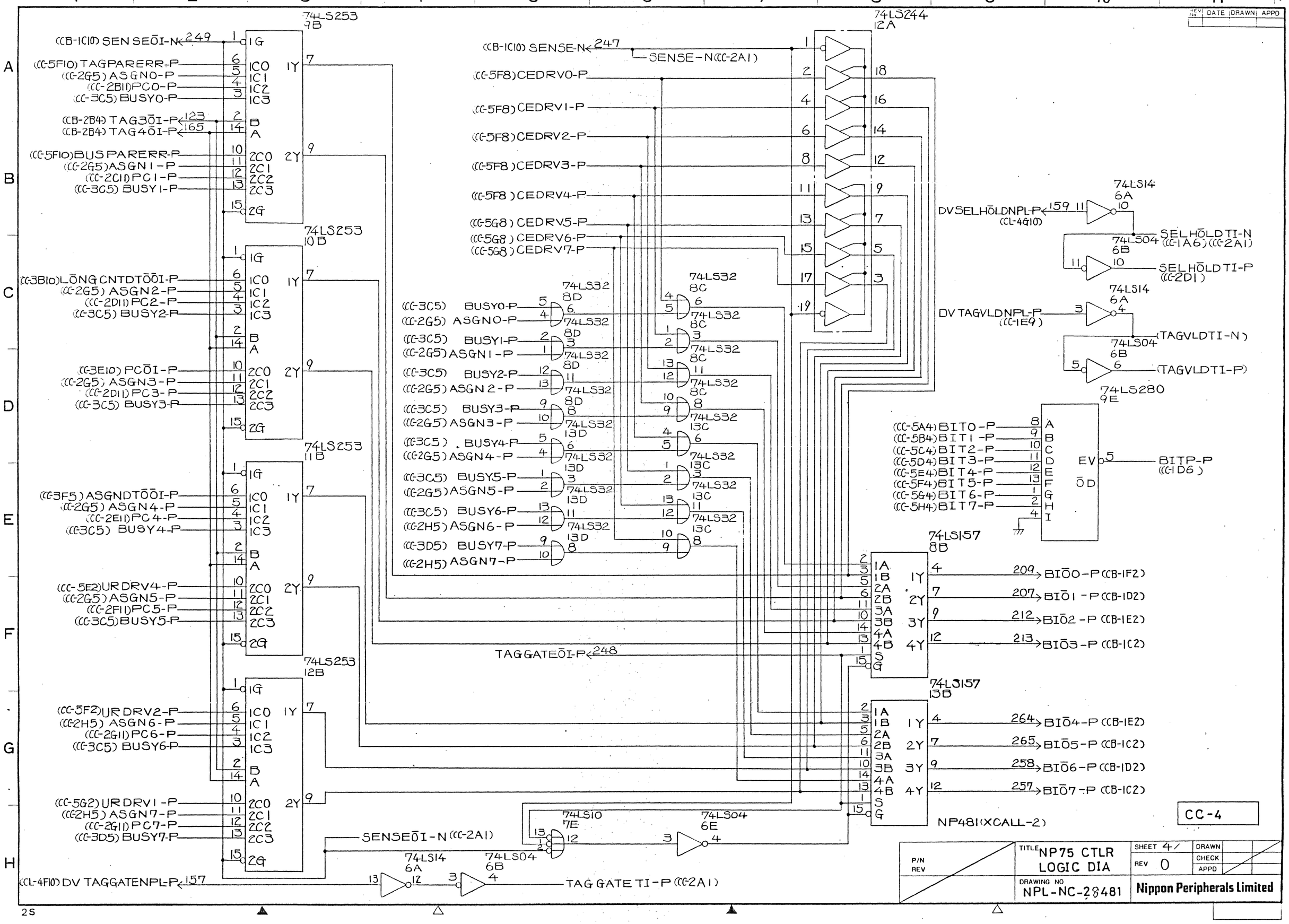
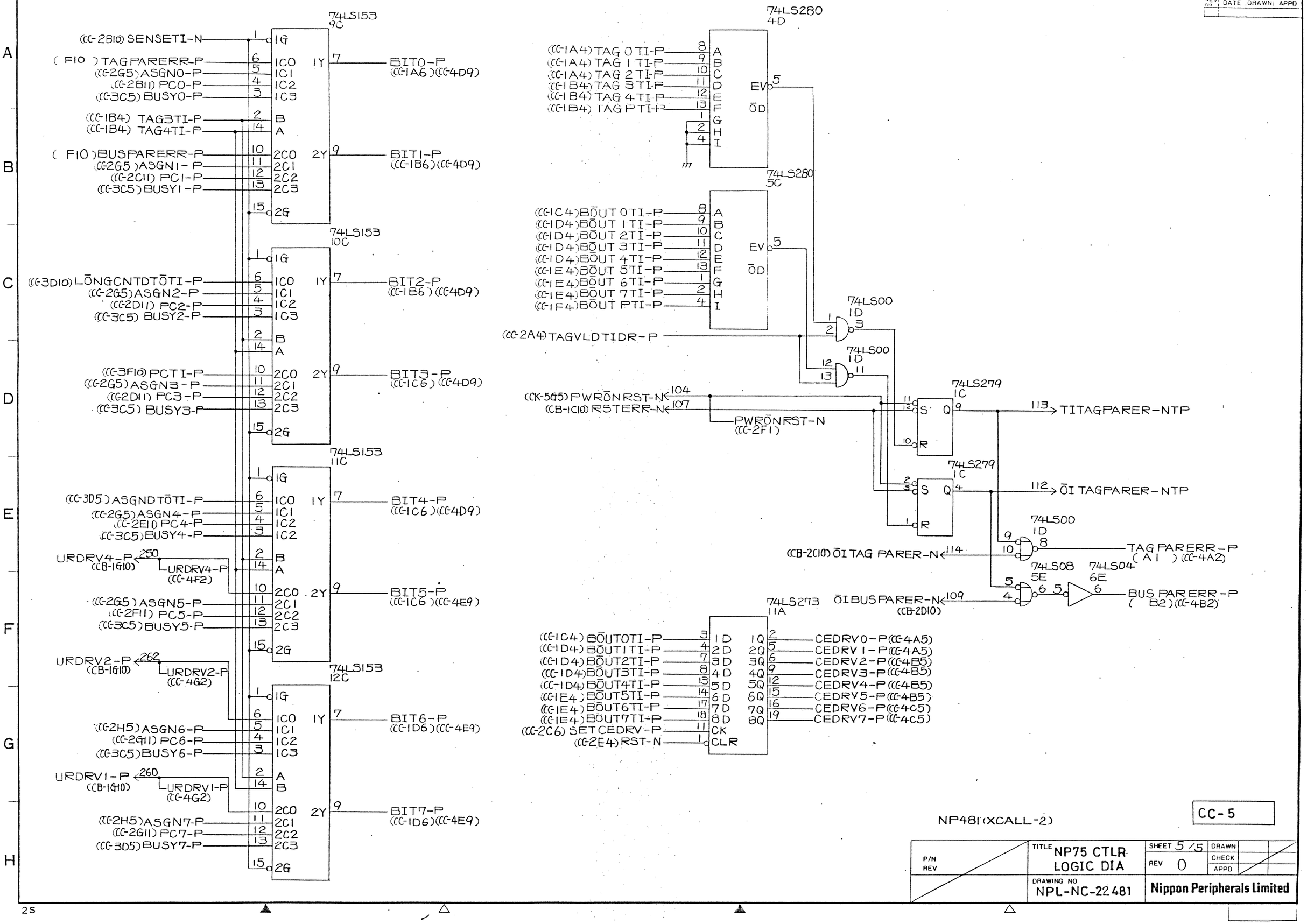

74LS253 9B
74LS253 10B
74LS253 11B
74LS253 12B
74LS244 12A
74LS14 6A
74LS04 6B
74LS280 9E
74LS157 8B
74LS157 13B
74LS32 8C
74LS32 8D
74LS32 13C
74LS32 13D
74LS10 7E
74LS04 6E
74LS14 6A
74LS04 6B
(CB-IC10) SEN SEŌI-N
(CC-5F10) TAGPARERR-P
(CC-2G5) ASGNO-P
(CC-2B11) PCO-P
(CC-3C5) BUSYO-P
(CB-2B4) TAG3ŌI-P
(CB-2B4) TAG4ŌI-P
(CC-5F10) BUS PARERR-P
(CC-2G5) ASGN1-P
(CC-2C11) PC1-P
(CC-3C5) BUSY1-P
(CC-3B10) LŌNG CNTDTŌŌI-P
(CC-2G5) ASGN2-P
(CC-2D11) PC2-P
(CC-3C5) BUSY2-P
(CC-3E10) PCŌI-P
(CC-2G5) ASGN3-P
(CC-2D11) PC3-P
(CC-3C5) BUSY3-P
(CC-3F5) ASGNDTŌŌI-P
(CC-2G5) ASGN4-P
(CC-2E11) PC4-P
(CC-3C5) BUSY4-P
(CC-5E2) UR DRV4-P
(CC-2G5) ASGN5-P
(CC-2F11) PC5-P
(CC-3C5) BUSY5-P
(CC-5F2) UR DRV2-P
(CC-2H5) ASGN6-P
(CC-2G11) PC6-P
(CC-3C5) BUSY6-P
(CC-5G2) UR DRV1-P
(CC-2H5) ASGN7-P
(CC-2G11) PC7-P
(CC-3D5) BUSY7-P
(CL-4F10) DV TAGGATENPL-P
SENSEŌI-N (CC-2A1)
TAG GATE TI-P (CC-2A1)
(CB-IC10) SENSE-N
SENSE-N (CC-2A1)
(CC-5F8) CEDRV0-P
(CC-5F8) CEDRV1-P
(CC-5F8) CEDRV2-P
(CC-5F8) CEDRV3-P
(CC-5F8) CEDRV4-P
(CC-5G8) CEDRV5-P
(CC-5G8) CEDRV6-P
(CC-5G8) CEDRV7-P
TAGGATEŌI-P
DV SELHŌLDNPL-P (CL-4G10)
SELHŌLDTI-N (CC-1A6) (CC-2A1)
SELHŌLDTI-P (CC-2D1)
DV TAGVLDNPL-P (CC-1E9)
(TAGVLDTI-N)
(TAGVLDTI-P)
(CC-5A4) BIT0-P
(CC-5B4) BIT1-P
(CC-5C4) BIT2-P
(CC-5D4) BIT3-P
(CC-5E4) BIT4-P
(CC-5F4) BIT5-P
(CC-5G4) BIT6-P
(CC-5H4) BIT7-P
BITP-P (CC-1D6)
209 → BIŌ0-P (CB-1F2)
207 → BIŌ1-P (CB-1D2)
212 → BIŌ2-P (CB-1E2)
213 → BIŌ3-P (CB-1C2)
264 → BIŌ4-P (CB-1E2)
265 → BIŌ5-P (CB-1C2)
258 → BIŌ6-P (CB-1D2)
257 → BIŌ7-P (CB-1C2)
NP481 (XCALL-2)
CC-4
TITLE NP75 CTLR LOGIC DIA
SHEET 4/
REV 0
DRAWN
CHECK
APPD
DRAWING NO NPL-NC-28481
Nippon Peripherals Limited
P/N REV
REV DATE DRAWN APPD



NP481 (XCALL-2)

CC-5

P/N REV	TITLE NP75 CTLR LOGIC DIA	SHEET 5/5 REV 0	DRAWN CHECK APPD
	DRAWING NO NPL-NC-22481	Nippon Peripherals Limited	

REV NO.	DATE	DRAWN	APPD

(CR-5D10) ENABLE A -P ← 127
(CT-5D10) ENABLE B -P ← 130
74LS32 4A
74LS08 3A
(CL-1B4) BRING UP RUN G-N ← 128
74LS08 3C
129 → DSBL BIN - N (CC-1A6)
(CB-2G5) SEL HOLD ŌI-N
HDZ904 10B
(A 9) TAGVLD ŌI-P
(CS-4A10) PORS WR -N ← 237
(F 5) BIŌ P-P
(CC-4E9) BIŌ 7-P ← 155
R50 100Ω 1/4W → 242 ŌI TAGVLD NPL-P (CA-4F2)
R49 100Ω 1/4W → 239 ŌI BIN P NPL-P (CA-4E2)
R48 100Ω 1/4W → 240 ŌI BIN 7 NPL- P (CA-4E2)
HDZ904 9B
(CC-4E9) BIŌ 5-P ← 168
(CC-4E9) BIŌ 3-P ← 159
(CC-4E9) BIŌ 1-P ← 160
R46 100Ω 1/4W → 238 ŌI BIN 5 NPL-P (CA-4A2)
R44 100Ω 1/4W → 234 ŌI BIN 3 NPL-P (CA-4D2)
R42 100Ω 1/4W → 232 ŌI BIN 1 NPL-P (CA-4D2)
HDZ904 8B
(CC-4E9) BIŌ 6-P ← 157
(CC-4E9) BIŌ 2-P ← 162
(CC-4E9) BIŌ 4-P ← 164
R47 100Ω 1/4W → 235 ŌI BIN 6 NPL-P (CA-4E2)
R43 100Ω 1/4W → 229 ŌI BIN 2 NPL- P (CA-4D2)
R45 100Ω 1/4W → 233 ŌI BIN 4 NPL- P (CA-4D2)
HDZ904 7B
(CC-4D9) BIŌ 0-P ← 158
R41 100Ω 1/4W → 227 ŌI BIN 0 NPL-P (CA-4C2)
74LS280 6A
EV → 5 → BIŌP-P (B2)
ŌD
A B C D E F G H I
101 167 201 267
+5V
C1 3.3μF 35V
C4 3.3μF 35V
C5 0.022μF 50V
C11 0.022μF 50V
106 111 116 126 131 136 146
0V
151 156 166 206 211 216
226 231 236 246 251 256
266

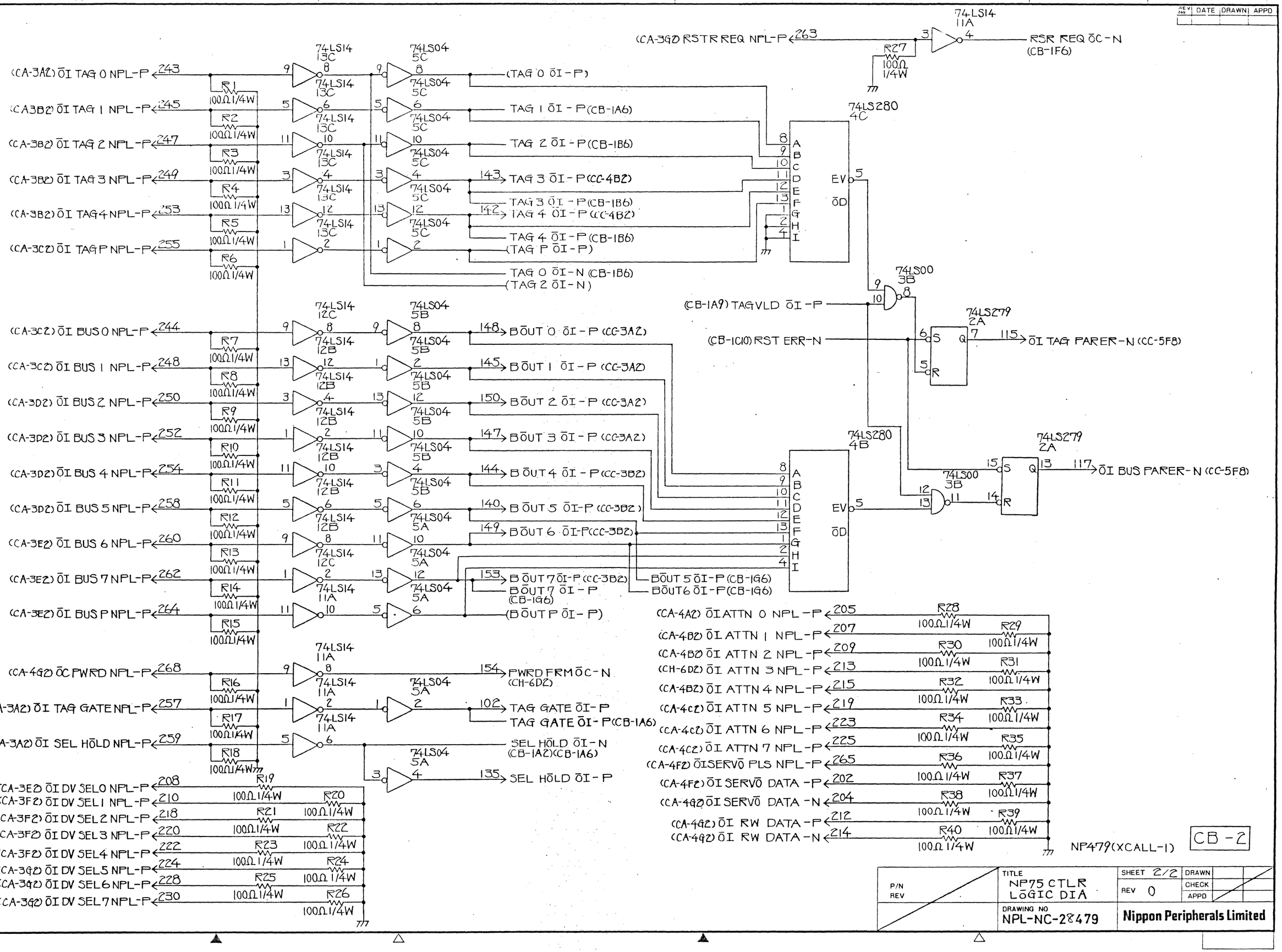
(CB-2G5) TAG GATE ŌI -P
(CB-2G5) SEL HOLD ŌI-N
74LS00 3B
(TAG VLD ŌI-N)
74LS04 1A
C12 510PF 50V
TAGVLD ŌI-P (B2)(CB-2C7)
74LS04 2B
(CB-2A5) TAG 1 ŌI-P
74LS138 2C
(CB-2B5) TAG 4 ŌI-P
(CB-2B5) TAG 3 ŌI-P
(CB-2B5) TAG 2 ŌI-P
(CB-2C5) TAG 0 ŌI-N
A B C G1 G2 G3
Y0 Y1 Y2 Y3 Y4 Y5 Y6 Y7
74LS04 2B
74LS00 3B
74LS08 5A
74LS08 3A
(CC-2C5) RST ERR TI-N ← 125
(CK-5G5) PWR ON RST -N ← 118
124 → RST ERR - N (CC-5D6)
RST ERR - N (CB-2C7)
74LS20 1C
74LS04 1A
105 → SENSE ŌI-N (CC-4A2)
104 → SENSE-N (CC-4A8)
119 → SET PC - N (CC-2A7)
122 → RSTR CMP ŌI-NTP
74LS279 2A
RSR REQ TC-P (CH-1E5) ← 108
120 → RSR CMP FRM ŌC-N (CH-6D2)
(CH-1E5) RSR CMP TC-P ← 107
114 → RSR REQ FRM ŌC-N (CH-6E2)
(CB-2A10) RSR REQ ŌC-N
74LS175 1B
(CB-2E7) BOUT 5 ŌI-P
(CB-2E7) BOUT 6 ŌI-P
(CB-2E5) BOUT 7 ŌI-P
1D 2D 3D 4D CK CLR
1Q 1Q̄ 2Q 2Q̄ 3Q 3Q̄ 4Q 4Q̄
109 → UR DRV 4 - P (CC-5E1)
112 → UR DRV 2 - P (CC-5F1)
113 → UR DRV 1 - P (CC-5G1)
(CC-1G6) X CALL PR-N ← 165

NP479 (XCALL-1)

CB - 1

P/N NP479 REV A	TITLE NP75 CTLR LOGIC DIA	SHEET 1 / 2 REV 0	DRAWN WATAKI 84.7.10 CHECK APPD DGN NO 84.7.1
XCALL-1	DRAWING NO NPL-NC-28479	Nippon Peripherals Limited	

L-28


74LS14 13C
74LS04 5C
(CA-3A2) ŌI TAG 0 NPL-P 243
(CA-3B2) ŌI TAG 1 NPL-P 245
(CA-3B2) ŌI TAG 2 NPL-P 247
(CA-3B2) ŌI TAG 3 NPL-P 249
(CA-3B2) ŌI TAG 4 NPL-P 253
(CA-3C2) ŌI TAG P NPL-P 255
R1 100Ω 1/4W
R2 100Ω 1/4W
R3 100Ω 1/4W
R4 100Ω 1/4W
R5 100Ω 1/4W
R6 100Ω 1/4W
(TAG 0 ŌI-P)
TAG 1 ŌI-P (CB-1A6)
TAG 2 ŌI-P (CB-1B6)
143 TAG 3 ŌI-P (CC-4B2)
TAG 3 ŌI-P (CB-1B6)
142 TAG 4 ŌI-P (CC-4B2)
TAG 4 ŌI-P (CB-1B6)
(TAG P ŌI-P)
TAG 0 ŌI-N (CB-1B6)
(TAG 2 ŌI-N)
74LS14 12C
74LS04 5B
(CA-3C2) ŌI BUS 0 NPL-P 244
(CA-3C2) ŌI BUS 1 NPL-P 248
(CA-3D2) ŌI BUS 2 NPL-P 250
(CA-3D2) ŌI BUS 3 NPL-P 252
(CA-3D2) ŌI BUS 4 NPL-P 254
(CA-3D2) ŌI BUS 5 NPL-P 258
(CA-3E2) ŌI BUS 6 NPL-P 260
(CA-3E2) ŌI BUS 7 NPL-P 262
(CA-3E2) ŌI BUS P NPL-P 264
R7 100Ω 1/4W
R8 100Ω 1/4W
R9 100Ω 1/4W
R10 100Ω 1/4W
R11 100Ω 1/4W
R12 100Ω 1/4W
R13 100Ω 1/4W
R14 100Ω 1/4W
R15 100Ω 1/4W
148 B ŌUT 0 ŌI-P (CC-3A2)
145 B ŌUT 1 ŌI-P (CC-3A2)
150 B ŌUT 2 ŌI-P (CC-3A2)
147 B ŌUT 3 ŌI-P (CC-3A2)
144 B ŌUT 4 ŌI-P (CC-3B2)
140 B ŌUT 5 ŌI-P (CC-3B2)
149 B ŌUT 6 ŌI-P (CC-3B2)
153 B ŌUT 7 ŌI-P (CC-3B2)
B ŌUT 7 ŌI-P (CB-1A6)
(B ŌUT P ŌI-P)
74LS14 11A
74LS04 5A
(CA-4G2) ŌC PWRD NPL-P 268
(CA-3A2) ŌI TAG GATE NPL-P 257
(CA-3A2) ŌI SEL HŌLD NPL-P 259
R16 100Ω 1/4W
R17 100Ω 1/4W
R18 100Ω 1/4W
154 PWRD FRM ŌC-N (CH-6D2)
102 TAG GATE ŌI-P
TAG GATE ŌI-P (CB-1A6)
SEL HŌLD ŌI-N (CB-1A2)(CB-1A6)
135 SEL HŌLD ŌI-P
(CA-3E2) ŌI DV SEL0 NPL-P 208
(CA-3F2) ŌI DV SEL1 NPL-P 210
(CA-3F2) ŌI DV SEL2 NPL-P 218
(CA-3F2) ŌI DV SEL3 NPL-P 220
(CA-3F2) ŌI DV SEL4 NPL-P 222
(CA-3G2) ŌI DV SEL5 NPL-P 224
(CA-3G2) ŌI DV SEL6 NPL-P 228
(CA-3G2) ŌI DV SEL7 NPL-P 230
R19 100Ω 1/4W
R20 100Ω 1/4W
R21 100Ω 1/4W
R22 100Ω 1/4W
R23 100Ω 1/4W
R24 100Ω 1/4W
R25 100Ω 1/4W
R26 100Ω 1/4W
74LS14 11A
(CA-3G2) RSTR REQ NPL-P 263
R27 100Ω 1/4W
RSR REQ ŌC-N (CB-1F6)
74LS280 4C
74LS280 4B
A B C D E F G H I
EV ŌD
74LS00 3B
(CB-1A9) TAG VLD ŌI-P
(CB-1C10) RST ERR-N
74LS279 2A
115 ŌI TAG PARER-N (CC-5F8)
117 ŌI BUS PARER-N (CC-5F8)
BŌUT 5 ŌI-P (CB-1A6)
BŌUT 6 ŌI-P (CB-1A6)
(CA-4A2) ŌI ATTN 0 NPL-P 205
(CA-4B2) ŌI ATTN 1 NPL-P 207
(CA-4B2) ŌI ATTN 2 NPL-P 209
(CH-6D2) ŌI ATTN 3 NPL-P 213
(CA-4B2) ŌI ATTN 4 NPL-P 215
(CA-4C2) ŌI ATTN 5 NPL-P 219
(CA-4C2) ŌI ATTN 6 NPL-P 223
(CA-4C2) ŌI ATTN 7 NPL-P 225
(CA-4F2) ŌI SERVŌ PLS NPL-P 265
(CA-4F2) ŌI SERVŌ DATA-P 202
(CA-4G2) ŌI SERVŌ DATA-N 204
(CA-4G2) ŌI RW DATA-P 212
(CA-4G2) ŌI RW DATA-N 214
R28 100Ω 1/4W
R29 100Ω 1/4W
R30 100Ω 1/4W
R31 100Ω 1/4W
R32 100Ω 1/4W
R33 100Ω 1/4W
R34 100Ω 1/4W
R35 100Ω 1/4W
R36 100Ω 1/4W
R37 100Ω 1/4W
R38 100Ω 1/4W
R39 100Ω 1/4W
R40 100Ω 1/4W
NP479 (XCALL-1)
CB-2
REV NO | DATE | DRAWN | APPD
P/N REV
TITLE NP75 CTLR LŌGIC DIA
SHEET 2/2
REV 0
DRAWN
CHECK
APPD
DRAWING NO NPL-NC-28479
Nippon Peripherals Limited

CONTROLLER BACK BOARD		DEVI - EDGE (NP446) 3M CONNECTOR	PCB (NP442) 3M CONNECTOR	HEADER	PLUG	
(CJ-4G4) DV TAG GATE NPL-P	CA-257	4-13	4-13	J301A-25	P301A-25	NPL TAG GATE - P(X-1C2)
		-14	-14	-26	-26	GND
(CJ-4G4) DV SEL HOLD NPL-P	-259	-15	-15	-27	-27	NPL SEL HOLD - P(X-1D2)
		-16	-16	J301A-28	P301A-28	GND
(CJ-4E4) DV TAG BIT 0 NPL-P	-243	-1	-1	J302A-39	P302A-39	NPL DEV TAG 0 - P(X-2E2)
		-2	-2	-40	-40	GND
(CJ-4E4) DV TAG BIT 1 NPL-P	-245	-3	-3	-41	-41	NPL DEV TAG 1 - P(X-2E2)
		-4	-4	-42	-42	GND
(CJ-4E4) DV TAG BIT 2 NPL-P	-247	-5	-5	-43	-43	NPL DEV TAG 2 - P(X-2E2)
		-6	-6	-44	-44	GND
(CJ-4F4) DV TAG BIT 3 NPL-P	-249	-7	-7	-45	-45	NPL DEV TAG 3 - P(X-2F2)
		-8	-8	-46	-46	GND
(CJ-4F4) DV TAG BIT 4 NPL-P	-253	-9	-9	-47	-47	NPL DEV TAG 4 - P(X-2F2)
		-10	-10	-48	-48	GND
(CJ-4G4) DV TAG BIT P NPL-P	-255	-11	-11	-49	-49	NPL DEV TAG P - P(X-2F2)
		4-12	4-12	J302A-50	P302A-50	GND
(CJ-4A10) DV BOUT 0 NPL-P	-244	5-1	5-1	J301A-7	P301A-7	NPL BUS OUT 0 - P(X-1B2)
		-2	-2	-8	-8	GND
(CJ-4A10) DV BOUT 1 NPL-P	-248	-3	-3	-9	-9	NPL BUS OUT 1 - P(X-1B2)
		-4	-4	-10	-10	GND
(CJ-4A10) DV BOUT 2 NPL-P	-250	-5	-5	-11	-11	NPL BUS OUT 2 - P(X-1B2)
		-6	-6	-12	-12	GND
(CJ-4B10) DV BOUT 3 NPL-P	-252	-7	-7	-13	-13	NPL BUS OUT 3 - P(X-1B2)
		-8	-8	-14	-14	GND
(CJ-4B10) DV BOUT 4 NPL-P	-254	-9	-9	-15	-15	NPL BUS OUT 4 - P(X-1B2)
		-10	-10	-16	-16	GND
(CJ-4C10) DV BOUT 5 NPL-P	-258	-11	-11	-17	-17	NPL BUS OUT 5 - P(X-1C2)
		-12	-12	-18	-18	GND
(CJ-4C10) DV BOUT 6 NPL-P	-260	-13	-13	-19	-19	NPL BUS OUT 6 - P(X-1C2)
		-14	-14	-20	-20	GND
(CJ-4D10) DV BOUT 7 NPL-P	-262	-15	-15	-21	-21	NPL BUS OUT 7 - P(X-1C2)
		-16	-16	-22	-22	GND
(CJ-4D10) DV BOUT P NPL-P	-264	-17	-17	-23	-23	NPL BUS OUT P - P(X-1C2)
		5-18	5-18	-24	-24	GND
(CJ-4A4) DV SEL 0 NPL-P	-208	1-1	1-1	-29	-29	NPL DEV SEL 0 - P(X-1D2)
		-2	-2	-30	-30	GND
(CJ-4A4) DV SEL 1 NPL-P	-210	-3	-3	-31	-31	NPL DEV SEL 1 - P(X-1D2)
		-4	-4	-32	-32	GND
(CJ-4B4) DV SEL 2 NPL-P	-218	-9	-9	-33	-33	NPL DEV SEL 2 - P(X-1D2)
		-10	-10	-34	-34	GND
(CJ-4B4) DV SEL 3 NPL-P	-220	-11	-11	-35	-35	NPL DEV SEL 3 - P(X-1D2)
		-12	-12	-36	-36	GND
(CJ-4C4) DV SEL 4 NPL-P	-222	-13	-13	-37	-37	NPL DEV SEL 4 - P(X-1E2)
		-14	-14	-38	-38	GND
(CJ-4C4) DV SEL 5 NPL-P	-224	-15	-15	-39	-39	NPL DEV SEL 5 - P(X-1E2)
		-16	-16	-40	-40	GND
(CJ-4D4) DV SEL 6 NPL-P	-228	-17	-17	-41	-41	NPL DEV SEL 6 - P(X-1E2)
		-18	-18	-42	-42	GND
(CJ-4D4) DV SEL 7 NPL-P	-230	-19	-19	-43	-43	NPL DEV SEL 7 - P(X-1E2)
		1-20	1-20	-44	-44	GND
(CJ-4D4) DV 5 MINTM NPL-P	-263	4-17	4-17	-1	-1	NPL 5 MIN TIMER - P(X-1A2)
GND	-206	4-18	4-18	J301A-2	P301A-2	GND
GND	-211					DEVICE INTERFACE - 1
GND	-216					
GND	-226					
GND	-231					
GND	-236					
GND	-251					
GND	-259					
GND	CA-266					

CA-1

P/N / REV	TITLE	SHEET 1 /2	DRAWN
	NP3[CTLR LOGIC DIA	REV 0	CHECK
DEVICE INTERFACE	DRAWING NO NPL-NC-21446		APPD

Nippon Peripherals Limited

CONTROLLER BACK BOARD		DEVI-EDGE (NP446) 3M CONNECTOR	PCB (NP442) 3M CONNECTOR	HEADER	PLUG	
(CJ-1E5) DV ATTN 0 NPL-P	CA-205	2-5	2-5	J302A-1	P302A-1	NPL ATN RSP 0-P (X-2A2)
		-6	-6	-2	-2	GND
(CJ-1D5) DV ATTN 1 NPL-P	-207	-7	-7	-3	-3	NPL ATN RSP 1-P (X-2A2)
		-8	-8	-4	-4	GND
(CJ-1E5) DV ATTN 2 NPL-P	-209	-9	-9	-5	-5	NPL ATN RSP 2-P (X-2B2)
		-10	-10	-6	-6	GND
(CJ-1F5) DV ATTN 3 NPL-P	-213	-11	-11	-7	-7	NPL ATN RSP 3-P (X-2B2)
		-12	-12	-8	-8	GND
(CJ-1F5) DV ATTN 4 NPL-P	-215	-13	-13	-9	-9	NPL ATN RSP 4-P (X-2B2)
		-14	-14	-10	-10	GND
(CJ-1D1) DV ATTN 5 NPL-P	-219	-15	-15	-11	-11	NPL ATN RSP 5-P (X-2B2)
		-16	-16	-12	-12	GND
(CJ-1E1) DV ATTN 6 NPL-P	-223	-17	-17	-13	-13	NPL ATN RSP 6-P (X-2B2)
		-18	-18	-14	-14	GND
(CJ-1D1) DV ATTN 7 NPL-P	-225	-19	-19	-15	-15	NPL ATN RSP 7-P (X-2B2)
		2-20	2-20	-16	-16	GND
(CJ-1C5) DV BIN 0 NPL-P	-227	3-1	3-1	-17	-17	NPL BUS IN 0-P (X-2C2)
		-2	-2	-18	-18	GND
(CJ-1C5) DV BIN 1 NPL-P	-232	-3	-3	-19	-19	NPL BUS IN 1-P (X-2C2)
		-4	-4	-20	-20	GND
(CJ-1C5) DV BIN 2 NPL-P	-229	-5	-5	-21	-21	NPL BUS IN 2-P (X-2C2)
		-6	-6	-22	-22	GND
(CJ-1B5) DV BIN 3 NPL-P	-234	-7	-7	-23	-23	NPL BUS IN 3-P (X-2C2)
		-8	-8	-24	-24	GND
(CJ-1B5) DV BIN 4 NPL-P	-233	-9	-9	-25	-25	NPL BUS IN 4-P (X-2C2)
		-10	-10	-26	-26	GND
(CJ-1A5) DV BIN 5 NPL-P	-238	-11	-11	-27	-27	NPL BUS IN 5-P (X-2D2)
		-12	-12	-28	-28	GND
(CJ-1A5) DV BIN 6 NPL-P	-235	-13	-13	-29	-29	NPL BUS IN 6-P (X-2D2)
		-14	-14	-30	-30	GND
(CJ-1E5) DV BIN 7 NPL-P	-240	-15	-15	-31	-31	NPL BUS IN 7-P (X-2D2)
		-16	-16	-32	-32	GND
(CJ-1D5) DV BIN P NPL-P	-239	-17	-17	-33	-33	NPL BUS IN P-P (X-2D2)
		-18	-18	-34	-34	GND
(CJ-1F1) DV TAG VLD NPL-P	-242	-19	-19	-37	-37	NPL TAG VALD-P (X-2E2)
		3-20	3-20	-38	-38	GND
(CJ-1E1) SERVO PLS NPL-P	-265	4-19	4-19	-35	-35	NPL CAL PULS-P (X-2E2)
		4-20	4-20	J302A-36	P302A-36	GND
(CB-2B1) SERVO DATA-P	-202	2-3	2-3	J301A-3	P301A-3	SERVO SIG A/B-P (X-1A2)
		-4	-4	-4	-4	GND
(CB-2B1) SERVO DATA-N	-204	-1	-1	-5	-5	SERVO SIG A/B-N (X-1A2)
		2-2	2-2	-6	-6	GND
(CB-2E1) RW DATA-P	-212	1-5	1-5	-45	-45	R/W DATA-P (X-1F2)
		-6	-6	-46	-46	GND
(CB-2E1) RW DATA-N	-214	-7	-7	-47	-47	R/W DATA-N (X-1F2)
GND	-206	1-8	1-8	J301A-48	P301A-48	GND
GND	-211					
GND	-216					
GND	-226					
GND	-231					
GND	-236					
GND	-246					
GND	-251					
GND	-256					
GND	CA-266					

DEVICE INTERFACE-2

CA-2

P/N	TITLE NP3T CTLR LOGIC DIA	SHEET 2 /2	DRAWN
REV		REV 0	CHECK
			APPD
	DRAWING NO NPL-NC-21446	Nippon Peripherals Limited	

REV	DATE	DRAWN	APPD

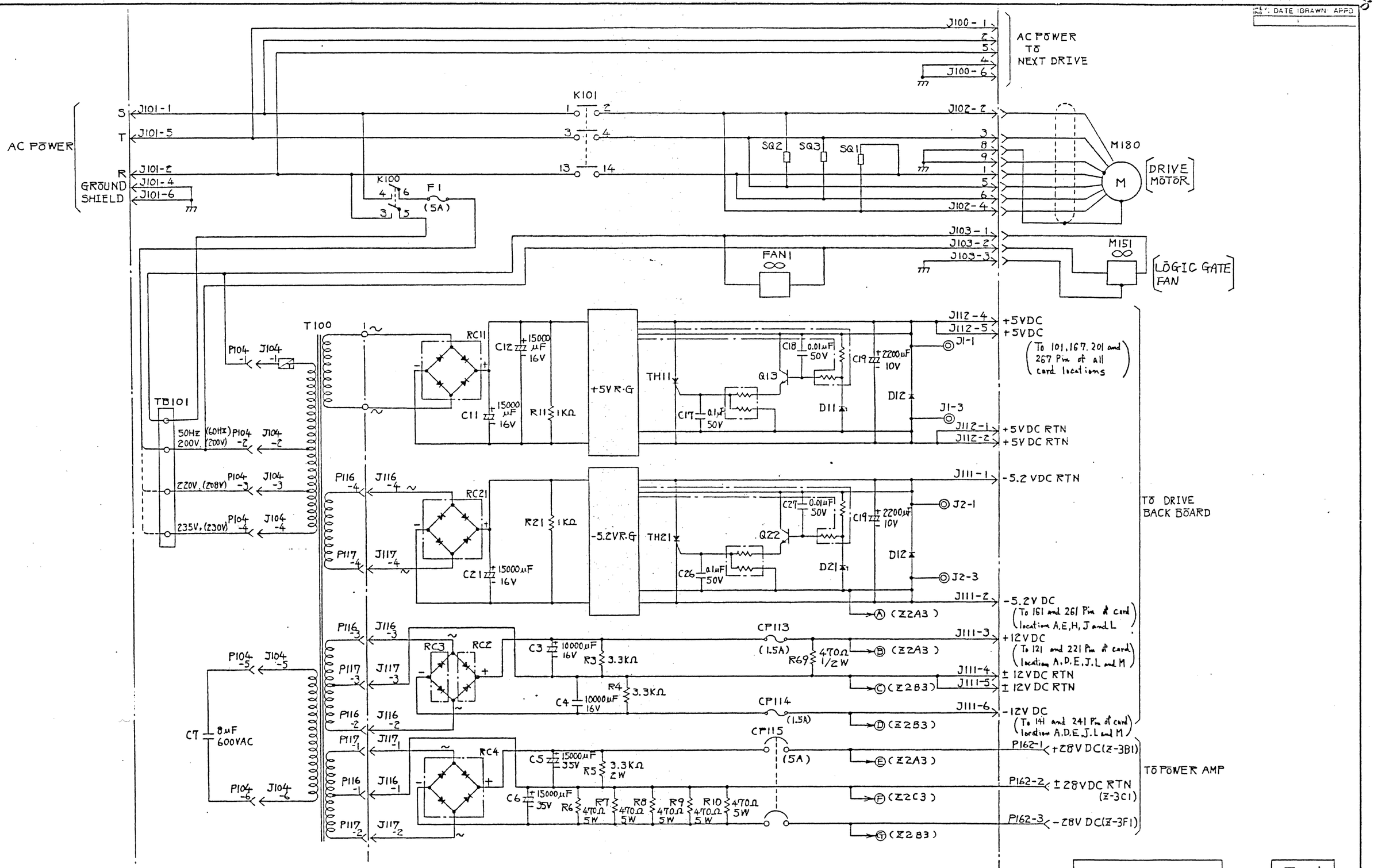
AC POWER FROM PREVIOUS RRIVE
S J101-1
T J101-5
R J101-2
N J101-3
GROUND J101-4
SHIELD J101-6
380~408 200~235
TB102
K101
K100
F1 5A
SQ2 SQ3 SQ1
380~408V 200~235V 380~408V 200~235V 380~408V 200~408V
TB102
J100-1 2 3 5 4 J100-6
AC POWER TO NEXT DRIVE
J102-2 3 8 9 1 5 6 J102-4
M180
M
DRIVE MOTOR
J103-1 J103-2 J103-3
FAN1
M151
LOGIC GATE FAN
T100
TB 101
P104 J104 -1
P104 J104 -2
220V 380V P104 J104 -3
235V 408V P104 J104 -4
P104 J104 -5
P104 J104 -6
CT 8μF 600VAC
P116 J116 -4
P117 J117 -4
P116 J116 -3
P117 J117 -3
P116 J116 -2
P117 J117 -2
P116 J116 -1
P117 J117 -1
P116 3-1
RC11 C12 +15000μF 16V C11 +15000μF 16V R11 1KΩ
+5V R·G
TH11 Q13 C18 0.01μF 50V C19 +2200μF 10V D12 C17 0.1μF 50V D11
RC21 R21 1KΩ C21 +15000μF 16V
-5.2V R·G
TH21 Q22 C27 0.01μF 50V C19 +2200μF 10V D12 C26 0.1μF 50V D21
RC3 RC2 C3 +10000μF 16V R3 3.3KΩ C4 +10000μF 16V R4 3.3KΩ
CP113 (1.5A) R69 470Ω 1/2W
CP114 (1.5A)
RC4 C5 +15000μF 35V R5 3.3KΩ 2W C6 +15000μF 35V R10 470Ω 5W R9 470Ω 5W R8 470Ω 5W R7 470Ω 5W R6 470Ω 5W
CP115 (5A)
J112-4 J112-5 +5V DC +5V DC (To 101, 167, 201 and 267 Pin of all card locations)
J1-1
J1-3
J112-1 +5V DC RTN
J112-2 +5V DC RTN
J111-1 -5.2V DC RTN
J2-1
J2-3
J111-2 -5.2V DC (To 161 and 261 Pin of card location A.E.H.J and L)
Ⓐ (Z2A3)
3 +12V DC (To 121 and 221 Pin of card location A.D.E.J.L and M)
Ⓑ (Z2A3)
4 ± 12V DC RTN
5 ± 12V DC RTN
Ⓒ (Z2B3)
J111-6 -12V DC (To 141 and 241 Pin of card location A.D.E.J.L and M)
Ⓓ (Z2B3)
P162-1 +28V DC (Z-3B1)
Ⓔ (Z2A3)
P162-2 ± 28V DC RTN (Z-3C1)
Ⓕ (Z2C3)
P162-3 -28V DC (Z-3F1)
Ⓖ (Z2B3)
TO DRIVE BACK BOARD
TO POWER AMP

DC POWER SUPPLY B-1 (FOR 400V)

Z-1

P/N REV	TITLE NP37 DRV LOGIC DIA.	SHEET 1/3	DRAWN
		REV 1	CHECK
DC POWER SUPPLY B-1	DRAWING NO		APPD

Nippon Peripherals Limited.



DC POWER SUPPLY B-1 (FOR 200V)

Z-1

P/N REV	TITLE NP37 DRV LOGIC DIA.	SHEET 2/3	DRAWN
		REV 1	CHECK
DC POWER SUPPLY B-1	DRAWING NO		APPD

Nippon Peripherals Limited.

(FOR 200V)

NO	DATE	DRAWN	APPD
CORRECTOIN -DRIVE LINE : J113-4→J114-2 FROM PREVIOUS DRIVE ADDRESS : X-2 → CE-3			
Z 153.6.27 T. Kamiya Okayama			

Z-1G8 Ⓔ (+28V DC)
Z-1F8 Ⓑ (+12V DC)
Z-1E8 Ⓐ (-5.2V DC)
Z-1F8 Ⓓ (-12V DC)
Z-1G8 Ⓕ (-28V DC)
Z-1F8 Ⓒ (±12V RTN)
Z-1G8 Ⓕ (±28V RTN)

D54 D56 D57 D55 D50 D52 D51 D53
R51 1KΩ 1W R50 220Ω R53 3.3KΩ R57 4.7KΩ R56 2.2KΩ R55 1.5KΩ R54 1KΩ R52 1KΩ
RL1 (115Ω) RL3 (115Ω)
Q52 Q51

(A-6A7) MTR RUN DV-N — J113-1

R63 220Ω 1/2W
rl3 -28V
R65 1KΩ R66 6.8KΩ
Q34
J114-1 P114-1 S170 BELT GUARD INTERLOCK
-2 -2
-3 -3
J114-4 P114-4
BLAKE SOLENOID

P105-5 J105-2 S130 (CE POWER SW) K100 (650)
P105-7 J105-1 D31
R43 1KΩ 2W
D33 D34 D35
R37 2.2KΩ 1/2W R47 6.8KΩ R44 2.2KΩ 1/2W R45 2.2KΩ 1/2W
rl1 THS1 D38 D40 (RED) DC POWER ALM (RED)
DRV MOTOR THERMAL ALM
PL1 R73 2.2KΩ
R64 3.3KΩ 1W D49 (DRV MOTOR SEQUENCE ERR (RED)) D58

S150 P112-3 J112-3 (LOGIC GATE THERMAL)
P112-6 J112-6
R71 1KΩ R42 1KΩ 2W D37 TH1 TH2 R72 6.8KΩ Q31
R70 2.2KΩ 1/2W D36 Q30 C30 .022 μF 50V D30 C33 +220 μF 35V R39 1KΩ R46 56KΩ C34 0.1μF 50V
R32 47KΩ C31 0.1μF 50V (LOGIC THERMAL (GREEN)) (POWER ON (GREEN))
C35 0.1μF 50V R74 47KΩ R75 1KΩ R41 1KΩ

R68 10Ω 7W R67 100Ω 1W RC6
J105-6 P105-9 K101 (650) 400V MACHINE ONLY
J105-3 J105-4 K102 (650) 200V MACHINE ONLY
J105-5 J105-1

M180 P115-2 J115-2 (DRV MTR THERMAL)
P115-1 J115-1
J134-1 (FROM PRIVIOUS DRIVE)
(CE-3A10) +24V 1ST DRV-P — J134-2
(CE-3A10) +24V 2ND DRV-P — -3
(CE-3B10) +24V 3RD DRV-P — -4
(CE-3B10) +24V 4TH DRV-P — -5
(CE-3B10) +24V ES RTN-N — -6
(CE-3B10) POWONDRVMTRSEQ-N — J134-7

J132-1 J132-2 J132-3 J132-5 J132-6 J132-4 — TO NEXT DRIVE

R60 1KΩ 2W R61 1KΩ 2W R62 100Ω
(CE DRV MOTOR SW) S132
J113-2 — DV MTR SW ON-N (A-5B1)
J113-3 — +28V DC (A-7D2)
J113-4 — GRD

DC POWER SUPPLY B-2 — Z-2

P/N / REV	TITLE: NP 37 DRV LOGIC DIA.	SHEET 3/3	DRAWN
		REV 2	CHECK
DC POWER SUPPLY B-2	DRAWING NO		APPD

Nippon Peripherals Limited

NO	DATE	DRAWN	APPD
D6 R26 REMOVE			
1	82.5.19	Kawamiyoitaru	
REMOVE: C6~9			
ADD: L1, 2 C24			
SHEET 2 REV 1→2			
FUNCTION 3→C			
2 183 7-10 IS Switching			

(Z-1G9)+28V DC ← P/J 162-1 — +28VDC(2B1)

(A-7C9) ZMD/PA CTL A-N ← P/J 160-3

(Z-1G9) ±28V DC RET ← P/J 162-2 — ±28VDCRET (2C1)

(A-9G9) PA DRVA ← P/J 160-5

(A-1H7) DC RET A ← P/J 160-5 — DCRETB

(Z-1G9) -28V DC ← P/J 162-3 — -28VDC(2F1)

(A-1F4) +12V DC ← P/J 160-7

(A-1G4) -12V DC ← P/J 160-8

D1 1S2072

C1 3.3μF 50V

R1 1KΩ

R2 620Ω 6.5W

R3 100Ω

R4 20KΩ

Q1 2SA537A

R5 5.6KΩ

R6 1KΩ

Q2 2SC1707A

R7 20KΩ

R8 1.2KΩ

R9 1.2KΩ

C3 3.3μF 50V

Q3 2SC708A

R12 360Ω

MJ11015 Q5

C6 470PF

C7 470PF

R20 820KΩ 1/2W

C5 33μF 10V

D2 1S468

D3 1S468

D4 1S468

D5 1S468

R14 200Ω

R21 2KΩ

μA776 IC2

R19 100Ω

C10 1000PF 50V

R22 1.2KΩ

R23 360Ω

C11 4700PF 50V

C12 0.1μF

L1 0.7μH

L2 0.7μH

C24 1μF 200V

P/J 160-1 → VCM 1-A → P/J 170A → VCMA

P/J 160-2 → VCM 2-A → P/J 170A

D6 1S468

R26 24KΩ

R27 2KΩ

μPC251C

R24 2KΩ

R25 2KΩ

P/J 160-4 → I SENSE A(A-9G5)

R15 2KΩ

R16 2KΩ

R17 2KΩ

R18 2KΩ

R28 0.51Ω 2W

C13 6.8μF 35V

C14 6.8μF 35V

C8 470RF

C9 470RF

MJ11016 Q6

R10 1.2KΩ

C4 3.3μF 50V

Q4 2SA537A

C2 3.3μF 50V

R11 1.2KΩ

R13 360Ω

注. 指定なき抵抗はすべて1/4Wとする.

Z-3

NP408 (PWR AMP)

P/N NP408 REV C	TITLE NP408 CIRCUIT_DIA.	SHEET 1/2 REV 2	DRAWN 82.5.19 CHECK 82.5.19 APPD 82.5.21
PWR AMP	DRAWING NO NPL-NC-20408	Nippon Peripherals Limited	

NC-20408

REV No	DATE	DRAWN	APPD
D12, R54 REMOVE			
1	82.5.19	Kamijyo	
REMOVE: C17~20			
ADD: L3, 4, C25			
2	82.7.10	Sasaki	Kawai

(1B2)+28V DC

D7
1S2072

R30 620Ω 6.5W

Q9 2SA537A

R32 20KΩ

R29 1KΩ

R31 100Ω

R36 1.2KΩ

R40 360Ω

MJ11015
Q7

(A-7D9)
ZMD/PA CTL B -N ← P/J 160-20

R33 5.6KΩ

Q10 2SC1707A

R34 1KΩ

R35 20KΩ

Q11 2SC708A

R37 1.2KΩ

C15 3.3μF -50V

△C17 470PF

△C18 470PF

±28V DC RET
(1C2)

R48 820KΩ 1/2W

△L5 0.7μH

△CZ5 1μF 200V

P/J 160-22 → VCM 1-B

P/J 171B

VCM B

P/J 171B

D8 1S468 D10 1S468

D9 1S468 D11 1S468

R42 200Ω

C21 1000PF 50V

R50 1.2KΩ

△L4 0.7μH

P/J 160-21 → VCM 2-B

P/J 171B

μA776
IC3

R51 360Ω

C22 4700PF 50V

C23 0.1μF

△D12 1S468

△R54 24KΩ

R55 2KΩ

(A-9G9)PA DRV B ← P/J 160-17

R49 2KΩ

R47 100Ω

μPC251C
IC1

(A-1H7)DC RET B ← P/J 160-18

DCRETA

R43 2KΩ

R45 2KΩ

R52 2KΩ

R53 2KΩ

P/J 160-19 → I SENSE B (A-9G6)

R44 2KΩ

R46 2KΩ

R56 0.51Ω

R38 1.2KΩ

△C19 470PF

△C20 470PF

C16 3.3μF -50V

MJ11016
Q8

Q12 2SA537A

R39 1.2KΩ

R41 360Ω

(1G2)-28V DC

Z-4

NP 408 (PWR AMP)

P/N / REV	TITLE: NP408 CIRCUIT_DIA.	SHEET 2/2	DRAWN
		REV 2	CHECK
	DRAWING NO: NPL-NC-20408		APPD

Nippon Peripherals Limited

NO	DATE	DRAWN	APPD

(A-1G5) +5V ← J313-19
(A-1G5) +5V ← -20

LED1 (KM-46809)
LED2 (KM-46807)

R1 200Ω 1/4W
R2 200Ω 1/4W

(A-9H5) RDY LED A-N ← -17
(A-9H5) RDY LED B-N ← -18

(A-1H7) GND ← -1
〃 ← -2
〃 ← -3
〃 ← -4
〃 ← -7
〃 ← -10
〃 ← -13
(A-1H7) GND ← J313-16

SW1 (NM-42313)
3 — 1 — J313-5 → RZ ON A-N (A-9G2)
3 — 2 — -6 → RZ OFF A-N (A-9G2)

SW2 (NM-42312)
2 — 1 — -12 → READ ONLY A-N (A-9G2)
2 — 3

SW3 (NM-42313)
3 — 1 — -8 → RZ ON B-N (A-9G2)
3 — 2 — -9 → RZ OFF B-N (A-9G2)

SW4 (NM-42312)
2 — 1 — J313-15 → READ ONLY B-N (A-9G2)
2 — 3

Σ-5

NP419 (DRIVE OPERATOR PANEL)

P/N NP 419	TITLE NP 37 DRV LOGIC_DIA.	SHEET 1/1	DRAWN
REV		REV 0	CHECK
DRIVE OPERATOR PANEL	DRAWING NO NPL-NC-20419		APPD

Nippon Peripherals Limited

NC-20419

DRV PLATTER (NPB 455)		HDA I EDGE CARD A (NP 423)		HDA I CABLE A (NB-40036-A)	HDA I CONNECTOR A (NP421)		HDA A SIDE	
			3M CONNECTOR		3M CONNECTOR			
(J-9C9)WT SEL HDAA-P	←	H-108	A-1-1		A-1-1	A-B02	→	WT SEL HDA A-P
GND	←	-106	-2		-2	-B07	→	GND
(J-6E9)CHIP SEL 0 HDAA-P	←	-110	-3		-3	-B05	→	CHIP SEL 0 HDAA-P
			-4		-4			
(J-6E9)CHIP SEL 1 HDAA-P	←	-112	-5		-5	-B04	→	CHIP SEL 1 HDAA-P
			-6		-6			
(J-6E9)CHIP SEL 2 HDAA-P	←	-114	-7		-7	-B05	→	CHIP SEL 2 HDAA-P
			-8		-8			
(SPARE)	←	-118	-9		-9	-B06	→	(SPARE)
			-10		-10			
(NOT USED)	←	-113	-11		-11	(NOT USED)		
			-12		-12			
+5V	←	-101	-13		-13	-B09	→	+5V
			-14		-14			
(J-7A9) 6.3V MRS 1 HDAA-P	←	-128	-15		-15	-B08	→	6.3V MRS 1 HDAA-P
			-16		-16			
(J-3D9)-4V	←	H-125	-17		-17	-B10	→	-4V
			-18		-18	-B11	→	-4V
			-19		-19	-B12	→	-4V
			A-1-20		A-1-20	A-B13	→	GND
			A-2-1		A-2-1	A-D03	→	+5V
			-2		2			
GND	←	H-131	-3		3	-D02	→	GND
			-4		4			
(J-3F6) HD SEL 1 HDAA-N	←	-107	-5		5	-D04	→	HD SEL 1 HDAA-N
			-6		6			
(J-3E6) HD SEL 2 HDAA-N	←	-109	-7		7	-D05	→	HD SEL 2 HDAA-N
			-8		8			
(J-7A9) 6.3V MRS 0 HDAA-P	←	-115	-9		9	-D06	→	6.3V MRS 0 HDAA-P
			-10		10			
(J-8C2) WMSV HDAA-N	←	-117	-11		11	-D07	→	WMSV HDAA-N
			-12		12			
(J-4A9) WTI HDAA	←	-119	-13		13	-D09	→	WTI HDAA
			-14		14			
(F-2B9) SET R/WA-N	←	H-123	-15		15	-D13	→	SET R/WA-N
			-16		16			
			-17		17	-D10	→	-4V
			-18		18	-D11	→	-4V
			-19		19	-D12	→	-4V
			A-2-20		A-2-20	A-D08	→	GND

+5V(Z-7D4)

GND(Z-7E4)

HDA INTERFACE A

Z-6

P/N / REV	TITLE: NP37 DRV LOGIC-DIA.	SHEET 1/2	DRAWN S. Saito 82.11.11
		REV 0	CHECK F. Nagashima 82.11.15
			APPD K. Hashimoto 82.11.16
HDA: INTERFACE A	DRAWING NO	Nippon Peripherals Limited	

DATE DRAWN APPD

DRV PLATTER (NPB 455)		HDA I EDGE CARD A (NP423)		HDA I CABLE A (NB-40036-A)		HDA I CONNECTOR A (NP 422)		HDA A SIDE
			3M CONNECTOR			3M CONNECTOR		
(J-9F1) TLO HDAA-P	←	H-134	A-3-1			A-3-1	A-G02	→ TLO HDAA-P
			-2			-2	-G07	→ GND
(J-2C2) DATA Y HDAA-P	←	-138	-3			-3	-G03	→ DATA Y HDAA-P
			-4			-4		
(J-2B2) DATA X HDAA-P	←	-140	-5			-5	-G04	→ DATA X HDAA-P
			-6			-6		
(NOT USED)	→	-142	-7			-7	-J05	→ (NOT USED)
			-8			-8		
(NOT USED)	→	-144	-9			-9	-J04	→ (NOT USED)
			-10			-10		
(J-8A7) MRS SF HDAA-P	←	-148	-11			-11	-G05	→ MRS SF HDAA-P
			-12			-12		
(J-8A7) SP GND T HDAA	←	-150	-13			-13	-G06	→ SP GND T HDAA
			-14			-14		
(NOT USED)	→	-152	-15			-15	-J07	→ (NOT USED)
			-16			-16		
(J-8A7) SP GND F HDAA	←	-154	-17			-17	-J06	→ SP GND F HDAA
			-18			-18	(NOT USED)	
(NOT USED)	→	H-158	-19			-19		
			A-3-20			A-3-20	A-G13	→ GND
(Z-6G5) +5V	←		A-4-1			A-4-1	A-J03	→ +5V
			-2			-2		
(Z-6G5) GND	←		-3			-3	-J02	→ GND
			-4			-4		
(J-7A9) 6.3V MRS 2 HDAA-P	←	H-145	-5			-5	-G08	→ 6.3V MRS 2 HDAA-P
			-6			-6		
			-7			-7	-G09	→ +5V
			-8			-8		
(NOT USED)	→	-147	-9			-9	(NOT USED)	
			-10			-10		
(F-4F2) FHIA-N	←	-149	-11			-11	-J09	→ FHIA-N
			-12			-12		
(D-1E9) M8/3VA	←	-155	-13			-13	-G10	→ M8/3VA
			-14			-14		
			-15			-15	-J10	→ M8/3VA
			-16			-16		
(NOT USED)	→	-157	-17			-17	(NOT USED)	
			-18			-18		
(F-2B9) SET R/W SAFE A-N	←	-159	-19			-19	-J13	→ SET R/W SAFE A-N
			A-4-20			A-4-20	-J08	→ GND
			SOLDERING	SHIELDING WIRE		SOLDERING		
(E-4B1) SRV SIG HDAA-P	←	-164	A-G			A-G	-G11	→ SRV SIG HDAA-P
(E-4C1) SRV SIG HDAA-N	←	-162	-R			-R	-J11	→ SRV SIG HDAA-N
GND	→	H-166	A-B			A-B	-G12	→ SRV GND A
							A-J12	→ SRV GND A

HDA INTERFACE A

Z-7

P/N / REV	TITLE: NP37 DRV LOGIC-DIA.	SHEET 2/2	DRAWN
		REV 0	CHECK
			APPD
HDA INTERFACE A	DRAWING NO	Nippon Peripherals Limited	

	DRV PLATTER (NP5 455)	HDA I EDGE CARD B (NP 423)	HDA I CABLE B (NB-40036-B)	HDA I CONNECTOR B (NP421)	HDA B SIDE
		3M CONNECTOR		3M CONNECTOR	
(J-9F9) WT SEL HDAB-P		H-208 B-1-1		B-1-1 B-B02	WT SEL HDA B-P
GND		-206 -2		-2 -B07	GND
(J-6G9) CHIP SEL 0 HDAB-P		-210 -3		-3 -B03	CHIP SEL 0 HDAB-P
		-4		-4	
(J-6G9) CHIP SEL 1 HDAB-P		-212 -5		-5 -B04	CHIP SEL 1 HDAB-P
		-6		-6	
(J-6G9) CHIP SEL 2 HDAB-P		-214 -7		-7 -B05	CHIP SEL 2 HDAB-P
		-8		-8	
(SPARE)		-218 -9		-9 -B06	(SPARE)
		-10		-10	
(NOT USED)		-213 -11		-11 (NOT USED)	
		-12		-12	
+5V		-201 -13		-13 -B09	+5V
		-14		-14	
(J-7E9) 6.3V MRS 1 HDAB-P		-228 -15		-15 -B08	6.3V MRS 1 HDAB-P
		-16		-16	
(J-3D9) -4V		H-225 -17		-17 -B10	-4V
		-18		-18 -B11	-4V
		-19		-19 -B12	-4V
		B-1-20		B-1-20 B-B13	GND
		B-2-1		B-2-1 B-D03	+5V
GND		H-231 -2		2	
		-3		3 -D02	GND
		-4		4	
(J-3G6) HD SEL 1 HDAB-N		-207 -5		5 -D04	HD SEL 1 HDAB-N
		-6		6	
(J-3F6) HD SEL 2 HDAB-N		-208 -7		7 -D05	HD SEL 2 HDAB-N
		-8		8	
(J-7E9) 6.3V MRS 0 HDAB-P		-215 -9		9 -D06	6.3V MRS 0 HDAB-P
		-10		10	
(J-8F1) WMS V HDAB-N		-217 -11		11 -D07	WMS V HDAB-N
		-12		12	
(J-4B9) WTI HDAB		-219 -13		13 -D09	WTI HDAB
		-14		14	
(K-2A9) SET R/WB-N		H-223 -15		15 -D13	SET R/WB-N
		-16		16	
		-17		17 -D10	-4V
		-18		18 -D11	-4V
		-19		19 -D12	-4V
		B-2-20		B-2-20 B-D08	GND
		+5V (Z-9D4)			
		GND (Z-9E4)			

HDA INTERFACE B

Z-8

P/N / REV	TITLE: NP57 DRV LOGIC-DIA.	SHEET 1/2	DRAWN S.Saito 92.11.11
		REV 0	CHECK E.Hirano 92.11.15
			APPD K.Hirano 92.11.15
HDA: INTERFACE B	DRAWING NO	Nippon Peripherals Limited	

DRV PLATTER (NPB 455)		HDA I EDGE CARD B (NP423)		HDA I CABLE B (NE-40056-B)	HDA I CONNECTOR B (NF 422)		HDA B SIDE
		3M CONNECTOR			3M CONNECTOR		
(J-9G1) TLOHDAB-P	H-234	B-3-1			B-3-1	B-G02	TLO HDAB-P
		-2			-2	-G07	GND
(J-2D1) DATAYHDAB-P	-236	-3			-3	-G03	DATA Y HDAB-P
		-4			-4		
(J-2C1) DATAXHDAB-P	-240	-5			-5	-G04	DATA X HDAB-P
		-6			-6		
(NOT USED)	-242	-7			-7	-J05	(NOT USED)
		-8			-8		
(NOT USED)	-244	-9			-9	-J04	(NOT USED)
		-10			-10		
(J-8E6) MRS SF HDAB-P	-248	-11			-11	-G05	MRS SF HDAB-P
		-12			-12		
(J-8D6) SP GNDT HDAB	-250	-13			-13	-G06	SP GNDT HDAB
		-14			-14		
(NOT USED)	-252	-15			-15	-J07	(NOT USED)
		-16			-16		
(J-8D6) SP GNDF HDAB	-254	-17			-17	-J06	SP GNDF HDAB
		-18			-18	(NOT USED)	
(NOT USED)	H-256	-19			-19		
		B-3-20			B-3-20	B-G13	GND
(Z-8G5) +5V		B-4-1			B-4-1	B-J03	+5V
		-2			-2		
(Z-8G5) GND		-3			-3	-J02	GND
		-4			-4		
(J-7E9) 6.3VMRS2HDAB-P	H-245	-5			-5	-G08	6.3VMRS2HDAB-P
		-6			-6		
		-7			-7	-G09	+5V
		-8			-8		
(NOT USED)	-247	-9			-9	(NOT USED)	
		-10			-10		
(K-4F2) FHIB-N	-249	-11			-11	-J09	FHIB-N
		-12			-12		
(M-1E9) M8/3VB	-253	-13			-13	-G10	M8/3VB
		-14			-14		
		-15			-15	-J10	M8/3VB
		-16			-16		
(NOT USED)	-257	-17			-17	(NOT USED)	
		-18			-18		
(K-2B9) SET R/W SAFEB-N	-259	-19			-19	-J13	SET R/W SAFE B-N
		B-4-20			B-4-20	-J08	GND
		SOLDERING		SHIELDING WIRE	SOLDERING		
(L-4B1) SRV SIG HDAB-P	-264	B-G			B-G	-G11	SRV SIG HDAB-P
(L-4C1) SRV SIG HDAB-N	-262	-R			-R	-J11	SRV SIG HDAB-N
GND	H-266	B-B			B-B	-G12	SRV GND B
						B-J12	SRV GND B

HDA INTERFACE B

Z-9

P/N / REV	TITLE	SHEET 2/2	DRAWN
	NP37 DRV LOGIC-DIA.	REV 0	CHECK
HDA INTERFACE B	DRAWING NO		APPD

Nippon Peripherals Limited

NP420

(CF-1G9)	NPL 5 MIN TIMER-P	P301A/B -1	P303-1	NPL 5 MIN TIMER-P (A-1A1)	J301B-1
(CF-2F9)	SRV SIG A/B-P	-3	-3	SRV SIG A/B-P (A-9A9)	-3
(CF-2F9)	〃 -N	-5	-5	〃 -N (A-9A9)	-5
(CF-1C9)	NPL BUS OUT 0-P	-7	-7	NPL BUS OUT 0-P (A-2F1)	-7
(CF-1C9)	〃 1-P	-9	-9	〃 1-P (A-2F1)	-9
(CF-1D9)	〃 2-P	-11	-11	〃 2-P (A-2F1)	-11
(CF-1D9)	〃 3-P	-13	-13	〃 3-P (A-2G1)	-13
(CF-1D9)	〃 4-P	-15	-15	〃 4-P (A-2G1)	-15
(CF-1D9)	〃 5-P	-17	-17	〃 5-P (A-2G1)	-17
(CF-1E9)	〃 6-P	-19	-19	〃 6-P (A-2G1)	-19
(CF-1E9)	〃 7-P	-21	-21	〃 7-P (A-2H1)	-21
(CF-1E9)	〃 P-P	-23	-23	〃 P-P (A-2H1)	-23
(CF-1A9)	NPL TAG GATE -P	-25	-25	NPL TAG GATE -P (A-1D1)	-25
(CF-1A9)	NPL SEL HOLD -P	-27	-27	NPL SEL HOLD -P (A-8E1)	-27
(CF-1E9)	NPL DEV SEL 0-P	-29	-29	NPL DEV SEL 0-P (A-8A1)	-29
(CF-1F9)	〃 1-P	-31	-31	〃 1-P (A-8A1)	-31
(CF-1F9)	〃 2-P	-33	-33	〃 2-P (A-8B1)	-33
(CF-1F9)	〃 3-P	-35	-35	〃 3-P (A-8B1)	-35
(CF-1F9)	〃 4-P	-37	-37	〃 4-P (A-8C1)	-37
(CF-1G9)	〃 5-P	-39	-39	〃 5-P (A-8C1)	-39
(CF-1G9)	〃 6-P	-41	-41	〃 6-P (A-8C1)	-41
(CF-1G9)	〃 7-P	-43	-43	〃 7-P (A-8D1)	-43
(CF-2G9)	R/W DATA -P	-45	-45	R/W DATA -P (A-9D9)	-45
(CF-2G9)	〃 -N	-47	-47	〃 -N (A-9D9)	-47
	Not Used	P301A/B -49	P303 -49	Not Used	J301B-49
	GND	P301A/B -2~50(Even)	P303-2~50(Even)	GND (A-1H7)	J301B-2~50(Even)

These signals are transmitted to next drive by connecting P301 of next drive to J301 on PCB NP420.

On last drive of the string, DVI terminator NP416 (of X-3) must be installed to J301 instead of P301.

DRIVE INTERFACE 1

X-1

P/N / REV	TITLE: NP37 DRV LOGIC DIA.	SHEET 1/2	DRAWN
		REV 0	CHECK
DRIVE INTERFACE1	DRAWING NO		APPD

Nippon Peripherals Limited

(CF-2A9) NPL ATN RSP 0-P	P302A/B-1	P304-1	NPL ATN RSP 0-P (A-8D9)	J302B-1
(CF-2B9) 〃 1-P	-3	-3	〃 1-P (A-8D9)	-3
(CF-2B9) 〃 2-P	-5	-5	〃 2-P (A-8D9)	-5
(CF-2B9) 〃 3-P	-7	-7	〃 3-P (A-8E9)	-7
(CF-2B9) 〃 4-P	-9	-9	〃 4-P (A-8E9)	-9
(CF-2C9) 〃 5-P	-11	-11	〃 5-P (A-8E9)	-11
(CF-2C9) 〃 6-P	-13	-13	〃 6-P (A-8F9)	-13
(CF-2C9) 〃 7-P	-15	-15	〃 7-P (A-8F9)	-15
(CF-2C9) NPL BUS IN 0-P	-17	-17	NPL BUS IN 0-P (A-3B9)	-17
(CF-2D9) 〃 1-P	-19	-19	〃 1-P (A-3B9)	-19
(CF-2D9) 〃 2-P	-21	-21	〃 2-P (A-3B9)	-21
(CF-2D9) 〃 3-P	-23	-23	〃 3-P (A-3C9)	-23
(CF-2D9) 〃 4-P	-25	-25	〃 4-P (A-3C9)	-25
(CF-2E9) 〃 5-P	-27	-27	〃 5-P (A-3D9)	-27
(CF-2E9) 〃 6-P	-29	-29	〃 6-P (A-3E9)	-29
(CF-2E9) 〃 7-P	-31	-31	〃 7-P (A-3E9)	-31
(CF-2E9) 〃 P-P	-33	-33	〃 P-P (A-3E9)	-33
(CF-2F9) NPL CAL PULS-P	-35	-35	NPL CAL PULS-P (A-8G9)	-35
(CF-2F9) NPL TAG VALD-P	-37	-37	NPL TAG VALD-P (A-8G9)	-37
(CF-1A9) NPL DEV TAG 0-P	-39	-39	NPL DEV TAG 0-P (A-1A1)	-39
(CF-1B9) 〃 1-P	-41	-41	〃 1-P (A-1B1)	-41
(CF-1B9) 〃 2-P	-43	-43	〃 2-P (A-1B1)	-43
(CF-1B9) 〃 3-P	-45	-45	〃 3-P (A-1C1)	-45
(CF-1C9) 〃 4-P	-47	-47	〃 4-P (A-1C1)	-47
(CF-1C9) 〃 P-P	P302A/B-49	P304-49	〃 P-P (A-1C1)	J302B-49
GND	P302A/B-2~50 (Even)	P304-2~50 (Even)	GND (A-1H7)	J302B-2~50 (Even)

NP420

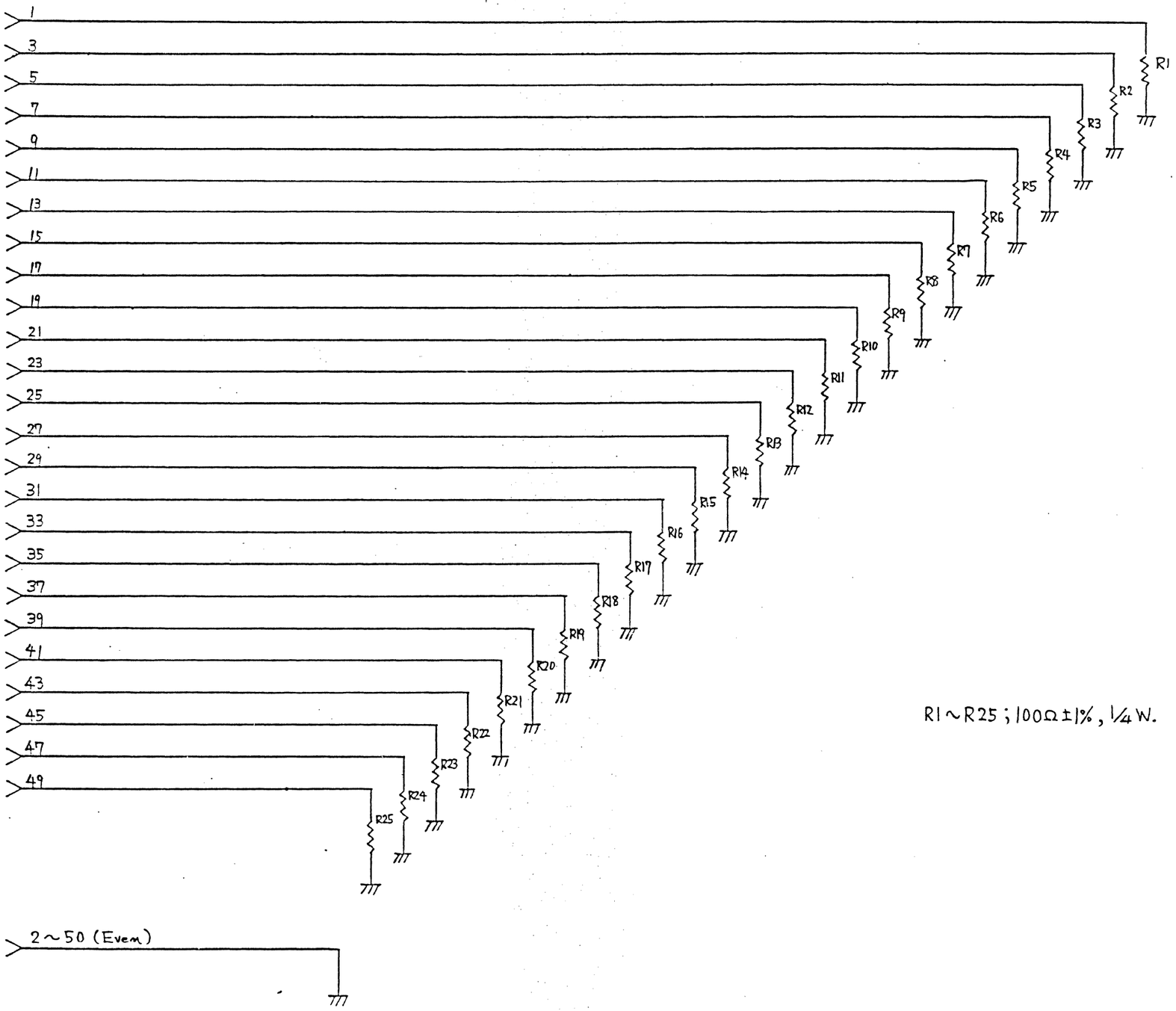
These signals are transmitted to next drive by connecting P302 of next drive to J302 on PCB NP420.

On last drive of the string, DVI terminator NP416 (of X-3) must be installed to J302 instead of P302.

DRIVE INTERFACE 2.

X-2

P/N / REV	TITLE: NP37 DRV LOGIC DIA.	SHEET 2/3 REV 0	DRAWN CHECK APPD
DRIVE INTERFACE 2	DRAWING NO	Nippon Peripherals Limited	



R1~R25 ; 100Ω ±1%, 1/4W.

NP416 (DVI Terminator)

X-3

P/N NP 416	TITLE NP37 DRV LOGIC DIA.	SHEET 3/3	DRAWN
REV		REV	CHECK
			APPD
DVI Terminator	DRAWING NO	Nippon Peripherals Limited	

(X-1A5)NPL 5 MIN TIMER-P ← J305-1 — 74LS14 5F

(X-2E5)NPL DEV TAG 0-P ← J304-39 — 74LS14 6E
(X-2E5)NPL DEV TAG 1-P ← -41 — 74LS14 8E
(X-2E5)NPL DEV TAG 2-P ← -43 — 74LS14 8G
(X-2F5)NPL DEV TAG 3-P ← -45 — 74LS14 8G
(X-2F5)NPL DEV TAG 4-P ← -47 — 74LS14 8G
(X-2F5)NPL DEV TAG P-P ← J304-49 — 74LS14 8G

(A-8B10) SELECTED A-P — 74LS00 5A
(X-1D5) NPL TAG GATE-P ← J305-25 — 74LS14 3E
(A-8C10) SELECTED B-P — 74LS00 5A
74LS04 6B

(A-8B10) SELECTED A/B-P

74LS139 9A — DEC
74LS139 9A — DEC
74LS138 6A — DEC

74LS280 8C — PCE

74LS04 6B → 74LS00 5A
74LS00 5A

74LS02 6A
74LS02 7A
74LS02 7A
74LS04 7C
74LS02 6A
74LS02 7A
74LS02 6A
74LS02 7A

152 → 5 MIN TM-N(C-5C2)(N-5C2)
220 → TAG BUS BIT 4-N(E-5B2)(L-3B2)
225 → TAG BUS BIT 3-N(E-1E2)(L-1E2)
224 → TAG BUS BIT 2-N(E-1E2)(L-1E2)
159 → TAG BUS BIT 1-N(E-1E2)(L-1E2)
TAG BUS BIT 0-N(A-2B2)

237 → TAG 3XA-N(D-9E2)(F-1E2)
238 → TAG 2XA-N(C-5D2)(D-9E2)(F-1D2)
239 → TAG 1XA-N(C-1B2)(F-6E2)
240 → TAG 0XA-N(C-1C2)(F-6F2)

243 → TAG 3XB-N(K-1B2)(M-9D2)
244 → TAG 2XB-N(K-1D2)(M-9E2)(N-5D2)
245 → TAG 1XB-N(K-6E2)(N-1D2)
246 → TAG 0XB-N(K-6F2)(N-5D2)

227 → TAG X7-N(C-1A2)(F-6F2)(K-6F2)(N-1A2)
228 → TAG X6-N(C-1C2)(F-1B2)(K-1B2)(N-1C2)
229 → TAG X5-N(C-1C2)(N-1C2)
218 → TAG X4-N(C-1D2)(D-9D2)(M-9D2)(N-1D2)
232 → TAG X3-N(C-1E2)(F-6F2)(K-6E2)(N-1E2)
219 → TAG X2-N(C-1E2)(F-1C2)(K-1C2)(N-1E2)
233 → TAG X1-N(C-1F2)(N-1F2)
217 → TAG X0-N(C-1C2)(C-5D2)(F-6E2)(K-6E2)(N-1C2)

TAG GATE-N(A-2E2)
TAG GATE-P(A-2A2)

SNS ITFC-P(A-2C2)
143 → SNS HDA SEQ-P(F-4C2)(K-4C2)
SNS HDA SEQ-P(A-4B2)(A-5B2)
115 → SET R/W-N(F-2A2)(K-2A2)
SET R/W-N(A-2C2)(A-5E2)
SET R/W-P(A-4E2)
SKST/STSCT-P(A-2B2)
207 → CHECK RESET-P(C-1B2)(F-3B2)(K-3B2)(N-1B2)
CHECK RESET-P(A-5G2)
ATTN RESET-P(A-2A2)
223 → CE SYNC TF-P
TAG PRTY CHK-P(A-2D2)

J312-47 → +12V DC (E-3G1)
119, 121 — +12V
J312-12,14 → -12VDC (E-3G1)
124, 321 — -12V
101, 167, 201, 257 — +5V
J311-18,20 → +5V (E-5A2)

C15 +3.3μF -35V, C16 +3.3μF -35V, C19 0.022μF 50V, C64 0.022μF 50V

106, 111, 116, 125, 131, 136, 141, 146, 151, 156, 166, 206, 211, 216, 226, 231, 236, 246, 251, 256, 256 — 0V
161, 251 — -5.2V

J312-8,10 → DC RTN A/B (E-3D1, E-4D1)
J311-1,2,3,4,7,16,17,18 → GND (E-5E3)
J304-2~5 (Even) → GND (X-2G5)
J303-2~5 (Even) → GND (X-1G5)

A-1

NP410 (INTERFACE)

P/N NP410	TITLE NP37 DRV LOGIC DIA.	SHEET 1/2	DRAWN
REV F		REV 4	CHECK / APPD
INTERFACE	DRAWING NO NPL-NC-21410	Nippon Peripherals Limited	NC-21410

(A-1F10) ATTN RESET - P
(A-8B10) SELECTED A/B - P
(A-1D9) TAG GATE - P
(A-1F10) SKST/STSCT - P
(A-1A10) TAG BUS BIT 0 - N
(A-1D9) TAG GATE - N
(A-1E9) SET R/W - N
(A-1E9) SNS ITFC - P
(A-6F9) PDR - P
(A-1G10) TAG PRTY CHK - P

74LS00 3A
74LS10 3B
74LS04 2A
74LS00 4A
74LS10 3B
74LS00 5A
74LS00 4A
74LS20 2B
74LS00 4A
74LS04 2A
74LS04 2A
74LS04 2A
74LS00 4A
74LS04 2A
74LS10 3B
74LS280 6F
PCG
A B C D E F G H I
EV
OD

74LS00 5A
74LS00 5A
74LS00 5A
74LS02 4B
74LS279 1B
74LS279 1B
74LS04 2A
74LS02 4B
74LS03 5B
74LS03 5B
74LS03 5B

118 → SRV STROBE - N (E-3A2) (L-3A2)
157 → TAG VALID - P
TAG VALID - P (A-8G2)
145 → GATE MACH ST - N (C-1C7)(E-3H2)(F-4E2) (K-4E2)(L-3H2)(N-1C7)
GATE MACH ST - N (A-5G2)
BUS IN BIT 1 - N (A-3B2)
123 → INTF CHECK - N
BUS IN BIT 6 - N (A-3E2)
BUS IN BIT 7 - N (A-3E2)

(X-1B5) NPL BUS OUT 0 - P ← J303-7
(X-1B5) NPL BUS OUT 1 - P ← -9
(X-1B5) NPL BUS OUT 2 - P ← -11
(X-1B5) NPL BUS OUT 3 - P ← -13
(X-1C5) NPL BUS OUT 4 - P ← -15
(X-1C5) NPL BUS OUT 5 - P ← -17
(X-1C5) NPL BUS OUT 6 - P ← -19
(X-1C5) NPL BUS OUT 7 - P ← -21
(X-1C5) NPL BUS OUT P - P ← J303-23

74LS14 5F
74LS14 5F
74LS14 5F
74LS14 4F
74LS14 4F
74LS14 4F
74LS14 4F
74LS14 4F
74LS14 4F

162 → BUS OUT BIT 0 - N (C-3A2)(F-2E2)(K-2E2)(N-3A2)
BUS OUT BIT 0 - N (A-5F2)
163 → BUS OUT BIT 1 - N (C-3B2)(F-2F2)(K-2F2)(N-3B2)
215 → BUS OUT BIT 2 - N (C-3B2)(F-2B2)(K-2B2)(N-3B2)
214 → BUS OUT BIT 3 - N (C-3B2)(F-2C2)(K-2C2)(N-3B2)
213 → BUS OUT BIT 4 - N (C-3C2)(F-5E2)(K-5E2)(N-3C2)
212 → BUS OUT BIT 5 - N (C-3D2)(F-2C2)(K-2C2)(N-3D2)
164 → BUS OUT BIT 6 - N (C-3D2)(F-1F2)(K-1F2)(N-3D2)
160 → BUS OUT BIT 7 - N (C-3E2)(F-1F2)(K-1F2) (N-3E2)

A-2
NP410 (INTERFACE)

P/N	TITLE NP37 DRV LOGIC DIA.	SHEET 2 /	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-21410		APPD

Nippon Peripherals Limited

NC-21410

101

REV	DATE	DRAWN	APPD

(A-8B10) SELECTED A/B-P

(A-6F9) POR-N

+5V

(C-2A9) BUS IN BIT 0 - N ← 133
(N-2A9)
BUS IN BIT 0 - N
(A-4C10)

(C-2B9) BUS IN BIT 1 - N ← 157
(N-2B9)
BUS IN BIT 1 - N
(A-4D10)(A-2C10)

(C-2B9) BUS IN BIT 2 - N ← 210
(N-2B9)
BUS IN BIT 2 - N
(A-5F10)(A-4F10)

(C-2C9) BUS IN BIT 3 - N ← 142
(N-2C9)
BUS IN BIT 3 - N
(A-5B10)

(C-2C9) BUS IN BIT 4 - N ← 135
(N-2C9)

(C-2D9) BUS IN BIT 5 - N ← 140
(N-2D9)
BUS IN BIT 5 - N
(A-5C10)

(C-2D9) BUS IN BIT 6 - N ← 134
(N-2D9)
BUS IN BIT 6 - N
(A-5D10XA-2D10)

(C-2E9) BUS IN BIT 7 - N ← 154
(N-2E9)
BUS IN BIT 7 - N
(A-5E10XA-2D10)

R1 820Ω
R2 820Ω
R3 820Ω
R4 820Ω
R5 820Ω
R6 820Ω
R7 820Ω
R8 820Ω

74LS04 7B
74LS04 7B
74LS04 7B
74LS04 7C
74LS04 7C
74LS04 7C
74LS04 7C
74LS04 7C

74LS280 7F
PCE
A B C D E F G H I
EV
ōD

HD2904 10F
HD2904 9F
HD2904 8F

J304-17 >> NPL BUS IN0 - P (X-2C5)
-19 >> NPL BUS IN1 - P (X-2C5)
-21 >> NPL BUS IN2 - P (X-2C5)
-23 >> NPL BUS IN3 - P (X-2C5)
-25 >> NPL BUS IN4 - P (X-2D5)
-27 >> NPL BUS IN5 - P (X-2D5)
-29 >> NPL BUS IN6 - P (X-2D5)
-31 >> NPL BUS IN7 - P (X-2D5)
J304-33 >> NPL BUS INF - P (X-2D5)

A-3

NP410 (INTERFACE)

P/N	TITLE: NP37 DRV LOGIC DIA.	SHEET 5/	DRAWN
REV		REV 0	CHECK
	DRAWING NO: NPL-NC-21410		APPD

Nippon Peripherals Limited

NC-21410

101

NO.	DATE	DRAWN	APPD
A(4)	RESTART SEQ-N		
1	83.2.18	T. Kamita	

74LS191 11C CNT
(E-7B10) 625KHzVFO A ← 263
(A-6F9) POR-N
(A-1E10) SNS HDA SEQ-P
+5V
R10 1KΩ
74LS112 11B
CLOCK-P (A-5B2)
74LS04 7B
(A-6D9) TIMER UP-P
74LS02 10A
74LS08 11A
74LS112 10B
253 → TP1
(E-2C10) MTN CMPLT A-P ← 260
(L-2C10) MTN CMPLT B-P ← 262
74LS03 8B
BUS IN BIT 0-N (A-3B2)
244 → GO HOME-N (E-1D2)(L-1D2)
(A-7F9) PWR GOOD-P
(A-5E10) MTR SW ON LT-P
74LS00 9C
74LS20 6C
(A-5D10) PLL GOOD LT-P
(A-5D10) AIR GOOD LT-P
(A-5C10) DC GOOD LT-P
254 → TP2
BUS IN BIT 1-N (A-5B2)
(A-1F10) SET R/W-P
74LS00 11D
74LS112 11B
R61 1KΩ
RESTART SEQ TP-N ← 202
259 → TP3
BUS IN BIT 2-N (A-3C2)
RESTART SEQ-N (A-5E2)
74LS138 9B DEC
R9 1KΩ
STATE 0-N (A-6A2)
STATE 1-N (A-5A2)(A-6A2)
STATE 2-N (A-5A2)(A-6B2)
STATE 3-N (A-5A2)(A-6D2)
(STATE 4-N)
STATE 5-N (A-5A2)(A-6D2)
STATE 6-N (A-5C2)
139 → STATE 7-N (F-4D2)(K-4D2)
STATE 7-N (A-5C2)(A-6D2)

A-4

NP410 (INTERFACE)

P/N	TITLE	SHEET 4	DRAWN
REV	NP37 DRV LOGIC-DIA.	REV 1	CHECK
	DRAWING NO NPL-NC-21410	Nippon Peripherals Limited	APPD

NC-21410

REV	DATE	DRAWN	APPD
CHANGE AGC ACTIVE-F			
1	185 2.19	T.Kamiya	
CHANGE DV OFF SV RS-N			
2	184.1.30	S.Saito	

(A-6F9) PDR-P
(A-4F7) STATE1-N
(A-4F7) STATE2-N
(A-4G7) STATE3-N
(A-4G7) STATE5-N
74LS20 6C
74LS02 10D
74LS00 9D
74LS04 8D
222 → DV OFF SVRS-N (E-2A2)(L-2A2)
+5V
R12 2KΩ
R11 15Ω
C3 0.022μF 50V
(E-2F10) DV MTR SW ON-N ← J312-9
74LS04 8D
74LS04 8D
74LS279 5D
MTR SW ON LT-P (E-2) (A-4D2)
(A-4E9) CLOCK-P
74LS03 5C
(A-1E10) SNS HDA SEQ-P
BUS IN BIT 3-N (A-3C3)
(A-4G7) STATE6-N
(A-6F9) PDR-N
74LS279 5D
DC GOOD LT-P (A-4E2)
74LS02 10D
74LS00 7D
74LS11 5D
74LS03 5C
(A-4G7) STATE7-N
BUS IN BIT 5-N (A-3D2)
(A-7F9) PWR BAD-P
74LS279 5D
AIR GOOD LT-P (A-4D2)
74LS00 7D
74LS11 6D
74LS03 5C
AIR SYS GOOD-N ← 209
BUS IN BIT 6-N (A-3E2)
74LS279 5D
PLL GOOD LT-P (A-4D2)
74LS02 10A
74LS00 7D
74LS11 6D
74LS03 5C
(E-5G8) AGC ACTIVEA-P ← 252
(L-5G8) AGC ACTIVEB-P ← 257
BUS IN BIT 7-N (A-3E2)
74LS02 10D
74LS11 4C
74LS11 4D
74LS04 6D
⚠ (A-4F3) RESTART SEQ-N
74LS04 8D
74LS00 9D
242 → SEQ RES-N (C-5C2 XN-5C2)
74LS00 9D
74LS279 5C
74LS03 6B
74LS04 8D
74LS00 7D
74LS11 4D
(A-2F6) BUS OUT BIT 0-N
BUS IN BIT 2-N (A-3C2)
(A-1F9) CHECK RESET-P
(B10) MTR SW ON LT-P
74LS00 9C
(A-2B10) GATE MACH ST-N
(A-1E9) SET R/W-N

A-5

NP410 (INTERFACE)

P/N / REV	TITLE: NP37 DRV LOGIC DIA.	SHEET 5/ REV Z	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-21410	Nippon Peripherals Limited	

NC-21410

NO.	DATE	DRAWN	APPD
CHENGE C7 : 4.7μF 10V → 10μF 16V			
1	83.6.20	[illegible]	

(A-4F7) STATE0-N
(A-4F7) STATE1-N
(A-4F7) STATE2-N
74LS11 4C
74LS279 5C
75450 3D
J312-11 >> MTR RUN DRIV-N (Z-2F2)
+5V
R16 390Ω
D1 1S468
R17 390Ω
R13 100KΩ
C4 0.022μF 50V
MC1455P1 1C
OSC
R14 100KΩ
C1 15μF 20V
74LS161 1A
CNT
LŌ CL CK A B C D P T
QA QB QC QD CR
(A-4G7) STATE7-N
74LS11 4C
(A-4G7) STATE3-N
(A-4G7) STATE5-N
74LS08 11A
74LS279 EC
TIMER UP-P (A-4C2)
+5V
R15 100KΩ
C5 0.022μF 50V
MC1455P1 1D
ONC SHOT
C2 10μF 16V
C6 0.022μF 50V
FOR-P (A-2C2)(A-5A2)
74LS37 1E
112 FOR-N (C-1A2)(D-5F2)(F-3A2) (K-3A2)(M-5F2)(N-1A2)
74LS37 1E
FOR-N (A-3A2)(A-4B2)(A-5C2)
74LS02 4B
(A-7F9) PWR BAD-P
144 FOR/PWR BAD-N
FOR/PWR BAD-N (A-8F2)

A-6

NP410 (INTERFACE)

P/N / REV	TITLE	SHEET 6/	DRAWN
	NP37 DRV LOGIC DIA.	REV 1	CHECK
	DRAWING NO NPL-NC-21410	Nippon Peripherals Limited	APPD

NC-21410

10f

NO.	REV.	DATE	DRAWN	APPD

(K-1A9) ZMD/PACTL B-N ← 247

(F-1A9) ZMD/PACTL A-N ← 235

(E-2A10) ENBL SEQ A-P ← 255

(L-2A10) ENBL SEQ B-P ← 258

+5V

74LS05 11F

R18 1KΩ

R19 1KΩ

R20 1KΩ

R21 1KΩ

R22 1KΩ

C7 0.022μF

R26 15KΩ

R25 27KΩ

μPC177C 9G

J312-5 >> ZMD/PACTL A-N (Z-3B1)

J312-15 >> ZMD/PACTL B-N (Z-4B1)

+28V << J312-16

R27 3.6KΩ

C8 0.022μF

C9 0.022μF

D2 RD10EB

74LS05 11F

R23 1KΩ

74LS05 11F

R24 1KΩ

250 → PWR GOOD-P

PWR GOOD-P (A-4D2)

PWR BAD-P (A-5C2)(A-6G2)

A-7

NP410 (INTERFACE)

P/N	TITLE	SHEET 7	DRAWN
REV	NP37 DRV LOGIC_DIA.	REV 0	CHECK
	DRAWING NO NPL-NC-21410		APPD

Nippon Peripherals Limited

NC-21410

(X-1D5)NPL DEV SEL 0-P <- J303-29 13 — 74LS14 3E 12 — 74LS32 6E 1,2 — 74LS20 4E 12,13 — 74LS08 2F 10,9 — 74LS04 1F 9,8 — 105 → SELECTED A-N (C-1B2)(E-3A2)(F-2A2)

(X-1D5)NPL DEV SEL 1-P <- -31 3 — 74LS14 3E 4 — 74LS32 6E 12,13 — 74LS20 4E 11 — 74LS08 2F 13,12 — 74LS04 1F 3,4 — 105 → SELECTED B-N (K-2A2)(L-3A2)(N-1B2)

(X-1D5)NPL DEV SEL 2-P <- -33 5 — 74LS14 3E 6 — 74LS32 6E 4,5 — 74LS37 1E 1,2 — 3 → SELECTED A/B-P (A-1E2)(A-2A2)(A-3A2)(A-9C2)

(X-1E5)NPL DEV SEL 3-P <- -35 9 — 74LS14 3E 8 — 74LS32 6E 9,10 — SELECTED A-P (A-1D2)

(X-1E5)NPL DEV SEL 4-P <- -37 11 — 74LS14 2E 10 — 74LS32 5E 4,5 — SELECTED B-P (A-1D2)

(X-1E5)NPL DEV SEL 5-P <- -39 9 — 74LS14 2E 8 — 74LS32 5E 9,10

(X-1E5)NPL DEV SEL 6-P <- -41 1 — 74LS14 2E 2 — 74LS32 5E 1,3

(X-1E3)NPL DEV SEL 7-P <- J303-43 13 — 74LS14 2E 12 — 74LS32 5E 12,13 — 74LS20 4E 1,2,4,5 — 6

DV +5V

0.1 — R28 1KΩ — 74LS04 7E 1,2

2.5 — R29 1KΩ — 74LS04 7E 5,6

4.5 — R30 1KΩ — 74LS04 7E 11,10

6.7 — R31 1KΩ — 74LS04 7E 13,12

(X-1D5)NPL SEL HOLD-P <- J303-27 11 — 74LS14 3E 10 — 74LS04 1F 11,10 — 74LS08 2F 5,6

(A-6G9) POR/PWR BAD-N

+5V — R32 1KΩ — 74LS03 3F 9,10,8 — 74LS04 7E 9,8

+5V — R33 1KΩ — 74LS03 3F 4,5,6 — 74LS04 7E 3,4

(C-1F10) ATN/HDA ATN A-N <- 114 — 74LS04 1F 13,12 — 74LS03 3F 13,12,11

(E-2C10)

(L-2C10) ATN/HDA ATN B-N <- 117 — 74LS04 1F 1,2 — 74LS03 3F 2,1,3

(N-1F10)

(A-2B9) TAG VALID-P

+5V — R34 1KΩ

(F-1F9)CAL CNT PLS-N <- 203 — 74LS04 6B 13,12

HD2904 11E

J304-1 -> NPL ATN RSP 0-P (X-2A5)

-3 -> NPL ATN RSP 1-P (X-2A5)

-5 -> NPL ATN RSP 2-P (X-2B5)

HD2904 10E

-7 -> NPL ATN RSP 3-P (X-2B5)

-9 -> NPL ATN RSP 4-P (X-2B5)

-11 -> NPL ATN RSP 5-P (X-2B5)

HD2904 9E

-13 -> NPL ATN RSP 6-P (X-2B5)

-15 -> NPL ATN RSP 7-P (X-2C5)

-37 -> NPL TAG VALD-P (X-2E5)

HD2904 8E

J304-35 -> NPL CAL PULS-P (X-2E5)

A-8

NP410 (INTERFACE)

P/N / REV	TITLE: NP37 DRV LOGIC_DIA.	SHEET 8	DRAWN
		REV 0	CHECK
	DRAWING NO: NPL-NC-21410		APPD

Nippon Peripherals Limited

NC-21410

901

NO	DATE	DRAWN	APPD
CHANGE SINK ADDRESS			
1	82.11.11	S.Sato	
CHANGE R53: 2KΩ → 1KΩ			
2	83.6.20	M.Kato	

J303-5 >> SRV SIG A/B-N (X-1B5)

J303-3 >> SRV SIG A/B-P (X-1A5)

(E-7A5) F1 A/B-N ← 158
(L-7A5)

(E-7A5) F1 A/B-P ← 165
(L-7A5)

MB5365AM-G 5G

R35 100Ω

R36 100Ω

R41 510Ω -5.2V

R42 510Ω -5.2V

(A-8B10) SELECTED A/B-P

74LS05 11F

+5V

R45 750Ω

R47 3.6KΩ

MB5365AM-G 4G

R57 1.5KΩ

C10 0.022μF

R55 560Ω

R51 12KΩ

R53 1KΩ

C11 0.022μF

-12V

J303-45 >> R/W DATA-P (X-1F5)

J303-47 >> R/W DATA-N (X-1F3)

(J-6B9) RAW DATA-P ← 124

(J-6B9) RAW DATA-N ← 125

MB5365AM-G 3G

R37 100Ω

R38 100Ω

R43 510Ω -5.2V

R44 510Ω -5.2V

+5V

C13 0.022μF

R49 100Ω

MB5365AM-G 1G

R39 100Ω

R40 100Ω

10116 2G

NRZ WT DT-P (J-3B2) 110

NRZ WT DT-N (J-3B2) 109

(F-2D9) RD XMIT GTD A-N ← 265

(K-2D9) RD XMIT GTD B-N ← 244

74LS00 11D

74LS05 11F

+5V

R46 750Ω

R48 3.6KΩ

MB5365AM-G 7G

R58 1.5KΩ

R56 560Ω

R60 360Ω

R59 360Ω

R52 12KΩ

R54 1KΩ

C12 0.022μF

-12V

R50 1KΩ

C14 0.022μF

-5.2V

(E-5A10) RZ ON A-N ← J311-5 — 149 → RZ ON A-N (E-2A2)

(E-5B10) RZ OFF A-N ← -6 — 155 → RZ OFF A-N (E-2B2)

(E-5C10) RZ ON B-N ← -8 — 150 → RZ ON B-N (L-2A2)

(E-5D10) RZ OFF B-N ← -9 — 153 → RZ OFF B-N (L-2B2)

(E-5B10) READ ONLY A-N ← -12 — 128 → READ ONLY A-N (F-4G2)

(E-5D10) READ ONLY B-N ← J311-15 — 122 → READ ONLY B-N (K-4G2)

(C-5C5) RDY LED A-N ← 113 — J311-17 >> RDY LED A-N (E-5C2)

(N-5C5) RDY LED B-N ← 120 — J311-18 >> RDY LED B-N (E-5C2)

(E-3E10) I SENSE A ← J312-3 — 234 → I SENSE A (D-2B2)

(D-6C9) PA DRV A ← 204 — J312-7 >> PA DRV A (E-3D1)

(E-3E10) I SENSE B ← J312-13 — 208 → I SENSE B (M-2B2)

(M-6C9) PA DRV B ← 205 — J312-17 >> PA DRV B (E-4D1)

A-9

NP410 (INTERFACE)

P/N / REV	TITLE: NP37 DRV LOGIC_DIA.	SHEET 9/9	DRAWN
		REV 2	CHECK
	DRAWING NO: NPL-NC-21410		APPD

Nippon Peripherals Limited

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NO	DATE	DRAWN	APPD
CHANGE SIGNAL FROM TAG X1-N TO TAG 1X-N (10C-3)			
1	12.11.4		
SHEET 1: REV 0 → 1 FUNCTION REV A → B			
2	154.123		
SHEETS REV 0 → 1 FUNCTION REV B → C			
3	84.1.30		

(X-1A5)NPL DEV TAG 0-P ← J304-39 — 74LS14 10G (9→8) — TAG BUS BIT0-N(A-2B2)(A-10A2)

(X-2E5)NPL DEV TAG 1-P ← -41 — 74LS14 10G (11→10)

(X-2E5)NPL DEV TAG 2-P ← -43 — 74LS14 10G (13→12)

(X-2E5)NPL DEV TAG 3-P ← -45 — 74LS14 10G (1→2)

(X-2F5)NPL DEV TAG 4-P ← -47 — 74LS14 10G (3→4)

(X-2F5)NPL DEV TAGP-P ← J304-49 — 74LS14 10G (5→6)

TAG4-N (A-10B2)(A-10F2)
TAG3-N (A-10B2)(A-10G2)
TAG2-N (A-10B2)(A-10G2)
TAG1-N (A-10A2)(A-10H2)

+5V — R11 1KΩ — R10 1KΩ — R9 1KΩ — R8 1KΩ
+5V — R15 1KΩ — R14 1KΩ — R13 1KΩ — R12 1KΩ

74LS156 13A — DEC
1C, 1G, A, B, 2C, 2G
1Y0→237 TAG 3XA-N(D-9E2)(F-1B2)
1Y1→238 TAG 2XA-N(C-5D2)(D-9E2)(F-1D2)
1Y2→239 TAG 1XA-N(C-1B2)(F-6E2)
1Y3→240 TAG 0XA-N(C-1C2)(F-6F2)
2Y0→243 TAG 3XB-N(K-1B2)(M-9D2)
2Y1→248 TAG 2XB-N(K-1D2)(M-9E2)(N-5D2)
2Y2→245 TAG 1XB-N(K-6E2)(N-1B2)
2Y3→249 TAG 0XB-N(K-6F2)(N-5D2)

74LS156 12A — DEC
+5V — R21 R20 R23 R22 R17 R16 R19 R18 1KΩ
1Y0→230 TAG X3-N(C-1E2)(F-6F2)(K-6E2)(N-1E2)
1Y1→219 TAG X2-N(C-1E2)(F-1C2)(K-1C2)(N-1E2)
1Y2→232 TAG X1-N(C-1F2)(N-1F2)
1Y3→217 TAG X0-N(C-1C2)(C-5D2)(F-6E2)(K-6E2)(N-1C2)
2Y0→227 TAG X7-N(C-1A2)(F-6F2)(K-6F2)(N-1A2)
2Y1→228 TAG X6-N(C-1C2)(F-1B2)(K-1B2)(N-1C2)
2Y2→229 TAG X5-N(C-1C2)(N-1C2)
2Y3→218 TAG X4-N(C-1D2)(D-9D2)(M-9D2)(N-1D2)

(A-8B9)SELECTEDA-P ← 74LS00 11C (1,2→3) ← 74LS04 8C (3→4)
(X-1D5)NPL TAG GATE-P ← J303-25 ← 74LS14 4G (13→12)
(A-8C9)SELECTEDB-P ← 74LS00 11C (4,5→6)
74LS04 8C (1→2)
74LS00 11C (13,12→11) → A 10E2
(A-8B9)SELECTEDA/B-P

+5V — R24 1KΩ — TAG GATE-N(A-2B2)(A-10B2)
TAG GATE-P(A-2A2)(A-10A2)

74LS04 12F (13→12)
74LS10 6C (1,13→12)
74LS10 6C (10,9→8)
74LS02 10C (2,3→1)
SNS ITFC-P(A-2C2)
74LS02 10C (6,5→4)
74LS32 6B (2,1→3) → 143 SNS HDA SEQ-P(A-4B2)(A-5C2)
SNS HDA SEQ-P(F-4C2)(K-4C2)
74LS02 10C (9,8→10)
74LS05 3A (5→6) → 115 SET R/W-N(F-2A2)(K-2A2)
SET R/W-N(A-2C2)(A-5H2)
74LS04 8C (5→6)
SET R/W-P(A-4E2)
74LS02 10C (12,11→13)
SKST/STSCT-P(A-2B2)
74LS02 8B (3,2→1)
74LS32 6B (12,13→11) → 207 CHECK RESET-P(G-1B2)(F-3B2)(K-3B2)(N-1B2)
CHECK RESET-P(A-5G2)
74LS02 8B (12,11→13)
ATTN RESET-P(A-2A2)
74LS02 8A (8,9→10) → 223 CE SYNC TP-P
TAG PRTY CHK-P(A-2D2)

C SNS HDA SEQ-N ← 102 — +5V — R1 1KΩ — 74LS04 2A (1→2)
C CHECK RESET-N ← 104 — R2 1KΩ — 74LS04 2A (3→4)

74LS280 11E — PCG
A B C D E F G H I → EV (5), ŌD

119, 121 — J312-4, J312-6 → +12V, +12VDC(Z-3G1)
141, 241 — J312-12, J312-14 → -12V, -12VDC(Z-3G1)

J311-19, J311-20 → +5V(Z-5A2)
101, 167, 201, 267 — +5V
C16 3.3μF 35V — C19 3.3μF 35V — C 0.022μF 50V — 0.022μF 50V
106, 111, 116, 126, 131, 136, 161, 261 — 0V, 146, 151, 156, 166, 206, 211, 216, 226, 231, 236, 246, 251, 256, 266 — -5.2V

J311-1, -2, -3, -4, -7, J311-10 → GND(Z-5E3)
J312-8, J312-10 → DC RTN A/B (Z-3D1)(Z-4D1)
J303-33, -35, -37, -39, J303-41 — J303-43, -45, -47, J303-49

J304-2, -4, -6, -8, -10, -12, -14, -16, -18, J304-20 → GND (X-2G5)
J304-22, -24, -26, -28, -30, -32, -34, -36, -38, J304-40
J304-42, -44, -46, -48, J304-50, J303-3, -5, -7, -9, J303-11 → GND (X-1G5)
J303-13, -15, -17, -19, -21, -23, -25, -27, -29, J303-31

A-1

NP460 (INTERFACE-A)

P/N NP460 REV C	TITLE NP37/75 DRV LOGIC_DIA	SHEET 1/10 DRAWN IT 89.5.9 REV 3 CHECK 93.5.11 APPD 93.5.11	
INTERFACE	DRAWING NO NPL-NC-20460	Nippon Peripherals Limited	

NC-20460

REV NO.	DATE	DRAWN	APPD

(A-1F9) ATTN RESET-P
(A-8B9) SELECTED A/B-P
(A-1C9) TAG GATE-P
(A-1F9) SKST/STSCT-P
(A-1B9) TAG BUS BIT0-N
(A-1D9) TAG GATE-N
(A-1D9) SET R/W-N
(A-1E9) SNS ITFC-P
(A-6F9) FOR-P
(A-1G9) TAG PRTYCHK-P

74LS00 14D
74LS10 13E
74LS04 13D
74LS20 12E
74LS02 12D
74LS03 9C
74LS279 10E
74LS04 11D
74LS05 7A
74LS02 8A
74LS03 9C
74LS280 7F
74LS04 13B
74LS14 6G
74LS14 5G
74LS02 6F
74LS02 5F
74LS05 7A
74LS05 11A

+5V
R33 1KΩ
R34 1KΩ
R25 1KΩ
R26 1KΩ
R27 1KΩ
R28 1KΩ
R29 1KΩ
R30 1KΩ
R31 1KΩ
R32 1KΩ

118 → SRV STROBE-N (E-3A2) (L-3A2)
137 → TAG VALID-P
TAG VALID-P (A-8G2)
145 → GATEMACH ST-N (C-1C7)(E-3H2)(F-4E2)(K-4E2)(L-3H2)(N-1C7)
GATE MACH ST-N (A-5G2)
BUS IN BIT1-N (A-3C2)
123 → INTF CHECK-N
BUS IN BIT6-N (A-3E2)
BUS IN BIT7-N (A-3F2)

$\overline{B0}$B0-N (A-10E2)
$\overline{B0}$B1-N (A-10C2)
PCG
EV
$\overline{OD}$

(X-1B5) NPL BUS $\overline{OUT}$0-P ← J303-7
(X-1B5) NPL BUS $\overline{OUT}$1-P ← -9
(X-1B5) NPL BUS $\overline{OUT}$2-P ← -11
(X-1B5) NPL BUS $\overline{OUT}$3-P ← -13
(X-1C5) NPL BUS $\overline{OUT}$4-P ← -15
(X-1C5) NPL BUS $\overline{OUT}$5-P ← -17
(X-1C5) NPL BUS $\overline{OUT}$6-P ← -19
(X-1C5) NPL BUS $\overline{OUT}$7-P ← -21
(X-1C5) NPL BUS $\overline{OUT}$8-P ← J303-23

162 → BUS $\overline{OUT}$ BIT0-N (C-3A2)(F-2E2)(K-2E2)(N-3A2)
BUS $\overline{OUT}$ BIT0-N (A-5G2)
163 → BUS $\overline{OUT}$ BIT1-N (C-3B2)(F-2F2)(K-2F2)(N-3B2)
215 → BUS $\overline{OUT}$ BIT2-N (C-3B2)(F-2B2)(K-2B2)(N-3B2)
214 → BUS $\overline{OUT}$ BIT3-N (C-3B2)(F-2C2)(K-2C2)(N-3B2)
213 → BUS $\overline{OUT}$ BIT4-N (C-3C2)(F-5E2)(K-5E2)(N-3C2)
212 → BUS $\overline{OUT}$ BIT5-N (C-3D2)(F-2C2)(K-2C2)(N-3D2)
164 → BUS $\overline{OUT}$ BIT6-N (C-3D2)(F-1F2)(K-1F2)(N-3D2)
160 → BUS $\overline{OUT}$ BIT7-N (C-3E2)(F-1F2)(K-1F2)(N-3E2)

A-2

NP460 (INTERFACE-A)

P/N / REV	TITLE	SHEET 2/	DRAWN
	NP 37/75 DRV LOGIC-DIA	REV 0	CHECK
	DRAWING NO NPL-NC-20460		APPD

Nippon Peripherals Limited

NC-20460

(A-8C8) SEL A/B - P

(A-6G9) PŌR - N

(A-10B9) BIB 0 - N

+5V

R35 820Ω
R36 820Ω
R37 820Ω
R38 820Ω
R39 820Ω
R40 820Ω
R41 820Ω
R42 820Ω

74LS00 4A
74LS04 5A 6
74LS04 5A 8
74LS04 10A
74LS04 5A 6
74LS04 5A 4
74LS04 5A 2
74LS04 2A 6
74LS04 5A 10

(C-2A9) BUS IN BIT0 - N ← 133 (N-2A9)
(A-4C9) BUS IN BIT0 - N (A-10B10)
(A-2C10) BUS IN BIT1 - N (A-4D9)
(C-2E9) BUS IN BIT1 - N ← 137 (N-2E9)
(C-2E9) BUS IN BIT2 - N ← 210 (N-2E9)
(A-4F9) BUS IN BIT2 - N (A-5G10)
(C-2C9) BUS IN BIT3 - N ← 142 (N-2C9)
(A-5C9) BUS IN BIT3 - N
(C-2C9) BUS IN BIT4 - N ← 138 (N-2C9)
(C-2D9) BUS IN BIT5 - N ← 140 (N-2D9)
(A-5C9) BUS IN BIT5 - N
(C-2D9) BUS IN BIT6 - N ← 134 (N-2D9)
(A-2D9) BUS IN BIT6 - N (A-3D9)
(C-2E9) BUS IN BIT7 - N ← 154 (N-2E9)
(A-2D9) BUS IN BIT7 - N (A-3E9)

74LS280 13F
FCG
A B C D E F G H I
EV ŌD

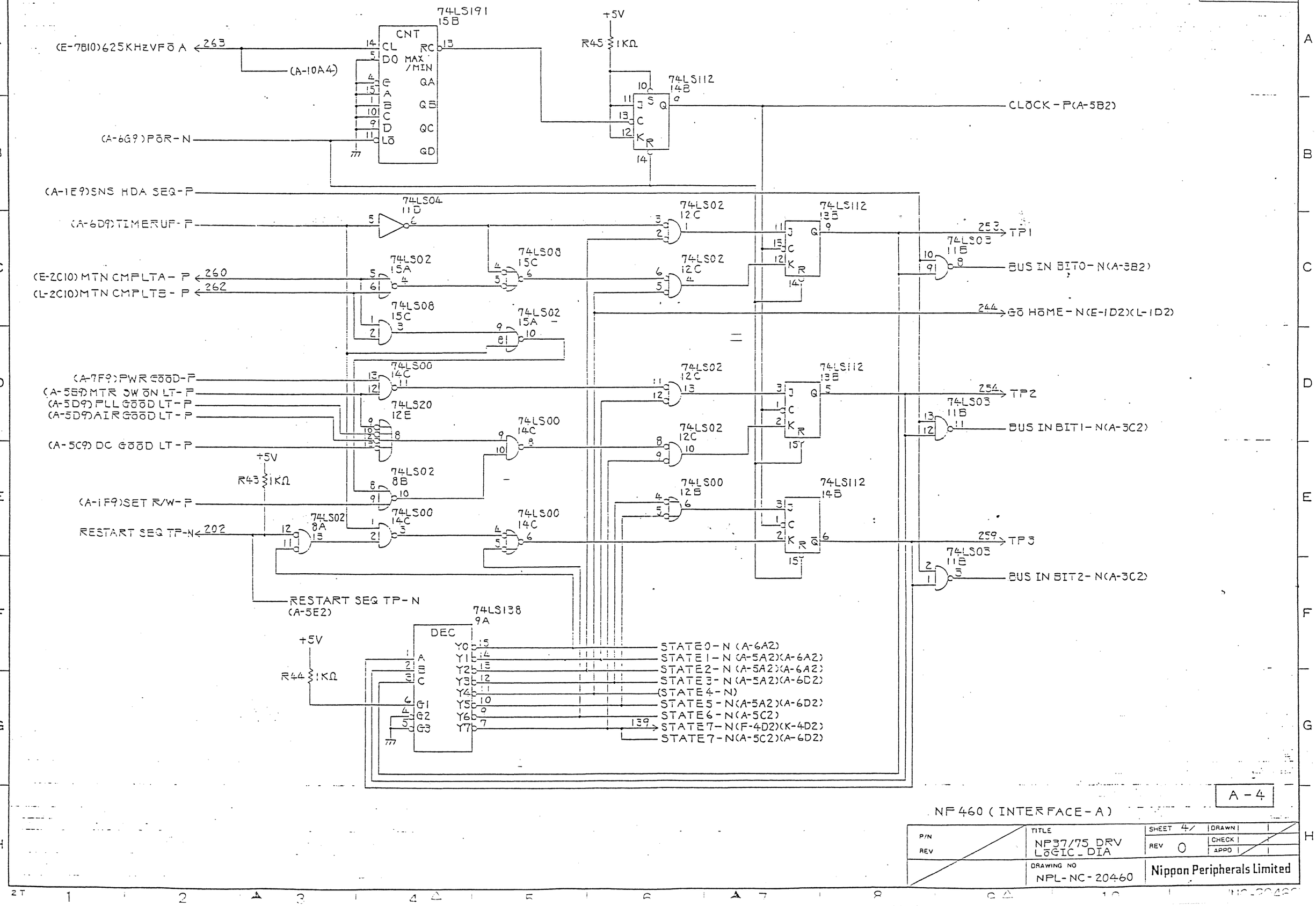
HD2904 13G
HD2904 12G
HD2904 11G

J304-17 → NPL BUS IN0 - P (X-2C5)
-19 → NPL BUS IN1 - P (X-2C5)
-21 → NPL BUS IN2 - P (X-2C5)
-23 → NPL BUS IN3 - P (X-2C5)
-25 → NPL BUS IN4 - P (X-2D5)
-27 → NPL BUS IN5 - P (X-2D5)
-29 → NPL BUS IN6 - P (X-2D5)
-31 → NPL BUS IN7 - P (X-2D5)
J304-33 → NPL BUS IN P - P (X-2D5)

A - 3

NP460 (INTERFACE-A)

P/N / REV	TITLE: NP37/75 DRV LOGIC_DIA	SHEET 3 / DRAWN	
		REV 0 / CHECK	
	DRAWING NO: NPL-NC-20460	APPD	Nippon Peripherals Limited



A-4

NF460 (INTERFACE-A)

P/N	TITLE: NP37/75 DRV LOGIC_DIA	SHEET 4/	DRAWN
REV		REV 0	CHECK
	DRAWING NO: NPL-NC-20460		APPD

Nippon Peripherals Limited

NO	DATE	DRAWN	APPD
CHANGE DV OFF SV RS-N			
1 184.1.30 IS Suite			

(A-6F9) PŌR-P

(A-4F6) STATE1-N
(A-4F6) STATE2-N
(A-4G6) STATE3-N
(A-4G6) STATE5-N

74LS20 7B

74LS02 5C

74LS00 8D

74LS04 10A

222 → DV ŌFF SVRS-N (E-2A2) (L-2A2)

+5V

R46 2KΩ

(Z-2F10) DV MTR SW ŌN-N ← J312-9

R47 15Ω

C1 0.022μF 50V

74LS04 12F

74LS04 12F

74LS279 10E

MTR SW ŌN LT-P (G 2) (A-4D2)

(A-4B9) CLŌCK-P

74LS03 8E

BUS IN BIT3-N (A-3D2)

(A-1E9) SNS HDA SEQ-P

(A-4G6) STATE6-N

74LS279 7D

DC GŌŌD LT-P (A-4E2)

(A-6G9) PŌR-N

74LS02 10B

74LS00 8D

74LS11 5D

74LS03 8E

BUS IN BIT5-N (A-3E2)

(A-4G6) STATE7-N

(A-7F9) PWR BAD-P

74LS279 7D

AIR GŌŌD LT-P (A-4D2)

74LS11 5D

74LS00 12B

74LS03 8E

BUS IN BIT6-N (A-3E2)

AIR SYS GŌŌD-N ← 209

74LS279 7D

PLL GŌŌD LT-P (A-4D2)

74LS03 8E

BUS IN BIT7-N (A-3F2)

(E-5G8) AGC ACTIVEA-P ← 252
(L-5G8) AGC ACTIVEB-P ← 257

74LS02 15A

74LS08 15C

74LS00 8D

74LS11 5D

(A-4F3) RESTART SEQ TP-N

74LS02 5C

74LS11 9E

74LS04 11D

74LS04 11D

74LS00 12B

242 → SEQ RESET-N (C-5C2) (N-5C2)

74LS00 8D

74LS279 10E

74LS03 2B

BUS IN BIT2-N (A-3C2)

74LS04 11D

74LS00 10D

74LS11 9E

(A-2F6) BUS ŌUT BIT0-N

(A-1F9) CHECK RESET-P

(B10) MTR SW ŌN LT-P

74LS00 10D

(A-2B9) GATE MACHST-N
(A-1E9) SET R/W-N

A-5

NP460 (INTERFACE-A)

P/N	TITLE: NP3775 DRV LŌGIC_DIA	SHEET 5/	DRAWN
REV		REV 1	CHECK
	DRAWING NO: NPL-NC-20460		APPD
		Nippon Peripherals Limited	

NC-20460

REV. DATE DRAWN APPD

(A-4F6) STATE0-N
(A-4F6) STATE1-N
(A-4F6) STATE2-N
74LS11 5B
74LS279 4C
7545O 9F
J312-11
MTR RUN DRIV-N (E-2F2)
+5V
R51 390Ω
D1 1S468
R52 390Ω
C3 0.022μF 50V
R48 100KΩ
R49 100KΩ
C2 15 μF 20V
MC1455P1 1C
OSC
74LS161 2C
CNT
LD QA QB QC QD CR
CL CK A B C D P T
(A-4G6) STATE7-N
74LS11 5B
(A-4G6) STATE3-N
(A-4G6) STATE5-N
74LS08 4D
74LS279 4C
TIMER UP-P (A-4C2)
C5 0.022μF 50V
R50 100KΩ
C4 10μF 16V
C6 0.022μF 50V
MC1455P1 1B
ONC SHOT
PŌR-P (A-2C2) (A-5A2)
74LS37 1A
112 PŌR-N (C-1A2) (D-5F2) (F-3A2) (K-3A2) (M-5F2) (N-1A2)
74LS37 1A
PŌR-N (A-3A2) (A-4B2) (A-5C2) (A-10C2)
74LS02 8A
(A-7F9) PWR BAD-P
144 PŌR/PWR BAD-N
PŌR/PWR BAD-N (A-8F2)

A-6

NP460 (INTERFACE-A)

P/N	TITLE NP3775 DRV LOGIC_DIA	SHEET 6/	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-20460		APPD

Nippon Peripherals Limited

(K-1A9) EMD/FACTLB-N ← 247

(F-1A9) EMD/FACTLA-N ← 235

+5V

74LS05 14A

R53 1KΩ

(E-2A10) ENBLSEQA-P ← 255

11 10

μPC177C 15E

6 7 1

+5V R54 1KΩ

4 5 2

J312-5 → EMD/FACTLA-N (E-3B1)

R55 1KΩ

+5V

74LS05 14A

R56 1KΩ

(L-2A10) ENBLSEQB-P ← 258

9 8

8 9 14

R57 1KΩ

C7 0.022μF

10 11 13

R58 15KΩ

R59 27KΩ

J312-15 → EMD/FACTLB-N (E-4B1)

+28V ← J312-16

R60 3.6KΩ

3 12

C8 0.022μF

D2 RD10EB

C9 0.022μF

+5V

R61 1KΩ

74LS05 14A

+5V

R62 1KΩ

74LS05 14A

3 4 5 6

250 → PWR GOOD-F

PWR GOOD-P (A-4D2)

PWR BAD-P (A-5C2)(A-6G2)

A-7

NP460 (INTERFACE-A)

P/N / REV	TITLE: NP37/75 DRV LOGIC DIA	SHEET 7 / REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-20460	Nippon Peripherals Limited	

NC-20460

(X-1D5) NPL DEVSEL0-P
(X-1D5) NPL DEVSEL1-P
(X-1D5) NPL DEVSEL2-P
(X-1E5) NPL DEV SEL3-P
(X-1E5) NPL DEV SEL4-P
(X-1E5) NPL DEV SEL5-P
(X-1E5) NPL DEV SEL6-P
(X-1E5) NPL DEV SEL7-P
(X-1D5) NPLSELHOLD-P
(A-6G9) POR/ PWR BAD-N
(A-10D5) A INTF DSBL-N
(C-1F10) ATN/HDA ATNA-N (E-2C10)
(L-2C10) ATN/HDAATNB-N (N-1F10)
(A-2B9) TAG VALID-P
(F-1F9) CALCNT PLS-N (K-1F9)
(A-10A10) RESERVED-P
SELECTEDA-N (C-1B2)(E-3A2)(F-2A2)
SELECTEDB-N (K-2A2)(L-3A2)(N-1B2)
SELECTED A/B-P (A-1E2)(A-2A2)(A-9C2)(A-10F2)
SELECTEDA-P (A-1C2)(A-10C4)
SELECTEDB-P (A-10E4)(A-1D2)
SEL A/B-P (A-3A2)(A-10A2)
NPL ATN RSP0-P (X-2A5)
NPL ATN RSP1-P (X-2A5)
NPL ATN RSP2-P (X-2B5)
NPL ATN RSP3-P (X-2B5)
NPL ATN RSP4-P (X-2B5)
NPL ATN RSP5-P (X-2B5)
NPL ATN RSP6-P (X-2B5)
NPL ATN RSP7-P (X-2C5)
NPL TAG VALD-P (X-2E5)
NPL CAL PULS-P (X-2E5)
DVA0.1-N (B-4DZ)
DVA2.3-N (B-4DZ)
DVA4.5-N (B-4EZ)
DVA6.7-N (B-4EZ)

NP460 (INTERFACE-A)

P/N	TITLE NP37/75 DRV LOGIC_DIA	SHEET 8/	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-20460		APPD

Nippon Peripherals Limited

A-8

NO.	DATE	DRAWN	APPD
CHANGE R77 1KΩ → 750Ω			
1	[illegible]	[illegible]	[illegible]

(L-7A5)(E-7A5) F1 A/B-N ← 158
(L-7A5)(E-7A5) F1 A/B-P ← 165
J303-5 → SRV SIG A/B-N (X-1B5)
J303-3 → SRV SIG A/B-P (X-1A5)
MB5365AM-G 7G
R73 100Ω
R74 100Ω
R72 750Ω → -5.2V
R75 750Ω → -5.2V
+5V
R76 750Ω
74LS05 2D
(A-8B9) SELECTED A/B-P
R77 3.6KΩ
MB5365AM-G 8G
74LS05 2D
(A-10D10) SPCLSELA-P
74LS05 2D
(A-10D10) SPCLSELB-P
R78 12KΩ
R79 750Ω
R80 1.5KΩ
R81 560Ω
C10 0.022μF
C11 0.022μF
-12V
J303-45 → R/W DATA-P (X-1F5)
J303-47 → R/W DATA-N (X-1F5)
(J-6B9) RAW DATA-P ← 124
(J-6B9) RAW DATA-N ← 125
MB5365AM-G 2G
R83 100Ω
R84 100Ω
R82 750Ω → -5.2V
R85 750Ω → -5.2V
+5V
R86 750Ω
MB5365AM-G 2F
74LS03 1B
74LS00 12B
(F-2D9) RDXMITGTDA-N ← 265
(K-2D9) RDXMITGTDB-N ← 264
R87 3.6KΩ
R88 12KΩ
R89 1KΩ
R90 1.5KΩ
R91 560Ω
C12 0.022μF
-12V
74LS03 2B
74LS04 10A
+5V
C13 0.022μF
R93 100Ω
MB5365AM-G 1G
R92 100Ω
R94 100Ω
R95 360Ω
R96 360Ω
R97 1KΩ
C14 0.022μF
-5.2V
+5V
R100 3.3KΩ
R101 1.8KΩ
R102 43KΩ → -5.2V
10116 1F
10102 1E
10102 1E
R99 510Ω
R98 510Ω → -5.2V
109 → NRZ WT DT-N
110 → NRZ WT DT-P

(Z-5A10) RZ ŌN A-N ← J311-5 ← 149 → RZ ŌNA-N (E-2A2)
(Z-5B10) RZ ŌFF A-N ← -6 ← 155 → RZ ŌFF A-N (E-2B2)
(Z-5C10) RZ ŌN B-N ← -8 ← 150 → RZ ŌN B-N (L-2A2)
(Z-5D10) RZ ŌFF B-N ← -9 ← 153 → RZ ŌFF B-N (L-2B2)
(Z-5B10) READ ŌNLY A-N ← -12 ← 128 → READ ŌNLY A-N (F-4G2)
(Z-5D10) READ ŌNLY B-N ← J311-15 ← 122 → READ ŌNLY B-N (K-4G2)
(C-5C5) RDY LED A-N ← 113 ← J311-17 → RDY LED A-N (Z-5C2)
(N-5C5) RDY LED B-N ← 120 ← J311-18 → RDY LED B-N (Z-5C2)

(Z-3E10) I SENSE A ← J312-3 ← 234 → I SENSE A (D-2B2)
(D-6C9) PA DRV A ← 204 ← J312-7 → PA DRV A (Z-3D1)
(Z-3E10) I SENSE B ← J312-13 ← 208 → I SENSE B (M-2B2)
(M-6C9) PA DRV B ← 205 ← J312-17 → PA DRV B (Z-4D1)

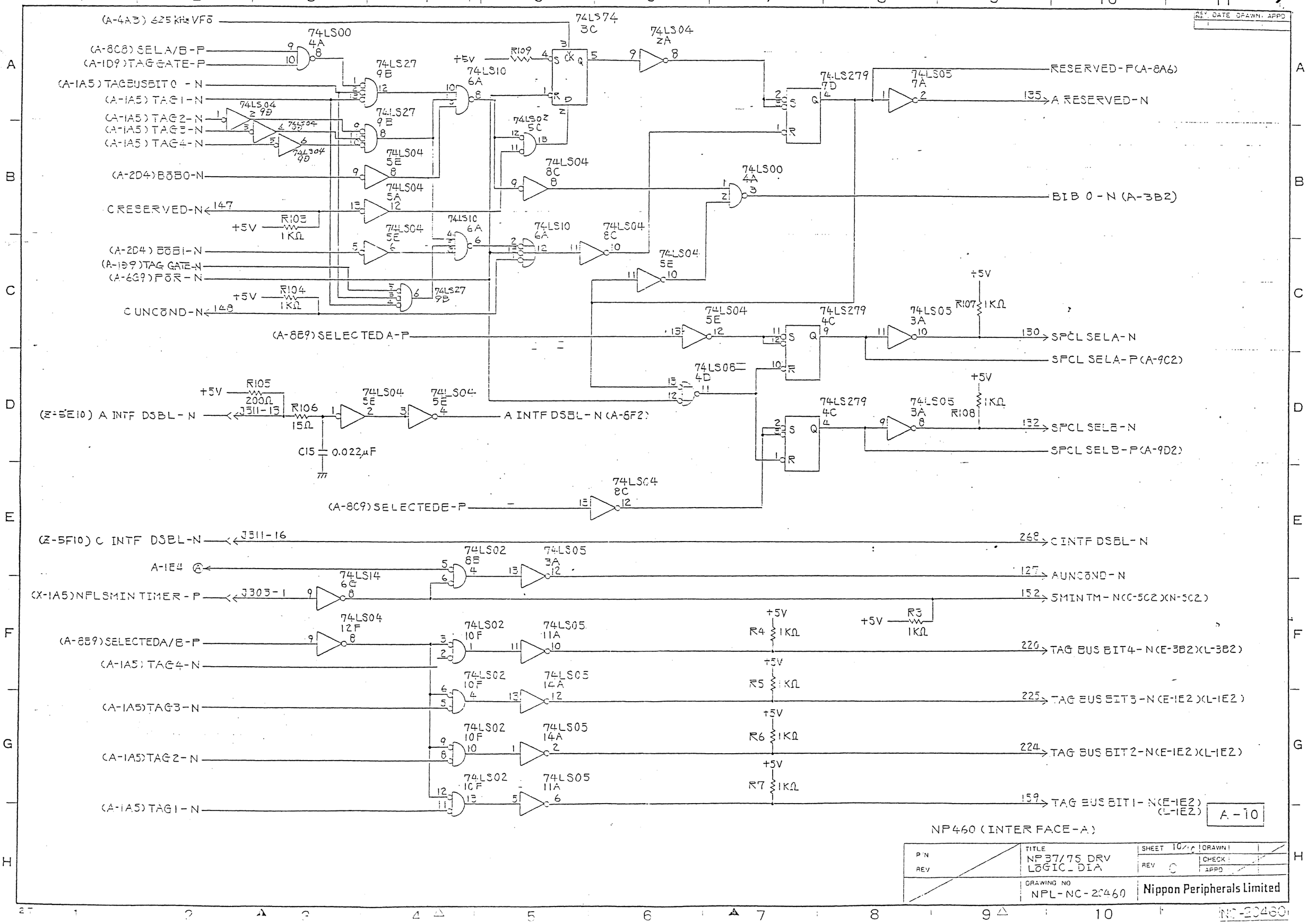
A - 9

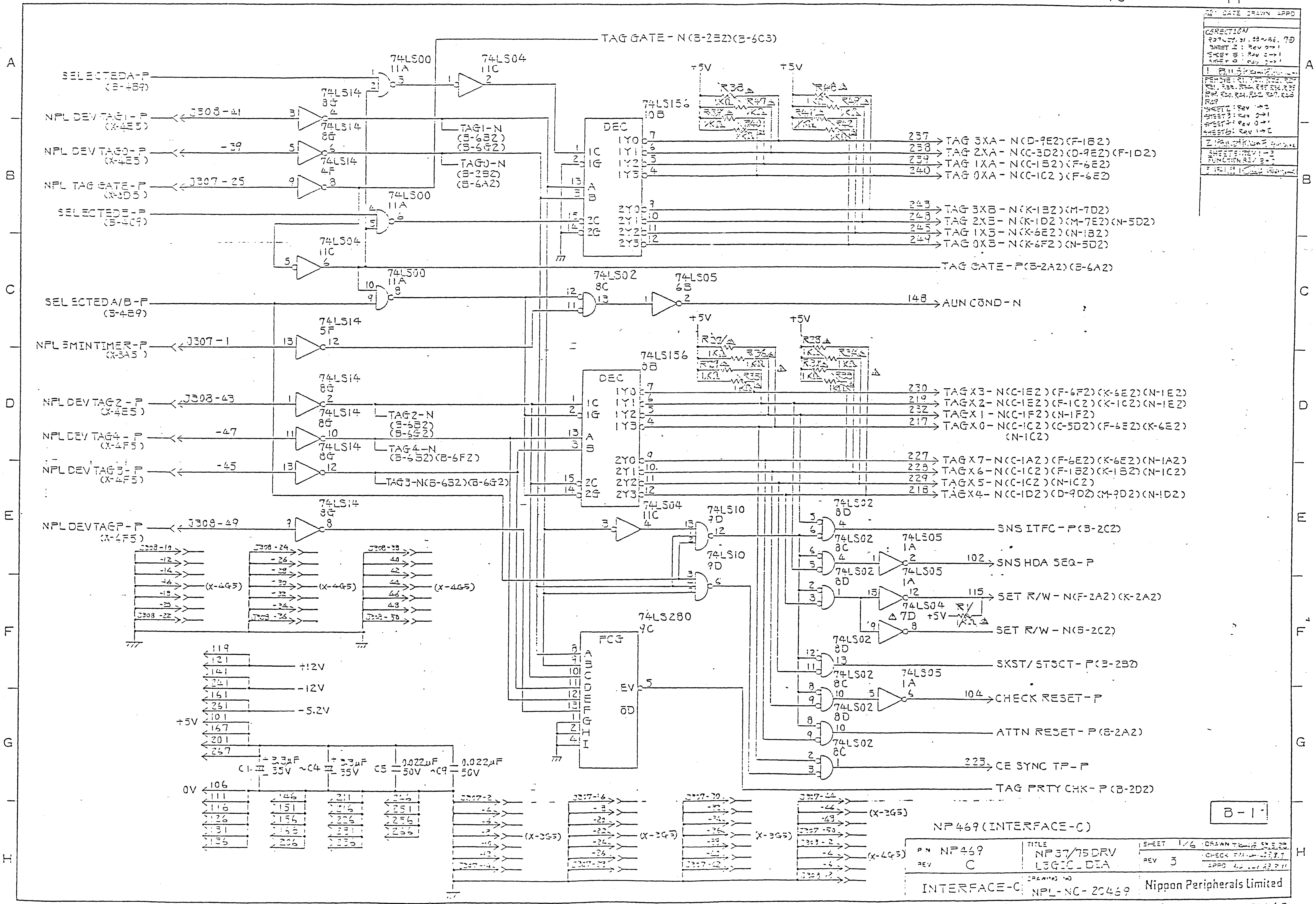
NP460 (INTERFACE-A)

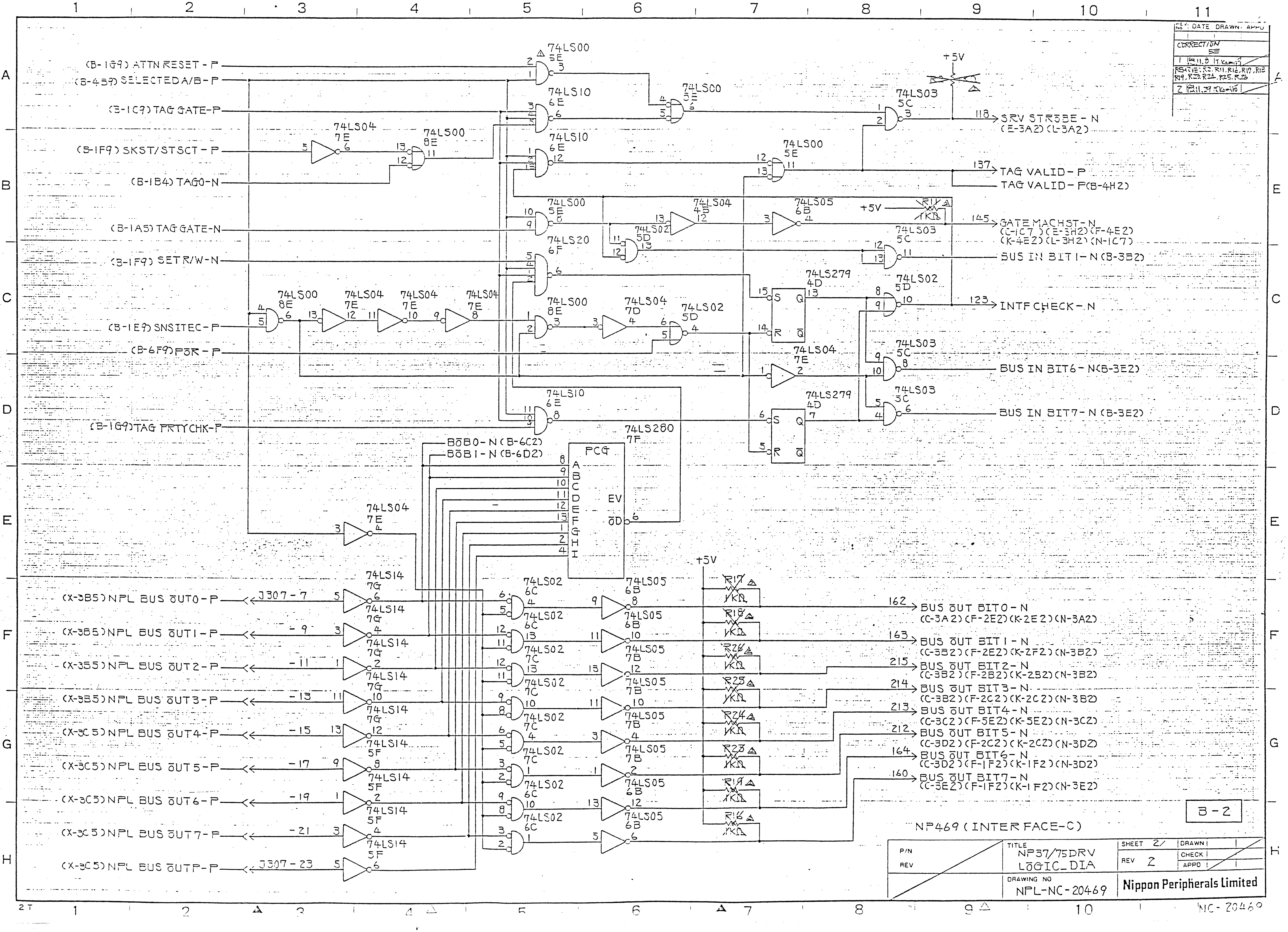
P/N	TITLE: NP 37/75 DRV LOGIC - DIA.	SHEET 9/	DRAWN
REV		REV 1	CHECK
	DRAWING NO: NPL-NC-20460		APPD

Nippon Peripherals Limited

NC-20460


(A-4A3) 625 KHz VFO
74LS74 3C
74LS00 4A
(A-8C8) SELA/B-P
(A-1D9) TAG GATE-P
74LS27 9B
74LS04 2A
+5V
R109
74LS10 6A
(A-1A5) TAGBUSBIT 0 - N
(A-1A5) TAG1-N
(A-1A5) TAG2-N
(A-1A5) TAG3-N
(A-1A5) TAG4-N
74LS04 9B
74LS27 9B
74LS02 5C
74LS279 7D
74LS05 7A
RESERVED-P (A-8A6)
135 A RESERVED-N
74LS04 5E
74LS04 8C
74LS00 4A
(A-2D4) BBB0-N
BIB 0-N (A-3B2)
74LS04 5A
C RESERVED-N
147
R103 1KΩ
74LS04 5E
74LS10 6A
74LS10 6A
74LS04 8C
74LS04 5E
(A-2D4) BBB1-N
(A-1B9) TAG GATE-N
(A-6G9) FOR-N
+5V
R104 1KΩ
74LS27 9B
C UNCOND-N
148
+5V
R107 1KΩ
74LS04 5E
74LS279 4C
74LS05 3A
(A-8B9) SELECTED A-P
130 SPCL SELA-N
SPCL SELA-P (A-9C2)
74LS08 4D
+5V
R105 200Ω J311-15
R106 15Ω
74LS04 5E
74LS04 5E
74LS279 4C
74LS05 3A
R108 1KΩ
(Z-5E10) A INTF DSBL-N
A INTF DSBL-N (A-8F2)
C15 0.022μF
132 SPCL SELB-N
SPCL SELB-P (A-9D2)
74LS04 8C
(A-8C9) SELECTEDE-P
(Z-5F10) C INTF DSBL-N
J311-16
268 C INTF DSBL-N
74LS02 8B
74LS05 3A
A-1E4
127 AUNCOND-N
74LS14 6G
(X-1A5) NPLSMIN TIMER-P
J303-1
152 SMIN TM-N (C-5C2) (N-5C2)
74LS04 12F
74LS02 10F
74LS05 11A
+5V
R4 1KΩ
+5V
R3 1KΩ
(A-8B9) SELECTEDA/B-P
220 TAG BUS BIT4-N (E-3B2) (L-3B2)
(A-1A5) TAG4-N
74LS02 10F
74LS05 12A
+5V
R5 1KΩ
(A-1A5) TAG3-N
225 TAG BUS BIT3-N (E-1E2) (L-1E2)
74LS02 10F
74LS05 14A
+5V
R6 1KΩ
(A-1A5) TAG2-N
224 TAG BUS BIT2-N (E-1E2) (L-1E2)
74LS02 10F
74LS05 11A
+5V
R7 1KΩ
(A-1A5) TAG1-N
159 TAG BUS BIT1-N (E-1E2) (L-1E2)
A-10
NP460 (INTER FACE-A)
P/N
REV
TITLE
NP37/75 DRV LOGIC_DIA
SHEET 10/10
REV C
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-20460
Nippon Peripherals Limited
NC-20460


TAG GATE-N(B-2B2)(B-6C3)
SELECTEDA-P (B-4B9)
NPL DEV TAG1-P (X-4E5) J308-41
NPL DEV TAG0-P (X-4E5) -39
NPL TAG GATE-P (X-3D5) J307-25
SELECTEDB-P (B-4C9)
SELECTED A/B-P (B-4B9)
NPL 8MINTIMER-P (X-3A5) J307-1
NPL DEV TAG2-P (X-4E5) J308-43
NPL DEV TAG4-P (X-4F5) -47
NPL DEV TAG3-P (X-4F5) -45
NPL DEV TAGP-P (X-4F5) J308-49
74LS00 11A
74LS04 11C
74LS14 8G
74LS14 4F
74LS156 10B
74LS156 6B
74LS02 8C
74LS05 6B
74LS10 9D
74LS280 9C
TAG1-N (B-6B2) (B-6G2)
TAG0-N (B-2B2) (B-6A2)
TAG2-N (B-6B2) (B-6G2)
TAG4-N (B-6B2)(B-6F2)
TAG3-N(B-6B2)(B-6G2)
TAG 3XA-N(D-9E2)(F-1B2)
TAG 2XA-N(C-3D2)(D-9E2)(F-1D2)
TAG 1XA-N(C-1B2)(F-6E2)
TAG 0XA-N(C-1C2)(F-6E2)
TAG 3XB-N(K-1B2)(M-7D2)
TAG 2XB-N(K-1D2)(M-7E2)(N-5D2)
TAG 1XB-N(K-6E2)(N-1B2)
TAG 0XB-N(K-6F2)(N-5D2)
TAG GATE-P(B-2A2)(B-6A2)
AUN COND-N
TAGX3-N(C-1E2)(F-6F2)(K-6E2)(N-1E2)
TAGX2-N(C-1E2)(F-1C2)(K-1C2)(N-1E2)
TAGX1-N(C-1F2)(N-1F2)
TAGX0-N(C-1C2)(C-5D2)(F-6E2)(K-6E2) (N-1C2)
TAGX7-N(C-1A2)(F-6E2)(K-6E2)(N-1A2)
TAGX6-N(C-1C2)(F-1B2)(K-1B2)(N-1C2)
TAGX5-N(C-1C2)(N-1C2)
TAGX4-N(C-1D2)(D-9D2)(M-9D2)(N-1D2)
SNS ITFC-P(B-2C2)
SNS HDA SEQ-P
SET R/W-N(F-2A2)(K-2A2)
SET R/W-N(B-2C2)
SKST/STSCT-P(B-2B2)
CHECK RESET-P
ATTN RESET-P(B-2A2)
CE SYNC TP-P
TAG PRTY CHK-P(B-2D2)
+12V
-12V
-5.2V
+5V
0V
C1 3.3μF 35V
C4 3.3μF 35V
C5 0.022μF 50V
C9 0.022μF 50V
(X-4G5)
(X-3G5)
B-1
NP469 (INTERFACE-C)
P/N NP469
REV C
TITLE NP37/75DRV LOGIC DIA
SHEET 1/6
REV 3
INTERFACE-C
DRAWING NO NPL-NC-20469
Nippon Peripherals Limited
NC-20469



(B-1G9) ATTN RESET - P
(B-4G9) SELECTED A/B - P
(B-1C9) TAG GATE - P
(B-1F9) SKST/STSCT - P
(B-1B4) TAG0 - N
(B-1A5) TAG GATE - N
(B-1F9) SET R/W - N
(B-1E9) SNSITEC - P
(B-6F9) POR - P
(B-1G9) TAG PRTY CHK - P
74LS00
74LS10
74LS04
74LS05
74LS02
74LS03
74LS20
74LS279
74LS280
74LS14
+5V
SRV STROBE - N (E-3A2) (L-3A2)
TAG VALID - P
TAG VALID - P (B-4H2)
GATE MACHST - N (C-1C7) (E-3H2) (F-4E2) (K-4E2) (L-3H2) (N-1C7)
BUS IN BIT 1 - N (B-3B2)
INTF CHECK - N
BUS IN BIT6 - N (B-3E2)
BUS IN BIT7 - N (B-3E2)
B0B0 - N (B-6C2)
B0B1 - N (B-6D2)
PCG
EV
OD
(X-3B5) NPL BUS OUT0 - P
(X-3B5) NPL BUS OUT1 - P
(X-3B5) NPL BUS OUT2 - P
(X-3B5) NPL BUS OUT3 - P
(X-3C5) NPL BUS OUT4 - P
(X-3C5) NPL BUS OUT5 - P
(X-3C5) NPL BUS OUT6 - P
(X-3C5) NPL BUS OUT7 - P
(X-3C5) NPL BUS OUTP - P
J307 - 7
J307 - 23
BUS OUT BIT0 - N (C-3A2) (F-2E2) (K-2E2) (N-3A2)
BUS OUT BIT1 - N (C-3B2) (F-2E2) (K-2F2) (N-3B2)
BUS OUT BIT2 - N (C-3B2) (F-2B2) (K-2B2) (N-3B2)
BUS OUT BIT3 - N (C-3B2) (F-2C2) (K-2C2) (N-3B2)
BUS OUT BIT4 - N (C-3C2) (F-5E2) (K-5E2) (N-3C2)
BUS OUT BIT5 - N (C-3D2) (F-2C2) (K-2C2) (N-3D2)
BUS OUT BIT6 - N (C-3D2) (F-1F2) (K-1F2) (N-3D2)
BUS OUT BIT7 - N (C-3E2) (F-1F2) (K-1F2) (N-3E2)
B - 2
NP469 (INTERFACE-C)
TITLE NP37/75DRV LOGIC_DIA
SHEET 2/
REV 2
DRAWING NO NPL-NC-20469
Nippon Peripherals Limited
NC-20469

NO.	DATE	DRAWN	APPD
REVISE: R6, R8, R9, R10, R14, R21, R22, R37			
1	82.11.29	T.Kamita	

(B-4C9) SEL A/B-P

(B-6F9) PDR-N

(B-6C9) BIT0-N

+5V

(C-2A9)(N-2A9) BUS IN BIT0-N ← 235 — R37 820Ω — 74LS00 6B pin 4,5

(C-2B9)(N-2B9) BUS IN BIT1-N ← 157 — R21 820Ω — 74LS04 5B pin 9,8

(B-2C9) BUS IN BIT1-N

(C-2B9)(N-2B9) BUS IN BIT2-N ← 210 — R22 820Ω — 74LS04 5B pin 11,10

(C-2C9)(N-2C9) BUS IN BIT3-N ← 142 — R10 820Ω — 74LS04 5B pin 3,4

(C-2C9)(N-2C9) BUS IN BIT4-N ← 138 — R8 820Ω — 74LS04 4B pin 5,6

(C-2D9)(N-2D9) BUS IN BIT5-N ← 140 — R9 820Ω — 74LS04 5B pin 1,2

(C-2D9)(N-2D9) BUS IN BIT6-N ← 134 — R6 820Ω — 74LS04 4B pin 11,10

(B-2D9) BUS IN BIT6-N

(C-2E9)(N-2E9) BUS IN BIT7-N ← 154 — R14 820Ω — 74LS04 5B pin 5,6

(B-2D9) BUS IN BIT7-N

HD2904 9F

14,1,2	10	J308-17 → NPL BUS IN0-P(X-4C5)
6,5,3	7	-19 → NPL BUS IN1-P(X-4C5)
3,2,1	4	-21 → NPL BUS IN2-P(X-4C5)

HD2904 9G

14,13,1	7	-23 → NPL BUS IN3-P(X-4C5)
11,12	10	-25 → NPL BUS IN4-P(X-4D5)
3,2	4	-27 → NPL BUS IN5-P(X-4D5)

HD2904 10F

14,13,1	4	-29 → NPL BUS IN6-P(X-4D5)
6,5,3	7	-31 → NPL BUS IN7-P(X-4D5)
11,12	10	J308-33 → NPL BUS INP-P(X-4D5)

74LS280 9E

PCG: A(8), B(9), C(10), D(11), E(12), F(13), G(1), H(2), I(4), 777; EV → 5; $\overline{OD}$

B-3

NP469 (INTER FACE-C)

P/N	TITLE	SHEET 3/	DRAWN
REV	NP 37/75 DRV LOGIC_DIA	REV 1	CHECK
	DRAWING NO NPL-NC-20469		APPD

Nippon Peripherals Limited

NC-20469

(X-3D5) NPL DEVSEL0-P ← J307-29 ← 74LS14 4F
(X-3D5) NPL DEVSEL1-P ← -31 ← 74LS14 4F
(X-3D5) NPLDEVSEL2-P ← -33 ← 74LS14 4F
(X-3E5) NPLDEVSEL3-P ← -35 ← 74LS14 4F
(X-3E5) NPL DEVSEL4-P ← -37 ← 74LS14 3F
(X-3E5) NPL DEVSEL5-P ← -39 ← 74LS14 3F
(X-3E5) NPL DEVSEL6-P ← -41 ← 74LS14 3F
(X-3E5) NPL DEVSEL7-P ← J307-43 ← 74LS14 3F

74LS32 4E, 74LS32 4E, 74LS32 4E, 74LS32 4E, 74LS32 3E, 74LS32 3E, 74LS32 3E, 74LS32 3E

74LS20 3D, 74LS20 3D

(B-6D9) RESERVED-P

74LS08 2D, 74LS08 2D, 74LS08 2D, 74LS08 2D

+5V, R58 1KΩ, R45 1KΩ

74LS05 1A → 103 → SELECTEDA-N (C-1B2) (E-3A2) (F-2A2)
74LS05 1A → 105 → SELECTEDB-N (K-2A2) (L-3A2) (N-1B2)

74LS32 2C
SELECTEDA/B-P (B-1C2) (B-2A2) (B-5C2) (B-6F2)
SELECTEDA-P (B-1A2) (B-6D2)
SELECTEDB-P (B-1B2) (B-6E2)

74LS32 2C
SEL A/B-P (B-3A2) (B-6A2)

HD2904 11G
J308-1 → NPL ATN RSP0-P (X-4A5)
-3 → NPL ATN RSP1-P (X-4A5)
-5 → NPL ATN RSP2-P (X-4B5)

HD2904 11F
-7 → NPL ATN RSP3-P (X-4B5)
-9 → NPL ATN RSP4-P (X-4B5)
-11 → NPL ATN RSP5-P (X-4B5)

HD2904 10G
-13 → NPL ATN RSP6-P (X-4B5)
-15 → NPL ATN RSP7-P (X-4C5)
-37 → NPL TAG VALD-P (X-4E5)

HD2904 11E
J308-35 → NPL CAL PULS-P (X-4E5)

+5V, R60 1KΩ, R59 1KΩ, R61 1KΩ, R62 1KΩ
(A-8E5) DVA 0,1-N ← 107 ← 74LS04 10D
(A-8E6) DVA 2,3-N ← 108 ← 74LS04 10D
(A-8E5) DVA 4,5-N ← 129 ← 74LS04 10D
(A-8E5) DVA 6,7-N ← 133 ← 74LS04 10D

(X-3D5) NPL SELHOLD-P ← J307-27 ← 74LS14 4F → 74LS04 2B

74LS08 1D
(B-6F9) PORST-N
(B-6A9) AINTFDSBL-N

74LS04 2B → ATN/HDA ATN A-N (C-1F10) (E-2C10) ← 114 ← 74LS03 1C
74LS04 2B → ATN/HDA ATN B-N (L-2C10) (N-1F10) ← 117 ← 74LS03 1C

+5V, R86 1KΩ: 74LS03 1C → 74LS04 10D
+5V, R53 1KΩ: 74LS03 1C → 74LS04 10D

(B-2B9) TAG VALID-P

+5V, R20 1KΩ
CAL CNT PLS-N (F-1F9) (K-1F9) ← 203 ← 74LS04 7D

B-4

NP469 (INTERFACE-C)

P/N	TITLE NP37/75DRV LOGIC-DIA	SHEET 4/	DRAWN
REV		REV 1	CHECK
	DRAWING NO NPL-NC-20469		APPD

Nippon Peripherals Limited

NC-20469

NO	DATE	DRAWN	APPD
CORRECTION R74, 1F			
1 ISSUED FOR [illegible]			
CHANGE R78 1K → 750Ω			
2 ISSUED FOR [illegible]			

J307-5 → SRV SIG A/B-N (X-3B5)
J307-3 → SRV SIG A/B-P (X-3A5)

(E-7A5)(L-7A5) F1 A/B-N ← 158
(E-7A5)(L-7A5) F1 A/B-P ← 165

MB5365AM-G 6G
R82 100Ω
R84 100Ω
R83 750Ω → -5.2V
R81 750Ω → -5.2V

+5V
R12 750Ω
74LS05 3B
(B-439) SELECTEDA/B-P
(B-609) SPCL SELA-P
(B-629) SPCL SELB-P
R75 5.6KΩ
R76 12KΩ → -12V
R78 750Ω
R79 1.5KΩ
R80 560Ω
C64 0.022μF
C11 0.022μF

MB5365AM-G 3G

+5V
R52 100Ω
C61 0.022μF

J307-45 → R/W DATA-P (X-3F5)
J307-47 → R/W DATA-N (X-3F5)

(J-689) RAW DATA-P ← 124
(J-689) RAW DATA-N ← 125

MB5365AM-G 3G
R69 100Ω
R71 100Ω
R68 750Ω → -5.2V
R70 750Ω → -5.2V

MB5365AM-G 2G
R64 100Ω
R63 100Ω

10116 Δ 1F
R57 510Ω → -5.2V
R58 510Ω
R65 360Ω
R67 360Ω
R66 1KΩ
C14 0.022μF → -5.2V

+5V
R55 750Ω
74LS03 2E
74LS00 11A
(F-209) RD XMITGTDA-N ← 265
(K-209) RD XMITGTDB-N ← 264
R72 3.6KΩ
R73 12KΩ → -12V
R77 1KΩ
R74 1.5KΩ
R37 560Ω
C12 0.022μF

MB5365AM-G 4G

10102 1E
110 → NRE WT DT-P
109 → NRE WT DT-N

+5V
R54 3.3KΩ
74LS03 2E
74LS04 2B
R85 1.8KΩ
R56 4.3KΩ → -5.2V

B-5

NP469 (INTERFACE-C)

P-N / REV	TITLE: NP37/75DRV LOGIC DIA	SHEET 5/	DRAWN
		REV 2	CHECK
			APPD
	DRAWING NO: NPL-NC-20469	Nippon Peripherals Limited	

NO.	DATE	DRAWN	APPD
CORRECTION			
1	15.11.8	[illegible]	
REMOVE: R1, R5, R15, R30, R32, R46			
Z	15.11.89	[illegible]	

C INTFDSBL-N ← 268 — R43 200Ω — +5V — R50 15Ω — 74LS04 11C — 74LS04 4C → A INTF DSBL-N (B-4F2)

C73 0.022μF

(A-4A2) 625 KHz VFO ← 263 — 74LS04 3E — 74LS74 1B

(B-4C9) SELA/B-P
(B-1C9) TAG GATE-P
(B-1B4) TAG 0-N
(B-1B4) TAG 1-N
(B-1D4) TAG 2-N
(B-1E4) TAG 3-N
(B-1D4) TAG 4-N
(B-2D4) BOB0-N
A RESERVED-N ← 135
(B-1A6) TAG GATE-N
(B-2D4) BOB1-N
A UNCOND-N ← 127
(B-4B9) SELECTEDA-P
(B-4B9) SELECTEDB-P
POR-N ← 112
(B-4B9) SELECTED A/B-P
(B-1D4) TAG4-N
(B-1E4) TAG3-N
(B-1D4) TAG2-N
(B-1B4) TAG1-N

74LS00 8E
74LS27 10E
74LS04 8F
74LS10 6D
74LS02 5D
74LS04 7D
74LS04 4B
74LS279 3C
74LS05 3B
74LS00 11B
74LS08 1D
74LS02 10C
74LS05 9B
74LS04 11C
74LS04 2B

+5V — R7 1KΩ — R3 1KΩ — R51 1KΩ — R45 1KΩ — R32 1KΩ — R30 1KΩ — R15 1KΩ — R44 1KΩ — R5 1KΩ

147 → C RESERVED-N
SITO-N (B-3A2)
RESERVED-P (B-4A7)
130 → SPCL SEL A-N
SPCL SELA-P (B-5C2)
132 → SPCL SEL B-N
SPCL SELB-P (B-5C2)
POR-N (B-3A2)(B-4F2)
POR-P (B-2D2)
220 → TAG BUS BIT4-N (E-3B2)(L-3B2)
225 → TAG BUS BIT3-N (E-1E2)(L-1E2)
224 → TAG BUS BIT2-N (E-1E2)(L-1E2)
159 → TAG BUS BIT1-N (E-1E2)(L-1E2)

B-6

NP469 (INTERFACE-C)

P/N	TITLE NP 37/75 DRV LOGIC_DIA	SHEET 6/6	DRAWN
REV		REV Z	CHECK
	DRAWING NO NPL-NC-20469		APPD

Nippon Peripherals Limited

NC-20469

(A-6F9) PŌR-N ← 228 — 74LS04 10B — PŌR-P (C-6C2)

74LS04 10B — PŌR-N (C-2C2)(C-4A2) (C-5A2)

(A-1C9) TAG X7 -N ← 245
(A-1B9) TAGIXA-N ← 248
74LS32 12A → 74LS08 11A → 217 SLATRSTTPA-N / SLATRSTA-N (D 2)(C-3H2)

SRCHSCTA-P (C-3G9)
VLDIDXA-N (C-6E9) — 74LS04 11D
+5V — R10 1KΩ
74LS74 11E
SCTCMPA-N (C-3E9) — 74LS15 11B
74LS74 11E → 218 SCTCPCGTTPA-P / SCTCMPCKGTA-P (C-3F2)

(A-1F9) CHECK RESET-P ← 223 — 74LS00 10A → 74LS08 11A → 232 SLCKRSTTPA-N / SLCKRSTA-N (C-3F2)

+5V — R9 1KΩ

(A-8A9) SELECTEDA-N ← 225 — 74LS04 10B → 74LS04 10B

(G 8) ACCS CMPA-N
(C-3H9) SRCHSCTA-N
(A-2B9) GATEMACHST-N ← 227
74LS08 11C → 74LS27 10C → 74LS05 9C → BUS IN BIT 7-N (C-2E8)

(A-1C9) TAG X6 -N ← 255
74LS02 13A → 258 SNSTGTTPA-P / SNSTGTA-P (C-4A2)

(A-1B9) TAG0XA-N ← 249
74LS32 12A

(C-3E9) SCT CMPA-N — 74LS04 11D
74LS32 10E → 74LS27 10C → 74LS05 9C → BUS IN BIT 6-N (C-2D8)

(A-1C9) TAG X5 -N ← 265
74LS32 12A → 74LS00 10A → 74LS00 10A

(F-6E9) SNSR/W2A-N ← 234
SCTCMPCKLTA-N (C-3F9)
74LS08 11C → 74LS27 10C → 74LS05 9C → BUS IN BIT 2-N (C-2B8)

(B 5) SLATRSTA-N → 222 SST/SSCLTTPA-N

(F-2A9) SETR/WA-N ← 243 — 74LS04 11D → SET R/WA-P (C-2A2)(C-4B2)

(A-1D9) TAG X4 -N ← 260
74LS02 13A → 257 ST HR/CRHTPA-P / ST HAR/CARHIA-P (C-2B2)

(C-2E9) HAR6A-P
SCT CNT BIT6A-P (C-4G5)
74LS86 12E → 74LS27 12C → 74LS08 11C → 213 BLKCNGPTPA-P / BLKCNGPTPA-P (G 7)

(A-1D9) TAG X3 -N ← 259
74LS02 13B → 250 SNSCARLŌTPA-P / SNSCARLŌA-P (C-3A2)

(C-2F9) HAR7A-P
SCT CNT BIT7A-P (C-4G5)
74LS86 12E

(A-1D9) TAG X2 -N ← 252
74LS32 12A → 74LS08 11A → 238 STTGTRGTPA-N / STTGTRGA-N (C-3F2)(C-4A2)

SCTPLSDLDA-N (C-5A9) — 74LS04 10B

(A-1D9) TAG X1 -N ← 262
74LS02 13A → 264 STCARLŌTPA-P / STCARLŌA-P (C-3C2)

(E-2B10) ACS CMPA-N ← 247
74LS27 12C → 74LS04 10B

(E-2G10) ACS CHEKA-N ← 115
74LS32 10E → 74LS15 11B → 237 ATN/HDAATNA-N (A-8G2)

(C-3G9) SCTCMP*CKA-N
74LS00 12B → 74LS00 12B

ACCSCMPA-N (C 7)
ACCSCKA-N (C-2F2)

(E10) BLKCNGPTPA-P — 74LS05 9C → BUS IN BIT 5-N (C-2D8)

101 167 201 267 +5V
C2 3.3μF -35V ~C5 3.3μF -35V
106 111 116 126 131 136 146 151 156 166 206 0V
211 216 226 231 236 246 251 256 266

C-1

NP411 (HAR/CARA)

P/N NP411 REV E	TITLE NP37 DRV LOGIC_DIA.	SHEET 1/6	DRAWN
		REV 6	CHECK
HAR/CAR A	DRAWING NO NPL-NC-20411		APPD

Nippon Peripherals Limited

NC-20411

108

NO.	DATE	DRAWN	APPD
CHANGE RESET SIG. OF HAR AND CAR FROM SRVST BIT 7 TO GBLAT			
1	82.6.15	Saito	
CHANGE RESET SIG. OF HAR CAR FROM GBLAT TO LOGIC — AND OF GBLAT AND ST BIT 7			
2	82.7.15	Saito	
CHANGE SINK ADDRESS			
3	82.11.15	Saito	
CHANGE ACCESS TIMER CLOCK			
4	82.12.15	Saito	

(C-1F5)SNS HR/CRHIA-P

(C-1D10)SET R/WA-P

(C-3C9)BUS OUT BIT0-P

(C-3C9)BUS OUT BIT1-P

(C-3C9)BUS OUT BIT2-P

(C-3C9)BUS OUT BIT3-P

STHAR/CARHIA-P
(C-1E5)

74LS08 9B

74LS175 4B
REG
1D 1Q
2D 2Q
3D 3Q
4D 4Q
CK
CLR

74LS03 4C

BUS IN BIT0-N
(C-4A10)(C-3A9)

BUS IN BIT1-N
(C-4B10)(C-3B9)

BUS IN BIT2-N
(C-4B10)(C-3B9)(C-1D10)

BUS IN BIT3-N
(C-4C10)(C-3B9)

132 BUS IN BIT0-N
(A-3A2)(D-9A9)(E-3D10)(F-4G9)
(K-4G9)(L-3D10)(M-9A9)(N-2A9)

133 BUS IN BIT1-N
(A-3B2)(D-9B9)(E-3D10)(F-4F9)
(K-4F9)(L-3D10)(M-9B9)(N-2B9)

139 BUS IN BIT2-N
(A-3B2)(D-9B9)(E-3E10)(F-3G9)
(K-3G9)(L-3E10)(M-9B9)(N-2B9)

142 BUS IN BIT3-N
(A-3C2)(D-9C9)(E-3E10)(F-6B9)
(K-6B9)(L-3E10)(M-9B9)(N-2C9)

137 HAR2A-P(J-6E2)
138 HAR3A-P(J-6E2)

74LS32 2E

74LS08 9D

(C-1A5)PUR-N

(E-1D9)STBIT1/RZA-N 214

74LS175 7B
REG
1D 1Q
2D 2Q
3D 3Q
4D 4Q
CK
CLR

74LS03 7C

BUS IN BIT4-N
(C-4E10)(C-3C9)

BUS IN BIT5-N
(C-4E10)(C-3D9)(C-1G10)

BUS IN BIT6-N
(C-4E10)(C-3D9)(C-1C10)

BUS IN BIT7-N
(C-4F10)(C-3E9)(C-1C10)

153 BUS IN BIT4-N
(A-3C2)(D-9C9)(E-3F10)(F-4D9)
(K-4D9)(L-3F10)(M-9C9)(N-2C9)

154 BUS IN BIT5-N
(A-3D2)(D-9C9)(E-3F10)(F-4F9)
(K-4F9)(L-3F10)(M-9C9)(N-2D9)

202 BUS IN BIT6-N
(A-3E2)(D-9D9)(E-3F10)(F-3B9)
(K-3B9)(L-3F10)(M-9D9)(N-2D9)

152 BUS IN BIT7-N
(A-3E2)(D-9D9)(E-3G10)(F-5F9)
(K-5F9)(L-3G10)(M-9D9)(N-2E9)

168 HAR4A-P(J-6E2)
159 HAR5A-P(J-6E2)
162 HAR6A-P(J-3E2)
HAR6A-P(C-1D7)
155 HAR7A-P(J-3F2)
HAR7A-P(C-1E7)
RST REGA-N(C-3C2)

74LS04 5A

74LS32 2E

(C-6C9)GBLATA-P

+5V

R5 1KΩ

74LS04 9E

74LS00 5E

74LS191 6D
CNT
CL RC
D0 MAX/MIN
G QA
A QB
B QC
C QD
LD

74LS08 9B

(C-6E9)VLD IDXA-N

(C-4G4)SCTCNTFCAA-N

(C-1G8)ACCSCKA-N

(E-1G9)LD ACSTIMA-N 209

215 ACSTOUTA-P(E-2E2)

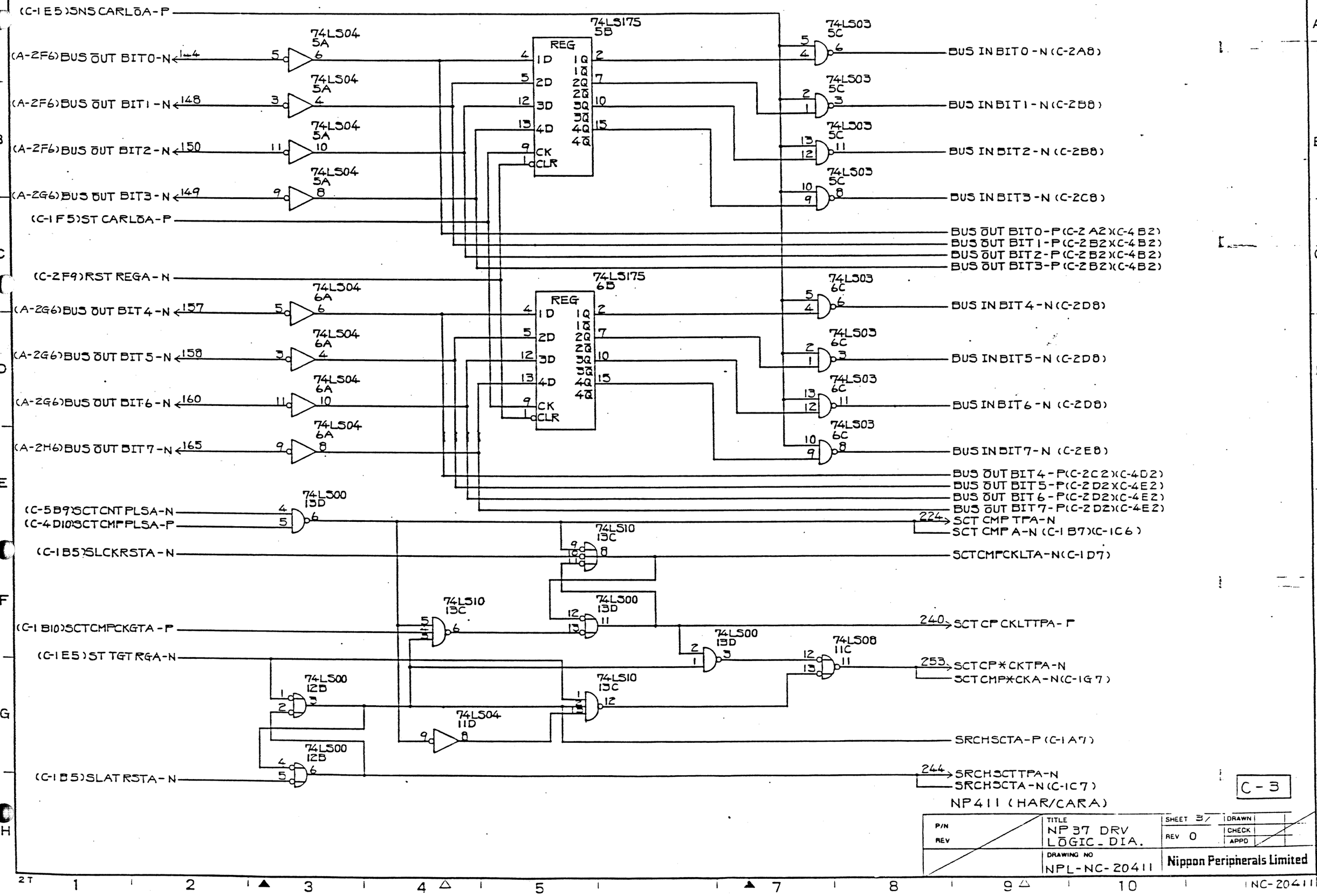
C-2

NP411 (HAR/CARA)

P/N / REV	TITLE	SHEET 2/	DRAWN
	NP37 DRV LOGIC DIA.	REV 4	CHECK
	DRAWING NO NPL-NC-20411		APPD

Nippon Peripherals Limited

NC-20411



C-3

NP411 (HAR/CARA)

P/N / REV	TITLE: NP37 DRV LOGIC_DIA.	SHEET 3/ REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-20411	Nippon Peripherals Limited	

NC-20411

NO.	DATE DRAWN	APPD
ADD SIGNAL SCTCNT FCAA-N		
1 184.12.8 S.Saito		

(C-1E5)ST TGT RGA-N
(C-5B9)SCT CNT PLSA-N
ST SCT JMPA-N ←14-7
(C-1C5)SNS TGTA-P
(C-1A5)PDR-N
(C-1D10)SETR/WA-P
(C-3C9)BUS OUT BIT0-P
(C-3C9)BUS OUT BIT1-P
(C-3C9)BUS OUT BIT2-P
(C-3C9)BUS OUT BIT3-P
(C-3E9)BUS OUT BIT4-P
(C-3E9)BUS OUT BIT5-P
(C-3E9)BUS OUT BIT6-P
(C-3E9)BUS OUT BIT7-P
(A10)SCT CNT PLSA-P
(C-6E9)VLDIDXA-N

+5V R3 1KΩ
+5V R6 1KΩ
+5V R1 510Ω

74LS04 6A
74LS04 3D
74LS10 6E
74LS00 5E
74LS00 5E
74LS157 4A
74LS157 7A
74LS175 3B
74LS175 8B
74LS193 3A
74LS193 8A
74LS03 3C
74LS03 8C
74LS136 2A
74LS136 9A

SCT CNT PLSA-P (E2)
BUS IN BIT0-N (C-2A8)
BUS IN BIT1-N (C-2B8)
BUS IN BIT2-N (C-2B8)
BUS IN BIT3-N (C-2C8)
BUS IN BIT4-N (C-2D8)
BUS IN BIT5-N (C-2D8)
BUS IN BIT6-N (C-2D8)
BUS IN BIT7-N (C-2E8)
109 → SCT CPPSTPA-P
SCT CMPPLSA-P (C-3E2)
SCT CNT BIT7A-P (C-1E7)
SCT CNT BIT6A-P (C-1E7)
SCT CNT FCAA-N (C-2F1)△

C-4

NP411 (HAR/CARA)

P/N / REV	TITLE: NP37 DRV LOGIC_DIA.	SHEET 4/ REV 1	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-20411	Nippon Peripherals Limited	

NC-20411

(C-1A5) PŌR-N

(E-7A10) F23/75A-P ← 208

74LS04 9E

74LS00 13D

74LS10 6E

74LS04 9E

74LS574 8E

74LS574 8E

74LS508 25

74LS508 11A

230 → SCT PLS DLTPA-N

SCT PLS DLDA-N (C-1E7)

C1 1000PF

(C-6E9) VLD IDXA-N

+5V R8 1KΩ

74LS332 10E

164 → SCT CNT FTPA-N

SCT CNT PL5A-N (C-3E2) (C-4A2)

(A-1A9) 5MINIM-N ← 205

(E-2F10) R/WCPBLA-N ← 212

74LS04 9E

74LS332 10E

207 → RDY LEDA-N (A-9H2)

+5V R7 1KΩ

74LS193 8D

(A-5F9) SEQ.RZRŌ-N ← 233

74LS04 11D

(A-1B9) TAG ZXA-N ← 242

(A-1D9) TAGX0-N ← 235

74LS02 13B

74LS02 13D

268 → HDA RZA-N (E-2A2)

(E-7D10) IDX STBA-P ← 134

IDX STBA-P (C-6B2)

74LS04 9E

+5V

R4 1KΩ

74LS193 5D

(C-6D9) IDX MRKA-N

74LS193 4D

74LS500 5E

(C-6E9) PŌR-N

112 → GBRSTATP-N

GBRSTA-N (C-6A2)

74LS193 7D

107 → SCTCTBWLTPA-N

74LS193 6D

204 → SCTCTBWHTPA-N

NP411 (HAR/CARA)

C-5

P/N	TITLE: NP37 DRV LOGIC_DIA.	SHEET 5/	DRAWN
REV		REV 0	CHECK
	DRAWING NO: NPL-NC-20411		APPD

Nippon Peripherals Limited

NC-20411

(C-5H5)GBRSTA-N

+5V

RZ 1KΩ

74LS164 2C SET REG

74LS158 1C DEC

74LS08 2B

(C-5D5)IDX STBA-P

(E-7B10) 625KHz VFOA 118

74LS04 9E

(C-1A5)PORST-P

74LS04 5D

74LS279 1A

74LS20

74LS32 2E

(E-4G6)IDX CMPA-N 128

74LS11 1B

74LS10 3E

74LS04 5A

122 → IDX DETATP-N

108 → GB2/IDA-P (E-2D2)

105 → GBLATA-P (E-2D2)

GBLATA-P (C-2E1)

125 → IDX MRKA-P (F-3C2)

IDX MRKA-N (C-5E2)

102 → VLDIDXA-N (F-3B2)

VLDIDXA-N (C-1A7)(C-2F2)(C-4D2)(C-5B2)

PORST-N (C-5G1)

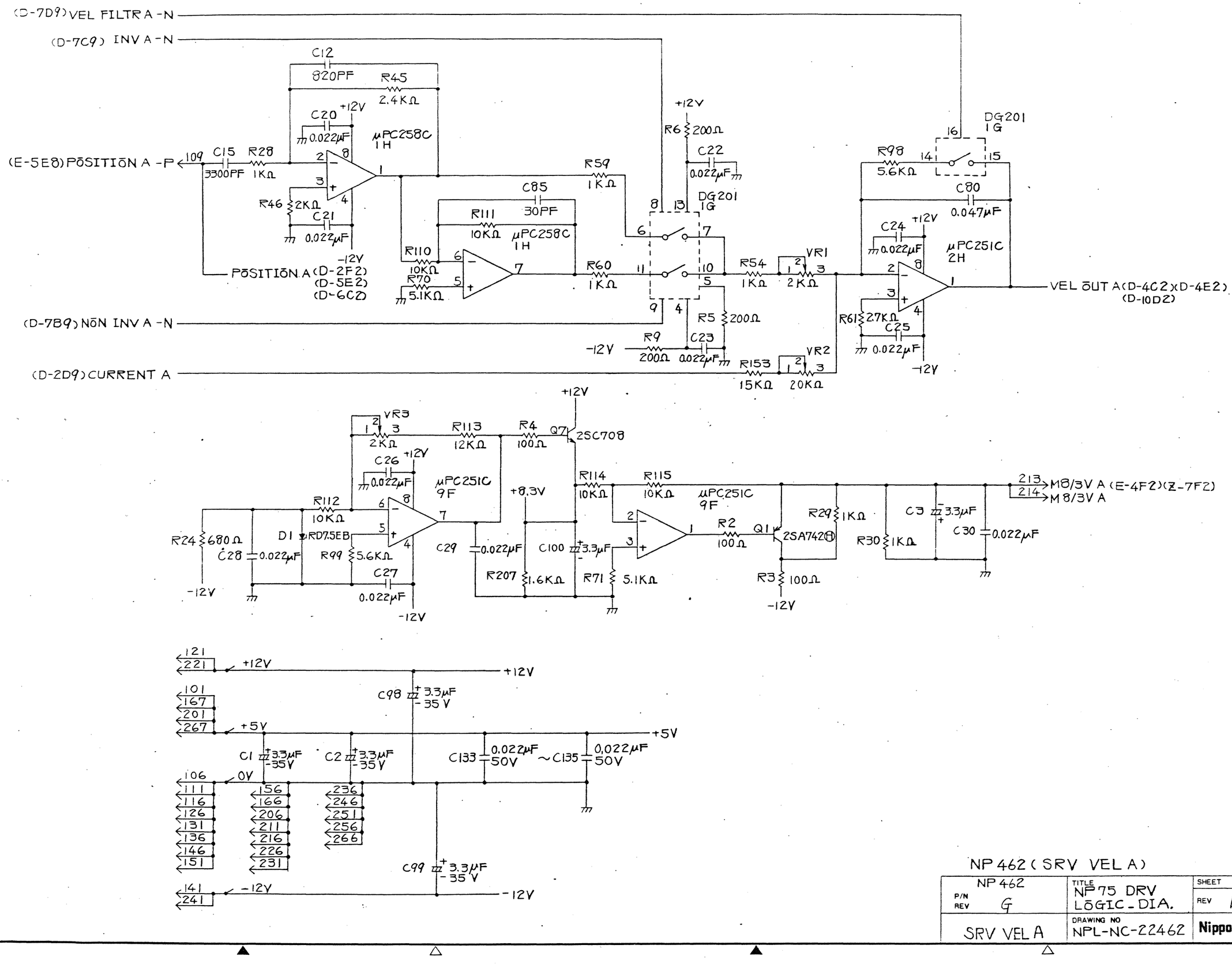
NO.	DATE	DRAWN	APPD
For PB Assy NPL-NY-40411 00-0 74LS20 → 4E 1,2,4,5,6 From NPL-NY-40411 01-1 ~ 74LS20 → 2D 3,9,10,12,13			
1	82.2.26		
Cut 74LS08 2B-3 — 74LS279 1A-5 Connect 74LS08 2B-3 — 74LS08 1D-1; 74LS158 1C-13 — 74LS08 1D-2; 74LS08 1D-3 — 74LS279 1A-5			
2	82.5.20		
ADD SINK ADDRESS OF GBLAT			
3	82.6.18		

C-6

NP411 (HAR/CARA)

P/N / REV	TITLE: NP37 DRV LOGIC_DIA.	SHEET 66	DRAWN
		REV 3	CHECK
	DRAWING NO: NPL-NC-20411		APPD
	Nippon Peripherals Limited		

NC-20411



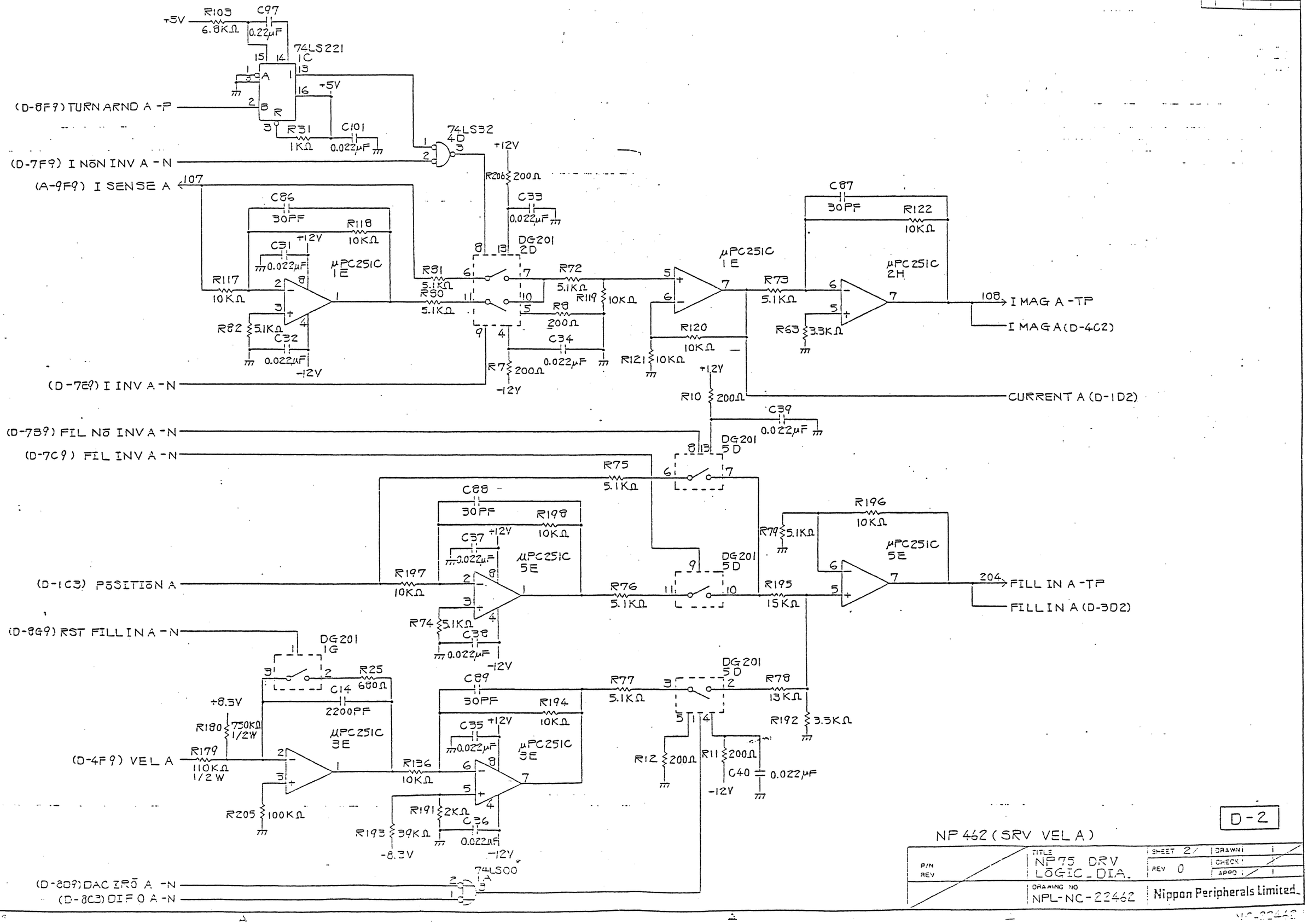
SHEET 6 Rev 0→1
FUNCTION Rev F→G

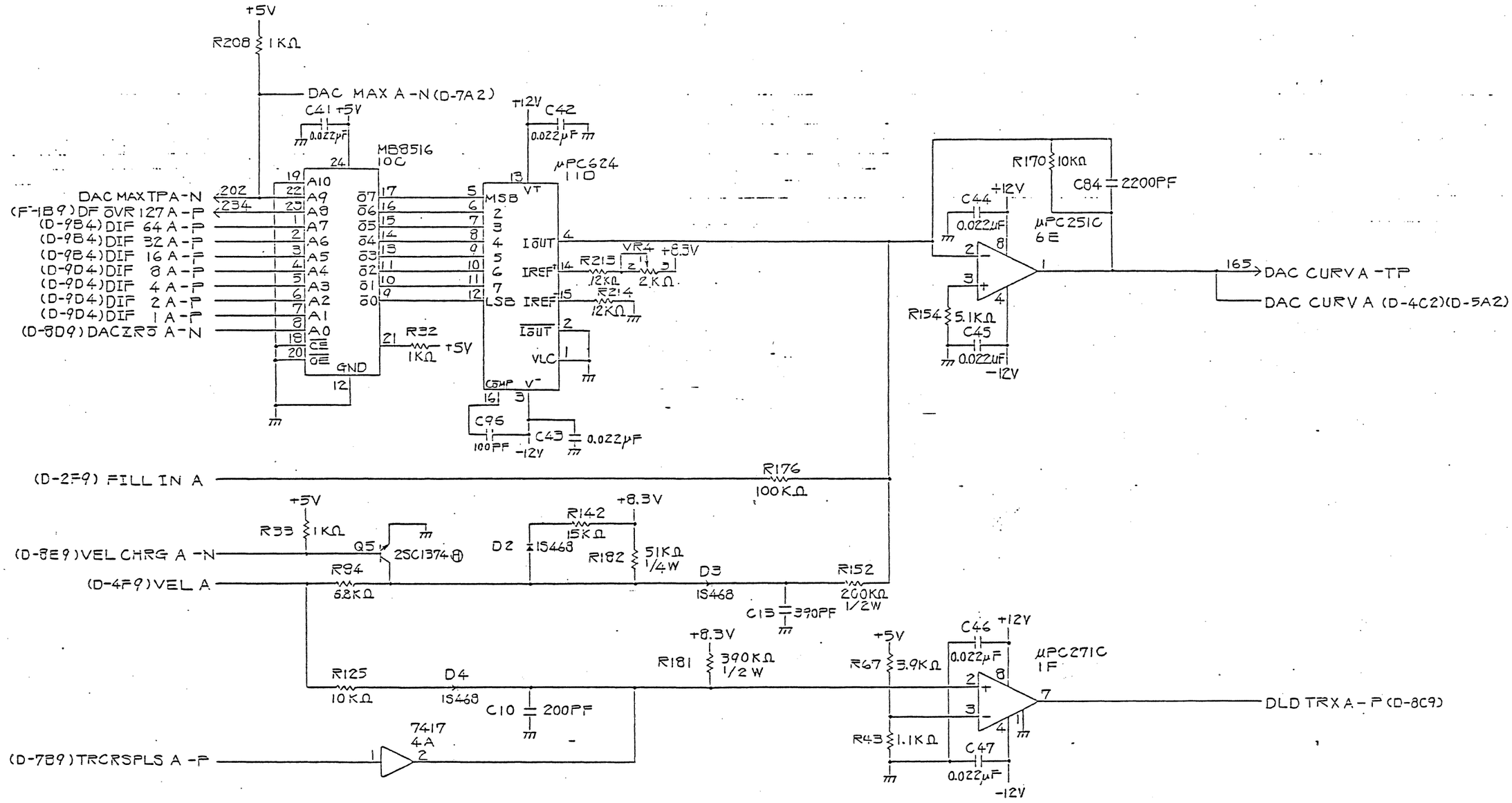
D-1

NP 462 (SRV VEL A)

NP 462 P/N REV G	TITLE NP 75 DRV LOGIC - DIA.	SHEET 1/10 REV 1	DRAWN T.Sasaki 94.9.5 CHECK APPD 94.10.7.9.5
SRV VEL A	DRAWING NO NPL-NC-22462	Nippon Peripherals Limited	

NC-22462


REV DATE DRAWN APPD
+5V
R103
6.8KΩ
C97
0.22μF
74LS221
1C
(D-8F9) TURN ARND A -P
R31
1KΩ
C101
0.022μF
74LS32
4D
+12V
(D-7F9) I NON INV A -N
(A-9F9) I SENSE A
107
R206 200Ω
C33
0.022μF
C86
30PF
R118
10KΩ
C31
0.022μF
μPC251C
1E
DG201
2D
R117
10KΩ
R81
5.1KΩ
R50
5.1KΩ
R72
5.1KΩ
R119
10KΩ
R9
200Ω
C34
0.022μF
R82
5.1KΩ
C32
0.022μF
-12V
R7
200Ω
-12V
(D-7E9) I INV A -N
μPC251C
1E
R120
10KΩ
R121
10KΩ
C87
30PF
R122
10KΩ
μPC251C
2H
R73
5.1KΩ
R63
3.3KΩ
108
I MAG A -TP
I MAG A (D-4C2)
+12V
R10
200Ω
C39
0.022μF
CURRENT A (D-1D2)
(D-7B9) FIL NO INV A -N
(D-7C9) FIL INV A -N
DG201
5D
R75
5.1KΩ
C88
30PF
R198
10KΩ
C37
0.022μF
μPC251C
5E
R197
10KΩ
R74
5.1KΩ
C38
0.022μF
-12V
(D-1C3) POSITION A
R76
5.1KΩ
DG201
5D
R79
5.1KΩ
R196
10KΩ
μPC251C
5E
R195
15KΩ
204
FILL IN A -TP
FILL IN A (D-3D2)
(D-8G9) RST FILL IN A -N
DG201
1G
R25
680Ω
C14
2200PF
+8.3V
R180
750KΩ
1/2W
R179
110KΩ
1/2W
(D-4F9) VEL A
μPC251C
3E
R205
100KΩ
C89
30PF
R194
10KΩ
C35
0.022μF
μPC251C
3E
R136
10KΩ
R191
2KΩ
R193
39KΩ
C36
0.022μF
-8.3V
-12V
R77
5.1KΩ
DG201
5D
R78
13KΩ
R192
3.3KΩ
R12
200Ω
R11
200Ω
C40
0.022μF
-12V
74LS00
1A
(D-8D9) DAC IRO A -N
(D-8C3) DIF O A -N
D-2
NP 462 (SRV VEL A)
P/N
REV
TITLE
NP75 DRV
LOGIC DIA.
SHEET 2
REV 0
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-22462
Nippon Peripherals Limited

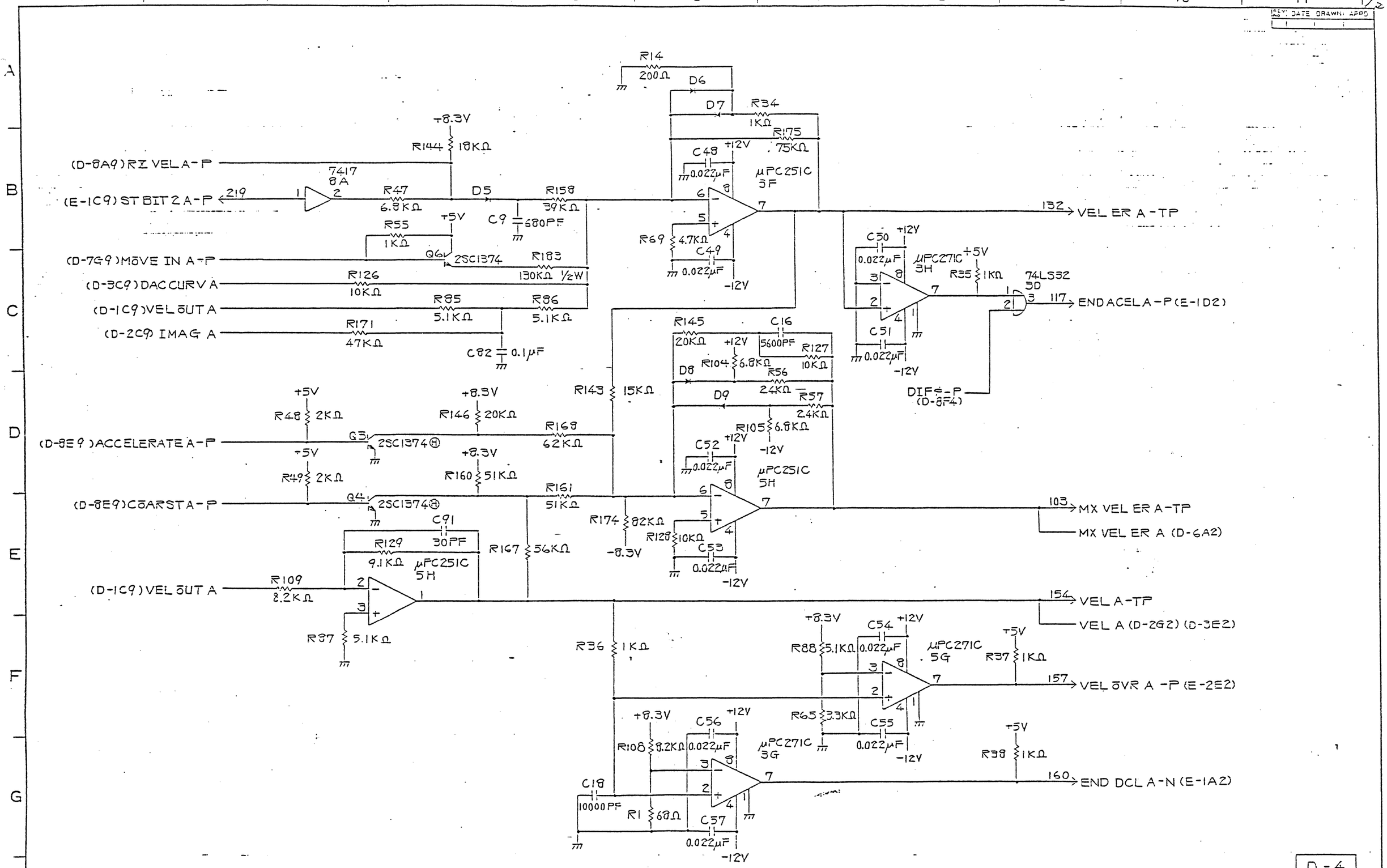


NP 462 (SRV VEL A)

D-3

P/N REV	TITLE NP 75 DRV · LOGIC-DIA.	SHEET 3/	DRAWN
		REV 0	CHECK
	DRAWING NO NPL-NC-22462		APPD

Nippon Peripherals Limited.

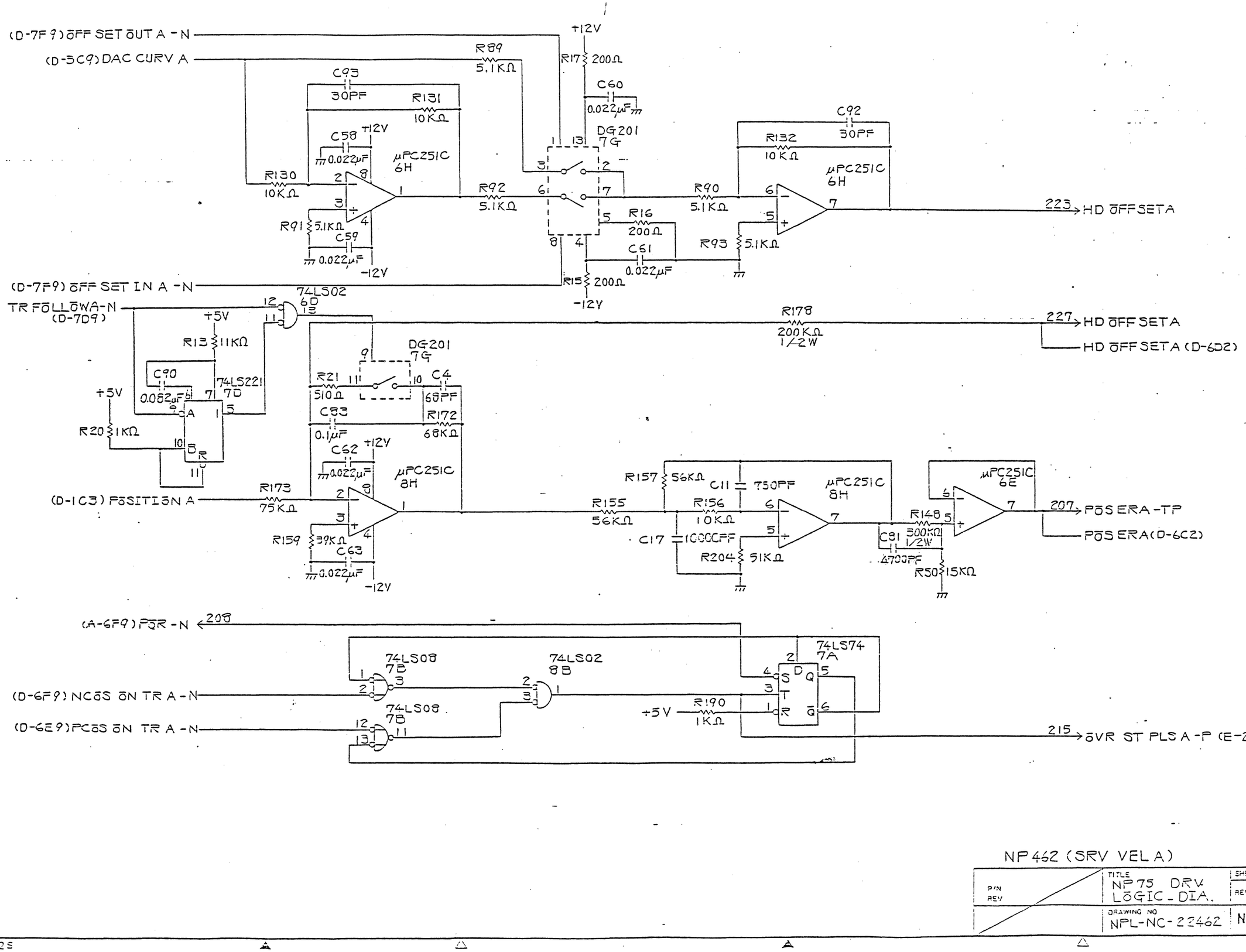


D-4

NP462 (SRV VEL A)

P/N REV	TITLE NP75 DRV. LOGIC_DIA.	SHEET 4/	DRAWN
		REV 0	CHECK
	DRAWING NO NPL-NC-22462	Nippon Peripherals Limited.	APPD

NC-22462



D-5

NP462 (SRV VEL A)

P/N REV	TITLE NP75 DRV LOGIC - DIA.	SHEET 5 /	DRAWN
		REV 2	CHECK
	DRAWING NO NPL-NC-22462	Nippon Peripherals Limited	APPD

NC-22462

NO.	DATE	DRAWN	APPD
R219, 221: 56KΩ→24KΩ R222: 68KΩ→56KΩ R223: 5.6KΩ→1.5KΩ			
1	85-2-26		

(D-7F9) I NŌN INV A -N
(D-4E9) MX VELER A
(D-7E9) I INV A -N
(D-7D9) TR FŌLLŌW A -N
(D-5E9) PŌSER A
(D-5D9) HD ŌFF SET A
(D-1C3) PŌSITIŌN A
(D-7C9) SET DIF CP A -N
(D-7D9) RST DIF CP A -N

R94 5.1KΩ
C94 30PF
R134 10KΩ
R133 10KΩ
R96 5.1KΩ
R95 5.1KΩ
DG201 2D
R97 5.1KΩ
C66 +12V 0.022μF
μPC251C 8F
R200 10KΩ
C67 0.022μF -12V
DG201 8G
R135 6.8KΩ
R116 10KΩ
R217 510Ω
R199 10KΩ
240 → RAW PA DRVATP
μPC251C 8F
R162 13KΩ
R163 100KΩ
R164 13KΩ
R165 100KΩ
268 → NŌ TCH PAD A-TP
R218 91KΩ
R219 24KΩ
R220 91KΩ
R221 24KΩ
C8 390PF
C6 390PF
C7 390PF
C5 390PF
R166 56KΩ
R44 750Ω
R177 180KΩ 1/2W
R150 27KΩ
C136 470PF
C137 470PF
C138 470PF
R223 1.5KΩ
R222 56KΩ
μPC251C 5F
C139 470PF
237 → PA DRV A (A-9G7)
R62 3.3KΩ
R201 270Ω
R202 3.3KΩ
C19 10000PF
R141 10KΩ
R149 24KΩ
C64 +12V 0.022μF
μPC251C 5F
R140 10KΩ
R68 3.9KΩ
C65 0.022μF -12V
R26 1.3KΩ
C68 +12V 0.022μF
μPC271C 9H
R106 7.5KΩ
-8.3V
C132 0.022μF
R51 2KΩ
C69 0.022μF -12V
235 → FINE LEVEL A TP-N
C70 +12V 0.022μF
μPC271C 10H
+5V R40 1KΩ
265 → FINE PŌS A-P (E-2G2)
+8.3V
R107 7.5KΩ
R100 7.5KΩ
R52 3.9KΩ
C72 +12V 0.022μF
μPC271C 11G
R27 1.3KΩ
C71 0.022μF -12V
+5V R41 1KΩ
225 → FINE LEVEL A TP-P
210 → PCŌS ŌN TR A TP-N
PCŌS ŌN TR A -N (D-5G2) (D-7A2) (D-10A2)
R58 2.4KΩ
C127 1000PF
C131 0.022μF
C74 +12V 0.022μF
μPC271C 11H
+5V R42 1KΩ
205 → NCŌS ŌN TR A TP-N
NCŌS ŌN TR A -N (D-5F2) (D-7A2) (D-10A2)
R101 7.5KΩ
R22 6.2KΩ
R18 3.9KΩ
C76 +12V 0.022μF
μPC2710 10G
R53 3.9KΩ
C75 0.022μF -12V
-8.3V
+5V R184 1KΩ
74LS00 8G
DIF CŌMP IA-P (D-10F6)
R39 1KΩ
C128 1000PF
C78 +12V 0.022μF
μPC2710 9G
+5V R185 1KΩ
74LS00 8G
R23 6.2KΩ
+8.3V
R19 3.9KΩ
C79 0.022μF -12V

NP 462 (SRV VEL A)

D-6

P/N REV	TITLE	SHEET 6/	DRAWN
	NP 75 DRV LŌGIC DIA.	REV 1	CHECK
	DRAWING NO NPL-NC-22462		APPD

Nippon Peripherals Limited

NC-22462

(D-8F9) DIF 0 TR A -P
(D-8B9) DIF COMP A -P
(D-6F9) NCOS ON TR A -N
(E-2A9) ENBL SEQ A -P
(D-3A3) DACMAX A -N
(D-6E9) PCOS ON TR A -N
(G9) OD EVN A -N
(D-8C9) DLD TRX A -P
(D-8B9) DIF COMP A -P
(D-9G4) ST BIT 1/RI A -N
(D-9F4) ST BIT 4 A -P
(D-9G9) ST BIT 1/RI A -P
(D-9E9) ST BIT 4 A -N
(D-9F9) ST BIT 3 A -N
(D-9F9) ST BIT 2 A -N
(D-9B4) DIR IN A -P
(D-9F4) ST BIT 2 A -P
(D-9F4) ST BIT 3 A -P
(D-9D4) DIF 1 A -P
(D-9G4) ST BIT 1/RI A -N

74LS08 7B
74LS00 8G
74LS10 9C
74LS32 4D
74LS10 8C
74LS04 6B
74LS10 9B
74LS00 5B
74LS11 3A
74LS00 9A
74LS10 9B
74LS08 7B
74LS00 6C
74LS04 6B
74LS00 1A
74LS04 1B
74LS10 2C
74LS21 4B
74LS20 2B
74LS08 5C
74LS00 6C
74LS86 4C
74LS00 6A
74LS04 6B
74LS86 4C
74LS02 8B
74LS04 5C
74LS74 10D
74LS32 4D
74LS00 5A
74LS27 7C
7417 8A
74LS10 2C

159 → TR CRS LAT A -P (E-3D2)
145 → TR CRS PLS A -P (F-1A2)
TR CRS PLS A -P (D-3F2) (D-8G2)
155 → FIL NO INV A TP-N
FIL NO INV A -N (D-2D2)
230 → VEL PL LAT A -P (E-3E2)
232 → NON INV A TP-N
NON INV A -N (D-1C2)
228 → FIL INV A TP-N
FIL INV A -N (D-2D2)
112 → INV A TP-N
INV A -N (D-1A2)
SET DIF CP A -N (D-6G2)
SET DF A -N (D-10F6)
RST DIF CP A -N (D-6H2)
RST DF A -N (D-10F6)
133 → TR FOLW A TP -N
TR FOLLOW A -N (D-6B2) (D-5C1)
209 → VEL FILTR A TP-N
VEL FILTR A -N (D-1A2)
163 → TR ON A TP-N
134 → I INV A TP-N
I INV A -N (D-2D2) (D-6B2)
217 → OFF SET OUT A TP-N
OFF SET OUT A -N (D-5A2)
164 → I NON INV A TP-N
I NON INV A -N (D-2B2) (D-6A2)
168 → OFF SET IN A TP-N
OFF SET IN A -N (D-5C2)
OD EVN A -N (B2)
224 → MOVE IN A TP-P
MOVE IN A -P (D-4C2)
102 → FWD SEEK A TP-N

D-7

NP 462 (SRV VEL A)

P/N REV	TITLE: NP 75 DRV LOGIC_DIA.	SHEET 7/	DRAWN:
		REV 0	CHECK:
	DRAWING NO: NPL-NC-22462		Nippon Peripherals Limited.

NC-22462

(D-9E9) ST BIT 4 A-N
(D-9F9) ST BIT 3A-N
(D-9F9) ST BIT 2A-N
(D-9F4) ST BIT 4 A-P
(D-9F4) ST BIT 3 A-P
(D-9F4) ST BIT 2 A-P
(D-9G4) ST BIT 1/RZ A-N
(D-9G9) ST BIT 1/RZA-P

74LS00 1A
74LS20 2B
74LS21 4B
74LS05 10A
74LS00 1A
7417 4A

144 → RZ VEL A TP-P
RZ VEL A-P (D-4B2)
113 → ON TR A-N (E-1A2)

+5V
R186 1KΩ

7417 8A
(D-10G9) DIF COMP A-P

DIF COMP A-P (D-7A2)
(D-7C2)

74LS20 3B
158 → VEL SETL A-N (E-1C2)

(F-1B9) DIF0 A-N ← 114
DIF 0 A-N (D-2H2)

74LS04 3C
74LS20 3B
74LS00 5B
74LS05 10A
+5V
R187 1KΩ
218 → DLD TRX A TP-P
DLD TRX A-P (D-3F8) (D-7C2)

74LS08 5C
74LS04 1B
153 → DAC ZRO A TP-N
DAC ZRO A -N (D-2H2) (D-3C2)

74LS10 2A
74LS10 2C
Ⓐ D-7A6

74LS10 2A
74LS11 3A
74LS10 2A
7417 4A
147 → COARST A TP-P
COARST A-P (D-4E2)
7417 4A
152 → ACEL A TP-P
ACCEL ERATE A-P (D-4D2)
7417 4A
150 → VEL CHG A TP-N
VEL CHRG A-N (D-3E2)

74LS08 5C
104 → TURNARND A TP-P (E-2E2)
TURNARND A-P (D-2B2)

DIF φ-P (D-4D8)

74LS02 8B
DIF OTR A-P (D-7A2)

74LS27 7C
162 → RST FLIN A TP-N
RST FILLIN A-N (D-2F2)

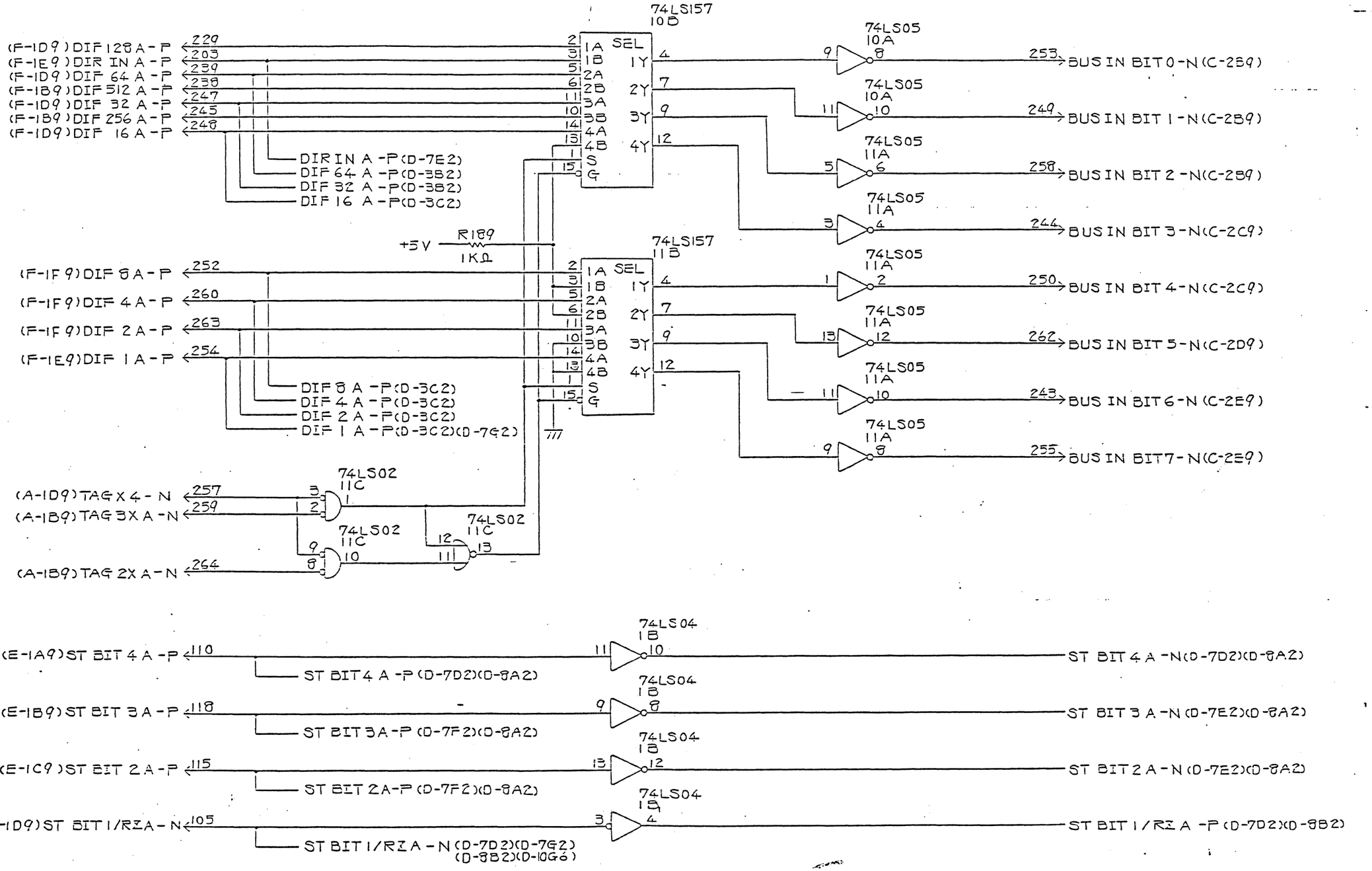
+5V
R102 6.8KΩ
C95 1000PF
74LS221 1C
(D-7B9) TR CRS PLS A-P
+5V R166 1KΩ

D-8

NP 462 (SRV VEL A)

P/N REV	TITLE NP 75 DRV LOGIC-DIA.	SHEET 8/ REV 0	DRAWN CHECK APPD
	DRAWING NO NPL-NC-22462	Nippon Peripherals Limited	

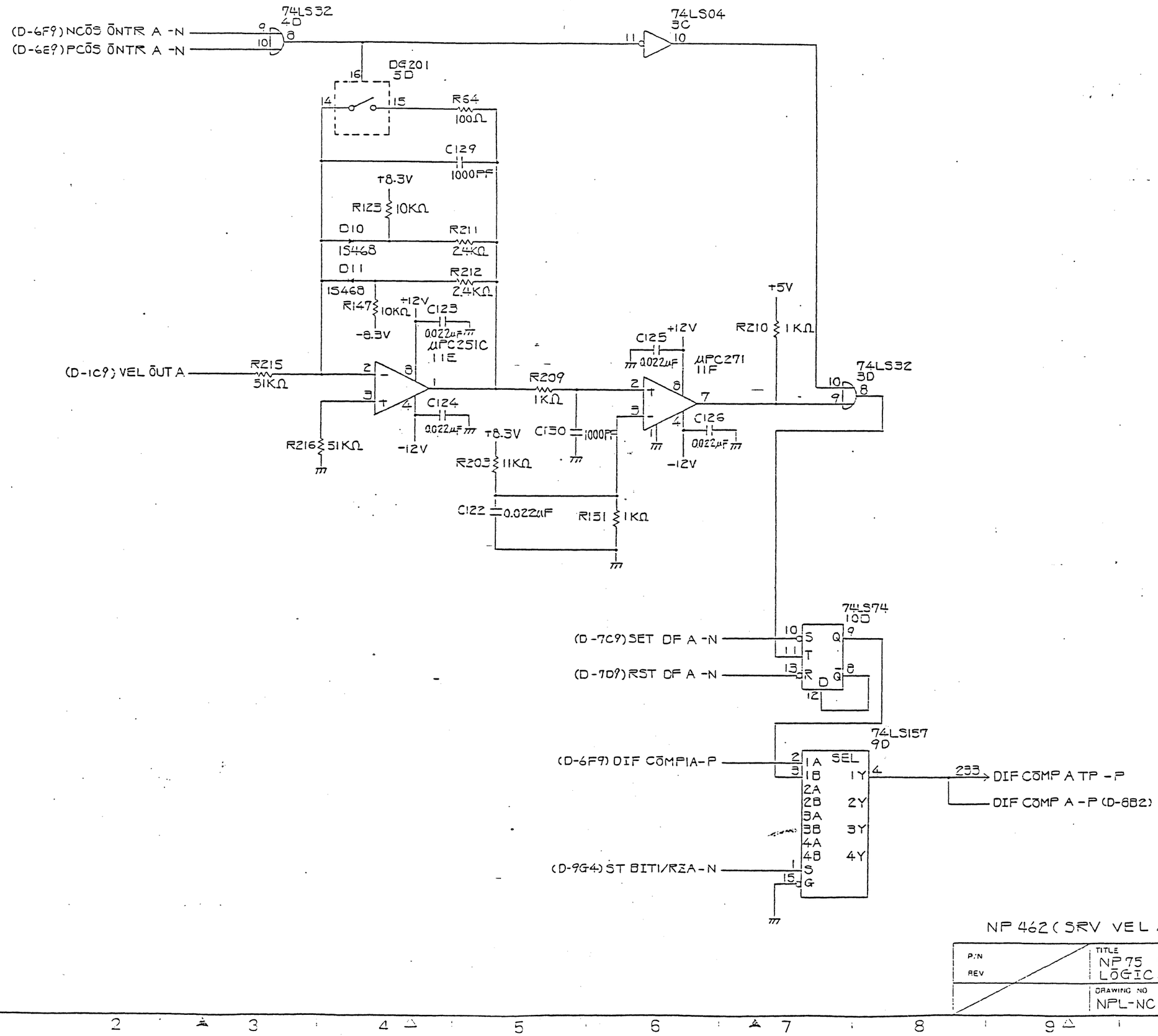
NC-22462



D-9

NP462 (SRV VEL A)

P/N REV	TITLE NP75 DRV. LOGIC-DIA.	SHEET 9/	DRAWN
		REV 0	CHECK
	DRAWING NO NPL-NC-22462	Nippon Peripherals Limited	APPD



D-10

NP 462 (SRV VEL A)

P/N / REV	TITLE: NP75 DRV LOGIC-DIA.	SHEET 10 / 10 DRAWN / REV 0 CHECK / APPD
	DRAWING NO: NPL-NC-22462	Nippon Peripherals Limited

NC-22462

NO	DATE	DRAWN	APPD
1			
SHEET 5 : Rev 0 → 1			
1 [illegible]			
SHEET 2 Rev up 0 → 1			
2 [illegible]			

(E-2B10) RSETSEQA-N
(E-3B10) BUFVF0A-P
(D-4G9) ENDDCLA-N ← 135
(D-8B9) ONTRA-N ← 104
(E-2F10) STTIMOUTA-N
(E 9) BUSYA-P
(E-2B10) ENBLSEQA-P
(D-3C9) VELSETLA-N ← 119
(D 9) STBIT1/R1A-N
(E-2C10) MANLR1R0A-N
(D-4C9) ENDACELA-P ← 137
(E-2E2) GBLATA-P
(E-2E10) R/WA-P
(E-2D2) GB2/IDA-P
(F-1G9) DIF1A-P ← 149
(A-4C9) GOHOME-N ← 148
(F-1B9) DFOVR127A-P ← 150
(E-3B10) BUFVF0A-N

74LS504 2D
74LS00 3D
74LS175 4B REG
74LS00 1G
74LS298 4A
+5V
R1 1KΩ
ENDDCLA-N (E-3F2)
ENDACELA-P (E-3G2)

MB14367 5A
28Pin DIP
+5V
NC

(E-3B10) SEQPLSA-P
(A-1A9) TAGBUSBIT1-N ← 159
(A-1A9) TAGBUSBIT2-N ← 158
(A-1A9) TAGBUSBIT3-N ← 163
(A 9) STBIT4A-P
(B 9) STBIT3A-P
(C 9) STBIT2A-P
(D 9) STBIT1A-P
TAGBUSBIT1-N (E-3E1)
TAGBUSBIT2-N (E-3B1)
TAGBUSBIT3-N (E-3B1)

+5V
R2 1KΩ
+5V
R3 1KΩ

74LS112 7B
74LS112 7B
74LS112 6B
74LS112 6B
74LS112 6A
74LS112 6A
74LS74 7A
74LS74 7A

154 → STBIT4A-P (D-9E2)
STBIT4A-P (E2)(E-2D2)(E-3F2)
214 → STBIT3A-P (D-9F2)(F-2E2)
STBIT3A-P (E2)(E-2D2)(E-3F2)
155 → STBIT2A-P (D-4B2)(D-9F2)
STBIT2A-P (F2)(E-3F1)
STBIT1A-P (F2)(E-2C2) (E-2D2)(E-3F2)
203 → STBIT1/R1A-N (C-2C2)(D-9G2)(F-1D2)
STBIT1/R1A-N (C2)
BUSYA-N (E-3H2)
165 → BUSYA-P
BUSYA-P (B2)(E-2C2)
207 → EVNTRA-P
EVNTRA-P (E-3F2)(E-7G1)
209 → TFTIMTPA-P
TFTIMA-P (E-2F2)
218 → LDACSTIMA-N (C-2G2)
LDACSTIMA-N (E-2C2)

(E-3B10) BUFVF0A-N

注. 指定なき抵抗はすべて 1/4W とする。

E-1

NP463 (SRV POS A)

NP463 P/N REV B	TITLE NP137 DRV LOGIC_DIA.	SHEET 1/7 REV 2	DRAWN [illegible] CHECK [illegible] APPD [illegible]
SRV POS A	DRAWING NO NPL-NC-20463	Nippon Peripherals Limited	

NC-20463

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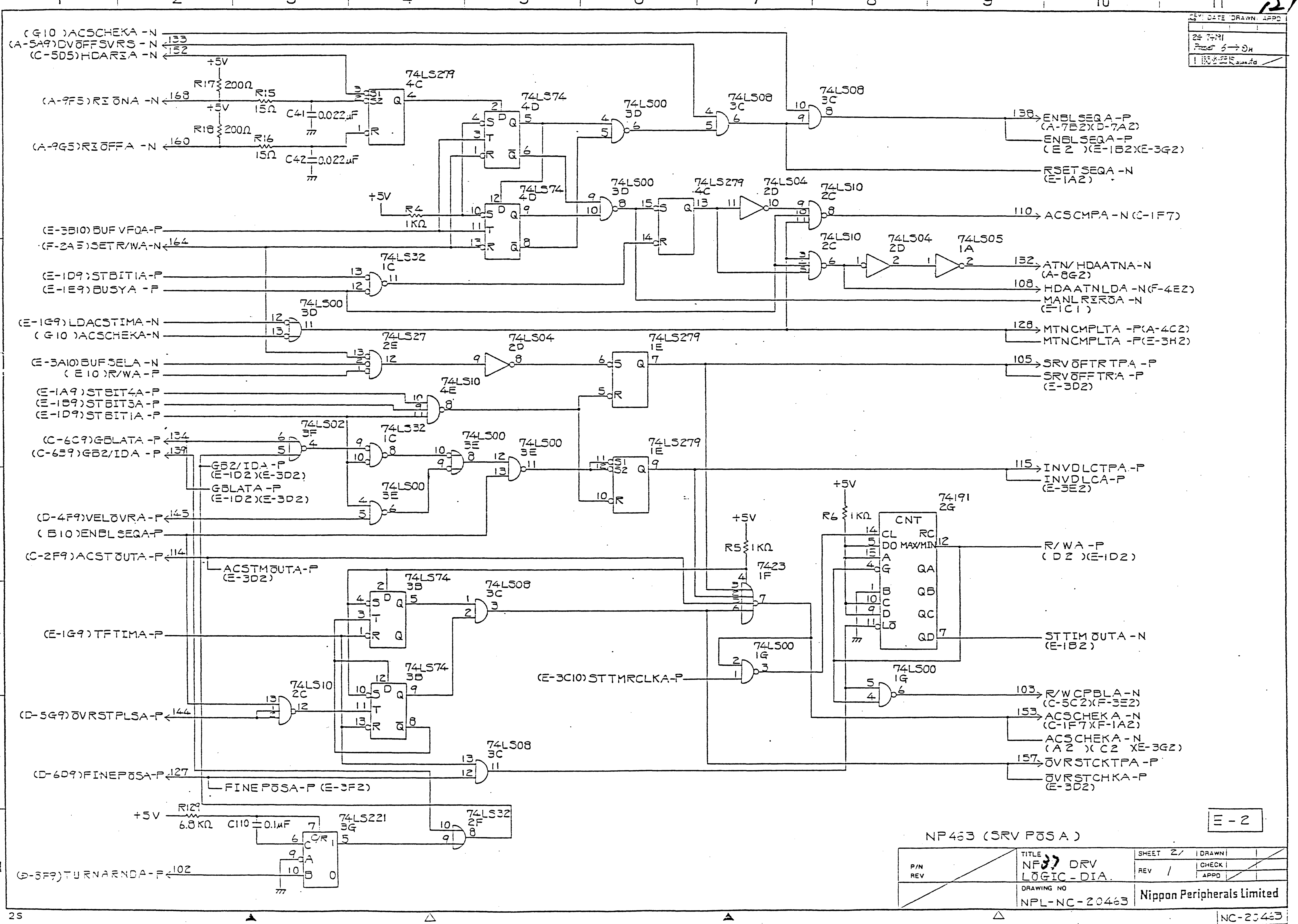
(G10)ACSCHEKA -N
(A-5A9)DVOFFSVRS -N
(C-5D5)HDARZA -N
(A-9F5)RZONA -N
(A-9G5)RZOFFA -N
(E-3B10)BUFVFOA-P
(F-2A5)SETR/WA-N
(E-1D9)STBITIA-P
(E-1E9)BUSYA -P
(E-1G9)LDACSTIMA-N
(G10)ACSCHEKA-N
(E-3A10)BUFSELA -N
(E10)R/WA-P
(E-1A9)STBIT4A-P
(E-1B9)STBIT3A-P
(E-1D9)STBITIA -P
(C-6C9)GBLATA -P
(C-6B9)GB2/IDA -P
GB2/IDA-P (E-1D2)(E-3D2)
GBLATA-P (E-1D2)(E-3D2)
(D-4F9)VELOVRA-P
(B10)ENBLSEQA-P
(C-2F9)ACSTOUTA-P
ACSTMOUTA-P (E-3D2)
(E-1G9)TFTIMA-P
(D-5G9)OVRSTPLSA-P
(D-6D9)FINEPOSA-P
FINEPOSA-P (E-3F2)
(D-3F9)TURNARNDA-P
(E-3C10)STTMRCLKA-P
ENBLSEQA-P (A-7B2)(D-7A2)
ENBLSEQA-P (E2)(E-1B2)(E-3G2)
RSETSEQA -N (E-1A2)
ACSCMPA -N (C-1F7)
ATN/HDAATNA-N (A-8G2)
HDAATNLDA -N(F-4E2)
MANLRZROA -N (E-1C1)
MTNCMPLTA -P(A-4C2)
MTNCMPLTA -P(E-3H2)
SRVOFTRTPA -P
SRVOFFTRA -P (E-3D2)
INVDLCTPA -P
INVDLCA-P (E-3E2)
R/WA -P (D2)(E-1D2)
STTIMOUTA -N (E-1B2)
R/WCPBLA-N (C-5C2)(F-3E2)
ACSCHEKA -N (C-1F7)(F-1A2)
ACSCHEKA-N (A2)(C2)(E-3G2)
OVRSTCKTPA -P
OVRSTCHKA-P (E-3D2)
74LS279
74LS74
74LS00
74LS08
74LS04
74LS10
74LS05
74LS32
74LS27
74LS02
7423
74191
74LS221
E-2
NP463 (SRV POSA)
TITLE NF37 DRV LOGIC-DIA.
DRAWING NO NPL-NC-20463
SHEET 21
REV 1
Nippon Peripherals Limited
NC-20463

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REV NO	DATE	DRAWN	APPD

(A-8A9)SELECTEDA-N ← 268
(A-2A9)SRVSTRŌBE-N ← 210
(A-1A9)TAGBUSBIT4-N ← 147
(E-1F3)TAGBUSBIT3-N
(E-1F3)TAGBUSBIT2-N
(E-7B10) 625KHZVFŌA
TRTIMTP-N ← 205
+5V
R13 1KΩ
R12 1KΩ
74LS04 4G
74LS27 2E
74LS10 4E
74LS74 4F
74LS00 3E
74LS02 3F
74LS293 5C
74191 6C
74LS157 2B
74LS157 2A
74LS375 3A
74LS32 1C
74LS05 1B
74LS05 1A
74LS27 1D
R14 1KΩ

BUF SELA-N (G2)(E-2D2)
SELECTEDA-P (E-7A1)
129 → SNSSVSTCMTPA-P
SEQPLSA-P(E-1E2)
BUF VFOA-N (E-1A2)(E-1F1)
BUF VFOA-P (E-1D2)(E-2B2)
125 → STTMRCLTPA-P
STTMRCLKA-P (E-2F6)

(E-2E2)ACSTMŌUTA-P
(E-2E2)GBLATA-P
(E-2G10)ŌVRSTCHKA-P
(E-2D2)GBZ/IDA-P
(E-2D10)SRVŌFFTRA-P
(D-7A9)TRCRSLATA-P ← 130
(E-2E10)INVDLCA-P
(D-7B9)VELPLLATA-P ← 112
(E-1F3)TAGBUSBIT1-N

(E-1A9)STBIT4A-P
(E-1F9)EVNTRA-P
(E-1B9)STBIT3A-P
(E-2G2)FINEPŌSA-P
(E-1C9)STBIT2A-P
(E-1D9)STBIT1A-P

(E-1C3)ENDDCLA-N
(E-1D3)ENDACELA-P
(E-2B10)ENBLSEQA-P

(E-2G10)ACSCHEKA-N
(A10)BUFSELA-N

(A-2B9)GATEMACHST-N ← 107
(E-1E9)BUSYA-N
(E-2C10)MTNCMPLTA-P

BUS IN BIT0-N (C-2B9) ← 113
BUS IN BIT1-N (C-2B9) ← 123
BUS IN BIT2-N (C-2B9) ← 117
BUS IN BIT3-N (C-2C9) ← 124
BUS IN BIT4-N (C-2C9) ← 140
BUS IN BIT5-N (C-2D9) ← 120
BUS IN BIT6-N (C-2D9) ← 109
BUS IN BIT7-N (C-2E9) ← 118

E-3

NP463 (SRV PŌSA)

P/N REV	TITLE NP-37 DRV LOGIC_DIA.	SHEET 3/	DRAWN
		REV 0	CHECK
			APPD
	DRAWING NO NPL-NC-20463	Nippon Peripherals Limited	

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REV | DATE | DRAWN | APPD

-8.3V
R147 5.1KΩ
(E-6F6) +5V
VR1
R19 130Ω
200Ω
OFFSET A-N (E9)
C46 0.022μF
(E-6H6) -12V
R96 1.3KΩ
C79 0.022μF
R75 620Ω
R103 3.3KΩ
(E-6F6) +12V
C47 0.022μF
R21 1KΩ
MB5365AMG 9D-2
R29 100Ω
R123 255 360Ω → CARRIERTPA-P
MB5365AMG 9D-1
R105 2.7KΩ
CARRIER1A-P (E1)(G1)
R72 910Ω
R28 100Ω
C81 0.1μF
C48 0.022μF
R73 910Ω
R106 2.7KΩ
(D11) V AGC A-P
MB4303 9B
SRVSIGHDAA-P 250 (Σ-7G2)
L2 4.7μH
C21 0.1μF
R57 100Ω
R22 100Ω
R25 100Ω
C12 91PF
C13 91PF
R23 100Ω
R24 100Ω
R74 22Ω
REF A-P (D9)
C80 120PF
R104 3.3KΩ
R26 100Ω
C28 0.01μF
R27 100Ω
SRVSIGHDAA-N 254 (Σ-7G2)
L1 4.7μH
C22 0.1μF
R38 100Ω
R31 100Ω
C29 0.01μF
R30 100Ω
C45 0.022μF
(E-6H6) -5.2V
(E-6H6) -12V
R63 264 360Ω → CARRIERTPA-N
MB5365AMG 9D-2
CARRIER1A-N (E1)(F1)
R32 100Ω
R53 1KΩ
R65 36Ω
R111 3.6KΩ
CARRIER2A-P (E-5B1)(E-6B1)
R112 3.6KΩ
CARRIER2A-N (E-5B1)(E-6B1)
C56 0.022μF
R76 620Ω
(E-6F6) +5V
C26 0.1μF
R77 620Ω
MC1496P 8E
R61 390Ω
R62 390Ω
+12V (E-6F6)
R71 10Ω
C52 0.022μF
μPC251C 9E
R92 5.1KΩ
C2 30PF
C113 10PF
R142 10KΩ
R143 20KΩ
245 → AGCLOOPA-P
245 AGCLOOPA-P
(B5) REF A-P
R146 20KΩ
μPC258C 8B
R148 110Ω
V AGC A-P (E4)
(A4) OFFSET A-N
R144 20KΩ
C49 0.022μF
μPC251C 10E
R145 20KΩ
C114 10PF
(B10) CARRIER1A-P
C19 0.1μF
R33 100Ω
(E-7C10) F6A-P
(E-7C10) F6A-N
CARRIER1A-N (C10)
C20 0.1μF
R34 100Ω
C27 0.33μF
μPC251C 9E
R101 5.1KΩ
R102 5.1KΩ
C1 30PF
R94 5.1KΩ
C50 0.022μF
AGC CNTRLA (E-5G1)
(D-1E9) M8/3V A 247
C34 3.3μF
C44 0.022μF
C43 0.022μF
(E-6H6) -12V
R70 10Ω
C53 0.022μF
+12V
MB4002M 10B
(C10) CARRIER1A-N
C39 0.047μF
R35 100Ω
R89 2KΩ
(B10) CARRIER1A-P
C40 0.047μF
R36 100Ω
R90 2KΩ
R55 62Ω
+5V
R56 510Ω
C55 0.022μF
C54 0.022μF
R125 680Ω
-5.2V
(E-5G8) AGC ACTIVE A-P
74LS00 10A
74LS00 10A
265 → IDX CMP A-N (C-6D2)

E-4

NP463 (SRV POS A)

P/N REV	TITLE NP 3/7 DRV LOGIC DIA.	SHEET 4/	DRAWN
		REV 0	CHECK
			APPD
	DRAWING NO NPL-NC-20463	Nippon Peripherals Limited	

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NO.	DATE	DRAWN	APPD
CORRECTION R69 : 100Ω → 10Ω			
1	85.5.29	T.Kunishi	

(E-4C4XCARRIER2A-P) — R39 100Ω — pin 4
(E-7F10)F3A-N — pin 10
(E-7E10)F3A-P — pin 8
(E-4D4XCARRIER2A-N) — R40 100Ω — pin 1

MC1496P 8D: pin 2 — C23 0.1μF, R78 300Ω; pin 3 — +12V via R116 1.1KΩ; pin 6 — C59 0.022μF, R115 1.1KΩ; pin 12 — R118 30KΩ, VR3 10KΩ, C3 1000PF, C4 1000PF; pin 5 — C57 0.022μF, -8.3V; pin 14 — C58 0.022μF, -12V

μPC258C 8C: pin 2 — R68 10Ω; pin 3 — +12V via C68 0.022μF; pin 1 — R114 6.2KΩ; pin 5 — +12V via C67 0.022μF; pin 6 — R113 6.2KΩ; pin 4 — -12V; pin 7 — R69 10Ω (⚠)

μPC258C 8B: pin 6 — R91 20KΩ, C15 47PF; pin 5 — +12V via C66 0.022μF; pin 4 — C65 0.022μF, -12V; pin 7 — RAW POSA-P (E1); C16 47PF, R93 20KΩ

R69 → 232 DMOPOSTPA-P

C10 1600PF → 239 POSITIONATP-N

μPC258C 8A-2: pin 2 — R117 4.3KΩ, C17 30PF; pin 3 — (B10)RAWPOSA-P via R99 5.1KΩ, R100 5.1KΩ, C11 510PF; pin 1 — R87 10KΩ

μPC258C 8A-2: pin 6 — C18 30PF, R86 10KΩ; pin 5 — +12V via C60 0.022μF; pin 7 — 235 POSITIONA-P(D-1B2); pin 4 — C61 0.022μF, -12V; R109 5.1KΩ

OSCINTPA ← 237 — R88 10KΩ — R81 51Ω

R64 360Ω → 230 AGCCTRLTPA

μPC271C 8A-1: pin 2 — (E-4E10)AGCCNTRLA via R98 5.1KΩ; pin 3 — +5V via R80 560Ω, R79 20Ω, C64 0.022μF; pin 8 — C62 0.022μF +12V; pin 1 — C63 0.022μF -12V; pin 7 — 238 AGCACTIVEA-P (E-4G6) (A-5E2)(F-4E2); +5V via R122 2KΩ

E-5

NP463 (SRV POSA)

P/N REV	TITLE NP-37 DRV LOGIC_DIA.	SHEET 5/ REV 1	DRAWN / CHECK / APPD
	DRAWING NO NPL-NC-20463	Nippon Peripherals Limited	

NC-20463

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REV	DATE	DRAWN	APPD

(E-4C4)CARRIER2A-N
(E-7B10)F2A-P
(E-7C10)F2A-N
(E-4D4)CARRIER2A-P
R41 100Ω
R42 100Ω
C24 0.1μF
R121 1 KΩ
MC1496P 8F
C76 0.022μF
C75 0.022μF
-8.3V
-12V
C7 1000PF
C5 1000PF
R60 390Ω
C6 1000PF
R67 10Ω
μPC251C 9F
R66 10Ω
C73 +12V
0.022μF
μPC251C 9F
C74 0.022μF
-12V
R83 10KΩ
R84 10KΩ
R85 10 KΩ
C9 200 PF
R82 10 KΩ
C8 200PF
+12V
C69 0.022μF
μPC251C 10F
C70 0.022μF
-12V
R127 16KΩ
R45 100Ω
257 → VCOCTLTPA
C109 0.1μF
μPC251C 10F
R128 3.9 KΩ
R126 8.2KΩ
259 → VCO TST1A-P
R97 1.5KΩ
HD103107 8H
VC C1 C2 Q Q̄
R20 1KΩ
C14 75PF
VR2 1KΩ
R124 1KΩ
C38 3.3μF
C71 0.022μF
-5.2V
VCOA-P (E-7B1)
+12V
C115 0.022μF
R134 750Ω
R138 4.3KΩ
R130 100Ω
+5V
μPC271C 9H
R140 10KΩ
R132 510Ω
Q1 2SA744
R136 1KΩ
C116 0.022μF
-12V
+12V
R110 360
C111 3.3μF
51KΩ
C112 3.3μF
VCO TST 2A-P
C117 0.022μF
R137 1KΩ
R133 510Ω
Q2 2SC1374
μPC271C 10H
R141 10KΩ
R139 4.3KΩ
-5.2V
R135 750Ω
C118 0.022μF
R131 100Ω
-5.2V
-12V

(E-7F10)F4A-N
(E-7E10)F4A-P
R43 100Ω
R44 100Ω
C25 0.1μF
R95 1 KΩ
MC1496F 8G
C77 0.022μF
C78 0.022μF
-8.3V
-12V
R58 390Ω
R59 390Ω
+5V
C72 0.022μF

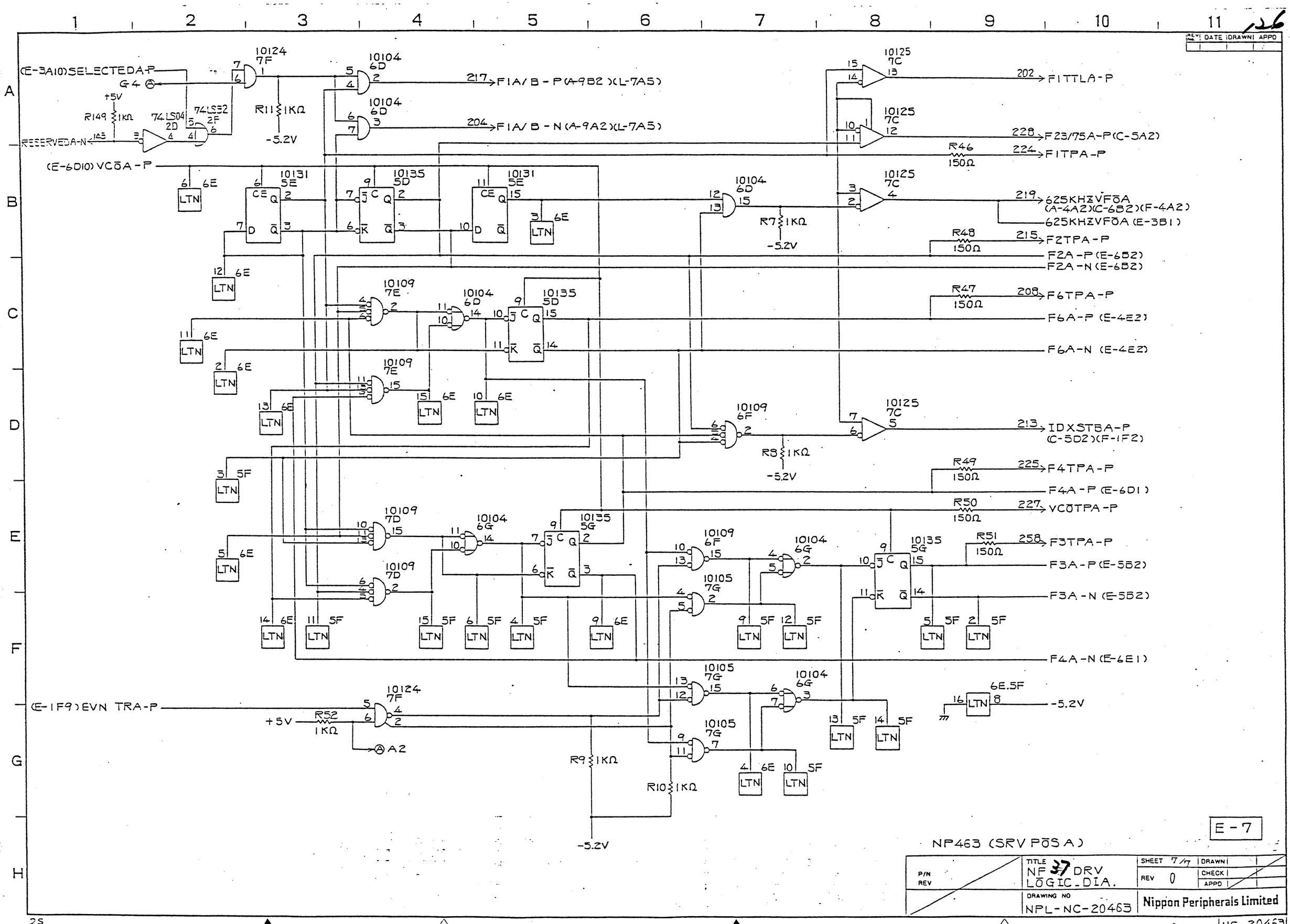
121 221 → +12V → +12V (E-4A7)(E-4D6)
101 167 201 267 → +5V → +5V (E-4A4)(E-4D5)
106 111 116 126 131 136 146 151 156 166 206 211 216 226 231 236 246 251 256 266 → 0V
C30 3.3μF 35V
C33 3.3μF 35V
C93 0.022μF 50V
C105 0.022μF 50V
C35 3.3μF 35V
C36 3.3μF 35V
C37 3.3μF 35V
C108 3.3μF 35V
C82 0.022μF 50V
C92 0.022μF 50V
C106 0.022μF 50V
C107 0.022μF 50V
161 261 → -5.2V → -5.2V (E-4C2)
141 241 → -12V → -12V (E-4A5)(E-4C7)(E-4E5)(E-4F3)(E-4F8)

E-6

NP463 (SRV POS A)

P/N REV	TITLE NP-37 DRV LOGIC DIA.	SHEET 6/	DRAWN
		REV 0	CHECK
			APPD
	DRAWING NO NPL-NC-20463	Nippon Peripherals Limited	

NC-20463



NP463 (SRV POS A)

E-7

P/N REV	TITLE NF 37 DRV LOGIC_DIA.	SHEET 7/17	DRAWN
		REV 0	CHECK
	DRAWING NO NPL-NC-20463		APPD

Nippon Peripherals Limited

NC-20463

REV No	DATE	DRAWN	APPD
SHEET 2 Rev 0→1 FUNCTION Rev F→G			
1 IER 6.1 IT Kawasaki			
SHEET 5 REV 0→1 FUNCTION REV G→H			
2	84.7.10	SS 7/10	A.OSHIRO

(F-3A9)PBR-N

(D-7A9)TR CRS PLSA-P ← 132
(E-2G10)ACS CHECKA-N ← 129

74LS10 3B

74LS08 4C

(A-1B9)TAG3XA-N ← 135
(A-1C9)TAGX6-N ← 133

74LS32 4A

(A-1D9)TAGX2-N ← 138

74LS32 4A

(F-2E9)BUS OUT BIT0-P
(F-2F9)BUS OUT BIT1-P
(F-2D9)BUS OUT BIT2-P
(F-2D9)BUS OUT BIT3-P

74LS32 4A

(A-1B9)TAG2XA-N ← 140

74LS02 4B

(E-1D9)ST BIT1/R3A-N ← 123

(E-7D10)IDXSTBA-P ← 118

(A-2H6)BUS OUT BIT7-N ← 114

74LS04 2B

(A-2G6)BUS OUT BIT6-N ← 109

74LS04 2B

(F-2C9)BUS OUT BIT5-P
(F-5F4)BUS OUT BIT4-P

+5V
R3 1kΩ
R1 1kΩ
R2 1kΩ

74191 2A
74191 3A
74191 1A

CL, D0, A, G, B, C, D, LD, RC, MAX/MIN, QA, QB, QC, QD

74LS00 3C
74LS00 3C
74LS00 3C
74LS00 3C

74LS27 2C
74LS27 2C

74LS10 3B

74LS279 1C
74LS279 1C
74LS279 1C

74LS04 2B
74LS04 2B

74LS574 2D

R4 1kΩ

74LS138 1B

7406 4D
7406 4D

127 → EMD/FACTLA-N (A-7A2)

115 → DIF256A-P (D-9B2)
113 → DIF512A-P (D-9A2)
112 → DF 5VR127A-P (C-3B2)(E-1D2)
134 → DIF 0A-N (D-8C2)
125 → DIRINA-P (D-9A2)
119 → DIF 16A-P (D-9B2)
124 → DIF 32A-P (D-9B2)
120 → DIF 64A-P (D-9A2)
117 → DIF 128A-P (D-9A2)

104 → DIF 1A-P (D-9C2)(E-1D2)
102 → DIF 2A-P (D-9C2)
105 → DIF 4A-P (D-9C2)
108 → DIF 8A-P (D-9C2)

128 → CALCNTPLS-N (A-8H2)

101, 167, 201, 267 → +5V

C2 3.3μF 35V
C5 3.3μF 35V

106 → 0V
111, 116, 126, 131, 136, 146, 151, 156, 166, 206
211, 216, 226, 231, 236, 246, 251, 256, 266

NP414 (R/WCTRLA)

F-1

P/N NP414	TITLE NP37 DRV LOGIC_DIA	SHEET 1/6	DRAWN SS 6.1 T.Kawa
REV H		REV 2	CHECK SS 6.2 F.N.
R/WCTRLA	DRAWING NO NPL-NC-22414		APPD SS 6.2 K.F.
		Nippon Peripherals Limited	

NC-22414

REV	DATE	DRAWN	APPD
CHANGE SET R/W SAFE SIGNAL			
1	83.6.11		

(A-8A9) SELECTEDA-N ←107
(A-1E9) SET R/W-N ←150
(F-6C9) R/W CHECKA-P
(A-2F6) BUS OUT BIT2-N ←148
(A-2G6) BUS OUT BIT3-N ←147
(F-3A9) PORA-N
(F-6E9) DIAG SET R/WA-N
(A-2G6) BUS OUT BIT5-N ←145
(A-2F6) BUS OUT BIT0-N ←155
(E-1A9) ST BIT3A-P ←165
(A-2F6) BUS OUT BIT1-N ←152
(C9) WRT SELIA-N
(D9) SET R/W SAFEA-P
(B9) WRT SELIA-P
F-4C9 (AG)
(F-5D3) WMSVA-N
(F-5C3) NOFUNCA-N
(A9) SELECTEDA-N

74LS04 2B
74LS04 6A
74LS00 5B
74LS02 4B
74LS04 5A
74LS02 4B
74LS04 5A
74LS03 5D
+5V R5 1KΩ
74LS04 7C
74LJ20 12C
74LS02 6D
74LS03 5D
74LS04 5A
74LS10 3B
74LS08 4C
74LS00 6B
74LS00 6D
74LS00 6B
74LS04 6A
74LS00 5B
74LS10 5C
74LS04 5A
74LS00 5B
74LS04 6A
74LS00 5B
74LS04 5A
74LS20 6C
74LS20 6C
74LS04 7C
74LS10 5C
74LS04 6A
74LS10 5C
+5V R23 1KΩ
74LS00 6B
74LS04 6A
7406 4D
C9 2200PF
74LS04 6A
74LS279 1C
74LS03 5D

SELECTEDA-N(HZ)(F-4FZ)
SELECTEDA-P(F-3BZ)(F-4DZ)
SLCTD SET R/WA-P(F-3CZ)(F-4BZ)(F-5FZ)
149 → SLCTD SET R/WA-N(C-1D7)(E-2CZ)(J-6FZ)(Z-6FZ)
SLCTD SET R/WA-N(F-4EZ)(F-5AZ)
144 → SET R/W SAFEA-N(J-6EZ)(Z-7FZ)
WRT SELIA-P(GZ)
(AA) F-3EZ
(AB) F-4BZ
(AC) F-5GZ
WRT SELIA-N(FZ)
WT SEL1/2A-P(F-3DZ)
BUS OUT BIT5-P(F-1FZ)
PRINT SEL2A-N(F-3GZ)
160 → RDXMITGTDA-N(A-9EZ)(J-1C1)
SET R/W SAFEA-P(FZ)
BUS OUT BIT3-P(F-1CZ)(F-5DZ)
BUS OUT BIT2-P(F-1CZ)(F-5FZ)
(AD) F-3DZ
(AE) F-4BZ
BUS OUT BIT0-P(F-1CZ)(F-5BZ)
158 → DF ST WT ERRA-N TP
BUS OUT BIT1-P(F-1CZ)(F-5CZ)
142 → WRT STBY CHKA-P
WRT STBY CHKA-P (F-6BZ)
(F-3A9) CHK RST/PORA-N
(F-6F9) SNS R/W1A-P
BUS IN BIT0-N(F-4G9)
164 → WT SELIGTDA-N(J-9CZ)

NP414(R/WCTRLA)

F-2

P/N	TITLE	SHEET 2/	DRAWN
REV	NP37 DRV LOGIC-DIA	REV 1	CHECK
	DRAWING NO NPL-NC-22414		APPD

Nippon Peripherals Limited

NC-22414

NO.	DATE	DRAWN	APPD

(A-6F9) PŌR-N ← 209

74LS04 7C

74LS04 7C

PŌR-N (F-1A2) (F-2C2)

(A-1F9) CHECK RESET-P ← 268

(F-2A9) SELECTEDA-P

74LS08 6E

74LS02 6D

CHK RST/PŌRA-N (F-2F7) (F-5A6) (F-6E2)

(F-6F9) SNSR/WIA-P

(C-6D9) VLD IDXA-N ← 204

74LS04 7C

74LS03 9C

249 → BUS IN BIT6-N (C-2D9)
BUS IN BIT6-N (F-5E9)

(F-2A9) SLCTD SETR/WA-P

(C-6D9) IDXMRKA-P ← 137

74LS10 11C

74LS279 8B

205 → INDEX CHKA-P
INDEX CHKA-P (F-6B2)

74LS03 8A

BUS IN BIT3-N (F-6B9)

F-2E9 (AD)

(F-2C9) WTSEL1/2A-P

74LS00 7B

74LS279 8B

159 → CTRL CHKA-P
CTRL CHKA-P (F-6A2)

74LS03 8A

BUS IN BIT4-N (F-4D9)

F-4G9 (B)

74LS00 7B

74LS279 8B

208 → CAPABLCHKA-P
CAPABLCHKA-P (F-6A2)

(F-2A10) R/W CPBLA-N ← 162

74LS00 7B

74LS03 8A

BUS IN BIT1-N (F-4F9)

F-2B9 (AA)

74LS04 7C

74LS74 7A

(F-4F9) BUS IN BIT5-N

74LS74 7A

202 → WRT ŌVR RUNA-P
WRT ŌVR RUNA-P (F-6B2)

74LS03 8A

168 → BUS IN BIT2-N (C-2B9)

+5V

7406 4D

R21 1.5KΩ

+5V

7406 4D

R22 1KΩ

74LS32 4A

(F-2D9) PRI WT SELZA-N

C7 1800PF

C8 820PF

130 → WT SELZA-N (J-4A1)

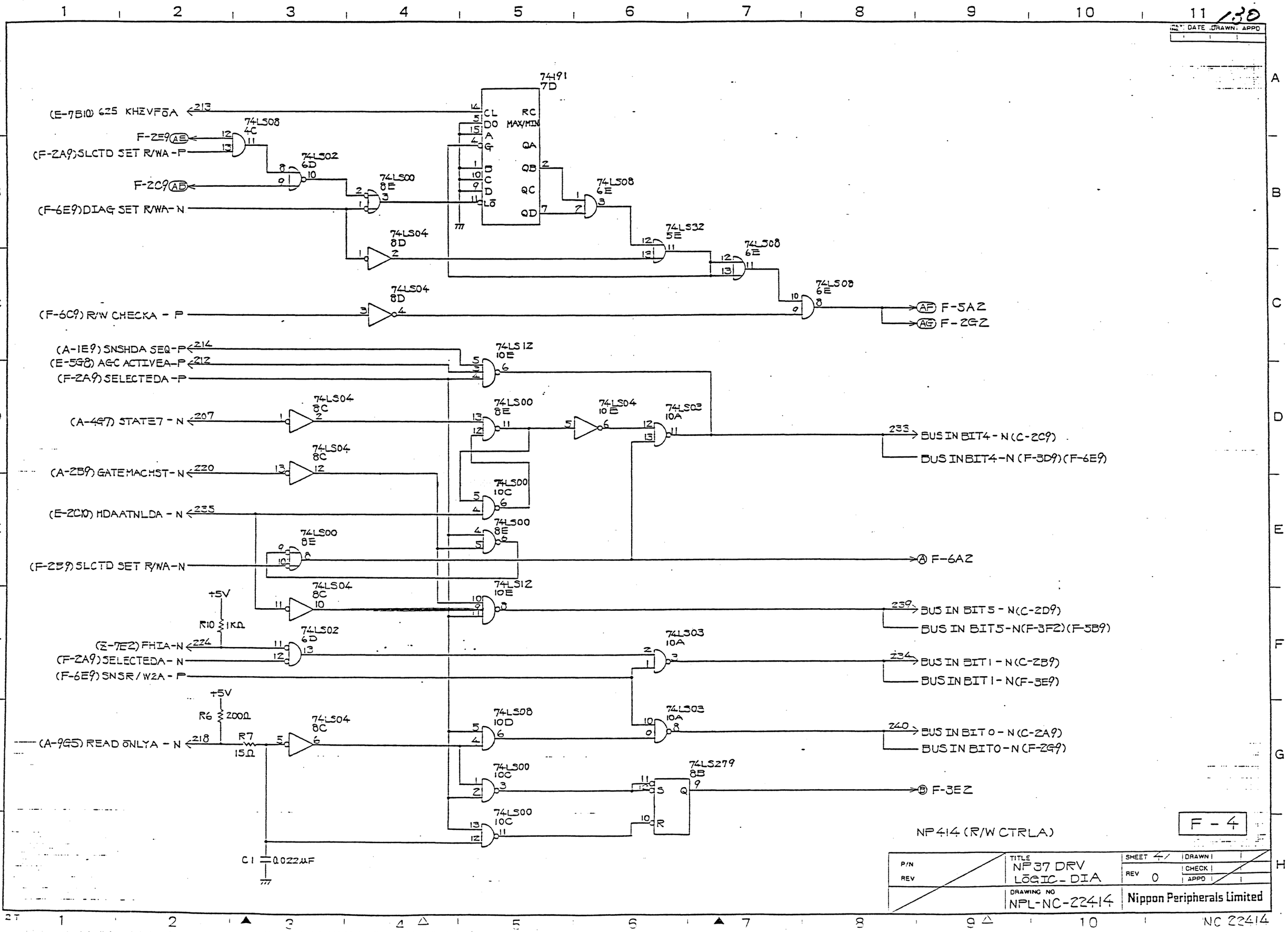
NP414 (R/WCTRLA)

F-3

P/N	TITLE	SHEET 3/	DRAWN
REV	NP37 DRV LOGIC-DIA	REV 0	CHECK
	DRAWING NO NPL-NC-22414		APPD

Nippon Peripherals Limited

NC-22414


74191 7D
(E-7B10) 625 KHZVFOA 213
74LS08 4C
F-2E9 AE
(F-2A9) SLCTD SET R/WA-P
74LS02 6D
F-2C9 AB
74LS00 8E
(F-6E9) DIAG SET R/WA-N
74LS04 8D
74LS32 5E
74LS08 6E
74LS08 6E
(F-6C9) R/W CHECKA-P
74LS04 8D
AF F-5A2
AG F-2G2
(A-1E9) SNSHDA SEQ-P 214
(E-5G8) AGC ACTIVEA-P 212
(F-2A9) SELECTEDA-P
74LS12 10E
(A-4G7) STATE7-N 207
74LS04 8C
74LS00 8E
74LS04 10E
74LS03 10A
233 BUS IN BIT4-N (C-2C9)
BUS IN BIT4-N (F-3D9) (F-6E9)
(A-2B9) GATEMACHST-N 220
74LS04 8C
74LS00 10C
(E-2C10) HDAATNLDA-N 235
74LS00 8E
74LS00 8E
(F-2B9) SLCTD SET R/WA-N
A F-6A2
+5V
R10 1KΩ
74LS04 8C
74LS12 10E
239 BUS IN BIT5-N (C-2D9)
BUS IN BIT5-N (F-3F2) (F-5B9)
(E-7E2) FHIA-N 224
74LS02 6D
(F-2A9) SELECTEDA-N
(F-6E9) SNSR/WZA-P
74LS03 10A
234 BUS IN BIT1-N (C-2B9)
BUS IN BIT1-N (F-3E9)
+5V
R6 200Ω
R7 15Ω
(A-9G5) READ ONLYA-N 218
74LS04 8C
74LS08 10D
74LS03 10A
240 BUS IN BIT0-N (C-2A9)
BUS IN BIT0-N (F-2G9)
74LS00 10C
74LS279 8B
B F-3E2
74LS00 10C
C1 0.022μF
NP414 (R/W CTRLA)
F-4
P/N
REV
TITLE NP37 DRV LOGIC-DIA
SHEET 4/
REV 0
DRAWN
CHECK
APPD
DRAWING NO NPL-NC-22414
Nippon Peripherals Limited
NC 22414

REV NO	DATE	DRAWN	APPD
ADD GATE DELAY			
1	1847.10	S.Ito	

(F-6F9)SNSR/W1A-P
(F-6E9)SNSR/W2A-P
(F-3B9)CHK RST/PORA-N

F-4C9 (AF)
(F-2B9)SLCTD SET R/WA-N
(F-6E9) DIAG SET R/WA-N
(J-7B9)MLTFNC ERRA-P 225
(F-2E9) BUS OUT BIT 0-P
(J-7B9) NO FUNCA-N 222
NO FUNCA-N (F-2H2)
(F-2F9)BUS OUT BIT1-P
(J-8C6) WMSVA-N 217
WMSVA-N (F-2G2)
(F-2D9) BUS OUT BIT3-P
(J-8B9) WRT OP OKA-N 215
(A-2G6)BUS OUT BIT4-N 238
(F-2A9)SLCTD SET R/WA-P
(F-2D9) BUS OUT BIT2-P
BUS OUT BIT4-P(F-1F2)
F-2C9 (AC)

74LS00 10C
74LS08 10D
74LS04 8C
74LS03 9A
74LS08 9D
74LS04 8C
74LS03 9A
74LS04 8D
74LS03 9A
74LS08 9D
74LS03 9A
74LS03 9B
74LS04 8D
74LS08 9D
74LS03 9B
74LS03 9B
74LS04 8D
74LS08 9D
74LS04 10B
74LS03 9B
74LS03 9C
74LS03 9C
74LS04 8D
7406 4D
74LS27 2C
74LS04 2B
74LS08 4C
74LS02 13A

+5V R14 1KΩ
+5V R16 1KΩ
+5V R8 1KΩ
+5V R12 1KΩ
+5V R9 1KΩ
+5V R11 1KΩ
+5V R15 1KΩ
+5V R20 3KΩ
C6 0.01μF

74LS10 11D
74LS279 11B
74LS10 11D
74LS10 11D
74LS279 11B
74LS10 11C
74LS20 12D
74LS279 12B
74LS20 12D
74LS279 11B
74LS10 11C
74LS279 11B
74LS20 12C
74LS279 12B

74LS03 11A
74LS03 11A
74LS03 11A
74LS03 10A
74LS03 11A
74LS03 12A

© F-6D2
Ⓓ F-6C2
Ⓔ F-6D2

242 SEL ERRA-P
SEL ERRA-P (F-6B2)
BUS IN BIT5-N (F-4F9)
243 NO SEL ERRA-P
NO SEL ERRA-P (F-6B2)
237 HDA WRT CHKA-P
HDA WRT CHKA-P (F-6C2)
BUS IN BIT6-N (F-3B9)
253 HDARD CHKA-P
HDARD CHKA-P (F-6C2)
247 DECOD CHKA-P
DECOD CHKA-P (F-6C2)
262 BUS IN BIT7-N
254 TRASICHKA-P
TRASICHKA-P (F-6C2)

NP414 (R/W CTRL A)

F-5

P/N	TITLE	SHEET 5/	DRAWN
REV	NP37 DRV LOGIC-DIA	REV 1	CHECK
	DRAWING NO NPL-NC-22414		APPD

Nippon Peripherals Limited

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F-4E9 (A)

(F-3D9) CTRL CHKA-P
(F-3E9) CAPABL CHKA-P
74LS33 13C

(F-3F9) WRT OVR RUNA-P
(F-2F9) WRT STBY CHKA-P
74LS33 13C

DISABLER/WCHKA-N ← 265
(F-3C9) INDEX CHKA-P

+5V
R17 1KΩ
+5V
R18 1KΩ

(F-5B9) SEL ERRA-P
(F-5C9) NO SEL ERRA-P
74LS33 13B
R13 1KΩ +5V

(F-5D9) HDA WRT CHKA-P
(F-5E9) HDA RD CHKA-P
74LS33 13B

(F-5F9) DECOD CHKA-P
(F-5G9) TRASI CHKA-P
74LS33 13B
74LS04 10B

74LS33 13B
74LS04 10B
74LS08 10D
74LS08 10D
74LS03 12A

244 → BUS IN BIT3-N (C-2C9)
BUS IN BIT3-N (F-3C9)
245 → R/W CHKA-P
R/W CHECKA-P (F-2B2) (F-4C2)

F-5D9 (C)
74LS10 13D
74LS279 12B
252 → WT SELVFYA-P
74LS03 12A

F-5A9 (C)
F-5E9 (E)
74LS10 13D
74LS279 12B
248 → WT OP OKA-P

(F-3B9) CHK RST/PORA-N
74LS03 12A
BUS IN BIT4-N (F-4D9)

(A-1D9) TAGX0-N ← 260
(A-1B9) TAG1XA-N ← 257
74LS02 13A
74LS04 10B
250 → SNS R/W2A-N (C-1D7)
SNS R/W2A-P (F-4F2) (F-5A6)

(A-1D9) TAGX3-N ← 264
(A-1B9) TAG0XA-N ← 255
74LS02 13A
74LS04 10B
DIAG SET R/WA-N (F-2C2) (F-4B2) (F-5A2)

(A-1C9) TAGX7-N ← 258
74LS02 13A
SNS R/W1A-P (F-2G7) (F-3B2) (F-5A6)

+5V
R19 1KΩ
74LS161 3D

(J-9B6) WT OPS3A-P ← 143
(J-9A6) RVSWTDTA-P ← 122
LO CL CK A B C D P T
QA QB QC QD QR

74LS00 7B
153 → WRTOPDKTFMA-N (J-9C1)

NP414 (R/WCTRLA)

F-6

P/N	TITLE NP37 DRV LOGIC-DIA	SHEET 6/6	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-22414		APPD

Nippon Peripherals Limited

NC-22414

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(115)-5.2VSP — VR1 50KΩ — R177 100KΩ — R178 100KΩ

(G5)+5VSP — C65 0.022μF

(J-2E10) FLTD WAVE-P — C47 1000PF — R24 100Ω

(J-2F10) FLTD WAVE-N — C48 1000PF — R25 100Ω

(C10) AGCCTL-P — R26 100Ω

(C10) AGCREF-P — R27 100Ω

MB4303 13E

R28 100Ω — C49 4700PF — C16 62PF — R14 100Ω — C17 62PF — R29 100Ω — C50 4700PF

-5.2VSP (H5) — C66 0.022μF

+5VSP (G5) — R71 510Ω — Q12 2SA741(B) — R170 8.2KΩ

+5V — R98 1KΩ — R132 2KΩ — R114 1.2KΩ — R1 10Ω

(F-ZD9) RDXMITGTDA-N 268 — 74LS03 5C

(K-ZD9) RDXMITGTDB-N 258 — 74LS03 5C

R173 10KΩ — RDXMITGTDA-N (J-2B1)

RDXMITGTDB-N (J-2C1)

R56 130Ω — C24 680PF

-5.2V — R174 10KΩ — RDXMTA/B-P (J-3C2)

R2 10Ω — (H5) -5.2VSP

C44 0.022μF — C43 0.022μF — C67 0.022μF — C68 0.022μF

MB4311 11E

R59 360Ω 24.8 → AGC WAVE TP-P

AGC WAVE-P (J-5B2)(J-5C2)

R60 360Ω 24.5 → AGC WAVE TP-N

AGC WAVE-N (J-5E2)(J-5D2)(J-5G2)

AGC CTL-P (E1)

R61 360Ω 24.0 → AGC CTL TP-P

R62 360Ω — C37 4700PF

R57 300Ω — D2 1S468 — C38 0.01μF

AGC REF-P (C1)

R171 1.1KΩ — VR2 5KΩ — C69 0.022μF — +12V

μPC251C 12A

R172 10KΩ — C54 0.022μF — R58 330Ω — D3 RD5.1 — R166 5.1KΩ — C70 0.022μF — -12V

+12V — R13 10Ω — Q1 2SC708A(B) — C1 3.3μF — R99 1KΩ — -12V

229 → +16.3V ADJ TP — +16.3V

+12V 121 221 — +12V

+5V 101 201 167 267 — L5 10μH — C114 0.022μF 50V — ~C123 0.022μF 50V — C2 3.3μF — +5VSP (A4)(C4)(J-2D5)(J-2F5)(J-5A3)(J-5A5)

106 111 116 126 131 — 0V 136 146 151 156 — 166 206 211 216 — 226 231 236 251 — 256 246 266 — C3 3.3μF — C4 3.3μF

-5.2V 161 261 — L4 10μH — -5.2VSP (A1)(B4)(D7)(J-2G5)(J-5C5)

-12V 141 241 — L3 10μH — -12VSP (J-2B4)(J-2C8)(J-2E7)(J-5C3)(J-5F3)(J-5G3)

NP425 (RD DTCT)

J-1

P/N NP425 REV K	TITLE NP37 DRV LOGIC - DIA.	SHEET 1 of 4 REV 11	DRAWN S.Saito 82.6.9 CHK'D F.Hasekawa 82.6.9 APPD K.Hoshino 82.7.9
RD DTCT	DRAWING NO NPL-NC-20425	Nippon Peripherals Limited	

NC-20425

1371

2S

NO	DATE	DRAWN	APPD
CORRECTION			
K34: 1KΩ → 16KΩ			
1	82.10.15	S.Saito	
ADC HDA IF			
2	83.1.11	S.Saito	
REMOVE C18: 68PF			
3	84.7.16	S.Saito	

RAWRDWAVE-N(G 1)
RAWRDWAVE-P(G 1)
ŌREDWAVE-N(F10)
ŌREDWAVE-P(E10)

RDXMITGTDA-N (J-1D3)
DATAXHDAA-P 263 (Z-7BZ) △
DATAYHDAA-P 262 △(Z-7BZ)
RDXMITGTDB-N (J-1D3)
DATAXHDAB-P 264 (Z-9BZ) △
DATAYHDAB-P 265 (Z-9BZ) △

DG201BK 14A

R53 270Ω, R65 390Ω, R66 390Ω
R54 270Ω, R67 390Ω, R68 390Ω
-12VSP (J-1H5) R49 200Ω, C56 0.022μF
+12V R48 200Ω, C55 0.022μF
R50 200Ω

R15 100Ω, R16 100Ω
R168 6.8KΩ, R169 6.8KΩ
R17 82Ω, C57 0.022μF
R147 2.2KΩ

MB5365AMG 14C1
R36 160Ω △1% 0.047μF △6.8PF
C34
R69 390Ω
C58 0.022μF
MB5365AMG 14C2
MB5365AMG 14C2
R96 2.7KΩ, R97 2.7KΩ
D1 RD7.5
C59 0.022μF
-4.5V(J-5C2)
(J-1H5) -12VSP

WTDATAYB-P (J-4E1)
WTDATAXB-P (J-4E1)
WTDATAYA-P (J-4E1)
WTDATAXA-P (J-4E1)

(J-1G5) +5VSP
MB5365AMG 13D
C60 0.022μF
(A10)ŌRED WAVE-P
(A10)ŌRED WAVE-N
L1 8.2μH, L2 8.2μH
R86 390Ω, R87 390Ω, R88 390Ω, R89 390Ω
C8 47PF, C9 47PF, C10 47PF, C11 47PF
R9 39Ω, C61 0.022μF
R18 100Ω, R19 100Ω
R81 100Ω → FLTD WAVE -P(J-1B1)
R82 100Ω → FLTD WAVE -N(J-1B1)
R150 2.4KΩ, R151 2.4KΩ
C62 0.022μF
(J-1H5) -12VSP

(J-1G5) +5VSP
C63 0.022μF
MB3501M 12B
(A10)RAW RDWAVE-P
(A10)RAW RDWAVE-N
C45 0.047μF, C46 0.047μF
R20 100Ω, R21 100Ω
C6 10PF, R121 820Ω
R22 100Ω → 249 FIX GAIN TP-P
R23 100Ω → 250 FIX GAIN TP-N
C7 10PF
R130 2KΩ, R131 2KΩ
(J-1H5) -5.2VSP
C64 0.022μF

NP425 (RD DTCT)

J-2

P/N REV	TITLE NP37 DRV LOGIC -D1A	SHEET 2	DRAWN
		REV 3	CHECK
	DRAWING NO NPL-NC-20425		APPD
	Nippon Peripherals Limited		

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DATE	DRAWN	APPD
CHANGE VEE OF 6A FROM −4V TO −5.2VLP		
1 12.6.76 S.Saito		
CORRECTION OF HIS DWG R176: 5kΩ → 5.1kΩ		
2 12.7.5 S.Saito		
R103: 1kΩ → 100Ω ADD R235 = 100Ω		
3 12.7.15 S.Saito		
ADD: TIE UP−P		
4 12.22.15 S.Saito		
ADD SINK ADDRESS		
5 13.11.11 S.Saito		

-5.2V
C87 0.022μF
10116 8B
(A-9E9) NRZ WTDT-P 202
(A-9E9) NRZ WTDT-N 203
LTN 4 9B 5 9B
LTN 14 6B
WTDTINHIMTP-P 212
(J-1D4) RDXMTA/B-P
-5.2V
C88 0.022μF
10131 7A
CLK Q
S
R
D
WT DATA CMN-P (J-4E1)
WT DATA CMN-N (J-4F1)
LTN 6 9B 9 9B

+12V
R63 360Ω
R176 5.1 KΩ
VR4 5KΩ
μPC251C 12A
R175 10KΩ
D5 RD5.1EB1
C97 0.022μF
R165 5.1KΩ
R185 100Ω
Q10 2SA537
R3 15Ω 3W
-12V
233 → -4V (Z-6DZ) (Z-8DZ)
C98 0.022μF
C5 3.3μF
R103 100Ω
R235 100Ω

+5V
C80 0.022μF
R102 1KΩ
LTN 16 6B 8
-5.2V
C79 0.022μF
D9 1S1588
RZ34 10Ω
RZ31 240Ω
RZ33 240Ω
RZ32 240Ω
-5.2VLP (J-3FZ)
-12V

10124 6A
(C-2E9) HAR6A-P 152
149 → HDSEL2 HDAA-N (Z-6EZ)
LTN 6 6B
10124 6A
(C-2E9) HAR7A-P 153
150 → HDSEL1 HDAA-N (Z-6EZ)
LTN 12 6B
10124 6A
(N-2E9) HAR6B-P 157
154 → HDSEL2 HDAB-N (Z-8EZ)
(J-3E9) -5.2VLP
C78 0.022μF
LTN 15 6B
TIE UP-P (4B1)
10124 6A
(N-2E9) HAR7B-P 158
155 → HDSEL1 HDAB-N (Z-8EZ)
HAR7A-P (J-4B1)
LTN 15 6B
HAR7B-P (J-4C1)
R35 100Ω 204 → CUR ADJ TP
CUR REF (J-4C1) (J-4H1)

-12V
D4 RD6.2
Q11 2SC1707
R70 390Ω
VR3 500Ω
R105 1KΩ
R95 910Ω
-12V

NP425 (RD DTCT)

J-3

P/N / REV	TITLE: NP37 DRV LOGIC DIA.	SHEET 5/	DRAWN
		REV 5	CHECK
			APPD
	DRAWING NO: NPL-NC-20425	Nippon Peripherals Limited	

NC-20425

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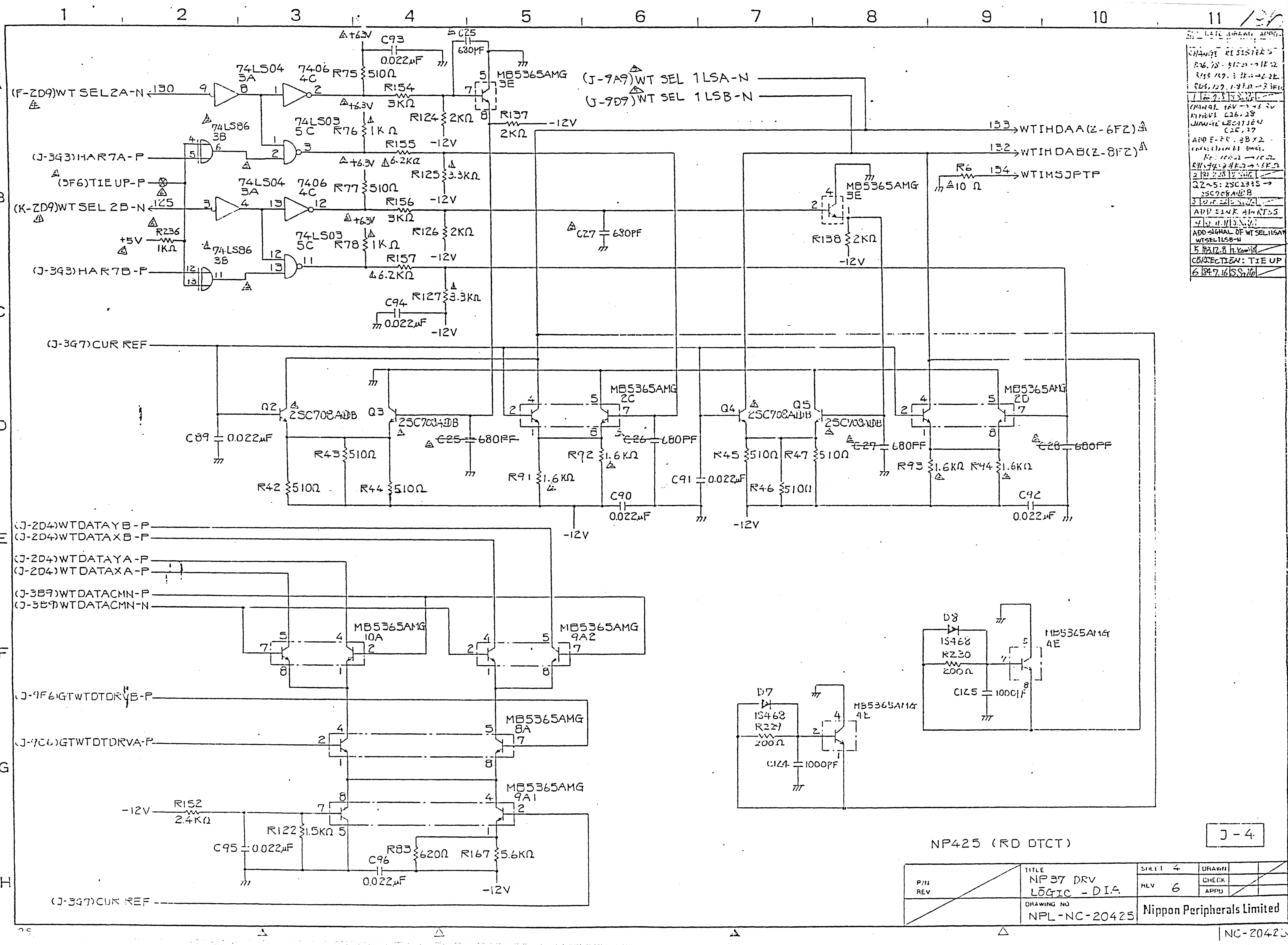
1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H
(F-ZD9)WT SEL2A-N
(J-3G3)HAR7A-P
(3F6)TIE UP-P
(K-ZD9)WT SEL 2B-N
(J-3G3)HAR7B-P
(J-3G7)CUR REF
(J-9A9)WT SEL 1LSA-N
(J-9D9)WT SEL 1LSB-N
WTIHDAA(Z-6FZ)
WTIHDAB(Z-8FZ)
WTIMSJPTP
74LS04 3A
7406 4C
74LS03 5C
74LS86 3B
MB5365AMG 3E
MB5365AMG 2C
MB5365AMG 2D
MB5365AMG 10A
MB5365AMG 9A2
MB5365AMG 8A
MB5365AMG 9A1
MB5365AMG 4E
2SC708AIDB
Q2 Q3 Q4 Q5
(J-2D4)WTDATAYB-P
(J-2D4)WTDATAXB-P
(J-2D4)WTDATAYA-P
(J-2D4)WTDATAXA-P
(J-3B9)WTDATACMN-P
(J-3B9)WTDATACMN-N
(J-9F6)GTWTDTDRVB-P
(J-9C6)GTWTDTDRVA-P
(J-3G7)CUR REF
D8 1S468 R230 200Ω C125 1000pF
D7 1S462 R227 200Ω C124 1000PF
R152 2.4KΩ
R122 1.5KΩ
R83 620Ω
R167 5.6KΩ
C95 0.022μF
C96 0.022μF
+5V R236 1KΩ
+6.3V
-12V
CHANGE RESISTERS
ADD SIGNAL OF WT SEL1LSA, WT SEL1LSB-N
CORRECTION: TIE UP
J-4
NP425 (RD DTCT)
TITLE NP37 DRV LOGIC - DIA
SHEET 4
REV 6
DRAWN
CHECK
APPD
DRAWING NO NPL-NC-20425
Nippon Peripherals Limited
NC-20425

DATE DRAWN APPD

(J-1G5)+5V SP
(J-1G5)+5VSP
R10 39Ω
C71 0.022μF
C73 0.022μF
R40 300Ω
R39 300Ω
MB5365AMG 11C
R34 100Ω
R33 100Ω
C81 -5.2V 0.022μF
C39 0.047μF
10116 10B
R135 2KΩ
R136 2KΩ
(J-1B10)AGC WAVE-P
C51 0.047μF
R32 100Ω
MB5365AMG 11D
C40 0.047μF
(J-1B10)AGC WAVE-N
C52 0.047μF
R31 100Ω
R101 1KΩ
R133 2KΩ
R100 1KΩ
R134 2KΩ
R90 820Ω
R41 150Ω
C15 62PF
R55 270Ω
(J-2C9) -4.5V
C75 0.022μF
MB5365AMG 12D
(J-1H5)-5.2VSP
C74 0.022μF
(J-1H5)-12VSP
R73 750Ω
R72 750Ω
C72 0.022μF
ΣERO CRS-P(J-6B2)
ΣERO CRS-N(J-6A2)
LTN
C82 -5.2V 0.022μF

(J-1B10)AGC WAVE-P
(J-1B10)AGC WAVE-N
R204 680Ω
R205 680Ω
10116 8B
C41 0.047μF
MB5365AMG 9E
C35 0.047μF
R186 100Ω
R187 100Ω
R211 1KΩ
R104 1KΩ
R139 2KΩ
R74 750Ω
R210 750Ω
C76 0.022μF
-12VSP (J-1H5)
C77 0.022μF
C83 -5.2V 0.022μF
D6 RD4.3EB1
R8 62Ω
R213 1KΩ
10116 6C
R206 680Ω
R207 680Ω
R212 1KΩ
MB5365AMG 10C
C36 0.047μF
R188 100Ω
R189 100Ω
C42 0.047μF
(J-1H5)-12VSP
R140 2KΩ
11 VBB
R158 510Ω
R159 510Ω
-5.2V
NPKGT-N (J-6B2)
NPKGT-P (J-6D2)
PPKGT-N (J-6A2)
PPKGT-P (J-6C2)
9B
6B

NP425 (RD DTCT)

J-5

P/N REV	TITLE NP37 DRV LOGIC -DIA.	SHEET 5	DRAWN
		REV 0	CHECK
			APPD
	DRAWING NO NPL-NC-20425	Nippon Peripherals Limited	

DATE	DRAWN	APPD
ADD SINK ADDRESS		
1	82.11.11	S.Sato

C111 0.022μF -5.2V

R64 360Ω -ZR CRS TP-N

(J-5C10) ZERO CRS-N
(J-5F10) PPKGT-N
(J-5C10) ZERO CRS-P
(J-5D10) NPKGT-N

10106 7B

R228 2.2KΩ -5.2V

C19 75PF R7 22Ω

11 VBB

10116 6C

10102 4B

C112 0.022μF -5.2V

10102 4B

128 RAW DATA-P (A-9DZ)Δ
127 RAW DATA-N (A-9DZ)Δ

10 6B LTN

R160 510Ω -5.2V

1 6B LTN

10131 5B

(J-5F10) PPKGT-P

R198 360Ω 114 PPKIHBGTTP-N

2 6B LTN

R196 360Ω

5 6B LTN

10131 5B

(J-5D10) NPKGT-P

R199 360Ω 104 NPKIHBGT TP-N

3 6B LTN

R197 360Ω 160 PPKGTTP-N 220 NPKGTTP-N

11 6B LTN

C113 0.022μF -5.2V

+5V R220 1KΩ

74LS145 1A

(C-ZE9) HAR5A-P 108
(C-ZE9) HAR4A-P 105
(C-ZC9) HAR3A-P 112
(C-ZC9) HAR2A-P 113
(F-ZB9) SET R/W SAFEA-N 107
(F-ZB9) SET R/WA-N 109

74LS504 3A
7406 2A
7406 2A
74LS05 4A

117 CHP SEL0 HDAA-N (Z-6BZ)Δ
118 CHP SEL1 HDAA-N (Z-6CZ)Δ
102 CHP SEL2 HDAA-N (Z-6CZ)Δ
125 CHP SEL3 HDATPA-NΔ

+5V R221 1KΩ

74LS145 5A

(N-ZE9) HAR5B-P 143
(N-ZE9) HAR4B-P 145
(N-ZC9) HAR3B-P 139
(N-ZC9) HAR2B-P 140
(K-ZB9) SET R/W SAFEB-N 148
(K-ZB9) SET R/W B-N 144

7406 3A
7406 2A
7406 2A
74LS05 4A

135 CHP SEL0 HDAB-N (Z-8BZ)Δ
138 CHP SEL1 HDAB-N (Z-8CZ)Δ
137 CHP SEL2 HDAB-N (Z-8CZ)Δ
129 CHP SEL3 HDATPB-NΔ

J-6

NP425 (RD DTCT)

P/N REV	TITLE NP37 DRV LOGIC -DIA.	SHEET 6/	DRAWN
		REV 1	CHECK
			APPD
	DRAWING NO NPL-NC-20425	Nippon Peripherals Limited	

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NO.	DATE	DRWN.	APPD
CHANGE: 6V → 6.3V			
1	12.11.14	S.Saito	
APP. SINK ADDRESS			
2	12.11.11	N.Saito	

+6.3V

R179 13Ω
R180 13Ω
R181 13Ω
R182 13Ω
R183 13Ω
R184 13Ω

R115 1.2KΩ
R116 1.2KΩ
R117 1.2KΩ
R118 1.2KΩ
R119 1.2KΩ
R120 1.2KΩ

C84 0.022μF
C23 680PF
C29 680PF
C30 680PF
C31 680PF
C32 680PF
C33 680PF

+12V
+5V

μPC177C 6E
μPC177C 6E
μPC177C 6E
μPC177C 7C
μPC177C 7C
μPC177C 7C

R141 2KΩ
R142 2KΩ
R224 2KΩ
R225 2KΩ
R226 2KΩ
R227 2KΩ

R190 180Ω
R191 180Ω
R192 180Ω
R193 180Ω

C85 0.022μF
C86 0.022μF
C99 0.022μF
C100 0.022μF
C101 0.022μF

R161 3.9KΩ
R162 3.9KΩ

74LS145 5E
74LS145 7E

A B C D
Y0 Y1 Y2 Y3 Y4 Y5 Y6 Y7 Y8 Y9

7406 4C

R214 1KΩ
R215 1KΩ
R216 1KΩ
R217 1KΩ
R218 1KΩ
R219 1KΩ

228 → 6.3VMRS 0 HDAA-P (Z-6EZ)
227 → 6.3VMRS 1 HDAA-P (Z-6DZ)
230 → 6.3VMRS 2 HDAA-P (Z-7EZ)
209 → NŌ FUNCA -N (F-5CZ)
163 → MLT FNC ERRA-P (F-5BZ)
218 → 6.3V MRS 0 HDAB-P (Z-8EZ)
210 → 6.3V MRS 1 HDAB-P (Z-8DZ)
223 → 6.3V MRS 2 HDAB-P (Z-9EZ)
224 → NŌ FUNCB-N (K-5CZ)
207 → MLT FNC ERRB-P (K-5BZ)

NP425 (RD DTCT)

J-7

P/N REV	TITLE	SHEET	DRAWN
	NP37 DRV LOGIC DIA.	REV 2	CHECK
	DRAWING NO NPL-NC-20425		APPD

Nippon Peripherals Limited

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REV. NO	DATE	DRAWN:	APPD
CHANGE OUTPUT PIN NO OF MRS SF HDA LINE 165 → 217 205 → 220 ADD SP GND ON PIN 219, 235, 243 239			
1	82.6.21	I.S.Saito	
CHANGE RESISTORS R108, 112: 1K2 → 1.5KΩ			
2	82.7.5	I.S.Saito	
CHANGE: +6V → +6.3V			
3	82.7.26	I.S.Saito	
REMOVE: C13, 21: 510PF ADD: R237, 238: 750Ω			
4	82.11.24	I.S.Saito	
ADD SINK ADDRESS			
5	82.11.11	I.S.Saito	

+6.3V — C103 0.022μF — R11 39Ω

219 → SP GND T HDA A (Z-7CZ)

235 → SP GND F HDA A (Z-7DZ)

217 → MRS SF HDA A-P (Z-7CZ)

R37 150Ω — R106 1KΩ — C102 0.022μF — +12V

μPC177C 9C

C20 510PF — R107 1KΩ — R148 2.2KΩ — C104 0.022μF

+5V — C105 0.022μF — R143 2KΩ

WT SEL I GT DA-N (J-9D6) → 74LS86 3B

115 → WRT OP OKA-N (F-5EZ)

162 → MRS SFVT PA-P

WMSVHDAA-N 213 (Z-6FZ)

μPC177C 9C

R238 750Ω — C21 510PF — R108 1.5KΩ

+5V — R144 2KΩ

215 → WMSVA-N (F-5DZ)

R109 1KΩ — C106 0.022μF — R79 510Ω — C107 0.022μF

243 → SP GND T HDA B (Z-9CZ)

239 → SP GND F HDA B (Z-9DZ)

220 → MRS SFHDA B-P (Z-9CZ)

R12 39Ω

R38 150Ω — R110 1KΩ — C12 510PF — R111 1KΩ — R149 2.2KΩ

μPC177C 9C

+5V — C109 0.022μF — R145 2KΩ

WT SEL I GT DB-N (J-9D6) → 74LS86 3B

103 → WRT OP OKB-N (K-5EZ)

208 → MRS SFVT PB-P

WMSVHDAB-N 214 (Z-8FZ)

μPC177C 9C

R237 750Ω — C13 510PF — R112 1.5KΩ — R113 1KΩ — R80 510Ω — C110 0.022μF

+5V — R146 2KΩ

225 → WMSVB-N (K-5DZ)

NP425 (RD DTCT)

J-8

P/N REV	TITLE NP37 DRV LOGIC DIA.	SHEET 8	DRAWN
		REV 5	CHECK
	DRAWING NO NPL-NC-20425		APPD

Nippon Peripherals Limited

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NO.	DATE	DRAWN	APP'D
REMOVE R4, 5 CHANGE R51, 52 FROM 82Ω TO 30Ω CHANGE VCC OF WT SEL 1 DLT SOURCE FROM +12V TO +5V			
1			
CHANGE: +6V → +6.3V			
2			
CHANGE Q6, 7: 2SC2068 ⓄB 2SC2335			
3			
ADD SINK RESISTOR			
4			
CHANGE R163, 164 3.9kΩ → 330Ω MOUNT R239, 240 1.2kΩ R241, 242 470Ω ADD SIGNAL WT SEL 1 LSA-N WT SEL 1 LSB-N			
5			

+6.3V

+5V

C53 0.022μF

-5.2V

R241 470Ω

R51 30Ω

R4 10Ω

R239 1.2kΩ

Q6 2SC2335

WT SEL 1 LSA-N (J-4A7)

253 → WTOPSSA-P(F-6H1)

R194 330Ω

R200 560Ω

R222 1.3KΩ

R163 330Ω

74LS04 3A

7406 2A

(F-2C9) WT SEL1 GTDA-N 124

R208 680Ω

Q8 2SA742Ⓗ

119 → WT SEL 1 DAA-P(Z-6BZ)

R201 750Ω

7406 4C

(F-6G9) WRTOPOKTFHA-N 254

R123 1.5KΩ

GTWTDT DRVA-P(J-4G1)

R84 620Ω

R128 1.8KΩ

-12V

WTSEL1 GTDA-N(J-8B7)

(K-2C9) WT SEL1 GTDB-N 147

WTSEL1 GTDB-N(J-8E7)

255 → WTOPSSB-P(K-6H1)

WT SEL 1 LSB-N (J-4A7)

+5V

-5.2V

R242 470Ω

R52 30Ω

R5 10Ω

Q7 2SC2335

R240 1.2kΩ

R195 330Ω

R202 560Ω

R223 1.3KΩ

R164 330Ω

(K-6G9) WRTOPOKTFHB-N 259

74LS04 3A

7406 2A

(Z-7BZ)TLO HDAA-P 165

R209 680Ω

Q9 2SA742Ⓗ

120 → WT SEL HDAB-P(Z-8BZ)

R203 750Ω

7406 4C

R153 1.5KΩ

GTWTDT DRVB-P(J-4F1)

R85 620Ω

R129 1.8KΩ

-12V

(Z-9BZ)TLO HDAB-P 205

NP425 (RD DTCT)

J-9

P/N REV	TITLE NP37 DRV LOGIC -DIA.	SHEET 9.9 REV 5	DRAWN CHECK APP'D
	DRAWING NO NPL-NC-20425	Nippon Peripherals Limited	

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REV NO.	DATE	DRAWN	APPD
SHEET 2 Rev 0→1 FUNCTION Rev F→G			
1	18.6.1		
SHEETS REV 0→1 FUNCTION REV G→H			
Z	18.7.10	S.Sato	A.Gomi

(K-3A9)PSR-N

(M-7A9)TR CRS PLSB-P ← 132
(L-2G10)ACS CHECKB-N ← 129

74LS10 3B
74LS08 4C
74LS32 4A
74LS32 4A
74LS32 4A
74LS02 4B

(A-1B9)TAG 3XB-N ← 135
(A-1C9)TAG X6-N ← 133
(A-1D9)TAG X2-N ← 138
(A-1B9)TAG 2XB-N ← 140
(L-1D9)ST BIT1/R3B-N ← 123

(K-2E9)BUS OUT BIT0-P
(K-2F9)BUS OUT BIT1-P
(K-2D9)BUS OUT BIT2-P
(K-2D9)BUS OUT BIT3-P

(L-7D10)IDXSTBB-P ← 118

(A-2H6)BUS OUT BIT7-N ← 114
(A-2G6)BUS OUT BIT6-N ← 109
(K-2C9)BUS OUT BIT5-P
(K-5F4)BUS OUT BIT4-P

+5V
R3 1kΩ
R1 1kΩ
R2 1kΩ
R4 1kΩ

74191 2A
74191 3A
74191 1A

CL, D0 MAX/MIN, A, G, B, C, D, LD, RC, QA, QB, QC, QD

74LS27 2C
74LS10 3B
74LS00 3C
74LS00 3C
74LS00 3C
74LS00 3C
74LS279 1C
74LS279 1C
74LS279 1C
74LS04 2B
74LS04 2B
74LS04 2B
74LS04 2B
74LS74 2D
74LS138 1B
74LS27 2C
7406 4D
7406 4D

74LS138: A, B, C, G1, G2, G3, Y0, Y1, Y2, Y3, Y4, Y5, Y6, Y7

74LS74: S, T, R, 0, 1

74LS279: S, R, Q

127 → EMD/PACTLB-N (A-7A2)
115 → DIF256B-P (M-9B2)
113 → DIF512B-P (M-9A2)
112 → DF OVR127B-P (N-3B2)(L-1D2)
134 → DIF 0B-N (M-8C2)
125 → DIRINB-P (M-9A2)
119 → DIF 16B-P (M-9B2)
124 → DIF 32B-P (M-9B2)
120 → DIF 64B-P (M-9A2)
117 → DIF 128B-P (M-9A2)
104 → DIF 1B-P (M-9C2)(L-1D2)
102 → DIF 2B-P (M-9C2)
105 → DIF 4B-P (M-9C2)
108 → DIF 8B-P (M-9C2)
128 → CALCNTPLS-N (A-8H2)

101, 167, 201, 267 → +5V
C2 3.3μF 35V
C5 3.3μF 35V
106, 111, 116, 126, 131, 136, 146, 151, 156, 166, 206 → 0V
211, 216, 226, 231, 236, 246, 251, 256, 266

NP414 (R/WCTRLB)

K - 1

P/N NP414	TITLE NP37 DRV LOGIC_DIA	SHEET 1/6	DRAWN 83.6.1
REV H		REV 2	CHECK 83.6.2
R/WCTRLB	DRAWING NO NPL-NC-23414		APPD 83.6.2

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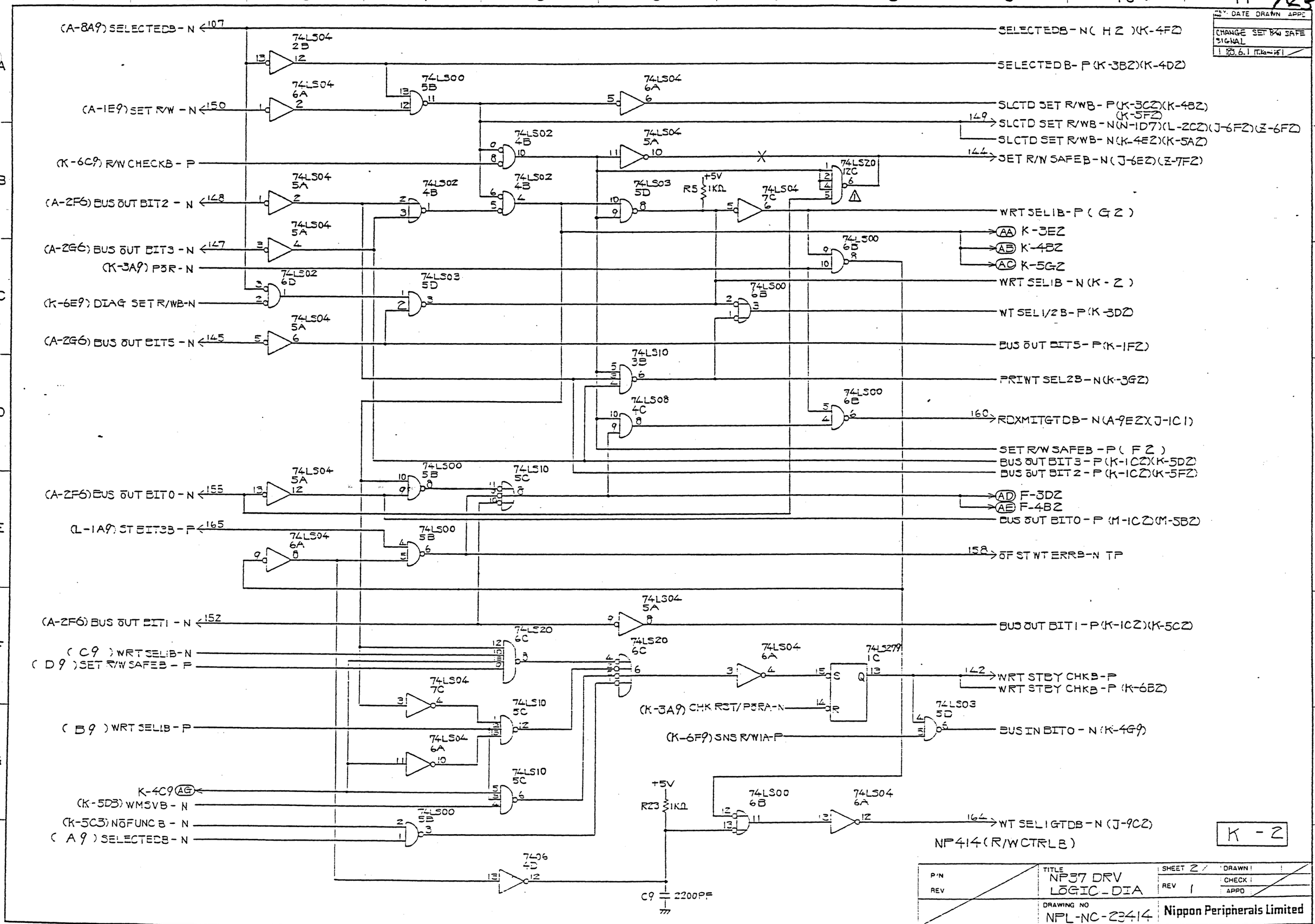

REV.	DATE	DRAWN	APPD
CHANGE SET R/W SAFE SIGNAL			
1	6.1		

P/N	TITLE NP37 DRV LOGIC-DIA	SHEET 2 /	DRAWN
REV		REV 1	CHECK
	DRAWING NO NPL-NC-23414		APPD

Nippon Peripherals Limited

K-2

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(A-6F9) PŌR-N ← 209 — 74LS04 7C (13→12) — 74LS04 7C (11→10) → PŌR-N (K-1AZ) (K-2CZ)

(A-1F9) CHECK RESET-P ← 268 — 74LS08 6E (5,4→6) — 74LS02 6D (5,6→4) → CHK RST/PŌRB-N (K-2F7) (K-5A6) (K-6EZ)

(K-2A9) SELECTEDB-P

(K-6F9) SNSR/WIB-P

(N-6D9) VLD IDxB-N ← 204 — 74LS04 7C (0→8) — 74LS03 9C (12,13→11) → 249 BUS IN BIT6-N (N-2D9) BUS IN BIT6-N (K-5E9)

(K-2A9) SLCTD SETR/WB-P — 74LS10 11C (3,5,1→6)

(N-6D9) IDXMRKB-P ← 137

74LS279 8B (6→S, 5→R, 7→Q) → 205 INDEX CHKB-P, INDEX CHKB-P (K-6BZ)

74LS03 8A (1,2→3) → BUS IN BIT3-N (K-6B9)

F-2E9 (AD) ← — 74LS00 7B (12,13→11)

(K-2C9) WTSEL1/2B-P

74LS279 8B (15→S, 14→R, 13→Q) → 150 CTRL CHKB-P, CTRL CHKB-P (K-6AZ)

74LS03 8A (12,13→11) → BUS IN BIT4-N (K-4D9)

F-4G9 (F) ← — 74LS00 7B (2,1→3)

74LS279 8B (2→S, 1→R, 4→Q) → 208 CAPABLCHKB-P, CAPABLCHKB-P (K-6AZ)

74LS03 8A (9,10→8) → BUS IN BIT1-N (K-4F9)

(L-2A10) R/W CPELB-N ← 162 — 74LS00 7B (9,10→8)

K-2B9 (AA) ← — 74LS74 7A (2→S, 1→T, 3→R, 5→1, 0→0)

(K-4F9) BUS IN BIT5-N — 74LS04 7C (1→2)

74LS74 7A (12→S, 11→T, 13→R, 9→1, 8→0) → 202 WRT ŌVR RUNB-P, WRT ŌVR RUNB-P (K-6BZ)

74LS03 8A (5,4→6) → 168 BUS IN BIT2-N (N-2B9)

(K-2D9) PRI WT SEL2B-N — 7406 4D (11→10) — R21 1.5KΩ +5V — 7406 4D (9→8) — R22 1KΩ +5V — 74LS32 4A (9,10→8) → 130 WT SEL2B-N (J-4A1)

C7 1800PF — C8 820PF

NP414 (R/WCTRLB)

K-3

P/N	TITLE NP37 DRV LOGIC-DIA	SHEET 3	DRAWN
REV		REV 0	CHECK
	DRAWING NO NPL-NC-23414		APPD

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(L-7B10) 625 KHZVFOB ← 213
K-2E9 (AE) ← 12
(K-2A9) SLCTD SET R/WB-P ← 13
K-2C9 (AB) ← 9
(K-6E9) DIAG SET R/WB-N ← 1
(k-6C9) R/W CHECKB - P ← 3
(A-1E9) SNSHDA SEQ-P ← 214
(L-5G8) AGC ACTIVEB-P ← 212
(K-2A9) SELECTEDB-P
(A-4G7) STATE7 - N ← 207
(A-2B9) GATEMACHST-N ← 220
(L-2C10) HDAATNLDB - N ← 235
(K-2B9) SLCTD SET R/WB-N
(E-7E2) FHIB-N ← 224
(K-2A9) SELECTEDB - N
(K-6E9) SNSR/W2B - P
(A-9G5) READ ONLYB - N ← 218

74LS08 4C
74LS02 6D
74LS00 8E
74LS04 8D
74191 7D
CL DO A G B C D LD RC MAX/MIN QA QB QC QD
74LS08 6E
74LS32 5E
74LS08 6E
74LS08 6E
74LS04 8D
(AF) K-5A2
(AG) K-2G2
74LS12 10E
74LS04 8C
74LS00 8E
74LS04 10E
74LS03 10A
233 → BUS IN BIT4 - N (N-2C9)
BUS IN BIT4-N (K-3D9) (F-6E9)
74LS04 8C
74LS00 10C
74LS00 8E
(A) K-6A2
74LS04 8C
74LS12 10E
239 → BUS IN BIT5 - N(N-2D9)
BUS IN BIT5-N(K-3F2)(F-5B9)
+5V
R10 1KΩ
74LS02 6D
74LS03 10A
234 → BUS IN BIT1 - N(N-2B9)
BUS IN BIT1 - N(K-3E9)
+5V
R6 200Ω
R7 15Ω
74LS04 8C
74LS08 10D
74LS03 10A
240 → BUS IN BIT0 - N(N-2A9)
BUS IN BIT0 - N(K-2G9)
74LS00 10C
74LS279 8B
S Q R
(B) K-3E2
74LS00 10C
C1 .022μF

NP414 (R/W CTRLB)

K - 4

P/N / REV	TITLE: NP37 DRV LOGIC - DIA	SHEET 4	DRAWN
		REV 0	CHECK
	DRAWING NO: NPL-NC-23414		APPD

Nippon Peripherals Limited

NC 23414

REV	DATE	DRAWN	APPD
	ADD GATE DELAY		
1	84.7.10	S.Saito	

(F-6F9)SNSR/W1A-P
(F-6E9)SNSR/W2A-P
(F-3B9)CHK RST/PORA-N

K-4C9 (AP)
(K-2B9)SLCTD SET R/WB-N
(K-6E9)DIAG SET R/WB-N
74LS00 10C
74LS08 10D
74LS04 8C
→ (C) K-6D2

(J-7B9)MLTFNC ERRB-P ←225
74LS03 9A R14 1KΩ
74LS04 8C
74LS08 9D
74LS10 11D
74LS279 11B
242 → SEL ERRB-P
SEL ERRB-P (K-6B2)
74LS03 11A
BUS IN BIT5-N (K-4F9)

(K-2E9) BUS OUT BIT0-P
74LS03 9A

(J-7B9) NO FUNCB-N ←222
NO FUNCA-N (F-2H2)
74LS03 9A R16 1KΩ
74LS04 8D
74LS08 9D
74LS10 11D
74LS279 11B
243 → NO SEL ERRB-P
NO SEL ERRB-P (K-6B2)
74LS03 11A

(K-2F9) BUS OUT BIT1-P
74LS03 9A
74LS10 11C

(J-8C6) WMSVB-N ←217
R8 1KΩ
WMSVA-N (F-2G2)
74LS03 9B R12 1KΩ
74LS04 8D
74LS08 9D
→ (D) K-6C2

(K-2D9) BUS OUT BIT3-P
74LS03 9B
74LS20 12D
74LS279 12B
237 → HDA WRT CHKB-P
HDA WRT CHKB-P (K-6C2)
74LS03 10A
BUS IN BIT6-N (K-3B9)

(J-8B9) WRT OP OKB-N ←215
R9 1KΩ
74LS03 9B R11 1KΩ
74LS04 8D
74LS08 9D
→ (E) K-6D2

(A-2G5) BUS OUT BIT4-N ←238
74LS04 10B
74LS03 9B
74LS20 12D
74LS279 11B
253 → HDARD CHKB-P
HDARD CHKB-P (K-6C2)
74LS03 11A

(K-2A9) SLCTD SET R/WB-P
74LS03 9C R15 1KΩ

(K-2D9) BUS OUT BIT2-P
74LS03 9C
74LS04 8D
74LS10 11C
74LS279 11B
247 → DECOD CHKB-P
DECOD CHKB-P (K-6C2)
74LS03 11A
262 → BUS IN BIT7-N

BUS OUT BIT4-P (F-1F2)

K-2C9 (AC)
7406 4D
R20 3KΩ
C6 0.01μF
74LS27 2C
74LS04 2B
74LS08 4C
74LS20 12C
74LS279 12B
254 → TRASICHKB-P
TRASICHKB-P (K-6C2)
74LS03 12A
74LS02 13A

NP414 (R/W CTRLB)

K-5

P'N / REV	TITLE: NP37 DRV LOGIC-DIA	SHEET 5/ REV 1	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-23414	Nippon Peripherals Limited	

NC 23414

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K-4E9 ⓐ

(K-3D9) CTRL CHKB-P
(K-3E9) CAPABL CHKB-P
74LS33 13C

(K-3F9) WRT OVR RUNB-P
(K-2F9) WRT STBY CHKB-P
74LS33 13C

+5V
R17 1KΩ
+5V
R18 1KΩ

DISABLER/NCHKB-N ← 265
(K-3C9) INDEX CHKB-P

(K-5B9) SEL ERRB-P
(K-5C9) NO SEL ERRB-P
74LS33 13B
R13 1KΩ +5V

(K-5D9) HDA WRT CHKB-P
(K-5E9) HDA RD CHKB-P
74LS33 13B

(K-5F9) DECOD CHKB-P
(K-5G9) TRASI CHKB-P
74LS33 13B
74LS04 10B
74LS08 10D

74LS33 13B
74LS04 10B
74LS08 10D
74LS08 10D
74LS03 12A

244 → BUS IN BIT3-N (N-2C9)
BUS IN BIT3-N (K-3C9)
245 → R/W CHKB-P
R/W CHECKB-P (K-2B2) (K-4C2)

K-5D9 ⓒ
74LS10 13D
74LS279 12B
252 → WT SELVFYB-P
74LS03 12A

K-5A9 ⓒ
K-5E9 ⓔ
74LS10 13D
74LS279 12B
248 → WT OP OKB-P
74LS03 12A

(K-3B9) CHK RST/PSRB-N
BUS IN BIT4-N (K-4D9)

(A-1D9) TAGX0-N ← 260
(A-1B9) TAG1XB-N ← 257
74LS02 13A
74LS04 10B
250 → SNSR/W2B-N (N-1D7)
SNS R/W2B-P (K-4F2) (K-5A6)

(A-1D9) TAGX3-N ← 264
(A-1B9) TAG0XB-N ← 255
74LS02 13A
74LS04 10B
DIAG SET R/WB-N (K-2C2) (K-4B2) (K-5A2)

(A-1C9) TAGX7-N ← 258
74LS02 13A
SNS R/W1B-P (K-2G7) (K-3B2) (K-5A6)

+5V
R19 1KΩ
74LS161 3D
(J-9B6) WTOPSSB-P ← 143
(J-9A6) RVSWTDTB-P ← 122
74LS00 7B
153 → WRTOPDKTFHB-N (J-9C1)

NP414 (R/W CTRL B)

K-6

P/N	TITLE NP37 DRV LOGIC-DIA	SHEET 6/6 DRAWN
REV		REV 0 CHECK APPD
	DRAWING NO NPL-NC-23414	Nippon Peripherals Limited

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NC-23414

(L-2510)RSETSEQB-N
(L-3B10)BUFVFOB-P
(M-4G9)ENDDCLB-N 155
(M-3B9)ONTRB-N 104
(L-2F10)STTIMOUTB-N
(E 9)BUSYB-P
(L-2B10)ENBLSEQB-P
74LS04 2D
74LS00 3D
74LS175 4B REG
1D 2D 3D 4D CK CLR
1Q 2Q 3Q 4Q
+5V R1 1KΩ
74LS00 1B
END DCLB-N(L-3F2)
(D-8C9)VELSETLB-N 119
(D 9)STBIT1/RESB-N
(L-2C10)MANLRERSB-N
(M-4C9)ENDACELB-P 137
(L-2E2)GBLATB-P
(L-2E10)R/WB-P
(L-2D2)GB2/IDB-P
(K-1G9)DIF1B-P 149
(A-4C9)GOHOME-N 148
(K-1B9)DFOVR127B-P 150
(L-3B10)BUFVFOB-N
74LS298 4A
WS A1 A2 B1 B2 C1 C2 D1 D2 CK
QA QB QC QD
ENDACELB-P (L-3G2)
+5V
MB14367 5A
28Pin DIP
NC
(L-3B10)SEQPLSB-P
(A-1A9)TAG BUS BIT1-N 159
(A-1A9)TAG BUS BIT2-N 159
(A-1A9)TAG BUS BIT3-N 163
(A 9)STBIT4B-P
(B 9)STBIT3B-P
(C 9)STBIT2B-P
(D 9)STBIT1B-P
TAG BUS BIT1-N(L-3E1)
TAG BUS BIT2-N(L-3E1)
TAG BUS BIT3-N(L-3E1)
+5V R2 1KΩ
+5V R3 1KΩ
74LS112 7B
74LS112 7B
74LS112 6B
74LS112 6B
74LS112 6A
74LS112 6A
74LS112 6A
74LS574 7A
74LS574 7A
J S Q C K R Q̄
D T
154 STBIT4B-P (M-9E2)
STBIT4B-P
(E2)(L-2D2)(L-3F2)
214 STBIT3B-P(K-2E2)(M-9F2)
STBIT3B-P
(E 2)(L-2D2)(L-3F2)
155 STBIT2B-P (M-4B2)(M-9F2)
STBIT2B-P
(F2)(L-3F1)
STBIT1B-P(F2)(L-2C2)
(L-2D2)(L-3F2)
203 STBIT1/RESB-N
(K-1D2)(M-9G2)(N-2C2)
STBIT1/RESB-N(C2)
BUSYB-N(L-3H2)
165 BUSYB-P
BUSYB-P(B2)(L-2C2)
207 EVNTRB-P
EVNTRB-P(L-3F2)(L-7G1)
209 TFTIMTPB-P
TFTIMB-P(L-2F2)
218 LDACSTIMB-N(N-2G2)
LDACSTIMB-N(L-2C2)

注. 指定なき抵抗にすべて¼Wとする。

L-1

NP463 (SRV POSB)

NP 463	TITLE NP37 DRV LOGIC_DIA.	SHEET 1/7	DRAWN
P/N REV B		REV 2	CHECK APPD
SRV POS B	DRAWING NO NPL-NC-21463	Nippon Peripherals Limited	

NC-21463

151

(G10)ACSCHEKB-N
(A-5A9)DVOFFSVRB-N 153
(N-5D5)HDAREQB-N 152

+5V R17 200Ω R15 15Ω C41 0.022μF
(A-9G5)REQNB-N 168
+5V R18 200Ω R16 15Ω C42 0.022μF
(A-9G5)REQFFB-N 160

74LS279 4C
74LS74 4D
74LS00 3D
74LS08 3C
74LS08 3C

138 → ENBLSEQB-P (A-7C2)(M-7A2)
ENBLSEQB-P (E2)(L-1B2)(L-3G2)
RSETSEQB-N (L-1A2)

+5V R4 1KΩ
74LS74 4D
74LS00 3D
74LS279 4C
74LS04 2D
74LS10 2C

110 → ACSCMPB-N (N-1F7)

(L-3B10)BUFVFOB-P
(N-1D8)SETR/WB-N 164

74LS10 2C
74LS04 2D
74LS05 1A

152 → ATN/HDAATNB-N (A-8G2)(N-1F10)
108 → HDAATNLDB-N (K-4E2)

74LS32 1C
(L-1D9)STBIT1B-P
(L-1E9)BUSYB-P

MANLREQB-N (L-1C1)

74LS00 3D
(L-1G9)LDACSTIMB-N
(G10)ACSCHEKB-N

128 → MTNCMPLTB-P (A-4C2)
MTNCMPLTB-P (L-3H2)

74LS27 2E
74LS04 2D
74LS279 1E
(L-3A10)BUFSELB-N
(E10)R/WB-P

105 → SRVOFFTRTPB-P
SRVOFFTRB-P (L-3D2)

74LS10 4E
(L-1A9)STBIT4B-P
(L-1B9)STBIT3B-P
(L-1D9)STBIT1B-P

74LS02 3F
74LS32 1C
74LS00 3E
74LS00 3E
74LS279 1E

(N-6C9)GBLATB-P 134
(N-6B9)GB2/IDB-P 139
GB2/IDB-P (L-1D2)(L-3D2)
GBLATB-P (L-1D2)(L-3D2)

115 → INVDLCTPB-P
INVDLCB-P (L-3E2)

+5V R6 1KΩ
74191 2G CNT
+5V R5 1KΩ
7423 1F

(M-4F9)VELOVRB-P 145
(B10)ENBLSEQB-P

R/WB-P (D2)(L-1D2)

(N-2F9)ACSTOUTB-P 114
ACSTMOUTB-P (L-3D2)

74LS74 3B
74LS08 3C

(L-1G9)TFTIMB-P

74LS00 1G
(L-3C10)STTMRCLKB-P

STTIMOUTB-N (L-1B2)

74LS74 3B
74LS10 2C
74LS00 1G

(M-5G9)OVRSTPLSB-P 144

103 → R/WCPBLB-N (K-3E2)(N-5C2)
153 → ACSCHEKB-N (K-1A2)(N-1F7)
ACSCHEKB-N (A2)(C2 XL-3G2)

74LS08 3C
157 → OVRSTCKTPB-P
OVRSTCHKB-P (L-3D2)

(M-6D9)FINEPOSB-P 127
FINEPOSB-P (L-3F2)

+5V R127 6.8KΩ C110 0.1μF
74LS221 3G
74LS32 2F

(D-8F9)TURNARNDB-P 102

L-2

NP463 (SRV POS B)

P/N REV	TITLE NP37 DRV LOGIC-DIA.	SHEET 2/ REV 1	DRAWN CHECK APPD
	DRAWING NO NPL-NC-21463	Nippon Peripherals Limited	

NC-21463

REVI NO. | DATE | DRAWN | APPD

(A-8B9)SELECTEDB-N ← 268
(A-2A9)SRVSTRŌBE-N ← 210
(A-1A9)TAGBUSBIT4-N ← 147
(L-1F3)TAGBUSBIT3-N
(L-1F3)TAGBUSBIT2-N
(L-7B10) 625KHZVFŌB
TRTIMTP-N ← 205
(L-2E2)ACSTMŌUTB-P
(L-2E2)GBLATB-P
(L-2G10)ŌVRSTCHKB-P
(L-2D2)GBBZ/IDB-P
(L-2D10)SRVŌFFTRB-P
(M-7A9)TRCRSLATB-P ← 130
(L-2E10)INVDLCB-P
(M-7B9)VELPLLATB-P ← 112
(L-1F3)TAGBUSBIT1-N
(L-1A9)STBIT4B-P
(L-1F9)EVNTRB-P
(L-1B9)STBIT3B-P
(L-2G2)FINEPŌSB-P
(L-1C9)STBIT2B-P
(L-1D9)STBIT1B-P
(L-1C3)ENDDCLB-N
(L-1D3)ENDACELB-P
(L-2B10)ENBLSEQB-P
(L-2G10)ACSCHEKB-N
(A10)BUFSELB-N
(A-2B9)GATEMACHST-N ← 107
(L-1E9)BUSYB-N
(L-2C10)MTNCMPLTB-P

74LS04 4G
74LS27 2E
74LS10 4E
74LS74 4F
74LS00 3E
74LS02 3F
74LS293 5C
74191 6C
74LS157 2B
74LS157 2A
74LS375 3A
74LS32 1C
74LS05 1B
74LS27 1D
+5V
R13 1KΩ
R12 1KΩ
R14 1KΩ

BUFSELB-N (G2)(L-2D2)
SELECTEDB-P (L-7A1)
129 → SNSSVSTCMTPB-P
SEQPLSB-P(L-1E2)
BUFVFOB-N (L-1A2)(L-1F1)
BUFVFOB-P (L-1D2)(L-2B2)
125 → STTMRCLTPB-P
STTMRCLKB-P (L-2F6)
113 → BUSINBIT0-N (C-2B9)
123 → BUSINBIT1-N (C-2B9)
117 → BUSINBIT2-N (C-2B9)
124 → BUSINBIT3-N (C-2C9)
140 → BUSINBIT4-N (C-2C9)
120 → BUSINBIT5-N (C-2D9)
109 → BUSINBIT6-N (C-2D9)
118 → BUSINBIT7-N (C-2E9)

L-3

NP463 (SRV PŌSB)

P/N REV	TITLE NP37 DRV LŌGIC_DIA.	SHEET 3/	DRAWN
		REV 0	CHECK
			APPD
	DRAWING NO NPL-NC-21463	Nippon Peripherals Limited	

INC-21463

REV NO | DATE | DRAWN | APPD

-8.3V
R147 5.1KΩ
VR1
R19 130Ω
200Ω
(L-6F6) +5V
OFFSET B-N (E7)
C46 0.022μF
(L-6H6) -12V
R96 1.3KΩ
C79 0.022μF
R75 620Ω
R103 3.3KΩ
(L-6F6) +12V
C47 0.022μF
R21 1KΩ
MB5365AMG 9D-2
R29 100Ω
R123 255 360Ω → CARRIERTPB-F
MB5365AMG 9D-1
R105 2.7KΩ
CARRIER1B-P (E1)(G1)
R72 910Ω
R28 100Ω
C81 0.1μF
C48 0.022μF
R73 910Ω
R106 2.7KΩ
(L-6H6) -12V
R63 264 360Ω → CARRIERTPB-N
MB5365AMG 9D-2
CARRIER1B-N (E1)(F1)
R32 100Ω
R53 1KΩ
C113 10PF
R142 10KΩ
R143 20KΩ
243 → AGCLOOPB-P
245 → AGCLOOPB-F
R148 110Ω → V AGC B-P (E4)
(B5) REF B-P
R146 20KΩ
μPC258C 8B
(A4) OFFSET B-N
R144 20KΩ
R145 20KΩ
C114 10PF
AGC CNT RLB (L-5G1)
C2 30PF
C49 0.022μF
μPC251C 10E
C1 30PF
R94 5.1KΩ
C50 0.022μF
(L-6H6) -12V
R92 5.1KΩ
R101 5.1KΩ
R102 5.1KΩ

(D11) V AGC B-P
MB4303 9B
SRVSIGHDAB-P 250 (Σ-9G2)
L2 4.7μH
C21 0.1μF
R37 100Ω
R26 100Ω
C28 0.01μF
R27 100Ω
R22 100Ω R25 100Ω
C12 91PF C13 91PF
R74 22Ω
C80 120PF
R104 3.3KΩ
REF B-P (D9)
R23 100Ω R24 100Ω
SRVSIGHDAB-N 254 (Σ-9G2)
L1 4.7μH
C22 0.1μF
R38 100Ω
R31 100Ω
C29 0.01μF
R30 100Ω
C45 0.022μF
(L-6H6) -5.2V
R65 36Ω
R111 3.6KΩ
CARRIER2B-F (L-5B1)(L-6B1)
R112 3.6KΩ
CARRIER2B-N(L-5B1XL-6B1)
C56 0.022μF
R76 620Ω
(L-6F6) +5V
C26 0.1μF
R77 620Ω
MC1496P 8E
R61 390Ω
R62 390Ω
+12V (L-6F6)
R71 10Ω
C52 0.022μF
μPC251C 9E
(B10) CARRIER1B-P
C19 0.1μF
R33 100Ω
(L-7C10) F6 B-P
(L-7C10) F6 B-N
CARRIER1B-N (C10)
C20 0.1μF
R34 100Ω
C27 0.33μF
C51 0.022μF
μPC251C 9E
(M-1E9) M8/3VB 247
C34 3.3μF
C44 0.022μF
C43 0.022μF
(L-6H6) -12V
R70 10Ω
C53 0.022μF +12V
MB4002M 10B
(C10) CARRIER1B-N
C39 0.047μF
R35 100Ω
R89 2KΩ
C54 0.022μF
74LS00 10A
74LS00 10A
265 → IDX CMP B-N (N-6D2)
(B10) CARRIER1B-P
C40 0.047μF
R36 100Ω
R90 2KΩ
R125 680Ω (L-5G8) AGC ACTIVE B-P
-5.2V
-5.2V
+5V
R55 62Ω
R56 510Ω
C55 0.022μF

L-4

NP463 (SRV POSB)

P/N REV	TITLE NP37 DRV LOGIC DIA.	SHEET 4/ REV 0	DRAWN / CHECK / APPD
	DRAWING NO NPL-NC-21463	Nippon Peripherals Limited	

NC-21463

REV. NO.	DATE	DRAWN	APPD
CORRECTION R69 : 100Ω → 10Ω			
1	83.5.27	T.K	

(L-4C4)CARRIER2B-P
(L-7F10)F3B-N
(L-7E10)F3B-P
(L-4D4)CARRIER2B-N
R39 100Ω
R40 100Ω
MC1496P 8D
C23 0.1μF
R78 300Ω
C57 0.022μF
C58 0.022μF
-8.3V
-12V
+12V
C59 0.022μF
R115 1.1KΩ
R116 1.1KΩ
R118 30KΩ
VR31 10KΩ
C3 1000PF
C4 1000PF
R68 10Ω
μPC258C 8C
C68 0.022μF
C67 0.022μF
R69 10Ω ⚠1
R114 6.2KΩ
R91 20KΩ
C15 47PF
C66 0.022μF
μPC258C 8B
C65 0.022μF
C16 47PF
R93 20KΩ
R113 6.2KΩ
RAW POSB-P (E1)
232 → DMOPOSTP5-P
C10 1600PF
239 → POSITIONBTP-N
R117 4.3KΩ
C17 30PF
μPC258C 8A-2
C18 30PF
R66 10KΩ
C60 0.022μF
μPC258C 8A-2
C61 0.022μF
R109 5.1KΩ
(B10)RAWPOSB-P
R99 5.1KΩ
R100 5.1KΩ
C11 510PF
R87 10KΩ
235 → POSITIONB-P(M-1B2)
OSCINTPB ← 237
R88 10KΩ
R81 51Ω
R64 360Ω
230 → AGCCTRLTPB
C62 0.022μF
μPC271C 8A-1
+5V
R122 2KΩ
(L-4E10)AGCCNTRLB
R98 5.1KΩ
R80 560Ω
R79 20Ω
C64 0.022μF
C63 0.022μF
238 → AGCACTIVEB-P (L-4G6)(A-5E2)(K-4E2)

L-5

NP463 (SRV POS B)

P/N REV	TITLE NP37 DRV LOGIC_DIA.	SHEET 5/	DRAWN
		REV 1	CHECK
			APPD
	DRAWING NO NPL-NC-21463	Nippon Peripherals Limited	

REVISIONS | DATE | DRAWN | APPD

(L-4C4)CARRIER2B-N
(L-7B10)F2B-P
(L-7C10)F2B-N
(L-4D4)CARRIER2B-P
R41 100Ω
R42 100Ω
C24 0.1μF
R121 1KΩ
MC1496P 8F
C7 1000PF
C5 1000PF
R60 390Ω
C6 1000PF
C76 0.022μF
C75 0.022μF
-8.3V
-12V
R67 10Ω
μPC251C 9F
C73 0.022μF
+12V
μPC251C 9F
C74 0.022μF
-12V
R66 10Ω
R83 10KΩ
R84 10KΩ
R85 10KΩ
R82 10KΩ
C8 200PF
C9 200PF
C69 0.022μF
+12V
μPC251C 10F
C70 0.022μF
-12V
R127 16KΩ
R45 100Ω
257 → VCOCTLTPB
C109 0.1μF
μPC251C 10F
R128 3.9KΩ
R126 8.2KΩ
259 → VCOTSTIB-P

(L-7F10)F4B-N
(L-7E10)F4B-P
C25 0.1μF
R95 1KΩ
MC1496P 8G
R43 100Ω
R44 100Ω
C77 0.022μF
C78 0.022μF
-8.3V
-12V
+5V
R58 390Ω
R59 390Ω
C72 0.022μF
R97 1.5KΩ
HD103107 8H
R20 1KΩ
C14 75PF
VR2 1KΩ
R124 1KΩ
C38 3.3μF
C71 0.022μF
-5.2V
VCOB-P (L-7B1)

+12V
C115 0.022μF
R134 750Ω
R138 4.3KΩ
R130 100Ω
+5V
μPC2771C 9H
R140 10KΩ
R132 510Ω
Q1 2SA744
R136 1KΩ
C116 0.022μF
-12V
+12V
R110 250 → VCO TST 2B-P
C111 3.3μF 51KΩ
C117 0.022μF
C112 3.3μF
R137 1KΩ
R133 510Ω
Q2 2SC1394
μPC2771C 10H
R141 10KΩ
R139 4.3KΩ
-5.2V
R135 750Ω
R131 100Ω
C118 0.022μF
-5.2V
-12V

121 221 +12V → +12V (L-4A7)(L-4D6)
101 167 201 267 +5V → +5V (L-4A4)(L-4D5)
C30 3.3μF 35V
C33 3.3μF 35V
C93 0.022μF 50V
C105 0.022μF 50V
C35 3.3μF 35V
C36 3.3μF 35V
106 111 116 126 131 136 146 151 0V
156 166 206 211 216 226
231 236 246 251 256 266
C37 3.3μF 35V
C108 3.3μF 35V
C82 0.022μF 50V
C92 0.022μF 50V
C106 0.022μF 50V
C107 0.022μF 50V
161 261 -5.2V → -5.2V (L-4C2)
141 241 -12V → -12V (L-4A5)(L-4C7)(L-4E5)(L-4F3)(L-4F8)

NP463 (SRV POS B)

P/N REV	TITLE NP37 DRV LOGIC DIA.	SHEET 6/ REV 0	DRAWN CHECK APPD
	DRAWING NO NPL-NC-21463	Nippon Peripherals Limited	

L-6

NC-21463

REV! NO.	DATE	DRAWN	APPD

(L-3A10)SELECTED5-P
G4 (A)
+5V
R149 1KΩ
143
RESERVED5-N
74LS04 2D
74LS32 2F
R11 1KΩ
-5.2V
10124 7F
10104 6D
217 → F1A/B-P (E-7A5)
204 → F1A/B-N (E-7A5)
(L-6D10) VCO5-P
10131 5E
10135 5D
LTN 6E
10109 7E
10109 7D
10104 6G
10135 5G
10109 6F
10105 7G
10104 6D
R7 1KΩ
-5.2V
10125 7C
202 → F1TTL5-P
228 → F23/75B-P (N-5A2)
R46 150Ω
224 → F1TP5-P
219 → 625KHZVFO5 (K-4A2)(N-6B2)
625KHZVFO5 (L-3B1)
R48 150Ω
215 → F2TP5-P
F25-P (L-6B2)
F25-N (L-6B2)
R47 150Ω
208 → F6TP5-P
F65-P (L-4E2)
F65-N (L-4E2)
R8 1KΩ
-5.2V
213 → IDXST55-P (K-1E2)(N-5F2)
R49 150Ω
225 → F4TP5-P
F45-P (L-6D1)
R50 150Ω
227 → VCOTP5-P
R51 150Ω
258 → F3TP5-P
F35-P (L-5B2)
F35-N (L-5B2)
F45-N (L-6E1)
6E.5F
-5.2V
(L-1F9) EVN TRB-P
+5V
R52 1KΩ
(A) A2
R9 1KΩ
R10 1KΩ
-5.2V

L-7

NP463 (SRV POS 5)

P/N REV	TITLE NP37 DRV LOGIC DIA.	SHEET 7/7 REV 0	DRAWN CHECK APPD
	DRAWING NO NPL-NC-21463	Nippon Peripherals Limited	

NC-21463

REV NO	DATE	DRAWN	APPD
SHEET 6 Rev 0→1			
FUNCTION Rev F→G			
1	5-2-86		

(M-7D9) VEL FILTR B -N

(M-7C9) INV B -N

C12 820PF R45 2.4KΩ

C20 0.022μF +12V

μPC258C 1H

(L-5E8) POSITION B -P ← 109 C15 3300PF R28 1KΩ

R46 2KΩ C21 0.022μF -12V

POSITION B (M-2F2) (M-5E2) (M-6C2)

C85 30PF R111 10KΩ μPC258C 1H

R110 10KΩ R70 5.1KΩ

R59 1KΩ R60 1KΩ

+12V R6 200Ω C22 0.022μF

DG201 1G

R5 200Ω R9 200Ω C23 0.022μF -12V

(M-7B9) NON INV B -N

(M-2D9) CURRENT B

R54 1KΩ VR1 2KΩ

VR2 20KΩ R153 15KΩ

DG201 1G R98 5.6KΩ C80 0.047μF

C24 0.022μF +12V μPC251C 2H

R61 2.7KΩ C25 0.022μF -12V

VEL OUT B (M-4C2)(M-4E2) (M-10D2)

VR3 2KΩ R113 12KΩ R4 100Ω Q7 2SC708

C26 0.022μF +12V μPC251C 9F

R112 10KΩ R24 680Ω C28 0.022μF D1 RD7.5EB R99 5.6KΩ C27 0.022μF -12V

C29 0.022μF +8.3V R207 1.6KΩ C100 3.3μF R71 5.1KΩ

R114 10KΩ R115 10KΩ μPC251C 9F

R2 100Ω Q1 2SA742(B)

R29 1KΩ R30 1KΩ C3 3.3μF C30 0.022μF

R3 100Ω -12V

213 → M8/3V B (L-4F2)(E-9F2)

214 → M8/3V B

121 221 +12V → +12V

C98 3.3μF -35V

101 167 201 267 +5V → +5V

C1 3.3μF -35V C2 3.3μF -35V C133 0.022μF 50V ~ C135 0.022μF 50V

106 OV

111 116 126 131 136 146 151

156 166 206 211 216 226 231

236 246 251 256 266

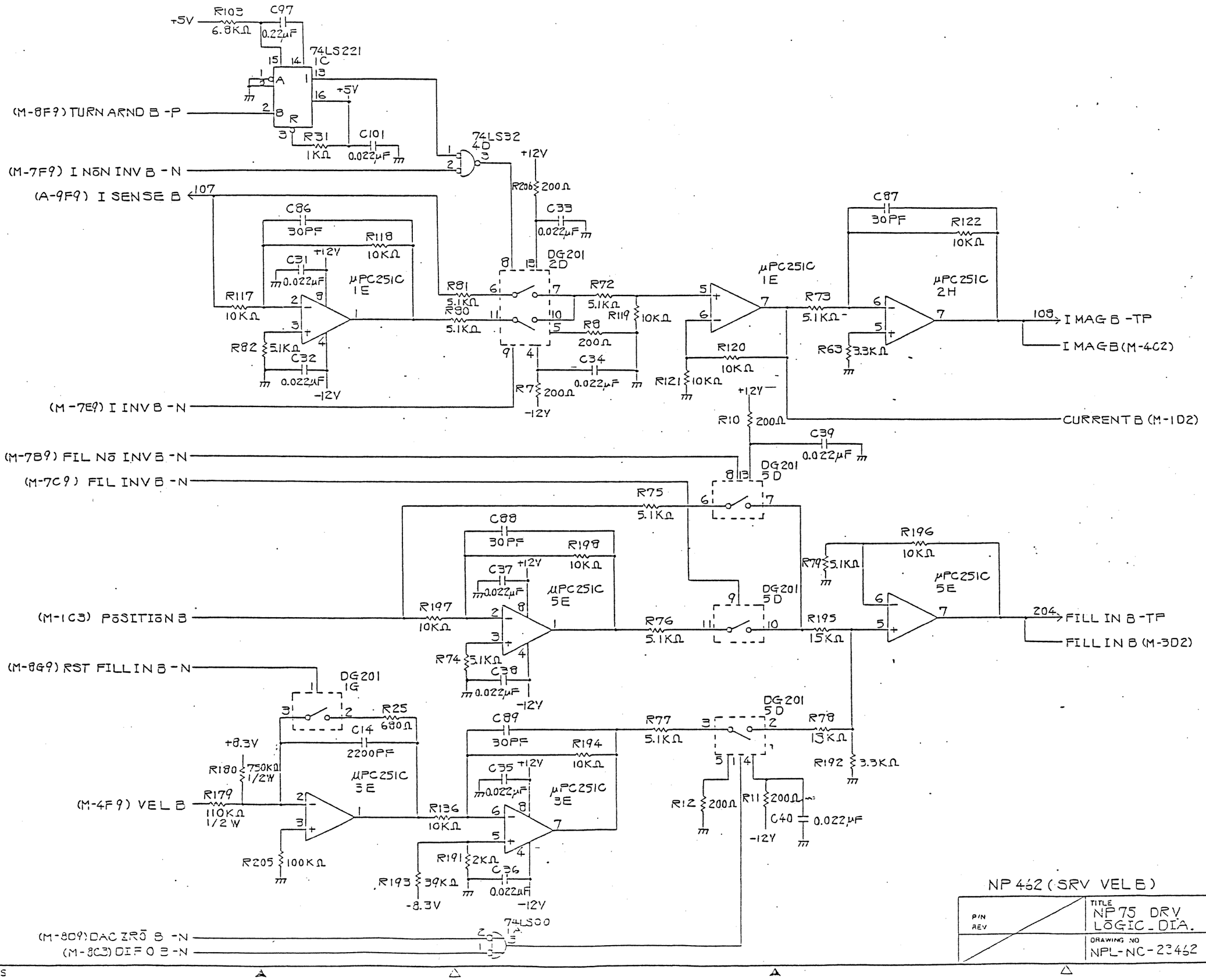
C99 3.3μF -35V

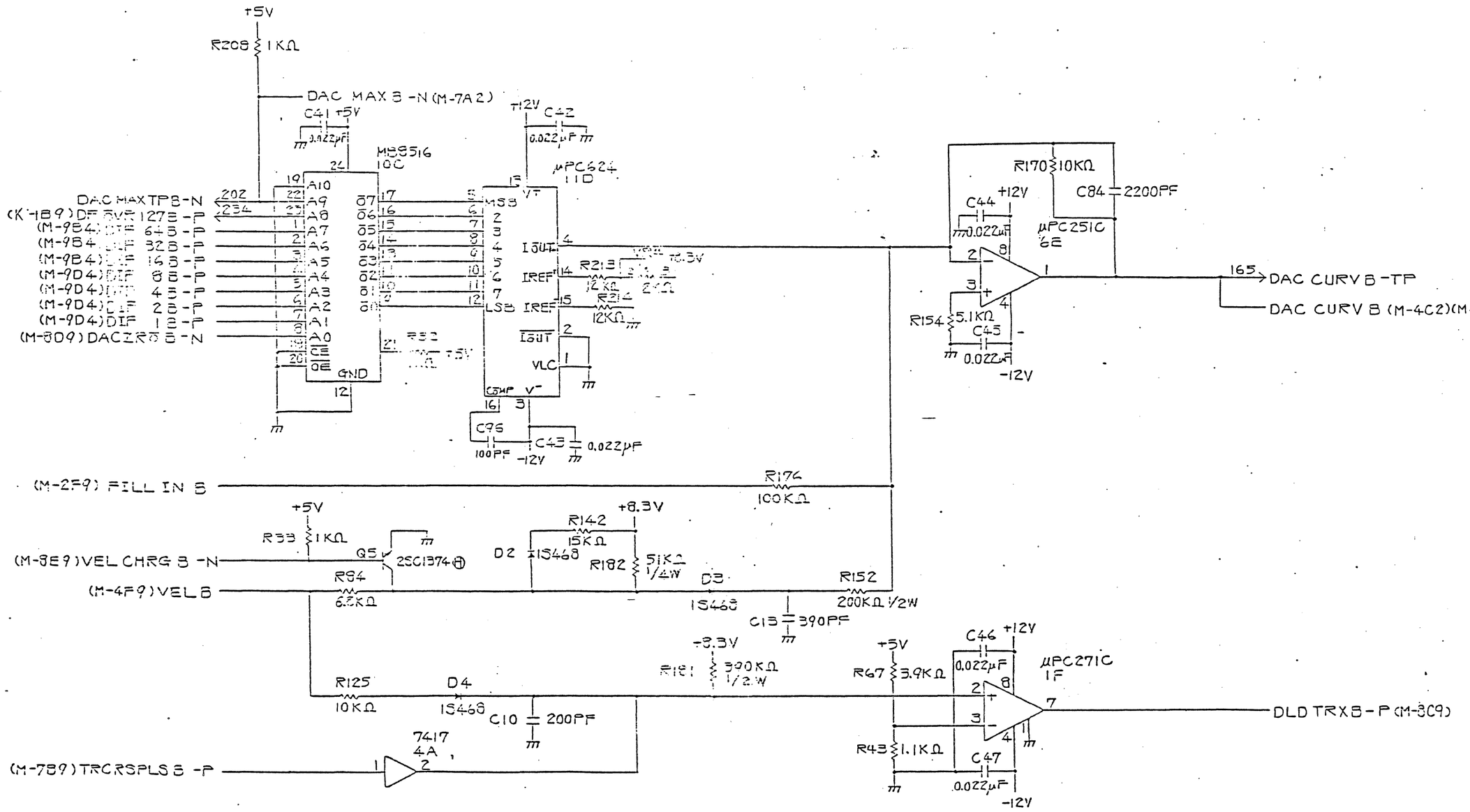
141 241 -12V → -12V

M-1

NP462 (SRV VEL B)

NP462 P/N REV G	TITLE NP75 DRV LOGIC-DIA.	SHEET 1/10 REV 1	DRAWN TS CHECK APPD 04/NOV 89.5.5
SRV VEL B	DRAWING NO NPL-NC-23462	Nippon Peripherals Limited	

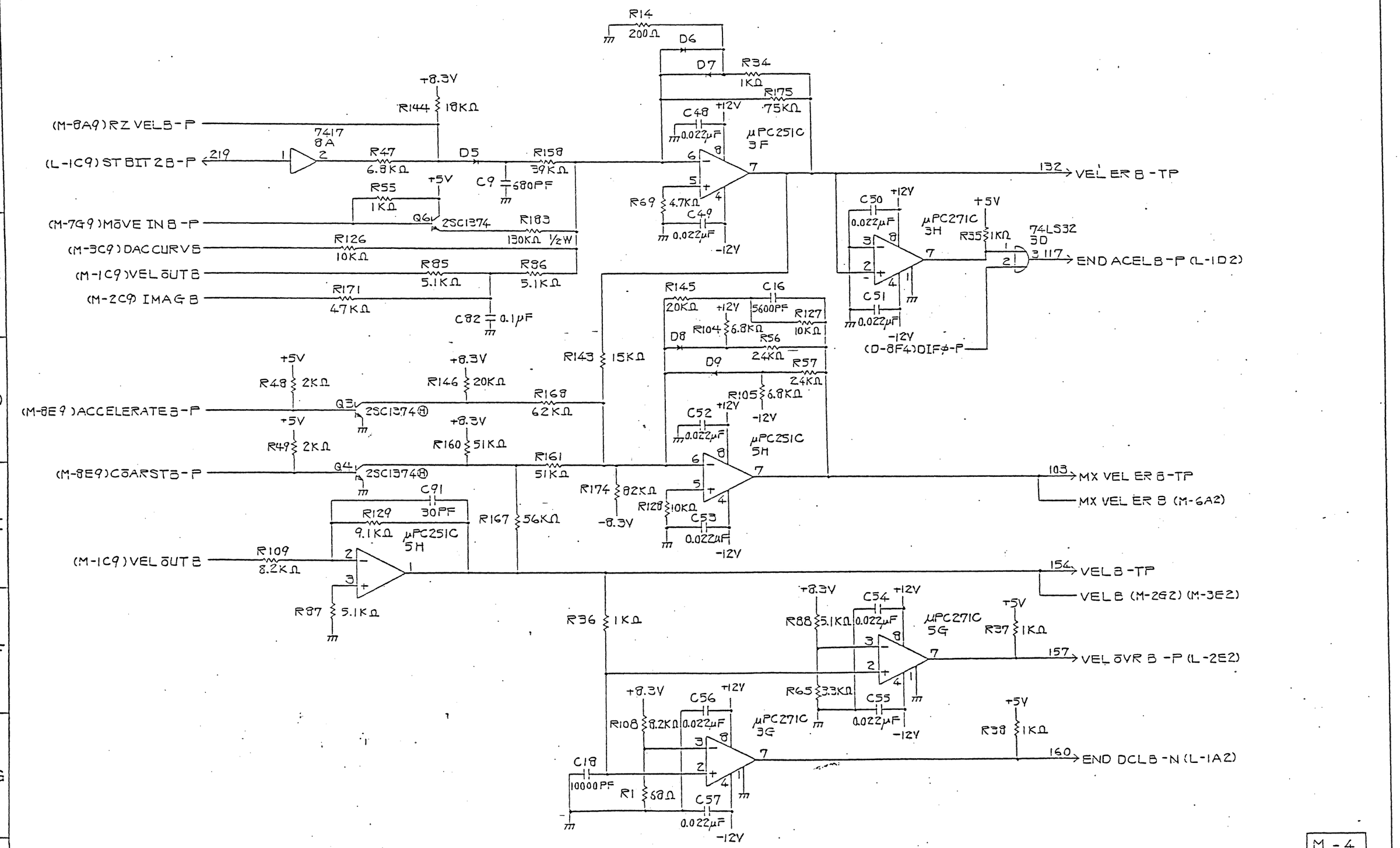

+5V
R103
6.8KΩ
C97
0.22μF
74LS221
1C
(M-8F9) TURN ARND B -P
R31
1KΩ
C101
0.022μF
74LS32
4D
(M-7F9) I NON INV B -N
(A-9F9) I SENSE B
107
+12V
R206 200Ω
C33
0.022μF
C86
30PF
R118
10KΩ
C31
0.022μF
μPC251C
1E
R117
10KΩ
R82 5.1KΩ
C32
0.022μF
-12V
DG201
2D
R81
5.1KΩ
R80
5.1KΩ
R72
5.1KΩ
R119 10KΩ
R8
200Ω
C34
0.022μF
R7 200Ω
-12V
(M-7E9) I INV B -N
μPC251C
1E
R120
10KΩ
R121 10KΩ
+12V
R10 200Ω
C39
0.022μF
DG201
5D
C87
30PF
R122
10KΩ
μPC251C
2H
R73
5.1KΩ
R63 3.3KΩ
108
I MAG B -TP
I MAG B (M-4C2)
CURRENT B (M-1D2)
(M-7B9) FIL NO INV B -N
(M-7C9) FIL INV B -N
R75
5.1KΩ
C88
30PF
R198
10KΩ
C37
0.022μF
μPC251C
5E
R197
10KΩ
R74 5.1KΩ
C38
0.022μF
-12V
DG201
5D
R76
5.1KΩ
R79 5.1KΩ
R196
10KΩ
μPC251C
5E
R195
15KΩ
204
FILL IN B -TP
FILL IN B (M-3D2)
(M-1C3) POSITION B
(M-8G9) RST FILL IN B -N
DG201
1G
R25
680Ω
C14
2200PF
+8.3V
R180 750KΩ 1/2W
R179
110KΩ 1/2 W
(M-4F9) VEL B
R205 100KΩ
C89
30PF
R194
10KΩ
C35
0.022μF
μPC251C
3E
R136
10KΩ
R191 2KΩ
C36
0.022μF
R193 39KΩ
-8.3V
-12V
DG201
5D
R77
5.1KΩ
R78
13KΩ
R192 3.3KΩ
R12 200Ω
R11 200Ω
C40
0.022μF
-12V
74LS00
(M-8D9) DAC ZRO B -N
(M-8C3) DIFO B -N
M-2
NP 462 (SRV VEL B)
P/N
REV
TITLE
NP75 DRV
LOGIC DIA.
SHEET 2/
REV 0
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-23462
Nippon Peripherals Limited
NC-23462



NP 462 (SRV VEL 8)

M-3

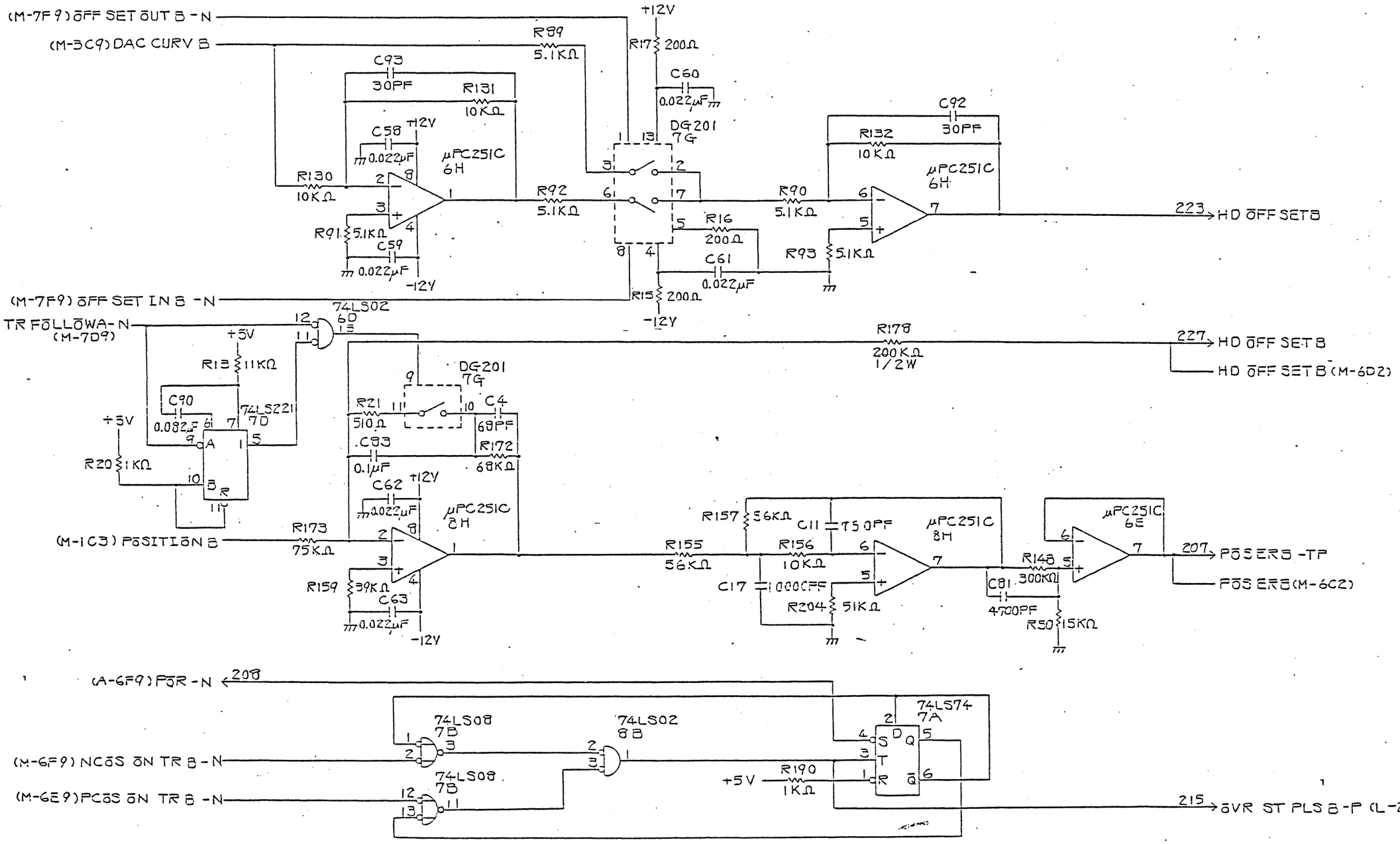
P/N REV	TITLE NP75 DRV LOGIC DIA.	SHEET 3/	DRAWN
		REV 0	CHECK
	DRAWING NO. NPL-NC-23462	Nippon Peripherals Limited	APPD



M-4

NP462 (SRV VEL8)

P/N REV	TITLE NP75 DRV LOGIC-DIA.	SHEET 4/ REV 0	DRAWN / CHECK / APPD /
	DRAWING NO NPL-NC-23462	Nippon Peripherals Limited	



M-5

NP462 (SRV VEL B)

P/N REV	TITLE NP75 DRV LŌGIC-DIA.	SHEET 5	DRAWN
		REV 0	CHECK
	DRAWING NO NPL-NC-23462		APPD
	Nippon Peripherals Limited		

REV No.	DATE	DRAWN	APPD
R219, 221 : 56KΩ→24KΩ			
R222 : 68KΩ→56KΩ			
R223 : 5.6KΩ→1.5KΩ			
1	85-2-26		

(M-7F9) I NON INV B -N
(M-4E9) MX VELER B
(M-7E9) I INV B -N
(M-7D9) TR FOLLOW B -N
(M-5E9) POSER B
(M-5C9) HD OFF SET B
(M-1C3) POSITION B
(M-7C9) SET DIF CP B -N
(M-7D9) RST DIF CP B -N

R94 5.1KΩ
C94 30PF
R134 10KΩ
μPC251C 3F
R133 10KΩ
R96 5.1KΩ
R95 5.1KΩ
DG201 2D
R97 5.1KΩ
DG201 8G
R135 6.8KΩ
R116 10KΩ
R217 510Ω
-12V

C66 +12V 0.022μF
μPC251C 8F
R199 10KΩ
R200 10KΩ
C67 0.022μF
C8 390PF
C6 390PF
C7 390PF
C5 390PF
R166 56KΩ
R62 3.3KΩ
R44 750Ω

240 → RAW PADRVBTP
μPC251C 8F
R162 13KΩ
R163 100KΩ
R164 13KΩ
R165 100KΩ
R177 180KΩ 1/2W
R150 27KΩ
268 → NOTCH PAD B-TP
R218 91KΩ
R219 24KΩ
R220 91KΩ
R221 24KΩ
CB6 470PF
C136 470PF
C137 470PF
R223 1.5KΩ
R222 56KΩ
μPC251C 5F
C139 470PF
237 → PA DRV B (A-9G7)
R201 270Ω
R202 3.3KΩ
235 → FINE LEVEL B TP-N

C19 10000PF
R141 10KΩ
R149 24KΩ
C64 +12V 0.022μF
μPC251C 5F
R140 10KΩ
R68 3.9KΩ
C65 0.022μF
-12V
R51 2KΩ
R26 1.3KΩ
C68 0.022μF
μPC271C 9H
R106 7.5KΩ
-8.3V
C132 0.022μF
C69 0.022μF
-12V

C70 +12V 0.022μF
μPC271C 10H
+5V R40 1KΩ
265 → FINE POS B-P (L-2G2)

+8.3V
R107 7.5KΩ
R100 7.5KΩ
R52 3.9KΩ
C72 +12V 0.022μF
μPC271C 11G
R27 1.3KΩ
C71 0.022μF
-12V
+5V R41 1KΩ
225 → FINE LEVEL B TP-P
210 → PCOS ON TR B TP-N
PCOS ON TR B -N (M-5G2) (M-7A2) (M-10A2)

R58 2.4KΩ
C127 1000PF
C131 0.022μF
C74 +12V 0.022μF
μPC271C 11H
+5V R42 1KΩ
205 → NCOS ON TR B TP-N
NCOS ON TR B -N (M-5F2) (M-7A2) (M-10A2)

R101 7.5KΩ
R22 6.2KΩ
R18 3.9KΩ
C76 +12V 0.022μF
μPC2710 10G
R53 3.9KΩ
C75 0.022μF
-12V
-8.3V
+5V R184 1KΩ
74LS00 8G
DIF COMP1B-P (M-10F6)

R39 1KΩ
C128 1000PF
C78 +12V 0.022μF
μPC271C 9G
+5V R185 1KΩ
74LS00 8G

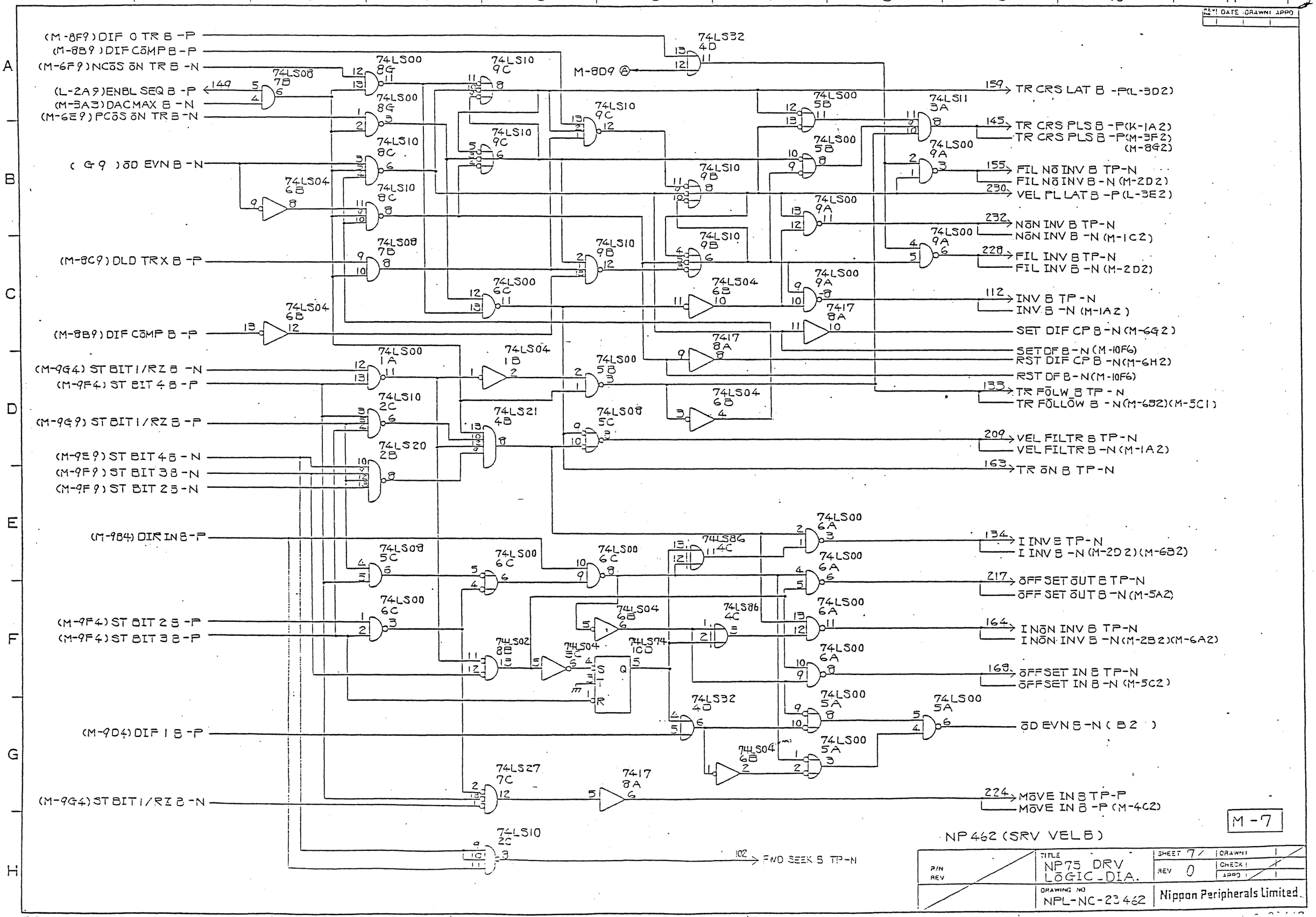
+8.3V
R23 6.2KΩ
R19 3.9KΩ
C79 0.022μF
-12V

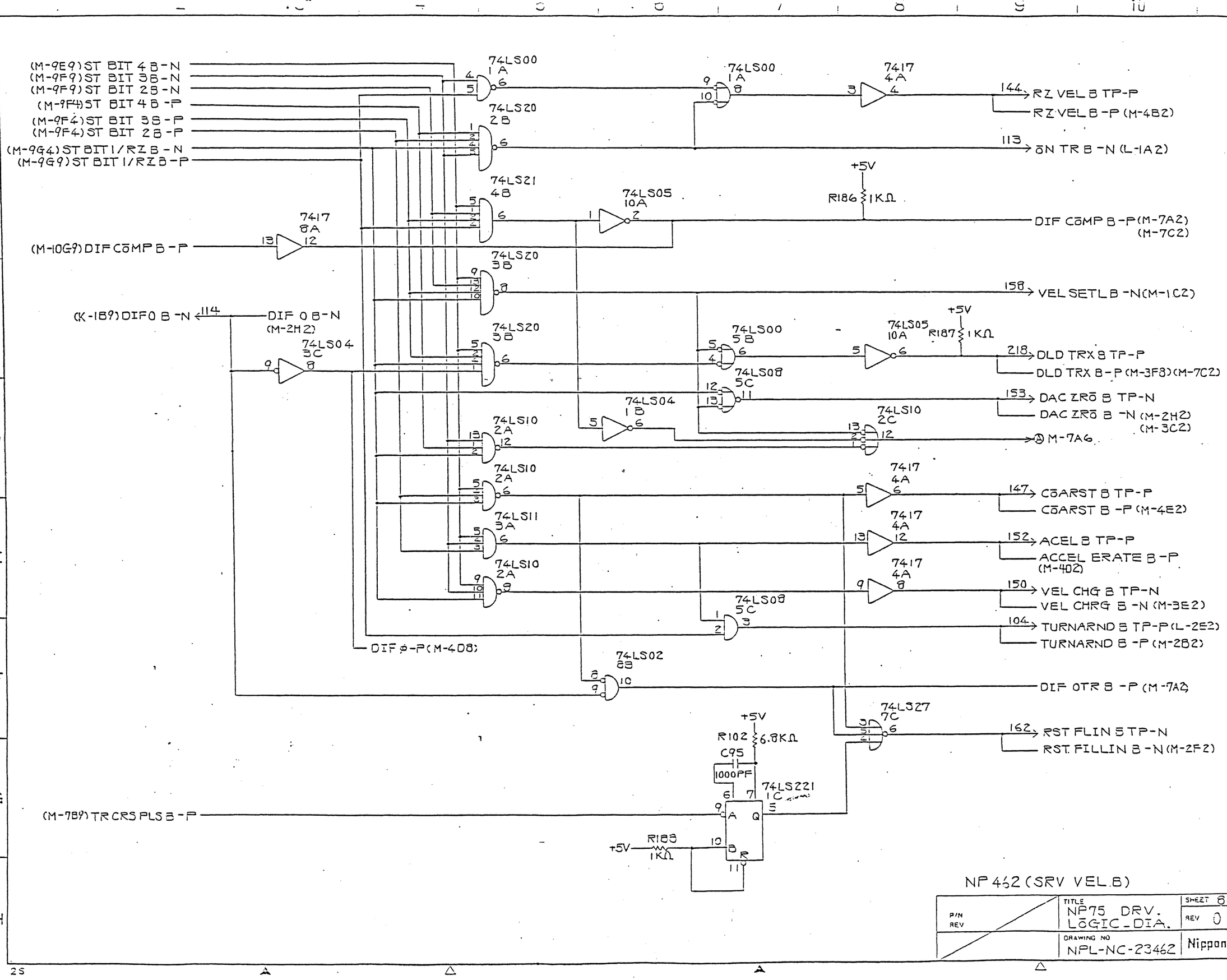
M-6

NP462 (SRV VEL B)

P/N REV	TITLE NP75 DRV LOGIC_DIA.	SHEET 6/ REV 1	DRAWN CHECK APPD
	DRAWING NO NPL-NC-23462	Nippon Peripherals Limited	

NC-23462


(M-8F9) DIF 0 TR B -P
(M-8B9) DIF COMP B -P
(M-6F9) NCOS ON TR B -N
(L-2A9) ENBL SEQ B -P
(M-3A3) DACMAX B -N
(M-6E9) PCOS ON TR B -N
(G9) OD EVN B -N
(M-8C9) DLD TRX B -P
(M-8B9) DIF COMP B -P
(M-9G4) ST BIT 1/RZ B -N
(M-9F4) ST BIT 4 B -P
(M-9G9) ST BIT 1/RZ B -P
(M-9E9) ST BIT 4 B -N
(M-9F9) ST BIT 3 B -N
(M-9F9) ST BIT 2 B -N
(M-9B4) DIR IN B -P
(M-9F4) ST BIT 2 B -P
(M-9F4) ST BIT 3 B -P
(M-9D4) DIF 1 B -P
(M-9G4) ST BIT 1/RZ B -N
M-8D9
74LS32 4D
74LS00 8G
74LS10 9C
74LS08 7B
74LS10 8C
74LS04 6B
74LS10 9B
74LS00 5B
74LS11 3A
74LS00 9A
74LS00 6C
74LS00 1A
74LS04 1B
74LS00 5B
74LS10 2C
74LS21 4B
74LS08 5C
74LS20 2B
74LS08 5C
74LS00 6C
74LS00 6C
74LS86 4C
74LS00 6A
74LS00 6C
74LS04 6B
74LS86 4C
74LS02 8B
74LS04 5C
74LS74 10D
74LS32 4D
74LS00 5A
74LS04 6B
74LS27 7C
7417 8A
74LS10 2C
159 TR CRS LAT B -P(L-3D2)
145 TR CRS PLS B -P(K-1A2)
TR CRS PLS B -P(M-3F2) (M-8G2)
155 FIL NO INV B TP-N
FIL NO INV B -N (M-2D2)
230 VEL FL LAT B -P (L-3E2)
232 NON INV B TP-N
NON INV B -N (M-1C2)
220 FIL INV B TP-N
FIL INV B -N (M-2D2)
112 INV B TP -N
INV B -N (M-1A2)
SET DIF CP B -N (M-6G2)
SET DF B -N (M-10F6)
RST DIF CP B -N (M-6H2)
RST DF B -N (M-10F6)
133 TR FOLW B TP - N
TR FOLLOW B - N (M-6B2) (M-5C1)
209 VEL FILTR B TP-N
VEL FILTR B -N (M-1A2)
163 TR ON B TP-N
134 I INV B TP-N
I INV B -N (M-2D2) (M-6B2)
217 OFF SET OUT B TP-N
OFF SET OUT B -N (M-5A2)
164 I NON INV B TP-N
I NON INV B -N (M-2B2) (M-6A2)
168 OFFSET IN B TP-N
OFFSET IN B -N (M-5C2)
OD EVN B -N (B2)
224 MOVE IN B TP-P
MOVE IN B -P (M-4C2)
102 END SEEK B TP-N
S Q R
M-7
NP462 (SRV VEL B)
P/N
REV
TITLE NP75 DRV LOGIC_DIA.
SHEET 7/
REV 0
DRAWN
CHECK
APPD
DRAWING NO NPL-NC-23462
Nippon Peripherals Limited.

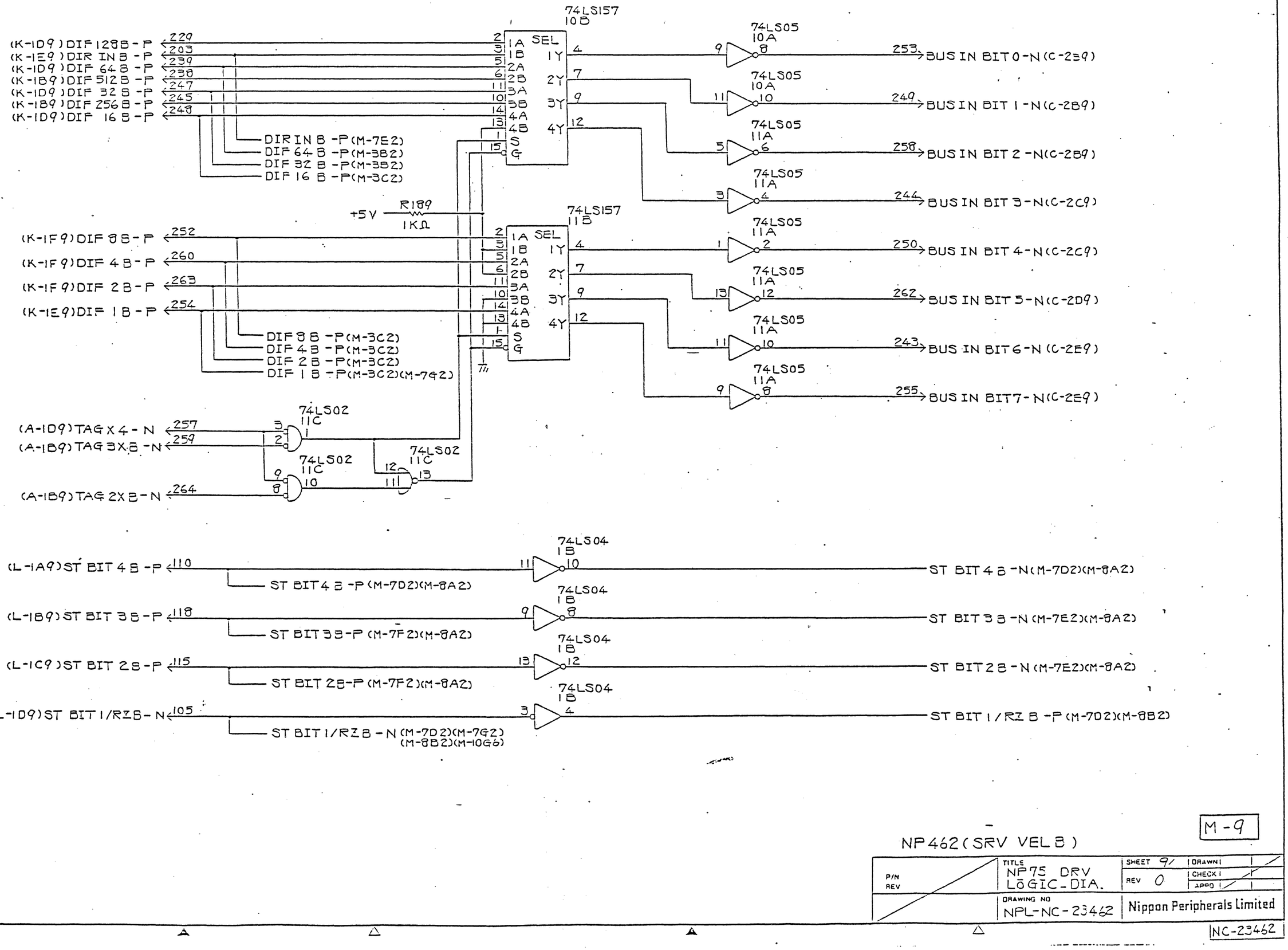


NP 462 (SRV VEL B)

M-8

P/N REV	TITLE NP75 DRV. LOGIC-DIA.	SHEET 8/	DRAWN
		REV 0	CHECK
	DRAWING NO NPL-NC-23462	Nippon Peripherals Limited	APPD

NC-23462

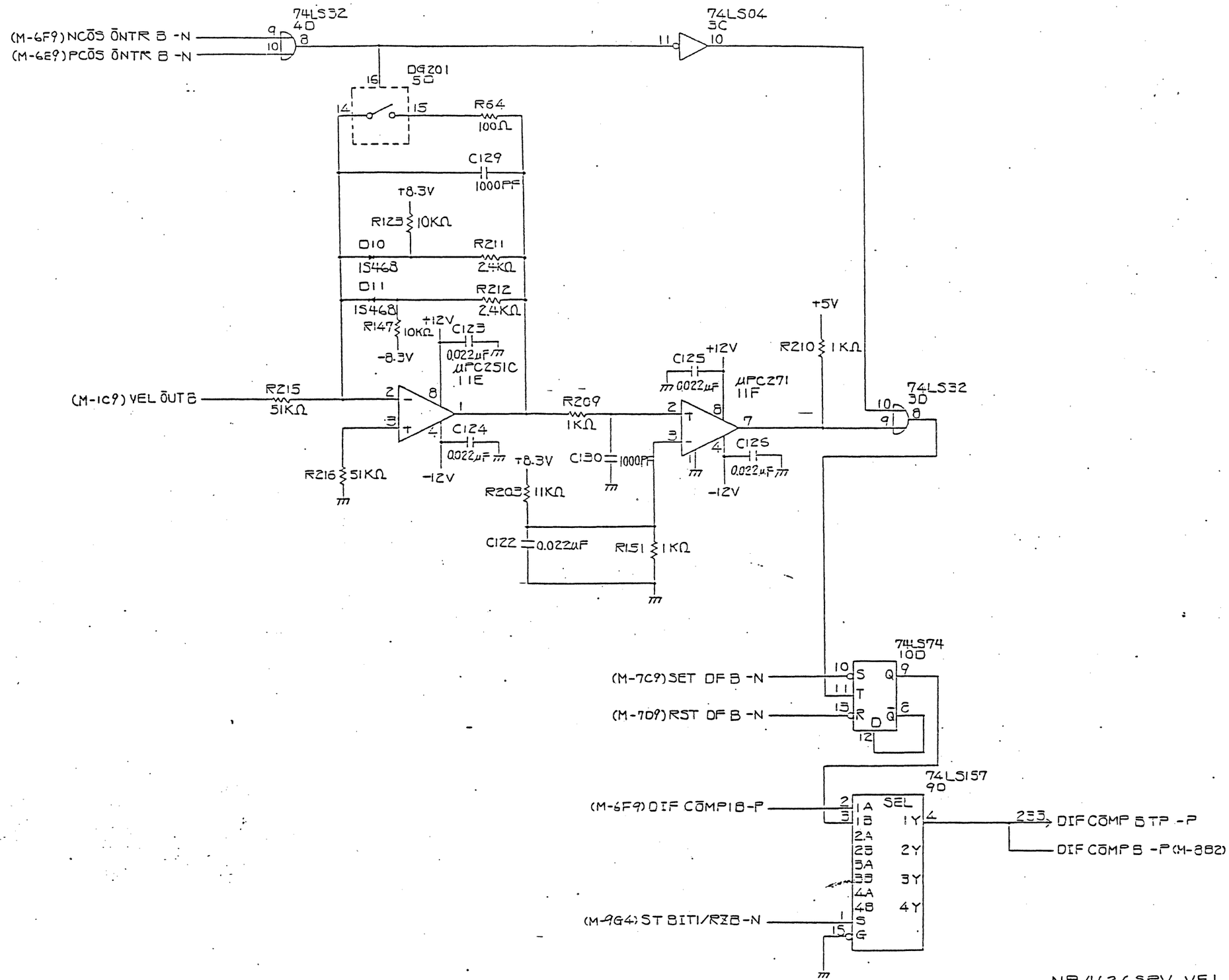


NP462(SRV VEL B)

M-9

P/N REV	TITLE NP75 DRV LOGIC-DIA.	SHEET 9/ REV 0	DRAWN / CHECK / APPD /
	DRAWING NO NPL-NC-23462	Nippon Peripherals Limited	

NC-23462



M - 10

NP 462 (SRV VEL B)

P/N / REV	TITLE: NP75 DRV. LOGIC - DIA.	SHEET 10 / 10 DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-23462	REV 0 — Nippon Peripherals Limited

NC-23462

NO	DATE	DRAWN	APPD
SHEET 6 Rev up 0→1			
SHEET 6 Rev up 1→2			
SHEET 2 REV 0→1			
SHEET 6 REV 2→3			
FUNCTION REV: B→C			
SHEET 2: REV 1→2			
FUNCTION REV: C→D			
SHEET 2: REV 2→3			
SHEET 2: REV 3→4			
SHEET 4: REV 0→1			
FUNCTION REV: D→E			

(A-6F9) POR-N ←228 — 74LS04 10B (9→8) → POR-P (N-6C2)

74LS04 10B (11→10) → POR-N (N-2C2)(N-4A2) (N-5A2)

(A-1C9) TAG X7 -N ←245 — 74LS32 12A (1,2→3)
(A-1C9) TAG X8 -N ←248 — 74LS32 12A (1,2→3)

74LS08 11A (1,2→3) → 217 → SLATRSTTPB-N; SLATRSTB-N (D2)(N-3H2)

(A-1F9) CHECK RESET-P ←223 — 74LS00 10A (13,12→11)

74LS08 11A (5,4→6) → 232 → SLCKRSTTPB-N; SLCKRSTB-N (N-3F2)

(A-8B9) SELECTEDB-N ←225 — 74LS04 10B (13→12)

74LS04 10B (3→4)

(A-1C9) TAG X6 -N ←255 — 74LS02 13A (2,3→1) → 258 → SNSTGTTPE-P; SNSTGTB-P (N-4A2)

(A-1D9) TAG X0 -N ←235 — 74LS32 12A (12,13→11)

(A-1C9) TAG X5 -N ←265 — 74LS32 12A (5,4→6)

74LS00 10A (10,9→8)

74LS00 10A (5,4→6) → 222 → SST/SSCLTTPB-N

(B5) SLATRSTB-N

(A-1D9) TAG X4 -N ←260 — 74LS02 15A (6,5→4) → 257 → ST HR/CRHTPB-P; ST HAR/CARHIB-P (N-2B2)

(A-1D9) TAG X3 -N ←259 — 74LS02 15B (2,3→1) → 250 → SNSCARLOTPB-P; SNSCARLOB-P (N-3A2)

(A-1D9) TAG X2 -N ←252 — 74LS32 12A (9,10→8)

74LS08 11A (10,9→8) → 238 → STTGTRGTPB-N; STTGTRGB-N (N-3F2)(N-4A2)

74LS02 15A (12,11→13) → 254 → SNS HR/CRHTPB-P; SNS HR/CRHIB-P (N-2A2)

(A-1D9) TAG X1 -N ←262 — 74LS02 15A (9,8→10) → 264 → STCARLOTPB-P; STCARLOB-P (N-3C2)

101, 167, 201, 267 ← +5V

C2 3.3μF 35V ~ C5 3.3μF 35V

106, 111, 116, 126, 131, 136, 146, 151, 156, 166, 206 ← 0V

211, 216, 226, 231, 236, 246, 251, 256, 266

SRCHSCTB-P (N-3G9)

VLDIDXB-N (N-6E9) — 74LS04 11D (3→4)

+5V — R10 1KΩ

74LS74 11E (S, D, T, R, Q, Q̄)

SCTCMPE-N (N-3E9) — 74LS15 11E (4,5,6)

74LS74 11E (S, D, T, R, Q, Q̄) → 218 → SCTGPCGTTPB-P; SCTCMPCKGTB-P (N-3F2)

+5V — R9 1KΩ

(G8) ACCS CMPB-N — 74LS08 11C (10,9→8)

(N-3H9) SRCHSCTB-N — 74LS08 11C (10,9→8)

(A-2B9) GATE MACHST-N ←227 — 74LS08 11C (10,9→8)

74LS27 10C (9,10,11→8) → 74LS05 9C (9→8) → BUS IN BIT7-N (N-2E8)

(N-3E9) SCT CMPB-N — 74LS04 11D (5→6)

74LS32 10E (1,2→3)

74LS27 10C (1,2,13→12) → 74LS05 9C (3→4) → BUS IN BIT6-N (N-2D8)

(K-6E9) SNSR/W2B-N ←234 — 74LS08 11C (4,5→6)

SCT CMPCKLTE-N (N-3F9)

74LS27 10C (4,5,13→6) → 74LS05 9C (11→10) → BUS IN BIT2-N (N-2E8)

(K-2A9) SET R/WB-N ←243 — 74LS04 11D (13→12)

74LS27 10C (1,2,13→12) → 74LS08 11C (1,2→3) → 213 → BLKCNGPTPB-P; BLKCNGPTPB-P (G7)

(N-2E9) HAR6B-P — 74LS86 12E (1,2→3)

SCT CNT BIT6B-P (N-4G5)

(N-2F9) HAR7B-P — 74LS86 12E (12,13→11)

SCT CNT BIT7E-P (N-4G5)

SCTPLSDLDB-N (N-5A9) — 74LS04 10B (1→2)

ACS CMPB-N ←247 (L-2B10) — 74LS27 10C (11,10,9→8) → 74LS04 10B (5→6)

74LS32 10E (5,4→6)

(L-2G10) ACS CHEKE-N ←115 — 74LS15 11B (9,10,11→8) ← +5V, R11 1KΩ → 237 → ATN/HDAATNA-N (A-5G2)

(N-3G9) SCTCMP*CKB-N — 74LS00 12B (9,10→8)

74LS00 12B (13,12→11)

ACCSCMPB-N (C7)

ACCSCKB-N (N-2F2)

(E10) BLKCNGPTPB-P — 74LS05 9C (13→12) → BUS IN BIT5-N (N-2D8)

N-1

NP411 (HAR/CARE)

P/N NP411	TITLE NF37 DRV LOGIC_DIA.	SHEET 1/6	DRAWN
REV E		REV 6	CHECK
HAR/CARB	DRAWING NO NPL-NC-21411		APPD

Nippon Peripherals Limited

NC-21411

NO	DATE	DRAWN	APPD
CHENGE RESET SIG. OF HAR AND CAR FROM SRUSTBIT7 TO GBLAT			
1	82.6.16	S.Saito	
CHANGE RESET SIG. OF HAR CAR FROM GBLAT TO LOGIC- AND OF GBLAT AND ST BIT7			
2	82.7.15	S.Saito	
CHANGE SINK ADDRESS			
3	82.11.11	S.Saito	
CHANGE ACCESS TIMER CLOCK			
4	83.3.15	S.Saito	

(N-1F5)SNSHR/CRHIB-P

(N-1D10)SETR/WB-P

(N-3C9)BUS OUT BIT0-P

(N-3C9)BUS OUT BIT1-P

(N-3C9)BUS OUT BIT2-P

(N-3C9)BUS OUT BIT3-P

STHAR/CARHIB-P (N-1E5)

74LS08 9B

74LS175 4B REG

74LS32 2E

74LS03 4C

BUS IN BIT0-N (N-4A10)(N-3A9) → 132 BUS IN BIT0-N(C-2A9)

BUS IN BIT1-N (N-4B10)(N-3B9) → 133 BUS IN BIT1-N(C-2B9)

BUS IN BIT2-N (N-4B10)(N-3B9)(N-1D10) → 139 BUS IN BIT2-N(C-2B9)

BUS IN BIT3-N (N-4C10)(N-3B9) → 142 BUS IN BIT3-N(C-2C9)

137 HAR2B-P(J-6GZ)△

138 HAR3B-P(J-6GZ)△

(N-1A5)PORB-N

(L-1D9)STBIT1/RZB-N 214

(N-3E9)BUS OUT BIT4-P

(N-3E9)BUS OUT BIT5-P

(N-3E9)BUS OUT BIT6-P

(N-3E9)BUS OUT BIT7-P

74LS175 7B REG

74LS03 7C

BUS IN BIT4-N (N-4E10)(N-3C9) → 153 BUS IN BIT4-N(C-2C9)

BUS IN BIT5-N (N-4E10)(N-3D9)(N-1G10) → 154 BUS IN BIT5-N(C-2D9)

BUS IN BIT6-N (N-4E10)(N-3D9)(N-1C10) → 202 BUS IN BIT6-N(C-2D9)

BUS IN BIT7-N (N-4F10)(N-3E9)(N-1C10) → 152 BUS IN BIT7-N(C-2E9)

74LS32 2E

74LS04 5A

△(N-6C9)GBLATB-P

168 HAR4B-P(J-6GZ)△

159 HAR5B-P(J-6GZ)△

162 HAR6B-P(J-3FZ)△

HAR6B-P(N-1U7)

155 HAR7B-P(J-3G2)

HAR7B-P(N-1E7)

RST REGE-N(N-3C2)

+5V

R5 1KΩ

74LS04 9E

74LS00 5E

74LS191 6D CNT

74LS08 9D

(N-6E9)VLD IDXB-N

△(N-4G4)SCTCNTFCAB-N

(N-1G8)ACCSCKB-N

215 ACSTOUTB-P(L-2E2)

(L-1G9)LD ACSTIMB-N 209

N-2

NP411 (HAR/CARE)

P/N / REV	TITLE: NP 37 DRV LOGIC DIA.	SHEET 2	DRAWN
		REV 4	CHECK / APPD
	DRAWING NO: NPL-NC-21411	Nippon Peripherals Limited	

NC-21411

(N-1 E 5)SNS CARLOB-P

BUS OUT BIT0-N ← 144 (A-2F6) — 74LS04 5A
BUS OUT BIT1-N ← 148 (A-2F6) — 74LS04 5A
BUS OUT BIT2-N ← 150 (A-2F6) — 74LS04 5A
BUS OUT BIT3-N ← 149 (A-2G6) — 74LS04 5A

74LS175 5B (REG: 1D 2D 3D 4D, CK, CLR; 1Q 2Q 3Q 4Q)

74LS03 5C:
- BUS IN BIT0-N (N-2A8)
- BUS IN BIT1-N (N-2B8)
- BUS IN BIT2-N (N-2B8)
- BUS IN BIT3-N (N-2C8)

(N-1 F 5)ST CARLOB-P

BUS OUT BIT0-P (N-2 A2)(N-4 B2)
BUS OUT BIT1-P (N-2 B2)(N-4 B2)
BUS OUT BIT2-P (N-2 B2)(N-4 B2)
BUS OUT BIT3-P (N-2 B2)(N-4 B2)

(N-2F9)RST REGB-N

BUS OUT BIT4-N ← 157 (A-2G6) — 74LS04 6A
BUS OUT BIT5-N ← 158 (A-2G6) — 74LS04 6A
BUS OUT BIT6-N ← 160 (A-2G6) — 74LS04 6A
BUS OUT BIT7-N ← 165 (A-2H6) — 74LS04 6A

74LS175 6B (REG: 1D 2D 3D 4D, CK, CLR; 1Q 2Q 3Q 4Q)

74LS03 6C:
- BUS IN BIT4-N (N-2D8)
- BUS IN BIT5-N (N-2D8)
- BUS IN BIT6-N (N-2D8)
- BUS IN BIT7-N (N-2E8)

BUS OUT BIT4-P (N-2C2)(N-4F2)
BUS OUT BIT5-P (N-2D2)(N-4E2)
BUS OUT BIT6-P (N-2D2)(N-4E2)
BUS OUT BIT7-P (N-2D2)(N-4E2)

(N-5B9)SCTCNTPLSB-N
(N-4 D10)SCTCMPPLSB-P
— 74LS00 13D

224 → SCT CMP TPB-N
SCT CMP B-N (N-1 B7)(N-1C 6)

(N-1 B5)SLCKRSTB-N — 74LS10 13C

SCTCMPCKLTB-N (N-1 D7)

(N-1 B10)SCTCMPCKGTB-P — 74LS10 13C; 74LS00 13D

240 → SCT CP CKLTTPB-P

(N-1 E5)ST TGTRGB-N — 74LS00 13D; 74LS08 11C

253 → SCT CP*CKTPB-N
SCT CMP*CK B-N (N-1G 7)

74LS00 12B; 74LS10 13C

74LS04 11D

SRCHSCTB-P (N-1 A7)

(N-1 B5)SLATRSTB-N — 74LS00 12B

244 → SRCHSCTTPB-N
SRCHSCTB-N (N-1C 7)

NP411 (HAR/CARS)

N-5

P/N	TITLE: NP37 DRV LOGIC_DIA.	SHEET 3/	DRAWN
REV		REV 0	CHECK
	DRAWING NO: NPL-NC-21411		APPD

Nippon Peripherals Limited

NC-21411

NO	DATE	DRAWN	APPD
A88	SIGNAL NAME SCTCNTFCAB-N		
1	80.12.25	Sasaki	

(N-1E5)ST TGT RGB-N
(N-5B9)SCT CNT PLSB-N
ST SCT JMPB-N
(N-1C5)SNS TGTB-P
(N-1A5)POR-N
(N-1D10)SETR/WB-P
(N-3C9)BUS OUT BIT0-P
(N-3C9)BUS OUT BIT1-P
(N-3C9)BUS OUT BIT2-P
(N-3C9)BUS OUT BIT3-P
(N-6E9)VLDIDXB-N
(N-3E9)BUS OUT BIT4-P
(N-3E9)BUS OUT BIT5-P
(N-3E9)BUS OUT BIT6-P
(N-3E9)BUS OUT BIT7-P
(A10)SCT CNT PLSB-P

+5V R3 1KΩ
+5V R6 1KΩ
+5V R1 510Ω

74LS04 6A
74LS04 5D
74LS10 6E
74LS00 5E
74LS00 5E
74LS157 4A
74LS175 3B
74LS193 3A
74LS157 7A
74LS175 8B
74LS193 8A
74LS03 3C
74LS03 3C
74LS03 3C
74LS03 3C
74LS03 8C
74LS03 8C
74LS03 8C
74LS03 8C
74LS03 9A
74LS136 2A
74LS136 2A
74LS136 2A
74LS136 2A
74LS136 9A
74LS136 9A
74LS136 9A
74LS136 9A

SCT CNT PLSB-P (E2)
BUS IN BIT0-N (N-2A8)
BUS IN BIT1-N (N-2B8)
BUS IN BIT2-N (N-2B8)
BUS IN BIT3-N (N-2C8)
BUS IN BIT4-N (N-2D8)
BUS IN BIT5-N (N-2D8)
BUS IN BIT6-N (N-2D8)
BUS IN BIT7-N (N-2E8)
SCTCPPSTPB-P
SCTCMPPLSE-P (N-3E2)
SCTCNT BIT7B-P (N-1E7)
SCTCNT BIT6B-P (N-1E7)
SCTCNTFCAB-N (N-2F1)

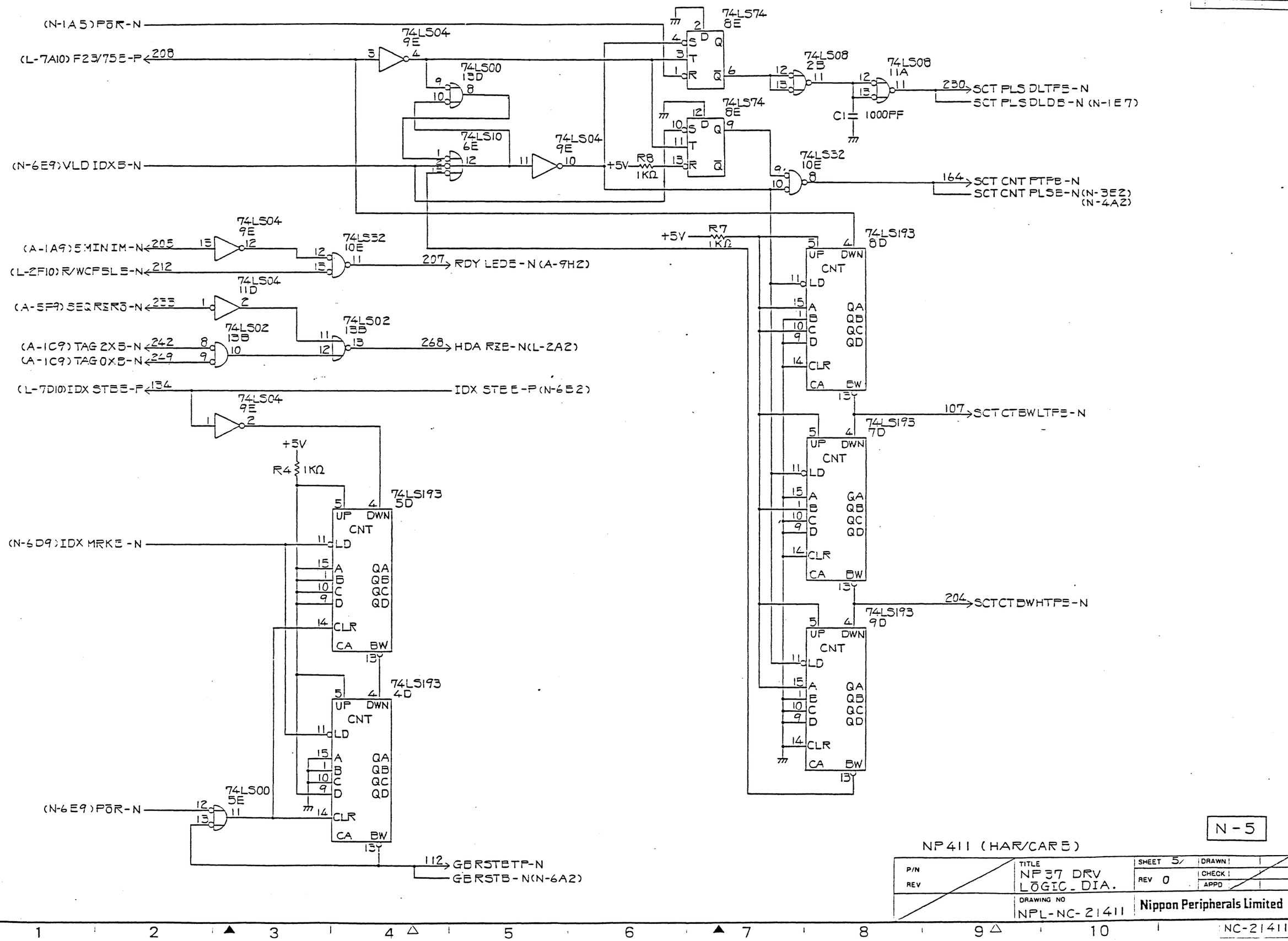
N-4

NP411 (HAR/CARE)

P.N / REV	TITLE	SHEET 4	DRAWN
	NP37 DRV LOGIC_DIA.	REV 1	CHECK
	DRAWING NO NPL-NC-21411		APPD

Nippon Peripherals Limited

NC-21411

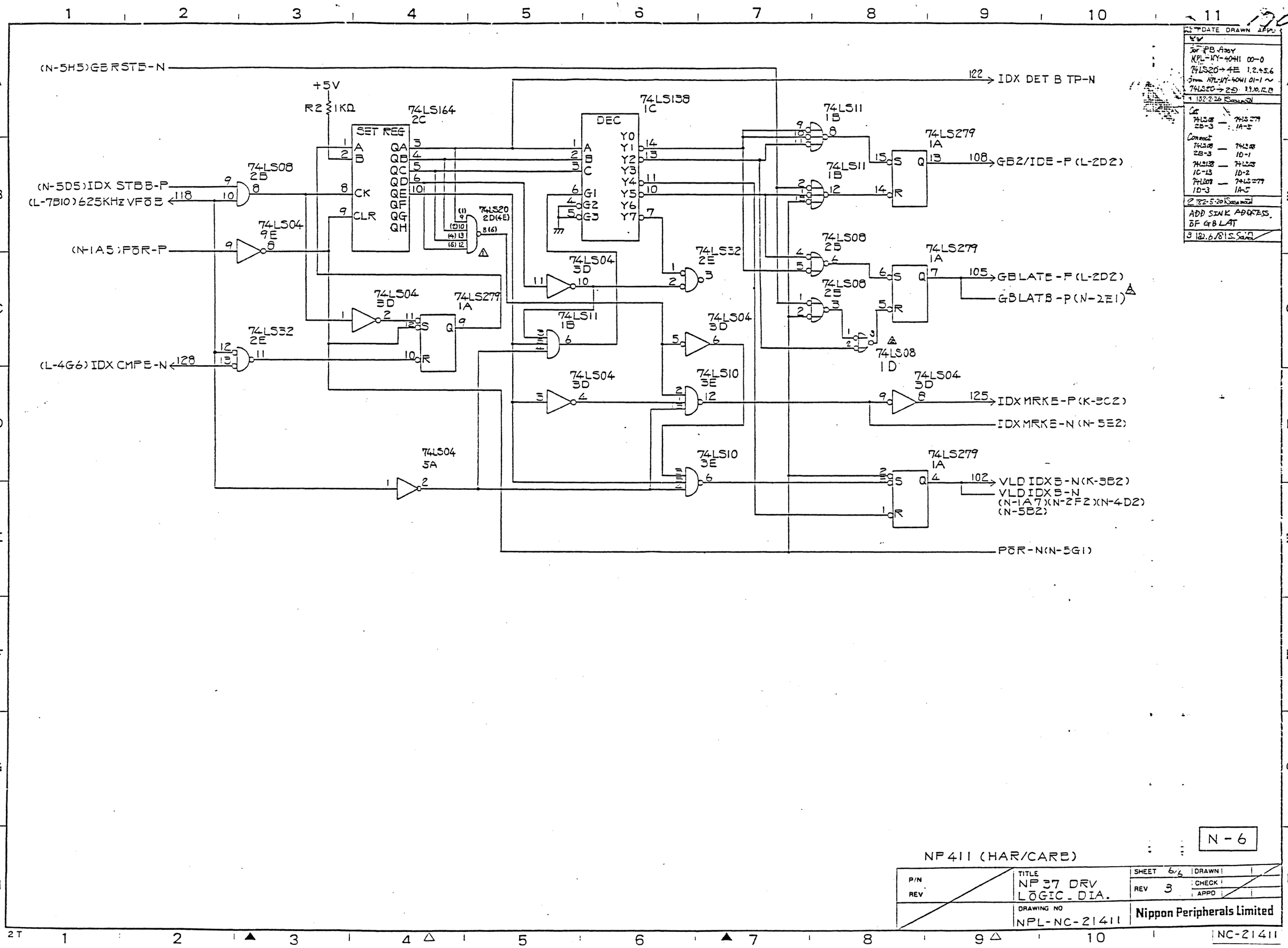


N-5

NP411 (HAR/CARB)

P/N / REV	TITLE: NP37 DRV LOGIC_DIA.	SHEET 5/ REV 0	DRAWN / CHECK / APPD
	DRAWING NO: NPL-NC-21411	Nippon Peripherals Limited	

NC-21411


(N-5H5)GBRSTB-N
+5V
R2 1KΩ
74LS164 2C
SET REG
A
B
CK
CLR
QA
QB
QC
QD
QE
QF
QG
QH
74LS138 1C
DEC
Y0
Y1
Y2
Y3
Y4
Y5
Y6
Y7
G1
G2
G3
74LS08 2B
(N-5D5)IDX STBB-P
(L-7B10)625KHz VFOE
118
74LS04 9E
(N-1A5)PDR-P
74LS20 2D(4E)
74LS04 3D
74LS279 1A
74LS11 1B
74LS32 2E
(L-4G6)IDX CMPE-N
128
74LS04 5A
74LS10 3E
74LS11 1S
74LS08 2S
74LS08 1D
122 IDX DET B TP-N
108 GB2/IDE-P (L-2D2)
105 GBLATE-P (L-2D2)
GBLATB-P (N-2E1)
125 IDX MRKE-P (K-3C2)
IDX MRKE-N (N-5E2)
102 VLD IDXB-N (K-3B2)
VLD IDXB-N (N-1A7)(N-2F2)(N-4D2) (N-5B2)
PDR-N (N-5G1)
DATE DRAWN APPD
for PB Assy
NPL-NY-40411 00-0
74LS20→4E 1.2.4.5.6
from NPL-NY-40411 01-1 ~
74LS20→2D 9.10.12.13
1 82-2-26
CK
74LS08 2B-3 — 74LS279 1A-5
Connect
74LS08 2B-3 — 74LS08 1D-1
74LS138 1C-13 — 74LS08 1D-2
74LS08 1D-3 — 74LS279 1A-5
2 82-5-20
ADD SINK ADDRESS OF GB LAT
3 82.6.8
P/N
REV
TITLE
NP37 DRV LOGIC_DIA.
SHEET 6/6
REV 3
DRAWN
CHECK
APPD
DRAWING NO
NPL-NC-21411
Nippon Peripherals Limited
NP411 (HAR/CARE)
N-6
NC-21411