

MONITOR 8041 CHARACTER GENERATOR
 for
High-Performance CRT Displays

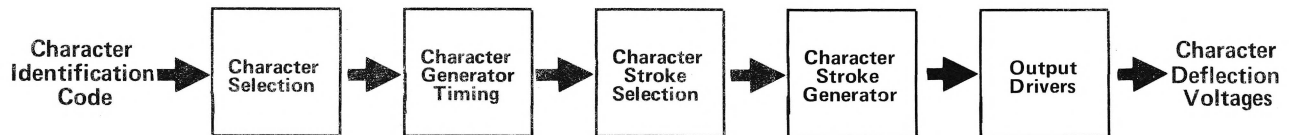
The MONITOR Model 8041 Character Generator provides high-speed digitally controlled stroke character generation for use with direct-writing cathode ray tube display systems. This Character Generator produces 20-stroke characters in 10 microseconds maximum, offering high performance for graphic display systems.

DESIGN FEATURES

- Up to 20 strokes per character
- Maximum character writing time: 10 microseconds
- Average character writing time: 6.25 microseconds
- Repertoire of 64 alphanumeric characters and symbols.

FUNCTIONAL DESCRIPTION

The input lines accept the character identification information upon which the generator operates to provide the proper character deflection signals. The block diagram shows the inter-relationship of the various functional elements.



CHARACTER GENERATOR

The receipt of a write-start signal enables a character clock gate thereby permitting clocked generation of the signals required to generate the character. This timing provides up to 20 sequential signals for the generation of the character strokes. A character is formed automatically by generating a vector stroke signal in each of up to 20 intervals. The standard character repertoire is shown in figure 1.

Each individual stroke is a vector sum of one or more units in the plus or minus X, plus or minus Y or one-half unit in the plus or minus X directions.

The character stroke functions are selected by sequencing an MOS read only memory. The sequencing is accomplished under character generator timing control. The appropriate sequence is selected by decoding the 6-bit character address input lines.

The output of the ROM is strobed to the function generators and an intensity modulator which turns the beam off during retrace or background motions.

Function generators provide accurate voltage levels which are summed and integrated by output driver circuits. These outputs are the complex X and Y deflection voltages necessary for the stroke generation of characters.

A write-complete pulse is provided for asynchronous operation.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Q	R	S	T	U	V	W	X	Y	Z	ø	1	2	3	4	5	6
7	8	9	[\]	^	—	!	"	#	\$	%	&	'		
()	*	+	,	-	.	/	:	;	<	=	>	?	@	(space)	

Figure 1 — Character Repertoire 64 Upper Case ASCII Set

ELECTRICAL SPECIFICATIONS

All digital input and output signal levels and impedances are compatible with conventional TTL integrated-circuit logic.

INPUTS

Character Selection 6-bit parallel words
Control Pulses Write Start

OUTPUTS

Control Pulses Write Complete
Character Deflection Voltages ± 1.5 volts @ 20 ma. (measured at the input of any display when terminated with 75 ohms).
Character Intensification Voltage..... Digital signal, low during blanking, high during write.

CHARACTER & SYMBOL CHARACTERISTICS

Number of Characters and Symbols 64, upper case ASCII. Standard set per figure 1.
Writing Time 10 microseconds maximum.
Average Character and Symbol
Writing Time Approximately 6 microseconds.
Number of Strokes..... 20 maximum.
Aspect Ratio 4 units high by 3 units wide.
Uniformity..... $\pm 5\%$ of character height.

POWER REQUIREMENTS 115 volts $\pm 60\text{Hz}$ ± 3 cycles, 0.5 ampere.

MECHANICAL CONFIGURATION 19" wide x 1 $\frac{3}{4}$ " high x 5" deep

ENVIRONMENT

Ambient Temperature 50° to 100° F
Relative Humidity to 95% without condensation

OPTIONS

Horizontal or vertical orientation of characters
Four character sizes
Provisions to generate special characters
Higher speed character generation