



*Personal Computer  
Hardware Reference  
Library*

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**IBM Personal Computer  
Professional Graphics  
Display Technical  
Reference**

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# Description

The IBM Personal Computer Professional Graphics Display is a 640-by-480 PEL color raster display for medium- and high-function graphics and alphanumerics. It operates with separate red, green, and blue analog signals and is can support an infinite number of colors.

The Professional Graphics Display attaches to the system unit through a signal cable that is approximately 1.5 meters (4.9 feet) in length. This cable provides a direct-drive connection from the IBM Professional Graphics Controller. The cable consists of shielded, twisted-pair lines, and has a 9-pin, subminiature, D-shell connector at the system-unit end. The pins have the following functions:

	Signal Name/Description	Pin	
<b>Professional Graphics Display</b>	Red Video	1	<b>Professional Graphics Controller</b>
	Green Video	2	
	Blue Video	3	
	Horizontal and Vertical Sync	4	
	Mode Control	5	
	Ground for Pin 1	6	
	Ground for Pin 2	7	
	Ground for Pin 3	8	
	Ground for Pins 4 and 5	9	

A second cable provides power to the display from a standard wall outlet. The display has its own power control and indicator. Depending on the model number, it accepts either 100 to 127 Vac at 50 to 60 Hz, or 200 to 240 Vac at 50 to 60 Hz.

The display has a 340-millimeter (13-inch) cathode ray tube (CRT). The CRT and analog circuits are enclosed so the display may be placed on top of the system unit or on a nearby tabletop or desk. Front-panel controls and indicators are the Power-On indicator, Power-On control, and Contrast and Brightness controls.

# Operating Characteristics

## Screen

- High-contrast, antireflection
- Displays an infinite number of colors
- 640 horizontal PELs by 480 vertical PELs

## Video Signal

- Maximum video bandwidth of 17 MHz
- Red, green, blue, and synchronization signals are all independent

## Synchronization

- Active low, TTL-compatible, at frequencies of 30.12 kHz horizontal, and 60.02 kHz vertical (non-interlaced)

## Mode Control

- Active low
- Expands the screen capacity to 400 lines.

# Specifications

## Size:

Length: 392 mm (15.4 in.)

Depth: 407 mm (15.6 in.)

Height: 297 mm (11.7 in.)

Weight: 14.5 kg (32 lb)

## Power Dissipation:

87 Watts Maximum

## Power Cable:

Length: 1.8 m (6 ft)

Size: 18 AWG

## Signal Cable:

Length: 1.5 m (4.9 ft)

Size: 28 AWG

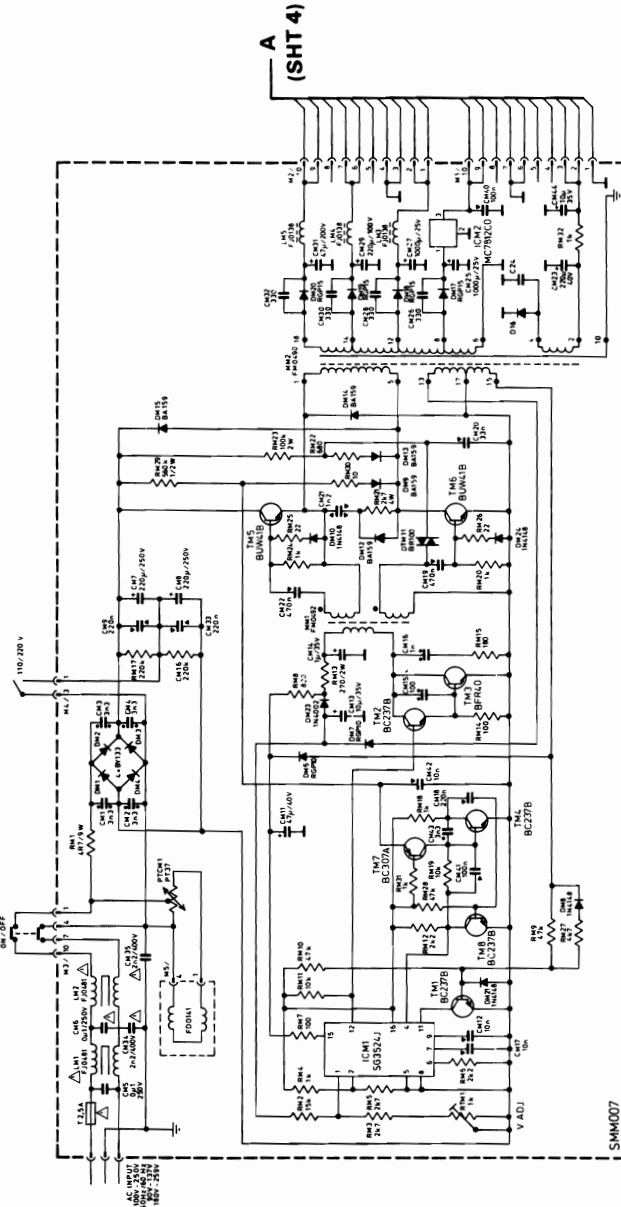
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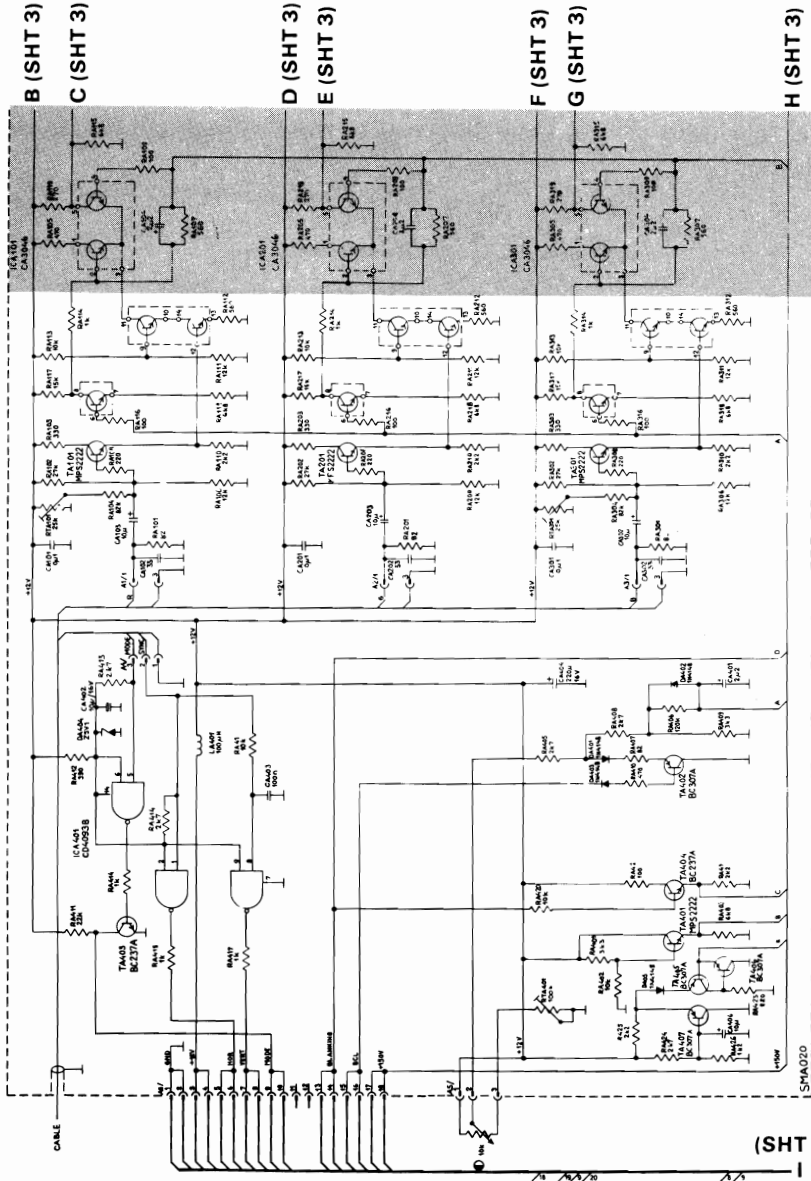


# Logic Diagrams

The following are the logic diagrams of the Professional Graphics Display:

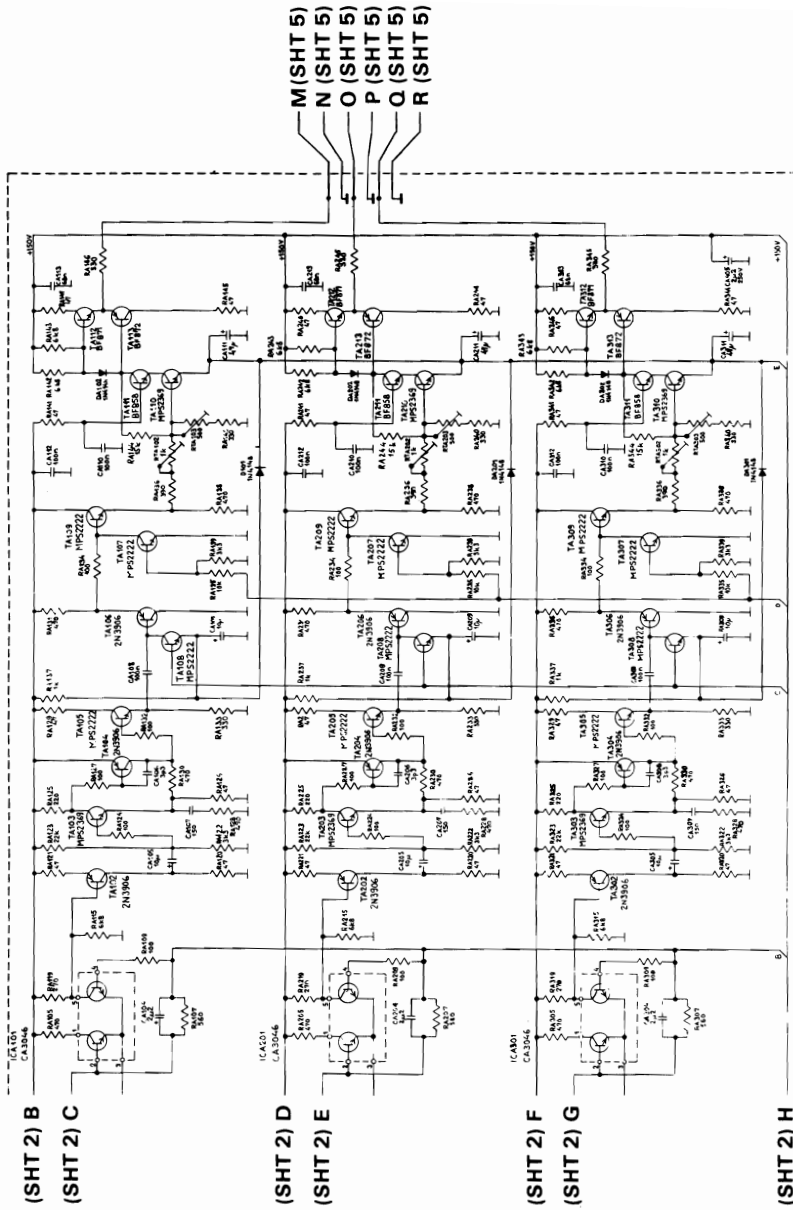


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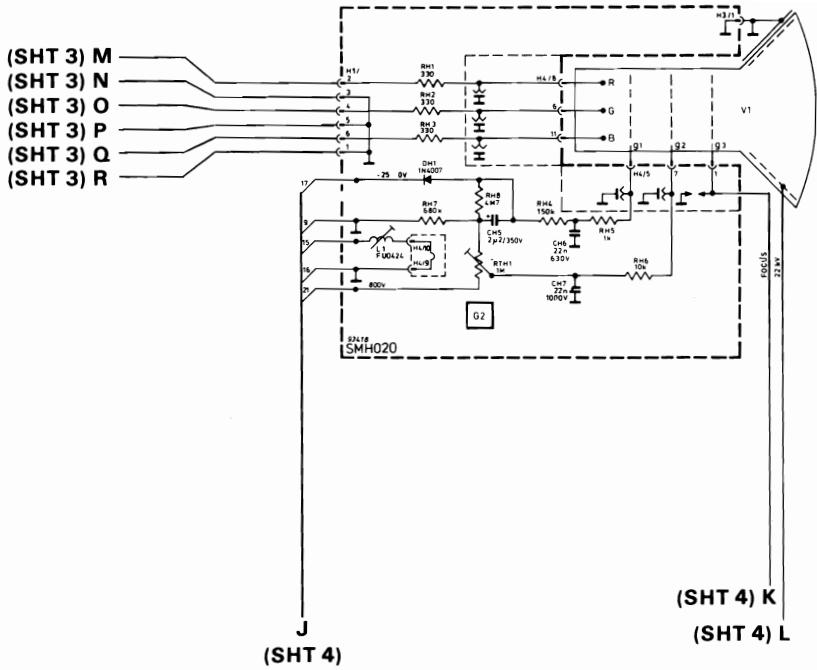


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