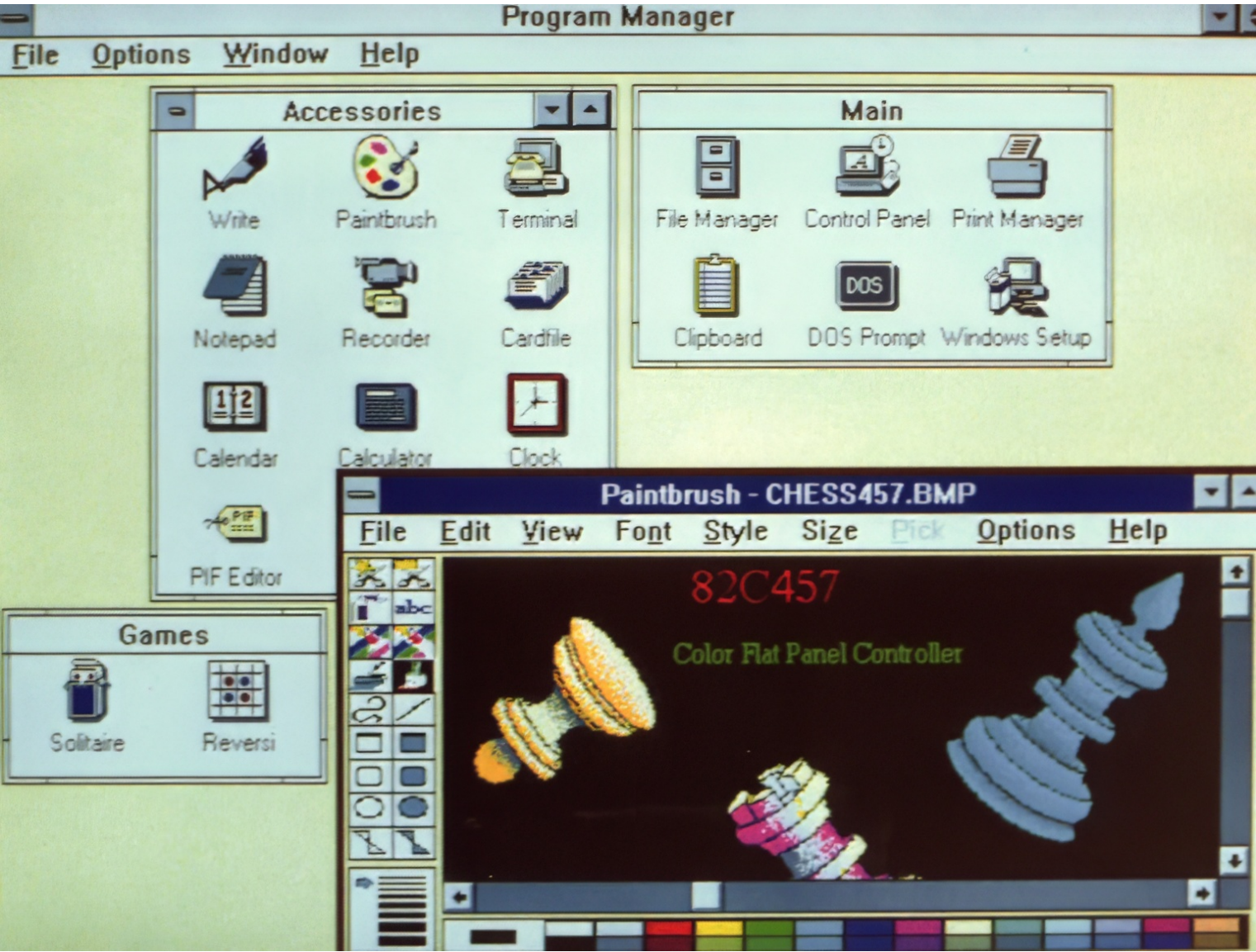


**Chips & Technologies 82C457 (IBM VGA (640 x480) Color Flat Panel Controller)**



Demo screen on color TFT (Thin Film Transistor) flat panel running Microsoft Windows 3.0 driven by 82C457

VGA Mode	Backward compatibility	Resolution	Display mode	Colors	Text size	Clock frequency
0, 1	CGA/EGA/VGA	320 x 200	Text	16	8 x 8	25.175 MHz
2, 3		640 x 200				
4, 5		320 x 200	Graphics	4		
6		640 x 200		2		
7	MDA/Hercules/EGA/VGA	720 x 350	Text	B/W	9 x 14	28.322 MHz
D	EGA/VGA	320 x 200	Graphics	16	8 x 8	25.175 MHz
E		640 x 200			B/W	
F		640 x 350		16		
10		640 x 350		2	8 x 16	
11	VGA	640 x 480		16		
12		640 x 480		256	8 x 8	
13		320 x 200				



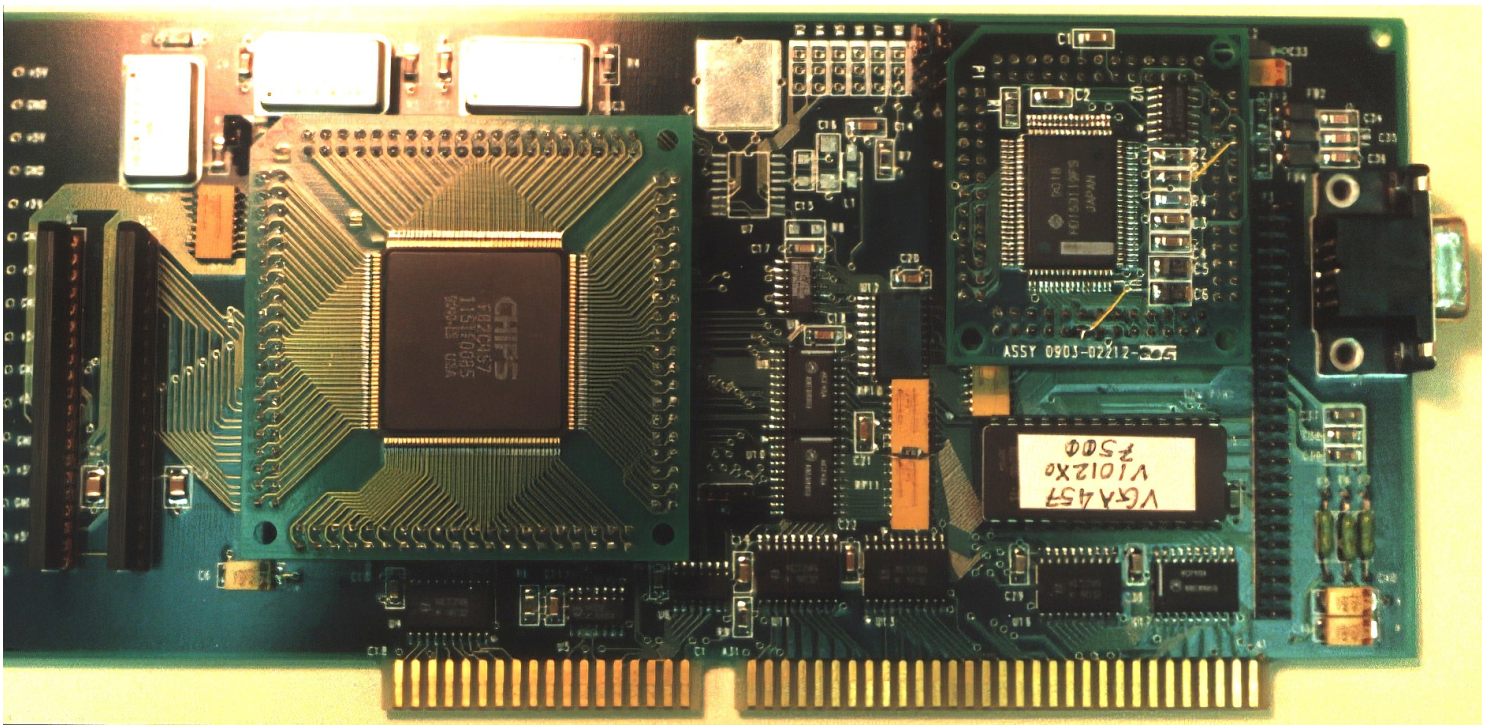


Simultaneous display on  
14" CRT monitor TV (NEC MultiSync Plus) & 10.4" Sharp TFT (Thin Film Transistor) color flat panel  
(Display quality of digital flat panel was much better than analog CRT (Cathode Ray Tube))  
**Demonstrating the transition from CRT to Flat panel**



82C457 Evaluation board (Lower right) driving CRT through VGA connector & flat panel through 50 pin flat cable





82C457 Evaluation board

This evaluation board assembles,

- Chips & Technologies 82C457 VGA Color flat panel controller
- 2 pieces of Toshiba [TC511665](#) 64kx16 ZIP DRAMs
- Hitachi RAMDAC [HD15319](#) with RGB color information (6 bits each; R[5:0], G[5:0], B[5:0]) fed back to 82C457 for color processing.
- 28 pin Flat panel graphics BIOS EEPROM
- 3 pieces of crystal oscillators (25.175 MHz, 28.322 MHz, 40.000 MHz) to keep backward compatibility of CGA/MDA/Hercules/EGA (VGA mode 0 through 13)
- VGA connector for connecting analog CRT
- 50 pin flat cable connector for connecting digital flat panel

Chips & Technologies manufactured own companion chips below especially for flat panel graphics LSIs.

- [82C401](#) Flat Panel/CRT Clock Synthesizer to provide 3 frequencies programmable from a 14.318MHz crystal oscillator (for flat panel, one of 12 different frequencies to select highest possible frame frequency).
- [82C460](#) Flat Panel Color Palette
- [82C411](#) Flat Panel Color Palette/DAC (Compatible function with HD15319 above)

## Dithering



Dithering at a certain frame display by 82C457



Final display all frames combined by 82C457