

Wilton 6409

Fault Diagnostics of the graphics display processor board.

Video Plane has bits stuck in the first byte of a word that exits the FIFO to be displayed.

That is the high byte (bits 8-15) of the word.

This worksheet traces the path of each bit from the graphics processor to the video mixer.

The CRT is 512px x 512px. One line = 32 x 16 bit words.

Inspection of the CRT displayed image revealed a repeated bit pattern contained in the first byte to exit from the FIFO shift registers.

Comparison with the stuck byte pattern shows close correlation to U36 RAM output.

Conclusion is that U37 4416 RAM is faulty.

Key

U35-DQ3-15 =IC ID-pin name-pin number

U34,U35 4416 RAM			U22 LS166			
Bit	U24 LS245	Bit	U22 LS166	Pin		
0	U24-A1-2	0	A	2		
1	U24A3-4	1	B	3		
2	U24-A4-5	2	C	4		
3	U24-A6-7	3	D	5		
4	U24-A8-9	4	E	10		
5	U24-A7-8	5	F	11		
6	U24-A5-6	6	G	12		
7	U24-A2-3	7	H	14		
			Q	13	Video Plane 1 byte FIFO exit to U23-13 input	
U36,U37 4416 RAM			U23-13 LS166			
Bit	U25 LS245	Stuck Byte Pattern	Bit	U23-13 LS166	Pin	
8	U25-A1-2	1	8	A	2	
9	U25-A3-4	1	9	B	3	
10	U25-A4-5	1	10	C	4	
11	U25-A6-7	0	11	D	5	
12	U25-A8-9	0	12	E	10	
13	U25-A7-8	0	13	F	11	
14	U25-A5-6	1	14	G	12	
15	U25-A2-3	0	15	H	14	
				Q	13	Video Plane 1 word FIFO exit