

**5 T R O U B L E S H O O T I N G**

This section helps you resolve problems you may encounter while setting up or using your MultiSync MT800 LCD Projector.

**Status Light Messages**

Condition	Status
OFF	Normal
On Continually	The projector lamp has exceeded 2000 hours of operation and should be replaced.
Blinking Slowly (Once a second)	Check the filter and clean it if necessary. Ensure that the filter panel is installed properly. Wait one minute before using the remote control. Otherwise the lamp may not go on.

Condition	Status
Blinking Rapidly (4 times a second)	The projector is overheated. The lamp turns off automatically. Allow the fan to run at least two minutes before unplugging the projector. Then check the filter and clean it if necessary. If there is insufficient ventilation around the projector or if the room where you're presenting is particularly warm, move the projector to a cooler location. In either case, allow at least five minutes before turning the projector back on. If the problem persists, contact your NEC dealer for service.

### Common Problems & Solutions

Problem	Check These Items
Does not turn on	<p>Check that the cord is plugged in and that the power switch on the back panel is on. Ensure that the air filter and filter panel are installed correctly. (See page 43.)</p> <p>Check the status light to see if the projector has overheated.</p>
No picture	<p>Use the menu icons to select your source (Video, S-Video or RGB). (See page 36.)</p> <p>Ensure your cables are connected properly.</p> <p>Use icons to adjust the brightness and contrast.</p> <p>Remove the lens cap.</p>
Image isn't square to the screen	<p>Reposition the projector to improve its angle to the screen.</p>
Picture is blurred	<p>Adjust the focus. (See page 17.)</p> <p>Reposition the projector to improve its angle to the screen.</p> <p>Ensure that the distance between the projector and screen is within the adjustment range of the lens.</p>

51

Problem	Check These Items
Image is scrolling vertically, horizontally or both	<p>Use icons to select the source you want to input.</p>
Remote control does not work	<p>Install new batteries. (See page 44.)</p> <p>Make sure there are no obstacles between you and the projector.</p> <p>Make sure you are within 23 feet (7m) of the projector.</p>
Status indicator is lit or blinking	<p>See the Status Light message chart on page 49.</p>
Cross color in RGB mode	<p>If "Auto Picture" is off, turn it on. If "Auto Picture" is on, turn it off and balance the image with the Picture Adjustment icon and Fine Picture Adjustment icon.</p>

To Contact Your NEC Service Representative, Call 1-800-836-0655

## 6 SPECIFICATIONS

This section provides technical information about the MultiSync MT800 LCD Projector's performance.

### Optical

LCD Panel	1.3" p-Si with 800 × 600 dots
Lens	Power zoom, power focus F 3.5 f = 52-73 mm
Lamp	Metal halide lamp 250 W (Guaranteed life span: 2,000 hours or 6 months from date of purchase, whichever comes first.)
Image Size	20-300 inches diagonal
Projection Distance	3.28-39.37 ft (1.0-12 m)
Image Brightness	Light output: 370 ANSI lumens
Contrast Ratio	200 : 1
Color Temperature	7,500 Kelvin

53

### Electrical

Inputs	Video (NTSC/PAL/SECAM/M- NTSC) RGB (H:15-60 kHz)
Video Bandwidth	50 MHz
Color Reproduction	Full color, 16.7 million colors simultaneously.
Horizontal Resolution	NTSC 550, PAL 350, SECAM 350, M-NTSC 350 TV lines RGB 800 dots horizontal, 600 dots vertical
Power Requirement	110-120/220-240 VAC, 50/60 Hz
Input Current	4.6 A
Dimensions	12.7" (W) x 5.9" (H) x 16.0" (D) 32.2cm (W) × 15.0cm (H) × 40.7cm (D) (including feet and lens)
Net Weight	15.9 lbs (7.2 kg)
Operational Temperatures	LCD projector: 32°-104°F (0° to 40°C), 20-80% humidity Remote control: 32°-140°F (0° to 60°C) IR receiver: 32°-140°F (0° to 60°C)
Regulations	UL Approved (UL 1950, CSA 950) Meets DOC Canada requirements FCC Class A

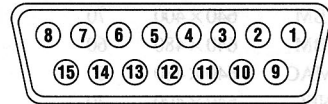
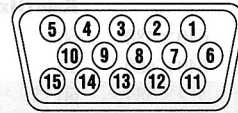
### D-Sub Pin Assignments

#### PC 15-Pin mini D-Sub

Pin No.	Signal to be connected
1	Red
2	Green
3	Blue
4	GND
5	No Connection
6	Red GND
7	Green GND
8	Blue GND
9	No Connection
10	Digital GND
11	GND
12	No Connection
13	Horizontal Sync
14	Vertical Sync
15	No Connection

#### Macintosh 15-Pin D-Sub

Pin No.	Signal to be connected
1	Red GND
2	Red
3	Horizontal Sync
4	GND
5	Green
6	Green GND
7	No Connection
8	No Connection
9	Blue
10	No Connection
11	GND
12	Vertical Sync
13	Blue GND
14	No Connection
15	No Connection



Pin No.	Signal	IBM	VEGA	MAC	Resolution	Refresh	Filter	Dot
14	Freeze	Y	Y	N	640x480	75	88.88	27.58
15	Front Floor	Y	Y	Y	720x320	70	31.47	28.32
16	Front Ceiling	Y	Y	Y	720x480	70	31.47	28.32
17	Row Floor	N	Y	N	720x320	67	39.44	27.2
18	Row Ceiling	N	Y	N	720x480	67	39.44	27.2
19	Auto Start On	Y	Y	Y	800x600	28.25	32.16	38
20	Auto Start Off	Y	Y	Y	800x800	60.32	27.88	40
21	Auto Pause On	Y	Y	Y	800x600	75	48.88	49.2
22	Auto Pause Off	Y	Y	Y	800x600	75.19	48.08	20
23	No Picture Off	Y	Y	Y	832x624	74.22	49.22	27.81
24	Highres On	N	Y	N	1024x768	60	32.2	44.9
25	Highres Off	Y	Y	Y	1024x768	60	48.36	62
26	Power MGT On	Y	Y	Y	1024x768	70	26.4	72
27	Power MGT Off	Y	Y	Y	1024x768	75	38.22	60
28	Auto Mute	N	Y	N	1280x1024	60	64	64
29	Auto Mute	N	Y	N				
30	Lamp Test	N	Y	N				
31	OS/2	N	Y	N				
32	Engage	Y	Y	Y				
33	Contrast	Y	Y	Y				

**Timing Chart**

Y/N		Resolution	Refresh Rate (Hz)	F.H. (kHz)	Dot Clk (MHz)
Y	NTSC	640×480	60	15.73	
Y	PAL	640×480	50	15.625	
N	MAC	512×384	60.15	24.48	15.67
N	MAC	512×384	60.15	24.48	17.234
N		640×395	55	24	20.35
Y	NEC	640×400	56	24.83	21.053
Y	IBM	640×400	70	31.47	25.175
Y	IBM	640×480	60	31.47	25.175
Y	MAC	640×480	60	31.47	25.175
Y	NEC	640×400	70	31.47	25.175
Y	NEC	640×480	60	31.47	25.175
Y	VESA	640×480	59.94	31.47	25.175
Y	MAC	640×480	66.67	34.97	31.334
Y	MAC	640×400	66	35	30.24
Y	MAC	640×480	66.67	35	30.24
Y	VESA	640×480	75	37.5	31.5
Y	VESA	640×480	72	37.86	31.5
Y	IBM	640×480	75	39.38	31.5

N	MAC	640×870	75	68.85	57.28
Y	IBM	720×350	70	31.47	28.322
Y	IBM	720×400	70	31.47	28.322
N	IBM	720×350	87	39.44	35.5
N	IBM	720×400	87	39.44	35.5
Y	VESA	800×600	56.25	35.16	36
Y	VESA	800×600	60.32	37.88	40
Y	VESA	800×600	75	46.88	49.5
Y	VESA	800×600	72.19	48.08	50
Y	MAC	832×624	74.55	49.725	57.283
N	VESA	1024×768	43	35.5	44.9 interlace
Y	VESA	1024×768	60	48.36	65
Y	VESA	1024×768	70	56.4	75
Y	VESA	1024×768	75	60	78.75
N	VESA	1280×1024	60	64	

Incompatible signals are listed "N" and hatched. VESA 1024x768 and MAC 832×624 images are compressed into 800×600.

**PC Control Command Reference**

**Command Codes**

No.	Function	Code	Data	Description
01	Video	03H	No	Same as remote
02	RGB	04H	No	Same as remote
03	Power On	08H	No	Same as remote (See page 62.)
04	Power Off	14H	No	Same as remote
05	Picture Mute	47H	No	Same as remote
06	Audio Mute	45H	No	Same as remote
07	Onscreen Mute	11H	No	Same as remote
08	Power Zoom W	09H	No	Same as remote
09	Power Zoom T	0AH	No	Same as remote
10	Power Focus +	0BH	No	Same as remote
11	Power Focus -	0CH	No	Same as remote
12	Reset	43H	No	Same as remote (Resets immediately after returning ACK)
13	X2/X4	87H	No	Same as remote

14	Freeze	91H	No	Same as remote
15	Front Floor	15H	No	
16	Front Ceiling	16H	No	
17	Rear Floor	17H	No	
18	Rear Ceiling	18H	No	
19	Auto Start On	19H	No	
20	Auto Start Off	1AH	No	
21	Auto Picture On	1BH	No	
22	Auto Picture Off	1CH	No	
23	Highcontrast On	1DH	No	
24	Highcontrast Off	1EH	No	
25	Power MGT On	23H	No	
26	Power MGT Off	24H	No	
27	800x600 Mode	25H	No	
28	640x480 Mode	26H	No	
29	Lamp Reset	27H	No	Lamp usage hour is reset to 0
30	S-VIDEO	C6H	No	Same as remote
31	Brightness	60H	Yes	0 to 63
32	Contrast	62H	Yes	0 to 63

## Command Codes (continued)

No.	Function	Code	Data	Description
33	Color	64H	Yes	0 to 63
34	Tint	66H	Yes	-32 to +31(E0 to 1F)
35	Sharpness	68H	Yes	0 to 3
36	Audio Volume	6AH	Yes	0 to 63
37	Fine Picture	6EH	Yes	0 to 15
38	Picture Adj	70H	Yes	0 to 255
39	H Position	72H	Yes	-32 to +31(E0 to 1F)
40	V Position	74H	Yes	-32 to +31(E0 to 1F)

61

## Cable Connection

### Communication Protocol

Baud rate:	9600 bps
Data length:	8 bits
Parity:	no parity
Stop bit:	one bit
X on/off:	none
Communications procedure:	half duplex

If the CPU of the LCD projector has received the data correctly, it returns an ACK(C5H). If the received data is not correct, the CPU returns an NAK(CAH), then the following status:

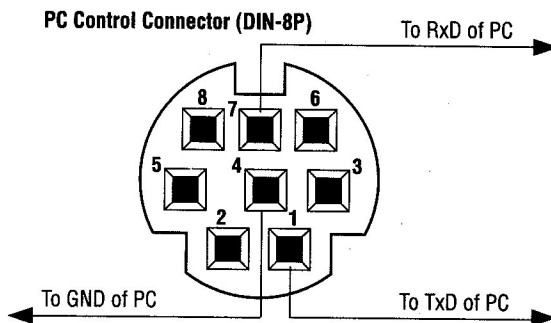
Receiving success:	C5
Receiving failure:	CA Err
Err 01:	Command not supported
Err 02:	Checksum error
Err 03:	Command not acceptable(Busy)
Err 04:	Parameter error

*NOTE: If failing in powering-on, the CPU returns the following NAKs:*

### CA Err 1

#### Err 1 8X (Apply the corresponding bit.)

- Bit 0: Filter cover is not attached correctly
- Bit 1: Lamp house cover is not attached correctly
- Bit 2: Overheated
- Bit 3: Lamp lighting failure



SPECIFICATIONS

62

# TROUBLESHOOTING

## 1. Confirmation of operation

Faults can be judged to a certain extent by an operation check under normal conditions of use. Before removing the top cover, check the following.

Is the POWER indicator lit orange in standby state?

- YES
- NO →
- The power cord may be disconnected.
  - The power switch may be OFF.
  - The fuse F1 for the PS1 PWB may be burnt.
  - A CPU peripheral circuit of the MAIN PWB may be faulty.

Is the POWER indicator lit green when power is switched ON?

- YES
- NO →
- PS1, PS2, BALLAST, or CPU circuit may be faulty.
  - Lamp bulb may be burnt out.

Is the STATUS indicator flashing?

- NO
- YES →
- The fan cover/lamp cover may be out of place.
  - The air filter may be clogged up.
  - There may be a fault around the KEN/BM PWB.
  - Lamp bulb may be burnt out.
  - The LM connector may not be inserted correctly.

Can the ticking sound of lamp lighting ignition heard?

- YES
- NO →
- The LM connector may not be inserted correctly.
  - The BALLAST PWB may be faulty.
  - Lamp bulb may be burnt out.

Is the lamp lit?

- YES
- NO →
- Lamp bulb may be burnt out.

Is the ON screen displayed?

- YES
- NO →
- The main PWB may be faulty.

Faults in VIDEO, TERM PWB.



## TROUBLESHOOTING

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### 2. Power-supply block:

Power-related trouble can cause no picture, no power supply to each PWB, no lamp lighting, no fan operation, etc.

The shortcut to dealing with a fault, if it occurs, is to determine whether it is of the power supply. Then check the PS1, PS2, and BALLAST in this order.

When the top cover is opened, the protector will operate. Keep the fan cover and lamp cover in place, or short pins 1, 2 and 3 of the LF connector of the MAIN PWB.

#### (1) PS1 PWB

Is AC power input to the connector CP1?

NO → • Faulty contact of the connector CP1.

YES

Is DC output of about 240V (for an AC input of 100V), 275V (for an AC input of 120V), 275V (for an AC input of 220V), or 304V (for an AC input of 240V), available at the connectors W1 and W2?

YES → • PS2 or BALLAST is faulty.

NO

Is F1 opened?

YES → • Replacement of a fuse required.

NO

Are resistors R3 and R4 opened?

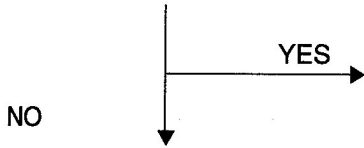
YES → • Replace the resistors.

NO

Fault in IC1, CR1, or CR3  
Soldered parts coming off, cracks in PWB

**(2) PS2 PWB**

Is DC input of about 300V available at the connector BZ?



- PS1 or the connector BZ may not be connected properly.

Is there following output voltage at each connector on PS2?

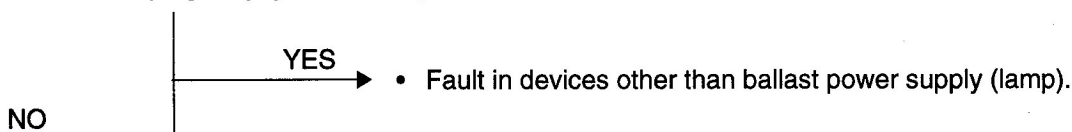
Connector	PIN NO.	STAND BY MODE	POWER ON MODE	Related circuit
PM	1	—	17.5	LC driving circuit
	2	—	15	LC driving circuit
	3	GND	GND	
	4	—	12	AUDIO circuit
	5	GND	GND	
	6	—	12	VIDEO circuit
	7	GND	GND	
	8	—	12	External supply voltage
	9	GND	GND	
	10	—	5	Analog LC driving, VIDEO circuits
	11	—	-5	LC driving circuit
	12	GND	GND	
PN	1	—	5	Digital LC driving, VIDEO circuits
	2	—	5	Digital LC driving, VIDEO circuits
	3	GND	GND	
	4	GND	GND	
PL	1	5	5	CPU standby power supply
	2	5	5	CPU standby power supply
	3	GND	GND	
	4	GND	GND	
	5	0	5	Power ON control
	6	0	5	Fan revolution control
PJ	1	—	11.5	Suction fan
	2	—	—	
	3	GND	GND	

## TROUBLESHOOTING

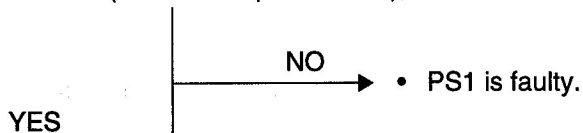
Connector	PIN NO.	STAND BYMODE	POWER ONMODE	Related circuit
PS	1	—	9	Exhaust fan
	2	—	—	
	3	GND	GND	
PB	1	GND	GND	Ballast power supply
	2	15	15	
	3	—	—	
	4	—	—	Ballast power supply
	5	20	20	
	6	GND	GND	
PZ/ZF	1	—	0/5	ZOOM+ control
	2	—	0/5	ZOOM- control
	3	—	0/5	FOCUS+ control
	4	—	0/5	FOCUS- control

### (3) BALLAST PWB

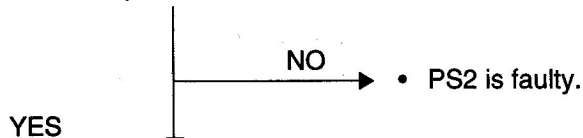
Can the lamp-lighting ignition ticking sound be heard?



Is DC input of about 240V (for an AC input of 100V), 275V (for an AC input of 120V), 275V (for an AC input of 220V), or 304V (for an AC input of 240V), available at the connector CP1.



Is a DC input of 15V or 20V at the CP3 connector?

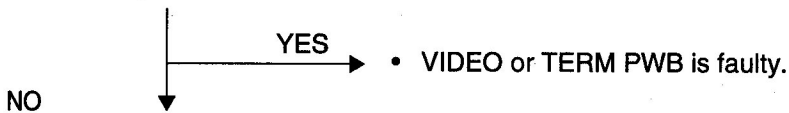


Checking the LM connector block and voltages.

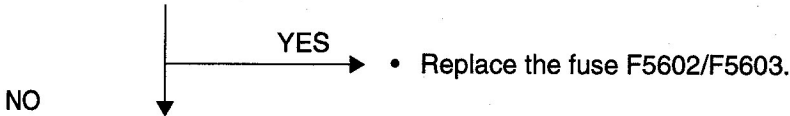
Connector	PIN NO.	STAND BY	POWER ON	Related circuit
LM	1	—	0	About 5V with the lamp unit
	2	GND	GND	
	3	—	About 1V	Lamp ON control
	4	GND	GND	

**(4) Main PWB block**

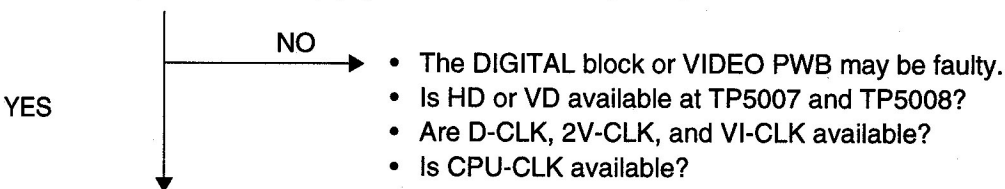
Is a normal picture available for RGB or VIDEO?



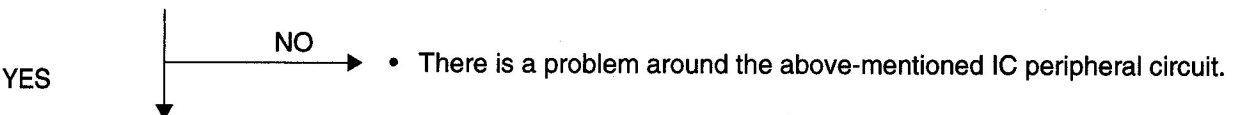
Is F5602 or F5603 opened?



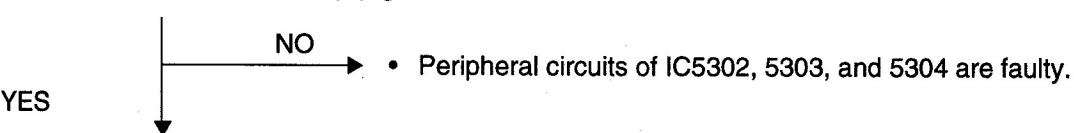
Is video output of about 1Vp-p generated at TP5001, 5002, and 5003?



Is a video output of about 2Vp-p generated at Pins 14 and 15 of IC5308, 5311, and 5313?



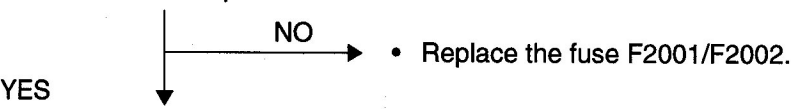
Is a video output of about 4Vp-p generated at Pins 20-25 of the connector toward the LC?



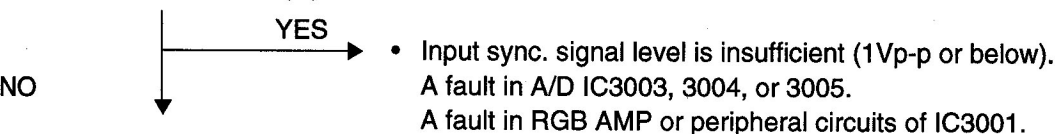
Error in timing signal from G/A, or a fault in the LCCOM circuit, or a fault in the LC.  
LCCOM circuit fault  
LCD panel cable disconnected

**(5) VIDEO PWB**

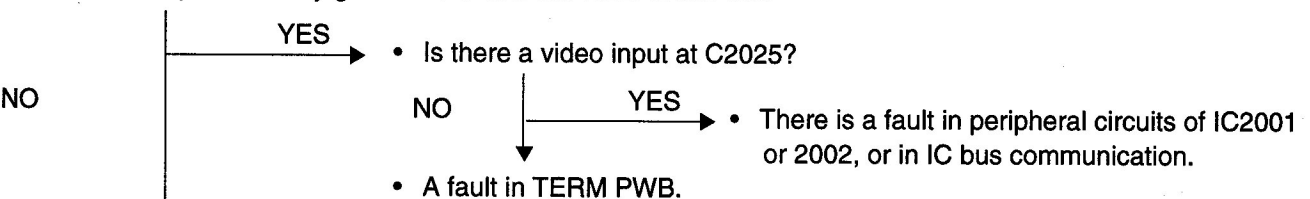
Is F2001 or 2002 opened?



Are no RGB pictures only generated and is the VIDEO circuit OK?



Are no VIDEO pictures only generated and is the RGB circuit OK?



Are there no pictures for both RGB and VIDEO?

Faulty contact of the B to B connector of the VT/VM board.