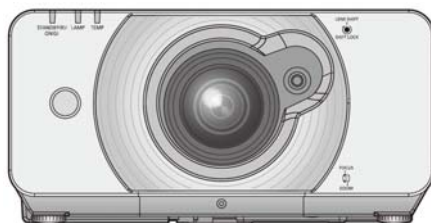


Service Manual

1-chip DLP Based Projector

Model No. **PT-DZ570U**
PT-DW530U
PT-DX500U
PT-DZ570E
PT-DW530E
PT-DX500E



The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

 **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.



WARNING : Use UV Radiation eye and skin protection during servicing.

CAUTION

Lithium Battery

Risk of explosion if battery is replaced by an incorrect type,
Replace only with the same of equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Precaution

If using of this projector at high altitudes (above 1,400m), set HIGHT ALTITUDE MODE to "ON".
(Refer to "PROJECTOR SETUP menu" in Operating Instructions.)
Failure to observe this may cause malfunctions. Never use this projector at an altitude of 2,700m or higher.
Using this projector at high altitude, consult your dealer or Authorized Service Center about preparations.

About lead free solder (PbF)

This projector is using the P.C.Board which applies lead free solder.
Use lead free solder in servicing from the standpoint of antipollution for the global environment.

Notes:

- Lead free solder: Sn-Ag-Cu (tin, silver and copper) has a higher melting point (approx. 217°C) than standard solder. Typically the melting point is 30~40 °C higher. When servicing, use a high temperature soldering iron with temperature limitation function and set it to 370 ± 10 °C.
- Be precautious about lead free solder. Sn-Ag-Cu (tin, silver and copper) will tend to splash when heated too high (approx. 600°C or higher).
- Use lead free solder for the P.C.Board (specified on it as "PbF") which uses lead free solder. (When you unavoidably use lead solder, use lead solder after removing lead free solder. Or be sure to heat the lead free solder until it melts completely, before applying lead solder.)
- After soldering to double layered P.C.Boards, check the component side for excess solder which may flow onto the opposite side.

About the identification of the lead free solder P.C.Board.

For the P.C.Board which applies lead free solder, the symbol as shown in the figure below is printed or stamped on the surface or the back of P.C.Board.



For US

IMPORTANT SAFETY NOTICE

There are special parts used in Panasonic LCD Projectors which are important for safety. These parts are shaded on the schematic diagram. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of PANASONIC BROADCAST & TELEVISION SYSTEMS COMPANY.

WARNING:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, The user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION : Any unauthorized changes or modifications to this equipment will void the users authority to operate.

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1. Exploded Views
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1. Safety Precautions

1.1. General Guidelines

- For continued safety, no modification of any circuit must be attempted.
- Unplug the power cord from the power outlet before disassembling this projector.
- Use correctly the supplied power cord and must ground it.
- It is advisable to use an isolation transformer in the AC power line before the service.
- Be careful not to touch the rotation part (cooling fan, etc.) of this projector when you service with the upper case removed and the power supply turned ON.
- Observe the original lead dress during the service. If a short circuit is found, replace all the parts overheated or damaged by the short circuit.
- After the service, all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations must be properly installed.
- After the service, check the leakage current to prevent the customer from getting an electric shock.

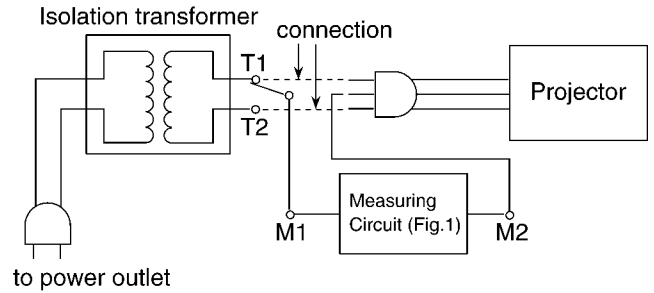


Fig. 2

2. Assemble the circuit as shown in Fig. 2. Plug the power cord in a power outlet.
3. Connect M1 to T1 according to Fig. 2 and measure the voltage.
4. Change the connection of M1 from T1 to T2 and measure the voltage again.
5. The voltmeter must read 0.375 V or lower in both of steps 3 and 4. This means that the current must be 0.75mA or less.
6. If the reading is out of the above standard, the projector must be repaired and rechecked before returning to the customer because of a possibility of an electric shock.

1.2. Leakage Current Check

1. Prepare the measuring circuit as shown in Fig.1.

Be sure to use a voltmeter having the performance described in Table 1.

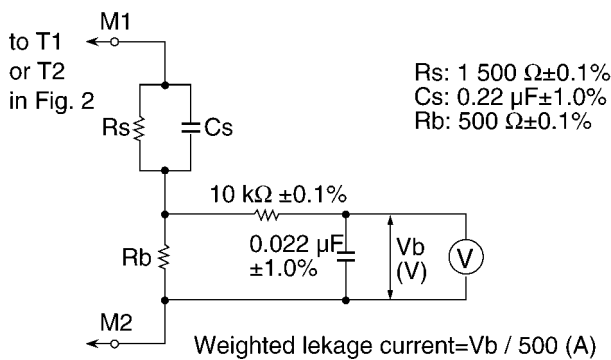


Fig. 1

	Performance
Voltmeter (rms reading)	Accuracy: $\leq 2\%$
	Input resistance: $\geq 1 \text{ M}\Omega$
	Input capacitance: $\leq 200 \text{ pF}$
	Frequency range: 15 Hz to 1 MHz

Table 1

1.3. UV Precaution and UHM Lamp Precautions

- Be sure to unplug the power cord from the power outlet when replacing the lamp.
- Because the lamp reaches a very high temperature during its operation, wait until it cools completely when replacing the Lamp Unit.
- The lamp emits small amounts of UV-radiation, avoid direct-eye contact with the light.
- The lamp unit has high internal pressure. If improperly handled, explosion might result.
- Because the high pressure lamp involves a risk of failure, never touch the lamp wire lead during the service.

2. Specifications

Model No.		PT-DZ570U PT-DZ570E	PT-DW530U PT-DW530E	PT-DX500U PT-DX500E	
Power supply		AC100 V - 240 V 50Hz/60Hz			
Power consumption		415 W When [STANDBY MODE] is [ECO] : Approx. 0.4 W When [STANDBY MODE] is [NORMAL] : Approx. 15 W			
Amps		5.0 A – 1.9 A			
DLP chip	Panel size	0.67 inch (aspect ratio 16 : 10)	0.65 inch (aspect ratio 16 : 10)	0.70 inch (aspect ratio 4 : 3)	
	Display system	1 unit DLP chip, DLP type			
	Number of pixels	2 304 000 pixels (1 920 × 1 200 dots)	1 024 000 pixels (1 280 × 800 dots)	786 432 pixels (1 024 × 768 dots)	
Lens		Manual zoom (2x) / Manual focus F 2.0 - 3.4, f 21.5 mm - 43.0 mm			
Projection lamp		1 bulbs × 300 W (Max 310 W) UHM lamp			
Optical output *1		4 000 lm (ANSI)		4 500 lm (ANSI)	
Applicable scanning frequency*2	For RGB signal	H : 15 kHz - 100 kHz, V : 24 Hz - 120 Hz PIAS (Panasonic Intelligent Auto Scanning) system			
		Dot clock frequency Less than 162 MHz			
	For YP _B P _R signal	[480i]	H: 15.73 kHz, V: 59.94 Hz	[576i]	H: 15.63 kHz, V: 50 Hz
		[480p]	H: 31.5 kHz, V: 59.94 Hz	[576p]	H: 31.25 kHz, V: 50 Hz
[720/50p]		H: 37.5 kHz, V: 50 Hz	[720/60p]	H: 45 kHz, V: 60 Hz	
[1 035/60i]		H: 33.75 kHz, V: 60 Hz	[1 080/50i]	H: 28.13 kHz, V: 50 Hz	
[1 080/60i]		H: 33.75 kHz, V: 60 Hz	[1 080/24p]	H: 27 kHz, V: 24 Hz	
[1 080/25p]		H: 28.13 kHz, V: 25 Hz	[1 080/24sF]	H: 27 kHz, V: 48 Hz	
[1 080/30p]		H: 33.75 kHz, V: 30 Hz	[1 080/60p]	H: 67.5 kHz, V: 60 Hz	
[1 080/50p]	H: 56.25 kHz, V: 50 Hz				
• HD/SYNC, VD terminals are not compliant with 3 value composite SYNC.					
	For video signal (S-video included)	H : 15.75 kHz/15.63 kHz, V : 50 Hz/60 Hz			
	For DVI-D/HDMI signal	480p, 576p, 720/60p, 720/50p, 1 080/60p, 1 080/50p, 1 080/60i, 1 080/50i, 1 080/24sF, 1 080/30p, 1 080/25p, 1 080/24p • Displayable resolution : VGA - WUXGA (non-interlace) • Dot clock frequency : 25 MHz - 162 MHz			
Color system		7 standards (NTSC/NTSC4.43/PAL/PAL-N/PAL-M/SECAM/PAL60)			
Screen size		40 inch - 300 inch			
Screen aspect ratio		16 : 10	16 : 9	4 : 3	
Projection scheme		Menu-selectable from front/rear/ceiling mount, and floor mounting			
Contrast ratio		2 000 : 1			
Power cord length		3.0 m			
Cabinet		Molded plastic			

Model No.		PT-DZ570U PT-DZ570E	PT-DW530U PT-DW530E	PT-DX500U PT-DX500E
Terminals	RGB1 IN	1 set, BNC × 5 [RGB signal] 0.7 V [p-p] 75 Ω (G-SYNC : 1.0 [p-p] 75 Ω) HD/SYNC TTL high impedance, automatic positive/negative polarity compatible VD TTL high impedance, automatic positive/negative polarity compatible [Y _B P _R signal] Y : 1.0 V [p-p] Synchronization signal included, P _B P _R : 0.7 V [p-p] 75 Ω		
	RGB2 IN	1 set of high density, D-sub 15-pin (female) [RGB signal] 0.7 V [p-p] 75 Ω (G-SYNC : 1.0 [p-p] 75 Ω) HD/SYNC TTL high impedance, automatic positive/negative polarity compatible VD TTL high impedance, automatic positive/negative polarity compatible [Y _B P _R signal] Y : 1.0 V [p-p] Synchronization signal included, P _B P _R : 0.7 V [p-p] 75 Ω		
	VIDEO IN	1 set, BNC, 1.0 V [p-p] 75 Ω		
	S-VIDEO IN	1 set, Mini DIN 4-pin, Y: 1.0 V [p-p], C: 0.286 V [p-p] 75 Ω, compatible with S1 signal		
	DVI-D IN	1 set, DVI-D 24-pin (Single link), DVI 1.0 compatible, HDCP compatible		
	HDMI IN	1 set, HDMI 19-pin (HDCP/Deep color compatible)		
	SERIAL IN/OUT	1 set, D-sub 9-pin, RS-232C compatible, computer control use		
	REMOTE 1 IN/OUT	1 set, M3 pin jack, wired remote control use, multiple connection use		
	REMOTE 2 IN	1 set, D-sub 9-pin, external control use		
LAN	1 set, RJ-45, network connection use, PJ-Link compatible, 10 Base-T/100Base-TX			
Dimensions		Width : 530 mm (20 7/8"), Length : 200 mm (7 7/8"), Height : 548.5 mm (21 19/32") (540 mm (21 1/4") : not including surface projection parts)		
Weight		Approx. 24.0 kg (52.9 lbs.) *3		
Operating environment		Temperature *4 : 0 °C to 45 °C / Humidity : 10 % to 80 % (no condensation)		
Remote control	Power supply	DC 3 V (AA/R6 battery × 2)		
	Operating range	Approx. 30 m (98'5") (when operated directly in front of signal receptor)		
	Weight	134 g (including batteries)		
	Dimensions	Width : 51 mm (2"), Length : 176 mm (6 15/16"), Height : 28 mm (1 3/32")		
Options	Ceiling bracket	For high ceiling : ET-PKD310H / For low ceiling : ET-PKD310S Ceiling Mount Attachment : ET-PAD310		
	Replacement Lamp Unit	ET-LAD310 (1 bulb), ET-LAD310W (2 bulbs)		
	Replacement filter unit	ET-ACF310		
	Smoke Cut Filter	ET-SFD310		
	Frame	ET-PFD310		

*1: Measurement, measuring conditions and method of notation all comply with ISO21118 international standards.

*2: For details of video signals that can be projected using this projector, refer to "List of compatible signals"

*3: This is the average value. It may differ depending on each product.

*4: When using this projector at high elevations 1 400 - 2 700 m (4 593 - 8 858 ft) sea level, temperature will be 5 °C lower than this higher limit.

•The part numbers of accessories and separately sold components are subject to change without notice.

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