



SERVICE KNOWHOW

Date: Nov.18, 2002 **No.:** SKD03001 [1/9]

MODEL No.

PDP-503PE/WYVIO6

PDP-503PU/KUC

PDP-503PE/WYVI6XK

PDP-433PG/TLDPKBRO

PDP-433PE/WYVI6XK

MODEL No.

PDP-503PG/TLDPKBRO

PDP-503PC/TAXQ

PDP-433PE/WYVIO6

PDP-433PU/KUC

SUBJECT 1 PDP-503HD, PDP-433HD series Defect diagnostic Method.

----- Please see the following pages. -----

PIONEER CORPORATION

K.MATSUMURA ,MANAGER

DP

Technical Support Group
Service Support Division

Memo:

SY66

Classify:

PDP-503HD & PDP-433HD Series Defect Diagnosis Method

1) No Power

- 1.1 Power LED blinks green slowly (3 sec)
- 1.2 Power LED blinking Red fast (300ms)
- 1.3 Power LED blinking fast (200ms On 100ms Off)
 - When LED blinking is green
 - When LED blinking is Red
- 1.4 Error indication
[E01], [E02], [E04], [E06]

2) Picture Abnormal

- 2.1 Picture does not appear
- 2.2 Picture abnormal

3) Scan IC Diagnosis

- 3.1 Scan IC diagnosis method

Service Knowhow

PDP-503HD & PDP-433HD Series Defect Diagnosis Method

1) No Power

1-1 Power LED blinks green or red slowly (3 sec. cycle)

Confirm System Cable connection ---> In this case LED blinks red after [E01] indication.

↓ OK

Confirm MR interface (PDP), PC interface (MR) connector's soldering

↓ OK

Replace MR interface (PDP), or PC interface (MR)

1-2 Power LED blinks Red fast (300ms cycle), -- Rear case open detection operation
Check whether power is turn off when Rear case is removed

↓

Check the Detect sw beside the audio amp.

Release method : Put back Rear case which presses the detect sw,
using remote-con to press "Menu", "Set" and then "Power On"

1-3 Power LED blinks fast (200ms on --> 100ms off)

If Blinking Green :

Blink Count	Main Cause	Cause	Repair Action
1 Time	Panel Micom NG	Panel Micom-Module Micom communication error	Digital Video Assy replacement
2 Times	Digital-IICbus communication NG [E06]	1) Module Micom-EEPROM communication error 2) Module Micom-Power Assy communication error 3) Module Micom-MR IF Assy communication error 4) Module Micom-Audio Assy communication error	1) Digital Video Assy defect, replace 2) D1 (Digital) - P2 (Power) connection check 3) D3 (Digital) - R3 (MR IF) connection check MR IF Assy defective 4) D3 (Digital) - R3 (MR IF) or R23(MR IF) -A24 (Audio) connection check, Audio Amp Assy faulty
3 Times	Dew Drop abnormal	Dew drop detected by dew sensor	If dew form leave unit for about an hour, Check CN2002 (Y drive) connector, Y drive defect (Dew Sensor faulty)
4 Times	Temperature abnormal	Happen when unit's temperature is abnormal (Sensor temp. reach about 78 deg.C.)	Confirmed Sensor temperature --> Panel hi temp.--> Turn off power, cool the panel --> Panel lo temp.--> TE1 (Dig.) connector check *If abnormal temp. happens sometimes, it could be due to X,Y drive poor adjustment (SUS timing adj.)

If Blinking Red : (If PD happen wait for about 1 minute after power off before turn on power)

Blink count	PD Detect unit	Diagnosis Method
1 Time	Y Drive Assy YCP over current detect	<p>Confirm Y1 connector's Vsus (230V)'s voltage dropping (when PD works). In power off state separate A,B scan assy completely (connector, plate) from Y drive</p> <p style="text-align: center;">↓ No</p> <p>Is PD triggered when Power on ? ---> Scan IC defect To Scan IC diagnosis</p> <p style="text-align: center;">Yes ↓</p> <p>Y drive assy faulty ---> Replace Assy</p>
2 Times	Y Drive Assy *DC-DC power abnormal detect	<p>Confirm Y1 connector's Vsus(230V)'s voltage dropping (when PD works). In power off state separate scan A,B assy completely (connector, plate) from Y drive</p> <p style="text-align: center;">↓ No</p> <p>Is PD triggered when power on ? ---> Scan IC defect To Scan IC diagnosis</p> <p style="text-align: center;">Yes ↓</p> <p>Y drive assy faulty ---> Replace Assy</p>
3 Times	X Drive Assy *DC-DC power VRN abnormal	<p>Confirm X1 connector's Vsus(230V)'s voltage dropping (when PD works). Confirm X1 connector's Pin3 become "L" (Before power off).</p> <p style="text-align: center;">↓</p> <p>X Drive faulty ---> Replace Assy</p>
4 Times	X Drive Assy *Reset circuit abnormal *XCP over current detect	<p>Confirm X1 connector's Vsus(230V)'s voltage dropping when PD. Confirm X1 connector's Pin4 become "L" (Before power off).</p> <p style="text-align: center;">↓</p> <p>X Drive faulty ---> Replace Assy</p>
5 Times	Power Supply Assy Vsus(230V) abnormal Vadr (60V) abnormal 15V, 12V, 6.5V abnormal 13.5V, -9V abnormal Internal +B abnormal	<p>Set to Low power mode (SW102 "off" in Power Supply Assy) Dis-connct P2 connector only pin5</p> <p style="text-align: center;">↓</p> <p>Is PD triggered when power on ?</p> <p style="text-align: center;">Y → Remove A21 connector (Audio Amp Assy) and power on, PD working ?</p> <p style="text-align: center;">N ↓</p> <p style="text-align: center;">N ↓ Replace Audio Amp Assy</p> <p style="text-align: center;">Y ↓ Replace Power Assy</p> <p>To next page</p>

	<p>Caution : V_{sus}: 230V V_{adr}: 60V When 1 of this 2 voltage drop due to over current it will also cause the other voltage to drop. If can't detect faulty assy should measure voltage.</p> <p>*VSUS voltage drops =>Disconnect either P3 or P4 and power on. If OK after P3 disconnected => Go to 1 time Blinking diagnosis If OK after P4 disconnected => X drive assy defective</p> <p>*VADR voltage drops =>To part **</p>	<p>Power off and Set SW102 back to "On" (P2 Pin5 still disconnect) Remove P5 connector in Power Supply Assy</p> <p>↓</p> <p>Power On, PD working ? →</p> <p>Y ↓</p> <p>Power off, Re-connect P5, P2 pin5 Remove P3 (In Power Supply)</p> <p>↓</p> <p>Power On, PD working ? →</p> <p>Y ↓</p> <p>Power off, re-connect P3, dis-connect P4</p> <p>↓</p> <p>Power on, PD working ? →</p> <p>Y ↓</p> <p>Power off, dis-connect P3, P5 and P2 Pin5 (P4 still disconnect)</p> <p>↓</p> <p>Power on, PD working ? →</p> <p>↓</p> <p>Replace Power Assy</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>Confirm Adr Out (Adr Connect Assy HOT)**'s 60V Measure Upper & Lower portion voltage, the lower voltage's Adr Module IC is faulty *Adr Module IC (TCP) visual check *Remove Bridge Assy, measure Adr Connect Assy's HOT-Gnd resistance, identify the lower resistance assy</p> </div> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>To Blinking 1, 2 times diagnosis</p> </div> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>To Blinking 3, 4 times diagnosis</p> </div> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>Go back the top of this page and re-check Reference (May be misjudgment) P5 : VADR = 60V P4 : VSUS = 230V</p> </div>
<p>6 Times</p>	<p>Address connect *VADR line broken, (Bridge Assy loosen) *TCP (address defective) # When checking IC1201 disconnect power assy's P2 pin5</p>	<p>Check IC1201's pin 6, 8 (in digital video assy) Pin 6 "H" → "L" : Lower Address circuit Pin 8 "H" → "L" : Upper Address circuit Check VADR voltage separated by the above method If 60V does not exist in VADR OUT (HOT Pt.) → Confirm Bridge Assy's proper connection to Adr Connect Assy</p> <p>VADR OUT voltage (60V) is abnormal →</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>Panel Defective</p> </div>
<p>7 Times</p>	<p>Adr Resonance Assy (Check both upper and lower part)</p> <p>#When checking CN1503, CN1603 disconnect P2 pin5</p>	<p>Check CN1503,CN1603-pin 1 in digital video assy. CN1503-pin 1 "L" : Upper Address circuit CN1603-pin 1 "L" : Lower Address circuit Check VADR voltage(60V) of Sub Adr Assy CN8801 separated as above.</p> <p>Normal ↓</p> <p>Abnormal ↓</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Is 60V of ADR OUT (Address connect Assy : HOT) normal ?</p> <p>Y →</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>Sub Address Assy defective</p> </div> <p>N ↓</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>Separate Address Resonance Assy an Adr Connect Assy completely, is 60V from ADR OUT normal ?</p> </div> <p>Y →</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>Panel Defective</p> </div> <p>N ↓</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;"> <p>Adr Resonance Assy Defective</p> </div> </div> <div style="width: 45%;"> <p>Check Power Supply Assy</p> </div> </div>

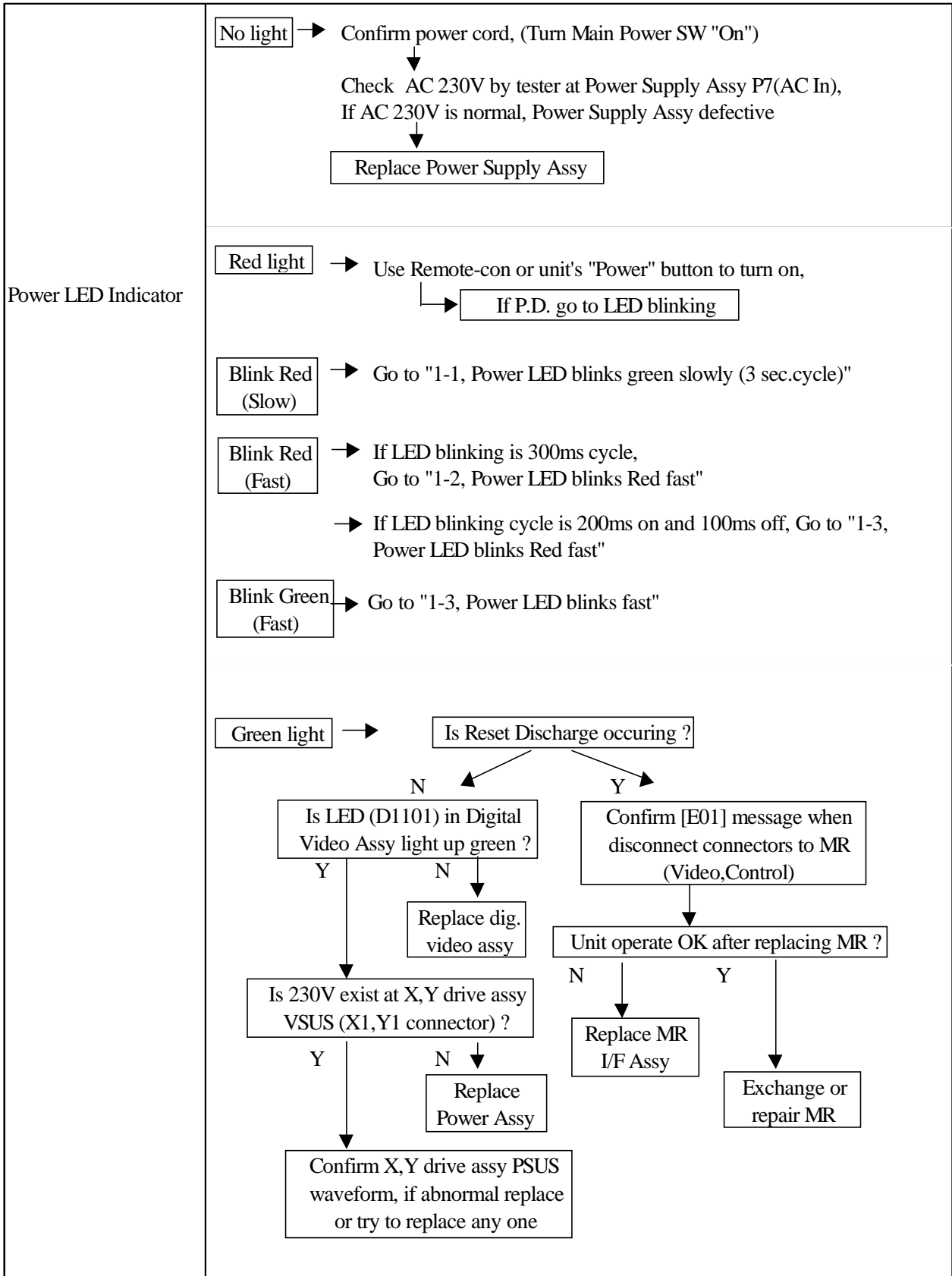
8 Times	Digital Video Assy	<p>Does individual voltage in digital video assy's each TP exist ? (Before P.D. operate)</p> <p style="text-align: center;"> TP1903 : +5V TP1904 : +3V TP1905 : GND TP1906 : +2V </p> <p>Y ↓</p> <p>Confirm "D1" connector's pin5 become "L"</p> <p>↓</p> <p style="text-align: center;"> Digital Video Assy Defective/Replace </p> <p>N ↓</p> <p>Is +12V exist in TP1901 or TP1916 ?</p> <p>Y ↓</p> <p style="text-align: center;"> Replace Power Supply Assy </p> <p>N ↓</p> <p style="text-align: center;"> Digital Video Assy Defective/Replace </p>
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1-4 Error message

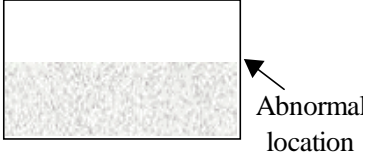
Code	Cause	Countermeasure
[E01]	MR not connected Cable poor connection	Confirm that the panel and MR is firmly connected by the proper cable. >>>Refer to 1-1
[E02]	Non-compatible signal input	Non-compatible signal is input into PDP panel (PDP-503P), Normally does not occur but when message appear check MR.
[E04]	Internal temperature abnormal	<p>Internal temperature of panel is high, turn power off and leave unit for a while. If panel is not at high temperature, check temperature via service mode. Service mode : "Menu" --> "Set" --> "Power" within 3 sec.</p> <p style="text-align: center;">↓</p> <p>2/17 page : Abnormal temp. is detected when sensor's value is above 78</p>
[E06]	Internal bus communication error	<p>Check connector cable at each PCB assy.</p> <ul style="list-style-type: none"> *D1 (Digital Video Assy) - P2 (Power Supply Assy) *D3 (Digital Video Assy) - R3 (MR Interface Assy) *R23 (MR Interface Assy) - A24 (Audio Assy) *System cable (PDP - MR)

2) Abnormal Picture

2-1 No Picture



2-2 Screen becomes white

<p>Whole screen (Few sec. later P.D.)</p>	<p>Separate scan module Assy (A,B) from Y drive assy completely and power on,</p> <pre> graph TD Start[] --> PD{P.D. ?} PD -- N --> GoScan[Go to Scan module diagnosis] PD -- Y --> GoLED[Go to Power LED Red Blinking 6,7 times diagnosis] </pre>				
<p>Whole screen (Few sec. later no P.D.)</p>	<p>Check whether Full Mask is being set. If Full Mask is not set to OFF, Set it to OFF</p> <pre> graph TD Start[] --> SM[Service Mode Menu->Set->Power] SM --> Display[Display 17/17 page Up Down key] Display --> FullMask[Full Mask : OFF] </pre>				
<table border="1"> <tr> <td data-bbox="178 819 301 898">Upper or Lower half white</td> <td data-bbox="304 819 445 898">P.D. occur</td> </tr> <tr> <td data-bbox="178 902 301 1025"></td> <td data-bbox="304 902 445 1025">P.D. not occur</td> </tr> </table>	Upper or Lower half white	P.D. occur		P.D. not occur	<p>Go to Power LED Red Blinking Diagnosis</p> <p>Scan IC defective, IC near to the abnormal picture center is defective</p> 
Upper or Lower half white	P.D. occur				
	P.D. not occur				
<p>Vertical line (1 line to tens of cm width)</p>	<p>Check flex cable at defect location between address connect assy and digital video assy (Disconnect the cable once and re-connect again)</p> <pre> graph TD Start[] --> Cross[Cross connect the flex cable of the Defect Location Adr connect assy with another one] Cross --> Changed{Was the defective location changed ?} Changed -- N --> ReplacePanel[Replace Panel Assy] Changed -- Y --> Reconnect[Re-connect these cables to the original conectors and replace the flex cable with a new one] Reconnect --> Disappear{Does the symptom disappear} Disappear -- N --> ReplaceDVA[Replace Digital Video Assy] Disappear -- Y --> Defective[The flex cable is defective] </pre>				
<p>Horizontal lines</p>	<p>Check cable between Y2 connector (Y Drive Assy) and D6 connector (Digital Video Assy)</p> <p>(Disconnect the cable once and re-connect again)</p> <pre> graph TD Start[] --> Improve{Any improve changes in the symptoms ?} Improve -- N --> ReplaceYDA[Replace Y Drive Assy, symptoms improve ?] ReplaceYDA -- Y --> ReplaceYDA2[Replace Y Drive Assy] ReplaceYDA -- N --> ScanIC[Scan IC Defective, Replace corresponding Scan IC] </pre>				

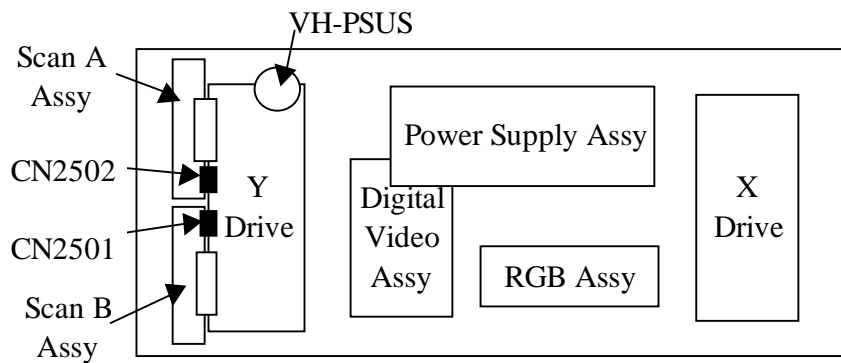
3) Scan IC Diagnosis

Defective Scan IC Judgement Method

Step 1 To Judge which Assy is defective

Open the rear bonnet and find out whether Scan A Assy (upper) or Scan B Assy (Lower) has the defective Ics.

- 1 Check VH-PSUS resistance value at upper right side of Y drive assy with analog tester (x1). (Due to condenser existence, needle will jerk momentarily)
- 2 Remove anyone of CN2501/CN2502 connecting Scan A/B Assy to Y drive assy and then check VH-PSUS resistance value again.
- 3 Short circuit occurs with the PCB Assy where defective IC exist. If both PCB assy cause short circuit, defective ICs could exist in both PCB assy.



Step 2 To judge which IC is defective

Next, disassemble PDP and check which IC is defective

- 1 Remove front panel, side chassis (3 screws in front and 2 at the back), and scan IC spring.
- 2 Make Scan A/B Assy IC visible as shown in the following diagram.
- 3 Check resistance value between PSUS (GNDH) and Scan IC's output pin 1-30,61-82,99,100. (Black probe to GNDH, Red probe to IC pins. Normal value is about 20 ohm. when defective the value is zero or infinity.)
- 4 Defective ICs can also be judged by checking resistance value between VH (pin 49,50) and the output pins. (In this case, Red to VH, Black to individual output pins. Normal value is 50.)
- 5 Replace defective ICs found.

