ADJUSTMENT INSTRUCTIONS

1. Application Object

These instructions is applied all of the PDP TV, RF-052A Chassis.

2. Specification

(1) Because this is not a hot chassis, it is not necessary to use an isolation transformer. However, the use of isolation transformer will help protect test instrument.
(2) Adjustment must be done in the correct order.
(3) The adjustment must be performed in the circumstance of 25±5°C of temperature and 65±10% of relative humidity if there is no specific designation.
(4) The input voltage of the receiver must keep 100-220V, 50/60Hz.
(5) The receiver must be operated for about 15 minutes prior to the adjustment.

● After RGB Full white HEAT-RUN Mode, the receiver must be operated prior to adjustment.
● Enter into HEAT-RUN MODE
 1) Press the POWER ON KEY on R/C for adjustment.
 2) OSD display and screen display 100% full White pattern.

※ Set is activated HEAT-RUN without signal generator in this mode.
※ Single color pattern(RED/BLUE/GREEN) of HEAT-RUN mode uses to check PANEL.

Caution) If you turn on a still screen more than 20 minutes, (Especially digital pattern, cross hatch pattern) after image may be occur in the black level part of the screen.

3. Channel memory

3-1. Setting up the LGIDS

1) Install the LGIDS. (idsinst.exe)
2) After installation, restart your PC.
3) Extract [files.zip] to folder [c:\LGIDS\files].
4) Start LGIDS.

(Fig. 1)

3-2. Channel memory Method

1) Select "PDP" and "Hurricane" on Model dialog. And check your connection in Communication dialog. (If your connection is 'NG', then set your PORT(COM1,2,3,...) correctly.)
2) Connect RS-232C cable and turn on the power.
 (If your connection has completed, you can see "Ready".)

※ If your set is not an end products but only a board, you have to make your board to Stand-by state (LED_R). And you have to Download in Stand_by power state.

(Fig. 2-1)

3) Select proper CH_memory file(*.nvm) for each model at [NVRAM Download] → [Write Batch]
 Next, select proper binary file(*.bin) including the CH information for each model at [NVRAM File].
4) Click the [Download] button.
 It means the completion of the CH memory download if all items show 'OK' and Status is changed by 'PASS' at the lower right corner of the window.
5) If you want to check whether the CH information is memorized correctly or not, click the [Verify] button.
 And then compare NVRAM File(*.bin) with the CH information downloaded.

(Fig. 2-2)

Each PCB assembly must be checked by check JIG set. (Because power PCB Assembly damages to PDP Module, especially be careful)

4. POWER PCB Assy Voltage Adjustments (Va, Vs Voltage Adjustments)

4-1. Test Equipment : D.M.M. 1EA

4-2.Connection Diagram for Measuring
: refer to fig.3

4-2. Adjustment Method [P/No 3501V00221A B/D]

(1) Va Adjustment
1) After receiving 100% Full White Pattern, HEAT RUN.
2) Connect + terminal of D.M.M to Va pin of P805, connect - terminal to GND pin of P805.
3) After turning RV601, voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top. (Deviation; ±0.5V)

(2) Vs Adjustment
1) Connect + terminal of D.M.M to Vs pin of P805, connect – terminal to GND pin of P805.
2) After turning RV401, voltage of D.M.M adjustment as same as Va voltage which on label of panel right/top. (Deviation; ±0.5V)
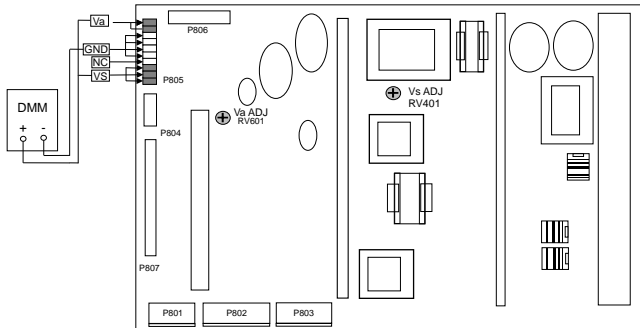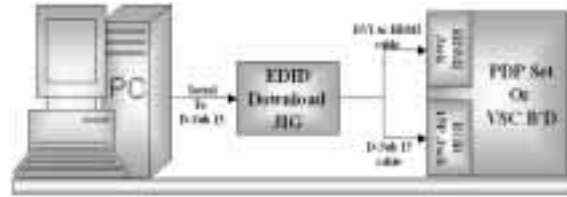

(Fig. 3) Connection diagram of power adjustment for measuring

5. EDID (The Extended Display Identification Data)/ DDC (Display Data Channel) download

5-1. Required Test Equipment
1) Adjusting PC with S/W for writing EDID Data.(S/W : EDID TESTER Ver.2.5)
2) A Jig for EDID Download
3) Cable : Serial(9Pin or USB) to D-sub 15Pin cable, D-sub 15Pin cable, DVI to HDMI cable

5-2. Setting of device

(Fig. 4) Connection Diagram of DDC download

5.3. Preparation for Adjustment
1) As above Fig. 5, Connect the Set, EDID Download Jig, PC & Cable.
2) Turn on the PC & EDID Download Jig. And Execute the S/W : EDID TESTER Ver,2.5
3) Set up S/W option
   Repeat Number : 5
   Device Address : A0
   PageByte : 8
4) Power on the Set

5.4. Sequence of Adjustment

(1) DDC data of Analog-RGB
1) Init the data

2) Load the EDID data.(Open File)
   [Analog-RGB : RF052ABC_RGB.ANA]
   [Digital(HDMI) : RF052ABC_HDMI.DVI]
3) Set the S/W as below.
4) Push the "Write Data & Verify"button. And confirm "Yes".
5) If the writing is finished, you will see the "OK" message.

(Fig.5) EDID DATA

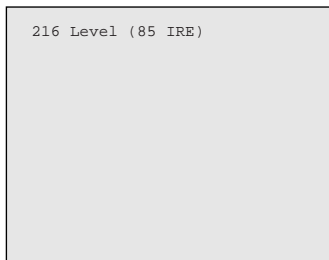# 6. Auto AV(CVBS) Color Balance

6-1. Requirement
- This AV color balance adjustment should be performed before white Balance Adjustment

6-2. Required Equipment
1) Remote controller for adjustment
2) AV Pattern Generator
  : 802F Pattern Generator, Master(MSPG-925FA), etc
  (Which has PAL Composite Video format output with standard(1.0 Vpp) Vertical 100% Color Bar Pattern as Fig6)

216 Level (85 IRE)

(Fig. 6) Auto AV(CVBS) Color Balance Test Pattern
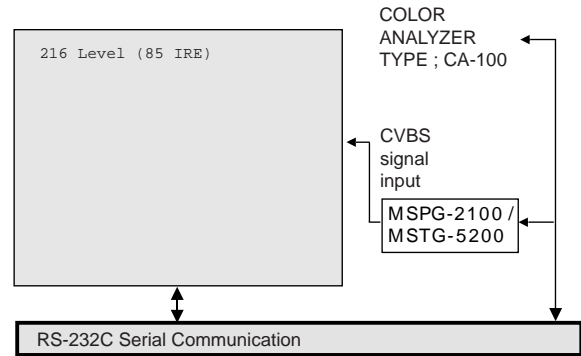
6-3. Method of Auto AV(CVBS) Color Balance
1) Input the PAL Composite Video (Fig6. 100% Color Bar Pattern) into video input.
   (RCA : AV1, SCART : AV3 Input, PAL : 50Hz, NTSC : 60Hz)
2) Set the PSM to Standard mode in Picture menu.
3) Press INSTAR key on R/C for adjustment.
4) Press the ▶(Vol. +) key operate to set, then it becomes automatically.
5) Auto-RGB OK means completed adjustment.

7. Adjustment of White Balance

7-1. Required Equipment
1) Remote controller for adjustment
2) Color Analyzer (CA-100 or same product)
3) Auto W/B adjustment instrument(only for Auto adjustment)
4) AV Pattern Generator

7-2. Connecting diagram of equipment for measuring (For Auto Adjustment)

216 Level (85 IRE)

COLOR ANALYZER TYPE ; CA-100

CVBS signal input

MSPG-2100 / MSTG-5200

RS-232C Serial Communication

(Fig. 7) Connection Diagram of Auto W/B Adjustment

◆ Auto adjustment Map(RS-232C)

Type		RF-052A/B/C			
Baud Rate		Data bit		Stop bit	Parity
115200		8		1	NONE
Protocol Setting	Index	Cmd1	Cmd2	Data	Min Value	Max Value
	R Gain	j	a		00(00)	255(FF)
	G Gain	j	b		00(00)	255(FF)
	B Gain	j	c		00(00)	255(FF)
	R Offset	j	d		00(00)	255(FF)
	G Offset	j	e		00(00)	255(FF)
	B Offset	j	f		00(00)	255(FF)

7-3. Adjustment of White Balance (For Manual adjustment)
● Operate the zero-calibration of the CA-100, then stick sensor to PDP module surface when you adjust.
● For manual adjustment, it is also possible by the following sequence.

1) Select white pattern of heat-run mode by pressing power on key on remote control for adjustment then operate heat run more than 15 minutes.
2) As below Fig.8, Supply 216Level (85 IRE) full screen pattern to Video input.
   (RCA : AV1, SCART, AV3, PAL : 50Hz, NTSC: 60Hz)
3) Press the TV/AV KEY on R/C for converting input mode.
4) Set the PSM to Standard mode in Picture menu.
5) Enter the White Balance adjustment mode by pressing the INSTART key twice(White Balance) on R/C.

6) Stick sensor to center of the screen and select each items (Red/Green/Blue Gain and offset) using ▲ / ▼(CH +/-) key on R/C.
7) Adjust Only High Light with R Gain/ B Gain using ◄ / ► (VOL+/-) key on R/C.
8) Adjust it until color coordination becomes as below.
   (Initially, R/G/B gain and R/G/B offset values are fixed
   Red Gain : 82, Green Gain : 80, Blue Gain : 86
   Red Offset : 7D, Green Offset : 7E, Blue Offset : 80)
   (High Light G Gain : 7A // Low Light R Offset : 7F, G Offset 7E, B Offset 80 is Fixed)
   Bright :   High Light : 80 ± 20cd
   Color-Coordinate :   High Light : X : 0.285 ± 0.003
                                        Y : 0.295 ± 0.003
   Color Temperature : 9,300°K ± 500°K
9) When adjustment is completed, Exit adjustment mode using EXIT key on R/C

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216 Level (85 IRE)
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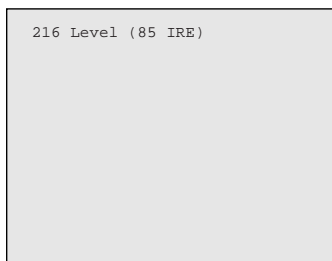
(Fig. 8) Pattern for Adjustment of White Balance

8. Auto Component Color Balance

[Requirement]
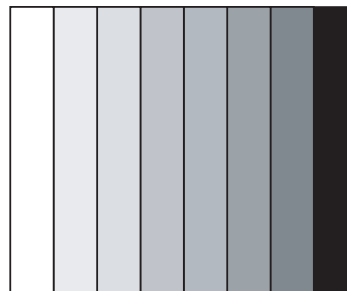It is very import to use correct adjustment pattern like fig.9
■ Within the pattern, color sequence should be aligned
   : W-Y-C-G-M-R-BLUE-BLACK
   (If color sequence is reversed(Black -> ... > White), reverse the pattern with REV key, when using Master pattern generator like MSPG-925)
■ If Minimum Black Level and/or Maximum White Level is not correct, Select 100% Color Bar Pattern.

8-1. Required Test Equipment
1) Remote controller for adjustment
2) 802F Pattern Generator
   (Which has 720p Ypbpr output & PC 1024x768 60Hz with Standard(0.7Vpp) Vertical 100% Color Bar Pattern as Fig.9)

8-2. Method of Auto Component Color Balance
1) Input the Component 720p 100% Color Bar signal into Component1 or Component2.
2) Set the PSM to Standard mode in Picture menu.
3) Press INSTART key on R/C for adjustment.
4) Press the ►(Vol. +) key operate To set, then it becomes automatically.
5) Auto-RGB OK means complete adjustment

(Fig. 9) Auto Component Color Balance Test Pattern

9. Auto RGB Color Balance

[Requirement]
It is very import to use correct adjustment pattern like fig.10
■ Within the pattern, color sequence should be aligned
   : W-Y-C-G-M-R-BLUE-BLACK
   (If color sequence is reversed(Black -> ... > White), reverse the pattern with REV key, when using Master pattern generator like MSPG-925)
■ If Minimum Black Level and/or Maximum White Level is not correct, Select 100% Color Bar Pattern.

9-1. Required Test Equipment
1) Remote controller for adjustment
2) 802F Pattern Generator
   (Which has VGA 60Hz PC Format output with standard (0.7Vpp) Vertical 16 Gray Scale pattern as Fig.10)

9-2. Method of Auto RGB Color Balance
1) Input the PC 1024x768 60Hz 100%Color bar into RGB.
2) Set the PSM to Standard mode in Picture menu.
3) Press ADJ key on R/C for adjustment.
4) Press the ►(Vol. +) key operate To set, then it becomes automatically.
5) Auto-RGB OK means completed adjustment.
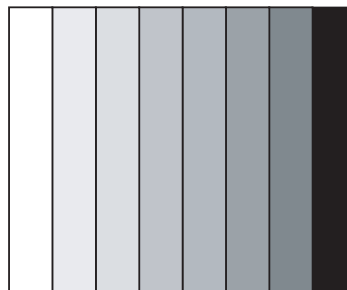
(Fig. 10) Auto RGB Color Balance Test Pattern

10. Default value in adjustment mode

10-1. Auto Color Balance (Component/RGB)

```
Auto Color Balance(HEX)

Auto-RGB          ► To Set
Source            Cortez
Red    Offset1        22
Green Offset1         24
Blue   Offset1        23
Red    Offset2        45
Green Offset2         43
Blue   Offset2        37
Red    Gain          014
Green Gain           031
Blue   Gain          011
Reset             ► To Set
```

(Fig. 11) Default Value on OSD

10-2. White Balance

```
White Balance(Hex)

Red    Gain          82
Red    Offset        80
Green Gain           86
Green Offset         7D
Blue   Gain          7E
Blue   Offset        80
Reset            ► To Set
```

(Fig. 12) Default Value on OSD