

# ADJUSTMENT INSTRUCTIONS

## 1. Application Object

These instructions apply to the RF-043E 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 equipment.
- (2) Adjustment must be done in the correct order.
- (3) The adjustment must be performed in the circumstance of  $25\pm 5^{\circ}\text{C}$  of temperature and  $65\pm 10\%$  of relative humidity if there is no specific designation otherwise..
- (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 adjustments.

- The unit must be Heat Run with a RGB Full pattern, prior to adjustment.
- Enter into HEAT-RUN MODE
  - 1) Press the POWER ON KEY on Service R/C.
  - 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 can be used to check PANEL.

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

## 3. Setting Up the LGIDS

- (1) Install the LGIDS. (idsinst.exe)  
After installation has completed, check if the file shown in (Fig. 1) has been created.
- (2) Right click on 'LGIDS' and select 'Create Shortcut'  
Then move the shortcut icon onto the desktop.
- (3) Double-click on the 'LGIDS' icon on the desktop to execute the program.

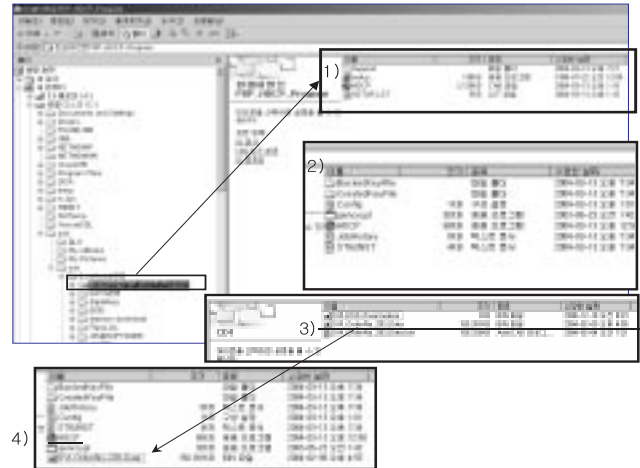


(Fig. 1)

## 4. HDCP Download

### 4-1. Setting Up the LGIDS

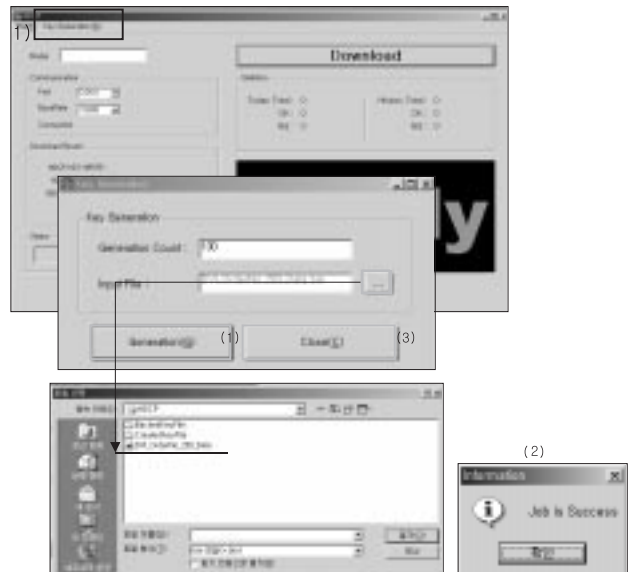
- (1) Click on 'setup' to install in your directory.
- (2) After installation has completed, check if the file shown on (Fig. 2) has been created.
- (3) Copy the KEY from source CD into the HDCP directory which was installed just now. (DVI\_orderNo\_2003\_data)



(Fig. 2)

- (4) After running HDCP(application program) which is inside the HDCP directory, setup the Communication.  
Port : COM1(modification possible)  
BaudRate : 115200

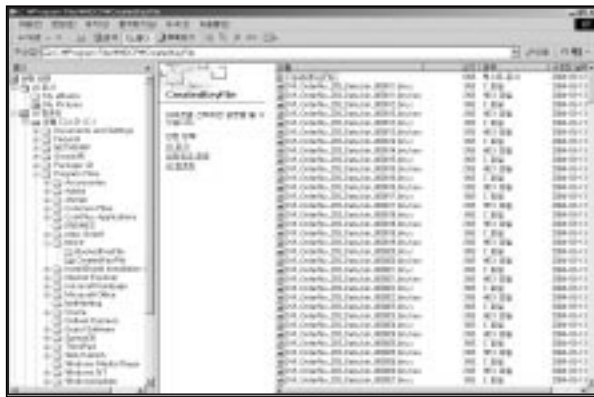
### 4-2. KEY Generation



(Fig. 3)

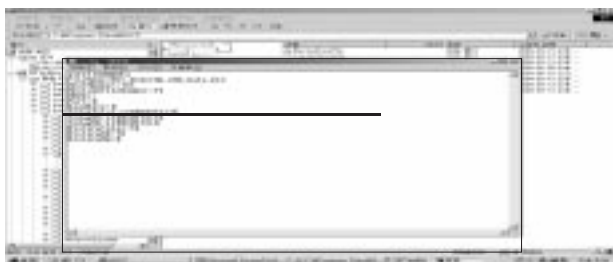
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- (1) Click on 'Key Generation (G)'.
- (2) Input the number of the key in Generation count.  
ex) If 100 Keys are required, then just register 100 and next time it will automatically get 101.
- (3) Input file : When installing the program for the first time, you must find the original KEY that you copied and open it. It is crucial that you copy the original KEY into this directory.  
When you use Generation, the information is recorded in Config.ini.
- (4) Click on 'Generation' \_\_\_\_\_(1)  
If it is done correctly, you will see "Job is Success." \_\_\_\_\_(2)  
Click on 'close' \_\_\_\_\_(3)
- (5) Check the Generation Data(Confirmation it's possible within HDCP\CreatedKeyFile)



(Fig. 4)

- (6) It is possible to check how many Generations are created at this point.  
(Fig. 5) shows that you have created 130 Generations and you will start from 131 next time.



(Fig. 5)

## 4-3. HDCP Download Method

- (1) Input power of Stand-By 5V.  
(Download must be executed only when it is on Stand-by)
- (2) The RS-232C(9PIN) must be connected to the COM1 on the PC.



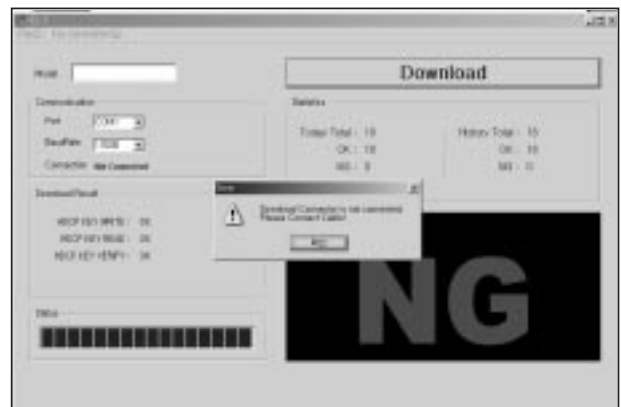
(Fig. 6)

- (3) If all the preparation is completed, click on 'Download'.



(Fig. 7) Normal State

- (4) If abnormal state (Fig. 8) display then (3) execute.



(Fig. 8) Abnormal State

# ADJUSTMENT INSTRUCTIONS

Each PCB assembly must be checked by Check JIG Set before assembly. (Take special note of the Power PCB, which can easily damage the PDP module)

## 5. POWER PCB Assy Voltage Adjustments (Va, Vs Voltage Adjustments)

### 5-1. Test Equipment : D.M.M. 1EA

### 5-2. Connection Diagram for Measuring Refer to (Fig 9).

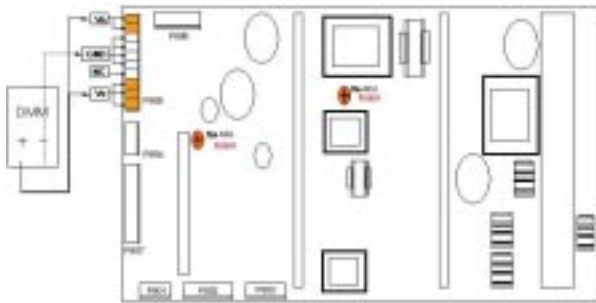
### 5-3. Adjustment Method for P/No. 3501V00182A/B B/D

#### (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) Turn RV601, to adjust the Va voltage to match the value marked on the label on the right/top of the panel. (Deviation;  $\pm 0.5V$ )

#### (2) Vs Adjustment

- 1) Connect + terminal of D.M.M to Vs pin of P805, connect - terminal to GND pin of P805.
- 2) Turn RV401, to adjust the Vs voltage to match the value marked on the label on the right/top of the panel. (Deviation;  $\pm 0.5V$ )



(Fig. 9-1) Connection Diagram of Power Adjustment for Measuring(3501V00182A/B)

### 5-4. Adjustment Method for P/No. 3501V00187A B/D

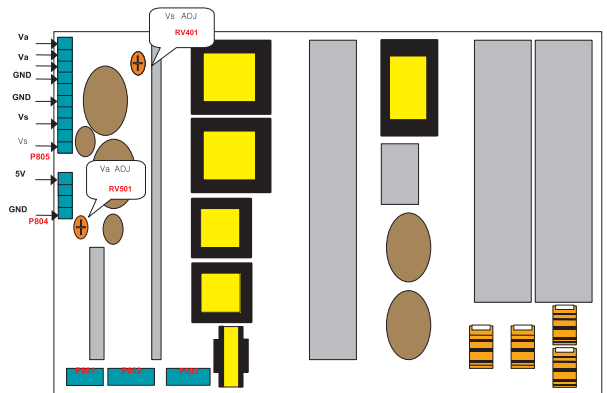
#### (1) Va Adjustment

- 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) Turn RV501, to adjust the Va voltage to match the value marked on the label on the right/top of the panel. (Deviation;  $\pm 0.5V$ )

#### (2) Vs Adjustment

- 1) Connect + terminal of D.M.M to Vs pin of P805, connect - terminal to GND pin of P805.
- 2) Turn RV401, to adjust the Vs voltage to match the value marked on the label on the right/top of the panel. (Deviation;  $\pm 0.5V$ )



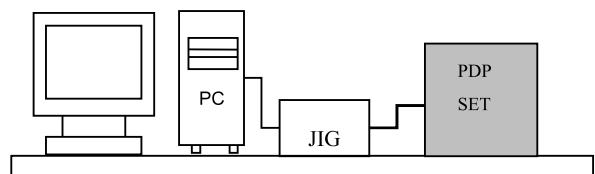
(Fig. 9-2) Connection Diagram of Power Adjustment for Measuring(3501V00187A)

## 6. DDC Data Input

### 6-1. Required Test Equipment

- (1) A jig for adjusting PC, DDC (PC serial to D-sub Connection equipment)
- (2) S/W for writing DDC (EDID Data Write & Read)
- (3) D-sub 15P Cable, D-Sub to DVI Connector (Connect to DVI Jack)

### 6-2. Setting of Device



(Fig. 10)

### 6-3. Preparation for Adjustment

- (1) Set devices as above and turn the PC and jig on.
- (2) Put S/W for writing DDC (EDID data Write & Read) into operation. (operated in DOS mode.)

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## 6-4. Sequence of Adjustment

### (1) DDC Data Input for Analog-RGB

- 1) Put the set on the table and turn the power on.
- 2) Connect PC Serial to D-sub 15P Cable of jig for DDC adjustment to RGB terminal (D-Sub 15Pin).
- 3) Operate S/W for DDC record and select DDC data for Analog RGB in Model Menu.
- 4) Operate EDID Write command.
- 5) Operate EDID Read command and check whether Check Sum is as below.  
MU-42PM11: CB  
MU-42PM12X/MU-50PM10: DC
- 6) If Check Sum is not CB(or DC), repeat 3) ~ 4).
- 7) If Check Sum is CB(or DC), DDC data for Analog-RGB input is completed.

### (2) DDC Data input for Digital-RGB(DVI)

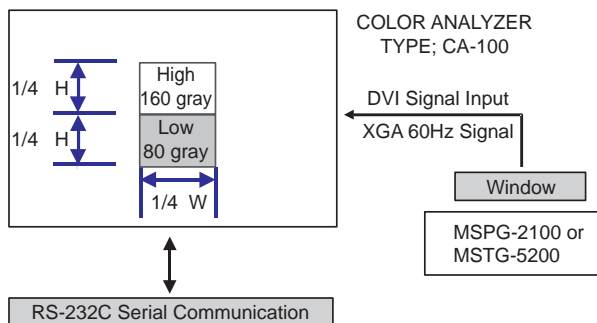
- 1) Connect PC Serial to DVI Cable of jig for DDC adjustment to DVI terminal (DVI Jack).
- 2) Operate S/W for DDC record and select DDC data for digital RGB in model menu.
- 3) Operate EDID Write command.
- 4) Operate EDID Read command and check whether Check sum is as below.  
MU-42PM11: 4A  
MU-42PM12X/MU-50PM10: CD
- 5) If Check sum is not 4A(or CD), repeat 3) ~ 4).
- 6) If Check sum is 4A(or CD), DDC data for Analog-RGB input is completed.

## 7. Adjustment of White Balance

### 7-1. Required Equipment

Color Analyzer (CA-100 or similar product)

### 7-2. Connection Diagram of Equipment for Measuring



(Fig. 11) White Balance Adjustment

### 7-3. Adjustment of White Balance

- Operate the Zero-calibration of the CA-100, then stick sensor to PDP module surface when you adjust.
- Manual adjustment is also possible by the following sequence.

- (1) Select white pattern of heat-run mode by pressing power key on the Service Remote Control (S R/C) then allow to heat run at least 15 minutes.
- (2) Supply Window Pattern signal to DVI input using Pattern Generator.
  - 1) Input Signal: XGA 60Hz
  - 2) Input the Window Pattern(Horizontal 25%, Vertical 50%(Top High 25% + Bottom Low 25%)) (Refer to Fig. 11)
- (3) Press the FRONT-AV KEY on R/C for converting input DVI mode.
- (4) Press ADJ key twice on S R/C. (White Balance)
- (5) High Adjustment  
Stick sensor to center of 160 Gray Level(High Window Pattern), select Red Gain and Green Gain using ▲, ▼ key on S R/C.  
Press VOL +, - keys to adjust until color coordination matches below.  
X; 0.285±0.003, Y; 0.285±0.003
- (6) Low Adjustment  
Stick sensor to center of 80 Gray Level(Low Window Pattern), select Red Offset and Green Offset using ▲, ▼ key on S R/C.  
Press VOL +, - keys to adjust until color coordination matches below.  
X; 0.285±0.006, Y; 0.285±0.006
- (7) Repeat above step (5) and (6) for the best condition of High and Low.
- (8) Exit adjustment mode using ■ Key.

## 8. Auto Component Color Balance

### 8-1. Required Test Equipment

Pattern Equipment: MSP3240A or similar product  
(16 Gray Scale Pattern output(Component output Level: 0.7Vp-p))

### 8-2. Method of Auto RGB Color Balance

- (1) Input RGB Source : Component 720p 16 Gray Scale Pattern  
At this time, input the Y, Pb and Pr signal.
- (2) Press ADJ KEY on the S R/C.
- (3) Press Vol. + KEY and operate To set.
- (4) Auto-RGB OK means completed adjustment.

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## 9. Auto RGB Color Balance

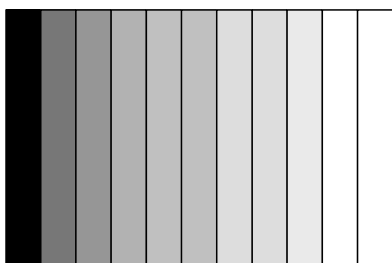
### 9-1. Required Test Equipment

Pattern Equipment: PC Pattern Generator (VG828, VG854, 801GF, MSP3240A)

(16 Gray Scale Pattern output(RGB output Level: 0.7Vp-p)

### 9-2. Method of Auto RGB Color Balance

- (1) Input RGB Source : XGA 60HZ 16 Gray Scale Pattern
- (2) Press ADJ KEY on the S R/C.
- (3) Press Vol. + KEY and operate To SET.
- (4) Auto-RGB OK means completed adjustment.



(Fig. 12) Auto RGB/ Component Color Balance Test Pattern

## 10. Auto Adjustment Map(RS-232C)

RF-043A						
Type	RS232					
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)