

ADJUSTMENT PRECAUTIONS

Entering service mode

(Method 1)

1. Send the service R/C code to enter the service mode.
2. Send it again to exit the service mode.

(Method 2)

1. Short the jumper to enter the service mode.
Connect "J 311" with "J 403".
2. Stop shorting the jumper to exit the service mode.

Service mode menu

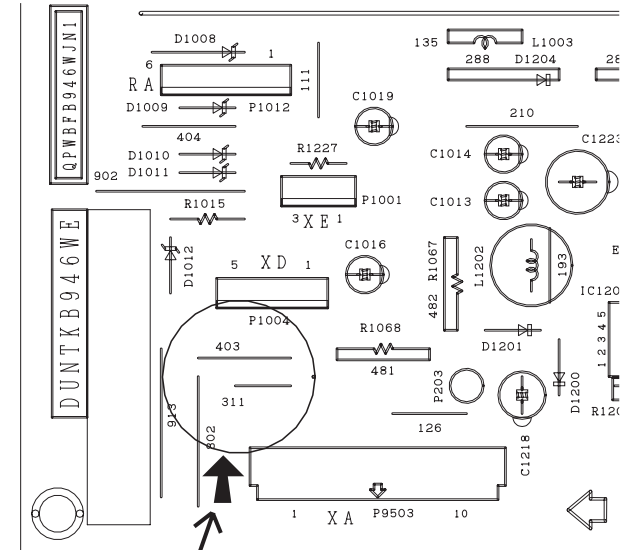
1. Select item by ch up/down ,push vol up/down.
2. When you adjust geometry, please set Full mode by "Wide mode key".
3. About geometry adjustment, it is necessary to adjust 2 pattern.
 - 50hz interlace signal
 - 60hz interlace signal

About "Reset TV-set"

1. When replacing the flash ROM or EEPROM, the TV may need to be reset.
2. Unless necessary, do not reset the TV because the adjustment data will be initialized.
3. To reset the TV, enter the "Reset TV-set" menu and press the SURROUND key.
After about 30 seconds, the NVM data will be initialized.

Changing the NVM data

1. Enter the "NVM Edit" menu.
2. Input the addr. and data in hex with the number keys or vol up/down key.
 - NVM-edit addr. (hex) ----
 - NVM-edit data (hex) --



MAIN (Wiring side)

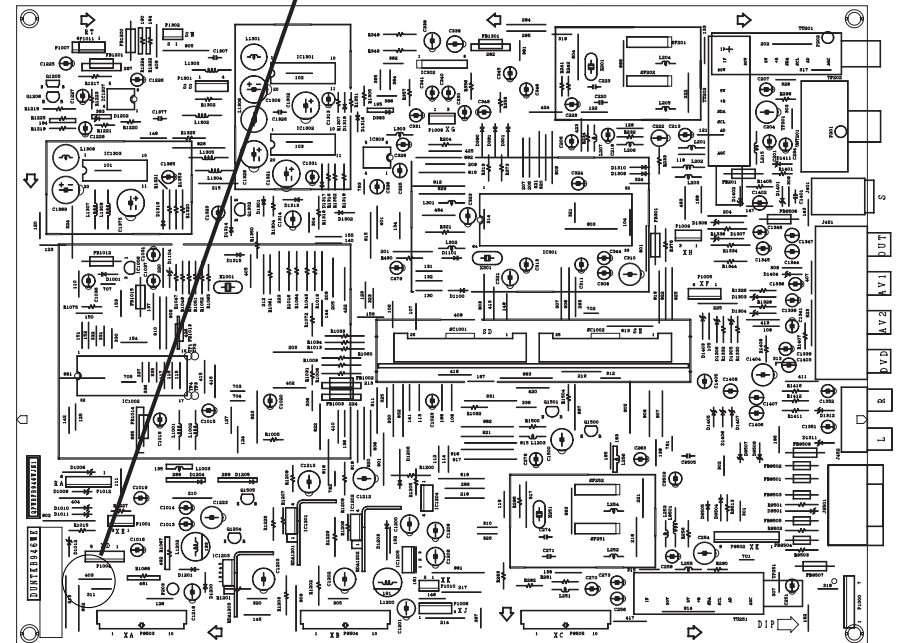
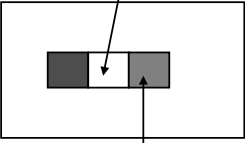

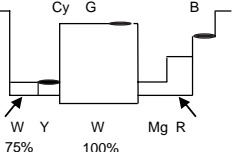


Fig.1

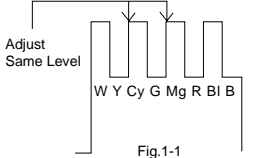
CUT OFF, BKGD ADJUSTMENT CONTINUED

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
3	Max Beam Check	(1) Receive 50Hz Monoscope Pattern Signal. (2) Press R/C to set Picture NORMAL condition. (3) Select full mode. (4) Connect the DC milliammeter between TP601 and TP602 (Full Scale: 3mA Range) (5) Beam current must be within $1800 \pm 100\mu A$.	
4	SUB-CONTRAST (SUB-CONT) I2C bus adjustment (RF SIGNAL)	(1) Receive the window pattern with AV input. (2) Make the picture normal with the remote controller. (3) Select the SUB-CONTRAST adjustment mode with the remote controller, and adjust 50% white to $140 \pm 10cd$.	<p>Note 2: Use "Y" of Minolta colour analyzer CA-100.</p> <p>Note 3: Use the PAL window pattern of the signal generator SX1006 for adjustment.</p> <p>50% white for SUB-CONT</p>  <p>Dark white for SUB-BRIGHT</p> <p>Note 4: window pattern</p>
5	SUB-BRIGHTNESS (SUB BR) I2C bus adjustment (RF signal)	(1) Receive the window pattern with AV input. (2) Make the picture normal with the remote controller. (3) Select the sub-bright adjustment mode with the remote controller, and adjust the right dark white area of the window pattern to $2.0cd \pm 0.5cd$.	<p>* When E-2 CH (Crosshatch pattern) or equivalent signal is received.</p> <p>1. Make the picture normal with the remote controller. 2. Adjust the 3rd (1 thru 5 from the left) balk of the window pattern to sink.</p>  <p>CUT OFF POINT</p>

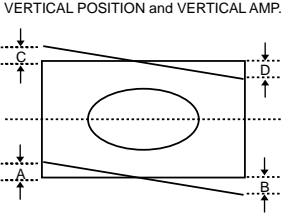
PAL CHROMA ADJUSTMENT

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	SUB COLOUR I2C Bus adjustment (RF signal)	(1) Receive the "PAL Colour Bar" signal. (E-10CH) (2) Make the picture normal with the remote controller. (3) Connect the oscilloscope to TP1802 (Use 10:1 probe) Range:2V/Div Sweep time:20μsec/Div (4) Set the sub colour adjustment mode with the remote controller, and vary the sub colour data to make 75% W of the PAL colour bar and RED at the same level for adjustment shown in Fig. 1-1.	 <p>Fig.1-1</p>


NTSC CHROMA ADJUSTMENT

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	SUB-TINT I2C bus adjustment (RF signal)	(1) Select the sub-tint adjustment mode to receive NTSC colour bar. (2) Connect the oscilloscope to TP1803 Range :20mV/Div(AC) (Use Probe 10:1) Sweep time :10μsec/Div (3) Vary the sub tint data to adjust the waveform to be gained as shown in Fig 1-1. *Change NVM data position 7F1 data 07=>00 07 is the offset value for factory.	<p>(B-Y)</p>  <p>Fig.1-1</p>

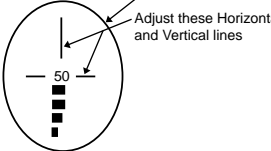
HORIZONTAL, VERTICAL, DEFLECTION LOOP ADJUSTMENT

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	100Hz FULL	(1) Press R/C to set Picture NORMAL condition. (2) Select full mode.	Note:
1	V. LINEARITY (I2C BUS CONTROL)	*Receive 50Hz Monoscope Pattern Signal. (1) Call the "VERTICAL LINEARITY" mode. (2) Increase or decrease "VERTICAL LINEARITY" by Volume key till the horizontal line in the center of monoscope is just at the position where the blanking starts.	
2	VERTICAL POSITION (I2C BUS CONTROL)	(1) Call the "VERTICAL POSITION" mode. (2) Increase or decrease "VERTICAL POSITION" by Volume key till the picture is centered.	
3	VERTICAL AMP. (I2C BUS CONTROL)	(1) Call the "VERTICAL AMPLITUDE" mode. (2) Increase or decrease "VERTICAL AMPLITUDE" by Volume key to set overscan of 8% typical. Adjustment Spec 8% range +1% -1%	
4	HORIZONTAL POSITION (I2C BUS CONTROL)	(1) Call the "Hor.RGB Pos POFS3" mode. (not NEWLIN mode) (2) Increase or decrease "Hor.RGB Pos POFS3" by Volume key to center the picture horizontal.	
5	PICTURE WIDTH (I2C BUS CONTROL)	(1) Call the "PICTURE WIDTH" mode. (2) Increase or decrease "PICTURE WIDTH" by Volume key to set overscan of 8% typical. Adjustment Spec 8% range +1% -1%	<p>VERTICAL POSITION and VERTICAL AMP.</p>  <p>2mm > A-B E-5 2mm > C-D A face is for south Adjustment Spec 8.0% range +1% -1% at the upper side of the geometry center and the lower side of the geometry center</p>
		*Receive 50Hz Cross-Hatch Pattern Signal.	

HORIZONTAL, VERTICAL, DEFLECTION LOOP ADJUSTMENT CONTINUED

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
6	TRAPEZE (I2C BUS CONTROL)	(1) Call the "TRAPEZE" mode. (2) Increase or decrease "TRAPEZE" by Volume key.	
7	CUSHION (I2C BUS CONTROL)	(1) Call the "CUSHION" mode. (2) Increase or decrease "CUSHION" by Volume key.	
8	CORNER AMPLITUDE (I2C BUS CONTROL)	(1) Call the "UPPER CORNER" mode. (2) Increase or decrease "UPPER CORNER" by Volume key. (3) Call the "LOWER CORNER" mode. (4) Increase or decrease "LOWER CORNER" by Volume key.	
9	CORNER AMPLITUDE (SIXTH) (I2C BUS CONTROL)	(1) Call the "UPPER CORNER (SIXTH)" mode. (2) Increase or decrease "UPPER CORNER (SIXTH)" by Volume key. (3) Call the "LOWER CORNER (SIXTH)" mode. (4) Increase or decrease "LOWER CORNER (SIXTH)" by Volume key.	
10	ANGLE (I2C BUS CONTROL)	(1) Call the "ANGLE" mode. (2) Increase or decrease "ANGLE" by Volume key.	
11	BOW (I2C BUS CONTROL)	(1) Call the "BOW" mode. (2) Increase or decrease "BOW" by Volume key.	
12	S CORRECTION (I2C BUS CONTROL)	(1) Call the "S CORRECTION" mode. (2) Increase or decrease "S CORRECTION" by Volume key.	
	2) 120Hz FULL	 Adjust items 2), same as 100Hz FULL NO.1--NO.12	

FOCUS ADJUSTMENT

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	FOCUS	(1) Receive the "Monoscope Pattern" signal. (2) Press R/C to set Picture NORMAL condition. (3) Select full mode. (4) Adjust the focus control to get the best focusing.	(Adjusted point) 

PROTECTOR OPERATION CHECKING

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	H+V PROTECTOR	(1) Receive "Monoscope Pattern" signal. (2) Connect output of Bias Box to D757 cathode (3) Set voltage of Bias Box to 18V and make sure the protector is not work. (4) Set voltage of Bias Box to 27V, and make sure the protector is work.	
2	OTHER PROTECTOR	(1) Once finish rectified Electrolytic Capacitor short testing in + B line, check all possible damaged components on +B line. (Use random selected set for inspection)	

A/V INPUT AND OUTPUT CHECKING

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	AV OUTPUT CHECK	(1) Receive the "PAL Colour Bar" signal (100% White Colour Bar, Sound 400Hz 100% Mod) (2) Terminate the Video output with a 75 ohm impedance. Make sure the output is as specified (1.0 Vp-p ± 3dB) (3) Terminate the Audio output with a 10 Kohm impedance. Make sure the output is as specified (1.77 Vp-p ± 3dB)	
2	AV-1 INPUT CHECK	Check of AV	
3	AV-2 INPUT CHECK	Check of AV	
4	Component (50Hz 60Hz 480p 576p) INPUT CHECK	Check of AV	
5	REAR S-Terminal INPUT CHECK	Check of AV	
6	FRONT INPUT CHECK	Check of AV	
7	FRONT S-Terminal INPUT CHECK	Check of AV	

FUNCTION OPERATION CHECKING (1) (VIDEO & AUDIO)

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS																																								
1	CONTRAST	(1) Receive "Monoscope Pattern" signal. (2) Press to Menu mode, then select Picture Mode and set to select CONTRAST. (3) Press Volume Up/Down key to check whether the CONTRAST effect is OK or not.																																									
2	COLOUR	(1) Receive "Colour Bar" signal. (2) Press to Menu mode, then select Picture Mode and set to select COLOUR. (3) Press Volume Up/Down key to check whether the COLOUR effect is OK or not.																																									
3	BRIGHTNESS	(1) Receive "Monoscope Pattern" signal. (2) Press to Menu mode, then select Picture Mode and set to select BRIGHTNESS. (3) Press Volume Up/Down key to check whether the BRIGHTNESS effect is OK or not.																																									
4	SHARPNESS	(1) Receive "Monoscope Pattern" signal. (2) Press to Menu mode, then select Picture Mode and set to select BRIGHTNESS. (3) Press Volume Up/Down key to check whether the BRIGHTNESS effect is OK or not.																																									
5	TINT	(1) Receive "NTSC Colour Bar" signal thru AV in. (2) Press to Menu mode, then select Picture Mode and set to select TINT. (3) Press Volume Up/Down key to check TINT, UP for GREEN direction and DOWN for RED direction whether is OK or not.																																									
6	POWER SAVE	(1) Receive "Monoscope Pattern" signal. (2) Set FEATURE to select SAVE. (3) Press Volume Up/Down key to check the POWER SAVE effect is OK or not. and whether LED(POWER SAVE) light up or not.																																									
7	WHITE TEMP	(1) Receive "Monoscope Pattern" signal. (2) Press to Menu mode, then select Picture Mode and set to select WHITE TEMP. (3) Press Volume Up/Down key to check WHITE TEMP Option.																																									
8	NORMAL	(1) Once in PICTURE Mode, and the NORMAL key is pressed, all the settings will be present to normal setting. (Normal setting value for every mode, refer on the following figure). <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>standerd</th> <th>movie</th> <th>music</th> <th>news</th> </tr> </thead> <tbody> <tr> <td>CONTRAST</td> <td>50</td> <td>60</td> <td>45</td> <td>45</td> </tr> <tr> <td>COLOUR</td> <td>0</td> <td>0</td> <td>5</td> <td>5</td> </tr> <tr> <td>BRIGHT</td> <td>0</td> <td>5</td> <td>5</td> <td>0</td> </tr> <tr> <td>TINT</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>SHARPNESS</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>PICTURE NR</td> <td>LOW</td> <td>LOW</td> <td>LOW</td> <td>LOW</td> </tr> <tr> <td>WHITE TEMP.</td> <td>0</td> <td>10</td> <td>0</td> <td>0</td> </tr> </tbody> </table>		standerd	movie	music	news	CONTRAST	50	60	45	45	COLOUR	0	0	5	5	BRIGHT	0	5	5	0	TINT	0	0	0	0	SHARPNESS	0	0	0	0	PICTURE NR	LOW	LOW	LOW	LOW	WHITE TEMP.	0	10	0	0	
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CHECKING FUNCTION OPERATION (2) (VIDEO & AUDIO) CONTINUED

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
9	COLOUR SYSTEM	(1) Receive the "PAL COLOUR BAR" signal, press the COLOUR SYSTEM key to select modes except PAL, check the COLOUR is not working properly. Then, select the "PAL" mode. Check again its colour so that it is working properly. (2) Receive "SECAM COLOUR BAR" signal, press COLOUR SYSTEM key to select modes except SECAM, check the COLOUR is not working properly. Then, select the "SECAM" mode. Check again its colour so that it is working properly. (3) Receive "NTSC 3.58 COLOUR BAR" signal, press COLOUR SYSTEM key to select modes except NTSC 3.58, check the COLOUR is not working properly. Then, select the "NTSC 3.58" mode. Check again its colour so that it is working properly. (4) Receive "NTSC 4.43 COLOUR BAR" signal thru AV, press COLOUR SYSTEM key to select modes except NTSC 4.43, check the COLOUR is not working properly. Then, select the "NTSC 4.43" mode. Check again its colour so that it is working properly.	
10	SOUND SYSTEM	(1) Receive "PAL-D/K" signal, press the "SOUND SYSTEM" to select B/G, I, M Check the sound output is not working properly. Select D/K and check the sound output to make sure it is working properly. (2) Receive "PAL-I" signal, press the "SOUND SYSTEM" to select B/G, D/K, M Check the sound output is not working properly. Select I and check the sound output to make sure it is working properly. (3) Receive "PAL-B/G" signal, press the "SOUND SYSTEM" to select I, D/K, M Check the sound output is not working properly. Select B/G and check the sound output to make sure it is working properly. (4) Receive "NTSC-M" signal, press the "SOUND SYSTEM" to select I, D/K, B/G Check the sound output is not working properly. Select M and check the sound output to make sure it is working properly.	
11	VOLUME	(1) Receive "E-5ch Monoscope Pattern" signal. (2) Press Volume Up/Down key to check whether the VOLUME effect is OK or not.	
12	BALANCE	(1) Receive "E-5ch Monoscope Pattern" signal. (2) Press to Menu mode, then select Sound Mode and set to select BALANCE. (3) Press Volume Up/Down key to check whether the Left-to-Right BALANCE effect is OK or not.	
13	BASS	(1) Receive "E-5ch Monoscope Pattern" signal. (2) Press to Menu mode, then select Sound Mode and set to select BASS. (3) Press Volume Up/Down key to check whether the BASS effect is OK or not.	

CHECKING FUNCTION OPERATION (2) (VIDEO & AUDIO) CONTINUED

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
14	TREBLE	(1) Receive "E-5ch Monoscope Pattern" signal. (2) Press to Menu mode, then select Sound Mode and set to select TREBLE. (3) Press Volume Up/Down key to check whether the TREBLE effect is OK or not.	
15	SUPER BASS	(1) Receive "E-5ch Monoscope Pattern" signal. (2) Press to Menu mode, then select Sound Mode and set to select SUPER BASS. (3) Press Volume Up/Down key to check whether the SUPER BASS effect is OK or not.	
16	VOLUME Headphone	(1) Receive "E-5ch Monoscope Pattern" signal. (2) connect Headphone. (3) Press to Menu mode, then select Feature Mode and set to select HEADPHONE. (4) Press Volume Up/Down key to check whether the VOLUME effect is OK or not.	

CHECKING FUNCTION OPERATION (WIDE MODE)

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	WIDE MODE	(1) Receive "Monoscope Pattern" signal. (2) Press WIDE key to check change WIDE mode PANORAMA/FULL/NORMAL/ZOOM14:9/CINEMA	
2	V-SIZE in wide mode	(1) Receive "Monoscope Pattern" signal. (2) Select PANORAMA, ZOOM14:9, and CINEMA mode. (3) Select V-SIZE, Press Volume Up/Down key to check whether the V-SIZE effect is OK or not.	
3	V-SCROLL in wide mode	(1) Receive "Monoscope Pattern" signal. (2) Select PANORAMA, ZOOM14:9, and CINEMA mode. (3) Select V-SCROLL, Press Volume Up/Down key to check whether the V-SCROLL effect is OK or not.	

CHECKING FUNCTION OPERATION (TEXT MODE)

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	TEXT	(1) Receive E-10ch signal. (2) Press TEXT key to check change TEXT mode TELETXT mode / MIXED mode / TEXT off.	
2	TEXT key	(1) Receive E-10ch signal. (2) Press HALF PAGE, HOLD, REVEAL, CLOCK, CANCEL, LIST, INDEX, and RESET key to check whether each effect is OK or not.	

CHECKING FUNCTION OPERATION (AV MODE)

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	AV MODE key	(1) Receive "Monoscope Pattern" signal. (2) Press AV MODE key to check change AV MODE mode STANDERD/MOVIE/MUSIC/NEWS	

CHECKING FUNCTION OPERATION (Twin Screen,PinP)

NO	ADJUSTMENT POINT	ADJUSTMENT CONDITION / PROCEDURE	WAVEFORM OR OTHERS
1	Twin Screen (ON-OFF) (Picture quality)	(1) Press "Twin Screen" key. (2) Recive "E-5ch Monoscope Pattern" signal at SUB ch. (3) Check the picture quality. (4) Receive "E-12ch Colour bar" signal at SUB ch. (5) Check the colour level.	
2	P in P (ON-OFF) (SIZE) (MOVE)	(1) Press "P in P" key. (2) Check the picture quality of SUB picture. (3) Press "P in P" key. (4) Check the SIZE of SUB picture. (5) Press "MOVE" key. (6) Check the position of SUB picture.	
3	P out P (ON-OFF) (MOVE)	(1) Select NORMAL in Wide mode. (2) Press to "P in P" key. (3) Check the picture quality of SUB picture. (4) Press "MOVE" key. (5) Check the position of SUB picture.	
4	FREEZE	(1) Receive "LIVE picture" signal. (2) Press "P in P" key. (3) Check the LIVE and FREEZE pictures.	
5	CH-SCAN	(1) Press "CH-SCAN" key. (2) Check the multi pictures.	