2. Alignment and Adjustments

2-1 General Alignment Instructions

1. Usually, a color TV-VCR needs only slight touch-up adjustment upon installation.
Check the basic characteristics such as height, horizontal and vertical sync and focus.

2. Observe the picture for good black and white details. There should be objectionable color shading; if color shading is present, demagnetize, perform purity and convergence adjustments described below.

3. Use the specified test equipment or its equivalent.

4. Correct impedance matching is essential.

5. Avoid overload. Excessive signal from a sweep generator might overload the front-end of the TV. When inserting signal markers, do not allow the marker generator to distort test results.

6. Connect the TV only to an AC power source with voltage and frequency as specified on the backcover ameplate.

7. Do not attempt to connect or disconnect any wires while the TV is turned on. Make sure that the power cord is disconnected before replacing any parts.

8. To protect against shock hazard, use an isolation transformer.

2-2 Automatic Degaussing

A degaussing coil is mounted around the picture tube, so that external degaussing after moving the TV should be unnecessary. But the receiver must be properly degaussed upon installation.

The degaussing coil operates for about 1 second after the power is switched ON. If the set is moved or turned in a different direction, the power should be OFF for at least 10 minutes.

If the chassis or parts of the cabinet become magnetized, poor color purity will result. If this happens, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube and the sides and front of the receiver. Slowly withdraw the coil to a distance of about 6 feet before turning power OFF.

If color shading persists, perform the following Color purity and Convergence adjustments.

2-3 High Voltage Check

CAUTION : There is no high voltage adjustment on this chassis. The B+ power supply should be +135 volts (with full color- bar input and normal picture level).

1. Connect a digital voltmeter to the second anode of the picture tube.

2. Turn on the TV. Set the Brightness and Contrast controls to minimum (zero beam current).

3. Adjust the Brightness and contrast controls to both extremes. Ensure that the high voltage does not exceed 30 KV under any conditions.

2-4 FOCUS Adjustment

1. Iput a black and white signal.

2. Adjust the tuning control for the clearest picture.

3. Adjust the FOCUS control for well defined scanning lines in the center area of the screen.

2-5 Factory Adjustment

2-5-1 Service Mode

1. To enter the "Service Mode", Press the remote-control keys in this sequence :

   - If you do not have Factory remote-control

| PICTURE OFF | → | MUTE | → | 1 | → | 8 | → | 2 | → | PICTURE ON |

   - If you have Factory remote-control

| PICTURE ON | → | DISPLAY ([+]) | → | FACTORY |

2-5-2 Factoy Mode OSD

2-5-2(A) ADJUST

Service
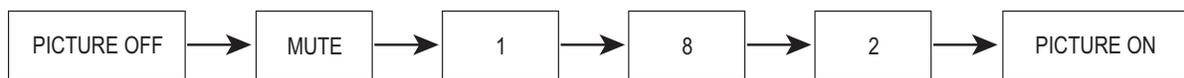
Deflection
Video Adujst 1
Video Adujst 2
Video Adujst 3
OPTION
YC DELAY
TEST PATTERN
EEPROM
BUS STOP
CHCKSUM
RESET
G2 ADJUST
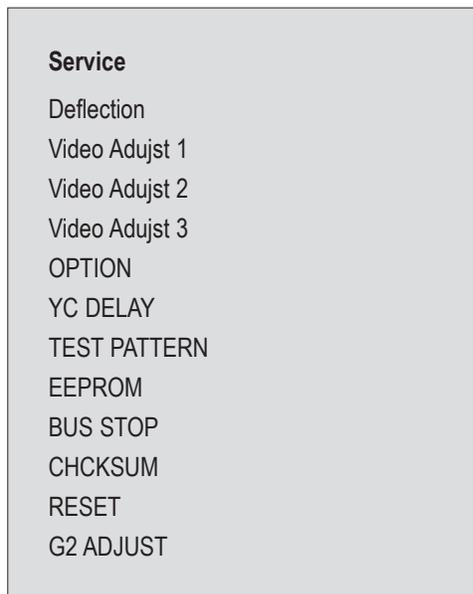
2-6 Functions of Each Port in Service Mode

🌐 DEFLECTION (NT 60Hz)

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
V Amp	ADJ	28	28	9	9	9	28	31
V Shift	ADJ	-30	-30	-20	-20	-20	-30	-28
H EW	ADJ	-2	-2	40	40	40	-2	14
H Shift	ADJ	130	130	123	123	123	130	146
V Linearity	ADJ	-8	-8	-8	-8	-8	-8	-4
V SC	FIX	43	43	43	43	43	43	43
H Parabola	ADJ	67	67	60	60	60	63	7
Upper Corner	ADJ	1	1	-2	-2	-2	1	8
Lower Corner	ADJ	-10	-10	-13	-13	-13	-10	-4
Upper Corner6	FIX	-7	-7	-7	-7	-7	-7	-7
Lower Corner6	FIX	8	8	8	8	8	8	8
H Trapezium	ADJ	9	9	8	8	8	9	4
Bow	ADJ	3	3	-1	-1	-1	3	3
Angle	ADJ	0	0	0	0	0	0	0
EHT Time	FIX	20	20	20	20	20	20	20
EHT Threshold	FIX	1	1	1	1	1	1	1
EHT Vertical	FIX	-12	-12	-12	-12	-12	-12	-12
EHT Horizontal	FIX	77	77	77	77	77	77	77
EHT Vertical2	FIX	-10	-10	-10	-10	-10	-10	-10
EHT Horizontal2	FIX	8	8	8	8	8	8	17

Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
V Amp	ADJ	28	28	31				
V Shift	ADJ	-30	-30	-28				
H EW	ADJ	-2	-2	14				
H Shift	ADJ	130	130	146				
V Linearity	ADJ	-8	-8	-6				
V SC	FIX	43	43	34				
H Parabola	ADJ	67	67	7				
Upper Corner	ADJ	1	1	8				
Lower Corner	ADJ	-10	-10	-4				
Upper Corner6	FIX	-7	-7	-7				
Lower Corner6	FIX	8	8	8				
H Trapezium	ADJ	9	9	4				
Bow	ADJ	3	3	3				
Angle	ADJ	0	0	0				
EHT Time	FIX	20	20	30				
EHT Threshold	FIX	1	1	10				
EHT Vertical	FIX	2	-12	0				
EHT Horizontal	FIX	30	77	0				
EHT Vertical2	FIX	-17	-10	-50				
EHT Horizontal2	FIX	7	8	0				

DEFLECTION (PAL 50Hz)

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
V Amp	ADJ	4	0	0	0	0	0	0
V Shift	ADJ	-6	-6	-6	-6	-6	-6	-6
H EW	ADJ	0	0	0	0	0	0	0
H Shift	ADJ	-16	-12	-12	-12	-12	-12	-12
V Linearity	ADJ	0	3	3	3	3	3	3
V SC	FIX	0	0	0	0	0	0	0
H Parabola	ADJ	0	0	0	0	0	0	0
Upper Corner	ADJ	0	0	0	0	0	0	0
Lower Corner	ADJ	0	0	0	0	0	0	0
Upper Corner6	ADJ	0	0	0	0	0	0	0
Lower Corner6	ADJ	0	0	0	0	0	0	0
H Trapezium	ADJ	0	0	0	0	0	0	0
Bow	FIX	0	0	0	0	0	0	0
Angle	FIX	0	0	0	0	0	0	0
EHT Time	FIX	20	20	20	20	20	20	20
EHT Threshold	FIX	1	1	1	1	1	1	1
EHT Vertical	FIX	-12	-12	-12	-12	-12	-12	-12
EHT Horizontal	FIX	77	77	77	77	77	77	77
EHT Vertical2	FIX	-10	-10	-10	-10	-10	-10	-10
EHT Horizontal2	FIX	8	8	8	8	8	8	8
Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
V Amp	ADJ	4	4	4				
V Shift	ADJ	-6	-6	-6				
H EW	ADJ	0	0	0				
H Shift	ADJ	-16	-16	-16				
V Linearity	ADJ	0	0	0				
V SC	FIX	0	0	0				
H Parabola	ADJ	0	0	0				
Upper Corner	ADJ	0	0	0				
Lower Corner	ADJ	0	0	0				
Upper Corner6	ADJ	0	0	0				
Lower Corner6	ADJ	0	0	0				
H Trapezium	ADJ	0	0	0				
Bow	FIX	0	0	0				
Angle	FIX	0	0	0				
EHT Time	FIX	20	20	30				
EHT Threshold	FIX	1	1	10				
EHT Vertical	FIX	2	-12	0				
EHT Horizontal	FIX	30	77	0				
EHT Vertical2	FIX	-17	-10	-50				
EHT Horizontal2	FIX	7	8	0				

Video Adjust 1

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
R Cutoff	ADJ	127	127	127	127	127	127	127
G Cutoff	FIX	127	127	127	127	127	127	127
B Cutoff	ADJ	127	127	127	127	127	127	127
R Drive	ADJ	127	127	127	127	127	127	127
G Drive	FIX	127	127	127	127	127	127	127
B Drive	ADJ	127	127	127	127	127	127	127
Sub Bright	ADJ	60	60	60	60	60	60	60
Sub Contrast	ADJ	49	49	49	49	49	49	49
Sub Color	FIX	0	0	0	0	0	0	0
Sub Tint	FIX	46	46	46	46	46	46	46
AKB Option	FIX	1	1	1	1	1	1	1
BCL Threshold	FIX	24	24	21	21	21	24	20
BCL Gain	FIX	200	200	240	240	240	200	240
BCL Time	FIX	100	100	230	230	230	100	230
Sub Sharpness	FIX	10	10	15	15	15	10	15
Pilot Low	FIX	25	25	25	25	25	25	25
Pilot High	FIX	45	45	45	45	45	45	45
V-Mute(x100ms)	FIX	3	3	3	3	3	3	3
BCL TCUP	FIX	65	-	65	65	65	65	65

Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
R Cutoff	ADJ	127	127	127				
G Cutoff	FIX	127	127	127				
B Cutoff	ADJ	127	127	127				
R Drive	ADJ	127	127	127				
G Drive	FIX	127	127	127				
B Drive	ADJ	127	127	127				
Sub Bright	ADJ	60	60	60				
Sub Contrast	ADJ	49	49	49				
Sub Color	FIX	0	0	0				
Sub Tint	FIX	46	46	46				
AKB Option	FIX	1	1	1				
BCL Threshold	FIX	28	24	21				
BCL Gain	FIX	200	200	200				
BCL Time	FIX	100	100	100				
Sub Sharpness	FIX	10	10	10				
Pilot Low	FIX	25	25	25				
Pilot High	FIX	45	45	45				
V-Mute(x100ms)	FIX	3	3	3				
BCL TCUP	FIX	65	65	65				

Video Adjust 2

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
VSU	FIX	2	2	2	2	2	2	2
Melody Volume	FIX	5	5	5	5	5	5	5
HB Start	FIX	159	159	159	159	159	159	159
HB Stop	FIX	149	149	149	149	149	149	149
RF AGC	FIX	1	1	1	1	1	1	1
VM Gain	FIX	7	7	0	0	0	6	0
VM Delay	FIX	7	7	4	4	4	4	4
V Peaking	FIX	12	12	12	12	12	12	12
BLE Tilt	FIX	7	7	7	7	7	7	7
BLE Gain	FIX	2	2	2	2	2	1	2
BLE Mode	FIX	2	2	2	2	2	2	2
BLE Break	FIX	1	1	1	1	1	1	1
CTI Gain	FIX	1	1	1	1	10	10	1
CTI Coring	FIX	15	15	15	15	5	5	15
LTI Gain	FIX	15	15	15	15	15	15	15
D-EHT Time	FIX	5	5	5	5	5	5	6
DCT Ratio	FIX	50	50	50	50	50	50	50
VSP COMB	FIX	3	3	3	3	3	3	3

Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
VSU	FIX	2	2	2				
Melody Volume	FIX	5	5	5				
HB Start	FIX	159	159	159				
HB Stop	FIX	149	149	120				
RF AGC	FIX	1	1	1				
VM Gain	FIX	7	7	7				
VM Delay	FIX	7	7	7				
V Peaking	FIX	12	12	12				
BLE Tilt	FIX	7	7	7				
BLE Gain	FIX	2	2	2				
BLE Mode	FIX	2	2	2				
BLE Break	FIX	1	1	1				
CTI Gain	FIX	1	1	1				
CTI Coring	FIX	15	15	15				
LTI Gain	FIX	15	15	15				
D-EHT Time	FIX	5	5	5				
DCT Ratio	FIX	50	50	50				
VSP COMB	FIX	3	3	3				

Video Adjust 3

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
NR Off Value	FIX	3	3	3	3	3	3	3
Gamma Mode	FIX	1	1	1	1	1	1	1
Gamma Correction	FIX	50	50	60	60	60	30	50
BST StartPoint	FIX	145	145	145	145	145	145	145
BST Gain(B)	FIX	50	50	50	50	50	50	50
DPWL Gain	FIX	80	80	80	80	80	80	80
DPWL Start	FIX	155	155	155	155	155	155	155
PIP Contrast	FIX	15	15	10	10	10	10	15
PIP Tint	FIX	63	63	63	63	63	63	63
PIP Color	FIX	5	5	7	7	7	7	5
PIP PAL V.Pos	FIX	24	24	24	24	24	24	24
PIP NTSC V.Pos	FIX	23	23	23	23	23	23	23
PIP H.Pos	FIX	39	39	39	39	39	39	39
PIP R Cutoff	FIX	2	2	4	4	4	4	2
PIP B Cutoff	FIX	1	1	5	5	5	5	1
PIP R Drive	FIX	170	170	168	168	168	168	170
PIP B Drive	FIX	190	190	212	212	212	212	190

Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
NR Off Value	FIX	3	3	3				
Gamma Mode	FIX	1	1	1				
Gamma Correction	FIX	50	50	50				
BST StartPoint	FIX	145	145	145				
BST Gain(B)	FIX	50	50	50				
DPWL Gain	FIX	80	80	80				
DPWL Start	FIX	155	155	155				
PIP Contrast	FIX	15	15	15				
PIP Tint	FIX	63	63	63				
PIP Color	FIX	5	5	5				
PIP PAL V.Pos	FIX	24	24	24				
PIP NTSC V.Pos	FIX	23	23	23				
PIP H.Pos	FIX	39	39	39				
PIP R Cutoff	FIX	2	2	2				
PIP B Cutoff	FIX	1	1	1				
PIP R Drive	FIX	170	170	170				
PIP B Drive	FIX	190	190	190				

YC DELAY

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
PAL Delay	FIX	0	0	0	0	0	0	0
SECAM Delay	FIX	-2	-2	-2	-2	-2	-2	-2
NTSC Delay	FIX	-3	-3	-3	-3	-3	-3	-3
PAL(AV) Delay	FIX	-1	-1	-1	-1	-1	-1	-1
SECAM(AV) Delay	FIX	-3	-3	-3	-3	-3	-3	-3
NTSC(AV) Delay	FIX	-4	-4	-4	-4	-4	-4	-4
Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
PAL Delay	FIX	0	0	0				
SECAM Delay	FIX	-2	-2	-2				
NTSC Delay	FIX	-3	-3	-3				
PAL(AV) Delay	FIX	-1	-1	-1				
SECAM(AV) Delay	FIX	-3	-3	-3				
NTSC(AV) Delay	FIX	0	0	0				

Test Pattern

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
Test Pattern	FIX	0	0	0	0	0	0	0
Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
Test Pattern	FIX	0	0	0				

Option Byte

Item	TXP2734FXXAA TXP2730FXXAA TXP2730S/XAA	TXP2434FXXAA	TXP2728X/XAC TXP2730FXXAC TXP2734FXXAC	CL29M16 CL29K5 CL29M5	CL29M21 CL29T21	CL25M6	CT25M20MQUX XTC	CL21S8	CT21T20MQUX XTC
1.System	CT-N	CT-N	CT-N	CL	CL	CL	CL	CL	CL
2.Sound	Stereo	Stereo	Stereo	Stereo	Stereo	Stereo	Stereo	Stereo	Stereo
2.ACS	-	-	-	-	-	-	-	-	-
3.AV Jack	2RCA+S+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+DVD	2RCA+DVD
4.Tilt	On	Off	On	On	On	Off	Off	Off	Off
5.Vchip	USA	USA	USA+CANADA	Off	Off	Off	Off	Off	Off
6.Caption	On	On	On	On	On	On	On	On	On
7.PIP	Off	Off	Off	Off	2-Tuner	Off	Off	Off	Off
8.LNA	Off	Off	Off	Off	ON	Off	Off	Off	Off
9.Auto On	Off	Off	Off	Off	Off	Off	Off	Off	Off
10.StandBy LED	Off	Off	Off	Off	Off	Off	Off	Off	Off
11.A/V Multi	-	-	-	-	-	-	-	-	-
11.Philippines	Off	Off	Off	Off	Off	Off	On	Off	ON
12.Osd Language	English	English	English	English	English	English	English	English	English
13.FM Radio	Off	Off	Off	Off	Off	Off	Off	Off	Off
14.Antenna Disp	Off	Off	Off	Off	Off	Off	Off	Off	Off
15.Hi-Deviation	Off	Off	Off	Off	Off	Off	Off	Off	Off
16.Plug & Plat	On	On	On	On	On	On	On	On	On
17.DNIe Jr	Off	Off	Off	Off	On	Off	On	Off	On
18.Volume Curve	Small	Small	Small	Small	Small	Small	Small	Small	Small
19.Color Matrix	Japan	Japan	Japan	Japan	Japan	Japan	Japan	Japan	Japan
20.PWM/Parabola	Parabola	Parabola	Parabola	Parabola	Parabola	Parabola	Parabola	Parabola	Parabola
21.Hotel mode	-	-	-	-	-	-	-	-	-
22. Child Lock	-	-	-	-	-	-	-	-	-
23. Air/Cable On	-	-	-	-	-	-	-	-	-

Item	CL21T21 CL21M21	CT29K10MQUX XTW	CT29M20MQUX XTC	CT29M16MQUX XTC	Brazil CL34Z6P CL29Z6P	Brazil CL29M21	Brazil CL21M21	Brazil CL21N11	
1.System	CL	CT-N	CL	CL	CL	CL	CL	CL	
2.Sound	Stereo	-	Stereo	Stereo					
2.ACS	-	ON	-	-	Off	Off	Off	Off	
3.AV Jack	2RCA+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+S+DVD	2RCA+DVD	2RCA+DVD	
4.Tilt	Off	On	On	On	On	On	Off	Off	
5.Vchip	Off	Off	Off	Off	Off	Off	Off	Off	
6.Caption	On	On	On	On	On	On	On	On	
7.PIP	1-Tuner	Off	Off	Off	2-Tuner	Off	1-Tuner	Off	
8.LNA	0ff	Off	Off	Off	ON	Off	Off	Off	
9.Auto On	Off	ON	Off	Off	Off	Off	Off	Off	
10.StandBy LED	Off	ON	Off	Off	Off	Off	Off	Off	
11.A/V Multi	-	-	-	-	-	-	-	-	
11.Philippines	Off	Off	ON	ON	Off	Off	Off	Off	
12.Osd Language	English	English	English	English	English	English	English	English	
13.FM Radio	Off	Off	Off	Off	Off	Off	Off	Off	
14.Antenna Disp	Off	Off	Off	Off	Off	Off	Off	Off	
15.Hi-Deviation	off	Off	Off	Off	Off	Off	Off	Off	
16.Plug & Plat	On	On	On	On	On	On	On	On	
17.DNIe Jr	On	Off	On	Off	On	On	On	On	
18.Volume Curve	Small	Small	Small	Small	Small	Small	Small	Small	
19.Color Matrix	Japan	Japan	Japan	Japan	Japan	Japan	Japan	Japan	
20.PWM/Parabola	Parabola	Parabola	Parabola	Parabola	Parabola	Parabola	Parabola	Parabola	
21.Hotel mode	-	-	-	-	Off	Off	Off	Off	
22. Child Lock	-	-	-	-	On	On	On	On	
23. Air/Cable On	-	-	-	-	On	On	On	On	

G2 Adjust

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
Read Cut	-							
Read Dri	-							
IBRM	FIX	175	175	190	190	190	175	175
WDRM	FIX	75	75	75	75	75	75	75
CDL	FIX	255	255	255	255	255	255	255
COLR G B	FIX	105 / 105 / 105	105 / 105 / 105	105 / 105 / 105	105 / 105 / 105	105 / 105 / 105	105 / 105 / 105	105 / 105 / 105
Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
Read Cut	-							
Read Dri	-							
IBRM	FIX	175	175	175				
WDRM	FIX	75	75	75				
CDL	FIX	255	255	255				
COLR G B	FIX	105 / 105 / 105	105 / 105 / 105	105 / 105 / 105				

White Balance

Item	Remark	CL29T21 CL29M21 CT29M20MQUXXTC CT29M16MQUXXTC	CT29K10MQUXXTW	CL25M6 CL25M5	CT25M20MQUXXTC	TXP2434FX	TXP2734FX TXP2728FX TXP2730FX TXP2730S	CL21S8 CL21T21 CL21M21 CT21T20MQUXXTC
		29" SDI MST	29" SDI MST	25" SDI MST	25" SDI MST	25" SDI MST	29" SDI MST	21" SDI MST
H	-	275/275/37	275/275/37	275/275/45	275/275/45	295/295/45	295/295/37	275/275/55
L	-	265/265/2.0	265/265/2.0	265/265/2.5	265/265/2.5	295/295/2.5	295/295/2.0	265/265/2.5
Item	Remark	Brazil CL34Z6P	Brazil CL29Z6P CL29M21	Brazil CL21M21 CL21N11				
		34" TSB(USA) MTPD	29" SDI MST	29" SDI MST				
H	-	275/275/37	275/275/37	275/275/55				
L	-	265/265/2.0	265/265/2.0	265/265/2.5				

EEPROM

No	Factory Control	Remark	MIN	MAX	25", 29" America	21", 25", 29" South Central	21", 29" XTC	29" XTW	21", 29", 34" XAZ
0	Dynamic Contrast	FIX	0	255	100	100	100	100	100
1	Dynamic Brightness	FIX	0	255	45	45	45	45	45
2	Dynamic Sharpness	FIX	0	255	75	80	80	80	50
3	Dynamic Color	FIX	0	255	38	43	43	43	40
4	Dynamic Tint	FIX	0	255	50	50	50	50	50
5	Standard Contrast	FIX	0	255	82	80	80	80	80
6	Standard Brightness	FIX	0	255	45	45	45	45	45
7	Standard Sharpness	FIX	0	255	50	50	50	50	50
8	Standard Color	FIX	0	255	45	43	43	43	40
9	Standard Tint	FIX	0	255	50	50	50	50	50
10	Movie Contrast	FIX	0	255	50	50	50	50	50
11	Movie Brightness	FIX	0	255	55	55	55	55	55
12	Movie Sharpness	FIX	0	255	25	25	25	25	25
13	Movie Color	FIX	0	255	40	40	40	40	40
14	Movie Tint	FIX	0	255	50	50	50	50	50
15									
16									
17									
18									
19	DVD SUB TINT	FIX	0		1	15	15	15	15
20	16:9 V-SHIFT	FIX	0	100	15	15	15	15	15
21	16:9 PARAVOLA	FIX	0	100	5	5	5	5	5
22	PIP BRIGHTNESS	FIX	0	15	0	0	0	0	0
23	Double TTX Contrast	FIX			255	255	255	255	255
24	TTX V Position	FIX	0	255	255	255	255	255	255
25	TTX H Position	FIX	0	255	255	255	255	255	255
26	TTX Contrast	FIX	0	255	255	255	255	255	255
27	TTX Brightness	FIX	0	255	255	255	255	255	255
28	OSD Contrast	FIX	0	255	90	90	90	90	90
29	OSD Brightness	FIX	0	255	13	13	13	13	13
30	Double TTX H Position	FIX	0	255	255	255	255	255	255
31	Standard Equ100(Std BASS)	FIX	0	8	50	50	50	50	50
32	Standard Equ300(Std TREBLE)	FIX	0	13	50	50	50	50	50
33	Standard Equ1K(Music BASS)	FIX	0	14	85	85	85	85	85
34	Standard Equ3K(Music TREBLE)	FIX	0	13	70	70	70	70	70
35	Standard 10K(Movie BASS)	FIX	0	12	95	95	95	95	95
36	Music Equ100(Movie TREBLE)	FIX	0	18	50	50	50	50	50
37	Music Equ300(Speech BASS)	FIX	0	14	40	40	40	40	40
38	Music Equ1K(Speech TREBLE)	FIX	0	11	50	50	50	50	50
39	Music Equ3K	FIX	0	14	255	255	255	255	255
40	Music 10K	FIX	0	18	255	255	255	255	255
41	Movie Equ100	FIX	0	22	255	255	255	255	255
42	Movie Equ300	FIX	0	15	255	255	255	255	255
43	Movie Equ1K	FIX	0	11	255	255	255	255	255
44	Movie Equ3K	FIX	0	12	255	255	255	255	255

No	Factory Control	Remark	MIN	MAX	25", 29" America	21", 25", 29" South Central	21", 29" XTC	29" XTW	21", 29", 34" XAZ
45	Movie 10K	FIX	0	13	255	255	255	255	255
46	Speech Equ100	FIX	0	6	255	255	255	255	255
47	Speech Equ300	FIX	0	11	255	255	255	255	255
48	Speech Equ1K	FIX	0	14	255	255	255	255	255
49	Speech Equ3K	FIX	0	13	255	255	255	255	255
50	Speech 10K	FIX	0	11	255	255	255	255	255
51	Brightness(RGB/DVD)	FIX	0	255	6	6	6	6	6
52	Contrast(RGB/DVD)	FIX	0	63	35	35	35	35	35
53	U Saturation(RGB/DVD)	FIX	0	63	44	44	44	44	44
54	V saturation(RGB/DVD)	FIX	0	63	43	43	43	43	43
55	V/FBL Delay	FIX	0	255	85	85	85	85	85
56	CrCb Delay	FIX	0	255	84	84	84	84	84
57	d/w h-position	FIX	0	255	255	255	255	255	255
58	d/w -blanking 1	FIX	0	255	255	255	255	255	255
59	d/w -blanking 2	FIX	0	255	255	255	255	255	255
60	PIP G CUTOFF	FIX	0	255	4	1	4	4	1
61	PIP G DRIVE	FIX	0	255	170	170	170	170	170
62	OSD/PIP BRIGHT BALANCE	FIX	0	31	31	31	31	31	31
63	PIP BRIGHT OFFSET	FIX	0	255	85	210	85	85	205
64	MDB_STRENGTH	FIX	0	127	68	68	68	68	68
65	MDB_HARMONIC	FIX	0	127	37	37	37	37	37
66	MDB_HP	FIX	0	30	9	9	9	9	9
67	MDB_LP	FIX	0	30	11	11	11	11	11
68	MDB_LIM	FIX	0	255	252	252	252	252	252
69	MDB_CUTOFF	FIX	0	40	12	12	12	12	12
70	EHT POSITION 1	FIX	0	255	5	5	5	5	5
71	EHT POSITION 2	FIX	0	255	249	249	249	249	249
72	3.4CH SLLTHD (TV-NO NOISE)	FIX	0	3	1	1	1	2	2
73	other CH SLLTHD (TV-NO NOISE)	FIX	0	3	1	1	1	2	2
74	LNA Operating Point	FIX	0	255	166	166	166	166	166
75	SLLTHDV(TV NO NOISE)	FIX	0	6	0	0	0	6	7
76	LNA Default	FIX	0	1	0	0	0	0	0
77	LNA SWITCH	FIX	0	1	0	0	0	0	0
78	LMIXOFS	FIX	0	13	13	13	13	13	13
79	CR_AMP_TH Setting	FIX	0	255	-	-	-	16	-
79	H-OUTDEL	FIX	0	255	72	72	72		74
80	H-OUTDEL	FIX	0	255	-	-	-	72	-
80	CR-P Initial	FIX	0	7	4	4	4		3
81	CR-I Initial	FIX	0	7	3	3	3	255	2
82	DRX_CR_AMP_TH	FIX	0	255	32	32	32	255	48
83	Over Modulation Return Counter	FIX	0	255	100	100	100	255	100
84	VCR Mode Counter	FIX	0	255	5	5	5	255	5
85	VID_AMP_HEAD_BS (In the modulation)	FIX	0	255	40	40	40	255	40

No	Factory Control	Remark	MIN	MAX	25", 29" America	21", 25", 29" South Central	21", 29" XTC	29" XTW	21", 29", 34" XAZ
86	CR_P (In the Over Modulation)	FIX	0	7	4	4	4	255	2
87	THRSEL (picture shaking when weak signal)	FIX	0	1	0	0	0	255	1
88	SLLTHDVP	FIX	0	1	1	1	1	255	0
89	SLLTHD_CATV	FIX	0	7	255	255	255	255	1

2-7 Screen Change (I2C Bus Geometric Adjustment)

1   V SHIFT
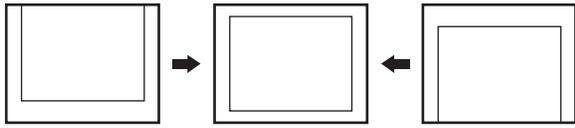
6   H TRAPIZIUM
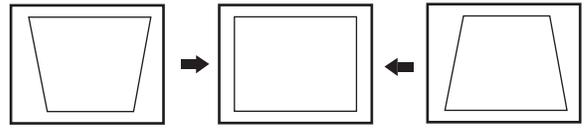
2   V AMP
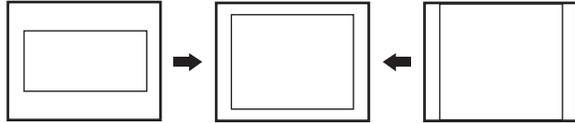
7   H PARABOLA
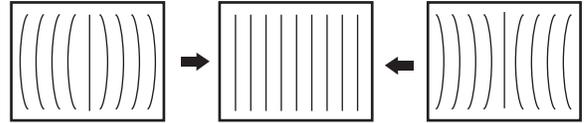
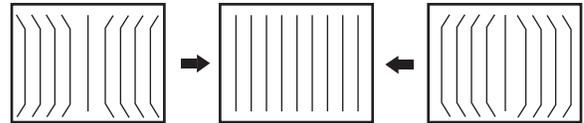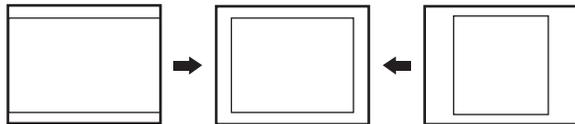3   V SLOPE
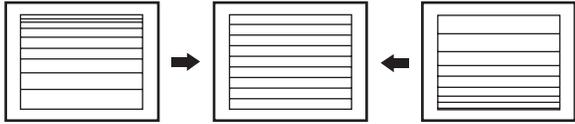
8   H Symmetry
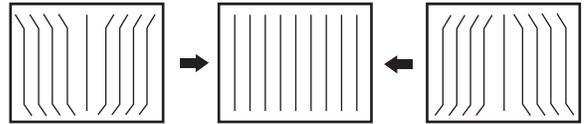
4   V SC
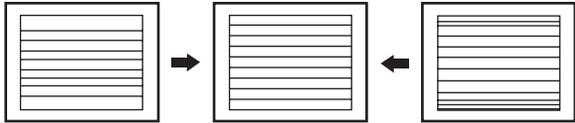
9   H Corner

5   H-EW

10   H SHIFT

2-8 Pin Connections and Short Descriptions

Pin No.	Pin Name	Type	Connection (If not used)	Short Description
1	GND	SUPPLY	OBL	Ground Platform
2	VSUP5.0BE	SUPPLY	OBL	Supply Voltage Analog Video Back-end, 5.0 V
3	TEST	IN	GND	Test Input, reserved for Test
4	VERT +	OUT	GND	Differential Vertical Sawtooth Output
5	VERT -	OUT	GND	Differential Vertical Sawtooth Output
6	EW	OUT	GND	Vertical Parabola Output
7	RSW2	OUT	LV	Range Switch 2 Output
8	RSW1	OUT	LV	Range Switch 1 Output
9	SENSE	IN	GND	Sense ADC Input
10	GNDM	IN	GND	Reference Ground for Sense ADC
11	FBIN	IN	GND	Fast Blank Input, Back-end
12	RIN	IN	GND	Analog Red Input, Back-end
13	GIN	IN	GND	Analog Green Input, Back-end
14	BIN	IN	GND	Analog Blue Input, Back-end
15	SVMOUT	OUT	VSUP5.0BE	Scan Velocity Modulation Output
16	ROUT	OUT	VSUP5.0BE	Analog Red Output
17	GOUT	OUT	VSUP5.0BE	Analog Green Output
18	BOUT	OUT	VSUP5.0BE	Analog Blue Output
19	VRD		OBL	Reference Voltage for RGB DACs
20	XREF		OBL	Reference Current for RGB DACs
21	VSUP3.3BE	SUPPLY	OBL	Supply Voltage Analog Video Back-end, 3.3 V
22	GND	SUPPLY	OBL	Ground Platform
23	GND	SUPPLY	OBL	Ground Platform
24	VSUP3.3IO	SUPPLY	OBL	Supply Voltage I/O Ports, 3.3 V (main and standby supply)
25	VSUP3.3DAC	SUPPLY	OBL	Supply Voltage Video DACs, 3.3 V
26	GNDDAC	SUPPLY	OBL	Ground Video DACs
27	SAFETY	IN	GND	Safety Input
28	HFLB	IN	HOUT	Horizontal Flyback Input
29	HOUT	OUT	LV	Horizontal Drive Output
30	VPROT	IN	GND	Vertical Protection Input
	PWMV	OUT	LV	PWM Vertical Output
	DFVBL	OUT	LV	Dynamic Focus Vertical Blanking Output
31	SDA	IN/OUT	OBL	I2C Bus Data Input/Output

Pin No.	Pin Name	Type	Connection (If not used)	Short Description
32	SCL	IN/OUT	OBL	I2C Bus Clock Input/Output
33	P21	IN/OUT	LV	Port 2, Bit 1 Input/Output
34	P20	IN/OUT	LV	Port 2, Bit 0 Input/Output
35	P17	IN/OUT	LV	Port 1, Bit 7 Input/Output
36	P16	IN/OUT	LV	Port 1, Bit 6 Input/Output
37	P15	IN/OUT	LV	Port 1, Bit 5 Input/Output
38	P14	IN/OUT	LV	Port 1, Bit 4 Input/Output
39	P13	IN/OUT	LV	Port 1, Bit 3 Input/Output
40	P12	IN/OUT	LV	Port 1, Bit 2 Input/Output
41	P11	IN/OUT	LV	Port 1, Bit 1 Input/Output
42	P10	IN/OUT	LV	Port 1, Bit 0 Input/Output
43	VSUP3.3FE	SUPPLY	OBL	Supply Voltage Analog Video Front-end, 3.3 V (main and standby supply)
44	GND	SUPPLY	OBL	Ground Platform
45	GND	SUPPLY	OBL	Ground Platform
46	VSUP1.8FE	SUPPLY	OBL	Supply Voltage Analog Video Front-end, 1.8 V (main and standby supply)
47	VOUT3	OUT	LV	Analog Video 3 Output
48	VOUT2	OUT	LV	Analog Video 2 Output
49	VOUT1	OUT	LV	Analog Video 1 Output
50	VIN1	IN	GND	Analog Video 1 Input
51	VIN2	IN	GND	Analog Video 2 Input
52	VIN3	IN	GND	Analog Video 3 Input
53	VIN4	IN	GND	Analog Video 4 Input
54	VIN5	IN	GND	Analog Video 5 Input
55	VIN6	IN	GND	Analog Video 6 Input
56	VIN7	IN	GND	Analog Video 7 Input
57	VIN8	IN	GND	Analog Video 8 Input
58	VIN9	IN	GND	Analog Video 9 Input
59	VIN10	IN	GND	Analog Video 10 Input
60	VIN11	IN	GND	Analog Video 11 Input
61	P23	IN/OUT	LV	Port 2, Bit 3 Input/Output
62	P22	IN/OUT	LV	Port 2, Bit 2 Input/Output
63	XTAL2	OUT	OBL	Analog Crystal Output
64	XTAL1	IN	OBL	Analog Crystal Input

Pin No.	Pin Name	Type	Connection (If not used)	Short Description
65	VSUP1.8DIG	SUPPLY	OBL	Supply Voltage Digital Core, 1.8 V (main and standby supply)
66	GND	SUPPLY	OBL	Ground Platform
67	GND	SUPPLY	OBL	Ground Platform
68	VSUP3.3DIG	SUPPLY	OBL	Supply Voltage Digital Core, 3.3 V
69	VSUP5.0IF	SUPPLY	OBL	Supply Voltage IF ADC, 5.0 V
70	VSUP5.0FE	SUPPLY	OBL	Supply Voltage Analog IF Front-end, 5.0 V
71	RESETQ	IN/OUT	OBL	Reset Input/Output
72	IFIN+	IN	VREF IF	Differential IF Input
73	IFIN-	IN	VREF IF	Differential IF Input
74	VREFIF		OBL	Reference Voltage, IF ADC
75	TAGC	OUT	LV	Tuner AGC Output
76	AIN1R/ SIF	IN/ OUT	GND	Analog Audio 1 Input, Right Analog 2nd Sound IF Output
77	AIN1L	IN	GND	Analog Audio 1 Input, Left
78	AIN2R	IN	GND	Analog Audio 2 Input, Right
79	AIN2L	IN	GND	Analog Audio 2 Input, Left
	AIN3R	IN	GND	Analog Audio 3 Input, Right
	AIN3L	IN	GND	Analog Audio 3 Input, Left
	AOUT2R	OUT	LV	Analog Audio 2 Output, Right
	AOUT2L	OUT	LV	Analog Audio 2 Output, Left
80	AIN3R/ AOUT2R	IN/ OUT	LV	Analog Audio 3 Input, Right Analog Audio 2 Output, Right
81	AIN3L/ AOUT2L	IN/ OUT	LV	Analog Audio 3 Input, Left Analog Audio 2 Output, Left
82	AOUT1R	OUT	LV	Analog Audio 1 Output, Right
83	AOUT1L	OUT	LV	Analog Audio 1 Output, Left
84	SPEAKER R	OUT	LV	Analog Loudspeaker Output, Right
85	SPEAKER L	OUT	LV	Analog Loudspeaker Output, Left
86	VREFAU		OBL	Reference Voltage, Audio
87	VSUP8.0AU	SUPPLY	OBL	Supply Voltage Analog Audio, 8.0 V
88	GND	SUPPLY	OBL	Ground Platform

MEMO