Self Diagnosis Supported model

SERVICE MANUAL

AA-2U CHASSIS

MODEL NAME	REMOTE COMMANDER	DESTINATION	CHASSIS NO.
KV-32FV27	RM-Y182	US	SCC-S44KA
KV-32FV27	RM-Y182	CND	SCC-S45GA
KV-36FS13	RM-Y180	US	SCC-S44HA
KV-36FS13	RM-Y180	CND	SCC-S45EA
KV-36FS13H	RM-Y180	HAWAII	SCC-S46FA
KV-36FS17	RM-Y181	US	SCC-S44GA
KV-36FS17H	RM-Y181	HAWAII	SCC-S46EA
KV-36FV27	RM-Y182	US	SCC-S44JA
KV-36FV27	RM-Y182	CND	SCC-S45FA
KV-36FV27H	RM-Y182	HAWAII	SCC-S46GA
KV-38FS17	RM-Y181	E	SCC-S50EA

KV-36FV27

RM-Y182

TRINITRON® COLOR TELEVISION

SONY®

9-965-901-01

SECTION 4: CIRCUIT ADJUSTMENTS

ELECTRICAL ADJUSTMENTS BY REMOTE COMMANDER

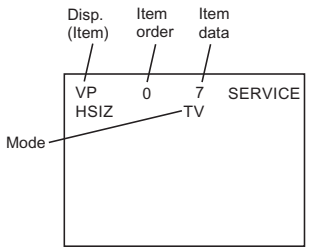
Use the Remote Commander (RM-Y180, RM-Y181, RM-Y182) to perform the circuit adjustments in this section.

Test Equipment Required: 1. Pattern generator 2. Frequency counter 3. Digital multimeter 4. Audio oscillator

4-1. SETTING THE SERVICE ADJUSTMENT MODE

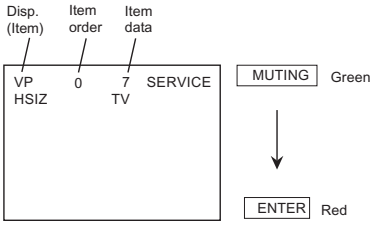
1. Standby mode (Power off).
2. Press [Display] ➡ Channel [5] ➡ Sound Volume [+] ➡ Power

SERVICE ADJUSTMENT MODE ON

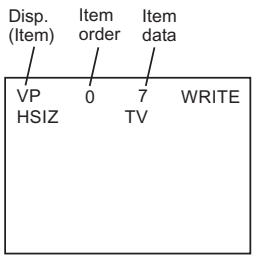


3. The CRT displays the item being adjusted.
4. Press [1] or [2] on the Remote Commander to select the item.
5. Press [3] or [6] on the Remote Commander to change the data.
6. Press [MUTING] then [ENTER] to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



7. Press [8] then [ENTER] on the Remote Commander to initialize.



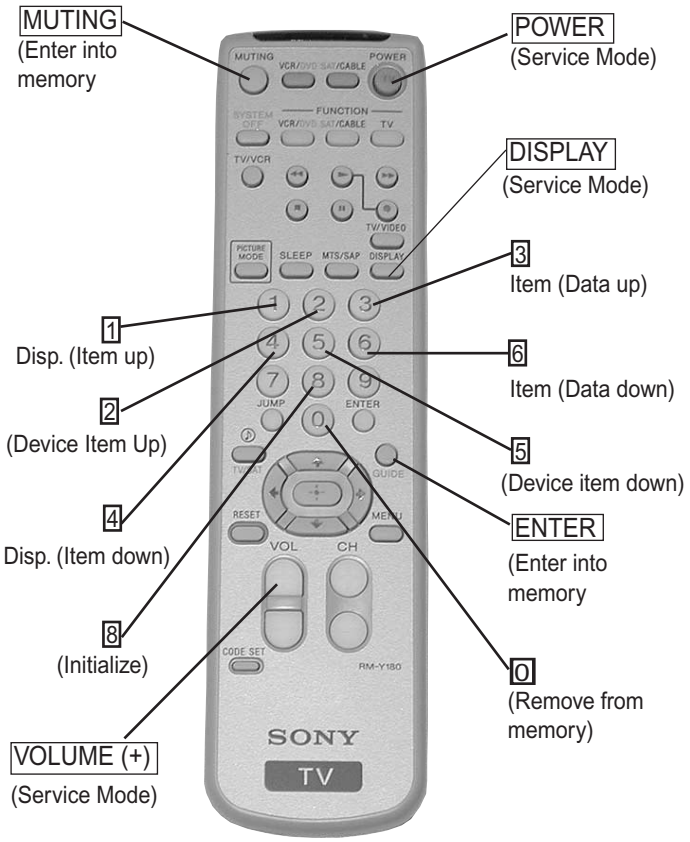
Carry out step 7 when adjusting IDs 0 to 7 and when replacing and adjusting IC002.

8. DO NOT turn off set until SERVICE appears.

4-2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, pull out the plug from the AC outlet, then replace the plug in the AC outlet again.
2. Turn the power switch ON and set to Service Mode.
3. Call the adjusted items again to confirm they were adjusted.

4-3. REMOTE ADJUSTMENT BUTTONS AND INDICATORS



RM-Y182

	Register Name		Description	Data Range	Adj/Fix	Initial Data	32"	36"/38"		Comments
							FV	FS	FV	
0	HPOS	VP CXA2131AS	H-Position	0-63	*Adj*	7	7	7		0: 2ms delay, 63: 2ms advance
1	HSIZ		H-Size	0-63	*Adj*	10	10	10		EW DC bias, 0: -0.5V, 31: 0V, 63: +0.5V
2	VBOW		AFC Bow	0-15	*Adj*	6	6	6		0: top/bottom delay 900ns, 7: center, 15: top/bottom advance 900ns
3	VANG		AFC Angle	0-15	*Adj*	5	5	5		0: top delay/bottom advance 650ns, 7: center, 15: top advance/bottom delay 650ns
4	TRAP		Trapezium Adjustment	0-15	*Adj*	6	6	6		0: 1.5ms advance, 15: 1.5ms delay
5	PAMP		Pin Compensation	0-63	*Adj*	32	32	32		0: 0.15Vpp, 31: 0.7Vpp, 63: 1.3Vpp
6	UCPN		Upper Corner Pin	0-63	*Adj*	36	36	36		0: -0.4V, 63: +0.4V
7	LCPN		Lower Corner Pin	0-63	*Adj*	36	36	36		0: -0.4V, 63: +0.4V
8	VSIZ		V-Size	0-63	*Adj*	0	0	0		0: -15%, 31: 0%, 63: +15%
9	VPOS		V-Position	0-63	*Adj*	31	31	31		0: -0.1V, 31: 0V, 63: +0.1V
10	VLIN		V-Linearity	0-15	*Adj*	7	7	7		0: 85% top enlarged, 7: 100% top normal, 15: 115% top compressed
11	VSCO		S-Correction	0-15	*Adj*	7	7	7		0: 0V added to VD, 15: 100mVpp added to VD
12	VZOM		16:9 CRT Zoom Mode On/Off	0,1	FIX	0	0			0: Zoom Off, 1: Zoom On (top/bottom cut by 25% when ASPECT=31, RGB blanked in this interval)
13	EHT		Vertical Size High Voltage Correction	0-15	FIX	4	4			0: Picture adjusted 0%, 15: Picture Adjusted -5%
14	ASP		Aspect Ration Control 4:3 Mode	0-63	FIX	47	47			0: 75%(16x9 CRT Full), 31: 100%(4x3 CRT Full), 63: 110%
15	ASP1		Aspect Ration Control 16:9 Mode	0-63	FIX	47	47			0: 75%(16x9 CRT Full), 31: 100%(4x3 CRT Full), 63: 110%
16	SCRL		16:9 Vertical Scroll During Zoom	0-63	FIX	31	31			0: Scrolled toward top 32H, 63: Scrolled toward bottom 32H
17	HBSW		H Blanking Switch	0,1	FIX	1	1			0: OFF, 1: ON
18	LBLK		Left Blanking	0-15	FIX	15	15			0: +1.2ms, 7: Center, 15: -1.2ms
19	RBLK		Right Blanking	0-15	FIX	0	0			0: +1.2ms, 7: Center, 15: -1.2ms
20	HDW		H Drive Pulse Width	0,1	FIX	1	1			0: Normal Mode (25ms), 1: Narrow Pulse Width
21	EWDC		EW/DC Display 4x3 on 16x9 CRT	0,1	FIX	0	0			0: OFF, 1: ON
22	LVLN		Picture Bottom Lin Adjust	0-15	*Adj*	0	0			0: 100%, 15: 85% Picture top compressed
23	UVLN		Picture Top Lin Adjust	0-15	*Adj*	0	0			0: 100%, 15: 85% Picture bottom compressed
24	RDRV		Red Drive	0-63	*Adj*	31	31	48	54	0: 1.5Vpp, 63: 3.0Vpp Red Signal Output
25	GDRV		Green Drive	0-63	*Adj*	31	31			0: 1.5Vpp, 63: 3.0Vpp Greem Signal Output
26	BDRV		Blue Drive	0-63	*Adj*	31	31			0: 1.5Vpp, 63: 3.0Vpp Blue Signal Output
27	RCUT		Red Cutoff	0-15	FIX	7	14			0: 3.5mA IK, 7: 13mA IK, 15: 22.7mA IK
28	GCUT		Green Cutoff	0-15	*Adj*	7	7			0: 3.5mA IK, 7: 13mA IK, 15: 22.7mA IK
29	BCUT		Blue Cutoff	0-15	*Adj*	7	7			0: 3.5mA IK, 7: 13mA IK, 15: 22.7mA IK
30	RDR4		Video 4 Red Drive	0-63	*Adj*	31	31	54		0: 1.5Vpp, 63: 3.0Vpp Red Signal Output
31	GDR4		Video 4 Green Drive	0-63	*Adj*	31	31			0: 1.5Vpp, 63: 3.0Vpp Greem Signal Output
32	BDR4		Video 4 Blue Drive	0-63	*Adj*	31	31			0: 1.5Vpp, 63: 3.0Vpp Blue Signal Output
33	RCU4		Video 4 Red Cutoff	0-15	FIX	7	14			0: 3.5mA IK, 7: 13mA IK, 15: 22.7mA IK
34	GCU4		Video 4 Green Cutoff	0-15	*Adj*	7	7			0: 3.5mA IK, 7: 13mA IK, 15: 22.7mA IK
35	BCU4		Video 4 Blue Cutoff	0-15	*Adj*	7	7			0: 3.5mA IK, 7: 13mA IK, 15: 22.7mA IK
36	SBRT		Sub Brightness	0-31	*Adj*	15	adjust to IRE cutoff	adjust to IRE cutoff		Sub Brightness
37	RON		Red Off	0,1	FIX	1	1			0:OFF, 1:ON
38	GON		Green Off	0,1	FIX	1	1			0:OFF, 1:ON
39	BON		Blue Off	0,1	FIX	1	1			0:OFF, 1:ON
40	AXPL		Axis PAL	0,1	FIX	0	0			0: Normal Axis, 1: Forced PAL Asix
41	CBPF		Chroma BPF On/Off	0,1	FIX	1	1			0: BPF OFF, 1: BPF ON
42	COFF		Color On/Off	0,1	FIX	0	0			0: Chroma OFF, 1: Chroma ON
43	TSSP		Sub Sharpness for TV Input	0-15	Fix by model	6	6	5	6	0=-12dB, 7=+3.5dB, 15=+9dB
44	TSPF		Sharpness fo for TV Input	0,1	FIX	1	1			0=2.5MHZ, 1=3.0MHz
45	VSSP		Sub Sharpness for Video Input	0-15	Fix by model	7	7	5	7	0=-12dB, 7=+3.5dB, 15=+9dB
46	VSPF		Sharpness fo for Video Input	0,1	FIX	1	1			0=2.5MHZ, 1=3.0MHz
47	YSSP		Sub Sharpness for YUV Input	0-15	Fix by model	7	7	6	7	0=-12dB, 7=+3.5dB, 15=+9dB

	Register Name		Description	Data Range	Adj/Fix	Initial Data	32"	36"/38"		Comments
							FV	FS	FV	
48	YSPF	VP CXA2131AS	Sharpness fo for YUV Input	0,1	FIX	1		1		0=2.5MHZ, 1=3.0MHz
49	AXNT		Axis NTSC	0,1	FIX	0		0		0: Japan Axis, 1: US Axis
50	PREL		Pre/Overshoot Ratio	0,1	FIX	1		1		0: 1:1, 1: 2:1
51	DCT		DC Transmission Ratio	0,1	FIX	1		1		0:100%, 1:85%
52	ABLM		ABL Mode	0,1	FIX	1		1		0:Picture ABL, 1:Picture/Brightness ABL
53	FSC		FSC Output On/Off	0,1	FIX	1		1		0: FSC output OFF, 1: FSC output ON
54	HOSC		H VCO Frequency Adjustment	0-15	FIX	12		12		0: Low, 15: High (40 Hz Steps)
55	VSS		Vsync Slice Level	0,1	FIX	0		1		0: 1/3 from sync tip, 1: 1/4 from sync tip
56	HSS		Hsync Slice Level	0,1	FIX	0		1		0: 1/3 from sync tip, 1: 1/4 from sync tip
57	HMSK		Macrovision Countermeasure	0,1	FIX	1		1		0: Off, 1: ON
58	VTMS		Select Signal VTIM Pin	0-3	FIX	0		0		0: V retrace timing, 1: Hsync signal, 2: Vsync signal, 3: don't use
59	AFC		AFC	0-3	FIX	0		0		0: High Gain, 1: Medium Gain, 2: don't use, 3: Extremely low gain
60	REFP		REFP	0,1	FIX	0		0		0: R=20H/G=21H/B=22H, 1: R=23H/G=24H/B=25H
61	VBSW		VBLK Width Control	0-3	FIX	0		0		0: 9H from B, 1: 10H from B, 2: 11H from B, 3:12H from B (When JUMP SW=1)
62	BKOF		ABL Signal Detection Level	0,1	FIX	0		0		0: VTH=3V, 1: VTH=1V
63	AGN2		Aging Mode 2 - Black Output Mode	0,1	FIX	0		0		0: Black Output Mode OFF, 1: Black Output Mode ON
0	SREF	AP BH3868	Surround Effect	0-15	FIX	7		7		0: Min, 15: Max (8-15 LOOP=1)
1	BBLP		BBE Low PAss	0-15	FIX	5		5		0: 0.5dB, 15: 10dB
2	BBHP		BBE High Pass	0-15	FIX	3		3		0: 0.5dB, 15: 10dB
3	SVOL		Sub Volume	0-15	FIX	7		7		0:-0 volume steps, 15:-15 volume steps
4	SBAL		Sub Balance	0-15	FIX	7		7		0: +Right, 15:+Left
5	SBAS		Sub Bass	0-15	Fix by model	5	5	8	5	0:-7 steps, 15: +8 steps
6	STRE		Sub Treble	0-15	Fix by model	3	5	8	5	0:-7 steps, 15: +8 steps
0	SPCA	SRS TDA7464	SRS Space Attenuation	0-63	FIX	0		0		0: 0dB, 63: -31db (1dB steps)
1	CENA		SRS Center Attenuation	0-63	FIX	0		0		0: 0dB, 63: -31db (1dB steps)
2	INPA		Input Attenuation	0-127	FIX	3		3		0: 0dB, 127: -31.5dB (0.5dB steps)
0	COUT	3D COMB uPD64082	Chroma Signal Gain / BPF	0-3	FIX	3		3		Input/Output gain=1 / BPF ON
1	YAPS		Y V-Compensation/Peaking	0-3	FIX	3		3		Correctin enabled for digital/analog inputs
2	NSDS		Standard/Non-Standard Processing	0-3	FIX	0		0		Standard adaptive processing
3	MSS		Inter-frame/Inter-line Mode	0-3	FIX	0		0		Adaptive Processing
4	EXAD		External ADC Insert	0,1	FIX	0		0		Internal Y-ADC
5	PECS		Pedestal Error Correction	0-3	FIX	0		0		Standard
6	EXCS		C sync Input	0-3	FIX	1		1		Use CSI
7	CPP		Y ADC Amplitude/Clamp Method	0-3	FIX	0		0		Y-ADC & C-ADC Vtb=1.25V
8	HDP		H Phase Fine Adjustment	0-7	FIX	3		3		Phase +/- 0msec
9	CDL		C Output Delay Fine Adjustment	0-7	FIX	5		5		Y/C Delay +/- 0msec
10	DYCO		Y Moving Coring Level	0-15	FIX	2		2		0: Close to moving pictures, 15: Close to still pictures
11	DYGA		Y Moving Coring Gain	0-15	FIX	10		10		0: Close to still Pictures, 15: Close to moving Pictures
12	DCCO		C Moving Coring Level	0-15	FIX	2		2		0: Close to moving pictures, 15: Close to still pictures
13	DCGA		C Moving Coring Gain	0-15	FIX	9		9		0: Close to still Pictures, 15: Close to moving Pictures
14	YNRK		YNR Non-linear Filter Gain	0,1	FIX	1		1		x7/8 large noise reduction and large after image
15	YNRI		YNR Non-linear Filter Convergence	0,1	FIX	0		0		6LSB small noise reduction and small after image
16	YNRL		YNR Non-linear Filter Limit Level	0-3	FIX	1		1		0: YNR Off , 3: 3LSB large noise reduction
17	CNRK		CNR Non-linear Filter Gain	0,1	FIX	1		1		x7/8 large noise reduction and large after image
18	CNRI		CNR Non-linear Filter Convergence	0,1	FIX	0		0		6LSB small noise reduction and small after image
19	CNRL		CNR Non-linear Filter Limit Level	0-3	FIX	1		1		0: CNR OFF , 3: 3LSB large noise reduction
20	ID1O		ID-1 Superimpose Signal	0,1	FIX	0		0		Through, no superimposition
21	ID1W		Specifies bit A1 of Word 0	0,1	FIX	0		0		0: 4x3, 1: 16x9
22	ID1N		Spedifies bit A2 of Word 0	0,1	FIX	0		0		0: normal, 1:letterbox
23	CLK		CLK8 Pin Output	0,1	FIX	1		1		0: Output 8fsc, 1: Output OFF

	Register Name		Description	Data Range	Adj/Fix	Initial Data	32"	36"/38"		Comments
							FV	FS	FV	
24	ST0S	3D COMB uPD64082	Select ST0 Pin Output Signal	0-3	FIX	1		1		External Y-ADC clamp pulse
25	WSC		Noise Detection Coring	0-3	FIX	1		1		1LSB coring for noise detection circuit
26	VTRH		H-sync Non-Standard Detection Hysteresis	0-3	FIX	1		1		Low hysteresis (2 clock pulses)
27	VTRR		H-sync Non-Standard Detection Sensitivity	0-3	FIX	1		1		Medium sensativity (+/- 8 clock pulses)
28	LDSR		Frame Sync Non-Std Detection Sensativity	0-3	FIX	2		2		Low sensativity (1.5 clock pulses)
29	PWRE		Internal ADC Input Range	0,1	FIX	0		0		Same input range on Y-ADC and C-ADC
30	VAPG		Vertical Aperture Compensation Gain	0-7	FIX	4		4		0: Correction OFF, 7: Max Correction
31	VAPI		Vertical Aperture Comp Convergence	0-31	FIX	12		12		0: Correction OFF, 31: Max Correction
32	TEST		Test Bit	0,1	FIX	0		0		Normal Mode
33	YPFT		Y Peaking Filter Center Frequency	0-3	FIX	3		3		4.22 MHz
34	YPFG		Y Peaking Filter Gain	0-15	FIX	7		6		0: -1 gain, 15: 0.875 gain
35	V1PS		Horizontal Dot Supression Level	0-3	FIX	2		2		Medium suppression
36	VEGS		Vertical Dot Supression Level	0-3	FIX	2		2		Medium supression
37	CC3N		Line Comb C Separation Filter	0,1	FIX	0		0		Narrow bandwidth
38	C0HS		C Signal Delay Time at NR	0,1	FIX	0		0		1H Delay
39	CLPH		Y-ADC Clamp Test Bit	0,1	FIX	0		0		Normal Mode
40	SEL2		DC Detection High Freq Sensativity	0,1	FIX	0		0		Low sensativity, Close to still pictures
41	SEL1		DY detection Low Freq Sensativity	0,1	FIX	0		0		Low sensativity, Close to still pictures
42	YHCO		Y High Freq Coring	0-3	FIX	1		0		Small Amount of coring (+/- 1LSB)
43	YHCG		Y High Freq Coring Gain	0,1	FIX	0		0		Gain = 1
44	OVST		Non Standard Detection Test Bit	0,1	FIX	0		0		Normal Mode
45	CSHD		H/V counter Test Bit	0,1	FIX	0		0		Normal Mode
46	KCTT		H/V counter Test Bit	0-3	FIX	0		0		Normal Mode
47	SHT		Non Standard Detection Test Bits	0,1	FIX	0		0		Normal Mode
48	VCT		H/V counter Test Bit	0,1	FIX	0		0		Normal Mode
49	OTT		H/V counter Test Bit	0,1	FIX	0		0		Normal Mode
50	CL2D		Clock Generator Test Bit	0,1	FIX	1		1		Normal Mode
51	CGGT		Clock Generator Test Bit	0,1	FIX	0		0		Normal Mode
52	CLEB		Clock Generator Test Bit	0,1	FIX	0		0		Normal Mode
53	CGT		Clock Generator Test Bit	0,1	FIX	0		0		Normal Mode
54	HPLL		Horizontal PLL Filter	0,1	FIX	1		1		Quick convergence
55	BPLL		Burst PLL Filter	0,1	FIX	1		1		Quick convergence
56	FSCF		Burst Extraction Gain	0,1	FIX	0		0		High gain
57	PLLF		PLL Loop Gain	0,1	FIX	1		1		High gain, quick convergence
58	KILR		Killer Detection Reference	0-15	FIX	3		3		0: Detection off, 15: High detection sensativity
59	HSSL		Horizontal Sync Slice Level	0-15	FIX	12		12		0: 4LSB, 15: 19LSB
60	VSSL		Vertical Sync Slice Level	0-15	FIX	8		8		0: HSSL + 0LSB, 15: HSSL + 15LSB
61	BGPS		Burst Gate Start Position	0-15	FIX	5		5		0: Hsync center + 2ms, 15: Hsync center +5.75ms
62	BGPW		Internal Burst Gate Pulse Width	0-15	FIX	10		10		0: 0.5ms, 15: 4.25ms
63	ADCL		ADC Clock Delay	0-3	FIX	3		3		0: 0ns, 3: 20.5ns (typical)
64	ADPD		ADC Power Down	0,1	FIX	1		1		Stop ADC when not in use
65	NSDW		Non Standard Detection Test Bit	0,1	FIX	0		0		Normal Mode
66	CNRF		CNR Section Test Bit	0,1	FIX	0		0		Normal Mode
0	SHPR	PIC IMP TA1226 N	Controls both DL APACON and SRT	0-127	Fix by Model	52	52	59	52	0: Minimum, 127: Maximum
1	BLAD		Black Area Detect	0-3	FIX	0		0		0: 10IRE, 1: 20IRE, 2: 30IRE, 3: 40IRE
2	SRTS		SRT Start Amplitude	0-3	FIX	3		3		0: 7IRE, 1: 10IRE, 2: 14IRE, 3: 28IRE
3	YNR		Controls YNR ON/OFF	0,1	FIX	1		1		YNR ON
4	GIRE		Gamma Correction Start Point	0-3	FIX	3		3		0: 70IRE, 1: 80IRE, 2: 90IRE, 3: OFF
5	DAC1		1 bit DAC Output	0,1	FIX	0		0		Open
6	DAC2		1 bit DAC Output	0,1	FIX	0		0		Open

	Register Name		Description	Data Range	Adj/Fix	Initial Data	32"	36"38"		Comments
							FV	FS	FV	
7	GCUR	PIC IMP TA1226N	Controls Curve of Gamma Correction	0,1	FIX	0	0			0: -2.4dB, -1.6dB
8	BLKC		Black Conpensation	0,1	FIX	1	1			OFF
9	TEST		Test Bit	0-3	FIX	3	3			Pin 20 Output: 0=RS, 1=SHR, 2=RTC, 3=TEST3
10	RS		Gain of DL APACON at 8MHz Peak	0-7	FIX	0	0			0: 0dB, 7: +6dB
11	RTC		Compensation Ratio of SRT and DL APACON	0-7	FIX	4	4			0: Min, 7: Max
12	VMLO		Gain for Menu VM=LOW	0-2	FIX	1	1			0=off, 1=-6dB, 2=-3dB, 3=0dB
0	PIPH	PIP SDA9588X	PIP H-position	0-127	FIX	34	36			0:Right, 127:Left
1	PIPV		PIP V-position	0-63	FIX	22	22			0:Up, 63:Down
2	POFV		Position Ofset Vertical	0-15	FIX	4	4			Vertical PiP Offset from Center
3	POFH		Position Ofset Horizontal	0-31	FIX	17	18			Horizontal PiP Offset from Center
4	VACQ		PiP V-Acquisition Window	0-15	FIX	8	8			0: -8 lines up, 8: Center, 15: +7 pixels down
5	HACQ		PiP H-Acquisition Window	0-15	FIX	8	8			0: -16 pixels right, 8: Center, 15: +14 pixels left
6	PVID		PiP Vsync Delay	0-31	FIX	0	0			Step size 3.56ms< 1 step < 6.4ms
7	VERB		Vertical Blanking	0,1	FIX	0	0			0: DAC Blanking during line blanking interval, 1: DAC Blanking during line AND field intervals
8	PSEL		SELDOWN Bit Control	0,1	FIX	1	1			0:Open out, 1:TTL out
9	SELD		Select PYS Delay	0-15	FIX	8	8			0: -8 clock cycles, 8: NO delay, 15: +7 clock cycles
10	4SLD		Select PYS Delay YUV Input	0-15	FIX	8	8			0: -8 clock cycles, 8: NO delay, 15: +7 clock cycles
11	PCOR		Position Correction	0,1	FIX	1	1			0: OFF, 1: ON (Position correction during varying parent frequency)
12	AGCR		AGC Gain Control Reset	0,1	FIX	1	1			0: Normal, 1: Reset (transition of 0-->1 resets AGC)
13	AGCM		AGC Mode	0-3	FIX	0	3			0: Sync height & ADC Overflow, 1: sync height, 2: ADC overflow, 3: AGC Fixed
14	AGCV		ADC Value	0-15	FIX	11	12			0: Input valtage 0.5Vpp, 15: Input Voltage is 1.5Vpp
15	CLMD		Clamp Pulse Duration	0-3	FIX	0	0			0: 0.5ms, 1: 0.9ms, 2: 1.2ms, 3: 1.5ms
16	CLMS		Clamp Pulse Start	0-3	FIX	2	2			0: 1.0ms, 1: 1.5ms, 2: 2.0ms, 3: 2.5ms
17	LMOF		Luminance Offset	0-3	FIX	3	3			0: NO OFFSET, 1: +16LSB, 2: -8LSB, 3: -16LSB
18	PYDL		Y/C Delay	0-15	FIX	8	2			0: -8 pixels, 15: +7 pixels
19	FRMY		Frame Y Level	0-15	Fix by Model	6	4	5		Adjusts 4 MSB of Frame Y Signal
20	FRSL		Frame Type Select	0,1	FIX	1	1			0: Normal frame, 1: 3D frame
21	FRWH		Frame Width Horizontal	0-7	FIX	4	4			0: No frame, 7: 7 pixels
22	FRWV		Frame Width Vertical	0-3	FIX	1	1			0: No frame, 3: 3 lines
23	PBSW		PiP Block Selection (PIPBG vs PIPBLK)	0,1	FIX	0	1			Blocking Type: 0= PIPBG(gray), 1=PIPBLK(black)
0	CKIL	PIP-YC SDA9588X	Color Killer Threshold	0-3	FIX	0	0			0: -30dB, 1: -18dB, 2: -24dB, 3: color always off
1	COLO		Color Killer Off	0,1	FIX	0	0			0: Color killer active, 1: Color always on
2	PSHU		PiP Sub Hue	0-15	FIX	7	7			PiP sub hue
3	4PSU		PiP Sub Hue YUV Input	0-15	FIX	7	7			PiP sub hue
4	CPLL		Chroma PLL Off	0,1	FIX	0	0			0: Chroma PLL active, 1: Chroma PLL free running
5	SCAD		Sub Carrier Freq Fine Adjustment	0-31	FIX	6	6			0: -150 PPM, 7: default, 31: +310 PPM
6	PCON		PiP Contrast	0-15	FIX	0	0			0: nominal, 15: +30% increase
7	4PCN		PiP Contrast YUV Input	0-15	FIX	0	0			0: nominal, 15: +30% increase
8	PBRT		PiP Brightness	0-15	FIX	2	2			0: nominal, 15: +20% increase
9	4PBR		PiP Brightness YUV Input	0-15	FIX	2	2			0: nominal, 15: +20% increase
10	IPER		V Pedestal	0-15	FIX	0	0			0: nominal, 15: +15LSB offset
11	4IPR		V Pedestal YUV Input	0-15	FIX	4	0			0: nominal, 15: +15LSB offset
12	IPEG		Y Pedestal	0-15	FIX	0	0			0: nominal, 15: +15LSB offset
13	4IPG		Y Pedestal YUV Input	0-15	FIX	0	0			0: nominal, 15: +15LSB offset
14	IPEB		U Pedestal	0-15	FIX	1	1			0: nominal, 15: +15LSB offset
15	4IPB		U Pedestal YUV Input	0-15	FIX	1	1			0: nominal, 15: +15LSB offset
16	BLKR		Invert V Pedestal	0,1	FIX	1	0			0: Offset add during blanking, 1: Offset add during active
17	BLKB		Invert U Pedestal	0,1	FIX	0	1			0: Offset add during blanking, 1: Offset add during active
18	PVGA		Peak Level V Output	0-255	FIX	84	84			0: 0.3Vpp, 192: 1.0Vpp, 255: 1.2Vpp
19	4PVG		Peak Level V Output YUV Input	0-255	FIX	69	69			0: 0.3Vpp, 192: 1.0Vpp, 255: 1.2Vpp

	Register Name		Description	Data Range	Adj/Fix	Initial Data	32" FV	36"/38" FS	36"/38" FV	Comments
20	PUGA	PIP-YC SDA9588X	Peak Level U Output	0-255	FIX	52	52			0: 0.3Vpp, 192: 1.0Vpp, 255: 1.2Vpp
21	4PUG		Peak Level U Output YUV Input	0-255	FIX	36	36			0: 0.3Vpp, 192: 1.0Vpp, 255: 1.2Vpp
22	PYGA		Peak Level Y Output	0-255	Fix by Model	104	25	35		0: 0.3Vpp, 192: 1.0Vpp, 255: 1.2Vpp
23	4PYG		Peak Level Y Output YUV Input	0-255	Fix by Model	129	27	37		0: 0.3Vpp, 192: 1.0Vpp, 255: 1.2Vpp
24	CHRO		UV Output Polarity	0,1	FIX	0	0			0: +U/+V output, 1: -U/-V output
25	SATA		Color Saturation Adjustment	0-15	FIX	8	9			0: No color, 8: nominal saturation, 15: nominal x 1.875
26	YPKG		Y Peaking Adjustment	0-7	FIX	7	7			0: No peaking, 7: Strongest Peaking
27	4YPK		Y Peaking Adjustment YUV Input	0-7	FIX	7	7			0: No peaking, 7: Strongest Peaking
28	YCOR		Y Coring Enable	0,1	FIX	1	1			0: OFF, 1: ON
29	CLPL		Clamp Pulse Length	0-3	FIX	0	0			0=5ms, 1=3.75ms, 2=2.5ms, 3=1.25ms
0	RTCO	DAC CXA1315	Rotation Coil	0-63	FIX	31	31			Rotation coil adjustment for nominal value
1	T2CO		Sub Color TV Input	0-7	*Adj*	120	120	111	106	TV Sub Color Adjustment (CXA2039 YUV Models AT DAC)
2	V2CO		Sub Color Video Input	0-7	*Adj*	120	120	122	114	VIDEO1-3 Sub Color Adjustment (CXA2039 YUV Models at DAC)
3	4COL		Sub Color YUV Input	0-7	*Adj*	120	120	117		YUV Sub Color Adjustment (CXA2039 YUV Models at DAC)
4	T2HU		Sub Hue TV Input	0-7	*Adj*	15	15	16		TV Sub HUE Adjustment (CXA2039 YUV Models at DAC)
5	V2HU		Sub Hue Video Input	0-7	*Adj*	15	15	18		VIDEO1-3 Sub HUE Adjustment (CXA2039 YUV Models at DAC)
6	4SHU		Sub Hue YUV Input	0-7	*Adj*	15	15	16		YUV Sub HUE Adjustment (CXA2039 YUV Models at DAC)
0	XJGL	ID1 CXD2085	Decoding Result Held For VCR Scanning	0,1	FIX	0	0			Hold data during VCR variable speed playback
1	LNJ1		ID-1 Signal Location	0,1	FIX	0	0			Search for ID-1 data +/- one line in VBI
0	DUM1	CCD	CCD Dummy Register							Used to display CC data in Service Mode
1	VOSD		VChip OSD Test Register	0,1	FIX	0	0			Used to display VChip data in Service Mode
0	DISP	OP M306V5	OSD Position	0-63	*Adj*	15	15			OSD horizontal position
1	RAMW		OSD RAM Window	0,1	FIX	0	0			
2	ICMP		OSD Non-interlace Threshold	0-15	FIX	4	4			0: 0 fields, 15: 15 fields
3	IPOR		OSD Non-interlace Even/Odd Display	0-3	Fix	1	1			0=Even OSD display, 1= Odd OSD display, 2&3=N/A
4	FAWD		Factory AutoWide Mode	0,1	Fix	0	0			0= No Autowide in RF mode, 1= Autowide in RF Mode
5	TILT		Tilt Correction Spec	0,1	Fix	0	2			0= New Tilt Spec for AA2U (less VANG offset), 1= AA2W/AA2H Tilt Spec
		PROGRAM PALETTE	PROGRAM FOR EACH PALETTE MODE →				VIVID	STD	MOVIE	SPORTS
0	VPIC		Set Current Program Pallette PICTURE Reset Level	0-63	FIX by Palette	50	63	50	38	63	0=MIN, 63=MAX
1	VBRT		Set Current Program Pallette BRIGHTNESS Reset Level	0-63	FIX by Palette	31	31	31	31	31	0=MIN, 63=MAX
2	VCOL		Set Current Program Pallette COLOR Reset Level	0-63	FIX by Palette	31	38	31	31	38	0=MIN, 63=MAX
3	VSHP		Set Current Program Pallette SHARPNESS Reset Level	0-63	FIX by Palette	31	31	31	31	31	0=MIN, 63=MAX
4	VVM		Set Current Program Pallette VM Reset Level	0-3	FIX by Palette	1	2	1	0	2	0=OFF, 1=LOW, 2=HIGH, 3=N/A
5	VTRI		Set Current Program Pallette Color Temp Reset Setting	0-3	FIX by Palette	1	0	1	2	0	0=COOL, 1=NEUTRAL, 2=WARM, 3=N/A
6	VGMA		Set Current Program Pallette YC/J GAMMA	0-3	FIX by Palette	2	3	2	2	2	0=GAMMA CORRECTION OFF, 3=+12 IRE CORRECTION @ 40 IRE INPUT
7	VBLK		Set Current Program Pallette Black Stretch	0,1	FIX by Palette	1	1	1	1	1	0=BLACK STRETCH OFF, 1=BLACK STRETCH ON
8	VAPA		Set Current Program Palette APACON	0,1	FIX by Palette	1	0	1	1	1	0=APACON OFF, 1=APACON ON
9	VSRT		Set Current Program Pallette SRT	0,1	FIX by Palette	0	1	0	0	0	0=SRT OFF, 1=SRT ON
10	VNRM		Set Current Program Pallette NRMD	0,1	FIX by Palette	0	0	0	0	1	0=3D YCS, 1=2D YCS

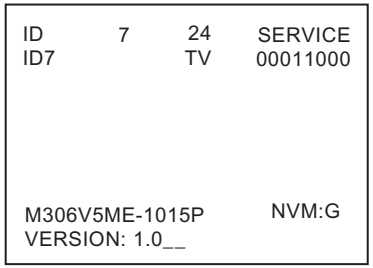
ADJUSTMENT ITEMS (6 OF 6)

	Register Name		Description	Data Range	Adj/Fix	Initial Data	32"	36"/38"		Comments
							FV	FS	FV	
0	RDOF	WARM COLOR TEMP OFFSET	Red Drive offset for WARM	0-63	FIX	0	0			Red Drive MOVIE=RDRV(RDR4)-RDOF
1	GDOF		Green Drive offset for WARM	0-63	FIX	4	4			Green Drive MOVIE=GDRV(GDR4)-GDOF
2	BDOF		Blue Drive offset for WARM	0-63	FIX	15	15			Blue Drive MOVIE=BDRV(BDR4)-BDOF
3	RCOF		Red Cutoff offset for WARM	0-31	FIX	0	0			Red Cutoff MOVIE=RCUT(RCU4)-RCOF
4	GCOF		Green Cutoff offset for WARM	0-31	FIX	2	2			GREEN Cutoff MOVIE=GCUT(GCU4-GCOF)
5	BCOF		Blue Cutoff offset for WARM	0-31	FIX	7	7			BLUE Cutoff MOVIE=BCUT(BCU4)-BCOF
6	DCOF		Dynamic Color setting for WARM	0,1	FIX	0	0			0=OFF, 1=ON
0	ID-0	ID MAP	ID-0 (Language/Color Systems)	0-255	Fix by model	89		refer to NVM ID Chart		See ID map
1	ID-1		ID-1 (Input/Output Conifguration)	0-255	Fix by model	63				See ID map
2	ID-2		ID-2 (Audio)	0-255	Fix by model	239				See ID map
3	ID-3		ID-3 (OSD/Timer/V-chip/Ch Fix)	0-255	Fix by model	99				See ID map
4	ID-4		ID-4 (CC/Spot Killer/etc)	0-255	Fix by model	139				See ID map
5	ID-5		ID-5 (V-series Features/etc)	0-255	Fix by model	181				See ID map
6	ID-6		ID-6 (PiP/Ant Sw related)	0-255	Fix by model	6				See ID map
7	ID-7		ID-7 (Special Models/etc)	0-255	Fix by model	24				See ID map

VALUE = Not Used for AA-2U

VALUE = Fixed Item For AA-2U

4-5. FEATURE ID MAP



Note: Check to be sure NVM is good (NVM: G)

Model	Destination	ID-0	ID-1	ID-2	ID-3	ID-4	ID-5	ID-6	ID-7
KV-32FV27	US	89	63	239	99	139	177	6	24
KV-32FV27	CND	89	63	239	83	139	177	6	24
KV-36FS13	US	89	31	95	99	139	177	0	17
KV-36FS13	CND	89	31	95	83	139	177	0	17
KV-36FS13	HAWAII	89	31	95	99	139	177	0	17
KV-36FS17	US	89	31	95	99	139	177	6	17
KV-36FS17	HAWAII	89	31	95	99	139	177	6	17
KV-36FV27	US	89	63	239	99	139	177	6	24
KV-36FV27	CND	89	63	239	83	139	177	6	24
KV-36FV27	HAWAII	89	63	239	99	139	177	6	24
KV-38FS17	E	25	31	95	195	155	177	6	81

4-6. PROGRAM PALETTE SETTINGS

		Vivid	Standard	Movie	Sports
Picture	(VPIC)	63	50	38	63
Brightnness	(VBRT)	31	31	31	31
Color	(VCOL)	38	31	31	38
Sharpness	(VSHP)	31	31	31	31
VM[1)]	(VVM)	2	1	0	2
C Temp[1)]	(VTRI)	2	1	0	2
Gamma	(VGMA)	3	2	2	2
Blk Comp	(VBLK)	1	1	1	1
V Apa Comp	(VAPA)	0	1	1	1
SRT ON/OFF	(VSRT)	1	0	0	0
NRMD	(VNRM)	0	0	0	1

[1)] Setting of 3 is invalid for these registers

TO PROGRAM PROGRAM PALETTE RESET LEVELS

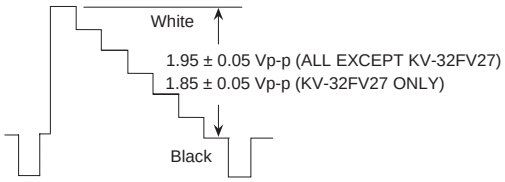
1. Switch to Program Palette to edit.
2. Enter Service Mode.
3. Set desired values for current Program Palette settings.
4. Write into memory by pressing [MUTING] then [ENTER].
5. Repeat steps 1-4 for each palette.

Example
To Set RESET Level of Standard Mode to 60%
1. Switch to STANDARD Palette.
2. Enter Service Mode.
3. Change value of VPIC to 38 (38/63 = 60%)
4. Write into memory by pressing [MUTING] then [ENTER] .
5. Enter Video Menu and press [RESET] .
6. Reset level of picture for STANDARD PALETTE ONLY is now 38 steps.

4-7. A BOARD ADJUSTMENTS

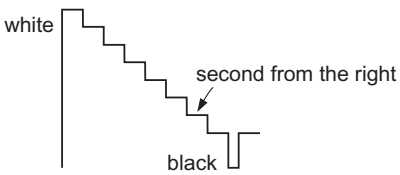
SUB CONTRAST ADJUSTMENT (RDRV, RDR4)

1. Input a 75% color-bar signal.
2. Set to: VIDEO mode = Standard, COLOR = Minimum, PICTURE = 100%, GON = 0 (OFF), BON = 0 (OFF)
3. Set to Service Adjustment Mode and connect an oscilloscope to pin ① of CN351 on the A Board.
4. Set RDRV with [1] and [4] .
5. Adjust with [3] and [6] for: 1.85 ± 0.05 Vp-p (KV-32FV27 ONLY), 1.95 ± 0.05 Vp-p (ALL EXCEPT KV-32FV27).
6. Write into memory by pressing [MUTING] then [ENTER] .
7. Repeat steps 1-6 for RDR4 using Video 4 input.



SUB BRIGHT ADJUSTMENT (SBRT)

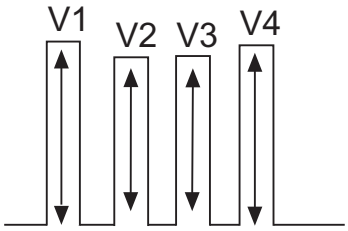
1. Set to Service Adjustment Mode.
2. Input a gray scale pattern signal.
3. Set the PICTURE to minimum, and BRIGHT to normal.
4. Select SBRT with [1] and [4] .
5. Adjust SUB BRIGHT level with [3] and [5] so that the stripe second from the right is faintly visible.
6. Write into the memory by pressing [MUTING] then [ENTER].



SUB HUE, SUB COLOR ADJUSTMENT (T2HU, T2CO, V2HU, V2CO, 4SHU, 4COL)

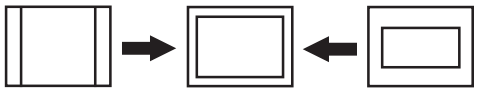
Note: T2HU and T2CO are for Tuner inputs.
V2HU and V2CO are for all other Video inputs.
4SHU and 4COL are for Video 4 input.

1. Input a 75% color-bar signal.
2. Set to Service Adjustment Mode and set: VIDEO mode = Standard, PICTURE = 100%, COLOR = 50%, HUE = 50%.
3. Connect an oscilloscope to Pin ③ of CN351 on the A Board.
4. Select T2HU and T2CO with [1] and [4] .
5. Adjust with [3] and [6] for a flat ± 50mV.
6. Write into memory by [MUTING] then [ENTER] .
7. Repeat steps 1-6 for V2HU & V2C0 and 4SHU & 4COL.



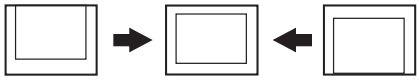
V. SIZE ADJUSTMENT (VSIZ)

1. Input a cross-hatch signal.
2. Set to Service Adjustment Mode.
3. Select VSIZ with [1] and [4].
4. Adjust with [3] and [6] for the best vertical size.
5. Write into the memory by pressing [MUTING] then [ENTER].



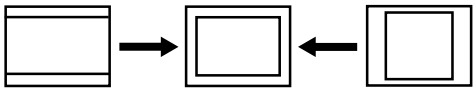
V. POSITION ADJUSTMENT (VPOS)

1. Input a cross-hatch signal.
2. Set to Service Adjustment Mode.
3. Select VPOS with [1] and [4] .
4. Adjust with [3] and [6] for the best vertical center.
5. Write into the memory by pressing [MUTING] then [ENTER].



H. SIZE ADJUSTMENT (HSIZ)

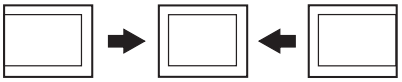
1. Input a monoscope signal.
2. Set to Service Adjustment Mode.
3. Select HSIZ with 1 and 4 .
4. Adjust with 3 and 6 for the best vertical size.
5. Write into the memory by pressing MUTING then ENTER.



H. POSITION ADJUSTMENT (HPOS)

HPOS Range is from 0~15.

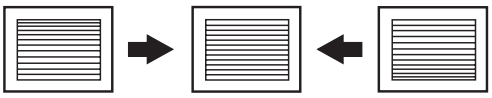
1. Input a monoscope signal.
2. Set the Service Adjustment Mode.
3. Select HPOS with 1 and 4 .
4. Adjust with 3 and 6 for the best horizontal center.
5. Write into the memory by pressing MUTING then ENTER.



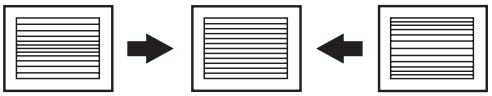
V LINEARITY (VLIN), V CORRECTION (VSCO), PIN AMP (PAMP) AND PIN PHASE (PPHA) ADJUSTMENTS

1. Input a cross-hatch signal.
2. Set to Service Adjustment Mode.
3. Select VLIN, VSCO, PAMP, and PPHA with 1 and 4 .
4. Adjust with 3 and 6 for the best picture.
5. Write the memory by pressing MUTING then ENTER .

V LINEARITY(VLIN)

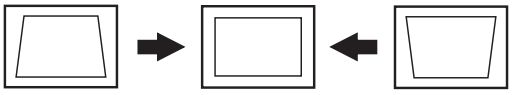


VS CORRECTION (VSCO)



PIN AMP (PAMP)

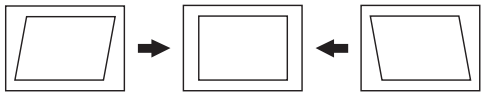
PIN PHASE (PPHA)



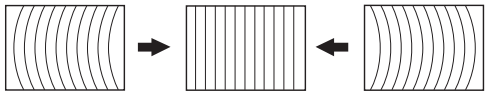
V ANGLE (VANG), V BOW (VBOW), UPPER PIN (UPIN) AND LOW PIN (LPIN) ADJUSTMENTS

1. Input a monoscope signal.
2. Set to Service Adjustment Mode.
3. Select VANG, VBOW, UPIN, and LPIN with 1 and 4 .
4. Adjust with 3 and 6 for the best picture.
5. Write the memory by pressing MUTING then ENTER .

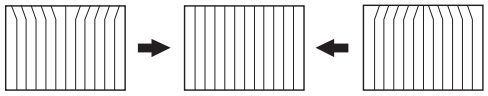
V ANGLE (VANG)



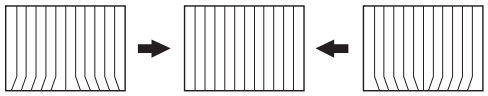
V BOW (VBOW)



UPPER PIN (UPIN)

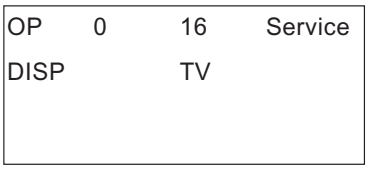


LOW PIN (LPIN)



OSD POSITION ADJUSTMENT (DISP)

1. Input a color-bar signal.
2. Set to Service Adjustment Mode.
3. Select DISP with 1 and 4.
4. Adjust with 3 and 6 for adjustment of characters to center.
5. Write the memory by pressing MUTING then ENTER .



ROTATION COIL ADJUSTMENT

1. Input a monoscope signal.
2. Push the Menu button on the Remote.
3. Select the “Set-up” mode.
4. Select “Tilt Correction”. Confirm that number (0) color changes to red.
5. Push ↑ (+) on the Remote. Confirm that the number increases up to +5 and the picture rotates clockwise.
6. Push ↓ (-) on the Remote. Confirm that the number decreases down to -5 and the picture rotates counter-clockwise.
7. Push ↑ (+) on the Remote. Return the value to 0.

SET-UP