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## 4. Alignment and Adjustment

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### 4-1. VCR Adjustment

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#### 4-1-1. VCR Adjustment Preparation

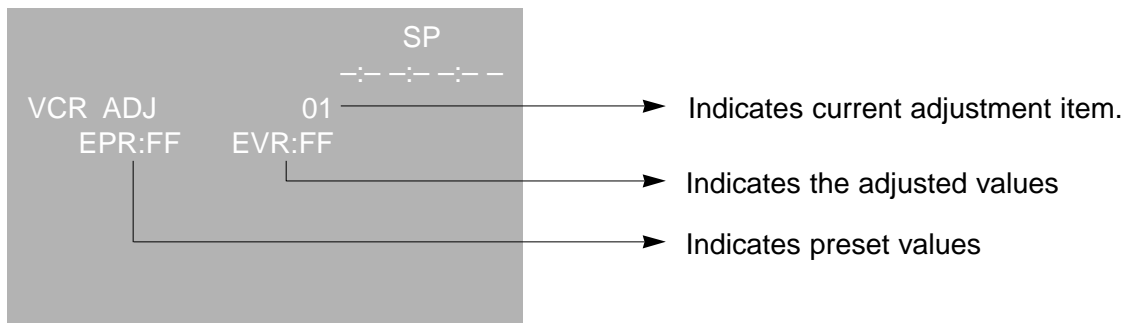
##### 1. How to get into the VCR adjust mode.

###### STEP 1

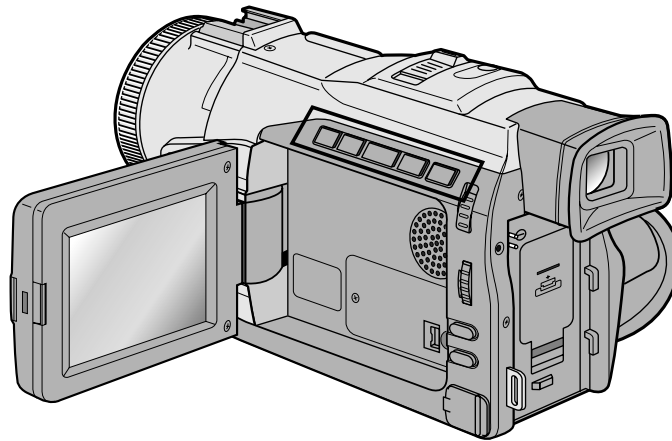
1. Connect the power source.
2. Set the mode switch of the video camera to "VCR" position.
3. Push the "TAPE EJECT" switch so that Door Housing is opened.

###### STEP 2

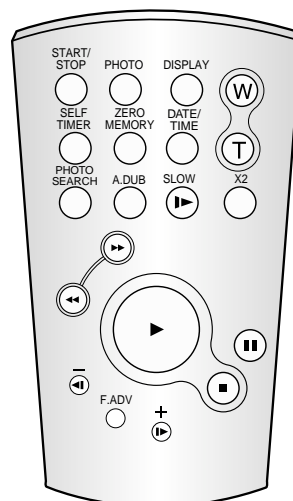
1. Press and hold the "EASY" button and "STOP" button on the video camera at the same time for more than 5 seconds.
2. When monitor OSD appears as shown below, VCR adjustment mode has been activated successfully.
3. When changing the adjustment item, please press the "EASY/CUSTOM" button on the video camera.
4. You can turn the menu dial on the video camera to change adjustment value.
5. After setting adjustment value, please press "ENTER" button on the video camera to confirm DATA.



**Fig.1. RIGHT CASE**



**Fig.2. REMOCON KEY**



**STEP 3 .** If you want to finish the adjustment mode, you have to do Power Reset.  
The Power Reset means that you pull out the power source and pull in it again.

## 4-1-2. VCR Adjustment

### 1. VCR Adjustment Items

NO	NAME	Value	Description	
01	SWP POSITION 1	Adjustment	HEAD SW 1	
02	SWP POSITION 2	Adjustment	HEAD SW 2	
03	EQC ch0	88	CH1 EQ Initial Value (FIX)	
04	EQC ch1	88	CH2 EQ Initial Value (FIX)	
05	GDH ch0	80	CH1 “Group Delay High” Initial Value (FIX)	
06	GDH ch1	80	CH2 “Group Delay High” Initial Value (FIX)	
07	GDL ch0	88	CH1 “Group Delay Low” Initial Value (FIX)	
08	GDL ch1	88	CH2 “Group Delay Low” Initial Value (FIX)	
09	AF-REC OFFSET	00	AFTER REC OFFSET (FIX)	
0A	REC CURRENT	A0	REC CURRENT (FIX)	
0B	REC CURRENT MP	A0	REC CURRENT MP (FIX)	
0C	Y LEVEL	78	LUMI LEVEL (FIX)	
0D	C LEVEL	C0	COLOR LEVEL (FIX)	
0E	AGC-MARK	00	FIX	
0F	ACC-MARK	00	FIX	
10	S-AGC-MARK-OFFSET	00	FIX	
11	S-ACC-MARK-OFFSET	00	FIX	
12	LCD COLOR OFFSET	05	FIX	
13	DIF INITIAL	FF	FIX	
14		FF	FIX	
15		FF	FIX	
16		FF	FIX	
17		FF	FIX	
19	MODEL DATA	-	MODEL INITIAL Value	
			MODEL	Adj. Value
			SCD80	6A
			SCD86/D87	EA
			VP-D80/D81	43
			VP-D80i/D81i	6B
			VP-D85/D87D/D87	C3
VP-D85i/D87Di/D87i	EB			
1A	DEW	45	FIX	
1B	MODEL DATA	-	D.ZOOM	
			MODEL	Adj. Value
			SCD80	5B
			SCD86/VP-D80/D80i/D81/D81i	DB
			VP-D87D/D87Di	DC
SCD87/VP-D85/D85i/D87/D87i	DF			
40	HEAD SW ADJUST	-	HEAD SW Adjustment	
1F	COPY PROTECT	-	NTSC: 20 PAL: 12	

### 2. How to adjust Head Switching Position.

- 1) Get into VCR ADJUST mode.
- 2) Move to the VCR ADJUST address "40".
- 3) Play standard tape, and "Head Switching Position" will be adjusted automatically.

## 4-2 Camera Adjustment

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Note: How to adjust the camera system.

- 1) EEPROM stores confirmed adjustment value of each adjustment step.
- 2) DSP (Digital Signal Process : ICP06-MAIN BOARD) digitalizes the camera signal.
- 3) When changing ICP08-MAIN BOARD of EEPROM, readjust main board. While changing LCD board- and EVF board- always readjust each part.  
Since EEPROM stores confirmed adjustment value of each adjustment step, readjusting must be performed in order to store the changed data.
- 4) Adjust the following items after changing LENS ASSY.
  - a. LENS ZOOM TRACK
  - b. AUTO HALL
  - c. AUTO IRIS
- 5) Adjust the following items after changing EEPROM and MAIN BOARD.
  - a. LENS ZOOM TRACK
  - b. ZOOM VR CENTER
  - c. AUTO HALL
  - d. AUTO IRIS
  - e. AUTO WHITE BALANCE (indoor)
  - f. AUTO WHITE BALANCE (outdoor)

### 4-2-1 Adjustment Preparation

#### 1. Measuring Instrument

- 1) DC power supply
- 2) Oscilloscope
- 3) PAL vectorscope, NTSC Vectorscope
- 4) PAL wave form monitor, NTSC wave monitor
- 5) PAL TV or monitor, NTSC TV or monitor
- 6) Color bar chart  
Gray scale chart

#### 2. Camera Pcb configuration

- 1) Main PCB
- 2) CCD PCB
- 3) EIS PCB
- 4) EVF PCB
- 5) LCD PCB

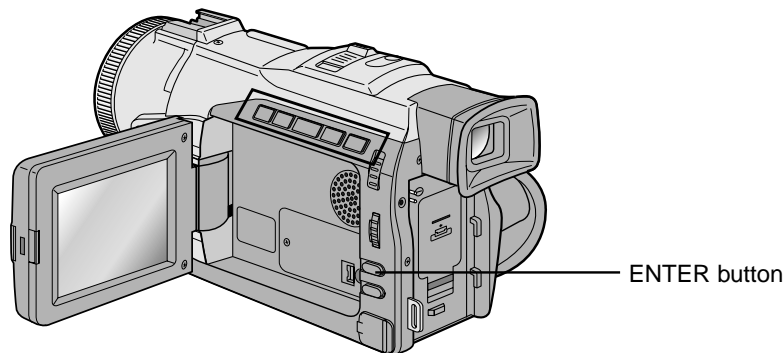
#### 3. Before you start

- 1) Use the buttons on the video camera when adjusting camera.
- 2) Press the "Enter" button when storing confirmed adjustment value of each adjustment step in EEPROM.
- 3) The OSD shows "OK" after finishing each adjustment step.
- 4) To clear the adjustment mode, pull out the power source.

#### 4. Functions of each button on the video camera

Button	Description
ENTER (Confirm)	Stores changed value in the adjustment and auto adjustment mode.
VOL/MF (Data Up/Down)	Changes data in the adjustment state.
EASY.Q (Mode Up)	Changes mode.
CUSTOM (Mode Down)	

In adjustment mode, the buttons on the video camera is as the followings.



Note: In service adjustment mode, button names are different from those in customer function control mode. e.g.) "Enter" is the same as "Confirm".

#### 5. How to set up the camera adjustment mode

##### STEP 1

- 1) Connect the power source (battery/DC cable).
- 2) Open Housing from video camera.
- 3) Set the "POWER(CAMERA/PLAYER)" switch to "CAMERA" position.
- 4) The OSD appears.

##### STEP 2

Press and hold the "EASY.Q" button and "STOP" button on the video camera at the same time for more than 5 seconds.

##### STEP 3

When monitor OSD appears as shown below, the adjustment mode has been activated successfully. Turn the VOL/MF dial to highlight CAM ADJ and press the ENTER button.

##### ADJ ITEM

- ☒ VCR ADJ
- ☒ CAM ADJ
- ☒ CAM DISP
- ☒ DSC ADJ
- ☒ LCD/CVF ADJ
- ☒ DSC F/WRITE

Note : "XX" indicates variable values.

model	NTSC	PAL	CONTENT							
ADDR	data	data	d7	d6	d5	d4	d3	d2	d1	d0
ODF	FF	FF	CAMERA TABLE INITIAL( 'AA'+CONFIRM)							
0CD	FF	FF	AUTO HALL ADJUST							
0CE	FF	FF	AUTO IRIS ADJUST							
0CF	FF	FF	AUTO WB ADJUST (0D4:INDDOR, 0D5:OUTDOOR)							
0D0	FF	FF	AUTO LENS ADJUST(WARNING! DON'T USE WITHOUT AN INFINITE COLLIMATOR)							
0D6	FF	FF	ZOOM LEVER CENTER POSITION SETTING							
0DB	FF	FF	NO USED							
0DE	FF	FF	3MM LENS AUTO ADJUST AT SERVICE FIELD(DISTANCE 3M+/-1Cm)							
000	02	03	model set( ntsc=00, pal =01)				#001 1(FL R&B CTL #11F/#1AF)			
001	28	28	color-bar	lcd-jig	cds pow save	6pointzoom0(fl awb)		0(fl iris)		
002	90	58	Flash on percent of iris start							
003	01	01	CDS_WEIGHT	CDS_CONTROL2L VALUE AT AGC VALUE CHANGE						
004	00	00	CDS_CONTROL1H							
005	00	00	CDS_CONTROL1L							
006	01	01	CDS_AGCH							
007	A0	A0	CDS_AGCL							
008	00	00	CDS_HALL_GAINH							
009	18	18	CDS_IRISPWM_H							
00A	00	00	CDS_HALL_REFH							
00B	00	00	CDS_IRISPWM_L							
00C	00	00	CDS_COARSE_OFFSETH							
00D	00	00	CDS_COARSE_OFFSETL							
00E	00	00	CDS_FINE_OFFSETH							
00F	00	00	CDS_FINE_OFFSETL							
010	00	00	CDS_VBH							
011	00	00	CDS_VBL							
012	00	00	CDS_OPTBLACKH							
013	04	04	CDS_OPTBLACKL							
014	00	00	CDS_HOT_PIXELH							
015	01	01	CDS_HOT_PIXELL							
016	00	00	CDS_COLD_PIXELH							
017	00	00	CDS_COLD_PIXELL							
018	00	00	CDS_CONTROL2H							
019	04	04	CDS_CONTROL2L							
01A	00	00	CDS_BLANKH							
01B	00	00	CDS_BLANKL							
01C	00	00	CDS_DLY1_ADCLKH							
01D	0A	09	CDS_DLY1_ADCLKL(d3~d0)							
01E	00	00	CDS_DLY2_SV_SRH							
01F	2F	03	CDS_DLY2_SV_SRL SHD ADJ (d7~d4) , SHP ADJ (d3~d0)							
020	01	01	CDS_TESTH							
021	80	80	CDS_TESTL							
022	18	18	MOTOR_STARTTIME							
023	01	01	MOTOR_DRIVETIME							
024	08	08	MOTOR_CHOPPING							
025	40	40	MOTOR_EXTPIN							
026	11	11	MOTOR_EVRA/FOCUS MOTOR CURRENT							

model	NTSC	PAL	CONTENT							
ADDR	data	data	d7	d6	d5	d4	d3	d2	d1	d0
027	11	11	MOTOR_EVRB//ZOOM MOTOR CURRENT							
028	40	40	FULL CHARGE THRESHOLD AT FLASH ON							
029	01	01	REMOCON ZOOM SPEED(0~3)							
02A	FF	FF	LENS CHECK							
02B	FF	FF	LENS CHECK							
02C	00	00	LENS CHECK							
02D	FF	FF	LENS CHECK							
02E	FF	FF	LENS CHECK							
02F	00	00	LENS CHECK							
030	3C	40	AE TARGET							
031	5A	5A	Ep0_Hiluxper                      IRIS»Πζ POINT							
032	78	80	BLC_Ae_Target							
033	20	20	SPOTLIGHT_Ae_Target							
034	78	80	SANDSNOW_Ae_Target							
035	80	80	INITIAL IRIS							
036	90	90	Iris_UpGainPercent							
037	30	30	AutoAgcOn_Target							
038	CF	CF	ShtUpDown_Spd							
039	28	30	AE-center-percent							
03A	80	80	Ep0_Iris_DownSpeed							
03B	80	80	Ep0_AgcUpDown_Speed							
03C	80	80	agc min_max%eis_shut							
03D	90	90	Iris_DownGainPercent							
03E	80	80	Iris_Current_Hall_Re							
03F	0F	0F	Iris_Current_Option	NI(0;agc-)	CLIP OPTION		NIGHT OPTI. AGC TARGET			
040	60	60	iris							
041	70	70	AGC MAX TARGET							
042	18	18	FLASH TIMING T1 (SET UP ; ABOUT 1 US)							
043	00	00	FLASH TIMING T1 (SET UP ; ABOUT 1 US)							
044	08	09	PRE RADIATION ~ MAIN RADIATION VD COUNTER							
045	1C	24	FROM VD FALLING AT MAIN RADIATION TIME (8US UNIT) high							
046	00	00	FROM VD FALLING AT MAIN RADIATION TIME (8US UNIT) low							
047	FF	FF	AGC DOWN VALUE AT FLASH ON							
048	00	00	ZOOM BE CONNECTED WITH AGC DOWN VALUE AT FLASH ON							
049	00	00	PAE MODE FLASH AE TARGET THRESHOLD PERCENT							
04A	28	28	AGC START VALUE AT FLASH ON							
04B	5A	5A	AGC START VALUE AT LIGHT ON							
04C	2A	2A	AGC VALUE AT LIGHT OFF							
04D	00	00	CRCB_WB_HI VALUE AT FLASH ON(#166)							
04E	64	48	PERCENT FROM IRIS OUTPUT VALUE AT FLASH ON							
04F	00	00	CBWB VALUE AT FLASH ON (#168)							
050	FF	FF	AF OPTION 1							
051	FF	FF	SPOT OPTION1							
052	FF	FF	AF_OPTION2							
053	FF	FF	AF_OPTION3							
054	FF	FF	ZOOM TRACK MIDDLE,WIDE 0.5STEP SHIFT    0.5step m/w shift(d3:1)							
055	FB	FB	AF_OPTION4							

<i>model</i>	<i>NTSC</i>	<i>PAL</i>	<i>CONTENT</i>							
<i>ADDR</i>	<i>data</i>	<i>data</i>	<i>d7</i>	<i>d6</i>	<i>d5</i>	<i>d4</i>	<i>d3</i>	<i>d2</i>	<i>d1</i>	<i>d0</i>
057	FF	FF	1(FL R&B CTL #05A/#05B)							
058	01	01	WB_PGM_OPTION(ADJUST AND AUTO SHIFT SELECT)							
059	0A	10	DETECTION MARGEIN OF YELLOW							
05A	40	40	FLASH R CTL (R CTL 5100+(R CTL 5100-R CTL 3100)X R %)							
05B	70	70	FLASH B CTL (B CTL 5100+(B CTL 5100-B CTL 3100)X R %)							
05C	20	2A	WB REMAPPING_B,WHEN IN DATA > 3100_B \$ NOT WHITE DETECTED VALUE							
05D	20	26	WB REMAPPING_R,WHEN IN DATA > 3100_R \$ NOT WHITE DETECTED VALUE							
05E	20	2A	WB REMAPPING_B,WHEN IN DATA > 3100_B \$ LOCATED OF LEFT SIDE							
05F	20	26	WB REMAPPING_B,WHEN IN DATA > 3100_B \$ LOCATED OF RIGHT SIDE							
060	A5	A1	[chg]_b_3100 CHANGED BY WB ADJUST #0CF OR #0D4							
061	30	2F	[chg]_r_3100 CHANGED BY WB ADJUST #0CF OR #0D4							
062	52	52	[chg]_b_5100 CHANGED BY WB ADJUST #0CF OR #0D5							
063	5E	53	[chg]_r_5100 CHANGED BY WB ADJUST #0CF OR #0D5							
064	75	75	OUTDOOR DECISION HALL PERCENT VALUE							
065	A0	A0	WB_IN_B_DATA > 3100_B(CONSIDERED INDOOR)							
066	81	81	WB_IN_R_DATA > 5100_R(CONSIDERED OUTDOOR)							
067	C8	C8	Ep0_awb_tracking							
068	EF	EC	WHITE_DETECTION_MARGEN AT OUTDOOR							
069	21	21	WB_SLOPE OF 3100 TO 5100							
06A	84	84	OUTDOOR B_CONTROL OF POWER ON							
06B	89	87	OUTDOOR R_CONTROL OF POWER ON							
06C	10	20	Y-LEVEL DOWN VALUE AT AGC MAX POINT							
06D	1C	1C	B MAPPING ,WHEN WB_OUT_B_DATA > 5100_B							
06E	2C	1F	@ R_HUE_NEGA_5100							
06F	EB	FE	@ R_HUE_POSI_5100							
070	0B	13	@ NB_HUE_NEGA_5100							
071	26	26	@ B_HUE_POSI_5100							
072	0E	0E	WB_LEFT_MARGEIN(LENGTH) OF WHITE DETECTION							
073	08	08	WB_RIGHT_MARGEIN(LENGTH) OF WHITE DETECTION							
074	01	01	display option -awb							
075	20	20	AWB_TRACKING_SPEED							
076	00	00	[D70]R MAPPING ,WHEN WB_IN_R_DATA > 3100_R							
077	10	15	R MAPPING ,WHEN WB_OUT_R_DATA > 5100_R							
078	20	20	B MAPPING ,WHEN 3100_B < WB_IN_B_DATA < 2600_B							
079	31	31	FIELD CAPTURE ON FLASH							
07A	0A	0A	AAWB_Y-LEVEL_DEVIDE SCALE							
07B	00	00	AWB_B_3100_MOVE TO CENTER							
07C	02	02	AWB_R_3100_MOVE TO CENTER							
07D	FD	00	AWB_B_5100_MOVE TO CENTER							
07E	02	04	AWB_R_5100_MOVE TO CENTER							
07F	20	20	R MAPPING ,WHEN 3100_R < WB_IN_R_DATA < 2600_R							
080	20	26	R_3100_OVER WHEN IN_DATA > 3100_B							
081	24	2A	B_3100_OVER WHEN IN_DATA > 3100_B							
082	1A	1A	AWB_OPTION[D70-D5]							
083	06	06	WB_RIGHT AREA _DIVIDE SCALE							
084	04	04	WB_LEFT AREA _DIVIDE SCALE							
085	00	00	TRACKING DICISION OUTDOOR HALL							
086	77	7C	@ R_GAIN_POSI_5100							



<i>model</i>	<i>NTSC</i>	<i>PAL</i>	<i>CONTENT</i>							
<i>ADDR</i>	<i>data</i>	<i>data</i>	<i>d7</i>	<i>d6</i>	<i>d5</i>	<i>d4</i>	<i>d3</i>	<i>d2</i>	<i>d1</i>	<i>d0</i>
087	78	77	@ R_GAIN_NEGA_5100							
088	58	56	@ B_GAIN_POSI_5100							
089	2D	38	@ NB_GAIN_NEGA_5100							
08A	1A	1A	WB_INDOOR_CLIP_CONTORL_OPTION							
08B	E6	E6	YELLOW_TRACKING_CONDITION_SELECT_AT_NORMAL							
08C	01	01	AWB_DIVIDED_MIDIUME_Y_LEVEL_WEIGHT							
08D	00	00	WB_LOW_LIGHT_LENGTH_OPTION							
08E	02	02	WB_R_CONTROL_SHIFT_AT_EIS_ON							
08F	02	02	WB_B_CONTROL_SHIFT_AT_EIS_ON							
090	1A	21	EIS_VERTICAL_AD_GAIN							
091	3C	3E	EIS_HORIZONTAL_AD_GAIN							
092	10	10	EIS_NOISE_THRESHOLD							
093	FA	FA	EIS_VERTICAL_CENTERRING_GAIN							
094	FA	FA	EIS_HORIZONTAL_CENTERRING_GAIN							
095	07	07	EIS_VERTICAL_DEFAULT							
096	0B	0E	EIS_HORIZONTAL_DEFAULT							
097	FF	FF	EIS_WIDE_PERCENT							
098	FF	FF	EIS_TEST_OPTION							
099	28	28	EIS_DEMO_SPEED							
09A	04	04	EIS_PANNING_THRESHOLD							
09B	ED	ED	EIS_REF_MAX_OPTION							
09C	1E	1E	FREQUENCY_REF_PANNING_ON_TIME							
09D	04	04	GYRO_REF_DEC_MAX							
09E	18	18	FREQUENCY_SUM_THRESHOLD_FOR_GYRO_REF_RESET							
09F	80	80	EIS_HSUVDIV							
0A0	80	80	EIS_VSUVDIV							
0A1	10	10	EIS_COEF_LIMIT							
0A2	FF	FF	EIS_HSUVDIV							
0A3	EC	EC	EIS_HSUVDIV							
0A4	F0	F0	EIS_INI_TIME							
0A5	09	0A	FLASH_CAPTURE_TIME							
0A6	00	00	FLASHOFF_TIME_HIGH							
0A7	48	48	FLASHOFF_TIME_LOW							
0A8	40	40	Hall Close Target							
0A9	89	89	Hall Open Value - Close Value							
0AA	60	60	Hall Ref Start At Hall Adjust							
0AB	4C	4C	Hallgain Start At Hall Adjust							
0AC	43	42	[CHANGED BY HALL-ADJ#0CD]Hall Min Value( Iris Close )							
0AD	DD	DD	[CHANGED BY HALL-ADJ#0CD]Hall Max Value( Iris Open )							
0AE	07	07	LENS_CHECK_LIMIT_0							
0AF	10	10	LENS_CHECK_LIMIT_1							
0B0	10	10	LENS_CHECK_LIMIT_2							
0B1	12	12	LENS_CHECK_LIMIT_3							
0B2	20	20	LENS_CHECK_LIMIT_4							
0B3	00	00	NO USED							
0B4	58	58	Ae Control Value At Adj							
0B5	20	20	Agc Min Limit Value							
0B6	68	68	Agc Max Limit Value							

<i>model</i>	<i>NTSC</i>	<i>PAL</i>	<i>CONTENT</i>							
<i>ADDR</i>	<i>data</i>	<i>data</i>	<i>d7</i>	<i>d6</i>	<i>d5</i>	<i>d4</i>	<i>d3</i>	<i>d2</i>	<i>d1</i>	<i>d0</i>
0B7	85	85	[CHANGED BY Z.VR_CHKJ#0D6]ZOOM VR LEVER CENTER VALUE							
0B8	20	20	Zoom Vr Margin							
0B9	13	17	ZOOM MAX SPEED							
0BA	03	03	TELE END ZOOM SPEED							
0BB	DC	DA	[CHANGED BY IRIS-ADJ#0CE]IRIS_CONTROL_MIN_HIGH							
0BC	00	00	[CHANGED BY IRIS-ADJ#0CE]IRIS_CONTROL_MAX_LOW							
0BD	5C	5B	[CHANGED BY IRIS-ADJ#0CE]IRIS_CONTROL_MAX_HIGH							
0BE	0B	0B	[CHANGED BY LENS_ADJ#0DE]TELE ENG LIMIT							
0BF	5E	56	[CHANGED BY LENS_ADJ#0DE]Focus Photo Sensor Position-L							
0C0	81	81	[CHANGED BY LENS_ADJ#0DE]Focus Photo Sensor Position-H							
0C1	6E	67	[CHANGED BY LENS_ADJ#0DE]Zoom Photo Sensor Position-L							
0C2	83	83	[CHANGED BY LENS_ADJ#0DE]Zoom Photo Sensor Position-H							
0C3	46	46	[CHANGED BY LENS_ADJ#0DE]Focus Moving Data At Adj-L[with #0D7='1']							
0C4	81	81	[CHANGED BY LENS_ADJ#0DE]Focus Moving Data At Adj-H							
0C5	00	00	[CHANGED BY LENS_ADJ#0DE]Zoom Moving Data At Adj-L							
0C6	83	83	[CHANGED BY LENS_ADJ#0DE]Zoom Moving Data At Adj-H							
0C7	05	04	[CHANGED BY LENS_ADJ#0DE]Focus MID Margin-L							
0C8	00	00	[CHANGED BY LENS_ADJ#0DE]Focus MID Margin-H							
0C9	00	FE	[CHANGED BY LENS_ADJ#0DE]Focus Tele Margin-L							
0CA	00	FF	[CHANGED BY LENS_ADJ#0DE]Focus Tele Margin-H							
0CB	01	00	[CHANGED BY LENS_ADJ#0DE]Focus Wide Margin-L							
0CC	00	00	[CHANGED BY LENS_ADJ#0DE]Focus Wide Margin-H							
0CD	FF	FF	HALL_AUTO_ADJUST							
0CE	FF	FF	IRIS_AUTO_ADJUST							
0CF	FF	FF	WB_AUTO_ADJUST(LINE): indoor-outdoor							
0D0	FF	FF	LENS_AUTO_ADJUST(WITH INFINITE COLLIMITOR CONDITION)							
0D1	FF	FF	WB_FLASH_ADJ							
0D2	FF	FF	NO_USED							
0D3	FF	FF	LENS_CHECK							
0D4	FF	FF	WB_3100K_AUTO_ADJUST							
0D5	FF	FF	WB_5100K_AUTO_ADJUST[5100=3100+C18 Fliter]							
0D6	FF	FF	ZOOM_VR_LEVER_AUTO_CENTER_ADJUST							
0D7	00	00	ZOOM/FOCUS MOTOR MOVING (#0C3~#0C6) '1'=one AF							
0D8	FF	FF	NO_USED							
0D9	FF	FF	GYRO_HORIZONTAL_AUTO_CHECK							
0DA	FF	FF	GYRO_VERTICAL_AUTO_CHECK							
0DB	FF	FF	AGC_ADJ(NO_USED)							
0DC	FF	FF	NO_USED							
0DD	FF	FF	NO_USED							
0DE	FF	FF	LENS_AUTO_ADJUST_3M FOR SERVICE FIELD							
0DF	FF	FF	CAMERA INITIAL 'AA'+CONFIRM							
0E0	0A	0A	GYRO_CHECK_CENTER_VALUE							
0E1	40	40	GYRO_CHECK_THRESHOLD_VALUE							
0E2	00	01	camera model code(line-initial)							
0E3	50	50	agc middle point set (#0B5~ #1DA ~#0E3)							
0E4	E0	E0	agc middle chroma suppress. Percent of #142							
0E5	0C	0C	agc middle noise slice (#133)							
0E6	0A	0A	agc middle YH-APT-GAIN+ (max:1F)(#131)							

model	NTSC	PAL	CONTENT							
ADDR	data	data	d7	d6	d5	d4	d3	d2	d1	d0
0E7	0A	0A	agc middle YV-APT-GAIN+ (max:1F)(#132)							
0E8	0F	0F	agc middle YV-APT-GAIN- (max:1F)(#13B)							
0E9	05	05	agc middle YH-APT-GAIN- (max:1F)(#13C)							
0EA	F8	F8	agc middle digital clamp middle value(#121)							
0EB	F2	F2	agc max digital clamp value(#121)							
0EC	0E	0E	color-key-green #17A (#16E,#16F,#0EC)							
0ED	09	09	color-key-blue #17A (#17C,#17D,#0ED)							
0EE	0C	0C	color-key-yellow #17A (#17E,#17F,#0EE)							
0EF	30	30	W/B 5100K ADJ.							
0F0	90	88	C_GAIN[7:0]				ON NIGHT SHOT			
0F1	00	00	CRCB_WB_HI VALUE AT				ON NIGHT SHOT			
0F2	43	32	CRWB[7:0]				ON NIGHT SHOT			
0F3	4C	50	CBWB[7:0]				ON NIGHT SHOT			
0F4	24	24	CGWB[7:0]				ON NIGHT SHOT			
0F5	60	70	C_RY_GP[7:0]				ON NIGHT SHOT			
0F6	4F	75	C_RY_GN[7:0]				ON NIGHT SHOT			
0F7	30	09	C_RY_HP[7:0]				ON NIGHT SHOT			
0F8	21	12	C_RY_HN[7:0]				ON NIGHT SHOT			
0F9	30	30	YAPT_NOISE SLICE				ON NIGHT SHOT			
0FA	C0	C0	GUN ZOOM PWM ON WIDE							
0FB	00	00	GUN ZOOM PWM ON TELE							
0FC	60	44	IRIS_PERCENT ON AGC START AT FLASH							
0FD	4C	30	IRIS_PERCENT ON AGC MAX AT FLASH							
0FE	04	04	ZOOM_CHANGE SPEED IN POSITION #1							
0FF	08	08	ZOOM_CHANGE SPEED IN POSITION #2							
100	00	00					X27_INV	H1_INV	ADCLK_SELHSP_SEL	
101	00	00	HCNT_SET[7:0]							
102	B7	9A	H1_DLY[3:0]				H2_DLY[3:0]			
103	80	10	SHP_DLY[3:0]				SHD_DLY[3:0]			
104	78	18	ADCLK_DLY[3:0]				RG_DLY[3:0]			
105	24	24	- SHP_WITH[2:0]				- SHD_WITH[2:0]			
106	A7	A6	VPUL_INV	V_SKIP	SHUT_MODE[1:0]		PBLK_CDS	PBLK_INV	CLP_INV	ALLSCKINV
107	00	00	- FLD_INV		V_CLP	Hi_SHUT[8]	CINEMA	CLP1_ADJ[2:0]		
108	00	00	Hi_SHUT_VAL[7:0]							
109	00	00	Lo_SHUT_VAL[7:0]							
10A	80	80	FCM_Addr[7:0]							
10B	00	00	-	-	-	-	-	FCM_Addr[9:8]		
10C	01	00	-	-	-	ITU601	AF_ZONE	CCD_DIRECT	1CLK_SYNC	CRCB_SEL
10D	10	10	-	-	RG_SEL		SHP_SEL		SHD_SEL	
10E	40	3C	DAC0_PWM_OUTPUT[7:0]							
10F	6E	81	DAC1_PWM_OUTPUT[7:0]							
110	FF	FF	H_ZM_RATIO[7:0]							
111	04	02	H_ZM_START[7:0]							
112	00	00	H_ZM_START[7:0]							
113	00	00	V_ZM_RATIO[7:0]							
114	01	01	V_ZM_SUB_Odd[7:0]							
115	30	37	V_ZM_SKIP[7:0]							
116	00	00	YC_DLY[7:0]							

<i>model</i>	<i>NTSC</i>	<i>PAL</i>	<i>CONTENT</i>							
<i>ADDR</i>	<i>data</i>	<i>data</i>	<i>d7</i>	<i>d6</i>	<i>d5</i>	<i>d4</i>	<i>d3</i>	<i>d2</i>	<i>d1</i>	<i>d0</i>
117	C0	C0	LIN_H	LIN_V	V_DLY_ADJ[1:0]	H_DLY_ADJ[1:0]	H_ZM_START[9:8]			
118	01	01	-	-	UVCLK_INV	DZSCK_INV	HAIF_MIR	FULL_MIR	HMIR_AR[8]	FMIR_AR[8]
119	B5	B5	H_Mirr_Addr[7:0]							
11A	68	68	F_Mirr_Addr[7:0]							
11B	C0	00	HMOSAIC_ADJ[1:0]			H_MOSAIC[5:0]				
11C	C0	C0	VMOSAIC_ADJ[1:0]			V_MOSAIC[5:0]				
11D	38	38	HSIZE_AUTO_ZM[7:0]							
11E	38	38	VSIZE_AUTO_ZM[7:0]							
11F	00	00	NO_USED							
120	10	10	-	-	AD_DLY[1:0]/SYS_DLY	CLP_EN	Defect_mode_S2_S1_S0			
121	FD	FD	P_OFFSET[7:0]							
122	10	10	P_THR[7:0]							
123	00	00	-	-	-	-	P_RAM_Hi[19:16]			
124	00	00	P_RAM_Mdl[7:0]							
125	00	00	P_RAM_Lo[7:0]							
126	20	20	-	P_FIND_CNT[6:0]						
127	25	26	P_WH_START[7:0]							
128	DC	DD	P_WH_END[7:0]							
129	01	02	P_WV_START[7:0]							
12A	7A	92	P_WV_END[7:0]							
12B	00	00	-	-	-	-	PTEST	DET_DISP	CRCT_DISP	
THR_DISP										
12C	00	00	-	-	-	-	-	-	-	
PATTN_GEN										
12D	80	80	HALL DICISION VALUE ON ZOOMING							
12E	00	00	LENS 6 POINT ADJUST							
12F	00	00	LENS 6 POINT ADJUST							
130	A8	A8	YVAPT_BKTH[1:0]		YVAPT_BKG[1:0]	YHAPT_BKTH[1:0]	YHAPT_BKG[1:0]			
131	0C	0B	YAPT_FCOEF_Hi[1:0]		GAMA_LIN	YH_APT_GAIN_POSI[4:0]				
132	CE	D0	YAPT_FCOEF_Lo[1:0]		YGAMA_OLDYV_APT_GAIN_POSI[4:0]					
133	06	08	-	-	YAPT_NOISE_SLICE[5:0]					
134	A6	A6	Y_Hi_REF[7:0]							
135	85	78	EDGE_REF[7:0]							
136	E0	E0	YVLPF_SEL	EG_SEL	Hi_SEL	YLPF_SEL[1:0]		YCS_DLY[2:0]		
137	05	06	-	YAPT_NSLICE_AFTER_GAMA[6:0]						
138	F8	F8	YWC[7:0]							
139	D6	C0	YAPT_CLIP[7:0]							
13A	62	63	-	Y_DETAIL_ENH_THR[2:0]		-	-	YD_ENH_GAIN[1:0]		
13B	B1	C1	YV_APT_GAIN_NEGA[4:0]					YAPTHi_CLP[1:0]	EGFALL[4]	
13C	59	51	YH_APT_GAIN_NEGA[4:0]					YAPTHi_CLP[3:2]	HiFALL[4]	
13D	8F	8F	HiFALL[3:0]				EGFALL[3:0]			
13E	00	00	LENS 6 POINT ADJUST							
13F	00	00	LENS 6 POINT ADJUST							
140	9A	9D	Y_GAIN[7:0]							
141	90	90	DSE_Y_GAIN[7:0]							
142	88	98	C_GAIN[7:0]							
143	08	08	YART[2:0]			YAPT_Hi_GAIN[4:0]				
144	C0	C0	YH_PST_GN[1:0]		YV_PST_GN[1:0]	YH_EMBO_SEL[1:0]	YV_EMBO_SEL[1:0]			

<i>model</i>	<i>NTSC</i>	<i>PAL</i>	<i>CONTENT</i>							
<i>ADDR</i>	<i>data</i>	<i>data</i>	<i>d7</i>	<i>d6</i>	<i>d5</i>	<i>d4</i>	<i>d3</i>	<i>d2</i>	<i>d1</i>	<i>d0</i>
145	52	52	PASTEL_OFFSET[7:0]							
146	35	35	EMBOSSING_OFFSET[7:0]							
147	20	20	GROUP_DLY[2:0]			Y_NEGA	Y_EMBOSS	Y_PASTEL	YIN/OUT_WIND	
148	00	00	AWB_B3100_AUTOMOVING							
149	00	02	AWB_R3100_AUTOMOVING							
14A	FA	00	AWB_B5100_AUTOMOVING							
14B	05	03	AWB_R5100_AUTOMOVING							
14C	00	00	AWB_B_FLASH_AUTOMOVING							
14D	00	00	AWB_R_FLASH_AUTOMOVING							
14E	30	48	[CHG]_B_FLASH							
14F	68	7F	[CHG]_R_FLASH							
150	A8	A8	DYVAPT_BKTH[1:0]	DYVAPT_BKG[1:0]	DYHAPT_BKTH[1:0]	DYHAPT_BKG[1:0]				
151	0C	0C	-	-	-	DYH_APT_GAIN_POSI[4:0]				
152	50	50	DYH_APT_GAIN_NEGA[4:0]				-		-	-
153	0C	0C	-	-	-	DYV_APT_GAIN_POSI[4:0]				
154	B0	A0	DYV_APT_GAIN_NEGA[4:0]				-		-	-
155	10	10	-	-	DDY_APT_NSlice[5:0]					
156	70	70	DYAPT_CLIP[7:0]							
157	00	00	-	-	-	DYAPT_Hi_GAIN[4:0]				
158	06	06	-	DYAPT_NSLICE_AFTER_GAMA[6:0]						
159	62	62	-	DY_DETAIL_ENH_THR[2:0]	-	-			DYD_ENH_GAIN[1:0]	
15A	10	10	-	-	-	DYVLPF_SEL	YAPTHi_CLP[3:0]			
15B	36	36	DWH_START[7:0]							
15C	A5	A5	DWH_END[7:0]							
15D	2D	2D	DWV_START[7:0]							
15E	7F	7F	DWV_END[7:0]							
15F	00	00	IRIS DIFFRACTION SHUTTER							
160	06	06	-	CHCON	CVCON_O	CVCON_E	CTL_SEL	CRMS	CBMS	
161	5E	5E	CR_COEF[7:0]							
162	44	44	CB_COEF[7:0]							
163	0A	0C	CRDS[7:0]							
164	FF	03	CBDS[7:0]							
165	00	00	CGDS[7:0]							
166	00	00	-	-	-	-	CRWB[9:8]		CBWB[9:8]	
167	38	38	CRWB[7:0]							
168	97	A8	CBWB[7:0]							
169	24	24	CGWB[7:0]							
16A	59	62	CRRG[7:0]							
16B	D0	C8	CBRG[7:0]							
16C	F8	F4	CRBG[7:0]							
16D	72	72	CBBG[7:0]							
16E	B0	B0	color-key-green #178							
16F	00	00	color-key-green #179							
170	73	89	C_RY_GP[7:0]							
171	82	70	C_RY_GN[7:0]							
172	EB	FE	C_RY_HP[7:0]							
173	0F	19	C_RY_HN[7:0]							
174	38	4C	C_BY_GP[7:0]							

<i>model</i>	<i>NTSC</i>	<i>PAL</i>	<i>CONTENT</i>							
<i>ADDR</i>	<i>data</i>	<i>data</i>	<i>d7</i>	<i>d6</i>	<i>d5</i>	<i>d4</i>	<i>d3</i>	<i>d2</i>	<i>d1</i>	<i>d0</i>
175	2D	3A	C_BY_GN[7:0]							
176	0C	0B	C_BY_HP[7:0]							
177	02	0A	C_BY_HN[7:0]							
178	E8	E8	C_KEY_Slope1[7:0]		make-up red					
179	10	10	C_KEY_Slope2[7:0]		make-up-red					
17A	04	04	-	-	-	-	CSLOP1[9]	CSLOP1[8]	CSLOP2[9]	CSLOP2[8]
17B	00	00	-	-	CHUE_FIX	CBLUE	CNEGA	CMONO	CKEY	CKEY_NEGA
17C	07	07	color-key-blue #178							
17D	EB	EB	color-key-blue #179							
17E	E4	E4	color-key-yellow #178							
17F	00	00	color-key-yellow #179							
180	02	02	Y_GAMMA1[7:0]							
181	07	09	Y_GAMMA2[7:0]							
182	12	10	Y_GAMMA3[7:0]							
183	28	25	Y_GAMMA4[7:0]							
184	40	42	Y_GAMMA5[7:0]							
185	65	65	Y_GAMMA6[7:0]							
186	96	96	Y_GAMMA7[7:0]							
187	DA	DA	Y_GAMMA8[7:0]							
188	02	02	C_GAMMA1[7:0]							
189	07	09	C_GAMMA2[7:0]							
18A	12	10	C_GAMMA3[7:0]							
18B	28	25	C_GAMMA4[7:0]							
18C	40	42	C_GAMMA5[7:0]							
18D	65	65	C_GAMMA6[7:0]							
18E	96	96	C_GAMMA7[7:0]							
18F	DA	DA	C_GAMMA8[7:0]							
190	54	51	AF_W1H_STRT[7:0] //N14 //P13							
191	A8	A6	AF_W1H_END[7:0]							
192	26	2E	AF_W1V_STRT[7:0]							
193	5F	71	AF_W1V_END[7:0]							
194	15	13	AF_W2H_STRT[7:0]							
195	E4	E0	AF_W2H_END[7:0]							
196	0A	0B	AF_W2V_STRT[7:0]							
197	78	8E	AF_W2V_END[7:0]							
198	48	47	AE_W1H_STRT[7:0]							
199	B0	AF	AE_W1H_END[7:0]							
19A	23	2A	AE_W1V_STRT[7:0]							
19B	5A	6C	AE_W1V_END[7:0]							
19C	12	13	AE_W2H_STRT[7:0]							
19D	E7	E3	AE_W2H_END[7:0]							
19E	1C	1C	AE_W2V_STRT[7:0]							
19F	78	8E	AE_W2V_END[7:0]							
1A0	17	16	AWB_H_STRT[7:0]							
1A1	E7	E6	AWB_H_END[7:0]							
1A2	08	09	AWB_V_STRT[7:0]							
1A3	76	8E	AWB_V_END[7:0]							
1A4	FF	FF	AE_THR_HiGH[7:0]							

model	NTSC	PAL	CONTENT							
ADDR	data	data	d7	d6	d5	d4	d3	d2	d1	d0
1A5	00	00	AE_THR_LOW[7:0]							
1A6	B0	B0	AWB_THR_HiGH[7:0]							
1A7	30	30	AWB_THR_LOW[7:0]							
1A8	B0	B0	AF_Clip_THR[7:0]							
1A9	A0	A0	AE_Clip_THR[7:0]							
1AA	04	04	-	ODM_ZONE_DISP[2:0]			ODM_TEST OLPF_SEL FIL_PASS			
1AB	18	18	AE_CLIP END TARGET							
1AC	04	04	AE CONTROL START							
1AD	0A	0A	AE CLIP CONTROL END							
1AE	20	20	AWB_FLASH THR							
1AF	00	00	NO_USED							
1B0	01	01	CCD WHITE DEFECT COMPENSATION H-START(AEWIH)							
1B1	F6	F6	CCD WHITE DEFECT COMPENSATION H-END(AEWIH)							
1B2	02	02	CCD WHITE DEFECT COMPENSATION V-START(AEWIV)							
1B3	77	77	CCD WHITE DEFECT COMPENSATION V-END(AEWIV)							
1B4	10	10	CCD WHITE DEFECT COMPENSATION DIGITAL CLAMP LEVEL(#121)							
1B5	38	38	COLOR SUPPRESS START AGC							
1B6	E0	E0	COLOR SUPPRESS PERCENT OF MIDDLE_#0E4( 00=no color,FF=no suppress)							
1B7	1A	1A	[ldz]D/Z_ON_step							
1B8	80	80	[ldz]D/Z_ON_TELE_L				D/ZOOM UP START POINT			
1B9	87	87	[ldz]D/Z_ON_TELE_H							
1BA	00	00	[ldz]D/Z_ON_WIDE_L				D/ZOOM UP END POINT			
1BB	85	85	[ldz]D/Z_ON_WIDE_H							
1BC	00	00	[ldz]D/Z_OFFS_WIDE_L				D/ZOOM DOWN START POINT			
1BD	83	83	[ldz]D/Z_OFFS_WIDE_H							
1BE	50	50	[ldz]D/Z_OFFE_WIDE_L				D/ZOOM DOWN END POINT			
1BF	7C	7C	[ldz]D/Z_OFFE_WIDE_H							
1C0	FA	FA	[d/z]D/ZOOM MAX STEP							
1C1	38	38	[d/z]_HSIZE(#11D)							
1C2	38	38	[d/z]_VSIZE(#11E)							
1C3	06	06	WIDE P_OFFSET CONTROL VALUE							
1C4	B0	B0	NEW IRIS CONTROL CENTER VALUE AT IRIS ADJT							
1C5	80	80	DSE_ART_#143							
1C6	30	2A	DSE_SEPIA_R_#163							
1C7	C0	B8	DSE_SEPIA_C_RY_HP_#172							
1C8	B7	9A	DSE_B/W_H1/H2_DLY_#102							
1C9	80	10	DSE_B/W_SHP/SHD_DLY_#103							
1CA	78	18	DSE_B/W_ADCLK/RG_DYL_#104							
1CB	00	00	DSP_YART_EMBO_#143							
1CC	5F	5F	DSP_YH_PST_EMBO_GAIN_EMBO_#144							
1CD	48	48	DSP_EMBO_OFFSET_EMBO_#146							
1CE	AA	AA	DSP_DSE_Y_V_APT_BKTH_EMBO_#150							
1CF	90	90	DSP_DSE_Y_H_APT_GAIN_POSI_EMBO_#151							
1D0	90	90	DSP_DSE_Y_H_APT_GAIN_NEGAI_EMBO_#152							
1D1	12	12	DSP_DSE_Y_V_APT_GAIN_POSI_EMBO_#153							
1D2	90	90	DSP_DSE_Y_V_APT_GAIN_NEGA_EMBO_#154							
1D3	0F	0F	DSP_DSE_Y_APT_NOISE_SLICE_EMBO_#155							
1D4	BF	BF	DSP DSE Y APT CLIP EMBO #156							

<i>model</i>	<i>NTSC</i>	<i>PAL</i>	<i>CONTENT</i>							
<i>ADDR</i>	<i>data</i>	<i>data</i>	<i>d7</i>	<i>d6</i>	<i>d5</i>	<i>d4</i>	<i>d3</i>	<i>d2</i>	<i>d1</i>	<i>d0</i>
1D5	10	10	DSP_DSE_YHIGHLIGHT_GAIN_EMBO_#157							
1D6	18	18	DSP_DSE_YAPT_NSLICEAFTE_GAM_EMBO_#158							
1D7	10	10	DSP_DSE_YDETAIL_EHAN_TH_EMBO_#159							
1D8	00	00	DSP_DSE_Y_V_APT_LPF_SEL_EMBO_#15A							
1D9	00	00	NO_USED							
1DA	38	38	AGC_NSL_START_AGC							
1DB	09	06	AGC_H_APT_G_PO_MIN_#131[4:0] MAX=1F							
1DC	05	05	AGC_V_APT_G_PO_MIN_#132[4:0] MAX=1F							
1DD	1A	18	AGC_NOISE_SL_MAX_#133[5:0] MAX=3F							
1DE	01	01	AGC_H_APT_G_NE_MIN_#13B[4:0] MAX=1F							
1DF	05	05	AGC_V_APT_G_NE_MIN_#13C[4:0] MAX=1F							
1E0	0C	0C	PHOTO-DSP#131-H.APER+							
1E1	06	08	PHOTO-DSP#133-NOISE/S							
1E2	59	41	PHOTO-DSP#13C-H.APER-							
1E3	00	00	NO_USED							
1E4	20	20	PHOTO-DSP#147-GROUP DELAY							
1E5	CB	C9	PHOTO-DSP#132							
1E6	79	79	PHOTO-DSP#13B							
1E7	A8	A8	PHOTO-DSP#130							
1E8	06	08	CHROMA SUPPRESS AGC START(#1B5)~AGC MAX; #163 CONTROL START							
1E9	09	08	CHROMA SUPPRESS AGC START(#1B5)~AGC MAX; #163 CONTROL STOP							
1EA	0C	02	CHROMA SUPPRESS AGC START(#1B5)~AGC MAX; #164 CONTROL START							
1EB	0A	0D	CHROMA SUPPRESS AGC START(#1B5)~AGC MAX; #164 CONTROL STOP							
1EC	50	50	HALL DATA AT OUTDOOR							
1ED	32	3A	AE_TARGET(#030) AT OUTDOOR							
1EE	1B	19	AGC MIN LIMIT VALUE(#0B5) AT OUTDOOR							
1EF	A5	A5	Y GAIN(#140) AT OUTDOOR							
1F0	A7	A6	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#106							
1F1	01	01	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#12C							
1F2	80	88	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#142							
1F3	66	66	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#160							
1F4	4C	4C	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#170							
1F5	48	48	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#171							
1F6	04	10	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#172							
1F7	04	10	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#173							
1F8	40	-	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#174							
1F9	48	48	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#175							
1FA	FC	FC	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#176							
1FB	F8	F8	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#177							
1FC	32	34	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#167							
1FD	6C	6C	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#168							
1FE	24	24	COLOR_BAR_PATTERN_GEN FOR LCD(CVF)_ADJUST_#169							
1FF	10	10	REVISION_DATE							



## 4-2-2 Camera Adjustment

Note : "XX XX" indicate the previous preset value and adjusted value. Press the ENTER (Confirm) button to store the adjusted value.

CAMERA ADJ	0CD
EPR:XX	EVR:XX
(Stored value)	(Adjusted value)

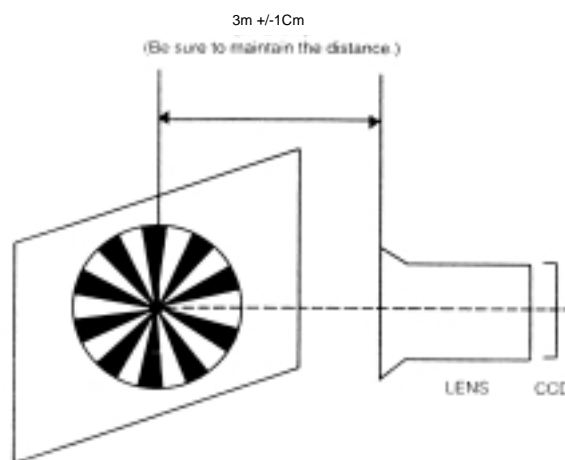
### 1. LENS ZOOM TRACK

Caution : For whole zoom range, it shall be in focus. The location of a focus lens is moving depending on the location of zoom lens. During adjusting, micom measures the focus location from a near distance to a long.

- 1) Camera is set to E-E mode.
- 2) Focus chart
- 3) Ensure that camera is left an about 3 m distance from a focus chart and the focus of lens is placed vertically. Attach a focus chart to white or gray wall of a flat surface.
- 4) Connect a video output terminal to a TV.
- 5) Press the EASY.Q (Mode Up) / CUSTOM (Mode Down) button so that OSD shows "0DE XX XX".
- 6) Press the ENTER (Confirm) button. Never impact on the lens when adjusting zoom and focus lens. The OSD shows "OK" after finishing the adjustment.

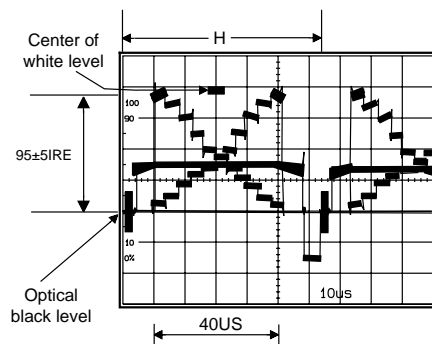
### 2. Zoom VR center

- 1) Camera mode & 3100°K gray scale chart.
- 2) Connect a video output terminal to a TV.
- 3) Press the EASY.Q (Mode Up) / CUSTOM (Mode Down) button so that OSD shows "0D6 XX XX".
- 4) Press the ENTER (Confirm) button.
- 5) Then Micom finds out Zoom VR center position.  
Store Zoom VR center value in 0B7.



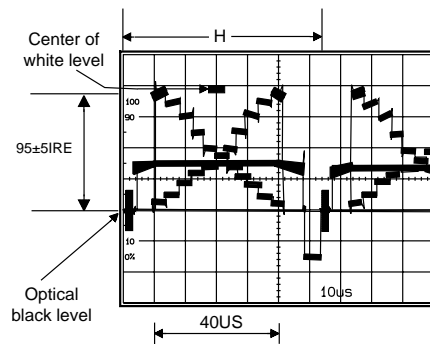
### 3. AUTO HALL

- 1) Camera mode & 3100° K gray scale chart
- 2) Connect a video output terminal to a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "0CD XX XX".
- 4) Press the ENTER (Confirm) button.
- 5) Then micom finds out max. Hall value with an iris opened and min. Hall value with an iris closed. Store max. and min. value of Hall in 0AD and 0AC respectively.
- 6) The OSD shows "OK" after finishing the adjustment.



### 4. AUTO IRIS LEVEL

- 1) Camera mode & 3100° K gray scale chart
- 2) Connect a video output terminal to a wave form monitor and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "0CE XX XX".
- 4) Press the ENTER (Confirm) button.
- 5) Then micom finds out max. Hall value with an iris opened and min. Hall value with an iris closed. Store max. and min. value of in 0BC, 0BD and 0BB respectively.
- 6) The OSD shows "OK" after finishing the adjustment.



## 5. AUTO WHITE BALANCE (indoor)

- 1) Camera mode & 3100° K/5100° K gray scale chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "0D4 XX XX".
- 4) Ensure that camera picks up image 40μs on 3100°K gray scale chart precisely and the illumination is 1500-2000 Lux.
- 5) Press the ENTER (Confirm) button to ensure that white spot on a vectorscope is moving in the middle of screen.
- 6) The OSD shows "OK" after finishing the adjustment.

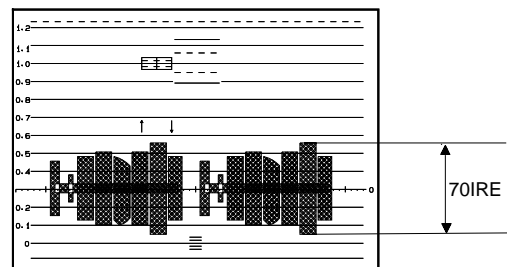
## 6. AUTO WHITE BALANCE (outdoor)

- 1) Camera mode & 3100° K/5100° K gray scale chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "0D5 XX XX".
- 4) Ensure that camera picks up image 40 on 5100 gray scale chart (3100 gray scale chart + C16 filter) precisely and the illumination is 1500-2000 Lux.
- 5) Press the ENTER (Confirm) button to ensure that white spot on a vectorscope is moving in the middle of screen.
- 6) The OSD shows "OK" after finishing the adjustment.

## 7. R-Y POSITIVE GAIN (indoor)

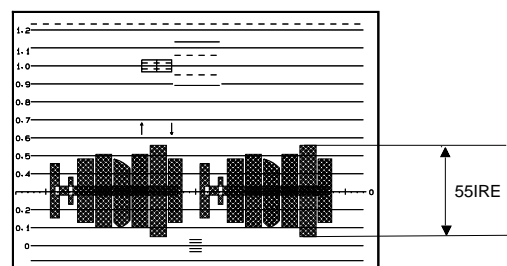
- 1) Camera mode & 3100° K color bar chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "170 XX XX".

- 4) Ensure that camera picks up image on 3100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the red level is 70IRE.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



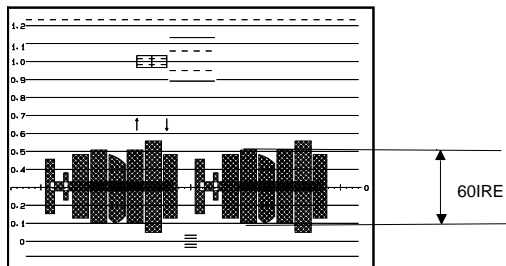
## 7-b. R-Y POSITIVE GAIN (outdoor)

- 1) Camera mode & 5100° K color bar chart (3100° K color bar chart + C16 filter)
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "086 XX XX".
- 4) Ensure that camera picks up image on 5100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the red level is 55IRE.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



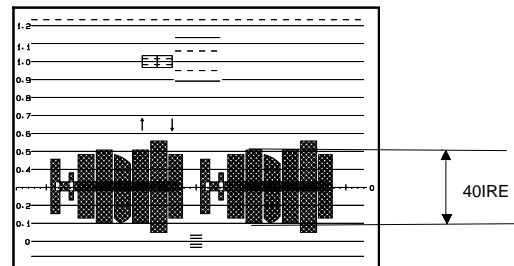
## 8. R-Y NEGATIVE GAIN (indoor)

- 1) Camera mode & 3100° K color bar chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "171 XX XX".
- 4) Ensure that camera picks up image on 3100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the cyan level is 60IRE.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



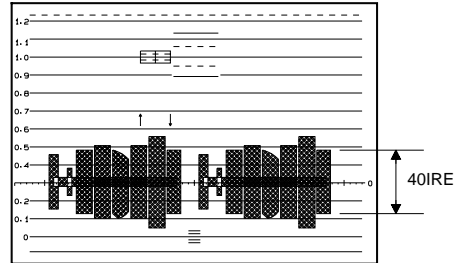
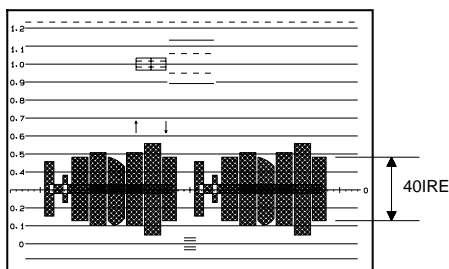
## 8-b. R-Y NEGATIVE GAIN (outdoor)

- 1) Camera mode & 5100° K color bar chart (3100°K color bar chart + C16 filter)
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "087 XX XX".
- 4) Ensure that camera picks up image on 5100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the cyan level is 40IRE.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



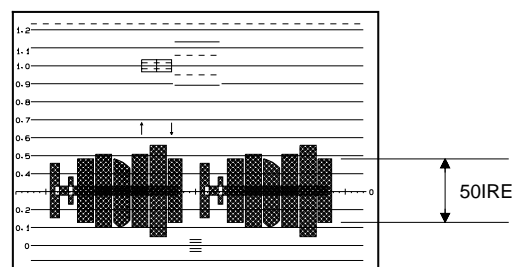
## 9. B-Y POSITIVE GAIN (indoor)

- 1) Camera mode & 3100° K color bar chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "174XX XX".
- 4) Ensure that camera picks up image on 3100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the blue level is 40IRE.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



## 10. B-Y NEGATIVE GAIN (indoor)

- 1) Camera mode & 3100° K color bar chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "175 XX XX".
- 4) Ensure that camera picks up image on 3100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the yellow level is 50IRE.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.

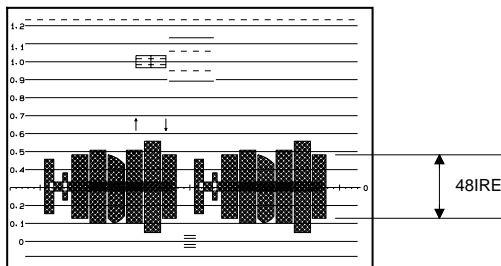


## 9-b. B-Y POSITIVE GAIN (outdoor)

- 1) Camera mode & 5100° K color bar chart (3100°K color bar chart + C16 filter)
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "088 XX XX".
- 4) Ensure that camera picks up image on 5100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the blue level is 30IRE.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.

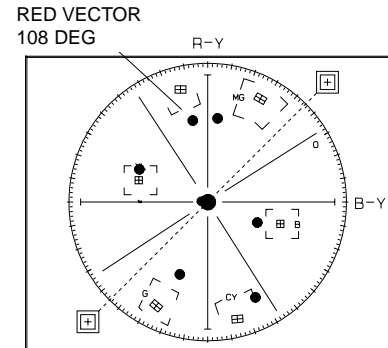
### 10-b. B-Y NEGATIVE GAIN (outdoor)

- 1) Camera mode & 5100° K color bar chart (3100°K color bar chart + C16 filter)
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "089 XX XX".
- 4) Ensure that camera picks up image on 5100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the yellow level is 48IRE.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



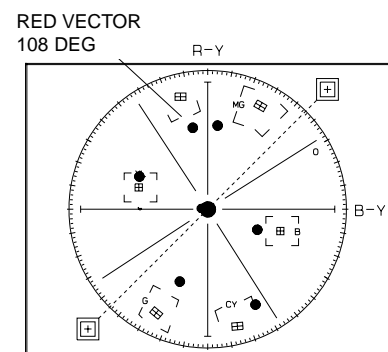
### 11. R-Y POSITIVE HUE (indoor)

- 1) Camera mode & 3100° K color bar chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "172 XX XX".
- 4) Ensure that camera picks up image on 3100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the red vectors is 108° .
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



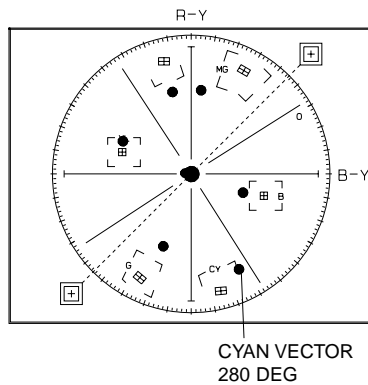
### 11-b. R-Y POSITIVE HUE (outdoor)

- 1) Camera mode & 5100° K color bar chart (3100°K color bar chart + C16 filter)
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "06F XX XX".
- 4) Ensure that camera picks up image on 5100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the red vectors is 108° .
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



## 12. R-Y NEGATIVE HUE (indoor)

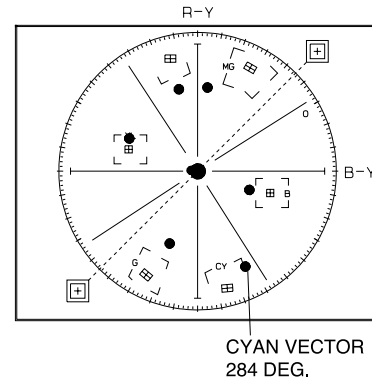
- 1) Camera mode & 3100° K color bar chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q (Mode Up) / CUSTOM (Mode Down) button so that OSD shows "173 XX XX".
- 4) Ensure that camera picks up image on 3100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the cyan vector is 280°.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



### 12-b. R-Y NEGATIVE HUE (outdoor)

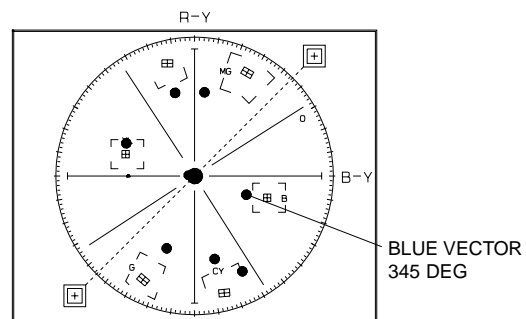
- 1) Camera mode & 5100° K color bar chart (3100°K color bar chart + C16 filter)
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q (Mode Up) / CUSTOM (Mode Down) button so that OSD shows "06E XX XX".
- 4) Ensure that camera picks up image on 5100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the cyan vector is 280°.
- 6) Press the ENTER (Confirm) button to store data.

- 7) The OSD shows "OK" after finishing the adjustment.



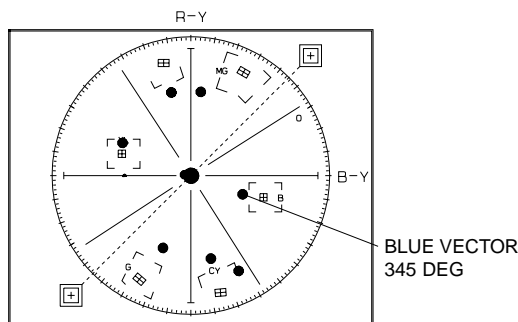
## 13. B-Y POSITIVE HUE (indoor)

- 1) Camera mode & 3100° K color bar chart
- 2) Connect a video output terminal to a vectorscope and a TV.
- 3) Press the EASY.Q (Mode Up) / CUSTOM (Mode Down) button so that OSD shows "176 XX XX".
- 4) Ensure that camera picks up image on 3100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the blue vector is 345°.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



### 13-b. B-Y POSITIVE HUE (outdoor)

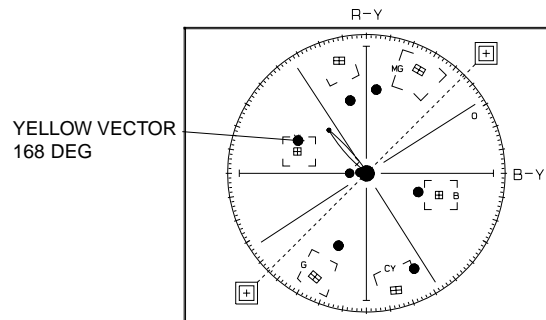
- 1) Camera mode & 5100° K color bar chart (3100°K color bar chart + C16 filter)
- 2) Connect a video output terminal to a vectoroscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "071 XX XX".
- 4) Ensure that camera picks up image on 5100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the blue vector is 345°.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.



### 14. B-Y NEGATIVE HUE (indoor)

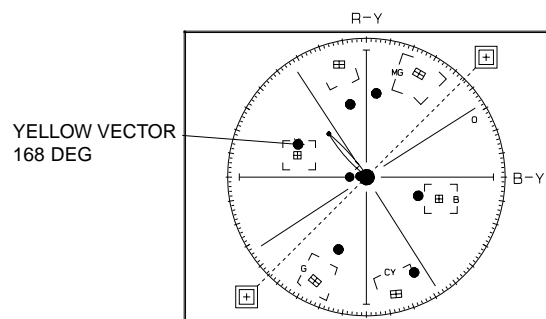
- 1) Camera mode & 3100° K color bar chart
- 2) Connect a video output terminal to a vectoroscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "177 XX XX".
- 4) Ensure that camera picks up image on 3100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the yellow vector is 168°.
- 6) Press the ENTER (Confirm) button to store data.

- 7) The OSD shows "OK" after finishing the adjustment.



### 14-b. B-Y NEGATIVE HUE (outdoor)

- 1) Camera mode & 5100° K color bar chart (3100°K color bar chart + C16 filter)
- 2) Connect a video output terminal to a vectoroscope and a TV.
- 3) Press the EASY.Q(Mode Up)/CUSTOM(Mode Down) button so that OSD shows "070 XX XX".
- 4) Ensure that camera picks up image on 5100° K color bar chart precisely and the illumination is 1500-2000 Lux.
- 5) Turn the VOL/MF (Data Up/Down) dial so that the yellow vector is 168°.
- 6) Press the ENTER (Confirm) button to store data.
- 7) The OSD shows "OK" after finishing the adjustment.





### 4-3. LCD Adjustment (112K)

Notes: For LCD adjustment, use the buttons on the video camera and the remote control.

After each adjustment step is completed, OSD shows "OK".

EEPROM(ICL202) stores confirmed adjustment value of each adjustment step.

After finishing the adjustment, turn power off.

#### 1. How to get into the LCD adjust mode.

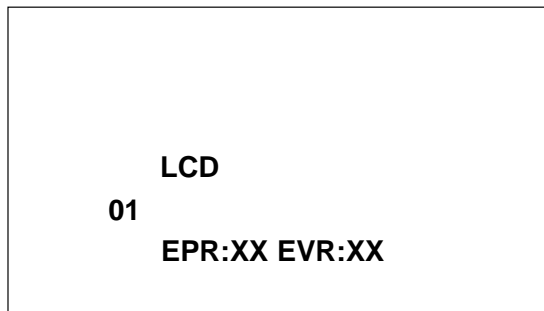
##### STEP 1

1. Connect the power source (battery/DC cable).
2. Set the "CAMERA/PLAYER" switch to "CAMERA" position.
3. Camera screen and OSD appears.
4. Open housing of the video camera and remove tape.
5. Open the LCD.

##### STEP2

- 1) Press and hold the "EASY" button on the video camera and "BLC" button on the video camera at the same time for more than 5 seconds.

Monitor screen



When monitor OSD shows as above screen, LCD adjustment mode has been activated successfully.

Note : "XX" indicates variable values.

#### 2. Functions of each button on the Video Camera

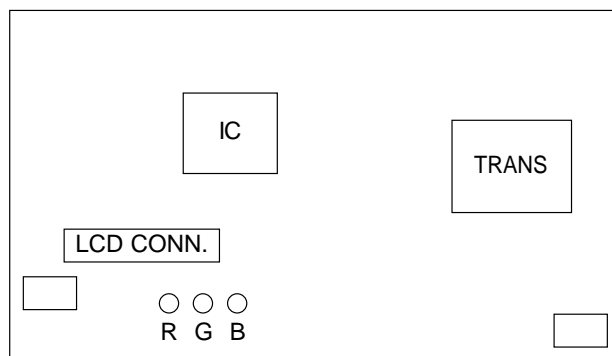
Button	Description
ENTER (Confirm)	Stores changed value in the adjustment mode.
EASY (Mode Up)	Shift adjustment address to left.
CUSTOM (Mode Down)	Shift adjustment address to right.
VOL UP (Data Up)	Up value.
VOL DOWN (Data Down)	Down value.

Note: In service adjustment mode, button names are different from those in customer function control mode.

### 3. Adjust Mode

	NTSC	PAL
00	55	55
01	80	80
02	A0	A0
03	4F	4F
04	30	30
05	C6	C6
06	A4 (adjust)	A4 (adjust)
07	80	80
08	80	80
09	70	70
0A	85	85
0B	80	80
0C	76	76
0D	80	80
0F	15	15
10	52	52
11	CD	CD
12	C0	80
13	8E	93
14	00	00
15	00	00
0E	D0	D0

### 4. How to adjust



Address  
06

Name  
CONTRAST

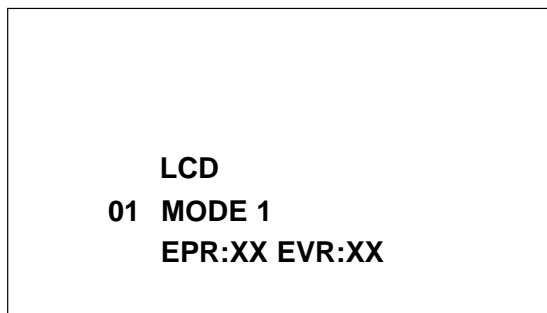
(R, G, B waveform on each TP)

## 4-4. EVF Adjustment

### 4-4-1. EVF adjustment Preparation

#### STEP 1

- 1) Connect the power source (battery/DC cable).
- 2) Set the "POWER(CAMERA/PLAYER)" switch to "CAMERA" position.



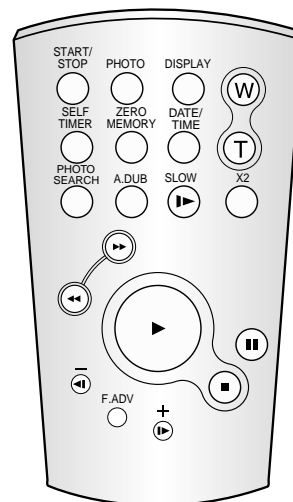
Monitor screen

#### STEP 2

Press and hold the "EDIT(+)" button and "SELFTIMER" button on the video camera at the same time for more than 5 seconds.

#### STEP 3

Press the "DISPLY" button to make color bar appear.



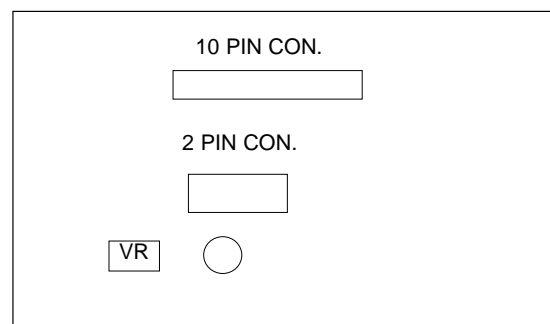
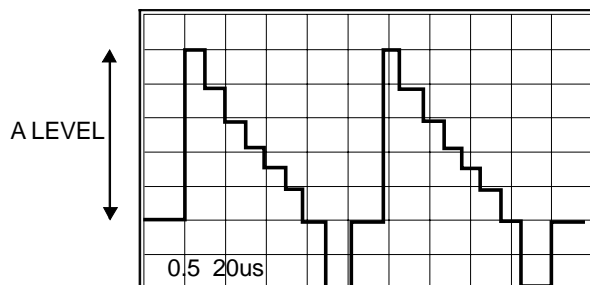
Remote Control Button Location

Note : "XX" indicates variable values.

### 4-4-2. EVF adjustment

#### 1) VIDEO GAIN

- a) Connect an oscilloscope probe to TP-V.
- b) Adjust the VRE02 so that A level is 2.5 Vp-p



Location of Test Point

**MEMO**