

# SECTION 4

## ELECTRICAL ADJUSTMENT

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# ELECTRICAL ADJUSTMENT PROCEDURE

## 1. ADJUSTMENT SYSTEM

For performing the electrical adjustment, the following tool are required.

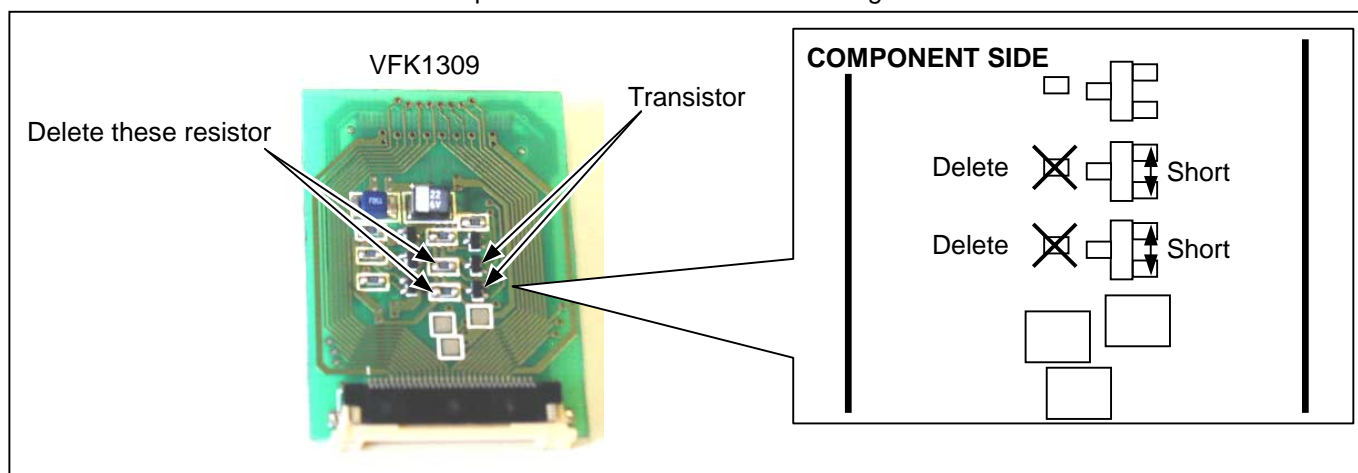
NAME	Part Number	Pcs.	Remark
Measuring Board	VFK1308P	1	
EVR Connector Board	VFK1309A	1	NOTE
EVR Extender Board	VFK1694	1	
30pin Flat Cable	VFK1317	2	
DC Cable	VJA0941	1	
DC Cable	VJA1128 or LSJA0310	1	
9pin RS232C cross cable	---	1	
AC Adaptor	---	1	
Personal Computer	---	1	

### NOTE:

1. VFK1309 can be use to this adjustment system except LCD adjustment.
2. If you have VFK1309, it can be modified to VFK1309A as following below indicated specification.

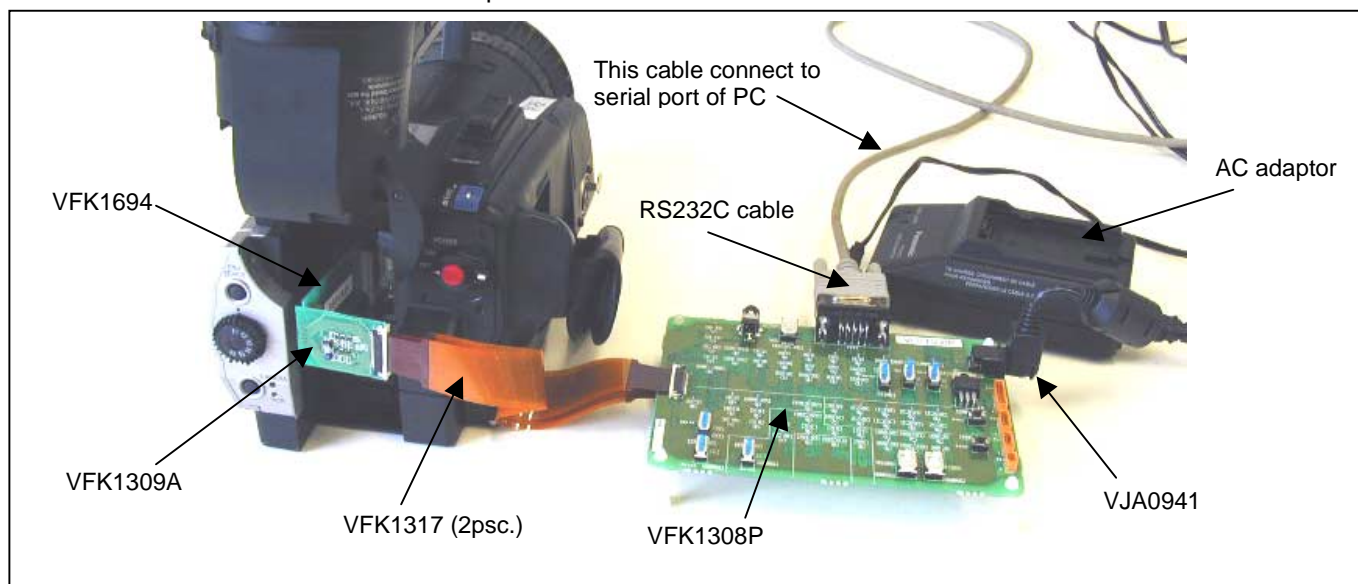
### 1-1. Modification procedure of VFK1309

1. Delate 2 pieces of resistor as shown figure.
2. Shot between emitter and base of 2 pieces of transistor as shown in figure.



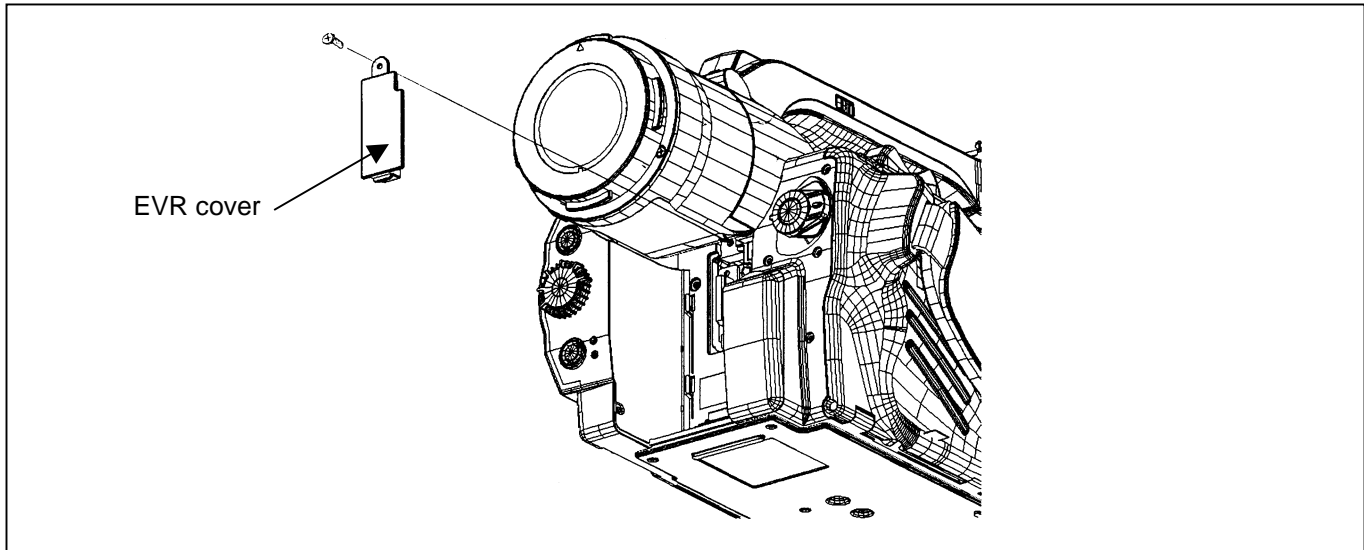
### 1-2. Connection

Please refer to next item 1-3 as detail explanation.

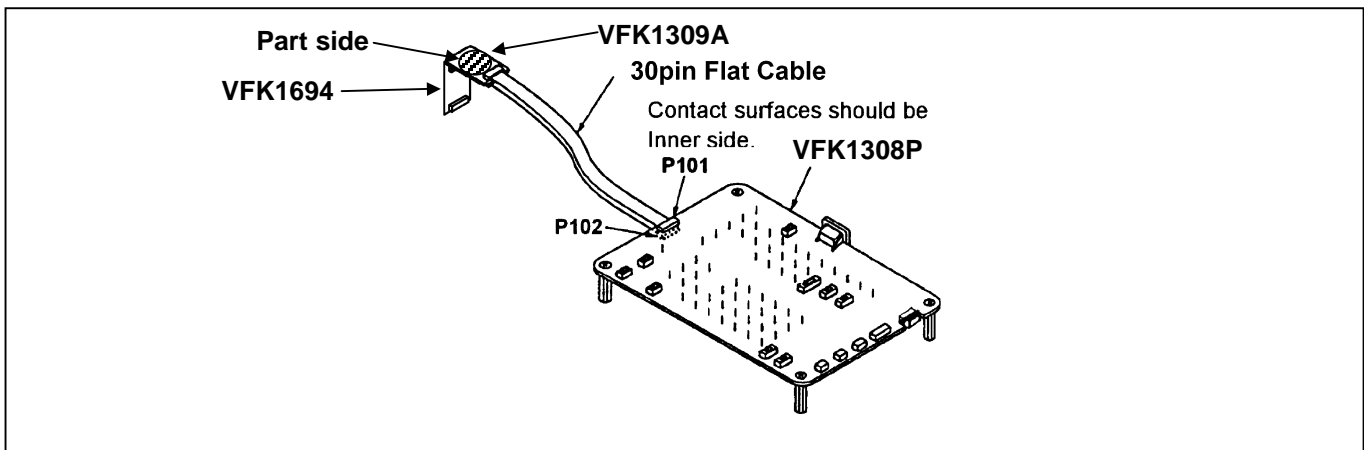


### 1-3. System Hook up Procedures

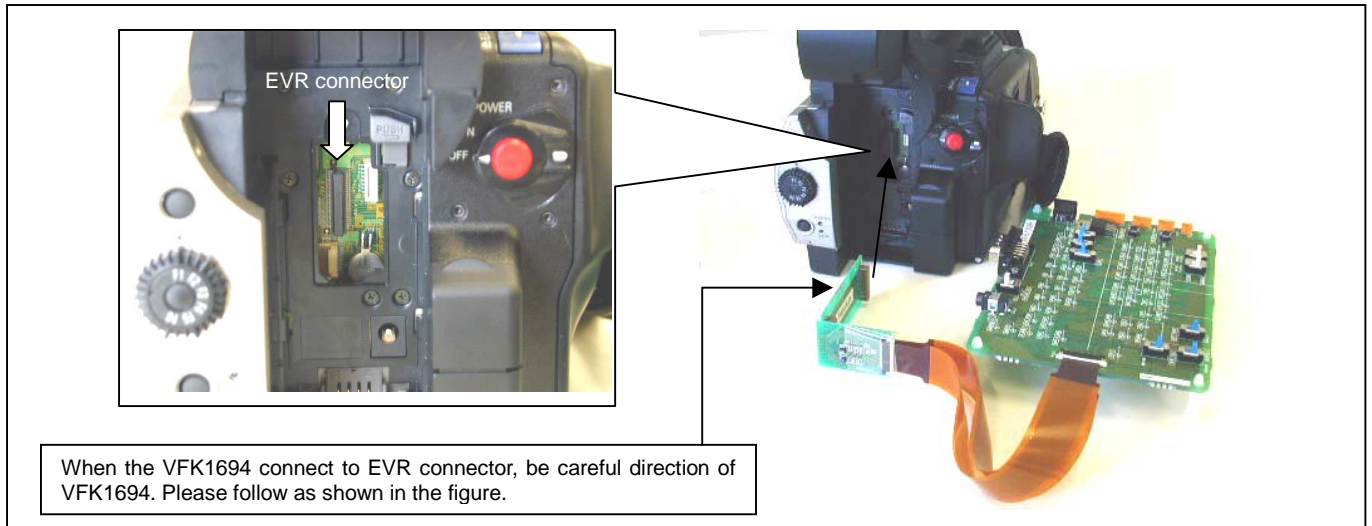
1. Unscrew 1 screw and remove the EVR cover.



2. Connect the 2 pcs. of 30 pin flat cables (VFK1317) between P101/P102 on the Measuring Board (VFK1308P), and 2 connectors on the EVR Connector Board (VFK1309A). Make sure that the contact surface of 2 pcs. of 30 pin Flat Cables are inner side and direction of the EVR Connector Board is as shown in Figures. Then connect the Extender board (VFK1694).



3. Connect the EVR Extender board (VFK1694) to EVR connector on EVR connect C.B.A. in camera recorder. Then make sure that the direction of the Extender Board is correct as shown in Figure.



4. Supply DC6V-9V to the Measuring Board (VFK1308P). Please use the DC cable (VJA0941) and AC Adaptor to supply DC voltage to Measuring Board.
5. Connect a 9 pin RS-232C cable between the Measuring Board and RS-232C connector on Personal Computer as shown in Figure.
6. Unless otherwise specified on the message of the EVR software or this adjustment procedure, set the switches on the Measuring Board as shown in the table below.

NAME	SETTING POSITION
RS232C SEL (SW101)	D-SUB
VTR TEST (SW103)	NORMAL
BST TEST (SW104)	NORMAL
SW107	CENTER position
SW108	H
SW105	H
SW106	OFF
FLUSH1 (SW102)	NORMAL
FLUSH2 (SW109)	NORMAL

## 2. REQUIRED TOOL & EQUIPMENT FOR ELECTRICAL ADJUSTMENT

Below indicated tool are required to perform each adjustment except tools introduced item1.

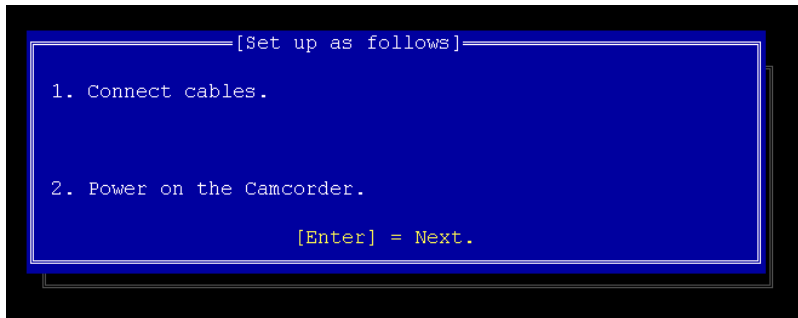
Adjustment	Item	Required Tool	Remark
Camera	Hall Amp (Auto)	Unnecessary	
	Iris PWM (Auto)	Unnecessary	
	Zoom SW center value adjustment	Unnecessary	NOTE
	OIS (Auto)	Unnecessary	
	Zoom Tracking (Auto)	72mm Attachment Ring (VFK1809)	
		43mm Attachment Ring (VFK1164TAR43)	
		Collimator (VFK1164TCM01)	
	White Balance (3100K)	Halogen lamp & Grayscale chart	
		Color Pyrometer & Lux Meter	
	White Balance (5100K)	CC filter (LB120) (VFK1347)	
		CC filter (LBA2) (VFK1884)	
		CC filter (LBB6) (VFK1888)	NOTE
		72mm Attachment Ring (VFK1809)	
		CC Filter Holder (VFK1345)	
		Step-down Ring (62mm-52mm) (VFK1346)	
		Step-up Ring (43mm-49mm) (VFK1659)	
		Step-up Ring (49mm-62mm) (VFK1660)	
		Halogen lamp & Grayscale chart	
		Color Pyrometer & Lux Meter	
	White Balance (4500K)	CC filter (LB120) (VFK1347)	NTSC model only
		CC filter (LB80) (VFK1342)	PAL model only
		CC filter (CC C20) (VFK1887)	PAL model only
		72mm Attachment Ring (VFK1809)	
		CC Filter Holder (VFK1345)	
		Step-down Ring (62mm-52mm) (VFK1346)	
		Step-up Ring (43mm-49mm) (VFK1659)	
		Step-up Ring (49mm-62mm) (VFK1660)	
		Halogen lamp & Grayscale chart	
		Color Pyrometer & Lux Meter	
	White Balance (3600K)	CC filter (LB40) (VFK1341)	NTSC model only
		CC filter (LBB2) (VFK1885)	NTSC model only
		CC filter (CC C10) (VFK1886)	PAL model only
		72mm Attachment Ring (VFK1809)	
		CC Filter Holder (VFK1345)	
		Step-down Ring (62mm-52mm) (VFK1346)	
		Step-up Ring (43mm-49mm) (VFK1659)	
		Step-up Ring (49mm-62mm) (VFK1660)	
		Halogen lamp & Grayscale chart	
		Color Pyrometer & Lux Meter	
	CCD White scratch damage revision (Auto)	Unnecessary	
	White Shading	Halogen lamp	
VTR	Sensitivity adj of Tape sensor (Auto)	Tape End/Beg. Sensor Cassette (VFK1217)	
	PG Shifter (Auto)	Oscilloscope	
		DV Color bar Alignment Tape (VFM3010EDS)	NTSC model only
		DV Color bar Alignment Tape (VFM3110EDS)	PAL model only
	Luminance Level	Waveform Monitor	NTSC model only
		Oscilloscope	PAL model only
	Chroma Level	Waveform Monitor	NTSC model only
		Oscilloscope	PAL model only
LCD	PLL	Oscilloscope	
	Pedestal Level	Oscilloscope	
	Contrast	Oscilloscope	
	Sub Contrast	Oscilloscope	
	White balance	Oscilloscope	
EVF	PLL	Oscilloscope	
	Pedestal Level	Oscilloscope	
	Contrast	Oscilloscope	
	Sub Contrast	Oscilloscope	
	White balance	Oscilloscope	

**NOTE:** The Zoom SW center value adjustment is contained in Camera adjustment menu but it is not the adjustment of the camera system. The LBB6 is the compatible article of 80D. The cc filter 80D is made by Kodak, which was introduced with the AG-DVX100/DVC80/DVC180 service manual. Being supplying LBB6(VFK1888) as service tool, which is made from Fuji film, either can be used LBB6 and 80D for White Balance (5100K) adjustment.

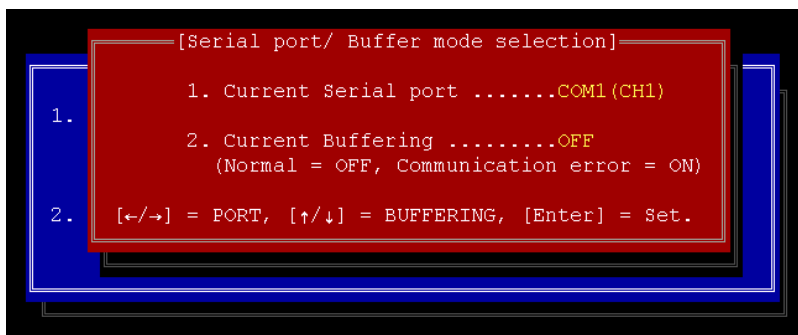
### 3. PC EVR (ADJUSTMENT) SOFTWARE

#### 3-1. BOOT UP THE ADJUSTMENT SOFTWARE

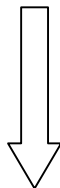
1. Copy all files of EVR software (VFK1811B:NTSC / VFK1840A:PAL) to created directly on PC.
2. Restart the PC in DOS mode.
3. Type "**DVX100**" and press ENTER key, then EVR software boot up.
4. Wait for a few seconds so that the EVR adjustment program is started.



PRESS ENTER KEY

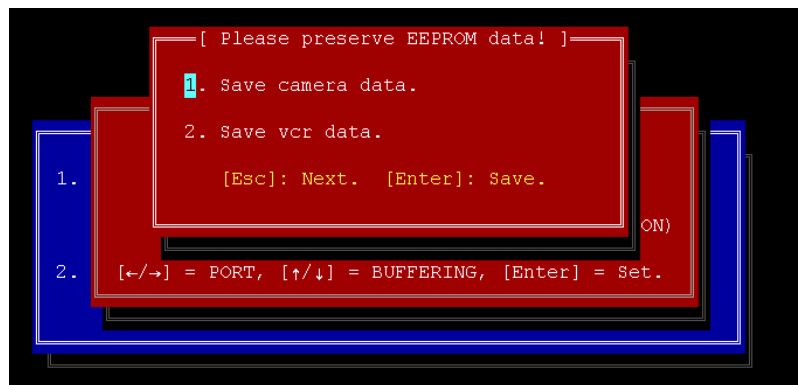


PRESS ENTER KEY

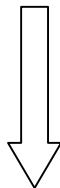


#### NOTE:

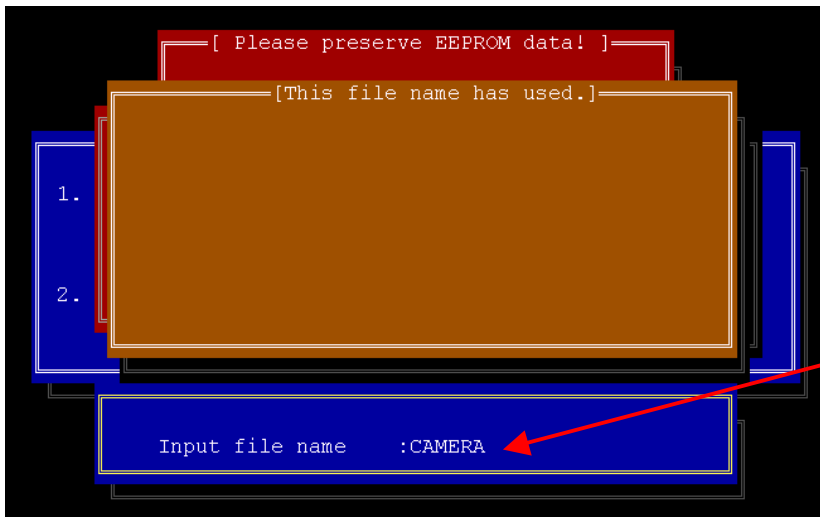
In case of communication error occurred in DOS mode, please try to boot an EVR software in MS-DOS WINDOWS screen.



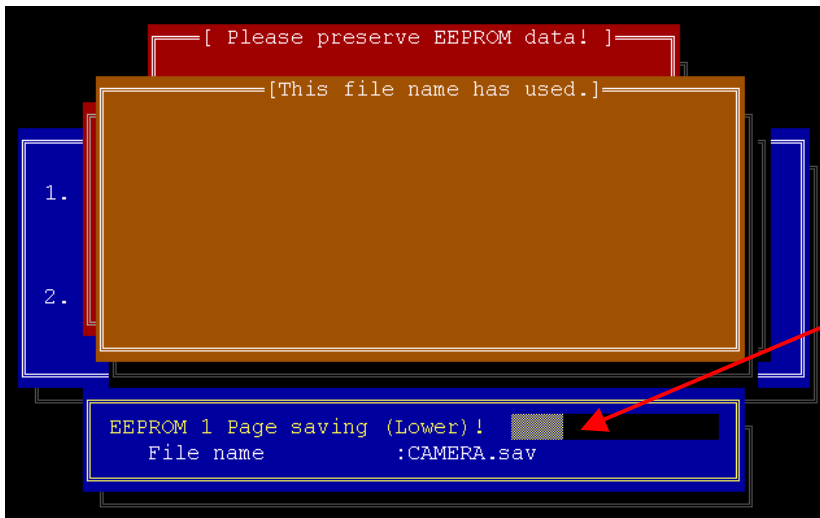
Normally this screen is appeared. We recommended store the EEPROM data before start adjustment. If you want to skip store the data, PRESS ESC KEY, then goes to Main menu.



In case of select No.1



Input file name and PRESS ENTER KEY.

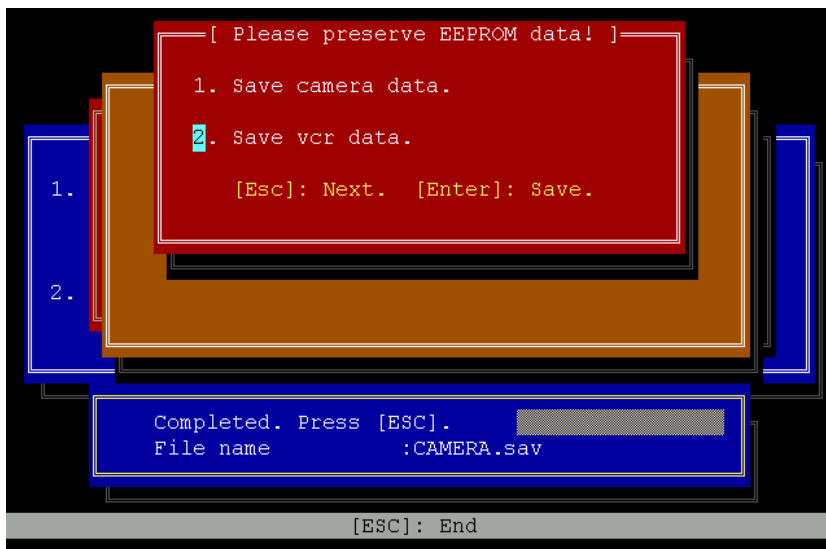


Saving the data is started.

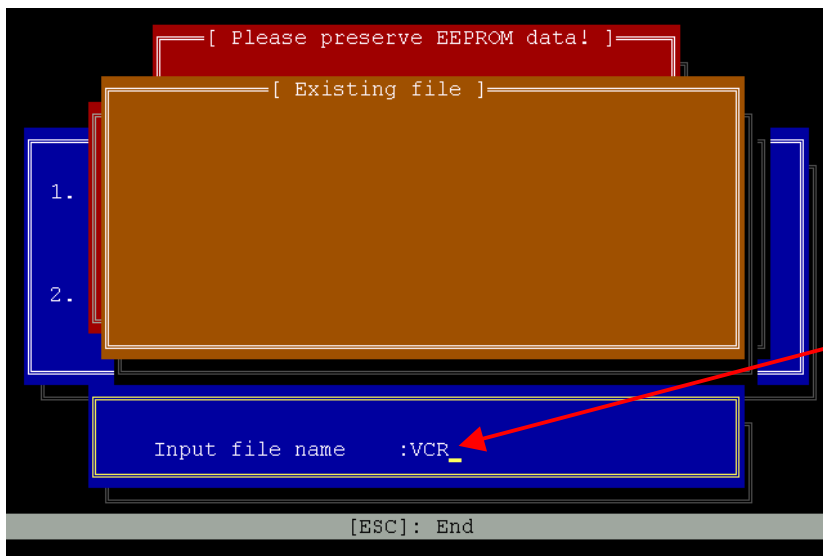


When the data is stored completed, this screen is appeared. PRESS ESC KEY.

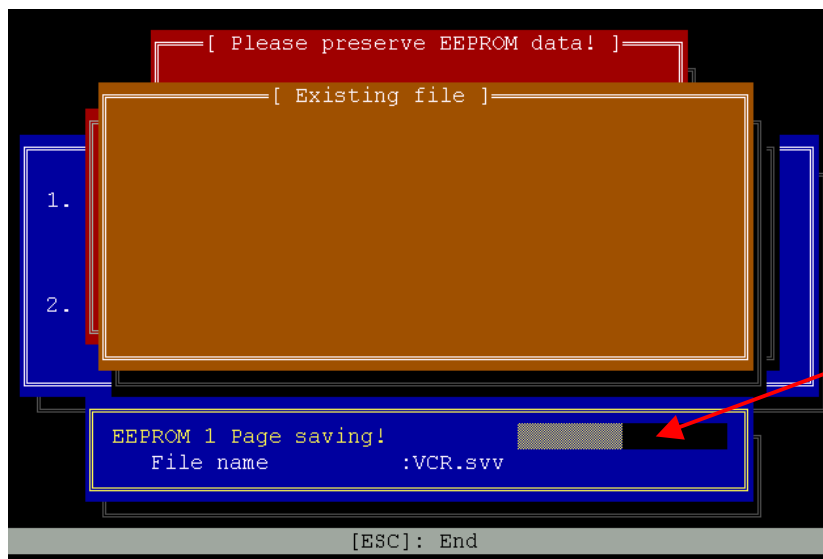




Return to this screen and in case of select No.2. PRESS ENTER KEY.



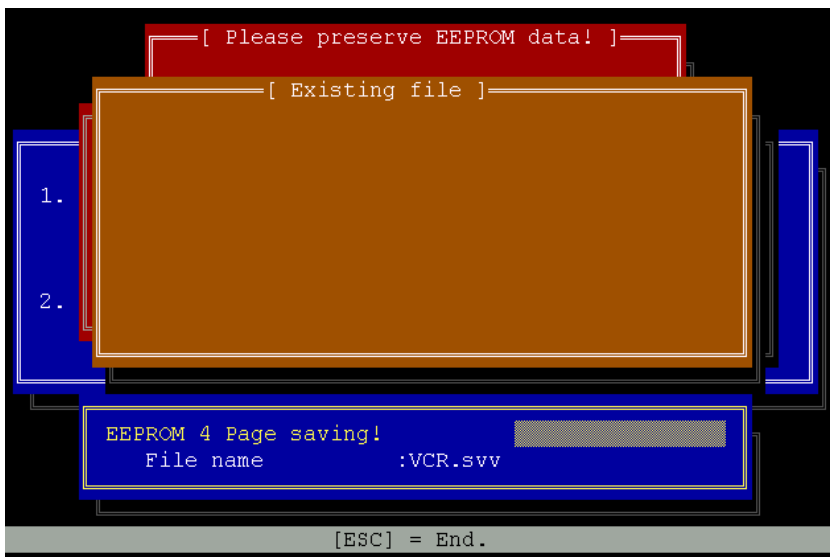
Input file name and PRESS ENTER KEY.



Saving the data is started.





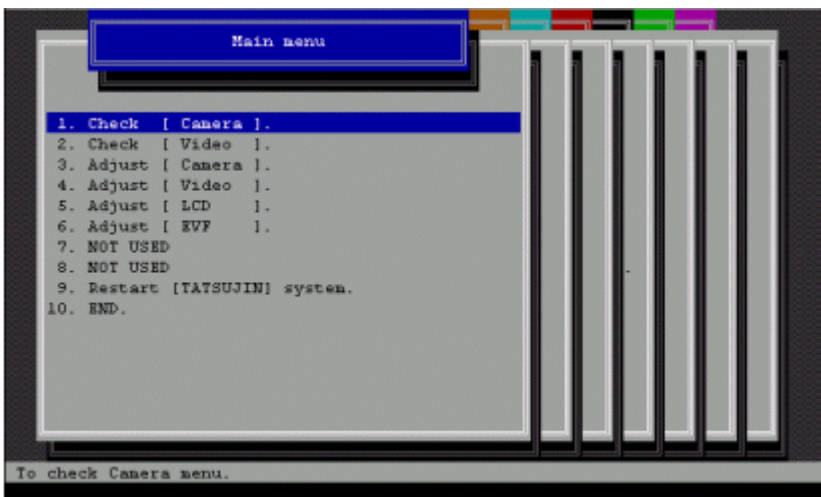


When the data is stored completed, this screen is appeared. PRESS ESC KEY.

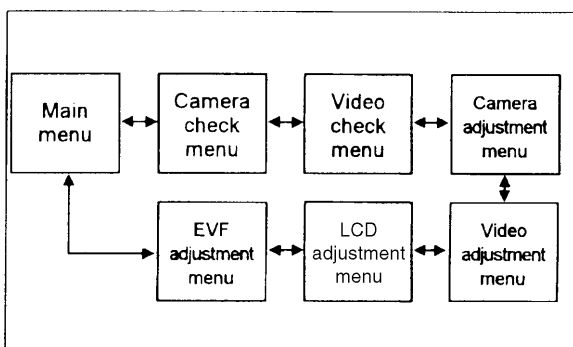
### 3-2. How to Use the Main Menu

Select a Sub Menu to check, adjust the unit and etc. by pressing  $\uparrow\downarrow$  (UP/DOWN) Key in Main Menu. Then press “ENTER” Key. the Sub Menu will be displayed.

**NOTE:** Menu (pages) 3,4,5 and 6 are needed for adjustment.

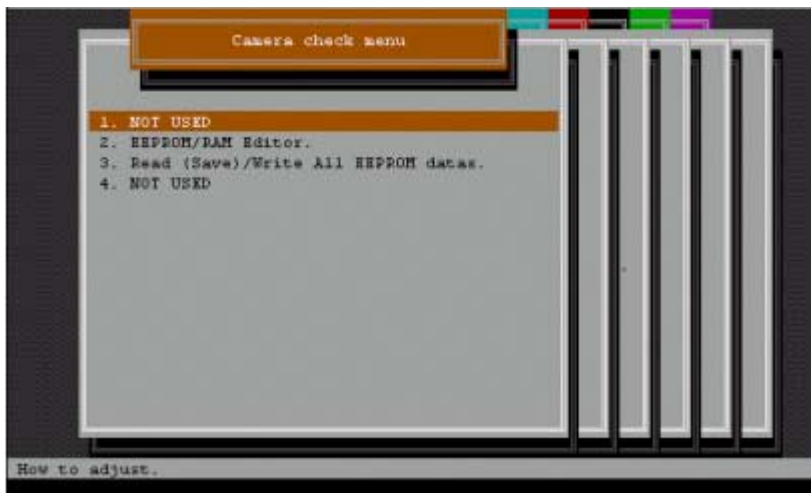


With using  $\leftarrow\rightarrow$  keys, also the menu can be changed.



### 3-3. Introduction of the Sub Menu

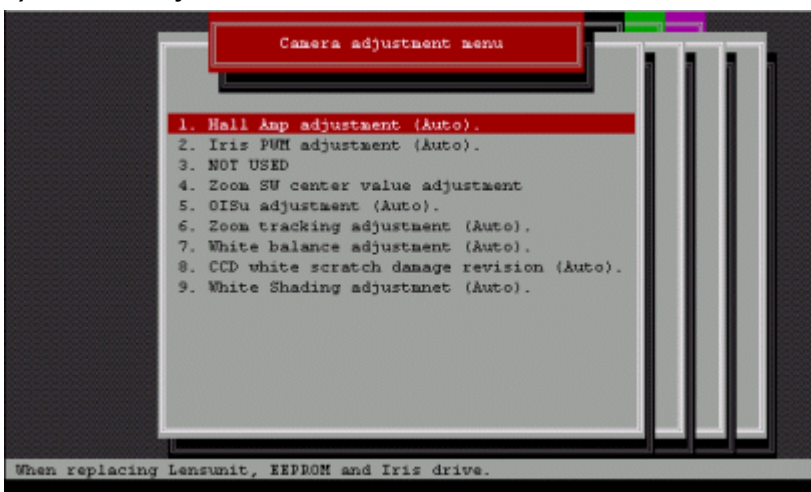
#### 1) Camera Check Menu



#### 2) Video Check Menu



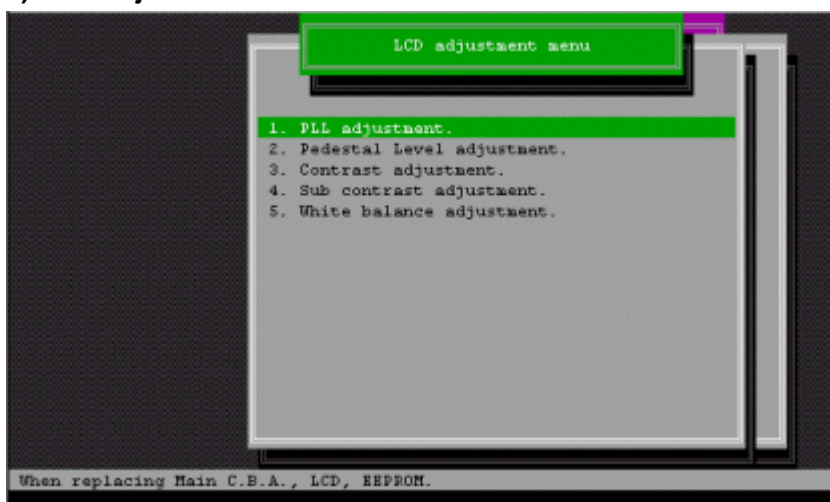
#### 3) Camera Adjustment Menu



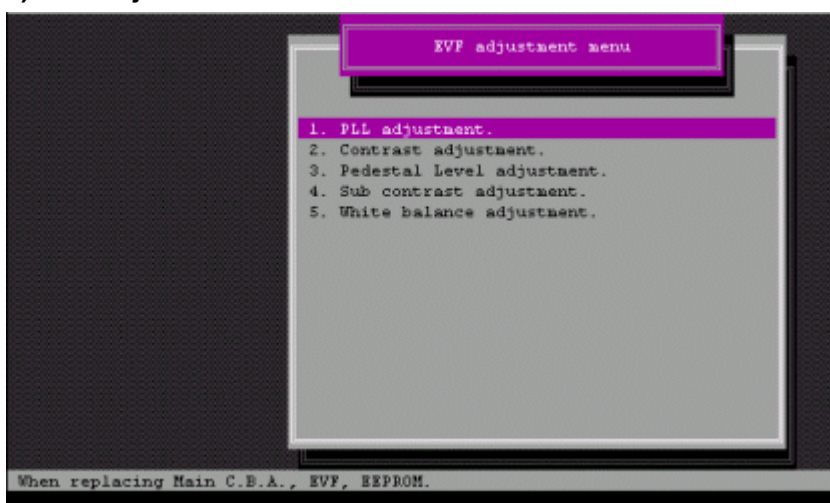
#### 4) Video Adjustment Menu



#### 5) LCD Adjustment Menu



#### 6) EVF Adjustment Menu



## 4. EEPROM

All adjustment data has been stored in the EEPROM.

There are two EEPROM in this camera recorder as shown in the table below.

NAME	REF. No.
CAMERA EEPROM	IC307 (CAMERA C.B.A.)
VTR EEPROM	IC2008 (VTR C.B.A.)

### NOTE:

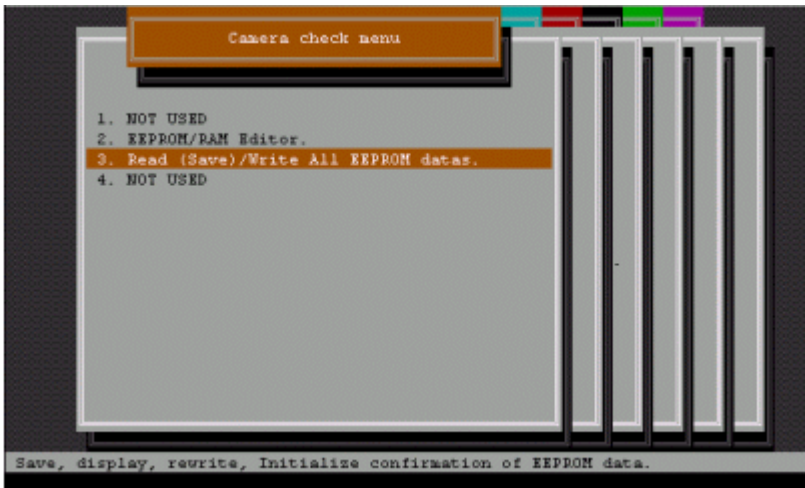
Some information such as the hour meter also have been stored in the EEPROM. Which information stored in EEPROM, refer to item "7-2. EEPROM Data" in section 1. And the contents of these items 4-1, 4-2 and 4-3, which mentioned about how to save and write all EEPROM data.

### NOTE:

Be sure to save both the EEPROM data into the personal computer before performing service and adjustment, in order to avoid any accidental data loss.

### 4-1. How to Save Camera All EEPROM Data

1. Select "**Camera Check menu**" In the Main menu, and then press the "**Enter**" key.
2. Select "**3. Read (Save) / Write All EEPROM datas**" in the Camera check menu, and then press the "**Enter**" key.



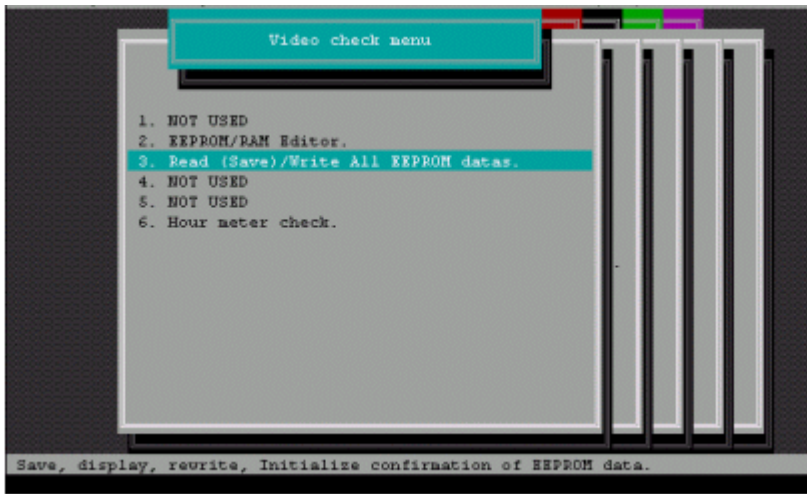
3. Select "**9. Save all data of EEPROM**" in "**3. Read (Save) / Write All EEPROM datas**" menu, and then press the "**Enter**" key.



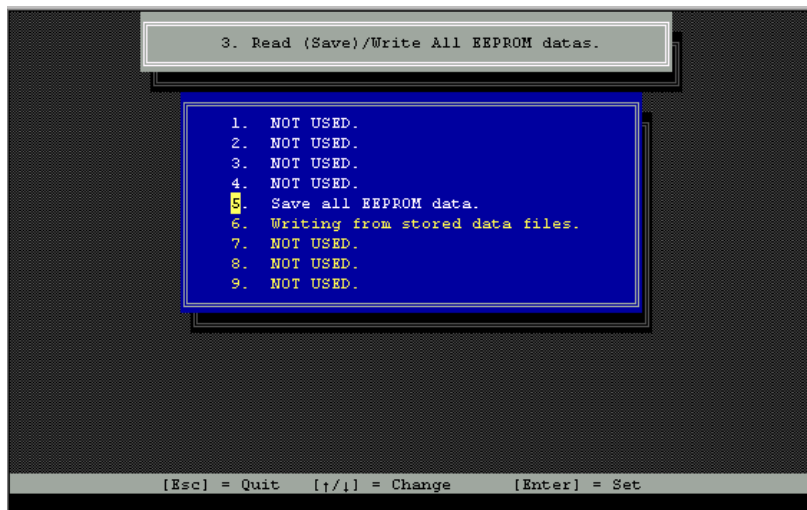
4. Type the File name and, then press the “**Enter**” key. The data of EEPROM (IC307) can be stored in the personal computer. (Please refer to item “**3-1. BOOT UP THE ADJUSTMENT SOFTWARE**”)

#### 4-2. How to Save VTR All EEPROM Data

1. Select “**Video Check menu**” In the Main menu, and then press the “**Enter**” key.
2. Select “**3. Read (Save) / Write All EEPROM datas**” in the Video check menu, and then press the “**Enter**” key.



3. Select “**5. Save all EEPROM data**” in “**3. Read (Save) / Write All EEPROM datas**” menu, and then press the “**Enter**” key.



4. Type the File name, and then press the “**Enter**” key. The data of EEPROM (IC2008) will be stored in the personal computer.



### 4-3. REWRITE Saved Data

When Camera or VTR C.B.A. is replaced, It becomes impossible to adjustment or repairing during service operation, rewrite the saved data which is stored in EEPROM as follows. And readjust.

#### 4-3-1. How to Rewrite All EEPROM data on Camera C.B.A.

1. Select “**Camera Check menu**” In the Main menu, and then press the “**Enter**” key.
2. Select “**3. Read (Save) / Write All EEPROM datas**” in the Camera check menu, and then press the “**Enter**” key.
3. Select “**10. Data write using stored file**” in “**3. Read (Save) / Write All EEPROM datas**” menu, and then press the “**Enter**” key.
4. Type the saved file name, and then press the “**Enter**” key.
5. Select “**9. EEPROM ALL (2 Kbyte)**”, and then press the “**Enter**” key.
6. The data can be written in EEPROM (IC307).

#### 4-3-2. How to Rewrite All EEPROM data on VTR C.B.A.

1. Select “**Video Check menu**” In the Main menu, and then press the “**Enter**” key.
2. Select “**3. Read (Save) / Write All EEPROM datas**” in the Video check menu, and then press the “**Enter**” key.
3. Select “**6. Writing from the stored data files**” in the “**3. Read (Save) / Write All EEPROM datas**” menu, and then press “**Enter**” key.
4. Type the saved file name, and then press the “**Enter**” key.
5. Select “**5. Write EEPROM (1024 byte)**”, and then press the “**Enter**” key.
6. The data can be written in EEPROM (IC2008).

### 4-4. EEPROM Data Upgrade Procedure.

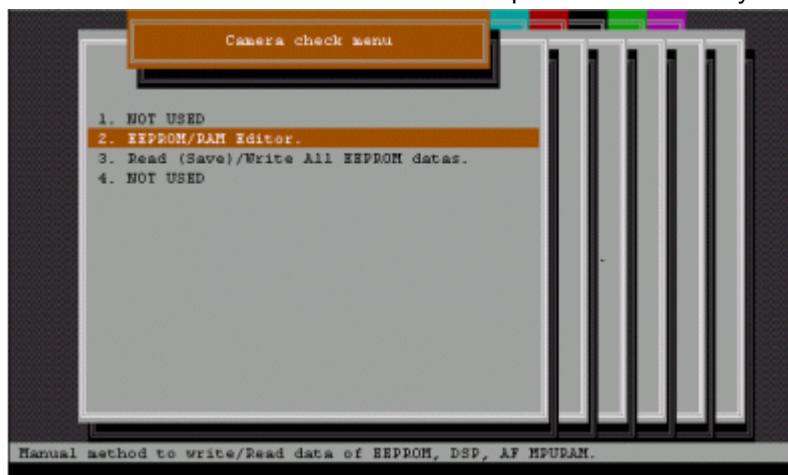
EEPROM data can be changed individuality to upgrade. In case of EEPROM data have to changed for improvement of some functions. Technical bulletin described address and data as indicated as below table.

-	-	VSI3983B (Ver12)	VSI3983D (Ver14)
1	Address	0542	
	Data	70	FF
2	Address	00ED	
	Data	12	14

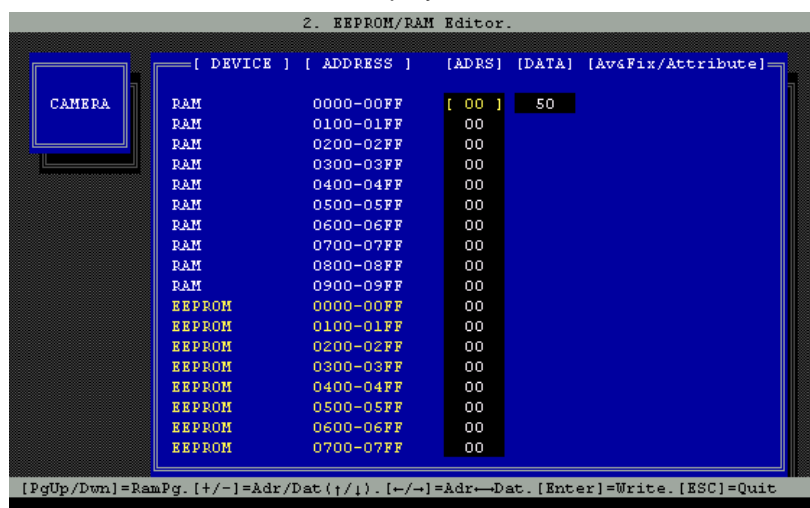
**NOTE:** Before up-grade the Camera or VTR EEPROM, be sure to save ALL EEPROM data into the personal computer to avoid any accidental data loss. Regarding the saving method, refer to item 4-1 and 4-2 in this section.

#### 4-4-1. CAMERA EEPROM upgrade procedure

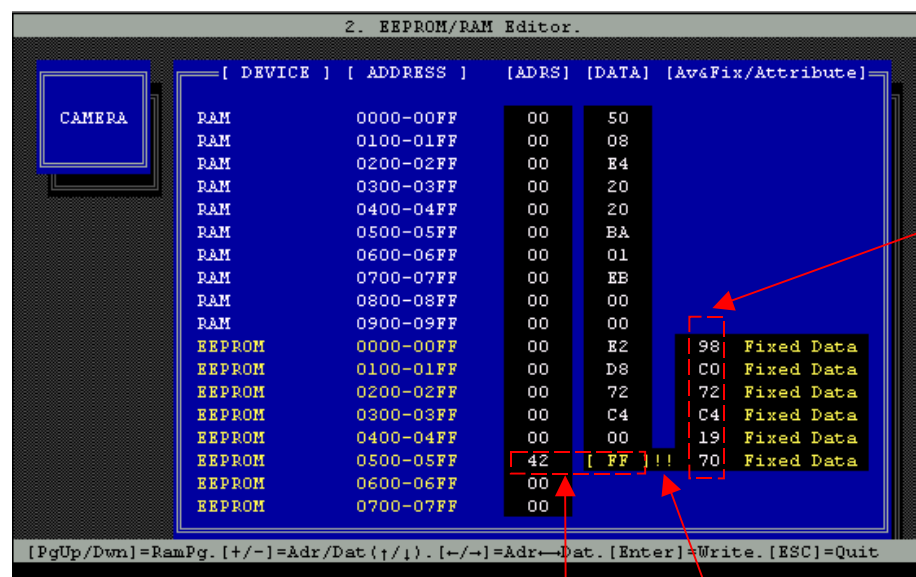
1. Boot up EVR software and open the Camera check menu.
2. Select “**2. EEPROM/RAM Editor**” and press “**ENTER**” key.



3. Below indicated screen is displayed.



4. In case of data is change to FF from 70 on address 0542, select a line “**EEPROM 0500-05FF**” by arrow key (↑/↓) and input a value as 42 to column [ADRS]. Next cursor is moved to column [DATA] by arrow key (→/←) and input a value as FF. And press ENTER key to write to EEPROM.



**NOTE:** These data do not original data. Do not refer these data.

After writing data, mark “!!” is displayed momentarily.

Input data as [ADRS] is 42 and [DATA] is FF and press ENTER key

5. Please change the other part of address data follow the above description.

**NOTE:** As mentioned as Supplement Service Manual, address is indicated as 4 digits of numerical value. Select the line based on first 2 digit and value behind 2 digit is input value to column [ADRS].

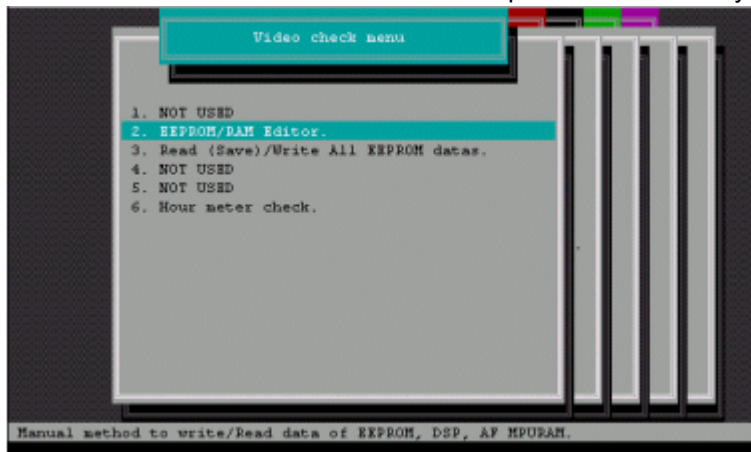
EEPROM	0000-00FF	←
EEPROM	0100-01FF	
EEPROM	0200-02FF	
EEPROM	0300-03FF	
EEPROM	0400-04FF	
EEPROM	0500-05FF	←
EEPROM	0600-06FF	
EEPROM	0700-07FF	

In case of 00ED, select the line of “0000-00FF”.

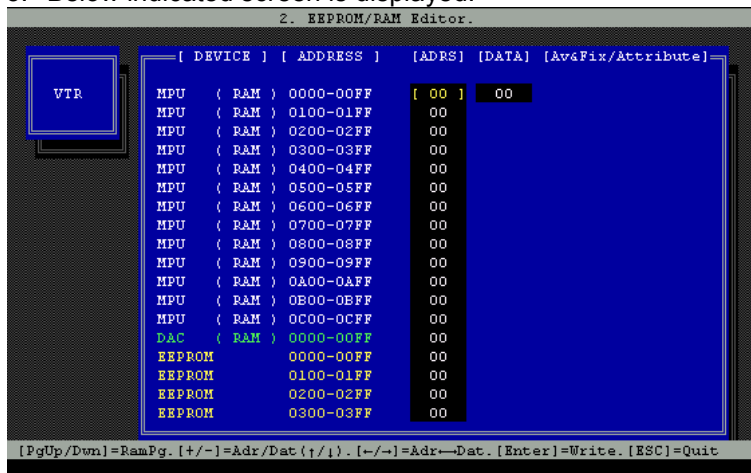
In case of 0542, select the line of “0500-05FF”

#### 4-4-2. VTR EEPROM upgrade procedure

1. Boot up EVR software and open the Video check menu.
2. Select “2. EEPROM/RAM Editor” and press “ENTER” key.



3. Below indicated screen is displayed.



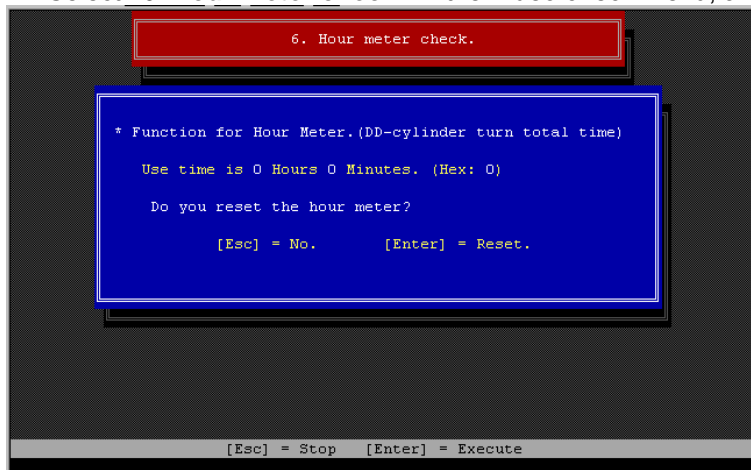
4. Upgrade procedure is the same as CAMERA EEPROM upgrade. How to change the data, please refer to previous item 4-4-1.

## 5. HOUR METER RESET

Hour Meter can be reset by use this EVR software.

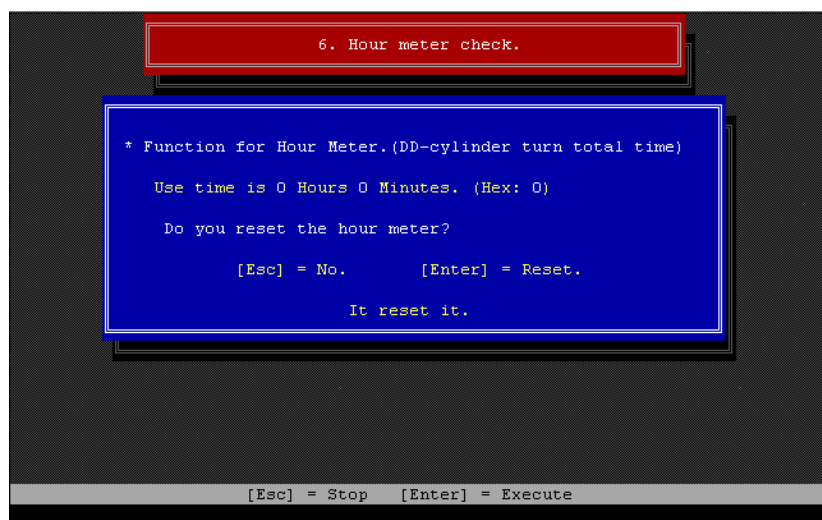
### <How to reset Hour Meter>

1. Select “Video Check menu” In the Main menu, and then press the “Enter” key.
2. Select “6. Hour meter check” in the Video check menu, and then press the “Enter” key.





3. Press the **“ENTER”** key, then reset is executed.



4. After finish this operation, the program goes to **“Video Check Menu”** automatically.
5. Open the **“OTHER FUNCTION”** menu in Unit and confirm that the HOUR METER display is change to **“00000H”**.

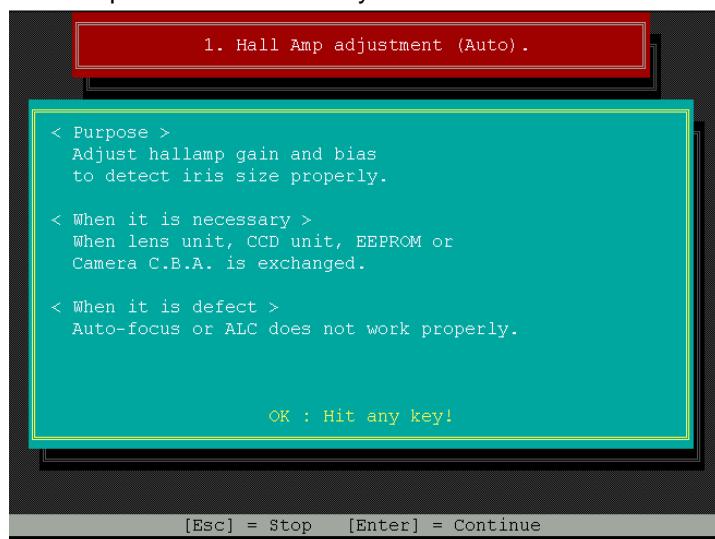
## 6. CAMERA ADJUSTMENT PROCEDURE

Be sure to save the Camera EEPROM data into the Personal Computer, before performing adjustment.  
Perform the all PC-EVR adjustments, by referring to procedures on PC screen.

### 6-1. Hall Amp Adjustment (AUTO)

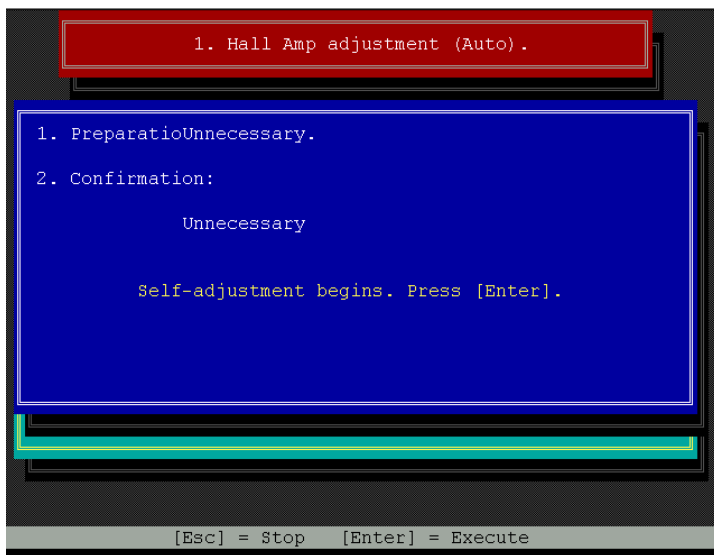
This adjustment can be adjust automatically.

1. Open the **“Camera adjustment menu”**.
2. Select **“1. Hall Amp adjustment (Auto)”** in the Camera adjustment menu, and then press the **“Enter”** key.
3. Set to CAMERA mode in camera recorder follow the message **“Auto / Manually set to CAMERA mode.”**, and then press the **“Enter”** key.

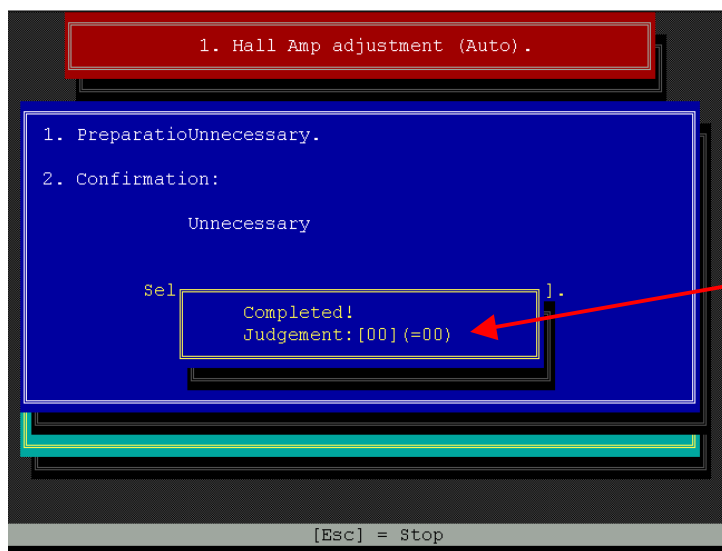


PRESS ENTER KEY.





PRESS ENTER KEY, then adjustment is started.

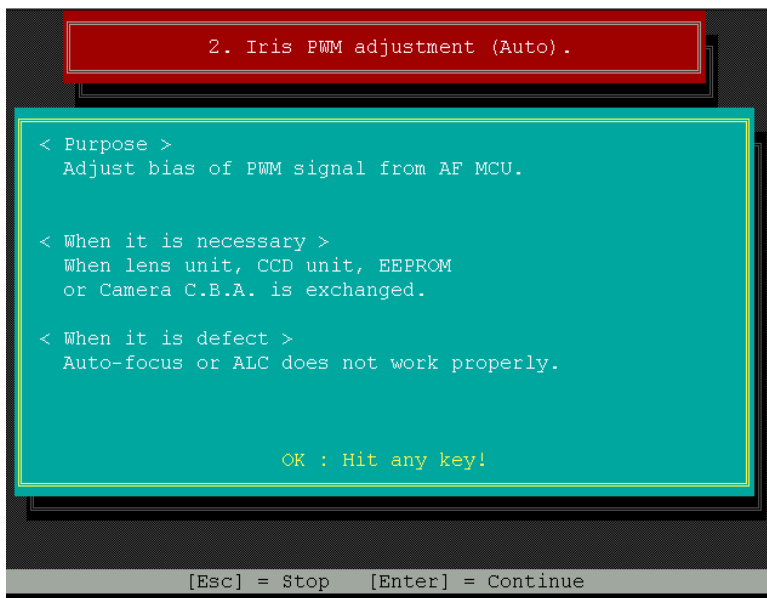


When adjustment is finished, message "**Completed!**" appeared and numerical value is changed "**00**". The program goes to Camera adjustment menu automatically.

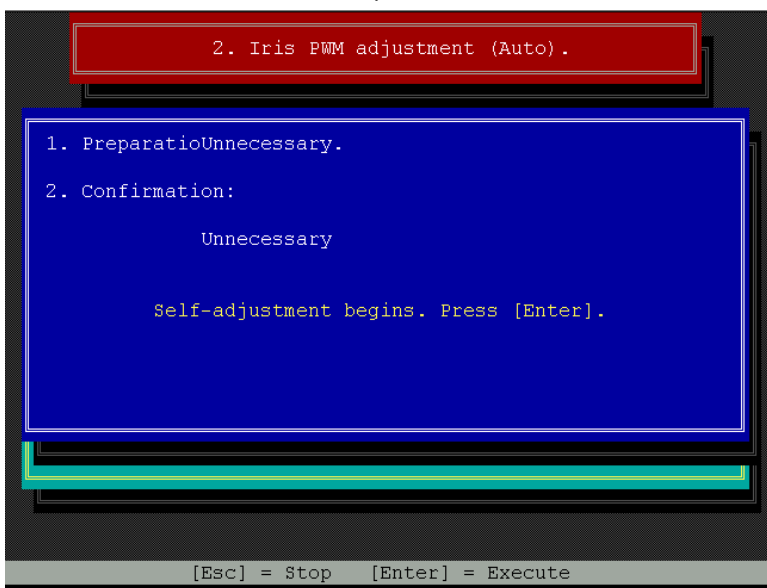
## 6-2. Iris PWM Adjustment (AUTO)

This adjustment can be adjust automatically.

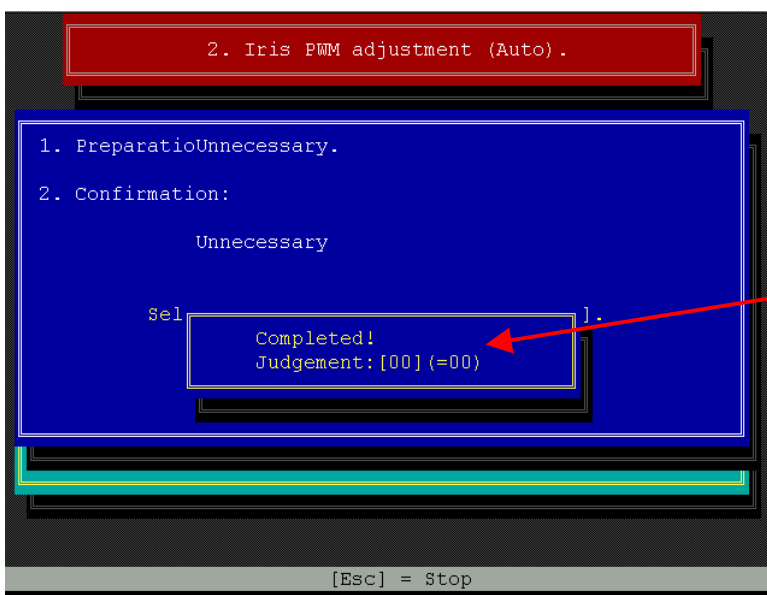
1. Open the "**Camera adjustment menu**".
2. Select "**2. Iris PWM adjustment (Auto)**" in the Camera adjustment menu, and then press the "**Enter**" key.
3. Set to CAMERA mode in camera recorder follow the message "**Auto / Manually set to CAMERA mode.**", and then press the "**Enter**" key.



PRESS ENTER KEY.



PRESS ENTER KEY, then adjustment is started.



When adjustment is finished, message "Completed!" appeared and numerical value is changed "00". The program goes to Camera adjustment menu automatically.

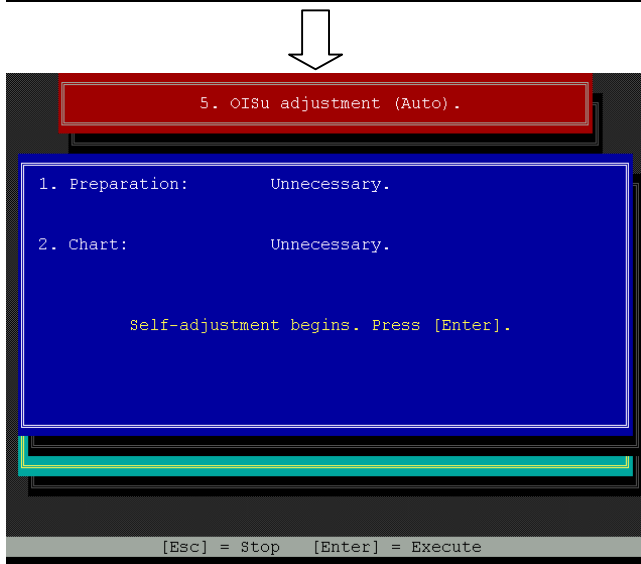
### 6-3. OISu Adjustment (AUTO)

This adjustment can be adjusted automatically.

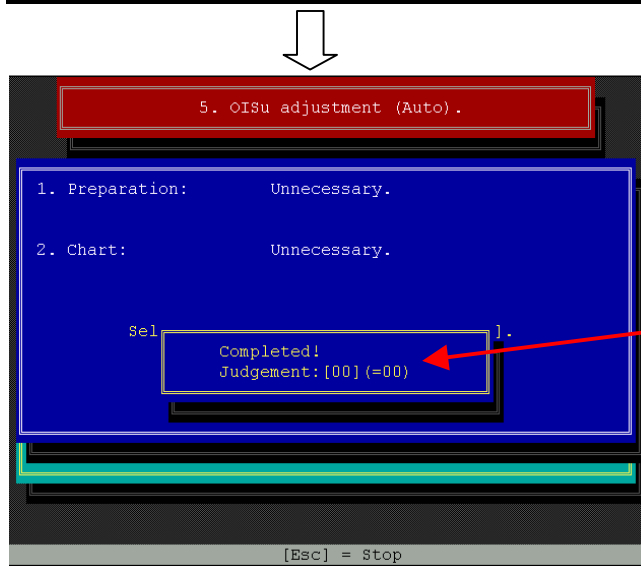
1. Open the “**Camera adjustment menu**”.
2. Select “**5. OISu adjustment (Auto)**” in the Camera adjustment menu, and then press the “**Enter**” key.
3. Set to CAMERA mode in camera recorder follow the message “**Auto / Manually set to CAMERA mode.**”, and then press the “**Enter**” key.



PRESS ENTER KEY.



PRESS ENTER KEY, then adjustment is started.

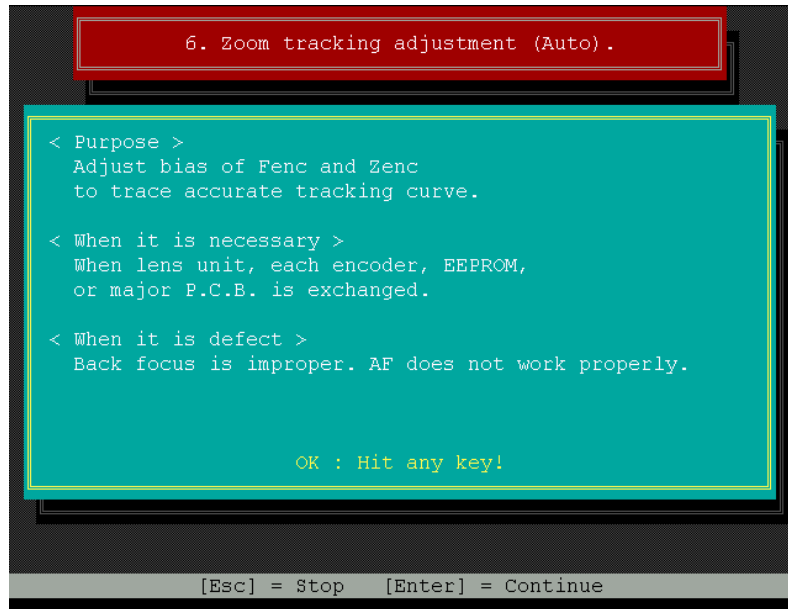


When adjustment is finished, message “**Completed!**” appeared and numerical value is changed “00”. The program goes to Camera adjustment menu automatically.

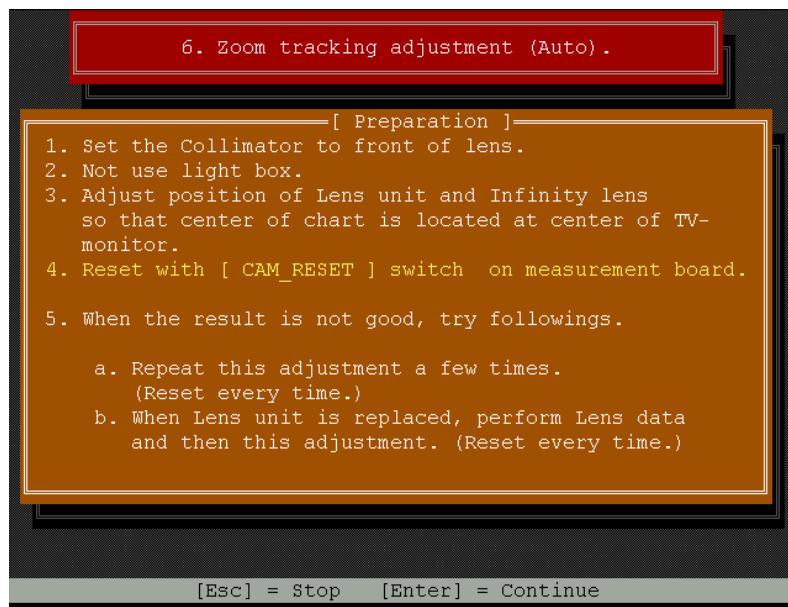
## 6-4. Zoom Tracking Adjustment (AUTO)

This adjustment can be adjusted automatically.

1. Set the 72mm Attachment Ring (VFK1809) to front of the Lens.
2. Set the 43mm attachment ring (VFK1164TAR43) to Collimator (VFK1164TCM01).
3. Set the Collimator (VFK1164TCM01) with the 43mm attachment ring (VFK1164TAR43) to 72mm Attachment Ring (VFK1809).
4. Open the “**Camera adjustment menu**”.
5. Select “**6. Zoom Tracking adjustment (Auto)**” in the Camera adjustment menu, and then press the “**Enter**” key.
6. Set to CAMERA mode in camera recorder follow the message “**Auto / Manually set to CAMERA mode.**”, and then press the “**Enter**” key.

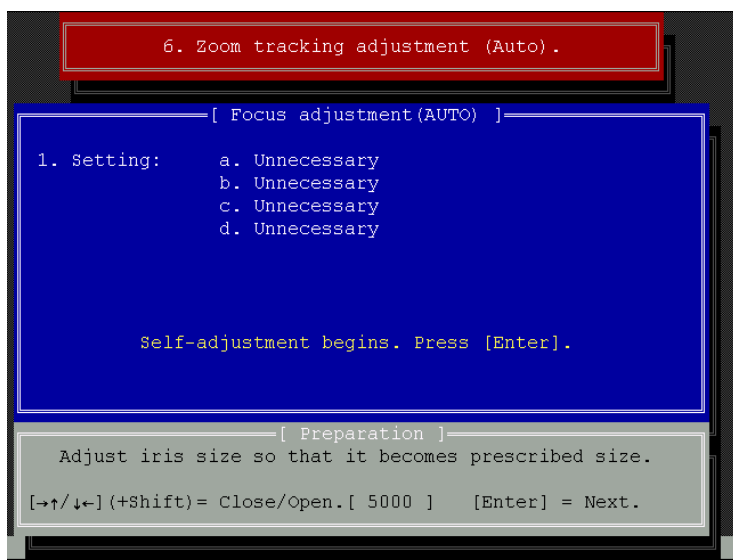


PRESS ENTER KEY.

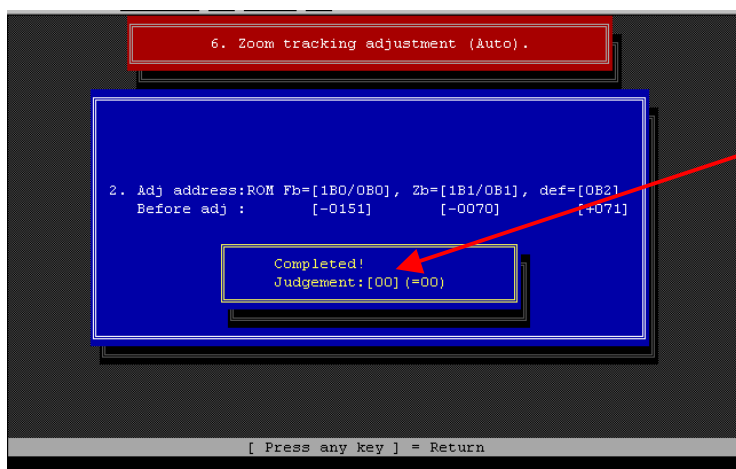


PRESS ENTER KEY.





PRESS ENTER KEY, then adjustment is started.



When adjustment is finished, message "**Completed!**" appeared and numerical value is changed "**00**".

7. After finish this adjustment, press "**CAM RESET**" switch on Measuring Board (VFK1308P).

**NOTE:** Please perform this adjustment twice.

8. Confirm that the camera recorder set to Auto Focus mode.

9. Connect the VIDEO OUT to Monitor TV.

10. Press the Zoom button to set maximum TELE side.

11. Confirm that the focus chart appeared clear and Numerical value of Focus control information display. (The value should be appeared "**AF95 ± 1**")

12. Set the camera recorder to manual focus mode.

13. Press the Zoom button to change zoom position to maximum WIDE from maximum TELE side, then confirm that the focus chart appeared clear and Zoom position display number changed smoothly.

## 6-5. White Balance Adjustment (AUTO)

This adjustment can be adjusted automatically.

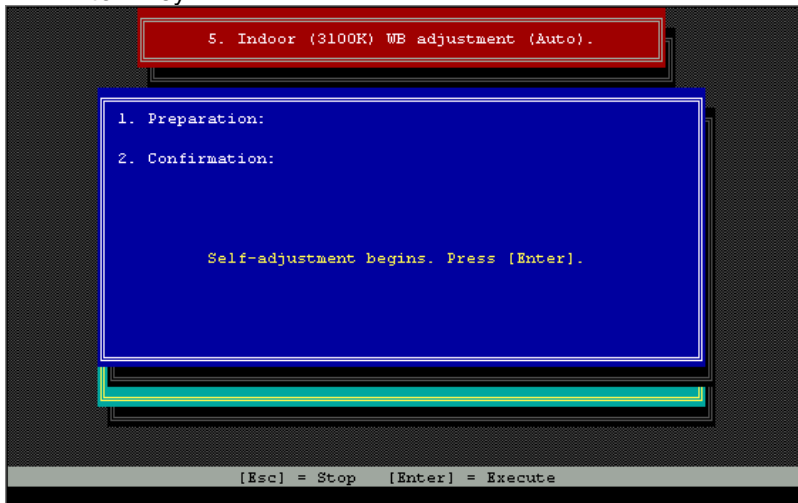
Set to CAMERA mode in camera recorder follow the message “Auto / Manually set to CAMERA mode.”, and then press the “Enter” key.

<Preparation>

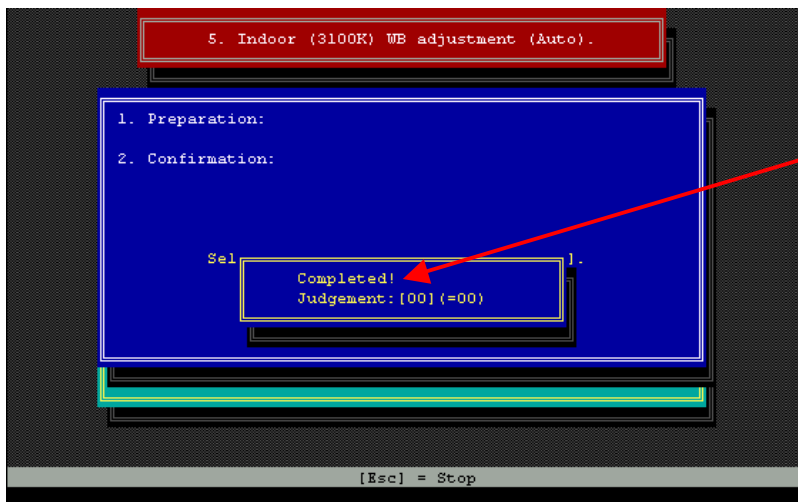
1. Set the ND FILTER SW to 1/8 position.
2. Set the camera recorder to ATW mode.
3. Execute the ABB.

### 6-5-1. Indoor (3100K) White Balance Adjustment (AUTO)

1. Aim the camera recorder at Grayscale Chart under the Halogen lamp condition (3100K, 2000Lux).
2. Open the “Camera adjustment menu”.
3. Select “7. White Balance adjustment” in the Camera adjustment menu, and then press the “Enter” key.
4. Select “5. Indoor (3100K) WB adjustment (Auto)” in the White balance adjustment menu, and then press the “Enter” key.



PRESS ENTER KEY, then adjustment is started.



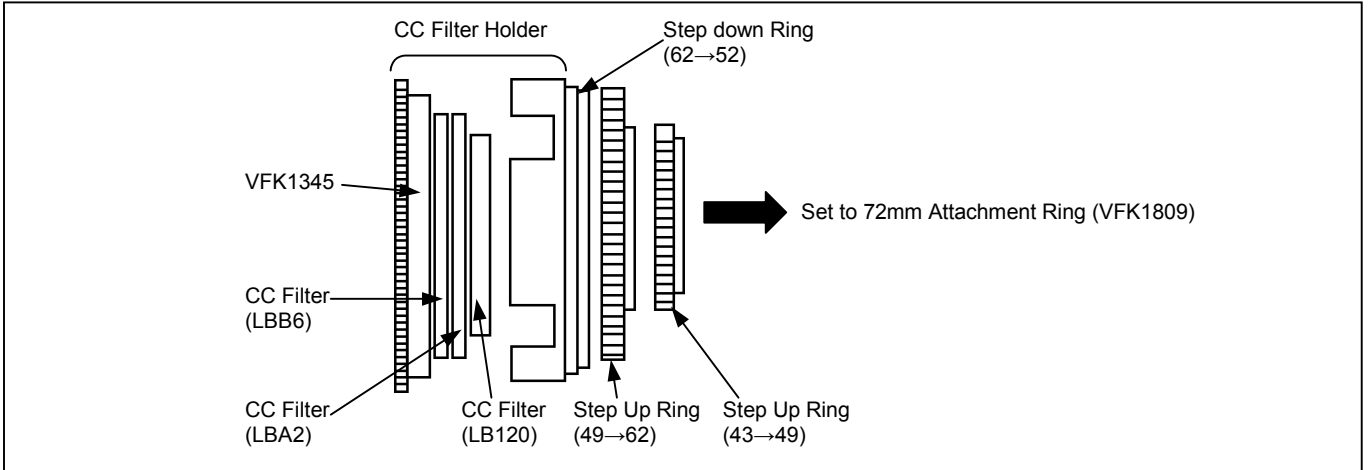
When adjustment is finished, message “Completed!” appeared and numerical value is changed “00”.

### 6-5-2. Outdoor (5100K) White Balance Adjustment (Auto)

1. Set the Color Conversion filters (LB120 : VFK1347), (LBA2 : VFK1884) and (LBB6 : VFK1888) to CC Filter Holder (VFK1345).

**NOTE:** The LBB6(VFK1888) is the compatible article of 80D. The cc filter 80D is made by Kodak, which was introduced with the AG-DVX100/DVC80/DVC180 service manual. Being supplying LBB6(VFK1888) as service tool, which is made from Fuji film, either can be used LBB6 and 80D for White Balance (5100K) adjustment.

2. Set the one Step-down Ring (VFK1346) and two Step Up Rings (VFK1659, VFK1660) to CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to front of the Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



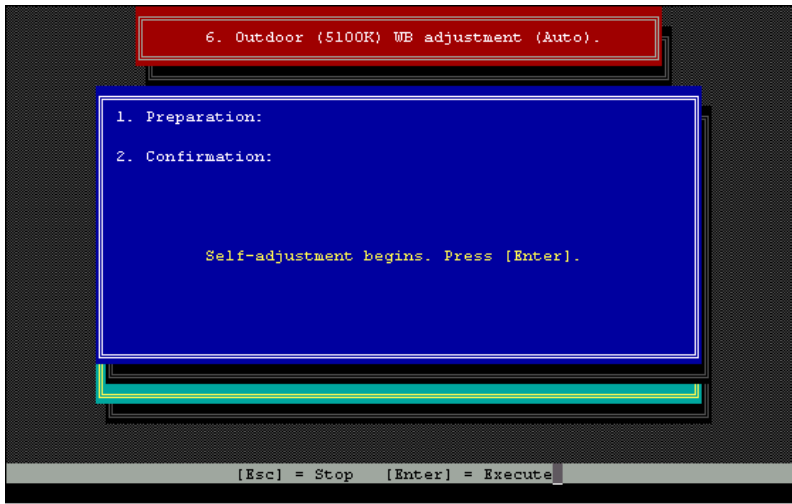
5. Aim the camera recorder at Grayscale Chart under the Halogen lamp condition (3100K, 2000Lux).
6. Open the **“Camera adjustment menu”**.
7. Select **“7. White Balance adjustment”** in the Camera adjustment menu, and then press the **“Enter”** key.
8. Select **“6. Outdoor (5100K) WB adjustment (Auto)”** in the White balance adjustment menu, and then press the **“Enter”** key.



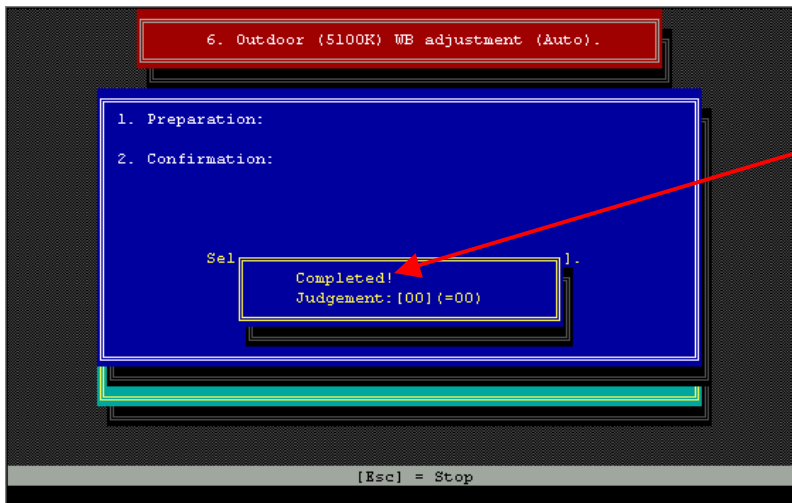
PRESS ENTER KEY.







PRESS ENTER KEY, then adjustment is started.



When adjustment is finished, message "**Completed!**" appeared and numerical value is changed "**00**".



### 6-5-3. Cool white (4500K) White Balance Adjustment (Auto)

< In case of NTSC model >

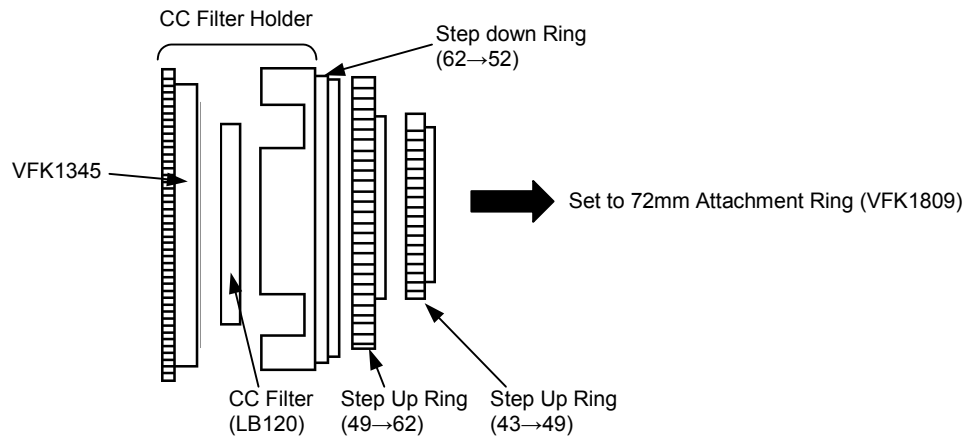
1. Set the Color Conversion filters (LB120 : VFK1347) to CC Filter Holder (VFK1345).

< In case of PAL model >

1. Set the Color Conversion filters (LB80 : VFK1342) and (CC C20 : VFK1887) to CC Filter Holder (VFK1345).

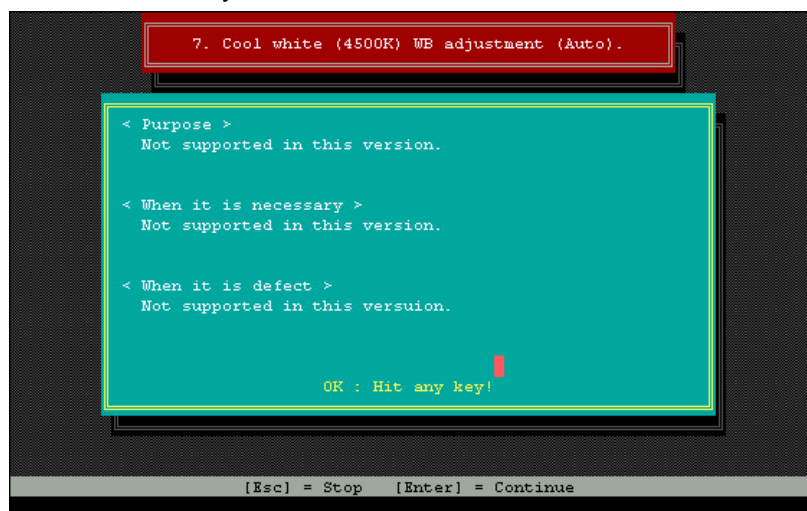
< Common procedure >

2. Set the one Step-down Ring (VFK1346) and two Step Up Rings (VFK1659, VFK1660) to CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to front of the Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



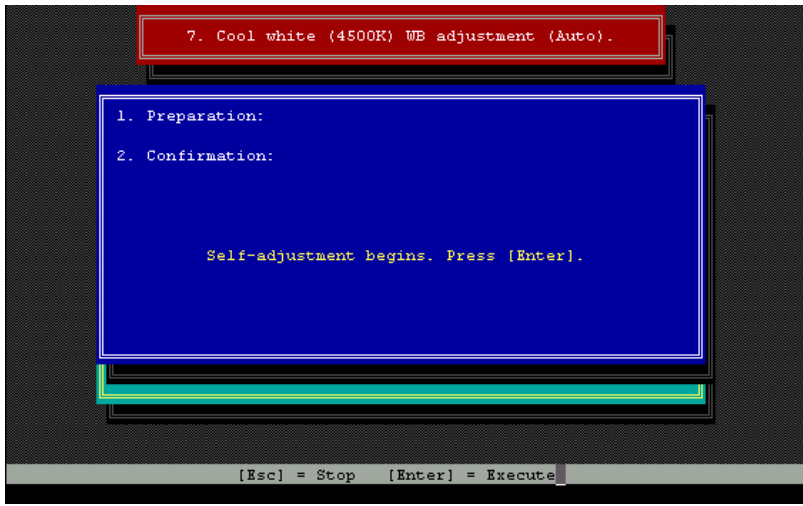
**NOTE:** Above figure described in case of NTSC.

5. Aim the camera recorder at Grayscale Chart under the Halogen lamp condition (3100K, 2000Lux).
6. Open the “**Camera adjustment menu**”.
7. Select “**7. White Balance adjustment**” in the Camera adjustment menu, and then press the “**Enter**” key.
8. Select “**7. Cool white (4500K) WB adjustment (Auto)**” in the White balance adjustment menu, and then press the “**Enter**” key.

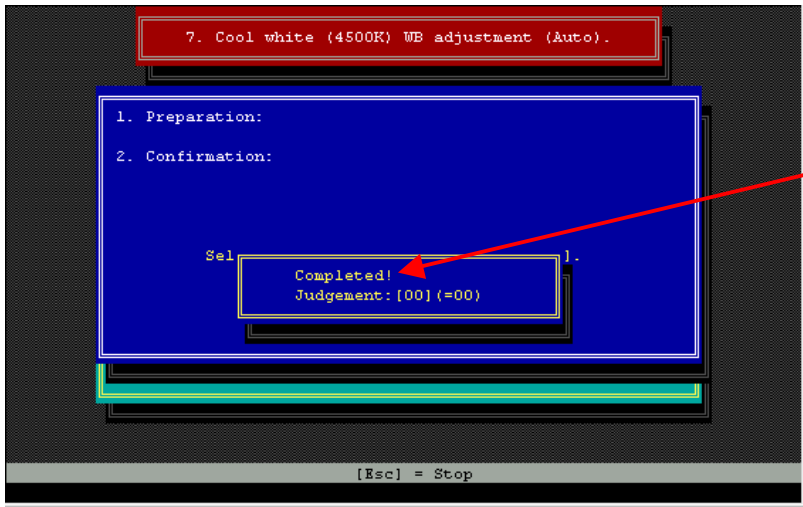


PRESS ENTER KEY.





PRESS ENTER KEY, then adjustment is started.



When adjustment is finished, message **“Completed!”** appeared and numerical value is changed **“00”**.

#### 6-5-4. Warm white (3600K) White Balance Adjustment (Auto)

< In case of NTSC model >

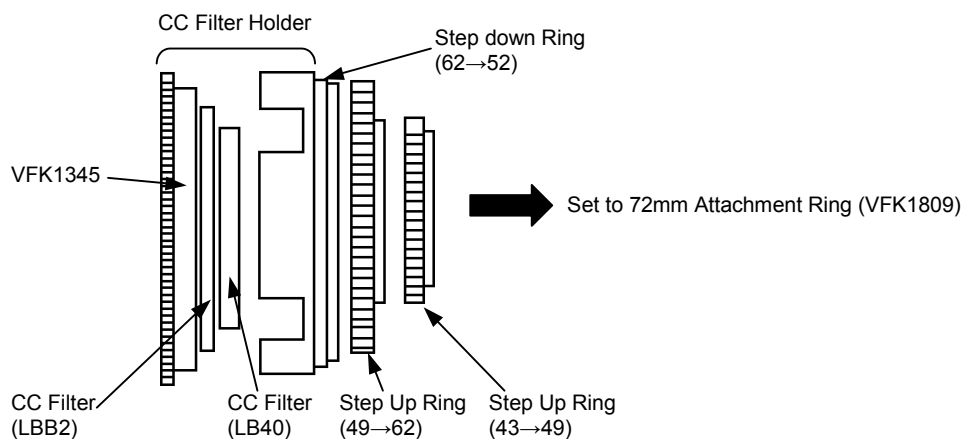
1. Set the Color Conversion filters (LB40 : VFK1341) and (LBB2 : VFK1885) to CC Filter Holder (VFK1345).

< In case of PAL model >

1. Set the Color Conversion filters (CC C10 : VFK1886) to CC Filter Holder (VFK1345).

< Common procedure >

2. Set the one Step-down Ring (VFK1346) and two Step Up Rings (VFK1659, VFK1660) to CC Filter Holder as shown in figure.
3. Set the 72mm Attachment Ring (VFK1809) to front of the Lens.
4. Set the CC Filter Holder with Step-up & down Rings to 72mm Attachment Ring (VFK1809).



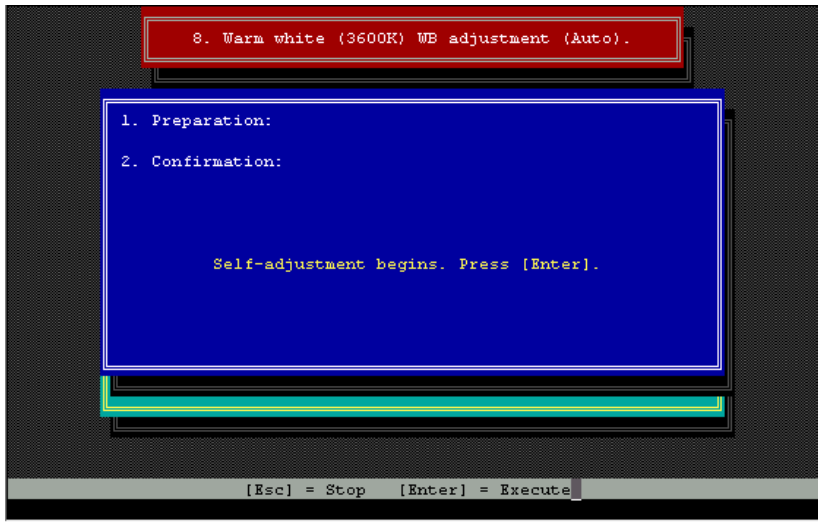
**NOTE:** Above figure described in case of NTSC.

5. Aim the camera recorder at Grayscale Chart under the Halogen lamp condition (3100K, 2000Lux).
6. Open the “**Camera adjustment menu**”.
7. Select “**7. White Balance adjustment**” in the Camera adjustment menu, and then press the “**Enter**” key.
8. Select “**8. Warm white (3600K) WB adjustment (Auto)**” in the White balance adjustment menu, and then press the “**Enter**” key.

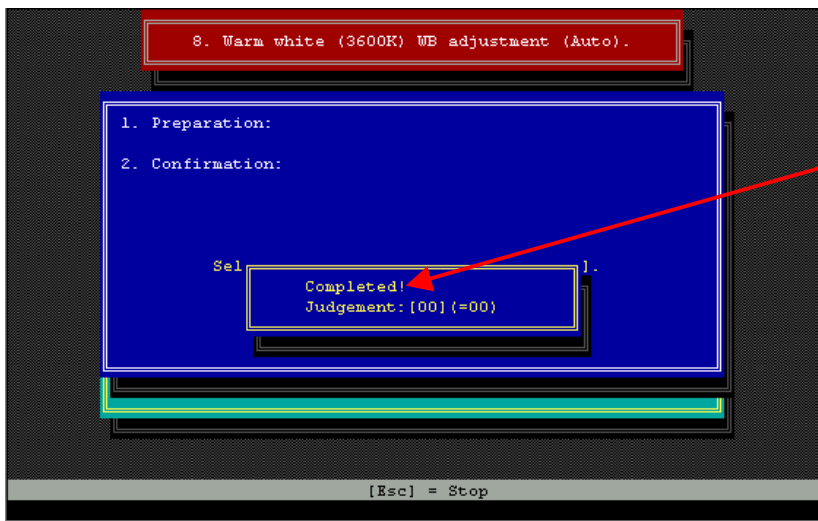


PRESS ENTER KEY.





PRESS ENTER KEY, then adjustment is started.

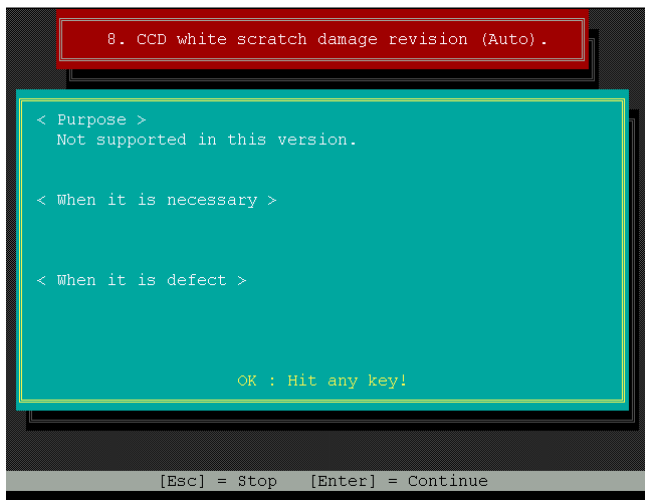


When adjustment is finished, message **“Completed!”** appeared and numerical value is changed **“00”**.

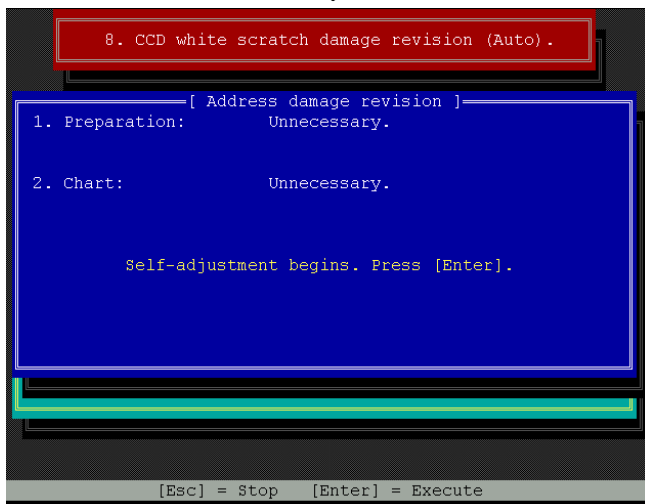
## 6-6. CCD white scratch damage revision Adjustment (AUTO)

This adjustment can be adjusted automatically.

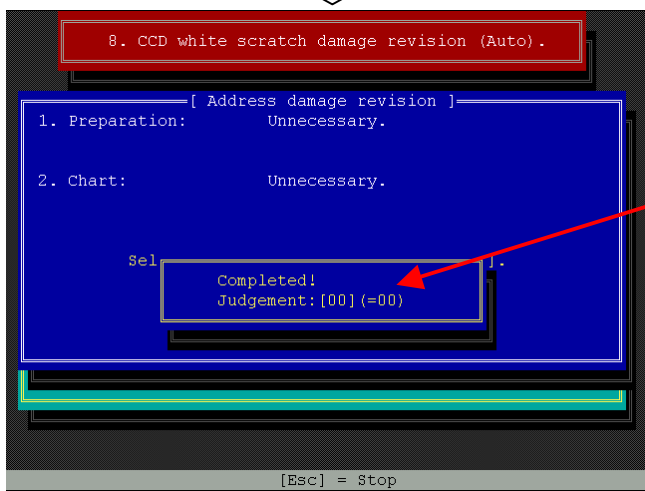
1. Open the “Camera adjustment menu”.
2. Select “8.CCD white scratch damage revision adjustment (Auto)” in the Camera adjustment menu, and then press the “Enter” key.
3. Set to CAMERA mode in camera recorder follow the message “Auto / Manually set to CAMERA mode.”, and then press the “Enter” key.



PRESS ENTER KEY.



PRESS ENTER KEY, then adjustment is started.

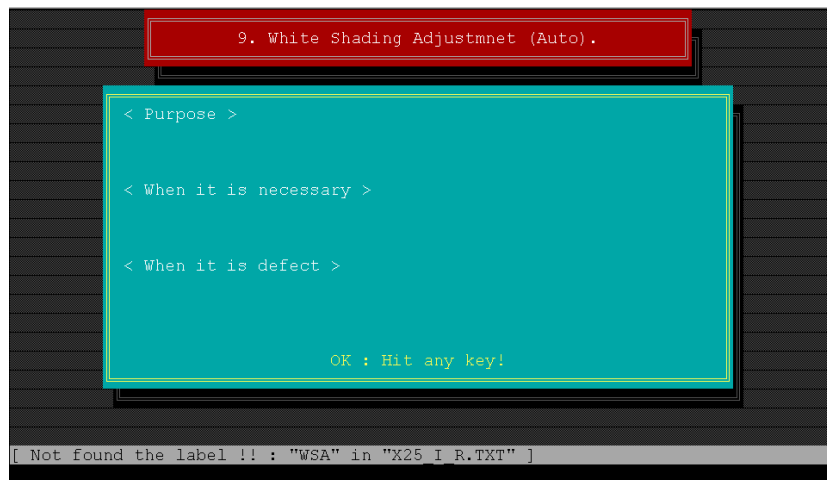


When adjustment is finished, message “Completed!” appeared and numerical value is changed “00”. The program goes to Camera adjustment menu automatically.

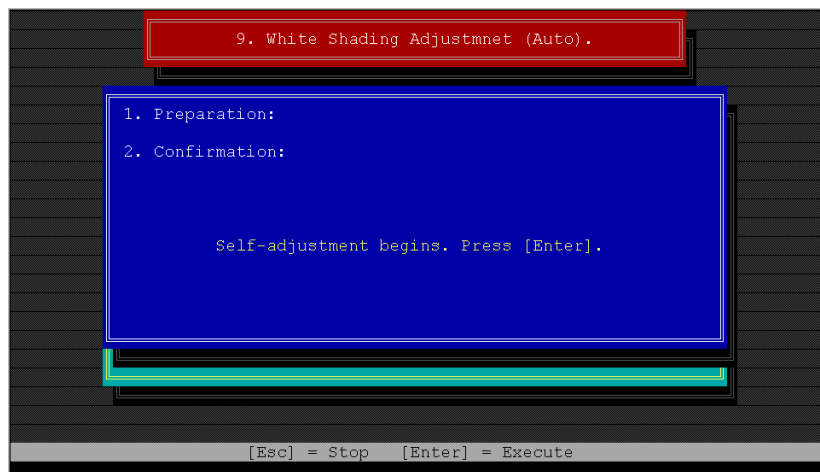
## 6-7. White Shading Adjustment

This adjustment can be adjust automatically.

1. Set the GAIN SW to L (0dB) of camera recorder.
2. Open the SW mode menu in CAMERA menu.
3. Select the item “**ATW**” and set to OFF.
4. Aim the camera recorder at white paper (it can be use clear white paper) under the Halogen lamp condition.
5. Shoot the white paper to become fully screen.
6. Set the White Balance by press AWB SW and confirm that the message “**AWB OK**” on center of screen.
7. Open the DISPLAY SETUP menu in CAMERA menu.
8. Select the item “**MARKER**” and set to ON.
9. Press the ZEBRA SW and confirm that the marker is appears on screen.
10. Adjust the Iris dial to the luminance level to become 70 to 80% (luminance level can be confirm by numerical value, which displayed lower left corner of screen.
11. Open the “**Camera adjustment menu**”.
12. Select “**9. White Shading Adjustment (Auto)**” in the Camera adjustment menu, and then press the “**Enter**” key.
13. Set to CAMERA mode in camera recorder follow the message “**Auto / Manually set to CAMERA mode.**”, and then press the “**Enter**” key.

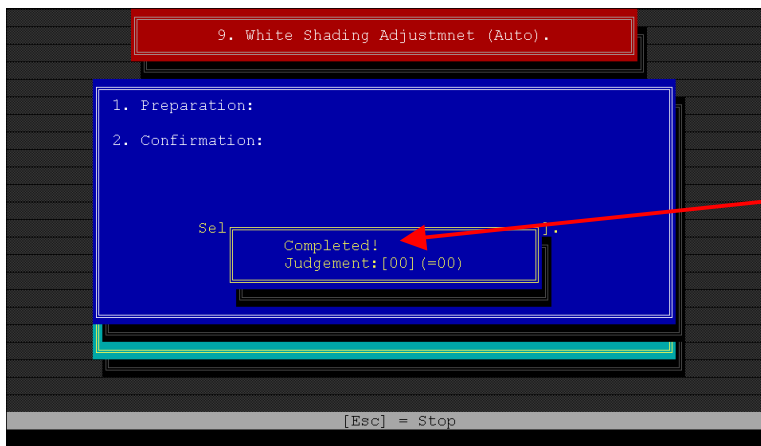


PRESS ENTER KEY.



PRESS ENTER KEY, then adjustment is started.





When adjustment is finished, message "**Completed!**" appeared and numerical value is changed "**00**". The program goes to Camera adjustment menu automatically.



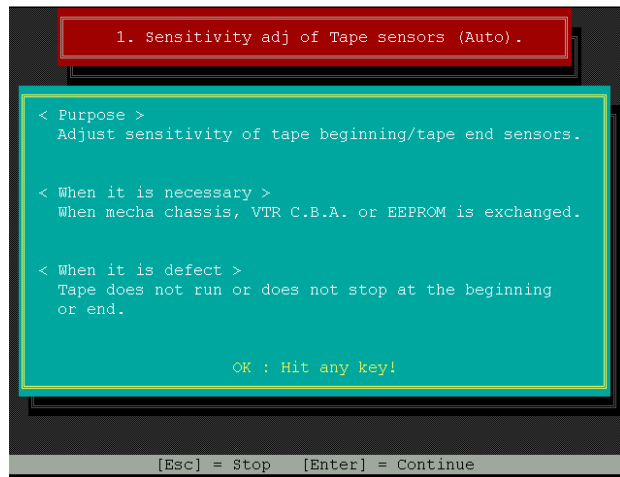
## 7. VTR ADJUSTMENT PROCEDURE

Be sure to save the VTR EEPROM data into the Personal Computer, before performing adjustment.  
Perform the all PC-EVR adjustments, by referring to procedures on PC screen.

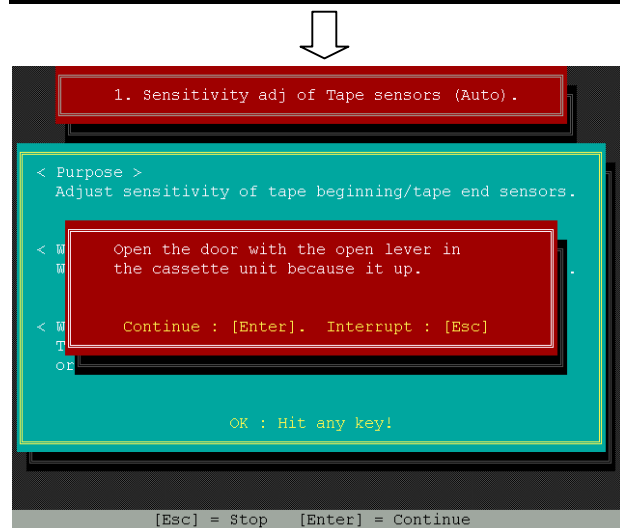
### 7-1. Sensitivity adj of Tape sensors Adjustment (AUTO)

This adjustment can be adjusted automatically.

1. Insert the Tape End/Beg. Sensor Cassette (VFK1217) into the camera recorder.
2. Open the “Video adjustment menu”.
3. Select “1. Sensitivity adj of Tape sensors (Auto)” in the Video adjustment menu, and then press the “Enter” key.

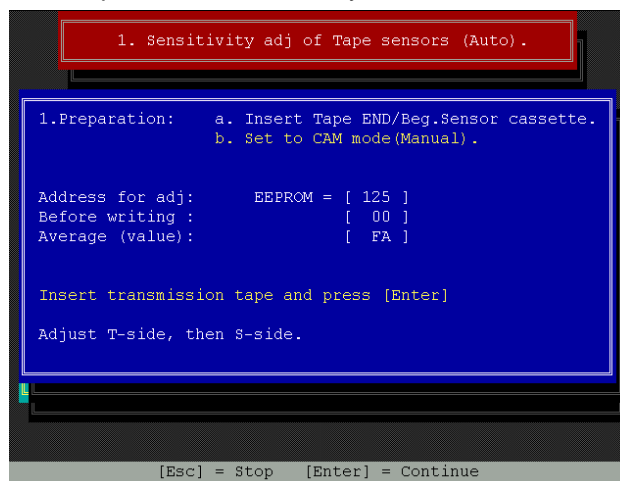


PRESS ENTER KEY.

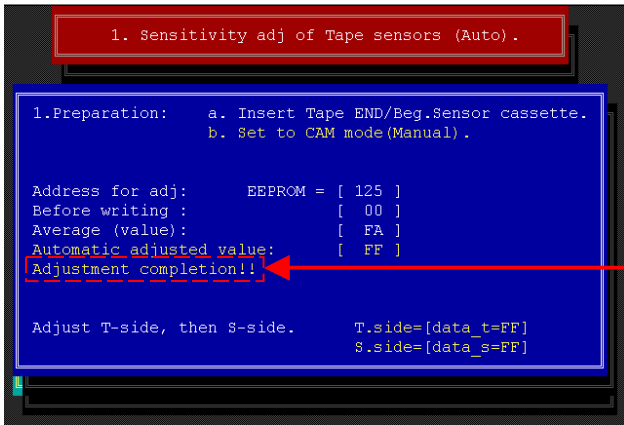


Unnecessary open the door, PRESS ENTER KEY.

4. Set to CAMERA mode in camera recorder follow the message “Auto / Manually set to CAMERA mode.”, and then press the “Enter” key.



In case of the “Tape END / Beg. Sensor cassette (VFK1217)” is already inserted, PRESS ENTER KEY.



Please confirm this message appeared on screen, then adjustment is finished.

## 7-2. PG shifter Adjustment (AUTO)

This adjustment can be adjust automatically.

1. Connect the oscilloscope to “HID” and “SPA” on the VFK1308P.
2. Insert the DV color bar alignment tape (VFM3010EDS: NTSC or VFM3110EDS: PAL) into the camera recorder.
3. Open the “Video adjustment menu”.
4. Select “2. PG shifter adjustment (Auto)” in the Video adjustment menu, and then press the “Enter” key.
5. Set to VCR mode in camera recorder follow the message “Manually set to VCR mode.”, and then press the “Enter” key.



PRESS ENTER KEY.



Unnecessary open the door, PRESS ENTER KEY.

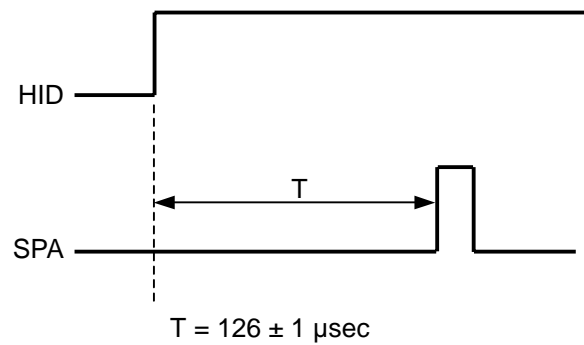


In case of the DV color bar alignment tape is already inserted, PRESS ENTER KEY, then adjustment is started.

**NOTE:**

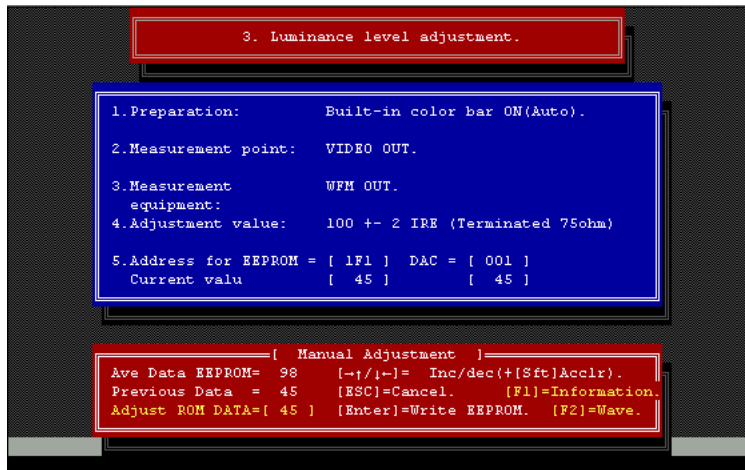
When the screen change in the following screen, camera recorder goes to STBY ON from STBY OFF mode. Press ENTER key after the camera recorder change to STBY ON mode completely.

After finish adjustment, please confirm portion “T” is within the specification as shown in figure.



### 7-3. Luminance level Adjustment

1. Connect the (WFM: NTSC model / oscilloscope: PAL model) to VIDEO OUT with 75ohm terminate.
2. Open the “Video adjustment menu”.
3. Select “3. Luminance level adjustment” in the Video adjustment menu, and then press the “Enter” key.
4. Set to CAMERA mode in camera recorder follow the message “Auto / Manually set to CAMERA mode.”, and then press the “Enter” key.



#### NOTE:

This figure is described in case of NTSC model.

5. Adjust the Y level to become (100±2 IRE: NTSC model / 700±10 mVp-p: PAL model) by press arrow keys.

**Note:** 1) Y level can be adjusted by press arrow keys on keyboard.

2) Waveform (figure) can be displayed by press F2 key.

6. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

### 7-4. Chroma level Adjustment

1. Connect the (WFM: NTSC model / oscilloscope: PAL model) to VIDEO OUT with 75ohm terminate.
2. Open the “Video adjustment menu”.
3. Select “4. Chroma level adjustment” in the Video adjustment menu, and then press the “Enter” key.
4. Set to CAMERA mode in camera recorder follow the message “Auto / Manually set to CAMERA mode.”, and then press the “Enter” key.



#### NOTE:

This figure is described in case of NTSC model.

5. Adjust the C level to become (40±3: NTSC model / 300±20 mVp-p: PAL model) by press arrow keys.

**Note:** 1) C level can be adjusted by press arrow keys on keyboard.

2) Waveform (figure) can be displayed by press F2 key.

6. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

## 8. LCD ADJUSTMENT PROCEDURE

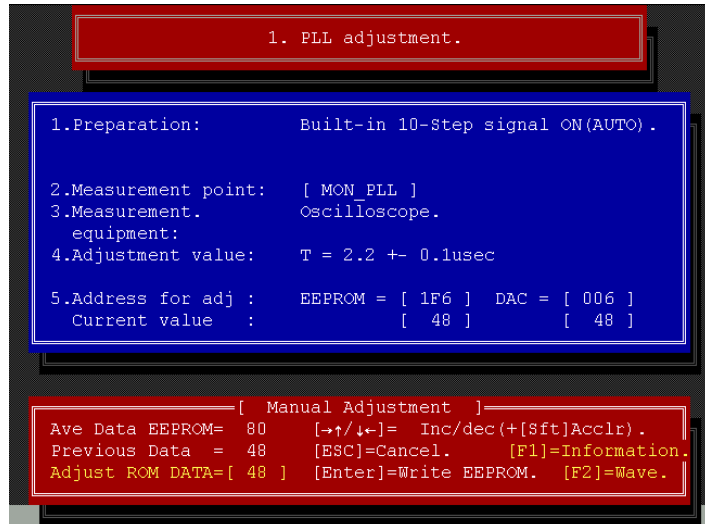
Be sure to save the VTR EEPROM data into the Personal Computer, before performing adjustment.  
Perform the all PC-EVR adjustments, by referring to procedures on PC screen.

**Note:** Set to CAMERA mode in camera recorder.

Set the VTR TEST (SW103) switch on VFK1308P to L position.

### 8-1. PLL Adjustment

1. Connect the oscilloscope to “MON\_PLL” on the VFK1308P.
2. Open the “LCD adjustment menu”.
3. Select “1. PLL adjustment” in the LCD adjustment menu, and then press the “Enter” key.



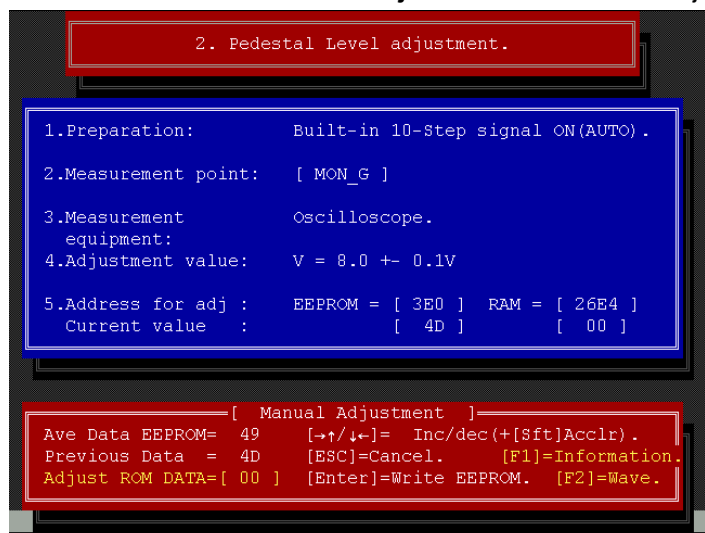
4. Adjust the width (T) to become  $2.2 \pm 0.1 \mu\text{sec}$  as shown in figure.

**Note:**

- 1) Width (T) can be adjusted by press arrow keys on keyboard.
- 2) Waveform (figure) can be displayed by press F2 key.
5. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

### 8-2. Pedestal Level Adjustment

1. Connect the oscilloscope to “MON\_G” on the VFK1308P.
2. Open the “LCD adjustment menu”.
3. Select “2. Pedestal Level adjustment” in the LCD adjustment menu, and then press the “Enter” key.



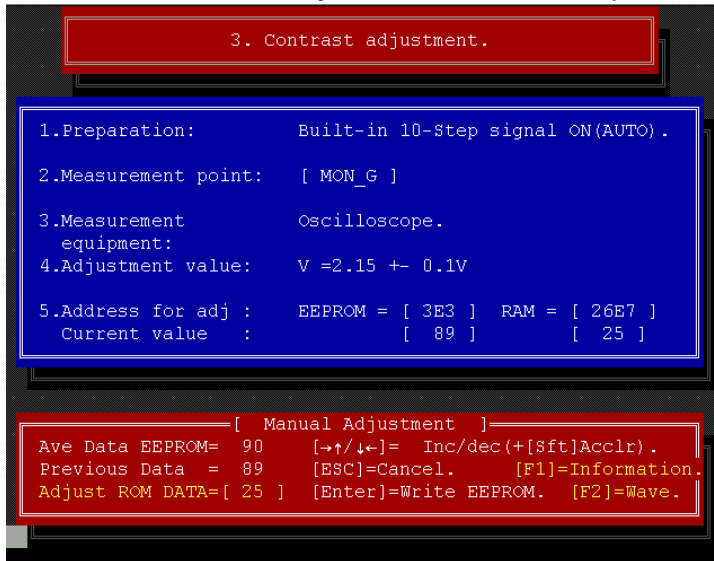
4. Adjust the differential amplitude both 0 step-level (portion “a” in figure) to become  $8.0 \pm 0.1 \text{V}$  as shown in figure.

**Note:**

- 1) Level (a) can be by press arrow keys on keyboard.
- 2) Waveform (figure) can be displayed by press F2 key.
5. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

### 8-3. Contrast Adjustment

1. Connect the oscilloscope to “MON\_G” on the VFK1308P.
2. Open the “LCD adjustment menu”.
3. Select “3. Contrast adjustment” in the LCD adjustment menu, and then press the “Enter” key.



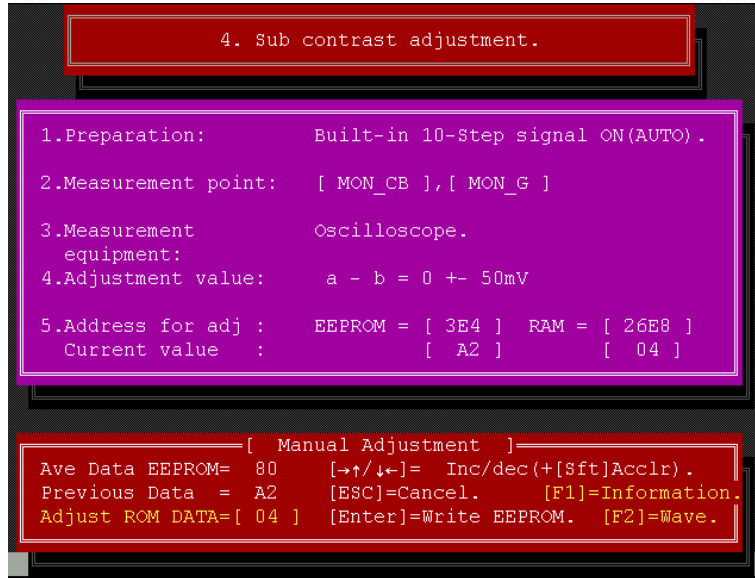
4. Adjust the differential amplitude between 0 step-level and 7 step-level (portion “V” in figure) to become  $2.15 \pm 0.1V$  as shown in figure.

**Note:**

- 1) Level (V) can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform.
5. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

## 8-4. Sub contrast Adjustment

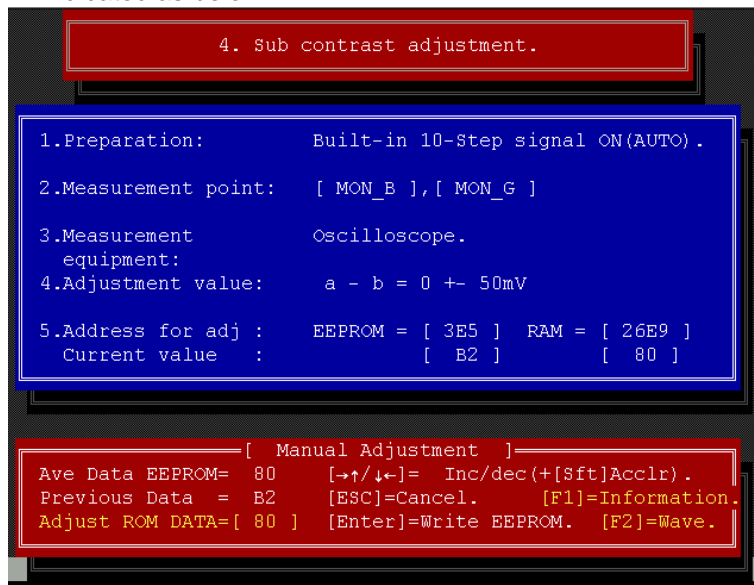
1. Connect the oscilloscope to “MON\_CB” and “MON\_G” on the VFK1308P.
2. Open the “LCD adjustment menu”.
3. Select “4. Sub contrast adjustment” in the LCD adjustment menu, and then press the “Enter” key.



4. Adjust level difference between “a” (MON\_CB) and “b” (MON\_G) to become  $0 \pm 50\text{mV}$  as shown in figure.

### Note:

- 1) Signal level can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform. MON G is reference level.
5. When adjustment is finished, press ENTER key to adjusted data write to EEPROM, then change the display indicated as below.



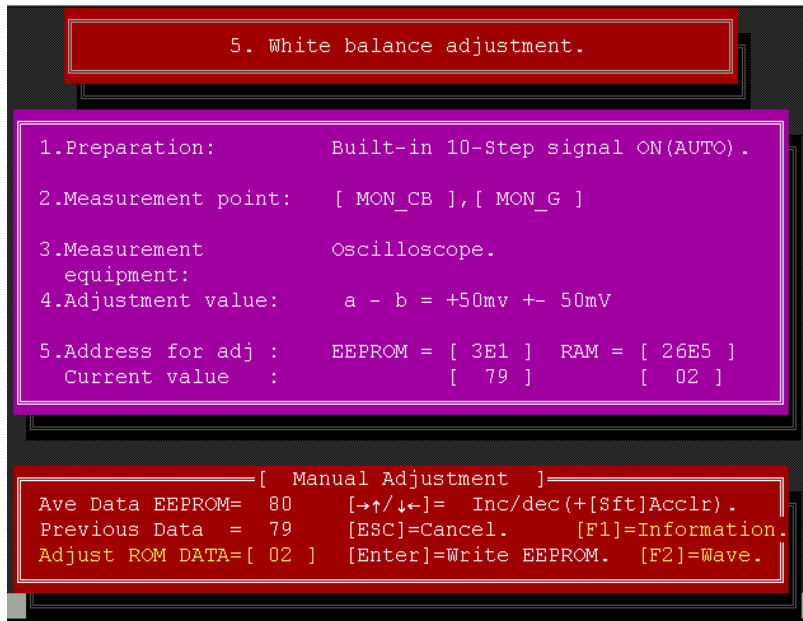
6. Connect the oscilloscope to “MON\_B” and “MON\_G” on the VFK1308P.
7. Adjust level difference between “a” (MON\_B) and “b” (MON\_G) to become  $0 \pm 50\text{mV}$  as shown in figure.

### Note:

- 1) Signal level can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform. MON G is reference level.
8. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

## 8-5. White balance Adjustment

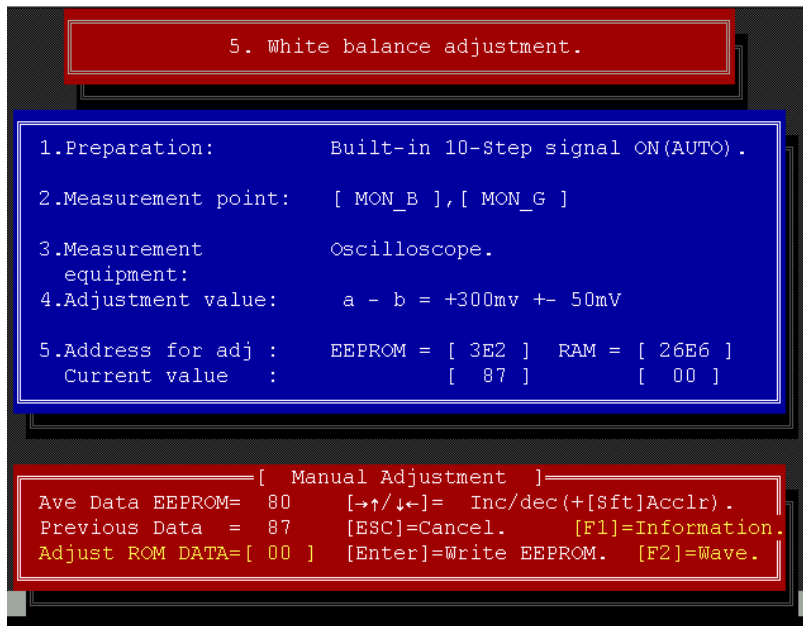
1. Connect the oscilloscope to “MON\_CB” and “MON\_G” on the VFK1308P.
2. Open the “LCD adjustment menu”.
3. Select “5. White balance adjustment” in the LCD adjustment menu, and then press the “Enter” key.



4. Adjust level difference between “a” (MON\_CB) and “b” (MON\_G) to become  $+50\text{mV} \pm 50\text{mV}$  as shown in figure.

### Note:

- 1) Signal level can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform. MON G is reference level.
5. When adjustment is finished, press ENTER key to adjusted data write to EEPROM, then change the display indicated as below.



6. Connect the oscilloscope to “MON\_B” and “MON\_G” on the VFK1308P.
7. Adjust level difference between “a” (MON\_B) and “b” (MON\_G) to become  $+300\text{mV} \pm 50\text{mV}$  as shown in figure.

### Note:

- 1) Signal level can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform. MON G is reference level.
8. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.



## 9. EVF ADJUSTMENT PROCEDURE

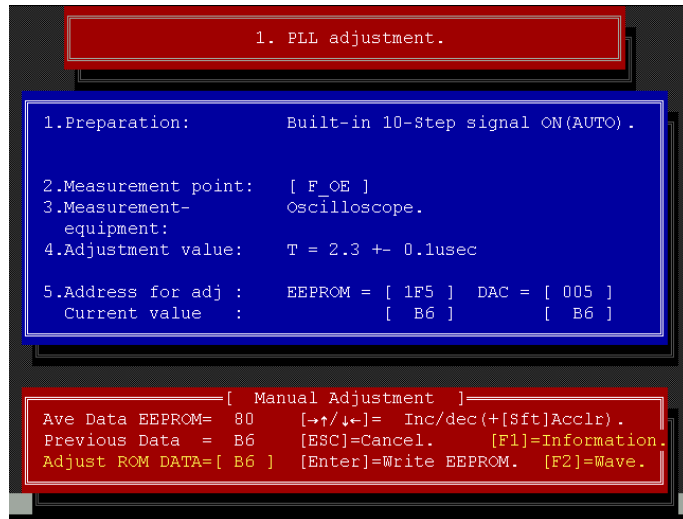
Be sure to save the VTR EEPROM data into the Personal Computer, before performing adjustment. Perform the all PC-EVR adjustments, by referring to procedures on PC screen.

**Note:** Set to CAMERA mode in camera recorder.

Set the VTR TEST (SW103) switch on VFK1308P to L position.

### 9-1. EVF PLL Adjustment

1. Connect the oscilloscope to “F\_OE” on the VFK1308P.
2. Open the “EVF adjustment menu”.
3. Select “1. PLL adjustment” in the EVF adjustment menu, and then press the “Enter” key.



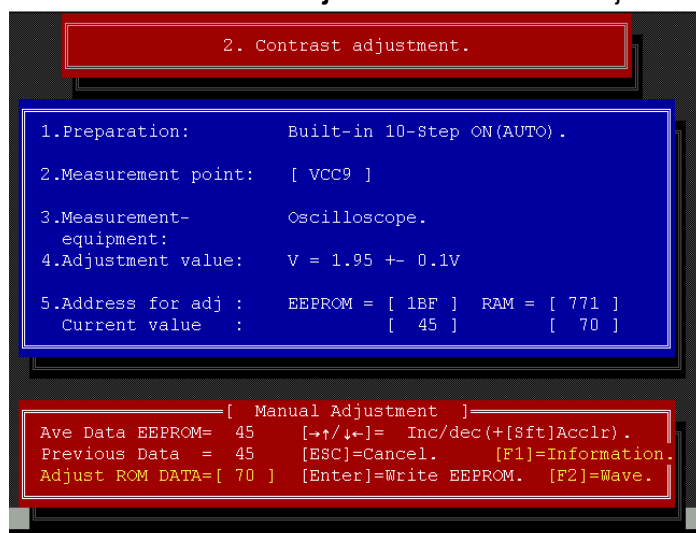
4. Adjust the width (T) to become  $2.3 \pm 0.1 \mu\text{sec}$  as shown in figure.

**Note:**

- 1) Width (T) can be adjusted by press arrow keys on keyboard.
- 2) Waveform (figure) can be displayed by press F2 key.
5. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

### 9-2. EVF Contrast Adjustment

1. Connect the oscilloscope to “VCC9” on the VFK1308P.
2. Open the “EVF adjustment menu”.
3. Select “2. Contrast adjustment” in the EVF adjustment menu, and then press the “Enter” key.



4. Adjust the differential amplitude between 1 step-level and 10 step-level (portion “V” in figure) to become  $1.95 \pm 0.1 \text{V}$  as shown in figure.

**Note:** 1) Level (V) can be adjusted by press arrow keys on keyboard.

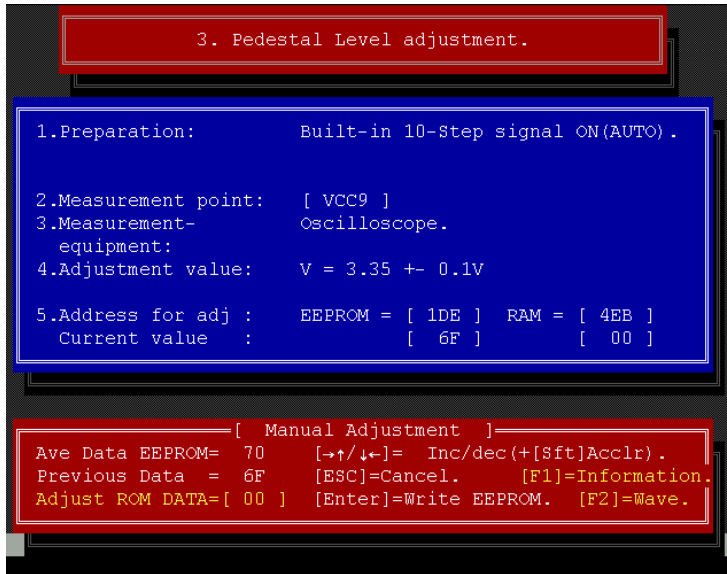
2) Waveform (figure) can be displayed by press F2 key.

3) Please measure the opposite side of waveform.

5. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

### 9-3. EVF Pedestal Level Adjustment

1. Connect the oscilloscope to “VCC9” on the VFK1308P.
2. Open the “EVF adjustment menu”.
3. Select “3. Pedestal Level adjustment” in the EVF adjustment menu, and then press the “Enter” key.



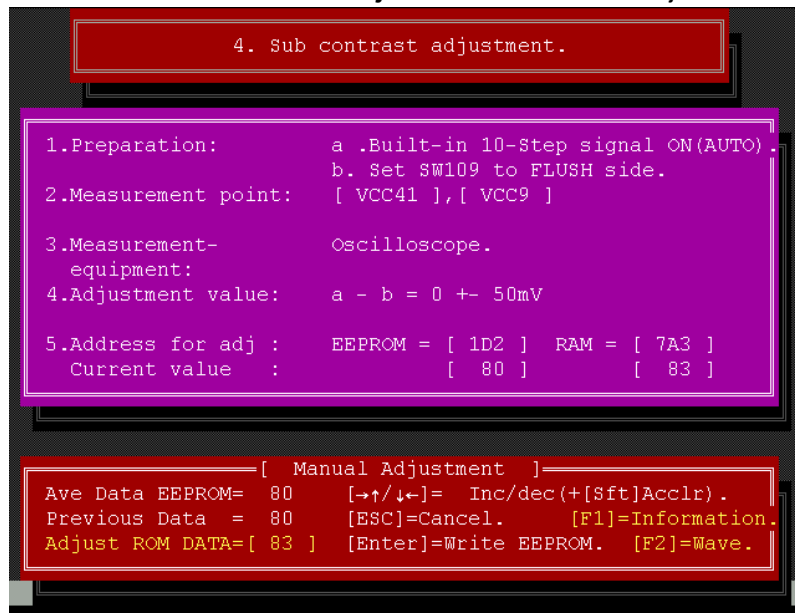
4. Adjust the differential amplitude both 10 step-level (portion “V” in figure) to become  $3.35 \pm 0.1V$  as shown in figure.

**Note:**

- 1) Level (V) can be adjusted by press arrow keys on keyboard.
- 2) Waveform (figure) can be displayed by press F2 key.
5. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

## 9-4. EVF Sub contrast Adjustment

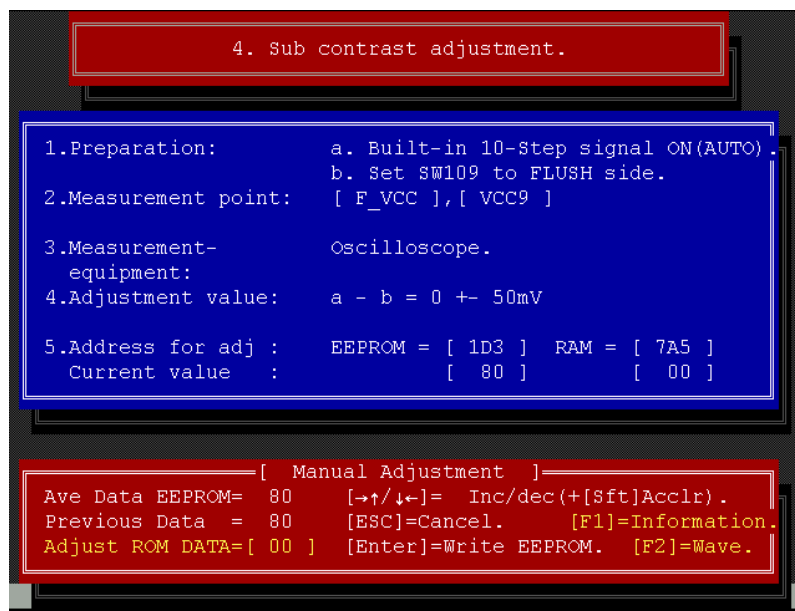
1. Set SW109 to “**FLUSH**” side on the VFK1308P.
2. Connect the oscilloscope to “**VCC41**” and “**VCC9**” on the VFK1308P.
3. Open the “**EVF adjustment menu**”.
4. Select “**4. Sub contrast adjustment**” in the EVF adjustment menu, and then press the “**Enter**” key.



5. Adjust level difference between “**a**” (VCC41) and “**b**” (VCC9) to become  $0 \pm 50\text{mV}$  as shown in figure.

### Note:

- 1) Signal level can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform. VCC9 is reference level.
6. When adjustment is finished, press ENTER key to adjusted data write to EEPROM, then change the display indicated as below.



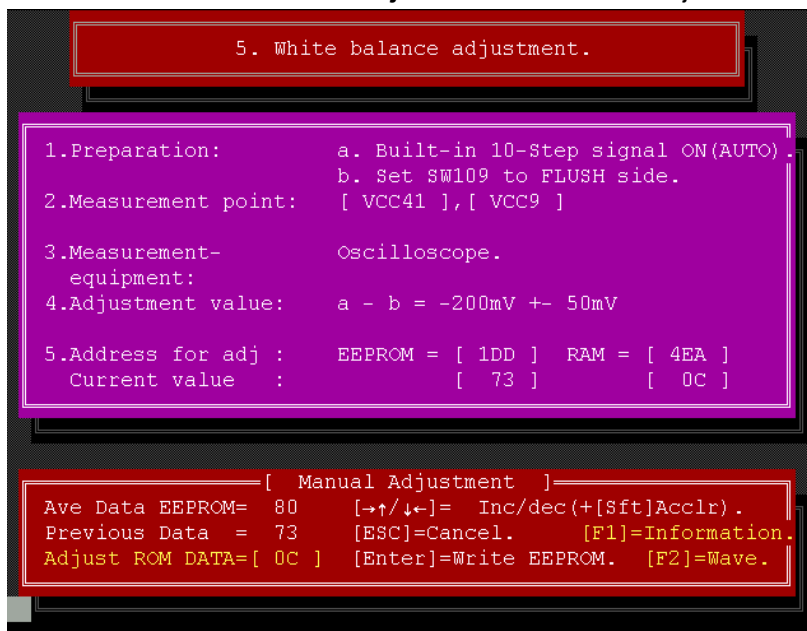
7. Connect the oscilloscope to “**F\_VCC**” and “**VCC9**” on the VFK1308P.
8. Adjust level difference between “**a**” (F\_VCC) and “**b**” (VCC9) to become  $0 \pm 50\text{mV}$  as shown in figure.

### Note:

- 1) Signal level can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform. VCC9 is reference level.
9. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

## 9-5. EVF White balance Adjustment

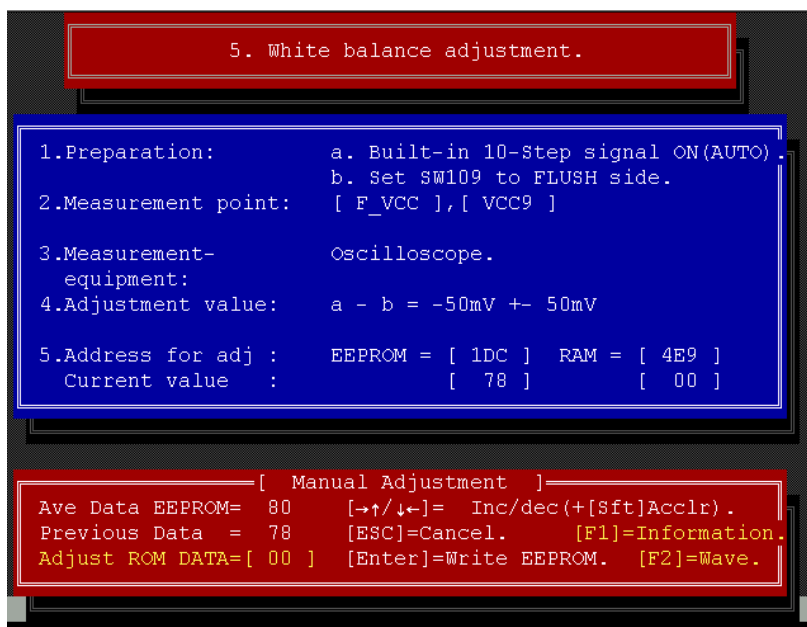
1. Set SW109 to “FLUSH” side on the VFK1308P.
2. Connect the oscilloscope to “VCC41” and “VCC9” on the VFK1308P.
3. Open the “EVF adjustment menu”.
4. Select “5. White balance adjustment” in the EVF adjustment menu, and then press the “Enter” key.



5. Adjust level difference between “a” (VCC41) and “b” (VCC9) to become  $-200\text{mV} \pm 50\text{mV}$  as shown in figure.

### Note:

- 1) Signal level can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform. VCC9 is reference level.
6. When adjustment is finished, press ENTER key to adjusted data write to EEPROM, then change the display indicated as below.



7. Connect the oscilloscope to “F\_VCC” and “VCC9” on the VFK1308P.
8. Adjust level difference between “a” (F\_VCC) and “b” (VCC9) to become  $-50\text{mV} \pm 50\text{mV}$  as shown in figure.

### Note:

- 1) Signal level can be adjusted by press arrow keys on keyboard.
  - 2) Waveform (figure) can be displayed by press F2 key.
  - 3) Please measure the opposite side of waveform. VCC9 is reference level.
9. When adjustment is finished, press ENTER key to adjusted data write to EEPROM.

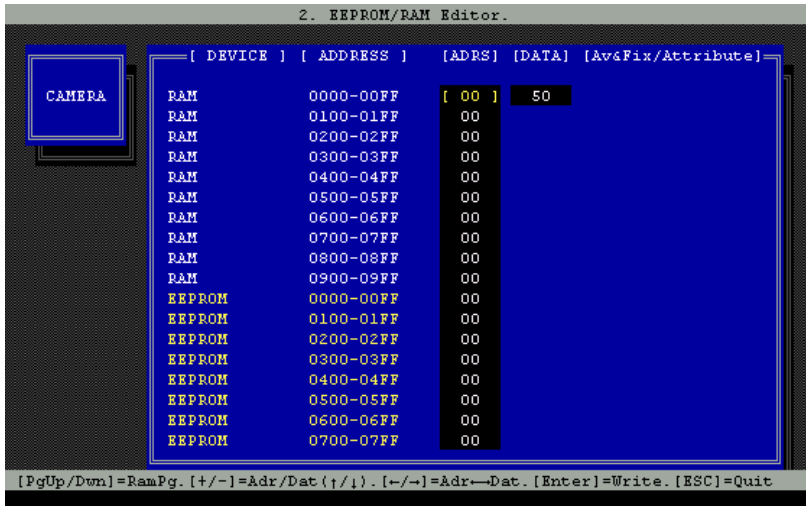
## 10. OTHER ADJUSTMENT PROCEDURE

Be sure to save the CAMERA EEPROM data into the Personal Computer, before performing adjustment.

### 10-1. ZOOM SW Center Value Adjustment

This adjustment have to performed, when the GRIP COVER UNIT or ZOOM SW in GRIP COVER UNIT is replaced.

1. Open the “**Camera adjustment menu**”.
2. Select “**4. Zoom SW center value adjustment**” in the camera adjustment menu, and then press “**ENTER**” key.
3. Set to CAMERA mode in camera recorder follow the message “**Auto / Manually set to CAMERA mode.**”, and then press “**ENTER**” key.
4. Below indicated screen is displayed.

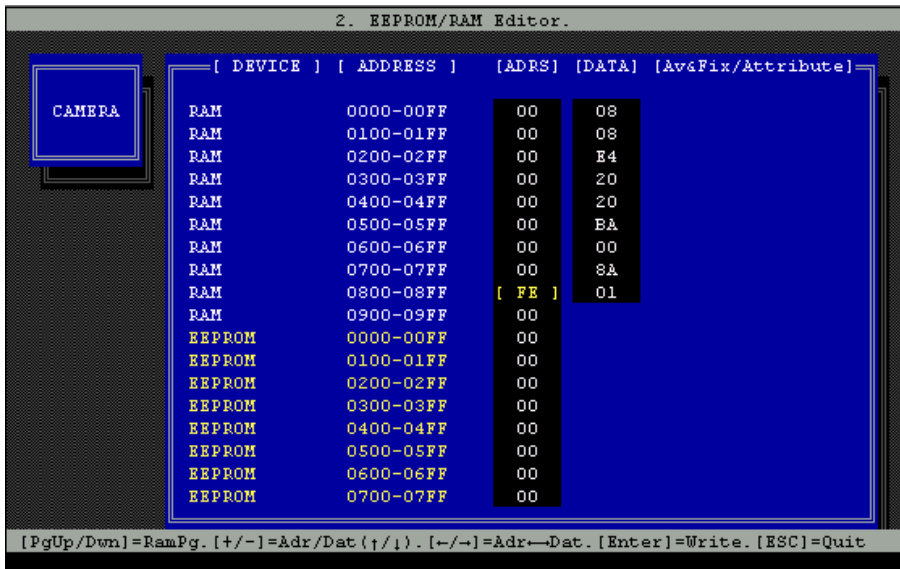


2. EEPROM/RAM Editor.

[ DEVICE ]	[ ADDRESS ]	[ADRS]	[DATA]	[Av&Fix/Attribute]
RAM	0000-00FF	[ 00 ]	50	
RAM	0100-01FF	00		
RAM	0200-02FF	00		
RAM	0300-03FF	00		
RAM	0400-04FF	00		
RAM	0500-05FF	00		
RAM	0600-06FF	00		
RAM	0700-07FF	00		
RAM	0800-08FF	00		
RAM	0900-09FF	00		
EEPROM	0000-00FF	00		
EEPROM	0100-01FF	00		
EEPROM	0200-02FF	00		
EEPROM	0300-03FF	00		
EEPROM	0400-04FF	00		
EEPROM	0500-05FF	00		
EEPROM	0600-06FF	00		
EEPROM	0700-07FF	00		

[PgUp/Dwn]=RamPg. [+/-]=Adr/Dat {↑/↓}. [-/+]=Adr←Dat. [Enter]=Write. [ESC]=Quit

5. Select a line “**RAM 0800 - 08FF**” by arrow key (↑/↓) and input a value as FE to column [ADRS].
6. Press Tele side of zoom switch on Grip Cover side to fully Tele position and release a finger slowly from button.
7. Write down displayed numerical value in column [DATA].



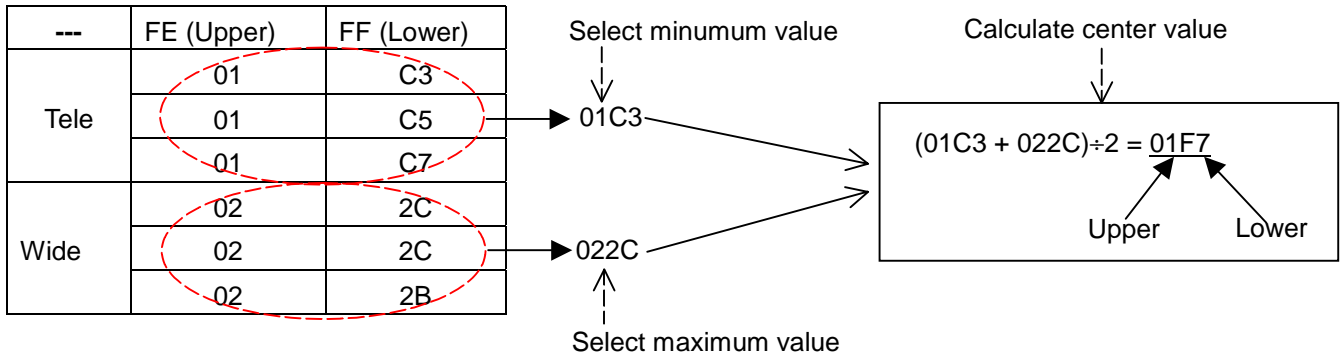
2. EEPROM/RAM Editor.

[ DEVICE ]	[ ADDRESS ]	[ADRS]	[DATA]	[Av&Fix/Attribute]
RAM	0000-00FF	00	08	
RAM	0100-01FF	00	08	
RAM	0200-02FF	00	E4	
RAM	0300-03FF	00	20	
RAM	0400-04FF	00	20	
RAM	0500-05FF	00	EA	
RAM	0600-06FF	00	00	
RAM	0700-07FF	00	8A	
RAM	0800-08FF	[ FE ]	01	
RAM	0900-09FF	00		
EEPROM	0000-00FF	00		
EEPROM	0100-01FF	00		
EEPROM	0200-02FF	00		
EEPROM	0300-03FF	00		
EEPROM	0400-04FF	00		
EEPROM	0500-05FF	00		
EEPROM	0600-06FF	00		
EEPROM	0700-07FF	00		

[PgUp/Dwn]=RamPg. [+/-]=Adr/Dat {↑/↓}. [-/+]=Adr←Dat. [Enter]=Write. [ESC]=Quit

8. Input a value FF to column [ADRS] on line “**RAM 0800 - 08FF**” .
9. Write down displayed numerical value in column [DATA].
10. Repeat step 5 to 9 twice to write down the value.
11. Select the minimum measurement value.
12. Press Wide side of zoom switch on Grip Cover side to fully wide position and release a finger slowly from button and repeat step 5 to 9 three times.
13. Select the maximum measurement value.

<For example>



14. Calculate center value of minimum and maximum value.
15. Select a line "**EEPROM 0200 - 02FF**" by arrow key (↑/↓) and input a value as E7 to column [ADRS].
16. Cursor is moved to column [DATA] by arrow key (→/←) and input a value as lower data value (for example: F7 as indicated as above). And press ENTER key to write to EEPROM.
17. Select a line "**EEPROM 0300 - 03FF**" by arrow key (↑/↓) and input a value as E7 to column [ADRS].
18. Cursor is moved to column [DATA] by arrow key (→/←) and input a value as upper data value (for example: 01 as indicated as above). And press ENTER key to write to EEPROM.

