SECTION 1

SERVICE INFORMATION

Model No. : AG-AC160P/AN/EJ/EN/MC

CONTENTS

1. Service Fixture & Tools

No.	Parts No.	Name	Remarks
1	VVS0094	PC EVR Software for AG-AC160 series	Download from Global Service WEB Site
2	VVS0058	USB Driver for Adjustment	Download from Global Service WEB Site
3	VFK1347	CC Filter (LB120)	
4	VFK1884	CC Filter (LBA2)	
5	VFK1888	CC Filter (LBB6)	
6	VFK1345	CC Filter Holder	
7	VFK1346	Step-Down Ring (62mm-52mm)	
8	VFK1659	Step-Up Ring (43mm-49mm)	
9	VFK1660	Step-Up Ring (49mm-62mm)	
10	VFK1809	72mm Attachment Ring	
11	RFKZ0422	Collimator	***NOTE1: Please refer to the following.**
12	----------	Collimator Adaptor	***NOTE2: Please refer to the following.**
13	----------	White chart	

***NOTE1:**
The AG-HMC150/HPX170 series is used. Please consult service department of Professional AV Business unit about purchase. It is the same as the service tool used by serving the Digital Still Camera.

***NOTE2:**
The AG-HMC150/HPX170 series is used. Please consult service department of Professional AV Business unit about purchase.

1 **VVS0094**

PC EVR Software for AG-AC160 series

DOWN LOAD

2 **VVS0058**

USB Driver for Adjustment

DOWN LOAD

3 **VFK1347** (LB120)

4 **VFK1884** (LBA2)

5 **VFK1888** (LBB6)

CC Filter

6 **VFK1345**

CC Filter Holder

7 **VFK1346**

Step Down Ring (62mm - 52mm)

VFK1345 VFK1346

8 **VFK1659**

Step-up Ring (43mm - 49mm)

9 **VFK1660**

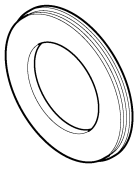
Step-up Ring (49mm - 62mm)

VFK1659

VFK1660

10 **VFK1809**

72 mm Attachment Ring



11 **RFKZ0422**

Collimator

12 **-----**

Collimator Adaptor

13 **-----**

White Chart

14

15

16

2. Maintenance

2-1. Maintenance Schedule

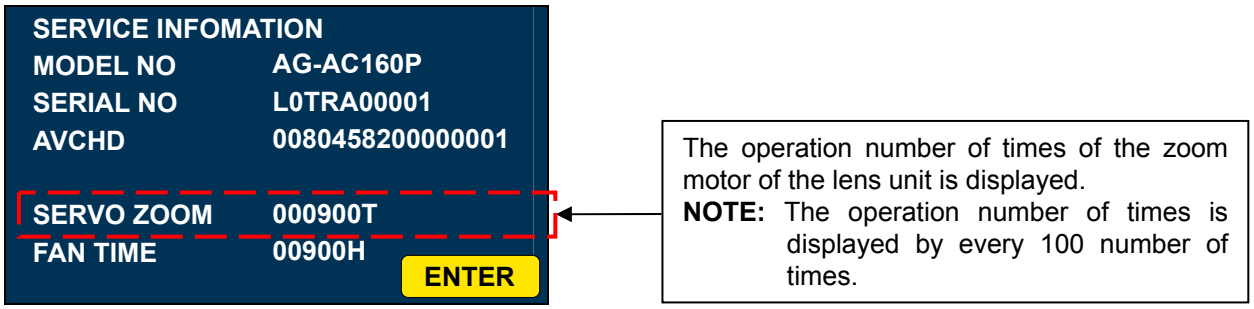
No.	Part Name	Part No.	Pcs	Replacement
1	Zoom Motor Unit	L6DAYYYC0003	1	Every 50,000 number of times (SERVO ZOOM) * Please refer to the following procedures.

The maintenance execution time shown in the above is recommendation for standard maintenance execution. This is not life of various parts. The life is influenced by temperature, humidity, dust, etc..

2-2. Confirmation method of operation number of times of the Zoom Motor

The operation number of times of Zoom Motor is displayed on the SERVICE INFORMATION screen of the DIAGNOSTIC menu.

1. Confirm that the camera recorder is set to **CAMERA** mode.
2. Push the button in order of **"RESET/TC SET"** button → **"STOP (Tilt the operation lever in the ▼ direction)"** button → **"DISP/MODE CHK"** button → **"MENU"** button, DIAGNOSTIC menu will be displayed in addition to a setup menus.
3. Push the **OPERATION lever** in the ▲ or ▼ direction to select the **DIAGNOSTIC MENU**. And push the **OPERATION lever (ENTER button)** to open the SERVICE INFORMATION screen.
4. The operation number of times of Zoom Motor is displayed on item **SERVO ZOOM** in SERVICE INFORMATION screen.



The operation number of times can be confirmed also with the PC EVR software. Please refer to item **"6-3-4. Hour Meter"** about display procedure by PC EVR software.

2-3. Reset of operation number of times of the Zoom Motor

After replacing Zoom Motor unit, set the operation number of times to 0 times.
Please refer to item **"6-3-4. Hour Meter"** about setting procedure by PC EVR software.

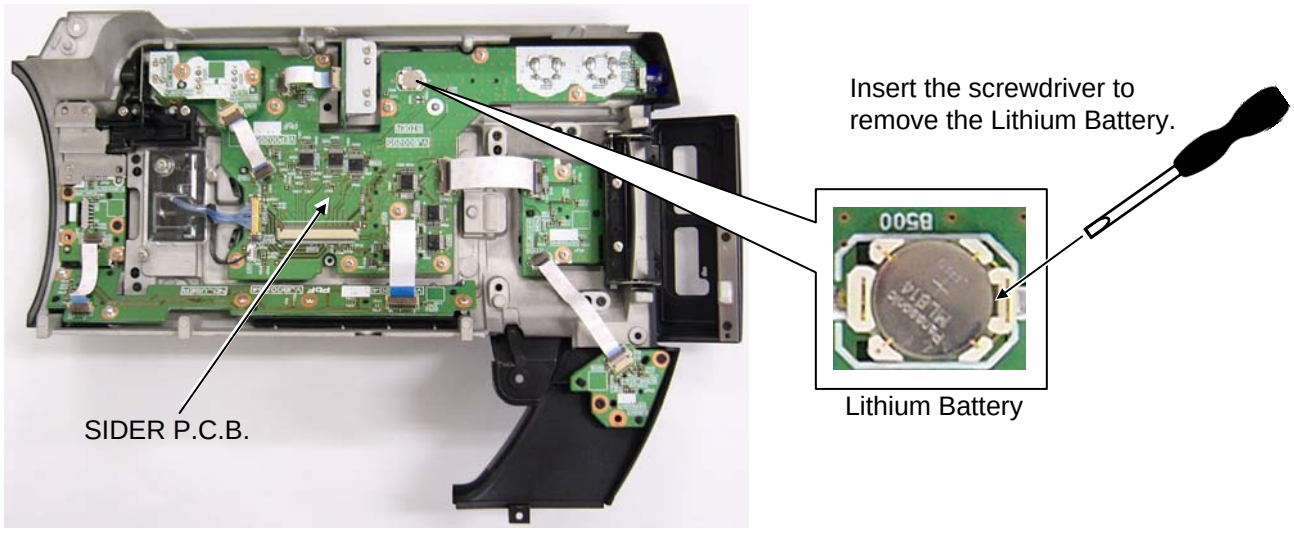
2-4. Replacement procedure of Zoom Motor unit

The removal procedure has been described to the item **"16. Removal of ZOOM MOTOR Unit"** of disassembly procedure (SECTION 2).

3. Replacement procedure of Lithium Battery

1. Remove the SIDE CASE R S Unit. (The removal procedure has been described to the item **"5. Removal of SIDE CASE R S Unit"** of disassembly procedure (SECTION 2)).
2. There is a Lithium battery on the SIDER P.C.Board (Ref No: B500 at foil side of SIDER P.C.B.).
3. Insert the screwdriver to groove of the Lithium Battery Holder and press down it to remove the Lithium Battery. (Pay attention for remove of battery to be pop-up)
4. Install the new battery.
5. Set the date and time of internal clock (Refer to item **"Setting the calendar"** of operation instructions (vol1) for the setting method).

NOTE: The date and time of internal clock can be set also with PC EVR software.
Main menu → Settings(S) → Calender and clock set up(C)



NOTE:
The lithium battery is a critical component.
It must never be subjected to excessive heat of discharge.
It must therefore only be fitted in equipment designed specifically for its use.
Replacement batteries must be of the same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.
REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE.

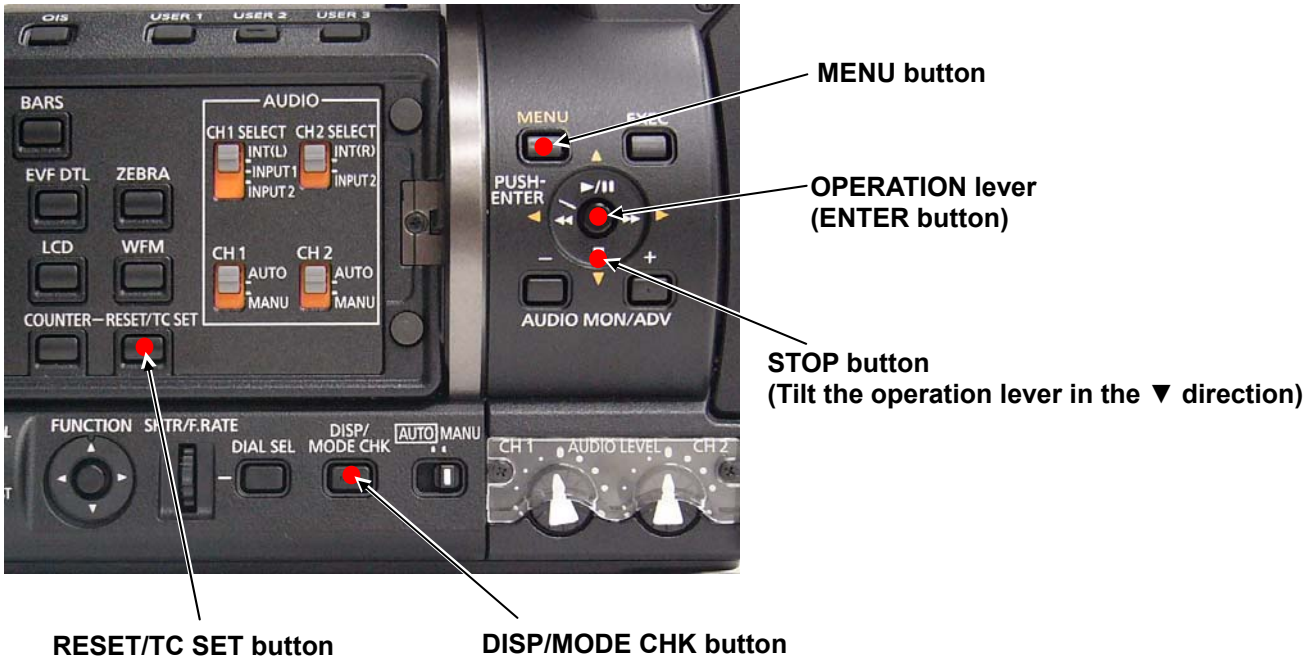
4. Service menu

This model has DIAGNOSTIC menu as service menu besides the setup menu.

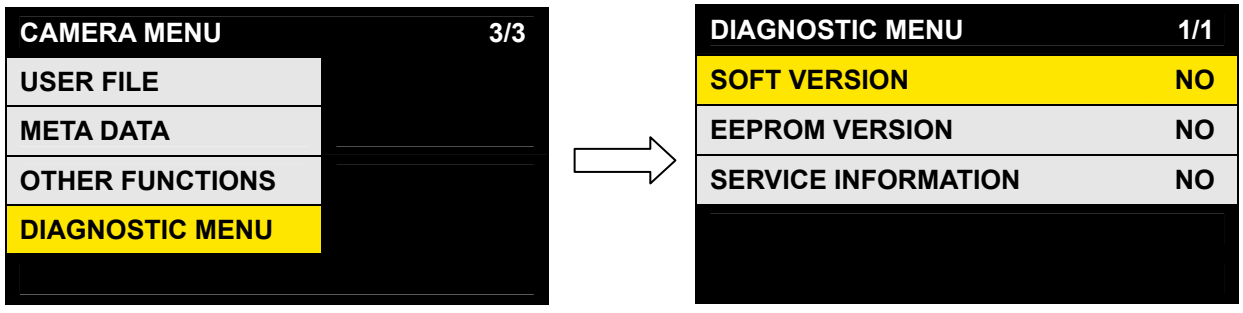
< How to open the DIAGNOSTIC menu >

NOTE: PB mode can not be display the menu.

1. Turn on the power. Confirm that the camera recorder is set to **CAMERA** mode.
2. Press the button in order of **"RESET/TC SET"** button → **"STOP (Tilt the operation lever in the ▼ direction)"** button → **"DISP/MODE CHK"** button → **"MENU"** button, DIAGNOSTIC menu can be displayed in addition to a setup menus.



3. After the item DIAGNOSTIC MENU is displayed, tilt the **OPERATION lever** in the ▲▼ direction to select the item **"DIAGNOSTIC MENU"**, and press the **OPERATION lever** (**ENTER** button) (or tilt ► direction) to open the DIAGNOSTIC MENU menu.



4-1. DIAGNOSTIC menu

4-1-1. Software Version Display

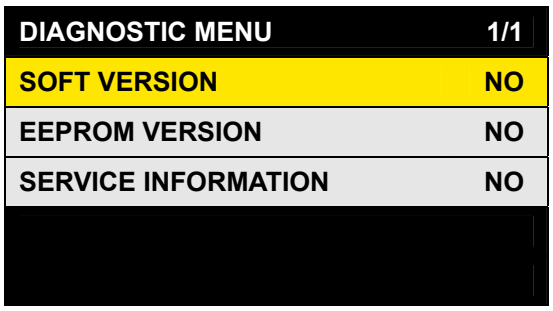
Each software version can be confirmed at items **"SOFT VERSION"** and **"EEPROM VERSION"** in DIAGNOSTIC menu.

NOTE: The each version of Microprocessor, FPGA and EEPROM can be confirmed also with the PC EVR software. Please refer to item **"6-3-5. Software Version Display"**.

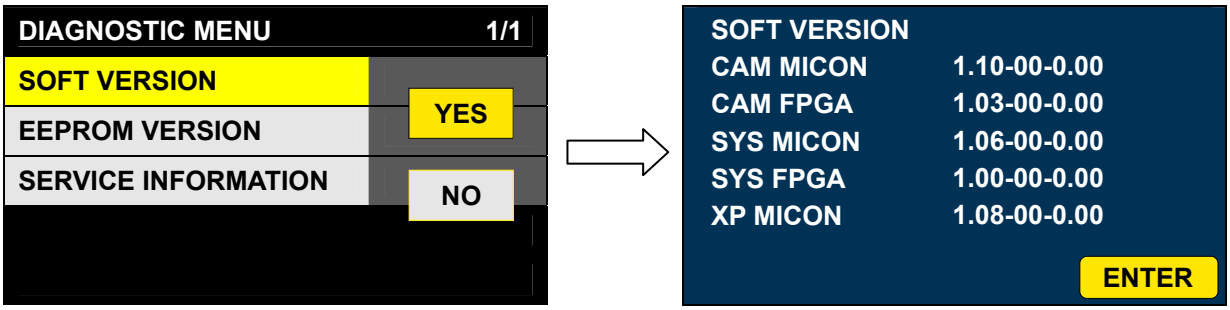
Type	Name on display	Ref No.	P.C.Board
Microprocessor	CAM MICON	IP3410	MAIN P.C.Board
	SYS MICON	IP3000	
	XP MICON	IP1600	
FPGA	CAM FPGA	IP102	
	SYS FPGA	IP402	
EEPROM	CAM	IP3411	
	SYS	IP3003	
	XP	IP1600	

SOFT VERSION

1. Tilt the **OPERATION lever** in the ▲▼ direction to select the item **"SOFT VERSION"**, and press the **OPERATION lever** (**ENTER** button) (or tilt lever in ► direction).



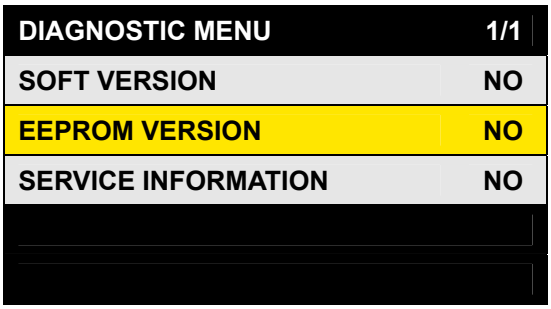
2. Tilt the **OPERATION lever** in the ▲ direction to select the **"YES"**. And press the **OPERATION lever** (**ENTER** button) to move the SOFT VERSION display screen.



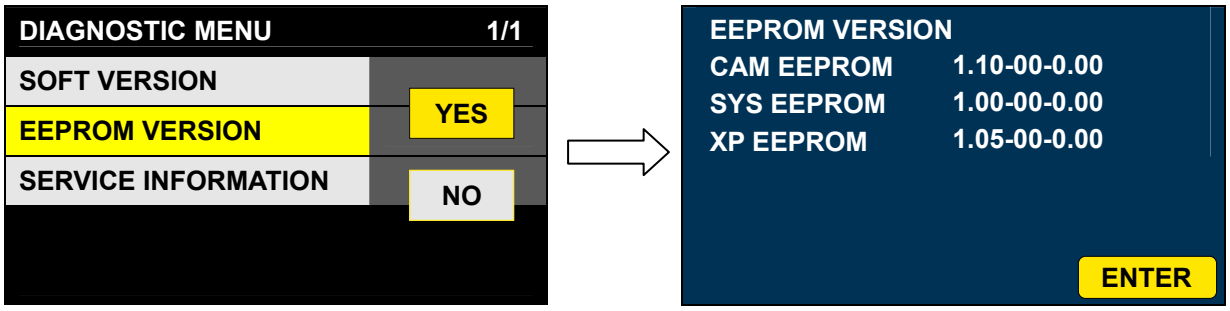
3. Pressing the **OPERATION lever** (**ENTER** button), the screen is return to DIAGNOSTIC menu screen.

EEPROM VERSION

1. Tilt the **OPERATION lever** in the ▲▼ direction to select the item **"EEPROM VERSION"**, and press the **OPERATION lever** (**ENTER** button) (or tilt lever in ► direction).



2. Tilt the **OPERATION lever** in the ▲ direction to select the **"YES"**. And press the **OPERATION lever** (**ENTER** button) to move the EEPROM VERSION display screen.

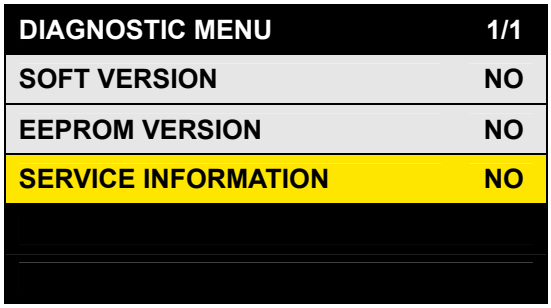


3. Pressing the **OPERATION lever** (**ENTER** button), the screen is return to DIAGNOSTIC menu screen.

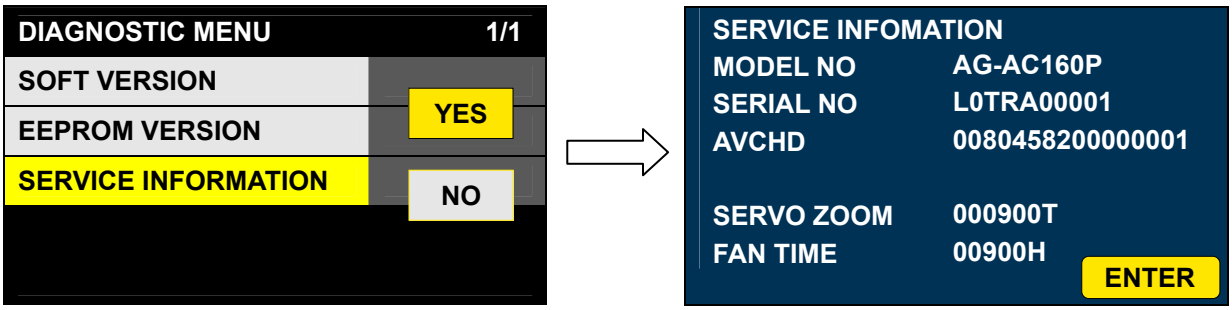
4-1-2. Service Information

The following information is displayed on the SERVICE INFORMATION screen.
- Model No.
- Serial No.
- 1394 UID
  UID product numbers is displayed as AVCHD. The displayed number of 16 figures is **"UID"**.
  ex.) 00804582-38837003 (First 8 figures are fixed numbers and last 8 figures are unique numbers).
- Operation number of times of Zoom Motor
- Operation hours of FAN

1. Tilt the **OPERATION lever** in the ▲▼ direction to select the item **"SERVICE INFOMATION"**, and press the **OPERATION lever** (**ENTER** button) (or tilt lever in ► direction).



2. Tilt the **OPERATION lever** in the ▲ direction to select the **"YES"**, and press the **OPERATION lever** (**ENTER** button) to move the SERVICE INFORMATION display screen.



3. Pressing the **OPERATION lever** (**ENTER** button), the screen is return to DIAGNOSTIC menu screen.

Note: The UID information can be confirmed also with the PC EVR software. Please refer to item **"6-3-2. Write UID data"**.

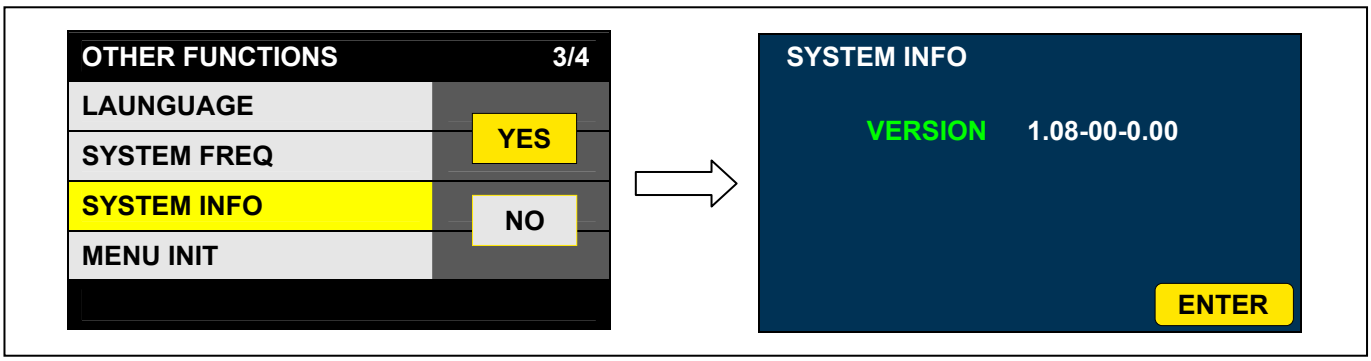
5. Firmware update procedure for camera recorder

The XP MICON software can be updated by SD memory card.

5-1. Version display method

The version of system in this camera recorder is displayed in OTHER FUNCTIONS menu screen of setting menu.

1. Turn the power on.
2. Press **MENU** button to display the setting menu.
3. Use **OPERATION lever** to select the OTHER FUNCTIONS menu and press **OPERATION lever (ENTER button)** to open the OTHER FUNCTIONS menu.
4. Select the item **"SYSTEM INFO"** and press **OPERATION lever (ENTER button)**. And select the **"YES"** and press **OPERATION lever (ENTER button)** to display the version of system in this camera recorder.



5-2. Update with the SD memory card

CAUTION: Before Updating Software

- **Do not power down or pull card while upgrading.** If the program quits during loading, the data will be erased or part writing condition and the restart is not made. However software can not be updated, please contact Panasonic Service Engineering.

5-2-1. Preparation of update

< Preparation for SD memory card >

1. One piece of SD memory cards (more than 64MB memory card) is required. Use only SD memory cards that comply with the SD or SDHC specifications.
2. Insert an SD memory card into the card slot of this unit and format it.

NOTE: SD memory card used in this unit requires to be conformed to SD™ standards. Be sure to format SD memory card on this unit.

< Copy of Image data for update >

1. Download Image Data **"VSI*****.zip"** for the update from **"Support Desk"** web site.
2. Copy the file **"VSI*****.zip"** to hard disk of your PC and extract the file.
3. Insert a formatted SD memory card into the card slot of PC.
4. Copy the folder **"PRIVATE"** to one piece of SD memory cards. The downloaded image data (upgrade file: **VSI*****.img**) is included in folder **"PRIVATE"**.

NOTE: Do not change the construction of folder and file name. The folder construction shown in the following and top of directory should be **"PRIVATE"**.

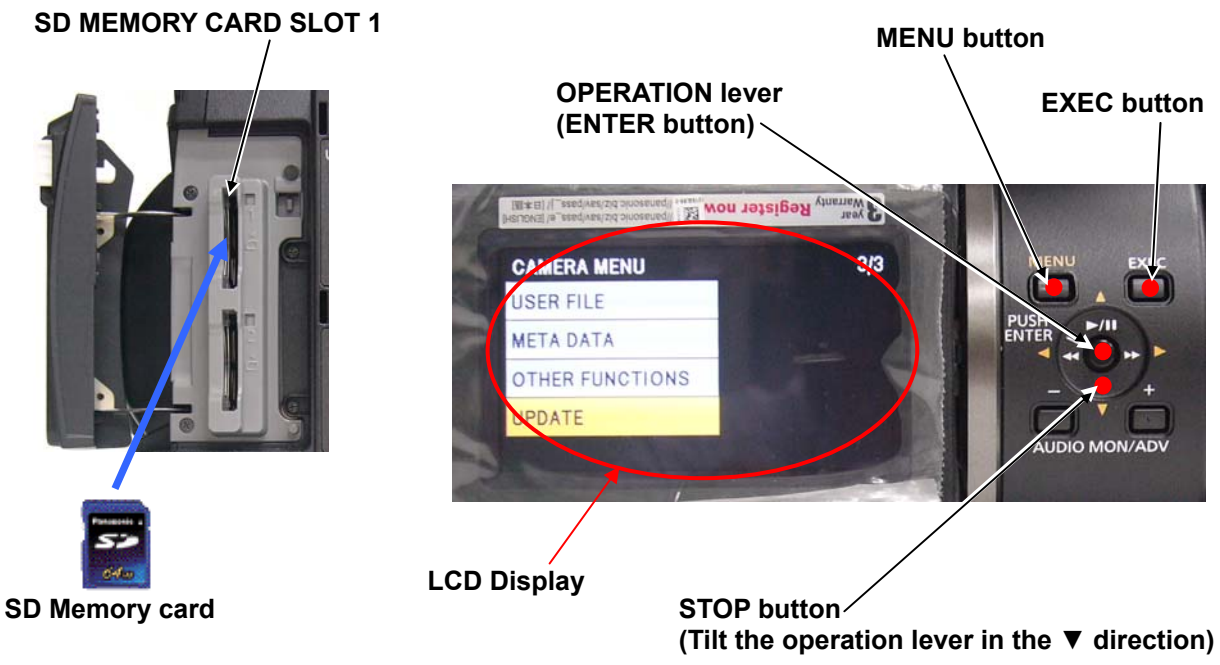
**Folder: PRIVATE \ MEIGROUP \ PAVCN \ SBG \ AVCCAM \ FW **
File Name: VSI***.img**

< External Power >

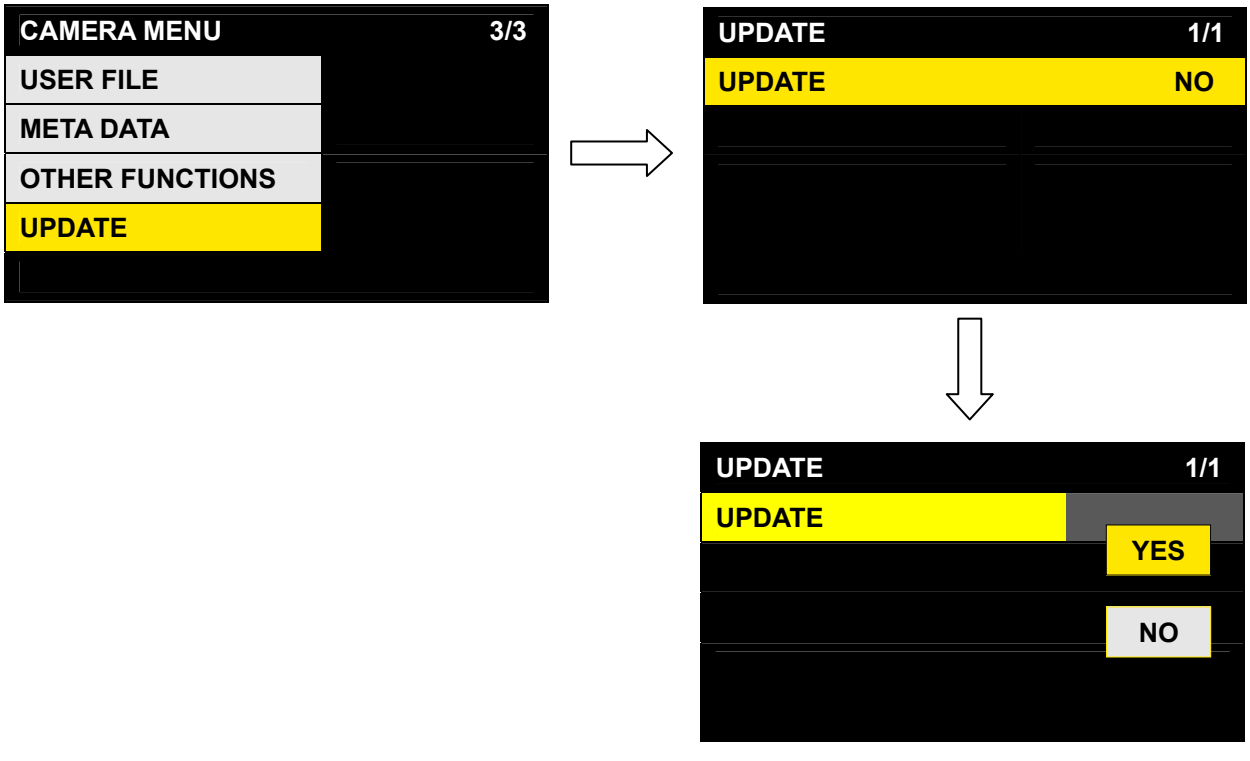
It is best to power the unit from the external power supply. This will prevent the unit from shutting off during updating.

5-2-2. Updated procedure

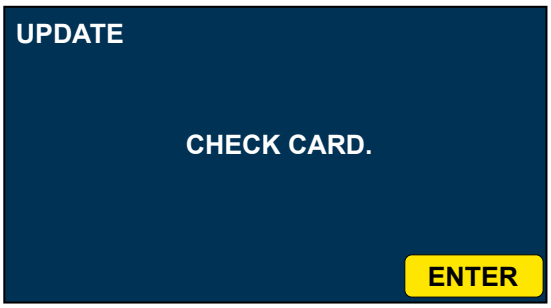
1. Turn the power on. Confirm that the camera recorder is set to **CAMERA** mode.
2. Insert the SD memory card into the SD memory card slot 1.
3. Press the **MENU** button to display the setting menu.



4. Keep pressing the **"STOP (Tilt the operation lever in the ▼ direction)"** button and **"EXEC"** button, press **"MENU"** button, UPDATE menu can be displayed in addition to a setup menus.
5. Select the item **"UPDATE"** on the menu and press the **OPERATION lever** (**ENTER** button) twice. When update is executed, select the item **"YES"** and pressing **OPERATION lever** (**ENTER** button), update program is started.



NOTE: When the update file is not recognized on SD memory card etc., the following messages is displayed. Please confirm whether the update file is correctly written on the SD memory card.



6. The LCD screen darkens when shifting to the update processing, and the **CAMERA Lamp** blinks. During updating software, **CAMERA Lamp** is blink.

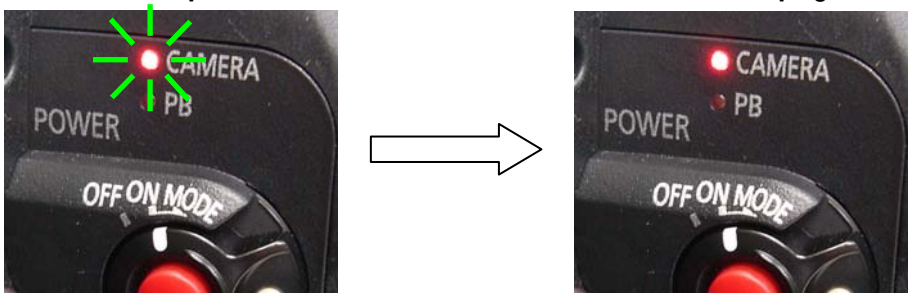
The message does not display on the screen.

◆ Software update takes **approx. 1 to 2min**. **Do not power down while updating.**

7. In updating succeed, **CAMERA Lamp** is change from blinking to lights.

During updating software, **CAMERA lamp** is blink.

In updating succeed, **CAMERA lamp** lights.



8. Remove the SD memory card and turn the power supply of AC Adaptor OFF. Then power OFF the camera recorder and power ON the power supply and camera recorder.

NOTE: ● Power OFF/ON by the power SW of camera recorder does not work just after updating the software. Please shut OFF the external power supply.

9. Confirm that the version number is renewed for your confirmation update was correctly done follow the item **"5-1. Version display method"**.

6. PC EVR software

6-1. Required tools and equipment for PC EVR software

When the PC EVR software is used, the following tools are required.

NAME	Part Number	Pcs.	Remark
PC EVR software	VVS0094	1	Download from the Global Service WEB site.
USB driver	VVS0058	1	Download from the Global Service WEB site. Same driver as DVD-CAM, DVC-CAM
USBC cable A type ↔ mini B	---	1	
Personal Computer	---	1	***NOTE:**

***OS: Windows XP SP2 / SP3**

6-2. Setup

6-2-1. Installation method of USB driver (VVS0058)

This work is not necessary if USB driver for DVD/DVC-CAM adjustment has already installed.

1. Download the file **"USB Driver for Adjustment (VVS0058)"** from Global Service WEB Site.
2. After extracting **VVS0058.zip**, execute **"USB_COM.exe"** in VVS0058.
3. Execute **"setup.exe"** in **"ComMass"** folder. Install it according to the message.
4. This camera recorder is set to **COM** mode.

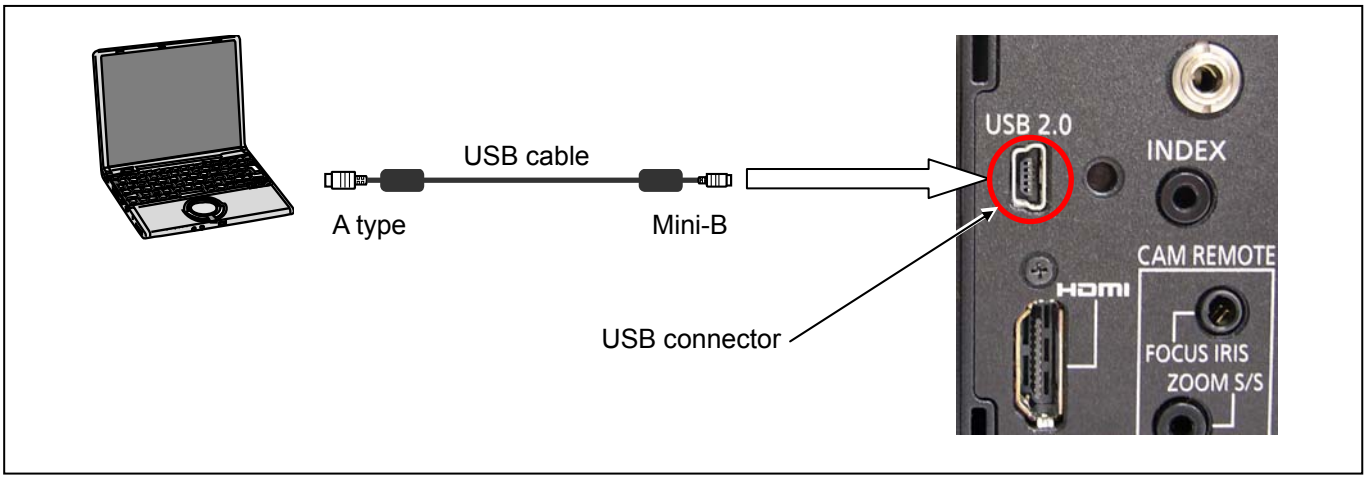
< Setting method of COM mode >

4-1. Turn the power on and confirm that the camera recorder is set to **CAMERA** mode.

4-2. The **COM** mode is set by hold down the **"RESET/TC SET"** button, **"PLAY (Tilt the operation lever in the ▲ direction)"** button and **"EXEC"** button at the same time for three seconds or more. (The character of "COM" blinks to the LCD screen when the COM mode is set.).

NOTE: To cancel the COM mode, execute the operation of the same button as the setting. (Com mode cannot be cancelled if the power has been switched off and back on again.).

5. Connect the USB cable between USB connector and PC (The character of "COM" is changed to the lighting display.).



6. **"Found New Hardware Wizard"** automatically opens on PC. Install it according to the message.

6-2-2. Setup for PC EVR Software

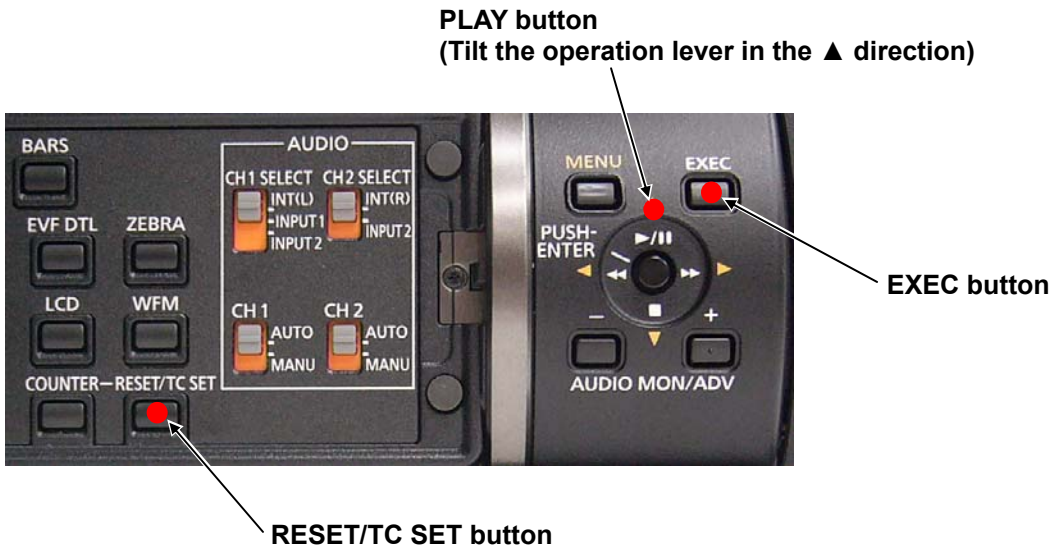
1. Download the file **"PC EVR Software for AG-AC160 series (VVS0094)"** from Global Service WEB Site.
2. Turn the power on and confirm that the camera recorder is set to **CAMERA** mode.
3. This camera recorder is set to **COM** mode.

< Setting method of COM mode >

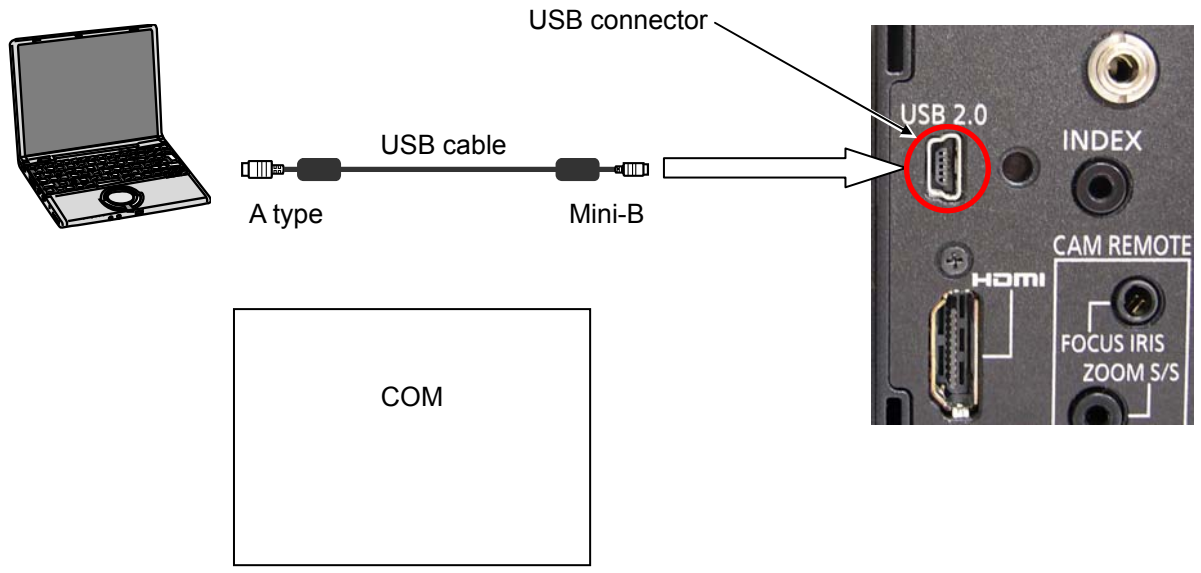
4-1. Turn the power on and confirm that the camera recorder is set to **CAMERA** mode.

4-2. The **COM** mode is set by hold down the **"RESET/TC SET"** button, **"PLAY (Tilt the operation lever in the ▲ direction)"** button and **"EXEC"** button at the same time for three seconds or more. (The character of "COM" blinks to the LCD screen when the COM mode is set.).

NOTE: To cancel the COM mode, execute the operation of the same button as the setting. (Com mode cannot be cancelled if the power has been switched off and back on again.).

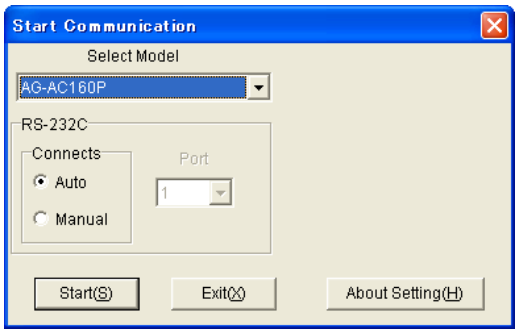


4. Connect the USB cable between USB connector and PC (The character of "COM" is changed to the lighting display.).

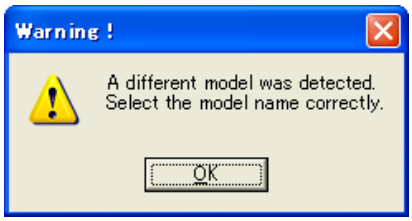


The character of "COM" blinks/lights to the LCD screen when the COM mode is set.

5. Start up the PC EVR software by double-click **"VVS0094.exe"**.
6. Select the model in **"Select Model"** box and click **"Start(S)"** button on **Start Communication** screen.

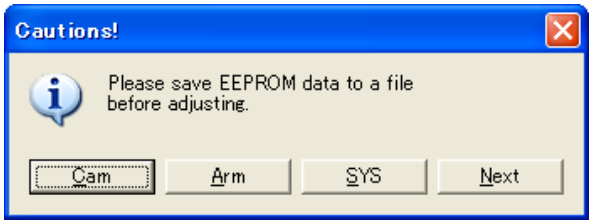


NOTE: When the selected destination (model) is not matched with the connected camera recorder, the warning message is displayed as follows. Clicking the **"OK"** button, the PC EVR software closes compulsorily. Start up the PC EVR software again and select the correct model name in the **Start Communication** screen.

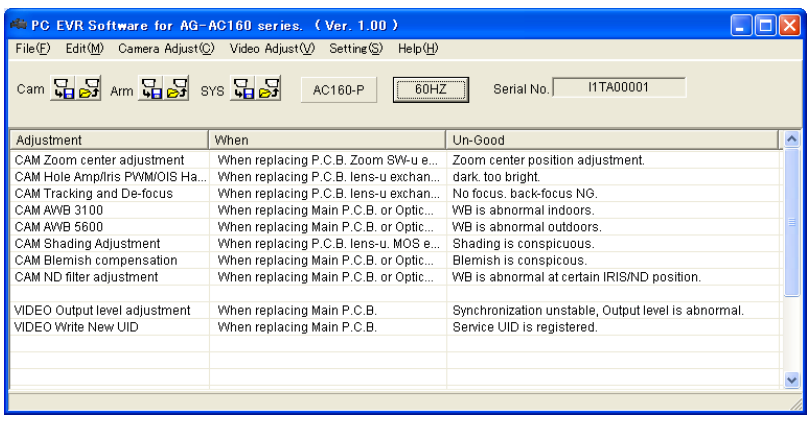


NOTE: When the no initialized MAIN P.C.Board installed in camera recorder, the warning message is displayed. Please refer to item **"6-3-1. Initialization of MAIN P.C.Board"**.

7. When the communication connection completes, the following message is displayed. When you backup the EEPROM data, click **"Cam"**, **"Arm"** and **"SYS"** button. Please refer to item **"7-1. Save data of EEPROM data"** about backup procedure. When you do not backup the EEPROM data, click **"Next"** button to display the Main screen.



8. Main screen is displayed.



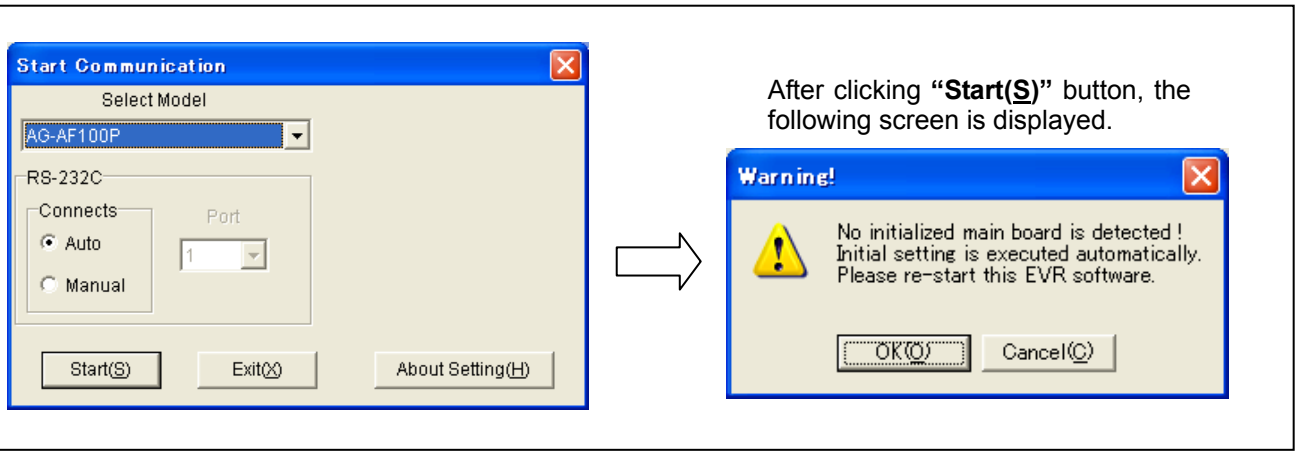
6-3. PC EVR Software operation

The following confirmation and the setup can be performed by PC EVR software.

● Initialization of MAIN P.C.Board ● Save and write EEPROM ● Read and Write the UID data
● Set up of Date and Time of internal clock ● Display the hour meter ● Software Version Display
● System Frequency changing ● Camera adjustment ● Video adjustment

6-3-1. Initialization of MAIN P.C.Board

This EVR software is detecting whether the MAIN P.C.Board (ARM EEPROM) was initialized after the **"Start(S)"** button is clicked on **Start Communication** screen. If no initialized MAIN P.C.Board was detected, the following warning message is displayed.



Clicking **"OK(O)"** button on the warning message screen, initialization settings automatically starts, and power is turned OFF and ON automatically (It is set to the destination (model name) selected on the **Start Communication** screen).
NOTE: The PC EVR software closes compulsorily.

When MAIN P.C.Board is replaced, the above warning message screen might be displayed. In that case, please click the **"OK(O)"** button on the warning message screen to execute the initialization.

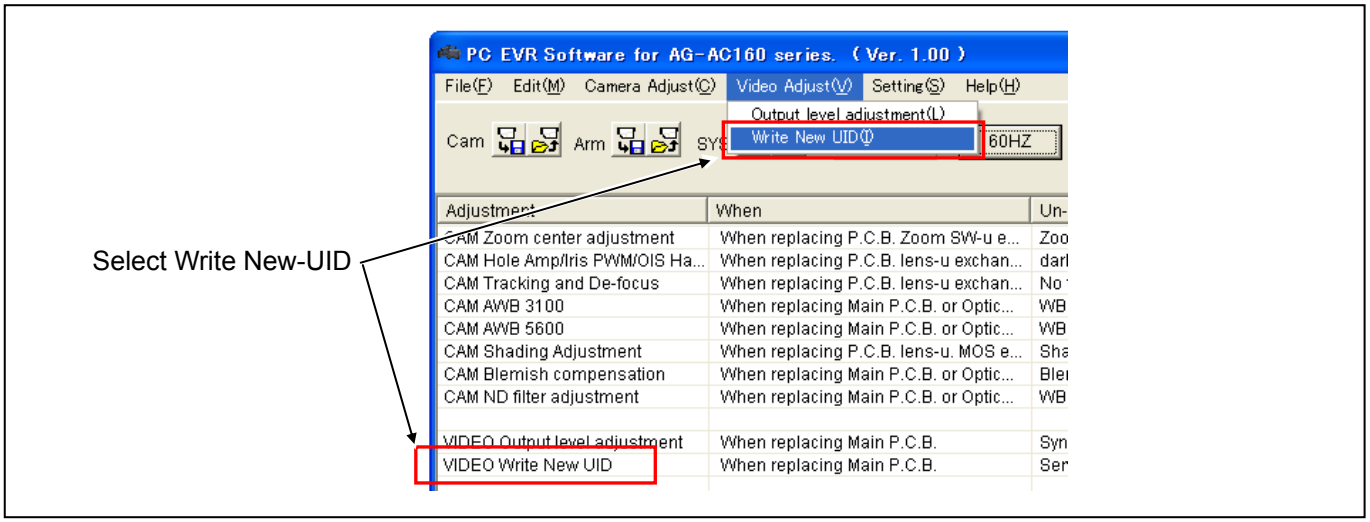
NOTE: Be careful of the model selection, because the destination can not be changed after above setting is completed.

Start up the PC EVR software again after above setting is completed, and continue the operation shown on previous page.

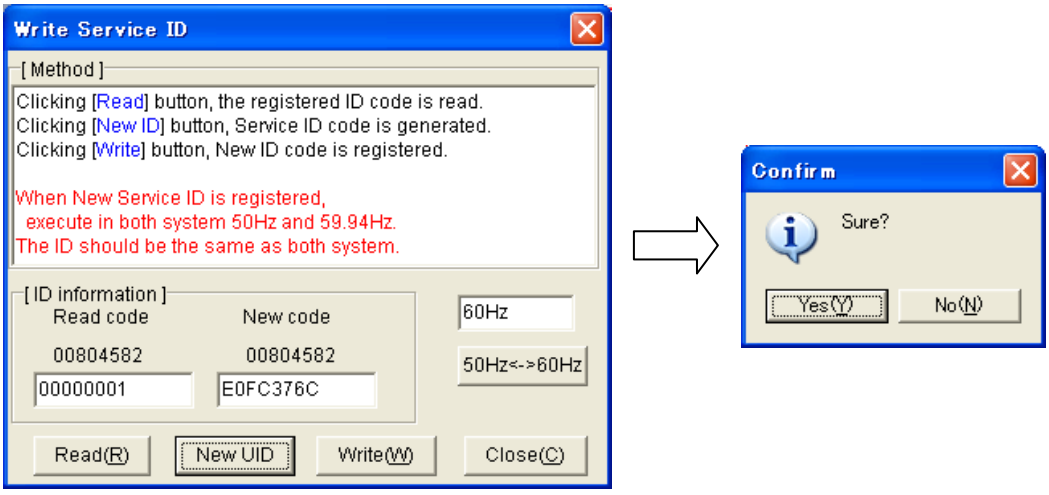
6-3-2. Write UID data

When new UID is registered, execute in both system 50Hz and 60Hz. **The UID should be the same as both systems 50Hz and 60Hz.**

1. Select **"Write New UID(I)"** in **"Video Adjust(V)"** menu or double-click **"VIDEO Write New UID"** on Adjustment item.



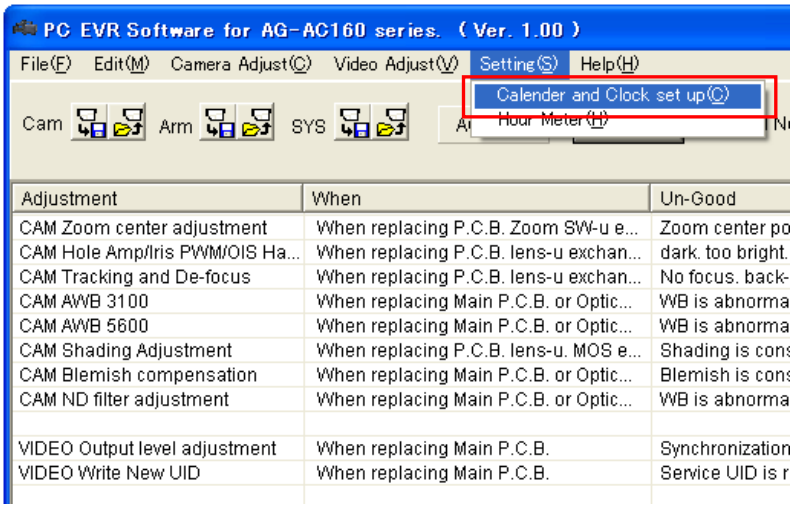
2. Clicking **"NEW UID"** button, new UID code is generated and displayed.
3. Clicking **"Write(W)"** button, the following confirmation message is displayed.



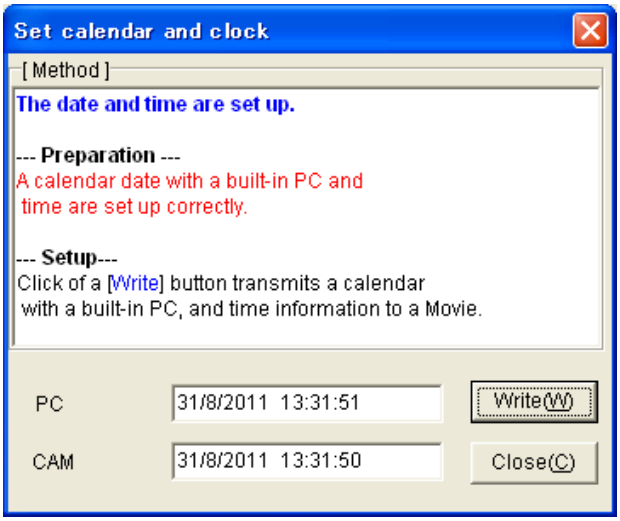
4. Clicking **"Yes(Y)"** button, new UID code is write to camera recorder automatically.
5. Click the **"50Hz <-> 60Hz"** button to change the system frequency. Clicking **"50Hz <-> 60Hz"** button, frequency changings automatically executed, and power is turned OFF and ON automatically. The PC EVR software closes compulsorily.
6. Start up the PC EVR software and write the UID again (UID have to write to NTSC and PAL area of ARM EEPROM.). Do not click the **"NEW UID"** button. Please execute writing after inputting the same value written in camera recorder in step 4 with the manual.

6-3-3. Setup of Date and Time of internal clock

1. Select **"Calendar and Clock set up (C)"** in **"Setting(S)"**.



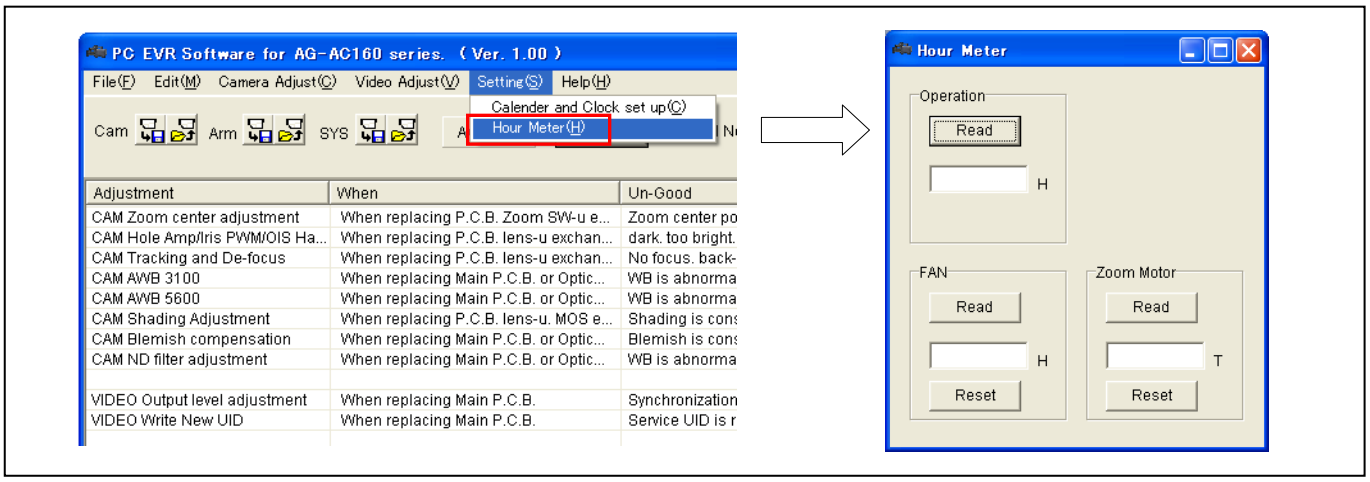
2. The date/time information of PC is displayed on **Set calendar and clock** screen.
3. Clicking **"Write(W)"** button, a date and time information is set in the camera recorder.



NOTE: A setup date and time of internal clock can be set also with the item CLOCK SET in OTHER FUNCTIONS menu screen of setting menu.

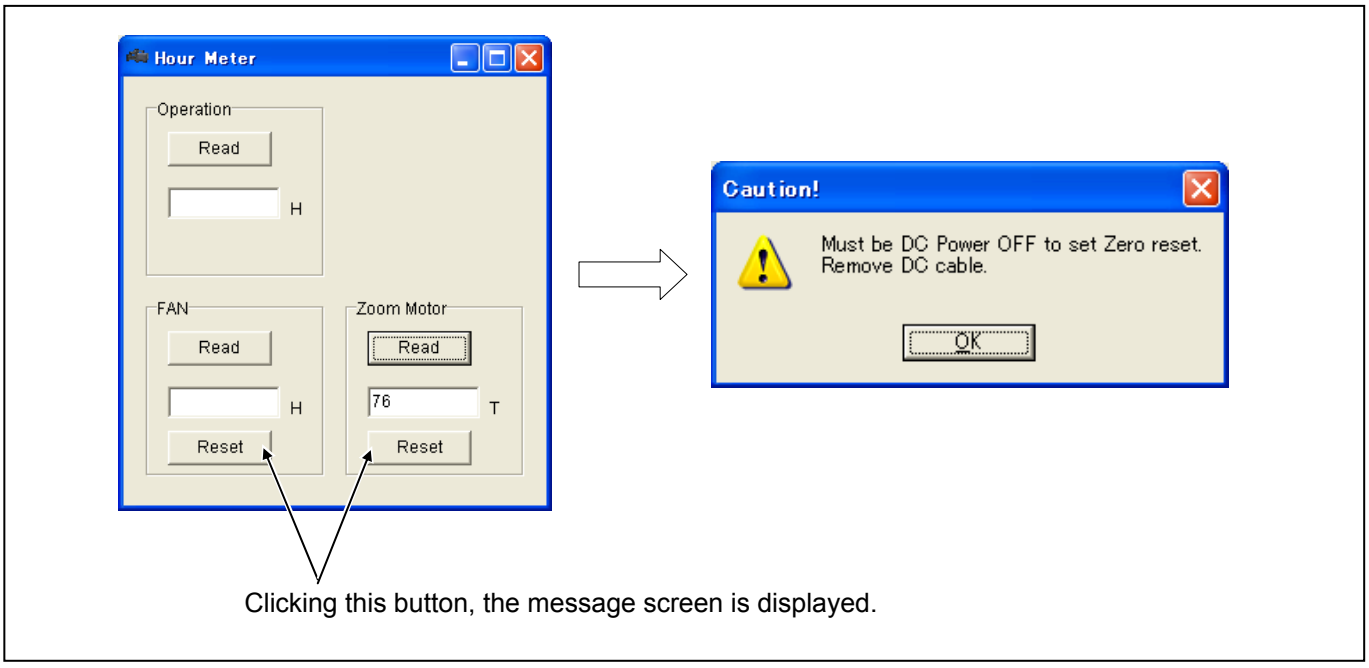
6-3-4. Hour Meter

1. Select **"Hour Meter (H)"** in **"Setting(S)"** menu.



2. The **Hour Meter** screen is displayed. The following operation hours can be display and reset on the **Hour Meter** screen.
   - **Operation** : Display of the time of the camera-recorder has been on.
   - **FAN** : Display and reset of the time of the FAN has been on
   - **Zoom Motor** : Display and reset of the operation number of times of the Zoom Motor.

3. Clicking **"Read"** button on the **Hour Meter** screen, total operation time is displayed.
4. Clicking **"Reset"** button on the **Hour Meter** screen, the value of the FAN and Zoom Motor of camera recorder can be reset.
5. Clicking **"Reset"** button, the following message screen is displayed.



6. Clicking the **"OK"** button, the PC EVR software closes compulsorily. Remove DC cable.

7. Turn on the power of camera recorder. Start up the PC EVR software again and confirm that the value of hour meter is **"0"**.

The data of ZOOM MOTOR value is saved in CAM EEPROM.

The data of OPERATION and FAN value are saved in SYS EEPROM.

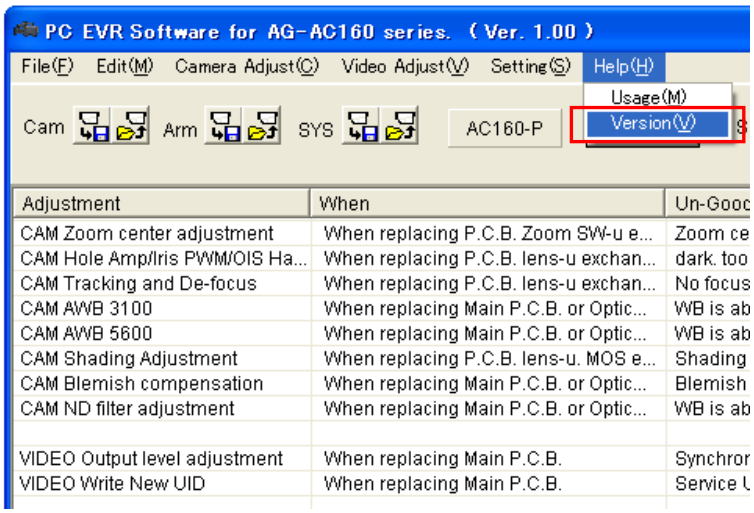
***NOTE:**
If Hour Meter is set to the original value by writing back EEPROM backup data, please turn the power supply OFF and ON with the following procedure.

Write back CAM or SYS EEPROM data -> Remove the DC cable or Turn off the SW of external DC power supply.
-> Connect the DC cable or Turn on the SW of external DC power supply.
-> Turn the power SW of camera recorder to ON.
-> Turn the power SW of camera recorder to OFF.
-> After turning the power SW of camera recorder to ON, confirm that Hour Meter value is returned to the original value.

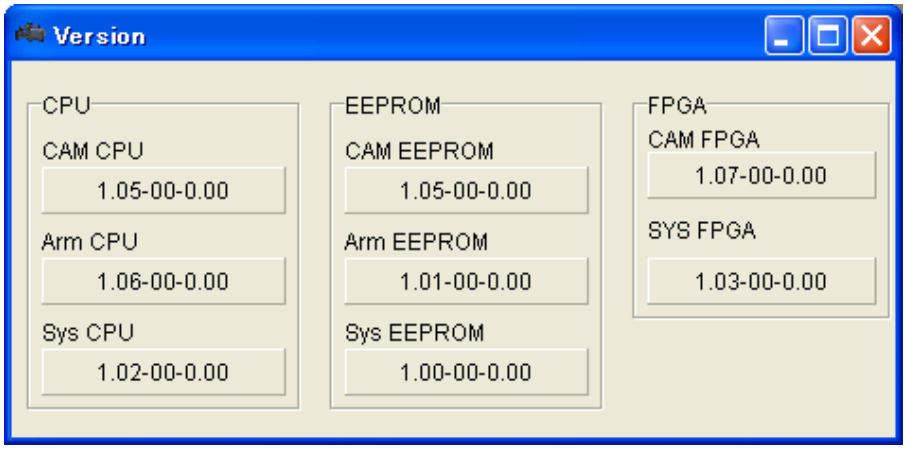
NOTE: The total operation time can be confirmed also with the item OPERATION TIME in OTHER FUNCTIONS menu screen of setting menu. The total operation time of FAN and the total operation number of times of the Zoom Motor can be confirmed also with the SERVICE INFORMATION screen of DIAGNOSTIC menu.

6-3-5. Software Version Display

1. Select **"Version(V)"** in **"Help(H)"** menu.



2. The following software version is displayed.

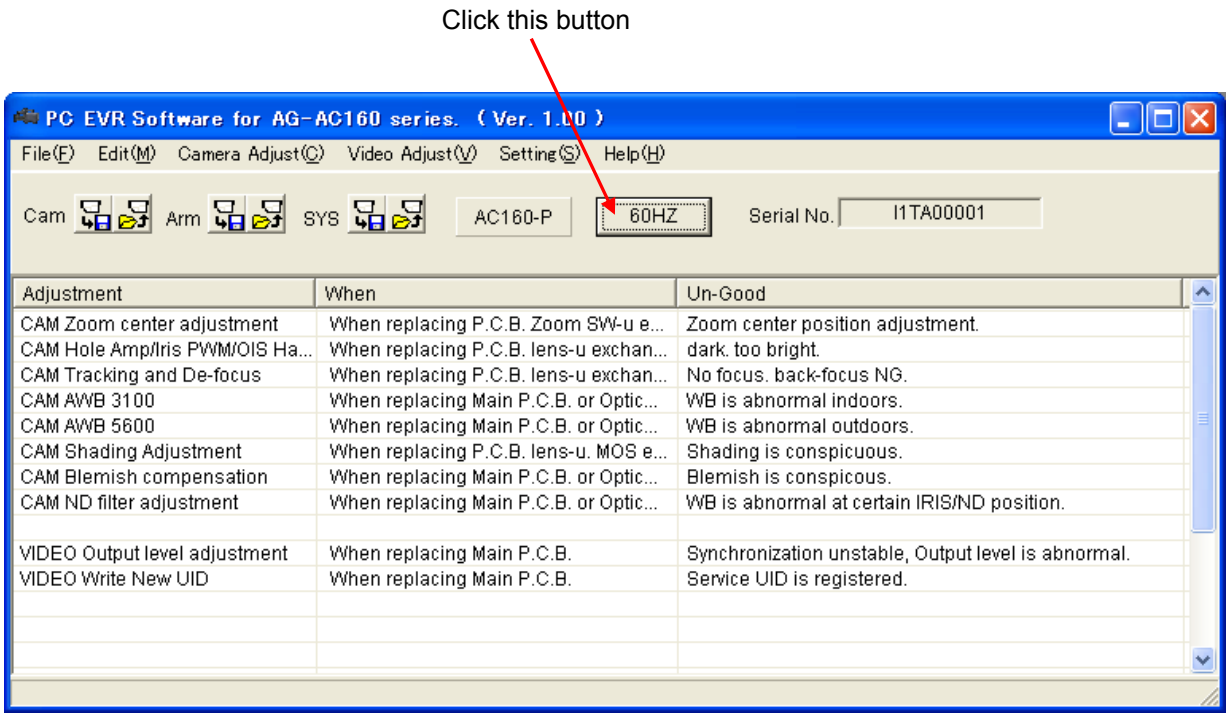


NOTE: The each software version can be confirmed also with the item SOFT VERSION and EEPROM VERSION in DIAGNOSTIC menu screen.

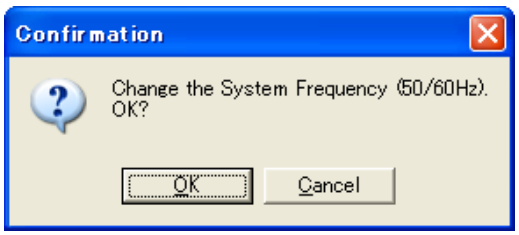
6-3-6. System Frequency changing

System frequency can be changed.

1. Click the frequency display button.



2. The following confirmation message is displayed.



3. Clicking **"OK"** button on the confirmation message screen, frequency changings automatically executed, and power is turned OFF and ON automatically.

NOTE: The PC EVR software closes compulsorily.

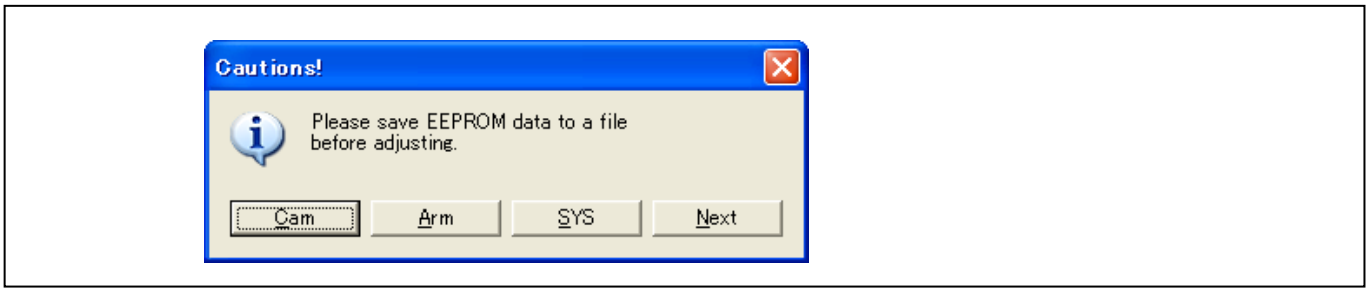
NOTE: System frequency can be changed also with the item SYSTEM FREQ in OTHER FUNCTIONS menu screen of setting menu.

7. Save and write EEPROM data

< PREPARATION >
When EEPROM data save and write, the PC EVR software (VVS0094) is used. Please connect the tools and set up the PC EVR software follow the item **"6. PC EVR software"**.

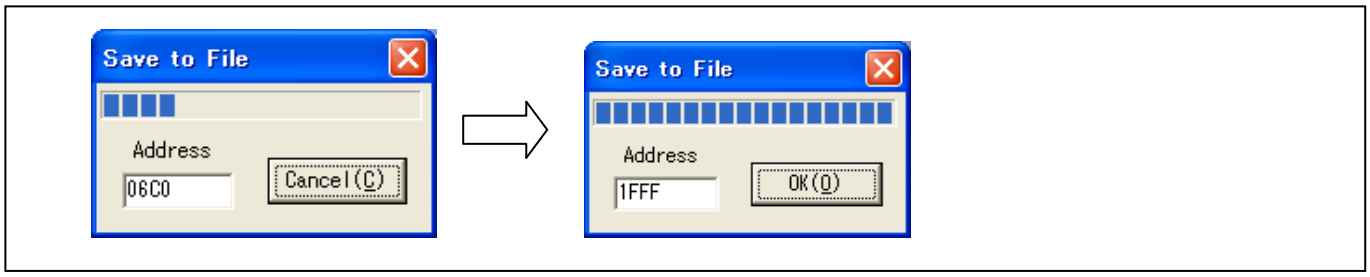
7-1. Save data of EEPROM data

1. Start up the PC EVR software.
2. Select the model in **"Select Model"** box and click **"Start(S)"** button on **Start Communication** screen.
3. When the communication connection completes, the following screen is displayed. When you save the EEPROM data, click **"Cam"**, **"Arm"** and **"SYS"** button.

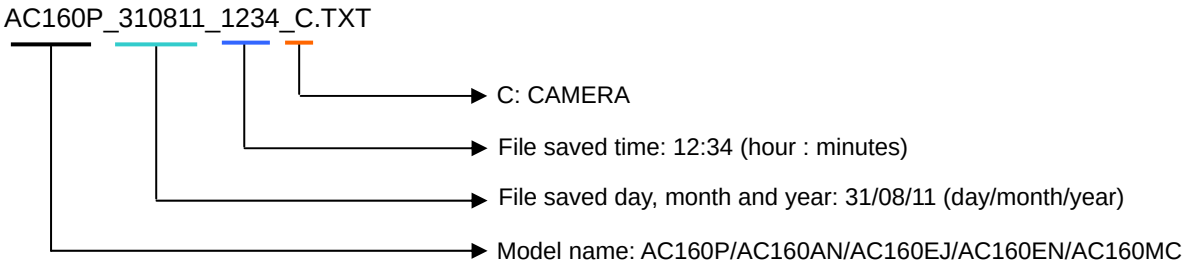


7-1-1. Save data of CAM EEPROM data

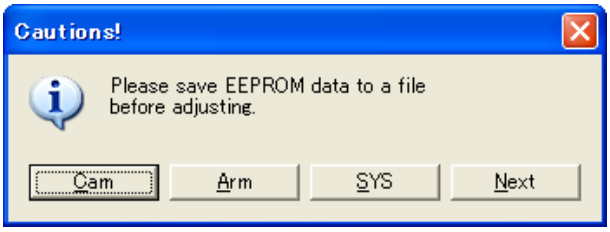
1. When the **"Cam"** button is clicked, **Input file name** screen appears to saving data. After confirming the file name, click **"Save"** button on **Input file name** screen. While saving data, progress bar is displayed. When **"OK(O)"** button is displayed, data saving is complete.



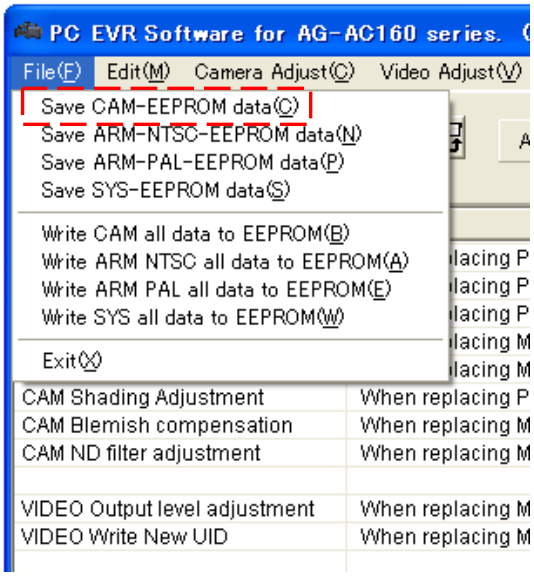
NOTE: Basically, please save the file as the file named by default. As for this file name, the name is generated as follows.



2. Clicking **“OK(O)”** button, the following screen is displayed again.



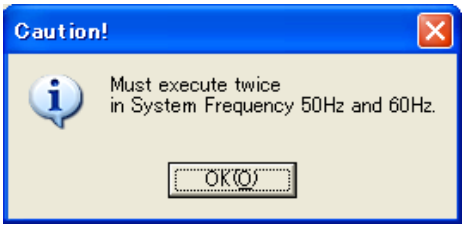
3. Also on the main screen, EEPROM data can be saved. The **Input file name** screen is displayed by clicking **“Save CAM-EEPROM data(C)”** in **“File(F)”** menu and data can be saved according to the procedure for showing in step 1.



Also this icon is clicked,
Input file name screen is opened.

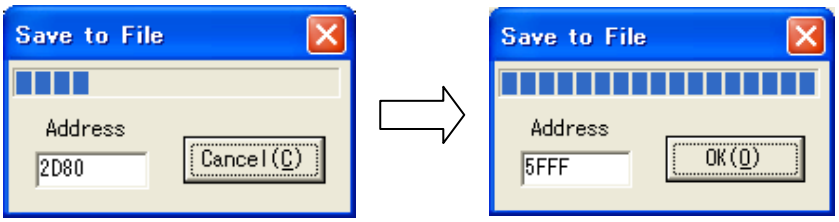
7-1-2. Save data of ARM(XP) EEPROM data

1. Clicking **"Arm"** button, following message is displayed.

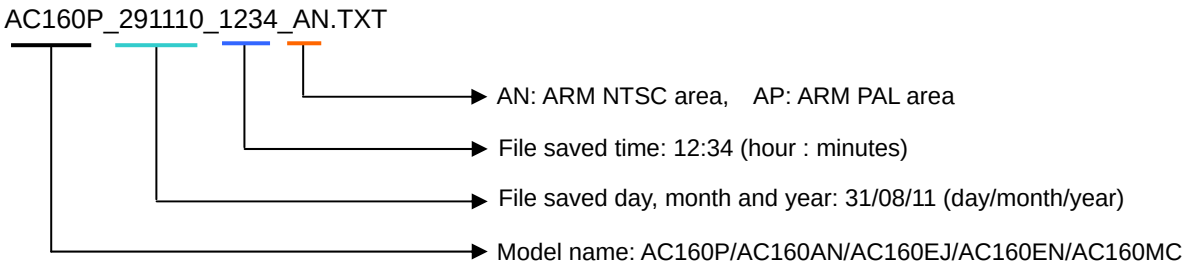


NOTE: ARM(XP) EEPROM has NTSC and PAL area. Please backup EEPROM data in system frequency 50Hz and 60Hz. The system frequency can be set to 50 or 59.94 by the item SYSTEM FREQ of the OTHER FUNCTIONS menu screen of setting menu or PC EVR software (refer to item 6-3-6).

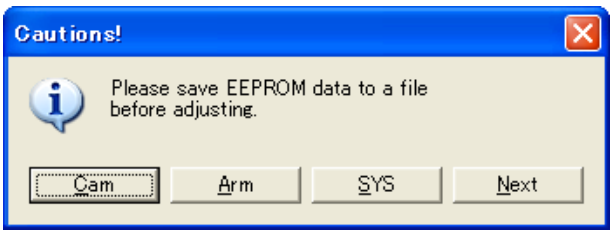
2. When the **"OK(O)"** button is clicked, **Input file name** screen appears to saving data. After confirming the file name, click **"Save"** button on **Input file name** screen. While saving data, progress bar is displayed. When **"OK(O)"** button is displayed, data saving is complete.



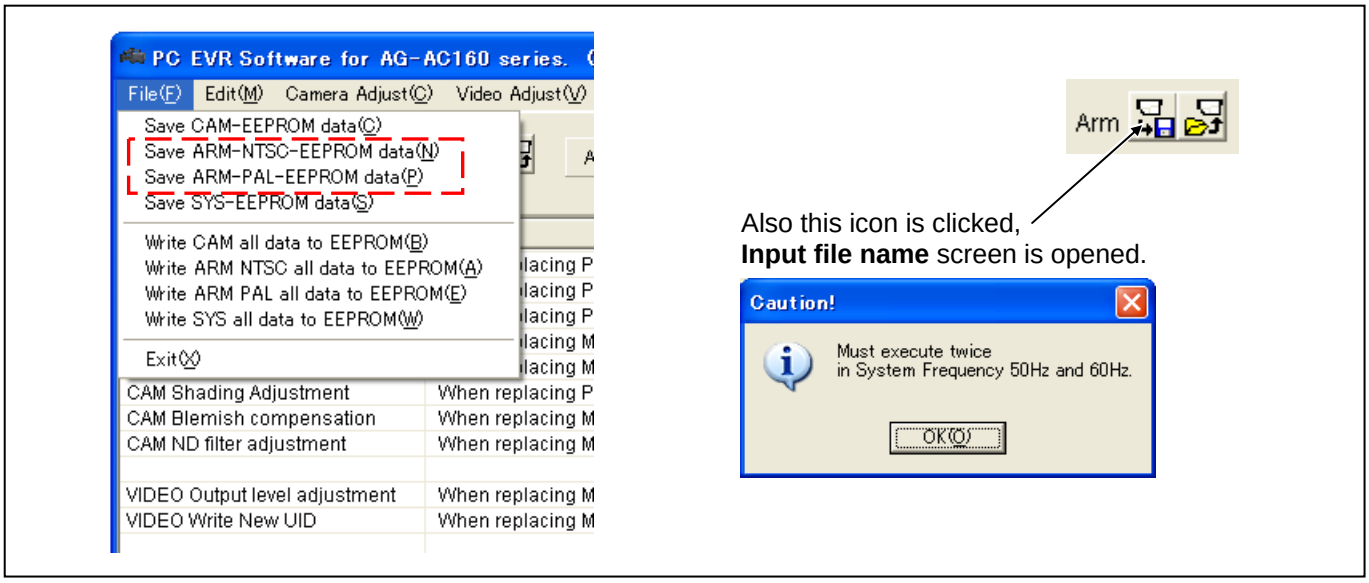
NOTE: Basically, please save the file as the file named by default. As for this file name, the name is generated as follows.



3. Clicking **"OK(O)"** button, the following screen is displayed again.

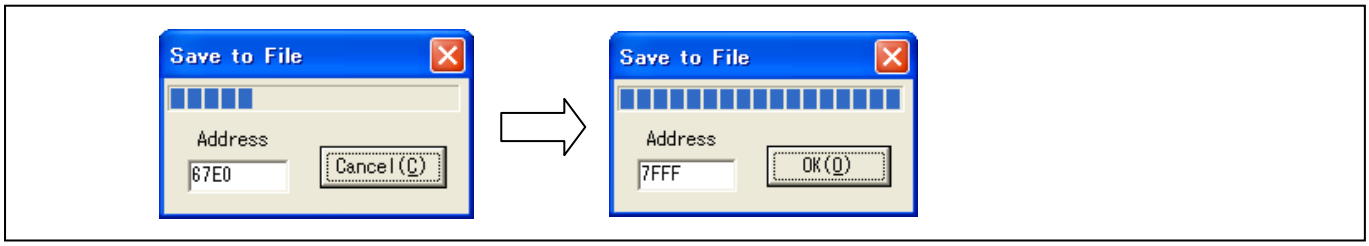


4. Also on the main screen, EEPROM data can be saved. The screen is displayed as shown in step 1 by clicking **"Save ARM ***** EEPROM(***) data"** in **"File(F)"** menu and clicking **"OK(O)"** button, the **Input file name** screen is displayed by data can be saved according to the procedure for showing in step 2.



7-1-3. Save data of SYS EEPROM data

1. Clicking **"SYS"** button, **Input file name** screen appears to saving data. After confirming the file name, click **"Save"** button on **Input file name** screen. While saving data, progress bar is displayed. When **"OK(O)"** button is displayed, data saving is complete.

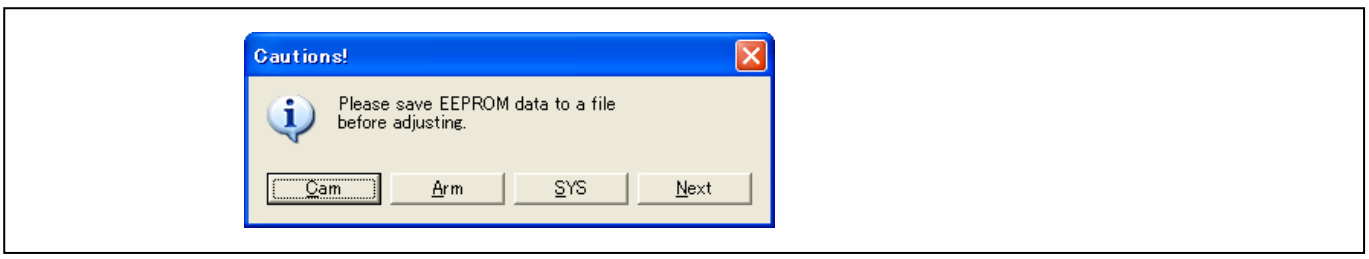


NOTE: Basically, please save the file as the file named by default. As for this file name, the name is generated as follows.

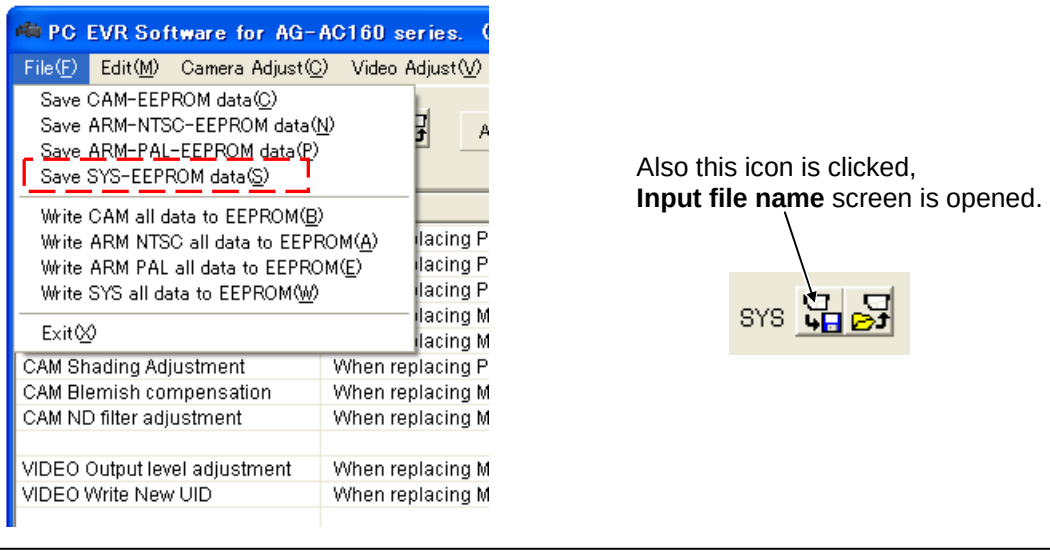
AC160P_310811_1234_S.TXT

- S: SYSCON
- File saved time: 12:34 (hour : minutes)
- File saved day, month and year: 31/08/11 (day/month/year)
- Model name: AC160P/AC160AN/AC160EJ/AC160EN/AC160MC

2. Clicking **"OK(O)"** button, the following screen is displayed again.

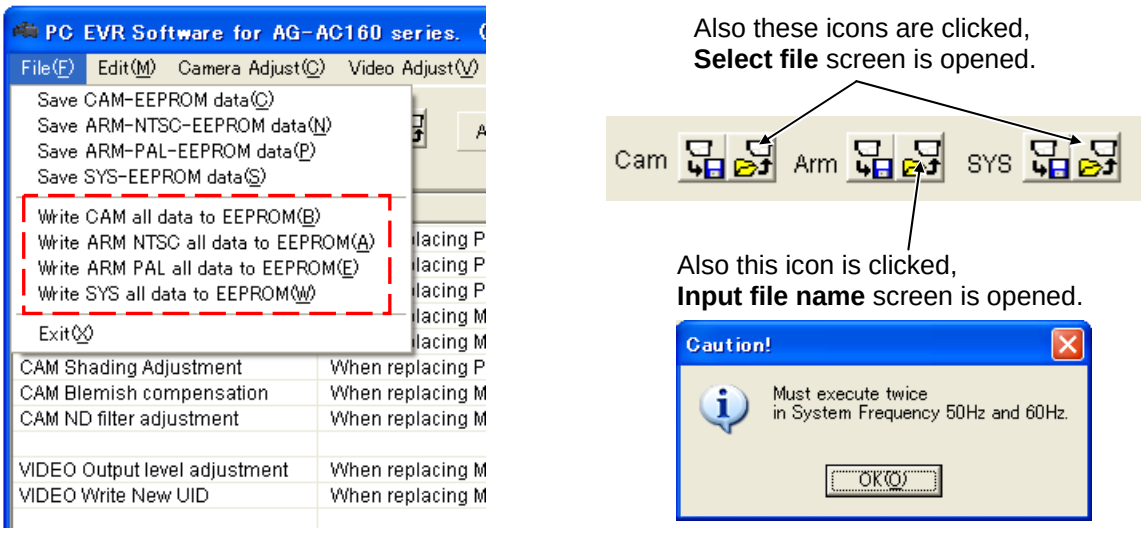


3. Also on the main screen, EEPROM data can be saved. The **Input file name** screen is displayed by clicking **"Save SYS-EEPROM data(S)"** in **"File(F)"** menu and data can be saved according to the procedure for showing in step 1.

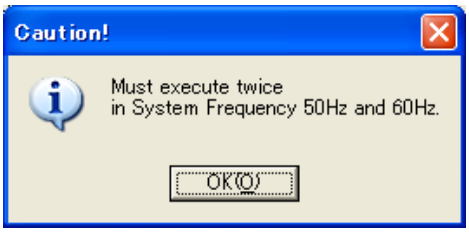


7-2. Write EEPROM data

1. Start up the PC EVR software and the main screen is displayed.
2. Clicking **"Write *** **** all data to EEPROM(*)"** in **"File(F)"** menu, **Select file** screen is displayed.

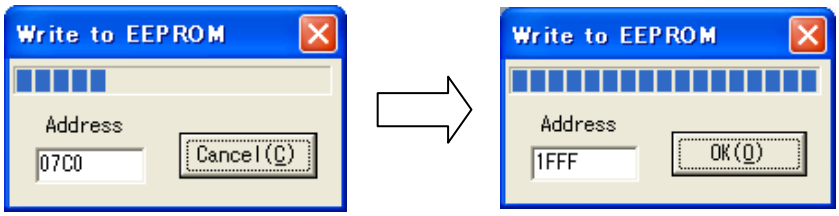


NOTE: ARM EEPROM has NTSC and PAL area. Please write the 2 area of EEPROM data. Clicking **"Write ARM NTSC all data to EEPROM(A)"**, **"Write ARM PAL all data to EEPROM(E)"** or above indicated icon (for ARM), the following message is displayed. And Clicking **"OK(O)"** button, **Select file** screen is displayed.



NOTE: If the system frequency is not matched when **"Write ARM NTSC all data to EEPROM(A)"** or **"Write ARM PAL all data to EEPROM(E)"** is clicked, the following message is displayed. Please change the system frequency.

3. Select the file to be written on **Select file** screen and clicking **"Open"** button, writing starts. While writing data, progress bar is displayed. When **"OK(O)"** button is displayed, data writing is complete.



NOTE:
After backup data of CAM or SYS EEPROM is written back to the replaced P.C.Board, please turn the power supply OFF and ON with the following procedure.

Write back EEPROM data -> Remove the DC cable or Turn off the SW of external DC power supply.
-> Connect the DC cable or Turn on the SW of external DC power supply.
-> Turn the power SW of camera recorder to ON.
-> Turn the power SW of camera recorder to OFF.
-> After turning the power SW of camera recorder to ON, confirm that Hour Meter value is returned to the original value.

***Hour Meter (CAM EEPROM -> ZOOM MOTOR)**
***Hour Meter (SYS EEPROM -> OPERATION ＆ FAN)**

8. Operation after major part exchanged

8-1. Operation List

X: Operation required

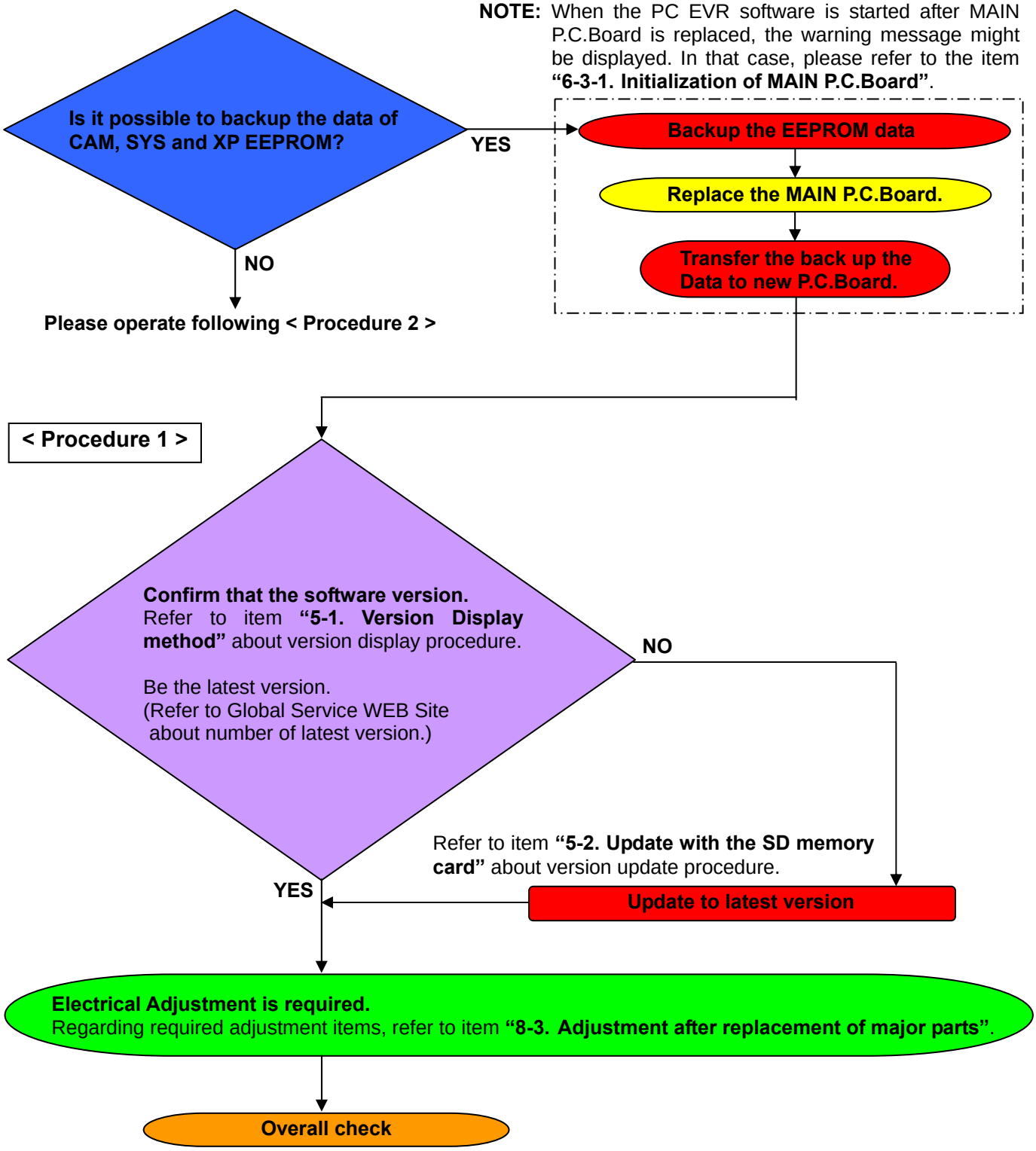
	Replacement Parts	Adj.	Version conf.	EEPROM	Remark
	MAIN P.C.B.	X	X	X	Setting of Internal clock's
	SDCARD P.C.B.				Not required
	POWER P.C.B.				Not required
TOP CASE U	TOP P.C.B.				Not required
	RCA P.C.B.				Not required
	REMOCON_F P.C.B.				Not required
	XLR P.C.B.				Not required
	HANDLE P.C.B.				Not required
EVF U	EVF_CN P.C.B.				Not required
CAMERA LENS U	LENS U	X			Reset of Zoom Motor operation time
	ZOOM MOTOR U	X			Reset of Zoom Motor operation time *Included in LENS U.
	PRISM U	X			
	MOS MAIN P.C.B. X3	X			*Included in PRISM U.
	MOS SUB_R P.C.B.	X			*Included in CAMERA LENS U.
	MOS SUB_G P.C.B.	X			*Included in CAMERA LENS U.
	MOS SUB_B P.C.B.	X			*Included in CAMERA LENS U.
GRIP U	ZOOM SW P.C.B.	X			Not required
SIDE CASE R U	SIDER P.C.B.				Setting of Internal clock's
	CAM_OP P.C.B.				Not required
	USER SW P.C.B.				Not required
	SHUTR DIAL P.C.B.				Not required
	MENU P.C.B.				Not required
	SCENE DIAL P.C.B.				Not required
LCD U	LCD PANEL				Not required
	MONITOR P.C.B.				Not required
	HINGE P.C.B.				Not required
BACK CASE U	REAR JACK P.C.B.				Not required
	REAR JACK2 P.C.B.				Not required
	REAR SW P.C.B.				Not required
	BATTERY P.C.B.				Not required

8-2. Operation flow chart after replacement of major parts

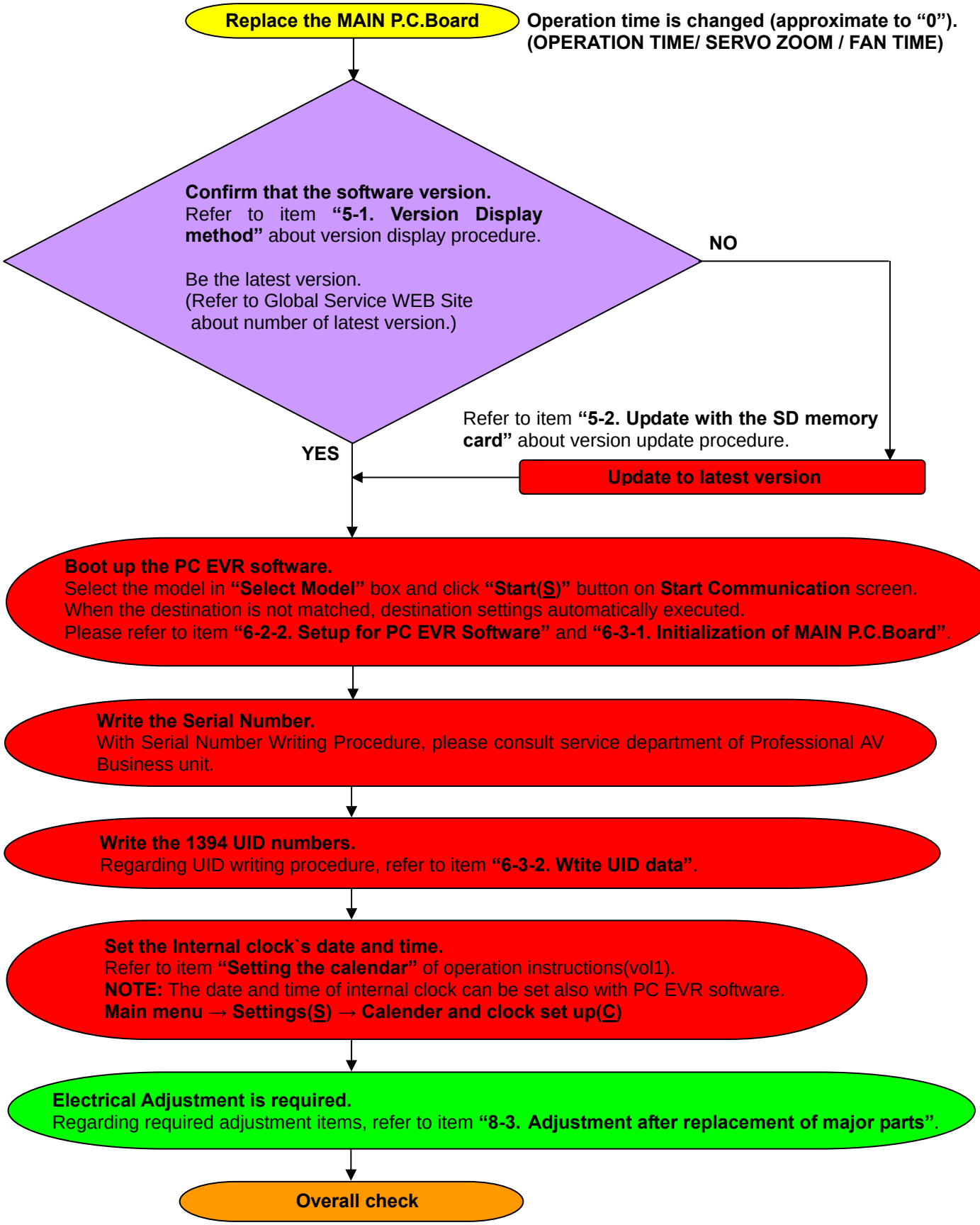
8-2-1. MAIN P.C.Board

Refer to item **"7. Save and write EEPROM data"** about save and writing procedure.

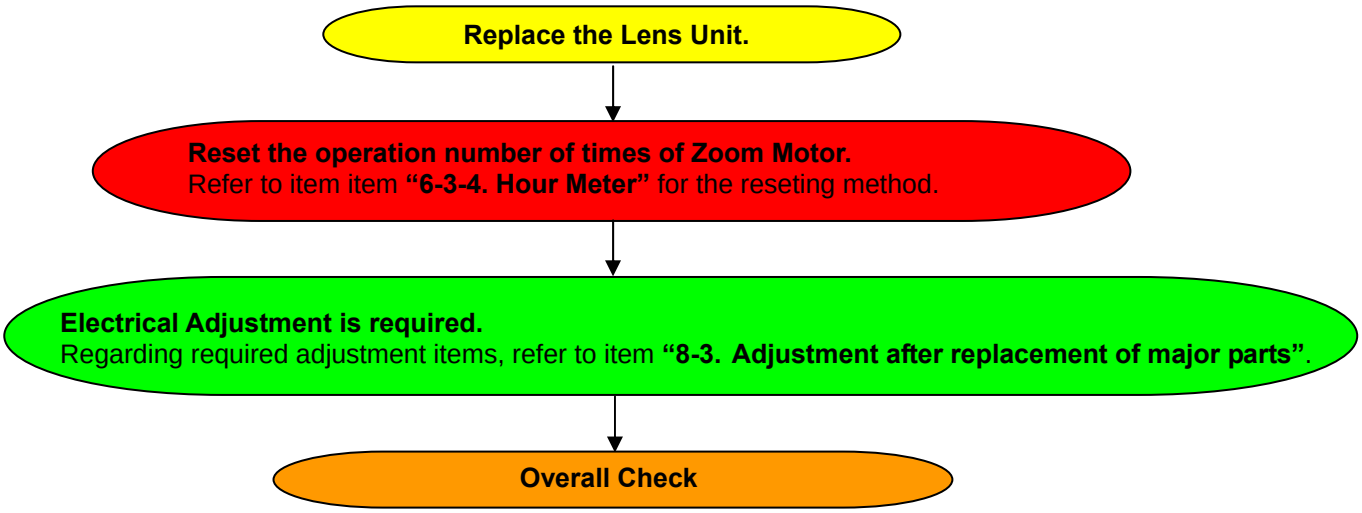
NOTE: When the PC EVR software is started after MAIN P.C.Board is replaced, the warning message might be displayed. In that case, please refer to the item **"6-3-1. Initialization of MAIN P.C.Board"**.



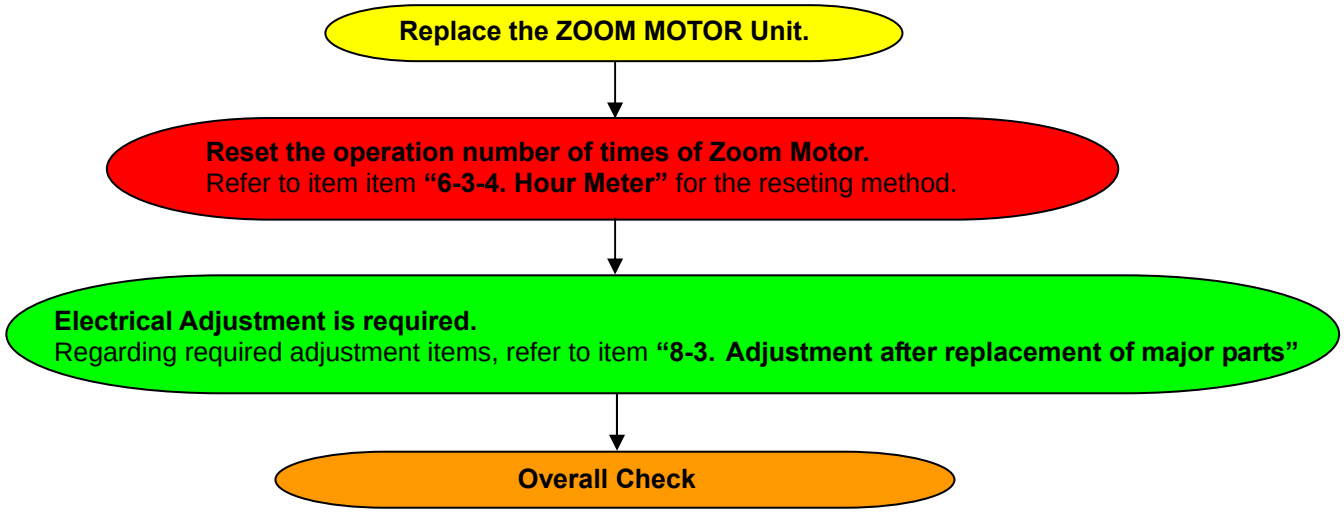
< Procedure 2 >


Replace the MAIN P.C.Board
Operation time is changed (approximate to "0").
(OPERATION TIME/ SERVO ZOOM / FAN TIME)
Confirm that the software version.
Refer to item "5-1. Version Display method" about version display procedure.
Be the latest version.
(Refer to Global Service WEB Site about number of latest version.)
NO
YES
Refer to item "5-2. Update with the SD memory card" about version update procedure.
Update to latest version
Boot up the PC EVR software.
Select the model in "Select Model" box and click "Start(S)" button on Start Communication screen.
When the destination is not matched, destination settings automatically executed.
Please refer to item "6-2-2. Setup for PC EVR Software" and "6-3-1. Initialization of MAIN P.C.Board".
Write the Serial Number.
With Serial Number Writing Procedure, please consult service department of Professional AV Business unit.
Write the 1394 UID numbers.
Regarding UID writing procedure, refer to item "6-3-2. Wtite UID data".
Set the Internal clock`s date and time.
Refer to item "Setting the calendar" of operation instructions(vol1).
NOTE: The date and time of internal clock can be set also with PC EVR software.
Main menu → Settings(S) → Calender and clock set up(C)
Electrical Adjustment is required.
Regarding required adjustment items, refer to item "8-3. Adjustment after replacement of major parts".
Overall check

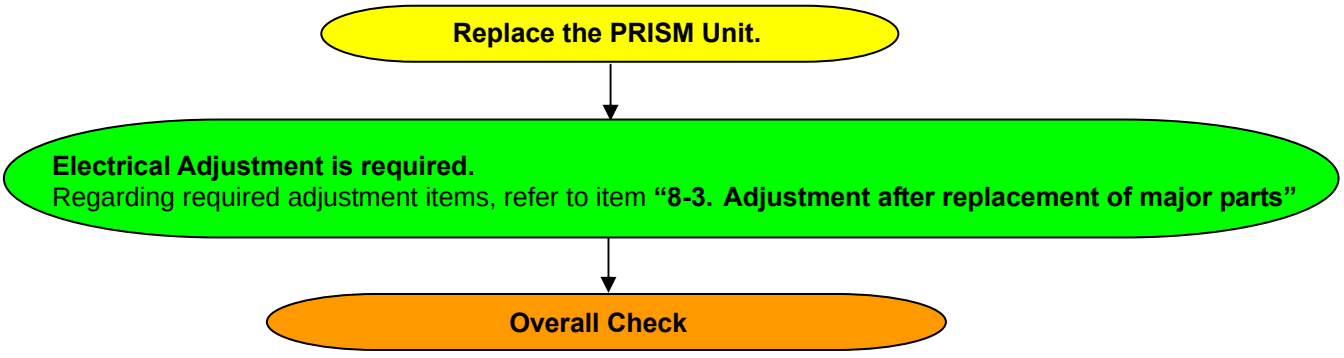
8-2-2. LENS Unit



8-2-3. ZOOM MOTOR Unit

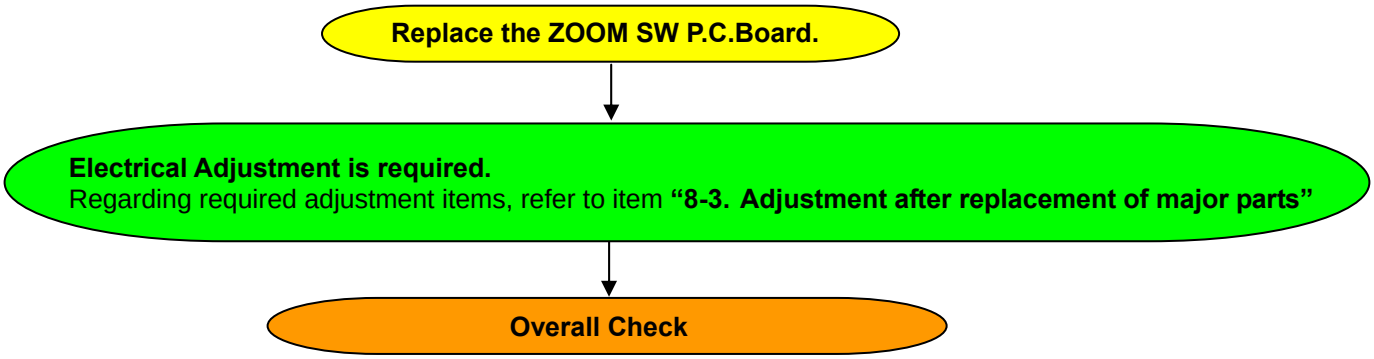


8-2-4. PRISM Unit



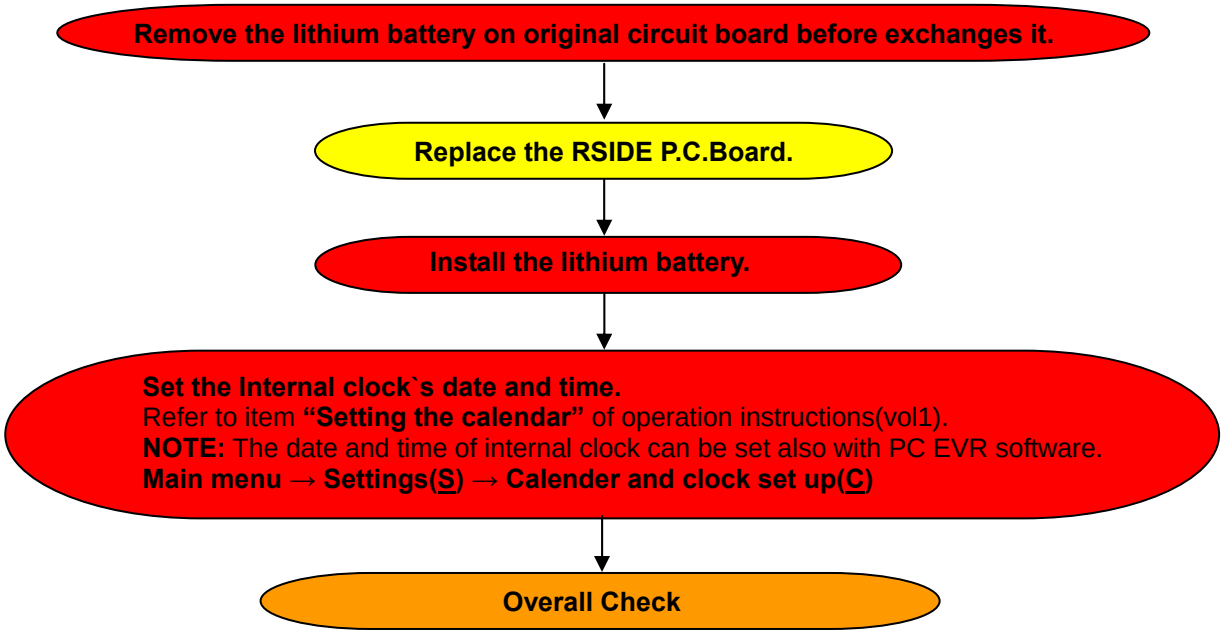
8-2-5. ZOOM SW P.C.Board

When GRIP unit is replaced, it requires same operation.



8-2-6. RSIDE P.C.Board

NOTE: The lithium battery has not installed to a new RSIDE P.C.Board. Remove the lithium battery on original circuit board and onto it in new one.



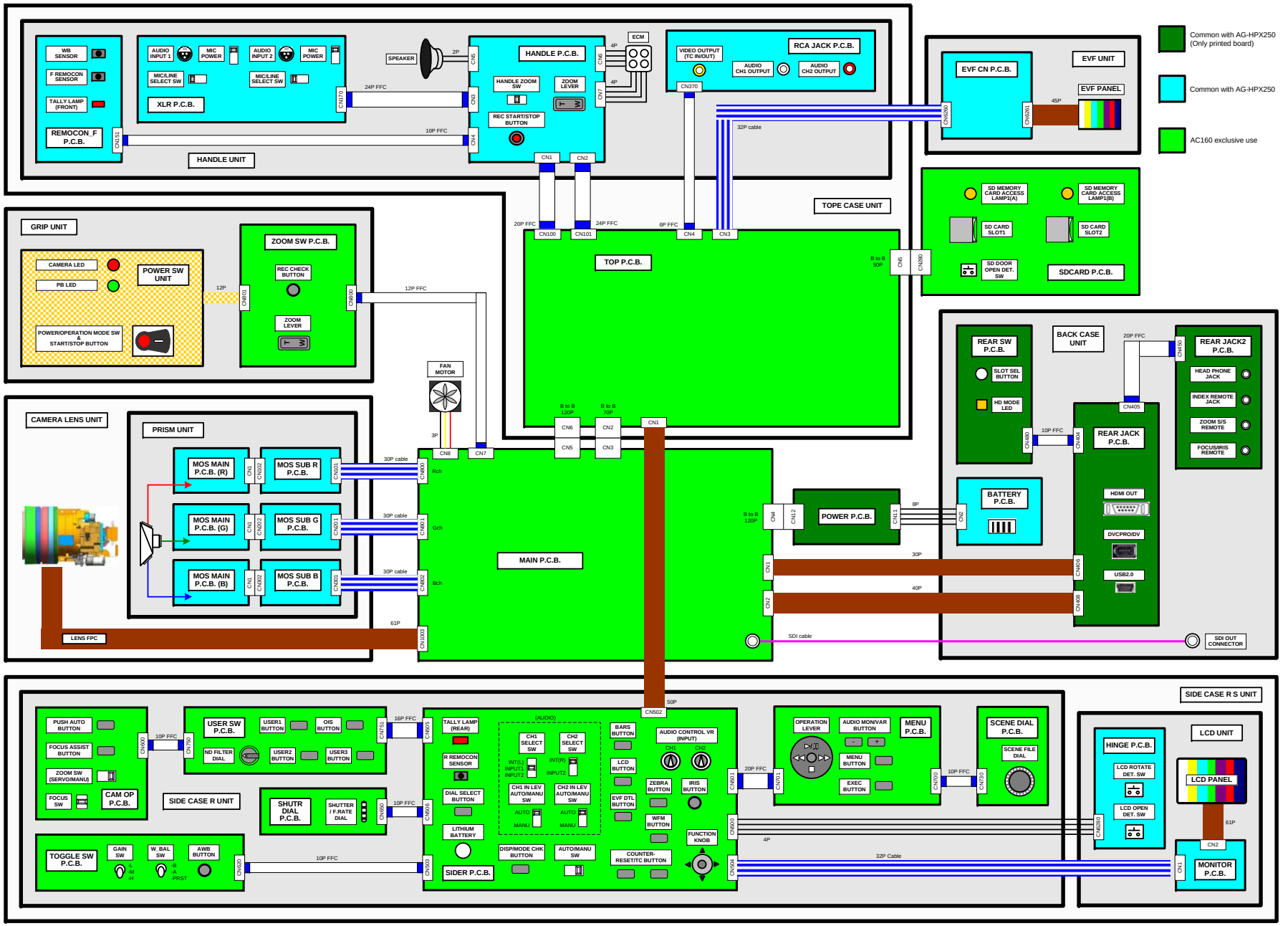
8-3. Adjustment after replacement of major parts

When the following parts are exchanged showing in the table, the adjustment and confirmation are required follow the items shown by mark **"X"** in the table.
The adjustment procedure has been described to section 3 (Electrical adjustment procedure).

X: Adjustment / Confirmation Required.

ADJISTMENT ITEM	PARTS NAME					
	*MAIN P.C.B.		CAMERA LENS U			GRIP U
	When back up CAM / XP EEPROM data	When no back Up CAM / XP EEPROM data	LENS U	PRISM U	ZOOM MOTOR U	ZOOM SW P.C.B.
Zoom center Adjustment	X	X				X
Hall Amp / Iris PWM / OIS Hall Amp Adjustment	X	X	X			
Zoom tracking and De-focus Adjustment	X	X	X	X	X	
White Balance Adjustment (3100K)		X	X	X		
White Balance Adjustment (5600K)		X	X	X		
White Shading Adjustment		X	X	X		
Blemish Compensation Adjustment		X	X	X		
ND FILTER Compensation Adjustment		X	X	X		
Video Output Level Adjustment	X	X				

***** The method of data backup (EEPROM) has been described to the item **"7. Save and write EEPROM data"**.


Common with AG-HPX250 (Only printed board)
Common with AG-HPX250
AC160 exclusive use
HANDLE UNIT
WB SENSOR
F REMOCON SENSOR
TALLY LAMP (FRONT)
REMOCON_F P.C.B.
AUDIO INPUT 1
MIC POWER
AUDIO INPUT 2
MIC POWER
MIC/LINE SELECT SW
MIC/LINE SELECT SW
XLR P.C.B.
SPEAKER
HANDLE P.C.B.
HANDLE ZOOM SW
ZOOM LEVER
REC START/STOP BUTTON
ECM
VIDEO OUTPUT (TC IN/OUT)
AUDIO CH1 OUTPUT
AUDIO CH2 OUTPUT
RCA JACK P.C.B.
EVF CN P.C.B.
EVF UNIT
EVF PANEL
TOPE CASE UNIT
SD MEMORY CARD ACCESS LAMP1(A)
SD MEMORY CARD ACCESS LAMP1(B)
SD CARD SLOT1
SD CARD SLOT2
SD DOOR OPEN DET. SW
SDCARD P.C.B.
GRIP UNIT
CAMERA LED
PB LED
POWER SW UNIT
POWER/OPERATION MODE SW & START/STOP BUTTON
ZOOM SW P.C.B.
REC CHECK BUTTON
ZOOM LEVER
TOP P.C.B.
FAN MOTOR
CAMERA LENS UNIT
LENS FPC
PRISM UNIT
MOS MAIN P.C.B. (R)
MOS SUB R P.C.B.
MOS MAIN P.C.B. (G)
MOS SUB G P.C.B.
MOS MAIN P.C.B. (B)
MOS SUB B P.C.B.
MAIN P.C.B.
POWER P.C.B.
BATTERY P.C.B.
BACK CASE UNIT
REAR SW P.C.B.
SLOT SEL BUTTON
HD MODE LED
REAR JACK P.C.B.
REAR JACK2 P.C.B.
HEAD PHONE JACK
INDEX REMOTE JACK
ZOOM S/S REMOTE
FOCUS/IRIS REMOTE
HDMI OUT
DVCPRO/DV
USB2.0
SDI OUT CONNECTOR
SIDE CASE R S UNIT
PUSH AUTO BUTTON
FOCUS ASSIST BUTTON
ZOOM SW (SERVO/MANU)
FOCUS SW
CAM OP P.C.B.
USER SW P.C.B.
USER1 BUTTON
OIS BUTTON
ND FILTER DIAL
USER2 BUTTON
USER3 BUTTON
SIDE CASE R UNIT
SHUTR DIAL P.C.B.
SHUTTER / F.RATE DIAL
TOGGLE SW P.C.B.
GAIN SW
W_BAL SW
AWB BUTTON
TALLY LAMP (REAR)
R REMOCON SENSOR
DIAL SELECT BUTTON
LITHIUM BATTERY
SIDER P.C.B.
CH1 SELECT SW
CH2 SELECT SW
CH1 IN LEV AUTO/MANU SW
CH2 IN LEV AUTO/MANU SW
DISP/MODE CHK BUTTON
AUTO/MANU SW
BARS BUTTON
AUDIO CONTROL VR (INPUT)
LCD BUTTON
ZEBRA BUTTON
IRIS BUTTON
EVF DTL BUTTON
WFM BUTTON
FUNCTION KNOB
COUNTER-RESET/TC BUTTON
OPERATION LEVER
AUDIO MON/VAR BUTTON
MENU BUTTON
EXEC BUTTON
MENU P.C.B.
SCENE DIAL P.C.B.
SCENE FILE DIAL
SIDE CASE R S UNIT
HINGE P.C.B.
LCD ROTATE DET. SW
LCD OPEN DET. SW
LCD UNIT
LCD PANEL
MONITOR P.C.B.
24P FFC
10P FFC
32P cable
20P FFC
6P FFC
12P FFC
30P cable
61P
50P
16P FFC
45P
8P
40P
SDI cable
32P Cable

10. P.C.Board Location