Operating Instructions

Industrial Color Camera

GP-US502

Lens : Purchased locally
Cable : Option

Panasonic®

.

CONTENTS

CAUTION:

Before attempting to connect or operate this product, please read the label on the bottom.

⚠ CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN** ⚠

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

SA 1965

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompa-nying the appliance.

SA 1966

The serial number of this product may be found on the bottom of the unit.
You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____ GP-US502 _____

Serial No. _____

WARNING:
   TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

PREFACE

Panasonic's GP-US502 Industrial Digital Signal Processing Color 3-CCD Camera overcomes space limitations that have complicated many video applications.

The GP-US502 incorporates Three 380,000-pixels (768 (H) x 494 (V)) Interline Transfer CCDs to give you a remarkable 700 lines of horizontal resolution and a S/N ratio is 56dB. This means you get a color picture with high visual information content, for excellent image detail.

Because it features digital signal processing, the GP-US502 provides an exceptionally stable picture.

FEATURES

1. High-performance micro prism optical system with three 1/2" IT CCDs.
2. 700lines of horizontal resolution.
3. 56dB of signal to noise ratio.
4. Minimum scene illumination of 0.9 footcandle (9 lux) at F2.8 with + 18dB gain.
5. Auto Tracing White Balance (ATW), Auto White Balance Control (AWC) or Manual White Balance Control are selectable.
6. Automatic Setting of Black Balance (ABC) or Manual Setting.
7. Gen-Lock capability.
8. Built-in full color bar generator.
9. Automatic Gain Control (AGC) and Electronic Light Control(ELC) are available.
10. Automatic (AUTO), Step (STEP) and Manual (MANU) setting of Electronic shutter modes are selectable.
11. 12V DC operation.
12. RGB and S-Video Outputs.
13. Character Generator Input.

PRECAUTIONS

- Do not attempt to disassemble the camera or camera control unit.
  To prevent electric shock, do not remove screws or cover. There are no user-serviceable parts inside. Refer servicing to qualified service personnel.

- Do not expose the camera or camera control unit to rain or moisture, or try to operate it in wet areas. Do take immediate action if ever the camera or camera control unit become wet. Turn power off and refer servicing to qualified service personnel. Moisture can damage the camera and camera control unit and also create the danger of electric shock.

- Ambient temperature range.
  Do not install the camera and camera control unit in any place which is beyond 32°F - 113°F (0°C - +45°C).

- Do not drop anything inside the camera or camera control unit.
  Dropping metal for example inside the camera and camera control unit could permanently damage the unit.

- Never crush or pinch the camera cable.
  Do not bend the camera cable into a curve whose radius is small.

- Never face the camera toward the sun.
  Whether the camera is in use or not, never face it toward the sun. Do use caution when operating the camera in the vicinity of spot lights or other bright light sources.

- How to take clean this camera and camera control unit.
  After turning off the power of camera control unit, clean them with a dry cloth. If it is difficult to remove dirt or dust, clean them by using a cloth with a mild detergent. Use only a lens cleaning tissue paper (available at your local camera store) for lens cleaning.

- Connect this unit to a 12V DC, CLASS 2 Power supply only.

- After using the camera, turn off the power of the camera control unit and put the lens cap on the camera head.

- Connect together only the camera head and camera control unit which are packed in the same box (a pair). Otherwise it may cause a improper operation.

- All necessary procedures, with regards to installation of this product, should be made by qualified Service Personnel or System Installers.

Cautions:

1. Connecting or disconnecting camera cable to/from the camera control unit or camera must be done after turning OFF the Power of the camera control unit.
2. Use GP-CA63 (13ft/4m) camera cable only to connect it between the camera head and camera control unit. Do not extend the cable.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

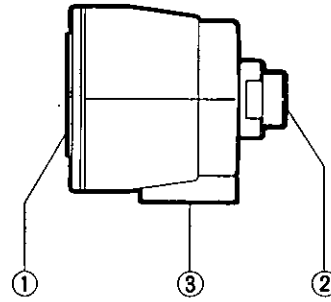## Camera Head

1. **Lens Mount**

   Used this to attach the special C-mount lens.

2. **Camera Cable Connector**

   This 20-pin connector is used to connect the optional camera cable GP-CA63 to the camera control unit.
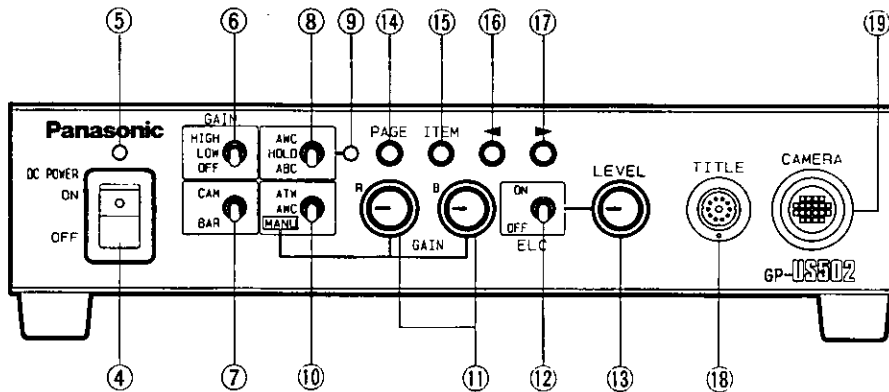
3. **Camera Mounting Screw Hole**

   This threaded hole (1/4" - 20) is located on the bottom of the camera head and is used to mount the camera onto a mounting bracket or tripod.

Camera Control Unit

[Front Panel]

4. **Power ON/OFF Switch (DC POWER ON/OFF)**

   This switch turns ON and OFF the power of this unit and power supply for camera head.

5. **Power Indicator (POWER)**

   This indicator lights up red when the power switch (4) is turned ON.

6. **Automatic/Manual Gain Selection Switch (GAIN OFF/LOW/HIGH)**

   This switch is used to select the gain of video amplifier as follows.

   The mode can be selected in the SETUP MENU.
   Refer to page 10.

   Note : When set the gamma mode in the SCENE FILE MENU to ON position, the AGC mode is not available.

MODE	POSITION OF SW	GAIN
AGC	HIGH	Maximum +18dB
	LOW	Maximum + 9dB
	OFF	0dB
MANU	HIGH	+18dB (Fixed)
	LOW	+9dB (Fixed)
	OFF	0dB

7. **Camera/Color Bar Selection Switch (CAM/BAR)**

   This switch is used to select either the video signal or the full color bar signal which is output from the Video Output Connector (VIDEO), YC (S-VIDEO) Output Connector or RGB (D-SUB, 9-pin) Output Connector.

   CAM : The video signal produced by the camera is output.

   BAR : The full color bar signal is output.

Set the switch to BAR position when making video monitor adjustments and recording the color bar signal.

8. Auto White Balance/Auto Black Balance Set Switch (AWC/HOLD/ABC)

This switch sets the white balance and black balance automatically as follows.

AWC : This position is used for setting the white balance when the White Balance Selection Switch (ATW/AWC/MANU)(10) is set to the AWC position. Aim the camera at white chart and press this switch to upwards to set the white balance.

The Auto Warning Indicator starts blinking to indicate that the white balance is being set.

When the white balance setting is completed, the blinking stops.

When the Auto Warning Indicator (9) lights continuously, check the position of White Balance Selection Switch (ATW/AWC/MANU) (10) is set to AWC position, and carry out the auto white balance setting procedure.

HOLD : In this position the white and black balances set at the AWC or ABC position can be fixed in a memory.

ABC : This position is used for setting the black balance when the Black Balance Control (BLACK BAL) in the SETUP MENU is set to ABC position. Close the lens iris or cap on the lens and press this switch to downwards to set the black balance. The Auto Warning Indicator starts blinking to indicate that the black balance is being set.

When the black balance setting is completed the blinking stops.

When the Auto Warning Indicator (9) lights continuously, check the mode of Black Balance in the SETUP menu is set to ABC mode, and carry out the auto black balance setting procedure.

9. Auto Warning Indicator

This indicator blinks while the white balance or black balance is being automatically set. This indicator lights continuously when the white balance or black balance is set improperly. In this case, carry out the auto white balance or black balance setting procedure.

10. White Balance Selection Switch (ATW/AWC/MANU)

This switch selects the white balance mode as follows.

ATW : In this Auto-Tracing White Balance(ATW) position, the color temperature of the illuminant is continuously monitored and the white balance of the camera is automatically set.

AWC : This switch is used to set the Auto White Balance (AWC) together with Auto White Balance/ Auto Black Balance Set Switch (AWC/HOLD/ ABC) (8).

MANU : The white balance can be adjusted manually by the Red Gain (R GAIN) and Blue Gain Controls (B GAIN) (11).

Notes :
1. The mode of White Balance can also be checked in the SETUP MENU.
2. When set the gamma mode in the SCENE FILE MENU to ON position, the ATW mode is not available.

11. Red and Blue Gain Controls (R GAIN/B GAIN)

These controls are used to manually adjust the white balance.

These controls only work when the White Balance Selection Switch (ATW/AWC/MANU) (10) is set to MANU position.

Turn the controls clockwise to increase the red and blue signal levels, and counterclockwise to decrease these levels.

12. Electronic Light Control ON/OFF Switch (ELC ON/OFF)

This switch selects the Electronic Light Control as follows.

ON : In this position the Electronic Light Control (ELC) mode is selected and the Electronic Shutter Speed (SHUTTER) mode in the SETUP MENU is interrupted.

OFF : In this position the Shutter Speed Mode(SHUTTER) in the SETUP MENU is selected and Electronic Light Control (ELC) mode is interrupted.

Notes :
1. The function of this switch can be confirmed in the SETUP MENU.
2. When select the gamma off mode in the SCENE FILE menu, ELC and AGC modes are interrupted.

13. Electronic Shutter Speed Control (LEVEL)

This control is used to set the target value of Electronic Shutter Speed between 1/60 and 1/10,000 sec together with ELC ON/OFF Switch (12).

14. Page Button (PAGE)

This button is used to display the SETUP MENU by pressing it for more than 2 seconds and to change the mode in the SETUP MENU.

15. Item Button (ITEM)

This button is used to move the cursor(Blinking position) in the down direction in the SETUP MENU.

16. Left Button (<)

This button is used to move the cursor(Blinking position) in the left direction in the SETUP MENU.

17. Right Button (>)

This button is used to move the cursor(Blinking position) in the right direction in the SETUP MENU.

18. Title Input Connector (TITLE)

This connector is used to connect the Optional Character Generators WJ-KB15 or WJ-KB50.

Note :

The Black & White characters of the generator are mixed with the video signal and are obtained at VIDEO OUT, S-VIDEO (Y/C) OUT and RGB/SYNC OUT connectors.

No colorization of the character is available.

19. Camera Cable Connector (CAMERA)

This 20-pin connector is used for connection with the camera head via the optional camera cable GP-CA63. Fasten the camera cable to this connector firmly.
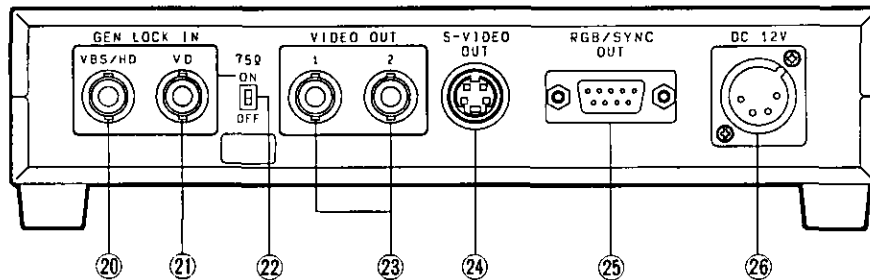
If not, noise may be appeared.

Camera Head Side	Pin No.	Camera Control Unit Side
-9V Input	1	-9V Output
+5V Input	2	+5V Output
+15V Input	3	+15V Output
G Signal Output	4	G Signal Input
V2 Input	5	V2 Output
R Signal Output	6	R Signal Input
V4 Input	7	V4 Output
+25V Input	8	+25V Output
V1 Input	9	V1 Output
V3 Input	10	V3 Output
RGB Ground(GND)	11	RGB Ground(GND)
SHT(R) Input	12	SHT(R) Output
N. C.	13	N. C.
B Signal Output	14	B Signal Input
Ground(GND)	15	Ground(GND)
N. C.	16	N. C.
SHT(G) Input	17	SHT(G) Output
SHT(B) Input	18	SHT(B) Output
H2 Input	19	H2 Output
RG Input	20	RG Output

Caution :

Connecting or disconnecting the camera cable must be done after turning OFF the Power of Camera Control Unit.

[Rear Panel]

20. Gen-lock Signal Input Connector (BNC) (VBS/HD)

The color video signal of the camera is automatically synchronized to the gen-lock signal (Composite Signal, Black Burst Signal or Video Sync) when either signal is supplied to this connector.

The gen-lock signal is used for system reference.

Caution :

If the gen-lock signal is jittery (as in the case of a VCR playback picture), the camera can not be synchronized properly.

(External HD and VD Mode)

The horizontal and vertical pulse of the color video signal is synchronized to the external HD fed to this connector and external VD fed to the VD Input Connector (21).

21. Gen-Lock Signal Input Connector (BNC) (VD)

Supply the external vertical drive (VD) pulse to this connector.

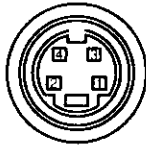## 22. Gen-Lock Video 75 ohms Termination On/Off Switch (75 ohms ON/OFF)

When looping through the gen-lock video signal with BNC "T" Adaptor, set this switch to OFF position. When not looping through, set this switch to ON position.

23. Video Output Connector (BNC) (VIDEO OUT 1,2)

A 1.0Vp-p/75 ohms composite video signal is provided at this connector.

24. S-Video Output Connector (S-VIDEO OUT)

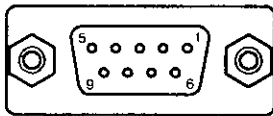The luminance(Y) and chrominance(C) signals for S-VHS VCR or monitor are provided at this connector.

S-VIDEO OUT (Mini-DIN,4-pin)

Pin No.	Description
1	Y Ground
2	C Ground
3	Y Signal Output(0.714Vp-p(Y level)/75 ohms)
4	C Signal Output(0.286Vp-p(Burst Level)/75 ohms)

25. RGB/SYNC Output Connector (D-SUB,9-pin) (RGB/SYNC OUT)

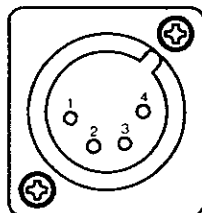The red, green, blue; sync and composite video signals are provided at this connector.

RGB/SYNC OUT (D-SUB,9-pin)

Pin No.	Description
1	Ground(GND)
2	Ground(GND)
3	Red(R) Output(0.7Vp-p/75 ohms)
4	Green(G) Output(0.7Vp-p/75 ohms)
5	Blue(B) Output(0.7Vp-p/75 ohms)
6	Composite Video Output(1.0Vp-p/75 ohms)
7	Sync(SYNC)Output(4.0Vp-p or 0.3Vp-p/75 ohms)
8	Ground(GND)
9	Ground(GND)

26. 12V DC Input Connector(XLR,4-pin)(DC 12V)

This connector accepts an external DC power source supplying nominal power of 12V DC, 0.7A.

Pin No	Description
1	Ground(GND)
2	Not Used
3	Not Used
4	+12V DC IN

DC 12V
(XLR,4-pin)

CAUTION :

CONNECT THIS TO A 12V DC CLASS 2 POWER SUPPLY ONLY.

Caution :

To prevent fire or shock hazard, the UL listed wire VW-1, Style 1007 should be used for the cable for 12V DC Input connector.

INSTALLATION

Caution :

Keep the Power ON/OFF Switch (4) of camera control unit in the OFF position throughout the installation.

Lens Mount

1. Remove the front cap of the camera head and confirm that the surface of the optical filter of the camera head is clean.
   If the surface of the optical filter is dirty or dusts, clean it up with a blower brush which is for film camera lenses (available at your local camera store).

2. Mount the C-Mount Lens by turning it clockwise onto the lens mount of the camera head.
   Caution :
   - Do not use any lens which has more than 1/8" (3.5mm) of protrusion for lens mounting.
   - Do not open the lens iris greater than the F2.8 stop.

Special C-mount: Less than 1/8"
                    (Less than 3.5 mm)

CONNECTIONS

Cautions :

1. Keep the Power ON/OFF Switch (4) in the OFF position until all connections have been properly made.
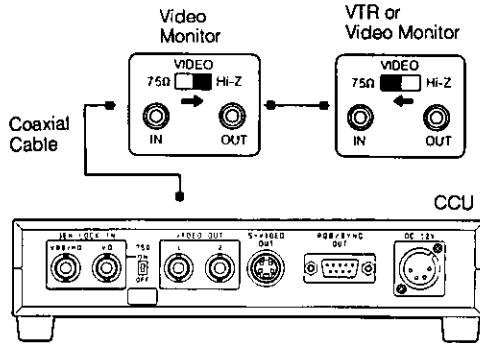2. Connect the camera head and camera control unit which are packed in the same box (a pair) otherwise it would be cause a improper operation.

Internal Sync Operation

1. Connect the camera cable between the camera head and the camera control unit.
2. Connect the coaxial cable with BNC connectors between the Video Output Connector (23) of the camera control unit and the video monitor or VCR

3. Connect the power cable with XLR 4-pin connector between the DC 12V Input Connector (26) and the 12V DC power supply unit (obtained locally).

- Calculation method of maximum cable length between camera control unit and power supply unit is as follows.

$$10.5V\ DC < VA - (R \times 0.42 \times L) < 16V\ DC$$

L : Cable length(meter)
R : Resistance of copper wire(ohms/meter)
VA : DC output voltage of power supply unit

L standard $= VA - 12 / 0.42 \times R$ (meter)

L minimum $= VA - 16 / 0.42 \times R$ (meter)

L maximum $= VA - 10.5 / 0.42 \times R$ (meter)

CAUTION :

CONNECT THIS TO A 12V DC CLASS 2 POWER SUPPLY ONLY.

Caution :

To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used for the cable for 12V DC Input connector.

Gen-lock Operation

1. Connect the camera cable between the camera head and the camera control unit.
2. Connect the coaxial cable with BNC connectors between the Video Output Connector (23) of the camera control unit and the Video Input Connector of Special Effects Generator (SEG), and between the VBS/HD Input Connector (20) of the camera control unit.

3. Connect the power cable with XLR 4-pin connector between the DC 12V Input Connector (26) and the 12V DC power supply unit (obtained locally).
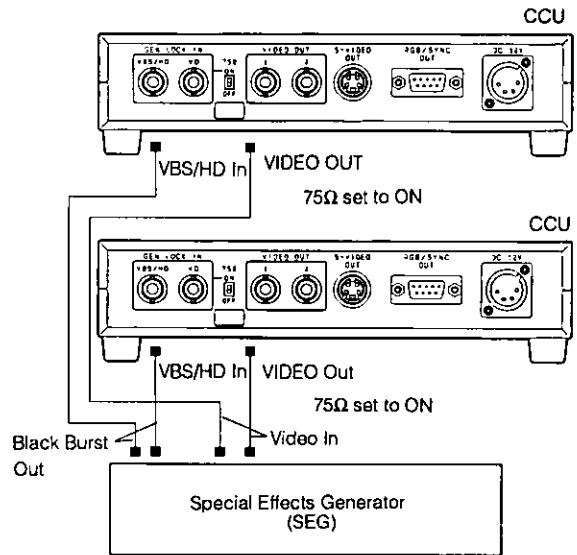
CAUTION :

CONNECT THIS TO A 12V DC CLASS 2 POWER SUPPLY ONLY.

Caution :

To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used as for the cable for 12V DC Input Connector.

SETUP PROCEDURE

1. SETUP MENU

This camera has an on-screen user setup menu which enables the user to change various operational modes of the camera.

This set up menu is structured as a tree-type menu as shown in Fig. 1.

This menu is described in detail in the following section 3. SETUP MENU DESCRIPTION.

Note :

1. SETUP menu is output from Video Output Connector and S-Video Output Connector.

Fig.1.

All setup operations are performed by the following buttons on the front panel as show in Fig.2.

Page Button (PAGE) :

The Setup Menu is displayed by this button.
The Menu is changed by this button.

Item Button (ITEM) :

The cursor moves downwards.

Left Button (<)

The cursor moves left.
The mode is selected by this button.
The adjustment of certain levels can be made by this button.

Right Button(>)

The cursor moves right.
The mode is selected by this button.
The adjustment of certain levels can be made by this button.

Fig.2.

-8-

2. SETUP ORDER

When the camera setup is required, proceed according to the following steps.

(1) Display the "SETUP" menu.
   (Refer to page 8 for description and page 11 for procedure.)

(2) Camera Identification Setting (CAMERA ID)
   (Refer to page 9 for description and page 12 for procedure.)

(3) Electronic Light Control (ELC)
   (Refer to page 9 for description and page 14 for procedure.)

(4) Shutter Speed Setting (SHUTTER)
   (Refer to page 10 for description and page 15 for procedure.)

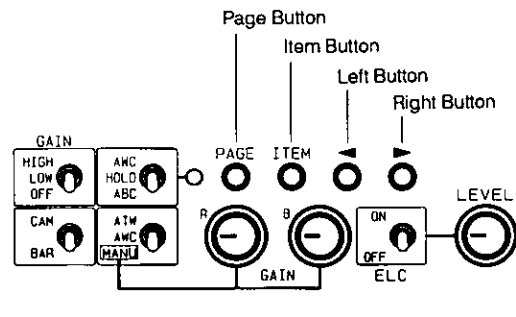(5) Gain Control Setting (GAIN)
   (Refer to page 10 for description and page 16 for procedure.)

(6) Synchronization Setting (SYNC)
   (Refer to page 10 for description and page 16 for procedure.)

(7) White Balance Mode Check (WHITE BAL)
   (Refer to page 10 for description and page 19 for procedure.)

(8) Black Balance Setting (BLACK BAL)
   (Refer to page 11 for description and page 19 for procedure.)

(9) Scene File Setting (SCENE FILE)
   (Refer to page 11 for description and page 20 for procedure.)

3. SETUP MENU DESCRIPTION

3-1. Camera Identification (CAMERA ID)

Up to 16 of alphanumerical characters for camera identification CAMERA ID can be edited and displayed anywhere on the monitor screen.

Fig.3.

The CAMERA ID display ON or OFF mode can be chosen by the primary SETUP MENU and the editing of displayed characters can be performed in the second level menu.

Fig.4.

Note : Refer to Page 11 (SETUP OPERATION) for the details.

3-2. Electronic Light Control (ELC) Settings

With conventional cameras, strong background lighting such as a spotlight, interferes with the clarity of important scene objects, making them appear dark.This camera is equipped with a Electronic Light Control mode to over comes this problem.

The ELC detection area and AGC detection area mode should be selected by Electronic Light Control Switch (ELC ON/OFF) (12) on the front panel.

The setting of ELC detection control and AGC detection are available in the second level menu.

Fig.5.

Note : When set the ELC ON/OFF switch (12) on the front panel to ON position, ELC detection area control is selected, when set to OFF position, AGC detection area control is selected.

3-3. Shutter Speed Setting(SHUTTER)

There are 3 types of electronic shutter speed mode available.

AUTO : Target Value of Shutter Speed can be manually adjusted by using Electronic Shutter Speed Control (LEVEL) (13) when the ELC ON/OFF switch (12) is set to ON position and "---" is displayed in the SETUP MENU.

STEP : The Shutter speed can be selected between 1/60 second (OFF) and 1/100 - 1/10,000 second.

MANU : The Shutter Speed can be selected line by line between 1/525 and 254/525.

```
** SET UP **

CAMERA ID      *OFF
ELC            *OFF
SHUTTER         OFF   ⬅
GAIN           AUTO
SYNC            INT
WHITE BAL       AWC
BLACK BAL       ABC
SCENE FILE     *USER

END
```
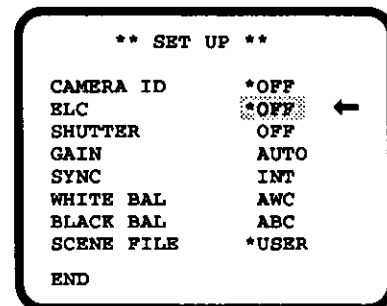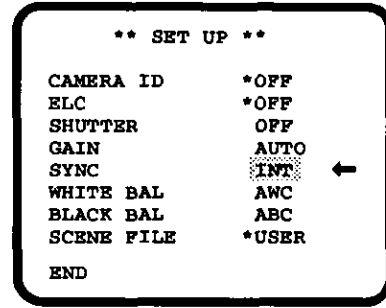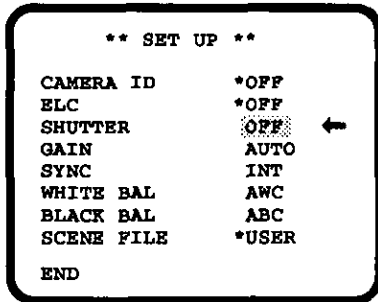
Fig.6.

3-4. Gain Control Setting (GAIN)

The gain control mode, either Automatic Gain Control (AGC) or Manual Gain Control, can be selected by this menu. Also, the level may be set by the Automatic/Manual Gain Selection Switch (GAIN OFF/LOW/HIGH) (6) on the front panel.
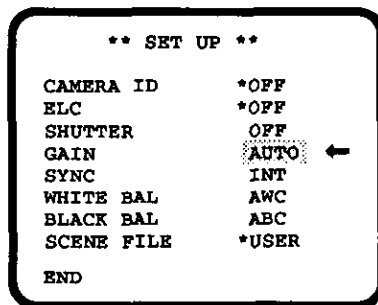
```
** SET UP **

CAMERA ID      *OFF
ELC            *OFF
SHUTTER         OFF
GAIN           AUTO  ⬅
SYNC            INT
WHITE BAL       AWC
BLACK BAL       ABC
SCENE FILE     *USER

END
```

Fig.7.

3-5. Synchronization Setting (SYNC)

This camera accepts a composite color video signal (VBS), black burst signal (BBS) or composite B/W (Black and White) signal for the Gen-Lock operation. The SYNC mode is automatically set according to gen-lock signal which is supplied to the VBS/HD Input Connector.

This camera also accepts the vertical drive pulse (VD) and horizontal drive pulse (HD) or vertical drive pulse (VD) only.

```
** SET UP **

CAMERA ID      *OFF
ELC            *OFF
SHUTTER         OFF
GAIN           AUTO
SYNC            INT   ⬅
WHITE BAL       AWC
BLACK BAL       ABC
SCENE FILE     *USER

END
```

Fig.8.

3-6. White Balance Mode Check (WHITE BAL)

A color characteristic of illumination is called color temperature and it is measured in units of Kelvin (˙K).

A higher color temperature is considered bluish while a lower color temperature is more reddish.

A camera shooting a scene with high color temperature illumination produces a bluish picture. Likewise, it will produce a reddish picture with lower color temperature illumination.

Therefore, in order for the camera to reproduce a scene accurately, it needs to be white balanced before shooting.

Once the white balance has been correctly set, the setting maintained in a memory.

This setting will not be lost even if the camera control unit is turned off. However, for best results, it is recommended that the white balance adjustment be carried out if the camera has not been for a long period of time.

The 3 mode of white balance control (Auto-Tracing White Balance (ATW)), one-touche Automatic White Balance (AWC) and manual (MANU) can be selected by ATW/AWC/MANU˙ selection Switch on the front panel.

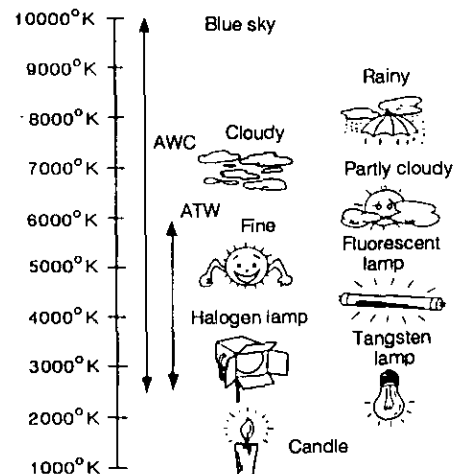This Menu shows the mode of white balance control selected for reference.

Fig.9.

3.7. Black Balance Setting (BLACK BAL)

Correct setting of the black balance is required for producing correct colors, especially in low-light situations.

Once the black balance has been correctly set, the setting maintained in a memory.

This setting will not be lost even if the camera control unit is turned off. However, for best results, it is recommended that the black balance adjustment be carried out if the camera has not been for a long period of time.

The black balance control mode can be selected between auto black balance control (ABC) on the front panel and manual control (MANU) by this menu.
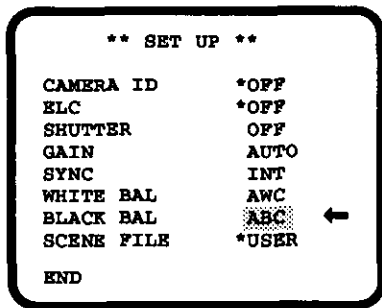
```
**  SET  UP  **

CAMERA  ID      *OFF
ELC             *OFF
SHUTTER         OFF
GAIN            AUTO
SYNC            INT
WHITE  BAL      AWC
BLACK  BAL      ABC    ←
SCENE  FILE     *USER

END
```

Fig.10.

3-8. Scene File Setting (SCENE FILE)

This menu allows for the customer to adjust and set the video signal of camera to meet the customer's requirement.

The 7 adjustments are available by this menu are as follows.

Gamma Correction ON/OFF (GAMMA), RGB sync level (RGB SYNC), Field or Frame Memory Selection (FLD/FRM), Chrominance Level Control (CHROMA GAIN), Aperture Level Control (AP GAIN), Total Pedestal level Control (TOTAL-PED) and Chroma Phase Control(HUE).

```
**  SET  UP  **

CAMERA  ID      *OFF
ELC             *OFF
SHUTTER         OFF
GAIN            AUTO
SYNC            INT
WHITE  BAL      AWC
BLACK  BAL      ABC
SCENE  FILE     *USER  ←

END
```

Fig.11.

4. SETUP OPERATION

Before entering the setup menu, it is possible to reset the camera's setup condition to the factory setup values by use of the All RESET operation described bellow.

(1) Confirm that the normal camera picture is displayed and no set up menu is displayed.

(2) While pressing both the Left Button (<) and Right Button (>) together, press the Page Button (PAGE) for more than 2 seconds in order to reset all adjustments and selections to the factory setup condition.

Fig.12.

Note :

While the ALL RESET mode is being processed, picture may be disturbed.

This phenomenon is normal and indicates that the ALL RESET is displayed in the upper left corner of the screen and the Auto Warning indicator lights red.

The Auto Warning Indicator stays lit until AWC or ABC control is performed.

4-1. Entering Setup Menu

• By pressing the Page Button (PAGE) for more than 2 seconds, the "SETUP" menu is displayed on the monitor screen as shown in Fig.13.

```
**  SET  UP  **

CAMERA  ID      *OFF   ←
ELC             *OFF
SHUTTER         OFF
GAIN            AUTO
SYNC            INT
WHITE  BAL      AWC
BLACK  BAL      ABC
SCENE  FILE     *USER

END
```

Fig.13.

- By observing this menu, you can check current camera setup conditions.
- After confirming current conditions, and if further resetting of any item is not required, move the cursor (Blinking Position) to the "END" position on the left bottom corner by using the Item Button (ITEM) and press the Page Button (PAGE) to return to the normal camera picture.


```
     ** SET UP **

CAMERA ID      *OFF
ELC            *OFF
SHUTTER         OFF
GAIN           AUTO
SYNC            INT
WHITE BAL       AWC
BLACK BAL       ABC
SCENE FILE     *USER

END                  ←
```

Fig.14.

Note :

1. Whenever completing the setup menu, always move the cursor to the "END" position and press the Page Button (PAGE) and confirm that the "SETUP MENU" disappears from the screen in order to ensure the latest data is stored in the memory.

   In addition, do not connect or disconnect the Gen-lock input signal during setting the "SETUP MENU" as this could cause a reset of set data.
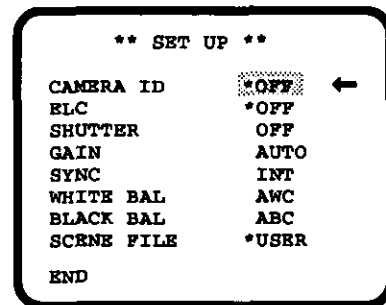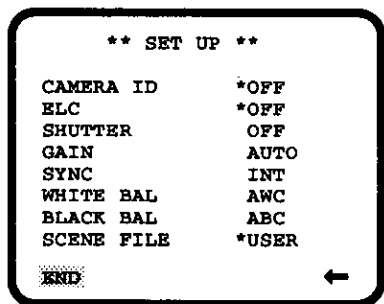
Important Notice :

When the cursor is moved to the next position(next item) after changing the data (for example, from ON → OFF), the latest data is written in the memory (EEPROM:Electronic Erasable Programmable Read Only Memory) and it remains until the another data write is made. Turning the camera control unit power switch OFF and then ON will not alter this data.

4-2 Camera Identification Setting(CAMERA ID)

4-2-1. How to display the submenu of Camera Identification (CAMERA ID)

- When the camera identification character need editing, perform the following steps by using the submenu of Camera Identification (CAMERA ID).
- Move the cursor to the "CAMERA ID" position and press the Page Button (PAGE) to display the Character Editing menu as shown in Fig.15.

Character Cursor

```
ABCDEFGHIJKLM
NOPQRSTUVWXYZ          — Character Area
1234567890
().,'":;&#!?=
+-*/%$

← →  SPACE             — Command
*POSI RET END RESET
```

Editing Cursor ——————— — Editing Area

Fig.15.

- The character cursor on the letter "A" and editing cursor on the left bottom of the editing area starts blinking.
- Move the character cursor to the desired letter by using the Item Button (ITEM), the Left Button (<) or the Right Button (>) and press the Page Button (PAGE). The selected letter is written on the editing cursor. (The blinking Editing Cursor moves to right automatically at this moment.)
- Repeat this procedure until the character editing has been completed.


```
→  ABCDEFGHIJKLM
   NOPQRSTUVWXYZ
   1234567890
   ().,'":;&#!?=
   +-*/%$

   ← →  SPACE
   *POSI RET END RESET

   GP-US502........
```

Fig.16.

4-2-2. How to move the editing position to correct an individual character

- When the position of the editing cursor is to be shifted on the editing area, move the character cursor to the "←" or "→" position by using the Item Button (ITEM), the Left Button (<) or the Right Button (>) to the desired character and press the Page Button (PAGE).

```
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
1234567890
().,'":;&#!?=
+-*/%$

←  SPACE
*POSI RET END RESET

GP-US502........
```

Fig.17.

4-2-3. How to make a blank space in the editing characters.

• When a blank space is needed, move the character cursor to the "SPACE" position by using the Item Button (ITEM), the Left Button (<) or the Right Button (>) and press press the Page Button (PAGE). The blank space is inserted into the cursor position on the editing area.
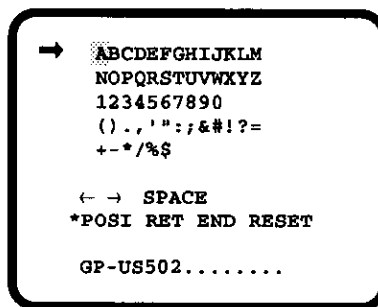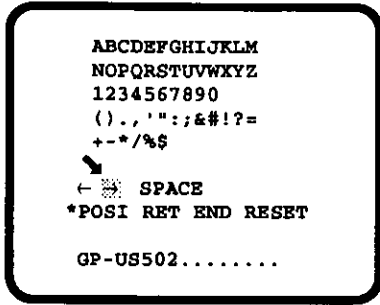


```
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
1234567890
().,'":;&#!?=
+-*/%$

←  →  SPACE  ←
*POSI RET END RESET

GP-US502........
```
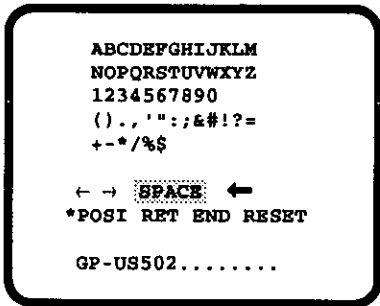
Fig.18.

4-2-4. How to erase the all edited characters in the editing area.

• When all characters in the editing area are to be erased, move the character cursor to "RESET" position by using the·Item Button (ITEM), the Left Button (<) or the Right Button (>) and press the Page Button (PAGE).


```
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
1234567890
().,'":;&#!?=
+-*/%$

←  →  SPACE
*POSI RET END RESET  ←

GP-US502........
```

Fig.19.

4-2-5. How to change the Camera ID display position on the monitor screen.

• After completing the editing of the Camera Identification characters, the display position of the Camera Identification characters on the monitor screen can be set as follows.

• Move the character cursor to the " "POSI" position by using the Item Button (ITEM), the Left Button (<) or the Right Button (>) and press the Page Button (PAGE) to display the Camera Identification (CAMERA ID) position menu as shown in Fig.20 and the characters of the Camera ID starts blinking to identify the positioning menu for the operator.


```
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
1234567890
().,'":;&#!?=
+-*/%$

←  →  SPACE
→  *POSI RET END RESET

GP-US502........
```

Fig.20.


```
GP-US502
```

Fig.21.

• The display position of the Camera ID on the monitor screen can be changed anywhere on the monitor screen by using the Item Button (ITEM), the Left Button (<) and the Right Button (>).

Note:
1. When moving the Camera ID horizontally, the Camera ID stops moving at the edge of the monitor screen.
2. The Camera ID moves faster when the Item Button (ITEM), the Left Button (<) or the Right Button (>) is kept pressed for more than 0.5 seconds.

4-2-6. How to display the Camera ID on the monitor screen.

- After completing the display position of Camera ID on the monitor screen, press the Page Button (PAGE).
- Move the character cursor to "RET" position by using the Right Button (>) and press the Page Button (PAGE) to display SETUP Menu as shown in Fig.13.
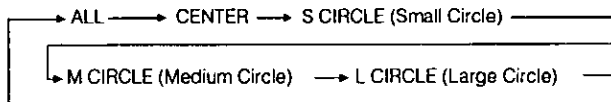- Change the CAMERA ID to " "ON" mode by using the Left Button (<) or the Right Button (>) to display the CAMERA ID on the monitor screen.

4-3. Electronic Light Control (ELC)

- Display the SETUP menu as shown in Fig.13.
- Move the cursor to the "ELC" position by using the Item Button (ITEM) and select either the " "ON" for ELC detection area control or ""OFF" for AGC detection area control by using the Electronic light Control ON/OFF Switch (ELC ON/OFF) (12) on the front panel.
- The following 5 detection areas for ELC detection and AGC detection control are available.

```
┌──► ALL ──────► CENTER ──► S CIRCLE (Small Circle) ──────┐
│                                                          │
└► M CIRCLE (Medium Circle)  ──► L CIRCLE (Large Circle) ──┘
```

4-3-1. ELC detection control area setting (ELC CONT)

- Display the SETUP Menu as shown in Fig.13.
- Move the cursor to the "ELC" position by using the Item Button (ITEM) and set the Electronic Light Control ON/OFF Switch (ELC ON/OFF) (12) on the front panel to "ON" position to select the ""ON" mode.
- Press the Page Button(PAGE) to set the detection area and the ELC detection control area (ELC CONT) is displayed as shown in Fig.22.

```
     ** ELC CONT **

AREA           ALL  ⬅

PEAK/AVE       ....I....
               P        A



RET   END
```

Fig.22.

- Move the cursor to the "AREA" position by using the Item Button (ITEM). The cursor "ALL" starts blinking.
- Set the desired detection area by using the Left Button (<) or the Right Button (>).

```
     ** ELC CONT **

AREA           ALL

PEAK/AVE       ....I....
               P        A

                        ↖

RET   END
```

Fig.23.

- Move the cursor to "PEAK/AVE" (Peak/Average) position by using the Item Button (ITEM). The cursor "I" starts blinking.
- Set the detection mode by using the Left Button (<) or the Right Button (>).
- By setting to A (Average) side position, the average value is detected.
- By setting to P (Peak) side position, the peak value is detected.

4-3-2. AGC detection control area setting (AGC CONT)

- Display the SETUP Menu as shown in Fig.13.
- Move the cursor to the "ELC" position by using the Item Button (ITEM) and set the Electronic Light Control ON/OFF Switch (ELC ON/OFF) (12) on the front panel to "OFF" position to select the ""OFF" mode.
- The AGC detection control area (AGC CONT) is displayed as shown in Fig.24.

```
     ** AGC CONT **

AREA           ALL  ⬅

PEAK/AVE       ....I....
               P        A



RET   END
```
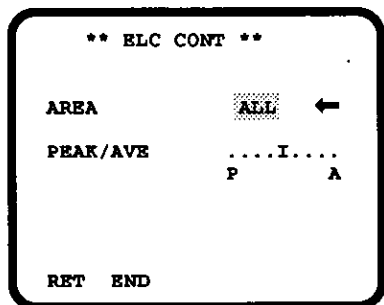
Fig.24.

- Move the cursor to the "AREA" position by using the Item Button (ITEM). The cursor "ALL" starts blinking.
- Set the desired detection area by using the Left Button (<) or the Right Button (>).
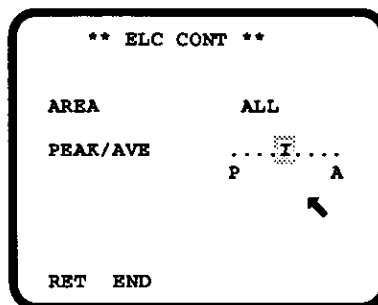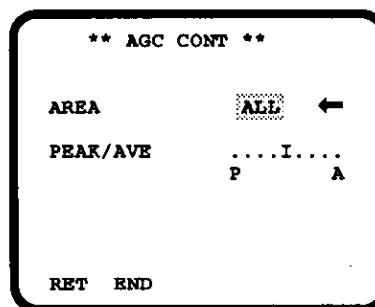
```
** AGC CONT **


AREA          ALL

PEAK/AVE      ....I....
              P       A
                     ↖


RET  END
```
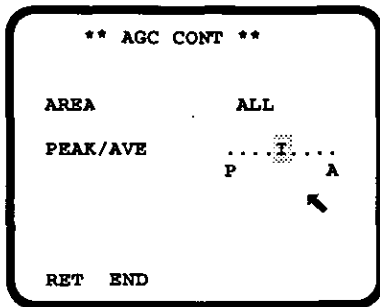
Fig.25.

- Move the cursor to 'PEAK/AVE' (Peak/Average) position by using the Item Button (ITEM). The cursor "I" starts blinking.
- Set the detection mode by using the Left Button (<) or the Right Button (>).
- By setting to A (Average) side position, the average value is detected.
- By setting to P (Peak) side position, the paek value is detected.

4-4. Electronic Shutter Speed Setting(SHUTTER)

- Display the SETUP menu as shown in Fig.26.

```
** SET UP **

CAMERA ID      *OFF
ELC            *OFF
SHUTTER         OFF     ←
GAIN           AUTO
SYNC           INT
WHITE BAL      AWC
BLACK BAL      ABC
SCENE FILE     *USER

END
```
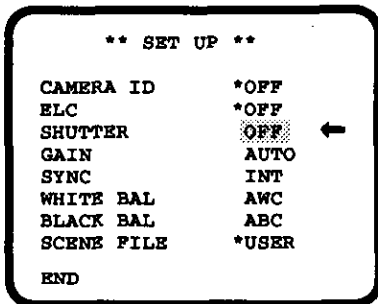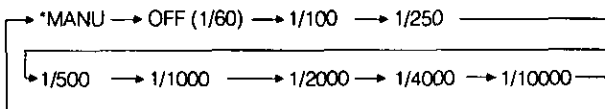
Fig.26.

- Move the cursor to 'SHUTTER' position by using the Item Button(ITEM) and select either the "*MANU" for Synchronized Scan mode or 'OFF' for Step Setting mode by using the Left Button (<) or the Right Button (>).
- The following electronic shutter speeds and modes by this menu is available.

```
→*MANU → OFF (1/60) → 1/100 → 1/250
↳1/500 → 1/1000 → 1/2000 → 1/4000 → 1/10000
```

4-4-1. Electronic Shutter Speed Setting(Step)

- Display the SETUP menu as shown in Fig.26.
- Move the cursor to 'SHUTTER' position by using the Item Button (ITEM) and select the desired shutter speed by using the Left Button (<) or the Right Button (>).

4-4-2. Manual Shutter Speed Setting(MANU)

- Display the SETUP menu as shown in Fig.27.

```
** SET UP **

CAMERA ID      *OFF
ELC            *OFF
SHUTTER        *MANU    ←
GAIN           AUTO
SYNC           INT
WHITE BAL      AWC
BLACK BAL      ABC
SCENE FILE     *USER

END
```

Fig.27.

- Move the cursor to 'SHUTTER' position by using the Item Button (ITEM) and select the "*MANU" mode by using the Left Button (<) or the Right Button (>).
- Press the Page Button (PAGE) to select the manual electronic shutter speed. The '254/525' starts blinking.
- Set the desired shutter speed by using the Left Button (<) or the Right Button (>).
- The adjustable range is 1/525 - 254/525 lines.

```
** SHUTTER **

MANU SET        251/525
                      ↖



RET END
```

Fig.28.

Note :

When the Electronic Light Control ON(ELC ON) is selected, both the Step Electronic Shutter Speed and the Manual Electronic Shutter Speed Settings are not available.

4-4-3. Auto Shutter Speed Setting(AUTO)

Note : When the Electronic Light Control ON (ELC CONT) is selected by the Electronic Light Control (ELC) mode, the Auto shutter Speed Setting is available as follows.

-15-

- Confirm that "ELC "ON" is selected by the "ELC" mode menu and "---" is displayed on the "SHUTTER" mode as shown in Fig.29.

```
        ** SET UP **

   CAMERA ID      *OFF
   ELC             ON   ←
   SHUTTER        ---
   GAIN           AUTO
   SYNC           INT
   WHITE BAL      AWC
   BLACK BAL      ABC
   SCENE FILE    *USER

   END
```

Fig.29.

- Adjust the target value for Auto Shutter Speed by the Electronic Shutter Speed control (LEVEL) (13) on the front panel.
- The target value can be adjusted between 1/60sec and 1/10,000sec.
  However, this value is not displayed in the SETUP menu or on the monitor screen.

4-5. Gain Control Setting(GAIN)

- Display the SETUP menu as shown in Fig.30.

```
        ** SET UP **

   CAMERA ID      *OFF
   ELC            *OFF
   SHUTTER         OFF
   GAIN           AUTO  ←
   SYNC           INT
   WHITE BAL      AWC
   BLACK BAL      ABC
   SCENE FILE    *USER

   END
```
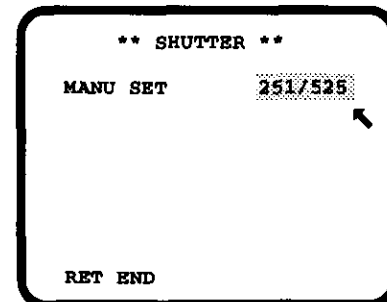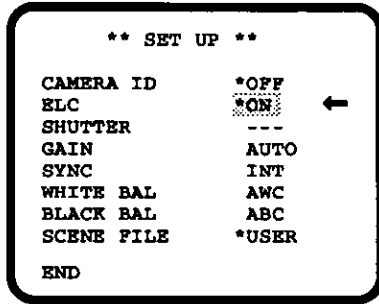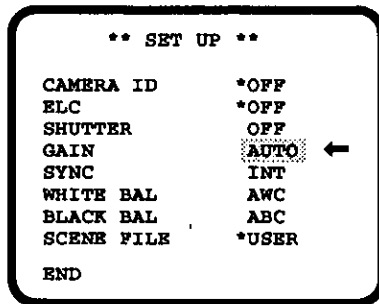
Fig.30

- Move the cursor to "GAIN" position by using the Item Button (ITEM) and select either the "AUTO" or "MANU" by using the Left Button (<) or the Right Button (>).
- This menu is used to confirm the mode of gain control.

4-5-1. Automatic Gain Control(AGC)

- When the "AUTO" mode is selected, the gain of video amplifier is changed by position of Automatic/Manual Gain Selection Switch (GAIN OFF/LOW/HIGH) (6) on the front panel as follows.

Position	Gain
HIGH	Maximum +18dB
LOW	Maximum +9dB
OFF	0dB

4-5-2. Manual Gain Control(MANU)

- When the "MANU" mode is selected, the gain of video amplifier is changed by position of Automatic/Manual Gain Selection Switch (GAIN OFF/LOW/HIGH) (6) on the front panel as follows.

Position	Gain
HIGH	+18dB (Fixed)
LOW	+9dB (Fixed)
OFF	0dB

4-6. Synchronization Setting(SYNC)

- Display the SETUP menu as shown in Fig.31.

```
        ** SET UP **

   CAMERA ID      *OFF
   ELC            *OFF
   SHUTTER         OFF
   GAIN           AUTO
   SYNC            INT   ←
   WHITE BAL      AWC
   BLACK BAL      ABC
   SCENE FILE    *USER

   END
```

Fig.31.

- Move the cursor to "SYNC" position by using the Item Button (ITEM).

Important Notice :
1. The priority of sync mode is as follows.
   1. Color Composite Video signal (VBS)
   2. B/W Composite Video Signal (VS)
   3. HD/VD Signal
   4. VD Signal
   5. Internal Sync (INT)
2. When the internal sync mode is to be used, No gen-lock signal should be supplied to the Gen-lock Input Connector on the rear panel.
3. When the VBS or VS gen-lock mode is to be used, supply the gen-lock input signal to Gen-lock Input Connector on the rear panel (20).
4. The VBS gen-lock mode has a second level menu of the horizontal phase (H PHASE) and subcarrier phase (SC COARSE, SC FINE) adjustments as shown in Fig.33.

-16-

When the cable length of video output signal or gen-lock input signal is changed, the horizontal and sub-carrier phase must be readjusted.

5. The VS gen-lock mode has a second level menu of horizontal phase (H PHASE) as shown in Fig.35. When the cable length of video output signal or gen-lock input signal is changed, the horizontal phase must be readjusted.

6. When the HD/VD or VD pulse is to be used, supply them to the VBS/HD connector (20) and VD (21) connector on the rear panel.

4-6-1. VBS Gen-lock Mode (EXT(VBS))

Horizontal Phase Adjustment (H PHASE)

- Confirm that the cursor is on the "INT" position of the SYNC MODE as shown in Fig 31.
- Supply the black burst signal(BBS) or composite color video signal (VBS) to the Gen-lock Input Connector (20) and confirm that "INT" position has been changed into the "EXT (VBS)" indication as shown in Fig.32.
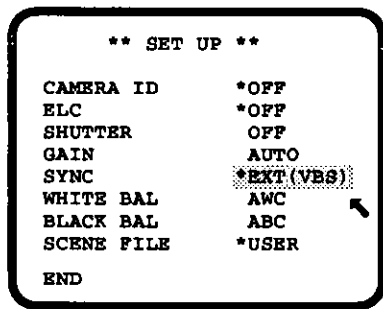
```
          ** SET UP **

    CAMERA ID        *OFF
    ELC              *OFF
    SHUTTER          OFF
    GAIN             AUTO
    SYNC             *EXT(VBS)
    WHITE BAL        AWC
    BLACK BAL        ABC
    SCENE FILE       *USER

    END
```

Fig.32.

CAUTION: The gen-lock input signal should meet with EIA RS-170A specifications and should not contain jitter, such as a VCR playback signal might, as this could cause a synchronization error.

- After confirming that the cursor is on the "EXT (VBS)" position, press the Page Button (PAGE) and Synchronization phase adjustment menu is displayed.

```
          ** SYNC **

    H PHASE          ....I....
                     -        +
    SC COARSE        1(1--4)

    SC FINE          ....I....
                     -        +


    RET   END
```
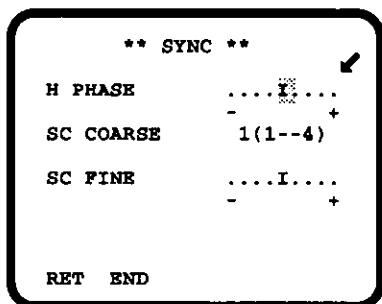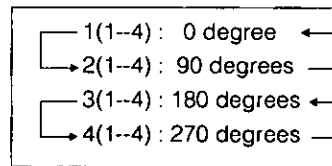
Fig.33.

- Move the cursor to the "H PHASE" position. The cursor "I" starts blinking.
- Connect the camera video output signal and the gen-lock input signal to a dual-trace oscilloscope.
- Set the oscilloscope to the to the horizontal rate and expand the horizontal sync portion on the oscilloscope.
- While observing the oscilloscope, adjust the horizontal phase (H PHASE) by using the Left Button (<) or the Right Button (>). Normally, minimum timing differences between the 2 signals is the desired result. The cursor "I" moves left or right.
  The adjustable range is 0 - 2.5 μ sec.

Subcarrier Coarse Phase Adjustment (SC COARSE)

- Move the cursor to the "SC COARSE" position. The cursor "1(1--4)" starts blinking.
- Press the Left Button (<) or the Right Button (>) so that the hue of the color from the Effect Output Video Signal (Program Output Video Signal) of the Special Effects Generator (SEG) becomes closest color of the original objects.
  (The SC coarse adjustment can be made for every 90 degrees of color phase rotation (4 steps) by using the Left Button (<) or the Right Button (>).
  Note: After the fourth step, it returns the first step.

```
    ┌── 1(1--4) :  0 degree  ◄──┐
    │  └─► 2(1--4) : 90 degrees ──┐
    │  ┌── 3(1--4) : 180 degrees ◄─┘
    │  └─► 4(1--4) : 270 degrees ──┐
```

Subcarrier Fine Phase Adjustment(SC FINE)

- Move the cursor to the "SC FINE" position. The cursor "I" starts blinking.
- Press the Left Button (<) or the Right Button (>) so that the color of the Effect Output Video signal (Program Output Video Signal) of the Special Effects Generator (SEG) becomes closest color of the original objects.
  (The fine adjustment can be made for up to 90 degrees of color phase rotation by using the Left Button (<) or the Right Button (>).
  Note :
  1. When the cursor "I" reaches to the end of "+" position, the cursor "I" jumps to the "-" position. At the same time, the step number of the SC COARSE mode increases one step to enable a continuous adjustment.
     The reverse operation takes place when the cursor "I" reaches to end of "-" position.
  2. When the Left Button (<) or the Right Button (>) is kept pressed for more than 1 second, the cursor "I" moves quickly.

3. For more accurate adjustment, supply both the original camera video output signal and the Effect Output Video Signal(Program Output Video Signal) of the Special Effects Generator(SEG) to a vectorscope and compare the chroma phase for both signals.

4. When both the Left Button (<) and the Right Button (>) are pressed simultaneously, the cursor "I" is reset to the factory setup position.

4-6-2. VS Gen-lock Mode (EXT(VS))

- Confirm that the cursor is on the "INT" position of the SYNC MODE as shown in Fig.31.
- Supply the composite sync or black and white composite video signal to the Gen-lock Input Connector (20) and confirm that the "INT" position has been changed into the "EXT (VS)" indication as shown in Fig.34.

```
       ** SET UP **

   CAMERA ID      *OFF
   ELC            *OFF
   SHUTTER         OFF
   GAIN           AUTO   ✔
   SYNC           *EXT(VS)
   WHITE BAL       AWC
   BLACK BAL       ABC
   SCENE FILE     *USER

   END
```

Fig.34.

CAUTION: The gen-lock input signal should meet with EIA RS-170A specifications and should not contain jitter, such as VCR playback signal might, as this could cause a synchronization error.

- After confirming that the cursor is on the "EXT (VS)" position, press the Page Button (PAGE) and synchronization phase adjustment menu is displayed as show in Fig.35.

```
       ** SYNC **          ✔

   H PHASE        ....I....
                   -        +




   RET  END
```

Fig.35.

- Move the cursor to the "H PHASE" position. The cursor "I" starts blinking.
- Connect the camera video output signal and the genlock input signal to a dual-trace oscilloscope.
- Set the oscilloscope to the horizontal rate and expand the horizontal sync portion on the oscilloscope.
- While observing the oscilloscope, adjust the horizontal phase (H PHASE) by using the Left Button (<) or the Right Button (>). The cursor "I" moves left or right. The adjustable range is 0 - 2.5 μ sec.

4-6-3. External HD/VD Mode(HD/VD)

- Connect the coaxial cable of the external HD and VD Signal to the Gen-lock Input connector (VBS/HD) (20) and VD Input Connector (21) respectively and confirm that the "INT" position changes to "EXT (H/V)" indication as shown in Fig.36.
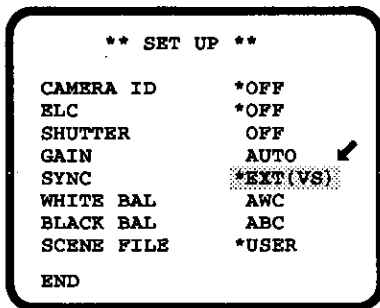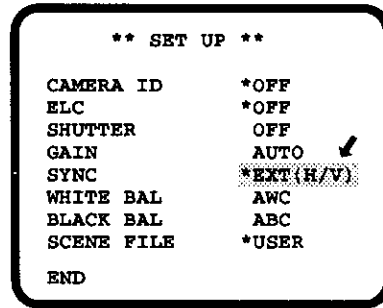
```
       ** SET UP **

   CAMERA ID      *OFF
   ELC            *OFF
   SHUTTER         OFF
   GAIN           AUTO   ✔
   SYNC           *EXT(H/V)
   WHITE BAL       AWC
   BLACK BAL       ABC
   SCENE FILE     *USER

   END
```

Fig.36.

- No more setting up or adjustment is required.

4-6-4. External VD Mode (VD)

- Connect the coaxial cable of the external VD signal to the VD Input Connector (21) and confirm that the "INT" position changes to "EXT (VD)" indication as shown in Fig 37.
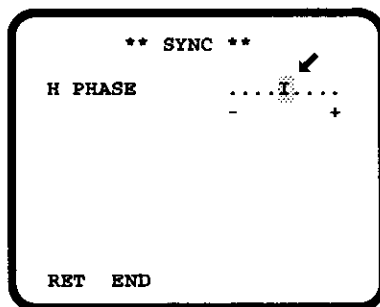
```
       ** SET UP **

   CAMERA ID      *OFF
   ELC            *OFF
   SHUTTER         OFF
   GAIN           AUTO   ✔
   SYNC           *EXT(VD)
   WHITE BAL       AWC
   BLACK BAL       ABC
   SCENE FILE     *USER

   END
```
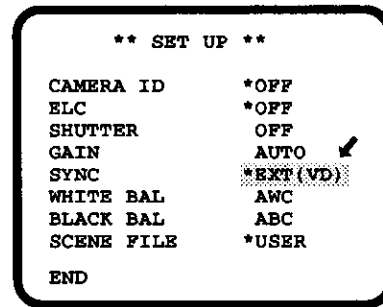
Fig.37.

• No more setting up or adjustment is required.

4-7. White Balance Setting(WHITE BAL)

• Display the SETUP menu as shown in Fig.38.

```
**  SET  UP  **

CAMERA  ID      *ON
ELC             *OFF
SHUTTER          OFF
GAIN             AUTO
SYNC             INT
WHITE  BAL       ATW    ←
BLACK  BAL       ABC
SCENE  FILE     *USER

END
```
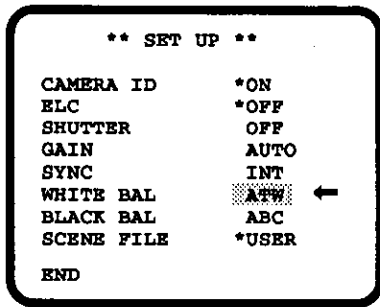
Fig.38.

• The mode selection and setting of white balance is done by White Balance Selection Switch (ATW/AWC/ MANU) (10) and Auto White Balance/Auto Black Balance Set Switch (AWC/HOLD/ ABC) (8) on the front panel.
• This menu is used to confirm the mode of white balance.

4-7-1. Auto Tracing White Balance Setting(ATW)

• Set the White Balance Selection Switch (ATW/AWC/ MANU) (10) on the front panel to ATW position.
• No more setting up or adjustment is required.

4-7-2. Auto White Balance Setting(AWC)

• Set the White Balance Selection Switch (ATW/AWC/ MANU) (10) on the front panel to AWC position.

```
**  SET  UP  **

CAMERA  ID      *OFF
ELC             *OFF
SHUTTER          OFF
GAIN             AUTO
SYNC             INT
WHITE  BAL       AWC    ←
BLACK  BAL       ABC
SCENE  FILE     *USER

END
```
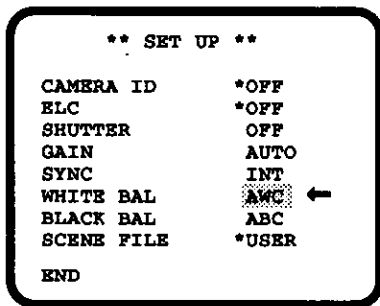
Fig.39.

• Aim the camera at white set chart.
• Press the Auto White Balance/Auto Black Balance Set Switch (AWC/HOLD/ABC) (8) on the front panel to upwards to set the white balance.
• When the auto white balance is completed, Auto Warning Indicator goes off from blinking condition.
If the Auto Warning Indicator lights continuously, carry out the auto white balance setting (AWC) procedure again.

4-7-3. Manual White Balance Setting(MANU)

• Set the White Balance Selection Switch (ATW/AWC/ MANU) (10) on the front panel to MANU position.

```
**  SET  UP  **

CAMERA  ID      *OFF
ELC             *OFF
SHUTTER          OFF
GAIN             AUTO
SYNC             INT
WHITE  BAL       MANU   ←
BLACK  BAL       ABC
SCENE  FILE     *USER

END
```
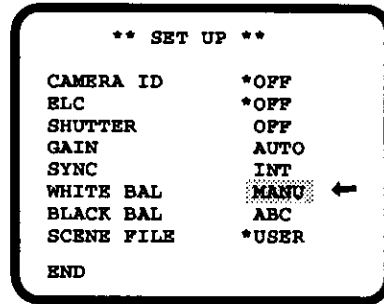
Fig.40.

• While observing the vectorscope or waveform monitor, adjust the red and blue gain controls (R GAIN/B GAIN) on the front panel.

4-8. Black Balance Setting (BLACK BAL)
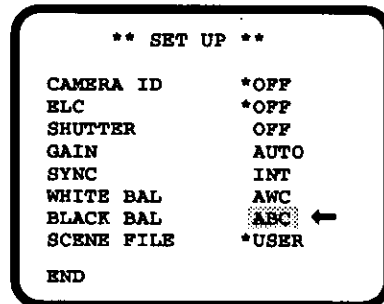
• Display the SETUP MENU as shown in Fig.41.

```
**  SET  UP  **

CAMERA  ID      *OFF
ELC             *OFF
SHUTTER          OFF
GAIN             AUTO
SYNC             INT
WHITE  BAL       AWC
BLACK  BAL       ABC    ←
SCENE  FILE     *USER

END
```

Fig.41.

4-8-1. Auto Black Balance Control Setting (ABC)

• Move the cursor to the 'BLACK BAL' position by using the Item Button (ITEM) and select the 'ABC' mode by pressing the Left Button (<) or the Right Button (>).
• Cap on the lens and press down the Auto White Balance/Auto Black Balance Set Switch (AWC/HOLD/ ABC) (8) on the front panel to set the black balance.
• When the auto black balance is completed, Auto Waring Indicator goes off from blinking condition.
If the Auto Warning Indicator lights continuously, carry out the auto black balance setting (ABC) procedure again.

4-8-2. Manual Black Balance Control Setting(MANU)

- Move the cursor to the 'BLACK BAL' position by using the Item Button (ITEM) and select the '*MANU' mode by pressing the Left Button (<) or Right Button (>).
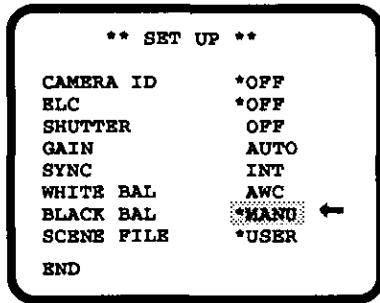
```
**  SET  UP  **

CAMERA ID       *OFF
ELC             *OFF
SHUTTER         OFF
GAIN            AUTO
SYNC            INT
WHITE BAL       AWC
BLACK BAL       *MANU  ←
SCENE FILE      *USER

END
```

Fig.42.

- By pressing the Page Button (PAGE), the manual black balance menu (BLACK BAL) is displayed as shown in Fig.43.

```
**  BLACK  BAL  **        ✔

R-PED           ....I....
                -        +
B-PED           ....I....
                -        +




RET   END
```
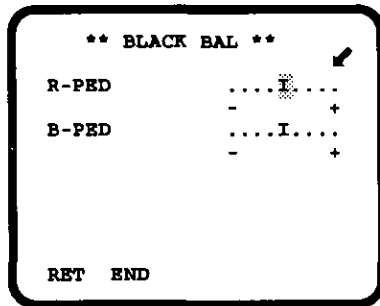
Fig.43.

- Move the cursor to the 'R-PED' position by using Item Button (ITEM).
  The cursor 'I' starts blinking.
- Cap on the lens.
- While observing the vectorscope or waveform monitor, adjust the red pedestal level (R-PED) by using the Left Button (<) or the Right Button (>) for minimun carrier.
  The cursor 'I' moves left or right.
- Move the cursor to the 'B-PED' position by using the Item Button (ITEM).
  The cursor 'I' starts blinking.
  While observing the vectroscope or waveform monitor, adjust the blue pedestal level (B-PED) by using the Left Button (<) or the Right Button (>) for minimun carrier.
  The cursor 'I' moves left or right.
  Note : Any of above setting, can be reset to the factory setup by placing the cursor over the desired mode and then simultaneously pressing both Left Button (<) and the Right Button (>) for more than 1 second.

4-9. Scene File Setting (SCENE FILE)

This menu allows for customer to adjust and set the video signal to the user's particular requirements.
Note :
1. When the color bar is selected by Camera/Color Bar Selection Switch (CAM/BAR) on the front panel, Scene file menu can not be set.
2. When set the Gamma On/Off is set to 'OFF' position, ATW, AGC, and ELC can not be used.
3. The setting of chroma level (CHROMA GAIN), Total pedestal level (TOTAL-PED) and Chroma phase (HUE) are available for all signal outputs except RGB Output.
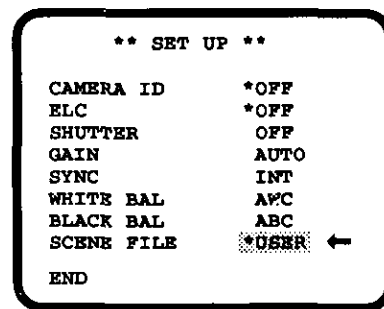
- Display the SETUP MENU as shown in Fig.44.

```
**  SET  UP  **

CAMERA ID       *OFF
ELC             *OFF
SHUTTER         OFF
GAIN            AUTO
SYNC            INT
WHITE BAL       AWC
BLACK BAL       ABC
SCENE FILE      *USER  ←

END
```

Fig.44.

- Move the cursor to '*USER' mode position by using the Item Button (ITEM) and press the Page Button (PAGE).
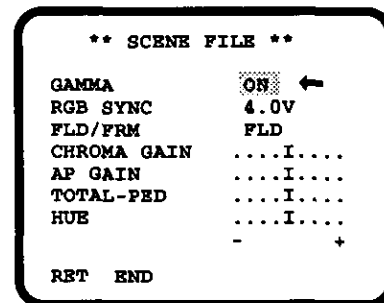- The scene file menu is displayed as shown in Fig.45.

```
**  SCENE  FILE  **

GAMMA           ON    ←
RGB SYNC        4.0V
FLD/FRM         FLD
CHROMA GAIN     ....I....
AP GAIN         ....I....
TOTAL-PED       ....I....
HUE             ....I....
                -        +

RET   END
```

Fig.45.

4-9-1. Gamma On/Off Setting (GAMMA ON/OFF)

- Move the cursor to the 'GAMMA' position. The cursor 'ON' starts blinking.
- Select the mode of gamma on or off by using the Left Button (<) or the Right Button (>).
  Note : When select the gamma off mode, ATW, AGC and ELC are not available.

4-9-2. RGB Sync Output Level (RGB SYNC)

- Move the cursor to the "RGB SYNC" position. The cursor "4.0 V" starts blinking.
- Select the sync output level for RGB as either 4.0 V or 0.3 V by using the Left Button (<) or the Right Button (>) according to the RGB monitor input level.

4-9-3. Field/Frame Charge Mode Setting (FLD/FRM)

- Move the cursor to the "FLD/FRM" position. The cursor "FLD" starts blinking.
- Select the charge mode either FLD or FRM by using Left Button (<) or Right Button (>).
  Note : When select the frame charge mode (FRM), the ELC function is not available (ELC OFF).

4-9-4. Chroma Level Setting (CHROMA GAIN)

- Move the cursor to the "CHROMA GAIN" position. The cursor "I" starts blinking.
- While observing the vectorscope or color video monitor, adjust the chroma level by using Left Button (<) or Right Button (>).
  The cursor "I" moves left or right.
- When the cursor "I" reaches end of left position, chroma gain becomes OFF.

4-9-5. Aperture Level Setting (AP GAIN)

- Move the cursor to the "AP GAIN" position. The cursor "I" starts blinking.
- While observing the color video monitor, adjust the aperture level by using the Left Button (<) or Right Button (>).
  The cursor "I" moves left for a soft picture or right for a sharper picture.
- When the cursor "I" reaches end of left position, aperture level becomes OFF.

4-9-6. Total Pedestal Level Setting (TOTAL-PED)

- Move the cursor to the "TOTAL-PED" position. The cursor "I" starts blinking.
- While observing the waveform monitor/oscilloscope or color video monitor, adjust the total pedestal level (black level) by using the Left Button (<) or Right Button (>).
  The cursor "I" moves left for dark (low) picture or right for bright (high) picture.

4-9-7. Chroma Phase (Hue) Setting (HUE)

- Move the cursor to "HUE" position. The cursor "I" starts blinking.
- While observing the vectorscope or color video monitor, adjust the chroma phase(hue) by using the Left Button (<) or Right Button (>).
  The cursor "I" moves left or right.

Note :

How to reset to factory setup.

Any of the above setting except GAMMA ON/OFF, RGB SYNC and FLM/FRM, can be reset to the factory setup by placing the cursor over the desired item and then simultaneously pressing both Left Button (<) and Right Button (>) for more than 1 second.

PREVENTION OF BLOOMING AND SMEAR

When the camera is aimed towards spotlights or other bright lights or light reflecting objects, smear or blooming may appear.

Therefore the camera should be operated carefully in the vicinity of extremely bright objects to avoid smear or blooming.

If the camera is aimed at the sun or very bright light, such as laser beam, for a long period of time, the CCD image sensor may be burned in and blemishes(white or black dots) appears on the monitor screen.
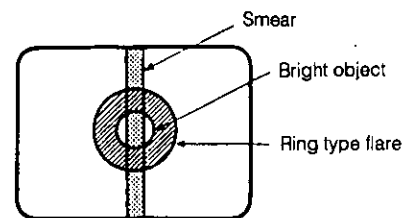

Fig.46.

SPECIFICATIONS

Pick-up System:	Micro prism system (F1.6)
Image Sensor:	Three 1/2" interline transfer (IT) supper high sensitivity CCDs
Pixels:	768 (Horizontal) x 494 (Vertical)
Scanning Standard:	525 lines, 60 fields, 30 frames
	Synchronizing System: Internal or External (Gen-Lock), automatically switchable
Internal:	NTSC standard
	External (Gen-Lock) Input: VBS/VS/HD/VD is selectable
	SC Phase for Gen-Lock (VBS): Free adjustable over 360°
	H Phase for Gen-Lock (VS): Adjustable
Video Outputs:	
	Video Output: BNC Connector x 2
	1.0Vp-p NTSC composite/75ohms
	Y/C (S-VIDEO) Output: S-VIDEO Connector x 1
	0.714Vp-p Luminance level (Y)/75ohms (S-VIDEO connector)
	0.286Vp-p Burst Level (C)/75ohms (S-VIDEO connector)
	RGB/SYNC Output: D-SUB 9-pin Connector x 1
	R/G/B: 0.7Vp-p each/75ohms
	SYNC: 4Vp-p/75ohms or 0.3Vp-p/75ohms selectable
	VIDEO: NTSC composite/75ohms
Required Illumination:	2000 Lux at F8.0, 3200° K
Minimum Illumination:	0.9 fc (9 Lux) at F2.8 with +18dB gain, 30IRE level
Signal-to-Noise Ratio:	56dB (Typical, Luminance) without aperture and gamma
Horizontal Resolution:	700 lines at center (Y signal)
White Balance:	ATW (Automatic Tracing White Balance Control), AWC (Automatic White Balance Control) and Manual
Black Balance:	ABC (Automatic Black Balance) and Manual
Color Bar:	Built-in full color bar with 7.5% set-up
Electronic Shutter:	AUTO: Adjustable between 1/60 - 1/10,000sec
	STEP: Selectable 1/60(OFF),1/100, 1/250, 1/500, 1/1,000, 1/2000, 1/4000 and 1/10000s
	SYNCHRO SCAN: Selectable from 1/525 to 254/525 line
Gain Selection:	AGC and Gain Up (Selectable)
Switches:	Power On/Off (POWER), Camera/Color Bar Selection (CAM/BAR), Gain Up Selection (OFF/LOW/HIGH (0/+9/+18dB)), Auto White/Auto Black Balance Set (AWC/HOLD/ABC), White Balance Selection (ATW/AWC/MANU), ELC (Electronic Light Control) On/Off, PAGE, ITEM, < (LEFT) and > (RIGHT)
Controls:	R Gain, B Gain and ELC LEVEL
Lens Mount:	Special C Mount
Power Source:	12V DC
Power Consumption:	8.4W
Ambient Operating Temperature:	32° F - 113° F (0° C - +45° C)
Ambient Operating Humidity:	30% - 90%
Dimensions	
Camera Head:	1-5/16" (W) x 1-11/16" (H) x 2" (D)
(Excluding Mounting Adaptor)	(34 (W) x 44 (H) x 51.5 (D) mm)
CCU:	8-1/8" (W) x 1-11/16" (H) x 9-1/2" (D)
(Excluding Rubber Foot and Connector)	(206.5 (W) x 44 (H) x 250 (D) mm)
Weights	
Camera Head:	0.24 lbs (110g)
CCU:	3.74 lbs (1.7Kg)

Dimensions and Weights indicated are approximate
Specifications are subject to change without notice

OPTIONAL ACCESSORIES

Camera Cable: GP-CA63
Character Generators: WJ-KB15, WJ-KB50

Panasonic

Broadcast & Television Systems Company

Division of Matsushita Electric Corporation of America

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