MODEL

HLM-905WR

MULTI FORMAT
LCD COLOR MONITOR

OPERATION MANUAL

Ikegami


SA 1965

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN.


SA 1966

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.


SA 1965

The lightning flash with arrowhead inside a triangle is intended to warn the user that parts inside the product are dangerous and many cause electric hazards.


SA 1966

The exclamation mark inside a triangle is intended to inform users that important operating and servicing instructions are provided with the equipment.

WARNING: FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS (REFER TO SERVICE LITERATURE).

DECLARATION of CONFORMITY:

The "CE" mark means the products as mentioned below will meet the intent of the following Directives and Standards.
Inrush current according to EN55103-1 Annex B is as follows.
HLM-905WR : 0.117A r.m.s. (the average half-cycle r.m.s. inrush current, on initial switch-on.)
: 0.112A r.m.s. (the average half-cycle r.m.s. inrush current after a supply interruption of 5 s.)
Directives : 93/68/EEC, 2004/108/EC, 92/31/EEC for EMC (electromagnetic compatibility)
2006/95/EC for Low voltage (Safety)
Standards : HLM-905WR : EN55103-1-E4, EN55103-2-E4, EN60950-1

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR WATER.

Disposal of used Electric and Electronic Equipment
(Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product, or in the related documents in the package, indicates that this product shall not be treated as normal household waste. Instead, it should be taken to a proper applicable collection point or depot for the recycling of electric and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent possible negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources.
For more detailed information about recycling of this product, please contact your local city authority, your household waste disposal service or the place where you purchased the product.

NOTE:
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION;
ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PART RESPONSIBLE FOR COMPLIANCE COULD VOID THE USERS AUTHORITY TO OPERATE THE EQUIPMENT.

IMPORTANT SAFETY INSTRUCTIONS

1. General

1) Read all instructions provided.
2) Save these instructions for future use.
3) Follow all warnings and instructions marked on the television equipment.
4) Never insert objects of any kind into this television monitor through cabinet slots as they may come in contact with dangerous voltage points or short out parts, resulting in fire or electric hazards, Never spill liquid of any kind on the television monitor.
5) Do not attempt to service this television monitor yourself as operating or removing covers many expose you to dangerous voltage or other hazards, Refer all servicing to qualified service personnel.
6) Do not use attachments not recommended by the television equipment manufacturer as they may result in the risk of fire, electric shock, or injury to persons.
7) This television monitor has been preadjusted to meet the respective broadcasting standard signals. So, it cannot be used with the signals of different broadcasting standards.
8) When keeping or transporting the unit for a long time, pack it in the supplied carton or equivalent.

2. Power supply

1) This television equipment should be operated only from the type of power source indicated on the marking label.
2) This television equipment is provided with a three-wire grounding type plug with a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet.
   Do not defeat the safety purpose of the grounding-type plug.
3) When connecting and disconnecting the power cable, be sure to hold the plug.
4) Do not allow anything to rest on the power cord. Do not place this television equipment where the cord will be abused by persons walking on it.
5) For added protection for this television equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet.
   This will prevent damage to the equipment due to lightning and power-line surges.
6) Do not overload wall outlets and extension cords as this can result in fire or electric shock.

3. Usage and location

1) Do not use this television equipment near water - for example, near a bath tub, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, or the like.
2) Do not place this television equipment on an unstable cart, stand, or table. The television equipment may fall, causing serious injury to children and adults, and serious damage to the equipment. Use only with a cart or stand recommended by the manufacture, or sold with the television equipment. Wall or shelf mounting should follow the manufacture's instructions, and should use a mounting kit approved by the manufacture.
   Television equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

3) Slots and openings in the cabinet and the back or bottom are provided for vitiation, and to ensure reliable operation of the monitor and to protect it from overheating, these openings should never be blocked or covered. The openings should never be blocked by placing the television equipment on a bed, sofa, rug, or other similar surface. (This television equipment should never be placed near or over a radiator or heat register.) This television equipment monitor should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.

IMPORTANT SAFETY INSTRUCTIONS

4) Avoid operating or placing (keeping) in a hot (+40℃ or over) or cold (less than 0℃), high vibration, or dusty place. Avoid operating or storing in a place exposed to direct sunlight.

5) If an image of extremely high brightness is displayed on the screen for a long time, the panel may get burned in.

4. Cleaning

1) Unplug this television equipment from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
2) Do not use thinner or benzene for cleaning. Otherwise, the cabinet may deform or the paint may peel away.

5. Repair

1) Unplug this television monitor from the wall outlet and refer servicing to qualified service personnel under the following conditions:
   a. When the power cord or plug is damaged or frayed.
   b. If liquid has been spilled into the television.
   c. If the television monitor has been exposed to rain or water.
   d. If the television does not operate normally by following the operating instructions.
      Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television monitor to normal operation.
   e. If the television monitor has been dropped or the cabinet has been damaged.
   f. When the monitor exhibits a distinct change in performance - this indicates a need for service.
2) When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacture that have the same characteristics as the original part.
   Unauthorized substitutions may result in fire, electric shock, or injury to persons.
3) Upon completion of any service or repairs to this monitor, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.
4) For repair service, contact **Ikegami**'s authorized sales representative or **Ikegami** service desk directly.

PRECAUTIONS FOR OPERATIONS

1) Never let this unit fall or subject it to strong shock.

2) Do not remove the cabinet unless necessary. High-voltage parts are contained in the cabinet and they are very dangerous if you touch then. Only qualified service engineers are allowed to adjust the internal parts of the cabinet.

3) This color monitor has been adjusted to signals conforming to each broadcasting standard. It cannot be used for signals of different broadcasting standards.
Be sure to operate the color monitor within the voltage range marked on its back.

4) If cabinet or screen is dirty, wipe with soft cloth. At this time, avoid using benzene or thinner, otherwise the paint may peel away.

5) Note that, if video signals with high luminance are monitored on the LCD panel over a long period of time, the panel may burn in the image.

6) The socket-outlet shall be installed near the equipment and shall be easily accessible.

7) Avoid using or storing this unit in the following places:
   - Hot (+40℃ or more) or cold (0℃ or less) places, especially where this unit may be exposed to the direct rays of the sun.
   - Humid and dusty places.
   - Places where there is considerable vibration.
   - Places exposed to rain or water.
   - When storing or transporting this unit, pack it in the supplied carton or equivalent.

8) If no image can be monitored even after performing user adjustment or the unit appears faulty, do not dismantle this unit by yourself. In such cases, contact the **Ikegami** service desk.

9) Should this unit fail within one year after delivery, it will be repaired free of charge unless the malfunction was caused by mishandling or misuse of the user.
However, the fuses are not covered by the warranty.

10) The specifications and appearance of this unit may be subject to change for further improvement without prior notice.

Cautions for Rack-Mount.

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

Precautions Upon Use

In order to use the monitor safely, read through this manual and pay attention to the following points in particular.

1. **Do not use any power supply other than the specified one (AC/DC).**

2. **Do not give a shock to the monitor.**
   Be very careful to keep the monitor from shocks because glass is used inside the LCD.

3. **Do not use or store the monitor in the following places.**
   Place where the ambient temperature is out of spec
   When installing the monitor on a monitor shelf, switcher table, rack, etc., make sure in advance that the temperature of the installation location is within the specified range.
   In the case of an outdoor setup, even if the ambient temperature is within the specified range, the inside of the monitor may be heated by direct sunlight. Therefore, keep radiation in mind. (Avoid direct sunlight.)
   Never block the air outlet at the rear of the monitor and the air inlet at the side. Make sure in particular that a blackout curtain or the like does not block the air outlet.
   Place exposed to rain, snow or high humidity
   Use of the monitor in such a place will cause electric leakage or failure.

4. **Avoid exposing the LCD screen to direct sunlight.**
   Exposure of the LCD screen to direct sunlight for a long time will degrade the film. Therefore be careful of direct sunlight when using the monitor outdoors.

5. **Cautions in handling the front LCD panel**
   Be careful not to touch the LCD panel front surface with bare hands, unless necessary. When wiping the dust off the surface, use soft, dry cloth and take care not to rub the surface strongly. Do not use thinner or benzene.

6. **Do not touch liquid crystal leaked from the monitor's display surface.**
   If the monitor's display surface is accidentally broken and the liquid crystal leaks, be careful never to put the liquid in your mouth, inhale it and allow it on your skin.
   If the liquid gets into your eye or mouth, immediately rinse it with water and get medical attention.
   If the liquid contacts your skin or clothes, immediately wipe it off using alcohol or the like and wash the stained spot with soap and water. Do not leave the liquid intact, because otherwise your skin or clothes may be affected.

7. **Do not display the same pattern for a long time.**
   Note that residual image may be generated if the same pattern is displayed for a long time.
   ・Turn off the power when the monitor is not used.
   To avoid residual images, preferably take the following measures.
   ・Change the screen regularly.
   ・Display the whole screen in white.

8. **Caution for condensing.**
   When the monitor is used in the condition where temperature abruptly changes, the surface of LCD panel and the inside of monitor are possible to get condensed. And if it is used leaving condensed, it can cause deterioration of quality and trouble.
   If the device is condensed, please do not turn on the power until waterdrop is disappeared completely.

9. **Avoid operation or storage in a place exposed to corrosive gas.**
   Operation or storage in a place where any corrosive gas such as sulfur dioxide, hydrogen sulfide, chlorine or ammonia is generated may lead to a significant reduction in the monitor service life. It may also cause failure or electric leakage.
   Also avoid using the monitor in a location exposed to high salty wind.

10. **Do not use this monitor for such applications as space appliance, nuclear control system as any medical equipment involving human life.**

Quality of LCD panel

Note that because the LCD panel mounted on the monitor is manufactured through the use of high-precision technology, 99.99% or more of the pixels are effective, but 0.01% or less of them may be lacking in brightness or lit up constantly.

Internal fan

The internal fan does not run constantly but automatically starts running when the internal temperature of the monitor rises. When the environmental temperature is low, the internal fan may not be running, which indicates no fault condition.

At power-on, the fan rotates for a moment for checking its own performance.

In the case of outdoor use, even if the ambient temperature is low, the fan may start running when the internal temperature of the monitor rises.

Suppose that the fan does not operate properly at power-on or at high temperatures. In such case, the message "FAN ERROR!" will appear at the top of the screen.

The brightness of the backlight may be reduced in order to keep the internal temperature of the motor from rising.

If the message "FAN ERROR!" is displayed, contact your dealer or **Ikegami** service desk.

Warranty

If the product should fail within one year from the date of delivery in spite of the proper use, the manufacturer will repair the product free of charge. Even if the product is covered by the warranty, however, the customer will be charged for labor and parts in the following cases.

1. Failure and damage caused by the following:
   - Improper use
   - Repair or modification performed by the customer
   - Transportation, transfer, falling, etc. after the purchase of the product
   - External factors such as natural disasters and over-voltage
2. Aged deterioration of the liquid crystal panel and backlight (change in brightness, increase in the number of luminescent spots and dark points, etc.)
3. Damage, discoloration and degradation of the cabinet including the LCD front protective panel
4. Replacement of the accessories and fuse

   If no image comes out in spite of routine adjustment or if the product should seem to fail, contact your dealer or **Ikegami** service desk.

Accessories

The monitor comes with the following accessories. Be sure that they are included.

1. Operation manual: 1 copy
2. Parallel remote connector: 1 set
3. Power cable: 1 pc.

Specifications and external dimensions are subject to change without prior notice.

CONTENTS

1. Outline

1-1. Outline

This 9-inch type HDTV/SDTV multi-format color monitor employs a high-definition liquid crystal panel for reduction in thickness, weight and power consumption, and is designed for use in various spaces such as sub-control rooms, editing rooms, monitor wall, transmission control desks, and outside broadcast vans.

This monitor is compatible with the functions and operation of the HTM/TM series CRT monitors, so that it can realize the functions necessary for a broadcasting service monitor with conventional operation.

1-2. Features

(1) High performance liquid crystal panel

Employed is a liquid crystal panel with a WXGA (1280 x 768 dots) that is excellent in basic performances such as high brightness, high contrast, wide viewing angle, quick response and good color reproducibility.

(2) Multi-format

The monitor supports various broadcasting formats.

- 480i/59.94 (NTSC)
- 575i/50 (PAL-B)
- 1080psF/30
- 1080psF/25
- 1080psF/24, 23.98
- 1080p/60, 59.94
- 1080p/50
- 1080p/30, 29.97
- 1080p/25
- 1080p/24, 23.98
- 1035i/60, 59.94
- 1080i/60, 59.94
- 1080i/50
- 720p/60, 59.94
- 720p/50
- 720p/30, 29.97
- 720p/24, 23.98
- 720p/25

(3) Compatibility with embedded audio

Standard equipped with an embedded audio feature, the embedded audio signals multiplexed with 3G-SDI signal, HD-SDI signal or SD-SDI (4:2:2) signal can be automatically recognized and the audio output can be heard through the built-in speaker, stereo headphones and audio monitor output. The monitor also has a standard embedded audio level meter display on the screen.

The embedded audio signal may be handled as an analog output.

(4) Remote control functions

The monitor can be remote-controlled with the use of three remote control functions. Depending on the place of installation and type of operation, the parallel, serial mode can be used.

In addition to the conventional parallel remote control (pin assignment by user is possible), the monitor also comes standard with a serial remote input interface that enables remote control with just one BNC coaxial cable.

Up to 99 monitors can be remote-controlled individually or concurrently using an optional serial remote controller (during next model examination) simply with Ikagami's various monitors being loop-through connected.

(5) Built-in markers

4:3 (16:9 mode), 13:9, 14:9, 15:9, 16:9 (4:3 mode), 1.85:1 (16:9 mode) and 2.35:1 (16:9 mode) line markers can be displayed.

The monitor can also get the 1%-stepwise safety marker displayed in the range of 80-99% with respect to the line marker area.

The safety markers over the effective screen can be equally preset 1% by 1% in the range of 80-99%.

The monitor also comes standard abundantly with five-part split and ten-part split crosshatch markers useful for location alignment.

(6) User marker display function

Up to 10 different user markers, such as line and box markers, are presettable pixel by pixel to your desired positions and sizes. The line and box drawing settings can be easily made with not just the switch but also the USB mouse. Resulting complicated data may also be saved on a USB memory so that the data can be copied to another monitor or stored in a PC.

This function is optimum for positioning in editing the layout and its display for various types of information such as teleshopping.

* Patent pending

(7) Shadow function

The shadow function is to shade the area other than a 4:3 (16:9 mode), 13:9, 14:9, 15:9 or 16:9 (4:3 mode) marker area on images. The shadow contrast can be set at 0%, 20%, 40% or 60% on the MENU. The use of this function allows you to instantly visualize the image area when converting images with an aspect ratio of 16:9 to those with an aspect ratio of 4:3 or vice versa.

This shadow function can be turned on/off by remote control and prompt switching is therefore realized.

(8) Various built-in test signals

The monitor is standard equipped with color bar signal, grayscale signal with pluge pattern, and window signal. Various adjustments can therefore be made on the monitor alone.

(9) Time code display function

It is possible to display the time code (VITC) multiplexed into SDI signal on the screen.

The display comes in two sizes, large and small, and its brightness in three levels.

(10) Waveform monitor/Vector scope display functions

Waveform monitor of brightness signal can be displayed. The display comes in two sizes, NORMAL and SMALL, and its brightness in three levels. The waveform can also be displayed in any of three selectable positions and in one of two colors: GREEN and WHITE. The vector scope can also be readily displayed.

(11) Display comparison function by using 2 split screens or by switching between 2 full screens

Comparison of images is possible by displaying a previously captured still image and the currently input moving image simultaneous side by side on the split screen basis, or by manually or automatically switching between the still image and the moving image on the full screen basis. This function is useful for making adjustments between a number of cameras and for positional alignment.

As it allows storing up to 32 captured images on a USB memory, this function can be used for making adjustments of colors and positions between a single captured image downloaded from the USB and the current image on the camera.

(12) Dot-by-dot display function

All the picture elements of an input signal are displayed 1:1 according to the pixels of the LCD panel without scaling the incoming signal (enlarging or reducing the input signal according to the LCD pixels).

This function is useful in checking transmitted input signals for pixel defects, camera CCD's scratches, etc.

(13) External memory function

Various data (including the MENU settings, the PRESET data, and the full capture image data) can be stored on the USB memory for data management on the PC. All these data can be copied onto another monitor.

* In case the data is to be copied onto another monitor, care should be taken as the PRESET data on individual monitors are different in their data types.

The data type of the stored images is in the specific format exclusive to the device used.

(14) USB mouse control

By connecting a commercially available USB mouse to the USB terminal of this monitor, it is possible to perform various adjustments including the "MENU setting," "PRESET data setting," "Input signal switching," and the "Front switch setting" through the use of a mouse. Remote operation of the monitor at a distant position is possible by using a commercially available wireless mouse.

Use of the scroll wheel function of the mouse has significantly improved the user-friendliness of the monitor for making adjustment of various data such as color temperature.

(15) AC/DC operation

The monitor can accept the AC/DC power as standard. Use of a battery is optionally possible.

This monitor is not of the external AC adapter type but of the all-in-one construction that allows direct AC input to the main body of the monitor. When a rack mount is used, therefore no extra space other than that for the main body of the monitor is required.

(16) Downmix function

Among the embedded audio 8 channels, 5.1 channel surround audio channel (Lm, Rm, C, Ls, and Rs) has been selected for the stereophonic audio function at the downmix mixing ratio specified by ARIB and ISO/IEC.

The downmix audio signals can be easily output through the speakers built in the monitor or a headphone, or through the analog output.

(17) Auto Setup Function for Color Temperature

The color temperature, which was difficult to adjust before is simply and automatically adjustable in each steps without PC, connecting this ASP-100 Auto Setup Prove to the USB port on monitors.

And it is also able to be used as the measuring instrument for measuring color temperature (color point of x, y) and contrast.

* HLM-905WR supports in more than ASP-100 Rev1.

(18) IMD/UMD display by TSL protocol

This is a function to control the IMD/UMD display in a centralized manner by using "TSL UMD Protocol V3.1.

For displaying, Material Display (alphanumeric) and TALLY Display are possible.

A maximum of 32 units per line (system) can be controlled in a centralized manner by using RS485.

By increasing the number of lines, the ID setting and individual controls of a maximum of 126 units become possible.

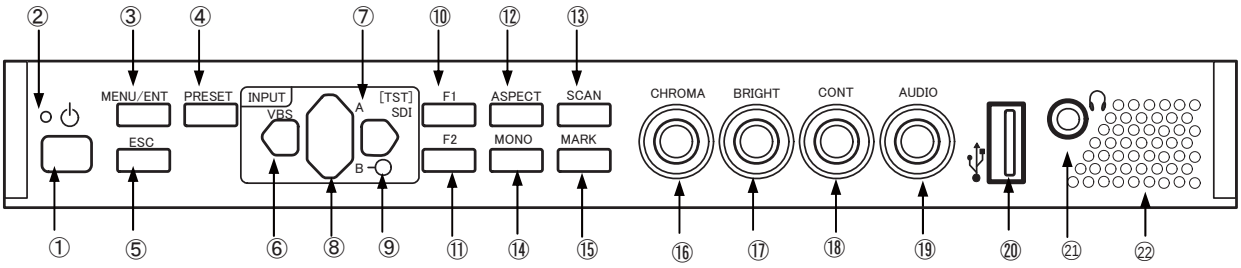
* IMD : In Monitor Display
UMD : Under Monitor Display

(19) IMD/UMD display by the user display

This is a function for specifying the name of material at random by using up to 8 alphanumeric letters on individual monitors for each of the inputs (SDI-A/SDI-B/VBS) to indicate the name of the material that has been specified in advance in monitor display or under monitor display when the input channel is switched over.

2. Names of parts and their Functions

2-1. Front Controller Parts



① **POWER** switch

・This switch is used to turn ON/OFF the monitor.

* This switch will not turn ON/OFF the AC power supply for the monitor.
* It takes several seconds for an image to come up after power-on.

② **POWER** LED

・This LED is lit up in green when the power supply for the monitor is ON.

* When running on battery, this LED indicator starts flickering to tell you the remaining battery power becomes low. In such case, immediately turn off the power and replace the battery with new one. When the remaining battery power gets to the lower limit, the power is forced to shut off and the LED indicator starts flickering at 0.5 sec. intervals after alarm is issued for 30 sec. (the LED flickering is quicken for about 30 sec.)

* When using a battery, set the nominal voltage on the menu appropriately in accordance with the battery to be used. For the setting item, refer to "**4-4. Description of MENU 2 Functions ⑪**" .

③ **MENU/ENT** switch

・This switch is pressed to display the menu screen and to change the menu screen.

・This switch is also pressed to confirm entries on the menu.

④ **PRESET** switch

・ This switch is pressed to display the preset menu.

* This switch is ineffective when the menu is displayed.

⑤ **ESC** switch

・ This switch is pressed to escape from menu operation.

⑥ **VBS** switch/◀ (LEFT) switch

・ To select the **VBS input**, this switch is pressed with the menu and preset menu not displayed.

・ When the menu or preset menu is displayed, this switch is used to select setting items on each menu.

⑦ **SDI (TST)**switch/▶ (RIGHT) switch

・ To select the **SDI input**, this switch is pressed with the menu and preset menu not displayed.

・To display the incorporated test signal, this switch is pressed and held for several seconds with the menu and preset menu not displayed.

・When the menu or preset menu is displayed, this switch is used to select setting items on each menu.

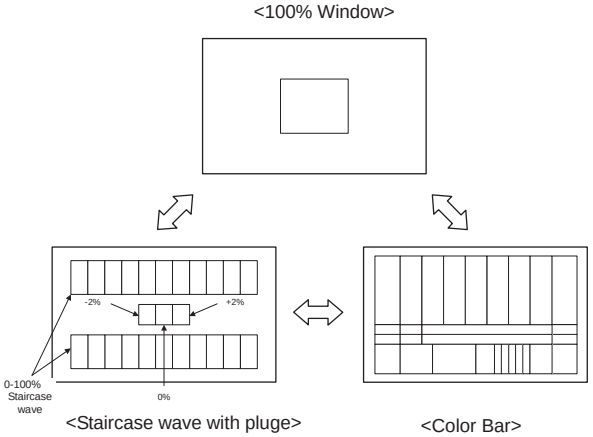
⑧ **CH SELECT switch/▲ (UP)/▼ (DOWN)** switch

・ To select channels when the **SDI input** is selected, this switch is pressed with the menu and preset menu not displayed.

・ When the menu or preset menu is displayed, this switch is used to change the setting of each item.

・ When the internal test signal is displayed, this switch is used to change the type of test signal.

・The following three types of test signals are incorporated.



⑨ **CH-B** LED

・This LED is lit up when CH-B is selected in the case of the **SDI input**.

* When the internal test signal is displayed, this LED is not lit up at any time.

⑩ **F1** switch

・It becomes possible to perform one-touch operation by assigning a setting item on **MENU2** to this switch.

・ For the setting item, refer to "**4-4. Description of MENU 2 Functions**".

⑪ **F2** switch

・It becomes possible to perform one-touch operation by assigning a setting item on **MENU2** to this switch.

・ For the setting item, refer to "**4-4. Description of MENU 2 Functions**".

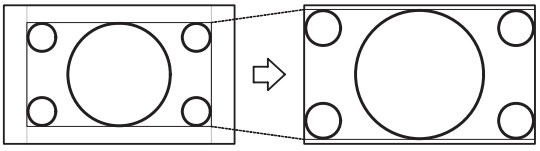
⑫ **ASPECT** switch

・This switch is pressed to change the image aspect ratio (4:3/16:9/ZOOM). HDTV signal is only 16:9 aspect.

・ Whether to store setting for each channel or to make setting for all the channels together is chosen on **MENU2**.

* ZOOM" magnifies the image area in the 4:3 letterbox.

<ZOOM>

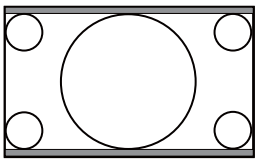


* SDTV format signals (480i/575i) only are effective.

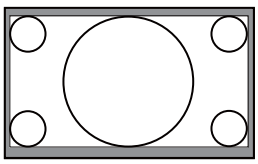
⑬ **SCAN** switch

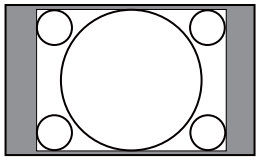
・Press this switch to change image display sizes (normal-scan/under-scan).

<16:9 Normal-scan>

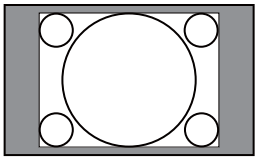


<16:9 Under-scan>





<4:3 Normal-scan>



<4:3 Under-scan>

⑭ **MONO switch**

・This switch is pressed to make a color signal monochrome.

* When analog component RGB is input, this function is ineffective.

⑮ **MARK** switch

・This switch is pressed to turn ON/OFF the marker display.

・The type of marker to be displayed is set on **MENU7**.

* When the internal test signal is displayed, this function is ineffective.

⑯ **CHROMA** manual control

・This control serves as a manual/preset switch for chroma or a manual data variable control.

・The control pops out when it is pressed and the mode is changed to MANUAL.

⑰ **BRIGHT** manual control

・This control serves as a manual/preset switch for brightness or a manual data variable control.

・The control pops out when it is pressed and the mode is changed to MANUAL.

⑱ **CONT** manual control

・This control serves as a manual/preset switch for contrast or a manual data variable control.

・The control pops out when it is pressed and the mode is changed to MANUAL.

・This control can be an allocation to BACKLIGHT according to the NENU setting.

⑲ **AUDIO** control

・Use this control to adjust the sound volume of the front speaker or the headphones.

* An audio (analog / embedded audio / downmix audio) to be outputted to the speaker must be set on **MENU6**.

⑳ **USB** terminal

・Connect a USB memory, and the monitor's data can be saved on the USB memory or the data on the USB memory can be downloaded on another monitor.

・Connect a USB mouse, and the user markers can be drawn.

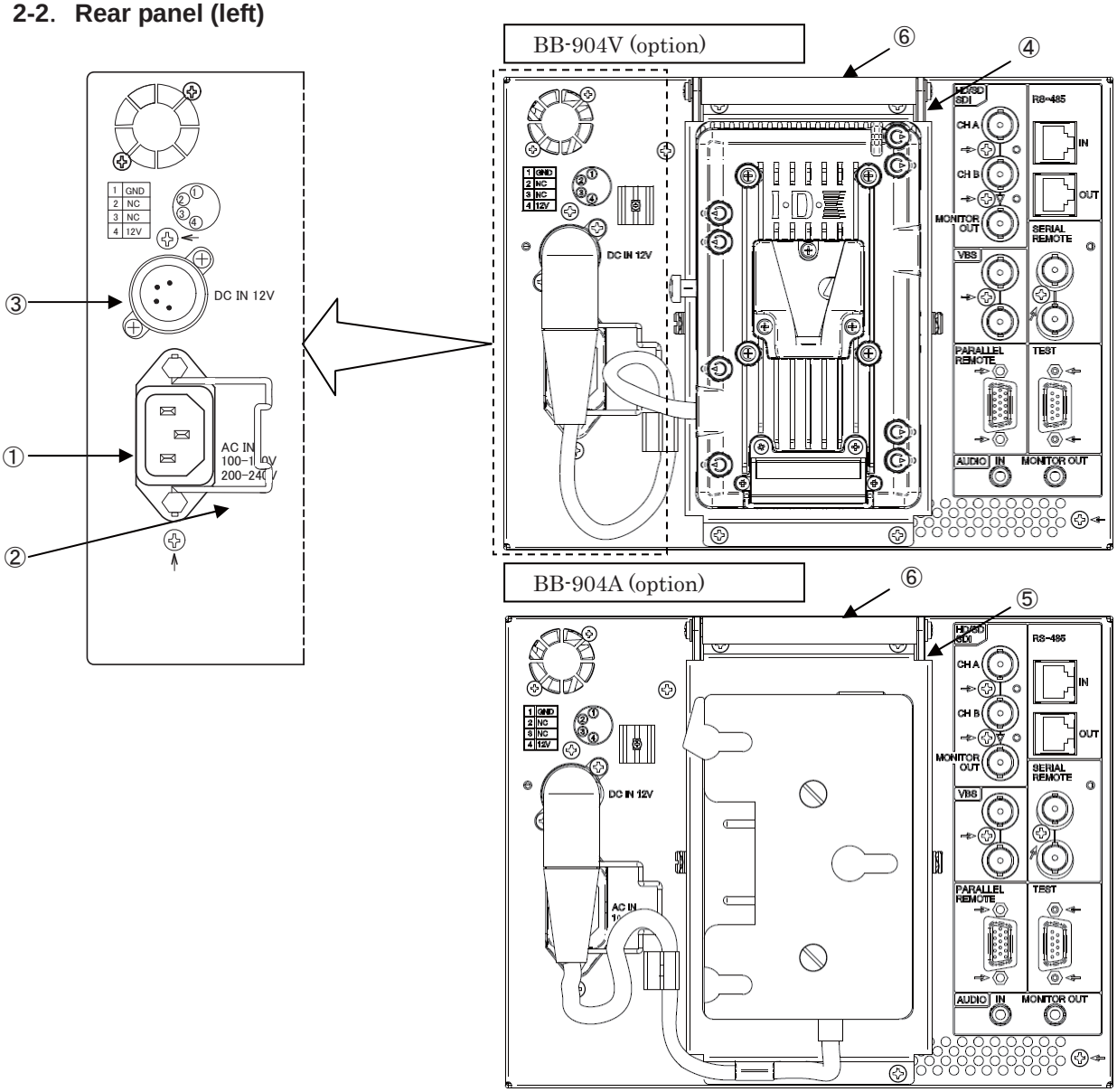
㉑ **Stereo headphones output** (stereo mini-jack type)

- Analog audio signals, embedded audio signals and downmix audio signals are fed out of this terminal.
- The analog and embedded inputs can be selected on **MENU6**.
- Very low sound may be audible even when the volume is at minimum position.

㉒ **Front speakers**

- Analog audio signals, embedded audio signals (downmix, ch1/2, ch3/4, ch5/6 and ch7/8), and downmix audio signals are fed out of this terminal.
- The audio selected in the analog audio inputs, embedded audio inputs and downmix audio inputs is output here.
- With the headphones being connected, no sound is heard from the speakers.

2-2. Rear panel (left)



① AC power supply input connector

・ The accompanying AC cable is connected to this connector to supply AC power.

② Locking hardware

・ This hardware is used to lock the AC plug to prevent it from coming off.

③ DC input connector

・Insert the provided DC cable here to supply DC +12V power.

・Insert the provided BB-904A (option) of DC cable here to supply battery power.

④ BB-904V (option)

・Insert the provided IDX battery here to supply battery power.

⑤ BB-904A (option)

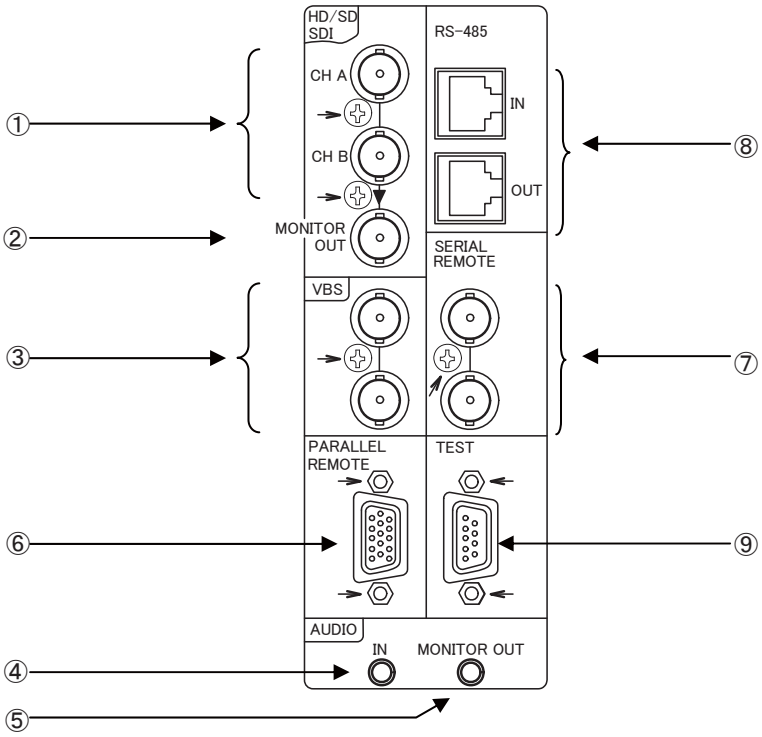
・Insert the provided ANTON BAUER battery (DI-ONIC 90) here to supply battery power.

⑥ Handle

・ When this monitor is carried, this is improved.

・ The knob can be drawn out at once by picking up and lifting both ends.

2-3. Rear panel (video inputs/outputs)



① SDI A/B signal input

- 3G-SDI, HD-SDI or SD-SDI (4:2:2) signals are input through this connector.
- The format of an input signal is automatically detected to control the monitor.

② SDI signal output

- The signal of the channel selected on the monitor is output from the A/B channel of the input SDI signal.

* When channels are set to "ON" in "SDI CH LOCK" on **MENU2**, signal is output from only the channel set to "ON".

③ NTSC/PAL analog composite input

- NTSC/PAL VBS (analog composite) signals are input through this connector.
- When loop-through-connections are not made, a 75Ω termination should be connected.

④ Analog audio input

- Feed analog audio signals here.

⑤ Analog audio output

- Select analog audio or downmix audio or one pair of channels out of four paired channels (eight embedded audio channels multiplexed in SDI) in the **MENU6**. The selected 2-channel analog audio signal is outputted from this connector.

⑥ PARALLEL REMOTE signal input

- Connect the accompanying remote connector here.
- For details of pin connections, refer to "**Data 3: Parallel Remote Pin Function**" or "**4-11. Description of MENU 8 Functions**".
- Make sure the cable used is shielded.

⑦ SERIAL REMOTE signal input

- Connect the BNC cable from the SRC-301A/Z(*) serial remote controller here.
  *SRC-301A/Z is discontinuation.
- By adopting the loop through connection, up to 99 monitors can be controlled individually or collectively.
- Without the loop through connection in place, connect a terminating plug.
- Set the monitor ID number on the **MENU2** screen.

⑧ RS-485 input/output

- This I/O is connected when performing a material display by using the TSL UMD protocol or a TALLY display.
- Up to 32 units can be loop-through-connected.
- Without loop-through connection, use the optional terminating device.

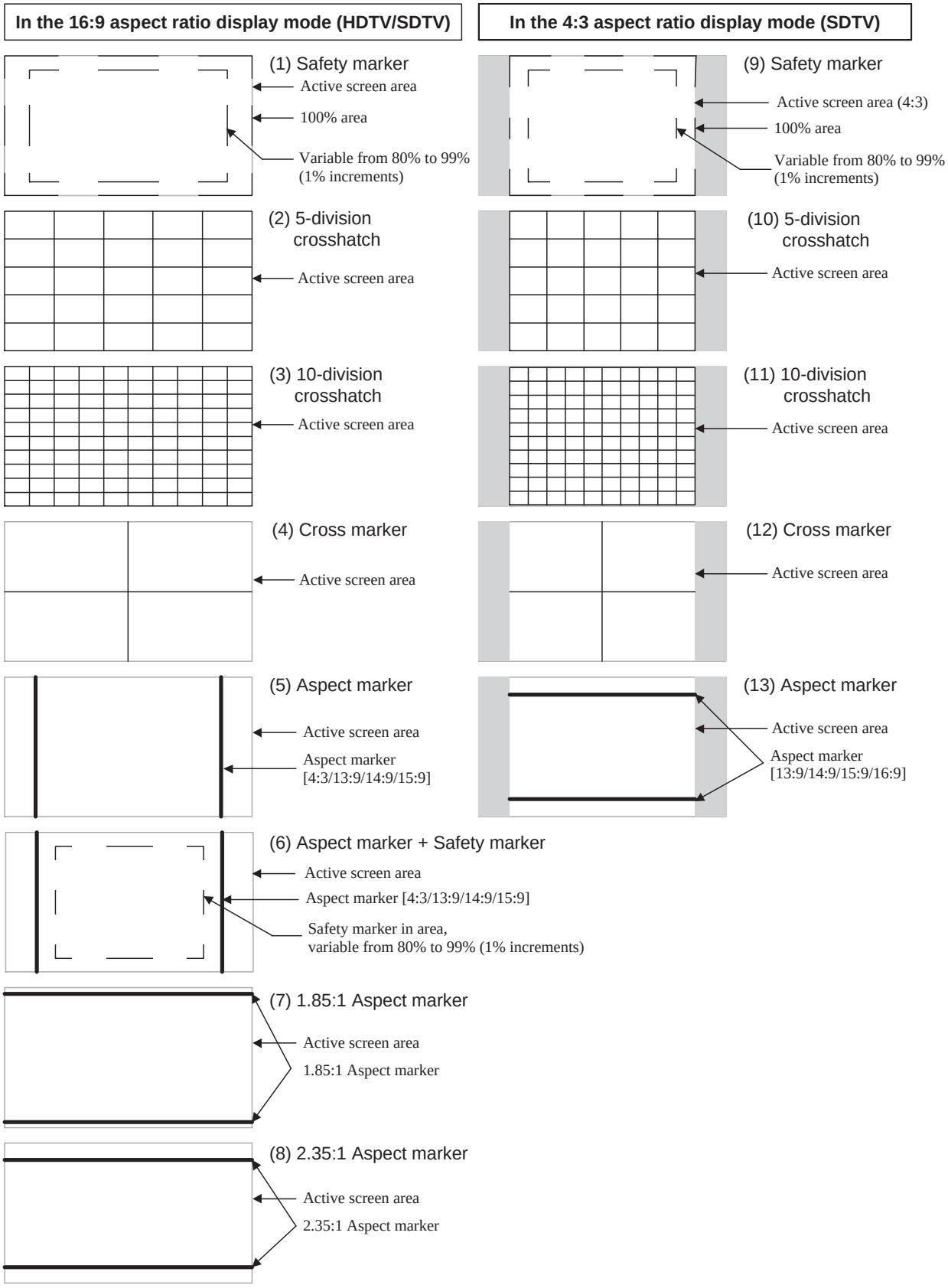
* Make sure the cable used is shielded.

⑨ TEST terminal for factory adjustment

- The TEST terminal is factory adjustment. Connect nothing to this terminal.

3. Markers

3-1. Types of Markers



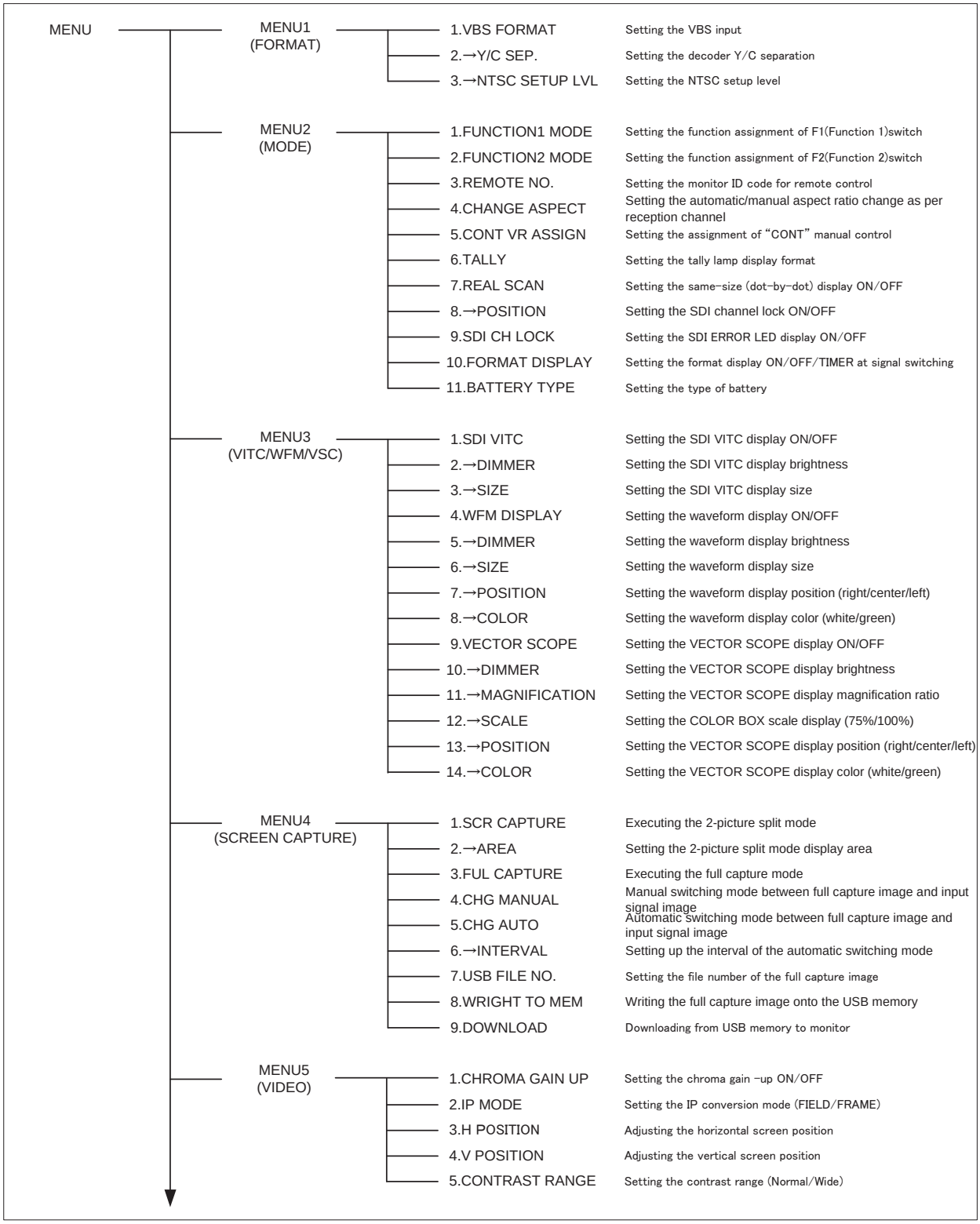
•

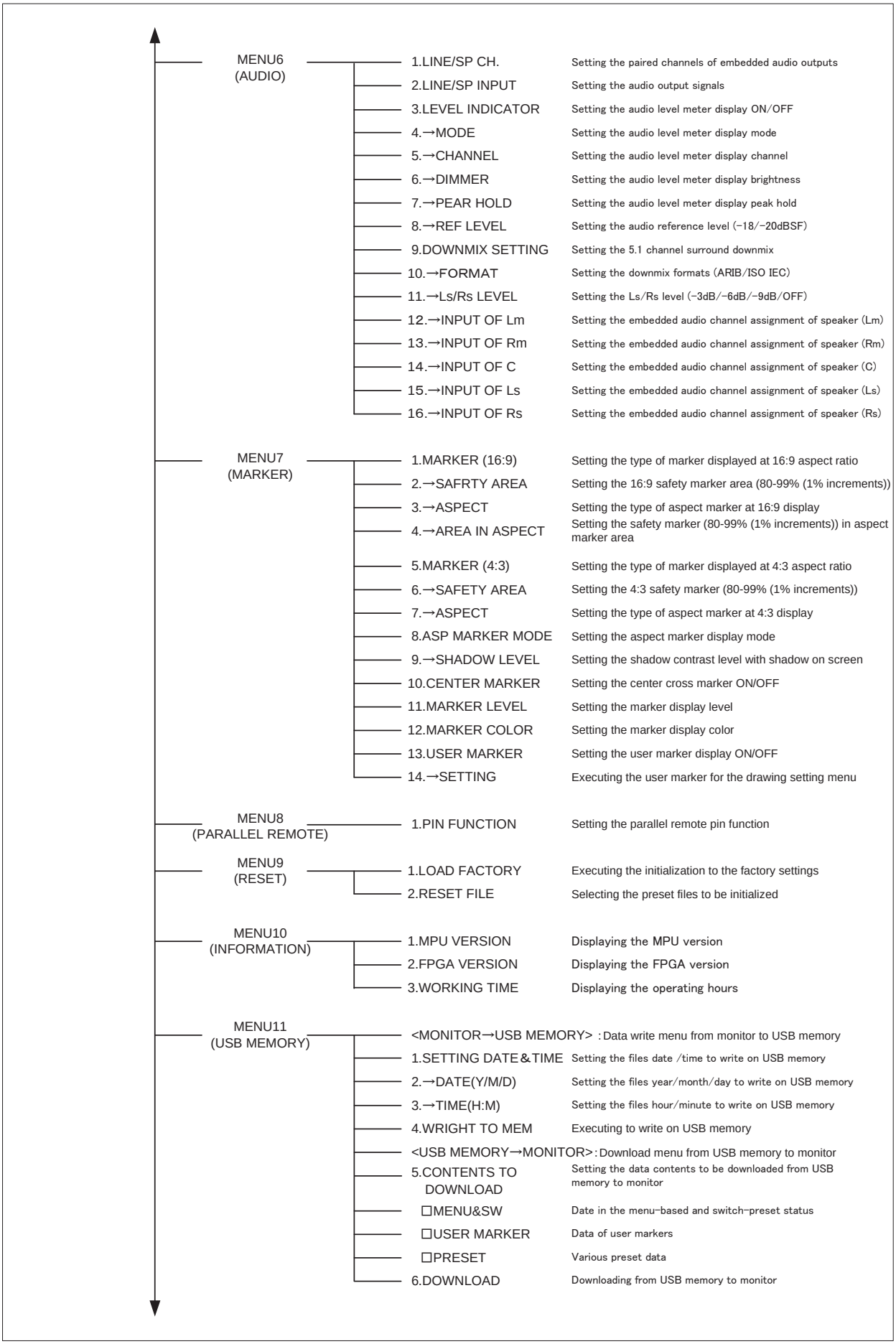
The displayed markers are set on **MENU7**.

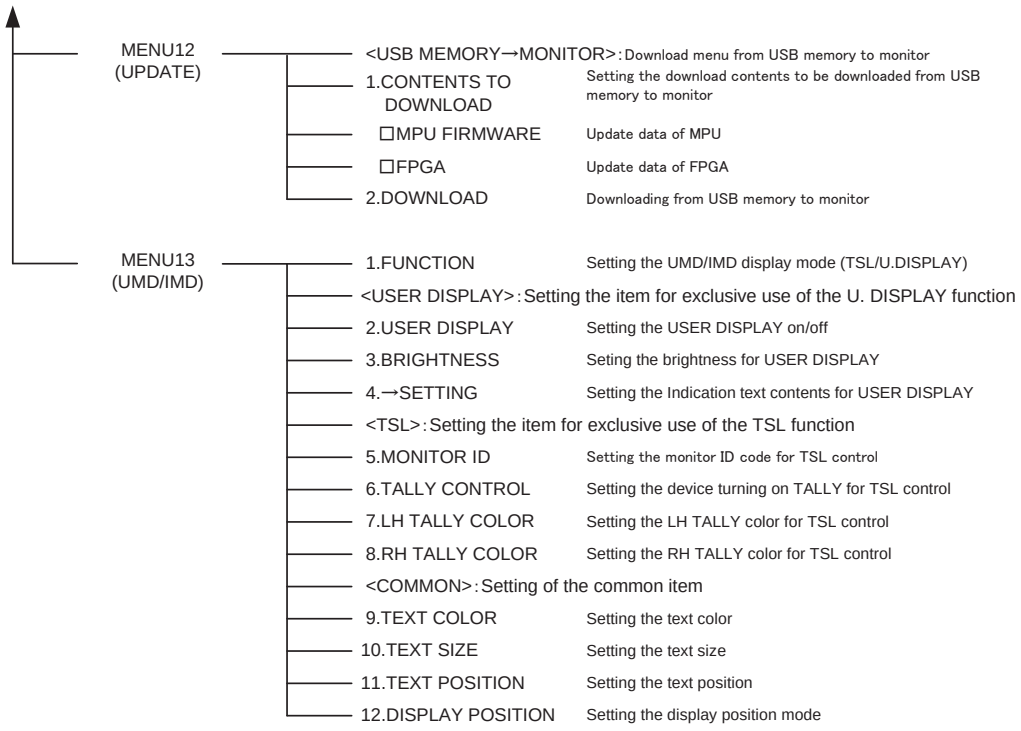
4. MENU Functions

4-1. List of MENU

All functions can be executed in the MENU screen.

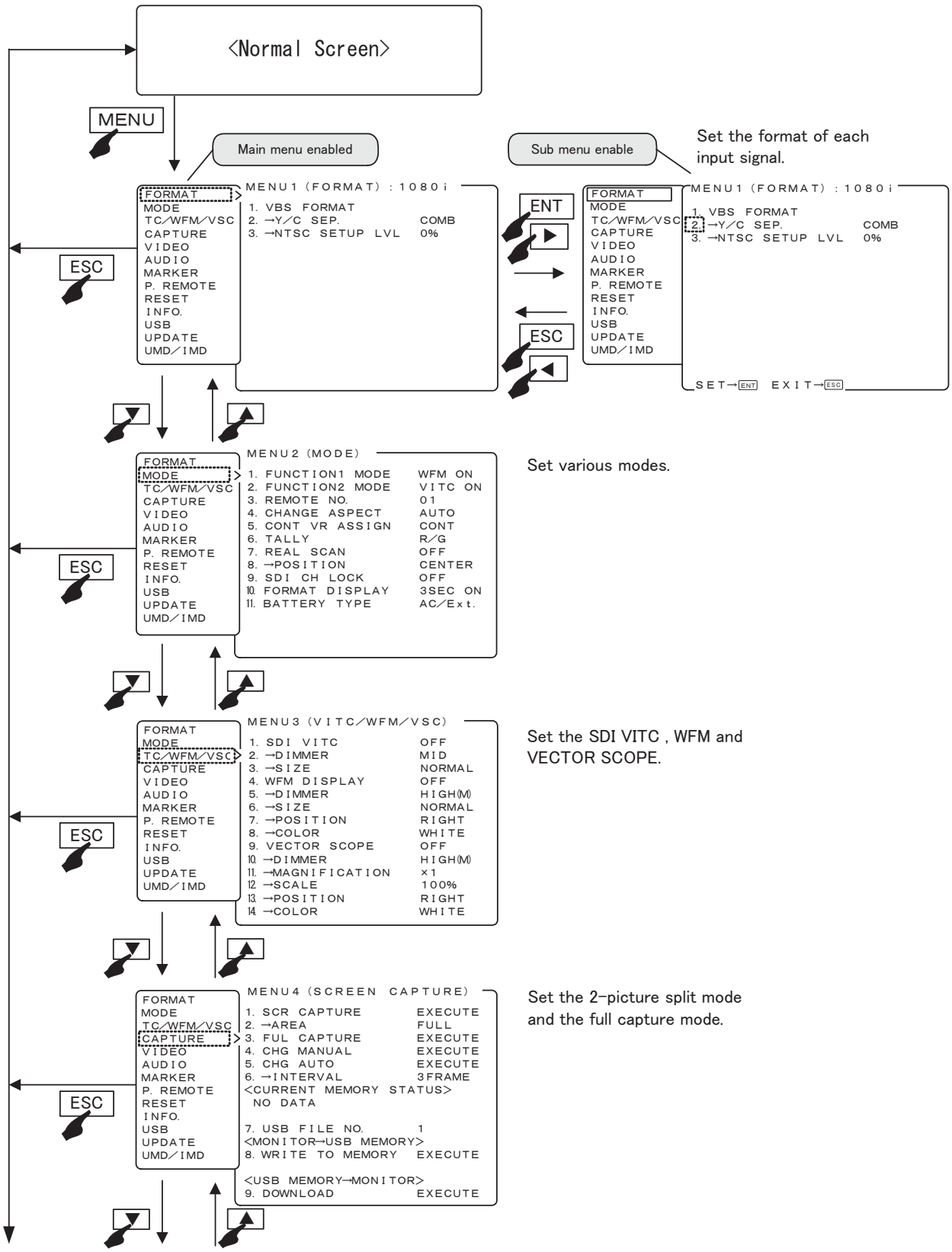


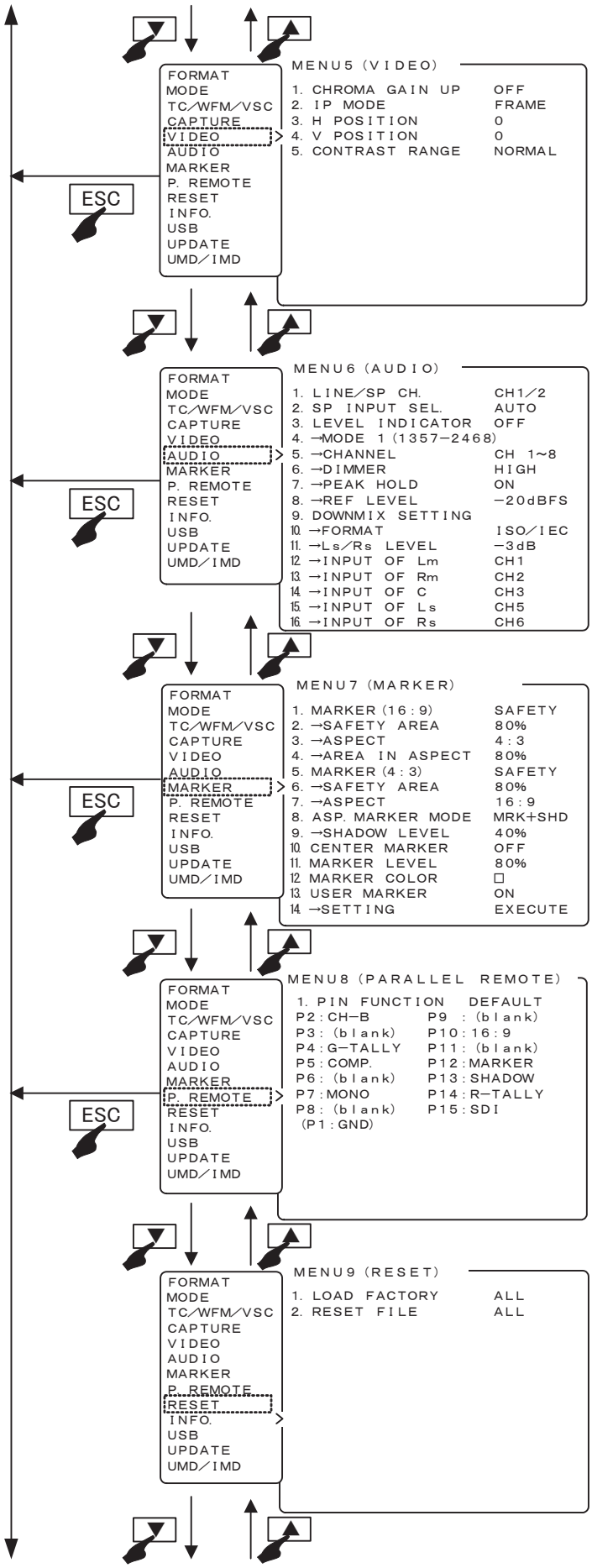

MENU6 (AUDIO)
1.LINE/SP CH. Setting the paired channels of embedded audio outputs
2.LINE/SP INPUT Setting the audio output signals
3.LEVEL INDICATOR Setting the audio level meter display ON/OFF
4.→MODE Setting the audio level meter display mode
5.→CHANNEL Setting the audio level meter display channel
6.→DIMMER Setting the audio level meter display brightness
7.→PEAR HOLD Setting the audio level meter display peak hold
8.→REF LEVEL Setting the audio reference level (−18/−20dBSF)
9.DOWNMIX SETTING Setting the 5.1 channel surround downmix
10.→FORMAT Setting the downmix formats (ARIB/ISO IEC)
11.→Ls/Rs LEVEL Setting the Ls/Rs level (−3dB/−6dB/−9dB/OFF)
12.→INPUT OF Lm Setting the embedded audio channel assignment of speaker (Lm)
13.→INPUT OF Rm Setting the embedded audio channel assignment of speaker (Rm)
14.→INPUT OF C Setting the embedded audio channel assignment of speaker (C)
15.→INPUT OF Ls Setting the embedded audio channel assignment of speaker (Ls)
16.→INPUT OF Rs Setting the embedded audio channel assignment of speaker (Rs)
MENU7 (MARKER)
1.MARKER (16:9) Setting the type of marker displayed at 16:9 aspect ratio
2.→SAFRTY AREA Setting the 16:9 safety marker area (80-99% (1% increments))
3.→ASPECT Setting the type of aspect marker at 16:9 display
4.→AREA IN ASPECT Setting the safety marker (80-99% (1% increments)) in aspect marker area
5.MARKER (4:3) Setting the type of marker displayed at 4:3 aspect ratio
6.→SAFETY AREA Setting the 4:3 safety marker (80-99% (1% increments))
7.→ASPECT Setting the type of aspect marker at 4:3 display
8.ASP MARKER MODE Setting the aspect marker display mode
9.→SHADOW LEVEL Setting the shadow contrast level with shadow on screen
10.CENTER MARKER Setting the center cross marker ON/OFF
11.MARKER LEVEL Setting the marker display level
12.MARKER COLOR Setting the marker display color
13.USER MARKER Setting the user marker display ON/OFF
14.→SETTING Executing the user marker for the drawing setting menu
MENU8 (PARALLEL REMOTE)
1.PIN FUNCTION Setting the parallel remote pin function
MENU9 (RESET)
1.LOAD FACTORY Executing the initialization to the factory settings
2.RESET FILE Selecting the preset files to be initialized
MENU10 (INFORMATION)
1.MPU VERSION Displaying the MPU version
2.FPGA VERSION Displaying the FPGA version
3.WORKING TIME Displaying the operating hours
MENU11 (USB MEMORY)
<MONITOR→USB MEMORY> : Data write menu from monitor to USB memory
1.SETTING DATE&TIME Setting the files date /time to write on USB memory
2.→DATE(Y/M/D) Setting the files year/month/day to write on USB memory
3.→TIME(H:M) Setting the files hour/minute to write on USB memory
4.WRIGHT TO MEM Executing to write on USB memory
<USB MEMORY→MONITOR> : Download menu from USB memory to monitor
5.CONTENTS TO DOWNLOAD Setting the data contents to be downloaded from USB memory to monitor
☐MENU&SW Date in the menu-based and switch-preset status
☐USER MARKER Data of user markers
☐PRESET Various preset data
6.DOWNLOAD Downloading from USB memory to monitor


MENU12
(UPDATE)
<USB MEMORY→MONITOR>: Download menu from USB memory to monitor
1.CONTENTS TO DOWNLOAD
Setting the download contents to be downloaded from USB memory to monitor
☐MPU FIRMWARE
Update data of MPU
☐FPGA
Update data of FPGA
2.DOWNLOAD
Downloading from USB memory to monitor
MENU13
(UMD/IMD)
1.FUNCTION
Setting the UMD/IMD display mode (TSL/U.DISPLAY)
<USER DISPLAY>: Setting the item for exclusive use of the U. DISPLAY function
2.USER DISPLAY
Setting the USER DISPLAY on/off
3.BRIGHTNESS
Seting the brightness for USER DISPLAY
4.→SETTING
Setting the Indication text contents for USER DISPLAY
<TSL>: Setting the item for exclusive use of the TSL function
5.MONITOR ID
Setting the monitor ID code for TSL control
6.TALLY CONTROL
Setting the device turning on TALLY for TSL control
7.LH TALLY COLOR
Setting the LH TALLY color for TSL control
8.RH TALLY COLOR
Setting the RH TALLY color for TSL control
<COMMON>: Setting of the common item
9.TEXT COLOR
Setting the text color
10.TEXT SIZE
Setting the text size
11.TEXT POSITION
Setting the text position
12.DISPLAY POSITION
Setting the display position mode

4-2. Flow of MENU Operations

MENU can be switched as follows using the **MENU** switch.





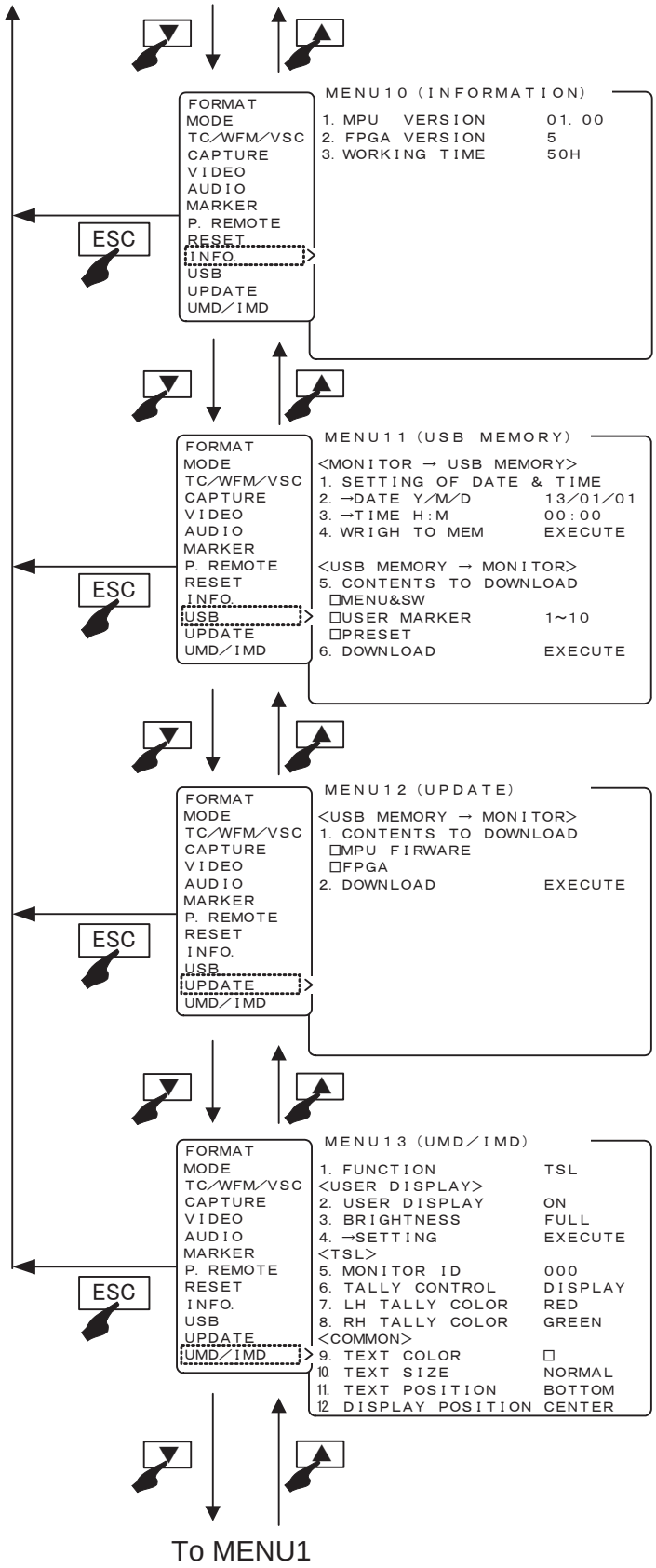
Set the image-related items.

Set the audio-related items.

Set the marker-related items.

Set the parallel remote-related items.

Initialize the menu items/file setting.



Displays the MPU/FPGA version, operating hours and added optional modules.

Set the USB memory-related read/write items.

Set the MPU/FPGA download-related items.

Set the UMD/IMD-related items.

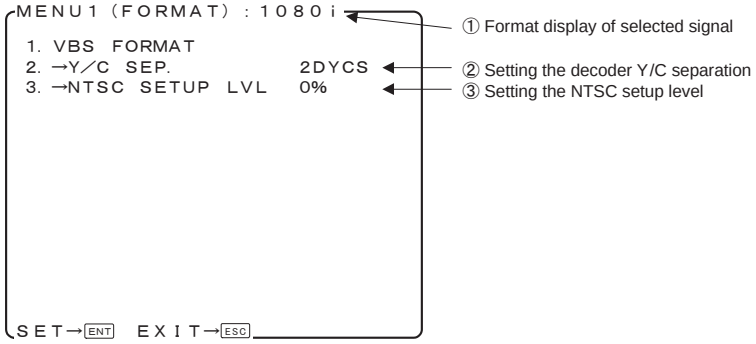
4-3. Description of MENU 1 Functions

＊Note the following description on the menu.

・The vertical frequency "/60" includes both 60 Hz and 59.94 Hz (60/1.001).

・The vertical frequency "/48" includes both 24 psF and 23.98 psF (24/1.001) in SF mode.

・The vertical frequency "/24" includes both 24 Hz and 23.98 Hz (24/1.001).



① Format display of selected signal

・Shows the format of the currently selected signal.

② Setting the decoder Y/C separation

・For the Y/C separation of VBS (composite) signals, set any of the following three types of formats.

・COMB: adaptive 5-line comb filter

・TRAP : trap filter

・This function can be assigned with the F1 F2 switch on the front panel.

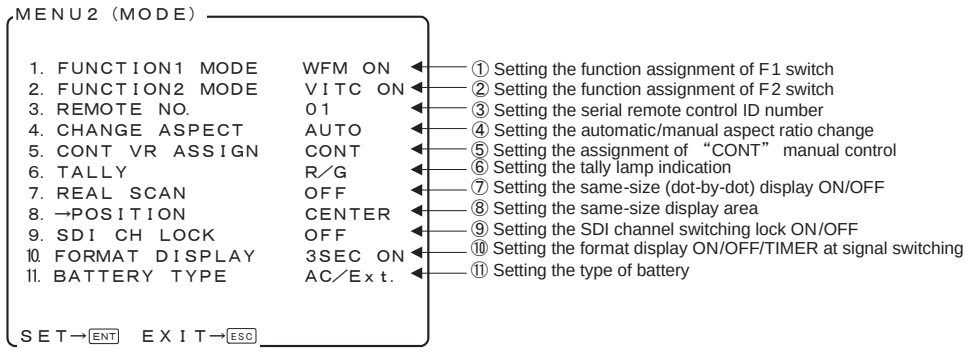
・Default setting is COMB.

③ Setting the NTSC setup level

・Used to set the setup level at the time of NTSC signal input. When the black level of the signal has 7.5% setup, it is set to "7.5%".

・Default setting is 0%.

4-4. Description of MENU 2 Functions



① Setting the function assignment of F1 switch

・Set any of the following operations performed by pressing the **F1** switch on the front panel.

・Default setting is WFM ON.

< F1 & F2 SW Function Assignment List>

・INPUT Switching of the input source
SDLA → SDI-B → VBS →

・FILE Switching of the preset file
See item 5 for details.
D65 →S93 →FILE1 →FILE2···→

・APT ON Turning ON/OFF of the aperture
See item 5 for settings of the APT level/frequency.
APT OFF → ON →

・SCREEN Selecting a single color from RGB for displaying
RGB → R only → G only → B only

・MRK SEL Switching of the types of marker
See **MENU7-1** for details.
SAFETY → CROSS 5···→ASP+SAF→

・COMB Switching of the Decoder Y/C separation setting
See **MENU1-2** for details.
COMB → TRAP →

・CHR UP Turning ON/OFF of CROMA UP
See **MENU5-1** for details.
CHROMA UP OFF → ON →

・DELAY Switching of H/V/H+V of DELAY
Enabled only for SDI input
DL OFF→H.DL→V.DL→H/V.DL→

・IP MODE Switching of the IP FIELD/FRAME conversion mode
See **MENU5-2** for details.
FRAM → FIELD →

・BL DIM Switching of the Backlight brightness level
See item 5 for details.
17→18→19 ··· 30→1→2→3 ···16→

・RS ON Turning ON/OFF of the equal- magnification display
See **MENU2-8** for details.
RS OFF → ON →

・RS POS Switching of the equal-magnification display area
See **MENU2-9** for details.
CENTER →C/B→R/T→RC ··· C/T→

・USR MRK Turning ON/OFF of the USER MARKER display
See **MENU7-13** for details.
USER MARKER OFF → ON →

・VSC ON Turning ON/OFF of the VECTOR display
See **MENU3-9** for details.
VSC OFF → ON →

・VITC ON Turning ON/OFF of the SDI VITC display
See **MENU3-1** for details.
VITC OFF → ON →

・WFM ON Turning ON/OFF of the WFM display
See **MENU3-4** for details.
WFM OFF → ON →

・AUD CH Switching of the embedded audio channel
See **MENU6-1** for details.
CH1/2→CH3/4→CH5/6→CH7/8→DMIX→

・IN SDI Switching of the SDI input A/B
CH1/2→CH3/4→CH5/6→CH7/8→DMIX→

・FCAP Capturing of full-screen images
Shortcut key to the Image Capture Menu on **MENU4-3**

・CHG M Manual switching of a full capture image and the input signal image
Shortcut key to the Execution Menu on **MENU4-4**

・CHG A Automatic switching of a full capture image and the input signal image
Shortcut key to the Execution Menu on **MENU4-5**

② Setting the function assignment of F2 switch

・The function assignment is selectable in the same way as that shown above ① by pressing the **F2** switch on the front panel.

・Default setting is VITC ON.

③ Setting the serial remote control ID number

・Used to set the ID number (01 to 99) of the monitor.
* The ID number for exclusive use of the TSL sets it in MENU13-5

・The ID number is assigned to each monitor in order to perform remote operation with the serial remote controller.
* SRC-301A/Z is discontinuation.

・Default setting is 01.

④Setting the ASPECT ratio to Automatic or Manual

・ AUTO:
When the SDTV signal is input, the ASPECT information that has been set up by using the **ASPECT** switch is individually stored in memory by each input channel of VBS/SDI chA (for SD only)/SDI chB (for SD only). (HD-SID signal is fixed to 16:9.)
When the individual channel is switched over in such a manner as "VBS⇔SDI chA⇔SDI chB," the ASPECT information that has been stored in memory will automatically be set up.

・MANUAL:
The information that has been set up by using the **ASPECT** switch will be set up to the same aspect value without exception.

・Default setting is AUTO.

* When switching the ASPECT in the parallel remote mode, set the ASPECT ratio to "MANUAL".

⑤ Setting the assignment of "CONT" manual control

・Used to assign the function to the [CONT] control (switch popped up).
・CONT : contrast's manual level setting
・BL : backlight level setting .

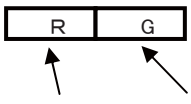
・Default setting is CONT.

※With setting at "BL", the **"5-1⑧"** item automatically varies accordingly. Also the preset data is kept intact even when the switch is pressed.

⑥ Setting the tally lamp indication

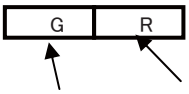
・Set any of the following display modes of the tally lamps located at the top of the front of the monitor.

・R/G : R is on the left side and G on the right side, when facing the screen.



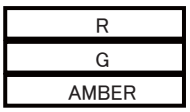
[R-TALLY ON] [G-TALLY ON]

・G/R : G is on the left side and R on the right side, when facing the screen.



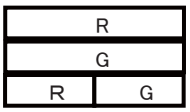
[G-TALLY ON] [R-TALLY ON]

・R+G : The entire tally is displayed.
The lamp is displayed in amber when both the R-TALLY and G-TALLY are set at ON. Both R- and G-TALLY at ON.



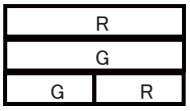
←[R-TALLY ON]
←[G-TALLY ON]
←[Both R and G-TALLY at ON]

・R/G ALL : The entire tally is displayed.
The lamp is displayed R/G when both the R-TALLY and G-TALLY are set at ON. Both R- and G-TALLY at ON.



←[R-TALLY ON]
←[G-TALLY ON]
←[Both R and G-TALLY at ON]

・G/R ALL : The entire tally is displayed.
The lamp is displayed G/R when both the R-TALLY and G-TALLY are set at ON. Both R- and G-TALLY at ON.



←[R-TALLY ON]
←[G-TALLY ON]
←[Both R and G-TALLY at ON]

・Default setting is R/G.

⑦Setting the same-size (dot-by-dot) display ON/OFF

・Set to ON in order to reproduce the input signal in its original pixels without enlargement or reduction.

・This function can be assigned with the **F1** **F2** switch on the front panel.

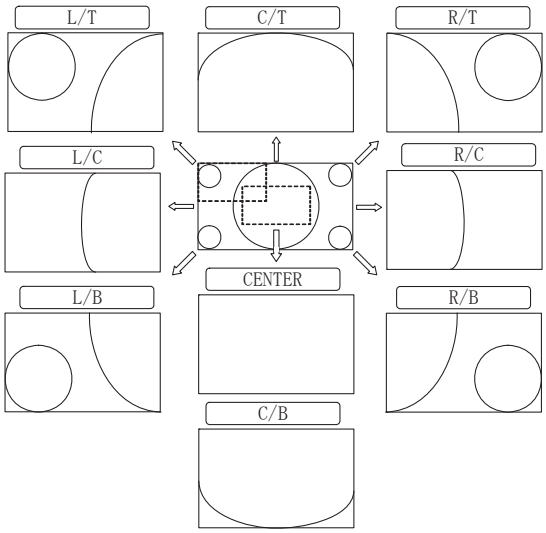
・Default setting is OFF.

※Signals in 480i/575i format are not in square pixels. Therefore, the aspect ratio will be displayed differently from the original image.

⑧ Setting the same-size display area

・Used to set the display area for the input of signals in the 1080i/1080p format, which has more pixels than those (1280x768) of the panel.
・CENTER(Screen center displayed)
・L/T(Screen top left displayed)
・L/C(Screen center left displayed)
・L/B(Screen bottom left displayed)

・C/T(Screen top center displayed)
・C/B(Screen bottom center displayed)
・R/T(Screen top right displayed)
・R/C(Screen center right displayed)
・R/B(Screen bottom right displayed)
・In the 480i/575i/720p format, the image appears at the center of the screen regardless of this setting.
・This function can be assigned with the F1 F2 switch on the front panel.
・Default setting is CENTER.



⑨ Setting the SDI channel switching lock ON/OFF

・The lock is set to "ON" to prevent SDI signal channel switching.
・It utilizes the MONITOR OUT terminal and is effective in fixing the channel. It prevents accidental channel switching.
・Default setting is OFF.
※Before setting it to "ON", make sure the desired SDI channel is selected.

⑩ Setting the format display ON/OFF before switching signals

・Used to set whether the channel and signal format are displayed or not.
  ・3SEC ON : Three seconds indication
  ・CONT ON : Consecutive indication
  ・OFF : Indication off
・Default setting is 3SEC ON.

⑪ Setting the type of battery

・This function is used to set the voltage (discharge ending voltage) for warning that the battery is low. Select an appropriate mode according to the nominal voltage of the battery to be used.
  ・AC/Ext. : AC or external stabilized DC power supply
  ・DC+14.8V : Battery with nominal voltage of 14.8V or 14.4V
  ・DC+13.2V : Battery with nominal voltage of 13.2V
  ・DC+12.0V : Battery with nominal voltage of 12.0V
・Default setting is AC/Ext.

Precautions for battery

1) For the nominal voltage of the battery, refer to the indication on the battery or the instructions manual of the battery.

2) For the following batteries, select DC +14.8V in the battery mode setting.
  endura 7,7S by IDX CO., Ltd.
  endura 10,10S by IDX Co., Ltd.

3) When using the battery equipped with XLR 4-pin connector or when operating the battery using XLR 4-pin connector, make a proper selection in the battery setting according to the nominal voltage of the battery used.
  Example: HP-90L by Paco Electronics Industry, Inc. : DC+13.2V

4) When operated with the setting not in accordance with the battery's nominal voltage, the following events may result.

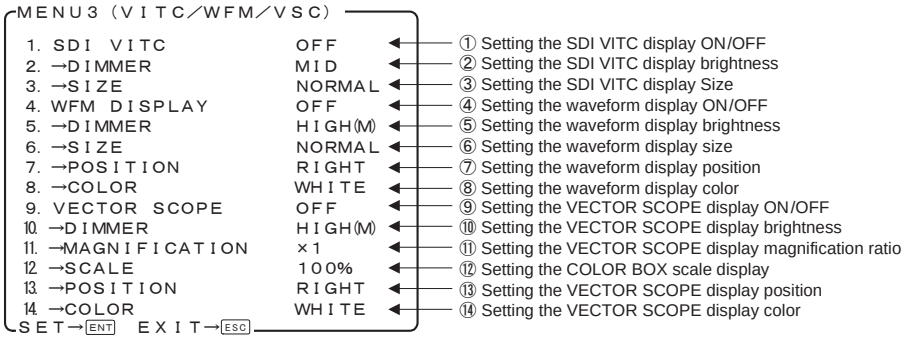
- When nominal 13.2V battery is used with +DC12V setting.
  Battery alarm, 30-second alarm and shutdown alarm will function. However, it may take longer from activation of the battery alarm until shutdown.
  Also, the battery life may be adversely affected as the voltage is lower than the discharge ending voltage.

- When nominal 13.2V battery is used with +DC14.8V setting.
  Service hours are shortened.

- When nominal 12.0V battery is used with +DC14.8V setting.
  Battery alarm and 30-second alarm may be triggered shortly even if fully charged battery is used, shutting down the monitor.

5) If operation is stopped shortly despite correct battery mode setting (shutdown alarm will not flicker), it is likely that the battery's internal protection circuit has been activated.

4-5. Description of MENU 3 Functions



① Setting the SDI VITC display ON/OFF

- Used to turn ON or OFF the VITC display multiplexed with HD-SDI signal.
- This function can be assigned with the F1 F2 switch on the front panel.

・Default setting is OFF.

② Setting of SDI VITC display brightness

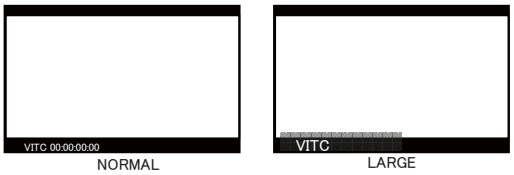
- Used to set the SDI VITC display brightness in three levels, LOW, MID and HIGH.

・Default setting is MID.

③ Setting of SDI VITC display size

- Used to select the SDI VITC display size, NORMAL or LARGE.

・Default setting is NORMAL.



NORMAL LARGE

④ Setting of waveform display ON/OFF

- Used to turn ON or OFF the waveform display of luminance signal.
- This function can be assigned with the F1 F2 switch on the front panel.

・Default setting is OFF.

⑤ Setting of waveform display brightness

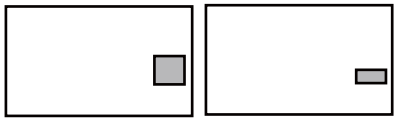
- Used to set the waveform display brightness in three levels, LOW, MID, HIGH and HIGH(M).
- HIGH(M) mode transmits with a picture and displays it.

・Default setting is HIGH(M).

⑥ Setting of waveform display size

- Used to set the luminance signal waveform display size, NORMAL or SMALL.
- The SMALL setting displays the waveform half as tall as in the NORMAL setting.

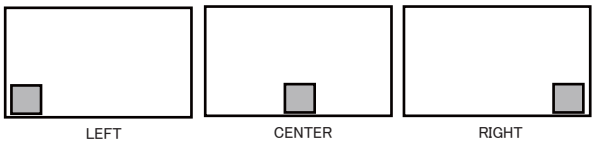
・Default setting is NORMAL.



⑦ Setting of waveform display position

- Used to set the waveform display position, RIGHT, CENTER or LEFT.

・Default setting is RIGHT.



⑧ Setting of waveform display color

- Used to set the waveform display color, GREEN or WHITE.

・Default setting is WHITE.

⑨ Setting the VECTOR SCOPE display ON/OFF

- Used to turn on or off the VECTOR SCOPE display.
- This function can be assigned with the F1 F2 switch on the front panel.
- Default setting is OFF.

⑩ Setting the VECTOR SCOPE display brightness

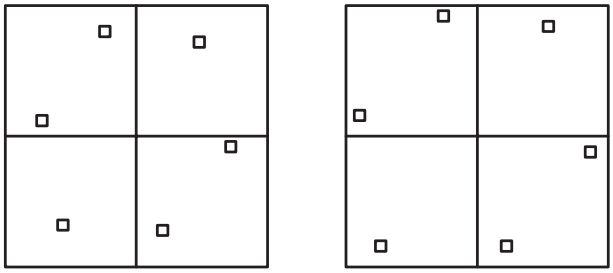
- Used to set the VECTOR SCOPE display brightness in 3 levels: LOW, MID, HIGH and HIGH(M).
- HIGH(M) mode transmits with a picture and displays it.
- Default setting is HIGH.

⑪ Setting the VECTOR SCOPE display magnification ratio

- Used to set the VECTOR SCOPE display magnification in 4 ratios: x1, x2, x4 and x8.
- Default setting is x1.

⑫ Setting the COLOR BOX scale display

- Used to set the VECTOR SCOPE' s COLOR BOX according to the input color bar signal: 75% and 100%.
- Default setting is 100%.

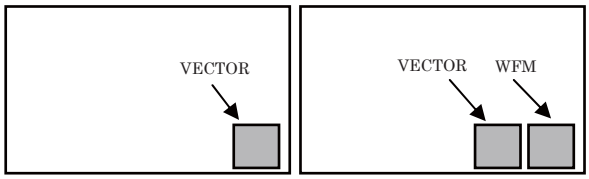


75%SCALE 100%SCALE

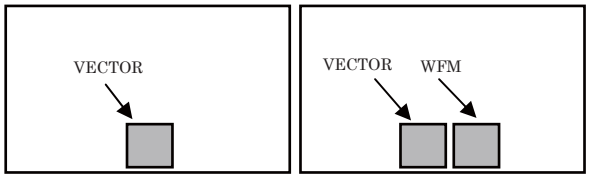
⑬ Setting the VECTOR SCOPE display position

- Used to set the waveform display to any of the RIGHT, CENTER and LEFT positions.
- When used commonly with WFM, the VECTOR display is located on the left of the WFM one.
- Default setting is RIGHT.

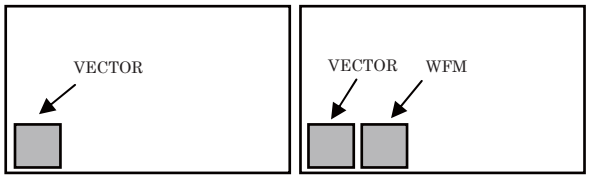
- RIGHT location



- CENTER location



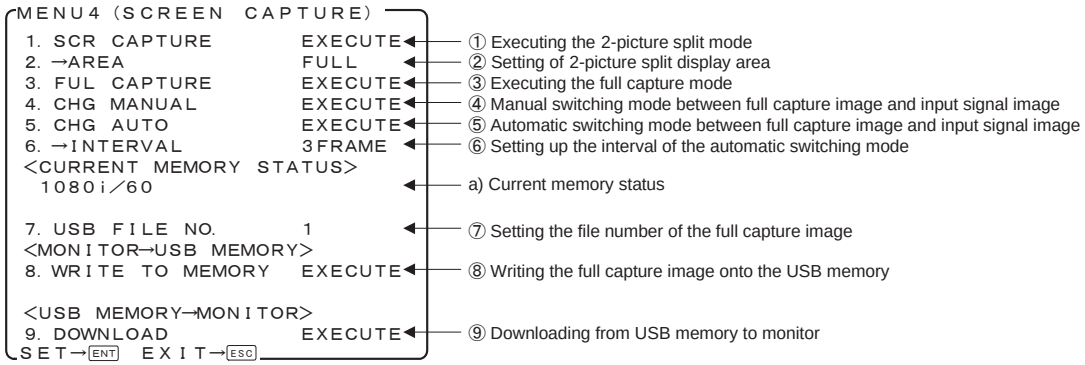
- LEFT location



⑭ Setting the VECTOR SCOPE display color

- Used to set the waveform display color to either of GREEN and WHITE.
- Default setting is WHITE.

4-6. Description of MENU 4 Functions

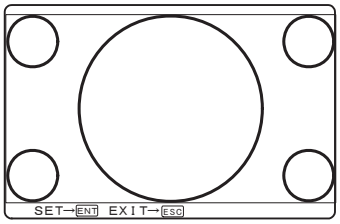


① Executing the 2-picture split mode

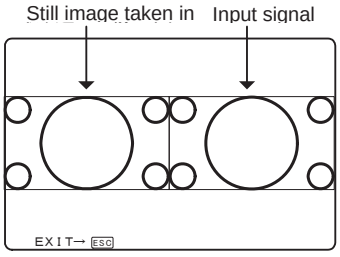
・Used to execute this mode to take in the still image of an input signal and compare it with other inputs.

1. With "EXECUTE" flashing in magenta, press the ENT switch.

2. The display changes as shown below. Press the ENT switch again to take in the image.



3. Switch the input and compare its image with the taken-in still image. To take in another image or to quit the 2-picture split mode, press the ESC switch.



* The 2-picture split mode is operative with the same format signals. If different-format signals are input, the images cannot be properly displayed.

* With ASPECT set at [16:9], the SDTV signal is converted to the [4:3].

② Setting of 2-picture split display area

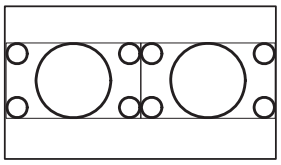
・Used to set the display area in the 2-picture split mode.

・FULL: Full image displayed

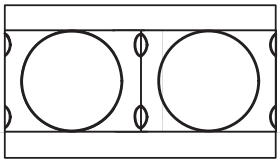
・4:3: Image in the central 4:3 area displayed

・Default setting is FULL.

* This function is operative with HDTV-format input signals only.



HDTV < FULL >

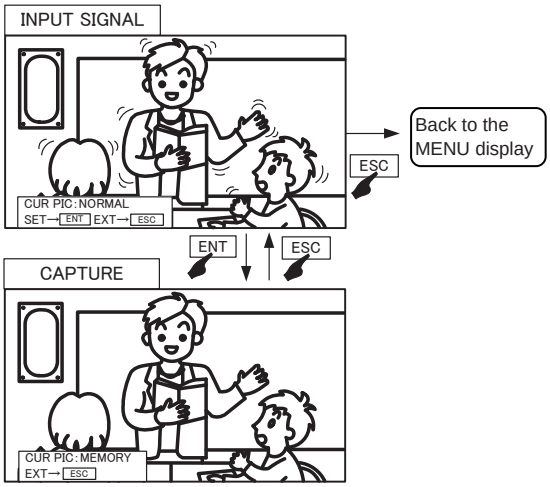


HDTV < 4:3 >

③ Executing the full capture mode

・This mode enables capturing the image that has been input in the full-screen mode.

・When the EXECUTE command is given, the MENU will appear at the lower left hand corner of the screen. When the **ENT** switch is pressed, the full screen image will be captured. By pressing the **ESC** switch, the Input Signal mode will be resumed.



* When the power is turned OFF, the captured image will be lost. If it is desired to save it for future use, follow item ⑧ to store it in the USB memory, and download it from the memory when using it.

④Manual switching mode between full capture image and input signal image

・This operation is possible after the full capture mode described under item ③ has been executed.

・ Whenever the **ENT** switch is pressed, the full capture image and the image of the input signal will be instantly switched over as illustrated on the diagram at left, making it possible immediately to compare the images.

By selecting a preferred moment to change over the switch, it is possible to ascertain the comparison of color / brightness / picture quality / position, etc. on a partial basis.

* The comparison of the image of the input signal and the captured image can be performed only if both images are in the same format. The comparison cannot be performed if the formats of images of the input signal and the captured image are different, or if the captured image has not been stored in the memory of the monitor.

⑤Automatic switching mode between full capture image and input signal image

・This operation is possible after the full capture mode described under item ③ has been executed.

・The full capture image and the image of the input signal will be automatically switched over, making it possible immediately to compare the images.

As images are switched over automatically, it is possible to carry out adjustments such as positioning at ease while operating the camera.

・ The automatic switching can be set up by frame according to the procedures described under item ⑥.

* The comparison of the image of the input signal and the capture image can be performed only if both images are in the same format. The comparison cannot be performed if the formats of the input signal image and the capture image should differ, or if the captured image has not been stored in the memory of the monitor.

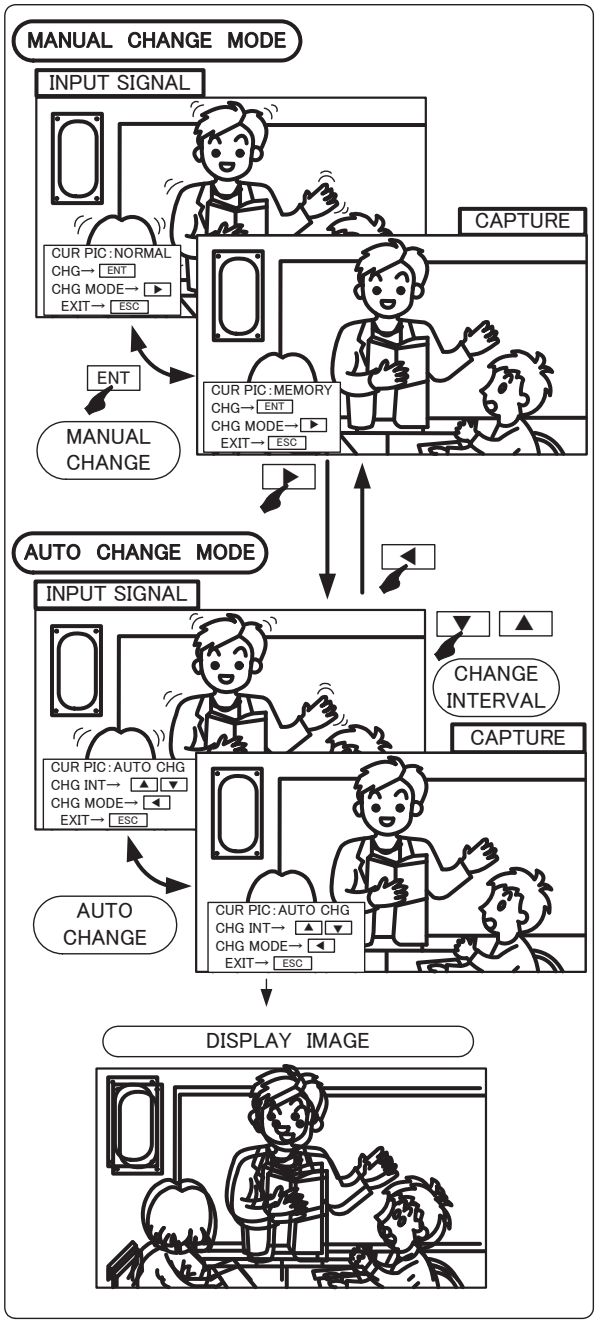
⑥Setting up the interval of the automatic switching mode

・This operation is possible after the full capture mode described under item ③ has been executed.

・The interval of the automatic switching mode can be specified by a unit of frame as shown below: .

1 FRAME→2 FRAMES→3 FRAMES→4 FRAMES →5 FRAMES→10 FRAMES→30 FRAMES→60 FRAMES→

・Default setting is 3 FRAMES.



a) CURRENT MEMORY STATUS

・The format of the full capture image is displayed here.

・The “NO DATA” display will appear when no image has been captured. As all captured images will be lost when the monitor is turned OFF, the “NO DATA” display will always appear whenever the monitor is turned ON.

⑦Setting the file number of the full capture image

・This feature is used to specify the file number (1~32) to be used when storing a full capture image in the USB memory. When downloading an image from the USB memory, one of these numbers is used to identify the desired image file.

⑧ Writing the full capture image onto the UBS memory

・Since it is possible to take in up to 32 images, test signals and other required images can be stored in the USB memory in advance before going out on an outdoor filming work for downloading and utilizing them on the location site.

・In case data is to be stored in PC and be restored onto the USB memory, make sure that the entire folder of "Ikegami_Monitor" containing the required data should be placed on the root of the USB.

・The USB memories in any format other than FAT12/16/32, or VFFT are not compatible with this monitor. In addition, any USB memory on which some security measure has been executed cannot be used on this monitor.

・ For details of the method of writing data on the USB memory, please refer to "How to write full capture data from monitor to USB memory" on page 25.

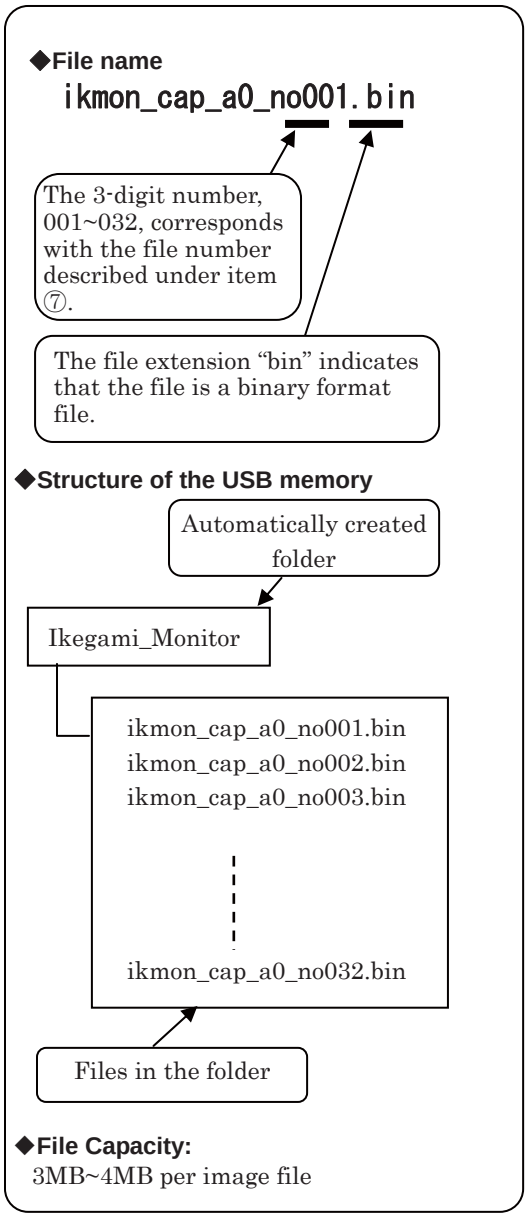
Concerning file names

・ When a full capture image is stored in the USB memory, a folder called "Ikegami_Monitor" will be automatically created in the USB memory, in which files will be stored as described below.
If the USB memory has been already manipulated under **MENU11**, the "Ikegami_Monitor" folder should already has been created. The subsequent image files will be stored in this folder in binary format.

・ The file format that has been used is exclusive to HLM-905WR.

Concerning dates used for stored files

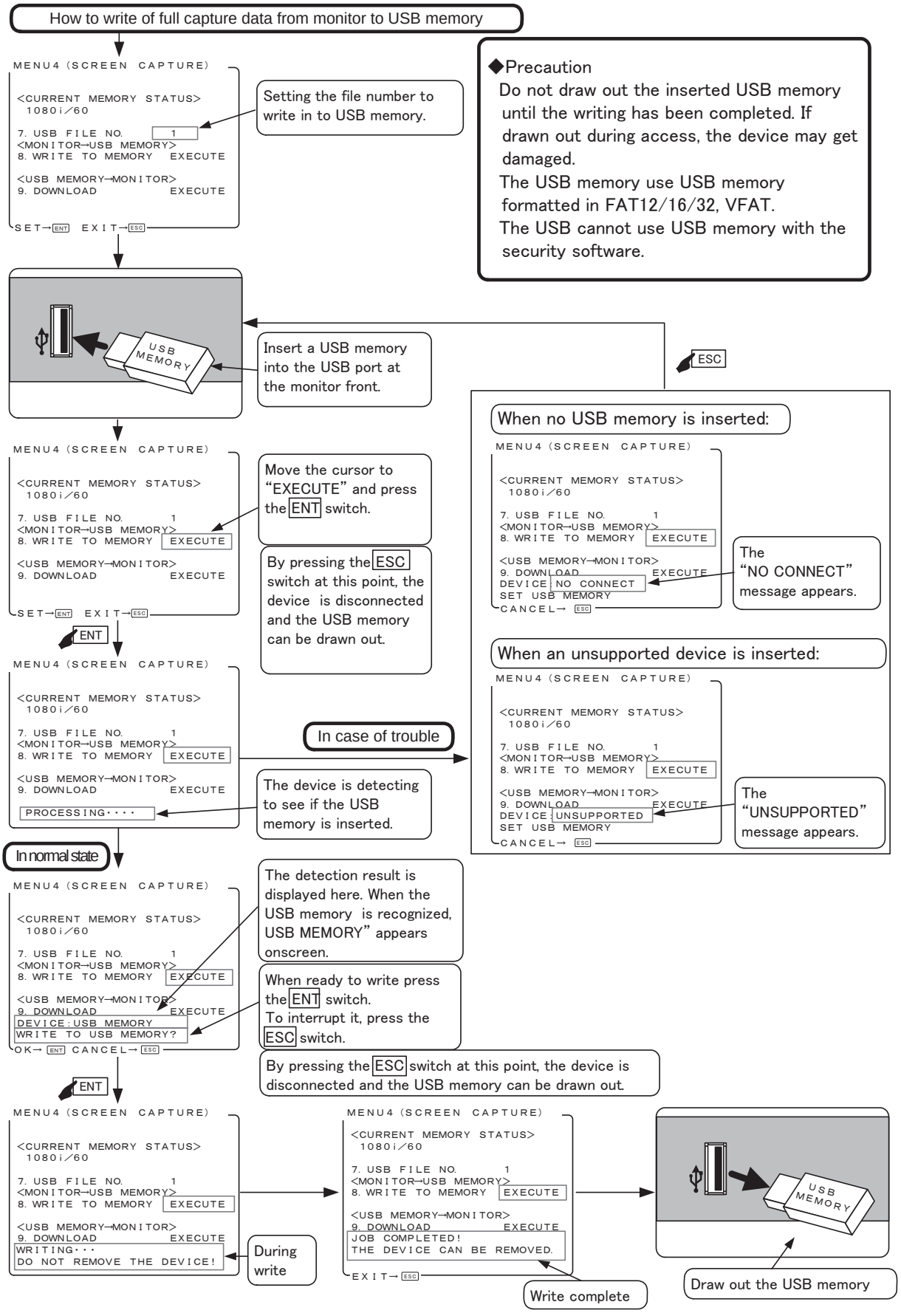
・ Since the monitor does not have any built-in clock, "the date," and "the time" that have been set up under **MENU11** will apply.
Please check the descriptions given under **MENU11** for the method of setting.



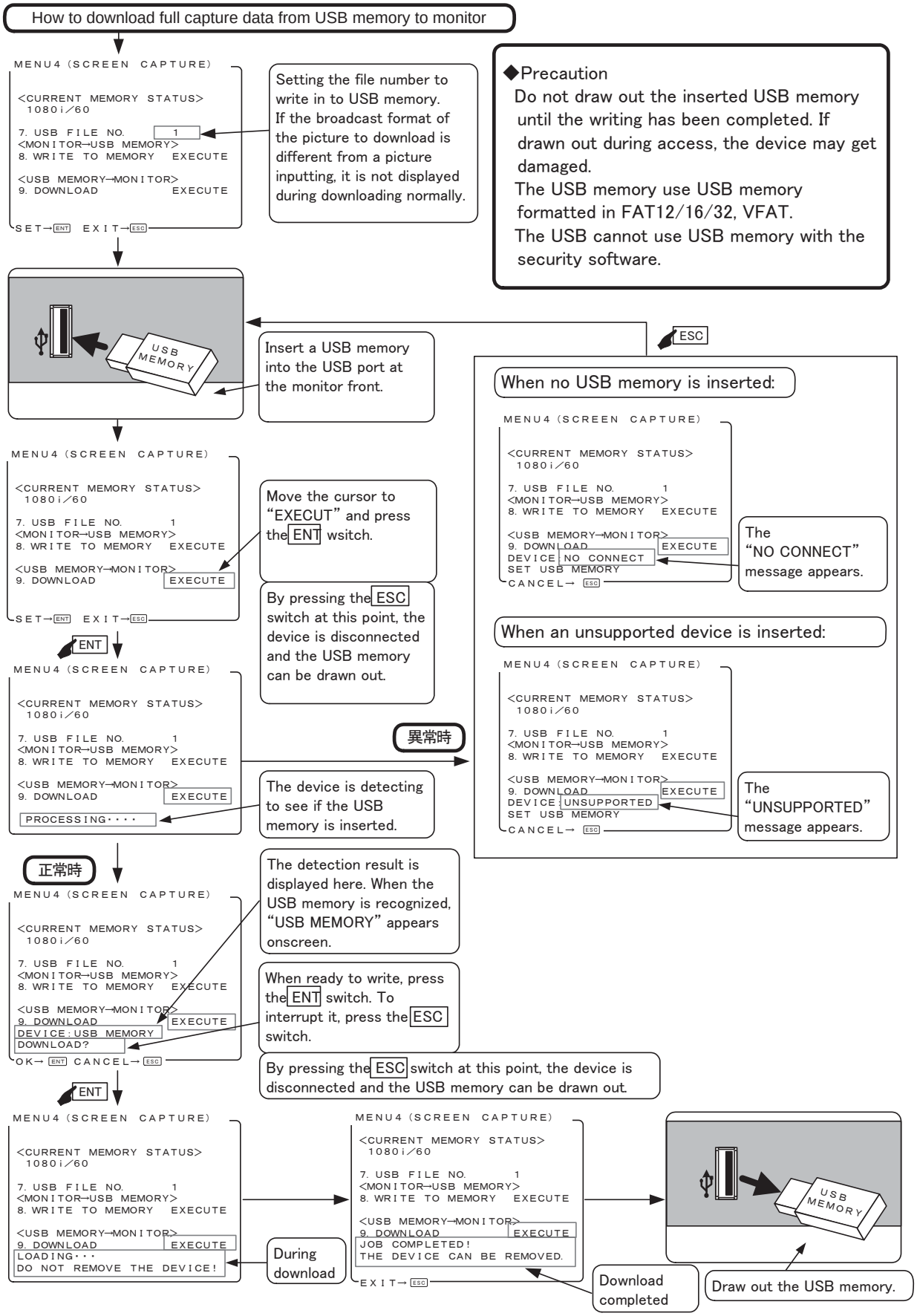
⑨ Downloading from UBS memory to monitor

・Downloading the capture image stored in the USB memory to the monitor

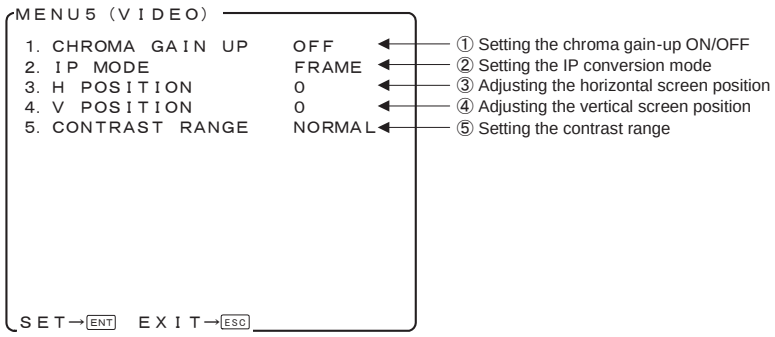
・ For details of the method of downloading the capture image from the USB memory to the monitor, please refer to "How to download full capture data from USB memory to monitor" on page 25.


How to write of full capture data from monitor to USB memory
MENU4 (SCREEN CAPTURE)
<CURRENT MEMORY STATUS>
1080i/60
7. USB FILE NO. 1
<MONITOR→USB MEMORY>
8. WRITE TO MEMORY EXECUTE
<USB MEMORY→MONITOR>
9. DOWNLOAD EXECUTE
SET→ENT EXIT→ESC
Setting the file number to write in to USB memory.
◆Precaution
Do not draw out the inserted USB memory until the writing has been completed. If drawn out during access, the device may get damaged.
The USB memory use USB memory formatted in FAT12/16/32, VFAT.
The USB cannot use USB memory with the security software.
USB MEMORY
Insert a USB memory into the USB port at the monitor front.
ESC
When no USB memory is inserted:
DEVICE:NO CONNECT
SET USB MEMORY
CANCEL→ESC
The "NO CONNECT" message appears.
Move the cursor to "EXECUTE" and press the ENT switch.
By pressing the ESC switch at this point, the device is disconnected and the USB memory can be drawn out.
ENT
In case of trouble
When an unsupported device is inserted:
DEVICE:UNSUPPORTED
The "UNSUPPORTED" message appears.
PROCESSING····
The device is detecting to see if the USB memory is inserted.
In normal state
The detection result is displayed here. When the USB memory is recognized, USB MEMORY" appears onscreen.
DEVICE:USB MEMORY
WRITE TO USB MEMORY?
OK→ENT CANCEL→ESC
When ready to write press the ENT switch.
To interrupt it, press the ESC switch.
By pressing the ESC switch at this point, the device is disconnected and the USB memory can be drawn out.
WRITING···
DO NOT REMOVE THE DEVICE!
During write
JOB COMPLETED!
THE DEVICE CAN BE REMOVED.
EXIT→ESC
Write complete
Draw out the USB memory

How to download full capture data from USB memory to monitor



4-7. Description of MENU 5 Functions



① Setting the chroma gain-up ON/OFF

- Set the gain-up ON/OFF for chroma signals.
- At the time of ON, the chroma gain increases by +6 dB.
- This function can be assigned with the F1 F2 switch on the front panel.

- Default setting is OFF.

② Setting the IP conversion mode

- The mode for I → P conversion is set in the 1035i/1080i/1080psF/480i/575i formats.
- FRAME : The information on the previous and subsequent fields is used to convert images to progressive ones. Thanks to this, diagonal interpolation of moving images is enabled for optimum setting.
- FIELD : The line interpolation in the field is used to convert images to progressive ones. In this way, the signal delay can be minimized.

- Default setting is FRAME.

* If the delay difference between video and audio are noticeable, change to "FIELD" setting. This setting will help operate regularly. Compared to FRAME interpolation, the FIELD setting may produce jaggies in moving images viewed diagonally.

③ Adjusting the horizontal screen position

- Adjust the horizontal screen position of VIDEO input (SDI, VBS).
- The settings are memorized for each channel, each format.

- Default setting is 0.

④ Adjusting the vertical screen position

- Adjust the vertical screen position of VIDEO input (SDI, VBS).
- The settings are memorized for each channel, each format.

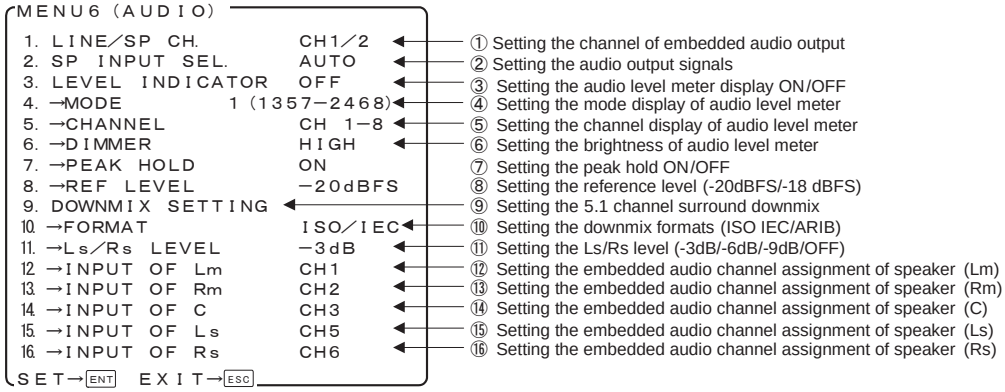
- Default setting is 0.

⑤ Setting the contrast range

- NORMAL : Set the video level within the range with no over-flow even if the contrast level is MAX.
- WIDE : The contrast level can be increased to two times.
  *The high level video has the over-flow.

- Default setting is NORMAL.

4-8. Description of MENU 6 Functions



①Setting the channel of embedded audio outputs

- Set any of the following pairs of channels of embedded audio to be outputted to the front speaker, the headphone and the rear audio monitor output.
  - CH1/2 : The output comes out of the paired CH1 and CH2 channels.
  - CH3/4 : The output comes out of the paired CH3 and CH4 channels.
  - CH5/6 : The output comes out of the paired CH5 and CH6 channels.
  - CH7/8 : The output comes out of the paired CH7 and CH8 channels.
  - DOWNMIX : The output comes out of downmix 5.1ch surround audio.
- This function can be assigned with the F1 F2 switch on the front panel.
- Default setting is CH1/2.

② Setting the audio output signals

- Set the signals to be outputted to the speaker, the headphone, and the rear audio monitor output.
  - AUTO : embedded audios in the SDI input mode, and analog in the VBS input modes
  - EMBEDDED : fixed at embedded audios
  - ANALOG : fixed at analog audio
- Default setting is AUTO.

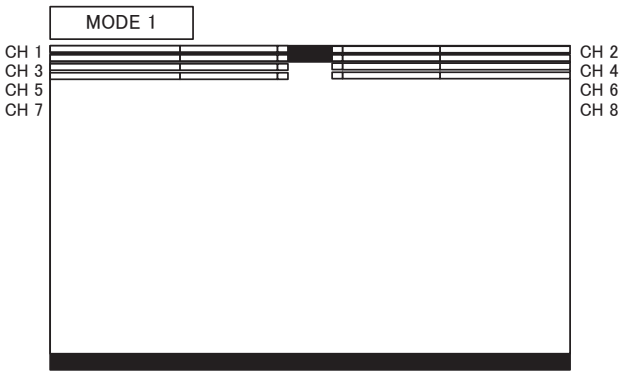
③ Setting the audio level meter display ON/OFF

- Used to turn on and off the audio level meter display.
- Default setting is OFF.

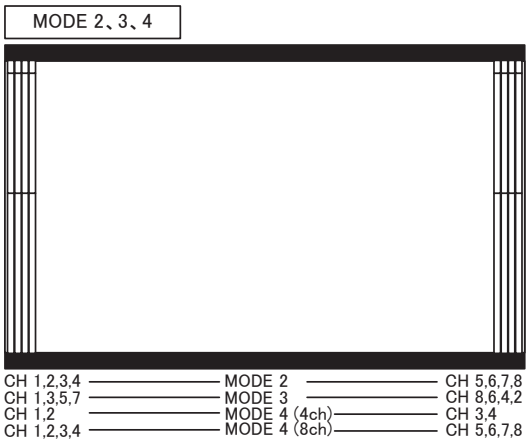
④ Setting the mode display of audio level meter

- Set the display mode of the audio level meter.
- The number in parentheses shows the order of display channel.

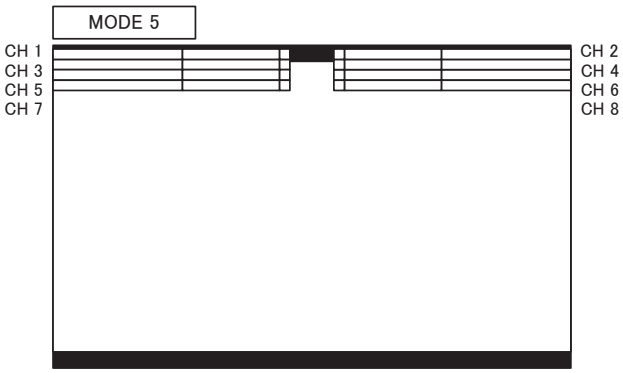
- MODE1 (1357-2468)



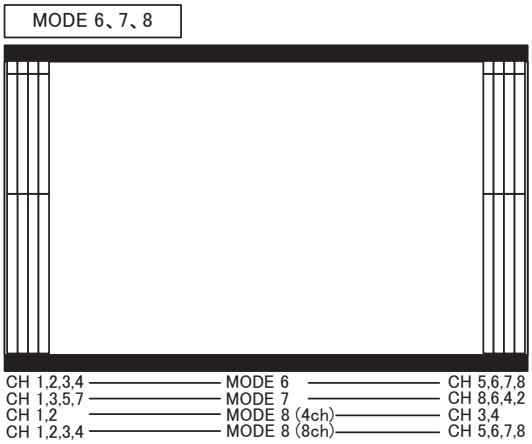
- MODE2 (1234-5678)
  MODE3 (1357-8642)
  MODE4 (12-34) : in the case of 4ch
  MODE4 (1234-5678) : in the case of 8ch



・MODE5 (1357-2468)



・MODE6 (1234-5678)
MODE7 (1357-8642)
MODE8 (12-34) : in the case of 4ch
MODE8 (1234-5678) : in the case of 8ch



・Default setting is 1(1357-2468).

⑤ Setting the channel display of audio level meter

・Set the display channel of the audio level meter.
  ・CH 1－2 : CH1 to CH2 is displayed.
  ・CH 1－4 : CH1 to CH4 is displayed.
  ・CH 1－8 : CH1 to CH8 is displayed.
・Default setting is CH 1-8.

⑥ Setting the brightness of audio level meter

・Set the brightness of the audio level meter.
・The level meter image transmissive mode or nontransmissive mode can be set.
  ・LOW
  ・MID
  ・HIGH
  ・LOW (MIX) (Image transmissive mode)
  ・MID (MIX) (Image transmissive mode)
  ・HIGH (MIX) (Image transmissive mode)
・Default setting is HIGH.

⑦ Setting the peak hold display of audio level meter

・Used to turn on and off the peak hold display.
・Default setting is ON.

⑧ Setting the reference level

・Set the reference level of the audio level meter.
  ・-18dBFS
  ・-20dBFS
・Default setting is -20dBFS

⑨ Downmix setting

・Set the 5.1 channel surround downmix.
・Mix the 5.1 channel surround audio signal assigned to 6 channels of embedded audio into 2 channels and outputs from the speaker, the headphone and the audio monitor output.
・5.1ch surround super woofer(LFE) channel is not mixed.

⑩ Setting the downmix formats

・Select the mixing method to downmix 5.1ch audio in “ISO/IEC” and “ARIB”.
・Default setting is ISO/IEC

⑪ Setting the Ls/Rs level

・Set the coefficient of Ls/Rs to mix.
・Set among -3dB/-6dB/-9dB/OFF.
(OFF = $-\infty$)
・Default setting is －3dB

⑫ Setting the embedded audio channel assignment of speaker (Lm)

・Set the channel of embedded audio, which the audio for 5.1ch surround Lm speaker (left side in front) should be assigned from.
・Default setting is CH1

⑬ Setting the embedded audio channel assignment of speaker (Rm)

・Set the channel of embedded audio, which the audio for 5.1ch surround Rm speaker (right side in front) should be assigned from.
・Default setting is CH2

⑭ Setting the embedded audio channel assignment of speaker (C)

・Set the channel of embedded audio, which the audio for 5.1ch surround C speaker (center) should be assigned from.
・Default setting is CH3

⑮ Setting the embedded audio channel assignment of speaker (Ls)

・Set the channel of embedded audio, which the audio for 5.1ch surround Ls speaker (left side in rear) should be assigned from.

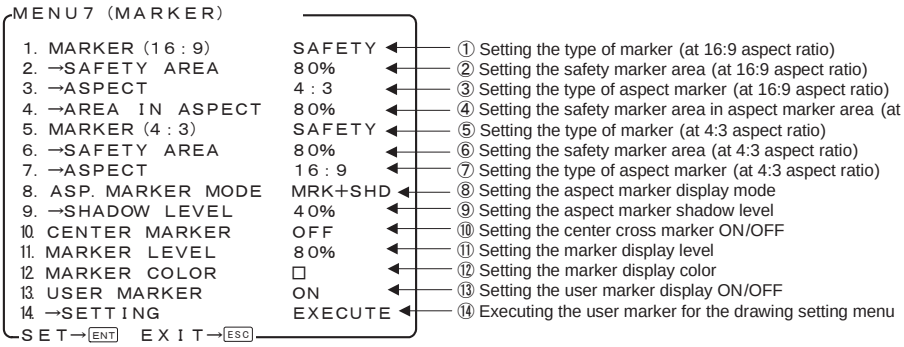
・Default setting is CH5

⑯ Setting the embedded audio channel assignment of speaker (Rs)

・Set the channel of embedded audio, which the audio for 5.1ch surround Rs speaker (right side in rear) should be assigned from.

・Default setting is CH6

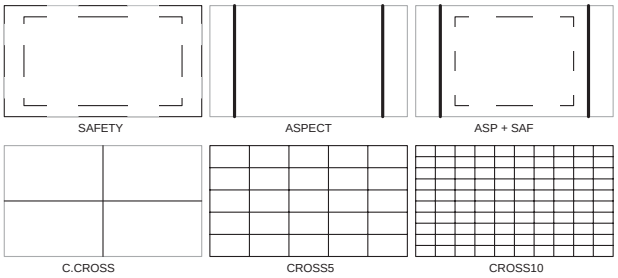
4-9. Description of MENU 7 Functions



① Setting the type of marker (at 16:9 aspect ratio)

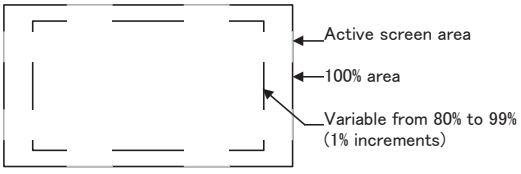
- Used to set various types of markers displayed at 16:9 aspect ratio.
  - SAFETY : Displaying the safety marker preset in Item ② .
  - ASPECT : Displaying the aspect marker preset in Item ③ .
  - ASP+SAF : Displaying the aspect marker preset in Item ③ and the safety marker in aspect marker area preset in Item ④.
  - C.CROSS : Cross marker.
  - CROSS5 : 5-split crosshatch pattern.
  - CROSS10 : 10-split crosshatch pattern.
- This function can be assigned with the F1 F2 switch on the front panel.

- Default setting is SAFETY.



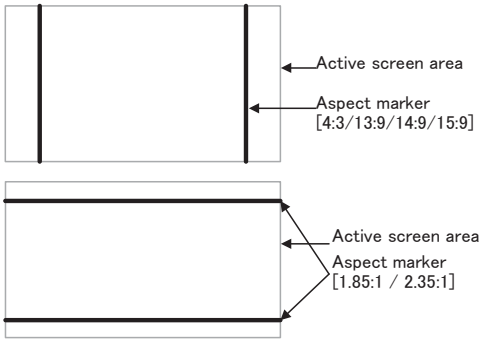
② Setting the safety marker area (at 16:9 aspect ratio)

- Used to set the safety marker area in the 80%- 99% range with 1% increments at 16:9 aspect ratio.
- Default setting is 80% (safety area).



③ Setting the type of aspect marker (at 16:9 aspect ratio)

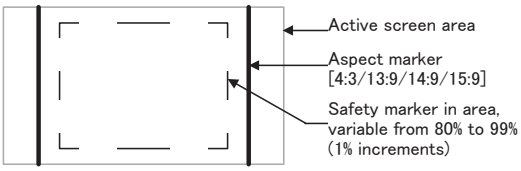
- Used to select the type of aspect marker from "4:3, 13:9, 14:9, 15:9, 1.85:1 and 2.35:1" at 16:9 aspect ratio.
- Default setting is 4:3 marker.



④ Setting the safety marker area in aspect marker area (at 16:9)

- Used to set the safety marker in the aspect marker (4:3, 13:9, 14:9 and 15:9) area in the 80%-99% range with 1% increments at 16:9 aspect ratio.

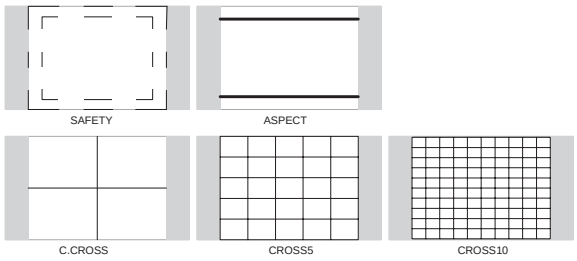
- Default setting is 80% (safety area).



⑤ Setting the type of marker (at 4:3 aspect ratio)

- Used to set various types of markers displayed at 4:3 aspect ratio.
  - SAFETY : Displaying the safety marker preset in Item ⑥.
  - ASPECT : Displaying the aspect marker preset in Item ⑦.
  - C.CROSS : Cross marker.
  - CROSS5 : 5-split crosshatch pattern.
  - CROSS10 : 10-split crosshatch pattern.

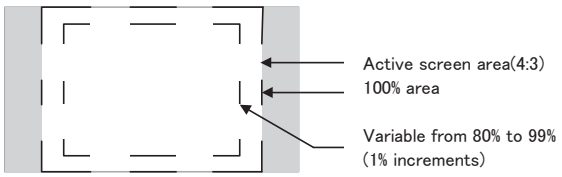
・Default setting is SAFETY.



⑥ Setting the safety marker area (at 4:3 aspect ratio)

・Used to set the safety marker area in the 80%-99% range with 1% increments at 4:3 aspect ratio.

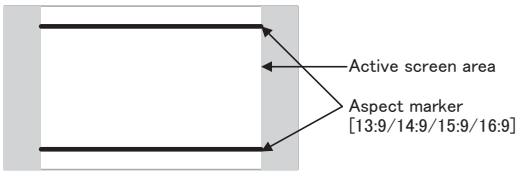
・Default setting is 80% (safety area).



⑦ Setting the type of aspect marker (at 4:3 aspect ratio)

・Used to select the type of aspect marker from "13:9, 14:9, 15:9 and 16:9" at 4:3 aspect ratio.

・Default setting is 16:9 marker.



⑧ Setting the aspect marker display mode

・Used to set the aspect marker display mode.

・MARKER : Displaying the marker only.

・SHADLOW : Displaying the shadow only

・MRK+SHD : Displaying both the marker and shadow

・Default setting is MARKER+SHADOW.

⑨ Setting the aspect marker shadow level

・Used to set the contrast level of the aspect marker shadow, when displayed.

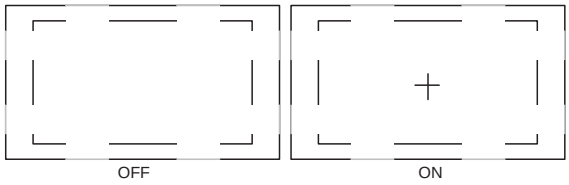
・Settings: 0%, 20%, 40% and 60%

・Default setting is 40%.

⑩ Setting the center cross marker ON/OFF

・Used to turn on and off the center cross marker.

・Default setting is OFF.



⑪ Setting the marker display level

・Used to set the marker display level.

・Settings: 20%, 40%, 60%, 80% and 100%

・Default setting is 80%.

⑫ Setting the marker display color

・Used to set the marker display color.

* The user marker is displayed in the color preset on the user marker menu.

・Settings : White, yellow, cyan, green, magenta, red and blue

・Default setting is white.

⑬ Setting the user marker display ON/OFF

・Used to turn on and off the user marker display.

・This function can be assigned with the F1 F2 switch on the front panel.

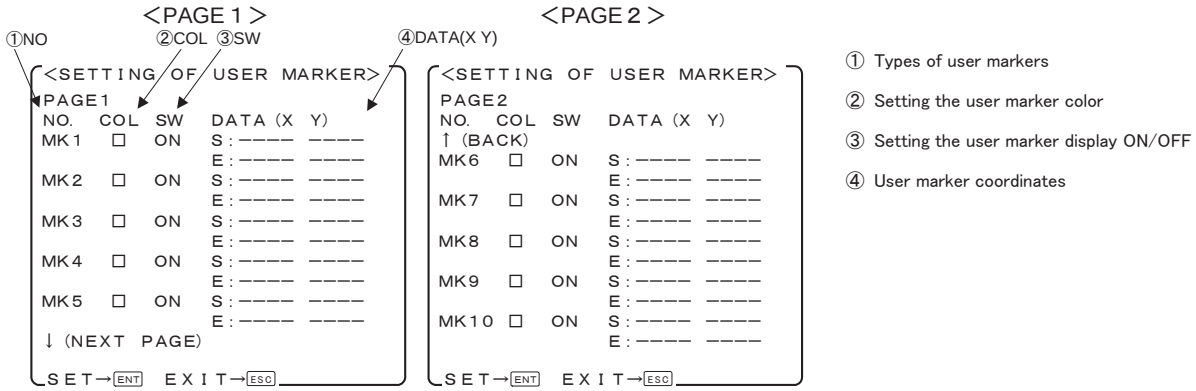
・Default setting is OFF.

⑭ Executing the user marker for the drawing setting menu

・Press ENT with EXECUTE, and the user marker setting menu shows up. Now various settings can be made on this menu.

For details, refer to Item **4-10.**

4-10. Description of MENU7 (USER MARKER) Functions and Making Settings

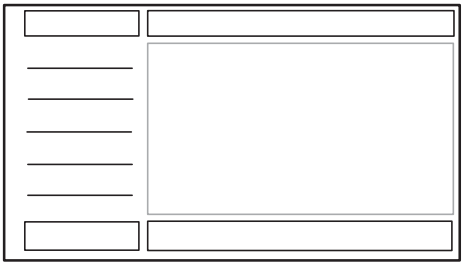


◆How to turn from PAGE1 to PAGE2
When the blinking cursor is at MK1, use the ▲ switch to go to PAGE2. With the blinking cursor at MK5, use the ▼ switch to go to PAGE2.

① Types of user markers

・The user markers are presettable in boxes or lines, chosen from 10 types from MK1 to MK10. Up to 10 different display positions of subtitles can therefore be individually preset, depending on programs. Use the ▼ and ▲ switches to select a desired item.

<10 different display examples>



② Setting the user marker color

・Using the "COL" item, select a desired display color from 6 colors. The 10 types of user markers can be color-coded to identify them if two or more user markers are used.
・Settings : White, yellow, cyan, green, red and blue
・Default setting is white.

③ Setting the user marker display ON/OFF

・Using the "SW" item, the display can be turned on and off.
・Default setting is ON.

④ User marker coordinates

・In the "DATA (X Y)" column, the coordinates for S : START POINT and E : END POINT of the currently set user markers are displayed. without such settings, the "–" marker appears.

・Move the cursor to the X/Y data. Using the ENT switch, new user markers can be drawn or already registered user markers can be modified.

・The setting can be made in 1-pixel increments. The top left of the effective screen serves as the reference point (0001, 0001) of the coordinates. From this point, the coordinates can be adjusted in the pixel range of 1280 x 720.

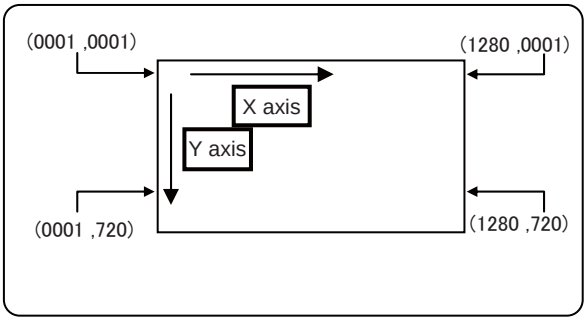
・Default setting is –(unregistered).

●Resetting the data

・With the "DATA (X Y)" settings blinking in magenta, hold down the ▶ switch (or the right-hand button on the mouse) longer than 3 seconds, and the preset data may be deleted (–).

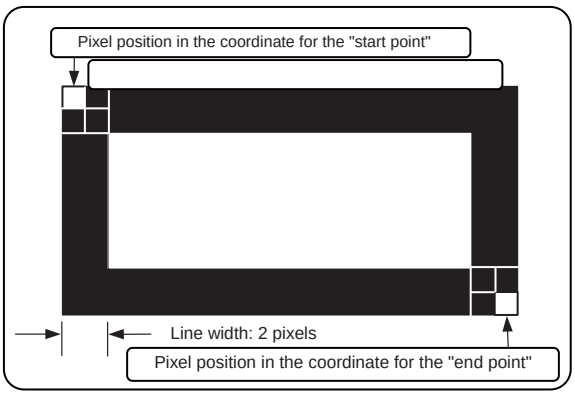
●Coordinate reference point

The X-Y coordinate of the effective screen starts at the reference point (0001, 0001) as shown below.

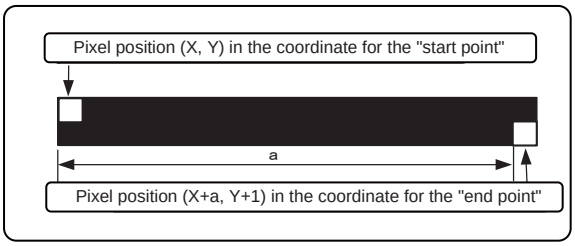


●Marker lines and coordinate values

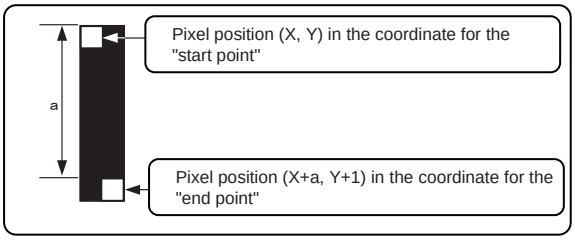
There are 2 line widths for the user markers. However, the coordinate for the start point and that for the end point are different by 1 pixel.



Accordingly, in drawing a horizontal line, the Y-direction address has a coordinate value with 1 pixel added, as shown below.



When a vertical line is drawn, the X-axis address has a coordinate value with 1 pixel added, as shown below.



How to preset new user markers

① Setting the marker display ON/OFF

```
MENU7 (MARKER)
 1. MARKER (16:9)        SAFETY
 2. →SAFETY AREA         80%
 3. →ASPECT              4:3
 4. →AREA IN ASPECT      80%
 5. MARKER (4:3)         SAFETY
 6. →SAFETY AREA         80%
 7. →ASPECT              16:9
 8. ASP. MARKER MODE     MRK+SHD
 9. →SHADOW LEVEL        40%
10. CENTER MARKER        OFF
11. MARKER LEVEL         80%
12. MARKER COLOR         □
13. USER MARKER          ON
14. →SETTING             EXECUTE
SET→[ENT]  EXIT→[ESC]
```

Set USER MARKER to ON.

Move the cursor

② Execute the drawing mode in item 14

```
MENU7 (MARKER)
 1. MARKER (16:9)        SAFETY
 2. →SAFETY AREA         80%
 3. →ASPECT              4:3
 4. →AREA IN ASPECT      80%
 5. MARKER (4:3)         SAFETY
 6. →SAFETY AREA         80%
 7. →ASPECT              16:9
 8. ASP. MARKER MODE     MRK+SHD
 9. →SHADOW LEVEL        40%
10. CENTER MARKER        OFF
11. MARKER LEVEL         80%
12. MARKER COLOR         □
13. USER MARKER          ON
14. →SETTING             EXECUTE
SET→[ENT]  EXIT→[ESC]
```

Press ENT now.

ENT

③ Setting the individual markers

```
<SETTING OF USER MARKER>
PAGE1
NO.  COL  SW   DATA (X  Y)
MK1  □    ON   S:----  ----
               E:----  ----
MK2  □    ON   S:----  ----
               E:----  ----
MK3  □    ON   S:----  ----
               E:----  ----
MK4  □    ON   S:----  ----
               E:----  ----
MK5  □    ON   S:----  ----
               E:----  ----
↓ (NEXT PAGE)
SET→[ENT]  EXIT→[ESC]
```

Set the color and ON/OFF display for individual markers.

ENT

④ Going to the drawing menu

```
<SETTING OF USER MARKER>
PAGE1
NO.  COL  SW   DATA (X  Y)
MK1  □    ON   S:----  ----
               E:----  ----
MK2  □    ON   S:----  ----
               E:----  ----
MK3  □    ON   S:----  ----
               E:----  ----
MK4  □    ON   S:----  ----
               E:----  ----
MK5  □    ON   S:----  ----
               E:----  ----
↓ (NEXT PAGE)
SET→[ENT]  EXIT→[ESC]
```

ENT → ⑤

⑤ Setting the start point

X axis

Y axis

```
START  POINT( X:0640  Y:0360)
END    POINT( X:0640  Y:0360)
```

With nothing registered, the initial X-Y coordinate is displayed, and the start-point X-Y coordinate starts blinking.

With nothing registered, the cursor is displayed at the default center.

⑥ Moving the cursor to the start point

```
START  POINT( X:0200  Y:0150)
END    POINT( X:0200  Y:0150)
```

The shifted X-Y coordinate is displayed.

Move the cursor to the start point.

ENT

⑦ Saving the start point

```
START  POINT( X:0200  Y:0150)
END    POINT( X:0200  Y:0150)
```

The end-point X-Y coordinate stars blinking.

ENT

⑧ Moving the cursor to the end point

```
START  POINT( X:0200  Y:0150)
END    POINT( X:0700  Y:0350)
```

Move the cursor to the end point.

Take the procedure to set a new start point

ENT

ESC

⑨ Saving the end point

The cursor moves to the start point. Take the procedure in Step ⑤ on the next page.

The menu screen in Step ③ reappears and the settings are displayed at the X-Y coordinate.

How to modify the user markers

① Setting the marker display ON/OFF

```
MENU7 (MARKER)
1. MARKER (16:9)          SAFETY
2. →SAFETY AREA           80%
3. →ASPECT                4:3
4. →AREA IN ASPECT        80%
5. MARKER (4:3)           SAFETY
6. →SAFETY AREA           80%
7. →ASPECT                16:9
8. ASP. MARKER MODE       MRK+SHD
9. →SHADOW LEVEL          40%
10. CENTER MARKER         OFF
11. MARKER LEVEL          80%
12. MARKER COLOR          □
13. USER MARKER           ON
14. →SETTING              EXECUTE
SET→[ENT]  EXIT→[ESC]
```

Set USER MARKER to ON.

Move the cursor

② Execute the drawing mode in item 14

```
MENU7 (MARKER)
1. MARKER (16:9)          SAFETY
2. →SAFETY AREA           80%
3. →ASPECT                4:3
4. →AREA IN ASPECT        80%
5. MARKER (4:3)           SAFETY
6. →SAFETY AREA           80%
7. →ASPECT                16:9
8. ASP. MARKER MODE       MRK+SHD
9. →SHADOW LEVEL          40%
10. CENTER MARKER         OFF
11. MARKER LEVEL          80%
12. MARKER COLOR          □
13. USER MARKER           ON
14. →SETTING              EXECUTE
SET→[ENT]  EXIT→[ESC]
```

Press ENT now.

ENT

③ Setting the individual markers

```
<SETTING OF USER MARKER>
PAGE1
NO.  COL  SW   DATA (X  Y)
MK1  ■    ON   S:0200 0150
               E:0700 0350
MK2  □    ON   S:---- ----
               E:---- ----
MK3  □    ON   S:---- ----
               E:---- ----
MK4  □    ON   S:---- ----
               E:---- ----
MK5  □    ON   S:---- ----
               E:---- ----
↓ (NEXT PAGE)
SET→[ENT]  EXIT→[ESC]
```

Set the color and ON/OFF display for individual markers.

ENT

④ Setting the modified size

```
<SETTING OF USER MARKER>
PAGE1
NO.  COL  SW   DATA (X  Y)
MK1  □    ON   S:0200 0150
               E:0700 0350
MK2  □    ON   S:---- ----
               E:---- ----
MK3  □    ON   S:---- ----
               E:---- ----
MK4  □    ON   S:---- ----
               E:---- ----
MK5  □    ON   S:---- ----
               E:---- ----
↓ (NEXT PAGE)
SET→[ENT]  EXIT→[ESC]
```

(Hold down) ▶

ENT

⑤

Hold down the ▶ switch (or the right-hand button on the mouse), and the data will be initialized (—).

⑤ Setting a new start point

X axis

Y axis

```
START  POINT( X:0200 Y:0150)
END    POINT( X:0700 Y:0350)
```

The start-point X-Y coordinate starts blinking.

The magenta-colored cursor appears at the start point.
*If the end point is positioned above or to the left of the start point, the cursor display position depends on the registered data.

Move the cursor to the start point.

⑥ Modifying the start point

```
START  POINT( X:0100 Y:0120)
END    POINT( X:0700 Y:0350)
```

The shifted X-Y coordinate is displayed.

ENT

⑦ Modifying the end point

```
START  POINT( X:0100 Y:0120)
END    POINT( X:0700 Y:0350)
```

The end-point X-Y coordinate starts blinking.

The magenta-colored cursor appears at the end point.

ENT

⑧ Shifting the end point

```
START  POINT( X:0100 Y:0120)
END    POINT( X:1100 Y:0600)
```

Move the cursor to the end point.

Take the procedure to set a new start point.

ENT

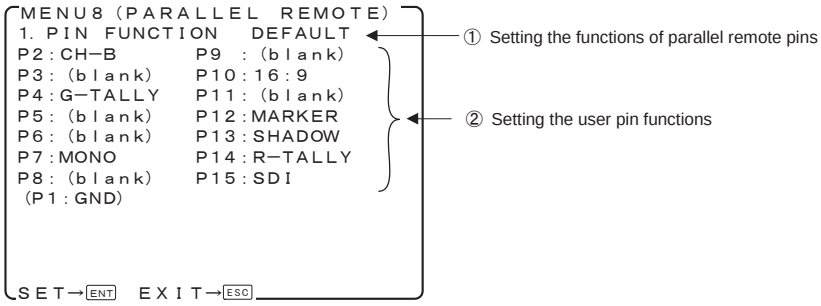
ESC

⑨ Saving the end point

The cursor moves to the start point.

The menu screen in Step ③ reappears and the new settings are displayed at the X-Y coordinate.

4-11. Description of MENU 8 Functions



① Setting the functions of parallel remote pins

・Select the pre-assigned pin functions of parallel remote control or the individual user-set functions.

* By default, the pre-assigned pin functions are displayed beneath.

② Setting the IP conversion mode

・When "USER" is selected in ① , set the individual pin functions. The settable functions are as follows.

・CH-B : selection of CH-B
・SDI : selection of SDI input
・MONO : selection of MONO
・16:9 : selection of SDTV aspect ratio 16:9
・MARKER : marker ON
・SHADOW : shadow ON at **MENU7**-preset level
・SHADOW0 : shadow ON at shadow level 0% (Black)
・SHADOW20 : shadow ON at shadow level 20%
・SHADOW40 : shadow ON at shadow level 40%
・SHADOW60 : shadow ON at shadow level 60%
・R-TALLY : R tally ON
・G-TALLY : G tally ON
・(blank) : unassigned

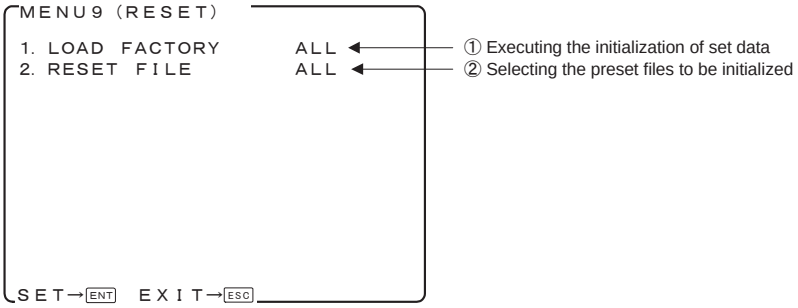
* "SHADOW0 ", "SHADOW20 ", "SHADOW40 " and "SHADOW60 " functions

・ Select two or more SHADOW settings at once, and "SHADOW0" (Black) is given priority.
・ When any of these functions is turned ON, the **MENU8**-adjusted shadow level is forced to go back to the level remotely preset.

* The functions of the following pins, which are fixed, cannot be changed.

・ Pin 1 : Make contact GND

4-12. Description of MENU 9 Functions



① Executing the initialization of set data

・Perform this setting to restore the default settings.

・ALL : Factory settings are restored for all PRESET data, all MENUs and switches.

・PRESET : Factory settings are restored for all PRESET data.

・MENU&SW : Factory settings are restored for all MENUs and switches.

・To initialize, select an item to be initialized with the ▲ and ▼ switches and press the ENT switch. The confirmation message appears. Press the ENT switch again. To cancel the initialization, just press the ESC switch.

* The initialization of data cannot be executed if "DATA LOCK" or "ALL LOCK" is set in "5-2. ⑥ Setting of data protection password". To initialize the data, unlock.

② Selecting the preset files to be initialized

・When "PRESET" is selected in ①, select a file for restoring the set data to the factory-set one.

・ALL : All the preset files are initialized.

・FILEx (x:1 to 8) : FILEx only is initialized.

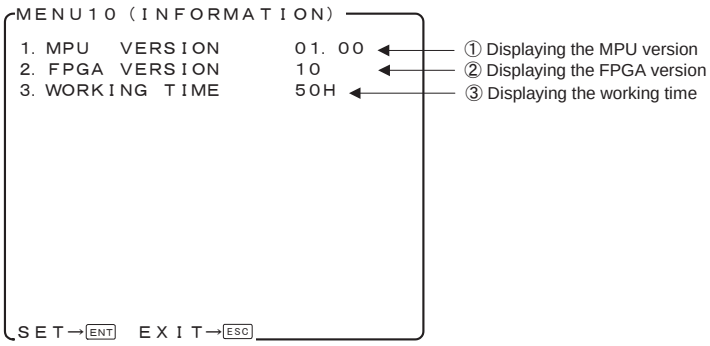
・FILE1-8 : FILE1 to FILE8 only are initialized.

・D65 : REF D65 only is initialized.

・D93 : REF D93 only is initialized.

・D65/D93 : REF D65 and D93 only are initialized.

4-13. Description of MENU 10 Functions



① Displaying the MPU version

・Displays the current software version.

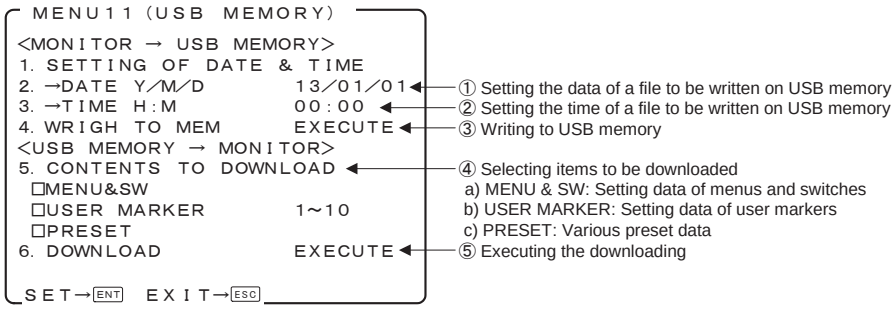
② Displaying the FPGA version

・Displays the current software version.

③ Displaying the working time

・The total working time of the monitor is displayed in hours.

4-14. Description of MENU 11 Functions



Writing from monitor to USB memory

① Setting the date of a file to be written on USB memory

- Used to set the editing date of a file to be written on a USB memory. Enter a date when you are going to write on the USB memory. When re-viewing files on a computer, the date entered here will be displayed as the date of the file.
- Enter "Y (year)/M (month)/D (day)" in this order.
- If no date is entered, the file will be edited as of the date appearing currently on the menu.

② Setting the time of a file to be written on USB memory

- Used to set the editing time of a file in a way similar to Item ① .
- Enter "H (hour) : M (minute)" in this order. If no time is entered, the file will be edited as of the time appearing currently on the menu.

③ Writing to USB memory

- To write all the setting data from the monitor to a USB memory, select "EXECUTE" and press the ENT switch. For writing details, refer to "How to write from monitor to USB memory" (page 36).
- **File format for writing to USB memory**

  Files to be written from the monitor to a USB memory are created in the following 3 text files in the Ikegami Monitor folder that is automatically prepared.

Ikegami_Monitor : Automatically prepared folders

menu_sw_hlm905_001.txt

- File to save the menu (USER MARKER and PRESET MENU not included) status and the switch settings.
- Data capacity: Approx. 2 Kbyte
- Files specific for the HLM-905.

user_marker_hlm905_001.txt

- File to save various setting data of the user markers MK1 thru MK10 that are preset in MENU8.
- Data capacity: Approx. 2 Kbyte
- Files specific for the HLM-905.

preset_hlm905_001.txt

- File to save the PRESET menu settings as well as all the D65, D93 and FILE1 thru -8 data.
  The password lock and the password itself are not saved, however.
- Data capacity: Approx. 3 Kbyte
- This file is specific for the HLM-905WR.
  The PRESET data of the HLM-905WR and other models cannot be downloaded.

◆Precautions on writing

- With a USB connected to the monitor, do not turn ON/OFF the monitor or disconnect the inserted USB memory while writing is going on, or else the USB memory may possibly be damaged. Be sure to disconnect the USB memory in accordance with the procedure described under "How to write from monitor to USB memory" on page 42.
- Do not change the name of an automatically generated folder or a file, or else downloading to the monitor will be disabled. Do not modify the data in a file, or else the order of the data may be altered, disabling writing of the data.
- If there is a file already in the specified folder, the data of a new file will be overwritten on the existing file.
- Any USB memory formatted by a format other than FAT12, 16, 32, or VFAT is not compatible with the monitor.

Downloading from USB memory to monitor

④ Selecting items to be downloaded

- Select the items of data to be downloaded from the USB memory to the monitor. Tick the check box.
- Contents of individual items

a) □MENU&SW

- Tick this check box to download the setting statuses of all the menus (excluding USER MARKER MENU and PRESET MENU) and the switch setting status.
- The following file will be read:
  "¥Ikegami_Monitor¥menu_sw_hlm905_001.txt."
- As this is a file exclusive to the HLM-905WR, it is not possible to download any data saved by any other model to the HLM-905 WR, and vice versa.

b) □USER MARKER

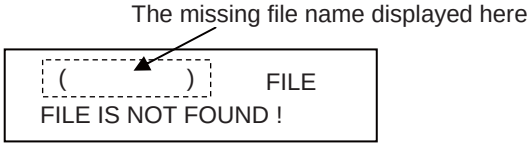
- Tick this check box to download various settings (including the color, ON/OFF, and X-Y coordinate) of the user markers MK1 through MK10 in **MENU7**.
- The following file will be downloaded:
  "¥Ikegami_Monitor¥user_marker_hlm905_001.txt."
- By changing the "MK1 through MK10" settings, it is possible to download the user markers in groups or individually.

c) □PRESET

- To download the items set on the PRESET MENU and all of the data of D65, D93, and FILE 1 ~ 8, tick this check box. If an individual FILE is specified, only the data of the specified FILE will be downloaded.
- The following file will be read:
  "¥Ikegami_Monitor¥ preset_hlm905_001.txt."
- If a data is locked with a password, the check box cannot be ticked. Enter the password to unlock the data first and download the data.
- As this is a file exclusive to the HLM-905WR, it is not possible to download any data saved by any other model to the HLM-905 WR, and vice versa.
- The color temperature data in a FILE are different from unit to unit. If a data from another monitor is downloaded onto another monitor, the same color temperature will not be achieved. Accordingly, it is advisable to utilize the downloaded PRESET data for its unit as backup.

⑤ Executing the downloading

- To download the data of the items selected udder Item ④ from the USB memory to the monitor, press ENT under "EXECUTE."
  Refer to "How to download from USB memory to monitor" on page 43 for the details of writing.
- If the file specified under Item ④ does not exist in the specific folder of the USB memory, the following message will appear:

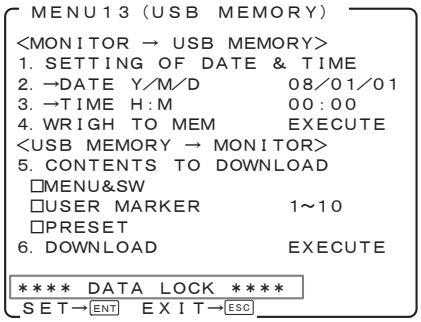


◆Precautions on downloading

・With a USB memory connected to the monitor, do not turn ON/OFF the monitor or disconnect the inserted USB memory while downloading is going on, or else the USB memory may possibly be damaged. Be sure to disconnect the USB memory in accordance with the procedure described under "How to download from USB memory to monitor" on page 43.

・Do not change the name of an automatically generated folder or a file, or else downloading to the monitor will be disabled. Do not modify the data in a file, or else the order of the data may be altered, disabling writing of the data.

・If a data in the monitor is locked with a password, "DATA LOCK" will appear on the MENU as shown on the diagram below.
Enter the password to unlock the data first and download the data.



・It is possible in some cases that a high-security USB memory may not be recognized by the monitor.

◆Error messages during writing or downloading

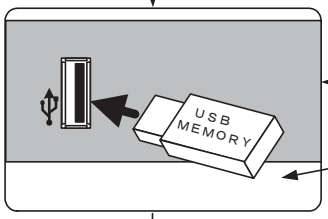
ILLEGAL DATA:	Checksum error
FILE IS NOT FOUND:	File is not found.
ERROR01:	A file system error is detected
ERROR02;	A device other than a USB memory or a high-security USB memory is detected.
ERROR03~17:	Various errors on access

How to write from monitor to USB memory

```
MENU11 (USB MEMORY)
<MONITOR → USB MEMORY>
1. SETTING OF DATE & TIME
2. →DATE Y/M/D        09/01/01
3. →TIME H:M          00:00
4. WRIGH TO MEM       EXECUTE
<USB MEMORY → MONITOR>
5. CONTENTS TO DOWNLOAD
 □MENU&SW
 □USER MARKER         1~10
 □PRESET
6. DOWNLOAD           EXECUTE

SET→ENT  EXIT→ESC
```

Enter the data and time of a file to be written on a USB memory.
*If no data and time is entered here, the already entered setting will be upheld.

◆Precaution
Do not draw out the inserted USB memory until the writing has been completed. If drawn out during access, the device may get damaged.



Insert a USB memory into the USB port at the monitor front.

```
MENU11 (USB MEMORY)
<MONITOR → USB MEMORY>
1. SETTING OF DATE & TIME
2. →DATE Y/M/D        08/01/01
3. →TIME H:M          00:00
4. WRIGH TO MEM       EXECUTE
<USB MEMORY → MONITOR>
5. CONTENTS TO DOWNLOAD
 □MENU&SW
 □USER MARKER         1~10
 □PRESET
6. DOWNLOAD           EXECUTE

SET→ENT  EXIT→ESC
```

Move the cursor to "EXECUTE" and press the ENT switch.

By pressing the ESC switch at this point, the device is disconnected and the USB memory can be drawn out.

ENT

```
MENU11 (USB MEMORY)
<MONITOR → USB MEMORY>
1. SETTING OF DATE & TIME
2. →DATE Y/M/D        08/01/01
3. →TIME H:M          00:00
4. WRIGH TO MEM       EXECUTE
<USB MEMORY → MONITOR>
5. CONTENTS TO DOWNLOAD
 □MENU&SW
 □USER MARKER         1~10
 □PRESET
6. DOWNLOAD           EXECUTE

PROCESSING···
```

The device is detecting to see if the USB memory is inserted.

In normal state

```
MENU11 (USB MEMORY)
<MONITOR → USB MEMORY>
1. SETTING OF DATE & TIME
2. →DATE Y/M/D        08/01/01
3. →TIME H:M          00:00
4. WRIGH TO MEM       EXECUTE
<USB MEMORY → MONITOR>
5. CONTENTS TO DOWNLOAD
 □MENU&SW
 □USER MARKER         1~10
 □PRESET
6. DOWNLOAD           EXECUTE

DEVICE:USB MEMORY
WRITE TO USB MEMORY?
OK→ENT  CANCEL→ESC
```

The detection result is displayed here. When the USB memory is recognized, USB MEMORY" appears onscreen.

When ready to write press the ENT switch.
To interrupt it, press the ESC switch.

By pressing the ESC switch at this point, the device is disconnected and the USB memory can be drawn out.

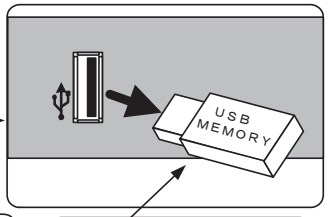
ENT

```
MENU11 (USB MEMORY)
<MONITOR → USB MEMORY>
1. SETTING OF DATE & TIME
2. →DATE Y/M/D        08/01/01
3. →TIME H:M          00:00
4. WRIGH TO MEM       EXECUTE
<USB MEMORY → MONITOR>
5. CONTENTS TO DOWNLOAD
 □MENU&SW
 □USER MARKER         1~10
 □PRESET
6. DOWNLOAD           EXECUTE

WRITING···
DO NOT REMOVE THE DEVICE!
```

During write

```
MENU11 (USB MEMORY)
<MONITOR → USB MEMORY>
1. SETTING OF DATE & TIME
2. →DATE Y/M/D        08/01/01
3. →TIME H:M          00:00
4. WRIGH TO MEM       EXECUTE
<USB MEMORY → MONITOR>
5. CONTENTS TO DOWNLOAD
 □MENU&SW
 □USER MARKER         1~10
 □PRESET
6. DOWNLOAD           EXECUTE

JOB COMPLETED!
THE DEVICE CAN BE REMOVED.
EXIT→ESC
```

Write complete



Draw out the USB memory

In case of trouble

ESC

When no USB memory is inserted:

```
MENU11 (USB MEMORY)
<MONITOR → USB MEMORY>
1. SETTING OF DATE & TIME
2. →DATE Y/M/D        08/01/01
3. →TIME H:M          00:00
4. WRIGH TO MEM       EXECUTE
<USB MEMORY → MONITOR>
5. CONTENTS TO DOWNLOAD
 □MENU&SW
 □USER MARKER         1~10
 □PRESET
6. DOWNLOAD           EXECUTE

DEVICE:NO CONNECT
SET USB MEMORY
CANCEL→ ESC
```

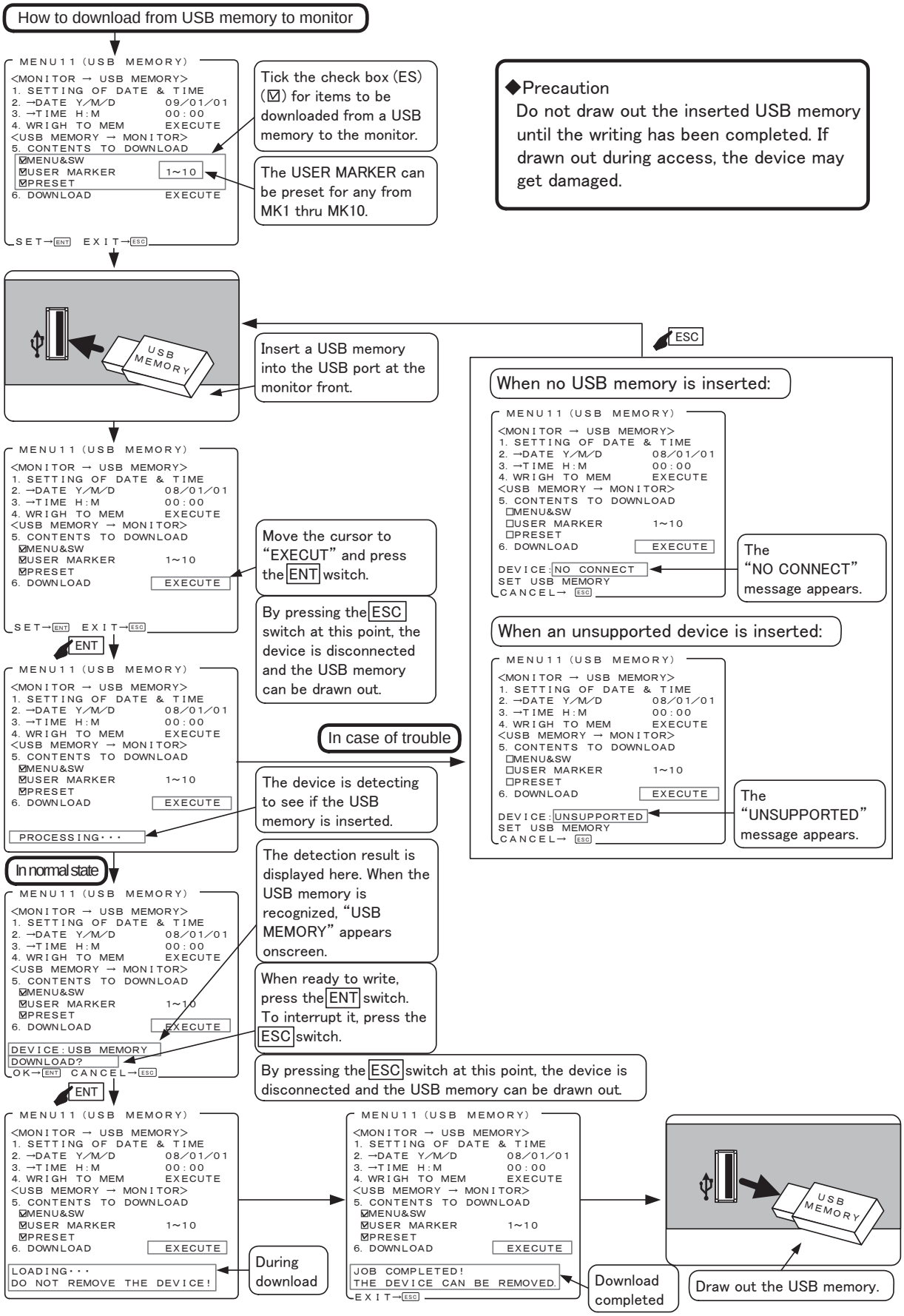
The "NO CONNECT" message appears.

When an unsupported device is inserted:

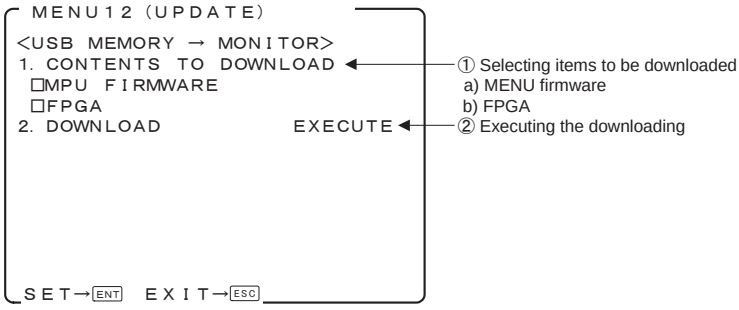
```
MENU11 (USB MEMORY)
<MONITOR → USB MEMORY>
1. SETTING OF DATE & TIME
2. →DATE Y/M/D        08/01/01
3. →TIME H:M          00:00
4. WRIGH TO MEM       EXECUTE
<USB MEMORY → MONITOR>
5. CONTENTS TO DOWNLOAD
 □MENU&SW
 □USER MARKER         1~10
 □PRESET
6. DOWNLOAD           EXECUTE

DEVICE:UNSUPPORTED
SET USB MEMORY
CANCEL→ ESC
```

The "UNSUPPORTED" message appears.

How to download from USB memory to monitor



4-15. Description of MENU 12 Functions



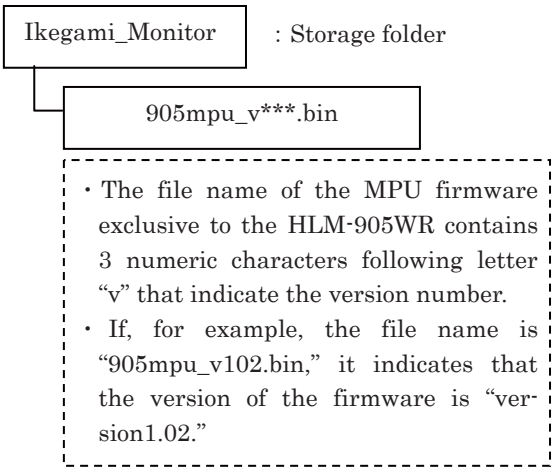
① Selecting items to be updated

・When updating the monitor by using the data stored in the USB memory, tick the check box of the items to be updated.
It is possible to download both items simultaneously.

a) ☐MPU FIRMWARE

・When updating the MPU firmware, tick the check box here.

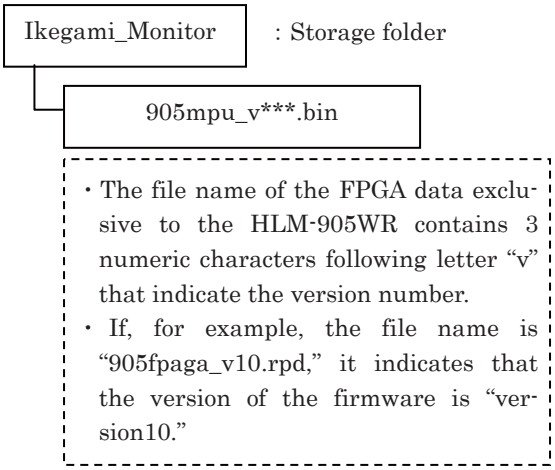
・Check the "Ikegami_Monitor" folder located on the root of the USB memory for existence of the data for HLM-905WR.



b) ☐FPGA

・When updating FPGA, tick the check box here.

・Check the "Ikegami_Monitor" folder located on the root of the USB memory for existence of the data for HLM-905WR.

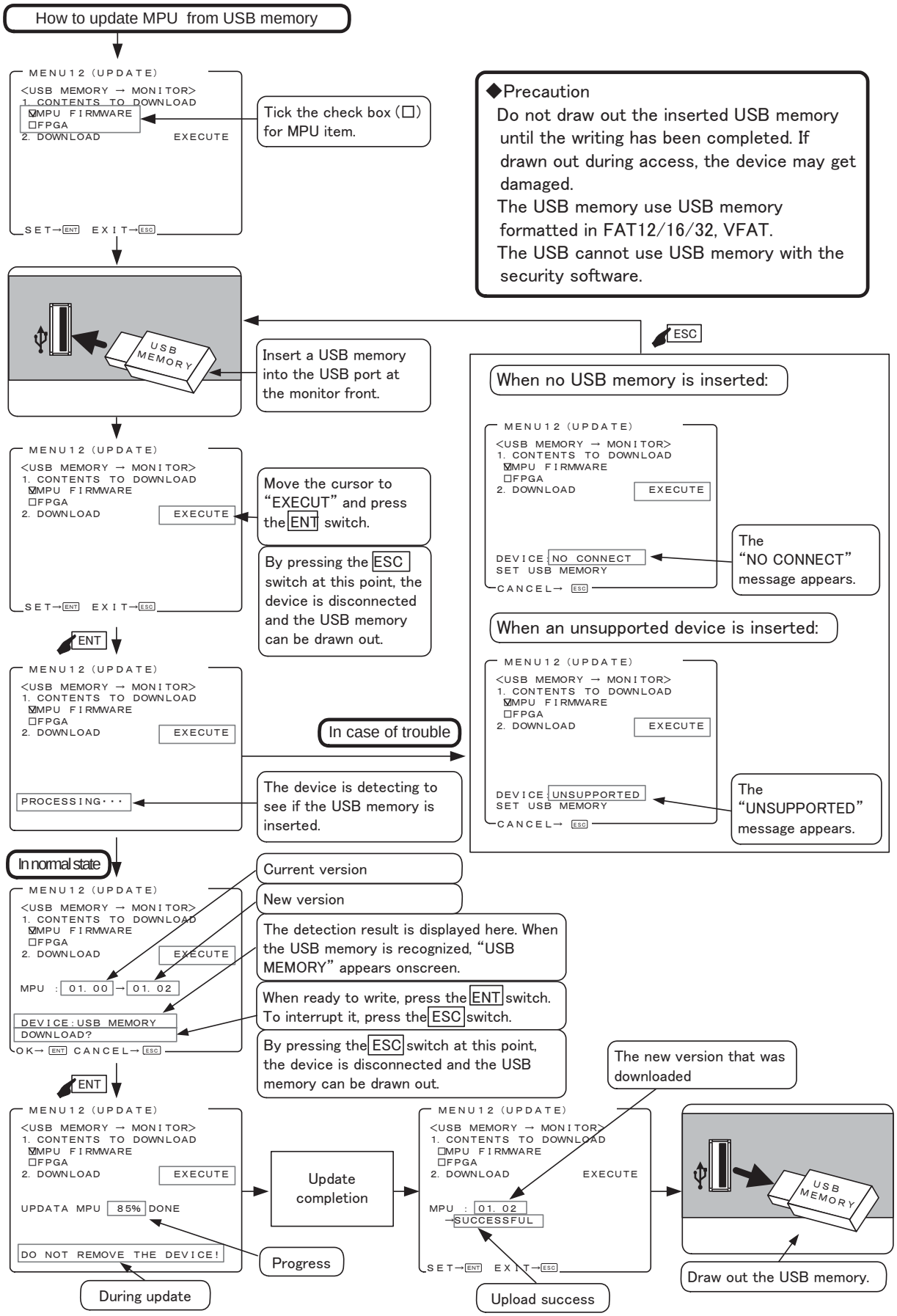


② Execution of download

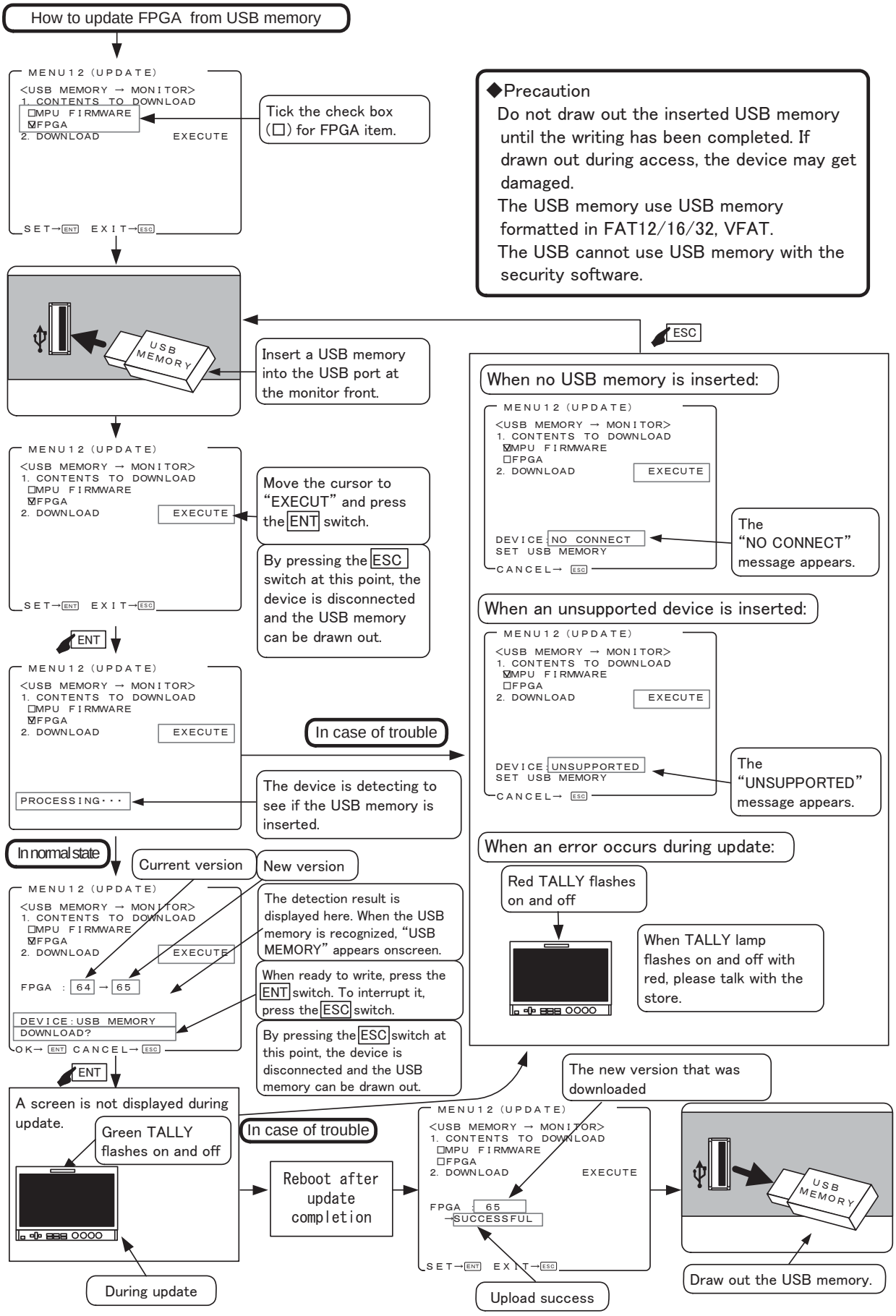
・Execute the updating of the item or items selected by ticking under item ①.

・Please refer to "How to update MPU from USB memory" on page 45 for the method of updating MPU.

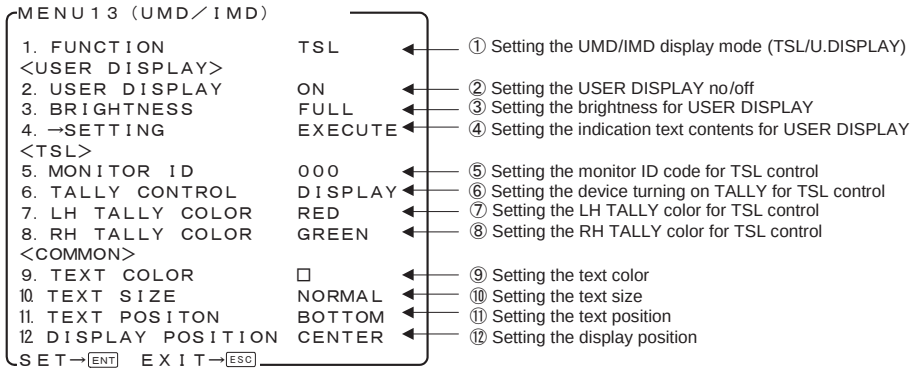
・When updating both MPU and FGA simultaneously, update FGA first and, even if an error should occur then, update MPU next.


How to update MPU from USB memory
MENU12 (UPDATE)
<USB MEMORY → MONITOR>
1. CONTENTS TO DOWNLOAD
☑MPU FIRMWARE
☐FPGA
2. DOWNLOAD EXECUTE
SET→ENT EXIT→ESC
Tick the check box (☐) for MPU item.
◆Precaution
Do not draw out the inserted USB memory until the writing has been completed. If drawn out during access, the device may get damaged.
The USB memory use USB memory formatted in FAT12/16/32, VFAT.
The USB cannot use USB memory with the security software.
USB MEMORY
Insert a USB memory into the USB port at the monitor front.
ESC
When no USB memory is inserted:
DEVICE:NO CONNECT
SET USB MEMORY
CANCEL→ESC
The "NO CONNECT" message appears.
When an unsupported device is inserted:
DEVICE:UNSUPPORTED
SET USB MEMORY
CANCEL→ESC
The "UNSUPPORTED" message appears.
Move the cursor to "EXECUT" and press the ENT switch.
By pressing the ESC switch at this point, the device is disconnected and the USB memory can be drawn out.
ENT
In case of trouble
PROCESSING···
The device is detecting to see if the USB memory is inserted.
In normal state
Current version
New version
MPU : 01.00 → 01.02
The detection result is displayed here. When the USB memory is recognized, "USB MEMORY" appears onscreen.
DEVICE:USB MEMORY
DOWNLOAD?
OK→ENT CANCEL→ESC
When ready to write, press the ENT switch. To interrupt it, press the ESC switch.
By pressing the ESC switch at this point, the device is disconnected and the USB memory can be drawn out.
ENT
The new version that was downloaded
UPDATA MPU 85% DONE
DO NOT REMOVE THE DEVICE!
Progress
During update
Update completion
MPU : 01.02
→SUCCESSFUL
Upload success
Draw out the USB memory.

How to update FPGA from USB memory



4-16. Description of MENU 13 Functions



① Setting change-over of TSU/USER DISPLAY functions

- This setting makes it possible to select either TSL or USER DISPLAY for executing the UMD/IMD display.
  - TSL: TSL is effective.
  - U. DISP: USER DISPLAY is effective.

- Default setting is TSL.

② Setting ON/OFF of the USER DISPLAY

- This setting makes it possible to select whether or not the characters specified under item ④ should be displayed on the screen.
  - ON: Displayed on the screen
  - OFF: Not displayed on the screen

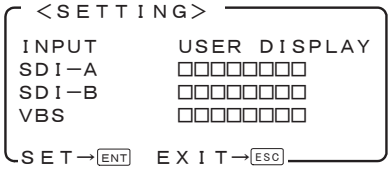
- Default setting is ON.

③ Setting brightness of characters on USER DISPLAY

- This setting makes it possible to specify the brightness of the characters to appear on the USER SCREEN.
  - FULL: 100% brightness
  - 1/2: 50% brightness
  - 1/7: 30% brightness

④ Setting the content of characters on USER DISPLAY

- When the "EXECUTE" command is given, the MENU below is displayed for setting the content of the characters.



- 8 letters for each channel should be specified here, which appear at a channel switch-over.
- Types of letters

A B C D E F G H I J K L M N O P Q R S T U
V W X Y Z 0 1 2 3 4 5 6 7 8 9 – ( ) [blank]

⑤ Setting monitor's ID number for TSL

- Set up each monitor's ID number to be used when TSL control is executed using RS485.
- A number from 0 to 126 may be used for ID number setting.
- A maximum of 32 units can be connected per line by means of daisy chain connection. It is possible, however, to control up to 126 monitors individually by increasing the number of lines.

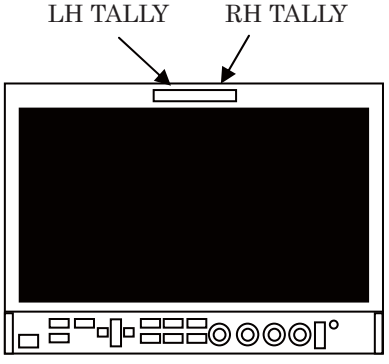
- Default is number 000.

⑥ Setting the method for illuminating the TALLY for TSL

- It is possible to set up the TALLY indication either by illuminating the LED TALLY on top of the monitor or by displaying it on the screen.
- DISPLAY: Displayed on the screen
- LED: LED illuminated

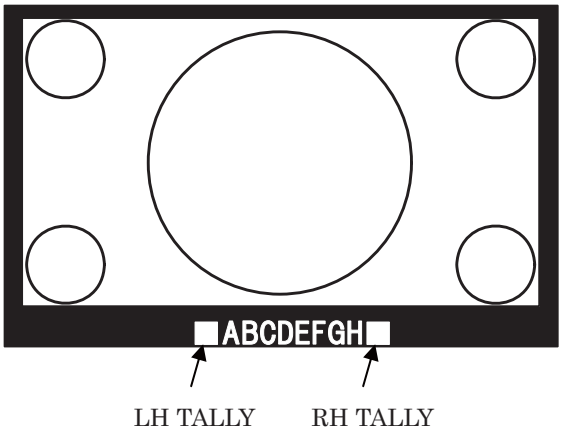
- Default setting is DISPLAY.

<If LED is specified, LED TALLY will be illuminated>

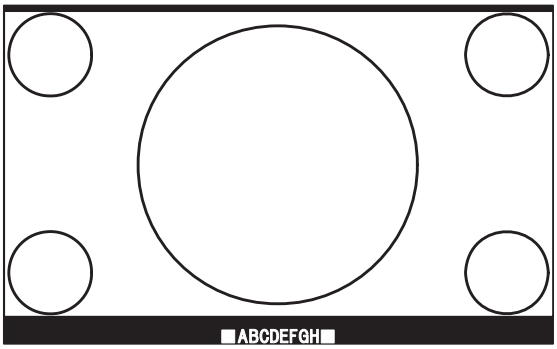


<If DISPLAY is specified, TALLY will be displayed on the screen>

・ If the character size is NORMAL:



・ If the character size is SMALL:



⑦ Setting the color at the left side of TALLY for TSL

・ Select the color to be displayed at the left side of TALLY' from 3 colors including RED, GREEN, and AMBER.

・Default setting is RED.

⑧ Setting the color right side of TALLY for TSL

・ Select the color to be displayed at the right side of TALLY from 3 colors including RED, GREEN, and AMBER.

・Default setting is GREEN.

⑨ Setting the color of characters to be displayed (Common setting item)

・ Select the color of the characters to be displayed from 7 colors including WHITE, YELLOW, CYAN, GREEN, MAGENTA, and BLUE.

・Default setting is WHITE.

⑩ Setting the size of characters to be displayed (Common setting item)

・ Select the size of the characters from 2 types including "NORMAL" and "SMALL."

・NORMAL: Large character size

・SMALL: Small character size

・ If "SMALL" has been selected, characters may be displayed without interfering with images, even if the image size is not reduced.

・Default setting is NORMAL.

⑪ Setting the position of characters to be displayed (Common setting item)

・ Select the position of characters to be displayed from 2 types including "BOTTOM" and "TOP."

・BOTTOM: Displayed at the bottom of the screen.

・TOP: Displayed at the top of the screen

・Default setting is BOTTOM.

⑫ Setting the position of images to be displayed (Common setting item)

・ Select the position of images to be displayed from 2 types including "CENTER" and "AUTO."

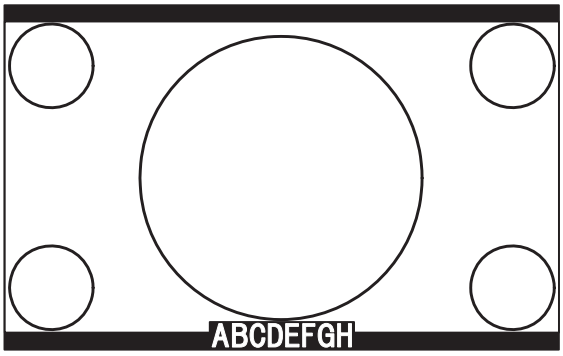
・CENTER: Images will always be displayed at the center of the screen.

・AUTO: In accordance with the setting of character text at TOP or BOTTOM, images will be displayed automatically at the top or bottom of the screen.

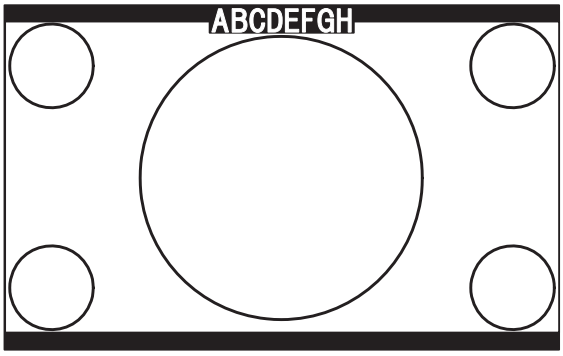
・Default setting is CENTER.

UMD/IMD Indication Table

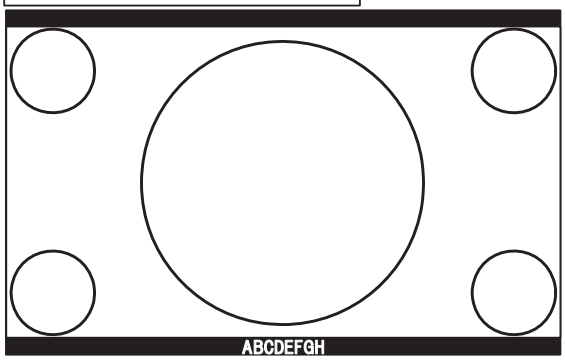
TEXT SIZE : NORMAL
TEXT POSITION : BOTTOM
DISPLAY POSITION : CENTER



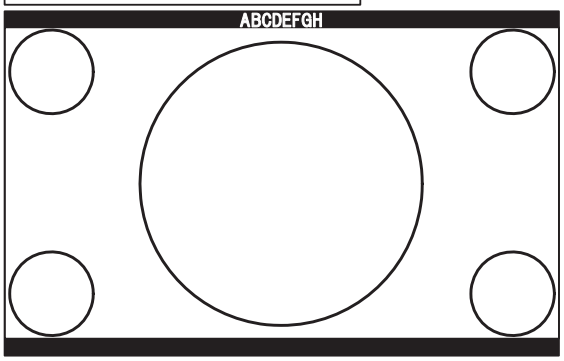
TEXT SIZE : NORMAL
TEXT POSITION : TOP
DISPLAY POSITION : CENTER



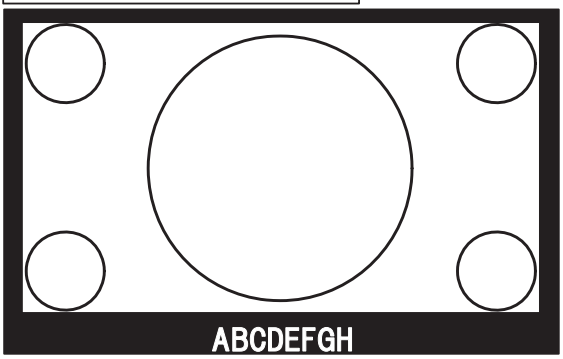
TEXT SIZE : SMALL
TEXT POSITION : BOTTOM
DISPLAY POSITION : CENTER



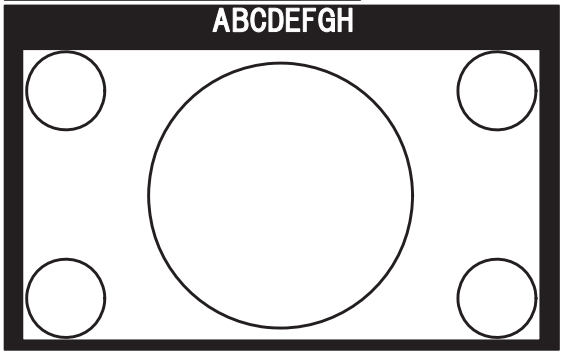
TEXT SIZE : SMALL
TEXT POSITION : TOP
DISPLAY POSITION : CENTER



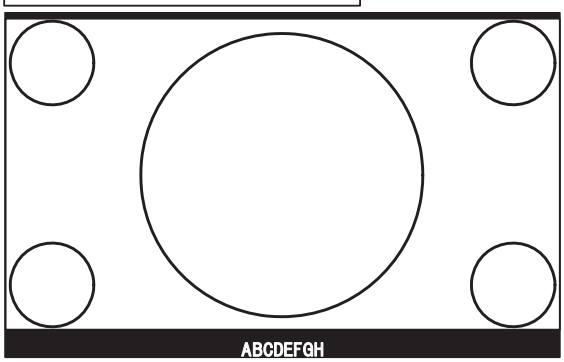
TEXT SIZE : NORMAL
TEXT POSITION : BOTTOM
DISPLAY POSITION : AUTO



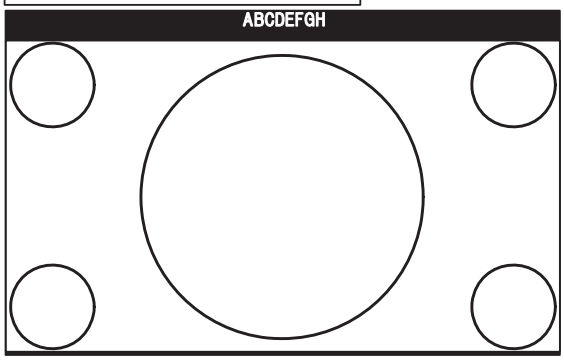
TEXT SIZE : NORMAL
TEXT POSITION : TOP
DISPLAY POSITION : AUTO



TEXT SIZE : SMALL
TEXT POSITION : BOTTOM
DISPLAY POSITION : AUTO



TEXT SIZE : SMALL
TEXT POSITION : TOP
DISPLAY POSITION : AUTO

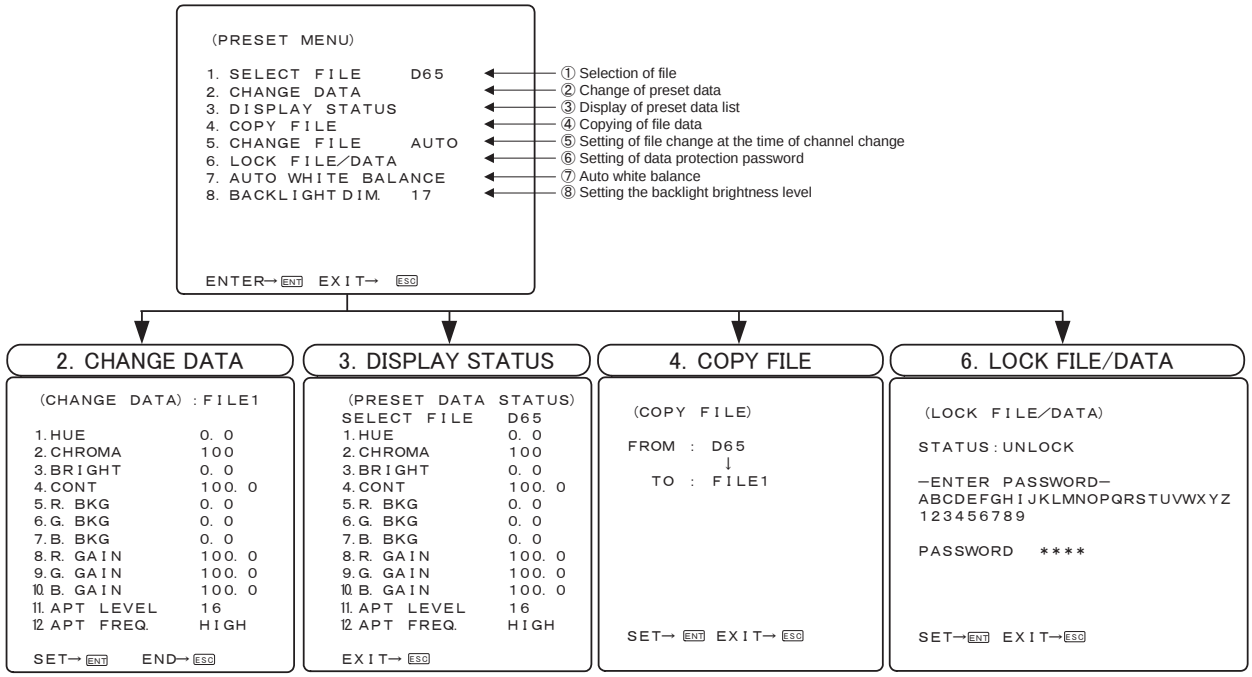


5. Preset Menu Function

5-1. List of preset menu

・To execute the preset menu, press **PRESET**.

* Turn off the menu screen.



* "7.AUTO WHITE BALANCE" is MENU for exclusive use of automatic setup probe "ASP-100". Please refer to a manual of "ASP-100" for the details.

5-2. Description of preset menu

① Selection of files

・Select a file from among D65, D93 and FILE1 to FILE8.

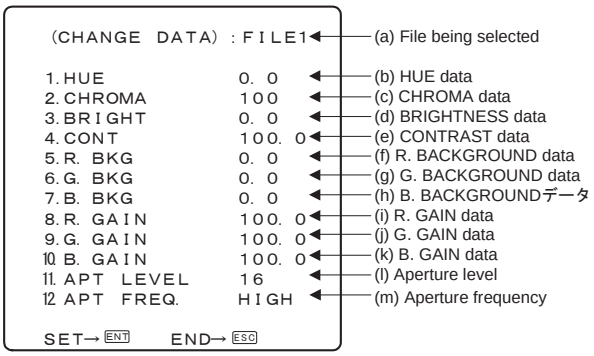
- ・D65 : 6500K
- ・D93 : 9300K
- ・FILE1-8 : User files

・The following data is memorized on these 10 files.

- ・HUE : Hue data (only for NTSC signals)
- ・CHROMA : CHROMA data
- ・BRIGHT : BRIGHTNESS data
- ・CONT : CONTRAST data
- ・R.GAIN : R.GAIN data
- ・G.GAIN : G.GAIN data
- ・B.GAIN : B.GAIN data
- ・R.BKG : R.BACKGROUND data
- ・G.BKG : G.BACKGROUND data
- ・B.BKG : B.BACKGROUND data
- ・APT LEVEL : Aperture level
- ・APT FREQ. : Aperture frequency

*The D65 and D93 have been factory-set for the color temperatures of 6500K and 9300K, respectively. The FILE1 thru -8 data have been factory-set to be the same as for the D65.

② Change of preset data



・Change the data of a file selected in **"(a) Selection of files"** on the preceding page.

・How to change data

Select “CHANGE DATA” and press the **ENT** switch. The following “CHANGE DATA” menu appears.

・Adjustable

・HUE

Used to set the hue (only for NTSC signals).

・CHROMA

Used to set the color density.

・BRIGHT（BRIGHTNESS）

Used to set the black level.

・CONT（CONTRAST）

Used to set the white level.

・R.BKG（R.BACKGROUND）

Used to set the black balance (red component) in the dark zone.

・G.BKG（G.BACKGROUND）

Used to set the black balance (green component)in the dark zone.

・B.BKG（B.BACKGROUND）

Used to set the black balance (blue component)in the dark zone.

・R.GAIN

Used to set the white balance (red component) in the bright zone.

・G.GAIN

Used to set the white balance (green component)in the bright zone.

・B.GAIN

Used to set the white balance (blue component)in the bright zone.

・APT LEVEL

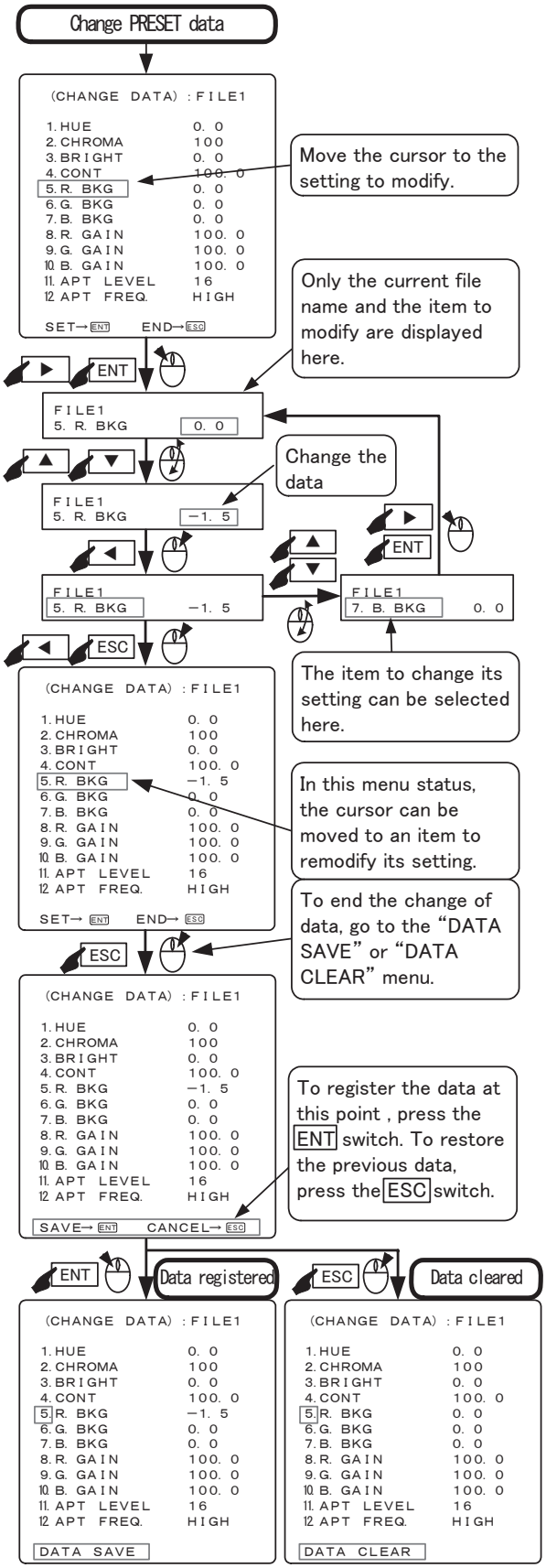
Used to set the aperture level in the “0-63” range.

・ Default setting is 16.

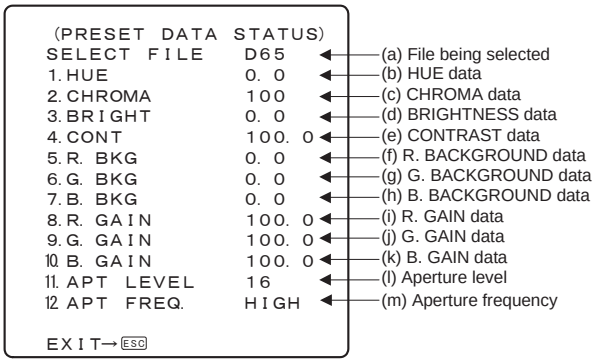
・APT FREQ.

Used to set the aperture frequency. LOW (low frequency), MID1, MID2, HIGH (high frequency)

・ Default setting is HIGH.

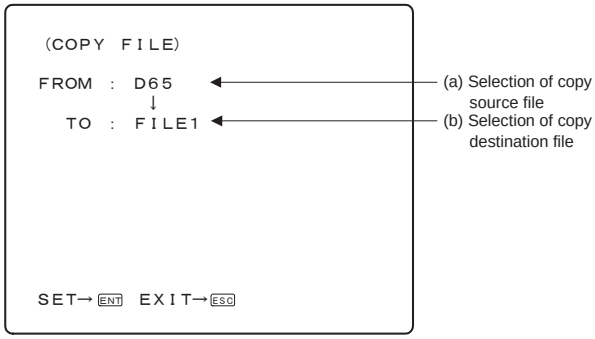


③ Display of preset data list



・Display a list of the settings of file data.
・To change files, use the ◀ and ▶ switches at the SELECT FILE setting.

④ Copying of file data



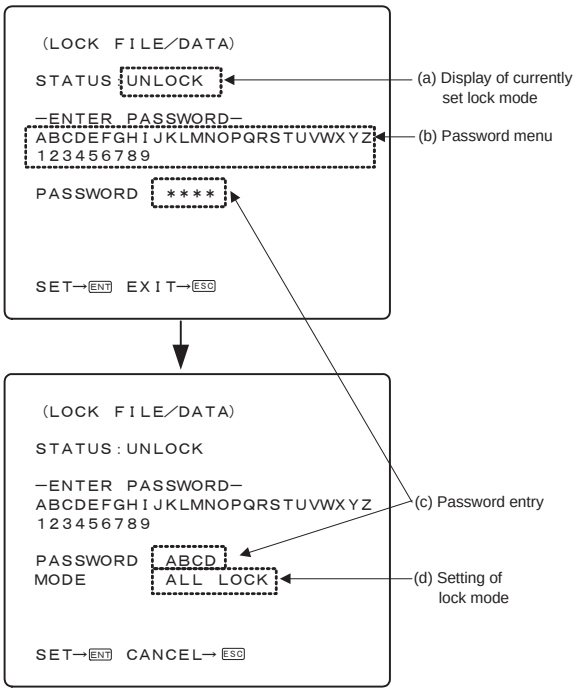
(a) Select the copy source file (D65, D93, FILEx [x: 1 to 8]) using the ▲/▼ switch and press the **ENT** switch.
(b) Select the copy destination file (FILEx [x: 1 to 8], FILE1 - FILE8) using the ▲/▼ switch.
* When FILE1 - FILE8 are selected, data is copied to FILE1 through FILE8.
(c)When the **ENT** switch is pressed, the copy confirmation message appears. To copy, press the **ENT** switch again. If not, press the **ESC** switch.

⑤ Setting of file change operation at the time of channel change

・Set the association of channel change with file change.
・AUTO: Files are memorized for each channel: When a channel is changed to another, an automatically stored fillies picked up.
・MANUAL: Just one file preset for all channels is fixed.
・ Default setting is AUTO.

⑥ Setting of data protection password

・A password is set to prevent modifications of the preset data and the initialization.



(a) Display of currently set lock mode
・The currently set lock mode is displayed.
・UNLOCK : The lock is released and all data can be changed.
・DATA LOCK : Preset data change is locked, although file change impossible.
・ALL LOCK : Preset data change and file change are impossible.

(b) Password menu
・Select characters from this list using the ▲, ▼, ◀ and ▶ switches and press the **ENT** switch to set the password.

(c) Password entry
・When setting the lock mode to ALL LOCK or DATA LOCK or when releasing the lock mode(UNLOCK), select characters from the menu in ② and enter a four-digit password here.
* If you forget the registered password, contact Ikegami's service office. They have a password for releasing the lock.

(d) Setting of LOCK mode
・When the **ENT** switch is pressed after the password has been entered, the LOCK mode blinks. Execute the setting by pressing the **ENT** key. To return to the previous state, press the **ESC** switch.

⑦ Operation of Auto Setup

・When optional ASP-100 Auto Setup Probe is connected for automatic adjustment for color temperature, please select hear. Please refer an operation manual for ASP-100 regarding the detail.

* HLM-905WR supports in more than ASP-100 Rev1.

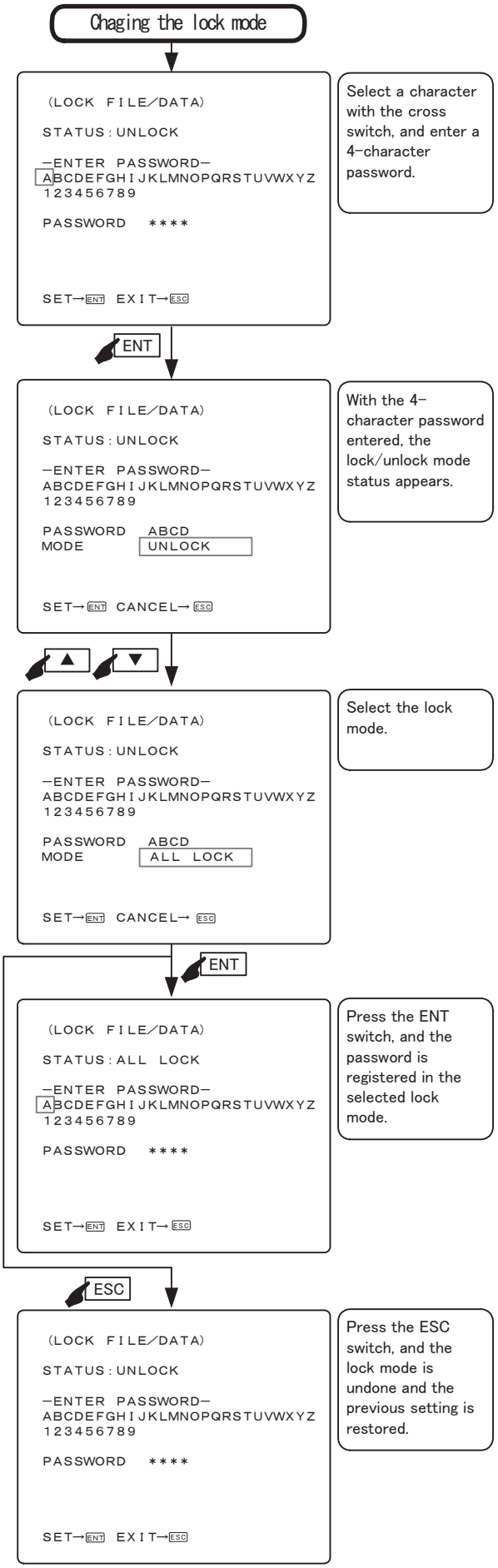
⑧ Setting the backlight brightness level

・When the backlight brightness level is raised, the black level is also slightly raised. Therefore set the backlight brightness level according to the ambient condition.

・This function can be assigned with the **F1** **F2** switch on the front panel.

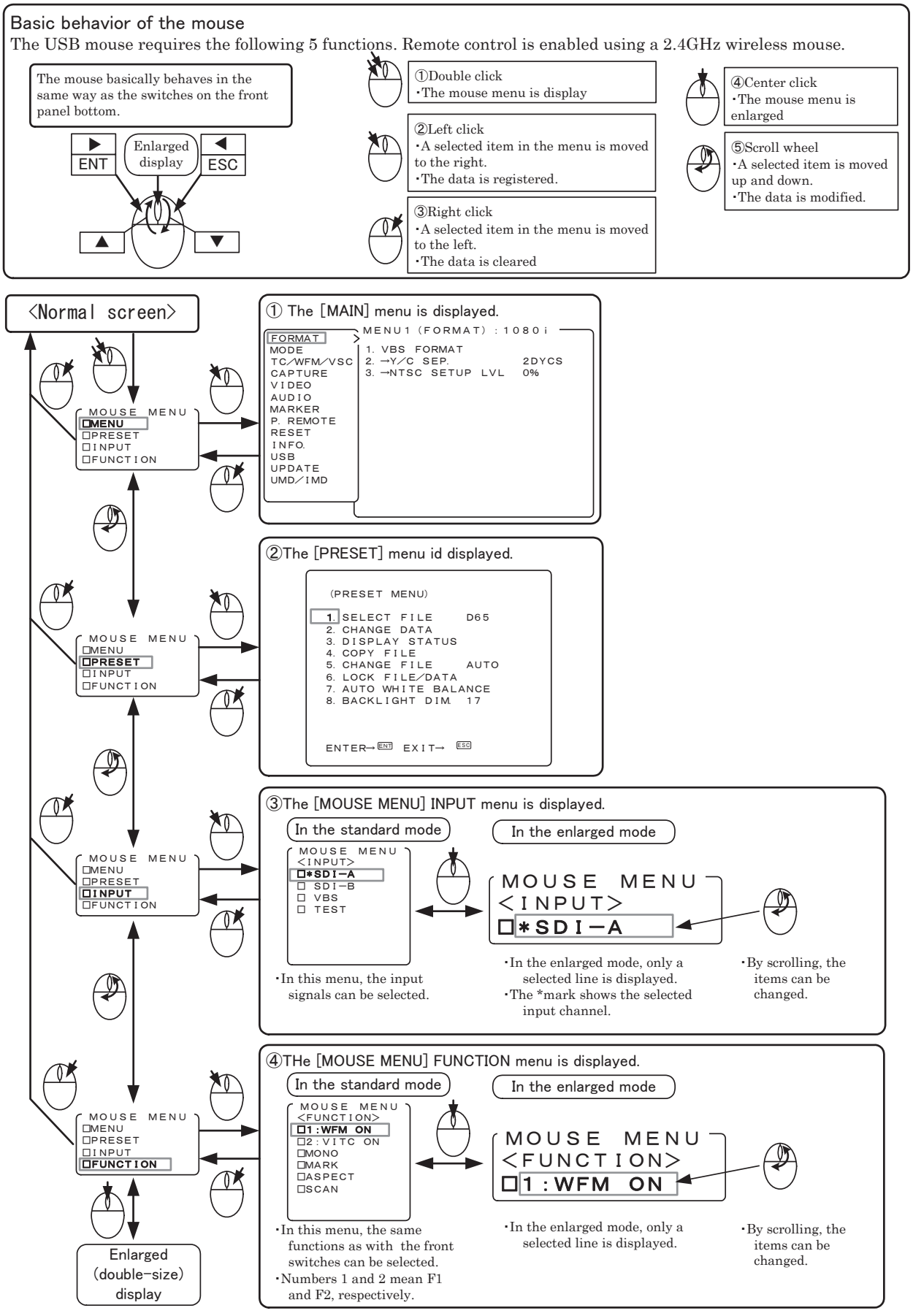
・Default setting is 17.

※The use at lower backlight brightness level extends the life span of backlight.



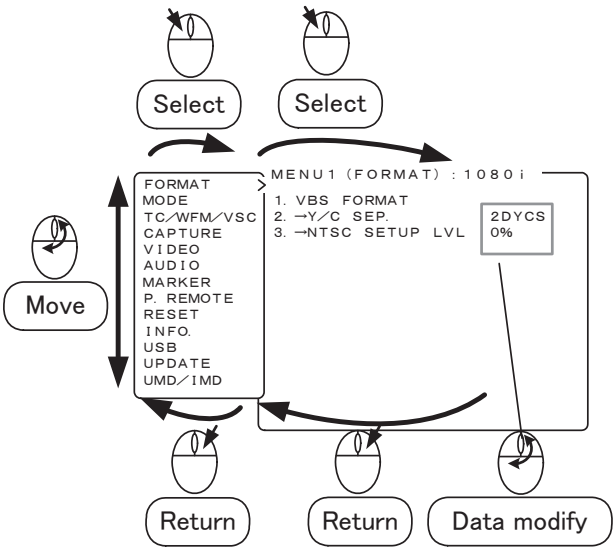
6. Mouse menu function

6-1. Basic procedure of the mouse menu



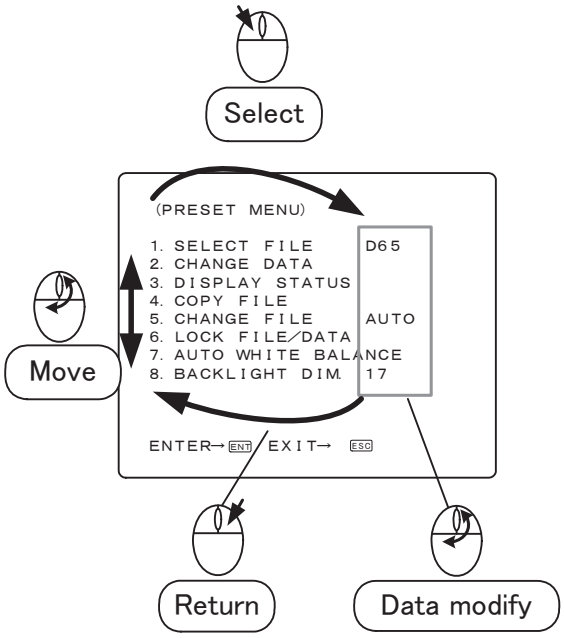
6-2. Basic procedures on the MENU and PRESET MENU screens

① Basic mouse behavior on the MENU screen



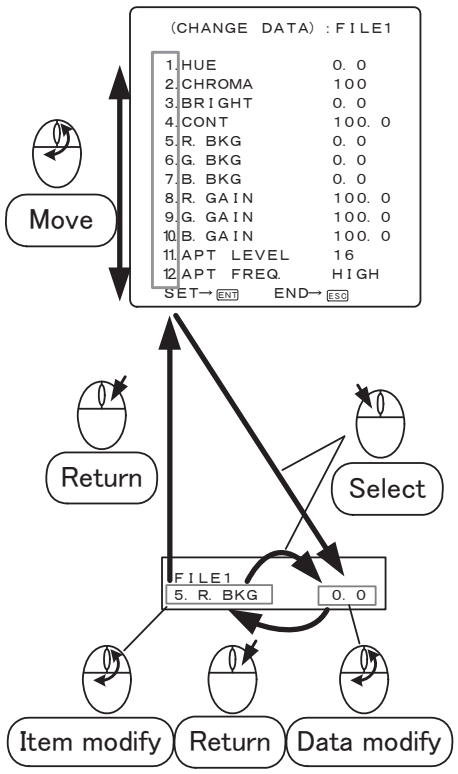
- Left-click the mouse to go to the right of the MENU screen and select an item. Right-click it to return to the left-hand items.
- The scroll wheel is used to move vertically and to change the settings.
- When there are two or more settings to select on the right-hand data like the USB memory's date setting, left-click the mouse to go to the settings to modify.

② Basic mouse behavior on the PRESET MENU screen



- The behavior is the same as Item ①.

③ Basic mouse behavior on the CHANGE PRESET screen



- The behavior is the same as Item ①.

◆Precaution

The available USB mouse supports a general-purpose mouse of HID conformity equipped with Windows as standard equipment.

The mouse that needs a special exclusive driver cannot be supported.

7. Specifications

7-1. General specifications

(1) Supply voltage

AC input

・ 100V～120V±10%　50／60Hz

・ 200V～240V±10%　50／60Hz

DC input

・ DC+12V

(2) Power consumption

AC input: 23W max

・ C100V～120V : 0.45A max

・ AC200V～240V : 0.26A max

DC input: 20W max

・ DC+12V : 1.6A max

(3) Ambient operating temperature/humidity, ambient storage temperature/humidity

Operation:　0°C to +40°C, 20% to 85% (no condensing)

Storage:　-10°C to +50°C, 5% to 85% (no condensing)

Maximum wet-bulb temperature: 29°C

(4) Outside dimensions (excluding protrusions)

222.4mm(W)×173mm(H)×69.5mm(D)

(5) Weight

Approx. 2.0kg (excluding the stand and option)

(6) Standard accessories

Operation manual, Parallel remote connector, AC Power cable

x1 each

7-2. Rated performance

(1) SDI signal (supported as standard)

a) Input/output terminal

Input:　BNC 2 lines

Output:　BNC 1 line (Active loop through for only one line selected)

b) Input signal format (Auto detection)

・ 3G-SDI　: SMPTE425M-A/B

1080p/60,59.94	1080p/50

・ HD-SDI　: SMPTE292M

1035i/60,59.94	1080p/25
1080i/60,59.94	1080p/24,23.98
1080i/50	720p/60,59.94
1080psF/30,29.97	720p/50
1080psF/25	720p/30,29.97
1080psF/24,23.98	720p/25
1080p/30,29.97	720p/24,23.98

・ SD-SDI（4:2:2）: SMPTE 259M

480i/59.94	575i/50

c) Input level

Rating: 800mVp-p±10%

d) Transmission speed

3G-SDI:　2.970Gb/s

HD-SDI:　1.485Gb/s

SD-SDI:　270Mb/s

e) Quantization bit rate

10 bits

f) Input/output impedance

75Ω

g) Transmission distance

Over 100m (5CFB, 1.485Gb/s)

(2) Analog composite (NTSC/PAL) signal (supported as standard)

a) Input terminal

BNC 1 lines (Loop through)

b) Input signal format

NTSC composite signal (SMPTE 170M)

PAL composite signal (EBU)

c) Input level

VS:　1.0Vp-p, Positive polarity

V:　0.714Vp-p (NTSC)/0.7Vp-p (PAL), Positive polarity

d) Input impedance

High impedance bridge connection or 75Ω termination

(75Ω termination plug is optional.)

(3) Embedded audio specification (supported as standard)

a) Input signal format

・ SMPTE 425M-A/B

1080p/60, 59.94	1080p/50

・ SMPTE 299M

1035i/60, 59.94	1080p/25
1080i/60, 59.94	1080p/24, 23.98
1080i/50	720p/60, 59.94
1080psF/30,29.97	720p/50
1080psF/25	720p/30,29.97
1080psF/24,23.98	720p/25
1080p/30,29.97	720p/24,23.98

・ SMPTE 272M

480i/59.94 (4:2:2)	575i/50 (4:2:2)

b) Format detection

Auto detection

c) Sampling frequency

48kHz (Synchronized with video clock)

d) Embedded audio output

The audio on each of paired channels downmix, ch1/2, ch3/4, ch5/6 and ch7/8 is output through the built-in speaker, the headphone and the analog audio output.

(4) Embedded audio level meter (supported as standard)

a) Display method
Superimposition on screen

b) Display channel
8 ch

c) Display position
4 types

d) Display mode
8 modes

e) Display segment
26 segments (including -∞)

f) Segment point
-∞, -60, -54, -48, -44, -40, -38, -36, -34, -32, -30, -28, -26, -24, -22, -20, -18, -16, -14, -12, -10, -8, -6, -4, -2, 0dB

g) Display color
Reference level (-18dBFS or -20dBFS) is select in MENU.

- -20dBFS
  -∞ ~ -22dB: Green
  -20 ~ -2dB: Yellow
  0dB: Red
- 18dBFS
  -∞ ~ -20dB: Green
  -18 ~ -2dB: Yellow
  0dB: Red

h) Peak hold
About 1 sec

i) Release time
About 0.4 sec

(5) Analog audio input (supported as standard)

a) Input terminal
Φ3.5 Stereo mini jack type

b) Input level
0dBV max
*0dBV = 1Vrms

(6) Analog audio output (supported as standard)

a) Output terminal
Φ3.5 Stereo mini jack type

b) Output level
0dBV max
-20dBV (digital audio data: at the -20dBFS)
*0dBV=1Vrms

c) Output impedance
75Ω or more

d) Input signal source
Analog audio input or embedded audio input can be outputted. A signal to be outputted is set on MENU(DOWNMIX, CH1/2, CH3/4, CH5/6, CH7/8).

(7) Headphones output (supported as standard)

a) Output terminal
Φ3.5 Stereo mini jack type

b) Output
85 mW/ch (RL: 32 Ω, distortion factor: 1%)

c) Input signal source
Analog audio signal or embedded audio signal can be outputted.
To select one of these signals, make the setting on MENU(DOWNMIX, CH1/2, CH3/4, CH5/6, CH7/8).

(8) Speaker output (supported as standard)

a) Rated output (monaural)
1W or more (distortion factor: 1.5%)

b) Input signal source
Analog audio input or embedded audio input can be outputted. A signal to be outputted is set on MENU (DOWNMIX, CH1/2, CH3/4, CH5/6, CH7/8).
* With the headphones being connected, no sound is heard from the speakers.

7-3. Specifications for liquid crystal display (LCD) module

(1) Number of pixels
1280 (H) x 768 (V) dots

(2) Pixel pitch
0.1515mm (W)×0.1515mm(H)

(3) Screen size (display area)
193.92mm×116.352mm
(Diagonal 22.61 cm, 9 V type)

(4) Screen brightness (brightness performance of LCD unit)
350 cd/m^2 (at full white input)
* The setting brightness differs according to the setting value of color temperature.

(5) Drive system
a-Si TFT active matrix, line sequential (non-interlace)

(6) Pixel arrangement
RGB vertical stripe

(7) Response speed

a) Ton + Toff: 22ms typ. (Ta = 25°C)
* The response speed from the 10% black to 90% white level and that from the 90% white to 10% black level are added together.

b) Gray to gray: 13ms typ. (Ta = 25°C)

(8) Contrast ratio
1000:1 (typ.)

(9) Number of display colors
16.78 million colors (8bits)

(10) Viewing angle
Vertical/horizontal: 176° (contrast ratio: 10:1 or more)

7-4. Functions

(1) Front operation

・Switch
POWER ON/OFF, MENU/ENT, PRESET, ESC, VBS(◀), CH A (▲), CH B (▼), SDI[TEST] (▶), F1, F2, ASPECT, SCAN, MONO, MARKER

・Volume
CHROMA, BRIGHTNESS, CONTRAST (BACKLIGHT), AUDIO

* With the MENU or Preset Menu screen on, the CHA, CHB, SDI[TEST] and VBS switches serve as arrow keys for the directions in parentheses.
* Hold down the SDI[TEST] switch, and the built-in test signal is displayed.
* The LED indicator lights up when the POWER and CH B switches are turned on.

(2) Marker function

a) Center marker
(Set to ON/OFF using MENU settings)

b) Safety marker
Any of the following markers is displayed according to the image aspect ratio (4:3/16:9). The numbers in parentheses show the aspect at the time of marker display.

<Types>
- "Safety area marker" + 100% (4:3/16:9)
  The "safety area markers" are effective over the entire screen and can be preset 1% by 1% in the range of 80-99%.
- 5 divided crosshatch (4:3/16:9)
- 10 divided crosshatch (4:3/16:9)
- Cross (4:3/16:9)
- 16:9 aspect marker (4:3)
- 15:9 aspect marker (4:3/16:9)
- 14:9 aspect marker (4:3/16:9)
- 13:9 aspect marker (4:3/16:9)
- 4:3 aspect marker (16:9)
- 1.85:1 aspect marker (16:9)
- 2.35:1 aspect marker (16:9)
- "Each aspect marker" + "Safety marker in aspect" (4:3/16:9)

The "safety marker in aspect" refers to the safety marker with respect to the aspect marker display zone, and can be preset 1% by 1% in the range of 80-99%. Corresponding to each aspect marker.

<Marker level>
- Set in five steps of 20%, 40%, 60%, 80% and100%

(3) Shadow function

Creates a shadow outside the aspect areas with 4:3 (16:9 mode), 13:9, 14:9, 15:9, 16:9 (4.3 mode), 1.85:1 (16:9 mode) and 2.35:1 (16:9 mode).

<Types>
- "Various aspect markers" + "Shadow"
- "Various aspect markers" + "Safety marker in aspect" + "Shadow"
- Shadow only

<Shadow contrast level>
- Set in four steps of 0%, 20%, 40% and 60%.

(4) User marker function

Function for the user to draw their desired lines and boxes in the unit of pixels.

a) No. of types: 10
b) No. of colors: 6
c) Drawable sizes: 1280 x 720 pixels
d) Drawing method: Switch or USB mouse
* Patent pending

(5) IMD/UMD function by TSL protocol

Function for controlling material display by using RS485

For IMD/UMD display, either TSL or USER DISPLAY should be selected (Select on the MENU).

a) Standard: RS485
b) Connector: RJ-45 (Loop through)
c) No. of connections: Max. 32 units per line
* By increasing the number of lines, it is possible to set ID numbers and individually control up to 126 units.
d) Protocol: TSL UMD V3.1
e) Characters: ASCII (alphanumeric); Max. of 8 characters in 7 colors
f) TALLY display: Red, Green, or Amber; On-screen indication or LED indication
g) Display position: Top or bottom

(6) IMD/UMD function by User Display

Function for setting any desired name of material by the individual input channels (including SDI-A, SDI-B, and VBS) for displaying the name of the material when the input channel is switched over.

For IMD/UMD display, either TSL or USER DISPLAY should be selected (Select on the MENU).

a) Characters: ASCII (alphanumeric); Max. of 8 characters in 7 colors
b) Display position: Top or bottom

(7) USB memory function

a) Content of the memory
- MENU setting
- User marker
- PRESET data
- Full capture image

b) Stored image
- No. of stored images: Max. 32 images
- Resolution: 280×720
- File format: Binary file for exclusive use of the monitor
- Data capacity: 3~4 MB

7-5. Remote Control

(1) Parallel remote control

Input connector: HD D-SUB 15-pin
- CH A/B switching
- SDI ON/OFF
- COLOR/MONO switching
- 4:3/16:9 switching
- MARKER ON/OFF
- SHADOW ON/OFF
- R TALLY ON/OFF
- G TALLY ON/OFF
- SHADOW0 ON/OFF (★)
- SHADOW20 ON/OFF (★)
- SHADOW40 ON/OFF (★)
- SHADOW60 ON/OFF (★)

* For the pin function, refer to **"Data 3 Parallel Remote Pin Function"**.

* In addition to default setting, user setting is possible.
The "★" marked settings are used in the USER mode.

(2) Serial remote control

(The controller SRC-301A/Z is discontinuation.)
Input/output terminal:
BNC 1 lines (Loop through)
Input level
1.9Vp-p, Negative polarity
Input impedance
High impedance bridge connection or 75 termination

* For the control items, refer to **"Data 2 Control with Remote Controller"**.

(3) RS-485 remote control (customized)

Connector: RJ-45 (loop-through)
Maximum number of connections: 32 units
Additional lines will allow up to 126 monitors for each ID setting and monitor control.

8. Applicable Standards

8-1. Safety standards

- UL1419
- EN60950-1

8-2. Electromagnetic interference

- FCC Class-A
- EN55103-1 E4
- EN55103-2 E4

8-3. Environmental regulations

- Compliant with RoHS Directive

9. Options

(1) SRC-301Z (SRC-301A/Z is discontinuation.)

"Serial remote controller"

Serial remote controller capable of remote controlled operation simply by connecting the BNC cable to the serial remote input mounted as standard.

Just this unit can control all of the monitor functions. When plural monitors are connected in loop with BNC cables, up to 99 monitors can be controlled individually or collectively.

(2) ASP-100 (Rev1)

"Auto Setup Probe"

The color temperature is automatically adjustable in each steps by just connecting the ASP-100 to the USB port on monitors.

And it is also able to be used as the measuring instrument for measuring color temperature (color point of x, y) and contrast..

- Weight: approx. 100g

* HLM-905WR/907WR supports in more than ASP-100 Rev1.

(3) DR-904

"Dual rack mount hardware"

- Designed specifically for HLM-904/907WR.
- 4U-size rack mount hardware for mounting 2 units HLM-904/905/907WR.
- Weight: approx. 1.3Kg

(4) BP-920

"Blank panel for DR-920/904"

- Blank panel for mounting one monitor with DR-920/904.
- Weight: approx. 0.54Kg

(5) DR-904T (made-to-order)

"Dual rack mount hardware (Tilt-type)"

- Designed specifically for HLM-904/905/907WR.
- 5U-size tilt rack mount hardware for mounting 2 units

(6) BR-904T (made-to-order)

"Blank panel for DR-904T"

- Blank panel for mounting one monitor with DR-904T.

(7) WR-904L (made-to-order)

"WFM rack mount hardware"

- Designed specifically for HLM-904/905/907WR.
- Monitor+WFM(Made by Leader Electronics Corp.: LV5750)
- 4U-size rack mount hardware

(8) WR-904L3 (made-to-order)

"WFM rack mount hardware"

- Designed specifically for HLM-904/905/907WR.
- Monitor+WFM(Made by Leader Electronics Corp.: LV5750A/LV5710A/5800)
- 4U-size rack mount hardware

(9) WR-904L4 (made-to-order)

"WFM rack mount hardware"

- Designed specifically for HLM-904/905/907WR.
- Monitor+WFM(Made by Leader Electronics Corp.: LV5380)
- 4U-size rack mount hardware

(10) WR-904L5 (made-to-order)

"WFM rack mount hardware"

- Designed specifically for HLM-904/905/907WR.
- Monitor+WFM(Made by Leader Electronics Corp.: LV5330)
- 4U-size rack mount hardware

(11) WR-904C (made-to-order)

"WFM rack mount hardware"

- Designed specifically for HLM-904/905/907WR.
- Monitor+WFM(Made by Tektronix, Inc.: WFM7000series
- 4U-size rack mount hardware

(12) WR-904A (made-to-order)

"WFM rack mount hardware"

- Designed specifically for HLM-904/905/907WR.
- Monitor+WFM(Made by Astrodesign Inc. : WM-3007/A)
- 4U-size rack mount hardware

(13) HR-904 (made-to-order)

"Half rack mount hardware"

- 4U-size half rack mount hardware for mounting one monitor.

(14) STD-904

"Stand"

- Fixed stand

(15) STD-900

"Stand"

- With tilt-up: +14

(16) STD-920T

"Tilt-Stand"

- Tilt angle: ±10°

(17) BB-904A

"Battery bracket (Antonbauer type)"

- Specific for the HLM-904/905/907WR
- Weight: approx. 0.39Kg

(18) BB-904V

"Battery bracket (V type)"

- Specific for the HLM-904/905/907WR
- Weight: approx. 0.36Kg

(19) GR-904

"Handle"

- Specific for the HLM-904/905/907WR
- Weight: approx. 0.15Kg

(20) PP-904

"Protection plate (antireflection panel)"

- Specific for the HLM-904/905WR
- Weight: approx. 74g

(21) MH-904

"Folding hood"

- Specific for the HLM-904/905/907WR
- Weight: approx. 0.58Kg

(22) CC-905

"Hard carrying case"

- Specific for the HLM-905WR

(23) SO-106

"Soft carrying case"

- Made by SEKAIDO. Inc.
- Specific for the HLM-904/905/907WR

(24) AT-900

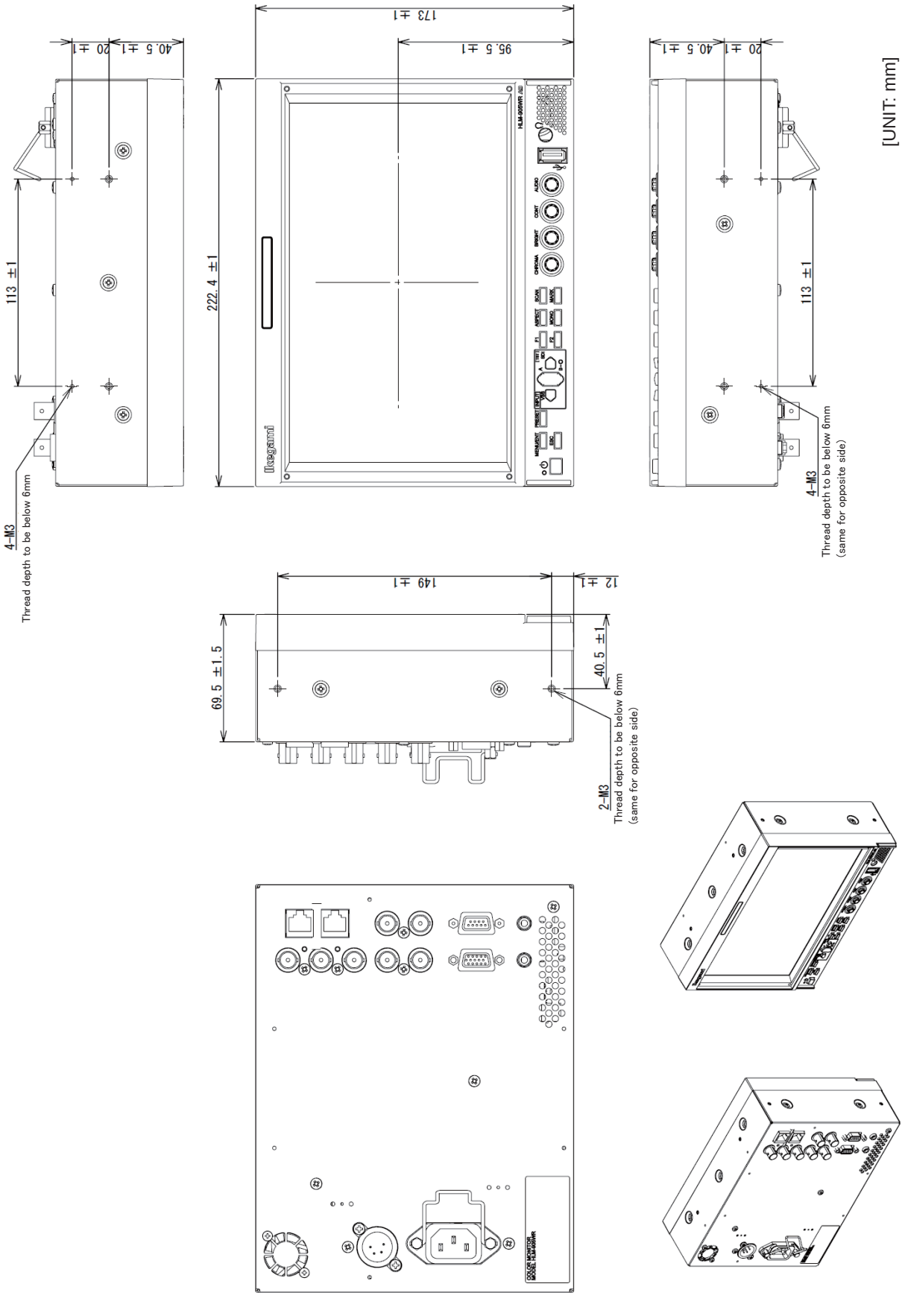
"Inch screw thread attachment plate"

- Attachment plate for connecting a tripod
- For 1/4-inch and 3/8-inch threads, and detachable with the STD-900 stand on

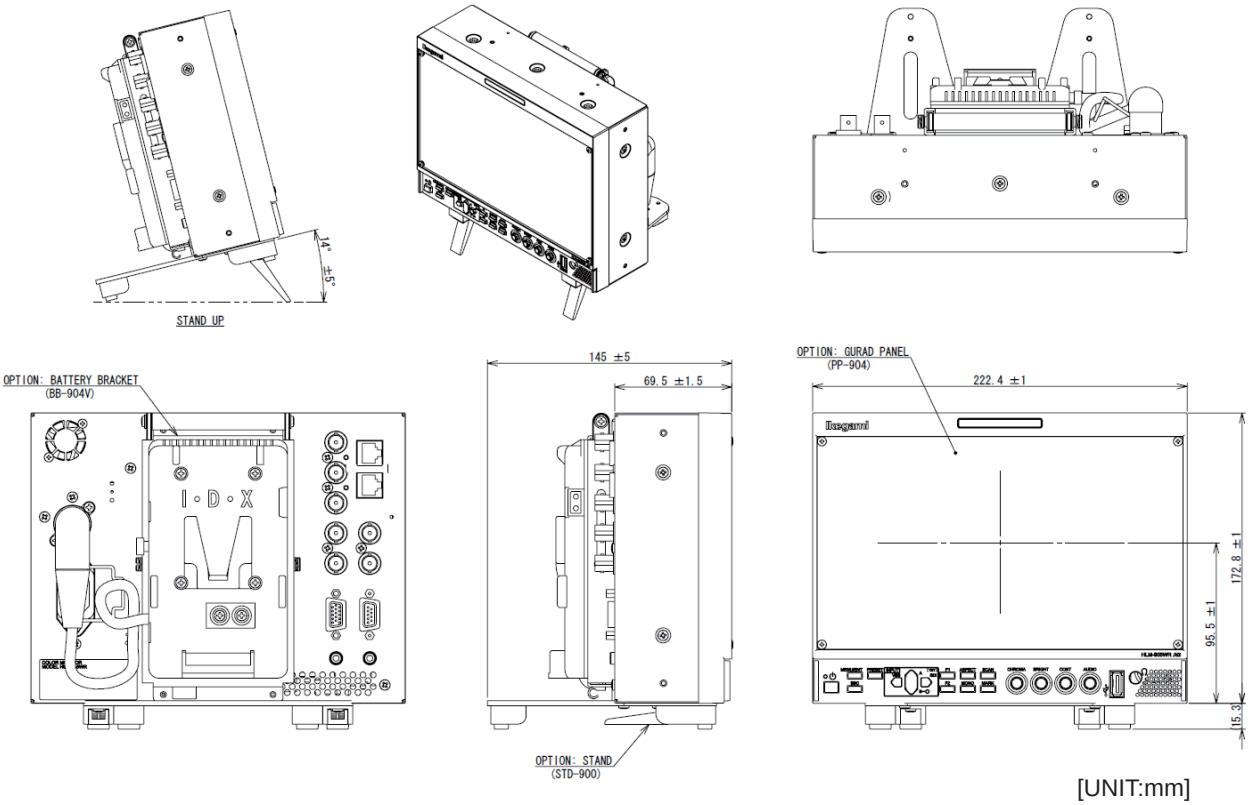
* The specifications and appearance of this product are subject to change for product improvements without notice.
* Black spots and luminescent spots may occur in 0.01% or less of the effective pixels of this product. This is not a failure.

10. External View

(1) MAIN CHASSIS

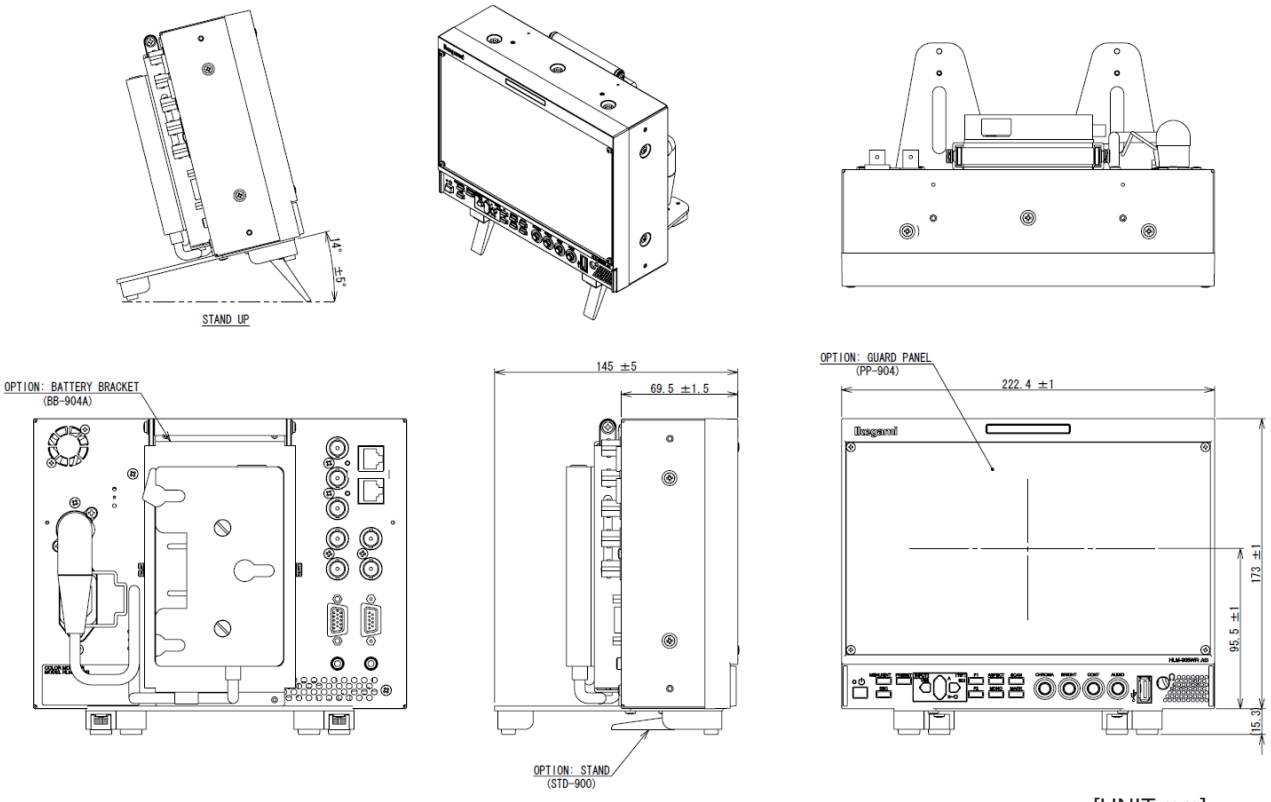


(2) Option（STD-900, BB-904V, PP-904）



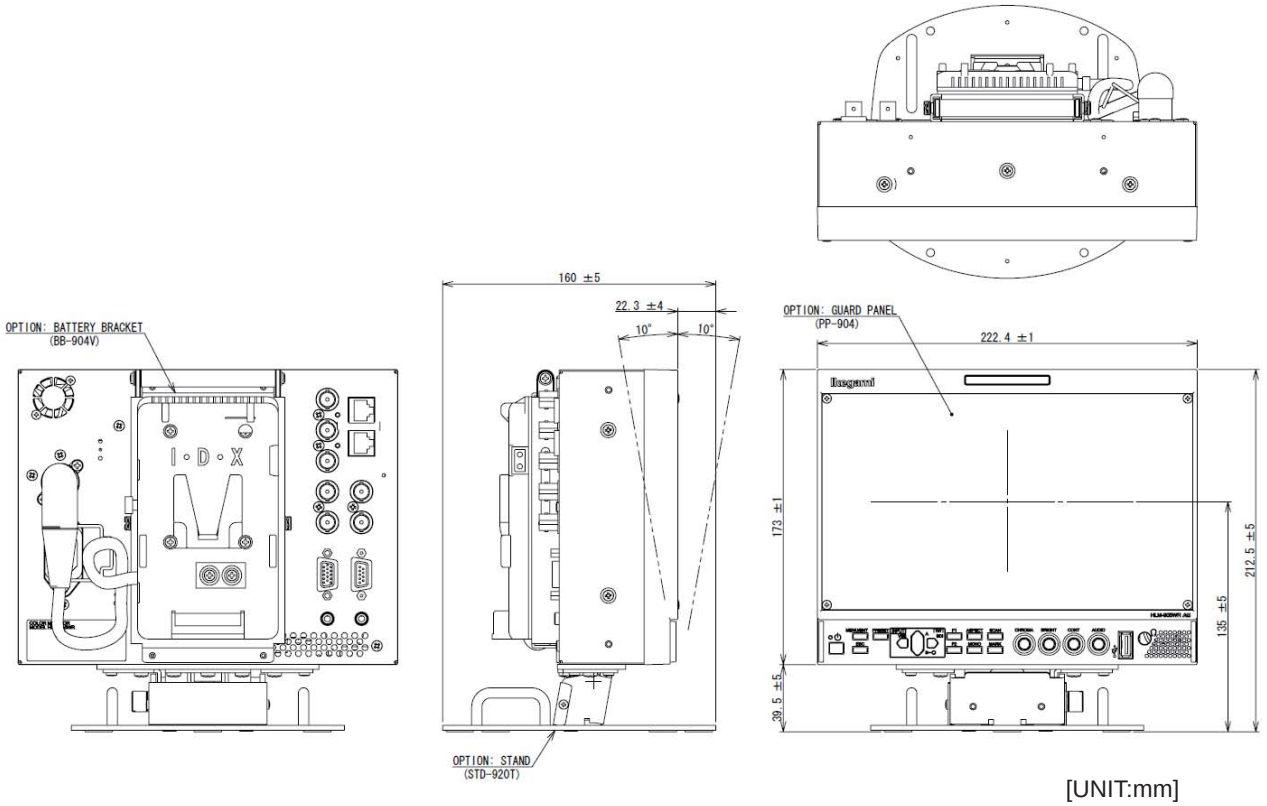
[UNIT:mm]

(3) Option（STD-900, BB-904A, PP-904）



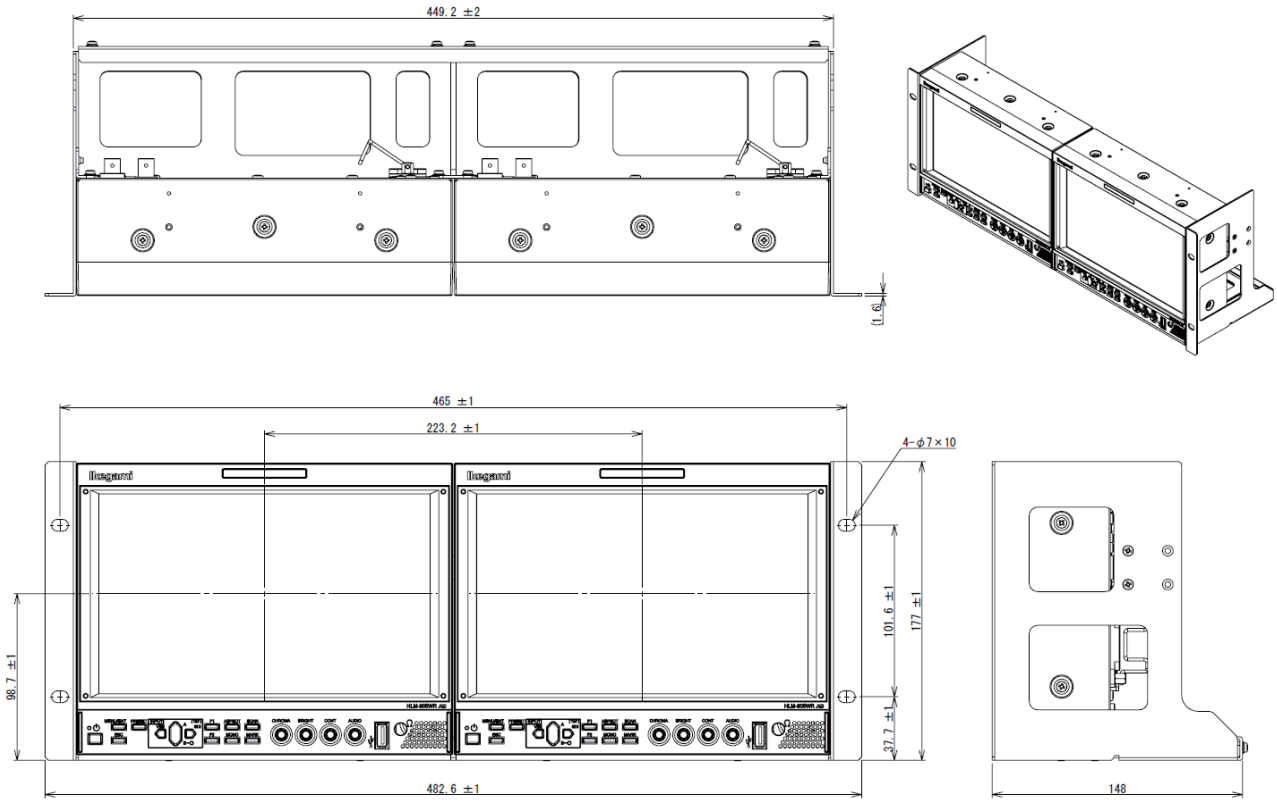
[UNIT:mm]

(4) Option（STD-920T, BB-904V, PP-904）



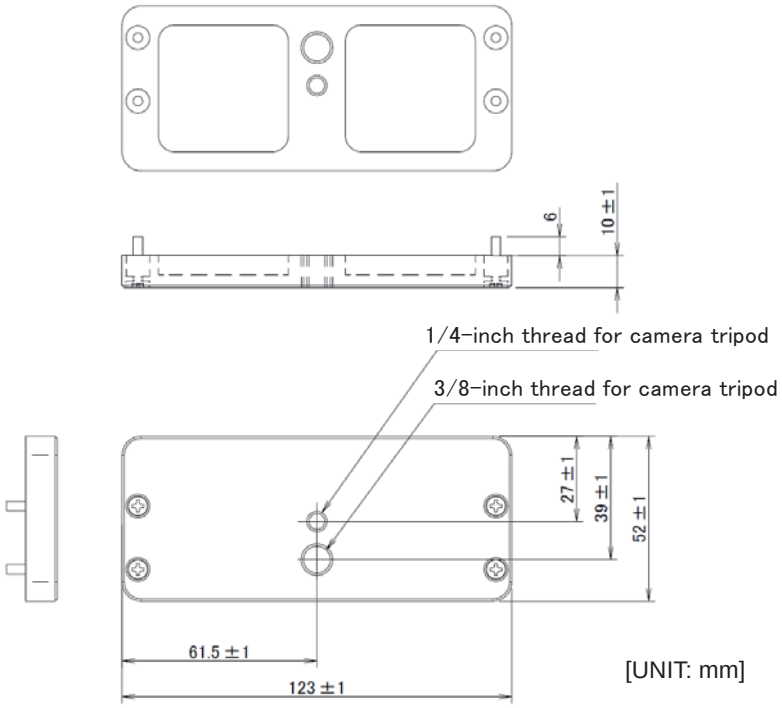
[UNIT:mm]

(5) Option（DR-904）



[UNIT: mm]

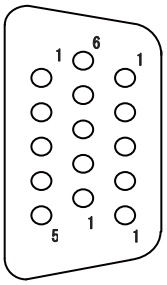
(6) Option（AT-900）



[UNIT: mm]

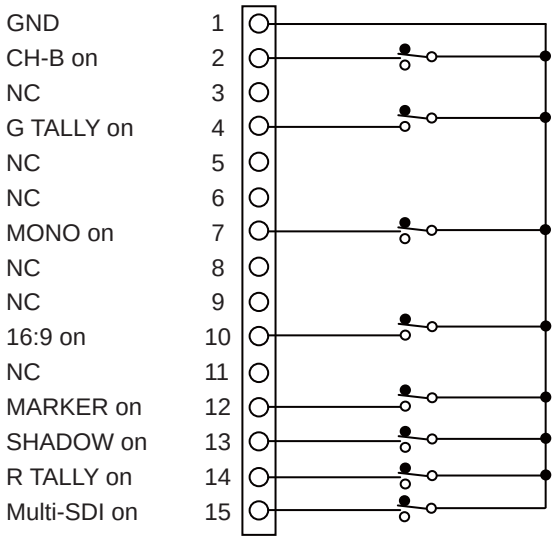
Data 1 Parallel Remote Pin Function

Connector Face View on Rear Panel



<Connector on system side>
D-Sub 15-pin (male) mini-type
* Connector
CD0115PA100: CVILUX-made
* Case
DE-C8-J9-F2-1:
Japan Aviation Electronics Industry-made
※ The above parts or equivalents are supplied as standard.

Wiring of Remote Connector (by default)



■ **Pin functions by default**

Pin No.	Function	External Assignment for Function
1	GND	Connecting remote terminals to this pin enables ON control.
2	CH-B on	Connect to Pin 1 to select B channel in the Multi-SDI input mode. * When Pin 2 is OPEN, the A channel will be selected.
3	(blank)	No connection
4	G TALLY on	Connect to Pin 1 to set G TALLY to ON.
5	(blank)	No connection
6	(blank)	No connection
7	MONO on	Connect to Pin 1 to switch the COLOR/MONO setting to MONO.
8	(blank)	No connection
9	(blank)	No connection
10	16:9 on	Connect to Pin 1 to change the aspect (4:3/16:9) of SDTV signals to 16:9. * If the setting is to be controlled simultaneously with channel switching, set [CHANGE ASPE] to [MANUAL] in **MENU 2-4**.
11	(blank)	No connection
12	MARKER on	Connect to Pin 1 to set MARKER to ON.
13	SHADOW on	Connect to Pin 1 to set SHADOW to ON. * The shadow is displayed in the **MENU7**-preset level.
14	R TALLY on	Connect to Pin 1 to set Red TALLY to ON.
15	Multi-SDI on	Connect to Pin 1 to select the Multi-SDI input module. Use together with Pin 2 to switch between channels A and B. * When Pins 15 are open, the analog composite will be selected.

■ **Additional user-set functions**

Pin No.	Function	External Assignment for Function
User setting	SHADOW0 on	Connect to Pin 1 for running with the shadow level 0% (black). * Priority is given to this pin function if any other shadow setting pin is pressed at once.
User setting	SHADOW20 on	Connect to Pin 1 for running with the shadow level 20%.
User setting	SHADOW40 on	Connect to Pin 1 for running with the shadow level 40%.
User setting	SHADOW60 on	Connect to Pin 1 for running with the shadow level 60%.

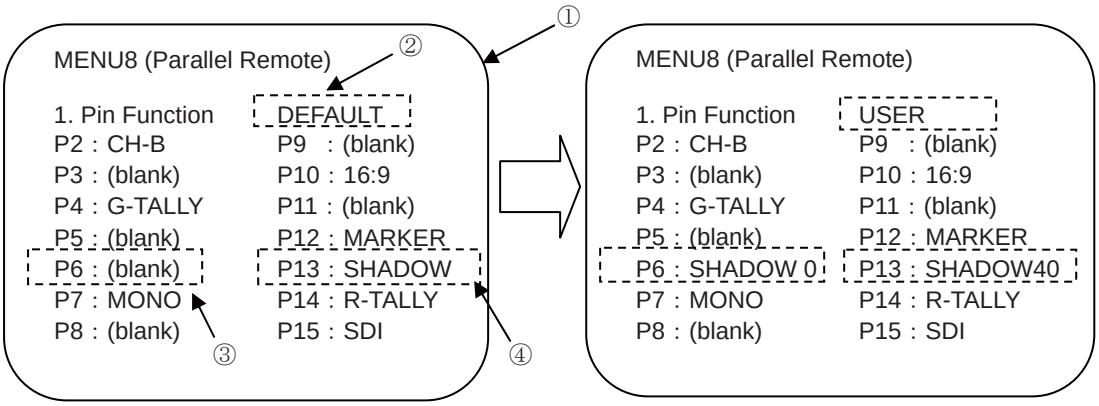
* The functions of pins other than 1 are freely user-settable on MENU.

Setting of two shadow levels and behavior

The shadow levels can be very quickly switched each other. To do this, make the user setting to assign the parallel-remote pin functions to "SHADOW0", "SHADOW20", "SHADOW40", "SHADOW60", etc.

Typical setting procedure and behavior are shown below.

■ **Setting procedure**



①First press the "MENU" switch and make the "**MENU8**" screen appear.

②Move the cursor to "DEFAULT" and enter "USER" instead.

③Move the cursor to "P6: (blank)" and enter "P6: SHADOW0" (black) instead.

④Move the cursor to "P13: SHADOW" and enter "P13: SHADOW40" instead.

* In the above setting, priority is given to Pin 6 if Pins 6 and 13 are pressed at once.

■ **Behavior**

Item	MARKER Terminal (12)	SHADOW(40%) Terminal (13)	SHADOW(0%) Terminal (6)	Behavior
1	"ON"	OFF	OFF	MARKER ON
2	"ON"	"ON"	OFF	MARKER＋SHADOW(40%) ON
3	"ON"	OFF	"ON"	MARKER＋SHADOW(0%) ON
4	"ON"	"ON"	"ON"	MARKER＋SHADOW(0%) ON *Priority to 0%
5	OFF	"ON"	OFF	SHADOW(40%) ON
6	OFF	OFF	"ON"	SHADOW(0%) ON
7	OFF	"ON"	"ON"	SHADOW(0%) ON *Priority to 0%

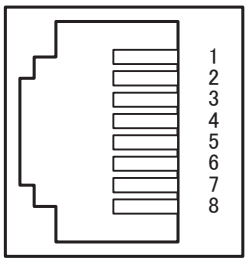
* The types of markers displayed are those set on "**MENU7**".

Data 2　Control with Remote Controller

Control item	Serial remote SRC-301A/Z	Remarks
■Switch functions		
VIDEO (VBS)	○	
SDI A	○	
SDI B	○	
TEST	○	
APERTURE ON/OFF	○	
COLOR/MONO	○	
BLUE ONLY ON/OFF	○	
DELAY (H/V/PCR)	○	only SDI
4:3/16:9 SCAN SELECT	○	only SDTV
FILE SELECT	○	
MARKER ON/OFF	○	
MENU	○	
■Variable preset level functions		
HUE	○(※)	only VBS(NTSC)
CHROMA	○(※)	
BRIGHTNESS	○(※)	
CONTRAST	○(※)	
APERTURE	○(※)	
R/G/B GAIN	○(※)	
R/G/B BACKGROUND	○(※)	
BACK LIGHT	○(※)	

※：Adjustments through MENU operation.

Data 3　RS-485 Pin Function



＜Female terminal＞

Pin No.	IN terminal	OUT terminal
1	TXD＋	TXD＋
2	TXD－	TXD－
3	RXD＋	RXD＋
4	GND	GND
5	GND	GND
6	RXD－	RXD－
7	NC	NC
8	NC	NC

MODEL HLM-905WR

MULTI FORMAT
LCD COLOR MONITOR

OPERATION MANUAL

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