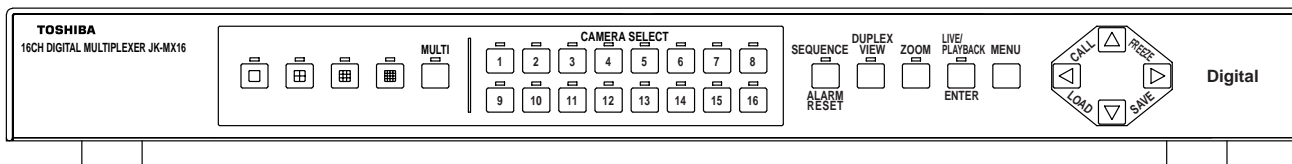


TOSHIBA

Instruction Manual

COLOR MULTIPLEXER

JK-MX16A



WARNING

This is a Class A of EN55022 product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

INFORMATION

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.

USER-INSTALLER CAUTION: Your authority to operate this FCC verified equipment could be voided if you make changes or modifications not expressly approved by the party responsible for compliance to Part 15 of the FCC Rules.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

For Customer Use

Enter below the Serial No. which is located on the bottom of the cabinet. Retain this information for future reference.



Model No.: _____

Serial No.: _____

SAFETY PRECAUTIONS

Read the following safety precautions carefully before using the product. These instructions contain valuable information on safe and proper use that will prevent harm and damage to the operator and other persons. Make sure that you fully understand the following details (indications, graphic symbols) before proceeding to the main descriptions in this manual.



Indication definitions

Indication	Meaning
 Warning	This indicates that ignoring this label and/or misoperation of the product may cause serious personal injury or even death.
 Caution	This indicates that ignoring this label and/or misoperation of the product may cause personal injury ^{*1} and/or material damage ^{*2} .

*1: Bodily injury means injuries, burns, and electric shock which does not require hospitalization or prolonged treatment.

*2: Physical damage means extended harm to home, household effects.

Graphic symbol definitions

Symbol	Meaning
	Indicates a prohibited action that must not be carried out. The actual prohibited action is indicated in the symbol or nearby graphically or described in text.
	Indicates a mandatory action that must be carried out surely. The actual mandatory action is indicated in the symbol or nearby graphically or described in text.

Warning

- **Do not use the product when abnormality occurs.**



The use in the abnormality status such as emitting smoke from the product, smelling burning, being damaged by drop, invasion of foreign objects inside the product, etc., may cause fire and/or electric shock. Be always sure to remove the AC adapter at once and contact your dealer.

- **Do not install the product where splashing of water may occur, such as outdoor, a bathroom, etc.**



This may cause fire and/or electric shock.

- **Do not repair, disassemble and/or modify by yourself.**



This may cause fire and/or electric shock. Be always sure to contact your dealer for internal repair, check and cleaning of the product.

- **Use the AC adapter only with the indicated power supply voltage (120V AC).**



Use with any other power supply voltage might cause fire or electric shock.

- **Do not put a vessel(s) filled with a liquid (flower vase, etc.).**



If a liquid enters the product, a fire and/or electric shock may occur.

- **Do not put the product in an unstable, slanting and/or vibrated place.**



Drop and/or fail of the product may cause injury.

- **Do not touch power or TV antenna cords during a thunderstorm.**



This might cause electric shock.



Caution

- **Keep the followings when installing.**



- Do not put the product on an inflammable material such as carpet or blanket.
- Do not put the product in a narrow space, since the heat generated from the product may be difficult to emanate.
- Do not put an inflammable material on the product.
If you do not keep above, the heat generated by the product may cause fire.



- **Do not put the product in direct sunshine and/or high temperature.**

The temperature rise inside the product may cause fire.



- **Do not put the product in a moist or dusty place such as a bathroom, a place close to a humidifier, etc.**

This may cause fire and/or electric shock.



- **Do not put the product in a moist, soot and/or dusty place such as a kitchen, etc.**

Do not put the product where a soot and steam may occur, such as a kitchen, etc., or in a dusty place. This may cause fire and/or electric shock.



- **Do not allow children to play with the packaging boxes, packaging bags, or other materials.**

Failing to do so may result in injury or suffocation.



- **Do not stand on the equipment.**

Doing so could cause it to crack, break, or could result in injury.



- **Ask your dealer to perform a periodical check and internal cleaning.**

Dust inside the product may cause fire and/or trouble. For check and cleaning cost, please consult your dealer.

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INTRODUCTION

Thank you for purchasing Toshiba's JK-MX16A Color Duplex Multiplexer. This instruction manual describes every aspect of installation, set-up, and operation of the JK-MX16A. If you run into difficulties and need technical assistance, feel free to call our technical support center at 1 (877) 855 1349 available weekdays between the hours of 9AM - 5PM PST or visit our web page at www.cctv.toshiba.com.

Overview

The Toshiba JK-MX16A Color Multiplexer has the capacity to support up to 16 cameras and can display them in a variety of display modes (example: 2 x 2, 3 x 3, 4 x 4, etc.). Each camera is sequenced at a rate that is equal to the recording speed on the VCR up to 1/20 second. The JK-MX16A offers a wide variety of features designed to integrate with most any video surveillance system.

Features

• Multiple Screen Displays

In both live and playback modes, the JK-MX16A supports a multitude of display modes including: 2x2, 3x3, 4x4, 8+2, 12+1, picture in picture modes, vertical split screen, horizontal split screen, squash screen and squish screen. (Refer to page 13 for details)

• Multiplex Recording/Playback

The JK-MX16A is designed to record all cameras onto a single VHS videotape. During the recording process, each camera is encoded with a digital ID number. For example, camera one is encoded with a "number one," camera two is encoded with "number two," and so on. During playback the multiplexer looks for the digital ID number and decodes the signal. The end result is that you can select to view any camera you wish to view without having to view all of the cameras that have been recorded.

The speed at which the multiplexer switches from camera to camera is determined by the speed at which the VCR records. For example, if the VCR is set to record in 18-hour modes (also known as 24-Hour Virtual Real-Time), the JK-MX16A must be programmed to record at the same speed. (Refer to page 22 for details)

• Multiple Monitor Outputs

The JK-MX16A is equipped with two monitor outputs. The main monitor output will display both live and playback image in any multiple screen display desired including programmed camera sequence. The call monitor output displays each live camera in full screen mode and can be programmed to sequence at a rate determined by the user. (Refer to page 28 for details)

• Day/Night Function

This unit has the unique ability of converting a color camera with mediocre low light capabilities into a black & white camera with excellent low light capabilities for use in low light conditions. This function is programmable via a timer schedule. (Refer to page 21)

• Alarm Function and Scheduling

This unit is equipped with one alarm-input contact for each camera input. Upon alarm activation this unit can be programmed to automatically alter recording priority of alarmed camera input and display the alarmed camera in any desired display mode including full screen. Each alarm input channel can be programmed to ignore an alarm input by timer schedule. (Refer to page 23 for details) In addition, this unit has the capability of storing all alarm events in an alarm event log. (Refer to page 26 for details)

- **Video Loss**

This unit is equipped with video loss detection. Each camera can be individually programmed. (Refer to page 26 for details)

- **Motion Detection/Counter Functions**

This unit provides extensive video motion detection capabilities. Among the programmable parameters available are motion direction, motion size, motion area, sensitivity, dwell time, and display mode. In addition, each motion event can be logged to a counter and displayed to the monitor. (Refer to page 24 for details)

- **Display Mode Save/Recall Function**

The monitor display mode as specified by the front panel can be saved and recalled. When power is switched off and then on again, the unit will start up from the saved condition. (Refer to page 20 for details)

- **High Density Function**

This feature effectively doubles the amount of images that are recorded. High density mode operate only in modes slower than 24 hour standard density (SP) or 48 hour high density (EP). (Refer to page 23 for details)

Duplex View Function

The duplex view function allows the VCR playback image to be displayed while simultaneously viewing live images. (Refer to page 16 for details)

- **Zoom Function**

The zoom function allows a live camera image to be enlarged up to five times the normal size. (Refer to page 14 for details)

- **VCR Playback Adjustment Function**

This function allows the user to maximize the stability of the playback images. Essentially it helps minimize vertical jitter and minimize the mixing of playback cameras. (Refer to page 15 for details)

- **VCR Bypass Function**

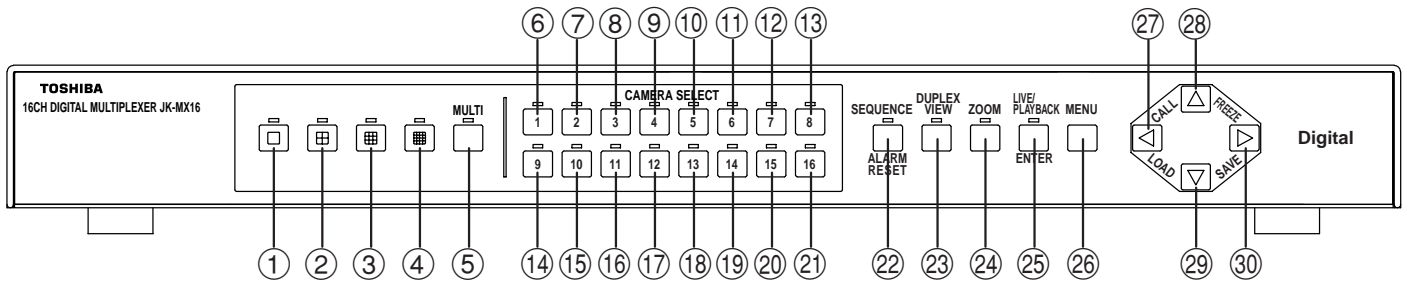
Many VCRs have on-screen displays that require a monitor in order to program the VCR. The JK-MX16A offers a VCR Bypass function that allows the user to directly view the output of the VCR enabling. This enables the user to view and program any on screen menus, which the VCR may have. This feature can also be used to directly view the VCR's output in order to adjust VCR tracking. (Refer to page 15 for details)

- **Discreet Camera Function**

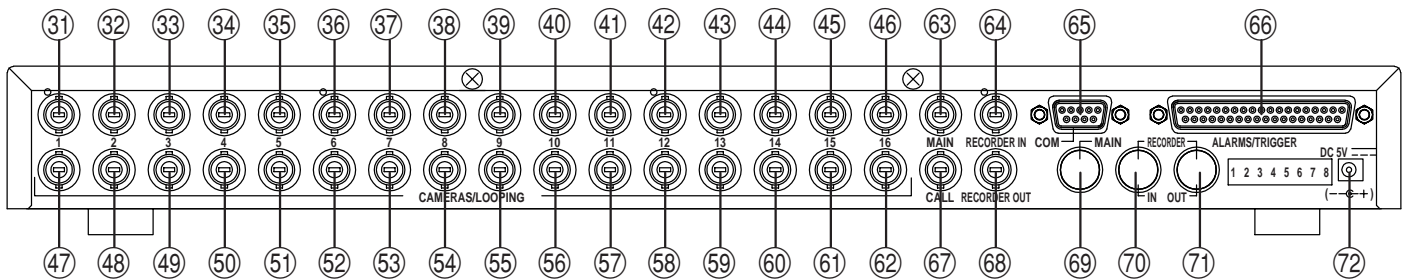
There might be some instances where certain cameras are to be recorded but not necessarily monitored live. One example would be a hidden or discreet camera that is to be hidden from the guard that is monitoring the camera. In this case, discreet camera function can be used to "hide" a camera from the security guard while still being recorded onto videotape. (Refer to page 21 for details)

Instruction in Brief

Front Panel



Rear Panel



Front Panel

- ① **FULL SCREEN button**
Press to set a full screen display.
- ② **2x2 button**
Press to set a 2x2 screen display.
- ③ **3x3 button**
Press to set a 3x3 screen display.
- ④ **4x4 button**
Press to set a 2x2 screen display.
- ⑤ **MULTI button**
Press to set the following types of displays: Squish screen, Vertical split screen with pan, Squash screen, Horizontal split screen with pan, 8+2 screen, 12+1 screen, and PIP screen.
- ⑥~⑳ **CAMERA SELECT buttons 1 through 16**
Press to select which camera is to be used for display purpose during Live or Playback mode.
- ㉑ **SEQUENCE/ALARM RESET button**
This button has multiple functions
 - Press to place the cameras into sequence mode
 - Press to reset alarm after an activation
 - Press to make playback adjustments while in playback mode
 - Also used during menu programming
- ㉒ **DUPLEX VIEW button**
Press to display the camera image and the VCR playback image simultaneously.
- ㉓ **ZOOM button**
This button has multiple functions
 - Press while in live mode to zoom image
 - Press to alternate image while in Squish, Squash, Split screen.
- ㉔ **LIVE/PLAYBACK/ENTER button**
This button has multiple functions
 - Press to switch the Live mode and the Playback mode
 - Press and hold down to directly view the input image of the VCR
 - Also used during menu programming
- ㉕ **MENU button**
Use in conjunction with on screen menus.

②⑦ **◀ button**

This button has multiple functions

- Used during menu programming.
- Used to navigate while in zoom mode.
- Press together with the ▲ button to enter the CALL monitor operation mode.
- Press together with the ▼ button to permit reloading of the most recently saved front panel display mode.
- Used when making playback adjustments in the playback mode.
- Used to finish setting Day/Night gain level.

②⑧ **▲ button**

This button has multiple functions

- Used during menu programming.
- Used to navigate while in zoom mode.
- Press together with the ▶ button to freeze image.
- Used when setting Day/Night gain level.

②⑨ **▼ button**

This button has multiple functions

- Used during menu programming.
- Used to navigate while in zoom mode.
- Press together with the ▶ button to save the current front panel display mode.
- Used when setting Day/Night gain level.

③⑩ **▶ button**

This button has multiple functions

- Used during menu programming.
- Used to navigate while in zoom mode.
- Used when making playback adjustments in the playback mode.
- Used when setting Day/Night gain level.

Rear Panel

③①~③② CAMERA/LOOPING 1 to 16

These BNC connectors are used to connect the cameras and each has a looping output. The factory setting of each 75 ohm termination is ON. Two DIP switches inside the unit determine whether the termination is ON or OFF for each camera input.

③③ MAIN

Main monitor output connector (BNC); connect it to the main monitor.

③④ RECORDER IN

Recorder input connector (BNC); connect it to the video output of the VCR etc.

③⑤ COM

Use this to connect a personal computer for controlling the multiplexer.

③⑥ ALARMS/TRIGGER

This connector is used for all alarm inputs, outputs, and also contains the input (REC Trigger In) for synchronizing VCR to multiplexer. If using a Toshiba time-lapse recorder, a synchronization cable is not required

③⑦ CALL

This is the call monitor output (BNC) connector. This output is limited to display live full screen images.

③⑧ RECORDER OUT

Recorder output connector (BNC); connect it to the video input of VCR etc.

③⑨ MAIN

Main monitor output connector (S-video connector); connect it to the main monitor.

④⑦ RECORDER IN

Recorder input connector (S-video connector); connect it to the S-video output of the VCR etc.

④⑧ RECORDER OUT

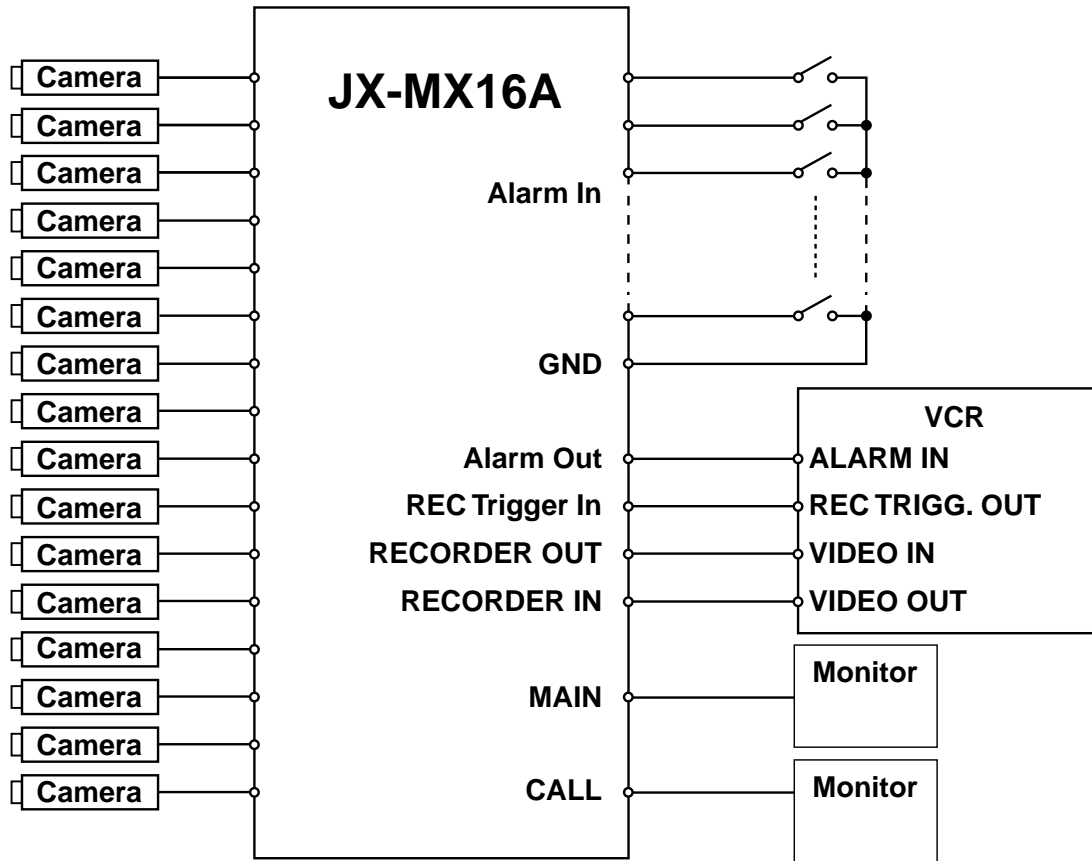
Recorder output connector (S-video connector); connect it to the S-video input of the VCR etc.

④⑨ 5 V DC

Accept the power plug of AC adapter.

Connection

Basic Wiring Example:



Installation Steps

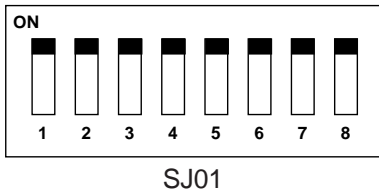
- (1) If cameras are to be looped out to other devices, the termination switch inside the unit has to be set to off. (Refer to page 12 for details)
- (2) Set the time and date on the menu screen.
- (3) If the time-lapse VCR is equipped with an on-screen menu for programming, use the VCR Bypass function to view the on-screen menu on the monitor. (Refer to page 15 for details).
- (4) Select the desired recording mode on the time-lapse recorder.
- (5) Select a recording mode in the multiplexer that matches the record mode on the VCR. (Refer to page 22 "Recording Functions" for details)
- (6) When alarm output contacts of this unit are to be connected to the VCR, it will be necessary to program the alarm recording duration of the time-lapse recorder to "MANUAL". The recording duration of the alarm event will be then be controlled by the dwell time that is programmed in the JK-MX16A. (Refer to page 23 for details).

Video Termination Switches (When using the looping connector)

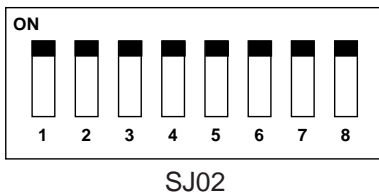
The termination switches are located near the rear panel on the main circuit board. The 75 ohm termination is enabled when the switch is in the "ON" position. The factory setting of 75 ohm termination for each camera input is ON. If cameras are to be looped out to other devices, set the termination switch to off.

Setting method

- (1) Disconnect the AC adapter. Remove the 8 screws from the side and the 2 screws from rear, then take off the top cover.
- (2) Set the switches (SJ01, SJ02) on the main circuit board to ON or OFF.
- (3) Attach the top cover and tighten the screws in their original positions.
- (4) Attach the AC adapter.



No.	Input Name
1	Camera 1
2	Camera 2
3	Camera 3
4	Camera 4
5	Camera 5
6	Camera 6
7	Camera 7
8	Camera 8



No.	Input Name
1	Camera 9
2	Camera 10
3	Camera 11
4	Camera 12
5	Camera 13
6	Camera 14
7	Camera 15
8	Camera 16

Operation

Viewing the Camera Image

Use the **LIVE/PLAYBACK** button to select the Live mode (The LED will light).

Full Screen Display

The camera image can be viewed in a full screen display.

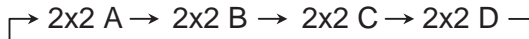
- ① Press the **FULL SCREEN** button.
- ② Press the **CAMERA SELECT** button of the channel you wish to view. The LED of the selected channel will light at this time.

2x2 Display

The camera image can be viewed in a 2x2 display.

- ① Press the **2x2** button.

Each time the **2x2** button is pressed, the screen display mode changes as follows:



- 2x2 A: Displays Channel 1 to Channel 4.
(The LEDs of **CAMERA SELECT** buttons 1 to 4 light.)
- 2x2 B: Displays Channel 5 to Channel 8.
(The LEDs of **CAMERA SELECT** buttons 5 to 8 light.)
- 2x2 C: Displays Channel 9 to Channel 12.
(The LEDs of **CAMERA SELECT** buttons 9 to 2 light.)
- 2x2 D: Displays Channel 13 to Channel 16.
(The LEDs of **CAMERA SELECT** buttons 13 to 16 light.)

Display Position

1	2
3	4

3x3 Display

The camera image can be viewed in a 3x3 display.

- ① Press the **3x3** button.

* The images from the Channel 10 to Channel 16 will not be displayed.

4x4 Display

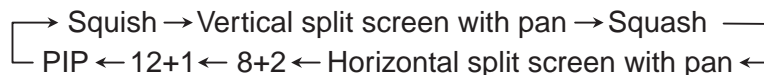
The camera image can be viewed in a 4x4 display.

- ① Press the **4x4** button.

MULTI Display

Camera images can be viewed in a variety of multiple displays.

- ① Press the **MULTI** button. Each time the **MULTI** button is pressed, the display mode changes as follows:



- Squish
 - (1) The **CAMERA SELECT** button can be used to switch the camera image.
 - (2) The **ZOOM** button can be used to change the position at which the camera is switched.
- Vertical split screen with pan
 - (1) The **CAMERA SELECT** button can be used to switch the camera image.
 - (2) The **ZOOM** button can be used to change the position at which the camera image is switched.
 - (3) The **◀** or **▶** button can be used to pan the display area.

- Squash
 - (1) The **CAMERA SELECT** button can be used to switch the camera image.
 - (2) The **ZOOM** button can be used to change the position at which the camera is switched.
- Horizontal split screen with pan
 - (1) The **CAMERA SELECT** button can be used to switch the camera image.
 - (2) The **ZOOM** button can be used to change the position at which the camera image is switched.
 - (3) The Δ or ∇ button can be used to pan the display area.
- 8 + 2
 - (1) The **CAMERA SELECT** button can be used to switch the camera image at the upper left of the screen.
 - (2) The camera image at the upper right of the screen can be changed with menu settings.
- 12 + 1
 - (1) The **CAMERA SELECT** button can be used to switch the camera image at the center of the screen.
- PIP
 - (1) The **CAMERA SELECT** button can be used to switch the camera image.
 - (2) The **ZOOM** button can be used to change the position at which the camera image is switched.
 - (3) The number of sub screens (up to 2) or the screen display position can be set with the menu.

SEQUENCE Display

Camera images can be viewed in a sequential display.

- ① Press the **SEQUENCE** button. Depending on the displayed screen, operation will be as follows:
 - For a full screen display : Camera image is switched in the full screen display.
 - For a 2x2 display : Camera image at the lower right position of the 2x2 screen is switched.
 - For a 3x3 display : Camera image at the lower right position of the 3x3 screen is switched.
 - For an 8+2 display : Camera image at the upper left position of the 8+2 screen is switched.
 - For a 12+1 display : Camera image at the center position of the 12+1 screen is switched.

ZOOM

In the Live mode, when a full screen display or a 2x2 display is selected, camera images can be viewed with portions enlarged. For the 2x2 display, the zoom area can also be moved.

For a full screen display

- ① Press the **ZOOM** button. Each time the **ZOOM** button is pressed, the magnification factor changes as follows:

□ → 2x → 3x → 4x → 5x □

- ② Press the Δ , ∇ , \triangleleft , or \triangleright buttons to move the zoom area up, down, left, or right.
- ③ To cancel the **ZOOM** display, press the **CAMERA SELECT** button.

For a 2x2 display

- ① Press the **ZOOM** button.
- ② Press the **CAMERA SELECT** button to select the channel image you wish to view with its portion enlarged, the LED will flash and the magnification of channel image will change to 2x. Press the Δ , ∇ , \triangleleft , or \triangleright buttons to pan the image.
- ③ To exit the Zoom mode, press the **ZOOM** button, (The LED is not lit) and press the **CAMERA SELECT** button for desired camera to exit. (The LED is not lit).

View the VCR Playback Image

The various display options are as follows:

- ① When playing back a tape that was recorded with the multiplexer set to “Normal” record mode, the following display options are available:
 - Full Screen
 - 2x2 Screen
 - 3x3 Screen
 - 4x4 Screen
 - 8+2 Screen
 - PIP
- ② When playing back a tape that was recorded with the multiplexer set to “High Density” record mode, the following display options are available:
 - Full Screen
 - 2x2 Screen

VCR Bypass Function

The image output from the VCR can be viewed directly on the main monitor.

- ① Holding down the **LIVE/PLAYBACK** button for 2 seconds or longer sets the VCR Bypass mode. (The LED is flashing).
- ② To exit the VCR direct mode, press the **LIVE/PLAYBACK** button one more time.

VCR Playback Adjustment Function

The JK-MX16A has the VCR Playback Adjustment function for offering users improved image quality and synchronization.

- Adjustment
 - (1) Use the **LIVE/PLAYBACK** button to select the playback mode (and LED will go off).
 - (2) Play the time-lapse VCR.
 - (3) Press the **SEQUENCE** button.
 - (4) The VCR playback adjustment screen will appear.
 - (5) Press the ◀ or ▶ button to minimize the mixing of the images of other channels.
 - (6) Press the **SEQUENCE** button once again to return to the original screen.
- * Please readjust this adjustment when the playback speed of the time-lapse VCR has been changed.
- * Please readjust this adjustment when playing back a tape that has been recorded in a different recording time mode.
- * These adjustment contents will return to normal when the power is off.

Using the DUPLEX VIEW Function to Simultaneously View Live Camera Images and VCR Playback Images.

(1) To view the VCR playback image while viewing the live camera image...

- ① Press the **LIVE/PLAYBACK** button and select the Live mode. (The LED will light).
- ② Press the **DUPLEX VIEW** button. The LED will light and the Window screen will display.
- ③ Press the **CAMERA SELECT** button to display the desired camera image from the VCR playback images.
- ④ To exit the Duplex view mode, press the **DUPLEX VIEW** button. (The LED is not lit).

(2) To view the camera image while viewing the VCR playback image...

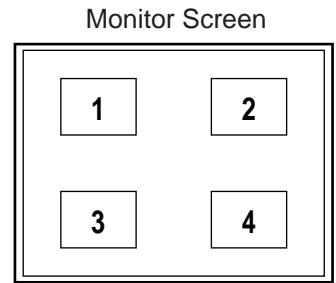
- ① Press the **LIVE/PLAYBACK** button and select the Playback mode. (The LED is not lit).
- ② Press the **DUPLEX VIEW** button. The LED will light and the Window screen will display.
- ③ Press the **CAMERA SELECT** button to display the desired camera image.
- ④ To exit the Duplex view mode, press the **DUPLEX VIEW** button. (The LED is not lit).

(3) Display position of the Duplex View Window

The display position of the window will be different for full screen, 2x2 screen, 8+2 screen, and 12+1 screen.

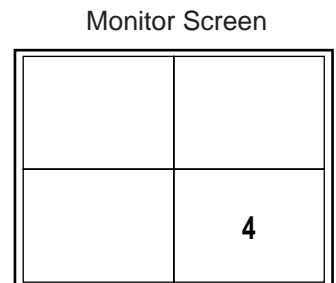
- Full screen

During a full screen display, the Duplex View Window is brought out among positions one to four according to the position set in the menu.



- 2x2 screen

The display position will be positioned at 4.

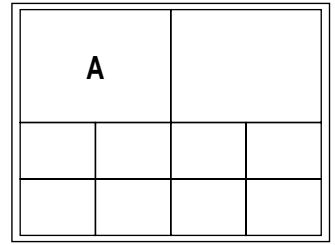


- 8+2 screen

The Duplex View Window will be in position **A**.

- * When a recording is made and the multiplexer is programmed in "High Density" mode, the 8+2 screen is not available.

Monitor Screen

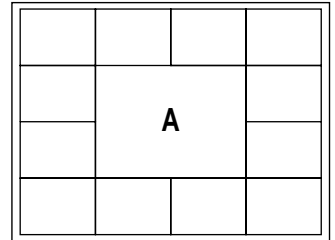


- 12+1 screen

The Duplex View Window will be in position **A**.

- * This screen pattern is only displayed in the Live mode.

Monitor Screen



Day/Night Function

This unit is a time-linked function that provides increased gain of the video level of the various cameras. To further improve the S/N ratio of the image, the signal is intentionally output as a black-and-white signal.

The Day/Night function will function on the main monitor output as well as the VCR output; however, it will not function on the call monitor output.

Note that if the Night mode is set while normal level video is being input, such as a daytime scene, the output image will exhibit a white-out phenomenon. Please exercise caution when setting this function.

To set the Day/Night Function gain, use the Δ , ∇ , \triangleleft , or \triangleright buttons in the Full screen.

- (1) Use the **LIVE/PLAYBACK** button to select the Live mode. (The LED will light).
- (2) Press the **FULL SCREEN** button to display the Full screen.
- (3) Select the camera to set and press the \triangleright button.
- (4) Press the Δ or ∇ button to set the gain you desired.

Gain

- ① L : Low
- ② M : Medium
- ③ H : High

- (5) Press the \triangleleft button to finish setting Day/Night gain level.

SET UP

The JK-MX16A Set Up is accomplished through its on-screen menus. To enter the menu system, press the **MENU** button. The display will then show the main menu. Selection from the various items of the menu is done with the Δ , ∇ , \triangleleft , \triangleright , **ENTER**, and **MENU** buttons. Press the **MENU** button to exit from the main menu.

Main Menu

The main menu contains the following 7 sub menus.

System Set-up

This sets the date display function, serial communication parameters, etc.

Camera Functions

This sets the title display, Day/night functions, etc.

Recording Set-up

This sets the functions that are recorded to the VCR.

Alarm Functions

This set the alarm functions.

Multi-view Functions

This set the Multi-view functions.

Sequence Set-up

This sets the automatic switching functions.

Security Set-up

This sets the security functions.

Menu

System Set-up
Camera Functions
Recording Set-up
Alarm Functions
Multi-view Functions
Sequence Set-up
Security Set-up

\blacktriangle \blacktriangledown :Select \blacktriangleright :Next
MENU:Exit

Setting Contents

1. System Set-up

1.1 Time & Date Functions

Hour Format

Sets the hour display format.

- ① 24H : 24-hour display
- ② AM/PM : 12-hour display

Date Format

Sets the date display format.

- ① MMMM/dd/yy : e.g., Oct./01/2000 (Month/Day/Year)
- ② yy/MMMM/dd : e.g., 2000/Oct./01 (Year/Month/Day)
- ③ dd/MMMM/yy : e.g., 01/Oct./2000 (Day/Month/Year)
- ④ yy/MM/dd : e.g., 2000/10/01 (Year/Month/Day)
- ⑤ MM/dd/yy : e.g., 10/01/2000 (Month/Day/Year)
- ⑥ dd/MM/yy : e.g., 01/10/2000 (Day/Month/Year)
- ⑦ MM/dd/ddd/yy : e.g., 10/01/SUN./2000 (Month/Day/Day of the week/Year)

Time & Date Set-up

Sets the time and date. The current time can be entered in increments of one minute. Pressing the **ENTER** button will reset the second counter to zero.

Daylight Savings

Sets Daylight Saving Time on and off.

Select On (from the Off condition) and press the **MENU** button to advance the time by 1 hour. Select Off (from the On condition) and press the **MENU** button to turn back the time by 1 hour.

T&D View Main Mon

Sets the time and date display of the main monitor screen On/Off.

- ① On : Displays the date and time on the main monitor.
- ② Off : Does not display the date and time on the main monitor.

T&D View Call Mon

Sets the time and date display of the call monitor screen On/Off.

- ① On : Displays the date and time on the call monitor.
- ② Off : Does not display the date and time on the call monitor.

T&D View VCR PB

Sets the time and date display of the VCR playback screen On/Off.

- ① On : Displays the date and time on the VCR playback screen.
- ② Off : Does not display the date and time on the VCR playback screen.

Time & Date Position

Sets the position at which the time and date are displayed. When the line is the same as the title position, the title has priority and the time and date are not displayed. This is the same for each of the main monitor output (i.e., camera live screen and VCR playback screen) and the call monitor output.

- ① Top : Displayed at the top of the screen.
- ② Bottom : Displayed at the bottom of the screen.

System Set-up

Time & Date Functions
Font Color
Comm. Set-up
Save/Recall
Default

▲▼:Select ENTER:Next
MENU:Return

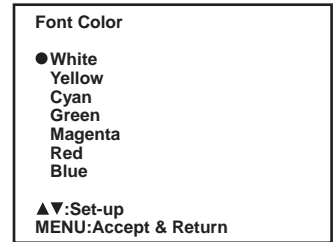
Time & Date Functions

Hour Format
Date Format
Time & Date Set-up
Daylight Savings
T&D View Main Mon
T&D View Call Mon
T&D View VCR PB
Time & Date Position
▲▼:Select ENTER:Next
MENU:Return

1.2 Font Color

The color of the characters on main monitor screen can be changed.

- ① White ② Yellow ③ Cyan ④ Green ⑤ Magenta ⑥ Red ⑦ Blue



1.3 Comm. Set-up

Sets the serial communications items.

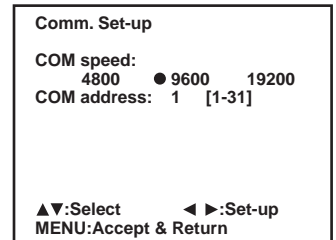
COM speed

Sets the transfer speed.

- ① 4800 : Transfer speed of 4800 bps
② 9600 : Transfer speed of 9600 bps
③ 19200: Transfer speed of 19200 bps

COM address

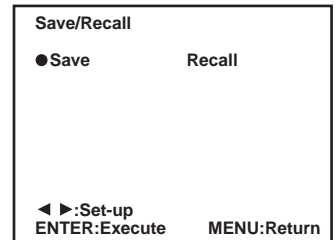
Sets the communications address.



1.4 Save/Recall

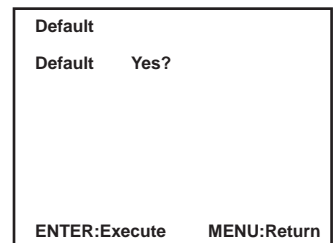
The contents of the menu screen can be saved and recalled.

- ① Save : Saves the setting contents of the current menu screen. (After the Save is executed, it will take approx. 1 minute to complete it.)
② Recall: Recalls the setting contents of the previously saved menu screen. (After the Recall is executed, it will take approx. 1 minute to complete it.)



1.5 Default

A press of the **ENTER** button on this screen permits all of the menu screen setting contents (with the exception of the clock) to be returned to the default values that were in effect at time of shipping. (After the Default is executed, it will take approx. 1 minute 30 seconds to complete it.)



2. Camera Functions

2.1 Title Functions

Camera Title

Inputs the title (character display) of each channel. Entry of a maximum of 10 characters (alphanumeric and symbols) is permitted for each channel.

Note: for screens of 1/9 size and 1/16 size, only the camera number can be accommodated.

Title View Main Mon

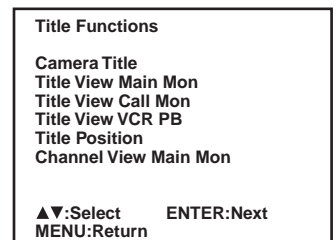
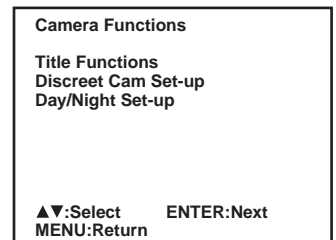
Sets the title display of the main monitor screen On/Off. Settings can be made for each channel, independently.

- ① Off : Does not display the title on the main monitor screen.
② On : Displays the title on the main monitor screen.

Title View Call Mon

Sets the title display of the call monitor screen On/Off. Settings can be made for each channel, independently.

- ① Off : Does not display the title on the call monitor screen.
② On : Displays the title on the call monitor screen.



Title View VCR PB

Sets the title display of the VCR playback screen On/Off. Settings can be made for each channel, independently.

- ① Off : Does not display the title on the VCR playback screen.
- ② On : Displays the title on the VCR playback screen.

Title Position

Sets the position at which the title of the camera live screen (i.e., main monitor output) will be displayed (Full screen display only). The title display position is fixed for the call monitor screen.

- ① Top : Displayed at the top of the screen.
- ② Bottom : Displayed at the bottom of the screen.

Channel View Main Mon

Sets the camera number display of the 1/9 size and 1/16 size screens On/Off.

- ① Off : Does not display the camera number.
- ② On : Displays the camera number.

2.2 Discreet Cam Set-up

Sets the screen mute On/Off. Settings can be made for each channel, independently.

- ① Off : Displays the image.
- ② On : Does not display the image.

Discreet Cam Set-up 1/2		
CH1:	● Off	On
CH2:	● Off	On
CH3:	● Off	On
CH4:	● Off	On
CH5:	● Off	On
CH6:	● Off	On
CH7:	● Off	On
CH8:	● Off	On
▲▼:Select ◀▶:Set-up		
MENU:Accept & Return		

2.3 Day/Night Set-up

Sets the Day/Night function On/Off. Settings can be made for each channel, independently.

- ① Off : Does not use the Day/Night function.
- ② On : Uses the Day/Night function.
- ③ Sche. : When within the set time, the Day/Night function will be activated.

Day/Night Set-up 1/2		
CH1:	● Off	On
CH2:	● Off	On
CH3:	● Off	On
CH4:	● Off	On
CH5:	● Off	On
CH6:	● Off	On
CH7:	● Off	On
CH8:	● Off	On
▲▼:Select ◀▶:Set-up		
MENU:Accept & Return		

3. Recording Set-up

3.1 Camera Rec Select

Sets the channel that is recorded on the VCR. Settings can be made for each channel, independently.

- ① Off : Does not record to VCR.
- ② On : Records to VCR.
- ③ Sche. : Records to VCR when the time is within the set time.

Recording Set-up		
Camera Rec Select		
Recording Functions		
VCR Input Select		
Camera Priority Rec		
High density Mode		
▲▼:Select ENTER:Next		
MENU:Return		

Camera Rec Select 1/2		
CH1:	Off	● On Sche.
CH2:	Off	● On Sche.
CH3:	Off	● On Sche.
CH4:	Off	● On Sche.
CH5:	Off	● On Sche.
CH6:	Off	● On Sche.
CH7:	Off	● On Sche.
CH8:	Off	● On Sche.
▲▼:Select ◀▶:Set-up		
MENU:Return ENTER:Auto		



3.2 Recording Function

Sets the VCR recording mode and time mode.

Normal mode:

- ① SP : SP mode (Example, 2 hour & 12 hour modes are SP modes).
- ② EP : EP mode (Example 6 hour, 18 hour mode, & 24 Hour Virtual Real-time modes are EP modes). **Note:** LP: LP mode applies when unit is switch to PAL mode. (Refer to page 34 for "Changing the Internal Switch")

Recording Function			
Normal mode:	SP	● EP	
time:	6H	18H	● 24H
	30H	48H	72H 96H
	120H	168H	240H 360H
	480H	720H	960H
Alarm mode:	● SP	EP	
time:	● 2H	12H	24H
▲▼:Select ◀▶:Set-up			
MENU:Accept & Return			

Normal time: Sets the VCR recording time mode

When the SP mode has been selected with the aforementioned mode selection,

- ① 2H (3H in the PAL version) ② 12H ③ 24H ④ 36H ⑤ 48H ⑥ 72H ⑦ 96H ⑧ 120H ⑨ 168H
- ⑩ 240H ⑪ 360H
- ⑫ 480H ⑬ 720H ⑭ 960H

When the EP (LP in the PAL version) mode has been selected with the aforementioned mode selection,

- ① 6H ② 18H ③ 24H ④ 30H ⑤ 48H ⑥ 72H ⑦ 96H ⑧ 120H ⑨ 168H ⑩ 240H ⑪ 360H
- ⑫ 480H ⑬ 720H ⑭ 960H

Alarm mode:

- ① SP : SP mode
- ② EP : EP mode (LP : LP mode in the PAL version)

Alarm time: Sets the VCR recording time mode.

When the SP mode has been selected with the aforementioned mode selection,

- ① 2H (3H in the PAL version) ② 12H ③ 24H

When the EP (LP in the PAL version) mode has been selected with the aforementioned mode selection,

- ① 6H ② 18H ③ 24H

3.3 VCR Input Select

Sets the VCR input connectors.

- ① BNC : BNC connector (When a composite signal is input)
- ② S-VIDEO : S-VIDEO connector (When an S-video signal is input)

VCR Input Select	
● BNC	S-VIDEO
◀▶:Set-up	
MENU:Accept & Return	

3.4 Camera Priority Rec

When there are 3 or more camera inputs, the channel that is recorded to the VCR can be given priority. Settings can be made for each channel, independently.

- ① L : Sets the priority lower.
- ② H : Sets the priority higher.
- ③ AI : Optimizes the priority depending on the alarm information that has already been input.
- ④ Sche. : Sets the priority higher when the time is within the set time.

Camera Priority Rec 1/2				
CH1:	● L	H	AI	Sche.
CH2:	● L	H	AI	Sche.
CH3:	● L	H	AI	Sche.
CH4:	● L	H	AI	Sche.
CH5:	● L	H	AI	Sche.
CH6:	● L	H	AI	Sche.
CH7:	● L	H	AI	Sche.
CH8:	● L	H	AI	Sche.
▲▼:Select ◀▶:Set-up				
MENU:Accept & Return				

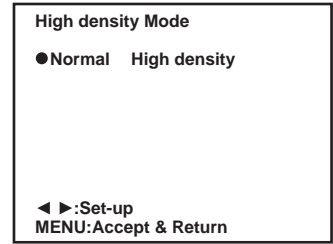
3.5 High density Mode

Sets the multiplexer into high-density mode. When high-density mode is selected, the multiplexer compresses two fields of information into one field thereby doubling the refresh rate. While the refresh rate is improved when high-density mode is enabled, there is a slight loss in image quality caused by image compression.

- ① Normal : Standard (normal) density mode
- ② High density : High-density mode

Note: If the multiplexer is not set to 24 Hour or longer (SP) or 48 Hour or longer (EP) in the Recording function menu, you can not set the High density mode on it.

We recommend the multiplexer is used with the VCR time and date display set to off.

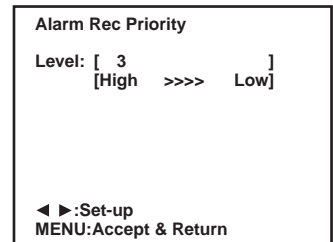
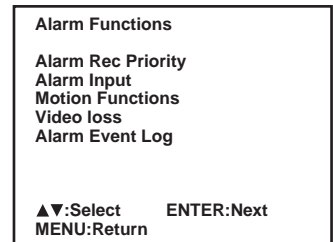


4. Alarm Functions

4.1 Alarm Rec Priority

When an alarm signal is activated, camera priority recording can be programmed from this menu.

- ① Level 3: Only the camera that has an active alarm is recorded. All other cameras are ignored for the duration of the alarm condition.
- ② Level 2: The alarmed camera is recorded at a higher priority than non-alarmed cameras (example: In a 4 camera system, when camera #4 is alarmed the camera sequence would be as follows: 4,4,4,4,4,1,4,4,4,4,4,2,4,4,4,4,3).
- ③ Level 1: The alarmed camera is recorded at a higher priority than non-alarmed cameras (example: In a 4 camera system, when camera #4 is alarmed the camera sequence would be as follows: 4,4,4,1,4,4,4,2,4,4,4,3).
- ④ Level 0: No change to the recording sequence when an alarm is activated.



4.2 Alarm Input

Alarm Type

Sets the type of alarm input signal.

- ① N.C : Normal Closed. When the contact is open, alarm will be set to operation.
- ② N.O : Normal Open. When the contact is closed, alarm will be set to operation.
- ③ L.L : Logic Low. Alarm input in the logic "Low" level will sets the alarm operation.
- ④ L.H : Logic High. Alarm input in the logic "High" level will sets the alarm operation.

Main Mon Callout

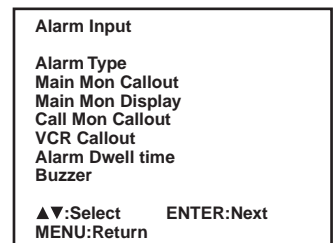
When an alarm signal is activated, the main monitor displays the alarmed camera channel. Each camera channel can be programmed independently.

- ① Off : Alarmed camera is not called out to main monitor.
- ② On : Alarmed camera is called out to main monitor.
- ③ Sche. : Alarmed camera is called out to main monitor based on a timer schedule.

Main Mon Display

Sets the display screen of the main monitor output when the alarm signal has been input.

- ① Full : Full screen
- ② 2x2 : 2x2 screen
- ③ 3x3 : 3x3 screen
- ④ 4x4 : 4x4 screen



Call Mon Callout

When an alarm signal is activated, the call monitor output displays the alarmed camera channel. Each camera channel can be programmed independently.

- 1 Off : Does not callout alarmed camera to call monitor when alarm signal is activated.
- 2 On : Calls out alarmed camera to call monitor when alarm signal is activated.
- 3 Sche. : Calls out alarmed camera to call monitor based on a timer schedule.

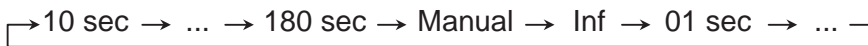
VCR Callout

When an alarm signal is activated, the VCR records the camera that is in alarm condition with higher priority. Recording priority is set in the Alarm Rec. Priority menu.

- ① Off : Alarmed camera is not routed to the VCR for priority recording.
- ② On : Alarmed camera is routed to the VCR for priority recording.
- ③ Sche. : Alarmed camera is routed to the VCR for priority recording based on timer schedule.

Alarm Dwell Time

Sets the alarm dwell time when the alarm signal has been input. Settings can be made for each channel, independently.



- ① 1 to 180 sec : Alarm operation is held only for the set time.
- ② Manual : Alarm operation is held while the alarm signal is being input.
- ③ Inf : The alarm operation is held until the **ALARM RESET** reset button is pressed or the power is switched off.

Buzzer

Sets the buzzer On/Off when the alarm signal is input. Settings can be made for each channel, independently.

- ① Off : Buzzer is not sounded.
- ② On : Buzzer is sounded.

4.3 Motion Functions

Motion Sensitivity

Sets the sensitivity of the motion detection. Settings can be made for each channel, independently.

- ① Low : Low sensitivity
- ② Middle : Normal
- ③ High : High sensitivity

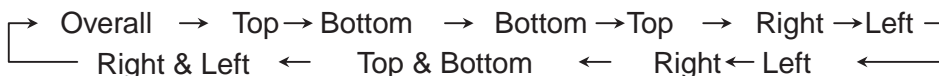
Motion Functions 1/2

- Motion Sensitivity
- Motion Direction
- Motion Size
- Motion Area
- Detection Mode
- Motion Counter Display

▲▼:Select ENTER:Next
MENU:Return

Motion Direction

Sets the detection direction of the motion detection. Settings can be made for each channel, independently.



- ① Overall : All up/down and left/right directions
- ② Top → Bottom : From top to bottom direction only
- ③ Bottom → Top : From bottom to top direction only
- ④ Right → Left : From right to left direction only
- ⑤ Left → Right : From left to right direction only
- ⑥ Top & Bottom : Vertical direction (from top to bottom, or from bottom to top) only
- ⑦ Right & Left : Horizontal direction (from right to left, or left to right) only

Motion Size

Sets the size of the cell that detects the motion. Settings can be made for each channel, independently.

- ① S : Small cell size
- ② M : Medium cell size
- ③ L : Large cell size

Motion Area

Sets the detection area of the motion detection. Settings can be made for each channel, independently.

- ① Manual : Cursor is used to set the detection range.
- ② Auto : Sets the range in which motion occurred within a fixed time to an insensitive zone.

Detection Mode

Sets whether the motion detection will be used as an alarm or as a counter.

- ① Alarm : Used as an alarm
- ② Counter : Used as a counter

Motion Counter Display

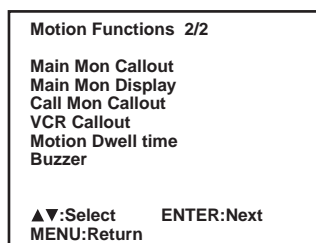
The number of times motion has been detected sets the main monitor On/Off (Full screen display only). Settings can be made for each channel, independently.

- ① Off : Not displayed. (Displayed only on the menu screen.)
- ② On : Displayed

Main Mon Callout

When the motion detection is programmed to act as an alarm, the main monitor can be programmed to display the motion alarmed camera. Each camera can be programmed independently..

- ① Off : Motion alarmed camera is not called out to main monitor.
- ② On : Motion alarmed camera is called out to main monitor.
- ③ Sche. : Motion alarmed camera is called out to main monitor based on a timer schedule.



Main Mon Display

Sets the display screen of the main monitor output when the motion detection is used as an alarm.

- ① Full : Full screen
- ② 2x2 : 2x2 screen
- ③ 3x3 : 3x3 screen
- ④ 4x4 : 4x4 screen

Call Mon Callout

When the motion detection is programmed to act as an alarm, the call monitor displays the motion alarmed camera. Each camera can be programmed independently.

- ① Off : Motion alarmed camera is not called out to call monitor.
- ② On : Motion alarmed camera is called out to call monitor.
- ③ Sche. : Motion alarmed camera is called out to call monitor based on a timer schedule.

VCR Callout

When the motion detection is programmed to act as an alarm, the VCR records the camera that is in alarm condition with higher priority. Recording priority is set in the Alarm Rec. Priority menu.

- ① Off : Motion alarmed camera is not routed to the VCR for priority recording.
- ② On : Motion alarmed camera is routed to the VCR for priority recording.
- ③ Sche. : Motion alarmed camera is routed to the VCR for priority recording based on timer schedule.

Motion Dwell Time

Sets the alarm dwell time when the motion detection is used as an alarm. Settings can be made for each channel, independently.

→ 10 sec → ... → 180 sec → Inf → 01 sec → ...]

- ① 1 to 180 sec : Holds the alarm operation for the set time only.
- ② Inf : Press the **ALARM RESET** button or maintain the alarm operation until the power is switched off.

Buzzer

Sets the buzzer On/Off when the motion detection is used as an alarm.

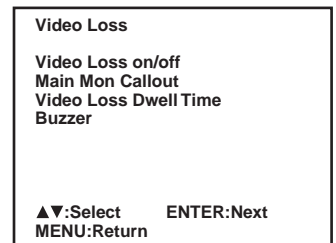
- ① Off : Buzzer is not sounded.
- ② On : Buzzer is sounded.

4.4 Video Loss

Video Loss on/off

Sets the channel to perform video loss detection. Settings can be made for each channel, independently.

- ① Off : Video loss is not detected.
- ② On : Video loss is detected
- ③ Sche. : Detects video loss when the time is within the set time.



Main Mon Callout

Sets the operation of the main monitor output when video loss has been detected. Settings can be made for each channel, independently.

- ① Off : No action is taken even if video loss is detected.
- ② On : The screen takes on the 4x4 screen format when video loss is detected and “LOSS” is displayed.
(Video loss operation)

Video Loss Dwell Time

Sets the video loss dwell time when video loss has been detected. Settings can be made for each channel, independently.

→ 10 sec → ... → 180 sec → Inf → 01 sec → ...]

- ① 1 to 180 sec : Holds the alarm operation for the set time only.
- ② Inf : Press the **ALARM RESET** button or maintain the video loss operation until the power is switched off.

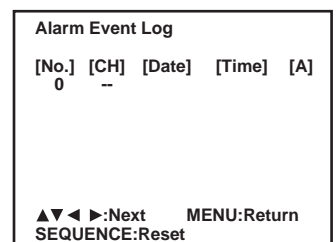
Buzzer

Sets the buzzer On/Off when video loss has been detected.

- ① Off : Buzzer is not sounded.
- ② On : Buzzer is sounded.

4.5 Alarm Event Log

Allows view of all activity log event including video loss, motion detection activation, and alarm input activation.

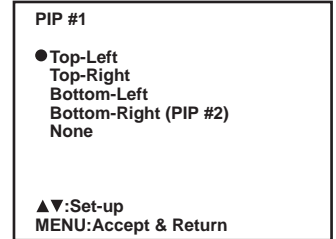
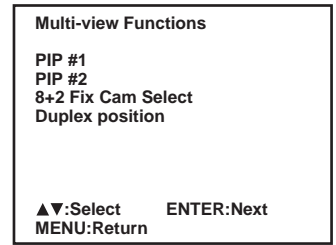


5. Multi-view Functions

5.1 PIP #1

Sets the display position of sub screen 1 for picture-in-picture (PIP) display. There will not be a PIP display when “None” has been selected.

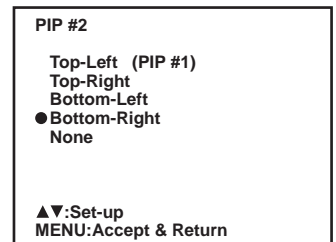
- ① Top-Left
- ② Top-Right
- ③ Bottom-Left
- ④ Bottom-Right
- ⑤ None



5.2 PIP #2

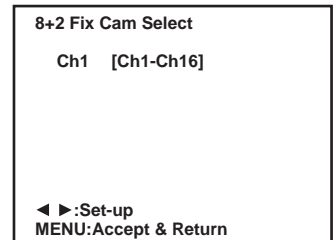
Sets the display position of sub screen 2 for picture-in-picture (PIP) display. There will not be a PIP display when “None” has been selected.

- ① Top-Left
- ② Top-Right
- ③ Bottom-Left
- ④ Bottom-Right
- ⑤ None



5.3 8+2 Fix Cam Select

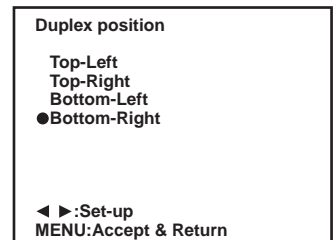
Sets the spot channel of the 8+2 screen.



5.4 Duplex position

Sets the display position of the sub screen in the duplex view mode.

- ① Top-Left
- ② Top-Right
- ③ Bottom-Left
- ④ Bottom-Right



6. Sequence Set-up

6.1 Call Mon Sequence

The camera sequence dwell time and camera selection that's displayed in the **call monitor** can be programmed in this menu. By pressing the **ENTER** button while in the Call Mon Sequence menu, all connected cameras will be added to the call monitor sequence selection. Once the **ENTER** button is pressed, the multiplexer will detect the presence of a camera input signal and will automatically add each camera to the sequence process.

Ch : Each camera can be programmed to sequence in any desired order within this menu.

Dwell : 1 sec to 60 sec

Sequence Set-up		
Call Mon Sequence		
Main Mon Sequence		
2x2	Sequence	
3x3	Sequence	
8+2	Sequence	
12+1	Sequence	
▲▼:Select		ENTER:Next
MENU:Return		

Call Mon Sequence		
1:ch1	7:ch7	12:ch12
2:ch2	8:ch8	13:ch13
3:ch3	9:ch9	14:ch14
4:ch4	10:ch10	15:ch15
5:ch5	11:ch11	16:ch16
6:ch6	Dwell:	03sec
ENTER:Auto Set-up		
▲▼:Select		◀▶:Set-up
MENU:Accept & Return		

6.2 Main Mon Sequence

The camera sequence dwell time and camera selection that is displayed in the **main monitor** can be programmed in this menu. By pressing the **ENTER** button while in the Main Mon Sequence menu, all connected cameras will be added to the main monitor sequence selection. Once the **ENTER** button is pressed, the multiplexer will detect the presence of a camera input signal and will automatically add each camera to the sequence process.

Ch : Each camera can be programmed to sequence in any desired order within this menu.

Dwell : 1 sec to 60 sec.

Main Mon Sequence		
1:ch1	7:ch7	12:ch12
2:ch2	8:ch8	13:ch13
3:ch3	9:ch9	14:ch14
4:ch4	10:ch10	15:ch15
5:ch5	11:ch11	16:ch16
6:ch6	Dwell:	03sec
ENTER:Auto Set-up		
▲▼:Select		◀▶:Set-up
MENU:Accept & Return		

6.3 2x2 Sequence

The camera sequence dwell time and camera selection that is displayed in the lower right channel of a **2x2 display** can be programmed in this menu. By pressing the **ENTER** button while in the 2x2 Sequence menu, all connected cameras will be added to the sequence selection of the lower right channel in the 2x2 display. Once the **ENTER** button is pressed, the multiplexer will detect the presence of a camera input signal and will automatically add each camera to the sequence process.

Ch : Each camera can be programmed to sequence in any desired order within this menu.

Dwell : 1 sec to 60 sec.

2x2 Sequence		
1:ch1	7:ch7	12:ch12
2:ch2	8:ch8	13:ch13
3:ch3	9:ch9	14:ch14
4:ch4	10:ch10	15:ch15
5:ch5	11:ch11	16:ch16
6:ch6	Dwell:	03sec
ENTER:Auto Set-up		
▲▼:Select		◀▶:Set-up
MENU:Accept & Return		

6.4 3x3 Sequence

The camera sequence dwell time and camera selection that is displayed in the lower right channel of a **3x3 display** can be programmed in this menu. By pressing the **ENTER** button while in the 3x3 Sequence menu, all connected cameras will be added to the sequence selection of the lower right channel in 3x3 display. Once the **ENTER** button is pressed, the multiplexer will detect the presence of a camera input signal and will automatically add each camera to the sequence process.

Ch : Each camera can be programmed to sequence in any desired order within this menu.

Dwell : 1 sec to 60 sec

3x3 Sequence		
1:ch1	7:ch7	12:ch12
2:ch2	8:ch8	13:ch13
3:ch3	9:ch9	14:ch14
4:ch4	10:ch10	15:ch15
5:ch5	11:ch11	16:ch16
6:ch6	Dwell:	03sec
ENTER:Auto Set-up		
▲▼:Select		◀▶:Set-up
MENU:Accept & Return		

6.5 8+2 Sequence

The camera sequence dwell time and camera selection that is displayed in the upper left channel of an **8+2 display** can be programmed in this menu. By pressing the **ENTER** button while in the 8+2 Sequence menu, all connected cameras will be added to the sequence selection of the upper left 8+2 display. Once the **ENTER** button is pressed, the multiplexer will detect the presence of a camera input signal and will automatically add each camera to the sequence process.

Ch : Each camera can be programmed to sequence in any desired order within this menu.

Dwell : 1 sec to 60 sec

8+2 Sequence		
1:ch1	7:ch7	12:ch12
2:ch2	8:ch8	13:ch13
3:ch3	9:ch9	14:ch14
4:ch4	10:ch10	15:ch15
5:ch5	11:ch11	16:ch16
6:ch6		Dwell: 03sec
ENTER:Auto Set-up		
▲▼:Select ◀▶:Set-up		
MENU:Accept & Return		

6.6 12+1 Sequence

The camera sequence dwell time and camera selection that is displayed in the center channel of a **12+1 display** can be programmed in this menu. By pressing the **ENTER** button while in the 12+1 Sequence menu, all connected cameras will be added to the sequence selection of the center channel 12+1. Once the **ENTER** button is pressed, the multiplexer will detect the presence of a camera input signal and will automatically add each camera to the sequence process.

Ch : Each camera can be programmed to sequence in any desired order within this menu

Dwell : 1 sec to 60 sec

12+1 Sequence		
1:ch1	7:ch7	12:ch12
2:ch2	8:ch8	13:ch13
3:ch3	9:ch9	14:ch14
4:ch4	10:ch10	15:ch15
5:ch5	11:ch11	16:ch16
6:ch6		Dwell: 03sec
ENTER:Auto Set-up		
▲▼:Select ◀▶:Set-up		
MENU:Accept & Return		

7. Security Set-up

Menu Lock

Sets security lock On/Off for the menu operation. When setting to On, the security code (access code) will be required to operate the menu.

- ① Off : Does not lock the menu operation.
- ② On : Locks the menu operation.

To set the access code:

From the main menu, select the "Security Set-Up" in order to enter the security menu.

By pressing the ▶ Button while the cursor is on the "menu Lock", the access code field will be displayed.

Access Code:

At this point, enter a four digit password by using the **CAMERA SELECT** buttons 1 through 10. The message "Re-enter to confirm" will appear. Re-enter password to confirm.

Button Lock

Sets security lock On/Off for the button operation of the Front panel. When setting to On, you can not operate the Front panel.

- ① Off : Does not lock the button operation.
- ② On : Locks the button operation.

Remote Lock

Sets security lock On/Off for the remote control operation. When setting to On, you can not operate the remote control.

- ① Off : Does not lock the remote control operation.
- ② On : Locks the remote control operation.

Security Set-up	
Menu Lock:	Off
Button Lock:	Off
Remote Lock:	Off
▲▼:Select ◀▶:Set-up	
MENU:Accept & Return	

Security Set-up	
Menu Lock:	On
Button Lock:	Off
Remote Lock:	Off
Access Code:
Camera:	1~9,10(0)

Schedule setting

The schedule management function serves to operate the Day/Night or alarm operations daily for only a specific time over a period of one week.

Setting of the schedule is done on the schedule setting screen by setting the starting time and ending time.

Setting Method

- (1) Press the Δ or ∇ button on the schedule setting screen and select the day.
- (2) Press the \triangleright button and select starting time.
- (3) Press the Δ or ∇ button, set the starting hours, and press the \triangleright button.
- (4) Press the Δ or ∇ button, set the starting minutes, and press the \triangleright button.
- (5) Press the Δ or ∇ button, set the ending hours, and press the \triangleright button.
- (6) Press the Δ or ∇ button, set the ending minutes, and press the \triangleright button.
- (7) Press the **MENU** button to complete the schedule settings.

***** Schedule			
[ch*]	ON	OFF	[24H]
Sun	:	12:00 ~ 18:00	
Mon	:	12:00 ~ 18:00	
Tue	:	12:00 ~ 18:00	
Wed	:	12:00 ~ 18:00	
Thu	:	12:00 ~ 18:00	
Fri	:	12:00 ~ 18:00	
Sat	:	12:00 ~ 18:00	
\blacktriangle :Week		\blacktriangleright :Time	
MENU:Accept & Return			

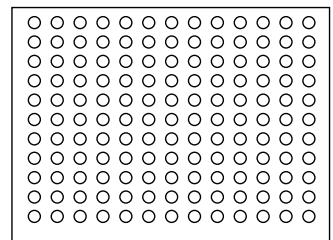
Motion Area Setting

You can set the motion detection range in the Motion Area setting menu. There are two methods available, Manual and Auto.

Motion Area 1/2			
CH1:	\blacktriangleleft	● Manual	Auto
CH2:		● Manual	Auto
CH3:		● Manual	Auto
CH4:		● Manual	Auto
CH5:		● Manual	Auto
CH6:		● Manual	Auto
CH7:		● Manual	Auto
CH8:		● Manual	Auto
\blacktriangle :Set-up		\blacktriangleright :Set-up	
MENU:Accept & Return			

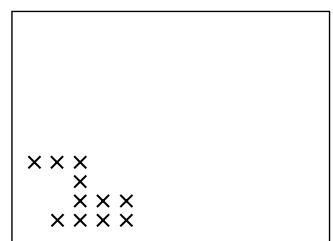
Manual

- (1) Use the \triangleleft or \triangleright button to select "Manual".
- (2) A press of the \triangleleft button will display the range over which motion detection is enabled. Portions indicated by a "o" make up the enabled range.
- (3) When there is a portion for which motion detection is not desired, move the cursor with the Δ , ∇ , \triangleleft or \triangleright buttons, then press the **ENTER** button (and the "o" marks will disappear).
- (4) Press the **MENU** button to set the range.



Auto

- (1) Use the \triangleleft or \triangleright button to select "Auto".
- (2) A press of the \triangleright button will display the screen that indicates the range over which motion detection is disabled. In this condition, the portions for which motion was detected will automatically become the disabled range (and an "x" mark will be displayed).
- (3) Press the **MENU** button to set the range.



* Should the motion detection respond in an oversensitive manner, lower the sensitivity and set the size larger.

Factory Default Settings

The factory default settings of menu are as indicated below. When the default settings are set, all items except for the time input are set to the condition of the factory default settings.

Item	Factory default setting
1. System Set-up	
1.1 Time & Date Functions	
Hour Format	24H
Date Format	MM / dd / yy
Time & Date set up	10 / 01 / 2000
Daylight Savings	On
T&D View Main Mon	On
T&D View Call Mon	On
T&D View VCR PB	On
Time & Date Position	Top
1.2 Font Color	White
1.3 Comm. set-up	
COM speed	9600
COM address	1
1.4 Save / Recall	Save
2. Camera Functions	
2.1 Title Functions	
Camera Title	CAMERA * (*=Channel No.)
Title View Main Mon	On (All channel)
Title View Call Mon	On (All channel)
Title View VCR PB	On (All channel)
Title Position	Bottom
Channel View Main Mon	On (All channel)
2.2 Discreet Cam Set-up	Off (All channel)
2.3 Day / Night Set-up	Off (All channel)
3. Recording Set-up	
3.1 Camera Rec select	On (All channel)
3.2 Recording Function	
Normal mode	EP
Normal time	18H
Alarm mode	SP
Alarm time	2H
3.3 VCR Input Select	BNC
3.4 Camera Priority Rec	L (All channel)
3.5 High density Mode	Normal

Factory Default Settings (continued)

Item	Preset (at time of factory shipping)
4. Alarm Functions	
4.1 Alarm Rec Priority	Level : 3
4.2 Alarm Input	
Alarm Type	N.O (All channel)
Main Mon Callout	On (All channel)
Main Mon Display	Full
Call Mon Callout	On (All channel)
VCR Callout	On (All channel)
Alarm Dwell Time	10sec (All channel)
Buzzer	On (All channel)
4.3 Motion Functions	
Motion Sensitivity	Middle (All channel)
Motion Direction	Overall (All channel)
Motion size	S (All channel)
Motion Area	Manual (All channel)
Detection mode	Alarm (All channel)
Motion counter Display	On (All channel)
Main Mon Callout	Off (All channel)
Main Mon Display	Full
Call Mon Callout	Off (All channel)
VCR Callout	Off (All channel)
Main Motion Dwell Time	10sec (All channel)
Buzzer	Off (All channel)
4.4 Video Loss	
Video Loss on/off	Off (All channel)
Main Mon Callout	Off (All channel)
Video Loss Dwell Time	10sec (All channel)
Buzzer	Off (All channel)
4.5 Alarm Event Log	0
5. Multi-view Functions	
5.1 PIP #1	Top-Left
5.2 PIP #2	Bottom-Right
5.3 8+2 Fix Cam Select	Ch1
5.4 Duplex position	Bottom-Right
6. Sequence Set-up	
6.1 Call Mon Sequence	Step 1 : ch1 ~ Step16 : ch16, Dwell : 03sec
6.2 Main Mon Sequence	Step 1 : ch1 ~ Step16 : ch16, Dwell : 03sec
6.3 2x2 Sequence	Step 1 : ch1 ~ Step16 : ch16, Dwell : 03sec
6.4 3x3 Sequence	Step 1 : ch1 ~ Step16 : ch16, Dwell : 03sec
6.5 8+2 Sequence	Step 1 : ch1 ~ Step16 : ch16, Dwell : 03sec
6.6 12+1 Sequence	Step 1 : ch1 ~ Step16 : ch16, Dwell : 03sec
7. Security Set-up	
Menu Lock	Off
Button Lock	Off
Remote Lock	Off

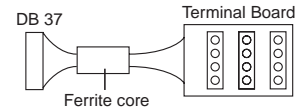
ALARMS/TRIGGER Connector and COM Connector

ALARMS/TRIGGER Connector

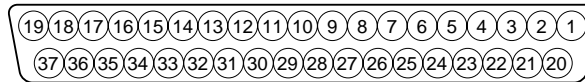
See the Pin Configuration Table below for the functions of the various pins.

Note: When using the Terminal board

When using the Terminal board, please fix the provided Ferrite core to the cable.



Connector Pin Arrangement



(DB37 pin connector)

Pin Configuration Table

Pin No.	Function	Input/Output	Operation
1	Alarm In 1	Input	<ul style="list-style-type: none"> Normal Close, or Normal Open, Logic level "Low", or Logic level "High". (Set in menu)
2	Alarm In 2		
3	Alarm In 3		
4	Alarm In 4		
5	Alarm In 5		
6	Alarm In 6		
7	Alarm In 7		
8	Alarm In 8		
9	Alarm In 9		
10	Alarm In 10		
11	Alarm In 11		
12	Alarm In 12		
13	Alarm In 13		
14	Alarm In 14		
15	Alarm In 15		
16	Alarm In 16		
17	REC Trigger In	Input	
18	NC	—	
19	GND	—	
20	Alarm out 1	Output	Open Collector
21	Alarm out 2		
22	Alarm out 3		
23	Alarm out 4		
24	Alarm out 5		
25	Alarm out 6		
26	Alarm out 7		
27	Alarm out 8		
28	Alarm out 9		
29	Alarm out 10		
30	Alarm out 11		
31	Alarm out 12		
32	Alarm out 13		
33	Alarm out 14		
34	Alarm out 15		
35	Alarm out 16		
36	Alarm out		
37	+5V	—	

COM Connector

This is the RS-232C/RS-422 control connector. RS-232C or RS-422 settings are made using the internal switches of this unit (Factory setting is RS-232C).

Remote control operation of this unit and changes of the setting contents can be performed by serial communications. For details, please consult your dealer.

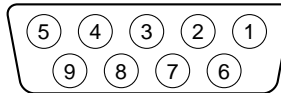
(Communications Protocol)

- Transfer speed: 4800 bps, 9600 bps, 19200 bps
- Stop bit: 1 bit
- Start bit: 1 bit
- Data length: 8 bits (LSB first)
- Parity: None

(Connections)

D-SUB 9-Pin Connector

Pin No.	Function
1	(NC)
2	RS-232C RXD
3	RS-232C TXD
4	(NC)
5	GND
6	RS-422 TXD (Factory setting: open)
7	RS-422 RXD (Factory setting: open)
8	RS-422 TXD (Factory setting: open)
9	RS-422 RXD (Factory setting: open)



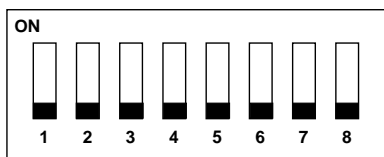
(NC: No Connection)

Changing the Internal Switch

At time of shipping, this unit is set for the NTSC system and the communications profile is set to RS-232C. By changing the internal settings of this unit, the settings can be changed to the PAL system or RS-422 communications profile.

Setting Method

- (1) Disconnect the AC adapter. Remove the 8 screws from the sides and the 2 screws from the rear, then take off the top cover.
- (2) Set switch (S501) on the main circuit board according to the settings of the table below.



S501

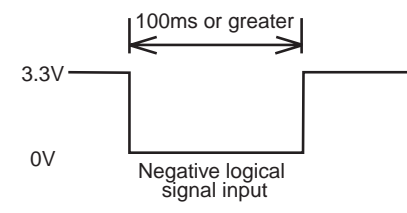
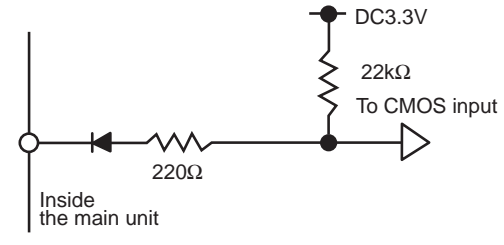
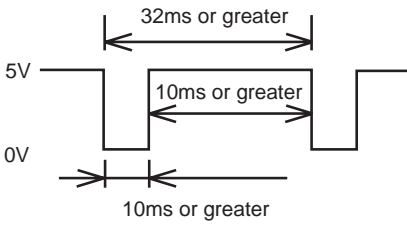
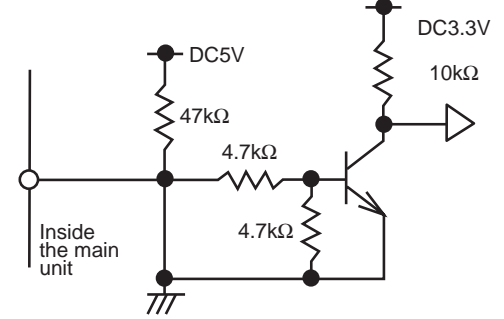
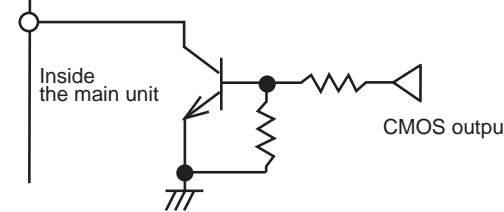
No.	OFF Side	ON Side
1	RS-232C	RS-422
2	RS-232C	RS-422
3	RS-232C	RS-422
4	RS-232C	RS-422
5	RS-232C	RS-422
6	RS-422 No termination	RS-422 Termination
7	(*1)	XXXXXXXXXX
8	NTSC	PAL

Note

*1: Make sure to set to "OFF"

- (3) Attach the top cover and tighten the screws in their original positions.
- (4) Connect to the AC adapter.

Signal Levels of Input/Output Terminals

Input/Output Terminal	Signal Level	Internal Circuit (Equivalent)
<ul style="list-style-type: none"> Alarm Input 		
<ul style="list-style-type: none"> Moving picture trigger input 		
<ul style="list-style-type: none"> Alarm output 	<p>Maximun 5V DC, 20mA</p>	

Troubleshooting

Symptom	Items to Check
There is no image	<ul style="list-style-type: none"> • Is the power plug of the AC adapter securely plugged into the power outlet? • Are the cables properly connected?
Image is disturbed	<ul style="list-style-type: none"> • Perhaps the VCR direct mode has been set?
Front panel buttons don't function	<ul style="list-style-type: none"> • Perhaps the menu mode has been set? • Perhaps the alarm mode has been set? • Perhaps the VCR direct mode has been set?
Alarm signal is not being received	<ul style="list-style-type: none"> • Perhaps the menu screen has been set?
ALARM RESET button does not function	<ul style="list-style-type: none"> • It is possible that the unit is not in the alarm mode.
Screen is not displayed properly during VCR playback	<ul style="list-style-type: none"> • Check the VCR mode tracking adjustment. • While playing back a commercial, pre-recorded tape, set the unit to the VCR direct mode.
Screen is disturbed during VCR playback	<ul style="list-style-type: none"> • Check the direct playback image in VCR direct mode. • The image might be disturbed when the VCR is set to a special playback mode (e.g., cue, review).
VCR does not record properly	<ul style="list-style-type: none"> • Check the menu settings. • Are the connections with the VCR correct? • Check the settings of the VCR deck.
The time is off	<ul style="list-style-type: none"> • The clock of this unit has an accuracy of within one minute per month. Please reset the time periodically.

Specifications

Power supply	5V DC 1.3A
External dimensions	EIA 1U 17 x 1-3/4 x 14-3/4 inch (W x H x D), 430 x 44 x 375 mm (W x H x D)
Weight	4.0 kg (8 lbs 13 oz)
Signal system	Standard NTSC/PAL color television system NTSC : 525 lines, 60 Fields/s PAL : 625 lines, 50 Fields/s
Camera input	BNC, 1.0V(p-p), 75 ohm Unbalanced Luminance signal
Camera output (Loop Through)	BNC, 1.0V(p-p), 75 ohm Unbalanced Luminance signal
Monitor output	BNC, S-video, 1.0V(p-p), 75 ohm Unbalanced Luminance signal
VCR input	BNC, S-video, 1.0V(p-p), 75 ohm Unbalanced Luminance signal
VCR output	BNC, S-video, 1.0V(p-p), 75 ohm Unbalanced Luminance signal
Digital Sampling	711 x 460 NTSC, 711 x 562 PAL
Operating conditions	Temperature: 32°F to 104°F (0°C to 40°C) Humidity: less than 90%
Connector section	
Alarm input	DB37, Ground input: 0V to 0.5V
Alarm output	DB37, Open/Short, less than 20mA
Recording trigger input	DB37, 0V/5V pulse signal
Communication port	DB9 (RS232C or RS422)

Design and specifications are subject to change without notice.

Note: Please acknowledge that we reserve the right to make changes in product performance or specifications without prior notice. Also please note that we bear no responsibility for mistakes, misprints or omissions of the instruction manual.

Accessories

- Instruction manual (JK-MX16A) (1)
- Quick reference guide (1)
- Terminal board (1)
- Ferrite core (1)
- Screw (2)
- Rack mount ear (EIA) (2)
- AC adapter (1)
- Instruction manual (AC adapter) (1)

LIMITED WARRANTY

MULTIPLEXER

The Imaging Systems Division of Toshiba America Information Systems, Inc. ("ISD") makes the following limited warranties with regard to this MULTIPLEXER ("Product"). These limited warranties extend to the Original End-User ("You[r]").

One (1) Year Limited Warranty of Labor and Parts ISD warrants that this Product will perform in accordance with specifications for a period of one (1) year from the date of purchase by the Original End-User. During this one (1) year period, ISD will repair or replace the Product, if it does not perform as warranted. In order to take advantage of this Limited Warranty, You must: (a) deliver the Product to an ISD Authorized Service Provider ("ASP"); and (b) pay all transportation and insurance charges for shipment of the Product to the ASP. ISD reserves the right to substitute factory refurbished parts in place of those in need of repair.

Instruction Manual (Owner's Manual): You should read the Instruction Manual (Owner's Manual) thoroughly before operating this Product. Before seeking warranty service, you should check the troubleshooting guide in the Instruction Manual (Owner's Manual) and follow the instructions to correct the problem.

How to Obtain Warranty Service – Step-by-step Procedures: To obtain warranty service, You should:

1. Contact Toshiba at (877) 855 – 1349 for operation or installation assistance. (877) 855 – 1FIX
2. Contact an ASP for warranty service within thirty (30) days after the Product fails to comply with specifications.
2. Arrange for shipment of the Product to a Toshiba Authorized Service Provider.
3. Securely pack the Product in the original carton and external shipping pack, include a letter explaining the problem with a copy of the bill of sale or proof of purchase.
4. Prepay all transportation and insurance costs.

Questions? If you have any questions, please check our web site at <http://www.toshiba.com/taisisd/security/>

Your Responsibilities: This Limited Warranty is subject to the following conditions:

1. You must provide the bill of sale or proof of purchase at the time that warranty service is required.
2. You must notify an ASP within thirty (30) days after you discover that the product does not perform in accordance with specifications during the Limited Warranty period.
3. All Warranty Service of this product must be by an ISD Authorized Service Provider.
4. You must pack the Product in its original carton using the original packing material, then insert the original carton containing the Product into another carton with additional packing material before shipping the Product to an ASP.

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