

Dear Customer!

By selecting this VC product you have chosen a professional device, which guarantees highest possible quality and reliability.

Please read the following instructions carefully before commissioning the product in order to be able to take full advantage of all quality features regarding this product line.

Multiplexer

Art. Nr. 20147-Z

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IMPORTANT SAFETY OPERATION GUIDE

1. **READ INSTRUCTIONS-** All the safety and operating instructions should be read before the appliance is operated.
2. **RETAIN INSTRUCTIONS-**The safety and operating instructions should be retained for future reference.
3. **CLEANING-**Unplug video motion or equipment from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a dry cloth for cleaning.
4. **ATTACHMENTS-** Do not use attachments not recommended by the video monitor or equipment manufacturer as they may result in the risk of fire, electric shock or injury to persons.
5. **WATER AND MOISTURE-**Do not use video monitor or equipment near water, for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, or the like.
6. **ACCESSORIES-** Do not place video monitor or equipment on an unstable cart, stand or table. The video monitor or equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

Video monitor or equipment and cart combinations should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.
7. **VENTILATION-**Slots and openings in the cabinet and the back or bottom are provided for ventilation ,and to ensure reliable operation of the video monitor or equipment and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the video monitor or equipment on a bed, sofa, rug, or other similar surface. Video monitor or equipment should never be placed near or over a radiator or heat register. Video monitor or equipment receiver should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.
8. **POWER SOURCES-**Video monitor or equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type power supplied to your home, consult your video monitor or equipment dealer or local power company.
9. **POWER CORDS-**Do not allow anything to rest on the power cord. Do not locate video monitor or equipment where the cord will be abused by persons walking on it.
10. **LIGHTING-**For added protection for video monitor or equipment during a lighting storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lightning and power-line surges.
11. **OVERLOADING-**Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
12. **OBJECT AND LIQUID ENTRY-**Never push objects of any kind into video monitor or equipment through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any thing on the product.

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13. **SERVICING**-Do not attempt to service video monitor or equipment yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
 14. **DAMAGE REQUIRING SERVICE**-Unplug video monitor or equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - A. When the power-supply cord or the plug has been damaged.
 - B. If liquid has spilled, or objects have fallen into the video product.
 - C. If the video product has been exposed to rain or water.
 - D. If the video product does not operate normally by following the operating instructions.
 - E. If the video product has been dropped, or the cabinet damaged.
 - F. When the video product exhibits a distinct change in performance-this indicates a need for service.
 15. **REPLACEMENT PARTS**-When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
 16. **SAFETY CHECK**-Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine that the video product is in proper operation condition.
 17. **FIELD INSTALLATION**-This installation should be made by a qualified service person and should conform to all local codes.
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INTRODUCTION

The multiplexer is video multiplexer that provides viewing and recording capabilities from as many as 16 channels of video. The multiplexer provides exceptional picture quality in live and playback modes. It also offers dramatic cost and space savings over traditional mean of viewing and recording multiple channels of video from several camera sources.

Multiplexer Functions

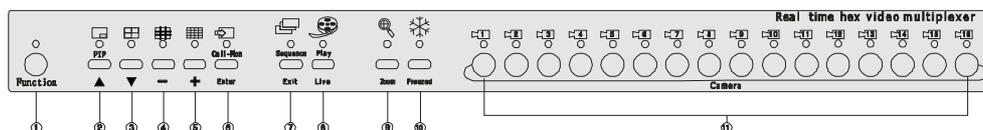
Compatible with color and B&W video cameras or other NTSC/EIA(PAL/CCIR) standard video sources. Video synchronization is not required.

- Full duplex operation allows simultaneous recording and multi-screen viewing.
- Outstanding picture quality provided by a 720 x 576 pixel display with 256 gray levels.
- Versatile display formats provide a convenient user interface. Full-screen with 2 x 2 ZOOM, 2 x 2, 3 x 3, 4 x 4 and picture-in-picture(PIP) display formats supported.
- With 16 channels programmable NO or NC alarm input.
- Video detection alarm function.
- On-screen display includes date, time, alarm status, video loss and 8-character camera titles
- Compatible with RS-485 remote control data.

Front and Rear Panels

This multiplexer contains easy-to-use control keys on the front of the multiplexer, as well as simple inputs and outputs on the back of the multiplexer.

The Front Panel

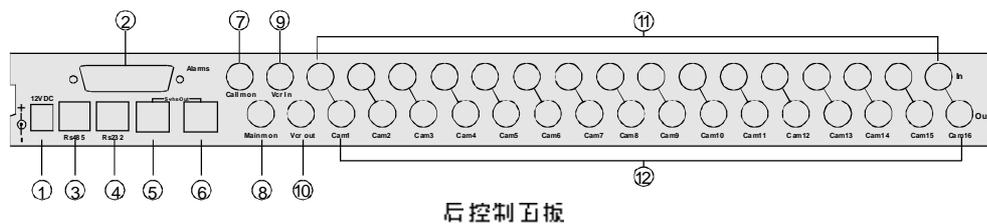


Some front panel buttons have dual functions. The primary function is listed first, followed by the secondary function. Indicator lights(LED) are above each button.

- ① **Function**-Pressing this button allows access to the system setup menus.
- ② **PIP(up arrow)**-Displays the currently selected camera in the full screen format, insert with a 1/9 size picture of one other camera. This button functions as an up control in the Zoom and Setup modes.
- ③ **Down arrow(2 x 2)**-Displays up to four cameras in the 2 x 2 format. Press this button again to view the next 4 pictures on full display format . This button functions as a down control in the Zoom and Setup modes.
- ④ **Left arrow (3 x 3)**-Displays up to nine cameras in the 3 x 3 format. This button functions as a left control and descending (-) in the Zoom and Setup modes.
- ⑤ **Right arrow(4 x 4)**-Displays up to 16 cameras in the 4 x 4 format. This button functions as a right control and increase (+) in the Zoom and setup modes.
- ⑥ **Call-Mon**-Select the video mode of call monitor output. This button functions as enter in the setup mode.

- ⑦ **Sequence**-Switch automatically each channel in full screen display. This button functions as exit in the setup mode.
- ⑧ **Play/Live**-Press this button to enter current display forma and playing-back format.
- ⑨ **Zoom**-Pressing this button may display a 2X Zoom of the selected camera.
- ⑩ **Freeze**-Used to freeze single picture or multi-pictures .
- ⑪ **Camera(1-16)**-Used to freeze the picture chosen ,to display cameras selected in the full screen format.

The Rear Panel



- ① **Power**-This 2.1mm pin jack accepts 12V DC at 2.5A. The center pin is positive.
- ② **Alarms**-This DB25-s connector allows alarms activation via contact closure or TTL/CMOS alarm inputs.
- ③ **RS485**-RS485 data remote control interface.
- ④ **RS232**-RS232 data remote control interface.
- ⑤ **S-vhs out1**-This S-type connector connects with the S-type connector 1 of video recorder out put.
- ⑥ **S-vhs out2**- This S-type connector connects with the S-type connector 2 of video recorder output.
- ⑦ **Call mon**- To output a video signal to the BNC connector of call monitor in a full screen mode.
- ⑧ **Main mon**-To output a video signal to the BNC connector of main monitor in any possible format.
- ⑨ **Vcr in**- This connector connects with the BNC connector of video recorder.
- ⑩ **Vcr out**- To connect with the BNC connector output from video recorder.
- ⑪ **Cam in** Video input BNC connector, terminal matching is selectable.
- ⑫ **Cam out**-These BNC connectors provide looping camera video from the corresponding camera input.

INSTALLATION

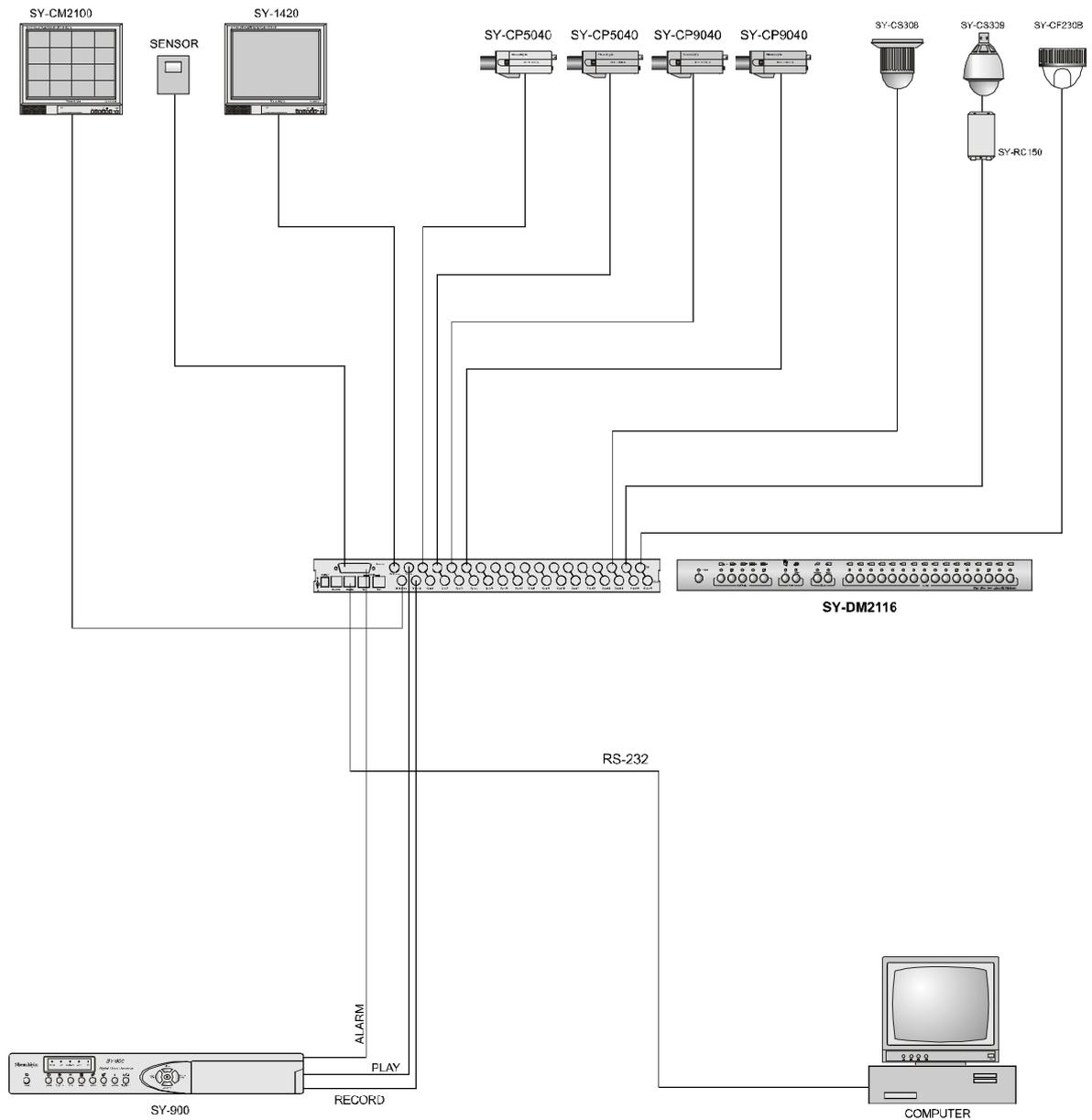
Select a location for the product that is clean, dry and has AC power. Find an environment where temperature and humidity extremes do not exceed the product specifications. Failure to do so can result in equipment failure and loss of warranty protection.

Required Connections

Cameras	Connect each Cam in to the video output of a camera or other composite video source..
Main Mon (Monitor)	Connect Main mon to the video input of a monitor. This monitor displays selected live or recorded cameras in any available format.
Power	Connect the multiplexer power module or other center positive source of 12V DC at 2.5ampere to Power .

Optional Connections

Call Mon(Monitor)	Connect call mon output to the video input of an NTSC/EIA(PAL/CCIR) compatible video monitor. This monitor displays the selected or alarm camera in the full screen format, it can also auto switch to 16 single full screens display.
VCR IN	Connect Vcr in to the video output of a VCR .
VCR OUT	Connect Vcr in to the video input of a VCR .
S-vhs out 1	Connect S-vhs out to the S-Video input of a Super VHS video recorder.
S-vhs out 2	Connect S-vhs out to the S-video input of an Super VHS video recorder
Alarm inputs	Alarm inputs accept a contact type or TTL/CMOS alarm signal. Multiplexer alarm input polarity is selectable from menu and defaults are normally open or closed.
Alarm Output	The Alarm Output is a contact type signal between Alarms pin 10 (common) and either pin 11 (normally closed) or pin 23 (normally open). Connect the appropriate pins to the alarm input of the VCR or other device.
RS-232 Input	The output of a compatible source of RS-232 control data.
RS-485 Input	The output of a compatible source of RS-485 control data.



**Real time 16-ch video multiplexer system
connection diagram DM-2116-14**

Attention: Case of this product must be safely grounded

SYSTEM CHECKOUT

Multiplexer system operation can be checked immediately after installation with the multiplexer in the factory default state. While the multiplexer itself requires no adjustment, system components such as the monitor, cameras and video recorder should be checked for proper operation and adjustment. The system checkout procedure involves three steps: monitor calibration, a camera check, and a video recorder check. At least two video cameras are required to check system operation.

Monitor Calibration

This process involves adjusting monitor display brightness, contrast, hue and saturation based on the standard color bar pattern generated by the multiplexer. The procedure is as follows.

1. Input a standard color signal generated from signal generator to the Main Monitor.
2. Turn off any automatic color control features on the monitor that might interfere with manual adjustment.
3. Turn the monitor's color level (saturation) control all the way down. The display is now black and white.
4. Adjust the monitor's contrast and brightness controls so that the bar pattern starts with white, darkens evenly through shades of gray and ends with black.
5. Turn the monitor's color level control to its midpoint .
6. Adjust the monitor's tint(hue) control until the colors are correct. The correct sequence of colors from left to right is white, yellow, cyan, green, magenta, red, blue and black.

The Main Monitor is now correctly calibrated to the output of the multiplexer. To calibrate the Call Monitor, temporarily connect its video cable to the **Main mon** output and perform steps 2 through 6 again.

While monitor adjustments can be changed to suit the viewer, calibrate the monitor before you adjust any cameras or investigate a display or video quality problem.

Camera Check

The multiplexer multicamera display capability makes checking camera performance as simple as comparing two pictures on one screen. This method is preferable to the direct camera to monitor technique because it allows precise adjustment of each camera against a chosen reference camera. In this way, differences between cameras are minimized and picture quality is optimized.

NOTE: Before performing a camera check, complete the monitor calibration procedure described in the previous section. Adjustment camera picture quality is more effective on a monitor which is already calibrated.

The camera check procedure is as follows:

1. Complete the monitor calibration procedure.
 2. Connect all system cameras directly to the multiplexer camera inputs. Remove all connections to the looping(lower) camera outputs.
 3. Make sure that the multiplexer is set up for 75 ohms termination.
 4. Select a suitable format which displays all of the attached cameras.
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5. Pick the best looking picture and use that camera as a reference. If necessary, adjust the camera for an optimum picture. Do not adjust the monitor.

6. Adjust each remaining camera, in turn, for an optimum picture. Try to obtain the same picture quality as the reference camera.

The cameras are now correctly adjusted with respect to the calibrated monitor and each other. You may now adjust the monitor for the best overall display. If you choose to make further monitor adjustments, it is best to do so with all cameras displayed.

Making a Test Tape

The easiest way to verify multiplexer system operation is to make a test recording and play it back. This process effectively tests every piece of equipment in the system.

Before proceeding with the test tape, complete both the monitor calibration and camera check procedures. Make sure the multiplexer monitor and all system cameras are correctly adjusted. This helps ensure the best results during the tape test.

The tape test procedure is as follows:

1. Place the VCR in the record mode at the 24-hour speed. The VCR begins recording multiplexed camera video. You may select any viewing mode or display format while recording. This will not affect the tape because camera recording and display are independent operations.

2. After several minutes, stop the VCR and rewind the tape.

3. Place the VCR in the play mode.

4. Press the Recorder button on the multiplexer.

While the multiplexer detects the VCR signal, it configures itself for tape playback and displays all recorded cameras in the multi-camera format. To view multiple **cameras**, press the desired display format button (**2** \times **2**, **3** \times **3**, **4** \times **4**). If the camera or cameras do not appear, check VCR operator and review all video connections.

SETUP MENU SYSTEM

Multiplexer feature can be configured to suit the requirement of most video installations.

Accessing Setup Menu

Press function button to enter main setup menu system under the live mode. The system will require to input a four-digit password, the system will exit the main menu setup mode if wrong password is input. The initial password is set as 1111 (to press CAMERA 1 button four times). Only after correct password is input can you enter into the main menu setup system.



1. System setup

After entering the main menu setup system, press "←" "→" "↑" "↓" buttons to move cursor to "SYSTEM SETUP", then press "ENTER" button to access to sub-menus of "SYSTEM SETUP" which includes DATE, TIME, TIME-ZONE etc.



1.1-1.2 Date and Time

Press “↑” or “↓” button to move the cursor to the “DATE and TIME” to amend the date or time you need by pressing buttons of “+” “-” .

1.3 Time Zone

Press “↑” or “↓” button to move the cursor to the "FORMAT"to choose the time zone you need by pressing buttons of “+” “-” .

ASIA: YY-MM-DD

U S: MM-DD-YY

EURO: DD-MM-YY

1.4 Time & date display

Press “↑” or “↓” button to move the cursor to the DISPLAY then press “+” “-” button to hide time and date.

1.5 Boundary

Press “↑” or “↓” or button to move the cursor to the BOUNDARY then press “+” “-” button to choose the boundary colors: white, gray and black.

1.6 Back ground color

Press “↑” or “↓” button to move the cursor to the BG COLOR then press “+” “-” button to choose the back ground colors: blue and black.

1.7 System

Press “↑” or “↓” button to move the cursor to the SYSTEM then press “+” “-” button to choose SYSTEM S: PAL or NTSC.

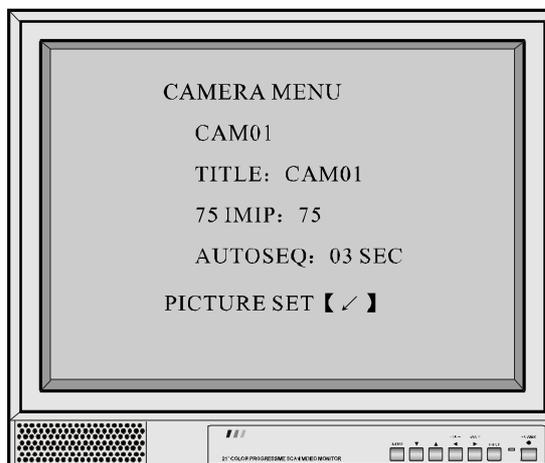
1.8 Password re-set

Press “↑” or “↓” button to move the cursor to the PASSWORD then press “+” “-” button to revise the system password. There are four digits which may use numbers ranging from 1 to 9 (CAMERA 1-9) and letters (from A to F) to indicate.

Remark: Please keep your password in mind and keep it secretly. If you forget your password please input the super password 7942 to enter the system setup.

2. Camera setup

Press “↑” or “↓” button to move the cursor to "CAMERA SET" and then press "ENTER" button to revise the channel of related camera.



2.1 Channel

Press “↑” or “↓” button to move the cursor to the "CAM01" and then press “+” or “-” button to revise the channel.

2.2 Title setup

Press “↑” or “↓” button to move the cursor to the "TITLE" and then press “+” or “-” button to revise or add the character of camera title.

2.3 Impedance setup

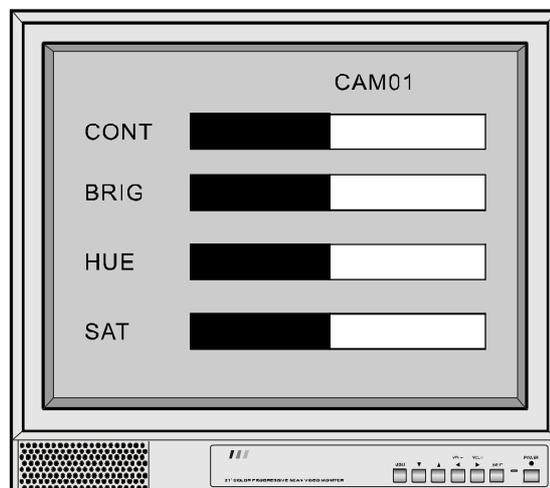
Press “↑” or “↓” button to move the cursor to the "75 IMIP" then press “+” or “-” button to choose the two input impedances: 75 ohm or Hi.

2.4 Time auto sequence

Press “↑” or “↓” button to move the cursor to the "AUTOSEQ" then press “+” or “-” button to revise duration of the auto-sequent time which may be set as from 1 to 99 seconds or close.

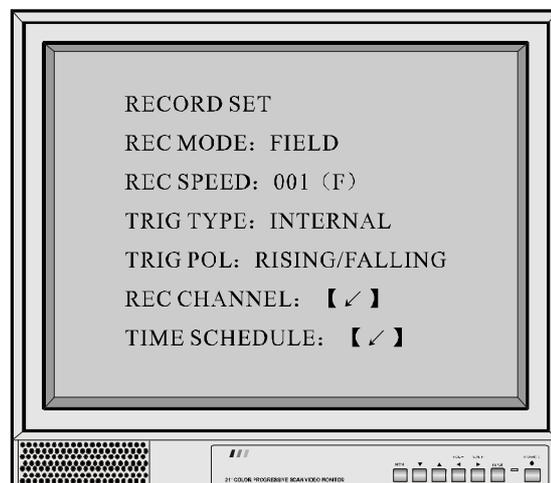
2.5 Channel setup

Press “↑” or “↓” button to move the cursor to the "PICTURE SET" then press "ENTER" button to enter the channel setup, press “+” or “-” button to adjust the contrast, brightness, gray and color saturation.



3. Record setup

To move the cursor with buttons to "RECORD SET" and press "ENTER" button to enter record setup mode.



3.1 Record mode

Press “↑” or “↓” button to move the cursor to the REC"MODE" then press “+” or “-” button to choose the two record modes:FRAMEand FIELD.

3.2 Record speed

Press “↑” or “↓” button to move the cursor to the"RECORD SPEED"then press “+” or “-” button to adjust the operatingspeed of the recorded signal sending to VCR(from 001 to 255 frames).

3.3 Trigger type

Press “↑” or “↓” button to move the cursor to the"TRIG TYPE"then press “+” or “-” button to choose the two trigger types:INTERNAL and EXTERNAL.

3.4 Trigger polarity

Press “↑” or “↓” button to move the cursor to the"TRIG POL"then press “+” or “-” button to choose the two trigger polarities:RISING and FALLING.

3.5 Record channel

Press “↑” or “↓” button to move the cursor to the"REC CHANNEL" then press "ENTER" button to enter record channelsetup. This function is used to set the signal of each channel to send to the VCR as s backup or not.

3.6 Record time

Press “↑” or “↓” button to move the cursor to the"TIME SCHEDULE"then press" ENTER" button to set the time, this function is used to adjust the recording speed under the frame recording mode.

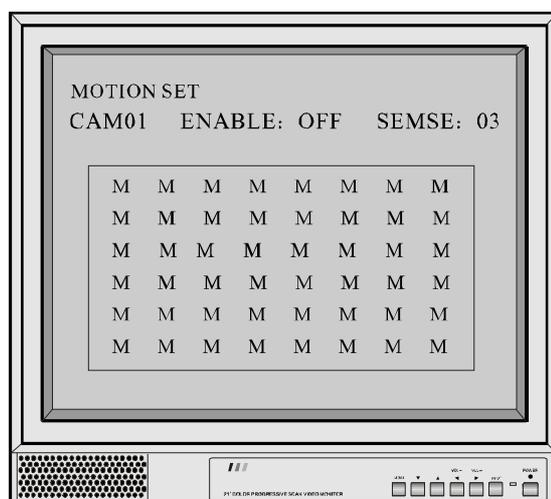
4. Alarm setup

Under the main menu format, to move the cursor with “↑” or “↓” buttons to"ALARM SET"and then press "ENTER" button to enter alarm setup mode.



4.1. Motion detection setup

To move the cursor with “↑” or “↓” buttons to"MOTION SET" and press"ENTER"button to enter MOTION DETECTION setup .



4.1.1 Detection channel

Press “ ↑ ” or “ ↓ ” button to move the cursor to the "CAM01" then press “ + ” or “ - ” button to choose the channel wanted.

4.1.2 Detection on/off

Press “ ↑ ” or “ ↓ ” button to move the cursor to the SENSE then press “ + ” or “ - ” button to make the detection be ON or OFF.

4.1.3 Sensitivity

Press “ ↑ ” or “ ↓ ” button to move the cursor to the ENABLE then press “ + ” or “ - ” button to adjust the motion detection sensitivity.

4.1.4 Detection area

To set motion detection area by choosing "M" character with “ ↑ ” or “ ↓ ” button. There are 48 "M" characters, the motion detection is effective if the area is with "M" character, and the motion detection is ineffective if the area is without "M" character.

To use “ ↑ ” “ ↓ ” “ + ” “ - ” buttons to move the "M" character cursor, "ENTER" button is used to add or cancel "M" character. Press "EXIT" to exit.

4.2 Outer sensor setup

Press “ ↑ ” or “ ↓ ” button to move the cursor to "SENSOR SE" then press "ENTER" button to enter sensor setup, press "+" and "-" button to choose low voltage, high voltage and off.



4.3 Alarm buzzer

Press “ ↑ ” or “ ↓ ” button to move the cursor to the"BUZZER"and then press “+” or “-” button to decide whether need the buzzer to make audio sound when the alarm events happen

4.4 Relay

Press “ ↑ ” or “ ↓ ” button to move the cursor to the"RELAY"and then press “+” or “-” button to decide whether need the trigger to input when the alarm events happen

4.5 Alarm duration

Press “ ↑ ” or “ ↓ ” button to move the cursor to the"ALARM TIME"and then press “+” or “-” button to adjust the alarm duration.

5. Alarm event list

Under the main menu format,to move the cursor with “ ↑ ” or “ ↓ ” buttons to"EVENT LIST"and then press "ENTER"button to view the event lists. There are 10 pages and they allow to record up to 99 alarm events.

To use buttons to up and down the pages. Pressing"ENTER"button to enter the canceling setup.

A: Sensor trigger alarm

B: Video loss alarm

C: Power failure record

6. System re - set

Under the main menu format,to move the cursor with buttons to"RESET DEFAULT"and then press"ENTER" button to enter system reset . The system will display a dialog box about system reset. To use "+ "and" - "buttons to choose"YES"and then press"ENTER"button to enter system reset setup. The system will return to main menu mode after finish this operation. All the functions will return to be the manufacturers default after the system reset is finished.

OPERATION

This section describes how to operate the multiplexer.

Operation Modes

This multiplexer has two basic operating modes: Live and Tape.

Live Mode

Press the "Play/Live" button to view live camera video under the state of light-off. Live mode allows you to view any combination of connected camera on the Main Monitor in any display format.

Tape mode

Press the "Play/Live" button to view tape camera video under the state of light-on. The VCR mode does not affect camera video output to the VCR from VCR input. Recording of the cameras at the **VCR out** connector is a completely independent operation and is not affected by operator actions at the front panel. This means that a second VCR can continue recording while you review a tape.

Main Monitor

The Main Monitor can display any live or recorded camera in the fullscreen format. It can also display a movable 2× zoom of any camera.

Full Screen

Press buttons from "CAM1" to "CAM16", it will fully display the picture of cameras from channel 1 to channel 16.

Zoom

When viewing full screen display, press "ZOOM" button to enter the zoom mode and then press "ENTER" button to view a 2 x ZOOM picture. Press "↑" "↓" "←" "→" buttons to move the ZOOM area. And press "ZOOM" button to return to full screen display.

Picture in picture (PIP)

Press "PIP" button to enter PIP format. Press "PIP" continuously to switch three different formats. To press "ENTER" button for two seconds in the PIP format, the "SWAP MODE" character will flicker on the top of the screen which indicate that you've entered the PIP channel mode. Press "↑" "↓" buttons to move the yellow title cursor, "+" and "-" button are used to choose the channel you want, and press "EXIT" to exit.

2×2 Multi-screen Display

The 2×2 format is the familiar quad display. It displays four pictures at one time. Press "☐" button continuously to sequentially display four quads images of CAMERA(1-4), CAMERA(5-8), CAMERA(9-12) and CAMERA(13-16).

3×3 Multi-screen Display

Press "☐" button to display four quad images of CAMERA(1-9), and press it again to display CAMERA(10-16).

4×4 Multi-screen display

Press "☐" button to display CAMERA(1-16) in 4×4 format.

Sequencing Display

Pressing the "SEQUENCE" button will sequentially display CAMERA(1-16) automatically.

Pictures freezing

Pictures freezing format includes single picture freezing and multi-pictures freezing. Double pressing buttons "CAMERA(1-16)" is to cancel or relieve the frozen pictures under the formats of full screen display and multipictures.

Tape Playback

To review a videotape with the multiplexer, press the "Play Back" button and place the VCR in the play mode. And in front of each picture will display character of "PB" which indicates the multiplexer has entered the state of playback.

Multiplexer operation during videotape playback is the same as when viewing live cameras. All front panel buttons have the same effect.

Call Monitor

The Call Monitor can display any live camera in the full screen format. Press "CALL-MON" button, "CALL MON SET" will display at the top of the main monitor. Pressing "CAM1-16" button will display any live camera in full screen.

ALARM RESPONSE

The multiplexer detects and responds to three types alarm events:

Mechanical alarms, motion alarms and video loss alarms. A mechanical alarm event occurs when there is a contact closure at any multiplexer alarm. A motion alarm occurs when motion is detected at a camera with motion detection alarm ON. A video loss alarm occurs when the multiplexer detects the loss of video at an active camera input.

Mechanical Alarm

The multiplexer Alarms connector provides one mechanical alarm input for each camera input. These inputs can be connected to any security device equipped with either a contact closure or TTL/CMOS standard alarm output. Alarm polarity is selectable via multiplexer setup menu.

Each alarm input requires two wires. One wire connects to the desired alarm input pin. The second wire connects to any available ground pin.

When multiplexer processor detects the mechanical alarms ,it performs as follows:

1. The alarm buzzer sounds the audible alarm.
2. The alarm relay is energized.
3. The ALARM message is displayed as "A" at the alarmed camera on the Main Monitor in full screen.

Motion Alarm

If the function is selected ,the multiplexer will initialize an alarm when detect the motion. The motion alarm of each camera may be set as ON or OFF in the setting menu.

When multiplexer processor detects the motion alarms ,it performs as follows:

- 1 The alarm buzzer sounds the audible alarm.
- 2 The alarm relay is energized
- 3 The ALARM message is displayed as "M"at the alarmed camera on the Main Monitor in full screen.

Video Loss Alarms

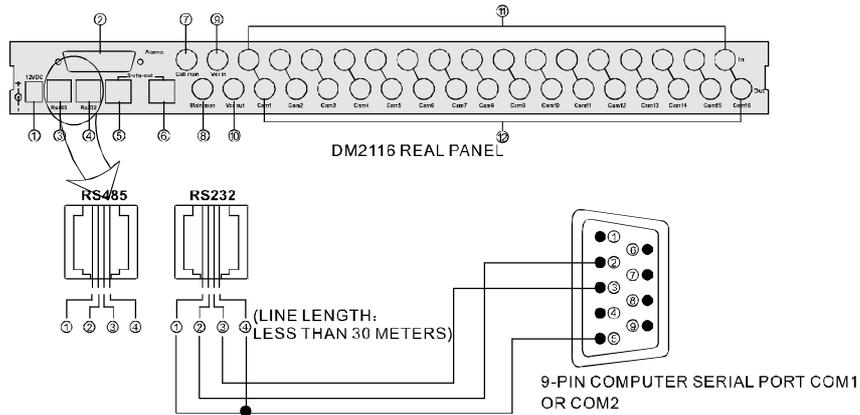
The multiplexer can detect the loss of a video signal at all connected camera inputs. If the video Loss Alarm option is OFF, the loss of video is ignored. If the option is ON, the following actions occur:

- 1 The alarm buzzer sounds the audible alarm.
- 2 The alarm relay is energized
- 3 The ALARM message is displayed as "L" at the alarmed camera on the Main Monitor.

REMOTE CONTROL

The multiplexer provides one method of remote control:RS232 data. These functions enable you to control the multiplexer through operating the computer keyboard.

Connection Diagram



Super Terminal Operation

The super terminal operation of windows 2000,XP allows you to operate the remote control of this multiplexer.

Communication Agreement

To set the super terminal port as below

Baud rate: 9600

Inspection bit: No

Data bit: No

Stop bit: 1

Control Code List:

RS232 Command	Execution
"m"	Set
"p"	PIP/↑
"q"	Quad/↓
"n"	Nine/←/→
"h"	Hex/ / *
"e"	Enter/call
"a"	Auto/exit
"r"	PB/Live
"z"	zoom
"f"	freeze
"1"	Cam1
"2"	Cam2
"3"	Cam3
"4"	Cam4
"5"	Cam5
"6"	Cam6
"7"	Cam7
"8"	Cam8
"9"	Cam9
"A"	Cam10
"B"	Cam11
"C"	Cam12
"D"	Cam13
"E"	Cam14
"F"	Cam15
"G"	Cam16

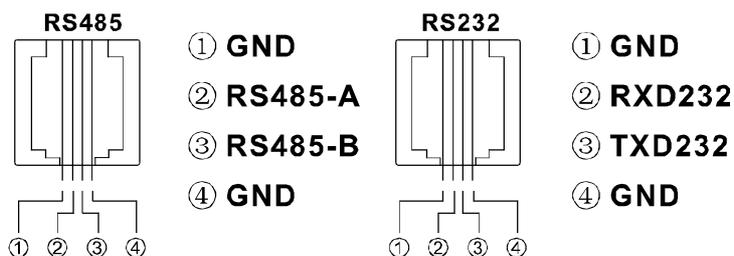
TECHNOLOGY SPECIFICATION

Video Standard	PAL: 50fields/second/CH NTSC: 60fields/second/CH
Digital Memory	PAL: 720 x 576 NTSC: 720 x 480
Video Input	16 loops BNC, 1.0Vp-p composite, individually optional 75ohms
Video Output	Main Monitor: 1 loop: 1.0Vp-p 75 Ω Call Monitor: 1 loop: 1.0Vp-p 75
VCR Input	1.0Vp-p 75 Ω
VCR Output	1.0Vp-p 75 Ω S-VHS out
Alarm Output	1Programmable as Normally Open or Normally Close,
Alarm Input	16 Active TTL High/Low Input(one mating connector)
Alarm Duration	Programmable 3-99 seconds, 4 seconds default
Alarm Mode	Video Loss Alarm , Video Motion Alarm, Outer trigger alarm
Interface Control	RS232/RS485
Power Consumption	DC12V 15W
Net Weight	2.8kg
Ambient Temperature	-30 $^{\circ}$ C~60 $^{\circ}$ C
Dimensions	432mm(L) \times 311mm(W) \times 44mm(H)

APPENDIX

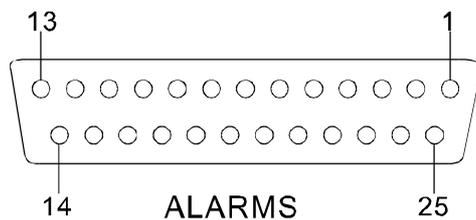
APPENDIX A

Remote control connector pin assignment



APPENDIX B

Alarm connector pin assignment



PIN NO.	PIN ASSINGMENT	PIN NO.	PIN ASSINGMENT
1	Ground	14	EX-TREGGER
2	Alarm 16	15	Null
3	Alarm 14	16	Alarm No
4	Alarm 12	17	Alarm 1
5	Alarm 10	18	Alarm 3
6	Alarm 8	19	Alarm 5
7	Alarm 6	20	Alarm 7
8	Alarm 4	21	Alarm 9
9	Alarm 2	22	Alarm 11
10	Alarm common	23	Alarm13
11	Alarm NC	24	Alarm15
12	Null	25	Null
13	Ground		



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