

# VIDEOLOGY

IMAGING SOLUTIONS INC.  
Original Equipment Manufacturer

## Instruction Manual

2.4MP 10x Auto Focus Zoom Camera  
with EX-SDI Video Output and WDR



### MODELS

24Z2.1W-10X-EXSDI-344

### PRODUCT FEATURES

- 1/3" 2.4 MP Image Sensor
- 1080p / 720p (60/ 50/ 30/ 25fps)
- Auto Focus Zoom
- 10x Optical Zoom, 32x Digital Zoom
- Real Time True WDR
- Digital Noise Reduction
- Extended SDI
  - Transmissions to 500m (1650 ft.)
- **Note:** Greater distances can be achieved with higher grade cabling.
- Full HD digital format using standard cabling (coax, cat5/6)
- Latency <1 fps.
- Power & control over same cable (with UTC only)
- HD-SDI
- CVBS analog video output

### CONTACT INFORMATION

For technical assistance with this product, please contact the supplier from whom the product was purchased.

Please visit us at: <http://www videologyinc.com>  
**VIDEOLOGY IMAGING SOLUTIONS** is an ISO 9001 registered video camera developer and manufacturer serving industrial, machine vision, biometric, security, and specialty OEM markets.

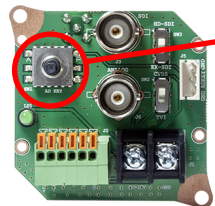
Videology designs, develops, manufactures, and distributes video, image acquisition, and display technologies and products to OEMs worldwide.

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## How to Use the Camera



Settings can be implemented using the miniature joystick located on the optional OSD control board (60MC0001).

1. Press the joystick IN on the control board to display the SETUP window.

## Camera Setup MAIN MENU

MENU	
FOCUS	↓
EXPOSURE	↓
WHITE BAL	↓
IMAGE	↓
INTELLIGENCE	↓
SPECIAL FUNC	↓
DISPLAY	↓
[EXIT]	[SAVE] [DFLT]

Functions can be setup using the "Menu Key Command".

The menu consists of the "Main Menu" and "Sub Menu".

The main menu is displayed where 7 camera functions can be selected.

Upon pushing each main menu selection, the sub-menu is displayed

To save the setting changes, select **[SAVE]**.

To disregard the setting changes, select **[EXIT]** (After select, Power off -> on)

To return to factory settings, select **[DFLT]**

## FOCUS

MENU		FOCUS	
FOCUS	↓	FOCUS	AUTO
EXPOSURE	↓	DISTANCE	1.0m
WHITE BAL	↓	ZOOM SPEED	████████ 7
IMAGE	↓	LENS REFRESH	ONE PUSH↓
INTELLIGENCE	↓	E. ZOOM	OFF
SPECIAL FUNC	↓	ZOOM PRESET	↓
DISPLAY	↓		
[EXIT]	[SAVE] [DFLT]	[BACK]	[SAVE] [DFLT]

**FOCUS:** Select auto focus mode  
▶ AUTO, ONE PUSH, MANUAL

**DISTANCE:** Select minimum distance in focus between camera and object.

- ▶ 0.1 / 1.0 / 3.0 / 5.0 / 10.0 m

**ZOOM SPEED:** Select Zoom Speed

- ▶ 0 (Slow) ~ 7 (Fast)

**LENS REFRESH:** Lens origin calibrated automatically.

- ▶ ONE PUSH↓ / ON (1 day ~ 10 days)

**E.ZOOM:** Select maximum digital zoom magnification.

- ▶ OFF / ON  
(max x2 ~ x19, x21, x23, x25, x28, x32)

**ZOOM PRESET:** Select zoom preset

- ▶ PRESET #: Select Zoom preset number (1 ~ 5)
- ▶ MODE: OFF / ON ↓  
▶ ON ↓: Adjust the Zoom Position

## EXPOSURE

MENU		EXPOSURE	
FOCUS	↓	MODE	AUTO
EXPOSURE	↓	AGC	ON
WHITE BAL	↓	SHUT SPEED	---
IMAGE	↓	IRIS	---
INTELLIGENCE	↓	DSS	OFF
SPECIAL FUNC	↓	FLICKERLESS	OFF
DISPLAY	↓	BRIGHTNESS	████████ 8
[EXIT]	[SAVE] [DFLT]	WDR/BLC	OFF
		DAY&NIGHT	AUTO↓
		[BACK]	[SAVE] [DFLT]

**MODE:** Select Exposure Mode

- ▶ AUTO / IRIS.P / SHUT.P / MANUAL

**AGC:** Select Auto Gain Control

- ▶ OFF / ON (AUTO, SHUT.P or IRIS.P Mode)
- ▶ 0 ~ 10 (MANUAL Mode)

**SHUT SPEED:** Can be set in SHUT.P or MANUAL mode

- 60 / 50 fps mode
  - ▶ x8, x4, x2, 1/60(50), 1/120(100), 1/250, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000, 1/30000 sec
- 30 / 25 fps mode
  - ▶ x4, x2, 1/30(25), 1/60(50), 1/120(100), 1/250, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000, 1/30000 sec

**IRIS:** Iris level can be set in IRIS.P or MANUAL mode

- ▶ 0 ~ 20

**DSS:** Select maximum DSS (Digital Slow Shutter)

- 60 / 50 fps mode
  - ▶ OFF / x2, x4, x8
- 30 / 25 fps mode
  - ▶ OFF / x2, x4

**FLICKERLESS:** Select flickerless mode

- ▶ OFF / ON (remove screen flicker)

**BRIGHTNESS:** Adjust brightness level

- ▶ 0 (dark) ~ 20 (bright) steps

**WDR/BLC:** Select WDR (Wide Dynamic Range) or BLC (Back Light compensation)

- ▶ WDR↓
  - ▶ LEVEL: Adjust WDR level.
- ▶ LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH

**WDR will not work in Manual Exposure Mode or Shutter Priority Mode**

**When WDR is ON, CVBS output is disabled**

- ▶ BLC↓
  - ▶ POSITION: Adjust the window position
  - ▶ SIZE: Adjust the window size

**WDR & BLC will not function at the same time**

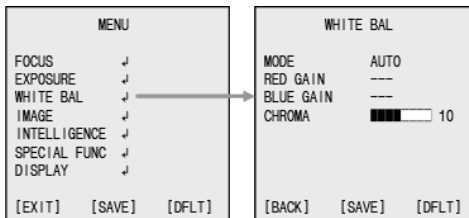
If WDR is ON, BLC is OFF  
If BLC is ON, WDR is OFF

**BLC will not work in Manual Exposure Mode.**

**DAY & NIGHT:** Select Day & Night

- ▶ MODE: AUTO↓ / EXT-IN↓ / DAY / NIGHT↓  
▶ AUTO
- ▶ DELAY: 0 ~ 255 sec
- ▶ THRS: 0 ~ 28  
Day↔Night switching level in Auto Mode.  
Switching in lower lux with lower threshold level.
- ▶ GAP: LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH  
Margin between Day→Night switching level and Night→Day switching level.
- ▶ IR DETECTION: Setting IR Detection mode. (ON / OFF)
- ▶ IR DET LEVEL: Setting IR Detection level. (LOW, MID-LOW, MIDDLE, MID-HIGH, HIGH)
- ▶ BURST: OFF / ON  
▶ EXT-IN
- ▶ DELAY: 0 ~ 255 sec
- ▶ BURST: OFF / ON
- ▶ POLARITY: External Input polarity (ACTIVE LOW / ACTIVE HIGH)  
▶ NIGHT
- ▶ BURST: OFF / ON

## WHITE BALANCE



**AWB:** Select WHITE BALANCE mode

- ▶ AUTO / ONE PUSH↓ / MANUAL / INDOOR / OUTDOOR
  - ▷ AUTO: adjusts color over to the environment color temp.
  - ▷ ONE PUSH: fixed white balance mode is automatically readjusted only by pressing ONE PUSH (push set)
  - ▷ MANUAL↓: Color can be corrected when the user increases or decreases "RED GAIN" or "BLUE GAIN".
  - ▷ INDOOR: Set color temperature to be Indoor light (3700°K)
  - ▷ OUTDOOR: Set color temperature to be Outdoor light (5100°K)

**RED GAIN:** Adjust R gain value adjusts

- ▶ 0 ~ 20 steps

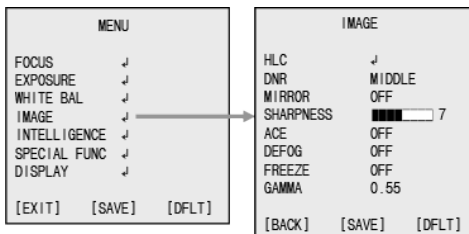
**BLUE GAIN:** Adjust B gain value adjusts

- ▶ 0 ~ 20 steps

**CHROMA:** Adjust CHROMA gain value adjusts

- ▶ 0 ~ 20 steps

## IMAGE



**HLC:** Select High Light Compensation.

A mask overwrites an area of extreme bright light to mitigate saturation in the scene.

- ▷ MODE: OFF / ON / NIGHT
- ▷ LEVEL: 0 ~ 20 steps
- ▷ COLOR: 0 ~ 13 steps

**DNR:** Select Digital Noise Reduction

- ▶ OFF / LOW / MIDDLE / HIGH / AUTO

**MIRROR:** Select a flip mode

- ▶ OFF / H / V / H&V
  - ▷ H: flips the picture horizontally on the screen
  - ▷ V: flips the picture vertically on the screen
  - ▷ H&V: flips the picture horizontally & vertically on the screen

**SHARPNESS:** Adjust sharpness level

- ▶ 0 ~ 10 steps

**ACE:** (Adaptive Contrast Enhancer) Select Digital WDR (Wide Dynamic Range)

- ▶ OFF / LOW / MIDDLE / HIGH

**DEFOG:** Implements defog function

- ▶ OFF / ON↓
  - ▷ MODE: AUTO / MANUAL
  - ▷ LEVEL: LOW / MIDDLE / HIGH

**DEFOG and ACE will not work correctly at the same time (When ACE is on, DEFOG is off and when DEFOG is on, ACE is off)**

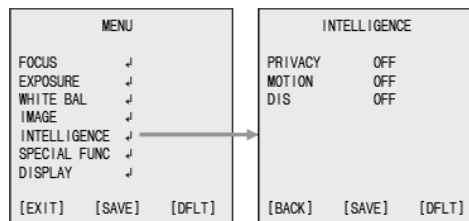
**FREEZE:** Select real or still mode

- ▶ OFF / ON

**GAMMA:** Select GAMMA

- ▶ 0.45 / 0.55 / 0.65 / 0.75

## INTELLIGENCE



**PRIVACY:** Hide an area you want to hide on the screen

- ▶ OFF / ON↓
  - ▷ MASK#: Select mask area number (1 ~ 24)
  - ▷ MODE: Mask enable or disable (OFF / ON)
  - ▷ POSITION: Adjust the mask position
  - ▷ SIZE: Adjust the mask size
  - ▷ COLOR: Select mask color (0 ~ 13)
  - ▷ TRANS: Select mask transparency level (0 ~ 4)

**MOTION:** When there is movement of the subject in the scene, it will be detected.

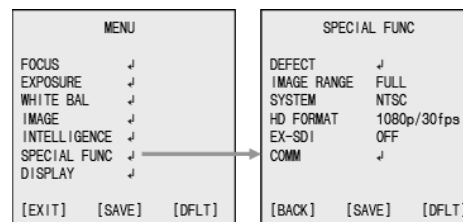
- ▶ OFF / ON↓
  - ▷ AREA#: Setting 3 areas (1~3) of motion detection
  - ▷ MODE: OFF / ON (Limit and define areas of motion detection)
  - ▷ SENSITIVITY: Adjust sensitivity of MD (0 ~ 20 steps)  
To increase sensitivity, lower the number.
  - ▷ POSITION: Adjust the Area position

- ▷ SIZE: Adjust the Area size
- ▷ INTERVAL: Select the alarm interval time (0 ~ 255sec)
- ▷ DWELL TIME: Select the duration time about changing MD mode (0 ~ 255sec)
- ▷ ZOOM PRESET: Select Motion Zoom Preset Mode and Position (OFF / ON↓)

**DIS:** Select Digital Image Stabilizer mode

- ▶ OFF / ON↓
  - ▷ RANGE: Set the image compensation range. (10%, 20%, 30%)
  - ▷ FILTER: Set the sensitivity to hold DIS function in worst case. (LOW, MIDDLE, HIGH)
  - ▷ AUTO C: Set Auto Centering mode (OFF, HALF, FULL)

## SPECIAL FUNCTION



**DEFECT:** Compensates for bad pixels that may occur. Works when the whole screen is in full black or if there is much pixilation and it changes the THRS values until the screen is fixed.

**When you use this function, you have to cap the lens to remove the light.**

**IMAGE RANGE:** Select image bit range. (Full: 100%, Compressed: 75%)

- ▶ FULL, COMP, USER↓
  - ▷ LEVEL: Select user mode level (0 ~ 32)

**SYSTEM:** Select NTSC (30/60fps) or PAL (25/50fps).

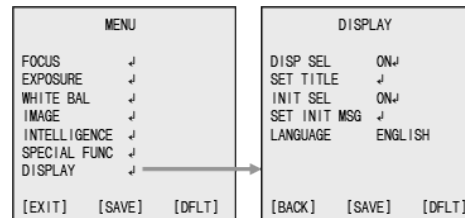
**HD FORMAT:** Select Digital output (1080p/30(25) fps, 1080p/60(50) fps, 720p/30(25) fps, 720p/60(50) fps)

**EX-SDI:** Select EX-SDI mode (OFF / ON)

**COMM:** Set up the camera ID, baud rate, protocol

- ▷ ID: Select the camera ID
  - ▶ 1 ~ 255
- ▷ BAUD RATE: Select serial communication speed
  - ▶ 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200bps
    - ▷ PROTOCOL: Select operating protocol
- ▶ VISCA / PELCO-D / PELCO-P / UPDATE  
**(Videology programming use only)**

## DISPLAY



**DISP SEL:** Select display item.

- ▶ OFF / ON↓
  - ▷ ID: OFF / ON
  - ▷ TITLE: OFF / ON
  - ▷ ZOOM RATIO: OFF / ON
  - ▷ SYSTEM MSG: OFF / ON (MD Alarm and Wait message)

**SET TITLE:** Select camera title menu (Text edit-max 40 characters)

**INIT SEL:** Select display initial message.

- ▶ OFF / ON↓
  - ▷ ID: OFF / ON
  - ▷ BAUDRATE: OFF / ON
  - ▷ PROTOCOL: OFF / ON
  - ▷ VERSION: OFF / ON
  - ▷ INIT MSG: OFF / ON

**SET INIT MSG:** modify initial message. (Text edit - max 40 characters)

**LANGUAGE:** Select language.

- ▶ English / Japanese / Simplified Chinese / Traditional Chinese

Character Table of Text edit Mode

A B C D E F G H I J K L M N O P Q R S T U V W X  
Y Z a b c d e f g h i j k l m n o p q r s t u v w x y  
z , . ( ) { } [ ] 0 1 2 3 4 5 6 7 8 9 \* + - / = ~ ! ?  
"

## BACK

Select to go back to the previous screen

## SAVE

Saves all the setting changes.

## DEFAULT

The default option will restore factory settings.