Thank you for using this product.
Please read this manual carefully before use. Please keep this instruction manual in a safe place for future reference.
CONTENTS

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10. SPECIFICATION
1. PURPOSE

The 1/4” DSP color CCD X22 ZOOM camera, especially for closed circuit Television and security surveillance application.

- DSP color camera for PAN/TILT&ZOOM controller.
- High resolution 1/4” color CCD pick-up.
- High durability built in X22 optical power zoom lens.
- OSD function.
- AGC.
- Total zoom ratio X268 [Digital zoom X12, optical zoom X22]
- Variable zoom ratio.
- 480TV lines at center
- Min. illumination at 0.3Lux (F=1.6)
- Min. illumination at 0.01Lux (Electronic Sensitive Up) with Day & Night function.
- Back-light compensation.
- External synchronization with line-lock [optional]
- Wire remote controller [optional]
2. CAUTIONS

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the User’s authority to operate the equipment.

1) Power supply
- Use only with the +12V DC regulated power supply marked Class 2.
- Be sure to connect each lead to the appropriate terminal. Wrong connection may cause malfunction and/or damage to video camera.

2) Operating and storage location.
- Do not attempt to aim the camera at the sun or other extremely bright objects that cause smear to appear irrespective of whether the camera is operating or not. This may damage the CCD.
- Do not place the camera in the following locations. Locations subjected to extremely high or low temperatures. Locations subjected to high levels of humidity and dust. Locations where are large amount of water vapour and steam. Locations subjected to excessive vibrations.
- When this camera is installed near equipment, like a wireless communication device that emits a strong electromagnetic field, some irregularity such as noise on the monitor screen may happen.

3) Handling of the unit
- Do not allow the camera to be subjected to strong impacts or shocks. The camera could be damaged by improper handling or storage.
- Never attempt to disassemble or modify the camera.
- If an abnormality should occur, immediately turn off the power and consult your dealer.
3. **Configuration**

**BNC Jack** (Video output)

**TELE Switch**

- **Zoom-in the screen**
  - The view angle becomes narrow but the size of a subject in the screen becomes bigger.

**NEAR Switch**

- **Focusing near**
  - To focus on the image of near subject manually.

**FAR Switch**

- **Focusing far**
  - To focus on the image of far subject manually.

**ZFCM Connector**

- **BNC Jack** (Video output)

**S-Video Switch**

- **Control**
  - It is a 6 or 12 Pin circle connector.
  - Wire Controller connector.

**Power Connector**

- **S-Video**
  - It is used to see high quality picture.
  - You must be sure that there is S-VIDEO connector on the monitor and S-VIDEO cable.

- **使我**
  - It is a 6 or 12 Pin circle connector.
  - Wire Controller connector.

**Power Connector**

- **BNC Jack** (Video output)

**Tele Switch**

- **Zoom-in the screen**
  - The view angle becomes narrow but the size of a subject in the screen becomes bigger.

**Near Switch**

- **Focusing near**
  - To focus on the image of near subject manually.

**Far Switch**

- **Focusing far**
  - To focus on the image of far subject manually.

**ZFCM Connector**

- **BNC Jack** (Video output)

**S-Video**

- It is used to see high quality picture.
  - You must be sure that there is S-VIDEO connector on the monitor and S-VIDEO cable.

- **Control**
  - It is a 6 or 12 Pin circle connector.
  - Wire Controller connector.

**Power Connector**

- **USE ONLY CONSTANT DC 12V 500mA ADAPTER**

---

**MENU**

**MOVING TO SETUP MENU**

- **Tele Switch**
  - **Zoom-in the screen**
    - The view angle becomes narrow but the size of a subject in the screen becomes bigger.

- **Near Switch**
  - **Focusing near**
    - To focus on the image of near subject manually.

- **Far Switch**
  - **Focusing far**
    - To focus on the image of far subject manually.

- **ZFCM Connector**
  - **BNC Jack** (Video output)

- **S-Video**
  - It is used to see high quality picture.
    - You must be sure that there is S-VIDEO connector on the monitor and S-VIDEO cable.

- **Control**
  - It is a 6 or 12 Pin circle connector.
    - Wire Controller connector.

- **Power Connector**
  - **USE ONLY CONSTANT DC 12V 500mA ADAPTER**

Generally how to control P.T.Z is the same as how to control Remote Controller.

**Pan Tilt Zoom**

*P.T.Z is not included*

![Diagram of Pan Tilt Zoom controls]

Press WIDE and FAR button together to open / close MENU window on the screen.
# 4. SETUP MENU

SETUP MENU REVIEW...CONFIGURATION CHART.

<table>
<thead>
<tr>
<th>MENU</th>
<th>SUB-MENU</th>
</tr>
</thead>
<tbody>
<tr>
<td>MENU1</td>
<td></td>
</tr>
<tr>
<td>FOCUS</td>
<td>AUTO</td>
</tr>
<tr>
<td></td>
<td>MANUAL</td>
</tr>
<tr>
<td>BLC</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>AUTO</td>
</tr>
<tr>
<td></td>
<td>NORMAL</td>
</tr>
<tr>
<td></td>
<td>SHUTTER</td>
</tr>
<tr>
<td></td>
<td>AUTO</td>
</tr>
<tr>
<td></td>
<td>IRIS</td>
</tr>
<tr>
<td></td>
<td>AUTO</td>
</tr>
<tr>
<td></td>
<td>F1.6-F32</td>
</tr>
<tr>
<td></td>
<td>AGC</td>
</tr>
<tr>
<td></td>
<td>AUTO</td>
</tr>
<tr>
<td></td>
<td>B/W</td>
</tr>
<tr>
<td></td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
</tr>
<tr>
<td>W/B</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>AUTO</td>
</tr>
<tr>
<td></td>
<td>NORMAL</td>
</tr>
<tr>
<td></td>
<td>INT</td>
</tr>
<tr>
<td></td>
<td>AUTO</td>
</tr>
<tr>
<td></td>
<td>BPS</td>
</tr>
<tr>
<td></td>
<td>AUTO</td>
</tr>
<tr>
<td></td>
<td>MANUAL[LRB]</td>
</tr>
<tr>
<td></td>
<td>CAM ID</td>
</tr>
<tr>
<td></td>
<td>000-255</td>
</tr>
<tr>
<td></td>
<td>D-ZOOM</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>DISPLAY</td>
</tr>
<tr>
<td></td>
<td>PUSHON</td>
</tr>
<tr>
<td></td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>SYNC</td>
</tr>
<tr>
<td></td>
<td>INT</td>
</tr>
<tr>
<td></td>
<td>LL [OPTION]</td>
</tr>
<tr>
<td></td>
<td>BPS</td>
</tr>
<tr>
<td></td>
<td>2500, 3600, 15000</td>
</tr>
<tr>
<td></td>
<td>LOAD DEFAULT</td>
</tr>
<tr>
<td>MENU2</td>
<td></td>
</tr>
<tr>
<td>NEGA</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>BW</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>MIRROR</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>FREEZE</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>BRIGHT</td>
<td>20 [0-48]</td>
</tr>
<tr>
<td>SHARP</td>
<td>10 [0-20]</td>
</tr>
<tr>
<td>MENU3</td>
<td></td>
</tr>
</tbody>
</table>
5. MENU FORMAT TABLE

1) NEGA / POS: Use to change NEGATIVE and POSITIVE mode.
   ON: NEGATIVE mode, OFF: POSITIVE mode.

2) B/W, COLOR: Use to change color and monochrome of picture.
   ON: COLOR mode, OFF: BLACK and WHITE mode.

3) MIRROR: When image mirror is ON state, the image is displayed in the opposite direction.

4) FREEZE: Use to change real picture and digital picture.
   ON: Digital picture, OFF: Real picture.

5) WB, AWB: Maintain the best color condition by controlling the change of color automatically.[2800K – 8000K]
   WAWB: Can find white balance exactly in case precise WB Maintenance is needed under any environment.

6) SHUTTER: Use to select the shutter speed 28 steps.

7) ID: To connect a large number of camera, identification number can be assigned to each camera control easily.

8) BRIGHTNESS: Use to change the brightness of scene.[0-48]

9) SHARPNESS: Use to change the sharpness of scene.[0-20]

10) FACTORY: Set the initial mode ON, the changed data are renewed reset the data to its shipping condition.

11) WAIT MODE: Indicates the camera stand-by mode until the camera power ON
6. HOW TO USE CONTROL KEY

There are 5 buttons on the rear side of the camera. These buttons are used to set setup menu and values. And each button has different functions up to the menu and they are described as followings.

1) ZOOM BUTTON [T,W]
- T(TELE): "T" is button for zoom in function which makes the image of the subject nearer and bigger.
- W(WIDE): "W" is button for zoom out function which makes the image of the subject farther and smaller.

2) FOCUS BUTTON [N,F]
- N(NEAR) BUTTON: "N" is button for focusing nearer with the same view of angle.
- F(FAR) BUTTON: "F" is button for focusing farther with the same view of angle

3) MENU BUTTON (at the center)
A button to open or close setup menu

4) FUNCTION MENU[MAIN,EFFECT,SYSTEM]
"T" or "W" button to select effect and system after menu is button state.

5) FUNCTION DATA [N,F]
This button is used for data adjust.

6) MENU DATA [T,W]
This button is used for down or up in the menu mode.
7. INTERFACE

1) J1[4P]

<table>
<thead>
<tr>
<th>PIN NO.</th>
<th>NAME</th>
<th>IO SIGNAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ZOOM T W</td>
<td>DC Control (5V–12V)</td>
</tr>
<tr>
<td>2</td>
<td>FOCUS N F</td>
<td>DC Control (5V–12V)</td>
</tr>
<tr>
<td>3</td>
<td>COMMON</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MENU</td>
<td>DC Control (5V–12V)</td>
</tr>
</tbody>
</table>

*Power input: 5V – 12V

2) J2[6P]

<table>
<thead>
<tr>
<th>PIN NO.</th>
<th>NAME</th>
<th>IO SIGNAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TXD</td>
<td>RS-232</td>
</tr>
<tr>
<td>2</td>
<td>RXD</td>
<td>RS-232</td>
</tr>
<tr>
<td>3</td>
<td>KEY0</td>
<td>ADKEY</td>
</tr>
<tr>
<td>4</td>
<td>KEY1</td>
<td>ADKEY</td>
</tr>
<tr>
<td>5</td>
<td>485(B)</td>
<td>RS-485(–)</td>
</tr>
<tr>
<td>6</td>
<td>485(A)</td>
<td>RS-485(+)</td>
</tr>
</tbody>
</table>
8. CONNECTION DIAGRAM

1. CONNECTION WITH MONITOR

2. CONNECTION WITH MONITOR WHEN PANTILT IS INSTALLED
9. DIMENSION

![Diagram of camera dimensions and connections]

- S-VIDEO TYPE
- REMOTE CONTROLLER TYPE

Dimensions:
- 118 mm
- 100 mm
- 55.8 mm
- 62 mm
## 10. SPECIFICATION

<table>
<thead>
<tr>
<th>MODEL</th>
<th>22X DSP COLOR ZOOM CAMERA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Format</td>
<td>NTSC</td>
</tr>
<tr>
<td>Scanning Frequency (H)</td>
<td>15.734 KHz</td>
</tr>
<tr>
<td>Scanning Frequency (V)</td>
<td>59.94 Hz</td>
</tr>
<tr>
<td>Pick-Up Device</td>
<td>1/4&quot; SONY HAD CCD</td>
</tr>
<tr>
<td>Total Pixels Number</td>
<td>811 (H) x 494 (V)</td>
</tr>
<tr>
<td>Picture Element</td>
<td>768 (H) x 494 (V)</td>
</tr>
<tr>
<td>S/N Ratio</td>
<td>More Than 48KdB</td>
</tr>
<tr>
<td>Horizontal Resolution</td>
<td>More Than 480 TV Lines</td>
</tr>
<tr>
<td>Lens</td>
<td>X22 Zoom [3.9mm~85.8mm, F1.6(W)~F3.7(T)]</td>
</tr>
<tr>
<td>Minimum Illumination</td>
<td>0.3 Lux (40 IRE) F1.6</td>
</tr>
<tr>
<td>Digital Zoom Ration</td>
<td>Basic x 12 (Total Zoom Ration x268 X2 ~ X12)</td>
</tr>
<tr>
<td>Sync System</td>
<td>Internal</td>
</tr>
<tr>
<td>OSD (On Screen Display)</td>
<td>OSD On / Off</td>
</tr>
<tr>
<td>Video Output</td>
<td>Composite Output 75Ω Terminated</td>
</tr>
<tr>
<td>Camera Control</td>
<td>RS-485 / RS-232C</td>
</tr>
<tr>
<td>Day &amp; Night</td>
<td>Auto (Only Day &amp; Night Type)</td>
</tr>
<tr>
<td>Focus Mode</td>
<td>Auto / Manual</td>
</tr>
<tr>
<td>Brightness</td>
<td>Manual (Brightness Up / Down)</td>
</tr>
<tr>
<td>Sharpness</td>
<td>Manual (Sharpness Up / Down)</td>
</tr>
<tr>
<td>Iris Control</td>
<td>Auto / Manual (Iris Up / Down)</td>
</tr>
<tr>
<td>AGC Control</td>
<td>Auto / Manual (0~22 dB Control)</td>
</tr>
<tr>
<td>Shutter Speed</td>
<td>1/60 ~ 1/10,000 Sec</td>
</tr>
<tr>
<td>White Balance</td>
<td>AWB / WAWB / Indoor / Outdoor / Manual</td>
</tr>
<tr>
<td>Back Light</td>
<td>On / Off</td>
</tr>
<tr>
<td>Negative / Positive</td>
<td>Negative On / Off</td>
</tr>
<tr>
<td>Freeze</td>
<td>On / Off</td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>-10 ~ +50°C</td>
</tr>
<tr>
<td>Operation Humidity</td>
<td>0 ~ 80% RH</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-20 ~ 60°C, 0 ~ 85% RH</td>
</tr>
<tr>
<td>Supplied Voltage</td>
<td>7~16V (Recommended Voltage : 12V ± 10%)</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Max. 4.8W (500mA)</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>55.8 x 62 x 100</td>
</tr>
<tr>
<td>Weight</td>
<td>350g</td>
</tr>
</tbody>
</table>