

CCD COLOR CAMERA

IK-65WDA

Please read this manual thoroughly before use,
and keep it handy for future reference.

Record in space provided below the Model No. and
the Serial No. as found on the bottom of this unit.

Model No. IK-65WDA Serial No. _____

Retain this information for future reference.

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IMPORTANT SAFEGUARDS

1. Read Instructions

All the safety and operating instructions should be read before the product is operated.

2. Retain Instructions

The safety instructions and instruction manual should be retained for future reference.

3. Heed Warnings

All warnings on the product and in the instruction manual should be adhered to.

4. Follow Instructions

All operating and use instructions should be followed.

5. Cleaning

Disconnect this video product from the power supply before cleaning.

6. Attachments

Do not use attachments not recommended by the video product manufacturer as they may cause hazards.

7. Water and Moisture

Do not use this video product near water, for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool and the like.

8. Accessories

Do not place this video product on an unstable cart, stand, tripod, bracket or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

9. Ventilation

This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

10. Power Sources

This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your location. Consult your product dealer.

11. Power-Cord Protection

Power-Supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, screws and the point where they exit from the product.

12. Lightning

For added protection for this video product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the power supply and cable system. This will prevent damage to the video product due to lightning and power-line surges.

13. Overloading

Do not overload power supply and extension cords as this can result in a risk of fire or electric shock.

14. Object and Liquid Entry

Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of kind on the video product.

15. Servicing

Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

16. Damage Requiring Service

Disconnect this video Product from the power supply and refer servicing to qualified service personnel under the following conditions.

- When the power supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the video product.
- If the video product has been exposed to rain or water.
- If the video product does not operate normally by following the operating instructions in the instruction manual. Adjust only those controls that are covered by the instruction manual as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
- If the video product has been dropped or the cabinet has been damaged.
- When the video product exhibits a distinct change in performance this indicates a need for service.

17. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer with the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

18. 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 operating condition.



The CAUTION label, shown on the left, is attached on the bottom of camera.



The lightening flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

•CAUTION

CONNECT 24V AC UL LISTED CLASS 2 POWER SUPPLY.

FIELD INSTALLATION MARKING:

WORDED : "THIS INSTALLATION SHOULD BE MADE BY A QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO ALL LOCAL CODES."

Note : The camera is indoor used

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.

1. FEATURES & DESCRIPTION :

(1) IK-65WDA has the following functions.

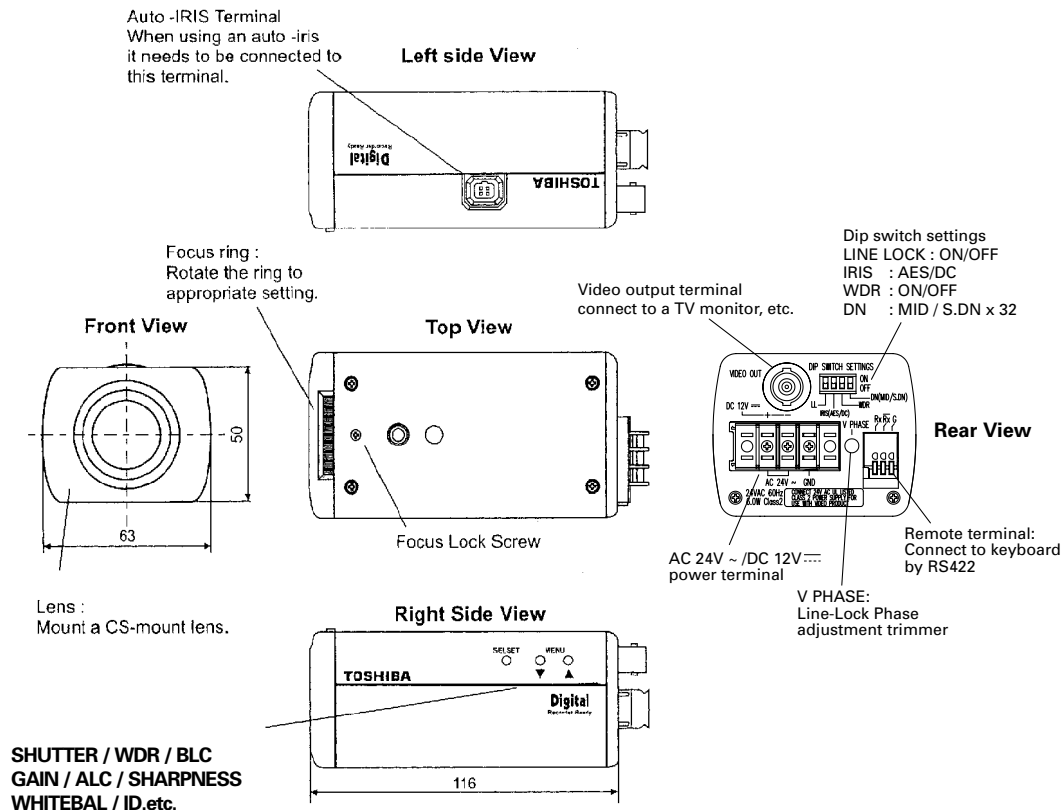
- (1) 133 Times Dynamic Range
Toshiba developed algorithms that enable industry leading dynamic range
- (2) Digital Noise Reduction ("DNR")
Exclusive 3 Dimensional Digital Noise Reduction boosts S/N ratio to a incredible 53dB
- (3) 0.001Lux @ 1.2Minimum Illumination in slow shutter mode
User-definable Sensitivity levels ensure best image quality reproduction dependent on available lighting conditions
- (4) User-Definable DAY/NIGHT Threshold
Customize the color to black & white conversion level according to your application needs
- (5) MENU-DRIVEN Programming
- (6) Remote control from a keyboard etc, by RS422.
- (7) Up to 1/100,000 sec shutter speed
- (8) 520 horizontal TV lines in HI-RESO mode
- (9) Easy installation into any AC 24V~/DC 12V system

2. CAUTIONS :

- (1) In order to protect the camera, avoid placing or using it under direct sunlight, rain or dust.
- (2) Avoid touching the CCD sensor with your fingers. If necessary, use a soft cloth moistened with alcohol to wipe off any dust.
- (3) When the camera is not in use, keep the lens or lens cap attached to protect the CCD sensor.
- (4) Avoid aiming the camera at the sun.
- (5) Avoid shooting the camera at intense light. Intense light such as a spotlight may cause a bloom or smear. A vertical stripe may appear on the screen. However, this is not a malfunction.
- (6) Install the camera away from video noise. If cables are wired near electric lighting wires or a TV set, noise may appear in images. In this event, relocate cables or reinstall equipment.

3. COMPONENTS :

- | | | |
|--|---|------------------|
| (1) Camera | 1 | |
| (2) Accessories | | |
| (a) Lens Connector | 1 | (E4-191J-100(M)) |
| (b) Instruction Manual | 1 | |
| (c) Lens Cap | 1 | |
| (d) Lens, coaxial cable and power cord are not supplied with camera. | | |



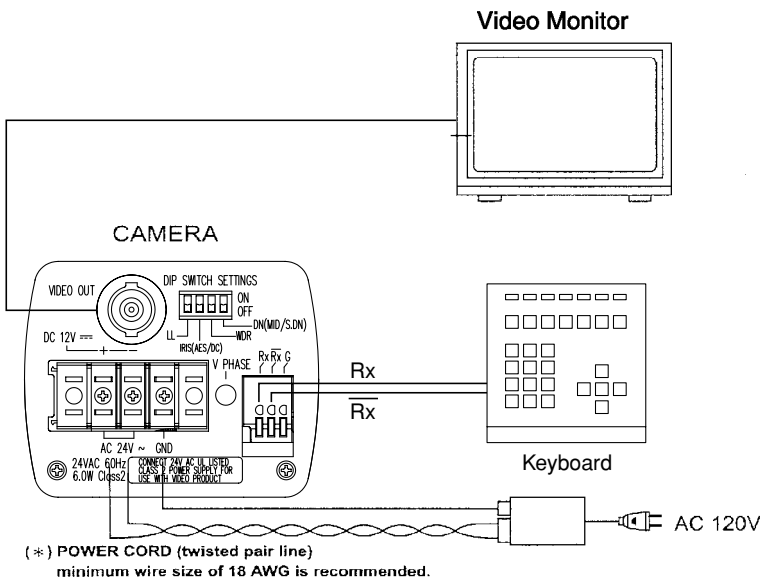
5.CONNECTIONS AND OPERATIONS :

Notes on connecting

- Power plugs of connected equipment must be disconnected before installations.
- A 75-ohm coaxial cable (3C-2V or 5C-2V) is required for standard connection.
- For details of wiring and operation of equipment to be connected, refer to their operation manuals.
- Lenses, coaxial cables for video signals and the power cord are not supplied with the camera.

Refer to the operations manuals of connected equipment for detailed wiring and overall operation instructions.

5.1 Basic connection for a single system configuration



24V AC UL Listed Class 2 power supply / 12V DC power supply

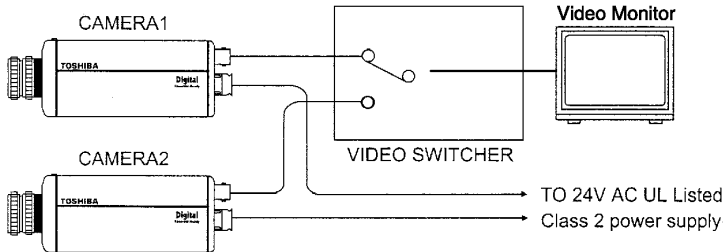
CAUTION: Never input 24V AC and 12V DC at the same time.

Do not overload power supply

Since this camera uses 24V AC UL Listed Class 2 power supply or 12V DC power supply, it should be connected to a power supply that allows for at least 7w consumption.

5.2 Line-Lock Control

- Matching the vertical synchronization with the power frequency is called the Line-Lock.
- This function is activated when the LINE LOCK switch is selected to ON.
- When two or more cameras are switched by the video switcher for viewing by a monitor TV, the vertical sync. Phase can be locked with the power frequency, and a stable vertical sync. is obtained without being disturbed at the time of switching.



Note:

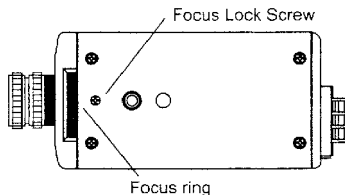
- **The camera is synchronized to the power frequency of $60 \pm 1\text{Hz}$ covering a normal fluctuation of the power frequency. However, the camera may not cover a large fluctuation caused from the power generated by an engine generator, etc.**
- **It takes about 10 seconds or more until a stable synchronization is obtained after the power is turned on. This is normal, because several seconds are required to stabilize the camera against power noise.**
- **Refer to "6.LINE-LOCK PHASE" for adjustment.**

5.3 Operation

- (1) Before mounting a lens, check whether it is a "C" mount or "CS" mount type lens. If a "C" mount lens is used, an adapter ring is required and the back focus will need to be adjusted.
- (2) Mount the lens on the camera by turning the lens clockwise. Adjust the diaphragm and focus for optimum image.
- (3) Connect the VIDEO output to the video monitor. The picture will appear on the monitor screen as the power is supplied to the camera.
- (4) Adjust the focus and aperture of the lens for best image quality.

5.4 Back focus adjustment:

Back focus is adjusted at the factory to accommodate most standard lenses. If a slight adjustment is needed, mount the lens to the camera first. Then loosen the Focus Lock Screw. Rotate the Focus ring until a clear image is achieved. Retighten the Focus Lock Screw.



NOTE

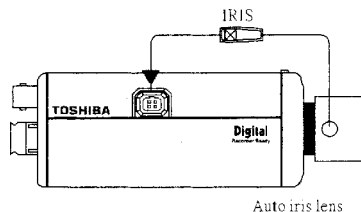
- When the lens weight is more than 2.2 lbs., support the camera on the lens side rather than relying on the tripod mount of the camera.

5.5 Lens

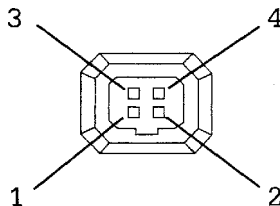
This camera supports DC (direct drive) type of auto-iris lens:

Connect the auto-iris connector plug to the IRIS terminal on the side of the camera. Refer to the chart below for correct wiring and set up.

Change the IRIS switch (DIP SWITCH SETTINGS on rear panel) to select DC.



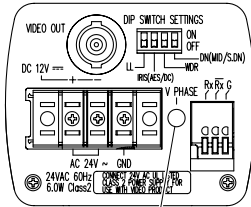
	Direct Drive IRIS Lens
IRIS terminal pin	1. Damp-(y)
	2. Damp+(r)
	3. Driver+(wh)
	4. Driver-(g)



6.LINE-LOCK PHASE :

When a video switcher switches two or more cameras, the picture may fluctuate on the video monitor due to the different AC line phase of each camera. In this case, adjust the V PHASE controller (on rear panel) to get a stable image.

The camera is in the Line-Lock Mode. Line-Lock phase is set 0-300 degrees by adjusting the V phase control at the rear of the camera.



V. PHASE CONTROLLER

7.DIP SWITCH SETTINGS :

The following settings can be performed by setting the rear dip switches.

7.1 LINE LOCK (DIP1) : ON/OFF

The line lock functions with AC24V power and the switch on the ON side.

7.2 IRIS (DIP2) : AES/DC

AES/DC select switch.

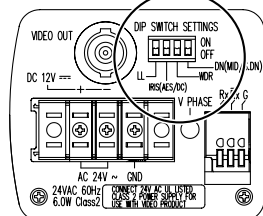
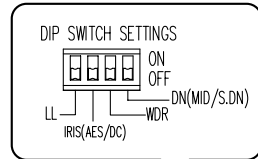
AES (ON side) : Auto electronic shutter function.

DC (OFF side) : When using AI lens without amp.

7.3 WDR (DIP3) : ON/OFF

With this switch ON, wide dynamic range function (WDR) is activated.

When WDR function is activated, the video of each Field is mixed. When this happens, vertical resolution And the number of the frames decrease slightly.



7.4 DN (DIP4) : MID/S.DNx32

DN mode select switch.

MID (ON side) :

In low light conditions the IK-65WDA automatically cuts the chroma signal and boots the gain up of the luminance by 6dB.

S.DNx32 (OFF side) :

Under the low light condition, the IK-65WDA automatically activates the slow shutter function.

FACTORY SETTINGS

LINE LOCK : ON

IRIS : DC

WDR : OFF

DN : S.DNx32

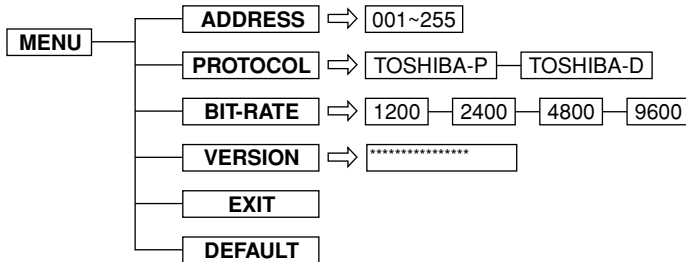
NOTE

- **When you change DIP 2, 3 or 4 then the present settings are displayed for about 2 seconds on the upper left side of the screen.**
- **When the on screen menu ("OSD") is displayed and DIP 3, 4 is changed, then the present settings are stored and the OSD ends.**

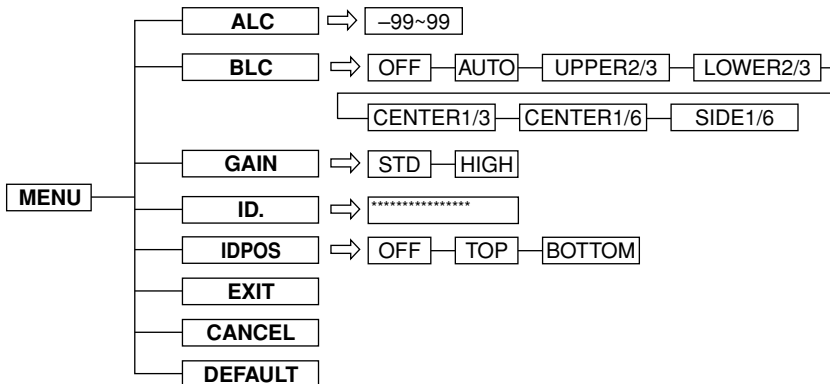
8.MENU DRIVEN SET-UP :

The following is the on-screen menu ("OSD") structure for all settings and adjustments of the camera.

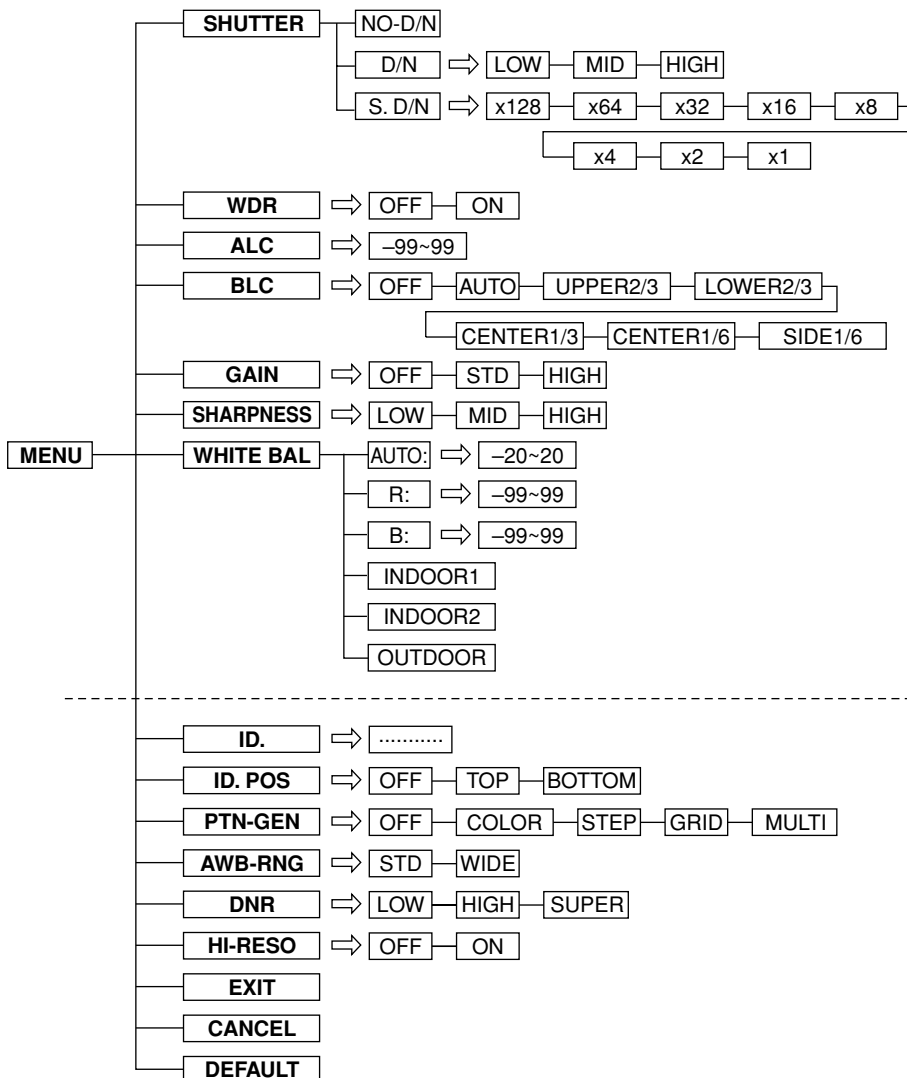
RS422 setting menu



MAIN menu (Except for DIP3 and DIP4 ON)



ADVANCED MAIN menu (DIP3 and DIP4 ON)



8.1 Setting switches and the functions

On the side panel of the cameras there are three push button switches as shown below:

Switch name	Main function
Select	Setting mode call on/off, setting entry
▼	Setting item selection (down)
▲	Setting item selection (up)

8.2 On Screen MAIN menu (Except for DIP3 and DIP4 ON)

The camera is adjusted using the On Screen Menu.

Press and hold the select switch on the side of the camera body 2 seconds until the menu appears on the monitor. The shaded area represents the option to be set.

(Displayed when both DIP3 and DIP4 on the rear are not set to ON).

Displays the present state of the rear switches.

```

WDR [***] - CHG DIP SW
D/N [*****] - CHG DIP SW
ALC LEV: 00
BLC AUTO
GAIN STD
ID.
.....
ID-POS OFF
[EXIT] CANCEL DEFAULT
  
```

(1) WDR = Wide dynamic range function

Displays the rear switch status of the switch (DIP 3).

(2) D/N = DAY/NIGHT function

Displays the rear switch status of the switch (DIP 4).

(3) ALC = Automatic level control

Move the cursor to the position shown in fig. Use the ▲ ▼ SELECT switches to adjust the ALC level to reach the desired luminosity.

```

WDR *** - CHG DIP SW
D/N ***** - CHG DIP SW
ALC [LEV] 00
BLC AUTO
GAIN STD
ID.
.....
ID-POS OFF
EXIT CANCEL DEFAULT
  
```

(4) BLC = Back light compensation

Move the cursor to the position in Fig.

Use the SELECT switches to select
OFF, AUTO, UPPER2/3, LOWER2/3, CENTER1/
3, CENTER1/6, LOWER1/6

Using in AES or auto iris lens, the exposure
adjustment is automatically controlled so that
the best picture is obtained at next monitor
zone. This function is effective when strong
light enters and auto iris lens closes.

OFF: The camera is not in BLC mode.

```

WDR  * * *   - CHG  DIP  SW
D / N * * * * - CHG  DIP  SW
ALC                                     LEV: 00
BLC                                     AUTO
GAIN                                     STD
ID .
. . . . .
ID - POS      OFF
EXIT  CANCEL  DEFAULT
    
```

The area size is approximately the following:

(Appropriately maintain the shaded area of the video level)

① OFF



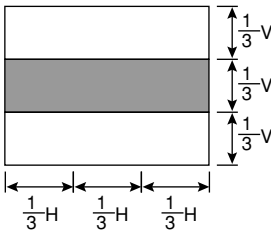
② UPPER 2/3



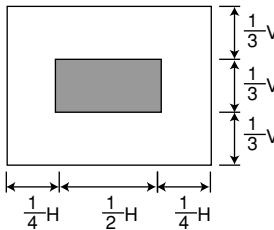
③ LOWER 2/3



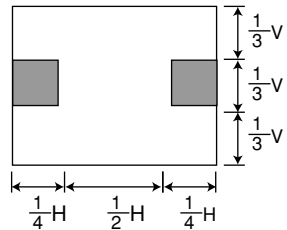
④ CENTER 1/3



⑤ CENTER 1/6



⑥ SIDE 1/6



⑦ AUTO

Depending on the subject conditions, areas 1 to 6 can be combined.

NOTE

- The camera automatically decides which areas are dark in AUTO mode, and the brightness for these areas are adjusted to their optimum levels. Consequently, the bright parts of the image may be affected.

(5) GAIN = AGC gain setting

Move the cursor to the position in Fig.
Use the SELECT switches to select OFF, STD,
HIGH.

OFF : AGC does not operate.
STD : Standard position, max gain = 24dB
HIGH : High-Sensitivity position, max gain
= 30dB
(If there is noise in low light condi-
tions, set to STD.)

```

WDR  ***      - CHG  DIP  SW
D/N  *** **   - CHG  DIP  SW
ALC                      LEV:  00
BLC                      AUTO
GAIN                      STD
ID .
.....
ID - POS      OFF
EXIT  CANCEL  DEFAULT
  
```

NOTE

- If the SHUTTER settings are set to S.D/N (excluding X1), then OFF cannot be set.

(6) ID. = Camera ID.

Move the cursor to the position shown in fig.
Use the SELECT switches to name each cam-
era up to 20 characters.

Font list
0,1,2,3,4,5,6,7,8,9
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
. , : ? + - x / & < > () · (SPACE)

```

WDR  ***      - CHG  DIP  SW
D/N  *** **   - CHG  DIP  SW
ALC                      LEV:  00
BLC                      AUTO
GAIN                      STD
ID .
.....
ID - POS      OFF
EXIT  CANCEL  DEFAULT
  
```

(7) ID. POS = Camera ID. Position

Move the cursor to the position shown in fig.
Use the SELECT switches to select OFF, TOP,
BOTTOM. Show the Camera ID in monitor
screen.

OFF : The camera ID is not displayed
TOP : The camera ID is displayed at the
top-left of the monitor
BOTTOM : The camera ID is displayed at the
bottom-left of the monitor.

```

WDR  ***      - CHG  DIP  SW
D/N  *** **   - CHG  DIP  SW
ALC                      LEV:  00
BLC                      AUTO
GAIN                      STD
ID .
.....
ID - POS      OFF
EXIT  CANCEL  DEFAULT
  
```

(8) CANCEL

Move the cursor to the position in fig.
Press the SELECT switch to exit the menu without saving and changes.

```
WDR  * * *   - CHG  DIP  SW
D / N * * * * - CHG  DIP  SW
ALC          LEV:  0 0
BLC          AUTO
GAIN         STD
ID .
. . . . .
ID - POS      OFF
EXIT CANCEL  DEFAULT
```

(9) EXIT

Move the cursor to the position in fig.
Press the SELECT switch when SAVE ALL SETTING (excluding WDR, D/N settings) is displayed to save all changes and exit the menu.

```
WDR  * * *   - CHG  DIP  SW
D / N * * * * - CHG  DIP  SW
ALC          LEV:  0 0
BLC          AUTO
GAIN         STD
ID .
. . . . .
ID - POS      OFF
EXIT CANCEL  DEFAULT
```

(10) DEFAULT

Move the cursor to the position in fig.
Press the SELECT switch to select DEFAULT, which returns the camera to its factory settings.

Default settings

```
WDR  * * *   - CHG  DIP  SW
D / N * * * * - CHG  DIP  SW
ALC          LEV:  0 0
BLC          AUTO
GAIN         STD
ID .
. . . . .
ID - POS      OFF
```

```
WDR  * * *   - CHG  DIP  SW
D / N * * * * - CHG  DIP  SW
ALC          LEV:  0 0
BLC          AUTO
GAIN         STD
ID .
. . . . .
ID - POS      OFF
EXIT CANCEL DEFAULT
```

NOTE

- The **ADVANCED MAIN** menu contents change to the default settings.

8.3 On Screen **ADVANCED MAIN** menu (**DIP3 and DIP4 ON**)

The camera is adjusted using the On Screen Menu.

Press and hold the select switch on the side of the camera body 2 seconds until the menu appears on the monitor. The shaded area represents the option to be set.

(Displayed when both DIP3 and DIP4 on the rear are set to ON.)

```

SHUTTER      D / N : MID
WDR           ON
ALC           LEV : 00
BLC           AUTO
GAIN          STD
SHARPNESS    MID
WHITE - BAL  AUTO : 00
    
```

```

NEXT
EXIT CANCEL DEFAULT
    
```

(1) **SHUTTER**

Move the cursor to the position in fig.

Use the SELECT switches to select NO-D/N, D/N, S.D/N.

NO-D/N (NO DAY/NIGHT FUNCTION) :

Exposure time is fixed at 1/60 sec.

The control of the luminosity is done with the DC Lens.

D/N (DAY/NIGHT function) :

In low light conditions the IK-65WDA automatically cuts the chroma signal level and boosts the gain up of the luminance by 6dB.

```

SHUTTER      D / N : MID
WDR           ON
ALC           LEV : 00
BLC           AUTO
GAIN          STD
SHARPNESS    MID
WHITE - BAL  AUTO : 00
    
```

```

NEXT
EXIT CANCEL DEFAULT
    
```

- a. **LOW** : The chroma cut level is set less than 20 to 30IRE.
- b. **MID** : The chroma cut level is set less than 30 to 40 IRE.
- c. **HIGH** : The chroma cut level is set less than 40 to 50 IRE.
"HIGH" is for a brighter setting than "LOW"

S.D/N (SUPER DAY/NIGHT FUNCTION) :

Under the low light condition, the IK-65WDA automatically activates the slow shutter function.

Practical Application

IRIS (DIP2) : DC

SHUTTER MODE	LENS TYPE	SHUTTER
NO-D/N	Auto iris	1/60
D/N	Auto iris+(6 dB gain up)	1/60
S.D/N	Auto iris	X128 - 1/60

IRIS (DIP2) : AES

SHUTTER MODE	LENS TYPE	SHUTTER
NO-D/N	Fixed iris	1/60 - 1/10K
D/N	Fixed iris+(6 dB gain up)	1/60 - 1/10K
S.D/N	Fixed iris	X128 - 1/10K

A DC lens opens when AES mode is chosen.

(2) WDR = Wide dynamic range function

Move the cursor to the position shown in fig.
Use the ▲ ▼ SELECT switches to select OFF
or ON in the WDR setting.

When WDR is set to ON, WDR activates automatically.

When WDR function is activated, the video
of each field is mixed. When this happens,
vertical resolution and the number of the
frames decrease slightly.

SHUTTER	D / N : MID
WDR	ON
ALC	LEV : 00
BLC	AUTO
GAIN	STD
SHARPNESS	MID
WHITE - BAL	AUTO : 00
NEXT	
EXIT CANCEL DEFAULT	

(3) ALC = Automatic level control

Refer to 8.2 (3).

(4) BLC = Back light compensation

Refer to 8.2 (4).

(5) GAIN = AGC gain setting

Refer to 8.2 (5).

(6) SHARPNESS

Move the cursor to the position shown in fig.
Use the ▲ ▼ SELECT switches to select LOW,
MID, High in the SHARPNESS setting.

SHUTTER	D / N : MID
WDR	ON
ALC	LEV : 00
BLC	AUTO
GAIN	STD
SHARPNESS	MID
WHITE - BAL	AUTO : 00
NEXT	
EXIT CANCEL DEFAULT	

(7) WHITE BAL (WHITE BALANCE)

Move the cursor to the position shown in fig. Use the ▲ ▼ SELECT switches to select AUTO, MANUAL in the WHITE BAL settings.

AUTO : The white balance is automatically adjusted corresponding to the color temperature variations on the object. The camera is applicable to a color temperature range of 2500-10K. Press the SELECT switch to enter AUTO set mode. Use the ▲ ▼ SELECT switches to adjust the shift value of the convergence point.

When data becomes big in the positive side, a convergence point is altered in the red side. When data becomes big in the negative side, a convergence point is altered in the blue side.

SHUTTER	D / N : MID
WDR	ON
ALC	LEV : 00
BLC	AUTO
GAIN	STD
SHARPNESS	MID
WHITE - BAL	AUTO : 00
NEXT	
EXIT CANCEL DEFAULT	

MANUAL : Press the SELECT switch to enter the MANUAL SETTINGS. Use the ▲ ▼ SELECT switches to adjust R Gain (Red) and B Gain (Blue) until the desired white balance is reached. Press SELECT to exit the manual settings.

INDOOR1 : Optimum setting for the white balance when the color temperature is 3000K indoors with an incandescent lamp.

INDOOR2 : Optimum setting for the white balance when the color temperature is 4000K indoors with a fluorescent lamp.

OUTDOOR : Optimum setting for the white balance when the color temperature is 5200K in an outside environment.

NOTES

- If the optimum white balance cannot be obtained, then try to set AWB-RNG to WIDE. (Refer to 8.3 (11).)

(8) ID. = Camera ID.

Refer to 8.2 (6).

(9) ID. POS = Camera ID. Position

Refer to 8.2 (7).

(10) PTN-GEN = Test pattern generator

Move the cursor to the position shown in fig.

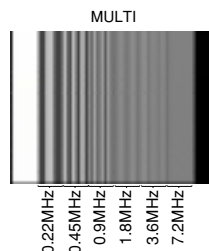
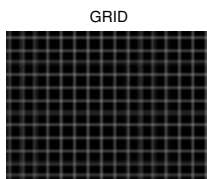
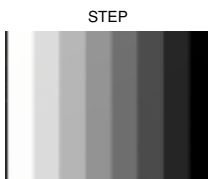
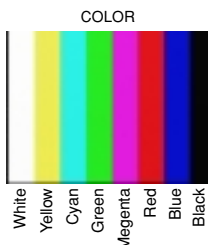
Use the ▲ ▼ SELECT switches to select OFF, COLOR, STEP, GRID, MULTI.

OFF : Test pattern is not displayed.
 COLOR : Color bar signal is displayed.
 STEP : Gray step signal is displayed.
 GRID : Grid pattern signal is displayed.
 MULTI : A simple multi-burst signal is out-put.

```

ID
.....
ID - POS      OFF
PTN - GEN     OFF
AWB - RNG     STD
DNR           LOW
HI - RESO     OFF

BACK
EXIT  CANCEL  DEFAULT
  
```



NOTE

- The accuracy of the signal is not guaranteed.
- To check the system operation etc., use a standard signal source.

(11) AWB-RNG = AWB control range

Move the cursor to the position shown in fig.
 Use the st ▲ ▼ SELECT switches to select STD or WIDE in the AWB-RNG setting.

Set the color temperature tracking range of the white balance auto mode.

STD : The camera is applicable to a color tempera true range of 2500-10k
 WIDE : Wider than the STD settings.

```

ID
.....
ID - POS      OFF
PTN - GEN     OFF
AWB - RNG     STD
DNR           LOW
HI - RESO     OFF

BACK
EXIT  CANCEL  DEFAULT
  
```

NOTE

- When switching from WIDE to STD setting, turn off and on the camera to clear the setting.

(12) DNR = Digital noise reduction

Move the cursor to the position shown in fig.
Use the ▲ ▼ SELECT switches to select LOW, HIGH, SUPER.

LOW : Standard position.
HIGH : Increase the effect of DNR.
SUPER : Further increase the effect of DNR.

NOTE

- If you set HIGH or SUPER the noise reduction effect is reduced but an after-image is produced if a moving subject is shot.

```
ID
.....
ID - POS      OFF
PTN - GEN     OFF
AWB - RNG     STD
DNR           LOW
HI - RESO     OFF

BACK
EXIT CANCEL DEFAULT
```

(13) HI-RESO = Hi resolution

Move the cursor to the position shown in fig.
Use the ▲ ▼ SELECT switches to select OFF or ON in the HI-RESO setting.

OFF : Standard position.
Resolution of horizontal is 480TV lines or more.
ON : Hi resolution function is activated.
Resolution of horizontal is 520 TV lines.

NOTE

- If you set HI-RESO to ON, the image signal resolution is increased, but depending on the subject, noise may be increased.

```
ID
.....
ID - POS      OFF
PTN - GEN     OFF
AWB - RNG     STD
DNR           LOW
HI - RESO     OFF

BACK
EXIT CANCEL DEFAULT
```

(14) NEXT, BACK

Move the cursor to the position in fig.
Press the SELECT switch, to select the last
page or next page.

SHUTTER	D / N : MID
WDR	ON
ALC	LEV : 00
BLC	AUTO
GAIN	STD
SHARPNESS	MID
WHITE - BAL	AUTO : 00

NEXT
EXIT CANCEL DEFAULT

ID
.....
ID - POS OFF
PTN - GEN OFF
AWB - RNG STD
DNR LOW
HI - RESO OFF

BACK
EXIT CANCEL DEFAULT

(15) CANCEL

Move the cursor to the position in fig.
Press the SELECT switch to exit the menu
without saving any changes.

SHUTTER	D / N : MID
WDR	ON
ALC	LEV : 00
BLC	AUTO
GAIN	STD
SHARPNESS	MID
WHITE - BAL	AUTO : 00

NEXT
EXIT **CANCEL** DEFAULT

(16) EXIT

Move the cursor to the position in fig.
Press the SELECT switch when SAVE ALL
SETTINGS is displayed to save all changes
and exit the menu.

SHUTTER	D / N : MID
WDR	ON
ALC	LEV : 00
BLC	AUTO
GAIN	STD
SHARPNESS	MID
WHITE - BAL	AUTO : 00
NEXT	
EXIT	CANCEL DEFAULT

(17) DEFAULT

Move the cursor to the position in Fig.
Press the SELECT switch to select DEFAULT,
which returns the camera to its factory set-
tings.

Default settings

SHUTTER	D / N : MID
WDR	ON
ALC	LEV : 00
BLC	AUTO
GAIN	STD
SHARPNESS	MID
WHITE - BAL	AUTO : 00

ID

.....	
ID - POS	OFF
PTN - GEN	OFF
AWB - RNG	STD
DNR	LOW
HI - RESO	OFF

SHUTTER	D / N : MID
WDR	ON
ALC	LEV : 00
BLC	AUTO
GAIN	STD
SHARPNESS	MID
WHITE - BAL	AUTO : 00
NEXT	
EXIT	CANCEL DEFAULT

8.4 On Screen RS422 setting menu (FOR REMOTE CONTROL)

The camera is adjusted using a sub menu for setup using a remote control. Press and hold the ▲ switch on the side of the camera body 2 seconds until the menu appears on the monitor. The blinking area represents the option to be set. (This sub menu cannot control from a keyboard by RS-422)

Default settings

ADDRESS	0 0 1
PROTOCOL	TOSHIBA - P
BIT - RATE	4 8 0 0

(1) ADDRESS

Move the cursor to the position in Fig.

Use the SELECT ▲ ▼ switches to select 001 to 255.

In RS-422 control, it is necessary to set a unique camera address for each camera.

ADDRESS	0 0 1
PROTOCOL	TOSHIBA - P
BIT - RATE	4 8 0 0
VERSION	* * * *
EXIT DEFAULT	

(2) PROTOCOL

Move the cursor to the position in Fig.

Use the SELECT switches to select TOSHIBA-P, TOSHIBA-D.

ADDRESS	0 0 1
PROTOCOL	TOSHIBA - P
BIT - RATE	4 8 0 0
VERSION	* * * *
EXIT DEFAULT	

(3) BIT-RATE

Move the cursor to the position in Fig.

Use the SELECT switches to select 1200, 2400, 4800, 9600bps.

In RS-422 control, the bit rate for each camera should match the controller or keyboard.

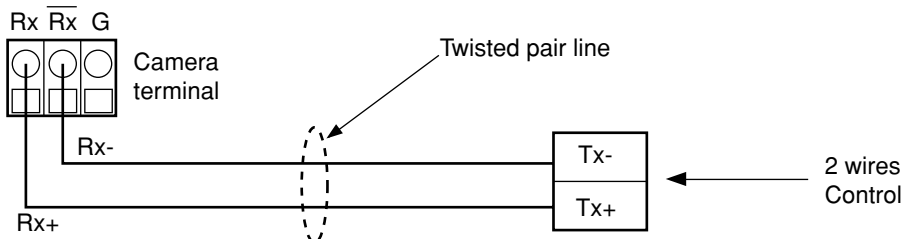
ADDRESS	0 0 1
PROTOCOL	TOSHIBA - P
BIT - RATE	4 8 0 0
EXIT DEFAULT	

(4) VERSION

Software version display.

9.REMOTE CONTROL :

RS-422 Control (Factory-setting) supported TOSHIBA-P and TOSHIBA-D.



Tx of the communication line from KBD is connected to Rx of the camera, and Tx-is connected to Rx-of the camera.

A controllable function is as follows.

Preset Number / Key Function		Function
↑ (TILT)	Valid when the OSD menu is displayed	The same operation as when a ▲ button has been pressed
→ (PAN)	Valid when the OSD menu is displayed	The same operation as when a ▼ button has been pressed
↓ (TILT)	Valid when the OSD menu is displayed	The same operation as when a ▼ button has been pressed
← (PAN)	Valid when the OSD menu is displayed	The same operation as when a ▲ button has been pressed
IRIS Open	Valid when the OSD menu is displayed	The same operation as when a SELECT button has been pressed
	Valid when the OSD menu is not displayed	ALC setting +1
IRIS Close	Valid when the OSD menu is not displayed	ALC setting -1
71 GO		Backlight compensation AUTO
72 GO		Backlight compensation OFF
75 GO		Software version display
88 GO	Valid during ADVANCED mode	SHUTTER NO-D/N
89 GO	Valid during ADVANCED mode	SHUTTER D/N
87 GO	Valid during ADVANCED mode	SHUTTER S..D/N
95 SET		Enter MENU mode

10. NOTES ON USE AND INSTALLATION :

- **Do not aim the camera at the sun**

Do not aim the camera at the sun or point it at sun even if you are not shooting.

- **Do not shoot intense light**

Intense light such as a spotlight may cause a bloom or smear. A vertical stripe may appear on the screen. However, this is not a malfunction.

- **Treat the camera with care**

Do not drop the camera or subject it to strong shock of vibration. Otherwise, the camera may malfunction.

- **Never touch internal parts**

Do not touch the internal parts of the camera other than the parts specified. Otherwise, the camera may malfunction.

- **Do not splash water on the camera**

Install the camera where the camera can be kept dry. If the camera gets wet, turn off the power and contact your dealer.

- **Install the camera**

Where no video noise appears.

If cables are wired near electric lighting wires or a TV set, noise may appear in images. In this event, relocate cables or reinstall equipment.

- **Check the ambient temperature and humidity**

Avoid using the camera where the temperature is hotter or colder than specified. Otherwise, the quality of images may deteriorate or internal parts may be affected. Special care is required to use the camera at high temperature and humidity.

- **Should you notice any trouble**

If any trouble occurs while you are using the camera, turn off the power and contact your dealer. If you continue to use the camera when there is something wrong with it, the trouble may much worse and an unpredictable accident may occur.

11. IN CASE OF PROBLEMS :

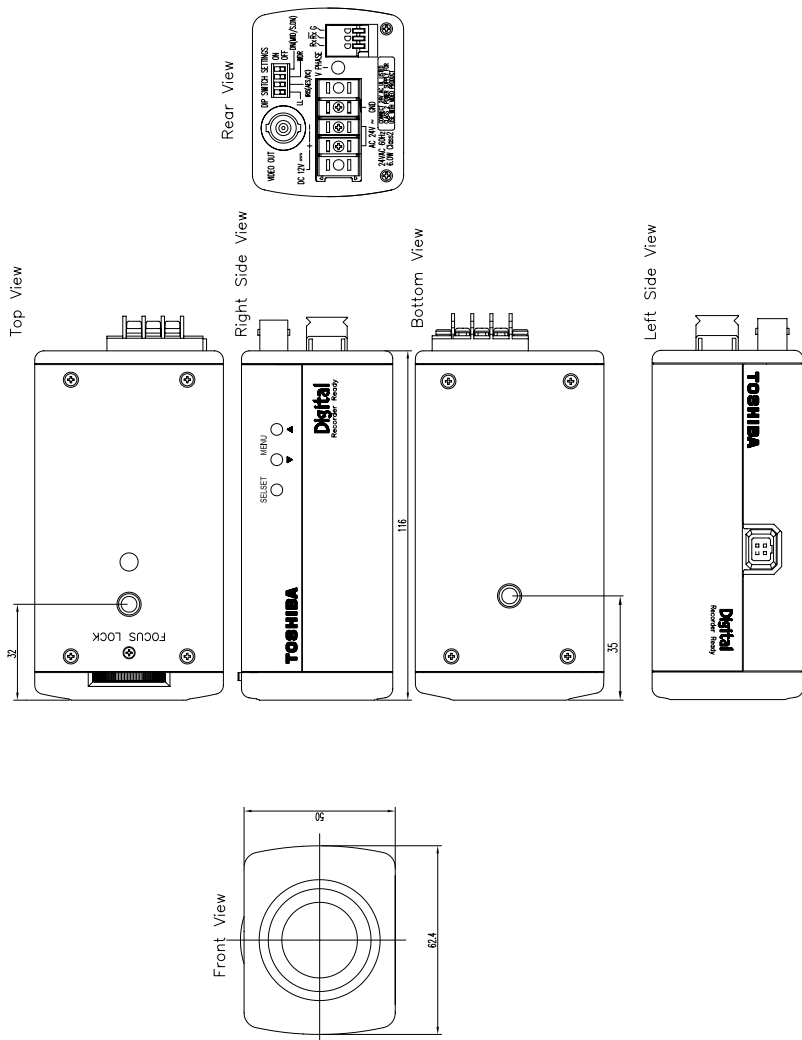
Condition	Check Points
No image	• Are the camera and connected equipment turned on? • Is the iris of the lens adjusted properly? • Are cables connected correctly?
Unnatural color	• Is the monitor TV adjusted correctly? • Is the lighting too weak?

Press default to return the camera to factory settings (8.2.(10))

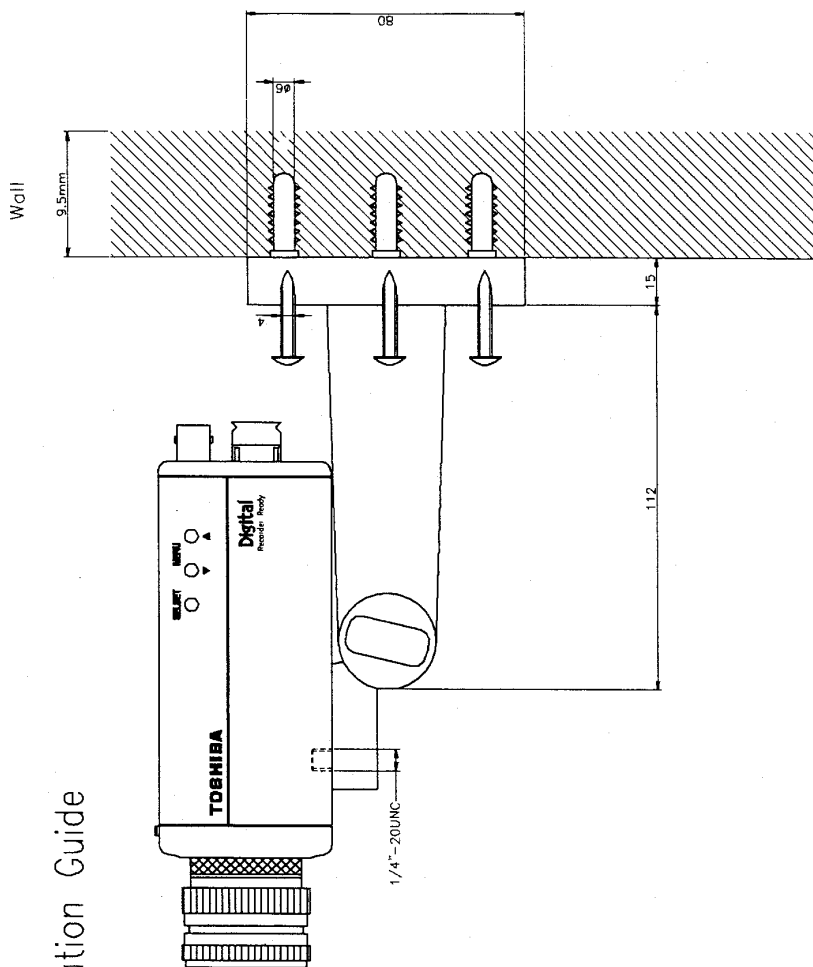
12. SPECIFICATIONS :

Power	AC 24V ~ $\pm 10\%$ 60Hz/DC 12V $\pm 10\%$
Power consumption	6.0W with AI lens
Image sensor	1/3 inch CCD image area sensor
Image pickup area	5.59mm (0.220inch) horizontal x 4.68mm (0.184inch) vertical (1/3inch type)
Effective picture element	768 horizontal x 494 vertical
Scanning system	2 : 1 interlace NTSC Standard TV system
Scanning frequency	15.75kHz horizontal 60Hz vertical
Synchronization	Line-Lock, Internal manually switchable
Resolution	Horizontal 520 TV lines or more Vertical 350 TV lines or more (WDR OFF, HI-RESO ON) Horizontal 520 TV lines Vertical 260 TV lines or more (WDR ON, HI-RESO ON, slow shutter)
Minimum illuminance of subject	0.1 Lux (F1.2, AGC HIGH, More than 10% of image output $\gamma=0.45$) 0.001 Lux (F1.2, x 128, AGC HIGH, More than 10% of image output $\gamma=0.45$)
S/N	53dB or more (AGC OFF, WDR OFF, weight ON) 50dB or more (AGC OFF, WDR ON, weight ON)
Video output	VBS 1.0V p-p/75 ohms, composite
Output impedance	75 Ω unbalanced
White balance	AUTO (2500K to 10,000K), MANUAL, INDOOR1, INDOOR2, OUTDOOR
IRIS control	DC Iris Driver Circuit Built in
Gain control	Average AGC-STD (24dB), HIGH (30dB)
Backlight compensation	6 mode BLC function
Dynamic range	Wide dynamic range function
Lens mount	CS mount
Ambient temperature	-10°C to +50°C (14°F to 122°F)
Ambient humidity	30% to 90%
Weight	500g
External dimensions	2.74(W) x 1.97(H) x 4.56(D) inches (63x50x116mm)
Automatic electronic shutter	ON (1/60s to 1/100000)/OFF (1/60s)
Sens-up limit (slow shutter)	OFF/x2, x4, x8, x16, x32, x64, x128

13. EXTERIOR VIEW :



Camera Installation Guide



The Installation Guide is for reference only.
Bracket is not be enclosed.

Memo

LIMITED WARRANTY

CCD SECURITY CAMERA

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

Three Year Limited Warranty of Labor and Parts ISD warrants that this Product will perform in accordance with specifications for a period of three years from the date of purchase by the Original End-User. During this three 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 or product.

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) or contact technical support at 877 855 1349 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) 855-1FX
2. Contact an ASP for warranty service within thirty (30) days after the Product fails to comply with specifications.
3. Arrange for shipment of the Product to a Toshiba Authorized Service Provider.
4. 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.
5. Prepay all transportation and insurance costs.

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