

SUPER DNR COLOR CAMERA USER'S MANUAL



- True Day & Night (ICR)
- DNR (Digital Noise Reduction)
- DSS (Digital Slow Scan)
- Blemish Auto Compensation (Zero Blemish)
- OSD Function
- Digital Pan/Tilt, Zoom(x4)



The lightning flash with an 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.

INFORMATION - This equipment has been tested and found to comply with 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.





WARNING - Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CAUTION : To prevent electric shock and risk of fire hazards:

- ◆ Do NOT use power sources other than that specified.
- ◆ Do NOT expose this appliance to rain or moisture.

This installation should be made by a qualified service person and should conform to all local codes.

Precaution

	<p>Do not Keep the camera face to strong light directly</p>
	<p>Do not install the camera in extreme temperature conditions.</p>
	<p>Do not disassemble the camera even if troubles happened</p>
	<p>To avoid malfunctions, never use the camera close to a gas or oil leak</p>



	<p>Do not drop the camera or subject them to physical shocks.</p>
	<p>Do not expose the camera to rain or spill beverage on it.</p>
	<p>Do not install the camera under unstable lighting conditions</p>
	<p>Do not install or use the camera in an environment where the humidity is high</p>

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1. Features



■ High Resolution of 560TV Lines

Clear image quality has been achieved by employing a SONY CCD with 410,000 pixels, which provides a horizontal resolution of 560 TV lines.

■ TRUE DAY & NIGHT (ICR Type -IR Cut Filter Removable)

This camera has a function that automatically selects the mode that is appropriate for daytime or night-time conditions. The COLOR mode operates in daytime conditions to provide optimum colors, and B/W mode operates in night-time conditions to enhance the definition of the image. (w/o ICR -Option)

■ PRIVACY Function

The PRIVACY function conceals the areas not required to appear on the image.

■ Electronic IRIS

The electronic IRIS function enables continuous automatic control of the shutter between 1/60(1/50)~1/120,000 seconds.

■ DNR (Digital Noise Reduction)

The amount of low illuminance noise has been significantly reduced, and the signal-to-noise ratio (S/N ratio) as well as horizontal resolution have been improved, resulting in a clear and sharp image display even in the dark.






■ Controlled by OSD Menu

The camera can be controlled by selecting text displayed on the monitor screen.

■ Additional Functions

Automatic White Balance, Backlight compensation, Automatic Gain Control, Motion detection, Digital Pan / Tilt / Zoom, Mirror, NEGA/POSI and SYNC functions are also available.

2. Components

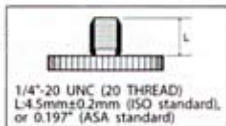
Super DNR Color Camera	
Auto Iris Lens Connection Plug	
C-Mount Adaptor	
L-Wrench	
Manual	

3. Names and Functions of Parts

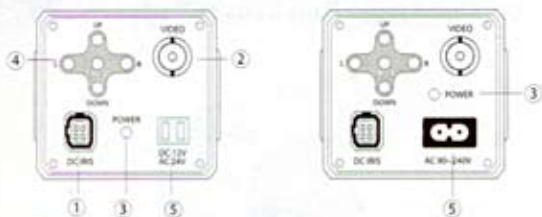


1) Front

- ① **Lens protection cap**
Please cover the lens when it is not in use.
- ② **CS-Mount lens adaptor**
Please attach the CS-Mount lens here.
- ③ **Back Focus clamp screw**
Please loosen the clamp screw with a screwdriver before adjusting the Back focal length.
- ④ **Mounting bracket screw hole**
Please use the screw hole when fixing the camera onto the mounting bracket. Please use the clamp screw as specified in the picture.



The mounting bracket can be separated and attached to the top of the camera. In this instance please do not tighten the screw to a depth of more than 5mm, otherwise serious damage can occur to the inner parts of the camera.



2) Back

- ① Auto iris lens connector
This is the connection terminal for the auto iris lens.
- ② Video output terminal
Sends video signals and connects to the video input terminal of the monitor.
- ③ Power lamp
Lights up when the correct power is supplied to the camera.
- ④ Setting button(OSD Button)
ENTER button : Use for the menu display. This button can be used to confirm settings after changing the value of the selected function or current conditions.
UP & DOWN buttons : Use for selecting items by moving the cursor up or down on the menu screen.
LEFT(L) & RIGHT(R) buttons : Use when changing item values, by moving the cursor to the left or right on the menu screen.
- ⑤ Power input terminal
Connects to the power appropriate to each power requirement.

4. Installation



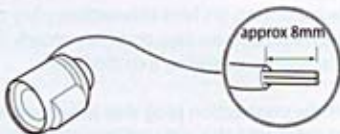
1) Lens

Lenses are sold separately. Lenses such as auto iris lens, CS-Mount lens and C-Mount lens can be used.

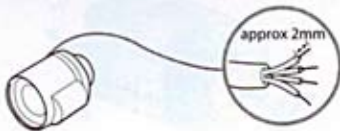
Note)

- Use of the DC auto iris lens is recommended to achieve the best results for operating this product effectively.
- Please keep the lens clean.
- Any foreign objects and finger marks on the lens can cause inferior image quality in low light level conditions.

- ① When using an auto iris lens
Please peel off about 8mm of the outer skin of the auto iris lens cable.

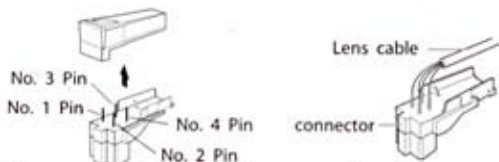


Please peel off about 2mm of the outer skin of the insulated conductor inside the lens cable.



Please remove the cover of the auto iris lens connection plug and solder the lens cable to the connector pin in the plug.

Pin No.	LENS
	DC
No.1 Pin	Damping-
No.2 Pin	Damping+
No.3 Pin	Drive+
No.4 Pin	Drive-



Please replace the auto iris lens connection plug cover and take off the lens protection cap, and then attach the auto iris lens to the camera by screwing it in clockwise.

Please insert the connection plug that is connected to the auto iris lens cable into the auto iris lens connector, which is located on the back of the camera.



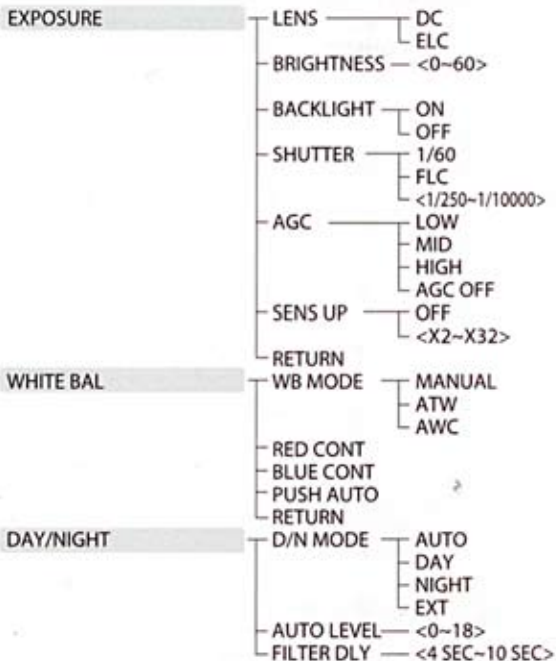


- ② When using a CS-Mount lens
Please take off the lens protection cap and attach the CS-Mount lens to the camera by screwing it in clockwise.

- ③ When using a C-Mount lens
Please take off the lens protection cap and attach the C-mount adaptor.

5. Setup Menu Flow

1) MAIN SETUP

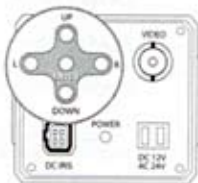




MOTION	DETECT MODE	OFF ON
	DETECT AREA	+...
	SENSITIVITY	<0~8>
	ALARM TIME	<1 SEC~60 SEC>
PRIVACY	AREA	<1~4>
	MASK	ON OFF
	LEVEL	<0~15>
	TOP	<6~150>
	DOWN	<8~152>
	LEFT	<0~185>
	RIGHT	<2~187>
OPTION	TITLE	+...
	NEGA/POSI	POSI/NEGA
	SHARPNESS	<0~15>
	MIRROR	NORMAL MIRROR VERTICAL ROTATE
	ZOOM	OFF <ON 1~ON 8>
	PAN/TILT	ON OFF
DISPLAY	TITLE	ON OFF
	MOTION DET	ON OFF
SYNC	INT EXT	
INITIAL	USE NOT USE	
EXIT		

6. How to Set up the Function

You can set up functions by using the 5 buttons on the rear of the camera.



1. Press the ENTER button

-Main setup menu is displayed on the monitor screen.



2. Select a desired function by using the Up and Down buttons

-Place the cursor over a desired item.



3. Set up a selected item by using the Left and Right buttons.
4. To finish the setting, 'EXIT' and press the 'ENTER' button.

6-1. EXPOSURE

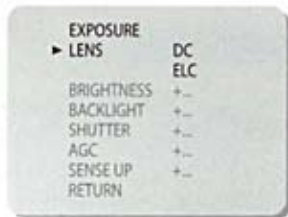
MENU	
▶ EXPOSURE	+_-
WHITE BAL	+_-
DAY/NIGHT	+_-
MOTION	+_-
PRIVACY	+_-
OPTION	+_-
DISPLAY	+_-
SYNC	INT
INITIAL	USE
EXIT	

1. When the MENU screen is displayed, select 'EXPOSURE' by using the Up and Down buttons so that the arrow indicates 'EXPOSURE'.
2. Select a desired mode by using the right button.

EXPOSURE	
▶ LENS	DC ELC
BRIGHTNESS	+_-
BACKLIGHT	+_-
SHUTTER	+_-
AGC	+_-
SENSE UP	+_-
RETURN	

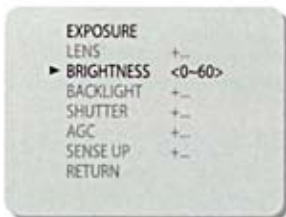
6-1-1 LENS

Choose the lens type DC or Manual lens by using the selector button.



6-1-2 BRIGHTNESS

Choose the brightness level from 0 to 60 steps.



6-1-3 BACKLIGHT

You can choose backlight by turning ON or OFF.



EXPOSURE	
LENS	+/-
BRIGHTNESS	+/-
▶ BACKLIGHT	ON OFF
SHUTTER	+/-
AGC	+/-
SENSE UP	+/-
RETURN	

6-1-4 SHUTTER

You can select either auto or manual shutter.
-1/60, FLC, 1/250~1/10000

EXPOSURE	
LENS	+/-
BRIGHTNESS	+/-
BACKLIGHT	+/-
▶ SHUTTER	1/60 FLC <1/250~1/10000>
AGC	+/-
SENSE UP	+/-
RETURN	

-When LENS is DC, it is possible to select it. Another becomes NOT USE. It becomes 1/60 at NTSC. It becomes 1/50 at PAL.

6-1-5 AGC

Automatic Gain Control is a feature which adjust gain automatically according to the incoming Signal.

By positioning the arrow to 'AGC' on the EXPOSURE menu with the help of UP and DOWN buttons, you can select the LOW, MID and HIGH, AGC OFF Mode you wish to go.



6-1-6 SENS UP

You can always get the clear image with this function under night or lowlighting level

-OFF, <X2~X32>

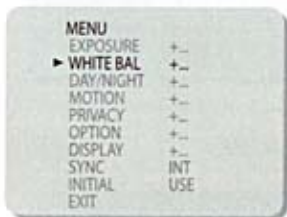


6-2. WHITE BAL



1. Press the ENTER button

-Main setup menu is displayed on the monitor screen.



2. Select a desired function by using the Up and Down buttons

-Place the cursor over a desired item

3. Set up a selected item by using the Left and Right buttons.

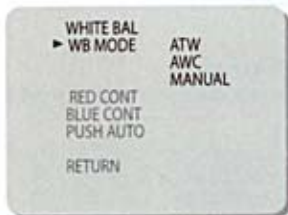
4. To finish the setting, 'EXIT' and press the 'ENTER' button.

6-2-1 WB MODE

Use the White Balance function to adjust the screen color.

1. When the MENU screen is displayed, select 'WHITE BAL' by using the Up and Down buttons so that the arrow indicates 'WHITE BAL'.

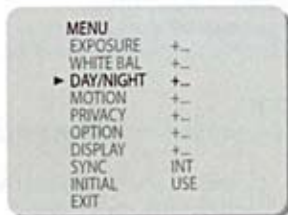
2. Select a desired mode by using right and left buttons.



Select one of the following 3 modes, for your appropriate purpose
 -ATW, AWC, MANUAL

6-3. DAY/NIGHT

1. Press the ENTER button
 -Main setup menu is displayed on the monitor screen.



2. Select a desired function by using the Up and Down buttons
 -Place the cursor over a desired item
3. Set up a selected item by using the Left and Right buttons.
4. To finish the setting, 'EXIT' and press the 'ENTER' button.



6-3-1 DAY/NIGHT

You can display pictures in color or black and white.

1. When the MENU screen is displayed, select 'DAY/NIGHT' by using the Up and Down buttons so that the arrow indicates 'DAY/NIGHT'.



2. Select a desired mode by using the Left and Right buttons according to the picture display you want.
-AUTO, DAY, NIGHT, EXT

6-3-2 AUTO LEVEL

When it is AUTO, 0 to 18 can be selected. (It changes by setting AGC)

- AGC OFF : NOT USE
- AGC LOW : 0 to 3 can be selected.
- AGC MID : 0 to 11 can be selected.
- AGC HIGH : 0 to 18 can be selected.

6-3-3 FILTER DLY

When it is AUTO, 4 to 10 can be selected. When AGC is OFF, NOT USE. Another becomes NOT USE.

6-4. MOTION

Your camera transmits an alert signal when it detects motion of an object on the screen. If you connect the

camera to an external alarm, you can pay attention to the screen when the alarm sounds. This feature is useful when you have to monitor on several screens simultaneously. Whenever your camera detects motion of object, 'MOTION' will be displayed with the number counted up on the screen.

1. Press the ENTER button

-Main setup menu is displayed on the monitor screen.



2. Select a desired function by using the Up and Down buttons

-Place the cursor over a desired item

3. Set up a selected item by using the Left and Right buttons.

4. To finish the setting, 'EXIT' and press the 'ENTER' button.





6-4-1 DETECT MODE

OFF or ON can be selected.

-Turning on becomes invalid while displaying OSD.

- However, it becomes effective only at MOTION AREA.

6-4-2 DETECT AREA

MOTION AREA is displayed.

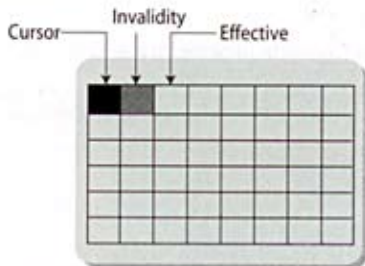
6-4-3 SENSITIVITY

0 to 8 can be selected.

6-4-4 ALARM TIME

1 to 60 can be selected.

MOTION AREA



1. A thick gray shows the cursor.
 2. When it is transparent, the area becomes effective.
- Default is ALL transparent, it is ALL effective.
 3. When it is light gray, the area becomes invalidity.
 4. Cursor moved by LEFT or RIGHT.
 5. When UP or DOWN is pushed, it becomes effective or invalid.
 6. Menu is returns to the MOTION.
- BLC automatically becomes effective on this screen.

6-5. PRIVACY

Hide an area you want to hide on the screen

1. Press the ENTER button

-Main setup menu is displayed on the monitor screen.



2. Select a desired function by using the Up and Down buttons

-Place the cursor over a desired item

3. Set up a selected item by using the Left and Right buttons.

4. To finish the setting, 'EXIT' and press the 'ENTER' button.



1) AREA : 1 to 4 can be selected.

2) MASK : OFF or ON can be selected.

3) LEVEL : When MASK is ON, 0 to 15 can be selected.

-It set the same value regardless of a set value of AREA

- 4) TOP : When MASK is ON, 3 to 124(NTSC) or 6 to 150(PAL) can be selected.
- 5) DOWN : When MASK is ON, 5 to 126(NTSC) or 8 to 152(PAL) can be selected.
- 6) LEFT : When MASK is ON, 0 to 187(NTSC) or 0 to 185(PAL) can be selected.
- 7) RIGHT : When MASK is ON, 2 to 189(NTSC) or 2 to 187(PAL) can be selected.



6-6. OPTION

1. Press the ENTER button

-Main setup menu is displayed on the monitor screen.



2. Select a desired function by using the Up and Down buttons

-Place the cursor over a desired item

3. Set up a selected item by using the Left and Right buttons.

4. To finish the setting, 'EXIT' and press the 'ENTER' button.



6-6-1 TITLE

If you enter a title, the title will appear on the monitor.

1. If the OPTION menu screen is displayed, use the Up and Down buttons so that the arrow indicates 'TITLE'.



2. Set up a selected item by using the Left and Right buttons.
3. Use the 4 direction buttons to move to desired letter and select the letter by pressing the 'ENTER' button. Repeat this to enter multiple letters. You can enter up to 10 letters.
4. Enter a title, move the cursor to 'POS' and press the ENTER button. The entered title appears on the screen. When the position is determined, select 'END' and press the ENTER button to return to the OPTION menu.

6-6-2 NEGA/POSI

You can display pictures in Positive or Negative.

1. If the OPTION menu screen is displayed, use the Up and Down buttons so that the arrow indicates 'TITLE'.
2. Set up a selected item by using the Left and Right buttons.



OPTION	
TITLE	+ -
► NEGA/POSI	POSI NEGA
SHARPNESS	<0-15>
MIRROR	NORMAL MIRROR
ZOOM	OFF
PANTILT	<ON1-ON8>
	ON OFF
RETURN	

6-6-3 SHARPNESS

Increase this value and the picture outline becomes stronger and clearer. Adjust this value appropriately depending on the sharpness of the picture.

OPTION	
TITLE	+ -
NEGA/POSI	POSI NEGA
► SHARPNESS	<0-15>
MIRROR	NORMAL MIRROR
ZOOM	OFF
PANTILT	<ON1-ON8>
	ON OFF
RETURN	

6-6-4 MIRROR

You can display pictures in mirror.
NORMAL, MIRROR, VERTICAL, ROTATE can be selected.

OPTION	
TITLE	+ _
NEGA/POSI	POSI NEGA
SHARPNESS	<0-15>
▶ MIRROR	NORMAL MIRROR
ZOOM	OFF <ON1-ON8>
PANTILT	ON OFF
RETURN	

6-6-5 ZOOM

OFF(x1) and ON1 to ON8(x4) can be selected.
When PAN/TILT is ON, it is NOT USE.

OPTION	
TITLE	+ _
NEGA/POSI	POSI NEGA
SHARPNESS	<0-15>
MIRROR	NORMAL MIRROR
▶ ZOOM	OFF <ON1-ON8>
PANTILT	ON OFF
RETURN	

6-6-6 PANTILT

This function can be used when setted ON in ZOOM function.
Please select the PANTILT ON and get out from Menu and operate the PAN/TILT by pressing the buttons of UP,DOWN, RIGHT(R), LEFT(L) on the Back Side of Camera.



OPTION	
TITLE	+ -
NEGA/POSI	+ POSI - NEGA
SHARPNESS	<0-15>
MIRROR	NORMAL MIRROR
ZOOM	OFF
▶ PANTILT	<ON1-ON8> ON OFF
RETURN	

6-7. DISPLAY

1. Press the ENTER button
-Main setup menu is displayed on the monitor screen.

MENU	
EXPOSURE	+ -
WHITE BAL	+ -
DAY/NIGHT	+ -
MOTION	+ -
PRIVACY	+ -
OPTION	+ -
▶ DISPLAY	+ -
SYNC	INT
INITIAL	USE
EXIT	

2. Select a desired function by using the Up and Down buttons
-Place the cursor over a desired item
3. Set up a selected item by using the Left and Right buttons.
4. To finish the setting, 'EXIT' and press the 'ENTER' button.



6-7-1 TITLE

This function is for displaying the Camera ID of TITLE selected in OPTION functions on screen.

6-7-2 MOTION DET

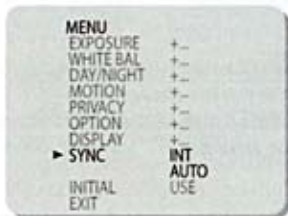
This function is for MOTION DETECT functions selected in MOTION Function to be worked.

6-8. SYNC

Two synchronization modes are available INTERNAL and EXTERNAL LINE-LOCK mode.

INT : Internal synchronization

AUTO : External Line-Lock synchronization





6-9. INITIAL

It shows whether use or not the Conditions selected in SYNC.

MENU	
EXPOSURE	+_-
WHITE BAL	+_-
DAY/NIGHT	+_-
MOTION	+_-
PRIVACY	+_-
OPTION	+_-
DISPLAY	+_-
SYNC	INT
▶ INITIAL	USE
EXIT	NOT USE

6-10. EXIT

To finish setting menu.

MENU	
EXPOSURE	+_-
WHITE BAL	+_-
DAY/NIGHT	+_-
MOTION	+_-
PRIVACY	+_-
OPTION	+_-
DISPLAY	+_-
SYNC	INT
INITIAL	USE
▶ EXIT	

7. SPECIFICATIONS

TV System	NTSC	PAL
Sensor	Sony 1/3" SuperHAD Sensor	
Effective Pixels	768(H) X 494(V)	752(H) X 582(V)
Horizontal Resolution	560 TV Lines (Max.)	
Scanning System	2:1 Interlace	
Synchronization	Internal	
Frequency	Horizontal:15.734 KHz Vertical : 59.94Hz	Horizontal:15.625 KHz Vertical : 50.00Hz
Video Output	1.0Vp-p/ 75ohm Video 0.714Vp-p Sync 0.286Vp-p	
Burst Level	0.286Vp-p	
S/N	More than 50dB(γ , Aperture, AGC off)	
Min. Illumination	0.01Lux (f1.4 20IRE)	
Sense UP	Max. 32 times, 0.00001 Lux	
γ Correction	0.45	
AGC	+18dB Max.	
IRIS Control	Electrical IRIS / Lens IRIS (DC Lens)	
Electrical Shutter	1/60(1/50)~1/120,000	
O.S.D	Built-in LENS, BRIGHTNESS, BACKLIGHT SHUTTER, AGC, SENSE UP WHITE BAL, DAY/NIGHT, MOTION PRIVACY, TITLE, NEGA/POSI, SHARPNESS, MIRROR, ZOOM, PAN/TILT	
Lens	C/CS Mount	
Operating Temperature/Humidity	-10 ~ 50 / 30% ~ 80%	
Storage Temperature/Humidity	-20 ~ 60 / 20% ~ 90%	
Power(Max.)	DC 12V 300mA	DC12V, 300mA AC 24V, 110mA
	AC 90~240V	
Dimension	61(V) X 55(H) X 106(L)mm	
Weight	Abt.380g	Abt.400g

Design and specifications are subject to change without notice.

WARRANTY CARD & A/S



PRODUCT NAME		PERIOD
MODEL NAME		
PURCHASE DATE	. .	
WARRANTY PERIOD	. .	
CUSTOMER'S ADDRESS	NAME	
	TEL	
AGENT'S ADDRESS	NAME	
	TEL	

* Be sure to fill in the blank when the unit is sold.

◆ HOW TO REQUEST FOR AFTER SERVICE

- 1) If the thought to be defective comes up, please read the manual again before calling A/S. As minor defects may happen by an unauthorized or improper handling of the unit, many of defects can be solved by the user himself with only a simple touch after looking over the instruction and cautions in the manual.
- 2) How to request after service.
Please describe problems in detail on this card when ask A/S. After presentation of this warranty card with the details, you can get the service with free of cost or with some expenses according to the contents of the written details.
- 3) Following cases should be paid for A/S even within the warranty period.
 - a. When defects are caused by the careless handling of the user.
 - b. When improper or unauthorized repairs are done or when the inside is modified or damaged.
 - c. Defects caused by natural disaster or power problem.
 - d. When the warranty card is not filled in or corrected unconfirmed or lost.



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