

## CCT502 Night Devil

The Night Devil Dome Camera produces high quality images and works in extremely low light conditions. The dome was originally developed for bars and nightclubs but is also a good choice for external dimly lit areas such as car parks and compounds. The dome has many features including a 3D axis mounting bracket for wall mounting, IP66 weatherproof, vandal resistant, 540 TVL, a preview video connector and an OSD facility providing options for motion detection, privacy masking and camera setup options. No need for additional lighting with this camera. It is truly amazing.



### Electronic Features

1/3" SONY SUPER HAD 540 TVL CCD -  
 Low illumination down to 0.002 Lux -  
 Digital 10 Bit Image Enhanced Technology –  
 Menu for Motion Detection & camera setup -  
 Low power consumption 12vDC at 220mA -  
 Accidental Surge and Electronic Shock  
 Protected.

### Mechanical Features

Vandalproof, Weatherproof and Tamperproof –  
 3 Axis 3D built-in bracket –  
 Vari-focal 4 ~ 9 mm Auto DC Iris Lens –  
 Robust Aluminium housing with Polycarbonate  
 Smoked Cover –  
 External OSD control for picture quality.

### Mounting the Camera

The camera is for mounting on a wall, ceiling or outdoor fascia board. An optional wall bracket is also available CCT501. Note that this camera has a 3D gimble allowing wall mounting as well as ceiling mounting.

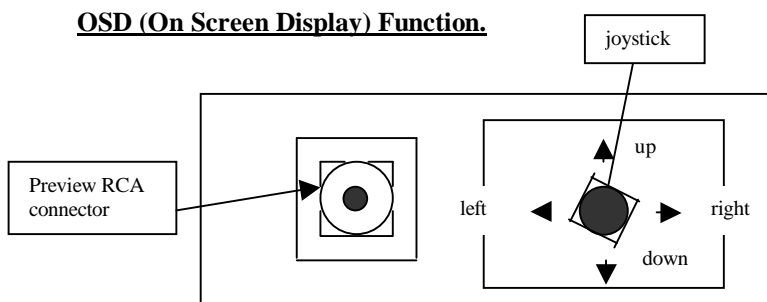
### Powering the Camera

The dome requires a 12V DC regulated power supply. The camera is provided with a fly lead with a mini power jack plug. It is recommended to use a power supply that is rated higher than the current consumption of the camera i.e. POW120 would be adequate for powering a single camera but not two or more.









### Connecting the camera to control equipment.


The dome camera comes with a fly lead for power and video out. To reduce installation time the video out lead is terminated into a male BNC connector. This allows the installer to effortlessly connect the camera to control equipment via a female BNC-BNC lead. A special setup joystick controller or remote is supplied which is plugged into the controller hub flylead or direct on the PCB board. The CCT502 is supplied with the remote and the CCT504 the joystick controller. Both work identically. The joystick has a preview RCA connector to allow a test monitor to be connected without removing the video output line. The CCT502 has the connector fitted to the camera board.

### OSD (On Screen Display) Function.














1. **PRESS JOYSTICK** < Display MENU >  
 < extra options > < save >
2. **UP/DOWN** < Move to function >
3. **LEFT/RIGHT** < Change Mode >
4. **PRESS JOYSTICK** < Save function >

SETUP	
LENS	DC  / MANUAL
SHUTTER	--- / FLK
WHITE BAL.	MANUAL  / AWC  / ATW
BACKLIGHT	OFF / LOW / MIDDLE / HIGH
AGC	OFF / LOW  / MIDDLE  / HIGH 
DNR (Dig. Noise Reduct)	OFF / LOW / MIDDLE / HIGH
SENS-UP (Low luminance compensation)	OFF / AUTO 
SPECIAL 	
EXIT	

 = Press down joystick button


### SETUP FUNCTIONS


- LENS** DC < Auto DC Iris >  (Press joystick for brightness control 1 ~ 70)  
MANUAL
- SHUTTER** --- / FLK < flickerless option >  
< --- means no mode available >  
< Using the DC lens, the shutter speed is fixed at 1/60. Select FLK if flickering occurs due to an illumination and frequency imbalance. >
- WHITE BALANCE** MANUAL  / AWC  / ATW  
< The screen colour can be adjusted by using this option. Select either AWC, ATW or MANUAL. >  
ATW < Auto Tracking White Balance – set for use outdoors, sodium lamp, inside tunnels, fluorescent light etc. >  
AWC  < Auto White Balance Control – use a piece of white paper to make optimum setting according to current lighting source. If this changes this setting will have to be re-adjusted. Press joystick for red and blue setting 1 ~ 256 >  
MANUAL  < Manual mode provides fine adjustment. Select ATW or AWC first. If white balance unstable use AWC. Press joystick for red and blue setting 1 ~ 256 >
- BACKLIGHT COMP.** LOW / MIDDLE / HIGH / OFF  
< When there is strong backlight behind the object, clear images of the background and object can still be obtained by using the BACKLIGHT function. The level of backlight compensation can be adjusted between LOW, MIDDLE or HIGH. >
- AGC** LOW  / MIDDLE  / HIGH  / OFF  
< As the level of gain increases the screen gets brighter and the noise level increases. >  
OFF < The gain is fixed at 6dB >  
LOW  < Set for gain 6dB ~ 18dB >  
MIDDLE  < Set for gain 6dB ~ 30dB >  
HIGH  < Set for gain 6dB ~ 34dB >  
Press joystick for adjusting BRIGHTNESS 1 ~ 70.



DNR LOW / MIDDLE / HIGH / OFF  
(Note: the higher DNR setting will reduce noise but increase ghosting)  
OFF < There is no reduction in noise level. >  
LOW < Small reduction in noise level with almost no ghosting. >  
MIDDLE < There is sufficient noise level reduction without causing too much ghosting. >  
HIGH < Noise levels greatly reduced however ghosting more prevalent >

**SPECIAL NOTE: If AGC is turned OFF, DNR will not function**

SENS-UP AUTO  (low luminance compensation – Press joystick to amplify level  
Min x2 ~ Max x128)  
OFF  
< SENS-UP maintains a bright, clear screen image by automatically detecting changes in low light level conditions. Pressing the joystick in AUTO mode will provide adjustment of storage magnification from x2 ~ x128. As the magnification increases, the screen gets brighter but moving objects get more afterimage effect. If storage magnification is increased while SENS-UP is operating, it may result in noise and spots across monitor may appear. This is normal. >

SPECIAL  See SPECIAL menu details below  
< The SPECIAL menu includes the following options:  
CAMERA ID  
COLOUR  
SYNC  
MOTION DET  
PRIVACY  
MIRROR  
SHARPNESS  
RESET  
RETURN >

EXIT < Select Exit and press joystick to finish setup. >

		SPECIAL
CAMERA ID	OFF / ON	↔
COLOUR	AUTO / ON	
SYNC	INT	
MOTION DET	OFF / ON	↔
PRIVACY	OFF / ON	↔
MIRROR	OFF / ON	
SHARPNESS	OFF / ON	↔
RESET		↔
RETURN		↔

#### SPECIAL FUNCTIONS






CAMERA ID      OFF / ON ↔ (Press joystick for ID characters)  
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  
← → CLR POS END

< Up to 15 characters can be selected for the ID. Move the cursor to the required character and press joystick to lock the character. The cursor will now move to the next space. Repeat with next character and so on. When name chosen move cursor to POS and press joystick. The name now appears in top left hand corner of display. Move using the 4 directional keys and press joystick again. Now select END and press joystick to complete ID. >

< If you press the joystick after moving cursor to CLR, all the letters will be erased. To change a character move cursor to the arrow at bottom left of screen and press SET. Now position cursor above character you wish to change and select, then move cursor to replacement character and press joystick. >

COLOUR      AUTO - This sets camera to DAY/NIGHT mode. Colour for daytime and Black & white for night time.  
ON      - The colour mode is selected permanently.  
< If AGC is OFF you cannot select AUTO mode. If Infra-red light is used you may have a problem with focusing and COLOUR (Day & Night) >

SYNC      INT - Internal synchronisation  
< SYNC mode is fixed to INTernal when using 12v DC supply >

- MOTION DET                      OFF / ON   
   AREA SEL        1 / 2 / 3 / 4  
   AREA STATE    ON / OFF  
   TOP   DOWN    1 ~ 73  
   LEFT   RIGHT   1 ~ 96  
< Movement in 4 areas on the screen can be selected and when movement is detected the words "MOTION DETECTED" are displayed on the screen. Press AREA SEL and select area required. Select ON for area required. Set the size of the area to be observed using the UP, DOWN, LEFT and RIGHT selectors. Press the joystick to save the settings.  
NOTE: MOTION DETECTION IS A MONITOR SCREEN DISPLAY MESSAGE ONLY - THERE IS NO MOTION DETECT OUTPUT SIGNAL. >
- PRIVACY                              OFF / ON   
   AREA SEL        1 / 2 / 3 / 4  
   AREA STATE    ON / OFF  
   AREA TONE    1 ~ 100  
   TOP   DOWN    1 ~ 73  
   LEFT   RIGHT   1 ~ 96  
< Select areas on the screen that you do not want displayed. Press AREA SEL . Select ON for area required. Set the size of the area to be observed using the UP, DOWN, LEFT and RIGHT selectors. Press the joystick to save the settings. >
- MIRROR                              OFF / ON  
< If set to ON inverts the horizontal image. OFF cancels the inversion. >
- SHARPNESS                          OFF / ON   
< The outline of the video image becomes cleaner as the Sharpness level is increased. If the level goes up excessively it may affect the video image by generating noise. Press joystick to display setting for sharpness 1 ~ 31. Press the joystick to save the settings.
- RESET                               < Press the joystick to reset to manufacturers settings. Note that the SENS-UP setting is switched OFF, AGC set to Middle and DNR set to low. >
- RETURN                               < Returns to previous menu >

**CCT502 Camera Specifications**

Image Sensor	1/3" SONY Colour Super HAD	Effective Pixels	PAL 752 (H) x 582 (V)
Electronic Shutter	1/50 – 1/100,000 sec	Sync. System	Internal / Line Lock
BLC	Automatic selected by menu	S/N Ratio	More than 50dB (AGC off)
Image Output	1V <sub>pk-pk</sub> 75Ω	Gamma Correction	0.45
Resolution	540 TVLines (digital 10 bit)	White Balance	Automatic select by menu
Min Illumination	.002 lux at F1.6 (SENS-UP x128)	Sync. System	Internal Sync.
Input Voltage	12V DC	Smear Effect	0.005%
Power Consumption	220 mA	Scanning System	PAL 625 Lines
MTTF	80,000 hours or more	Humidity	Within 85% (IP66 rated)
Lens	4~9mm Auto DC Varifocal	Weight	922g camera only
AGC	4dB ~ 35dB auto (Max / Off )	Dimension	140mm diameter x 88mm H
Output Terminal	BNC – Video, 2.1mm Jack power	Operating Temp.	-20°C ~ 60°C
Weatherproof	IP66 rated	Housing	Aluminium – Ivory finish
3 Axis Bracket	Pan 180°, Tilt 90°, Rotate 360°	Wall bracket	Optional CCT501
Test monitor output	RCA connection for additional test monitor output		

**Special Features**

Optional Wall Bracket CCT501

Digital Noise Reduction
Motion Detection via On Screen Menu
Privacy Masking via On Screen Menu
Mirror Option via On Screen Menu

**Troubleshooting**

No screen display connection

\* check power

- \* check video line
- \* check brightness of Auto Iris Lens

Unclear video image

- \* check lens is clean
- \* ensure display screen is not exposed directly to sunlight.

Screen is dark

- \* adjust monitor contrast
- \* adjust brightness level of the Auto Iris Lens – Refer LENS settings
- \* adjust lens focus lever

Overheating –

black stripes on screen

- \* Ensure regulated 12vDC power supply is used rated at minimum 350mA

*All specifications are approximate. Kovert.com reserves the right to change any product specification or features without notice. Whilst every effort is made to ensure that these instructions are complete and accurate, kovert.com cannot be held responsible in any way for any losses, no matter how they arise, from errors or omissions in these instructions, or the performance or non-performance of the camera or other equipment that these instructions refer*