SPECIFICATION

Model No.	HTC-96H28DID
IMAGE SENSOR	1/ 3" 960H Color CCD Sensor
EFFECTIVE PIXELS	976(H) X 582(V)
SYNC. FORMAT	INTERNAL
RESOLUTION	HORIZONTAL 700TVL
VIDOE OUTPU T	1.0V (P-P) NTSC COMPOSITE, 75Ω
MIN. ILLUMINATION	0.00LUX (IR LED: On)
IR CONFIGURATION	42 IR LEDs (850nM)
S/N RATIO	52dB (AGC OFF, WEIGHT OFF) OR MORE
OSD	BUILT-IN
AGC	OFF / LOW / MIDDLE / HIGH SELECTABLE
SHUTTER	AUTO / FLK / MANUAL / 1/50
SENS-UP	OFF / AUTO (X2~X256)
BRIGHTNESS	1~100 STEPS (LEVEL ADJUSTABLE)
D-WDR	ON/OFF Level Selectable
BLC	LOW / MIDDLE / HIGH SELECTABLE
HSBLC	LOW / MIDDLE / HIGH SELECTABLE
WHITE BALANCE	ATW / AWB / AWC-SET / MANUAL
DAY / NIGHT	COLOR / AUTO / EXT / B/W SELECTABLE
SMART 3DNR	ON/ OFF SELECTABLE
D-EFFECT	FREEZE / MIRROR/ D-ZOOM / NEG. IMAGE
MOTION DET.	4 AREA
PRIVACY MASKING	8 AREA
D-ZOOM	ON / OFF (X32)
SMART D-ZOOM	ON / OFF (X5)
DIS	ON / OFF SELECTABLE
LESN SHADING CORRECT.	ON / OFF SELECTABLE
LENS	TDN2.8-12MM AUTO IRIS
POWER SOURCE	12VDC / 24VAC (OPTIONAL)
POWER CONSUMPTION.	650mA @12VDC
OPERATIONAL TEMP.	-10Deg. C ~ +50 Deg. C RH95% MAX.
STORAGE TEMP.	-20Deg. C ~ +50 Deg. C RH95% MAX.
WEIGHT	0.5Kg

GENERAL FEATURES

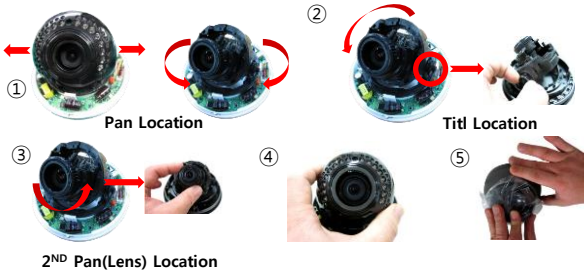
1. HORIZONTAL 700TVL RESOLUTION
2. 42 IR LEDs CONFIGURATION WITH 40MTR IR DISTANCE
3. MECHANICAL TRUE DAY / NIGHT
4. SMART NOISE REDUCTION
5. SENSE-UP X256
6. D-WDR (WIDE DYMAIC RANGE)
7. DEFOG
8. SMART DIGITAL ZOOM
9. MOTION DETECTION & PRIVACY MASKING
10. DIS (DIGITAL IMAGE STABLIZER)

OSD CONTROL & MENU TREE

• Push the joystick S/W to pop up 0SD Menu and set up your desired value.

① : 2nd Video Out ② : Set/Menu

Lens and Internal 3-Axis Bracket Control



1. Remove IR LED cover and set the desired Pan Location.
2. Set the Tilt location by loosening the side screw manually.
3. Set the 2nd Pan (Lens)location with the lens holder.
4. Tighten the side screw manually and recover the IR LED cover.
5. Set the desired zoom and focus and put the dome cover.

OSD MENU TREE & MAIN MENU

- **LENS**
  - ● DC LENS ● MANUAL ● VIDEO
- **EXPOSURE**
  - ● SHUTTER ● AGC ● SENS-UP ● RETURN
- **BACKLIGHT**
  - ● OFF ● D-WDR ● BLC ● HSBLC
- **WHITE BAL.**
  - ● ATW ● AWB ● AWC->SET ● MANUAL
- **DAY & NIGHT**
  - ● COLOR ● AUTO ● EXT ● B/W
- **SMART 3DNR**
  - ● VALUE ● SMART NR ● SMART LEVEL ● SENSITIVITY ● RETURN
- **F-DNR**
  - ● OFF ● AUTO ● MANUAL
- **FUNCTION**
  - ● MOTION ● PRIVACY ● D-EFFECT ● IMAGE ADJ.
  - ● COMM ADJ. ● SYNC ● LANGUAGE ● RETURN
- **EXIT**

1) LENS <DC LENS / MANUAL>

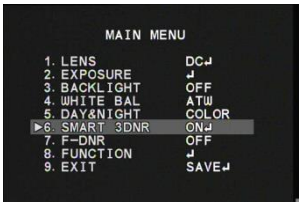
- Recommend Lens set as the designated camera default

DC LENS <Brightness / IRIS Speed / Return>

Brightness : 1-100 steps adjustable

Iris Speed : If necessary, control Iris speed (1-5 steps)

MANUAL <Brightness / Return>



SETUP Menu Functions

2) EXPOSURE
<SHUTTER / AGC / SENS-UP / RETURN>

SHUTTER :

Adjust shutter settings : Auto / FLK / Manual / 1/50 /1/60
- AUTO mode adjust shutter speed automatically.
- FLK mode reduces on-screen flickering.
- Manual mode allows you to adjust the shutter speed from 1/50,1/60, 1/100000 ~X2~X256.

AGC (Auto Gain Control) : Off / Low / Middle / High
- Control Gain Noise to get proper image quality.
- Set AGC Mode as High to get brighter image but more noises of the picture.

SENS-UP : On / Off
- Automatically detect light level and maintains a clear picture. Set a desired level upto X256.

Return

3) BACKLIGHT
<SHUTTER / AGC / SENS-UP / RETURN>

D- WDR : (Wide Dynamic Range) :
- To distinguish an object in both bright and dare areas
- Set desired Low & High level. 0~15 level selectable
- Return : Return the main menu.

BLC : Deliver a distinctive subject and background at the same time, even when the subject is in backlight
- Value : Low / Middle / High selectable
- Area : Single / Double mode supported. Set the BLC position and size.
- Default : Go back to Factory Default setting value.

HSBLC : To mask a strong light at the designated area.
- Gain : Set the desired HSBLC Gain level. (0-100 Steps)
- Mode : Set the desired mode. (Night only / All Day)
- Mask Level : Set the desired mask level. (0-100 Steps)
- Default : Go back to Factory Default setting.
- M. Skip Area : Designate an area which you want to skip.

Return

4) WHITE BAL.
<ATW / AWB / AWC-SET / MANUAL>

ATW : Auto Tracking White Balance.
- Use this mode when the color temp. is between 1,800~10,000K

AWB : Auto White Balance with the factory default value.

AWC->SET :
- To find the optimal setting for current luminance environment in this mode. Set the point the camera towards a sheet of white paper and press the Joystick S/W. If the environment changes, readjust it.

MANUAL
- To fine-tune White Balance manually. Set White balance first by using ATW or AWC mode before Manual mode. After that , if there is still a white balance issue, switch to manual mode and have a fine-tune. Manual mode allows you to increase or decrease the red or blue factor.

5) DAY / NIGHT <COLOR / AUTO / EXT / B/W>

COLOR : Display always color picture

AUTO : Automatic D/N switching according to ambient illumination.
Delay / D-N / N-D / Return Modes are provided.

EXT : Automatic D/N switching by using external signals.
IR LED (Photocell sensor) version must set with EXT mode.

B/W : Display always B/W picture

- IR Smart : IR Saturation Control. Set a designated value & area.

6) SMART 3DNR <On / Off>
- To reduce the background noise in a low luminance environment with 2D + 3D filtering system.

VALUE : Set the desired 3DNR value.
SMART NR : Set Smart NR On for the level and Sensitivity .
SMART LEVEL : Adjust Smart NR level (1-200 Steps).
SENSITIVITY : Set Smart NR sensitivity for activation.

7) F-DNR <AUTO / MANUAL/OFF>
- To defog when the video or the weather is foggy by controlling F-DNR level.

AUTO : Set the detect level for activation.
MANUAL : Set the detect level manually by adjusting level, Color Gain, Edge Gain, Gama value.

8) FUNCTION

8-1) MOTION :
- A signal is generated by the camera whenever motion is detected. You can define 4 areas and control its sensitivity.

8-2) PRIVACY :

To mask area which you want to mask. 8 areas selectable with 16 colors and controllable transparency.

8-3) D-EFFECT :
<D-Zoom/Smart D-Zoom/DIS/FREEZE/MIRROR/NEG. IMAGE>
- **D-Zoom** : Digital Zoom In / Out up to X32.
  PAN/TILT : Set Pan/Tilt location when D-Zoom is activated.
- **Smart D-Zoom** : Set the zoom in /out value upto X5.
  Range : Set the zoom in/out range from x2 to x5
  Position : Designate the zoom area. When a movement is detected, it automatically Zoom in/out with PIP.
  Sensitivity : Set the sensitivity level for activation.
  Time : Set your desired time value for display of Zoom in/out.
  * Smart D-Zoom will not be activated when D-Zoom is acting.
- **DIS** : Digital Image Stabilizer (On/Off)
  * DIS will not be activated when D-Zoom & Smart D-Zoom is on
- **Freeze** : To hold the image to analyze precisely.
- **Mirror** : Change the video direction. Mirror / V-Flip/Rotate
- **Neg. Image** : Negative Image (On/ Off)

8-4) IMAGE ADJUST
- **Sharpness** : Set the sharpness level of the picture (3-31 Steps)
- **Monitor** : CRT / LCD modes are provided.
- **LSC** : Lens Shading Correction.(On/Off)
- **Defect** : Activate this mode when "White Spot (Dead Pixel)" on screen is occurred.

8-5) COMM ADJ :
- **CAM TITLE** : To display a title on the monitor. (On / Off)
- **PROTOCOL** : To define a proper protocol for communication.
- **RS-485** : Set Camera ID and Baud rate.

8-6) SYNC : Set the synchronization. If the power of the camera is **AC**, L/L will be provided

8-7) LANGUAGE : Set the proper language of Main Menu