Product Operation Manual

MSH-HSD080W-18X/23X/26X Network IP High Speed Dome

Microseven Systems, Inc.

Walnut, California 91789, USA

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1. Preface

MSH-HSD080W-18X/23X/26X network IP high speed dome cameras adopt SONY / Hitachi zoom module, with bright and exquisite images. As video & audio multi-media equipment that based on network transmission, which adopts built-in and multi-media communication technology, the camera is a multi-media network terminal that can directly connect to the network.

The camera adopts all-built-in technology, which can be connected to the TCP/IP network without any other equipment and realize the video & audio collection, code compression and transmission function. Outstanding H.264 compression code arithmetic guarantees the minimum occupation of bandwidth, and built-in Web Server enables users to visit the IP camera through IE or special surveillance management software.

Furthermore, the camera adopts built-in fans and heater, which guarantees the weather-proof running of the equipment.

2. Key Features

Built-in Decoder

- Support TCP/IP protocol.
- Digital set up, auto saving when power off .

Camera Features

- Auto/manual focus technology.
- Auto blacklight compensation.
- Auto withe balance.
- Atuo color/black switch (low inllumination).
- Wide dynamic range technology.

PTZ Features

- Motor driving ensures PTZ possesses stable rotation, accurate position and fast reaction.
- Synchronization belt transmission, reduce noisy and image shake.
- 360 degree endness panning and 180 degree auto tilting enalble no blind point surveillance.
- 188 preset
- ZAP function

Structure Features

- Built-in heating and fan can adapt to any bad weather.
- Water-proof structure.
- Built-in lightening-proof device.

Other Features

- Powerful software function: provide network video server hardware as well as total software solution.
- Flexible visit mode: one end to multi-end, multi-end to one end.
- Motion detection alarm, I/O status alarm and LOGO update alarm function, with 12x16 detecting areas& 8 level sensitivity ;when the moving objects are discovered in set areas, an

alarm signal will be transmitted to appointed client-end through network, image capturing & recording or other relevant actions can be set.

- Digital matrix function: can realize common analog matrix functions like switch & setup auto switch time etc. Special keyboard can be directly connected to the network, controlled speed domes and switched images.
- With IEEE 802.11b/g standard wireless transmit capability and Ethernet port, improves flexibility of installation evidently.
- Provide SDK interface to realize multi-system integration, easy for second development for more functions.
- Supports dual-stream, can select different saving code ration and remote transmit ratio according to demand.

3. Notes

A. Do not attempt to disassemble the camera yourself.

To prevent electric shock, do not remove screws or covers. No part inside can be repaired by users. Ask a qualified service person for serving.

B. Handle the camera with care.

Avoid striking or shaking. The camera could be damaged by improper handling or storage.

C. Do not expose the camera to rain or moisture.

If rain or moisture, turn the power off immediately and ask a qualified service person for servicing. Moisture can damage the camera and also create the danger of electric shock.

D. Do not use strong or abrasive detergents when cleaning the camera body. Use a dry soft cloth to clean the camera when dirty. In case the dirt is hard to remove, use a mild detergent and wipe gently.

E. Pay great attention to the CCD faceplate cleaning

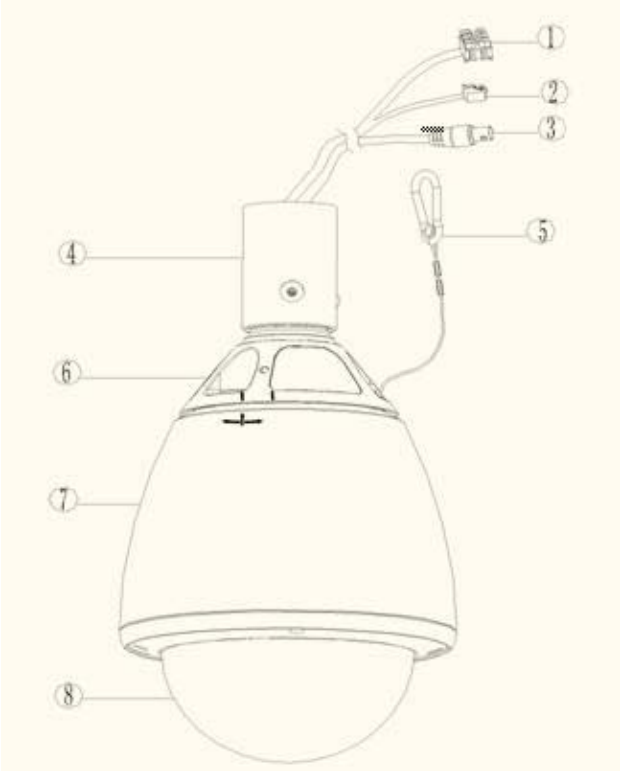
Do not clean the CCD with strong or abrasive detergents. Use lens tissue or a cotton tipped applicator and ethanol.

F. Never face the camera towards the sun.

Do not aim the camera at bright objects. Whether the camera is in use or not, never aim it at the sun or other very bright objects. Otherwise, blooming or smear maybe caused.

G. Do not operate the camera beyond the specified temperature, humidity or power source.

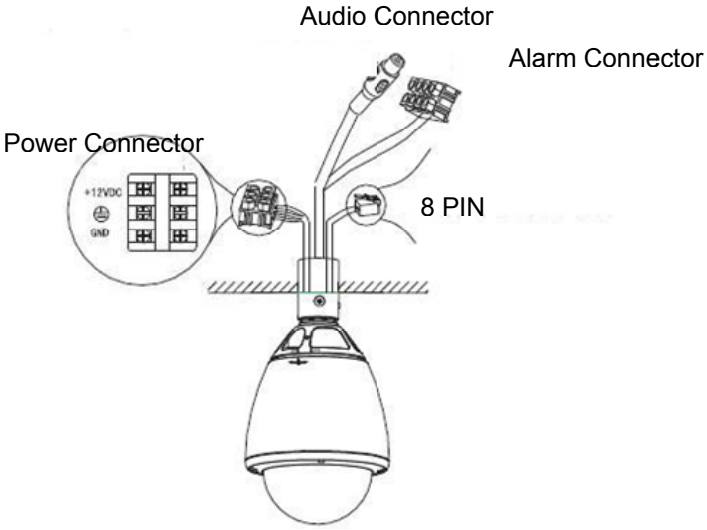
4. Instructions for Main Parts



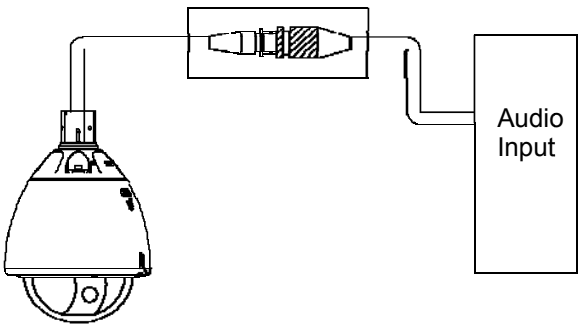
① Power connector
② RJ45 internet connector
③ Audio connector
④ Alarm connector
⑤ Pipe
⑥ Secure chain
⑦ Upper base
⑧ Body
⑨ Transparent cover

5. Connections

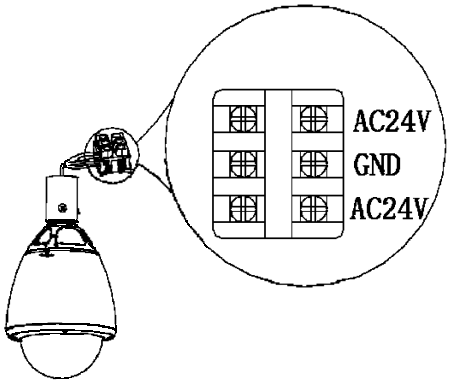
5.1 Connection interfaces



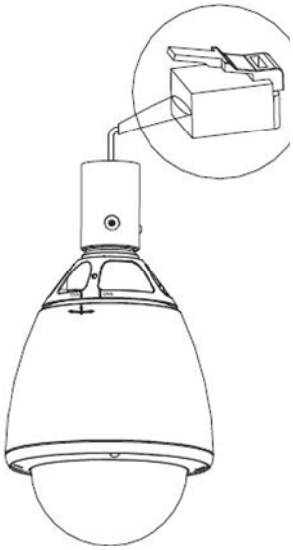
5.2 Audio connection



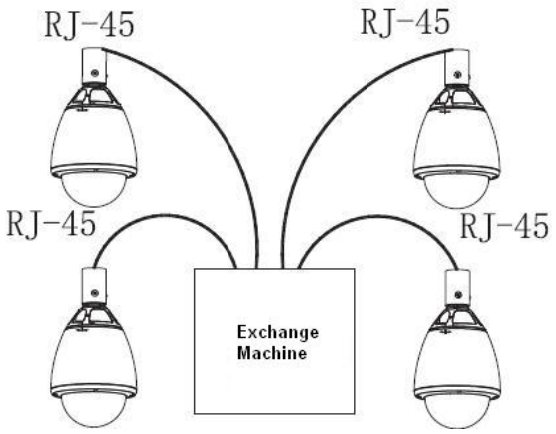
5.3 Power connection



5.4 Power connection

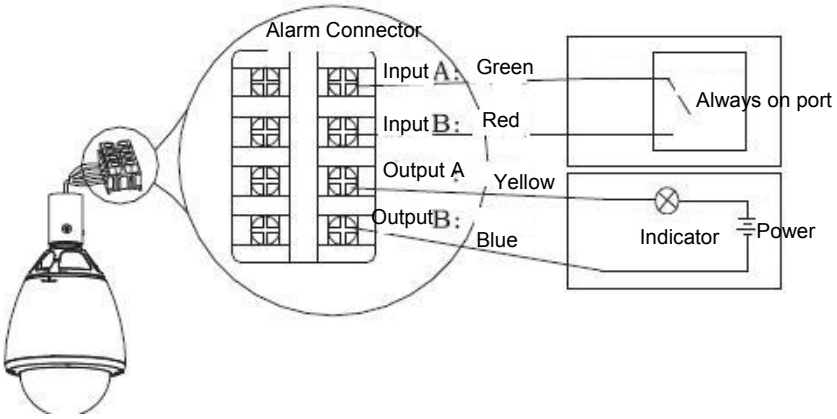


5.5 RJ-45 connections



- 8PIN standard GM line
- Ultra-five
- Recommended maximum length: 80m

5.6 Connection interfaces

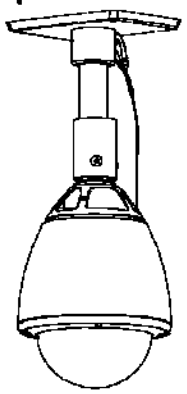


6. Installation of Camera

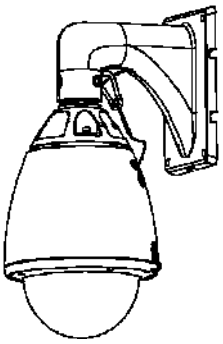
☞ **The following installation should be undertaken by qualified service personnel or system installers.**

☞ **Ensure that you have cut off the power during the installation process.**

☞ **The following installation method is outdoor hoisting and wall hoisting.**



Outdoor Hoisting



Wall Hoisting

☞ **Ask an expert about the bearing capability and structure of the installation surface, if the surface is not solid enough, the camera may drop down. To get the weight of camera please refer to the product specification.**

6.1 Preparation

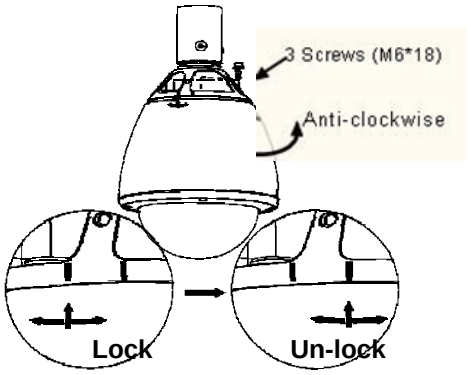
A. Purchasing ceiling mount bracket.

B. Choose the installation place (Note: Please choose an installation place which is strong enough to bear the camera weights.)

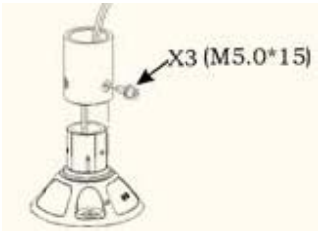
C. Prepare installation accessories.

6.2 Disassembly the camera

A. Removing upper base from camera by loosening 3 screws, separate it from the camera.

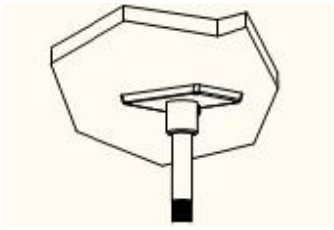


B. Loosing 3 screws to separate the accessory pipe.

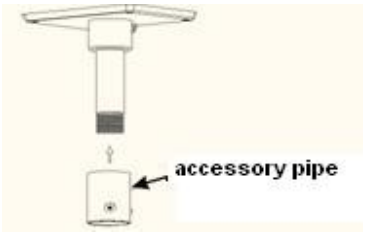


6.3 Install bracket

A. Fix the bracket on the installation surface by screws.

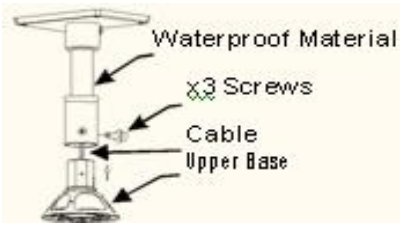


B. Fix the bracket on the installation surface by screws.



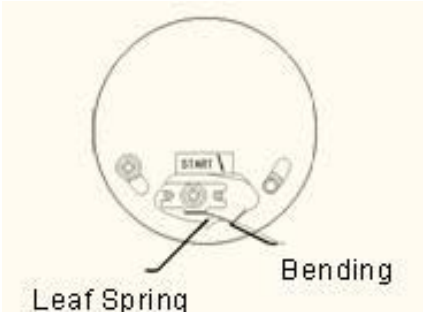
C. Thread cables through the bracket.

D. Use 3 screws to fix upper base to accessory pipe, filling the gap between bracket and accessory pipe with water-proof materials.



6.4 Install camera

A. Aiming “START” arrow to the bent portion of the spring.

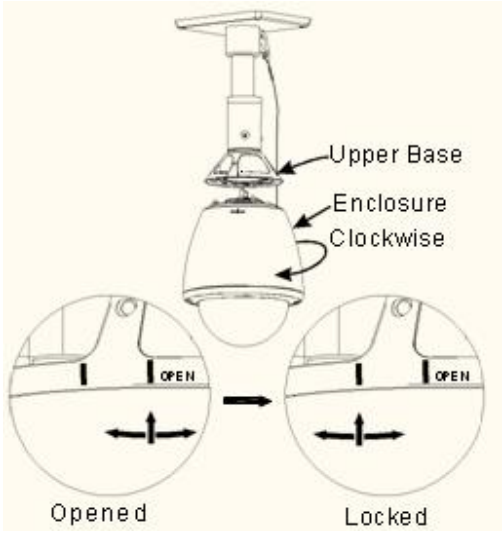


B. Ensure that the secure chain hooks the bracket.

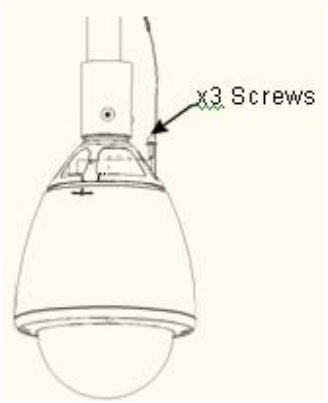
C. Fix the camera to the upper base.

i. Move up the camera; let the guide pins fit into upper base guide holes.

ii. Turn the camera counter-clockwise to the end. (Please make sure the camera had been turned to the lock position before release your hand.)



iii. Fasten 3 screws.

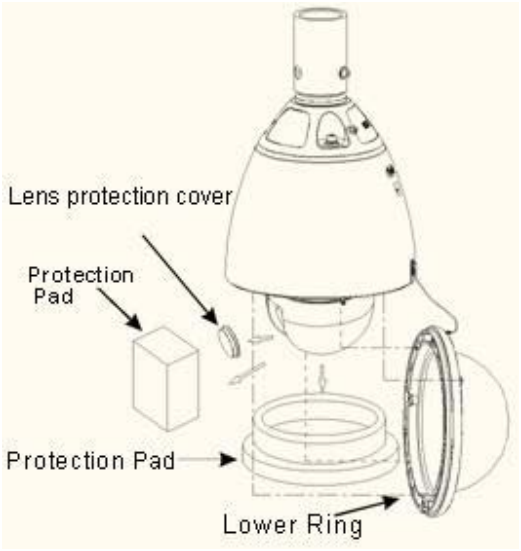


6.5 Remove protection pads

☞ **Please make sure that you have set up the camera already before proceed following operations.**

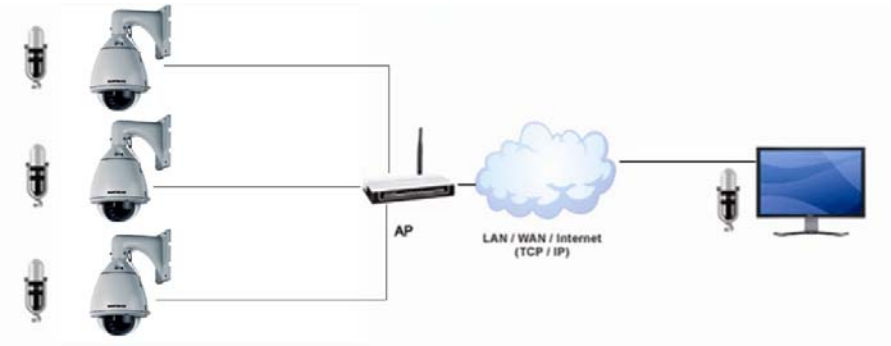
A. Remove 4 screws on the lower ring.

B. Remove protection pad and lens shield.



C. Install transparent hemisphere shield to the camera, fasten the screws to ensure water-proof. (Please reference to 6.5 B.)

7. Basic System Diagram and Operating Circumstance



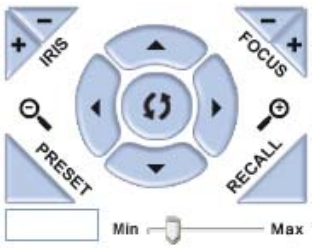
Operate environment

After the equipment installed and connected to the network, it should be operated on Server Software Platform of Microseven Digital Video Server.

8. Network High Speed Dome Camera Operation

8.1 Pan/Tilt

Operator can use the joystick of the controller (MSH-CU7502) to operate pan/tilt for up, down, left, right movement.



Pan/tilt speed has 8 levels (1-8), from low to high speed). Operator can adjust the pan/tilt speed by controlling angle of the joystick movement, the larger angle, the higher speed. Operator can also use the 8-direction (including upper-left, upper-right, lower-right and lower-left) joystick to control the movement of pan/tilt.

8.2 Auto flip operation

When pan/tilt points straight down, and operator still held joystick downwards with even speed the camera is able to tilt from 0 to 180 degree in a fast motion and keep on moving upward. And this makes it possible to track subjects passing directly under the camera more smoothly, and avoid any blind point. In OSD menu, auto flip can be set on/off.

8.3 ZAP operation

ZAP function is to automatically adjust pan/tilt speed when camera is zooming in/out, using complex algorithm. Provides right surveillance image all the time.

8.4 Lens operation

Lens operation is zoom in/out, focus and iris control.

A. Zoom

User can control zoom in/out in the client-end software function “Zoom”. Through this control, user can get closer and wider view of the image.

Press”+” to realize zoom in, the image will be shown as a bigger one with a more narrow visual field; un-press “+” to stop the control;

Press “-” to realize zoom out, the image will be shown as a smaller one with a wider visual field; un-press “-” to stop the control;

B. Focus

Auto Focus is the default status when lens stop zooming and pan/tilt is still. The lens adjust automatically according to the centre of the image, user can get a clear view of the image.

Press “+” to let the lens Focus becomes smaller, un-press “+” to stop the control;
Press “-” to let the lens Focus becomes bigger, un-press “-” to stop the control;

C. Iris

Auto Iris is camera default configure. By judging the lightness variation of the working environment, lens will automatically adjust the iris to meet the change of the lightness and keep the image in a stable lightness condition.

Press “+” to open the iris, un-press “+” to stop the control;
Press “-” to close the iris, un-press “-” to stop the control;

8.5 Preset operation

Preset function is to record the current PTZ status, zoom in/out status and focus status in the built-in memory disk. User can recall the preset to realize fast and accurate view the image.

Preset Setting & Preset Recall:

Enter client-end software, select number in the “Preset” selection, then click “ Set up” to finish the current preset settings. User can view any preset images by click the corresponding “Preset”.

8.6 PTZ automatic scanning

PTZ automatic scanning will proceed with 360 degree continuously rotation with a stable speed. The speed is determined depends on current lens zoom status.

i. Make sure that there is no pan/tilt action before start the auto scanning;
ii. Click Auto Rotate button to start the auto scanning;

User can stop the auto scanning by any operation orders during the auto scanning process;

8.7 Camera fast operation

Item	Manual Operation	Function	Support Protocol
1	Recall “51” preset	Enter OSD menu	MICROSEVEN, PELCO-D, PELCO-P
2	Recall “52” preset	Enter OSD menu	MICROSEVEN, PELCO-D, PELCO-P
3	Recall “61” preset	Run tour 1	MICROSEVEN, PELCO-D, PELCO-P
4	Recall “62” preset	Run tour 2	MICROSEVEN, PELCO-D, PELCO-P
5	Recall “63” preset	Run tour 3	MICROSEVEN, PELCO-D, PELCO-P
6	Recall “64” preset	Run tour 4	MICROSEVEN, PELCO-D, PELCO-P
7	Recall “65” preset	Run tour 5	MICROSEVEN, PELCO-D, PELCO-P
8	Recall “66” preset	Run tour 6	MICROSEVEN, PELCO-D, PELCO-P
9	Recall “67” preset	Run tour 7	MICROSEVEN, PELCO-D, PELCO-P
10	Recall “68” preset	Run tour 8	MICROSEVEN, PELCO-D, PELCO-P
11	Recall “69” preset	Run group task	MICROSEVEN, PELCO-D, PELCO-P
12	Recall “90” preset	Open alarm out put 1	MICROSEVEN
13	Recall “91” preset	Close alarm out put 1	MICROSEVEN
14	Recall “95” preset	Enter OSD menu	PELCO-D, PELCO-P
15	Recall “96” preset	Random scan/Auto scan off	PELCO-D, PELCO-P
16	Recall “97” preset	Random scan on	PELCO-D, PELCO-P
17	Recall “99” preset	Auto scan on	PELCO-D, PELCO-P
18	Recall “51” preset	Set up auto scan left boundary	MICROSEVEN, PELCO-D, PELCO-P
19	Recall “52” preset	Set up auto scan right boundary	MICROSEVEN, PELCO-D, PELCO-P
20	Recall “92” preset	Set up auto scan left boundary	PELCO-D, PELCO-P
21	Recall “93” preset	Set up auto scan right boundary	PELCO-D, PELCO-P

9. Transparent Shield Cleaning

In order to generate clear image, the transparent shield of the dome camera should be cleaned periodically.

- ☞ Cleaning with caution, please hold the outer edge of the shield; avoid the directly contact with the shield because the acid sweat of your finger may erode the coating cover. Scratches may lower the image quality.
- ☞ Please use the soft dry cloth or other substitutions to wipe the dome surface.
- ☞ If there is a heavy dirt, user can use neutral detergent (such as Ether) to clean it. Any high-level furniture cleaning product can be used to clean the shield.

10. Specifications

Model	MSH-HSD080W-18X/23X/26X		
Pick-up Device	1/4″ type solid state progressive DDC		
Pixels	724(H) × 582(V) PAL/724(H) × 494(V) NTSC		
Video Mode	NTSC/PAL		
Horizontal Resolution	Color: 480TVL/ Black & White: 570TVL		
Lens	18 x Optical	23 x Optical	26 x Optical
Maximum Aperture	F1.4(W)-F3.0(T)	F1.6(W)-F3.7(T)	F1.6(W)-F3.8(T)
Minimum Illumination	0.1Lux/0.01Lux	0.1Lux/0.01Lux	0.1Lux/0.001Lux
S/N Ration	≥ 50dB (AGC OFF, Weight On)		
Rotation Angel/Speed	Angle: 360 ° endless (H), 180°(V) Speed: 0.1 - 360°/s (H), 0.1 - 200°/s (V)		
Image Compression Mode	H.264		
Resolution	QCIF: 176 * 144 (PAL), 176*120 (NTSC) CIF: 352 * 288 (PAL), 352*240 (NTSC) H-D1: 720 *288 (PAL), 360*480 (NTSC) D1: 720 * 576 (PAL), 720*480 (NTSC)		
Frame Rate	25 fps (PAL), 30 fps (NTSC)		
Bit Stream	200 Kbps ~ 3 Mbps, CBR/VBR Adjustable)		
Character Superimpose	Support character and time superimpose		
Motion Detection	12x16 detecting areas and 8 levels sensitivity		
Scanning	Random/Auto		
Timing Task	Open/Close (8 time periods are selectable, 5 tasks selectable)		
Group	Open/Close (8 tours can be set up)		
Alarm input/output	1 input/1output		
Physical Image Flip Function	Open/Close		

Preset	188
Home Position	Can select any preset from 1-188
Privacy Masking	Open/Close (2 privacy areas)
Motion Detection Function	Open/Close (8 areas)
White Balance	Auto/Manual
BLC	Close/Open
Focus	Auto/Manual
Shot	Auto/Manual
Iris Control	Auto/Manual
AGC Control	Auto/Manual
Day/Night Switch	Auto/Manual
Wide Dynamic Range	Auto/Manual
Image Mirror Function	Open/Close
Image Freeze Function	Open/Close
Network Interface	1 RJ-45, 10M/100M self-adjustable
Network Protocol	TCP/IP, UDP/IP, HTTP, ICMP, Telnet, IGMP
Wireless Function	IEEE 802.11b/g wireless module
IE Application	Built-in web server, allows IE browsing and controlling
Network Time Check	Provide the interface for network time check
Equipment Search	Support equipment searching by Ethernet broadcasting
User Administration	Provide multi-level user administration
Built-in Watchdog	Timing detection of chips & software work status, auto system reset
Remote Reposition	Realize remote reposition through network
Audio Input	1 channel, RCA interface, single track
Audio Sampling Rate	8KHz
Audio Compression Rate & Standard	32Kps / G.711A
Temperature/Humidity	- 30°C - +50°C, ≤ 90%
Power Supply	DC 12V
Power Consumption	10W (normal work condition), 40W (Maximum, heating device is on)
Dimensions/Weight (with lens)	Φ8.11 in X 14.78 in (H) / 2.27lb.

11. Problems and Checking Item

Common Problem	Checking Item
No movement or no image after power on	Is the power supply working properly?
	Is the camera connected correctly?
	Is the power cord connected correctly?
Self diagnostic is abnormal, there is image, but with problem running	Is the protection pad removed?
	Is the consumption of power supply meets the requirement?
Self diagnostic is normal, but no image	Is the lens protection cover removed?
	Is the video cable correctly connected?
	Are the two poles of the video cable short circuited?
	Has the camera been broken?
Self Diagnostic is successful, but can not control	Is the data communication cable correctly connected?
	Is the dip-switch of communication protocol matching the protocol of the prior camera?
	Is there any problem with cable connection?
	Is the project cables connected correctly?
Image unstable	Is the video cable reversely connected?
	Is the video cable in good connection?
	Is the output voltage of the power supply matching?
Cannot control the camera	Is the prior camera working properly?
	Is the data communication cable in good connection?
Image is not clearly or with dirty pot.	Please check if the transparent hemisphere shield Is dirty or not.
	Please check if the lens is dirty or not.
Image interfere or noise	Please check if there is a strong interfere source around the camera.
	Please check if the video line screening is in good condition or not.
	Please check if there is the line connection is right or not.
No alarm output or can not call preset	Please check alarm is in good work condition or not.
	Please check if open “input” and “output” on “Alarm setup” menu.
	Please set up if alarm input and output line of camera is cut off or with a bad connection.

Appendix --- Lightening and Surge Protection

- **This product uses TVS lightening-proof technology, which can protect the camera from the damage by sudden lightening strike with power consumption no higher than 1.5KW, and surge or other type of electronic pulses. However, if the camera is installed outdoor, in condition of electric safety, certain measures are necessary and described as follows:**

- Signal cable must be kept 50m away from high voltage equipment or cable.

- Under the roof is recommended for outdoor wiring.

- In the open field, the cable must install within the grounded sealed steel pipe and buried underground. Aerial wiring is strictly prohibited.

- In the area of frequent lightening and high sensitive voltage (such as high voltage transformer substation), additional high power consumption lightening proof equipment and lightening rod installation are necessary.

- The designing of grounding and lightening proof for outdoor equipment must meet the standards of system anti-interference and electric safety, and connection with grounded circuit conductor of high voltage electricity network is strictly prohibited. When the system is grounded along, the ground resistor must be mo higher than 4 ohm, cross-section of the ground wire must be less than 25m ㎡.