

User Manual

**1/2.7" HD Camera / Dome,
Day&Night, 2592x1944,
Infrared, IP66**

**MEB-65M2713M0A
MED-55F0036M0A
MED-65M2713MBA**

REGULATORY INFORMATION

● FCC COMPLIANCE STATEMENT

FCC Conditions

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Compliance

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 its own expense.

FCC Information

Please pay attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

● EU CONFORMITY STATEMENT



This product and – if applicable – the supplied accessories too are marked with “CE” and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2014/35/EU, the EMC Directive 2014/30/EU, Radio Equipment Directive 2014/53/EU and the RoHS Directive 2011/65/EU



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household user should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

● INDUSTRY CANADA ICES-003 COMPLIANCE



This device meets the CAN ICES-3 (A) / NMB-3 (A) standard requirements.

SAFETY INSTRUCTIONS

These instructions are intended to ensure that users can use the product correctly to avoid any danger or property loss.

Warnings: Serious injury or death may happen if any of the warnings are ignored.

Cautions: Injury or equipment damage may happen if any of the cautions are ignored.

	
Warnings: Follow these instructions to prevent serious injury or even death.	Cautions: Follow these precautions to avoid any potential injury or material damage.



Warnings

- In the use of the device, you must be in strict compliance with the electrical safety regulations of the nation and region.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the limited Power Source with 12 VDC according to the IEC60950-1 standard. Refer to technical specifications for details.
- To reduce the risk of fire or electric shock, do not expose this product to rain or moisture environment. Un-plug this apparatus during lightning storms or when unused for long periods of time.
- Do not connect multiple devices to one power adaptor to avoid over-heating or a fire hazard caused by overload.
- If smoke, odor or noise rise from the device, please immediately turn off the power and unplug the power cord, and then contact us.
- Don't disassemble the device by one unprofessional person. These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock. Do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
- Do not block any ventilation openings. To avoid heat accumulation, good ventilation is required for the operating environment. Install in accordance with the manufacturer's instructions.



Cautions

- Do not drop the camera or subject it to physical shock
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Do not touch sensor modules with fingers.
- Do not install near any extremely heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Also do not place the camera in cold (its operating temperature should be -100C-500C) dusty or damp locations, or expose it to high electromagnetic radiation.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Only use attachments/accessories specified by the manufacturer.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.



Safety Instruction

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings and cautions.
4. Follow all instructions.
5. Clean only with dry cloth.
6. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
7. Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/List Class 2 power source only.

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1 Introduction

Thanks for purchasing our analogue HD product. The series of cameras are applicable for both indoor and outdoor conditions, and the application scenarios include road, warehouse, oil station, underground parking lot, bar etc.

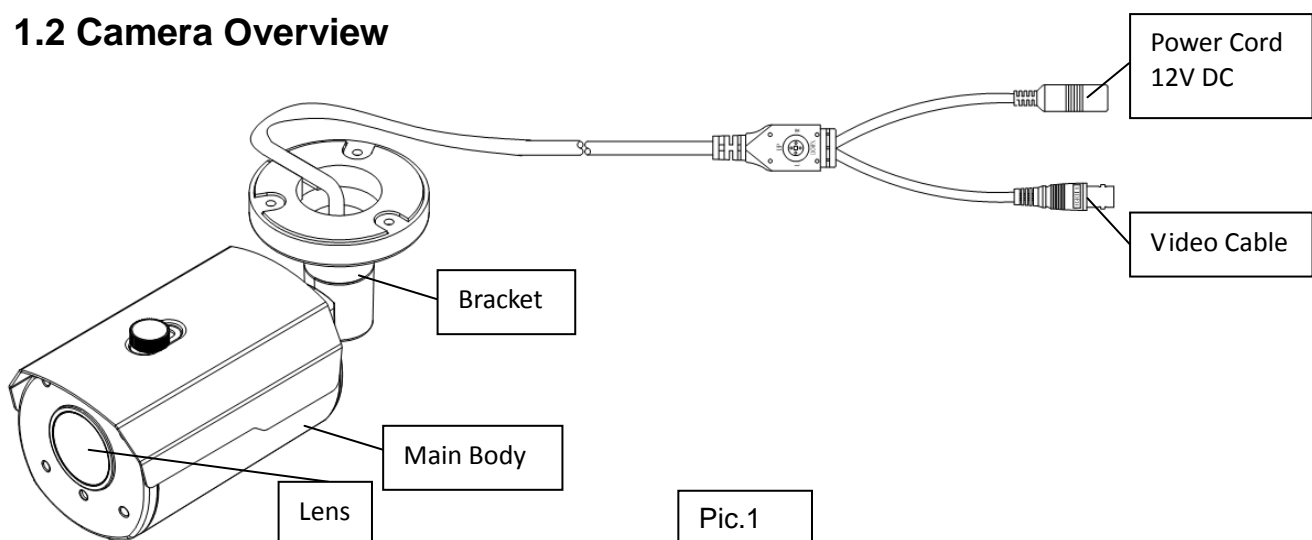
Statement:

Some information contained in this manual may differ from the actual product. We will make every effort to ensure correctness of the information contained in this manual, which may be subject to change from time to time without prior notice. The updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in this manual. For any question or need, Please don't hesitate to contact us at any time. For any problems you cannot solve with the use of this manual, please contact our technical support or the authorized dealers

1.1 Features

- 1/2.7" low illumination CMOS image sensor
- 3.6mm fixed or 2.7-13.5mm vari-focal (Motorized) lens
- True D/N (Auto, Day, Night)
- IR LEDs
- HD-TVI, HD-CVI, AHD, CVBS selectable (OSD)
- Auto exposure control (1/15s~1/50,000s)
- Auto white balance and back light compensation
- Lens Shading Correction
- Digital WDR (Wide Dynamic Range)
- DNR (Digital Noise Reduction)
- Defect Detections (Live DPC, White DPC)
- 12VDC for Camera
- Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.

1.2 Camera Overview



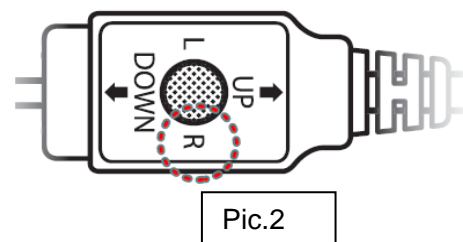
Note: Press in different direction and hold the Joystick of camera for 3 seconds to switch the video output. Four kinds of video outputs are available: TVI, AHD, CVI and CVBS under the fixed mode.

UP: stands for AHD mode

Down: stands for CVBS mode

L: stands for TVI mode

R: stands for CVI mode



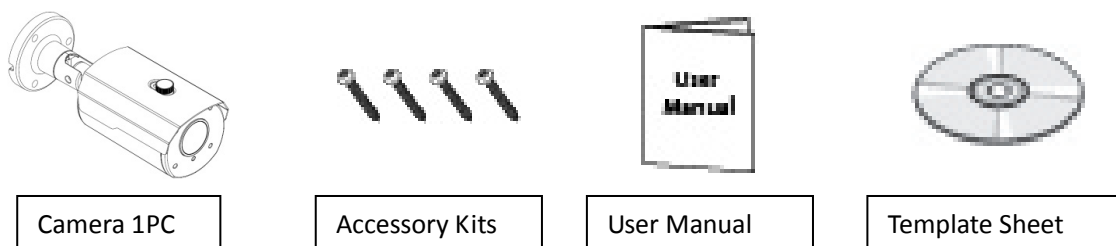
2 Installation and Configuration

Before you start

- Make sure that the device in the package is in good condition and all the assembly parts are included.
- Make sure that all the related equipment is power-off during the installation.
- Check whether the power supply is matched with your power output to avoid any damage.
- If the wall is cement, insert expansion bolts before installing it. If the wall is wooden, use self-tapping screws to secure the camera.
- If the product does not function properly, do NOT disassemble the camera for repair or maintenance by yourself.

2.1 Package Contents

The package contains the following.

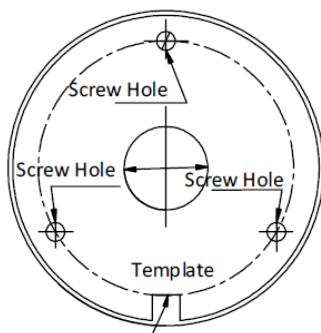


Camera	1	Template Sheet	1
User Manual	1	Accessory Kit	1

2.2 Installation

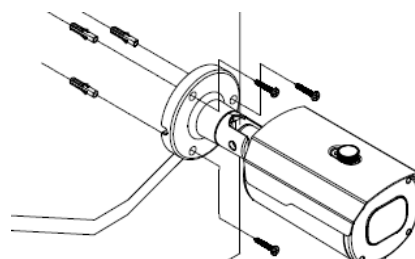
2.2.1 VF Bullet Camera

1. Paste the drill template (supplied) to the place where you want to install the camera shown as Pic 3



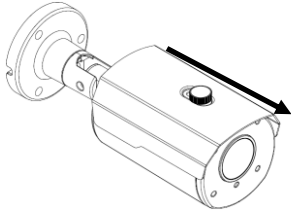
Pic. 3

2. Drill the screw holes and the cable hole (optional) in the ceiling/wall according to the drill template.
3. Mount the bullet camera and fix the base of the camera to the ceiling or wall shown as Pic 4



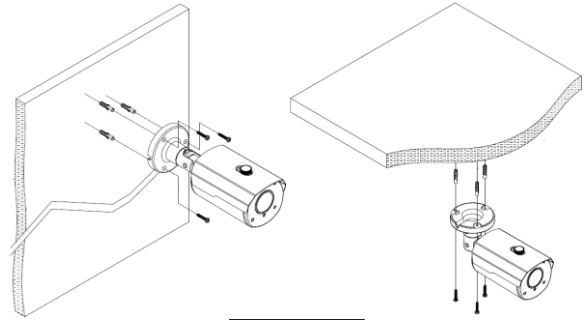
Pic. 4

4. Adjust the camera angle and tighten the body of camera
5. Connect the corresponding power cord and video cable.
7. Adjust sun-shield position shown as Pic. 5



Pic. 5

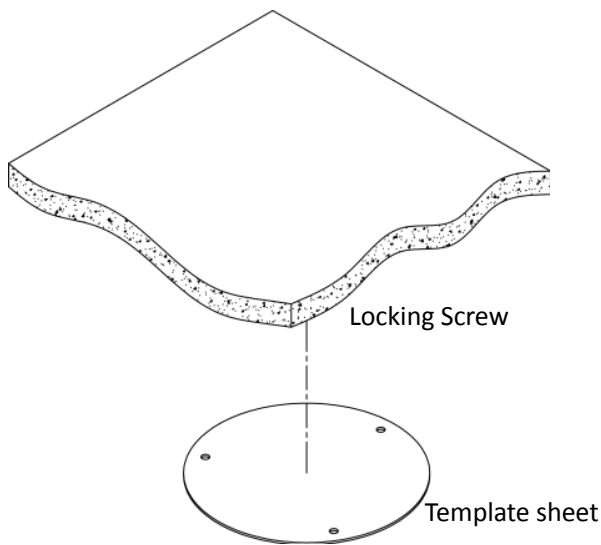
6. Power-on the camera to check whether the image on the monitor is available from the optimum angle. If not, use "L" wrench to adjust the camera to the optimum angle.
8. Allow you mount on the ceiling/wall Shown as Pic 6



Pic.6

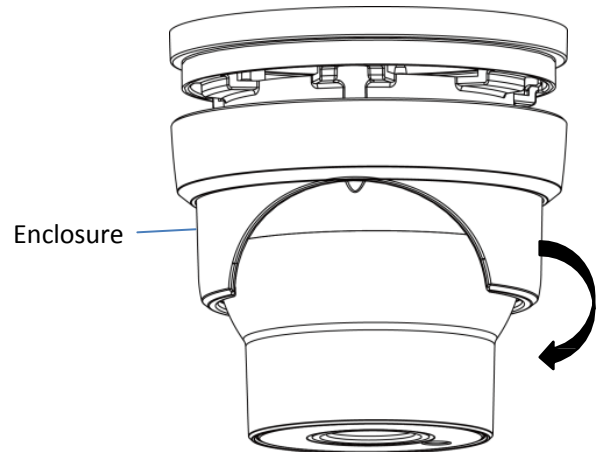
2.2.2 VF Turret Camera

1. Paste the template sheet in place at the proper position shown as Pic 7



Pic. 7

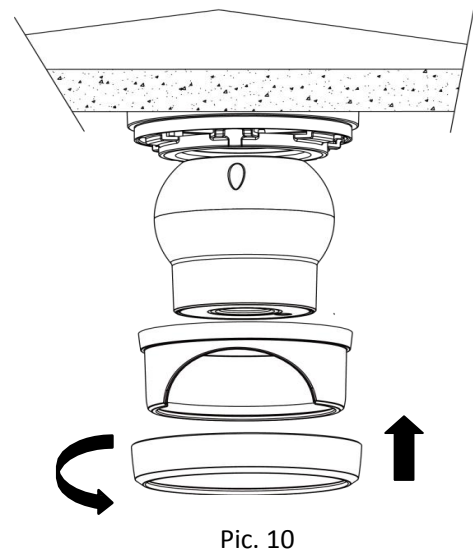
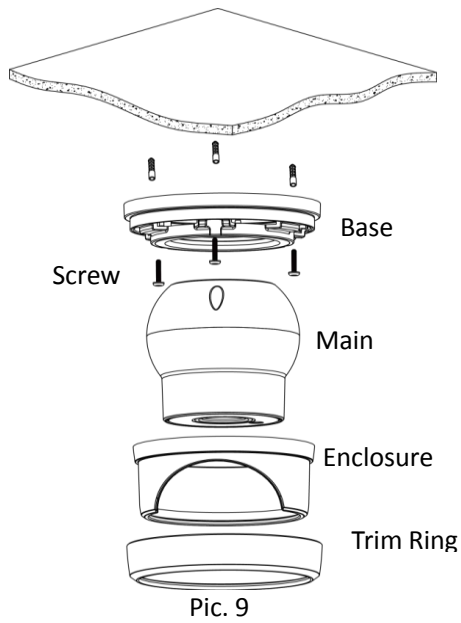
2. Remove the enclosure off the camera by rotating it down shown as Pic 8.



Pic. 8

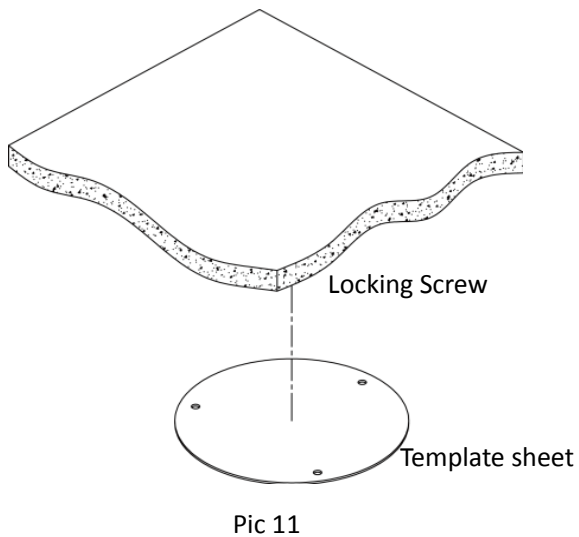
3. Fix the base of the camera with the three screws provided in the accessory kit shown as Pic 9

4. Mount the collar back by rotating it up shown as Pic 10.

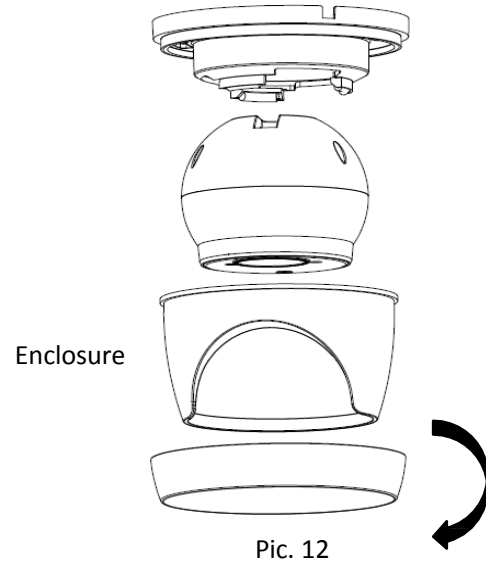


2.2.3 Fixed Turret Camera

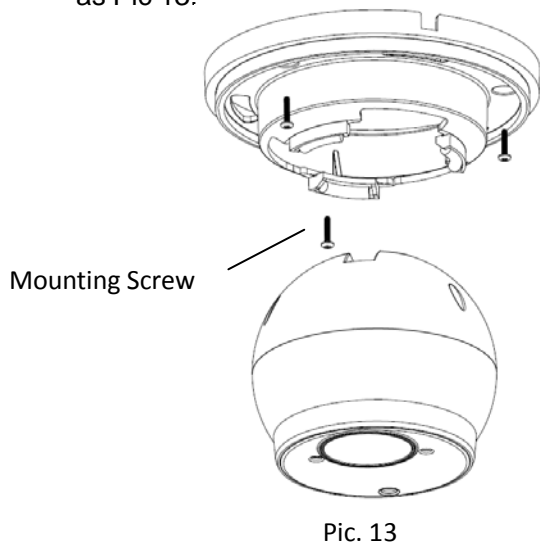
1. Paste the template sheet in place at the proper position shown as Pic 11.



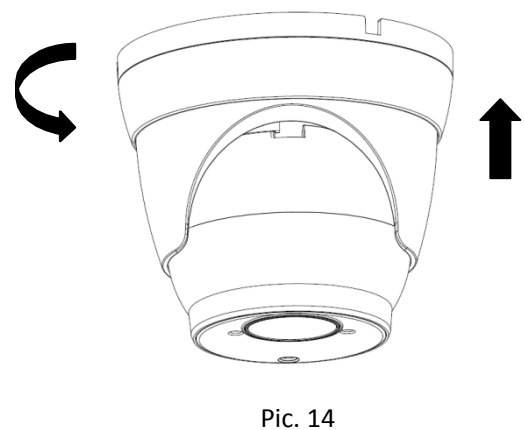
2. Remove the enclosure off the camera by rotating it down shown as Pic 12.



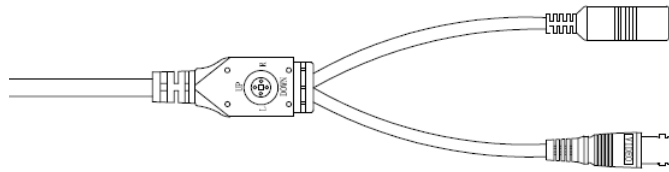
3. Fix the base of the camera with the three screws provided in the accessory kit shown as Pic 13.



4. Mount the enclosure and trim ring back by rotating it up shown as Pic 14



2.3 Connections



	Connector	Description
1	DC Jack	Camera Power
2	BNC Jack	Video Out

- **Connecting Video Output connector**

Connect the video output (BNC) connector to the video input.

- **Connecting the Power**

Connect power of 12VDC for the camera. When using a 12VDC adapter, connect the positive (+) pole to the '+' position and the negative (-) pole to the '-' position. Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.

- **Focus and Zoom (Coaxitron)**

For zoom and focus setting please use a control unit that supports Coaxitron (HD protocol).

2.4 OSD Menu Description

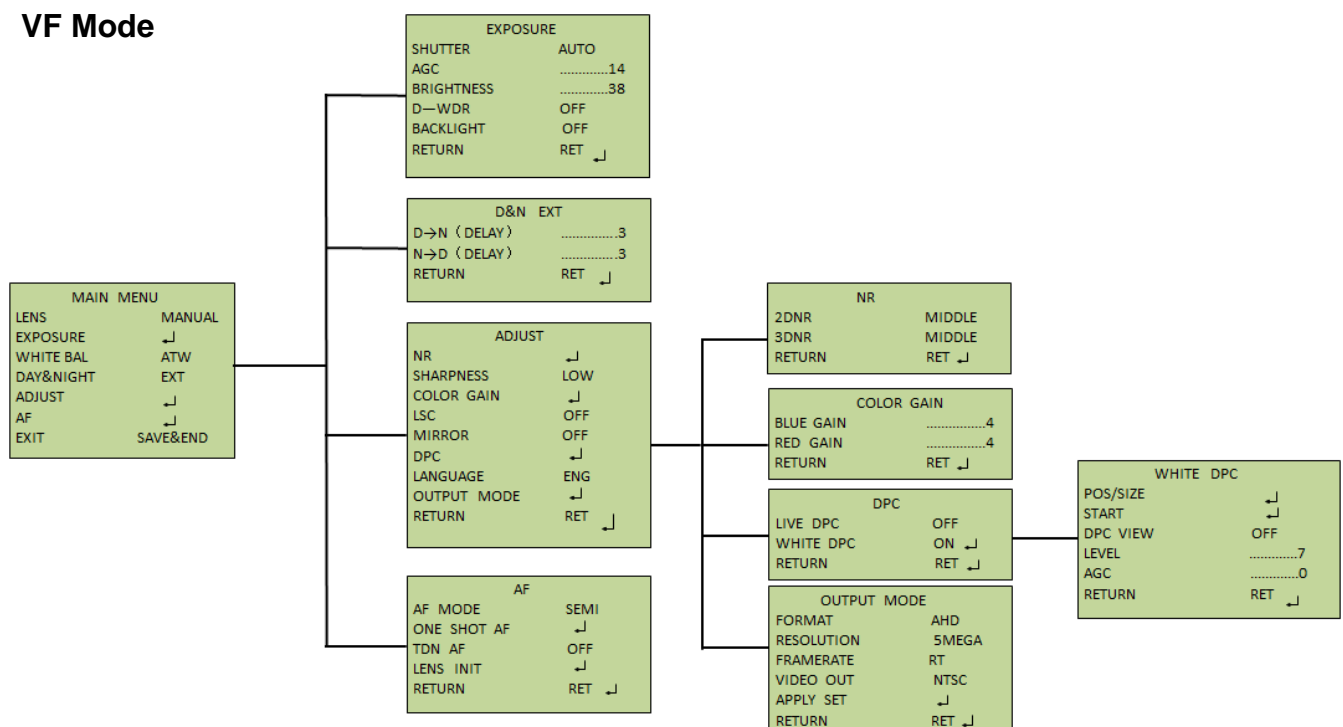
Purpose

Call the menu by clicking the joystick of the camera or <  > button on the PTZ control interface.

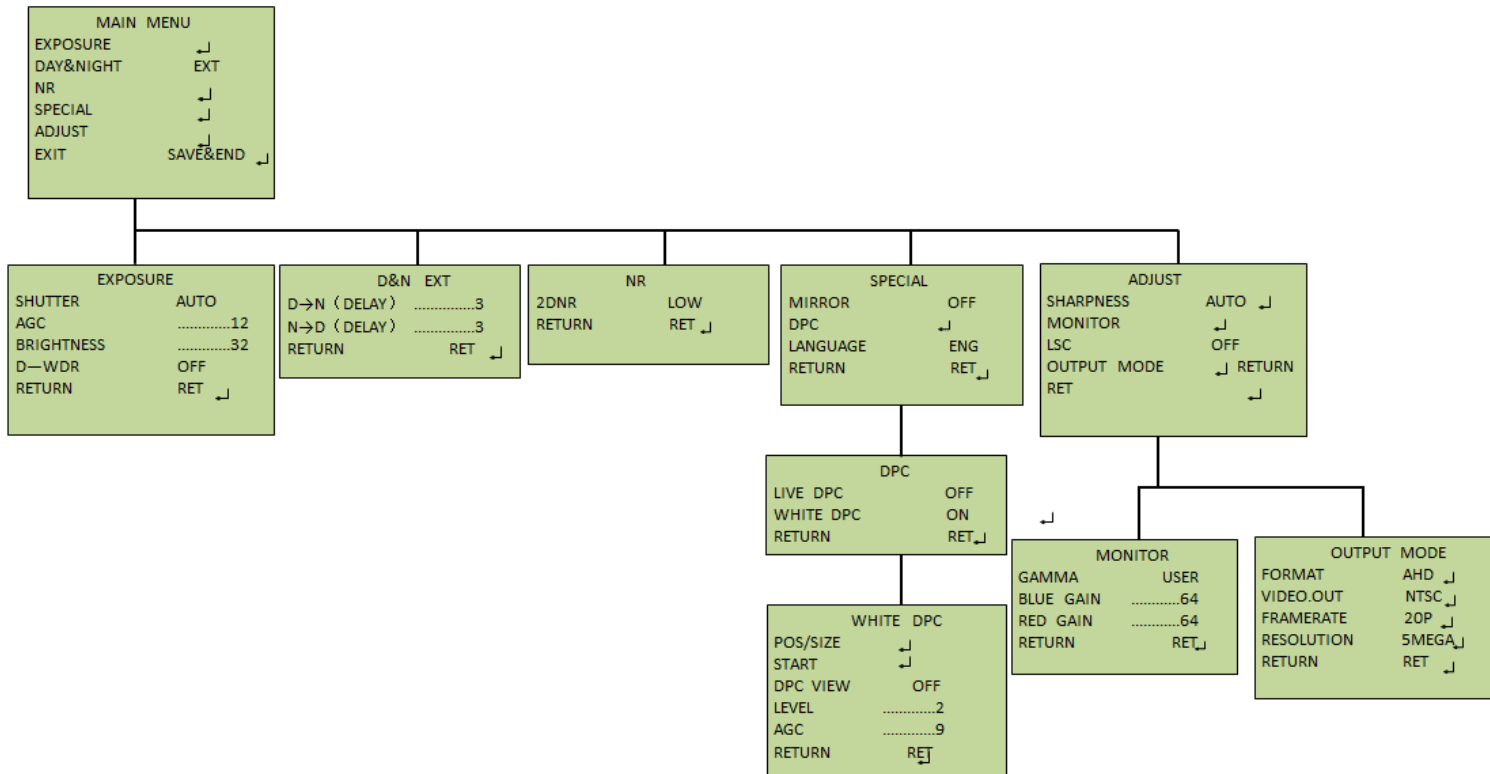
2.4.1 OSD Menu Structure

OSD menu structure of VF and Fixed version are different, below listed functions you will find in **ADJUST** and **SPECIAL** menu setup as sub menu

VF Mode



Fixed Mode



EXPOSURE: describes the brightness-related parameters which can be adjusted by **Shutter**, **AGC**, **Brightness**, **D-WDR** and **Backlight** etc.

- **Shutter:** increase the exposure time on a single frame which makes a camera more sensitive to the light. so it can produce images even in low lux conditions.
Fixed camera will show the parameters as the <Auto>, <1/30>, <FLK>, <1/240>, <1/480>, <1/1000>, <1/2000>, <1/5000>, <1/10000> and <1/50000>
VF camera will show the parameters as the <Auto> & <FLK>.
- **AGC** (Auto Gain Control): It optimizes the clarity of the image in poor light conditions. The AGC can be set the value from 0 to 15.
- **Brightness:** Adjust its brightness level. The brightness can be set from 1 to 100.
- **D-WDR** (Digital Wide Dynamic Range): will balance the brightness level of the whole image to provide clear images with details. You can set as **OFF**, **ON** and **AUTO**.
Under the <ON> mode, you can choose its level from 0 to 15.
- **Backlight:** compensates light to the object in the front to make it clear, but this may cause the over exposure of the background where the light is strong.

WHITE BALANCE: White balance, the white rendition function of the camera, is to adjust the color temperature according to the environment. It can remove unrealistic color cast in the images. You can set WHITE BALANCE mode as Auto or Manual.

- **Auto:** Under the Auto mode, white balance can be adjusted automatically according to the color temperature of the scene illumination.
- **Manual:** Under the Manual mode, you can set the R-GAIN/B-GAIN value from 1 to 255 to adjust the shades of red/blue color of the image.

DAY & NIGHT: COLOR, B/W and EXT, are selectable for DAY/NIGHT switch.

- **COLOR:** The image is colored in day mode all the time
- **B/W:** The image is black and white all the time, and the IR led turns on in the poor light conditions. Under the B/W mode, you can turn on/off the IR led to meet the requirement of different circumstances and set the value of IR Smart in this menu.

IR Smart: The function is used to adjust the light to its most suitable intensity and avoid the image from over-exposure.

Level: The IR level value is set from 0 to 15. The higher the value is, the more obvious effects are.

Area: Set its area parameters as <Position>, <Size> <RET> and <Again> etc.

- **EXT:** The option allow you set its switch delay time when the mode is switched from D→N or N→D

D→N (Day to Night) : is used to control the delay time of switching the <Day> to the <Night> mode. You can set the value from 0 to 60. The smaller the value is, more quickly the camera switch between the two modes.

N→D (Night to Day) : is used to control the delay time of switching the <Night> to the <Day> mode. You can set the value from 0 to 60. The smaller the value is, more quickly the camera switch between the two modes.

Adjust/Special: The menu is used to mainly adjust video parameter setting. Its sub-menu has a bit difference between Fixed and VF version. Details please refer to the above Menu structure.

- **NR (Noise Reduction):** The 2 DNR function can decrease the noise effect, especially when capturing moving images in poor light conditions. You can set the below 2DNR parameters: **OFF**, **LOW**, **MIDDLE** and **HIGH**
- **Sharpness:** determines the amount of detail an imaging system can reproduce. You can set the Sharpness parameters as **Auto & OFF**. Under the <Auto> mode, you can set its Level, Start AGC, End AGC etc Its setting value is as follows:

Level value from 0 to 10

Start AGC value from 0 to 255

End AGC value from 0 to 255

- **Monitor:** the option allows you adjust monitor's parameters; you can set its parameters as <GAMMA>, <Blue Gain> and <Red Gain> etc.

GAMMA: Its parameter covers the <user, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00>, The larger the value is, the darker screen brightness is.

Blue Gain: Set the value from 0 to 100

Red Gain: Set the value from 0 to 100.

- **LSC:** increase the brightness of the image margin. You can set as <ON> and <OFF>, under the <On> sub-menu, you can adjust the brightness of screen margin.

- **Mirror: OFF, MIRROR, V-FLIP and ROTATE** are selectable for mirror.

OFF: The mirror function is disabled.

Mirror: The image flips 180° horizontally

V-Flip: The image flips 180° vertically.

Rotate: The image flips 180° both horizontally and vertically.

- **DPC (Defective Pixel Correction):** Defective pixels are pixels in a CMOS image sensor, which fail to sense light levels correctly. The series of camera supports defective pixel correction. You can set the **DPC** as **<Live DPC>** and **<White DPC>**.
- **Language:** Under the sub-menu, you can select English, CHN 1(Chinese 1), CHN 2 (Chinese 2), Ger(German), FRA(French), ITA(Italian), SPA (Spanish), POL(Polish), RUS(Russian), POR(Portuguese), NED(Dutch), TUR(Turkish) and JPN (Japanese)
- **Output mode:** click the **<Output>** menu, you can choose its format (AHD, CHD,THD, CVBS), Video Out(NTSC, PAL), Frame rate (12.5P & 20P), Resolution(5MEGA, 4MEGA) etc.

Format	Resolution	Frame Rate	Remarks
AHD (AHD)	5MP / 4MP	20 fps	CVI format only support 4MP resolution, its frame rate defaulted as 25fps @ PAL system and 30 fps @ NTSC system.
TVI (THD)	5MP / 4MP	20 fps	
CVI (CHD)	4MP	25 fps / 30 fps	
CVBS	720P	25 fps / 30 fps	

AF Mode: This option refers to the motorized camera.

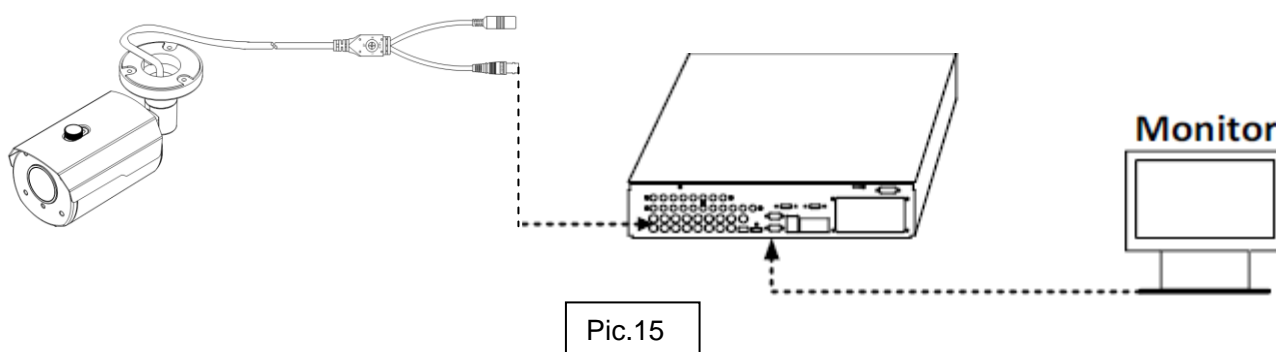
- **AF mode:** allow you set motorized mode parameter, included Semi, Auto and Manual
- **ONE SHOT AF:** The menu will automatically focus the lens.
- **TDN AF:** When transfer between Day and night modes, the camera will automatically focus the lens. The sub-menu covers OFF and ON

LENS INIT: the option will allow you initialize the lens to defaulted value.


2.4.2 OSD Menu operation



Call the menu locally via DVR port

1. Connect the camera with your DVR and the monitor shown as Pic 15.

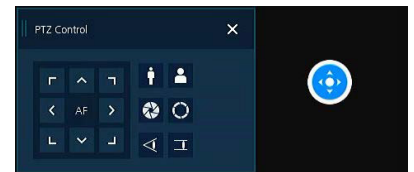


2. Power on the camera, the DVR and the monitor, and then view the image on the monitor.
3. Open the DVR main menu, and enter into the menu **<Device-->PTZ-->Protocol>** and configure the protocol to **<Coax>**;

4. Go to Live view interface and left-click the bottom on the specific live channel, then select the PTZ control icon  to pop up the following interface shown as Pic 16

5. Click the icon  to go to hybrid HD camera OSD menu. This icon is also to be used as Confirm icon. Up, down and right and left buttons  are used to select the menu.

6. Now you have called the OSD menu of the camera by PTZ Control Interface via DVR port.



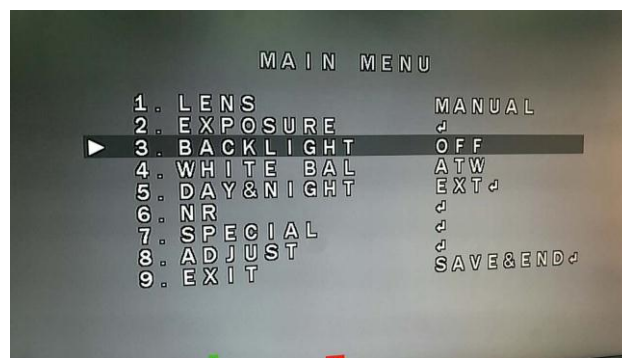
Pic.16

Call the menu remotely via joystick of the camera

For the AHD camera with Joystick, we can use the joystick (Pic 17) to control AHD Main Menu. The operation steps follow as below:



Pic.17



Pic.18

1. Press the middle button to callout MAIN MENU (Pic 18) and can confirm the chosen items.
2. Press to Up/Down direction to switch the menu items.
3. Press to Left/Right direction to choose different items in this menu.

Also we can use the joystick to call the video output mode.

1. Press to <UP> direction and hold for three seconds to call the <AHD> mode;
 2. Press to <Down> direction and hold for three second to call the <CVBS> mode;
 3. Press to <L> direction and hold for three seconds to call the <TVI> mode;
- Press to <R> direction and hold for three seconds to call the <CVI> mode

3 Appendix

3.1 Specification

Bullet Camera

Model no.	MEB-65M2713M0A
product description 01	1/2.7" HD Camera, Day&Night,
product description 02	2592 (H) ×1944 (V) , Infrared,
product description 03	2,7-13,5mm, 12VDC, IP66
Technical requirements	
System	True Day&Night
Camera type	Bullet
Video standard	PAL/NTSC
Signal format	Composite (FBAS), HD-TVI @ 5MP, AHD @ 5MP
Sensor size	1/2.7"
Imager, Type	Progressive CMOS, SC5235
Synchronization	internal
Signal-to-noise ratio	50dB
Resolution pixels	2560x1440; 960x576
Frame rate	25/30fps @ 2560x1440p
Sensitivity	Color 0.05lux @ F1.2(AGC ON) ; B/W 0 lux @ IR ON
Automatic electronic shutter (ESC)	1/15 ~ 1/50.000sec..
Manual electronic shutter (MES)	1/15 ~ 1/50.000sec.
Low speed shutter	no
Digital Noise Reduction (DNR)	yes
Flickerless function	yes
Mirror function	mirror, V flip, rotation
White balance	automatic
Backlight compensation	yes
Wide Dynamic Range (WDR)	D-WDR
IR cut filter	switchable
Video outputs	HD-TVI, AHD, HD-CVI, composite (CVBS)
Lens type	varifocal
Lens	DC
Focal length	2,7 - 13,5mm (Motorized)
Aperture range (F)	F1.8(W) ~ F3.2 (T)±5%
Horizontal angle of view	115.9°(W)—33.8°(T)
Vertical angle of view	59.5°(W)—19.0°(T)
MOD (Minimum object distance)	0.8m(W)-1.0m (T)
Illumination	infrared 24x IR LED
Illumination range	approx. 30m
Menu languages	German, English, French, Italian, Spanish, Turkish, Dutch, Portugese, olish, Chinese, Russian
OSD function control	Via Joystick (Cable) or TVI -UTC protocol
Text display	supplied
Motion detector	no
Privacy zones masking	no
Serial interfaces	Coaxitron (HD Protocol)
Serial interfaces protocols	UTC (HD-Signal Format)
External connections	video (BNC), 12VDC power input
Mounting	wall mount, ceiling mount
Temperature range (operation)	-20°C ~ +50°C
Housing material	aluminium
Housing	outdoor
Integrated wall mount	yes
Hidden cable management	yes
Sunshield	yes
Window heater	no
Colour (housing)	white
Vandalism resistant	no
Protection rating	IP66
Alarm inputs	no
Alarm outputs	no
Supply voltage	12VDC
Power consumption	4.5W
Dimensions (HxWxD)	77x84x240mm
Weight	600g

Turret Camera

Model	MED-65M2713MBA	MED-55F0036M0A
product description 01	1/2,7" HD Dome, Varifocal,	1/2,7" HD Dome, Fix,
product description 02	Day&Night, 2592 (H) ×1944 (V) , Infrared	Day&Night, 2592 (H) ×1944 (V) , 3.6mm,
product description 03	2,7-13mm, 12VDC, IP66	Infrared, 12VDC, IP66
Technical requirements		
Camera type	Dome	Dome
System	True Day&Night	True Day&Night
Video standard	PAL/NTSC	PAL/NTSC
Signal format	Composite (FBAS), HD-TVI @ 5MP, AHD @ 5MP	Composite (FBAS), HD-TVI @ 5MP, AHD @ 5MP
Sensor size	1/2.7"	1/2.7"
Imager type	Progressive CMOS, SC5235	Progressive CMOS, SC5235
Resolution pixels	2592x1940, 960x576	2592 (H) ×1944 (V)
Frame rate	20fps@2592x1940, 25/30fps @ 2560x1440p	20fps@2592x1944p, 25/30fps @ 2560x1440p
Synchronization	internal	internal
Signal-to-noise ratio	50dB	50dB
Sensitivity	0.05lux@F1.2(AGC ON),0Lux with IR ON	0.05lux@F1.2(AGC ON),0Lux with IR ON
Automatic electronic shutter (ESC)	1/15 ~ 1/50.000sec..	1/15 ~ 1/50.000sec..
Manual electronic shutter (MES)	1/15 ~ 1/50.000sec.	1/15 ~ 1/50.000sec.
Low speed shutter	no	no
Digital Noise Reduction (DNR)	yes	yes
Backlight compensation	yes	yes
Wide Dynamic Range (WDR)	D-WDR	D-WDR
White balance	automatic	automatic
Blemish compensation	no	no
Flickerless function	yes	yes
IR cut filter	switchable	switchable
Day/Night switching	auto, day, night	auto, day, night
Privacy zones masking	no	no
Menu languages	German, English, French, Italian, Spanish, Turkish, Dutch, Portuguese, Polish, Chinese, Russian	German, English, French, Italian, Spanish, Turkish, Dutch, Portuguese, Polish, Chinese, Russian
OSD function control	Via Joystick (Cable) or TVI -UTC protocol	Via Joystick (Cable) or TVI -UTC protocol
Text display	supplied	Supplied
Motion detector	no	no
Mirror function	mirror, V flip, rotation	mirror, V flip, rotation
Digital zoom	no	no
Lens type	varifocal	fixed focal length
Focal length	2,7 - 13,5mm (Motorized)	3.6 mm fixed lens
Horizontal angle of view	115.9°(W)—33.8°(T)	87.4°
Vertical angle of view	59.5°(W)—19.0°(T)	47.0°
MOD (Minimum object distance)	0.8m(W)-1.0m (T)	0.2m
Aperture range (F)	F1.8(W) ~ F3.2 (T)±5%	F2.0±5%
Video outputs	HD-TVI, HD-CVI, AHD, composite (CVBS)	HD-TVI, HD-CVI, AHD, composite (CVBS)
Alarm inputs	no	no
Alarm outputs	no	no
Illumination	infrared 40x IR-LEDs 850nm, 60°	infrared 18x LED 850nm
Illumination range	approx. 40m	approx. 20m
External connections	video (BNC), 12VDC power input	video (BNC), 12VDC power input
Serial interfaces	Coaxitron (HD Protocol)	Coaxitron (HD Protocol)
Serial interfaces protocols	TVI-UTC	TVI-UTC
Housing	outdoor	outdoor
Housing material	Aluminium	Aluminium
Colour (housing)	white	white
Heater	no	no
Blower	no	no
Mounting	wall mount, ceiling mount	wall mount, ceiling mount
Supply voltage	12VDC	12VDC
Power consumption	5.3W	3,7W
Temperature range (operation)	-20°C ~ +50°C	-20°C ~ +50°C
Protection rating	IP66	IP66

※ Specifications are subject to change without notice.



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