

# 2MS2PAN-4G3D

Solar Solution with 2 Starlight 4K Panoramic Cameras, NVR and 4G Router  
 Standby 24hr x3 Days



*Note: This image is for marketing purposes ONLY. It does not indicate the position of the cameras and is not to scale.*



**2x Panoramic View Camera**



**4G Router**



**NVR with 1 HDD capacity**



**1 Month Backup**



**3 Day Battery Backup**

## Solutions



### Features

#### Starlight Panoramic Network Camera: 2MPANIP-4KIR50-P

- Two 4K Panoramic Cameras
- 180° horizontal viewing angle for each camera. Full 360° coverage with 2 cameras
- Customized OSD
- 5<sup>th</sup> generation infrared technology, up to 50m (164ft)

#### Video Recorder : 2MN-8004-P4

- 8 channel IP camera input
- 8 PoE channels
- 1 TB hard drive included

#### Solar Power System

- Monocrystalline silicon solar cell module with a 25 year service life
- Durable Lithium iron phosphate battery with an 8 year service life
- Standby time: 24 hours for 3 days
- Easy to manage controller
- Integrated power cabinet

**Note: More cameras can be added. Further customization is available. Price will change accordingly.**

### Specifications

CAMERA: 2MPIP-2MIR505X					
<b>Sensor</b>		1/1.8" progressive scan, 2.0 megapixel, CMOS			
<b>Lens</b>		4 x 4.2mm lens			
<b>DORI Distance</b>	<b>Lens</b>	<b>Detect (m)</b>	<b>Observe (m)</b>	<b>Recognize (m)</b>	<b>Identify (m)</b>
	4.2mm	50.4 (165.4ft)	20.2(66.3ft)	10.1(33.1ft)	5.0(16.4ft)
<b>Angle of View (H)</b>		180°			
<b>Angle of View (V)</b>		80°			
<b>Angle of View (O)</b>		221.4°			
<b>Adjustment Angle</b>		Pan: -90°~90°; Tilt: -45°~60°			
<b>Shutter</b>		Auto/Manual, shutter time: 1 s ~ 1/100000 s			
<b>Minimum Illumination</b>		Color: 0.002lux (F1.8,AGC ON) 0lux with IR			
<b>Iris</b>		F1.8			
<b>Day/Night</b>		IR-cut filter with auto switch (ICR)			
<b>S/N</b>		>55 dB			
<b>IR Range</b>		UP to 50m (164ft)			
<b>WDR</b>		120dB			

## Starlight Panoramic Camera



### NETWORK

<b>Protocols</b>	IPv4, IGMP, ICMP, ARP, TCP, UDP, DHCP, PPPoE, RTP, RTSP, RTCP, DNS, DDNS, NTP, FTP, UPnP, HTTP, HTTPS, SMTP, 802.1x, SNMP, QoS
<b>Compatible Integration</b>	ONVIF (Profile S, Profile G, Profile T), API

### INTERFACE

<b>Audio I/O</b>	1 Input: impedance 35 k $\Omega$ ; amplitude 2 V [p-p] 1 Output: impedance 600 $\Omega$ ; amplitude 2 V [p-p]
<b>Alarm I/O</b>	2/1
<b>Network</b>	1x100M/1000M Base-FX SFP + 2x10M/100M/1000M Base-TX Ethernet

### GENERAL

<b>Power</b>	AC24V/DC24V $\pm$ 25%
<b>Power Consumption</b>	48W Max
<b>Dimensions</b>	259 x 211 x 115 (mm)
<b>Weight</b>	2.4kg (5.3lb)
<b>Working Environment</b>	-40°C ~ +70°C (-40°F ~ 158°F), Humidity: 10%~95% RH (non-condensing)
<b>Ingress Protection</b>	IP67

### VIDEO

<b>Video Compression</b>	Ultra H.265, H.265, H.264, MJPEG
<b>Frame Rate</b>	Main Stream: 4096 $\times$ 1800:Max. 30 fps; Sub Stream: 1920 $\times$ 832:Max. 30 fps; Third Stream: 1280 $\times$ 560: Max. 30 fps
<b>HLC</b>	Supported
<b>BLC</b>	Supported
<b>OSD</b>	Up to OSD's
<b>Privacy Mask</b>	Up to 8 areas
<b>ROI</b>	Up to 8 areas

### SMART

<b>General Function</b>	Watermark, IP Address Filtering, Tampering Alarm, Alarm input, Alarm output, Access Policy, ARP Protection, RTSP Authentication, User Authentication
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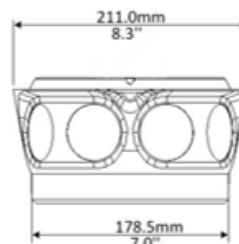
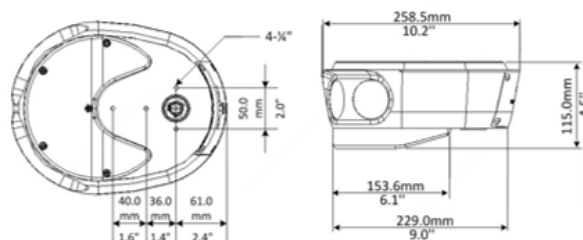
### AUDIO

<b>Audio Compression</b>	G.711
<b>Two-way Audio</b>	Supported
<b>Suppression</b>	Supported
<b>Sampling Rate</b>	8 KHZ

### STORAGE

<b>Edge Storage</b>	Micro SD, up to 256 GB
<b>Network Storage</b>	ANR

### Recorder Dimensions



## Network Video Recorder



### RECORDER MODEL: 2MN-8008-P8

#### VIDEO INPUT/ OUTPUT

<b>IP Video Input</b>	8CH
<b>Two-way Audio Input</b>	1CH, RCA

#### NETWORK

<b>Incoming Bandwidth</b>	320Mbps
<b>Outgoing Bandwidth</b>	160Mbps
<b>Remote Users</b>	128
<b>Protocols</b>	P2P, UPnP, NTP, DHCP, PPPoE

#### VIDEO/AUDIO OUTPUT

<b>HDMI/VGA Output</b>	VGA: 1920x1080p/60Hz, 1920x1080p/50Hz, 1600x1200/60Hz, 1280x1024/60Hz, 1280x720/60Hz, 1024x768/60Hz HDMI: 4K (3840x2160)/60Hz, 4K (3840x2160)/30Hz, 1920x1080p/60Hz, 1920x1080p/50Hz, 1600x1200/60Hz, 1280x1024/60Hz, 1280x720/60Hz, 1024x768/60Hz
<b>Recording Resolution</b>	12MP/8MP/6MP/5MP/4MP/3MP/1080p/960p/720p/D1/2CIF/CIF
<b>Audio Output</b>	1-ch, RCA
<b>Synchronous Playback</b>	8-ch
<b>Corridor Mode Screen</b>	3/4/5/7/9

#### DECODING

<b>Decoding format</b>	Ultra 265, H.265, H.264
<b>Liveview/Playback</b>	12MP/8MP/6MP/5MP/4MP/3MP/1080p/960p/720p/D1/2CIF/CIF
<b>Capability</b>	3 x 12MP@25, 4 x 4K@30, 8 x 4MP@30

#### HARD DISK

<b>SATA</b>	2 SATA interfaces
<b>Capacity</b>	up to 10TB for each disk

#### EXTERNAL INTERFACE

<b>Network Interface</b>	1 RJ-45 10M/100M/1000M self-adaptive Ethernet Interface
<b>USB Interface</b>	Front panel: 1 x USB2.0, Rear panel: 1 x USB3.0
<b>Alarm In</b>	4-ch
<b>Alarm Out</b>	1-ch

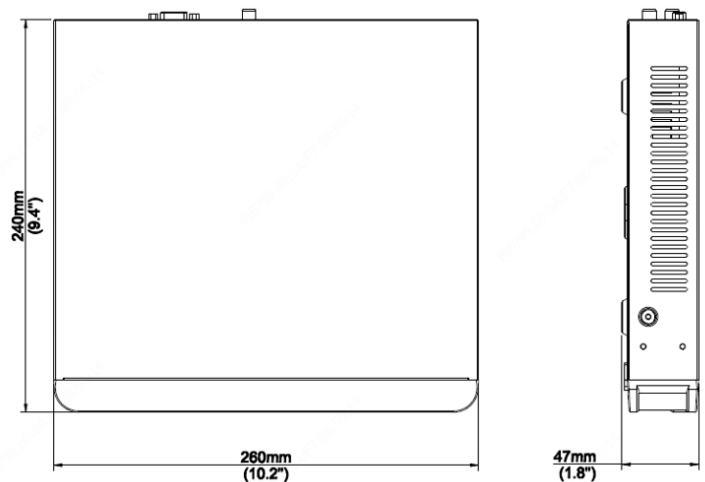
#### POE

<b>Interface</b>	8 independent 100 Mbps PoE network interfaces
<b>Max Power</b>	Max 30W for single port Max 130W in total (16.25W for each)
<b>Supported Standard</b>	IEEE 802.3af/at

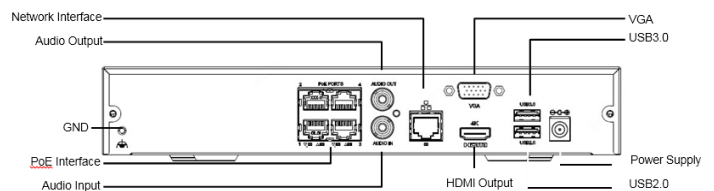
#### GENERAL

<b>Power Supply</b>	100 ~ 240 V AC
<b>Power Consumption</b>	≤ 12 W (without HDD)
<b>Working Environment</b>	-10°C ~ + 55°C (+14°F ~ +131°F) Humidity ≤ 90% RH (non-condensing)
<b>Dimensions (W×D×H)</b>	380 mm × 315mm × 53 mm (15" × 12.4"×2.1")
<b>Weight (without HDD)</b>	≤2.42kg (5.34lb)

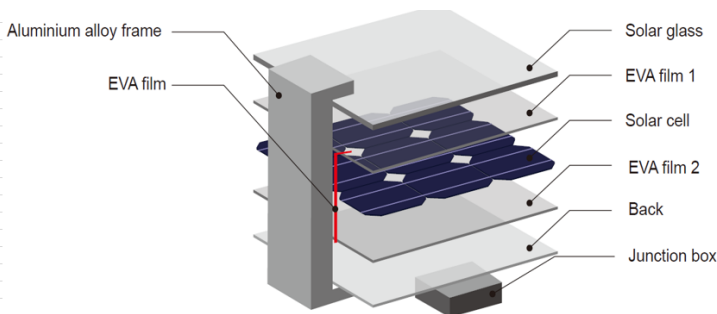
#### Recorder Dimensions



#### Rear Panel



## Solar Panel Modules



### SOLAR MODULE SPECIFICATIONS

#### MODULE DATA

<b>Standard Power (W)</b>	170	300	380
<b>Working Voltage (V)</b>	18.86	32.01	38.41
<b>Working Current (A)</b>	8.51	8.86	8.86
<b>Open Circuit Voltage (V) Voc</b>	22.35	37.27	44.72
<b>Short-circuit Current (A) Isc</b>	9.02	9.373	9.895
<b>Cell Efficiency (%) CE</b>	19.3	19.9	19.9
<b>Module Efficiency (%) ME</b>	>16.13	>17.43	>17.52
<b>Tolerance (%)</b>	±3%		
<b>Nominal Operating Cell Temperature</b>	47°C (+/- 2°C)   116.6°F (+/- 35.6°F)		

#### TEMPERATURE COEFFICIENTS

<b>Short Circuit Current Coefficient Isc (%)</b>	0.04°C / 32.1°F
<b>Open Circuit Voltage Coefficient Voc (%)</b>	-0.38°C / 31.3°F
<b>Nominal Power Factor Pm (%)</b>	-0.47°C / 31.2°F
<b>Working Current Coefficient Im(%)</b>	0.04°C / 32.1°F
<b>Working Voltage Coefficient Vm (%)</b>	-0.38°C / 31.3°F

#### COMPONENTS & MECHANICAL DATA

<b>Solar Cell</b>	156 x 156 Mono-crystalline silicon		
<b>Number of Cell (pcs)</b>	4 x 9 series connection	6 x 10 series connection	6 x 12 series connection
<b>Size of Module</b>	1485 x 668 mm / 4.9' x 2.2' ft	1640 x 990 mm / 5.4' x 3.2' ft	1960 x 990 / 6.4' x 3.2' ft
<b>Front Glass Thickness</b>	3.2mm   0.1" in		
<b>Surface Maximum Load Capacity</b>	2400-5400Pa		
<b>Allowable Hail Load</b>	23m/s, 7.53g   23m/s, 0.3oz		
<b>Weight Per Piece (kg)</b>	15.26kg/33.6 lbs	18.86/41.6 lbs	22.16/48.9 lbs
<b>Junction Box Type</b>	Pass the TUV or CE Certificate		
<b>Bypass Diode Rating (A)</b>	12 or None		
<b>Cable &amp; Connector Type</b>	Pass the TUV or CE Certificate		
<b>Frame (Material Corners,etc.)</b>	30# / 35#	40# / 35#	
<b>Back Board Type (Brand Type)</b>	TPT, PET or KPF		
<b>Working Temperature</b>	-40°C to 85°C   -40°F to 185°F		
<b>Standard Test Conditions</b>	AM1.5 1000W/m <sup>2</sup> 25°C/77°F		

## Solar Power Controller MPPT



### CONTROLLER SPECIFICATIONS

<b>System Voltage</b>	12V/24V/48V/96V automatic recognition
<b>Max Charging Current</b>	40A
<b>Fast Charging Voltage</b>	14.0/28.0V/56V/112V(25°C)/(77°F)
<b>Boost Charging Voltage</b>	14.5/29.0V/58.0V/116V(25°C)/(77°F)
<b>Equalization Charging Voltage</b>	14.8/29.6V/59.2V/118.4V(25°C)/(77°F)
<b>Float Charging Voltage</b>	13.7/27.4V/54.8V/109.6V(25°C)/(77°F)
<b>Low Voltage Alarm</b>	11.0/22.0/44.0/88.0V
<b>Low Voltage Disarming</b>	12.5/25.0V/50.0V/100.0V
<b>Storage Cell Type</b>	Liquid, Gel, Lithium
<b>Temperature Compensation</b>	-4.17mV/K per cell (boost charging, equalization charging); -3.33mV/K per cell (float charging)
<b>Solar Power End Max Voltage</b>	55V/100V/150V/300V
<b>Storage Cell Max Voltage</b>	DC280V
<b>Cable Length</b>	120mm/80mm   4.7" in/3.1" in.
<b>High Protection Voltage For Storage Cell</b>	15.5/31.0/62V/124V
<b>Communication Protocol</b>	RS232/RS485/TCP/IP transmission wired or wireless by GPRS/3G/4G etc.
<b>Recommended Wire Diameter</b>	6mm <sup>2</sup>
<b>Max Current Consumption</b>	8mA/16mA/24mA
<b>Working Temperature</b>	-40°C ~ 60°C
<b>Protection Level</b>	IP30~IP68
<b>Altitude (for reference)</b>	4000~5000m   2.5~3.1 miles

## Lithium Iron Phosphate Battery

### BATTERY SPECIFICATIONS

<b>Voltage</b>	12.8V
<b>Max Capacity</b>	230AH
<b>Discharge Stop Voltage</b>	11.2V
<b>Charge Stop Voltage</b>	14.4V
<b>Working Temperature</b>	-10°C~70°C   14°F to 158°F
<b>Service Life</b>	2000-2500 circle life
<b>Features</b>	Deep discharge depth, no memory, environmental protection, portable, long life



*Note: Batteries are custom made according to the projects requirement. Picture is for reference only.*