勁電科技有限公司 台灣新竹市 30055 北區金竹路 100 號 1 樓 IO-Power Technology Co., Ltd 1F., No.100, Jinzhu Rd., North Dist., Hsinchu City 30055, Taiwan
http://www.io-power.com http://www.io-power.com.cn e-mail: io-power@io-power.com.tw Tel:+886 3 5429395 Fax:+886 3 5357297 Cell:+886 933168849 Jacky Cheng

30Km transformer substation and High-voltage power tower

Deployment long-distance range MIMO WiFi wireless surveillance system design proposal

With Solar DC UPS and 12VDC to 48VDC PoE & 12VDC to 24VAC power system

1. Plan goal

In response to high voltage electric transmission towers of transmission line towers security monitoring, detection analysis of simultaneous high-voltage electric transmission circuit data management on demands, through MIMO WiFi wireless construction of long-distance data transmission on wireless Expressway, achieve real-time monitoring and management of high-voltage electric transmission systems.

2. Plan demand

2-1. through around-the-clock, time, distance, large bandwidth MIMO WiFi for wireless transmission to monitor and to reconnaissance data system, it will reduces the mountain to patrol the electric power tower personnel workload.

2-2. in response to high voltage power lines and towers skeletons and set up base environment …, for long-range real-time safety monitoring and management.

2-3. in response to high-voltage electricity Tower system, the Typhoon wind pressures, season heavy snow, temporary rainstorm, dust storms, thunder stroke…,under the impact of natural environment, for long-range strain managing transport safety monitoring and status for a long time.

2-4. matching incline, vibration, temperature, humidity, wind pressure, corrosion…of detects the equipment, carries on transportation facility such as power circuit and power towers of real-time monitoring and management of data transmission and analysis.

2-5. the matching electric power analysis management system management system equipment, the monitor analysis electrical energy transmission condition, takes the essential electrical energy transmission management measure.

2-6. through the integration of 'the solar energy power supply system' + '360 degree zoom lens 24 hour monitoring video recording system' + 'long-distance range big bandwidth MIMO WiFi wireless transmission system', achieves the upper row use demand.

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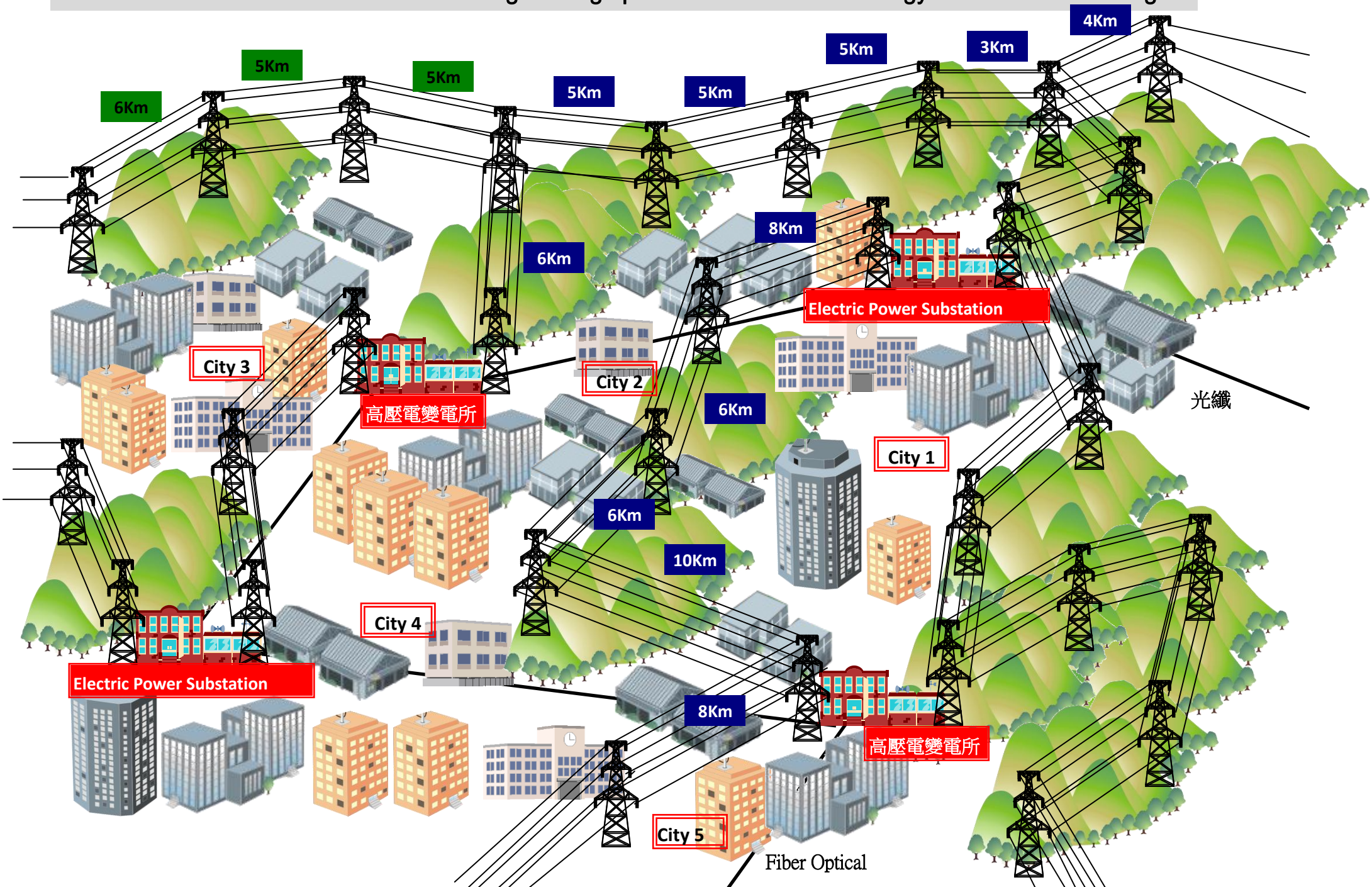
3. Multi-urban transformer substation and high-voltage power tower electrical energy transmission the diagram



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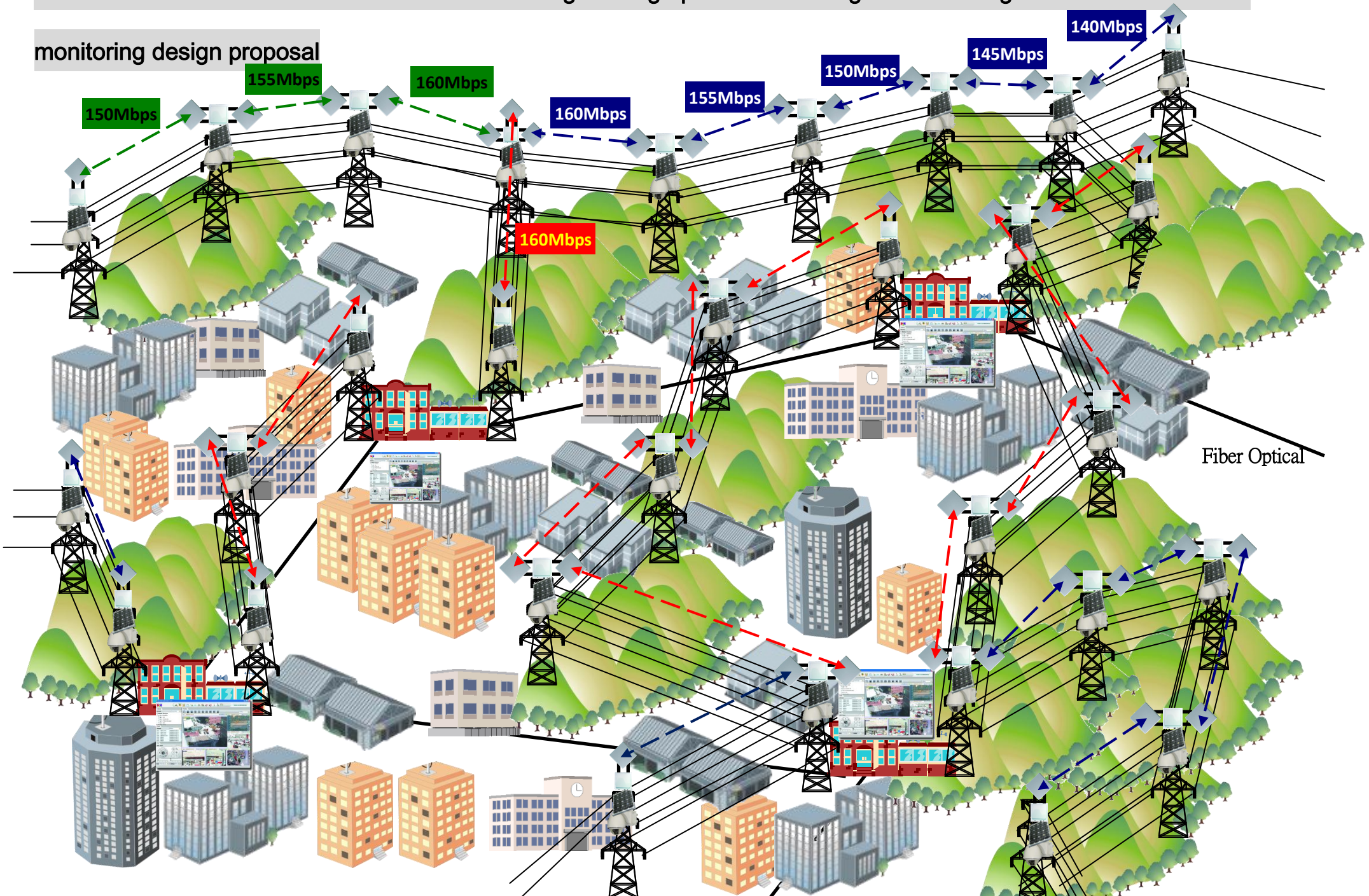
4. Multi-urban 30Km transformer substation and high-voltage power tower long-distance range MIMO WiFi wireless monitoring design proposal



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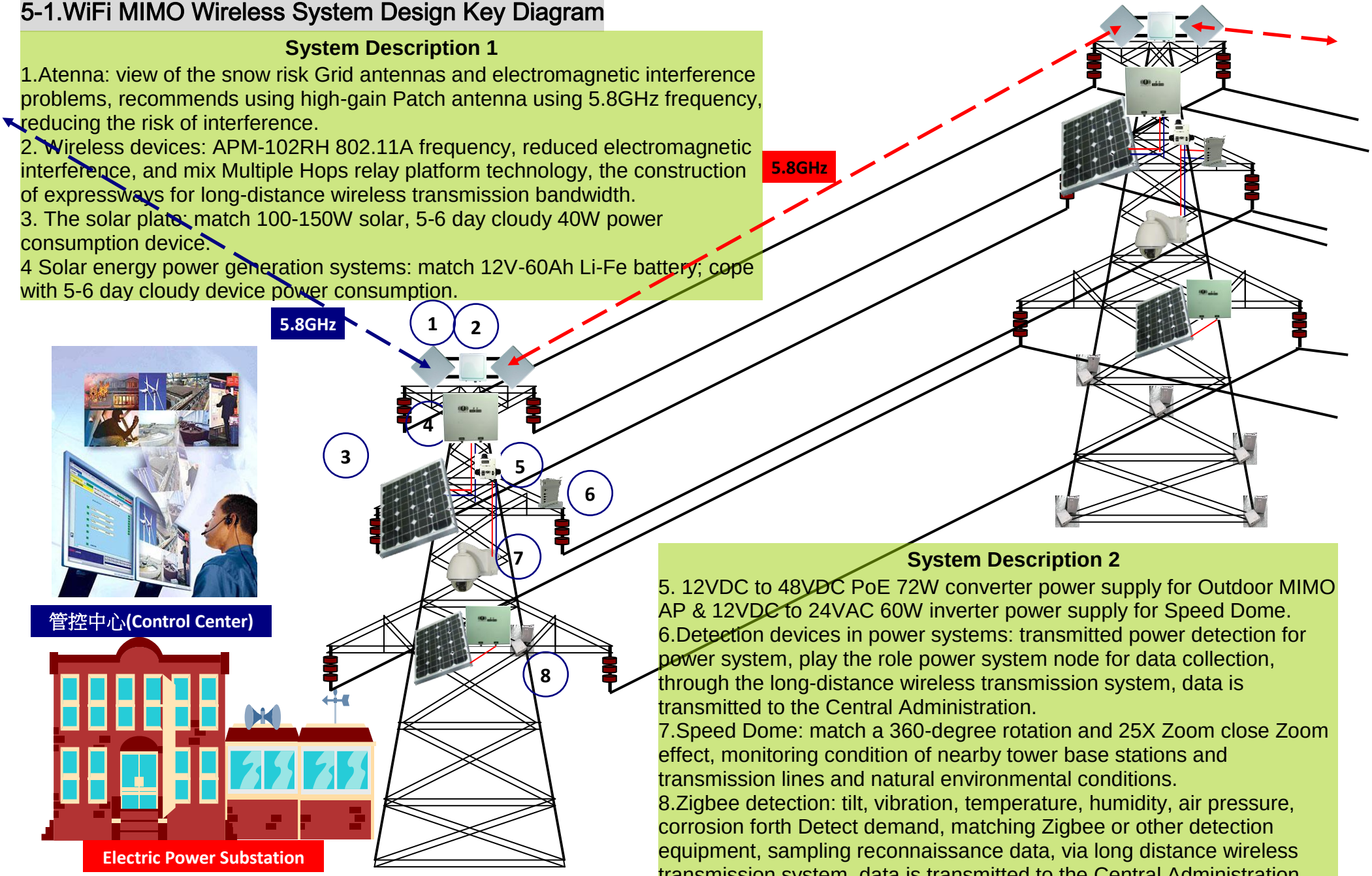
5-1.WiFi MIMO Wireless System Design Key Diagram

System Description 1

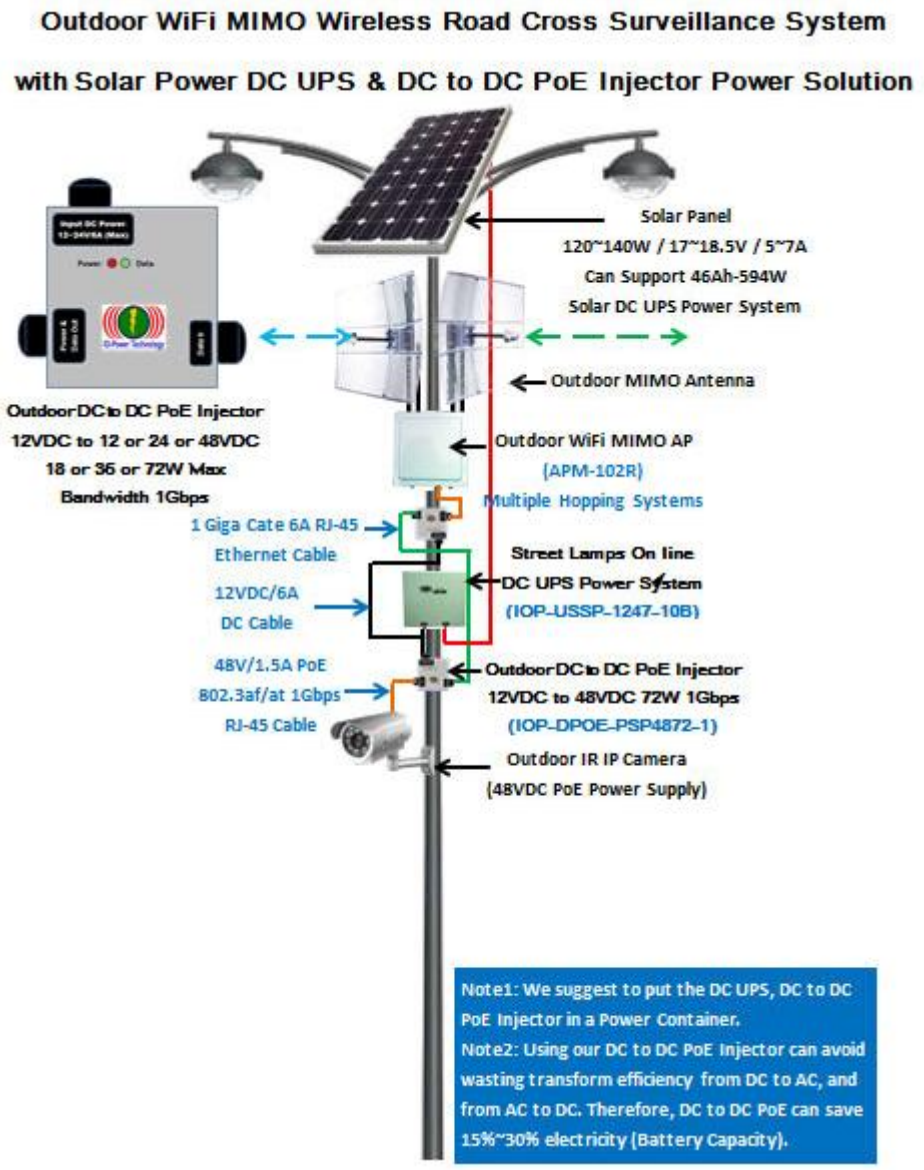
1.Atenna: view of the snow risk Grid antennas and electromagnetic interference problems, recommends using high-gain Patch antenna using 5.8GHz frequency, reducing the risk of interference.
2. Wireless devices: APM-102RH 802.11A frequency, reduced electromagnetic interference, and mix Multiple Hops relay platform technology, the construction of expressways for long-distance wireless transmission bandwidth.
3. The solar plate: match 100-150W solar, 5-6 day cloudy 40W power consumption device.
4 Solar energy power generation systems: match 12V-60Ah Li-Fe battery; cope with 5-6 day cloudy device power consumption.

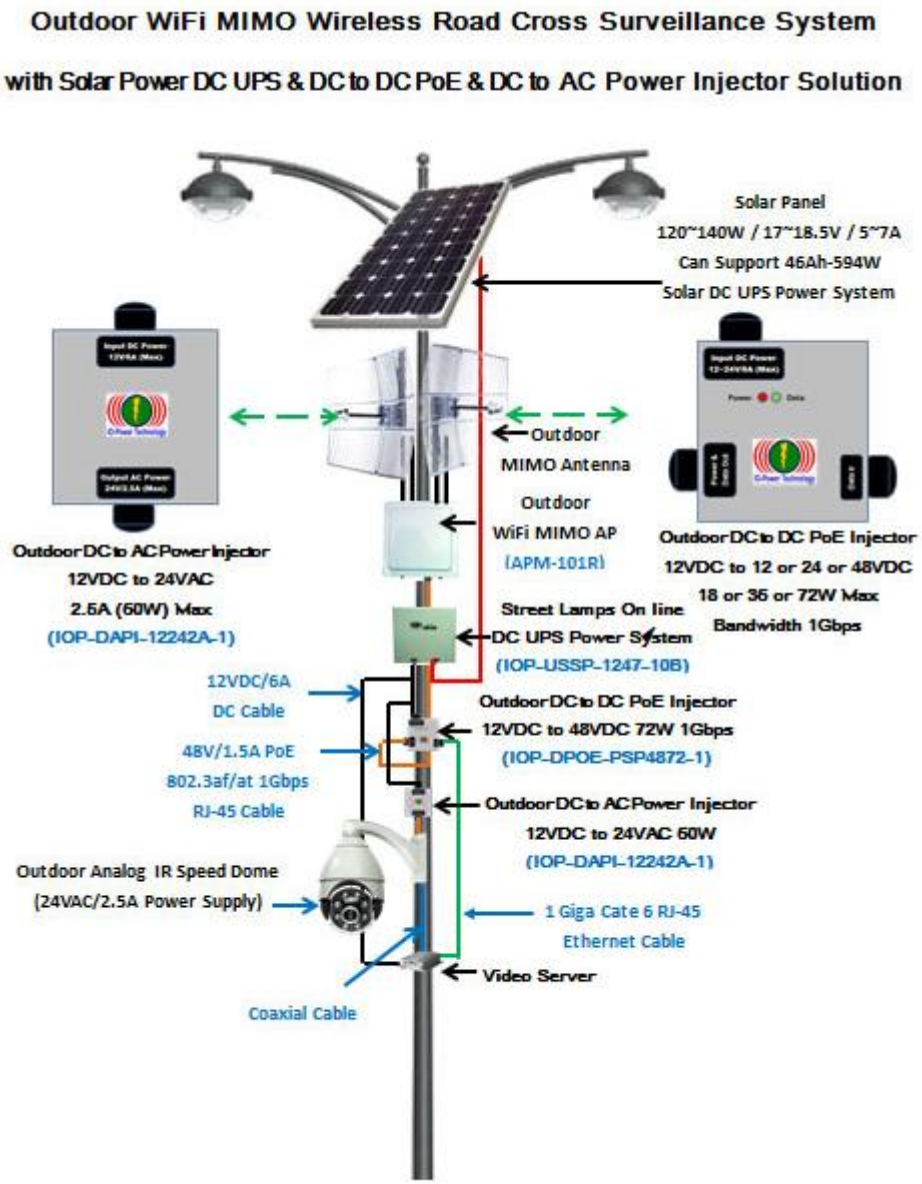


System Description 2

5. 12VDC to 48VDC PoE 72W converter power supply for Outdoor MIMO AP & 12VDC to 24VAC 60W inverter power supply for Speed Dome.
6.Detection devices in power systems: transmitted power detection for power system, play the role power system node for data collection, through the long-distance wireless transmission system, data is transmitted to the Central Administration.
7.Speed Dome: match a 360-degree rotation and 25X Zoom close Zoom effect, monitoring condition of nearby tower base stations and transmission lines and natural environmental conditions.
8.Zigbee detection: tilt, vibration, temperature, humidity, air pressure, corrosion forth Detect demand, matching Zigbee or other detection equipment, sampling reconnaissance data, via long distance wireless transmission system, data is transmitted to the Central Administration.

5-2. 『outdoor street light multi-purpose online non-interrupt the operation electrical power system and the persistent effect does not interrupt the operation electrical power system 』 the plan proposal





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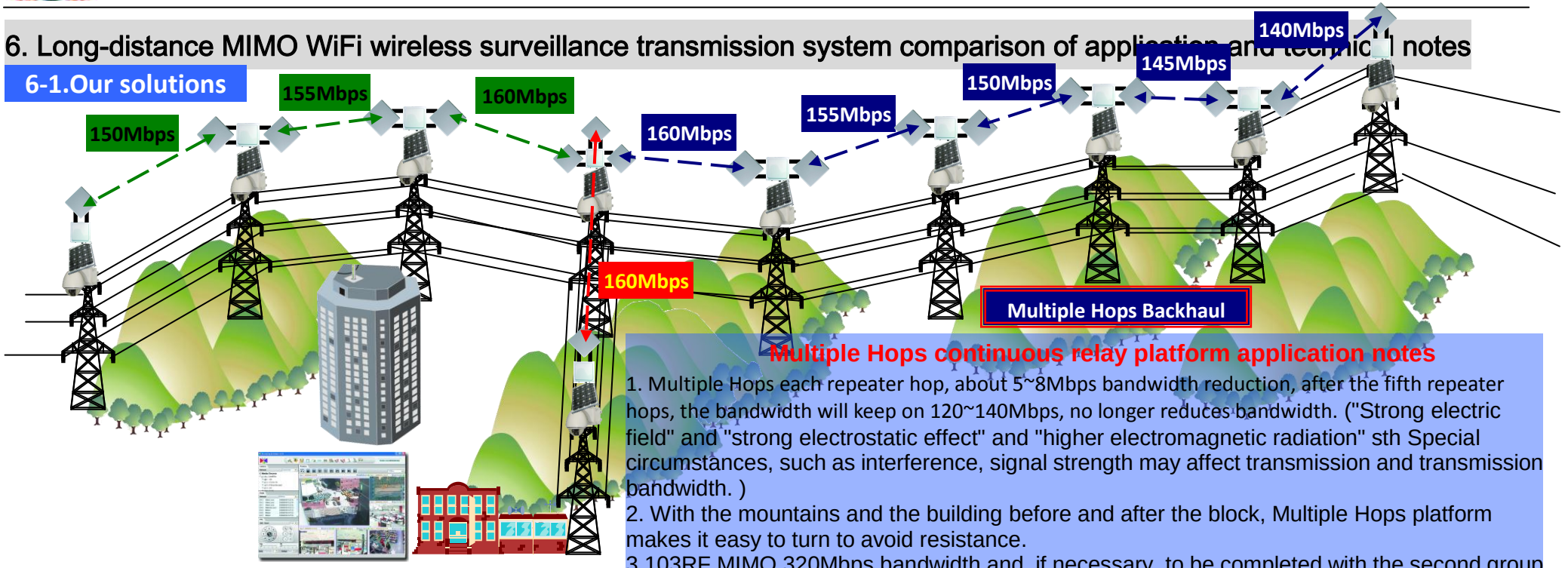
6. Long-distance MIMO WiFi wireless surveillance transmission system comparison of application and technical notes

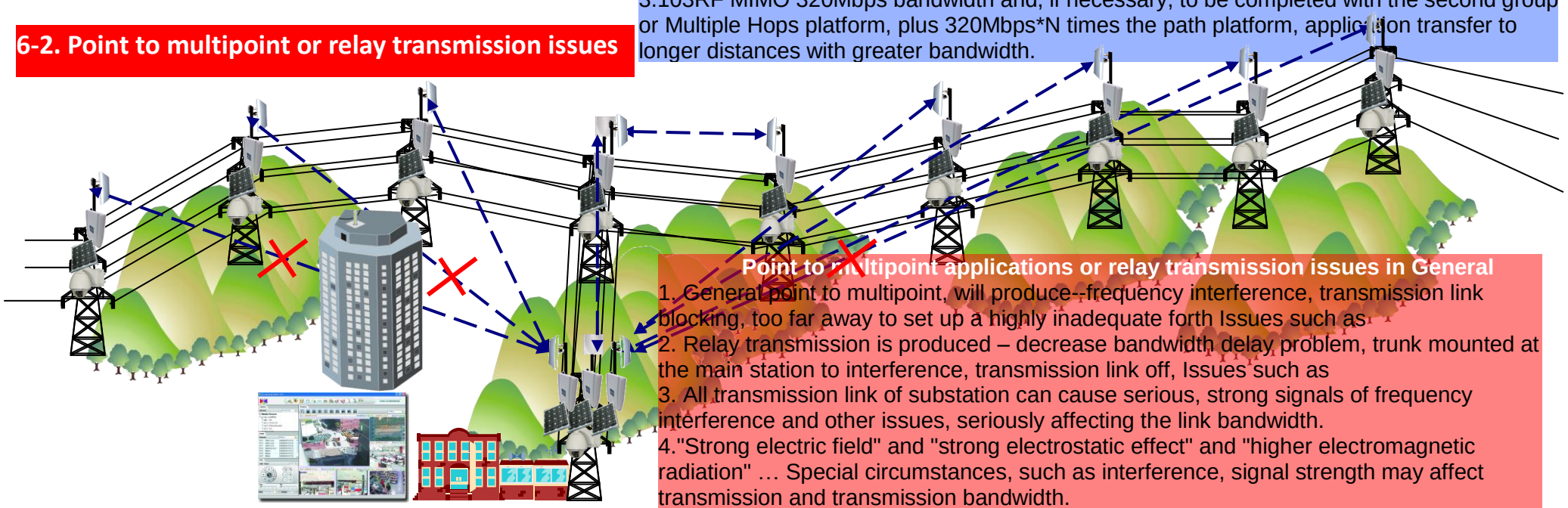
6-1.Our solutions



Multiple Hops continuous relay platform application notes

1. Multiple Hops each repeater hop, about 5~8Mbps bandwidth reduction, after the fifth repeater hops, the bandwidth will keep on 120~140Mbps, no longer reduces bandwidth. ("Strong electric field" and "strong electrostatic effect" and "higher electromagnetic radiation" sth Special circumstances, such as interference, signal strength may affect transmission and transmission bandwidth.)
2. With the mountains and the building before and after the block, Multiple Hops platform makes it easy to turn to avoid resistance.
3.103RF MIMO 320Mbps bandwidth and, if necessary, to be completed with the second group or Multiple Hops platform, plus 320Mbps*N times the path platform, application transfer to longer distances with greater bandwidth.

6-2. Point to multipoint or relay transmission issues

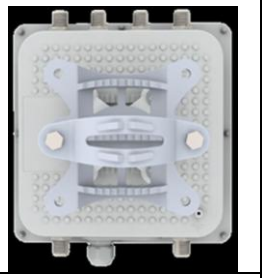


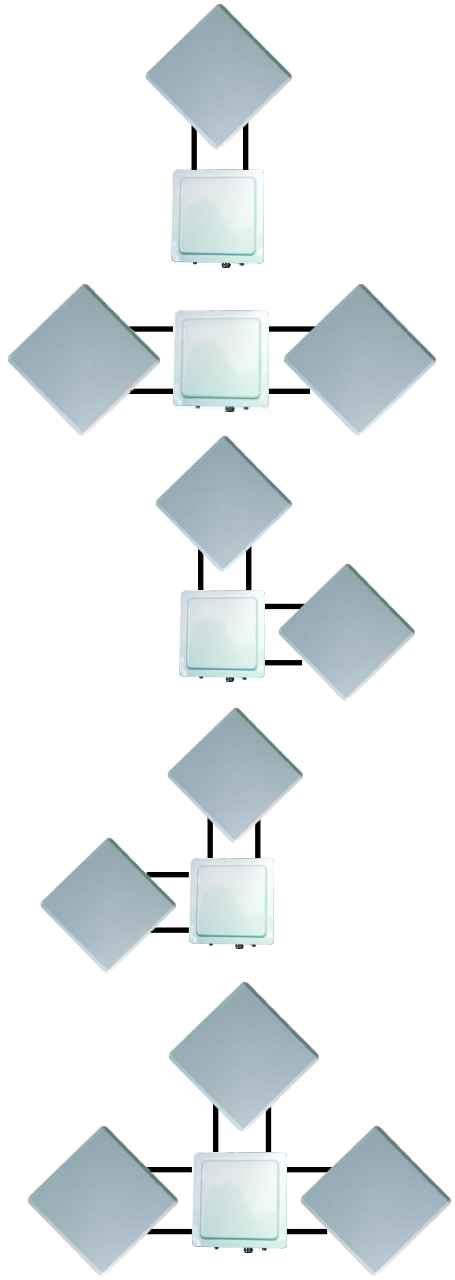
Point to multipoint applications or relay transmission issues in General

1. General point to multipoint, will produce--frequency interference, transmission link blocking, too far away to set up a highly inadequate forth Issues such as
2. Relay transmission is produced – decrease bandwidth delay problem, trunk mounted at the main station to interference, transmission link off, Issues such as
3. All transmission link of substation can cause serious, strong signals of frequency interference and other issues, seriously affecting the link bandwidth.
4."Strong electric field" and "strong electrostatic effect" and "higher electromagnetic radiation" … Special circumstances, such as interference, signal strength may affect transmission and transmission bandwidth.

7. Product Specifications

Device type and specifications

	Model	APM-101R (H)	APM-102R (H)	APM-103R (H)
Product Images	Rear Side			
	Top of Antenna Connector			
	Below of Antenna Connector			
	Front Side			



Product Specifications

Hardware Specification

Key Components	
Main Processor	Atheros AR7161(680Mhz)
Wireless Chipset	Atheros AR9220 based miniPCI module, Up to three modules
Switch Controller	Atheros AR8035 / Atheros AR8021
Flash Memory	16MBytes
SDRAM	128MBytes
Console	UART x 1(PCBA onboard)

Interfaces	
Wireless	Up to three 2x2 MIMO radios, mini-PCI version 1.0 type 3A Frequency ranges : a. USA : 2.400 ~ 2.483 GHz, 5.15 ~ 5.35 GHz, 5.5 ~ 5.7 GHz, 5.725 ~ 5.825 GHz b. Europe: 2.400 ~ 2.483 GHz, 5.15 ~ 5.35 GHz, 5.47 ~ 5.725 GHz c. Japan: 2.400 ~ 2.497 GHz, 5.15 ~ 5.35 GHz, 5.47 ~ 5.725 GHz

d. China: 2.400 ~ 2.483 GHz, 5.725 ~5.85 GHz

RF output power of DNMA-92 :

a. IEEE802.11a

1. 21dBm@6M(all) 17dBm@54M(5180MHz) 16dBm@54M(5825MHz)

b. IEEE802.11b

1. 20dBm@1M(2412MHz) 19dBm@1M(2484MHz) 21dBm@11M(all)

c. IEEE802.11g

1. 23dBm@6M(all) 19dBm@54M(all)

d. IEEE802.11a/n HT20

1. 21dBm@MCS0/8(5180MHz) 19dBm@MCS0/8(5825MHz)
2. 16dBm@MCS7/15(5180MHz) 14dBm@MCS7/15(5825MHz)

e. IEEE802.11a/n HT40

1. 19dBm@MCS0/8(5190MHz) 18dBm@MCS0/8(5795MHz) 13dBm@MCS7/15(all)

f. IEEE802.11g/n HT20

1. 21dBm@MCS0/8(all) 17dBm@MCS7/15(all)

g. IEEE802.11g/n HT40

1. 21dBm@MCS0/8(2422MHz) 20dBm@MCS0/8(2462MHz)
2. 16dBm@MCS7/15(all)

Receive Sensitivity of DNMA-92 :

	a. IEEE802.11a 1.-82dBm@6M, 1Rx -95/-91dBm@6M, 2Rx 2. -65dBm@54M, 1Rx -79/-75dBm@54M, 2Rx b. IEEE802.11b 1.-82dBm@1M, 1Rx -95/-91dBm@1M, 2Rx 2. -76dBm@11M, 1Rx -91/-87dBm@11M, 2Rx c. IEEE802.11g 1.-82dBm@6M, 1Rx -95/-91dBm@6M, 2Rx 2. -65dBm@54M, 1Rx -80/-76dBm@54M, 2Rx d. IEEE802.11a/n HT20 1.-82dBm@MCS0, 1Rx -95/-91dBm@MCS0, 2Rx 2. -64dBm@MCS7, 1Rx -77/-73dBm@MCS7, 2Rx e. IEEE802.11a/n HT40 1.-79dBm@MCS0, 1Rx -91/-87dBm@MCS0, 2Rx 2. -61dBm@MCS7, 1Rx -74/-70dBm@MCS7, 2Rx f. IEEE802.11g/n HT20 1.-82dBm@MCS0, 1Rx -95/-91dBm@MCS0, 2Rx 2. -64dBm@MCS7, 1Rx -77/-73dBm@MCS7, 2Rx g. IEEE802.11g/n HT40 1.-79dBm@MCS0, 1Rx -90/-86dBm@MCS0, 2Rx 2. -61dBm@MCS7, 1Rx -74/-71dBm@MCS7, 2Rx
Ethernet	10/100/1000 Base-TX MDI/MDIX RJ-45 x 1 Compliant with :IEEE802.3 / 802.3u / 802.3at Hardware based 10/100/1000, full/half, flow control auto negotiation
Connector	101R 2 x N-type(1 radio)

	102R 4 x N-type(2 radios) 103R 6 x N-type(3 radios)
Power Requirement	48V 1A PoE Support Gigabit Ethernet Link
Watch Dog	Hardware Watch Dog

Physical	
Dimensions	220 x 220 x 77 mm
Weight	101R/101RH—1.8Kg 102R/102RH—1.9Kg 103R/103RH—2.0Kg 2.0kg (3.7kg mount kit included)

Environmental	
Temperature Range	-20℃~70℃
Humidity	0% ~ 95% Non-condensing
Storage	-40~ 85℃
Dusty & Waterproof	Outdoor IP67 rated

Regulatory	
Certification	FCC, CE
Safety	Processing

Software Specification

System Operation	
Bridge Mode	Layer 2 Switching Learning Technology
	Store-and-Forward
	Spanning Tree Protocol - IEEE 802.1d STP / IEEE 802.1w RSTP / IEEE 802.1s MSTP
	Static IP / Dynamic IP
	DHCP server / client
	Multicast / Broadcast Storm Limitation
	IEEE 802.1q Tag VLAN
	IEEE 802.1p VLAN Priority Based QoS

Network Interface	
Wireless	IEEE 802.11 a/b/g/n 2.4GHz / 5GHz Dual Band Radio
	2 x 2 MIMO Technology
	Single Radio / Dual Radios / Triple Radios
	AP mode / Client mode / WDS mode
	IEEE 802.11h DFS
	WMM QoS
	Channel / Tx Power / Data Rate / Max Distance Adjustable
	Advanced Wireless Parameters Adjustable
	Multi-SSIDs / VLAN tags mapping(Up to 16 x ESSIDs for each radio)
	Wireless Site Survey
	Node Information
	Concurrent Connected Node Limitation
	Client User Isolation

Wire		48V 1A PoE Support Gigabit Ethernet Speed
		Ethernet Link Speed Configurable
		10/100/1000 Base-TX MDI/MDIX RJ-45
Performance		
Wireless To Wire	TCP	Up to 180Mbps for one radio to Ethernet
		Up to 320Mbps for two radios to Ethernet
		Up to 320Mbps for three radios to Ethernet
	UDP	Up to 240Mbps for one radio to Ethernet
		Up to 350Mbps for two radios to Ethernet
		Up to 350Mbps for three radios to Ethernet
	PPS	>= 20,000@short packet for one radio to Ethernet
		>= 28,000@short packet for two radios to Ethernet
		>= 28,000@short packet for three radios to Ethernet
	Latency	< 5ms

Multiple Hops	2 hops	Up to 160Mbps
	3 hops	Up to 150Mbps
	>= 4hops	Up to 140Mbps
	PPS	>= 20,000@short packet at multiple hops
	Latency	< 10ms

Security
Hide SSID(turn off ESSID broadcasting)
MAC Address ACL
WEP 64/128/152 bits
IEEE 802.1x EAP-MD5 / EAP-TLS / EAP-TTLS
WPA / WPA2 PSK / EAP with TKIP / CCMP AES based Encryption

Management
HTTP(s) WEB GUI

Telnet
SSH
Console(optional interface)
CLI commands
SNMP v2c/v3, standard / private MIBs
Syslog
Management VLAN Tag
NTP Client
Firmware upgrade / downgrade
Dual Images
Dual Configuration files / Factory Default
Multiple Level Management

Advanced Technology	
Multiple Hopping	Up to 10 hops with more than 120Mbps throughput
	Configurable Max. Hop Counts(default 20 hops)

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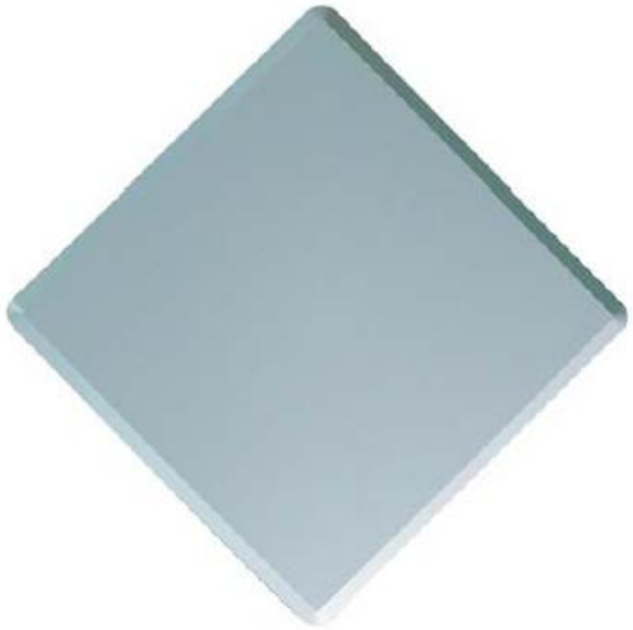
IOP-PANFO-5M2001010

5GHz 20dBi Dual Polarization MIMO Panel Antenna

Electrical Specification	
Frequency range	5150 - 5875 MHz
Gain	20 dBi
VSWR	2 : 1 Max.
Polarization	Dual Linear, +- 45°
HPBW / Horizontal	10°
HPBW / Vertical	10°
Standard compliance	N / A
Front to back ratio	-30dB (Max)
Isolation	24dB (Min)
Power handing	6W (cw)
Impedance	50 Ohms



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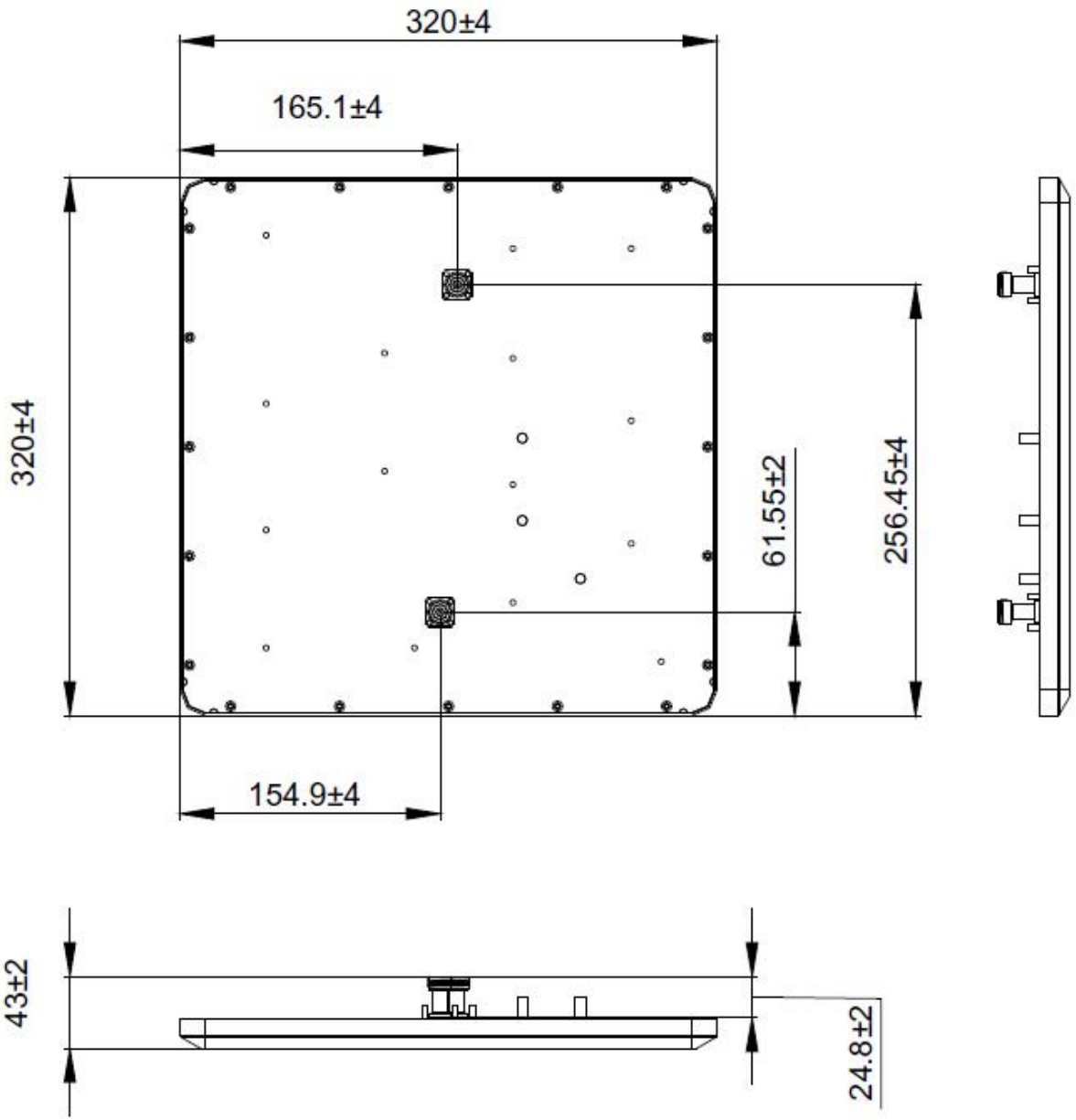
Connector	N Jack × 2
Environmental & Mechanical Characteristics	
Survival wind speed	216Km/hr
Temperature	-40℃ to +80℃
Humidity	95% @ 55℃
Lightning protection	DC ground
Radome color	Gray
Radome material	PC, UV resistant
Weight	1245g
Dimensions	320 × 320 × 20 mm
Waterproof	IP-67
Mounting kit	Pole mount & Wall mount

*exclusive of mounting kit



Port 1

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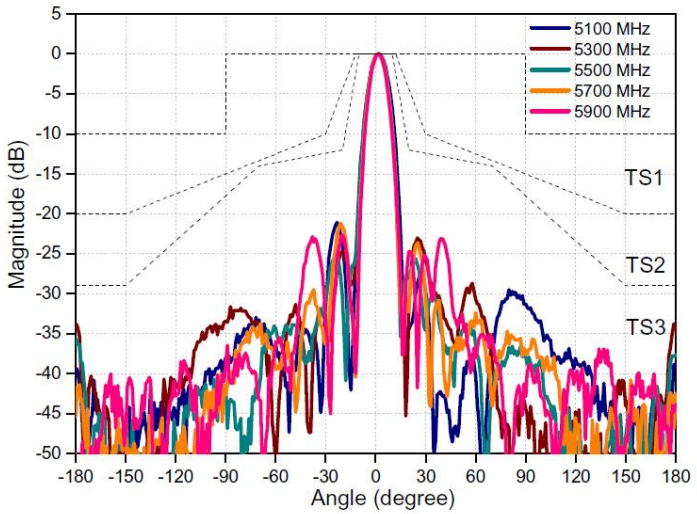
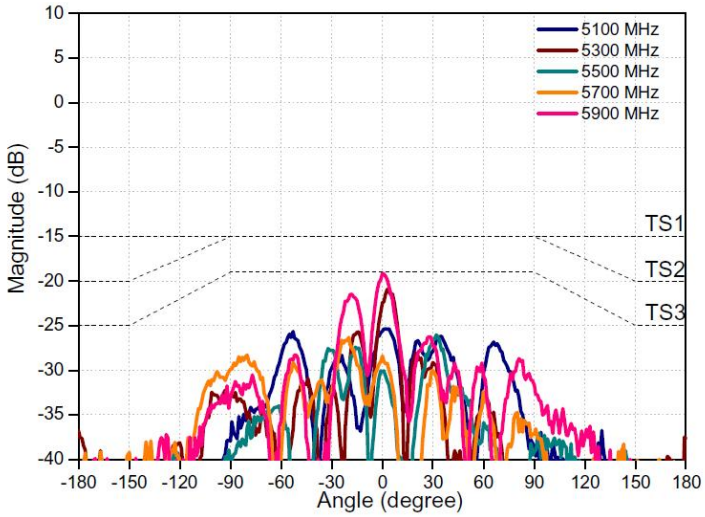
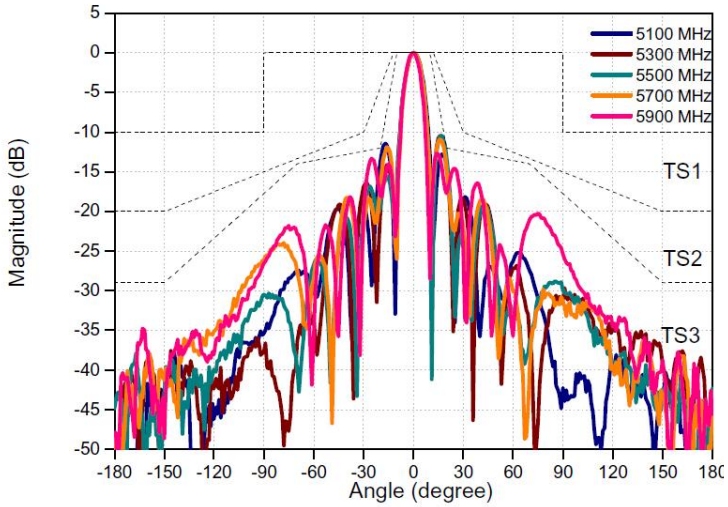
V-plane Co-polarization Pattern



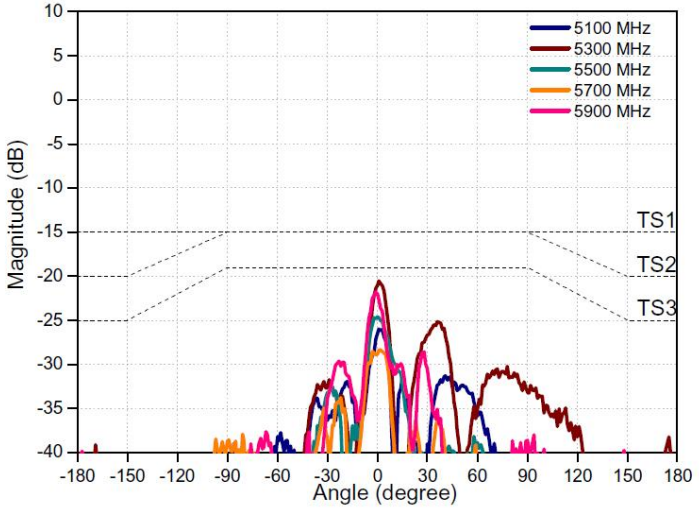
V-plane Cross-polarization Pattern



H-plane Co-polarization Pattern



H-plane Cross-polarization Pattern



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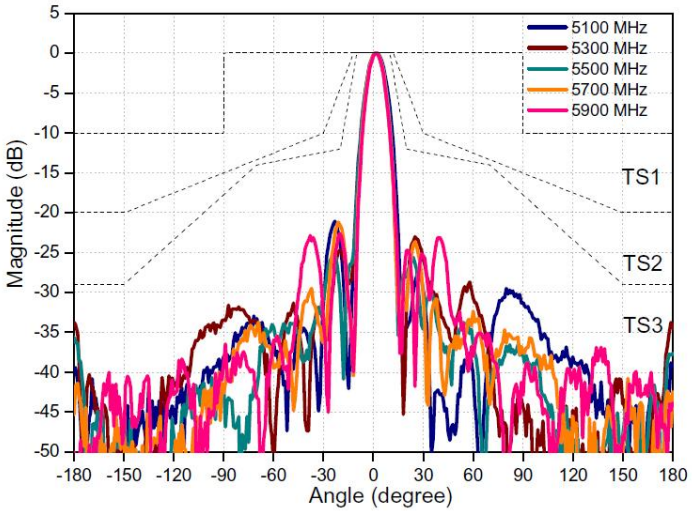
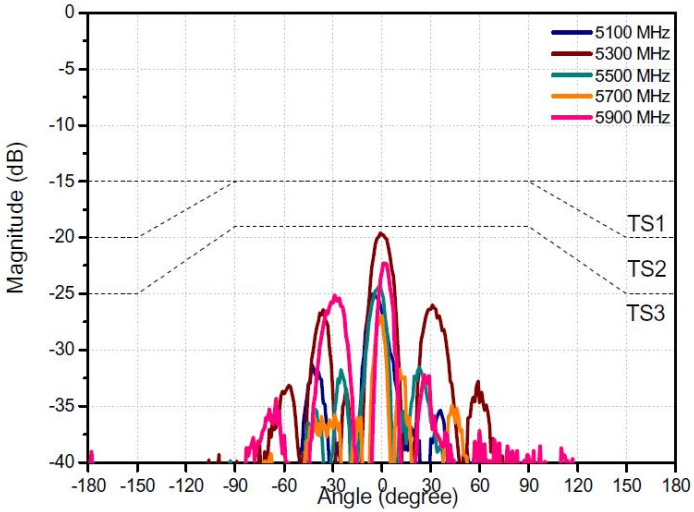
Port 2

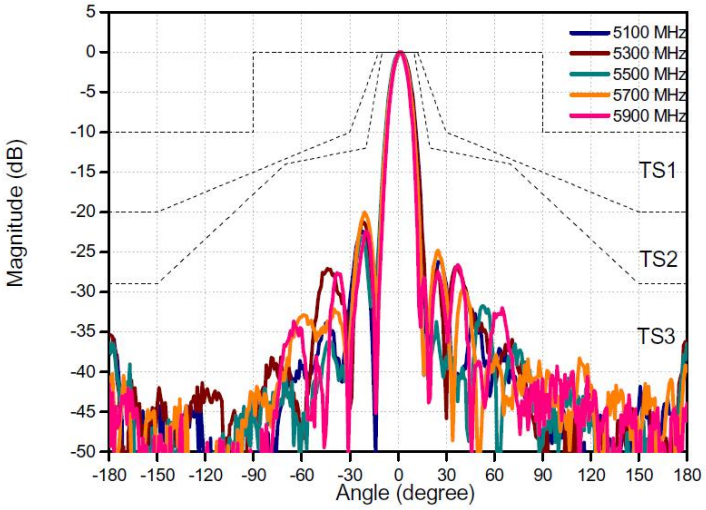
V-plane Co-polarization Pattern



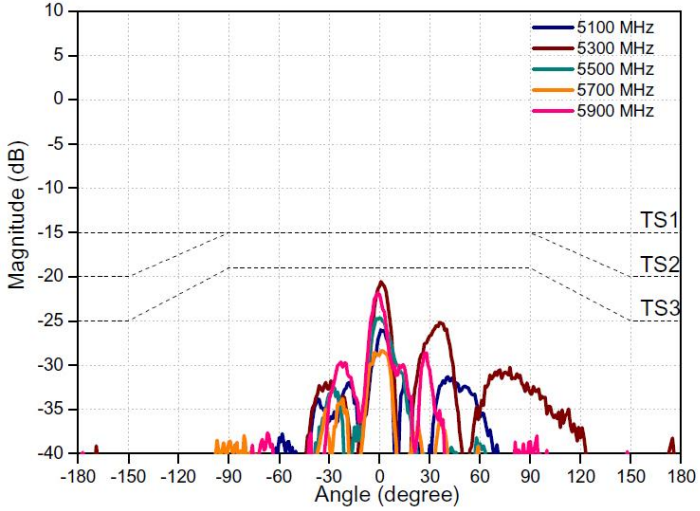
V-plane Cross-polarization Pattern



H-plane Co-polarization Pattern



H-plane Cross-polarization Pattern



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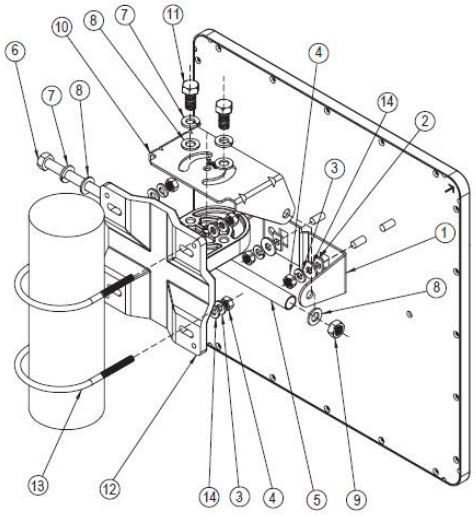
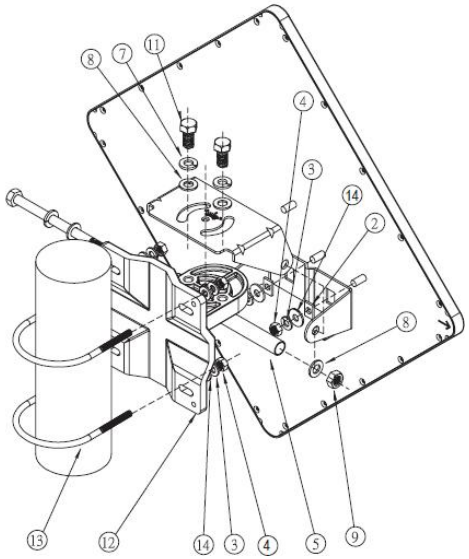
Pole Mount

Slant±45 Degree Polarization



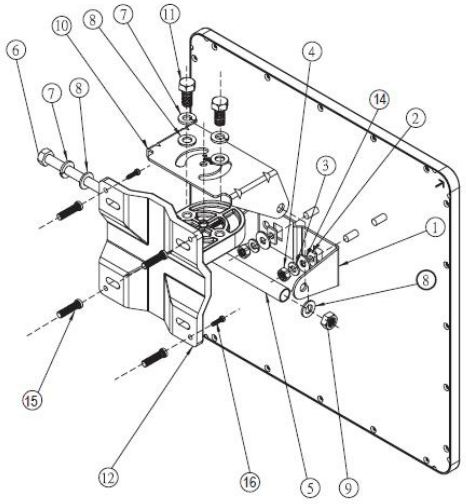
Hor. & Ver. Polarization



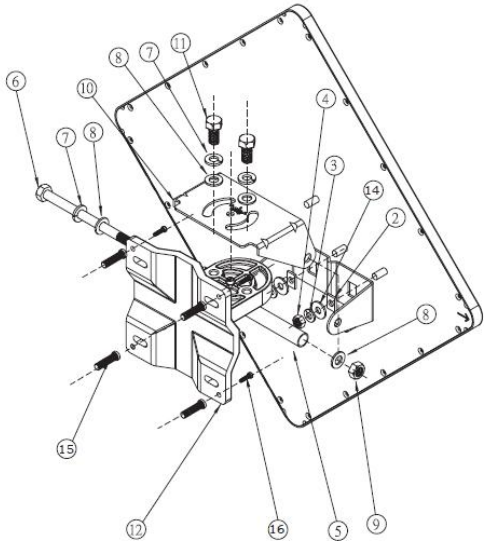
1.	M-Type breaket (L)	1Pcs
2.	Space Keeper	2Pcs
3.	Spaing washer	6Pcs
4.	M6-1.0 Nut	6Pcs
5.	Steel tube 93.2 mm	1Pcs
6.	XHM8-1.25*120	1Pcs
7.	M8 spring washer	3Pcs
8.	M8 washer	4Pcs
9.	M8 Nut	1Pcs
10.	Rotating bracket	1Pcs
11.	XHM8-1.25*20	2Pcs
12.	Mounting main fram	1Pcs
13.	U-Type Screw	2Pcs
14.	M6 washer	6Pcs
15.	Wall Tiger	4Pcs
16.	TH 5/32-16*1"	4Pcs

Wall Mount

Slant±45 Degree Polarization



Hor. & Ver. Polarization



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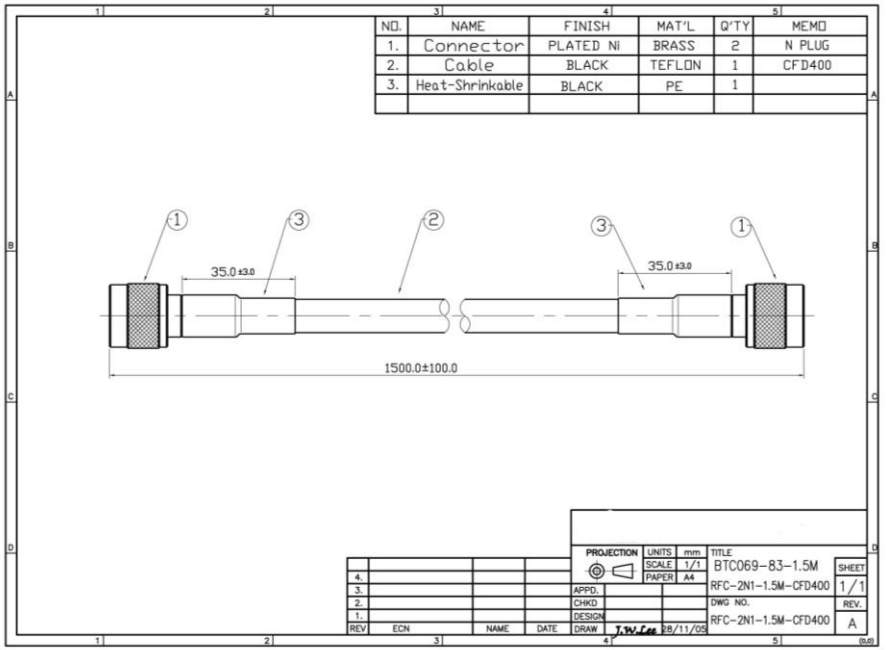
IOP-RFCFD-400150NMR

CFD-400 N-Type 1.5M Antenna RF Cable



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CFD-400 RF Cable SPEC

Standard: CFD400 (CFD400-E) CABLE 1/2.74MM X 1C

CONSTRUCTION:

ITEM		UNIT	2.74MM
No. of Wire		P，C	1C
1)Conductor	Material	—	Copper Clad Aluminum
	Size	No./mm	1/2.74
2)Insulation	Material	—	PEF
	Thickness	mm	(NOM.) 2.2
	O.D	mm	(NOM.) 7.24
3)Binder		—	Sealed Aluminum Mylar Tape
4)Braid Shield	Material	—	Tinned Copper Wire
	Coverage	%	85% ↑
5)Jacket	Material	—	PVC or PE
	O.D	mm	10.3+-0.25

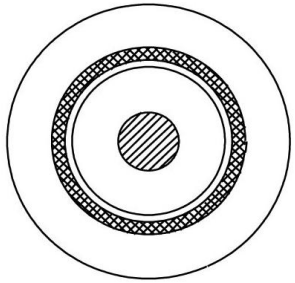
MECHANICAL PROPERTIES:

ITEM	UNIT	
Minimum Bend Radius	mm	25.4
Weight	kG/m	0.1
Tensile strength	kG	72.6
Operating temperature	℃	-40/85

ELECTRICAL PROPERTIES (20℃):

ITEM	UNIT	
Conductor Resistance	Ω/Km	1.67
Impedance	Ω	(NOM.) 50
Capacitance	PF/FT	(NOM.) 23.9
Velocity of propagation	%	(NOM.) 85
DC resistance, inner cond.	Ω/Km	4.56
DC resistance, outer cond.	Ω/Km	5.41
Shielding effectiveness	dB	≧90

Attenuation (nom.)	
MHz	dB/100ft
30	0.7
50	0.9
150	1.5
450	2.7
900	3.9
1500	5.1
2000	6.0
2500	6.8
5800	10.8



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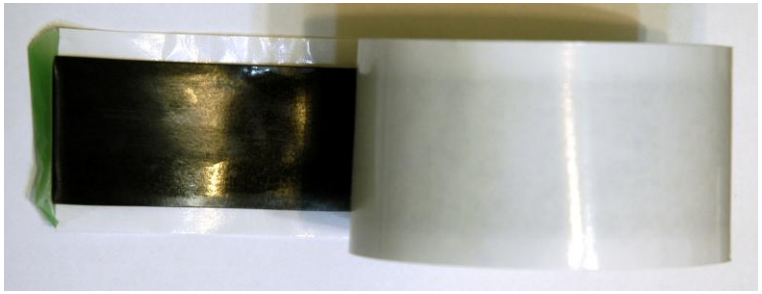
IOP-RMTOC-173830510B

Self-Bonding Rainproof Insulating Tape SPEC



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Specifications and instructions for use

1. The scope of:

--600V Low-voltage connector used for sealing and insulation

-- High and low voltage bus of anti-corrosion protection, maintenance of high pressure joints of waterproofing treatment

2. Conditions of use:

-- Environment temperature is below 40 ℃

--Continuous operating temperature: 90 ℃ below 130 ° c under low pressure overload and emergency operation linkage PE joints of copper or aluminum cables.

3. Characteristics:

-- Voltage level：600V

-- AC voltage：Above 25KV

-- Insulation resistance：1x106MΩ

-- Black, thickness：1.7mm±0.5mm

-- Adhesion/split：Below 2cm

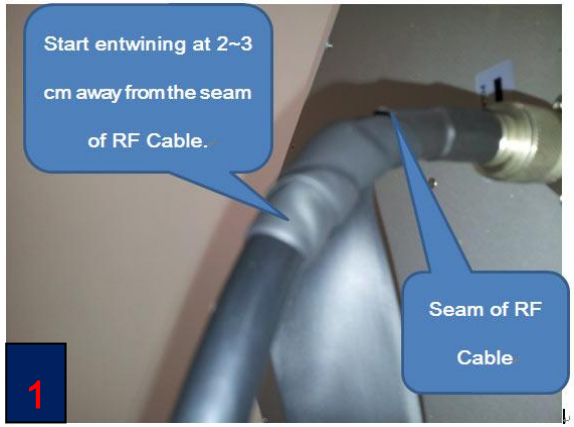
-- Extension rate：Above 1000%

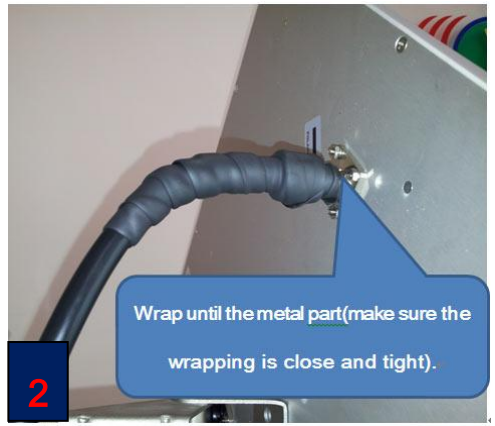
-- Tensile breaking force：Above 2Kg

-- Water absorption：Below 0.2%

-- Stability：130℃/100hrs No gum

4. Instructions for use: With low-voltage cable straight connector as an example





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IO-Power USSS-12V3547-OA Series

Solar Collection Cloudy Large Capacity Model

Next Generation Solar Collection Energy Online Type Power Generation System

IOP-USSS-12V3547-OA Series Specification (* Patent Pending)

Model	IOP-USSS-1235-10B	IOP-USSS-1240-10B	IOP-USSS-1247-10B
Outdoor Model M12 Connector Aluminium Radiating Airtight Housing IP 67			
Power Capacity	445 WH (34.8Ah @ 12.8V)	515WH (40.2Ah @ 12.8V)	594 WH (46.4Ah @ 12.8V)
Solar Cell Input DC Voltage / Current	DC 12V~28V 24V/7A Max	DC 12V~28V 24V/7A Max	DC 12V~28V 24V/7A Max
Suggestion Solar Cells Max Voltage / Open Circuit Voltage Maximum Current	100~130W 17~18.5V / 21~23V 5~8A	110~135W 17~18.5V / 21~23V 5~8A	120~140W 17~18.5V / 21~23V 5~8A
DC to DC for Device	DC 11.5V~14.4V +-3% 6A Max		

DC to DC for Battery	14.4V +-3% 3~4.8A Max		
Transform Efficiency	90%~ Electronic MPPT Effectiveness		
Protection	Solar collection energy online type uninterruptible operating system power failure does not interrupt (monitor system will not be black screen) Solar cell 12V~28V automatic input voltage detection Cloudy collection of solar cells can be charged * Solar cell reverse charge protection Built-in Li-Fe battery BMS/PCM voltage balance management Battery charge/discharge protection ' would not be either battery core fault ' affect the operation of ontology and its Automatic detection of abnormal voltage or battery status and fault exception of battery charging protection * Battery positive and negative polarity of the anti-protection Low-voltage zero-power battery protection * Balancing charge/discharge protection * Charge/discharge limit current protection Battery overcharge protection Over discharge protection Over temperature protection Input power overcurrent protection Input power supply over voltage protection Short circuit protected Fuse		
Support Battery Type	C-LiFePO4 Lithium Batteries		
Battery Capacity	34.8Ah @ 12.8V (445 WH)	40.2Ah @ 12.8V (515 WH)	46.4Ah @ 12.8V (594 WH)
Battery Charge Mode	CCP/CVP MCU Control		
Battery Charge Voltage	14.4V +- 3%		

Battery Charge Float Voltage	13.6V +- 3%		
Battery Cut-off Discharge Voltage	11.5V +- 3%		
Battery recovery discharge voltage	12.4V +- 3%		
Standard Charge Current	3.6A		
Max. Charge Current	7A		
Standard Discharge Current	3A		
Max. Discharge Current	6A		
Solar Cell 80W @ 6hrs @ 360MJ/m2 Charging Time @95% Capacity	Non discharge 3.5hrs On line discharging 4.5hrs	Non discharge 4hrs On line discharging 5.5hrs	Non discharge 4.5hrs On line discharging 6hrs
Battery Cycle Life (80% Capacity) 0.2C Charging 0.5C Discharge	@ 25°C 2000 Times @ 45°C 1600 Times @ 50°C 1200 Times @ 60°C 550 Times @ 60°C 720 Times 70% Capacity		
Industrial Housing & Connector	Aluminium Radiating Airtight Housing IP67 M12 Connector and Solar Panel Connector		
Connector Type	1.Enter the solar DC power supply: Input DC 6~28V M12 Female 2.Output: 12V M12 Female to DC Jack Female 3.Solar Panel Connector Cable Tyco. 1394462-4 (Male) & Tyco. 6-13994461-2 (Female)		
Operating Temperature	-20°C ~ 60°C		

(Discharge)	20~40°C Battery Capacity:100% -10°C Battery Capacity : 60% -20°C Battery Capacity : 48%		
Charging Temperature	-30°C ~ 60°C		
Storage Temperature	-20°C ~ 40°C		
Rel. Humidity	10~95%RH		
Storage Time	6 months (Stored charge once every three months) **(Before the Use, please First Charge)**		
Dimension	209(L)x139(W)x210mm(H)		
Weight	3.9Kg (Box 5Kg) (1Pcs/Carton)	4.6Kg (Box 5.6Kg) (1Pcs/Carton)	6.2Kg (Box 7Kg) (1Pcs/Carton)
LED Indicator	1.Input AC power LED-red full light (Battery capacity more than 95%) 2.Input AC power LED-red flash light (Battery is charging) 3.Battery is charging, Insert the 12V device load, LED-green flash light 4.Battery non charging, Insert the 12V device load, LED-green full light		
Housing	IP67		
Approvals	. CE, FCC		
Installation	1.Street lamp pole mount 2.Upright pole mount 3.Wall mount installation		
Warranty	12 months		

Ps 1: Battery Capacity +-5%

Ps 2: Product specifications change, without notice, consultation with agent or dealer before buying the latest specifications

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IO-Power DPOE-PSP1248-OA Series

Outdoor DC to DC Power over Ethernet (PoE) Converter

12VDC-18W / 24VDC-36W / 48VDC-72W Passive Mode

(To be completed with online 12~24VDC DC UPS Power System)

IOP-DPOE-PSP1248-OA Series Specification

Model Number	IOP-DPOE-PSP1218-1	IOP-DPOE-PSP2436-1	IOP-DPOE-PSP4872-1
Outdoor PoE Passive Mode Iron Airtight Housing IP 67 (Housing mold processing)			
Input DC Voltage	12~24VDC (28V Max)	12~24VDC (28V Max)	12~24VDC (28V Max)
Input DC Current	12VDC 6A Max 24VDC 3A Max	12VDC 6A Max 24VDC 3A Max	12VDC 6A Max 24VDC 3A Max
Output PoE DC Voltage	12VDC	24VDC	48VDC

Output DC Current	1.5A Max	1.5A Max	1.5A Max
Output Power Consume Watts	18W Max	36W Max	72W Max
Ethernet Pin Number	Power + Data Output PIN : 4 & 5 (+) / 7 & 8 (-) Data Input PIN : 1 & 2 / 3 & 6		
Ethernet	Compatible with IEEE802.3 / 802.3u / 802.3at / 802.3at PoE Passive		
Support Ethernet Bandwidth	10/100/1000Mbps (1Gbps)Bandwidth		
Ethernet Cable SPEC	RJ-45 Cat.5/Cat.5e/Cat.6/Cat.6e/Cat.6A		
Transform Efficiency	95%~		
Protection	Built-in MCU management Automatic detection of Ethernet transmit bandwidth 10/100/1000Mbps Over discharge protection Input power overcurrent protection Input power supply over voltage protection Imported power polarity protection for anti-welding		
Industrial Housing & Connector	Iron Airtight Housing IP 67 Gland Connector		
Connector Type	Input DC Power: 9~28VDC Max DC Jack Female with LED Power + Data Output:RJ-45 Port with LED Data Input:RJ-45 Port		
Operating Temperature	-40°C ~ +60°C		
Storage Temperature	-20°C ~ 40°C		
Rel. Humidity	0~95%RH		

Dimension	155mm(L)x152mm(W)x42mm(H)
Weight	0.5Kg
LED Indicator	1.Plug DC Jack, Input DC Power, Red LED Light 2.RJ-45 Ethernet Cable Plug Into Power + Data Output Port, Green LED Light
Housing	IP67
Approvals	CE FCC Processing
Installation	1.Street lamp pole mount or Upright pole mount 2.Wall mount installation
Warranty	12 months

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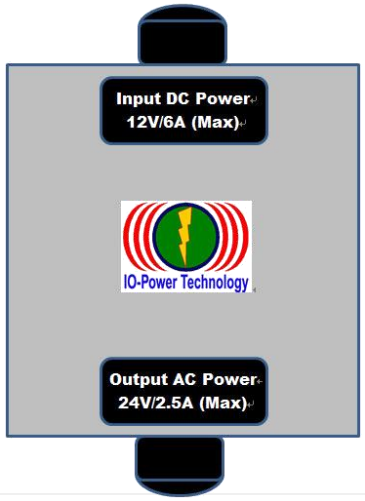
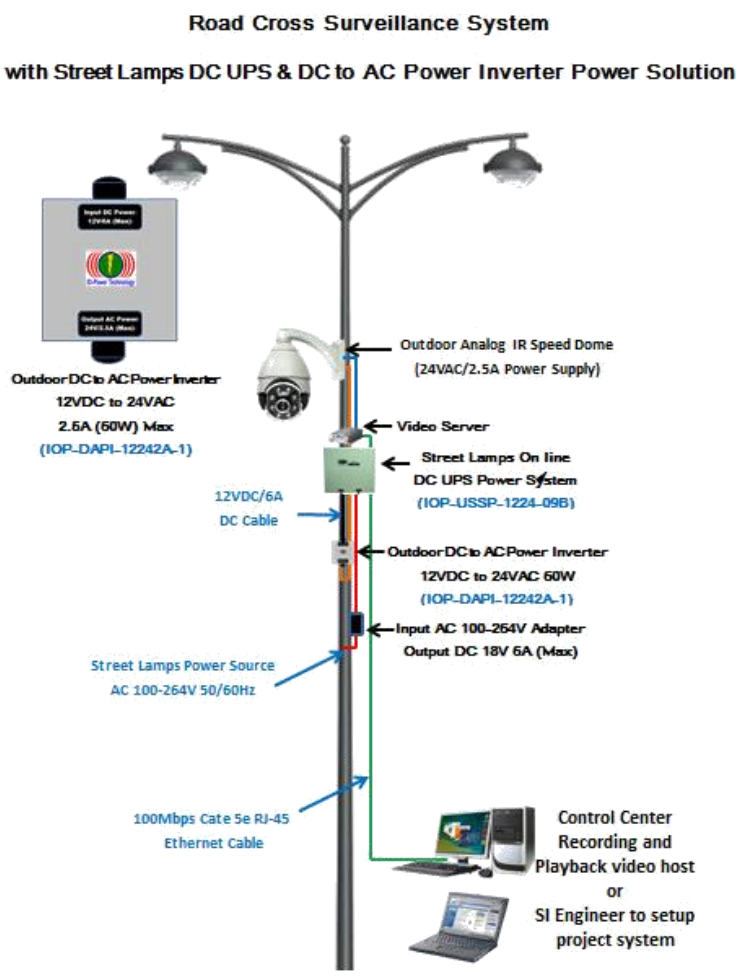
O-Power DAPI-12242A-1

Outdoor 12VDC to 24VAC Power Inverter

(Special Design for Speed Dome 24VAC Power Solution)

IOP-DAPI-12242A-1 Specification

Model Number	IOP-DAPI-12242A-1
Outdoor 12VDC to 24VAC Iron Airtight Housing IP 67 (Housing mold processing)	
Input DC Voltage	12VDC (11VDC~15VDC Max)
Input DC Current	12VDC 6A Max
Output AC Voltage	24VAC (20VAC~25VAC Max)
Output AC Current	2.5A Max
Output Power Frequency	47-63 Hz
Output Power Consume Watts	60W Max



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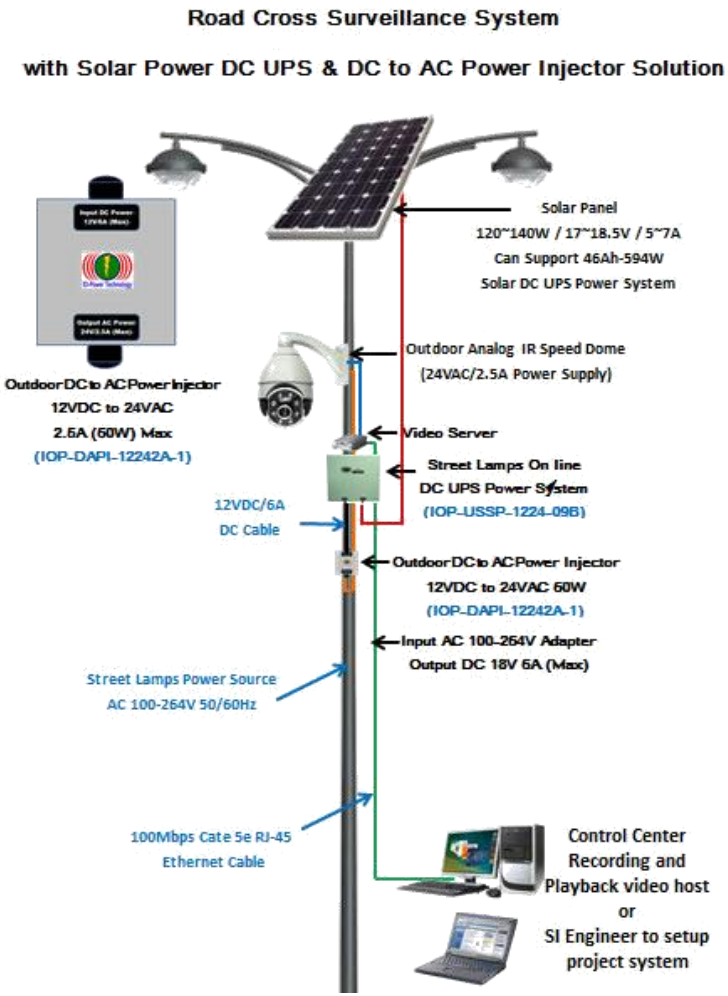
Input Connector	DC Jack Connector
Output Connector	DC Plug Connector
Transform Efficiency	85%~
Protection	Input power overcurrent protection Low input voltage protection High input voltage protection Output power overcurrent protection Short circuit protection Imported power polarity protection for anti-welding
Industrial Housing & Connector	Iron Airtight Housing IP 67 Gland Connector
Connector Type	Input DC Power: 11~15VDC Max, DC Jack Output AC Power: 22VAC~25VAC Max, DC Plug
Operating Temperature	-30°C ~ +60°C
Storage Temperature	-20°C ~ 40°C
Rel. Humidity	0~95%RH



Dimension	155mm(L)x152mm(W)x42mm(H)
Weight	0.5Kg
Housing	IP67
Approvals	CE FCC Processing
Installation	1.Street lamp pole mount or Upright pole mount 2.Wall mount installation
Warranty	12 months

Ps 1: Product specifications change, without notice, consultation with agent or dealer before buying the latest specifications