

802.11AG/AGN/AC point-to-point continuous relay hop loop backup system

WiFi MIMO Long Distance/Large Bandwidth/Multi-function/Dual-mode, Dual-band, Dual backup

WiFi 5 Mil-Spec Outdoor Wireless Access Point

External antenna style



Flat panel cover



1 External antenna



2 External antenna



3 External antenna

All-in-one antenna style



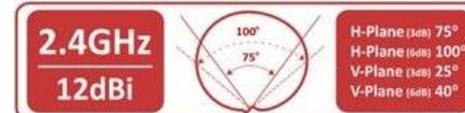
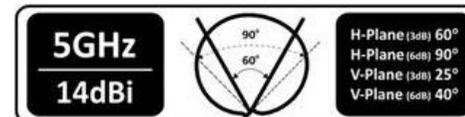
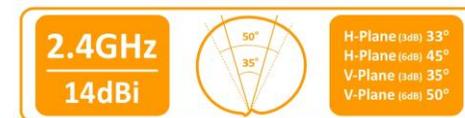
Comes with various top-cover all-in-one antennas

>Support 5.8GHz 18-20dBi directional antenna

>Support 2.4GHz 14dBi directional antenna

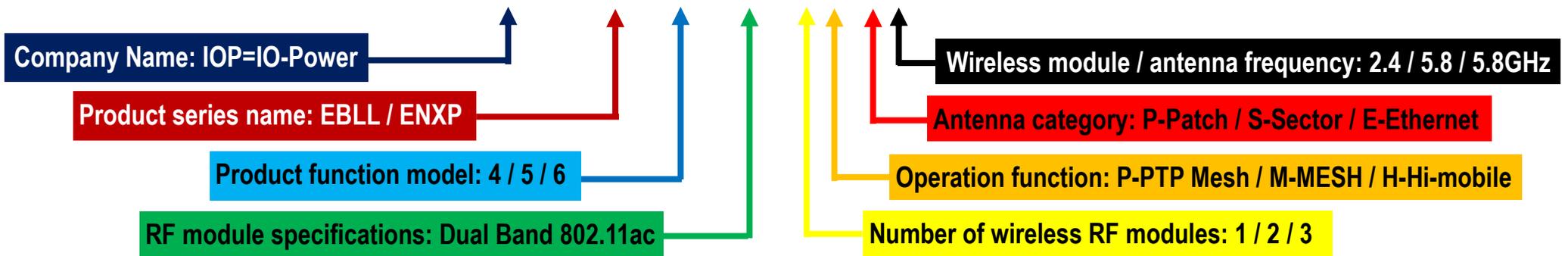
>Support 5.8GHz 14dBi 60-120 degree sector antenna

>Support 2.4GHz 12dBi 75-140 degree sector antenna



IOP-EBLLX-DACXX-XXXX Wireless device model analysis

IOP-EBLLX-DACXX-XXXX



■ Outdoor wireless product function description

IOP-EBLLX-DACXP-XXXX outdoor wireless products adopt 802.11ag/agn/ac 2X2 MIMO technology. Through professional and unique software development of new technologies, they have developed a variety of wireless transmission operation functions, special market exclusive applications, and unique anti-interference, multi-path backup, MESH network, Hi-mobile high-speed movement and other functions:

1. WiFi AP (Connection Server) / STA (Connection Client): It has general WiFi AP operation functions and is compatible with the connection operation of general STA clients.
2. PTP MESH point-to-point loop backup: Point-to-point multiple loop backup function, with relay jumper connection transmission and unique anti-interference connection frequency and privatized military-standard transmission encryption mode...etc., which is the same as the previous generation EL-N-X wireless Product functions are similar.
3. MESH Network (project procurement): Special dedicated MESH Network wireless equipment, with automatic networking, best path, multi-path backup, automatic repair, multi-exit...etc. of wireless MESH network Function.
4. Hi-mobile (project procurement): Unique design supports high-speed mobile wireless transmission function at speeds above 200Km/s. The Mobile transmission bandwidth can reach 100Mbps. Hand over fast handover speed is within 50ms. It is used in railway systems and express delivery. It is used in transportation systems, highway systems, general road systems, science and technology industrial parks, large factory

security patrols, golf courses, special environments and special application projects.

IOP-EBLLX-DACXP-XXXX wireless products have built-in 5.8GHz wireless module + built-in 2.4GHz wireless module, forming a basic dual-band wireless dual-module product; for applications that require more transmission and more bandwidth usage and For more special function applications, the wireless PCBA motherboard also retains an expandable 5.8GHz module interface. Through the loading or updating of core software, customers can have more functional improvements and expansion structures when using this wireless product equipment. Flexibility and ability to respond to special market usage requirements provide customers with market competitive advantages of unique wireless products far beyond their competitors.

The first 2.4GHz 802.11gn wireless module adopts HT40MHz channel width transmission, with a maximum transmission rate of 300Mbps, and point-to-point PTP Mesh transmission bandwidth traffic, with a maximum transmission rate of 240Mbps or more. When two wireless modules operate and transmit at the same time, the maximum transmission rate can reach 1.06Gbps, and the bandwidth traffic can reach more than 700Mbps.

Or the first 5.8GHz 802.11ac wireless module, using HT80MHz channel width transmission, with a maximum transmission rate of 867Mbps, and PTP Mesh transmission bandwidth traffic, with a maximum transmission rate of 520Mbps or more.

The second 5.8GHz 802.11ac wireless module adopts HT80MHz channel width transmission, with a maximum transmission rate of 867Mbps, and PTP Mesh transmission bandwidth traffic, with a maximum transmission rate of 520Mbps or more.

The third external plug-in expansion 5.8GHz 802.11ac wireless module adopts HT80MHz channel width transmission, with a maximum transmission rate of 867Mbps, and PTP Mesh transmission bandwidth traffic, with a maximum transmission rate of 520Mbps or more.

Three wireless modules operate and transmit at the same time, the maximum transmission rate can reach 2.0Gbps, and the bandwidth traffic can reach 1280Mbps.

Through the PTP MESH relay platform and multiple loop backup and mesh network architecture of the MESH network, combined with the total bandwidth of three 802.11 n/ac wireless modules; it can easily solve the shortage of long-distance transmission bandwidth traffic. Application problems, and at the same time, it can improve the architecture of the wireless information highway system and provide the architectural application of sky network and ground network.

■ EBL4 – product function description of software version

IOP-EBLL4-DACXP-EXXX outdoor wireless product has three basic operations including standard WiFi AP (Access Point) connection service and dedicated STA (Station) connection client operation modes, as well as PTP Mesh point-to-point backbone transmission operation mode. Function description is as follows:

1. WiFi AP service operation mode:

The connection and Internet access services provided to WiFi wireless users and the basic wireless connection transmission applications of Point to Point and Point to Multi Point are basic usage functions of the international standard specification of WiFi AP.

2. Operation mode of STA (Station) client:

A. It is a WiFi AP connection client specially designed for this prototype and cannot be connected to other AP devices.

B. The STA client is wireless and connected to the dedicated AP service wireless device, which can implement the "multi-point continuous relay hopping transmission mechanism" and provide "continuous relay hopping with low bandwidth consumption" and "packet response with low latency" performance. Carry out the erection of multiple wireless transmission backbones in a large area to achieve exclusive applications of wireless network transmission systems.

The continuous wireless relay hops of the STA connection AP can support 250 hops (it is recommended that the relay hops within 10 times). After providing wireless relay hops for 10 times, the transmission bandwidth traffic can still reach more than 300Mbps, and the wireless packet response delay (Latency) of 10 relay hops can be controlled within 30ms, which is suitable for large-scale wireless signal coverage transmission system applications.

Once the relay jumps to a platform, 1ms delay will be added. After three relay jumps, an additional 2ms delay will be added. In this way, the total delay ms of the number of platform jumps is accumulated.

One relay hop will reduce the wireless transmission bandwidth by 10~20Mbps. After 10 relay hops, the wireless bandwidth will remain above 300Mbps.

C. When setting to the STA client wireless operation mode, you can advanced configure the Secondary AP mechanism and pre-set multiple sets of backup AP SSID connection mechanisms on the operation webpage, through "automatic detection of disconnection time", "The RSSI signal is reduced to a critical value, and connection attempts are made according to the default AP SSID priority order to achieve a backup recovery connection mechanism.

3. EBLL4- PTP Mesh point-to-point backbone transmission operation mode:

Equipped with PTP Mesh operation function; PTP Mesh provides "privatized military-standard point-to-point anti-interference secure encrypted transmission technology", which can provide point-to-point backbone transmission traffic bandwidth of up to 520Mbps, and can easily carry more than 30 three-megapixel IP Cams Bandwidth traffic transmission requirements of digital cameras.

The key functions of PTP Mesh include:

A. Multi-point wireless relay backbone loop backup transmission:

- After the relay hops 15 times, it can still maintain about 70% of the wireless bandwidth traffic transmission and maintain latency within 90ms.
- Supports multi-point relay jump backup and repair mode in PTP MESH Loops mode.

B. Adopt privatized military-standard wireless transmission security encryption technology

- The privatized security encryption mode at the bottom of the software achieves military-standard security encryption protection.
- Private security encryption mode of wireless transmission layer / also optional to supports general WiFi security encryption mode.
- Military-standard wireless interconnection and handshaking communication mode completely isolated from general WiFi wireless device connections.

C. Adopt secure connection mode architecture similar to mesh's group connection ID segmentation, with a privatized anti-intrusion mechanism

- Through the Mesh connection group method, the same wireless group can communicate with each other and transmit. Different connection groups are completely isolated to achieve an anti-intrusion mechanism.

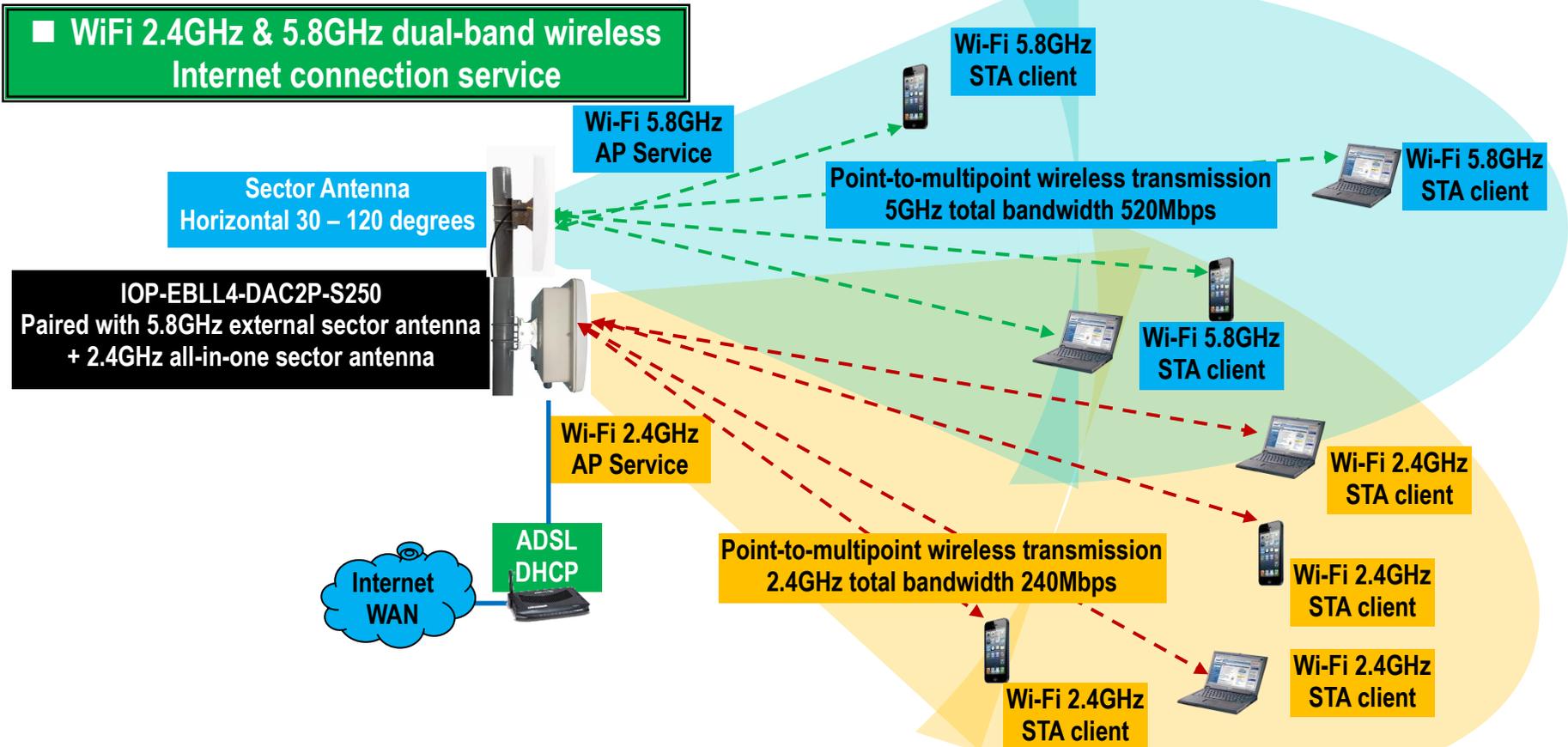
D. Start the system-level communication and export-oriented allocation mechanism of the root node

- Activate the root node level allocation method through Mesh to achieve operational allocation of packet flows to egress and achieve a multi-exit mechanism.
- E. Additional cost parameter settings for wireless and wired ends, manually guiding packet flow paths and specifying the priority of loop backup
- Through the setting of additional cost parameters on the wireless end and the wired end, the total additional cost of the entire transmission link is accumulated to achieve the flow path designation of packet transmission and the priority of the repair connection that provides loop backup connections.
- F. Amplified frequency usage and customized special channel width, with anti-interference ability
- Expanded 4.9GHz and 6.1GHz wireless frequencies to provide more low-interference frequency requirements.
 - Customize the operation mode of non-10MHz/non-20MHz/non-40MHz wireless channel width to reduce wireless interference and improve anti-interference capability.
 - Supports multi-module network cards and 2.4/5.8GHz dual-band selection and multi-interface export data streaming technology.

■ 2.4GHz & 5.8GHz dual-band WiFi AP and STA (Station) operation mode

1. WiFi AP/STA client operation mode provides wireless Internet services and large-bandwidth (PtP) point-to-point/(PtMP) point-to-multipoint backbone transmission functions and multi-point connection transmission operation functions:

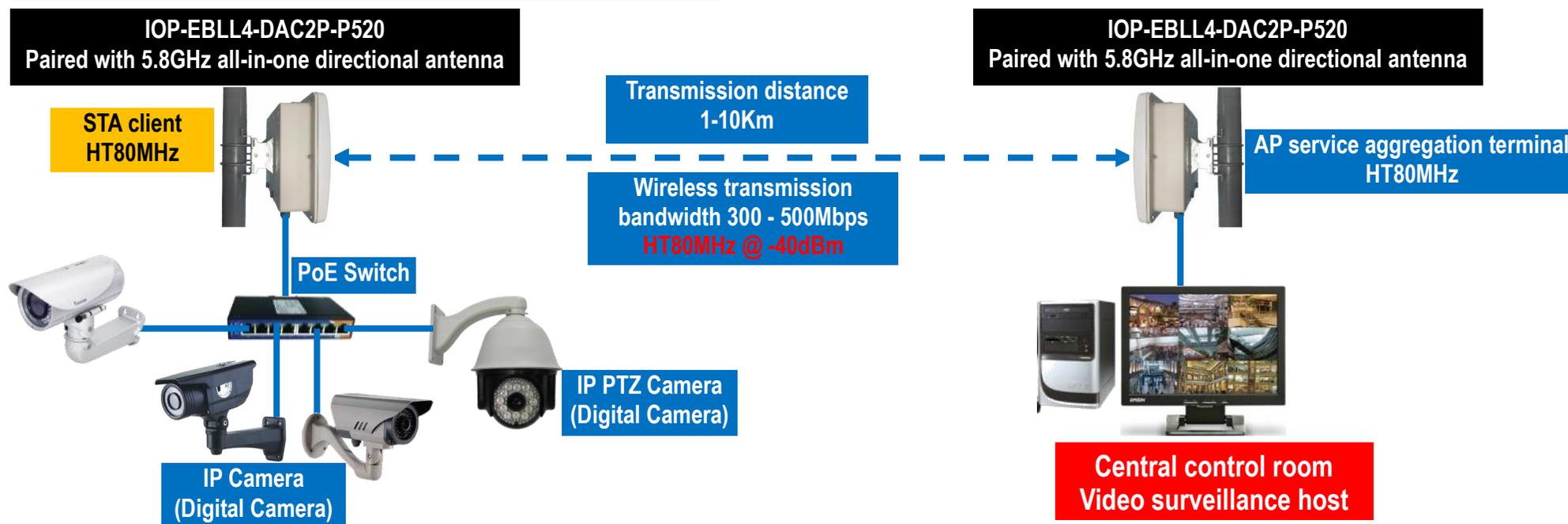
AP (Access Point) operation mode provides WiFi 2.4GHz & 5.8GHz Internet connection services and PtP point-to-point and PtMP point-to-multipoint transmission services. 802.11ac 2x2 MIMO wireless transmission technology can be set under the HT80 channel width. It provides a transmission rate of 867Mbps (Short GI) and a maximum transmission bandwidth of 520Mbps for a single wireless module; two built-in wireless modules can provide a transmission rate of 1.7Gbps and a total transmission bandwidth of 850Mbps for the two modules.



2. **STA (Station) operation mode provides basic wireless client functions for connecting to the AP:**

STA (client) operation mode plays the role of point-to-point and point-to-multipoint client connection transmission applications. Through 802.11ac 2x2 MIMO wireless transmission technology, under the HT80 channel width setting, a single wireless network card module provides 867Mbps. The transmission rate and 520Mbps transmission traffic bandwidth are suitable for the backbone installation of surveillance images and data transmission.

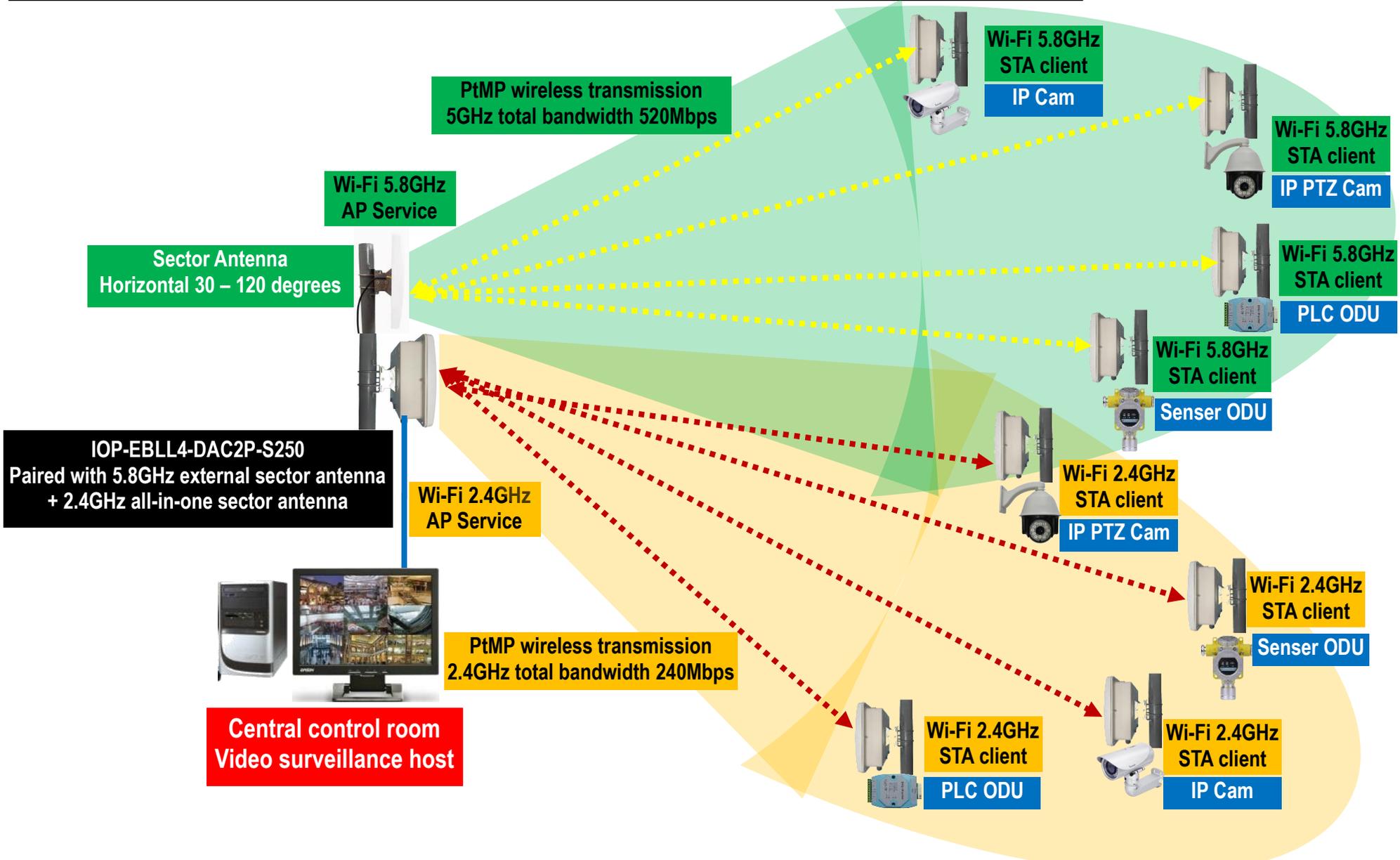
■ Point-to-Point wireless backbone transmission



802.11ac channel width, transmission distance and transmission bandwidth description

1. HT20 can transmit distance 40Km, maximum bandwidth 30-70Mbps
2. HT40 can transmit distance 20Km, maximum bandwidth 100 - 200Mbps
3. HT80 can transmit distance 10Km, maximum bandwidth 250 - 400Mbps

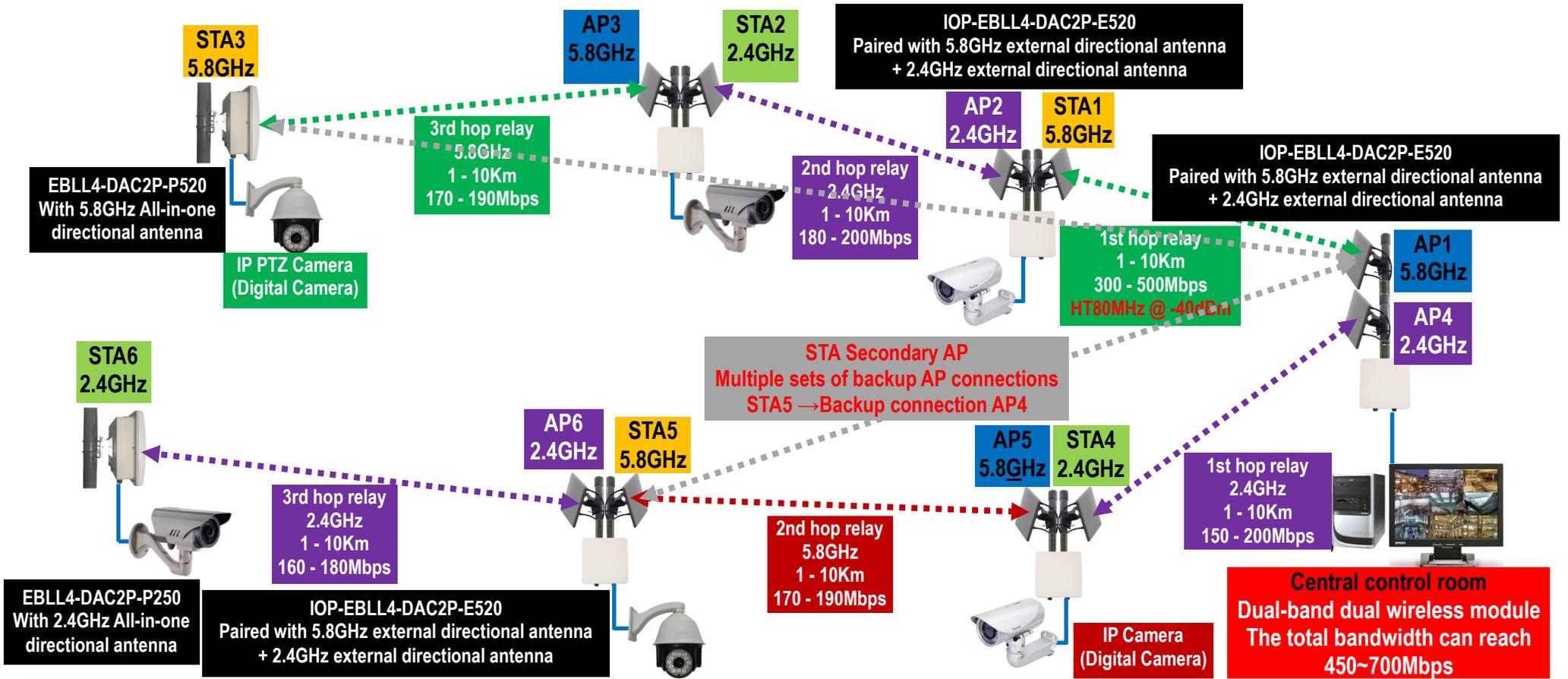
PtMP point-to-multipoint 2.4GHz & 5.8GHz dual-band wireless backbone transmission



3. "Multi-point continuous relay Hops technology" of STA connected AP has backbone hopping low-loss bandwidth and low-latency transmission functions:

When STA (Station) and AP transmit continuously through relay hops, each relay hop reduces the bandwidth traffic by about 10-20Mbps, and the bandwidth traffic can still be maintained above 300Mbps after 10 hops. It also has a packet response within 30ms after 10 hops. Low latency features. When operating in STA (Station) mode, it has the function of repairing multiple backup AP connections in the Secondary AP. The user can specify the order of priority backup connection APs.

Wireless multi-point relay continuous platform jumping technology



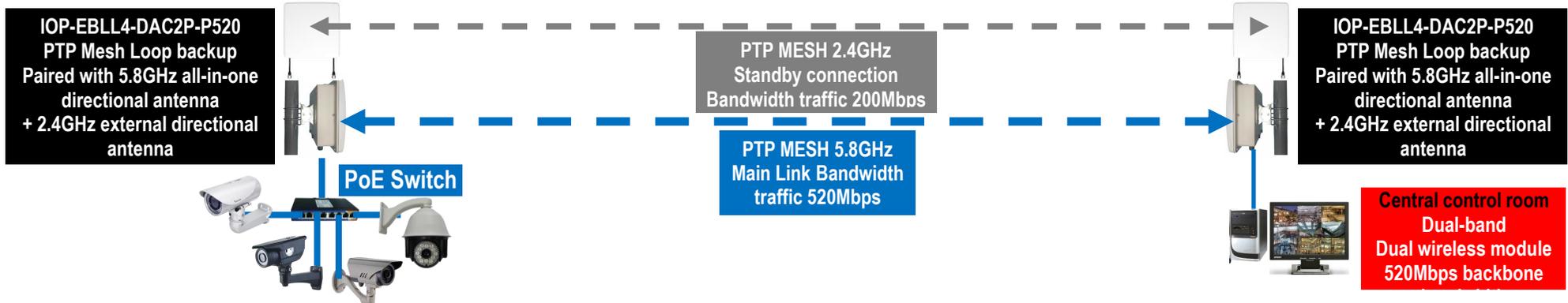
■ BELL4-MODE PTP Mesh operation mode

1. BELL4-MODE PTP Mesh point-to-point "dual mode", "dual frequency", "dual backup" wireless loop transmission operation functions:

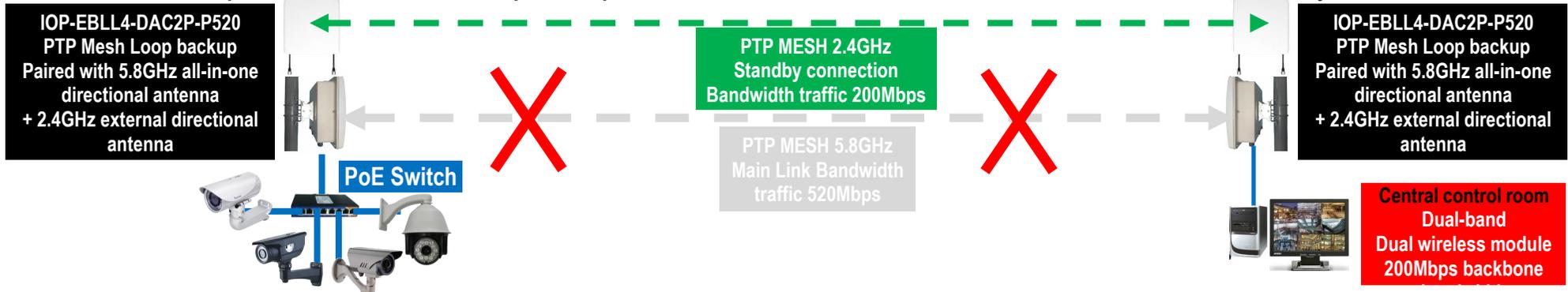
BELL4-PTP Mesh can adopt the Loop backup mechanism of "5.8GHz + 2.4GHz dual mode" + "5.8GHz + 2.4GHz dual frequency" + "5.8/2.4GHz dual backup" to perform dual-band wireless backup connection transmission.

It is particularly suitable for point-to-point wireless monitoring transmission system applications in "high-risk interference areas", or as backup network applications for "wired optical fiber networks", or for point-to-point backbone backup transmission applications as "central control host terminals".

A. "Dual-mode" + "Dual-band" + "Dual-redundant" point-to-point wireless loop backup transmission system



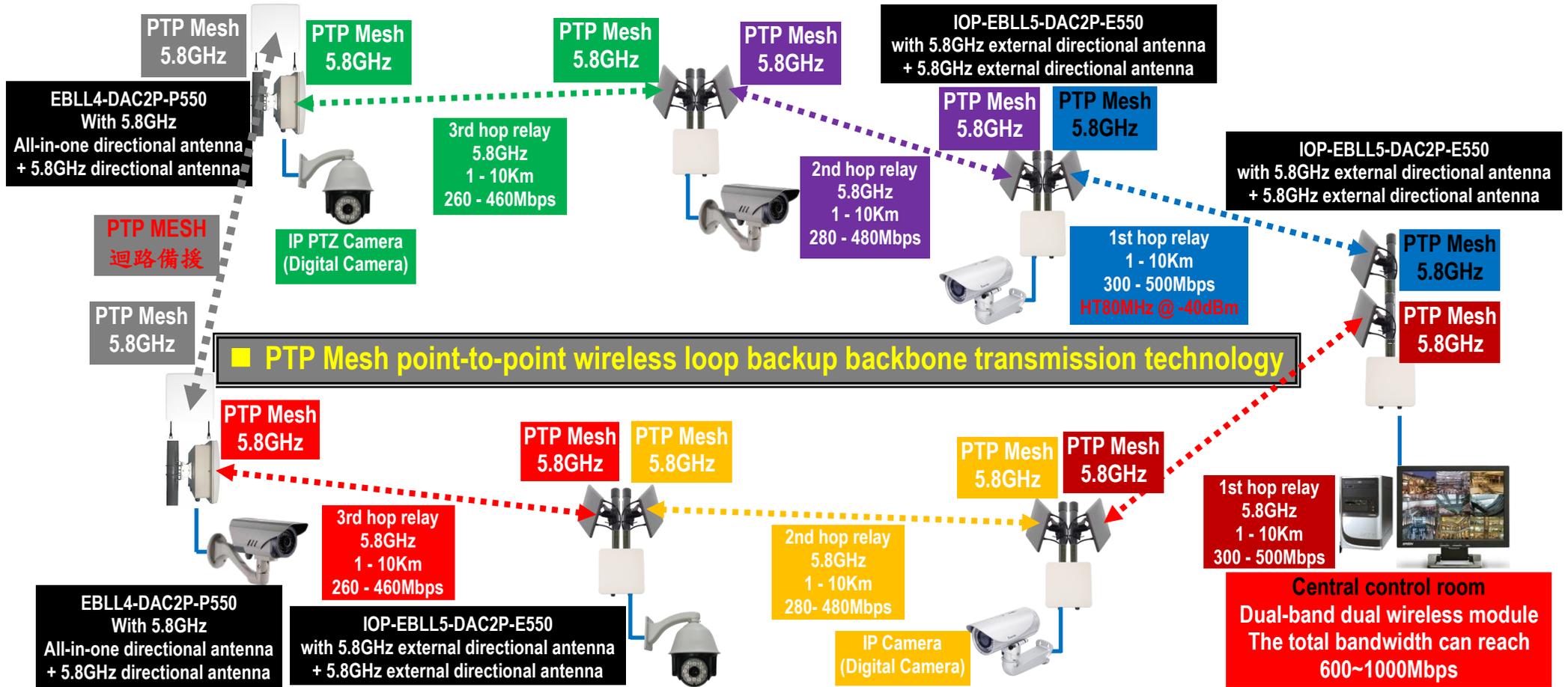
B. Illustration of the point-to-point wireless loop backup mechanism of "Dual Mode" + "Dual Band" + "Dual Redundancy"



2. BELL4-MODE PTP Mesh point-to-point "dual-mode" wireless loop backup backbone transmission operation functions:

BELL4-PTP Mesh "wired" wireless network transmission, introduces Mesh concepts and technology, and has "operating protocol rules of wired networks", "point-to-point relay jumping mechanism", and "multiple loop backup repair connection mechanism", "privatized military-standard wireless encrypted transmission", "special frequency anti-interference" and other features.

The Loop backup mechanism of PTP Mesh can operate on both wired and wireless network systems at the same time, and performs automatic detection and connection repair of multiple loops.



■ Product Specifications

1. Hardware Specification

Main key components	
Main Processor	Qualcomm Quad core ARM Cortex A7 at 716.8MHz
Radio Frequency	<ul style="list-style-type: none"> ■ On-board module radio frequency 1: 2x2 MIMO 5.8GHz, MMCX connector ■ On-board module radio frequency 2: 2x2 MIMO 2.4GHz, MMCX connector ■ External network card RF 3: 2x2 MIMO 5.8GHz, MMCX connector
Wireless Spec	<ul style="list-style-type: none"> ■ On-board module radio frequency 1: IEEE 802.11a/an/ac 5.8GHz ■ On-board module radio frequency 2: IEEE 802.11g/gn 2.4GHz ■ External network card radio frequency 3: IEEE 802.11a/an/ac 5.8GHz
Wireless Bandwidth	<p>802.11a/an/ac supports 20MHz / 40 MHz / 80 MHz</p> <p>802.11g/gn supports 20MHz / 40 MHz</p> <p>Various wireless radio frequency transmission channel width settings can be selected to match the wireless channel width according to the actual transmission bandwidth requirements, in order to increase the number of wireless channels used and reduce the probability of wireless frequency interference with each other.</p>
Memory (NOR)	32MB
Memory (RAM)	512MB
Flash memory	128MB NAND Flash



Wireless RF Specifications

	Built-in RF 1 (5.8GHz)			Built-in RF 2 (2.4GHz)			External radio frequency 3 (5.8GHz)			
Wireless signal output power Tx Power (Per-chain)	802.11a	6M	27dBm	802.11g	6M	27dBm	802.11a	6M	27dBm	
		54M	23dBm		54M	25dBm		54M	23dBm	
	802.11an	MCS0, MCS8	26dBm	802.11gn	MCS0, MCS8	26dBm	802.11an	MCS0, MCS8	26dBm	
		MCS7, MCS15	21dBm		MCS7, MCS15	24dBm		MCS7, MCS15	23dBm	
	802.11ac	MCS0, MCS10	25dBm				802.11ac	MCS0, MCS10	25dBm	
		MCS9, MCS19	19dBm					MCS9, MCS19	19dBm	
	Receive signal sensitivity Rx Sensitivity	802.11a	6M	-96dBm	802.11g	6M	-96dBm	802.11a	6M	-96dBm
			54M	-78dBm		54M	-78dBm		54M	-81dBm
802.11an		MCS0, MCS8	-93dBm	802.11gn	MCS0, MCS8	-93dBm	802.11an	MCS0, MCS8	-96dBm	
		MCS7, MCS15	-70dBm		MCS7, MCS15	-70dBm		MCS7, MCS15	-77dBm	
802.11ac		MCS0, MCS10	-90dBm				802.11ac	MCS0, MCS10	-96dBm	
		MCS9, MCS19	-62dBm					MCS9, MCS19	-72dBm	
Modulation method		802.11ag, 11agn, and 11ac are all OFDM (Supports BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)								

Various interface specifications

Antenna connector	<ul style="list-style-type: none"> ■ IOP-EBLL4-DAC1P-E500: 2 x N-type (1 on-board wireless module) ■ IOP-EBLL4-DAC2P-E520: 4 x N-type (2 on-board wireless modules) ■ IOP-EBLL4-DAC3P-E525: 6 x N-type (2 on-board wireless modules + 1 external 5GHz 802.11ac wireless RF card) ■ (IOP-EBLL4-DAC1P-E500 or E200: 2 x N-type 2 on-board wireless modules, only 1 wireless module is enabled)
Antenna matching	<ul style="list-style-type: none"> ■ External optimized antenna model: IOP-PANFO-5M2001213 – 5.8GHz 18-20dBi dual polarization MIMO flat panel antenna. ■ External optimized antenna model: IOP-PANFO-2M1403335 – 2.4GHz 14dBi dual polarization MIMO flat panel antenna. ■ External optimized antenna model: IOP-SANFO-5M1406010 – 5.8GHz 14-15dBi dual polarization MIMO H-60~120° / V-10~25° sector antenna. ■ External optimized antenna model: IOP-SANFO-2M1207525 – 2.4GHz 12dBi dual polarization MIMO H-75~140° / V-25~45° sector antenna. ■ Other external purchased antennas: OMNI omnidirectional antenna / Dish directional dish antenna...etc. ■ All-in-one antenna model: MBAP-RF1-PANFO-5M2001213 - 5GHz 18-20dBi dual polarization MIMO H-12° / V-13° flat panel antenna, assembled in aluminum die-cast IP69 waterproof chassis. ■ All-in-one antenna model: MBAP-RF1-PANFO-2M1403335 –2.4GHz 14dBi dual polarization MIMO H-33° / V-35° flat panel antenna, Assembled in aluminum die-cast IP69 waterproof chassis. ■ All-in-one antenna model: MBAP-RF1-SANFO-5M1406010 - 5GHz 14-15dBi dual polarized MIMO H-60~120° / V-10~25° sector antenna, assembled in aluminum die-cast IP69 waterproof chassis. ■ All-in-one antenna model: MBAP-RF1- SANFO-2M1207525 - 2.4GHz 12dBi dual polarization MIMO H-75~140° / V-25~45° sector antenna, assembled in aluminum die-cast IP69 waterproof chassis.



Wired network interface	Support Giga Ethernet Port X 2 : Support 10/100/1000Mbps RJ-45 port, equipped with 10BASE-T, 100BASE-TX and 1000BASE-T, half/duplex/half-duplex, Auto negotiation traffic automatic detection control, compatible with: IEEE802.3 / 802.3i / 802.3u
Input power interface	<ul style="list-style-type: none"> ■ Passive PoE PD Ethernet power receiving end Port, supply power to this outdoor wireless transmission equipment. ■ DC power supply: Input 24~48Vdc/3A or above DC power supply, RJ-45 Ethernet Giga Port, used for data transmission.
Ethernet lightning surge protection interface	Supports PoE Port Ethernet lightning surge protection up to 10KA @ 8/20μs. (Component passes IEC 61000-4-5 10KA @ 8/20μs total pulse discharge current 10 times)
Power supply demand model	
Power supply terminal	DC 24Vdc~48Vdc /1.5A or above wide voltage input (insert DC connector method)
	<ol style="list-style-type: none"> 1. Paired with the IEEE 802.3af/3at high-power direct-supply Passive PoE Ethernet power supply terminal, it provides 48Vdc/1.5A/48W output (instant 72W maximum output). (Input 12~24Vdc DC power into Passive PoE, convert 48Vdc and load it into the Ethernet network to supply power to wireless devices with 48Vdc-PoE) 2. Special note: Passive PoE LED light display→Input DC power - the red LED light is all on; plug in the RJ-45 network cable - the green LED light will not light up!!

<p>Device power consumption (Including PoE power supply)</p>	<ul style="list-style-type: none"> ■ IOP-EBLLX-DAC1P-XXXX: Static operation is about 4W/H, general operation is less than 6W/H, 500Mbps wireless full-speed bandwidth transmission consumes a maximum of 8W/H; instantaneous startup consumes a maximum of less than 12W/H. ■ IOP-EBLLX-DAC2P-XXXX: Static operation is about 4W/H, general operation is less than 8W/H, 500Mbps wireless full-speed bandwidth transmission consumes a maximum of 10W/H; instantaneous startup consumes a maximum of less than 16W/H. ■ IOP-EBLLX-DAC3P-XXXX: Static operation is about 6W/H, general operation is less than 10W/H, 500Mbps wireless full-speed bandwidth transmission consumes a maximum of 14W/H; instantaneous startup consumes a maximum of less than 20W/H.
---	---

Physical Dimensions and Weight

<p>Size</p>	<ul style="list-style-type: none"> ■ Flat top cover version: L268mm X W268mm X H80mm (H90 includes air release valve) ■ Raised plate cover version: L268mm X W268mm X H108mm (H118 includes release valve) ■ Double lower cover locking version: L268mm X W268mm X H140mm (H150 includes a release valve) ■ All-in-one machine upper cover antenna version: L266mm X W266mm X H110mm (H120 includes a release valve) ■ After assembling the fixing bracket, add 72mm to the height ■ Wireless PCBA motherboard size: L -115mm * W -105mm * H -16mm / D -8mm
<p>Weight and packaging</p>	<ul style="list-style-type: none"> ■ Equipment weight 3.0Kg – 3.2Kg / All-in-one machine weight: 2.4Kg – 2.5Kg (depending on the number of opening connectors) ■ Product packaging box (including PoE power supply and mounting bracket accessories) 4.0Kg – 4.5Kg ■ Freight Carton, can hold 2 boxes of 9Kg

Usage environment tolerance specifications

Operating temperature range	The operating temperature is -40 ~ 70°C, and it can withstand high sunlight temperatures up to ambient temperature of 45°C and internal sunlight temperature of 75°C.
Storage temperature	-40 ~ 105°C
Operating humidity	0% ~ 95% Operating
Storage humidity	0% ~ 90% Storage (non-condensing)
Dustproof and waterproof level	Outdoor IP69 rating
Case material and resistance protection and installation standards	<ul style="list-style-type: none"> ■ Aluminum metal die-cast shell with anti-corrosion paint. ■ The thickness of the aluminum die-cast shell is up to 3.5mm to improve resistance to external electromagnetic wave interference and improve corrosion resistance in seaside and special use environments. ■ Specially designed to fit VESA international standard - 75mm x 75mm for various indoor/outdoor equipment fixing methods.
ROHS specifications	Yes

Product related certifications

Wireless product certification	<p>Taiwan NCC radio frequency certification (in progress)</p> <p>Taiwan TAICS wireless product safety certification (under arrangement)</p> <p>Wireless project certification in other countries or regions (under arrangement)</p>
---------------------------------------	---



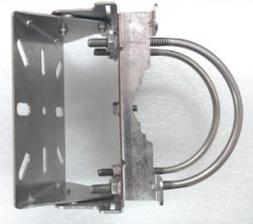
Dustproof and waterproof certification for three types of casings and mechanical interfaces

- Tablet top cover version (can build a second wireless PCBA motherboard): IP69 dustproof and waterproof certification.
- Raised plate cover version (can be built-in with other 4G/5G routers/PLC/NBIoT/LoRa/BT/network switches...etc.): IP69 dustproof and waterproof certification.
- Double lower cover locking version (can be built-in high and low temperature resistant and explosion-proof mobile DC UPS 24Ah-300W power supply system): IP69 dustproof and waterproof certification.

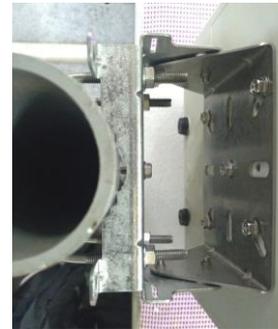
International VESA Standard - Universal Stainless Steel Mount

**VESA universal stainless steel
wind pressure resistant mounting
bracket**

**Fixing bracket model:
IOP-UHMK-VESA75-1**



1. Suitable for VESA international standard - 75mm x 75mm for fixing various indoor/outdoor equipment.
2. Suitable for general engineering equipment standards - 60mm x 60mm for fixing various indoor / outdoor equipment.
3. Support triangular fixed point fixation method.
4. Support screw fixing point tightening method.
5. Support +/- 40° up and down antenna angle adjustment function.
6. Supports wall-mounted fixation (can also support carriage-mounted fixation).
7. Supports pole fixing method and supports 0.5 ~ 2.5 inch pole diameter
8. Supports street lamp pole fixing method (8-inch pole strap/ strap width: 15mm/ strap thickness: 2mm).
9. Supports telegraph pole fixing method (12-inch pole strap/ strap width: 15mm/ strap thickness: 2mm).
10. Assembly dimensions: L x W x H: 125 x 125 x 77mm / Thickness: 1.2mm.
11. Bearing wind pressure: can bear wind pressure up to level 17 or above (above 250Km/hr).
12. Support wall screw hole anti-slip fixation method.
13. Accessories are made of stainless steel:
 - U-shaped thread screw x 2
 - M6 hexagonal nut with spacer x 4
 - M5 X 8mm Hexagonal Phillips screws with spacers x 9
 - M5 X 12mm hexagonal Phillips screw with spacer x 1



3. Software Specification

Network switching bridging and wireless routing software capabilities	
Wireless Bridges Operation mode	<ul style="list-style-type: none"> ■ Network transparent bridge bridging: supports AP/STA/PTP Mesh (transparent bridge mode)
Wireless device software operation functions	
System operation mode	<ul style="list-style-type: none"> ■ EBLL4 – AP/STA/PTP Mesh (Network Transparent Bridging) <ul style="list-style-type: none"> >> AP/STA wireless connection service and client wireless transmission system technology. >> PTP Mesh PtP closed privatized wireless loop backup backbone transmission system technology. ■ EBLL5-MESH Network multi-path mesh network wireless transmission technology.(Project procurement) ■ EBLL6 - Hi-mobile high-speed mobile wireless transmission technology. (Project procurement)
Wireless multi-modules and multiple export interfaces	Supports up to 3 wireless multi-module designs, performs dynamic multi-mode export interface allocation for wired networks and wireless networks, and switches settings to AP or STA or PTP Mesh or MESH network or Hi-mobile high-speed mobile according to operational needs Transmission mode of operation.
Supports multi-point relay hopping and low loss bandwidth function	<ul style="list-style-type: none"> ■ A variety of multi-point relay continuous platform jumping technology is used when encountering obstacles such as buildings, hillside terrain or woods. It can continuously relay the turn and platform jumping transmission function multiple times to solve the problem of transmission obstruction. ■ Can continuously perform wireless relay hops 250 times (it is recommended to be within 10 times) for transparent packet transmission, switching transmission, distribution and forwarding and other applications. ■ The wireless bandwidth transmitted by different relays continuously hops through packet switching technology to achieve a low-loss bandwidth performance of 10-20Mbps per hop. Even after 10 consecutive relay hops, the frequency can still be maintained above 300Mbps bandwidth.
<ul style="list-style-type: none"> ■ AP/STA Hops ■ PTP Mesh Hops 	

<p>MESH Network (Project procurement)</p>	<ul style="list-style-type: none"> Special dedicated MESH Network wireless equipment, with functions such as automatic networking, optimal path, multi-path backup, automatic repair, multi-exit, etc. of wireless MESH network. (Tentative)
<p>Hi-mobile high-speed mobile transmission (Project procurement)</p>	<ul style="list-style-type: none"> Special Hi-mobile high-speed mobile transmission wireless equipment supports vehicle speeds above 200Km/s / mobile transmission bandwidth above 100Mbps / Hand over switching connection speeds of 50ms, providing unique applications for high-speed mobile wireless transmission systems. (Tentative)
<p>Data security encryption and device security management</p>	
<p>Data security encryption</p>	<ul style="list-style-type: none"> The PTP Mesh network system has the military-grade security features of an exclusive private wireless transmission system. PTP Mesh operation mode, with wireless group security mechanism of system group ID (Main Group ID) and adjacent node link ID (Link ID), similar to military-grade encryption method, replacing the previous low-level wireless network Standard encryption technology (WEP)...etc. Equipped with Service Organization ID (SSID) wireless security mechanism. Equipped with WPA/WPA2 AES key encryption.
<p>Equipment security management</p>	<ul style="list-style-type: none"> Equipped with the security function of account and password input settings in the operation interface. Private wireless transmission technology and unique frequency usage mechanism achieve anti-interference performance.
<p>System management and system maintenance functions</p>	
<p>System management functions</p>	<ul style="list-style-type: none"> Supports operation and management of HTTP(s) WEB GUI through web browser. Support client network time adjustment NTP Client / DHCP Client / DHCP Server / NAT / Firewall. Supports backing up configuration files / saving configuration files/restoring factory values.

<p>System maintenance function</p>	<ul style="list-style-type: none"> ■ Support hardware/software watchdog mechanism (Support Hardware/Software Watchdog). ■ Dedicated simple system network management software that supports L2-MAC layer system scanning, automatic detection and display, and automatic software update. (Tentative) ■ Supports the scanning detection and segmented update mechanism operation of Utility simple network management software. (Tentative)
<p>System construction and erection auxiliary tools</p>	
<p>Wireless connection signal scanning and connection status auxiliary tool</p>	<ul style="list-style-type: none"> ■ It has the detection and scanning function of the wireless installation environment to facilitate wireless engineering and technical personnel to judge the reference for channel selection and use. ■ Supports dynamic wireless signal, transmission rate and traffic display icons to facilitate wireless engineering and technical personnel to judge the operational stability of the wireless system. ■ Support on-site and remote wireless devices to detect each other's connection signal value, transmission rate and encryption or not and other information display mechanisms to facilitate wireless engineering and technical personnel to determine the signal operation at both ends of the wireless system during future maintenance situation. ■ Equipped with a calculation tool for pre-evaluating the RSSI signal strength of the wireless system to facilitate the evaluation of the antenna gain before construction and erection.

**Antenna adjustment and
transmission bandwidth
and packet drop rate
testing tools**

- After the antenna is installed, use the built-in software to perform wireless antenna calibration and adjustment mechanism to obtain local and opposite remote wireless RSSI signal strength information and wireless transmission rate detection and polarization signal strength changes to facilitate the judgment of the antenna pair. Accurate or not, it is helpful for construction workers to perform antenna adjustment operations.
- Support the software testing mechanism of wireless link bandwidth traffic transmission to confirm that the transmission bandwidth of the wireless system can exceed 150Mbps. It also displays the packet drop rate of transmission packets to facilitate judgment of the stability of connection transmission.

** Copyright © 2023 -2030 All rights reserved.

** No part of this publication may be reproduced, adapted, or stored in a retrieval system without permission.

** Specifications are subject to change without notice.

■ Packaging and accessories

- IOP-EBLLX-DACXP-XXXXX 802.11ag / agn / ac outdoor wireless AP (Bridge)
- 802.3af/at 1Gbps 48V 1.5A Passive PoE high-power Ethernet power supply.
- AC 100V~240V to DC 19V/4.74A transformer, matched with US AC Code 1.5m power cord.
- IOP-UHMK-VESA75-1 VESA universal stainless steel wind pressure-resistant mounting bracket assembly, with pole, lamppost, wall and other fixing functions.