WIRELESS AP

WIRELESS CCTV APPLICATION

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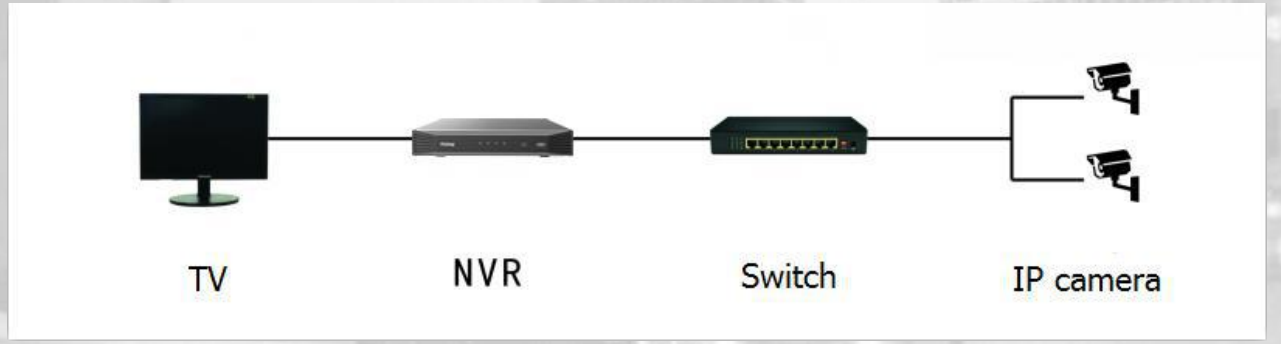
Galaxy®
WIRELESS AP Knowledge

Wired or Wireless Installation?

When to use wireless?

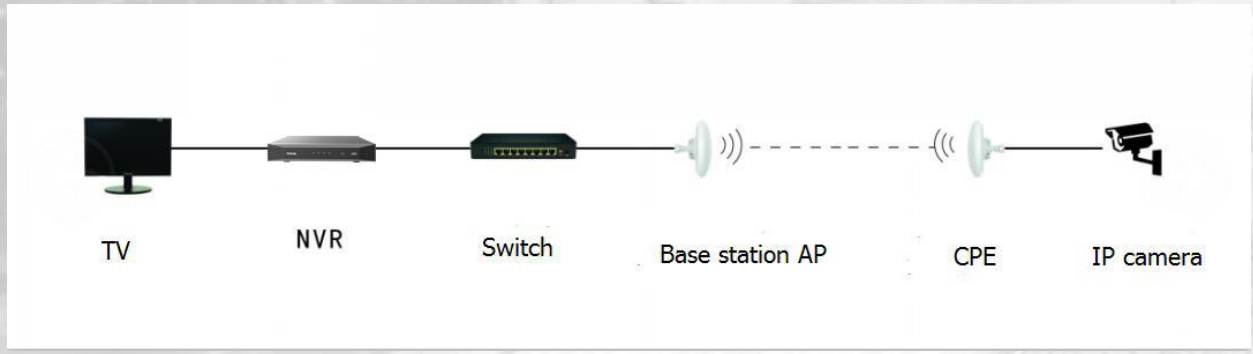
Wired CCTV Installation：



Wired installation is commonly used of CCTV installer mostly if they have a project for Analog Type Camera and IP Camera. They use some Cables like Coaxial and UTP Network Cable.

- **Need Cables & Protection(outdoor)**
- **Distance is around 100meters**

Wireless CCTV Installation：



Wireless installation is much effective for long distance video transmission using AP antenna. And also it can save more time, installation materials / labor cost, and more margins for projects

- **NO Cables, Line of Sight**
- **Distance is from up to 20km**

What is Wireless AP?

Concept: Wireless is less wire, not NO-wire.

Access Point (AP) connects to devices (DVR or cameras) by wired Ethernet, and converts it to a 2.4Ghz or 5Ghz wireless signal. It sends and receives wireless data.

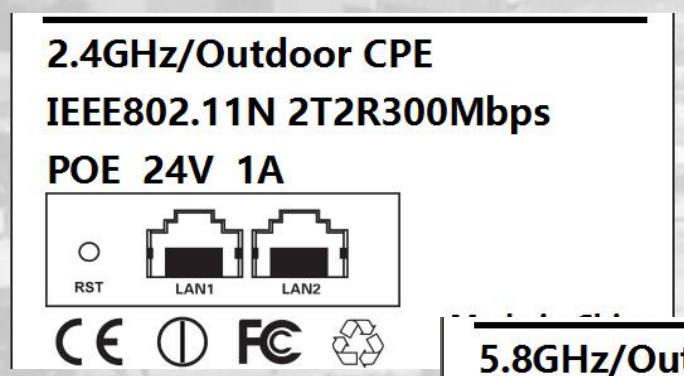
Usually the data receiver is directly called AP, while the data transmitter is called CPE (Customer Premises Equipment). All Access points products can be set as AP or CPE mode. (Transmitters also known as senders)

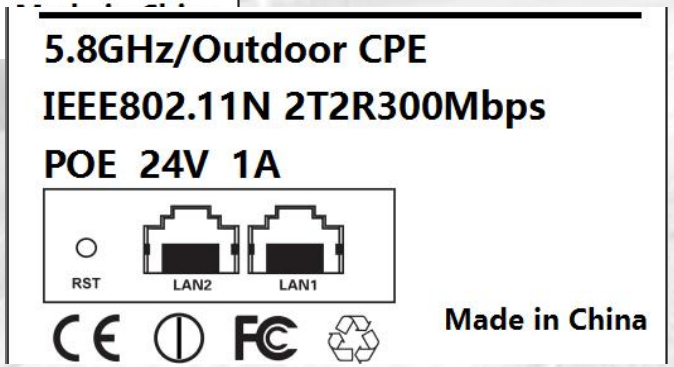
Wireless AP Transmission Speed

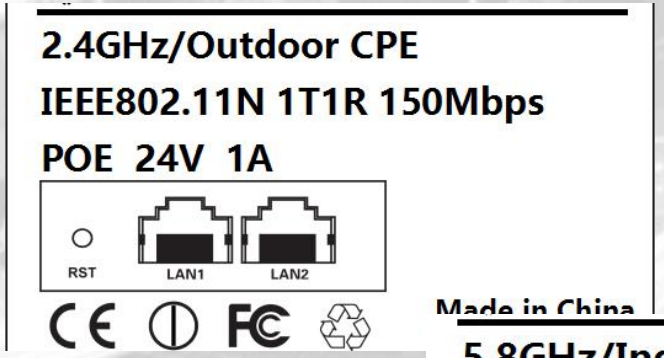
The transmission rate is the highest transmission rate that can be achieved in theory. The data transmission bandwidth is the practical speed bps（bit per second）.

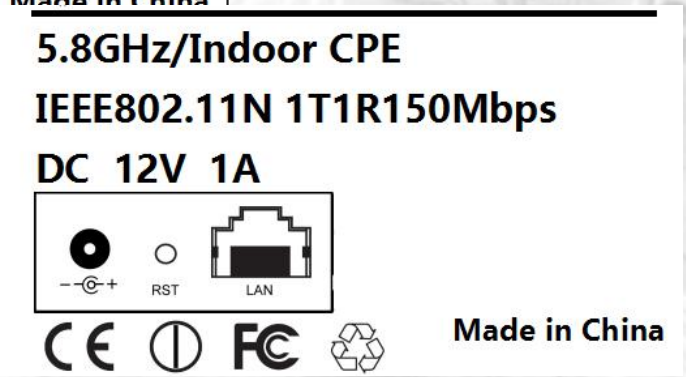
Highest rate: 300Mbps
Practical Bandwidth is 50M

Highest rate: 150Mbps Practical Bandwidth is 35M









How many IP Cameras you can transmit?

The IP cameras are connected with the CPE(Transmitter). The bandwidth of AP(Receiver) and the cameras decide how many cameras can be carried in one solution.

Bandwidth of wireless access point:

Frequency	Transmission Speed	Model	Transmission Distance	Total Bandwidth
5.8 GHz	150Mbps	GX-WAP1502	≤2km	30-60M
2.4 Ghz	300Mbps	GX-WAP3003	≤3km	40-60M
5.8GHz	300Mbps	GX-WAP3008	≤3km	40-60M

IP Cameras bandwidth & Compression technology

Bandwidth of camera: (Realistic bandwidth depends on Camera traffic – amount of motions)

H.264 Video Compression			H.265 Video Compression		
IP Camera	Megapixel	Bandwidth	IP Camera	Megapixel	Bandwidth
720P	0.92	1 - 3Mbps	1080P	2.07	1 - 4Mbps
960P	1.23	2 - 5Mbps	2K Res.	3.69	2 - 7Mbps
1080P	2.12	3 - 8Mbps	4K Res.	8.85	6 - 18Mbps
2K Res.	3.69	5 - 15Mbps	Galaxy Pro Ultra 265		
4K Res.	8.85	11 - 35Mbps	4K Res.	8.85	3 – 9Mbps

How many IP Cameras you can transmit?

GX-WAP3008 / 5.8Ghz / 300Mbps speed
Maximum Bandwidth: 60M

AP (Receiver)

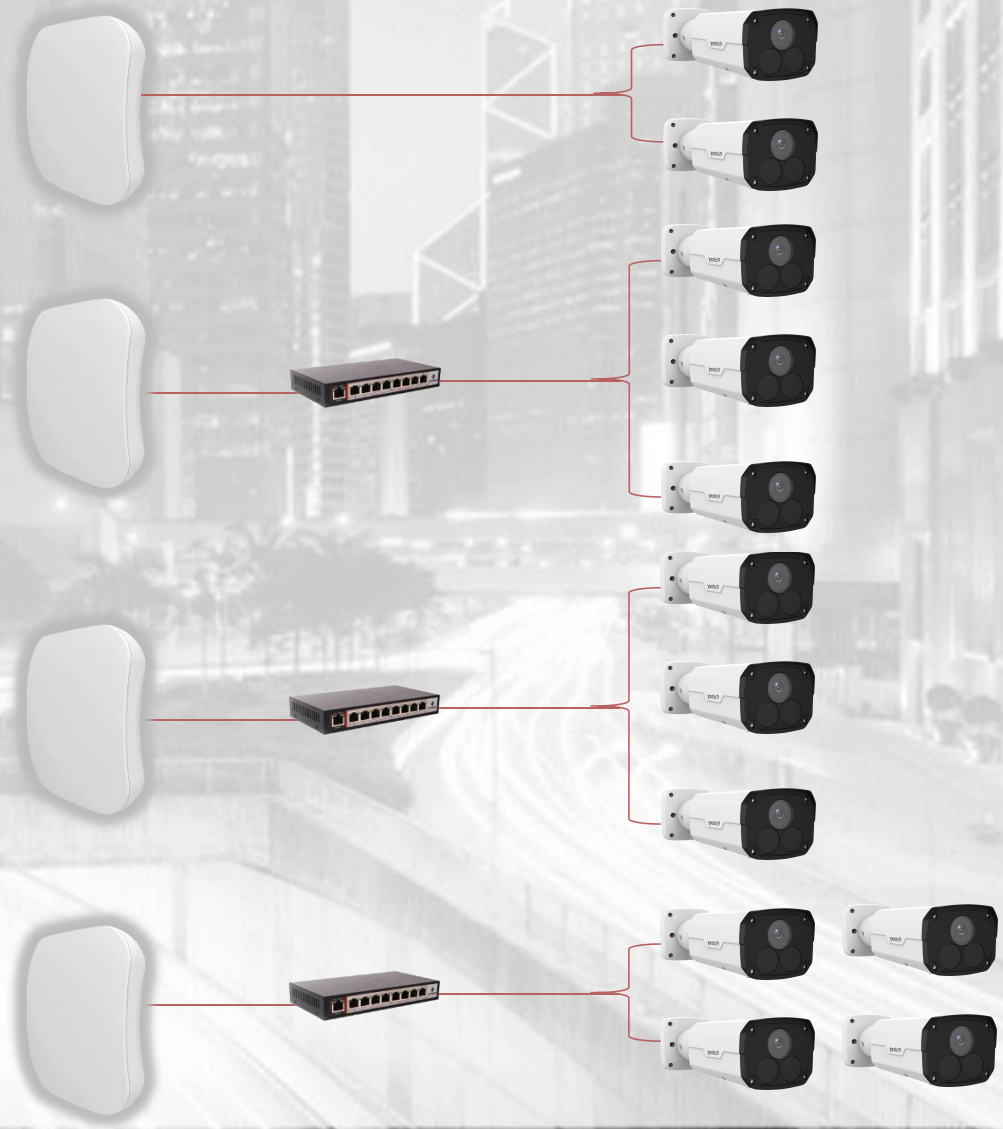
PoE Switch

NVR

CPE (Trans.)

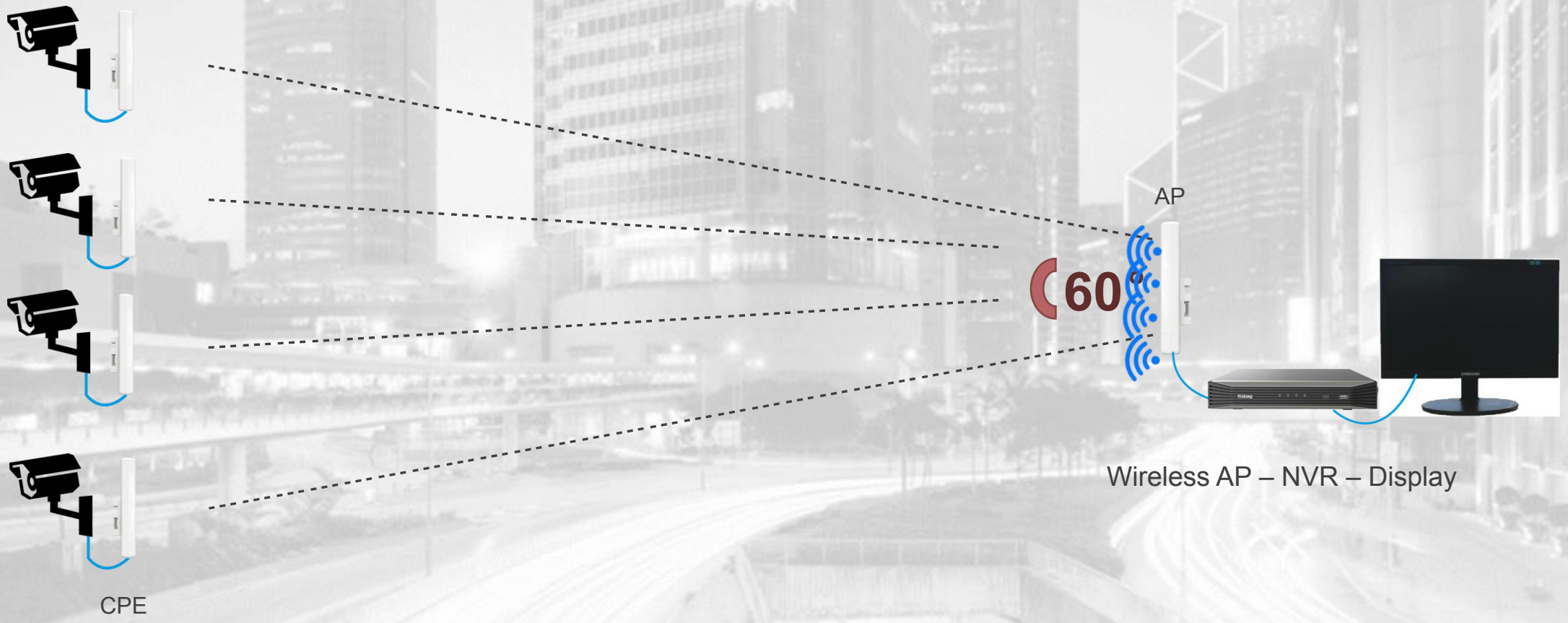
PoE Switch

H.265 1080P / 3Mbps



20 units IPC x 3Mbps = 60Mbps
As long as not exceeding the
AP receiver bandwidth

The transmission angle of wireless AP



Keep in mind:

The farther distance from AP, the greater the scope of coverage.

The smaller angle to the center of AP, the farther the transmission distance.

What is a DIP Access Point?

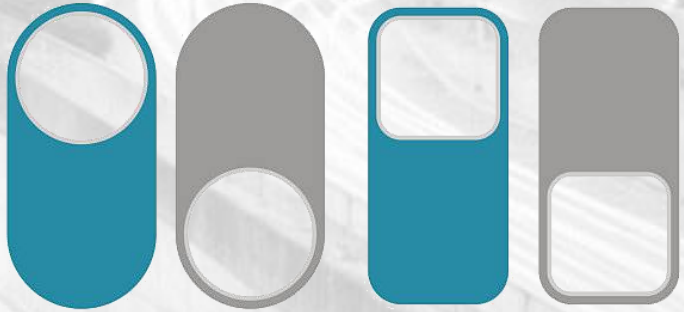
The first DIP switch EZ Dial up Access point in the market. No computer web interface needed, no network knowledge needed, no professional guidance needed.

EZ Connection by simply flipping the Access point DIP to MATCH your devices!

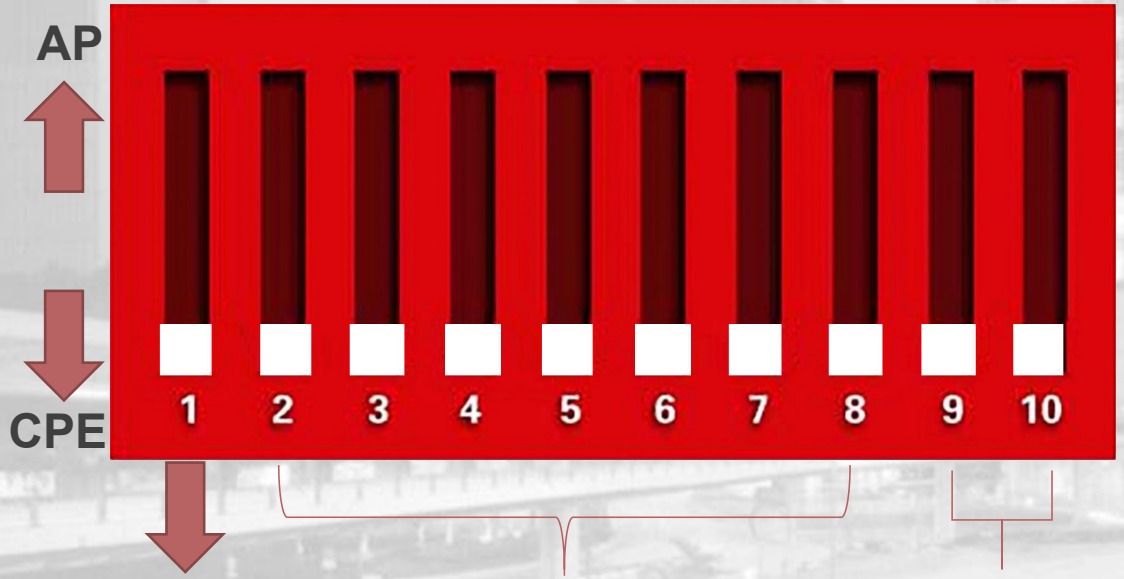
DIPs Aps are specialized for **CCTV Video Transmission** compared to other AP brands in retail market that are applicable for mostly web browsing NETWORK Transmission.

DIP Access Point features :

- **Good Transmission Speed & Distance**
- **Stability in constant data transmission (low latency)**
- **Durability in commercial/industrial environment**
- **Low maintenance**
- **Weatherproof**



How the DIP Switch Works?



Switch 1 changes the mode of the device.
UP is Access point (AP) mode for using with your recorder, Router, etc..
DOWN is for using with your cameras & Wi-fi.

Switch 2 to 8 are for matching AP and CPE together. Different combinations corresponds to different frequencies.

Switch 9 &10 are for point to multi-point functionality. To use up to 4 CPEs with one AP, different orders of button 9&10 stand for different CPE.

Each DIP AP(Receiver) can be connected up to 4 DIP CPE(Transmitters)

Sample DIP Setup of DIP1526-H

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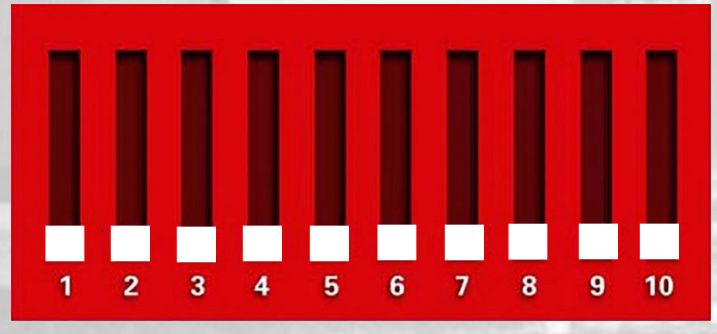
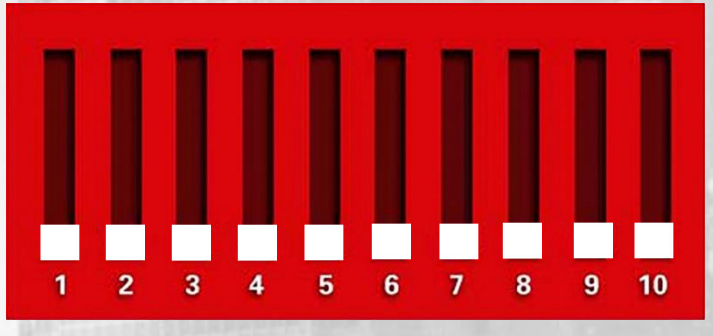
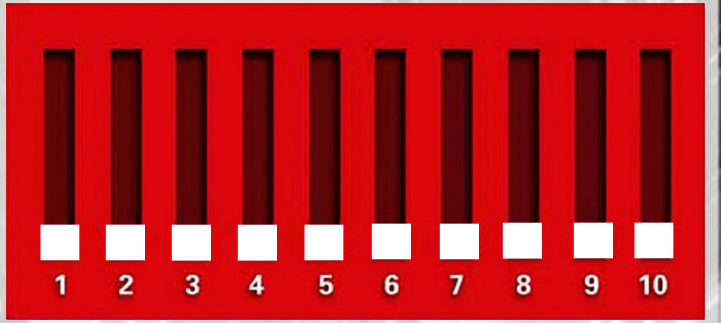
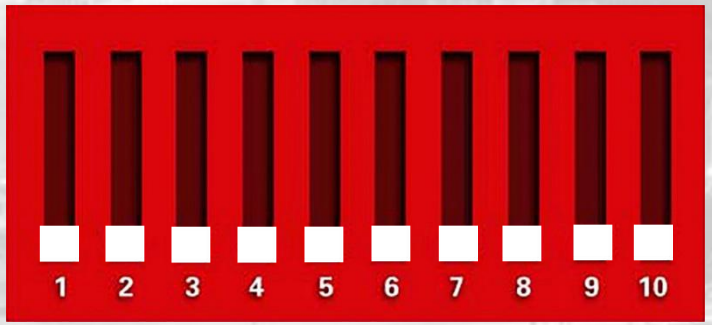
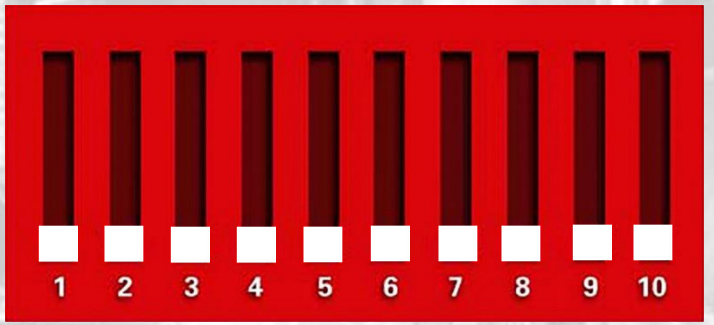
Access Point







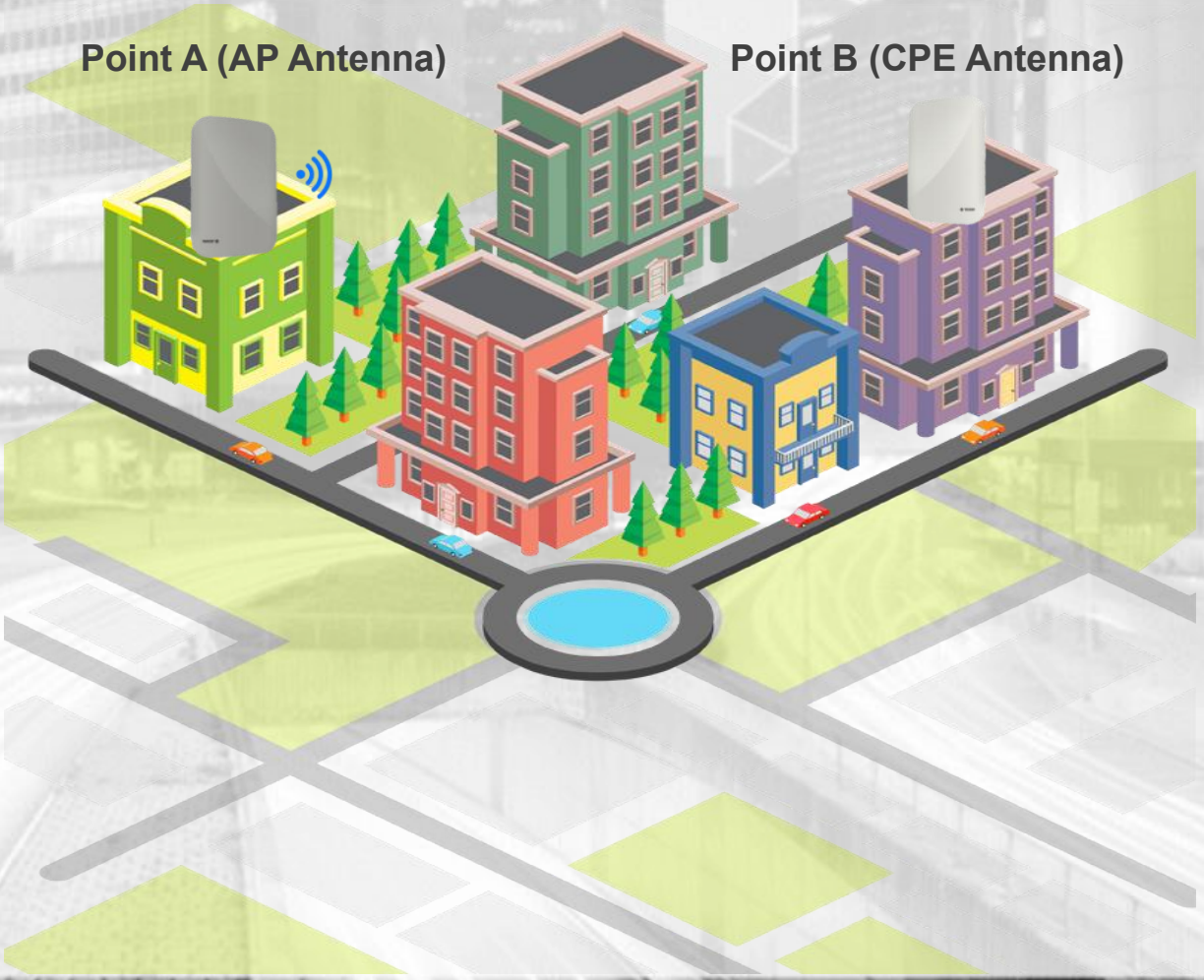




1. Setup the Working Mode of all APs.
2. Set the Frequency of AP (Receiver).
3. Follow the Frequency Pattern of AP (Receiver) in CPE (Transmitter).
4. Set the IP Keys of AP (Receiver) and CPE (Transmitter).
5. Follow the procedure in other AP (Receiver) & CPE (Transmitter) but in different Frequency Pattern.

Wireless Transmission Mode

Point-to-Point Transmission (PTP)



Scenarios:
Between buildings for Cameras & Internet

Wireless Transmission Mode

Galaxy

Point-to-Multi Point Transmission (PTMP)

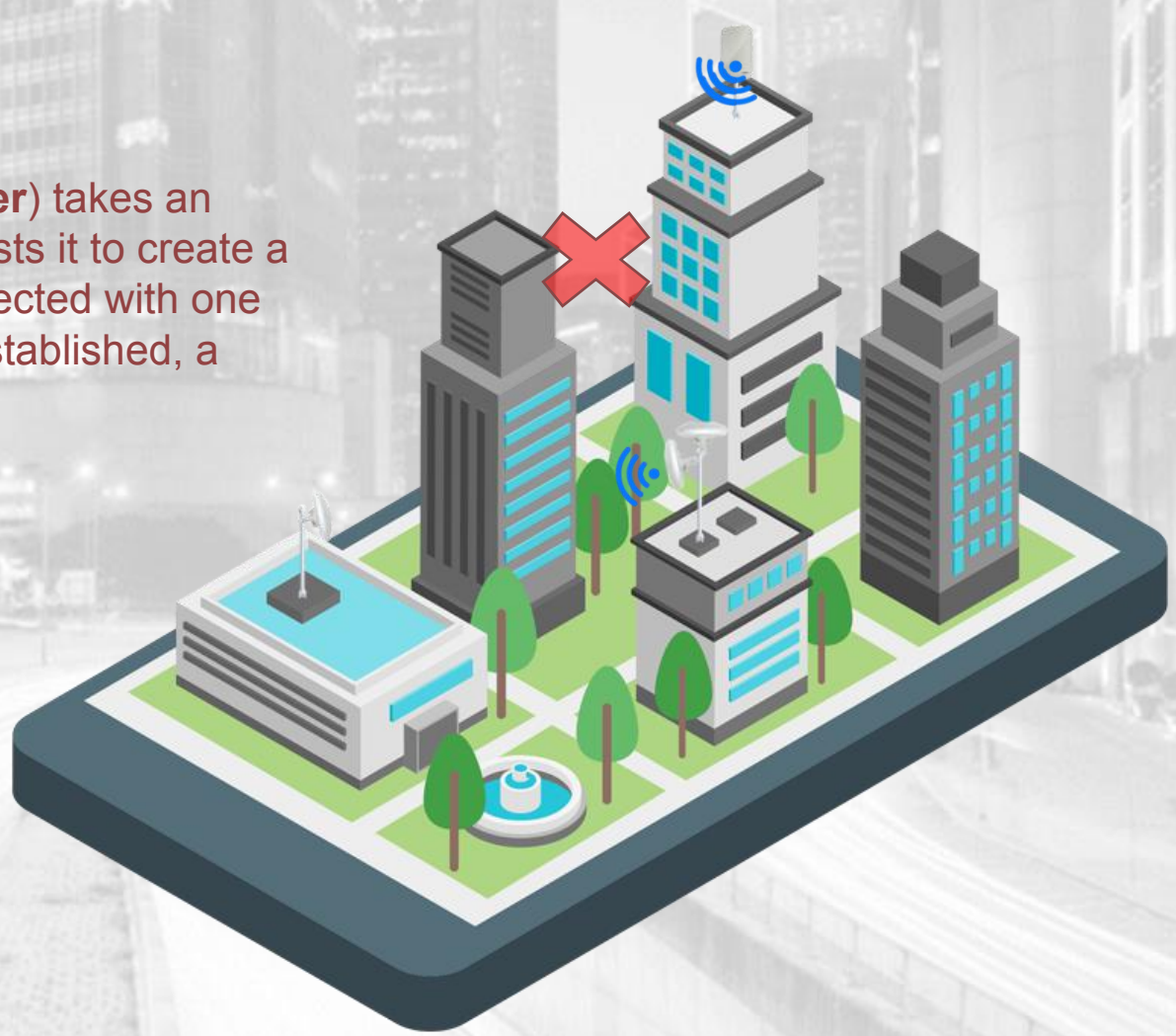
-The Point-to-Multipoint topology (also called star topology or simply P2MP) is a common network architecture for outdoor wireless networks to connect multiple locations to one single central location. In a point-to-multipoint wireless Ethernet network, all remote locations do not communicate directly with each other but have a single connection towards the center of the star network where one or more base station is typically located.

Wireless Transmission Mode

Galaxy

Repeater / Access Point Mode

-A **wireless repeater** (also called **wireless range extender**) takes an existing signal from a wireless access point and rebroadcasts it to create a second network. When two or more hosts have to be connected with one and the distance is too long for a direct connection to be established, a wireless repeater is used to bridge the gap.



Specification and Application

GX-WAP1502 Community, Warehouse, Store, etc

Universal Joint

Arc-shaped Housing

Switching Button

Non-Setting

Auto-Configure

Anti-Interference

Waterproof & Dustproof

Power	Transmission Rate	CPU	Amplifier IC	DRAM
23dBm	150Mbps	AR9344	SiGe5012B	DDR2 64M

Frequency	Antenna Gain	Range	Bandwidth
5180~5240MHz/ 5745-5825MHz	10dBi	2km	40-50M

GX-WAP3003 Community, Warehouse, Store, etc

Power	Transmission Rate	CPU	Amplifier IC	DRAM
27dBm	300Mbps	AR9341	SiGe5012B	DDR2 64M

Frequency	Antenna Gain	Range	Bandwidth
2412-2462MHz	16dBi	3km	40-50M

GX-WAP3008 Construction Site, Tower Crane

Universal Joint

Arc-shaped Housing

Switching Button

Non-Setting

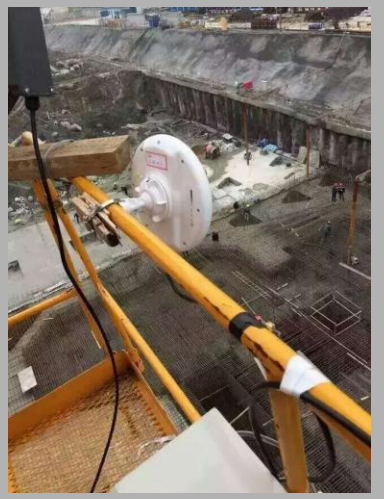
Auto-Configure

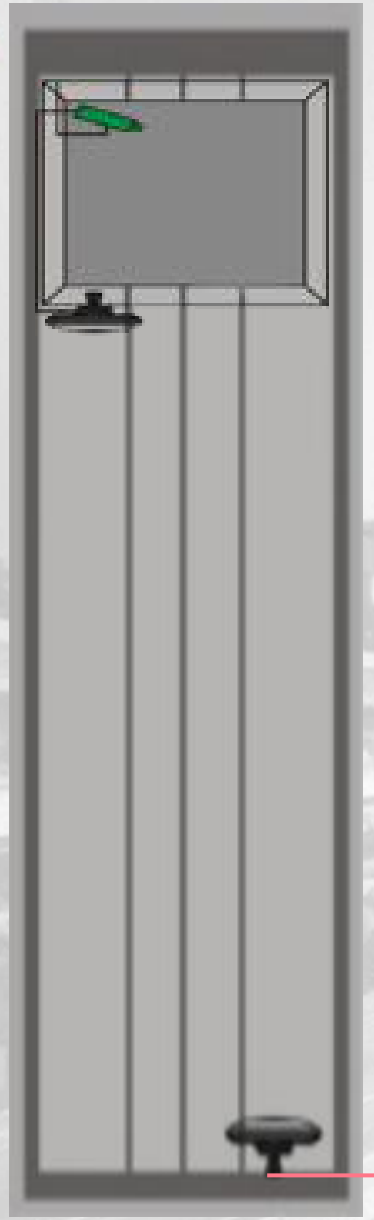
Anti-Interference

Waterproof & Dustproof

Power	Transmission Rate	CPU	Amplifier IC	DRAM
27dBm	300Mbps	AR9344	SiGe5012B	DDR 64M

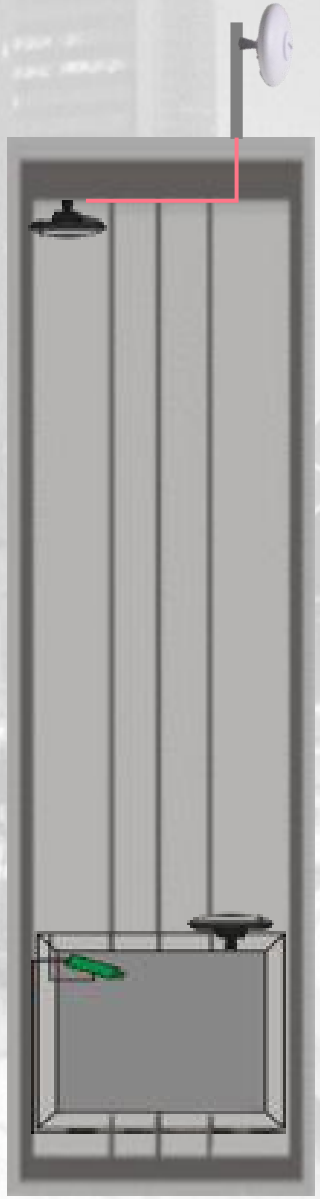
Frequency	Antenna Gain	Range	Bandwidth
5180~5240MHz/ 5745-5825MHz	16dBi	3-4KM	40-60M



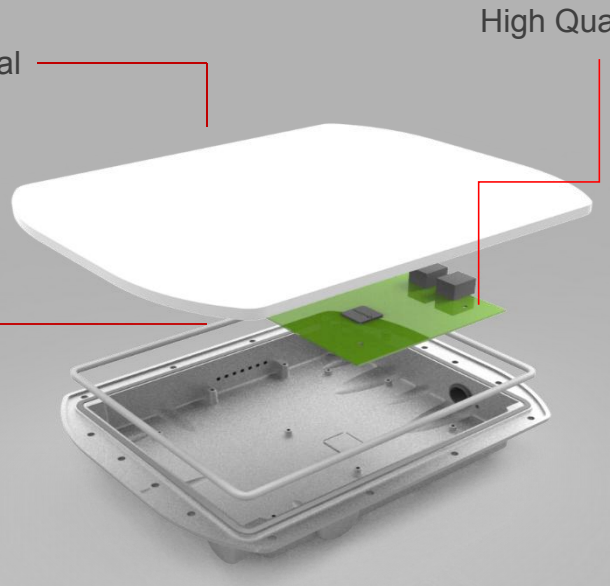


- The GX-WAP3003/3008 is specialized in Elevator CCTV Transmission, it is easy to mount in elevator car and the shaft.

- Compare to the cabling installation, wireless solution is more convenient in installation and less maintenance and higher margin for contractors.



GX-WAP-TX23-3516K Special Use In Large Land Tunnel, Mountains etc



Range

Low Power

Auto-Configure

Waterproof & Dustproof

Power	Transmission Rate	CPU	Amplifier IC	DRAM
27dBm	300Mbps	AR9344	SiGe5012B	DDR64M

Frequency	Antenna Gain	Range	Bandwidth
5180~5240MHz/ 5745-5825MHz	18dBi	10KM	40-90M

Installation & Cases

Competitive edge

Conventional AP

1.Most application are for internet use

2.Limited on installation angles

3.Limited selections on product range

4.High cost on commercial grade products

Galaxy AP

1.Fashionable design & Industrial level performance

2.360 °adjustable bracket for EZ installation

3.Wide applications for all markets

3.Specialized in CCTV projects, peace of mind

Successful Case

- **Won major construction, farm land projects**
- **Appointed wireless AP supplier for EVERGRANDE & CREIT.**
- http://www.evergrande.com/en/
- http://www.creit.ca/

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