5GHz 802.11ac 900Mbps TDMA Outdoor Long Range Wireless CPE Kit

Stable and Reliable Long-range Outdoor Wireless Solution with Superior Performance

The 5GHz 802.11ac 900Mbps TDMA Outdoor Long-range Wireless CPE Kit offers a long-range and excellent throughput better than those of the traditional wireless device. **The distance from one location to another can reach up to 20km.** With the standard IEEE 802.3at Power over Ethernet (PoE) design, the OUTDOOR LONG RANGE WIRELESS CPE can be easily installed in the areas where power outlets are not available. The OUTDOOR LONG RANGE WIRELESS CPE KIT is definitely suitable for wireless long-distance city-to-city connectivity for all applications. Based on **TDMA and ATPC (Automatic Transmit Power Control)** technology, the OUTDOOR LONG RANGE WIRELESS CPE KIT allows a number of users to share the same frequency band without interference between users by allowing them to transmit at a different time slot. With the IP65-rated outdoor enclosure, the OUTDOOR LONG RANGE WIRELESS CPE KIT can perform normally under rigorous weather conditions, meaning it can be installed in any harsh, outdoor environments.

Benefits of TDMA and ATPC

Time-division multiple access (TDMA) is a channel access method for shared-medium networks. It allows several users to share the same frequency channel by dividing the signal into different time slots. The users transmit in rapid succession, one after the other, each using its own time slot. This allows multiple stations to share the same transmission medium while using only a part of its channel capacity. With the TDMA technology, the OUTDOOR LONG RANGE WIRELESS CPE KIT reduces interference between users by allowing them to transmit at different times. It provides a better quality data transmission compared to other techniques because it reduces interference and allows for more efficient use of the available frequency spectrum. The ATPC provides automatic wireless signal adjustment in accordance with the environment, reduces mutual interference between the CPEs, and improves the stability of data transmission.

Industrial Compliant Wireless LAN and LAN

- Compliant with time-division multiple access (TDMA) wireless technology
- Compliant with the IEEE 802.11a/n/ac WAVE2 MU-MIMO wireless technology
- 2T2R architecture with data rate of up to 900Mbps
- Equipped with two 10/100/1000Mbps RJ45 ports with auto MDI/MDI-X supported

RF Interface Characteristics

- 29dBi dual-polarization antenna
- High output power with multiply-adjustable transmit power control
- Support Automatic Transmit Power Control (ATPC)

Outdoor Environmental Characteristics

- IP65 rating; built-in TVS lightning protection
- IEEE 802.3 at Power over Ethernet design
- Operating temperature: -40~70 degrees C

Multiple Operation Modes and Wireless Features

- Multiple operation modes: AP (auto WDS), AP (TDMA), Station (WDS/TDMA) and Station (ARPNAT)
- Support ATPC function to reduce mutual interference between the CPEs
- WMM (Wi-Fi multimedia) provides higher priority to multimedia transmitting over wireless
- Coverage threshold to limit the weak signal of clients occupying session
- Real-time Wi-Fi channel analysis chart and client limit control for better performance
- Support Terminal Fast Roaming with 802.11k, 802.11v, and 802.11r

Secure Network Connection

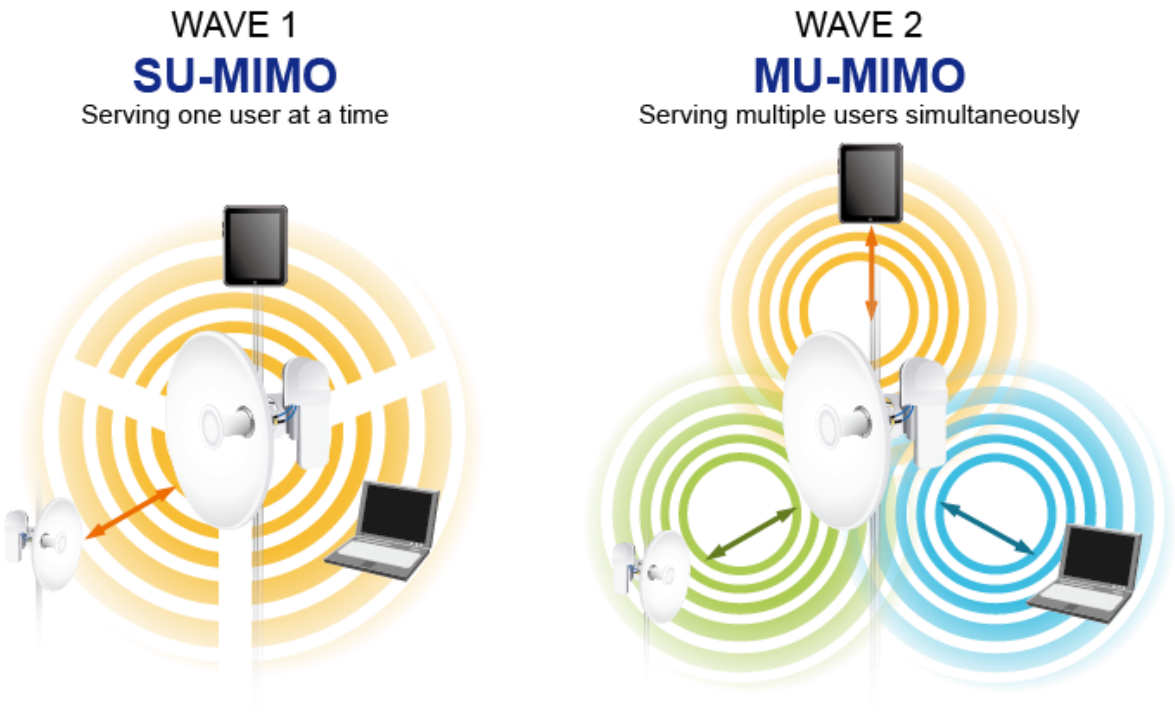
- Full encryption supported: WPA/WPA2, WPA-PSK/WPA2-PSK authentication
- Supports 802.1Q tagged VLAN over WDS/TDMA
- Supports MAC address filtering

Easy Installation and Management

- 3 simple steps to establish PtP (AP + Station) connection easily
- System status monitoring through remote Syslog Server

Benefits of MU-MIMO under 802.11ac Wave 2

With the MU-MIMO Wave 2 technology, the OUTDOOR LONG RANGE WIRELESS CPE, installed in public areas such as hotspots, airports and conferences, reduces the frustration that Wi-Fi users often experience in downloading web pages, e-mail file attachments and media contents. For cellular operators, the OUTDOOR LONG RANGE WIRELESS CPE provides a better Wi-Fi user experience, reducing the likelihood of users turning off Wi-Fi and putting more load on the cellular network. For enterprises, this technology also can solve Wi-Fi congestion issues in open work spaces and conference rooms.



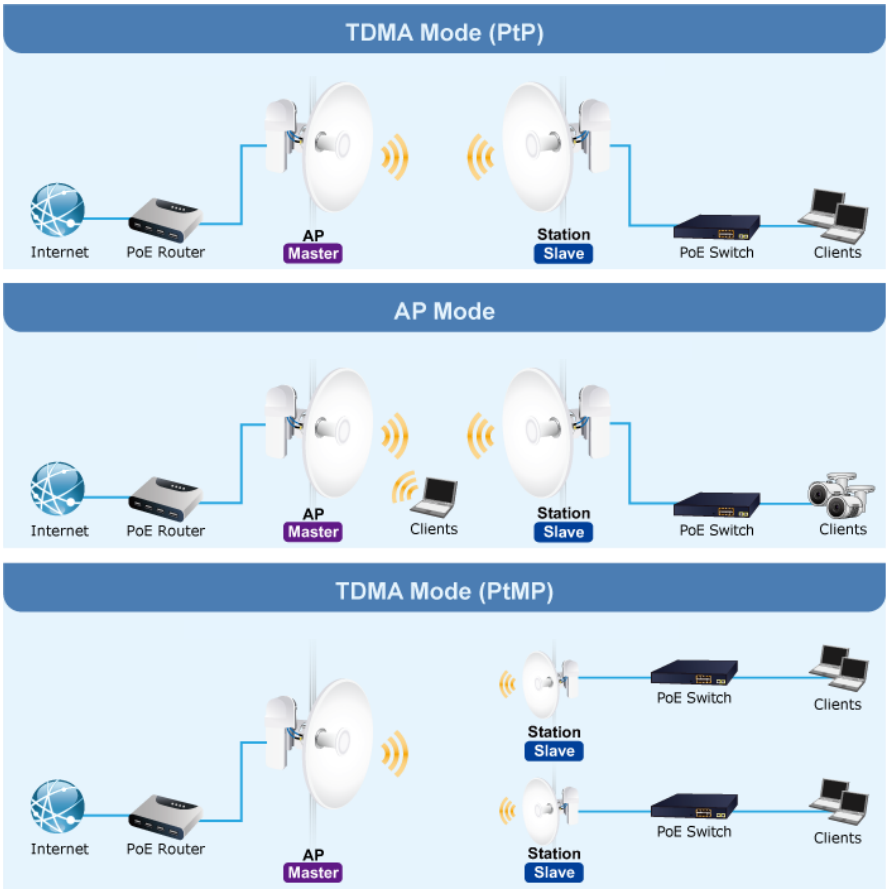
Flexible, Durable and Reliable Outdoor Characteristics

To reach maximum reliability in the harsh environment, the **OUTDOOR LONG RANGE WIRELESS CPE KIT** not only comes with **IP65-rated casing**, but also adopts the Qualcomm Chipset Solution, capable of withstanding wide temperature ranging from **-40 to 70** degrees C. Designed with the **IEEE 802.3at PoE+** (**P**ower **o**ver **E**thernet) power scheme, the **OUTDOOR LONG RANGE WIRELESS CPE KIT** can be easily installed in the areas where power outlets are not available. Furthermore, it is also suitable to be integrated with Renewable Powered PoE System to offer farther wireless service in remote areas.

Environmental Adaptations in Outdoor Area

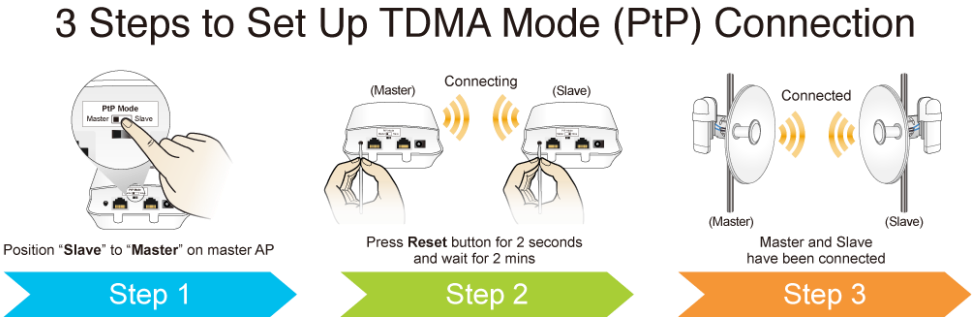
Designed for Various Requirements

The OUTDOOR LONG RANGE WIRELESS CPE KIT is specially designed for long-distance outdoor wireless solutions that are capable of establishing stable bridge connection with 29dBi high gain dish antenna. To provide long range and maximum performance., the OUTDOOR LONG RANGE WIRELESS CPE KIT can implement 3 operation modes and is easy to use where a multitude of applications in communities, warehouses, campuses, harbors, etc. can be made.



3 Simple Steps to Set Up PtP Connection

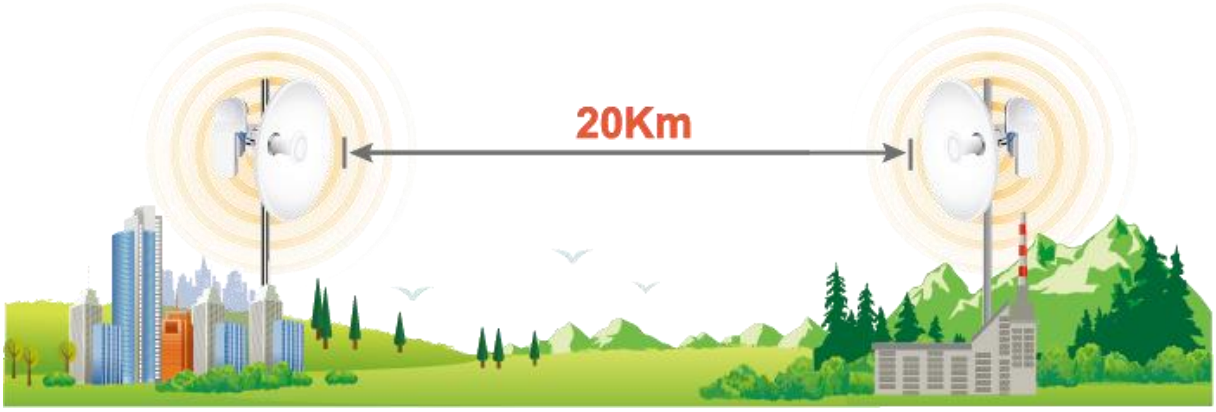
Without needing to enter the Web interface for configuration, the OUTDOOR LONG RANGE WIRELESS CPE KIT has the DIP switch for setting to master (AP mode) and to slave (Station mode). User only needs three simple steps to establish the PtP connection without any difficulty. By just switching the button to “Master” on the master AP, and pressing the reset button, the PtP connection can be established in 2 minutes as the connection steps are shown below.



Applications

Long-distance Connection

The OUTDOOR LONG RANGE WIRELESS CPE KIT is specially designed for long-distance outdoor wireless bridge solutions that are capable of establishing stable bridge connection with 29dBi high gain dish antenna to provide long-range connection and maximum performance. It supports TDMA that can reduce interference between users by allowing them to transmit at different times even when a large number of users shares the same frequency band. It is easy to install and adjust the suitable setting in appropriate locations. The connection distance would be **up to 20km** and the throughput would be up to 80Mbps. In the aspect of management, the adjustable transmit power control and IEEE 802.1Q VLAN that the OUTDOOR LONG RANGE WIRELESS CPE features regulate network data transfer by delaying the flow of less important or less desired packets.



Specifications

Hardware	
Standard Support	IEEE 802.11a/n/ac IEEE 802.11i IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3x flow control IEEE 802.11k, 802.11v, and 802.11r
Dimensions (W x D x H)	OUTDOOR LONG RANGE WIRELESSCPE：85 x 33 x 185 mm Antenna ANT-D29AD：430 x 165 x 430 mm
Weight	OUTDOOR LONG RANGE WIRELESSCPE：298 g Antenna ANT-D29AD：1165 g
Power Requirements	Passive 48V DC inject (package included) or IEEE 802.3 at PoE+ (End-span) or 12V DC IN
Power Consumption (max.)	< 15W per device
Interface	2x RP-SMA PoE: 1 x 10/100/1000BASE-TX, auto-MDI/MDIX, 802.3 at PoE In

	LAN: 1x 10/100/1000BASE-TX, auto-MDI/MDIX
Button	Reset/Pair button
Switch	PtP Switch
Data Rate	IEEE 802.11a: up to 54Mbps IEEE 802.11n (20MHz): up to 150Mbps IEEE 802.11n (40MHz): up to 300Mbps IEEE 802.11ac (80MHz): up to 867Mbps
Media Access Control	CSMA/CA
Modulation	802.11 a/n/ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Frequency Band	5150~5850MHz
Operating Channels	5GHz channel: 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136,140, 149, 153, 157, 161, 165 * 5GHz channel list will vary in different countries according to their regulations.
Max. Transmit Power (dBm)	Up to 26 dBm (country dependent)
Receiver Sensitivity (dBm)	

Network Mode	Data Rate	Receive Sensitivity (dBm)
802.11a	6Mbps	-90
	54Mbps	-70
802.11n HT20	MCS0/MCS8	-88
	MCS7/MCS15	-70
802.11n HT40	MCS0/MCS8	-86
	MCS7/MCS15	-68
802.11ac VHT20	MCS0	-89
	MCS8	-67
802.11ac VHT40	MCS0	-86
	MCS9	-62
802.11ac VHT80	MCS0	-85
	MCS9	-58

Antenna	Dual polarization dish antenna Gain：29 dBi Frequency range：5180 -5850 MHz Polarization：±45° Cross-pol Isolation：30 dBi VSWR：< 1.8 Azimuth beam width (H pol)：6° Azimuth beam width (V pol）：6° Elevation beam width：6°
Environment & Certification	
Operating Temperature	-40 ~ 70 degrees C
Operating Humidity	5 ~ 95% (non-condensing)
IP Level	IP65
ESD Protection	± 6KV
Surge Protection	± 2kV
Regulatory	CE, RoHS
Software	
LAN	Static IP/DHCP Supports Secondary IP
Wireless Modes	Access Point (auto WDS), Access Point (TDMA3), Station (WDS/TDMA3), Station (ARPNAT)
Channel Width	20MHz, 40MHz, 80MHz
Encryption Type	WPA, WPA-PSK, WPA2, WPA2-PSK
Wireless Security	Enable/Disable SSID Broadcast Wireless Max. 32 MAC address filtering User Isolation
Max. SSIDs	1
Max. Wireless Clients	128 (depending on usage)
Wireless QoS	Supports Wi-Fi Multimedia (WMM), 4 queues prioritization on TDMA
Wireless Advanced	Auto Channel Selection Transmit Power: 3 - 30 dBm Client Limit Control, Coverage Threshold Wi-Fi channel analysis chart Fast Roaming(IEEE 802.11k, 802.11r, 802.11v)
Status Monitoring	Device status, wireless client List DHCP client table System Log supports remote syslog server
VLAN	IEEE 802.1Q VLAN (VID: 2~4094)
Management	Remote management through SSH/HTTP/Telnet Configuration backup and restore Supports Bonjour (mDNS), CDP/LLDP, SSDP Supports GRE tunnel SNMP v1/v2c/v3 support, MIB I/II, Private MIB