

## Dual-Radio 802.11ax 2x2:2 Indoor Access Point

Everest Networks provides the industry's leading Wi-Fi solutions addressing today's most pressing ultra-high density (UHD) challenges, such as high user engagement, high network capacity, fast throughput, and low total cost of ownership (TCO). Our solutions leverage the Everest Wi-Fi platform, designed and built specifically for UHD venues such as stadiums, arenas, convention centers, shopping malls, transport hubs, auditoriums, campuses, and smart cities.

### AN INDUSTRY LEADER

A complementary component of the Everest platform is the AP600, an indoor-rated, low-performance access point (AP) providing short-range coverage. Primarily employed for enterprise-grade low- to medium-density environments such as offices, hotel, luxury suites, non-public service areas, and retail outlets, the AP600 is a multi-gigabit 802.11ax AP featuring dual radios, internal semi-directional antennas, 2x2:2 MIMO and MU-MIMO capabilities.

### BUILT FROM THE GROUND UP

At its core, the AP600 employs two independent 802.11ax MIMO radios, one in the 5-GHz band 3x3:3 and another in the 2.4-GHz band 2x2:2, for dual-radio concurrent operation. In addition, the AP600 utilizes a multi-antenna system with down-ward or outward patterns when ceiling- or wall-mounted, respectively. Along with pattern, and spatial diversity, the multi-antenna system provides coverage patterns which are 160°-wide directional for reliable and consistent RF signal. Combined with a sturdy metal body for improved solution reliability, the AP600 provides best-in-class enterprise-grade performance at a lower cost than competitive 802.11ax access points.

The AP600 also provides additional capabilities such as advanced radio resource management, active multi-radio



### UNIQUE BENEFITS

- Concurrent **dual-radio** 802.11ax 2x2:2 SS PHY rate up to **3 Gbps**
- Up to 250 associated devices per AP
- Up to **99+** active devices per AP
- **2 Gbps** backhaul: 1 x 1.0G PoE+ and 1x 10/100/1000 Ethernet ports
- Optimized antennas with 160°-wide (quasi-omni) patterns for 2.4/5 GHz
- Simultaneous pattern and spatial diversity for MIMO and MU-MIMO
- 2x2:2 spatial streams per radio
- Rated for indoor environments

client load balancing, and assisted roaming, which are fully supported and managed by Everest's WLAN controller wireless management system. Through Everest's WLAN controller's simple and clear user interface, the AP600 can be easily and quickly configured, managed, monitored, and assessed with minimal user interaction, providing operational efficiency and system scalability (up to 1,000 APs) without compromise.

## CONCURRENT DUAL-RADIO FOR UP TO 3.0 GBPS

The AP600 leverages the combined power of two 802.11ax radios operating in 2x2:2 and 3x3:3 MIMO mode, for a total of 4 parallel spatial streams. One radio is dedicated to the 2.4-GHz band providing MIMO functionality while the other radio is dedicated to the 5-GHz band providing MU-MIMO functionality. In addition, the AP600 enables concurrent dual-radio operation without impacting the radio's performance for an aggregate PHY throughput of 3.0 Gbps. Integrated within the AP600 is a dual-band scanning radio. Finally, 3.0 Gbps of wired backhaul is provided by two Ethernet ports, 1 Gbps each.

## ADVANCED ANTENNA TECHNOLOGY

The AP600 has a fully-integrated antenna system featuring polarization, pattern, and spatial diversity for enhanced MIMO and MU-MIMO operation. The 4-spatial steam 160°-beam profile provides a quasi-omnidirectional down-ward or outward coverage pattern when ceiling- or wall-mounted, respectively, for a reliable, consistent, and defined RF signal in enterprise-grade environments.

## AUTO DISCOVERY

Upon power-up, the AP600 is auto-discovered by Everest's WLAN controller which performs AP verification and authorization before commencing data transfer. Once authorized, updated firmware and AP configuration are downloaded in a secured and controlled tunnel for an efficient and fast bring-up and operation.



## ACTIVE CLIENT ROAMING & LOAD BALANCING

Our patent-pending load balancing algorithms performs traffic management to optimize client associations, throughput, and roaming. Based on 802.11k and 802.11v protocols, the algorithm dynamically balances users between intra- and inter-AP radios to maximize radio, client and network performance and capacity.

## INTEGRATED ENTERPRISE SECURITY

The AP600 features integrated, easy-to-configure security technologies providing secure connectivity for employees and guests. Employing the latest 802.11i advanced security features and encryption, with WPA2 authentication, the AP600 delivers the level of security required in an enterprise or crowded event environment.

## Performance and Capacity

### Associated Devices

Up to 250

### Active Devices

Up to 99+

### Peak PHY Rates

5 GHz: 2.4 Gbps

2.4 GHz: 0.6 Gbps

Total: 3.0 Gbps

### Backhaul

1x 1.0 Gbps and 1x 10/100/1000 Ethernet ports

## Advanced Radio Technology

### Radios Per AP

5 GHz: 1x 802.11a/n/ac/ax

2.4 GHz: 1x 802.11b/g/n/ax

### MIMO

2x2 (SU-MIMO and MU-MIMO)

### MIMO Streams (per radio)

SU-MIMO (2.4/5 GHz):

- 2 streams for 2x2 devices

- Max.: 1.2 Gbps per stream

- Max.: 2.4 Gbps (5 GHz)

MU-MIMO:

- 2 streams for 2 concurrent devices

### Features

TPC, DFS, TxBF, SGI

MRC, MLD, CDD, STBC, LDPC

### Max Tx Power (country code = Vietnam)

2.4 GHz: 32 dBm

5 GHz: 34 dBm

### Rx Sensitivity

802.11n (MCS0, HT20): -97 dBm

802.11ac (MCS0, VHT20): -92 dBm

### Other

Dual-band scan radio and BLE radio

## Antenna Characteristics

### Antenna Characteristics

Band-optimized Internal

and integrated

Outward/downward

Pattern, polarization, spatial

### Antenna Patterns

2.4/5 GHz: 160° -wide

### Max Physical Antenna Gain & max EIRP

2.4 GHz: 4 dBi & maximum EIRP = 32 dBm

5 GHz: 4 dBi & maximum EIRP = 34 dBm

## WiFi Specifications

### Supported Standards IEEE

802.11a/b/g/n/ac/ax

### Supported Rates 802.11b: 1

- 11 Mbps

802.11a/g: 1 - 54 Mbps

802.11n: 6.5 - 600 Mbps (MCS0-31, 1 - 4 SS)

802.11ax: 6.5 to 2.4 Gbps (MCS0-11, 1 - 4SS)

802.11n-2.4 GHz: 6.5 - 800 Mbps (MCS0-9, 1 - 3SS)

802.11 HT: HT20/40

802.11 VHT: VHT20/40/80

### Supported Channels (availability based on country code)

2.4 to 2.472 GHz: 1 - 13 (FCC/IC)

2.4 to 2.4835 GHz: 1 - 14 (ETSI)

5.15 - 5.25 GHz: 36 - 48 (FCC: U-NII-1/IC/ETSI)

5.25 - 5.35 GHz: 52 - 64 (FCC: U-NII-2A/IC/ETSI)<sup>1</sup>

5.47 - 5.725 GHz: 100 - 140 (FCC: U-NII-2C/IC/ETSI)<sup>1</sup>

5.725 - 5.850 GHz: 149 - 165 (FCC: U-NII-3/IC)

### Channelization

<sup>1</sup> Pending certification

20/40/80/160 MHz

### Security

Wi-Fi Protected Access (WPA)

IEEE 802.11i (WPA2, RSN)

Transport Layer Security (TLS)

Datagram Transport Layer Security

IEEE 802.1X

Encryption: AES, CBC, CCM, CCMP128,256

## Power

### Max Input Power (per port)

15 W @ 42.5 - 56 VDC

### Max Power Consumption

12 W

### DC

12V/2A

## Physical Interfaces

### Ethernet

2x 100/1000 Mbps

Auto-sensing

802.3 10 Base-T

802.3u 100 Base-T

802.3ab 1000 Base-T

802.3bz 2.5G Base-T

PoE 802.3at (Type I) [802.3af]

PoE+ 802.3at (Type II) [802.3at]

LLDP

## Physical Characteristics

### Dimensions

168 mm x 168 mm x 32 mm

6.6 in x 6.6 in x 1.26 in

### Weight

0.5 Kg (1.1 lbs)

### Environmental

Operating temperature: 0°C to 45°C (32°F to 113°F)

Storage temperature: -40°C to 70°C (-40°F to 158°F).

Operating humidity: 5% to 95% non-condensing

Operating altitude: 3000 m

Shock and vibrations: ETSI 300-19-2-4 spec T41.E 4M3

Surge immunity

UV resistant

## Reliability

### MTBF

401,314 hours (calculated)

### MTR

30 minutes

## Wireless and Traffic Management

### Wireless and Traffic: Standards

802.11e QoS

802.11k RRM

802.11r Fast BSS transition (FT)

802.11v Wireless Network

Management

802.11ae Prioritization of Management Frames

### Wireless and Traffic: Features

Airtime fairness

Client load balancing

Dynamic radio management based on per: client, radio, and AP metrics

### Interfaces

Everest's WLAN controller: WMS and AC

## Certification and Compliance

### Wi-Fi Alliance

Wi-Fi Certified n, ac, ax

Wi-Fi Protected Access (WPA2)

Protected Management Frames

Voice-Enterprise

WMM® (Wi-Fi Multimedia™)

### Regulatory and Safety

Emissions (EMI/EMC):

- FCC Part 15, Class B
- ICES-003 issue 6, Class B
- VCCI (CISPER 32)

Radio:

- FCC Part 15c, part 15e (US)
- RSS-247 (Canada)
- ARIB STD-T66, ARBI STD-77 (Japan)

Surge: IEC 61000-4-5 Edition 2.0 2014, EN61000-4-5:2014

Safety:

- UL60950-1/ IEC60950-1
- UL2043 (Plenum Rated)

Shock and vibrations:

- IEC 68-2-27
- IEC 68-2-06