

# Altitude® 350-2



*Altitude 350-2 integrated and detachable dual-radio access points provide secure, high-performance wireless coverage for demanding enterprise applications.*

## Simplicity

- Dual radios and power options maximize design options and flexibility settings
- AutoCell™ dynamic RF management eliminates management of channel settings and power levels
- AccessAdapt™ with branch office support provides Plug and Play AP installation without pre-configuration

## Performance

- Antenna diversity for clear, clean signals
- Automated radio self-healing for high availability
- Over-the-air Quality of Service (QoS) with automatic mapping to wired QoS for true end-to-end voice support
- Hardware-accelerated encryption in every AP for fast, scalable link security

## Security

- Directory-integrated link security simplifies user access management
- A rich set of authentication and access control options for every application and device
- Wireless intrusion detection that operates while user connections are being maintained

The Altitude 350-2 is a dual-radio access point (AP) that supports simultaneous operation of 802.11a and 802.11g/b wireless networks. Used with Summit® WM series switches for centralized management and control, the Altitude 350-2 APs deliver Plug and Play installation anywhere in the organization's network, including the next building, the next city, or even in another continent. Two Altitude 350-2 models are available: the sleek integrated model with interior omni-directional antennas and the detachable model that provides RP-SMA connectors for external antennas. Both models support antenna diversity for better performance, particularly in challenging multipath environments.

The Altitude 350-2 delivers an easy-to-use, secure and high-performance solution that is ideal for demanding enterprises. With the versatility to simultaneously support a wide variety of wireless needs—including voice access, guest access, secured access, and rogue AP detection—the Altitude 350-2 dramatically simplifies the installation and operation of Enterprise wireless networks. This AP can be installed without major network topology changes, without significant network reconfiguration, without time-consuming pre-configuration steps and without skilled labor at the site.

## Target Applications

- Wireless connectivity for multiple user types and devices
- Support for high-performance applications such as voice over WLAN
- Distributed wireless connectivity with Plug and Play installation and centralized support
- Applications requiring high availability and RF management
- Sites requiring both connectivity and wireless intrusion detection

*Together with the Summit WM series switches for centralized management, the Altitude 350-2 delivers Plug and Play installation anywhere in an organization's network—including the next building, next city or even in another country.*



## Simple Installation and Operation

Out-of-the-box Altitude 350-2 AP installation is easy. Using AccessAdapt, the Altitude 350-2 automatically discovers connections to the Summit WM series switch. No changes to the network topology or new VLANs are necessary—making the solution easy to integrate with existing networks. After discovering the Summit WM series switch, the Altitude 350-2 AP downloads configuration details and provisioning information. Using multiple Service Set Identifiers (SSIDs), designers can make a rich set of access options available to users of a single AP. For example, one Altitude AP can simultaneously support guests, Voice over Wireless LAN (VoWLAN) handsets, and secured employee access.

## Maximize Flexibility with Dual Radios, Power Choices, and Mounting Options

The Altitude 350-2 APs support two 802.11 wireless LAN radios, maximizing design options for user support and perimeter defense. When both radios are utilized, Enterprises benefit from having the maximum aggregate capacity available at every service location. Each radio can support multiple applications, such as voice, corporate, or guests, to tailor performance for demanding applications. The AP is plenum rated and supports Power over Ethernet (PoE) or external power (adapters are sold separately), giving installers the flexibility to meet site demands for device placement.

## AutoCell Dynamic Radio Management

The Altitude 350-2 APs provide Dynamic RF Management (DRM) using AutoCell (optional on the Summit WM100). AutoCell automatically assigns power levels and channels, continually adjusts RF characteristics while the system is in operation, and self-heals the network should an AP go out of service. As a result, the Altitude 350-2 delivers fewer

dropouts and lost connections, clearer calls, and higher system throughput. In addition to providing outstanding coverage, AutoCell also reduces the need for a rigorous site survey before installation.

AutoCell operations can be tailored to meet site, performance, and security demands. For the highest aggregate throughput and best roaming performance, AutoCell minimizes co-channel interference by providing “shaped” RF coverage. With cell shaping, transmit power is dynamically limited to the lowest level possible, while management frames (beacons) are transmitted at maximum power. This allows roaming clients (such as VoWLAN handsets) to easily and quickly locate radio resources and roam to adjacent cells. When cell shaping is disabled, the Altitude limits beacon transmission power levels, adding an extra measure of security by making wireless networks harder to detect outside the facility.

AutoCell even works to optimize the network when “foreign” wireless networks or interference sources are in range. If an interfacing signal is detected, AutoCell will automatically select channels and power levels to minimize the impact.

## Voice-Grade Performance with End-to-End QoS and High Availability

The Altitude 350-2 AP and Summit WM series switches work together to optimize performance and availability for voice. All 802.11 time-critical functions, such as hardware-accelerated encryption, over-the-air QoS, and RF management are implemented on the Altitude 350-2. This delivers higher performance, more scalability, and robust availability—particularly in large networks—than wireless LAN alternatives that rely on a central appliance to manage time-critical functions. The Altitude 350-2 also supports over-the-air QoS protocols such as SpectraLink Voice Priority (SVP) and 802.11e WME for VoWLAN handsets.

## High Performing Branch Office Support

Altitude 350-2s can also be deployed in remote offices without needing a remote Summit WM switch. In this configuration, the APs locally bridge wireless traffic and use local security and QoS policies. Communication with the central Summit WM series switch is needed only during boot up and for user authentication. Local wireless user sessions stay operational even when the WAN connection is not available.

## Enterprise-Grade Security

Altitude 350-2 APs work with Summit WM series switches and the Enterprise’s existing AAA infrastructure to deliver comprehensive link security capabilities. The solution offers a complete range of privacy options ranging from unencrypted communication for guests, shared key for phones and PDAs, to WEP, WPA v1, and WPA v2. For high-performance and scalability, all over-the-air encryption connections are terminated at the Altitude 350-2 with hardware-accelerated encryption.

The Altitude 350-2 also supports intrusion detection of rogue APs or unauthorized ad hoc networks. Each AP can scan multiple bands and channels to detect unauthorized wireless devices while simultaneously supporting user connections. The data from these scans is transmitted to a Summit WM switch where it is analyzed and reported so action can be taken. For greater physical security, the Altitude 350-2 has no console port to access and is mounted with a bracket that requires tools for removal.

# Product Specifications

## Physical Specifications

### Unit Dimensions

- 7.4 in. (18.8 cm) wide; 5.6 in. (14.2 cm) deep; 1.6 in. (4.1 cm) high

### Weight

- 12.2 oz (346g); add 2.6 oz (74g) for mounting bracket

### Packaging Specifications

- 9.5 in. (24.1 cm) wide; 10.5 in. (26.7 cm) deep;
- 2 in. (5.1 cm) high
- 2 lbs (0.91 kg)

### Operating

- Operating temperature 0°C to 50°C (32°F to 122°F)
- Storage temperature -40°C to 70°C (-40°F to 158°F)
- Relative Humidity 10 - 95% (Non-Condensing)
- Altitude 0 - 3000 meters (9,850 ft)

### Transportation

- Shock 3G, 11ms, 60 Shocks
- Shock 10G, 6ms, 600 Shocks
- Sine Vibration 5-100-5 Hz @.2G, 0-peak, 1/10 Oct/min
- Random Vibration 3-500Hz 1.5Grms
- Random Vibration 5-20Hz @ 1.0 ASD W/-3dB/oct from 20-200Hz
- Drop at 39.4", 14 drops, packaged.

## Input Power

### Power Over Ethernet (PoE)

- 48Vdc, 250mA via Power over Ethernet (PoE) Switch (Class 0, 12.95 Watts Max, 7.4 Watts Typical)
- 48Vdc, 250mA via Power over Ethernet (PoE) Injector (Not Provided)

### Wall Adapter

- 6Vdc, 1.5A, (Not Provided) Requires country specific certifications

### Interface

- Auto-sensing 10/100 Ethernet interface

### LEDs

- 2.4 GHz Radio Activity
- Access Point Power/Status
- 5.0 GHz Radio Activity

### Antenna Internal Diversity

- 2.4 GHz - 2 dBi Gain
- 5.0 GHz - 5 dBi Gain

### External Antenna (Detachable A-350 only)

- RP-SMA Connector

### Frequency

- 2.4 GHz to 2.484 GHz
  - 802.11b – DSS
  - 802.11g – DSS/CCK/OFDM
 up to 3 non-overlapping channels
- 5.15 GHz to 5.85 GHz
  - 802.11a – OFDM
 up to 12 non-overlapping channels

### Maximum Transmit Power

- 802.11a
  - 5.15 to 5.25 GHz: 14 dBm
  - 5.25 to 5.35 GHz: 16 dBm
  - 5.725 to 5.850 GHz: 15 dBm
- 802.11b: 19 dBm
- 802.11g: 16 dBm

### Transmit – (Selectable per Radio)

- 100%, 50%, 25%, 12.5%, 6.25%

### Receive Sensitivity

- 802.11b
  - 1 Mbps -93 dBm
  - 2 Mbps -90 dBm
  - 5.5 Mbps -89 dBm
  - 11 Mbps -86 dBm
- 802.11g and 802.11a
  - 6 Mbps -89 dBm
  - 9 Mbps -88 dBm
  - 12 Mbps -87 dBm
  - 18 Mbps -86 dBm
  - 24 Mbps -83 dBm
  - 36 Mbps -80 dBm
  - 48 Mbps -73 dBm
  - 54 Mbps -70 dBm

## Regulatory/Safety

### Safety

- cULus per 60950-1:2003
- UL2043 Plenum Rated
- CB per IEC 60950-1:2001 with all available country deviations
- GS Mark per EN60950-1:2001
- 73/23/EEC Low Voltage Directive

### North America EMC Standards

- FCC 47 CFR, Part 15107, 15.109, Class A (USA)
- ICES-003 Class A (Canada)

### European EMC Standards

- EN 55022:2003 Class A
- EN 55024:1998 Class A includes IEC/EN 61000-4-2, 3, 4, 5, 6, 8, 11
- EN 61000-3-2,3 (Harmonics & Flicker)
- ETSI EN 300 386:2001 (EMC Telecommunications)
- ETSI EN 300 486-17 (9-2000)
- EN60601-1-2 (Medical)
- 89/336/EEC EMC Directive

### International EMC Standards

- CISPR22:2003:A1:2004 Class A (International Emissions)
- CISPR 24:1997 Class A (International Immunity)
- IEC/EN 61000-4-2 Electrostatic Discharge
- IEC/EN 61000-4-3 Radiated Immunity
- IEC/EN 61000-4-4 Transient Burst
- IEC/EN 61000-4-5 Surge
- IEC/EN 61000-4-6 Conducted Immunity
- IEC/EN 61000-4-11 Power Dips & Interruptions

## Radio Transceiver Compliance

### USA

- FCC 47 CFR, Part 15.247, Class C (2.4GHz)
- FCC 47 CFR, Part 15.407, Class C (5GHz)
- FCC 47 CFR, Part 15.205, 15.207, 15.209
- FCC 47 CFR, Part 2.109, 2.1093
- FCC OET No. 65:1997
- FCC ID#RFJ-A3502

### Canada

- RSS-210 (2.4GHz)
- RSS-139-1 (5GHz)
- RSS-102 (RF Exposure)
- IC ID# 4141A-A3502

### European Union

- R&TTE Directive 1999/5/EC
- ETSI/EN 300 328-2 2003-04 (2.4 GHz)
- ETSI/EN 301 893-1 2002-07 (5 GHz)
- ETSI/EN 301 489-1 2002-08
- ETSI/EN 301 489-17 2002-08 (RLAN)

Note: For latest compliance standards, Declarations of Conformity (DoC) and country specific certifications visit [www.extremenetworks.com/go/rfccertification.htm](http://www.extremenetworks.com/go/rfccertification.htm).

### Other

- IEEE 802.11a (5 Ghz)
- IEEE 802.11b/g (2.4 GHz)
- IEEE 802.3af (PoE)

### Environmental Standards

- EN/ETSI 300 019-2-1 v2.1.2 - Class 1.2 Storage
- EN/ETSI 300 019-2-2 v2.1.2 - Class 2.3 Transportation
- EN/ETSI 300 019-2-3 v2.1.2 - Class 3.1e Operational
- ASTM D3580 Random Vibration Operational 1.5G

## Ordering Information

Part Number	Name	Description
15938	Altitude 350-2 Integ. Ant. AP	Dual-radio Access Point capable of supporting 802.11a/b/g standards; requires Summit WM-series switch for operation. Includes internal antennas and standard mounting bracket. Use 802.3af PoE or optional ext. Altitude-350 AC to DC 6V adapter.
15939	Altitude 350-2 Detach. Ant. AP	Dual-radio Access Point capable of supporting 802.11a/b/g standards; requires Summit WM series switch. Includes bracket and two 15931 "paddle" external antennas. Use 802.3af PoE or optional ext. Altitude-350 AC to DC 6V adapter. Two RP-SMA connectors.
15925	Altitude 350 AC PSU, NA	External Power Adapter for the Altitude 350, AC to 6 Volt DC, U.S./Canada only
15926	Altitude 350 AC PSU, EMEA	External Power Adapter for the Altitude 350, AC to 6 Volt DC, European Union
15928	Altitude 350 AC PSU, GBR	External Power Adapter for the Altitude 350, AC to 6 Volt DC, United Kingdom
15929	Altitude 350 Jcnctn Box Bracket	Mounting Bracket for Wireless AP - For use with single-width conduit junction box.
15930	Altitude 350 Jcnctn Adptr Plate	Mounting Bracket – Adapter plate for dual-width conduit junction box. Purchase with 15929 only.



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