



Key Features

- IEEE 802.11 ac/a/b/g/n compliant
- Up to 450Mbps (2.4GHz) + 1300Mbps (5GHz) wireless data transmission rate
- Gigabit Ethernet port with IEEE 802.3 at standard PoE support
- Internal high-performance antennas for low-profile design
- Integrated WLAN management solution with WMS-series PoE switch
- Advanced AP mode with mesh support*
- SNMP v1/ v2c/v3, MIB I/II supported
- WEP/WPA/WPA2 wireless encryption
- IPv4/IPv6 support

802.11 ac/a/b/g/n Dual Concurrent Outdoor Management AP

High power, high sensitivity and high reliability solution designed to operate under harsh environments

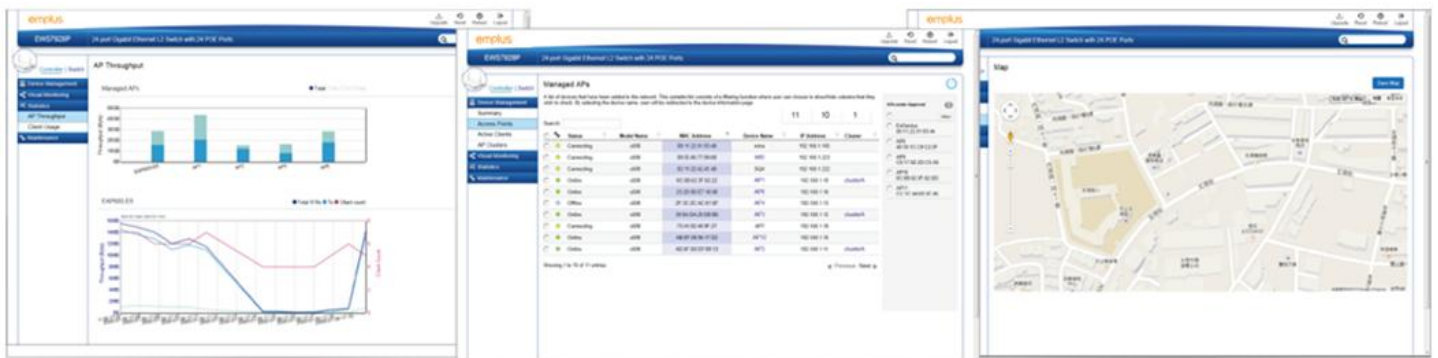
The WAP660 is a versatile, high power outdoor access point designed to withstand harsh environments making it an ideal solution for creating outdoor wireless networks. With transfer rates of up to 1300Mbps in 5GHz and 450Mbps in 2.4GHz, users are able to enjoy faster wireless connections for bandwidth hungry applications such as audio, video and voice streaming. With its IP65-rated waterproof enclosure and the flexible mounting capabilities, this product is suitable to be installed in stadiums, school campuses, stations, airports, manufacturing plants or virtually any venue requiring a robust outdoor wireless solution.

802.3at Power Over Ethernet (PoE) Support

WAP660 can be powered using the enclosed PoE injector or any off-the-shelf 802.3at-compliant PoE switches, solving the common power sourcing issue in the field where devices are usually placed in outdoor environment. With PoE power management from WMS management switch, the power budget of WAP660 and its consumption can be configured and monitored immediately.

Configuration and Management with Ease

WMS-series managed AP is designed to work with WMS-series Wireless Management Switch as part of emplus' integrated WLAN management solution, providing intuitive web-based configuration, management, and advanced wireless features such as fast handover, fast roaming, and band steering. The AP is self-discovered by WMS management switch (models listed below for product ordering information) on your WLAN without extra efforts; once added into managed device list, WLAN administrator can easily use individual or cluster settings to fast deploy numbers of AP with desired settings, saving repetitive configuration tasks. Other than intuitive device management, this integrated solution provides map-view UI on WMS switch for AP placement visualization with built-in troubleshooting tools to perform diagnosis upon error occurred.



802.3at-compliant Power-over-Ethernet (PoE) for Alternative Power Sourcing

WAP660 can be powered by enclosed power adapter or off-the-shelf 802.3af/at-compliant PoE switches, solving common power sourcing issue in the field where devices are usually placed at drop-ceiling or mounted on walls. With PoE power management from WMS management switch, AP device power budget and consumption can be real-time configured and monitored..

Advanced WLAN Feature to Facilitate Effective Spectrum Usage

For effective spectrum usage, WAP660 has enclosed band steering technology, enabling 5GHz-capable clients to associate with its 5GHz radio and offloading air utilization in 2.4GHz-band. *With intelligent wireless mesh management from WMS switch, mesh connection can assist to further extend WLAN coverage; coupling with client limit and fast handover features, WAP660 can preserve scarce wireless resources and best adapt to deployed environments

Flexible Bandwidth Management and Enterprise-Class WLAN Security for Versatile Applications

WAP660 offers multiple SSIDs (up to 16 sets) and each SSID can have its own bandwidth and WLAN security settings, enabling various applications running over WLAN with different levels of security strength and bandwidth limit. Regarding user mobility, PMKSA caching will facilitate fast roaming upon handoff so remaining 4-way handshake can complete key exchange within association process in reduced time interval. In addition, Guest Network feature also allocates a separate network segment for guest access within deployed WLAN so access attempts on internal networks can be restricted

RF Specification (Aggregated Value)

Channel	Data Rate	Transmit Power (dBm)	Receive Sensitivity (dBm)
802.11b 2.4 GHz	1 Mbps	29	-96
	2 Mbps	29	-95
	5.5 Mbps	29	-93
	11 Mbps	29	-92
802.11g 2.4 GHz	6 Mbps	28	-94
	54 Mbps	25	-75
802.11a 5 GHz	6 Mbps	29	-93
	54 Mbps	25	-76
802.11n HT20 2.4 GHz	MCS 0 / 8 / 16	28	-95
	MCS 7 / 15 / 23	25	-70
802.11n HT40 2.4 GHz	MCS 0 / 8 / 16	27	-94
	MCS 7 / 15 / 23	24	-69
802.11n HT20 5GHz	MCS 0 / 8 / 16	29	-92
	MCS 7 / 15 / 23	24	-73
802.11n HT40 5GHz	MCS 0 / 8 / 16	29	-89
	MCS 7 / 15 / 23	24	-72
802.11ac VHT20 5GHz	MCS0	29	-92
	MCS8	23	-69
802.11ac VHT40 5GHz	MCS0	29	-89
	MCS9	21	-65
802.11ac VHT80 5GHz	MCS0	29	-86
	MCS9	21	-62

* Maximum performance of the hardware provided. Maximum transmit power is limited by local regulatory.

** The supported frequency band is restricted by local regulatory requirements.

*** Transmit power is configured in 1.0dBm increments.

Specification

Radio Specification

- Dual Concurrent Radio
 - 2.4GHz: 802.11b/g/n with max data rate up to 450Mbps
 - 5GHz: 802.11 a/n/ac with max data rate up to 1300Mbps
- Transmit Power (Max.):
 - 2.4GHz: max 29dBm
 - 5GHz: max 29dBm
 - Maximum transmit power is limited by regulatory
- Supported Radio Technology:
 - 802.11b: direct-sequence spread-spectrum (DSSS)
 - 802.11a/g/n/ac: orthogonal frequency-division multiplexing (OFDM)
- Channelization
 - 802.11ac with 20/40/80 MHz channel width
 - 802.11n with 20/40 MHz channel width
 - 802.11a/b/g with 20 MHz channel width
- Supported Modulation:
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
 - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Supported data rates (Mbps):
 - 802.11b: 1, 2, 5.5, 11
 - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
 - 802.11n: 6.5 to 450 (MCS0 to MCS23)
 - 802.11ac: 6.5 to 1300 (MCS0 to MCS9, NSS = 1 ~ 3)

Physical Characteristics

- Power Source:
 - DC Input: 12 VDC 2A
 - PoE: compatible with 802.3af/at
- Internal High Gain Antennas
 - 3T3R 5dBi Dual band antennas
- Interface
 - 1 x 10/100/1000 BASE-T Ethernet (RJ45) 802.3af/at PoE
 - 1 x 10/100/1000 BASE-T Ethernet (RJ45) client port
 - 1 x DC power connector
 - 1 x reset button
- Dimensions
 - 300(L) x 181(W) x 34.1(H)mm

Environment

- Operating temperature: -20°C~70°C
- Operating humidity: 0%~90% typical
- Storage temperature: -30°C~80°C
- Harsh Environment Use: Waterproof IP65 rated

Wireless

- Operating Mode
 - AP / WDS/ Mesh AP** (configured by WMS switch)
- Auto Channel Selection
 - Setting varies by regulatory domains
- SSIDs:
 - Supports up to 8 SSIDs per frequency band
- VLAN Tag / VLAN Pass-through
- Wireless Client List
- Guest Network
- QoS
 - Supports 802.11e/WMM
- Band Steering
- Security
 - WEP encryption: 64/128/152-bit
 - WPA/WPA2 Enterprise/PSK
 - Hidden SSID
 - MAC address filtering (up to 32MACs per SSID)
 - Wireless STA (Client) connection list
 - SSH/HTTPs supports

Mesh* (Phase II)

- Auto configuration by WMS management switch
 - Secure mesh link with WPA2 encryption
 - Self-forming mesh connection within clustered managed APs on WMS switch
- Wireless service coverage extension beyond Ethernet cabling

Management

- Deployment Options
 - Standalone (individually managed)
 - Managed by WMS switch
- Configuration
 - Web interface (HTTP/S)
 - SNMP v1/v2c/v3 with MIB I/II and private MIB
 - CLI (Telnet/SSH)
- Firmware Upgrade
 - Web interface or CLI
- Backup / Restore Settings
 - Revert to factory default settings
- Save Configuration as Default:
 - Saves the customized configuration as default
- Auto Reboot
 - Specifies interval to reboot system periodically
- E-mail Alert / Syslog Notification