WAP38DC

Indoor Wireless Acuity™ 802.11n Dual Concurrent Access Point with Internal Anternnas

The WAP38DC is a dual band (2.4GHz and 5GHz) 802.11n access point, one of a series of high-performance gigabit wireless access points (APs) launched by Amer Networks. Part of the Acuity™ family of Access Points, which includes both internal and external antenna Access Points for 802.11n and 802.11ac. The WAP38DC provides a wireless access rate equivalent to at least six times the rate available on conventional 802.11 a/b/g networks, and offers wider coverage and better range.
The WAP38DC uses Gigabit Ethernet uplink ports, a huge benefit over the more traditional Fast Ethernet ports found on most Access Points enabling the implementation of a more robust wireless network that can even service the needs of multimedia applications.

The WAP38DC can operate as a standalone access point or it can be grouped together with other access points in the Acuity™ family with the use of an Amer Wireless Controller. With the use of an Amer Wireless Controller like the WS6002, features such as wireless network security, radio frequency (RF) control, mobile access, quality of service (QoS) guarantee, can be unified across the entire wireless network with the added benefit of seamless roaming.

The WAP38DC operates in the 2.4 GHz and 5 GHz band and employs technologies such as multiple-input multiple-output (MIMO) and orthogonal frequency division multiplexing (OFDM), providing a data transmission rate of up to 300 Mbps per channel and 600 Mbps per dual channels. Featuring flexible installation, the WAP38DC may be installed on a wall, desk top, or ceiling. Its internal antenna configuration offers a non-intruding look and offers flexibility in wireless deployment. The WAP38DC supports either local power with the use of an external adapter or power over Ethernet (PoE) with the use of a 802.11af switch, injector or mid-span switch which is not included. The WAP38DC is part of a series of high-rate wireless APs ideal for various application environments such as Educational and Business.

- **Highlights**

High-Performance and High-Reliability Wireless Network

- High-speed wireless broadband access:

  The WAP38DC supports the 802.11abgn standard, operates in the 2.4 GHz and 5 GHz band, and provides an access bandwidth up to 600 Mbps.

- GE ports for wired connections

  Utilizing Gigabit Ethernet ports for uplink access greatly improves performance and bypasses the limitations of conventional Fast Ethernet ports, so that wired ports are no longer a bottleneck of wireless access rates.

- High-performance RF characteristics

  Professional optimized RF module design is employed in the WAP38DC allowing a single antenna port to support 20 dB transmit power at all rate levels, thereby improving wireless coverage in high-rate access scenarios.

- Automatic AP emergency mechanism

  In a centralized network architecture where APs are configured in Controller Mode (FIT) and a wireless Controller is deployed, network down time could occur when a wireless controller goes offline.

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The WAP38DC and the other access points that are part of this Acuity ™ family support an automatic emergency mechanism. This mechanism allows the APs to intelligently detect if it has communication with the centralized controller. When detecting that the wireless Controller is off-line, the AP quickly switches its operating mode so that it may continue to forward data while enabling new users to access the network. This mechanism attains high availability in the entire wireless network and maintains high uptime for the wireless network.

- Broad operating temperature range

  Amer takes into account the many differing environments that wireless Access Points are being utilized in today's applications. With this in mind Amer took care with the hardware design and the component selection process to obtain a broad temperature operation range of –10°C to +55°C for the WAP38DC.

- Dual-OS backup mechanism

  Amer Acuity™APs support a dual-OS backup mechanism. When an AP fails to start from the active OS, it can immediately start from a standby OS, thereby improving the long-term running reliability of equipment in an adverse environment.

- **Intelligent Control and Automatic Perception**

- Performance enhancement with optional 11n Only access control

  Since 802.11n is downward compatible with the legacy 802.11a/b/g protocols, any users on legacy technology can also gain access to an 802.11n access point. By allowing legacy devices to connect to the 802.11n access point, 802.11n users may experience performance degradation. By supporting an optional 802.11n Only mode on either RF channel, Amer Acuity™ APs may be set to only allow 802.11n transmission guaranteeing bandwidth for those user.

- Intelligent RF management

  Amer Acuity™ APs may be used with a wireless Controller to perform automatic power and channel adjustment. They employ particular RF detection and management algorithms to attain better RF coverage.

  When there is excessive signal interference caused by strong external signals, the Access Point may automatically switch to an appropriate operating channel under the control of the Controller to avoid the interference, guaranteeing wireless performance. The system also supports wireless network "Blackhole" compensation. When an AP on the network stops operating, the RF management function of the Controller compensates for the resulting blind area by adjusting surrounding Access Points to maintain normal operation.

- Intelligent control for airtime fairness

  When legacy 802.11b and 802.11g devices are used on a wireless network or if some devices are an extended distance from the Access Points, the negotiation rates will be low, causing a large number of users to experience a long WLAN access delay, low rates, or poor overall AP performance. The AP performance problem in a low rate access environment cannot be resolved by simply employing rate control and traffic shaping. With Amer Acuity™ APs this problem is addressed with intelligent control for airtime fairness which ensures that a user can always enjoy the same WLAN experience in the same location, no matter what type of device is being used. The intelligent control of devices based on airtime fairness greatly improves the performance of both the client and the entire network. It enables all clients with high data transmission rates to attain strikingly higher performance while low-rate clients are mostly unaffected. The performance will be even higher on an open wireless network. Once high-rate clients finish data transmission, fewer clients will be transmitting data on the wireless network contributing to less contention on the network, thereby greatly improving overall AP performance.

- Intelligent load balancing

  With most wireless systems, a wireless client will select an Access Point based on the signal strength of available Access Points. With this type of uncontrolled access a large number of clients could be connected to the same AP simply because the AP provided a stronger signal.

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As more clients are connected to an AP, the bandwidth available to each client will be reduced, thereby greatly affecting user experience. Amer Acuity™ wireless products support intelligent load balancing based on:

-traffic -frequency bands
-number of users -signal strength

- Intelligent identification of Devices

Amer Acuity™ APs when paired with an Amer Acuity™ wireless controller supports adaptive portal authentication pages that are able to intelligently detect the device platform and automatically adjust the page resolutions to provide best results for mobile devices. Device support include Apple iOS, Android and Windows. This active platform identification also can determine the type of device that is connected wither mobile phone, tablet or PC and implement dynamic policy control of devices based on the device type allowing intelligent user control.

- Comprehensive support for IPv4/v6 dual-stack networks

Powered by Amer's cutting-edge IPv6 technology, Amer Acuity™ APs may be deployed on an IPv6 network, with IPv6 tunnels established through auto negotiation between a wireless Controller and an AP. When the wireless Controller and the AP completely operate in IPv6 mode, the wireless Controller can still correctly identify IPv4 devices and process IPv4 packets from wireless clients. Featuring flexible adaptability To IPv4/6, Amer Acuity™ APs cater to complex applications involved in migration from an IPv4 network to an IPv6 network. They not only provide IPv4 service to customers on an IPv6 network, but also enable users on an IPv4 network to log in to the network through the IPv6 protocol.

- Network-wide seamless roaming

Amer wireless Controllers support an advanced wireless cluster technology, which enables multiple Controllers to synchronize online connection information and roaming records of all users to each other in real time. This technology implements not only L2/L3 seamless roaming inside a wireless Controller but also fast roaming across wireless Controllers. As client IP address re-authentication is not required in the roaming process, the real-time service level for roaming is greatly improved.

- **Secure and Controllable Wireless Network**

- User Isolation

Amer Acuity™ wireless APs support the isolation of wireless users from one another. With the user isolation function enabled, wireless clients cannot directly communicate with each other but can only access an upstream wired network. This provides additional security in a wireless deployment.

- Wireless intrusion detection and intrusion defense

Amer wireless APs support wireless intrusion detection and intrusion defense features. This feature allows for the detection of unauthorized wireless devices. Blacklist and white list can also be created improving security management.

- 32 SSID / BSID

Each AP supports a maximum of 32 WLANs to implement multilayer multi-service management of wireless users. Each WLAN supports access control and uplink/downlink rate limit based on MAC or IP addresses. These WLANs may be bound to virtual local area networks (VLANs). Different authentication and accounting policies can be implemented on the separate SSID/BSID. 16 SSID/BSID are supported on each band (2.4GHz and 5GHz) creating a maximum of 32 SSID/BSID.

- Secure user admission

Amer Acuity™ APs may be used with wireless Controllers to provide multiple secure access, authentication, and accounting mechanisms for various application environments. These mechanisms include:

* 802.1x authentication
* Captive portal authentication, including built-in portal, external portal, and custom portal authentication modes
* MAC address authentication
* LDAP authentication
* WAPI encryption and authentication
* Wired/wireless integrated authentication and accounting

- Wireless SAVI

Source address validation (SAVI) technology is implemented on the WAP38DC to deal with spoofed packet attacks.

- PEAP user authentication

Protected Extensible Authentication Protocol (PEAP) authentication adds security to the wireless network.

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- Secure Access

  An AP is usually deployed in a public area and requires a strict security mechanism to guarantee the legitimacy of access for all devices. The following secure access mechanisms are available to be applied on an Amer Acuity™ AP and an Amer Acuity™ Controller:

  * AP MAC address authentication
  * AP password authentication
  * Bidirectional digital certificate authentication

- Real-time spectrum protection

  Amer Acuity™ APs support a built-in RF collection module that integrates RF monitoring and real-time spectrum protection. By implementing communications and data collection through the respective AP, the RF collection module performs wireless environment quality monitoring, wireless network capability tendency evaluation, and unexpected-interference alarms. It actively detects and identifies RF interference sources (Wi-Fi or non-Wi-Fi) and provides a realtime spectrum analysis diagram. In addition, it can automatically identify interference sources and determine the locations of problematic wireless devices, ensuring that a wireless network attains optimal performance.

Easy-to-Manage Wireless Network

- Plug-and-play

  Amer Acuity™ APs are able to automatically discover Amer Acuity™ wireless Controllers. A wireless network function can be enabled on an AP without performing any configuration on the AP at all. The AP can be seamlessly integrated with existing switches, firewalls, authentication servers, and other network devices without changing existing network architecture. When used with an Amer Acuity™ wireless Controller, Amer Acuity™ APs support plug-and-play and zero configuration. The wireless Controller undertakes all the management, control, and configuration of the APs. Network administrators do not need to separately manage or maintain a huge number of wireless APs. All actions, such as configuration, firmware upgrade, and security policy updating, are performed uniformly under the control of the wireless Controller.

- Controller (Fit) and Standalone (Fat) modes

  Amer Acuity™ APs may work in fit or fat mode and can flexibly switch between the modes based to network planning requirements. APs working in fit mode are managed by a wireless Controller in a centralized manner while fat mode is a standalone mode that still offers a robust feature set in the absence of a controller.

- Automatic AP version upgrade

  Amer Acuity™ APs may be automatically associated with a wireless Controller to automatically download the latest software versions for automatic upgrades, reducing administration overheads.

- Remote probe analysis

  Amer Acuity™ APs support a remote probe analysis function, which listens to and captures Wi-Fi packets in the coverage area. Data can be mirrored to a local analysis device in real time to help network administrators perform troubleshooting or for optimization analysis.

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Hardware Specifications

Dimensions (mm):	250 x 222 x 58
10/100 /1000 Base-T port:	1
Console port (RJ-45):	1
PoE:	802.3af/802.3at
Local:	12 V DC, 2 A local power supply
RF port:	Built in 2.4 GHz 4 dBi antenna and 5 GHz dBi antenna.
Working frequency band:	802.11a/n : 5.150 GHz to 5.850 GHz 802.11b/g/n : 2.4 GHz to 2.483 GHz
Modulation technology:	OFDM: BPSK@6/9Mbps, QPSK@12/ 18Mbps, 16-QAM@24Mbps, 64-QAM@48/ 54Mbps DSSS: DBPSK@1Mbps, DQPSK @2Mbps, CCK@5.5/11Mbps MIMO-OFDM: MCS 0-15
Transmit Power:	The maximum transmit power output on each antenna port is 20 dBm for all rate levels and modulation modes.
Power adjustment granularity:	1 dBm
AP access speed:	802.11n: 20 MHz BW: 6, 5, 7.2, 13, 14.4, 19.5, 21.7, 26, 28.9, 39, 43.3, 52, 57.8, 58.5, 65, 72.2, 78, 86.7, 104, 115.6, 117, 130, 144 Mbps 40 MHz BW: 13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 91, 108, 120, 121.5, 135, 140, 150, 162, 180, 216, 240, 243, 270, 300 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps 802.11b: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps 802.11a: 54, 48, 36, 24,18, 12, 9, 6 Mbps
Working/Storage temperature:	–10°C to +55°C –40°C to +70°C
Working/Storage RH:	5% to 95% (non-condensing)
Protection level:	IP31

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Software Specifications

WLAN:

- Product Category: Indoor dual-band frequency
- Working frequency band: 2.4 GHz and 5 GHz
- Virtual AP (BSSID): 32
- Number of spatial streams: 2
- Dynamic channel adjustment (DCA): Yes
- Transmit power control (TPC): Yes
- Blind area detection and repair: Yes
- SSID hiding: Yes
- RTS/CTS: Yes
- RF environment scanning: Yes
- Hybrid accessory: Yes
- Restriction on the number of access users: Yes
- Link integrity check: Yes
- Prohibiting the access of terminals with weak signals: Yes
- Forced roaming of terminals with weak signals: Yes
- Intelligent control of terminals based on airtime fairness: Yes
- High-density application optimization: Yes

11n enhancements:

- 40 MHz bundling: Yes
- 300 Mbps (PHY): Yes
- Frame aggregation (A-MPDU): Yes
- Maximum likelihood demodulation (MLD): Yes
- Transmit beam forming (TxBF): Yes
- Maximum ratio combining (MRC): Yes
- Space-time block coding (STBC): Yes
- Low-density parity-check code (LDPC): Yes

Security:

- Encryption: 64/128 WEP, dynamic WEP, TKIP, and CCMP encryption
- 802.11i: Yes
- WAPI: Yes
- MAC address authentication: Yes
- PEAP authentication: Yes
- WIDS/WIPS: Yes
- Real-time spectrum protection: Yes
- Protection against DoS attacks: Anti-DoS for wireless management packets
- Forwarding security: Frame filtering, white list, static blacklist, and dynamic blacklist
- User isolation: AP L2 forwarding suppression
- Isolation between virtual APs (multiple SSIDs): Yes
- Periodic SSID enabling and disabling: Yes

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Software Specifications

- Access control of free resources: Yes
- Secure admission control of wireless terminals: Secure admission control of wireless terminals based on DCSM
- Wireless SAVI: Yes
- ACL: Access control of various data packets such as MAC, IPv4, and IPv6 packets
- Secure access control of APs: Secure access control of APs, such as MAC authentication, password authentication, or digital certificate authentication between an AP and an AC

Forwarding:

- IP address setting: Static IP address configuration or dynamic DHCP address allocation
- IPv6 forwarding: Yes
- IPv6 portal: Yes
- Local forwarding: Yes
- Multicast: IGMP Snooping
- Roaming: Fast roaming across APs
- Fast roaming across ACs: Signal strength, bit error rate, RSSI, S/N, whether neighboring APs are normally operating, etc.
- AP switching reference: Signal strength, bit error rate, RSSI, S/N, whether neighboring APs are normally operating, etc.
- WDS: Yes

QoS:

- WMM: Yes
- Priority mapping: Ethernet port 802.1P identification and marking Mapping from wireless priorities to wired priorities
- QoS policy mapping: Mapping of different SSIDs/ VLANs to different QoS policies Mapping of data streams that match with different packet fields to different QoS policies
- L2-L4 packet filtering and flow classification: Yes, MAC, IPv4, and IPv6 packets
- Load balancing: Load balancing based on the number of users
Load balancing based on user traffic
Load balancing based on frequency bands
- Bandwidth limit: Bandwidth limit based on APs
Bandwidth limit based on SSIDs
Bandwidth limit based on terminals
Bandwidth limit based on specific data streams
- Power saving mode: Yes
- Automatic emergency mechanism of APs: Yes
- Intelligent identification of terminals: Yes
- Multicast enhancement: Multicast to unicast

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Software Specifications

Management:

- Network management: Centralized management through an Access Controller; Supports both fit and fat modes
- Maintenance mode: Both local and remote maintenance
- Log function: Local logs, Syslog, and log file export
- Alarm: Yes
- Fault detection: Yes
- Statistics: Yes
- Switching between fat and fit modes: An AP working in fit mode can switch to fat mode through a wireless Access Controller; An AP working in fat mode can switch to fit mode through a local control port or Telnet.
- Remote probe analysis: Yes
- Dual-image (dual-OS) backup mechanism: Yes
- Watchdog: Yes

Order Information:

- Product: WAP38DC
- Description: 802.11 abgn indoor wireless AP (2.4 GHz & 5 GHz dual-channel , dual frequency, 802.3af PoE) with Internal antennas.

  Plug-In Power Adapter & PoE Injector sold seperately

Related Products:

- WAP33DC: Indoor Wireless 802.11n Amer Acuity™ Wireless Dual Concurrent Access Point
- WAP33DO: Outdoor Wireless 802.11n Amer Acuity™ Wireless Access Point with internal Antennas
- WAP42DC: Indoor Wireless Acuity™ 802.11ac Dual Concurrent 2 X 2 Access Point with internal Antennas
- WAP43DC: Indoor Wireless Acuity™ 802.11ac Dual Concurrent 3 X 3 Access Point with internal Antennas
- WS6002: 132 AP Wireless Access Controller
- WS6028: 256 AP Wireless Access Controller
- WS6222: 1024 AP Wireless Access Controller

Warranty and Support:

- Warranty: 3 Years
- Support: Free technical support (phone/email)

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