Data General

High density

Triple radio

6800 Mbps

Access Point
WiFi6 AX6800

DG-AP850-AX6800

Wi Fi 6 CERTIFIED

1. Product Overview

DG-AP850-AX6800 is a WiFi 6 tri-radio enhanced indoor wireless access point (AP) designed by Data General for challenging high density indoor scenarios, such as higher education, government, universal education, finance, and commerce.

DG-AP850-AX6800 supports protocols such as 802.11ax, 802.11ac Wave2, 802.11ac Wave1, and 802.11n. Adopting the hardware-independent tri-radio design, the whole machine can provide a maximum access rate of 6.817 Gbps, and the high-speed access rate takes performance out of the equation.

The product takes full consideration on important factors such as wireless network security, radio frequency (RF) control, mobile access, quality of service (QoS) assurance, seamless connection, and IoT module expansion, and cooperates with Data General wireless controllers and DG-WIS to complete data forwarding, security, access control, and IoT application expansion for WiFi users.

The product can support the local power supply or Ethernet power supply mode, which can be flexibly selected according to the customer's on-site power supply environment. In addition, the product can be mounted on the wall or ceiling safely and conveniently, which is especially suitable for large campuses, conference centers, squares and other high-density environments.

2. Appearance

3. Product Features

Multi-service Port Design

DG-AP850-AX6800 supports a maximum wired access rate of 3 Gbps.

The two adaptive Ethernet copper ports, with each providing the high-speed wired access rate of up to 1 Gbps, enable high-speed transmission and conversion between wireless and wired connections.

One adaptive Ethernet copper port can expand other module units such as Data General IoT, enriching application scenarios.

High-speed and Wireless for More Reliable Power Saving

1024 QAM High-speed Access Rate

DG-AP850-AX6800 adopts the tri-radio design and a new generation of wireless standard protocol 802.11ax. When three radios are enabled at the same time, the high-speed wireless rate is up to 6.817 Gbps, bringing high-speed and complete experience.

OFDMA High-density User Access

DG-AP850-AX6800 supports the OFDMA function of the 802.11ax standard, which divides the WLAN signal tunnel into multiple narrower sub signal tunnels so that each user can occupy one or more sub signal tunnels. Using AP scheduling, multiple users can simultaneously receive and send packets, reducing contention and back off among users, reducing network latency, and improving network efficiency.

In a high-density deployment and access environment, the average rate of a single user can be four times that under 802.11ac.

Green and Environmental Protection, with Lower Power Consumption Per Unit Performance

A large number of new energy-saving technologies have been applied to DG-AP850-AX6800, including single-antenna standby technology, dynamic MIMO power saving technology, enhanced automatic power saving transmission technology, and per-packet power control technology. With high performance power supply design, DG-AP850-AX6800 can provide high-speed wireless access with power saving.

Intelligent Identification

It supports intelligent identification for terminals and can identify intelligent mobile terminals such as iOS and Android terminals, as well as PCs. With correlation of Data General DG-WIS system, it can implement visualized wireless management and one-key network optimization for wireless terminals.

Intelligent Local Forwarding

DG-AP850-AX6800 inherits the intelligent local forwarding technology of Data General, breaking through the traffic limits of wireless controllers. Cooperating with Data General wireless controller, the data forwarding mode of DG-AP850-AX6800 can be flexibly pre-configured. According to the SSID name or user VLAN, whether to forward data using the wireless controller or directly enter the wired network for data exchange can be determined.

The local forwarding technology can be used to forward data that is sensitive to delay and requires high real-time

transmission over a wired network, which can greatly relieve the traffic pressure of the wireless controller and better adapt to the requirements of high traffic transmission over the 802.11ax network.

Various QoSs

DG-AP850-AX6800 supports various quality of services (QoSs), bandwidth limitation in WLAN, AP, and STA modes, WiFi Multimedia (WMM) that defines priorities for different service data, implementing timely and quantitative video and audio transmission and ensuring smooth application of multimedia.

DG-AP850-AX6800 supports the multicast-to-unicast technology, which solves the problem of unsmooth videos caused by packet loss and large latency in multicast applications such as video on demand (VoD) over wireless networks, and optimizes the experience of multicast video services over wireless networks.

Easier Overall Security Protection

User-level Security Access

DG-AP850-AX6800 supports multiple user access authentication modes, including Web, 802.1x, MAC address, and local authentication. In addition, DG-AP850-AX6800 fully supports the Global Security Network (GSN) solution. The standards-compliant network access control system strictly defines network access from user access, authorization, host compliance, network behavior monitoring, network attack prevention, and other aspects, implementing the construction concept of "network access as authentication and security".

Flexible Virtual AP Technology

Using the virtual AP technology, DG-AP850-AX6800 can provide a maximum of 48 virtual APs, and each radio can provide a maximum of 16 virtual APs. Network administrators can encrypt and isolate subnets or VLANs using the same SSID, and flexibly configure an independent authentication mode and encryption mechanism for each SSID.

Overall Wireless Security Protection

Using the integrated network management system DG-SNC and DG-WS series wireless controllers of Data General, DG-AP850-AX6800 provides a series of wireless security protection functions, such as Wireless Intrusion Detection System (WIDS), RF interference location, rogue AP countermeasures, anti-ARP spoofing, and DHCP security protection, fundamentally building a safe and reliable WiFi network for users.

Various Easy Authentication Modes

With Data General authentication system or multi-service AC, it supports various efficient and convenient registration methods, such as non-perception, SMS, and QR code visitors.

WiFi users access the network in non-perception registration mode. They only need to enter their accounts and passwords upon the initial access, enabling users to easily access the Internet with only one authentication.

The registration page is displayed after users access the WiFi network in SMS registration mode. Users can register accounts using their mobile numbers and access the Internet using their accounts and passwords received in SMS messages.

The QR code registration mode is another convenient way for visitors to access the Internet. After accessing WiFi, visitors can obtain QR code prompts and access the network after being authorized by the visitees (employees). Visitors' behavior is directly related to visitees, providing higher security.

Flexible Device Managed Mode

Flexible Switching Between Fat and Fit Modes

DG-AP850-AX6800 supports flexible switching between Fat and Fit modes. In Fit mode, DG-AP850-AX6800 can be installed and used without configuration, and the complete remote management greatly improves the operation and maintenance (O&M) efficiency of WiFi.

Web Page Management

DG-AP850-AX6800 provides the web management page for the AC and AP, facilitating WiFi configuration and overall network operation. On the AC web page, APs as well as users connected to the APs can be managed, and the speed of users and network access of users are limited, facilitating O&M personnel to plan and operate WiFi networks.

Correlation to Network Management Software

DG-AP850-AX6800 can correlate with DG-SNC provided by Data General. DG-SNC can manage all wireless controllers and APs in the network, including device configuration backup and device status query, and provides wireless thermal maps to display wireless AP signal distribution in the actual environment.

Small-sized Branch Office All-in-One

In small-sized branch office scenarios, DG-AP850-AX6800 can provide wireless access services for office areas and act as a VPN gateway to implement all-in-one AP and VPN gateways, simplifying network deployment and saving construction costs.

PPPoE

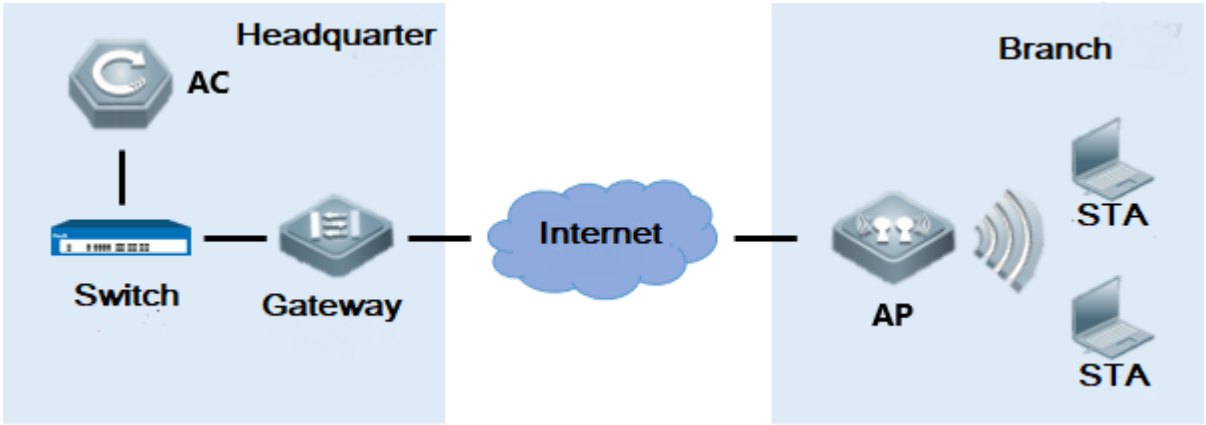
Supporting the PPPoE client function, DG-AP850-AX6800 can be connected to the Internet through PPPoE, enabling branch offices to access the Internet without setting up additional gateways.

NAT

DG-AP850-AX6800 supports NAT and translates NAT addresses between the Internet and the LANs in branch offices.

IPsec VPN

Supporting IPsec VPN, DG-AP850-AX6800 enables creation of IPsec VPN tunnels between the HQ and branch offices, so as to achieve LAN connectivity between the HQ and all branch office areas.



4. Product Specifications

Hardware Specifications

Dimensions and Weight

Dimensions and Weight	DG-AP850-AX6800
Physical dimensions (W x D x H)	220 mm x 220 mm x 48.85 mm (8.66 in. x 8.66 in. x 1.92 in.)
Weight	AP: 1.3 kg (2.87 lbs) Mounting bracket: 0.2 kg (0.44 lbs)
Installation	Ceiling-mounting or wall-mounting
Lock option	Securing latch and Kensington lock

Radio Specifications

Radio Specifications	DG-AP850-AX6800
Radio design	Tri-radio design, ten spatial streams Radio1: 2.4 GHz, four spatial streams: 4x4 MU-MIMO Radio2: 5 GHz, two spatial streams: 2x2 MIMO Radio3: 5 GHz, four spatial streams: 4x4 MU-MIMO
Operating frequencies	Radio1: 802.11b/g/n/ax: 2.400 GHz to 2.483 GHz Radio2: 802.11a/n/ac: 5.470 GHz to 5.725 GHz, 5.725 GHz to 5.850 GHz Radio3: 802.11a/n/ac/ax: 5.150 GHz to 5.350 GHz Note: The operating radio is country-specific.
Data rate	Radio 1: 2.4 GHz, 1.15 Gbps Radio 2: 5 GHz, 867 Mbps Radio 3: 5 GHz, 4.8 Gbps Combined: 2.4 GHz + 5 GHz + 5 GHz, 6.817 Gbps
Antenna type	Built-in smart antennas
Antenna gain	2.4GHz: 3 dBi 5GHz: 3 dBi
Max. transmit power	20 dBm Note: The transmit power varies based on the regulations in different countries and regions.
Power adjustment	1 dBm
Modulation	OFDM: BPSK @ 6/9 Mbps, QPSK @ 12/18 Mbps, 16-QAM @ 24 Mbps, and 64-QAM @ 48/54 Mbps DSSS: DBPSK @ 1 Mbps, DQPSK @ 2Mbps, and CCK @ 5.5/11 Mbps MIMO-OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, and 1024-QAM

Radio Specifications	DG-AP850-AX6800
	OFDMA
Receive sensitivity	802.11b: –96 dBm (1 Mbps), –93 dBm (5 Mbps), and –89 dBm (11 Mbps) 802.11a/g: –91 dBm (6 Mbps), –85 dBm (24 Mbps), –80 dBm (36 Mbps), and –74 dBm (54 Mbps) 802.11n: –90 dBm @ MCS0, –70 dBm @ MCS7, –89 dBm @ MCS8, –68 dBm @ MCS15 802.11ac: HT20: –88 dBm (MCS0) and –63 dBm (MCS9) 802.11ac: HT40: –85 dBm (MCS0) and –60 dBm (MCS9) 802.11ac: HT80: –82 dBm (MCS0) and –57 dBm (MCS9) 802.11ac: HT160: –80 dBm (MCS0) and –55 dBm (MCS9) 802.11ax: HE80: –82 dBm (MCS0), –57 dBm (MCS9), and –52 dBm (MCS11) 802.11ax: HE160: –80 dBm (MCS0), –49 dBm (MCS11)

Port Specifications

Port Specifications	DG-AP850-AX6800
Bluetooth	Bluetooth 5.0
USB port	USB 2.0
Fixed service port	Uplink: Two 10/100/1000Base-T Ethernet ports with auto-negotiation, supporting link aggregation. The first port can by powered by PDs. Downlink: One 10/100/1000Base-T Ethernet port with auto-negotiation, supporting power feeding (12 V/2 W) to external devices by PSE, connected to external devices by Data General IoT modules
Fixed management port	One RJ45 console port
Status LED	One system status LED
Button	One Reset button

Power Supply and Consumption

Power Supply and Consumption	DG-AP850-AX6800
Input power supply	(1) 48 V DC/0.6 A power supply (2) PoE/PoE+ power supply, IEEE 802.3af/at-compliant

Power Supply and Consumption	DG-AP850-AX6800
	Note: When the AP is powered by IEEE 802.3af-compliant PoE power supply, only Radio1 works, and PSE power supply to external devices and USB functions are disabled).
External power supply	Supported by PSE (12 V/2 W)
Max. power consumption	25.5 W

Environment and Reliability

Environment and Reliability	DG-AP850-AX6800
Temperature	Operating temperature: –10°C to +50°C (14°F to 122°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 3000 m (9842.52 ft) and 5000 m (16404.2 ft), every time the altitude increases by 220 m (721.79 ft), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 5% to 95% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
IP rating	IP51
Safety standard	GB 4943.1, IEC 60950-1, IEC 60825-1
EMC standard	EN 300386, GB/T 19286, GB/T 17618

Software Specifications

WLAN Function

WLAN Function	DG-AP850-AX6800
Maximum number of allowed STAs	1536
Virtual AP service	A maximum of 48 virtual AP services can be provided for the whole machine, and a maximum of 16 ones can be provided for a single RF.
SSID hiding	Supported
Each SSID can be configured with an independent authentication mode, encryption mechanism, and VLAN attributes.	Supported
Remote Intelligent Perceptive Technology (RIPT)	Supported
Terminal intelligent identification technology	Supported
Intelligent load balancing based on the number of terminals or traffic	Supported
STA limit	SSID-based STA limit is supported. Radio-based STA limit is supported.

WLAN Function	DG-AP850-AX6800
Bandwidth limit	STA/SSID/AP-based speed limit is supported.

Security Function

Security Function	DG-AP850-AX6800
Registration modes such as PSK and Web	Supported
Data encryption	WPA (TKIP), WPA-PSK, WPA2 (AES), WPA3, and WEP (64/128 bits) are supported.
WeChat registration	Supported
QR code visitor registration	Supported
SMS registration	Supported
Non-perception registration	Supported
Data frame filtering	The whitelist, static blacklist, and dynamic whitelist are supported.
User quarantine	Supported
Rogue AP detection and countermeasures	Supported
Dynamic ACL delivery	Supported
RADIUS protocol	Supported
CPU Protection Policy (CPP)	Supported
Network Foundation Protection Policy (NFPP)	Supported

Routing and Switching Function

Routing and Switching Function	DG-AP850-AX6800
IPv4 address	The static IP address or DHCP can be obtained.
Multicast	Multicast conversion to unicast is supported.
PPPoE	The PPPoE client is supported.
VPN	The IPsec VPN is supported.
NAT	Supported (including FTP ALG/DNS ALG)

Management and Maintenance

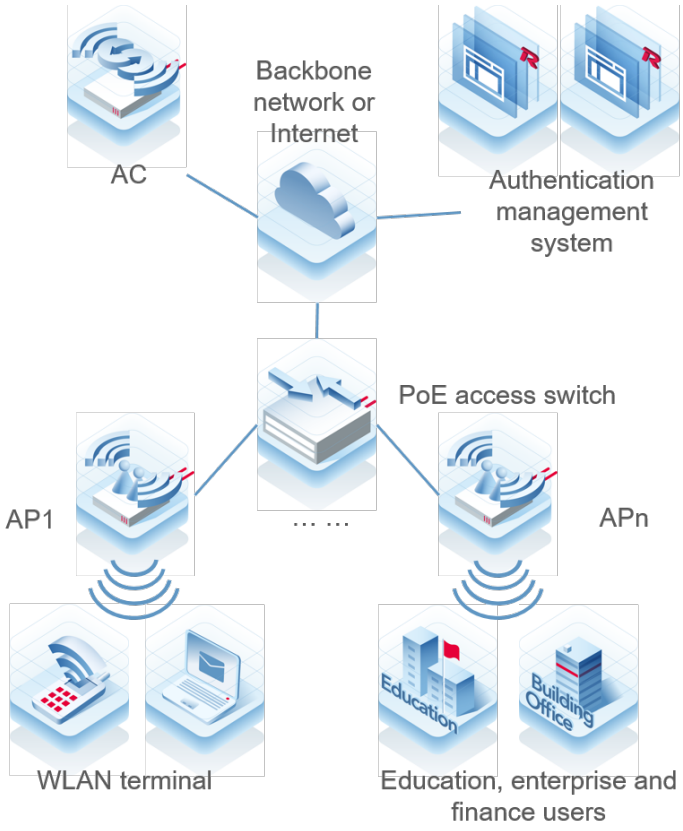
Management and Maintenance	DG-AP850-AX6800
Network management	Networks can be managed using Telnet and TFTP. Web management is supported.
Wireless positioning	RBIS is supported.
Wireless marketing	WMC/MCP is supported.
Fault detection and alarming	Supported
Information statistics collection and logs	Supported

Management and Maintenance	DG-AP850-AX6800
Fat/Fit mode switching	The Fit mode can be switched to the Fat mode by using the AC series wireless controller. The Fat mode can be switched to the Fit mode by using the local control port and Telnet.

5. Typical Application

Such AP devices are recommended for scenarios with simple building structures, non-special blocking objects, concentrated users, and areas with large capacity requirements, such as meeting rooms, libraries, classrooms, bars, and leisure centers. These AP devices can be flexibly deployed according to different environments.

Typical networking of DG-AP850-AX6800



6. Ordering Information

Product Model	Product Description
DG-AP850-AX6800	It is a WiFi 6 tri-radio enhanced indoor wireless AP designed for challenging high density indoor scenarios. The whole machine has 10 spatial streams and a maximum access rate of 6.817 Gbps, and supports working under 802.11a/b/g/n/ac and 802.11ax, Fat/Fit mode switching, and 802.3at power feeding and local power feeding.
DG-POE-AT	802.3at 30w PoE+ injector

7. Warranty

For more information about warranty terms and period, contact your local sales agency:
Warranty terms: https://datageneral.co/warranty-policy

Note: The warranty terms are subject to the terms of different countries and distributors.

8. More Information

For more information about Data General, visit the official Data General website or contact your local sales agency:

- Data General official website: https://www.datageneral.co
- Support: https://www.datageneral.co/support
- Email support: support@datageneral.co

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