ASTRONICS
CONNECTIVITY SYSTEMS & CERTIFICATION

CabinAXe™

Industry's First Wi-Fi 6E Enabled Cabin Wireless Access Point

The CabinAXe™ Cabin Wireless Access Point (CWAP) creates a more compelling onboard connected wireless experience by utilizing increased spectrum for higher throughput enabled by Wi-Fi 6E.

The introduction of CabinAXe brings blazing fast Wi-Fi performance onboard by extending RF performance into the 6GHz band provided by Wi-Fi 6E.

CabinAXe marks the first time a CWAP will utilize the Wi-Fi Alliance's recently ratified Wi-Fi 6E standard. Wi-Fi 6E will make use of up to 1.2GHz of unlicensed spectrum in the 6GHz band. This new authorization provides less congestion and larger channel widths and thus greater throughput. CabinAXe builds on Astronics' rich history in developing CWAPs and connectivity hardware. In addition to all of the features offered by 802.11AX, CabinAXe will feature three radios (Tri-radio): 2.4GHz, 5GHz, and 6GHz thereby supporting future classes of personal electronic devices and potential use cases. CabinAXe will also include separate Bluetooth Low Energy (BLE) and Zigbee radios which will add the capability to introduce a host of low power connected devices and onboard sensors, bringing the Internet of Things (IoT) into the aircraft cabin. CabinAXe will be certified for retrofit applications and ready for line fit applications using Astronics proven processes for developing aerospace grade cabin wireless access points.

CabinAXe continues the evolution of Astronics' line of CWAP firsts, starting with the first FAA certified 802.11ac, Wave 2 unit. Astronics' CabinAXe launch is preceded by over 16,000 previous generation CWAP units shipped to date.

Product Features

Wireless

- 2.4 GHz radio: Two spatial stream Single User (SU) MIMO for up to 574 Mbps wireless data rate with 2SS HE40 802.11ax client devices
- 5 GHz radio: Two spatial stream Single User (SU) MIMO for up to 1.2 Gbps wireless data rate with 2SS HE80 802.11ax client devices
- 6 GHz radio: Two spatial stream Single User (SU) MIMO for up to 2.4 Gbps wireless data rate with 2SS HE160 802.11ax client devices
- Up to 512 associated client devices per radio, and up to 16 BSSIDs per radio
- OFDMA and Bi-Directional MU-MIMO for more active concurrent users
- Aruba's' patented AI-powered ClientMatch technology to dynamically steer traffic to las balance APs to improve the user experience
- Two integrated dual-band omni-directional antenna for 2x2 MIMO
- WPA-3, enhanced open security, and TPM for secure key storage
- Hotspot2.0, DFS, and transmit beam forming
- Support for Worldwide (-WW) operation via CLI, which can automatically configure the WAP in accordance with location information to pre-set regulatory domains stored within the AP

Network

- 2x daisy chain gigabit ethernet interfaces (uses existing aircraft wiring)
- Ethernet by-pass with redundant power supplies to allow downstream CWAPs to communicate with the headend server in the event of a failure of the primary power supply
- IoT Ready: Bluetooth-5 and Zigbee radio capabilities to support remote sensors and beacons

Ground Network Capabilities

- Client Bridge capable
- Improved interference from cellular networks

Control

- Ability to utilize Aruba's Virtual Mobility Controller (VMC) or RESTful APIs for centralized CWAP network visibility and control by the headend server

Aircraft Interfaces

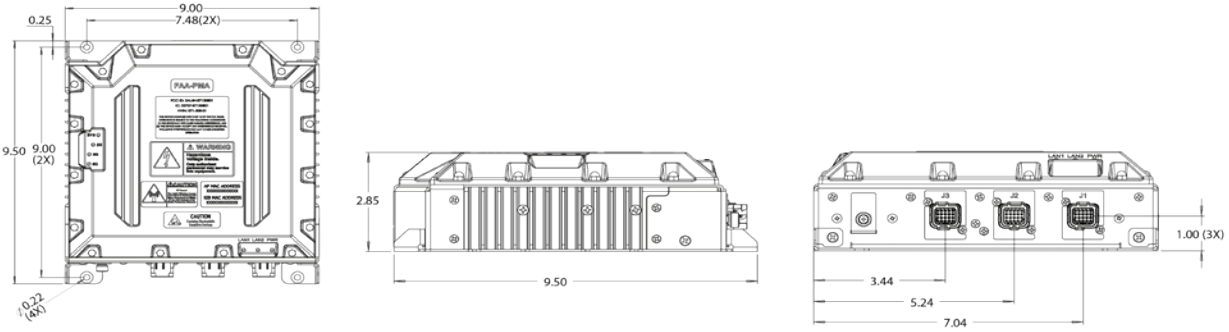
- 115VAC, 360-800 Hz (<25W), ARINC 628 Interfaces including discrete I/O, and ID strapping signals

Mechanical

- Weight: 5.5 lbs.
- Form Factor: Per ARINC 628 mounting and footprint, backwards compatible with existing wiring and mounting installations.

Outline Dimensions

in inches



Connectors

REF DESIGNATOR	SHELL	INSERT	MATING SHELL	MATING INSERT
J1	EN4165M01AA	EN4165A20-22-1NA	EN4165M61AA	EN4165A20-22-1NB
J2	EN4165M01AB	EN4165A20-22-1NB	EN4165M61AB	EN4165A20-22-1NA
J3	EN4165MO1AC	EN4165A20-22-1NA	EN4165M61AC	EN4165A20-22-1NB

Environmental/EMI Test Requirements

DESCRIPTION	SECTION	RTCA/DO-160G CATEGORY
Temperature	Section 4	Category A1
Altitude	Section 4	Category A1
Decompression (45,000 FT)	Section 4	Category A1
Overpressure (-19,000 FT)	Section 4	Category A1
Temperature Variation (5°/min)	Section 5	Category B
Humidity	Section 6	Category A
Waterproofness (140 l/m²/Hr)	Section 10	Category W
Fluids Susceptibility (60/40 PGW)	Section 11	11.4.1
Vibration - Random	Section 8	Category S, Curve C
Operation Shock	Section 7	Category B
Crash Safety - Impulse and Sustained	Section 7	Category B
Fungus Resistance	Section 13	Category F
Power Input	Section 16	Category A(WF)X
Voltage Spikes	Section 17	Category A
AF Conducted Susceptibility - Power Inputs	Section 18	Category R(WF)
Induced Signal Susceptibility	Section 19	Category ZW
RF Susceptibility (Conducted and Radiated)	Section 20	Category T
RF Emissions (Conducted and Radiated)	Section 21	Category M
Lightening Induced Transient Susceptibility	Section 22	Per Boeing D6-85512
Electrostatic Discharge	Section 25	Category A

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