



Airborne Wave Relay® System (AWRS)

WR-AIR-SYS-X-XX



The Airborne Wave Relay System (AWRS) is a custom built, self-contained Line Replaceable Unit (LRU) ready to be installed in aircraft. AWRS has received a Federal Aviation Administration (FAA) Supplemental Type Certificate (STC) for installation in fixed-wing aircraft. The system is available in dual band and single band configurations and provides Wave Relay® MANET capabilities to ensure aircraft mission success.

OPTIMAL FLEXIBILITY

- Designed to be rapidly installed on fixed wing and rotary wing aircraft
- Offered in single and dual band variations to meet mission requirements
- FAA Supplemental Type Certificate (STC) (#SA01105DE)

STAY CONNECTED ANYWHERE

- Uses the Wave Relay® MANET
- Designed for mass scalability - no hop limits
- Rapid self-forming & self-healing
- True peer-to-peer - no master node

CARRY LESS. DO MORE.

- Network, voice, video, computer – all in one device
- More room for mission critical equipment

STREAM HD VIDEO

- Fully integrated H.264 HD video encoding/decoding
- Connect video cameras directly to the unit
- View multiple video streams simultaneously
- Stream video and voice simultaneously

WAVE RELAY MIMO TECHNOLOGY

- High reliability in complex environments
- Maximized network performance and mobility

RELIABLE VOICE & INTELLIGENT RoIP

- Integrate MANET intercom into aircraft audio system
- Put aircraft radios “on the network” via Radio over IP (RoIP) and talk to air, ground, and maritime assets.

NO NDA REQUIRED

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SPECIFICATIONS

Physical

Dimensions (W x L x H)

3/4 ATR per ARINC 404A
7.796 x 12.675 x 7.620 in.
19.8 x 32.2 x 19.4 cm

Weight (Dual, chassis only)

11.08 lbs.
5.03 kg

Power

Input Power

10A at 22 - 28VDC

Environmental

FAA-Approved Installation

Compatible Aircraft

Cessna 172 Series
Cessna 182 Series
Cessna 206 Series
Cessna 208 Series

More aircraft types are currently being added.
If your aircraft is not mentioned, contact your Persistent Systems sales representative for information on adding your aircraft to the list.

Onboard Computing

Processor

1 GHz Quad Core ARM

RAM

2GB

Storage

128 GB Flash

OS

Wave Relay OS

Video

Input

3G-SDI
Composite

Video Compression

H.264 Encoding and Decoding
Native Scaling
MPEG Transport Stream

Bit Rates

250 Kbps – 20 Mbps

Frame Rates

6/10/15/24/29.97/30/59.94/60 fps
59.94/60 fps not available at 1080p

Resolutions

240p
SD 480
SD 576 PAL
720p
1080p

Network Protocols

UDP Multicast & Unicast (MPEG-2 Transport Stream)
RTP Multicast & Unicast
RTSP Unicast

Networking

Advanced Wave Relay® multicast algorithms
Seamless Layer 2 network connectivity
Integrated serial-to-Ethernet capability
Cloud Relay™
IPv4 and IPv6 compatible
Integrated DHCP server
USB RNDIS Host and Device

Wi-Fi

Onboard Wi-Fi allows users to access Web Management Interface (WMI) and Wave Relay network of AWRS node(s)

Security

Integrated Hardware Cryptographic Acceleration

CTR-AES-256 Encryption

HMAC-SHA-256 Authentication & Integrity

Utilizes CNSA Algorithms

Cryptographically authenticated Over-the-Air Rekey and Key Zero

FIPS-140-2 Certified

Data Packages & Letters of Authorization

AWRS must be purchased with a relevant data package and Letter of Authorization.

[WR-AIR-SYS-DATA-23](#): STC data and RTU/LOA for Part 23 aircraft

[WR-AIR-SYS-DATA-25](#): STC data and RTU/LOA for Part 25 aircraft

[WR-AIR-SYS-DATA-27](#): STC data and RTU/LOA for Part 27 aircraft

[WR-AIR-SYS-DATA-29](#): STC data and RTU/LOA for Part 29 aircraft

Dual Band:

Included Parts

(1) Aircraft Box:

[WR-AIR-SYS-2-12](#): L- & S-Band

[WR-AIR-SYS-2-14](#): L- & Lower C-Band

[WR-AIR-SYS-2-24](#): S- & Lower C-Band

(6) Aircraft-grade RF cables, 15'

Includes required Antenna doublers

Includes required Aircraft Antennas

Includes mating connectors for:

Ethernet

USB

Power

RoIP/Aircraft Audio

I/O

Interfaces

(6) RF (TNC)

(2) GPS (BNC)

(2) Video In (BNC)

(2) Ethernet (Aircraft-rated RJ45)

(2) USB (Aircraft-Rated USB A)

(1) Power (D38999 Series)

(1) Dual RoIP/Aircraft Audio (D38999 Series)

Single Band:

Included Parts

1) Aircraft Box:

[WR-AIR-SYS-1-01](#): L--Band

[WR-AIR-SYS-1-02](#): S-Band

[WR-AIR-SYS-1-04](#): Lower C-Band

(3) Aircraft-grade RF cables, 15'

Includes required Antenna doublers

Includes required Aircraft Antennas

Includes mating connectors for:

Ethernet

USB

Power

RoIP/Aircraft Audio

I/O

Interfaces

Only one set of connectors on the Single Band AWRS enclosure are functional. The below specifications describe the number of functional interfaces.

(3) RF (TNC)

(1) GPS (BNC)

(1) Video In (BNC)

(1) Ethernet (Aircraft-rated RJ45)

(1) USB (Aircraft-Rated USB A)

(1) Power (D38999 Series)

(1) RoIP/Aircraft Audio (D38999 Series)

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