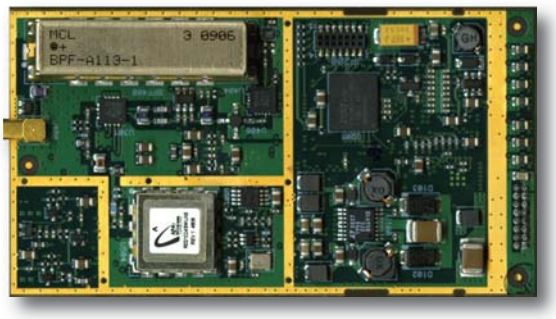
AW100Rx AVIA



AW100Rx AVIA is the DSP based OEM radio receiver with built-in wireless link monitoring and management tools in a compact form factor. AW100Rx AVIA is designed for mobile applications such as airborne and guidance for unmanned vehicles. The AW100Rx AVIA OEM board features high-performance function with advanced technology and sophisticated technology running on a powerful board.

The advanced technology provides uninterrupted reception. The unmatches features of AW100Rx AVIA include:

- Data Speed over the air 10500 symbols per second at 25 kHz
- Advanced Forward Error Correction (FEC)
- RS-232 serial interface with RTS/CTS flow control support
- Data Speed over the serial port 9600 to 115200 bps

AW100Rx AVIA supports D8PSK modulation technique. It also includes a selectable error correction, which improves the functioning of the radio modem under interference.

AW100Rx AVIA supports two separate Application Data and Maintenance modes of single RS-232 serial port.

The built-in firmware tools provide the wireless link testing, unit's status and error statistics monitoring as well as unit's settings change over the air. The firmware of the AW100Rx AVIA radio resides in a flash memory. The updating of the radio modem programs is entirely software-based. The flash memory is re-programmable through an RS-232 interface or over the air.

AW100Rx AVIA OEM board is designed for using in VHF Data Broadcast (VDB) Receiver subsystem according RTCA/DO-253A requirements.

AW100Rx AVIA

General Specification

- Input Voltage: 7-18 V ± 5 %
- Power Consumption max: 1 W
- Operation Temperature: -40°C ... +80°C
- Storage Temperature: -45°C ... +85°C
- Dimensions: L: 81,5 mm x W: 46.5 mm x H: 15.24/19.5 mm
- Weight: 45 g

Features

- DSP-Modem
- Zero-IF Technologies
- 108 – 117.975 MHz Frequency Range
- Up to 115200 bps Data Rate
- Embedded Firmware Compensation for Operation at Extremely Low and High Temperatures
- Compact Design

External Connectors:

RF Connector

J2 is Antenna Input Connector: MMCX RIGHT ANGLE PCB JACK, EMERSON JOHNSON P/N 135-3701-311

Main Connector (J1)

16-Lead Header Connector, COMM CON INC. P/N 3913-16G2

PIN #	Signal Name	I/O	Description
1	GND	-	Signal and Chassis Ground
2	RX	I	Receive Data, serial data input.
3	TX	O	Transmit Data, serial data output.
4	DSR	I	Data Set Ready
5	RTS	O	Request to Send. This signal is asserted (logic '0', positive voltage) to prepare the DCE device for accepting transmitted data from the DTE device. When the DCE is ready, it acknowledges by asserting Clear to Send.
6	TTLI1	I	Sleeps/wakes Radio. In sleep mode, all radio functions are disabled consuming less than 100uA. At wake up, any user programmed configuration settings are refreshed from flash memory, clearing any temporary settings that may have been set: • (3.3v) = Sleep Radio • (0v) = Wake Radio An internal 10K pull-down enables Wake Radio if this signal is left unconnected.
7	DCD	O	Data Carrier Detect
8	CTS	I	Clear to Send This signal is asserted (logic '0', positive voltage) by the DCE device to inform the DTE device that transmission may begin
9	DTR	O	Data Terminal Ready
10	RES CONT	I	Resets trhe radio (Active Low = 0v)
11	TTLO1	O	TTL Output Line 1 (LED)
12	TTLO2	O	TTL Output Line 2 (LED)
13	GND	-	Signal and Chassis Ground
14	Not used		-
15	PWR_IN	I	+7 to +18 VDC Power Input
16	PWR_IN	I	+7 to +18 VDC Power Input

Compliance

Parameter	Specification
RTCA	DO-253A

General Radio Specifications

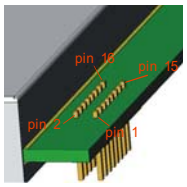
Component	Details
Frequency Range	108-117.975 MHz
Channel Spacing	25 kHz
Carrier Frequency Stability	±1 ppm
Modulation	D8PSK
Communication Mode	Receiver
Supported User Interfaces	Serial Asynchronous (RS-232)
Supported Comms. Protocols	Transparent Receiver

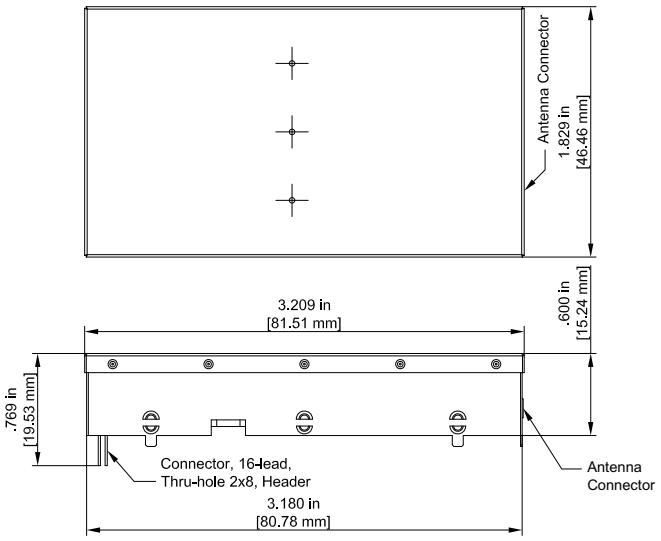
Radio Receiver Specifications

Component	Details
Receiver Sensitivity for D8PSK (BER 1x 10^{-4})	-100dBm
Receiver Dynamic Range	-105dBm to +10dBm

Receiver Specification

Component	Details
Interface DSP	RS-232 (serial port)
Interface Connector	16-lead Connector
Data Speed of Serial Interface	9600 - 115200 bps
Data Rate of Radio Interface	31500 bps
Forward Error Correction (FEC)	Reed-Solomon Error Correction





Specifications are typical and subject to change without prior notice

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