AlphaWave—License Free
Spread Spectrum Radio Modems
WIRELESS SOLUTIONS
FOR SYSTEM CONTROL APPLICATIONS

AW*2400Tx*™: OEM SSR 2400 MHz

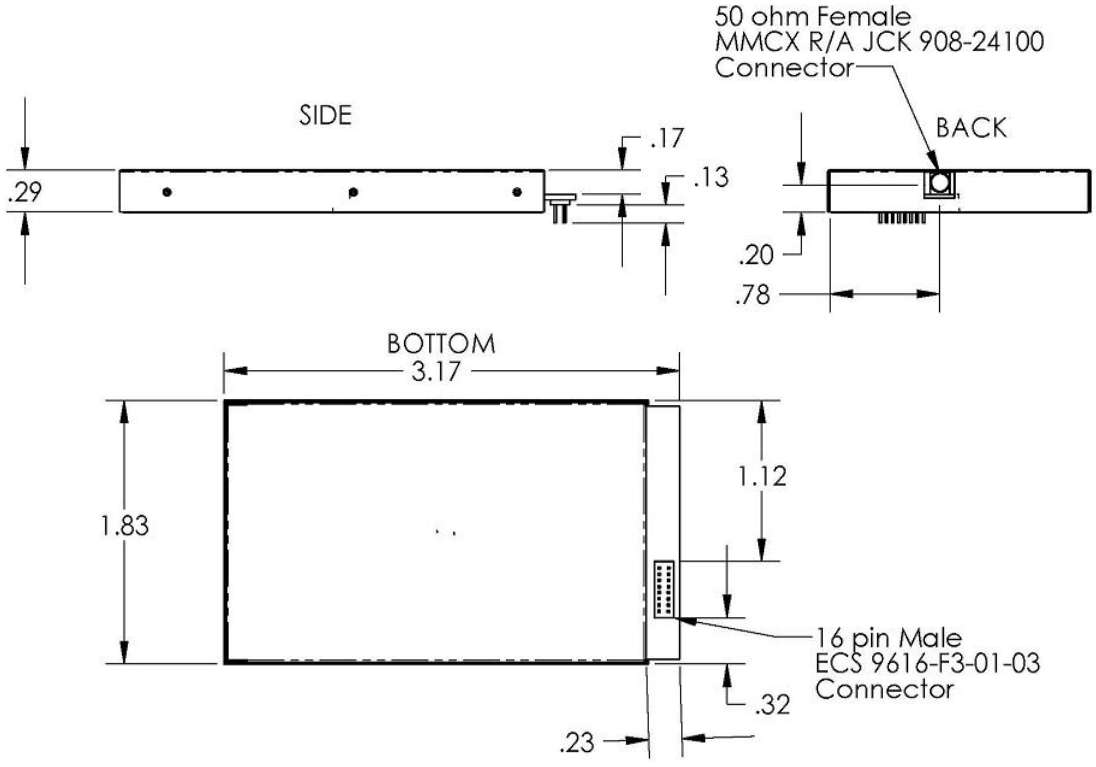
DSP based OEM Radio Modem with Built-in wireless link Monitoring and Management Tools:

- Unlicensed operation modes
- 3 miles Maximum Distance Range
- Data Speed over the air 14,400 to 57,600 bps
- Programmable Output Power—0 dBm to 20 dBm in 1.2 dB steps (1 mW to 100 mW)
- Data Speed over the serial ports 300 to 115,200 bps
- Testing, monitoring and control of the unit over the air.
- The RS-232/RS-485 style interface with standard CMOS signal levels makes the electronic integration easy.

ArWest Communications Corp. exceeds established standards within the **SCADA** and outdoor telemetry markets with the release of *AlphaWave2400Tx* (***AW2400Tx***™) series Spread Spectrum integrated wireless modem, another in a series of next generation radio modem products. The ***AW2400Tx***™radio modem provides a high-speed Point-to-Point and Point-to-Multipoint wireless data transfer at up to 57.6 kbps.

The ArWest range of Spread Spectrum products were developed to exacting customer needs and to have pin-to-pin compatibility with our range of VHF and UHF Narrow Band Radio Modems.

Mechanical Drawings



ArWest Communications Corp. 300 Orchard City Drive # 126 Campbell, CA
Tel: (1) 408-866-9668 Fax: (1) 408-866-9678 Email: sales@arwestcom.com

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Visit us on the web at www.arwestcom.com

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ARWEST

AW2400Tx™

General Radio Specifications

Parameter	Specification
Operating Frequency Range	2405 – 2480 MHz
Modulation Technique	O-QPSK
Error Vector Magnitude	8%
20 dB bandwidth	2.8 MHz
Spreading Technique	DSSS
Number of Channels	20
Chip Rate	2000 kchip/sec
Radio Protocol (Communication Mode)	Time Division Duplex (TDD) Time Division Multiple Access (TDMA)
Max. Distance Range w/ 2.1 dBi dipole antenna	3 miles / 5 km
Channel Data Rate	57.6 kbps 28.8 kbps 19.2 kbps 14.4 kbps
System Gain (Antenna gain is not included)	123 dB 126 dB 128 dB 129 dB
End to End delay	33 ms
Power Consumption	< 700 mW – 100 mW continuous transmitting mode < 450 mW – transmit with 30% duty cycle (100 mW Output) < 500 mW – 50 mW continuous transmitting mode < 360 mW – transmit with 30% duty cycle (50 mW Output) < 300 mW – receive mode
Reference Oscillator Frequency	16 MHz
Reference Oscillator Accuracy	±10 ppm
Type of Emission	FCC-CFR-47 Part 15 §15.247 ETSI EN 300 328 / ETSI EN 300 400

Transmitter Specifications

Parameter	Specification	
Output Power	0 dBm to 20 dBm in 1.2 dB steps	
Output Power Control Accuracy	±1 dB (at normal test conditions) +2.0 dB and -3.0 dB (under extreme test conditions)	
Nominal Output Impedance	50 Ohms 2.0:1 VSWR	
Carrier Frequency Stability	±300 kHz	
Harmonics: 2nd harmonic 3rd harmonic	 -38 dBm -45 dBm	
Spurious emissions: 30 – 1000 MHz >1 – 12.75 GHz 1.8 – 1.9 GHz 5.15 – 5.3 GHz	 -36 dBm -30 dBm -47 dBm -47 dBm	Complies with: EN 300 440, FCC-CFR-47 Part 15, ARIB STD-66, RSS-210

Receiver Specifications

Parameter	Specification
Noise Figure	5 dB
Nominal Input Impedance	50 Ohms
Receiver Sensitivity @ PER <1%, 20 octets packet length	-103 dB @ 57.6 kbps -106 dB @ 28.8 kbps -108 dB @ 19.2 kbps -109 dB @ 14.4 kbps
Dynamic Range	-110 to -25 dBm
Max. Input Signal Level	-10 dBm
RSSI accuracy absolute	±5 dB
Adjacent channel rejection ±5 MHz ±10 MHz @ PER <1%, 20 octets packet length	100 dBc 110 dBc (Input RF level -82 dBm)
Spurious emissions, 30 – 1000 MHz LO leakage 1 – 12.75 GHz	-57 dBm -47 dBm

Mechanical and Environmental

Parameter	Specification
Dimensions	80.2 mm x 56.5 mm x 11.5 mm (3.2" x 2.2" x 0.45")
Weight	max 150 g
Temperature	Operating –30°C to +60°C (ETSI 300-019-1-3 Class 3.1(E)) Storage –40°C to +85°C
Environmental	OEM Product – characteristics dependent on housing
Power Supply Voltage	Regulated 3.3 VDC from external power source
Housing/Color	No Housing – OEM board plus shield, only
Antenna Connector	Huber/Suhner : 85 MMCX 50-0-1 (female)
RS232 Connector	16 pin Male Connector (ECS 9616-F3-01-03)
Altitude	-1,000 m below sea level to 8,500 m above sea level

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