AW2400mSPI, -EVAL | Product Brief

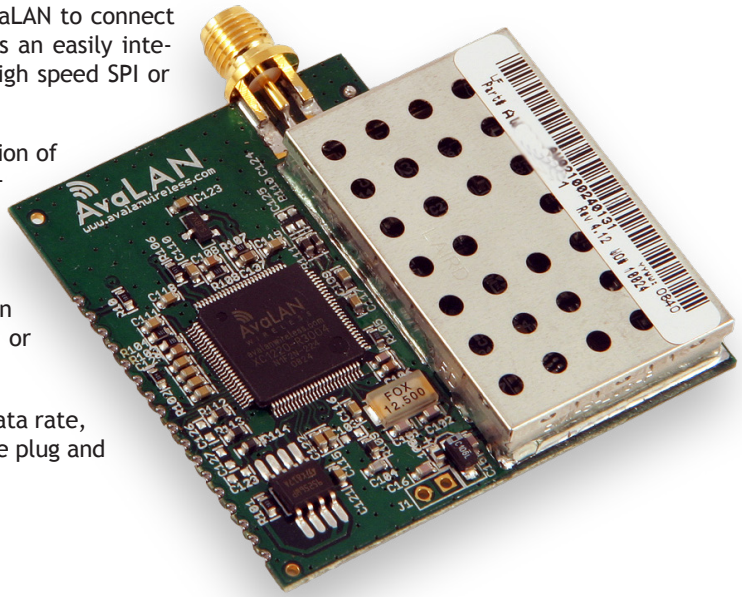
2.4 GHz SPI to RF Module

When your application needs just the radio technology from AvaLAN to connect to your own microcontroller, this tiny low cost module provides an easily integrated data-to-wireless interface utilizing either synchronous high speed SPI or asynchronous UART.

The 2.4 GHz band is the most globally accepted unlicensed portion of the RF spectrum. AvaLAN's unique solution offers 29 non-overlapping channels and maximum legal power to provide five times the range of Wi-Fi through walls or line-of-sight.

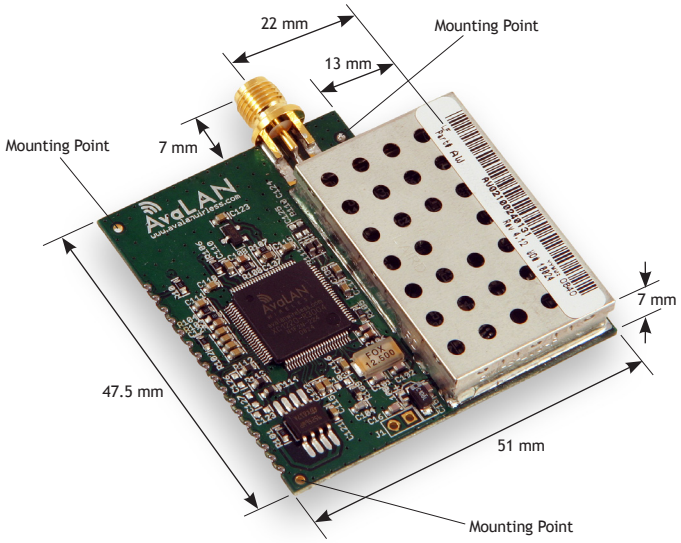
Get started with the Evaluation Kit that provides two modules and everything you need to begin testing and development. Then when you are ready to deploy, buy the modules in packs of ten or call AvaLAN Sales for larger quantity pricing.

AvaLAN's products offer the ideal combination of price, range, data rate, security, interference avoidance, quality-of-service, and a simple plug and play set up with minimal user programming required.

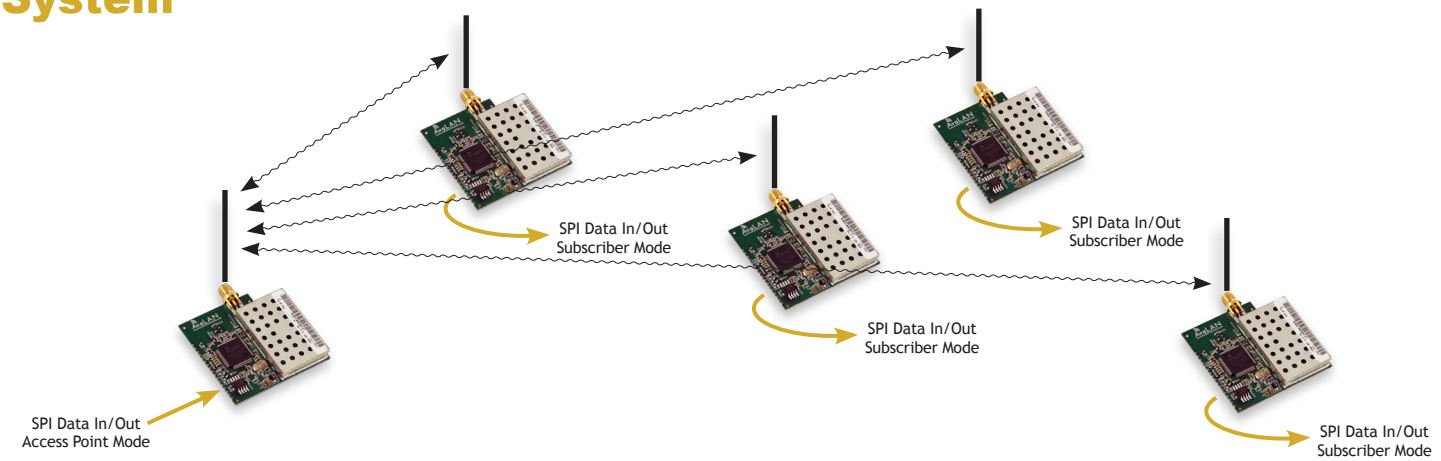


Features

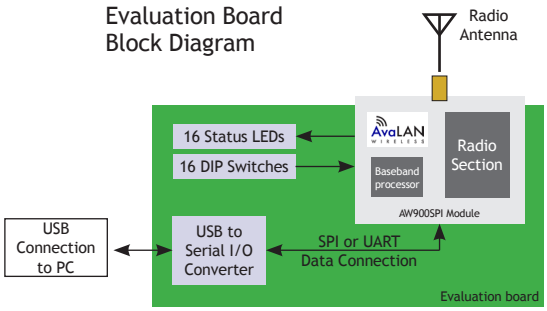
- 1.54 Mbps DSSS Radio with high speed SPI and UART data interfaces
- FCC/IC certified modular approval for 2.4 GHz
- 128 bit AES encryption - FIPS 197 NIST certified
- 156 dB link budget enables exceptional range:
  10 watts EIRP with 19 dBi antenna (+21 dBm conducted)
  -116 dB receive sensitivity with 19 dBi antenna (-97 dBm at port)
- TDMA MAC supports up to 63 concurrent subscribers
- Low power draw: 0.75w transmitting, 2µw standby at 3.3 VDC
- Wide temperature range: -40° to +80°C
- Narrow occupied bandwidth allows 29 channels within 2.4 GHz band
- Small form factor allows easy integration: 47.5 x 51 x 7 mm

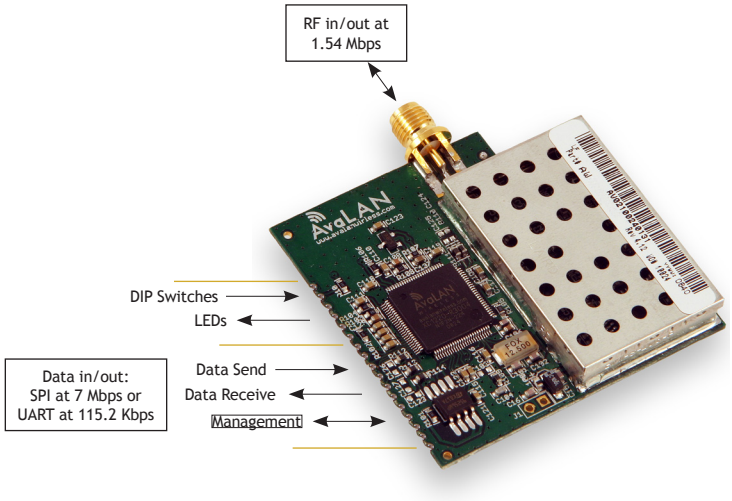


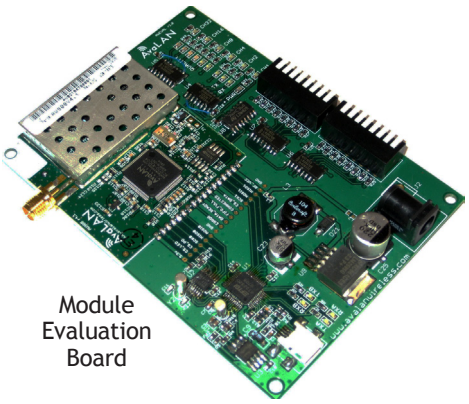
System



Evaluation System







Module
Evaluation
Board

The command set includes:

0x01 getStatus
0x02 getPublicKey
0x03 getPrivateKey
0x04 getDeviceID
0x05 getStats
0x06 getVersion
0x08 getNumberOfConnectedSUs
0x09 getRSSIreadings
0x0A getDATAPacket

0x81 setStatus
0x82 setPublicKey
0x83 setPrivateKey
0x84 setDeviceID
0x85 setReset
0x8A setDATAPacket
0x8B setFirmwareStart
0x8C setFirmwareEnd

Design files include C source code for command set.

Technical specifications

CHARACTERISTIC	SPECIFICATION / DESCRIPTION
RF transmission rate	1.536 Mbps
Serial throughput	1.2 Mbps
Output power	+21 dBm (10 Watts EIRP used with 19 dBi antenna)
Receive sensitivity	-97 dBm at 10e-4 BER (-116 dBm with 19 dBi antenna)
Radio link budget	156 dB with 19 dBi antenna
Range	30 miles LOS with 19 dBi antenna
Radio channels/bandwidth	29 non-overlapping with 2.0833 MHz spacing and 1.75 MHz occupied bandwidth
Manual frequency select	Channel can be selected with DIP switches or via command set instruction
Connector type	RF RPSMA Female
Error correction technique	Sub-block error detection and retransmission
Voltage	3.3 VDC
Temperature range	-40° C to +80° C
Power Consumption	**Transmit:** 0.75 Watts **Receive:** 0.5 Watts **Sleep:** 2 µW
Size	47.5 x 51 x 7 mm, 10 grams

10.04.2010