

# 900 MHz RS-232 to RF Module

This product allows you to connect RS-232 devices wirelessly in situations where direct wired connections are too costly or have insufficient range, security or noise immunity. It provides direct plug-and-play replacement of an RS-232 cable, but without most of the limitations. Most cables used for RS-232 are limited to about 50 feet, with expensive low capacitance cable extending the range to perhaps 1000 feet. This wireless link can travel up to 40 miles line-of-sight and with excellent ability to penetrate walls and vegetation. The radio modules automatically select the lowest interference RF channel, encrypt the data and seamlessly transmit it, looking just like a direct RS-232 cable to the rest of the system.

Get started with the AW900R2-EVAL 900 MHz RS-232 to RF Evaluation Kit that provides two modules and everything you need to begin testing and development. Then buy the modules to build into your own system, contacting AvaLAN Sales for a price vs. quantity quote.

The configuration may be easily set or changed by plugging a laptop into each module's built in USB interface, uploading new configurations into its non-volatile memory, and putting the link back into service. The same USB interface can also display diagnostic information and provide easy firmware updating.

This technology is also available in rugged outdoor weatherproof enclosures preconfigured as a wireless point-to-point bridge, the AW900R2-PAIR.

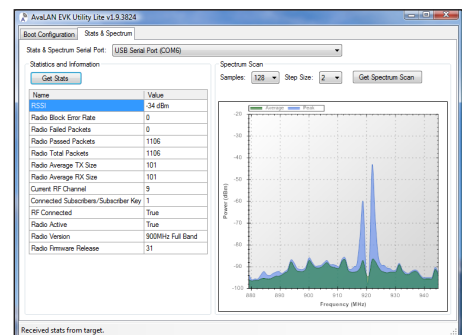
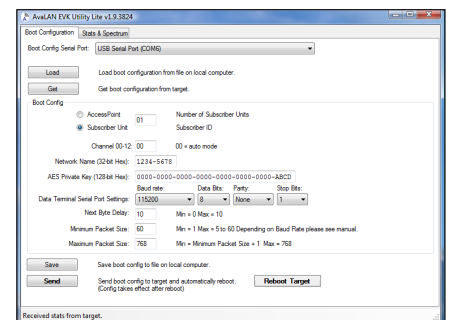
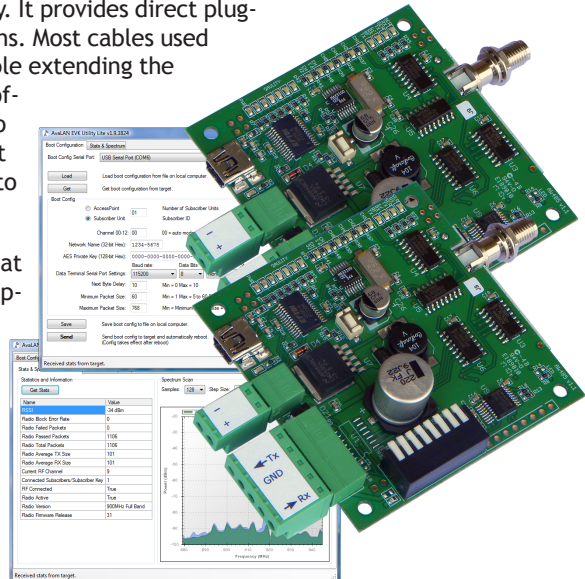
AvaLAN's products offer the ideal combination of price, range, data rate, security, interference avoidance, quality-of-service, and a simple plug and play set up with minimal user programming required.

## Features

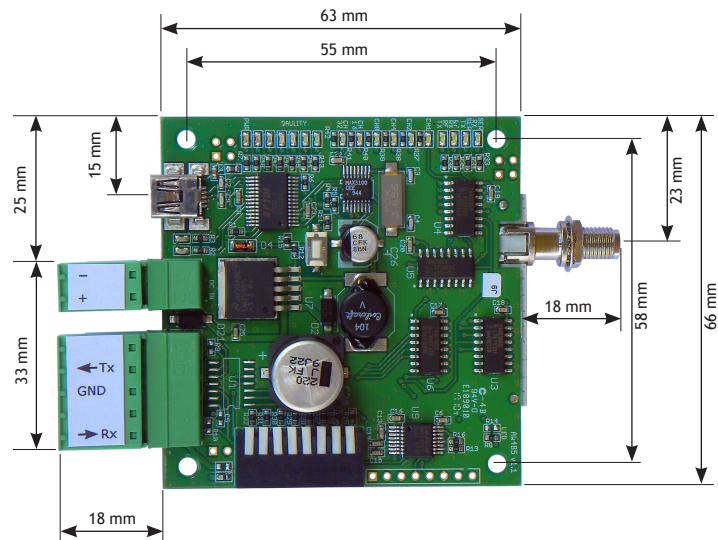
- 9-48 VDC accommodates wide voltage use
- Up to 40 mile range to connect to difficult locations
- 4 Watts EIRP, Maximum legal radiated power for long range penetration
- One Watt power consumption is ready for solar applications
- -40° to +80°C for extreme temperature operation
- USB management interface to enable quick setup time
- LED display for quick and easy trouble-shooting
- Graphical spectrum analyzer to evaluate RF environment
- 115,200 Baud for high speed serial applications
- Phoenix screw terminal plugs for easy wiring

## Screen Captures:

### USB Configuration Utility



## Physical Dimensions



## Technical specifications

Characteristic	Specification/Description
Serial Baud Rate	9600, 19200, 38400, 57600, 76800, 115200
RS-232 Signal Characteristics	See data sheet for Maxim 3221 chip ( <a href="http://www.maxim-ic.com">www.maxim-ic.com</a> )
RF transmission rate	1.536 Mbps
RF Output Power	+21 dBm (4 Watts EIRP with 15 dBi antenna)
Receiver Sensitivity	-97 dBm at 10 <sup>-4</sup> Bit Error Rate
Radio Link Budget	148 dB with 15 dBi antennas
Range	Up to 40 miles line-of-sight with 15 dBi antennas
RF channels/bandwidth	12 non-overlapping with 2.0833 MHz spacing and 1.75 MHz bandwidth
Channel selection	Automatic or manual via USB interface
Adjacent band rejection	SAW receiver filter attenuates cellular and pager interference
Error correction	Sub-block error detection and retransmission
Encryption	128-bit AES, meets FIPS 197 Standard
Evk Utility Management Tools	Serial port configuration, encryption keys, tuning parameters, QoS statistics, spectrum analyzer
Status LEDs	power, RF activity, serial data activity, channel, link quality
Connectors	RF: RPSMA Female, RS-232, power: Phoenix screw terminals
Power consumption	Transmit: 0.54 Watts, Receive: 0.45 Watts
Voltage	5-48 VDC
Power regulation	Switching regulator
Transmit current draw	175 ma at 9 VDC, 140 ma at 12 VDC, 35 ma at 48 VDC
Operating Temperature Range	-40 °C to +80 °C

## Ordering Information

### AW900R2-EVAL

900 MHz RS-232 to RF Module Evaluation Kit

Contents:

- (2) 900 MHz RS-232 to RF Modules
- (2) AW2-900 Omnidirectional Antennas
- 2) 20" USB to Mini-USB Adapter Cables
- 2) 120VAC to 6 VDC Wall Hanger Power Supplies

### AW900R2-10

900 MHz RS-232 to RF Module 10-pak

Contents:

- (10) RS-232 to RF Modules