

FEATURES

- **Dual output capability**
- **Range sensitivity adjustment**
- **Patented design for high speed signal capture and noise immunity**
- **Output circuitry protection from damage due to transients on the cable**

AR2200 RF Module



The AR2200 Radio Frequency (RF) Module is a dual-output radio transmitter/receiver controlled by an Amtech®-brand reader. Upon command from the reader, the AR2200 RF Module generates a signal in the 915 MHz RF band and delivers the signal to one or two antennas for broadcast. The AR2200 RF Module then receives and demodulates the reflected tag signal returned through the antenna and preamplifies and conditions the demodulated signal before sending it to the reader.

Controlled by the reader, the AR2200 RF Module can operate continuously or can activate in response to a sensor input signal indicating the detected presence of an object.

Normal mode allows a single reader to drive two antennas from one RF module when the cable length required to separate the two reading areas is less than 100 feet (30.48m). For greater separation of reading areas — cable length up to 1000 feet (304.8m) — two RF modules configured in compatibility mode may drive one antenna each.

Range sensitivity adjustment allows controlled introduction of a signal tailored to mask stray signals without reducing RF power as occurs with attenuation. Sensitivity circuit potentiometers access a wide range of settings, from maximum broadcast range (range sensitivity OFF) to maximum signal rejection (range sensitivity fully ON). A patented homodyne receiver increases system immunity to noise and prevents signal dropout, allowing the system to read tags moving at high speed.

The preamplifier provides analog signal output capable of driving up to 1000 feet (304.8m) of cable. These balanced signal lines provide low impedance and incorporate electrostatic discharge protection. The AR2200 RF Module interface board filters DC power received from the reader or power supply and protects output circuitry from damage due to transients on the cable.

The AR2200 RF Module connects to the reader through cables attached to the AR2200 RF Module's interface board. All control and data connections are secured at a quick-disconnect terminal strip on the AR2200 RF Module interface board.

AR2200 RF Module

COMMUNICATIONS

Frequency Range

902 to 928 MHz

The authorized frequency band in the United States is 902 to 904 and 909.75 to 921.75 MHz.

TransCore recommends separate frequencies for multiple RF modules at one site. TransCore assigns additional frequencies in the 915 MHz band according to the following table.

902-928 MHz FREQUENCY ASSIGNMENT SEQUENCE		
NUMBER OF FREQUENCIES REQUIRED	FACTORY SET FREQUENCY	SEPARATION ACHIEVED
1	911.99	-
2	918.01	6.02 MHz
3	910.00	1.99 MHz
4	920.00	1.99 MHz

All other frequencies require special order.

HARDWARE FEATURES

RF Connectors

Type N female

POWER

Nominal RF Power

(measured at output port)
1.6W minimum

Frequency Stability

±10 ppm

Nominal Input Voltage

12.5V DC

Harmonic Output

-50 dBc

Spurious Output

-60 dBc

PHYSICAL

Dimensions

Size: 13.5 x 13.0 x 6.36 in.
(34.3 x 33 x 16.2 cm)

Weight: 22 lb (10 kg)

ENVIRONMENTAL

Operating Temperature

-40° to +167°F (-40° to +75°C)

STANDARDS

Safety Standards

Complies with United States and international safety standards as specified by ANSI C95.1, IEC Pub 215 and 657, and NRPB.

ETL Listing, UL Compliant

The AR2200 RF Module, when used in conjunction with an AH200 Reader, complies with the requirements of the Standard for Information-Processing and Business Equipment (UL-1950 First Edition) and has received European Testing Laboratory (ETL) listing #A0190875050.

Note: ETL listing requires removing the RF module unit while punching holes or drilling in the enclosure.

ISO, AAR, ATA, ANSI

The AR2200 RF Module meets the hardware and firmware configuration and performance criteria specified by the International Organization for Standardization's (ISO) container identification standard. It also meets the standards for automatic equipment identification set by the Association of American Railroads (AAR), the American Trucking Associations (ATA), and American National Standards Institute (ANSI).

LICENSING

Local regulations apply. The Federal Communications Commission (FCC) regulates operation in the United States. Contact TransCore for more information.

OPTIONS

Weatherproof Enclosure

Available as a subassembly or housed in either a NEMA-4 or stainless steel enclosure.

Harsh Environment Option

Extends vibration specification to 2 G_{rms} from 5 to 500 Hz.

ACCESSORIES

Attenuators

Five-W, 1 to 24 dB attenuators with Type-N sockets are available. SMA-type pads used in the AR2200 RF Module jumper line may attenuate only the output signal.

Hex Key

For removing and installing RF module and reader circuit boards

DOCUMENTATION

AR2200 RF Module Installation Manual



For product information call: 1.800.923.4824 or 972.733.6600 (outside the U.S.) Fax 972.733.6486

www.transcore.com

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