

Ethernet Wi-Fi Reader



- Instant reporting of detected Wavetrend active RFID tags over a wireless LAN
- User configurable tag data filters
- Easy remote configuration over the wireless LAN
- High speed data throughput
- Supports wide variety of antennas to achieve custom coverage areas
- 2 I/O ports for monitoring & control of external devices
- Supports up to 256 bit AES (Rijndael) encryption
- Rugged design and low cost

The RX1000 reader detects and decodes RFID (radio frequency identification) signals from Wavetrend's range of active RFID tags. It can operate in rugged conditions at ultra long ranges, subject to the appropriate antenna being fitted to the unit. The data from detected tags is sent by the reader via Ethernet over a WLAN to authorised corporate computing systems.

Typical Applications

This reader is ideally suited for use in systems that track tagged assets such as containers, plant and machinery or high value assets, or for monitoring personnel in health and safety or security applications.

RX1000 readers can be used to create RFID networks within buildings. For more robust and rigorous uses they can be deployed externally across large complexes, such as container ports, warehouses or external yards. The RX1000 offers enhanced functionality to facility management; CCTV and access control systems through its integrated inputs and relay outputs that allow the monitoring of external analogue sensors and activation of other devices at will.

The tag data and reader status information is fed into the end-user application enabling complete management of all tagged assets and the automation of business decisions about them based on accurate and near real-time knowledge of their location and condition.

Key Features	Business Benefits
IP and MAC addressable. Provides all standard WLAN functions	The reader can be easily managed via the WLAN. Both user assigned and dynamic (DHCP) IP addressing is supported. MAC addressing and all major WLAN security protocols can be used for enhanced security and data integrity.
Powered from a separate 7.5V PSU (supplied). 802.11b/g supported.	Quick and easy installation in a variety of WLAN environments. Standard Wi-Fi omni-directional antenna supplied.
Reader status indication by LED's on the front panel and at RJ45 connectors.	Visual diagnostics are possible for key reader functions – tag detection, power, relay status and wireless network activity.
Two modes of data transmission: <ul style="list-style-type: none"> ▪ Hardware auto-polling - tag data provided automatically from Reader network. ▪ Software polling – tag data requested from each reader individually by intelligent edge devices or host application. 	<ul style="list-style-type: none"> ▪ Hardware auto-polling allows for the continuous feed of tag data to the system in the fastest possible manner. ▪ Software polling allows for dynamic communication with each reader by software applications, instant notification of reader offline and customisation of reader polling order and frequency.
User configurable 'heart beat' message.	Automatic notification of reader status at a user-defined interval.
Signal Strength information is reported with every tag	Allows for limitation of read range directly on the reader through signal strength filtering and can give an idea of the tag's proximity to the reader.

Standard Specifications

Model Range

The reader is available in two models. Each model operates with a different air interface protocol. The readers can be ordered using the part numbers listed below:

L-Series
L-RX1000
W-Series
W-RX1000

Air Interface Protocols

'L-Series' and 'W-Series' refer to 2 different proprietary communication protocols used between Wavetrend tags and readers. The L-Series reader must be used with Wavetrend L-Series tags. The W-Series reader must be used with Wavetrend W-Series tags. Both types of reader can operate on the same reader network infrastructure.

Antennas available for the RX1000 from Wavetrend & potential ranges*

AN100	¼ Whip – up to 40m
AN200	½ Stub – up to 20m
AN300/350	Patch – up to 90m
AN400	Outdoor Whip – up to 50m
AN500	Door Blade – up to 20m

The read range of the RX1000 is achieved through use of an antenna.

It is strongly recommended that the services of a properly trained engineer from a Wavetrend Accredited Channel Partner (ACP) or Wavetrend Professional Services are employed to determine the best location for the reader and the best antenna to be used to achieve the desired read range.

*Read ranges are affected by environmental conditions and site configurations and may not match those stated in this sheet. Read ranges will generally be greater outdoors than indoors. With specialist antennas, ranges in excess of 500m can be achieved

Environmental

Operating temperature	: -10°C to +60°C
Storage temperature	: -20°C to +70°C
Humidity	: 5% to 90% (non condensing)

Physical

Size	: 130mm x 140mm x 28mm
Weight (unit)	: 340 grams
Weight (packaged)	: 720 grams (includes PSU)
Colour	: Silver / Black
Material	: Aluminium
Connections	: 1 x SMA Wi-Fi antenna connector : 1 x BNC (F) 433MHz antenna connector : 2 x Inputs : 2 x Relay Outputs : 1 x 7.5Vdc socket

Radio Frequency*

Receive Frequency	: 433.92 MHz
Modulation	: ASK
Stability	: 20ppm over -10°C to +60°C
Sensitivity	: -80 dBm (preliminary)
RF Input	: 50 Ohm BNC (female)

Electrical

Supply Voltage	: 7.5Vdc
Max. current consumption	: 700mA
ESD protection	: 2kV Human Body Model
Relay Ratings	: Max current : 3A : Max Load : 60W : Max Voltage : 250Vac / 220Vdc

Wireless Ethernet

Network Standards	: IEEE 802.11b, IEEE 802.11g
Frequency Range	: 2.412 – 2.484 GHz
Maximum Receive Level	: -10 dBm (with PER <8%)
Security	: WEP 64/128, WPA – PSK, TKIP, AES end-to-end encryption
Supported Protocols	: ARP, UDP/IP, TCP/IP, Telnet, ICMP, SNMP, DHCP, BOOTP, TFTP, Auto IP, SMTP, and HTTP

*Alternate RF specifications to meet your individual requirements are available on request, including alternate operating frequencies (868 & 915 MHz). Please enquire at your nearest Wavetrend office.

Certifications



Ordering & Further Information

For information on purchasing the RX900 Ethernet PoE Reader please email Wavetrend's Sales team:

sales@wavetrend.net

For more information on Wavetrend, our active RFID products & Professional Services and on joining our Accredited Channel Partner (ACP) program, visit our website:

WWW.WAVETREND.NET