

# MMT9000

900 MHz Unlicensed  
Nomadic Wireless Terminal

[www.vecima.com](http://www.vecima.com)

WaveRider systems by Vecima Networks are field deployable wireless access networks that are portable and deliver user-mobility. Operating in the 900 MHz ISM band, WaveRider systems offer cost-effective solutions for delivering high-speed voice and data services wherever constant, reliable communications are required.

The MMT9000 enables Ethernet connections to up to 100 nomadic and/or fixed terminals per base terminal, with up to 2 Mbps peak ftp data transfer rates. With the addition of optional components, WaveRider systems also have the capability to provide telephone service via an IP PBX, as well as security video and short message text services.

## MMT9000 Nomadic Wireless Terminal



### MMT9000 Highlights:

- Signaling Rates of 2.75 Mbps and access speeds of 2 Mbps
- Supports voice, video and data communications
- Enables end-user mobility; suitable for in-vehicle installations
- Extended temperature range of -40° C to 50° C
- Superior 900MHz non-line-of-sight performance
- Reliable and easy to deploy
- Compatible with WaveRider LMS4000/8000 900MHz systems
- Certified with WaveRider vehicle antenna WR302-9000, various vehicle mounts available

## Features

**Complementary Services:** The MMT9000 Mobile Terminal complements mobile private radio networks that are currently in use for public safety, utility, military and other applications by addressing the need for high-speed data.

**Compact Form Factor:** The MMT9000 has a compact form factor for easy vehicular installation and is designed for use with a variety of mobile and fixed antennas. Set-up and configuration is rapid and simple.

**Base Station Nomadic Roaming:** The MMT9000 can search the full RF frequency range or select from a defined list to locate MBT9000 base terminals or CCU access points. It then selects the base terminal with the best RF signal and authorization permission. With this and DHCP Client enabled (factory defaults), the installer does not need to enter ANY configuration parameters into the MMT9000 in order to install it.

**DHCP Client:** The MMT9000 can obtain its IP address, subnet mask and IP gateway information from a DHCP server, reducing the amount of configuration required for installation. This allows the network operator to reassign IP addresses to MMT's without having to access the mobile terminal itself.

**Auto Configuration:** The MMT9000 will accept parameters from a RADIUS server to set other configurable parameters in the modem. Parameters include: password, all SNMP parameters, RF Frequency (ships in Nomadic mode), and number of MAC addresses accessible to the airlink.



## Radio Specifications

Operating Frequency Band	902 to 928 MHz
Radio Access	DSSS w/ Dynamic Polling MAC
Radio Modulation	Complementary Code Keying (CCK)
Peak Output Power	+27 to +16 dBm at antenna port (software selectable)
RF Rx Threshold	-89 dBm (BER<10-6) at antenna port, not including antenna gain
Minimum/Maximum Center Channel Frequency	905/925 MHz
Channel Bandwidth	5.5 MHz
Center Frequency Spacing Increment	0.2 MHz
Orthogonal Channels	4
Orthogonal Channel Separation	6.6 MHz
Channel Selection	Nomadic, Auto, RADIUS, Static
Panel LED's	Signal Level (DC Power), Ethernet Link, Ethernet Traffic
Data Type	IP with QoS for VoIP
User Access Protocols	Telnet w/ Password
Management Protocols	RADIUS, DHCP, SNMP, NTP, ftp, Telnet

## Radio Performance

Signaling Rate	2.75 Mbps
User Data Rate	Up to 2.0 Mbps (user-definable)
Nomadic sector switching time (typical)	2 sec. (Depends on Network Design)

## Power Specifications

Power Supply Input	+12 VDC (10.5 to 17 VDC)
Ignition Sense	+12 VDC
Fuse (included)	2 Amp automotive blade with IP67 Holder, 12-inch (30.5 cm) leads
Power Consumption (typical)	10W

## Interface Specifications

Data Connection Ethernet	10BaseT RJ-45 HDX Jack
Data Cable Length (max)	330 feet (100 m)
DC Connection	4-pin Conxall 73804PG300 (B+, B-, IGN Sense, Chassis GND)
DC Cable (included)	18-feet (5.5 m), 4-wire, 18 AWG, Conxall 63804SG519 (Automotive Rated)
RF Connection	Standard SMA-female
Ground post on front panel	#10-32 Thread w/ Nut, Washer, Terminal Lug #12-10

## Dimensions

Unit L x W x H	6 x 5.75 x 2 inches (15.2 x 14.6 x 5.1 cm)
Mounting Space L x W x H	8.5 x 7.25 x 2.25 inches (21.6 x 14.6 x 5.7 cm)
Mounting brackets	Attached; shock absorbing; 0.25 in. (6.4 mm) mounting holes
Weight	3 lb (1.4 Kg)
Materials	Aluminum extrusion

## Environmental Specifications

Operating Temperature	-40° C to 50° C
Storage Temperature	-40° C to 70° C
Operating Humidity	0% to 95% RH (non-condensing @ 50° C)
Environments	Designed for automotive conditions Shock & Vibration to MIL-STD-810F Wheeled Vehicle Profile Exceeds ETSI EN 300 019-2-5

## Approvals

Radio Transmitter	FCC Class A, CFR 47 Part 15, FCC Industry Canada RSS-102 and RSS-210
Safety	UL, CSA



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