

## RV-M55-E

The [M55 Ethernet Interface Radio](#) has TCP/IP Ethernet interface on it, and inside are data radios for VHF/UHF narrowband or 915 ISM license free bands.

The M55-E has the industry's highest data rates. The RF data modules in it can be the RV-M6, the RV-M8, or the RV-M50 LoRa radio.

There are two terminal ports, one for data communications over-the air on the radio modem inside the M55. Another port is for command mode or MODBUS commands to read voltage, temperature, or vibration.



## Product Overview

### Many RF Bands

The RF transceiver can utilize 2 or 4 FSK modulation or QAM modulation. By choosing your over-the-air data rate and modulation type, you can run your system at the speed an range you need, with data rates from 1.2kbps to 96kbps and range from 10 to 100 miles.

### Long-Range Operation

The radio modems works over 10-50 miles point-to-point and many miles with omni-directional antennas. All modems support store-and-forward repeating for wide-area coverage.

### Efficient Power Consumption

The RV-M21 can operate off DC input from 9-28V. Receiving, the M21 draws less than 1watt of power!

### High Speed and High Efficiency

The RV-M55 operates with user-selectable over-the air data rates of 1200 to 21870 bps . Faster rates for higher efficiency or lower-speed for increased communication range.

### Configurable Power Output

Utilizing new ultra-high efficient GAN RF power amplifier technology developed for wideband military use, the GAN amplifier can be set for any power between 500mW and 15 watts.

### Point-to-point data

Two M55-E can be configured to securely and quickly connect two Ethernet, terminal servers, or serial devices. The RS-485 interface is standard, and RS-232 is an option for this product also.

### OTA Configuration

The ID of a particular transponder and certain system parameters such as report rate may be configured Over-The-Air, without having to physically connect to the unit.

### Secure Data

The data encryption feature may be enabled on any Tech Series data radio modem. When secure data is enabled, the radio will encrypt transmissions using AES128 encryption.

### GPS Option

The optional internal GPS allows the product to be a powerful Automatic Vehicle Locating (AVL) system or Time Space Position Information (TSPI) reporting device. Raveon's TDMA protocol is built in, enabling it to be used to track thousands of things in real time.

### License Free Version

Raveon's license free radio RV-M50 LoRa radio can be incorporated into this M55-E. The Ethernet data is passed over the LoRa radio and sent over the air to other LoRa radios or to another one of these M55-E Ethernet Interface radios.

## General Specifications

### Mode 1: RV-M55-Ex-Rbb

(Rbb is the Communication interface feature information.)

x is a G, if GPS feature is added. Blank if no GPS Features

R is the Radio used: 6: RV-M6 5: RV-M50 8:RV-M8

bb Frequency Bands: {Internal Modem Number}

UA 400-434 MHz (non-US/gov.) {RV-M8}

UB 419-450 MHz (non-US/gov.) {RV-M8}

UC 450-480 MHz (RV-M8)

UD 470-512 MHz (non-US/gov.) {RV-M8}

UJ 380-400 MHz (non-US/gov.) {RV-M8}

VA 132-155 MHz (non-US/gov.) {RV-M8}

VB 150-174 MHz {RV-M8}

VC 216-222 MHz {RV-M8}

EC: 902-928 MHz (North/South America)

ED: 863-870 MHz (Europe)

EF: 779-787 MHz (China)

Input Voltage VCC:

12-15 VDC full-spec 16V limiter internal.

9-15 VDC operational

Power Consumption:

Receiving data: <100 mA at 12.0 VDC Input

Transmitting data: < 2000 mA at 12.0 VDC Input

Sleep (<100  $\mu$ A)

RS-485 Serial Port Baud Rates (programmable)

1.2k, 2.4k, 4.8k, 9.6k, 19.2k, 38.4k, 57.6k, 115.2k

Over-the-air baud rates (programmable)

-N 1200, 2000, 2400, 4.8k, 5142, 8K,9.6k

-W 1200, 2000, 2400, 4.8k, 8k, 9.6k, 19.2k

Full Spec Operating Temperature range

-30°C to +60°C

TX-RX and RX-TX turn-around time

<3mS

RF I/O Connector

BNC (Female), TNC (Female) optional

Addressing

Individual address: 65,536

Options:

Internal GPS, TDMA firmware

option

G

## Transmitter Specifications

RF Power Output 0.5W – 5W (programmable) based on the RF modem inside this product.

(Lower power options available)

RF Bandwidth Narrow, wide, or Freq. Hopping

Occupied Bandwidth per FCC

Frequency Stability Better than  $\pm 1.5$ ppm

See RF specification in the data sheets of the data radio used within the RV-M55-E product.

## Receiver Specifications

Typical RX Sensitivity (dBm): See the Data Radio data sheet.

Modulation	12.5kHz	25kHz	
MSK 9.6kbps		-114	
MSK 4.8kbps	-116	-117	
MSK 1.2kbps	-120	-121	
LoRa ISM			129dBm

IF bandwidth.....N: 12.5kHz

W: 25kHz

See RF specification in the data sheets of the data radio used within the RV-M55-E-Rbb product. -Rbb part number specifies the Radio Version

## Available in Module Form

For RF integration, the M6 2 watt Radio Modem Module is also available in the M55

The RV-M8 5 watt data radio is also usable within this M55-E Ethernet interface radio modem.



The M50 data radio is License Free in the 915MHz band, and can be used in this M55 product.

The M6 and M6 can have DC input up to 28V, and this RV-M55-E version has an internal 16V limiter. To be safe, this limiter will keep the RV-M55-E totally safe if volte input goes above 16V even up to 75V. If an error shots negative voltage in, it does not normally break this product because this limiter protects negative voltage also.

If your system ever needs changes to this design, let Raveon sales team know that, and Raveon can easily do that.

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