



# EMBEDDED MODULE WR-5200



## JOIN THE WAVE RELAY ECOSYSTEM

The Embedded Module is the most advanced, scalable, and efficient Mobile Ad Hoc Networking (MANET) device in the world, available in an integration-ready, SWaP-timized form factor. Integrate the Embedded Module into your products to unite UAVs, UGVs, and sensors on a single network. The Embedded Module features an HD video encoder and onboard computer, eliminating redundant equipment from your platform. The Embedded Module is compatible with Persistent System’s full line of Interchangeable Frequency Modules, allowing you to change frequencies to ensure compliance, future-proof your design, and protect your product from obsolescence.

### TRANSFORM YOUR SYSTEMS INTO NETWORK DEVICES

- Designed for integration into disparate unmanned systems and sensors
- Communicate further and faster than ever before
- Communication, computing, and video encoding all in a single device

### SWaP-TIMIZE YOUR UNMANNED SYSTEMS

- Consolidate your computing, video encoding, communications, and networking hardware
- Focus on what matters most: the mission, time on station, and payloads
- Streamlined integration

### ACHIEVE THE VISION

- Bring your unmanned platform into the Wave Relay® Ecosystem
- MPU5 users can now operate your platforms, watch your video feeds, and steer your cameras
- Take your unmanned systems to the next level by adding swarming, autonomy, and collaborative capabilities

### NO NDA REQUIRED

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# SPECIFICATIONS

## Physical

### Weight

3.2 oz.

### Main Board Dimensions

2.00 x 3.29 x 0.59 in.

## Computing

### Operating System

Wave Relay OS

### Processor

1 GHz Quad Core ARM

### RAM

2GB

### Storage

128GB Flash

## Environmental

### Operating Temperature

-40°C to +85°C

### Emissions

RE102

### MIL-STD-810G

Vibration

High Temperature (operational)

High Altitude (operational)

## I/O

### Interfaces

GPS

HDMI In

3G-SDI/Composite In

Control (Sleep, GPIO, Zeroize, 1PPS, GND)

RS-232 Serial

USB OTG

Ethernet

Audio In (Mic)

Audio Out (Speaker)

## MANET

### MANET

Wave Relay® MANET

Self-Forming/Healing

Peer-to-Peer

No Master Node

### Node Entry Time

<1 sec.

### Max. Number of Hops

No Limit

### Max. Number of Nodes

No Limit

### Max. Distance between Nodes

130 mi

## Networking

### Ethernet

10/100 Mbps

Integrated serial-to-Ethernet

### Integration and Extension

Seamless layer 2 network

Cloud Relay™ compatible

### Protocols

Advanced multicast algorithms

IPv4 and IPv6 compatible

Integrated DHCP server

USB RNDIS Host and Device

## Power

### Input

8 - 28 VDC

### Power Consumption

0.3A & 12V

## Security

### Crypto Modes

CTR-AES-256 Encryption

SHA-256 HMAC

### Hardware

Cryptographic Acceleration

Suite-B Algorithms

## Video

### Video Input

3G-SDI

Composite

HDMI

### Video Compression

H.264 Encoding and Decoding

Native Scaling

### Bit Rates

500 Kbps - 20 Mbps

### Frame Rates

6/10/15/24/29.97/30/59.94/60 fps

59.94/60 fps not available at 1080p

### Resolutions

240p

SD 480

SD 576 PAL

720p

1080p

### Network Protocols

UDP Multicast & Unicast (MPEG-2 Transport Stream)

RTP Multicast & Unicast

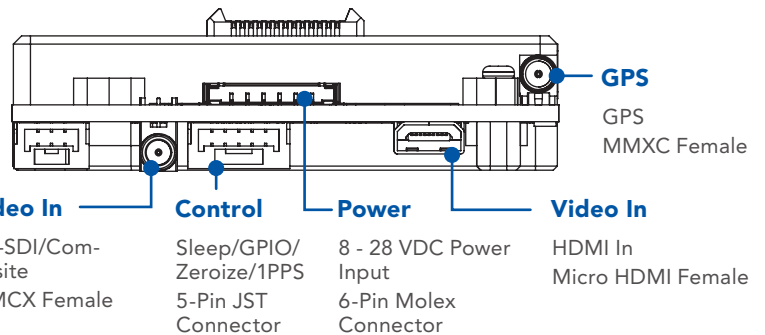
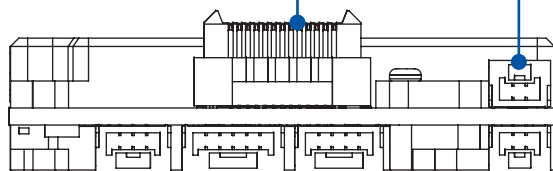
RTSP Unicast

## RF

L-, S-, and C- Band RF Modules available  
3x3 MIMO Technology  
6-10W Transmit Power

## Speaker

Audio Out  
2-Pin JST  
Connector



## Serial

RS-232  
3-Pin JST  
Connector

## USB OTG

USB OTG In/Out  
5-Pin JST  
Connector

## Ethernet

10/100 Ethernet  
In/Out  
4-Pin JST  
Connector

## Microphone

Audio In  
2-Pin JST  
Connector

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