HDMI VIDEO-IN

SERIAL (RS-232)

USB

CONTROL

ENET

3G-SDI VIDEO-IN

MIC

Embedded Module

The Embedded Module is the most advanced, scalable, and efficient Mobile Ad Hoc Networking (MANET) radio 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. Because the Embedded Module features an HD video encoder and onboard Android™ computer, eliminate 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.

ONE SOLUTION. INFINITE POSSIBILITIES.

PERSISTENT SYSTEMS

Specifications

Physical

Weight
91g

Main Board Dimensions
5.1 × 8.4 × 1.5 cm

Power

Input
8—30 V DC

Power Consumption
0.3 A & 12 V

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)

Android™ Computer

Operating System
Android™ 5.0 – Lollipop

Processor
1 GHz Quad Core ARM

RAM
2GB

Storage
128GB Flash

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

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

Security

Crypto Modes
CTR-AES-256 Encryption
SHA-256 HMAC

Hardware
Cryptographic Acceleration Suite-B Algorithms

MANET

MANET
Wave Relay®
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
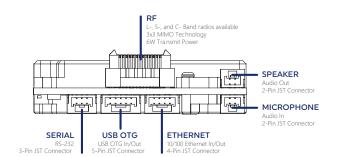130 mi

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Transform Your Systems into Network Devices

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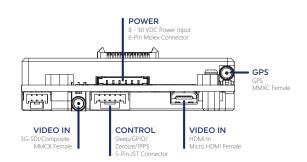- Communication, computing, and video encoding all in a single device

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 radio 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

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

SPEAKER
Audio Out
2-Pin JST Connector

MICROPHONE
Audio In
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

POWER
8 - 30 VDC Power Input
6-Pin Molex Connector

GPS
GPS
MMXC Female

VIDEO IN
3G-SDI/Composite
MMCX Female

CONTROL
Sleep/GPIO/
Zeroize/1PPS
5-Pin JST Connector

VIDEO IN
HDMI In
Micro HDMI Female

CISTECH SOLUTIONS

Quality
ISO 9001
SAI GLOBAL