



GVR5 (Ground Vehicle Radio 5)

Dual Band Wave Relay® MANET

Overview

The GVR5 provides simultaneous, dual-band, robust, low latency, and high-capacity networked communications among tracked and wheeled ground vehicles, and among ground vehicles and Wave Relay® MANET-equipped aircraft.

Use the Wave Relay® MANET's massively scalable network, with Cloud Relay™ and intelligent Radio-over-IP (RoIP), to rapidly task-organise vehicles, munitions, dismounts, and airborne assets. The GVR5 interoperates with the Wave Relay® MANET family of tactical networking devices.

- Simultaneous Dual Band Wave Relay® MANET (**Mobile Ad-Hoc Network**).
- Automatically routes communications over the best band depending on geography and RF congestion.
- Embedded Cloud Relay™ federates the GVR5 with 3rd Party Communications Systems, such as LTE and Wide Band SATCOM.
- Massive Network Scalability & Robust IP networking supports Rapid Task Organisation, Joint Operations, and Mobile Command & Control.
- Tracked and Wheeled Vehicle Ready.
- Ideal for manned-unmanned vehicle teaming and vehicle leader-follower operations.



Specifications

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| Dual Band Communication Options | Choose Any Two Frequency Bands C: 4430MHz to 5000MHz L: 1350MHz to 1390MHz S: 2200MHz to 2507MHz Selective RF Standby via front panel and software APIs. |
| 3x3 MIMO Antenna Options | Optimise communications range and penetration using the GVR5's alternative combinations of vertically and horizontally polarised antennas. Each antenna type comes with either wide or narrow vertical beam widths to support your unique communications preferences. |

Key features

- Simultaneous Dual Band Wave Relay® MANET
 - **WR-GVR5-SYS-01:** C-Band & L-Band
 - **WR-GVR5-SYS-02:** C-Band & S-Band
 - **WR-GVR5-SYS-03:** L-Band & S-Band
- Optimise communications range, data throughput, and penetration with the GVR5's 3x3 MIMO antennas with vertical and horizontal polarisations.
- Make any command and control service available, virtually, from anywhere in the network, using the GVR5's Internet Protocol differentiated services and efficient voice and video multicast.
- Manually or remotely enable/disable one or both RF bands for LPI/LPD or EMCON operations.
- The GVR5's embedded Cloud Relay™, in conjunction with the massively scalable Wave Relay® MANET, makes rarely available means of communicating, such as high capacity SATCOM and LTE, available to anyone in the network.
- The GVR5's on-board video encoder, efficient multicast technology, and IP differentiated services will ensure video renders everywhere it's needed, in time, and without over-loading the network.
- The GVR5 is wheeled and tracked vehicle-ready and has optional ballistic shock mounting for the harshest combat environments.

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| Network | IPv4/IPv6 with Differentiated Services. Advanced Wave Relay® MANET multicast algorithms. RTP Multicast & Unicast. RTSP Unicast. Layer 2 network connectivity. Cloud Relay™. Integrated DHCP server. |
| Security | FIPS 140-2 Certification. Integrated Hardware Cryptographic Acceleration. CTR-AES-256 Encryption. HMAC-SHA-256 Authentication & Integrity NSA Suite-B Algorithms. Cryptographically authenticated Over-the-Air Rekey and Key Zero. Front Panel Single Switch Zero. Add a HAIPE to use the radio on a Type 1. Black Core Network. |
| Video | 2 x 3G-SDI Input. H.264 Encoding and Decoding. Native Scaling. Bit Rates. 500 Kbps - 20 Mbps. 6/10/15/24/29.97/30/59.94/60 fps (59.94/60 fps not available at 1080p). |
| Processor | 2 x 1 GHz Quad Core ARM. |
| OS Support | Android™ 6.0 Marshmallow. |
| I/O | 2 x RJ-45 Enet. 2 x 3G-SDI Video. 2 x SMA GPS Antenna. 2 x RS-232. |
| Environment | MIL-STD-810. Temperature: Storage: -60°F to +160°F. Operating: -25°F to +125°F plus solar radiation 1120W/m2. Relative Humidity: 95% non-condensing from 86°F to 160°F. Altitude: Storage: -1,312ft to 50,000ft. Operating: -1312ft to 15,000ft. Other: Steam & Water Jet Cleaning, Blowing. Sand & Dust, Salt Fog, Fungus, Forging. Shock Pulse, Drop, Vibration, ESD, HEMP, NSL, NBC. Optional: ballistic shock mounts. |
| EMI | MIL-STD-461. CE102. CS101. CS114-116. RE-102. RE-103. |
| Power | Reverse Polarity Protection. Input Voltage Range: 20 to 33VDC. Starting Operation: Operates through 12VDC for 1sec (Initial engagement surge), 16VDC for 30sec (Cranking surge). Transient Disturbance: Operates through 250V for 70µs (Spike), 100V for 50ms (Surge). |
| Human Factor | MIL-STD-1472. |
| Safety | SEL Form 1183. |
| Dimensions | (W) 10.05" x (D) 9.96" x (H) 4.59" (Excluding connectors). |
| Max Weight (C/L) Radio | 9.5lbs. |



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 Steatite will work with our customers to gain a clear understanding of their

