Data Sheet

Hughes WS-2000 Mini

UAV BVLOS Communication Platform

Reliable, secure, and adaptive communications are both advantageous and mission critical in today's dynamic operational landscape. Hughes is proud to introduce the WS-2000, a breakthrough in global 4G/5G Beyond Visual Line of Sight (BVLOS) communications for Unmanned Aerial Vehicles (UAVs), a next-generation, compact, multi-network communications platform engineered for demanding operational environments. The WS-2000 is one of the many modem options powering the Hughes GUARDIAN (All Domain Communications) Service or as a vendor integrated communications channel.

KEY FEATURES AND TACTICAL ADVANTAGES

Innovative and Adaptable BVLOS Communications

Designed for integration into UAV platforms, controllers, and heads-up displays, our platform ensures global persistent connectivity across vast operational theaters.

Low Size, Weight, and Power (SWaP)

Optimized for tactical deployment, our platform delivers high performance with a compact footprint which is ideal for Group 1–3 UAVs and other SWaP-constrained platforms.

Extensible Resilient Comms Platform within a Low SWaP

Embed in UAVs to form on-board networking and communications backbone.

Hughes Warpspeed Mid-size Form Factor

- Embedded solution for small Unmanned Aircraft System (sUAS), handheld controllers, headsets, and more
- Low-cost entry, service enabler for Hughes GUARDIAN

Extended Functionality with Dual WAN Networking

- External ethernet interface for Wide Area Network (WAN) (ie. SATCOM) or Local Area Network (LAN) networking
- Supports WAN failover (break-before-make)
- Load Balancing*

Global 5G/4G Cellular Modem

- 5G Redcap at 200 Mbps downlink and 100 Mbps uplink
- 4G/LTE CAT4 Fallback



Hughes HG-2000, IP-43 Enclosure for the WS-2000

Secure Network Gateway

- Executes Hughes Router OS and embedded SNE for resilient connectivity
- Functionality — Switches between cellular and up to two additional comms channels
- Hughes GUARDIAN Secure Tunnel Backbone
- FIPS 140-3 Level 2 Trusted Platform Module

eSIM and Network Management

- Triple SIM on-board: eSIM + Dual 4FF Physical SIM
- Automatic Network Failover: SIM and WAN failover
- PACE and network route planning: Pre-provisions SIM and network rules prior to mission

Quick Deployment

- Zero touch provisioning and remote endpoint management*

Easy to Integrate

- USB, UART (MAVLINK) and Gigabit Ethernet (auto negotiate) interfaces
- No custom kernel drivers needed. Supports Windows/Linux out of the box
- Built-in MAVLink Router for framing and routing MAVLink between UAS and network endpoints
- Available with (HG-2000) or without chassis (WS-2000)

**Future Roadmap Features*

Hughes WS-2000 Mini

Technical Specifications

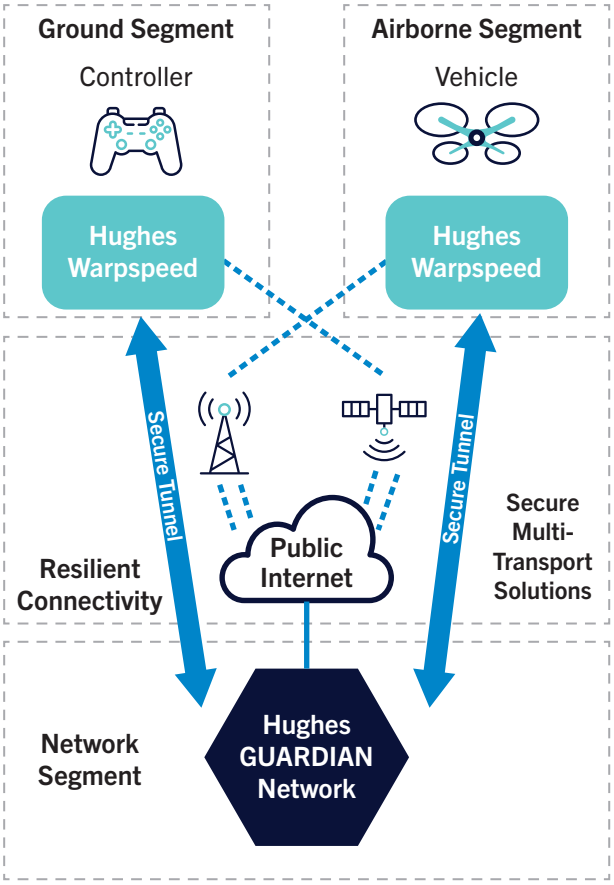
Processor Subsystem	1x ARM A7 @ 1.7 GHz 1 GB DDR/1 GB NAND
Secure Network Gateway	Hughes GUARDIAN Secure Tunnel Backbone FIPS 140-3 Level 2 TPM
# SIM	Dual Nano-SIM (4FF) + eSIM
Antenna/MIMO	MIMO 2x2 (2x MHF.4)
GNSS	L1/L5 (MHF.4)
External Interfaces	USB 3.0/2.0 OTG (JST-GH) UART (RS-232 option) (JST-GH) 10/100/1000 Ethernet (JST-GH) 2x GPIO (JST-GH)
Power Input	9V-30V DC input (4-pin JST-GH)
Operational Temperature	-40 °C to +85 °C
Weight	36g (WS-2000) 105g (HG-2000)
Dimensions (W x L x D)	50mm x 70mm x 9mm (WS-2000) 54mm x 87mm x 17mm (HG-2000)

Radio Capabilities

Cellular Radio Access	3GPP Rel 17, 5G Redcap 4G/LTE CAT4 Fallback
Cellular Bands	**5G FR1:** n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n77/n78/n79 **4G LTE:** B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B30/B34/B38/B39/B40/B41/B42/B43/B48(CBRS)/B66/B70/B71/B106
Cellular Throughput	5G Sub.6 FDD and TDD operation in 5G NR stand-alone • DL: 223 Mbps • UL: 123 Mbps LTE Cat 4 • DL: 200 Mbps • UL: 105 Mbps
LTE/5G Transmit Power	23 dBm (Power Class 3) 26 dBm (Power Class 2 in B41/n41)



Hughes WS-2000 with
Hughes WS-1000 “NANO” embedded
50 x 70mm



For more information, visit
www.hughes.com

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