



HSM-2051 HIGH SPEED MODEM

MULTIFUNCTIONAL, RELIABLE CONNECTIVITY

High-performance modem, with a variety of waveforms to meet your needs

As technology advances and more data is transferred, the quality and capability of modems become increasingly important. Our latest generation Collins Aerospace HSM-2051 high speed modem provides state-of-the-art digital services across HF/VHF/UHF/WBHF channels. Intended for use in both military and commercial applications, the HSM-2051 offers the highest performance currently available with RF channels up to 48kHz.

HF/VHF/UHF modem waveforms

A world class modem, our HSM-2051 supports most major HF standards, with rates up to 9.6 kbps skywave/ 16 kbps surface wave in 3kHz (SSB) and 19.2 kbps skywave/32 kbps surface wave in 6 kHz (ISB). In V/UHF, user data rates in a single 40 kHz channel go up to 153.6 kbps (coded) leveraging our proprietary autobaud capable waveforms.

WBHF support

In a WBHF mode, the HSM-2051 supports the MIL-STD-188-110D Appendix D waveform, providing data rates ranging from 75 bps – 16 kbps at 3 kHz through to 1.2 kbps – 240 kbps at 48 kHz.

Get in touch and we'll help ensure you have access to flexible, high-performance connectivity when you need it, across a variety of applications.



KEY FEATURES & BENEFITS

- MIL-STD-188-110D Appendix D for wideband HF support
- STANAG 4691 Annex B Compliant
- Remote control GUI via Ethernet
- Modem probe mode
- Load/save multiple user configurations
- Synchronous, asynchronous, and Ethernet interfaces
- Remote controllable across any standard IP network
- Comprehensive signal display (including BER and impulse response)
- Internal/external loopback provides install test at unit or system level
- Includes control and data software development kit (SDK) to enable application developers to interface their products to the modem using socket connections

Troubleshoot using modem probe mode

The HSM-2051 includes a modem probe mode in which the signal path is characterized to determine the signal to noise ratio (SNR), available bandwidth, radio automatic level control (ALC) and automatic gain control (AGC). What's more, it can detect distortion from non-linear effects, aiding in installation and troubleshooting.

SPECIFICATIONS

Functional Interfaces

Data	Ethernet, asynchronous and synchronous serial (from 75 bps to 240 kbps)
Control	Locally with control LCD and keypad or embedded graphical user interface (GUI) with mouse and monitor (not included) Remotely via Windows application over IP
Audio	Input/output: 600 Ohm balanced +10 to -30 dBm BW: 3kHz - 48 kHz
Keyline	Relay-operated contact closure

Waveforms

MIL-STD-188-110D	With appendices B, C, D (WBHF) and F
STANAG 4285	
STANAG 4415	
STANAG 4529	
STANAG 4539	
STANAG 4691 ANNEX B	16 to 96 kbps (coded); 25 kHz
V/UHF 40K	4.8 to 153.6 kbps (coded); 40 kHz
V/UHF 20K	2.4 to 76.8 kbps (coded); 21.6 kHz
V/UHF 12K5	2.4 to 48 kbps (coded); 12.5 kHz
Commercial Airborne 1800	
Commercial Maritime 1440	
Programmable FSK	
VHDR	Very high data rate HF waveform up to 16 kbps in 3 kHz channel

Other waveforms can be added in the future via software updates to the unit.

Top user data rates

Channel (kHz)	Coded rate (kbps)
3	9.6 ¹ / 16 ²
6 (ISB)	19.2 ¹ / 32 ²
8.33	32
12.5	48
21.6	76.8
25	96
40	153.6
48	240

¹Sky wave. ²Surface wave.

Channel simulator

Another feature of the HSM-2051 is a two-channel, real-time, ionospheric channel simulator that simulates the effect of an HF/WBHF channel. Enhancing the Watterson HF channel model, our channel simulator provides traditional Additive White Gaussian Noise (AWGN) and CCIR Recommendation 322 noise.

Physical Interfaces

Ethernet	Dual 10/100/1000 Mbps RJ45
Serial	Single 44-pin synchronous/asynchronous (DCE): RS-232, RS-422 and RS-530 (custom interface cables required) 9-pin asynchronous RS-232 COM port interface
Audio output	25-pin connector with 600 Ohm balanced audio (2) and keyline (2)
Video	SVGA/HDMI output for embedded GUI
Keyboard/mouse	USB-A

Environmental

Operating temperature	0° C to 50° C
Storage temperature	-40° C to 70° C
Relative humidity	0 to 95%, non-condensing
Altitude	1,000 ft below sea level to 15,000 ft above sea level
Shock	MIL-STD-810H, Method 516.8, Section 4.6.2 functional shock, Procedure I
Vibration	MIL-STD-810H, Method 528.1, Section 5.1.2.4 Discrete Frequency Test
Compliance	CE, UKCA and FCC (Class A, Part 15) compliant
Power	100-240V AC, 50/60 Hz, 0.9A
Size	1U aluminum half rack-mount chassis (mounting kits available for both dual and single unit mount) 8.75" W x 1.73" H x 17.25" D
Weight	Approximately 7 lbs.

Specifications subject to change without notice.



COLLINS AEROSPACE

800.321.2223 | +1.319.295.5100

fax: +1.319.378.1172

learnmore@collins.com

collinsaerospace.com