

GEMINI3[™]

MOBILE DATA RADIO MODEM

UHF, 700 MHz or 800 MHz



Capitalizing on over 20 years of experience designing mission critical wireless data equipment, Dataradio proudly presents the GeminiG3. This native IP mobile data modem operates at 128 kbps over 50 KHz channels at 700 MHz or 64 kbps in 25 kHz channels over 800 MHz and UHF channels using proven FM technology.

PERFORMANCE In addition to unprecedented speed, the GeminiG3 radio modem provides exceptional adjacent channel protection. The Gemini G3 mobile automatically adapts to base station data speeds for maximum network flexibility. The GeminiG3 mobile can be programmed with up to 32 channels and automatically change channels as it roams seamlessly through the service area. With Parallel Decode[®], multi-path problems are almost eliminated. A highly efficient air protocol assures enough data throughput to support video from a patrol car.

EASILY CONFIGURE AND MANAGE YOUR NETWORK The GeminiG3 radio modem embedded web server provides access to status and configuration information from any web browser, either locally or remotely. For ease of maintenance or upgrades the entire unit, including the operating system, can be reprogrammed over the air. AES 128-bit encryption ensures that both the data and the network remain secure.

GET THE MOST OUT OF YOUR AVAILABLE BANDWIDTH To help make the most efficient use of your network, the GeminiG3 mobile has "stateless" over-the-air data compression and protocol reduction. Stateless compression means that it works efficiently on both TCP/IP and UDP packets without needing a dedicated server or gateway.

KNOW THE EXACT LOCATION OF EACH VEHICLE with an internal 12-channel WAAS-capable GPS receiver designed for improved accuracy, integrity, and availability of the basic GPS signals, Dataradio's out-of-band signaling and autonomous AVL allow the GeminiG3 mobile to transmit GPS position reports with no adverse effect on system throughput.

EASILY INTEGRATE PERIPHERALS The GeminiG3 radio modem uses a standard Ethernet 10/100 BaseT interface with automatic MDIX so it's plug and play with any Ethernet device. In addition, the GeminiG3 mobile provides two RS-232 ports configured as terminal servers and a built-in router. Additional devices can be connected to the network by using an in-car hub or switch. This makes adding other peripherals, such as a camera, a snap.

CONVENIENT NETWORK MONITORING On and offline diagnostics are standard in the Gemini platform to give you real-time network performance information. Diagnostics, combined with our optional Network Management System (NMS), give data network administrators proactive tools to effectively collect and analyze diagnostic information providing an effective means to assure the reliability of your data network.

BUILT FOR THE FUTURE The GeminiG3 radio modem has plenty of horsepower for today's applications, and with 4 megabytes of flash memory, there is plenty of head-room for features and enhancements to meet future requirements. To ensure the value of your investment, the GeminiG3 mobile comes with a two-year warranty with optional extended warranty plans available.

System Diagram



GEMINIG3 SPECIFICATIONS

GENERAL	UHF	700 MHz	800 MHz
Frequency Range (MHz)	403 - 512 Rx/Tx	792 - 803 Tx, 762 - 773 Rx	806 - 824 Tx, 851-869 MHz Rx
Emission Designators	17K0F1D (all bit rates)	28K0F1D (all bit rates)	14K1F1D (64 & 48 kbps), 15K6F1D (32 kbps)
Regulatory Designators	FCC Part 90 / IC RSS-119	FCC Part 90, 27	FCC Part 90 / IC RSS-119
FCC ID/Industry Canada	EOTAPDA/773195525A	EOTGPD7	EOTGPDB/773A-773195643A
Number of Channels	32 internally stored, over-the-air programmable		
Modes of Operation	Half-Duplex		
Frequency Stability	1.0 ppm		
Data Encryption	AES 128-bit		
Power Supply Voltage	13.6 VDC nominal (negative ground)		
Size	6.0" W x 2.0" H x 7.1" D		
Environmental	MIL-810E shock and vibration		
Operating Temperature Range	-30° C to +60° C		
Antenna Connector	1 primary female Tx/Rx, 1 auxiliary female Rx		
GPS Connector	SMA		
User Interface	Ethernet RJ45 Auto-MDIX 10-100/T with LED status indicators Dual RS-232 DB-9F Serial ports configured as Terminal Servers USB Port (future use)		

MODEM/NETWORK

Forward Error Correction	Hypercode		
Addressability	Native TCP/IP		
Encryption	AES 128-bit		
Protocols	Dataradio E-DBA with OOB AAVL support Ethernet IEEE 802.3, (ICMP, IGMP, TCP, UDP) IP Fragmentation Address Resolution Protocol (ARP) IP directed broadcast, IP limited broadcast, IP multicast relay DHCP client and server Dynamic Routing (RIPv2), Network Address Translation (NAT)		
Data Rate	64, 48 or 32 kbps	128, 96 or 64 kbps	64, 48, or 32 kbps

RECEIVER

Rx Sensitivity (for 1% Packet Error Rate [PER] with Parallel Decode at carrier frequency)	-98 dBm @ 64 kbps -104 dBm @ 48 kbps -108 dBm @ 43.2 kbps -110 dBm @ 32 kbps	-94 dBm @ 128 kbps -100 dBm @ 96 kbps -106 dBm @ 64 kbps	-95 dBm @ 64 kbps -101 dBm @ 48 kbps -105 dBm @ 43.2 kbps -107 dBm @ 32 kbps
Selectivity	77 dB typical, 75 dB minimum @ 25 kHz	68 dB typical, 65 dB minimum @ 50 kHz	77 dB typical, 75 dB minimum @ 25 kHz
Spurious Response	>80 dB minimum		
Intermodulation	80 dB typical, 75 dB minimum	78 dB typical, 75 dB minimum	80 dB typical, 75 dB minimum
Receive Frequency Range	403-512 (FCC Part 90)	766-773 MHz (FCC Part 90), 762-764 MHz (FCC Part 27)	851-869 MHz (FCC Part 90)

TRANSMITTER

Transmit Frequency Range	403-512 (FCC Part 90)	796-803 MHz (FCC Part 90) 792-794 MHz (FCC Part 27)	806-824 MHz (FCC Part 90)
Measurement Method	EIA/TIA (FCC approval), RSP-110 (IC approval)	EIA/TIA (FCC approval)	EIA/TIA (FCC approval), RSP-110 (IC approval)
Power Output	10-40 W, adjustable in four steps	10-25 W, adjustable in four steps	10-35 W, adjustable in four steps
Spurious Emissions	>80 dBc		
Attack Time	<10 mS with less than 1 mS variation		
FM Hum and Noise	-45 dB max (25 kHz)	-50 dB max (50 kHz)	-45 dB max (25 kHz)