GEMINI G3™ 700

128 KBPS MOBILE DATA RADIOMODEM

700 MHz

Capitalizing on over 20 years of experience designing mission critical wireless data equipment, Dataradio proudly presents the Gemini G3 700. This native IP mobile data modem operates at 128 kilobits per second in 50 KHz channels using proven FM technology.

PERFORMANCE In addition to unprecedented speed, the Gemini G3 700 radiomodem provides exceptional adjacent channel protection. 96 and 64 kilobit rates are built in for lower density areas; coverage at 128K is great, at 96K outstanding, and at 64K phenomenal. The Gemini G3 mobile automatically adapts to base station data speeds for maximum network flexibility. The Gemini G3 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 user data throughput of up to 64 kilobits per second - enough to support video from a patrol car.

EASILY CONFIGURE AND MANAGE YOUR NETWORK The Gemini G3 radiomodem 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.
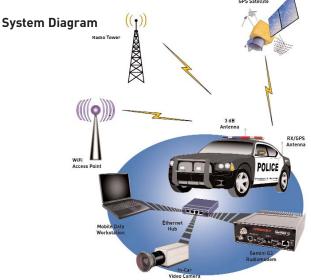
GET THE MOST OUT OF YOUR AVAILABLE BANDWIDTH To help make the most efficient use of your network, the Gemini G3 mobile has "stateless" over-the-air data compression and protocol reduction. Stateless compression means that it works efficiently on both TCP/IP and UDP packets without needing a dedicated 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 Gemini G3 mobile to transmit GPS position reports with no adverse effect on system throughput.

EASILY INTEGRATE PERIPHERALS The Gemini G3 radiomodem uses a standard Ethernet 10/100 BaseT interface with automatic MDIX so it's plug and play with any Ethernet device and IP v4 application. In addition, the Gemini G3 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 Gemini G3 radiomodem 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 Gemini G3 mobile comes with a two-year warranty with optional extended warranty plans available.

System Diagram

GEMINI G3 700 SPECIFICATIONS

GENERAL

Frequency Range	792 - 803 TX
Emission Designators	28K0F1D
Regulatory Designators	FCC Part 90, 27
FCC ID	EOTGPD7
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	IPv4
Encryption	AES 128-bit
Protocols	Dataradio E-DBA with OOB AAVL support Ethernet IEEE 802.3, (ICMP, IGMP, TCP, UDP, IPSec) IP Fragmentation Address Resolution Protocol (ARP) IP directed broadcast, IP limited broadcast IP multicast relay DHCP client and server Network Address Translation (NAT) Dynamic Routing (RIPv2)
Data Rate	128, 96 or 64 kbps,

RECEIVER

Rx Sensitivity (for 1% Packet Error Rate [PER] with Parallel Decode™ at carrier frequency)	-95 dBm @ 128 kbps -102 dBm @ 96 kbps -108 dBm @ 64 kbps
Selectivity	68 dB, 65 dB minimum @ 50 kHz
Spurious Response	80 dB minimum
Intermodulation	78 dB typical, 75 dB minimum
Receive Frequency Range	766-773 MHz (FCC Part 90), 762-764 MHz (FCC Part 27)

TRANSMITTER

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