

GEMINI3™ 700

128 Kbps MOBILE DATA RADIO MODEM

700 MHz



Capitalizing on over 20 years of experience designing mission critical wireless data equipment, Dataradio proudly presents the Gemini3 700. This native IP mobile data modem operates at 128 kilobits per second in 50 KHz channels using proven FM technology.

PERFORMANCE The Gemini3 700 provides 128 Kbps in 50 kHz channels with 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. Gemini3 700 automatically adapts to the speed of the base station for maximum network flexibility. With Parallel Decode™, multi-path problems are almost eliminated. Our data sensitivity specifications are rated for mobiles in-motion! This highly efficient air protocol assures user data throughput of 64 kilobits per second - enough to support video from a patrol car.

EASILY CONFIGURE AND MANAGE YOUR NETWORK The Gemini3 700 embedded web server provides access to status and configuration information from any browser-equipped computer, either locally or remotely. For ease of maintenance or upgrades the entire unit, including the operating system, can be re-programmed 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 available bandwidth, Gemini 3 700 has stateless 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.

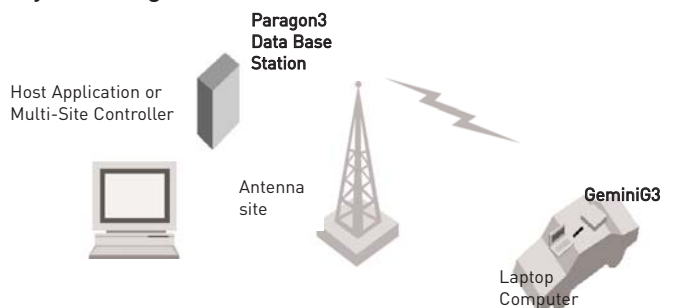
KNOW THE EXACT LOCATION OF EACH VEHICLE With an internal 12-channel WAAS-capable GPS receiver designed for improved accuracy, integrity, and availability of the basic GPS signals. Dataradio's out-of-band signaling and autonomous AVL allow the Gemini3 700 to transmit GPS position reports with no adverse effect on system throughput

PLUG AND PLAY PERIPHERALS The Gemini3 700 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 Gemini3 700 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 Gemini3 700 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 Gemini3 comes with a 2- 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	(2) Mini UHF
GPS Connector	SMA
User Interface	(1) 10/100 Base-T Ethernet RJ-45 (1) USB 2.0 B-type receptacle (2) DB-9 Serial Interfaces configured as terminal servers

MODEM/NETWORK

Forward Error Correction	Hypercube 14
Addressability	IPv4
Encryption	AES 128-bit
Rx Sensitivity	1% (PER)
Protocol	Dataradio EDDBA with OOB AAVL support
Packet Error Rate with Parallel Decode, in motion, at carrier frequency	-95 dBm at 128k bit/sec

RECEIVER

Selectivity	68 dB, 65 dB minimum @ 50 kHz
Spurious Response	80 dB
Intermodulation	78 dB typical, 75 dB minimum
Tx-Rx Channel Spacing	(any) 5 MHz typical
FM Hum and Noise	-50 dB max (50 kHz)
Rx Sensitivity (guaranteed specification including allowance for drift at base and mobile) for 1% Packet Error Rate (PER) with a mobile in motion with Parallel Decode at carrier frequency	-95 dBm @ 128 kbps -102 dBm @ 96 kbps -108 dBm @ 64 kbps

TRANSMITTER

Measurement Method	EIA (FCC approval)
Power Output	10-25 W, adjustable
Spurious Emissions	80 dBc
Attack Time	<10 mS with less than 1 mS variation
FM Hum and Noise	-45 dB max (25 kHz)