

## Gemini G3 ADB

Agile Dual-Band Mobile Data Modem for Private Networks



### Key Features

- Parallel Decode with intelligent combining dual receivers
- Highly sophisticated and powerful HyperCode forward error correction
- Base hunt mechanism scans and measures RSSI
- Integrated GPS
- Triple IF filters
- On-line and off-line diagnostics
- AES 128-bit data encryption

### Key Benefits

- Provides added decode sensitivity in multi-path and fading environments
- Maintains connectivity and throughput while in motion
- Provides seamless roaming between bases
- Supplies location info for AVL and for local mapping
- Supports a mix of channel bandwidth
- For real-time network performance statistics
- Additional cyber security for the data and the network

The Dataradio Gemini G3 ADB operates in the private licensed 700 and 800 MHz spectrum. Designed specifically for government, public safety agencies and public utilities, this agile dual band (ADB) model integrates the necessary functionality for data-only vehicular installations.

The ADB combines 700 and 800/NPSPAC in a single unit that offers seamless roaming across any combination of these channels. If you planned to migrate to the 700 MHz band or whether your network is optimized at 700 or 800 MHz band, the ADB will ease your planning by simply roaming automatically from one band to another, without manual intervention.

Our patented Parallel-Decode technology, featuring dual receivers, and the use of HyperCode forward error correction, allow for greatest sensitivity especially in multi-path and fading environments. Equipped with a 12-channel GPS receiver, the Gemini G3 ADB can determine the position, speed and direction of the vehicle. This can then be reported on-board the vehicle and/or to a remote dispatcher.

Embedded web server provides browser access for status and configuration of network parameters. Since the unit firmware and reconfigurations can be reprogrammed over-the-air, maintenance and upgrades are greatly facilitated. Moreover, the ADB supports TIA-102 (P-25) data for use on nationwide data interoperability channels per FCC 90.548.

The Gemini G3 ADB comes with a two-year warranty. Extended warranty plans are available.

# Gemini G3 ADB Specifications

## General

Frequency Range

	700 MHz	800 MHz	
	FCC	FCC	IC
TX	796 – 803	809 – 824	806 – 821
RX	766 – 773	854 – 869	851 – 866

Channel Bandwidth

12.5, 25 and 50 KHz for 700 MHz, NPSPAC and 25 KHz for 800 MHz

TX/RX Separation

30 MHz for 700 MHz and 45 MHz for 800 MHz

Frequency Increment

6.25 KHz

Frequency Tolerance

± 1.0 ppm (± 0.4 ppm with AFC, Paragon4 base station required)

Mode

Half-Duplex

Receiver

	700 MHz		800 MHz	
	25 KHz	50 KHz	NPSPAC	25 KHz
Adjacent Channel Rejection (dB)	65	65	65	70
Spurious Response (dB)	>75			

Receiver Sensitivity

Data Rate (Kbps)	700 MHz			800 MHz	
	12.5 KHz†	25 KHz†	50 KHz	NPSPAC	25 KHz
16	-107	–	–	-115	–
24	-101	–	–	-109	–
32	-95	-108	–	-103	-108
43.2	–	-104	–	–	-104
48	–	-100	–	–	-100
64	–	-93	-104	–	-94
96	–	–	-99	–	–
128	–	–	-93	–	–

†Preliminary values, subject to change. All values in the table are expressed in dBm.

Transmitter

	700 MHz	800 MHz
Output Power (W)	10 to 30	10 to 35
Spurious (dB)	> 75	

Number of Channels

32 Internally Stored (Over the Air Programmable)

Supported Protocols

Ethernet/IP (Any protocol running over IP, such as ICMP, IGMP, TCP, UDP, SNMP, etc.), IP Fragmentation, ARP, IP Directed Broadcast, IP Limited Broadcast, Multicast, DHCP Server, NAT, RIPv2

Management

HTTP embedded web server for setup and help, SNMP

## Physical

GPS Connector

SMA

Ethernet Host Connector

10/100 BaseT auto-MDIX, RJ-45

Serial Interfaces

Dual EIA-232F DE9 Female DCE (300 to 115,200 bps)

Antenna Connector

Dual TNC Female

Supply Voltage

10.9 to 16.3 VDC (13.6 Nominal), Negative Ground

Display (3 Bi-Colour status LEDs)

PWR/PGM, TX/RX, LNK/ACT

Mechanical Dimensions

6.0" x 2.0" x 7.1" (15.2 x 5.1 x 18.0 cm)

Weight

4.5 lbs (2.04 kg)

Circuit Protection

15 Amp External Fuse

Chassis

Rugged Die-Cast Aluminum

## Environmental

Operating Temperature

-22 to +140 °F (-30 to +60 °C)

Storage Temperature

-22 to +140 °F (-30 to +60 °C)

Humidity

95% at 40 °C (104 °F) Non-Condensing

Vibration

MIL 810E, Method 514.4, Procedure I (10)

Shock

MIL 810E, Method 516.4, Procedures I, VI

EMI

FCC Part 15-B

## Agency Approvals

FCC (EOTGPDB), Industry Canada (773A-EOTGPDB), UL (46A3)

