

PARAGON3™ 700

700 MHz, 128 kbps 50 khz Base Station Controller



WIDEBAND DATA AT 700 MHZ IS HERE! The Paragon3 700 gets the most from your network in terms of both speed and coverage delivering 128 kbps in a 50 kHz 700 MHz wideband channel. With the new Paragon3, you can now choose between 128 kbps for high urban areas and have good coverage, or 96 kbps for suburban areas and get great coverage, or 64 kbps for rural areas and have outstanding coverage from you base station controller. Network administrators using GeminiG3 mobiles will be amazed at how they can adapt the speeds of their base station controllers based on the needs of the area. Within their network, GeminiG3 mobiles automatically adapt to the speed of the base station controller encountered. Adjustments are made completely automatic when roaming from high to low-density areas, and vice versa.

NO PROPRIETARY NETWORK INFRASTRUCTURE REQUIRED The Paragon3 provides an open architecture that makes the task of implementing the base station controller much easier than in the past. Each base station controller comes equipped with a standard "off-the-shelf" IP router with dual Ethernet 10/100T interfaces, replacing the need for proprietary controllers and equipment. You say you need a fault tolerant network? It's as easy as adding a second router, which can be located anywhere within your network.

REMOTEY MANAGE YOUR RF NETWORK The Paragon3 can be completely reprogrammed remotely through your LAN and back-haul lines. Most of your network maintenance can be carried out from a single location - no need to actually visit each location to make changes. A real-time operating system and flash file system make upgrading seamless and hassle free.

Adding an optional Network Management system lets you take full advantage of both offline and online diagnostics - available in the built-in Base Station Monitor, which provides both performance and health status network information.

INCREASE NETWORK ACCESSIBILITY Dataradio's patented Parallel Decode™ technology uses a space-diversity, smart combining receiver system to eliminate multi-path fading problems. With Parallel Decode™ technology, network administrators will notice an increase in RF network performance by a minimum of 10 dB, which is equivalent to increasing the output power of your mobile unit by a factor of 10 - no need to add 15-20 dB fade margin to ensure adequate coverage. The end result is a significant boost in your wireless network performance and double the effective wireless network coverage area.

INTEROPERATION OR INTEROPERABILITY Interoperation and interoperability can be accomplished using any application that is IP v4 compliant. It simply plugs right in! The modular design of the Paragon3 700 base station gives you the flexibility to expand your system to include other public safety agencies based within your community or with surrounding communities. Due to very tight control of the Paragon3's transmitted signal, unbound network expansion can be accomplished using only four channels.

NETWORK SECURITY The Paragon3 utilizes AES 128-bit encryption to ensure your network data is secure. Radius Authentication helps minimize the chore of managing user access. System data is transferred securely over-the-air to keep mission-critical information safe from unwanted intrusion.

GET THE MOST OF YOUR AVAILABLE BANDWIDTH To help make the most efficient use of your available bandwidth, the Paragon3 700 utilizes "stateless" data compression and protocol reduction. Why "stateless" data compression? Stateless data compression can compress both UDP and TCP packets transparently and with minimal effort. The gains are often enough for real-time video using a simple web cam.

The Paragon3 modem control unit features our most powerful modem ever - capable of handling over 900 million instructions per second. With 16 megabytes of flash memory and plenty of horsepower to spare, you'll get a unit that can grow as your future needs grow.

PARAGON3 700 SPECIFICATIONS

GENERAL

Frequency Range (MHz)	766-773 MHz (Part 90), 762-764 MHz (Part 27)
Cabinet Size	22.06" W x 75.82" H (without leveling feet) x 27.06" D
Frequency Stability	1.0 ppm
Operating Voltage/ Current Consumption	120 VAC / 6 A max, 60 Hz
Tx Current Consumption	24A DC max. @13.8 VDC
Channel Bandwidth	50 kHz
Operating Temperature Range	-22°F to +140°F / -30°C to +60°C
User Interface	Dual Ethernet 10-100/T with RJ45 and LED status indicators Dual RS-232 Serial ports with female DB-9 configured as Terminal Servers USB Port IP V4 Auto MDIX and built-in router

RECEIVER

Selectivity (typical)	75 dB @ 50 kHz
Intermodulation (typical)	80 dB
Spurious Emissions - conducted	transmit: -53 dBm to 1 GHz / -17 dBm to 4 GHz standby: -57 dBm to 1 GHz / -47 dBm to 4 GHz
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

Rated Continuous RF Power	50 watts max. (adjustable from 12.5 to 50 W)
Spurious Emissions: -transmit -standby	-40 dBc minimum @ 100 kHz
Tx Sideband Noise	-65 dBc @ 50 kHz
FM Hum and Noise -EIA603	-45 dB (300 Hz to 3 kHz) @ 50 kHz (EIA)
VSWR Stability	2:1 mismatch
Transmitter Sideband Noise	-80 dBc @ 50 kHz

System Diagram

