

# xMax® BSN250 Base Station

## *Delivering Carrier-Class Cognitive Radio Networks*

The xMax BSN250 is a high-capacity, all-IP base station that employs cognitive networking and software-defined radio (SDR) technology to deliver unprecedented scalability, reliability and performance while minimizing total operating costs (TCO). This three-sector, 252 simultaneous-call capable base station communicates with xMax handsets and modems (future) using the license-free ISM 900MHz band.

The BSN250 base station has been engineered to deliver exceptional operational efficiencies and capabilities, enabling the deployment of networks with minimized CAPEX and OPEX. By helping reduce total network costs, the BSN250 allows carriers to enhance revenue streams and meet the exploding demand for mobile services – at a lower cost than competing cellular technologies.

Incorporating xG's high-performance air interface technology, the BSN250 is preconfigured with all software required to support robust connectivity to and from xMax mobile and fixed devices.

By design, the BSN250 allows for easy capacity upgrades to meet increased traffic demands.. The BSN250 also delivers the flexibility and features required by advanced mobile services. Deployment and operations are supported by sophisticated carrier-class Network Management System software (xMonitor) and deployment/drive tools (xDrive) to ensure optimized and reliable network operations.

The BSN250 Base Station is part of the comprehensive, all-IP xMax system infrastructure that includes a line of base stations, switching centers, handsets and management tools. xMax networks are powered by xG's patented mobile VoIP system technology and operate using low-cost internet-based infrastructure, not outdated and expensive circuit-switching gear used by legacy cellular networks. This allows carriers to deploy networks that are cheaper to build, quicker to roll out, and easier to maintain, while still maintaining 100% interoperability with existing telephone and cellular networks. The result is increased cash flow, better margins and lower network TCO.



## **Key Features**

- *Provides access to wireless mobile VoIP and fixed data services (with future software upgrade)*
- *IP network-based, Internet friendly operation and connectivity*
- *In-place remote software upgrades, modular hardware design*
- *18 independent high performance radios provide maximum coverage, capacity and reliability*
- *High performance MAC layer, specifically designed for VoIP*
- *Layer 2 support, layer 3/ layer 4 capable*
- *Up to 10,000 served customers*
- *Up to 254 simultaneous calls per 3 sector base station*
- *Authentication (future update)*
- *Advanced QoS and Mobility (see details on reverse side)*

# xMax® BSN250

## Technical Specifications

### AIR-INTERFACE

- 3 sectors, maximum 6 channels per sector, capable of 1Mbps line-rate (18Mbps total)
- All channels in the 902 – 928 MHz unlicensed spectrum
- TX power per channel: +30dBm (1Watt) with automatic compensation for coax length and dynamic power control
- RX sensitivity per channel: -100dBm
- High performance MAC layer, specifically designed for mobile VoIP
- Standards compatible mobile optimized SIP signaling

### ADVANCED QoS AND MOBILITY

- Guaranteed latency of 30ms / critical for carrier-quality VoIP calling
- High efficiency, very low overhead proprietary communications signaling
- Make-before-break cell handoff for uninterrupted calls during roaming
- No DHCP latency for fast roaming between cells and networks
- Interference-avoiding cognitive radio-driven smart channel selection, even during calls

### TRAFFIC CAPACITY

- Voice traffic capacity: 252 simultaneous calls (higher capacity via future SW upgrades)
- Fixed data modems: 480 modems (with future SW upgrade)

### OTHER

- Network interface: 1x 10/100/1G per IEEE 802.3i/u/z (copper Ethernet), with support of IEEE 802.1p for COS
- Remote network management and monitoring: xMonitor over the IP network
- Remote software updates
- Local craft terminal: serial port and command line interface, web-server over Ethernet/IP
- GPS antenna port
- Environment: indoor operating temp: 32 to 104°F (0 to 40°C); humidity: 10 to 90%, non-condensing; storage temp: -4 to 149°F (-20 to 65°C)
- HW installation: 19" rack; 15U combined height for all 6 units (3 filter units, 1 RF unit, 1 control unit, 1 power unit)
- Power: 110VAC; 60Hz
- Power Consumption: 12.25Amp @ 110Vac (full load)

### CERTIFICATION

Complies with U.S. Federal Communications Commission (FCC), Code of Federal Regulations (CFR), Title 47 - Telecommunication, FCC Part 15 Subpart B- Class A Requirements, CSA, UL.

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BSN250-0610



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