

BelAir300 Converged Multi-service Wireless Node

BelAir Networks offers the only complete family of wireless mesh products. This comprehensive portfolio delivers unprecedented flexibility in the design and future-proof growth of your wireless cellular and mesh network. It supports a full spectrum of coverage options from high-speed Internet access and other data services through to high capacity, high performance networking that addresses a full mix of cellular, video, wireline-quality voice, tiered business services and backhaul.

The BelAir300 Converged Multi-service Wireless Node is the first and only solution able to support GSM Cellular, Wi-Fi, WiMAX, and backhaul services in a compact, integrated package, and the only solution optimized to deliver carrier-grade voice services. By incorporating up to two 1800 or 1900 MHz IP-based GSM EDGE-enabled picocells within its industry-leading wireless mesh solution, BelAir has again taken a leadership position and delivered the most compact, flexible and cost effective solution for wireless carriers.

The BelAir300 is a six-radio platform encased in a small, environmentally hardened outdoor package, and available in multiple configurations. It can be used to build cellular and wireless mesh networks throughout cities and across campuses. Deploy it as a standalone device, or, through multiple point to point, point to multipoint, or multipoint to multipoint connectivity, as part of a larger mesh comprised of other BelAir300 nodes, or any combination of BelAir200, BelAir100, and BelAir50, all seamlessly managed by BelAir BelView NMS.

- **Industry's first converged GSM picocell/wireless mesh solution**
- **Highest performance available today**
- **Flexible coverage applications**
- **Cellular, Wi-Fi, and WiMAX**



Wireless

- Multi-radio platform with up to 6 radios
 - Up to 6 backhaul radios or in combination with Wi-Fi Access and GSM radios
- Access and backhaul radio (IEEE 802.11a/b/g)
 - Frequency and transmit power:
 - 2.4 to 2.4835 GHz, up to 36 dBm EIRP
 - 4.900 to 5.000 GHz, up to 30 dBm EIRP
 - 4.940 to 4.990 GHz, up to 30 dBm EIRP
 - 5.25 to 5.35 GHz, up to 30 dBm EIRP
 - 5.725 to 5.825 GHz, up to 32 dBm EIRP
 - 802.11b mode: rates up to 11 Mbps
 - 802.11g mode: rates up to 54 Mbps
 - Receive sensitivity: up to -100 dBm
 - Diversity
- Backhaul radio (pre-WiMAX)
 - Frequency and transmit power:
 - 4.900 to 5.000 GHz, up to 30 dBm EIRP
 - 4.940 to 4.990 GHz, up to 30 dBm EIRP
 - 5.25 to 5.35 GHz, up to 30 dBm EIRP
 - 5.47 to 5.725 GHz, up to 30 dBm EIRP
 - 5.725 to 5.850 GHz, up to 32 dBm EIRP
 - 5.825 to 5.875 GHz, up to 14 dBm EIRP
 - Rates up to 54 Mbps (20 MHz channel)
 - Receive sensitivity: up to -90 dBm
 - Multiple point-to-point, point-to-multipoint and multipoint-to-multipoint links
- Backhaul radio (WiMAX)
 - Frequency and transmit power:
 - 2.300 to 2.360 GHz, up to 30 dBm EIRP
 - 2.495 to 2.690 GHz, up to 30 dBm EIRP
 - Rates up to 36.6 Mbps (10 MHz channel)
 - Receive sensitivity: up to -93 dBm

- Transmit Power Control
- Dynamic Frequency Selection
- Available T1/E1 circuit emulation module (CEM)
- Layer 2 and Layer 3 mobility
- GSM Radio

Transmit frequencies

GSM 1800 model: 1805 to 1880MHz

GSM 1900 model: 1930 to 1990MHz

Channel spacing: 200kHz

Max. output power:

GMSK (CS 1-4/MCS 1-4): +23dBm

8PSK (MCS 5-9): +13dBm

Static power control: 6 steps (2dB each)

Dynamic power control: 6 steps (2dB each)

Receive frequencies

GSM 1800: 1710 to 1785MHz

GSM 1900: 1850 to 1910MHz

Channel spacing: 200kHz

Performance: GSM 05:05

Gain control steps: 26

Antennas

- Access
 - directional: 8.5, 11.5 dBi
 - external directional: 8.5 dBi
 - external omni-directional: 4, 6, 8, 10, 12 dBi
- Backhaul
 - internal directional: 6, 9, 10.25, 10.5, 12, 13.5, 15 dBi
 - external directional: 10.5, 12, 15 dBi
- GSM
 - Separate antennas for TX, RX
 - 0dBi omni-directional (nominal)
 - External antenna connections (optional)

Networking

- Dual-electrical, electrical or optical Ethernet ports
- Layer 2 and Layer 3 support
- 802.1D bridging
- 802.1Q VLANs with authentication

- RSTP and MSTP
- QoS with traffic prioritization over 4 queues, Voice over IP, and traffic filtering
- 15 SSIDs per access radio. Full MBSSID support for 8 virtual APs per access radio
- Support for SNMP, ICMP, HTTP, ARP, TCP, UDP, Telnet, TFTP and IP traffic

GSM Data

- Encryption support
 - A5/1
 - A5/2
- Circuit switched data
 - Single slot BS20 at up to 14.4kb/s
 - BS21-26, plus BS61, BS81
- GPRS support
 - Coding schemes CSI-4
 - Multi-slot class 10
 - Dynamic PDCH for optimising mix of service for voice/data
- E-GPRS support
 - Modulations coding schemes MCS1 -9
 - Link adaptation
 - Incremental redundancy

Management

- Secure local and remote access
- Command line, HTTP and HTTPS Web GUI, SNMPv1/v2 and SSHv2 management interfaces
- MIBs: MIB-II, SNMPv2, 802.11, Ethernet-like, Interface Group, IP Forwarding Table, OSPFv2
- Multiple user privilege levels with RADIUS authentication
- Firmware upgrade through TFTP with support for automatic rollback
- RADIUS accounting

Security

- Authentication: 802.1x (RADIUS) and EAP methods
- Encryption: WEP 64 and 128 bit, TKIP /

MIC per 802.1x, 802.11i AES

- MAC address access control lists
- Rogue AP detection

Approvals

- Radio: FCC part 15 and part 27, EN 300 328, EN 300 440, EN 301 893
- EMC: FCC 47 CFR part 15, subpart B Class B and EN 301 489-1/-17 Class B
- Safety: ANSI/UL std no. 60950-1, CSA-C22.2 std no. 60950-1, CB-60950-1
- Laser safety: Class I laser product complies with 21CFR 1040 and IEC60825
- Outdoor use: IP56/NEMA4/NEMA4X for wet and dusty conditions
- CE mark

Physical and Electrical

- Size: 11.5 in. (29.2 cm) width by 14.25 in. (36.2 cm) length by 16 in. (40.6 cm) high
- Weight: 42 lbs (19 kg)
- Typical power consumption: 88 Watts
- Power supply: 100 to 240 V ac, 47 to 63 Hz
- Available wall or pole mounting kits with theft deterrent anti-tamper screws
- Power, Radio and Ethernet lamps

Protection circuits

- IEC 60000-4-5 level 4 surge
- GR1089 - 6 kV (3000 A) surge

Environmental

- Operating temperature: -40°C to +50°C
- Storage temperature: -40°C to +80°C
- Operating humidity: 5 to 95% non-condensing
- Shock and vibration: ETSI300-019-1-4



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