ANSI Models

Nortel Networks Series 100 Internet Broadband Access Radio

All-outdoor, scalable point-to-point radio transceivers providing cost-effective backhaul solutions for cellular, PCS and broadband access

Nortel Networks Series 100 of Internet Broadband Access Radios (iBAR-100) establish high-speed, reliable point-to-point wireless access links. The iBAR-100 product line offers a cost-effective alternative to leased lines, with many added advantages: fast deployment, scalability, simple installation, carrier-grade reliability and full visibility to the service provider's NMS. The flexibility and low cost of the iBAR-100 solution permit service providers to efficiently deliver high-quality and competitively priced voice, data and IP services.

The iBAR-100 transceivers operate in multiple millimeter-wave frequency bands, from 15 to 38 GHz, and provide scalable channel capacity, from 1 to 4 DS-1s. Moreover, these radio transceivers offer standard features such as robust 4-FSK modulation, programmable RF output power and forward error correction for exceptional error-free performance.

The iBAR-100 radios are available as either an all-outdoor or split outdoor-indoor solution. The latter offers additional OAM&P functionality by providing an SNMP port for remote and centralized network management.

Features & Benefits

- **Wide selection of frequency bands** to fulfil varying market provisions and applications (private, WLL, LMDS)
- **Scalable channel capacity** to precisely match traffic volume
- **SNMP agent and TCP/IP port** to enable centralized OAM&P and seamless integration with Nortel Networks' Radio Element Manager and Preside network management solutions
- **Handheld wireless terminal** to facilitate configuration, maintenance and performance monitoring of the outdoor unit (ODU)
- **Receive Signal Strength Indicator** (RSSI) on ODU to guide service personnel in antenna alignment
- **Common ODU and frequency synthesizer** minimize the number of spare units and the cost of ownership
- **Superior performance guaranteed** with Reed-Solomon forward error correction and link ID codes
- **Simple installation and maintenance** with the snap, twist and lock design of the ODU

NORTEL NETWORKS™

How the world shares ideas.

Internet Broadband Access Radio, Series 100 - ANSI Models

Technical Specifications

AIR INTERFACE							
Frequency Band	15 GHz	18 GHz	23 GHz	24/26 GHz	28/29 GHz	31 GHz	38 GHz
Frequency Range (MHz)	14.4-15.35	17.7-19.7	21.2-23.6	24.25-26.5	27.5-29.5	31.0-31.3	37.0-40.0
Channel Selection	Software set in 250 kHz steps						
Frequency Source	Digital synthesizer						
Frequency Stability	±10 ppm						
Modulation	4-level frequency shift keying (FSK)						
Residual BER	≤ 10^{-13}						
Forward Error Correction (FEC)	Reed Solomon						
System Gain at 10^{-6} BER* (dB)							
1 x DS-1 (BW=2.5 MHz)	109	109	111	109	107	107	107
2 x DS-1 (BW=2.5 MHz)	106	106	105	105	104	104	103
4 x DS-1 (BW=5 MHz)	103	103	102	102	101	101	100
RF Power Output* (dBm)	+18	+18	+18	+17	+16	+16	+16
Power Control Range (dB)	up to 30	up to 30	up to 30	up to 30	up to 25	up to 25	up to 25
Power Control Range Resolution	In steps of 1 dB						
Rx Threshold at 10^{-6} BER* (dBm)							
1 x DS-1 (BW=2.5 MHz)	-91	-91	-93	-92	-91	-91	-91
2 x DS-1 (BW=2.5 MHz)	-88	-88	-87	-87	-86	-86	-85
4 x DS-1 (BW=5 MHz)	-85	-85	-84	-84	-83	-83	-82
DIGITAL INTERFACE							
Tributary Rate	1.544 Mbps per ITU-T G.703						
Line Code	B8ZS or AMI						
I/O Impedance	100 ohms balanced and terminated by a DB25 connector						
Payload (programmable)	1 x DS-1	2 x DS-1	4 x DS-1				
Channel Bandwidth	2.5 MHz	2.5 MHz	5 MHz				
OAM&P INTERFACE							
ODU							
- Handheld wireless terminal providing local configuration and maintenance functionality							
- Two dry-contact Form-C relay outputs report on link performance and critical alarms							
- RSSI port for antenna alignment							
IDU							
- SNMP port for remote and centralized OAM&P (operations, administration, maintenance and provision) Two electrical interfaces available for the SNMP port: EIA RS-232 (modem) or RJ-45 (10Base-T)							
- Craft terminal interface providing local configuration and maintenance functionality CIT interface: RS-232C terminated by a DB9 connector							
- Alarm LEDs for ODU and IDU							
Other							
Alarms Reported	Tributary LOS, tributary AIS, low Tx output power, Rx frame loss, low RSL, phase-lock loops, temperature and FAW mismatch						
Loopback Tests	RF, local tributary and remote tributary						

PHYSICAL, ELECTRICAL & ENVIRONMENTAL SPECIFICATIONS		
	ODU	**IDU**
Dimensions	281 mm W x 281 mm H x 83 mm D 11 in. W x 11 in. H x 3.25 in. D	483 mm W x 45 mm H x 281 mm 19 in. W x 1.75 in. H x 11 in. D
Weight	5 kg (11 lb)	1.1 kg (2.4 lb)
Input Voltage	±20 to 60 VDC	±20 to 60 VDC
Power Consumption	25 W	7 W
Operating Temperature	-33 to +55°C (-27 to 131°F)	0 to +65°C (32 to 149°F)
Storage Temperature	-40 to +70°C (-40 to 158°F)	-40 to +70°C (-40 to 158°F)
Relative Humidity	Up to 100% under all weather conditions	
ODU-IDU Cable Length	250 m with a nominal ±48 VDC supply voltage	
Regulatory Requirements	FCC Part 101, FCC Part 15, UL, CSA	

** Given values are typical and are as measured at the antenna port.*

For more information, please contact your authorized Nortel Networks distributor, or call 1-800-4-NORTEL (1-800-466-7835).

Visit our web site on the Internet at www.nortelnetworks.com/radio.

Issue 02 (000614)
Printed in Canada

NORTEL NETWORKS™
How the world shares ideas.