

AirStar™ System Specifications

26 GHz (ITU Version)

Base Radio Unit

Base Modem Unit

Base Station Shelf

Subscriber Radio Unit

Subscriber Access System

AirView™ Network Management System

Range and Availability (typ)

- 5 kilometer radius
- 99.995% availability (CCIR climatic Zone E, Northern Europe) minimum antenna gains

Radio Unit and Antennas

Base Station: The Base Station Radio comprises a number of sectorized radio unit arrays. Each sector has one or more Base Radio Units, allowing modular capacity build-up and redundant configuration of both radio and antenna.

Azimuth Beamwidth	Elevation Beamwidth	Nominal Gain	# of Sectors Per Cell
30°	7°	20 dBi	1 to 12
45°	7°	18 dBi	1 to 8
90°	7°	15 dBi	1 to 4

Subscriber Terminal: The Subscriber Radio Unit consists of a 125 mm integral antenna. Optional standard parabolic antennas may be used to increase system range.

- Integral: High performance horn antenna, 28 dB nominal gain
- Non-integral: 0.3 m at 35 dBi or 0.6 m at 41dBi

Frequency Range

- Digitally synthesized, software controlled
- 24.5 to 26.5 GHz
- T/R Spacing = 1008 MHz

Channel Bandwidth

- 7 MHz

Modulation Format

- Base Station to Subscriber Terminal: 4 QAM or 16 QAM, TDM
- Subscriber Terminal to Base Station: 4 QAM or 16 QAM, TDMA
- FDM of multiple 7 MHz carriers and Tx to RX separation

Transmit Power (typ)

	<u>4 QAM</u>	<u>16 QAM</u>
• Base Station	+20 dBm	+18 dBm
• Subscriber Terminal	+20 dBm	+18 dBm
• ATPC (Automatic Transmit Power Control range):	50 dB	

Receiver

Receive sensitivity: (BER=1x10⁻⁶)

	<u>4 QAM</u>	<u>16 QAM</u>
• Base Station:	-85 dBm at 8 Mb/s	-78 dBm at 16 Mb/s
• Subscriber Terminal:	-85 dBm at 8 Mb/s	-78 dBm at 16 Mb/s

Air Interface

- Netro's CellMAC™ protocol for wireless ATM, with centralized traffic scheduling based on Netro's virtual framer for ATM CBR traffic and virtual shaper for ATM VBR traffic.

System Specifications

System Capacity

- Capacity per subscriber (7 MHz, full duplex, channel):
 - 4 QAM: 64 Kb/s to 8 Mb/s
 - 16 QAM: 64 Kb/s to 16 Mb/s

Networking Specifications & Protocols

- Protocol:
 - Q.931
 - V5.1, V5.2
 - Frame Relay/ATM FRE.5
 - RFC 1483 (Multi-protocol encapsulation over ATM)

Interface Specifications

Subscriber Terminals:	Base Stations:
E1 and Fractional E1	E3 ATM UNI
ISDN BRI, PRI	STM-1 ATM UNI
Frame Relay	
10BaseT	

Network Management

- SNMP based
- Downloadable software, local and remote
- Performance measurement: per G.821, G.826, and ITU-R Rec 697-1
- Windows® NT GUI

Standards and Regulatory Compliance

- System: ETSI prETS 300 431, BAPT 211 ZV, MPT 1420, prETS TM4, ITU-R, RecF.749, x.731
- EMC: CE Mark, CISPR 22, EN55022, EN50082-1 and 2, ETS 300 339 and 385
- Traffic interface: ITU-T G.703, G.704, G.775, G.823, I.431, CTR 12, TBR 12, IEEE 802.3
- Mechanical and safety: ISO 9001, FQAA, CE Mark, EN 60950, EN 41003, IEC 950
- Environmental: ETS 300 019

Environmental

- Operating temperature, Base Station
 - Indoor unit: 0° C to +40° C
 - Outdoor unit: -33° C to +55° C
- Operating Temperature, Subscriber Terminal
 - Indoor unit: 0° C to +40° C
 - Outdoor unit: -33° C to +55° C
- Relative humidity (indoor): 5-95%, non-condensing
- Altitude (system): 0-4500 m
- Wind loading: Operational: 145 km/hr
Survival: 200 km/hr

Power

- Input voltage
 - Subscriber Terminal: -48 VDC or 220 VAC, 50 Hz
 - Base station: -48 VDC
- Power consumption (typ):
 - Base station: 400 W
 - Subscriber Terminal: 35 W

Redundancy

- 1 : N

Mechanical

Dimensions:	H x W x D	Weight
Subscriber Units:		
- Indoor unit (SAS)	4 cm x 21.5 cm x 28 cm	2.5 kg
- Outdoor unit (SRU)	30 cm x 16 cm x 20 cm	6.0 kg
Base Station Unit:		
- Indoor unit (BSS, incl. cooling)	44.4 cm x 48.3 cm x 50.8 cm	21.5 kg
- Outdoor unit (BRU)	41 cm x 11 cm x 17 cm	6.0 kg
SAS to SRU connection:		
- LMR240, 0 - 100 m; LMR400, 0 - 300 m		

Miscellaneous

- Encryption: DES, 40 bit. 56 bit, with export license

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