

Alcatel-Lucent 9500 MPR

MICROWAVE PACKET RADIO

The Alcatel-Lucent 9500 Microwave Packet Radio (MPR) platform enables smooth transformation of backhaul networks from TDM to IP, based on its market-leading ability to handle packets natively. As a result, the Alcatel-Lucent 9500 MPR efficiently transports multimedia traffic while still supporting legacy TDM with the quality of service end users require. With this platform, networks can easily and efficiently absorb rapid growth in multimedia traffic because the Alcatel-Lucent 9500 MPR improves packet aggregation, increases bandwidth, optimizes Ethernet connectivity and adapts packet transmission to the air conditions and quality required by different service types.



Microwave Service Switch (MSS) indoor unit



ODU outdoor unit

Features

- Intelligent indoor nodal unit that supports up to six outdoor units
- Universal ODU that is capacity and modulation independent
- Flexible aggregate capacity sharing between E1 and Ethernet or ATM traffic
- Adaptive packet transport that improves performance for priority services
- Output power agility
- Packet-based internal cross-connect
- TDM MEF8 encapsulation
- Electrical and optical GE interfaces
- Software-based configuration
- Multiservice switching capacity greater than 10 Gb/s
- Radio throughput greater than 2 Gb/s
- Termination of 192xE1 in circuit emulation
- Termination of Inverse Multiplexing ATM (IMA) group

Benefits

- Reduces OPEX by aggregating multiple access technologies over an Ethernet convergence layer
- Protects operators' investment and positions backhaul networks for smooth migration from TDM to IP
- Delivers the performance levels that end users demand, using innovative packet features
- Simplifies deployment with fast pre-provisioning, quick setup and network planning
- Increases scalability and availability and enhances OAM with end-to-end service-aware management, provided by the Alcatel-Lucent 5620 SAM and the Alcatel-Lucent 1350 OMS
- Enhances performance and reliability with built-in test functions
- Embedded synchronization distribution even in full Ethernet infrastructure
- Nodal microwave configuration with a single packet matrix switching both Ethernet and TDM
- No single point of failure
- Standalone Site Aggregator compatible with any multivendor microwave infrastructure

Technical specifications

Applications

- Mobile backhaul (Super PDH, ATM and Ethernet aggregation)
- Full Ethernet/IP backhaul (WiMAX, IP-DSLAM)
- Fixed and private networks

User interfaces

- 32-port E1
- 16-port E1 Any Service Any Port (ASAP)
- Embedded 4 x GE electrical and 2 GE optical

Indoor/outdoor connection

- Single coaxial cable for split-mount configuration
- Length up to 300 m
- Impedance 50 ohms

Network interfaces

- Network management system interface: Ethernet
- Network management data channel interface: 64 kb/s V11 co-directional

Dimensions

- Indoor unit (rack, desk or wall mounting)
 - MSS-8
 - Height: 88 mm
 - Width: 444 mm
 - Depth: 250 mm
 - MSS-4
 - Height: 40 mm,
 - Width: 427 mm
 - Depth: 250 mm
- Weight: <6 kg fully equipped
- 2.5 kg basic configuration

- Outdoor unit
 - Height: 287 mm
 - Width: 287 mm
 - Depth: 119 mm
 - Weight: 6 kg

Power supply

- Standard: -48 to -60 VDC
- Optional: -24 to -60 VDC

Services

- Network design and planning
- Hotline
- Repair and return express, swap and repair, spare parts management
- On-site visits, urgent interventions, technical assistance
- Training from theory to installation: Alcatel-Lucent University-based or at customer premises
- Bundled services during warranty period and warranty extensions

Environment

- EMI-EMC: EN 50022 Class B, EN 301489-1/EN 301489-4
- Safety: EN 60950:2000
- Ecological: ECMA TR/70
- Temperature
 - IDU: -40°C to +65°C
 - ODU: -33°C to +55°C

Network management

- Integrated network management in Windows environment
- Embedded web browser for NE supervision
- Intuitive supervision systems
- SNMP agent with TCP/IP rerouting capability
- Interoperable with all Alcatel-Lucent wireless microwave and transmission equipment
- Fully 1350 OMS and 5620 SAM compatible

Table 1. Technical summary

		6/10/6 GHz	7 GHz	8 GHz	10 GHz	11 GHz	13 GHz	15 GHz	18 GHz	23 GHz	26 GHz	28 GHz	32 GHz	38 GHz	
FREQUENCY RANGE, GHz		5.925 - 6.425 6.425 - 7.11	7.125 - 7.9	7.725 - 8.5	10.0 - 10.68	10.7 - 11.7	12.75 - 13.25	14.4 - 15.35	17.7 - 19.7	21.2 - 23.632	24.52 - 26.483	27.5 - 29.5	31.8-33.4	37.0 - 39.46	
POWER OUTPUT, NOMINAL															
	QPSK	28,5	28,5	28,5	26,0	24,0	23,0	22,0	19,5	19,5	15,5	15,0	18,0	17,5	
	16 QAM	26,5	26,5	26,5	24,0	22,0	21,0	20,0	17,5	17,5	13,5	13,0	16,0	15,5	
	32 QAM	26,0	26,0	26,0	23,5	21,5	20,5	19,5	17,0	17,0	13,0	12,5	15,5	15,0	
	64 QAM	25,5	25,5	25,5	23,0	21,0	20,0	19,0	16,5	16,5	12,5	12,0	15,0	14,5	
	128 QAM	24,5	24,5	24,5	22,0	20,0	19,0	18,0	15,5	15,5	11,5	11,0	14,0	13,5	
	256 QAM	22,5	22,5	22,5	20,0	18,0	17,0	16,0	13,5	13,5	9,5	9,0	12,0	11,5	
SYSTEM GAIN AT 10-3 BER															
10 Mbit/s	7 MHz	QPSK	123,0	123,0	123,0	120,0	118,0	117,0	116,0	113,0	112,5	107,5	107,0	110,0	109,0
20 Mbit/s	7 MHz	16 QAM	113,5	113,5	113,5	110,5	109,0	108,0	106,5	104,0	103,0	98,0	98,0	100,5	99,5
30 Mbit/s	7 MHz	64 QAM	106,0	106,0	106,0	103,0	101,5	100,5	99,0	96,5	95,5	90,5	90,0	92,5	91,5
20 Mbit/s	13.75 / 14 MHz	QPSK	119,5	119,5	119,5	116,5	115,0	114,0	112,5	110,0	109,0	104,0	104,0	106,5	105,5
40 Mbit/s	13.75 / 14 MHz	16 QAM	111,0	111,0	111,0	108,0	106,0	105,0	103,5	101,0	100,0	95,0	94,5	97,5	96,0
60 Mbit/s	13.75 / 14 MHz	64 QAM	103,5	103,5	103,5	100,5	98,5	97,5	96,5	93,5	92,5	87,5	87,0	89,5	88,5
40 Mbit/s	27.5 / 28 MHz	QPSK	116,5	116,5	116,5	113,5	112,0	111,0	109,5	107,0	106,0	101,0	101,0	103,5	102,5
80 Mbit/s	27.5 / 28 MHz	16 QAM	108,0	108,0	108,0	105,0	103,0	102,0	100,5	98,0	97,0	92,0	91,5	94,0	93,0
100 Mbit/s	27.5 / 28 MHz	32 QAM	104,0	104,0	104,0	101,0	99,0	98,0	96,5	94,0	93,0	88,0	87,5	90,0	89,0
125 Mbit/s	27.5 / 28 MHz	64 QAM	100,5	100,5	100,5	97,5	95,5	94,5	93,0	90,5	89,5	84,5	84,0	86,5	85,5
150 Mbit/s	27.5 / 28 MHz	128 QAM	95,5	95,5	95,5	92,5	90,5	89,5	88,0	85,5	84,5	79,5	79,0	81,5	80,5
165 Mbit/s	55 / 56 MHz	16 QAM	104,5	104,5	104,5	101,5	99,5	98,5	97,0	94,5	93,5	88,5	88,0	90,5	89,5
175 Mbit/s	27.5 / 28 MHz	256 QAM	90,5	90,5	90,5	87,5	85,5	84,5	83,0	80,5	79,5	74,5	74,0	76,5	75,5
300 Mbit/s	55 / 56 MHz	128 QAM	91,0	91,0	91,0	88,0	86,0	85,0	83,5	81,0	80,5	75,5	74,5	77,0	76,0
RADIO CONFIGURATION		1+0, 1+1 HSB, 1+1 HSB SD, 1+1 FD													

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