

# Alcatel-Lucent 9500 Microwave Packet Radio

## Microwave Service Switch | Release 6.1 (ANSI)

The Alcatel-Lucent 9500 Microwave Packet Radio (MPR) family includes a flexible range of Microwave Service Switch (MSS) indoor units that provide advanced Carrier Ethernet networking, aggregation and demarcation functions. Optimized to reduce space and power consumption, the MSS exists in different form factors to address all network sizes and locations, including tail, hub and backbone. The entire MSS family uses the same software and management systems, enabling consistent operations across end-to-end packet microwave networks. Combined with the 9500 MPR Microwave Packet Transport (MPT), the MSS sets the standard for delivering fast, efficient wireless transmission links with flexible networking and simple operations.



	MSS-O	MSS-1	MSS-8
Chassis	<ul style="list-style-type: none"> <li>• Fixed</li> <li>• Pole/Wall mount</li> <li>• Environmentally hardened for outdoor usage</li> <li>• IP67 compliant</li> </ul>	<ul style="list-style-type: none"> <li>• Fixed</li> <li>• Fanless</li> </ul>	<ul style="list-style-type: none"> <li>• Modular: Eight slots</li> <li>• Two core slots</li> <li>• Six interface slots</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>• 345 mm x 190 mm x 65 mm (13.6 in. x 7.5 in. x 2.6 in.)</li> </ul>	<ul style="list-style-type: none"> <li>• ½ RU</li> </ul>	<ul style="list-style-type: none"> <li>• 2 RU</li> </ul>
Nodal capability	<ul style="list-style-type: none"> <li>• Three radios</li> </ul>	<ul style="list-style-type: none"> <li>• Six radios</li> </ul>	<ul style="list-style-type: none"> <li>• Twenty-four radios</li> </ul>
Switching capability	<ul style="list-style-type: none"> <li>• 16 Gb/s</li> </ul>	<ul style="list-style-type: none"> <li>• 16 Gb/s</li> </ul>	<ul style="list-style-type: none"> <li>• 100 Gb/s</li> </ul>
Weight	<ul style="list-style-type: none"> <li>• 4.2 kg (9.3 lb)</li> </ul>	<ul style="list-style-type: none"> <li>• 2 kg (4.4 lb)</li> </ul>	<ul style="list-style-type: none"> <li>• Chassis: 3.6 kg (7.9 lb)</li> </ul>
Interfaces	<ul style="list-style-type: none"> <li>• 2 x 10/100/1000 RJ-45 with PoE support</li> <li>• 1 x 10/100/1000 RJ-45</li> <li>• 1 x SFP</li> </ul>	<ul style="list-style-type: none"> <li>• 16 DS1</li> <li>• 4 x 10/100/1000 RJ-45</li> <li>• 2 x SFP</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 192 DS1, 12 DS3, 12 OC-3, 54 GE</li> <li>• 2 x 10 Gb/s SFP+ ports</li> </ul>
Power supply	<ul style="list-style-type: none"> <li>• AC: 110 V to 230 V nominal</li> <li>• DC: 48 V nominal</li> </ul>	<ul style="list-style-type: none"> <li>• Dual feeds -48v, optional external +24v</li> </ul>	<ul style="list-style-type: none"> <li>• Dual feeds: -48 V DC or optional integrated +24 V DC</li> </ul>
Temperature	<ul style="list-style-type: none"> <li>• -40°C to +65°C (-40°F to +149°F)</li> </ul>	<ul style="list-style-type: none"> <li>• -40°C to +65°C (-40°F to +149°F)</li> </ul>	<ul style="list-style-type: none"> <li>• -40°C to +65°C (-40°F to +149°F)</li> </ul>

## Technical specifications

### Indoor/outdoor connections

GE electrical or optical cable

### Synchronization

- Performance according to ITU-T G.813, G.823, G.8264
- Clock distribution options
  - DS1/OC-3
  - External reference sync-in/sync-out (2 MHz, 5 MHz, 10 MHz)
  - Sync E + SSM
  - ITU-T G.8264
  - Built-in Stratum 3 clock
  - OC-3 line clock
- IEEE 1588v2: PTP

### Standards compliance

#### Environmental

- Telcordia® GR-63, GR-1089
- GR-3108
  - MSS-O: Class 4
  - MSS-1, MSS-8: Class 2
- EMC: EN 55022 Class B, EN 301 489-1, EN 301 489-4

#### Safety

- EN 60950-1, UL

#### Ecological

- ECMA TR/70

### Networking and services

- IEEE 802.1p, 802.1Q: VLAN tagging
- IEEE 802.3: Ethernet
- IEEE 802.3u: 100Base-TX
- IEEE 802.3z: 1000Base-SX/LX
- IEEE 802.3ab: 1000Base-T
- IEEE 802.3x: Flow control
- IEEE 802.1D: MAC bridges
- IEEE 802.1AX-2008: Link aggregation
- IEEE 802.1ag: Ethernet OAM
- MEF CE 2.0: Carrier Ethernet
- MEF 8, MEF 9, MEF 14, MEF 22
- ITU-T G.7041: GFP
- ITU-T G.8032v2: ERPS
- ITU-T G.813: Timing characteristics
- ITU-T G.823: Control of jitter
- ITU-T G.8264: Distribution of timing information
- ITU-T Y.1731: OAM functions

### Traffic management and QoS

- Marking based on:
  - Layer 2 (IEEE 802.1p)
  - Layer 3 (DiffServ)

### Network and element management

- Console, management, alarm
- Optional 256-bit AES Encryption compliant with FIPS PUB 140-2
- Secure FTP for software download and backup
- IPv4/IPv6 management
- Integrated network management in a Microsoft® Windows® environment
- Embedded web browser for network element supervision
- PC software-based configuration
- Intuitive supervision systems
- SNMP agent with TCP/IP rerouting capability
- Alcatel-Lucent 5620 Service Aware Manager
- Alcatel-Lucent TSM-8000 Fault Management System

### Services

- Architecture and design
- Equipment and site engineering
- Installation services
- Integration services
- Performance analysis, network assessment, DCN, synchronization and QoS assessment
- Migration to packet microwave management
- Maintenance
  - 24x7 technical support
  - Return for repair or advanced exchange

