

Nokia 9500 Microwave Packet Radio

Microwave Service Switch | Release 7.0 (ETSI)

The Nokia 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-4 | MSS-8 |
|----------------------|--|---|--|---|
| Chassis | <ul style="list-style-type: none"> • Fixed • Pole/Wall mount • Environmentally hardened for outdoor usage • IP67 compliant | <ul style="list-style-type: none"> • Fixed • Fanless | <ul style="list-style-type: none"> • Modular: four slots • Two core slots • Two interface slots | <ul style="list-style-type: none"> • Modular: Eight slots • Two core slots • Six interface slots |
| Dimensions | 345 mm x 190 mm x 65 mm (13.6 in. x 7.5 in. x 2.6 in.) | ½ RU | 1 RU | 2 RU |
| Nodal capability | Three radios | Six radios | Twelve radios | Twenty-four radios |
| Switching capability | 16 Gb/s | 16 Gb/s | 100 Gb/s | 100 Gb/s |
| Weight | 4.2 kg (9.3 lb) | 2 kg (4.4 lb) | Chassis: 2.8 kg (6.2 lb) | Chassis: 3.6 kg (7.9 lb) |
| Interfaces | <ul style="list-style-type: none"> • 2 x 10/100/1000 RJ-45 with PoE support • 1 x 10/100/1000 RJ-45 • 1 x SFP | <ul style="list-style-type: none"> • 16 E1 • 4 x 10/100/1000 RJ-45 • 2 x SFP | <ul style="list-style-type: none"> • Up to 64 E1, 22 GE, 2 E3, 4 STM-1 • 2 x 10 Gb/s SFP+ ports | <ul style="list-style-type: none"> • Up to 192 E1, 2 E3, 12 STM-1, 54 GE • 2 x 10 Gb/s SFP+ ports |
| Power supply | AC: 110 V to 230 V nominal DC: 48 V nominal | Dual feeds -48 V, optional external +24 V | ±48 V DC or optional integrated +24 V DC | Dual feeds: -48 V DC or optional integrated +24 V DC |
| Temperature | -40°C to +55°C (-40°F to +131°F) | -40°C to +65°C (-40°F to +149°F) | -40°C to +50°C (-40°F to +122 °F) | -40°C to +65°C (-40°F to +149°F) |

* MSS-1c version available for smaller configurations

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
 - 1/STM-1
 - External reference sync-in/sync-out (2 MHz, 5 MHz, 10 MHz)
 - SyncE + SSM
 - ITU-T G.8264
 - Built-in Stratum 3 clock
 - STM-1 line clock
 - IEEE 1588v2 on path support

Standards compliance

Environmental

- EN 55022 Class B
- EN 301 489-1-4
- ITU-T K.20, K.21, K.44, K.45
- EN 300 019-1-1, EN 300 019-1-2, EN 300 019-1-4

Safety

- EN 60950-1, EN 60950-22

Temperature

- Telcordia® GR-3108, EN 300 019-1-4, EN 300 019 2-4

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 802.31AX-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
- Nokia 5620 Service Aware Manager

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

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