

## Nokia Wavence

### Microwave Service Switches MSS-E, MSS-HE (ETSI and ANSI)

The Nokia Wavence family includes a flexible range of Microwave Service Switch (MSS) indoor units; MSS-E and MSS-HE are high performance fanless indoor units ready for the challenges of today and tomorrow 5G transport. MSS-E and MSS-HE share the same architecture with different scalabilities and provide advanced Carrier Ethernet networking, L3VPN and aggregation and demarcation functions. Optimized to reduce space and power consumption, the MSS family provides 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 Wavence UBT units, the MSS family sets the standard for delivering fast, efficient wireless transmission links with flexible networking and simple operations.



	MSS-E	MSS-HE
Chassis	Fixed, Fanless	Fixed, Fanless
Dimensions	1/2 RU	1/2 RU
Nodal capability	Up to 4 radios	Up to 8 radios
Switching capability	60Gbs	60Gbs
Weight	1.6 Kg (3.5 lb)	1.77 Kg (3.9 lb)
Interfaces	2 x SFP 3 x RJ45 16 E1/DS1	2 x SFP+ 10G 2 x SFP 2 x RJ45 2 x Combo (SFP/RJ45) 16 E1/DS1
Power supply	Dual feeds -48 V	Dual feeds -48V
Temperature	-40°C to +65°C (-40°F to +149°F)	-40°C to +65°C (-40°F to +149°F)

## Technical specifications

### Indoor/outdoor connections

- Eth electrical or optical cable

### Synchronization

Support for:

- ITU-T G.813, G.823, G.8264, G.8273.2, G.8273.3
- Clock distribution options
  - SyncE + SSM
  - Built-in Stratum 3 clock
  - 1588 T-TC and T-BC on path support

### Standards compliance

#### Environmental

- Telcordia® GR-63, GR-1089, GR-3108
- EN 55032 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 300 019-1-3

#### Safety

- EN 60950-1

#### Ecological

- ECMA TR/70

#### Networking and services

Support for:

- 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
- ITU-T G.8032v2: ERPS
- ITU-T Y.1731 BNM: OAM functions
- L3 VPN services
- MACsec capable (MSS-HE)

#### 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
- Embedded web browser for network element configuration and monitoring
- Intuitive supervision systems
- SNMP agent with TCP/IP rerouting capability
- Nokia NSP (Network Services Platform) 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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