



## 6335 Switch Node

*A Compact MSPP and Access WDM Multiplexer*

The Coriant® 6335 Switch Node is a flexible node which can be configured either as a Multi-Service Provisioning Platform (MSPP) or a compact access WDM node addressing the growing demand for broadband connectivity in access networks. The 6335 Switch Node handles SDH, PDH, and Ethernet and Fiber Channel services from 2 Mbps up to 10 Gbps. All 10G lines can be mapped into OTN and OTN SNC protection is supported for seamless interworking with overlaying OTN networks. WDM multiplexing, SDH multiplexing, and Ethernet Switching are all combined into a single 2 rack unit.

### FULL-FEATURED MSPP

Used as an MSPP, the 6335 Switch Node supports all common PDH, SDH, and Ethernet interfaces. On the line side, the node can be equipped as an ADM-64 or as multiple ADM-16s. The 6335 Switch Node is available in two versions: a 2RU unit supporting eight interface slots for SDH, PDH, and data, and a 7RU unit with eight additional slots for nodes for configuration with a high number of E1s or STM-1s.

Both Ethernet-over-PDH and Ethernet-over-SDH are supported and provide Ethernet end-to-end connections with low latency. It is also possible to aggregate the Ethernet traffic using a Layer 2 Ethernet switch card. Traffic policing with different service classes is supported utilizing either MPLS features or VLAN priority. The compact size and high STM-1 and E1 capacity of the 6335 Switch Node enable use at hub sites to connect voice traffic to local switches. It is also used as a head-end node to aggregate traffic into STM-64/OTU2 before it is carried over metro/core networks.

### COMPACT ACCESS WDM NODE

The 6335 Switch Node can be equipped as a compact Access WDM node with support of up to 8 CWDM or DWDM channels. Muxponder functionality is available so, for example, GE and 1G FC signals can be multiplexed into 2.5G line signals. Transponder cards are used to carry signals from 1G to 10G either transparently or mapped into an OTU2 (10G) line signal. SONET/SDH, Ethernet and Fiber Channel signals are supported. When 10G signals are mapped into OTU2 on the line side, OTN SNC protection is supported for network and equipment protection. Y-cable also offers the same type of protection and is supported in all Muxponder and Transponder cards and for all signals.

The growth in bandwidth demanding services – especially video streaming – and a limited number of fibers often cause fiber constraints in access networks. CWDM is a cost-efficient technology to scale the capacity of existing fiber infrastructure.

### CARRIER CLASS WITH FULL REDUNDANCY

The 6335 Switch Node is carrier class with a fully redundant architecture enabling high availability. Core modules such as power supplies, SDH matrix cards, and PDH interfaces are all equipment protected. Other traffic interfaces – Ethernet, SDH, and OTN – are either protected according to ITU-T or IEEE standard protection schemes or via Y-cable.

### BENEFITS OF THE CORIANT® 6335 SWITCH NODE

- Use as either a **full-featured MSPP or compact WDM node**
- Handle SDH, PDH, and Ethernet and Fiber Channel services **from 2 Mbps up to 10 Gbps**
- Provide carrier-class service with **full redundancy**
- **Fit anywhere** in the optical transport network
- **Reduce operational expenses** with intelligent network management



## TECHNICAL SPECIFICATIONS

### Feature Summary

- Full-featured Multi-Service Provisioning Platform
- High density ADM64 and MADM16
- Compact Access WDM node scaling the fiber capacity up to 8 x 10G
- Seamless interconnect to multiple data types: Packet, SDH, and OTN

### Subracks

#### SC3 Subrack

- 2RU high subrack with eight traffic slots

#### SC3-2 Subrack

- 7RU high subrack with eight additional traffic slots for E1 and SDH interfaces

### SDH MSPP Connectivity

#### Cross-connect levels

- VC-12, VC-3, VC-4

#### Cross-connect size

- 640 ports 4/4 (100G) switch matrix
- 128 ports 4/3/1 (20G) switch matrix

#### Multiplexing specification

- ETSI: ETS 300 147

#### Supported signals

- OTU2
- STM-1, STM-4, STM-16 and STM-64
- E1, E3 and DS3
- Fast Ethernet and Gigabit Ethernet

### WDM Connectivity

#### Channels

- 8 CWDM channels
- 8 DWDM channels

#### Line Signals

- Transponder and Muxponder functionality supported aggregating traffic into e.g. STM-16 or OTU2

#### Client signals

- 1G and 10G Ethernet
- 1G, 2G and 4G Fibre Channel
- STM-16 and STM-64
- OTU2

### Protection

#### Network protection

- OTN SNC according to ITU-T G.798
- SNC/I and SNC/N according to ITU-T G.783 and G.841
- MSP1+1 according to ITU-T G.841
- Two-fibre MS-SPRing according to ITU-T G.841 at STM-16 and STM-64

#### Equipment Protection

- 1+1 Cross-connection matrix and synchronization protection
- 1:1 and 1+1 Power Supply protection (configurable)
- 1+1 E1, E3 and DS3 protection

### Ethernet Services

- Ethernet Private Lines (EPL), Ethernet Virtual Private Lines (EVPL) and Ethernet Local Area Networks (E-LAN) in accordance with MEF (MEF-9 and MEF-14 certified)

#### Layer 1

- GFP encapsulation into SDH and OTN encapsulation to G.7041
- GFP mapping into PDH according to G.8040
- LCAS according to G.7042 (SDH) and G.7043 (PDH)

#### Layer 2 – Ethernet

- According to IEEE and ITU-T standards: 802.3, 802.1D (MAC switching), 802.1Q/1p (priority bit), 802.1ad (Q-in-Q), 802.3ah (Ethernet Link OAM), Y.1731 (Ethernet Flow OAM), 802.3ad (Link Aggregation), 802.1s (MSTP), and 802.1w (RSTP)

#### Layer 2 – T-MPLS

- T-MPLS in accordance with ITU-T G.8110.1 (Architecture), G.8112 (Interfaces), G.8121 (Functional blocks), Y.1711 (MPLS OAM), Y.1720 (1:1 LSP Protection)
- Ethernet pseudowire support (PWE3)

#### Layer 3 agnostics

- IP DSCP aware QoS
- IGMP v1, v2 and v3 Snooping according to IETF RFC3376

### Synchronization

#### Synchronization sources

- STM-N interface (T1)
- 2 Mbps tributaries (T2)
- 2 MHz station clock ports (T3)

#### Synchronization outputs

- 2 MHz station clock ports (T4)

#### Synchronization management

- SSM support according to ETS 300 417-6-1

### Power Specifications

#### DC power supply

- 2 inputs at -48V with 1+1 redundancy
- Operation range: -40.5V to -72V DC

### Environmental Conditions

#### Environmental specifications

- According to ETS 300 019-1-3 class 3.3

#### EMC

- According to EN 300 386

#### Safety

- According to EN 60950-1

### Dimensions

#### SC3 Subrack

- 441 x 270 x 86 mm (WxDxH)

#### SC3-2 Subrack

- 441 x 270 x 296 mm (WxDxH)

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