

# 10TCE-PCN-16GU+AES100G-BSI

100Gbit/s muxponder with BSI-approved Layer 1 encryption

## Benefits

- **Built-in cryptographic functions**  
No need for additional equipment or software
- **BSI-approved and CC-certified**  
BSI-VSA-10665/BSI-VSA-10678 approvals for the transport of classified data up to "VS-V" level and Common Criteria (CC) certification (operating system level)
- **Tamper-evident case**  
Hardware designed to avoid any unauthorized access or manipulation of security-sensitive components
- **High-density design**  
Two-slot compact design enabling up to eight modules per 9RU shelf respectively one module per 1RU shelf
- **Multi-service support**  
Support of any combination of client services, only limited by the maximum aggregated bandwidth (100Gbit/s)
- **Comprehensive monitoring capabilities**  
Multiple fault and performance monitoring capabilities on the client and the network ports

## Overview

The 10TCE-PCN-16GU+AES100G-BSI is a channel card that can multiplex/demultiplex up to 10 client interface signals of up to 16 Gbit/s services onto/from an ITU-T-compliant wavelength for transport over an optical network. With our robust and reliable ConnectGuard™ Layer 1 encryption technology, this module satisfies the most stringent security demands, including being qualified by the German federal office for information security (BSI) for the transport of classified data up to VS-V level ("BSI-VSA-10678" for VS-NfD and "BSI-VSA-10665" for VS-V).

Our 10TCE-PCN-16GU+AES100G-BSI is an enterprise-type TDM channel module with ten SFP+ interface cages on the client side and a single CFP interface cage on the network side. The 10TCE-PCN-16GU+AES100G implements cryptographic functions such as encryption, decryption and random number generation. The aggregate 100Gbit/s data stream is encrypted/decrypted using the Advanced Encryption Standard (AES). Data encryption and the use of an endpoint authentication mechanism protect the network link between two communicating 10TCE-PCN-16GU+AES100G modules against man-in-the-middle attacks. Our ConnectGuard™ Layer 1 encryption technology satisfies the strictest security standards such as FIPS 140-2 level 2. What's more, it has achieved BSI approval for transport of classified data up to VS-V level. This makes this module ideal for the transport of sensitive information that must be protected from unauthorized access.



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## High-level technical specifications

### General information

- Terminal multiplexer
- 2-slot module
- Pluggable transceivers:
  - Up to 10x SFP+ client interfaces
  - 1x CFP network interfaces
- Typical power consumption with SFP+ and CFP: 96W

### Client data rates supported

- 4GFC, 5G IB, 8GFC, 10GFC, 16GFC, STM-64/OC-192, 10 GbE WAN PHY, 10GbE LAN PHY, CE-LR, RoCE 40GbE\* and 100GbE\*\*
- Any combination of client services allowed (up to the max aggregated bandwidth)

### Environmental conditions

- SH9RU shelf: Telcordia SR-3580 level 3 (NEBS), ETSI EN 300 019-1-3 Class 3.1 (9RU) or 3.1e (1RU)
- Operating temperature: +5°C to +40°C / -40°C to +65°C with 1RU E-Temp+ shelf
- 5% to 85% relative humidity (non-condensing)

### Protection switching

- 1+1 unidirectional revertive and non-revertive switching
- 1+1 bidirectional revertive and non-revertive switching
- Switching times <50ms
- Automatic protection switching (APS) channel per sub-aggregate service for client channel card protection

### ConnectGuard™ encryption

- Encryption of payload according to AES-GCM with 256bit key
- Diffie-Hellman 4096 key exchange every minute
- Protection against modification
- Far-end authentication

### Security certifications

- BSI approval for transport of classified data up to VS-V level (BSI-VSA-10665 / BSI-VSA-10678)
- Common Criteria (CC) certification (operating system level)

## Applications in your network

### Secure enterprise connectivity

- High-capacity transport of sensitive data over WDM metro network infrastructure
- Built-in Layer 1 encryption technology for robust protection of data in motion with 100% throughput and ultra-low latency
- Protocol-agnostic Layer 1 encryption protecting data at all layers in the network stack
- Most robust and reliable Layer 1 encryption on the market:
  - BSI approval for the transport of classified data up to VS-V level (BSI-VSA-10665/BSI-VSA-10678)
  - Common Criteria certification (operating system level)
  - Adva Network Security is the only DWDM vendor that has achieved the BSI approval

