ZTE SCXN Core Switching and Management Card Interface Throughput Specifications - Official Technical Overview & Hardware Datasheet

EXECUTIVE SUMMARY

The ZTE SCXN represents a purpose-built core switching and management card engineered for the ZXA10 C300 optical access platform. As the central control and switching fabric of the C300 chassis, the SCXN delivers 480 Gbps of non-blocking switching capacity, a 64K MAC address table, and comprehensive Layer 2 through Layer 4 data processing capabilities . This official technical overview provides network architects, pre-sales engineers, and procurement specialists with a definitive reference for interface throughput, hardware specifications, and deployment characteristics of the SCXN control card.

The SCXN is designed to serve as both the service switching center and the management control center of the ZXA10 C300 OLT system. It monitors and controls the entire chassis, performs non-blocking data switching across all line cards, and processes critical system functions including clock synchronization, fan control, and card version management . With support for 16 GPON service cards, 4 Gigabit Ethernet uplink interfaces, and 2 management interfaces, the SCXN delivers carrier-class performance for high-density FTTH, FTTB, and FTTX deployments .



HARDWARE ARCHITECTURE & SILICON

The SCXN card integrates three functionally distinct subsystems on a single modular printed circuit board measuring 395.5 mm × 25 mm × 225 mm and weighing approximately 1.145 kg . The architecture comprises a dedicated Ethernet switching ASIC, a control CPU complex, and a precision clock/time processing module, each engineered for continuous carrier-grade operation.

SWITCHING SUBSYSTEM

The core switching silicon provides 480 Gbps of non-blocking fabric capacity, enabling simultaneous wire-speed forwarding across all populated GPON line cards. The switching center implements data switching, Ethernet framing, VLAN tagging and manipulation, multicast replication, IP routing, and QoS scheduling in hardware, ensuring deterministic throughput independent of packet size or

protocol complexity .

MANAGEMENT AND CONTROL MODULE

The management subsystem consists of control software, protocol processing software, overhead processing functions, and a dedicated control CPU. This module provides the operational backbone of the C300 chassis: forced card version download, hardware and software reset signaling, online card detection, and intelligent fan speed control . The control plane operates independently from the data forwarding plane, preserving management responsiveness under maximum traffic load.

CLOCK AND TIMING MODULE

The SCXN incorporates a dedicated system clock and time processing module that complies with ITU-T G.8262 (EEC Options 1 and 2), G.8264 (ESMC), G.781 (synchronization layer functions), and RFC 1305 (NTP Version 3) . This ensures precise synchronization across distributed access networks, essential for time-sensitive service delivery and regulatory compliance.



KEY FEATURES & ROUTING LOGIC

- 480 Gbps Non-Blocking Switching Fabric: Full-duplex, wire-speed switching capacity across all line card slots, eliminating head-of-line blocking and supporting simultaneous traffic flows between any card pair .

- 64K MAC Address Table: High-capacity forwarding database supporting large-scale subscriber and service VLAN deployments with hardware-accelerated learning and aging .

- 16 GPON Line Card Support: Manages and switches traffic from up to sixteen GPON service cards, enabling maximum port density for FTTH and FTTX applications .

- 4 Gigabit Ethernet Uplink Interfaces: SFP-based GE uplinks for connectivity to aggregation switches and core routers. Uplink interfaces support load-balance operating modes for resilient traffic distribution .

- 2 Management Interfaces: Dedicated out-of-band NM interface and local CLI console (RS-232) for service isolation and operational access .

- VoIP Function Support: Enables Voice over IP services when equipped with the optional VoIP daughter-card, consolidating data and voice delivery on a unified access platform .

- Comprehensive Protocol Stack: Hardware-accelerated Ethernet, VLAN, multicast, IP routing, QoS, and security functions implemented in the switching silicon and control software .

- Clock Synchronization Compliance: Supports ITU-T G.8262/G.8264/G.781 and RFC 1305 for network-wide timing distribution .

- Online Card Detection and Control: Continuous monitoring of line card status, version management, and autonomous fan control for thermal optimization .

COMPLIANCE & STANDARDS

The SCXN card is engineered to meet rigorous telecommunications industry standards for synchronization, environmental resilience, and electromagnetic compatibility. The clock and timing subsystem fully complies with the following specifications:

- ITU-T G.8262: Timing characteristics of synchronous Ethernet equipment slave clocks (EEC Options 1 and 2)
- ITU-T G.8264: Distribution of timing information through packet networks
- ITU-T G.781: Synchronization layer functions
- RFC 1305: Network Time Protocol (Version 3) specification

The card operates within the environmental envelope of the ZXA10 C300 chassis, supporting long-term operating temperatures typical of controlled central office and data center environments. The SCXN conforms to the platform-level electromagnetic compatibility and safety certifications held by the ZXA10 C300 system, including CE and RoHS compliance for global market deployment .

TECHNICAL SPECIFICATIONS

The following specification matrix represents the authoritative operational

parameters for the ZTE SCXN Core Switching and Management Card as deployed in the ZXA10 C300 chassis.

Parameter	Specification
Product Model	SCXN
Compatible Platform	ZXA10 C300 OLT
Card Type	Control and Switching Card
Switching Capacity	480 Gbps (non-blocking)
MAC Address Table	64K entries
Supported Line Cards	Up to 16 GPON service cards
Uplink Interfaces	4 × GE SFP optical (standard configuration)
Management Interfaces	1 × out-of-band NM, 1 × RS-232 CLI console, 1× SD card slot
VoIP Support	Yes (with VoIP daughter-card)
Clock Synchronization	ITU-T G.8262, G.8264, G.781; RFC 1305
Power Consumption (Static)	62 W (without uplink interfaces)
Power Consumption (Typical)	75 W (with uplink interfaces)
Power Consumption (Maximum)	80 W
Dimensions (H × W × D)	395.5 mm × 25 mm × 225 mm
Weight	1.145 kg
Operating Slots	ZXA10 C300: slots 10 and 11

	(active/standby)
Redundancy	1+1 card-level redundancy supported
Compliance	ITU-T G.8262/G.8264/G.781, RFC 1305, CE, RoHS

ORDERING SKU INFORMATION

The SCXN control card is available in the following configuration variants for the ZXA10 C300 platform:

- SCXN (Standard): 4× GE SFP uplink interfaces, 2× management interfaces, VoIP-capable with optional daughter-card. This is the primary configuration for deployments requiring external uplink connectivity.

- SCXN (Without Uplink Interfaces): A variant that omits the 4× GE SFP uplink interfaces while retaining the switching fabric, management interfaces, and GPON card support. This configuration is used in scenarios where uplink functions are provided by dedicated service cards or upstream equipment .

For precise ordering, specify the desired configuration (with or without uplink interfaces) and whether VoIP daughter-card functionality is required. The SCXN

is designed for installation in slots 10 and 11 of the ZXA10 C300 shelf, typically deployed in a 1+1 redundant configuration with one active and one standby card .

[IMAGE_2]