

Nokia ISAM FELT-B

Point-to-point line card

The Nokia Intelligent Services Access Manager (ISAM) FELT-B Line Termination Card is a high speed point-to-point and active Ethernet line card, delivering Fast Ethernet (FE), Gigabit Ethernet (GE) and 10 Gigabit Ethernet (10GE) services over point-to-point fiber. It is used in various applications like delivering business service, mobile backhaul, Virtual Unbundled Local Access (VULA) demarcation point between the access and content providers, and aggregation of DSLAMs and other Ethernet equipment.

The Nokia ISAM FELT-B line card offers advanced video, forwarding and quality of services capabilities aimed at supporting business users and aggregation applications. It also supports mobile backhaul by offering both frequency synchronization (synchronous Ethernet) and phase synchronization (IEEE 1588 ToD). Advanced troubleshooting, connectivity fault management and link and/ or board redundancy provide the high reliability required for these services. The FELT-B line card can be deployed indoors or outdoors — from Nokia ISAM shelves ranging from 4 to 16 slots, giving operators a wide range of density options.

Features

- Supports different Ethernet flavours:
 - 16-ports 10GE (through SPF+)
 - 18-ports 2.5GE (through SFP)
 - 36-ports FE/GE speeds (through dual-compact cSFP)
- SyncE, IEEE 1588 ToD and carrier-grade Ethernet support for business and mobile backhaul



- Flexible provisioning of 10G/2.5G/GE/FE interfaces
- High VLAN/QoS scalability for SLA enforcement
- Support for LAG/LACP and MSTP on the same line card
- Transparent and participating Ethernet service recovery for protection and restoration of services
- End-to-end connectivity fault management
- Industrial hardened

Benefits

- Scalable Ethernet point-to-point deployment with up to 10 Gb/s bandwidth per port
- High density with dual-compact SFPs
- Business services

NOKIA

- Cost-effective mobile backhaul and access node subtending
- Carrier-grade reliability, clock frequency and phase synchronization and troubleshooting
- Indoor/outdoor deployments with the ISAM family: Nokia 7302 ISAM FD, Nokia 7330 ISAM FD and Nokia 7360 ISAM FX

Technical specifications

Product specification

External Interfaces

- 16 x 10 Gb/s ports (SFP+)
- 18 x 2.5 Gb/s ports (SFP)
- 36 x 100/1000 Mb/s ports (SFP and/or dual-channel compact SFP)

Forwarding

- Layer 2 forwarding Generic: Ethernet packet types include Ethernet II Encapsulation and logical link control/Subnetwork Access Protocol (LLC/ SNAP); any combination of untagged/priority/ single/dual tagged packets; virtual LAN (VLAN) assignment for untagged/priority tagged packets based on port, multi-VLAN support at any interface
- Layer 2 forwarding Both 1:1 (CC) and N:1 (RB) can operate in single or dual tagged modes (including the ability to translate both S- and C-VLAN of a dual tagged frame)
- Layer 3 multicast: High-performance Internet Group Management Protocol (IGMP) processing; IGMP proxy; immediate leave; source-specific multicast/any-source multicast (SSM/ASM)
- Aggregate throughput per FELT-B is up to 80G bidirectional
- Cross-LT link protection, including LAG in load sharing mode

Quality of Service (QoS)

- QoS classification based on L2/L3/L4 multifield
- Flexible priority bit (re)marking with different marking rules for C- and S-VLAN tags

- Policing (incl. colour bling/colouraware trTCM and Class of Service based trTCM) including full colour processing and propagatation options (pbit or DEI marking)
- Flexible traffic manager combining colour blind and colour aware discard policies, programmable scheduling and shaping policies

Network synchronization

- Synchronous Ethernet Input on up to two programmable interfaces (VULA uplink mode) and output on all interfaces
- IEEE 1588 ToD input (VULA uplink mode) and output on all interfaces

Eco-sustainability

- Compliance to the COC
- ROHS compliance: FELT-B and SFP/cSFP are ROHS compliant
- SFP auto shutdown: Operator can control the power up/power down SFP to reduce the power
- Thermal control measures: Board-level and SFP-level auto-shutdowns
- Doubling port density with the same footprint (with dual-channel compact SFP)

Standard compliance

Enviromantal

- ETS 300 019-1-1 storage Class 1.1 (weatherprotected, partly temperature-controlled locations)
- ETS 300 019-1-2 transport Class 2.3 (packed, public transportation)
- ETS 300 019-1-3 stationary use Class 3.1E (temperature-controlled locations), when used in configuration with up to 2FX or 2 FD shelves
- ETS 300 019-1-3 stationary use Class 3.3 (not temperature-controlled locations), when used in stand-alone ISAM FX or ISAM FD shelves

Protection

• ITU-T K.20/K.45



Safety

- IEC 60950-1/EN60950-1
- EMC and ESD: ETS 300 386 V1.3.3 (2005-04) for telecommunications network equipment
- European directive 2002/95/EC on the restriction of the use of certain hazardous substances (RoHS)

Operation conditions

- -5°C to 45°C (23°F to 113°F) inlet/ambient temperature range, when used in configuration with up to 2 FX or 2 FD shelves
- -40°C to 65°C (-40°F to 149°F) inlet/ambient temperature range, when used in standalone ISAM FX or FD shelf

- Over-temperature sensors and shutdown
- Humidity: 10% to 95% (non-condensing)

Dimensions

- Height: 405 mm (15.94 in)
- Width:
 - Top: 225 mm (8.85 in)
 - Bottom: 205 mm (8.07 in)
- Board-to-board pitch: 25 mm (0.98 in)

Nokia is a registered trademark of Nokia Corporation. Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

Nokia Oyj Karaportti 3 FI-02610 Espoo Finland Tel. +358 (0) 10 44 88 000

Product code: SR1612004321EN (March)