

## **INI-202 Dual-Port Gigabit Ethernet Card**

Serving as the uplink module for the AXN Pseudo-Wire Gateway™, the INI-202 network interface card supports two Gigabit Ethernet interfaces and functions as a Layer-3/4 forwarding engine. The Ethernet interfaces allow high-speed connectivity between the AXN Pseudo-Wire Gateway and the packet-switched network (PSN).

The INI-202 receives encapsulated Pseudo-Wires or native IP traffic from IOM line cards. It performs Layer-3/4 switching and forwarding functions, appends appropriate Ethernet headers (including 802.1Q & P), and directs each packet to its respective queue based on QoS service requirements.

The advanced architecture of the INI utilizes four prioritized queues per interface. Each queue is individually policed and shaped according to a combination of scheduling mechanisms such as Strict Priority (SP) and WRR (Weighted Round Robin). A dedicated Flow Classification Engine (FCE) assures wire-speed performance. An ASIC-based packet processor performs packet switching, forwarding, filtering, and metering, as well as IP flow classification on a per-flow basis.

The INI can also work in a Layer-3 transparent mode. In this mode, the INI does not route IP traffic, but associates a subscriber's IP flow to an egress Ethernet VLAN ID based on its ingress Layer-2 logical interface. For example, it can map a FR DLCI to an Ethernet VLAN while preserving VPN separation at Layer-2 and without adding an extra routing hop. The Layer-2 protocols that are supported by this feature include HDLC, FR, PPP, and ATM.

Up to two INIs can be installed in the AXN1600/800 within their designated slots. While one INI is always required in an AXN system, a second INI can be installed to provide equipment redundancy. The INI-202 supports a corresponding interface module accommodating a Small Form-factor Pluggable (SFP) Gigabit Ethernet optical transceiver.

### **INI-202 Key Features:**

- Two Gigabit 1000BaseX Ethernet interfaces
- Layer-3 and layer-4 switching and forwarding operations with wire-speed performance
- IEEE 802.1Q
- IEEE 802.1P Prioritization
- Advanced QoS mechanisms
  - Specifies IP precedence by setting the value of the DiffServ Code Point (DSCP) byte in the IP header on a per-flow basis
  - Enables low-latency priority queuing that can be assigned for real-time and delay-sensitive traffic such as CES and DB-CES
  - Provides ToS/DiffServ to Class of Service (CoS) 802.1P mapping
- IEEE 802.1ad link aggregation with equipment protection
- The INI-202 can be installed in the AXN1600 and AXN800 Pseudo-Wire Gateway™ chassis.
- Enables remote management capabilities through Axerra's CLI and AXNVision™ NMS

## HARDWARE SPECIFICATIONS

### Platform Support

- AXN1600 and AXN800

**Number of interfaces:** 2

### Gigabit Ethernet (User or Network)

- **Bit Rate:** 1000 Mbps
- **Standards Compliance:** 802.3z
- **Range:**
  - **Multi-mode (1000Base-SX)**  
275m (62.5u fiber)  
550m (50u fiber)
  - **Single-mode (1000Base-LX)**  
5 Km (9u fiber)
  - **Single-mode (1000Base-ZX)**  
40 Km (9u fiber)
- **Max Ethernet Frame Size:** 1522 Bytes
- **Connector:** LC duplex, SFP

### External Clock

- **Standards**
  - G.703 section 9 and section 13
- **Connector:**
  - Mini-BNC (input and output)
  - RJ-45 (input and output)

### Indicators

- **Interface Module**
  - Gigabit Ethernet Interface
    - Link (Green)
    - Rx Activity (Green)
    - Tx Activity (Green)
  - Fast Ethernet Interface
    - Link (Green)
    - Activity (Yellow)
  - External Clock
    - Selected interface (Green)
- **Forwarding Engine (INI)**
  - Power LED
    - Off – No power
    - Green – Operational
    - Orange – Transient mode
  - Active LED
    - Off – No power
    - Green – Operational
    - Blinking Green – Standby card
    - Orange – Unassigned or transient mode

- Alarm LED
  - Off – No alarm
  - Orange – Minor alarm or transient mode
  - Red – Major alarm

## GENERAL SPECIFICATIONS

### Resiliency

- IEEE 802.3ad (link aggregation)

### QoS Management

- Layer 3 Marking – DSCP (DiffServ)
- Layer 2 Marking – VLAN 802.1Q/P
- DSCP to CoS mapping
- 4 priority queues per interface:
  - Strict Priority (SP)
  - Weighted Round Robin (WRR)

### Management Specifications

- In-band or out-of-band
- SNMP
- Command Line Interface (Telnet / ICP)
- SSH
- AXNVision NMS
- Local
  - ICP: RS-232 or RJ-45 via CLI

### Physical Dimensions

- **Interface Module**
  - Inches: 10.52 (h) x 4.53 (d) x 0.79 (w)
  - Cm: 26.7 (h) x 11.5 (d) x 2.0 (w)
  - Weight: 0.42 lb (0.19 Kg)
- **Forwarding Engine (INI)**
  - Inches: 10.52 (h) x 9.84 (d) x 0.79 (w)
  - Cm: 26.7 (h) x 25.0 (d) x 2.0 (w)
  - Weight: 1.3 lb (0.59 Kg)

### Environmental

- Operating temp: 0–50°C / 32–122°F
- Humidity: 5%–95% non-condensing

### Regulatory<sup>1</sup>

- **Safety**
  - UL 60950-1
  - CE Mark: EN 60950-1

<sup>1</sup> Please contact Axerra Networks for current list of approvals

## Ordering Information

Order Code	Description
INI-0202-B	Enhanced Forwarding Engine Bundle supports 2 port Gigabit Ethernet (Transceiver should be ordered separately)
INI-0200	Enhanced Forwarding Engine Card (INI) - 2xGigabit Ethernet
IMNI-0202	2 ports Gigabit Ethernet Interface Module accommodates two LC extractable transceiver (Transceiver should be ordered separately)
LC-GEMM-SR	Gigabit Ethernet SFP SX Multimode Short Reach (550 m) transceiver module
LC-GESM-IR	Gigabit Ethernet SFP LX Single Mode Intermediate Reach (5 Km) transceiver module



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