MPAC-IP 'IGUANA'

4x 10Gb/s SDH/SONET Packet Monitoring Card

The MPAC-IP 'IGUANA' SDH/SONET Packet Monitoring Card provides line-rate packet processing acceleration and monitoring access on up to 4x 10Gb/s packet/Ethernet over SDH and SONET optical interfaces.

KEY FEATURES

- Up to 4x SFP+ monitoring inputs
  - SDH – STM-1, STM-4, STM-16, STM-64
  - SONET – OC-3, OC-12, OC-48, OC-192
- Packet/Ethernet over SDH/SONET (PoS/EoS) monitoring
- VCAT/LCAS support
- Automatic PoS/EoS protocol detection – PPP, HDLC, cHDLC, GFP, ATM AAL2/AAL5
- 32,000 dynamically reconfigurable packet filters
- Data tunnel awareness (GTP, L2TP, etc.)
- Packet processing acceleration
- 4ns precision time stamp, synchronized through external connector or host software
- 8-lane PCIe bus connection to host
- Up to 2x 10Gb/s SFP+ Ethernet egress option
- XMC Form Factor on full height PCIe carrier

KEY BENEFITS

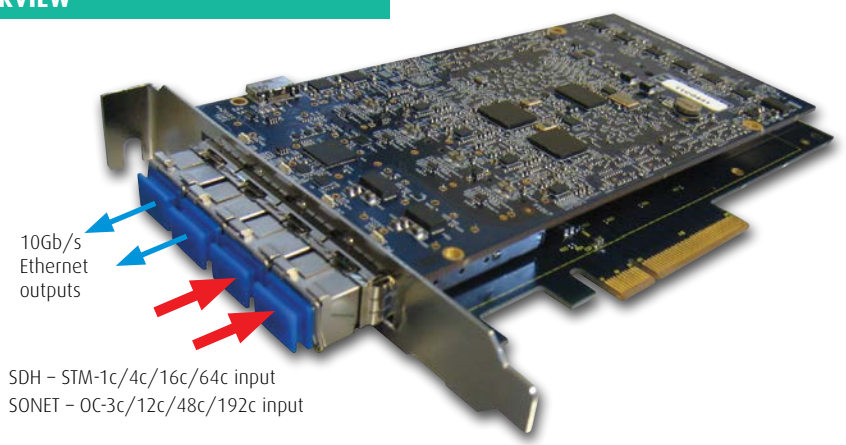
- 100% IP packet capture on non-Ethernet optical interfaces
- Connect to networks where packet over SDH/SONET framing protocol is unknown, using automatic PoS protocol detection
- Ensure no CPU resource is used inspecting irrelevant packets. Onboard packet filters prefilter monitored data at line-rate
- Synchronize packets monitored at different network nodes with 4ns precision
- Intercept known packet flows at zero CPU processing cost, by combining filters with Ethernet egress option
- Capture tunnelled data packets
- Offload CPU processing overhead from DPI applications. Packet processing acceleration features extract key data and generate additional information to support packet processing applications

APPLICATIONS

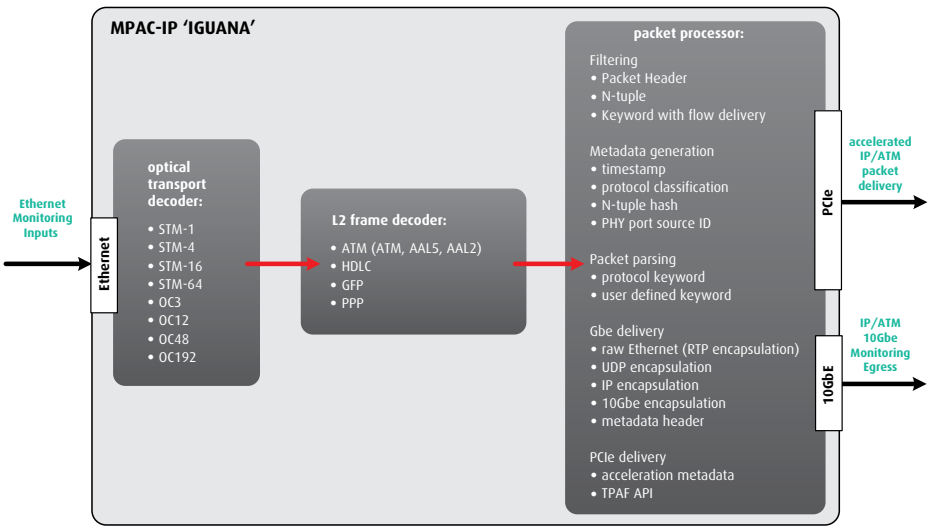
PoS/EoS network monitoring:

- Test and measurement
- Quality of service monitoring
- Cyber security
- Network Intrusion Detection (IDS)
- Lawful intercept

OVERVIEW



The MPAC-IP IGUANA 4x 10Gb/s card enables packet monitoring on Packet over SDH/SONET and ATM networks. The card incorporates up to 4x 10Gb/s SDH/SONET optical monitoring ports (STM-1/4/16/64 [OC-3/12/48/192]), capturing IP traffic from Packet/Ethernet over SDH/SONET (PoS/EoS) structured transport interfaces.



Dynamically reconfigurable on-board packet filters ensure that the host application need only process packets which are of potential interest. The IGUANA card provides packet filtering and delivery based on packet headers – IP, GTP, MPLS labels, or other user-defined fields. It also identifies keywords deep in packet payloads, and delivers the subsequent packet flow. These feature realtime capture of all critical communication data, including those transported through network tunnels.

The packet processing offload features pre-process captured packets – grouping communication flows, classifying and mapping protocol layers, parsing text protocol headers, and adding 4ns resolution timestamp – freeing the host CPU to run high-level realtime packet processing applications.

The IGUANA card will either copy the captured, filtered, and pre-processed packets directly to host memory via 8-lane gen2 PCIe, or forward them to a remote server via the optional dual on-board 10 Gigabit Ethernet egress ports.

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TECHNICAL SPECIFICATIONS

Monitoring interfaces:
- Up to four optical monitoring inputs – SFP+
- SDH – STM-1, STM-4, STM-16, STM-64
- SONET – OC-3, OC-12, OC-48, OC-192

Timing synchronization:
- 4ns resolution timestamp
- MMCX socket for 1PPS GPS timing reference (SMA adaptor supplied)
- Precision Time Protocol (PTP) support

Packet egress interfaces:
- Up to 2x 10 Gigabit Ethernet egress to user network
- 8-lane PCIe gen2 bus interface to host server (40Gb/s bandwidth)
- Can combine with Telesoft's JACKAL PCIe carrier for enhanced processing

Monitoring interface transport structure support:
- Automatic transport structure discovery
- VCAT and LCAS monitoring
- Packet/Ethernet over SDH/SONET
- RFC 2615 compliant PPP based PoS
- Monitoring of HDLC based PoS
- Monitoring of GFP
- ATM (Asynchronous Transfer Mode) support
- Monitoring and delivery of raw ATM cells
- Onboard AAL2/AAL5 packet reassembly

Configurable channel access:
- Configure specific SDH/SONET containers to monitor
- Configure full monitoring of all containers

Options for delivery of monitored data:
1 – IP monitored on PoS delivered over PCIe bus
2 – IP monitored on PoS delivered in an RTP stream over Gigabit Ethernet
3 – Raw ATM cells delivered over PCIe bus
4 – Raw ATM cells delivered as RTP stream over Gigabit Ethernet
5 – Reassembled IP from monitored ATM AAL2/5 delivered over PCIe bus
6 – Reassembled IP from monitored ATM AAL2/5 delivered over Gigabit Ethernet
7 – Raw Ethernet frames extracted from PoS, and delivered intact

Frame sizes:
- 64 bytes to 16,000 bytes

Up to 32,000 realtime configurable packet filters:
- N-tuple based filters, including:
- IP address
- TCP/UDP ports
- Protocol type field
- GTP headers
- MPLS labels
- Custom header filtering options
- String keyword matching filters
- Protocol filters (e.g. SIP, html, SMTP)
- Delivery of entire flow on string or protocol keyword match

Packet processing offload:
- 32-bit N-tuple hash to group communication flows (for load balancing, etc.)
- Protocol layer mapping and classification – layers 2-4
- Protocol keyword parsing
- Packet slicing

Physical characteristics:
- Half-length, full-height PCIe
- 10 watt power consumption
- Operating temperature: 0° to 55°C (storage: -20° to 70°C)
- Operating humidity: 8% to 90%

Operating system support:
- Linux

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