

Key Features

- **Flow Classification:** track up to 32 million unique IP flows
- **Flow Shunting:** Programmatically forward, drop, or redirect flows (blacklist matching)
- 4ns precision timestamping
- Gigamon, Arista timestamp support
- Reduced power consumption: 50 watts per adapter
- Linux and FreeBSD drivers

Hardware-at-a-Glance

- 100Gbps Lossless Packet Capture
- 1- port QSFP28 Optics: SR4 & LR4 (purchased separately)
- 16 lane, Gen 3 PCIe (supports all standard motherboards, PCIe bifurcation not required)
- External 1 PPS TTL serial input via front panel mini coax

ANIC-100Kq

1-Port, 100G, FPGA-Based Host CPU Offload Adapter

The ANIC-100Kq is an intelligent, cost-effective, 1-port 100G adapter/NIC designed to enhance the most demanding network monitoring and security applications by offloading the host CPU from various processor intensive tasks. The adapter is plugged into an available PCIe slot and seamlessly integrated with the host application via a software API. The adapter features a single QSFP28 interface which can accommodate SR and LR optical modules.

Packets enter the ANIC-100kq via the QSFP28 port and are processed by the onboard FPGA, which performs application critical CPU offload functions such as 100% packet capture, precise timestamping (4ns precision), [flow classification](#), [flow shunting](#), packet merging (in timestamp order), tunnel decapsulation (e.g. VLAN, MPLS, GRE, GTP, VXLAN), packet slicing, packet filtering, deduplication, packet steering, direct memory access (DMA)—including multi-core DMA—and more.

Timing Sub-System

In order to offer precise timestamping, the ANIC-100Kq must be disciplined by an available timing source. The highest precision is achieved via a direct attached (mini coax) 1PPS (pulse-per-second) signal from a source such as GPS or cellular network connection. Other potential timing sources are the host OS, another ANIC adapter or the local clock (free running).

Fast Path Data Communication (Kernel Bypass)

All data is transferred from the ANIC-100Kq directly into host memory at up to 100 Gbps via the PCIe bus. The host operating system is not involved in the data transfer. This fast path data communication facilitates extraordinarily high performance with zero packet loss.

Management and Control

The ANIC-100Kq provides all RMON1 (RFC 2819) related per-port statistics such as packets received, packets in error and dropped packets. Onboard hardware sensors track information such as: FPGA temperature; optical power; Ethernet link status; and time synchronization status.



Applications

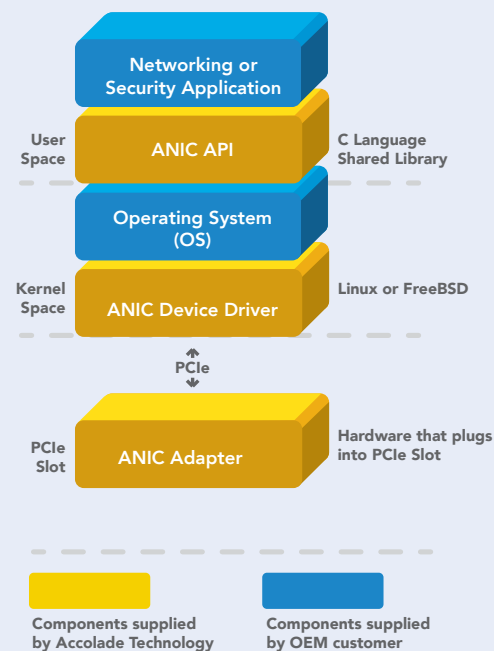
- Passive and Inline Network Monitoring
- Network Security and Forensics
- In-Line Deep Packet Inspection (DPI)
- Network Test and Measurement
- Network Probes
- Video Stream Monitoring
- High Frequency Trading (HFT)
- Application Performance Monitoring (APM)
- High Performance Computing (HPC)

Software Support

The ANIC-100Kq comes with a software development kit and world class technical support.

A lightweight, C language API is linked to the network monitoring or security application as a shared library. Various API calls are then made to communicate with and control the ANIC-100Kq. Native integration is available with PF_RING and Suricata.

The ANIC device driver facilitates communication with the adapter (via the host kernel) for common operations such as adapter setup, turning ports on and off or reading port status. All data communication, however, completely bypasses the host operating system.



Specifications

Hardware

- PCI Interface: 16 lanes Gen 3 PCI Express
- 100G Connector: QSFP28 per QSFP MSA, 100GBASE-SR4 and 100GBASE-LR4
- Timing Interface: TTL external 1 PPS input via mini-coax and repeater output

Memory

- Packet Memory: 12GB
- Flash Memory: 512MB

Environmental

- Operating Temperature: 0° to 50°C (32° to 122°F)
- Operating Humidity: 0 to 95%, non-condensing

Power

- 50 watts (without optics)
- Each QSFP28 optic adds 3.5 watts

Dimensions

- 4.25 (H) x 9.5 (L) inches (107 x 241 mm)
- Full Height, 3/4 Length

Compliance

- EMI per FCC Part 15/EN 55022/VCCI/AS/NZS Immunity per EN 55024
- Ethernet: IEEE 802.3ba 100GBASE-SR4 & LR4
- NEBS level 3 per GR-63 & GR-1089
- PCI-SIG®, RoHS, REACH

