

# RapXG™

## Quad-Port Network Record & Playback System

The highest port density and most accurate network record and playback system on the market

### Applications

- Network traffic emulation at captured packet rate
- Network data recorder
- Latency measurement and analysis
- Network security

### Benefits

- Full-bandwidth 1/10G Ethernet or 1/2/4/8/16G Fibre Channel record and playback solution
- Fully integrated with Wireshark network protocol analyzer
- Supports SPAN, TAP, and in-line network recording
- High-level API enabling quick integration with applications

### Features

- Quad SFP+ ports supporting optical and copper connectors
- IRIG-A, B and G time synchronization
- VITA 49 supported timestamping and playback
- PCAP Next Generation file format
- Programmable capture size and hardware filters
- Low latency, multi-threaded DMA host interface

### Overview

Increasing network speeds are making software recording and monitoring tools ineffective. These tools are unable to process traffic in real-time, nor can they play traffic back at appropriate rates and precision. Traditional capture systems lack balance between features, price, and performance making it difficult to justify the cost of deployment and operation. New Wave DV delivers the highest port density, lowest cost-per-port record and playback port on the market without sacrificing performance or features.

The RapXG™ comes standard with essential features, such as accurate time synchronization, programmable 5-tuple filters, PCAP Next Generation file format, a highly efficient PCI Express Gen3 host, a user friendly GUI interface, and a feature-rich API for record and playback functions.

The RapXG™ addresses the pressing need for an affordable plug-and-play network record and playback solution in data centers and development labs while eliminating unnecessary costs associated with port mirroring and wiring. For applications requiring intense network data processing, New Wave DV enables deployment of custom applications utilizing the RapXG™ API. With this innovative business model, teams now have the freedom to take advantage of the wide variety of options available from New Wave DV while staying within their budget.



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### Functional Description

**Time Synchronization** — Real-time systems, such as electronic trading systems or Radar track distribution, rely on the timely receipt of information for proper operation. Accurate time synchronization is one of the most important techniques used by engineers and administrators to monitor network performance. The RapXG™ supports IRIG-A, B, and G time code to ensure precise time synchronization of network data. It is capable of time stamping network data with 5ns relative accuracy. The time source is provided via a front panel SMA connector.

**Playback** — Playback of recorded network data is a key feature of the RapXG™ systems. Instead of simply dumping captured packets back onto the network, RapXG™ plays them back at the rate they were captured. Using hardware controlled precision clocks and the recorded capture timestamp, the RapXG™ plays back network data to within 20ns of captured time.

**VITA 49 Support** — When the network traffic is VITA 49, the RapXG™ records both the ingress time of the packet to the RapXG™ appliance as well as the embedded VITA 49 timestamp in the packet. This enables latency calculations from packet creation to data record. On playback of VITA 49 packets, the RapXG™ can transmit the packets based on the recorded timestamp or the VITA 49 timestamp, allowing the most accurate emulation of the date source.

**Data Capture and Filtering** — The RapXG™ delivers scalable, high performance packet capture and playback in real time. Application flow classification at wire speed is achieved using 5-tuple filters consisting of IP addresses, port numbers, and network protocol. In addition to supporting PCAP Next Generation file format, the RapXG™ card features a low latency, multi-threaded DMA host interface optimized for small packets.

**Network Protocol Analysis** — The RapXG™ is available with a high-level API and drivers for Linux. This allows custom software to take advantage of the system's capabilities through a C++ library and allows applications to modify card settings easily.

Because the RapXG™ system is fully integrated with the popular Wireshark network protocol analyzer, it provides a powerful tool for IT managers to easily leverage their team's existing expertise, increasing efficiency in diagnosing network issues.

**Reliability** — New Wave DV ensures extreme reliability that gives customers confidence to deploy their products in critical applications. Extended warranties and service agreements are available.

### Technical Specifications

#### NETWORK INTERFACE

Quad 1/10 Gigabit Ethernet SFP+ optical ports  
Quad 1 Gigabit Cooper Ethernet ports  
Quad 1/2/4/8/16 Fibre Channel SFP+ optical ports

#### TIME SYNCHRONIZATION

IRIG-A, B and G time synchronization via SMA connector

#### FILTERS

128 programmable 5-tuple filters  
IPv4, TCP, UDP, ICMP, ARP

#### PACKET RECORD/PLAYBACK

PCAP Next Generation format or raw data format

#### HOST INTERFACE x8

PCI Express Gen 3

#### COMPLIANCE

PCI Express Card Electromechanical Specification, Rev 2.0  
IEEE 802.3ae 2002 10GBASE LAN  
FCC 47 CFR Part 15, Subpart B, Class A (USA)  
IEC 60950-1 (International)  
RoHS Directive 2002/95EC

#### TEMPERATURE

Operating: 0 to 50° C  
Storage: -40° C to 85° C

### Ordering Information

500-05031-00-09: RapXG™ Quad 10GE Record & Playback Appliance

Request more information for storage configuration options.

#### FOR MORE INFORMATION

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