



 **daqscribe**
ETHERNET PACKET CAPTURE • RECORD • PLAYBACK

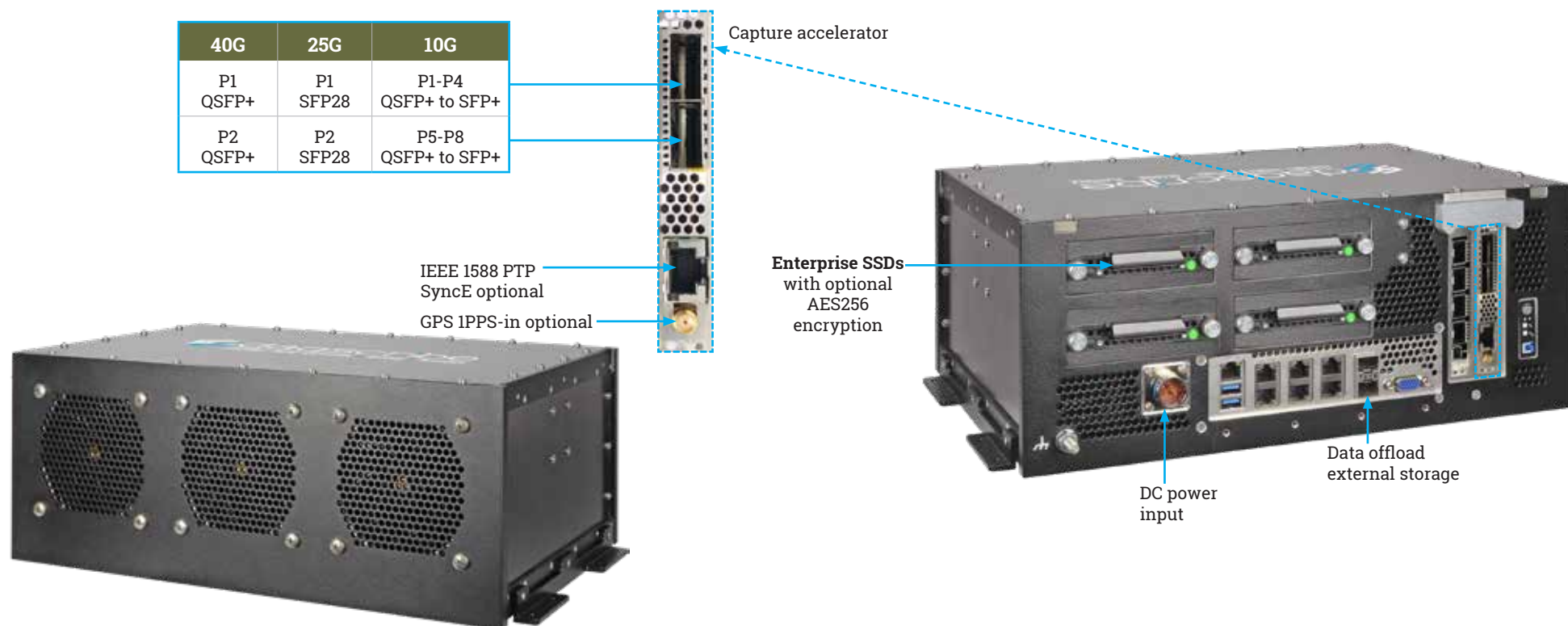
2022



Innovated and produced in the U.S.A

RDR70-Mini series

MIL-STD-810 COMPLIANT MINIATURE ETHERNET RECORDERS



RECORDER HIGHLIGHTS

- ✓ Miniature rugged **MIL-STD-810** compliant Ethernet recorders.
- ✓ Sustained **100% Ethernet capture, record, and playback** performance.
- ✓ **Real-time** standard **PCAP** status monitoring of capture ports.
- ✓ System storage options up to **60TB (SSDs)**.
- ✓ **STIG** compliant & **AES256** encryption options.
- ✓ Data offload: **USB 3.0** and **10GbE, 25GbE** or **40GbE** ports.

Daqscribe Ethernet recorders feature high-performance network technologies that grab data from **Layer-2** of the **OSI stack**.

This means precise packet-capture no matter the protocol, including **IPv4** or **IPv6**; **TCP** to **SCTP**; and **IP Unicast** to **IP Multicast**.

Data is reliably stored to enterprise **SSDs** in real-time and as **standard PCAP-formatted files**.

Access and analyze your recorded packet-data with common network analysis tools such as **Wireshark®** and **ntop®**.

100% capture & record from Layer 2

DESIGNED FOR ANY NETWORK PROTOCOL

| 7 | Application | High level APIs. HTTP, FTP, SMTP | SOFTWARE |
|---|--------------|---|----------|
| | Presentation | Encryption / decryption compression Context for communication between levels | |
| | Session | Controls dialogue between computers Controls terminations and results | |
| | Transport | Enables transfer of data TCP/UDP End-to-end connection | |
| 3 | Network | Connects hosts on different networks IPv4 + IPv6. Routing of data packets. | HARDWARE |
| 2 | Data Link | Provides connections between hosts on the same network. (Ethernet MAC addresses) | |
| 1 | Physical | Electrical + physical specifications for devices. Cables and connectors. Data in bits (1's and 0's) | |

| Miniature rugged Ethernet recorders | Storage options | Line rate performance | Network interfaces | | |
|---|---|--|--------------------|---------------|--|
| | Subject to availability and substitution | Packet Size 61 to 10,000 bytes | IEEE802.3 | Network Ports | Modules (not included) |
| RDR70-Mini-10G-2 20Gbps throughput <div>10GbE-link x 2</div> | <div>3TB</div> <div>6TB</div> <div>12TB</div> <div>15TB</div> <div>25TB</div> <div>30TB</div> | Rx: 20Gbps (or 2 x 10Gbps) Tx: 20Gbps (or 2 x 10Gbps) | 10GbE | 2 x SFP+ | SFP+ 10GBASE CR/SR/LR |
| DDR70-Mini-10G-4 40Gbps throughput <div>10GbE-link x 4</div> | <div>12TB</div> <div>25TB</div> <div>60TB</div> | Rx: 40Gbps (4 x 10Gbps) Tx: 40Gbps (4 x 10Gbps) | 10GbE | 4 x SFP+ | SFP+ 10GBASE CR/SR/LR |
| DDR70-Mini-25G-2 50Gbps throughput <div>25GbE-link x 2</div> | <div>12TB</div> <div>25TB</div> <div>60TB</div> | Rx: 50Gbps (2 x 25Gbps) Tx: 50Gbps (2 x 25Gbps) | 25GbE | 2 x SFP28 | SFP28 25GBASE CR/SR/LR/LR-BiDi, dual-rate 10/25GBASE-SR/LR |
| DDR70-Mini-40G 40Gbps throughput <div>40GbE-link x 1</div> | <div>6TB</div> <div>12TB</div> <div>25TB</div> <div>60TB</div> | Rx: 40Gbps (1 x 40Gbps) Tx: 40Gbps (1 x 40Gbps) | 40GbE | QSFP+ | QSFP+ 40GBASE CR4/SR4/LR4 |

SYSTEMS SPECIFICATIONS

| | |
|--|---|
| Hardware time stamp | <ul style="list-style-type: none"> ✓ Resolution: 4 ns, Stratum 3 compliant TCXO ✓ Time formats: PCAP-ns/-µs, UNIX 10 ns |
| Timing/synchronization | <ul style="list-style-type: none"> ✓ OS time synchronization (default) ✓ SMA interface for PPS (optional) ✓ RJ45 100/1000BASE-T interface for IEEE1588 PTP and SyncE support (optional) |
| Data format | <ul style="list-style-type: none"> ✓ PCAP format (capture/record only) ✓ NTCAP – PCAP style binary format (capture/replay) ✓ Command-line-interface utilities: Simple/quick conversion of file formats and UDP payload extraction |
| Optional capture /record features (FPGA processing) | <ul style="list-style-type: none"> ✓ Filtering based on e.g. L3/L4 criteria ✓ GTP, IP-in-IP, GRE and NVGRE tunneling support ✓ IP fragment handling ✓ Slicing at fixed or dynamic offset |
| Storage options | <ul style="list-style-type: none"> ✓ NVMe NAND flash (enterprise) ✓ Storage in TB with endurance TBW (total bytes written in PB) ✓ SSD endurance TBW is based on 128K sequential writing |
| CPU & memory | <ul style="list-style-type: none"> ✓ Xeon SoC: Options from 8 to 16 physical cores ✓ System memory: Options from 32GB to 256GB |
| Peripherals & data offload options | <ul style="list-style-type: none"> ✓ 1 x USB 3.0 ports ✓ 1 x VGA display ✓ 2 x 10GBASE-T ✓ 4 x 1GBASE-T ✓ 2 x 10Gbps SFP+ |
| Environmental standards | <p>MIL-STD-810 & DO-160 (compliant)</p> <ul style="list-style-type: none"> ✓ MIL-STD-810, Operational Temperature: -40°C to +60°C ✓ MIL-STD-810, Storage, Method 501, Procedure I/II: -40°C to +85°C ✓ MIL-STD-810, Altitude, Method 500: 12,500ft operation, 40,000ft transport ✓ MIL-STD-810, Vibration, Method 514, Procedure I: 5.5G, 10-2000Hz, 60 min/axis, 3 axes ✓ MIL-STD-810, Shock, Method 516, Procedures I/V: 20g, 11msec – functional shock; 40g, 11msec – crash hazard shock |
| System cooling | <ul style="list-style-type: none"> ✓ Three high reliability 92 mm fans |
| Power supply | <ul style="list-style-type: none"> ✓ 36-72 VDC via 220W power brick |
| Dimensions & weight | <ul style="list-style-type: none"> ✓ Height: 6" (15.24 cm) max, Width: 15.4" (39.11 cm), Depth: 9.6" (24.38 cm) excluding connectors ✓ 17 lbs (7.71 kg) - estimated |
| Mounting | <ul style="list-style-type: none"> ✓ Tray or bulkhead mounted using ears supplied |

Our Ethernet packet recording successes start with the careful selection of hardware for integration into our products.

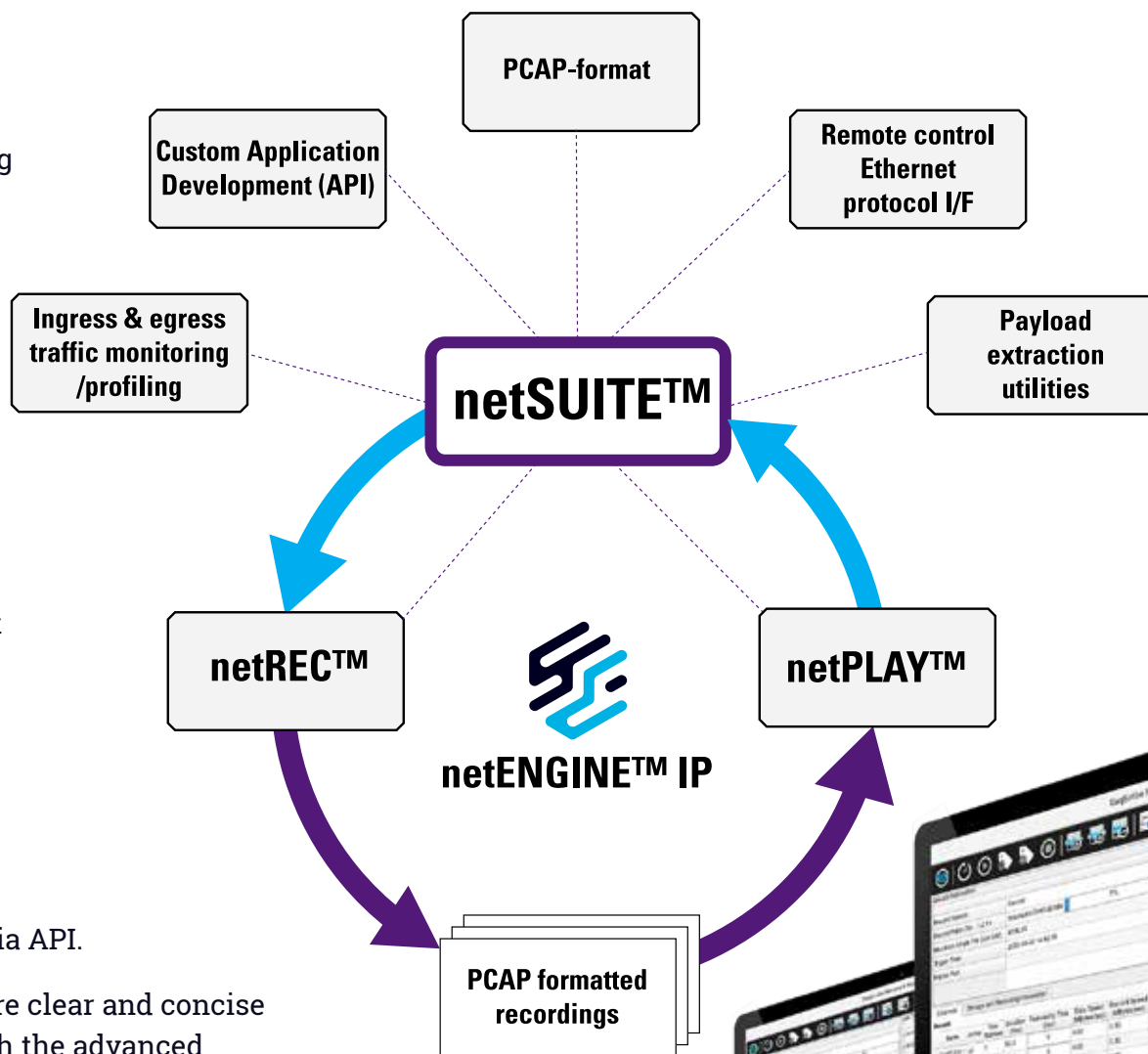
The end-to-end network data paths are then driven by our specially developed **network-engine IP**.

The result is a well-tuned Ethernet record and playback instrument, whose system functions are directed by one of our powerful software modules within **netSUITE™**.

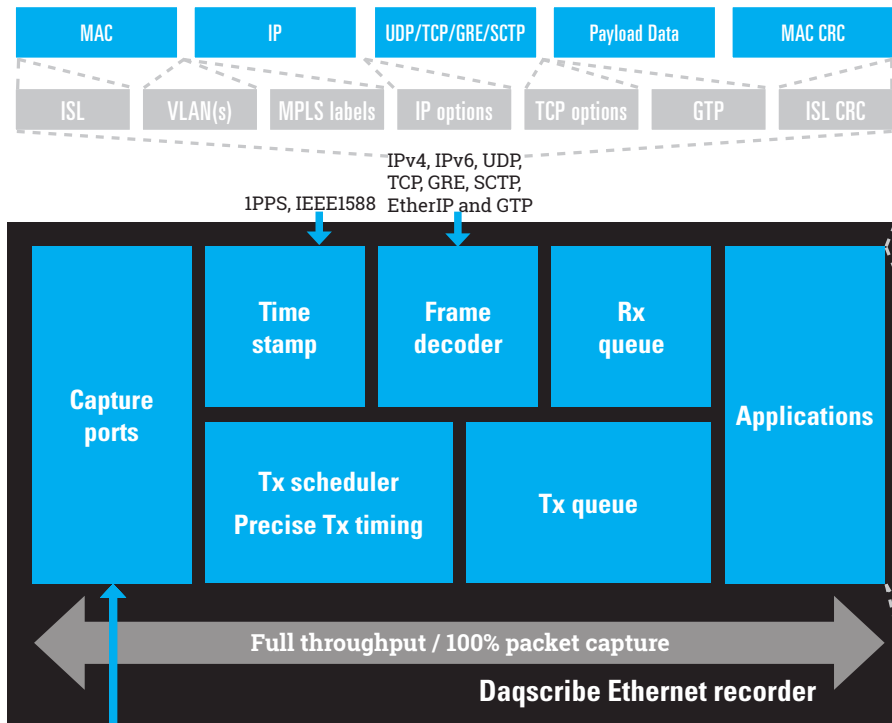
Operation workflows are easy to setup and manage from either your desktop or via API.

netREC™ and **netPLAY™** feature clear and concise GUIs, for consideration of both the advanced and novice users.

Your data can be found within our standard Linux file system, in **PCAP-format**, and on enterprise-grade solid-state storage.



SYSTEM BLOCK DIAGRAM



- 10/100/1000MbE/RJ45
- 10GbE / SFP+
- 25GbE / SFP28
- 40GbE / QSFP+
- 100GbE/QSFP28

netSUITE™ software featuring netREC™ and netPLAY™

The screenshot shows the netSUITE software interface. The top bar includes icons for various functions like Session, Channels, and Playback. The main window is divided into several sections:

- Session Information:** Displays details about the current recording session, including Record Session, Record Path, and Maximum Single File Size (MB).
- User Tags:** A table for adding and managing user-defined tags.
- Channels:** A table listing active recording channels.
- Record:** A detailed table showing recording progress for multiple channels.
- Replay:** A table for managing and executing playback sessions.

The screenshot displays the L2 monitoring tool interface, showing a table of network statistics and counters. The table is organized into columns for different types of counters and their current values.

| Type | Unit | Value | Unit | Value | Unit | Value |
|-------------|----------|-------|-------|-------|------|-------|
| Passive DAC | 10G Full | 0 | 0.00M | 0.00M | 9018 | N/A |
| Passive DAC | 10G Full | 0 | 0.00M | 0.00M | 9018 | N/A |
| Passive DAC | 10G Full | 0 | 0.00M | 0.00M | 9018 | N/A |

Below the table, there are sections for **Rx RMON counters** and **Totals**, providing a comprehensive overview of network performance and error rates.

L2 monitoring tool

- ✓ Port statistics/RMON counters RX - TX
- ✓ Checksum error counters
- ✓ Packet decode counters
- ✓ Drop counters
- ✓ IPF table counters
- ✓ Sensor monitoring
- ✓ PPS statistics
- ✓ IEEE 1588 PTP

Daqscribe Ethernet recorders are Assured Data Availability Solutions (ADAS) offering 100% packet capture, record, and playback capabilities

USE CASES

Spectrum Research



Electromagnetic sensing & analytics

- ✓ Wideband digital receivers
- ✓ Radio frequency system-on-a-chip
- ✓ Digital signal processing

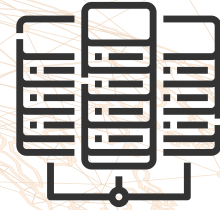
Telecommunications



Network planning, rollout, and QoS

- ✓ 5G wireless access
- ✓ Mobile edge computing
- ✓ Core networks

Cyber Operations



Computer & Network Defense

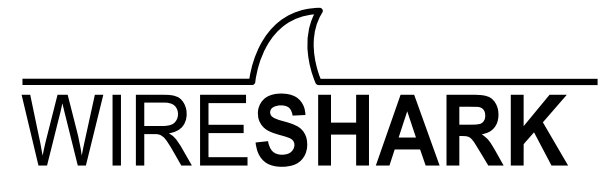
- ✓ Offensive computing
- ✓ Deep packet inspection
- ✓ Network capture & store



A VERSATILE PROCESSING PLATFORM
(software examples)

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PROCITEC®



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