Ether-DuaLoop is a battery operated loop-back device with two optical/electrical-ports that can be work independently looping back Ethernet/IP L1-L4 packets used to execute acceptance and assurance tests including RFC2544 or eSAM.

ALBEDO Ether.DuaLoop

1. GENERAL

1.1. INTERFACES
- Port A - B: 2 x SFP
- Port A - B: 2 x RJ45

1.2. OPERATION MODES
- Loop-back (single port and double port)
- Pass-through

2. ETHERNET PHY

2.1. INTERFACES
- SFP ports (1Gbit/s): 1000BASE-T, 1000BASE-SX, 1000BASE-LX, 1000BASE-ZX, 1000BASE-BX
- SFP ports (100 Mbit/s): 100BASE-FX, 100BASE-TX
- SFP ports (10 Mbit/s): 10BASE-T
- RJ-45 ports: 10BASE-T, 100BASE-TX, 1000BASE-T
- On / Off laser control
- Insertion of code errors

2.1.1 Auto-Negotiation
- Bit rate: 10 Mbit/s, 100 Mbit/s, 1 Gbit/s
- Master and Slave roles in the 1000BASE-T
- Disable auto-negotiation, force line settings

2.1.2 Power over Ethernet (PoE)
- Interfaces: 10BASE-T, 100BASE-T, 1000BASE-TX
- PoE pass-through in transparent mode

2.2. CLOCKS
- Internal time ref < ±3.0 ppm
- Ethernet through Port A & B

3. PORT LOOPBACK
Loop frames matching filtering conditions or loop all frames.
- L1 (wire loopback) at the far end Rx is forwarded to Tx
- L2 (frame loopback), MAC addresses are swapped
- L3 (packet loopback) IP addresses are swapped
- L4 (application loopback) ports are swapped
- Loop controls for broadcast and ICMP frames

4. FILTERS
- Up to 8 simultaneous filters to be applied to the traffic
- Selection by Ethernet, IP, TCP/UDP fields
- Generic filter by using 16 bit mask and arbitrary offset

4.1. ETHERNET SELECTION
- MAC Source Address
- MAC Destination Address
- Type / Length value with selection mask
- C-VID and S-VID with selection mask
- Service and Customer priority codepoint

4.2. MPLS SELECTION
- Top MPLS header
- Bottom MPLS header
- Label value
- Exp field

4.3. IPV4 SELECTION
- IPv4 Source address
- IPv4 Destination address
- IPv4 Protocol
- DSCP fields

4.4. IPV6 SELECTION
- IPv6 Source address
- IPv6 Destination address
- IPv6 flow label
- DSCP
- Next Header

4.5. UDP SELECTION
- Port: single value or or ranges of values

5. PHY RESULTS

5.1. AUTO-NEGOTIATION
- Bit rate indication
- Duplex mode indication
- Master role indication (1000BASE-T)
- Slave role indication (1000BASE-T)

6. FRAME ANALYSIS

- Modes: One-way (port A - A), two-way (port A - B)
- Separate statistics for Port A / B, Tx / Rx, Filter

6.1. ETHERNET STATISTICS

- Counts: Ethernet, VLAN, IEEE 802.1ad frames, Q-in-Q, Control, Pause, IEEE 1588-2008
- Frames: unicast, multicast, broadcast
- FCS errors, Undersized, Oversized, Fragments, Jabbers
- Size: < 64, 65-127, 128-255, 256-511, 512-1023, 1024-1518, 1519-1522, 1523-1526 and 1527-MTU bytes

6.2. IP STATISTICS

- Packet counts: IPv4 packets, IPv6 packets
- Packet counts: unicast, multicast and broadcast
- UDP, ICMP, IEEE 1588 packets
- IPv4 checksum errors, IPv6 checksum errors

6.3. BANDWIDTH STATISTICS

- Current, max, min, avrg (Tx / Rx, Port A / B)
- Unicast, multicast and broadcast counts
- IP and UDP statistics

6.4. NETWORK EXPLORATION

- Top talkers: 25 most popular MAC / IPv4 / IPv6 addr
- Top C-VID and S-VID: 25+25 most popular tags
- Atomatic setup of 8 filtering blocks

7. PLATFORM

7.1. GUI

- Touch-screen, keyboard and mouse
- Full remote control with VNC
- SNMP and MIB support

7.2. BATTERIES

- Operation time with batteries (LiPO): 8 - 24 hours
- Battery recharge time (LiPO): 4 hours

7.3. OPERATION

- Operational range: -10ºC to +50ºC
- Operation humidity: 10% - 90%
- IP rating: 54
- Configuration, report storage and export through USB

7.4. ERGONOMICS

- TFT colour touch screen (480 x 272 pixels)
- Dimensions: 223 x 144 x 65 mm (8.8 x 5.6 x 2.5 inches)
- Weight: 1 kg