ALBEDO Telecom

in Test we trust

*Once **mobile backhaul** has migrated to Ethernet/ IP / MPLS a bunch of synchronization alternatives are available including: a) **TDM** based signals such as E1/T1, b) satellite based **GPS** and c) packet based solutions such as **SyncE** and **PTP**. **Ether.Genius** is suitable for testing all this three environments and also those hybrid architectures on packet have not totally replaced legacy circuit switching.*

Market Analysis

Updated on 23/11/15

ALBEDO Ether.Genius

Ether.Genius	VePAL TX130M+	NetProbe 2000
		
ALBEDO Telecom	VEEX	Network Research

PLATFORM			
Size	• 210 x 110 x 60 mm • Volume: 1,386.0 cc • 1 kg	• 210 x 100 x 55 mm • Volume: 1,155.0 cc • 1 kg	• 210 x 100 x 42 mm • Volume: 900 cc
Architecture	• No modules, all interfaces included	• No modules, all interfaces included	• No modules, all interfaces included
Display	• 480 x 272 pixels (4.3 inch) • Touchscreen • Keyboard • Mouse	• 320 x 240 pixels (3.5 inch) • Touchscreen • Keyboard	• 320 x 240 pixels (3.5 inch) • Touchscreen • 5-way keypad
Ruggedness	• 1,5 meters drop	• 1,0 meter drop	• (?)
Remote Control	• Standard VNC • SNMP	• Propietary (ReVeal)	• Standard VNC
Batteries	• 2 x Li-Po • 8h in GbE • 24h in E1	• Li-Po • 2-6 h. operation	• Li-Po • 4-8 h. operation
Auxiliar Ports	• SD card (configuration, results) • RJ45 (remote control) • 2 x USB (upgrades, configuration, results)	• RJ45	• RJ45 (remote control) • mini USB
GNSS receiver	• Yes GPS / GLONASS	• No	• No
Optical Interfaces	• 2 x SFP • C37.94	• SFP (one)	• SFP (one) • C37.94
Electrical Interfaces	• 2 x RJ-45 • 2 x BNC • 2 x RJ45-balun • External Clock input • VF input • Datacom DTE • Datacom DCE	• 2 x Bantam (or RJ45) • 2 x BNC • External Clock input • VF input	• Bantam • BNC • 2 x RJ45 • External Clock input • VF input

CONFIDENTIAL

	Ether.Genius	VePAL TX130M+	NetProbe 2000
CLOCKS			
Internal Clock	• **GPS built-in receiver** • OCXO ±0.1 ppm • Default better than ±2.0 ppm	• Default ±3.5ppm	• (?)
External Clocks Input	• Antenna to GPS/GLONASS • 1.5, 2Mb/s, • 1.5, 2, 10 MHz • 1 pps	• 2Mb/s • 2, 25, 125 MHz • 2 and 10 MHz • 1 pps • SyncE, PPT	• No
Clock outputs	• 1 pps • 2Mb/s, 2.0 MHz	• 1.5, 2.048 Mb/s • 1.5, 2, 10, 25, 125 MHz • 1 pps	• No
ETHERNET - IP			
Frames	• IEEE 802.3 / DIX • VLAN • IEEE 802.1ad / Q-in-Q • FCS error insertion	• IEEE 802.3 / DIX • VLAN • IEEE 802.1ad / Q-in-Q	• IEEE 802.3 / DIX • VLAN • IEEE 802.1ad / Q-in-Q
Optical Power meter	• Yes	• No	• Yes
PoE	• Yes	• No	• No
Cable test	• TDR: Open, Short distance fault • Active links: MDI / MDIX status • Wiremap: Open, Short, Straight, Crossed, Polarity, Pair skew, Crosstalk	• TDR: Open/Short distance fault	• Wiremap: open, short, crosstalk, length impedance
Operation Modes	• Pass through • End point: IP, Ethernet, LI • Monitor • Loop-back	• End point • Monitor • Loop-back	• End point • Monitor • Loop-back
One-way Delay	• Yes	• No	• No
Packet Capture	• No	• Yes	• No
Streams	• 8 streams	• 8 streams	• 8 streams
MPLS	• Yes	• Yes	• Yes
Measurements	• BERT (Single Stream, Framed, Unframed) • Alarm Detection • Round Trip Delay • Service Disruption Time??	• BERT (Single Stream, Framed, Unframed) • Alarm Detection • Round Trip Delay • Service Disruption Time	• BERT
Protocols	• DHCP, ARP, DNS • Ping, Traceroute	• DHCP, ARP, DNS, FTP • Ping, Traceroute	• DHCP, ARP, DNS, FTP • Ping, Traceroute
IP	• IPv4 and IPv6 • CoS / DSCP	• IPv4 and IPv6 • CoS / DSCP • Browser	• IPv4 • IPTV
BW Profiles	• Constant, burst, ramp, random	• Constant, burst, ramp	• Constant, burst, ramp
Network Search	• Yes	• No	• No
RFC-2544	• Symmetric / Asymmetric • Throughput, Back-to-back, Frame loss, Latency, System recovery	• Symmetric / Asymmetric • Throughput, Back-to-back, Frame Loss, Latency	• Symmetric / Asymmetric • Throughput, Back-to-back, Frame loss, Latency
eSAM (ITU-T Y.1564)	• Symmetric • Asymmetric	• Symmetric	• Symmetric

	Ether.Genius	VePAL TX130M+	NetProbe 2000
SYNCHRONOUS ETHERNET			
SyncE modes	· Master, Slave, Passthru	· Master, Slave	· No
SyncE Frequenc	· Offset / Drift Analysis & Generation	· Slave frequency offset analysis	· No
SyncE	· ESMC, SSM monitor, decoding, generation · QL: generation, decoding, forward	· ESMC, SSM monitor, decoding, generation · QL: generation, decoding, forward	· No
SyncE Wander	· Built-in and real-time mesurement · TIE, MTIE, TDEV	· No (requires external PC)	· No
Wander Generation	· Sinusoidal wander generation	· No	· No
PTP- 1588v2			
PTP(IEEE1588)	· Master, Slave, Transparnt · Protocol Analysis/Generat · Freq. offset, drift	· No	· Yes (?)
PTP Profiles	· Telecom · Electrical	· (?)	· No
PTP Wander Analysis	· Built-in and real-time mesurement · TIE, MTIE, TDEV	· No (requires external PC)	· No
Wander Generation	· Real-time MTIE & TDEV	· External software !!	· No
PDV Floor metrics	· FPR, FPP, FPC · Pass / Fail theshold	· No	· No
E1 - T1			
TDM Frames	· E1 (PCM-30/C, PCM-31/C) · DS1 (Q4-2015)	· E1 (PCM-30/C, PCM-31/C), E2, E3 · DS1, DS3	· E1 · DS1, DS3
Measurements	· Attenuation · Frequency, Freq. deviation	· Attenuation · Frequency	· Frequency
Analysis	· G821, G826, M2100 · CAS, G711	· G821, G826, M2100 · CAS, G711	· G.821, G.826, M.2100 · CAS, G711
Latency	· Round Trip Delay (RTD) · One-Way Delay (OWD) with GPS	· Round Trip Delay (RTD)	· Round Trip Delay (RTD)
Pulse Mask	· Yes	· Yes	· Yes
Voice Freq.	· Add/drop	· Add/drop	· Yes
E1/T1 Jitter	· Analysis · Jitter Generation	· Analysis	· No
E1/T1 Wander	· Built-in TIE, MTIE, TDEV analysis · Built-in Wander Generation	· Yes (but requires requires and external PC)	· No
ITU-T G.703 / E0 (codirectional)			
Functions	· BER · Anomalies insertion and analysis · Defects insertion and analysis · G.821 performance	· BER · Anomalies insertion and analysis · Defects insertion and analysis · G.821 performance	· Yes
Latency	· Rount Trip Delay (RTD) · One-Way Delay (OWD) with GPS	· Rount Trip Delay (RTD)	· Rount Trip Delay (RTD)

	Ether.Genius	VePAL TX130M+	NetProbe 2000
		C37.94	
Tests	· Unframed or framed operation · Bit-rate from 64 kb/s to 768 kb/s · BER and ITU-T G.821 · Pass / fail indications · Alarms Detection / Insertion · Enhanced SFPs for industry connectivity	· No	· BER and ITU-T G.821 · Alarms · SFP may fail to connect
Measurements	· Optical Power meter · Frequency, Deviation, Data rate	· No	· Optical Power meter
Latency	· Rount Trip Delay (RTD) · One-Way Delay (OWD) with GPS	· No	· No
		DATACOM	
Operation Modes	· Terminal · Monitor	· No	· Terminal
Datacom	· Standard cables (CISCO) · From 50 b/s to 2048 kb/s · V.24/V.28 (RS-232) · X.21/V.11 · V.35 · V.36 (RS-449) · EIA-530 / EIA-530A	· No	· Cables NP2000-DCOM · V.24/V.28 (RS-232) · X.21/V.11 · V.35 · EIA-530
Analysis	· BER and ITU-T G.821 performance · Logic analyser capability · Defects LOC, AIS, LSS, All 0, All 1 · Anomalies: TSE, Slip · Line attenuation, frequency, deviation	· No	· No
Latency	· Rount Trip Delay (RTD) · One-Way Delay (OWD) with GPS	· No	· No
		VoIP	
PBX emulation	· Yes (with exsternal PC)	· No	· No
SIP Network emulation	· Yes	· No	· No
T.38 Fax emulation	· Yes	· No	· No
Simultaneous Calls	· 5 simultaneous calls	· 1 call	· 1 call
Codec	· G.729	· G711, G723, G729	· (?)
MOS	· Yes	· Yes	· No
Calls to PSTN	· Yes	· No	· No
RTP statistic:	· Jitter, Delay, Loss	· No	· No
DTMF tone	· Yes	· Yes	· No
SIP registration	· Yes	· Yes	· Yes
TOS/COS	· Yes	· No	· No
PDF reports	· Yes	· Yes	· Yes
ARP and Trace Route	· Yes	· No	· No
Call Modes	· Single, Sequential, Mass	· No	· No