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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 23/10/15

Advanced C37.94 testing

Ether.Genius	Ether10.Genius	NetProbe 2000
 ALBEDO	 ALBEDO	 Network Research

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	PLATFORM		
Size	• 210 x 110 x 60 mm • Volume: 1,386.0 cc • 1 kg	• 210 × 110 × 60 mm • Volume: 1,386 cc • 1.1 kg	• 210 x 100 x 42 mm • Volume: 900 cc
Architecture	• No modules, all interfaces included	• All interfaces included	• No modules, all interfaces included
Display	• 480 x 272 pixels (4.3 inch) • Touchscreen • Keyboard • Mouse	• 480 x 272 pixels (4.3") • Touchscreen • Keyboard • Mouse	• 320 x 240 pixels (3.5 inch) • Touchscreen • 5-way keypad
Ruggedness	• 1,5 meters drop	• 1,5 meters drop	• (?)
Remote Control	• Standard VNC • SNMP	• Standard VNC • SNMP	• Standard VNC
Batteries	• 2 x Li-Po • 8h in GbE • 24h in E1	• 2 x Li-Po • 8 hours in 10 GbE • 24 hours in E1	• Li-Po • 4-8 h. operation
Auxiliar Ports	• SD card (configuration, results) • RJ45 (remote control) • 2 x USB (upgrades, configuration, results)	• SD card (configuration, results) • RJ45 (remote control) • 2 x USB (upgrades, configuration, results)	• RJ45 (remote control) • mini USB
GNSS receiver	• GPS / GLONASS antenna	• GPS / GLONASS antenna	• No
Optical Interfaces	• 2 x SFP • C37.94	• 2 x SFP+ • C37.94	• SFP (one) • C37.94
Electrical Interfaces	• 2 x RJ-45 • 2 x BNC • 2 x RJ45-balun • External Clock input • VF input • 2 x Datacom DTE/DCE	• 2 x RJ-45 • 2 x BNC • 2 x RJ45-balun • External Clock input • VF input • 2 x Datacom DTE/DCE	• Bantam • BNC • 2 x RJ45 • External Clock input • VF input

This Datasheet that contains a specification which are representative and accurate of the product. However, are subject to change without notice

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	Ether.Genius	Ether10.Genius	NetProbe 2000
CLOCKS			
Internal Clock	• **GPS built-in receiver** • OCXO ±0.1 ppm • Default better than ±2.0 ppm	• GPS built-in receiver • OCXO ±0.1 ppm • Default better ±2.0 ppm	• (?)
External Clocks Input	• Antenna to GPS/GLONASS • 1.5, 2Mb/s, • 1.5, 2, 10 MHz • 1 pps	• DS1, E1 • 1.5, 2, 10 MHz • 1 pps	• No
Clock outputs	• 1 pps • 2Mb/s, 2.0 MHz	• 1 pps • 2Mb/s, • 2.0, 10 MHz	• No
C37.94			
SFP	• Enhanced SFPs for industry connectivity • SFP developed with manufacturers	• Enhanced SFPs for industry connectivity • SFP developed with manufacturers	• Normal SFP
Settings	• Unframed or framed operation • Bit-rate from 64 kb/s to 768 kb/s	• Unframed or framed operation • Bit-rate from 64 kb/s to 768 kb/s	• Bit-rate from 64 kb/s to 768 kb/s
Clock	• Recovered and Internal clock	• Recovered and Internal clock	• (?)
Tests	• BER and ITU-T G.821 • Pass / fail indications • Alarms Detection / Insertion	• BER and ITU-T G.821 • Pass / fail indications • Alarms Detection / Insertion	• BER and ITU-T G.821 • Alarms • SFP may fail to connect
Measurements	• Optical Power meter • Frequency, Freq. Deviation • Data rate	• Optical Power meter • Frequency, Deviation, Data rate	• Optical Power meter
Latency	• Rount Trip Delay (RTD) • One-Way Delay (OWD) with GPS	• Rount Trip Delay (RTD) • One-Way Delay (OWD) with GPS	• No
ETHERNET - IP			
Frames	• IEEE 802.3 / DIX • VLAN • IEEE 802.1ad / Q-in-Q • FCS error insertion	• IEEE 802.3 / DIX • VLAN, 802.1ad / Q-in-Q • MPLS • FCS error insertion • IPv4 and IPv6	• IEEE 802.3 / DIX • VLAN • IEEE 802.1ad / Q-in-Q
PoE Plus	• Yes	• Yes	• 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 • Active links: MDI / MDIX status • Wiremap: Open, Short, Straight, Crossed, Polarity, Pair skew, Crosstalk	• Wiremap: open, short, crosstalk, length impedance
Operation Modes	• Pass through • End point: IP, Ethernet, L1 • Monitor • Loop-back	• Pass through • End point: IP, Ethernet, L1 • Monitor • Loop-back	• End point • Monitor • Loop-back
Latency	• One-way delay with GPS • Round Trip Delay (RTD)	• One-way delay with GPS • Round Trip Delay (RTD)	• RTD
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 • Ping, Traceroute	• DHCP, ARP, DNS, FTP • Ping, Traceroute

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	Ether.Genius	Ether10.Genius	NetProbe 2000
IP	• IPv4 and IPv6 • CoS / DSCP	• IPv4 and IPv6 • CoS / DSCP	• IPv4 • IPTV
BW Profiles	• Constant, burst, ramp, random	• Constant, burst, ramp, random	• Constant, burst, ramp
Network Search	• Yes	• Yes	• No
RFC-2544	• Symmetric / Asymmetric • Throughput, Back-to-back, Frame loss, Latency, System recovery	• Symmetric / Asymmetric • Throughput, Back-to-back, Frame loss, Latency, System recovery	• Symmetric / Asymmetric • Throughput, Back-to-back, Frame loss, Latency
eSAM (ITU-T Y.1564)	• Symmetric • Asymmetric	• Symmetric • Asymmetric	• Symmetric
E1 - T1			
TDM Frames	• E1 (PCM-30/C, PCM-31/C) • DS1 (Q4-2015)	• E1 (PCM-30/C, PCM-31/C) • DS1 (Q4-2015)	• E1 • DS1, DS3
Measurements	• Attenuation • Frequency, Freq. deviation	• Attenuation • Frequency, Freq. deviation	• 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) • One-Way Delay (OWD) with GPS	• Round Trip Delay (RTD)
Pulse Mask	• Yes	• Yes	• Yes
Voice Freq.	• Add/drop	• Add/drop	• Yes
E1/T1 Jitter	• Analysis • Jitter Generation	• Analysis • Jitter Generation	• No
E1/T1 Wander	• Built-in TIE, MTIE, TDEV analysis • Built-in Wander Generation	• Built-in TIE, MTIE, TDEV analysis • Built-in Wander Generation	• 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) • One-Way Delay (OWD) with GPS	• Rount Trip Delay (RTD)
DATACOM			
Operation Modes	• Terminal, Monitor, Passthrogth	• Terminal, Monitor, Passthrogth	• 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	• 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	• 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	• 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
Latency	• Rount Trip Delay (RTD) • One-Way Delay (OWD) with GPS	• Rount Trip Delay (RTD) • One-Way Delay (OWD) with GPS	• No

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