

# Ultrafast Broadband Network Tests



## KE3600 xDSL MULTITEST

The KE3600 *MULTITEST* is a versatile and revolutionary xDSL and G.FAST Tester of services in ADSL 1/2/2+, VDSL2, Vectoring, G.FAST and bonded networks, FTTx/GPON deployments and as well in optical and copper Gigabit Ethernet networks.

**NEW**

### Merging Access Network Testing

- Autodetecting ADSL-VDSL-Vectoring-G.FAST ADSL/VDSL Bonding
- xG.FAST\* ready
- Gigabit Ethernet Copper and Fiber 10/100/1000 BaseT and SFP port
- GPON ONT Emulation
- Full High-Speed IPv4/6 Test Support: Statistics, Ping, Trace Route, HTTP Down- and FTP Up/Download, Web browser, VoIP, IPTV
- ADSL / VDSL / G.FAST Copper Line Testing 31 MHz & 106 MHz\* Line Qualification, Digital Telco Line Multimeter and TDR
- SHDSL (EFM, ATM, TDM) 8 wire CO and CPE Modem Emulation
- ISDN S2m/E1, S0/Uk0 and POTS

\* in preparation



All-In-One-Solution

## Specifications

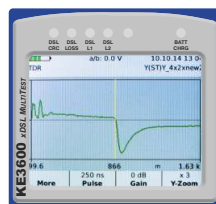
<b>Compliance</b>	ADSL1/2/2+	ITU-T G.992.5 (ADSL2+ incl. Annex A, B, J, M), ITU-T G.992.3 (ADSL2 incl. Annex A, B, J, L), ITU-T G.992.1 (G.DMT incl. Annex A, B, J) ATIS/ANSI T1.413 Issue 2 IEEE 802.3ah (PTM) ITU-T G.998.1/2/3 (Bonding)			
	VDSL2	ITU-T G.998.1/2/3 (Bonding mit Profil 30a) ITU-T G.993.2 Annex A, B (Vectoring) Profiles: 8a/b/c/d, 12a/b, 17a, 35b Band Plan: 997, 998, US0 IEEE 802.3ah (PTM)			
	G.FAST	ITU-T G.9700/9701			
<b>DSL parameters</b>		<ul style="list-style-type: none"> <li>■ Maximum attainable bit rates</li> <li>■ Actual achieved bit rates</li> <li>■ Actual bonded achieved rates</li> <li>■ Latency modes: fast, interleaved</li> <li>■ Data modes: ATM, PTM</li> <li>■ Capacity (%)</li> <li>■ Signal-to-noise ratio (SNR) margin</li> <li>■ Output power</li> <li>■ Attenuation</li> <li>■ Bits/bin</li> <li>■ Attenuation/bin (Hlog/bin)</li> </ul>			
		<ul style="list-style-type: none"> <li>■ QLN/bin, SNR/bin</li> <li>■ Vendor code, revision</li> <li>■ Interleave depth</li> <li>■ Interleave delay</li> <li>■ INP</li> <li>■ G.INP</li> <li>■ Vectoring</li> <li>■ Modes: PTM, ATM, LOS, FEC, CRC, HEC, LOF, LOM, SES, ES, UAS</li> <li>■ LATN per band</li> <li>■ SATN per band</li> </ul>			
<b>Test interfaces</b>		<ul style="list-style-type: none"> <li>■ G.FAST, VDSL2, ADSL 1/2/2+</li> <li>■ Ethernet 10/100 MBit/s Management Port</li> </ul>			
		<ul style="list-style-type: none"> <li>■ Ethernet 10/100/1000 MBit/s Test Port</li> <li>■ Web browser applicable for test interfaces</li> </ul>			
<b>Encapsulation methods</b>		<ul style="list-style-type: none"> <li>■ RFC 2684 supporting bridged Ethernet (IPvE)</li> <li>■ IPoA (RFC 1577)</li> </ul>			
		<ul style="list-style-type: none"> <li>■ PPPoE (RFC 2516)</li> <li>■ PPPoA/LLC and PPPoA/VC-MUX (RFC 2364)</li> </ul>			
<b>Operating modes</b>		<ul style="list-style-type: none"> <li>■ DSL Terminal</li> <li>■ Modem Replacement (DSL to Ethernet) pass through</li> </ul>			
		<ul style="list-style-type: none"> <li>■ Ethernet Terminal Mode</li> </ul>			
<b>Login format</b>		User name and password using PAP/CHAP			
<b>Connectivity support</b>		<ul style="list-style-type: none"> <li>■ TR069 / BNG</li> <li>■ LAN/WAN status</li> <li>■ DNS, gateway</li> <li>■ DHCP client/server, DHCP vendor class</li> </ul>			
		<ul style="list-style-type: none"> <li>■ NAT</li> <li>■ VLAN ID, VLAN tagging</li> <li>■ VPI/VCI</li> <li>■ IP release and signal strength</li> </ul>			
<b>Ping test</b>		<p>Ping destination: Gateway, IPv4 (IPv6 ready) address or URL</p> <p>Number of pings: 1 to 99</p> <p>Packet size: 32 to 1200 bytes (default is 32)</p> <p>Timeout: 1 to 10 seconds</p> <p>Results: Packets sent/received, average round-trip delay (ms)</p>			
<b>Trace Route test</b>		<p>Trace Route destination: Gateway, IPv4 (IPv6 ready) address or URL</p> <p>Timeout: In seconds, default is 1 s, maximum is 10 s</p> <p>Packet size: 32 bytes</p> <p>Number of hops: 1 to 32 (default is 30)</p> <p>Results: Indicates IP address of hop and round-trip time in milliseconds (ms)</p>			
<b>FTP/HTTP speed test</b>		<p>Address: IP or URL</p> <p>Direction: Upload and/or download up to 700 MBit/s</p> <p>Results: Time, kB transferred, speed in kbit/s</p> <p>Bookmarks: User-definable</p>			
<b>Software options</b>		IPTV Test, VoIP Tests			
<b>Interface options</b>		<ul style="list-style-type: none"> <li>■ xDSL Bonding-Module</li> <li>■ SHDSL 8 wire interface</li> <li>■ KECT copper qualifying up to 31 MHz and Telco Multimeter</li> <li>■ TDR fault detection / localization</li> </ul>			
		<ul style="list-style-type: none"> <li>■ SFP Port for copper, fiber (second GbE port) or GPON (ONT), Transceiver optional</li> <li>■ ISDN U<sub>0</sub> / S<sub>0</sub> / POTS interface</li> <li>■ S<sub>2M</sub> PRI S2M Interface</li> </ul>			
<b>General data</b>	<b>Display</b>	<b>Power Supply</b>	<b>Size</b>	<b>Weight</b>	<b>Housing</b>
	3,5" TFT-Display RGB 240 x 320	Built-in LiPo battery > 4 hours in test mode charging time 6 hours	23 x 11/9 x 7 cm 9 x 4.5/3.5 x 2.8"	820 g 1.81 lb	High impact resistant ABS w. drop protection



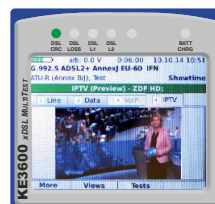
All parameters at a glance



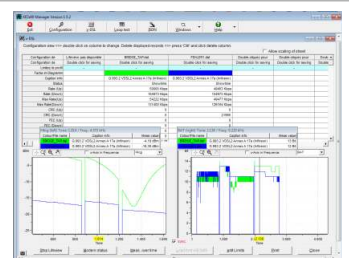
ISDN/POTS Test Telephone



Copper tests & TDR functions



IPTV Tests with Preview



Management Software included

