

NETWORK ANALYSIS AND MONITORING FAMILY

Scalable Solutions for Multiple Network Testing Use-Cases

Higher subscriber satisfaction, lower churn. Lower investment, higher revenue.

Main Benefits

- › Better network QoS and QoE
- › Cost-effective quality assurance of mobile network
- › Quicker error-locating for engineers
- › Faster mobile-network development

OPEX Reduction

- › Quick resolution of errors = less testing time
- › User-friendly GUI = less training
- › Spare network-capacity identification = maximized network

CAPEX Reduction

- › Bottleneck identification = minimized network HW investment
- › Seamless scalability = investment re-use
- › One analyzer for 2G/3G/LTE testing = lower cost

Research and development (functional testing)

Operation and maintenance (verification, live testing)

M5

Analyzer Software



- › Easily install M5 Analyzer software on any Windows PC
- › Troubleshooting and functional testing of Ethernet-based interfaces
- › Effortless remote use

PowerHawk

Multi-User Analyzer



- › Server for up to 10 simultaneous users
- › For IOT, verification and functional testing
- › Powerful solution to enable high-volume testing

PowerHawk Pro

Multi-User Live Network Analyzer



- › Probe-based system for automated real-time analysis
- › Network troubleshooting and mobile network optimization
- › Powerful KPIs available in real time, with detailed user-plane analysis including IP Application Analysis and diagnostics

TravelHawk Pro

Portable Network Troubleshooting Tool



- › Complete LTE/EPC technology support with correlated session and statistical analysis
- › High-performance unit for multiple simultaneous 1 Gbit/s and 10 Gbit/s Ethernet links
- › Comprehensive VoLTE analysis including correlated LTE control-plane, SIP, RTP and QoS (MOS/Rfactor) analysis and voice playback

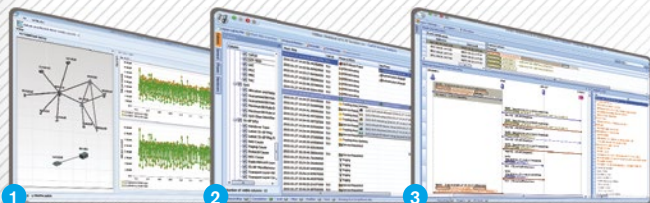
TravelHawk

Portable Analyzer



- › Briefcase-sized, PC-based unit for lab and field testing
- › On-site troubleshooting, IOT, verification and functional testing
- › Only portable multitechnology analyzer on the market

Analysis Applications



- 1 Diagnostics Suite gives information to determine QoE:** See network KPIs, subscriber and application-level QoS, call and IP session data and a wide range of network statistics.
- 2 Call and Session Analysis for troubleshooting:** See how individual calls or sessions evolve over multiple interfaces with detailed phase information and other parameters.
- 3 Protocol Monitor enables root-cause analysis:** See how the elements communicate with each other by following the sequence of messages with full details.

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M5
Analyzer Software



PowerHawk
Multi-User Analyzer



PowerHawk Pro
Multi-User
Live Network Analyzer



TravelHawk Pro
Portable Network
Troubleshooting Tool



TravelHawk
Portable Analyzer

Common M5 Analyzer Software

Options

	2G, 3G, LTE, IMS, CS Core and PS Core	LTE, PS Core	LTE/EPC	2G, 3G, LTE, IMS, CS Core and PS Core
Wireless technologies				
Transmission technologies	<ul style="list-style-type: none"> › 10/100 Mbit and 1/10 Gbit Ethernet with NIC 	<ul style="list-style-type: none"> › E1/T1/J1 › STM-1/OC-3 › STM-4/OC-12 › 10/100 Mbit Ethernet › 1/10 Gbit Ethernet 	<ul style="list-style-type: none"> › 1/10 Gbit Ethernet with PowerHawk Pro probe 	<ul style="list-style-type: none"> › 1/10 Gbit Ethernet
Intelligent data analysis applications	<ul style="list-style-type: none"> › Call and session analysis for LTE, UTRAN, GERAN, Core, SIP, IMS › NSN signaling support (SiMo) enables remote monitoring of NSN CS & PS Core networks › NSN eNodeB support for LTE Uu Analysis 	<ul style="list-style-type: none"> › High speed packet capture › High-capacity call and session analysis for LTE, PS Core › IP Application Analysis engine for application and voice quality measurement › LTE and PS Core signaling KPIs with KPI Server › Open database format for system integration with 3rd party tools › Monitoring, analyzing and correlating LTE air-IF physical data with Sanjole › NSN signaling support (SiMo) enables remote monitoring of NSN CS & PS Core networks 	<ul style="list-style-type: none"> › LTE live network troubleshooting › Transmission and IP-Application Analysis › Data capturing 	<ul style="list-style-type: none"> › E1/T1/J1 › STM-1/OC-3 › STM-4/OC-12 › 10/100 Mbit Ethernet › 1/10 Gbit Ethernet › Call and session analysis for LTE, UTRAN, GERAN, Core, SIP, IMS › NSN signaling support (SiMo) enables remote monitoring of NSN CS & PS Core networks › NSN eNodeB support for LTE Uu Analysis
Customer-specific implementations	3GPP-compliant, Ericsson, Nokia Siemens Networks, Alcatel-Lucent, Nortel, DoCoMo, etc.			