

IEC 61850 Process Bus Analyzer

Area of application

The IEC 61850 Process Bus Analyzer provides on-line analysis of data streams in IEC 61850 Process Bus, including sampled values data streams (IEC 61850-9-2 / IEC 61850-9-2LE) and GOOSE (IEC 61850-8-1).

The Analyzer is intended for type, routine, FAT, SAT and other tests of IEC 61850 Substation Automation Systems (SAS) and components of SAS, involving communication network, separate IEDs, communication network equipment (Ethernet switches), etc.

Overview

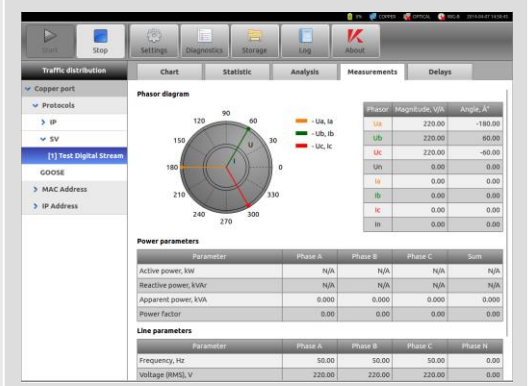
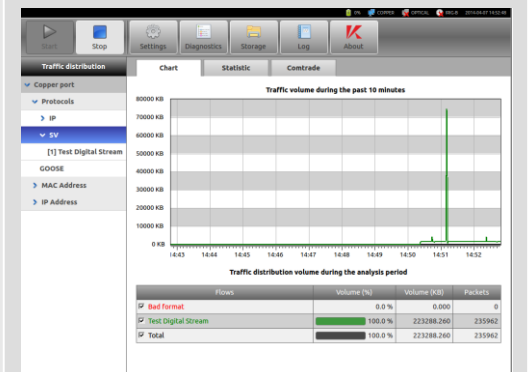
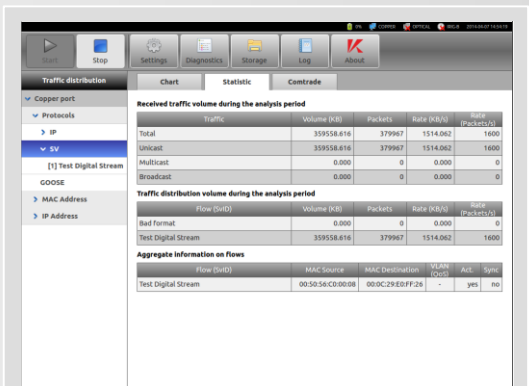
The device has a portable form factor enclosure resistant to shocks, precipitation and temperature variations.

The Analyzer contains the following interfaces: Ethernet ports (copper and fiber optic), touch screen, IRIG-B synchronization interface and USB interface for data export. Internal battery provides for autonomous operation.

The device offers essential and deep analysis of intensity, structure and contents of IEC 61850 communication traffic. The results are available in a user-friendly form, which is understandable without detailed knowledge of Ethernet networks technology and specifics of IEC 61850 standards.

Features (Ethernet)

- ❑ Capturing and processing of 100% ingress Ethernet traffic;
- ❑ Exporting of analysis reports in PDF;
- ❑ Checking format of Ethernet packets (CRC, Vlan, QoS etc.);
- ❑ Ethernet statistics: traffic profiling by:
 - IEC 61850 types: SV, GOOSE, MMS;
 - IP types (TCP, UDP);
 - Unicast/Multicast/Broadcast;
 - separate SV data streams;
 - separate GOOSE messages;
 - IP and MAC.



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Features (IEC 61850)

- Detecting SV data streams & GOOSE messages sequences;
- Online decoding of IEC 61850 packets:
 - SV: MAC src/dst, AppID, Ethertype, VLAN id, Priority, data quality flags, smpSync, confRef, refTm, Test flag etc.)
 - GOOSE messages: MAC src/dst, AppID, Ethertype, VLAN id, Priority, data quality flags, Test flag, timeAllowedToLive, confRef, T, StNum, NdsCom
- IEC 61850 SV and GOOSE conformance testing;
- IEC 61850-9-2LE assessment of compliance;
- Online analysis of SV streams (lost packets, sync loss, packet interleaving errors, etc.);
- Online analysis of GOOSE quality (lost packets, errors in the periodicity of sending, etc.);
- On-line electrical parameters calculation for SV flows:
 - currents and voltages r.m.s. ;
 - frequency;
 - active, reactive, apparent power;
 - phase angles;
 - phasors.
- Measuring the temporal characteristics of SV stream (delay time, jitter, packet delay variation etc.);
- Recording of ingress SV & GOOSE data streams (with export to COMTRADE/WinPCAP files).

Technical Data

Packaging	Dimensions (W x H x D)	368 x 267 x 152 mm 14,5 x 10,5 x 6 inch
	Weight	13,2 lbs (6 kg)
Enviromental	Temperature range (operating)	+1..+40 °C
	Relative Humidity	< 85 % at 25°C, non-condensing
Interfaces	Ethernet	1 x 10/100/1000BASE-T (RJ-45) 1 x 100BASE-FX (ST)
	Synchronization	IRIG-B (BNC, 50 Ω)
	Local Data Export	1 x USB (2.0)
	HMI	12,1' touch panel
Power Supply	External power supply	90...264 VAC, 47...63 Hz
	Internal Battery Life	> 2 hours