GDGM-61588 Portable Network Message Analyzer

General Information

GDGM-61588 Portable Network Message Analyzer is a portable instrument applied in smart substation or power research laboratory. It fully supports DL/T 860 and related standards of smart substation, and provides reference for testing, debugging and maintenance of various secondary equipment in smart substation.

GDGM-61588 can directly collect the sampled values, GOOSE, MMS and IEC 61588 synchronized messages of the intelligent substation process layer network. The transient recording and continuous recording modules are optional. After the transient recording is selected, the recording and location analysis of transient faults in power grid can be realized.

Features

- All types of messages of SV, GOOSE, MMS, IEC61588 in intelligent substations are recorded;
- With high performance real-time embedded operating system vxWorks, the system is stable, reliable and good real-time;
- Real-time abnormal network alarm of substation process layer and station control layer;
- Real-time recording analysis of original message and integrated design of transient fault recording;
- It supports the combined configuration of a variety of acquisition interface plug-ins, such as 100M/1000M/FT3, with a rich variety and a large number of interfaces;
- 4 1000Mbps uplink communication ports;
- Supporting time synchronization of optical fiber IRIG-B and electrical level IRIG-B, accuracy < 300ns;
- All acquisition ports support IEC61588 clock synchronization, accuracy < 300ns;
- After synchronization, time-keeping accuracy of the device in 24 hours ≤ ±100ms;
- Real-time data writing speed: outer circle ≥ 70MB/s, inner circle ≥ 30MB/s;
- Real-time nanosecond hardware timescale, time scale resolution 40ns;

Specification

Power supply	100V ~ 250V AC/DC power supply
Processor	Embedded dual-core processor, 2G memory
Storage	2TB
Operating system	Military-grade embedded real-time operating system vxWorks 6.9
Intelligent data acquisition port	
Configuration 1	8~16pcs 100Mbps SFP module
Configuration 2	8pcs 100Mbps SFP module + 4pcs 1000Mbps SFP module
Configuration 3	8pcs FT3(ST) optical fiber port + 8pcs 100Mbps SFP module
Configuration 4	8pcs FT3(ST) optical fiber port + 4pcs1000Mbps SFP module
Receiving sensitivity	-30 ~ -14dBm
Transmission power	-20 ~ -14dBm
Note: the SFP module can be plugged in LC multi-mode/single-mode optical fiber Ethernet interface or RJ45 Ethernet interface	

Message access	
Transmission rate	240Mbps, about 24 MU,≤25% load (at normal load, recommended)
Transmission rate	320Mbps, about 32 MU,≤40% load (at upper limit load, recommended)
Transmission rate	400Mbps, about 40 MU, ≤60% load (at limit load)
Transient recording	
Channel of sampled value (SV)	Number of records ≥512, number of start-up up to 128
Channel of switch quantity (GOOSE)	Records and number of start-up≥1024
Continuous recording	
Sampling rate	1000Hz (20 dots/wave cycle)
Channel of sampled value (SV)	number of records ≥512
Channel of switch quantity (GOOSE)	≥1024
Continuous recording can be configured;	
Time synchronization port	

• 1 IRIG-B (DC) code port; 1 IRIG-B (optical fiber) code port; • Intelligent data acquisition interfaces of all Ethernet types are available for IEC 61588 time synchronization;	
Accuracy of clock	
Accuracy of clock synchronization	≤±300ns
Synchronous source is lost after clock synchronization, time-keeping accuracy of the device	≤±100ms/24h
Timescale resolution of message recording	40ns
Max. timescale deviation of multiple intelligent acquisition ports	40ns