TimeCatcher 1588
Time Synchronization Tester / Analyzer

The TimeCatcher 1588 is a Sync Tester / Analyzer that allow the user to test and analyze synchronization quality and compliance in various types of networks. The TimeCatcher 1588 is developed for both traditional SDH/SONET core networks and IP-based backhaul networks, that can measure synchronization conformance simultaneously at a packet sync level (based on SyncE and IEEE 1588v2 technologies) and at a traditional physical sync level (1PPS, E1 interface) behind a packet synchronized devices. Multiple packet sync measurements can be performed, whether it's related to IEEE 1588v2 slave / boundary clock performance qualification or SyncE wander can be also measured at any node in the network.

Basic Function

- Embedded time and frequency GPS / Rubidium reference Visible Fault Locator fast locates defective connectors, faults in macrobends, patch cords and patch cord panels
- Built-in Rubidium oscillator, High sensitivity GPS receiver,BD receiver for timing measurement vs UTC
- High sensitivity measurement 1588v2 time server, PTN/ OTN Data transmission devices and traditional physical sync level (PTP,1PPS, 1PPS+TOD)
- Precision measurement IEEE1588v2 clock synchronization or SyncE clock synchronization accuracy performance including 2.048MHz, 2.048Mb/s, Ethernet
- TOD instant message display, TOD deviation real-time display
- PTPmessage sinstantly capture, analysis, storage, PTP synchronization processinstantly displays
- use as auxiliary timeserver to provide 1PPS+TOD or PTP signal for system time
- Select GPS Rubidium atomic clock for at least 3 hour continue test, suitable for indoor or the place where user do not have GPS antenna environment
- Provide G.703 2.048MHz, 2.048Mb/s accuracy external clock input interface
- Supports long period continue test,Statistic analysis time synchronization and clock synchronization long-term drift,calculateMTIE, TDEV
- Instantscreen capturefunction, you can savetest result via graph modeinstant
- Supports testresult storedand datareplayfunction
- Built-in Li-Ion rechargeable battery, supports 8 hours continuous operation
- USB data upload/download ports, Results of measurements on a PCsorting, archiving, analysis
- Extensive systeminformation query functions, such as satellitestate, Rubidiumstate, storage space, temperature, and otherinformation
- Supports tassociationtest function, PTP + TOD simultaneously test
- Supports multi-input physical sync measurements

Main Features

- 7 inch TFT color screen operation,language support Chinese/ English with GUI interface
- Fully comply with IEEE, ITU-T standard
- Provide differenttypes of test modules for users,to meet the different requirements of the test environment
- Supports Instant results, trends, test patterns, message statistics, packet analysis, compensationview
- Supports PTP / TOD simulation tests
- Supports manual, automatic and timed tests
- Supports real-time screenshots, and the test result can be saved as an image at anytime
- Supports in-depth analysis, template matching
- Supports on-line firmware upgrade

Specifications

Built-in GPS receiver	L1 Band: CA code 50 channels, L1 frequency 1575MHz 1 PPS accuracy: 15ns
Built-in BD receiver	Compass B1: 24 channels, B1 frequency 1561MHz 1PPS accuracy: 30ns
TOD mode	China Mobile, NMEA, ASCII
Rubidium atomic clock	1×10^{-12}(Typical values)
Depthlock time	45 minutes
Frequency test accuracy	1×10^{-9}
Time Test Input port	1PPS + TOD: RS422, RS232 TOD: RS422, RS232 1PPS: TTL PTP: 10/100/1000Base-T, 100Base-FX, 1000Base-FX Supports Unicast and Multi-cast
Clock Test Input port	G.703: 2.048MHz, 2.048Mb/s Sync-E: 10/100/1000Base-T, 100Base-FX, 1000Base-FX

Input port	TOD: RS422, RS232 1PPS: TTL G.703: 2.048MHz, 10MHz PTP: 10/100/1000Base-T, 100Base-FX, 1000Base-FX Supports Unicast and Multi-cast
Ext. Clock Input port	G.703: 2.048MHz, 2.048Mb/s
Management port	Console, USB, 10/100Base-TX Ethernet
Battery	Li-Ion Rechargeable battery, supports 8 hours continuous operation
Battery Recharge time	3 hours
Power Input	16V/8A DC adatpter
LCD screen	7 inch TFT color screen, 800x480
Dimension	292mm x 200mm x 90mm (W x H x D)
Temperature	Operating 0 ~ 50℃, Storage -20℃ ~ 60℃
Humidity	0% ~ 95% non-condensing
Weight	2.3kg (with Battery)

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

Typical Application

Based on IEEE 1588 Time Synchronization base station site deployment, security, cost, future maintenance, GPS has Obvious advantages.
IEEE 1588 implementations need to assume that two-way pass time delay is equal, but Fiber cutover/Fiber splicing/jump fiber/ network transformation and expansion may affect time delay and cause time synchronization accuracy goes down. As a result, when user doing the installation, test and maintenance, making time synchronization accuracy is very important.

Port1 Synchronization device and transmission device use GPS and Compass asreference time source for instant measuringtime synchronizationto synchronizethe device output accuracy and long-term stability.

- Synchronization device time synchronization deviation test
- Synchronization device long-term stability and time keeping ability test
- Synchronous deviceGPS, Compass test switch performance changes

Port2 Transmission device use tester built-in high performance Rubidium atomic clock for reference time to measure time synchronization accuracy for PTP interface and 1PPS + TOD output interface.

- By-point basis Link asymmetric compensation
- Transmission devicetime outputdeviationtest
- TOD Packet decoding analysis
- IEEE1588 PTP Synchronization message Mechanism analysis
- BMC best verification clock mechanism vertification

Port3 Transmission device and base station device use GPS and Compass to lock the reference time for the tester built-in Rubidium atomic clock. Then connect to base station device time and clock output interface to verify the transmission accuracy when time info pass through the network.

- The verification of time delay compensation function when P to P link asymmetric
- The verification of time accuracy when time path switching.
- The verification of time source info when time switching.

Application
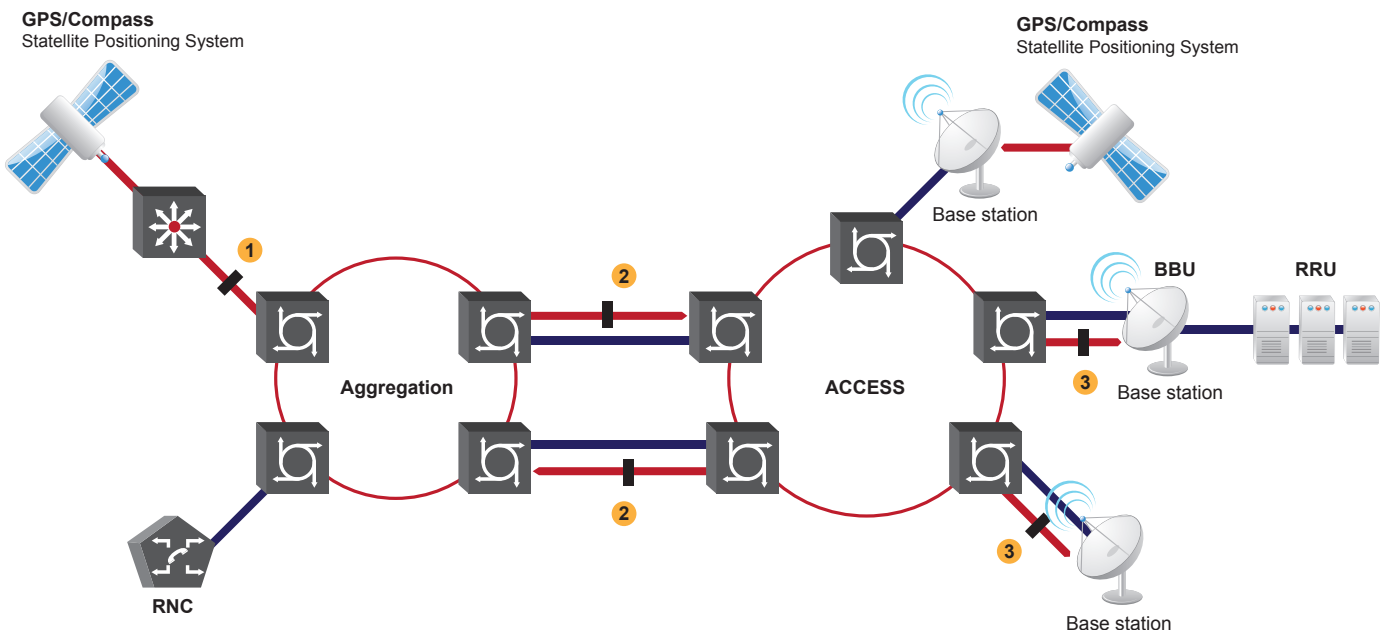
Ordering Information

Model Name	Description
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