



BT-750

PTP and NTP Client for the Network Edge

Compact

Packet-based network timing

Features

- » Compact and flexible form factor
- » Multiple system outputs including T1/E1, PPS, PPM, PP2S and 10/5/1 MHz
- » System status via LEDs
- » Integrated web server
- » Telnet, SNMP and MIB support
- » 10/100Base-T Ethernet interfaces

Benefits

- » Cost-effective distributed timing option
- » SLA assurance and KPI monitoring
- » Ease of management
- » Reduced installation costs

The BT-750 from Brilliant Telecommunications, Inc., is a carrier-class, compact, network timing client that delivers multiple synchronous outputs in a cost-efficient flexible platform.

The BT-750—designed as a network edge timing device—accurately distributes ITU Stratum timing over IP or MPLS networks when used in conjunction with Brilliant's PTP Grand Master/NTP server products: Cern C-2000 or Zurich Z-1000. Four output signals are available in the following formats: 2x T1/E1, PPS/PPM/PP2S and 10/5/1 MHz.

The BT-750 provides legacy timing outputs without the use of local GPS and supports key performance indicators including one-way and roundtrip jitter and latency measurements with a resolution of $\pm 1-3$ microseconds.

The BT-750 can be mounted in either a 19" or 23" rack, requiring 1RU for 2 units mounted side-by-side.



BT-750

PTP and NTP Client for the Network Edge

Specifications

General

Specifications

GR-1244
ITU G.823
ANSI T1.101

Internal oscillator

OCXO

Network timing client

NTP
PTPv2 (IEEE 1588)

Communications

RS-232 (RJ-45)
Ethernet (RJ-45)
10/100Base-T, IEEE 802.3

Receiver options

- » GPS receiver (L1)
12 channel, parallel tracking
L1 (1575.42 MHz) frequency

System inputs

PTP 1588v2
NTP
GPS RF cable in (optional)
LNA power—3.3/5 VDC software
selectable (only with GPS option)

System outputs

Number of system outputs 4

T1/E1

Number of T1/E1 outputs 2

T1 port format

Transmit bit rate—1.544 Mbps (G.703)
Line encoding—B8ZS
Framing—Extended Superframe (ESF) with
or without SSM support
Connector—RJ48, 110 ohm

E1 port format

Transmit bit rate—2.048 Mbps (G.703)
Line encoding—HDB3
Framing—G.704 without CRC4, G.704 with
CRC4 with or without SSM support
Connector—RJ48, 120 ohm

Frequency output

Number of 10/5/1 MHz outputs 1
(software selectable)
Connector BNC, 50 ohm

PPx output

Number of PPx outputs 1
Format PPM, PPS, PP2S (software selectable)
Signal type TTL, Pulse
Connector BNC

Frequency/timing accuracy

Locked to GPS
Frequency— 1×10^{-12} /month
Timing— ± 100 ns to UTC
Locked to eNTP peer or PTP Grand Master
Frequency—10 ppb
Timing— $< 3 \mu\text{sec}$ to UTC

Holdover accuracy

7.0×10^{-10} 24 hour stability

Physical

Dimensions 1.75" high x 8.5" wide x 12"
deep (4.45 x 21.59 x 30.48 cm); rack
mountable with optional tray
Power 48 VDC nominal (18 to 60 VDC); dual
feeds (redundant); AC option via adapter
Operating temperature -40° to $+144^\circ$ F
(-40° to $+65^\circ$ C)
Operating altitude 15,000 feet (4,500
meters) maximum
Humidity 0% to 85% noncondensing

EMC FCC Part 15, Class A, CE

Safety TÜV, North America and Europe

RoHS Level 6

Management

- » Alarms—critical, major, minor (LED)
- » Local or remote
- » Embedded web server GUI
- » Telnet/SSH/Craft CLI (Cisco-like)
- » Network management can be
performed through the Ethernet port
- » SNMP v1/v2/v3

Protocols and standards

ANSI T1.101
DiffServ/DSCP (RFC 2474)
GR-1244
HTTP/HTTPS (RFC 2616)
IPv4
ITU G.812, G.813, G.823, G.824, G.703,
G.704
NTPv2 (RFC 1119), v3 (RFC 1305), v4
enhancements
PTPv2 (IEEE 1588)
SMTP forwarding
SNMP v1 (RFC 1157), v2 (RFC 1448),
v3 (RFC 2271), MIB II (RFC 1213)
SSH (RFC 4250-4254)
SSL v1, v2, v3
Telnet (RFC 854)
TFTP (RFC 1350)
802.3



Brilliant Telecommunications, Inc.

307 Orchard City Drive, Suite 350
Campbell, CA 95008
T: 408.866.1896
F: 408.866.1708
www.BrilliantTelecom.com