

brandywine communications

Miniature Time Code Processor for Airborne Applications

Brandywine Communications' Miniature Airborne Time Code Processor (TCP-AM), is an extremely accurate and robust instrument that can be synchronized to a variety of external time sources and is a source of IRIG-B, GPS-Have Quick, NTP or IEEE 1588 time code.

Key Features

A multi-format precision time source in a very small form factor with low power consumption.

Can operate as a time code format translator: eg IEEE-1588 (PTP) to IRIG-B

Time Code Source	<ul style="list-style-type: none">IRIG and GPS Have Quick II time code generatorNTP Server and IEEE-1588 Master options
Time Mark Output	<ul style="list-style-type: none">UTC / GPS
Jam-sync	<ul style="list-style-type: none">Jam-sync to IRIG-B, GPS HQ, GPS receiver
Power	<ul style="list-style-type: none">9 to 36 V DC, 1.5 W
Power Backup	<ul style="list-style-type: none">Internal clock backed up by Super-Cap
USB Interface	<ul style="list-style-type: none">Configuration using a PC
Time Offset	<ul style="list-style-type: none">+/-12 hours with 1 second resolution
Digital I/O	<ul style="list-style-type: none">5 configurable digital input output pins
GPS Receiver [option]	<ul style="list-style-type: none">16 channel internal GPS receiver with external active antenna
GPS Lock Indicator	<ul style="list-style-type: none">GPS lock output
Galileo	<ul style="list-style-type: none">Galileo capable with firmware upgrade
RS-232 Port	<ul style="list-style-type: none">NMEA time & location message output (with GPS receiver)



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Miniature Airborne Time Code Processor

Specifications

Time Code Output

- Connector BNC
- Time Formats IRIG-B121...127
- Output Amplitude 3.0 Vp-p (no load)
- 2.0 Vp-p (into 600 ohms)

Ancillary Signals

Five Configurable Digital Signals, can be:

- Output Programmable Pulse 1
- Programmable Pulse 2
- Programmable Pulse 3
- Programmable Pulse 4
- One_PPS
- GPS On Time Mark
- GPS_Have Quick II
- GPS Lock
- IRIG-DC

- Input Event 1 to Event 4
- Debounced switch closure input
- Logic level input (accuracy +/- 100 ns)

- RS-232 NMEA messages (Time/Location)

- Connector Manufacturer: Glenair
- Part Number: 801-011-07M7-10SA
- Mates with: Glenair
- Part Number: 801-008-16M7-10PA

Power

- Connector Manufacturer: Glenair
- Part Number: 801-011-07M5-3SA
- Mates with: Glenair
- Part Number: 801-008-16M5-3PA

- Input 9 to 36 V DC, 1.5 W

Internal Time Base

- Stability 1 ppm (@ 25 deg C)
- Stability over Temperature 1 ppm (-40 to +40 deg C)
- Long Term Stability 1 ppm (1 year @ 25 deg C)
- Calibration Range +/- 8 ppm
- Calibration Accuracy +/- 15 ppb of external time source (@ 25 deg C) when disciplined

Synchronization

- IRIG-B Within +/- 10 μ s of external source at initial synchronization
- GPS-HQII, GPS Within +/- 200 ns of external source

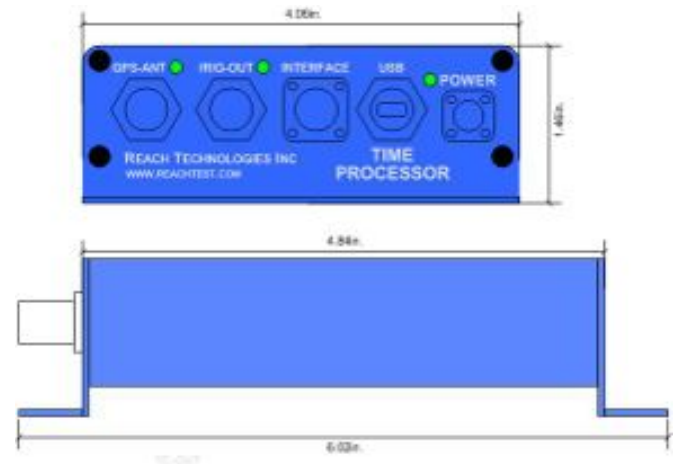
Environmental

- Temperature Operational: -40 to +60 deg C
- Non-operational: -50 to +70deg C
- Humidity Non-condensing: 95%

Physical

- Size 14.9 cm x 10.3 cm x 3.7 cm (5.9" x 4.0" x 1.5")

- Weight 0.5 kg (1 lb)



Options

GPS Receiver

- 16 channel GPS receiver

OCXO

- Hybrid OC/TCXO time base

Ethernet

- 10/100 Mbps
- IEEE-1588 (PTP) hardware support
- RJ-45 connector on rear panel

NTP Server

- [Requires Ethernet option]
- Operate as GPS synchronized NTP Source

IEEE-1588 Master

- [Requires Ethernet option]
- Operate as GPS synchronized IEEE-1588 Master

IEEE-1588 Slave

- [Requires Ethernet option]
- Generate time (eg. IRIG-B) from IEEE-1588

SNMP Control / Monitoring

- [Requires Ethernet option]
- Remote network configuration / monitoring

IRIG Code options:

- IRIG-A In/Out
- IRIG-E In/Out
- IRIG-H In/Out

GPS Antenna Input (GPS Receiver option)

- Power 5V active antenna power output
- Short circuit and open detection
- Connector TNC (standard)

Custom front/rear panel connector configurations available.

- eg. Special connector requirements
- eg. GPS antenna on rear panel