

Airborne Time Code Processor

- Flight Qualified
- Support for IEEE-1588 and GPS Havequick II I/O
- Input IEEE-1588 and Convert to IRIG A/B
- Tested to MIL-STD 810F and 461E CE102 and RE 102

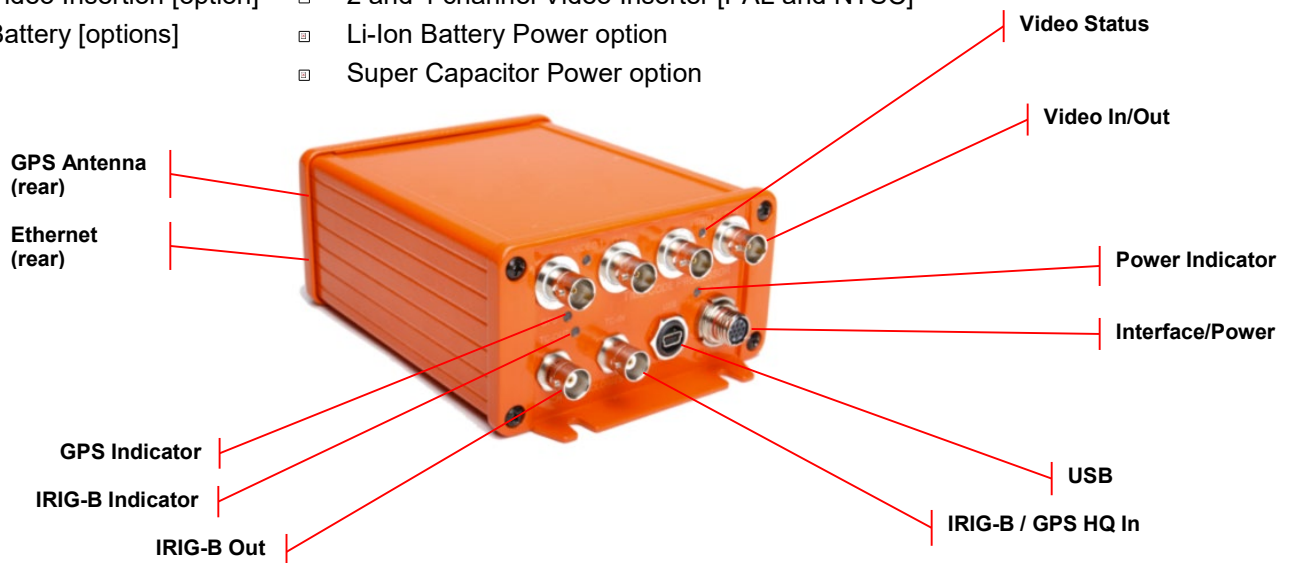
Brandywine's Airborne Time Code Processor (TCP-AS). This extremely accurate and robust instrument can be synchronized to a variety of external time sources and is a source of IRIG-B, GPS-Have Quick, NTP or IEEE 1588 time code.

Key Features

A multi-format precision time source in a 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 generator▣ NTP 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
RS-232 Port	<ul style="list-style-type: none">▣ NMEA message output
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
Video Insertion [option]	<ul style="list-style-type: none">▣ 2 and 4 channel Video Inserter [PAL and NTSC]
Battery [options]	<ul style="list-style-type: none">▣ Li-Ion Battery Power option▣ Super Capacitor Power option



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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)
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- 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

- Input 9 to 36 V DC, 1.5 W (no options)

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 [without Li-Ion battery]
- Non-operational: -50 to +70deg C
- Humidity Non-condensing: 95%

Physical

- Size 15.0 cm x 10.8 cm x 5.9 cm (5.9" x 4.3" x 2.3")
- Weight 0.7 to 1.4 kg (1.5 to 3 lb) [depending on options]

Options

GPS Receiver

- 16 channel GPS receiver

LCD Display

- Display of Time on front panel

Video Inserter

- PAL and NTSC video Input / Output
- Auto detect video signal
- Programmable overlay position and content
- Event markers (from event inputs)
- 2 channels (front) + 2 channels (rear)

IRIG Distribution

- 4 additional buffered IRIG code outputs

Li-Ion Battery

- High capacity backup power source

Super Capacitor Power

- Wide environmental specification
- Charge and discharge over full temperature range

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