

# TDU-310 - ADVANCED TIMECODE DISTRIBUTION



## Triple Reference Dual Redundant Precision Time Signal Distribution Unit

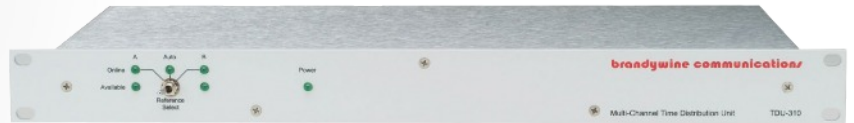


AS9100D Certificate Number : C0210021-AS3



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## Product Overview



The TDU-310 delivers automatic or manually selected dual redundant timing signal buffering and distribution across 40 outputs from a twin optically isolated banks comprising 2 x 3 independent time signal inputs, namely 1PPS, Have Quick and 50 bit/sec BCD time code.

Output signal reference selection combinations are link configurable in groups of 5 (BNC) or 10 (D Type) delivering a total of 40 buffered signals compliant with ICD-GPS-060 across 2 x 10 BNCs and a 50W D type connector.

The independent reference inputs are supported with fault monitoring and automatic switchover to the backup reference should the primary source(s) fail. In addition, Time fault discrete inputs facilitate reference changeover in response to external system signals. An automatic mode disable facility is available via a front panel switch facilitating manual override selection of the reference input bank.

The unit is built and tested to AS9100D aerospace quality standards and is specifically engineered and supplied for use in military communication applications requiring dual redundant signal distribution of the precise time code signals typically generated by military GPS receivers.

The 1PPS output pulse width is set to 20 $\mu$ s independent of the input pulse width with each output individually link selectable for either a low or 50 ohm buffer drive source impedance.

BCD time code outputs conform to EIA RS232 & RS422 standards and are link selectable for either single ended RS232 levels or differential RS422 levels.

The standard unit is provided with a selectable 115/230 VAC mains input with options for 12V, 24V or 48VDC available on request.

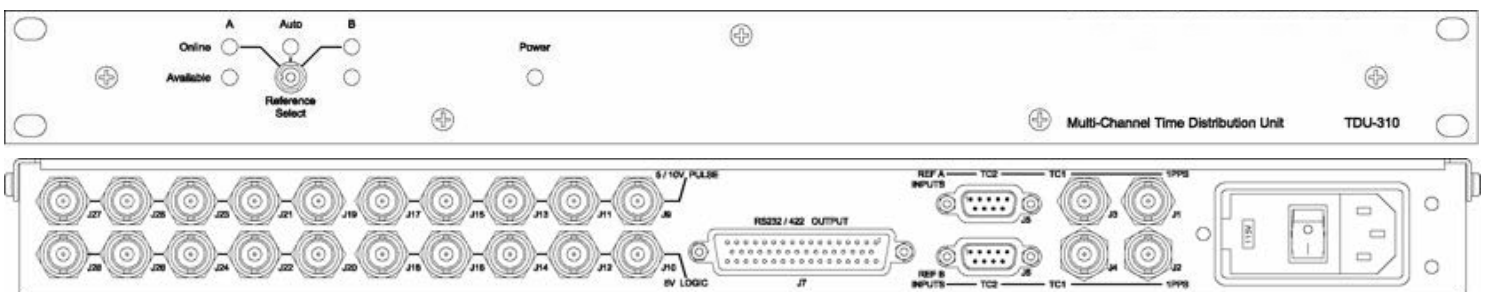
## Key Feature Summary

### Options & Features

- 3 x Dual redundant, optically isolated input references with automatic fault driven changeover
- Have Quick, BCD and 1PPS outputs compliant with ICD-GPS-060
- 1 PPS source impedance selection. Low or 50 Ohm
- BCD time code signal level selection RS232 or RS422
- Fully buffered and short circuit protected outputs
- 1U 19" rack mount
- Standard mains PSU 115/230 VAC with alternative options for 12, 24 or 48 VDC

### Signals

- Inputs : 2 x 3 Reference sources : 1 PPS, Have Quick, 50 BPS BCD Timecode
- Outputs : 4 groups of 5 and 2 groups of 10, link configured to select required reference source.
- Fault and mode status indication, manual override indication.



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## Specifications

Specifications - FDU-310	
Reference Signal Inputs	Details
1PPS	2 x BNC's Ref A and B - 50 Ohm Input Impedance
Have Quick	2 x BNC's Ref A and B - 50 Ohm Input Impedance
BCD Timecode	2 x 9 W D Type - 74ACT Logic Input Impedance ( 1 $\mu$ A )
Link Selectable Outputs	
<b>Groups 1 &amp; 2</b>	2 x 5 Outputs
Output Type	1PPS or Timecode BCD or Have Quick
Connectors	BNC
Level	0 - 10V pk
Rise Time	< 10ns
<b>Groups 3 &amp; 4</b>	2 x 5 Outputs
Output Type	1PPS or Timecode BCD or Have Quick
Connectors	BNC
Level	0 - 5V pk
Rise Time	< 10ns
<b>Groups 5 &amp; 6</b>	10 Outputs
Output Type	1PPS or Timecode BCD or Have Quick
Connectors	50W D Type Socket
Level	Single ended EIA RS232
Rise Time	< 4.5V / $\mu$ S Prop delay of 1 $\mu$ S
<b>Groups 7 &amp; 8</b>	10 Outputs
Output Type	1PPS or Timecode BCD or Have Quick
Connectors	50W D Type Socket
Level	Single ended EIA RS232
Rise Time	< 4.5V / $\mu$ S Prop delay of 1 $\mu$ S
<b>1 PPS Signal - Pulse Width</b>	20 $\mu$ S regardless of the 1PPS Input Pulse Width
Environmental	
Temperature	Instrument : -10°C + 50°C / Antenna -40°C to + 85°C
Humidity	95 % non condensing
Power	115VAC / 230VAC 50/60Hz
Power Options	18-36 VDC, 36-72 VDC, - 48VDC
Controls & Indicators	
Reference Select	Toggle switch, Select A,B or Automatic
Indicators	Reference A Selected or Available and Reference B Selected or Available
Environmental	
Temperature range	-10°C to +50°C
Humidity	95% Non condensing
<b>Physical</b>	19" Rack 1U 1.75" (H) x 7.5" (D) x 17" (W) [ 4.4 cm(H) x 19 cm (D) x 43.2 cm (W) ] Weight : 3.5 lb (1.6 Kg)
<b>Compliance</b>	CE Approved - EMC Emissions to EN55022 as EN55024 - FCC Part 15B, Class A EMC Immunity to EN50082-1 as EN61000-4-2 ESD, IEC801-3 HF Field & IEC 801-4