

AIRBORNE & PORTABLE IRIG-B Time Code Generators



ES-290



ES-291



ES-292

Features

- 11-40 VDC Power Input
- IRIG-B & ASCII (RS-232C) outputs
- Dual 1 PPS Output (20% and 50% Duty)
- External Time Code "Lock" Indicator & Output
- Automatic Daylight Savings Time Correction (ES-291 & ES-292)
- Time Zone Offset (ES-291 & ES-292)
- Rugged Powdercoated Aluminum Enclosure
- Internal Rechargeable Battery (ES-290 & ES-292)
- GPS "Lock" Indicator & Output (ES-291 & ES-292)
- Indoor/Outdoor Antenna With 16' Cable (ES-291 & ES-292)
- Carrying Handle (ES-290 & ES-292)
- Jam-Syncable To External IRIG-B (ES-290)

The **ES-290** is a portable Time Code Generator which outputs IRIG-B and ASCII (RS-232C) Time Codes. Two (2) One Pulse Per Second outputs and an external Time Code "Lock" output are also standard features. The unit may be synchronized to an external source of IRIG-B, then will free-run using its internal TCXO when the external signal is removed.

The **ES-291** is a very accurate GPS Time Code Generator. The unit receives time and date information from Global Positioning System satellites and outputs IRIG-B and ASCII (RS-232C) Time Codes. Two (2) One Pulse Per Second outputs and a GPS "Lock" output are also standard features. A 12-channel receiver is employed that is capable of tracking up to twelve satellites simultaneously, although reception of only one is required for time data to be output.

The **ES-292** is a very accurate portable GPS Time Code Generator. The unit receives time and date information from Global Positioning System satellites and outputs IRIG-B and ASCII (RS-232C) Time Codes. Two (2) One Pulse Per Second outputs and a GPS "Lock" output are also standard features. A 12-channel receiver is employed that is capable of tracking up to twelve satellites simultaneously, although reception of only one is required for time data to be output. Unit free-runs using internal TCXO in absence of GPS signal. A separate GPS receiver power switch is provided for conserving battery power during free-run operation.

Specifications

ES-290

IRIG-B Input:	100 mVpp – 10 Vpp, 25 K Ω input impedance, play speed
IRIG-B Output:	Mark to space 3.3 to 1 AM: 2 – 7 Vpp (mark amplitude), BNC, 600 Ω DC: ≥ 4.0 V high and ≤ 0.6 V low, 5 Vpp, I/O Connector
RS-232C Output:	ASCII date and time, sent once per second, I/O Connector
RS-232C Format:	ESE Format "A" ASCII @ 9600 baud, 8 data, no parity, 1 stop MM-DD-YY<SPACE><SPACE>DDD:HH:MM:SS<CR> Transmission is once per second and ends 7 ms before Time True.
1 PPS Output:	TTL output, positive edge true, 50 % duty output, I/O Connector
"Lock" Output:	TTL output, logic "1" when "locked" to an external source of time code, logic "0" otherwise, I/O Connector
Drift:	+/- 150 ms per day.
Power:	+11 to +40 VDC, 100 mA, 110 VAC Adapter is included
Battery:	Rechargeable Gell Cell Battery with 12 hour operation.
Mechanical:	3.45" H x 4.00" W x 6.00" D
Operating Temperature:	0° to +70°C
Storage Temperature:	-55° to +105°C
Humidity:	@95% non-condensing (+30°C to +60°C).
Options:	B, Display, F, HQ(In), J, SMPTE/EBU, 810F

ES-291

GPS Receiver:	Motorola 12-channel
IRIG-B Output:	Mark to space 3.3 to 1 AM: 2 – 7 Vpp (mark amplitude), BNC, 600 Ω (optional) DC: ≥ 4.0 V high and ≤ 0.6 V low, 5 Vpp
RS-232C Output:	ASCII date and time, sent once per second, I/O Connector
RS-232C Format:	ESE Format "A" ASCII @ 9600 baud, 8 data, no parity, 1 stop MM-DD-YY<SPACE><SPACE>DDD:HH:MM:SS<CR> Transmission is once per second and ends 7 ms before Time True.
1 PPS Outputs:	TTL outputs, positive edge true, I/O Connector #1 - 20% duty output, < 10 ns accuracy if "locked", directly from receiver #2 – 50 % duty output, < 1 ms accuracy, regenerated
GPS "Lock" Output:	TTL output, logic "1" when "locked" to GPS, logic "0" otherwise, I/O Connector
Accuracy:	1 PPS (20% duty cycle) @ < 10 ns (if "locked") IRIG-B @ 70 μ s (if "locked")
Drift:	+/- 150 ms per day (no "lock")
Power:	+11 to +40 VDC, 100 mA
Mechanical:	3.45" H x 4.00" W x 6.00" D
Operating Temperature:	0° to +70°C
Storage Temperature:	-55° to +105°C
Humidity:	@95% non-condensing (+30°C to +60°C).
Options:	AC, Ant, B, Display, F, HQ(Out), J, Jam, Moto, SMPTE/EBU,TTL, 810F

ES-292

GPS Receiver:	Motorola 12-channel
IRIG-B Output:	Mark to space 3.3 to 1 AM: 2 – 7 Vpp (mark amplitude), BNC, 600 Ω (optional) DC: ≥ 4.0 V high and ≤ 0.6 V low, 5 Vpp
RS-232C Output:	ASCII date and time, sent once per second, I/O Connector
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GPS "Lock" Output:	TTL output, logic "1" when "locked" to GPS, logic "0" otherwise, I/O Connector
Accuracy:	1 PPS (20% duty cycle) @ < 10 ns (if "locked") IRIG-B @ 70 μ s (if "locked")
Drift:	+/- 150 ms per day (no "lock")
Power:	+11 to +40 VDC, 100 mA, 110 VAC Adapter is included
Battery:	Rechargeable Gell Cell Battery with 4 - 12 hour operation depending on receiver configuration.
Mechanical:	3.45" H x 4.00" W x 6.00" D
Operating Temperature:	0° to +70°C
Storage Temperature:	-55° to +105°C
Humidity:	@95% non-condensing (+30°C to +60°C).
Options:	Ant, B, Display, F, HQ(Out), J, Moto, SMPTE/EBU, TTL, 810F

