

MODEL 6115G-3R GPS SYNCHRONIZED IRIG B TIME CODE GENERATOR

FEATURES

- Twelve channel GPS receiver with Dynamics Mode.
- IRIG B time code generator.
- Front Panel Time/Status Display.
- Five IRIG B serial outputs.
- One Demodulated IRIG B output
- Can be synchronized to GPS, IRIG B or external 1PPS clock reference.
- Parallel Status/Control Port and RS-232 Data Port.
- Active GPS antenna included.



DESCRIPTION

The Model 6115G-3R is a GPS synchronized IRIG B time code generator designed to provide a precise IRIG B serial time code output as well as a 1PPS time pulse. The unit automatically acquires all in-view satellites upon power up and locks an internal IRIG B time code generator to the GPS time reference. If the GPS lock is lost the 6115G-3R will automatically switch to an internal clock and continue generating the output IRIG B signal. No discernible change in the IRIG B output will occur due to this transition.

A unique feature of ITS GPS Synchronized Time Code Generators is Dynamic Mode adjustment. This allows the user to optimize the GPS receiver to match the environment, which in turn provides the most accurate time possible ranging from a fixed location to an airborne installation.

In the event that a GPS signal is not available the 6115G-3R can be locked to an external IRIG B serial time code signal. The selection of GPS or IRIG as the synchronization source is via a front panel switch or it may be done remotely via a TTL signal or contact closure.

The 6115G-3R may also be synchronized to an external 1 PPS such as a time mark signal from another timing device. When applied, the 6115G-3R internal clock will be reset to the closest second. It is therefore necessary to have previously set the clock recently enough to be certain that the drift would be less than one half second.

The 6115G-3R may also be used as a stand-alone unit to generate an IRIG B signal. The time-of-year may be set by the user via front panel switches. A backlit LCD readout displays the days, hours, minutes and seconds as well as unit status. In the event of a power failure the 6115G-3R will no longer output a serial time code however the time will continue to advance by automatically switching to a battery backed-up internal clock. The IRIG output will resume, without resetting, upon reapplication of power.

The unit has five buffered IRIG B outputs; one demodulated IRIG B output, and status and synchronized clock signal outputs.

Model 6115G-3R

GPS Synchronized IRIG B Time Code Generator

SPECIFICATIONS

Timing Accuracy

When Locked to GPS:

- 1×10^{-9} @ 1 second
- 1×10^{-10} @ 100 second
- 3×10^{-12} @ 1 day
- (Dynamic mode set to 'Fixed')

When powered (no GPS lock)

- $<2.5 \times 10^{-6}$ without discipline
- $<0.3 \times 10^{-6}$; <30 ms per day
- (after 24 hours of GPS locked disciplining)

On Battery backup

- 1×10^{-4} . (0 to +55°C)

Clock backup life (un-powered)

1 year minimum.

GPS Performance

Channels: 12 Parallel channels, tracks all satellites in view.
Time-to-first-fix: <15 seconds typical (warm start), <90 seconds typical (cold start).

UTC Time Mark: Synchronized with Global Reference Standard.

Reacquisition: 2 seconds typical.

Dynamics Mode: Five settings: Fixed, Walking, Land Vehicle, Marine, Airborne. Timing accuracy varies from <25 nsec (Fixed) to <100 nsec (Airborne)

IRIG B Output

Standard IRIG B serial time code IAW IRIG Standard 200-98.

Status and Clock Outputs

TTL: Standard TTL levels
OC(open Collector): Mosfet, Max Voltage: 100V
Max current: 1.3A, On resistance at 1.3A: 0.3 Ohm,
Max Drain-Source leakage: 500 nA.

External Clock Input

TTL, positive 1PPS signal

RS-232 Port

EIA RS-232C, 8 bit, no parity, 1 stop bit. Baud Rate selectable from 300 to 38400.

Power

100 to 240 VAC. 50/60 Hz

Temperature (Operating) (Storage)

0°C to +55°C
-10°C to +70°C

Humidity

95% non condensing

Package

Size: 19" wide x 9" deep (including connectors) x 1.72" high.
Weight: 4.5 lbs.



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