

generator. The selections are RFOFF: turns carrier off, RFCW: unmodulated carrier, RFON: C/A code and NAV data (spread spectrum signal), RFEXT: external BPSK modulation through AUX I/O connector and RFSQR: 511.5 kHz square wave modulation (maintenance purposes).

SETUP:

Provides access to menus for setting RS-232/422 communications port parameters, test set operational characteristics and self test.

TEST:

Selects one of three stored NAV data patterns. (Three data patterns reserved for future use)

1. T₁: NAV data that contains programmable almanac information and GPS week and time of week fields. The almanac data is valid for a 30 day period and may be downloaded in 'YUMA' ASCII text format via the RS-232 port. Current almanac data is available from the U.S. Coastguard Internet Web Site. The GPS-101 has an internal real time clock that keeps UTC time and is programmable by the user.
2. T₂: NAV data pattern that contains fixed GPS week and time of week.
3. T₃: Fixed 11001100.. repeating test pattern.

Select Keys: Moves cursor to selected field/parameter.

Display Keys: Contrast setting keys and display backlight on/off key.

ESC Key: Returns to main operation screen.

Slew Wheel: Allows rapid data slewing.

SPECIFICATION

GENERATOR

Frequency

1575.42 MHz

Accuracy

Same as Master Timebase

Doppler

Selectable frequency offset ± 4.0 kHz

Offset Accuracy

See Master Oscillator

Channels

Single SV simulation, selectable from 1 to 37

Phase Modulation

BPSK

PRN Code

C/A code = 1.023 MHz, 1023 bit gold code

NAV Data

50 Hz, Programmable test pattern, built-in patterns

Output Level

-85 to -145 dBm in 1 dB steps, ± 2 dB accuracy into 50 Ω (AC Coupled) Standard Cable, 4 dB loss

Spurious

< -40 dBc over the bandwidth (20 MHz)

External Modulation Input

TTL

MASTER OSCILLATOR

Standard Timebase

Frequency

10 MHz nominal (see note)

Temperature Stability

± 1 ppm

Ageing Rate

± 1 ppm/yr, ± 5 ppm/10 yr

Uncertainty

± 1 ppm

Option Timebase

Frequency

10 MHz nominal (see note)

Temperature Stability

± 0.1 ppm

Ageing Rate

± 0.1 ppm/yr

Uncertainty

± 0.1 ppm

Note: Internal timebase frequency is a function of timebase calibration, ageing rate, temperature stability and uncertainty.

External Reference Input

Input Level

0.25 to 6.0 Vp-p

Input Impedance

150 Ω nominal

Input Frequency

10.0 MHz

External Reference Output

Output Level

1.5 Vp-p nominal into 50 Ω

Output Frequency

10.0 MHz nominal

COUPLER

Coupling

-20 dB typical at 1575.42 MHz

Assumes

4.77 dB patch antenna gain and 4 dB cable loss

Isolation

- >25 dB at 1575.42 MHz
- >30 dB typical at 1575.42 MHz

GENERAL

Calibration Interval

- 1 year

AC Input

- 90 to 120 VAC, 50 to 400 Hz
- 200 to 240 VAC, 50 to 60 Hz

Battery Operation Time

- 120 minutes minimum, 360 minutes nominal

AC Power Consumption

- <50 W maximum, <40 W typical

Battery Charge Time

Unit Operating

- 8 hours for full charge @ 115 VAC, 60 Hz

Unit non-operating

- 6 hours for full charge @ 115 VAC, 60 Hz

Operating Temperature

- 20° to +55°C

Storage Temperature

- 20° to +70°C

Humidity

- 95% (±5%), non-condensing
- +10° to +30°C

Dimensions

- 292 mm wide; 131 mm high; 412 mm deep, does not include handle.
- 11.4 in. wide; 5.1 in. high; 16.1 in. deep, does not include handle.

Weight

- 9 kg (20 lbs.) maximum (with battery) does not include lid and lid contents

CONNECTOR TYPES

RF Output

- TNC, Female

Auxiliary Port

- 25-pin D-Sub, Male

RS-232 "REMOTE" (COMM 1)

- 9-pin D-Sub, Male, PC compatible

RS-232/422 "RECEIVER" (COMM 2)

- 25-PIN D-Sub, Male, PC compatible
- FCC Type Accepted, CFR47 Part 87.
- Complies with UL/CSA/EU Product Safety Standards

VERSIONS AND ACCESSORIES

When ordering please quote the full ordering number information.

Ordering Numbers

Versions

- | | |
|---------|--|
| 101-110 | GPS-101 Global Positioning System Ramp Test Set, 110 VAC operation |
| 101-220 | GPS-101 Global Positioning System Ramp Test Set, 220 VAC operation |

Accessories

- | | |
|-------|----------------------------------|
| OPT 1 | 0.1 ppm High Stability Time Base |
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All Aeroflex Avionics products delivered with Factory Certificate of Calibration

