

GPS OPTION

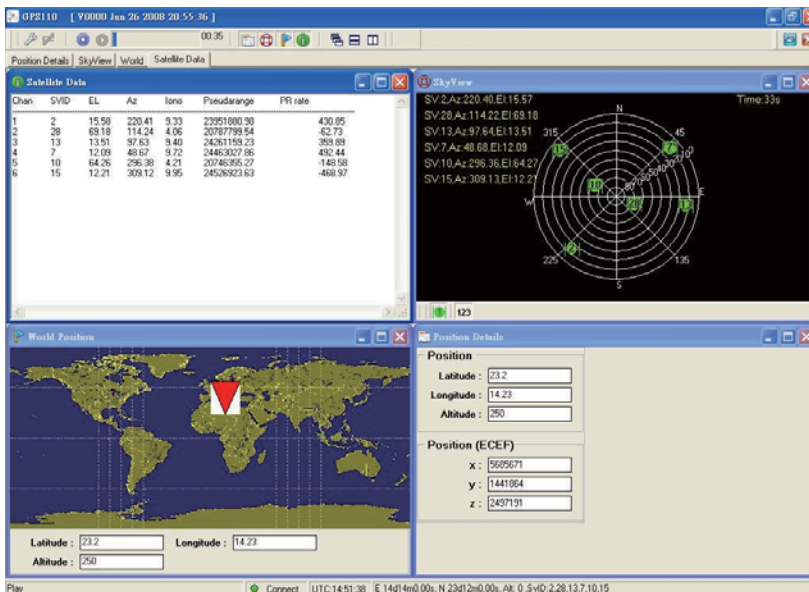
Overview

GPS Option is a multi-channel GPS simulator from ADIVIC. It is a sophisticated engineering tool designed to support the research, developing, integration and production tests of the GPS navigation systems.

Global Positioning System (GPS) is the only fully functional Global Navigation Satellite System (GNSS). It Utilizes a constellation of at least 24 Medium Earth Orbit satellites that transmit precise microwave signals. The system enables a GPS receiver to determine its location, speed, direction, and time.

The MP9100 GPS Option is a multi-channel Global Positioning System (GPS) simulator which provides the users a stable and accurate signal for testing on the GPS receiver, such as TTFF testing, weak satellites tracking/acquisition testing, positioning accuracy testing, etc.

It is capable of sending out GPS signal as low as -155dBm with 0.1ppm frequency accuracy. The eight channel version also provides 24 hours non-stop position fix.

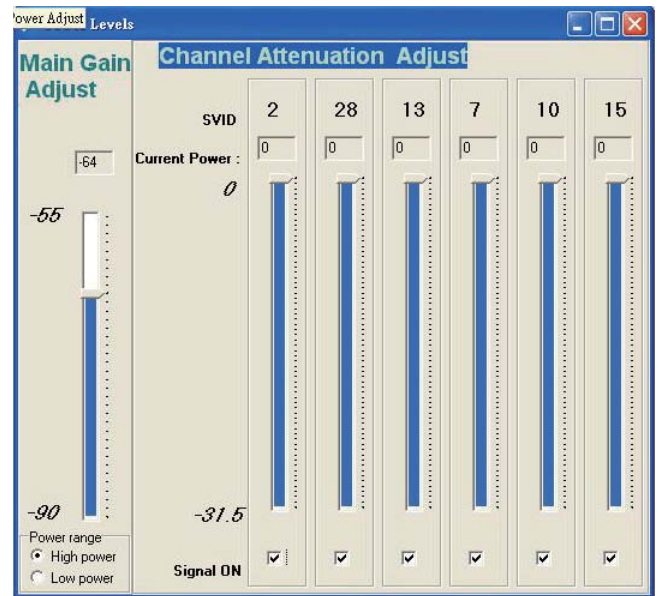


GPS OPTION

GPS Receiver testing

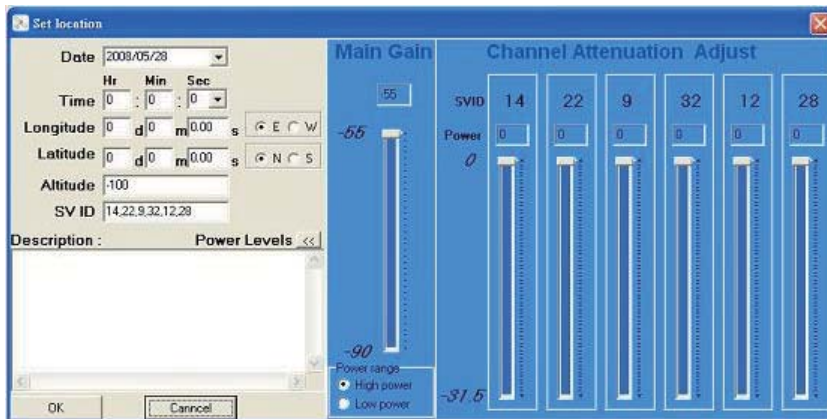
Modern GPS receivers are improving characteristics such as: lower power consumption, weak satellites tracking, acquisitions times, and accurate position fixes. ADIVIC MP9100 GPS Option is design for various GPS receiver testing purpose. In multi-channel mode, user can test GPS receiver :position fix sensitivity, signal tracking sensitivity, TTFF(time to first fix) , position deviation, and position accuracy. In single channel mode, user can test sensitivity, S/N ratio, and production line ATE test.

To provide the usage flexibility, the MP9100 GPS Option enables the users to switch between the single-channel and multi-channel modes. In terms of single-channel-mode functionality, the MP9100 GPS Option acts as ADIVIC MP6211A single channel GPS simulator.



User define GPS signal parameter

- Time
- Log / Lat
- Number of SV
- Each SV power level
- Main Power level



GPS

Digital TV

Audio Generator / Analyzer

FM / RDS / TMC

Bluetooth Audio product test system

GPS OPTION

GPS signal Scenario

The MP9100 GPS Option will be supplied with a selection of standard scenarios for production test applications: The scenarios are according to the real global GPS satellite orbital movement. User can define any location on the earth to do the test. Additional different date scenarios would also be available upon customer requests.



GPS Application Scenario

MP9100-IPS GPS Option



- 8 Channel GPS signal mode 24H profile
- 6 Channel GPS signal mode 1H profile
- 1 Channel GPS signal mode
- FM RDS TMC Generator

Antenna Transmission



- GPS Signal L1 1575.42MHz
- FM RDS TMC 76MHz - 108MHz



Conduct to DUT

GPS OPTION

GPS Product Test System performance specifications

Frequency Characteristics

- Frequency Range : 1575.42MHz
- Warm-up time (typical) : 30 minutes
- Frequency Accuracy : +/-100ppb maximum
- Temperature stability : +/-100ppb maximum
- Aging (Per year) : +/-100ppb maximum
(Per day) : +/-1 ppb maximum

Channels

- Number : 1~8
- Navigation data : GPS C/A @1.023MHz with 50bps
- Modulation : BPSK

Spectral purity

- Phase Noise@1KHz offset : <-80dBc/Hz
- Harmonic : <-70dBc

RF Output Characteristics

- High power normal output level : -90dBm ~ -55dBm
- Low power normal output level : -145dBm ~ -90dBm
- Channel Attenuation range (refer normal output level : -31.5dB ~ 0dB)
- Amplitude Resolution : 1dB step
- Amplitude Accuracy : <+/-1dB
- Output Impedance : 50 ohms

Voltage Standing Wave Ratio

- 1575.42MHz : <1.2

Overload protection on RF output

- Maximum reverse RF power : 1W maximum
- Maximum DC input : +/-50 VDC

Calibration

- Calibration : 1 year

Environmental

- Operating temperature 0 to 50 °C
- Relative Humidity : 10% to 90%
- Storage temperature : -20 to 70 °C
- Relative Humidity : 5% to 95%



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