

MODEL MP6220

Overview

ADIVIC MP6220 GPS simulator is a cutting-edge design for the purpose of various GPS receiver testing. In multi-channels mode, users are able to scrutinize position fix sensitivity, signal tracking sensitivity, TTFF (time to first fix), position deviation, and position accuracy of GPS receiver. Single channel mode enables users to test sensitivity, S/N ratio, and ATE test in laboratory and production line. Capitalizing on flexible usage, availability of switching between the single-channel and multi-channel modes provides users quick and effective testing to generate the best profit.

Features

- Doppler control 30 KHz to -30 KHz in 1 Hz step
- Almanac data upgradeable
- Built-in ultra high precise OCXO
- RF input range from -55 dBm to -160 dBm
- Control by RS232 interface
- Sensitivity testing

ADIVIC
— RF TEST & MEASUREMENT —

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Single & Multi-Channel GPS Simulator



MP6220 Specifications

Frequency Characteristics

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

Channels

Number	1 CH, 8 CH
Navigation data	GPS C/A @ 1.023 MHz with 50 bps
Modulation	BPSK

Spectral purity

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

RF Output Characteristics

High power normal output level	-55 dBm to -90 dBm
Low power normal output level	-90 dBm to -160 dBm
Channel Attenuation range (refer normal output level)	-31.5 dB to 0 dB)
Power level ranged from	-55 dBm to -145 dBm in 1 dB step, -145 dBm to -160 dBm in 0.5 dB step.
Amplitude Resolution	1 dB step
Amplitude Accuracy	< ±1 dB
Output Impedance	50 Ω
Doppler Shift	±30 KHz (1 CH option)

Voltage Standing Wave Ratio

1575.42 MHz	< 1.2
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Overload protection on RF output

Maximum reverse RF power	1 Watt maximum
Maximum DC input	±25 VDC

Calibration

Calibration	1 year
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Environmental

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

Single & Multi-Channel GPS Simulator GUI

The screenshot shows the main interface of the GPS Simulator. At the top, there is a toolbar with icons for Profile & Power Level Edit, Play Icon, Simulated GPS Time, View Icon, Program, and Real Time Sync. The main area is divided into several panels:

- SkyView:** Displays a sky plot and a table of satellite data.

SVID	EI	Az
5	10.36	224.22
6	16.97	131.42
7	61.06	186.77
8	42.52	238.78
10	35.30	276.98
13	65.54	57.48
19	33.72	90.01
28	25.96	315.10
- World Position:** Shows a world map with a location marker. Fields for Latitude (S-33d51m25.25s), Longitude (E 151d12m55.09s), and Altitude (10) are visible.
- Satellite Data:** A table with columns: CH, SVID, EI, Az, Ionospheric, Pseudorange, PR rate.

CH	SVID	EI	Az	Ionospheric	Pseudorange	PR rate
0	5	10.36	224.22	11.78	24790977.43	-350.29
1	6	16.97	131.42	11.49	23875635.65	334.27
2	7	61.06	186.77	5.56	20722027.33	-13.80
3	8	42.52	238.78	6.93	21583823.45	-251.23
4	10	35.30	276.98	8.00	22263762.57	139.93
5	13	65.54	57.48	5.54	20886012.13	225.41
6	19	33.72	90.01	8.57	22822104.70	-153.31
7	28	25.96	315.10	9.95	23014241.72	-661.95
- User profile:** A table listing profiles with columns: No., Location (Lon, Lat...), Date / Time, and Description. The selected profile is Sydney, Opera House.

At the bottom, there is a status bar with buttons for Connect, Profile Edit, and other controls. Labels with arrows point to various parts of the GUI: SKY, Position, Profile, Profile Edit, Location / Time status, System Connection Status, and Almanac / Ephemeris Simulating Readiness.

The 'Set location' dialog box is shown, allowing users to configure location and power settings. It includes fields for Date (2013-3-7), Time (0:0:0), Longitude (121d 33m 56.76s), Latitude (25d 2m 0.27s), and Altitude (10). The Description field contains 'Taipei 101 Tower'. The Power Levels section has a slider and radio buttons for High power and Low power. The Main Gain and Channel Attenuation Adjust section features four channels (0, 1, 2, 3) with sliders and checkboxes for Enable and Low power.