

Quality&Precise



MAXWELLON GMX8110

BDS / GPS / GLONASS / Galileo

Portable Navigation Signal Simulator
2023

Maxwellon

The GMXS8110 portable simulator is a single frequency point simulation source for global satellite navigation systems, launched for applications such as research and development, testing, and repeated testing in production enterprises.

The GMXS8110 portable simulator provides satellite navigation signal simulation for global satellite navigation systems, supporting signal simulation output at any frequency point of BDS/GPS/GLONASS/Galileo. It has the ability to simulate satellite navigation signals for BDS constellations (36 RNSS), GPS constellations (32), GLONASS constellations (24), Galileo constellations (24), and provides high stability standard 1PPS pulse signals and 10MHz clock signal output. It can meet the application needs of various user terminal devices, such as design and development, production testing, teaching demonstrations, and routine inspections.

■ Key Feature

- **Constellation Simulation:** capable of completing satellite orbit simulation, satellite clock deviation simulation, delay differential TGD simulation, etc.
- **Trajectory Simulation:** With the ability to generate static and dynamic trajectories.
- **Environmental Simulation:** ionospheric delay simulation, tropospheric delay simulation, ground atmospheric parameter simulation, etc.
- **Simulation Control:** The ability to independently set pseudo range and power for each channel, generate navigation messages for constellation models, and set parameters for atmospheric and ionospheric models.
- **Single Frequency Point Output:** Supports signal simulation output of any one frequency point in BDS/GPS/GLONASS/Galileo satellite navigation systems.

■ Specification

Frequency	
Type	Choose one frequency point from GPS, GLONASS, Galileo, and BDS
Signal Scale	
Number of channels	12 channels per frequency point
Multipath quantity	1-4 channels per frequency point (multiplexing)
Signal	
Phase noise	-75dBc/Hz (100 Hz)
	-80dBc/Hz (1kHz)
	-85dBc/Hz (10kHz)
	-90dBc/Hz (100kHz)
Harmonic power (Max)	-35dBc
Clutter power (Max)	-40dBc
Signal Power	
Power range	-150dBm~-60dBm
Power resolution	better than 0.2dB
Power accuracy	better than 0.7dB
External Interface	
Reference 1PPS pulse signal (BNC)	1 input and 1 output
Reference 10MHz clock signal (BNC)	1 input and 1 output
RF output port (N)	1

Clock stability	
Second Stability	$\leq \pm 5 \times 10^{-11}$
Day Stability	$\leq \pm 5 \times 10^{-9}$
External reference input	
1PPS pulse signal	1 channel
10MHz clock signal	1 channel
Standard reference output	
1PPS pulse signal	1 channel
10MHz clock signal	1 channel
Output pps	
Output level	LVTTL
Rising edge stability	0.1ns
High level duration	>20ms
Work environment	
Working temperature	-10 °C ~+55 °C
Humidity	10% to 75% (22 °C), $\geq 90\%$ (45 °C)
Storage and Transportation	
Impact	$\leq 9g/s$
Vibration	$\leq 0.1g/(10Hz \sim 100Hz)$
Humidity	$\leq 98\%$
Storage temperature	-45°C ~+75°C
Power supply	
AC voltage 200V-250V, frequency (50 \pm 10) Hz, DC ripple $\leq 3\%$	
Automatic protection in case of abnormal power supply	

■ Ordering Information

Standard

Name	Describe	Qty.
Hardware	Chassis	1pc
	Power Module	
	Time Frequency Module	
	Master Control	
	Signal Merging	
	Attenuator	
Software	Simulation control	1pc
	Scene editing	
	Constellation simulation	

Option

Constellation	Output Signal			Ordering	Notes
BDS	BDS B1 BDS B1C	BDS B2 BDS B2a BDS B2b	BDS B3	4 weeks	Choose any 1 frequency point
GPS	GPS L1	GPS L2	GPS L5		
GLONASS	GLO L1	GLO L2	-		
Galileo	GAL E1	GAL E5	-		



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