GeneHawk Handheld Signal Generator

GH-60

Overview

The handheld signal generator (GH60) is characterized by its strong portability, making it suitable for on-site testing and convenient to carry during field test. It boasts excellent RF performance, supporting a wide range of general digital modulation formats. It covers standard mobile communication formats with a high dynamic range, making it a versatile tool for various applications. With a frequency range of up to 6 GHz, compact design, intuitive user interface, and precise signal generation capabilities, the GH60 is a reliable and flexible solution for professionals who require both mobility and performance.

- An Android hand-held signal generator with simple operative features.
- Supports system integration, secondary development and customizable signal generation properties.
- High Portability: Compact (197*93*61mm), lightweight (0.9kg)

Frequency range

10MHz - 6GHz

Power Range

-130dBm to +15dBm

Support communication standard signal type

GSM | WCDMA | TDD-LTE
FDD-LTE NB-IoT | LoRa | 5GNR
(Users can modify channels under different configuration)

Support digital modulation type

BPSK | QPSK |
OQPSK 8PSK | 16QAM | 32QAM 64QAM
128QAM | 256QAM MSK | FSK

Modulation bandwidth

20MHz (can upgrade to 100MHz)

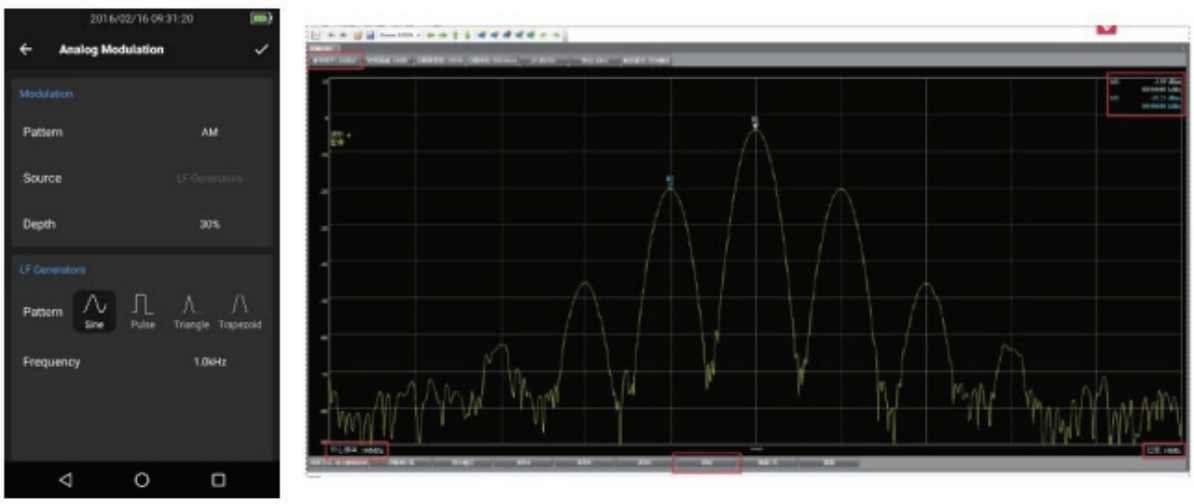
High portability

Small size(197*93*61 mm)
light weight (0.9kg)

Functions

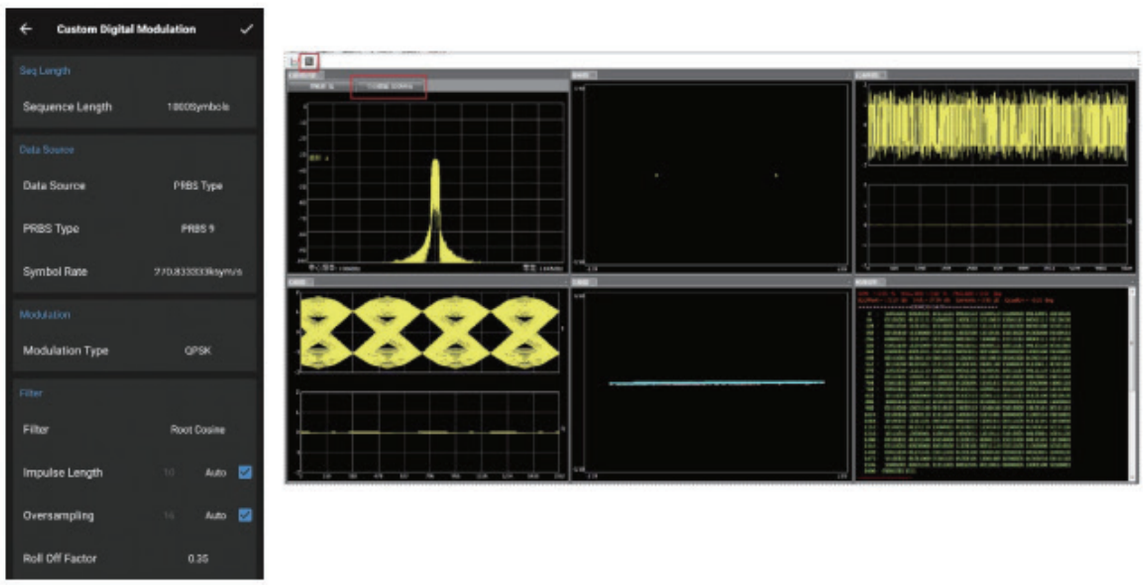
Analog Modulation

Analog modulation is a change to a characteristic of a periodic or non-periodic signal in order to convey information. GeneHawk can generate a variety of analog signals such as AM\FM\PM.



General Digital Modulation

Digital modulation is an important signal modulation method for modern telecommunications. It has better anti-interference ability and safety. GeneHawk can output a variety of digital modulated signals.



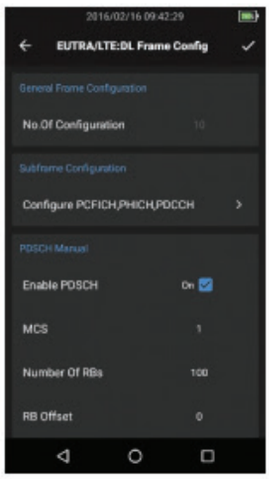
Functions

Standard Communication Mode Output

GeneHawk supports modulation of signals based on mainstream wireless communication standards. It not only includes 2G/3G/4G mobile communication standards, but also supports IoT signal standards such as LoRa and NB-IoT. The release of WIFI and Bluetooth signal modulation functions is also planned

5GNR Modulation

Support fast configuration to generate 5GNR modulation signal.



AWGN Function

Support control add AWGN signal on output

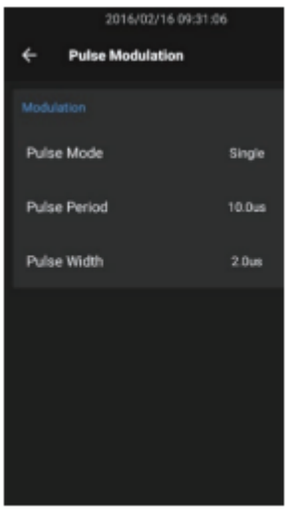
Sweep Mode

Using this function provided in GeneHawk, engineers can configure parameters such as start and stop frequency, frequency stepping, sweep power and scan speed.

Functions

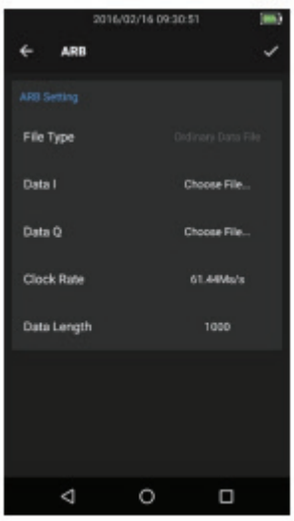
Pulse Modulation

GeneHawk support pulse modulation, the pulse period and pulse width can be configured.



ARB Function

ARB function allows users to transmit customized baseband data. Supports IQ data in .txt and .mat formats. Users need to set the data length and signal sampling rate according to the IQ data file.



Application

Laboratory RF Test

GeneHawk also supports testing of intermodulation distortion on amplifiers, mixers, receivers, etc. When paired with a spectrum analyzer (BA100), GeneHawk is able to complete broadband frequency response performance tests for the abovementioned devices.

Manufacture Application Test

GeneHawk is able to simulate GSM, WCDMA, TDD-LTE, FDD-LTE, NB-IoT, LoRa and 5G NR standard base station signals to cooperate with the production and calibration of UE. It is capable of providing base station consistency and function testing when combined with a signal analyzer module.

Teaching Application Test

When combined with a signal analyzer, GeneHawk provides RF microwave device testing demonstration to reduce the complexity of professional teaching courses. GeneHawk also has the ability to produce all standard uplink, downlink and digital modulation signals in any chip rate to satisfy the practices of professional education courses.

Innovative Features

High portability and long battery life

Despite its small form factor, there has been no compromise on GeneHawk's battery, allowing users to carry it around easily with a long usage period.

Support expansion and second development

Based on Android, GeneHawk allows users to install other applications according to needs, making it an open platform which allows second development.

Rich functionality for general digital modulation

Digital modulation is an important signal modulation method for modern telecommunications. It has better anti-interference ability and safety that allows an output of a variety of digital modulated signals.

Control Element

Specifications

Testing Range	Description
Frequency range	10MHz to 6GHz (can upgrade to 300kHz to 6GHz)
Frequency step	0.1Hz
Frequency-temperature Stability	±1ppm @ 0°C -50°C
Initial Frequency Accuracy	±0.5ppm
Power range	-110 to +14dBm
Power step	0.1dB
Power accuracy	±0.75dB @ Lev≥-80dBm | ±1.5dB @ Lev<-80dBm
Harmonic	≤-30dBc (+10dBm)
Nonharmonic	≤-50dBc
Phase noise	≤-105dBc/Hz @ 10kHz (3GHz to 6GHz) | ≤-109dBc/Hz @ 10kHz (≤ 3GHz)
Modulation bandwidth	20MHz (can upgrade to 100MHz)
Pulse modulation parameter	Pulse period: 10us - 40s , Pulse width: 10ns - 40s
General digital modulation type	BPSK | QPSK | OQPSK | 8PSK | MSK | FSK 16QAM | 32QAM | 64QAM | 128QAM | 256QAM
Analog modulation standard	AM | FM | PM | DSB | USB | LSB
Mobile communication standard	GSM | WCDMA | TDD-LTE | FDD-LTE | NB-IoT | LoRa | 5GNR
Support channel (LTE)	PSS | SSS | CSRS | PBCH | PCFICH | PHICH PDCCH | PDSCH | PUSCH | PUCCH | PRACH | SRS
EVM	≤2%rms
Frequency error	Better than ±10Hz
Phase error	Better than ±3°
TOI	+15dBm (-10dBm tones, 1MHz apart, Sensitivity set to low, Ref set to -10dBm)
Wave quality ρ	>0.9999
API	Support secondary development (open API)

Mechanical Features	Description
Operation system	Based on Android
Connectors	RF output: N type,female,50 Ω USB port: USB type-C Power interface: DC12V
Operation environment	Operation temperature: 0° C to 50° C Storage temperature: -20° C to 70° C
Dimension	197x93x61mm
Weight	0.9kg
Warranty	3 years

Ordering List

Model	Description
GH60	Handheld Vector Signal Generator

Accessories	Description
MTX-AS001	Power adapter

Calibration module	Description
MTX-S001	GSM Modulation License
MTX-S002	WCDMA Modulation License
MTX-S003	TDD-LTE Modulation License
MTX-S004	FDD-LTE Modulation License
MTX-S005	NB-IoT Modulation License
MTX-S006	LoRa Modulation License
MTX-S008	Custom Digital Modulation License
MTX-S009	ARB License
MTX-S010	Pulse Modulation License
MTX-S011	Analog Modulation License
MTX-S012	Sweep Mode License
MTX-S013	LSB\USB\Two Tone License
MTX-S014	5GNR License
MTX-S016	Linear Frequency Modulation License
MTX-S018	AWGN
MTX-S019	100MHz Bandwidth (hardware upgrade)
MTX-S020	Frequency expansion 300kHz - 6GHz (hardware upgrade)

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