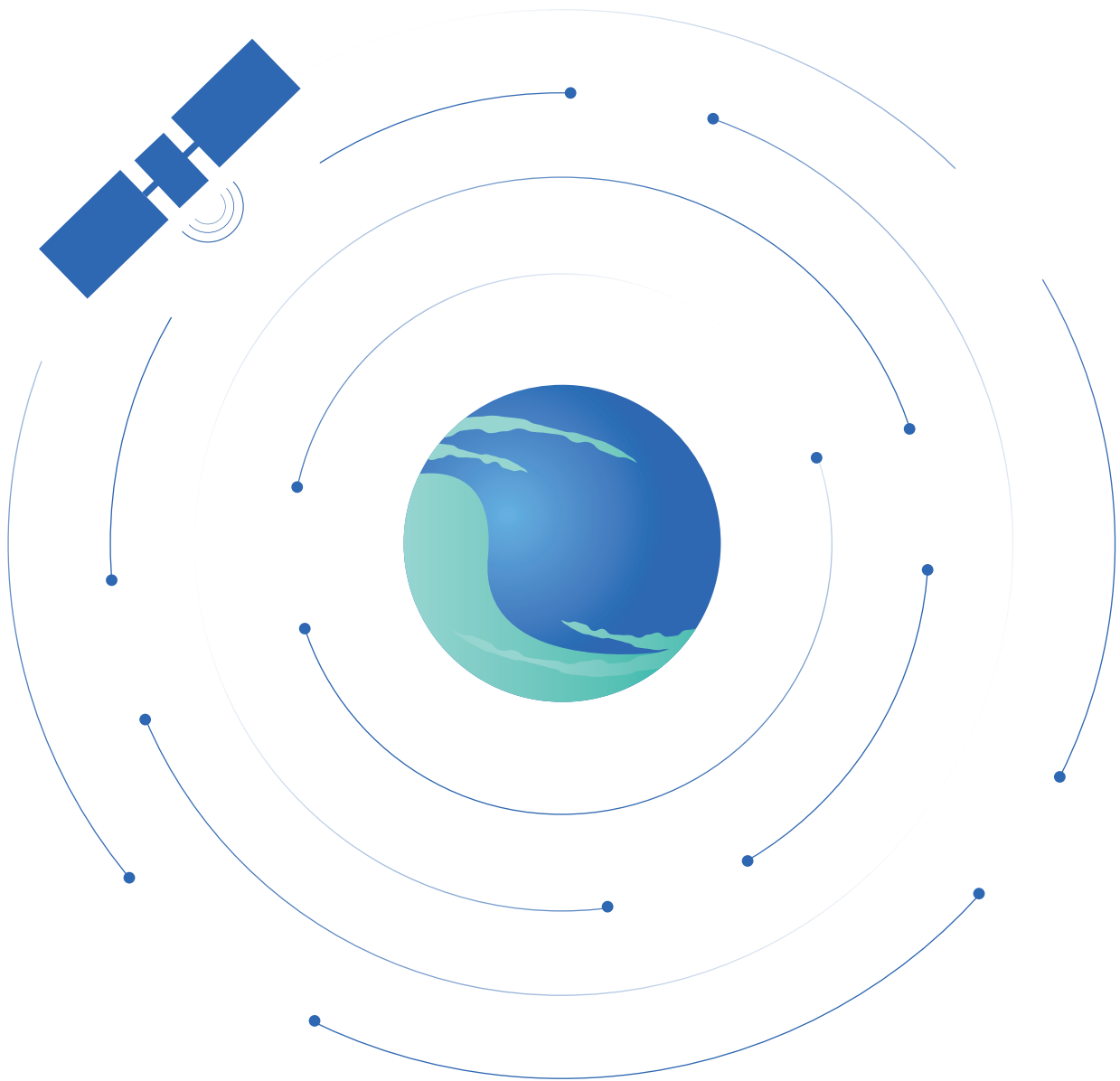


GNSS Signal Acquisition & Simulator

Shanghai Weiyu Tiandao Technology Co., Ltd.



1.1

上海微宇天导技术有限责任公司
Shanghai Weiyu Tiandao Technology Co., Ltd.

Company Overview

Shanghai Weiyu Tiandao Technology Co., Ltd is an innovative technology enterprise serving global markets, specializing in the independent research, development, and industrial application of cutting-edge technologies such as global satellite positioning, navigation, and timing (PNT), satellite internet communication and navigation, high-integration chip design, and artificial intelligence. We have established an "air-space-ground integrated" intelligent service system to address industry needs.

For our industrial clients, we develop full-scenario solutions that effectively tackle common technical challenges in high-precision positioning, navigation, and timing, as well as real-time wide-area communication. Leveraging our self-innovated integrated circuit technology platform, we provide one-stop design and manufacturing services for high-integration chips.

Additionally, we have built a 24/7 intelligent "Cloud Testing Platform" that continuously delivers high-reliability, high-confidence intelligent testing and verification services to global customers. This platform enables us to offer quality assurance systems covering the entire product lifecycle and end-to-end solutions for seamless process integration.

Decade-Long Technical R&D Team



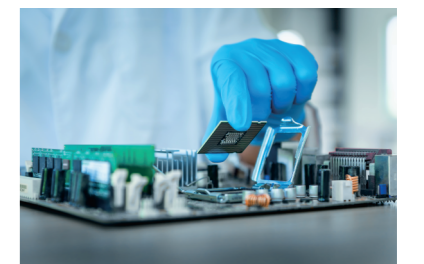
All-Weather Testing Service System



Global Satellite Navigation Service Network



Chip-Level System Solutions



01

Devices

- 1.1 PD20/Portable GnsS signal Simulator
- 1.2 PC20/Portable GNSS Signal Record & Playback Equipment
- 1.3 MY33/odular Universal Signal Generator

02

Contact us

- 2.1 Our team & contact information

1.1

PD20 / Portable GNSS Signal Simulator



Product Introduction

The PD20 Portable GNSS Signal Simulator is equipped with a powerful computing platform and a reconfigurable architecture. It is capable of flexibly outputting multi-system navigation frequency signals simultaneously and simulating the full-band signals of four systems. The built-in high-stability clock module enables precise synchronization with the real system. This simulator features a compact design and convenient operation, and its weight including the battery does not exceed 5 kilograms. It is suitable for satellite simulation, rapid signal verification, and onboard operations. The automated testing software can test and diagnose the functions and performance of Beidou/GNSS terminals indoors.

Product Features

- 10 - inch high - sensitivity touchscreen for menu - setup and one - click nav signal param broadcast. Supports scenario - based testing with multiple typical scenario libraries.
- Enables GNSS full - band nav signal simulation, outputs multi - frequency signals concurrently.
- Configure nav signal params in detail via buttons, touchscreen or tablet.
- Features time, position, and speed simulation scene modes.
- Built - in high - stability clock syncs with real - sky signals.
- Comprehensive aux accessories. Standard: mini multi - band omni antennas & bracket for rapid deployment. Optional: microwave shield for on - site tests, solar panels & power banks for extended battery life.

Outstanding Performance

Analog Frequency Band

BDS	B1 B2 B3	GPS	L1 L2 L5
GLONASS	L1 L2	Galileo	E1 E5

Analog Signal Capability

Signal Pattern	Time Simulation, Position Simulation, Speed Simulation
Satellite Signal Channel	No Less Than 16 Points Per Frequency
Time Synchronization Accuracy	≤ 50ns

Signal Dynamics

Velocity : ≥15000m/s	Acceleration : ≥ 1000m/s ²	Acceleration: ≥ 1000m/s ³
----------------------	---------------------------------------	--------------------------------------

Signal Accuracy

Pseudo-Range Accuracy : ≤ 0.05m	Accuracy Of Pseudo-Range Change Rate : ≤ ±0.005m/s
---------------------------------	----------------------------------------------------

Signal Quality

Phase Noise	-75dBc/Hz@100Hz	-80dBc/Hz@1kHz
	-85dBc/Hz@10kHz	-90dBc/Hz@100kHz
Clutter Suppression : ≤ -50dBc	Harmonic Suppression : ≤ -40dBc	

Signal Power

Maximum Output Power : ≥ 0dBm	Adjustable Attenuation Range : ≥ 60dB
Power Accuracy : ≤ 0.5dB	Attenuation Adjustment Step 1dB

Physical Characteristics

Overall Size : ≤ 320mm (Long) ×200mm (Wide) ×100mm (Tall)	Machine Weight : ≤5kg
-----------------------------------------------------------	-----------------------

Power Consumption

Supply Voltage : 200V ~ 240V/AC	50Hz ~ 60Hz (Power Adapter)
Overall Power Consumption : ≤80W	Endurance Time : ≥4h (Internal Battery)

1.2

PC20 / Portable GNSS Signal Record And Playback Equipment



Product Introduction

PC20 Compact GNSS Signal Recording/Replay System, A portable solution for real-time recording and playback of GNSS RF signals across 4 independent channels, compatible with BDS, GPS, GLONASS, Galileo, SBAS, NavIC, and QZSS. Capable of capturing signals from field environments (static/mobile) or GNSS simulator outputs.

Key Features:

- Synchronizes serial data logging with RF signal recording
- Ethernet/web/software control interfaces for remote configuration
- Data export via USB 3.0 or Gigabit Ethernet
- Supports receiver performance evaluation, algorithm research, field diagnostics, and maintenance

Applications:

- Automotive/road testing (real-world & RTK differential)
- Mobile device & production line validation
- Navigation chipset/module testing
- GNSS-denied environment simulations

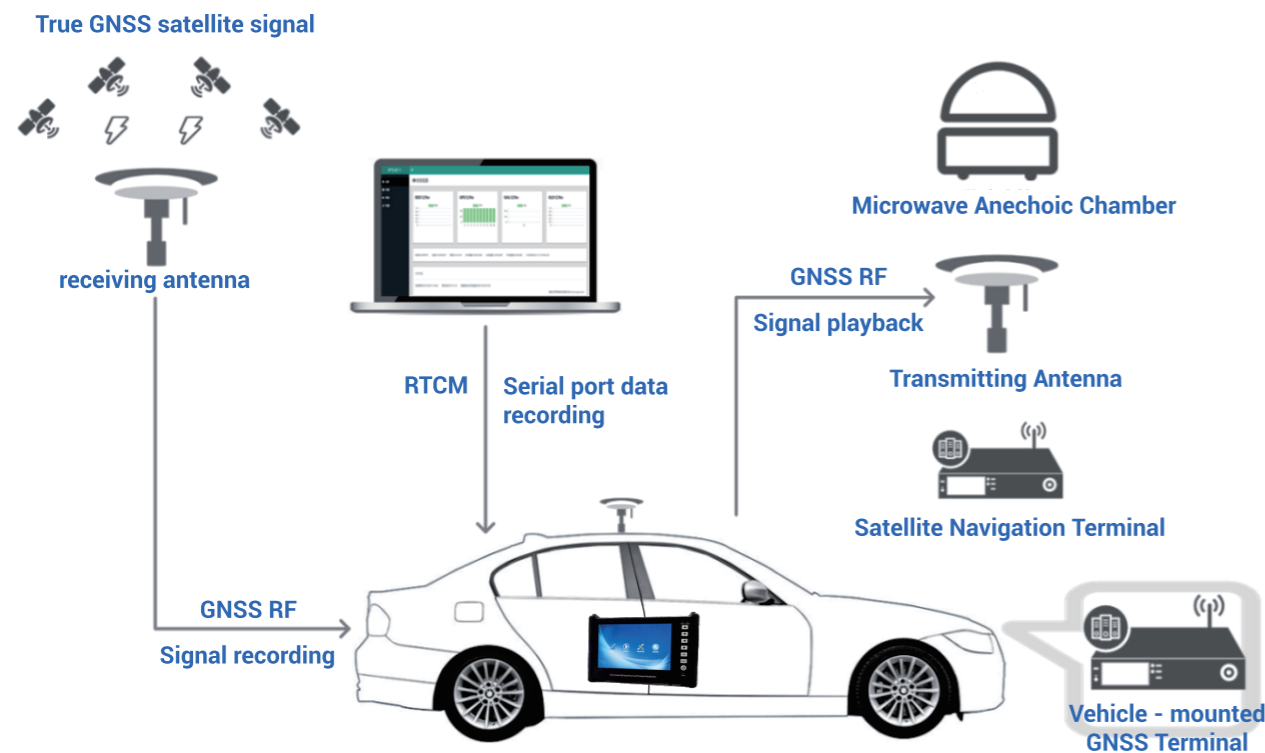
R&D Benefits:

- Reduces field testing iterations, shortens experiment cycles lowers development costs, and accelerates product deployment

Optimized for precision, flexibility, and operational efficiency in complex scenarios.

Product Features

- Boasts four - channel signal record & playback, covering all GNSS frequency bands.
- Allows independent power setting for 4 RF channels, enabling concurrent record/playback.
- Supports data recording on CAN, digital, RS232 channels.
- Integrates a GNSS receiver module for real - time navigation signal monitoring.
- Comes standard with 1TB SSD, optional 2TB/4TB for storage expansion.
- Supports local/remote control via built - in screen/buttons or Ethernet.
- Enables import/export of recorded data and transfer with external drives.
- Supports max 100MHZ recording bandwidth.
- Offers selectable I/Q signal quantization: 2bit, 4bit, 8bit, 16bit.
- Records standard serial data like RTCM, INS, and serial time - keeping data.
- Graphically displays signal spectra, visible satellites, and C/N0.
- Powers by built - in battery (2 - hour runtime) or external supply.
- Supports control via HTML, LCD, or physical buttons for easy & fast setup.
- Employs OCXO system for all, ensuring top - notch stability.



Outstanding Performance

Record - playback signal frequencies

BDS	B1 B2 B3	RDSS-S	RDSS-L (Including the Beidou III)	GPS	L1 L2 L5
GLONASS	L1 L2 L3	Galileo	E1 E5 E6	NAVIC	L5
QZSS	L1 L2 L5	SBAS	WAAS MSAS EGNOS	GAGAN	SDCM

RF channel count

4 Signal Recording Channels (Selectable RF Channel Center Frequency)	4 signal playback channels
----------------------------------------------------------------------	----------------------------

Signal recording

Input Signal Power : -90dBm ~ -30dBm	Channel Gain : Adjustable from 20dB ~ 70dB
I/Q quantization bits : 2/4/8/16bit (configurable)	Recorded signal bandwidth : Max. 100MHz

Signal Playback

Output Signal Power : -80dBm to 0dBm	Power Adjustment Range : ± 25 dB
Power Adjustment Step : 1dB	Harmonic Suppression : ≤ -40 dBc
In - band Spurious : ≤ -45 dBc	

10MHz Clock Signal

Input amplitude : 6 ± 2 dBm	Output amplitude : 5~7 dBm
Signal impedance : $50 \pm 10\Omega$	Output frequency stability : $\leq 5.0 \times 10^{-8}$ @1s

1PPS (1 Pulse Per Second) Signal

Pulse width : $20\mu s \pm 1\mu s$	Signal amplitude : ≥ 3 V	Signal impedance : $50 \pm 10\Omega$
------------------------------------	-------------------------------	--------------------------------------

Storage Performance

Disk storage capacity : Default 1TB SSD, optional 2TB/4TB SSD	Disk read/write rate : ≥ 200 MB/s
Disk storage duration : ≥ 24 h (2bit, 4channels)	

Physical Characteristics

Overall dimensions : ≤ 310 mm (L) $\times 190$ mm (W) $\times 60$ mm (H)	Overall weight : ≤ 2.5 kg
-------------------------------------------------------------------------------	--------------------------------

Power Consumption

Battery life : ≥ 2 h (Built - in battery)	Supply voltage : 200V - 240V/AC, 50Hz - 60Hz (Power adapter)
Overall power consumption : ≤ 50 W	

1.3

MY33 / odular Universal Signal Generator



Product Introduction

The My33 Modular Universal Signal Generator, built on a universal platform, offers flexible configuration for generating navigation interference. It can simulate full - frequency interference signals for BDS, GPS, GLONASS, and Galileo. Featuring a high - stability clock module, it synchronizes precisely with real satellite systems for seamless spoofing. It provides multiple ephemeris access options: real - time calculation via an external antenna, 4G - based retrieval, or using local offline ephemerides. With strong adaptability and compatibility, it meets diverse user needs.

Product Features

- Simulate full - band GNSS navigation signal generative spoofing jamming.
- Import external spoofing trajectories in real - time and spoof high - dynamic navigation targets.
- Acquire current - location ephemeris via 4G for spoofing signal simulation.
- Configure spoofing jamming parameters (position, trajectory, signal power).
- Provide an open remote - control protocol for secondary development and system integration.
- Offer multiple spoofing modes (time, position, trajectory).
- Receive satellite signals for time & ephemeris sync and generate spoofing signals with real ephemeris.
- Simulate spoofing signals using local offline ephemeris.
- Use a 433 MHz wireless interface for remote communication and control.

Outstanding Performance

Range : $\geq 800m$ (360°, unobstructed)	BEIRP : $\leq 10dBm$
Modes : Area protection, directional repulsion, hovering & return - to - base deception	
Bands : Full - band options for BDS, GPS, GLONASS, Galileo	Spoofing signal sync accuracy : $\leq 50ns$
Startup time : $\leq 5min$	Response time : $\leq 5s$
Continuous operation : 7×24h (unattended)	Weight : $\leq 5kg$
Dimensions : $\leq 320\times 200\times 60mm$	Supply : 220V AC (adapter)
Temp : $- 40^{\circ}C$ to $+70^{\circ}C$	

2.1

Our team & contact information



Kenneth Liu
General Manager
kenneth@vunav.com



Cedric Cao
GM Assistant
cedric@vunav.com



Chase Peng
Marketing Director
chase@vunav.com



Xander Zhang
Marketing Director
xander@vunav.com



Lene Gong
Business Manager
lene@vunav.com



Shanghai Weiyu Tiandao Technology Co., Ltd.

Room 401, 4th Floor, No. 7, Lane 205, Gaoji Road, Sijing Town,
Songjiang District, Shanghai.

+86 183 0128 2080

lene@vunav.com