The Simceiver ™ GNSS Simulator & Signal Analysis Instrument

Features

- *Real-time simulation of one of the follows : dual frequency GPS, GLONASS, BeiDou or GPS+GLONASS, GPS+BeiDou, GPS+Galileo signals (see Table below for available signals).*
- *Comprehensive simulation models including atmosphere, multipath etc.(see ReGen datasheet)*
- *Record and playback dual frequency GPS/Galileo, GLONASS and BeiDou signals.*
- *Twoor more units can be used to simulate, record and playback more signals at the same time.*
- *Signal analysis based on JAXA COSMODE ionospheric scintillation monitor.*
- *Simulated and recorded signals can be stored in digitized format , analysed by a MATLAB software receiver and played back as RF at any time.*

System	GPS			GLONASS			Galileo			BeiDou		QZS
Frequency	L1	L2	L5	L1	L2	L3	E1	E5A	E5B	B1	B2	
SIMULATE	OK	OK		OK	OK	OK	OK			OK	OK	OK
RECORD	OK	OK	AG	OK	OK	OK	OK	AG	AG	OK	OK	OK
PLAYBACK	OK	OK	AG	OK	OK	OK	OK	AG	AG	OK	OK	OK
ANALYSE	OK			OK	OK		OK			OK		OK

Options

ANSI C API allows to modify existing or implement custom models for signal simulation .

Single channel simulator with custom Doppler profile simulation.

RF noise and interference generator.

Simceiver™ AG hardware option supports E5, L5 signals with 24-MHz bandwidth.

Eagle front end allows to record two L1 signals GPS/Galileo + GLONASS /BeiDou, which can be played back with the Replicator™.

Overview

The Replicator™ is a multi-frequency, multi-system GNSS simulator for advanced R&D, equipment testing and education. It also can function as a recording, playback and signal analysis instrument.

Components:
1) Simceiver™ hardware device,
2) ReGen™ control software for real-time simulation,
3) Streamer software for recording and playback,
4) ARAMIS™ software receiver for signal analysis.

The Replicator™ is a result of our 7-year work for and collaboration with the Japan Aerospace

Specification

Power control	
Real-time between channels	*20 dB*
Resolution	*1 dB*
Signal quality	
In-band spectral purity	*< -30 dBc*
Harmonics	*< - 35 dBc*
Signal bandwidth	*8 MHz (24 MHz for AG)*
Connectors	
RF IN , RF OUT	*SMA female,*
USB-2	*Bi-directional to Host PC*
Trigger, 1 PPS IN, OUT	*Yes*
External clock IN, OUT	*SMA female , 10 MHz.*
Power	*5 VDC , < 3 W*
Accuracy	
Code phase	*< ±10 cm RMS*
Carrier phase	*< ±5 cm RMS*
Time base	*OCXO option*
Aging	*±2 ppb/day*
Stability	*±10 ppb over -20° C to +70° C*
Environmental	
Operating temperature	*+10～40℃*
Operating humidity	*40～90％RH （non-condensing）*
Dimensions	*200×120×70*
Weight w/o control PC	*< 1 kg*

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