

SIMAC2 - Accord's Indigenous GNSS Portable Simulator



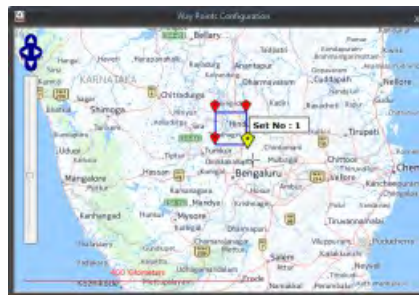
Features

- ❖ GNSS portable simulator
- ❖ Hardware update rate support of 100 ms
- ❖ Selection of single/multiple channels of GNSS constellations
- ❖ Supports file loading for dynamic simulation
- ❖ Comprehensive datalogging
- ❖ In-house Calibration
- ❖ Multiple options for signal impairments
 - ◆ Ionosphere
 - ◆ Troposphere
- ❖ Supports error modelling for RAIM tests like Fixed Doppler offset, Step and/or Ramp error
- ❖ Capable of multipath simulation

Specification

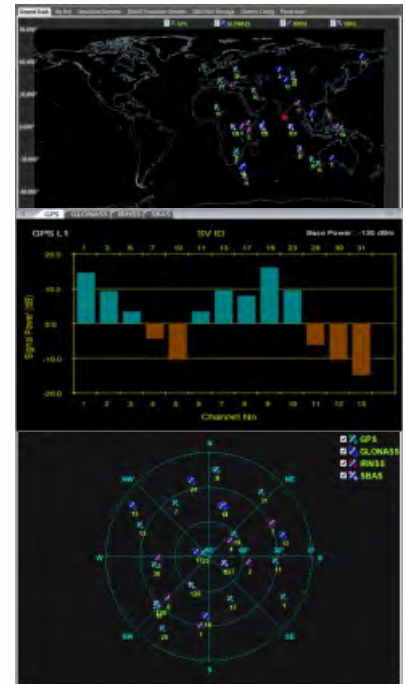
Vehicle Types

- ◆ Stationary user
- ◆ pre-defined model
- ◆ User motion trajectory file loading



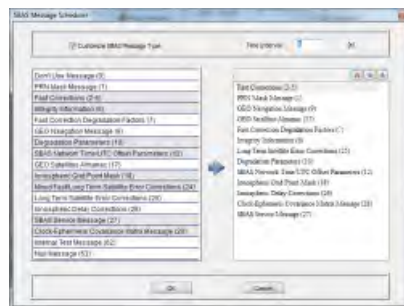
Output Display/ Data Logging

- ◆ Graphical and textual data display at 1 Hz
- ◆ File logging for off-line processing
 - Vehicle position and altitude
 - Satellite position
 - Navigation data
 - Received signal information parameters



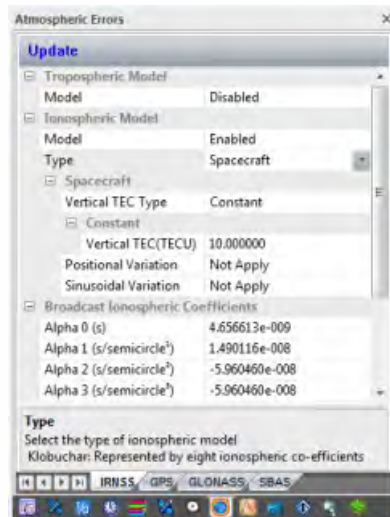
SBAS Configuration

- ◆ User configurable SBAS message types



Atmospheric Impairments

- ◆ Ionospheric Delay Models
 - Klobuchar model
 - SBAS grid-based model (Applicable for SBAS only)
 - IRNSS grid-based model (Applicable for IRNSS only)
- ◆ Tropospheric Delay Model as defined by
 - RTCA06
 - RTCA98



Specification

Signal Power Levels

✦ Nominal signal level for all bands @ Main RF port	-130 dBm
✦ Nominal signal level for all bands @ Calibration RF port	>50 dB
✦ Dynamic range w.r.t nominal signal level	±20 dB
✦ Resolution	0.1 dB

Signal Accuracy

✦ Master clock stability	±5 x 10 ⁻¹⁰ (per day)
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Operating Specifications

✦ Operating temperature	+10° to +40° C
✦ Storage temperature	-40° to +60° C
✦ Operating humidity	40% to 90% RH @ 40° C
✦ Storage humidity	20% to 90% RH @ 40° C
✦ Electrical power supply	230 V AC, 50 Hz

Modulation and Data Encoding Scheme

- ✦ BPSK
- ✦ FEC encoder (1/2 rate)
- ✦ 50 Hz, 250 Hz NAV data rate

Dynamic Limits

✦ Relative velocity	±515 m/s
✦ Relative acceleration	±50 m/s ²
✦ Relative jerk	±20 m/s ³

Mechanical Specification

Part	Dimension (WxDxH) (mm)	Weight (kg)	Power (W)
✦ Signal Generation Unit	320 x 320 x 150	<11	32
✦ Laptop	250 x 320 x 30	<2.3	65

Interfaces

✦ Main RF output *	Coaxial N-type female
✦ Calibration RF output *	Coaxial N-type female
✦ 1 PPS output *	Coaxial BNC Socket
✦ Internal reference output (10 MHz Sinusoid) *	Coaxial BNC Socket
✦ 10/100 Mbps Ethernet LAN	RJ-45

* All ports are 50 Ω

GNSS Constellations

Band	Service	Constellation	Channels	Center Frequency (MHz)	Bandwidth (MHz)
L1	C/A	GPS	16	1575.420	±10.23
		GLONASS**	14	1602.000	±5
	SBAS	3	1575.420	±10.23	
L5	SPS	IRNSS **	11	1176.450	±12
S	SPS	IRNSS **	11	2492.028	±8.25

** Optional

- Configuration**
- ✦ GPS+SBAS
 - ✦ GPS+SBAS+GLONASS
 - ✦ IRNSS-L5+IRNSS-S
 - ✦ GPS+SBAS+IRNSS-L5 or IRNSS-S



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