

# NCS NOVA

GNSS RF Simulator Portfolio

2023



# Specification

## 2023

RF Simulator Type	NCS NOVA	NCS NOVA+
<b>Channels, RF Bands and Frequencies</b>		
RF frequencies supported	Center frequency ranging from 1.125 GHz to 2.5 GHz	
RF modules	1 RF module with 1 RF-out or 2 RF-out	Up to 2 RF modules with 2 RF-out or 4 RF-out
RF bands (signal chains) per RF module	4 RF bands per RF module (with 50 MHz bandwidth of each band and selectable frequency per SW licence)	
RF band 1 signal coverage (1,559 - 1,610 MHz)	GPS L1 / Galileo E1 with OSNMA / GLONASS G1 / BeiDou-3 B1C & B1I / QZSS L1	
RF band 2 signal coverage (1,164 - 1,214 MHz)	GPS L5 / Galileo E5ab / BeiDou-3 B2a / NavIC(IRNSS) L5 / QZSS L5	
RF band 3 signal coverage (1,217 - 1,260 MHz)	GPS L2 / GLONASS G2 / QZSS L2	
RF band 4 signal coverage (1,261 - 1,300 MHz)	Galileo E6 (unencrypted) with HAS	Galileo E6 (with encryption) with HAS
RF band 5 signal coverage (2,483 - 2,500 MHz)	NavIC (IRNSS) S-Band	
Signal channels	Up to 60 channels	Up to 160 channels
Multipath channels per signal channel	Not limited (as generated in SW)	
Multipath capability	From simple ground reflection to complex LMS Narrow- / Wide-Band models	
<b>Power Levels</b>		
RF Signal Power	-30 dBm to -165 dBm	
Dynamic Range	135 dB	
Resolution	0.1 dB	
Linearity (over total Dynamic Range)	< 0.1 dB	
Absolute Accuracy	± 0.3 dB	
Run-to-Run Repeatability	± 0.1 dB	
<b>Signal Accuracy</b>		
Simulation (Iteration) Rate	100 Hz	100 Hz (up to 250 Hz optional)
Pseudorange Accuracy	< 0.1 mm RMS	
Pseudorange Rate Accuracy	< 0.1 mm/s RMS	
Pseudorange Uncertainty (due to Interchannel Bias)	0 mm RMS	
Deltarange Accuracy	< ±0.5 mm RMS	
<b>Optional Signal Generation</b>		
Noise Generation	-170 dBm/Hz to -110 dBm/Hz	
Interference & Spoofing	CW, AWGN   Spoofing	CW, AWGN, Chirp   Spoofing
<b>Signal Dynamics</b>		
Max. Velocity (LoS)	± 1,460,000 m/s	
Max. Acceleration (LOS)	± 667,000 m/s <sup>2</sup>	
Max. Jerk (LoS)	± 6,600,000 m/s <sup>3</sup>	
Angular Rates (indicative) (at 1.5 m lever arm) (at 0.5 m lever arm)	> 15π rad/s > 60π rad/s	
<b>Spectral Purity</b>		
Harmonics	< -40 dBc	
In-band Spurious	< -70 dBc	
Phase Noise	< 0.005 rad RMS	
Signal stability	Short term stability (ADEV 1 s) < ± 1 * 10 <sup>-10</sup> Long term stability (1 day) < ± 4 * 10 <sup>-8</sup>	Short term stability (ADEV 1 s) < ± 6 * 10 <sup>-13</sup> Long term stability (1 day) < ± 1.5 * 10 <sup>-10</sup>
<b>Inter-Carrier Phase Coherence</b>		
Carrier Phase Coherence (@ Rf Output)	< 0.5°	



**Disclaimer:**  
All specifications subject to change without prior notice

**For Americas**  
IFEN Inc.  
+1 415 627 0971  
sales-us@ifen.com



**For EMEA & APAC**  
IFEN GmbH  
+49 8121 2238 50  
sales@ifen.com