

RP-6100 Series

Multi-Channel RF Record & Playback



Accelerate your RF product designs and research projects with the **powerful** and **cost-effective** RP-6100 – a state-of-the-art **RF recorder** solution.



RP-6120P
Capture real-world RF wherever you are.



RP-6140

RP-6100 Series

Multi-Channel RF Record & Playback

Key Features

Frequency range of 10–6000 MHz, up to 4x40 MHz or 2x80 MHz bandwidth, 14-bit resolution, tight channel synchronization

Records up to 20 hours, includes RF Studio for quick setup/analysis.

Play back recordings anywhere, visualizing real signals and impairments for in-depth, repeatable analysis and product testing

Averna RF Instruments

RF Studio: RF Record & Playback Software

Easily record RF, audio and video as well as NMEA data

URT-5000: RF Player and Signal Generator

An all-in-one solution for repeatable testing with generated and real RF

→ Capture Real-World RF for Repeatable Lab Testing

Averna's RP-6100 Series sets a new standard for RF application testing. Record real-world signals like GNSS, HD Radio, LTE, and WiFi – plus impairments – to significantly advance your projects and harden product designs. With up to 4 channels and 160 MHz of recording bandwidth, a 10–6000 MHz frequency range, tight channel synchronization, and up to 16 TB of storage, this is one of the most powerful and cost-effective R&P solutions on the market.

→ RF Studio™ Enables Quick Setups, Playback and In-Depth Analysis

Preloaded with RF Studio, a state-of-the-art workflow tool, the RP-6100 Series lets you quickly set up your recordings, add contextual data, visualize weak signals, and analyze your collected RF environments to validate and fine-tune your designs and products.



IMPORTANT LEGAL NOTE: Every country has different laws governing the transmission and reception and/or recording of radio signals. Users are solely responsible for using their RP-6100 in compliance with all local and applicable laws and regulations governing the transmission and reception and/or recording of radio signals. Averna Technologies Inc. does not accept liability for such use of our products. Averna recommends that you determine what licenses may be required and what restrictions may apply prior to use.



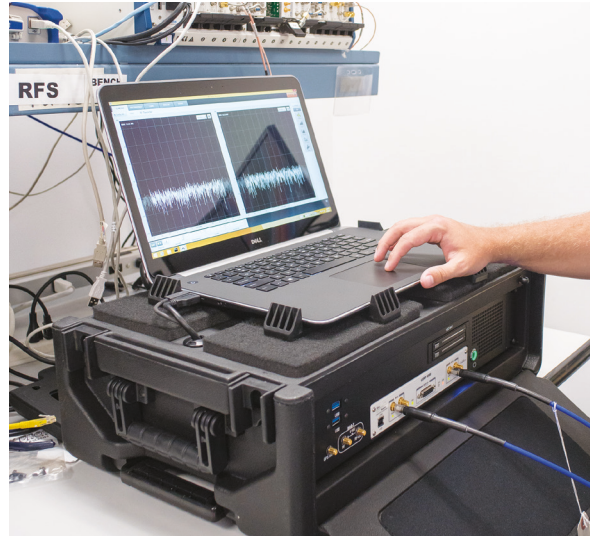
RP-6120P

The all-in-one portable model comes with a rugged case for easy transport and field recording



→ RP-6100 Series Features

- Frequency range of 10–6000 MHz, covering all GNSS bands (L1, L2 and L5)
- Multi-channel (1-4): Up to 4x40 MHz or 2x80 MHz bandwidth at 14-bit resolution (< 1 Hz)
- User-friendly analysis tools: Noise Figure, Spectrum, Power, and Histogram views
- Storage Capacity 4, 8 or 16 TB (up to 20 hours of recordings)
- Supports ATSC, Bluetooth, DAB, DVB-T, FM, GNSS, HD Radio (FM), IBOC, RDS/TMC, WiFi, etc.
- Three models: RP-6120P (2 ch. portable), RP-6120D (2 ch. desktop) and RP-6140 (4 ch.)
- Portable: Includes laptop + rugged case; can run on 12V or battery (~40 minutes); DriveView option



RP-6120D
2-channel Desktop model



RP-6120P
2-channel Portable model



RP-6140
4-channel Rackmount model



RP-6100 Series Technical Specifications

General	
Frequency Range	10 MHz to 6 GHz
Frequency Resolution	< 1 Hz
Bandwidth	156 kHz to 80 MHz (per channel)
Dynamic Range	80 dB SFDR
Amplitude Resolution	0.5 dB
Amplitude Accuracy	+/- 1dB
Phase Noise	< -97 dBc/Hz @ 1 GHz and 1 kHz offset < -105 dBc/Hz @ 1 GHz and 10 kHz offset < -115 dBc/Hz @ 1 GHz and 100 kHz offset
Internal Reference / 1 PPS	10 MHz sine wave < 2 x 10 ⁻⁸ (accuracy) < 2.5 x 10 ⁻⁸ (stability over temperature range) +/- 50 ns 1 PPS
Channel-to-Channel Time Offset	< 2 ns
External Reference / 1 PPS	10 MHz sine wave or rectangular 0 to 13 dBm input level 3.3 V to 5 V 1 PPS
Operating Temperature	+5°C to +45°C
Relative Humidity	10% to 90% non-condensing

Recorder	
ADC Resolution	14-bit
ADC Sample Rate	200 MS/s
Maximal Signal Power	- 15 dBm (at Rx input)
Gain Range	0 to 37.5 dB
Gain Resolution	0.5 dB
Noise Figure	< 10 dB

Player	
DAC Resolution	16-bit
DAC Sample Rate	800 MS/s
Maximal Signal Power	+ 20 dBm (at Tx output)
Gain Range	0 to 31.5 dB
Gain Resolution	0.5 dB

Model-Specific Features



Feature	RP-6120D (Desktop)	RP-6120P (Portable)	RP-6140 (Rackmount)
Channels/Bandwidth ^[1]	2 @ 40 MHz each	2 @ 40 MHz each	2 @ 80 MHz each 4 @ 40 MHz each
Recording Capacity ^[2] – Example (1 ch.)	Up to 10 hrs @ 20 MHz Up to 5 hrs @ 40 MHz	Up to 10 hrs @ 20 MHz Up to 5 hrs @ 40 MHz	Up to 20 hrs @ 40 MHz Up to 10 hrs @ 80MHz
Enhanced Noise Figure	No	No	1.5 dB
Bias-T (to Power Active GNSS Antenna)	No	One Bias-T 100 mA @ 5 V	One per Channel 100 mA @ 5 V
RF Box Dimensions/ Weight	X300 kit + desktop	Portable case: 14" (L) x 22" (W) x 9.25 (H) ~35-40 lbs	17" (L) x 17" (W) x 3.5" (H) ~25 lbs
Power	AC 110/220 V	AC 110/220 V or 12 V vehicle Internal battery: ~40 minutes	AC 110/220 V
Server/Computer	Desktop	Laptop	Rackmount Server 2U
DriveView Support (Camera + GPS Position Logging)	Contact Avera	Optional	Contact Avera
Storage Capacity	4 TB	8 TB	8 TB

[1] Other channel/bandwidth configurations available.
[2] Contact Avera for other disk configurations.

