



## SIM910 JFET, SIM911 BJT Voltage Preamplifiers

- 4 nV/ $\sqrt{\text{Hz}}$  input noise (SIM910)
- 1.8 nV/ $\sqrt{\text{Hz}}$  input noise (SIM911)
- Low output noise
- 1 MHz bandwidth
- Selectable gain from 1 to 100
- AC or DC coupled
- Differential or single-ended input
- 85 dB CMRR
- Remote interface



The SIM910 and SIM911 are high performance, low noise, programmable preamplifiers which are ideal for a wide range of small signal applications. The primary differences between the two models are their input impedance and input noise. The SIM911 has a bipolar junction transistor front end and offers lower input noise and a 100 k $\Omega$  front end impedance. The low bias current and 100 M $\Omega$  input impedance of the SIM910, which has a JFET front end, make it a better choice for use with high impedance sources.

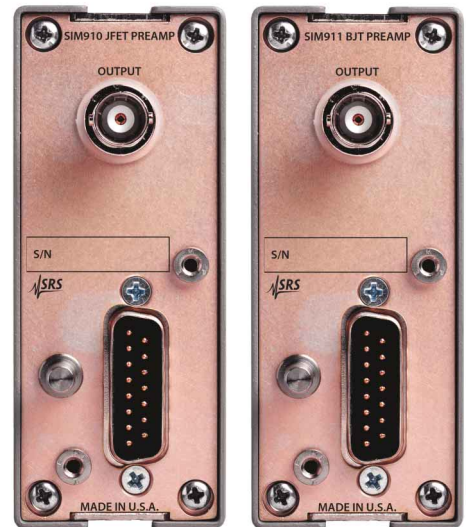
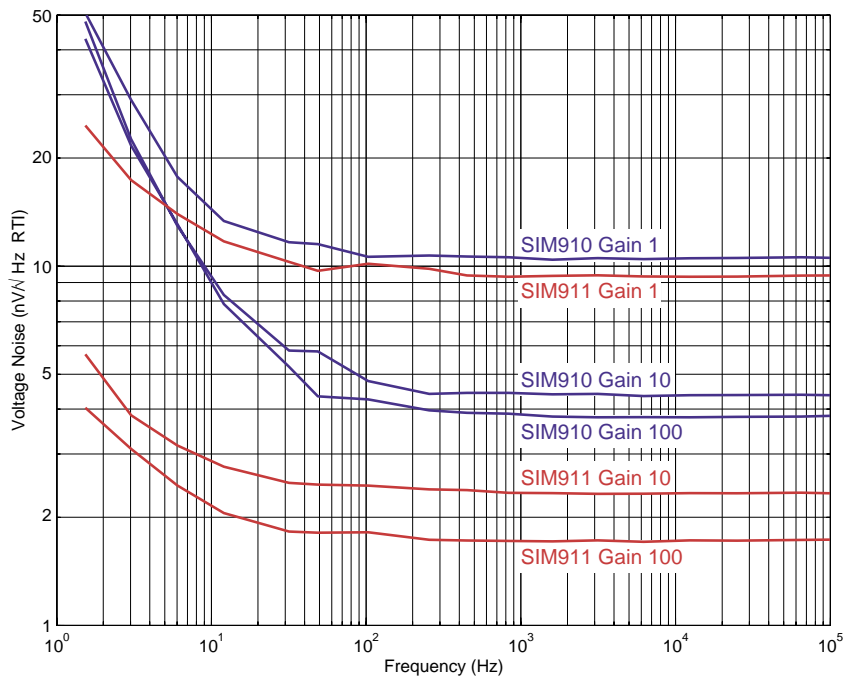
Both modules maintain very low output noise resulting in exceptional overall noise performance, even at low gain levels. The bandwidth of these preamplifiers is independent of gain setting so waveforms do not change shape as the gain is varied. Dual parallel outputs (one front and one rear) provide flexibility in cabling.

Inputs can be configured as true differential (A–B), single-ended (A) or internally grounded, and can be either AC or DC coupled. Additionally, the BNC input

shields can be floated, avoiding spurious ground loops when measuring remote signals.

The digital control circuitry in the SIM910/911 is designed with a special clock-stopping architecture in which the microcontroller is turned on only when settings are being changed. This guarantees that no digital noise can contaminate low-level analog signals. Settings may be changed from the front panel or through the remote interface. All instrument settings can also be queried via the remote interface. The module generates a status signal to alert the user of an overload condition. Both the SIM910 and SIM911 can be operated outside the SIM mainframe by powering them with their required DC voltages.

The SIM910 and SIM911 are part of a wide range of modules available for the SIM (Small Instrumentation Modules) platform from Stanford Research Systems. For more information, please contact SRS at 408-744-9040 or visit our web site at [www.thinkSRS.com](http://www.thinkSRS.com).



## SIM910, SIM911 Specifications

	<u>Common</u>	<u>SIM910</u>	<u>SIM911</u>
Frequency range	DC to 1 MHz		
Gain	1 to 100 (1, 2, 5 sequence)		
Gain accuracy	±0.5 % (DC to 100 kHz) ±5 % (<1 MHz)		
Gain stability	200 ppm/°C		
Input noise (typical)		4 nV/√Hz @ 1 kHz	1.8 nV/√Hz @ 1 kHz
Input impedance		100 MΩ // 35pF	100 kΩ // 35 pF
Input bias current (DC coupled)		0.5 pA	4 μA
AC coupling frequency (-3dB)		16 mHz	0.7 Hz
Input selection	A, A-B or GND		
Input coupling	AC or DC		
Input shields	Floating or ground		
Maximum input	±1 V differential, ±5 V common mode		
Maximum output	±10 V		
Common mode rejection	85 dB @ 1 kHz		
Operating temperature	0 °C to 40 °C, non-condensing		
Interface	Serial via SIM interface		
Connectors	BNC (3 front, 1 rear) DB15 (M) SIM Interface		
Power	+5 VDC (100 mA max) ±15 VDC (300 mA max)		
Dimensions	1.5" W × 3.6" H × 7.0" D		
Weight	1.5 lbs		
Warranty	One year parts & labor against defects in workmanship and materials		



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