EXCELLENCE IN ISOLATION!

SPI RACK
ULTRALOW NOISE, DRIFT AND INTERFERENCE
Ultra-stable DC voltage source

- 16 channels / 18 bit resolution
- Software-selectable range: ±4, ±2, ±4 V (extensible to ±8 V)
- Linear: INL ±0.5 LSB, DNL= ±0.2 LSB
- Low drift: 0.7 ppm/°C of range + 1.5 ppm/°C of output
- Low noise: <0.5 µVrms
  (0.1 to 10 Hz integrated bandwidth)
  <70 nV/√Hz @ 2 Hz
  <30 nV/√Hz @ 100 Hz
GALVANICALLY ISOLATED CONTROL
C1b

Isolated controller

Galvanic isolation from host pc to avoid interference and ground loops

Connects to host pc via USB

Drivers available for Python and QCoDeS
Ultra-stable DC current source

- 4 channels / 18 bit resolution + output monitor for each channel
- Software-selectable range: ±50 mA, ±25 mA, +50 mA
- Compliance voltage: ±3.5 V
- Linear: INL ±0.5 LSB, DNL= ±0.2 LSB
- Low drift: <2.5 ppm/°C of full scale
  (measured @ +50 mA into 50 Ω with ±50 mA range)
- Low noise: <2.5 nA/√Hz @ 10 Hz
  <0.8 nA/√Hz @ 1 kHz
  (measured @ +50 mA into 50 Ω with ±50 mA range)
ISOLATED POWER SUPPLY

Filtered power supply with gyrator (typically used with quantum dot setups)

The gyrator circuitry mimics a very large inductor (40 Henry) on every power lead. This prevents interference (like 50 Hz) from getting to the SPI Rack.

Back-up battery prevents sample damage in case of a power outage.

UP TO 11 MODULES PER RACK

11x D5a: 176 voltage sources

11x S4g: 44 current sources

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QBLOX PULSAR SERIES
Ultralow noise - Easy to integrate

Qubit Control Module
4 channels out
1 GSPS / 16 bit

Qubit Readout Module
2 channels out + 2 channels in
1 GSPS / 12 bit

QBLOX CLUSTER SERIES
Ultralow noise - Massively Scalable

1 GSPS
Control and Readout

400 channels / 20 U
Synchronized
Low-latency feedback

QBLOX
ENABLING THE QUANTUM REVOLUTION
Lorentzweg 1 | 2628 CJ Delft | the Netherlands | qblox.com | hello@qblox.com