



HELLO QUANTUM WORLD!



PULSAR

ULTRALOW NOISE - EASY TO INTEGRATE

PULSAR QCM QUBIT CONTROL MODULE



Ideal for (multiplexed) single-qubit
and two-qubit gates

4 channels out
1 GSPS / 16 bit
5 Vpp output (50 Ω)



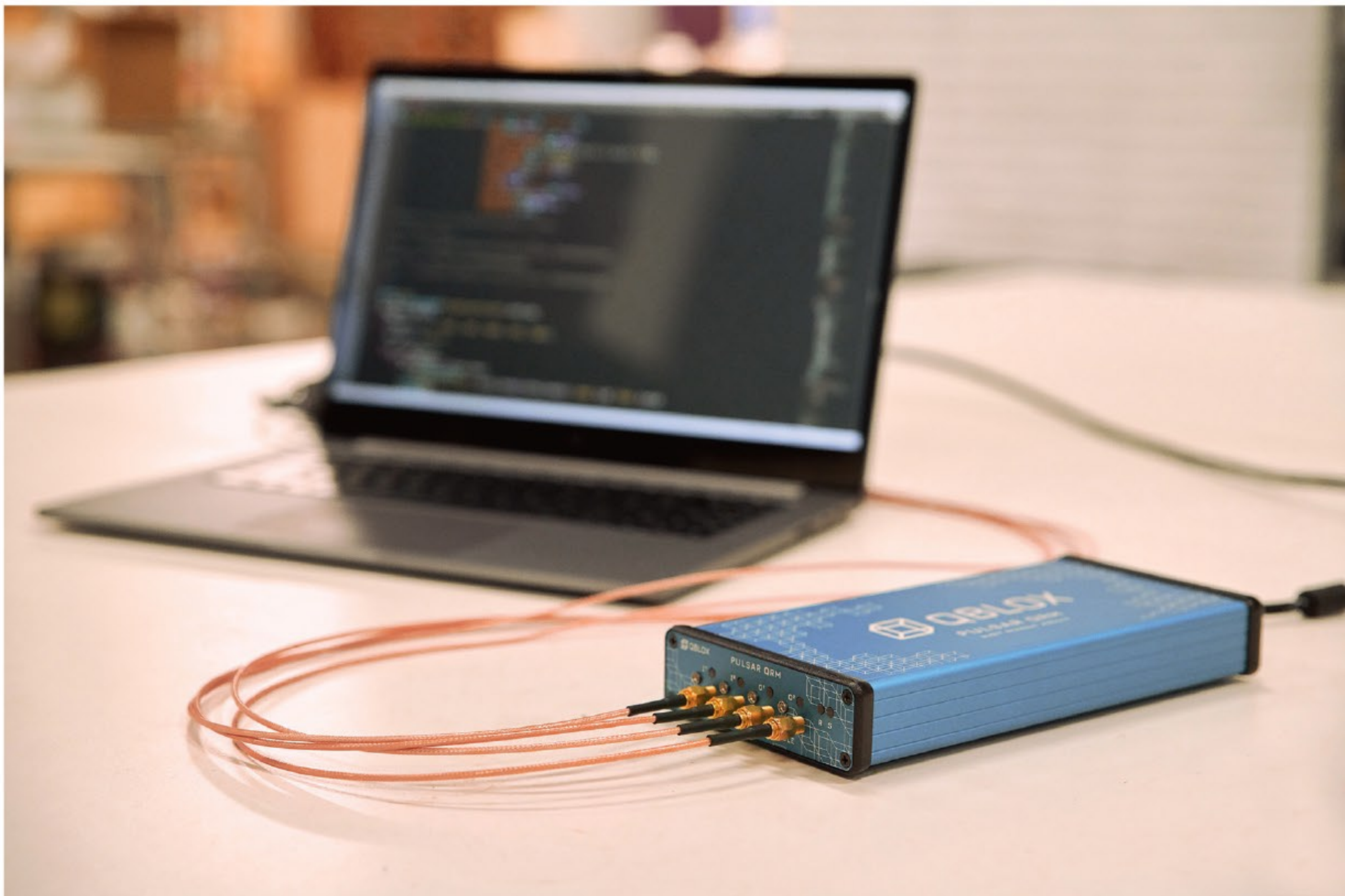
PULSAR SERIES QUANTUM CONTROL AND READOUT

Ultralow noise and distortion:

14 nV/ $\sqrt{\text{Hz}}$ (1 MHz) into 50 Ω
1.0 $\mu\text{V}/\sqrt{\text{Hz}}$ (1 Hz)
66 dB THD

Advanced sequence processor:

Multiplexed qubit control and readout,
Real-time (de)modulation and mixer corrections,
Parameterized gates, virtual Z-gates,
Low-latency feedback



Drivers available for Python and QCoDeS

Experimental platform available including many experiments:

Single-qubit characterizations
Randomized benchmarking (1Q and 2Q)



PULSAR QRM QUBIT READOUT MODULE



Ideal for (multiplexed) qubit readout

2 channels in + 2 channels out

1 GSPS / 12 bit

0.1 to 1 Vpp input (50 Ω)



QCM specifications

DAC channels	4
DAC sample rate	1 GSPS
DAC resolution	16 bit
Analog bandwidth (-3 dB)	300 MHz
Trigger latency	<100 ns
Output range (in a 50 Ω load)	5 Vpp
Rise/fall time (10%-90%)	1.2 ns
THD (100 MHz, 1 Vpp in a 50 Ω load)	66 dB
Voltage noise density (at 1 MHz in a 50 Ω load)	14 nV/ $\sqrt{\text{Hz}}$
Voltage noise density (at 1 Hz in a 50 Ω load)	1.0 $\mu\text{V}/\sqrt{\text{Hz}}$
Gain stability	<50 ppm (18 to 24 °C)

QRM specifications

ADC channels	2
ADC sample rate	1 GSPS
ADC resolution	12 bit
ADC bandwidth (-3 dB)	300 MHz
Input range (in a 50 Ω load)	0.1 to 1 Vpp (controllable)
DAC channels	2
DAC sample rate	1 GSPS
DAC resolution	12 bit
DAC bandwidth (-3 dB)	300 MHz
Output range (in a 50 Ω load)	1 Vpp

Joined specifications

Single-sideband (de)modulation frequency range	± 450 MHz
(De)Modulation frequency resolution	0.25 Hz
Marker channels	4
Control interface for settings and waveform loading	Ethernet
Length	246 mm
Width	106 mm
Height	36 mm

QBLOX CLUSTER SERIES

Ultralow noise - Massively Scalable



1 GSPS
Control and Readout



400channels / 20 U
Synchronized
Low-latency feedback

QBLOX SPI SERIES

DC current and voltage sources



Isolated control
filtered power supply



Up to 176 channels
in 3U



ENABLING THE QUANTUM REVOLUTION

Lorentzweg 1 | 2628 CJ Delft | the Netherlands | qblox.com | hello@qblox.com

