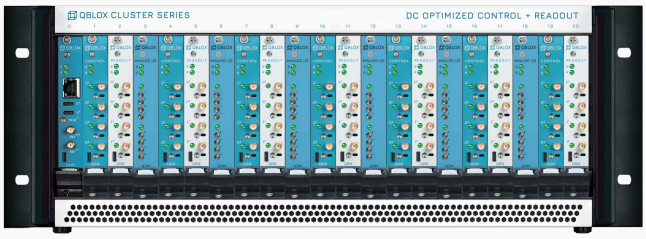
QBLOX

DC Cluster

Ultra-Stable DC Bias Control

Release April 2026_V1.4



QBLOX B.V. - DELFTECHPARK 22 | 2628 XH DELFT | THE NETHERLANDS | CHAMBER OF COMMERCE 72525053 | ALL RIGHTS RESERVED | SALES@QBLOX.COM

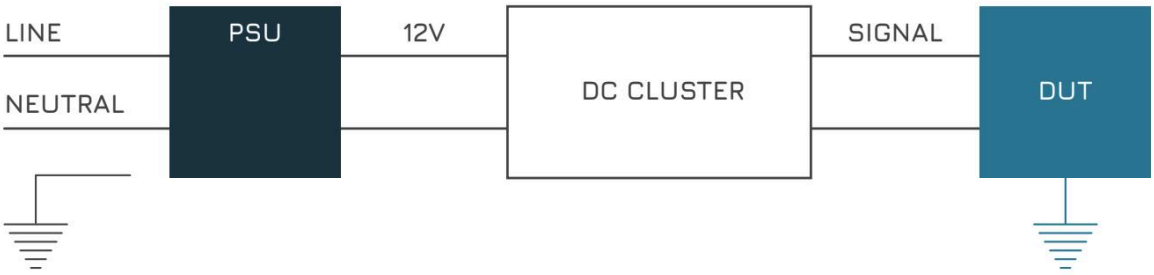
DESCRIPTION

Qblox upgrades its DC solution with the new Quantum Source and Measurement (QSM) module and the DC Cluster. Along with its sourcing function, the measurement capability of the QSM makes it a unique instrument for transport experiments and qubit applications.

The DC Cluster mainframe supports up to 20 modules. Its modular design allows integration with Qblox's QCM and QRM baseband modules within a single 19" DC Cluster mainframe. This makes the DC Cluster a fully integrated system that provides all essential functions for DC transport experiments in various device concepts.

The DC Cluster is fully compatible with both SYNQ and LINQ protocols, ensuring seamless integration with baseband, RF, and timetagging modules. To guarantee an interference-free connection between multiple Clusters, a SYNQ isolator is provided to further protect the DC Cluster's ground-loop-free operation.

Ground loop isolation architecture of DC Cluster



SYNQ

SYNQ protocol: Ensures fully deterministic timing of all outgoing signals by creating a synchronized start and establishes fixed timing relations between all the modules in the Cluster. SYNQ Isolator box is provided to establish SYNQ protocol between multiple Clusters to further protect ground-loop free operation.

LINQ

LINQ protocol: Facilitates low-latency feedback with an arbitrary control flow by distributing the measurement outcomes to all modules.

FEATURES

Ground-loop and interference isolation.

Safety ramp-down switch.

20 slots to support QSM modules, along with QCM, QRM and QTM modules.

Up to 160 channels in a single 19” Cluster.

SPECIFICATIONS

Capacity:	**20 slots**
Max # QSM module:	**18 modules**
Max # QCM/ QRM modules:	**13/15 modules**
Ramp to zero switch:	**1 global switch**
Dimensions:	**482 x 474 x 176 mm³**
Power supply:	**110-230 V / 50-60 Hz**
Data connection to host PC:	**1 Gbit/s via ethernet**