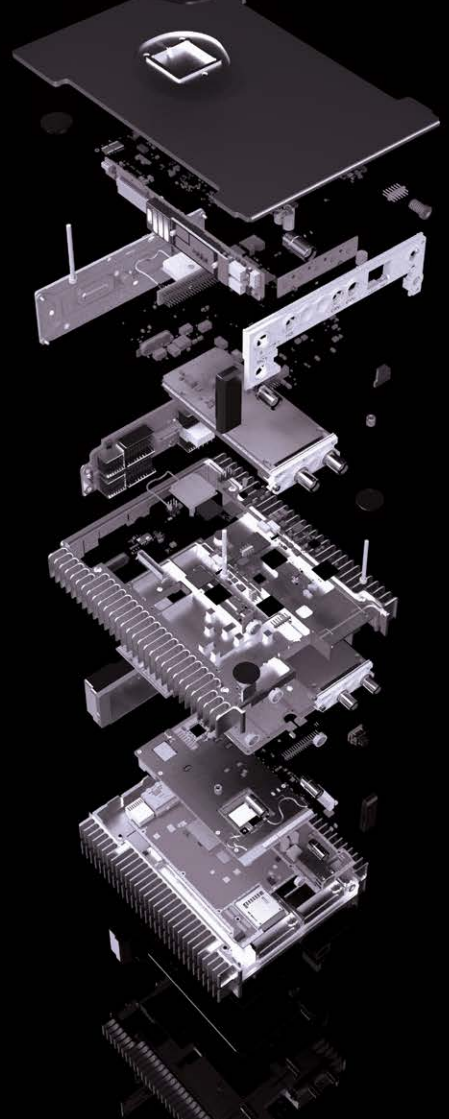


QUANTUS SERIES

QUANTUSSERIES

(Latin) adjective
quan·tus | /ˈkwɒntɜːs/

A great name for high precision Data Acquisition.

From the Latin meaning,
how much and how great

QUALITY AND QUANTITY

it's not often you get both

High sample rates, excellent signal conditioning, low noise floor.

ICP® voltage, Tacho, Temperature, Strain, High speed bridge and voltage, High speed voltage input, Pt100 input, Microphone ICP® voltage, Voltage output, Time and position, Synchronization, Digital bus interface, Digital audio, Piezoelectric charge.

Since 1984.

More than 150 000 Channels in the market.

Integrated but

OPEN.

The Quantus Series **is more than just an acquisition system.**

Together with our Software Partners, it is a complete suite of tools for Structural Acquisition and the most demanding Data Acquisition applications. Our systems are used globally in applications where accuracy and the quality of signal conditioning come first.

Readily

EXPANDABLE.

Whether you are swapping out Modules for different tasks or synchronizing systems for higher channel counts and distributed positions, the freedom to grow your measurement landscape is yours.

MODULAR CONCEPT

Up to 20 I/O Modules to choose from for 7 chassis sizes

WHAT ARE WE REALLY GOOD AT?

1. **GREAT ARCHITECTURE**
Singular platform, rugged design, portable and compact high-channel density modular systems.

2. **GREAT DATA QUALITY**
High sampling rates, high bandwidth, low noise floor. Unrivalled signal conditioning.

3. **MEASUREMENT FREEDOM**
22 I/O Module options to choose from, tethered or independent measurement options and synchronization for larger distributed measurements.

4. **QUANTUS** SOFTWARE
Flexible software options, from a RESTful interface to full turnkey solutions for advanced applications, in collaboration with our OEM PartnerNetwork.

5. **LASTING VALUE**
Modular, partially upgradable systems providing a lasting investment that keeps up with the latest technological advancements.

World-class calibration and support services to keep your system healthy for up to 15 years.

One company, all in-house and with a team dedicated to unsurpassed levels of quality.

01.

GREAT ARCHITECTURE

GREAT DATA QUALITY

MEASUREMENT FREEDOM

QUANTUS SOFTWARE

LASTING VALUE

RUGGED

- Machined from aluminium
- Conduction cooled
- Ambient operational temperature: - 40 °C to + 62 °C depending on system configuration

COMPACT AND VERSATILE

- Highest channel density in the market
- Compatibility for any Module
- Same system, portable or rack-mountable

SIMPLIFIED CABLING

- One cable for power, synchronization and Ethernet communication or standalone with no cables

FROM 2 TO 1000s OF CHANNELS,

the **Quantus**Series is the most portable, flexible, and scalable system available on the market.

DECA

10^{1}

16-216 Channels

MICRO

10^{-6}

2-18 Channels

MICRO BLACK

10^{-6}

2-4 Channels

DECA

ACTUAL SIZE

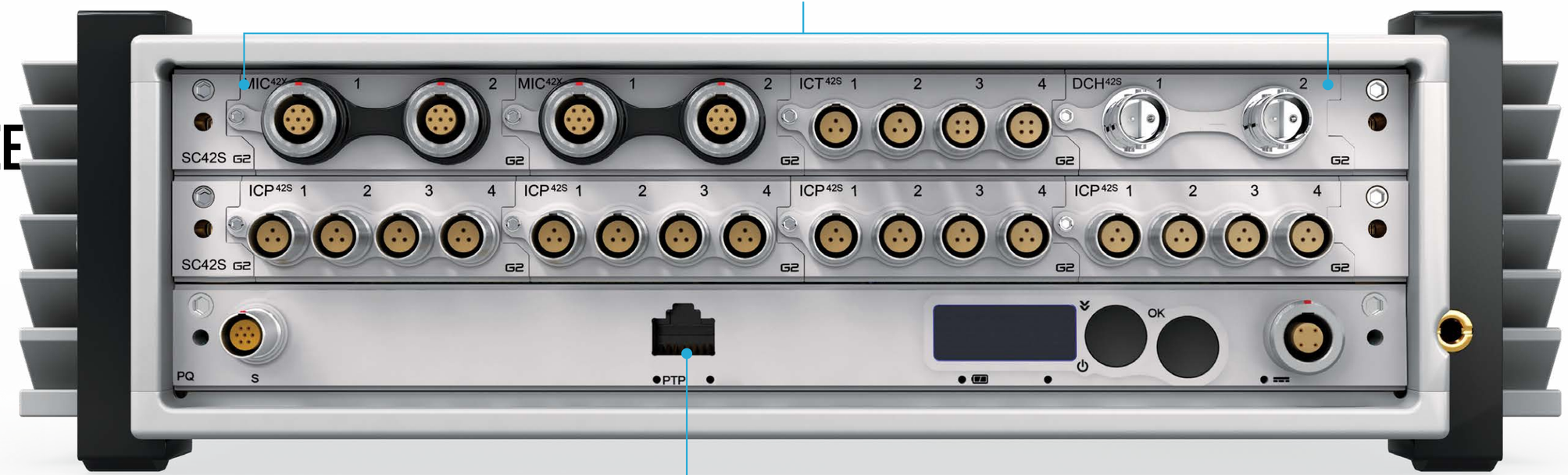
16-48 Channels

Up to 48 Channels Charge | Voltage | ICP®
Up to 64 Channels Temperature

FREEDOM OF CHOICE

Up to 32 Channels Bridge | Voltage | ICP®
Up to 16 Channels High-Speed Bridge and Voltage

Up to 16 Channels Microphone | Voltage | ICP®
Up to 16 Channels Tacho | Up to 16 Channels ICP® | Voltage



SIMPLE CONNECTION TO SMART DEVICES

Optional Wi-Fi

ONE CABLE FOR SYNCHRONIZATION AND ETHERNET

100% DATA CONFIDENCE

128 GB SSD

UPS

Backup Battery

DECA

EXTENDED BATTERY LIFE

PORTABLE

FLEXIBLE PLATFORM

with accessories.

REMOVABLE HANDLE

16-48 Channels

ENCLOSED

Machined from aluminium

8-24 Channels

EXTREME CONDITIONS

48-120 Channels

RACK-MOUNTABLE

72-216 Channels

*216 channels - 100 kSa/s

CUSTOMIZED MOBILE MOUNTS

MICRO Q

10 -6

ACTUAL SIZE

2-18 Channels

GPS

Time, position data and synchronization with drift compensation

CONNECT AN ATTOQ

For additional tethered features

CAN / CAN FD

Interface to CAN communication bus

SIMPLE CONNECTION TO SMART DEVICES

Optional Wi-Fi

128 GB SSD

100% data confidence

HDI

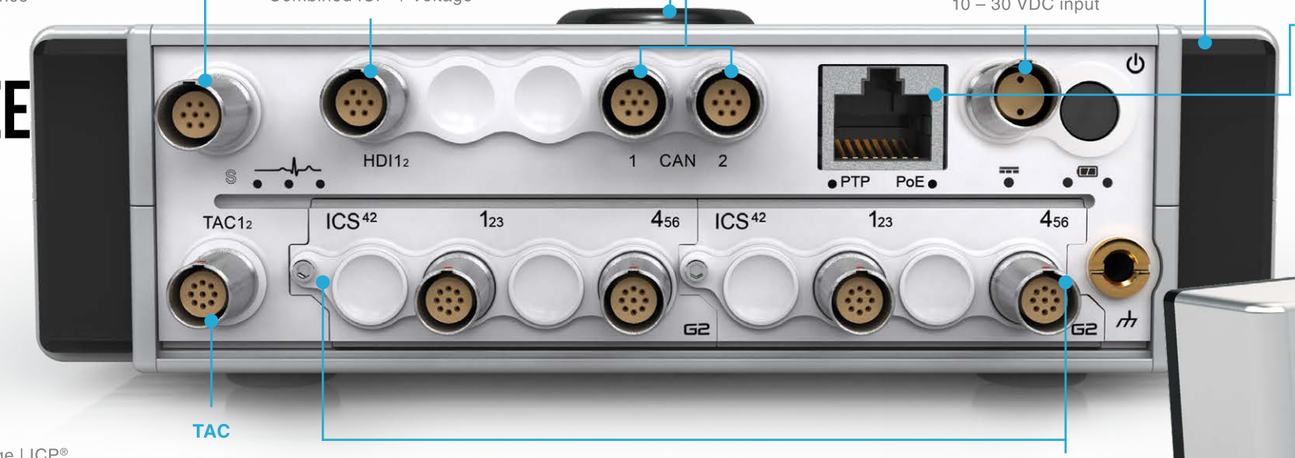
Combined ICP® / Voltage

10 – 30 VDC input

ONE CABLE FOR POWER, SYNCHRONIZATION AND ETHERNET

BUILT-IN BATTERY AND EXTERNAL BATTERY

Attach and swap for increased uninterrupted measurement time



I/O MODULES

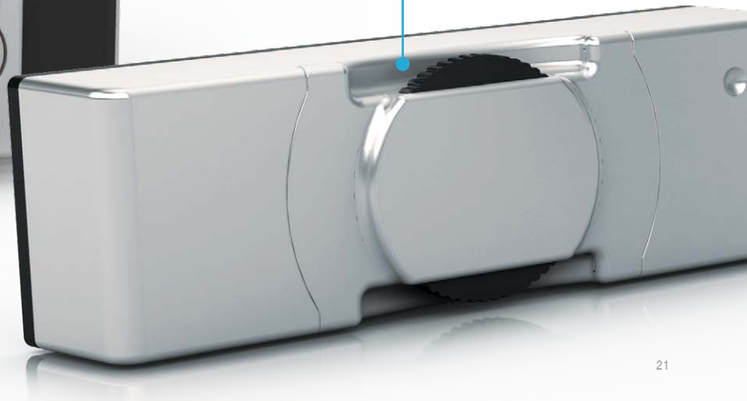
- 6 to 12 Channels Charge I Voltage I ICP®
- 8 to 16 Channels Temperature
- 4 to 8 Channels Bridge I Voltage I ICP®
- 2 to 4 Channels High-Speed Bridge and Voltage
- 2 to 4 Channels Microphone I Voltage I ICP®

TAC

Analog Tachometer

FREEDOM OF CHOICE

Choose from a variety of signal conditioning
Modules to be ready for any measurement scenario



MICRO Q BLACK

ACTUAL SIZE

2-4 Channels

CONNECT AN ATTOQ
For additional tethered features

CAN / CAN FD
Interface to CAN / CAN FD communication bus

10 – 30 VDC input

2 ICP® CHANNELS
Combined ICP® / Voltage Input Amplifier

COMING SOON

REMOVABLE SD CARD

HIGHLY COMPACT FORM FACTOR

NO COMPROMISE ON QUALITY SIGNAL CONDITIONING

ONE CABLE FOR POWER, SYNCHRONIZATION AND ETHERNET

SYNCHRONIZE TO INCREASE CHANNEL COUNT

SIMPLE LOW-COST SOLUTION FOR REPEATABLE MEASUREMENT SETUPS

MICRO

100% DATA CONFIDENCE

The SIMILARITIES.

NO COMPROMISE ON QUALITY SIGNAL CONDITIONING

MICRO BLACK

SET UP AND RUN YOUR MEASUREMENTS

SYNCHRONIZE TO INCREASE YOUR CHANNEL COUNT

CONNECT AN ATTOQ

For additional tethered features

BUILT-IN CHANNELS

CAN / CAN FD, TAC, HDI and GPS

BUILT-IN CHANNELS

ICP®, CAN / CAN FD

COMING SOON

HIGHLY COMPACT FORM FACTOR

Portable measurement
Machined from aluminium
Conduction cooled
Ambient temperature: -40 °C (-40 °F) to 55 °C (131 °F)

MICRO Q

ONE COMPACT FORM FACTOR, MANY OPTIONS

The DIFFERENCE.

DOCK YOUR MICROQ AND EXTERNAL MICROQ BATTERIES:

Use the DOCKQ maintenance station for increased uninterrupted portable measurement.

BUILT-IN 128 GB SSD

OPTIONAL MODULAR CHANNELS:

Charge | Voltage | Temperature | Bridge | ICP®
High-Speed Bridge and Voltage | Microphone | Tacho

SMALL, OUT-OF-THE-BOX MEASUREMENT

MICRO Q BLACK

REMOVABLE SD CARD

02.

GREAT ARCHITECTURE

GREAT DATA QUALITY

MEASUREMENT FREEDOM

QUANTUS SOFTWARE

LASTING VALUE

UNRIVALLED SIGNAL CONDITIONING

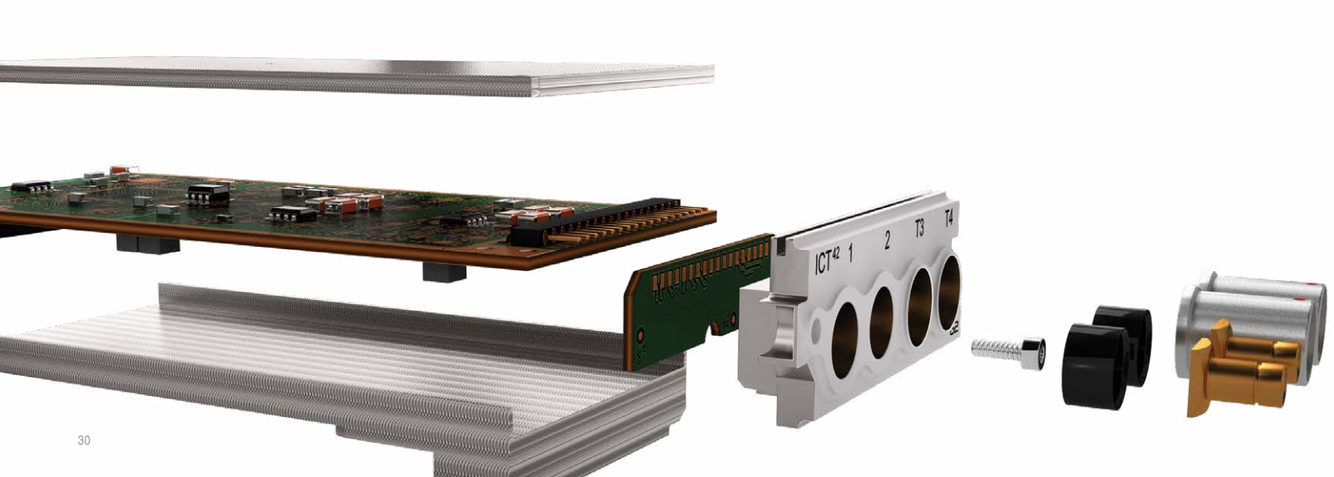
- 204.8 kSa/s with 24-bit resolution (up to 5 MSa/s)
- Low noise floor
- Phase accuracy

ALL IN ONE

- Supports real time data alignment, resampling, slow speed channels and more – all in the frontend with no need for external signal conditioning
- Signal conditioning, analog to digital converter and computing – all in one

UNRIVALLED

Signal Conditioning.



ALL MODULES INCLUDE THE FOLLOWING FEATURES:

- 50 V galvanic isolation from one Module to another
- Automatic internal calibration capability
- All settings are software configurable
- Very high channel density
- Excellent signal to noise performance
- Excellent spurious free-dynamic range, total harmonic distortion and crosstalk
- Finely tuned for the best performance at the lowest possible power
- Protection to accommodate both transient and continuous over-voltages
- Strong Electromagnetic Interference (EMI) screening for lower noise floor
- Firmware protection from excessive external EMI events
- Low power consumption

PARAMETER	MAXIMUM DATA RATE	MODULE	MODULE DESCRIPTION
ANALOG			
±10 V voltage input	51.2 kSa/s	IV[42]	20 channel Voltage Input
ICP® based microphones, accelerometers, load cells and pressure sensors ±10 V voltage input	51.2 kSa/s	ICS[42]L	6 channel ICP®/ Voltage Input
		WSB[42]L	4 channel ICP®/ Voltage Input
	102.4 kSa/s	ICS[42]	6 channel ICP®/ Voltage Input
		CHS[42]X	6 channel Charge / ICP® / Voltage Input
	204.8 kSa/s	ICT[42]S	2 channel Tacho / ICP®/ Voltage Input
		ICP[42]S	4 channel ICP®/ Voltage Input
		MIC[42]X	2 channel Microphone / ICP®/ Voltage Input
		WSB[42]X	4 channel Bridge / ICP®/ Voltage Input
		CHM[42]X	4 channel Charge / ICP® / Voltage Input with Buffered Outputs
	819.2 kSa/s	ALI[42]B	2 channel Analog Input
±60 V voltage input	204.8 kSa/s	ICT[42]S	2 channel Tacho / ICP®/ Voltage Input
		ICP[42]S	4 channel ICP®/ Voltage Input
Tacho pulse input with 4.9 MSa/s Scope Mode	Up to 1 MPulse/s [1]	ICT[42]S	2 channel Tacho / ICP®/ Voltage Input

In addition to the quality of analog signal processing and sensor support, every system in the **Quantus**Series family uses state-of-the-art digital processors to further process and manage signal information. Processing in the front-end hardware improves phase accuracy, effective bandwidth, and scalability of the system for real-time measurements.

Note 1: *Pulse rate for sum of both channels*

ANALOG

PARAMETER	MAXIMUM DATA RATE	MODULE	MODULE DESCRIPTION
Piezoelectric based accelerometers, load cells, etc. (Single-Ended)	102.4 kSa/s	CHS[42]X	6 channel Charge / ICP® / Voltage Input
	204.8 kSa/s	CHG[42]S	4 channel Charge Input
		CHM[42]X	4 channel Charge / ICP® / Voltage Input with Buffered Outputs
Piezoelectric based accelerometers, load cells, etc. (Differential)	204.8 kSa/s	DCH[42]S	2 channel Differential Charge Input
E, J, K, T and U thermocouples as well as Pt100 sensors ±10 V voltage input	6.4 kSa/s	THM[42]	8 channel Thermocouple / Pt100 / Voltage Input
Current and Voltage excited strain gauges including dynamic strain. load cells, pressure sensors, strain based accelerometers, inductive displacement (LVDT) and rope displacement sensors ±10 V voltage input	51.2 kSa/s	WSB[42]L	4 channel ICP® / Voltage Input
	204.8 kSa/s	WSB[42]X	4 channel Bridge / ICP® / Voltage Input
Bridge and Resistive Sensors used in Pyro-Shock / Mechanical Shock ±5 V voltage input	250 kSa/s	ALI[42]X @250	2 channel Analog Input
	500 kSa/s	ALI[42]X @500	
	1.25 MSa/s	ALI[42]X @1250	
	2.5 MSa/s	ALI[42]X @2500	
	5 MSa/s	ALI[42]X	
Acoustic Camera with ICP® and ±10 V voltage input	102.4 kSa/s	ACM[42]	24 channel Acoustic Camera
200 V or non-polarized microphones	204.8 kSa/s	MIC[42]X	2 channel Microphone / ICP® / Voltage Input

TIME, POSITION AND COMMUNICATION

Internal GPS	10 Hz	GPS[42]S	GPS Receiver for Time Synchronization and Position
CAN	2 Mbit/s (simultaneous)	CAN[42]S	2 channel CAN bus Interface

OUTPUT ±10 V with status handshake

204.8 kSa/s	ALO[42]S	4 channel Analog Output

MONITORING

204.8 kSa/s	CHM[42]X	4 channel Charge / ICP® / Voltage Input with Buffered Outputs

Note 1: *Pulse rate for sum of both channels*

03.

GREAT ARCHITECTURE

GREAT DATA QUALITY

MEASUREMENT FREEDOM

QUANTUS SOFTWARE

LASTING VALUE

FOR ALL SENSOR TYPES

- 20 I/O Module options for any sensor type
- Strain, temperature, sound, vibration, shock and more
- Digital bus: CANbus, Ethernet, Wi-Fi and more to come
- Modular concept – build your own system from selected components

TETHERED OR INDEPENDENT

- Choose systems with or without a built-in battery and get the same laboratory quality, whether your measurement is connected to a power source or is out in the field.

SYNCHRONIZE

- Synchronize **Quantus**Series systems with either Precision Time Protocol (PTP) or GPS

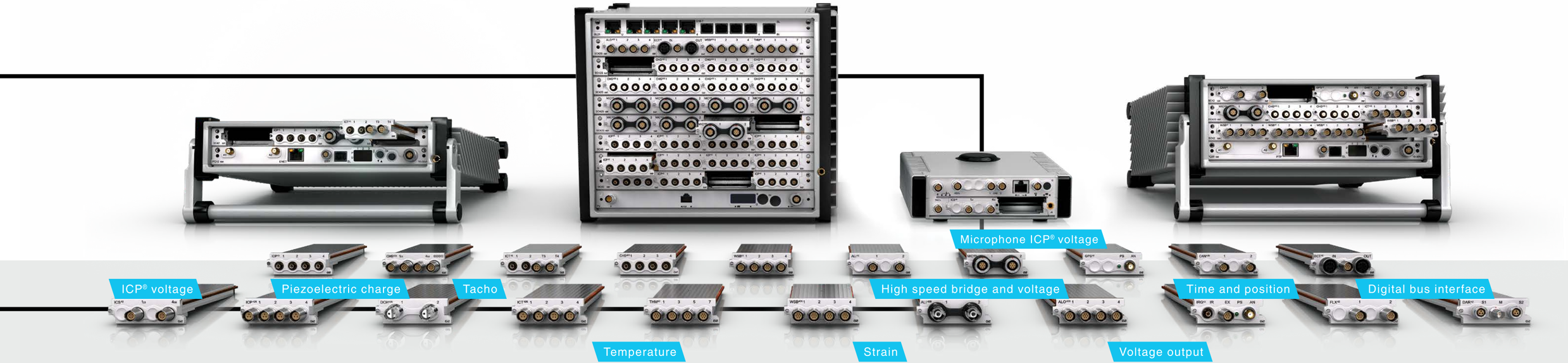
POWER MANAGEMENT CONCEPT

- Power management freedom – choose between cables or no cables

Modular.

the choice is yours.

Flexible interchangeability of Modules within and across all chassis sizes.



Tethered.

simple and expandable

ONE CABLE FOR POWER, ETHERNET AND SYNCHRONIZATION

COMING SOON

UPS
Optional

PoE

ⓘ **INTERNAL PTP SWITCH POWERED BY POE**

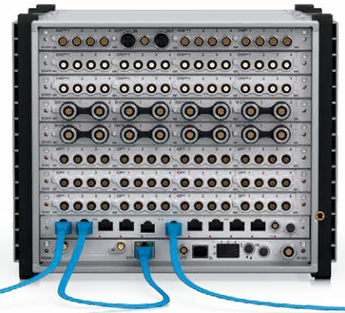
ⓘ **TETHER TO YOUR PC**

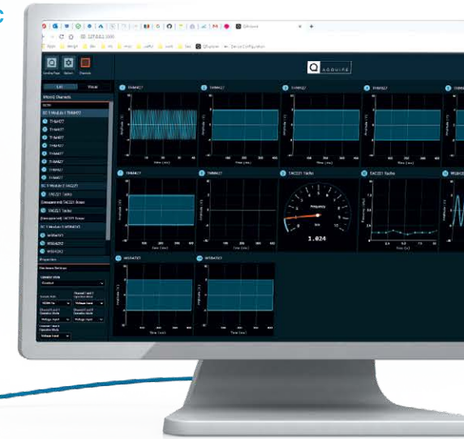
ⓘ **FOR LABORATORY ENVIRONMENTS**

PTP IEEE (1588-2008) with high precision, accuracy and robustness

PoE IEEE 802.3 (Power over Ethernet)

Ethernet: 1000BASE-T





10 – 30 VDC input

SYNCHRONIZE TO WITHIN 50 ns.

Independent.

for ultra-portability

SYNCHRONIZE WITH GPS

Use GPS for location

SHARE AND CHARGE

Hot swap external batteries for all day operation
Download data and share.

Secure local data storage on your system with
built-in SSD or removable SD card

Removable SD *Optional*

SSD *Optional*

Battery *Optional*

Wi-Fi *Optional*

GPS *Optional*

SET UP AND RUN YOUR MEASUREMENTS

TRANSFER DATA OVER WI-FI

SYNCHRONIZE WITH GPS TO WITHIN 500 ns.

04.

GREAT ARCHITECTURE

GREAT DATA QUALITY

MEASUREMENT FREEDOM

QUANTUS SOFTWARE

LASTING VALUE

OPEN DATA FORMATS

- Your data belongs to you – open and accessible data formats

EMBEDDED OPEN SOFTWARE

- Use MATLAB | LabVIEW | Python | C# | C++ and build your own system from selected components using our RESTful interface, **Q**Server
- Use embedded and included software for setup, remote control and acquisition of your data

OEM PARTNERNETWORK SOFTWARE

- Software for application-specific analysis. Choose our instrumentation platform with your preferred software

QUANTUS SOFTWARE

MATLAB LabVIEW python

QuantusSoftware comes embedded in every system, allowing the user to develop their own applications, acquire data, and integrate third-party OEM software packages for complete signal acquisition and analysis.

QuantusSoftware includes:

- **Q**Server, a RESTful API
- **Q**Acquire Data Acquisition Application
- **Q**Data**Manager** Data Acquisition Utility

EMBEDDED IN EVERY SYSTEM.

Accessible Data Formats.

YOUR DATA BELONGS TO YOU

QuantusSeries instruments store data in open and accessible formats, increasing adaptability and allowing you to choose how to process and manage your data.

- MATLAB binary - directly usable in your MATLAB environment
- Universal file format
- CSV

SERVER

```
{
    "ItemId": 4,
    "ItemName": "WSB42X2",
    "ItemNameIdentifier": 30,
    "ItemType": "Channel",
    "ItemTypeIdentifier": 4,
    "Info": [],
    "OperationMode": {
        "Description": "Voltage Input",
        "Id": 1
    },
    "SettingsApplied": true,
    "Settings": [
        {
            "Name": "Voltage Range",
            "Type": "Enumeration",
            "SupportedValues": [
                {
                    "Id": 0,
                    "Description": "10 mV",
                    "Numeric": 0.01,
                    "SIUnit": "V"
                },
                {
                    "Id": 1,
                    "Description": "100 mV",
                    "Numeric": 0.1,
                    "SIUnit": "V"
                },
                {
                    "Id": 2,
                    "Description": "1 V",
                    "Numeric": 1,
                    "SIUnit": "V"
                },
                {
                    "Id": 3,
                    "Description": "10 V",
                    "Numeric": 10,
                    "SIUnit": "V"
                }
            ],
            "Value": 3
        },
        {
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            "Type": "Enumeration",
            "SupportedValues": [
                {
                    "Id": 0,
                    "Description": "DC"
                },
                {
                    "Id": 1,
```

ALL RESTFUL RESPONSES ARE IN HUMAN READABLE JSON.

DATA COMMUNICATED USING EFFICIENT BINARY STREAM OVER A STANDARD TCP SOCKET.

SUPPORTS PTP SYNCHRONIZATION AND RECORDING TO LOCAL SSD.

Embedded Open Software.

LANGUAGE INDEPENDENT

Traditional approaches for interfacing software and measurement instruments require complex programming with hundreds of definitions and function calls.

In contrast, **Quantus**Series instruments use a modern, standards-compliant RESTful interface. This allows our customers to be faster to market with less investment and more reliable applications.

QServer's intelligent interface is the perfect springboard to launch your great idea.

MATLAB LabVIEW python C C++

ACQUIRE

It's Live

Embedded Easy Acquisition.

QAcquire is an intuitive app for configuring, calibrating, monitoring and making measurements. For remote operation, connect to **QAcquire** via Wi-Fi or Ethernet.

Embedded and included on all **Quantus**Series instruments, **QAcquire** configures, controls and monitors your measurement in a modern and effortless way.

ALWAYS ON. ALWAYS LIVE.

ACCESSIBLE FROM ANY BROWSER AND ANY DEVICE.

PartnerNetwork.

TURNKEY SOLUTIONS

For over 35 years, our hardware has been used in a variety of applications, from pass-by to modal analysis and acoustic control systems. Contact one of our **QExperts** for more information about how our systems will match your application.

MÜLLER-BBM VibroAkustik Systeme

AKITRON TAILORMADE TEST AND MEASUREMENT

LANDTOP 朗德

APEX Turbine Testing Technologies

M+E scope

SIGNALYSIS

MICROFLOWN TECHNOLOGIES

weles acoustics

VIBES.technology

05.

GREAT ARCHITECTURE

GREAT DATA QUALITY

MEASUREMENT FREEDOM

QUANTUS SOFTWARE

LASTING VALUE

GROW YOUR SYSTEM

- Built on standards that sustain technological advancements
- Modular systems that are always expanding – new releases of Modules and upgrades are available several times a year
- Add / swap new Modules when the need arises, and synchronize all systems

CALIBRATION

- ISO 17025 Calibration

IT’S ALL US

- All hardware, firmware, drivers and accessories are designed and manufactured in-house at MECALC

Custom development.

THE DIFFERENCE IS US.

In-house Design | Development | Manufacturing | Calibration and Support.

From custom cabling to solutions that enable our instrumentation to fit seamlessly with your measurement architecture, our in-house design and production capabilities are ready to create custom infrastructure to integrate with your measurement landscape.

MECALC works closely with our partners to meet the evolving trends in Test and Measurement applications. With one of the largest in-house development teams in the industry, we have the resources to work closely with our partners to meet new challenges.

CUSTOM MADE MOBILE MOUNT WITH INTEGRATED BNC CONNECTORS

Welcome to your next

investment in capital equipment.

As our standards-based concept is extremely sustainable, components from different generations often coexist in the same chassis. Users can refresh their system on a regular basis for different or more advanced measurement tasks.

Consistent improvements like finer performance balances, higher dynamic ranges, higher sampling rates, improved analog quality and lower noise and distortion continuously happen on multiple components.

SUPPORT MIXED GENERATION FOR PARTIAL UPGRADES

TECHNOLOGY ADVANCES AT AN ACCELERATED PACE.

WE KEEP UP.

MODULAR UPGRADES

05 year warranty

10 year warranty

15 year warranty

Recycle and Upgrade.

Calibration

and system health check.

MECALC is accredited to perform ISO 17025 certified calibration services. In addition, two levels of calibration service are offered, QuickCal and ProCal. QuickCal validates measurement accuracy using a voltage source. ProCal includes a full factory test of the entire system and exercises all measurement modes on the instrument.

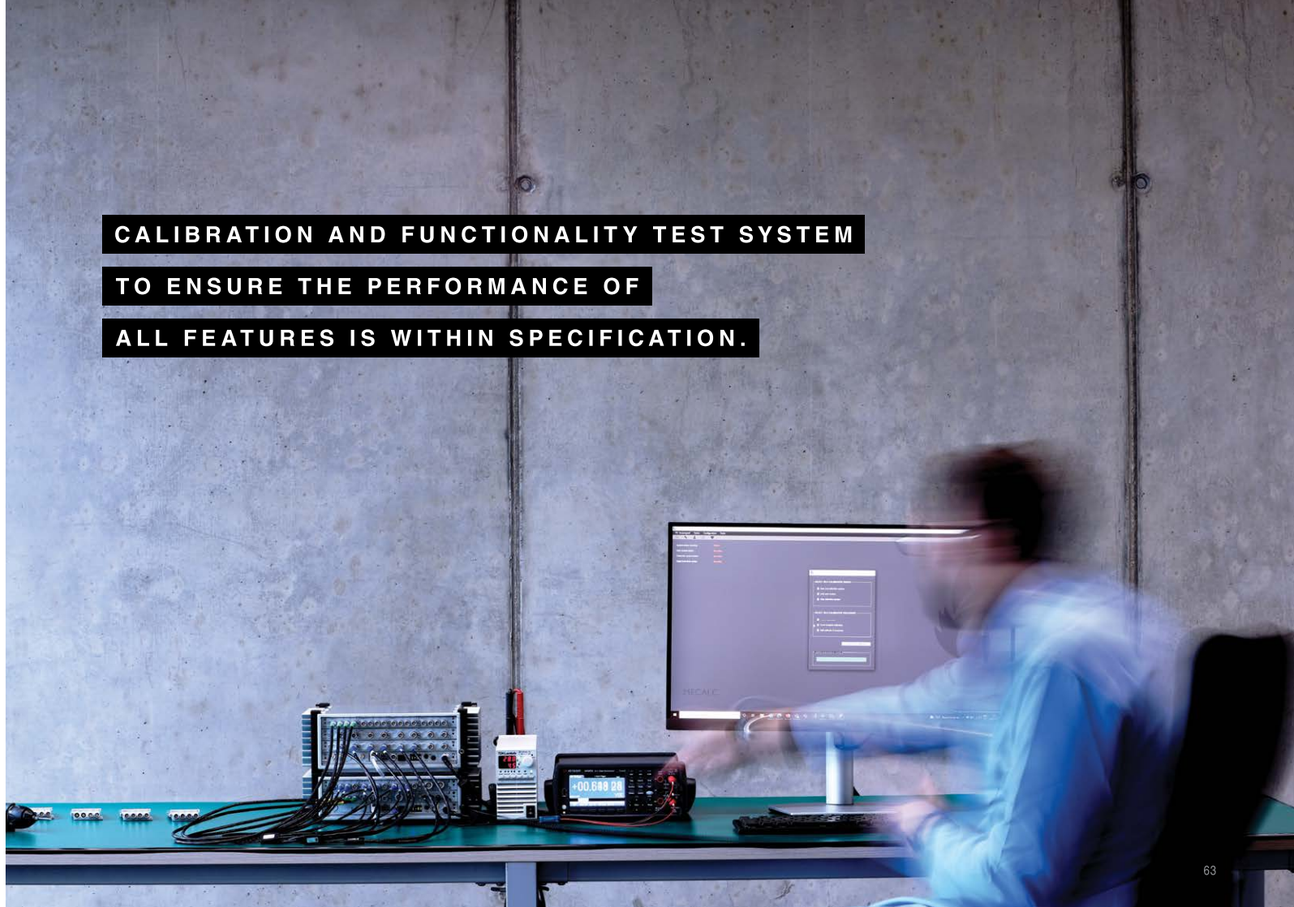
QuickCal:

QuickCal verifies the accuracy of a channel in a given system configuration. It is available for analog input and output channels including voltage, charge, and tacho.

ProCal:

ProCal is a comprehensive manufacturer's proprietary calibration. This calibration option verifies measurement accuracy plus the correct operation of internal voltage references, grounding, AC coupling, filters, noise performance, excitation voltage, integrity checking, digital channels, all connector pins, Signal Conditioning cards, Wi-Fi, SSD, batteries, handles, buttons, and many more.

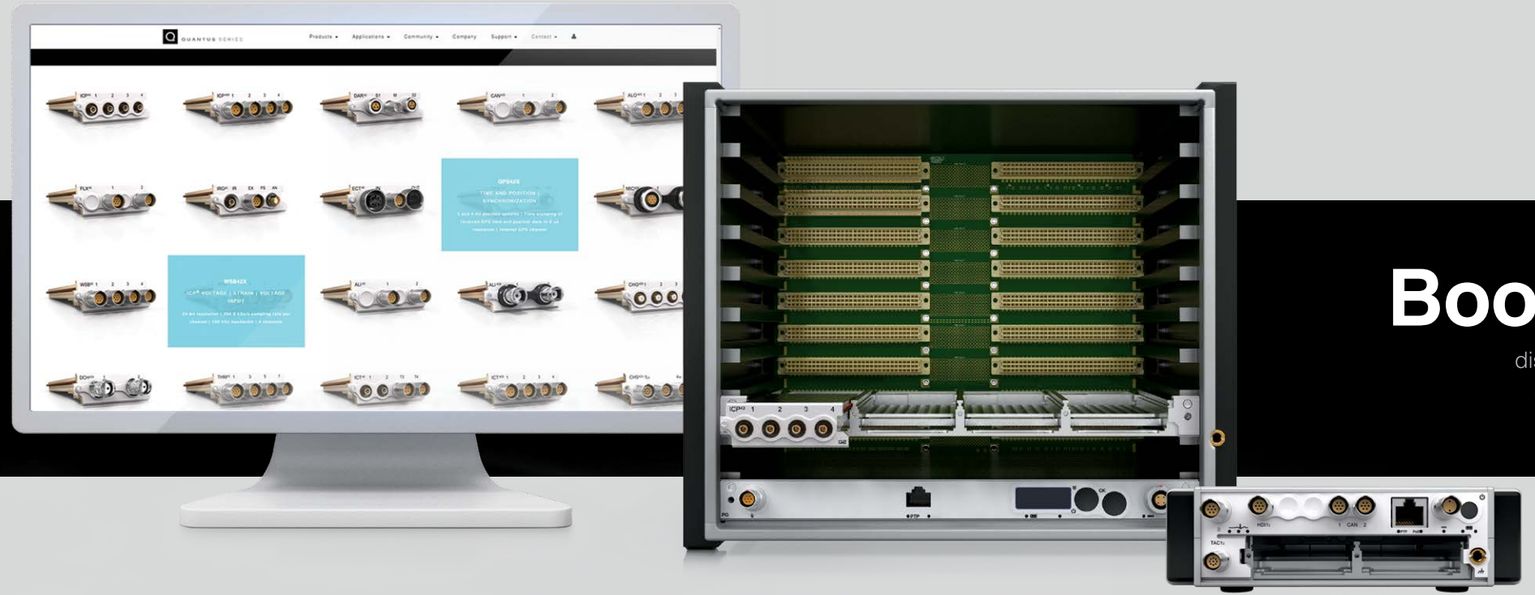
These tests ensure **Quantus**Series systems continue to operate as specified at every stage of their life cycle.



Your Move

Connect with us

Tell us about your application.



Book Your

discover call

today.

MECALC
technologies

USA | SOUTH AFRICA | EUROPE | ASIA

www.mecalc.com | hello@QuantusSeries.com

Follow MECALC Technologies

MECALC IS A HIGHLY SPECIALISED ENGINEERING DESIGN HOUSE WHICH ENJOYS PUSHING INNOVATION AHEAD OF THE GAME.

MECALC researches, designs, develops and manufactures advanced acquisition and control systems. Since 1984, we've been driven to position ourselves at the forefront of new developments and thinking.

Used to optimise noise, vibration and structural integrity in prototype or quality control testing, our **Quantus**Series instrumentation is crucial to markets where exceptional development and production quality are essential.

CHARGED TO INNOVATE, we're inspired to create products for those who are as passionate about creating theirs.

a mecalc design

QSS23/02.