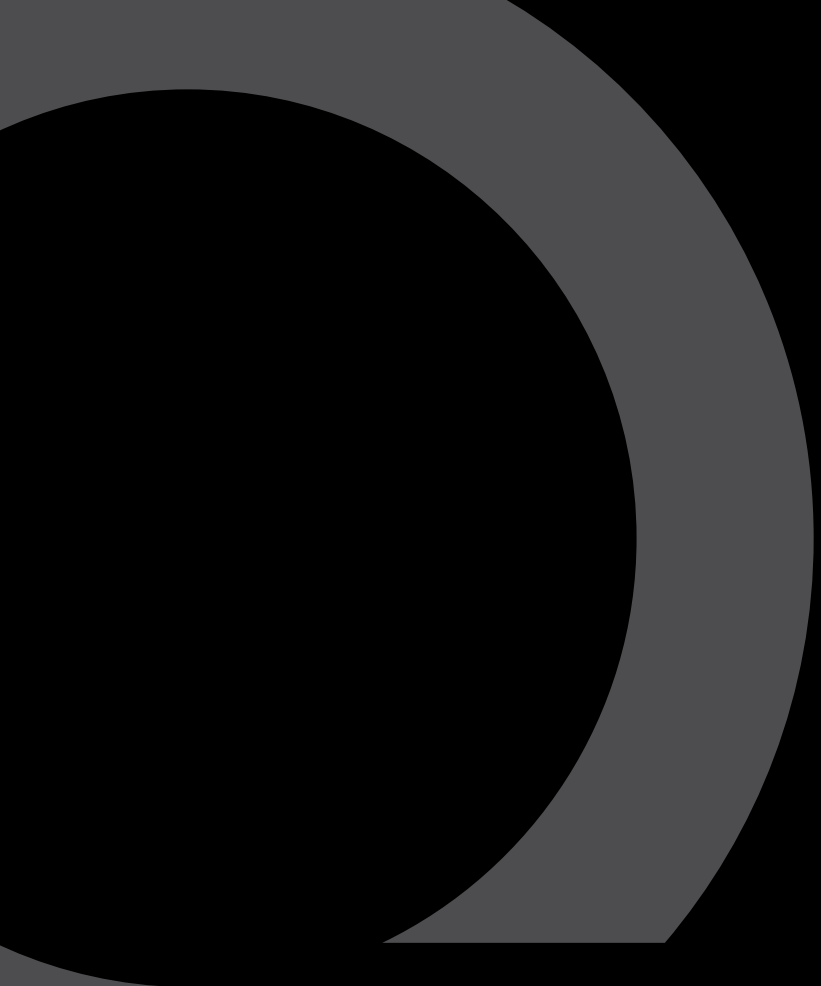


QUANTUS SERIES

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.

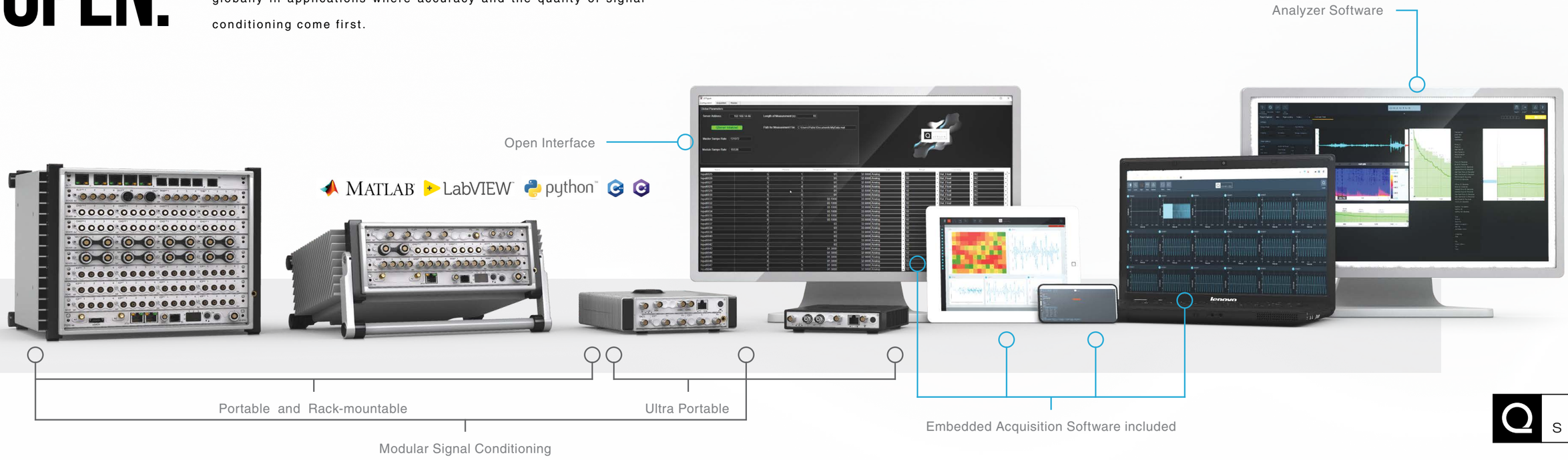
ICP® voltage, Tacho, Temperature, Strain, High speed bridge and voltage, High speed voltage input, Pt100 input, Microphone ICP® voltage, Voltage output, Time and position, Synchronization, Digital bus interface, Digital audio, Piezoelectric charge.

Since 1984.

More than 150 000 Channels in the market.

Integrated but OPEN.

The QuantusSeries is more than just an acquisition system. 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.

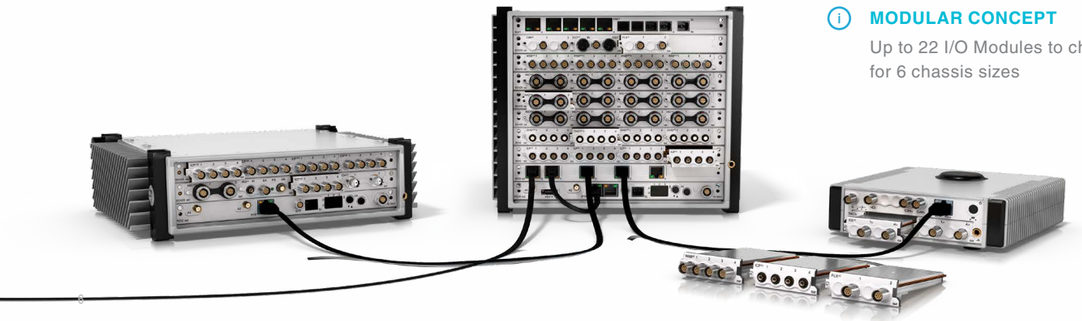


Readily

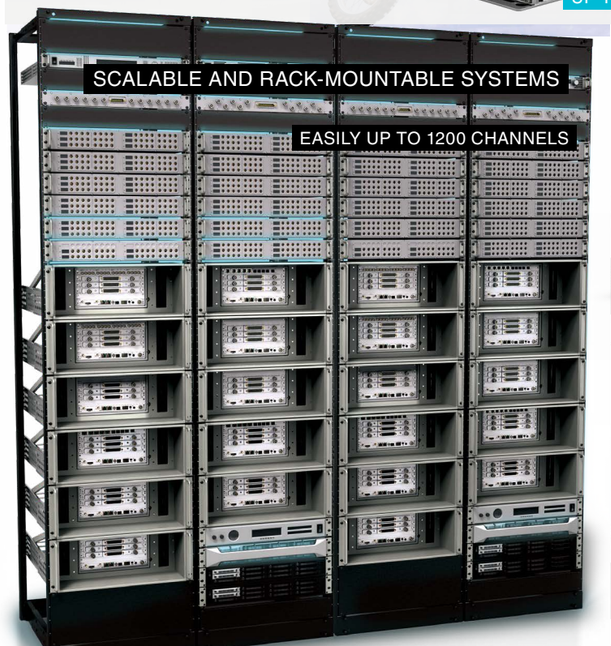
EXPANDABLE.

From small to large channel counts, leading manufacturers in automotive, aerospace, and defense trust MECALC with their most important projects.

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



MODULAR CONCEPT
Up to 22 I/O Modules to choose from for 6 chassis sizes



WHAT ARE WE REALLY GOOD AT?

01.

GREAT ARCHITECTURE

Rugged

- Machined from aluminium
- Conduction cooled
- Ambient operational temperature: - 40 °C to + 55 °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

10^{-18}

10^{-6}

10^{1}

IT'S A SERIES

From 2 to 1000s of channels, the **Quantus**Series is the most portable, flexible, and scalable system available on the market.

DECA Q

10^{1}

16-192 Channels

*per Chassis. 2000 synchronized

MICRO Q

10^{-6}

2-18 Channels

*300 synchronized

ATTO Q

COMING SOON

10^{-18}

4-400 Channels

*synchronized

DECA Q

10[1]

FREEDOM OF CHOICE

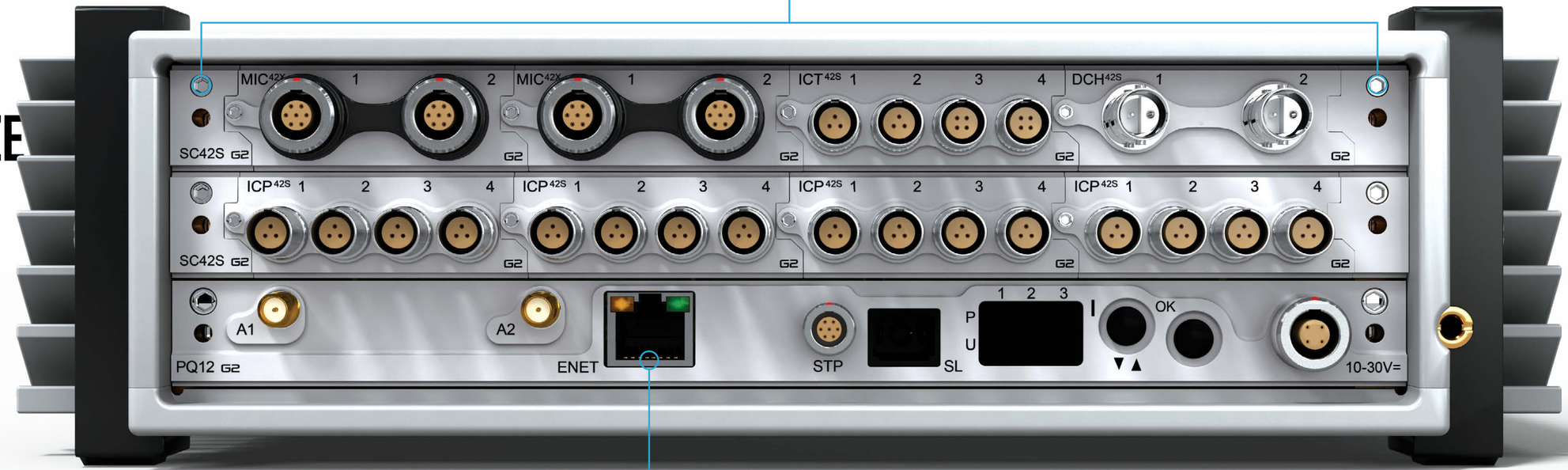
Up to 48 Channels Charge | Voltage | ICP®
Up to 64 Channels Temperature

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

Up to 32 Channels Microphone | Voltage | ICP®
Up to 32 Channels ICP®| Voltage | Up to 32 Channels Tacho

ACTUAL SIZE

16-48 Channels



SIMPLE CONNECTION TO SMART DEVICES
Optional Wi-Fi

ETHERNET

100% DATA CONFIDENCE
128 GB SSD

UPS
Backup Battery

DECA

PORTABLE

48-120 Channels

FLEXIBLE PLATFORM

with accessories.

CUSTOMIZED MOBILE MOUNTS

REMOVABLE HANDLE

16-48 Channels

ENCLOSED

Machined from aluminium

RUGGED

72-192 Channels

RACK-MOUNTABLE

MICRO Q

10⁻⁶

ACTUAL SIZE

2-18 Channels

128 GB SSD
100% data confidence

CONNECT AN ATTOQ
For additional tethered features

HDI
Combined ICP® / Analog Output

GPS
Time, position data and synchronization with drift compensation

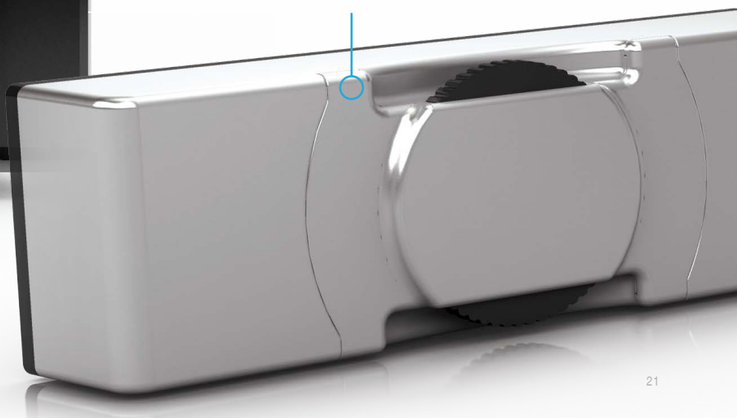
CAN / CAN FD
Interface to CAN communication bus

POWER LEMO®
10 – 30 VDC input

SIMPLE CONNECTION TO SMART DEVICES
Optional Wi-Fi

ONE CABLE FOR POWER, SYNCHRONIZATION AND ETHERNET

BUILT-IN BATTERY AND EXTERNAL BATTERY
Attach and swap for increased uninterrupted measurement time



CHOICE OF MODULAR CHANNELS
- 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

COMING SOON

ACTUAL SIZE

2-6 Channels

CONNECT AN ATTOQ

For additional tethered features

CAN / CAN FD

Interface to CAN / CAN FD communication bus

2 ICP® CHANNELS

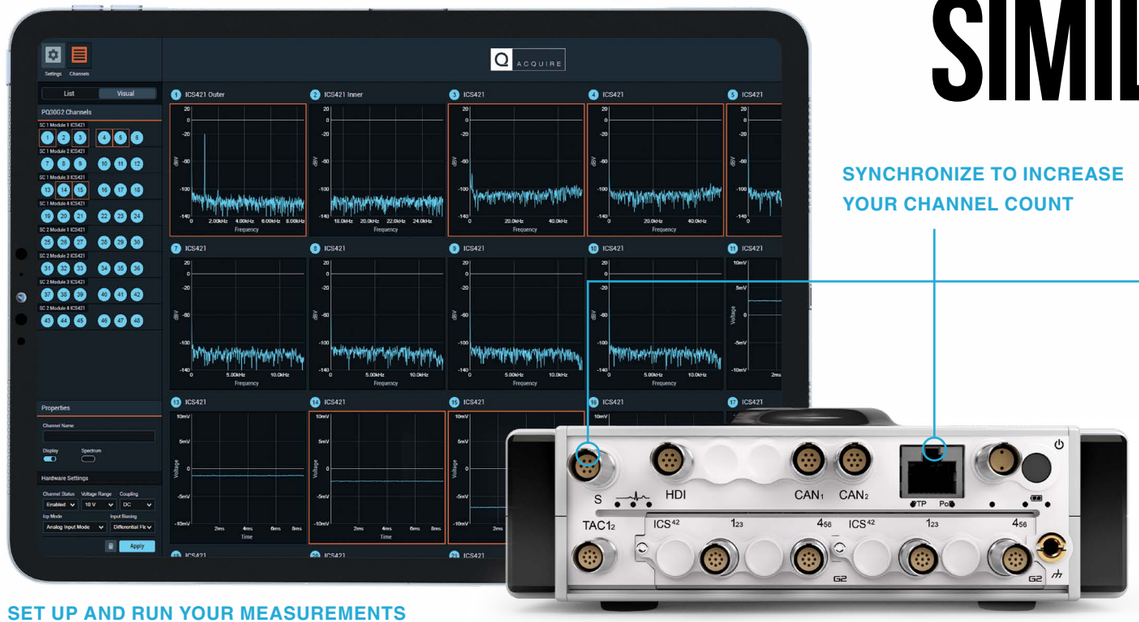
Combined ICP® / Voltage Input Amplifier

- **NO COMPROMISE ON QUALITY SIGNAL CONDITIONING**
- **ONE CABLE FOR POWER, SYNCHRONIZATION AND ETHERNET**
- **SYNCHRONIZE TO INCREASE CHANNEL COUNT**
- **HIGHLY COMPACT FORM FACTOR**
- **REMOVABLE SD CARD**
- **SIMPLE LOW-COST SOLUTION FOR REPEATABLE MEASUREMENT SETUPS**

MICRO Q

100% DATA CONFIDENCE

The SIMILARITIES.



SET UP AND RUN YOUR MEASUREMENTS

...without directly connecting to a computer. **Quantus**Series instruments operate with software that runs on the actual hardware – less cables, secure data storage and transfer.

SYNCHRONIZE TO INCREASE YOUR CHANNEL COUNT

BUILT-IN CHANNELS

Optional built-in channels for the MICRO**Q** – CAN / CAN FD, TAC and HDI

MICRO Q BLACK

COMING SOON

NO COMPROMISE ON QUALITY SIGNAL CONDITIONING

CONNECT AN ATTOQ

For additional tethered features

BUILT-IN CHANNELS

Built-in channels for the MICRO**Q** black – ICP®, CAN / CAN FD

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.

SMALL, OUT-OF-THE-BOX MEASUREMENT

MICRO Q BLACK

COMING SOON

DOCK YOUR MICROQ AND EXTERNAL MICROQ BATTERIES:

Use the DOCKQ maintenance station for increased uninterrupted portable measurement.

BUILT-IN 128 GB SSD

UP TO 5 MSa/s

OPTIONAL MODULAR CHANNELS:

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

PLUG-IN AND PLAY

No fuss measurement with built-in ICP®, CAN / CAN FD

REMOVABLE SD CARD

ATTO Q

COMING SOON

FOR VERSATILE MEASUREMENT PLACEMENT AND INCREASED MEASUREMENT PARAMETERS.

ⓘ INCREASE YOUR CHANNEL COUNT AND SYNCHRONIZE

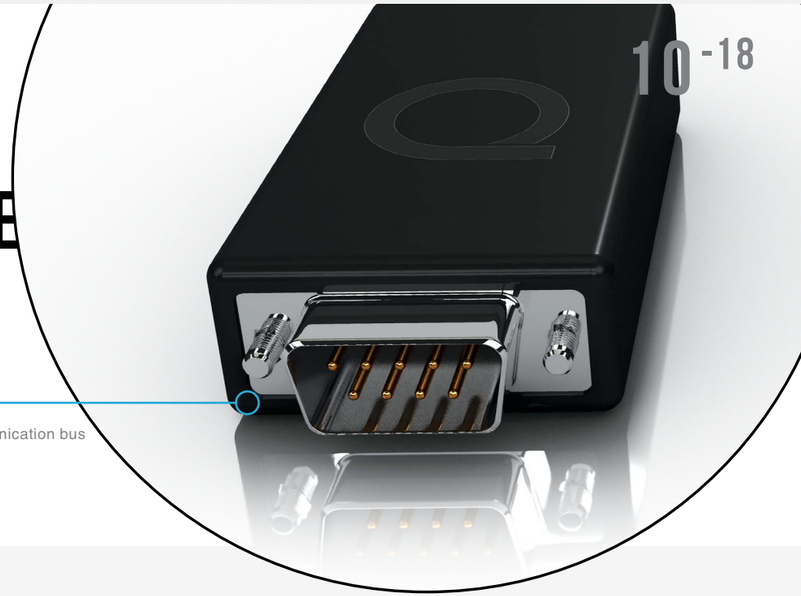
VELOCITY MEASUREMENT
GPS

ACTUAL SIZE

4-400 Channels

CAN / CAN FD

Interface to CAN/CAN FD communication bus



ⓘ ATTOQ

ATTO**Q**s can function outside of the system, providing the same unrivalled signal conditioning quality while increasing your measurement freedom.

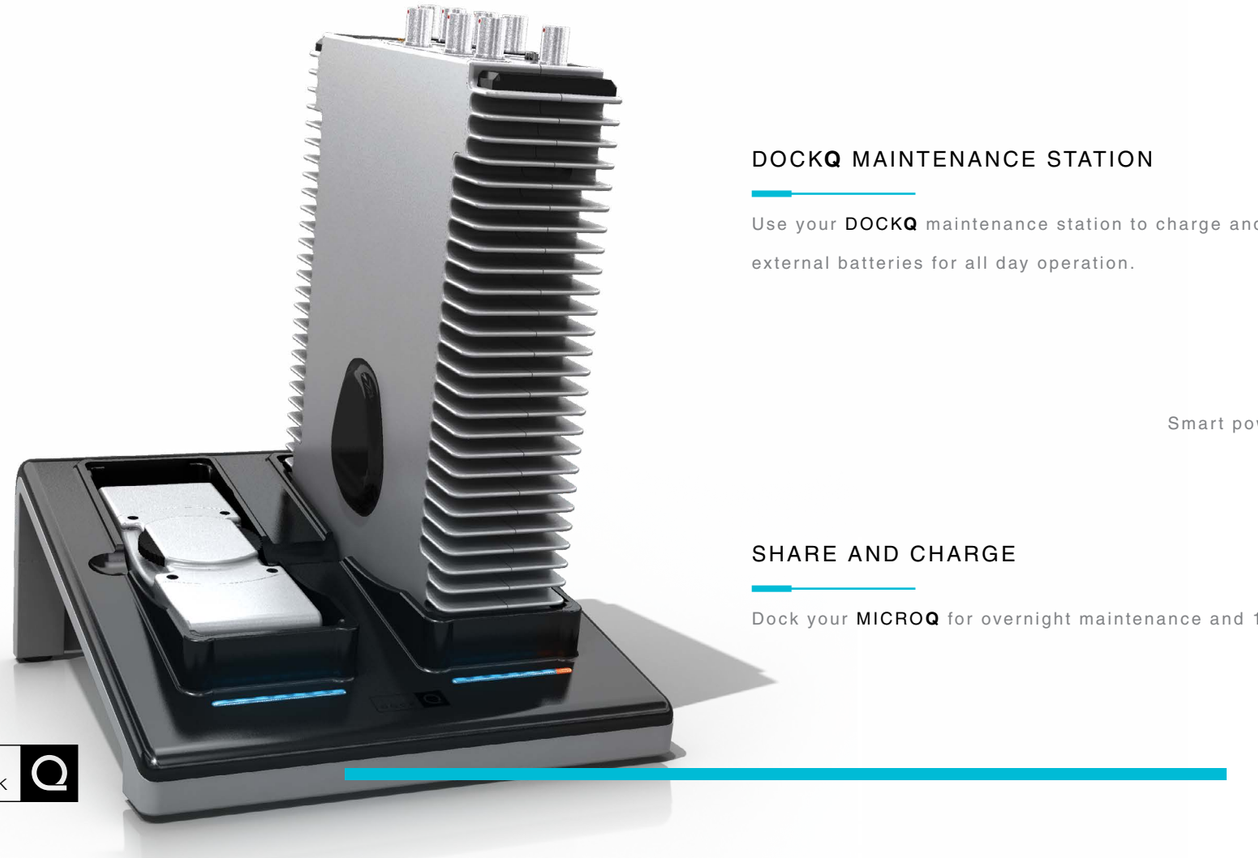
LIFESTYLE

Complete

DATA AND POWER

Management

Concept.



DOCKQ MAINTENANCE STATION

Use your **DOCKQ** maintenance station to charge and hot swap external batteries for all day operation.

SMART POWER MODES

Smart power modes and dynamic charging keep your system operational for longer.

SHARE AND CHARGE

Dock your **MICROQ** for overnight maintenance and 100% data confidence.

02.

GREAT DATA QUALITY

Unrivalled Signal Conditioning

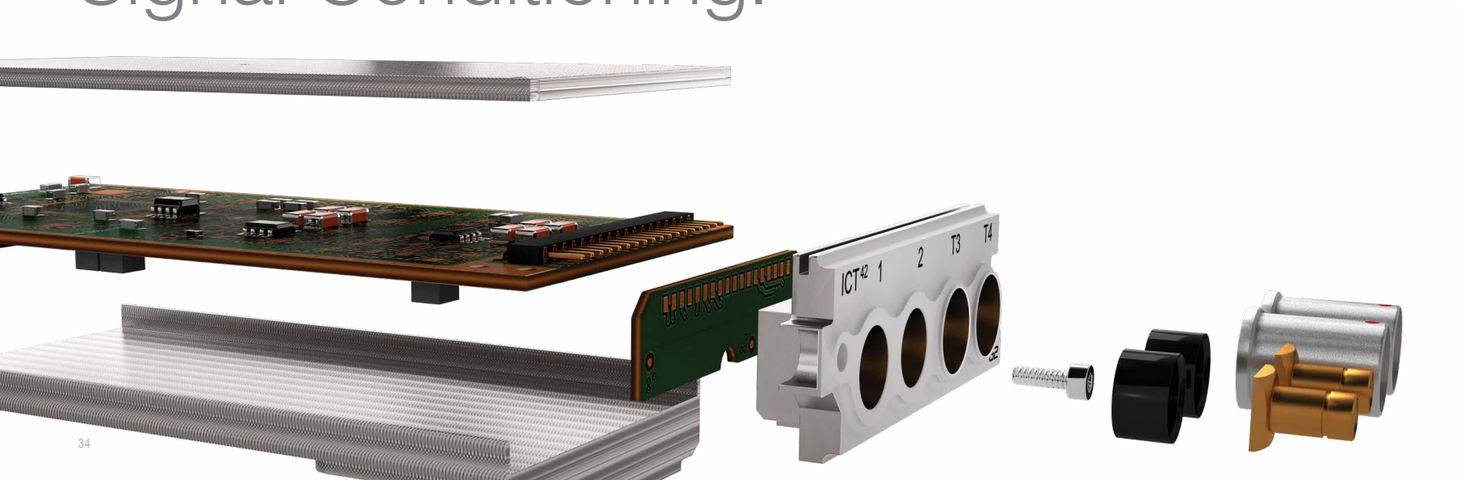
- 204.8 kSa/s with 24-bit resolution (up to 5 MSa/s)
- Low noise floor
- Phase accuracy

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 computer – all in one

UNRIVALLED

Signal Conditioning.

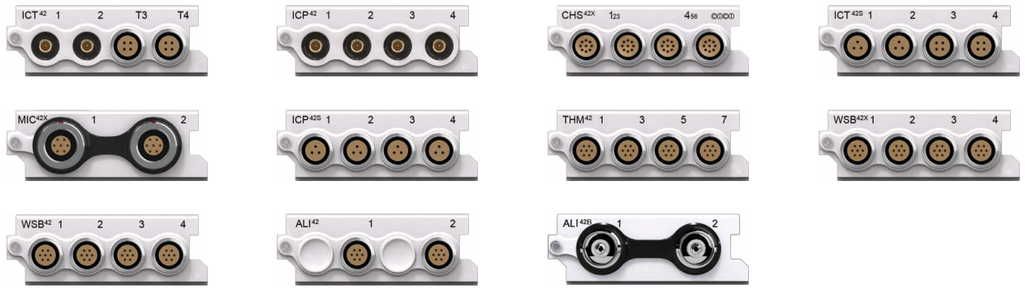


ALL MODULES INCLUDE THE FOLLOWING FEATURES:

- 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	CHANNELS	MAX. DATA RATE	RESOLUTION	QMODULE
ICP® based microphones, accelerometers, load cells and pressure sensors	2	102.4 kSa/s	24-bit	ICT42 [2]
	6	102.4 kSa/s	24-bit	ICS42; CHS42X
	2	204.8 kSa/s	24-bit	ICT42S [2]; MIC42X
	4	204.8 kSa/s	24-bit	ICP42S; WSB42X
±10 V voltage input	8	6.4 kSa/s	24-bit	THM42
	2	102.4 kSa/s	24-bit	ICT42 [2]
	4	102.4 kSa/s	24-bit	WSB42
	6	102.4 kSa/s	24-bit	ICS42; CHS42X
	2	204.8 kSa/s	24-bit	ICT42S [2]; MIC42X
	4	204.8 kSa/s	24-bit	ICP42S; WSB42X
	2	1 MSa/s [5]	24-bit	ALI42; ALI42B
±60 V voltage input	2	204.8 kSa/s	24-bit	ICT42S [2]
	4	204.8 kSa/s	24-bit	ICP42S
Tacho pulse input with 204.8 kSa/s Scope Mode	2	up to 700 kPulse/s [3]	20 ns	ICT42 [1]
Tacho pulse input with 4.9 MSa/s Scope Mode	2	up to 1 MPulse/s [3]	14 ns	ICT42S [1]
200 V or non-polarized microphones	2	204.8 kSa/s	24-bit	MIC42X

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: Also has two ICP®/ Analog input channels
Note 2: Also has 2 Tacho pulse input channels
Note 3: Pulse rate for sum of both channels
Note 4: Compound-Module
Note 5: 409.6 kSa/s for 2 channels and 1 MSa/s for 1 channel
NA: Not Applicable

ANALOG

PARAMETER	CHANNELS	MAX. DATA RATE	RESOLUTION	QMODULE
Piezoelectric based accelerometers, load cells, etc. (Single-Ended)	6	102.4 kSa/s	24-bit	CHS42X
Piezoelectric based accelerometers, load cells, etc. (Differential)	2	204.8 kSa/s	24-bit	DCH42S
Strain gauges, load cells, pressure sensors, strain based accelerometers, inductive displacement (LVDT) and rope displacement sensors	4	102.4 kSa/s	24-bit	WSB42
	4	204.8 kSa/s	24-bit	WSB42X
	2	1 MSa/s [5]	24-bit	ALI42
Current-excited strain gauges including dynamic strain	4	204.8 kSa/s	24-bit	WSB42X
E, J, K, T and U thermocouples as well as Pt100 sensors	8	6.4 kSa/s	24-bit	THM42
±10 V voltage output with status handshake	4	204.8 kSa/s	24-bit	ALO42S

OUTPUT

Internal GPS	1	10 Hz	NA	GPS42S

DIGITAL

CAN	1 network	8 Mbit/s	NA	CAN42S
CAN	2 networks	2 Mbit/s (simultaneous)	NA	CAN42S
FlexRay™	1 pair	10 Mbit/s	NA	FLX42
Digital audio receiver	2 stereo	96 kFrames/s	24-bit	DAR42

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: Also has two ICP®/ Analog input channels
Note 2: Also has 2 Tacho pulse input channels

Note 3: Pulse rate for sum of both channels
Note 4: Compound-Module

Note 5: 409.6 kSa/s for 2 channels and 1 MSa/s for 1 channel
NA: Not Applicable

03.

MEASUREMENT FREEDOM

For all sensor types

- 22 I/O Module options for any sensor type
- Strain, temperature, sound, vibration, shock and more
- Digital bus: FlexRay™, CANbus, Ethernet, Wi-Fi and more to come
- Modular concept – build your own lego-style system

Tethered or Independent

- Tethered or independent systems – laboratory quality measurements without keeping you there

Synchronize

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

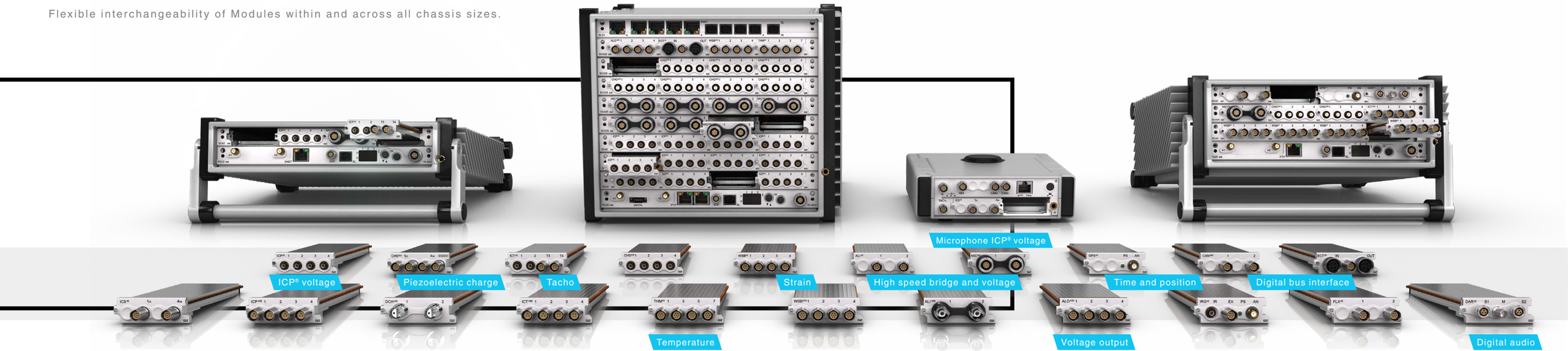
Power management concept

- Power management freedom – choose between cables or no cables

MODULES

CHOOSE FROM OUR BROAD RANGE OF MODULES

Flexible interchangeability of Modules within and across all chassis sizes.



Tethered.

simple and expandable

FOR LABORATORY ENVIRONMENTS

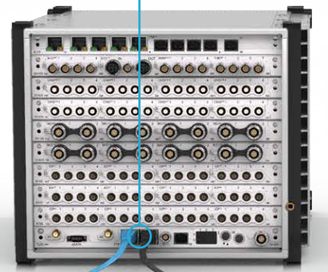
PTP IEEE (1588-2008) with high precision, accuracy and robustness
PoE IEEE 802.3 (Power over Ethernet)
Ethernet: 1000BASE-T
Data transfer at 45 MB/s

ONE CABLE FOR POWER, ETHERNET AND SYNCHRONIZATION

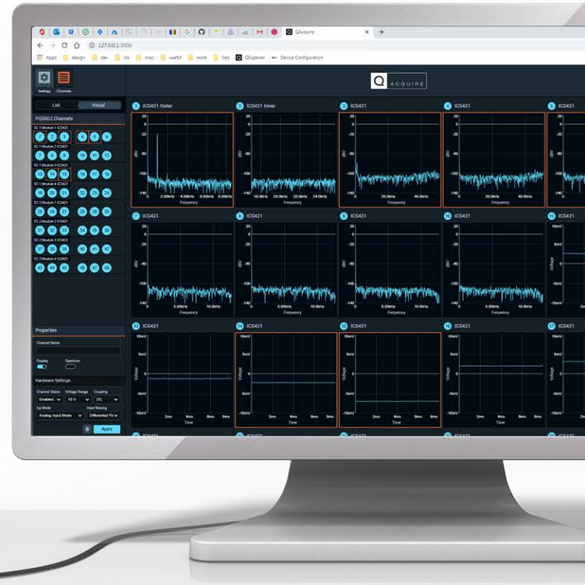
POWER LEMO®

10 – 30 VDC input

STORE DATA OVER ETHERNET, TRANSFER SECURELY TO YOUR NETWORK



TETHER TO YOUR PC



SYNCHRONIZE TO WITHIN 50 ns.

Independent.

for ultra-portability

LABORATORY QUALITY MEASUREMENTS, WITHOUT KEEPING YOU THERE

HOT-SWAPPABLE

External batteries for extended uninterrupted measurement time

SYNCHRONIZE WITH GPS

Use GPS for location

SIMPLE CONNECTION TO SMART DEVICES

Optional Wi-Fi

OPTIONAL

Wi-Fi
GPS
UPS and Batteries

BUILT-IN SSD

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

CHOOSE TETHERED OR INDEPENDENT BY ADDING OPTIONAL GPS, WI-FI, BUILT-IN SSD AND MORE.

Every system runs software on the system itself

ONE DEVICE CONNECTED TO MULTIPLE SYSTEMS

SYNCHRONIZE WITH GPS TO WITHIN 500 ns.

04.

QUANTUS SOFTWARE

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 lego-style system using our RESTful interface
- 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

ACCESSIBLE WITH INSTANT FEEDBACK. ALWAYS INCLUDED.

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.

- ASAM ATFX - This file set contains a self describing XML file and efficient binary data storage
- MATLAB binary - directly usable in your MATLAB environment
- Universal file format
- CSV

ACQUIRE

It's Live

Embedded Easy Acquisition.

Intuitive app for configuring, calibrating, monitoring and measuring. Can connect remotely to instruments for cordless operation.

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

ALWAYS ON. ALWAYS LIVE.

SERVER

Embedded Open Software.

LANGUAGE INDEPENDENT

CUSTOM MADE BY YOU

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 is our intelligent interface springboard to launch your great idea.

MATLAB LabVIEW python C C++

PartnerNetwork.

TURNKEY SOLUTIONS

PROFESSIONAL TARGETED SOFTWARE

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.

ATOM MEscope VIBES.technology PAK MÜLLER-BBM

05.

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 for limitless channel count

Calibration

- ISO 17025 Calibration

It’s all us

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

EXCELLENCE

is personal

DID YOU KNOW...

One of the most common reasons for failure in aging electronics is trapped air in solder pads. For surface mount technology, less trapped air in solder pads means higher quality. The industry standard for commercial products is 25%. The standard for military and space products is 10%. At MECALC, it's always <5%.

TO US QUALITY MATTERS.

From conceptualization and development to manufacturing, it's all us. This means stability, long life and less repairs.

Welcome to your next

10+ year investment.

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.

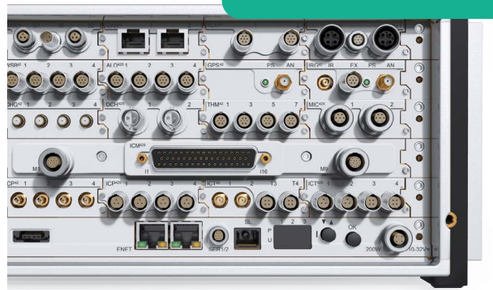
05 year warranty

10 year warranty

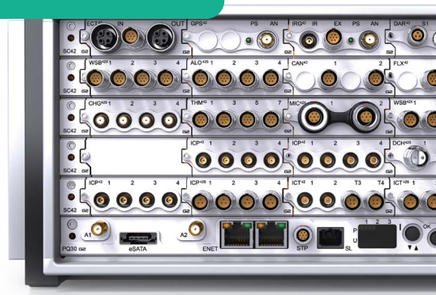
15 year warranty

TECHNOLOGY ADVANCES AT AN ACCELERATED PACE.

WE KEEP UP.



GENERATION 1



GENERATION 2

Recycle and Upgrade.

Calibration

and system health check.

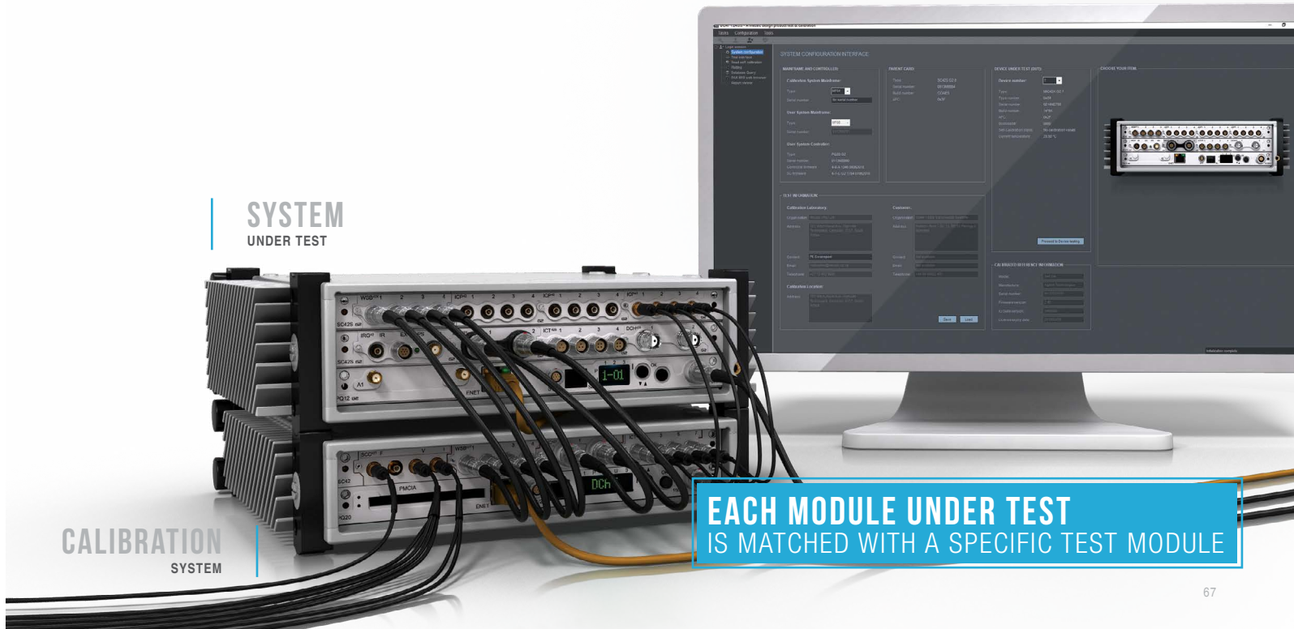
MECALC's commitment to the highest quality at every stage of a product's life has led us to develop our own automated calibration and testing system to fully test and/or calibrate the scope of our products.

ISO/IEC 17025 accredited and designed to ensure products generate accurate and repeatable results over time, our calibration services test a wide variety of hardware features – significantly more than most calibration laboratories – on our highly complex products.

Performing calibrations at our MECALC Factory, global offices or on-site at any customer location, MECALC support services ensure efficiency and consistency using tailored equipment operated by MECALC Product Experts.

CALIBRATION AND FUNCTIONALITY TEST SYSTEM

TO ENSURE THE PERFORMANCE OF ALL FEATURES IS WITHIN SPECIFICATION.



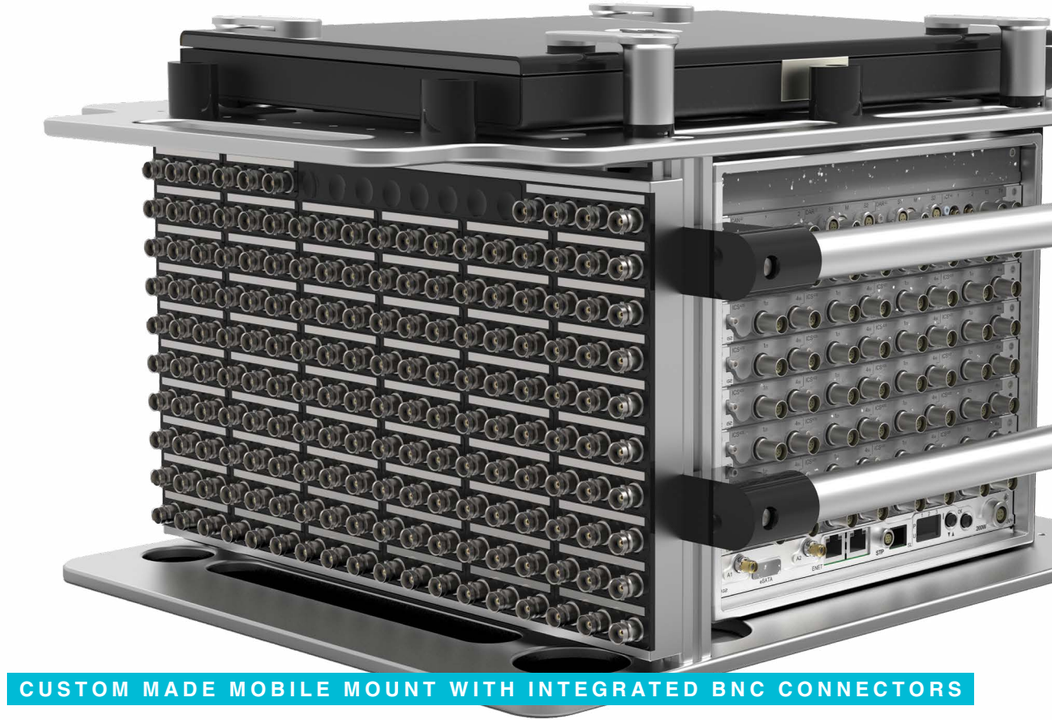
Custom development.

THE MECALC TEAM

The difference is us. We're one team, together providing in-house design, development, manufacturing, calibration and support.

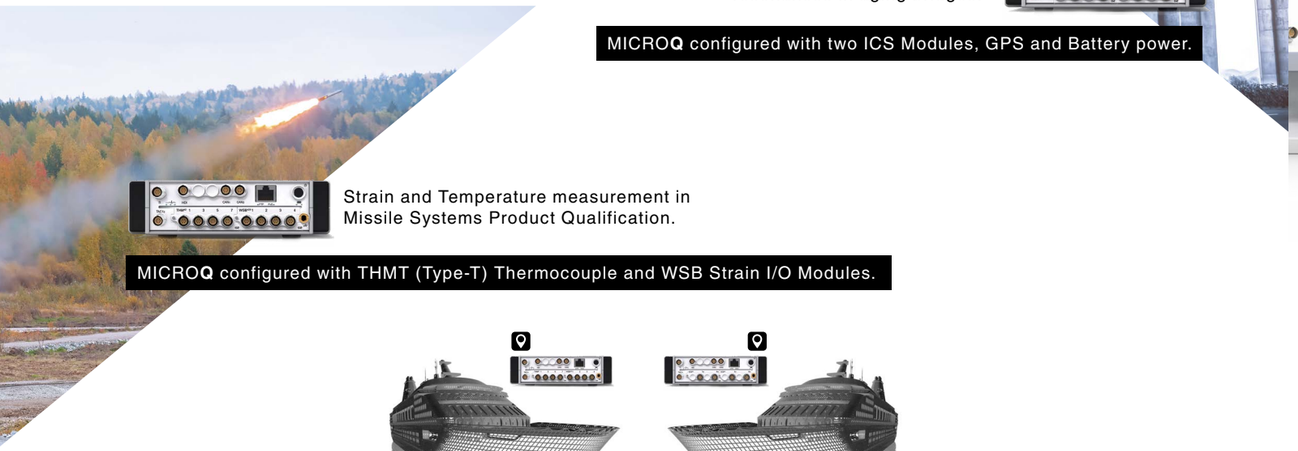
WHAT DOES THIS GIVE YOU?

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.



CUSTOM MADE MOBILE MOUNT WITH INTEGRATED BNC CONNECTORS

Some of our customers' recent applications include.

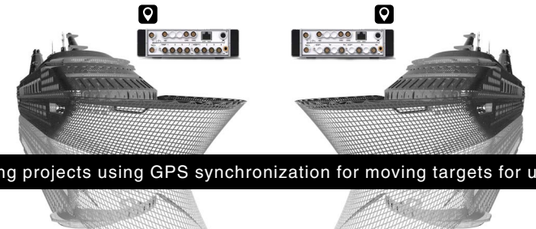


Investigation of structural resonances in aging bridges.

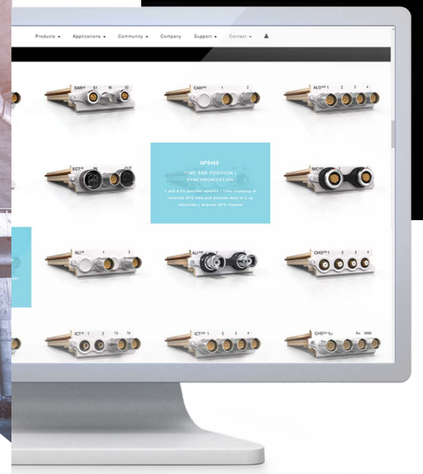
MICROQ configured with two ICS Modules, GPS and Battery power.

Strain and Temperature measurement in Missile Systems Product Qualification.

MICROQ configured with THMT (Type-T) Thermocouple and WSB Strain I/O Modules.



and new exciting projects using GPS synchronization for moving targets for ultra-portability!



Your Move

Connect with us

Tell us about your application.

MECALC technologies

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