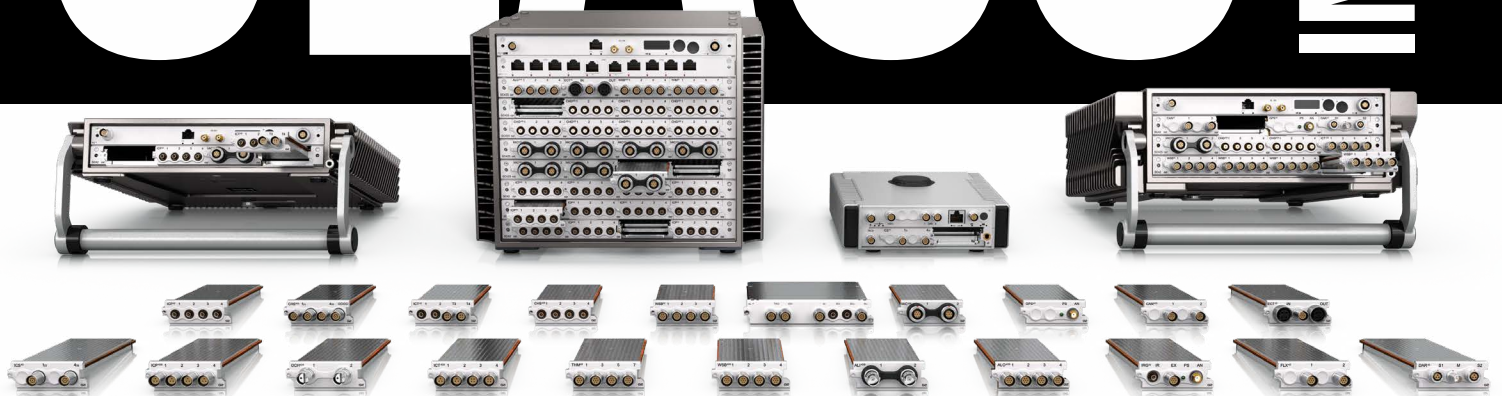
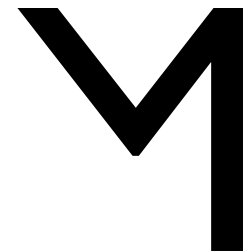


QUANTU SERIES

CATALOG

# WORLD CLASS INSTRUMENTATION





charged to innovate

For four decades, **MECALC** has been at the forefront of producing top-of-the-line data acquisition Systems renowned for their precision and signal conditioning quality.

While many companies in the data acquisition market offer both hardware and software, **MECALC** sets itself apart with its supreme focus on the engineering and production of exceptional instrumentation.

HELLO **QUANTU**SERIES



DOWNLOAD  
CATALOG  
[MECALC.com](http://MECALC.com)

QuantusSeries  
QuantusSoftware

06  
10

# HELLO

DECAQ  
DECAQ and DECAQ Lean  
Accessories  
Synchronization

26



# 26



MICROQ black  
Accessories

14



I/O Modules  
Analog | Time, Position and Communication | Output | Monitoring

42



# 42

MICROQ  
Accessories

20



Custom solutions | Parts and Spares  
Services and Support

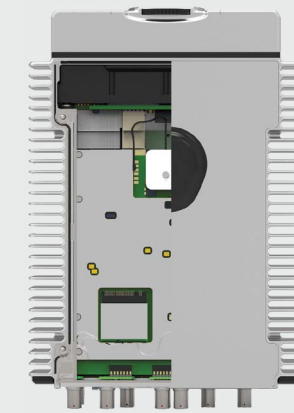
48

52

COMPACT  
MOBILE  
RUGGED  
QUALITY  
WIFI  
ETHERNET  
PoE  
MODULAR  
TACHO  
CAN FD  
STRAIN  
MICROPHONE  
TEMPERATURE  
ICP<sup>®</sup> VOLTAGE  
GPS

## QUANTUS SERIES

WORLD CLASS INSTRUMENTATION



FUTURE PROOF

With more channels, faster sampling and innovative power management concepts our philosophy focuses on quality and compatibility across different sizes and configurations, from battery-powered for field measurements to large rack-mounted Systems in test cells. Combined with the wide range of interchangeable **QuantusSeries** I/O Modules, multiple Systems can be combined into a single System using PTP synchronization or GPS for remote Systems.

FOR EVERYONE



# QUANTUSSERIES

**QuantusSeries** is more than just an acquisition platform. It is a complete front-end for the most demanding data acquisition applications in the industry.

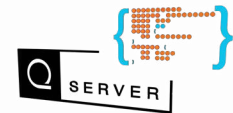
In addition to a wide range of analog signal processing and sensor support, **QuantusSeries** uses state-of-the-art digital processing to improve the system's phase accuracy, effective bandwidth, and scalability for real-time measurements. From 2 to 1000s of channels, our Systems are the most portable, flexible, and scalable in the market.

HIGH QUALITY

MODULAR SIGNAL CONDITIONING

PORTABLE AND RACK-MOUNTABLE

With the launch of our embedded REST API, **QServer**, and included data acquisition software tools, we're opening up the playing field – instrumentation that comes standard for all your acquisition needs and that doesn't limit you to any specific software integration.



EASY  
OPEN  
REST API  
MODERN  
ACQUIRE  
CHECK  
MANAGE  
ECOSYSTEM  
INTERFACE  
DATA  
SIMPLE  
VIEW  
OPTIONS  
GUIDED  
CLICK  
TRACK  
MONITOR  
INTERACT

INCLUDED  
QUANTUS SOFTWARE  
SUITE



BASIC ACQUISITION  
DEVELOPER'S TOOLBOX  
INTEGRATED SOLUTIONS

Our acquisition hardware comes with embedded software that we believe is essential for setting up, controlling, and recording your measurements. It provides a simple interface for creating custom applications.

You can also choose a third-party software package from our **PartnerNetwork** for a fully integrated solution.

## #comes included

The **QuantusSoftware** suite provides a quick and user-friendly way to immediately interact with the **QuantusSeries** hardware. It includes:

- **QServer** – a REST interface available on the hardware which uses HTTP and JSON requests.
- **QAcquire** – an embedded Web GUI to easily configure measurements, and to control the recording of measurement data (optional feature).
- **QDataManager** – a PC based data acquisition utility to transfer recorded measurement data and convert between multiple storage formats.

The key benefits of a REST API are:

- Driver-less: It does not require a driver to communicate with the device. It requires no additional effort to install / distribute drivers.
- Platform Independent: Works on virtually any platform.
- Programming Language Independent: Almost all programming languages have support for connecting to REST interfaces.
- Accelerated Integration: Integration time is reduced compared to other types of interfaces.

**QuantusSeries** hardware Users may choose to develop their own applications, acquire data, and integrate third-party software packages for complete signal acquisition and analysis.

Alternatively choose an existing signal acquisition and analysis software solution from one of our partners. Visit our website for more information about our **PartnerNetwork**.



## Ready when you are.

The **QAcquire** application will help setup and control the measurement, as well as collect and manage the data. Use the **QDataManager** Data Acquisition Utility to transfer and convert to different file formats.



## Do it yourself.

Build on our out of the box acquisition using open-source toolboxes for data acquisition software development.

MATLAB  
LABVIEW  
PYTHON  
C++  
C#



## Choose a solution.

Visit our website for a list of our partners who provide integrated solutions.



PARTNER NETWORK

[MECALC.com/partners-distributors-network.php](http://MECALC.com/partners-distributors-network.php)









The MICROQ black provides accessible, no-fuss measurement without breaking the bank. Get laboratory quality measurements in a small package - just what you need, no more, no less.



## #tethered

The MICROQ black tethered is a compact device for benchtop or embedded Systems. It is a basic measurement System that is connected to a PC and powered with DC Power or Power over Ethernet. Configurations come with built-in ICP® channels and a CAN / CAN FD interface.



MICROQ BLACK *t* C-2BNC



## #independent

The MICROQ black independent is a portable compact System for field use. In addition to standard DC and Power over Ethernet power options, all MICROQ black independent Systems come standard with internal data storage and an internal battery. Configurations come with built-in ICP® channels and a CAN / CAN FD interface. Options with Wi-Fi and GPS are available.



MICROQ BLACK *i+* W1BC-2BNC



### MICROQ BLACK *t* C-2BNC

2 x Analog Input channels (ICP®) | BNC connectors  
±7 V voltage limitation

1x CAN / CAN FD channel



### MICROQ BLACK *i+* W1BC-2BNC

2 x Analog Input channels (ICP®) | BNC connectors  
±7 V voltage limitation

1x CAN / CAN FD channel

Built-in Internal SSD

Internal GPS receiver

Wi-Fi

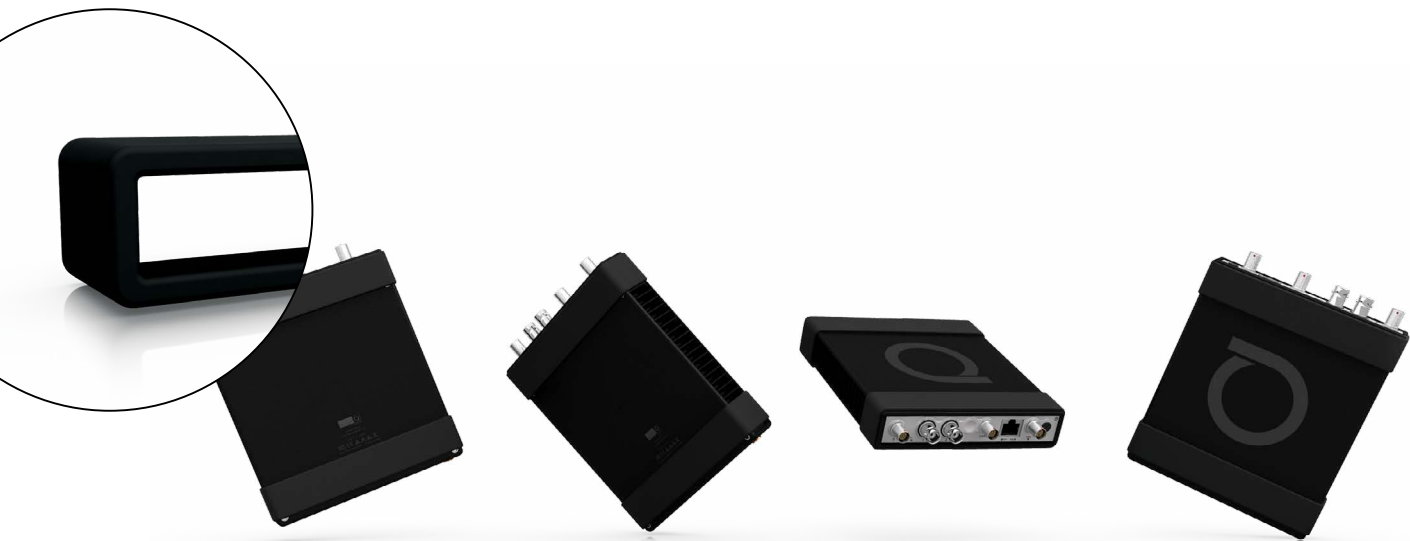
Internal Battery



# Bumper.

## FOR ADDITIONAL PROTECTION

Ever the adventurer, the MICROQ black's portability may lead it to be used in extreme environments. For protection against exposure to unconventional measurement conditions, the MICROQ black bumper provides additional shielding to an already rugged design.



# Sleeve.

## FOR ADDITIONAL PROTECTION

MICROQ black leather sleeve (tethered / independent). The leather sleeve can be ordered as a spare to protect your MICROQ black from bumps and scratches



# Mount Bracket.

## MICROQ BLACK MOUNT BRACKET

Keep your MICROQ black secure with a custom-designed bracket that allows the MICROQ black to mount to a 1-inch DIN rail or ¼-20 Tripod Mount. The fastening clip makes it possible to mount the MICROQ black in different positions



### SPRING CLIP

Can be positioned in 4 locations on the bracket, allowing for different mounting options







The MICROQ provides a flexible platform for a wide variety of interchangeable **QuantusSeries** I/O Modules, as well as synchronization with other Systems. A set range of configurations is available, each one able to support almost any testing scenario.

Compact and portable, the MICROQ tethered and MICROQ independent are hand-held Systems that can be synchronized to increase channel count and facilitate distributed measurements.

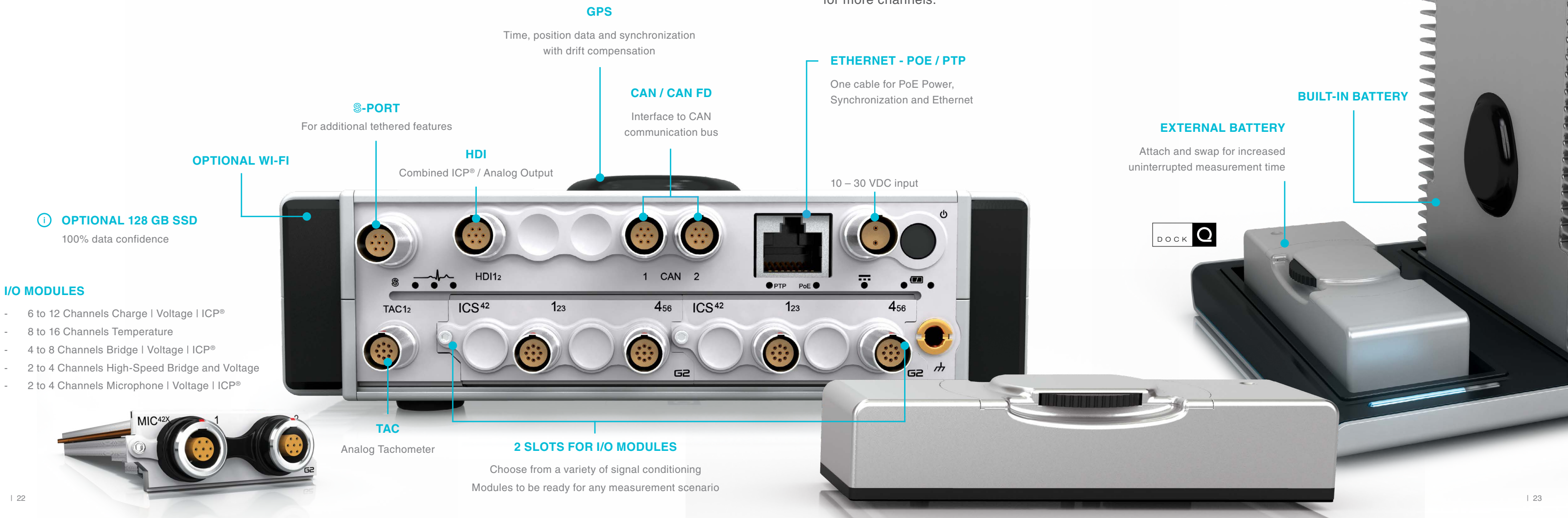
**QuantusSeries** Modules can be added / removed and saved for unique application requirements. Multiple MICROQ Systems can be combined to form a larger System. These Systems are synchronized using a PTP Switch.

## #tethered

The MICROQ tethered is a compact device for benchtop or embedded Systems. It is a basic measurement System that is connected to a PC and powered with DC Power or Power over Ethernet. Configurations are available with built-in channels for Tacho, CAN / CAN FD and HDI. Add up to two **QuantusSeries** I/O Modules for more channels.

## #independent

The MICROQ independent is a portable compact System for field use. In addition to standard DC and Power over Ethernet power options, all MICROQ independent Systems come standard with internal data storage and an internal battery. Configurations are available with built-in channels for Tacho, CAN / CAN FD and HDI. Add up to two **QuantusSeries** I/O Modules for more channels.



**OPTIONAL 128 GB SSD**  
100% data confidence

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





# Share and charge.

All day convenience | 100% data confidence.

## DOCKQ: MAINTENANCE STATION

Dock your MICROQ and your MICROQ External Battery onto the DOCKQ to charge and share data, giving you complete control of your power and data management.

Useful when charging MICROQ External Battery while measuring with your MICROQ, the DOCKQ ensures increased uninterrupted mobile measurement.

It only takes about 2 hours to charge a MICROQ External Battery on the DOCKQ from fully depleted to fully charged.



### CHARGE

Dock onto the DOCKQ to charge - check blue LEDs for power levels.

## EXTERNAL MICROQ BATTERY

For extended uninterrupted battery power simply attach a MICROQ External Battery to your MICROQ, without stopping your measurement.

Each Li-Ion battery adds a capacity of 40 Wh, increasing uninterrupted measurement time.



### ATTACH OR REMOVE EXTERNAL MICROQ BATTERY

Turn the Battery Wheel to attach the External MICROQ Battery to your MICROQ.

# Transport.

## MICROQ CASE

For the jet-setter. The MICROQ case protects the chassis while in transit.





# More channels.

**IN ONE SYSTEM OR DISTRIBUTED**

The DECAQ is a highly configurable platform for a wide variety of applications. It is available in several different sizes and configurations; from battery powered for field measurements, to large rack mounted Systems in test cells. Combined with the wide range of interchangeable **QuantusSeries** I/O Modules, the DECAQ supports almost any testing scenario.

Multiple DECAQ Systems can be combined into a single System using PTP synchronization. GPS Synchronization is also available for remote Systems.



The DECAQ is available with battery power for up to 2 hours of field operation, internal SSD, and WiFi communications. It is tailored for both general use and field tests. 2, 3, 4, 6 and 10-slot chassis are available.



**#Lean**

The DECAQ Lean supports a single battery for UPS function and is focused on lab or test cell configurations. 4, 6, and 10-slot chassis are available.

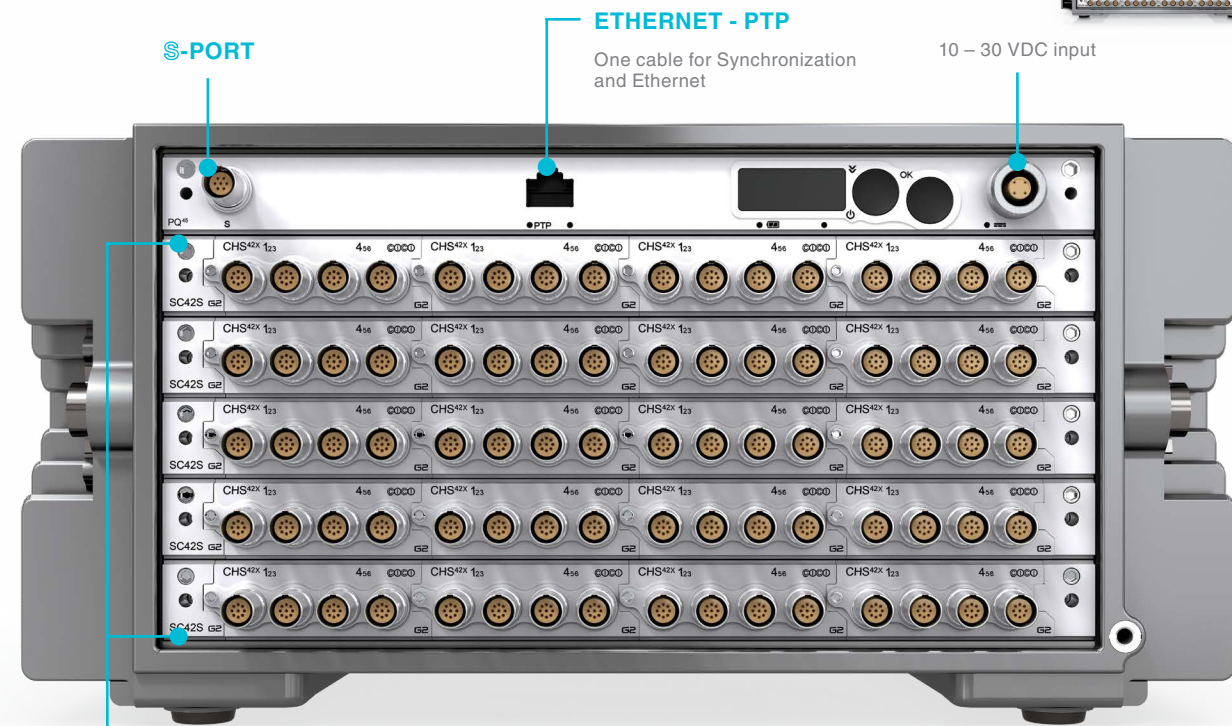






The DECAQ is designed for field use and is available with options for Wi-Fi communications, an internal SSD for internal data storage, and multiple field-swappable batteries.

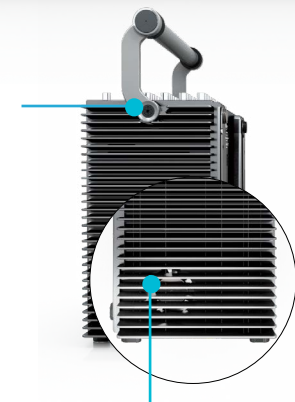
- ① RUGGED
- ① MACHINED FROM ALUMINUM
- ① OPTIONAL WI-FI
- ① OPTIONAL SSD
- ① OPTIONAL BATTERY



**I/O MODULE SLOTS**

Up to 192 Channels in a single chassis

**REMOVABLE HANDLE**



**OPTIONAL SILENT FANS**

① **CUSTOMIZED MOBILE RACKS**



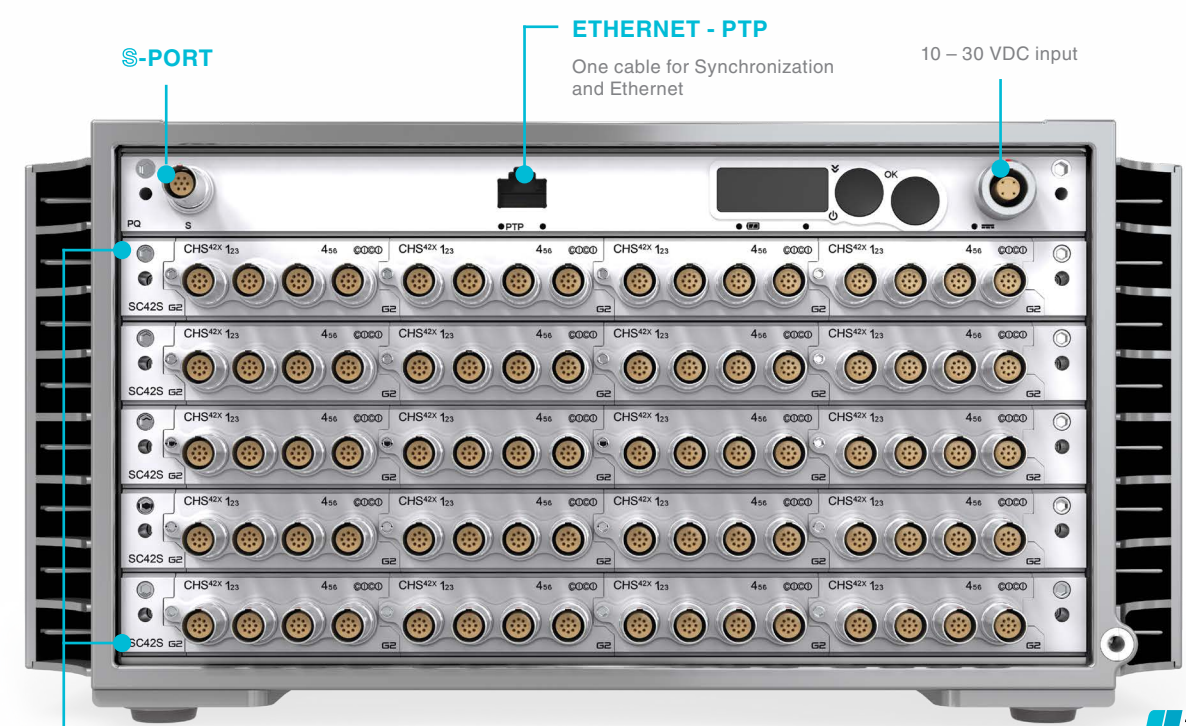
**MULTIPLE BATTERIES**



#Lean

DECAQ Lean Systems are well suited for lab operations and can easily be added to a rack. Battery power also provides UPS capability in situations where an external power source might cut out during the measurement or to protect from potential power outages.

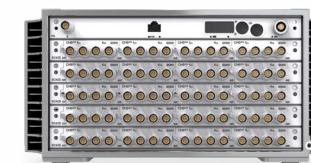
- ① RUGGED
- ① MACHINED FROM ALUMINUM
- ① OPTIONAL WI-FI
- ① OPTIONAL SSD
- ① OPTIONAL BATTERY



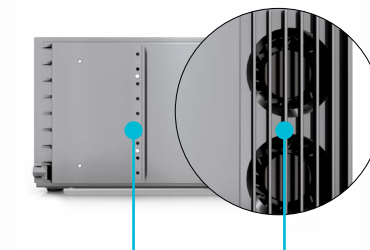
**I/O MODULE SLOTS**

Up to 192 Channels in a single chassis

① **EASY RACK INSTALLATION**



**SUBMODULE RACK**



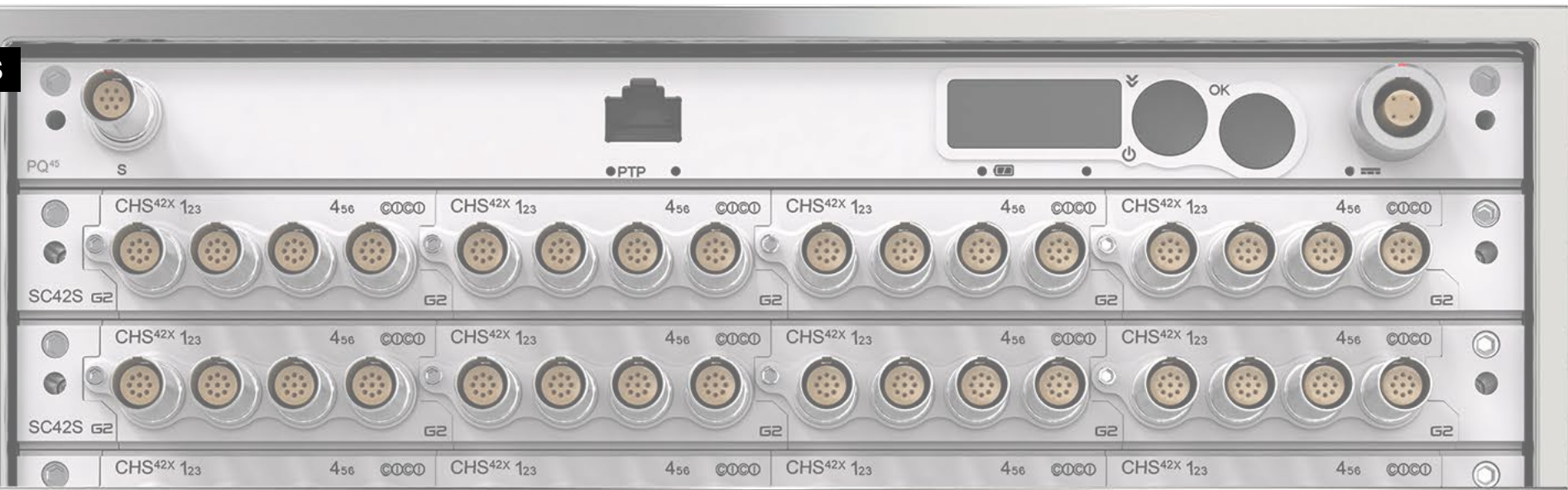
**FANS MUST RUN**



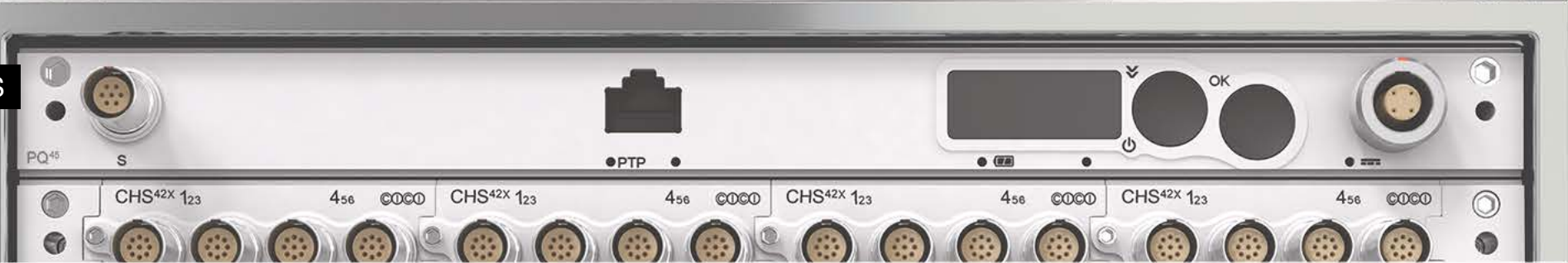
① **UPS**



72-192 CHANNELS



48-120 CHANNELS



24-72 CHANNELS



16-48 CHANNELS

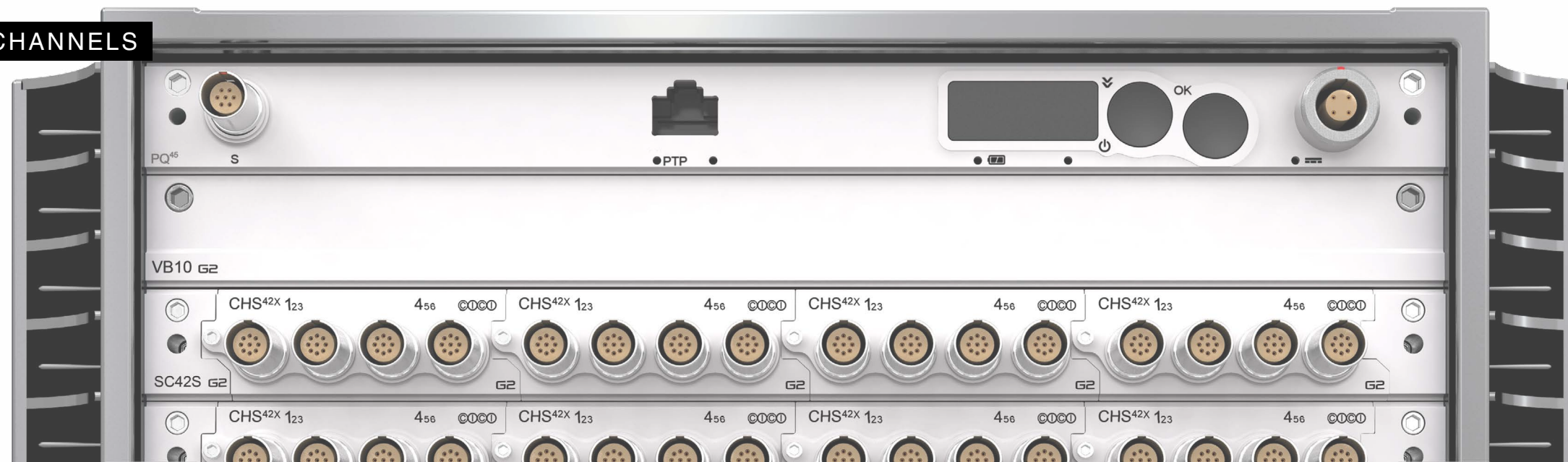


12-24 CHANNELS

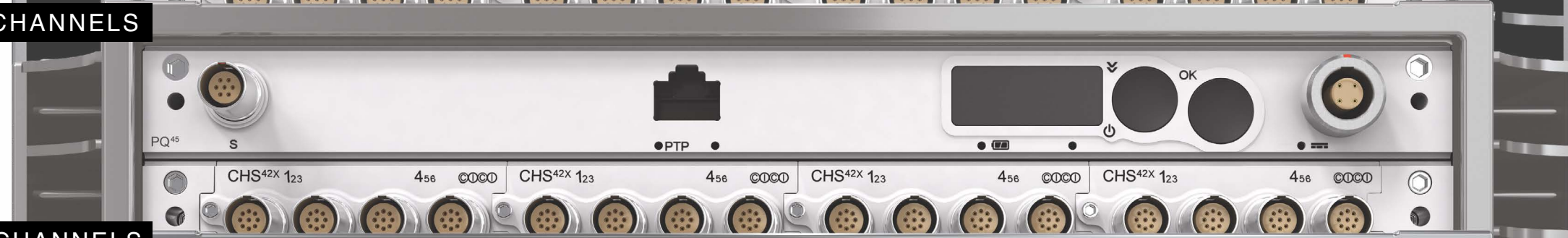




72-192 CHANNELS



48-120 CHANNELS



24-72 CHANNELS



# ACCESSORIES

The DECAQ is designed with portable measurements in mind. Battery Cartridges may be added to any size mainframe for up to two hours of field measurements. By powering the System down the batteries are then interchangeable and may be swapped in the field to support longer measurement tasks.

- Supported in all DECAQ Systems from DQ02 to DQ10
- Easily swappable in the field
- Battery Cartridges comply with flight regulations for a single cartridge installed in a System and two spare cartridges as carry-on luggage.

## BATTERY CARTRIDGES

ITEM NUMBER	DESCRIPTION
DQ-BAT	- DECAQ Li-Ion removable battery. - 90 Wh Capacity.
DECAQ	- DECAQ supports one to five user swappable batteries (DQ -BAT). Number of batteries supported is dependent on chassis size. Batteries purchased separately.
DECAQ LEAN	- DECAQ Lean supports one user swappable battery (DQ -BAT). Battery purchased separately.



Choose the number of batteries required to meet the measurement task.

- No battery – DECAQ is powered by mains power or vehicle power.
- UPS Backup for applications where the primary power source may be intermittent. Install one battery.  
*(For example: a vehicle's auxiliary power source may be interrupted when starting the engine.)*
- Battery powered field measurements are supported by filling all of a System's battery bays with cartridges.  
*(i.e. 1 cartridge for DQ02 or DQ03, 2 cartridges for DQ04, 3 cartridges for DQ06, and 5 cartridges for DQ10)*
- Longer term measurements are possible by periodically swapping cartridges.  
*(Requires temporary power from a vehicle or mains power source.)*

## BATTERY CONFIGURATIONS

All DECAQ Systems support one or more batteries. The images below show a System with the back cover removed to access the battery bays. Batteries purchased separately.

SYSTEM	SYSTEM WITH NO BATTERIES INSTALLED	SYSTEM WITH ONE BATTERY INSTALLED	SYSTEM WITH MULTIPLE BATTERIES INSTALLED
DECAQ-02			N/A
DECAQ-03			N/A
DECAQ-04			 <i>Max 2 removable batteries</i>
DECAQ-06			 <i>Max 3 removable batteries</i>
DECAQ-10			 <i>Max 5 removable batteries</i>



# Mounts.

## MOBILE MOUNTS

MobileMounts optimally secures 2, 3, 4, 6 or 10-slot System, SubModules and cabling with an optional notebook for mobile measurements.



CUSTOM MADE MOBILE MOUNT WITH INTEGRATED BNC CONNECTORS

CONTACT US

## RACK MOUNTS

The RackMounts are a compact, machined aluminum RackMounting Kit which house 2, 3, 4, 6 or 10-slot DECAQt chassis.

The chassis has specifically been recessed in each Mounting Kit to ensure that all cables are contained behind the rack's front face. These cables can then be routed to the left and right sides of the chassis.

At the rear, a horizontal brace provides a mounting point for cable connector flanges should this be required. This is useful where a conversion is required between DECAQ chassis connectors and those used by the testing facility.

The sides and rear of the Mount are left open to allow air to enter from the bottom of the rack to cool all mounted DECAQs.

REMOVE FROM RACKMOUNT FOR PORTABLE MEASUREMENTS

AND SECURE BACK TO RACKMOUNT



## SEAT FRAMES

The SF10 SeatFrame optimally secures 2, 3, 4 or 6-slot System and a laptop onto a car seat for mobile measurements. It consists of machined aluminum members which can be adjusted to optimally fit the seat, System and laptop.

To prevent sideways movement, the side and rear sleds can be adjusted to best hug the seat. The rear SeatFrame handle can also be adjusted to push against the seat's backrest to prevent it from flipping over. It is strapped to the seat using the seat's safety belt. A laptop is placed on an adjustable base mounted above QuantusSeries Systems.



# Transport.

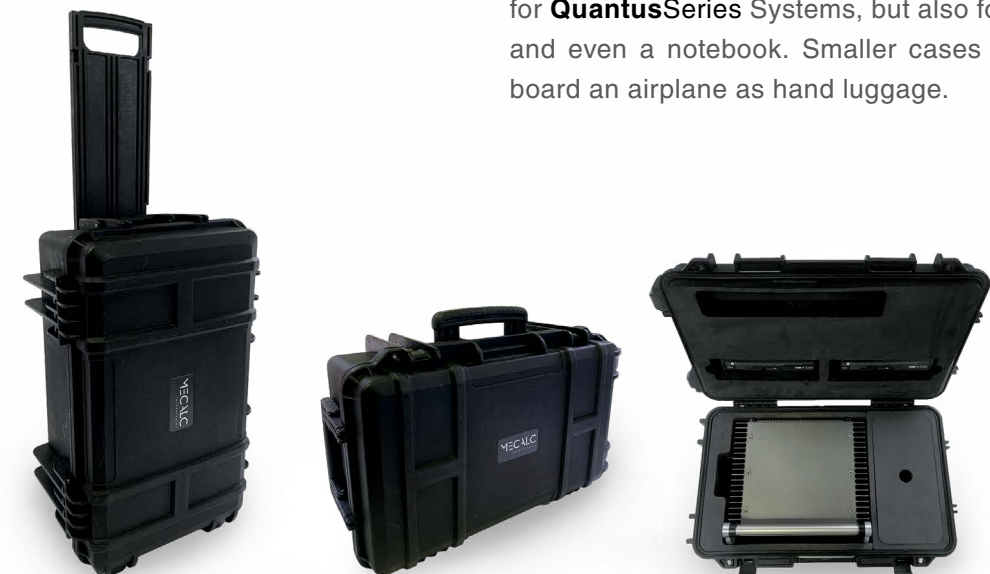
## DECAQ TRAVEL CASE

For secured travel, the DECAQ Travel Case keeps your System and its accessories safe in transit. Our injection molded high-end travel case is manufactured from Polypropylene material with an IP 67 rating, carry handles, padlock opportunity, wheels & retractable pull handle for ease of movement. This user-friendly high-end travel case weighs 6 kg - Travel case only.

## DECAQ RIGID CASE

Protective rigid cases for transportation over long distances are available for all Mainframe sizes. These robust cases are made of HPX® high-tech plastic and are water, dust and airtight.

Depending on the interior configuration of the transportation case, users have a secure place not only for QuantusSeries Systems, but also for cables, sensors and even a notebook. Smaller cases may be taken on board an airplane as hand luggage.





# Harsh systems.

*to configure your solution*

## THE HARSH SYSTEM

READY FOR USE IN ANY ENVIRONMENT YOU CAN THINK OF.

It is IP66 rated, is very high shock / vibration resistant and can operate over a wide range of temperatures. It can be configured for up to 120 ICP® / IEPE channels, up to 80 Wheatstone bridge channels or 128 Thermocouple channels, all in one very compact unit. Mixtures of channels are also possible.

### DECAQ 06H CHASSIS COMMON FEATURES

- IP66 in a compact chassis.
- Internal battery provides 30 minutes operating time as well as backup should power fail.
- Very high shock and vibration levels.
- Can operate at -40 to 70 °C environmental temperatures.
- Needs 10 to 30 V DC (160 W maximum), and 3 to 5 bar compressed air.
- Tight temperature regulation made possible through an internal solenoid.
- Up to 120 channel analog input and ICP® / IEPE.
- Up to 80 channel Wheatstone Bridge.
- Up to 128 channel thermocouples.
- Mixture of channels is possible which could include Tacho pulse measurement and digital Modules. A custom system front panel is required.
- Compact dimensions: 318 mm wide, 314 mm deep and 155 mm high.



IP66 RATED

FOR HARSH ENVIRONMENTS





# SYNCHRONIZATION

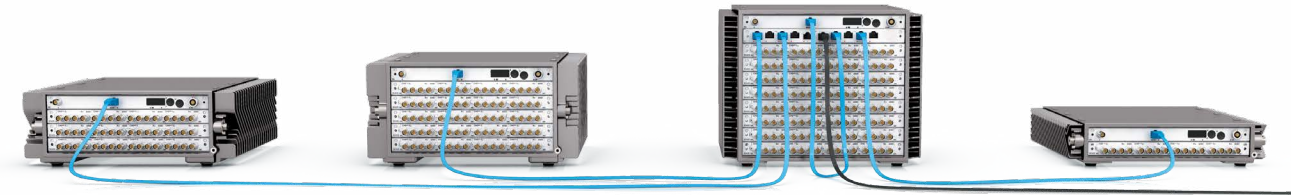
# Expand your system with the SP<sup>45</sup>.

## PTP SYNCHRONIZATION

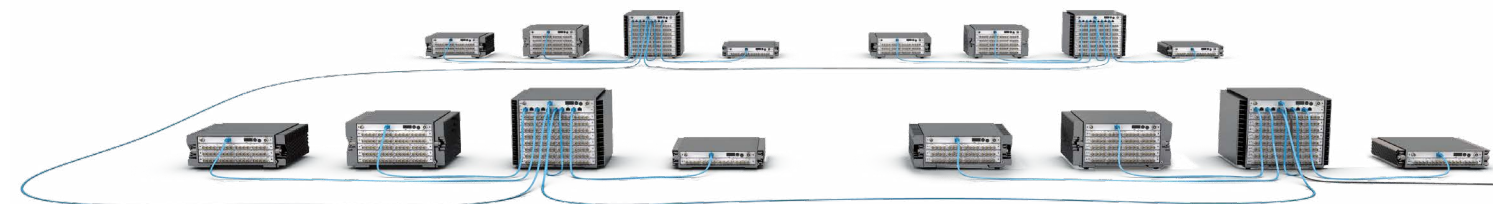
If more channels are required (than what can be accommodated in a single DECAQ System), or if it is preferred to place a DECAQ or MICROQ System closer to where the measurement takes place, two or more Systems can be synchronized with Precision Time Protocol (PTP).

PTP Synchronization according to the IEEE 1588-2008 standard enables easy expansion across multiple Systems. All Systems are connected to the same network with Ethernet as the communication medium. This concept achieves clock frequency and phase synchronization between multiple Systems.

## CLUSTER HUNDREDS OF CHANNELS

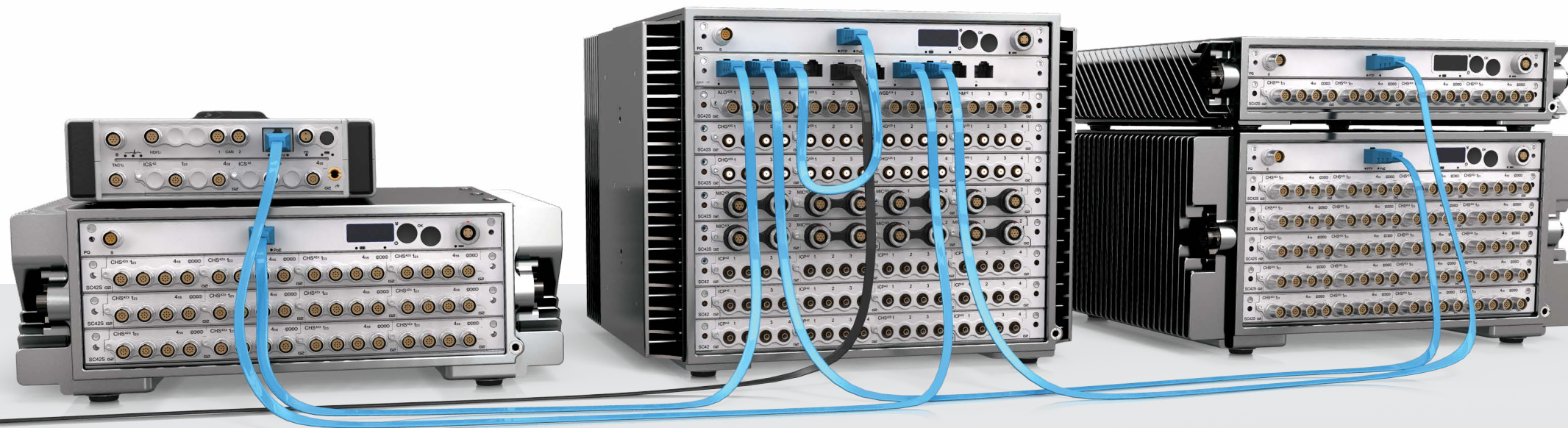


## SUPERCLUSTER THOUSANDS OF CHANNELS



SYNCHRONIZE WITH ACCURACY, SIMPLIFIED SETUP AND CABLING, IN A RACK OR FROM A DISTANCE.

ALL AS ONE SYSTEM



- INCREASE CHANNEL COUNT
- SHORTEN SIGNAL CABLES
- OPTIMIZE MEASUREMENTS
- REACH REMOTELY PLACED SENSORS
- AVOID DATA BOTTLENECKS

# I/O MODULES.



## CHOOSE FROM OUR BROAD RANGE OF MODULES

Each Module is optimized for a specific task while some combine different functions in one Module. Modules are continuously under development to accommodate new features and the latest technologies.

### 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





# SC<sup>42</sup>S

Signal Conditioning Board  
VMEbus Signal Conditioning Engine and Infrastructure



SC42S

The SC<sup>42</sup>S board provides the isolated power, signal processing, and mechanical infrastructure for up to four signal I/O Modules. It is a highly advanced board using 5 powerful 24-bit DSPs to process large volumes of data transferred between each Module and the VMEbus.

It also provides isolated power, sample timing infrastructure, and the internal communications interface for the I/O Modules. The easy interchangeability of I/O Modules is provided by the SC<sup>42</sup>S infrastructure. Modules are plugged into the SC<sup>42</sup>S and can be inserted and removed without removing the SC<sup>42</sup>S board itself.

**WHERE USED:**

- In any slot of all Systems except slot 1 which is reserved for the VMEbus System Controller and Power Supply

**FEATURES**

VMEbus slave and interrupter	4 isolated power supplies, one per Module
Supports the latest 2eVME specifications	Houses the Module's self-calibration engine
Mechanics to accommodate 4 Modules	Thermally optimized and encased in aluminum
Provides accurate timing infrastructure for 4 Modules	For high-speed multi-channel measurements
5 separate 24-bit DSPs, one per Module and one on the board	-20 °C   4 °F min temperature 55 °C   131 °F max temperature



**MODULE COVER - MBL**

Module Covers need to be purchased for any empty Module slots on the SC<sup>42</sup>S. These covers protect the System from any environmental damage that might take place when the Module slots are not in use.

ITEM NUMBER	DESCRIPTION
MBL	- Module Blank. - Covers empty I/O Module slot



**SLOT CLOSEOUT FOR DECAQ**

All empty DECAQ slots need to be closed to protect them from possible environmental harm. The DQ-VB10 provides a VMEbus closeout for empty DECAQ slots.

ITEM NUMBER	DESCRIPTION
DQ-VB10	- The DQ-VB10 provides a VMEbus closeout for unpopulated DECAQ slots (required)



## Signal Conditioning Channels

### ANALOG

PARAMETER	MAXIMUM DATA RATE	MODULE	MODULE DESCRIPTION	
±10 V voltage input	51.2 kSa/s	ICS <sup>42</sup> L	6 channel Voltage Input	
	409.6 kSa/s	ALI <sup>42</sup> B	2 channel Voltage Input	
ICP <sup>®</sup> based microphones, accelerometers, load cells and pressure sensors	51.2 kSa/s	WSB <sup>42</sup>	4 channel Bridge / ICP <sup>®</sup> / Voltage Input	
		ICS <sup>42</sup>	6 channel ICP <sup>®</sup> / Voltage Input	
	102.4 kSa/s	CHS <sup>42</sup> X	6 channel Charge / ICP <sup>®</sup> / Voltage Input	
		ICT <sup>42</sup> S	2 channel ICP <sup>®</sup> / Voltage Input	
		ICP <sup>42</sup> S	4 channel ICP <sup>®</sup> / Voltage Input	
		MIC <sup>42</sup> X	2 channel Microphone / ICP <sup>®</sup> / Voltage Input	
		WSB <sup>42</sup> X	4 channel Bridge / ICP <sup>®</sup> / Voltage Input	
±10 V voltage input	204.8 kSa/s	CHM <sup>42</sup> X	4 channel Charge / ICP <sup>®</sup> / Voltage Input with Buffered Outputs	
		ICT <sup>42</sup> S	2 channel Tacho / ICP <sup>®</sup> / Voltage Input	
		ICP <sup>42</sup> S	4 channel ICP <sup>®</sup> / Voltage Input	
±60 V voltage input	204.8 kSa/s	ICT <sup>42</sup> S	2 channel Tacho / ICP <sup>®</sup> / Voltage Input	
Tacho pulse input with 4.9 MSa/s Scope Mode	700 kPulse/s <sup>1</sup>	ICT <sup>42</sup> S	2 channel Tacho	
Piezoelectric based accelerometers, load cells, etc. (Single-Ended)	102.4 kSa/s	CHS <sup>42</sup> X	6 channel Charge / ICP <sup>®</sup> / Voltage Input	
	204.8 kSa/s	CHG <sup>42</sup> S	4 channel Charge Input	
		CHM <sup>42</sup> X	4 channel Charge / ICP <sup>®</sup> / Voltage Input with Buffered Outputs	
Piezoelectric based accelerometers, load cells, etc. (Differential)	204.8 kSa/s	DCH <sup>42</sup> S	2 channel Differential Charge Input	
E, J, K, T and U thermocouples as well as Pt100 sensors	6.4 kSa/s	THM <sup>42</sup>	8 channel Thermocouple / Pt100 / Voltage Input	
±10 V voltage input	51.2 kSa/s	WSB <sup>42</sup>	4 channel Bridge / ICP <sup>®</sup> / 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		204.8 kSa/s	WSB <sup>42</sup> X	4 channel Bridge / ICP <sup>®</sup> / Voltage Input
±10 V voltage input	1.25 MSa/s	ALI <sup>25</sup> @ 1250	2 channel Bridge / ICP <sup>®</sup> / Voltage Input	
Bridge and Resistive Sensors used in Pyro-Shock / Mechanical Shock		2.5 MSa/s		ALI <sup>25</sup> @ 2500
±5 V voltage input		5 MSa/s		ALI <sup>25</sup>
Acoustic Camera with ICP <sup>®</sup> and ±10 V voltage input	102.4 kSa/s	ACM <sup>42</sup>	24 channel Acoustic Camera	
200 V or non-polarized microphones	204.8 kSa/s	MIC <sup>42</sup> X	2 channel Microphone / ICP <sup>®</sup> / Voltage Input	



### TIME, POSITION AND COMMUNICATION

GPS	10 Hz	GPS <sup>42</sup> S	GPS Receiver for Time Synchronization and Position
CAN	2 Mbit/s (simultaneous)	CAN <sup>42</sup> S	2 channel CAN bus Interface

### OUTPUT

±10 V Signal Outputs: DC, Sine, Triangle, Square, and White Noise	204.8 kSa/s	ALO <sup>42</sup> S	4 channel Analog Output
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### MONITORING

Buffered outputs for external monitoring of the conditioned input signals	98 kHz bandwidth	ALO <sup>42</sup> S	4 channel Buffered Analog Output
	204.8 kSa/s	CHM <sup>42</sup> X	4 channel Charge / ICP <sup>®</sup> / Voltage Input with Buffered Outputs
	2.375 MHz bandwidth	ALI <sup>25</sup>	2 channel Buffered Analog Output

Note 1: Pulse rate for sum of both channels



**CUSTOM  
SOLUTIONS  
PARTS AND  
SPARES.**



# CUSTOM SOLUTIONS

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.

MECALC works closely with leading manufacturers in Aerospace, Automotive and Defense. Solutions developed through these partnerships drives innovation in the field and guides our product development.

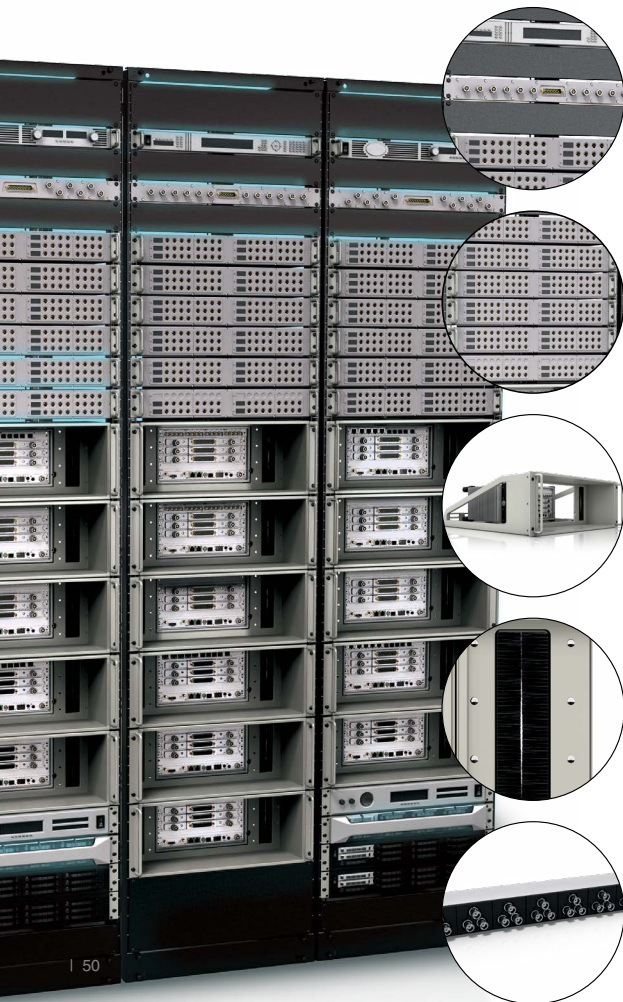
## CASE STUDY:

### SATELLITE ACOUSTIC TEST

In addition to typical data acquisition tasks, this application required large interconnects to simplify wiring, signal conditioning for 1000' cable lengths, sharing the buffered signals to multiple secondary Systems for real time monitoring and backup acquisition.

MECALC updated its standard I/O modules with new connectors, increased the power and isolation to support long cables, and added buffered outputs to share the conditioned signals. An external signal management System was developed to isolate and share the buffered outputs with multiple secondary Systems.

We look forward to learning about the challenges you face to working on solutions together.



#### POWER SUPPLY DISTRIBUTION BOARDS

#### BUFFERED OUTPUTS

#### DIFFERENT SIZE RACK FOR APPLICABLE SYSTEMS

#### PRECISION BRUSH TO ROUTE CABLES TO THE BACK

#### SMRM

#### SIGNAL CONDITIONING

- Advanced signal conditioning to support low noise applications and specialty sensors with power requirements beyond IEPE.
- SubModules to support  $\pm 20$  mA inputs.
- Support for extra sensor cables.

#### SIGNAL MANAGEMENT

- Signal buffering and distribution to multiple independent output channels to be distributed to secondary Systems.
- The Mobile Mount distributes all measuring channels from the System frontend to BNC connectors on the Mount. This enables easy access to the BNC connectors and simplifies cabling for portable measurements. It can support up to 170 voltage and ICP® channels, as well as additional Tacho input channels.

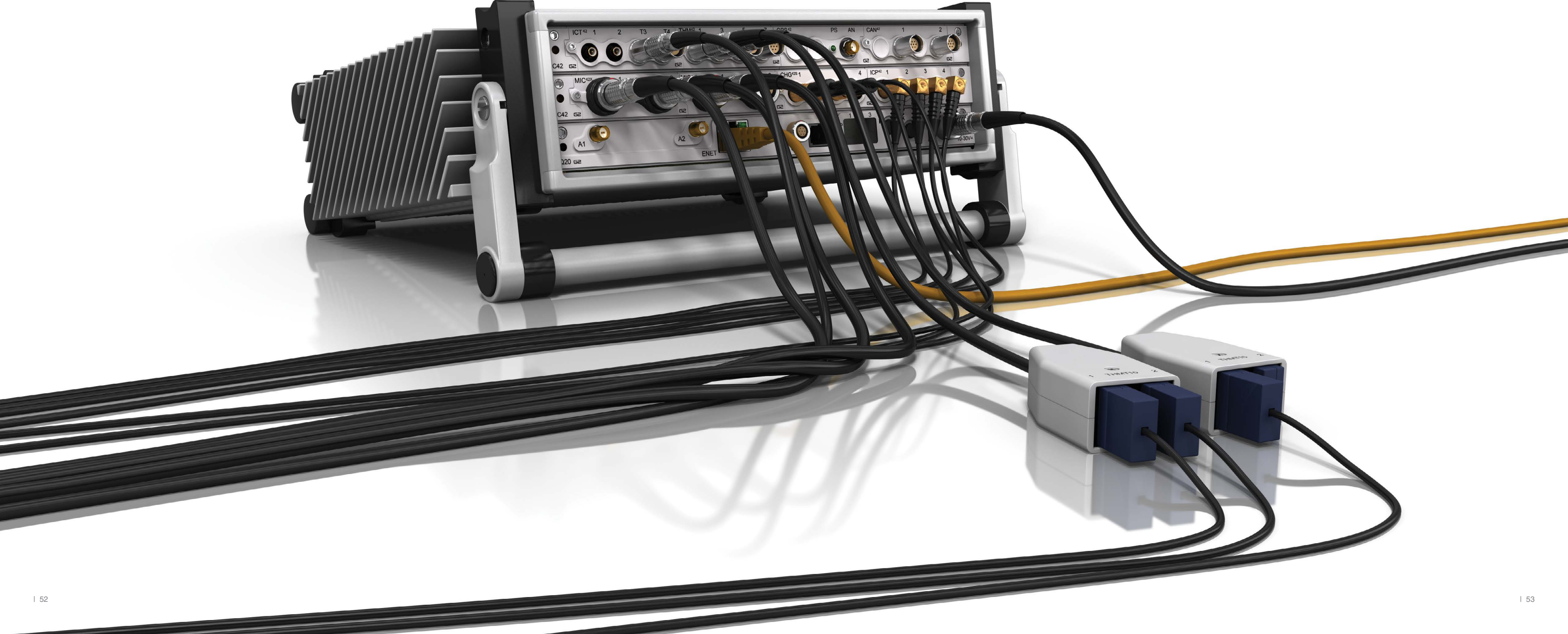
#### MOUNTS

- SeatFrame to secure a **QuantusSeries** System in a vehicle's passenger seat. The SeatFrame was enhanced with a Laptop mounting System to support the engineer running the tests in the field.
- DIN Rail mount for installing Systems in a production environment.

#### CUSTOM CABLES

MECALC will design and manufacture custom cables on request.

# SERVICES AND SUPPORT.





## SERVICES AND SUPPORT

# MECALC provides a

FULL RANGE OF SUPPORT SERVICES

DESIGNED TO MINIMIZE DOWNTIME AND MAXIMIZE THE LIFE OF YOUR SYSTEM.

All MECALC products are designed, developed, and manufactured in-house. We are invested in every phase of our products' life cycle, including its support and related services.

When you buy a **QuantusSeries** System, you get us. MECALC's support team is readily available to help with any challenge that might arise.

### OUR SERVICE AND SUPPORT OBJECTIVES:

#### UPTIME

To maximize uptime and a long life, we strive to provide quick and proactive support to keep your equipment at its highest operational level.

#### DIALOGUE

Open two-way communication with our customers helps us respond promptly to all customer requests and questions, as well as keep customers informed of their service status to plan their System health checks effectively.

#### TECHNICAL EXPERTISE - OUR COMMITMENT TO QUALITY

Our Product Experts are a dedicated team of highly specialized Technicians and Engineers trained to provide the best possible service and support.



### TRAINING AND APPLICATION SUPPORT:

Training and product support for **QuantusSeries** and **QServer** is available on-site or online. Software development services are available through our partners. Contact your local MECALC office for more information.

### ON-SITE SERVICES:

Most services can be performed at your facility.

On-site Services include:

- MECALC ProCal Calibration Service
- Product Training
- Application Engineering Support

Contact your local MECALC office for more information.

### SYSTEM RENTALS:

**QuantusSeries** Systems are available for rental and rent-to-purchase.





## SERVICES AND SUPPORT

All new **QuantusSeries** Systems are delivered with an optional ISO/IEC 17025 accredited calibration and a 2-year Factory Warranty. The main System warranty can be extended up to 8 years by periodically calibrating the System with a **MECALC ProCal** Calibration service.

Calibration and Extended Warranty plans are also available for pre-purchase on new Systems. Additional services offered include technical training, application engineering support, System rentals, and upgrade plans.

Additional warranty, service, and calibration options can be tailored to your requirements.

### CALIBRATION OPTIONS:

The ProCal calibration service includes a full factory test of the entire System and exercises all measurement modes on the instrument. As **MECALC** is ISO/IEC 17025 accredited, ProCal is offered as ISO/IEC 17025 accredited calibration or non-accredited calibration.

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 **QuantusSeries** Systems continue to operate as specified at every stage of their life cycle.

#### Calibration of Systems that may be periodically reconfigured in the field:

The **QuantusSeries** is a highly modular System and ProCal is designed for Systems that will be reconfigured in the field. Swapping or moving Modules between slots or Systems can then be done with confidence. And, the validity of a System calibration is preserved when a defective Module is replaced with a calibrated Module of the same type.

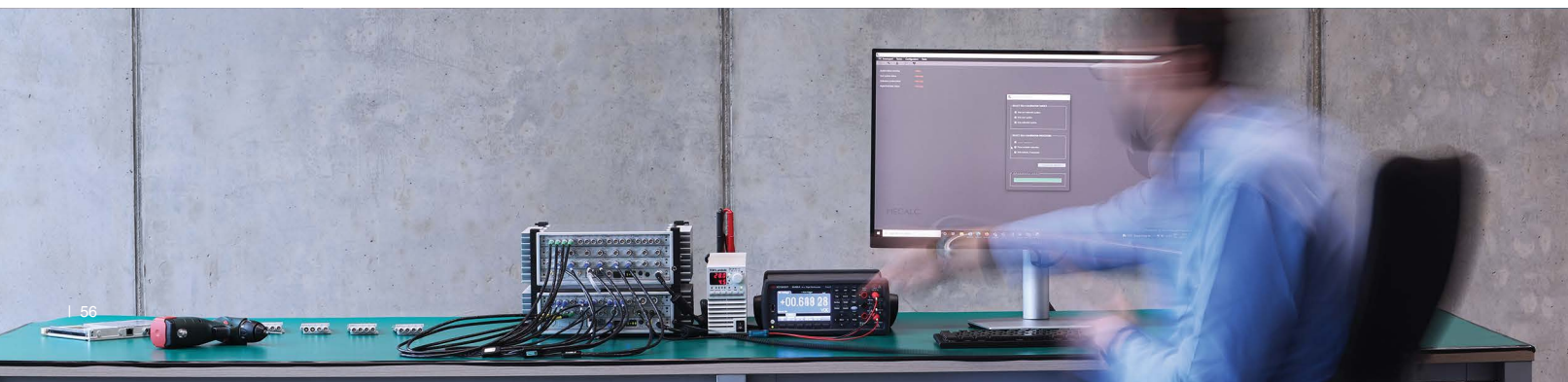


### CUSTOM CALIBRATION SYSTEM:

**DCAT** is **MECALC's** automated calibration and testing System used for ProCal Calibrations. Each channel is fully exercised and tested using circuits that emulate sensors, such as bridge completion resistors for calibrating a **WSB<sup>42</sup>X** Module.

A large System may contain tens of thousands of components that can operate in many modes and configurations. **DCAT** was developed to fully exercise and test these complex Systems.

For ISO/IEC 17025 accredited measurements, traceability is established by the calibrated DMM. A statement of compliance to specifications is made for every test as well as for the complete System.



### TRAVEL CASES

**QuantusSeries** Travel Cases are a secure packaging for shipping a System for calibration service.

# SERVICES AND SUPPORT

## STANDARD WARRANTY:

Our **QuantusSeries** products will be free from defects in materials and workmanship under normal use. The standard **QuantusSeries** product warranty period is 2 years, while cables, batteries and submodules have a 1 year warranty period.

## EXTENDED WARRANTY:

Calibrating the **QuantusSeries** product at least every second year automatically extends the warranty period to 8 years. The extended warranty is forfeited indefinitely if any calibration interval exceeds 2 years. Calibrations must be performed by **MECALC** or an authorized **MECALC** calibration partner using the **MECALC DCAT** software. Cables, batteries and submodules are excluded from the extended warranty.

## UPGRADES:

**QuantusSeries** Systems are designed with the long-term in mind. Our modular concept keeps our Systems updated with the latest technological advances. Components from different generations can coexist in the same System, allowing Systems to be partially upgraded as needed.

**MECALC's** in-house development team is one of the largest in the industry and regularly adds the latest technological advancements to the **QuantusSeries**. Upgrades to support the latest sensors, improve signal quality, and support new applications are continuously added to the I/O modules. And, new System designs provide faster data processing and data transfer, lower power consumption, higher channel counts, and more.

**Contact MECALC for more information about upgrade campaigns and new product releases.**

[CONTACT US](#)

for our full warranty terms and conditions.

TURN YOUR  
**02**  
YEAR WARRANTY

INTO A  
**08**  
YEAR WARRANTY

A LASTING INVESTMENT  
WITH UPDATES AND NEW FEATURES




MECALC CARES  WE RECYCLE




**Module Upgrades**

- FROM 4-6 CHANNELS
- ICP® AND VOLTAGE INPUT
- CAN FD CAPABILITY



**Infrastructure**

- IMPROVED PERFORMANCE
- LOWER POWER CONSUMPTION
- GROWS WITH NEW VERSIONS OF SOFTWARE



**Signal Conditioning Upgrade**

- MORE POWERFUL SIGNAL PROCESSING
- FASTER DATA RATES
- HIGHER CHANNEL COUNTS
- LOWER POWER CONSUMPTION



# WHY CALIBRATE WITH US?

## PROPRIETARY PRODUCT KNOWLEDGE

We use our proprietary product knowledge which only MECALC as the manufacturer can provide to test all analog and digital circuits thoroughly. Other calibration laboratories will typically only calibrate voltage or frequency accuracy, while a MECALC calibration also includes a comprehensive System check and verifies aspects such as noise, drift, grounding, AC coupling, TEDS, excitation, balancing, battery performance and many more.

## ALL FEATURES FASTER

MECALC calibrates all product features faster than other calibration laboratories. We take roughly 1000 measurements in 30 minutes. Doing this manually would take days. Thus, we ensure that your System is available again for you as quickly as possible with a minimum System downtime. Calibration turn-around time can be additionally minimized by using our on-site calibration offers.

## WITH CONFIDENCE

MECALC's ISO/IEC 17025 accreditation offers confidence in the calibration results. MECALC's ISO/IEC 17025 accredited measurements include traceability, uncertainty of measurement, decision rules, guard bands and compliance statements. MECALC is also an ILAC signatory to ensure our calibrations are recognized and accepted worldwide as equivalent to DAkkS or A2LA accredited calibrations.

Regular calibration ensures that the risk of measuring with defective hardware is minimized by detecting defects early. This provides reliable and repeatable measurement results. Regular calibration enables one to establish trends by plotting results on control charts. Should a hardware defect be detected, MECALC product experts can advise on the impact on measurement results and offer repairs without delay. If repairs are required, pre- and post-adjustment calibrations are performed to record any potential changes affecting the repeatability of measurements taken before and after the repair.

## EXTEND YOUR WARRANTY

Calibrating with MECALC could also extend your warranty. Please get in touch with your responsible MECALC partner for more details.



SYSTEM  
UNDER TEST

TRACEABILITY  
ESTABLISHED  
THROUGH A CALIBRATED DIGITAL MULTIMETER

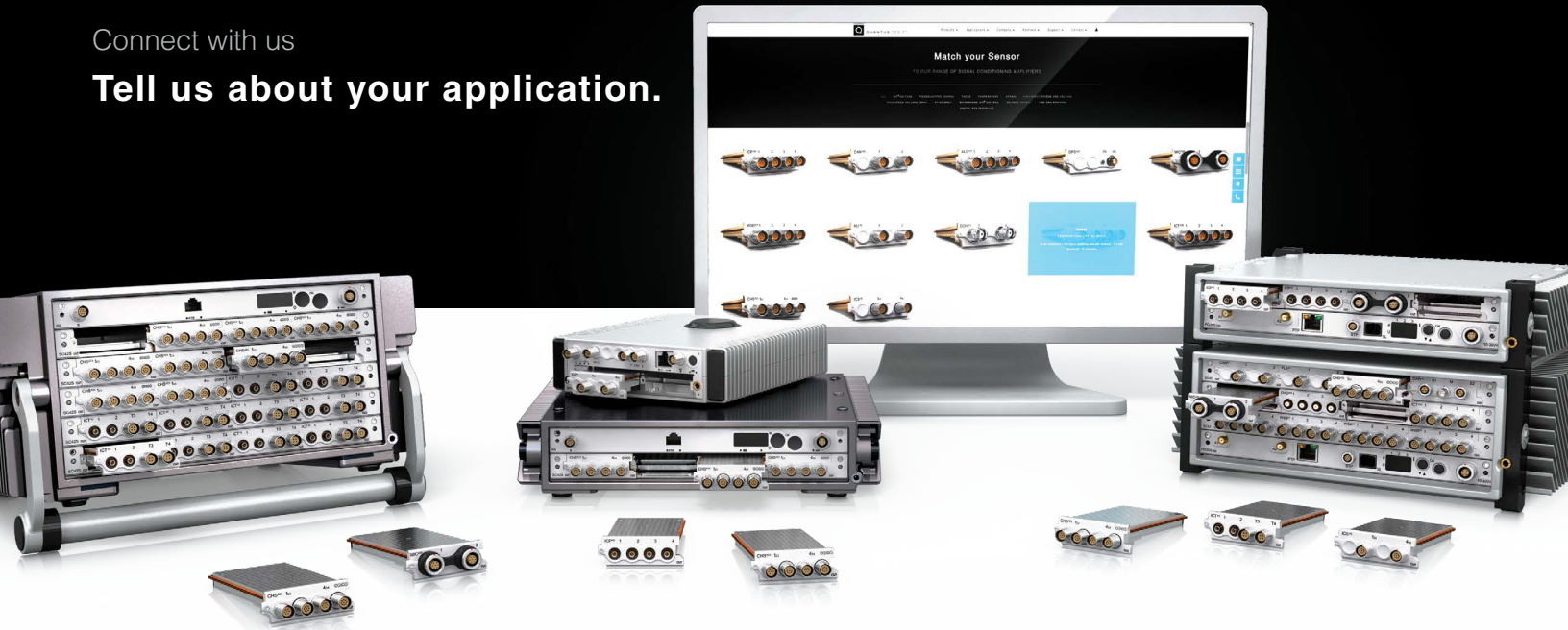
DCAT SYSTEM



# Your Move

Connect with us

Tell us about your application.



# MECALC

technologies

EUROPE | SOUTH AFRICA | USA

[MECALC.com](http://MECALC.com) | [hello@QuantusSeries.com](mailto: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 have been driven to position ourselves at the forefront of new developments and thinking.

Used to optimize noise, vibration and structural integrity in prototype or quality control testing, our **QuantusSeries** 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 m e c a l c d e s i g n