

# Q.raxx station T

Controller with PAC functionality

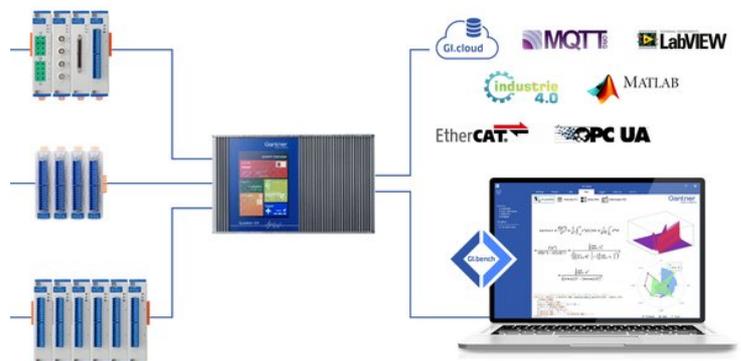
Q.raxx is the ideal 19" rackmount DAQ solution for applications that require high channel density. Q.raxx DAQ systems can utilize an integrated, high-performance controller for communication, control, and data logging purposes. With a controller, multiple Q.raxx systems can be synchronized to each other allowing for efficient DAQ distribution with low jitter and gradual expansion up to thousands of channels.

- High Density  
up to 13 I/O modules per Q.raxx 3U chassis with up to 16 channels per I/O module
- User Friendly  
front panel indicators for module status, power, and input range error
- Fully Customizable  
multiple front panel termination options available
- Maximum Flexibility  
parallel communication available in TCP/IP, CAN, PROFIBUS, Modbus, and EtherCAT



## Key Features

- High-performance controller for high-speed data acquisition  
100 kHz with 8 channels, 10 kHz with 128 channels
- Scalable to 64 DAQ modules  
4 UARTs for connecting 4 x 16 DAQ modules
- Configurable Ethernet interface  
1 GigE, TCP/IP, UDP, Modbus TCP, ASCII, web client and server
- Fieldbus interfaces  
EtherCAT Slave, CAN bus, CAN-FD, 2 x USB 2.0
- 6 Digital inputs  
status, frequency measurement, pulse counting, PWM measurement, and encoder input for measurement synchronization
- Internal high-speed data buffer  
500 MByte (SRAM) and 4 GByte (Flash), expandable via USB (1 Msample/s)
- Multi-Controller Synchronization  
IRIG-B with an accuracy of  $\pm 1 \mu\text{s}$
- PAC functionality with extensive library  
PID controllers, process control, data logging, transfer functions, mathematics, Boolean combinations, and function generators



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## Technical Data

### Microcontroller

Type	Intel Atom® Processor Z530 (1.60 GHz)
SRAM	1 GB (500 MB available for data storage)
Flash memory	4 GB
Real-time clock	battery buffered
Watchdog	Programmable
Operating system	RTLinux

### Ethernet

Frame size	2048 Byte (512 variables read and 512 variables write)
Baud rate	1 Gbps
Data transfer rate	16 MB/s, online or block transfer (32 variables at 100 kHz)
Protocols	TCP/IP, UDP, Modbus TCP (Master and Slave), ASCII, High Speed Port
Isolation voltage	500 VDC

### EtherCAT Slave

Specification	ETG.2000 EtherCAT Slave Information
Frame size	1024 bytes (253 variables read and 253 variables write)
Baud rate	100 Mbps
Cycle time	≥100 µs
Isolation voltage	500 VDC

### CAN bus

Channels	1
Electrical standard	CAN2.0
Baud rate	1 Mbps
Configuration	CAN DBC files
CAN-FD	Optional, with USB-Adapter

### Module Slave Interface (UART)

Channels	4 UARTs
Baud rate	9.6 kbps to 48 Mbps (100.000 measurements/s)
Max. slave modules	16 per UART
Isolation voltage	500 VDC

### USB

Channels	2
Specification	USB 2.0
Data transfer rate	4 MB/s (1 Msample/s)

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## Digital Inputs

Channels	6
Mode(s) of operation	status, frequency measurement, pulse counting, PWM measurement, encoder input for measurement synchronization
Logic voltage	<1 VDC (Low) >3.5 VDC (High)
Input voltage	30 VDC max.
Input current	1.5 mA max.

## Multi-Controller Synchronization

Protocol	IRIG-B
Accuracy	1 $\mu$ s
Electrical standard	ANSI/TIA/EIA-485-A, 2-wire

## Input Power

Input voltage	10 - 30 VDC, overvoltage and overcurrent protection
Power consumption	12 W (approx.)

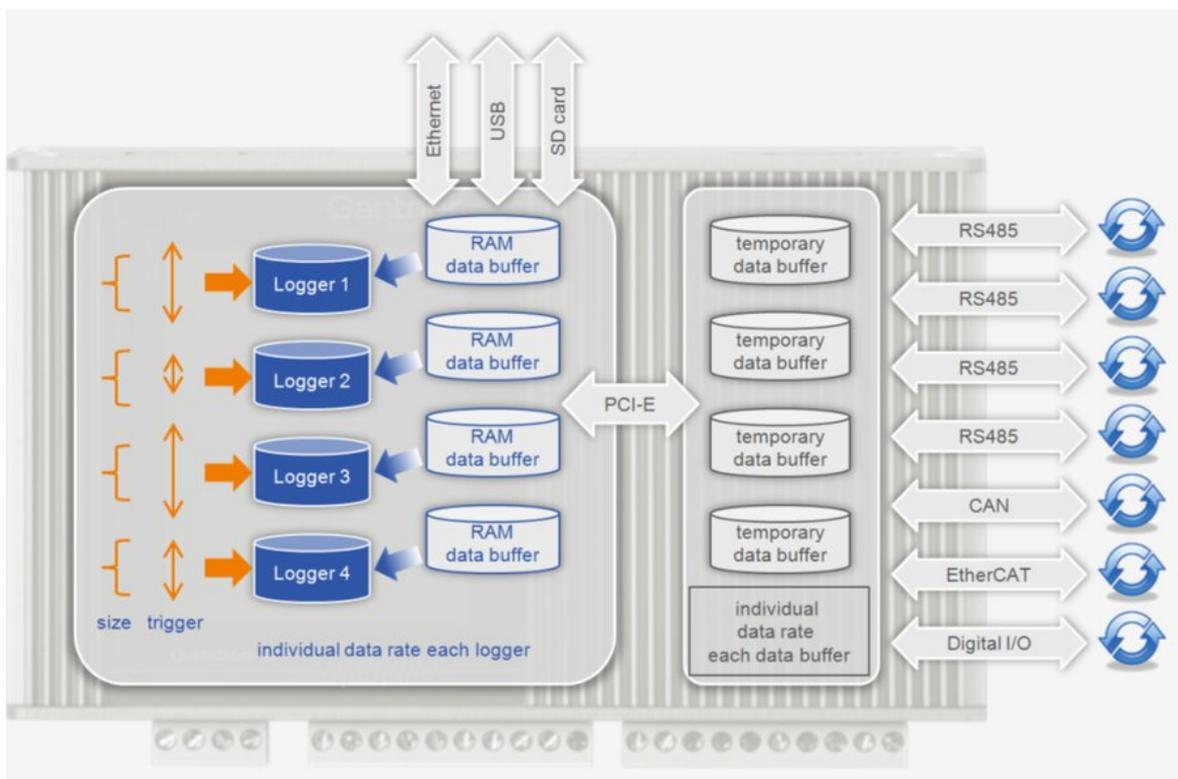
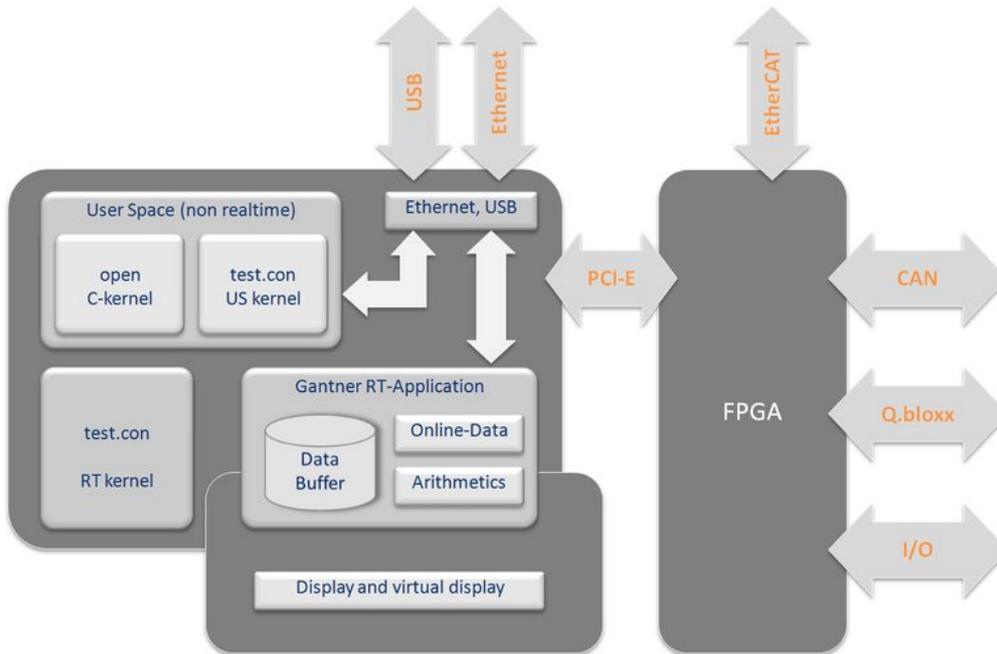
## Environmental Specifications

Electromagnetic compatibility	according to IEC 61000-4 and EN 55011
Operating temperature	-20°C to +60°C
Storage temperature	-40°C to +85°C
Relative humidity	5 - 95 % at 50°C (non-condensing)

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## Functional Diagram



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## Software Add-On

Matlab	Available for 32/64-bit Versions, read buffer data
DasyLab	For DasyLab Versions >= 15, read buffer data, read/write online values
LabView	For Versions >=2016 (older versions upon request), Available in 32/64-bit, read buffer data, read/write online values
test.con	Simple graphical programming for edge computing devices

## Plug-ins

Available plug-ins need Gl.monitor for configuration, output files can be send automatically to configured receivers

Rainflow	Cycle counting algorithm Rainflow HCM according to Colormann Seeger with matrix in .scv format
FFT	Frequency analysis with selectable window type, frequency range and channels of bins (resolution) with output in .scv format

## Mechanical information

Material	Aluminum
Measurements (W x H x D)	60 x 128 x 118 mm
Weight	approx. 200 g

## Ordering Information

Article number	897541
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