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Q330M+

AUG MEETING – CALGARY, ALBERTA

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Q330M+ Overview

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Q330M+



Q330M+ Overview

Features

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- CD1.1, native Q330, and SeedLink communication protocols
- Data packet authentication via Spyrus Authenticator device (DSA, ECDSA)
- PTP Timing option
- High input impedance and gain settings of 1, 2, 4, 8, 16, 32, 64, 128 for passive sensors selectable per sensor group
- Webserver for setup and configuration via GUI
- Optional Auxiliary Channel Processor (ACP) adds 5 16-bit auxiliary channels and one serial digital interface for environmental sensors
- Digital I/O for vault intrusion switch
- Dedicated power input for sensor power



Q330M+ Overview

Technical Specifications

- 3 or 6 main channels with 24-bits
- 6 auxiliary channels with 8-bits
- Over 50 SOH channels (temperature, voltages, currents, GPS status, sensor boom positions)
- 141dB RMS sine wave dynamic range (\approx 150dB peak-to-peak sine wave)
- Configurable linear or minimum-phase filtering
- Sample rates 1000, 500, 250, 200, 100, 50, 40, 20, 10, 1
- Time accuracy $< 1\mu\text{s}$ when locked to GPS or PTP server
- Wide input voltage range 9-36VDC (nominal 12V)
- Temperature range -20° to $+60^{\circ}\text{C}$ (fully specified); -40° to $+70^{\circ}\text{C}$ (guaranteed operative)
- Sensor control lock/unlock & re-center
- Calibration functions step, low-THD sine wave, MLS or random binary



Q330M+ Overview

Data

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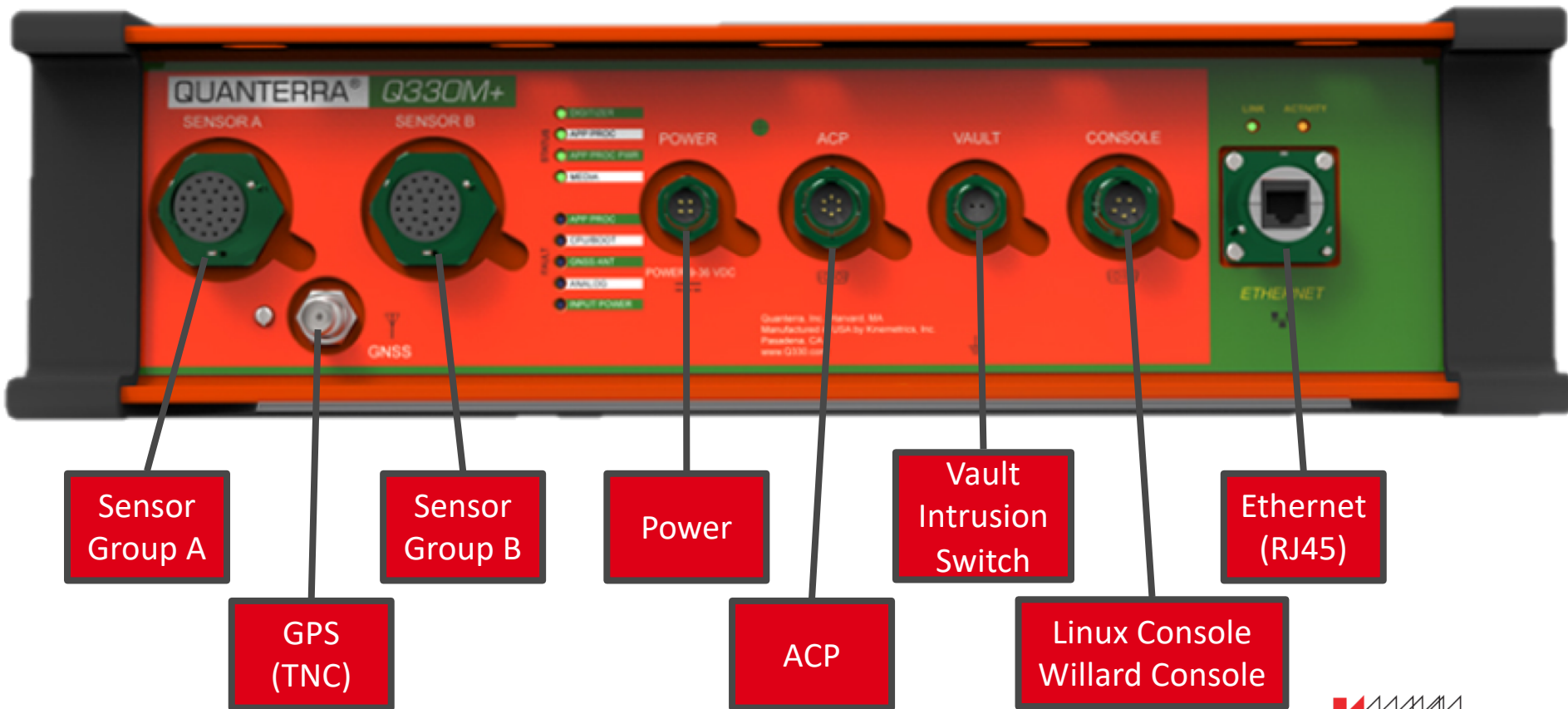
- (1) Ethernet port 10/100BaseT (full Linux IP protocol stack, hardcoded non-routable IP address: 169.254.10.10/16)
- (3) Virtual data ports: CD1.1, native Q330, and SeedLink
- (1) USB2.0
- (2) Console ports at 115kbaud
- Data storage on PC/MAC/Linux-formatted removable SLC SD card, standard 8GB (up to 32GB)
- Data copying or mirroring on optional external USB flash, standard 64GB (up to 256GB)



Q330M+ Overview

Connections

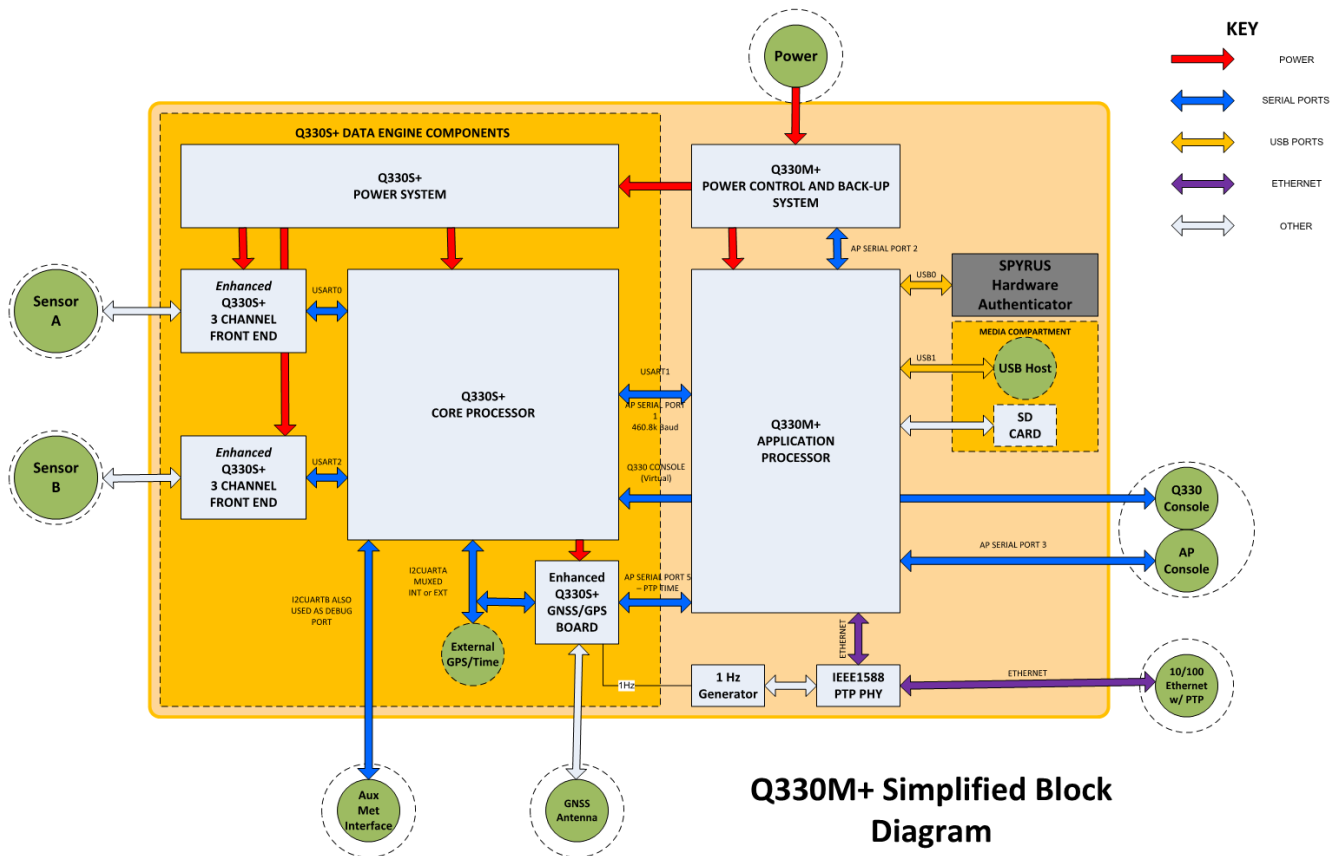
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Q330M+ Overview

Simplified Block Diagram

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Q330M+ Simplified Block Diagram

Software Block Diagram



How to Communicate with the Q330M+

Console Connection

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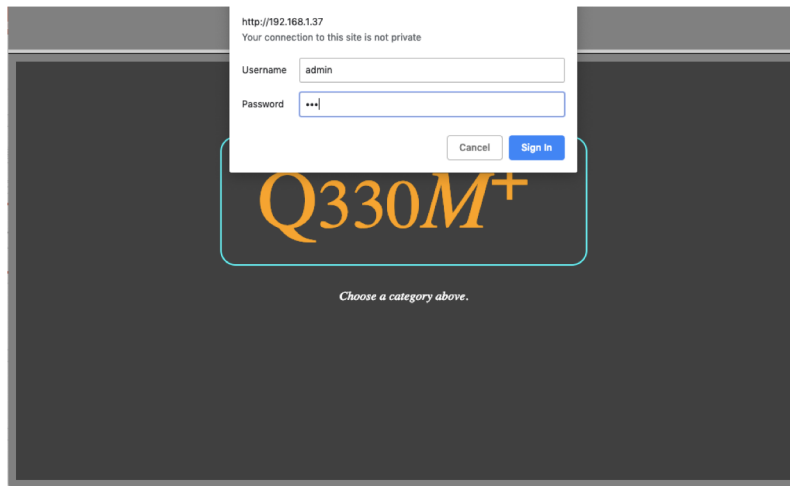
Procedure

- A. Establish Connection to the Linux console
 1. Connect console cable to 'Console' interface
 2. Connect 9-pin D-sub connector labeled 'L' to computer
 3. Using a serial client (e.g., minicom, PuTTY) establish an RS-232 (asynchronous serial) communication at with 115.2kbaud, 8 bit, no parity, and 1 stop bit (8N1)
 4. At the login prompt enter "root" and then the password "kmi"
- B. Establish Connection to the Quanterra console
 1. Connect console cable to 'Console' interface
 2. Connect 9-pin D-sub connector labeled 'Q' to computer
 3. Using Willard as usual

How to Communicate with the Q330M+

Web Interface

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Procedure

- A. Establish Connection with the hardcoded IP Address
 1. Connect Ethernet Cable between Q330M+ and Laptop
 2. Configure NIC of laptop, e.g., 169.254.10.222/16
 3. Open browser and type in 169.254.10.10
 4. Enter Username: admin; and Password: kmi

How to Communicate with the Q330M+ Web Interface

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Q330

DigitizerQ330CDSystemStatusLogout

ConfigurationStatusCommandsConfigurationWaveform

System1System2Data1Data2Data3Data4

Load Local XML Configuration File

Choose FileNo file chosenLoad

Load Remote XML Configuration File

Load

Configuration Status

'Save As' to generate and download file [6971.xml](#)

GPS

Source: ☒ Internal GPS ☐ Network Time GPS Power: ☒ Continuous ☐ PLL Lock or Max.

Any change to 'Source' requires save to EEPROM and digitizer reboot

Starting Hour
0:00Update

Sensor Control

Enable	Sensor A Function	Active-Volts	Enable	Sensor B Function	Active-Volts
Gen-1	Idle	<input type="radio"/> 5V <input checked="" type="radio"/> 0V	Gen-1	Idle	<input type="radio"/> 5V <input checked="" type="radio"/> 0V
Gen-2	Idle	<input type="radio"/> 5V <input checked="" type="radio"/> 0V	Gen-2	Idle	<input type="radio"/> 5V <input checked="" type="radio"/> 0V
Gen-3	Idle	<input type="radio"/> 5V <input checked="" type="radio"/> 0V	Gen-3	Idle	<input type="radio"/> 5V <input checked="" type="radio"/> 0V
Cal	Sensor A Calibrate	<input checked="" type="radio"/> 5V <input type="radio"/> 0V	Cal	Idle	<input type="radio"/> 5V <input checked="" type="radio"/> 0V

STS2STS5GurHIGurLoNoneSTS2STS5GurHIGurLoNone

Update

How to Communicate with the Q330M+

Web Interface

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SSI


Digitizer

Q330CD

System

Status

Logout



Authentication

CONFIG

GENERIC PARAMETERS

AUTHENTICATION

DIGITIZER

CHANNELS

CD SENDER

READ CONFIG

WRITE CONFIG

VIEW CONFIG

RESET CONFIG

KEY MGMT

HELP

Legend:

Untouched

Visited

Save Failed

Saved

CARD PIN: 1234

CARD TYPE: spyrus

KEY TYPE: ECDSA

AUTH CARD SLOT: 1

COMMON NAME: I13H1

LOCALITY NAME: I13CL

UNIT1 NAME: Data Authenticators

UNIT2 NAME: IMS

ORGANIZATION NAME: CTBTO

UPDATE | UNDO | DEFAULT | ADVANCED | HELP

Form Successfully Updated

How to Communicate with the Q330M+

Web Interface

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Status

[Digitizer](#) [Q330CD](#) [System](#) [Status](#) [Logout](#)

Health Status: OK

Site: I13H1
Property Tag: 6977
Serial No: 0360009CFBCE6017
Temperature: 28c
Clock Qual/Ph: 100% / 0%
Lat/Lon/Elev: / /
Time Mode: PTPSLAVE
TCX0: Consistency=100
OS Time: Fri May 24 17:58:03 UTC 2019
OS Uptime: up 57 minutes
Load Avg: 4.48
Mem Free: 362168kB
RT Uptime: 17 minutes
SW Ver: KMI Q330MPlus Update 2.5

Health Issues: None

CD Send: Channels=5 Signed=Yes RXOps=62 TXOps=3094 IOErrs=12

PSU: volts=12.789 Amps=0.269

Filesystem	Size	Use%	Mounted on
/dev/root	2.5G	58%	/
/dev/mmcblk0p3	998M	12%	/mnt/sysrw
/dev/mmcblk1p1	29G	1%	/mnt/data1

[Log Info](#) [Help](#) *This page will auto-refresh.*

How to Communicate with the Q330M+

Web Interface

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System

Network Parameters

Host Name

Domain Name

Eth0 Mode ☐ DHCP ☒ Static

IP Address

Netmask

Gateway

DNS1

DNS2

Runtime Parameters

Q330 ESN

Q330 Auth Code

Ring Server Size MB

Q330CD/SSI Startup ☒ Enable

DNS1

DNS2

Runtime Parameters

Q330 ESN

Q330 Auth Code

Ring Server Size MB

Q330CD/SSI Startup ☒ Enable

PTP Master ☐ Enable

PSU Parameters

DCOn Volts

DCOff Volts

APOn Volts

APOff Volts

Q330M+



Thank You Questions?