RELEASEnotes

QUANTUMX SOMAT XR

March 2017

Thank you for choosing HBM as solution provider for your measurement, testing and analysis tasks.

This document shows product news and dependencies around the QuantumX and SomatXR data acquisition series, for instance modules, accessories, firmware, PC software, documentation, services and trainings.

As this document is also part of the DVD shipped together with every single module, please check whether an updated version is available: http://www.hbm.com

We always recommend using the released firmware and software shown in this document!

Your opinion counts a lot. Please contact us and let us know how to improve our products and services. Many thanks in advance: http://www.hbm.com/support/

What's new or updated?

New modules

- **MX460B-R SomatXR Rugged Digital Measurement Module**
  - 4 channels, 100 kS/s per channel
  - Input type: digital pulse counter, digital rotary encoder (single / dual lane, w/ index), frequency and speed (rpm), pulse-width-measurement (PWM), HBM torque flange signals.

Module Firmware 4.10.4

- **New Functionality**
  - CAN: Saturated integer by CAN encoding. When the actual signal exceeds the number of specified bits in the CAN message you have two possibilities: 1. Just truncate the additional bits (modulo). This was the behavior of older firmware versions. 2. The value in the CAN message remains at the limit (saturation).
  - CAN: New CAN input type Boolean. This makes comfortable stuffing digital IO signals in CAN messages.
  - All modules: Possibility to analyze data streaming. The firmware logs all possible reasons when data streaming is interrupted, i.e. disconnection of module.
  - MX879B efficient digital IO data transfer: Digital IO signals are now treated as Booleans (and not as 32 Bit unsigned integers). Up to 64 Boolean digital IO states can be transferred in one data package. This saves bandwidth and allows an easy transmission of digital IO via MX471B to CAN bus. Of course, CAN messages could also represent several digital signals. Besides the digital IOs, alarm signals are Booleans too.

  - MX460(B)/MX410(B): New scaling type: segmented linear and polynomial scaling. MX410(B): To support linear table scaling, we need to set a gain based scaling for analog voltage output on the device, which should be calculated from first and last (after sorting!) point-x. If polynomial scaling is requested and analog output is active, parameterization shall be rejected.
  - CAN: Use “channel name” instead of “signal name” in EtherCAT. Signal name describes the sensor; channel name can be defined individually. Before, using more than one CAN signal of the same type you were not able to distinguish them in EtherCAT (because of identical signal name).
- **Fixed Issues**
  - EtherCAT/Morphee: module declines inconsistent parametrization (e.g. 1Hz filter @ 19.2 kS/s data rate).
  - Timestamps: It could occur that the very first sample after changing the datarate came with the wrong measurement pattern.
- **Known Issues**
  - EtherCAT: Parametrize filter settings: After setting filter "OFF", no further parametrization via CANopen-on-EtherCAT has any effect. This is also true when another client switches off the filter (e.g. MX Assistant, catmanAP, ...). You won´t get an error message.

PC Software

- **MX Assistant 4.61**
  - Fixed: Copy&Paste signal names in edit mode.
  - New: Option to display CAN IDs in hexadecimal (default: off). Can be activated via general parameters.
  - New: Module error status now for whole tree branches possible.
  - New: HBM sensor database with new sensors.
  - Fixed: Assigning a CAN signal to analog voltage outputs, for example MX878B, output scaling is parameterized properly.
  - Fixed: MX410(B)/MX430B: Analog voltage output displays now filter settings.
  - New: CAN bus outputs - digital sources now supported.

- **catmanAP 5.0.1**
  - **New functional package "EasyMonitoring"**, especially for CX22B-W data recorder:
    - parallel recording with individual triggers and sample rates
      Example Bridge:
      - slow data acquisition of all channels
      - Recording of selected channels with fast sample rate after a trigger event, e.g. left lane with high load
    - (S)FTP upload of measurement files to a data server (cloud)
    - Send push notification messages to smart phones or tablets triggered by detected events/alarms (download app from app store for Android or Apple)
    - Integration of NMEA based weather station measuring wind speed, barometric pressure, air temperature, humidity, rainfall and hail. For example Vaisala WXT520 weather station.
  - **New functions for Mobile Vehicle Testing and RLDA**
    - Synchronized acquisition, display and analysis of CAN raw data, acquired by MX471B, parallel to analog signals. Some bus traffic can be decoded online with a *.dbc.
    - Extended support for CCP/XCP communication
  - **New functions for Lab Testing**
    - Use CX22B-W optionally as gateway from FireWire to Gigabit maximizing data throughput. Direct access to all MX modules "behind" CX22B.
    - peak-valley computation
    - Zoom In / Out all objects in visualization to easily adapt to any screen size
    - MX878B/MX879B: analog voltage output and digital voltage output control via user interface allows you to link a visualization object of type controller (slider, knob, switch slider or switch) to an analog or digital output.
    - MX878B/MX879B: parameterize and use real-time PID controller.
    - Online computation: table or polynomial based linearization of signal inputs instead of onboard linearization in MX module.
    - Angle synchronous display and analysis of combustion engine signals.
  - **New functions for analyzing *.sie (SomatXR and eDAQ)**
    - Analyzing video recordings including a synchronized playback of video and other digital and analog data
    - Display CANraw data and decode with *.dbc
    - Start time of test and test description
    - GPS raw messages (NMEA messages) including timestamps can be extracted to a separate text file

Documentation

- **New**
  - MX460B-R data sheet: SomatXR ultra-rugged digital module
  - SCM-TCx leaflet: thermo mini to SubHD15
  - CASEMOUNT2+3 leaflet: Mounting brackets for SomatXR modules
  - CON-S3005 leaflet: Etherne coupler M12 to extend Ethernet cables
- **Updated datasheets**
  - CX22B-W: Data Recorder, now catman v5 recording functionality + gateway option
  - MX1615B(-R): Bridge Module, now supporting ¼ bridge / 3 wire with carrier frequency
  - MX471B(-R): CAN Module, now supporting CANraw
  - MX460B: Digital Rotary Module, now supporting crank wheel and angle measurement
  - MX238B: High Precision Full Bridge Amplifier, minor changes
  - MX430B: Precision Full Bridge Dynamic Amplifier, minor changes
  - UPX001_UPX002: Uninterruptible Power Supply, now also for QuantumX
  - SomatXR Accessory: Guide for the complete SomatXR accessory, update.
- **Updated operating manuals**
  - QuantumX general operation manual: minor changes
  - SomatXR MX manual operation manual: minor changes
  - CAN bus operating manual: new CAN raw

Version Chart

QuantumX / SomatXR system PC software (DVD and download)	**Version 4.61 (* = has been updated)**
MX Assistant	4.61 *
FireWire driver for Microsoft Windows™	1.45.0.0 (please update)
HBM Device Manager	1.0.0.1

Device / module firmware	**Version**
QuantumX Data Recorder CX22B and CX22B-W	5.0 * (install catman, when in maintenance)
QuantumX MX840B, MX440B, MX1615B, MX1601B, MX1609KB/TB, MX410B, MX460B, MX430B, MX238B, **MX403B, MX809B**, MX471B, MX878B, MX879B, CX27B and older modules…	4.10.4 *
SomatXR Data Recorder CX23-R	1.14.0 *
SomatXR MX840B-R, MX1615B-R, MX1601B-R, MX1609KB-R, MX411B-R, MX471B-R, MX460B-R	4.10.4 *

Commercial PC software (DVD and download)	**Version**
catman®EASY / AP	5.0.1 *
catman®Enterprise	7.0 *
HBM Common LabVIEW™ driver	3.0
HBM Common API driver for Visual Studio .NET	3.1
QuantumX CANape driver	4.1.3

Minimal Requirements for the PC

- Software:
  - Windows®XP, Vista™, 7, 8.x or 10
  - Microsoft Internet Explorer Version 8.0 or newer
  - Microsoft .NET Framework 4.0
    if necessary, needs to be manually installed using Windows-Update under Windows 8
- Hardware:
  - 32 or 64 Bit architecture
  - Intel Pentium 1 GHz or equivalent
  - Memory (RAM):
    - 512 MByte under Windows® XP
    - 1024 MByte under Windows Vista™, 7, 8.x or 10
  - Graphic card and monitor with resolution of at least 1024 x 768 pixels
  - Up to 100 MByte free hard disk memory (more in case of lacking .NET Framework)
  - Ethernet interface (10/100/1000 MBit)
  - Optional FireWire 1394b adapter (PC-CARD, expressCARD/34, PCI, PCIexpress or Thunderbolt).