SOMAT XR

July 2019
Version 2.10.0

Thank you for choosing HBM for your test, analysis and measurement task. This document shows the released product package of SomatXR. Please always check whether an updated version is available at: http://www.hbm.com. Please note that the firmware has been optimized. We recommend installing the latest firmware on all existing modules.

What's new?

Modules / Firmware
- **Firmware**
  - CX23-R Firmware Version 2.10.0
  - MX Module Firmware Version 4.12.32.0
    - Included in CX23-R firmware to update from the Web Interface.
- **New Module Support**
  - None

Software Tools / Libraries
- **Software Updates**
  - None

Documentation
- **New Documentation**
  - None
- **Updated Documentation**
  - CX23-R / EX23-R User Manual   Version 12.0
  - MX Modules Quick Start Guide (English / German)   Version 6.0

Accessories
- **New Accessories**
  - None
- **Updated Accessories**
  - None

A complete listing of all supported modules, accessories, and documentation of the SomatXR line is available at the end of these release notes.

Notes about the CX23-R firmware v2.10.0

- **New Features**

  - **Spectrum Chart support in the Single Channel Editor.** A new spectrum tab has been added as a chart type in the Single Channel Editor to support live data readouts during channel configuration.
  - **Touch screen and field friendly interactive triggers.** The interactive triggers have bee modified to be more friendly to touch screens in field situations. Please see the help system for more information.
  - **Import / Export System Preferences.** Support for exporting and importing system preferences has been added. Please see the help system for more information.
  - **SIE sample count metadata object for Time History channels.** A new SIE metadata object has been added for Time History DataMode channels to indicate how many data samples exist for that particular channel.
  - **RAW CAN Message Display.** The ability to see Raw CAN Messages and sequentialized CAN data has been added to the Single Channel Editor. Users can now view and capture message data when configuring the a RAW CAN channel in the Single Channel Editor. Or can view sequentialized data when configuring a CAN database channel in the Single Channel Editor. See the help system for more information.
  - **Keyboard shortcuts.** Keyboard shortcuts have been added to various contexts of the GUI to make field usage of the system more accessible. See the help system for more information.

- **Optimizations**

  - **CAN Channel data storable in integer formats.** In order to optimize SIE file size, options have been added to store selected CAN Channel data in integer formats.
  - **Max Test Start delay increase.** In order to accommodate some sensors which require longer times to stabilize, the start time delay maximum setting has been increased to 120 seconds.
  - **General user experience optimizations and bug fixes.** General optimizations in usability, and bug fixes have been applied to the user interface.
  - **SKB filename display in GUI.** The SKB file name is now displayed on the Databases page with the "Attached" or "Detached" text.
  - **XY Plot channel selection workflow improvements.** The process for working with the XY Plot chart type has been enhanced for greater usability and speed. Details are available in the help system.
  - **Chart type selection optimizations.** Selecting a chart type is now a single mouse click operation to expedite setting up large numbers of chart displays.
  - **SIE file size reduction via integer format CAN channel data.** Using the CAN channels on the XR, float64 data type will only be used if the signal sources are float64, and float32 will only be used if the signal sources are float32. The resultant SIE file size should be reduced, and the amounts will vary depending on the specific configuration of your test.
  - **Sorted of CAN Channels.** Sorting of CAN channels has been optimized to sort by connector and then by the name.

- **Bugs Fixed / Issues Resolved**

  - **Low sample rates combined with test stop options issue.** In certain configurations when using low sample rates and test stop parameters, tests would prematurely exit. This issue has been resolved.
  - **Computed Channels and DataModes with numerical names issue.** In certain situations when using Computed Channels or DataModes whose names are only numbers, the system would error. This issue has been resolved.
  - **CAN request message with message strings with only decimal digits issue.** Previously if a CAN request message string only contained decimal digits [0-9], the system would error. This issue has been resolved.
  - **Editing MX1615 channels.** Previously when working with the MX1615 in a test setup, the system would be unable to save test setups. This issue has been resolved.
  - **SIE filename renaming issue.** Previously when saving an SIE file with a different name that differed only by changing the capitalization of a single character in the previous SIE file name, a system error would result. This issue has been resolved.
  - **'Stop test at' parameter when using test start delay issue.** Previously when using the "Stop test at:" parameter with a "Test start delay" specified, the "Stop test at:" parameter would not be honored. This issue has been resolved.
  - **SIE file size 2GB cap issue.** In the previously released version, a bug was introduced that prevented SIE files larger than 2GB from being created. This issue has been resolved.
  - **SIE files with special characters issue.** Previously when using certain characters or strings in the SIE file name, it would cause the SIE file to be undownloadable. This issue has been resolved.
  - **Single Channel Editor live chart failure on units selection issue.** Previously when the user opened the Single Channel Editor after selecting Electrical units, the live charts would fail to start. This issue has been resolved.
  - **Trigger channel names that are numbers issue.** Previously when attempting to use a trigger channel where the channel name was a number, an error would result. This issue has been resolved.
  - **Adding GPS channels from networked systems issue.** Previously when attempting to add GPS channels from two systems on a networked setup, the GUI would disallow certain channels. This issue has been resolved.
  - **Various DBC importer issues.** Previously when using certain dbc files with extended signal types, the DBC importer would not be able to import the database. This issue has been corrected.
  - **General user interface and rendering bug fixes and optimizations.** The GUI as always has undergone several minor issue bug fixes as well as usability optimizations.
  - **DataModes setup dialog rendering issues.** In certain situations there would be rendering or usability anomalies when configuring DataModes. These issues have been resolved.

- **New or revised issues and advisories**

  - **Advisory on SIE data file names.** Google Chrome and Mozilla Firefox are currently the recommended browsers for accessing the web interface of the XR system. However, Chrome and Firefox browser updates have removed recognition / support of some special characters in file names, in some cases resulting in faulty SIE downloads or unrecognizable SIE file names. To completely preclude potential problems, it is recommended that both SXR setup names and SIE file names consist of only numbers, letters (upper and lower case), and the '_' character. Of course, users can use special characters if they desire and do not encounter problems. If problems are encountered, the user can rename the SIE files via the user interface and run the download again. Following are some known problems. Using the '#' character will result in problems when using the Download Manager application. Using the '(' or the ')' character will result in problems using the current version of Firefox.

- **Errata (advisories)**

  - **Recommended browsers.** The recommended browsers when using the eDAQXR web interface are up to date versions of Chrome and Firefox. The web interface may work on other browsers but may result in degraded or undesirable operation.
  - **SIE file naming conventions when using FTP upload.** Please note that file naming conventions and special character usage can affect whether the FTP server you are uploading to, will accept the file. There are characters that are illegal file name characters in Windows systems, and likewise for Linux systems. Please avoid these illegal characters when considering what operating system your FTP server is running on.
  - **Limitations on CAN database Vector DBC file export.**
    - CAN database Mode dependent channels are currently excluded.
    - CAN database CCP channels are currently excluded.

- **Errata (known issues)**

  - **Single channel editor locks up very rarely.** The SCE.can get into a state where it cannot be closed. This can happen when the SCE automatically starts a Strip chart or other data display when opening the SCE dialog window, and the system cannot provide data for the display for some reason. The user can refresh the browser to close the SCE dialog window. There is also a User preference to not automatically start any display in the SCE dialog window.
  - **Sporadic MX module HANDLE SUBSCRIBE error.** This error is seen rarely after a system boot from a power cycle or software initiated reset. The system reboots on this error and will automatically restart an SIE test that was running when the initial power cycle or software initiated reset occurred.
  - **Limitations on using MX471 modules.** The MX471 can be overloaded and not able to keep up with the processing required if there are too many CAN channels assigned. This is significantly affected by the CAN bus load – specifically the broadcast rate of the CAN messages. For example, the following test scenario will result in an overload. Test using all 4 ports with 128 channel assigned to each port (using 32 CAN messages per port) broadcast at 100 messages per second. In most cases, the XR system will reset on an overload situation, but not always. As such, users are strongly advised to avoid MX471 overload situations – particularly for unattended testing.
  - **Web browser exceptions. The** web browser interface will sometimes lock up or not properly reflect the actual states of the hardware or test. Refreshing the browser will usually correct this.
  - **Potential loss of data sync issues when using Firewire with MX Modules.** In certain usage scenarios, MX modules can lose PTP sync when a test run is restarted after a reboot. Connecting an MXB module to any other MXB module using FireWire without both having an

Ethernet connection to the data processor can result in acquired data not being synchronized to the data processor on one or more MXB modules.

o **EX23-R PTP Synchronization with MX modules using ports 5 and 6.** Using a system connected with MX modules connected to ports 5 or 6 on the EX23-R can result in the MX modules losing sync with the XR until the EX23-R is reconfigured properly. Reconfiguring these ports is fairly trivial. Please contact HBM Support at support@usa.hbm.com if your test application requires using MX modules on ports 5 and 6.

o **Push notifications on iOS devices.** There is a known issue with the iOS HBM Push application, where notifications will not be pushed, but instead have to be fetched by closing or reopening the app on your iOS device, or performing a pull down refresh of the notification list.

o **Setups utilizing multiple video channels from a multi-channel video encoder is not supported.** Although the CX23-R will allow the user to specify multiple video streams from a multi-channel encoder, using more than one channel from a multi-channel encoder is not supported, and configuring a test with this configuration may in not as-configured results, and is at the user's own risk. It is recommended the user only use one channel on a multi-channel video encoder.

o **Live video displays when using the Axis m7001 video encoder.** The Axis m7001 encoder can be used, but there are limitations on video display capabilities with this old and now discontinued Axis product. Video frames will be properly stored in the SIE file; however, viewing of the video frames is supported in the Hardware view only. As such, video frames cannot be displayed when the SIE test is running.

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RELEASEnotes

Complete Listing of Modules, Accessories, Documentation and available Support Software Tools / Libraries

Modules

SomatXR: Data Processor with 64 GB memory	1-CX23-R-64-2
SomatXR: Ethernet Switch PTP	1-EX23-R
SomatXR: Standard Amplifier	1-MX1601B-R
SomatXR: Bridge Amplifier	1-MX1615B-R
SomatXR: Thermo Amplifier	1-MX1609KB-R
SomatXR: Universal Amplifier	1-MX840B-R
SomatXR: Highly Dynamic Amplifier	1-MX411B-R
SomatXR: CAN module	1-MX471B-R
SomatXR: Frequency Amplifier	1-MX460B-R
QuantumX: Measuring Amplifier / 16 channels	1-MX1601B
QuantumX: Bridge Amplifier / 16 channels	1-MX1615B
QuantumX: Thermocouple Type K / 16 channels	1-MX1609KB
QuantumX: CAN Module / 4 channels	1-MX471B
QuantumX: Analog Voltage Output	1-MX878B
QuantumX: Digital Dynamic	1-MX460B
QuantumX: Universal Amplifier	1-MX840B

Documentation

CX23-R / EX23-R User Manual	Version 12.0
CX23-R Quick Start Guide	Version 3.0
EX23-R Quick Start Guide	Version 3.0
SomatXR Accessories Data Sheet (English / German)	Version 7.2
CX23-R Data Sheet (English / German)	Version 2.3 (2.2)
EX23-R Data Sheet (English / German)	Version 3.0
SomatXR Safety Manual	Version 2.1
MX1601B-R Data Sheet (English / German)	Version 4.1
MX1609KB-R Data Sheet (English / German)	Version 6.0
MX1615B-R Data Sheet (English / German)	Version 7.1
MX840B-R Data Sheet (English / German)	Version 3.0
MX878B Data Sheet (English / German)	Version 2.0
MX411B-R Data Sheet (English / German)	Version 2.0
MX471B-R Data Sheet (English / German)	Version 2.0
MX Modules User Manual (English / German)	Version 6.1
MX Modules Quick Start Guide (English / German)	Version 6.0
1-UPX00x-2 UPS Data Sheet (English / German)	Version 2.0
1-SCM-R-TCX-2 Data Sheet (English)	Version 2.0
Reference Manual For libsie	Version 1.0
1-SCM-R-SG120-300-1000-2 Data Sheet	Version 2.0
1-CON-S3005-2 Adapter Data Sheet	Version 1.1
NTX003 Data Sheet	Version 1.1
1-CASEMOUNT-UMB-2 Data Sheet	Version 1.0
1-CASEMOUNT2-2/3-2 Data Sheet	Version 1.0

Software Tools / Libraries

• HBM Device Manager	v1.0.0.1
• XR Download Manager	v1.2.2
• SomatXR Emulator	v2.8.4
• libsie SIE library	v1.1.5

Accessories

• Xcode to Xcode Adapter w/Mount	1-CON-S3005-2
• Fastener CaseLink-Rug, 160mmx80mmx12mm	1-CASELINK-RUG-2
• 2 Unit Mounting System, 200mmx130mmx50mm	1-CASEMOUNT2-2
• 3/4 Unit Mounting Syst,295mmx130mmx50mm	1-CASEMOUNT3-2
• Universal Mounting Bracket	1-CASEMOUNT-UMB-2
• Voltage conditioner .3M 840BR adapter	1-SCM-R-VC60-2
• ¼ bridge 1000 .3M 840BR Adapter	1-SCM-R-SG1000-2
• ¼ bridge 350 .3M 840BR adapter	1-SCM-R-SG350-2
• ¼ bridge 120 .3M 840BR adapter	1-SCM-R-SG120-2
• K type thermal couple .3M 840BR adapter	1-SCM-R-TCK-2
• E type thermal couple .3M 840BR adapter	1-SCM-R-TCE-2
• ICP, with BNC .3M 840BR adapter	1-KAB430-0.3
• AC/DC power supply unit (24 V, 120 W)	1-NTX003-2
• Power supply cable (CX23-R to MX module)	1-KAB2110
• Power supply cable (low loss) with exposed wires	1-KAB2115
• Mounting brackets	1-CASEMOUNT
• Ethernet cable (CX23-R / EX23-R to MX module)	1-KAB2100
• Ethernet cable (CX23-R / EX23-R to PC / access point)	1-KAB2106
• Ethernet cable (CX23-R to EX23-R)	1-KAB2107
• Push-pull sensor cable	1-KAB183
• Break away sensor cable	1-KAB184
• Digital I/O cable with exposed wires	1-KAB2101
• GPS/AUX adapter (CX23-R to EGPS-5Hz)	1-KAB2102
• CAN adapter (CX23-R to SomatCR KAB292)	1-KAB2104
• GPS/AUX cable with exposed wires	1-KAB2108
• CAN cable with exposed wires	1-KAB2109
• Precision GPS Receiver-200Hz	1-EGPS-200-B-2
• Precision GPS Receiver-200Hz-PLUS	1-EGPS-200-P-2
• EGPS-200 GPS Antenna	1-EGPS-200-ANT-2
• EGPS-200 GPS Template – RTK	1-EGPS-200-TEM-2
• Trigger Cable for EGPS-200	1-SAC-GPSTRIG-2
• Cable Extensions	1-SAC-EXT-MF

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Accessories (cont'd)

• Full-bridge adapter (to eDAQ M8 connector) (4 wire - no sense line)	1-KAB2117
• Quarter-bridge adapter (to eDAQ M8 connector) (3 wire - no sense line)	1-KAB2118
• Voltage adapter (to eDAQ M8 connector)	1-KAB2119
• ¼ Bridge Adapter (ODU 14 pin to M8F connector)	1-KAB2122-0.3
• CX23 + eDAQ sync cable (M12 to LEMO)	1-KAB2111-2
• GPS Receiver - 5Hz Update	1-EGPS-5HZ-2
• Pelican Case - eDAQ-lite/SXR	1-PEL1520-2
• Pelican Case - eDAQ/eDAQ-lite/SXR	1-PEL1600-2
• AC/DC Power Supply (24 V, 30 W) ODU 4p	1-NTX002
• Plug (ODU 4p push-pull)	1-CON-P1001
• Power supply (ODU, 5 m, open)	1-KAB294-5
• Connecting elements	1-CASELINK
• Carrying handle	1-CASECARRY
• 4 protective caps for ODU sensors	1-CON-A2013
• 2 protective caps for ODU system	1-CON-A2014
• FireWire ExpressCard adapter	1-IF-002
• FireWire intermodule (ODU, IP68, 2 m)	1-KAB272
• FireWire PC (ODU / FW, IP68, 3 m)	1-KAB276-3
• FireWire (module to PC, IP68, 5 m)	1-KAB293-5
• Ethernet cable (IP65/5m)	1-KAB273-5
• Connector (ODU, 14 pol, IP68)	1-CON-P1007
• Plug (ODU 14p break-away)	1-CON-P1016
• 1-wire-EEPROM DS24B33	1-TEDS-PAK
• 10 Connectors thermo mini (type K, RFID)	1-THERMO-MINI
• QuantumX: UPS	1-UPX001-2
• SomatXR Uninterruptable Power Supply	1-UPX002-2