December 2019
Version 2.12.0

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.

END OF PRODUCT LINE ANNOUNCEMENT

The CX23-R has been discontinued and development support for this module has officially ended. Please contact HBM support at support@usa.hbm.com to discuss upgrade options.

What's new?

Modules / Firmware

- **Firmware**
    - CX23-R Firmware Version 2.12.0
    - MX Module Firmware Version 4.12.32.0
        - Included in CX23-R firmware to update from the Web Interface.
    - MX Module Firmware Versions 4.12.32.0+ can be used but not officially supported.
- **New Module Support**
    - SomatXR: Thermo T Amplifier   1-MX1609TB-R
    - QuantumX: Thermocouple Type T / 16 channels   1-MX1609TB

Software Tools / Libraries

- **Software Updates**
    - XR Emulator Version 2.12.0

Documentation

- **New Documentation**
    - MX471C-R Data Sheet (English / German)   Version 1.0
- **Updated Documentation**
    - CX23-R / EX23-R User Manual   Version 13.0
    - SomatXR Accessories Data Sheet (English / German)   Version 8.1
    - MX Modules User Manual (English / German)   Version 7.2
    - 1-SCM-R-TCX-2 Data Sheet (English)   Version 3.0

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 v2.12.0

- **New Features**

  - **System Preference to not include "datamode_name@" prefix to SIE metadata for DataMode channel names.** A new System Preference has been added to eliminate the prefix to DataMode channel names in SIE metadata if desired.
  - **Mode 1 Networking for networked CX23-R's.** Support for Mode 1 Networking of CX23-R modules has been added. Please see the help system for more details.

- **Optimizations**

  - **General GUI, Charts, and Usability improvements.** General bug fixes, performance fixes, and stability fixes have been applied to make the GUI more responsive, provide better feedback, and improve overall stability.
  - **Next / Previous channel view in the Single Channel Editor (SCE).** The SCE has been enhanced to allow the user to cycle through channels from within the SCE.
  - **Optimized system behavior in power loss situations.** The system has been optimized to deal with power loss situations that greatly reduces possibilities of data loss, and maximizes the possibility of automatic test restart on power restoration.
  - **Two Point Scaling Dialog window enhancements.** The two point scaling dialog window has been enhanced to provide greater feedback and ease when attempting to do this type of scaling.
  - **Extension to Notifications.** A new notification "SIE test has filled the storage area" has been added as a possible notification the system can provide to the user if configured. See the Help system for more information.

- **Bugs Fixed / Issues Resolved**

  - **GPS stale data handling issue.** Previously when GPS stale data was required given the state of GPS connection, stale data handling would not be set properly on specific channels as specified. This issue has been resolved.
  - **Rare issue with Garmin GPS and NMEA message termination.** In rare cases unterminated NMEA messages would be sent by the Garmin GPS which would cause the XR unit to reset. This issue has been corrected.
  - **SIE file notifications issue.** In certain situations the SIE file notifications would not send as configured in the Notifications area. This issue has been resolved.
  - **Rezeroing MX channels issue.** Previously zeroing channels would not work properly in the SCE when using MX channels in certain situations. The first zero would work properly but subsequent zeros would work only in certain conditions. The issue did not occur within the spreadsheet rezero, and only in the SCE. This issue has been resolved.
  - **Digital output channels issue.** Previously when using Digital Output channels in certain configurations, the system would get into an unstable state and would require reboot. This issue has been resolved.
  - **Running an SIE test when storage is full issue.** Previously when attempting to start a new SIE test when the storage was full, the system would disallow this. In some circumstances it was found that the system would allow an SIE test to run even though the storage was full. This issue has been corrected.

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RELEASEnotes SOMAT XR

- **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)**

  - **CAN scaling issue with reduced SIE file size option.** In the v2.10.0 release, a bug was introduced that can result in invalid CAN channel data for all CAN signals that exceed 16 bits. In brief, if the CAN signal exceeds 16 bits, only the least significant 16 bits will exist in the CAN channel data in the SIE file. Note that this bug exists if and only if the System preference to 'Minimize SIE file sizes using integer data types' is enabled. However, note this preference is enabled by default in the v2.10.0 release. This bug was fixed and the System preference is no longer enabled by default.
  - **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.

- o **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.
- o **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.

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: Thermo T Amplifier	1-MX1609TB-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
• QuantumX: Thermocouple Type T / 16 channels	1-MX1609TB
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Documentation

• CX23-R / EX23-R User Manual	Version 13.0
• CX23-R Quick Start Guide	Version 3.0
• EX23-R Quick Start Guide	Version 3.0
• SomatXR Accessories Data Sheet (English / German)	Version 8.1
• 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
• MX471C-R Data Sheet (English / German)	Version 1.0
• MX Modules User Manual (English / German)	Version 7.2
• 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 3.0
• 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 2.0
• 1-CASEMOUNT2-2/3-2 Data Sheet	Version 2.0

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Software Tools / Libraries

- HBM Device Manager   v2.0.0
- XR Download Manager   v1.2.2
- SomatXR Emulator   v2.12.0
- 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) 1-KAB2117
  (4 wire - no sense line)
- Quarter-bridge adapter (to eDAQ M8 connector) 1-KAB2118
  (3 wire - no sense line)
- 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