



February 2019
Version 2.8.4

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 2.8.4
 - 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**
 - SomatXR Emulator v2.8.4

Documentation

- **New Documentation**
 - None
- **Updated Documentation**

○ CX23-R / EX23-R User Manual	Version 11.0
○ CX23-R Data Sheet (English / German)	Version 2.3 (2.2)
○ 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 5.0
○ EX23-R Data Sheet (English / German)	Version 3.0

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 v2.8.4

- **New Features**

- **System date and system time channels.** System date and system time channels have been added as collectable data from the system if these variables are ever needed given the test application.
- **Additional statistics display types.** Additional statistics display chart types are now available when running a test. See the help system for more information.
- **Addition of "Defined sensitivity factor" scaling mode for bridges.** Added a new "Defined sensitivity factor" scaling mode that is applicable for channels defined with a Bridge sensor input mode.
- **RAW CAN Data displays.** Raw CAN message data can now be displayed in the Digital meter setup window, and in the Test control Digital display charts.
- **Compressed SIE downloads.** Support for downloading SIE files over a compressed stream is now available. An extensive help topic has been written to explain the benefits and functionality of this feature.
- **Support for editing CAN mode dependent signal channels.** Added support for creating and editing CAN mode dependent signals/channels (multiplexor and multiplexed signals) in the CAN database single channel editor. Also, added support for editing only in the SXR single channel editor. For imported Vector DBC databases, it's recommended that the CAN database editor always be used. For eDAQ TXT databases, the SXR editor is the only option available.
- **Support for CAN DBC file exporting.** Added support for exporting CAN DBC files (without CCP).

- **Optimizations**

- **Extended support for signal conditioning modules with inoperable channels.** Extended the XR system to ignore MX channels that cannot be configured when an isolated MX module channel is inoperable. Note that only one inoperable MX1601B-R channel has been encountered over the current lifetime of the XR / MX module interface.
- **User preference added to control SCE (Single Channel Editor) strip chart.** Provided a new User preference option to not automatically start the Single channel editor strip charts when the channel Edit dialog window is created. If "auto start" is disabled, the user can click on the Apply button to start the strip charts after the dialog window is created.
- **Vector DBC export extensions.** The Vector DBC export functionality has been extended to include Description, Mark, and Invalid value. In addition, mode dependent signals are now included noting only one multiplexor channel can be available per message ID, and any number of multiplexor channels can be added.
- **Extended SIE metadata.** Extended SIE metadata to include some additional channel parameters. See the topic "SIE file metadata" in the Operational Notes section of the Help system for details.

- **Bugs Fixed / Issues Resolved**

- **CAN DBC import issue with channels using FMSB or FLBSB data formats.** Fixed an issue with CAN exports of DBC files that contain channels defined to use the FMSB or FLBSB data formats (for float32 and/or float64 data type signals). Prior to this release, the Vector DBC file SIG_VALTYPE_ parameters were not assigned correctly, and because of this, attempting to import the DBC file would fail.
- **Delimiter issue with CAN DBC imports.** Fixed an issue with the System preference to use '_' as the delimiter for CAN DBC database imports when the option to prepend the Message name to the Signal name was used. The issue existed in all previous releases.
- **Advisory on using recent versions of Chrome and Firefox.** For unknown reasons both Google and Mozilla at least have changed the way they respond to XR based SIE file



download requests. For all previous XR system releases, these changes result in the SIE file name being enclosed in single quotes. In this XR firmware release, we have modified the way the XR services download requests to eliminate this annoying issue.

- **Min Max Chart reset functionality issue.** Previously the reset option for Min / Max chart displays would not work properly in certain situations. This issue has been resolved.
- **Shunt scaling task in SCE issue.** Fixed an issue with the Shunt scaling task in the single channel editor that resulted in the channel not always being zeroed after the shunt task was performed - requiring the user to zero the channel after the shunt task.
- **Signal calculator expressions issue.** Fixed an issue with the XR systems potentially generating an error (which may or may not result in an error reset) when the SXR test has any Signal calculator computed channels defined using channel names enclosed in single quotes). In brief, running SIE tests, or Digital meter tasks, or restarting Live updates that included these computed channels, would eventually result in this error - unless the XR system was rebooted before the error occurred.
- **XY plot chart after GUI refresh issue.** The XY plot chart would not be rendered properly after a GUI refresh was performed. This issue has been corrected.
- **CAN Database name editing issue.** Previously it was only possible to edit a CAN database name by one character, this issue has been corrected.
- **Cyclic test “Stop test at” parameter issue.** Previously the “Stop test at” parameter would not be honored when running cyclic tests. This issue has been corrected.
- **MX1601 Transducer inrush current issue.** Increased tolerance to short term over current situations (initial transducer inrush current) on Channels 9-16 by delaying over current detection and shut down by 2 seconds. This change in detection applies to all channels but channels 9-16 were most susceptible to higher input capacitance transducers causing them not to be detected.
- **2 point scaling metadata issue.** Previously there was an issue with 2 point scaling mode metadata saved in SIE files. This issue has been corrected.
- **Ragged edge cleanup optimizations.** Fixed an issue with the number of channel data samples stored in SIE file not being the same for all channels with the same sample rate when tests were stopped using the Remote control run mode switch.
- **SIE data extraction issue.** Previously when extracting raw video data from an SIE file, the data would be downloaded with the wrong extension. Previously when extracting the test configuration or hardware information from an SIE file, no information would be downloaded. Previously when extracting raw data for a defined GPS or CAN channel, no data would be downloaded. All of these issues have been corrected.
- **FTP subdirectory upload issue.** Previously when attempting to upload SIE data to an FTP subdirectory, the SIE upload via FTP would fail. This issue has been corrected.
- **Sporadic SQLITE database issue.** Previously there would be SQLITE DATABASE LOCKED errors preventing writing to the internal database of the XR. This error was previously seen rarely after a system boot from a power cycle or software initiated reset. This issue has been corrected.
- **Stop test on test duration parameter issue.** Previously when utilizing the stop test on test duration parameter and remote control starting and stopping of tests, the stop test on test duration would not be honored. This issue has been corrected.
- **Certificate download issue.** Previously the calibration certificate for the XR would not work properly. This does not mean the XR is not calibrated, simply the download of the actual certificate resident on the system would not work properly. This issue has been corrected.

- **New or revised issues and advisories**

- **Limitations on CAN database Vector DBC file export.**
 - The following CAN database channel parameters are currently not included – Description, Mask, Invalid value.
 - CAN database Mode dependent channels are currently excluded.
 - CAN database CCP channels are currently excluded.



- **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.

- **Errata (known issues)**

- **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.
- **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.
- **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.
- **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.
- **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: 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 11.0
• 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 5.0
• 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

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|-----------------------|----------|
| • 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 |



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