



September 2016
Version 1.12.2

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 1.12.2 (Build 2706)
 - MX Module Firmware Version 4.6.18.0
 - Included in CX23-R firmware to update from the Web Interface.

Software Tools / Libraries

- **New Software Tools / Libraries**
 - SomatXR Emulator v1.0.1
 - SomatXR Download Manager v1.0.2
 - libsie SIE library v1.1.5

Documentation

- **New Documents**
 - SomatXR 1-SCM-R-TCK-2 Data Sheet (English)
 - SomatXR Reference Manual For libsie
- **Modified Documents**
 - SomatXR Accessories Data Sheet
 - SomatXR CX23-R EX23-R User Manual
 - SomatXR MX Users Manual
 - SomatXR UPX002 Data Sheet

Accessories

- **New Accessories**

○ 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

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 v1.12.2

- **Bugs Fixed / Issues Resolved**
 - **Issue where RAW CAN channel SIE XML data would be corrupted.** Fixed an issue where RAW CAN channel SIE XML data would be corrupted thereby making the SIE data for RAW CAN channels unable to be parsed by SIE processing software. This issue has been corrected.

Notes about the CX23-R firmware v1.12.1

Help System extensions for the following v1.12.1 features or optimizations will be available in the next full release of CX23-R firmware.

- **Bugs Fixed / Issues Resolved**
 - **Issue with single quote characters in Author or Summary text fields in Test Configuration Setup window.** Fixed an issue with having one or more single quote characters in the Author or Summary text fields in the Test Configuration Setup window. In previous releases, this resulted in an error reset (which subsequently resulted in an infinite loop of error resets).
 - **Issue with special characters used in channel Description or channel Units fields.** Fixed an issue with having the '&' character in any channel Description or channel Units field. In previous releases, this would result in the SIE file having corrupt metadata objects. Data viewers and analyzers (e.g., InField) that are based on libsie would error out when they encountered this corruption, and hence users would not be able to view / analyze their channel data.
 - **Issue with AUX port eDAQ sync mode in GUI.** Fixed an issue with GUI not displaying the correct information for the AUX port eDAQ sync mode. Note that the actual hardware eDAQ sync functionality was not affected by this and worked properly for starting/stopping synchronized test runs.
 - **Minor issues with new single channel Digital meter.** Fixed a few minor issues with the new single channel Digital meter; most significantly, always using the correct number of decimal places when the display is created.
 - **Issue with constants defined in scientific notation when using Signal Calculator Computed Channel.** Constants defined in scientific notation when using the Signal Calculator Computed Channel were previously not being handled properly. This issue has been resolved.
 - **Issue with Excel interface importing certain thermocouple channels.** Fixed an issue with the Excel interface not dealing with MX16109B-R temperature channels and MX840B-R thermocouple adapter module channels properly. The 'Thermocouple type' parameter was not being exported / imported.
- **Optimizations**
 - **Extension of timed delay shutdown on power loss.** Extended time delay between loss of power and start of CX23-R shut down to approximately 2 seconds. As such, a short term transient power drop out will not result in the CX23-R shutting down and then immediately restarting.
 - **Complete factory reset option enabled in addition to credential reset, and network configuration reset capabilities.** Added the capability to perform a 'factory reset' of the CX23-R using a user interactive procedure with the front panel switch. Users will likely never need to use this since it's only needed when communications with the CX23-R cannot be established by any other means. It is strongly recommended that users do not use this



capability without first contacting HBM customer service. See the Help for additional information in the next full release of CX23-R firmware.

- **Burst History DataMode now supports “Number of bursts” parameter.** The Burst History DataMode has been enhanced to support the “Number of bursts” parameter. More information can be found in the help system.
- **Problematic flashing options for single channel Digital meter removed.** Removed the problematic option to flash the digits readout when an alarm was tripped in the single channel Digital meter.

Notes about the CX23-R firmware v1.12.0

• New Features

- **Support for Axis P1214-e network camera.** The Axis P1214-e network camera is now supported for use with the CX23-R. More information on supported cameras or associated configurations is available in the help system.
- **Changed support for MX IP20 modules.** The CX23-R will no longer discover unsupported MX IP20 modules such as the MX1615B, MX1601B, etc., until they are officially supported for use with the CX23-R. Support for a limited set of IP20 MX modules is targeted for the next CX23-R release.

• Optimizations

- **Run time display enhancements.** General improvements to the run time displays in regard to throughput and robustness. The system is now designed to preferentially shut down the run time live displays instead of allowing the CPU to overload and reset on error, which might occur when the laptop goes into a low power sleep mode for example.
- **Enhanced hardware tree Channel select dialogue interface.** The Channel select dialog has been improved to include module icons, + and – expand icons, and the removal of icons for hardware and setup sections for visual clarity.
- **Major performance optimization for input channels tabs.** A major performance improvement has been implemented when switching tabs in the input channels section of the user interface. The performance optimization will be most readily discernable in large channel count setups.
- **Sample rate references changed from Hz to S/s.** All references in the user interface regarding sample rates have been changed from Hz to S/s (Samples per second).
- **Removal of GPS debug channels from the user interface.** Removed the 'pps_offset' and 'pps_timestamps' channels from the set of GPS channels accidentally provided in the previous release. These channels are development debugging channels which should not have been included in the set of GPS available channels.
- **Improved select channels dialogue window.** Reworked Select channels dialog window to minimize mouse clicks required to select input channels (CAN channels in particular).
- **Reduced clutter on Test Configuration page.** Modified the Test Configuration page 'Input channels' and 'Output Channels' windows to show only the tabs that actually have channels defined.
- **Improved Excel interface.** The Excel interface now includes “Live updates” and “Test run mode” parameters in the Summary section.
- **Improved All input channels tab.** The All input channels tab has been improved to show all of the Input mode parameters associated with the input type.
- **Improved single channel Digital display.** The single channel Digital display has been significantly enhanced in the following ways. The display can be resized as necessary by the user. The font can be adjusted including bolding and italicization. The unit name placement can be adjusted. The decimal point can be fixed to a certain number of decimal points, with the ability to use scientific notation. The update rate of the display can be configured. Light or dark color scheme of the display can be adjusted, warnings and alarms



can be set as well as a flashing indicator when in the warning or alarm ranges. Zeroing and other setup tasks have also been enhanced to use the new single channel display.

- **Bugs Fixed / Issues Resolved**

- **Issue where a deleted DataMode would remain visible in spreadsheet.** Fixed an issue where creating a DataMode, editing that DataMode such as the Description, and then deleting the DataMode would cause the DataMode tab to disappear, but the DataMode itself to remain in the spreadsheet. This issue has been resolved.
- **Issue with MX840B-R 40000 S/s sample rate filter frequency.** Fixed an issue with the user interface selecting the 3333 Hz filter frequency for the MX840B-R 40000 S/s sample rate instead of the desired 6667 Hz filter frequency.
- **Known issue regarding test setups containing 60 Hz channels on MX modules intermittently failing to start.** A known issue causes occasional test start errors when a test setup using the Classic data rate domain contains one or more MX channels at 60 Hz sample rates. This issue has been resolved.
- **Issue with disconnection of Host port while running a test.** Fixed issues with the Host port being disconnected / reconnected when a test was running. Previously this could result in the test stopping on a system reset error.
- **Issue with MX840 SSI encoder clock frequency parameter.** Fixed an issue with setting the SSI clock rate for the MX40B-R SSI encoder counter input mode. The SSI clock rate was always being set to 100 kHz, irrespective of what the user had selected.
- **Issue with copying sensor information between MX modules.** Eliminated issues with copying sensor information from one type of MX module (e.g., MX840B-R) to a different type of MX module (e.g., MX411B-R). Sensor information can only be copied from/to MX modules of the same type.
- **Issue where GUI can become unresponsive when using Internet Explorer 11.** Fixed an issue where the GUI could become unresponsive when using Internet Explorer 11. The symptoms of this bug would manifest themselves as button clicks to change the context of the GUI resulting in no action being taken, while the lower bar live displays were still normal and active. This issue has been corrected.
- **Issue with using CAN channels in any DataMode defined with a triggering condition.** Fixed an issue with having CAN input channels defined in any DataMode that was defined with a triggering condition (except the Message Logger DataMode). The system reset on error when attempting to start the test.
- **Issue with improper GUI response when removing a TEDS sensor.** Fixed an issue where the user interface would not properly process TEDS events when sensors were removed from connectors resulting in an incorrect TEDS state being left on connectors.
- **Issue with using CAN channels and in a Burst History DataMode.** Fixed an issue with CAN input channel data being completely invalid in all Burst History DataModes. This occurred for the CAN input channel data only; all data for all other types of input channels was valid.
- **Issue with MX840B-R default Bessel IIR filter frequency.** Fixed an issue with the user interface providing an option for a 40000 S/s Bessel IIR filter frequency of 6000 Hz on the MX840B-R module, which is not actually supported. The system reset on error when a test was started with this option.
- **Issue with changing Control view parameters of SIE files.** Corrected an issue where it was not possible to edit the "Save data file as" or "Description" fields in the Control view when Live displays are running.
- **Issue with MX module sync being affected by renaming the module.** Fixed an issue with MX modules temporarily losing sync with the CX23-R when the MX module was renamed.
- **Issue with LED correlation between hardware and user interface.** Fixed an issue with the user interface not presenting the correct CX23-R Hardware view option to 'Stop flashing LED' when the LED was flashing and the browser was subsequently refreshed or reloaded.

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- **Issue with chart displays on start of test.** Fixed an issue introduced in the v1.10.0 release that sometimes resulted in data for some channels not being displayed in the test run charts.
- **Issue with Zero and experimental Two-point scaling on MX411B-R.** Fixed a bug that prevented the Zero task and the experimental Two-point scaling task to run on MX411B-R channels in the Decimal sample rate domain when the system preference "Use system defined scaling filters" was enabled.
- **Issue where CAN and GPS channels are not being displayed in the Hardware view.** Corrected an issue where CAN and GPS channels were not being displayed in the Hardware view for test configuration.
- **Issue importing 32 bit wide mask/value parameters in eDAQ CAN database files.** Fixed an issue with the import of eDAQ CAN database (text) files. All database signals that had 32 bit wide mask/value parameter values defined were incorrectly rejected when the database was imported.
- **Issue with transducer power value on MX411B-R and MX840B-R modules.** Fixed a minor issue with the user interface incorrectly allowing the user to define a Transducer power value when the sensor Input mode was set to IEPE on MX411B-R and MX840B-R modules only. This was basically harmless since the Transducer power was never really activated, but it may have caused some user confusion.
- **Issue displaying default digital filter attenuation values.** Fixed a couple of isolated issues with the user interface not presenting a default digital filter attenuation value when the sample rate or the digital filter type was changed - specifically for the Bessel IIR filter at 20000 or 9600 S/s.



- **Known Issues and Advisories**

- **Extracting raw data from SIE files using the web interface may be unreliable for large datasets.** The SIE file data itself is not affected. The datasets can be retrieved by downloading the SIE file to a PC, and extracting them using the SomatXR Download Manager or another application. This issue is being investigated and SIE data extraction capabilities will be improved in a future release. A warning message when extracting raw data from CAN, GPS, and video channels will be issued when attempting to do so.
- **Issue with disconnecting the CX23-R Host port cable when a test is running with chart displays.** There is an ongoing issue where disconnecting the CX23-R Host port while running a test with chart displays may stop on error. The test will auto restart normally after the error reset (unless the user has disabled this feature in system preferences). To avoid this undesirable situation, all clients should log off before the Host port cable is disconnected. The solution to this issue is currently under investigation.
- **Users with previously undefined profiles.** If users have been previously configured with no profile, those users will be given read only permissions until a profile is assigned. This is an advisory effective if upgrading from v1.8.3 or earlier firmware.
- **Camera live displays are not currently supported using Internet Explorer.** This issue is further being investigated.
- **Caution when using Netgear networking interfaces with the CX23-R.** Certain Netgear switches and routers have been known to not work reliably when connected to the Host port of the CX23-R. The problem will manifest as the Netgear networking interface showing the CX23-R is not connected when in fact it is. In certain situations, a power cycle of the Netgear networking interfaces can correct the problem. For these reasons, it is strongly recommended that for any high availability or high assurance test platforms, that Netgear networking interfaces not be used to connect to the CX23-R Host port.
- **Caution when using SSL connections with Safari web browser.** When using the Safari browser with secure socket layer connections, the live displays and live updates in the web interface may not work properly without special certificate configuration. See the help system topic for more information.
- **Caution when using Firewire with MX Modules.** In certain atypical usage scenarios, MX modules can lose PTP sync when a test run is restarted after a reboot. See the help system topic that discusses setting up the SomatXR system for more information.
- **MX modules can get into a state where they can only be recovered via a power cycle.** On occasion, MX modules may get into a state where they are no longer recognized by the CX23-R interface. The work around for this issue is to power cycle the MX module.
- **Copying and pasting issue with “Input mode” parameter.** Currently there is an issue where copying and pasting operations do not properly paste the “Input mode” sub configuration options. The work around for this issue is to manually check these parameters when performing copying and pasting operations to ensure copied channels match their source channels. Development is working on a fix for this problem.



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

Modules

- SomatXR: Data Processor with 16 or 64 GB memory 1-CX23-R-xx-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
- QuantumX: Analog Voltage Output 1-MX878B

Documentation

- CX23-R Data Sheet (English / German) Version 2.2
- CX23-R / EX23-R User Manual Version 5.0
- CX23-R Quick Start Guide Version 3.0
- EX23-R Data Sheet (English / German) Version 1.2 (1.1)
- EX23-R Quick Start Guide Version 1.0
- SomatXR Safety Manual Version 2.0
- SomatXR Accessories Data Sheet (English / German) Version 5.0
- MX1601B-R Data Sheet (English / German) Version 3.0
- MX1609KB-R Data Sheet (English / German) Version 3.0
- MX1615B-R Data Sheet (English / German) Version 4.0
- MX840B-R Data Sheet (English / German) Version 1.0
- MX878B Data Sheet (English / German) Version 2.0
- MX411B-R Data Sheet (English / German) Version 1.0
- MX471B-R Data Sheet (English / German) Version 1.0
- MX Modules User Manual (English / German) Version 4.0
- MX Modules Quick Start Guide (English / German) Version 3.0
- NTX003 Data Sheet Version 1.1
- 1-UPX002-2 UPS Data Sheet (English / German) Version 1.0
- 1-SCM-R-TCK-2 Data Sheet (English) Version 1.0
- Reference Manual For libsie Version 1.0

Software Tools / Libraries

- HBM Device Manager v1.0.0.1
- SomatXR Download Manager v1.0.2
- SomatXR Emulator v1.0.1
- libsie SIE library v1.1.5

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Accessories

- Fastener CaseLink-Rug, 160mmx80mmx12mm
 - 2 Unit Mounting System, 200mmx130mmx50mm
 - 3/4 Unit Mounting Syst,295mmx130mmx50mm
 - SomatXR Uninterruptable Power Supply
 - Voltage conditioner .3M 840BR adapter
 - ¼ bridge 1000 .3M 840BR Adapter
 - ¼ bridge 350 .3M 840BR adapter
 - ¼ bridge 120 .3M 840BR adapter
 - K type thermal couple .3M 840BR adapter
 - ICP, with BNC .3M 840BR adapter
 - AC/DC power supply unit (24 V, 120 W)
 - Power supply cable (CX23-R to MX module)
 - Power supply cable (low loss) with exposed wires
 - Mounting brackets
 - Ethernet cable (CX23-R / EX23-R to MX module)
 - Ethernet cable (CX23-R / EX23-R to PC / access point)
 - Ethernet cable (CX23-R to EX23-R)
 - Push-pull sensor cable
 - Break away sensor cable
 - Digital I/O cable with exposed wires
 - GPS/AUX adapter (CX23-R to EGPS-5Hz)
 - CAN adapter (CX23-R to SomatCR KAB292)
 - GPS/AUX cable with exposed wires
 - CAN cable with exposed wires
 - Full-bridge adapter (to eDAQ M8 connector)
(4 wire - no sense line)
 - Quarter-bridge adapter (to eDAQ M8 connector)
(3 wire - no sense line)
 - Voltage adapter (to eDAQ M8 connector)
 - ¼ Bridge Adapter (ODU 14 pin to M8F connector)
 - CX23 + eDAQ sync cable (M12 to LEMO)
 - GPS Receiver - 5Hz Update
 - Pelican Case - eDAQ-lite/SXR
 - Pelican Case - eDAQ/eDAQ-lite/SXR
 - AC/DC Power Supply (24 V, 30 W) ODU 4p
 - Plug (ODU 4p push-pull)
 - Power supply (ODU, 5 m, open)
 - Connecting elements
 - Carrying handle
 - 4 protective caps for ODU sensors
 - 2 protective caps for ODU system
 - FireWire ExpressCard adapter
 - FireWire intermodule (ODU, IP68, 2 m)
 - FireWire PC (ODU / FW, IP68, 3 m)
 - FireWire (module to PC, IP68, 5 m)
 - Ethernet cable (IP65/5m)
 - Connector (ODU, 14 pol, IP68)
 - Plug (ODU 14p break-away)
 - 1-wire-EEPROM DS24B33
 - 10 Connectors thermo mini (type K, RFID)
- 1-CASELINK-RUG-2
 - 1-CASEMOUNT2-2
 - 1-CASEMOUNT3-2
 - 1-UPX002-2
 - 1-SCM-R-VC60-2
 - 1-SCM-R-SG1000-2
 - 1-SCM-R-SG350-2
 - 1-SCM-R-SG120-2
 - 1-SCM-R-TCK-2
 - 1-KAB430-0.3
 - 1-NTX003-2
 - 1-KAB2110
 - 1-KAB2115
 - 1-CASEMOUNT
 - 1-KAB2100
 - 1-KAB2106
 - 1-KAB2107
 - 1-KAB183
 - 1-KAB184
 - 1-KAB2101
 - 1-KAB2102
 - 1-KAB2104
 - 1-KAB2108
 - 1-KAB2109
 - 1-KAB2117

 - 1-KAB2118

 - 1-KAB2119
 - 1-KAB2122-0.3
 - 1-KAB2111-2
 - 1-EGPS-5HZ-2
 - 1-PEL1520-2
 - 1-PEL1600-2
 - 1-NTX002
 - 1-CON-P1001
 - 1-KAB294-5
 - 1-CASELINK
 - 1-CASECARRY
 - 1-CON-A2013
 - 1-CON-A2014
 - 1-IF-002
 - 1-KAB272
 - 1-KAB276-3
 - 1-KAB293-5
 - 1-KAB273-5
 - 1-CON-P1007
 - 1-CON-P1016
 - 1-TEDS-PAK
 - 1-THERMO-MINI