RELEASEnotes

SOMAT XR

February 2017
Version 1.14.0

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 1.14.0 (Build 3153)
  - MX Module Firmware Version 4.6.18.0
    - Included in CX23-R firmware to update from the Web Interface.
- **Module Support**
  - Support for Quantum MX471B CAN Module
  - Support for Quantum MX878B Analog Output Module
  - Support for Quantum MX1601B Measuring Amplifier Module
  - Support for Quantum MX1615B Bridge Amplifier Module
  - Support for Quantum MX1609KB Thermocouple Type K Module
  - Support for EGPS Precision GPS Receiver – 200Hz
  - Support for EGPS Precision GPS Receiver – 200Hz – PLUS

Software Tools / Libraries
- **Software Updates**
  - SomatXR Emulator v1.14.0

Documentation
- **New Documentation**
  - 1-CON-S3005-2 Adapter Data Sheet   Version 1.1
  - 1-CASEMOUNT-UMB-2 Data Sheet   Version 1.0
  - 1-CASEMOUNT2-2/3-2 Data Sheet   Version 1.0
- **Updated Documentation**
  - 1-SCM-R-SG120-300-1000-2 Data Sheet   Version 1.1
  - CX23-R / EX23-R User Manual   Version 6.0
  - SomatXR Accessories Data Sheet (English / German)   Version 6.0 (4.0)
  - 1-SCM-R-TCK-2 Data Sheet (English)   Version 1.2

Accessories
- **New Accessories**
  - Xcode to Xcode Adapter w/Mount   1-CON-S3005-2
  - Universal Mounting Bracket   1-CASEMOUNT-UMB-2
  - 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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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 v1.14.0

- **New Features**

  - **Support for the EGPS-200 and EGPS-200-PLUS.** The EGPS-200 and EGPS-200-PLUS are now supported as usable GPS hardware with the CX23-R. These GPS modules are in addition to the Garmin 5Hz GPS. Refer to the Help system for more information.
  - **Addition of tracking minimum and maximum values when using a multi-channel digital display.** When using the Multi-channel DVM, you can now specify a min/max display which will keep record of the minimum and maximum values of the channel's data. Also available is a reset function for these min/max displays. In addition, these min and max values can be defined when configuring individual channels such that when a multi-channel DVM is created, the warning and alarm min/max values are honored.
  - **Major enhancement of chart and plot component functionality.** The chart, and plot components of the GUI have been enhanced significantly for stability, performance, and usability. Refer to the Help system for more information.
  - **Cyclic test run mode and automatic file upload to FTP support.** Added support for a new Cyclic test run mode where tests are automatically restarted immediately after being stopped. In conjunction with this test mode, there is an option to automatically upload the SIE files created during the cyclic test runs to an FTP server. Refer to the Help system for more information.
  - **Added controls for setting / clearing Collect check box.** The Collect check box can be configured to be "checked" or "unchecked" by default when adding channels to a setup, from the Test Configuration Setup page. Additionally, channels can now be selected en masse to be checked for collection or not checked for collection by clicking the check box in the header of the Collect column from within the spreadsheet setup configuration area.
  - **The Burst Message Logger DataMode is now supported.** A new DataMode, the Burst Message Logger, is now a supported DataMode. More information can be found in the help system.
  - **Burst History DataMode Enhanced storage mode support.** Extended the Burst History DataMode to provide an Enhanced storage mode option that ensures that data will be stored for the full post trigger time period after any trigger event - even when the trigger event occurs while a previously triggered burst record is being stored. See the Help system for more information.
  - **Remote control test run option.** A new remote control test run option has been added which allows the user to remotely control the starting and stopping of SIE tests. See the Help system for more information.

- **Optimizations**

  - **Option to stop test based on date and time, and SIE file size.** Additional support has been added to specify automatically stopping an SIE test at a certain time and date, or when an SIE file size specified by the user is reached. More information is available in the help system.
  - **Reordering of channels reserved for All Channels view only.** The ability to reorder channels has been reserved to the All Channels view only to prevent confusion when reordering channels in other views when creating tests.
  - **Strip Chart window time periods now properly account for slow sample rates.** The Strip Chart plot component now takes into account slow sample rates, such as sub 1 Hz sample rates, when plotting data.

o **Disabled CX23-R Firmware update while MX modules are updating firmware.** Previously it was possible to update CX firmware while MX firmware was being updated which would interrupt the MX firmware update process. Policies are now in place to prevent this and ensure the CX23-R is not updating module firmware when it is requested that its firmware be updated.

o **Spectrum Chart mode has been enhanced.** The Spectrum Chart mode has been enhanced for clarity during configuration and stability when in operation.

o **Stop Button functionality has been optimized for stability.** The Stop Button in Test Control has been optimized to better indicate the current state of the system and provide a higher reliability when stopping tests.

o **Indication of TEDS status has been enhanced.** Additional mouse over notifications have been provided to make it clearer what the state of TEDS is on any particular channel, whether that is enabled, disabled, etc.

o **Help system updates and enhancements.** The help system has been updated and enhanced for clarity, and searchability.

o **Test duration preference moved to a setup specific configuration.** The Test duration preference has been replaced with an option within the Setup view of the test. The resultant configuration (if any) is then saved into the SXR file.

o **FPGA corruption recovery process enhancements.** The recovery process for corrupted FPGA's has been further enhanced and stabilized to cover a wider variation of error conditions.

o **Horizontal scrollbar functionality improved within editable grids.** The functionality of the horizontal scrollbar has been reworked for stability and performance.

o **Non WebGL enabled browsers will be warned when used.** When a non WebGL enabled browser is detected, a warning message will appear advising the user that the run time chart displays require WebGL.

o **Digital Output configurations enhanced for clarity.** Verbiage and defaults when configuring digital output channels have been improved for better clarity and reducing ambiguity.

o **Test restart in progress message optimized.** On restarts or power failure recoveries, test restarts in progress can be aborted or allowed from the GUI on reboot.

o **Formatting of the GUI displayed connector names has been optimized for greater clarity.** The connector names within the GUI have been optimized and changed format to improve discernability and readability. More information is available within the help system.

o **DataMode name for channels stored using the channel "collect" option.** Added support for the user to optionally provide a DataMode name for the channels stored using the channel "collect" option. This name is used in forming the SIE channel names. For example, if the user defines the name as "collected_channels", a typical SIE channel name would be "collected_channels@gps_latitude". If no name is specified, the SIE channel name would be "gps_latitude". This is useful for sorting SIE channels.

o **Module aliasing has been optimized.** The module aliasing functionality has been optimized to allow custom module names and follows new rules which are available within the help system for reference.

o **'Copy To' function was removed in particular context to reduce confusion with existing setups.** If using the 'Copy To' function from within the 'Add Channel' dialog, existing setups will not be selectable.

o **Module renaming preference moved from being a user preference to a system preference.** Module renaming was moved to a more intuitive system-level preference.

o **Enhanced user feedback when performing large operations within the user interface.** Operations in the GUI which are projected to take a long time to complete will now be announced with user feedback in the status bar.

o **Various enhancements to the readability and usability of the single channel editor.** The single channel editor window has been further optimized for usability and readability.

- o **Alarms / Warnings in single channel digital meter chart are now based on SXR parameters.** The single channel digital meter chart has been enhanced to by default, use the SXR parameters to define alarms / warnings.
- o **Improved organization of Profile administration of privileges.** The Profiles configuration page now has the system configuration privileges segmented in its own group for clarity and aesthetics.
- o **SDB tree view is now synchronized between the Hardware and Input Channels view.** The SDB tree view is now maintained across the Hardware and Input Channels viewing modes. Expanding a branch in one view, will now be expanded if looking at it in another view.
- o **Camera aspect ratios are now locked by default.** Aspect ratios for video displays are now locked by default. The aspect ratio can be adjusted by unlocking the user preference. See Help System for more information.
- o **Burst History number of bursts parameter default adjusted.** The default value for maximum number of bursts when creating a Burst History DataMode has been changed to unlimited. This value can be changed as needed.
- o **GPS regulation default adjusted.** The system preference to use GPS regulation has changed its default value to false. GPS regulation can be turned on by changing the parameter to true.
- o **Listing of available camera resolutions enhanced.** The listing of available camera resolutions has been enhanced to be a dynamic list which changes based upon the model of the supported camera attached. Additionally the available maximum resolutions have been increased to match the supported cameras, upwards of 1920x1080 with certain cameras.
- o **Display selections to persist across test runs.** The selected display when a test is started will remain the selected display, honoring the view of the client that started the test.
- o **Protective measures extended to prevent unnecessary rebooting while a test is running.** Extended the GUI to disallow the user from performing actions that would result in the system rebooting when an SIE test is running (e.g., changing system preferences such as 'TEDS enabled', 'Sample rate domain', etc.) and actions that could have undesired consequences (e.g., 'Set date and time').
- o **Typical CX23-R DIO Encoder wiring diagrams added to Help system.** For clarity and example sake, typical CX23-R DIO encoder wiring diagrams have been added to the Help system for your reference.

- **Bugs Fixed / Issues Resolved**

  - o **Under German locale, Setup state icon would not appear in the GUI.** Under certain conditions when using the German locale, the Setup state icon would not appear in the GUI, this issue has been corrected.
  - o **Timeout on restarting test runs has been removed.** Fixed an issue with the system timing out when attempting to restart test runs after a power failure, reboot, or an error reset test restart. The timeout has been removed. The system will always attempt to restart a test run no matter how long it takes.
  - o **Sub 1 Hz sample rates fail to start.** In certain situations, sub 1 Hz sample rate channels in a setup would prevent the test from starting properly when a test duration is specified for that test. This issue has been corrected.
  - o **Full storage error would persist after clearing space.** In certain situations, when the CX23-R ran out of SIE file storage space, the proper error indicating that there was no more space available would be displayed. Upon clearing space, the same error message would be displayed when attempting to run a test. This issue has been corrected.
  - o **System UTC time not set correctly when user sets time to local PC time.** In previous releases the system time would not be set properly when the user selected the option to set the system time to their local PC time. This issue has been corrected.

o **MX840B-R handle_subscription errors when running an SIE test.** When using the MX840B-R in an SIE test, in certain conditions there would be handle_subscribe errors preventing an SIE test from running. This issue has been corrected.

o **Issue with Spectrum plots performance.** Previously under certain DC inputs when using a Spectrum plot, the performance and appearance of the plot would be suboptimal. This issue has been corrected.

o **Issue with module renaming.** In certain situations, previously set alias names for MX modules were being shown even when the module renaming preference was set to false. This issue has been corrected.

o **Issue with disabled TEDS icons.** In certain situations, TEDS disabled icons were not being shown consistently across the Hardware page and Input Channels page. This issue has been corrected.

o **Filtering inputs channels by Sample Rate.** Fixed an issue where within some DataMode configuration windows, the Input Channels could not be filtered by sample rate. This issue has been corrected.

o **Incomplete copying of channel parameters.** In certain situations copying channel parameters in a certain order will paste the channels parameters in a certain order resulting in parameters not being honored when pasted. This issue has been fixed.

o **Input mode paste operation not populating completely.** If using the Input Mode paste operation, default values were not rippled to dependent parameters. This issue has been corrected.

o **GPS stale data would not populate in certain disconnect situations.** If GPS becomes disconnected at a point other than the physical GPS connection point on the CX23-R, stale data values would not be written into the SIE file for that time period. This issue has been corrected.

o **Low sample rate CAN channels using the MX471B-R or MX840B-R would cause a test not to start.** In certain situations, low sample rate CAN channels utilizing the MX471B-R and/or the MX840B-R would cause a test to fail to start. This issue has been corrected.

o **Adding GPS channels from a disconnected GPS device were not redlined.** In certain situations, disconnecting the GPS from the CX23R would cause a system reboot, or error. If attempting to add GPS channels to a test from a disconnected GPS device, the added channels will now redline properly.

o **SIE metadata "core:start_time" not populated correctly.** Fixed an issue with the exact test start time not being stored in the SIE metadata (tag id "core:start_time"). In all previous releases, the value for this tag was the time that the test start time was determined, which was typically around one second before the actual test start time.

o **Missing Test run description in SIE file metadata.** Prior to this release the Test run description was not being written into the SIE file metadata. This issue has been corrected.

o **Issue where admin credential reset process would fail under very specific power loss conditions.** Corrected an issue where deleting databases, and resetting the user profiles after a power failure would cause the admin account to be locked out with invalid credentials.

o **Issue where manipulating MX modules during live update tests could cause reboot of the CX23R.** When changing the data rate domain, or the speed mode of MX modules while a live update test was running, the CX would on occasion reboot as a result, this issue has been corrected.

o **Issue where disconnecting / reconnecting Host Ethernet port during test runs.** Fixed issues with the CX23-R sometimes stopping test runs on buffer overflow errors when the CX23-R Host port was disconnected / reconnected."

o **Issue where privilege to change the date and time on the system was not specified.** Fixed an issue where changing date and time settings was not specified as a customizable privilege. This issue has been corrected and is a configurable privilege.

o **Issue where system notification messages could not be closed under certain conditions and/or the red LED would not reset.** Fixed an issue where system notification messages could not be closed. Now pressing ESC, enter, space, or clicking the "X" button will close system notification dialog boxes and will reset the red LED.

- o **Issue with inconsistent system preference settings being reflected in the GUI.** Fixed an issue where changing certain system preferences which require a reboot, and exiting the dialog will cause inconsistency in the actual configuration of the system and what is reported in the GUI.
- o **Issue with running a Setup task test in Test Control window.** In certain cases the Test Control icons would get into an undesirable state when running Setup tasks in the Test Control window such as running a digital meter or rezeroing task. This issue has been corrected.
- o **Issue with strip chart X axis scale minimum.** In certain cases, the strip chart X axis scale minimum value was not enforced. This issue has been corrected.
- o **Issue with propagation of configuration changes in certain situations.** In certain cases, changing configuration options (such as transducer power on a module) would not propagate to all affected channels of that module. This issue has been corrected.
- o **Issue with deselecting video display via grid not closing the display.** Following a very specific set of steps, a video display can get into a state where deselecting the video channel will not close the video display. This issue has been corrected.
- o **Issue with video display continuing after a test run has been stopped.** When a video display was being used during a test, and the test was stopped, the video display would continue to function instead of stopping with the other charts. This issue has been corrected.
- o **Issue with power channel data going stale in certain conditions.** In certain use cases, the power channels would return bad data after 60 seconds after a live display on those channels was run prior. This issue has been corrected.

- • **Known Issues and Advisories**

  - o **Setups utilizing a video encoder will require configuration changes to work in v1.14.0.** If a previous setup was created with v1.12.0 or earlier firmware, the resolution of your video image will need to be changed to a properly supported resolution prior to running the test.
  - 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 **Attempting to start an SIE test when there are unsaved, pending Chart changes may result in a "test engine busy" error.** This issue can be avoided by always saving pending Chart display changes prior to running an SIE test. Or, by setting live updates to always be off. You may still get a "test engine busy" notification, but the test will still run.
  - o **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.
  - o **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.
  - o **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.
  - o **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.

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: 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

Documentation

- CX23-R Data Sheet (English / German)   Version 2.2
- CX23-R / EX23-R User Manual   Version 6.0
- 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 6.0 (4.0)
- 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 1.2
- Reference Manual For libsie   Version 1.0
- 1-SCM-R-SG120-300-1000-2 Data Sheet   Version 1.1
- 1-CON-S3005-2 Adapter 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
- SomatXR Download Manager   v1.0.2
- SomatXR Emulator   v1.14.0
- 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
- SomatXR Uninterruptable Power Supply   1-UPX002-2
- 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
- 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