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 eDAQXR. 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**
  - eDAQXR Firmware Version 2.8.4
  - MX Module Firmware Version 4.12.32.0
    - Included in eDAQXR firmware to update from the Web Interface.
- **New Module Support**
  - None

Software Tools / Libraries

- **Software Updates**
  - eDAQXR Emulator v2.8.4

Documentation

- **New Documentation**
  - None
- **Updated Documentation**
  - eDAQXR eDAQXR-lite User Manual Version 6.0
  - eDAQXR-lite Data Sheet (English / German) Version 1.0
  - eDAQXR-lite Quick Start Guide Version 1.0
  - eDAQXR-lite Safety Manual (English / German) Version 1.0
  - 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 eDAQXR line is available at the end of these release notes.

Notes about the eDAQXR firmware v2.8.4

- **New Features**
    - **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,

- **Optimizations**
    - **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**
    - **AOX file generation issue.** Fixed two issues with the generation of the AOX file. The Connector column was not being populated, and the sort order of the channels was incorrect.
    - **CAN DBC import issue with channels using FMSB or FLSB data formats.** Fixed an issue with CAN exports of DBC files that contain channels defined to use the FMSB or FLSB 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.
    - **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.
    - **Various bug fixes and optimizations to the user interface.** Various user experience bugs were fixed and further optimizations were implemented to improve performance.
    - **Invalid BRG channel hardware configuration for specific input mode issue.** Fixed a bug that resulted in invalid BRG channel hardware configuration for the 10V and Differential Amplifier sensor input modes in the following usage scenario.
        - The user runs a test with a BRG channel configured for the Half or Quarter Bridge sensor.input mode.
        - The user later runs a test (without an intervening power cycle or reboot) using the same BRG channel configured for the 10V or Diff Ampl sensor input mode.
            - The data for the BRG channel will typically drift off fairly quickly to either the Range max saturation value or the Range min saturation value since there is no connection to the positive signal input line. The user would have to power cycle or reboot the unit to get the channel working properly. This bug existed in all previous eDAQXR/Lite firmware releases.

- **Mode 2 Networking large SIE file download issue.** Fixed a bug that resulted in only a partial download of the SIE file for Mode 2 networked tests. If the component SIE file on any of the networks nodes (Master or Slaves) exceeded 2 GB, it was not included in the merged SIE file that was downloaded. This bug exists in all previous releases that support Mode 2 networking.

Notes about the eDAQXR firmware v2.8.2

- **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.
  - **Single Channel Editor Amplifier task.** Provided a new 'Ampl' task icon in the Single channel dialog that displays the signal conditioner settings for eDAQ legacy HLS and BRG layer channels. This is primarily for internal development usage at this time.
  - **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.
- **Optimizations**
  - **User notification when layer jumpers are duplicated.** Prior when legacy layers with the same jumper address were connected to the eDAQXR, the system provided no information to the user and showed no eDAQ layers in the Hardware page. Now the system informs the user when there are eDAQ layers with duplicate board jumper addresses.
  - **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. This applies to Mode 1 networked eDAQXR systems as well as stand alone eDAQXR systems.
  - **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.
  - **Persist through short term ethernet cable disconnections in Mode 1 Networking situations.** Implemented an enhancement for Mode 1 networked systems to survive short term ETH cable disconnections and continue to run the test with no SIE data losses. There is a variable limit on how long the ETH cable can be disconnected - based on the amount of data that has to be buffered on the Slave, which is dictated by the channel count and associated sample rates.
  - **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.

- **Bugs Fixed / Issues Resolved**
  - **ACTION REQUIRED: Legacy ITB/NTB channel phase.** Fixed two issues with eDAQ legacy ITB and NTB channels that affected all previous releases. First, for the Binary sample rate domain only, the sample rate for all channels was incorrectly set to the user requested sample rate multiplied by a factor of 8192/10000. Secondly, all channels were out of optimal synchronization phase;. In the Decimal domain, the channels lagged by 1.00000 seconds more than they should have; in the Binary domain, the channels lagged by 1.25000 seconds more than they should have. Users who have generated SIE files affected by these issue are urged to contact HBM customer service.
  - **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.
  - **Smart Module query issue.** In certain situations having an SMSTRB channel defined in a setup and attempting to query the smart module after it had already been added to a test would fail on subsequent query attempts. 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.
  - **Change Device with eDAQ legacy DIO Input/Output channels issue.** Previously when attempting to do a change device task on DIO Input or DIO Output channels, the change device task would fail. This issue has been corrected.
  - **Erroneous reset due to lost samples issue.** Fixed an issue with the eDAQXR resetting on "Lost Samples" or "Lost Packets" BRG / HLS layer errors when Zeroing all 16 channels on one or more of those layers.
  - **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.
  - **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.
  - **Test start delay and CAN channel issue.** Previously the system would reset on error when a test with CAN channels and a large Test start delay value (e.g. 30 seconds) was started. 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**

  - **Legacy eDAQ discovery after firmware update (revised).** The legacy eDAQ layers on the eDAQXR system are not always discovered after a firmware update, power cycle, or system reboot. Improvements were made in v2.8.0 to vastly reduce the likelihood of this issue occurring. Based on long term power cycle tests on multiple systems, this has been seen considerably less than 1 time in 1000 cycles. If a test is running, the system will reset and the test will be restarted.
  - **Mode 2 networking limitation that affects SIE data file.** The number of channel data samples stored in the SIE file will typically not be the same for all channels with the same sample rate when tests are stopped.
  - **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.
  - **eDAQ EBRG/EHLS digital filter limitations.** These eDAQ layers do not support certain digital filter / sample rate settings across all 16 channels of any layer.
    - Decimal 20000 S/s Linear Phase 6667 Hz: Maximum of 12 channels per layer. The 25000 S/s Linear Phase 8333 Hz is supported for all 16 channels.
    - Decimal 10000 S/s Butterworth 1500 Hz: Maximum of 15 channels per layer.
    - Decimal 100 S/s Linear Phase 33 Hz: Maximum limited to 15 channels per layer only if Test engine frame rate is 100 Hz; otherwise, supported for all 16 channels.
    - Binary 8192 S/s Butterworth 1700 Hz: Maximum of 15 channels per layer.
    - Binary 4096 S/s Butterworth 640 Hz: Maximum of 15 channels per layer.

- **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.
  - **Use of HTTP and HTTPS protocols and browser add-ons / extensions when connecting to the eDAQXR.** When performing a firmware upgrade and using the HTTP protocol, a CTRL+F5 refresh of your browser after the firmware update is required to ensure that new features and GUI elements are available. The same is true of the help system. If the user accesses the help system after a firmware update, a CTRL+F5 is required to ensure new help content is made available as well. The optimal performance when using the eDAQXR is realized using the HTTP protocol, inclusive of typical use, as well as download operations from the eDAQXR. Additionally, it is recommended that any browser add-ons or

extensions be disabled when using the eDAQXR as their enablement has been linked to degrading performance of the GUI interface when in use.

- **Caution when using Netgear networking interfaces.** Certain Netgear switches and routers have been known to not work reliably when connected to the Host port of the eDAQXR. The problem will manifest as the Netgear networking interface showing the eDAQXR 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 eDAQXR Host port.

- **Errata (known issues)**

  - **Sporadic NETDEV WATCHDOG time out error.** This error is seen very 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.
  - **Sporadic eDAQ legacy EBRG layer EXCITATION_5V_OFFSET error.** This error is seen very 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.
  - **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 with Mode 2 networking.** Channels cannot be shared across the network nodes (i.e., channels defined on any given node cannot be used on another node for DataMode triggering, use in a computed channel, etc.). The user interface does not prohibit this. If the user configures as SXR test in this way, the user interface will attempt to start the test run. However, the system will reset on error.
  - **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 issue 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 eDAQXR 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.

eDAQXR System Overview

The following information defines the scope of the eDAQXR system relative to the TCE/eDAQ system. Functionality that is not supported in this first release is noted.

Legacy eDAQ layers

The following legacy eDAQ layers are supported, with restrictions noted where applicable. Layers not listed are not supported.

NOTE: It is critical that you verify that the latest firmware is loaded on your existing legacy eDAQ layers before removing the legacy eDAQ processor. There is no ability to upgrade firmware with the new EXRCPU.

- **EBRG – Layer Firmware v1.3**
- **EHLS – Layer Firmware v1.12**
- **EDIO – Layer Firmware v1.10**
  - GPS port will not be supported
  - Vehicle Bus modules will not be supported
- **EITB – Layer Firmware v1.5**
- **ENTB – Layer Firmware v1.0**

EDAQXR processor "EXRCPU"

- Axis cameras are supported (limited to the officially supported list).
- Serial Bus modules are not supported.
- The following MXB modules are supported
  - MX1615 B / BR
  - MX1601 B / BR
  - MX1609 KB / KBR
  - MX840 B / BR
  - MX460 B / BR
  - MX411 BR
  - MX471 B / BR
  - MX878 B (Limited Functionality – See Help System)

Channel and Test Setup

This section lists current functional issues that TCE/eDAQ users will likely view as deficiencies. Most of these (and possibly all) will be addressed in future releases.

- There is currently no support for multiple runs. All test runs are currently treated as autonomous runs. A new SIE file is generated for every test run.
- The eDAQXR currently supports Zero and Shunt scaling tasks in an interactive mode only. The user needs to be patient and wait for all channel readings to become stable for each step in the task.
- There is currently no provision for assigning data types to channels. All legacy eDAQ and MXB channels are sourced and stored in the SIE file as 32 bit floats. All other channels are sourced and stored in the SIE file as 64 bit floats (including CAN, GPS, and digital input channels).

Networking

Networking is handled much better in the eDAQXR compared to the eDAQ. The user only needs to communicate with the Master node. There are two operational modes supported. In Mode 1 networking, the master collects channel data from the other nodes and processes it to generate a single SIE file. For more demanding test requirements, Mode 2 networking is available where all nodes process data channels into separate SIE files which are merged into a single SIE file when downloaded.

- Mode 2 networking does not yet support the capability to share channel data streams across nodes.

Computed channels and DataModes

- Power Saver computed channel is not supported.
- Some of the other eDAQ computed channels currently have no use in the eDAQXR and are not supported (e.g., Engineering Scalar and Integer Scalar).
- Time at Level (multi-dimensional) DataMode is not supported.

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

Modules

• eDAQXR: EXRCPU-32GB w/eDAQ adapt, lid, cables	1-EXR-E-32GB-2
• eDAQXR: EXRCPU-64GB w/eDAQ adapt, lid, cables	1-EXR-E-64GB-2
• eDAQXR: eDAQXR CPU 32GB No base, lid, cables	1-EXRCPU-32GB
• eDAQXR: eDAQXR CPU 64GB No base, lid, cables	1-EXRCPU-64GB-2
• 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

• eDAQXR Data Sheet (English / German)	Version 1.1
• eDAQXR Compatible Legacy eDAQ Technical Specifications	Version 1.0
• eDAQXR Quick Start Guide	Version 1.0
• eDAQXR Safety Manual (English / German)	Version 2.0
• eDAQXR eDAQXR-lite User Manual	Version 6.0
• eDAQXR-lite Data Sheet (English / German)	Version 1.0
• eDAQXR-lite Quick Start Guide	Version 1.0
• eDAQXR-lite Safety Manual (English / German)	Version 1.0
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• 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
• EX23-R Data Sheet (English / German)	Version 3.0

RELEASEnotes

eDAQXR

Software Tools / Libraries

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

Accessories

• eDAQXR: eDAQXR to eDAQ adapter assembly	1-EXR-E-ADT-2
• eDAQXR: eDAQXR PWR CABLE W/REMOTE-PIGTAILS	1-EXR-PWR-IO-PT-2
• 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