Elektrobit

EB tresos Bootloader

Release note

product release 3.13.2

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Legal disclaimer

Confidential information.

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1. Overview

This document provides you information about this new release of EB tresos Bootloader:

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2. BL-3.13.2 Release

2.1. New features

This chapter lists all new features added in Bootloader since previous release:

- Support of configuration for the location of CRC in the check memory routine.

2.2. Enhancements

This chapter lists all enhancements added in Bootloader since previous release:

No new enhancements

2.3. Important Notes

This chapter lists important notes to take care for integration of this new release:

- Bootloader implementation matrix provides you information about what is supported in EB tresos Bootloader. Please read it carefully to identify if project specific requirements shall be implemented, at integration side, by customer.
- Bootloader User guide (Bootloader_xxx_documentation) has been updated, please read it carefully to integrate and configure the bootloader correctly.
- Bootloader has been qualified for following ACG versions: ACG-8.8.4
- New configuration parameters have been added and shall be configured during integration (See Bootloader_Essentials_documentation for more details):
  - Prog_RC_CrcOffset configuration in Prog plugin: the CRC Offset is applicable for RoutineControl CheckMemory and the configured CRC Offset will be added to the PROG_MSG_BYTE_INDEX

2.4. Known issues

Known issues can be found in Known issue list document send to customer. This document can be found on EB command server.

2.5. Fixed issues

This chapter lists all fixed issues in Bootloader:

- OSCBLPDUR-236: S3 Timer is reloaded if TesterPresent is received after Response Pending

For more details, please refer to the known issue list from the previous release.

2.6. Limitations

This chapter lists current limitations in Bootloader (features that will be supported in next releases). Generic limitation for the full product are defined in EB tresos Product Description.

- No limitation in this version

3. BL-3.13.1 Release

3.1. New features

This chapter lists all new features added in Bootloader since previous release:

- SecureBoot with Autosar cryptographic stack: Bootloader performs SecureBoot verification of software at ECU start, using Autosar CSM plugin.
- Support of download verification using Hash

3.2. Enhancements

This chapter lists all enhancements added in Bootloader since previous release:

No new enhancements

3.3. Important Notes

This chapter lists important notes to take care for integration of this new release:

- Bootloader implementation matrix provides you information about what is supported in EB tresos Bootloader. Please read it carefully to identify if project specific requirements shall be implemented, at integration side, by customer.
- Bootloader User guide (Bootloader_xxx_documentation) has been updated, please read it carefully to integrate and configure the bootloader correctly.
- Bootloader has been qualified for following ACG versions: ACG-8.8.3
- New configuration parameters have been added and shall be set during integration (See Bootloader_Essentials_documentation for more details):
  - ProgCsmHashConfigId: When Hash verification is used, it shall reference the CSM Hash configuration.
- New callbacks have been added and shall be implemented in integration code (See Bootloader_Essentials_documentation for more details):

- BM_CustomGetExpectedApplicationChecksum: If CSM is used for SecureBoot feature, it provides the expected application checksum that shall be verified at ECU start.

3.4. Known issues

Known issues can be found in Known issue list document send to customer. This document can be found on EB command server.

3.5. Fixed issues

This chapter lists all fixed issues in Bootloader:

- OSCPROG-2362: Sleep timer is not started during a transition from BL extended session (3) to BL default session (1)
- OSCPROG-2361: Bootloader sends a positive response to DSC02 with 4 bytes of Session Parameter Record instead of 2 bytes

For more details, please refer to the known issue list from the previous release.

3.6. Limitations

This chapter lists current limitations in Bootloader (features that will be supported in next releases). Generic limitation for the full product are defined in EB tresos Product Description.

- No limitation in this version

4. BL-3.12.1 Release

4.1. New features

This chapter lists all new features added in Bootloader since previous release:

- SecureBoot with HSM: Bootloader performs SecureBoot verification of software at ECU start, using HSM SecureBoot feature.
- SecureBoot with Bootloader Updater: SecureBoot and Bootloader Updater feature can now be used together.
- Decryption: Bootloader can receive encrypted data and decrypt them using Autosar cryptographics libraries.

4.2. Enhancements

This chapter lists all enhancements added in Bootloader since previous release:

- Support of new module ReProgMemM: ReProgMemM module performs interaction between Prog modules and memory driver (Flash driver or external Flash driver)

4.3. Important Notes

This chapter lists important notes to take care for integration of this new release:

- Bootloader implementation matrix provides you information about what is supported in EB tresos Bootloader. Please read it carefully to identify if project specific requirements shall be implemented, at integration side, by customer.
- Bootloader User guide (Bootloader_xxx_documentation) has been updated, please read it carefully to integrate and configure the bootloader correctly.
- Bootloader has been qualified for following ACG versions: ACG-8.8.2
- New modules ReProgMemM is provided in Bootloader delivery and shall be integrated. .
- When Multiple group of identifier is used, a new configuration MultipleIdentifierGroup/RxPduId in BlPduR shall be configured: This entry allows to configure the RxPduId that shall be used by BlPduR to transmit

diagnostic response. In case of Lin connection this field is used to define the MsgIdx of the configured LTP message.

- New configuration parameters have been added and shall be set during integration (See Bootloader_Essentials_documentation for more details):
  - Security section, in BM plugin configuration, shall be configured when using SecureBoot feature.
  - Enable_Csm_Decryption in Prog plugin: If enabled, it allows to use a symetric algorithm provided by CSM library. Current implementation is limited to CBC decryption with PKCS7 Padding. Cry Primitive name : CbcPkcs7Decrypt.
  - ProgCsmDecryptionConfigId in Prog plugin: If CSM decryption is used, it references the CSM decryption configuration.
- New callbacks have been added and shall be implemented in integration code (See Bootloader_Essentials_documentation for more details):
  - BM_CustomHsmVerifyMac: If direct use of HSM is performed when using SecureBoot feature, it implements the call to HSM interface performing a MAC verification.
  - PROG_CustomGetMacKey: Shall provide the key to be used for the MAC verification if Autosar crypto stack is used for MAC generation. If direct use of HSM is performed, this callback is not required.
  - PROG_CustomHsmUpdateInitBlock: If SecureBoot is used and in case of direct use of HSM is performed, this callback shall perform call to the HSM interface initializing a new MAC generation for a block.
  - PROG_CustomHsmUpdateBlock: If SecureBoot is used and in case of direct use of HSM is performed, this callback shall perform call to the HSM interface performing a new MAC generation for a block.
  - PROG_CustomHsmUpdateFinish: If SecureBoot is used and in case of direct use of HSM is performed, this callback shall perform call to the HSM interface finalizing a new MAC generation for a block.

4.4. Known issues

Known issues can be found in Known issue list document send to customer. This document can be found on EB command server.

4.5. Fixed issues

This chapter lists all fixed issues in Bootloader:

- OSCBM-299: Application is not verified by the SecureBoot feature when BM Timeout Check is activated

- OSCBLPDUR-209: LIN physical response corrupted by functional request
- OSCPROG-2301: WriteFingerprint request fails in case of download by logical block
- OSCPROG-2300: Application considered as valid even if the verification has failed
- OSCPROG-2269: Ethernet Bootloader not responding for the request Open Programming Session received by the application.

For more details, please refer to the known issue list from the previous release.

4.6. Limitations

This chapter lists current limitations in Bootloader (features that will be supported in next releases). Generic limitation for the full product are defined in EB tresos Product Description.

- No limitation in this version

5. BL-3.12.0 Release

5.1. New features

This chapter lists all new features added in Bootloader since previous release:

- Bootloader Updater: Bootloader software can be updated by downloading a Bootloader updater including a new Bootloader version

5.2. Enhancements

This chapter lists all enhancements added in Bootloader since previous release:

No new enhancements

5.3. Important Notes

This chapter lists important notes to take care for integration of this new release:

- Bootloader implementation matrix provides you information about what is supported in EB tresos Bootloader. Please read it carefully to identify if project specific requirements shall be implemented, at integration side, by customer.
- Bootloader User guide (Bootloader_xxx_documentation) has been updated, please read it carefully to integrate and configure the bootloader correctly.
- Bootloader has been qualified for following ACG versions: ACG-8.8.1
- New configuration parameters have been added and shall be set during integration (See Bootloader_Essentials_documentation for more details):
  - "Boot Manager Variant" in BM plugin: Shall be set to "Boot Manager" in Bootloader integration; shall be set to "Pre-Boot Manager" in Initial Bootloader Manager integration (when Bootloader updater is used).
  - "Check Application Validity" in BM plugin: To be configured in Initial Bootloader Manager integration (when Bootloader updater is used); Shall be enable if the application validity and jump shall be done in Initial Bootloader Manager and not in Bootloader.

- New callbacks have been added and shall be implemented in integration code (See Bootloader_Essentials_documentation for more details):
  - BM_CheckProgRequest: Required only in Initial Boot Manager integration, it shall provide information if re-programming request has been received in Application.
  - BM_CustomCheckValidAppl: Required only in Initial Boot Manager integration, it shall provide information if Application is valid.
  - BM_CustomCheckValidBLU: Required only in Initial Boot Manager integration, it shall provide information if Bootloader Updater is present and valid.
  - BM_CustomCheckValidBL: Required only in Initial Boot Manager integration, it shall provide information if Bootloader is present and valid.
  - BM_JumpToApplication: Required only in Initial Boot Manager integration, it shall perform the jump to application software.
  - BM_JumpToBLU: Required only in Initial Boot Manager integration, it shall perform the jump to Bootloader Updater software.
  - BM_JumpToBL: Required only in Initial Boot Manager integration, it shall perform the jump to Bootloader software.

5.4. Known issues

Known issues can be found in Known issue list document send to customer. This document can be found on EB command server.

5.5. Fixed issues

This chapter lists all fixed issues in Bootloader:

<listitem>
No issue fixed on this version
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For more details, please refer to the known issue list from the previous release.

5.6. Limitations

This chapter lists current limitations in Bootloader (features that will be supported in next releases). Generic limitation for the full product are defined in EB tresos Product Description.

- No limitation in this version

6. BL-3.11.0 Release

6.1. New features

This chapter lists all new features added in Bootloader since previous release:

No new feature

6.2. Enhancements

This chapter lists all enhancements added in Bootloader since previous release:

- EB tresos Bootloader now supports decompression slicing value inferior to 1000 bytes.

No new enhancements

6.3. Important Notes

This chapter lists important notes to take care for integration of this new release:

- Bootloader implementation matrix provides you information about what is supported in EB tresos Bootloader. Please read it carefully to identify if project specific requirements shall be implemented, at integration side, by customer.
- Bootloader User guide (Bootloader_xxx_documentation) has been updated, please read it carefully to integrate and configure the bootloader correctly.
- Bootloader has been qualified for following ACG versions: ACG-8.8.0
- Callback prototypes have changed to support PduLengthType type for length type parameter. If the PduLengthType configuration in EcuC plugin is uint16, no change is required in integration, in other case you shall adapt integration to the new type configuration.

6.4. Known issues

Known issues can be found in Known issue list document send to customer. This document can be found on EB command server.

6.5. Fixed issues

This chapter lists all fixed issues in Bootloader:

- OSCPROG-2135: Potential overflow of programming end address

For more details, please refer to the known issue list from the previous release.

6.6. Limitations

This chapter lists current limitations in Bootloader (features that will be supported in next releases). Generic limitation for the full product are defined in EB tresos Product Description.

- No limitation in this version

7. BL-3.9.3 Release

7.1. New features

This chapter lists all new features added in Bootloader since previous release:

- Sleep timer: Bootloader goes to sleep mode when no communication happens in default session
- Programming counter: Bootloader limits a block programming to the configured maximum value.
- Download by block: Programming can be performed using a block identifier instead of the physical memory address.
- Compressed Flash driver: Flash driver is stored in compressed format in Bootloader memory and is decompressed to RAM in case of successful security unlock.

7.2. Enhancements

This chapter lists all enhancements added in Bootloader since previous release:

No new enhancements

7.3. Important Notes

This chapter lists important notes to take care for integration of this new release:

- Bootloader implementation matrix provides you information about what is supported in EB tresos Bootloader. Please read it carefully to identify if project specific requirements shall be implemented, at integration side, by customer.
- Bootloader User guide (Bootloader_xxx_documentation) has been updated, please read it carefully to integrate and configure the bootloader correctly.
- Bootloader has been qualified for following ACG versions: ACG-6.4.10 / ACG-7.7.2 / ACG-8.7.2
- New configuration parameter "Verification Buffer size" has been added in Prog configuration in order to size the buffer used for verification computation. This buffer is used to temporary locate the data read from memory in order to compute the CRC/Hash/Signature on them. More the buffer is big, more the blocking time for verification computation will be high.

- New callbacks have been added and shall be implemented in integration code (See Bootloader_Essentials_documentation for more details):
  - PROG_CustomGetProgCounter: If reprogramming counter feature is used, it provides the current values of reprogramming counter stored in non-volatile memory.
  - PROG_CustomIncrementProgCounter: If reprogramming counter feature is used, it increments the current values of reprogramming counter stored in non-volatile memory.

7.4. Known issues

Known issues can be found in Known issue list document send to customer. This document can be found on EB command server.

7.5. Fixed issues

This chapter lists all fixed issues in Bootloader:

- OSCPROG-2060: CRC computation failure on unexpected value

For more details, please refer to the known issue list from the previous release.

7.6. Limitations

This chapter lists current limitations in Bootloader (features that will be supported in next releases). Generic limitation for the full product are defined in EB tresos Product Description.

- No limitation in this version

8. BL-3.9.2 Release

8.1. New features

This chapter lists all new features added in Bootloader since previous release:

- Dual bank: Bootloader supports new callbacks allowing integration code supporting dual bank update (hardware specific).
- LZSS decompression feature: Bootloader supports the decompression of the received data before writting them in Flash memory. LZSS algorithm is used.

8.2. Enhancements

This chapter lists all enhancements added in Bootloader since previous release:

No new enhancements

8.3. Important Notes

This chapter lists important notes to take care for integration of this new release:

- Bootloader implementation matrix provides you information about what is supported in EB tresos Bootloader. Please read it carefully to identify if project specific requirements shall be implemented, at integration side, by customer.
- Bootloader User guide (Bootloader_xxx_documentation) has been updated, please read it carefully to integrate and configure the bootloader correctly.
- Bootloader has been qualified for following ACG versions: ACG-6.4.10 / ACG-7.7.2 / ACG-8.7.1
- Board API BoardPerformReset was renamed to BoardPerformSwReset and takes no parameter now. Please update your integration accordingly.
- Board API BoardSetState was renamed to BoardSetSleepState and takes no parameter now. Please update your integration accordingly.
- Board API BoardGetResetType was renamed to BoardIsSwReset and takes no parameter now. It returns TRUE if the reset type is software. Please update your integration accordingly.
- Dual Bank feature has been added and require the following actions to be used:

- Enable "Dual Memory Bank Used" configuration parameter in Prog plugin.
- Implement callback BM_CustomDualBankInit performing hardware initialization required to use the dual bank (Hardware specific).
- Implement callback PROG_CustomCalcInactiveBankWriteAddr performing address translation, for write operation, depending of the active bank (Hardware specific).
- Implement callback PROG_CustomCalcInactiveBankReadAddr performing address translation, for read operation, depending of the active bank (Hardware specific).

- Callbacks PROG_CustomStoreResetCause and PROG_CustomGetResetCause have been added and shall be implemented to exchange information between Bootloader and application is case a response shall be sent after reset.

8.4. Known issues

Known issues can be found in Known issue list document send to customer. This document can be found on EB command server.

8.5. Fixed issues

This chapter lists all fixed issues in Bootloader:

- OSCPROG-1901: NRC78 response is not sent for an EcuReset (0x11) request with the SuppressPositiveResponse bit set
- OSCPROG-1872: Checksum generation errors are not detected if Authenticated/Secured Boot is enabled
- OSCPROG-1829: Flash writing operation is not done correctly when signature verification is performed on received data
- OSCBLPDUR-156: No NRC=13(IMLOIF) response for TesterPresent with suppress response bit
- OSCPROG-1872: Checksum generation errors are not detected if Authenticated/Secured Boot is enabled
- OSCPROG-1961: Sleep Timer is deactivated once a request is received
- OSCPROG-1943: On bootloader start-up, the sleep time-out only happens if the TCP connection is established
- OSCPROGOEMIND-81: Unexpected call to callback PROG_CustomSetDownloadVerificationSuccess() when it returns PROG_E_NOT_OK
- OSCPROG-1930: Corruption flag of the flash driver is not correctly updated after a signature length check failure

- OSCPROG-1917: Response to a DSC01 request is not sent after reset
- OSCPROG-1906: The callback PROG_CustomSetCrcCompareSuccess() is not called if CRC verification is wrong

For more details, please refer to the known issue list from the previous release.

8.6. Limitations

This chapter lists current limitations in Bootloader (features that will be supported in next releases). Generic limitation for the full product are defined in EB tresos Product Description.

- No limitation in this version

9. BL-3.9.1 Release

9.1. New features

This chapter lists all new features added in Bootloader since previous release:

9.2. Enhancements

This chapter lists all enhancements added in Bootloader since previous release:

No new enhancements

9.3. Important Notes

This chapter lists important notes to take care for integration of this new release:

- Bootloader implementation matrix provides you information about what is supported in EB tresos Bootloader. Please read it carefully to identify if project specific requirements shall be implemented, at integration side, by customer.
- Bootloader User guide (Bootloader_xxx_documentation) has been updated, please read it carefully to integrate and configure the bootloader correctly.
- Bootloader has been qualified for following ACG versions: ACG-6.4.10 / ACG-7.7.2 / ACG-8.7.0
- Callback PROG_CustomSetCrcCompareSuccess has been renamed to PROG_CustomSetDownloadVerificationSuccess. Please update your integration accordingly.
- Callbacks BM_DisableECCCheck and BM_EnableECCCheck have been added and shall be implemented in integration code to enable/disable the ECC check if available on the hardware.
- Callbacks UDS_CustomPositiveAnswerInd has been added and can (optional) be used in integration code to implement action on the sending of a positive response.
- LZSS Decompression feature has been added and require the following actions to be used:
  - Enable "Enable_Compression" configuration parameter in Prog plugin.

- Indicate in "Compression algorithm Id" configuration parameter in Prog plugin the algorithm Id used in RequestDownload request.
- Indicate in "Decomp_Out_Buffer_size" configuration parameter in Prog plugin the size of the decompression buffer depending of available RAM memory.

9.4. Known issues

Known issues can be found in Known issue list document send to customer. This document can be found on EB command server.

9.5. Fixed issues

This chapter lists all fixed issues in Bootloader:

- OSCPROG-1865: NRC78 response is not sent for a DiagnosticSessionControl(defaultSession) request with the SuppressPositiveResponse bit set
- OSCPROG-1847: SecurityAccess subfunction parameter is not read correctly
- OSCPROG-1825: CheckMemory fails with infinite NRC78 in specific configuration
- OSCPROG-1772: Bootloader goes to sleep during programming session
- OSCPROGOEMIND-73: Continuous pending response when some transitions are requested
- OSCPROG-1827: No response to a RequestDownload request when previous CheckMemory failed
- OSCPROG-1821: ECU does not return to Lock state when GetSeed is not allowed (NRC_37)
- OSCPROG-1765: Continuous pending response when two successive WriteFingerPrint requests are received and the first is wrong

For more details, please refer to the known issue list from the previous release.

9.6. Limitations

This chapter lists current limitations in Bootloader (features that will be supported in next releases). Generic limitation for the full product are defined in EB tresos Product Description.

- No limitation in this version