



ASR650 Firmware Release Notes

V2.35**2026-05-20**

CHANGED

- **Version Number 3rd Digit**

The version number has been extended to include a third digit. This is used for (minor) revisions within a major version, or for test versions.



FIXED

- **ABT200 BLE Connect**

The reader could freeze while attempting to establish a BLE connection if data was being sent at that point (e.g., tag reading). This is now prevented by ensuring that data is not sent until notifications have been enabled on the remote device.

V2.34

2026-03-19

**CHANGED**

- **Module Power Setting**

The setting for the module power has been removed. It is now enabled permanently. It is neither possible to request this configuration nor to set it.

- **BT/LAN/WLAN enable/disable**

Beside the '*Module Power*' setting, it was possible to enable or disable BT, LAN or WLAN separately. These settings were also removed. If one of these modules is installed, it is always powered. While it is still possible to request these settings, the attempt to set the configuration is rejected.

- **ABT300 BLE Characteristics**

A few BLE characteristics have been added: serial number string, firmware revision string and hardware revision string. Before, only manufacturer name string and model number string were available. Note that ABT300 firmware 1.4.15.2 (or higher) is required to support the additional characteristics.

V2.33

2025-06-19

**NEW**

- **ABT300 Support**

Implemented support for the new ABT300 Bluetooth module. This dual-mode add-on module features Bluetooth Classic (SPP) and Bluetooth Low Energy. Both operating modes are available simultaneously - there is no configuration required. But BLE is not available when the mode is set to 'Master' - it only works in 'Slave' mode.

- **Country Code Northern Ireland**

Added Country Code for Northern Ireland. If EID tags with a Country Code of '899' are being read and the ASR650 is configured to the output format 'Custom Format' and the settings for the Country Code are set to send it in 'ISO Alphanumeric' format (send 'Extended Code' must also be activated), the reader will send 'XI' instead of '899'.

**CHANGED**

- **Input Voltage Limits**

The input voltage too low threshold has been changed from 11.0V to 11.3V. This avoids a possible problem that the reader toggles between *input voltage too low* state and *input voltage okay* state for input voltages close to the lower threshold.

**IMPROVED**

- **FDX Diagnosis Y-Scale**

The function for requesting FDX diagnosis data was extended with an additional parameter that allows to adjust the vertical resolution (Y-Scale). Before only the horizontal resolution (X-Scale) could be changed.

**FIXED**

- **FDX-B Decoding**

The decoding of FDX-B transponders has been optimized. One of the FDX-B decoding algorithms could produce wrong IDs for EID tags programmed with a particular pattern. An additional check has been implemented to prevent the occurrence of these incorrect IDs.

V2.32**2024-04-12****IMPROVED**

- **Wireless Sync**

A new algorithm for evaluating the RSSI signal and determining the wireless synchronization level has been implemented. This should result in a more stable synchronization between readers.

V2.31**2023-11-29****FIXED**

- **Update Process**

In version 2.28, a change was made to the update process that disables unused interfaces during the update to eliminate possible update issues.

Because these changes did not resolve the issue satisfactorily, a fix is being released now.

- **MUX / No Antenna / Alarm Messages**

Fixed a problem that an antenna error (when using antenna multiplexers) could lead to an endless antenna tuning because of a buffer overflow.

- **Module Alarm Messages**

Alarm messages should only be sent via the add-on-module AET300-IoT – not when using other modules like ABTs or ‘standard’ AETs. There was a fix in version 2.26 already but this only affected the alarm transmission via RS232 and RS485 – these messages were still sent on the module interface. This has been fixed now.

V2.30**2023-10-11****NEW**

- **FDX-B Post Processing**

Implemented a post-processing routine for FDX-B which can eliminate some sort of interference.

**CHANGED**

- **HDX Trailer**

The handling of the Trailer has changed again. Even though it might not make too much sense, the Trailer content does not matter now if the Trailer Bit is set to ‘0’. That means, the reader will take the Trailer content and send it on any interface (without checking anything), depending on the configured Output Format.

In case the Trailer Bit is ‘1’, this is interpreted as ‘contains useful information’. Because the Trailer content is not included in the CRC16 of the tag, it is very insecure and for this reason the reader does not send the tag data with Trailer before the data is identical in three consecutive (valid) telegrams.

**FIXED**

- **Reader Status – Sync. Status**

Because parts of code have been missing, it was not possible to request the Sync. Status (0x73) via a Reader Status request (0xA8), what has been corrected now.

V2.29**2023-08-04****CHANGED**

- **Internal changes only**

V2.28**2023-05-11****CHANGED**

- **Firmware Update Process**

In the past, firmware updates could fail in case the reader received messages on any of the other interfaces when the update was running. Changes have been made to prevent this problem.

- **IoT Alarm Extension**

Additional information, e.g. antenna voltage and antenna number, is added to the alarms.

V2.27**2023-03-21****CHANGED**

- **Wireless Sync. Min-Level**

Due to hardware changes in the HDX receiver, an adoption of the minimum RSSI level for Wireless Sync. was required (from 1.100mV down to 500mV).

V2.26**Release 2023 / Q2****2023-02-21****NEW**

- **Configurable Device Name**

It is possible to set (and to request) a customizable device name. This can make it easier to distinguish between several readers on site. The name can have up to 31 characters.

- set_DeviceName 0x0C
- get_DeviceName 0x0D

**CHANGED**

- **Warning/Alarm Output**

A message/alarm will only be sent via the AET300-IoT now. Before it was sent on all interfaces but this was confusing for customers, who are not using the IoT functionality.

**FIXED**

- **AET300 Tag Output**

With the integration of the IoT function of the AET300, the output of the tag data was always done in Byte Structure. This was an error because with the 'standard' version of the AET300 the output of the tags should be made according to the configured output format. Only the AET300-IoT should always send the EID in Byte Structure, independently of the configured output format.

V2.25**2022-09-01****CHANGED**

- **HDX Tags with Trailer unequal to zero**

A company programmed and sold HDX-Read-Only tags which had the Trailer unequal to 0x000000. Because the reader is also checking this data, those tags have not been read. This has been changed now – these tags can be read – but for safety reasons, the tag must be decoded with the same data in three consecutive transponder telegrams before it is accepted by the reader.

V2.24**2022-08-17****CHANGED**

- **Tag History vs AET300-IoT**

The buffer for the tags has been doubled from 10 to 20. This was necessary for the case where the AET300-IoT is used. This buffer is used for the operating modes *Continuous ID Output* (see 'Delaytime') and *Requested ID Output* (see 'Last-ID-Requests').

- **Tag Output – FDX and HDX Field Strength**

Instead of the RMS value, the peak-to-peak value is now used as signal strength for the tag data output of FDX tags and for HDX the average value of the signal (if activated). This also corresponds to the values in the diagnostics and the reader status now. Due to the different calculation, it is possible that thresholds that may have been configured for the receiver sensitivity is no longer correct and must be readjusted.

V2.23**Release 2022 / Q2****2022-05-25****IMPROVED**

- **FDX-B Decoding**

The decoding of FDX-B transponders has been optimized.

V2.22**2022-05-03****NEW**

- **Startup-Delay**

With this new configuration, a delay for the startup can be set. This can make sense for installations where several readers are driven from one power supply, to prevent all readers from having the high-power requirement (during Auto-Tuning) simultaneously. The delay is configurable.

**CHANGED**

- **AET300 Version Info**

The number of digits in the version number has been increased to 4.



IMPROVED

- **Reader Status 2.0**

The Reader Status function has been enhanced and accelerated. Many parameters are now saved in the background and are immediately available when a request is made. In addition, the values for each antenna are available individually and can also be queried with a parameter individually per antenna.

V2.21**2021-11-04**

IMPROVED

- **Reader Routines optimized**

All reading routines (FDX-B, HDX and H4002) have been improved.



FIXED

- **Custom Timing**

There was a bug in the function *Config Plus* so that the *Custom Timing* could not be set higher than 255ms.

- **ABT200**

Fixed a problem in the ABT200 Bluetooth library.

V2.20

2021-02-26

**CHANGED**

- **ABT200 Bluetooth Friendly Name**

ABT200 Bluetooth friendly name was changed to 'ASR_1234' where '1234' corresponds to the last 4 digits of the ASRs serial number. This change was necessary due to some limitations in the Bluetooth LE specification.

**FIXED**

- **Bluetooth – Set Peer Address**

There was a problem in this function so that no peer address could be saved.

- **Bluetooth Module Disable**

The module could not be switched off via command.

V2.19

2021-02-04

**NEW**

- **Clear Tag History**

Added command that allows to delete parts or the complete content of the tag buffer. Hence old entries can be removed from the buffer.

- **ABT200 with BT121**

Added support for new Bluetooth module (BT121).

**IMPROVED**

- **FDX-B Decoding**

The decoding of FDX-B transponders has been optimized.

V2.18**2020-06-26****IMPROVED**

- **HDX Spike Filter**

To improve the HDX read range, spikes are filtered from the signal.

V2.17**2020-04-23****CHANGED**

- **Bluetooth Friendly Name**

The length of the device name was 17 characters. This led to the last characters of the serial number being cut off in some applications. The device name has now been shortened by 4 characters.

V2.16**2020-02-07****CHANGED**

- **FDX-B Trailerbit & Trailer unequal to 0**

FDX-B tags with the Trailer-Bit = 0 but a Trailer content different from 0 have not been read. This was changed so that such tags can be read but the reader will only send the EID if the result was identical in 3 consecutive telegrams.

V2.15

2019-12-05

**NEW**

- **Timing configurable**

To allow the adoption of the timing (RF-ON vs. RF-OFF) to other, non ISO11784/85 compatible, readers, settings for a freely configurable timing have been introduced. FDX (RF-ON): 50-1000ms, HDX (RF-OFF): 4-1000ms. But the timing of the other readers must be fixed to allow successful usage (via wireless sync.). One can try to find out the timing of another reader using the 'Timing Monitor' available on the mobile readers

**CHANGED**

- **Output Format**

Adopted the output formats to the mobile readers.

V2.14

2019-11-07

**NEW**

- **RSSI Output**

When the reader is configured to the output format *Byte Structure*, the RSSI value (signal strength indicator for HDX) can be sent in addition to the EID (optionally) now.

- **Output Format TIRIS**

A new output format was added.

**FIXED**

- **HDX Ghostreads**

Corrected a problem that led to the possibility for wrong HDX EID numbers.

V2.13**2019-08-23****CHANGED**

- **Internal changes only**

V2.12**2019-07-10****CHANGED**

- **Baud Rate 4800bps**
Added a new baud rate (4800bps).

V2.11**2019-03-20****CHANGED**

- **Bluetooth Passcode visible**
Since version 2.05, the Bluetooth passcode could not be requested from the reader anymore. This was changed again now so that it is possible again.

**FIXED**

- **AET200 Communication Problem**
Fixed a problem that a firmware update could not be applied in case of communication problems with the AET200.
- **AET200 Config LAN Save**
Saving the LAN configuration did not work.
- **Get RSSI**
Instead of 8 bits for the RSSI value, only 4 bit values have been sent.