

FMB110 firmware errata

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Introduction

We are always improving our device's performance, stability, and reliability. That's why Teltonika is one of the leading GNSS trackers manufacturers in the world.

This document describes **FMBXXX platform** devices firmware improvements, changes, new features implementations as well as current firmware release version.

| FIRMWARE VERSION | SUPPORTED HARDWARE |
|--------------------------------------|--|
| 01.00.XX | FMB0YX, FMB9X0 |
| 01.01.XX | FMB0YX, FMB9X0, FMB96X |
| 01.03.XX | FMB0YX, FMB9X0, FMB96X |
| 03.01.XX | FMB0YX, FMB9X0, FMB96X, FMB1YX |
| 03.02.XX | FMB0YX, FMB9X0, FMB96X, FMB1YX |
| 03.06.XX | FMB0YX, FMB9X0, FMB96X, FMB1YX, FM30XY |
| 03.07.XX | FMB0YX, FMB9X0, FMB96X, FMB1YX, FM30XY, FMB2YX |
| 03.18.XX | FMB0YX, FMB9X0, FMB96X, FMB1YX, FM30XY, FMB2YX, FMT100 |
| 03.25.XX | FMB0YX, FMB9X0, FMB96X, FMB1YX, FM30XY, FMB2YX, FM30XY, FMT100 |
| 03.27.XX | FMB0YX, FMB9X0, FMB96X, FMB1YX, FMU1YX, FMM1YX, FMC1YX, FMM001, FMC001, FM30XY, FMB2YX, FMT100 |
| 100.XX.YY (based on 03.25.XX) | FMB910 Basic |

Firmware versioning

- Structure

FMB(T).VER.[XX].[YY].[ZZ].Rev.[##]_[ID###]

- Syntax description
 - XX - major FW version.
 - YY - branch number, shows major changes in firmware, i.e. new module support added or new major feature added.
 - ZZ - major changes like bigger fixes, improvements and new features addition.
 - ## - minor changes like small fixes and improvements.
 - ID[###] - Spec ID KEY - Specific clients FW changes.

Firmware versions

| FIRMWARE VERSION | RELEASE DATE | CHANGES |
|--|--------------|--|
| 03.27.13.Rev.03 (recommended for FMT100, FMB1XY, FMB0XY, FMB2XY, FMB9XY, FMM130, FMC001) | 2022.08.01 | <ul style="list-style-type: none"> • Improved system stability and fixed general bugs |
| 03.27.13.Rev.01 (recommended for FMM001) | 2022.04.06 | <ul style="list-style-type: none"> • Manufacture testing improvements • Improved system stability and fixed general bugs |
| 03.27.12.Rev.00 (recommended for FMC001) | 2022.02.09 | <ul style="list-style-type: none"> • Preferred Operator functionality improvements • SLM320 modem support added • BLE advanced beacon improvements • Static navigation improvements • GNSS improvements • New OBD Data MCU support added • Improved system stability and fixed general bugs |

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| 03.27.07.Rev.00 (recommended for FMB9X0, FMB204, MTB100) | 2021.08.02 | <ul style="list-style-type: none"> • New Flash memory component support added • Inverted DOUT functionality added • Universal Beacons functionality added • Added Beacon On Change functionality • Beacons list expanded to support 50 beacon ID's • BLE AES128 encryption added • Added Ignition On Counter functionality • Added BLE Efento sensor support • Added encrypted record support (TLS) • Added Ban list control functionality • EGTS protocol support added • Added configurable ACK type (TCP/AVL) source feature • Advanced eco driving for all hardware • Matrix3 RFID support added • iButton list extended to 4000 iButtons • Device records saving/sending improvements • Towing scenario improvements • SMS Data Sending improvements on events generation • SMS commands setdigout and readio sending improvements • Time synch from NTP/NITZ improvements • Device wake up from sleep modes improvements • HW with eSIM feature general working improvements • Can adapters data reading on ignition off/on improvements • Can adapters settings over SMS commands improved • General device debug logs capture improvements • BLE whitelist (scan stability improvements) • Battery protection improvements • Improved system stability and fixed general bugs |
| 03.25.18.Rev.08 | 2021.04.30 | <ul style="list-style-type: none"> • internal GNSS chip firmware update • Improved AutoAPN feature |
| 03.25.18.Rev.05 | 2021.02.26 | <ul style="list-style-type: none"> • AutoAPN improvements • Odometer calculation from CAN adapters data improvements • Improved system stability and fixed general bugs |
| 03.25.18.Rev.03 | 2020.12.28 | <ul style="list-style-type: none"> • Fix data type for BLE Sensor Custom • Record data sending improvements • Records saving and sending logic improved • Improved system stability and fixed general bugs |
| 03.25.15.Rev.32 | 2020.07.21 | <ul style="list-style-type: none"> • Auto APN functionality added to base firmware. |
| 03.25.15.Rev.02 (recommended for FM30XY) | 2020.02.17 | <ul style="list-style-type: none"> • Improved Green Driving feature parameter sending. |
| 03.25.15.Rev.01 | 2020.01.22 | <ul style="list-style-type: none"> • Records saving and sending logic improved. |
| 03.25.14.Rev.05 | 2019.12.23 | <ul style="list-style-type: none"> • UL202 Fuel level sensor support improvements, status IO changed from (AVL ID 328) to (AVL ID 483) • Odometer accuracy improvements when the Odometer Calculation Source is selected as the LVCAN |

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| 03.25.14.Rev.03 | 2019.11.27 | <ul style="list-style-type: none"> • BLE beacons and BLE sensors support added to base release • Autocalibration reworked and improved • New IO element: Coordinates according to ISO6709 • Added Multiple movement source selection • Advanced eco driving selections added for FMT100 • On demand tracking feature added • Added On demand tracking activation by AIN1/DIN1 • Time synchronization algorithm changed • DOUT Control Via Ignition and DOUT Control Via CALL functionalities has been merged • DIN3 can now be selected as an ignition source • OBD II data reading improvements • Bluetooth dongle OBD data reading improvements • Wake up from ultra-deep sleep improved • TZBT sensors data reading improvements • Devices with eSIM communication improvements • Operators List feature improvements • CAN adapters data reading improvements |
| 03.25.07.Rev.00 | 2019.06.10 | <ul style="list-style-type: none"> • One wire data reading improvements • Manual geofence configuration improvements • Data sending in online deep sleep mode optimization • DOUT Control via Ignition implementation • OBD data reading improvements • SMS command btgetlist improvements • Periodic sending optimization • Changed setdigout command response to "DOUT is disabled from CFG" if DOUT is disabled configuration • Improved SMS responses |

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| 03.25.05.Rev.00 | 2019.05.06 | <ul style="list-style-type: none"> • Added FMB207 support • Added FMB964 support • Added FMB130 support • Added BT3 auto connection mode "User ID" • Added UL202-02 fuel sensors functionality • Improved record sending to backup • Added DOUT3 control for scenarios with FMB130 hardware • Improved OBD CAN reading • Add "Always" battery charge mode • Added codec14 protocol support • GPS Acquisition improvements • Improved duplicate lvcn parameters • OBDII improvements, for ignition off detection and protocol changing • Add RS485 parity selection • Improved ECO driving functionality I/O elements manipulation • Added impulse counter support for FMB130 • Added FW downgrade protection • Rename BT user ID I/O element text default value • Added composed Bluetooth name functionality • Changed minimum & default geofence zone radius to 5 meters • GPS status update • Improved Eco Driving detection for FMB20X devices • Improved baud rate change • Change Default Time Synchronization value to Disable (GNSS only) • getops SMS command added • Only Half ICCID sent to server on ICCID event |
| 03.18.21.Rev.00 | 2019.02.28 | <ul style="list-style-type: none"> • Improved OBD data reading • Changed "obdinfo" sms response |
| 03.18.20.Rev.00 | 2019.02.21 | <ul style="list-style-type: none"> • Improved Ultra Deep sleep mode |

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| 03.18.19.Rev.00 | 2019.01.14 | <ul style="list-style-type: none"> • Improved FMB207 support • Improved simultaneous DNS requests issue (DNS fails if requesting at same time). Do not affects FM3/FM4 with ext modem • Improved path creating for NMEA logging file (after sdformat) • OBD & ELD improvements • 1-Wire Dallas temperature sensors improvements • Do not allow unauthorized incoming calls if any authorized number is configured • VIN reset/change on ELD improved • Changed default battery level sms text to "Battery level %" • Improved CODEC12 CMD server -> RS232/RS485 data length • CAN interrupt handling reworked • Improvement for putting space to APN configuration then it's empty and sim is inserted • Improved DOUT control over SMS when no DOUTs are enabled • Reworked external modem power off/on procedures • Changed SMS cmd "getgps" time source, to prevent zero values when GPS is OFF • GSM numbers handling rework • Improvement for Bluetooth communication over BT 3.0 |
| 03.18.16.Rev.00 | 2018.12.04 | <ul style="list-style-type: none"> • Changed default configuration parameters values • Improved SIM switch algorithm for DUAL-SIM devices (FMB125, FMB122) • Added possibility to set LV-CAN200, ALL-CAN300, CAN-CONTROL program number using SMS command in Online Deep Sleep mode • Improved RS485 LLS reconfiguring on different positions |

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| 03.18.15.Rev.00 | 2018.11.26 | <ul style="list-style-type: none"> • The conditions for entering sleep depend on this parameter: Always / After Time Sync / After Position Fix • Improved records reading and sending • Fixed Total Odometer IO values appearing in Trip Odometer IO • Fixed unexpected GPS LED blinking after wake up from sleep • UDP data sending improvements • Fixed CAN CONTROL speed I/O element value parsing • Fixed Battery Voltage I/O coefficients • Improved Crash Detection duration calculation • Changed odometer configuration parameter available min value to 0, while on TCP configuration values is from 1 • Improved auto calibration algorithm • Improved data sending algorithm • Removed forced record sending after waking up from deep sleep • Fixed ELD data sending via BLE • ELD speed source selection improvements • Fixed BLE temperature sensors I/O low level configuration • Changed odometer source switching algorithm (OBD<->GNSS). If OBD data becomes unavailable device will not switch to GNSS source automatically • Improved crash data packing • Fixed SMS "odoset:" max value validation • Fixed device restarts due too many BLE devices in range when performing scanning operation • Improved LLS data reading stability • Changed "Engine Oil Temperature" OBD IO element value representation from SIGNED to UNSIGNED • Increased Odometer max value from 999999 to 4294967 |
| 03.18.03.Rev.00 | 2018.09.25 | <ul style="list-style-type: none"> • Fixed AIN1 and External Voltage swap for FMB900 |

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| 03.18.02.Rev.00 | 2018.09.24 | <ul style="list-style-type: none"> • Added shadow calibration functionality • Improved eco driving events functionality • Improved GNSS hdop&pdop validation • Fixed LVCAN Fuel Level value coefficient according to IO protocol • Added Battery level % IO element • Fixed gps fix acquisition • Added Configurable BLE transmitting power • Added ELD support into base OBD FW version • Improved communication with FOTA WEB • Reworked IO manager to properly support variable length of IO • Improved operation in Deep Sleep • Improved records packing • Improved crash records generation. • Improved FW startup speed • Increased Trip status reading from BTAPP rate • Improved Idling functionality • Fixed duplicated record issue • Improved Bluetooth scanning functionality • Added OBD DTC, LVCAN DTC IO elements • Improved Power consumption in sleep mode • Fixed incoming call detection • Improved records saving scenario • Added MIN SPEED protections for ECO DRIVING • Improved RS232 operation after device initialization • Improved TZBT data reading • Improved eco/green driving and crash detection functionalities • Max packet size increased from 1024 bytes to 1280 bytes |
| 03.10.09.Rev.00 | 2018.07.03 | <ul style="list-style-type: none"> • Improved LiPo battery detection |
| 03.10.08.Rev.00 | 2018.06.25 | <ul style="list-style-type: none"> • Fixed FOTA WEB hardware detection • Improved SMS/GPRS command "setdigout" with speed parameter according to documentation (do not trigger DOUTx if GNSS FIX unavailable) • Added ELD VIN number validation • Fixed OBD and LVCAN IO current value showing in configurator • Fixed record sending if mode was changed and send period "0" • Added FMB125 BLE DualSIM HW support |

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| 03.10.03.Rev.00 | 2018.05.31 | <ul style="list-style-type: none"> • Added TZ-BT05B sensor support • Improved BLE scanning • Improved data sending scenario • Fixed configuration loading after download via FOTA WEB issue • Improved DOUT functionality • Added CAN-CONTROL support • Changed LVCAN Engine Temperature and LVCAN Fuel Level value coefficient (according IO protocol) • Added new SMS/GPRS command "getimsi" for IMSI number reading • Added ELD functionality • DNS support improvement • Stability improvements |
| 03.09.01.Rev.00 | 2018.04.30 | <ul style="list-style-type: none"> • Improved FOTA WEB functionality • Improved odometer value calculating from LVCAN (km->m) • Improved 1-wire operation with long wires • Improved Bluetooth functionality • Improved OBD data reading |
| 03.08.05.Rev.00 | 2018.04.18 | <ul style="list-style-type: none"> • Improved Static Navigation filter • Improved Crash Detection scenario • Improved device connection to configurator after FW update • Updated LVCAN protocol to support 4 and 5 digits numbers • BT functionality optimization |
| 03.07.07.Rev.00 | 2018.04.05 | <ul style="list-style-type: none"> • Improved simultaneous use of several Bluetooth connections |
| 03.07.06.Rev.00 | 2018.03.19 | <ul style="list-style-type: none"> • Fixed IO elements High/Low config parameters negative values saving • Improved OBD communication • Improved Outgoing Call trigger conditions • Improved VIN reading • Record saving optimization • Improved iButton expire time calculation |
| 03.07.01.Rev.00 | 2018.03.02 | <ul style="list-style-type: none"> • OBD pinout for FM3 improvement • Improved data sending • Improved FOTA WEB configuration sending • Changed GPS state values reporting in SMS "getinfo" according documentation • Improved Crash Detection • Added GPRS OPEN timeout for FOTA WEB • Improved UNLOCK key generation for keyword restoring • LiPo battery charging optimization • Added FMB2YX hardware support |
| 03.06.04.Rev.00 | 2018.02.12 | <ul style="list-style-type: none"> • Improved record storing and sending algorithm • Improved communication with accelerometer • Improved firmware update handling with internal flash memory |

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| 03.06.01.Rev.00 | 2018.01.29 | <ul style="list-style-type: none"> • BLE functionality added • Improved OBD request functionality • Improved record search and sending scenario • Fixed SD storage (used/total) info displaying • Added OBD stuck protection • Improved logging • Improved movement detection in sleep modes • Added SMS "getrecord" for High prio record generation • Added fix for GPRS authentication pap/chap • Added Ultra Deep Sleep functionality • Improved LiPo charging algorithm • Added support of FM30XY hardware |
| 03.03.07.Rev.00 | 2018.01.03 | <ul style="list-style-type: none"> • New parameter for SMS event compositor: %gmap - provides Google Maps link in SMS event message • Improvement for OBD data display in Configurator Status window • Improved Ignition and Movement detection by CAN data (OBD/LVCAN) • Improved iButton IO event generation after sleep mode • Fixed Trip odometer precision when counting mode is "Between records" • Fixed "setdigout" command usage on FMB9YX |
| 03.03.06.Rev.00 | 2018.01.03 | <ul style="list-style-type: none"> • Fixed GPS speed value |
| 03.03.03.Rev.00 | 2017.12.05 | <ul style="list-style-type: none"> • Added iButton ID inversion to solve incompatibility with FMA • Added additional iButton family ID's • Improved backup server triggering if main server DNS request fails • Removed Ios generation in deep/online sleep for EcoScore, Dallas Temp/ID, iButton, RFID, LLS • Enabled GSM I/O's in online sleep • Added setdigout dependency on speed. DOUT change is not executed while speed is too high. • GPS version string truncated in "getver" SMS response • Movement detection sensitivity decreased • Improvement in records manager to prevent records corruption • High priority events are not checking to send period now • Towing IO reset on feature reactivation added • Fixed FOTA WEB issue when APN has login and password • Major stability improvement patch! • Added immobilizer state restore on startup • SMS sending is now aborted after 3 unsuccessful attempts • SMS events text composition added. You can add additional parameters to SMS text • Improved HID RFID reading in FMB125 • Added Green Driving Duration IO element (AVL ID: 243) • Fixed SIM PIN change via Bluetooth • RS232 buffered modes added |

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| 03.02.03.Rev.00 | 2017.10.17 | <ul style="list-style-type: none"> • Updated GPS FW (Galileo satellites are used now too) • Auto calibration procedure improved • Added new LV-CAN200 parameters: CNG Status, CNG Used, CNG Level, OIL Level, Engine Temperature • Added "getimeiccid" SMS/GPRS command • IMEI packaging for UDP fixed • Crash Trace fixed • BTAPP application improvement • OBD PID data requesting when VIN unavailable fixed • Fake overspeeding events are now filtered out • Fixed BT name autogenerating if empty • Fixed records sending via UDP • Autoconnect to FotaWeb on power ON and after "cpureset" added • OBD protocol detection improvements • GNSS (used for records) data while device is in GPS sleep / deep sleep / online deep sleep fixed • Changed BT DEFAULT name autogeneration by device type • Improved SD present and mounted state detection • Removed check for AIN min value 500mV • Records sending by min saved records fix |
| 03.01.04.Rev.00 | 2017.09.06 | <ul style="list-style-type: none"> • New feature: NMEA via Bluetooth • New feature: Read records • New feature: iButton reading notification via DOUT. • New SMS/GPRS command: getvin (Returns vehicle VIN number. Aplicable for FMB001, or other FMB devices with connected OBDII dongle) • BTAPP protocol updated • Improvements in records sending (fixes increased traffic usage) • Improved configuration saving time |

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| 01.03.13.Rev.00 | 2017.11.07 | <ul style="list-style-type: none"> • Improved overall device stability • Fixed Bluetooth Data Link. • Fixed Bluetooth name auto-generating if empty. • Fixed Bluetooth clear all Paired device list from configurator. • Fixed records sending via UDP. • Fixed IMEI packaging for UDP. • Improved SMS login/pass validator. All characters are now allowed. • Added protection for OBD Odometer value reset. • Added protection for IMEI corruption. • Fixed bad records detector. • Added call functionality (when event detected) in Deep Sleep mode. • Restart protection fixed. • Improvements in SIM PIN setting. • Changed default FOTA WEB Domain. • Fixed OBD PID data requesting when VIN unavailable. • OBD protocol detection improvements. • Modem power ON improvements. • NTP improvements. • Added “getimeiccid” SMS/GPRS command. • SMS/GPRS command “sdformat” improvements. • SMS Login/Pass validator improvements. • Removed check for AIN min value 500mV. • Added additional IO High/Low-level setter by ParamID. • Fixed SMS processing state check in modem SLEEP mode setter. • FOTA functionality improvement. • Added protections by GSM number and text length. • IO event External Voltage DeltaChange improvements. • Fixed issues with double records, bad records, record search. • Fixed microSD to RAM switching for records saving. • Added retries for unsuccessful outgoing call. |
| 01.03.11.Rev.00 | 2017.10.19 | <ul style="list-style-type: none"> • Fixed Crash detection functionality. • Battery charging improvement. • Record sending via UDP fixed. • Record sending in DeepSleep improvement. • FOTA WEB functionality improvement. • Added protection for IMEI corruption. |

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| 01.03.03.Rev.00 | 2017.07.24 | <ul style="list-style-type: none"> • Added FOTA WEB functionality • Optimization of power consumption in sleep modes • GNSS IO Text "GNSSpower" changed to "GNSSStatus" • Added zero filling the ibutton values • Enabled IOs GNSS, Total Odometer in dsleep mode • Improved getio SMS response for FMB125 • Added CCID validity check before PIN registration • Minimized power consumptions in sleep modes • Added SD card check before it's usage • Changed excessive idling default/max values • DUAL SIM functionality implementation • PIN Entering to second SIM improvement • SMS/GPRS getgps command improvement • Added dual server support • Operator Black list implementation |
| 01.00.32.Rev.00 | 2017.07.10 | <ul style="list-style-type: none"> • Authorized GSM numbers list increased to 200 • Unplug feature improvement • SMS command 'sdformat' - deletes all internal memory • SMS command 'deleterecords' - deletes Avl records from memory • Faster GPS FIX after leaving sleep mode • 'odomet' SMS command fixed • Excessive Idling functionality improvement • DOUT state is restored on startup • Towing activation timeout max value increased • Averaging now works in Deep Sleep mode too • Minor OBD improvements • Bluetooth pairing improvements • FMB962/FMB964 hardware support added • Records sending when link is open fixed |
| 01.00.30.Rev.05 | 2017.05.26 | <ul style="list-style-type: none"> • Added 5 geozones functionality • IO elements ICCID and SD Status are added • Added Keyword functionality • Crash detection improvement, now it detects consecutive events • Towing Detection improvement • Unplug detection improvement • GPRS connection stability improvement • Improved Unplug detection - now detects "plug" events too • Data sending without microSD card • getgps SMS commands format fixed • Default configuration changed - allow sending in roaming and unknown modes |
| 01.00.22.Rev.12 | 2017.04.13 | <ul style="list-style-type: none"> • Improved connection to GSM operators |
| 01.00.22.Rev.11 | 2017.04.07 | <ul style="list-style-type: none"> • Improved LiPo battery charger state interpretation |
| 01.00.22.Rev.09 | 2017.03.28 | <ul style="list-style-type: none"> • Updated GPS firmware version • Hardware detection improvement |

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| 01.00.22.Rev.06 | 2017.03.14 | <ul style="list-style-type: none"> • Corrected “Green driving” values: “m/s2” conversion to “g” • SIM PIN entering fixed. • SMS Reading improved. Don't go to DeepSleep if there are SMS to read in memory. • GPS Fuel Counter fix. • Jamming detection improvement. • AutoGeofence functionality improvement. • Entering to DeepSleep fixed • IO elements “event only” parameter fix • Improvement in connection to GSM operator • Added SD card drive capacity parameter to Status window • Added BeiDou satellite numbers • Trip odometer I/O calculation improvement. |
| 01.00.19.Rev.02 | 2017.01.18 | <ul style="list-style-type: none"> • OBD data, VIN, DTC error count reading, DTC PID's requests, DTC delete via Bluetooth • Fixed GPS no fix lock-up |
| 01.00.17.Rev.03 | 2017.01.06 | <ul style="list-style-type: none"> • Bluetooth Voice call added |
| 01.00.15.Rev.00 | 2016.11.23 | <ul style="list-style-type: none"> • Accelerometer axis values XYZ as IO elements • Configuration send/save over Bluetooth • NTP+NITZ Time synchronization • EcoDriving auto-calibration |