FMB202 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	• Improved system stability and fixed general bugs
03.27.13.Rev.01 (recommended for FMM001)	2022.04.06	• Manufacture testing improvements • Improved system stability and fixed general bugs
03.27.12.Rev.00 (recommended for FMC001)	2022.02.09	• 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

03.27.07.Rev.00 (recommended for FMB9X0, FMB204, MTB100)	2021.08.02	• **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	• internal GNSS chip firmware update • Improved AutoAPN feature
03.25.18.Rev.05	2021.02.26	• AutoAPN improvements • Odometer calculation from CAN adapters data improvements • Improved system stability and fixed general bugs
03.25.18.Rev.03	2020.12.28	• 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	• Auto APN functionality added to base firmware.
03.25.15.Rev.02 (recommended for FM30XY)	2020.02.17	• Improved Green Driving feature parameter sending.
03.25.15.Rev.01	2020.01.22	• Records saving and sending logic improved.
03.25.14.Rev.05	2019.12.23	• 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

03.25.14.Rev.03	2019.11.27	• **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	• 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

03.25.05.Rev.00	2019.05.06	• **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 lvcan 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 improvement • bt getlist improvement • Added BLE connection control functionality, when service id is configured • Use speed if LVCAN/OBD speed is 0 • Improved record generating when speed source is configured as OBD/CAN • Added speed source configuration parameter for scenarios where vehicle speed is needed • Improved speed jump filter • Crash trace improvements • Changed "obdinfo" sms response - returns LAST detected OBD protocol now
03.18.21.Rev.00	2019.02.28	• Improved OBD data reading • Changed "obdinfo" sms response
03.18.20.Rev.00	2019.02.21	• Improved Ultra Deep sleep mode

03.18.19.Rev.00	2019.01.14	• 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	• 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

03.18.15.Rev.00	2018.11.26	• 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	• Fixed AIN1 and External Voltage swap for FMB900

03.18.02.Rev.00	2018.09.24	• 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 incomming 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	• Improved LiPo battery detection
03.10.08.Rev.00	2018.06.25	• 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

03.10.03.Rev.00	2018.05.31	• Added TZ-BT05B sensor support • Improved BLE scanning • Improved data sending scenario • Fixed configuration loading after download via FOTAWEB 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	• 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	• 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	• Improved simultaneous use of several Bluetooth connections
03.07.06.Rev.00	2018.03.19	• 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	• 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	• Improved record storing and sending algorithm • Improved communication with accelerometer • Improved firmware update handling with internal flash memory

03.06.01.Rev.00	2018.01.29	• **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	• **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	• Fixed GPS speed value
03.03.03.Rev.00	2017.12.05	• 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**

03.02.03.Rev.00	2017.10.17	• 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	• 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

01.03.13.Rev.00	2017.11.07	• 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	• 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.

01.03.03.Rev.00	2017.07.24	• Added FOTA WEB functionality • Optimization of power consumption in sleep modes • GNSSS 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	• 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 • ‘odoset’ 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	• 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	• Improved connection to GSM operators
01.00.22.Rev.11	2017.04.07	• Improved LiPo battery charger state interpretation
01.00.22.Rev.09	2017.03.28	• Updated GPS firmware version • Hardware detection improvement

01.00.22.Rev.06	2017.03.14	• 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	• 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	• Bluetooth Voice call added
01.00.15.Rev.00	2016.11.23	• Accelerometer axis values XYZ as IO elements • Configuration send/save over Bluetooth • NTP+NITZ Time synchronization • EcoDriving auto-calibration