IS1001-MC FIRMWARE UPDATE v1.7.1

RELEASE NOTES | APRIL 29, 2020

IS1001-MC CBG Board Firmware v1.7.1:

- Implemented automatic external Flash drive disconnection, whenever process of creating a file or writing to a file takes significantly longer than expected. This should prevent failed external Flash drive from causing inability to write new records into the IS1001-MC memory or to collect records from the IS1001-MC memory.

UPDATING FIRMWARE GUIDELINES

The firmware update is done via Biomark Device Manager software. Please refer to IS1001-MTS User Manual or Biomark Device Manager User Manual for the procedure.

Important! Tags memory may be erased after the application firmware update is complete, so it is recommended to download content of the memory prior to updating.

All settings may be reset to manufacturer default values during the update process, so it is recommended to generate a Controller Settings Report (RCS command) for the reference prior to updating the IS1001-MTS system (for IS1001-MC v1.5.2 and earlier the command is RRS – Report Reader Settings).

Firmware of all devices must be updated to the latest versions in order for the system to function properly. Start with updating IS1001 Application of all nodes, then update IS1001-MC CBG and finish with updating IS1001-MC Application.

For technical assistance please contact the Technical Services Department of Biomark at (208) 275-0011 or email biomarkservice@merck.com.

IS1001-MC FIRMWARE UPDATE v1.7.0

RELEASE NOTES | JUNE 12, 2019

IS1001-MC Application Firmware v1.7.0:

- Implemented FDX-B tag detection signal level measurement feature – when enabled, every time an FDX-B tag ID is successfully detected, signal level is measured and reported. The measured signal level value is appended to the end of the detected tag ID message; it is also stored with the tag ID in main memory and backup tag memory.

  TAG: 01 01 06/05/2019 11:06:35.750 3D9.2098AB0380 **202 mV**

  TAG: 01 01 06/05/2019 11:06:35.750 3D9.2098AB0380 30.0 C **202 mV**

  Added "DTS{1|0}" command and "FDXB Sig. Level Det." line on LCD menu Detection Setup screen to enable/disable the functionality. By default, the tag signal measurement is disabled.

- Implemented BioTherm tag temperature detection. The measured temperature value is appended to the end of the detected tag ID message; it is also stored with the tag ID in main memory and backup tag memory. The displayed temperature range is +25.0°C to +50.0°C. Temperature below range is displayed as "LL.L C", temperature above range is displayed as "HH.H C".

  TAG: 01 01 06/05/2019 11:06:35.750 3D9.2098AB0380 **30.0 C**

  TAG: 01 01 06/05/2019 11:06:35.750 3D9.2098AB0380 **30.0 C** 202 mV

  Added "DTT{1|0}" command and "BioTherm Temp. Det." line on LCD menu Detection Setup screen to enable/disable the functionality. By default, the temperature detection is disabled.

  Note: Specified BioTherm tag temperature measurement accuracy is ±0.5°C, BUT only from +33.0°C to +43.0°C. Accuracy is not specified and not guaranteed outside the +33.0°C to +43.0°C range.

- Changed backup tag memory format to allocate space for measured tag signal level and detected temperature values storage.

  Important! Backup tags memory will be erased after the application firmware update is complete, so it is recommended to download content of the memory prior to updating the IS1001-MC.

- Added ability to perform Full Tune process of all nodes in the Switching Sequence one after another, by using "NFTA" command.
- Added ability to cancel node(s) Full Tune process, by pressing "Esc" key.
- Removed "Controller Power Mode" line from LCD menu Controller Setup screen.
- Removed "AES256 Compliant" line from LCD menu Communication Setup screen.
- Added "Remote Communication Port Transfer Rate" setting ("CRR{F|S}" command) with "Full" and "Slow" options to be used whenever external communication hardware has limited data transfer capabilities.
- Corrected "Idling Time" value displayed in Full Status Report.

- Changed Full Status Report order and commands list order to match new format.

IS1001-MC CBG Board Firmware v1.7.0:

- Added support for FDX-B tag detection signal level value and BioTherm tag temperature value in tag records.

IS1001-MC FIRMWARE UPDATE v1.6.5

RELEASE NOTES | FEBRUARY 15, 2019

IS1001-MC CBG Board Firmware v1.6.5:

- Added support for the new replacement Flash memory IC, as the original IC became obsolete in 2018.
- Added "Controller Internal Data Memory Error" alarm if the detected memory IC is not supported.

Note: This update is critical for preventing possible data loss and must be applied to all CBG PCBAs with the following s/ns:

- 46127.0001 thru 46127.0050
- 49078.0001 thru 49078.0050

These PCBAs were installed in IS1001-MCs starting with s/n: 1832.0319.

IS1001-MCs with s/ns below 1832.0319 that are already updated with CBG Board firmware v1.6.4 are not required to be updated to v1.6.5. Updating to v1.6.4 is strongly recommended.

Important! After the CBG Board firmware is updated to v1.6.5, the IS1001-MC's internal memory must be erased via its user interface or by using "MEE" command, so it is recommended to download content of the memory prior to updating the IS1001-MC.

IS1001-MC FIRMWARE UPDATE v1.6.4

RELEASE NOTES | FEBRUARY 7, 2019

IS1001-MC Application Firmware v1.6.4:

- Added support for selective record type data collection by DCA.

IS1001-MC CBG Board Firmware v1.6.4:

- Improved memory write process by writing each new record into memory in two steps: first the data, then record validation bytes.
- Improved memory erase process by marking all records within a sector as invalid, in addition to marking all sectors as invalid.
- Improved memory erase process by starting from the present working sector instead of the first physical sector.
- Improved external Flash Drive handling by automatically creating a new subfolder for each one hundred data files.

IS1001-MC FIRMWARE UPDATE v1.6.3

RELEASE NOTES | SEPTEMBER 10, 2018

IS1001-MC Application Firmware v1.6.3:

- Fixed node's status packets order and timeout delay to avoid MC reporting "0" values for node's diagnostic parameters whenever total nodes sequence cycle time exceeds 2 seconds.

IS1001-MC CBG Board Firmware v1.6.3:

- Added support for selective record type data collection by DCA.

IS1001-MC FIRMWARE UPDATE v1.6.2

RELEASE NOTES | AUGUST 12, 2017

IS1001-MC Application Firmware v1.6.2:

- Corrected issue with deactivation of Automatic Standby function.
- Changed Alarms Unique Delay default value to 3600 seconds.
- Replaced "Error: Autostandby Voltage Deactivation Setting Is Too Low" message with "Error: Deactivation Setting Is Invalid".
- Replaced "Controller Temperature High/Low" alarms with "Temperature High/Low" in order to be suitable for use as alarms from nodes.
- Replaced "VTT For All Nodes In Sequence Enabled" message with "Node VTT Enabled" when VTT is activated on a single node.

IS1001-MC CBG Board Firmware v1.6.2:

- Updated MC's cycle synchronization functionality for multiple IS1001-MCs. The Slave MC(s) will wait for the “new cycle start” signal from Master MC before repeating its sequence. This way, if the Slave MC has fewer nodes in its sequence than the Master MC, synchronization of the sample sequence will be maintained.

IS1001-MC FIRMWARE UPDATE v1.6.1

RELEASE NOTES | JANUARY 18, 2017

IS1001-MC Application Firmware v1.6.1:

- Corrected misspelling of “Reset to Factory Default Parameters” command execution message.
- Changed “Node Discovered” message type to “INF:” when node has no ID assigned to it. This message is rebroadcasted every 5 minutes.
- Implemented “MFN” command to change present USB storage file number.
- Added support for reading and writing of all settings at once to enable preserving the existing parameters' settings during firmware update and for allowing exchange of the settings between controllers.
- Changed to postpone periodic VTT, alarms rebroadcast and periodic reports until an antenna full tuning process is completed.
- Enhanced “CSV - Set Controller Automatic Standby Voltage” command to include voltage setting for switching back to Scan mode.
- Changed command “CAS - Set Controller Automatic Standby” to “CPS - Set Controller Periodic Standby”.

IS1001-MC CBG Board Firmware v1.6.1:

- Fixed an issue with collecting new records by Biomark’s Data Collection Application software from IS1001-MC’s memory after entire memory erase.

IS1001-MC FIRMWARE UPDATE v1.6.0

RELEASE NOTES | MARCH 31, 2016

IS1001-MC Application Firmware v1.6.0:

- Added ability to copy the entire content of MC memory onto External USB Flash Drive into a single file.

- Added support for node's Antenna Dynamic Output Power functionality.
- Added ability to change Detection Unique Mode and Detection Unique Delay settings for each node individually, as well as for all nodes together.
- Extended maximum FDX-B Scan Time parameter to 500 milliseconds.
- Implemented 2 minutes delay before sending the first automatic Noise Report after system power up to ensure accurate data is reported.
- Implemented on-demand Diagnostic Data Report that contains only vital diagnostics information of the system.
- Added support for Biomark's new IS1001 Data-Over-Power (DOP) devices and implemented on-demand DOP Devices Status Report that provides detailed information of the devices present on CAN Bus network.
- Removed ability to change node's local USB port speed setting.
- Improved FDX-B Signal Level measurement accuracy throughout the operating temperature range.
- Changed FDX-B Signal Level measurement to be displayed in both millivolts and percent.
- Antenna Current and FDX-B Signal measurements are now cleared to 0 when system is in Standby mode (instead of keeping the last measurements received from nodes).
- Changed to not generate "Node Tuning Capacitance Low" and "Node Tuning Capacitance High" alarms if the condition calls for it but the present phase measurement is 0. Phase measurement of 0 indicates antenna is far out of tuning range or is not connected.
- Replaced "Half-Telegram Tag" with "Fastag" in the LCD menus, list of commands, messages and reports' sections.
- Replaced "Reader" with "Controller" in the LCD menus, list of commands, messages, alarms and reports' sections related to Master Controller.
- Replaced "Node" with "Reader Node" in the LCD menus, list of commands and reports' sections related to IS1001 nodes.
- Updated content and items' order in the LCD menus, list of commands and in several reports.
- "MFD - Download Full Memory" command replaced with "MED - Download Entire Memory".
- "MFE - Erase Full Memory" command replaced with "MEE - Erase Entire Memory".
- Added support for multiple Data Collection Application centers.
- Added support for system's date/time synchronization with National Institute of Standards and Technology (NIST) through Data Collection Application.
- Improved speed of node's firmware update through MC over internet connection. Requires BioTerm v.1.16.3 or later.

IS1001-MC CBG Board Firmware v1.6.0:

- Added support for FDX-B Scan Time up to 500 milliseconds.

- Added support for Biomark's new IS1001 Data-Over-Power devices.
- Added support for multiple Data Collection Application centers.

IS1001-MC FIRMWARE UPDATE v1.5.1

RELEASE NOTES | DECEMBER 4, 2014

IS1001-MC Application Firmware v1.5.1:

- FDX-B Half-Telegram™ Tag detection default value changed to Off.
- Detection efficiency test changed to automatically turn on when VTT is set to On and turn off when VTT is set to Off.
- "HDX Decoding" replaced with "HDX Tag Detection" in Full Status Report.
- "Sync Input Present" parameter moved to "Diagnostics" section in Full Status Report.
- Changed settings order in "Communication" section in Commands List, Full Status Report Reader Settings Report and Keypad Menu Settings: Local Port settings are displayed first, followed by Remote Port settings.
- Added support for "AES-256 Compliant" Lantronix XPort Ethernet module (special order item).
- Fixed issue with "Auto Standby Time" being displayed incorrectly in status report when it was set to 10 hours or more.

IS1001-MC CBG Board Firmware v1.5.1:

- Fixed issue with dated memory download when two months are selected for the download range.
- Fixed issue with tag ID being written to USB drive in decimal format incorrectly.
- Added warning when USB drive cannot be recognized or its format is not supported - "EXT. MEM. READY" LED flashes the error code.

IS1001-MC FIRMWARE UPDATE v1.5.0

RELEASE NOTES | AUGUST 6, 2014

IS1001-MC Application Firmware v1.5.0:

- Added support for detection of Half-Telegram™ FDX-B PIT tags. Half-Telegram™ FDX-B PIT tags were designed by Biomark, Inc. for use at high water velocity applications requiring high detection rates. This tag telegram consists of only 64 bits compared to 128 bits in ISO-standard FDX-B PIT

tag. Thus, it takes the tag only 16 milliseconds to transmit its telegram vs. 32 milliseconds that takes ISO-standard FDX-B PIT tag to transmit its telegram.

- Changed Detection Unique Delay setting to values in seconds: 1 - 43200 (1 second to 12 hours).
- Minor issues fixed.

IS1001-MC CBG Board Firmware v1.5.0:

- Added support for detection of Half-Telegram™ FDX-B PIT tags.

IS1001-MC FIRMWARE UPDATE v1.4.3

RELEASE NOTES | MAY 16, 2014

IS1001-MC Application Firmware v1.4.3:

- Added Backup Tag Memory. Backup Tag Memory is a dedicated tag IDs memory, physically separated from main internal Master Controller memory. Only tag IDs with date and time stamp are written to Backup Tag Memory following the same rules as for main memory (Unique Mode setting dependable). Backup Tag Memory size is 29120 tag IDs. When Backup Tag Memory gets full 3640 oldest tag IDs (oldest 12.5%) are erased. Backup Tag Memory cannot be disabled and has its own download and erase commands.
- Added Memory Status Report ("RMS" command). Memory Status Report contains main Memory status (usage in percent), Backup Tag Memory status (number of records and usage in percent), Store VTT To Memory setting (On/Off) and External Storage status (connection and buffer status, present file name).
- Fixed decimal conversion problem when reader is set to display tag IDs in Decimal.
- "Remore" replaced with "Remote" in status report.
- "Load Factory Default Parameters" replaced with "Reset To Factory Default Parameters" in commands list.

IS1001-MC FIRMWARE UPDATE v1.4.2

RELEASE NOTES | APRIL 11, 2014

IS1001-MC Application Firmware v1.4.2:

- Fixed decimal conversion problem when reader is set to display tag IDs in Decimal.
- Replaced "Remore" with "Remote" in status report.

- Replaced "Load Factory Default Parameters" with "Reset To Factory Default Parameters" in commands list.

IS1001-MC FIRMWARE UPDATE v1.4.1

RELEASE NOTES | FEBRUARY 20, 2014

IS1001-MC Application Firmware v1.4.1:

- Fixed "FDXB Scan Time" setting from keypad.

IS1001-MC CBG Board Firmware v1.4.1:

- Minor issue fixed.

IS1001-MC FIRMWARE UPDATE v1.4.0

RELEASE NOTES | JANUARY 21, 2014

IS1001-MC Application Firmware v1.4.0:

- Added ability to see the progress of Node Antenna Full Tune process through MC's communication ports.
- Added adjustment for FDXB Detection Scan Time: sets node scan time or FDX cycle time when HDX detection is enabled. Available settings are from 45 to 200 milliseconds (in 5 milliseconds increments).
- Added start of switching sequence synchronization feature for multiple MCs synchronization.
- Added "Modem Protocol" to remote communication port and support for Biomark's new Remote Data Collection System (communication via Sierra wireless modems).
- "Antenna Noise" replaced with "Noise".

IS1001-MC CBG Board Firmware v1.4.0:

- Added adjustment for FDXB Detection Scan Time: sets node scan time or FDX cycle time when HDX detection is enabled. Available settings are from 45 to 200 milliseconds (in 5 milliseconds increments).
- Added start of switching sequence synchronization feature for multiple MCs synchronization.

- Added support for Biomark's new Remote Data Collection System (communication via Sierra wireless modems).