

Service Bulletin

MODEL(S)	TB20, TB30, TB40, TB60
PART NUMBER(S)	6430020-(), 6430030-(), 6430040-(), 6431060-()
DESCRIPTION	Advanced Lithium-ion Battery
TOPIC	Software Update Version 1.0.4
PURPOSE	Product and Performance Enhancements
RELEASE DATE	June 22, 2022

APPLICABILITY

This Service Bulletin is applicable to the TBX Series of Advanced Lithium-ion Batteries, part numbers 6430020-(), 6430030-(), 6430040-(), and 6431060-(), manufactured by Mid-Continent Instrument Co., Inc. (dba True Blue Power and Mid-Continent Instruments and Avionics). These updates are to be performed only by authorized personnel per the instructions as listed in this Service Bulletin. Units with this software upgrade are available for sale from the manufacturer.

PURPOSE

The TBX software version 1.0.4 represents improvements to product functionality of the TBX Series.

EFFECTIVITY: RECOMMENDED

TBX units in the field can be updated to Software Version 1.0.4, but are not required to do so for continued airworthiness.

True Blue Power is recommending that all TB20, TB30, TB40 and TB60 units in the field be updated to Software Version 1.0.4 to take advantage of added features, enhancements and resolutions that improve the function and performance of the product.

Following the release date of the updated software, all general availability of TBX units manufactured or serviced by True Blue Power shall be installed with Software Version 1.0.4 or later.

DESCRIPTION

The following list describes the enhancements and resolutions incorporated in Software Version 1.0.4.

ENHANCEMENTS

1. Improve cell imbalance failure and cell over temperature failure reporting.
Add delay to avoid nuisance faults and assign unique fault bit identifier for cell imbalance fail (ARINC 429 Label 352 bit 28) and for cell over temperature fail (ARINC 429 label 352 bit 29).
2. Transition the battery from Active Mode to Sleep Mode if the battery voltage remains less than 16 volts for 6 minutes.

RESOLUTIONS

1. Modified heater test BIT timing to ensure that the battery enters Sleep Mode when inactive. With increasing service time, batteries could previously stay active and self-discharge after use, particularly in cold environments.
2. Updated ARINC transmission timing to allow more robust communication with receiving equipment.
3. Prevent condition that causes battery to get stuck in Control (Maintenance) Mode.
4. Prevent condition that causes battery to provide unlimited charging after a brief discharge during charge current limiting operation.
5. Corrected FET temperature charge current limiting to work in both charge current limiting state and (added) charge current unlimited state.
6. Corrected State of Charge (SOC) calculation when battery is disabled during charging/discharging.

ESTIMATED MANPOWER

Software can be downloaded and updated on fielded units in approximately 10 minutes.

WEIGHT AND BALANCE

No change

ELECTRICAL LOAD DATA

No change

CERTIFICATION

This Service Bulletin represents a minor change to the previously approved Technical Standard Orders Authorization for the TBX series of Advanced Lithium-ion Batteries. Any changes to software have been completed in accordance with approved developmental and quality processes per the guidelines of RTCA document DO-178C.

OTHER PUBLICATIONS AFFECTED

True Blue Power Installation Manual and Operating Instructions are updated with information associated with this Service Bulletin, as applicable. The manual numbers for each model are listed below and the latest revisions can be found at www.truebluepowerusa.com.

- TB20: 9019286; TB30: 9019287; TB40: 9019288; TB60: 9019485

ACCOMPLISHMENT INSTRUCTIONS

The action required by this Service Bulletin can be accomplished by returning the unit to True Blue Power or by performing the instructions as listed in this section.

If returning the TB20, TB30, TB40 or TB60 unit to True Blue Power:

Call True Blue Power sales department for a Return Material Authorization (RMA) at 316-630-0101.

Return address: True Blue Power
 9400 E. 34th Street N.
 Wichita, KS 67226

If performing this update in the field:

1. Download the approved software update file from <https://www.truebluepowerusa.com/software-updates/> to the root directory of a standard FAT formatted USB flash drive. If updating from 1.0.1 or 1.0.2, file name must remain “*update.muf*.” If updated from 1.0.3, file name is flexible with “.muf” as the extension.
2. Follow the instructions as listed on the website or Section 5 of the Install Manual.

To verify software version (optional):

1. Load the *getcfg.cmd* file to the root directory of a standard FAT formatted USB flash drive.
2. Follow the same instructions for updating the software as listed on the website or Section 5 of the Install Manual.
3. The battery will write a standard text file, *installer.txt*, on the USB flash drive. It can be viewed with any text editor and will display the software version, battery serial number (only on batteries factory built with software 1.0.2 or later) and currently loaded custom configuration parameters.