

Extreme
BM1 Not to Be Used With xBolt-G2
Revision 1



Date: April 14, 2021
 Applicability: XBOLT-G2
 Issued By: Jack Rader
 InTouch: 7659230 & 7679564

BACKGROUND INFORMATION

Battery Manger Gen 1 (BMGR1) hardware was originally designed for use with XPulse and XEM in mind. The capabilities of the hardware are limited by its design and limited firmware capacity.

With the rise of downhole hours of xBolt-G2 (Lagun), it has been determined that BMGR1 hardware has drawbacks that can negatively affect performance. As such, BMGR2 and XBT hardware is required for xBolt-G2 going forward.

PROCESS IMPROVEMENTS

In a recent case, field engineers reported that an xBolt-G2 tool was not transmitting for several hours during a run.

When dump analysis was performed, xBolt-G2 MCU and PPP modules were constantly resetting during that time, and the root cause of failure was determined to be that the BMGR1 battery in the “A” position. As the BMGR1 exceeded depletion over 50 amp hours used, the voltage was low enough to cause the MCU and PPP to reset, but not low enough to trigger a seamless transfer of power to the BMGR2 battery in the “B” position. It took many hours before the voltage was low enough for this change to occur. Once battery “B” took control, the xBolt-G2 tool functioned normally.

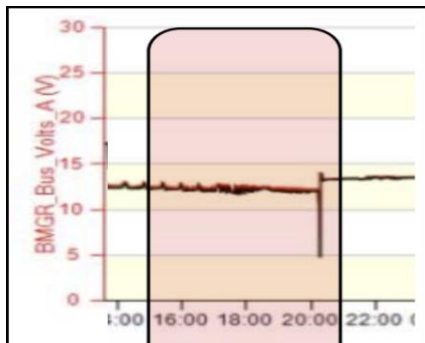


Figure 1: BMGR A voltage drops from 15:00 to 20:00. BMGR B takes control at 20:00

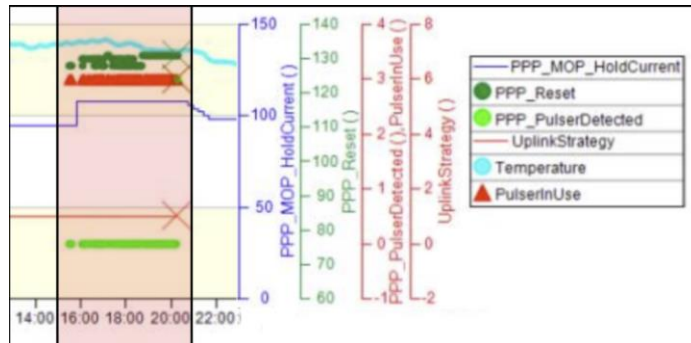


Figure 2: Continuous resets between 15:00 and 20:00 as Battery A (BMGR1) is not transferring Master power to Battery B.

After extensive review, it was determined that this failure would not have occurred if all BMGR units in the xBolt-G2 string were either BMGR2 or XBT types.

BMGR2 firmware allows the tool to transfer control of power to the next battery when the first battery’s remaining capacity is 25% of its total capacity. For example, a 50AH lithium battery will allow for an easier transfer once it is below 12.5AH remaining. BMGR1 firmware does not, and cannot, have this same feature.

MOVING FORWARD

It is policy that all xBolt-G2 (Lagun) tools be run with BMGR2 or XBT probes only. XEM and XDS1 may continue to use BMGR1 but the support for these modules has been discontinued.

Firmware	Type	Tool
0.x.x.x	BMGR1 Hardware	XEM and XDS1 only
2.x.x.x	BMGR2 Hardware	XEM, XDS1, or xBolt-G2
8.x.x.x	XBT Hardware	xBolt-G2 only

