

Locking onto the lpGBT with Serenity

Last time when testing we couldn't tell when the lpGBT was locking. We have narrowed it down to two possibilities:

- locks after 2 serenity firmware flashes
- locks when the lpGBT is connected and powered on

We found that 2 consecutive firmware flashes are needed for the lpGBT to lock and the RB does NOT need to be powered and connected. We flashed the serenity with no hardware connected.

Lessons from BTL

After testing on BTL hardware we learned that they run this line to get it their lpGBT to lock:

```
empbutler -c /home/cmx/mtd-emp-toolbox/mtd-  
daq/lpGBTv2_3_S01_ceacmsfw_250225_0031/hls_connections.xml do x0 frontend lpGBT  
reset -c 4
```

They actually run it in their official testing scripts, per lpGBT and on error, to ensure the lpGBT locks:

- https://gitlab.cern.ch/mtd-backend/daq/software/mtd-daq/-/blob/6b72ef0bfc22e677cefca296b2f163919f4da27a/src/mtddaqsw/utils/empbutler_utils.py#L