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Technical Support Bulletin 2016-02	**Best Practice Battery Connection**	**November 4, 2016**

Alert Level: **IMPORTANT**

Instruments: MMP, ITP

Software Versions: 5.24 and lower

Hardware Version: N/A

Subject: Best Practice Steps for Battery Connection and Re-initializing the Watchdog Alarm Clock

Summary: When you plug in the main battery, always connect to the profiler and interrupt the automatic 30 second initialization countdown.

Technical Details: When plugging in the main battery, always connect to the Profiler and interrupt the automatic 30 second initialization countdown. This 30 second countdown must be interrupted to re-initialize the watchdog alarm clock when the main battery has been disconnected from the electronics for some time. If the watchdog alarm clock is not re-initialized, it will reset every 68 minutes during the deployment, regardless of what has been programmed. A new Dive 0 occurs after every watchdog re-set. As a result, the Profiler will run significantly more, and will not correctly execute the programmed deployment.

Solution: As a Best Practice, every time you plug in the main battery, connect to the firmware with your computer using Motocross and interrupt the automatic 30 second initialization countdown to re-initialize the watchdog clock. Follow these steps:

1. Connect the main battery.

2. Connect your computer to the Profiler firmware with Motocross.

3. Press [CTRL]-[C] to interrupt the automatic 30 second countdown and re-initialize the watchdog clock.

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D:PROFILER

_____
CF2-MPP-5.00 R9 L2.0 U304   5_00.c compiled Jan  3 2013 at 00:50
             S/N ML12345-67D    Pattern Profiler
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_____
 The "Pattern Profiler" MPP operator interface is now running.
  Type ^C within 30 seconds to assert control and initialize system.     ⬅
   28 seconds [^C]
 Clock reads 01/03/13 12:42:04. Change it [N] ? y

 Enter date as mm/dd/yy or mm/dd/yyyy, time as hh:mm:ss
 Enter correct time [01/03/2013 12:42:13] ? 01/03/2013 12:42:32
 Clock reads 01/03/13 12:42:32. Change it [N] ?

01/03/13 12:42:35    SYSTEM Checking FlashCard ... done.
01/03/13 12:42:35    SYSTEM 35 files found on disk.
01/03/13 12:42:36    SYSTEM Capture is disabled.
01/03/13 12:42:36    SYSTEM D:CAPTUR*.TXT size is ~0.00 MB of 8.1 MB max.

01/03/13 12:42:36    SYSTEM Reading D:ODOMETER.DAT ... done.
01/03/13 12:42:36    SYSTEM History: 67.41 motor hours, 891 meters.
01/03/13 12:42:36    SYSTEM Hardware: Rev-D. Motor OpAmp offset: 31mA.

01/03/13 12:42:37    SYSTEM Watchdog initialized.
01/03/13 12:42:37    SYSTEM Watchdog alarm IRQ has been activated.
01/03/13 12:42:37    SYSTEM Setting watchdog clock ... done.

01/03/13 12:42:37    SYSTEM Loading URAO ... done.
01/03/13 12:42:37    SYSTEM Initializing sensors ...................... done.
01/03/13 12:42:37    SYSTEM Sizing CompactFlash ... done.
01/03/13 12:42:38    SYSTEM CompactFlash: 0.6 MB used, 986.6 MB free, 987.2 MB size.
01/03/13 12:42:38    SYSTEM Backup battery measures 3.2V.
01/03/13 12:42:38    SYSTEM Main battery measures 12.0V.
01/03/13 12:42:38    SYSTEM Loading schedule information ...
01/03/13 12:42:39    SYSTEM Loading SCHEDULE.DPL.
01/03/13 12:42:39    SYSTEM Scheduled dive zero time is 12/14/12 11:55:00.
01/03/13 12:42:39    SYSTEM Filling in schedule years ... done.
01/03/13 12:42:39    SYSTEM Loaded SCHEDULE.DPL.
01/03/13 12:42:39    SYSTEM Generating SCHEDULE.TXT ... done.
```

Figure 1: [CTRL]-[C] Interrupts the Automatic 30 Second Initialization Countdown

4. Optionally confirm the watchdog alarm clock has been reset by running the 2 second watchdog test in the Bench Test menu.

5. Disconnect your computer, seal the controller housing, and deploy the Profiler.

Note - In the case of a true unattended reset, the power is temporarily removed and a watchdog alarm clock re-initialization is not required. This is the case when the firmware is operating unattended during a deployment.

A fix in firmware v5.25 provides an automatic re-initialization. However, it is still highly recommend that you connect to the profiler and interrupt the automatic 30 second initialization countdown whenever plugging the battery into the electronics.

Tel: +1 508 495 4000   **www.mclanelabs.com**   **Fax: +1 508 495 3333**