

**Technical Support Bulletin 2014-05**

**Firmware Upgrades for  
CF2-Based Profilers**

**September 18, 2014**

**Alert Level:** INFORMATIONAL

**Instruments:** MMP, ITP with CF2 Microcontroller

**Software Versions:** 5.00 and higher

**Hardware Version:** N/A

**Subject:** Firmware Upgrades for CF2-Based Profilers

**Summary:** Instructions for using MotoCross to Upload Firmware for a CF2 -based McLane Profiler.

**Actions:** Follow these instructions to perform a firmware upgrade for a CF2-based Profiler with the compact flash card.

**IMPORTANT**

Contact McLane ([www.mclanelabs.com](http://www.mclanelabs.com)) with questions about making firmware or hardware configuration changes. After upgrading, the firmware must be configured to match the sensors installed on your specific system. Use the instrument-specific configuration section in the McLane Profiler Integrated Sensors and Communications Interface Guide to make sensor configuration changes.

To upgrade Profiler firmware with the compact flash card installed in the Profiler, complete the following steps:

1. Connect to the McLane instrument with the MotoCross file capture utility.
2. Start a capture file to record the upgrade process to a text file.
3. From the Motocross Transfer Menu select 'Capture Text' and then select 'Start'. The Capture On flag displays in the lower right of the screen (Figure 1).

**NOTE**

From the Profiler User Manual, refer to Appendix A 'Operating Motocross' for detailed instructions on setting up a capture file

4. Type *Q* at the Main Menu, followed by the password *MCLANE* to quit any running CF2 program.
5. After quitting, *C:\>* prompt displays.

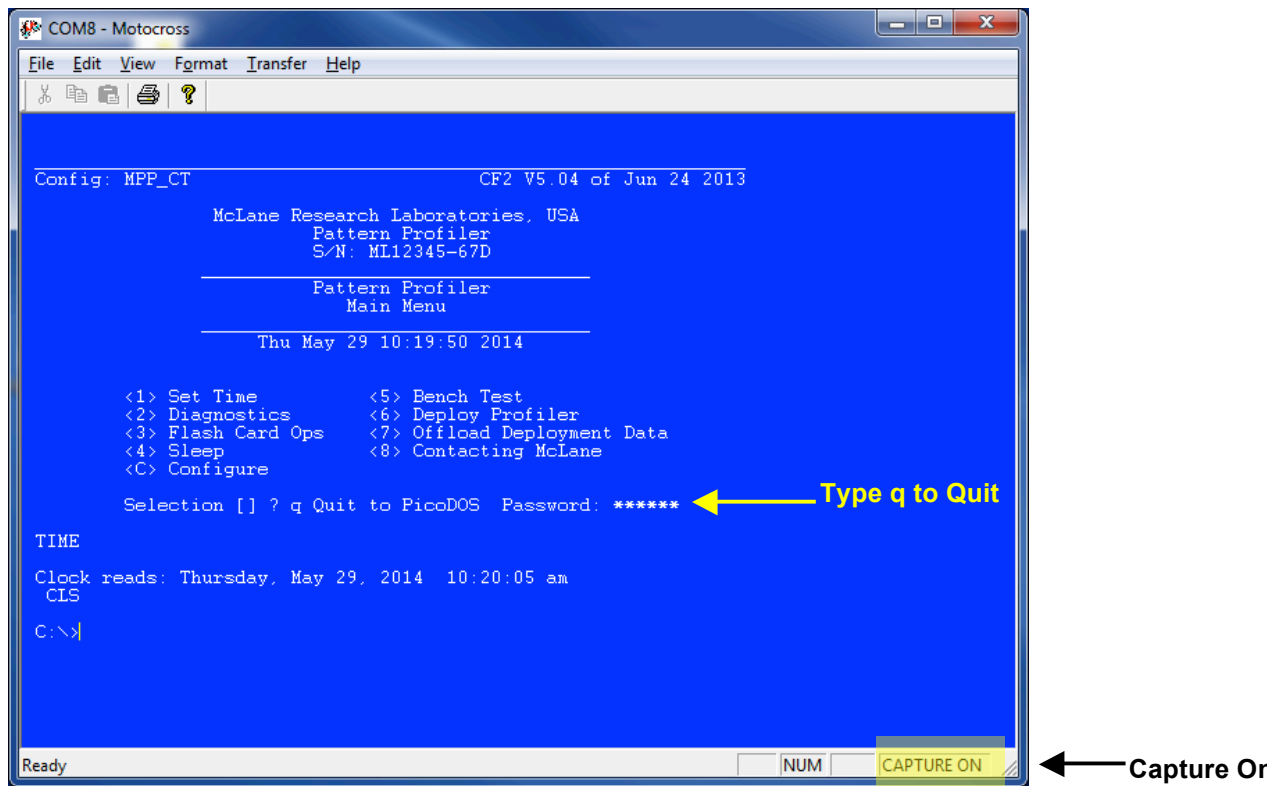
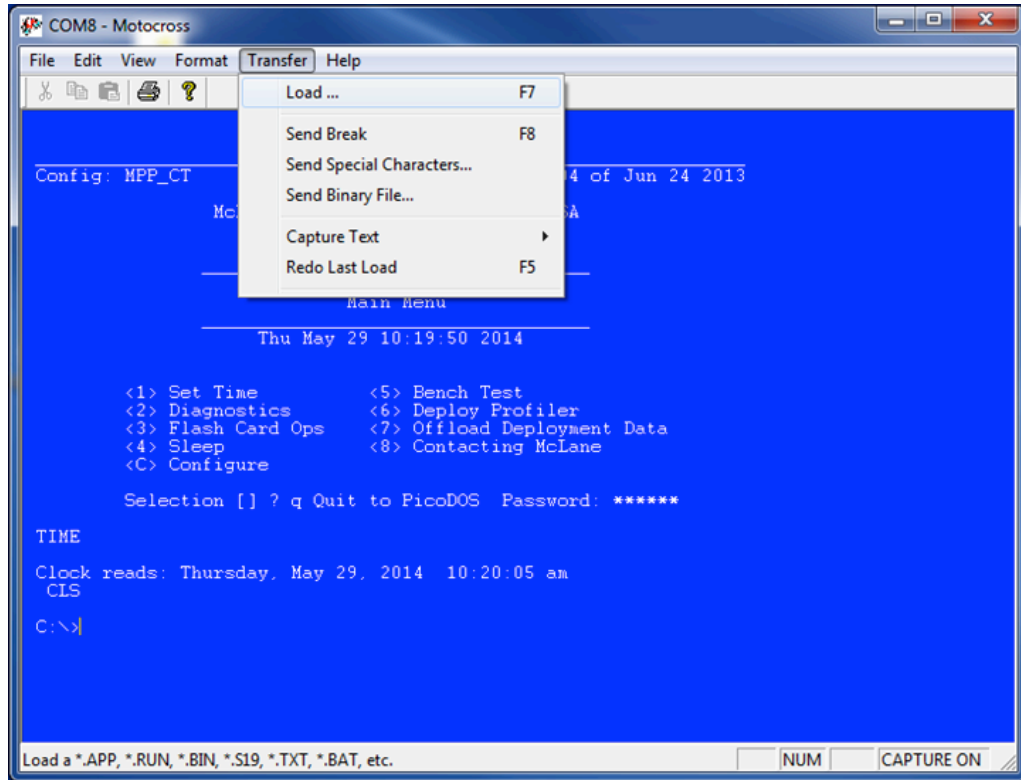


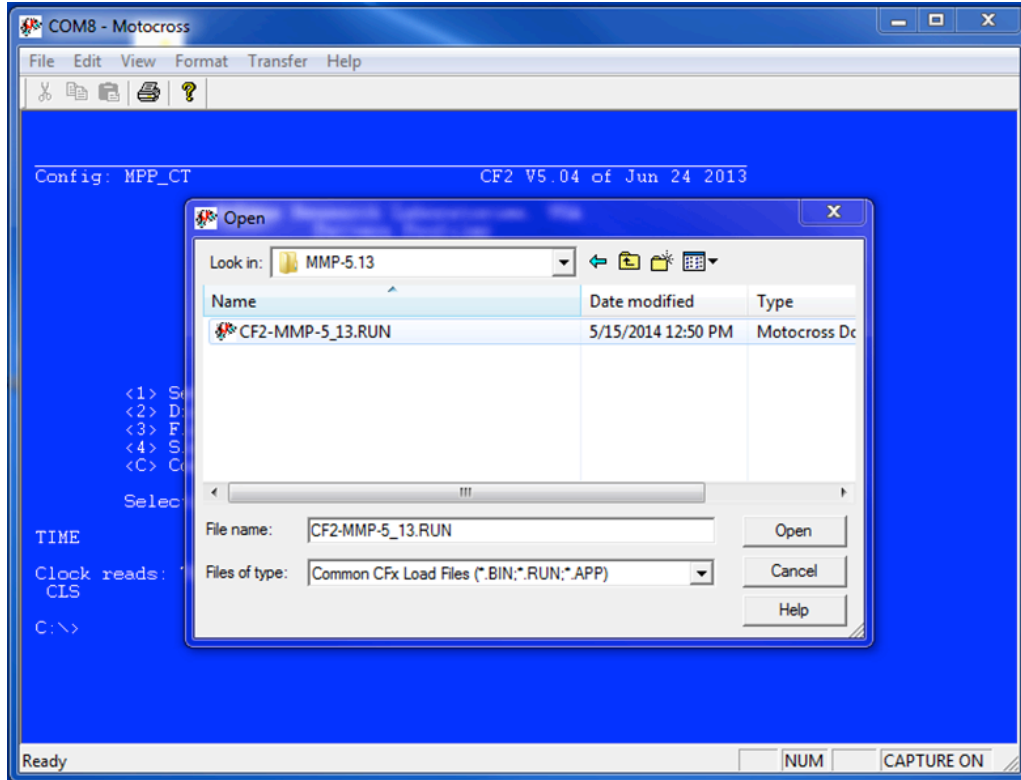
Figure 1: Access Persistor CF2 Microcontroller

6. From the MotoCross menu select 'Transfer' and then select 'Load' (Figure 2).

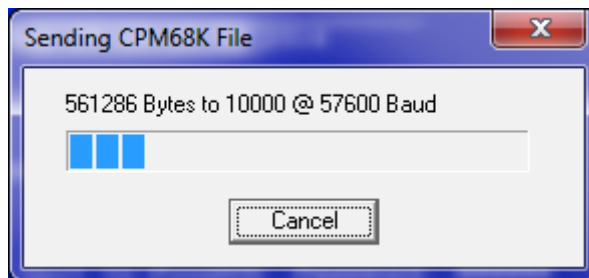


*Figure 2: Load Record*

7. Navigate to the appropriate directory and select CF2-MMP-V\_vv.RUN (Figure 3)
8. Wait for the transfer to complete (Figure 4).



*Figure 3: Selecting CF2-MMP-V\_vv.RUN*



*Figure 4: Load Progress*

9. At the 'G' do not press <ENTER>. **← NOTE: Do not press ENTER**
10. Type the following:  
`SD:PROFILER<ENTER>` **← NOTE: Type only PROFILER, do not add an extension**
11. When done saving, C:\> prompt displays. Type `AUTOEXEC<ENTER>` to start the program.

```

CRC 010000 07F181 = 1508C302
GS D:PROFILER<ENTER>
Saving 455042 bytes to D:PROFILER.PXE...
C:\>
AUTOEXEC <ENTER>

```

Figure 5: Type Directly Following 'G'

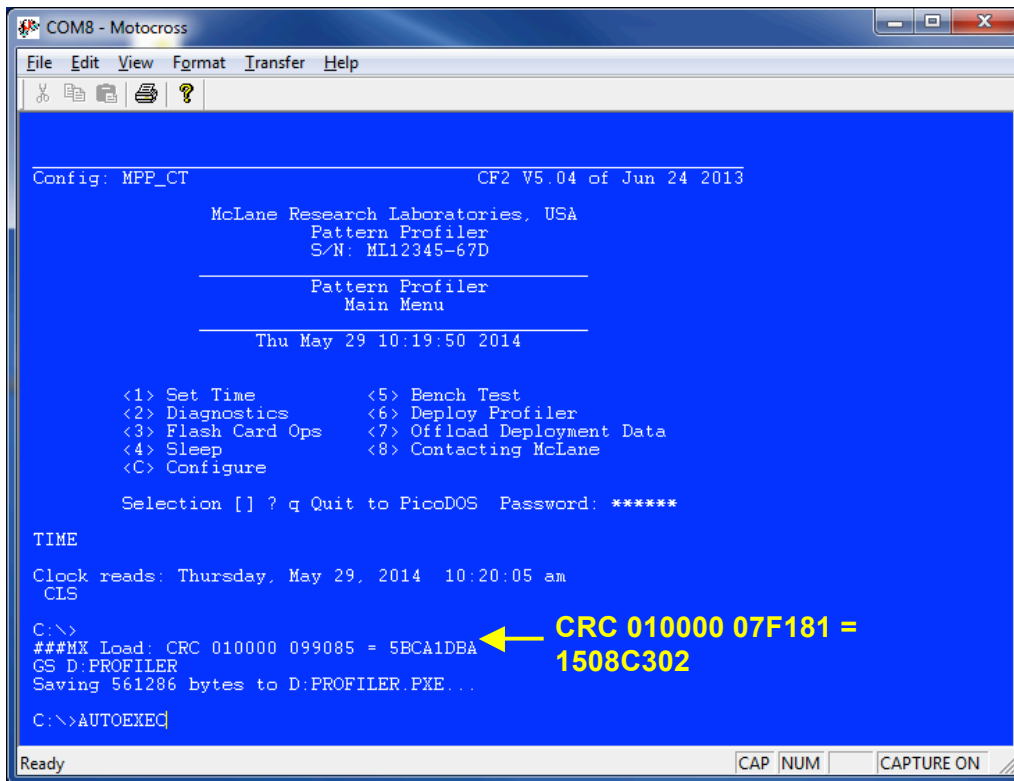


Figure 6: Type AUTOEXEC to Start Firmware Program



- 12. The Profiler program starts.
- 13. Press <CTRL>-C within 30 seconds to stop the automated deployment countdown.
- 14. The Profiler Firmware will indicate that EEPROM and Profiler Configurations do not match with a message to perform Instrument-Specific configuration before starting the deployment.

```
05/29/14 10:29:24  SYSTEM ERROR! Can't read from environment variable SETTINGS.PRF.
-----
CF2-MPP-5.13 R15 L2.2 U304          compiled May 15 2014 at 11:51
                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. ← Press CTRL-C

30 seconds  29 seconds  28 seconds  27 seconds  26 seconds  25 seconds  24 seconds
23 seconds  22 seconds [^C]

Clock reads 05/29/14 10:29:34. Change it [N] ? N

05/29/14 10:29:37  SYSTEM Checking FlashCard ... done.
05/29/14 10:29:37  SYSTEM 57 files found on disk.
05/29/14 10:29:37  SYSTEM Reading D:ODOMETER.DAT ... done.
05/29/14 10:29:37  SYSTEM History: 24.05 motor hours, 4485 meters.
05/29/14 10:29:37  SYSTEM Hardware: Rev-D. Motor OpAmp offset: 31mA.
05/29/14 10:29:38  SYSTEM Watchdog initialized.
05/29/14 10:29:38  SYSTEM Watchdog alarm IRQ has been activated.
05/29/14 10:29:38  SYSTEM Setting watchdog clock ... done.
05/29/14 10:29:38  SYSTEM Loading URAO ...
05/29/14 10:29:38  SYSTEM WARNING! EEPROM configuration does not match Profiler version.
05/29/14 10:29:38  SYSTEM WARNING! CONFIGURE SYSTEM BEFORE DEPLOYING. ←
05/29/14 10:29:39  SYSTEM Sizing CompactFlash ... done.
05/29/14 10:29:39  SYSTEM CompactFlash: 0.3 MB used, 1.89 GB free, 1.89 GB size.
05/29/14 10:29:39  SYSTEM Primary battery measures 11.9V.
05/29/14 10:29:39  SYSTEM Backup battery measures 03.2V.
05/29/14 10:29:39  SYSTEM Loading schedule information ...
05/29/14 10:29:39  SYSTEM Loading SCHEDULE.DPL.
05/29/14 10:29:40  SYSTEM Scheduled dive zero time is 03/14/14 15:45:00.
05/29/14 10:29:40  SYSTEM Filling in schedule years ... done.
05/29/14 10:29:40  SYSTEM Loaded SCHEDULE.DPL.
05/29/14 10:29:40  SYSTEM Generating SCHEDULE.TXT ... done.
05/29/14 10:29:41  SYSTEM NOTICE! Initializing 304 byte URAO array to default values ...
05/29/14 10:29:42  SYSTEM Initializing sensors ..... done.
05/29/14 10:29:42  SYSTEM WARNING! CONFIGURE SYSTEM BEFORE DEPLOYING. ←
Press any key to continue.
```

Figure 7: Profiler Firmware Starts

The firmware update is now complete. If power is cycled, the same program remains resident and runs automatically from compact flash card.

15. Check the McLane Profiler Integrated Sensors and Communications Interface User Manual and the McLane Profiler User Manual to complete the system configuration changes.

```
-----  
Config: MPP_CT                                CF2 V5.13 of May 15 2014  
  
-----  
                Pattern Profiler  
                System Configuration  
-----  
                Thu May 29 10:29:59 2014  
System Parameters:  
<0> Battery capacity                240 Ah  
Sensor Suite:  
  Port J9:CTD  
<1> Seabird 52MP CTD ----- ENABLED  
  Port J5:ACM  
<2> No ACM selected  
  Port J6:IMM  
<I> Telemetry  
  Port J4:SSP  
<B> BioSuite Triplet/PAR  
<N> Satlantic SUNA Nitrate  
<O> Aanderaa Optode  
<U> bbe FluoroProbe  
<W> Wetlabs ECO BBFL2  
  
  Port J10:SPR  
<L> Wetlabs ECO FLBB(RT)/D  
<P> Biospherical PAR  
  
  Port J7:TRB  
<T> Seapoint IR Turbidity  
  
  Port J8:FLR  
<E> Seapoint CHL Fluorometer  
<F> Wetlabs CDOM Fluorometer  
  
  Port J4i:SER  
<H> ProOceanus CH4  
<M> OceanServer5000 MotionPack  
  
  Port J5i:SER  
<K> ProOceanus CO2  
Exit:  
<X> Save changes    <^C> Cancel changes
```

*Figure 8: System Configuration Menu*