

MD2 Firmware Update Procedure

Using AgMD2UpdateFirmware.exe

Date:	February 28, 2019
Operating systems:	32-bit or 64-bit OS: Windows 7 SP1 Windows 8.1 Windows 10 Linux with kernel 2.6 & 3
Supported Instruments:	M9203A, M9703B, M9709A, M9710A
File Name:	AgMD2UpdateFirmware.exe

Important Notes (Repeated from MD2 Driver Release Notes)

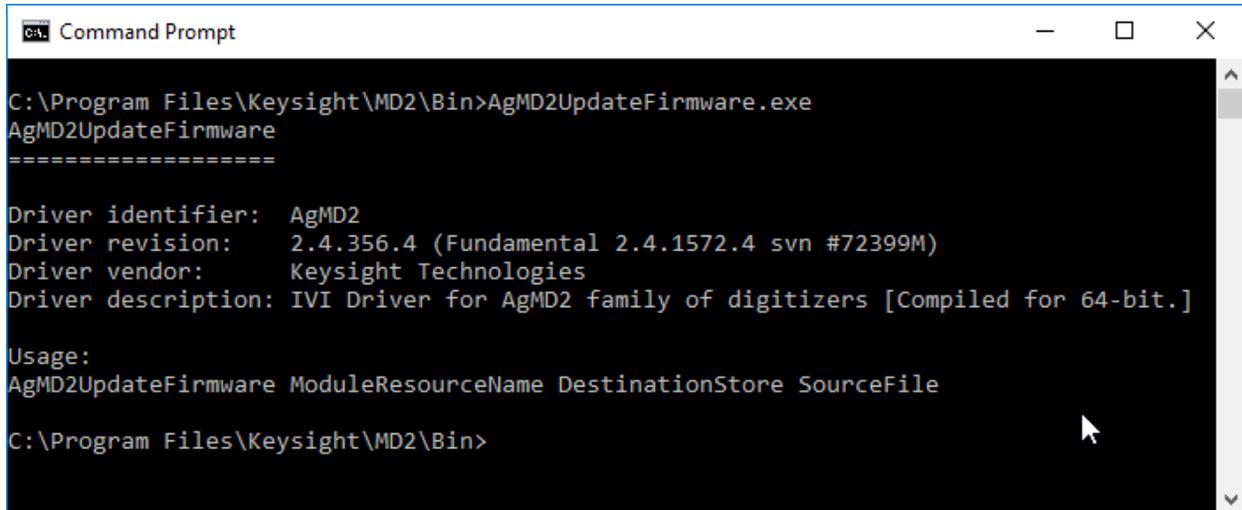
1. **Warning: MD2 2.x and later are not backward compatible with MD2.1.x!**
2. See **Important Note Regarding Backward Compatibility**.
3. **For M9703B users**, please note that MD2 release 2.3.6 requires an update of the Module Control FPGA (version 4.2.19).

Firmware Update Utility (AgMD2UpdateFirmware)

The AgMD2UpdateFirmware programming utility (AgMD2UpdateFirmware.exe) is used to load firmware to your Keysight instrument.

AgMD2UpdateFirmware General Information

The command line tool used is AgMD2UpdateFirmware.exe



```
Command Prompt
C:\Program Files\Keysight\MD2\Bin>AgMD2UpdateFirmware.exe
AgMD2UpdateFirmware
=====
Driver identifier:  AgMD2
Driver revision:   2.4.356.4 (Fundamental 2.4.1572.4 svn #72399M)
Driver vendor:    Keysight Technologies
Driver description: IVI Driver for AgMD2 family of digitizers [Compiled for 64-bit.]

Usage:
AgMD2UpdateFirmware ModuleResourceName DestinationStore SourceFile

C:\Program Files\Keysight\MD2\Bin>
```

Syntax

```
AgMD2UpdateFirmware.exe <ModuleResourceName> <DestinationStore> <filename>
```

The ModuleResourceName value is the VISA resource string.

The DestinationStore value should be **ConfigFlashCtrlFpga**.

All of the listed parameters are mandatory.

Filename conventions

Files with the ".mcs" extension contain instrument operating firmware generated by Keysight, but may be used on any instrument of the appropriate model type.

NOTE

If one or more spaces appear in the filename or path, the double quotes are required on the filename string as shown in the example below.

WARNING It is not possible for the utility to check that the file is suitable for the FPGA / CPLD of the specified device, so please use this mode carefully. Programming a device with the incorrect firmware file may render it unusable.

However, as long as the device has not yet been re-booted (power cycled) it will be possible to re-write the correct file. Conversely, if the device has been incorrectly programmed and subsequently re-booted, it will be necessary to return it to a Keysight Service Center for recovery.

Instructions for Windows

Open a Command Prompt Window (Start > Programs > Accessories > Command Prompt) and run the following commands (use your installation path in case of non-standard installation):

```
cd C:\Program Files\Keysight\MD2\Bin
```

```
AgMD2UpdateFirmware.exe PXIx::0::0::INSTR ConfigFlashCtrlFpga "C:\Program Files\IVI Foundation\IVI\Drivers\AgMD2\Firmware\M9703BCTRL.mcs"
```

The control file depends on the model type (for example M9703BCTRL.mcs)

PXI~~x~~::0::0::INSTR is the VISA resource string, it must match the resource string as shown in the Keysight Connection Expert. You can find the VISA resource string in the Keysight Connection Expert by clicking on the M9703B and then on the Instrument Properties tab (see M9703B Startup Guide > "Step 5: Verify Operation of the M9703B Module" for more information).

"Firmware update successful" is displayed on the screen, once the programming is completed,

Power cycle the chassis to complete the modification.

If you are using a remote controller, power cycle the host PC. It is often necessary to wait until the chassis and its modules have completed their start-up sequence before proceeding to reboot or power-up the host controller.

Check the module front panel indicators – after the boot process the STATUS LED should be green, and no other LED lit.

Instructions for Linux

On Linux the procedure is similar. Instead of opening a Command Prompt Window, open a standard or emulated Linux shell on Linux and type the following commands :

```
> lspxi
```

This command returns the PXI~~x~~::0::0::INSTR VISA resource string which is needed for the next command.

```
> AgMD2UpdateFirmware PXIx::0::0::INSTR ConfigFlashCtrlFpga  
"/usr/lib/firmware/md2/M9703BCTRL.mcs"
```

Important Note Regarding Backward Compatibility

Warning: MD2 2.x and later are not backward compatible with MD2 1.x!

With AgMD2 2.x, the backward compatibility of the IVI-C driver is broken for the following functions:

AgMD2_FetchWaveformInt8
AgMD2_FetchMultiRecordWaveformInt8
AgMD2_ReadWaveformInt8

Their function signatures have changed in line with IVI standard evolution: the WaveformArray parameter type has been updated from ViChar[] to ViInt8[].

AgMD2 1.x and AgMD2 2.x binary files remain compatible. User binaries compiled with AgMD2 1.x will work with the 2.x (and later) driver, for both IVI-C and IVI-COM interfaces. However, existing source code must be updated to allow the compilation with AgMD2 2.1 (and later).