

Instructions for Restoring the AG19 BIOS

Agilent Technologies M9036A PXIe Embedded Controller

Introduction

The following instructions describe how to restore BIOS version AG19 in your M9036A PXIe Embedded Controller. BIOS AG19 works only on Windows 7 Pro (both 32-bit and 64-bit).

To determine which BIOS is currently installed:

1. Turn chassis power off and then on again.
2. At startup, press the **Delete** key when the Agilent Splash screen appears. This opens the BIOS menu displaying the installed version of BIOS.

Note: A newer AG20 BIOS is available and is recommended for use instead of the AG19 BIOS. The AG20 BIOS corrects or improves the following:

- On rare occasions, the AG19 BIOS boot order can change to boot from preferentially LAN rather than the SSD (requiring a BIOS setup reconfiguration to correct).
- Some non-compliant PXIe chassis can cause the M9036A's ExpressCard Adapter to improperly initialize connected subordinate chassis.
- AG20 changes the default SSD SATA mode from IDE to AHCI for improved disk performance and to correct issues relating to multi-chassis operation.
- The AG19 BIOS incorrectly indicated that the PCIe Spread Spectrum Clocking is disabled. The AG20 BIOS now properly disables it by default.
- AG20 BIOS adds text along the bottom of the M9036A splash screen indicating how to enter Setup and Boot menu.

You can download the AG20 BIOS files and installation instructions from the M9036A website (www.agilent.com/find/M9036A).

Installation Process Overview

The instructions on the following pages contain detailed steps on how to restore the Agilent M9036A BIOS. The process contains these four stages:

1. **Important:** You must install *Microsoft Fix it 50470* before restoring the AG19 or AG20 BIOS. See page 2 for detailed installation instructions.
2. Download the AG19 BIOS files from Agilent.com.
3. Obtain the AMI BIOS utility from their website.
4. Update the M9036A BIOS and reboot.



Install *Microsoft Fix it 50470*

Agilent BIOS AG19 used the SATA mode of IDE, while later BIOS versions use the SATA mode of AHCI. Transitioning between different versions of BIOS requires first installing *Microsoft Fix it 50470* to allow your M9036 to operate with either SATA mode. Failure to do this can cause your M9036 to no longer be able to boot Windows (a recoverable situation, see instructions below).

To run *Microsoft Fix it 50470*:

1. Exit all Windows-based programs on the Agilent M9036A
2. Connect the Agilent M9036A to the internet
3. Go to <http://support.microsoft.com/kb/922976>
4. Follow the instructions on the screen to install and run *Microsoft Fix it 50470*.

Note: *If you are not able to connect the M9036A to the internet, you can download and save the utility to a flash drive or a CD (external USB) and then run it on the M9036A.*

If you encounter boot problems:

If you fail to run *Microsoft Fix it 50470*, your M9036A may fail the next time you boot the system, and will display bugcheck code 0x7B. If this happens, perform the following:

To keep your existing disk image¹:

1. Boot to BIOS setup. Press the **Delete** key at the Agilent splash screen.
2. Go to the Advanced Tab, then SATA Configuration. Reconfigure the SATA mode from AHCI to IDE mode.
3. Save and exit the BIOS setup.
4. Reboot to Windows.
5. Install *Microsoft Fix it 50470*.
6. Reboot to BIOS setup (again).
7. Go to the Advanced Tab, then SATA Configuration. Reconfigure SATA mode from IDE to AHCI mode.
8. Save and exit the BIOS setup.
9. Reboot to Windows. This should correct the problem.

¹ You may also use the Windows 7 disk recovery. This will completely erase your disk clean, but will fix this problem.

Install the AG19 BIOS

Notes: *In order to restore the BIOS, you must be logged in on the Agilent M9036A controller as a single user with Administrator privileges. If you are not, you must logout and then login again as a single user to an account with Administrator privileges. Set the User Account Control to the default position.*

You will need internet access to download the AFUWIN (amiflash.zip) utility from American Megatrends, Inc. Instructions are provided later in this guide for locating, downloading and using the AFUWIN utility.

I. Download the Agilent AG19 BIOS files to your M9036A

1. On the M9036A, create a folder at the root level of the C: drive for saving the new AG19 BIOS files.
2. Download and save the Agilent AG19 BIOS files to the folder created in Step 1 above. You can get the Agilent AG19 BIOS files from either the M9036A Product Information CD or from the M9036A website (www.agilent.com/find/M9036A).
 - a. If you use the M9036A Product and Information CD, connect an external USB CD/DVD drive to the M9036A. From the startup screen, click **Update/Restore M9036A BIOS** followed by **AG19 BIOS Files and Installation Instructions**. Go on to Step 3 below.
 - b. If you choose to connect to the M9036A website (this website will have the latest BIOS and driver files), select **Visit Technical Support**, then the **Drivers, Firmware and Software** tab. Scroll down and look for the M9036A BIOS link.
3. Save the *AG19WIN.zip* file to your hard disk and unzip it to a temporary folder. Copy the following unzipped files to the folder you created in Step 1:

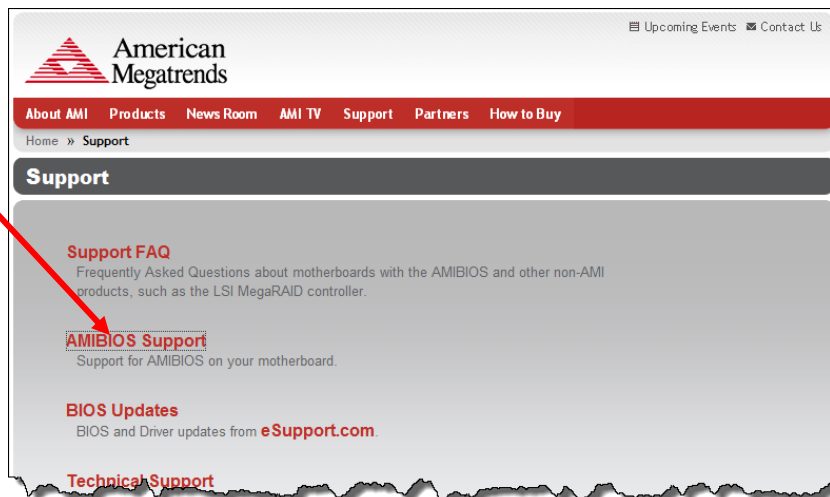
AG19 BIOS Files:
<i>P3970019.ROM</i>
<i>FLASHROM.CMD</i>
<i>HISTORY.TXT</i>
<i>README.TXT</i>

II. Obtain and run the AFUWIN utility from American Megatrends Inc.

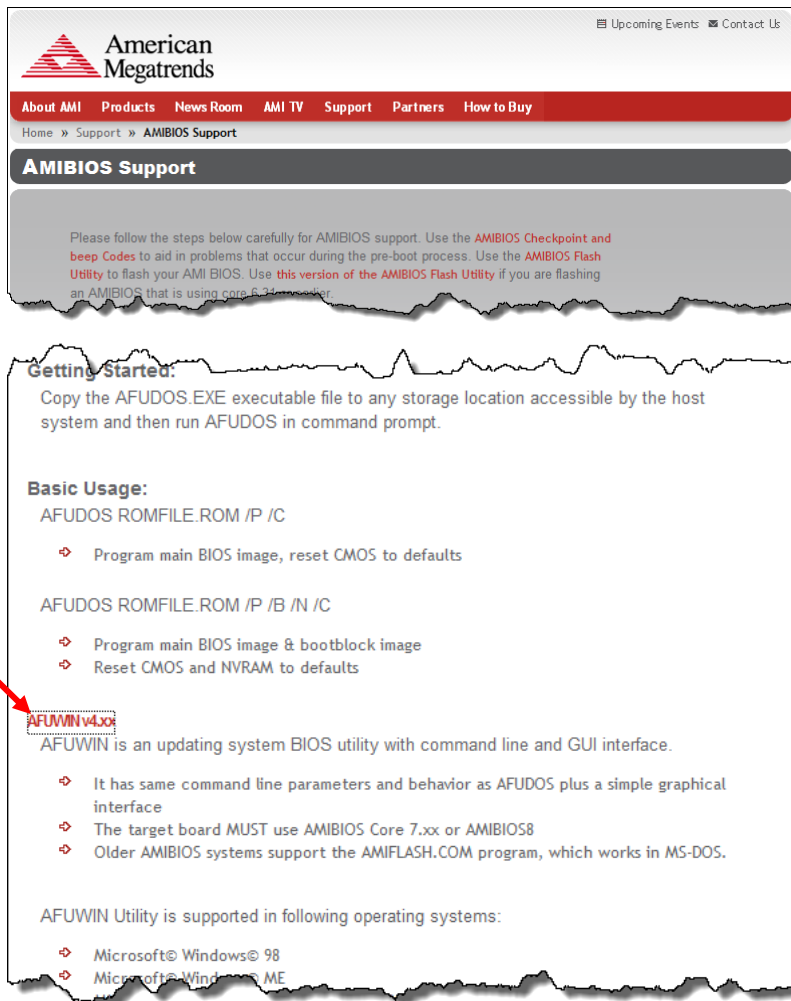
1. Go to the American Megatrends, Inc. (AMI) website: <http://ami.com>
2. From the AMI home page, select the **Support** link:



3. This opens the AMI Support web page. Click on the **AMIBIOS Support** link:



4. This opens the AMIBIOS Support web page. Scroll about half way down the page. Locate and click on the **AFUWIN v4.xx** link:



The screenshot shows the American Megatrends website's AMIBIOS Support page. At the top, there is a navigation menu with links for 'About AMI', 'Products', 'News Room', 'AMI TV', 'Support', 'Partners', and 'How to Buy'. Below the menu, the page title is 'AMIBIOS Support'. A introductory paragraph explains the steps for AMIBIOS support, mentioning 'AMIBIOS Checkpoint and beep Codes', 'AMIBIOS Flash Utility', and 'this version of the AMIBIOS Flash Utility'. The main content is divided into sections: 'Getting Started' (copying AFUDOS.EXE), 'Basic Usage' (command line examples for /P /C and /P /B /N /C), and 'AFUWIN v4.xx' (describing the utility and its supported operating systems: Microsoft Windows 98 and Microsoft Windows ME). A red arrow points to the 'AFUWIN v4.xx' link.

Getting Started:
Copy the AFUDOS.EXE executable file to any storage location accessible by the host system and then run AFUDOS in command prompt.

Basic Usage:
AFUDOS ROMFILE.ROM /P /C

- Program main BIOS image, reset CMOS to defaults

AFUDOS ROMFILE.ROM /P /B /N /C

- Program main BIOS image & bootblock image
- Reset CMOS and NVRAM to defaults

AFUWIN v4.xx
AFUWIN is an updating system BIOS utility with command line and GUI interface.

- It has same command line parameters and behavior as AFUDOS plus a simple graphical interface
- The target board **MUST** use AMIBIOS Core 7.xx or AMIBIOS8
- Older AMIBIOS systems support the AMIFLASH.COM program, which works in MS-DOS.

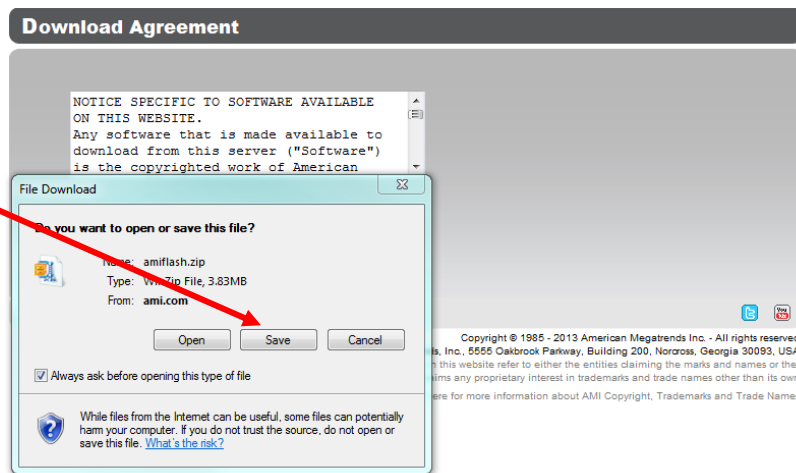
AFUWIN Utility is supported in following operating systems:

- Microsoft® Windows® 98
- Microsoft® Windows® ME

5. This opens the Download Agreement dialog box. Read the agreement and, if you agree to the terms, click **I Agree**.

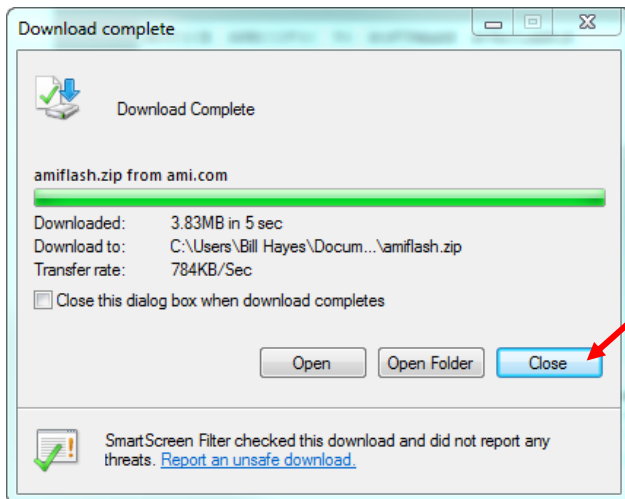


6. This opens the File Download window. Click **Save**.



7. This opens Windows Explorer. Browse to the folder where you want to save the AFUWIN file (*amiflash.zip*) and click **Save**.

- When the file has completed downloading to the computer, click **Close**.

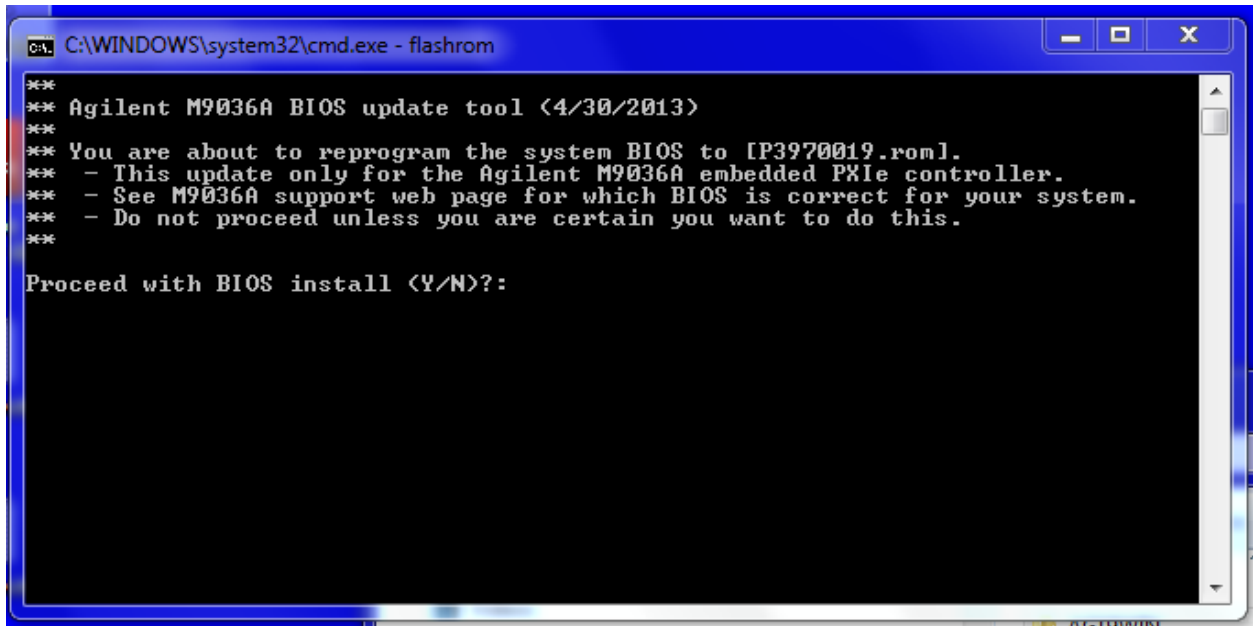


- Open Windows explorer and navigate to the folder where you saved the *amiflash.zip* file.
- Double click the *amiflash.zip* file and extract the contents to the folder. This extraction creates one folder named **amiflash**. There are two subfolders within the *amiflash* folder: **AMIBIOS** and **Aptio**. The contents of the **AMIBIOS** folder are not used in this update.
- The **Aptio** folder also has three subfolders: **AFUDOS**, **AFUEFI**, and **AFUWIN**. You will use the contents of the **AFUWIN** folder to restore the M9036A BIOS.
- The **AFUWIN** folder has two subfolders: **32** (used for 32-bit systems) and **64** (used for 64-bit systems). If you have a 32-bit system, go to step 13. If you have a 64-bit system, go to step 14.
- If you have a 32-bit system:** In folder **32**, unzip the *afuwin32.zip* file. This unzips multiple files to a folder named **afuwin32**. From the folder **afuwin32**, copy just the *afuwin.exe* and *amifldr32.sys* files and paste them into the folder you created in Section I, Step 1. Skip step 14 and go on to step 15.
- If you have a 64-bit system:** In folder **64**, unzip the *afuwin64.zip* file. This unzips multiple files to a folder named **afuwin64**. From the folder **afuwin64**, copy just the *afuwinx64.exe* and *amifldr64.sys* files and paste them into the folder you created in Section I, Step 1.
- At this point, you should have six files in the folder you created in Section I, Step 1:

For a 32-bit system:	For a 64-bit system:
<i>P3970019.ROM</i>	<i>P3970019.ROM</i>
<i>FLASHROM.CMD</i>	<i>FLASHROM.CMD</i>
<i>HISTORY.TXT</i>	<i>HISTORY.TXT</i>
<i>README.TXT</i>	<i>README.TXT</i>
<i>afuwin.exe</i>	<i>afuwinx64.exe</i>
<i>amifldr32.sys</i>	<i>amifldr64.sys</i>

III. Update the M9036A BIOS

1. In Windows Explorer, navigate to the folder created back in Section I, Step 1.
2. To begin the BIOS update procedure, double click on the *FLASHROM.CMD* file. This opens the following screen:



```
C:\WINDOWS\system32\cmd.exe - flashrom
***
*** Agilent M9036A BIOS update tool (4/30/2013)
***
*** You are about to reprogram the system BIOS to [P3970019.rom].
*** - This update only for the Agilent M9036A embedded PXIe controller.
*** - See M9036A support web page for which BIOS is correct for your system.
*** - Do not proceed unless you are certain you want to do this.
***
Proceed with BIOS install <Y/N>?:
```

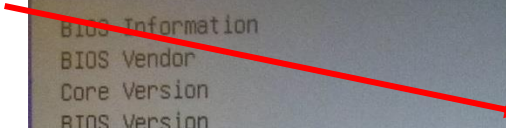
3. Type **Y** and press **Enter**. Do not cycle power until the BIOS has successfully updated.
4. After the utility completes, the BIOS will be updated.
5. Cycle chassis power. At startup, press the **Delete** key when the Agilent Splash screen appears. This opens the BIOS menu displaying the installed version of BIOS. Verify that AG19 is the current version. Configure any other settings as needed. Save, and then exit the BIOS Setup screen.

Aptio Setup Utility - Copyright (C) 2009 American Megatrends, Inc.

Main Advanced Chipset Boot Security Save & Exit

BIOS Information		Set the Date. Use Tab to switch between Data elements.
BIOS Vendor	American Megatrends	
Core Version	4.6.3.7	
BIOS Version	AG19	
Build Date	05/18/2012 14:52:17	
Memory Information		
Total Memory	8192 MB (DDR3 1066)	
ME Information		
ME Version	6.1.2.1051	
Board Information		
BC Firmware Revision	1.5.2	⇧⇩: Select Screen
Manufacture Date	08/09/2011	↑↓: Select Item
Last Repair Date	00/00/2000	Enter: Select
Serial Number	B541EA1009	+/-: Change Opt.
Hardware Revision	72113-0A30-200E	F1: General Help
Onboard LAN MAC ID	00-30-64-0C-E4-A8	F2: Previous Values
Boot Counter	00020990	F3: Optimized Defaults
Running Time	07197 Hrs	F4: Save ESC: Exit
System Date	[Thu 05/16/2013]	
System Time	[10:46:20]	
Access Level	Administrator	

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