ZFMS-EN-0002

Engineering Notice: Z-Tag Workaround

This is a workaround method for programming the flash on ZFx86 devices that are marked "NZ" due to Z-Tag functionality limitations. This method also includes a new AMD flash programmer that will allow flashing the BIOS using a ZF dongle, after loading a flash programmer over the serial port. All the required materials are in a ZIP file that can be downloaded from the ZF Downloads page at:
http://www.zflinux.com/library/software_and_drivers/amdflash.zip

REQUIREMENTS:

You must have a dongle with ONLY the flash program start address (FE) and flash bios image (F0) commands loaded. You can get this by deleting the other components from your dongle image in the ZTAG Manager and then re-writing the dongle. See "ZTWADIMG.BIN", the "ZTAG Workaround Dongle Image", as a sample dongle image. It has our default 1.06 Phoenix BIOS. You can replace the BIOS image with your default BIOS image, or make a dongle image yourself using the ZTAG Manager.

PROCEDURE:

1. Power down the system you wish to flash. Set the BUR enable (A23) bootstrap dip switch to ON. Remove any dongle. Attach a null modem cable, connected to a PC running a terminal emulator. Power the system back up. See that the post code indicator shows 0x11, and that the ZFix monitor is operational through the terminal emulator.

2. Download the "AM29ZTWA.COM" flash programmer through the Z-Fix ymodem facility.
    At the Z-Fix prompt:
    yload 70:0
    At your terminal emulator, initiate a YMODEM send of AM29ZTWA.COM. Hyperterminal in Windows seems to work well.)

3. Attach a dongle loaded with ZTWADIMG.BIN (or similar contents) to the system board's ZTAG header.

4. Run the flash programmer:
    g 70:0
    This programmer should identify itself as version '1.09 ZTWA'. When it has completed, it will return ZFix to the command prompt.

5. Power down the board, set BUR enable to OFF (normal), and remove the dongle. The system can now be powered up normally with the new BIOS.

The file "amdflash.zip" contains pre-built executable flash programmers and all sources, "ztwadimg.bin", the sample workaround dongle image, and "zfdsbios.bin", the normal dongle image. Both images contain our latest version of the Phoenix BIOS.

ZIP FILE INDEX:

am29fxxx.asm	AMD flash programmer main program source
am29fxxx.com	Built flash programmer
am29ztwa.com	Flash programmer built with ZTAG Work-Around
build.bat	Batch file to build am29fxxx.com
burapi.asm	BIOS Update ROM (BUR) API include file
flashpgm.asm	Flash programming routine include file
flashpgm.mac	Flash programming macro include file
zfdsbios.bin	Dongle image with Phoenix BIOS 1.06 for IDS
ztwadimg.bin	Dongle image suitable for use with ZTAG Work-Around