System BIOS Update utility for Quadmo747-E6xx

Revision History

Revision	Date	Author	Changes
1.0	13th September 2012	S.B.	First Release
1.1	19th November 2012	S.B.	BIOS Programmer updated
1.2	11th April 2013	S.B.	New BIOS programmers added
1.3	7th June 2013	S.B.	BIOS release for Quadmo747-E6xx extreme version added

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1. Use

In the package you downloaded from secoqseven Private Area, you will find:

- 08810000.xxx latest BIOS release for Quadmo747-E6xx
- 09630000.xxx latest BIOS release for Quadmo747-E6xx Extreme version
- TncFlash*www*.exe DOS BIOS programming utility, release *www*
- TncFlash*yyy*Linux Linux BIOS programmer, release *yyy*
- TncFlash*zzz*win32.exe Windows XP/Vista/Win7 32-bit BIOS programmer, release *zzz*

Please be aware that both with Linux and with Windows related programmer must be launched with Admin/SuperUser privileges using the command line.

This software works exclusively with Q7 CPU modules (see section 4 for more reference).

Please be aware that 0881000.xxx BIOS file is intended for the use with commercial version of the board, which has CS881 etched on the PCB.



0963000.xxx BIOS file is intended for the use with Extreme version of the board, which has CS963 etched on the PCB.



It is strongly suggested to reset the CMOS after every update by setting the BIOS to Factory Default.

Command line options for BIOS programming can be placed under any order. Anyway, adding more option in the command line will cause an execution of the options in this order:

- Dumping
- Erasing
- BIOS Programming
- Single flash blocks programming (Logo, additional BIOS, redundant EEPROM)

2.Options

The program accepts via the command line these following options:

-u *<file name>*	Program user string from plain ASCII file
-cu	Clear the User string
-du *<file name>*	Dump User String to file.
-v *<file name>*	Program custom video BIOS
-sv	Skip video BIOS area while programming
-dv *<file name>*	Dump custom video BIOS to file.
-f	Program current setup options as Factory Defaults.
-cf	Restore Real Factory Defaults
-t *<file name>*	Program Custom Data Table
-ct	Clear Custom Data Table
-st	Skip Custom Data Table while programming.
-dt *<file name>*	Dumps Custom Data Table to file.
-c *<file name>*	Custom BIOS Programming.
-cc	Clear the custom BIOS.
-sc	Skip custom BIOS flash area while programming.
-dc *<file name>*	Dump custom BIOS to file.
-n *<file name>*	Program NVS data.
-cn	Clear NVS data area
-dn *<file name>*	Dump NVS data to file.
-sn	Skip NVS area while programming
-o *<file name>*	Program setup options.
-co	Clear setup options in the EEPROM.
-do *<file name>*	Dump setup options to file.
-so	Skip setup options while programming.
-l *<file name>*	Logo Programming.
-cl	Clear the logo flash area.
-sl	Skip logo programming.
-ab *<file name>*	Program all the flash with a new BIOS file.
-db *<file name>*	Dump all BIOS to file.
-fw	Forces SPI Flash programming
-nr	No reboot. Wait for power off.

If no selection has been placed in the command line, the software will return the previous command line list.

Example: ***tncflash*www *-so -ab 0881000.108***

With this syntax, BIOS Programmer tncflash release *www* will program the Flash entirely (*-ab) with BIOS release contained in file <08810000.108>, but the setup options area will be skipped (*-so), so old setup option will be maintained.

3.Command line options.

**** -u <file name>***

This option will program the User String Area with the content of <*file name*>.

<*filename*> must be a plain ASCII text, with max length of 82 characters.

**** -cu***

This option will erase the User String Area.

**** -du <file name>***

This option will perform the dumping of the User String Area on the file <*file name*>.

**** -v <file name>***

This option will flash the content of <*file name*> on video BIOS area, overwriting original video BIOS.

Input binary file needs to be a valid video BIOS.

**** -sv***

With BIOS programming option “-ab”, this option will allow to skip the flash programming of video BIOS area.

**** -dv <file name>***

This option will perform the dumping of actual video BIOS area on the file <*file name*>.

**** -f***

This option uses the current setup values, and save them as factory default.

These settings are saved in Custom Data Area. If in this Area is present some table, different from factory default, that table is kept unchanged. In case in Custom Data Area is already present a table with Factory Defaults, this table will be overwritten.

When this option is used along with “-ab” option, unless options “-ct” or “-st” are used, all the data contained in the Custom Data Area are erased by “-ab” option programming, and then overwritten with the single Factory Default table.

**** -cf***

This option removes Custom Factory Defaults, replacing them with BIOS original factory default. Removal will be made only in case in Custom Data Area is effectively present a Custom factory Default table.

**** -t <file name>***

This option will program a User Data Table for SuperI/O customisation inside the BIOS flash.

**** -ct***

This option will erase the flash data dedicated to the User Data Table.

**** -st***

During the whole flash programming (options “-b” and “-ab”), this option indicates to skip the area dedicated to the User Data Table.

**** -dt <file name>***

This option will perform the dumping of the flash data dedicated to the User Data Table on the file <*file name*>.

***** *-c <file name>***

This option will flash an additional BIOS contained in <*file name*> (User Option ROM) inside the BIOS EEPROM.

This additional BIOS must follow these rules:

- valid signature: the first two byte must be 0x55, 0xAA
- 2KB as a minimum size
- 64KB as maximum size
- valid checksum

(NB to run the additional BIOS, you need to enable the related option in the BIOS setup)

***** *-cc***

This option will erase the flash data dedicated to the additional BIOS.

***** *-sc***

During the whole Flash programming (option "-ab"), this option indicates to skip the area dedicated to the additional BIOS.

***** *-dc <file name>***

This option will perform the dumping of the flash data dedicated to the additional BIOS on the file <file name>.

***** *-n <file name>***

This option will flash the content of <file name> inside EEPROM's Non Volatile Storage (NVS) Area.

The binary file needs to be 4096Byte (4KB) size.

***** *-cn***

This option will erase the data contained in NVS area

***** *-dn <file name>***

This option will perform the dumping of the Non Volatile Storage Area on the file <*file name*>

***** *-sn***

With BIOS programming options "-ab", using this option the programmer will skip the NVS area.

***** *-o <file name>***

This option will program the setup options contained in <*file name*> inside the flash. This part is used as redundant EEPROM.

The file <*file name*> needs to respect the following requirements

Minimum size 30B

Maximum size 4KB

The fist 30B must have the two valid checksums

If binary input file is a valid one, not only redundant EEPROM will be programmed, but also CMOS.

***** *-co***

This option will erase the flash data dedicated to the CMOS redundant copy.

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*** -do *<file name>***

This option will perform the dumping of the flash area dedicated to the CMOS redundant copy on the file <file name>.

**** -so***

When programming BIOS with option “-ab”, using this option the programmer will skip the area that is used as redundant EEPROM.

****-l <file name>***

This option will save the logo contained in *<file name>* inside the flash.

The logo needs to follow these respective requirements:

- 16 colour bitmap
- It needs to be at least 1 pixel
- the resolution must be no more than 640X480

(NB to make the logo visible you need to set the related option in the BIOS setup)

**** -cl***

This option will erase all the flash data dedicated for the logo.

**** -sl***

During the whole Flash programming (option “-ab”), this option indicates to skip the area dedicated to the logo.

**** - ab <file name>***

This option will program the entire flash data with the source binary file <file name>.

All areas of BIOS will be overwritten (unless otherwise stated with options “-sl”, “-sc”, “-sn”, “-sv”, “-st” and/or “-so”) will be erased.

If BIOS image contained in *<filename>* has valid data for EEPROM area, then also CMOS is reprogrammed with these data; otherwise, EEPROM is cleared and CMOS is not modified.

The binary file needs to follow these requirements:

- the size needs to be 1MB
- It needs to be a SECO's BIOS
- It needs to have a valid checksum
- It needs to be made for the board at issue

**** -db <file name>***

This option will perform the entire dumping of the flash data on the file <file name>.

**** -fw***

This option forces SPI Flash writing, even in case that SPI sector’s contents are identical to what we would like to program inside.

This is particularly useful during recovery situations, like, for example, when reprogramming the Flash BIOS by booting from an external Firmware Hub.

**** -nr***

Using this option, in case at least one of the programming or erasing actions have been performed, the automatic reboot will be skipped, and powering off the system is required to reboot it.

4. Warnings

Update process duration requires very few minutes. Anyway, this procedure is very critical as if any interruption occurs during the process, the board could be damaged.

It is suggested to plan this process avoiding critical time-periods, when power interruptions are more probable, being careful about good cabling of the complete system and about any possible condition which can stop normal working of electronic devices.

Please do not reset, turn off, unplug the ac power cord, touch or remove any drive used to updating the BIOS.

Do not use *TncFlash* to program on the Flash anything other than 08810000.yyy or 0963000.xxx BIOS files, otherwise the board will become not usable anymore.

Please be careful in choosing the correct BIOS file for the board you own: if on the board is etched CS881, then use 0881000.yyy BIOS file. If onboard is etched CS963 (extreme version of the board) then use 0963000.xxx file

After updating BIOS to a new release, it is strongly recommended that you enter the BIOS and check carefully every option. Particularly, it is recommended to check video BIOS settings, in special mode if you are using internal LVDS interface.

In case you should experience any problem with *TncFlash* utility, please contact SECO with a detailed description of problems encountered.

5. Supported Boards

- Quadmo747-E6xx commercial version (CS881), with 08810000.xxx BIOS
- Quadmo747-E6xx Extreme version (CS963), with 09630000.xxx BIOS