HALCoGen 03.05.02

Release Notes

29th May 2013

HALCoGen™ is the driver generation tool for TI's Hercules Microcontroller Family

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1 New In This Release

Version 03.05.02 is second patch release for version 03.05.00.

Help files are reused from 03.05.00.

2   System Requirements

The system requirements for HALCoGen v3.05.00 are as follows:

OS   – Windows XP, Windows 7

Memory   – 1GB

Disk Space – 750 MB

3   Installing HALCoGen

HALCoGen tool is part of the Software installation DVD that comes with any Hercules Development kit (**www.ti.com/hercules**).

The Latest HALCoGen version can also be downloaded from the following Link **http://www.ti.com/tool/halcogen**.

The tool gets installed in the directory named..**\HALCoGen\vXX.YY.ZZ**

Where **XX.YY** is the version number and **ZZ** is the Patch number if released. Multiple versions can co-exist, although it is advised to use the latest version.

4   Uninstall HALCoGen

The HALCoGen can be uninstalled one version at a time.

All Programs → Texas Instruments → Hercules→ HALCoGen → vXX.YY.ZZ → uninstall.

5   Release Contents

This release supports the drivers for the following variants:

Modules	TMS470M	TMS570LS20x	TMS570LS31 x/RM48x	TMS570LS12x/ RM46x	TMS570LS04x/ RM42x
Cortex-R4	-	✓	✓	✓	✓
Cortex-M3	✓	-	-	-	-
freeRTOS	✓	✓	✓	-	-
SYSTEM	✓	✓	✓	✓	✓
PINMUX	-	-	✓	✓	✓
MPU	✓	✓	✓	✓	✓
PMU	-	✓	✓	✓	✓
VIM	✓	✓	✓	✓	✓
ESM	-	✓	✓	✓	✓
Memory Map	✓	✓	✓	✓	✓
RAM	✓	✓	✓	✓	✓
FLASH	✓	✓	✓	✓	✓
GCM/Oscillator	✓	✓	✓	✓	✓
PLL	✓	✓	✓	✓	✓
DCC	-	-	✓	✓	✓
CCM	-	✗	✗	✗	✗
PMM	-	-	✓	✓	✓
POM	-	✗	✓	✓	-
EMIF	-	✗	✓	✓	-
PBIST	-	✓	✓	✓	✓
LBIST(STC)	✓	✗	✓	✓	✓
MBIST	✓	✗	✓	✓	✓
EFUSE	-	-	✓	✓	✓
RTP-IO	-	-	✓	-	-
DMM-IO	-	-	✓	-	-
ETPWM	-	-	-	✓	-
ECAP	-	-	-	✓	-
EQEP	-	-	-	✓	✓

✓   Available

✗   Not Available

-        Not Applicable

Modules	TMS470M	TMS570LS20x	TMS570LS31x/ RM48x	TMS570LS12x/ RM46x	TMS570LS04x/ RM42x
RTI	✔	✔	✔	✔	✔
GIO	✔	✔	✔	✔	✔
SCI	✔	✔	✔	✔	✔
LIN	✔	✔	✔	✔	✔
SPI	✔	✘	✔	✔	✔
SPI/MIBSPI	✔	✔	✔	✔	✔
CAN	✔	✔	✔	✔	✔
ADC	✔	✔	✔	✔	✔
HET	✔	✔	✔	✔	✔
HTU	-	✘	✘	✘	✘
I2C	-	-	✔	✔	✘
EMAC	-	-	✔	✔	-
USB	-	-	- / ✔	- / ✔	-
FlexRay™	-	-	✘ / -	✘ / -	-
FTU	-	-	✘ / -	✘ / -	-
FEE-CFG	✔	-	✔ / -	✔ / -	✔ / -

✔   Available

✘   Not Available

-        Not Applicable

6 Fixed In This Release

Following are the list of issues fixed in version 03.05.01 from 03.05.00 and 03.05.01

References	Description
SDOCM00101610	**RTI** : rtiSetPeriod(uint32 compare, uint32 period) sets the Compare register, it must set only update compare.
SDOCM00101609	**RTI** : User code section removed from version 3.05.00 to 03.05.01
SDOCM00095045	**SYSTEM:** Flash EEPROM Wait states are always Static which is not correct.
SDOCM00100006	**SYSTEM:** Default _isrStub routine missing for freeRTOS
SDOCM00100044	**SYSTEM:** CCM Self-Test checks have wrong sequences
SDOCM00100301	**PINMUX:** By default, there are 2 conflicts when MII is selected. MII_TX_AVCLK4 and MII_RX_AVCLK4 should not be selected by default.
SDOCM00100334	**PMM :** Wrong macros in sys_pmm.h
SDOCM00100439	**SYSTEM:** Fall-Back Address Parity Error Register in VIM module not set in Init API
SDOCM00100790	**FEE:** In HALCoGen generated FEE block configuration, the EEP number is fixed to 1 instead of 0, if number of EEP's selected is one.
SDOCM00100812	**SYSTEM:** TMS570LS3137 PGE default system clock out of specification
SDOCM00100837	**HTU:** HTU header file issues
SDOCM00100876	**SYSTEM:** HCG generates 3MB flash region even for LS1227 and RM46.
SDOCM00100877	**SYSTEM:** VCLK2 / VCLK frequency constraints need to be highlighted in HCG GUI.
SDOCM00100878	**EMIF:** EMIF Clock Doesn't Track VCLK3 Settings
SDOCM00100942	**FREERTOS:** Free RTOS project Fails to Build w. 5.1 tool chain, HALCoGen 3.05

7 Known Issues

Following are the list of Known issues in this version.

References	Description
SDOCM00084768	**MIBSPI:** MIBSPI5 configuration doesn't support Parallel mode. Also there are no settings for SOMI[1:3] or SIMO[1:3] but just SOMI0 and SIMO0"
SDOCM00084753	**SYS**: Since the PLL tab does not spit out warnings if any final or intermediate frequencies generated are out of spec. **Workaround**: Refer the device Technical Reference Manual for recommended PLL configurations.

SDOCM00086009	**Tool:** No KEIL tool support for TMS470M devices
SDOCM00087899	**FEE:** The FEE driver GUI in TMS470Mx family only supports 10 blocks.
SDOCM00094155	**MIBSPI:** No two Chip Select can be used simultaneously. i.e., SPI cannot talk to Two slaves simultaneously.
SDOCM00095488	**CAN:** Support for Mixed mode in CAN driver is necessary.
SDOCM00088096	**ADC:** Interrupt Enable Check box for Event,Group1 and Group2 groups for ADC1,ADC2 in HCG

8   User Notes

- 02.xx.xx HALCoGen Pjt cannot not be opened in 03.xx.xx or greater HALCoGen versions. User has to redo configuration with latest HALCoGen.

- Any directory should not have more than one HALCoGen project (.hcg and .dil files). Each project should be in an individual directory.

- From HALCoGen Version 3.00.00 onwards the header files are generated in include directory and other driver files in source directory. The user needs to set this include path in the 'project include settings' while building it.

  (Eg: In compiler (cl470) add option → "--include path (**path**)/include").

- When selecting HET2 – Advanced Configuration Mode / Disable Black box user must make sure the "Select Header File & Source file" inputs are generated out of NHET assembler using option "–n1 –hc32".

- HALCoGen does not delete any files placed/generated under source or include folder generated by HALCoGen.

- To use USB drivers in RM48x and RM46x family of devices Enable support for GCC extensions (--gcc) in compiler options.

- If running CPU Self test in debug mode, the debug info are lost immediately after CPU self test eg., All breakpoints set before CPU self test are lost.

- CCM Self test cannot be run in debug mode.

- HALCoGen must be used with default 100% Font size only. http://e2e.ti.com/support/microcontrollers/hercules/f/312/t/184660.aspx

- HALCoGen releases made till date including ver 3.05.0x driver is an Alpha (early adapter) release only.

- Following options must be selected under **MULTI IDE** project to use HALCoGen generated code for GHS.

  - **-T** < Generated code path >\source\sys_link.cmd

  - **-I** < Generated code path >\include

  - **-no_auto_interrupt_table**

  - **-e resetEntry**

8.1   Using CCS and Flash ECC

HALCoGen GUI has the following three options as given in *Figure 1 Flash ECC Options* which needs Flash ECC to be calculated and programmed in to the device.

1) Flash ECC Self Check in Safety Init Tab
2) Flash FMCBUS2 Error Check in Safety Init Tab
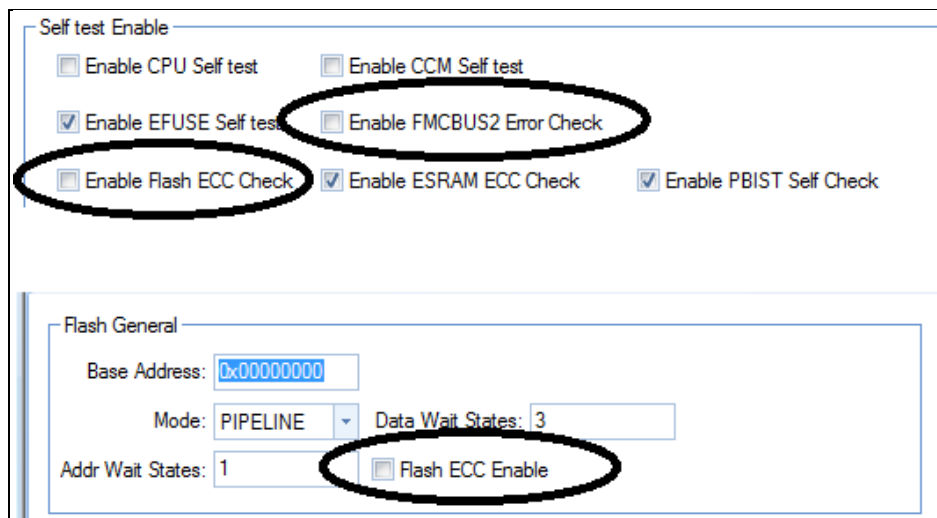3) Flash ECC in Flash configuration Tab

Figure 1 Flash ECC Options

Incase CCS does not provide default ECC append to the executable user must do following steps

1) Install nowECC. Download Link → http://www.ti.com/tool/nowecc

2) In the CCS Project Explorer go to

Project → Properties → Build → Steps → Post Build Steps and give the following command.

For TMSxxx Devices

"<nowECC path>\nowecc.exe" -F021 16M_ADD -R4 -a "${BuildArtifactFileName}"

For RMxxx Devices

"<nowECC path>\nowecc.exe" -F021 16M_ADD -le -R4 -a ${BuildArtifactFileName}"

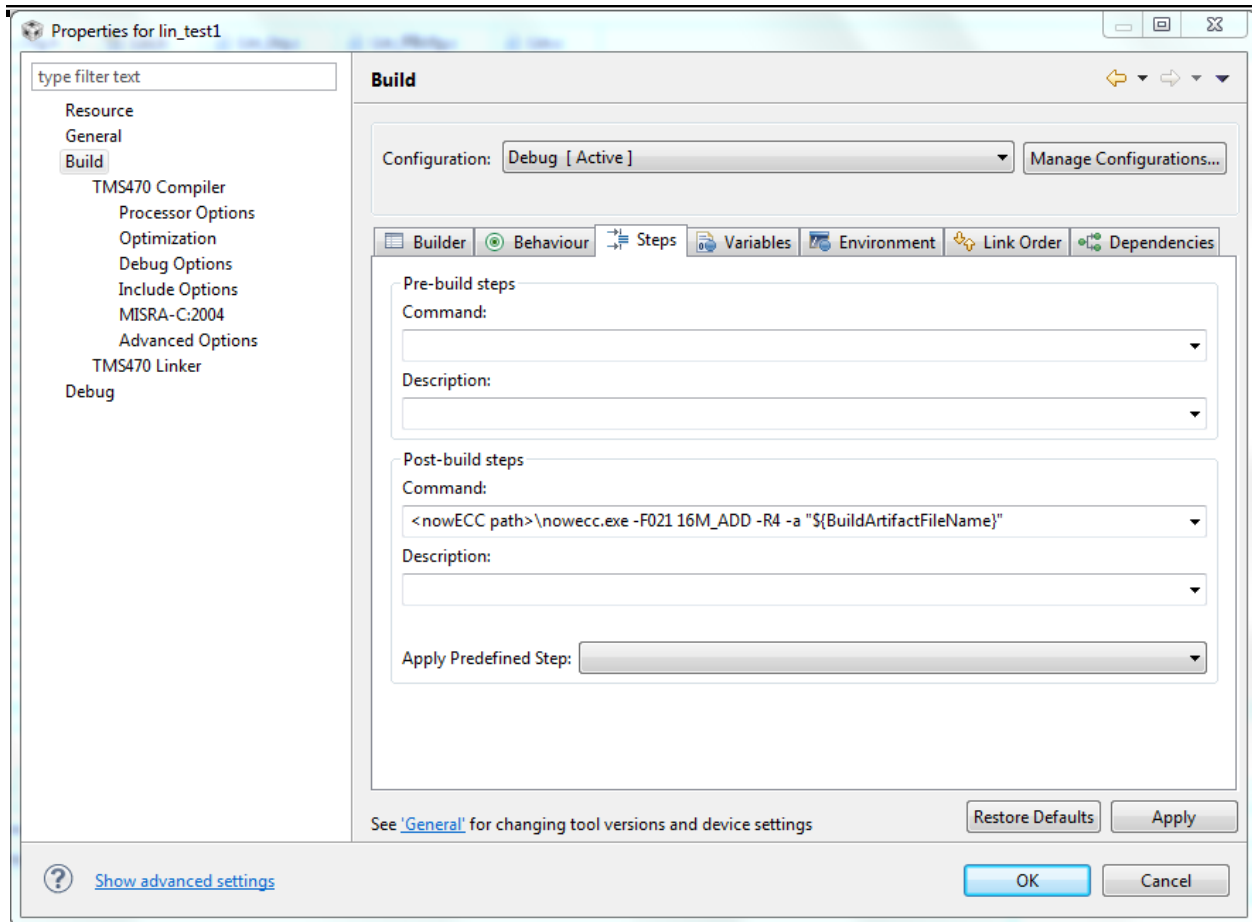Snapshot of the Project Properties with the necessary settings can be found in the below *Figure 2 : Project Properties Snap* Shot

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Figure 2 : Project Properties Snap Shot