

0.1 Board Files

0.1.1 Introduction

The board files are a collection of board-specific header and configuration files. Each file targets a specific STB or DVD platform.

Three types of files are provided:

- BSP: OS21 uses the BSP (Board Support Package) which is installed with the ST40/ST200 Toolset. The latest updated bsp is provided for all ST40 devices.

The current ST40 toolset release in use at the time of this release is:

- ST40: 5.1.0
- Header files; exports constants that are required by the developer to boot and initialize an application on a specific platform.
- Targetpack files; the default files (in C:\STM\STMCR1.6.0\targetpack by default for Windows) can be updated with the targetpack files in board for each of the chip being used. STMCR1.6.0 to be used for all chipsets.

These release notes refer to version 3.0.14 of the board files.

0.1.2 Implementation

The following table lists the available board header files:

Header File	Description
boardrevision.h	Header file containing the Board release revision.
mb411.h	Definitions for 7100/7109 mboard.
mb618.h	Definitions for mb618 mboard.
mb628.h	Definitions for mb628 mboard.
mb680.h	Definitions for mb680 mboard.
mb704.h	Definitions for mb704 mboard.
mb676.h	Definitions for mb676 mboard.
mb796.h	Definitions for mb796 mboard.
mb837.h	Definitions for mb837 mboard.
hdk5289.h	Definitions for hdk5289 board.
hdk7105.h	Definitions for hdk7105 board.
hdk7106.h	Definitions for hdk7106 board.
hdk7108.h	Definitions for hdk7108 board.
hdkh205.h	Definitions for hdkh205board.

Table 1 List of board header files

0.1.3 Changes from release 3.0.13 to 3.0.14

- Lille support added i.e. Support added for h205 (Bsp & targetpacks) for PS1 & PS2 stage.
- Solution to support stapp board targetpack unification.
- For drivers unitary test harness, targetpacks available in BOARD directory can be directly used by setting STTP_XML_PATH variable. No need to copy targetpack files to local STMCR directory manually).
- Support for ST40R5.1.0 toolset and STMCR1.6.0.
- Targetpack updated to v28 for mb680 & hdk7105 - Added second possibility to overclock the system, by passing the following parameter on command line "overclk=2".
- Targetpack updated to v17 for mb680(7106) & v18 for hdk7106 - Added possibility to overclock the system, by passing the following parameter on command line "overclk=1"
- Targetpack updated to v19 for hdk7108 & v18 for mb837 and v11 for mb903 - ODTCFG1 config restored to correct recommended Synopsys settings & SPI configure fix.
- Targetpack updated to v19 for hdk5289 & v18 for mb796 - Fixed an issue generating a ROM image. Check USB availability on the fusemap before accessing
- Targetpack added for sdk7105
- Targetpack updated to v11 for hdk7111 & v55 for mb618- Cosmetic change on LMI and sysconf settings, Added possibility to overclock the system, by passing the following parameter on command line "overclk=1" or "overclk=2"
- Targetpack updated to v35 for eud7141 & v33 for mb628- Added fix for warm reset issue, Added reset of eCM in case of WDT by eSTB, Check LMI DLL are locked before going on, Decrease some delay in LMI setup.

0.1.4 Changes from release 3.0.12 to 3.0.13

- Targetpack updated to v17 for hdk7106(Update DQS timing to support HDK7106 with STi7106 cut 3)
- Targetpack updated to v17 for hdk5289 & v16 for mb796(change cpu bandwidth limiter settings & Update stbus plug for blitter)
- Targetpack updated to v10 for hdk7111 & v54 for mb618(Blitter plugs settings update)
- Targetpack updated to v15 for hdk7106 & mb837 and v08 for mb903(Overclocking mode updated, New DDR-Mixer bandwidth limiter settings, Targetpack cleanup, print_lock_status() and print_local_delays() moved to "stx7108_ddrdbg.py" & HWPLF00000942 defect (code size too big) fix integration.)

0.1.5 Changes from release 3.0.11 to 3.0.12

- Targetpacks updated - hdk7106 -v16, mb837- v15beta1, mb903 - v06beta2& hdk7108 - v14beta1, mb628-v32 & EUD7141-v34 .

0.1.6 Changes from release 3.0.10 to 3.0.11

- Targetpacks updated - hdk7106 -v15, mb837- v13, mb903 - v06& hdk7108 - v11, hdk7105-v27, hdk7197-v04, mb628-v31 & EUD7141-v33 & 5197- v10
- BSP updated : sti7108 to v2.2 to add OS21_INTERRUPT_PCIE_SYS_ERR interrupt.

0.1.7 Changes from release 3.0.9 to 3.0.10

- Support added for hdk7197, hdk5189 & mb903.
- BSP for hdk7111 added.
- Targetpacks updated - hdk7106 -v14, 7111(mb618) - v53, hdk7111-v09, mb837- v09, mb903 - v03& hdk7108 - v7
- BSP updated : sti7105 (mb680 & hdk7105) - v08.

0.1.8 Changes from release 3.0.8 to 3.0.9

- Support added for eud7141 platform for unitary test harness.
- STi7200 support removed
- Targetpacks updated - HDK7106 -v13, 7105-v25, 7111 - v52, Sti7141 - v30 , eud7141- v32, 5289 - v14 & 7108 - v7
- BSP updated to v2.1 for mb827 & hdk7108.

0.1.9 Changes from release 3.0.7 to 3.0.8

- BSP Migration to ST40R5.0.0 - 5197, 5206, 7105, 7106, 7108, 7111, 7141, 7200
- Fixed OS21_INTERRUPT_EXT_n interrupt nomenclature issue - 7105,7106
- IT trigger mode fix: ST40_HOST_WDT, ST40_RT_WDT, LPC_WDT changed to OS21_ILC_TRIGGER_FALLING_EDGE. VTG interrupts moved to RISING EDGE for dual CPU support - 7108
- STMC Migration & compliance with STMCR1.5.0.
- BSP aligned with CPT agreed nomenclature for OS21_INTERRUPT_ETH_GMAC_MAC, OS21_INTERRUPT_ETH_GMAC_PMT, OS21_INTERRUPT_ETH_GMAC1_PMT, OS21_INTERRUPT_ETH_GMAC1_MAC, OS21_INTERRUPT_EXTn on 7106.

0.1.10 Changes from release 3.0.6 to 3.0.7

- Targetpack updated to v4 for 7108 (DDR controller settings changes to reach 960Mhz @1.2V VCore)
- Targetpack added for hdk7108.
- 7105 - TP v20 + BSP for hdk7105 board + EPLD updates.
- 7106 - TP v11 + BSP for hdk7106 board + EPLD updates.
- 7108 - Updated BSP to v1.1 & TP to v03[mb837] & v02 for palladium.
- 7111 - Updated BSP to v14[mb618] & TP(v51),
 - For sat7111: BSP to v14 & TP(v07), Introduced TP support for hdk7111 board & removed mb636 TP support.
- 5206 - TP v14 & BSP v10, EPLD updates.
- 7141 - BSP(v07), TP(v25)[mb628] & TP(v26)[eud7141]
- 7200 - BSP(v04), TP(v09) & Removed support for mb519.

0.1.11 Changes from release 3.0.6 to latest snapshot release

- Current Status:
 - 5197 - No change. Current targetpack version is V20.
 - 7105 - TP v20 & introduced separate BSP for hdk7105 board.
 - 7106 - TP v11 & introduced separate BSP for hdk7106 board, Introduced new EPLD equations.
 - 7108 - BSP version v1.1 updated, Updated targetpack to v03 for mb837 and v02 for palladium.
 - 7111 - For mb618: BSP (V14) & TP(v51), & For sat7111: BSP (v14)& TP(v07), Introduced TP support for hdk7111 board, removed mb636 TP support.
 - 5206/89 - Targetpack v14 & BSP v10, EPLD segregated based upon revision.
 - 7141 - BSP(v07), mb628 TP(v25) & eud7141 TP(v26)
 - 7200 - BSP(v04), TP(v09), Removed support for mb519.

0.1.12 Changes from release 3.0.5 to release 3.0.6 (Release Date: 09 November 2009)

- Targetpacks updated for following devices
 - 7141 - v20
 - 7105 - v19
 - 7106 - v09
 - 7108 - v1.1
 - 7111 - mb618 (v51), sat7111 (v07)
 - 5197 - v08
 - 5206/89 - v13
 - 7200 - v09
- Latest BSPs compatible to ST40R4.4.0 upgraded for all supported (7105, 7111, 7141, 7200, 5206, 5197, 7106, 7108) platforms.

0.1.13 Changes from release 3.0.3 to release 3.0.5 (Release Date: 27 August 2009)

- Targetpacks updated for following devices
 - 7141 - v14 updated (Update timings/electricals parameters on PLI/GPLMI to fix stability issue)
 - 7105 - v15 updated (Fix PMB setting for 16-bits LMI)Compliant to 1.4.0
 - 5197 - v07 updated (Compliant to 1.4.0)
- Added support for STx7106 on mb680 mboard, for STx5206 on mb796 mboard & for STx7108 on mb837 mboard.
- Latest BSPs compatible to ST40R4.4.0 upgraded for all supported (7105, 7111, 7141, 7200, 5206, 5197, 7106, 7108) platforms.
- Cleanup to remove support for ST20 devices.

- Resolved DDTS - GNBvd77071 : Unable to compile 7100 because of missing mb411.mem

0.1.14 Changes from release 3.0.2 to release 3.0.3 (Release Date: 23 October 2008)

- STx7111 - Added FE900 reset in targetpack for 7111cut2 onwards. Added support for UART4 in bsp & targetpack (cut 2 feature).

0.1.15 Changes from release 3.0.1 to release 3.0.2 (Release Date: 17 October 2008)

- Added support for STx5197 on mb704 mboard.
- STx7105 - Update to bsp for dvp interrupt. Update to targetpack for clockgen source configuration & enabling interconnect bug workaround automatically according to device cut.
- STx7111 - Update to targetpack for clockgen source configuration, mb618 RevD support, ethernet reset fix & enabling interconnect bug workaround automatically according to device cut.
- STx7141 - Update to bsp for ETHGMM1 interrupt. Update to targetpack for clockgen source configuration & enabling interconnect bug workaround automatically according to device cut. Fix for 32 bit addresses.

0.1.16 Changes from release 3.0.0 to release 3.0.1 (Release Date: 29 July 2008)

- STx7105 - Update to bsp for PCI and Standalone PIO interrupts. Update to targetpack for interconnect configuration.
- STx7111 - Update to bsp for PCI wake-up interrupt. Update to targetpack for Clockgen C/audio & E/USB configuration, Fix from STMC 1.2.1 for ST40 core type.

0.1.17 Changes from release 2.4.19 to release 3.0.0 (Release Date: 08 July 2008)

- Added support for STx7200 cut2 on mb671 mboard.
- Release number changed to 3.0.0 (Major release) to signify backward incompatible change in base addresses for ST40 devices from virtual addresses to physical addresses since Board Release 2.4.15

0.1.18 Changes from release 2.4.18 to release 2.4.19 (Release Date: 23 June 2008)

- Updates to bsp and targetpack for STx7141 and fixed 32 bit mode in targetpack.

0.1.19 Changes from release 2.4.17 to release 2.4.18 (Release Date: 17 June 2008)

- Added support for STx7105 on mb680 mboard.
- Added support for STx7141 on mb628 mboard.
- Added targetpack for STx7200 on mb519 mboard.
- Updates to 7111 bsp and targetpack. Default LMI clock at 660MHz and with STNoc workaround enabled.

- Stfae updates for STx5105, STx5107, STx7710 config files.

0.1.20 Changes from release 2.4.16 to release 2.4.17 (Release Date: 18 April 2008)

- Updates to 7111 targetpack for workaround to STBus/STNoc bug.

0.1.21 Changes from release 2.4.15 to release 2.4.16 (Release Date: 16 April 2008)

- STFAE changes integrated. Therefore, set STAPIREF_COMPAT=1 if using stapioref code.
- Updates to 7111 bsp & targetpack. Addition of 32 bit addressing support to bsp & targetpack.
- 32 bit addresses support (STEP 5) - consequently using physical addresses only for all ST40 chips.

0.1.22 Changes from release 2.4.14 to release 2.4.15 (Release Date: 13 February 2008)

- Added support for STx7111 on mb618 mboard.
- Virtual addresses defines changed to physical addresses for espresso(5528), mb376(5528), mb411(7100/7109), mb519(7200).

0.1.23 Changes from release 2.4.13 to release 2.4.14 (Release Date: 06 December 2007)

- Update to FMI configuration for STx5162/3.

0.1.24 Changes from release 2.4.12 to release 2.4.13 (Release Date: 07 November 2007)

- Update to STx5162 clock configuration and Resolved DDTS GNBvd64053 - wrong PLL frequency for STi5162.
- Tested with STx5163 on mb635A fitted with SDR SDRAM (by stboot test harness).

0.1.25 Changes from release 2.4.11 to release 2.4.12 (Release Date: 31 October 2007)

- Update to FMI configuration for STx5162.

0.1.26 Changes from release 2.4.10 to release 2.4.11 (Release Date: 09 October 2007)

- Updated Command files for STx7200 on mb519 with 32bits addressing support.

0.1.27 Changes from release 2.4.9 to release 2.4.10 (Release Date: 05 October 2007)

- Added support for STx5162 on mb634 mboard.

0.1.28 Changes from release 2.4.8 to release 2.4.9 (Release Date: 23 July 2007)

- Updated Command files for STx7200 on mb519 for stable LMI operation at 666MHz. Added GUMP and cut 2 support.

0.1.29 Changes from release 2.4.7 to release 2.4.8 (Release Date: 21 May 2007)

- Resolved Enhancement DDTS: GNBvd59029 - Updates required for extended dcache support on 7710.

0.1.30 Changes from release 2.4.6 to release 2.4.7 (Release Date: 07 March 2007)

- Configuration changes only for STx7200 and mb519 files. There are no code changes from previous release.

0.1.31 Changes from release 2.4.5 to release 2.4.6 (Release Date: 22 February 2007)

- Added support for STx7200 on mb519 mboard.
- Added config/command files for STx7200 on mb519 as a reference in mb519 directory.
- Added BOARD_GetRevision() macro to get the Board release revision string.

0.1.32 Changes from release 2.4.4 to release 2.4.5 (Release Date: 07 September 2006)

- Added support for STx5107 on CAB5107 Refboard with support for 8MB, 16MB, 32MB(default), 64MB memory configurations.
- Added support for STx5107 on SAT5107 Refboard with support for 8MB, 16MB, 32MB(default), 64MB memory configurations.
- STx5188 files updated. It now runs at a cpu speed of 222Mhz, with a CAS3/332Mhz sdram configuration.
- Resolved DDTS GNBvd51547 - FS does not always start : init to change

0.1.33 Changes from release 2.4.3 to release 2.4.4 (Release Date: 23 May 2006)

- Changes to board_init and board_runtime_init procedures to support all memory configs, instead of requiring different linktime and runtime procedures. (Applicable for 5107, 5188, 5105, 5100).*
- Updated LMI (170 MHz) clock value for STx5525 on mb428.

*Note: You need to set the appropriate memory configuration variable in your environment as YES.

eg: set MEMORYCONFIG_8MB=YES

The board_init and board_runtime_init linktime and runtime procedures have been modified to take care of different memory configurations. Earlier it was required to specify separate procedures during linktime and runtime incase the desired memory configuration was different from the default.

The additional linktime and runtime procedures defined in the config files are still present to maintain backwards compatibility with applications that maybe using these procedures already.

0.1.34 Changes from release 2.4.2 to release 2.4.3 (Release Date: 21 April 2006)

- Added support for STx5107 on mb436 with support for 8MB, 16MB, 32MB(default) memory configurations.
- Added support for STx5107 on DTT5107 Refboard with support for 8MB, 16MB, 32MB(default), 64MB memory configurations.
- Added support for 16MB configuration under MEMORYCONFIG_16MB option for STx5188 on mb457.
- Added support for 8MB configuration under MEMORYCONFIG_8MB option for STx5105/STx5118 (cut3.0) on maly3s.

0.1.35 Changes from release 2.4.1 to release 2.4.2 (Release Date: 23 February 2006)

- Resolved DDTS GNBvd47259 (Abnormal start at cold temperature) for 7710.
- Updated LMI (165 MHz) and Smartcard (5 MHz) clock values for STx5525 on mb428.

0.1.36 Changes from release 2.4.0 to release 2.4.1 (Release Date: 19 January 2006)

- Added support for STx5188 on mb457 motherboard.
- Added support for STx5525 on mb428 motherboard.

0.1.37 Changes from release 2.3.24 to release 2.4.0 (Release Date: 11 November 2005)

- Updated LMI configuration for 5105/5118 on mb400 & maly3s platforms.
- Changed memory configuration for 5100 on mb395 platform to use 64 MB LMI.
- Added extended dcache memory configuration for 5100 on mb395 & mb390. This is selectable from new link procedures provided in the config files.*
- Resolved DDTS:
 - GNBvd45467 - Problem with 166MHz LMI configuration with Maly3s board (5105/5118)
 - GNBvd45794 - Change interconnect setting (5100)
 - GNBvd45798 - Support for 64MB RAM for MB395 & Extended DCACHE config (5100) *

*The extended dcache configuration is supported for both mb390 & mb395 in which the first 8 MB of LMI are uncached (non cached region + avmem) & the rest is cached (avmemcached, external).

New link procedures board_init_extended & board_init_hex_extended created for the extended dcache option, in mb390.cfg & mb395.cfg. Link with one of these if using the extended dcache memory configuration.

Runtime procedure board_runtime_init_extended provided in mb390.cfg & mb395.cfg. Use this procedure in targets.cfg when running your application.

0.1.38 Changes from release 2.3.23 to release 2.3.24 (Release Date: 26 October 2005)

- Added support for 7109 on mb411.
- Updated IC, lmi, and lx clock values for 7100 cut 2.

- Resolved DDTS:
 - GNBvd44570 - board_runtime_init_rom procedure must be modified for rom debugging (7710)
 - GNBvd44962 - Frequency update to 200 mhz for STi7710
 - GNBvd44963 - FS_01_CONFIG_1 setup required for modem operation on 7710
 - GNBvd45080 - Optimized interconnect settings for STi7710

0.1.39 Changes from release 2.3.22 to release 2.3.23 (Release Date: 27 July 2005)

- Added support for 5100-mb395 platform.
- Added support for 5105-maly3s platform (SDR-SDRAM support).
- Added support for 8010-mb426 platform (Traviata).
- 5100 config files updated. CPU now at 221MHz, LMI at 166MHz.
- Resolved DDTS: GNBvd43301 - The config for some boards fixes the stack at 25KB (for 5100)

0.1.40 Changes from release 2.3.21 to release 2.3.22 (Release Date: 28 June 2005)

- Updated LMI/FMI(DVB-CI) configuration for STi5105. Added sdram support & tested on Maly3 board.
- Resolved DDTS:
 - GNBvd42666 - os20_th_data placement into INTERNAL memory (not a bug)

Note:

For running application with sdram support for 5105 (as in Maly 3 board), set the following in your build environment: set SDRAM_DEVICE_TYPE=SDR_SDRAM. By default, DDR configuration is selected.

0.1.41 Changes from release 2.3.20 to release 2.3.21 (Release Date: 17 June 2005)

- Changed EMI device addresses for mb421(8010).
- Re-Resolved DDTS:
 - GNBvd42509 - Addition of regs TVFormat, Front Panel Display and Dac8Chan in mb421.h

0.1.42 Changes from release 2.3.19 to release 2.3.20 (Release Date: 16 June 2005)

- Resolved DDTS:
 - GNBvd42509 - Addition of regs TVFormat, Front Panel Display and Dac8Chan in mb421.h
 - GNBvd42517 - DAA clock setting on 5100

0.1.43 Changes from release 2.3.18 to release 2.3.19 (Release Date: 23 May 2005)

- Added defines for default cacheable range (8MB) for STi5301 & STm8010. This default range can be overridden by user by passing desired range in DCacheMap initparam to STBOOT_Init().

0.1.44 Changes from release 2.3.17 to release 2.3.18 (Release Date: 19 Apr 2005)

- Added support for STi5301 on mb390 motherboard.

- Added support for STm8010 on mb421 motherboard.
- Changed values of ST40Peripheral, Audio decoder clocks in mb411.h for 7100.
- Resolved DDTS: GNBvd40660 - "CPU=243MHz and LMI=166MHz" (Query for 5100)

0.1.45 Changes from release 2.3.16 to release 2.3.17 (Release Date: 07 Mar 2005)

Modified configuration files for 7710 (mb391), to run at 166MHz by default.

Modified FMI Bank 1 (STEM0/DVBCI) configuration for 5105 (mb400).

Resolved DDTS: GNBvd39165 - incorrect ST approved bandwidth ratio (STi5100)

0.1.46 Changes from release 2.3.15A1 to release 2.3.16 (Release Date: 09 Feb 2005)

Added support for 7100 motherboard (mb411).

Modified configuration files for 5105 (mb400), as per latest recommendation from validation group.

Resolved DDTS:

- GNBvd36931 - Not able to peek 4629 registers on espresso on OS21 (reopened & resolved)
- GNBvd31164 - Unstable behaviour with DVB CI card in Non Unified Mode (no fix)

0.1.47 Changes from release 2.3.14 to release 2.3.15A1

Added support for using 5105 on mb400 motherboard.(Alpha support - FMI not yet supported)

Added support for 5700 - Champagne (mb385) and Walkiry motherboards.

Modified configuration files for 7710, primarily with changes to Audio clocks, as per latest recommendation from validation group.

0.1.48 Changes from release 2.3.13 to release 2.3.14

Modified configuration files for 7710 to clock the CPU/DDR interface at 175MHz by default. (required for proper MPEG decode)

Modified configuration files for 5528 (ST20) for using cut2.0 of 5528 on mb376.*

Resolved following DDTS:

- GNBvd36903 - MB376 PLL2_ChangeFreq values no good on STi5528 cut 2.0
- GNBvd36931 - Not able to peek 4629 registers on espresso on OS21 (Not a bug-No changes)

* No changes required for espresso(ST20). For ST40, ST40 toolset BSP is used instead of this driver "board". ST40 toolset 2.1.4 patch 1 to be used.

0.1.49 Changes from release 2.3.12 to release 2.3.13

Added support for 5105 emulation.(There will be a full release later when the board is available).

ST40 addresses provided for use of db499 on mb376.

Resolved following DDTS:

- GNBvd15064 - os20_th_code section should be placed in on-chip *
- GNBvd35429 - Wrong memory map in dcu_mb382.cfg (2 x 16M EMI, should be 1x 32M)
- GNBvd35582 - FLASH block size incorrectly defined in mb391.h
- GNBvd35584 - Incorrect translation of ST20 memory address to ST40 on espresso
- GNBvd35611 - New config files needed to use whole 64MB DDR on LMI

* Changes done in placing of os20 sections in on-chip memory for 7710 and 5105.

0.1.50 Changes from release 2.3.11 to release 2.3.12

Changed configuration files for 7710 to clock the CPU/DDR interface at 189MHz by default, as per latest recommendation from validation group.

Resolved DDTS GNBvd35353 - EMI addresses to be changed in mb376.h for OS21*

*The EMI/LMI addresses as visible from ST40 side are changed.

0.1.51 Changes from release 2.3.10 to release 2.3.11

Added support for 7710.

Added support for DTTi5516 brick board. (Resolved DDTS GNBvd33604)

Changes to drive 7020 STEM though EMI bus on the mb376.

Resolved following DDTS:

- GNBvd32710 - Correct the dac level with mb376 board
- GNBvd32756 - Modify mb390_mem.cfg for memory test
- GNBvd33182 - new config file is needed to improve support of 7020stem with mb382
- GNBvd33186 - New CACHEABLE_BASE_ADDRESS definition in mb382.h to support 7020stem
- GNBvd33604 - Infrastructure Driver Request for mb394 Board
- GNBvd33619 - Incorrect FLASH block size defined in mb390.h

Note: For OS21 on 5528 (ST40), - espresso and mb376 are supported. Board specific header files are used without modification. The Config (.cfg) files are not used and instead the configuration is provided by the ST40 Toolset BSP (Board Support Package).

0.1.52 Changes from release 2.3.9 to release 2.3.10

Update to PLL settings and addition of default settings for the config control registers for the 5100.

Added support for 5101.

0.1.53 Changes from release 2.3.8 to release 2.3.9

Procedure added to 5100ckg.cfg to update the interconnect priorities of the 5100 at startup.

0.1.54 Changes from release 2.3.7 to release 2.3.8

Updated FMI bank address config. This fixes the flash read/write problem in the previous release.

0.1.55 Changes from release 2.3.6 to release 2.3.7

Added support for the STi5100 on the mb390 eval board. Known problem with reading/writing to flash on the FMI.

0.1.56 Changes from release 2.3.4 to release 2.3.5

The LMI config for the espresso board has been updated

0.1.57 Changes from release 2.3.3 to release 2.3.4

The interconnect initialisation for the 5528 was updated to the latest spec from the validation group. The file bootiptr_sti5528.cfg was added, this contains a procedure that enables the 5528 to be booted from ROM.

0.1.58 Changes from release 2.3.2 to 2.3.3

Added ST20 support for STi5528 on mb376. This includes a recommended memory layout, with accompanying definitions in mb376.h. Base address definitions have also been provided for the devices connected to the EMI bus.

0.1.59 Changes from release 2.3.1 to 2.3.2

Added support for db573 (7020 STEM board) attached to mb382 or mb314. This consists of providing appropriate definitions in the board header files. The 5514/17 SDRAM_BASE_ADDRESS, SDRAM_SIZE, etc are still available as MB314/382_SDRAM_BASE_ADDRESS, etc. To avoid a proliferation of cfg files, the system setup changes necessary to support db573 are made in STBOOT, rather than the board config files.

Note that DVD_BACKEND=7020 is required when building for db573, in addition to DVD_FRONTEND=5514 or 5517.

Also made some cosmetic corrections to `clks_5516.cfg`, and adjusted its use of `CONFIG_CONTROL_D` to read/modify/write. In this way, the reset value of `DAC_ANALOG_PWRDWN` is preserved, which is important for the startup 'pop' fix on 5517. Note that this means other code must enable the audio DAC before it will produce sound - if using STAUD, this is done automatically by that driver.

Finally, the units of `SDRAM_FREQUENCY` in `mb290.h` have been corrected, and the clock configuration for mb290 has been changed to use the same clock rates as mb314 and not lock the clockgen registers. This allows the audio driver to modify the PCMCLK, to play audio on the 5514.

Resolved the following DDTS:

- GNBvd19976: Flash setup for mb382 cfg does not work (usage problem)
- GNBvd20271: mb5518um.cfg does not match naming standard

0.1.60 Changes from release 2.3.0 to 2.3.1

Added files for mb382. The main differences from mb361 are:

- There is one 8MB bank of flash, rather than two 4MB banks
- The 'chip' command refers to 5517 rather than 5516. Either chip can be used in either board, but where the 'chip' command is mismatched, the ST20 toolset will issue a warning message about the device id value that it finds. "chip STi5517" requires ST20 toolset 1.9.6 patch 5.

Changed the clock configuration for mb361 and mb382 to use the latest recommendations from validation.

0.1.61 Changes from release 2.2.1

The default setting for CFG_CCF.PBO is altered from 1 to 0 in this release, to improve video PTS association in the majority of cases. Specifically, the change is made for 5514/16, where the board configuration files control this group of registers. On other 55xx devices STBOOT controls CFG_CCF and the change will be made in STBOOT 2.9.0.

This change has implications when injecting from memory, namely that the injection mechanism must itself ensure that bit buffers are not overflowed. For more details, see the “PBO Feature Usage” Application Note.

Resolved DDTS:

- GNBvd15732: EMI bank 3 timings need changing for PIO mode 4
- GNBvd15497: Trap handler placed twice
- GNBvd15869: SDRAM_SIZE size not correct for mb314
- GNBvd16217: SDRAM_WINDOW_SIZE is twice expected value
- GNBvd14418: MPEG CONTROL register not set up correctly for 5514 and 5516

0.1.62 Changes from release 2.2.0

Resolved the following DDTS:

GNBvd14051: mb295: Badly defined FRONT and BACK_I2C_BUS

0.1.63 Changes from release 2.1.1

Added support for ATV2 HDTV Reference Platform (mb290)

Fixed the following DDTS entries:

GNBvd13847: 5516 eval board supports 16Mbyte SMI memory

0.1.64 Changes from release 2.1.0

Fixed the following DDTS entries relating to the Eval 5516 platform:

GNBvd13715: Linker places code incorrectly in flash for mb361.cfg

GNBvd13755: Eval 5516 clocks are too fast

0.1.65 Changes from release 2.0.10

Added support for the STi5516 Evaluation board (mb361). Unified memory support is provided in addition to standard EMI configuration.

Fixed the following DDTS entries:

GNBvd11294: STi5516AA EMI is only 16bits wide

GNBvd11365: Support for mediaref (5514 side)

GNBvd13115: [mb295] Data Cache could not be used, bad non cached section definition

GNBvd13543: mb314_um.cfg does not map epld

0.1.66 Changes from release 2.0.9

Added support for the STi7020 device when used in the STi7015 Evaluation board (mb295).

Fixed the following DDTs entries

- GNBvd12944: Missing close bracket in #define
- GNBvd12996: Swap definition of DB499_TRANSPORT_SELECT_0/2

0.1.67 Changes from release 2.0.8

Fixed the following DDTs entries

- GNBvd10940: Investigate EMI init for mb314
- GNBvd11366: Definition of hidden register required
- GNBvd11385: DataCache section correction and clean (comments)

0.1.68 Changes from release 2.0.7

Resolved the following DDTs entry

- GNBvd11178: Does not allow building for STi5512

0.1.69 Changes from release 2.0.6

Resolved the following DDTs entries:

- GNBvd10057: Add boot from FLASH support with unified memory
- GNBvd10215: name of the procedure is board_runtime_init_fast on 5514
- GNBvd10474: noint section incorrectly placed in mb5518.cfg
- GNBvd10399: Refresh rate for SDRAM initialization is wrong
- GNBvd10691: Change required to avoid filtering pb by OSD HW on 5512
- GNBvd11086: Flash configuration for ST40 Mediarref is incorrect

0.1.70 Changes from release 2.0.5

- Added support for mediaref board. DVD_PLATFORM should be set to mediaref and the procedure name is board_runtime_init.
- New EPLD configuration. This allows to use the on-board connectors or the STEM board for the tuner and packet injector.
- The entry point for all mb317 platforms have been changed to board_runtime_init. However, the previous procedure (mb317_setup) is still supported.
- On this release, the procedures for all platforms is board_runtime_init unless you are using a cut2 or cut2.1 5514. In those cases the procedure names are the ones explained in the release 2.0.3A5.
- Solved DDTs GNBvd10215: Name of the procedure is board_runtime_init_fast on 5514.

Alpha 5:

- Removed the line that locked the clock gen registers for 5514.

- Solved DDTS GNBvd10116: 5514clg.cfg file locks clock gen registers.

Alpha 4:

- Change the clock configuration to avoid some unstability problems.

Alpha 3:

- Change the the clock configuration to the most stable one.
- Support for cut 3, cut 2.1 and cut 2 running on EMI and LMI.
- Solved the following DDTs:
 - GNBvd09996: mb314_um.cfg does not support AVMEM space.
 - GNBvd10075: mb314_um.cfg includes old cut 2.1 emi and ckg files.
 - GNBvd10054: Bad SDRAM configuration.

Alpha 2:

- Change to clock configuration to a more stable one.
- Minor changes to 7015 configuration.
- ROM support is now implemented. Setting the linker procedure to board_init_hex instead of board_init will put the boot data in FLASH.

Alpha 1:

- Added the latest config files for 5514 from validation. The main change is that the jumper setting of the clock gen will be automatically detected (no longer needs to be in x1 mode).

0.1.71 Changes from release 2.0.4

- Added support for STi5514 cut 3. The platform mb314 is now used for 5514 cut 3 while platform mb314_21 can be used for both cut 2.0 and 2.1. For cut 3, the board must be configured in x1 mode (jumper setting).
- Resolved DDTs GNBvd09221: Versions of BOARD later than 2.0.4A6 seem to make the STPTI harness die.

0.1.72 Changes from release 2.0.3

- Minor changes to 7015 configuration.

Alpha 8:

- Added support for mb317a and mb317b boards using nGX1 and GX1 devices.
- Added support for 5514 side of the MediaRef board (mb314um_5514.cfg)
- Resolved the following DDTs:
 - GNBvd07626: Request for noninitialized bss sections.
 - GNBvd08996: Request Format Change in Release Notes: board.rel.
 - GNBvd08006: 55x8 DirecTv DBRef2.1.1 NCACHE_SIZE too small if no unified memory.

- GNBvd09095: Support for MediaRef board required.

Alpha 7:

- Re-mapped EMI bank 4 and bank 5 addresses to allow for increased EPLD space.
- Incorporated new clockgen dividers based on 500MHz PLL.
- Added poke for tri-stating EPLD clocks to ATA interface pins, to allow ATAPI to co-exist with clockgen workaround.

The following table defines the subsystem clock speeds:

Subsystem	X1	Slow	Fast
C2	27000000	83250000	166500000
STBUS	27000000	62437500	83250000
COMMS	27000000	55500000	55500000
VIDMEM	27000000	99900000	124875000
VIDMEM2	27000000	49950000	62437500
VIDMEM3	27000000	24975000	31218750
AUDIO_MMDSP	27000000	83250000	124875000
HDDI	27000000	62437500	71357142
EMI	27000000	83250000	166500000
MPX	27000000	83250000	166500000
FLASH	27000000	62437500	83250000
SDRAM	27000000	55500000	55500000
PCM	27000000	12287999	12287999
DSS SMARTCARD	27000000	18436008	18436008
AUX	27000000	4999998	4999998

Table 2 STi5514 Clocks

Alpha 6:

- Bug fixes to memory placements for non-cached section.
- Parameter checking errors in 5514emi.cfg file corrected.

Alpha 5:

- Incorporates boot loader for clock generator workaround.
- Adds new runtime entry points for dynamic clock speed selection.
- First attempt at SMI configuration.

The following table lists the procedures defined in `mb314.cfg`:

Procedure	Description
<code>board_init</code>	Linker procedure for non-os20 runtime configuration.
<code>board_init_os20_runtime</code>	Linker procedure for os20 runtime configuration.
<code>board_init_runtime</code>	Runtime procedure for initialization (X1 default).
<code>board_init_runtime_x1</code>	Runtime procedure for X1 mode.
<code>board_init_runtime_slow</code>	Runtime procedure for slow clock configuration.
<code>board_init_runtime_fast</code>	Runtime procedure for fast clock configuration.
<code>board_init_runtime_default</code>	Runtime procedure for default mode clock configuration.

Table 3 MB314 Procedures

Alpha 4:

- Correction to `mb5518.cfg` and `mb5518um.cfg` for EMI bank 3 configuration to allow correct flash operation at 81MHz.

Alpha 3:

- Modified flash memory EMI timings to account for X1 mode clocks.
- Added flash memory base address constant.

Alpha 2:

- Modified placement of the non-cached section memory area. This is now located in the first 2M of memory in EMI region 3 *i.e.*, `0x40000000` to `0x42000000`. Applications should define their data cache map such that this area of memory is not cached.

Alpha 1:

- First attempt at definitions for MB314 in `mb314.h`.
- First attempt at `mb314.cfg` file (X1 mode only - 27MHz).

0.1.73 Changes from release 2.0.2

- Renamed `force18.cfg` and `force18.h` to `mb5518.cfg` and `mb5518.h`
- Added `mb5518um.cfg`

0.1.74 Changes from release 2.0.1

- Added `force18.cfg` and `force18.h` files for FORCE18 demonstration board.
- Added `mb317.cfg` and `mb317.h` files for ST40GX1-compatible evaluation board.

0.1.75 Changes from release 2.0.0

- Fixed **GNBvd06314**; `mb282.cfg` has been modified to set `SDRAM_SIZE` to 16M.
- Removed `fpga_reg.h` - constants are now private to the 7015 boot implementation.

0.1.76 Known Problems

None.

0.1.77 Outstanding Defects

None.

0.1.78 Testing level

There are no formal tests for the correctness of these files. Testing is by usage in other component test harnesses.

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