



Release Notes

CodeWarrior Development Studio for StarCore DSP v10.5.2 Service Pack 1

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1 About This Release

The SP1 release of CodeWarrior for StarCore Development v10.5.2 introduces a new SmartDSP OS version and a Linker update.

1.1 Version Information

This release note provides important information for users of CodeWarrior Development Studio for StarCore DSP v10.5.2 SP1.

Users looking for productized solutions for the StarCore 3850 core and the BSC913x processors are encouraged to use CodeWarrior for StarCore 10.5.2 product plus SP1.

You are encouraged to read this document to become familiar with this release's supported targets, errata with workarounds, and other useful information.

1.2 Important Notes

CodeWarrior Development Studio for StarCore DSP v10.5.2 SP1 adds important updates on several components compared with CW SC v10.5.2 release:

- New Maple Firmware release P10 for 9132
- New SmartDSP version R04.08.03
- New BuildTools version 23.11.6.62

Please check Chapter 3 for the full list of features.

Note! New Eclipse 3.7.1 feature, Code Analysis: Depending on your settings in the Code Analysis panel, you might get unexpected syntax errors. You can customize these settings by going to Window->Preferences->C/C++->Code Analysis.

2 Getting Help

2.1 User Forum and FAQ

After looking through these release notes, and the documentation that comes with the installation of CodeWarrior, the next best place to look for answers to your questions is the online user forums located at

<http://forums.freescale.com>

Please check:

- **CodeWarrior for StarCore DSPs** forum for issues related to CodeWarrior development tools. The Frequently Asked Questions about CodeWarrior for StarCore DSP are posted here.
- **StarCore DSPs** forum for issues related to the silicon and hardware platforms.

The forums provide a great way to learn by seeing the questions and answers posted by other users. Of course, you can post your own questions and responses as well.

2.2 Contacting Freescale concerning CodeWarrior Development Tools

Finally, if you still have questions not addressed in the release notes, or want to provide feedback, please use the Freescale online support web page. To use this page, follow these steps:

1. In a web browser, go to <http://www.freescale.com/TechSupport>. Freescale's **Technical Support** web page appears.
2. On this page, click the [Create service request](#) online link. The **New Service Request — Category/Topic** page appears.
3. From the Category dropdown menu, select Technical Request.
4. From the Topic dropdown menu, select CodeWarrior (or other appropriate topic).
5. Click **Next**. The **New Service Request — SR Details** page appears.
6. In this page, enter the requested information. At a minimum, enter information in each field marked by an *.
7. Click **Submit**.
If you are already logged in, the **Service Request Confirmation** page appears. Go to the last step.
If you are not already logged in, the **Log-in** page appears.
8. If you are a registered member, login with your user name and password. The **Service Request Confirmation** page appears. Go to the last step.
9. If you have not yet registered,
 - a. If you want to become registered member, click **Register Now** and complete the registration process. The **Service Request Confirmation** page appears.
 - b. If you do not want to register, supply your contact information in the **I do not want to register - Provide contact information** form and click **Submit**. The **Service Request Confirmation** page appears.
10. Click **Done**.

Your service request is submitted.

3 New in this Release

3.1 Maple Firmware

The official Maple Firmware release for 9132 – Release P10 contains the following updates:

- Positioning RS for PDSCH EDF, functional per RM;
- FFT in repeat mode with large Cyclic prefix offsets (16Kbyte granularity);
- PDSCH EDF stuck case bug fix;
- CRC error uplink Code Blocks fixed when using MAPLE for both uplink and downlink.

3.2 SmartDSP OS

Kernel Features

BSC9132 Multimode support

BSC9132 Multimode enables setting of different SDOS local configurations per core. This new feature involves SmartDSP OS kernel changes and application configuration which should be done in order to use the feature correctly.

A demonstration of the application configuration can be found in multimode demo, located in:

`\SmartDSP\demos\starcore\psc9x3x\multimode_demo`

In order to enable BSC9132 multimode support the application should start with the following steps:

1. Set OS_MULTIMODE to ON inside `os_config.h`
2. Copy the following files:
 - a. `multimode_demo\os_config_c0.c`
 - b. `multimode_demo\os_config_c1.c`
 - c. `multimode_demo\os_config.h`
 - d. `multimode_demo\linker_files\c0.l3k`
 - e. `multimode_demo\linker_files\c1.l3k`
 - f. `multimode_demo\application_file\demo.appli`
 - g. `multimode_demo\linker_files\psc9x32_local_map_link.l3k`
 - h. `multimode_demo\linker_files\psc9x32_memory_map_link.l3k`

For a full list of settings which can be set as different between cores, please refer to:

`multimode_demo\os_config_c1.c` and `multimode_demo\os_config_c0.c`

Detailed explanation about each file can be found inside

`multimode_demo\README.txt`.

Driver Features

BSC9132 CPRI API change

SmartDSP OS R04.08.03 introduces a minor CPRI API change, due to a redundant field (an error CB which was the 1st field of the structure) in IQ device open parameters structure - `cpri_iq_open_params_t`.

The used error CB is placed in the structure as the last field

The modified structure after the change is:

```

typedef struct
{
#if defined(CPRI_BLOCK_VER_4_1)
uint8_t *multicast_buffer_data_base; /**< to be used only in multicast
or multiunicast modes (otherwise can be 0). */
#elif defined(CPRI_BLOCK_VER_4_2)
uint64_t multicast_buffer_data_base; /**< to be used only in multicast
or multiunicast modes (otherwise can be 0). It includes the steering
bits field. */
cpri_buffer_attributes_t *buffer_attributes; /**< 2nd destination
buffer attributes */
#endif // CPRI_BLOCK_VER_4_1
void (*hfn_tx)(cpri_num_t cpri_num, uint32_t event, void* data); /**<
Callback for handling CPRI_HFN_TIMING_EVENT event (initializing core
only). */
void (*hfn_rx)(cpri_num_t cpri_num, uint32_t event, void* data); /**<
Callback for handling CPRI_HFN_TIMING_EVENT event (initializing core
only). */
void (*bfm_tx)(cpri_num_t cpri_num, uint32_t event, void* data); /**<
Callback for handling CPRI_BFN_TIMING_EVENT event (initializing core
only). */
void (*bfm_rx)(cpri_num_t cpri_num, uint32_t event, void* data); /**<
Callback for handling CPRI_BFN_TIMING_EVENT event (initializing core
only). */
void (*iq_tx_begin)(cpri_num_t cpri_num, uint32_t event, void* data);
/**< Callback for handling CPRI_IQ_TX_BEGIN_EVENT event (initializing
core only). */
void (*iq_multicast_rx)(cpri_num_t cpri_num, uint32_t event, void*
data); /**< Callback for handling CPRI_MULTICAST_RX_IQ_THRESHOLD_EVENT
event (initializing core only). */
void (*error_callback)(void* param); /**< allback for handling general
error interrupts (initializing core only) */
} cpri_iq_open_params_t;

```

R04.08.01 Driver change

R04.08.01 patch is introduction of a new uCode F11309 - for BSC9131 only.

New features were added to support the new uCode version:

- MAPLE Ctrl Commands MAPLE_CMD_SET_HARQ_WRITE_DMA_SIZE and MAPLE_CMD_SET_HARQ_READ_DMA_SIZE were added, to modify eTVPE HARQ Max DMA transaction job size for write and read HARQ accumulator buffer.
- MAPLE eFTPE trace events #4 to #18 and trace event #20, were also added, see maple_trace.h for details.

R04.08.02 Driver change

R04.08.01 is introduction of a new uCode version for BSC9132, uCode A10.

New features were enabled to support the new uCode version:

- MAPLE PDSCH-EDF Job's First Job Flag PDSCH_BD_POS_EN.
- pdsch_open_params_t.cell configuration, now supports providing of RB amount of positioning reference signals using a n_prs_rb field.
- The Job's Positioning Reference Signal Header Address can be accessed using pdsch_job.hdr_data_ptrs[PDSCH_POS_RS_HEADER_ADDRESS].



Please refer to bug fixes chapter (6) for additional description (ENGR00270298).

Demos

BSC9132 multimode demo

This new demo demonstrates usage of SmartDSP OS multimode support.

BSC9132 eSPI demo

This demo was enhanced to demonstrate usage of the eSPI SmartDSP OS driver for transmitting and receiving data over the 2 SPI channels in the following modes:

- internal loopback mode (SPI1)
- SPI Flash mode (SPI1)
- RF card mode (SPI2).

The demo supports both Single-core and Multi-core scenarios.

In Single-core mode core opens 2 SPI channels (one channel per SPI device).

In Multi-core mode each core opens 1 SPI channel (core 0 on SPI1, core1 on SPI2).

Note: To check the SPI2 with RF card the device should be connected to Chip Select 0.

Note! For more details about the SmartDSP OS R04.08.03 please refers to SmartDSP OS release note: {CW Install Dir}\SC\Release_Notes\SmartDSP_OS_Notes

3.3 BuildTools

Linker option to disable weakbinding messages: (ENGR00289717)

4 System Requirements

Recommended Configuration

- 3GHz Intel® Pentium® P4 processor or better. Dual-core processor preferable.
- Microsoft® Windows XP, Windows Vista, Windows 7
- 2GB RAM (Experience on machines with 1GB RAM is significantly reduced)
- 2.3 GB free disk space

Note: 500MB of free space is required on the OS drive, regardless of the free space available on the destination drive.

Note: The users need Windows Administrator rights when installing the CodeWarrior within Program Files location. Otherwise CodeWarrior internal processes might fail to start during run time execution.

5 Who Should Use this Release?

Users developing for the BSC9131, BSC9132 devices



Developers seeking better performance from code not previously hand-optimized or developers willing to tune their code for performance

6 Who Should NOT Use this Release?

Users developing for StarCore MSC8157/8, MSC8154/6/2/1, MSC8256/4/2/1, MSC8144, MSC8122/26, MSC8113/12, MSC8101/3, or MSC711x DSPs.