



Application Note: Upgrading To Z-Stack v2.4

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1. Purpose

This document describes considerations to make when upgrading to Texas Instruments Z-Stack™ version 2.4.0, discussing changes made since the 2.3.1 release of Z-Stack. Z-Stack now supports ZigBee's Over-The-Air Upgrade (OTA) feature for inter-operable firmware replacements. Additionally, this release introduces support for a TI 32-bit ARM Cortex-M3 processor, the Stellaris LM3S9B96.

This document deals with the eight “core” and “full” Z-Stack installation packages listed below. “Core” packages include the latest Z-Stack files and libraries along with one simple sample application. “Full” packages include all components of the associated “core” package, along with additional sample applications, additional documentation, Z-Tool, and ZOAD.

- *ZStack-CC2530-2.4.0.exe* - “Core” package for SmartRF05EB + CC2530EM
- *ZStack-EXP5438-2.4.0.exe* - “Core” package for MSP-EXP430F5438 + CC2520EM
- *ZStack-LM9B96-2.4.0.exe* - “Core” package for LM3S9B96 + CC2520EM
- *ZStack-MSP2618-2.4.0.exe* - “Core” package for SmartRF05EB + MSP2618 + CC2520EM
- *ZStack-CC2530-2.4.0-1.4.0.exe* - “Full” package for SmartRF05EB + CC2530EM
- *ZStack-EXP5438-2.4.0-1.4.0.exe* - “Full” package for MSP-EXP430F5438 + CC2520EM
- *ZStack-LM9B96-2.4.0-1.4.0.exe* - “Full” package for LM3S9B96 + CC2520EM
- *ZStack-MSP2618-2.4.0-1.4.0.exe* - “Full” package for SmartRF05EB + MSP2618 + CC2520EM

2. Summary of Changes

2.1 ZStack-2.4.0 Changes

This section summarizes changes to Z-Stack that are observed when upgrading from version 2.3.1 to 2.4.0.

2.1.1 Over-The-Air Upgrade

Z-Stack now supports the ZigBee OTA Upgrade Cluster. OTA provides an inter-operable mechanism to upgrade the firmware on Z-Stack devices over an existing ZigBee network. Two sample applications in the “full” installers provide “out-of-the-box” configurations to demonstrate OTA – *SampleSwitchOta* and *SE SampleApp*. Refer to the “Z-Stack OTA Upgrade User’s Guide” for detailed instructions on using this feature.

2.1.2 Project File Changes

Z-Stack project files have been simplified to provide default support for ZigBee-Pro – explicit configurations for non-Pro devices have been removed. As part of this change, the ZIGBEEPRO compile option has been placed in the *f8wConfig.cfg* file and removed from the *Compiler->Preprocessor->Defined symbols* dialog box of the project file. This causes builds for all supplied sample applications to default to usage of ZigBee-Pro. Users who want to create non-Pro devices will need to make two simple changes to their project: (1) comment-out the ZIGBEEPRO option in *f8wConfig.cfg*, and (2) change to the corresponding non-Pro library – remove the *-Pro* part of the default library name found in the *Linker->Extra Options* dialog box.

2.1.3 OSAL Enhancements

Enhancements have been made to OSAL functionality as described below. These new features were developed for use in the Z-Stack system but are also available for application program usage. Refer to the “OSAL API” document for details on the use of OSAL features and functions.

2.1.3.1 Task Processing

Z-Stack continues to use a call to the function *osal_start_system()*, at the end of the system start-up process, to enter an infinite loop that provides task processing for the OSAL environment. In the 2.4.0 release, the task processing logic has been moved to a new function, *osal_run_system()*, that is called from the infinite loop in *osal_start_system()*. This permits the user run OSAL tasks, one at a time, if using an alternate OS scheduler and not using the default start-up call to *osal_start_system()*.

2.1.3.2 Memory Manager

The Z-Stack dynamic memory manager, *OSAL_Memory.c*, has been improved to perform better with 8-bit, 16-bit, and 32-bit processors, to avoid wasted RAM on smaller *halDataAlign_t* sizes. In addition, the “small-block bucket”

implementation has been enhanced so that long-lived items are placed at the bottom of the bucket to avoid searching during allocation and coalescing. Refer to the “Heap Memory Management” document for dynamic memory details.

2.1.4 Performance Improvements

Changes to ZStack-2.4.0 have been made to improve stability and performance in dense and higher traffic networks. See the README document accompanying the installation for a summary of improvements for this release.

2.1.4.1 Sleep Time

In past Z-Stack releases, End-Device sleep time was limited to slightly less than 21 seconds, due to OSAL timer use of 16-bit variables to count 320 uSec MAC timer interrupts. This problem has been resolved so that End-Devices can now sleep for the maximum OSAL timer period – 65.535 seconds.

2.1.4.2 Radio Sensitivity

The default value of MAC_RADIO_RECIVER_SENSITIVITY_DBM has been updated to reflect the most recent characterized values in the data sheet. This improves the quality of calculated LQI values.

2.1.4.3 CC2530 Optimization

For Z-Stack packages that support CC2530-based platforms, the default compiler optimization settings have been changed to disable the *Code Motion* option. This provides for better debugging, while producing slightly larger code.

2.1.5 Compiler Changes

IAR toolsets for the CC2530 and MSP430 platforms have been changed since the ZStack-2.3.1 release to take advantage of the latest improvements in the IDE, compilers, linkers, debuggers, etc. All ZStack-2.4.0 development and testing was performed with these newer tools, so it is recommended that users do an upgrade to these versions.

2.1.5.1 CC2530

Z-Stack-2.4.0 packages that support CC2530-based platforms have been upgraded to use the IAR EW8051 v7.60 Embedded Workbench toolset. The Z-Stack-2.3.1 release used v7.51 - note that ZStack-2.4.0 projects will not build properly with the v7.51A toolset – developers should upgrade to the v7.60 version.

2.1.5.2 MSP430

Z-Stack-2.4.0 packages that support MSP430-based platforms (MSP2618 and EXP5438) have been upgraded to use the IAR EW430 v5.10.6 Embedded Workbench toolset. The Z-Stack-2.3.1 release used v5.10.4 - note that ZStack-2.4.0 projects will build properly with the v5.10.4 toolset, but developers are encouraged to upgrade to v5.10.6.

3. Changes to Installed Files

This section lists file changes to Z-Stack installations that result when upgrading from version 2.3.1 to 2.4.0. Note that the LM3S9B96 platforms are not included here since version 2.4.0 is their initial release. Refer to tables in Sections 3.1 and 3.2 for changes to the Z-Stack “core” and “full” installers, respectively. Pay particular attention to items listed with **New** or **Removed** in the **Change** column. File folder updates are indicated when there is no entry in the **File** column. Making changes to existing project files (*.ewp,*.ewd,*.eww) can be done with the Embedded Workbench IDE or by editing the XML files directly.

3.1 Changes to “Core” Installed Files

The following “core” Z-Stack files have been changed since the v2.3.1 release:

File	Location	Change
hal_assert.c	...\Components\hal\common	Modified
hal_drivers.c	...\Components\hal\common	Modified
hal_drivers.h	...\Components\hal\include	Modified
hal_dma.h	...\Components\hal\target\CC2530EB	Modified
hal_flash.c	...\Components\hal\target\CC2530EB	Modified
hal_key.c	...\Components\hal\target\CC2530EB	Modified
hal_ota.c	...\Components\hal\target\CC2530EB	New
hal_ota.h	...\Components\hal\target\CC2530EB	New
hal_sleep.c	...\Components\hal\target\CC2530EB	Modified

hal_ivec.s43	...\Components\hal\target\MSP5438CC2520	Modified
hal_key.c	...\Components\hal\target\MSP5438CC2520	Modified
hal_mac_cfg.h	...\Components\hal\target\MSP5438CC2520	Modified
hal_oad.c	...\Components\hal\target\MSP5438CC2520	Modified
hal_oad.h	...\Components\hal\target\MSP5438CC2520	Modified
hal_ota.c	...\Components\hal\target\MSP5438CC2520	New
hal_ota.h	...\Components\hal\target\MSP5438CC2520	New
hal_xnv.c	...\Components\hal\target\MSP5438CC2520	Modified
hal_ivec.s43	...\Components\hal\target\MSP2618CC2520	Modified
hal_key.c	...\Components\hal\target\MSP2618CC2520	Modified
hal_oad.c	...\Components\hal\target\MSP2618CC2520	Modified
hal_oad.h	...\Components\hal\target\MSP2618CC2520	Modified
hal_ota.c	...\Components\hal\target\MSP2618CC2520	New
hal_ota.h	...\Components\hal\target\MSP2618CC2520	New
hal_xnv.c	...\Components\hal\target\MSP2618CC2520	Modified
mac_radio.c	...\Components\mac\low_level\srf04	Modified
mac_rx.c	...\Components\mac\low_level\srf04	Modified
mac_rx.h	...\Components\mac\low_level\srf04	Modified
mac_tx.h	...\Components\mac\low_level\srf04	Modified
mac_dualchip.c	...\Components\mac\low_level\srf04\dual_chip	Modified
mac_mcu_timer.c	...\Components\mac\low_level\srf04\dual_chip	Modified
mac_mcu_timer.h	...\Components\mac\low_level\srf04\dual_chip	Modified
mac_radio_defs.h	...\Components\mac\low_level\srf04\dual_chip	Modified
mac_csp_tx.c	...\Components\mac\low_level\srf04\single_chip	Modified
mac_mcu.c	...\Components\mac\low_level\srf04\single_chip	Modified
mac_radio_defs.c	...\Components\mac\low_level\srf04\single_chip	Modified
mac_radio_defs.h	...\Components\mac\low_level\srf04\single_chip	Modified
MT.c	...\Components\mt	Modified
MT.h	...\Components\mt	Modified
MT_OTA.c	...\Components\mt	New
MT_OTA.h	...\Components\mt	New
MT_RPC.h	...\Components\mt	Modified
MT_SYS.c	...\Components\mt	Modified
OSAL.c	...\Components\osal\common	Modified
OSAL_Memory.c	...\Components\osal\common	Modified
OSAL_Timers.c	...\Components\osal\common	Modified
OSAL.c	...\Components\osal\include	Modified
ZComDef.h	...\Components\osal\include	Modified
OSAL_Math.s51	...\Components\osal\mcu\cc2530	New
AF.c	...\Components\stack\af	Modified
AF.h	...\Components\stack\af	Modified
APSMEDE.h	...\Components\stack\nwk	Modified
NLMEDE.h	...\Components\stack\nwk	Modified
nwk_bufs.h	...\Components\stack\nwk	Modified
nwk_globals.c	...\Components\stack\nwk	Modified
nwk_globals.h	...\Components\stack\nwk	Modified
nwk_util.h	...\Components\stack\nwk	Modified
rtg.h	...\Components\stack\nwk	Modified
zcl.c	...\Components\stack\zcl	Modified
zcl.h	...\Components\stack\zcl	Modified
zcl_general.c	...\Components\stack\zcl	Modified
zcl_key_establish.c	...\Components\stack\zcl	Modified
zcl_key_establish.h	...\Components\stack\zcl	Modified
zcl_ota.c	...\Components\stack\zcl	New

zcl_ota.h	...\\Components\\stack\\zcl	New
zcl_pi.c	...\\Components\\stack\\zcl	Modified
zcl_pi.h	...\\Components\\stack\\zcl	Modified
zcl_se.c	...\\Components\\stack\\zcl	Modified
zcl_se.h	...\\Components\\stack\\zcl	Modified
ZDApp.c	...\\Components\\stack\\zdo	Modified
ZDApp.h	...\\Components\\stack\\zdo	Modified
ZDProfile.c	...\\Components\\stack\\zdo	Modified
ZDProfile.h	...\\Components\\stack\\zdo	Modified
Heap Memory Management	...\\Documents	Modified
Upgrading To Z-Stack v2.4	...\\Documents	New
Z-Stack Developer's Guide	...\\Documents	Modified
Z-Stack User's Guide – CC2530DB	...\\Documents\\CC2530	Modified
Z-Stack User's Guide – CC2520	...\\Documents\\MSP2618	Modified
Z-Stack User's Guide – EXP5438	...\\Documents\\EXP5438	Modified
EndDevice.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
EndDevice-Pro.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
EndDeviceMT.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
EndDeviceMT-Pro.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
Router.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
Router-Pro.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
RouterMT.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
RouterMT-Pro.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
Security.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
EndDevice2618.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
EndDevice2618-Pro.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
EndDevice2618MT.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
EndDevice2618MT-Pro.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
Router2618.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
Router2618-Pro.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
Router2618MT.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
Router2618MT-Pro.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
Security2618.lib	...\\Projects\\zstack\\Libraries\\MSP2618\\bin	Modified
EndDevice54xx.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
EndDevice54xx-Pro.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
EndDevice54xxMT.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
EndDevice54xxMT-Pro.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
Router54xx.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
Router54xx-Pro.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
Router54xxMT.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
Router54xxMT-Pro.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
Security54xx.lib	...\\Projects\\zstack\\Libraries\\MSP54xx\\bin	Modified
TIMAC-CC2530.lib	...\\Projects\\zstack\\Libraries\\TIMAC\\bin	Modified
TIMAC-MSP2618.lib	...\\Projects\\zstack\\Libraries\\TIMAC\\bin	Modified
TIMAC-MSP54xx.lib	...\\Projects\\zstack\\Libraries\\TIMAC\\bin	Modified
SampleApp.ewd	...\\Projects\\zstack\\Samples\\SampleApp\\CC2520DB	Modified
SampleApp.ewp	...\\Projects\\zstack\\Samples\\SampleApp\\CC2520DB	Modified
SampleApp.eww	...\\Projects\\zstack\\Samples\\SampleApp\\CC2520DB	Modified
SampleApp.ewd	...\\Projects\\zstack\\Samples\\SampleApp\\CC2530DB	Modified
SampleApp.ewp	...\\Projects\\zstack\\Samples\\SampleApp\\CC2530DB	Modified
SampleApp.eww	...\\Projects\\zstack\\Samples\\SampleApp\\CC2530DB	Modified
SampleAppHw.c	...\\Projects\\zstack\\Samples\\SampleApp\\CC2530DB\\Source	Modified
SampleApp.ewd	...\\Projects\\zstack\\Samples\\SampleApp\\EXP5438	Modified
SampleApp.ewp	...\\Projects\\zstack\\Samples\\SampleApp\\EXP5438	Modified

SampleApp.eww	...\\Projects\\zstack\\Samples\\SampleApp\\EXP5438	Modified
cc2530-sb.xcl	...\\Projects\\zstack\\Tools\\CC2530DB	Modified
f8w2530.xcl	...\\Projects\\zstack\\Tools\\CC2530DB	Modified
f8wConfig.cfg	...\\Projects\\zstack\\Tools\\CC2530DB	Modified
sb-boot.xcl	...\\Projects\\zstack\\Tools\\CC2530DB	Modified
f8wConfig.cfg	...\\Projects\\zstack\\Tools\\MSP2618	Modified
f8wConfig.cfg	...\\Projects\\zstack\\Tools\\MSP5438	Modified
OnBoard.h	...\\Projects\\zstack\\ZMain\\TI2530DB	Modified
ZMain.c	...\\Projects\\zstack\\ZMain\\TI2530DB	Modified
ZMain.c	...\\Projects\\zstack\\ZMain\\MSP2618	Modified
OnBoard.h	...\\Projects\\zstack\\ZMain\\MSP5438	Modified
ZMain.c	...\\Projects\\zstack\\ZMain\\MSP5438	Modified

3.2 Changes to “Full” Installed Files

In addition to the “core” installer file changes listed in Section 3.1, the following Z-Stack “full” installer files have been changed since the v2.3.1 release:

File	Location	Change
Smart Energy Sample Application User’s Guide	...\\Documents	Modified
Z-Stack OTA Upgrade User’s Guide	...\\Documents	New
Z-Stack Sample Applications	...\\Documents	Modified
Z-Stack User’s Guide ZNP-Sample Applications	...\\Documents	Modified
Z-Stack ZCL API	...\\Documents	Modified
CC2530ZNP Interface Specification	...\\Documents\\CC2530	Modified
Over Air Download for CC2530	...\\Documents\\CC2530	Modified
Over Air Download for MSP430	...\\Documents\\MSP2618	Modified
Over Air Download for MSP430	...\\Documents\\EXP5438	Modified
SampleLight.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\CC2520DB	Modified
SampleLight.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\CC2520DB	Modified
SampleLight.eww	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\CC2520DB	Modified
SampleLight.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\CC2530DB	Modified
SampleLight.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\CC2530DB	Modified
SampleLight.eww	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\CC2530DB	Modified
SampleLight.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\EXP5438	Modified
SampleLight.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\EXP5438	Modified
SampleLight.eww	...\\Projects\\zstack\\HomeAutomation\\SampleLight\\EXP5438	Modified
SampleSwitch.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\CC2520DB	Modified
SampleSwitch.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\CC2520DB	Modified
SampleSwitch.eww	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\CC2520DB	Modified
SampleSwitch.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\CC2530DB	Modified
SampleSwitch.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\CC2530DB	Modified
SampleSwitch.eww	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\CC2530DB	Modified
SampleSwitch.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\EXP5438	Modified
SampleSwitch.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\EXP5438	Modified
SampleSwitch.eww	...\\Projects\\zstack\\HomeAutomation\\SampleSwitch\\EXP5438	Modified
	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta	New
	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\CC2520DB	New
SampleSwitch.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\CC2520DB	New
SampleSwitch.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\CC2520DB	New
SampleSwitch.eww	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\CC2520DB	New
	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\CC2530DB	New
SampleSwitch.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\CC2530DB	New
SampleSwitch.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\CC2530DB	New

SampleSwitch.eww	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\CC2530DB	New
	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\EXP5438	New
SampleSwitch.ewd	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\EXP5438	New
SampleSwitch.ewp	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\EXP5438	New
SampleSwitch.eww	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\EXP5438	New
	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\Source	New
OSAL_SampleSwOta.c	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\Source	New
zcl_sampleswota.c	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\Source	New
zcl_sampleswota.h	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\Source	New
zcl_sampleswota_data.c	...\\Projects\\zstack\\HomeAutomation\\SampleSwitchOta\\Source	New
AllDevice-Pro.lib	...\\Projects\\zstack\\Libraries\\TI2530DB\\bin	Modified
	...\\Projects\\zstack\\OTA	New
	...\\Projects\\zstack\\OTA\\Boot	New
	...\\Projects\\zstack\\OTA\\Boot\\CC2530DB	New
Boot.ewd	...\\Projects\\zstack\\OTA\\Boot\\CC2530DB	New
Boot.ewp	...\\Projects\\zstack\\OTA\\Boot\\CC2530DB	New
Boot.eww	...\\Projects\\zstack\\OTA\\Boot\\CC2530DB	New
	...\\Projects\\zstack\\OTA\\Boot\\CC2530DB\\Source	New
interrupt_stubs.s51	...\\Projects\\zstack\\OTA\\Boot\\CC2530DB\\Source	New
	...\\Projects\\zstack\\OTA\\Dongle	New
	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB	New
OTA_Dongle.ewd	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB	New
OTA_Dongle.ewp	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB	New
OTA_Dongle.eww	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB	New
	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB\\Source	New
OSAL_OTA_Dongle.c	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB\\Source	New
OTA_Dongle.c	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB\\Source	New
OTA_Dongle.h	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB\\Source	New
OTA_Dongle_data.c	...\\Projects\\zstack\\OTA\\Dongle\\CC2520DB\\Source	New
	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB	New
OTA_Dongle.ewd	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB	New
OTA_Dongle.ewp	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB	New
OTA_Dongle.eww	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB	New
	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB\\Source	New
OSAL_OTA_Dongle.c	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB\\Source	New
OTA_Dongle.c	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB\\Source	New
OTA_Dongle.h	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB\\Source	New
OTA_Dongle_data.c	...\\Projects\\zstack\\OTA\\Dongle\\CC2530DB\\Source	New
	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438	New
OTA_Dongle.ewd	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438	New
OTA_Dongle.ewp	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438	New
OTA_Dongle.eww	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438	New
	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438\\Source	New
OSAL_OTA_Dongle.c	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438\\Source	New
OTA_Dongle.c	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438\\Source	New
OTA_Dongle.h	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438\\Source	New
OTA_Dongle_data.c	...\\Projects\\zstack\\OTA\\Dongle\\EXP5438\\Source	New
	...\\Projects\\zstack\\OTA\\Source	New
ota_common.c	...\\Projects\\zstack\\OTA\\Source	New
ota_common.h	...\\Projects\\zstack\\OTA\\Source	New
ota_signature.c	...\\Projects\\zstack\\OTA\\Source	New
ota_signature.h	...\\Projects\\zstack\\OTA\\Source	New
GenericApp.ewd	...\\Projects\\zstack\\Samples\\GenericApp\\CC2520DB	Modified
GenericApp.ewp	...\\Projects\\zstack\\Samples\\GenericApp\\CC2520DB	Modified

GenericApp.eww	...\\Projects\\zstack\\Samples\\GenericApp\\CC2520DB	Modified
GenericApp.ewd	...\\Projects\\zstack\\Samples\\GenericApp\\CC2530DB	Modified
GenericApp.ewp	...\\Projects\\zstack\\Samples\\GenericApp\\CC2530DB	Modified
GenericApp.eww	...\\Projects\\zstack\\Samples\\GenericApp\\CC2530DB	Modified
GenericApp.ewd	...\\Projects\\zstack\\Samples\\GenericApp\\EXP5438	Modified
GenericApp.ewp	...\\Projects\\zstack\\Samples\\GenericApp\\EXP5438	Modified
GenericApp.eww	...\\Projects\\zstack\\Samples\\GenericApp\\EXP5438	Modified
SampleApp.ewd	...\\Projects\\zstack\\Samples\\SampleApp\\CC2520DB	Modified
SampleApp.ewp	...\\Projects\\zstack\\Samples\\SampleApp\\CC2520DB	Modified
SampleApp.eww	...\\Projects\\zstack\\Samples\\SampleApp\\CC2520DB	Modified
SampleApp.ewd	...\\Projects\\zstack\\Samples\\SampleApp\\CC2530DB	Modified
SampleApp.ewp	...\\Projects\\zstack\\Samples\\SampleApp\\CC2530DB	Modified
SampleApp.eww	...\\Projects\\zstack\\Samples\\SampleApp\\CC2530DB	Modified
SampleAppHw.c	...\\Projects\\zstack\\Samples\\SampleApp\\CC2530DB\\Source	Modified
SampleApp.ewd	...\\Projects\\zstack\\Samples\\SampleApp\\EXP5438	Modified
SampleApp.ewp	...\\Projects\\zstack\\Samples\\SampleApp\\EXP5438	Modified
SampleApp.eww	...\\Projects\\zstack\\Samples\\SampleApp\\EXP5438	Modified
SimpleApp.ewd	...\\Projects\\zstack\\Samples\\SimpleApp\\CC2520DB	Modified
SimpleApp.ewp	...\\Projects\\zstack\\Samples\\SimpleApp\\CC2520DB	Modified
SimpleApp.eww	...\\Projects\\zstack\\Samples\\SimpleApp\\CC2520DB	Modified
SimpleApp.ewd	...\\Projects\\zstack\\Samples\\SimpleApp\\CC2530DB	Modified
SimpleApp.ewp	...\\Projects\\zstack\\Samples\\SimpleApp\\CC2530DB	Modified
SimpleApp.eww	...\\Projects\\zstack\\Samples\\SimpleApp\\CC2530DB	Modified
SimpleApp.ewd	...\\Projects\\zstack\\Samples\\SimpleApp\\EXP5438	Modified
SimpleApp.ewp	...\\Projects\\zstack\\Samples\\SimpleApp\\EXP5438	Modified
SimpleApp.eww	...\\Projects\\zstack\\Samples\\SimpleApp\\EXP5438	Modified
SampleApp.ewd	...\\Projects\\zstack\\SE\\SampleApp\\CC2520DB	Modified
SampleApp.ewp	...\\Projects\\zstack\\SE\\SampleApp\\CC2520DB	Modified
SampleApp.eww	...\\Projects\\zstack\\SE\\SampleApp\\CC2520DB	Modified
SampleApp.ewd	...\\Projects\\zstack\\SE\\SampleApp\\CC2530DB	Modified
SampleApp.ewp	...\\Projects\\zstack\\SE\\SampleApp\\CC2530DB	Modified
SampleApp.eww	...\\Projects\\zstack\\SE\\SampleApp\\CC2530DB	Modified
SampleApp.ewd	...\\Projects\\zstack\\SE\\SampleApp\\EXP5438	Modified
SampleApp.ewp	...\\Projects\\zstack\\SE\\SampleApp\\EXP5438	Modified
SampleApp.eww	...\\Projects\\zstack\\SE\\SampleApp\\EXP5438	Modified
esp.h	...\\Projects\\zstack\\SE\\SampleApp\\Source\\ESP	Modified
esp_data.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\ESP	Modified
ipd.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\IPD	Modified
	...\\Projects\\zstack\\SE\\SampleApp\\Source\\IPD_OTA	New
ipd.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\IPD_OTA	New
ipd.h	...\\Projects\\zstack\\SE\\SampleApp\\Source\\IPD_OTA	New
ipd_data.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\IPD_OTA	New
OSAL_ipd.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\IPD_OTA	New
loadcontrol.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\LoadControl	Modified
	...\\Projects\\zstack\\SE\\SampleApp\\Source\\OTA Cert	New
cert.txt	...\\Projects\\zstack\\SE\\SampleApp\\Source\\OTA Cert	New
pct.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\PCT	Modified
rangeext.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\RangeExt	Modified
simplemeter.c	...\\Projects\\zstack\\SE\\SampleApp\\Source\\SimpleMeter	Modified
f8wZCL.cfg	...\\Projects\\zstack\\Tools\\CC2530DB	Modified
oad.xcl	...\\Projects\\zstack\\Tools\\CC2530DB	Modified
oad-boot.xcl	...\\Projects\\zstack\\Tools\\CC2530DB	Modified
ota.xcl	...\\Projects\\zstack\\Tools\\CC2530DB	New
ota-boot.xcl	...\\Projects\\zstack\\Tools\\CC2530DB	New

OtaConverter.exe	...\\Projects\\zstack\\Tools\\CC2530DB	New
f8wZCL.cfg	...\\Projects\\zstack\\Tools\\MSP2618	Modified
oad.xcl	...\\Projects\\zstack\\Tools\\MSP2618	Modified
ota.xcl	...\\Projects\\zstack\\Tools\\MSP2618	New
OtaConverter.exe	...\\Projects\\zstack\\Tools\\MSP2618	New
f8wZCL.cfg	...\\Projects\\zstack\\Tools\\MSP5438	Modified
oad.xcl	...\\Projects\\zstack\\Tools\\MSP5438	Modified
ota.xcl	...\\Projects\\zstack\\Tools\\MSP5438	New
OtaConverter.exe	...\\Projects\\zstack\\Tools\\MSP5438	New
Boot.ewd	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2530	Modified
Boot.ewp	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2530	Modified
Boot.eww	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2530	Modified
Boot.ewd	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2530ZNP	Modified
Boot.ewp	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2530ZNP	Modified
Boot.eww	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2530ZNP	Modified
sb_main.c	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2530ZNP\\source	Modified
Boot.ewd	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2531	Modified
Boot.ewp	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2531	Modified
Boot.eww	...\\Projects\\zstack\\Utilities\\BootLoad\\CC2531	Modified
Dongle.ewd	...\\Projects\\zstack\\Utilities\\OAD\\CC2520DB	Modified
Dongle.ewp	...\\Projects\\zstack\\Utilities\\OAD\\CC2520DB	Modified
Dongle.eww	...\\Projects\\zstack\\Utilities\\OAD\\CC2520DB	Modified
Boot.ewd	...\\Projects\\zstack\\Utilities\\OAD\\CC2530DB	Modified
Boot.ewp	...\\Projects\\zstack\\Utilities\\OAD\\CC2530DB	Modified
Boot.eww	...\\Projects\\zstack\\Utilities\\OAD\\CC2530DB	Modified
Dongle.ewd	...\\Projects\\zstack\\Utilities\\OAD\\CC2530DB	Modified
Dongle.ewp	...\\Projects\\zstack\\Utilities\\OAD\\CC2530DB	Modified
Dongle.eww	...\\Projects\\zstack\\Utilities\\OAD\\CC2530DB	Modified
Dongle.ewd	...\\Projects\\zstack\\Utilities\\OAD\\EXP5438	Modified
Dongle.ewp	...\\Projects\\zstack\\Utilities\\OAD\\EXP5438	Modified
Dongle.eww	...\\Projects\\zstack\\Utilities\\OAD\\EXP5438	Modified
SerialApp.ewd	...\\Projects\\zstack\\Utilities\\SerialApp\\CC2520DB	Modified
SerialApp.ewp	...\\Projects\\zstack\\Utilities\\SerialApp\\CC2520DB	Modified
SerialApp.eww	...\\Projects\\zstack\\Utilities\\SerialApp\\CC2520DB	Modified
SerialApp.ewd	...\\Projects\\zstack\\Utilities\\SerialApp\\CC2530DB	Modified
SerialApp.ewp	...\\Projects\\zstack\\Utilities\\SerialApp\\CC2530DB	Modified
SerialApp.eww	...\\Projects\\zstack\\Utilities\\SerialApp\\CC2530DB	Modified
SerialApp.ewd	...\\Projects\\zstack\\Utilities\\SerialApp\\EXP5438	Modified
SerialApp.ewp	...\\Projects\\zstack\\Utilities\\SerialApp\\EXP5438	Modified
SerialApp.eww	...\\Projects\\zstack\\Utilities\\SerialApp\\EXP5438	Modified
TransmitApp.ewd	...\\Projects\\zstack\\Utilities\\Transmit\\CC2520DB	Modified
TransmitApp.ewp	...\\Projects\\zstack\\Utilities\\Transmit\\CC2520DB	Modified
TransmitApp.eww	...\\Projects\\zstack\\Utilities\\Transmit\\CC2520DB	Modified
TransmitApp.ewd	...\\Projects\\zstack\\Utilities\\Transmit\\CC2530DB	Modified
TransmitApp.ewp	...\\Projects\\zstack\\Utilities\\Transmit\\CC2530DB	Modified
TransmitApp.eww	...\\Projects\\zstack\\Utilities\\Transmit\\CC2530DB	Modified
TransmitApp.ewd	...\\Projects\\zstack\\Utilities\\Transmit\\EXP5438	Modified
TransmitApp.ewp	...\\Projects\\zstack\\Utilities\\Transmit\\EXP5438	Modified
TransmitApp.eww	...\\Projects\\zstack\\Utilities\\Transmit\\EXP5438	Modified
OnBoard.h	...\\Projects\\zstack\\ZMain\\TI2530DB	Modified
ZMain.c	...\\Projects\\zstack\\ZMain\\TI2530DB	Modified
OnBoard.h	...\\Projects\\zstack\\ZMain\\TI2530ZNP	Modified
ZMain.c	...\\Projects\\zstack\\ZMain\\TI2530ZNP	Modified
ZMain.c	...\\Projects\\zstack\\ZMain\\MSP2618	Modified

OnBoard.h	...\\Projects\\zstack\\ZMain\\MSP5438	Modified
ZMain.c	...\\Projects\\zstack\\ZMain\\MSP5438	Modified
CC2530ZNP-SB.hex	...\\Projects\\zstack\\ZNP\\CC253x\\bin	Modified
CC2531SB.hex	...\\Projects\\zstack\\ZNP\\CC253x\\bin	Modified
	...\\Projects\\zstack\\ZNP\\CC253x\\Source	New
znp_soc.c	...\\Projects\\zstack\\ZNP\\CC253x\\Source	New
znp_spi.c	...\\Projects\\zstack\\ZNP\\CC253x\\Source	New
znp.js	...\\Projects\\zstack\\ZNP\\CC253x\\tools	Modified
znp-prod.xcl	...\\Projects\\zstack\\ZNP\\CC253x\\tools	Modified
CC2530.ewd	...\\Projects\\zstack\\ZNP\\CC253x	Modified
CC2530.ewp	...\\Projects\\zstack\\ZNP\\CC253x	Modified
CC2531.ewd	...\\Projects\\zstack\\ZNP\\CC253x	Modified
CC2531.ewp	...\\Projects\\zstack\\ZNP\\CC253x	Modified
znp.eww	...\\Projects\\zstack\\ZNP\\CC253x	Modified
znp_app.c	...\\Projects\\zstack\\ZNP\\Source	Modified
znp_app.h	...\\Projects\\zstack\\ZNP\\Source	Modified
znp.cfg	...\\Projects\\zstack\\ZNP\\Source	Modified
znp_spi.c	...\\Projects\\zstack\\ZNP\\Source	Removed
	...\\Tools\\OTA	New
	...\\Tools\\OTA\\Console	New
OtaServer.exe	...\\Tools\\OTA\\Console	New
	...\\Tools\\OTA\\Converter	New
Converter.exe	...\\Tools\\OTA\\Converter	New
TI.CommonLib.dll	...\\Tools\\Z-Tool	Modified
TI.ZCmdMatchings.dll	...\\Tools\\Z-Tool	Modified
TI.ZPL.dll	...\\Tools\\Z-Tool	Modified
TI.ZPL.xml	...\\Tools\\Z-Tool	Modified
TI.ZPortLib.dll	...\\Tools\\Z-Tool	Modified
TI.ZScript.dll	...\\Tools\\Z-Tool	Modified
Z-Tool 2.0.exe	...\\Tools\\Z-Tool	Modified
ZPI Help.chm	...\\Tools\\Z-Tool	Modified