

Thank you for purchasing a Texas Instruments MSP-TS430 Target Socket Module and EM Boards for our MSP430 ultra low power microcontroller.

This document is applicable to the following tools:

- ❑ **MSP-TS430PW14**, the socket module for the for the MSP430F20xx, MSP430G2x01, MSP430G2x11, MSP430G2x21 and MSP430G2x31 Derivatives in 14-pin TSSOP-packages (TI package code: PW) (TI package code: PW).
- ❑ **MSP-TS430L092**, the socket module for the MSP-TS430L092 Devices in 14-pin TSSOP-packages (TI package code: PW).
- ❑ **MSP-TS430PW24**, the socket module for the MSP430AFE2xx Derivatives in 24pin TSSOP-packages (TI package code: PW). ***This tool does not support other MSP430 derivatives in the 24pin TSSOP-Package!***
- ❑ **MSP-TS430PW28**, the socket module for the MSP430 Derivatives in 20pin and 28pin TSSOP-packages (TI package code: PW) **except the MSP430F20xx, MSP430G2xxx..**
- ❑ **MSP-TS430PW28A**, The socket module fits all MSP430F20xx, MSP430G2xxx devices in 14, 20 and 28pin TSSOP-packages (TI package code: PW). ***This tool does not support other MSP430 derivatives in these TSSOP-Packages!***
- ❑ **MSP-TS430DW28**, the socket module for the MSP430 Derivatives in 20pin and 28pin SSOP-packages (TI package code: DW).
- ❑ **MSP-TS430DA38**, the socket module for the MSP430F22xx-Derivatives in 38pin TSSOP-packages (TI package code: DA).

MSP430F22xx Target Socket Module (MSP-TS430DA38)

Important Information:

Due to the large capacitive coupling introduced by the device socket between the adjacent signals XIN/P2.6 (socket pin 6) and RST/SBWTDIO (socket pin 7), in-system debugging can disturb the LFXT1 low-frequency crystal oscillator operation (ACLK). This behavior only applies to the Spy-Bi-Wire (2-Wire) JTAG configuration and only to the period while a debug session is active.

Workarounds:

- Use the 4-Wire JTAG mode debug configuration instead of the Spy-Bi-Wire (2-Wire) JTAG configuration. This can be achieved by placing jumpers JP4 through JP9 accordingly.
- Use the debugger option “Release JTAG On Go” that can be selected from the IDE drop down menu. This will prevent the debugger from accessing the MSP430 while the application is running. Note that in this mode a manual halt is required to see if a breakpoint was hit. Refer to the IDE documentation for more information on this feature.
- Use an external clock source to drive XIN directly.

- ❑ **MSP-TS430QFN23x0**, the socket module for the MSP430F23x0-Derivatives in 40pin QFN-packages (TI package code: RHA). ***This tool does not support other MSP430 derivatives in the 40pin QFN-Package!***
- ❑ **MSP-TS430RSB40**, the socket module for the MSP430F51x1, MSP430F51x2 Derivatives in 40 Pin QFN-packages (TI package code: RSB). ***This tool does not support other MSP430 derivatives in the 40pin QFN-Package***
- ❑ **MSP-TS430RHA40A**, the socket module for the MSP430FR572x, MSP-TS430FR573x Derivatives in 40 Pin QFN-packages (TI package code: RHA). ***This tool does not support other MSP430 derivatives in the 40pin QFN-Package***
- ❑ **MSP-TS430DL48**, the socket module for the MSP430F42x0-Derivatives in 48pin TSSOP-packages (TI package code: DL).
- ❑ **MSP-TS430RGZ48B**, the socket module for the MSP430F534x-Derivatives in 48pin QFN-packages (TI package code: RGZ). ***This tool does not support other MSP430 derivatives in the 48pin QFN-Package!***
- ❑ **MSP-TS430PM64**, the socket module for the MSP430 derivatives in 64pin QFP-packages (TI package code: PM) , ***except the MSP430F41x2.***
- ❑ **MSP-TS430PM64A**, the socket module for the **MSP430F41x2** derivatives in 64pin QFP-packages (TI package code: PM). ***This tool does not support other MSP430 derivatives in the 64pin QFP-Package!***
- ❑ **MSP-TS430RGC64B**, the socket module for the **MSP430F530x** derivatives in 64pin QFP-packages (TI package code: RGC). ***This tool does not support other MSP430 derivatives in the 64pin QFN-Package!***
- ❑ **MSP-TS430RGC64USB**, the socket module for the **MSP430F550x, MSP430F551x, MSP430F552x** derivatives in 64pin QFN-packages (TI package code: RGC). ***This tool does not support other MSP430 derivatives in the 64pin QFN-Package!***
- ❑ **MSP-TS430PN80**, the socket module for the MSP430 derivatives in 80pin QFP-packages (TI package code: PN), ***except MSP430F552x, MSP430F551x, MSP430F532x.***
- ❑ **MSP-TS430PN80A**, the socket module for the **MSP430F532x** derivatives in 80pin QFP-packages (TI package code: PN). ***This tool does not support other MSP430 derivatives in the 80pin QFP-Package!***
- ❑ **MSP-TS430PN80USB**, the socket module for the **MSP430F552x, MSP430F551x** derivatives in 80pin QFP-packages (TI package code: PN). ***This tool does not support other MSP430 derivatives in the 80pin QFP-Package!***
- ❑ **MSP-TS430PZ100**, the socket module for the MSP430 derivatives in 100pin QFP-packages (TI package code: PZ), ***except the MSP430F471xx, the MSP430F543x, the MSPF563x and the MSPF663x.***
- ❑ **MSP-TS430PZ100A**, the socket module for the **MSP430F471xx**-Derivatives in 100pin QFP-packages (TI package code: PZ). ***This tool does not support other MSP430 derivatives in the 100pin QFP-Package!***
- ❑ **MSP-TS430PZ100B**, the socket module for the **MSP430F67xx**-Derivatives in 100pin QFP-packages (TI package code: PZ). ***This tool does not support other MSP430 derivatives in the 100pin QFP-Package!***
- ❑ **MSP-TS430PZ5x100**, the socket module for the **MSP430F543x** and the **MSP430BT5190IPZ** - Derivatives in 100pin QFP-packages (TI package code: PZ). ***This tool does not support other MSP430 derivatives in the 100pin QFP-Package!***

- ❑ **MSP- TS430PZ100USB**, the socket module for MSP430F663x and MSP430F563x devices in 100pin QFP-packages (TI package code: PZ). ***This tool does not support other MSP430 derivatives in the 100pin QFP-Package!***
- ❑ **EM430F5137RF900**, the module with a **soldered** on **CC430F5137 IC** in a 48pin QFN-package (TI package code: RGZ).
- ❑ **EM430F6137RF900**, the module with a **soldered** on **CC430F6137 IC** in a 64pin QFN-package (TI package code: RGC).

Note: Obtaining the latest materials

This tool contains the most up-to-date materials available at the time of packaging. Please visit our MSP430 web site at www.ti.com/msp430 for the latest materials:

Datasheets, User's Guides, Code Examples, Application Notes, Tool Updates.

1.1 Inventory the Tool

1.1.1 Kit Contents, **MSP-TS430xxx**, **MSP-EM430xxx**

- ❑ One READ ME FIRST document (this document).
- ❑ One 32kHz crystal from Micro Crystal
- ❑ **MSP-TS430PW14**: One MSP-TS430PW14 Target Socket Module.
Four PCB 1x7 pin headers (Two male and two female). Two units MSP430F2013IPW.
- ❑ **MSP-TS430L092**: One MSP-TS430L092 target socket Module. Four PCB 1x7 pin headers (Two male and two female). 2 units MSP-TS430L092. an 'ActiveCable' PCB to connect between FET430UIF and TS-board.
- ❑ **MSP-TS430PW24**: One MSP-TS430PW24 Target Socket Module.
Four PCB 1x12 pin headers (Two male and two female). 2 units MSP430AFE253IPW.
- ❑ **MSP-TS430PW28**: One MSP-TS430PW28 Target Socket Module.
Four PCB 1x14 pin headers (Two male and two female). 2 units MSP430F2132IPW.
- ❑ **MSP-TS430PW28A**: One MSP-TS430PW28A Target Socket Module.
Four PCB 1x14 pin headers (Two male and two female). 2 units MSP430G2452IPW28.
- ❑ **MSP-TS430DW28**: One MSP-TS430DW28 Target Socket Module.
Four PCB 1x14 pin headers (Two male and two female). 2 units MSP430F123IDW.
- ❑ **MSP-TS430DA38**: One MSP-TS430DA38 Target Socket Module.
Four PCB 1x19 pin headers (Two male and two female). 2 units MSP430F2274IDA.
- ❑ **MSP-TS430QFN23x0**: One MSP-TS430F23x0 Target Socket Module.
Eight PCB 1x10 pin headers (Four male and four female). 2 units MSP430F2370IRHA.
- ❑ **MSP-TS430RSB40**: One MSP-TS430RSB40 Target Socket Module.
Eight PCB 1x10 pin headers (Four male and four female). 2 units MSP430F5172IRSB.
- ❑ **MSP-TS430RHA40A**: One MSP-TS430RHA40A Target Socket Module.
Eight PCB 1x10 pin headers (Four male and four female). 2 units MSP430FR5739IRHA.
- ❑ **MSP-TS430DL48**: One MSP-TS430DL48 Target Socket Module.
Four PCB 1x24 pin headers (Two male and two female). Two units MSP430F4270IDL.
- ❑ **MSP-TS430RGZ48B**: One MSP-TS430RGZ48B Target Socket Module.
Eight PCB 1x12 pin headers (four male and four female). Two units MSP430F5342IRGZ.

- ❑ **MSP-TS430PM64:** One MSP-TS430PM64 Target Socket Module.
Eight PCB 1x16 pin headers (Four male and four female). Two units MSP430F2618IPM.
- ❑ **MSP-TS430PM64A:** One MSP-TS430PM64A Target Socket Module.
Eight PCB 1x16 pin headers (Four male and four female). Two units MSP430F4152IPM.
- ❑ **MSP-TS430RGC64B:** One MSP-TS430RGC64B Target Socket Module.
Eight PCB 1x16 pin headers (Four male and four female). Two units MSP430F5310IRGC.
- ❑ **MSP-TS430RGC64USB:** One MSP-TS430RGC64USB Target Socket Module.
Eight PCB 1x16 pin headers (Four male and four female). Two units MSP430F5510IRGC and two units MSP430F5529IRGC. One USB cable, type A/B
- ❑ **MSP-TS430PN80:** One MSP-TS430PN80 Target Socket Module.
Eight PCB 1x20 pin headers (Four male and four female). Two units MSP430FG439IPN.
- ❑ **MSP-TS430PN80A:** One MSP-TS430PN80A Target Socket Module.
Eight PCB 1x20 pin headers (Four male and four female). Two units MSP430F5329IPN.
- ❑ **MSP-TS430PN80USB:** One MSP-TS430PN80USB Target Socket Module.
Eight PCB 1x20 pin headers (Four male and four female). Two units MSP430F5529IPN.
One USB cable, type A/B
- ❑ **MSP-TS430PZ100:** One MSP-TS430PZ100 Target Socket Module.
Eight PCB 1x25 pin headers (Four male and four female). Two units MSP430FG4619IPZ.
- ❑ **MSP-TS430PZ100A:** One MSP-TS430PZ100A Target Socket Module.
Eight PCB 1x25 pin headers (Four male and four female). Two units MSP430F47197IPZ.
- ❑ **MSP-TS430PZ100B:** One MSP-TS430PZ100B Target Socket Module.
Eight PCB 1x25 pin headers (Four male and four female). Two units MSP430F6733IPZ.
- ❑ **MSP-TS430PZ5x100:** One MSP-TS430PZ5x100 Target Socket Module.
Eight PCB 1x25 pin headers (Four male and four female). Two units MSP430F5438IPZ.
- ❑ **MSP-TS430PZ100USB:** One MSP-TS430PZ100USB target socket module. This is the PCB on Eight PCB 1x25 pin headers (Four male and four female). Two units MSP430F6638IPZ.
One USB cable, type A/B
- ❑ **EM430F5137RF900:** 2 EM430F5137-900 Target Boards 2 Batterie Packs with each 2 Batteries, 1 additional 32 khz Crystal, 2 868/915 MHz antennas.
- ❑ **EM430F6137RF900:** 2 EM430F6137-900 Target Boards 2 Batterie Packs with each 2 Batteries, 1 additional 32 khz Crystal, 2 868/915 MHz antennas.

1.2 Install the Hardware

- 1) Use a 14-conductor cable to connect a socket module to the Debug-Interface. Pictorials of the socket modules are presented in the appendices of the FET User's Guide. Ensure that the jumpers (LED and Vcc) are in place.