Jacinto™ 7 EVM Quick Start Guide for DRA821 Processor

Welcome to the Jacinto™ 7 EVM Quick Start Guide for DRA821 Processor.
This guide will help you begin your evaluation quickly by covering the following topics:

Step 1: Setup EVM and expansion card hardware.

Step 2: Experiencing the Out Of Box (OOB) demonstration to ensure the EVM hardware is functional.

Step 3: Download and install Processor SDK (software development kit).

Step 1: Setup EVM and expansion card hardware

The minimum configuration of the Jacinto 7 EVM includes the common processor board and a system-on-module (SOM) board. Each board ships separately.

- The common processor board provides basic connectivity to I/O, JTAG and various available expansion boards.
- The SOM includes the DRA821 processor you are going to evaluate, as well as power management and external memory.

Common processor board highlights
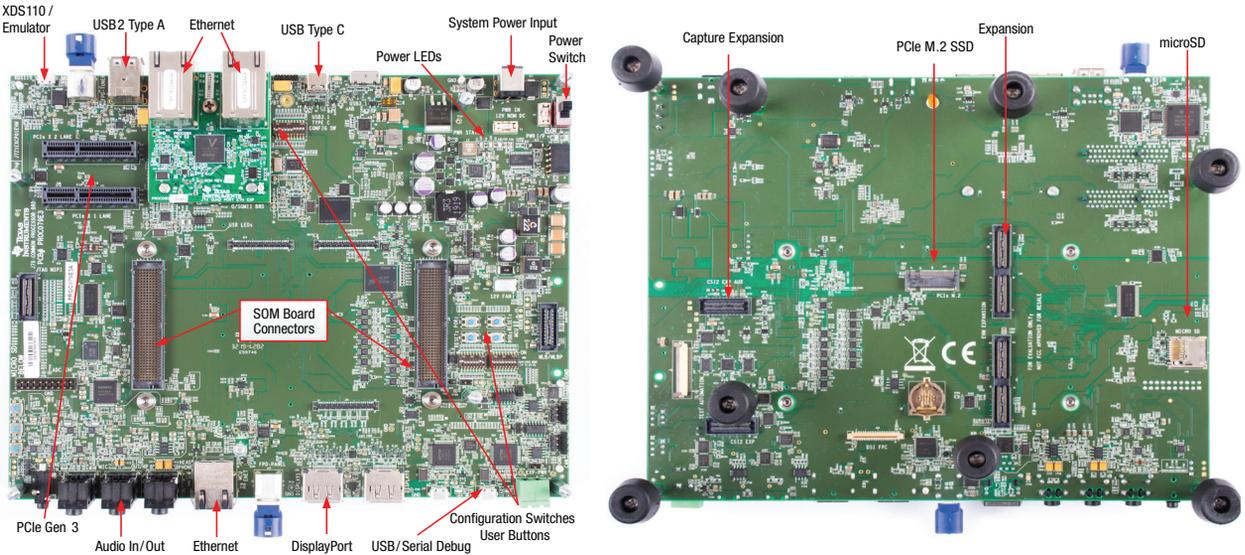
Note: Some interfaces may be unavailable depending on the SOM you attach to the common processor board.

System-On-Module highlights
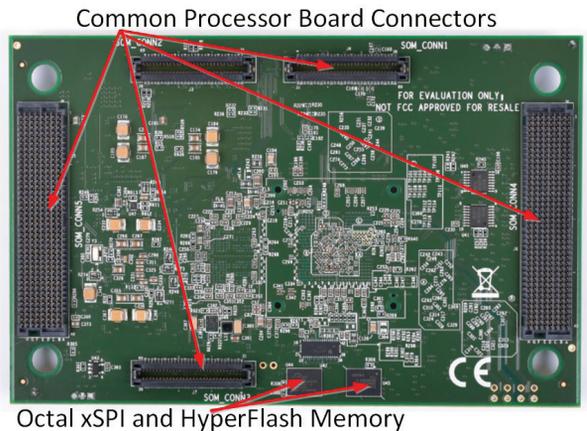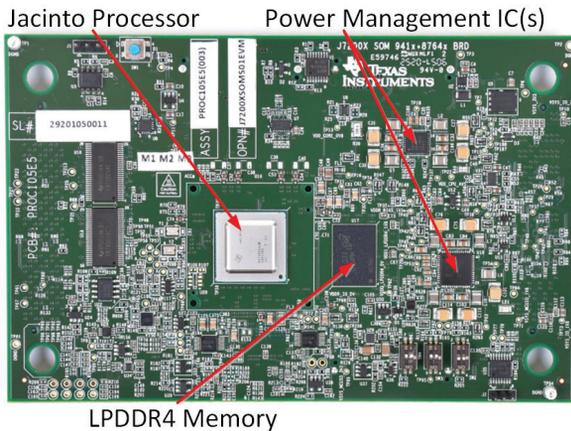
Attaching the SOM to the common processor board

1 Remove mounting screws (4) from Common Processor board (sold separately). The screws are shipped installed in jack-screws. If existing SOM module is already mounted, use Allen wrench (supplied with SOM) to eject SOM module by inserting the wrench into each jack-screw and turning counter-clockwise at each location until SOM module is loose.

2 Before installing new SOM, make sure all jack-screws are tight by inserting the wrench and turning clockwise at each location.

3 Install the SOM module on the Common Processor Board. Ensure it is oriented such that all connectors are aligned. Press firmly on the edges to ensure the connectors mate (may have to apply significant pressure).

4 Install mounting screws (4x) in each corner of the SOM. Tighten each screw to ensure all connectors are fully mated. Don't over-tighten.

Mounting screws (4x)

SOM module

Jack-screws (4x)

Common processor board
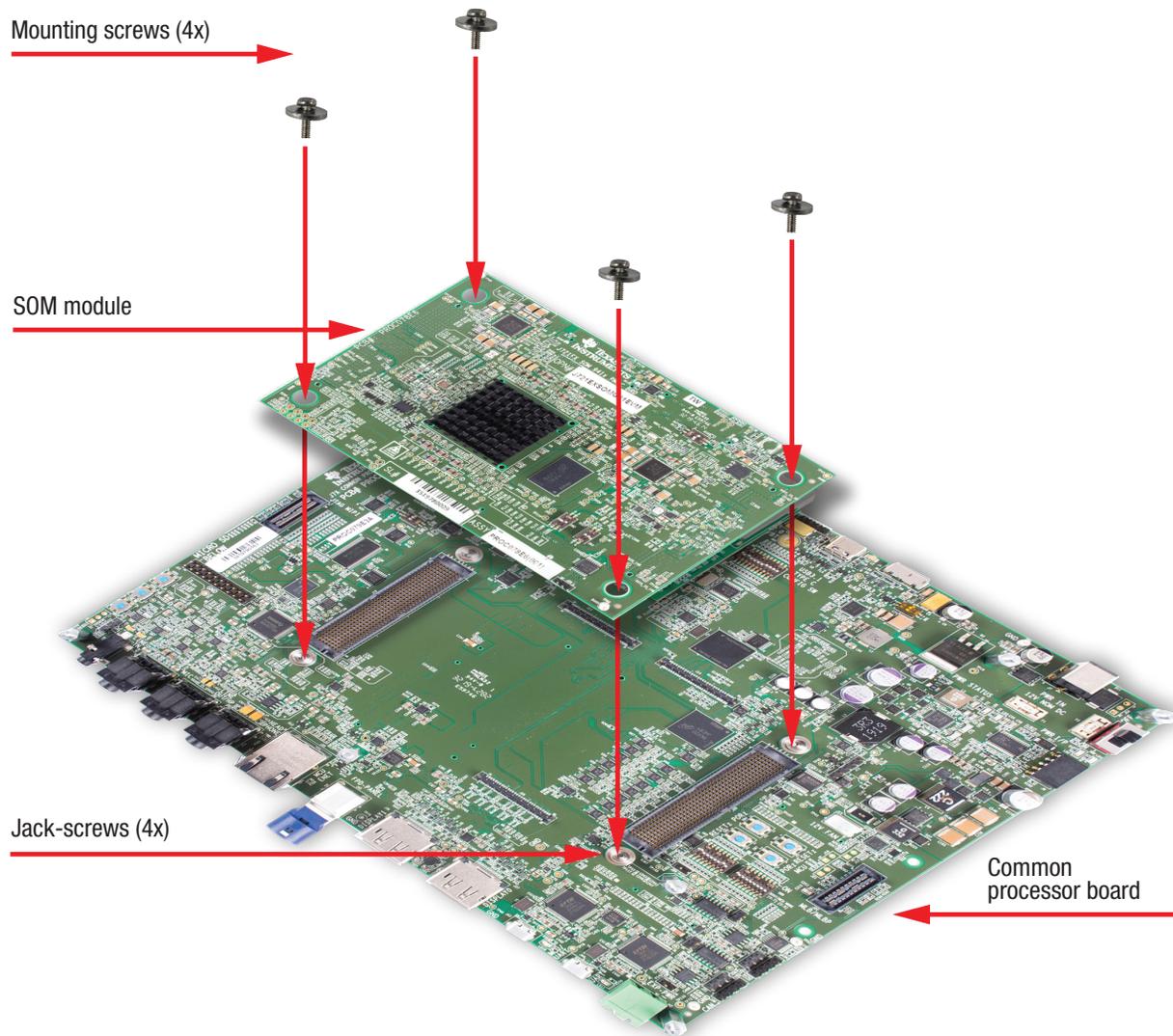
5 Insert the supplied Linux SD card into the Micro SD card slot. The location of the card slot is on the backside of the Common Processor Board.
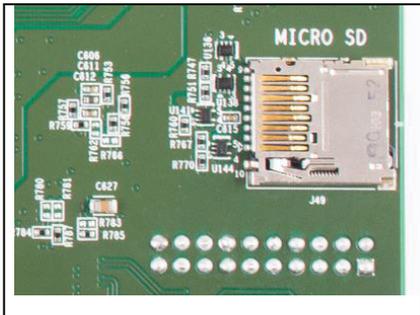
6 Connect the supplied USB cable to the USB/Serial Debug connector as shown. Connect other end to PC. Launch a terminal program (ex. TeraTerm) and connect to first of four UARTs that are assigned to USB port. Set terminal to operate at Baud 115200, 8b no parity, and flow control off.


7 Confirm the boot configuration switches SW8 and SW9 are set as shown.
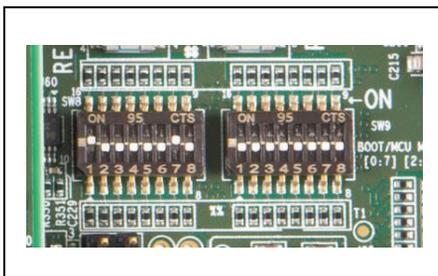
8 Connect a +12 VDC power supply (not included) with minimum output rating of 5 Amp, positive inner and negative outer terminals, female barrel 5.5 mm x 2.5 mm. Recommended power supply is CUI Inc. SDI65-12-U-P6 or equivalent.

9 To turn EVM system on, set switch SW2 to the 'ON' position. To turn EVM off, set switch SW2 to 'OFF'.

+12 VDC power supply cable

switch direction setting
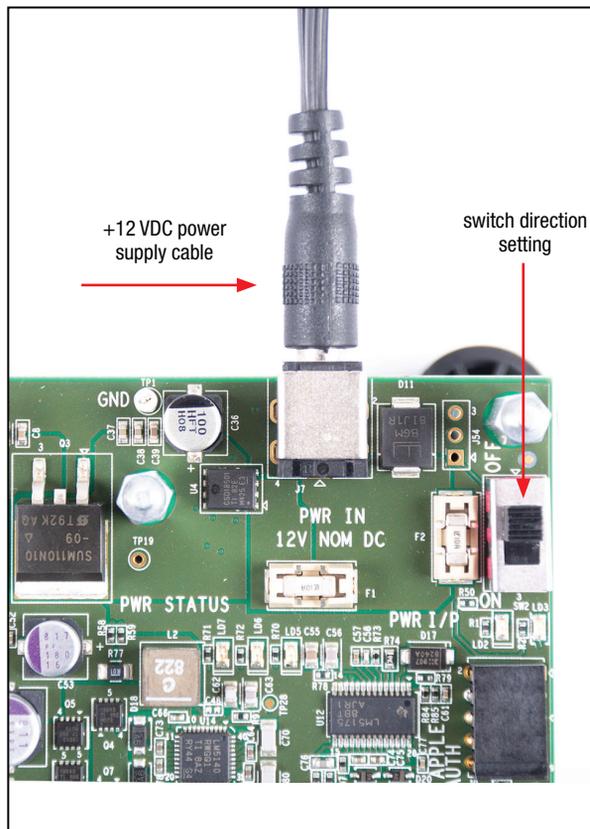
Attaching an optional expansion card

Expansion cards can be added to the common processor board to expand the capabilities of the EVM.

- **Automotive Gateway/Ethernet Switch /Industrial Expansion card**: this card adds ports for CAN-FD, Gigibit Ethernet and industrial Ethernet protocols. (Installation instructions are covered in the Appendix)

Step 2: Experiencing the Out Of Box (OOB) demonstration to ensure the EVM hardware is functional

1. To turn on the EVM, move the SW2 switch to the 'ON' position, as shown in Step 1, #9 above.
2. Within seconds, you should see the linux uboot and kernel boot log on the PC terminal application you setup in Step 1, #6 above.
3. When the boot completed, type "root" at the prompt to login and have access to the linux filesystem.

Step 3: Download and install Processor SDK (software development kit)

Processor SDK RTOS (PSDK RTOS) and **Processor SDK Linux (PSDK Linux)** together form a multi-processor software development platform for the Texas Instruments Jacinto 7 family of SOCs. The SDK provides a comprehensive set of software tools and components to help users develop and deploy their applications on supported Jacinto processors.

Processor SDK installation instructions are available online:

Processor SDK RTOS: www.ti.com/DRA821PSDKRTOSInstall

Processor SDK Linux: www.ti.com/DRA821PSDKLinuxInstall

From these links, you can learn how to install the SDK, modify, build, load, and debug the released software on the EVM.

# *Congratulations! This completes your Quick Start experience.*

Additional resources

Now that your EVM is setup and validated, you can continue your evaluation by getting additional support, accessing additional training and exploring further development options with the following resources:

- Support: www.ti.com/Jacinto7Support
- Training: www.ti.com/Jacinto7Training
- Development: ww.ti.com/DRA821Development

Appendix A: Installing the Automotive Gateway/ Ethernet Switch/Industrial Expansion card onto the common processor board

1. Remove the stand-offs (8x) from the EVM. Mate the expansion card to the common processor board expansion connectors (see bottom left).

2. Press firmly on the edges to ensure the connectors mate (may have to apply significant pressure).

3. If a CSI expansion board is not connected to the CSI expansion connectors on the common processor board, add a 2mm thick washer to each of the four stand-offs (see bottom right) on the common processor board. Washers are included in the kit.

4. Re-install the eight stand-offs.

Washer

Stand-off

CSI Expansion Connectors

EVM Expansion Connectors

82.2 ±0.5

Front view

190.5 ±0.5

Side view
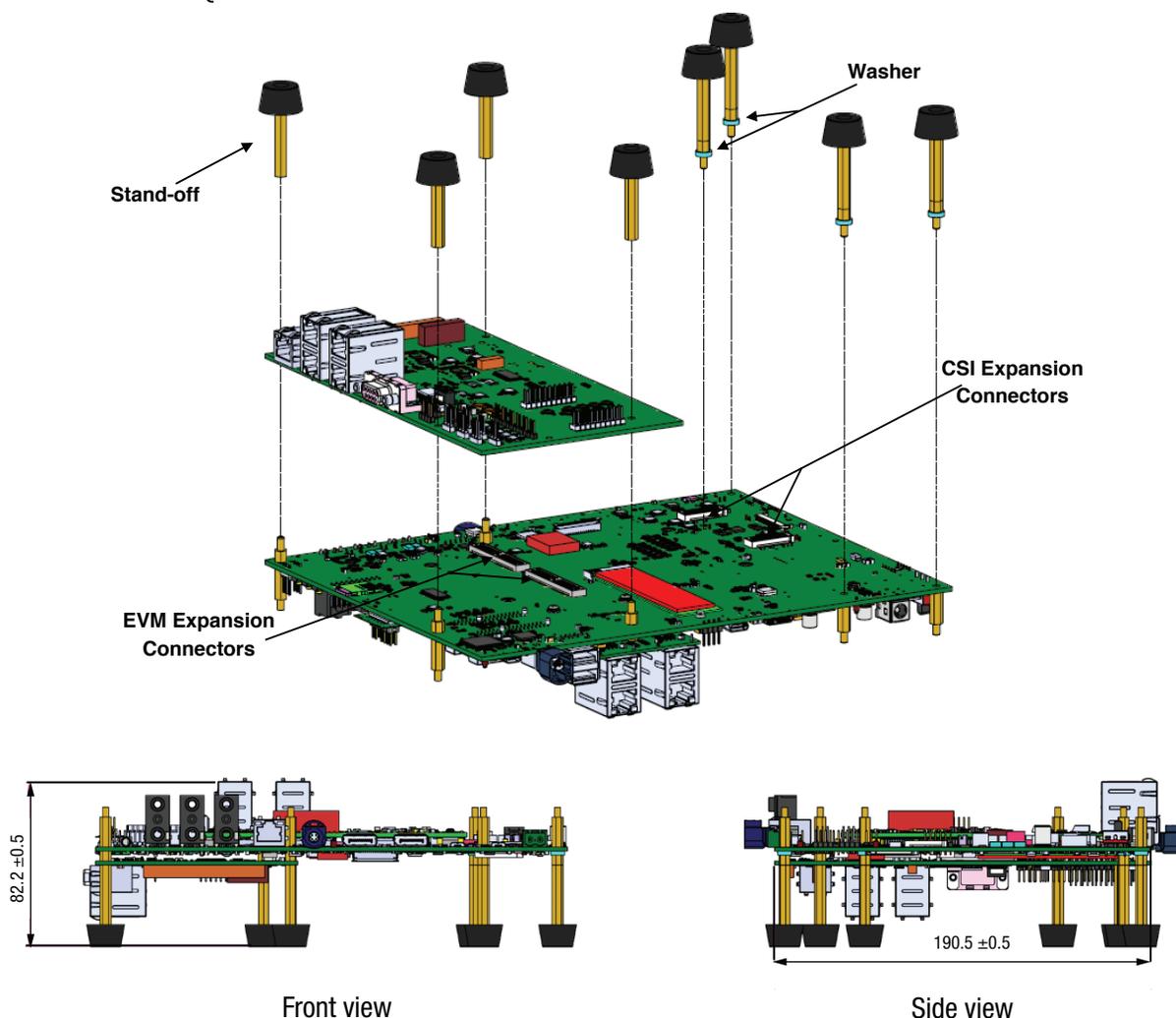
For more information on DRA821 processor including:

- User Guide • Software
- How Tos   • Design Files

Please visit **www.ti.com/jacinto**

For support questions, please contact: **support@ti.com** or **ti.com/e2e**

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