Jacinto™ 7 EVM Quick Start Guide for TDA4VM and DRA829V processors
Welcome to the Jacinto™ 7 EVM Quick Start Guide for TDA4VM and DRA829V processors. 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 4**: Complete Project 0, your first ‘Hello World’ project to ensure interoperability of the EVM and software.
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 TDA4x or DRA82x processor you are going to evaluate, as well as power management and external memory.

Common processor board highlights

System-On-Module highlights

Note: Some interfaces may be unavailable depending on the SOM you attach to the common processor board.
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.
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 If a DisplayPort panel is available (not included), connect the supplied DisplayPort cable to the EVM as shown. Connect other end to DisplayPort panel. If no panel is available, this step can be skipped.

8 Confirm the boot configuration switches SW8 and SW9 are set as shown.
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.

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

Attaching an optional expansion card

Various 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, Gigabit Ethernet and industrial Ethernet protocols. *(Installation instructions are covered in the Appendix)*

- **Infotainment Expansion card**: this card adds more audio I/O, HDMI and LVDS ports for display, a camera input port and tuner interfaces. *(Installation instructions are covered in the Appendix)*

- **Fusion Serial Capture Application board**: this card is developed by Spectrum Digital, a TI ecosystem partner, and adds multiple camera and radar inputs. *(Installation instructions are included in the box)*
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, #10 above.

2. To experience the Out Of the Box application, a DisplayPort panel is required. Connect the supplied DisplayPort cable to the EVM as shown in Step 1, #7 above. Connect the other end of the cable to DisplayPort panel.

3. After turning on the EVM and connecting a display, the DisplayPort panel will show the following welcome message:

Welcome to the Jacinto™ 7 automotive processor EVM!
Start your experience here: www.ti.com/Jacinto7QSG
Step 3: Download and install Processor SDK (software development kit)

Processor SDK RTOS Automotive (PSDKRA) and Processor SDK Linux Automotive (PSDKLA) 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.

Both PSDKLA and PSDKRA can be used together to implement various automotive use-cases as shown in figure below.

**Jacinto™ 7 Software Development Kits (SDKs)**

![Diagram of Processor SDK automotive installers.](image)

- Linux and RTOS SDKs to provide baseline components – They work across all Jacinto7 platforms
- “Plug and play” between SDKs to cater to integrated applications like cockpit as well as new markets like gateways, fusion, autonomous driving

Processor SDK installation instructions are available online:

Processor SDK RTOS:  [www.ti.com/Jacinto7PSDKRAInstall](http://www.ti.com/Jacinto7PSDKRAInstall)

Processor SDK Linux:  [www.ti.com/Jacinto7PSDKLAInstall](http://www.ti.com/Jacinto7PSDKLAInstall)
Step 4: Project 0, your first ‘Hello World’ project to ensure interoperability of EVM and SW

Completing Project 0 will ensure that you setup the hardware and configured the software correctly. It will also validate that the development environment is ready for you to make code changes and reflect those changes back to the EVM.

Ready to get started?
Access Project 0 instructions online: www.ti.com/Jacinto7Project0

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: www.ti.com/Jacinto7Development
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.

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Front view

Side view
Appendix B: Installing the Infotainment Expansion Board onto the common processor board

1. Remove the stand-offs (8x) from the EVM. Mate the Infotainment Expansion Board onto 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.
For more information on TDA4VM and DRA829V processors including:
• User Guide  • Software
• How Tos       • Design Files

Please visit [www.ti.com/jacinto](http://www.ti.com/jacinto)

For support questions, please contact: support@ti.com or [ti.com/e2e](http://ti.com/e2e)

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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