Getting Started with AMD Embedded Development Framework (EDF) using Pre-built Images

AMD
together we advance_

This How-To Video Covers . . .

Introduction to AMD EDF

Set up the AMD Versal™ VEK385 Board: Connect to Board System Controller

Download and Flash OSPI, SD Card: Boot into EDF Linux®

Load Prebuilt Application in EDF Linux

Explore Application Running on Board Using Python™ Script

AMD Embedded Development Framework

Open-Source

- Non-proprietary tooling
  - Long-term flexibility
  - Handoff to an Operating System vendor
- Broad ecosystem of compatible extensions and developer tools
  - Yocto Project™
  - Easy integration into existing open-source environments

Complete Solution Stack

- Embedded SW flows with pathways to deployment
  - Develop HW & SW independently
- Pre-configured system images
  - Feature rich, turnkey evaluation
  - Advanced flows

Fast Development

- Easy build flows for complex systems
  - CED-based hardware projects
- Yocto Project-based Software and images

Follow Along:

Requirements

1. AMD Versal™ Evaluation Kit with latest system controller firmware
2. EDF Linux® BSP Disk Image: Prebuilt Linux image
3. OSPI boot firmware: Bootloader (Only for Multi-stage Boot)
4. gpio-bram-test: Python™ file for exploring prebuilt PL firmware application
5. Serial Terminal emulator (PuTTY/screen)

Text-based Guide

Discovery and Evaluation: AMD Versal Device Portfolio

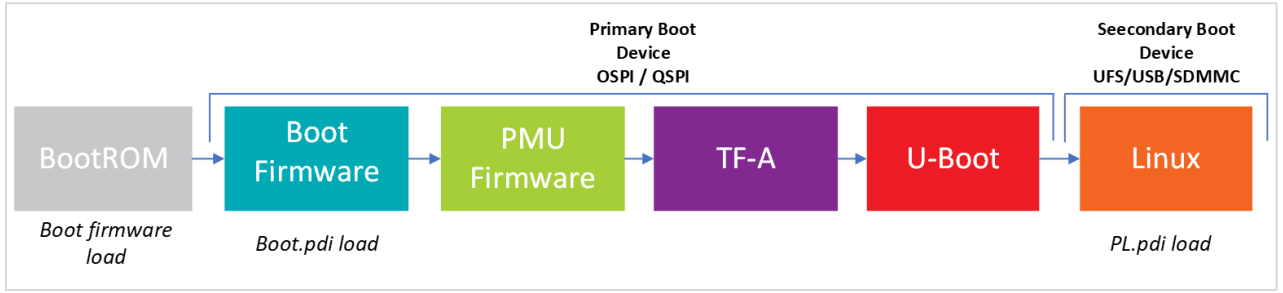
AMD EDF Boot Flows Support

All boot and configuration options are supported with EDF tools

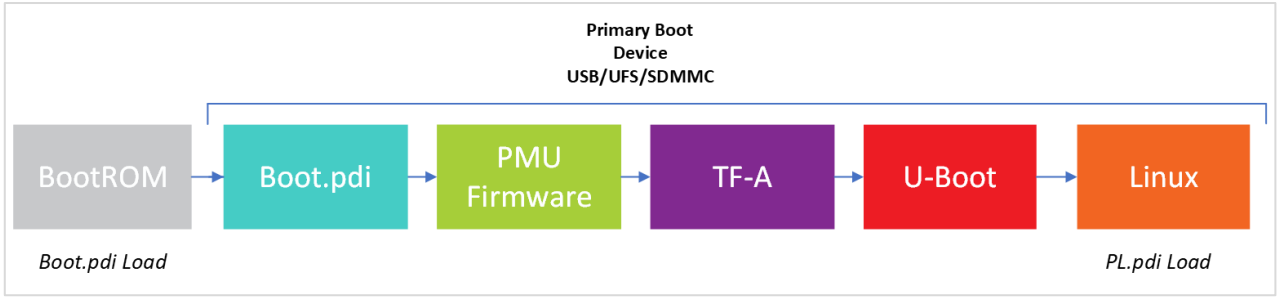
Single stage, multistage	All boot devices – JTAG, QSPI, OSPI, SDCARD, eMMC, UFS	Segmented configuration, monolithic configuration	Advanced – PCIe®, GbE, Tandem Boot

Default boot architecture for EDF Linux® BSP

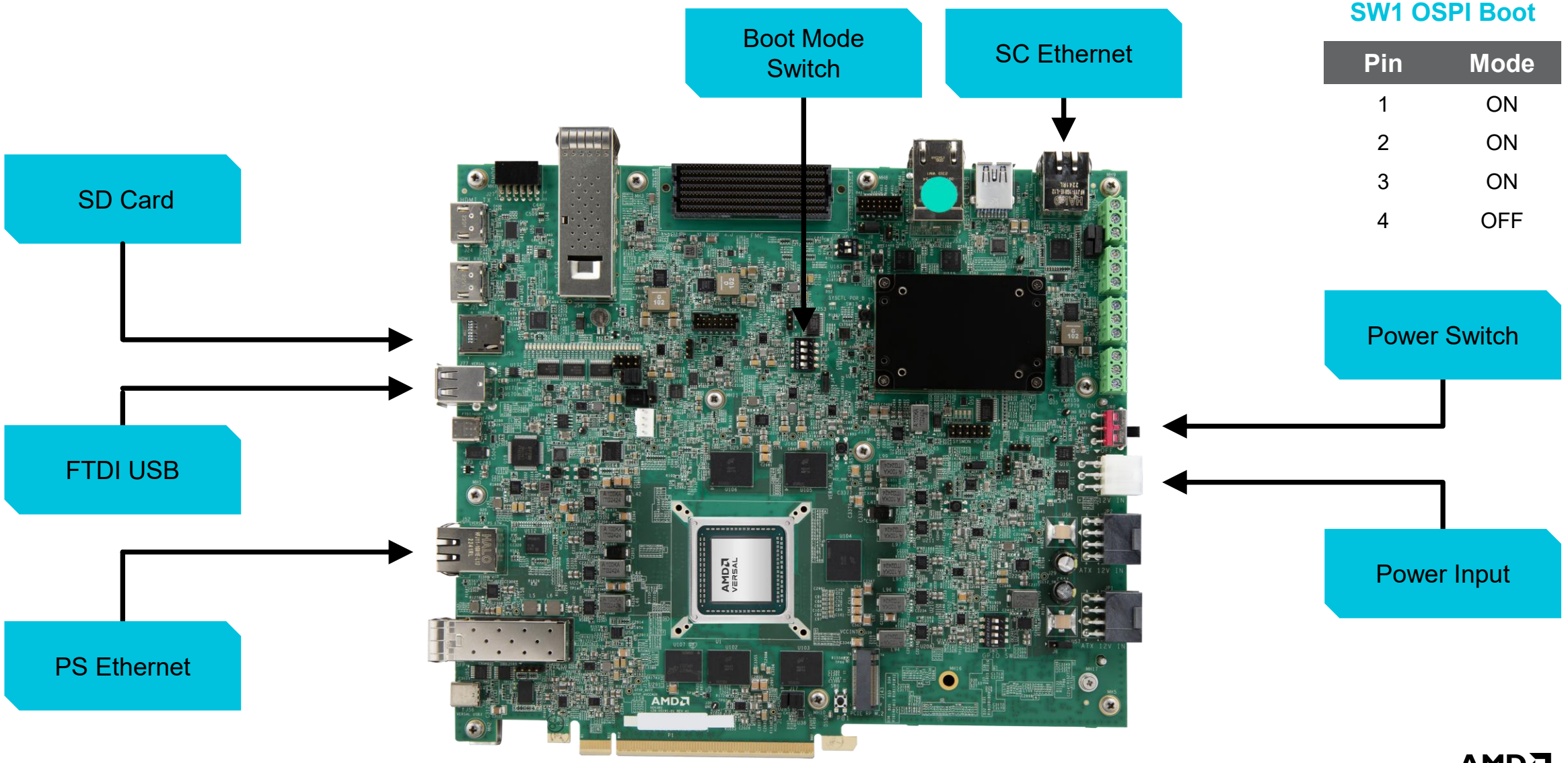
For AMD Versal™ AI Edge and Prime Series Gen 2:
Multistage boot with deferred PL load



For the first-generation Versal devices and previous architectures (including the AMD Zynq™ portfolio):
SD card boot with deferred PL load



Board Setup: AMD Versal™ VEK385 Board



SW1 OSPI Boot

Pin	Mode
1	ON
2	ON
3	ON
4	OFF

Watch the full Demo video

https://www.amd.com/en/products/software/adaptive-socs-and-fpgas/embedded-software/embedded-development-framework.html#resources

Summary - What We Just Showed

1

Download required images for AMD EDF

2

Set up AMD VEK385 and program OSPI flash with downloaded boot firmware using BEAM GUI

3

Flash SD card with EDF Linux® BSP Disk Image

4

Boot EDF Linux from the SD Card

5

Load prebuilt PL firmware application using “dfx-mgr-client” command

6

Explore prebuilt PL firmware application using the provided Python™ program

DISCLAIMER AND ATTRIBUTIONS


AMD