

SBC4661 Vision Kit with Cables and LCD Display Plus Integrated Software and Sample Programs

Vision Integrated Development Platform

The DKV4661 is a fully integrated, ready-to-run vision development platform for Micro/sys' Blazing Frames™ SBC4661 iMX6 ARM® Cortex®-A9 SBC. The Kit provides users with a wide range of choices for implementing their video processing applications. DKV4661 eliminates the need for hours (or days, or weeks) of configuring the individual components required for a vision system. Instead, the Kit provides all the components already integrated, allowing users to begin programming a vision application within minutes of powering up the system.



DKV4661 includes SBC4661, cables, sample software

What's Included in the Development Kit

Firmware / Software Tools:

- Linux BSP with U-Boot, Linux kernel, Ubuntu, or GNOME mobile
- Micro/sys' Yocto / Github for developers who prefer their own custom Linux distribution
- Micro/sys' Vision Layer enables easy access to OpenCV, GStreamer and GeniCam plus other powerful tools, libraries, and sample programs
- Micro/sys' FPGA Layer enables users to install the MicroBlaze™ microcontroller core running PetaLinux into the FPGA facilitating the Kintex-7 running in
 - standalone mode, *or*
 - communicating with the iMX6 via WEIM and/or PCIe

Hardware:

- iMX6 ARM Cortex-A9 Quad Core, 1 GHz
 - Runs independent of the Kintex-7 FPGA, *or*
 - Hosts the Kintex-7 FPGA via PCIe
- FMC connector from the Kintex-7 FPGA with eight available SERDES for interfacing camera protocols, SATA drives, or PCIe drives
- ARM® NEON™ GPU configurable for multimedia apps
- Low-cost LCD display attaches via TFT port
- Cable set and power supply for all I/O connectors on SBC4661

Kintex-7 FPGA Runs Solo or Interfaces to iMX6 via PCIe

The Kintex-7 FPGA on the SBC4661 easily handles tasks typically performed by a framegrabber in the traditional Windows/Intel-based vision systems. By off-loading the Host CPU, in this case the iMX6, the Kintex-7 unleashes the power of eight SERDES through the FMC connector to run multiple high-speed camera interfaces as well as SATA and PCIe drives, enabling streaming data from cameras to be quickly stashed on the drives for processing at a later time.

The Kintex-7 gains independence as a standalone processor separate from the iMX6 when the MicroBlaze microprocessor core is installed and is running PetaLinux. In this mode, the MicroBlaze is capable of performing typical framegrabbing tasks. At the user's discretion, the PCIe link between the iMX6 and Kintex-7 can be turned on and off for operational efficiencies..

Linux BSP Eases System Development

The SB4661 Vision Development Kit ships with a Linux image pre-loaded on an SD card so programmers can write code and compile programs for their application directly on the SBC4661.

To set up the system, simply attach a keyboard and display, plug the SD card into the SBC4661 SD/MMC slot, and the SBC4661 is up and running. An Ethernet cable can be attached to a desktop computer to access development tools on a personal desktop.

Step-by-step procedures to convert the Kernel and application program into a flash image for deployment of the user's final system out of flash are included in the User Manual.

Users who wish to build their own flavor of Linux for their embedded application will find Micro/sys releases to Yocto just what they need to customize their application.



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Vision Development Kit Includes:

Board & Camera

- SBC4661
- Camera module
(MIPI and FLIR Kits only. Suggestions available for other Kits)

Cables, Adapters, and Accessories

- 5V wall-mount power supply
- Xilinx Platform Cable USB-II (*DKF & DKC Kits*)
- 4 GB Solid State Drive (SSD)
- 10in TFT LCD display
- RJ45 Ethernet Cable
- Mini B to Type A USB Cable
- USB 3.0 Cable
- HDMI Cable
- SATA Cable
- 20-pin high density to 20-pin screw terminal
- 40-pin high density to 40-pin screw terminal
- 50-pin high density to 50-pin screw terminal

Board Support Package (BSP):

- U-Boot, Kernel, Ubuntu, or GNOME Mobile
- Micro/sys Vision Layer/Recipe

Targeted Reference Designs & Demos

- How to implement ARM Cortex
- How to install CameraLink or other vision IP cores
- How to implement drivers to DDR3 memory
- How to implement DIO and drivers.

Documentation

- SBC4661 Getting Started Guide
- SBC4661 Hardware User Manual
- Yocto Whitepaper
- OpenCV Whitepaper
- Popular StackableUSB™ expansion bus

Ordering:

DK 4661 – B V L

MICRO/SYS SBC DEVELOPMENT KIT

DK: Standard Development Kit
DKF: FPGA Development Kit
DKV: Vision Development Kit
DKC: FPGA & Vision Development Kit

OPERATING SYSTEM

A: Android
L: Linux (standard)
W: WinCE

FPGA SIZE

A: 70T
B: 160T (standard)
C: 325T
D: 410T
E: No FPGA

CAMERA INTERFACE

M: MIPI CSI
N: NTSC/PAL
F: FLIR Thermal Imaging
V: GigE & USB3 (standard)
X: CoaXPRESS
L: CameraLink Base

