







Introduction

The Intel® Arria® 10 SoC Development Kit offers a quick and simple approach for developing custom ARM* processor-based SoC designs. Design productivity is one of the driving philosophies of the Arria 10 SoC architecture. The Arria 10 SoCs offer full software compatibility with previous generation SoCs, a broad ecosystem of ARM software and tools, and the enhanced FPGA and digital signal processing (DSP) hardware design flow.

Arria 10 SoCs have been designed to meet the performance and power requirements for mid-range applications such as:

- > Wireless infrastructure equipment including remote radio unit and mobile backhaul**
- Compute and storage equipment including flash cache, cloud computing, and acceleration**
- › Broadcast studio and distribution equipment including professional A/V and video conferencing**
- > Military guidance, control, and intelligence equipment**
- > Wireline 100G line cards, bridges and aggregation, 40G GPON**
- > Test and measurement equipment**
- › Diagnostic medical imaging equipment**
- > PCI Express* (PCIe*) Gen3 x8 lanes (endpoint or root port)**
- **Application-specific daughtercards, available separately, supporting a wide range of I/O and interface standards



Figure 1. Intel Arria 10 SoC Development Kit

With this kit, you can:

- > Evaluate Arria 10 SoC device features and performance
- > Begin development of your hardware and software design
- > Use as a platform for target reference designs, OS/BSP, and tools

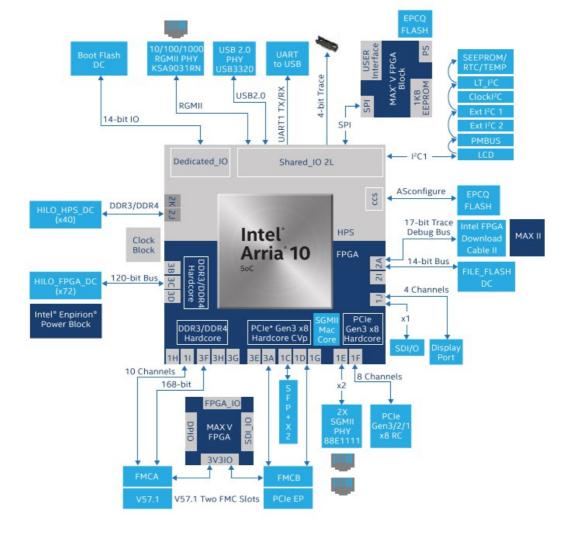


Table 1. Ordering Information

Ordering Code	Price	Ordering Information
DK-SOC- 10AS066S-A	Buy Now ▶	This development kit features a 10AS066N3F40E2SG device and a one-year license for the Intel Quartus [®] Prime design software.

1. Please contact Intel for shipping availability

Table 2. Development Kit Contents

Hardware	Software ²
 Arria 10 10AS066N3F40E2SG¹ SoC Embedded Intel FPGA Download Cable II for hard processor system (HPS) or FPGA programming PCI Express (PCIe) Gen3 x8, Dual FPGA mezzanine card (FMC) expansion 	 Golden System Reference Design Board Update Portal design Board Test System (BTS) design
headers Two 10/100/1000 SGMII Ethernet ports and one 10/100/1000 RGMII	 Arria 10 SoC Development Kit User Guide Arria 10 SoC Development Kit Quick Start Guide
Ethernet port and two 10GbE small form factor pluggable (SFP) cages > 1 FMC loopback card	Arria 10 SoC Development Board Reference Manual Development Kit design files (BOM, schematics, layout)
 USB On-The-Go (USB OTG) port 1GB DDR4 HPS HILO memory card oaded from Arrow.com. 	 Design software³ Intel SoC FPGA Embedded Development Suite (EDS),

Downlo

- NAND, quad serial peripheral interface (SPI), and SD/MICRO boot flash cards
- > 2GB DDR4 HILO memory card
- > Display port and serial digital interface (SDI) port

- including ARM* Development Studio 5 for Intel SoC FPGAs
- Quartus Prime Pro software (required)
- > Nios® II processor (optional)
- > MegaCore® intellectual property (IP) library (optional)
- Mentor Graphics* ModelSim* Intel FPGA Edition software (optional)
- 1. DK-SOC-10AS066S-A development kit comes with a 10AS066N3F40E2SG device
- 2. Download the zip file, and install the Arria 10 SoC Board Test System.
- 3. A one-year license for Quartus Prime design software is available upon purchase of the kit. License activation instructions and FAQs.

Table 3. Arria 10 SoC Development Kit Downloadable Content

Files	Description	
Arria 10 SX SoC Package Installer (ES2 Edition)	A single zip file containing	
Arria 10 SX SoC Package Installer (Production Edition)	 Arria 10 SoC Development Kit board design files, documents, and examples including the BTS installation files. 	
User Guide (ES2 Edition)		
User Guide (Production Edition)	Documentation about setting up the Arria 10 SoC Development Kit and using the included software: Arria 10 SoC Development Kit User Guide	
Quick Start Guide (ES2 Edition)		
Quick Start Guide (Production Edition)	Documentation summarizing the usage of the development kit and its features	
Board Schematic	Production Kit schematic, Rev C	
Board Bring Up Guide	Details on how to bring up the Arria 10 SoC Development Kit	
Arria 10 GSRD (Golden System Reference Design) ¹	The Arria 10 GSRD (Golden System Reference Design) page on Rocketboards.org has instructions to create an SD card image.	
SoC EDS Installer	SoC EDS installer which includes ARM Development Studio 5 (ARM DS-5*) for Intel SoC FPGAs	
Qsys and Quartus Tools	The Quartus Prime design suite provides the necessary tools used for developing hardware and software for Intel FPGA devices. Included in the Quartus Prime design suite are the Quartus Prime software, the Nios II EDS, and the Intel FPGA IP Library.	

¹ Please refer to the GSRD compatibility matrix to pick the correct GSRD version for your board.



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