Intel® Stratix® 10 SX SoC Development Kit

The Intel® Stratix® 10 SoC Development Kit offers a quick and simple approach for developing custom Arm processor-based SoC designs. The Intel Stratix 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.
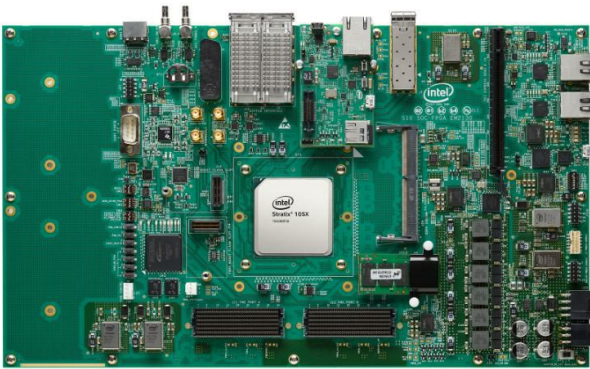

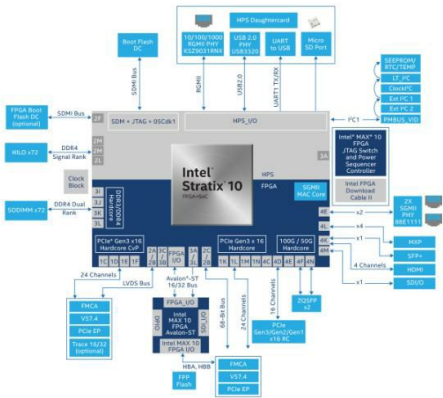Figure 1. Intel® Stratix® 10 SX SoC Development Kit

View Full Size

Figure 2. Intel® Stratix® 10 SX SoC Development Kit Block Diagram

View Full Size

You can use this development kit to:

› Evaluate the Intel Stratix 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	Stratix 10 Device	Ordering Information
DK-SOC-1SSX-L-A		1SX280LU2F50E1VG	Please contact Intel sales for availability. This development kit features a device and a one-year license for the Intel Quartus® Prime design software
DK-SOC-1SSX-H-A		1SX280HU2F50E1VGAS	Please contact Intel sales for availability. This development kit features a device and a one-year license for the Intel Quartus Prime design software

Buyer represents that it is a product developer, software developer or system integrator and acknowledges that this product is an evaluation kit that is not FCC authorized, is made available solely for evaluation and software development, and may not be resold.

Table 2. Development Kit Contents

Hardware	Software[1]
› Intel Stratix 10 SX SoC Development Board › Review Table 1 for featured Intel Stratix 10 device › One HiLo DDR4 memory card (4 GB) › One DDR4 SODIMM memory card (16GB dual rank) › Two HPS peripheral daughter cards (OOBE and NAND) › Two FMC loopback cards supporting transceiver, LVDS and single-ended I/Os › Two quad small-form-factor pluggable (QSFP28) and one SFP+ port › Two FMC+ low-pin count (LPC + 15 transceivers) connector › One SFP+ interface › PCIe x16 edge connector (via cable - not included) › AC adapter power cables › Ethernet and USB cables	› Design examples › Board Update Portal design › Board Test System (BTS) design › Documentation › Intel Stratix 10 SX SoC Development Kit User Guide › Board design files › Design software[2] › Intel Quartus Prime software (required) › Nios® II processor (optional) › Intel FPGA intellectual property (IP) library (optional) › Mentor Graphics ModelSim-Intel FPGA software (optional)

Please note that the DDR4 HiLo memory card has temporarily been removed from the SoC development kit - see DCL notice for details.

1. Download and unzip the Intel Stratix 10 SoC Development Kit installer first. Install the Intel Stratix 10 SoC Board Test System.

2. A one-year license for Intel Quartus Prime design software is available upon purchase of the kit. License activation instructions and FAQs.

Table 3. Intel Stratix 10 SoC Development Kit Downloadable Content

Files	Description
Intel Stratix 10 SX SoC Package Installer L-Tile ES (18.0 or higher) L-Tile Production (18.0.1 or higher) H-Tile Production (19.1 or higher)	A single installation file containing: › Intel Stratix 10 SoC Development Kit board design files, documents, and examples including the BTS installation files
User Guide	Documentation about setting up the Intel Stratix 10 SoC Development Kit and using the included software
Quick Start Guide	Documentation summarizing the usage of the development kit and its features
Board Schematic ES (Rev A) Production (Rev B)	Latest version of the board schematic for the ES (L-Tile only) and Production(H and L-Tile) kit › The L-Tile and H-Tile Production development kit share the same design
Intel Stratix 10 FPGA GSRD (Golden System Reference Design)[1]	The Intel Stratix 10 FPGA GSRD (Golden System Reference Design) page on Rocketboards.org has instructions for getting started on hardware and software designs that utilize the HPS (hard processor system) on Stratix 10 SoC
SoC EDS Installer	SoC EDS installer which includes Arm Development Studio (Arm DS) for Intel SoC FPGAs
Intel Quartus Prime	The Intel Quartus Prime design suite provides the provides the necessary tools used for developing hardware and software for Intel FPGAs. Included in the Intel Quartus Prime design suite are the Intel 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.

Table 4: Daughtercard Files

Daughter Card	Schematic	Last Updated
IO48 OOBE Daughtercard	Rev A	12/3/17
IO48 NAND Daughtercard	Rev A	12/3/17
SDM QSPI Boot Flash Daughtercard	Rev A	12/3/17
SDM NAND Boot Flash Daughtercard	Rev A	12/3/17
SDM MicroSD Boot Flash Daughtercard	Rev A	12/3/17
SDM eMMC Boot Flash Daughtercard	Rev A	12/3/17