HAN Pilot Platform

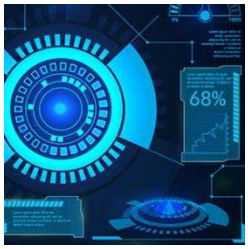
Overview

The HAN Pilot Platform Development Kit provides users a combination of ARM software and FPGA hardware development platforms. It has a vast memory device and peripherals on the hardware. This kit also includes resourceful reference designs to help users to accomplish their design needs. The hardware offers in the HAN Pilot Platform has the maximum capacity with 660K LEs in Arria 10 SoC FPGA and features various types of advanced multimedia interface such as: HDMI, DisplayPort, and 12G-SDI and a large capacity of DDR4 memory. The board's high speed network interfaces, Gigabit Ethernet and 10GbE via SFP+ ports, provides hardware resources for applications related to network communication.

The pre-installed 4GB DDR4 SO-DIMM module connected to the FPGA can be replaced and expanded up to 8GB in additon to the onboard 1GB DDR4 memory module. Alternatively, this SO-DIMM socket can be used to connect Terasic QDR memory module to the FPGA for low latency applications. The High Pin Count FMC interface onboard is ideal for exploring the variety of functions through add-on daughter cards.

The USB Type-C interface introduced for the first time is revolutionary and it offers USB 3.0 and DisplayPort connectivity, as well as bi-directional power delivery between the platform and host PC. The PCIe cabling socket at Gen 3 x4 can be connected to the host PC with Terasic PCIe x4 Cable Adapter (PCA) and PCIe cable to maximize the data transfer rate at lightening speed.

Target Markets:



Test & Measurement

High Performance Computing

Medical

Military & Defence

Broadcast & Video

Specifications

The HAN Pilot Platform has many features that allow users to implement a wide range of high performance designed circuits.The following hardware is provided on the board:

FPGA Device

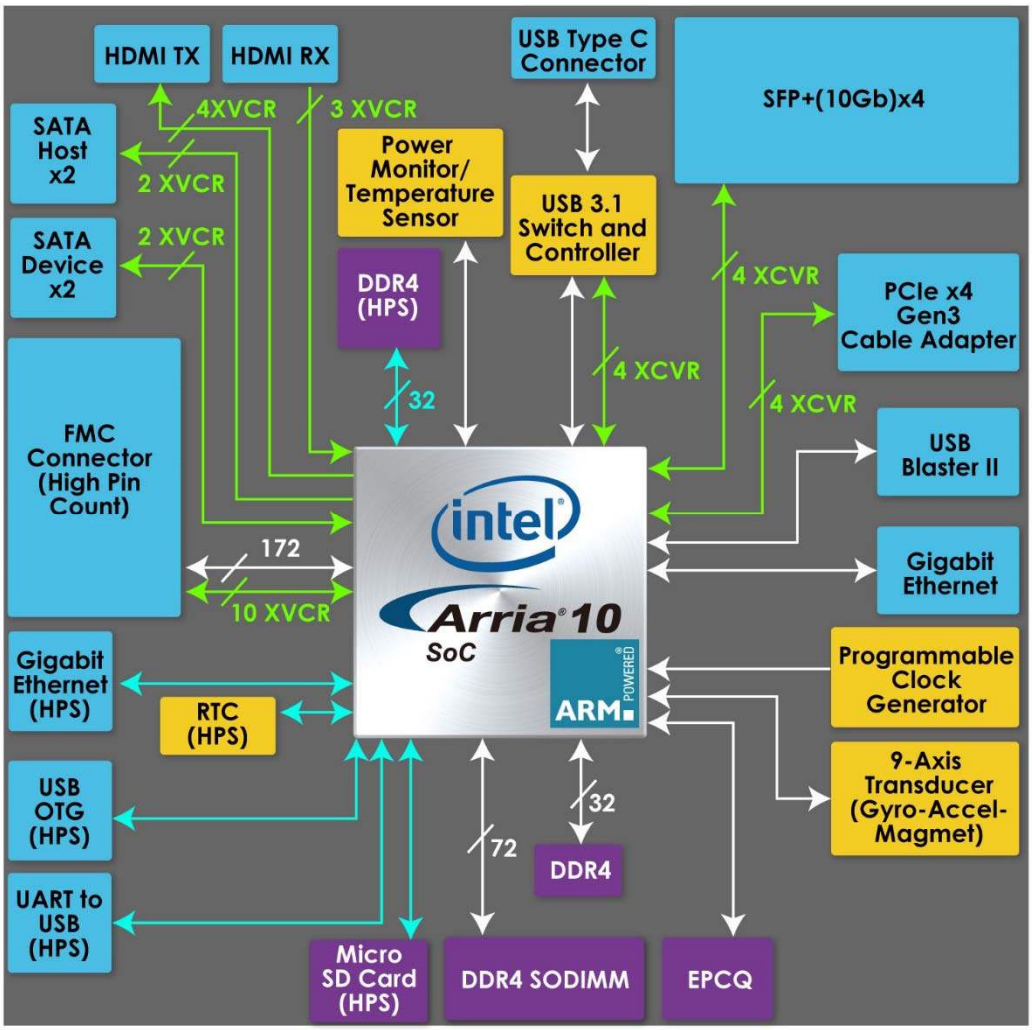
- Intel ® Arria10® SoC 10AS066K3F40E2SG device (660K LEs)
- USB-Blaster II onboard for programming; JTAG Mode
- Serial configuration device – EPCQL1024
- One DDR4 SO-DIMM Socket, support ECC
- On-board 1GB DDR4-2400, 32-bit data width
- USB Type-C Interface
    - Power Delivery
    - DisplayPort TX/RX with 4 lanes
    - USB 3.0/2.0
- HDMI TX/RX 2.0 for 4K2K@60- FPGA Transceiver
- PCIe Cabling Socket at Gen3 x4
- SFP+ Socket x4, 40Gbps
- SATA 3.0 Host and SATA Device x2 (SATA Connector x4)
- One Gigabit Ethernet Port
- SMA Clock-In and Clock-Out
- High Pin Count FMC Connector. Support VADJ 1.2V/1.5V/1.8V.
- Accelerometer, Gyroscope and Magnetometer
- Temperature Sensor
- Fan Control
- LED x2, KEY x2, Switch x2, 7-Segment x2

HPS (Hard Processor System)

- 1.5GHz Dual-core ARM Cortex-A9 processor
- Boost Flash Slot:
    - 1024 Mb QSPI Flash
    - Nand Flash

    - MicroSD Socket
- On-board 1GB DDR4-2400, 32-bit data width
- 1 Gigabit Ethernet PHY with RJ45 connector
- USB OTG Port, USB mini-AB connector
- UART to USB, USB Mini-B connector
- RTC
- One user button and one user LED
- Warm reset button and cold reset button

Block Diagram:



Memory Sockets

In addition to DDR4 Sodimm, it also compatible with Terasic QDRII+ Memory Module.

- DDR4 Sodimm Memory Module Installed

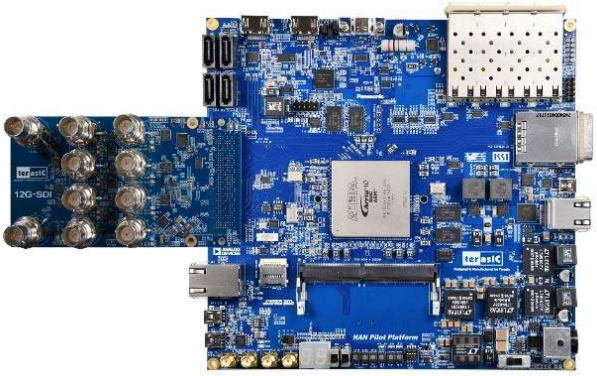
- QDRII+ Memory Module Installed

FMC Connectivity

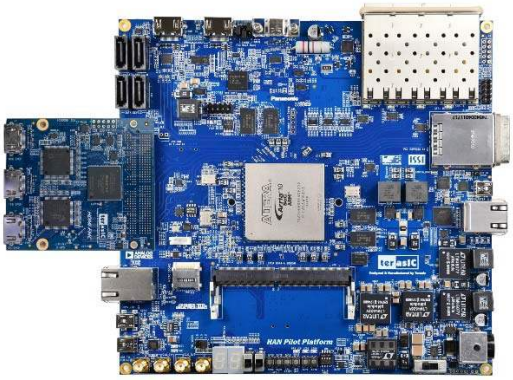
- **Connect XTS-FMC**

- **Connect D8M-FMC**

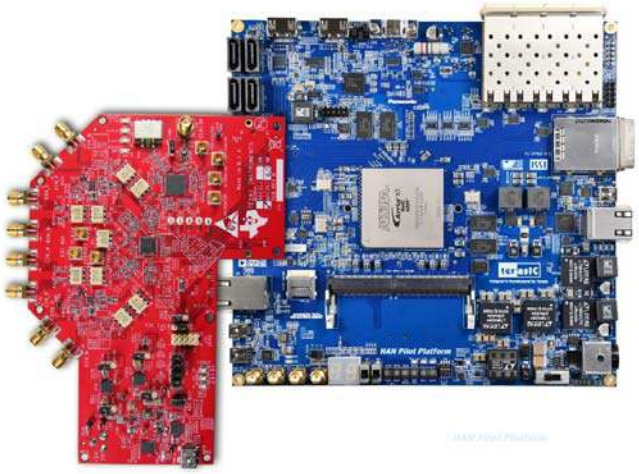
- **Connect 12G SDI-FMC**



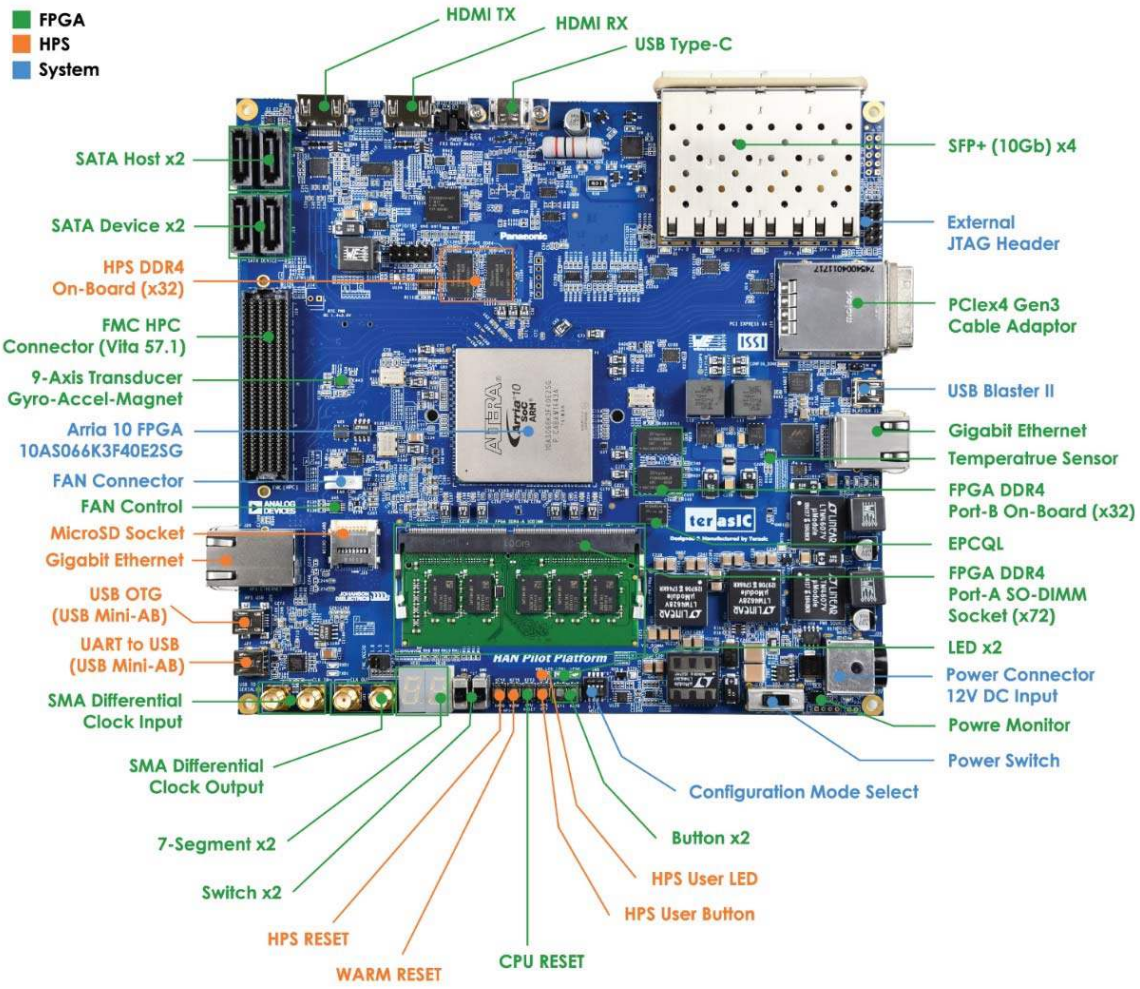
- **Connect HDMI-FMC**

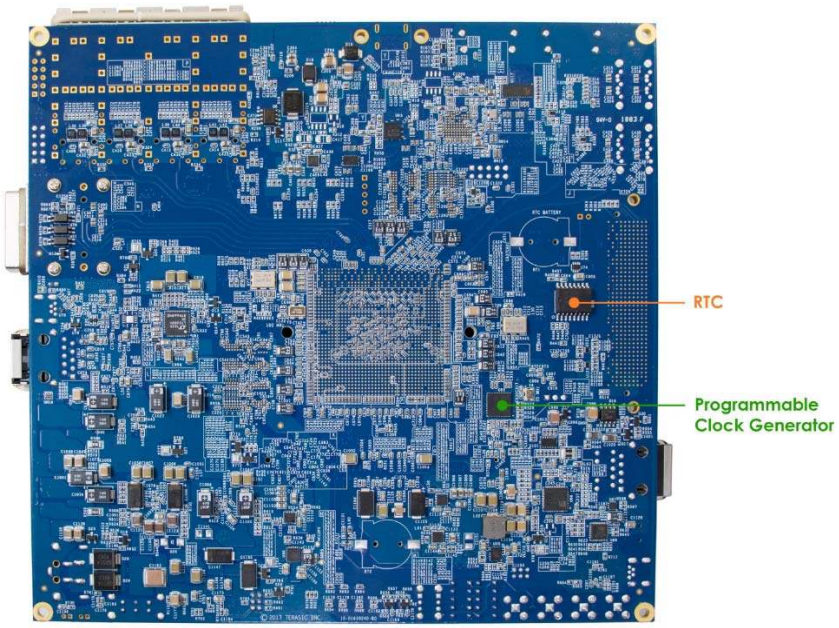


- **Connect TI JESD Board**



Layout





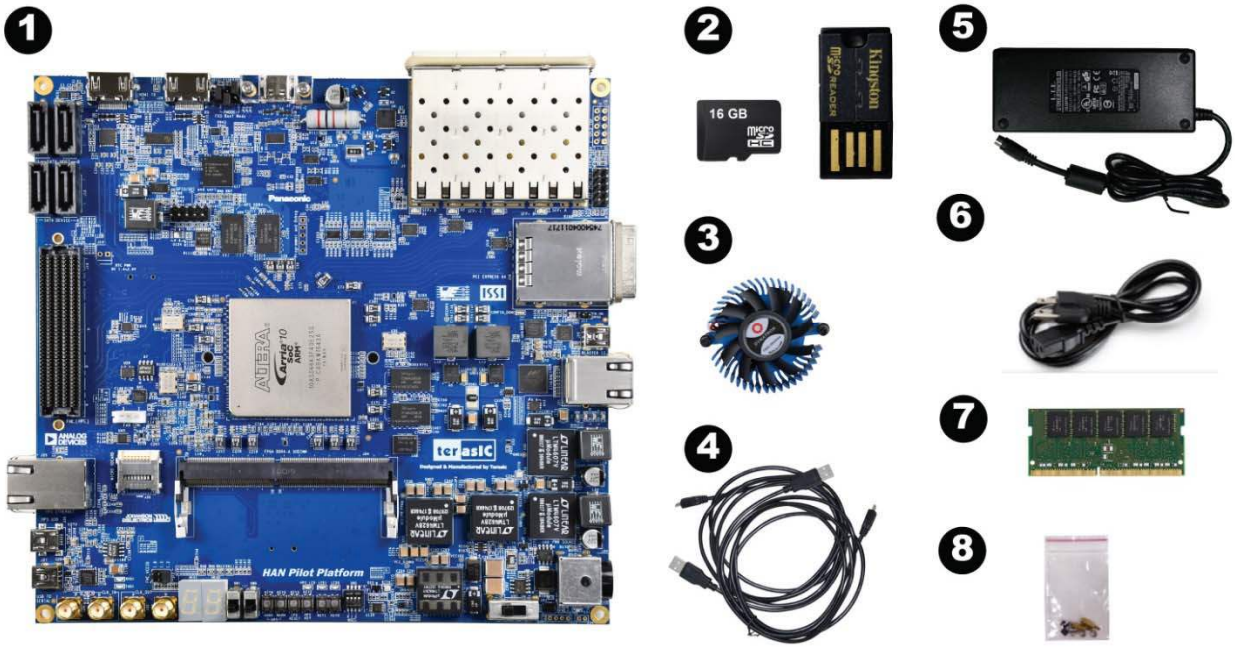
Resources

Linux BSP (Board Support Package): MicroSD Card Image

Title	Version	Size(KB)	Date Added	Download
Linux Console (Kernel 4.5)	1.0		2018-12-26	
Linux LXDE Desktop (Kernel 4.9.78-ltsi)	1.0		2018-12-26	

Please note that all the source codes are provided "as-is". For further support or modification, please contact ***Terasic Support*** and your request will be transferred to Terasic Design Service.
More resources about IP and Dev. Kit are available on ***Intel User Forums***.

Kit Contents



1. HAN Pilot Platform
2. MicroSD Card (Installed) and Card Reader
3. Fan (Installed)
4. Two Type A to Mini-B USB Cables
5. 12V DC Power Supply (Installed)
6. AC Power Cord (USA)
7. One 4GB DDR4 ECC SO-DIMM Module (Installed)
8. Screws, Copper Stands, and Silicon Footstands

No	Title
1.	[HAN] HAN Pilot Platform Part No: P0506 ▶ Weight: 2,300g