Supernova-M820
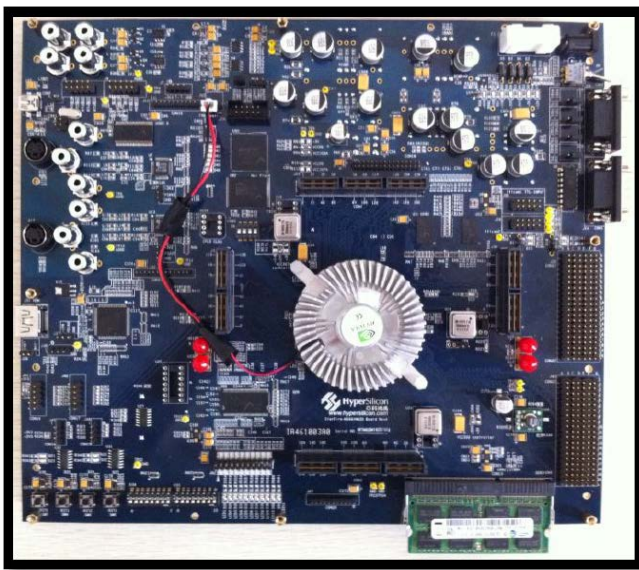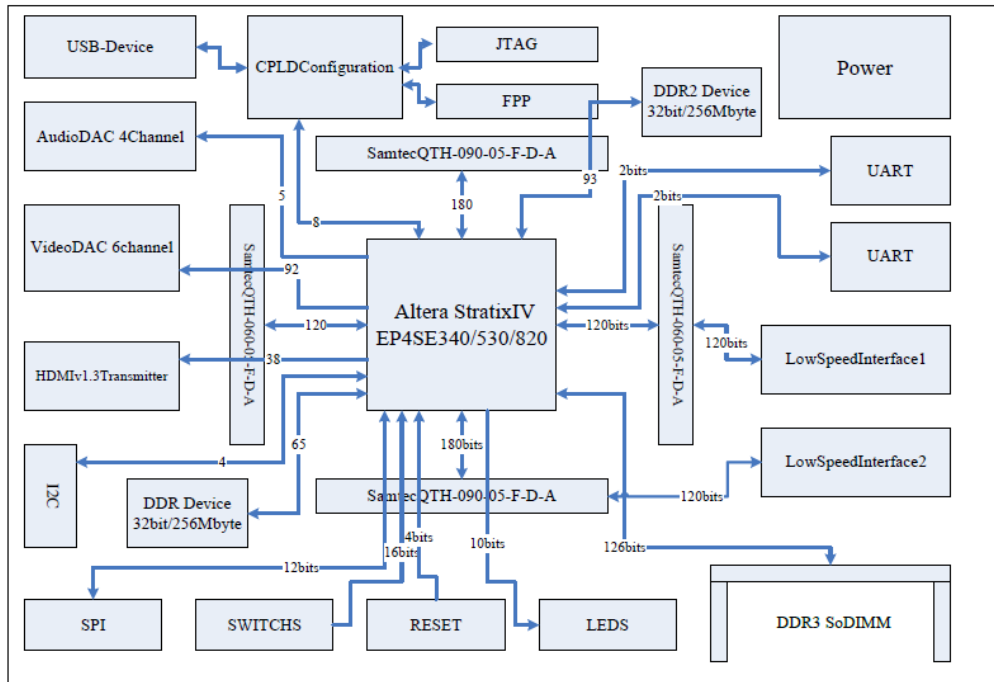
Wireless Communication System Evaluation Platform

Supernova-M820 : SNMB-M820

- Supernova-G820 is based on a piece of device of Altera. Stratix IV 820 that is equivalent to up to 8.2 Milion AISC gates to be prototyped. With highly flexible power, clock, memory, and peripheral configurations on board and many daughter boards extendable as well.

- Supernova-M820 is a powerfull tool for the software/hardware co-development, enable users to greatly shorten the time to market on their design projects.

- Supernova-M820 prototype board supports SOC/ASIC and IP design verification on Wireless communication, Digital TV, STB, PMP, mobile multi-media, and any other Video/Audio related designs.

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Diagram of system

Block diagram labels:

- USB-Device
- CPLDConfiguration
- JTAG
- FPP
- DDR2 Device 32bit/256Mbyte
- Power
- AudioDAC 4Channel
- SamtecQTH-090-05-F-D-A — 93 — 2bits — UART
- VideoDAC 6channel — 5 / 8 / 180 — 2bits — UART
- SamtecQTH-060-05-F-D-A — 92
- Altera StratixIV EP4SE340/530/820
- 120 — 120bits — SamtecQTH-060-05-F-D-A — 120bits — LowSpeedInterface1
- HDMIv1.3Transmitter — 38
- I2C — 4 / 65 — 180bits — LowSpeedInterface2
- DDR Device 32bit/256Mbyte
- SamtecQTH-090-05-F-D-A — 120bits
- 12bits / 16bits / 4bits / 10bits / 126bits
- SPI — SWITCHS — RESET — LEDS — DDR3 SoDIMM

Key features

- One piece of Altera Stratix IV EP4SE820 FPGA, capable of up to 8.2 Millions of ASIC gates prototyped
- Slackable for two or more main boards, for higher capacity
- 20-layer PCB with impedance control, frequency on board in no less than 166 MHz
- With both SAMTEC high speed connectors and common 2.54 mm connector, ensure high quantity extension. (ZYNQ-7000 daughter board, MIMO RF daughter board, etc)
- Standard DDR3-Sodimm expansion interface. Actual test frequency at 667Mhz
- 2 pieces of DDR II Memory parallel connected, 32bit data width,533MHz clock , up to total 512 M
- 2 pieces of DDR Memory parallel connected, 32 bit data width, 167MHz clock, up to total 256M
- DAC: 6 standalone channels of high speed DAC at 240Msps, 10bit, Supporting S-Video output and RGB/YUV3
- HDMI transmitter 165MHz, HDMI v1.3/DVI v1.0/HDCP v1.2 supporting all the video formats up to 1080P HDTV and UXGA (1600 1200@60Hz)supporting   audio format of S/PDIF and 8 channels of I2S.
- Several best-in-class power modules, ensure good power quality for daughter boards as well
- 2 SMA connectors available for high speed differential external clock input
- 2 RS232 interfaces 2 I2C interfaces, 2 SPI interfaces
- 600 extension IO ports, 300 of them are in differential standard
- ISO9000 certified manufacture process, solid mechanism

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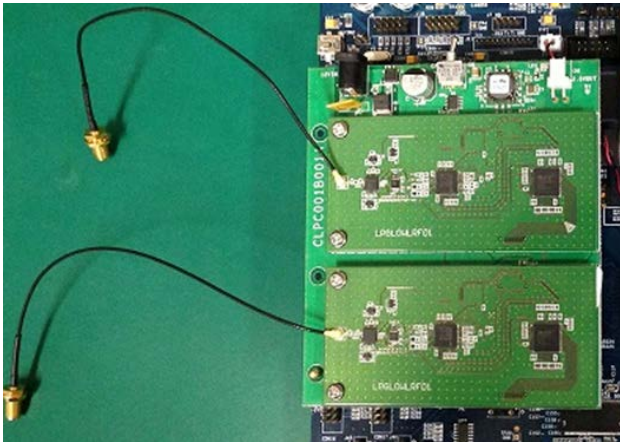
MIMO RF daughter board Supported : SNDB-RF001

- Type1 : Wireless LAN
  - 2.4GHz/5GHz dual channel
  - Up to 40MHz bandwidth
  - 80MHz will be supported
- Type2 : Software Defined Radio (SDR)
  - 70MHz to 6GHz
  - Up to 56MHz bandwidth
  - Multiple purpose

Several processors Supported : SNDB-MPU001

- ARM cortex-A9 processor in ZYNQ-7000
- Several soft-core processor can be easily integrated
- Universal CPU, Multimedia DSP
- Processor with the AMBA bus bridge (AHB, AXI), to support AMBA BUS SOC design and simulation
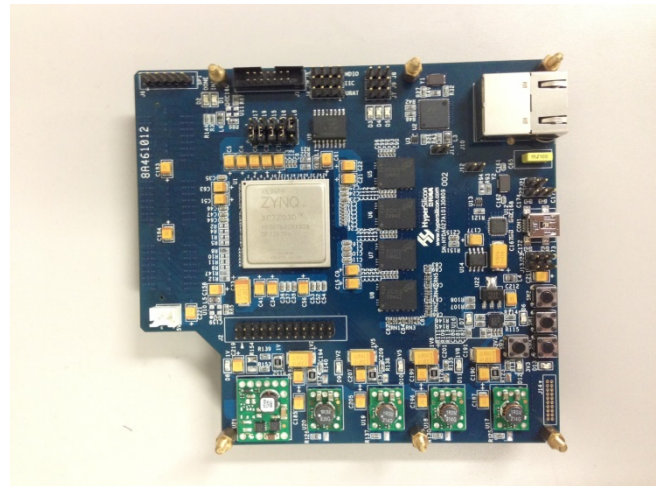
Some daughterboard Supported

- Supernova-M820 is equipped with four expansion connectors to connect daughter boards such as the MIMO RF and Several processors daughter boards that are shown in above. Other daughter boards are following,
  - USB
  - Ether
  - VGA
  - Memory
  - SD card
  - Etc…

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