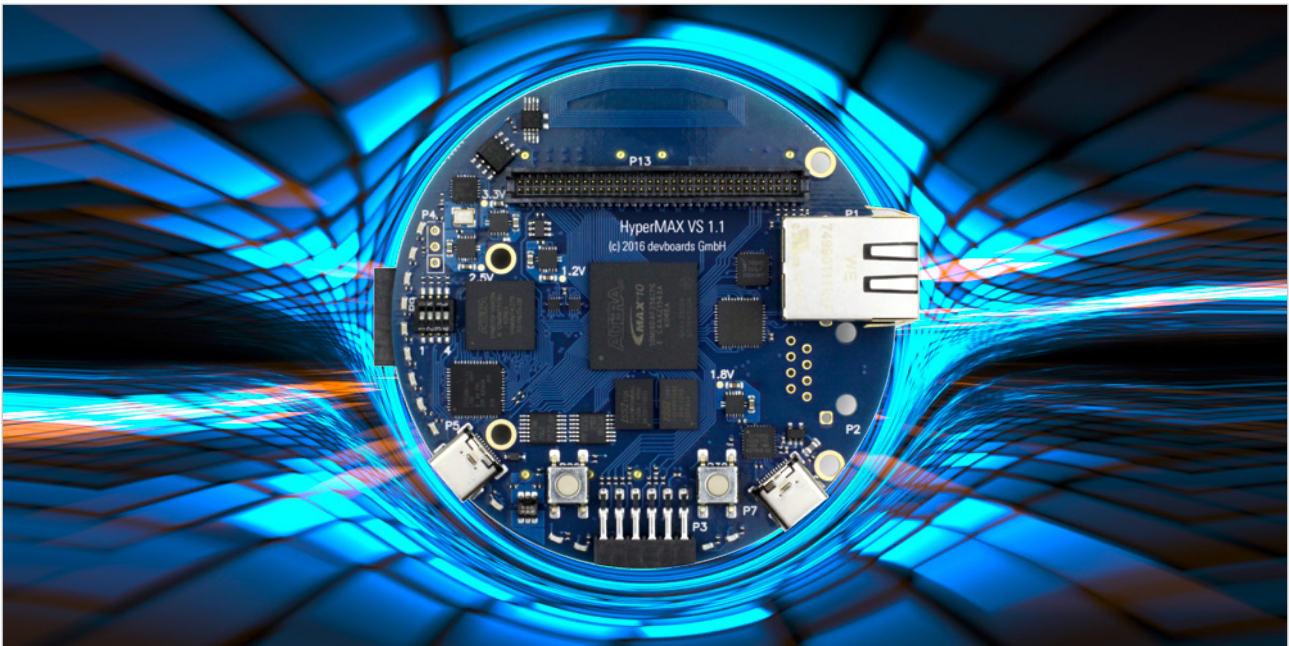




HyperMAX –

Integrated, High Performance
and Innovative MAX10 FPGA Development Board

ALTERA®

BROADCOM
connecting everything.

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HyperMAX -

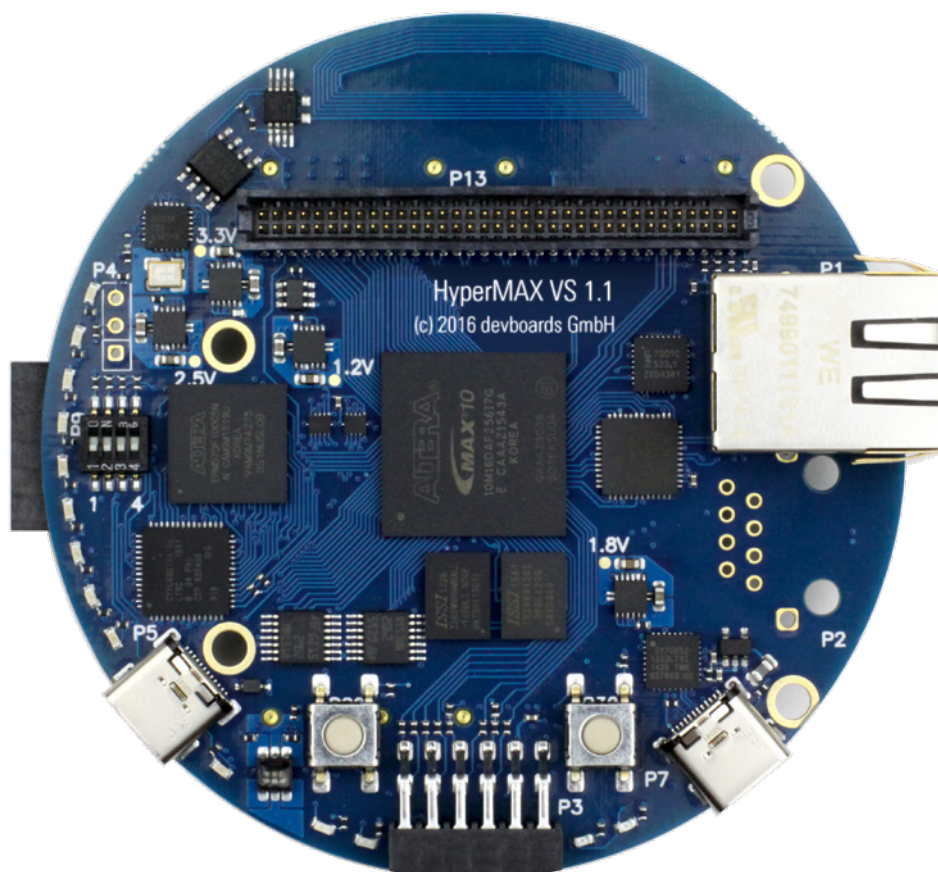
Integrated, High Performance and Innovative MAX10 FPGA Development Board

HyperMAX is a development board for the **ALTERA MAX10 FPGA** family and it demonstrates unique new features like:

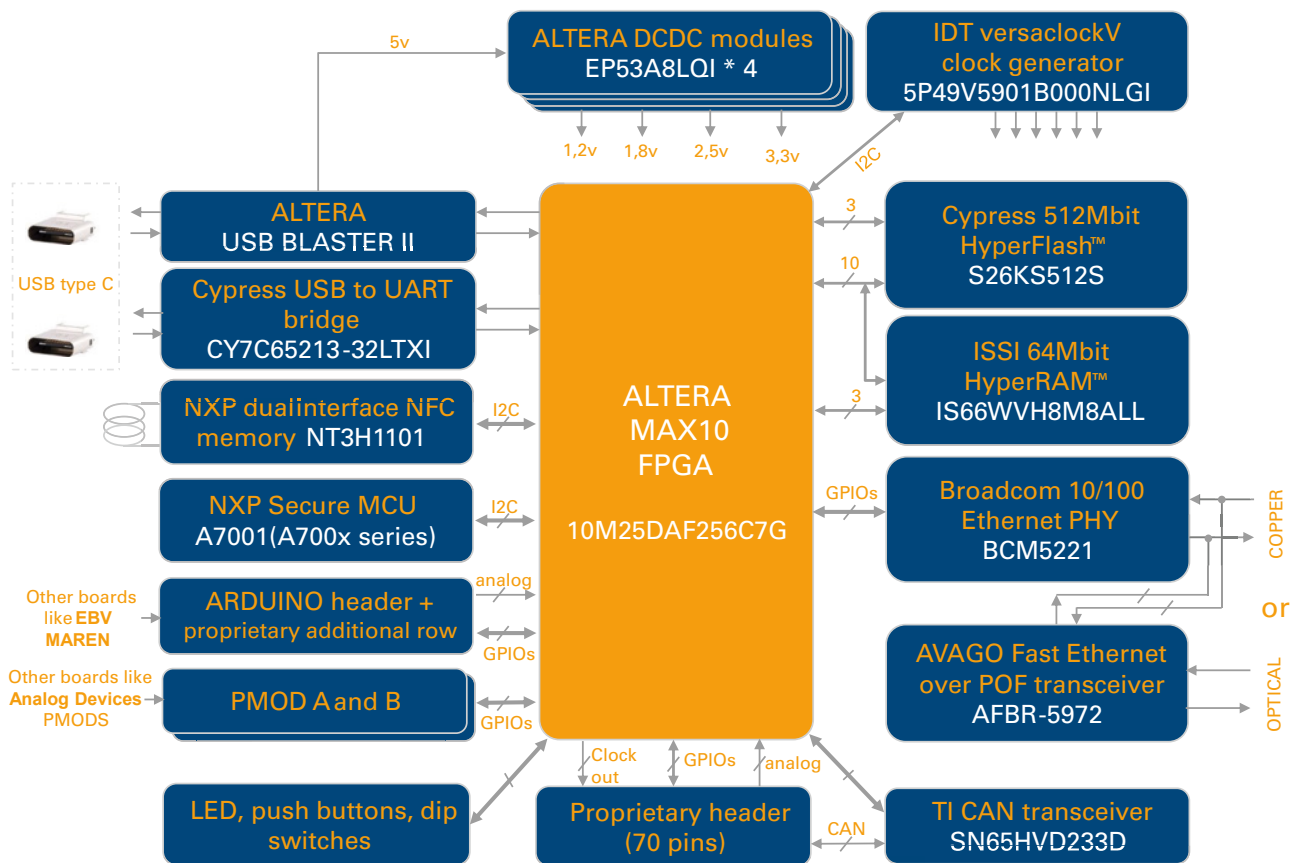
- **MAX10 FPGA series:** a very integrated (configuration / user memory, ADCs) low cost family associated with a wide device derivatives range, compatible with the NIOS® II versatile embedded processor and transforming **MAX10 in a flexible, customisable microcontroller**
- **Hyperbus™** memories (**HyperRAM** and **HyperFlash™**) using a reduced pin count interface, optimizing board space but maintaining high performances level
- **USB type C connectors** showing easy to use and compact form factor
- On board **security** chip for best in class IP protection, secure authentication

Apart from being highly performant, very integrated and secured, **HyperMAX** is also a flexible and is the choice to prototype a more complex / complete system by providing:

- Various **connectivity** options (NFC dual interface memory, CAN, optical or copper fast Ethernet, USB to UART)
- **Expansion features** (PMOD, ARDUINO and proprietary)
- **Self-sufficient development tool** (debug / programming USB integrated interface, USB powered, USB to UART interface...)



HyperMAX Development Board



HyperMAX Block Diagram

BOARD FEATURES

FPGA Subsystem

- ALTERA MAX10 10M25DAF256C7G
 - 25 K logic elements
 - 675 kbit RAM
 - 55 multiplier
 - 4 PLLs
 - 2 ADCs with 16 inputs
 - Temperature sensing diode
 - Dual configuration Flash (32 to 400kbit user flash)
- ALTERA EP53A8LQI DCDC modules providing 1.2 v, 1.8 v, 2.5 v and 3.3 v rails
- Embedded ALTERA USB-Blaster II for MAX10 programming / debugging
- Cypress 512Mbit HyperFlash™ Flash memory
- ISSI 64 Mbit HyperRAM™ DRAM memory
- IDT Versaclock V clock generation

Connectivity

- Broadcom BCM5221 10/100 Ethernet PHY with either copper or optical options (AVAGO AFBR-5972 Fast Ethernet over POF)
- NXP NT3H1101 NFC NTAG I2C memory with 1 kbit EEPROM
- CAN Transceiver
- Cypress USB to UART bridge with USB type C connector

Security

- NXP A7001 Secure authentication microcontroller

Expansion Features

- Arduino pinout associated with a proprietary double row allowing EBV MAREN daughter board (www.ebv.com/maren) compatibility; enabling various sensors, Bluetooth Low Energy connectivity and extension capabilities like WIFI, SIGFOX connectivity
- 2 PMODs headers (2*6 pins) to connect Analog Devices PMODs compatible boards
- Extension connector (46 GPIOs, CAN, 4 ADC input channels, 2 clock outputs)

User Interaction

- 2 push buttons and 2 DIP switches
- 8 single color LEDs and RGB LEDs

DELIVERABLES

- HyperMAX board
- USB type C– type A cable
- Demonstration project including EBV QSYS components for HyperRAM and HyperFlash memories and demonstrating many board features, expansion capabilities
- Training material to become familiar with tools, NIOS® II and many more
- User manual, design files

More information: www.ebv.com/hypermax

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