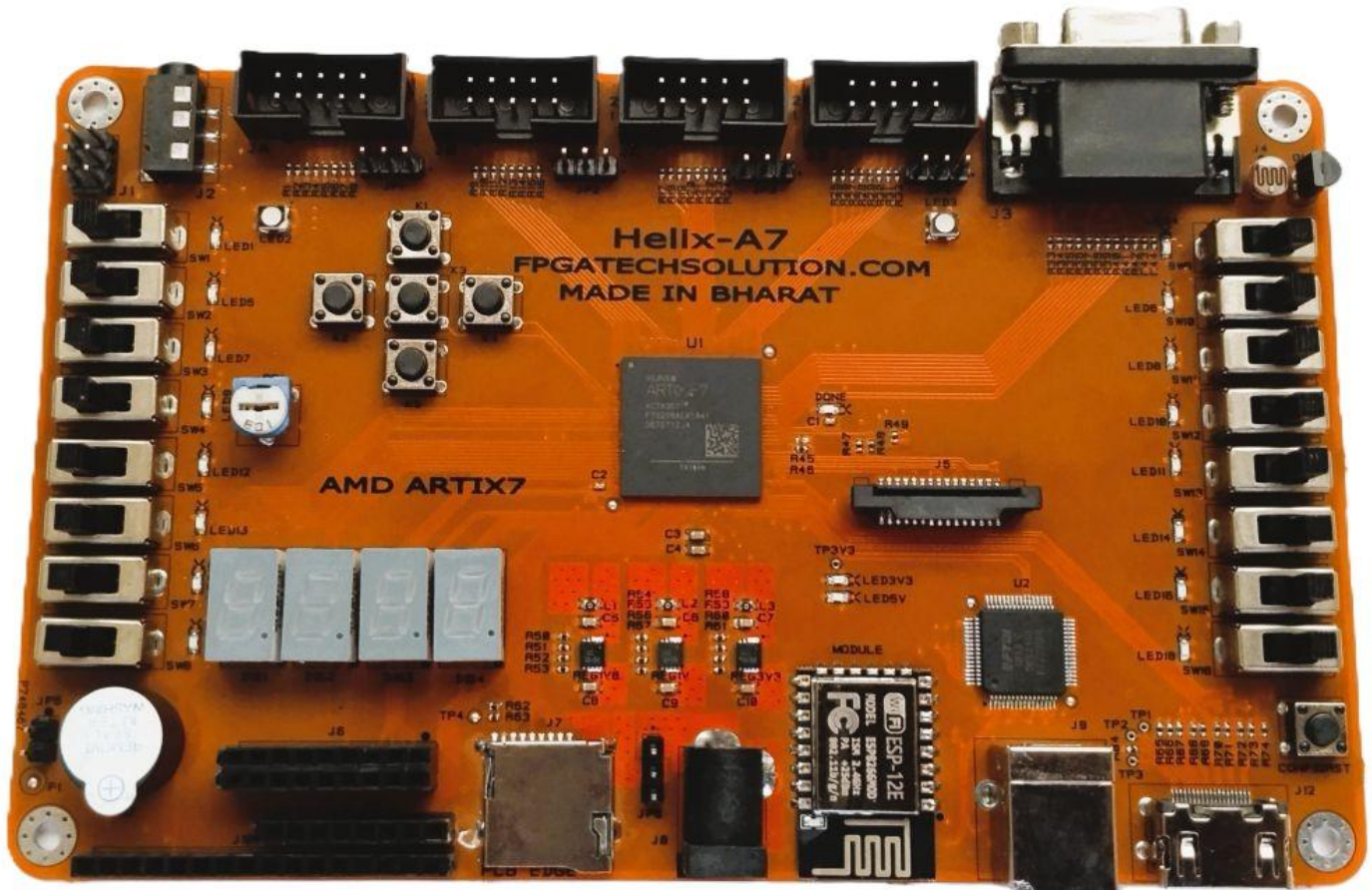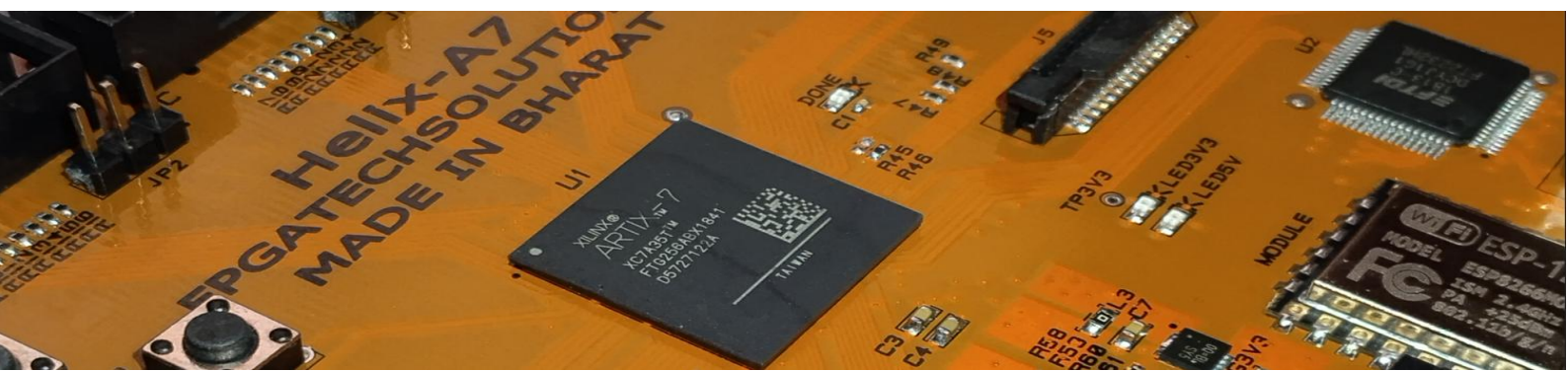**FPGA TECH SOLUTION**

SOLUTION AHEAD

The HELIX-A7 board is a complete, ready-to-use digital circuit development platform based on the latest Artix7 Field Programmable Gate Array (FPGA) from Xilinx. With its high-capacity FPGA (Xilinx part number XC7A35T-1FTG256C ARTIX7), low overall cost, and collection of USB, VGA, HDMI and other ports, the HELIX-A7 can host designs ranging from introductory combinational circuits to complex sequential circuits like embedded processors and controllers.
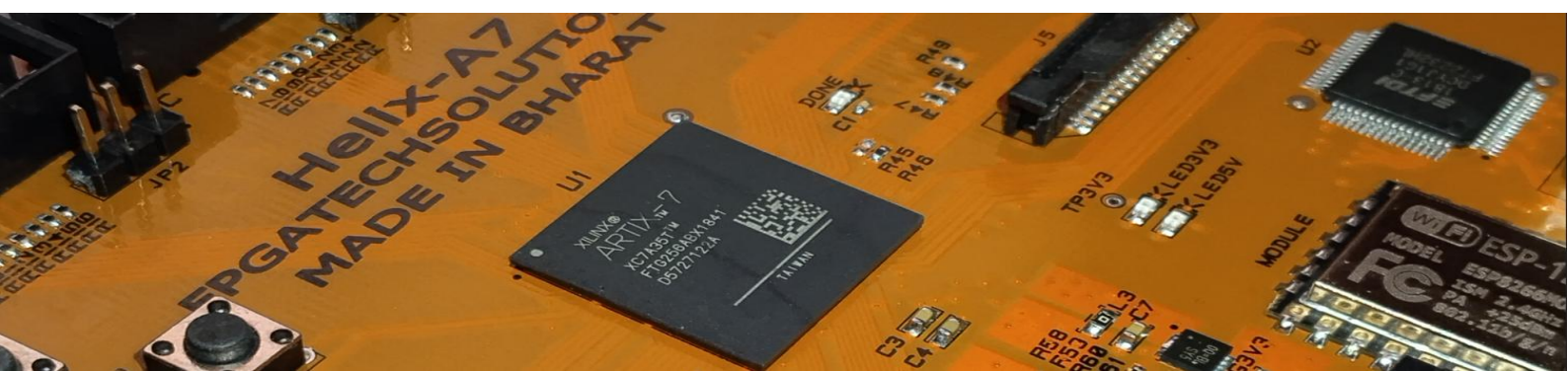
It includes enough switches, LEDs and other I/O devices to allow a large number designs to be completed without the need for any additional hardware, and enough uncommitted FPGA I/O pins to allow designs to be expanded using GPIO or other custom boards and circuits. An advantage of Artix7 over Spartan 6 is more logics resources and fully compatible with Vivado design suite. Xilinx offers **free** WebPACK™ versions of Vivado design suite, so designs can be implemented at no additional cost.

The HELIX-A7 board has on board USB JTAG which support Vivado & vitis. HELIX-A7 FPGA kit is ready to use Laboratory kit for ECE Curriculum. It can be useful for developing basic to advanced level digital circuits.

Technical Specification

- Xilinx XC7A35T-1FTG256C ARTIX7, 12,800 logic cells in 5000 slices
- MIPI-CSI 5MP Camera connector on board
- OV7670 camera connector on board
- 16 user switches
- 16 user LEDs
- 4 user pushbuttons
- 100MHz clock
- 4-digit 7-segment display
- Three GPIO ports (24GPIO), can be used for 12 diff channel xadc
- ESP-12E WiFi
- Buzzer &
- Two RGB LED
- HDMI out
- 12Bit VGA output
- USB-UART
- Serial Flash 32Mbit
- LM35 temperature sensor connected to XADC pin
- LDR connected to XADC pin
- Preset connected to XADC pin
- 8Bit SPI DAC
- SD CARD
- Stereo 3.5mm Jack (Audio out)
- USB-JTAG port for FPGA programming (support Vivado)

- OV7670 VGA camera   (Add on)
- Matrix keypad 4x4   (Add on)
- MIPI-CSI 5MP Camera   (Add on)
- TFT display 160×128   (Add on)
- RTC module   (Add on)
- OLED display 128*32   (Add on)
- Relay driver board   (Add on)
- Lab Protection Box   (Add on)

Applications

- Product Prototype Development
- Development and testing of custom embedded processors
- Signal Processing
- Communication devices development
- Educational tool for Schools and Universities

Package includes

- HELIX-A7 FPGA board
- USB cable
- 16BY2 LCD

Note: this board can be available with your Name on it