NewAE Technology Inc.
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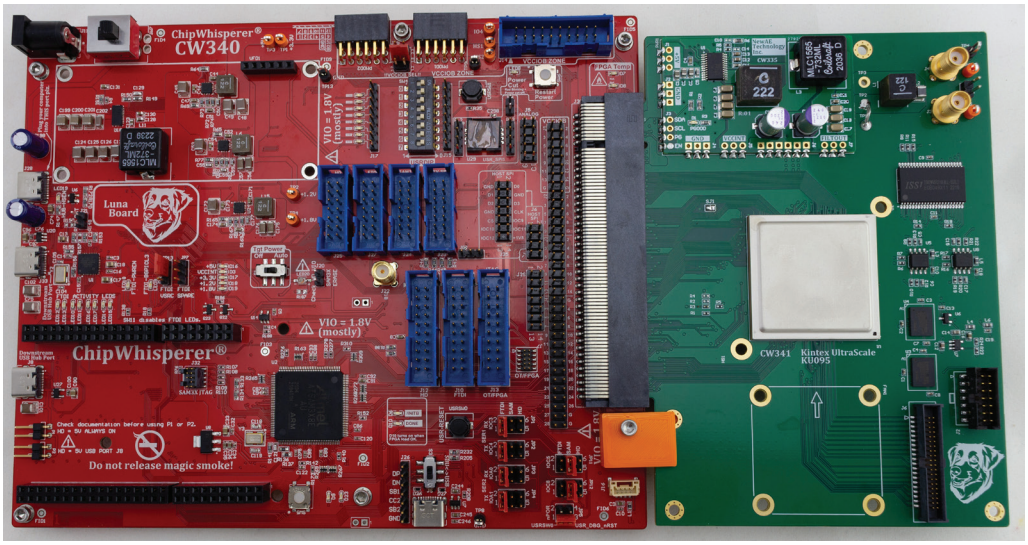
ChipWhisperer® Embedded Security Analysis Tools
Advanced FPGA Targets

CW340 OpenTitan Kit

Product Datasheet



This CW340 OpenTitan Kit includes both the CW340 baseboard and the CW341 Kintex UltraScale KU095 FPGA. This massive FPGA is designed for implementing the entire OpenTitan design, and is supported by the OpenTitan project.

The CW340 baseboard breaks out all of the OpenTitan signals. These can be routed to the quad-channel FTDI chip or a custom USB microcontroller (SAM3X).

The USB microcontroller (SAM3X) provides high-speed FPGA configuration using the parallel SelectMAP interface, along with temperature monitoring of the FPGA. The ST STM32L552 Nucleo board can be mounted onto the CW340, which can be loaded with HyperDebug firmware for additional debug support. An on-board USB hub simplifies the development process, including usage of board in remote access setups.

An optional VFD display (not included) can be mounted for expanded local feedback.

Product Highlights

Includes the following:

- NAE-CW340 Main Board
- NAE-CW341 XCKU095-1FFVA1156C Kintex UltraScale FPGA Target Board
- AC-DC Power Adapter
- Cables & jumpers

See online documentation for more information on the CW340 and CW341, including schematic and user manual.

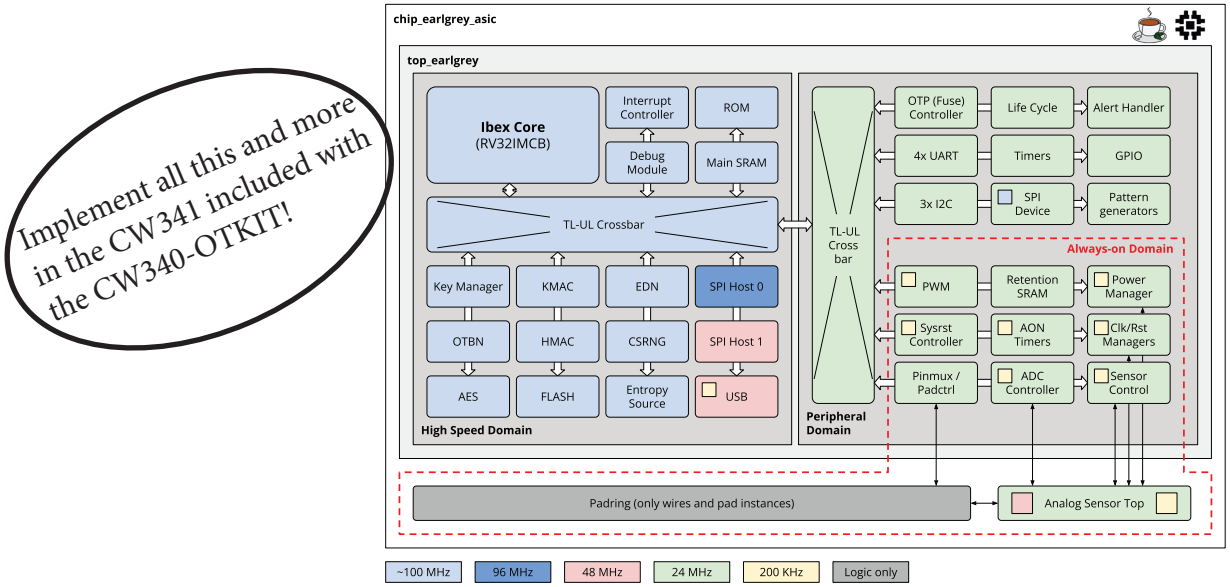
Ordering Summary

NAE-CW340-OTKIT Kit of CW340 & CW341, designed for OpenTitan emulation.

Product Links

Full Product Documentation	https://rtfm.newae.com/Targets/CW340%20Luna%20Board/
Product Schematic & More	https://github.com/newaetech/cw340-luna-board

OpenTitan Enabled



The CW340-OTKIT includes the large XCKU095-1FFVA1156C Kintex UltraScale FPGA on the CW341 FPGA card. This allows emulating the OpenTitan design, allowing you to experiment with a secure open-source root of trust. Being designed for use with OpenTitan, the CW340-OTKIT includes out-of-the-box support for rapid bitstream loading using the OpenTitan tools, and has supported debugging using the FTDI based JTAG interface in OpenOCD.

In addition, the CW341 daughtercard is designed to simplify electromagnetic (EM) or power based side-channel analysis (SCA). The KU095 package includes a heat spreader, but the CW341 board allows easy access to the sides of the FPGA for removal of the heat spreader. In addition, the board is ready to be turned into a shunt-based measurement platform by removing the relevant decoupling capacitors.

Disclaimers