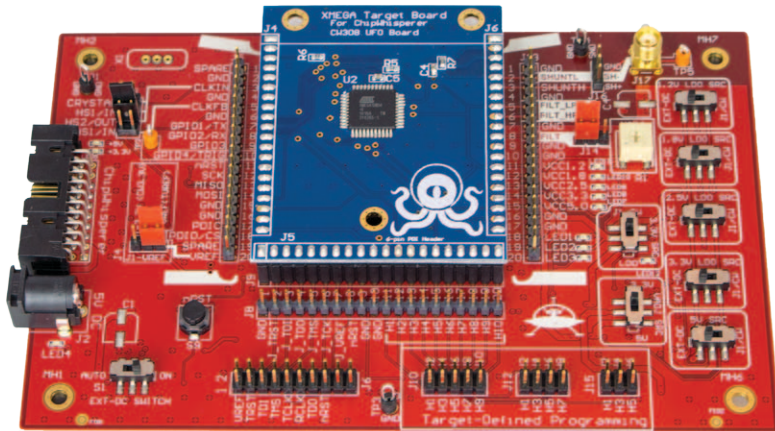




CW308 UFO Target Board



Get probing! The ChipWhisperer CW308 UFO board is the ultimate starting point for side-channel power analysis attacks when combined with a ChipWhisperer Capture solution. The CW308 puts all the standard requirements onto one board (such as power supplies, oscillators, filters) allowing you to make super-simple target victim boards.

A large variety of available target examples provides all levels of architectures for you to test against including 8-bit microcontrollers, 32-bit microcontrollers, and FPGAs.

Product Highlights

1.2V, 1.8V, 2.5V, 3.3V, and V-ADJ (1.25V - 3.5V range) power supplies.

Oscillator driver with crystal socket to allow use of most 2 or 3-pin crystals to drive target device or ChipWhisperer.

On-board LC low-pass filter to provide “clean” power supply for resistive shunt measurement.

Diode protection on I/O lines to allow voltage glitch insertion on target with less risk to connected devices.

Soft-start on input power to avoid disconnecting ChipWhisperer-Lite USB when switching power on/off.

Includes 8-bit Atmel XMEGA and 32-bit STM32F3 (Cortex M3) target devices.

Ordering Summary

NAE-CW308

Includes base-board, two targets, and additional accessories (see detailed ordering description).

NAE-CW308-ACCKIT

Includes 5.0V power supply & SMA-BNC cable. Connects board to regular oscilloscope (not used with ChipWhisperer-Capture).

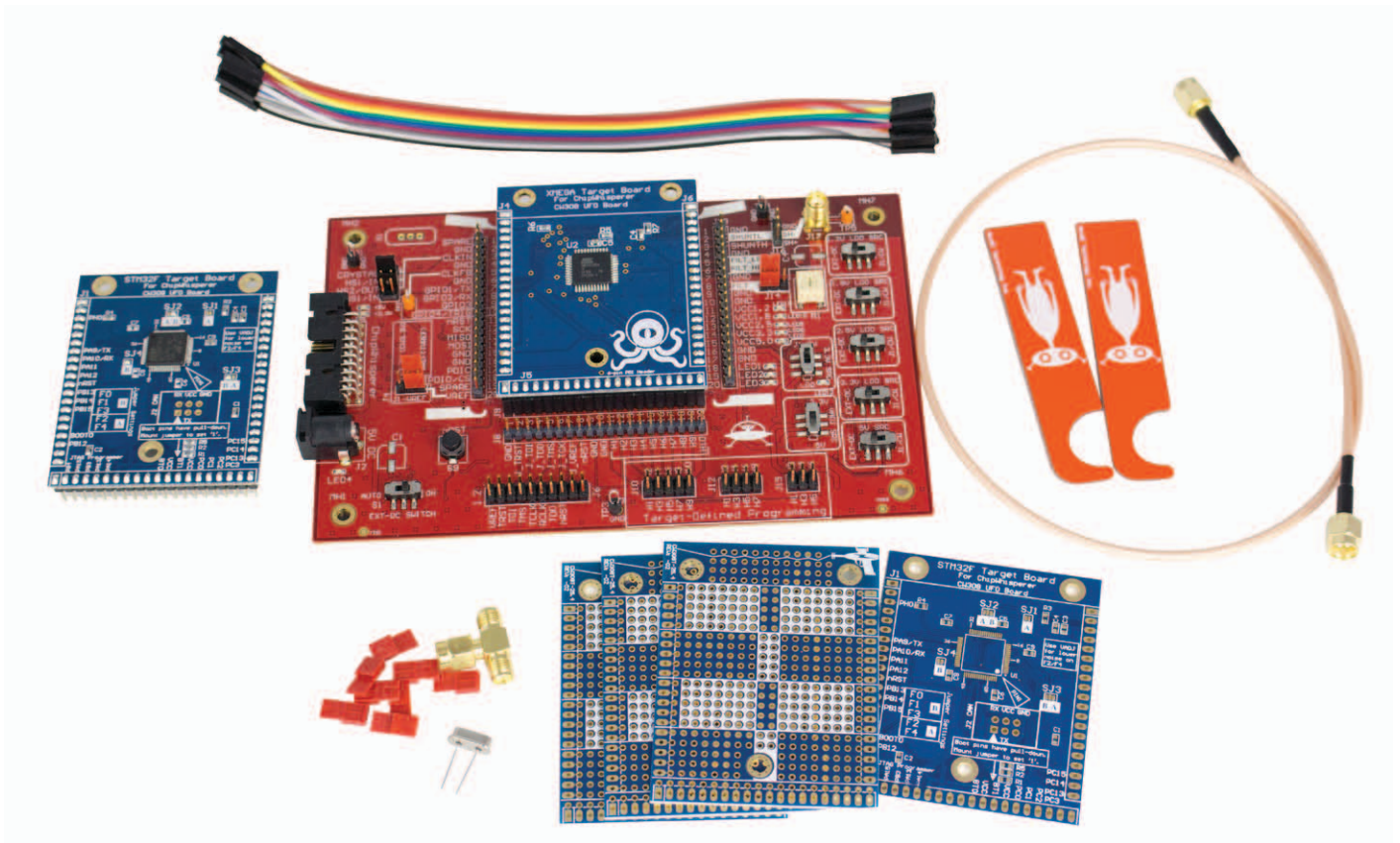
Product Links

Full Documentation

<http://cwdocs.com/cw308>

Detailed Ordering Options

NAE-CW308



The CW308 comes with the following parts (shown above)

- CW308 Main Board
- CW308T-XMEGA Target Board (Atmel 8-bit microcontroller)
- CW308T-STM32F3 Target Board (ARM Cortex M3)
- CW308T Prototyping Boards (2.54mm prototyping board)
- NPCB-CW308T-STM32F Blank PCB (Fits STM32F0, F1, F2, F3, F4)
- Target Removal Tool
- 7.37 MHz crystal
- 8x jumper wires
- 30 cm SMA cable
- SMA Tee

NAE-CW308-ACCKIT

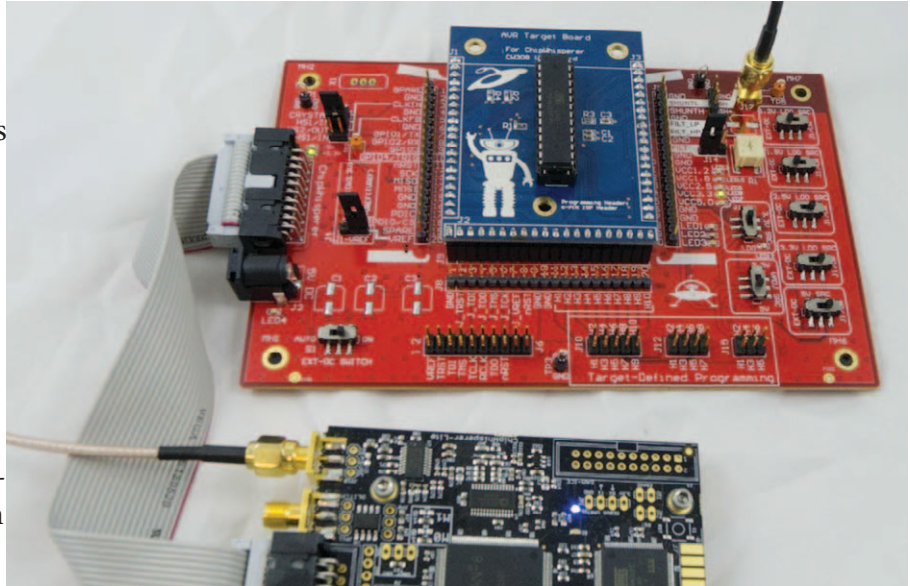
The accessory kit includes the additional required parts for powering the board stand-alone. The kit consists of the following items:

- 24 inch SMA to BNC Cable, Johnson P/N 415-0028-024
- 5.0 VDC Power Supply, XP Power P/N VER12US050-JA

ChipWhisperer Capture

The CW308 seamlessly connects to the CW1173 and CW1200 capture hardware. The capture hardware provides power, serial communication, clock, shunt resistor monitoring, and power and voltage fault injection capability.

Select devices (including the AVR, XMEGA, and ST-M32Fx) targets can be programmed from the ChipWhisperer, avoiding the need for an external programmer.

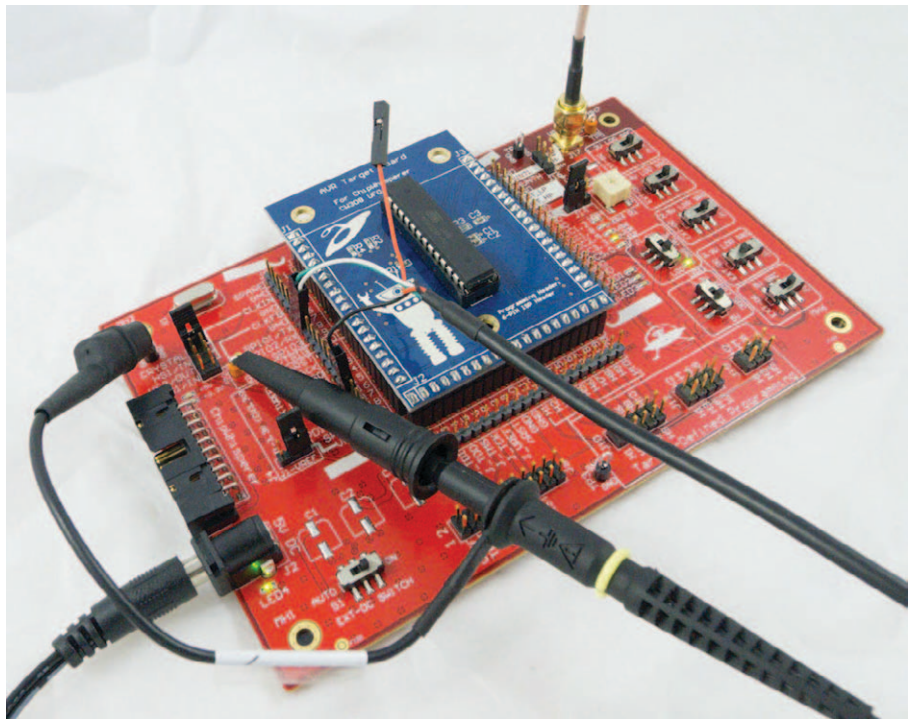


Stand Alone Usage

Stand alone usage is possible by connecting the SMA measurement port to an oscilloscope input, recommended with the SMA to BNC cable (available option).

The CW308T targets implement the Simple-Serial protocol (see <http://wiki.newae.com>), and will require a suitable 3.3V serial interface to send and receive data.

External programmers will be needed for all targets.



Full Documentation

See <http://cwdocs.com/cw308> for the UFO board documentation hosted at ChipWhisperer.com .

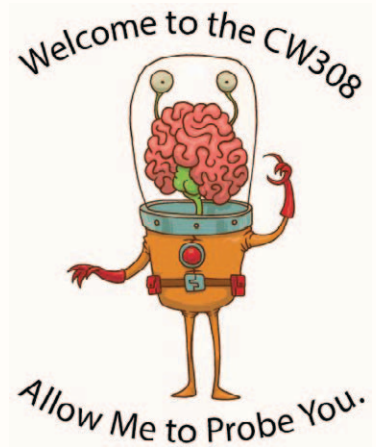
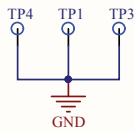
Schematic

Change Log

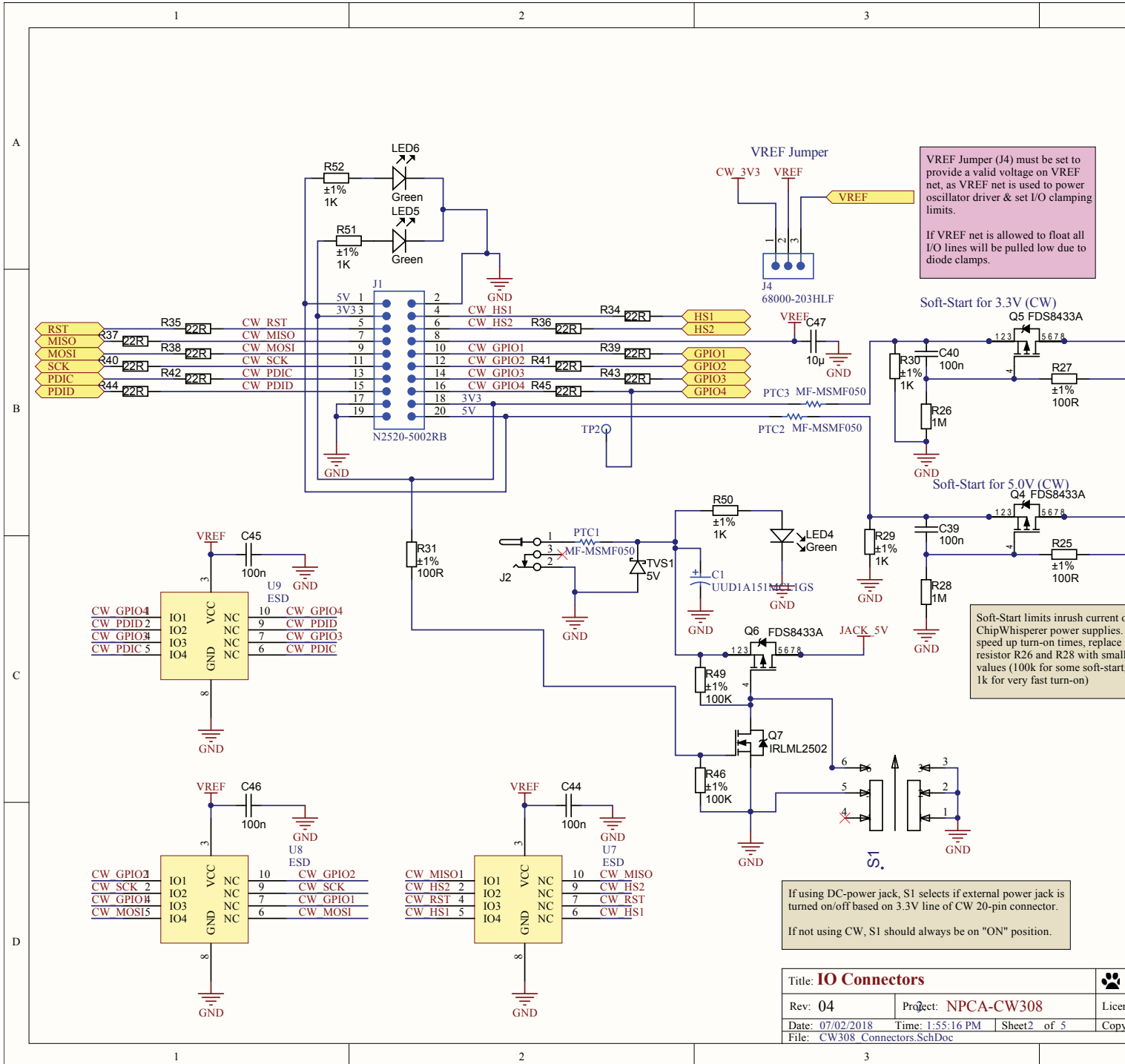
Changes in -04:
 *Addition of S9, R53
 *Removed C2/C3 (not used)

Changes in -03:
 * Change clock resistor.
 * Move switches slightly to give clearance for lifter board.
 * Add adjustable regulator & jumper to select FILTIN source.

Changes in -02:
 * Add test points for GND, Trig.
 * Add 100K pull-up on JTAG, nRST.
 * Fixed size of holes in XTAL pins.
 * Add pull-downs on capacitors.
 * LEDs moved from switches to beside terminals.
 * Addition of 5V switch.



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VREF Jumper (J4) must be set to provide a valid voltage on VREF net, as VREF net is used to power oscillator driver & set I/O clamping limits.

If VREF net is allowed to float all I/O lines will be pulled low due to diode clamps.

Soft-Start for 3.3V (CW)

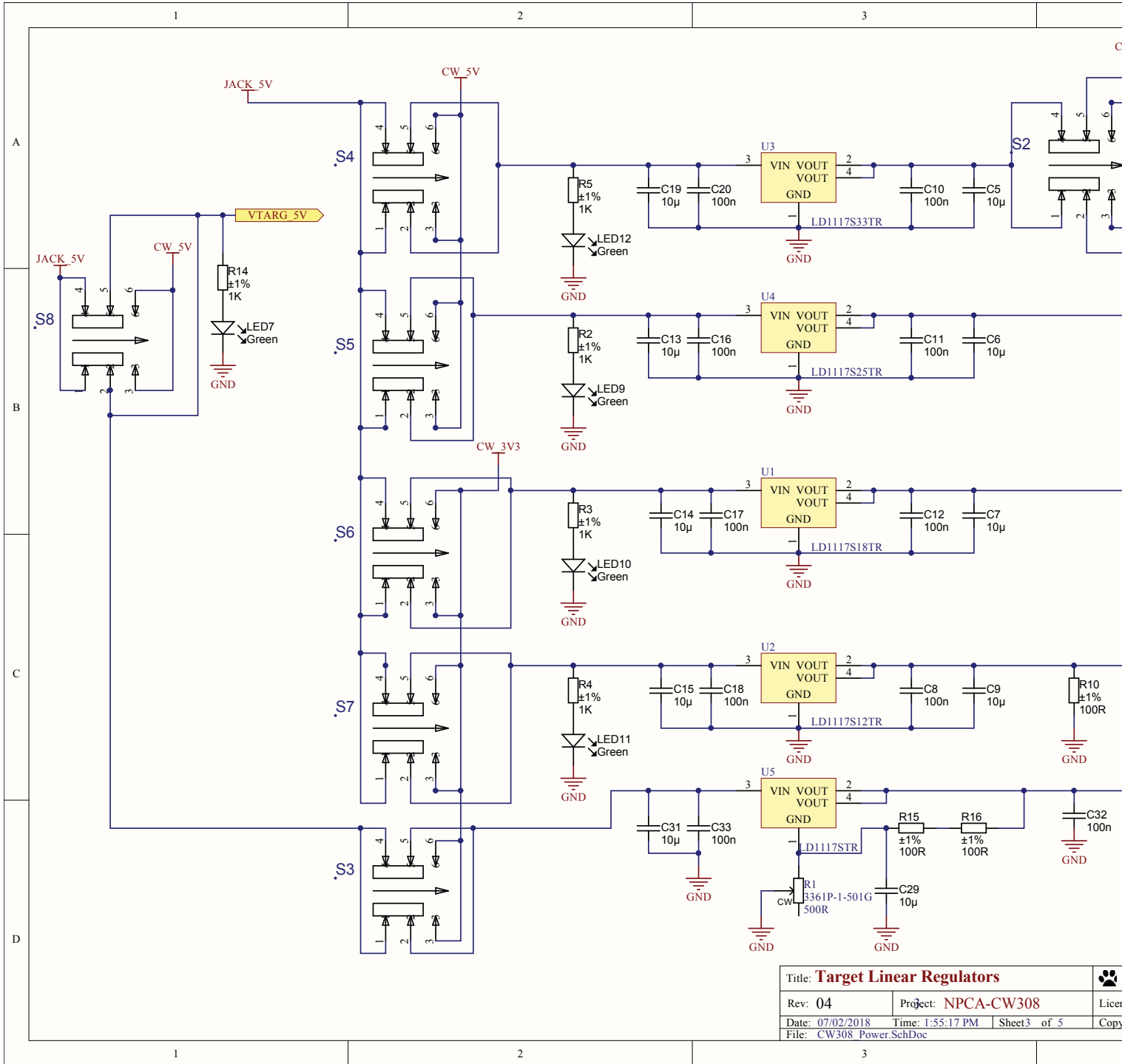
Soft-Start for 5.0V (CW)

Soft-Start limits inrush current of ChipWhisperer power supplies. speed up turn-on times, replace resistor R26 and R28 with small values (100k for some soft-start 1k for very fast turn-on)

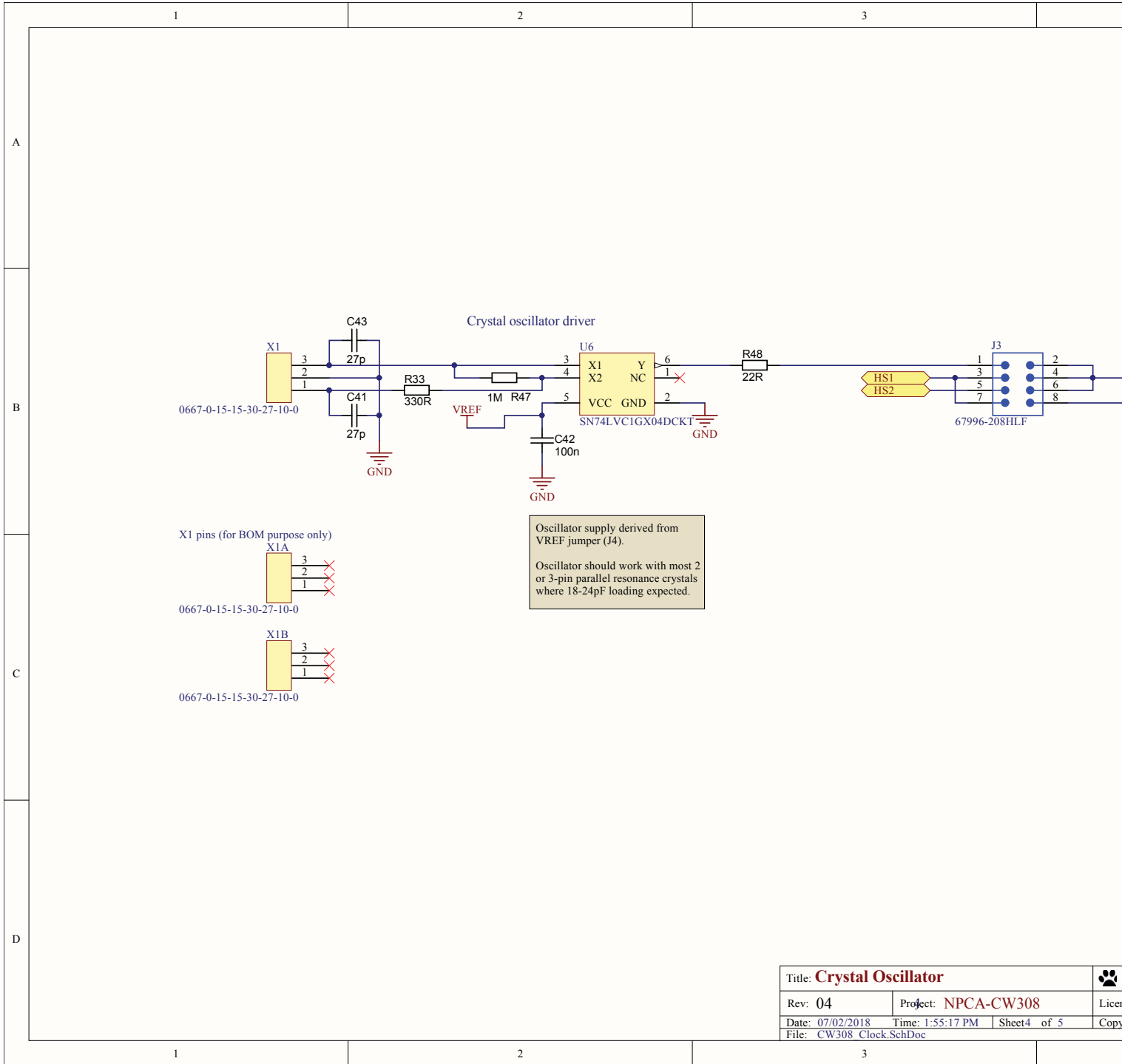
If using DC-power jack, S1 selects if external power jack is turned on/off based on 3.3V line of CW 20-pin connector.

If not using CW, S1 should always be on "ON" position.

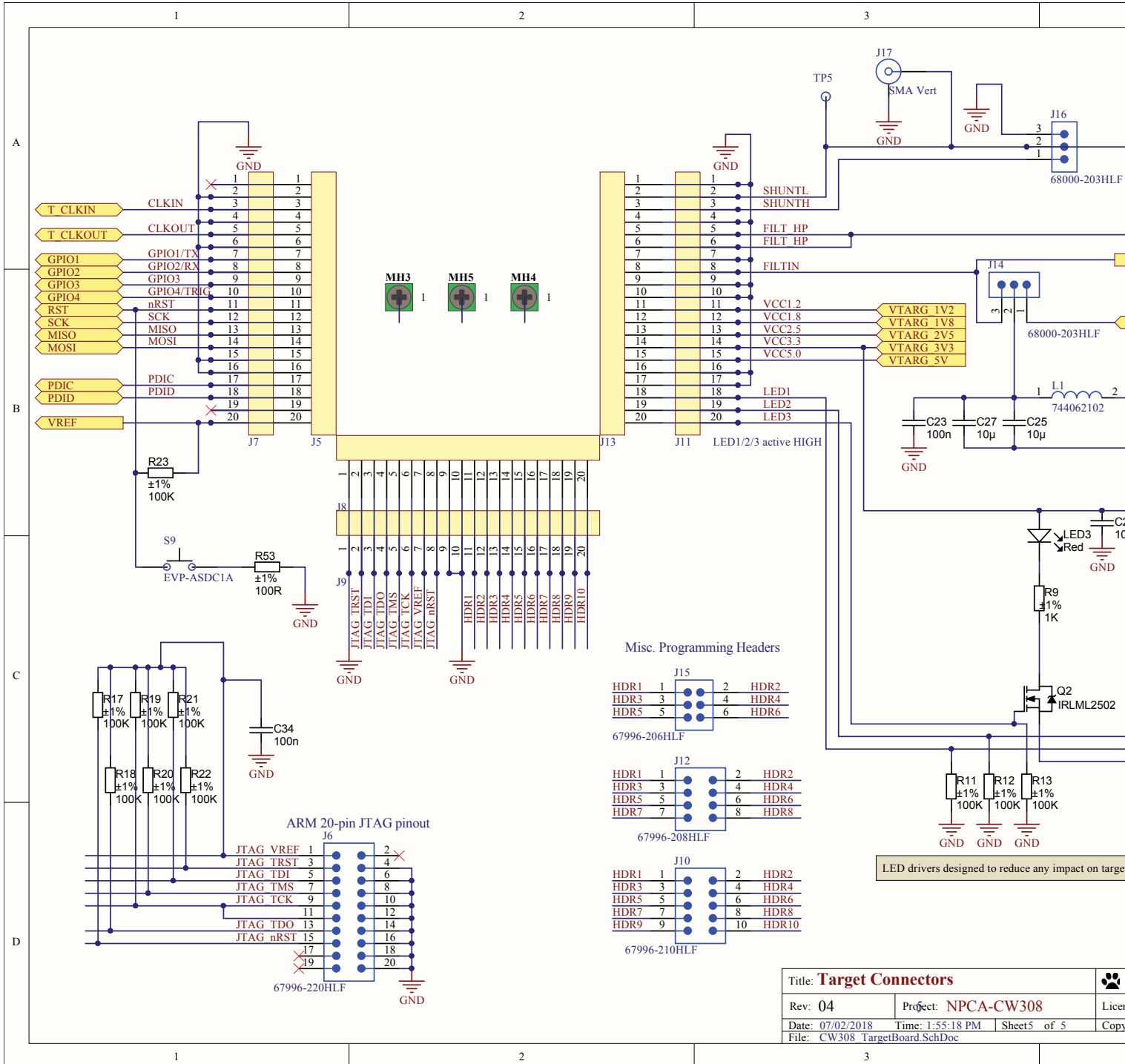
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Title: Crystal Oscillator		
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Title: Target Connectors		
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