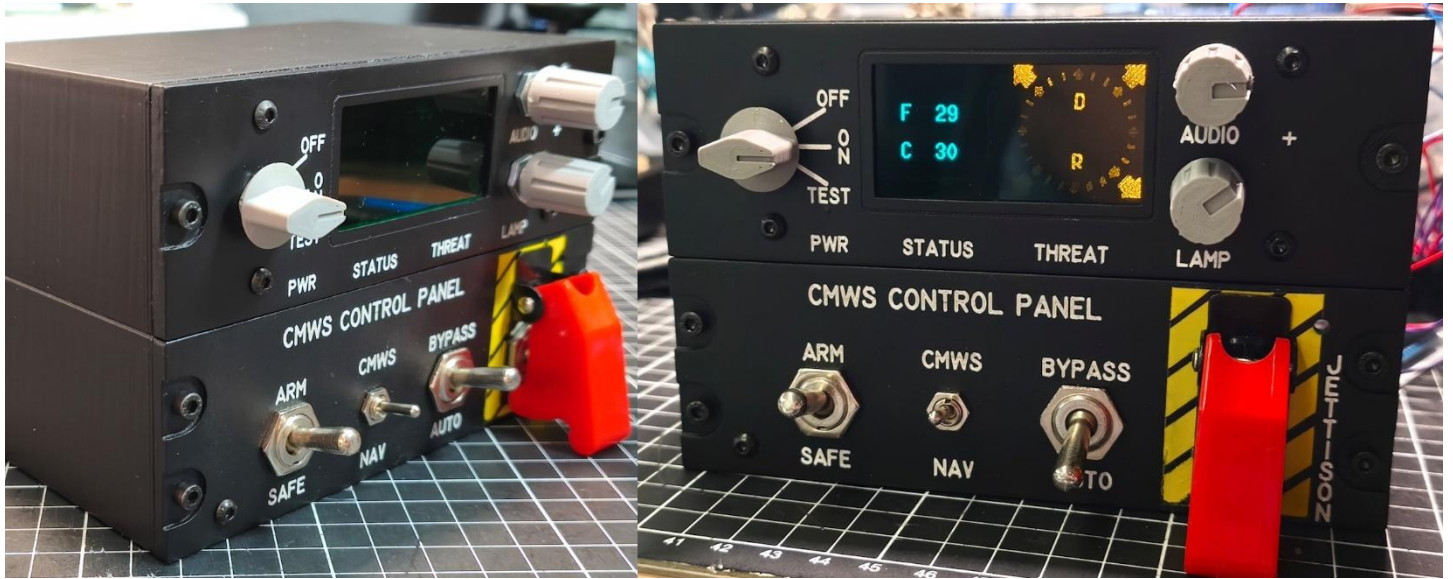# MilKris' CMWS for the DCS AH-64D Apache

DISCLAIMER: I'm not a professional maker! It's not perfect, but it works and I'm fine with the result. Here and there, some filing, drilling, and gluing might be necessary...

This is my **CMWS (Common Missile Warning System) Control Panel** build for the DCS AH-64D Apache.

The panel is driven by by [DCS BIOS (Skunkworks)](#) an **Arduino Mega** and a **1.3" OLED display** . The Mega is required because the Uno simply doesn't have enough RAM to run my code reliably - save yourself the headache and go straight to the Mega.

The **Threat Sector Index** is implemented with discrete LEDs for proper "something wants to kill you from that direction" vibes.

Total cost: ~50€ depending on what you already have in your parts bin.

Difficulty: Medium – you should know how to flash code to an Arduino using the Arduino IDE and setting up DCS BIOS. If you have no idea **how to set up DCS BIOS** or **upload code to an Arduino**, make sure to check out the excellent [tutorial by Hornet's Nest!](#)

If that still feels too fiddly, feel free to contact me on [Reddit](#) - I can offer a pre-flashed Arduino as an alternative.

As with my other projects, I've included **extra STL files for builders without a laser engraver**, so you can simply 3D-print the labels instead.

There is also an **alternate Threat Sector Index version with a hole mask**. It's not quite as pretty as the laser-engraved version, but it absolutely does the job.

If you'd prefer a proper laser-engraved Threat Sector Index, I can send you one - just contact me on [Reddit](#).

This guide is intentionally kept short. There's not much magic here beyond the pin mapping and wiring. If you want to see the full process, just check out the [timelapse build video](#)

PSA from Command:

If this thing blew your mind and made your simpit jealous, maybe drop a little "thanks" in the jar. Projects like this don't grow on trees; they're handcrafted in basements powered by caffeine, copium, and pure autism.

https://www.paypal.com/donate/?hosted_button_id=XG6RA9RWPM84Y

I'm looking forward to your **feedback** — and of course, feel free to share pictures of your own TEDAC!
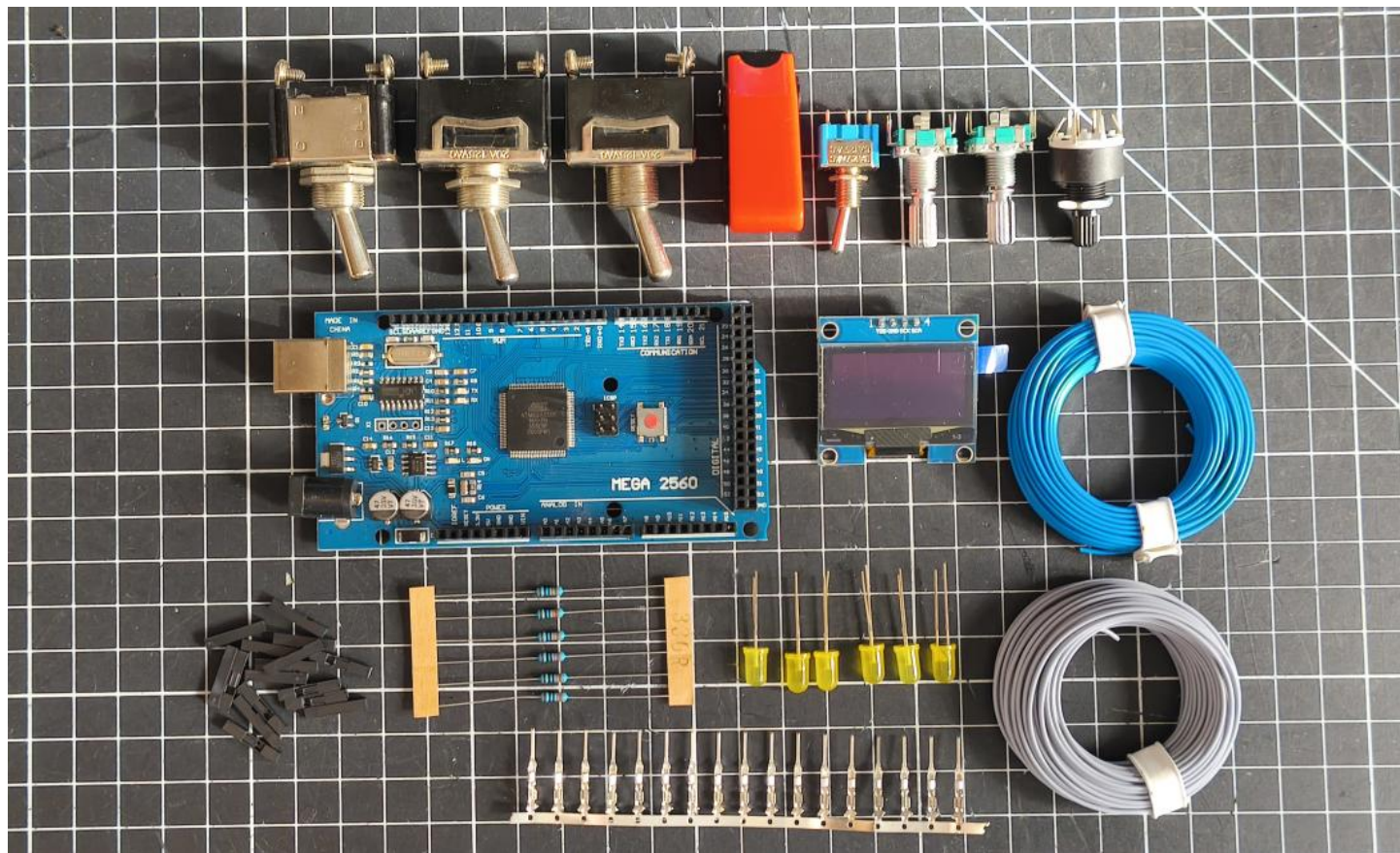
Yours,
MilKris

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Additional Apache projects such as the TEDAC, KDU, MPDs, IHADSS, EUFD and others are available on my GitHub.

Part list:

1× Arduino Mega 2560
1× 1.3" OLED Display 128×64 (SH1106, I2C)
6× 5 mm yellow LEDs
6× 330 Ω resistors
2× 360° rotary encoder (EC11 type)
3× 12 mm ON-OFF toggle switch (one with red safety cover)
1× 6 mm ON-OFF toggle switch
1× 16 mm rotary switch, 2-pole, 3-position
11× wood screws 2×6 mm
6× heat-set inserts M3×4×4.5 mm
15× M3 screws (length 5–12 mm depending on part thickness)
2.54 mm Dupont connectors (female)
AWG26 wire (≈ 0.14 mm²)
1x Pin header (female)
1× piece of green transparent acrylic glass — 56×31×3 mm
1x angeld USB cable

PIN Layout:
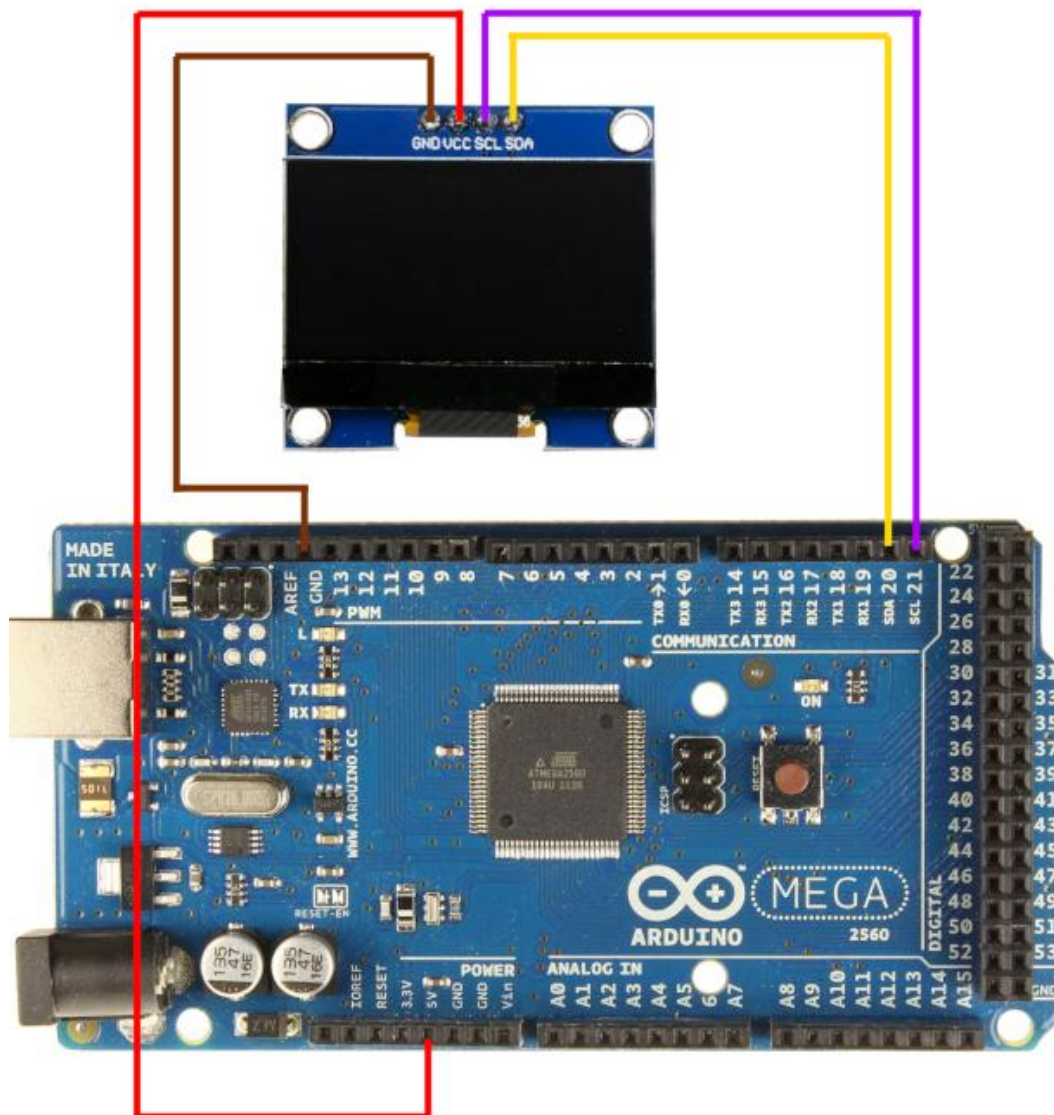
DISPLAY (I2C)

20 SDA
21 SCL

LED OUTPUTS

22 CMWS R BRT
23 CMWS D BRT
24 FWD RIGHT
25 AFT RIGHT
26 AFT LEFT
27 FWD LEFT

SWITCHES (2-POS → GND)

30 ARM
31 BYPASS
32 JETT
33 MODE

SWITCH (3-POS)

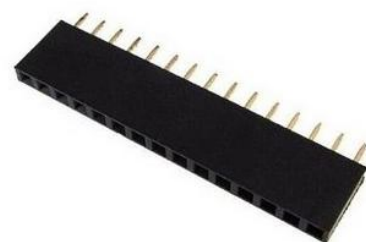34 PWR A
35 PWR B

ROTARY ENCODER
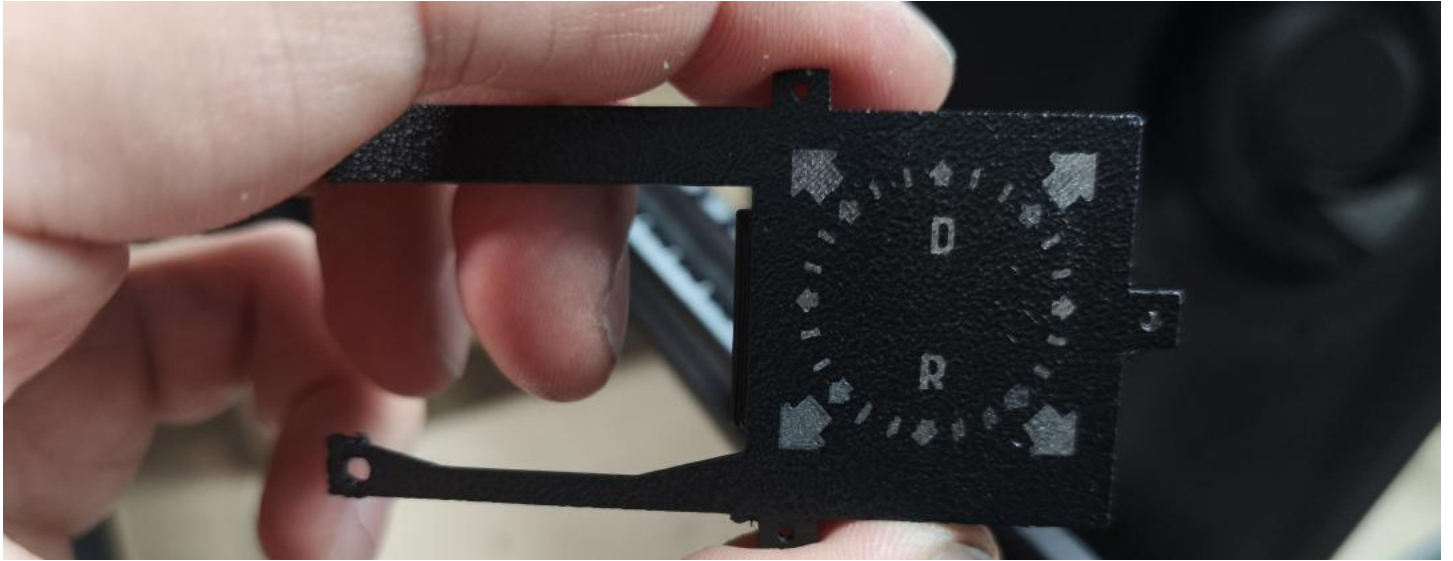
36 LAMP A
37 LAMP B
38 VOL A
39 VOL B

Use a 2.54 mm pin header strip as a GND distribution bridge. Connect the lower pins with solder. Then you only need one GND wire to the Arduino. I simply glued the pin header to the side of the housing.

A few tips and hints

If you want to print the Threat Sector Cage laser engraver, you should use transparent filament for best results. If you're printing the hole mask instead, use black filament.
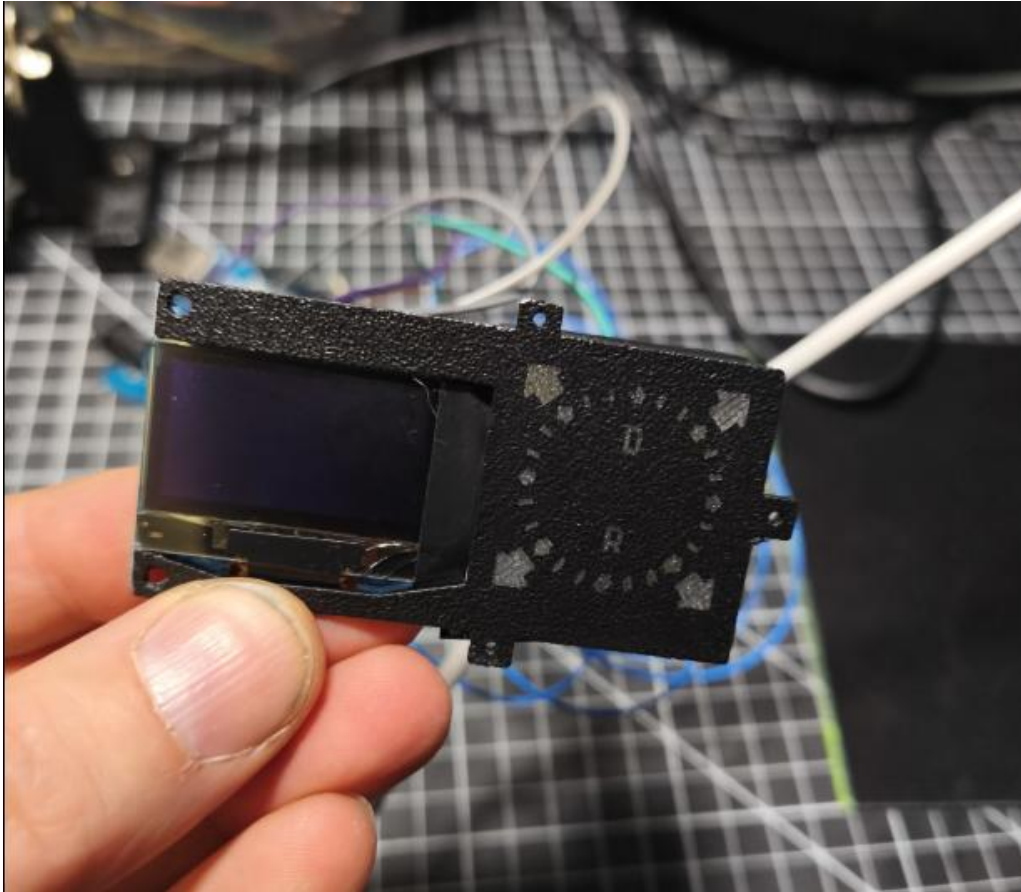

The Arduino is inserted using the sled

You need an angled USB cable, otherwise you won't be able to fit the Arduino into the CMWS case.

Installing the OLED Screen

The screen is simply placed into the "CMWS-Sector_Light_Cage" and then screwed into place. First, of course, insert the green acrylic/plex glass.