ANU Pinger Instructions

Kit contents:

- 3x Pingers: Powered by 1x18650 LIon Cell (No reverse polarity protection so be careful inserting the cell in the holder)
- 1x Base Station: 10m, 4 conductor cable connected to the Ping PCBA intended to be connected to the topside computer. The assembly includes the BMS, switch and indicator but they are not in use.

Power Board Logic:

- "1 button press" = on
- "2 button presses" = off
- The external switch is pushing a momentary switch internally with a post. So, to do a button press you quickly turn the switch clockwise and counter clockwise by around a half turn in quick succession.
- The external indicator is connected to the output of the BMS so it will show whether or not the power is on.
- The BMS includes over current, under voltage, charging (via the micro USB port), fuel gauge, and power switching.
- The two position switch on the BMS sets a timeout function when there is no load. The units as-shipped are configured with the timeout disabled. The power draw from the ping might be too low for the BMS to notice resulting in unexpected shutdowns.

Opening the enclosure:

To access the Ping PCBA, remove the flange cap on the transducer side. Be careful to not pull the tray all of the way out. Wires leading to the indicator and switch on the opposite flange cap will restrict the tray movement.

Programming:

3 options:

1. Ping Viewer to program over UART serial
2. STM Cube programmer over serial. We break out the boot pin to a momentary button on the Ping PCB which puts the MCU into the bootloader when held during a power cycle.
3. STM Cube programmer using a STLink

Pinouts:

Serial Port:

Pin	Function	Voltage	Cable Color
1	VCC	5v	Red
2	RX (in)	3.3v	Green
3	TX (out)	3.3v	White
4	GND	GND	Black

Programming Port:

Pin	Function
1	VDD (does not power MCU during programming, 5v required on UART port)
2	TCK/SWCLK

3	GND
4	TMS/SWDIO
5	RST
6	SWO