Summery

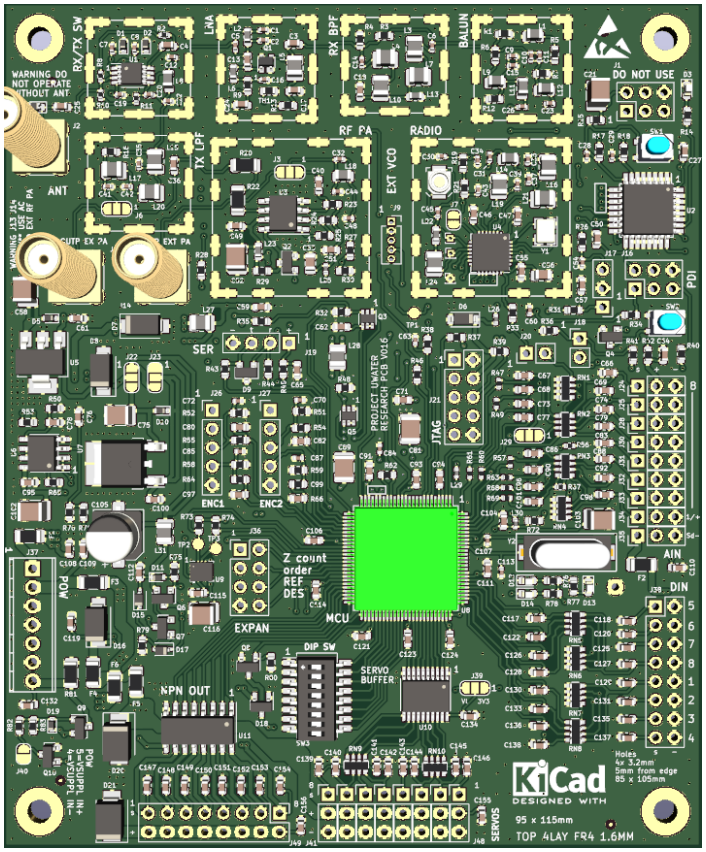
- Wireless bi-directional underwater RF data communication.
- For use in fresh water (500…1000µS/cm).
- For hobbyists and professionals.
- Multiple antenna solutions.
- Many on board electronic interfaces options.
- On board sensitive 3-axis accelerometer sensor.
- Free programmable or fixed bi-directional data link.

Applications

- Extended/next level RF transceiver evaluation kit.
- Educational/research tool technical colleges/universities.
- Measurement and control (half-duplex, high data rate, underwater only).

Technical

- 27MHz ISM-band, 5 channels
- Flexible protocol payload and data-rate.
- Antenna connection: 50 Ohm SMA connector.
- On board max. 50mW RF power
- Optional external 3Watt RF amplifier.
- Multiple power supply options (6...24V, battery/regulated).
- Onboard RF PA requires 12VDC (battery/regulated).
- XMEGA128A1U micro controller & AX5043 RF transceiver.
- Optional RF shielding.
- LNA (compensation filter losses).



Research PCB 95x115mm

Interfacing

8x Analogue input (12bit) 8x Digital input (3.3-5.0V) 8x Digital output (push-pull) 8x Digital output (NPN) 8x DIP switch 2x LED 2x Quadrature encoder input	1x ACCEL meter (3-axis) 1x Analog output 1x Expansion port 1x PDI programmer port 1x JTAG progr./debug port 1x Serial port (USART 3.3V)

In compliance with radio regulations?

Free programmable	Fixed bi-directional data link	
Depends on application	Submersed in water	Crossing air/water boundary
?	☑	☒

Range

Free programmable	Fixed bi-directional data link	
Depends on application	Submersed in water	Crossing air/water boundary
?	≈ 6 meters	☑

Programming RF transceiver

Free programmable	Fixed bi-directional data link
• Requires in depth knowledge RF transceiver • For professionals	• No in depth knowledge RF transceiver required • For hobbyist and professional

Application example: Imagine a model submarine equipped with an underwater depth stabilization computer. To update the software, the model must be taken out of the water and opened. This time-consuming and cumbersome process can be avoided by transferring most of the intelligence to the shore. This leaves the model mainly with sensors and actuators. Because the software now runs on a computer ashore, parameters, control algorithms and programs can easily be changed. The effect of these measures on the course and stability of the vessel can be observed immediately. This without taking the model out of the water.