

**Summary**

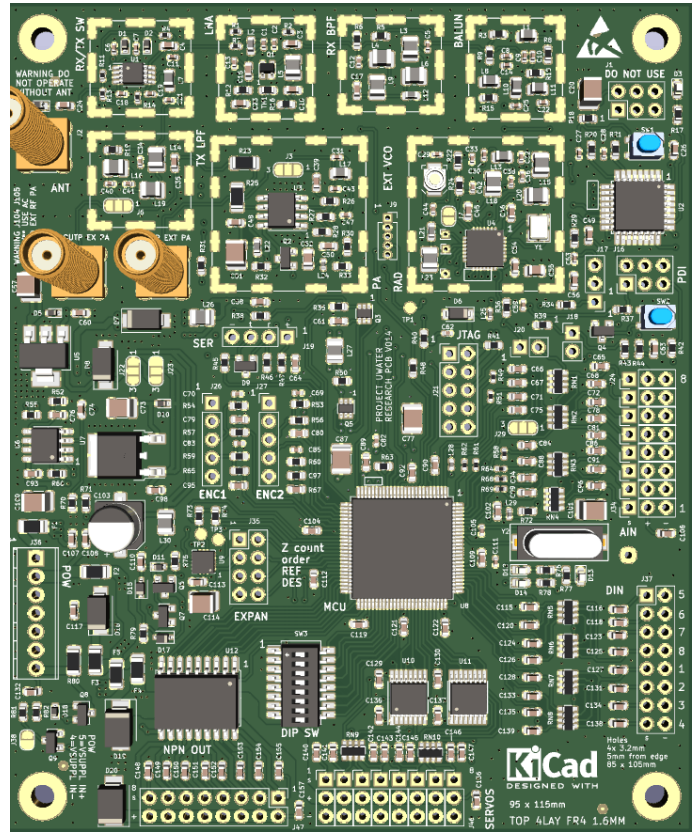
- Wireless underwater RF data communication.
- For use in fresh water (500...1000µS/cm).
- For hobbyists and professionals.
- Multiple antenna solutions.
- Many on board electronic interfaces options.
- On board sensitive 3-axis accelerometer sensor.
- Optional high-level programming RF transceiver.

**Applications**

- Extended/next level RF transceiver evaluation kit.
- Educational/research tool technical colleges/universities.
- Remote control + telemetry (simplex, low data rate).
- Measurement and control (half-duplex, high data rate).

**Technical**

- 27MHz ISM-band
- Flexible protocol solutions
- Antenna connection: 50 Ohm SMA connector.
- On board 50-100mW RF power
- Optional external 3Watt RF amplifier.
- Multiple power supply option (6...24V, battery/regulated).
- XMEGA128A1U micro controller & AX5043 RF transceiver.
- Optional RF shielding.
- LNA (compensation filter losses).
- User programmable.



Research PCB 95x115mm

**Interfacing**

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

**In compliance with radio regulations?**

Remote control + telemetry	Measurement and control	
<input checked="" type="checkbox"/>	Completely underwater	Crossing air/water boundary
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Range**

Remote control + telemetry	Measurement and control	
<input checked="" type="checkbox"/>	Completely underwater	Crossing air/water boundary
	~ 6 meters	<input checked="" type="checkbox"/>

**Programming RF transceiver**

High-level commands	Do it your self
<ul style="list-style-type: none"> <li>• No in depth knowledge RF transceiver required</li> <li>• For hobbyist and professional</li> </ul>	<ul style="list-style-type: none"> <li>• Requires in depth knowledge RF transceiver</li> <li>• For professional</li> </ul>

**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.

