Flyer 27MHz mini receiver for remote control purposes of a model submarine (based on the AX5043 transceiver IC)

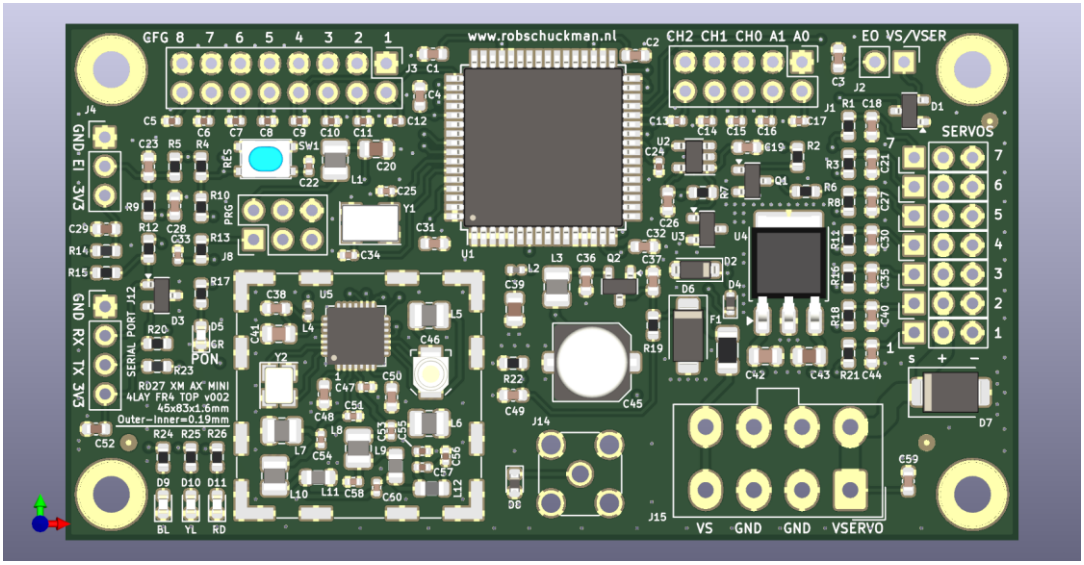
Without auxiliary PCB, without digital outputs (ULN2003/7xNPN)

Supports piston tanks only

<table>
<tr>
<td>4x electrical isolated mounting hole that can be connected to GND via solder jumper on back.</td>
<td>CFG 8-1 = Configuration
1=Enable reverse thrust
2 =X-rudder[1] (uses also free 1)
3=Low battery guard VS
4=Low battery guard VS
5=Low battery guard VS
6=Empty tanks direct on no RF
7=Two propellers[2] (uses also free 1)
8=Invert reverse thrust</td>
<td>CH2-CH1-CH0
RF channel (0-5). Must match transmitter.
000=CH0=26.995MHz
001=CH1=27.045MHz
010=CH2=27.095 MHz
011=CH3=27.145 MHz
100=CH4=27.195 MHz
101=CH5=27.255 MHz</td>
<td>A1-A0
Protocol address (0-3). Must match transmitter.
00=ADR0
01=ADR1
10=ADR2
11=ADR3</td>
<td>EO[3] = 6-24V/0.3A error output (buoy release)

Activates after EI being active for 20s</td>
<td>No digital outputs (ULN2003/ NPN)</td>
</tr>
<tr>
<td>EI = Error input (active low).

Response time=2s

3V3 (10mA) available for interface electronics.</td>
<td colspan="4" rowspan="2"> 
</td>
<td>7x
1-2ms servo pulse (3V3).

Low pass output filter (220 Ohm/ 1nF).

7=aftPiston
6= Propeller
5=fwdPiston
4=Free 2
3=Free 1[4]
2=Dive rud.
1=Left/right</td>
</tr>
<tr>
<td>Rx used for auxiliary PCB

Tx used for printing receiver information</td>
</tr>
<tr>
<td></td>
<td>LEDs
Grn = Power on indicator
Blue = Auto ranging successful
Yel = Errors (low batt., no RF, EI)
Red = Data receive</td>
<td colspan="2">Configuration (CFG 543)
000= Low battery guard VS off
001=5.75V (6.00V, 3 cells, Lead acid)
010=6.90V (7.20V, 6 cells, NiMH/NiCD)
011=6.60V (7.40V, 2 cells, Lithium/LiPo)
100=8.05V (8.40V, 7 cells, NiMH/NiCD)
101=9.20V (9.60V, 8 cells, NiMH/NiCD)
110=9.90V (11.1V, 3 cells, Lithium/LiPo)
111=10.5V (12.0V, 6 cells, Lead acid)</td>
<td>VS: 6-12V (fused)
VSERVO: 6-24V (non-fused).

VSERVO: supports high current (8A max continuously).

VS: low battery guard applicable.</td>
<td></td>
</tr>
<tr>
<td colspan="5">Outer PCB dimension: 45x83mm
Mounting holes: 4x3.2mm, centre=37x75mm, 4mm from edge of PCB.
Non-fatal error[5]: RF signal loss results in propeller and pistons to halt until RF signal is restored.
Limitations: does not support digital outputs (ULN2003/NPN), supports buoyancy system with piston tanks only.
Fatal errors[6]: a low battery and/or an active EI input causes the vessel to surface after which further diving is prohibited (reset required).
Error input (EI): water detector and/or max depth. Supports open collector/NPN and normally open switches (active low). Signals can be paralleled.
No auxiliary PCB but using piston tanks, use two end-limit switches with a diode over NC contact in series with motor wiring to stop piston at both end position.</td>
</tr>
</table>

[1] Cannot be used together with two propellers.
[2] Cannot be used together with X-rudder.
[3] Activates after EI is uninterrupted active for 20s
[4] Is used with two propellers or X-rudder.
[5] Changes to a fatal error after 20s of uninterrupted RF signal loss.
[6] Direction rudder (L/R) and propeller remains controllable.