ARDFrx2.2 Partslist 20**210727.** Schema 20180123. PCB 20180123-14. updated : C45, Fet1,4.
20211223

In this design i tried to use only easy obtainable parts.
Conrad / Box73 / Amidon.de / **RFmicrowave** ordering details are given for your convenience. Please respect component specifications.
If Conrad.nl does not ship to your country, use the part info at Conrad.nl and find a another supplier.
RM = hole spacing. Bend wires of components to fit the PCB if needed.
Most capacitors : RM5 or RM2.5. Keep capacitor wires as short as possible !

		Conrad orderNr
C1	**68p NP0**	**457221**
C2,4	**10p NP0**	**457124**
C5	**6p8 NP0**	**457108**
C30,31	**470p**	**531759**
C**3**,6	**100p NP0**	**531906**
C7	3p3 NP0 (determents the tuning range, abt. 850kHz)	**451216**
C41,47	100n	**531855**
C8	150p	
C9	10uF	**421986**
C10	1uF ceramic RM5 (or elco 5mm dia.)	**453382**
C11,13,15,16,17,18, 23,24,43,44, 51,109,112,205	22n ceramic.	**531808**
C12,40	100uF **max d=6.3 - RM2.5**	**443906**
C14	1000uF **6.3V. max d=8 - RM3.5**	**422024**
C25	47-56p **NP0** . Depends on used coil for L3.	
C26	39-47p **NP0 .** Depends on used coil for L6.	
C32	4n7 **FILM** (! NO ceramic Cs, micro phonic here !)	**455059**
C33	3.3uF RM2.5 tantalum	**481696**
C34,35	**47n**	**531718**
C36,37,203,204	220p NP0	**1420310**
C38	4u7. d=5, RM2 (elco or tantalum)	**1471077**
C39	150n ceramic RM5 (while R20=470 Ohm). **See "Setup" for details.**	**531872**
C45,46	22n **film**	**1235248**
C48,49	47p	**531826**
C202	22p NP0	**531975**
C207	4p7. **See "Setup" for details.**	**451232**

ARDFrx2.2 Partslist **20210727.** Schema 20180123. PCB 20180123-14.
All resistors 2.5x6.5mm 0.25W **metalfilm**.

R1,30,33,203	1k	
R3	22k METAL FILM (! for minimal oscillator phase noise !)	
R4,12	10k	
R5	50k lin. **See "Housing" for details.** OR Vishay Precision potmeter 10-turn Mono 2 W 50 kΩ	**424196** **429325**
R21	50k lin. **See "Housing" for details.**	**424196**
R6	220k	
R7,26	2k2	
R13,14	470k	
R15,18	**22k. Change their value for chanig total gain (for 0.3Vrmd noise at R19)**	
R16,17	330k	
R19	4k7	
R20	470 **See "Setup" for details.**	
R8,11,22,27,28	100k	
R24	**22k** Sets minimum sensitivity. **See "Setup" for details.**	
R30,31	**220**	
R201	680k	
Rx	1k5 **as for Xtal filter 10M12B . Rx = (ZinFilter-1k5).** **To be adapted to the characteristic impedance of the used crystal filter.**	
Ry	3k0 (3k3//33k) **as for Xtal filter 10M12B. Ry = ZoutFilter.** Both resistors can be inserted at the top copper with two wires per hole. **To be adapted to the characteristic impedance of the used crystal filter.**	
IC1	NE or SA 612N or 602N	**box73.de**
IC2	TL072	**155617**
VR1	LE50 5V **Low drop**	**1184984**
D1,2	1N4148	**162280**
D3	zener diode 5V1	**1110814**
D4	1N4000 / 4001 / 4002 etc.	**1262761**
FET1,4	**Wide leg = S and is connected to mass.** **BF998 : Legs should tough the PCB, and you should see its top.** **or** **BF998R : Soldered UPSIDE-DOWN. Bend legs a little down if needed.**	
FET5	**BF256b pinning DSG** (Ids=200uA @ Vgs=1.6-3.8V). **See PCB top silk.**	**563810**
CD1	BB535 or BB149 or eq. **Anode connected to mass.** (Cd varying between 18 and 9.5pF with Vd varying between 1V and 5V).	**153196**
LED	Bright red. (Battery condition indicator).	**184560**
T1	BC547c or equivalent. **Pinning. See PCB top silk.**	**140539**

ARDFrx2.2 Partslist **20210727.** Schema 20180123. PCB 20180123-14.
Use for Neosid coils a special 1mm x 2mm trimming tool, obtainable from **box73.de "ABGL-SD".**
The coil layouts are adapted for a variety of 7mm RM 2.25 and RM 2.5 coils.

L1, L2:
Neosid 7mm coil **BV5061, Amidon.de,**
Or wind 41/2 turns (80nH) on a Neosid 7V1S coil form (Amidon.de). Start = 5, End = 4.

L3,6:
Neosid 10.7 MHz IF coils 7x7mm..
Useable coil inductances are between 2 uH and 6 uH.
You can wind your own with abt. 20 turns at a Neosid 7F1S coil form (Amidon.de).
Start=5, End= 1 or 4.
The total values of tuning capacitors C25 and C26 are depending on the inductance value of the used coil. You may have to change their values. If after adjustment of a coil, but the core is :
1. Fully at the top of the coil, change the tuning capacitor for one with a little lower value.
2. Fully at the bottom of the coil, add at the bottom of the PCB a small capacitor (a few pF) in parallel to the existing tuning capacitor.

Suggested usable Neosid standard and **"Pre adjusted"** filter coils" (Amidon.de) are :

L [uH]	Amidon	Start-End	**RM**	Neosid	**RFmicrowave**
4	5056	5-4	2.25	5056	5056
3.3	5044	5-1	2.25	5044	
3.3	WZ12,25	5-1	2.5	(5313 07)	
3.9	WZ13,5	5-1	2.5	(5313 08)	
4.7	WZ15,25	5-1	2.5	(5313 09)	
5.6	WZ16.25	5-1	2.5	(5313 10)	

REM : On the earlier **PCB 20180117-10,**
when using coil 5056 for L3 and/or L6, you have to make a connection between pins 2 and 4 at the bottom side of the PCB. See schematic.
For the other coils in the table, make a connection between pins 2 and 1.
The pins of the WZ type coils must be bend a little to fit the PCB holes.

L7,10,11,12,201 :
Fastron or EPCOS axial 3x7mm 22uH choke (SRF >=11 MHz)
Conrad orderNr 440311

L15 :
Fastron or EPCOS axial 3x7mm 1uH choke (SRF abt. 180 MHz)
Conrad orderNr 440219

F1+2:
Crystal filter **10M12B box73.de** .. **Rx** = Zfilter-1k5 **(total 1k5) . Ry** = Zfilter = **3k0 = (3k3 // 33k)**
-OR- use 10M16B or 10M20B and adapt Rx and Ry. **A=single Xtal, B=matched pair Xtals.**
-OR- use ***2x single*** Xtal **10M15A** (RX=1k5, Ry=3k). **RFmicrowave**

Xt crystal **10.7MHz HC18U box73.de RFmicrowave**

Aluminum die cast box **Hammond 1590P1**	Conrad **532514**
SMA chassis bus	Conrad **739032**
3,5mm stereo chassis bus	Conrad (718574) **728612**
2x Knob with scale and brake	Conrad **184078**
Micro miniature **switch** 1x on/on	Conrad **700568**
Fp1 and Fp2 : 9,5 x 9,5mm **ferrite pipes**	Conrad **1086850**
9V block battery connector (This is a good one.)	Conrad **650515**