

RGO ONE 160/60m optional board

Operating and service manual version 1.01a



1.Operation

RGO ONE is classic super heterodyne single conversion SSB/CW amateur transceiver covering HF bands 80/40/30/20/17/15/12/10m. Bands 160m (1.8-2.0MHz) and 60m (5.250 – 5.450MHz) can be added anytime by optional 160/60m BPF board. Two band pass filters are suited on the board which should be attached to the transceiver main BPF board located on the bottom side.



Optional BPF board works on both RX and TX. If your RGO ONE has been purchased factory built and aligned it has 160m low pass filter already installed (40m low pass filter covers 60m band) so no other parts are needed to start making QSO's on 160m and 60m bands.

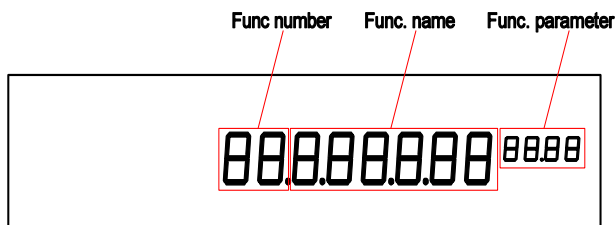
2.Specifications:

- Operating bandwidth 160m $1.8 \div 2.0\text{MHz}$
- Operating bandwidth 60m $5.25 \div 5.45\text{MHz}$
- RX Sensitivity (MDS) -129dbm
- Nominal output power 160m 40W
- Nominal output power 60m 50W
- Input/output impedance 50Ω

3.BAND enable and band limits change in Service menu 79

SERVICE MENU

Push and hold ENC.1 button while switching on the radio enables BAND plan menu No 79
LONG press of MTR MNU button enters menu. All service entries plus band plan are available



Short press of RIT/XIT CL button discards the changes made and leaves the menu

FUNCTION selection is controlled by encoder 3 or UP/DOWN buttons

PARAMETER selection is controlled by encoder 4

79 BAND plan selection

There are eleven bands available (01-11). Default values are in table BANDS

Choose which band you like to change (encoder 4) then hit encoder 3 button

79 bAnd 01 ——— 01 — 11 ← default

Lower limit frequency must be assigned. Default frequency is shown first with "Lo" label in front

Pressing encoder 2 button toggles band ON and OFF. When switched to OFF band will not appear in the normal operation

Lo 01800

Turn encoder 4 clockwise or counter-clockwise. Then hit encoder 3 button to fix the value. Upper band limit will appear on LCD

H 02000

Pressing encoder 2 button toggles band ON and OFF. When switched to OFF band will not appear in the normal operation

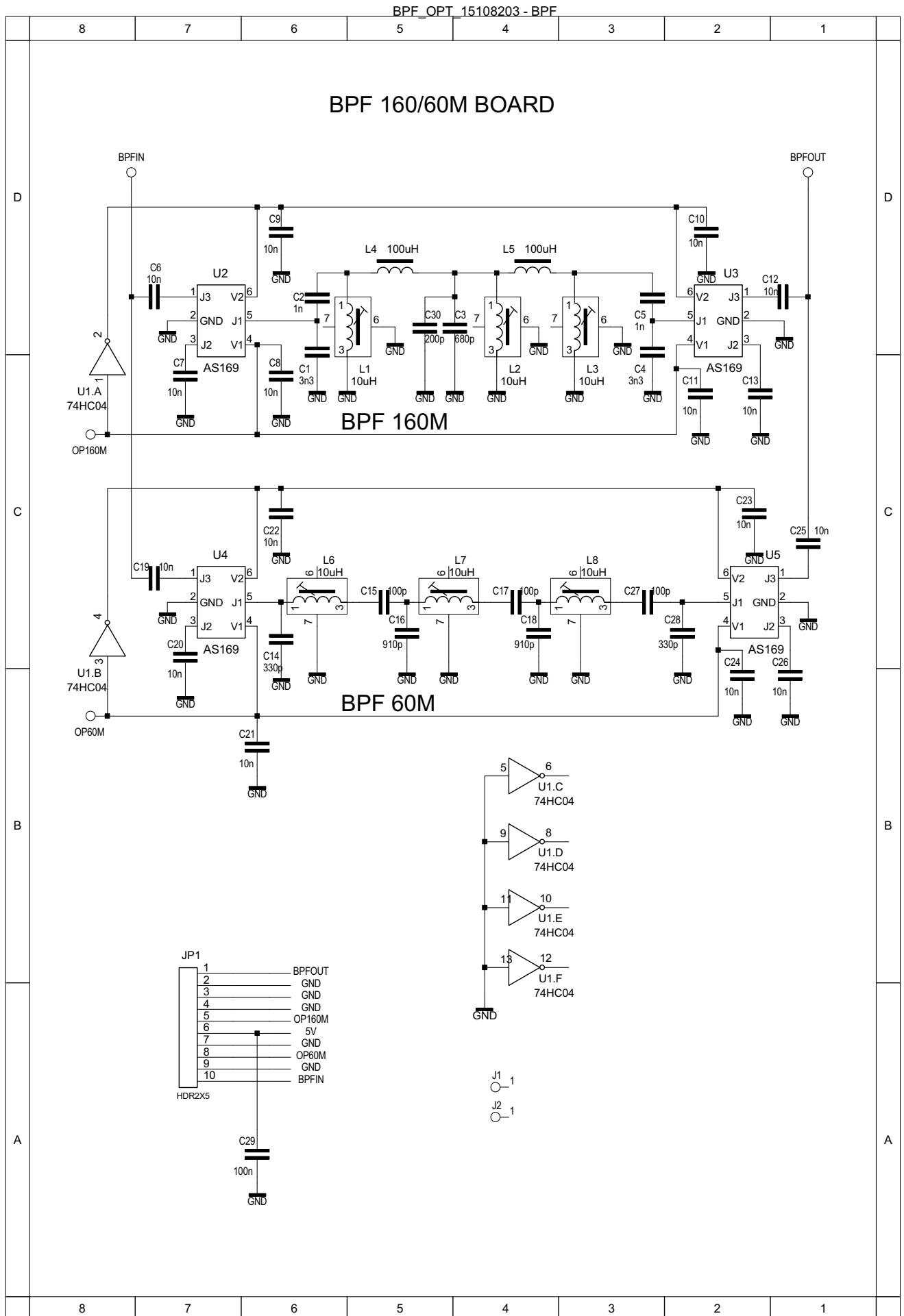
Assign upper frequency limit by same manner as for lower band limit

Turn clockwise or counter-clockwise encoder 4. Then hit encoder 3 button to finish. LCD will show 79 bAnd 01 again

Exit the menu by long press of MTR MNU button (saving current parameters)

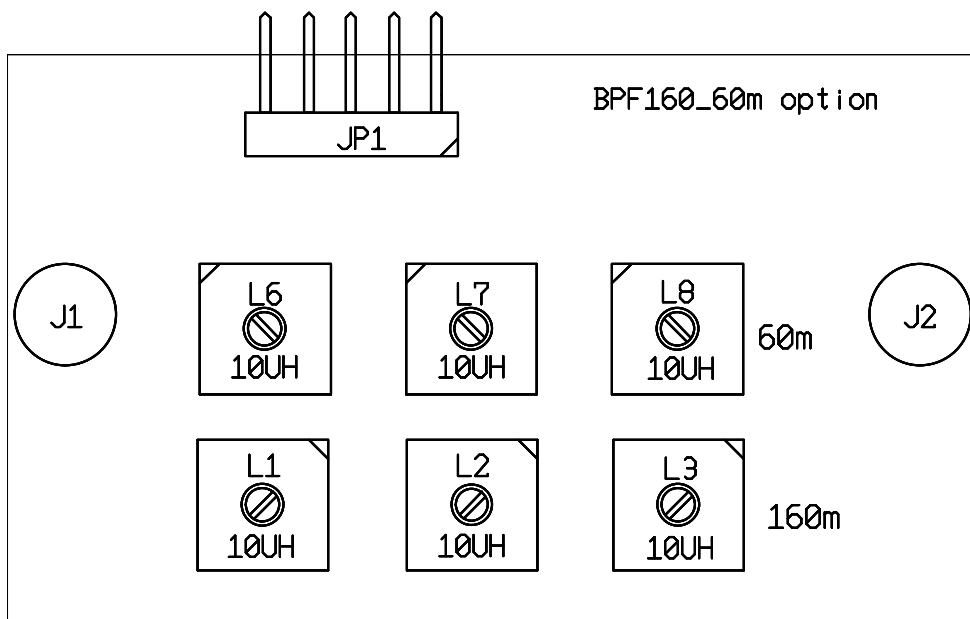
ATTENTION When 160/60m hardware option is not installed and band 01/03 is not OFF, the radio might not function properly

4.Schematics

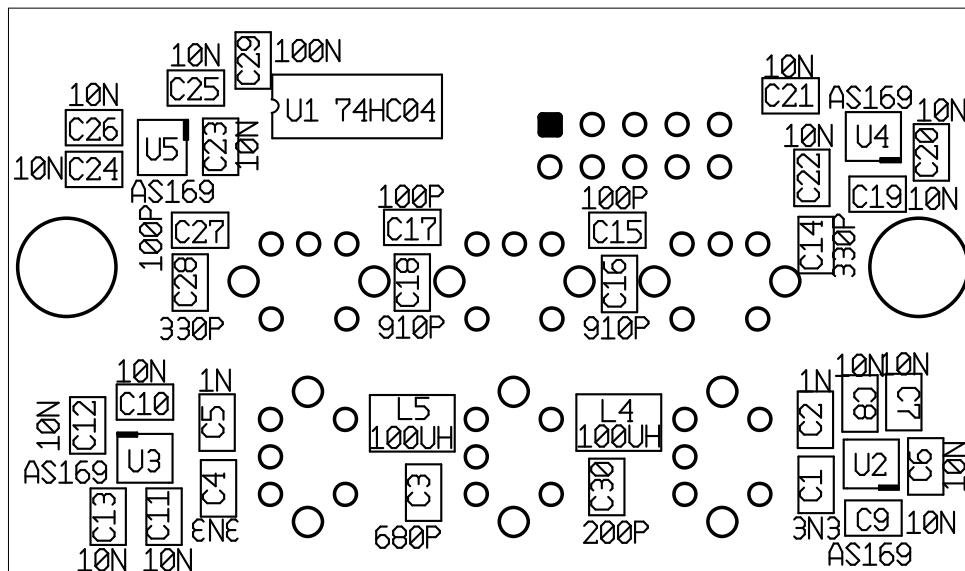


5.PCB layout top and bottom sides

Top view



Bottom view



6.Bill of materials

Name	Alias	Shape	order number
C1	3N3	\$R0805	C0805 3.3nF 50V C0G
C2	1N	\$R0805	C0805 1.0nF 50V C0G SAMSUNG
C3	680P	\$R0805	C0805 680pF 50V C0G SAMSUNG
C4	3N3	\$R0805	C0805 3.3nF 50V C0G
C5	1N	\$R0805	C0805 1.0nF 50V C0G SAMSUNG
C6	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C7	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C8	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C9	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C10	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C11	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C12	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C13	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C14	330P	\$R0805	C0805 330pF 50V C0G SAMSUNG
C15	100P	\$R0805	C0805 100pF 50V C0G SAMSUNG
C16	910P	\$R0805	81-GRM2165C2A911JA1D
C17	100P	\$R0805	C0805 100pF 50V C0G SAMSUNG
C18	910P	\$R0805	81-GRM2165C2A911JA1D
C19	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C20	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C21	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C22	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C23	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C24	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C25	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C26	10N	\$R0805	C0805 10nF 50V X7R SAMSUNG
C27	100P	\$R0805	C0805 100pF 50V C0G SAMSUNG
C28	330P	\$R0805	C0805 330pF 50V C0G SAMSUNG
C29	100N	\$R0805	C0805 100nF 50V X7R SAMSUNG
C30	200P	\$R0805	C0805 200pF 50V C0G SAMSUNG
J1	HDR_1	HOLE	M3x6, lockwasher 3mm
J2	HDR_1	HOLE	M3x6, lockwasher 3mm
JP1	HDR2X5	HDR2X5HA!1	HR2X40 1/8 cut
L1	10UH	KHS-6	KHS-6 10 uH A71108002
L2	10UH	KHS-6	KHS-6 10 uH A71108003
L3	10UH	KHS-6	KHS-6 10 uH A71108004
L4	100UH	\$R1210	CL100uH FDA32
L5	100UH	\$R1210	CL100uH FDA32
L6	10UH	KHS-6	KHS-6 10 uH A71108004
L7	10UH	KHS-6	KHS-6 10 uH A71108004
L8	10UH	KHS-6	KHS-6 10 uH A71108004
U1	74HC04	SO14	74HC04D
U2	AS169	\$SOT6	863-1002-1-ND
U3	AS169	\$SOT6	863-1002-1-ND
U4	AS169	\$SOT6	863-1002-1-ND
U5	AS169	\$SOT6	863-1002-1-ND