Operation instruction - Magnetic loop controller 230619 - 120819 M0HWD

ver. 1.4

Buttons (from right to left)

Short press:

1 civ - change the antenna frequency to the transceiver frequency

2 frequency - down

3 frequency – up

4 band down

5 band - up

Long press:

1 calibrate frequency to centre frequency of the band

2 frequencies - down fast

3 frequencies - up -fast

4 calibrate low part of band

5 calibrate high part of the band

Calibrating the controller – the first time of operation:

The controller can be programmed for deferent gears, capacitor , and bands.

This example is for a vacuumed capacitor 5-250 Pf, - 25 turns , gear have 50 tooth, and the magnetic loop is 1 meter diameter.

The bands covered in this example is 10-40m

Each band has a preferred “middle band frequency” as follow (chosen by me)

160 1830 MHz

80 3700 MHz

60 5000 MHz

40 7100 MHz

30 10120 MHz

20 14250 MHz

17 18100 MHz

15 21250 MHz

12 24950 MHz

11 27300 MHz

10 28450 MHz

6 50100 MHz

By default the program is set up for first time use to 20 m band.

By default all the bands factors are programmed to my loop.

Calibrating:

You need an antenna analyzer (I am using the aa-230 of Rig expert)

It will be easier to have a switch - switching between the transceiver and the analyzer -connected to the antenna.

1. Find out the antenna resonating frequency now.

2 bring the antenna resonance to 14250 with the frequency buttons 2/3 (my middle band for

20m)

3 disconnect the cable from the controller.

4 switch of the controller

5 press button nr 4 continually and switch on the controller, release the button.

6 Reconnect the cable to the controller.

7 bring the antenna to resonant 100kc beyond the “middle band frequency” e.g. 14150 kHz

8 press button 4 for 2 sec (long beep)

9 bring the antenna to resonant 100kc on top of the “middle band frequency” e.g. 14350 kHz

10 press button 5 for 2 sec (long beep)

The controller will calculate the factor - how many ticks of the stepper motor will be needed for 1 kHz.

The factor will be displayed on the upper right side of the controller.

After the calculation the controller will move the steeper motor to the “middle band frequency”.

If the frequency is resonate on the frequency displayed, change the resonate of the antenna with button 2/3, than press button 1 for 2 seconds.

That’s it.

Now repeat for all bands, BUT only steps 7 – 10.

To change the bands press button 4/5, and remember +-100kc is from the frequency displayed (not anymore 14250 which was done before)

Normal operation

change the transceivers frequency to find a station or empty space.

When you decide to transmit press bot 1 shortly.

As per climate change, humidity, rain etc the calibration may change a little.

the only thing that need to be done - if the centre frequency changes - bring the middle frequency by pressing the band button 4/5 to the desire band , then calibrate the resonant frequency with button 2/3, then pres button 1 for 2 seconds.

**warning:**