

Simple Double Band Receiver "Lidia-2"

(40m and 80m)

The Receiver "Lydia-2" is a simple direct conversion receiver designed for listening to SSB/CW Amateur radio stations. "Lydia" is developed by the Polish Włodzimierz Salwa (SP5DDJ) specially for novice radio Amateurs.

First and foremost, this project is intended for beginning hams, not having much experience in the design of the equipment. And for radio Amateurs who want a weekend to relax and do radio.

The receiver operates in two frequency ranges 3495 kHz - 3805 kHz and 6995 kHz – 7300 kHz. The main element is a MC3361 chip DA1, which is used in FM receivers with double frequency conversion.

In the receiver used: internal oscillator circuits, mixer and active filter. Bandpass filters at the receiver input, in spite of using axial inductors L1, L2 and L4, L5, provides the appropriate bandwidth, sensitivity, and harmonizing with the mixer. Input sensitivity of the receiver is adjusted by a simple antenna attenuator "RF Level" on the variable resistor R1, which performs the function of manual gain control. The VFO (Variable Frequency Oscillator) is running in the circuit with the inductors L3 (80 m) and L6 (40 m), varactor VD2 and a variable resistor "Tuning" R4. The stability of the VFO enough to listen to the stations. After a short time after switching on and warming up, the reception frequency is changed to 100-200 Hz for 30 minutes. The cascade on the VT1 transistor is designed for isolation from the VFO to noise from the digital scale in the receiver is not listening.

In the receiver "Lydia-2" there are three jumpers П1-П3 which controls the connection of external VFO or using internal VFO.

AF gain works on the popular LM386 chip DA2, the output of the connected speaker with 0.25 W 8 Ohm. At the entrance of AF gain there is a simple lowpass filter – regulates the change the bandwidth by switch S2 the "SSB/CW". DD1 chip 7808 is a voltage regulator to 8 volts, for power DA1 MC3361.

Band switching are relays P1-P3.

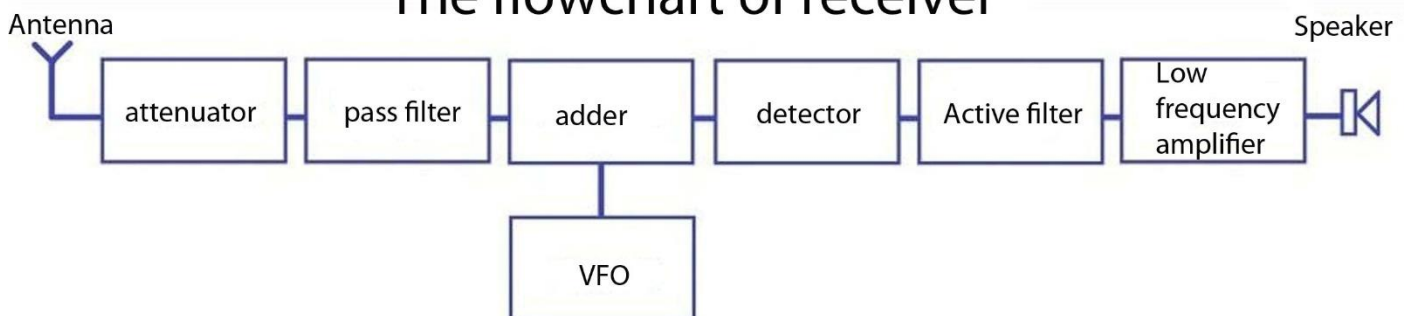
The receiver is mounted on the printed circuit Board size 85x60 mm. Correctly assembled and tuned receiver allows you to listen to CW and SSB Amateur stations in the bands 40 meters and 80 meters using a dipole antenna or a Long-Wire.

The hardest part is to adjust VFO to the range of the band using the frequency counter, generator or at the hearing at the working stations. Adjusting is tuning of trimming resistors R3, R5 and capacitor C15 in the range of 80 m or C31 in the range of 40 m. Keep C14 empty. If need – add 3-20 pF for fine tuning.

The receiver is very simple and can't compete with the complex factory or Amateur radio devices. But it's nice and easy-going, and is beginning to take a station with a long wire antenna just a few meters away.

If any of Your friends have a desire to listen to the radio, it will be the best and inexpensive gift.

The flowchart of receiver



Mounting diagram:

