



**Fig 14 : Picture of the completed receiver.**

If you have wound your own coil L5, you may have to adjust the value of C33. If the tuning voltage reaches the maximum of 4.2V with the core almost unscrewed (minimum inductance), reduce the value of C33 by one step. If the tuning voltage reaches the minimum of 0.2V with the core completely screwed in (maximum inductance), increase the value of C33 by one step. In order to avoid such problems we recommend the use of the specified TOKO coil.

For example, for a received frequency 137.50MHz - satellite NOAA 15 (oscillator of the receiver oscillates at 126.80MHz) set the voltage at the junction of R16, C31 to approximately 2.5V by adjusting the core of the L5. Check the exact frequency of the oscillator using a counter and tune it by slight changing the trimming capacitor C21.

The majority of constructors will probably not have a wobbler or rf signal generator at their disposal. Nevertheless even the modest ham shack equipped with just a probe, a multimeter and "common sense" it is possible to tune the input circuits to the lowest possible noise in the output LF signal. You just have to make a test Colpitts oscillator, working at 137.5 MHz. If you do not have a suit-

able circuit, I will gladly send it to you together with a PCB. You can then tune the resonance circuits, by the following method, to a minimum noise in the output signal. It is not necessary to make direct connection of test oscillator to the receivers input. It is sufficient to insert a cut wire into the antenna connector, a paper clip formed to an "L" shape will do the job. Set SW1-DIP4 to 137.5MHz and tune the frequency of test oscillator to this frequency, i.e. when the noise disappears from the receivers loudspeaker (or at least its intensity is considerably reduced). By touching the coil of test oscillator you can introduce "frequency modulation". At pin 13 of IC1 you can see the signal using an oscilloscope, or by listening to the loudspeaker. First adjust the core of L6 for the lowest noise in LF signal and the loudest volume. Then tune the input circuit, L1 - L4, and gradually shorten the improvised wire antenna (or move the test oscillator away) to give the lowest noise in low-frequency. Do not use a metal screwdriver, make a non-metallic screwdriver from a piece of hard wood (preferably bamboo), or from suitable plastic material.

Note: set the squelch off using potentiometer P1 set to its minimum value.