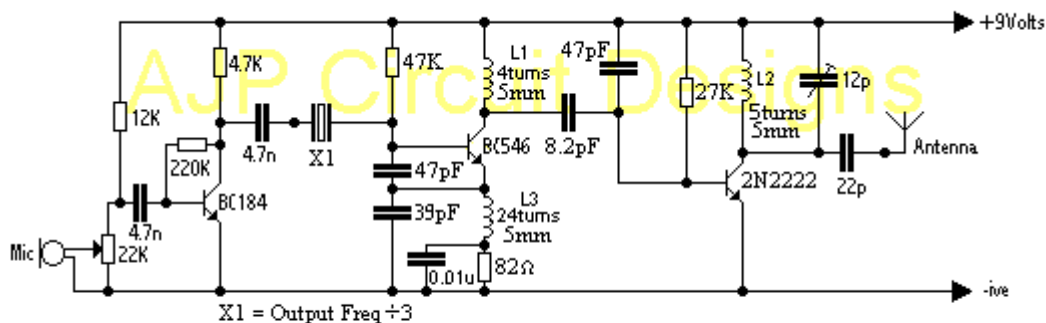


Narrowband FM Xtal Controlled VHF Transmitter

This Narrow Band FM VHF transmitter will output approximately 250mW of RF power using a 2N2222 and can operate between 75 and 146MHz. It utilises a variable high gain audio pre-amplifier, which can detect voices 40 feet away using an electret microphone. Using a NBFM scanner, ranges over 5KM have been achieved using a 48cm wire antenna. Coils are 22SWG. 5mm Air Core. L1 and L2 should be 6turns for 75 to 85MHz, 5turns for 85 to 100MHz and 4turns for 100 to 146MHz. It is Ideal to tune up this circuit using a wave detector meter placed a few inches away from the transmitter. I have a circuit on this site. This circuit will operate between 5.6Volts and 10Volts without any circuit alterations, but the range will be a lot less at lower voltages. 12Volts can be used by inserting a 82Ohm resistor in series with the positive lead. When using above 9Volts, a heatsink should be used on the 2N2222 as it will get very hot. It is Ideal to tune up this circuit using a wave detector meter placed 10-20cm away from the transmitter. I have a circuit on this site. Due to the demand of a higher powered transmitter an I have added an extra circuit below. This will boost the power by 2 to 3 times. Simply remove the antenna series capacitor and connect the circuit below. The coils are 22SWG and 7mm diameter on an Air Former. I have achieved 800mW RF output from the stage into a 50ohm Dummy Load, but in practice using a 1/4 144MHz Rubber Antenna only 500 to 600mW RF Power will be radiated. With the inclusion of this circuit ranges of 7 to 8Km have been reported. Personally I managed 6-7Km.



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AJP Circuit Designs

