1. Tuning Range

| | | |
|---|---|---|
| 29.000 MHz | - | 54.000 MHz |
| 108.000 MHz | - | 136.975 MHz |
| 137.000 MHz | - | 174.000 MHz |
| 406.000 MHz | - | 512.000 MHz |

2. Frequency Range of the Local Oscillators

a) 1st Local Oscillation Frequencies:

| | | | |
|---|---|---|---|
| 50.4 MHz | - | 75.4 MHz | (For 29 - 54 MHz Band) |
| 129.4 MHz | - | 158.375 MHz | (For 108 - 136.975 MHz Band) |
| 115.6 MHz | - | 152.6 MHz | (For 137 - 174 MHz Band) |
| 128.2 MHz | - | 163.533 MHz | (For 406 - 512 MHz Band) |

b) 2nd Local Oscillation Frequency: 20.95 MHz

3. Intermediate Frequencies

1st IF: 21.4 MHz 2nd IF: 450 kHz

CIRCUIT DESCRIPTION

This equipment is the double conversion type receiver. From a signal input, the above operating frequencies are coupled through separate tuned RF Amplifying and Mixing stages to the common First inter mediate Frequency (21.4 MHz).

The first local oscillator signal is delivered from the PLL synthesizer (IC701) and VCO circuit (Q702,703). The VCO frequency is divided down by the programmable counter which is preset from memory and compared to a reference frequency.

Any frequency or phase difference produces a correction signal to change the VCO tuning voltage. This tuning voltage then forces the VCO to oscillate at the frequency which required for the counter to produce output that is in phase with change the frequency. Thus, changing the modules of the counter will change the frequency of the VCO. The second oscillator (X701/20.95 MHz) is used for mixing down

to the 450 kHz second IF before the signal is limited and demodulated.

The second mixing and the FM demodulation are done at IC1. Also AM signal that divided from second IF signal is delivered to AM demodulated IC(IC4).

The demodulated audio signal is then coupled to the audio amplifier (IC3) and also filtered for proper squelch activation. he frequency program is entered from the decimal keyboard into the micro-processor (IC9) where it is multiplexed to drive the LCD display and decoded to enter the proper binary code in the memory to control the PLL synthesizer(IC701)