

reasons, use the loop antenna for field strength measurements whenever the signal level is sufficient to produce an adequate indication. Since the loop antenna is a directive device, it must be rotated for maximum pickup as indicated by the meter.

If a low signal level makes the use of the vertical antenna necessary, it is recommended that the antenna be located over the center of a network of wires placed on the ground and covering an area of approximately 800 square feet. The base of the antenna coupler must be connected to the ground network by a side bonding strap.

In spite of the precaution of spreading a ground wire network it is recommended that for greater accuracy, the vertical antenna be calibrated by means of the loop antenna at or near the frequency to be measured.

The calibration procedure is the same as that described in the previous section on radiated measurements. In order to obtain field strength in DB above one microvolt per meter, refer to Figure 4 for the vertical antenna and Figure 5 for the loop antenna. Add 6 DB (the effective height of a 41" rod) to the readings obtained using Figure 4.

6. Circuit Description

The frequency range of 0.150 MC to 30 MC is divided into six turret switched bands using IF frequencies of 0.455 and 1.600 MC. The proper intermediate frequency is chosen automatically by the bandswitching turret.

<u>BAND</u>	<u>FREQUENCY</u>	<u>IF</u>
1	0.150 to 0.360 MC	0.455 MC
2	0.360 to 0.870 MC	1.600 MC
3	0.870 to 2.1 MC	0.455 MC
4	2.1 to 5.2 MC	1.600 MC
5	5.2 to 12.5 MC	1.600 MC
6	12.5 to 30 MC	1.600 MC

The input signal, after passing through the signal input attenuator in the Basic Measuring Unit, is applied to a tuned circuit preceding an RF Amplifier, using a type 5702 pentode. The signal is then fed to the tuned mixer stage employing a 5875 tube where it is mixed with the local oscillator voltage. The local oscillator employs a 5702 and operates above the signal frequency by an amount equal to the IF frequency. The resulting IF signal is amplified by the corresponding IF amplifier. Each IF amplifier consists of 4 double tubed stages using 6BJ6 tubes. A schematic diagram of Tuning Unit T-A/NF-105 is shown in Figure 6.