

## **DESCRIPTION OF CIRCUIT FUNCTION**

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### 1) ANTENNA

It is designed suitable to human body's influence and small loop antenna.

### 2) RF AMPLIFIER AND BAND PASS FILTER (BPF)

Received RF signal from antenna is approved as TR(Q101) Base and TR(Q101) & TR(Q102) are connected to CASCADE in the amplifier and it is designed so that FEED BACK of partial signal can be suppressed maximumly. At this time noise index is less than 2, therefore low voltage amplification is available at very low noise producing condition BPF circuit is composed of Z101(SAW FILTER). L&C and surrounding terminals RF batch is passed.

### 3) 1st LOCAL OSCILLATOR (LOCAL)

1st local oscillator is composed of TR(Q105), X-TAL(X101) and surrounding parts and following formular is applied for oscillator FL of(X101)

$$FL = \frac{FC - 21.4}{12} \text{ (MHz)} \quad FC = \text{Carrier Frequency (MHz)}$$

Basic oscillator frequency is determined by 3rd OVERTONE TYPE X-TAL(X101) and it is tuned as 4 times frequency by(Q105) AND SURROUNDING L, C. Then, it is tuned again as 3 times frequency by(Q106) and surrounding L, C.

### 4) FILTER BETWEEN 1st CONVERTING CIRCUIT AND 1st INTERMEDIATE FREQUENCY

1st conversion circuit and frequency filter are passed through antenna, RF amplifier and 6RF and mixing the signal from 1st local oscillator and inputted receiving signal and then converts to 1st intermediate frequency of 21.4MHz. 1st intermediate frequency filter selects only 21.4MHz signal in various frequency factors which was produced during the mixing in the 1'st mixer and then it is approved 1st intermediate frequency "amplifier and other jamming signals except approved signal are excluded. This filter is 2 POLE MCF FILTER and sit has 15kHz band.

### 5) 2nd PART OSCILLATOR

2nd part oscillator of capacitor(C120),(C126) & X-TAL(X102) and it generates 20.945MHz of 2nd part oscillator frequency

### 6) DEMODULATION PART(Q110)

The signal removing unnecessary wave by Z102 and 2nd part oscillator frequency (20.945MHz) given by X-frequency is made in 1st intermediate frequency. 2nd intermediate frequency is suppressed by Z103 intermediate filter and only 455kHz of intermediate frequency and output restored, data through QUADATURE wave detector or DISCI. Restored data output is approved to LOWPASS FILTER and filtered date out put is passed through IC inside COMPARATOR again and it is converted to Decoder group of ASIC CPU in LOGIC board FM wave detector IC(Q110) has voltage regulator and it is controlled ON/OFF position by receiver ENABLE signal sent from battery voltage which was approved externally, therefore battery span of life can be extended due to reduction of electric power consumption of receiving each part.