Baby Unit Circuit Description

The Baby Unit consists of 8 functional parts as shown on the block diagram and the functional description as follows :

1. **Audio Amplifier**

   The Audio Amplifier response to amplify the input signal sensing by the microphone and the main components including the operational amplifier U1B, U1C

2. **Frequency Modulator**

   The Frequency Modulator response to change the oscillator frequency in accordance to the audio signal output from the **Audio Amplifier** in order to generate the modulated carrier signal frequency. The main components includes resistor R7 and variable capacitance diode D2

3. **Oscillator**

   The Oscillator is oscillating in the frequency 16.615MHz or 16.630MHz as selected by the **Channel Selection Switch.** It includes the main components of crystal Y1 and Y2, Transistor Q2, Coil L6.

4. **Channel Selection Switch**

   The Channel Selection Switch, SW1, are used to select one of the two carrier frequencies 49.845MHz and 49.890MHz which feed to the antenna and radiating into the free space

5. **Frequency Tripler**

   The Frequency Tripler response to generate the triple times frequency signals of 49.845MHz and 49.890MHz based on the fundamental oscillation frequencies 16.615MHz and 16.630MHz. The Frequency Tripler can reject the unwanted harmonic frequencies while emphasize the desired triple times of the fundamental frequencies. It includes the main components of coil L5 and capacitor C33

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6. Resonant Amplifier

The Resonant Amplifier provides further improvement of the harmonic frequencies suppression and amplifies the desired frequency only. Its main components including transistor Q1, coil L4, capacitor C23

7. Harmonic Filter

The Harmonic Filter aims at suppressing the harmonic frequencies to the lowest level and the main components consists of coil L2 and L3, capacitor C20, C21, C19 and C22

8. Antenna Matching Network

Antenna Matching Network serves as the purpose of impedance matching with the antenna and resonance at the 49MHz frequency only. The Antenna Matching Network includes of the components L1 and C1

END