

Podz RF Modules

Last revised on: 19th April, 2006

Left Channel RECEIVER

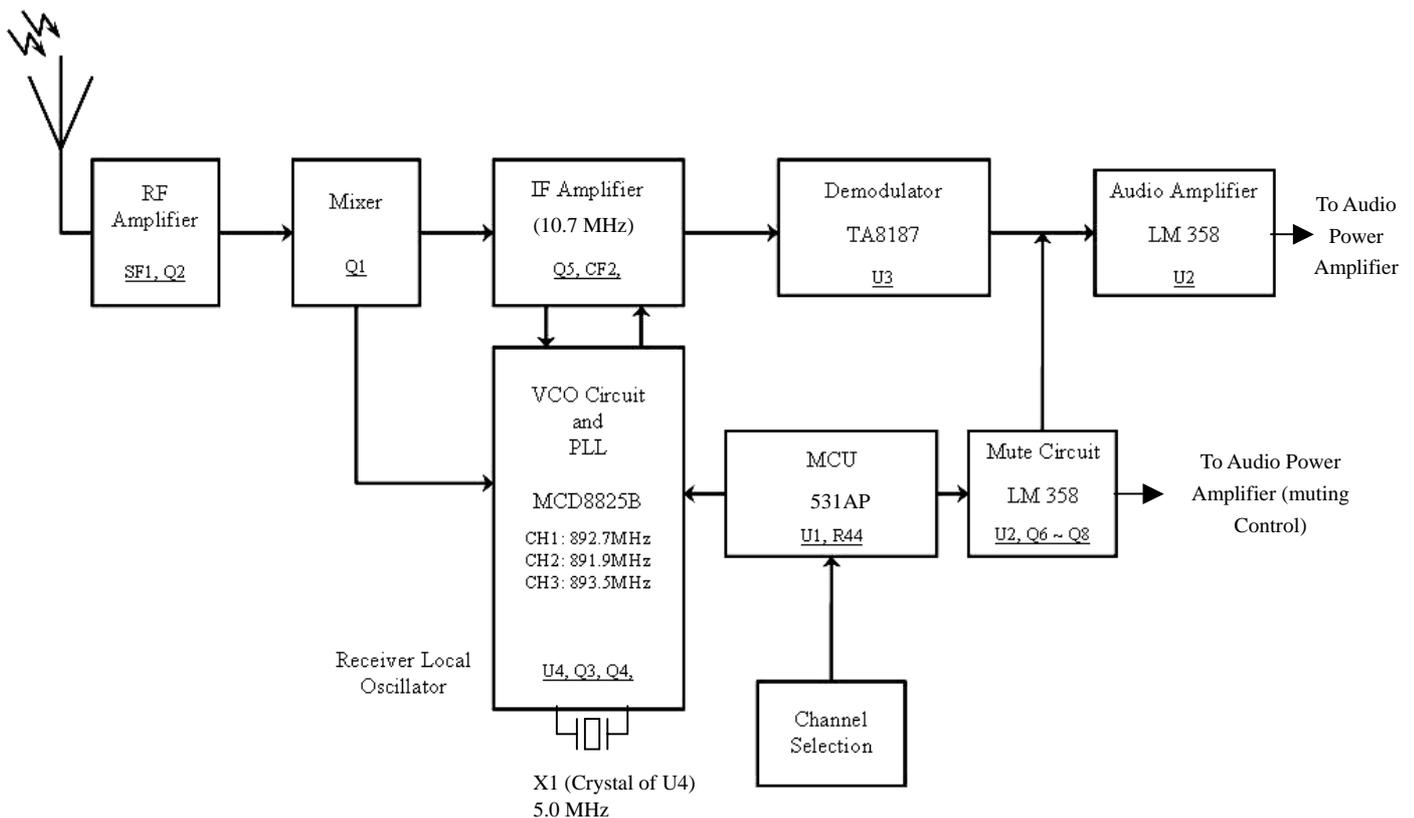
When the RF signal received from the antenna. The RF signal will be amplified by the **RF amplifier**. Then the signal will be mixed in the **mixer circuit** with the local oscillation frequency that generated from the **VCO circuit**. (The local oscillator frequency is control by the **PLL (IC MCD8825B) circuit** and the **MCU**)

After the signal is come to an ceramic IF filter (CF2) to remove all other un-want frequencies except the 10.7MHz and enter into the **IF amplifier**. An audio signal will be came out when the IF signal will pass into the **De-modulator circuit**.

The de-modulation oscillator frequency uses 892.7 MHz (Channel 1), 891.9 MHz (Channel 2) and 893.5 MHz (Channel 3).

Noted: The VCO frequency is controlled by MCU. If the MCU pin 3 is pull high, the left channel frequency is selected.

Left Channel Block Diagram



RF Amplifier is formed by *SF1*, *C1~C6*, *L1~L4*, *R1~R4* and *Q2*

MCU is 531AP (*U1*) and used a resistor (*R44*) to control the VCO frequency.

VCO Circuit and PLL (IC MCD8825B) Circuit is formed by *U4* and other passive components *Q3*, *Q4*, *D1*, *C17~C31*, *R7~R15*, *L8* and *L9*.

De-modulation Circuit is formed by *U3* (*TA8187*), *L11*, *L12*, *C47* *C49~C55* and *R32*.

IF Amplifier is formed by *Q5*, *CF2*, *R23~R29*, *C44~C47* and *R23~R29*

Audio Amplifier is formed by *U2* (*LM 358*) and other components *C63~C68*, *R46*, *R47* and *R49~R53*.

Right Channel RECEIVER

When the RF signal received from the antenna. The RF signal will be amplified by the **RF amplifier**. Then the signal will be mixed in the **mixer circuit** with the local oscillation frequency that generated from the **VCO circuit**.

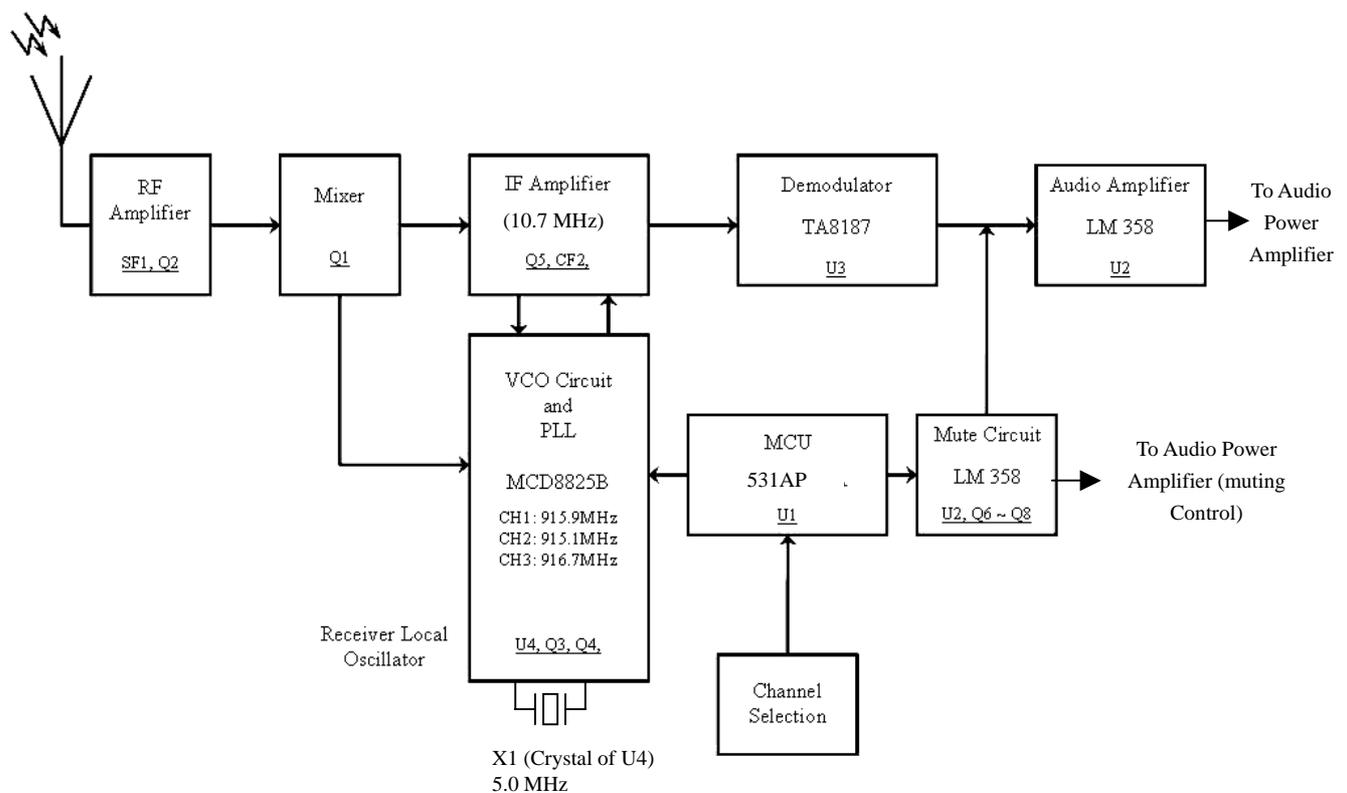
(The local oscillator frequency is control by the **PLL (IC MCD8825B) circuit** and the **MCU**)

Then the signal is come to an ceramic IF filter (CF2) to remove all other un-want frequencies except the 10.7MHz and enter into the **IF amplifier**. An audio signal will be came out when the IF signal will pass into the **De-modulator circuit**.

The de-modulation oscillator frequency uses 915.9 MHz (Channel 1), 915.1 MHz (Channel 2) and 916.7 MHz (Channel 3) and controlled by MCU with a resistor (R44).

Noted: The VCO frequency is controlled by MCU. If the MCU pin 3 is pull low, the right channel frequency is selected.

Right Channel Block Diagram:



RF Amplifier is formed by *SF1, C1~ C6, L1 ~ L4, R1 ~ R4* and *Q2*

MCU is 531AP (U1)

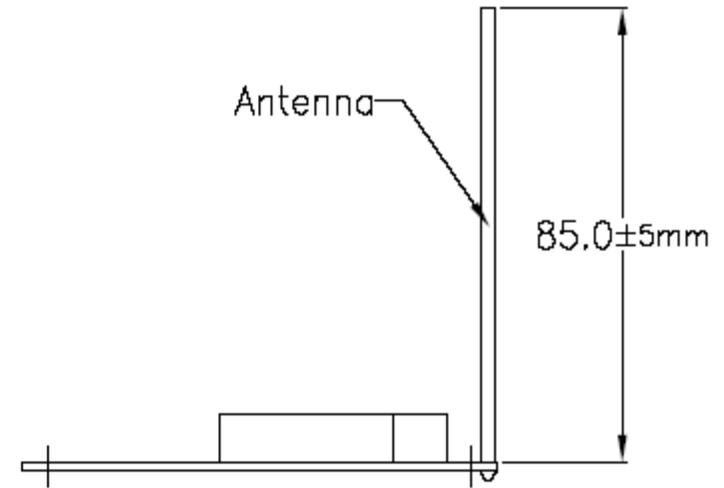
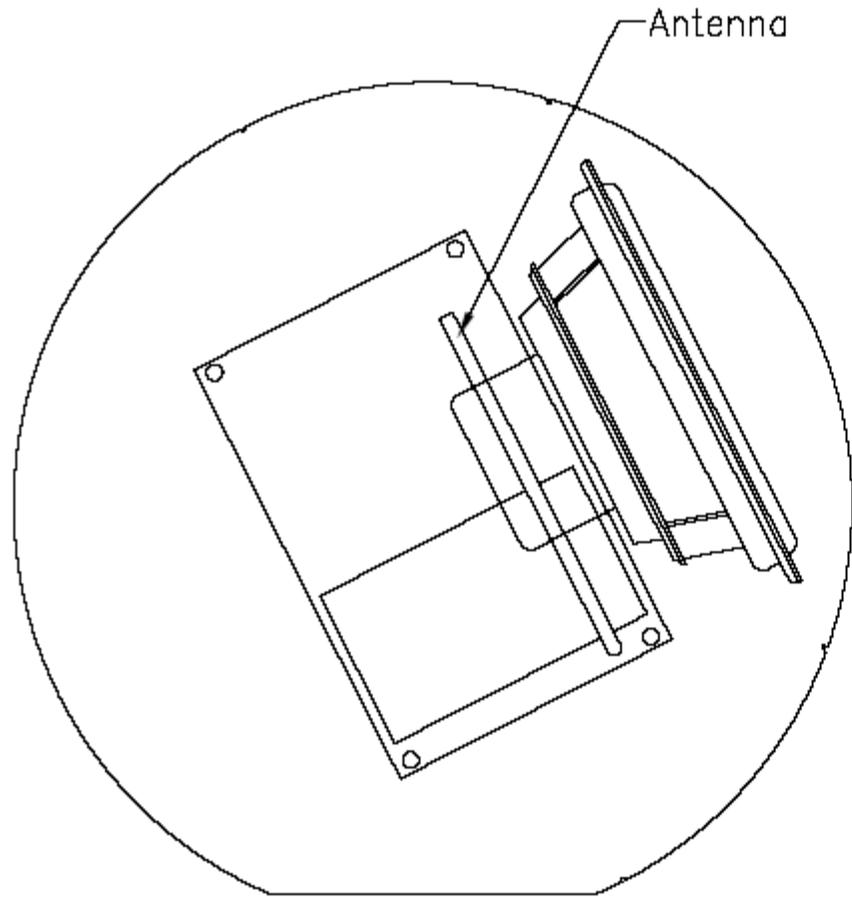
VCO Circuit and PLL (IC MCD8825B) Circuit is formed by U4 and other passive components *Q3, Q4, D1, C17~C31, R7 ~ R15, L8* and *L9*.

De-modulation Circuit is formed by *U3 (TA8187), L11, L12, C47 C49~C55* and *R32*.

IF Amplifier is formed by *Q5, CF2, R23 ~ R29, C44 ~ C47* and *R23 ~ R29*

Audio Amplifier is formed by U2 (LM 358) and other components *C63 ~ C68, R46, R47* and *R49 ~ R53*.

Antenna Location



Rx (L&R ch)

Podz wireless speaker