

Technical Description for the Outdoor Wireless Speaker

Following is the function description of 900MHz Transmitter and Receiver of Outdoor wireless speaker:

For TRANSMITTER:

When audio signal is inputted to the audio input port. Then the audio signal is summed into a mono signal (The Summing amplifier is formed by C22, C23, R5, R11, C10, C6, R15, R4 and U1 KA358) and then feed into the VCO circuit.

RF VCO: In the VCO circuit, the audio signal is modulated into RF signal. *(The VCO Frequency is for CH .1 = 926.6 MHz , CH .2 = 925.8 MHz and CH .3 = 927.4 MHz)*

The VCO frequency is adjusted by changing the output voltage from U11 pin 3 to control the D6 (a Voltage control capacitance diode) in order to adjust the output frequency from Q6 and Q4 to the correct channel frequency (Q4 and Q6 is a push pull circuit, its generated frequency is depended on the input capacitor from D6).

RF Amplifier: The modulating signal is power amplified into a defined level and transmit into outside. *(The Power amplifier is Q8 NE85619, R61, C70, L7, R60, R59 and C72.)*

The oscillating signal in the VCO circuit is controlled by the PLL circuit and MCU. *(The MCU is used to give a comment (by U3 pin 3, 5, 6) to the PLL U11 (pin 6, 7, 8) to control the VCO frequency that is oscillated as the user selected frequency. The PLL is a phase detector circuit that is used to lock the oscillating signal in VCO circuit in a defined frequency)*

Frequency Adjust: frequency is selected by channel switch SW401 for CH .1 = 926.6 MHz , CH .2 = 925.8 MHz and CH .3 = 927.4 MHz .*(The channel selection is input to MCU U3 Pin 4 and Pin 7)*

The LC circuit (C72, C73, C79, C81, L1 & L9) is used for the filtering.