

Technical Description for the Outdoor Wireless Speaker

Following is the function description of 900MHz Transmitter 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 and L9) is used for the filtering.