

Wireless microphone circuit description of U25PAH-1000

AUDIO CIRCUIT

The audio signal is injected via the microphone sensor into the audio circuit composed of the op. amp IC4 (MC4558), & compandor IC3 (SA571). The signal is compressed via the compandor circuit at a 2:1 ratio and is pre-emphasized by U2. The level of the output signal is controlled by the resistors R45 (10K VR) and R37, R47 to VCO.

MODULATOR CIRCUIT

The modulator circuit is a direct FM type built around the local oscillator controlled by Crystal X301(10MHz), VCO(IC302 MCD8825B), PLL(IC301 MB15E03). The modulated output from the oscillator is sent to the RF pre-amp.

Frequency Set: The frequency can be chosen by setting switch (AN1) or by an IR sensor and the CPU(IC1 16F73 clock 4MHz). And the signal from CPU to PLL can control the carrier frequency.

RF PRE-AMPLIFIER & FINAL AMPLIFIER

The 2-stage amplifier, using two transistors Q303(Y7) and Q304(R37), culminating with a normal transmitter output of <1mW. The precious LC output filter (L310-314, C333-342) suppress the output harmonics and matches the output to the integrate antenna.

LCD DISPLAY CIRCUIT

The LCD display (LCD T4036) is driven by IC5(HT1621) and showing the frequency etc. signals output by CPU.

POWER STEADY CIRCUIT

Use 2xAA batteries as power supply, Q4 (2SC4081) and Q3 (2SD2098) rise the voltage to 7.5V for audio part, and to U1(7805 5V) for CPU also the LCD, PLL and RF AMP.

ANT TYPE: Whip ant

Modulation Type: 100KF3E

Operational frequency range: 655M—679M Hz