Honor Tone Limited
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CIRCUIT DESCRIPTION

BABY MONITOR

MODEL : 2M06

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1. Product Description

2M06 is a baby monitor. consists of the nursery unit and the parent unit. It is for transmits the baby's sound to the parent unit.

2M06 have two main versions operating at difference frequency band

Operating frequency band:

Channel A: 906.662 Channel X: 907.992

Channel B: 905.995 Channel Y: 907.326

Power supply:

Transmit – adaptor with 120V AC 6VDC 200MA output

Receive – adaptor with 120V AC 6VDC 200MA output

2. Design/ Development

2.1 The outline for design / development is as follow:

a). Operating frequency

The baby monitor is a 2 channels FM microphone .The channel is selected by selected by setting the switches (Channel A,B & Channel X,Y)

b). Spurious radiation control

The output frequency is crystal oscillator to control the VCO frequency as the transmission frequency. and a LC filter and a ceramic filter is inserted in between for antenna circuit and transmission circuit to control the interference frequency.

3. Circuit description

The operations of each part are described below, based on the schematics

3.1 The transmit unit

a). Oscillator

TheY300 and Y3001 crystal oscillator generate standard frequency to control VCO oscillator (C357 ,VC350 D351, L355, L356)and generate the carried frequency that selected by channel A and channel B or channel X and Y. Turning VC351 and VC350 to adjusting the TX frequency accuracy.

b). Transmission Part

The microphone picks up the baby's sound, then pass through Q302-Q306 to amplify sound signal and input the TX3930 IC to modulate upon the carried frequency. the RF signal be amplified by Q350 RF power amplifier, then through the LC filter (L352 ,L350,C350,C352 etc.) to filtrate the interference radio frequency. At Last be transmitted out by antenna.

c). **Melody and recorder Function**

The Melody and recorder be consisted by U4001 W567S015 and U400 ISD1810 IC. The play melody and record voice be triggered by press SW401

and SW402 button. The power amplifier consisted by Q402,Q403 and Q404 components that amplify the low audio signal to that drive the speaker, and can select the volume level high or how by adjusting the volume VR400.

d). Power supply

the nursery unit is powered by 120V AC adaptor with 6VDC 200MA output Q405 D391, C391 form a regulator circuit that provides 4.1V power to the circuit.

3.2 The receiver unit

a). Y1 and Y2 form a crystal oscillator to generate standard frequency to control VCO oscillator (D100, L352,L102 VC101) that generate a local frequency, ant it selected by channel A and channel B or channel X and Y. Turning VC351 and VC350 to can adjusting the TX frequency accuracy.

b).Receiver function

The RX3930 is RF received IC, its work method is superheterodyne receiver.

The RF signal is received form the antenna and pass through a LC circuit to enter into LNA amplifier Q101 for amplifies. The RF signal be inputted RX3930 and be mixed by the local frequency, that will generate IF signal (intermediate frequency), then IF signal be demodulated by RX3930's demodulation then output the AF (audio) signal to preamplifier U1 YD358 that amplifies low audio signal.

C).Speaker amplifier

The U1 output the audio signal to the power amplifier U3 YD8602 for drivers the speaker, by adjusting the volume the VR1 to control the volume level high or low.

d). Voice level LED indication

Q1-Q7 are LED meter indication driver, it drives a group of LEDs which indicate the sound level.

e). Clock and timer

The U1 CG84321 is clock IC, and it can execute the clock display and timer function, and the clock time and timer can be adjusted by press the S1,S2,S3 button.

f). Power supply

The parent unit is powered by 3.6V 600MA rechargeable battery or an adaptor with 120VAC 6VDC 200MA.