DTMF DECODER

Abstract:

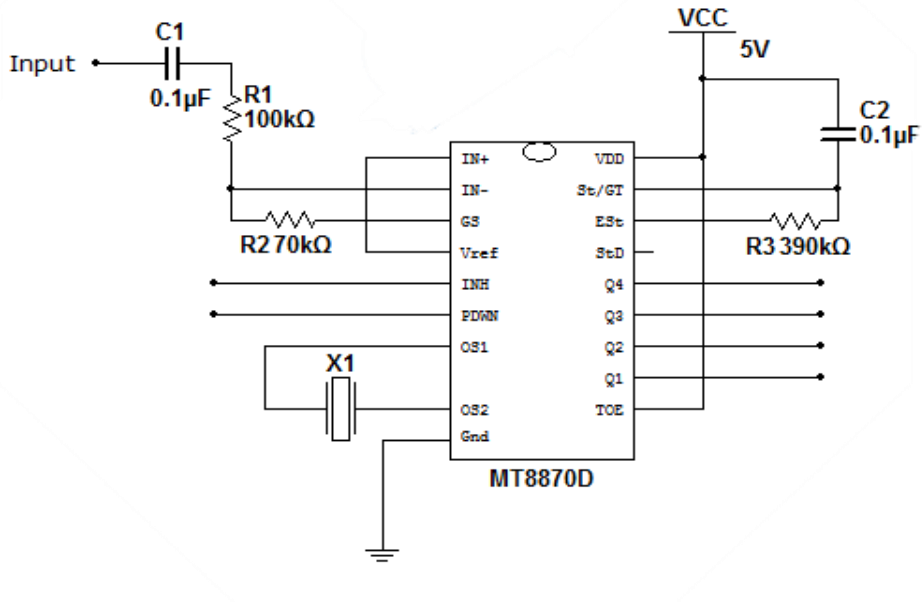
In the premature days, our telephone systems were operated by human operators in a telephone exchange room. The caller will pick up the phone, giving instruction to the operator to connect their line to the destination. It is a kind of manual switching. As more and more people entered in the telephone technology as useful communication gear, manual switching becomes a time consuming tedious task. As technology established, pulse or dial tone technique were invented for telephone communication switching. It employs electronics and computers to support switching operations. DTMF is the ultimate technique used in any of the Mobile, Telephone communication systems.

Introduction:

This DTMF (Dual Tone Multi Frequency) decoder circuit identifies the dial tone from the telephone line and decodes the key pressed on the remote telephone. Here for the detection of DTMF signaling, we are using the IC MT8870DE which is a touch tone decoder IC. It decodes the input DTMF to 5 digital outputs. The M-8870 DTMF (Dual Tone Multi Frequency) decoder IC uses a digital counting technique to determine the frequencies of the limited tones and to verify that they correspond to standard DTMF frequencies. The DTMF tone is a form of one way communication between the dialer and the telephone exchange. The whole communication

consists of the touch tone initiator and the tone decoder or detector. The decoded bits can be interfaced to a computer or microcontroller for further application (For example, Remote control of home/office electrical appliances using a telephone network, Cell Phone controlled home appliances, Mobile phone controlled robot, etc.)

Circuit Diagram:



Component Required:

1. DTMF decoder IC (M-8870)
2. Resistors (100kΩ; 70kΩ; 390kΩ)
3. Capacitors (0.1µFx 2)
4. Crystal oscillator (3.579545MHz)

Applications:

• Receiver system for British Telecom (BT) or CEPT Spec (MT8870D-1)

• Paging systems

• Repeater systems/mobile radio

• Credit card systems

• Remote control

• Personal computers

• Telephone answering machine