CIRCUIT DESCRIPTION FOR MODEL 3969

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1.TRANSMITTER SECTION

RF Frequency Oscillator (VCO)

Q1 function as oscillator for transmitter. The oscillator frequency is 2.4231GHz(CHA) or 2.4225GHz(CHB).

RF Amplifier and Power Amplifier:

Q3 is the power amplifier of transmitter.

PLL CIRCUIT

U2 (MB15E07SL) is a phase locked loop (PLL) IC. The output of the oscillator OSCout (4MHz) is input to the programmable reference divider. This 4MHz frequency is divided to 100KHz as the reference frequency built in the PLL IC.RF frequency from VCO is still divided to 100KHz by the prescaler built in the PLL IC .The phase difference between the reference frequency and the divided frequency by the prescaler will output to the tracking filter(R7,R8, C10,C11, R9, & C12) for locking the frequency. The DC voltage by filtering from the tracking filter is fed the varacitor diode to control the VCO oscillator frequency until the VCO frequency is locked. The VCO will be locked at the desired carrier frequency. VC1 is used to adjust RF frequency.

Modulation

U4-A, U4-B is the MIC amplifier. The amplifier audio signal from U4-B output is fed to VD2, for making F3E type modulation.

Circuit for limiting Modulation

Q5 and Q4 give the auto MIC control circuit. When the modulating voltage is excessive, the DC voltage will be obtained on the emitter of Q5, which turns to Q4. This feedback system keeps the maximum modulation.

MCU Controller

U3 is a MCU controller.

Y2, C36, & C37 function as oscillator (4MHz) for logic control to control the PLL.

Power Supply:

SW2 is power supply switch for the baby unit.

U1 is a regulator that the output DC voltage is 3V. This stable output is used to feed to IC U3, U2, U4 Power amplifier, RF amplifier .

ENGINEERING DEPT
☐ Sample only
☑ Reference only
☐ preliminary release
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