

Model : Panasonic RP-WF930T

Operation circuit description

Transmitter

Audio signal input from P1 then input to IC200, IC200 is a preamplifier with automatic sound level control, L200 and L201 are low pass filter make audio frequency under 19Khz, then audio signal input to Q209, Q210 and feedback to IC200 it is called “ Surround ”, S202 is to control the “ surround “ enable or not, then audio signal input to IC1, IC1 is a MPX encoder make left and right audio signal mix together and modulate, then input to Q2, Q2 is a VCO which generate 900Mhz RF signal, Q1 is a buffer make RF signal more strong, Q3 is a power amplifier which increase the RF power then pass a low pass filter transmit the RF signal through antenna.

VR1 and VR3 are for RF frequency range setting and select by S200, S200 is a channel switch select CH1 or CH2 or CH3.

Q200, Q203, Q208 and IC203 is an automatic power on off circuit, when no audio signal input over 120 seconds, the unit will auto off, when audio signal comes again, the unit will auto switch on, red led D202A will light on again, which is an operating index.

IC202, Q204 and Q207 are a battery charger circuit, which will automatic charge the battery when put the receiver on the unit, green led D202B turn on and the transmitter will turn off, green led light off means the battery is fully charged.

Receiver

RF signal receive from antenna, Y1 is a band pass filter which reject most of un-want frequency, Q1 is a RF amplifier which increase RF signal go to the mixer – Q2, also Q3 and Y2 is an oscillator which generate the fixed LO frequency to Q2 and mix with RF signal then go to IC2, IC2 is an inter – frequency stage include stereo MPX decoder, it demodulate the MPX signal return to original left and right audio signal, IC3 is an auto scan frequency circuit, it make IC2 at correct frequency to receive RF signal, the left and right audio signal go to IC4, which is a power amplifier, it makes enough power to drive the speaker LS1 and LS2, VR1 is a sound volume control.

Q4 and Q7 is a lock circuit to lock the correct channel.

Q5 and Q6 is a mute circuit.

Power supply and ground

Transmitter power is supplied by an external 12V 150mA AC/DC adaptor, no external connect is available for grounding, the printed circuit board traces are the only ground.

Receiver power is supplied by a built in NiMH 2.4V battery pack.