(43-3506)

CIRCUIT DESCRIPTION for the Model RS988 Senior Phone.

RS988 is a 900 MHz narrow band FM Cordless phone Telephone .It consists of Several key Blocks. They are:

a) RF module.
b) Audio, Equalizer Module and control circuit for Handset.
c) Audio and Line interface circuit for Base.
d) Security Code
e) Power supply for Base

a) RF module.

The signal received at antenna is first selected using dielectric filter and input to Low Noise amplifier. Then it is mixed with 1st Local frequency (892~894Mhz depends on Channel) and filtered by 10.7MHz ceramic filter. The down converted signal is then fed to IF IC for 2nd down conversion (to 450 kHz) and demodulation. The recovered Audio signal is available at pin no.9 of audio IC .The generation of 1st and 2nd local oscillator is controlled by Phase Lock Loop Technology by PLL IC. The transmitter frequency is generated by the transmitter side of Phase Lock Loop IC. Transmitter Frequency is generated by voltage controlled oscillator and doubled by external discrete circuit. Then the signal is amplified and fed to dielectric filter. It will then transmit through the Antenna.PLL IC is controlled by 4-bit micro-controller as require by Handset and Base.

Frequency Table:

BASE	Rx / Handset Tx	Base Tx / Handset Rx
Ch1	**925.35**	**902.85**
Ch2	**925.55**	**903.05**
Ch3	**925.75**	**903.25**
Ch4	**925.95**	**903.45**
Ch5	**926.15**	**903.65**
Ch6	**926.35**	**903.85**
Ch7	**926.55**	**904.05**
Ch8	**926.75**	**904.25**
Ch9	**926.95**	**904.45**
Ch10	**927.15**	**904.65**

b) Audio, Equalizer and control circuit for Handset.

All switching and controlled are done by 4 bit micro-controller (MCU) Ks57c5204 which operates at 3.58Mhz

Audio signal is either goes through equalizer module or not decided by switching controller U4.The U4 switching is decided by MCU is required by the user. The signal passing through equalizer is amplified according to the setting of slide switches, which can be adjusted by the user. Maximum gain is 20 dB.

The compandor noise reduction circuit (KA8507BD) is provided for better quality of speech. The Handset is operated by 3.6V Ni-cd battery and is can be charged by putting handset on base cradle.

c) Audio and Line Interface circuit for Base.

All controlled and switching for the base unit is done by MCU KS57C5204.Audio signal that passing through compandor is amplifier and input to Hybridge Transformer for coupling to telephone line .The Hybridge Transformer (HYTR) is essentially provide to Isolation between telephone and User then input and output signal coupling. The input signal and side tone signal goes through compandor before feed to RF module for modulation.

Opto-coupling device U2 detects the incoming signal. Also Ringing is produced by U4 (PJ31002). Ringing information is transfers to handset via data code. Upon received the information Handset will produce the ringer by MCU.

d) Security Code.

The Security code is randomly generated (64000 combination) by the Base MCU and send to Handset MCU via the RF link when every time Handset put on Base cradle. Base and handset MCUs check security code for every call initialization, dialing and receiving and verify before making the link. It prevents unauthorized handset being connected to same base unit

e) Power supply for Base.

DC 12V from the AC / DC adapter is used. Most of the circuit uses 5V regulated power except charge circuit that uses 12V unregulated power.

End