EXHIBIT 1
GENERAL DESCRIPTION

1.0 General Description

1.1 Product Description

The MH991(X)(0)(X) Series are 900 MHz Cordless Phone with Caller ID. The unit is capable of either tone or pulse dialing. The internal power supply's isolation is accomplished through a power transformer having an adequate dielectric rating. The circuit wiring is consistent under the requirement of part 68.

The handset unit consists of a keypad with twelve standard keys (0,...9,*,#), five function keys (flash, tone, pause, redial and memo), Caller ID function keys and one channel switch key. A talk key is provided to control pick/release telephone line in a toggle base.

The base unit has a page key, which is used to page the handset unit.

The circuit description is listed in the following page.

Connection between the device and the telephone network is accomplished through the use of USOC RJ11C in the 2-wire loop calling central office line.

CIRCUIT DESCRIPTION OF 9913

HAND SET :

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.5 of CN1 is connected to IC4B Pin no.15 Expander input. The audio output from IC4B Pin no.19 is finally amplified by Q3 and a.c coupled to the Receiver unit with HAC compatibility.

The demodulated data code from CN1 Pin no.5 is fed to IC1B Pin no.7 of IC7B is connected to (DATA IN) Pin no.54 of IC1.

Voice signal from C-MIC is coupled to Pin no.8 of IC4. The voice signal is compressed by IC4 & output Pin no.1 is connected to Pin no.11 of CN1 fro modulation.

Pin no.57 of IC1 is the output port for data code that should be transmitted to the base unit. This data code is connected to the Pin no.11 of CN1 for modulation.

Lcd Display operration is monitored by pin no. 62~77,95~100.

During the charging, it is detected by IC1 Pin no.51.

Key board operation is monitored by Pin no.78~85 of IC1.

Key Tone and the ringing from Pin no.89,90 of IC1 drives the BUZZER.

900MHz DESCRIPTION OF CIRCUIT

1. BASE RF MODULE

1) RX PART

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER, AN RF LOW NOISE AMPLIFIER, A BAND PASS FILTER, A ACTIVE TRANSISTOR MIXER, A MONOLITHIC CRYSTAL FILTER AND 10.7MHz IF AMPLIFIER.

ALSO IT INCLUDES BUFFER AMPLIFIERS FOR THE GENERATION OF LOCAL OSCILLATOR POWER.

THIS FRONT-END RECEIVER RECEIVERS AN RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 926.12MHz~927.29MHz PASS THROUGH RF AMP (Q303) AND BAND PASS FILTER, SAW FILTER.

AFTER PASSING THROUGH THE BAND PASS FILTER AND SAW FILTER, THE SIGNAL IS MIXED WITHIN 1'ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR. THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q305) AND THE SIGNAL PASS THROUGH THE MONOLITHIC CRYSTAL FILTER (10.7MHz). AFTER THE IF SIGNAL PASS THE MCF FILTER, THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC. AND THE SIGNAL IS MIXED IN THE FM IF IC (MC3361). THE SIGNAL PASS THROUGH THE CERAMIC FILTER (450KHz). THE OUTPUT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TERMINAL OF THE CONNECTOR TO THE BASE.

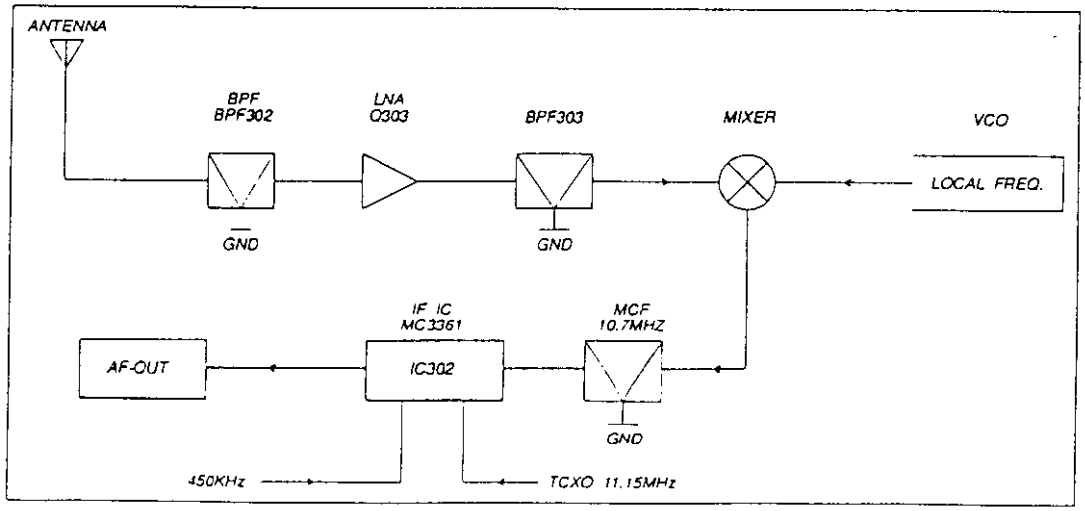

FIG. 1

2) TX PART

THE SIGNAL IS MAD TO THE PORTABLE, ENTER BY THE AF-IN TERMINAL OF THE CONNECTOR.

THE SIGNAL SEND THE MOD TERMINAL OF THE TX VCO.

THE SIGNAL IS MIXED IN THE TX VCO MIXING THE RF SIGNAL, THE RF SIGNAL ADJUST THE TRIMMER CAPACITOR VC301).

THE RF SIGNAL ENTER BY THE TRANSMISSION POWER AMP TRANSISTOR (Q301, Q302). ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TOWARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 902.12MHz ~ 903.29MHz.

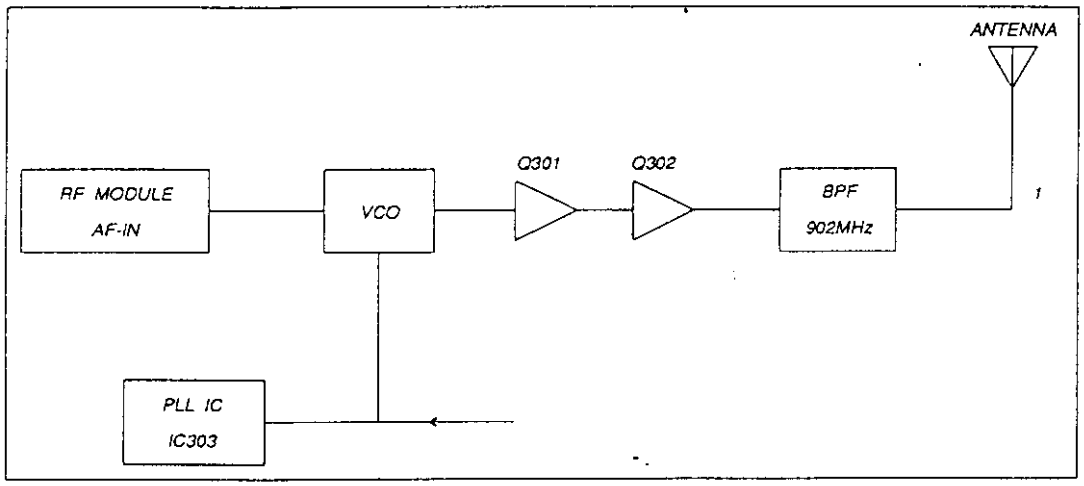

FIG. 2

2. PORTABLE RF MODULE

1) RX PART

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER, AN RF LOW NOISE AMPLIFIER, A BPF, A ACTIVE TRANSISTOR MIXER, A MONOLITHIC CRYSTAL FILTER AND 10.7MHz "IF" AMPLIFIER.

ALSO IT INCLUDES BUFFER AMPLIFIERS OR THE GENERATION OF LOCAL OSCILLATOR POWER.

THIS FRONT-END RECEIVERS AN RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 902.12MHz ~ 903.29MHz PASS THROUGH RF AMP (Q303) AND BAND PASS FILTER.

AFTER PASSING THROUGH THE BAND PASS FILTER, THE SIGNAL IS MIXED WITHIN 1'ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR. THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q301) AND THE SIGNAL PASS THROUGH THE MONOLITHIC CRYSTAL FILTER (10.7MHz) AFTER THE IF SIGNAL PASS THE MCF FILTER, THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC. AND THE SIGNAL IS MIXED IN THE FM IF IC (MC3361). THE SIGNAL PASS THROUGH THE CERAMIC FILTER (450KHz). THE OUTPUT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TERMINAL OF THE CONNECTOR 1 TO THE BASE.

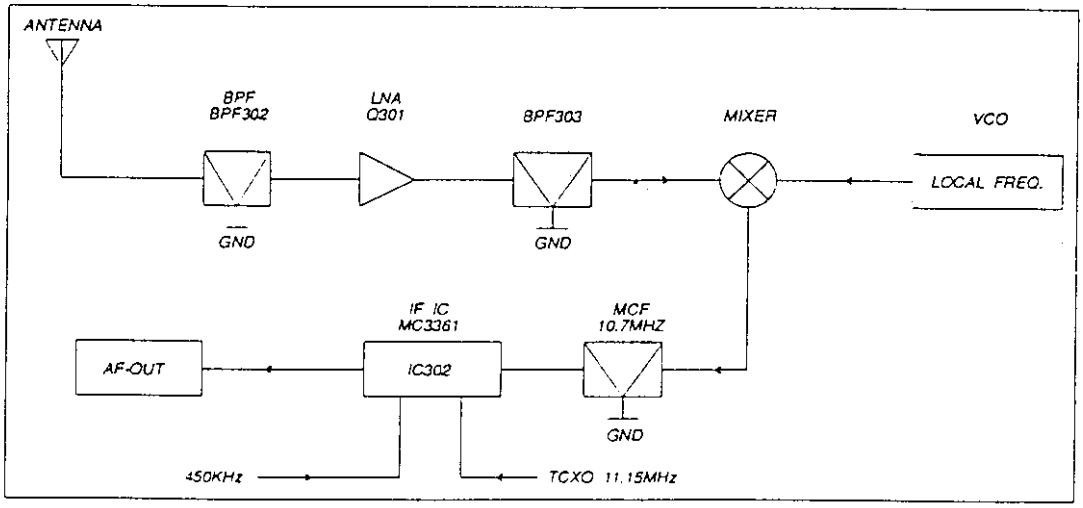

FIG.3

2) TX PART

THE SIGNAL IS MADE TO THE PORTABLE, ENTER BY THE AF-IN TERMINAL OF THE CONNECTOR.

THE SIGNAL SEND THE MOD TERMINAL OF THE TX VCO.

THE SIGNAL IS MIXED IN THE TX VCO MIXING THE RF SIGNAL, THE RF SIGNAL ADJUST THE TRIMMER CAPACITOR (VC301).

THE RF SIGNAL ENTER BY THE TRANSMISSION POWER AMP TRANSISTOR (Q304 Q305). THE SIGNAL IS AMPLITUDE IN THE Q304,Q305. ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TOWARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 926.12MHz ~ 927.29MHz.

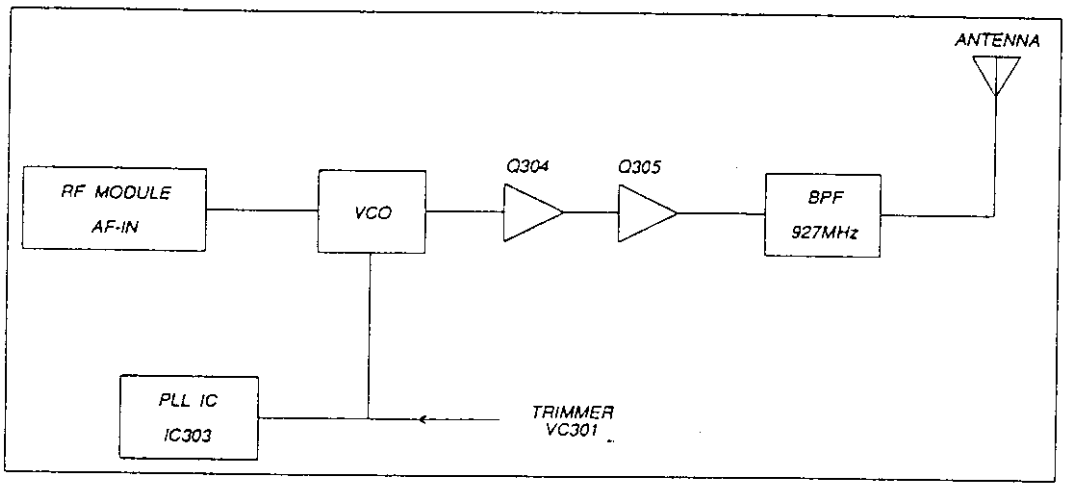

FIG.4