CIRCUIT DESCRIPTION OF CT-910

BASE UNIT :

Line 1

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.3 of CON2 is sent to IC2 (COMPANDER IC) Pin no.16 for Expansion. The expended audio signal output from Pin no19 is coupled to IC3B Q4,Q5 during the TELE mode. The audio signal is sent to the Telephone Line via hybrid Transformer HYB1.

The demodulated data code from CON2 Pin no.3 is Generated by Q1,Q2. Its output is connected to CODE Input Pin no.42 of IC1.

The Audio signal receiving from TEL-LINE is input to Q9, IC2 Pin no.8 for compression. The compressed audio signal from Pin no.1 of IC2 is connected to Pin no.10 of CON2 for modulation.

Pin no.18 of IC1 is the output port for data codes that should be transmitted to the handset the data code is connected to Pin no.10 of CON1 for modulation.

Line 1 Relay controlling is done by Pin no.35 of IC1.
Ring signal monitored by IC4 (PHOTO COUPLER IC) is detected by Pin no.33 of IC1 resulting a data code to the handset.

DTMF dialing is generated by IC1 Pin no.34 this signal output through the IC3B, Q4, Q5.

When the handset is placed on the base cradle, the charging is detected by Pin no.15 of IC1 and IC1 sends data codes to handset for security code setting.

Line 2

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.3 of CON2 is sent to IC2 (COMPANDER IC) Pin no.16 for Expansion. The expended audio signal output from Pin no19 is coupled to IC3A Q12,Q13 during the TELE mode

The audio signal is sent to the Telephone Line via hybrid Transformer HYB2.

The Audio signal receiving from TEL-LINE is input to Q17, IC2 Pin no.8 for compression. The compressed audio signal from Pin no.1 of IC2 is connected to Pin no.10 of CON2 for modulation.

Line Relay controlling is done by Pin no.19 of IC1.

Ring signal monitored by IC5 (PHOTO COUPLER IC) is detected by Pin no.28 of IC1 resulting a data code to the handset.

DTMF dialing is generated by IC1 Pin no.34 this signal output through the IC3A, Q12, Q13.

When the handset is far away from base unit, squelch circuit of RF board IC1 operates and Pin no.13 of RF board IC1 goes "HI". This will be detected by the micro processor and after 20 sec. go to Stand-By mode.

The power to the base unit is supplied by IC6 (5v REGULATOR IC).

Line1 LED display control Pin no.3 of IC1.

Line2 LED display control Pin no.2 of IC1.

Conference is input to Pin 16 of IC2 from Pin 3 of CON2 and the signal output to Pin19 of IC2 is sent to Tel Line 1 via HYB1 passing through IC3B, Q4, Q5 and to Tel Line 2 via HYB2 passing through IC3A, Q12, Q13.

In Tel Line 1, the signal is sent to Tel Line 2 via HYB2 passing through Q9, IC3C, Q12, Q13 while in Tel Line 2 the signal is sent to Tel Line 1 via HYB1 passing through Q17, IC3D, Q4, Q5.

In the stand-by mode the Branch Phone Detect of Line 1 is switched from Normal High to Low in the Pin30 of IC1 via IC7A, IC7B, accompanied with LED 1 of the base unit blinked.

In the stand-by mode the Branch Phone Detect of Line 2 is switched from Normal High to Low in the Pin31 of IC1 via IC7D, IC7C, accompanied with LED 2 of the base unit blinked.

HAND SET :

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.3 of CON1 is connected to IC1A Pin no.16 Expander input. The audio output from IC1 Pin no.19 is finally amplified by Q2 and A.C coupled to the Receiver unit with HAC compatibility.

The demodulated data code from CON1 Pin no.3 is fed to Q3,Q4 of Q3,Q4 is connected to (DATA IN) Pin no.15 of IC2.

Voice signal from C-MIC is coupled to Pin no.8 of IC1B. The voice signal is compressed by IC1B & output Pin no.1 is connected to Pin no.10 of CON1 for modulation.

Pin no.23 of IC2 is the output port for data code that should be transmitted to the base unit. This data code is connected to the Pin no.10 of CON1 for modulation.

During the charging, it is detected by IC2 Pin no.5.

Key board operation is monitored by Pin no.6,11,16~18,28~30 of IC1.

Key Tone and the ringing from Pin no.9 of IC2 drives the BUZZER.

1. BASE RF MODULE

1) BASE RX PART

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

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

THIS FRONT-END RECEIVERS AND RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 926.025MHz ~ 927.975MHz PASS THROUGH RF AMP (Q1) AND BAND PASS FITER,

AFTER PASSING THROUGH THE BAND PASS FILTER AND THE SIGNAL IS MIXED WITHIN 1'ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR. THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q3) AND THE SIGNAL PASS THROUGH THE CERAMIC FILTER (10.7MHz). AFTER THE IF SIGNAL PASS THE CERAMIC FILTER, THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC1. AND THE SIGNAL IS MIXED IN THE FM IF IC (DRL5018V). THE SIGNAL PASS THROUGH THE CERAMIC FILTER (450KHz). THE OUTPUT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TERMINAL OF THE CON1 TO THE BASE.

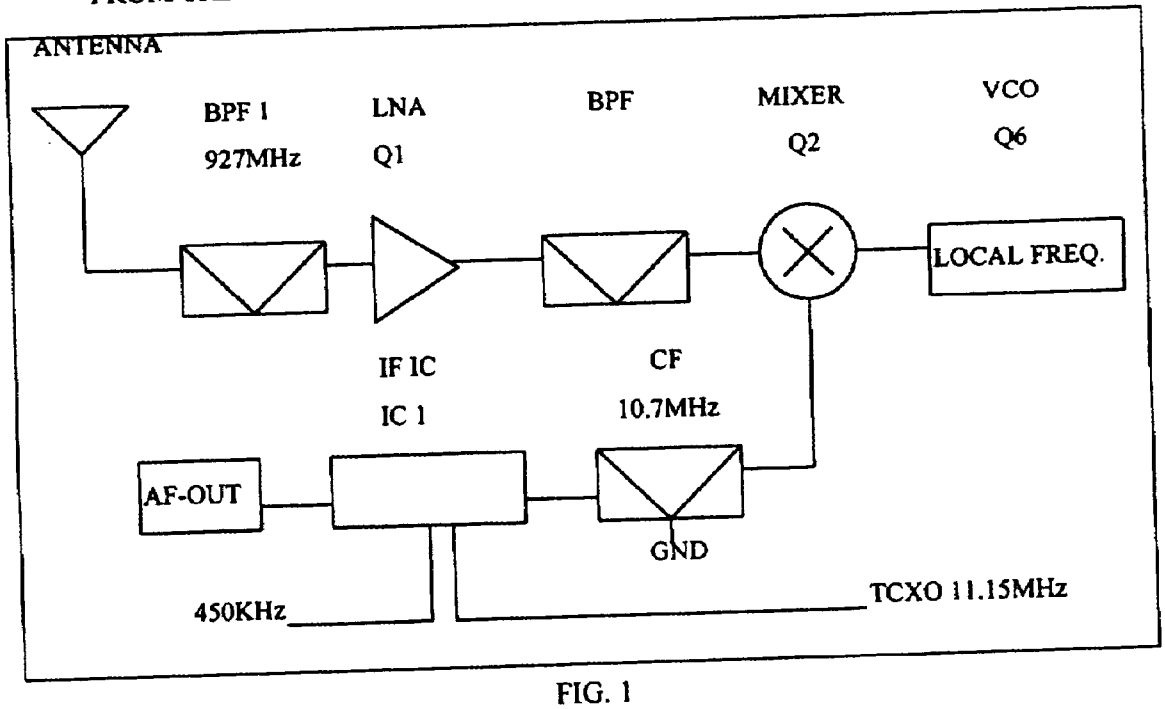


FIG. 1

2) BASE 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 (Q7, Q4).. THE SIGNAL IS AMPLITUDEIN THE Q7, Q4. ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TOWARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 926.025MHz ~ 927.975MHz.

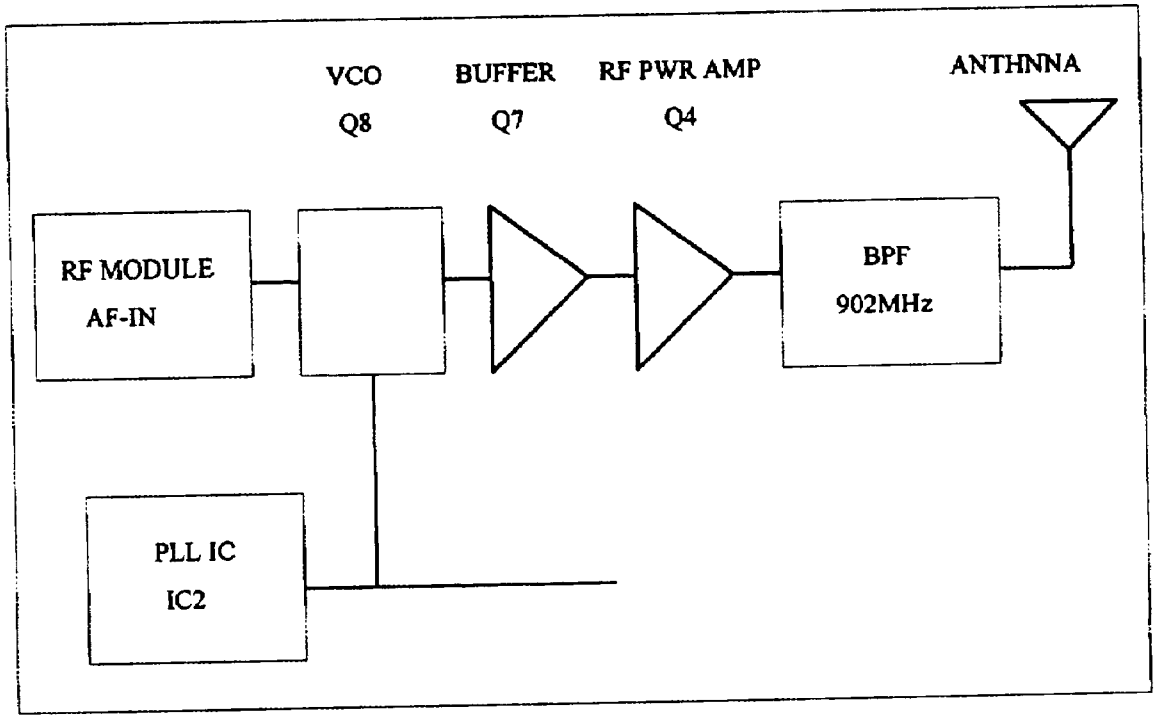


FIG. 2

2. PORTABLE RF MODULE

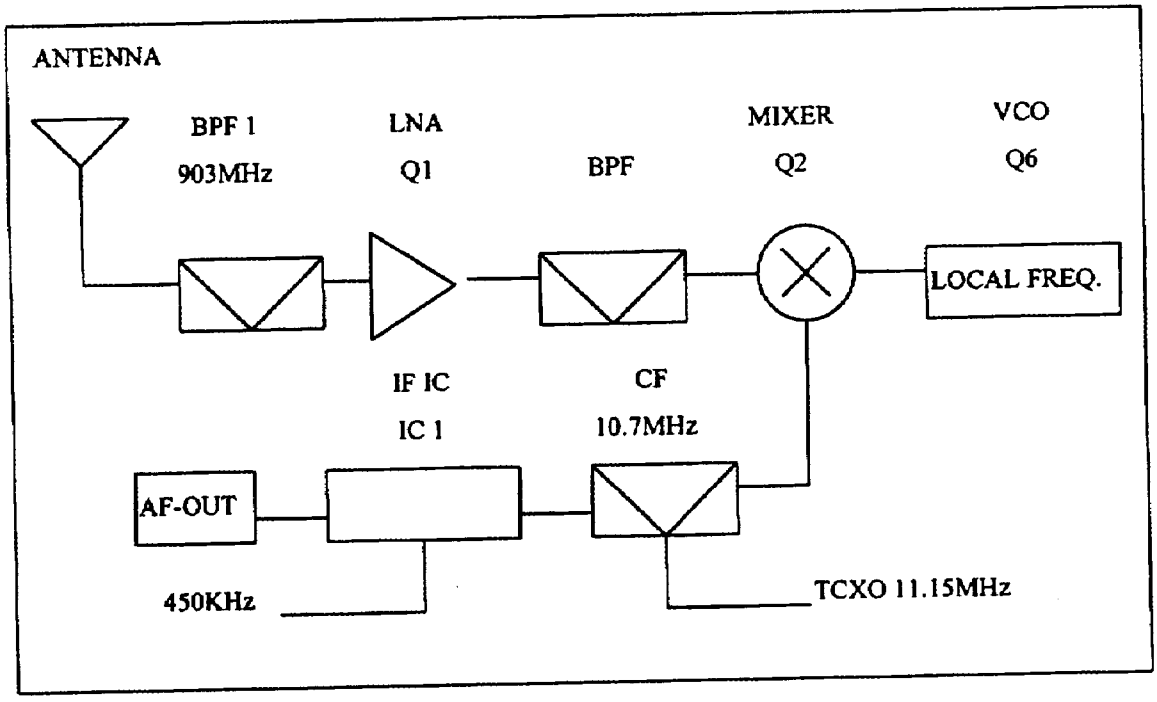
1) RX RART

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER,AND RF LOW NOISE AMPLIFIER, BPF, ACTIVE TRANSISTOR MIXER, CERAMIC FILTER (10.7MHz) AND 10.7MHz "IF" AMPLIFTER.

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

THIS FRONT-END RECEIVERS AND RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 902.025MHz ~ 903.975MHz PASS THROUGH RF AMP (Q1) AND BAND PASS FILTER.

AFTER PASSING THROUGH THE BAND PASS FILTER, THE SIGNAL IS MIXED(Q2) WITHIN 1'ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR. THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q3) AND THE SIGNAL PASS THROUGH THE CERAMIC FILTER (10.7MHz) AFTER THE IF SIGNAL PASS THE MCF FILTER, THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC1. AND THE SIGNAL IS MIXED IN THE FM IF IC (DBL5018V). THE SIGNAL PASS THROUGH THE CERAMIC FILTER (450KHz). THE OUTPIT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TERMINAL OF THE CON 1 TO THE BASE.



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 (Q7 Q4). THE SIGNAL IS AMPLITUDE IN THE Q7,Q4. ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TOWARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 926.025MHz ~ 927.975MHz.