DESCRIPTION OF CIRCUIT OPERATION

BASE UNIT:

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.4 of CON1 is sent to IC1 (COMPANDER IC) Pin no.16 for Expansion. The expended audio signal output from Pin no.19 is coupled to Q4, Q5 during the TEL. Mode. The audio signal is sent to the Telephone Line via hybrid Transformer L3.

The demodulated data code from CON1 Pin no.4 is generated by IC3A, D. It's output is connected to CODE Input Pin no.5 of MCU (IC2).

The Audio signal receiving from TEL-LINE is input to IC1 Pin no.8 for compression. The compressed audio signal from Pin no.1 of IC1 is connected to Pin no.8 of CON1 for TX modulation.

Pin no.14 of IC2 is the output port for data codes that should be transmitted to the handset the data code is connected to Pin no.8 of CON1 for modulation.

Relay controlling is done by Pin no.15 of IC2.
Ring signal monitored by IC5 (PHOTO COUPLER IC) is detected by Pin no.7 of IC2 resulting a data code to the handset.

DTMF dialing is generated by IC2 Pin no.6 this signal output through the L3.

When the handset is placed on the base cradle, the charging is detected by Pin no.11 of IC2 and IC2 sends data codes to handset for security code setting.

When the handset is far away form base unit, squelch circuit of IC1 operates and Pin no.7 of IC3B goes "HI". This will be detected by the microprocessor and after 20 sec. go to Stand by mode.

The power to the base unit is supplied by IC4 (5V REGULATOR IC).

LED indicators control Pin no. 22 of IC2.

HANDSET:

The demodulated signal, resulting from Double Super Heterodyne system, which appears at output Pin no.4 of CON1 is connected to IC1A Pin no.16 Expander input. The audio output from IC1A Pin no.19 is finally amplified by Q5 and A.C coupled to the Receiver unit with HAC compatibility.

The demodulated data code from CON1 Pin no.4 is fed to IC3A, D.
IC3A, D is connected to (DATA IN) Pin no.20 of IC2.

Voice signal from C-MIC is coupled to Pin no.8 of IC1B. The voice signal is compressed by IC1B and output Pin no.3 is connected to Pin no. 8 of CON1 for modulation.

Pin no.17 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. 8 of CON1 for modulation.

During the charging, it is detected by IC2 Pin no. 6.

Key board operation is monitored by Pin no.12 – 14, 28 - 31 of IC2.

Key Tone and the ringing from Pin no.18 of IC2 drives the BUZZER.

1. **BASE RF MODULE**

1) **RX PART**

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER, AND RF LOW NOISE AMPLIFIER, 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 RECEIVER RECEIVES AND RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 2462.MHz ~ 2467.9253MHz 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 OF AMP TRANSISTOR (Q103) 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 (KA3361). 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.

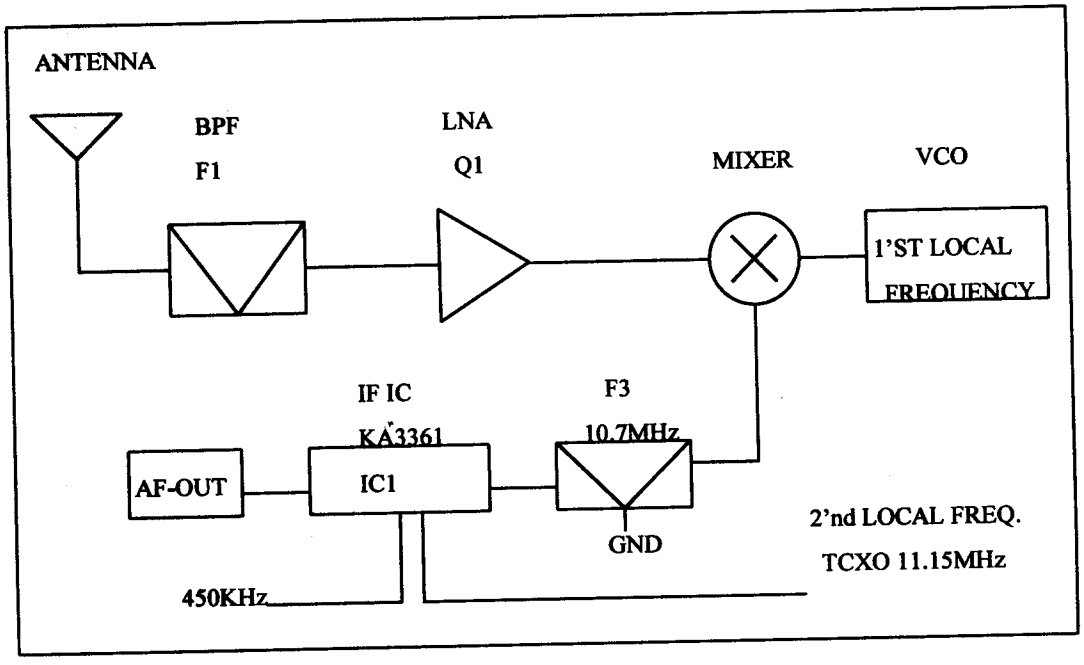

FIG. 1

2) **TX PART**

THE SIGNAL IS MADE TO THE BASE, ENTER BY THE AF-IN TERMINAL OF THE CONNECTOR (CON1 OF PIN NO.8).

THE SIGNAL SENDS 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 (VC1).

THE RF SIGNAL ENTER BY THE TRANSMISSION POWER AMP TRANSISTOR Q4

THE SINAL IS AMPLITUDE IN THE Q3. ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TO WARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 2400.881MHz ~ 2406.5203MHz.

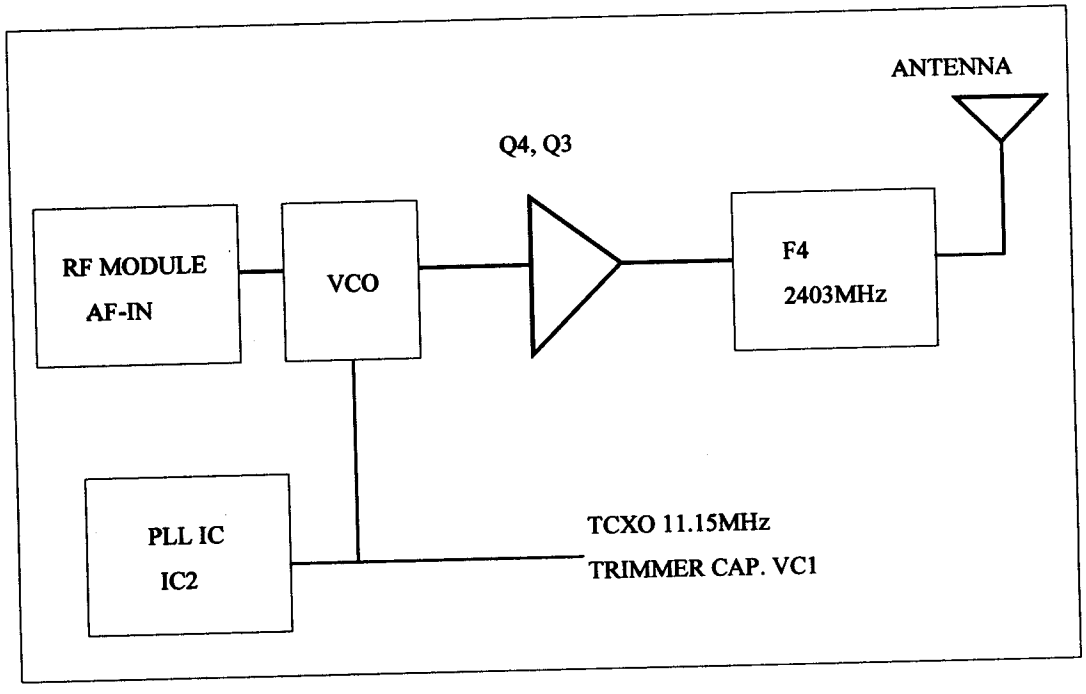

FIG. 2

2. PORTABLE RF MODULE

1) RX PART

THE RECEIVER FRONT-END CONTAINS A BAND PASS FILTER, AND RF LOW NOISE AMPLIFIER, ACTIVE TRANSISTOR MIXER, CERAMIC FILTER 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 2390.18MHz ~ 2395.82MHz PASS THROUGH RF AMP (Q1) 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 (Q10) AND THE SIGNAL PASS THROUGH THE CERANIC 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 (KA3361). 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 PORTABLE.

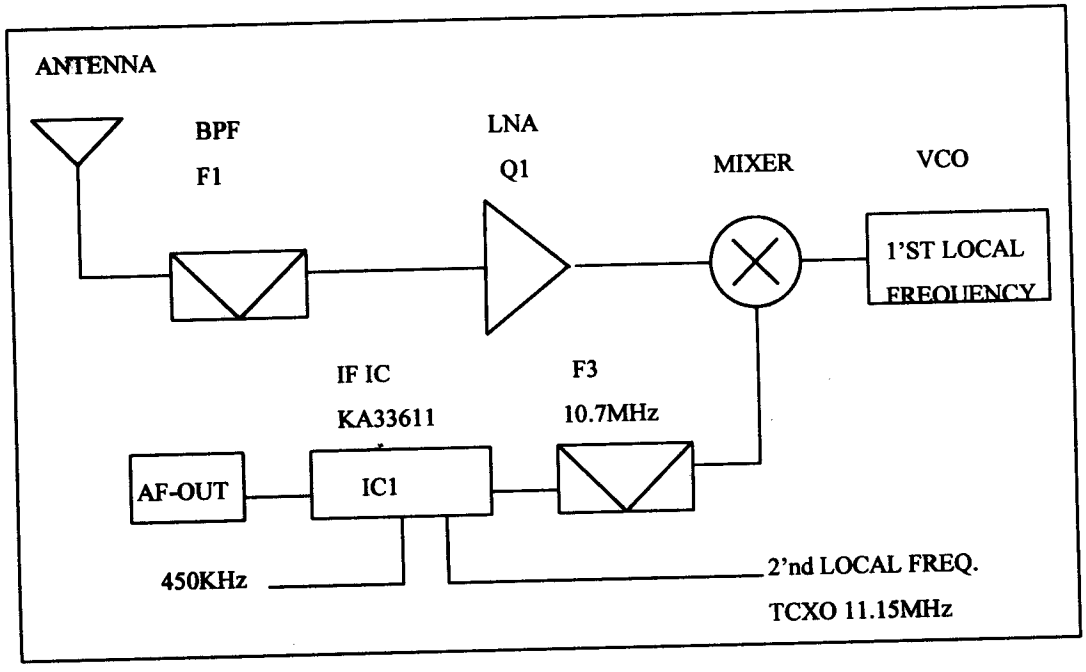

FIG.3

2) **TX PART**

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

THE SIGNAL SENDS 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 CV1.

THE RF SIGNAL ENTER BY THE TRANSMISSION POWER AMP TRANSISTOR (Q4,3). ENTER BY THE BAND PASS FILTER.

THE RF SIGNAL PASS THROUGH THE BAND PASS FILTER, TO WARDS THE ANT. THE LAST TRANSMISSION RF SIGNAL IS 2472.986Hz ~ 2478.6253MHz.

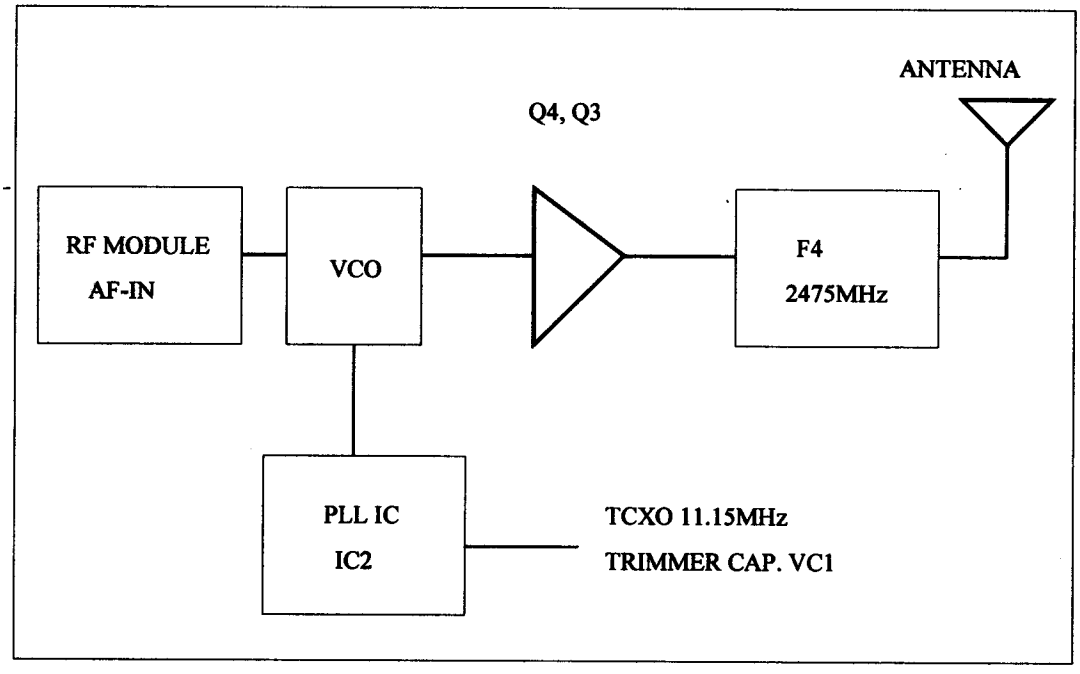

FIG. 4

2.4GHz 40-Channel Frequency Chart (Model 36260)

BASE			HANDSET		BASE			HANDSET	
CH	TX	RX	TX	RX	CH	TX	RX	TX	RX
1	2402.5500	2474.0000	2474.0000	2402.5500	21	2403.5500	2475.0000	2475.0000	2403.5500
2	2402.6000	2474.0500	2474.0500	2402.6000	22	2403.6000	2475.0500	2475.0500	2403.6000
3	2402.6500	2474.1000	2474.1000	2402.6500	23	2403.6500	2475.1000	2475.1000	2403.6500
4	2402.7000	2474.1500	2474.1500	2402.7000	24	2403.7000	2475.1500	2475.1500	2403.7000
5	2402.7500	2474.2000	2474.2000	2402.7500	25	2403.7500	2475.2000	2475.2000	2403.7500
6	2402.8000	2474.2500	2474.2500	2402.8000	26	2403.8000	2475.2500	2475.2500	2403.8000
7	2402.8500	2474.3000	2474.3000	2402.8500	27	2403.8500	2475.3000	2475.3000	2403.8500
8	2402.9000	2474.3500	2474.3500	2402.9000	28	2403.9000	2475.3500	2475.3500	2403.9000
9	2402.9500	2474.4000	2474.4000	2402.9500	29	2403.9500	2475.4000	2475.4000	2403.9500
10	2403.0000	2474.4500	2474.4500	2403.0000	30	2404.0000	2475.4500	2475.4500	2404.0000
11	2403.0500	2474.5000	2474.5000	2403.0500	31	2404.0500	2475.5000	2475.5000	2404.0500
12	2403.1000	2474.5500	2474.5500	2403.1000	32	2404.1000	2475.5500	2475.5500	2404.1000
13	2403.1500	2474.6000	2474.6000	2403.1500	33	2404.1500	2475.6000	2475.6000	2404.1500
14	2403.2000	2474.6500	2474.6500	2403.2000	34	2404.2000	2475.6500	2475.6500	2404.2000
15	2403.2500	2474.7000	2474.7000	2403.2500	35	2404.2500	2475.7000	2475.7000	2404.2500
16	2403.3000	2474.7500	2474.7500	2403.3000	36	2404.3000	2475.7500	2475.7500	2404.3000
17	2403.3500	2474.8000	2474.8000	2403.3500	37	2404.3500	2475.8000	2475.8000	2404.3500
18	2403.4000	2474.8500	2474.8500	2403.4000	38	2404.4000	2475.8500	2475.8500	2404.4000
19	2403.4500	2474.9000	2474.9000	2403.4500	39	2404.4500	2475.9000	2475.9000	2404.4500
20	2403.5000	2474.9500	2474.9500	2403.5000	40	2404.5000	2475.9500	2475.9500	2404.5000

10/24/01