EXHIBIT B

[FCC Ref. 2.1033(b)(4)]

"Description of Circuit Functions"

27925GE1-A CIRCUIT DESCRIPTION

A. BASE UNIT

1. TEL-LINE INTERFACE
2. RING DETECT
3. POWER SUPPLY
4. AUDIO AMPLIFIER AND COMPANDOR
5. DTMF GENERATOR
6. SQUALCH CONTROL
7. DATA COMMUNICATION INTERFACE
8. INTERCOM FUNCTION
9. LIU FUNCTION
10. BASE RF MODULE

B. PORTABLE UNIT

1. LOW BATTERY DETECTION CIRCUIT
2. BUZZER
3. INDICATOR CATEGORY
4. AUDIO AMPLIFIER AND COMPANDOR
5. PORTABLE RF MODULE
6. SQUALCH CONTROL
7. DATA COMMUNICATION INTERFACE

A. BASE SET

1. TEL-LINE INTERFACE

TEL-LINE INTERFACE CIRCUIT CONSISTS OF A RELAY, DIODE BRIDGE (D1~D4), (D5~D8) TRANSFORMER (T1,T2) AND SPEECH NETWORK CIRCUIT AS FOLLOWS FIG.1
A DC LOOP IS CONFIGUED WHEN CPU PIN 29,30 ARE SET LOW.
THE LOOP CURRENT FLOWS AS FOLLOWS:

TIP1 → FUSE1 → D1, D2, D3, D4 → T1
TIP2 → FUSE2 → D5, D6, D7, D8 → T2

THE PULSE SIGNAL FROM CPU PIN 29,30 ARE TRANSMITTED THROUGH LS1, LS2 TO TURN ON AND OFF THE TEL-LINE.

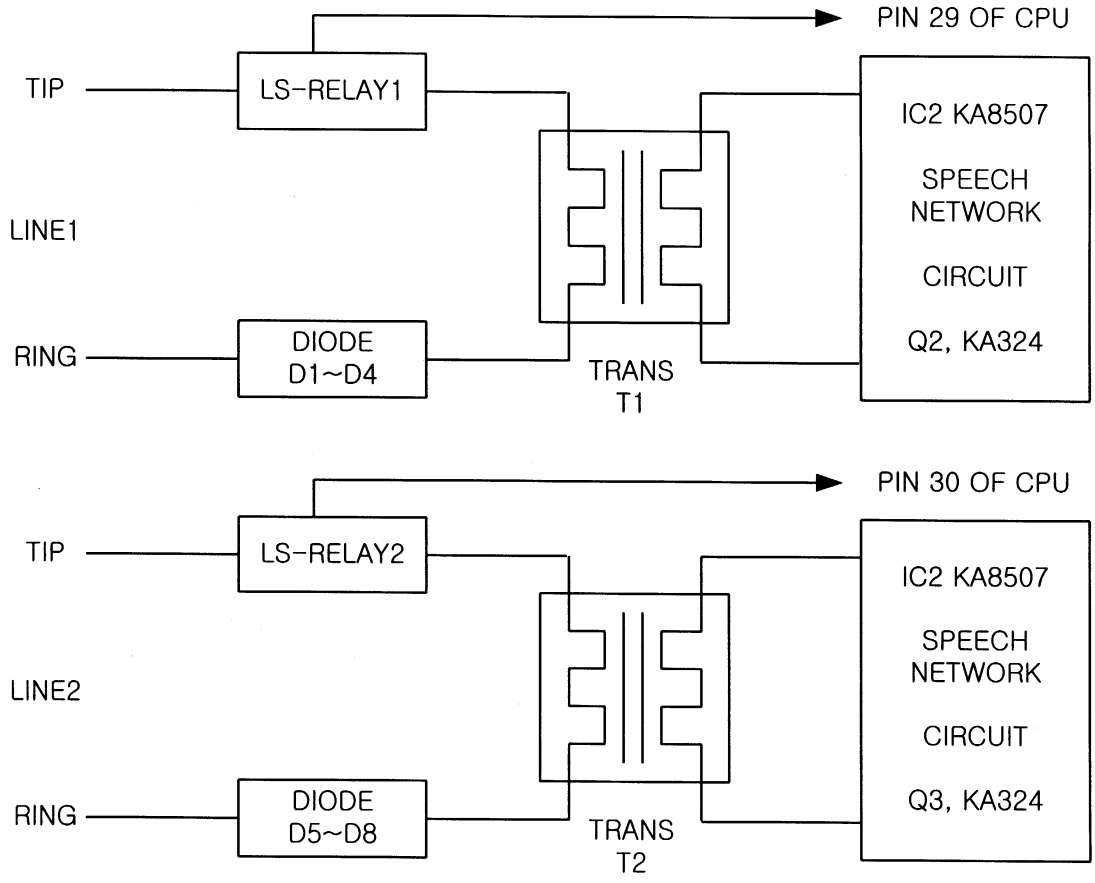

FIG.1

2. RING DETECT

THE RING SIGNAL SUPPLIED BETWEEN TIP AND RING PASSES THROUGH THE FOLLOWING PROCEDURES AND IS DETECTED BY THE CPU.

T1 → IC6 → CPU PIN24
T2 → IC7 → CPU PIN23

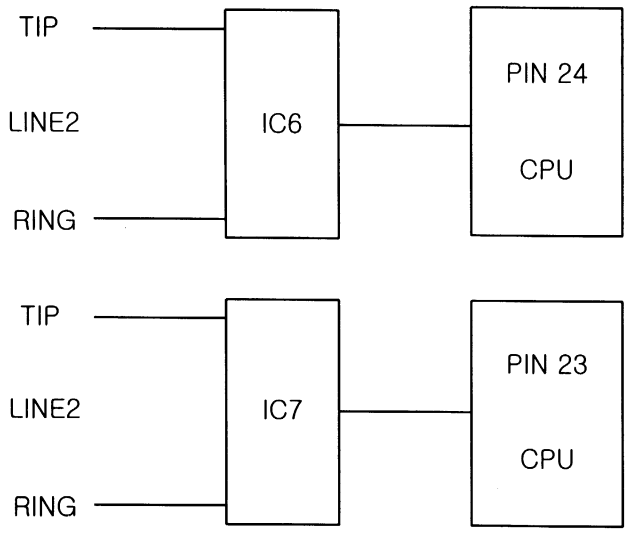

FIG.2

3. POWER SUPPLY

3-1 THE OUTPUT VOLTAGE OF U10 IS REGULATED 5V AND THIS VOLTAGE IS USED BY MAIN SUPPLYIING VOLTAGE OF CPU AND TX, RX POWERS.

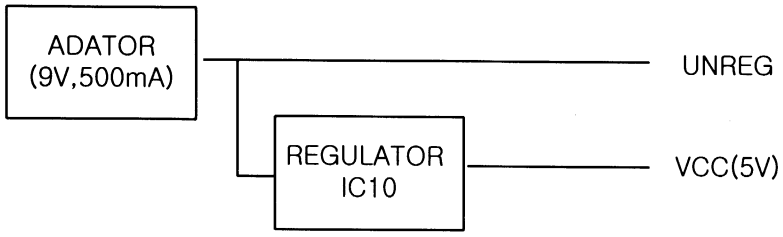

FIG.3

4. AUDIO AMPLIFIER AND COMPANDOR

4-1 TX PART:

THE TRANSMITTED SIGNALS FROM TELEPHONE LINE ARE FEED TO COMPANDOR IC (KA8507) THROUGH THE AUDIO AM LIFIER AND THE RECEIVED SIGNALS FROM TELEPHONE LINE ARE ALSO FEED TO AUDIO AMPLIFIER THROUGH COMPANDER IC (KA8507).

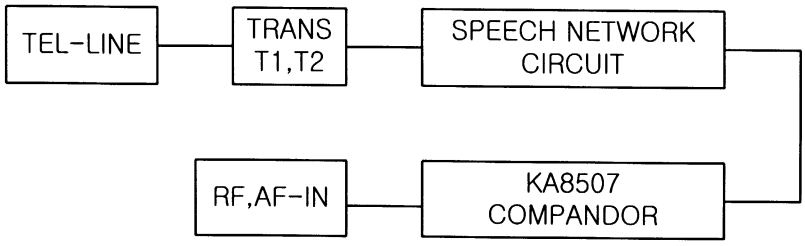

FIG.4

4-2 RX PART:

THE RECEIVED SIGNALS FROM AF-OUT OF RF MODULE, FEED TO COMPANDOR IC (KA8507) FOR NOISE ELIMINATION.
THIS SIGNAL THROUGH MATCHING TRANS TR1, ALSO FEED TO TELEPHONE LINE THROUGH THE SPEECH NETWORK CIRCUIT TO TRANSFER TO OTHER PARTY.

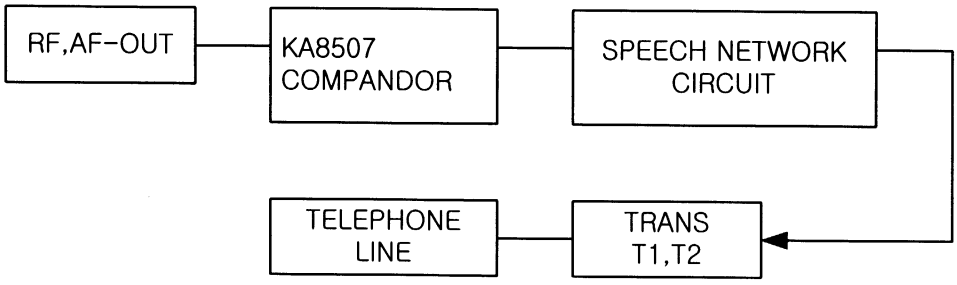

FIG.5

5. DTMF GENARATOR

THE U1 DTMF GENERATOR IS INTENDED TO PROVIDE DUAL-TONE MULTI-FREQUENCY (DTMF) FOR TONE DIALLING SYSTEM.

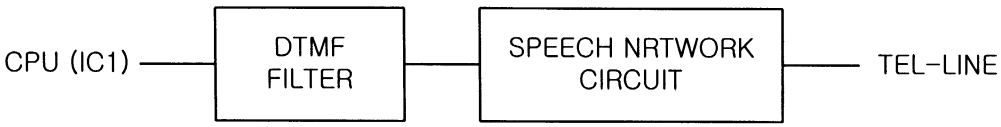

FIG.6

6. RSSI CONTROL

SQUALCH LEVEL OUTPUT FROM THE OP AMP IC3 (KA324) IS DETECTING BY PIN 4 OF CPU.

7. DATA COMMUNICATION INTERFACE.

* DATA COMMUNICATION IS OPERATED SERIAL OUTPUT

7-1 Input:

DATA SIGNAL WILL RECEIVE FROM THE PORTABLE UNIT AS THROUGH RF MODULE DATA SIGNAL INPUT PIN 26 (SI) OF CPU

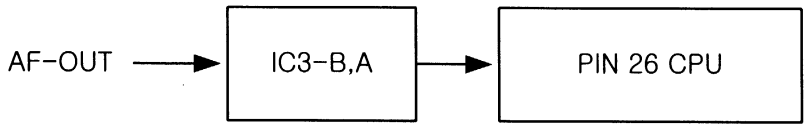

FIG.7

7-2 Output:

DATA SIGNAL WILL SEND TO THE PORTABLE UNIT AS THROUGH PIN 27(SO) OF CPU

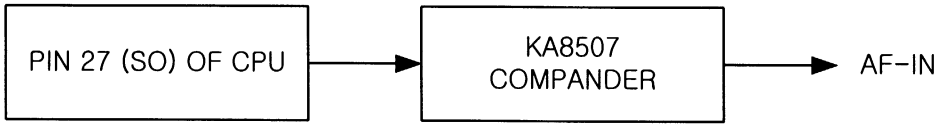

FIG.8

8. PAGING FUNCTION

PAGING FUNCTION CAN BE SELECTED EITHER FROM BASE TO PORTABLE. THE INTERCOM FUNCTION CAN BE ENABLED BY PRESSING THE PAGING KEY IN THE BASE SET.

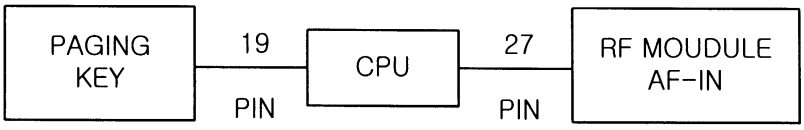

FIG.9

9. LINE IN USE(LIU) FUNCTION

LIU FUNCTION IS MONITERING EXTENTION PHONE WITH IS USING.

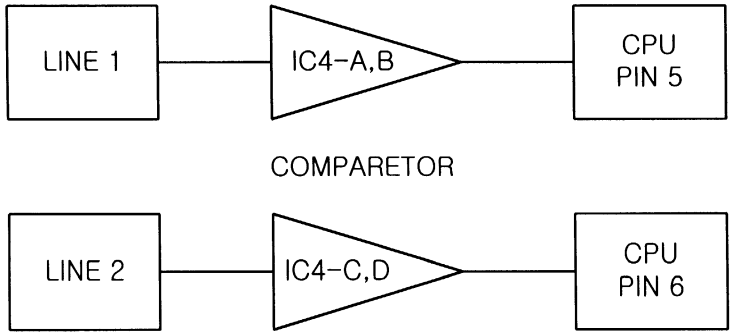

FIG.10

10. BASE RF MODULE

10-1. RX PART

THE RECEIVER FRONT-END CONTAINS A DIELECTRIC FILTER, A 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 OSCILATOR POWER.
THIS FRONT-END RECEIVER RECEIVES A RF SIGNAL FROM THE ANTENNA. AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 2475.00MHz~2476.95MHz PASS THROUGH RF AMP (Q306) AND DIELECTRIC FILTER (BPF302).
AFTER PASSING THROUGH THE DIELECTRIC FILTER, THE SIGNAL IS MIXED WITHIN 1'ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR.
THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q307, Q308) 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) I C.
AND THE SIGNAL IS MIXED IN THE FM IF IC (IC302).
THE SIGNAL PASS THROUGH THE CERAMIC FILTER (FD301).
THE OUTPUT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TEMINAL OF THE CONNECTOR 9 TO THE BASE.

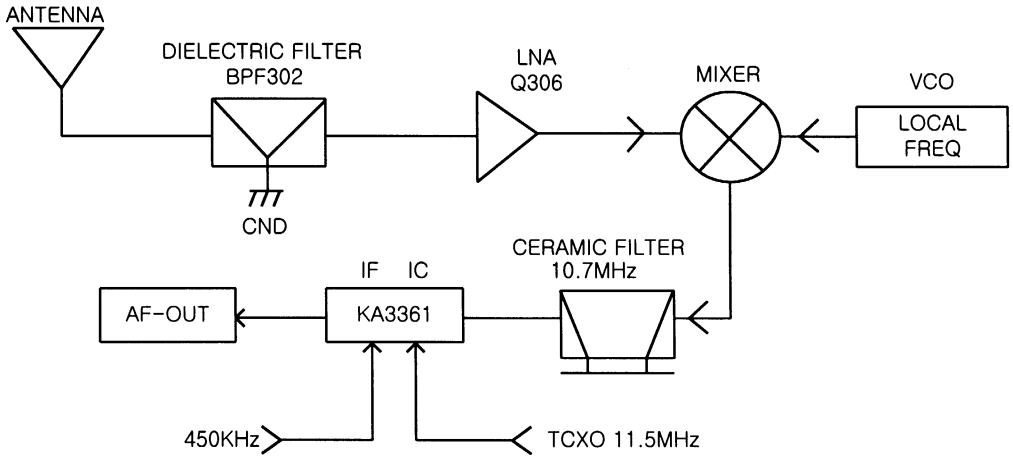

FIG.11

10-2. TX PART

THE SIGNAL IS MADE TO THE BASE, ENTER BY THE AF-IN TERMINAL OF THE CONNECTOR 2.
THE SIGNAL SENDS THE MODULATION 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 TRANSMITION POWER AMP TRANSISTOR (Q303) ENTER BY THE DIELECTRIC FILTER.
THE RF SIGNAL PASSES THROUGH THE DIELECTRIC FILTER, TOWARDS THE ANT.
THE LAST TRANSMITTION RF SIGNAL IS 2403.55MHz ~ 2405.50MHz

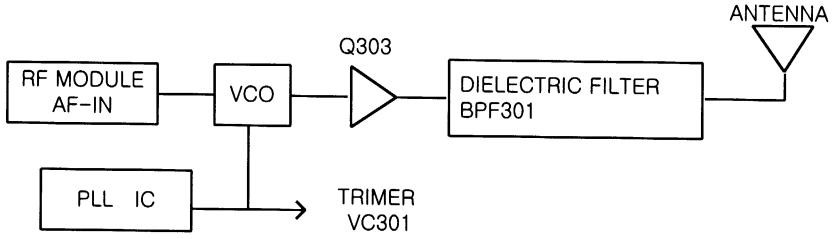

FIG. 12

B. PORTABLE UNIT

1. LOW BATTERY DETECTION CIRCUIT

TRANSISTOR Q5, Q6 IS CONTROLLED BY BATTERY VOLTAGE.
IF THE VOLTAGE OF BATTERY PACK IS BELOW 3.2V, CHANGED FROM HIGH TO LOW AT PIN 33 OF CPU THEN CPU BECOMES TO RECOGNIZE TO LOW VOLTAGE OF BATTERY PACK

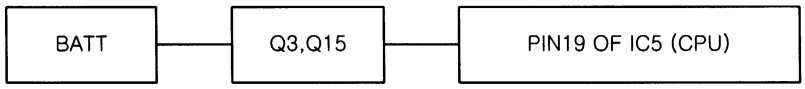

FIG.13

2. BUZZER

BUZZER IS CONTROLLED BY PIN 22 OF CPU DURING RECEIVED RING SIGNAL AND KEY INPUT

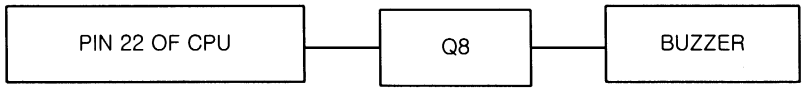

FIG.14

3. INDICATOR CATEGORY

3-1 INUSE LED
INUSE (LINE1) LED2 DRIVED BY PIN 31 OF CPU
INUSE (LINE2) LED3 DRIVED BY PIN 30 OF CPU

3-2 ANTENNA LED
LOW BATTERY LED DRIVED Q12 BY PIN 32 OF CPU

4. AUDIO AMPLIFIER AND COMPANDOR

4-1 TX PART

THE TRANSMITTED SIGNALS FROM MIC ARE FEED TO COMPANDOR IC1 THROUGH AUDIO CIRCUIT SIGNALS INPUT RF MODULE AF-IN

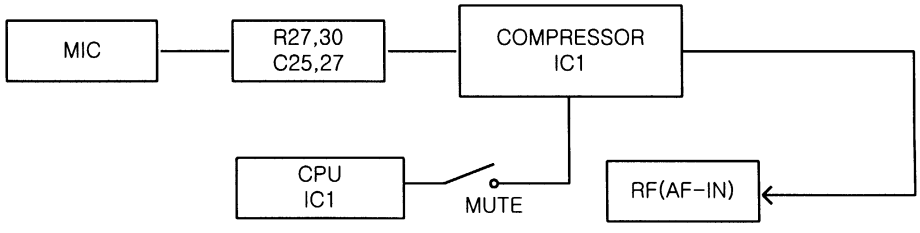

FIG.15

4-2 RX PART

THE RECEIVED SIGNALS FROM AF OUT CONTAIN SIGNALS AND PASS ONLY THROUGH COMPANDOR FOR NOISE ELIMINATION AND SIGNAL INPUT AUDIO AMPLIFIER.

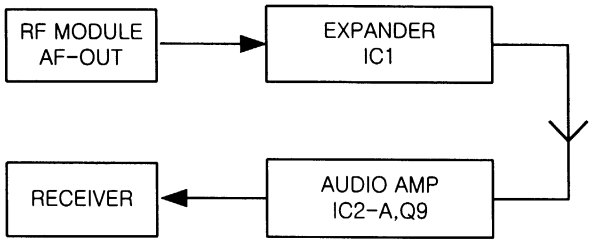

FIG.16

5. PORTALE RF MODULE

5-1. RX PART

THE RECEIVER FRONT-END CONTAINS A DIELECTRIC FITER (ALL), AND RF LOW NOISE AMPLIFIER, A DIELECTRIC FITER, AN ACTIVE TRANSISTOR MIXER,
A CERAMIC FILTER AND 10.7MHz "IF" AMPLIFIER. ALSO IT INCLUDES BUFFER AMPLIFIERS OR THE GENERATION OF LOCAL OSCILATOR POWER.
THIS FRONT-END RECEIVES A RF SIGNAL FROM THE ANTENNA.
AND RF SIGNALS WITHIN THIS FREQUENCY RANGE IS 2403.55MHz~2405.50MHz PASS THROUGH DIELECTRIC FITER AND RF AMP (Q306).
AFTER PASSING THROUGH THE DIELECTRIC FITER, THE SIGNAL IS MIXED WITHIN 1'ST LOCAL FREQUENCY FROM VOLTAGE CONTROLLED OSCILLATOR.
THE SIGNAL IS AMPLIFIED ON THE IF AMP TRANSISTOR (Q307, Q308). AND THE SIGNAL PASS THROUGH THE CERAMIC FILTER (10.7MHz), THE SIGNAL ENTER BY THE FM IF (INTERMEDIATE FREQUENCY) IC.
AND THE SIGNAL IS MIXED IN THE FM IF IC (KA3361).
THE SIGNAL PASSES THROUGH THE CERAMIC FILTER (450KHz).
THE OUTPUT SIGNAL IN THE FM IF IC STREAMS FROM THE AF-OUT TO TEMINAL OF THE CONNECTOR 9.

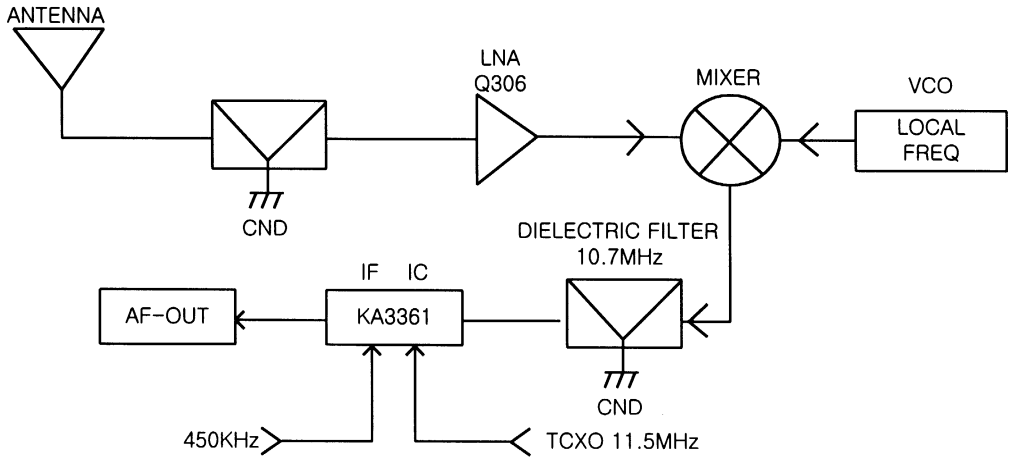

FIG.17

5-2. TX PART

THE SIGNAL IS MADE TO THE MICROPHONE, ENTER BY THE AF-IN TERMINAL.
THE SIGNAL SENDS THE MODULATION 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 TRANSMITION POWER AMP TRANSISTOR (Q303)
THE SIGNAL IS AMPLITUDE IN THE Q301.
ENTER BY THE DIELECTRIC FILTER.
THE RF SIGNAL PASSES THROUGH THE DIELECTRIC FITER, TOWARDS THE ANT.
THE LAST TRANSMITTION RF SIGNAL IS 2475.00MHz~2476.95MHz.

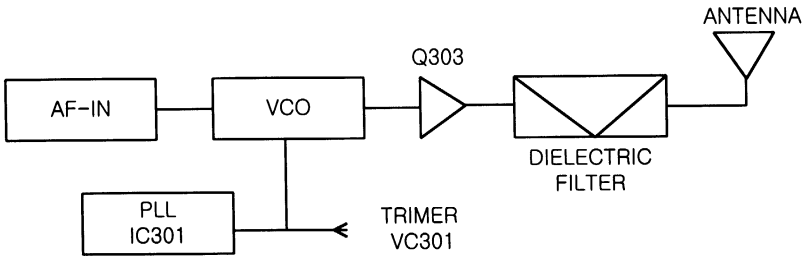

FIG. 18

6. RSSI CONTROL

SQUALCH LEVEL OUTPUT FROM THE OP AMP IC2 (KA324) IS DETECTING BY PIN 23 OF CPU.

7. DATA COMMUNICATION INTERFACE.

* DATA COMMUNICATION IS OPERATED SERIAL OUTPUT

7-1 Input:

DATA SIGNAL WILL RECEIVE FROM THE PORTABLE UNIT AS THROUGH RF MODULE DATA SIGNAL INPUT PIN 26 (SI) OF CPU

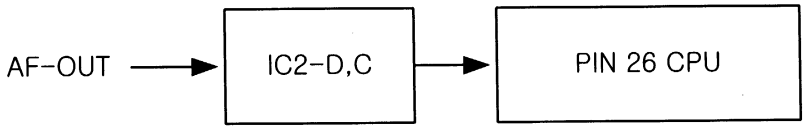

FIG.19

7-2 Output:

DATA SIGNAL WILL SEND TO THE PORTABLE UNIT AS THROUGH PIN 27(SO) OF CPU

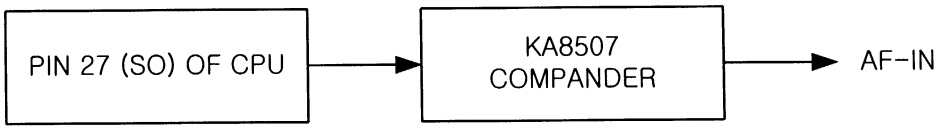

FIG.20