

EXHIBIT B

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

"Description of Circuit Functions"

# 26965GEX-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. RSSI CONTROL
7. DATA COMMUNICATION INTERFACE
8. INTERCOM FUNCTION
9. 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

## A. BASE SET

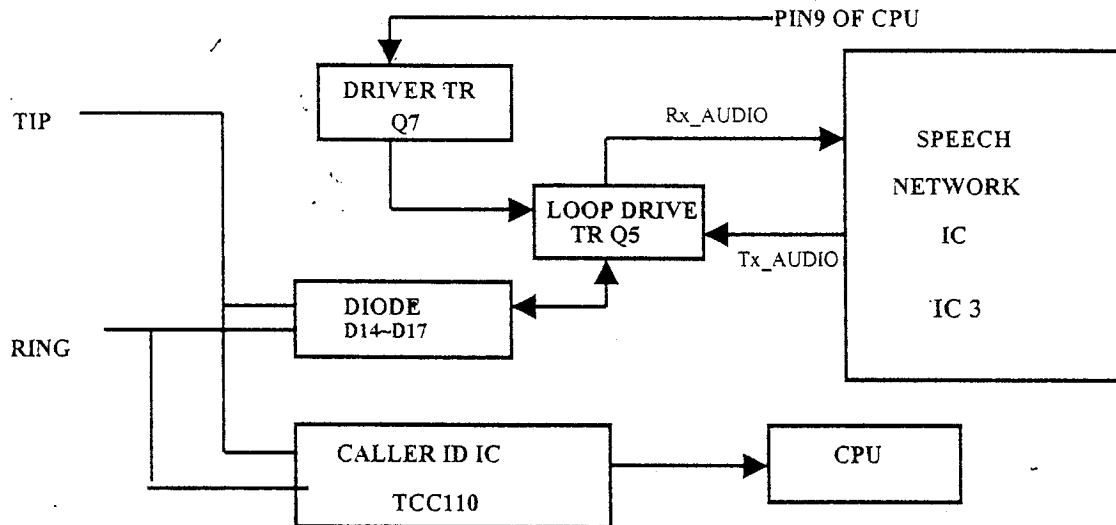
### 1. TEL-LINE INTERFACE

Tel-line interface circuit consist of a Bridge diode (D14~D17), a Tel-line Loop Drive TR (Q5,6) and Speech Network IC (IC7) as follows FIG.1.

A DC Loop in configured when Pin 9 of CPU are setting high and is switched a Loop drive TR (Q5,6).

The Loop current flows as follows :

-- TIP → FUSE1 → Bridge diode (D14~17)→ TR Q5 → Pin 10of Speech network IC

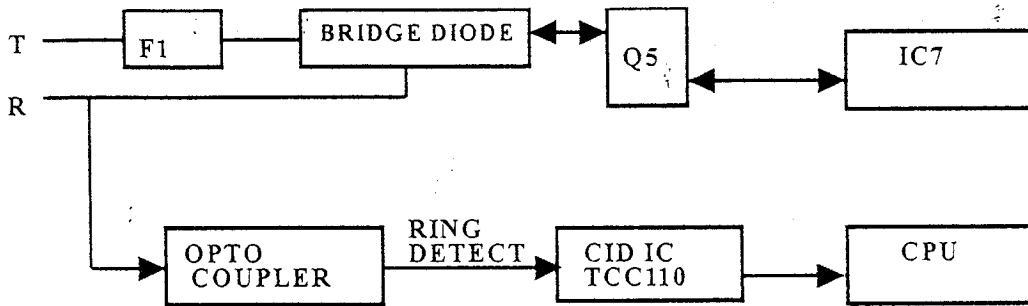


[ FIG 1 ]

## 2. RING DETECT

The ring signal supply between TIP and RING terminal and pass through the following procedure and is detected by CPU. (Fig2)

TIP / RING → F1(Fuse) → Opto coupler (IC6) → CID IC (IC8) → CPU



[ FIG 2 ]

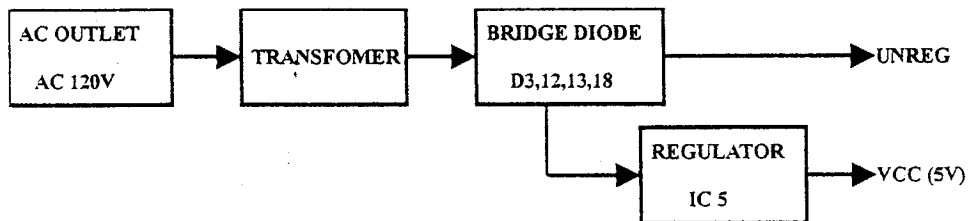
## 3. POWER SUPPLY

Power plug on the base unit into AC out let.

AC 120V is supplied from AC outlet, pass through Transformer and is rectified to DC 9V by bridge doide (D3,12,13,18).

This DC 9V output pas through Regulator IC (IC5) and output of IC5 is regulated DC5V.

This DC5V is used by main supplying voltage of CPU and Tx, Rx power.



[ FIG 3 ]

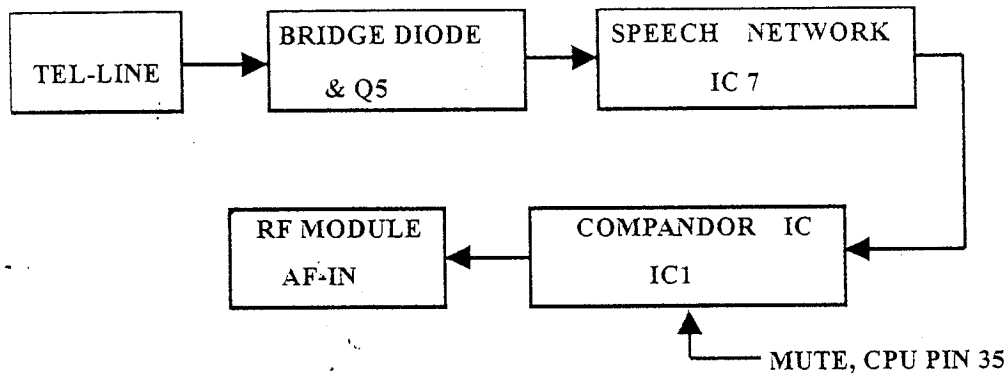
#### 4. AUDIO AMPLIFIER AND COMPANDOR

##### 4-1 TX PART:

The received signals from Telephone-Line pass through Bridge-diode and are feed to Pin 10 of Speech network IC (IC7)

The output (Pin4: RXO) of IC7 pass through C62, R69 & C13 and is feed to Pin8 of compandor IC (IC1).

The compressed output (Pin1) of IC1 pass through R22 & SVR1 and is feed to AF-IN of RF module.



[ FIG 4 ]

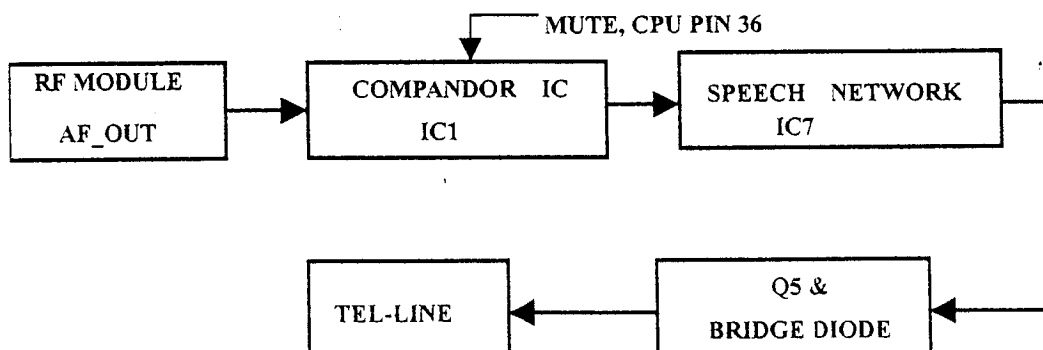
##### 4-2 RX PART:

The received signals from AF-out of RF Module, feed to Compandor IC (IC1) for noise elimination.

This expanded output signal (Pin 19) of Compandor IC1, pass through C33 & R29 and is feed to pin7(MIC+) of Speech network IC (IC7).

Fed signal is amplified in IC7 and so is output from Pin1(VL) of IC7.

This output signal pass through Q5 & Bridge diode (D14~17) and transmit forward Tel-line.



[ FIG 5 ]

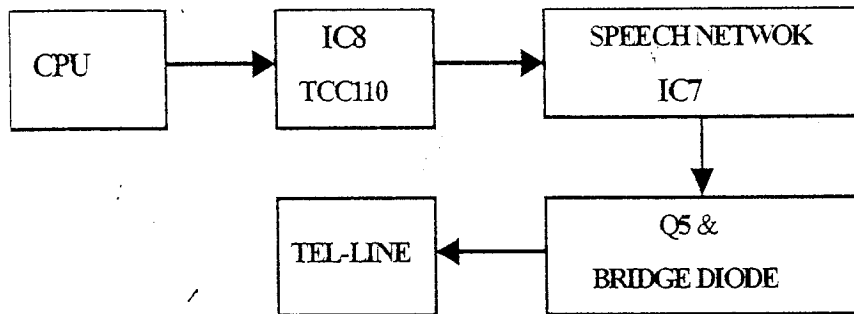
## 5. DTMF GENARATOR

When Base unit is received dial data from handset, CPU send command data that IC8 provide DTMF dial signal forward Tel-line.

Then IC8 is generated DTMF signal and is outputted in PIN 16 (DTMFO) .

This signal is feed to Pin11 of IC7 and is outputted in Pin1 (VL).

And this DTMF signal pass through Q5 & Bridge diode (D14~17) and is transmitted forward Tel-line.

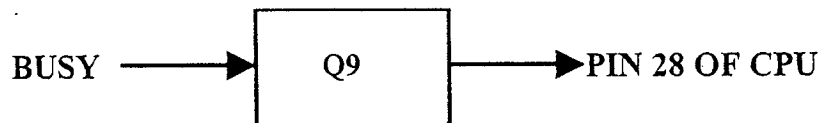


[ FIG 6 ]

## 6. RSSI CONTROL

RSSI\_level output from the IF IC is detecting by Q9 (Comparator).

When collect of Q9 change from high to low, pin28 of CPU is detected RSSI\_level.



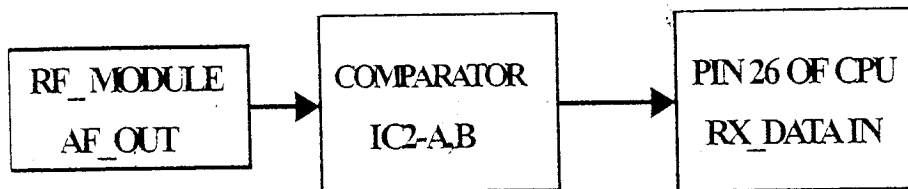
[ FIG 7 ]

## 7. DATA COMMUNICATION INTERFACE.

\* Data communication is operated serial output.

### 7-1 Pin 26 (RX Data) of CPU.

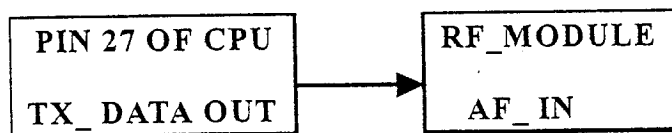
Data signal will be received from the Portable pass through IC2-A,B (Comparator).  
This rectangular data signal input to pin 26 (RX DATA) of CPU.



[ FIG 8 ]

### 7-2 PIN 27 (TXDATA) OF CPU :

Data signal will send to the Portable unit as through Pin27(TX DATA) of CPU.



[ FIG 9 ]

## 8. BASE RF MODULE

### 8-1. RX PART

The receiver front-end contains a Band-pass Filter, a RF Low Noise Amplifier, an Active Transistor Mixer, a Monolithic Crystal filter and 10.7MHz IF Amplifier.

Also it includes Buffer Amplifier for the generation of Local Oscillator Power.

This front-end Receiver receives an RF signal from antenna.

And RF Signals within this frequency range is 926.125MHz~927.675MHz pass through RF amp (Q303) and Band-pass filter.

After passing through the Band-pass Filter, the signal is mixed within 1<sup>st</sup> local frequency from voltage controlled oscillator.

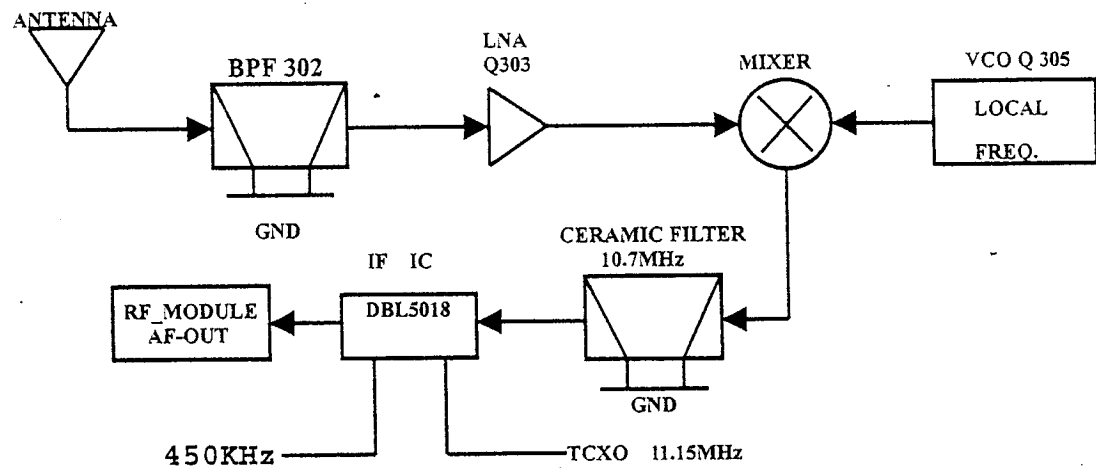
The signal amplified on the IF amp transistor (Q304) and the signal pass through the Ceramic filter (10.7MHz).

After the IF signal pass the Ceramic filter, the signal enter by the FM IF (Intermediate frequency) IC.

And the signal is mixed in the FM IF IC (DBL5018).

The signal pass through the Ceramic filter (450KHz).

The output signal in the FM IF IC system from the AF-out terminal of the connector 1 to the Base..



[ FIG 10 ]

## 8-2. TX PART

The signal is made to the Base, enter by the AF-IN terminal of connector 1.

The signal send the mod terminal of the Tx VCO.

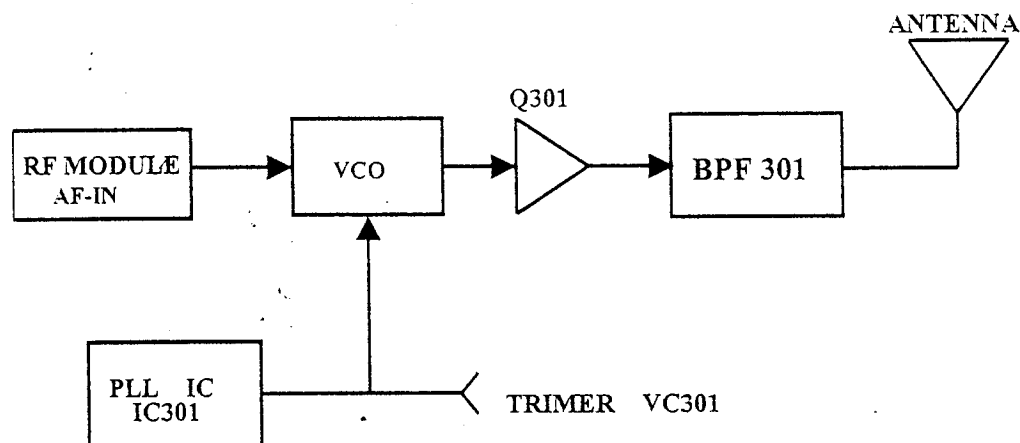
The signal is mixed in the Tx VCO mixing the RF signal,

The RF signal adjust the Trimmer Capacitor (VC1).

The RF signal enter by the transmit power amp transistor (Q301) feed to the Band-pass filter (BPF301).

The RF signal passed through the Band-pass filter, towards the Antenna.

The last transmission RF signal is 902.12 ~903.98MHz.



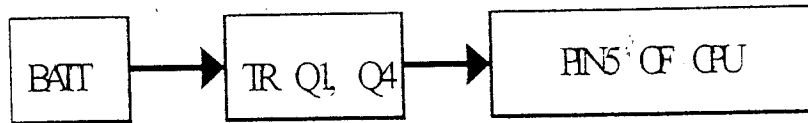
[ FIG. 11 ]

## B. PORTABLE UNIT

### 1. LOW BATTERY DETECTION CIRCUIT

Transistor Q1, Q4 is controlled by Battery voltage.

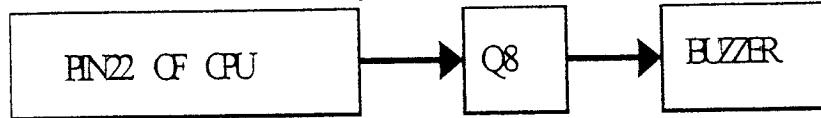
If the voltage of Battery pack is below 3.2V, change from high to low at Pin 5 of CPU.  
Then CPU become to recognize to low voltage of Battery pack.



[ FIG 12 ]

### 2. BUZZER

Buzzer is controlled by Pin 22 of CPU during received ring signal and key input.



[ FIG 13 ]

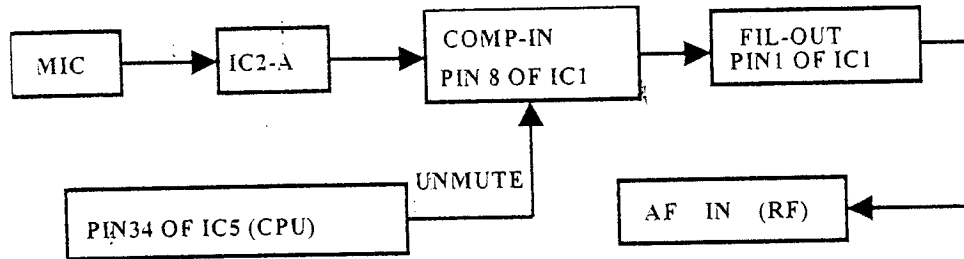
### 3. INDICATOR CATEGORY

All indicator is displayed at LCD window by the CPU Control.

## 4. AUDIO AMPLIFIER AND COMPANDOR

### 4-1 TX\_PART

The transmitted signals from MIC are feed to Compandor IC1 through Audio Amp (IC2) and signals input to RF Module AF-IN.



[ FIG 14 ]

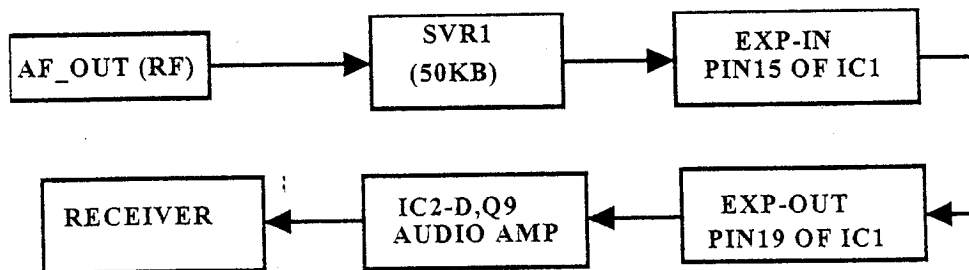
### 4-2 RX\_PART

The receiver signals from AF-out contain Audio signals.

The signals pass only through Compandor IC (IC1) for noise elimination and input to Audio Amp (IC2-B).

The Audio signals amplified by Audio Amp pass through Transistor Q9 and drive the Receiver-unit.

User can hear audio signals by Receiver-unit



[ FIG 15 ]

## 5. PORTABLE RF\_MODULE

### 5-1. RX\_PART

The receiver front-end contains a Band-pass filter, a RF Low Noise Amp, an Active Transistor Mixer, a Ceramic Filter and a 10.7MHz IF Amp.

Also it includes Buffer Amp of the generation of Local Oscillator Power.

This front-end receives a RF signal from the Antenna.

And RF signals within this Frequency range is 902.125~903.98MHz pass through Band-pass filter and RF Amp (Q303).

After passing through the Band-pass filter, the signals is mixed within 1'st Local Frequency from VCO (Voltage-controlled Oscillator).

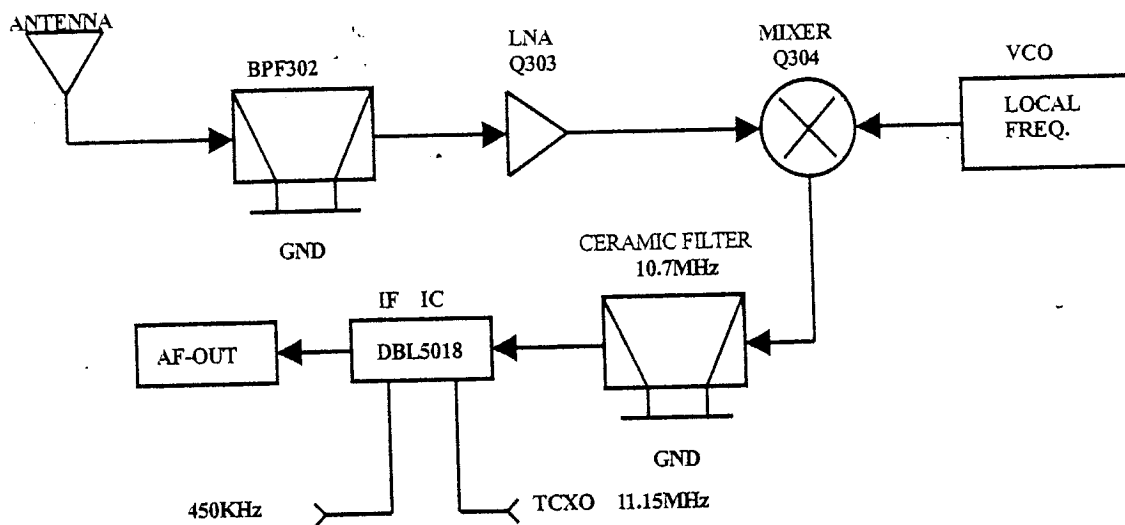
The signal is amplified on the IF Amp TR (Q304).

And the IF signal pass through the Monolithic crystal filter (10.7MHz) after the IF signal pass the Ceramic Filter, enter by the FM IF IC.

The signal is mixed in the FM IF IC (DBL5018).

And signal pass through the Ceramic Filter (450KHz).

The output signal from the AF-out of the FM IF IC streams to Compandor IC (IC1)



[ FIG 16 ]



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### **STATEMENT OF SECURITY CODE**

**DATE : AUG, 17, 2000**  
**PREPARED BY :**

The cordless phone shall incorporate circuit which makes use of a digital security code to provide protection against unintentional access to the public switched telephone network by the base unit and unintentional ringing by the handset.

The 26965A uses the following approaches for facilitating variation in the geographic distribution of individual security codes.

3. We provide a means for the user to readily select from over 1,048,575 possible discrete digital codes.

The 26965A has continuously varied initial security code as each telephone is produced.

4. We provide a random code which is continuously varied among 10,048,575 discrete digital codes whenever the 26965A is entered I.D program mode.

**TELIAN Corporation**

**JD SHIM R & D Manager**