4-3. DESCRIPTION OF CIRCUIT FUNCTION

CONAIR CORPORATION
FCC ID : LBBGH2405T
JOB # : 509AK0

EXHIBIT # : 14A-I

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3. POWER SUPPLY
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A. BASE UNIT

1. Tel-Line interface

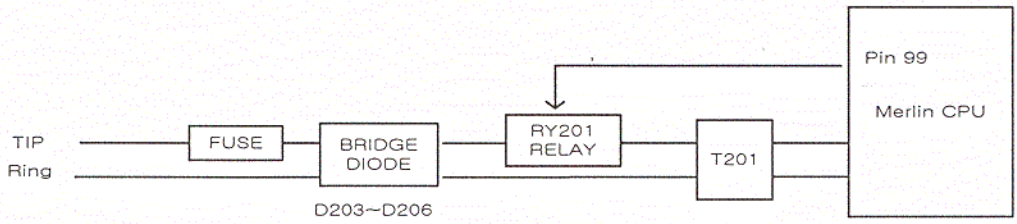
Tel-line interface circuit is comprised of a Relay, Bridge diode, Transformer and Merlin CPU as shown in Fig.1

DC loop is configured when the pin 99 of Merlin CPU is set to low status.

The loop Audio signal flows as follows ;

TIP-> L201/L202-> Fuse -> D203~D206-> Trans 201-> Z203/Z204

The pulse signal from the pin 99 of Merlin CPU are transmitted through the relay to turn on and off the tel-line.

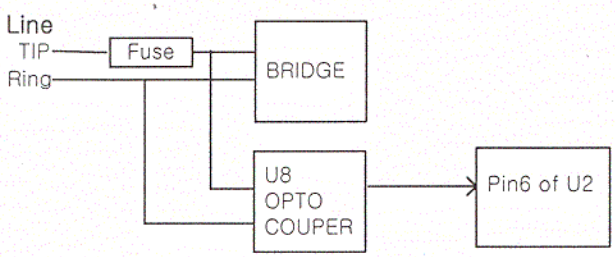


<< Fig 1. >>

2. Ring Detect

The ring signal supplied between TIP and RING passes through the following procedures and is detected by Merlin CPU.

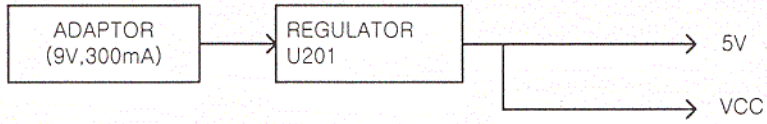
T/R → U 8 -> U2 (Pin 6 of CPU)



<<Fig 2.>>

3. Power supply

The output voltage of U201 is regulated in 5V DC, which is used as the supply voltage to the base main & RF Module.



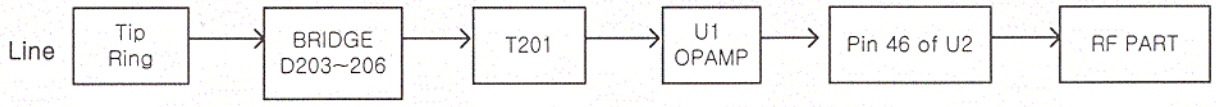
<< Fig 3. >>

4. Audio Path TX / RX

4-1 TX Part

The transmitted signals from telephone line are fed to the LINEI of Merlin CPU through LM324 OP Amplifier. The signal that is input to the LINEI is processed based on the following procedures; Parallel–to–serial converting, scrambling, differential encoding, spreading and modulation.

T/R ->D203~206->T201->U1->U2->RF PART

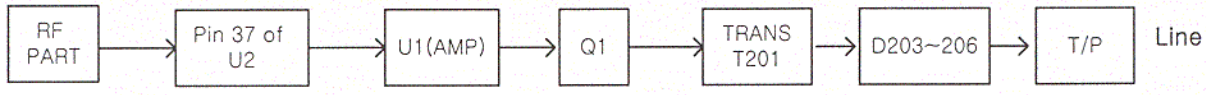


<< Fig 4 >>

4-2 RX Part

The received signals from the SPKO+ of Merlin CPU are fed to the telephone line through LM324 OP Amplifier. The signal that is output to the LINEI is processed based on the following procedures; Analog-digital converting, matched filtering with frequency compensation insertion, data demodulation, de-scrambling and serial-to-parallel converting.

RF PART->U2->U1->Q1->T201->D203~206->T/R



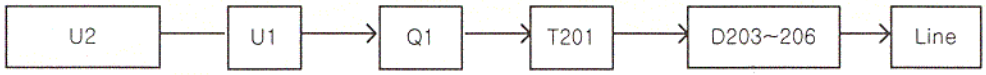
<< Fig 5 >>

5. DTMF generator

The DTMF generator in U2 is intended to provide dual-tone, multi-frequency (DTMF) or tone dialing system.

The DTMF signal is generated inside the audio engine of Merlin(U2) and transmitted to the SPKO+ of Merlin followed by LM324(U1) and Tip / Ring.

U2->U1->Q1->T201->D203~D206->T/R



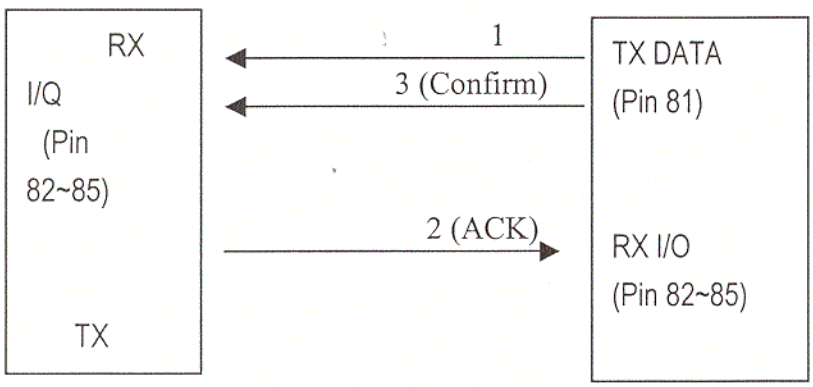
<< Fig 6 >>

6. RSSI detection

The method of detecting the RSSI is based on the AGC DC level (pin 24) & LNA attenuator(Pin 10) in RF 109(U103)

7. Data communication interface

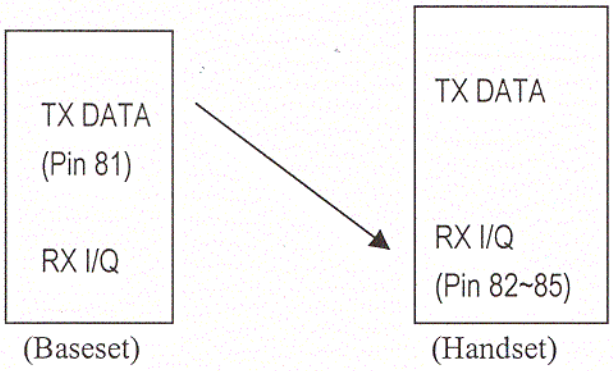
Data signal, that is sent by the handset, will be sent to the baseset through the RF module when attempt is initiated by the handset to establish an RF link. When the baseset receives the correct data sent by the handset, the baseset must send "ACK" data and the handset re-send "ACK". After these procedures, RF link can be established.



<< Fig 7 >>

8. Paging function

Paging function can be enabled only by the baseset.



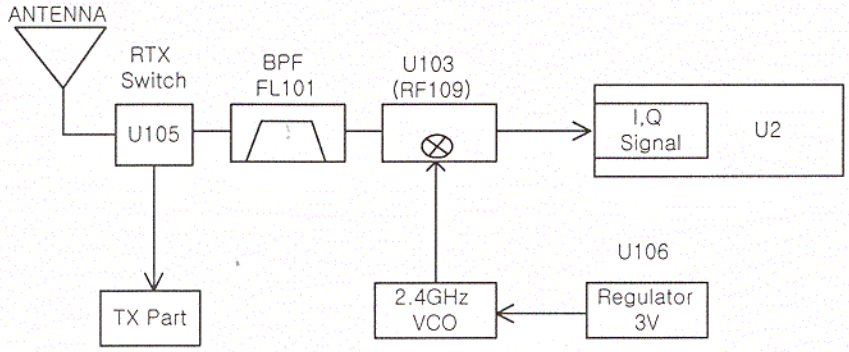
<< Fig 8 >>

9. BASE RF Module

9-1. RF RX Part

The receiver front-end is comprised of RX/TX Switch IC, BPF and RF 109. The front-end receiver receives an RF signal from the antenna. RF signals within the frequency (2404.8MHz ~2475.0MHz) pass through R/TX switch(U105) & BPF(FL101). After passing through the BPF, The signal is mixed with the local frequency inside the RF 109 IC.

ANT->U105->FL101->U103->U2

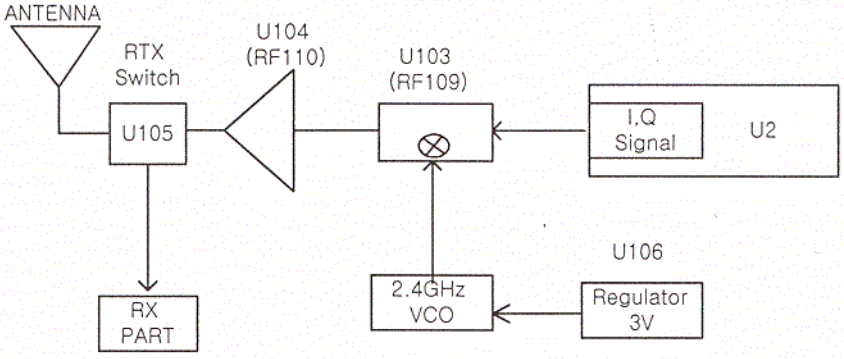


<< Fig 9 >>

9-2. RF TX Part

The transmitter front-end is comprised of RX/TX Switch IC, Power AMP and RF 109. The front-end transmitter transmits an RF signal to the antenna. RF signals within the frequency (2404.8MHz ~2475.0MHz) are amplified through Power AMP(U104) and pass through R/TX switch(U105), sent to the antenna.

U2->U103->U104->U105>ANT



<< Fig 10 >>

10. LED INDICATOR CATEGORY

10-1 In_Use LED

Talk LED is Driven by the pin 93 of Merlin CPU (U2).

10-2 Page/Charge LED

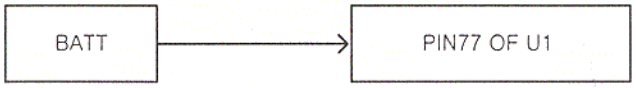
Page LED Driven by the pin 94 of Merlin CPU (U2).

Charge LED Driven by Q205, When Hand set is in cradle, charging.

B. PORTABLE UNIT

1. Low battery detection

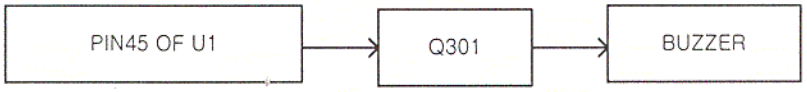
The pin 77 of Merlin always monitors the status of battery pack. If the threshold voltage of the battery pack is dropped below 3.2V +/- 0.1V, the handy shall alert the user to the time when the handset shall be placed on the cradle of its baseset.



<< Fig 11 >>

2. Buzzer

Buzzer is controlled by the pin 44 of Merlin(U1)when incoming ring data is received or button is pressed.



<< Fig 12 >>

3. LED Indicator category

3-1 In-use LED

Talk LED is driven by the pin 93 of Merlin (U1).

3-2 Low battery LED

Low battery LED is driven by the pin 95 of Merlin (U1).

3-3 Page LED

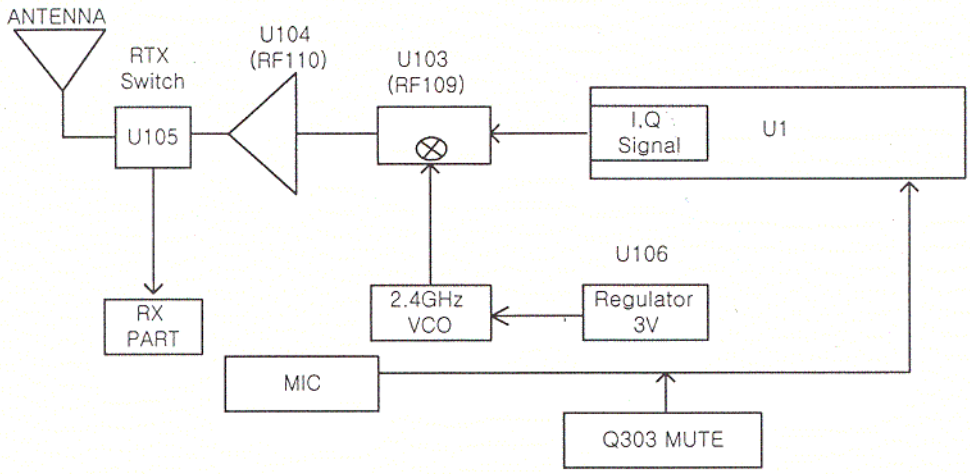
Page LED is driven by the pin 94 of Merlin (U1).

4. DIGITAL COMMUNICATION

4-1. AUDIO & RF PATH OF TX PART

The transmitter front-end is comprised of RX/TX Switch IC, Power AMP and RF 109. The front-end transmitter transmits an RF signal to the antenna. RF signals within the frequency (2404.8MHz ~2475.0MHz) are amplified through Power AMP(U104) and pass through R/TX switch(U105), sent to the antenna.

MIC->U301->U103->U104->U105->ANT

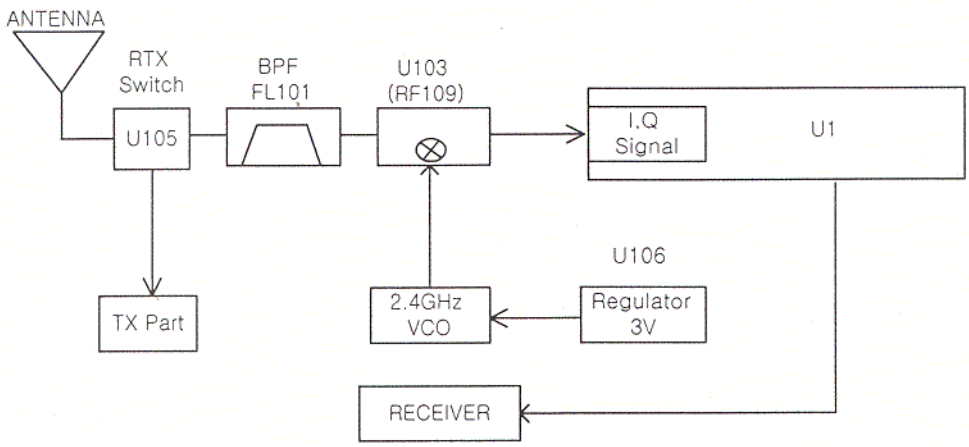


<< Fig 13 >>

4-1. AUDIO & RF PATH OF RX PART

The receiver front-end is comprised of RX/TX Switch IC, BPF and RF 109. The front-end receiver receives an RF signal from the antenna. RF signals within the frequency (2404.8MHz ~2475.0MHz) pass through R/TX switch(U105) & BPF(FL101). After passing through the BPF, The signal is mixed with the local frequency inside the RF 109 IC.

ANT->U105->FL101->U103->U301->RECEIVER.



<< Fig 14 >>