EXHIBIT B

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

"Description of Circuit Functions"

Exhibit B(1)-1 to B(1)-3 - Circuit Description
Exhibit B(2) - Statement of Digital Security Code

Circuit Description

Model: 7928B

The following circuit descriptionis for Model7928B andbase on the Circuit diagramand Block diagram.

Handset Unit

1. Receiving path

The receiving path is established by below sections:

RX Antenna

The Soft-wire RX antenna detects electro-magnetic signals at radio frequencies. These signals are further filtered into usable frequency for the receiving path through the 2403MHz dielectric filter F16.

Low Noise Amplifier (LNA)

FM signal filtered by the 2403MHz dielectric filter F16, is input to tuning amplifier Q18.Then input to second tuning amplifier Q23 before output tomixer.

Mixer

Mixer is included Q23 and local oscillator Q20 & Q14, which is controlled by the U1 PLL pin. The IF (808MHz) is filtering by a 808MHz dielectric filter F18 and to Q19 for amplifier then go to second mixer Q24, then mix to 10.7MHz IF signal by CF1. The filtered IF signal then input to U1 pin 40.

IF amplifier

IF amplifier has built in U1, Amplified IF is filtering again by a ceramic filter F2 (10.7MHz), the filtered IF will input to FM demodulator U1 pin 33.

FM demodulator and expander

The second IF signal is demodulated by quadrature coil T1, then the recovered audio signal is input to the expander stage in U1 for de-emphasis before output to the handset speaker through the audio amplifier in U1.

2. Transmitting path

The transmitting path is established by below stages:

Mic amplifier and compressor

Audio pick up by handset microphone is amplified by internal mic amplifier of U1, then input to compressor for pre-emphasis before input to the Modulato r (Tx VCO).

Modulator and Tx VCO

The transmit VCO is constructed by Q13, which is controlled by PLL of U1. Both audio and data signal input to the transmission VCO will cause a frequency modulation progress.

RF Power Amplifier and TX Antenna

FM signal amplified by Q12, Q11 & Q7 and the amplified Radio Frequency signal from the LC filter is fed into the Solid-wire, spring type TX Antenna then propagates the composite RF signal.

Base Unit

1. Receiving Path

The receiving path is established by below stages:

RX Antenna

The Solid-wire, spring type RX antenna detects electro-magnetic signals at radio frequencies. These signals are further filtered into usable frequency for the receiving path through the 2475MHz dielectric filter F16.

Low Noise Amplifier (LNA)

The filtered FM signal is inputted to tuning amplifier Q18. Then input to second tuning amplifier Q23 before output to mixer.

Mixer

Mixer stage is included of Q23 and local oscillator Q20 & Q14, which is controlled by the U1 PLL pin. The IF (818MHz) is filtering by a 818MHz dielectric filter F18 and to Q19 for amplifier then go to second mixer Q24, then mix to 10.7MHz IF signal by CF1. The filtered IF signal then input to U1 pin 40.

IF Amplifier

IF amplifier has built in U1, Amplified IF is filtering again by a ceramic filter F2 (10.7MHz), the filtered IF will input to FM demodulator U1 pin 33.

FM Demodulator and Expander

The second IF signal is demodulated by quadrature coil T1, then the recovered audio signal is input to the expander stage in U1 for de-emphasis before output to MCU IC2 (TMP86CS25) through the audio amplifier in U1.

2. Transmitting Path

The transmitting path is established by below sections.

Compressor, Splatter, Modulator

The received line audio and side tone signal from the hybrid will go to the audio input of the combo chip. It will pass through a compressor. From the output of the compressor, it will go to the splatter circuit. The audio will then modulate the Tx VCO (Transmit Voltage Controlled Oscillator) frequency of the modulator (Q13) which is controlled by the PLL of the combo IC.

Pre-amp, Final amp, TX Antenna

The 3rd harmonics of the Tx VCO frequency is extracted by pre-amp (Q11) and amplified by Q7. The final Tx signal is then passed through a dielectric Filter F15 to reduced unwanted harmonics. After this, the signal is provided to the Solid-wire, spring-type TX Antenna for transmission.

3. Telephone Line Interface

The telephone line interface circuit is established by below stages:

Audio Power Amplifier

Q1 & Q11 are built as an audio amplifier, according to high current output requirement for line interface.

Line Relay & Isolation

Line isolation mainly performed by two transistors (Q3 and Q8). Q8 also has a function of controlling the line-seize. Both audio input and output will th rough transistor Q3.

Ring Detect circuitry

Q12 and Q14 are used as AC amplifier for pick up the ring signal, which is input through resistor R4 (3.6Mohm) and capacitor C32 (10nF, 500Volt) as DC isolation from the telephone line.