

EXHIBIT B

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

"Description of Circuit Functions"

# Circuit Description for AT7938(27938GE)

This is a 2400MHz ISM Band cordless telephone for domestic use. Radio transmitter with FM technology provides greater mobility to the user within approximately 150 meters radius around the base.

Following paragraphs describe the detail of major building blocks.

## 1. Ringer Detection

### a. Base

Incoming ringer signal is first attenuated by C39, ZD1, ZD3 and R10. The signal is then feed to micro-controller (MCU) U1 for generating response signal according to the setting of inputs. When the ringer switch is set to on position MCU sends digitally coded information to handset via RF link.

### b. Handset

When digitally coded information is received from the base it will be decoded at MCU U5. Then necessary ringer is generated and applied to Q10, which drive the Buzzer BZ1.

## 2. Surge protection

The surge absorber V1 is mounted in the Base unit. It designed to operate when voltage over 330V. In general it is common to have induced surges in the telephone line due to lightening. If it allow entering the unit damage to the unit is imminent. The line interface, fuse and ringer detected circuit is most venerable to high voltage surges and V1 surge absorber can prevent it.

## 3. Line control

When the unit is operated by remote handset, line control is done by MCU. It turns on transistor Q11. Then telephone line power feeds to line interface circuit (Q8, Q9), turn on the telephone line and internal voice path, and around component.

## 4. Power Control

### a. Base unit

The main power is come from AC/DC adaptor, which provide 12V DC to the unit. Inside the unit there are two different voltages available for different modules. 12V non-back up voltage is supplied to the audio amplifier. Radio part, MCU and line interface related circuit is supplied with non-backup regulated 5V voltage.

## b. Handset

Three cells of Ni-MH battery(3.6V) provided necessary power to the handset. In order to keep power consumption to minimum, the radio receiver is turn on and off periodically by MCU and Q1. The MCU is supplied with regulated 3.6V by U3.

## 5 Radio Module

Both handset and base use 2400MHz ISM band analogue radio that transmits and receive signal in full duplex mode. Audio and data signal is FM modulated before transmitting from the module. The radio module is fully cover with shield plate in order to minimize interference to other equipment.