

EXHIBIT B

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

"Description of Circuit Functions"

## 2-9750D Circuit Description :

The following circuit description for THOMSON model 2-9750D is based on the circuit diagram and block diagram of 2-9750D.

### 2-9750D Handset :

#### 1. Receiving Path

The receiving path is established by below sections.

- **Low Noise Amplifier (LNA)**  
FM signal filtering by the duplexer, then input to the Q1 and pick up by tuning coil T1, before output to 1<sup>st</sup> mixer.
- **1<sup>st</sup> Mixer**  
1<sup>st</sup> mixer is included in U1 (TB31224), which 1<sup>st</sup> local oscillator (LO) is controlled by the internal PLL of U1 & VCO coil (T2). The 1<sup>st</sup> IF (10.7MHz) is filtering by a ceramic filter CF1, the filtered IF will input to 2<sup>nd</sup> mixer.
- **2<sup>nd</sup> Mixer**  
2<sup>nd</sup> mixer is also built in U1 (TB31224), which 2<sup>nd</sup> local oscillator (LO) is controlled by the crystal oscillator of U1. The 2<sup>nd</sup> IF (455KHz) is filtering by a ceramic filter CF2, the filtered 2<sup>nd</sup> IF will input to FM demodulator.
- **FM demodulator and expander**  
The 2<sup>nd</sup> IF is demodulate by quadrature coil T3, then the recovered audio is input to the expander for de-emphasis, before output to the handset speaker through audio amplifier.

#### 2. Transmitting Path

The transmitting path is established by below sections.

- **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 modulator (Tx VCO).

- **Modulator and Tx VCO**  
The transmit VCO is constructed by Q6, VD1 and T4, which is controlled by internal PLL of U1. Both audio and data signal input to the transmit VCO will cause a frequency modulation progress.
- **RF power amplifier**  
FM signal is amplified by Q7 and filtering by T5, then fit to the antenna through duplexer.

2-9750D Base Unit :

#### 1. Receiving Path

The receiving path is established by below sections.

- **Low Noise Amplifier (LNA)**  
FM signal filtering by the duplexer, then input to the Q1 and pick up by tuning coil T1, before output to 1<sup>st</sup> mixer.
- **1<sup>st</sup> Mixer**  
1<sup>st</sup> mixer is included in U1 (TB31224), which 1<sup>st</sup> local oscillator (LO) is controlled by the internal PLL of U1 & VCO coil (T2). The 1<sup>st</sup> IF (10.7MHz) is filtering by a ceramic filter CF1, the filtered IF will input to 2<sup>nd</sup> mixer.
- **2<sup>nd</sup> Mixer**  
2<sup>nd</sup> mixer is also built in U1 (TB31224), which 2<sup>nd</sup> local oscillator (L.O) is controlled by the crystal oscillator of U1. The 2<sup>nd</sup> IF (455KHz) is filtering by a ceramic filter CF2, the filtered 2<sup>nd</sup> IF will input to FM demodulator.
- **FM demodulator and expander**  
The 2<sup>nd</sup> IF is demodulate by quadrature coil T3, then the recovered audio is input to the expander for de-emphasis, before output to the line interface through audio amplifier.

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## 2. Transmitting Path

The transmitting path is established by below sections.

- Mic amplifier and compressor  
Audio input from line interface is amplified by internal mic amplifier of U1, then input to compressor for pre-emphasis, before input to the modulator (Tx VCO).
  
- Modulator and Tx VCO  
The transmit VCO is constructed by Q6, VDI and T4, which is controlled by internal PLL of U1. Both audio and data signal input to the transmit VCO will cause a frequency modulation progress.
  
- RF power amplifier  
FM signal is amplified by Q7 and filtering by T5, then fit to the antenna through duplexer.

## 3. Telephone line interface

The telephone line interface circuit is established by below sections.

- Audio power amplifier  
Q2 & Q5 are built as a push-pull power amplifier, according to high current output requirement for line interface.
  
- Line relay & isolation transformer  
T4 is the line isolation transformer, both audio input and output is through this transformer. RL1 is the reed relay for line seize, which is controlled Q3.
  
- Ring detect circuit  
IC2 is used as a differential amplifier for pick up the ring signal, which is input through two 20M ohm resistor (R44 and R45) as an isolation from the line.