

EXHIBIT E

DESCRIPTION OF ELECTRICAL CIRCUITRY

BASE UNIT:

A) WHEN A BELL SIGNAL ENTERS FROM TEL LINE

- 1) The bell detection circuit, i.e., the transistor(Q113) begins to operate and its output is inputted to pin 42 of IC101(BBIC).
- 2) To obtain a display synchronized with the bell signal, an IN USE signal is output from pin 31 of IC101(BBIC) and INUSE LED(LED101) is lighted up.
- 3) A portable phone receives a bell from the base station.
When the portable phone is switched from the STANDBY to TALK, the base station receives a carrier modulated by data indicating the switch from STANDBY to TALK.
The data demodulated at the base station is inputted to pin 82 and 83 of IC101, and passes through Q110 to make the circuit relay, then, release the muting and enables talk.

B) WHEN A LINE LOOP IS MADE BY A PORTABLE PHONE

- 1) When the operator of the portable phone switches STANDBY to TALK, the TALK mode data enters the base station and is demodulated at the RF Unit of the base station, and is inputted to pin 82 and 83 of IC101.
- 2) In this time, an IN USE signal is output from pin 31 of IC101, and the IN USE LED (LED101) is lighted up.

C) RECIEVER UNIT OPERATION

- 1) A signal is received by the antenna, and passes through the 905.22~925.55MHz band pass filter FL304 and FL301, and is inputted to the pin 7 of IC301.
- 2) The received signal and local signal made by VCO (452.61~462.775MHz) are mixed by IC301 to obtain 1st IF signal.
This signal goes out from pin 24 and 25 of IC301.
- 3) The base band signal is fed to pins 82 and 83 of IC101, and is demodulated by IC101 to control data and audio signal.
- 4) This audio signal is transmitted to the telephone line by IC101.

D) TRANSMISSION UNIT OPERATION

- 1) An audio signal from the line passes through the interface transistor(Q110) and is amplified by Q103.
- 2) The audio signal is inputted to pin 96 of IC101.
- 3) This audio signal is coded by IC140 and output from pin 89 and 901 to IC301.
- 4) This coded I and Q signal is modulated by IC301, and output from pin 2 of IC301.
- 5) This modulated signal goes through Tx AMP (Q303, 302, 301), and outputs to the antenna.

DESCRIPTION OF ELECTRICAL CIRCUITRY

PORTABLE UNIT:

A) RECEIVER UNIT OPERATION

- 1) A signal from the base unit is received by the antenna, and passes through the 905.22~925.55MHz band pass filter FL304 and FL301.
And the signal is fed to pin 7 of IC301.
- 2) An received signal and 1st local signal made by VCO(452.61~462.775) are mixed to obtain 1st IF signal.
And this signal goes out from pin 24 and 25 of IC301.
- 3) This 1st IF signal is fed to pin 82 and 83 of IC140, and is demodulated by IC140 to control data and audio signal.
- 4) This audio signal goes to pin 94 and 95 of IC140, and output to speaker.

B) TRANSMISSION UNIT OPERATION

- 1) When selected TALK switch to TALK, the detect switch of IC140 becomes ON and get into TALK mode.
- 2) The audio signal from microphone is inputted to pin 96 of IC140.
- 3) This audio signal is coded by IC140 and output from pin 89 and 901 to IC301.
- 4) This coded I and Q signal is modulated by IC301, and output from pin 2 of IC301.
- 5) This modulated signal goes through Tx AMP (Q303, 302, 301), and outputs to the antenna.