

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 photo-coupler (PC100) begins to operate and its output is inputted to pin 36 of IC105(SUB_CPU).
- 2) The IC105 transmit to IC107(MCU) to report the detection of incoming Bell signal.
- 3) To obtain a display synchronized with the bell signal, an IN USE signal is output from pin 57 of IC107 and INUSE LED(D105) is lighted up.
- 4) 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 63 of IC107, and MCU give permission SUB_CPU to make the circuit relay(Q107 & Q100), then, release the muting and enables to 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 63 of IC107.
- 2) In this time, an IN USE signal is output from pin 57 of IC107, and the IN USE LED (D105) is lighted up.

C) RECIEVER UNIT OPERATION

- 1) A signal is received by the antenna, and passes through the 903.75 to 926.25MHz band pass filter FL501, and transferred to balanced signal by T501 and is inputted to the pin 7 and 8 of IC101.
- 2) The received signal and local signal made by VCO (1.8075~1.8525GHz) are mixed by IC501 to obtain digitized audio signal.
- 3) The base band signal is fed to pins 24 of IC106(ADPCM Codec) and decoded to audio signal.
- 4) This audio signal is transmitted to the telephone line passing through Q115 the IC102(Gain Controlled Amp for side- tone reduction), Q113 and Q108..

D) TRANSMISSION UNIT OPERATION

- 1) An audio signal from the line passes through the interface transistor(Q108), Q104, IC102 and IC106.
- 2) The audio signal is inputted to pin3 of IC106(ADPCM Codec).
- 3) This audio signal is coded to ADPCM signal by IC106 and output from pin 25 to IC501.
- 4) This ADPCM signal inputted to pin38 of IC501 and convert to modulated 900MHz RF signal . The RF signal is outputted from the pin7 and pin8 of IC501 and goes through Balun(T501), and outputs to the antenna.

PORTABLE UNIT:

A) RECEIVER UNIT OPERATION

- 1) A signal from the base unit is received by the antenna, and passes through the 903.75 to 926.25MHz band pass filter FL501.
And the signal is fed to pin 7 and 8 of IC501.
- 2) An received signal and 1st local signal made by VCO(1.8075~1.8525GHz) are mixed to obtain digitized audio signal.
And this signal goes out from pin 37 of IC501.
- 3) This digitized audio signal is fed to pin 24 of IC303 and decoded to audio signal.
- 4) This audio signal output from pin11 of IC303 to pin4 of IC302 (amplifier), and output to speaker.

B) TRANSMISSION UNIT OPERATION

- 1) When press TALK switch to TALK, the detect switch of IC307 becomes ON and get into TALK mode.
- 2) The audio signal from microphone is amplified by Q303 and inputted to pin 3 of IC303.
- 3) This audio signal is coded to ADPCM by IC303 and output from pin 25 to IC307.
- 4) This ADPCM signal inputted to pin38 of IC501 and convert to modulated 900MHz RF signal .
The RF signal is outputted from the pin7 and pin8 of IC501 and goes through Balun(T501), and outputs to the antenna.