

DESCRIPTION OF ELECTRICAL CIRCUITRY

1. BASE UNIT:

A) WHEN A BELL SIGNAL ENTERS FROM TEL LINE

- 1) The bell detection circuit, i.e., the transistor(Q101) begins to operate and its output is inputted to pin 1 of IC201(CPU).
- 2) To obtain a display synchronized with the bell signal, an IN USE signal is output from pin 46 of IC201(CPU) and INUSE LED(LED202) is lighted up.
- 3) To show the arrival of the bell signal in the portable phone, pin 12 of IC201 enters the transmission mode "L".
And the bell signal data having the code set by pin 10 of IC201 is sent to the portable phone as a modulated output signal.
- 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 passes through a wave shaping circuit composed of IC401, and is inputted to pin 7 of IC201, and passes through Q103 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 base station. The data demodulated passes through the wave shaping circuit of IC401, and is inputted to pin 7 of IC201.
- 2) When a code of the base station matches a code of the portable phone, pin 12 of IC201 becomes the transmission mode "L". The circuit is made through Q103, and the muting is released through pin 7 of IC201.
- 3) In this time, an IN USE signal is output from pin 46 of IC201, and the IN USE LED (LED201) is lighted up.

C) RECIEVER UNIT OPERATION

- 1) A signal is received by the antenna, and passes through the 926~928MHz band pass filter F001, and is amplified by the RF AMP Q201 and Q202.
- 2) The filter(F001) disturb to pass the 902~904MHz signal.
- 3) The signal from Q202 is mixed by Q203 to obtain 1 st IF frequency(10.7MHz).
The 1 st IF signal is mixed by IC601 to obtain 2 nd IF signal(450KHz).
This signal goes out from pin 9 of IC601 as audio signal.
- 4) This audio signal passes through the wave shaping circuit(IC401) and is fed to pin 7 of IC201, and controls the CPU(IC201).
- 5) On the other hand, this audio signal is amplified by IC401, and passes through the interface transistor(Q105), and is transmitted to the telephone line.

D) TRANSMISSION UNIT OPERATION

- 1) An audio signal from the line passes through the interface transistor(Q105) and is amplified by the compander IC401.
- 2) This signal goes to TXVCO of FM modulation circuit.
- 3) The data of CPU goes out from pin 10 of IC201 to TXVCO of FM modulation circuit, and is modulated.
- 4) A 902MHz band frequency is generated by the oscillator circuit.

EXHIBIT E

DESCRIPTION OF ELECTRICAL CIRCUITRY

2. PORTABLE UNIT:

A) RECEIVER UNIT OPERATION

- 1) A signal from the base unit is received by the antenna, and passes through the 902~904MHz band pass filter F001.
And the signal is amplified by the RF AMP(Q201 and Q202).
- 2) An RF signal and 1st local oscillating frequency from (IC701, Q301, Q302) goes to the mixer(Q203).
And this signal is converted to 1st IF frequency(10.7MHz).
- 3) This signal is inputted to pin 16 of IF/DET IC601, and converted to 2 nd IF(450KHz).
This signal goes out from pin 9 of IC601 as audio signal.
- 4) This audio signal is amplified by expander circuit of IC201, and output to speaker.
On the other hand, the signal from pin 9 of IC601 passes through of the wave shaping circuit of IC201, and is inputted to pin 27 of IC901 of CPU, and process data in the CPU.

B) TRANSMISSION UNIT OPERATION

- 1) When selected TALK switch to TALK, pin 33 of IC901 enters mode "L", and Q801 is switched on.
Then the power line of TX is switched on.
- 2) The signal from microphone is amplified by Mix amp. of IC201.
And is output from pin 17 of IC201.
- 3) This signal is inputted to TXVCO of FM modulating circuit.
The data signal from pin 26 of IC901 modulates the carrier.
- 4) A 926MHz band frequency is generated by the oscillator circuit(IC701, Q102, Q103).
A 926MHz carrier is produced by Q101.
- 5) This 926MHz carrier is power amplified by the power amplifier Q101, and is emitted by the antenna.