

EXHIBIT - 3

CIRCUIT DESCRIPTION AND
DIGITAL SECURITY CODE INFORMATION

Equipment Description

file: uc-201z

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The model 43-1099 is a telephone terminal device that is designed for voice operation in a similar fashion to an ordinary residential or business telephone without the inconvenience and restraint of a handset cord.

This device consists of a base unit and a handset. The base unit is connected to a standard telephone modular jack (USOC RJ 11C Type) and is supplied electric power from a standard AC power line by using with the AC Adapter. The handset is powered from an internal battery pack.

The 43-1099 Cordless Telephone operates by means of a full duplex radio frequency TX/RX system in 902 - 928 MHz band. These radio frequency systems operate in accordance with Part 15 of the FCC Rules.

The 43-1099 has been specifically designed to comply with the requirements set forth in Part 68 of the FCC Rules as well as the Part 15 requirements.

Circuit Description and Operating Frequency

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Overview

This equipment is a Cordless Telephone System which operates within the 900MHz ISM band. This equipment consists of a base unit and a handset. The base unit is connected to a telephone network, and has transmitter and receiver circuits which are served to communication with the handset. The handset also has a transmitter and receiver portions in addition to regular dialing circuit.

Both the handset and the base unit have PLL circuits which enable to communicate in an empty channel. Pressing the CH key on the handset can

last the communications moving into other open channel without cutting the line even if interfered by interruption on talks.

1. Handset

1) Local Frequencies and Intermediate Frequencies

TX VCO Frequency: 902.080435 MHz to 904.039623 MHz
RX 1st Local Freq.: 940.309717 MHz to 942.268905 MHz
RX VCO Frequency: 940.309717 MHz to 942.268905 MHz
RX 2nd Local Freq.: 13.865 MHz

1st Intermediate Frequency: 14.32 MHz
2nd Intermediate Frequency: 455 kHz

2) Communication Link to Base unit

RX Circuit:

An incoming RF signal from the base unit is received through the antenna. RX VCO frequency shown above is produced by PLL IC (IC502) and RX VCO (IC502 1/2). Then, this frequency is the RX 1st Local frequency.

This 1st local signal is applied to the 1st Mixer (IC502) which produces 1st IF of 14.32MHz.

The 1st IF signal (14.32MHz) is mixed with 2nd local frequency of 13.865MHz to produce the 2nd IF of 455kHz at IC501. AF signal demodulated by IC501 is amplified by the audio amplifier (Q601/Q603/IC601) to drive a speaker.

TX Circuit:

TX VCO signal is generated at the PLL circuit and the TX VCO (IC502 2/2). Meanwhile, voice signal from the microphone (MC601) modulates the TX VCO signal at IC502. This modulated signal is the TX RF frequencies as listed above.

Then, the TX RF signal is amplified by RF AMP (Q506/Q507) and fed into the antenna through a band pass filter (FT501).

3) Dialing Signal

When this equipment is in Talk Mode, the transmitting circuit and dialing circuit are activated to make outgoing call. In this condition, when any number keys are pressed, the CPU (IC603) generates corresponding dial pulse codes.

2. Base Unit

1) Local Frequencies and Intermediate Frequencies

TX VCO Frequency : 925.989636 MHz to 927.948817 MHz
RX 1st Local Freq.: 887.760475 MHz to 889.719657 MHz
RX VCO Frequency : 887.760475 MHz to 889.719657 MHz
RX 2nd Local Freq.: 13.865 MHz

1st Intermediate Frequency: 14.32 MHz
2nd Intermediate Frequency: 455 kHz

2) Communication Link to Handset

RX Circuit:

An incoming RF signal from the handset is received through the antenna.

RX VCO frequency shown above is produced by PLL IC (IC202) and RX VCO (IC202 1/2). Then, this frequency is the RX 1st Local frequency. This 1st local signal is applied to the 1st Mixer (IC202) which produces 1st IF of 14.32MHz.

Then, the 1st IF signal (14.32MHz) is mixed with 2nd local frequency of 13.865MHz to produce the 2nd IF of 455kHz at IC201, and also AF output is obtained by IC201. The demodulated signal by IC201 contains a security code, and the code is fed to the CPU.

TX Circuit:

TX VCO signal is generated at the PLL circuit and the TX VCO (IC202 2/2). Meanwhile, voice signal from Telephone Network through the Hybrid Transformer (T1) modulates the TX VCO signal at IC202. This modulated signal is the TX RF frequencies as listed above. Then, the TX RF signal is amplified by RF AMP (Q206/Q207) and fed into the antenna through a band pass filter (FT201).

3) Dialing Signal

Dial pulse code sent from the handset is demodulated by IC201 as mentioned above, and is fed into the CPU to control RL1.

4) Telephone Interface Circuit

Outgoing voice signal to telephone network is amplified by IC2. When the Intercom/Telephone key is selected to telephone mode, this signal is delivered to the telephone interface circuit through the Hybrid Transformer (T1).

Incoming voice signal also goes through T1, then it is amplified by IC2 2/2 to a proper level for frequency modulation, then it is fed to the TX circuit. To protect the TX/RX circuits from a metallic surge, the surge absorbing capacitor (C9) is provided at the secondary circuit of the Hybrid Transformer (T1).

5) Bell Signal

An alerting signal (Bell signal) is detected by means of a Photo Coupler (IC3) which has a sufficiently high impedance.

6) Power Supply Circuit

The power supply circuits are composed of IC6, Q9 and a zener diode type HZ7C3. These are voltage regulator circuits to stabilize input voltage from the AC Adapter to attain a stable operation.

Digital Security Code Information

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65536 Digital Security Code

This cordless telephone system automatically selects a different security code from 65536 possible discrete digital codes each time the cordless telephone is used.

Furthermore, the security code can be changed randomly by pressing PAGE button on the base unit when the handset is placed in the base unit.