CIRCUIT DESCRIPTION ANDDIGITAL SECURITY CODE INFORMATION  (UC710)


CIRCUIT DESCRIPTION

1.OVER VIEW

The device is a digital spread spectrum cordless telephone which meets with FCC Part 15 requirements.  It provides the following features:

Direct Sequence Spread Spectrum Modulation
20 Radio frequency Channels in 902 - 928MHz ISM band
15mW maximum output power
Time Division Duplex operation
32kbps ADPCM voice CODEC
65536 security codes
Auto Channel codes
Auto Interference Avoidance

2. Configurations

2.1 Transmission

The voice signal is converted into 32kbps digital data by ADPCM CODEC.  The digital data is fed to scrambler, differential encoder, spreader which is responsible for the Spread Spectrum modulation. The SS Chip sends out digital data which is made by the spread spectrum sequence. This digital data having a 1.366Mbps data rate is filtered and upper converted to RF by FSK (Frequency Shift Keying) modulator.  Then, filtered by LPF (Low Pass Filter) to suppress the out-of-band spurious of the antenna transmission signal.

2.2 Reception

The receiver is direct conversion type. The incoming signal is passes through the RF BPF (Band Pass Filter). Down-conversion to quadrature base band signal is done using a matched pair of mixers and a 90° phase splatter for the LO (Local).  The SS Chip calculates the correlation from the spreading code and the outputs the detected voice data to ADPCM CODEC.  Finally, the ADPCM CODEC outputs received analog signal.

2.3 Duplexing

This DEVICE can communicate by using Time Division Duplexing. It uses same frequency in both transmission and reception. It has 1 msec time frame of one transmission and reception cycle. This frame signal is generated by SS Chip and is provided to all other circuits.

2.4 Control

The CPU controls the RF frequency channel. And the ASIC controls ADPCM CODEC and audio signal switching also set up the spreading code. Before established the communication link, THIS DEVICE searches vacant RF channel and then transmits RF signal at the vacant channel. The CPU generates a random security code out of 65536 codes, which can protects customers privacy.

3.   Specification

| Item | Specification |
| --- | --- |
| Frequency | 902 - 928MHz |
| Channel | 20 |
| Channel Separation | 0.96MHz |
| Spread Spectrum method | Direct Sequence (FSK modulation) |
| Chip rate | 1.366Mbps |
| RF Output Power | 15mW (Max.) |
| Duplexing | Time Division Duplex & Frequency Division Duplex |
| Burst Frame | 1 msec |
| Voice Coding | ADPCM |
| Power Supply | 3.6VDC Battery (Handset) / 120VAC Adapter (Base unit) |
| Operating temperature: | 0 to 50 deg C      Humidity: Up to 90% |

Digital Security Code Information

65536 Digital Security Code:
This cordless telephone system provides the random digital security code.

Equipment Description:
This device 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 restrain of a handset cord. This device consists of a base unit and a handset. The base unit is intended to connect to standard telephone modular jacks 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.

This device operates by means of a full duplex radio frequency TX/RX system in 902 - 928 MHz band with Spread Spectrum Technology. Theses radio frequency systems operate in accordance with Part 15 of the FCC Rules. This device has been specifically designed to comply with the requirements set forth in Part 68 of the FCC Rules as well as the Part15 requirements.  The specifications are below.

General:
Modulation                        : Direct Sequence Spread Spectrum Modulation
Operating Temperature    : 0 deg. C to +50 deg. C
Security Codes                 : 65536 Codes

Base Unit:
Frequency Band               : 902 MHz - 928 MHz
Power Requirements        : 9V DC 210mA (Use with AC Adapter)

Handset:
Frequency Band               : 902 MHz to 928 MHz
Power Requirements        : 3.6V DC (Rechargeable Nickel-Cadmium Battery)