

CIRCUIT DESCRIPTION AND DIGITAL SECURITY CODE INFORMATION (UC787BH)

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

35 Radio frequency Channels in 240 - 2478 MHz ISM band

Time Division Duplex operation

32kbps ADPCM voice CODEC

65510 security codes

Auto Channel codes

Auto Interference Avoidance

2. Configurations

2.1 Transmission

ADPCM CODEC converts the voice signal into 32kbps digital data. The digital data is fed to scrambler, differential encoder, spreader that is responsible for the Spread Spectrum modulation. The SS Chip sends out digital data that is made by the spread spectrum sequence. This digital data having a 1.366Mbps data rate is filtered and up-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 double conversion type. The incoming signal is passed through the LNA (Low Noise Amplifier) and RF BPF (Band Pass Filter). Down-conversion to first IF signal is done using the LO (Local: 1.6GHz). Down-conversion to quadrature base band signal (second IF) is done using a matched pair of mixers and a 90° phase splitter for the LO (Local). The SS Chip calculates the correlation from the spreading code and 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 2.25 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 Base Band ASIC (include CPU) controls the RF frequency channel, the antenna switch for diversity antenna (Base only), 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 ASIC generates a random security code out of 65510 codes, which can protects customer's privacy.

3. Specification

Item	Specification

Frequency	2407-2478 MHz
Channel	35
Channel Separation	2.048MHz
Spread Spectrum method	Direct Sequence (FSK modulation)
Chip rate	1.365Mbps
Duplexing	Time Division Duplex & Frequency Division Duplex
Burst Frame	2.25 msec
Voice Coding	ADPCM
Power Supply	3.7VDC Battery (Handset) / 120VAC Adapter (Base unit)
Operating temperature:	0 to 50 deg C Humidity: Up to 90%

Digital Security Code Information

65510 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 rechargeable battery pack.

This device operates by means of a full duplex radio frequency TX/RX system in 2407 - 2478 MHz band with Spread Spectrum Technology. These 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: 65510 Codes

Base Unit:

Frequency Band: 2407 MHz to 2478 MHz
Power Requirements: 9V DC 600mA (Use with AC Adapter)

Handset:

Frequency Band: 2407 MHz to 2478 MHz
Power Requirements: 3. V DC (Rechargeable Lithium-ion Battery)