

IP160S Circuit Description:

IP160S VOIP DECT consists of Handset and Base Unit. A single Base can accommodate up to 6 Handsets. Following are the circuit description of Handset and Base Unit.

VOIP DECT Base

The Core of the VOIP DECT base is the VOIP digital baseband chip (U5 SC14452) from Dialog Semiconductor. It provide interfaces to LAN chips (U2 network PHY chip KS8051RNL through MMI digital interface), DECT RF module (LMX4181), SDRAM chips (U7 MT48LC32M16), Flash Chip (U8 W25Q128BV), DCDC Power Supply U4.

Circuit Operation:

Unit is powered up through AC-DC adaptor that provides 5V output. The system can be powered from 5V AC-DC adaptor or POE (Power-Over-Ethernet) circuit U1. Priority is POE when the network router has POE power supply.

When power supply is steady, VOIP baseband chip will load bootloader from the Flash chip. This bootloader will initialize all Hardware configuration and then further load u-boot from the Flash that is for preparing the environment for uC-Linux. Finally uC-Linux is load and then the file system is initialized and mounted. System is then ready to operate.

For the DECT functionality, RF front end is the RF module with RF chip LMX4181. LMX4181 interface to the burst mode controller of U5 SC14452 which provide all DECT protocol for communicating with remote DECT Handsets. The system can support CATiQ and provide SWUOTA (Software Upgrade Over The Air) service to remote handset.

VOIP Handset

The core of the Handset is a DECT RF and digital baseband chip DCX79EF0CF. It provides DECT RF communication with VOIP DECT Base. Radio Frequency is DECT 6.0 from 1920 MHz to 930 MHz. The handset also consists of a Color LCD (LCD1) display with resolution of 176x220 pixels, 2.0 inches diagonal. There is a DCDC boosting circuit (U4) for Speaker Amplifier (U5) which drives a 36mm paper cone speaker.

Wideband audio is provided through HSSPOUTP and HSSPOUTN differential output for receive and MIP and MIN for microphone input. There is a Headset Jack that provides analog audio interface to external headset.

There is a key matrix that provide input interface to let the user to interface with the MMI to provide dialing function and other software function like: miss call browsing, phone book browsing.