Technical Specifications and

Description

Of

GSM/WCDMA Multi-Mode Digital Mobile Phone

FCC ID:SRQ-L130

Model- ZTE Blade L130

Version 1.0

26, Nov，2018

ZTE CORPORATION

1 Abstract

This document gives brief technical specification & description of our product—ZTE Blade L130

2 Abbreviations

AMR Adaptive Multi Rate

BB Base Band

BAI Baseband Audio Interface

DAI Digital-Audio-Interface

DTMF Dual Tone Multi Frequency function

EFR Enhanced Full Rate

FDN Fixed dialing number

FEM Front End Module

FR Full Rate

CDMA Code Division Multiple Access

LTE Long Term Evolution

IC Integrated circuit

JTAG IEEE standardized test interface for IC's

LCD Liquid Crystal Display

LNA Low noise amplifiers

PA Power amplifier

PCB Printed Circuit Board

PCS Public cellular system

PMU Power Management Unit

RF Radio Frequency

RX Receiver

SIM Subscriber Identity Module

TC Transceiver

TX Transmitter

USB Universal Serial Bus

UMTS Universal Mobile Telecommunication System

VCO Voltage controlled oscillator

VTCXO Voltage controlled temperature compensated x-tal oscillator

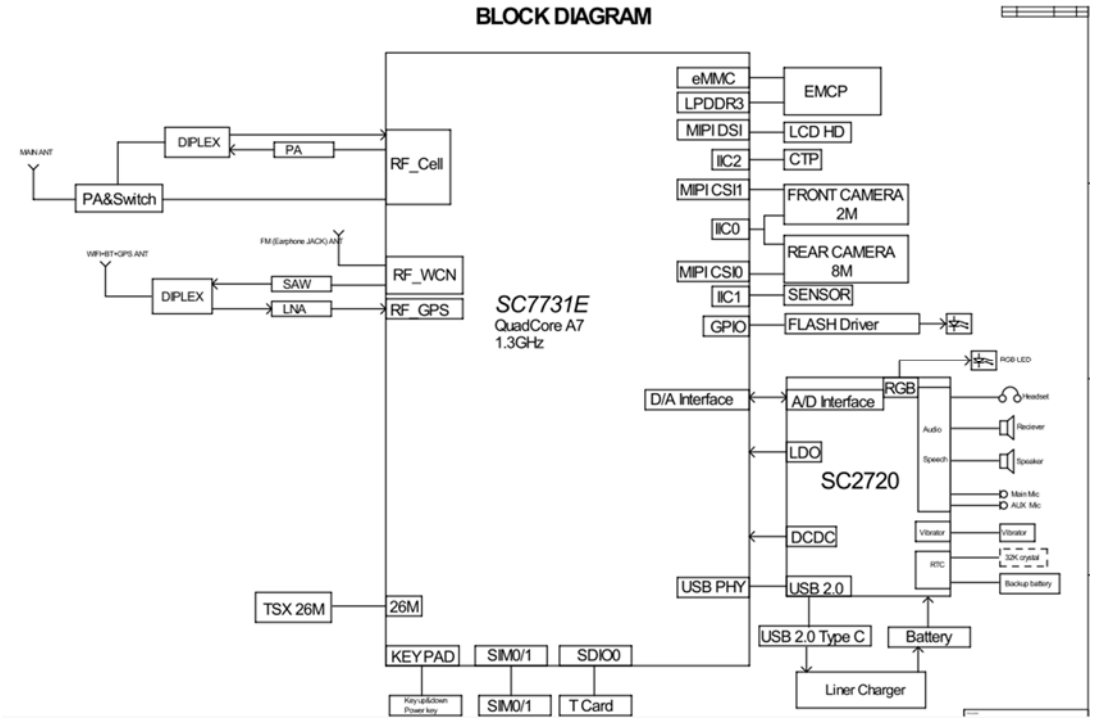
WCDMA Wideband code division multiple access

3 Hardware specification

Item	Feature	Remarks
Chipset	Spreadrum BB Chipset：SC7731E RF Chipset：SC7731E	
PCB	Main Board：6-layers	
Talk time	240mins	Estimated
Standby time	300hours	Estimated
Frequency Range	■ UMTS B2 UL 1850MHz~1910MHz DL 1930MHz~1990MHz ■ UMTS B4 UL 1710MHz~1755MHz DL 2110MHz~2155MHz ■ UMTS B5 UL 824MHz~849MHz DL 869MHz~894MHz ■ GSM850 UL 824MHz~849MHz DL 869MHz~894MHz ■ GSM900 880MHz~915MHz DL 925MHz~960MHz ■ GSM1800 UL 1710MHz~1785MHz DL 1805MHz~1880MHz ■ GSM1900 UL 1850MHz~1910MHz DL 1930MHz~1990MHz	
Vocoder	AMR	
Modulation/ Demodulation	UMTS:QPSK,16QAM GSM:GMSK	

RX sensitivity	GSM850/900/1800/1900: ≤-107dBm UMTS B2/4/5/8: ≤-109dBm	Conducted
Status Indicator	Yes	
System connector	Micro USB	
Ear Phone Jack	Yes	
Ear-microphone	Yes	
Battery Charger	No	
Travel Adapter	Yes	

4 Solution of the Product



The equipment under test (EUT) is the transmitter of ZTE Blade L130, WCDMA (B2/B4/B5) and GSM(850//900/1800/1900) digital mobile phone. Single band 2.4GHz,support 802.11b/g/n ,Support WIFI and BT TDD operation and signle-antenna with intergrated TR-switch,and support GPS.

The majority of the phone circuitry consists of a five device chipset; the SC7731E Transceiver IC,SC7731E highly integrated IC, containing

GSM/WCDMA/BT/WiFi/GPS/F，Power Amplifier RPM6569-12,The RPM6569-12 broadband linear power amplifier supports Mid-Band (1710 – 1980 MHz) and Low-Band (814 – 915 MHz). Tx-Rx FEM for Quad-Band GSM/GPRS RTM7289,The RTM7289 is a Transmit and Receive Front-End Module (FEM) designed in a very low profile and compact form factor for quad-band cellular handsets comprising GSM850/ 900, DCS1800 and PCS1900 operation. 3G switch-through support is provide by six dedicated high-linearity ports.
the SC7731E WIFI/BT IC, the SC2720 PMIC, and the SC7731E Baseband Processor. The remainders of the major radio components are the diplexer, antenna switch and duplexer. There is also a combination Flash Memory/SRAM IC. The system is powered by a rechargeable lithium-ion battery with a nominal voltage of 3.8 volts.

SC7731E is a highly integrated SoC with application processor, WCN modem and RF, cellar RF and WCDMA/HSPA (+)/GSM/GPRSmodem. It consists of Quad-core ARMCortex-A7 core as the application processor, which includes a NEON multimedia processing engine, Single-core ARM mali-T820 as 3D graphics accelerator, multi-standard multi-media accelerators and advanced audio subsystem. The specially optimized architecture of SC7731E can achieve high performance and low power for a lot of applications. Proprietary architectures and algorithms were developed for low power ASIC design and power management. Unique techniques are used for noise/offset calibration and cancellation. Overall, SC7731E chip set presents a high cost-effective platform for mobile devices.

An antenna switch selects the RF operating band, and then band-specific duplexers filter the incoming Rx signal while simultaneously routing the transmit signal to the antenna. The duplexer provide a differential Rx output. Each primary receive signal is routed from its duplexer to its Transceiever LNA through a matching network (MN) that optimizes the power transfer into the gain-stepped LNA.

The Tx RF paths share a common interface from the MSM device's Tx DAC, and then they share on-chip analog baseband circuits. Each band category, has a dedicated baseband-to-RF upconverter and its own set of RF gain stages.

The active upconverter's output is at the desired RF channel frequency, and drives its dedicated output circuits. These RF circuits include multiple variable-gain stages that provide transmit AGC control. The wide range of driver-amplifier output levels is achieved while supporting the WCDMA standard's requirements for ACLR, spurious emissions, Rx-band noise, and so on.

All transmitter output ports are single-ended with 50 Ohm nominal impedance. Each requires a simple matching network to interface with its RF front-end circuits' Tx path. The driver amplifiers end the signal-path circuitry within the WTR device, but the external transmit paths continue: SC7731E output — matching network — power amplifier — duplexer —antenna switch module— coupler — antenna.

Sample is converted to digital domain on-chip and used for Tx power detection and calibration purposes The RF transceiver shares its 26 MHz XO reference signal with the other circuits.

5 Software Architecture

ZTE Blade L130 handset software architecture consists of AMSS modem, MDM modem, kernel, rild, and app. The AMSS modem contains WCDMA stack layer, while MDM modem contains GSM/WCDMA stack. And App layer is all Java based application, rild is for communication between app and modem.