Operational Descriptions for CC555

1. Summaries

This document shows and provides the more detail information about hardware, including description of Baseband and RF.

In summary, 2G/3G/4G communication modem isMediatekMT6739m solution that supports GSM/WCDMA/FDD/LTE.

2.Feature

GSM： 850/1900

UMTS：2/5

LTE： 4/5/7/66

The EUT is working base on the **MCU MT6739**. The power supply is controlled by the IC MT6357. The RTC is 32.768KHz

The EUT equipped with **4-1 RF chipset MT6625L (WIFI/BT/GPS/FM 4-1, crystal: 26MHz)**.

The RF chip **MT6177M(Crystal: 26MHz)** used for this product support the GSM/GPRS /WCDMA/ HSDPA/HSUPA/E-UTRA(LTE) application.

GSM version is R99(GPRS/EGPRS Class 12) and

WCDMA version is R99.

The E-UTRA(LTE) release version is R9.

- **LTE**
- FDD: up to 150 Mbps downlink, 50 Mbps uplink

- 1.4 to 20 MHz RF bandwidth
- 2*2 downlink SU-MIMO; 4*2 downlink SU-MIMO
- IPv6, QoS
- Inter-RAT capabilities with HSPA+, EDGE, and applicable backward-compatible modes
- SNOW3G/ZUC cipher offload engine

3G UMTS FDD supported features

- 3Gmodem supports most main features in 3GPP Release 7 and Release 8
- CPC (DTX in CELL_DCH, UL DRX DL DRX), HS-SCCH-less, HS-DSCH
- Dual cell operation
- MAC-ehs
- Two DRX (receiver diversity) schemes in URA_PCH and CELL_PCH

- Uplink Cat. 7 (16QAM), throughput up to 11.5Mbps
- Downlink Cat. 24 (64QAM, dual-cell HSDPA), throughput up to 42.2Mbps
- Fast dormancy
- ETWS
- Network selection enhancements

GSM modem and voice CODEC

- Dial tone generation
- Noise reduction
- Echo suppression
- Advanced sidetone oscillation reduction
- Digital sidetone generator with programmable gain
- Two programmable acoustic compensation filters
- GSM quad vocoders for adaptive multirate (AMR), enhanced full rate (EFR), full rate (FR) and half rate (HR)
- GSM channel coding, equalization and A5/1, A5/2 and A5/3 ciphering
- GPRS GEA1, GEA2 and GEA3 ciphering
- Programmable GSM/GPRS/EDGE modem
- Packet switched data with CS1/CS2/CS3/CS4 coding schemes
- GSM circuit switch data
- GPRS/EDGE Class 12
- Supports SAIC (single antenna interference cancellation) technology
- Supports VAMOS (Voice services over Adaptive Multi-user channels on One Slot) technology in R9 spec

PA:

AP7219M-31

Supply voltage:3.7v

AP6716M-31

Supply voltage:3.7v

Connectivity Features

- WLAN
- Bluetooth
- FM Receiver

Characteristic:

Support 1.8 V and 3V SIM card;

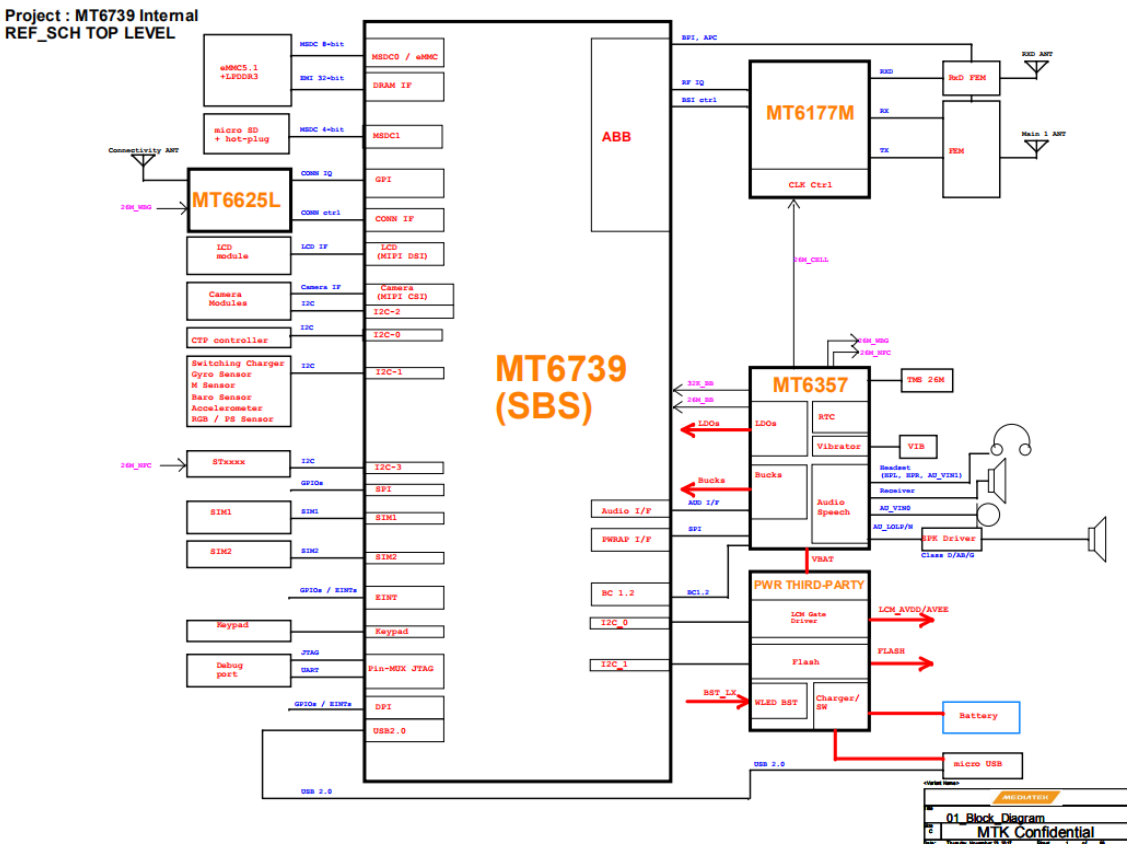
USB interface;

LCD: 854x480

Touch screen:5 points, capacity style.

Hareware keys;

Funcation Block Diagram



Multimedia Features

Graphics

- OpenGL ES 1.1/2.0/3.0 3D graphic accelerator capable of processing 71.5M tri/sec and 650M pixel/sec @ 650MHz
- OpenVG1.1 vector graphics accelerator

Video

- H.264 decoder: baseline 1080p @ 30fps/40Mbps (HW: CBP)
- H.264 decoder: main/high profile 1080p@30fps/40Mbps
- Sorenson H.263/H.263 decoder: 1080p @ 30fps/40Mbps
- MPEG-4 SP/ASP decoder: 1080p @ 30fps/40Mbps
- DIVX4/DIVX5/DIVX6/DIVX HD/XVID decoder: 1080p @ 30fps/40Mbps
- MPEG-4 encoder: Simple profile 720p@ 30fps
- H.263 encoder: VGA@ 30fps (SW)

Audio

- Hardware sampling rates supported: 8kHz to 192kHz
- Hardware Sample formats supported: 8-bit/16-bit/24-bit, Mono/Stereo
- Hardware interfaces supported: DAI, I2S, PCM
- Software 4-band IIR compensation filter to enhance loudspeaker responses
- Softwareproprietary audio post-processing technologies: BesLoudness(MB-DRC), BesSurround, Android built-in post processing
- Software audio encode: AMR-NB, AMR-WB, AAC, OGG, ADPCM
- Software audio decode: WAV, MP3, MP2, AAC, AMR-NB, AMR-WB, MIDI, Vorbis, APE, AAC-plus v1, AAC-plus v2, FLAC, WMA, ADPCM

Speech (in DSP)

- Speech codec (FR, HR, EFR, AMR FR, AMR HR and Wide-Band AMR)
- CTM
- Noise reduction

- Noise suppression
- Noise cancellation
- Dual-MIC noise cancellation
- Echo cancellation
- Echo suppression
- Dual-MIC input
- Digital MIC input

BT 4.1+EDR

Frequency:2402 – 2480 MHz

Modulation: GFSK (1Mbps), π/4-DQPSK(2Mbps),8-DPSK(3Mbps)

Antenna Type: PIFA Antenna

Antenna Gain: 0.8dBi

BT 4.1 BLE

Frequency: 2402 – 2480 MHz

Modulation: GFSK (1Mbps)

Antenna Type: PIFA Antenna

Antenna Gain: 0.8dBi

2.4G WIFI

Frequency:

802.11b/g/n 20: 2412~2462 MHz

802.11n(40MHz):2422~2452MHz

Modulation:

802.11b(DSSS):CCK,DQPSK,DBPSK

802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM

802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM

Antenna Type: PIFA Antenna

Antenna Gain: 0.8dBi

GSM:

UL:

GSM 850: 824 MHz-849MHz ,

PCS 1900: 1850 MHz-1910MHz

DL:

GSM 850: 869 MHz-894MHz ,

PCS 1900: 1930 MHz-1990MHz

Modulation: GMSK / 8PSK

Antenna Type: External Antenna

Antenna Gain: GSM 850: 1.8dBi, PCS 1900:2.5dBi

WCDMA:

UL:

Band V: 824 MHz-849 MHz

Band II: 1850 MHz-1910 MHz

DL:

Band V: 869 MHz-894 MHz

Band II: 1930 MHz-1990 MHz

Modulation: QPSK / 16QAM

Antenna Type: External Antenna

Antenna Gain: WCDMA 850: 1.8dBi, WCDMA1900: 2.6dBi

LTE

UL:

LTE Band 4:1710-1755MHz

LTE Band 5:824-849MHz

LTE Band 7:2500-2570MHz

LTE Band 66:1710~1780MHz

DL:

LTE Band 4:2110-2155MHz

LTE Band 5:869-894MHz

LTE Band 7:2620-2690MHz

LTE Band 66:2110~2200MHz

Modulation: QPSK / 16QAM

Antenna Type:

TX: External Antenna

RX: PIFA Antenna

Antenna Gain:

LTE Band 4: 2.6dBi

LTE Band 5: 1.8dBi

LTE Band 7: 2.9dBi

LTE Band 66: 2.7dBi