

OPERATIONAL DESCRIPTION

Model: A675L

Date: 2025-10-29

Band:

GSM: B2|B3|B5|B8

WCDMA: B1/B2/B4/B5/B8

LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B17/B20/B26/B28A/B28B/B38/B40/B41
(120M)/B66

1. Scope

This document shows and provides the more detail information about the platform we used.
The basic description for the Baseband and RF section are also included.

2. System Block Diagram

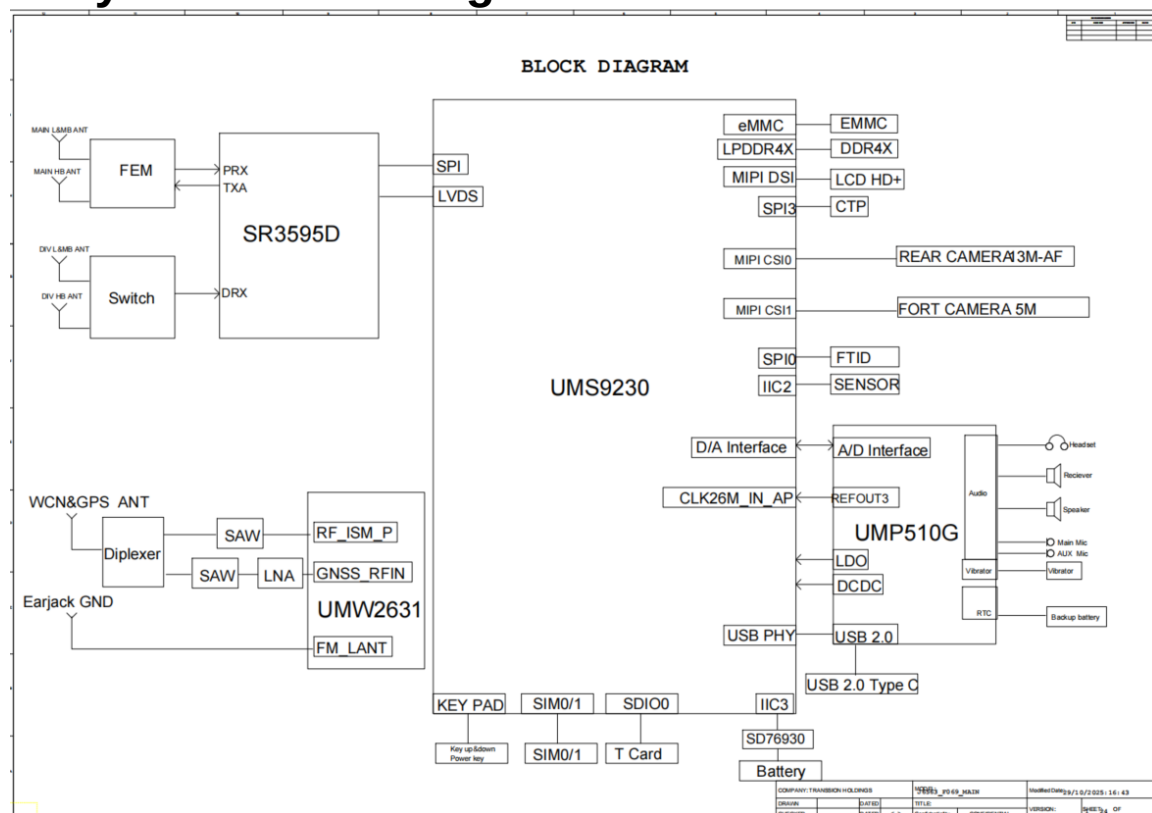


Figure 1 System Overview

3. RF Module

3.1 Transceiver(SR3595D)

SR3595D is a highly integrated, single-die radio transceiver chip that supports 4G with LTE-A for FDD-LTE, TDD-LTE, 3G WCDMA, HSDPA, HSUPA, GSM/EDGE as well as TD-SCDMA operation. Implemented in low cost bulk CMOS, it is optimized to meet the challenges of today's small form factor, power efficient, high performance cellular handsets. The SR3595D has total of 10 single-ended transmit ports, 14 primary and 12 diversity single-ended receive ports. The SR3595D provides connectivity multiple bands of operation. The SR3595D offers a cost competitive and small footprint radio solution for multi-mode, multi-band applications with the highest performance at the lowest power.

The linear transceiver architecture of SR3595D is utilized for 2.5G, 3G and 4G systems, offering excellent performance and design margins over 3GPP requirements. For 2.5G, a direct modulation scheme is used in the transmitter and performance of 2.5G receive and transmit chains is such that no additional RF filters are required to meet out-of-band noise specifications. The output driver stage for each transmitter chain is single-ended and matched to 50Ω.

The transceiver supports digital and analog I/Q interfaces with simple 3-wire bus architecture to program the radio.

Features

- Fully integrated single chip multi-mode, multi-band transceiver in bulk CMOS
- TDD-LTE Band:
34,38,39,40,41
- FDD-LTE Band:
1,2,3,4,5,6,7,8,12,13,17,18,19,20,25,26,28,29(DL Only),66
- TD-SCDMA Band: 34,39
- WCDMA Band:
1,2,3,4,5,6,8,9,10
- GSM/EDGE: GSM850, EGSM900, DCS1800, PCS 1900
- Single-ended LNAs in all receive bands and all modes of operation

- All TX outputs are single-ended and internally matched to 50Ω
- Digital IQ interface
- Ultra Low Power Consumption
- Three sets of reference clock outputs
- 123 balls BGA package
- 4.5mm x 4.5mm
- RoHS Compliance
- Halogen Free (HF) Compliance

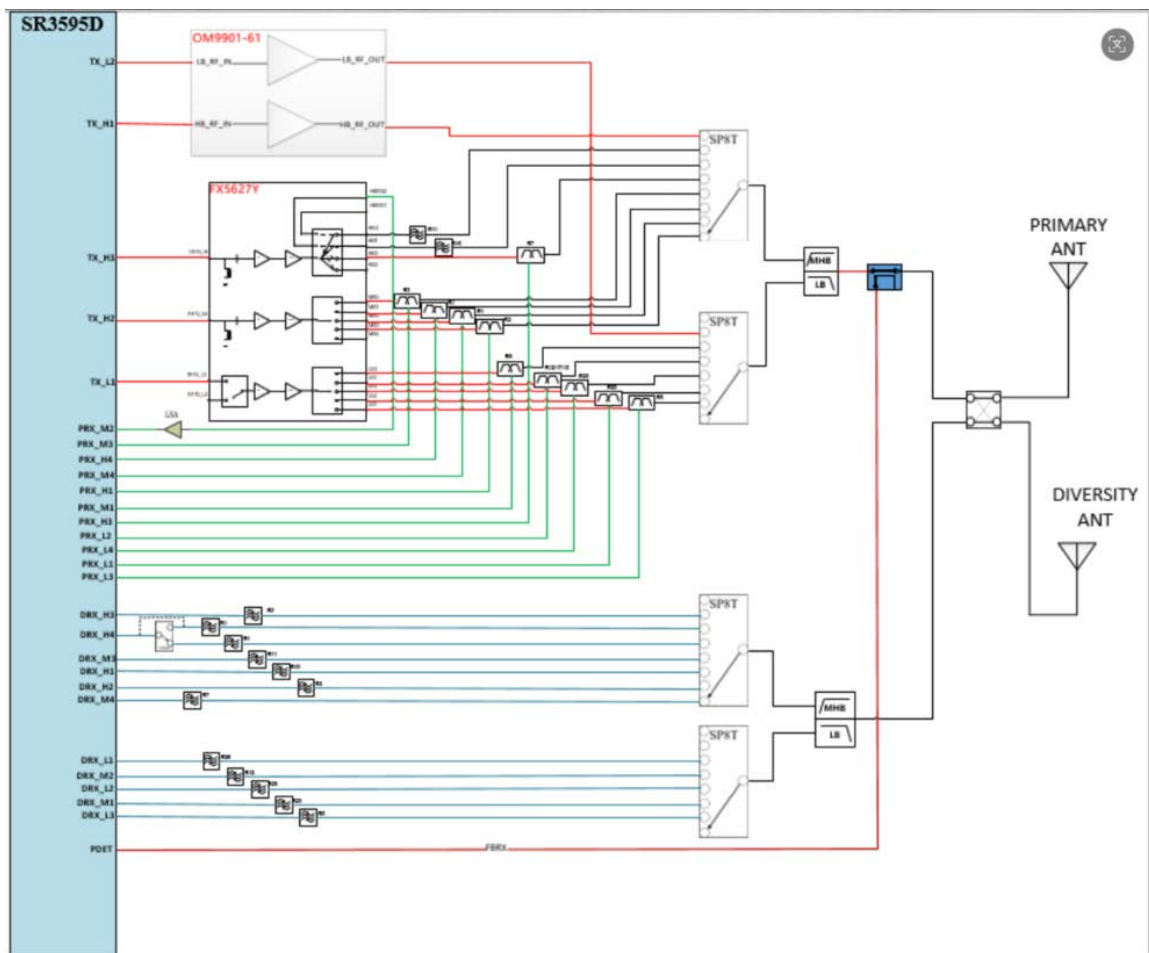


Figure 2 SR3595D Diagram

4. Baseband(UMS9230E)

UMS9230E is a highly integrated application processor with embedded TD-LTE,

LTE FDD, WCDMA/HSPA(+), WCDMA/DC-HSDPA, and GSM/GPRS/EDGE. It consists of dual-core Arm® Cortex®-A75 and six-core Arm® Cortex®-A55 processor as application processor, which includes a multimedia processing engine, Arm® Mali™-G57 as 3D graphics accelerator, multi-standard multi-media accelerators and advanced audio subsystem. The specially optimized architecture of UMS9230E 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 suppression/cancellation, echo suppression/cancellation algorithm. Overall, UMS9230E chipset presents a high cost-effective platform for four modes Android mobile devices.

Platform Features

Highlighted Features

- Dual-core high performance Arm® Cortex®-A75 processor up to 1.8GHz, and six-core low power Arm® Cortex®-A55 processor up to 1.6GHz.
- LPDDR4X up to 14GB, clock up to 1866MHz
- UFS2.2 / 2.1 2lane
- LTE Cat7
- Embedded connectivity system including WLAN/Bluetooth®/FM/GPS
- Resolution up to FHD+ (2520 × 1080) @60fps/ HD+ (1680 × 720) @120fps
- ISP supports 32MP@24fps in ZSL mode
- Support OpenGL ES3.2, OpenCL 3.0, Vulkan 1.0, Open VX 1.x and Renderscript compliant
- Support H.265/H.264 decode/encode 1080P@60fps

AP Subsystem

- Dual-core Arm® Cortex®-A75 processor, up to 1.8GHz
- Six-core Arm® Cortex®-A55 processor, up to 1.6GHz
- 64KB L1 I-cache and 64KB L1 D-cache, 256KB L2 cache for Arm® Cortex®-A75 processor
- 32KB L1 I-cache and 32KB L1 D-cache, 128KB L2 cache for Arm® Cortex®-A55 processor
- Shared 1024KB L3 I-cache
- Arm® Neon™ multimedia processing engine with SIMDv2/VFPv4 ISA support
- Support boot from SD, USB, UART, eMMC, UFS
- Support UID and secure boot
- Support DVFS technology with voltage ranging from 0.7V to 1.0V
- Support SensorHub

External memory interface

- Support eMMC 5.1 HS400
- Support UFS2.2 / 2.1
- Support LPDDR4X
- DDR Clock frequency up to 1866 MHz

Peripheral and connectivity interfaces

- Support tri-SIM cards, both 1.8 V and 3.0 V devices
- Support 3 SDIO 3.0
- Support USB 2.0 TypeC, USB 1.1 and OTG 2.0
- Support 7 UARTs, 2 UARTs support hardware flow control
- Support 4 SPIs, support both master and slave
- Support 5 I2S(PCM/TDM), for audio codec connection
- Support low power USB audio and A2DP
- Support 3-column × 3-row keypad with internal pull-up resistors
- Support 10 I2Cs up to 3.4Mbps, include 2 I3Cs
- Support more than 163 GPIO, 16 SE_GPIO, 16 CM4_GPIO, 16 EXTINT
- Support 3 PWM outputs
- Support SIM/USIM
- Support 2 analog MICs and 6 digital MICs

5. WCN features

WiFi Features

- Dual band 2.4/5 GHz 1x1 20/40/80 MHz IEEE 802.11a/b/g/n/ac
- Compliance with Wi-Fi VHT R2, supports DL MU-MIMO and beamformee
- UNISOC Extreme provides QAM-256 in 2.4 GHz band to improve 33% PHY data rate
- UNISOC Chorale antenna sharing and coexistence solution delivers excellent LTE, Wi-Fi MIMO, Bluetooth, Bluetooth Low Energy, GNSS concurrent operation performance in a compact and cost effective system design

- Support WMM-PS QoS, Wi-Fi Direct, Miracast R2, Passpoint 2.0, etc.
- Supports WEP, WPA/WPA2/ WPA3 R3, WPS 2.0, WAPI, WPI-SM4, EAP-TLS/EAP-TTLS/EAP PEAP/EAP-SIM/EAP-AKA/EAP-AKA', IEEE 802.11w Protected Management Frame
- Complies with IEEE 802.11 d/e/h/i/k/r/u/z
- Support both single and multiple channel concurrency
- Support background scan, ARP, TCP/UDP checksum offload, IPv6 NS offloading

Bluetooth

- Bluetooth 5.2, Bluetooth Smart Ready compliant
- Bluetooth classic and Low Energy dual mode concurrent operation
- Support LE 2 Mbps, LE Advertise Extension, Long Range
- Integrated 20 dBm high power on-chip PA for Bluetooth high power mode application
- Integrated wide-band speech processing to improve voice quality
- Support Low Energy background scan for context awareness applications
- Support multiple piconets and up to 8 concurrent Bluetooth Low Energy concurrent links

GNSS Features

- A-GNSS compliant and capabilities, supports SUPL/A-GPS/A-Beidou/A-GLONASS
- Integrated high performance RF path to reduce system design complexity
- Supports Satellite Based Argumentation systems (SBAS)
- Excellent tracking and hot start sensitivity

Operation Frequency:	GSM:	GSM850: 824.2~848.8 MHz		PCS 1900: 1850.2~1909.8 MHz	
	WCDMA:	Band II: 1852.4~1907.6 MHz		Band V: 826.4~846.6 MHz	
		Band IV: 1712.4~1752.6 MHz			
	LTE:	Band 2:1850MHz~1910MHz		Band 4:1710MHz~1755MHz	
		Band 5:824MHz~849MHz		Band 7: 2500MHz~2570MHz	
		Band 12: 699MHz~716MHz		Band 17: 704MHz~716MHz	
		Band 26:814MHz~849MHz		Band 38: 2570MHz~2620MHz	
		Band 41: 2535MHz~2655MHz		Band 66:1710MHz~1780MHz	
	Wi-Fi:	2412MHz~2462MHz		5150MHz-5250MHz	
		5250MHz-5350MHz		5470MHz-5725MHz	
5725MHz-5850MHz					
Bluetooth: 2402 MHz ~ 2480 MHz					
Modulation technology:	GSM:	☒ Voice(GMSK)	☒ GPRS(GMSK)	☐ EGPRS(GMSK, 8PSK)	
	WCDMA:	☒ RMC(QPSK)	☒ HSUPA(QPSK)	☒ HSDPA(QPSK,16QAM)	
	LTE:	☒ QPSK	☒ 16QAM	☒ 64QAM	
	Wi-Fi:	☒ 802.11b(DSSS)		☒ 802.11a/g/n/ac (OFDM)	
	Bluetooth:	☒ BDR(GFSK)	☒ EDR($\pi/4$ -DQPSK, 8DPSK)	☒ LE(GFSK)	
Antenna Type:	Internal Antenna				
Antenna Gain:	GSM 850:-3.93 dBi (declare by Applicant) PCS1900:-1.05 dBi (declare by Applicant) WCDMA band II:-1.05 dBi (declare by Applicant) WCDMA band IV:-2.36 dBi (declare by Applicant) WCDMA band V:-3.93 dBi (declare by Applicant) LTE band 2: -1.05 dBi (declare by Applicant) LTE band 4: -2.36 dBi (declare by Applicant) LTE band 5: -3.93 dBi (declare by Applicant) LTE band 7: -1.09 dBi (declare by Applicant) LTE band 12:-4.78 dBi (declare by Applicant) LTE band 17:-4.78 dBi (declare by Applicant) LTE band 26:-3.93 dBi (declare by Applicant) LTE band 38:-0.95 dBi (declare by Applicant) LTE band 41:-0.95 dBi (declare by Applicant) LTE band 66:-2.08 dBi (declare by Applicant) Bluetooth: -0.58 dBi (declare by applicant) 2.4G Wi-Fi: -0.58 dBi (declare by applicant) 5G Wi-Fi: 2.74 dBi (declare by applicant)				