

Operation description

1.1 Hardware System

The SDM450 device uses the advanced 14 nm FinFET process for lower active power dissipation and faster peak CPU performance. It includes a customized 64-bit ARM Cortex-A53 octa-core applications processor non-package-on-package (non-PoP) LPDDR3 SDRAM memory

This product supports screen display support Wifi (2.4G and 5G)/LTE TDD and FDD support LED indicators, support 128GTF card, support dual MIC noise reduction, support speaker audio output, support front and rear dual cameras.

1.2 Main IC information:

IC, PMI-8952,PMIC for interface, IC,PM-8953,PMIC for power

IC, BB,SDM-450-B-792NSP-TR-01-0-AA,feature_ID=0X41;CAT6 CDMA;1.8GHz

IC, WCN3680B,WLAN 2.4G+5G,/BT/GPS

IC, Multimode Multiband Power Amplifier Module

IC, eMMC+LPDDR3, 16GB+16Gb,3.3V,1.8/3.3V,1.8/1.2/1.2/1.2V,FBGA221,X8/X32

IC,SP10T+GSM PA,Tx-Rx Front-End Module for Quad-Band GSM/GPRS/EDGEw/10 Linear TRx Switch Ports,Dual-Band TD-SCDMA,and TDD LTE Band

Note: Regarding GSM/WCDMA developers will turn off these functions through software.

1.3 Wireless information

The SDM450 device Wifi module includes 2.4G and 5G, it support IEEE802.11ac/n/g/b/a applications, The operating frequencies are respectively 2400MHz~2483.5MHZ、5150MHz~5250MHz、5250MHz~5350MHz、5725MHz~5850MHz.

The SDM450 device LTE module includes Band2、Band4、Band5、Band12, The operating frequencies are respectively 1850MHz~1910MHZ、1710MHz~1755MHZ、824MHz~849MHZ、699MHz~716MHZ.

1.4 EUT's RF information(2.4G WIFI):

Items	Description
Equipment Name	Body Worn Camera
Model Number	FirstVu PRO
Trademark	Digital Ally
Power Supply	Adapter Model: AS1201A-0502000USU Input: 100-240V~50/60Hz 0.35A MAX Output: 5V 2000mA

		Battery Model: A213A 3.8V 3450mAh 13.11Wh			
Operating Temperature		-30~50℃			
EUT Stage		○ Product Unit		●Final-Sample	
Operating Band		2400~2483.5MHz		●IEEE 802.11b	
				●IEEE 802.11g	
				●IEEE 802.11n(20MHz)	
				●IEEE 802.11n(40MHz)	
Product Type		IEEE 802.11b: WLAN (1TX, 1RX) IEEE 802.11g: WLAN (1TX, 1RX) IEEE 802.11n: WLAN (1TX, 1RX)			
Nominal Bandwidth		20MHz / 40MHz			
Modulation		IEEE 802.11b: DSSS (DBPSK, DQPSK, CCK) IEEE 802.11g: OFDM (BPSK / QPSK / 16QAM / 64QAM) IEEE 802.11n: OFDM (BPSK / QPSK / 16QAM / 64QAM)			
Data Rate (Mbps)		IEEE 802.11b mode : DSSS (1/2/5.5/11) IEEE 802.11g mode : OFDM (6/9/12/18/24/36/48/54) IEEE 802.11n (20MHz) mode(MCS0~MCS7) IEEE 802.11n (40MHz) mode(MCS0~MCS7)			
Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PIFA	N/A	-1.2

1.5 EUT's RF information(5G WIFI):

EUT Stage	○ Product Unit	● Final-Sample			
Operating Band	5150MHz ~5250MHz	● IEEE 802.11a/n/ac(20MHz)			
	5250MHz ~5350MHz	● IEEE 802.11n/ac(40MHz)			
	5725MHz ~5850MHz	● IEEE 802.11ac(80MHz)			
Product Type	IEEE 802.11a: WLAN (1TX, 1RX)				
	IEEE 802.11n: WLAN (1TX, 1RX)				
	IEEE 802.11ac: WLAN (1TX, 1RX)				
Nominal Bandwidth	20MHz / 40MHz / 80MHz				

Modulation	IEEE 802.11a: OFDM (BPSK / QPSK / 16QAM / 64QAM)				
	IEEE 802.11n: (BPSK / QPSK / 16QAM / 64QAM)				
	IEEE 802.11ac: (BPSK / QPSK / 16QAM / 64QAM / 256QAM)				
Data Rate (Mbps)	IEEE 11a mode : OFDM (6/9/12/18/24/36/48/54)				
	IEEE 11n mode : MCS0~MCS7				
	IEEE 11ac mode : MCS0~MCS7				

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PIFA	N/A	-2.5

1.6 EUT's RF information(BLE):

EUT Stage	☐ Product Unit		☒ Final-Sample		
Radio Type	BLE				
Modulation Type	GFSK				
Frequency Range	2402-2480 MHz				
Data Rate	1 Mbps				
Number of Operated Channel	40				
Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PIFA	N/A	-1.2

1.7 EUT's RF information(BT):

EUT Stage	☐ Product Unit		☒ Final-Sample		
Radio Type	Bluetooth: BDR/EDR				
Modulation Technique	Frequency Hopping Spread Spectrum(FHSS)				
Modulation Type	GFSK, $\pi/4$ -DQPSK, 8DPSK				
Frequency Range	2402-2480 MHz				
Number of Operated Channels	79				
Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PIFA	N/A	-1.2

1.8 EUT's RF information(LTE):

EUT Stage	☐ Product Unit ☒ Final-Sample
Radio System Type	LTE
Operating Band	Band 2, Band 4, Band 5, Band 12

Characteristics	Description	
Radio System Type	LTE	
Supported Frequency Range	LTE BAND2	Transmission (TX): 1850 to 1910 MHz
		Receiving (RX): 1930 to 1990 MHz
	LTE BAND4	Transmission (TX): 1710 to 1755 MHz
		Receiving (RX): 2110 to 2155 MHz

Characteristics	Description	
		MHz
	LTE BAND5	Transmission (TX): 824 to 849 MHz
		Receiving (RX): 869 to 894 MHz
	LTE BAND12	Transmission (TX): 699 to 716 MHz
		Receiving (RX): 729 to 746 MHz
TX and RX Antenna Port Numbers	TX & RX port:	1
	RX-only port:	1
Target TX Output Power	LTE BAND2: 25dBm LTE BAND4: 25dBm LTE BAND5: 25dBm LTE BAND12: 25dBm	
Antenna Gain:	LTE BAND2: 2dBi LTE BAND4: 2dBi LTE BAND5: 2dBi LTE BAND12: 2dBi	
Supported Channel Bandwidth	LTE band 2	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE band 4	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE band 5	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE band 12	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
Designation of Emissions (Note: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.)	LTE BAND2:	1M10G7D (1.4 MHz QPSK modulation), 1M10W7D (1.4 MHz 16QAM modulation) 2M70G7D (3 MHz QPSK modulation), 2M70W7D (3 MHz 16QAM modulation) 4M50G7D (5 MHz QPSK modulation), 4M50W7D (5 MHz 16QAM modulation) 8M98G7D (10 MHz QPSK modulation), 8M97W7D (10 MHz 16QAM modulation) 13M45G7D (15 MHz QPSK modulation), 13M44W7D (15 MHz 16QAM modulation) 17M93G7D (20 MHz QPSK modulation), 17M94W7D (20 MHz 16QAM modulation)

Characteristics	Description			
	LTE BAND4:	1M09G7D (1.4 MHz QPSK modulation), 1M09W7D (1.4 MHz 16QAM modulation) 2M70G7D (3 MHz QPSK modulation), 2M69W7D (3 MHz 16QAM modulation) 4M50G7D (5 MHz QPSK modulation), 4M50W7D (5 MHz 16QAM modulation) 8M97G7D (10 MHz QPSK modulation), 8M97W7D (10 MHz 16QAM modulation) 13M44G7D (15 MHz QPSK modulation), 13M43W7D (15 MHz 16QAM modulation) 17M93G7D (20 MHz QPSK modulation), 17M94W7D (20 MHz 16QAM modulation)		
	LTE BAND5:	1M09G7D (1.4 MHz QPSK modulation), 1M09W7D (1.4 MHz 16QAM modulation) 2M70G7D (3 MHz QPSK modulation), 2M69W7D (3 MHz 16QAM modulation) 4M49G7D (5 MHz QPSK modulation), 4M50W7D (5 MHz 16QAM modulation) 8M98G7D (10 MHz QPSK modulation), 8M98W7D (10 MHz 16QAM modulation)		
	LTE BAND12:	1M09G7D (1.4 MHz QPSK modulation), 1M09W7D (1.4 MHz 16QAM modulation) 2M70G7D (3 MHz QPSK modulation), 2M69W7D (3 MHz 16QAM modulation)		

Characteristics	Description		
		4M49G7D (5 MHz QPSK modulation), 4M50W7D (5 MHz 16QAM modulation)	
		8M98G7D (10 MHz QPSK modulation), 8M97W7D (10 MHz 16QAM modulation)	