

1 Cover Page

RF MPE REPORT

Application No.: KSEM20080000932CR
FCC ID: 2AH25NT312
Applicant: Shanghai Sunmi Technology Co.,Ltd.
Address of Applicant: Room 605,Block 7,KIC Plaza,No.388 Song Hu Road Yang Pu District,Shanghai,China
Manufacturer: Shanghai Sunmi Technology Co.,Ltd.
Address of Manufacturer: Room 605,Block 7,KIC Plaza,No.388 Song Hu Road Yang Pu District,Shanghai,China
Equipment Under Test (EUT):
EUT Name: Cloud POS Printer
Model No.: NT312
Standard(s) : FCC Rules 47 CFR §2.1091
 KDB447498 D01 General RF Exposure Guidance v06
Date of Receipt: 2020-08-03
Date of Test: 2020-08-14 to 2020-09-14
Date of Issue: 2020-09-16

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Eric Lin
EMC Lab Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
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Revision Record			
Version	Description	Date	Remark
00	Original	2020-09-13	/

Authorized for issue by:			
		<i>Damon Zhou</i>	

		Damon Zhou / Project Engineer	
		<i>Eric Lin</i>	

		Eric Lin / Reviewer	



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3 General Information

3.1 General Description of E.U.T.

Power supply:	DC 24V by Adapter Adapter Model:CYSE65-240250 INPUT:100-240V,50/60Hz 1.7A OUTPUT:24V,2.5A
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3.2 Technical Specifications

2.4GHz

Antenna Gain:	1 dBi
Antenna Type:	PCB Antenna
Channel Spacing:	5MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	802.11b/g/n(HT20):11
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz

BT

Antenna Gain:	1 dBi
Antenna Type:	PCB Antenna
Bluetooth Version:	BT4.2 Dual mode
Channel Spacing:	1MHz
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Data Rate:	1/2/3Mbps
Number of Channels:	79
Operation Frequency:	2402MHz to 2480MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)



BLE

Antenna Gain:	1dBi
Antenna Type:	PCB Antenna
Bluetooth Version:	BT4.2 Dual mode
Data Rate:	1Mbps
Channel Spacing:	2MHz
Modulation Type:	GFSK
Number of Channels:	40
Operation Frequency:	2402MHz to 2480MHz

3G

Operation Frequency Band:	UMTS Band2,Band5	
Operation Frequency	Band 2	TX: 1852.4~1907.6MHz; RX 1932.4~1987.6MHz
	Band 5	TX:826.4-846.6MHz;RX 871.4~891.6MHz
Modulation Type:	QPSK,BPSK	
Antenna Type:	PIFA	
Antenna Gain:	UMTS Band 2: 0.96dBi UMTS Band 5: -0.63dBi	

4G

LTE Operation Frequency Band:	LTE FDD Band 2, 4, 5, 12,13
Modulation Type:	QPSK, 16QAM
Antenna Type:	PIFA
Antenna Gain:	Band 2: 0.96dBi Band 4:-0.39dBi Band 5:-0.63dBi Band 12:-0.89dBi Band 13:-2.33dBi

3.3 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

3.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **CNAS (No. CNAS L4354)**

CNAS has accredited Compliance Certification Services (Kunshan) Inc. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 2541.01)**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• **FCC (Designation Number: CN1172)**

Compliance Certification Services Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

• **ISED (CAB identifier: CN0072)**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

CAB Identifier: CN0072.

• **VCCI (Member No.: 1938)**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1600, C-1707, T-1499, G-10216 respectively.

4 Test Standards and Limits

4.1 FCC Radiofrequency radiation exposure limits:

According to §1.1310, the limit for general population/uncontrolled exposures

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

5 Measurement and Calculation

5.1 Maximum transmit power

The Power Data is based on the RF Test Report KSEM20080009201; KSEM200800093202; KSEM200800093203; KSEM200800093204; KSEM200800093205;

2.4G WIFI

Test Mode	Test Channel	Ant	Power [dBm]	Power [mW]
11B	2412	Ant1	19.59	90.99
11B	2437	Ant1	19.58	90.78
11B	2462	Ant1	19.92	98.17
11G	2412	Ant1	22.97	198.15
11G	2437	Ant1	23.24	210.86
11G	2462	Ant1	23.37	217.27
11N20SISO	2412	Ant1	22.32	170.61
11N20SISO	2437	Ant1	22.46	176.20
11N20SISO	2462	Ant1	22.66	184.50

BT

Test Mode	Test Frequency (MHz)	Output Power (dBm)	Reading Power (mW)
GFSK	2402	9.85	9.66
	2441	9.84	9.64
	2480	10.66	11.64
Pi/4DQPSK	2402	9.08	8.09
	2441	8.71	7.43
	2480	7.76	5.97
8DPSK	2402	9.47	8.85
	2441	9.12	8.17
	2480	9.39	8.69

BLE

Test Mode	Test Frequency (MHz)	Output Power (dBm)	Reading Power (mW)
BLE	2402	8.43	6.97
	2440	8.41	6.93
	2480	8.82	7.62

WCDMA Band 2

Test Mode		Conducted Power (dBm)			Conducted Power (mW)		
		LCH	MCH	HCH	LCH	MCH	HCH
HSUPA	Subtest 1	17.65	16.6	17.02	58.21	45.71	50.35
	Subtest 2	16.77	17.18	17.34	47.53	52.24	54.20
	Subtest 3	17.26	17.15	17.33	53.21	51.88	54.08
	Subtest 4	17.60	16.70	17.18	57.54	46.77	52.24
	Subtest 5	16.89	16.26	17.25	48.87	42.27	53.09
HSDPA	Subtest 1	17.01	16.53	16.43	50.23	44.98	43.95
	Subtest 2	16.60	16.79	17.35	45.71	47.75	54.33
	Subtest 3	16.92	16.76	17.05	49.20	47.42	50.70
	Subtest 4	16.38	16.26	16.99	43.45	42.27	50.00
RMC	12.2kbps RMC	20.66	20.42	20.66	116.41	110.15	116.41

WCDMA Band 5

Test Mode		Conducted Power (dBm)			Conducted Power (mW)		
		LCH	MCH	HCH	LCH	MCH	HCH
HSUPA	Subtest 1	18.27	19.60	19.33	67.14	91.20	85.70
	Subtest 2	18.81	19.06	17.95	76.03	80.54	62.37
	Subtest 3	18.30	19.00	19.30	67.61	79.43	85.11
	Subtest 4	19.11	18.84	19.54	81.47	76.56	89.95
	Subtest 5	18.92	19.22	18.53	77.98	83.56	71.29
HSDPA	Subtest 1	18.17	18.78	19.33	65.61	75.51	85.70
	Subtest 2	18.98	19.07	19.31	79.07	80.72	85.31
	Subtest 3	18.31	18.65	18.70	67.76	73.28	74.13
	Subtest 4	18.21	18.51	19.18	66.22	70.96	82.79
RMC	12.2kbps RMC	22.29	22.79	22.88	169.43	190.11	194.09

LTE BAND 2

Test Band: 2 _ 3MHz Bandwidth										
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)				
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH		
QPSK	1	0	20.44	20.28	20.09	110.66	106.66	102.09		
		2	20.71	20.36	20.23	117.76	108.64	105.44		
		5	20.53	20.19	20.19	112.98	104.47	104.47		
	3	0	20.56	20.33	20.2	113.76	107.89	104.71		
		2	20.63	20.37	20.28	115.61	108.89	106.66		
		3	20.55	20.33	20.28	113.50	107.89	106.66		
16QAM	6	0	19.54	19.44	19.41	89.95	87.90	87.30		
			19.69	19.89	19.14	93.11	97.50	82.04		
		1	2	19.89	20.35	19.06	97.50	108.39	80.54	
			5	19.79	19.91	18.72	95.28	97.95	74.47	
		3	0	19.75	19.7	19.27	94.41	93.33	84.53	
			2	19.85	19.78	19.29	96.61	95.06	84.92	
	3		19.78	19.53	19.31	95.06	89.74	85.31		
	6		18.42	18.49	18.44	69.50	70.63	69.82		
	Test Band: 2 _ 3MHz Bandwidth									
	Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
		Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
	QPSK	1	0	20.53	20.42	20.14	112.98	110.15	103.28	
7			20.63	20.45	20.50	115.61	110.92	112.20		
14			20.65	20.49	20.33	116.14	111.94	107.89		
8		0	19.73	19.48	19.36	93.97	88.72	86.30		
		4	19.62	19.45	19.41	91.62	88.10	87.30		
		7	19.63	19.57	19.41	91.83	90.57	87.30		
16QAM	15	0	19.69	19.40	19.35	93.11	87.10	86.10		
			19.09	18.88	18.96	81.10	77.27	78.70		
		7	19.22	19.26	18.94	83.56	84.33	78.34		
	8	14	19.12	19.44	19.72	81.66	87.90	93.76		
			0	18.46	18.29	18.60	70.15	67.45	72.44	
			4	18.30	18.40	18.59	67.61	69.18	72.28	
		7	18.33	18.39	18.60	68.08	69.02	72.44		
			15	0	18.48	18.30	18.13	70.47	67.61	65.01



Test Band: 2 _ 5MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.39	20.41	20.20	109.40	109.90	104.71	
		13	20.49	20.36	20.22	111.94	108.64	105.20	
		24	20.53	20.41	20.13	112.98	109.90	103.04	
	12	0	19.62	19.46	19.24	91.62	88.31	83.95	
		6	19.56	19.53	19.37	90.36	89.74	86.50	
		13	19.58	19.57	19.43	90.78	90.57	87.70	
25	0	19.70	19.49	19.37	93.33	88.92	86.50		
16QAM	1	0	19.37	19.11	19.37	86.50	81.47	86.50	
		13	19.52	19.24	19.39	89.54	83.95	86.90	
		24	19.38	19.42	19.64	86.70	87.50	92.04	
	12	0	18.59	18.15	18.22	72.28	65.31	66.37	
		6	18.53	18.19	18.16	71.29	65.92	65.46	
		13	18.64	18.44	18.19	73.11	69.82	65.92	
	25	0	18.46	18.39	18.19	70.15	69.02	65.92	
	Test Band: 2 _ 10MHz Bandwidth								
	Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
Size		Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.52	20.30	20.46	112.72	107.15	111.17	
		25	20.70	20.87	20.50	117.49	122.18	112.20	
		49	20.49	20.61	20.46	111.94	115.08	111.17	
	25	0	19.68	19.55	19.43	92.90	90.16	87.70	
		13	19.62	19.54	19.53	91.62	89.95	89.74	
		25	19.51	19.63	19.38	89.33	91.83	86.70	
50	0	19.71	19.46	19.23	93.54	88.31	83.75		
16QAM	1	0	19.44	19.45	19.23	87.90	88.10	83.75	
		25	19.38	19.10	19.04	86.70	81.28	80.17	
		49	19.07	19.10	19.01	80.72	81.28	79.62	
	25	0	18.65	18.50	18.37	73.28	70.79	68.71	
		13	18.61	18.55	18.54	72.61	71.61	71.45	
		25	18.58	18.59	18.63	72.11	72.28	72.95	
	50	25	19.48	19.30	19.13	88.72	85.11	81.85	



Test Band: 2 _ 15MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.56	20.17	20.46	113.76	103.99	111.17	
		38	20.47	20.21	20.50	111.43	104.95	112.20	
		74	20.60	20.00	20.46	114.82	100.00	111.17	
	36	0	19.60	19.57	19.43	91.20	90.57	87.70	
		18	19.57	19.47	19.53	90.57	88.51	89.74	
		39	19.45	19.38	19.38	88.10	86.70	86.70	
75	0	19.52	19.32	19.23	89.54	85.51	83.75		
16QAM	1	0	20.16	20.03	19.23	103.75	100.69	83.75	
		38	19.26	20.49	19.76	84.33	111.94	94.62	
		74	18.91	19.63	19.84	77.80	91.83	96.38	
	36	0	19.48	19.50	20.37	88.72	89.13	108.89	
		18	19.43	19.55	20.54	87.70	90.16	113.24	
		39	19.52	19.59	20.63	89.54	90.99	115.61	
	75	0	19.48	19.30	20.13	88.72	85.11	103.04	
	Test Band: 2 _ 20MHz Bandwidth								
	Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
Size		Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.56	20.17	20.46	113.76	103.99	111.17	
		50	20.47	20.21	20.50	111.43	104.95	112.20	
		99	20.60	20.00	20.46	114.82	100.00	111.17	
	50	0	19.60	19.57	19.43	91.20	90.57	87.70	
		25	19.57	19.47	19.53	90.57	88.51	89.74	
		50	19.45	19.38	19.38	88.10	86.70	86.70	
100	0	19.52	19.32	19.23	89.54	85.51	83.75		
16QAM	1	0	20.16	20.03	19.23	103.75	100.69	83.75	
		50	19.26	20.49	19.76	84.33	111.94	94.62	
		99	18.91	19.63	19.84	77.80	91.83	96.38	
	36	0	19.48	19.50	20.37	88.72	89.13	108.89	
		25	19.43	19.55	20.54	87.70	90.16	113.24	
		50	19.52	19.59	20.63	89.54	90.99	115.61	
75	50	19.48	19.30	20.13	88.72	85.11	103.04		



LTE BAND 4

Test Band: 4 _ 1.4MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.54	20.32	20.02	113.24	107.65	100.46	
		2	20.56	20.34	20.14	113.76	108.14	103.28	
		5	20.66	20.13	19.97	116.41	103.04	99.31	
	3	0	20.57	20.20	20.19	114.02	104.71	104.47	
		2	20.59	20.33	20.16	114.55	107.89	103.75	
		3	20.58	20.15	20.08	114.29	103.51	101.86	
	6	0	19.57	19.23	19.23	90.57	83.75	83.75	
	16QAM	1	0	19.82	18.86	18.87	95.94	76.91	77.09
			2	20.15	18.98	18.90	103.51	79.07	77.62
5			19.80	19.05	18.85	95.50	80.35	76.74	
3		0	19.69	19.27	19.23	93.11	84.53	83.75	
		2	19.87	19.31	19.18	97.05	85.31	82.79	
		3	19.88	19.33	19.09	97.27	85.70	81.10	
6		0	18.52	18.32	18.18	71.12	67.92	65.77	
Test Band: 4 _ 3MHz Bandwidth									
Modulation		RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.57	20.21	20.17	114.02	104.95	103.99	
		7	20.78	20.20	20.16	119.67	104.71	103.75	
		14	20.94	20.47	19.90	124.17	111.43	97.72	
	8	0	19.57	19.31	19.31	90.57	85.31	85.31	
		4	19.75	19.33	19.17	94.41	85.70	82.60	
		7	19.75	19.28	19.20	94.41	84.72	83.18	
	15	0	19.66	19.31	19.34	92.47	85.31	85.90	
	16QAM	1	0	19.81	18.85	18.91	95.72	76.74	77.80
			7	20.07	18.68	18.97	101.62	73.79	78.89
14			19.75	18.83	18.73	94.41	76.38	74.64	
8		0	18.69	18.13	18.34	73.96	65.01	68.23	
		4	18.80	18.06	18.29	75.86	63.97	67.45	
		7	18.88	18.51	18.24	77.27	70.96	66.68	
15		0	18.74	18.49	18.19	74.82	70.63	65.92	



Test Band: 4 _ 5MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.44	20.35	20.30	110.66	108.39	107.15	
		13	20.66	20.27	20.14	116.41	106.41	103.28	
		24	20.55	20.33	20.11	113.50	107.89	102.57	
	12	0	19.65	19.24	19.51	92.26	83.95	89.33	
		6	19.74	19.20	19.43	94.19	83.18	87.70	
		13	19.61	19.37	19.32	91.41	86.50	85.51	
	25	0	19.59	19.21	19.50	90.99	83.37	89.13	
	16QAM	1	0	19.35	19.31	19.33	86.10	85.31	85.70
			13	19.51	19.48	18.90	89.33	88.72	77.62
24			19.29	19.60	18.72	84.92	91.20	74.47	
12		0	18.40	18.15	18.19	69.18	65.31	65.92	
		6	18.58	18.26	18.28	72.11	66.99	67.30	
		13	18.63	18.23	18.16	72.95	66.53	65.46	
25		0	18.57	18.21	18.46	71.94	66.22	70.15	
Test Band: 4 _ 10MHz Bandwidth									
Modulation		RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.65	20.35	21.11	116.14	108.39	129.12	
		25	21.07	20.58	20.66	127.94	114.29	116.41	
		49	20.80	21.21	20.39	120.23	132.13	109.40	
	25	0	19.69	19.89	20.27	93.11	97.50	106.41	
		12	19.94	19.49	19.70	98.63	88.92	93.33	
		25	20.27	19.45	20.03	106.41	88.10	100.69	
	50	0	19.62	19.89	20.30	91.62	97.50	107.15	
	16QAM	1	0	19.89	19.95	19.76	97.50	98.86	94.62
			25	19.54	20.36	19.37	89.95	108.64	86.50
49			19.67	20.30	19.36	92.68	107.15	86.30	
25		0	19.31	18.94	18.34	85.31	78.34	68.23	
		12	18.70	19.26	18.71	74.13	84.33	74.30	
		25	19.12	19.18	18.98	81.66	82.79	79.07	
50		25	19.45	18.59	19.04	88.10	72.28	80.17	



Test Band: 4 _ 15MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.73	21.30	20.98	118.30	134.90	125.31	
		37	21.10	20.29	20.33	128.82	106.91	107.89	
		74	20.80	20.71	20.49	120.23	117.76	111.94	
	36	0	19.86	20.18	20.01	96.83	104.23	100.23	
		20	20.03	19.21	20.23	100.69	83.37	105.44	
		39	19.82	19.46	19.87	95.94	88.31	97.05	
	75	0	19.94	19.59	20.26	98.63	90.99	106.17	
	16QAM	1	0	20.21	20.17	19.36	104.95	103.99	86.30
			37	20.35	19.81	18.99	108.39	95.72	79.25
74			20.12	20.57	19.45	102.80	114.02	88.10	
36		0	18.66	18.41	19.03	73.45	69.34	79.98	
		20	19.19	18.75	18.33	82.99	74.99	68.08	
		39	19.53	18.79	18.16	89.74	75.68	65.46	
75		37	19.36	18.99	19.27	86.30	79.25	84.53	
Test Band: 4 _ 1.4MHz Bandwidth									
Modulation		RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	21.09	20.60	20.35	128.53	114.82	108.39	
		49	20.85	20.35	21.01	121.62	108.39	126.18	
		99	20.84	20.34	20.43	121.34	108.14	110.41	
	50	0	19.89	19.99	20.30	97.50	99.77	107.15	
		24	20.47	19.76	20.36	111.43	94.62	108.64	
		50	19.78	19.65	19.55	95.06	92.26	90.16	
	100	0	20.42	20.20	20.00	110.15	104.71	100.00	
	16QAM	1	0	19.69	19.94	19.93	93.11	98.63	98.40
			49	19.88	19.51	19.30	97.27	89.33	85.11
99			19.48	19.93	19.66	88.72	98.40	92.47	
50		0	19.03	18.53	18.64	79.98	71.29	73.11	
		24	19.56	19.00	18.52	90.36	79.43	71.12	
		50	19.56	18.72	18.18	90.36	74.47	65.77	
100		49	19.45	18.70	19.19	88.10	74.13	82.99	



LTE Band 5

Test Band: 5 _ 1.4MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.69	20.81	20.91	117.22	120.50	123.31	
		2	20.72	20.93	21.02	118.03	123.88	126.47	
		5	20.57	21.01	20.79	114.02	126.18	119.95	
	3	0	20.59	20.95	21.02	114.55	124.45	126.47	
		2	20.65	21.19	21.05	116.14	131.52	127.35	
		3	20.56	21.29	21.11	113.76	134.59	129.12	
16QAM	6	0	19.65	20.15	20.15	92.26	103.51	103.51	
			19.77	19.52	20.46	94.84	89.54	111.17	
		1	2	19.73	19.68	20.57	93.97	92.90	114.02
			5	19.64	19.71	20.38	92.04	93.54	109.14
			0	19.85	19.56	20.44	96.61	90.36	110.66
		3	2	19.58	19.67	20.32	90.78	92.68	107.65
	3		19.51	19.76	20.30	89.33	94.62	107.15	
	0		18.81	18.58	19.26	76.03	72.11	84.33	
	Test Band: 5 _ 3MHz Bandwidth								
	Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
		Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH
	QPSK	1	0	20.52	20.85	20.99	112.72	121.62	125.60
7			20.55	21.22	21.29	113.50	132.43	134.59	
14			20.39	21.33	21.04	109.40	135.83	127.06	
8		0	19.67	19.99	20.24	92.68	99.77	105.68	
		4	19.56	20.08	20.13	90.36	101.86	103.04	
		7	19.56	20.04	20.02	90.36	100.93	100.46	
15		0	19.66	20.04	20.11	92.47	100.93	102.57	
			19.96	19.74	20.46	99.08	94.19	111.17	
		1	7	20.27	20.37	20.85	106.41	108.89	121.62
16QAM	1	14	20.21	20.37	20.77	104.95	108.89	119.40	
		0	18.90	18.95	19.34	77.62	78.52	85.90	
		4	18.83	19.23	19.39	76.38	83.75	86.90	
	8	7	18.45	18.96	19.38	69.98	78.70	86.70	
		0	18.49	18.92	19.29	70.63	77.98	84.92	
		15	0	18.49	18.92	19.29	70.63	77.98	84.92



Test Band: 5 _ 5MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	20.42	20.76	21.15	110.15	119.12	130.32	
		13	20.33	21.02	20.86	107.89	126.47	121.90	
		24	20.29	21.06	20.97	106.91	127.64	125.03	
	12	0	19.69	19.97	20.09	93.11	99.31	102.09	
		6	19.66	20.11	19.98	92.47	102.57	99.54	
		13	19.54	20.12	20.07	89.95	102.80	101.62	
	25	0	19.60	20.04	20.10	91.20	100.93	102.33	
	16QAM	1	0	19.93	19.17	19.79	98.40	82.60	95.28
			13	19.68	19.53	19.77	92.90	89.74	94.84
24			19.27	19.67	19.75	84.53	92.68	94.41	
12		0	18.54	18.97	19.08	71.45	78.89	80.91	
		6	18.44	18.93	18.80	69.82	78.16	75.86	
		13	18.42	19.02	19.08	69.50	79.80	80.91	
25		0	18.56	18.94	19.15	71.78	78.34	82.22	
Test Band: 5 _ 10MHz Bandwidth									
Modulation		RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	21.49	21.48	21.17	140.93	140.60	130.92	
		25	21.37	21.26	22.03	137.09	133.66	159.59	
		49	20.94	21.91	21.77	124.17	155.24	150.31	
	25	0	19.86	20.06	20.51	96.83	101.39	112.46	
		13	20.27	20.16	20.60	106.41	103.75	114.82	
		25	19.68	20.51	20.05	92.90	112.46	101.16	
	50	0	20.40	20.81	20.57	109.65	120.50	114.02	
	16QAM	1	0	20.71	19.97	20.49	117.76	99.31	111.94
			25	21.27	20.79	21.46	133.97	119.95	139.96
49			21.18	20.47	21.51	131.22	111.43	141.58	
25		0	19.71	19.08	19.77	93.54	80.91	94.84	
		13	19.76	19.57	20.36	94.62	90.57	108.64	
		25	19.40	19.89	20.00	87.10	97.50	100.00	
50		0	18.77	19.89	19.99	75.34	97.50	99.77	



LTE Band 12

Test Band: 12 _ 1.4MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	22.48	21.83	22.42	177.01	152.41	174.58	
		2	22.82	21.93	22.20	191.43	155.96	165.96	
		5	23.00	21.91	22.29	199.53	155.24	169.43	
	3	0	22.56	22.18	22.45	180.30	165.20	175.79	
		2	22.81	22.09	22.29	190.99	161.81	169.43	
		3	22.70	22.12	22.23	186.21	162.93	167.11	
16QAM	6	0	21.76	21.16	21.37	149.97	130.62	137.09	
			20.98	21.51	21.38	125.31	141.58	137.40	
		1	2	21.38	21.85	21.36	137.40	153.11	136.77
			5	21.58	21.66	21.37	143.88	146.55	137.09
			0	21.51	21.45	21.32	141.58	139.64	135.52
		3	2	21.83	21.39	21.14	152.41	137.72	130.02
	3		22.10	21.25	21.27	162.18	133.35	133.97	
	0		20.58	20.26	20.30	114.29	106.17	107.15	
	Test Band: 12 _ 3MHz Bandwidth								
	Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
		Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH
	QPSK	1	0	22.38	22.04	22.05	172.98	159.96	160.32
7			23.01	22.21	22.20	199.99	166.34	165.96	
14			22.63	22.01	22.19	183.23	158.85	165.58	
8		0	21.56	21.22	21.28	143.22	132.43	134.28	
		4	21.64	21.10	21.13	145.88	128.82	129.72	
		7	21.57	21.05	21.05	143.55	127.35	127.35	
15		0	21.46	21.19	21.33	139.96	131.52	135.83	
			21.18	20.88	21.39	131.22	122.46	137.72	
		7	21.53	20.69	21.50	142.23	117.22	141.25	
16QAM	1	14	21.64	20.52	21.09	145.88	112.72	128.53	
		0	20.35	19.88	20.69	108.39	97.27	117.22	
		4	20.67	19.86	20.42	116.68	96.83	110.15	
	8	7	20.87	19.87	20.08	122.18	97.05	101.86	
		0	20.44	19.87	20.23	110.66	97.05	105.44	
		7	20.87	19.87	20.08	122.18	97.05	101.86	



Test Band: 12 _ 5MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	22.33	22.12	22.06	171.00	162.93	160.69	
		13	22.52	21.90	22.18	178.65	154.88	165.20	
		24	22.20	21.90	22.09	165.96	154.88	161.81	
	12	0	21.49	21.14	21.12	140.93	130.02	129.42	
		6	21.50	21.05	21.06	141.25	127.35	127.64	
		13	21.31	21.01	21.07	135.21	126.18	127.94	
	25	0	21.42	21.15	21.19	138.68	130.32	131.52	
	16QAM	1	0	21.24	20.68	20.97	133.05	116.95	125.03
			13	21.91	20.33	21.00	155.24	107.89	125.89
24			21.52	20.28	20.88	141.91	106.66	122.46	
12		0	20.14	19.97	20.15	103.28	99.31	103.51	
		6	20.40	19.94	20.03	109.65	98.63	100.69	
		13	20.24	19.85	19.94	105.68	96.61	98.63	
25		0	20.28	20.12	20.14	106.66	102.80	103.28	
Test Band: 12 _ 10MHz Bandwidth									
Modulation		RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	22.41	23.08	22.89	174.18	203.24	194.54	
		25	23.33	22.81	22.21	215.28	190.99	166.34	
		49	22.73	22.71	22.74	187.50	186.64	187.93	
	25	0	22.16	21.57	21.19	164.44	143.55	131.52	
		13	21.86	21.69	21.76	153.46	147.57	149.97	
		25	21.69	21.83	21.29	147.57	152.41	134.59	
	50	0	21.64	21.37	21.91	145.88	137.09	155.24	
	16QAM	1	0	22.23	20.93	21.01	167.11	123.88	126.18
			25	22.88	21.27	21.51	194.09	133.97	141.58
49			22.31	20.82	21.02	170.22	120.78	126.47	
25		0	20.30	20.84	20.85	107.15	121.34	121.62	
		13	20.55	20.47	20.17	113.50	111.43	103.99	
		25	20.77	20.51	20.56	119.40	112.46	113.76	
50		0	21.25	20.55	20.94	133.35	113.50	124.17	

LTE Band 13

Test Band: 13 _ 5MHz Bandwidth									
Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)			
	Size	Offset	LCH	MCH	HCH	LCH	MCH	HCH	
QPSK	1	0	21.01	20.95	20.97	126.18	124.45	125.03	
		13	21.25	20.76	20.96	133.35	119.12	124.74	
		24	20.93	20.75	20.83	123.88	118.85	121.06	
	12	0	20.19	20.17	19.91	104.47	103.99	97.95	
		6	20.28	20.11	19.97	106.66	102.57	99.31	
		13	20.06	19.96	19.93	101.39	99.08	98.40	
16QAM	1	0	20.19	20.13	19.92	104.47	103.04	98.17	
			19.84	20.35	19.11	96.38	108.39	81.47	
		13	20.22	19.68	19.24	105.20	92.90	83.95	
	12	24	19.63	19.94	19.39	91.83	98.63	86.90	
		0	19.21	18.98	18.80	83.37	79.07	75.86	
		6	19.25	18.77	18.93	84.14	75.34	78.16	
	25	13	18.79	18.75	18.88	75.68	74.99	77.27	
		0	19.12	18.99	18.84	81.66	79.25	76.56	
	Test Band: 13 _ 10MHz Bandwidth								
	Modulation	RB Allocation		Conducted Power (dBm)			Conducted Power (mW)		
		Size	Offset	LCH	MCH	HCH	/	MCH	/
QPSK	1	0	/	21.56	/	/	143.22	/	
		25	/	21.29	/	/	134.59	/	
		49	/	20.91	/	/	123.31	/	
	25	0	/	20.82	/	/	120.78	/	
		13	/	20.55	/	/	113.50	/	
		25	/	20.60	/	/	114.82	/	
16QAM	1	25	/	20.63	/	/	115.61	/	
			/	20.53	/	/	112.98	/	
		49	/	19.69	/	/	93.11	/	
	25	0	/	20.94	/	/	124.17	/	
		13	/	19.24	/	/	83.95	/	
		25	/	19.52	/	/	89.54	/	
	50	25	/	19.26	/	/	84.33	/	
		0	/	19.79	/	/	95.28	/	

5.2 MPE Calculation

According to the formula $S=P/4\pi R^2$, we can calculate S which is MPE.

Note:

- 1) P (mW)
- 2) R = distance to the center of radiation of antenna (in meter) = 20cm
- 3) MPE limit = 1mW/cm²

Band Information	Antenna Gain (dBi)	Gain in Linear Scale G	Operation Distance R(cm)	Max Tune-up power (dBm)	Max Tune-up power (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
2.4G wifi	1	1.26	20	24	251.19	0.063	1	Pass
BT	1	1.26	20	11	12.59	0.003	1	Pass
BLE	1	1.26	20	9	7.94	0.002	1	Pass
WCDMA Band 2	0.96	1.02	20	22	158.49	0.039	0.55	Pass
WCDMA Band 5	-0.63	0.86	20	23	199.53	0.034	1	Pass
LTE Band 2	0.96	1.02	20	21	125.89	0.031	1	Pass
LTE Band 4	-0.39	0.91	20	22	158.49	0.029	1	Pass
LTE Band 5	-0.63	0.86	20	23	199.53	0.034	0.55	Pass
LTE Band 12	-0.89	0.81	20	24	251.19	0.041	0.47	Pass
LTE Band 13	-2.33	0.58	20	22	158.49	0.018	0.52	Pass

The 2.4G & BT & WCDMA function can simultaneous transmitting.so the maximum rate of MPE is $0.063/1.0+0.003/1.0+0.039/0.55=0.137\leq 1.0$.

The 2.4G & BT & LTE function can simultaneous transmitting.so the maximum rate of MPE $0.063/1.0+0.003/1.0+0.041/0.47=0.153\leq 1.0$.

According to the KDB447498 section 7.2 determine the device is exclusion from SAR test.

--End of the Report--