

EVALUATION REPORT

Applicant Name:

Samsung Electronics Co., Ltd.

Address:

129, Samsung-ro, Maetan dong,
Yeongtong-gu, Suwon-si Gyeonggi-
do, 16677, Korea

Date of Evaluation:

December 29, 2016

Test Site/Location:

HCT CO., LTD., 74,Seoicheon-ro 578beon-gil,Majang-
myeo,Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

FCC ID
: A3LSMA320FL
APPLICANT
: Samsung Electronics Co., Ltd.

Test Data Re-Use Summary

Introduction

FCC ID: A3LSMA320FL

Equipment Class(es): DXX, NII, DTS, DSS, PCE

Rule Part(s): 2, 15, 22, 24

Applicant's Statement: The applicant takes full responsibility that the test data referenced below represents compliance for this FCC ID. This is confirmed by the applicant (Samsung Electronics Co., Ltd.)

Differences

Brief Description: Cellular parts, Bluetooth, WLAN, ANT+ hardware and software of this device are identical to the implementation in A3LSMA320F. The Product Equality Declaration document includes detailed information about the changes between the devices. The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the summary table below.

Spot Check Verification Result Summary

(Note: The detail test data can be found in this documents, Appendix A, hereafter)

Category	Spot Check	Verdict
SAR:	GSM 850/1900	Share
	WCDMA 850/1900	Share
	LTE B2/5	Share
	2.4 /5 GHz WLAN	Share
Licensed EMC	ERP/EIRP	Share
	RSE	Share
Unlicensed EMC	Band Edge	Share
	Spurious Emissions	Share

Reference Detail Section

Equipment Class	Reference FCC ID	Folder Test/RF Exposure	Report Title/Section
PCE	A3LSMA320F	SAR Report	All Sections
	A3LSMA320F	GSM WCDMA report	All Sections
	A3LSMA320F	LTE report	All Sections
DXX	A3LSMA320F	ANT+ report	All Sections
DSS	A3LSMA320F	Bluetooth Report	All Sections
DTS	A3LSMA320F	WLAN DTS Report	All Sections
	A3LSMA320F	BT LE Report	All Sections
	A3LSMA320F	SAR report	All Sections
NII	A3LSMA320F	UNII Report	All Sections
	A3LSMA320F	DFS Report	All Sections
	A3LSMA320F	SAR report	All Sections



Manager / Chang Seok. Choi
HCT CO.,LTD

Appendix A

Title : A3LSMA320FL Spot checking result									
Report	Test Item	Channel	Measured Frequency	A3LSMA320F Result [dBuV/m]		A3LSMA320FL Result [dBuV/m]		Gap [dB]	
				Peak	Average	Peak	Average	Peak	Average
ANT+	Fundamental	39	2441 MHz	91.01	-	90.3	-	0.71	-
	Band Edge	0	2400 MHz	66.99	14.6	66.23	13.83	0.76	0.77
	RSE	78	4960 MHz	51.82	43.3	51	42.22	0.82	1.08
			7440 MHz	55.5	43.74	55.07	43.28	0.43	0.46
BT	Band Edge	78	2483.5 MHz~2500 MHz	63.69	35.5	64.18	36.49	-0.49	-0.99
	RSE	78	4960 MHz	54.79	47.52	53.16	45.72	1.63	1.80
			7440 MHz	-	-	-	-	-	-
BT LE	Band Edge	39	2483.5 MHz~2500 MHz	52.71	41.91	53.63	41.87	-0.92	0.04
	RSE	39	4960 MHz	53.05	43.91	51.27	42.5	1.78	1.41
			7440 MHz	-	-	-	-	-	-
DTS	Band Edge	11	2483.5 MHz~2500 MHz	60.55	49.09	62.03	49.92	-1.48	-0.83
	RSE	6	4874 MHz	53.66	47.16	54.05	47.44	-0.39	-0.28
			7311 MHz	-	-	-	-	-	-
UNII (20MHz)	Band Edge	100	5350 MHz~5460 MHz	55.29	42.36	53.85	40.97	1.44	1.39
			5460 MHz~5470 MHz	57.43	-	55.78	-	1.65	-
	RSE	100	11000 MHz	62.85	47.03	61.5	46.1	1.35	0.93
UNII (40MHz)	Band Edge	102	5350 MHz~5460 MHz	56.91	43.24	54.85	41.22	2.06	2.02
			5460 MHz~5470 MHz	59.64	-	57.95	-	1.69	-
	RSE	102	11020 MHz	53.45	40.45	52.98	39.55	0.47	0.9
UNII (80MHz)	Band Edge	42	4500 MHz~5150 MHz	57.74	46.02	55.96	44.49	1.78	1.53
	RSE	155	17325 MHz	56.02	-	56.38	-	-0.36	-
DFS	Channel Move Time (Limit 10s)	58	5290 MHz	0.251874		0.005731		0.246143	
	Channel Closing Transmission Time, Aggregate Time After 200ms (Limit 60 ms)	58	5290 MHz	0.00014		0		0.00014	

2. Subject: Summary of the spot check for RF Exposure

Per FCC KDB 484596 D01 Referencing Test Data DR01-42712 4) e)

For RF exposure purposes, each combination of frequency band, wireless mode, and exposure test conditions shall be considered separately. A KDB inquiry is recommended for complex device configurations to confirm appropriate RF exposure test cases

Band	A3LSMA320F Measured 1g SAR(W/kg) Result		A3LSMA320FL Measured 1g SAR(W/kg) Spot check Result	Deviation (%)
GSM/GPRS/EDGE 850	Head	0.252	0.234	-7.14%
	Body worn	0.3	0.382	27.3%
	Hotspot	0.665	0.646	-6.51%
GSM/GPRS/EDGE 1900	Head	0.132	0.169	28%
	Body worn	0.308	0.227	-26.30%
	Hotspot	0.662	0.81	22.36%
WCDMA850	Head	0.324	0.323	-0.3%
	Body worn	0.244	0.311	27.45%
	Hotspot	0.615	0.703	18.55%
WCDMA1900	Head	0.37	0.369	-0.27%
	Body worn	0.701	0.576	-17.83%
	Hotspot	0.868	0.9	3.69%
LTE Band 2	Head	0.373	0.337	-9.65%
	Body worn	0.523	0.436	-16.63%
	Hotspot	0.591	0.718	21.49%
LTE Band 5	Head	0.258	0.271	5.04%
	Body worn	0.33	0.375	13.64%
	Hotspot	0.681	0.74	7.09%
2.4GHz WLAN	Head	0.722	0.631	-12.6%
	Body worn	0.11	0.107	-2.73%
	Hotspot	0.338	0.338	0%
5GHz WLAN	Head	0.451	0.342	-24.17%
	Body worn	0.313	0.355	13.42%
	Hotspot	0.597	0.656	9.88%

3. Summary of the spot check for Licensed EMC

FCC ID(s) : A3LSMA320F (Reference test data) vs A3LSMA320FL (Spot check data)

EFFECTIVE RADIATED POWER (GSM850) / (WCDMA850)

Modulation	Frequency		Mode	A3LSMA320F (Reference)	A3LSMA320FL (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
	ERP			ERP		
	MHz	Ch.		(dBm)	(dBm)	
GSM850	824.2	128	VOICE	27.77	27.60	-0.17
	836.6	190		29.18	27.66	-1.52
	848.8	251		29.15	27.96	-1.19
WCDMA850	826.4	4132	RMC	20.09	19.50	-0.59
	836.6	4183		20.51	19.94	-0.57
	846.6	4233		20.09	19.14	-0.95

RADIATED SPURIOUS EMISSIONS (GSM850) / (WCDMA850)

Modulation	Frequency		Mode	A3LSMA320F (Reference)	A3LSMA320FL (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
	EIRP			EIRP		
	MHz	Ch.		(dBm)	(dBm)	
GSM850	1,648.40	128	VOICE	-54.96	-54.51	0.45
	2,472.60			-44.39	-44.05	0.34
	3,296.80			-50.48	-51.33	-0.85
WCDMA850	1,652.80	4132	RMC	-52.44	-58.84	-6.4
	2,479.20			-50.43	-52.15	-1.72
	3,305.60			-53.11	-53.72	-0.61

EQUIVALENT ISOTROPIC RADIATED POWER (GSM1900) / (WCDMA1900)

Modulation	Frequency		Mode	A3LSMA320F (Reference)	A3LSMA320FL (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
				EIRP	EIRP	
	MHz	Ch.		(dBm)	(dBm)	
GSM1900	1850.2	512	VOICE	28.17	27.80	-0.37
	1880.0	661		28.29	28.02	-0.27
	1909.8	810		27.68	27.63	-0.05
WCDMA1900	1,693.20	9262	RMC	22.91	21.75	-1.16
	2,539.80	9400		23.02	21.62	-1.40
	3,386.40	9538		22.64	21.39	-1.25

RADIATED SPURIOUS EMISSIONS (GSM1900) / (WCDMA1900)

Modulation	Frequency		Mode	A3LSMA320F (Reference)	A3LSMA320FL (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
				EIRP	EIRP	
	MHz	Ch.		(dBm)	(dBm)	
GSM1900	3,700.40	512	VOICE	-51.60	-49.23	2.37
	5,550.60			-45.09	-44.17	0.92
	7,400.80			-41.70	-41.30	0.40
WCDMA1900	3,815.20	9538	RMC	-50.18	-52.02	-1.84
	5,722.80			-45.39	-44.77	0.62
	7,630.40			-42.02	-44.03	-2.01

EQUIVALENT ISOTROPIC RADIATED POWER (LTE – Band 2)

Modulation	Frequency		Mode Bandwidth	A3LSMA320F (Reference)	A3LSMA320FL (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
				EIRP	EIRP	
	MHz	Ch.		(dBm)	(dBm)	
LTE - B2	1855.0	18650	QPSK(10M)	22.13	21.47	-0.66

RADIATED SPURIOUS EMISSIONS (LTE – Band 2)

Modulation	Frequency		Mode Bandwidth	A3LSMA320F (Reference)	A3LSMA320FL (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
				EIRP	EIRP	
	MHz	Ch.		(dBm)	(dBm)	
LTE - B2	3,720.00	18700	QPSK	-51.24	-51.03	0.21
	5,580.00		20M	-45.08	-45.34	-0.26
	7,440.00			-40.50	-43.45	-2.95

EFFECTIVE RADIATED POWER (LTE – Band 5)

Modulation	Frequency		Mode Bandwidth	A3LSMA320F (Reference)	A3LSMA320FL (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
				ERP	ERP	
	MHz	Ch.		(dBm)	(dBm)	
LTE – B5	829.0	20450	QPSK(10M)	20.31	20.33	0.02

RADIATED SPURIOUS EMISSIONS (LTE – Band 5)

Modulation	Frequency		Mode Bandwidth	A3LSMA320F (Reference)	A3LSMA320FL (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
				EIRP	EIRP	
	MHz	Ch.		(dBm)	(dBm)	
LTE – B5	1,673.00	20525	QPSK	-57.22	-58.03	-0.81
	2,509.50		10M	-45.92	-48.73	-2.81
	3,346.00			-52.54	-54.26	-1.72