

EVALUATION REPORT

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Date of Evaluation:
January 10, 2019

Address:
129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 16677, Rep. of Korea

Test Site/Location:
HCT CO., LTD.,
74, Seoicheon-ro 578beon-gil, Majang-myeon,
Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

FCC ID: A3LSMM205FN

APPLICANT: SAMSUNG Electronics Co., Ltd.

Equipment Class(es) : PCE, DSS, DTS

Rule Part(s) : 15, 22, 24, 27

Application's Statement : The applicant takes full responsibility that the test data referenced below represents compliance for this FCC ID.

Differences
Brief Description : Some Cellular parts, Bluetooth & WLAN hardware and software of this device are identical to the implementation in A3LSMM205F. The operational description 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.

Test Reference : KDB 484596 D01 Reference Test Data v01

The detail test data can be found in this documents, Appendix A.

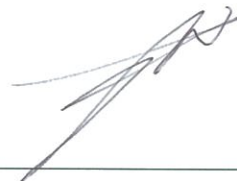
Category	Spot Check	Verdict
Licensed EMC	ERP / EIRP	Share
	RSE	Share
Unlicensed EMC	Band Edge	Share
	Spurious Emissions	Share

Reference Detail Section

Reference FCC ID	Equipment Class	Report Title	Section
A3LSMM205F	PCE	2G, 3G Report	All sections
		LTE Report	All sections
	DSS	Bluetooth Report	All sections
	DTS	WLAN DTS Report	All sections
		BT LE Report	All sections



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Engineer of Telecommunication Testing Center



Report approved by : Kwon Jeong
Manager of Telecommunication Testing Center

Appendix A. The Spot check test data

1. Summary of the spot check for Licensed EMC

1.1 EFFECTIVE RADIATED POWER

Modulation	Frequency		Mode	SM-M205F/DS (dBm)	SM-M205FN/DS (dBm)	Deviation (dB)
	MHz	Ch.				
GSM850	836.6	190	VOICE	26.13	24.70	1.43
WCDMA850	836.6	4183	RMC	17.06	15.77	1.29

Modulation	Frequency		Mod/ Bandwidth	SM-M205F/DS (dBm)	SM-M205FN/DS (dBm)	Deviation (dB)
	MHz	Ch.				
LTE B5	836.5	20525	QPSK(10M)	16.67	15.44	1.23

1.2 EQUIVALENT ISOTROPIC RADIATED POWER

Modulation	Frequency		Mode	SM-M205F/DS (dBm)	SM-M205FN/DS (dBm)	Deviation (dB)
	MHz	Ch.				
GSM1900	1850.2	512	VOICE	27.07	26.21	0.86
WCDMA1900	1907.6	9538	RMC	18.42	17.80	0.62

Modulation	Frequency		Mod/ Bandwidth	SM-M205F/DS (dBm)	SM-M205FN/DS (dBm)	Deviation (dB)
	MHz	Ch.				
LTE B41	2593.0	40620	QPSK(5M)	19.09	19.19	-0.10

1.3 RADIATED SPURIOUS EMISSIONS

Modulation	Frequency		Mode	SM-M205F/DS (dBm)	SM-M205FN/DS (dBm)	Deviation (dB)
	MHz	Ch.				
GSM850	1648.4	128	VOICE	-53.35	-55.31	1.96
WCDMA850	2539.8	4233	RMC	-42.56	-56.03	13.47

Modulation	Frequency		Mod/ Bandwidth	SM-M205F/DS (dBm)	SM-M205FN/DS (dBm)	Deviation (dB)
	MHz	Ch.				
LTE B5	2474.1	20407	QPSK(1.4M)	-54.75	-60.39	5.64

Modulation	Frequency		Mode	SM-M205F/DS (dBm)	SM-M205FN/DS (dBm)	Deviation (dB)
	MHz	Ch.				
GSM1900	5729.4	810	VOICE	-33.87	-37.82	3.95
WCDMA1900	7630.4	9538	RMC	-43.85	-44.15	0.30

Modulation	Frequency		Mod/ Bandwidth	SM-M205F/DS (dBm)	SM-M205FN/DS (dBm)	Deviation (dB)
	MHz	Ch.				
LTE B41	9994.0	39675	QPSK(5M)	-44.14	-47.10	2.96

2. Summary of the spot check for Unlicensed EMC

	Test Item	Channel	Measured Frequency	SM-M205F/DS (dBuV/m)		SM-M205FN/DS (dBuV/m)		Deviation (dB)	
				Average	Peak	Average	Peak	Average	Peak
BT	Band Edge	DH5 / ch 78	2483.5 MHz ~ 2500 MHz	48.22	68.93	48.32	68.54	-0.10	0.39
	RSE	DH5/ ch 39	7323 MHz	47.13	57.71	47.41	58.31	-0.28	-0.60
BT LE	Band Edge	ch 39	2483.5 MHz ~ 2500 MHz	46.54	62.59	46.14	62.46	0.40	0.13
	RSE	ch 0	7206 MHz	46.65	56.52	46.57	57.06	0.08	-0.54
DTS	Band Edge	802.11g / ch 1	2483.5 MHz ~ 2500 MHz	51.96	62.68	51.69	62.74	0.27	-0.06
	RSE	802.11b / ch 6	4874 MHz	40.00	51.32	40.39	51.67	-0.39	-0.35
		802.11n / ch 6	7311 MHz	50.53	59.83	50.81	59.97	-0.28	-0.14

3. List of test equipment for Licensed EMC

Manufacture	Model/ Equipment	Serial Number	Calibration Date	Calibration Interval	Calibration Due
REOHDE & SCHWARZ	SCU 18 / AMPLIFIER	10094	04/17/2018	Annual	04/17/2019
Wainwright	WHK1.2/15G-10EF/H.P.F	4	04/04/2018	Annual	04/04/2019
Wainwright	WHK3.3/18G-10EF/H.P.F	2	04/04/2018	Annual	04/04/2019
Hewlett Packard	11667B / Power Splitter(DC~26.5 GHz)	5001	06/07/2018	Annual	06/07/2019
Agilent	E3632A/DC Power Supply	KR75303243	05/09/2018	Annual	05/09/2019
Schwarzbeck	UHAP/ Dipole Antenna	557	03/31/2017	Biennial	03/31/2019
Schwarzbeck	UHAP/ Dipole Antenna	558	03/31/2017	Biennial	03/31/2019
ESPEC	SU-642 / Chamber	93000718	08/07/2018	Annual	08/07/2019
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	147	09/14/2018	Annual	09/14/2019
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	9120D-1298	10/04/2018	Annual	10/04/2019
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170342	04/25/2017	Biennial	04/25/2019
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170124	04/25/2017	Biennial	04/25/2019
Agilent	N9020A/Signal Analyzer(10Hz~26.5GHz)	MY52090906	06/08/2018	Annual	06/08/2019
Hewlett Packard	8493C/ATTENUATOR(20dB)	17280	06/21/2018	Annual	06/21/2019
REOHDE & SCHWARZ	FSV40/Spectrum Analyzer(10Hz~40GHz)	100931	10/22/2018	Annual	10/22/2019
Agilent	8960 (E5515C)/ Base Station	MY48360800	09/27/2018	Annual	09/27/2019
Schwarzbeck	FMZB1513/ Loop Antenna(9kHz~30MHz)	1513-175	08/23/2018	Biennial	08/23/2020
Schwarzbeck	VULB9160/ Bilog Antenna	9160-3368	08/09/2018	Biennial	08/09/2020
Schwarzbeck	VULB9160/ Hybrid Antenna	760	04/06/2017	Biennial	04/06/2019
REOHDE & SCHWARZ	SMB100A/ SIGNAL GENERATOR (100kHz~40GHz)	177633	07/19/2018	Annual	07/19/2019
REOHDE & SCHWARZ	ESU40 / EMI TEST RECEIVER	100524	07/27/2018	Annual	07/27/2019
HCT CO., LTD.,	FCC LTE Mobile Conducted RF Automation Test Software	-	-	-	-

4. List of test equipment for Unlicensed EMC

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Audix	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	04/19/2017	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	04/06/2017	Biennial	760
Schwarzbeck	VULB 9160 / TRILOG Antenna	08/09/2018	Biennial	9160-3368
Schwarzbeck	BBHA 9120D / Horn Antenna	05/02/2017	Biennial	9120D-937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	12/04/2017	Biennial	BBHA9170541
Rohde & Schwarz	FSP(9 kHz ~ 30 GHz) / Spectrum Analyzer	09/03/2018	Annual	100688
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	09/28/2018	Annual	101068-SZ
Agilent	N9020A / Signal Analyzer	06/08/2018	Annual	MY51110085
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	06/07/2018	Annual	8
Wainwright Instruments	WHKX7.0/18G-8SS / High Pass Filter	05/09/2018	Annual	29
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	06/29/2018	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	01/03/2018	Annual	2
Api tech.	18B-03 / Attenuator (3 dB)	06/07/2018	Annual	1
Agilent	8493C-10 / Attenuator(10 dB)	07/17/2018	Annual	08285
CERNEX	CBLU1183540 / Power Amplifier	07/10/2018	Annual	22964
CERNEX	CBL06185030 / Power Amplifier	07/10/2018	Annual	22965
CERNEX	CBL18265035 / Power Amplifier	01/10/2018	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	06/29/2018	Annual	25956
TESCOM	TC-3000C / Bluetooth Tester	03/27/2018	Annual	3000C000276