

EVALUATION REPORT

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Date of Evaluation:
October 17, 2018

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:	A3LSMJ415N
APPLICANT:	SAMSUNG Electronics Co., Ltd.

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

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 A3LSMJ415GN
 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.

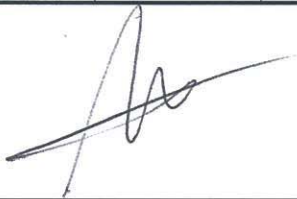
Test Reference : KDB 484596 D01 Reference Test Data v01

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	Original models' test report	Section
A3LSMJ415GN	PCE	2G, 3G Report	HCT-RF-1809-FC033	GSM1900, WCDMA B2, WCDMA B5 (Except for GSM850, WCDMA B4)
		LTE Report	B5 : HCT-RF-1809-FC032 B41: HCT-RF-1809-FC031	LTE B5, LTE B41 (Except for LTE B2, LTE B12, LTE B13, LTE B66(4))
	DSS	Bluetooth Report	HCT-RF-1809-FC025	All sections
	DTS	WLAN DTS Report	HCT-RF-1809-FC026	All sections
		BT LE Report	HCT-RF-1809-FC024	All sections
	DXX	NFC Report	HCT-RF-1809-FC023	All sections



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Report approved by : Jong Seok Lee
 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-J415GN/DS (dBm)	SM-J415N (dBm)	Deviation (dB)
	MHz	Ch.				
WCDMA850	836.6	4183	RMC	17.37	17.28	-0.09

Modulation	Frequency		Mod/ Bandwidth	SM-J415GN/DS (dBm)	SM-J415N (dBm)	Deviation (dB)
	MHz	Ch.				
LTE – B5	836.5	20525	QPSK(10M)	17.50	18.79	1.29

1.2 EQUIVALENT ISOTROPIC RADIATED POWER

Modulation	Frequency		Mode	SM-J415GN/DS (dBm)	SM-J415N (dBm)	Deviation (dB)
	MHz	Ch.				
GSM1900	1850.2	512	VOICE	29.26	27.95	-1.31
WCDMA1900	1852.4	9262	RMC	22.31	20.02	-2.29

Modulation	Frequency		Mod/ Bandwidth	SM-J415GN/DS (dBm)	SM-J415N (dBm)	Deviation (dB)
	MHz	Ch.				
LTE – B41	2593.0	40620	QPSK(5M)	21.60	21.75	0.15

1.3 RADIATED SPURIOUS EMISSIONS

Modulation	Frequency		Mode	SM-J415GN/DS (dBm)	SM-J415N (dBm)	Deviation (dB)
	MHz	Ch.				
WCDMA850	2539.8	4233	RMC	-43.67	-50.28	-6.61

Modulation	Frequency		Mod/ Bandwidth	SM-J415GN/DS (dBm)	SM-J415N (dBm)	Deviation (dB)
	MHz	Ch.				
LTE – B5	2544.9	20643	QPSK(1.4M)	-40.80	-45.36	-4.56

Modulation	Frequency		Mode	SM-J415GN/DS (dBm)	SM-J415N (dBm)	Deviation (dB)
	MHz	Ch.				
GSM1900	5550.6	512	VOICE	-38.87	-46.89	-8.02
WCDMA1900	5722.8	9538	RMC	-39.10	-41.47	-2.37

Modulation	Frequency		Mod/ Bandwidth	SM-J415GN/DS (dBm)	SM-J415N (dBm)	Deviation (dB)
	MHz	Ch.				
LTE – B41	8062.5	41565	QPSK(5M)	-37.60	-40.30	-2.70

2. Summary of the spot check for Unlicensed EMC

	Test Item	Channel	Measured Frequency (MHz)	SM-J415GN/DS (dBuV/m)		SM-J415N (dBuV/m)		Deviation (dB)	
				Average	Peak	Average	Peak	Average	Peak
BT	Band Edge	DH5 / ch78	2483.5 MHz~2500 MHz	36.19	65.00	35.35	64.16	-0.84	-0.84
	RSE	DH5/ ch 78	7440 MHz	46.98	61.09	45.19	59.11	-1.79	-1.98
BT LE	Band Edge	ch 39	2483.5 MHz~2500 MHz	42.19	51.79	41.80	50.79	-0.39	-1.00
	RSE	ch 19	7320 MHz	49.84	59.84	49.58	60.04	-0.26	0.20
DTS	Band Edge	g_ch 10	2483.5 MHz~2500 MHz	51.66	68.98	44.92	62.66	-6.74	-6.32
	RSE	b_ch 6	4874 MHz	48.50	56.79	41.98	53.00	-6.52	-3.79
		n_ch 6	7311 MHz	50.60	65.90	48.17	60.58	-2.43	-5.32
NFC	Operation within the band	-	13.110 ~ 14.010 MHz	16.99		17.64		0.65	
	RSE	-	30 ~ 1000 MHz	28.86		27.13		-1.73	

3. List of test equipment for Licensed EMC

Manufacture	Model/ Equipment	Calibration Date	Calibration Interval	Serial Number
REOHDE & SCHWARZ	SCU 18 / AMPLIFIER	04/17/2018	Annual	10094
Wainwright	WHK1.2/15G-10EF/H.P.F	04/04/2018	Annual	4
Wainwright	WHK3.3/18G-10EF/H.P.F	04/04/2018	Annual	2
Schwarzbeck	UHAP/ Dipole Antenna	03/31/2017	Biennial	557
Schwarzbeck	UHAP/ Dipole Antenna	03/31/2017	Biennial	558
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	09/14/2018	Annual	147
Schwarzbeck	BBHA 9120D/ Horn Antenna(1~18GHz)	10/14/2018	Annual	9120D-1298
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	04/25/2017	Biennial	BBHA9170342
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	04/25/2017	Biennial	BBHA9170124
REOHDE & SCHWARZ	FSV40/Spectrum Analyzer(10Hz~40GHz)	10/30/2017	Annual	100931
Agilent	8960 (E5515C)/ Base Station	09/27/2018	Annual	MY48360800
Schwarzbeck	FMZB1513/ Loop Antenna(9kHz~30MHz)	08/23/2018	Biennial	1513-175
Schwarzbeck	VULB9160/ Bilog Antenna	08/09/2018	Biennial	9360-3368
Schwarzbeck	VULB9160/ Hybrid Antenna	04/06/2017	Biennial	760
Anritsu Corp.	MT8820C/Wideband Radio Communication Tester	02/13/2018	Annual	6200863156
Anritsu Corp.	MT8820C/Wideband Radio Communication Tester	02/08/2018	Annual	6201026545
REOHDE & SCHWARZ	SMB100A/ SIGNAL GENERATOR (100kHz~40GHz)	07/19/2018	Annual	177633
REOHDE & SCHWARZ	ESU40 / EMI TEST RECEIVER	07/27/2018	Annual	100524
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	08/23/2018	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	04/06/2017	Biennial	760
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	FSP40(9 kHz ~ 40 GHz) / Spectrum Analyzer	07/24/2018	Annual	100843
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	09/28/2018	Annual	101068-SZ
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	06/07/2018	Annual	8
Wainwright Instruments	WHFX7.0/18G-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