

EVALUATION REPORT

Applicant Name:
 LG Electronics MobileComm U.S.A., Inc.

Date of Evaluation:
 Dec 19, 2016

Address:
 1000 Sylvan Avenue, Englewood Cliffs NJ 07632

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

FCC ID	: ZNFM250F
APPLICANT	: LG Electronics MobileComm U.S.A., Inc.

Test Data Re-Use Summary

Introduction

FCC ID: ZNFM250F
 Equipment Class(es): PCE, DTS, DSS
 Rule Part(s): 2, 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 ZNFM250H. 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.

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 / 1700 / 1900	Share
	2.4 GHz WLAN	Share
	LTE B2 / 4 / 5 / 7	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	ZNFM250H	SAR Report	All Sections (Except for LTE B13, 17))
	ZNFM250H	LTE report	All Sections (Except for LTE B13, 17)
	ZNFM250H	GSM WCDMA report	All Sections
DSS	ZNFM250H	Bluetooth Report	All Sections
DTS	ZNFM250H	WLAN DTS Report	All Sections
	ZNFM250H	BT LE Report	All Sections
	ZNFM250H	SAR report	All Sections



 Signature
 Manager / Chang Seok. Choi
 HCT CO.,LTD

Appendix A. The Spot check test data

1. Summary of the spot check for Licensed EMC

EFFECTIVE RADIATED POWER (GSM850) / (WCDMA850)

Modulation	Frequency		Mode	LG-M250H (Reference)	LG-M250F (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
				ERP	ERP	
	MHz	Ch.		(dBm)	(dBm)	
GSM850	824.2	128	VOICE	28.72	27.89	-0.83
	836.6	190		29.00	28.97	-0.03
	848.8	251		28.55	28.51	-0.04
WCDMA850	826.4	4132	RMC	19.68	19.82	0.14
	836.6	4183		20.33	20.67	0.34
	846.6	4233		20.30	20.23	-0.07

RADIATED SPURIOUS EMISSIONS (GSM850) / (WCDMA850)

Modulation	Frequency		Mode	LG-M250H (Reference)	LG-M250F (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
				EIRP	EIRP	
	MHz	Ch.		(dBm)	(dBm)	
GSM850	1,697.60	251	VOICE	-58.45	-58.54	-0.09
	2,546.40			-54.01	-47.02	6.99
	3,395.20			-52.38	-52.02	0.36
WCDMA850	1,693.20	4233	RMC	-59.77	-58.85	0.92
	2,539.80			-53.19	-51.96	1.23
	3,386.40			-53.69	-52.99	0.70

**EQUIVALENT ISOTROPIC RADIATED POWER
 (GSM1900) / (WCDMA1900) / (WCDMA1700)**

Modulation	Frequency		Mode	LG-M250H (Reference)	LG-M250F (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
	EIRP	EIRP				
	(dBm)	(dBm)				
MHz	Ch.					
GSM1900	1850.2	512	VOICE	29.30	28.82	-0.48
	1880.0	661		30.11	29.54	-0.57
	1909.8	810		30.35	29.57	-0.78
WCDMA1900	1,693.20	9262	RMC	22.90	22.11	-0.79
	2,539.80	9400		23.33	22.55	-0.78
	3,386.40	9538		23.32	22.40	-0.92
WCDMA1700	1712.4	1312	RMC	22.59	21.54	-1.05
	1732.4	1412		22.57	21.71	-0.86
	1752.6	1513		22.85	21.88	-0.97

**RADIATED SPURIOUS EMISSIONS
 (GSM1900) / (WCDMA1900) / (WCDMA1700)**

Modulation	Frequency		Mode	LG-M250H (Reference)	LG-M250F (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
	EIRP	EIRP				
	(dBm)	(dBm)				
MHz	Ch.					
GSM1900	3,700.40	512	VOICE	-48.19	-52.02	-3.83
	5,550.60			-38.85	-42.14	-3.29
	7,400.80			-39.60	-43.20	-3.60
WCDMA1900	3,704.80	9262	RMC	-49.85	-51.22	-1.37
	5,557.20			-44.70	-37.72	6.98
	7,409.60			-40.56	-41.63	-1.07
WCDMA1700	3,464.80	1412	RMC	-43.41	-43.03	0.38
	5,197.20			-46.69	-44.43	2.26
	6,929.60			-42.24	-43.60	-1.36



74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
 TEL: +82-31-645-6300 FAX: +82-31-645-6401

EQUIVALENT ISOTROPIC RADIATED POWER (LTE – Band 2/4/7)

Modulation	Frequency		Mode Bandwidth	LG-M250H (Reference)	LG-M250F (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
	EIRP	EIRP				
	(dBm)	(dBm)				
MHz	Ch.					
LTE - B2	1900.0	19100	QPSK(20M)	23.89	22.59	-1.30
LTE – B4	1753.5	20385	QPSK(3M)	22.98	21.83	-1.15
LTE – B7	2510.0	20850	QPSK(20M)	20.58	21.89	1.31

RADIATED SPURIOUS EMISSIONS (LTE – Band 2/4/7)

Modulation	Frequency		Mode Bandwidth	LG-M250H (Reference)	LG-M250F (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
	EIRP	EIRP				
	(dBm)	(dBm)				
MHz	Ch.					
LTE - B2	3,818.60	19193	QPSK	-47.63	-47.72	-0.09
	5,727.90		1.4M	-43.46	-42.09	1.37
	7,637.20			-38.48	-39.94	-1.46
	9,546.50			-28.40	-30.25	-1.85
LTE – B4	3,508.60	20393	QPSK	-34.34	-39.49	-5.15
	5,262.90		1.4M	-41.46	-46.71	-5.25
	7,017.20			-38.91	-38.20	0.71
LTE – B7	5,020.00	20850	QPSK	-50.59	-50.91	-0.32
	7,530.00		20M	-39.82	-39.61	0.21
	10,040.00			-47.94	-49.15	-1.21



74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA
 TEL: +82-31-645-6300 FAX: +82-31-645-6401

EQUIVALENT ISOTROPIC RADIATED POWER (LTE – Band 5)

Modulation	Frequency		Mode Bandwidth	LG-M250H (Reference)	LG-M250F (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
	ERP			ERP		
	MHz	Ch.		(dBm)	(dBm)	
LTE – B5	836.5	20525	QPSK (10M)	20.34	20.39	0.05

RADIATED SPURIOUS EMISSIONS (LTE – Band 5)

Modulation	Frequency		Mode Bandwidth	LG-M250H (Reference)	LG-M250F (Reuse)	deviation
				(Reference test data)	(Spot check test data)	
	EIRP			EIRP		
	MHz	Ch.		(dBm)	(dBm)	
LTE – B5	1,673.00	20525	QPSK	-58.18	-59.43	-1.25
	2,509.50		10M	-51.70	-44.30	7.40
	3,346.00			-52.76	-53.33	-0.57

2. Summary of the spot check for SAR

To determine data reuse, we performed spot check based on each maximum value of mode as bellow table

Band	ZNFM250H Measured 1g SAR(W/kg) Result	ZNFM250F Measured 1g SAR(W/kg) Result	Deviation (%)
GSM/GPRS/EDGE 850	0.587	0.592	0.85%
GSM/GPRS/EDGE 1900	0.411	0.48	16.79%
UMTS 850	0.534	0.557	4.31%
UMTS 1700	0.688	0.77	11.92%
UMTS 1900	0.641	0.774	20.75%
LTE 2(PCS)	0.898	0.913	1.67%
LTE 4 (AWS)	0.878	0.93	5.92%
LTE 5 (Cell)	0.592	0.544	-8.11%
LTE 7	0.592	0.586	-1.01%
802.11b	0.892	0.804	-9.87%

The worst case of the Simultaneous transmission considerations at Head Positions

Band	ZNFM250H Measured 1g SAR(W/kg) Result	ZNFM250F Measured 1g SAR(W/kg) Result	Deviation (%)
LTE 2(PCS)	0.548	0.478	-12.7%
802.11b	0.892	0.804	-9.87%

3. Summary of the spot check for Unlicensed EMC

Report	Test Item	Channel	Measured Frequency	LG-M250H Result [dBuV/m]		LG-M250AR Result [dBuV/m]		Gap [dB]	
				Peak	Average	Peak	Average	Peak	Average
BT	Band Edge	78	2483.5 MHz~2500 MHz	66.50	38.32	66.46	38.17	0.04	0.15
	RSE	0	4804 MHz	49.49	36.27	49.10	35.41	0.39	0.86
		39	7323 MHz	55.51	41.72	56.39	41.73	0.88	0.01
BT LE	Band Edge	39	2483.5 MHz~2500 MHz	53.31	41.80	53.12	44.10	0.19	2.30
	RSE	19	4880 MHz	50.02	40.08	49.91	40.10	0.11	0.02
				7320 MHz	55.49	45.61	55.89	45.51	0.40
DTS	Band Edge	11	2310 MHz~2390 MHz	67.92	50.09	65.73	49.01	2.19	1.08
	RSE	6	4874 MHz	53.01	46.14	49.96	37.56	3.05	8.58
				7311 MHz	54.82	43.09	54.72	43.08	0.10