



Spot Check Evaluation

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Phone
BRAND NAME : Motorola, Lenovo
MODEL NAME : XT2159-3,XT2159-6,XT2159-8
FCC ID : IHDT56ZW7
STANDARD : FCC Part 15 Subpart C §15.247

We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager



Sporton International (Kunshan) Inc.

**No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China**



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
161824-02A	Rev. 01	Initial issue of report	Aug. 18, 2021



1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W, Merchandise Mart Plaza,Chicago,IL60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W, Merchandise Mart Plaza,Chicago,IL60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Motorola, Lenovo
Model Name	XT2159-3,XT2159-6,XT2159-8
FCC ID	IHDT56ZW7
EUT supports Radios application	GSM/WCDMA/LTE WLAN 2.4GHz 802.11b/g/n HT20 Bluetooth BR/EDR/LE FM Receiver and GNSS
HW Version	DVT2
SW Version	R0Q31.63
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. Sample1 with adapter 1, usb cable 1 and earphone 1 performs RSE tests.

1.4 Modification of EUT

No modifications are made to the EUT during all test items.



1.5 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH06-KS TH01-KS	CN1257	314309

1.6 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	Brand Name	Motorola (Chenyang)	Model Name	MC-101
AC Adapter 1(EU)	Brand Name	Motorola (Chenyang)	Model Name	MC-102
AC Adapter 1(UK)	Brand Name	Motorola (Chenyang)	Model Name	MC-103
AC Adapter 1(AU)	Brand Name	Motorola (Chenyang)	Model Name	MC-105
AC Adapter 1(AR)	Brand Name	Motorola (Chenyang)	Model Name	MC-106
AC Adapter 1(IN)	Brand Name	Motorola (Chenyang)	Model Name	MC-104
AC Adapter 2(US)	Brand Name	Motorola(Aohai)	Model Name	MC-101
AC Adapter 2(EU)	Brand Name	Motorola(Aohai)	Model Name	MC-102
AC Adapter 2(UK)	Brand Name	Motorola(Aohai)	Model Name	MC-103
AC Adapter 2(AU)	Brand Name	Motorola(Aohai)	Model Name	MC-105
AC Adapter 2(AR)	Brand Name	Motorola(Aohai)	Model Name	MC-106
AC Adapter 2(IN)	Brand Name	Motorola(Aohai)	Model Name	MC-104
AC Adapter 3(Chile)	Brand Name	Motorola(Salcomp)	Model Name	MC-109
Battery 1	Brand Name	Motorola(Sunwoda)	Model Name	JK50
Battery 2	Brand Name	Motorola(ATL)	Model Name	JK50
Earphone 1	Brand Name	Motorola (NEW LEADER)	Model Name	NLD-EM313A-23SF
Earphone 2	Brand Name	Motorola (Ju wei)	Model Name	JWEP1185-ZN01H
USB Cable 1	Brand Name	Motorola(Washin)	Model Name	HX-ZN-13
USB Cable 2	Brand Name	Motorola (Ju wei)	Model Name	JWUB1498-ZN01H



2 Re-use of Measured Data

2.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: XT2159-3,XT2159-6,XT2159-8, FCC ID: IHDT56ZW7) is electrically identical to the reference device (Model: XT2159-1, XT2159-2, FCC ID: IHDT56ZW6) for the portions of the circuitry corresponding to the data being re-used. Based on their similarity, the FCC Part 15C (equipment class: DTS, DSS, DXX) reuse the original model's result and do spot-check, following the FCC KDB 484596 D01 v01.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: IHDT56ZW7 .

2.2 Model Difference Information

The main difference between FCC ID: IHDT56ZW6 and FCC ID: IHDT56ZW7 is as below:

- Remove WCDMA Band 4/6 and LTE Band 2/4/19/28/66.
- Add LTE Band 20/38/41.

Other differences and all the details of similarity and difference can be found in the confidential documents (XT2159-3/XT2159-6/XT2159-8_Operational Description of Product Equality Declaration).

2.3 Reference detail Section:

Rule Part	Equipment Class	Frequency Band (MHz)	Reference FCC ID(Parent)	Type Grant/ Permissive Change	Reference Title	FCC ID Filling (Variant)	Report Title/Section
15C	DSS (BR/EDR)	2400~2483.5	IHDT56ZW6	Original Grant	FR161824A	IHDT56ZW7	All sections applicable
	DTS (BLE)	2400~2483.5	IHDT56ZW6	Original Grant	FR161824B	IHDT56ZW7	All sections applicable
	DTS (WLAN)	2400~2483.5	IHDT56ZW6	Original Grant	FR161824C	IHDT56ZW7	All sections applicable

2.4 Spot Check Verification Data Section

Conducted power test and radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model

Summary for power and RSE spot check for each rule entry and technology is listed as below:



Test Item	Mode	FCC ID Parent Worst Result	FCC ID Variant Check Result	Difference (dB)
Conducted Power (dBm)	BT2.0-DH	7.45	7.03	0.42
	BT2.0-2DH	8.84	8.56	0.28
	BT2.0-3DH	9.20	8.87	0.33
	BLE4.0(1Mbps) CH00	6.63	6.61	0.02
	BLE4.0(1Mbps) CH19	6.46	6.03	0.43
	BLE4.0(1Mbps) CH39	6.88	6.43	0.45
	BLE5.0(2Mbps) CH00	6.78	6.64	0.14
	BLE5.0(2Mbps) CH19	6.32	6.02	0.30
	BLE5.0(2Mbps) CH39	6.84	6.46	0.38
	WLAN 2.4GHz 802.11b CH01	18.63	18.55	0.08
	WLAN 2.4GHz 802.11b CH06	16.76	16.36	0.40
	WLAN 2.4GHz 802.11b CH11	18.34	17.65	0.69
	WLAN 2.4GHz 802.11g CH01	22.53	22.44	0.09
	WLAN 2.4GHz 802.11g CH06	22.92	22.90	0.02
	WLAN 2.4GHz 802.11g CH11	20.77	20.06	0.71
	WLAN 2.4GHz 802.11n HT20 CH01	18.56	17.76	0.80
	WLAN 2.4GHz 802.11n HT20 CH06	22.32	22.31	0.01
WLAN 2.4GHz 802.11n HT20 CH11	18.21	18.09	0.12	

Test Item	Mode	IHDT56ZW6 Parent Worst Result	IHDT56ZW7 Variant Check Result	Difference (dB)
Radiated Spurious Emission (dBuV/m)	BT2.0 CH78	56.38	55.89	0.49
	BT4.0 CH39	46.46	46.49	0.03
	BT5.0 CH39	48.17	47.86	0.31
	11n20 CH01	50.73	49.19	1.54

Conclusion:

Radiated spurious emission test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

Based on the spot check test result, the test data from the original model is representative for the variant model. The power level and RSE spot check are shown within expected level compliant to limit line.

We confirm that the test data reuse policy of FCC KDB 484596 D01 Referencing Test Data v01 has been followed and the test data as referenced from the parent model report represents compliance with new FCC ID.



3 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz;Max 30dBm	Oct. 17, 2020	Jul. 30, 2021	Oct. 16, 2021	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz-44GHz	Apr. 12, 2021	Jul. 30, 2021	Apr. 11, 2022	Radiation (03CH06-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 01, 2020	Jul. 30, 2021	Oct. 31, 2021	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	49921	30MHz-1GHz	May 29, 2021	Jul. 30, 2021	May 28, 2022	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 25, 2021	Jul. 30, 2021	Apr. 24, 2022	Radiation (03CH06-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 10, 2020	Jul. 30, 2021	Nov. 09, 2021	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	187289	9KHz ~1GHZ	Apr. 12, 2021	Jul. 30, 2021	Apr. 11, 2022	Radiation (03CH06-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 06, 2021	Jul. 30, 2021	Jan. 05, 2022	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jan. 06, 2021	Jul. 30, 2021	Jan. 05, 2022	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270203	500MHz~26.5GHz	Apr. 13, 2021	Jul. 30, 2021	Apr. 12, 2022	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jul. 30, 2021	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jul. 30, 2021	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jul. 30, 2021	NCR	Radiation (03CH06-KS)
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Nov. 01, 2020	Jul. 27, 2021~Jul. 28, 2021	Oct. 31, 2021	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 07, 2021	Jul. 27, 2021~Jul. 28, 2021	Jan. 06, 2022	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 07, 2021	Jul. 27, 2021~Jul. 28, 2021	Jan. 06, 2022	Conducted (TH01-KS)

NCR: No Calibration Required.

-THE END-