Spot Check Evaluation

APPLICANT	:	Motorola Mobility LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	XT2223-2
FCC ID	:	IHDT56AE4
STANDARD	:	47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(H), 27(F), 27(Q), 90(S) 47 CFR Part 15 Subpart C §15.225 47 CFR Part 15 Subpart C §15.247 47 CFR Part 15 Subpart E §15.407 47 CFR Part 15 Subpart B

We, Sporton International Inc. (Kunshan), 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 Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager

ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
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
230110-01	Rev. 01	Initial issue of report	Apr. 18, 2022

1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2223-2
FCC ID	IHDT56AE4
HW Version	DVT2
SW Version	S1SS32.31
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-101
AC Adapter 1(EU)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-102
AC Adapter 1(UK)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-103
AC Adapter 1(AU)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-105
AC Adapter 1(AR)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-106
AC Adapter 1(CHILE)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-109
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 3(US)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-101
AC Adapter 3(EU)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-102
AC Adapter 3(UK)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-103
AC Adapter 3(AU)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-105
AC Adapter 3(AR)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-106
AC Adapter 4(US)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-201
AC Adapter 4(IN)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-204

AC Adapter 5(US)	**Brand Name**	Motorola(Acbel)	**Model Name**	MC-201
AC Adapter 6(IN)	**Brand Name**	Motorola(Aohai)	**Model Name**	MC-204
AC Adapter 7(BR)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-207
AC Adapter 8(BR)	**Brand Name**	Motorola(Flex)	**Model Name**	MC-207
Battery	**Brand Name**	Motorola(ATL)	**Model Name**	ND50
Earphone 1	**Brand Name**	Motorola(NLD)	**Model Name**	MH202
Earphone 2	**Brand Name**	Motorola(NLD)	**Model Name**	MI191
Earphone 3	**Brand Name**	Motorola(Lyand)	**Model Name**	MI191
Earphone 4	**Brand Name**	Motorola(LCHSE)	**Model Name**	MI191
USB Cable 1	**Brand Name**	Motorola(HX)	**Model Name**	S928D43190
USB Cable 2	**Brand Name**	Motorola(NAEE)	**Model Name**	S928D43191

1.5 Modification of EUT

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

1.6 Testing Location

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

Test Firm	Sporton International Inc. (Kunshan)		
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.**
	03CH04-KS 03CH07-KS TH01-KS CO01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24a
2.	03CH07-KS	AUDIX	E3	6.2009-8-24al
3.	CO01-KS	AUDIX	E3	6.2009-8-24

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: XT2223-2, FCC ID: IHDT56AE4) is electrically identical to the reference device (Model: XT2223-1, FCC ID: IHDT56AE3) for the portions of the circuitry corresponding to the data being re-used. Based on their similarity, the FCC Part15B (equipment class: JBP/CXX), the FCC Part 15C (equipment class: DTS, DSS, DXX) and FCC Part 15E (equipment class:NII) and FCC Part 22, 24, 27, 90 (equipment class: PCE) reuse the original model's result and dospot-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: IHDT56AE4 .

2.2 Model Difference Information

The **main** difference between FCC ID: IHDT56AE3 and FCC ID: IHDT56AE4 is as below:

- Remove WCDMA Band XIX, LTE Band 18/19/20/32/39/43 and 5G NR n8/n20/n38/n41/n77.
- Add LTE Band 66 and 5G NR n66.
- Disable HPUE mode for LTE Band 38/41, 5G NR n78 and Uplink_CA mode for LTE Band 41C/42C.

Other differences and all the details of similarity and difference can be found in the confidential documents (XT2223-2_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	IHDT56AE3	Original Grant	FR230110A	IHDT56AE4	All sections applicable
	DTS (BLE)	2400~2483.5	IHDT56AE3	Original Grant	FR230110B	IHDT56AE4	All sections applicable
	DTS (WLAN)	2400~2483.5	IHDT56AE3	Original Grant	FR230110C	IHDT56AE4	All sections applicable
	DXX (NFC)	13.56	IHDT56AE3	Original Grant	FR230110D	IHDT56AE4	All sections applicable
15E	U-NII-1	5180~5240	IHDT56AE3	Original Grant	FR230110E	IHDT56AE4	All sections applicable
	U-NII-2A	5260~5320	IHDT56AE3	Original Grant	FR230110E	IHDT56AE4	All sections applicable
	U-NII-2C	5500~5700	IHDT56AE3	Original Grant	FR230110E	IHDT56AE4	All sections applicable
	U-NII-3	5745~5825	IHDT56AE3	Original Grant	FR230110E	IHDT56AE4	All sections applicable
	DFS	5260~5320 5500~5700	IHDT56AE3	Original Grant	FZ230110	IHDT56AE4	All sections applicable
22, 24, 27	PCE (GSM)	GSM 850/1900	IHDT56AE3	Original Grant	FG230110A	IHDT56AE4	All sections applicable
	PCE (WCDMA)	Band II, IV, V	IHDT56AE3	Original Grant	FG230110A	IHDT56AE4	All sections applicable
	PCE (LTE)	B2/4/5/7/12/13/17/26/42 ULCA 7C	IHDT56AE3	Original Grant	FG230110B FG230110C FG230110E	IHDT56AE4	All sections applicable
22	PCE (NR)	n5	IHDT56AE3	Original Grant	FG230110F	IHDT56AE4	All sections applicable
90	PCE (LTE)	B26	IHDT56AE3	Original Grant	FG230110D	IHDT56AE4	All sections applicable
15B	JBP/CXX	-	IHDT56AE3	Original Grant	FC230110	IHDT56AE4	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	IHDT56AE3 Parent Worst Result	IHDT56AE4 Variant Check Result	Difference (dB)
Conducted Power (dBm)	BT BR/EDR	10.52	10.29	0.23
	BLE 1Mbps	5.76	5.43	0.33
	BLE 2Mbps	5.96	5.68	0.28
	11b, 2.4GHz	21.02	20.75	0.27
	11g, 2.4GHz	23.43	22.90	0.53
	11n HT20, 2.4GHz	23.41	22.91	0.5
	11n HT40, 2.4GHz	20.81	20.70	0.11
	11a, 5.2GHz	18.02	17.77	0.25
	11a, 5.3GHz	18.13	18.04	0.09
	11a, 5.5GHz	18.21	17.90	0.31
	11a, 5.8GHz	18.32	18.11	0.21
	11n HT20, 5.2GHz	17.86	17.74	0.12
	11n HT20, 5.3GHz	18.10	17.96	0.14
	11n HT20, 5.5GHz	18.22	18.08	0.14
	11n HT20, 5.8GHz	18.22	18.08	0.14
	11n HT40, 5.2GHz	16.83	16.73	0.1
	11n HT40, 5.3GHz	16.91	16.92	0.01
	11n HT40, 5.5GHz	17.09	16.94	0.15
	11n HT40, 5.8GHz	17.14	16.99	0.15
	11ac VHT20, 5.2GHz	16.96	16.69	0.27
	11ac VHT20, 5.3GHz	17.35	17.11	0.24
	11ac VHT20, 5.5GHz	17.36	17.15	0.21
	11ac VHT20, 5.8GHz	17.39	17.18	0.21
	11ac VHT40, 5.2GHz	16.30	16.02	0.28
	11ac VHT40, 5.3GHz	16.41	16.29	0.12
	11ac VHT40, 5.5GHz	16.65	16.38	0.27
	11ac VHT40, 5.8GHz	16.79	16.53	0.26
	11ac VHT80, 5.2GHz	13.77	13.59	0.18
	11ac VHT80, 5.3GHz	13.44	13.29	0.15
	11ac VHT80, 5.5GHz	16.02	15.90	0.12
	11ac VHT80, 5.8GHz	16.03	15.92	0.11
	GSM850	31.93	31.88	0.05
	GSM1900	28.73	29.34	0.61
	WCDMA Band II	23.11	22.42	0.69
	WCDMA Band IV	22.90	22.41	0.49
	WCDMA Band V	23.21	22.26	0.95
	LTE Band 2	22.79	22.30	0.49
	LTE Band 4	22.63	22.41	0.22
	LTE Band 5	22.82	22.45	0.37
	LTE Band 7	23.15	22.78	0.37
	LTE Band 7C	23.16	22.72	0.44
	LTE Band 12	23.12	22.78	0.34
	LTE Band 13	22.83	22.61	0.22
	LTE Band 17	23.06	22.71	0.35
	LTE Band 26, Part 22H	22.84	22.51	0.33
	LTE Band 26, Part 90S	22.77	22.44	0.33
	LTE Band 42	22.89	23.37	0.48
	5G NR n5	23.59	23.21	0.38

Test Item	Mode	IHDT56AE3 Parent Worst Result	IHDT56AE4 Variant Check Result	Difference (dB)
Radiated Spurious Emission (dBuV/m) @ 3m	NFC 13.56MHz	-7.47	-8.47	1.00
Radiated Spurious Emission (dBm)	GSM850	-41.56	-40.45	1.11
	WCDMA Band II	-51.51	-52.44	0.93
	LTE Band 13	-63.88	-64.35	0.47
	5G NR n5	-49.24	-51.62	2.38

Test Item	IHDT56AE3 Parent Worst Result	IHDT56AE4 Variant Check Result	Difference (dB)
Radiated Emission (dBuV/m)	-7.42	-6.40	1.02
Conducted Emission (dBuV)	-5.50	-7.99	2.49

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 are using power and ERP/EIRP measurements from the original parent model reports to list on the grant.

The same DFS detection is used in the variant. Hence, there is no spot check data for DFS.

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
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 14, 2021	Mar. 31, 2022	Oct. 13, 2022	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 13, 2021	Mar. 29, 2022~ Mar. 30, 2022	Apr. 12, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 30, 2021	Mar. 29, 2022~ Mar. 30, 2022	May 29, 2022	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	218652	1GHz~18GHz	Nov. 01, 2021	Mar. 29, 2022~ Mar. 30, 2022	Oct. 30, 2022	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Mar. 29, 2022~ Mar. 30, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	Burgeon	BPA-530	102219	0.01MHz ~3000MHz	Nov. 01, 2021	Mar. 29, 2022~ Mar. 30, 2022	Oct. 31, 2022	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Mar. 29, 2022~ Mar. 30, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jul. 30, 2021	Mar. 29, 2022~ Mar. 30, 2022	Jul. 29, 2022	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 13, 2021	Mar. 29, 2022~ Mar. 30, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Mar. 29, 2022~ Mar. 30, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Mar. 29, 2022~ Mar. 30, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Mar. 29, 2022~ Mar. 30, 2022	NCR	Radiation (03CH04-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 21, 2021	Mar. 25, 2022	Apr. 20, 2022	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 14, 2021	Mar. 25, 2022	Oct. 13, 2022	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr. 13, 2021	Mar. 25, 2022	Apr. 12, 2022	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 14, 2021	Mar. 25, 2022	Oct. 13, 2022	Conduction (CO01-KS)
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Max 30dBm	Oct. 16, 2021	Mar. 27, 2022	Oct. 15, 2022	Radiation (03CH07-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55370528	10Hz-44G,MAX 30dB	Oct. 10, 2021	Mar. 27, 2022	Oct. 09, 2022	Radiation (03CH07-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Mar. 27, 2022	Oct. 29, 2022	Radiation (03CH07-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Dec. 29, 2021	Mar. 27, 2022	Dec. 28, 2022	Radiation (03CH07-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	218652	1GHz~18GHz	Nov. 01, 2021	Mar. 27, 2022	Oct. 30, 2022	Radiation (03CH07-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Mar. 27, 2022	Jan. 04, 2023	Radiation (03CH07-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Mar. 27, 2022	Jan. 04, 2023	Radiation (03CH07-KS)
Amplifier	SONOMA	310N	413741	9KHz-1GHz	Jan. 13, 2022	Mar. 27, 2022	Jan. 12, 2023	Radiation (03CH07-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Apr. 14, 2021	Mar. 27, 2022	Apr. 13, 2022	Radiation (03CH07-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Mar. 27, 2022	NCR	Radiation (03CH07-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Mar. 27, 2022	NCR	Radiation (03CH07-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Mar. 27, 2022	NCR	Radiation (03CH07-KS)

NCR: No Calibration Required.

-THE END