SAMM 826

CERTIFICATE 2518.05

DECLARATION OF COMPLIANCE MPE ASSESSMENT

Motorola Solutions Inc. **EME Test Laboratory** Motorola Solutions Malaysia Sdn Bhd Plot 2A, Medan Bayan Lepas, Mukim 12 SWD 11900 Bayan Lepas Penang, Malaysia.	**Date of Report:** 08/04/2025 **Report Revision:** B

Responsible Engineer:	Alfred Hoe Kean Loon (Senior EME Engineer)
Report Author:	Hamidi Bin Ismail (Senior EME Technician)
Date/s Tested:	05/07/2025, 08/04/2025
Test Location:	Penang EME Laboratory
Manufacturer:	Motorola Solutions Malaysia Sdn Bhd.
Manufacturer Location:	Plot 2A, Medan Bayan Lepas Mukim, 12 SWD, 11900 Bayan Lepas, Penang, Malaysia
DUT Description:	Cyclops Mobile 806-870MHz 10W -- MXM600 DASH/DESK 806-870 MHZ MTC753DE
Test TX mode(s):	TDMA, BT, WLAN 2.4GHz, WLAN 5GHz
Max. Power output:	Refer to Table 4
Tx Frequency Bands:	Refer to Table 4
Signaling type:	Refer to Table 4
Model(s) Certified: (HVIN/PMN)	Refer 1.0 Introduction
Classification:	Occupational / Controlled Environment
Applicant Name:	Motorola Solutions Inc.
Applicant Address:	Plot 2A, Medan Bayan Lepas Mukim, 12 SWD, 11900 Bayan Lepas, Penang, Malaysia
Firmware Version (FVIN):	R65.100.10094
FCC ID:	AZ492FT7185
FCC Test Firm Registration Number:	823256
IC:	109U-92FT7185
ISED Test Site registration:	24843

Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 4.0 of this report (no deviation from standard methods). This report shall not be reproduced without written approval from an officially designated representative of the Motorola Solutions Inc EME Laboratory. I attest to the accuracy of the data and assume full responsibility for the completeness of these measurements. The results and statements contained in this report pertain only to the device(s) evaluated.

Saw Sun Hock (Approval Signatory)
Approved Date: 08/06/2025

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Report Revision History

Date	Revision	Comments
05/07/2025	A	Initial release
08/04/2025	B	Update the cover page, update the section 7.1 & 7.3 cable loss.

1.0 Introduction

This report contains calculated Maximum Permissible Exposure (MPE) results for product model AZM79UFT6TZ1AN.

Model	Hardware Version ID Number (HVIN)	Product Marketing Name (PMN)	Description
AZM79UFT6TZ1AN	AZM79UFT6TZ1AN	MXM600	MXM600 DASH/DESK 806-870 MHZ MTC753DE
AZM79UFT6TZ6AN	AZM79UFT6TZ6AN	MXM600	MXM600 DATA/SINGLE/DUAL REM 806-870 MHZ MTC753DE

2.0 MPE Summary

Table 1

Equipment Class	Frequency band (MHz)	Vehicle			Motorcycle		
		Power Density (mW/cm^2)	Percentage of FCC Limit (%)	Percentage of ISED Limit (%)	Power Density (mW/cm^2)	Percentage of FCC Limit (%)	Percentage of ISED Limit (%)
TNB	806-870 (LMR 800MHz)	0.197	36.6	77.5	0.099	32.6	69.0
DSS	2402-2480 (Bluetooth)	0.0001	0.01	0.01	0.0001	0.01	0.02
DTS	2412 – 2462 (WLAN 2.4 GHz)	0.001	0.05	0.09	0.001	0.08	0.15
NII	5180 - 5825 (WLAN 5 GHz)	0.001	0.06	0.07	0.001	0.11	0.12
Simultaneous (Highest Combined Percentage of Limit)		NA	36.67	77.59	NA	32.72	69.15

3.0 Abbreviations / Definitions

DUT: Device Under Test
EME: Electromagnetic Energy
MPE: Maximum Permissible Exposure

4.0 Referenced Standards and Guidelines

This product is designed to comply with the following applicable national and international standards and guidelines.

- United States Federal Communications Commission, Code of Federal Regulations; Rule Part 47CFR § 1.1310, § 2.1091 (d) and § 2.1093 for RF Exposure, where applicable.
- Federal Communications Commission, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields”, OET Bulletin 65 (Edition 97-01), FCC, Washington, D.C.: August 1997.
- American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE) C95. 1-1999

- American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE) C95. 1-1992. Specific to FCC rules and regulations.
- Institute of Electrical and Electronics Engineers (IEEE) C95.3-2002
- Ministry of Health (Canada) Safety Code 6 (2015), Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz
- RSS-102 (Issue 6) – Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)
- FCC KDB – 447498 D01 General RF Exposure Guidance v06
- FCC KDB – 865664 D02 RF Exposure Reporting v01r02

5.0 Power Density Limits

Table 2 – Occupational / Controlled Exposure Limits

Frequency Range (MHz)	FCC OET Bulletin 65 mW/cm^2	IEEE C95.1 1992/1999 mW/cm^2	IEEE C95.1 2005 W/m^2	RSS-102 Issue 6 W/m^2
10 – 20				10.0
20 – 48				$44.72 / f^{0.5}$
30 – 300	1.0			
48 – 100				6.455
10 – 400				
100 – 300		1.0	10.0	
100 – 6,000				$0.6455 f^{0.5}$
300 – 1,500	f/300			
300 – 3,000		f/300	f/30	
400 – 2,000				
1,500 – 15,000				
1,500 – 100,000	5.0			
2,000 – 300,000				
3,000 – 300,000		10.0	100.0	
6,000 – 15,000				50.0
15000 – 150,000				50.0
150000 –300,000				3.33×10-4 f

Table 3 – General Population / Uncontrolled Exposure Limits

Frequency Range (MHz)	FCC OET Bulletin 65 mW/cm^2	IEEE C95.1 1992/1999 mW/cm^2	IEEE C95.1 2005 W/m^2	RSS-102 Issue 6 W/m^2
10 – 20				2.0
20 – 48				$8.944 / f^{0.5}$
30 – 300	0.2			
48 – 300				1.291
10 – 400				
100 – 300		0.2		
100 – 400			2.0	
300 – 1,500	f/1,500			
300 – 6000				$0.02619 f^{0.6834}$
400 – 2,000			f/200	
300 – 15,000		f/1,500		
1,500 – 15,000				
1,500 – 100,000	1.0			
2,000 – 100,000			10.0	
2,000 – 300,000				
6,000 – 15,000				10.0
15,000 – 150,000				10.0
150,000 – 300,000				$6.67\times10^{-5} f$

6.0 Product and System Description

Table 3 below summarizes the technologies, maximum duty cycles and maximum output powers. Maximum output powers are defined as upper limit of the production line final test station.

Table 4

Technologies	Band (MHz)	Transmission	Duty Cycle (%)	Conducted (Average Detector) Maximum Power
LMR	806-870	SSPD	25	11.88W
LMR	806-870	MSPD	66.7	11.88W
BT	2402-2483.5	FHSS	77	2.24mW
BT LE	2402-2483.5	DSSS	63	2.24mW
WLAN 2.4GHz 802.11b	2401-2473	DSSS	97	15.85mW
WLAN 2.4GHz 802.11g	2401-2473	OFDM	97	15.85mW
WLAN 2.4GHz 802.11n	2401-2473	OFDM	97	15.85mW
WLAN 5GHz 802.11a (20 MHz)	5170-5730	OFDM	97	19.95mW
WLAN 5GHz 802.11n (20/40 MHz)	5250-5730	OFDM	97	19.95mW
WLAN 5GHz 802.1ac (20/40/80 MHz)	5250-5730	OFDM	97	19.95mW

7.0 MPE Assessment

MPE calculations were used to determine the RF exposure for this device. According to FCC's OET Bulletin 65 Edition 97-01 Section 2, calculations can be made to predict RF field strength and power density levels around typical RF sources. Equation below was used to show compliance for this device:

$$S = \frac{P_t G}{4\Pi d^2} F$$ Equation (1)

Equation (1) account for the maximum duty cycle of the signal, and the factor, F, to provide a conservative power density prediction.

Where:

S = power density

P_t = maximum output power scaled by the maximum duty cycle of the signal

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

d = distance from antenna

F = Enhancement factor [1 or 2.56 for predicting ground-level field strength]

7.1 MPE Assessment for Vehicle

Table 5

Antenna #	Max Power (W)	Duty Cycle (%)	Tx Frequency (MHz)	Antenna Gain (dBi)	Cable Loss, L (dB)	Dist., d (cm)	Enhancement Factor, F [4]	Max Calc. MPE (mW/cm^2)	MPE Spec Limit (mW/cm^2)			
									FCC	% of FCC Spec Limit	ISED limit	% of ISED Spec Limit
Vehicle												
LMR 800MHz												
PMAF4408A	11.880	66.70%	806.0	2.00	2.00	**80**	1.00	0.099	0.54	18.34	0.25	38.84
PMAF4408A	11.880	66.70%	870.0	2.00	2.00	**80**	1.00	0.099	0.58	16.99	0.27	36.86
GMAF4411A	11.880	66.70%	806.0	2.00	2.00	**80**	1.00	0.099	0.54	18.34	0.25	38.84
GMAF4411A	11.880	66.70%	870.0	2.00	2.00	**80**	1.00	0.099	0.58	17.0	0.27	36.9
GMAF4412A	11.880	66.70%	806.0	2.00	2.00	**80**	1.00	0.099	0.54	18.3	0.25	38.8
GMAF4412A	11.880	66.70%	870.0	2.00	2.00	**80**	1.00	0.099	0.58	17.0	0.27	36.9
GMAF4413A	11.880	66.70%	806.0	5.00	2.00	**80**	1.00	0.197	0.54	36.6	0.25	77.5
GMAF4413A	11.880	66.70%	870.0	5.00	2.00	**80**	1.00	0.197	0.58	33.9	0.27	73.5
GMAF4414A	11.880	66.70%	806.0	2.00	2.00	**80**	1.00	0.099	0.54	18.3	0.25	38.8
GMAF4414A	11.880	66.70%	870.0	2.00	2.00	**80**	1.00	0.099	0.58	17.0	0.27	36.9
GMAF4416A	11.880	66.70%	806.0	2.00	2.00	**80**	1.00	0.099	0.54	18.3	0.25	38.8
GMAF4416A	11.880	66.70%	870.0	2.00	2.00	**80**	1.00	0.099	0.58	17.0	0.27	36.9
PMAF4415A	11.880	66.70%	806.0	4.10	1.60	**80**	1.00	0.175	0.54	32.6	0.25	69.1
PMAF4415A	11.880	66.70%	870.0	4.10	1.60	**80**	1.00	0.175	0.58	30.2	0.27	65.5
BT												
PMAF4415A	0.00224	77.00%	2402.0	6.70	2.90	**80**	1.00	0.000	1.00	0.01	0.54	0.01
PMAF4415A	0.00224	77.00%	2480.0	6.70	2.90	**80**	1.00	0.000	1.00	0.01	0.55	0.01
AN000459A01	0.00224	77.00%	2402.0	5.50	2.20	**80**	1.00	0.000	1.00	0.00	0.54	0.01
AN000459A01	0.00224	77.00%	2480.0	5.50	2.20	**80**	1.00	0.000	1.00	0.00	0.55	0.01
WLAN 2.4GHz												
PMAF4415A	0.01585	97.00%	2412.0	6.70	2.90	**80**	1.00	0.000	1.00	0.05	0.54	0.09
PMAF4415A	0.01585	97.00%	2462.0	6.70	2.90	**80**	1.00	0.000	1.00	0.05	0.54	0.08
AN000459A01	0.01585	97.00%	2412.0	5.50	2.20	**80**	1.00	0.000	1.00	0.04	0.54	0.08
AN000459A01	0.01585	97.00%	2462.0	5.50	2.20	**80**	1.00	0.000	1.00	0.04	0.54	0.08
WLAN 5GHz												
PMAF4415A	0.01995	97.00%	5180.0	8.60	4.40	**80**	1.00	0.001	1.00	0.06	0.90	0.07
PMAF4415A	0.01995	97.00%	5825.0	8.60	4.40	**80**	1.00	0.001	1.00	0.06	0.98	0.06
AN000459A01	0.01995	97.00%	5180.0	7.20	3.30	**80**	1.00	0.001	1.00	0.06	0.90	0.07
AN000459A01	0.01995	97.00%	5825.0	7.20	3.30	**80**	1.00	0.001	1.00	0.06	0.98	0.06

7.2 MPE Assessment for Motorcycle

Table 6

Antenna #	Max Power (W)	Duty Cycle (%)	Tx Frequency (MHz)	Antenna Gain (dBi)	Cable Loss, L (dB)	Dist., d (cm)	Enhancement Factor, F [4]	Max Calc. MPE (mW/cm²)	MPE Spec Limit (mW/cm²)			
									FCC	% of FCC Spec Limit	ISED limit	% of ISED Spec Limit
MOTORCYCLE												
LMR 800MHz												
GMAF4417A	11.880	66.70%	806.0	2.00	2.00	**60**	1.00	0.175	0.54	32.6	0.25	69.0
GMAF4417A	11.880	66.70%	870.0	2.00	2.00	**60**	1.00	0.175	0.58	30.2	0.27	65.5
BT												
PMAF4415A	0.00224	77.00%	2402.0	6.70	2.90	**60**	1.00	0.000	1.00	0.01	0.54	0.02
PMAF4415A	0.00224	77.00%	2480.0	6.70	2.90	**60**	1.00	0.000	1.00	0.01	0.55	0.02
WLAN 2.4GHz												
PMAF4415A	0.01585	97.00%	2412.0	6.70	2.90	**60**	1.00	0.001	1.00	0.08	0.54	0.15
PMAF4415A	0.01585	97.00%	2462.0	6.70	2.90	**60**	1.00	0.001	1.00	0.08	0.54	0.15
WLAN 5GHz												
PMAF4415A	0.01995	97.00%	5180.0	8.60	4.40	**60**	1.00	0.001	1.00	0.11	0.90	0.12
PMAF4415A	0.01995	97.00%	5825.0	8.60	4.40	**60**	1.00	0.001	1.00	0.11	0.98	0.11

8.0 Simultaneous Transmission

The Table below summarizes the simultaneous transmission conditions for this device.

Table 7: FCC Limit for Vehicle

Simultaneous Transmission Scenario	Highest % to FCC limit				Sum of MPE percentage to the FCC limit
	LMR	WLAN 2.4GHz	WLAN 5GHz	BT	
	36.6%	0.05%	0.06%	0.01%	
LMR + WLAN 2.4 GHz	x	x			36.65%
LMR + WLAN 5 GHz + BT	x		x	x	36.67%

Table 8: ISED Limit for Vehicle

Simultaneous Transmission Scenario	Highest % to ISED limit				Sum of MPE percentage to the ISED limit
	LMR	WLAN 2.4GHz	WLAN 5GHz	BT	
	77.5%	0.09%	0.07%	0.01%	
LMR + WLAN 2.4 GHz	x	x			77.59%
LMR + WLAN 5 GHz + BT	x		x	x	77.58%

Table 9: FCC Limit for Motorcycle

Simultaneous Transmission Scenario	Highest % to FCC limit				Sum of MPE percentage to the FCC limit
	LMR	WLAN 2.4GHz	WLAN 5GHz	BT	
	32.6%	0.08%	0.11%	0.01%	
LMR + WLAN 2.4 GHz	x	x			32.68%
LMR + WLAN 5 GHz + BT	x		x	x	32.72%

Table 10: ISED Limit for Motorcycle

Simultaneous Transmission Scenario	Highest % to ISED limit				Sum of MPE percentage to the ISED limit
	LMR	WLAN 2.4GHz	WLAN 5GHz	BT	
	69.0%	0.15%	0.12%	0.02%	
LMR + WLAN 2.4 GHz	x	x			69.15%
LMR + WLAN 5 GHz + BT	x		x	x	69.14%

9.0 Conclusion

The MPE assessment presented in this report concludes that model AZM79UFT6TZ1AN are compliant to FCC and ISED Canada General Population / Uncontrolled RF exposure limits (with assessment distance, 80 cm for vehicle & 60 cm for Motorcycle).