Prüfbericht-Nr.: *Test report no.:*	CN25EDCU 001	**Auftrags-Nr.:** *Order no.*:	48272791	Seite 1 von 12 *Page 1 of 12*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2025-02-11	
Auftraggeber: *Client:*	Microchip Technology Inc. 2355 West Chandler Blvd. Chandler, Arizona 85224-6199, United States			
Prüfgegenstand: *Test item:*	ATA8510M			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	ATA8510MPE, ATA8510MUE			
Auftrags-Inhalt: *Order content*:	FCC Certification			
Prüfgrundlage: *Test specification:*	IEEE Std C95.1 47 CFR §2.1091 47 CFR §1.1310 KDB 447498 D04			
Wareneingangsdatum: *Date of sample receipt:*	2025-01-07			
Prüfmuster-Nr.: *Test sample no:*	A003912605-019, 020 A003912605-042, 043, 046			
Prüfzeitraum: *Testing period:*	2025-03-14 - 2025-05-02			
Ort der Prüfung: *Place of testing:*	EMC/RF Taipei Testing Site			
Prüflaboratorium: *Testing laboratory:*	Taipei Testing Laboratories			
Prüfergebnis*: *Test result*:*	Pass			

zusammengestellt von: *compiled by:*		**genehmigt von:** authorized by:	
Datum: *Date:* 2025-05-08		**Ausstellungsdatum:** *Issue date:* 2025-05-08	
Stellung / *Position:*	Ryan Chen Senior Project Manager	**Stellung** / *Position:*	Brenda Chen Senior Project Manager

Sonstiges / *Other:* The result of output power is referred to report no.: CN25N7TV 001.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. *The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2023, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.*

Contents

HISTORY OF THIS TEST REPORT

Revision	Description	Date Issued
R01	Original Release	2025-05-08

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:
Appendix EP - Photographs of EUT

1.2 Decision Rule of Conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

2 Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

2.2 Test Facility

Taipei Testing Laboratories

No.458-18, Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244
Taiwan (R.O.C.)
FCC Registration No.: 180491
ISED Registration No.: 25563

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a ATA8510M working at 433.92 MHz.
For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 Ratings and System Details

Basic Information of EUT

Item	EUT Information
Kind of Equipment/Test Item	ATA8510M
Type Identification	ATA8510MPE, ATA8510MUE
FCC ID	2ADHK-ATA8510M

Technical Specification of EUT

Item	EUT Information
Operating Frequency	433.92 MHz
Modulation	FSK / ASK
Operation Voltage	3.3 Vdc
Antenna Information	Refer to Note 2

Note:

1. All models are listed as below.

Model Type	Type Identification	Difference
Main	ATA8510MPE	All models are electrically identical, different model names are for marketing purpose. ATA8510M module is available with following antenna options: •PCB Antenna (ATA8510MPE) •U.FL Connector (ATA8510MUE) for External Antenna
Series	ATA8510MUE	

2. There're 2 samples used for the test. The only difference between the second source and main source lies in the supplier, all specifications are identical.

3. Antenna List:

ANT No.: 1, 2, 4, 5 are selected to the worst case for RSE test.

ANT No.	Brand Name	SN/Model #	Antenna Type	Peak Gain (dBi)	Placement
1	TAOGLAS	FXP450.07.0100C	FPC (UFL)	-1.57	External
2	Aristotle	RFA-04-AP296	FPC (UFL)	0.41	External
3	Aristotle	RFA-433-C58-100-D034	Dipole(UFL)	1	External
4	Aristotle	RFA-04-T118H1-70B150	Dipole (UFL)	1.29	External
5	Microchip	ATA8510	PCB	-1.8	On Board

4 Maximum Permissible Exposure Evaluation

4.1 Introduction

This Standard specifies requirements for, and provides guidance on, assessing compliance with the exposure limits of radiofrequency (RF) safety standards such as IEEE Std C95.1. This includes methodologies for making an assessment (by measurement or computation) of human exposure to ambient RF fields and induced body currents in the frequency range of 0 kHz to 300 GHz.

This Standard may also be used as a guide for making low-level environmental exposure assessments in areas around RF sources listed above, as well as other sources such as Wi-Fi devices.

4.2 Reference Levels

Where appropriate, the reference levels are derived from the basic restrictions by mathematical modelling and by extrapolation from the results of laboratory investigations at specific frequencies. They are given for the condition of maximum coupling of the field to the exposed individual, thereby providing maximum protection.

According to FCC 1.1310, the criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b).

The FCC MPE limits from 47 CFR §1.1310 are shown in the table below

Frequency Range [MHz]	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density [mW/cm^2]	Average Time [minutes]
(A) Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	*100	6
3.0 – 30	1842/f	4.89/f	*900/f^2	6
30 – 300	61.4	0.163	1.0	6
300 – 1500			f/300	6
1500 – 100000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3 – 1.34	614	1.63	*100	30
1.34 – 30	824/f	2.19/f	*180/f^2	30
30 – 300	27.5	0.073	0.2	30
300 – 1500			f/1500	30
1500 – 100000			1.0	30

NOTE –

(1) f is the frequency in MHz.

(2) Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded. For the specific case of occupational exposures at frequencies up to 100 kHz, the derived electric fields can be increased by a factor of 2 under conditions in which adverse indirect effects from contact with electrically charged conductors can be excluded.

(3) For frequencies between 100 kHz and 10 GHz, the quantities Seq, E2 and H2 are averages over any 6 minutes.

(4) For frequencies exceeding 10 GHz, Seq, the quantities E2 and H2 are averages over any 68/f 1.05 minutes (f in GHz).

4.3 Classification of the Assessment Methods

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user. Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the user's manual. So, this product under normal use is located on electromagnetic far field between the human body.

MPE Calculation Method according to KDB 447498 D04 Interim General RF Exposure Guidance v01
General frequency and separation-distance dependent MPE-based effective radiated power (ERP) thresholds are in Table B.1 of § 1.1307(b)(1)(i)(C) to support an exemption from further evaluation from 300 kHz through 100 GHz.
The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least λ/2π. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator.

TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

RF Source Frequency			**Minimum Distance**			**Threshold ERP**
f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	–	1.34	159 m	–	35.6 m	1,920 R^2
1.34	–	30	35.6 m	–	1.6 m	3,450 R^2/f^2
30	–	300	1.6 m	–	159 mm	3.83 R^2
300	–	1,500	159 mm	–	31.8 mm	0.0128 $R^2 f$
1,500	–	100,000	31.8 mm	–	0.5 mm	19.2R^2
Subscripts L and H are low and high; λ is wavelength. From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.						

5 Test Results

5.1 MPE-based Exemption

The Calculated at a distance of 20 cm are shown as below:

<FSK>

ANT No.	Source	Frequency (MHz)	Field Strength (dBuV/m)	EIRP (dBm)	EIRP (mW)	ERP (mW)	ERP Limit (mW)	Pass / Fail
ANT 5	Main	433.92	100.45	5.22	3.33	2.03	222.17	Pass
	2nd	433.92	99.44	4.21	2.64	1.61	222.17	Pass
ANT 1	Main	433.92	99.40	4.17	2.61	1.59	222.17	Pass
	2nd	433.92	98.92	3.69	2.34	1.43	222.17	Pass
ANT 2	Main	433.92	99.72	4.49	2.81	1.71	222.17	Pass
	2nd	433.92	99.66	4.43	2.77	1.69	222.17	Pass
ANT 4	Main	433.92	99.30	4.07	2.55	1.56	222.17	Pass
	2nd	433.92	98.35	3.12	2.05	1.25	222.17	Pass

<ASK>

ANT No.	Source	Frequency (MHz)	Field Strength (dBuV/m)	EIRP (dBm)	EIRP (mW)	ERP (mW)	ERP Limit (mW)	Pass / Fail
ANT 5	Main	433.92	98.77	3.54	2.26	1.38	222.17	Pass
	2nd	433.92	99.47	4.24	2.65	1.62	222.17	Pass
ANT 1	Main	433.92	99.73	4.50	2.82	1.72	222.17	Pass
	2nd	433.92	99.26	4.03	2.53	1.54	222.17	Pass
ANT 2	Main	433.92	100.69	5.46	3.52	2.14	222.17	Pass
	2nd	433.92	100.21	4.98	3.15	1.92	222.17	Pass
ANT 4	Main	433.92	100.02	4.79	3.01	1.84	222.17	Pass
	2nd	433.92	97.75	2.52	1.79	1.09	222.17	Pass

*dBµVA + 51.5 = dBµV
* EIRP [dBm] = E[dBµV/m] + 20log(d[meters]) - 104.77
* d = 3

Conclusion

The device complies with the FCC exposure requirements since the maximum transmitter power density is below the FCC limit.