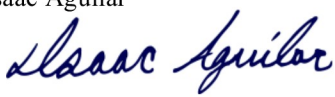


Test Report No. <i>Prüfbericht-Nr.:</i>	US253AMU 002	Order No. <i>Auftrags-Nr.:</i>	P01939866 234232355-100	Page 1 of 24 <i>Seite 1 von 24</i>
Client Reference No.: <i>Kunden-Referenz-Nr.:</i>	2227277	Order date: <i>Auftragsdatum:</i>	2025-05-05	
Client: <i>Auftraggeber:</i>	Tintometer Inc. 6456 Parkland Drive Sarasota, FL 34243 USA			
Identification/ Type No.: <i>Bezeichnung / Typ-Nr</i>	Base Model: WM-300-1100 Additional Model: WM-300-1101 (OEM Version)			
Order content: <i>Auftrags-Inhalt:</i>	47 CFR 2.1093 RF Exposure Evaluation for module integration			
Test specification: <i>Prüfgrundlage</i>	47 CFR 2.1093			
Date of sample receipt: <i>Wareneingangsdatum:</i>	10/20/2025			
Test sample No: <i>Prüfmuster-Nr.:</i>	P4:103; P4:104			
Testing period: <i>Prüfzeitraum</i>	12/15/2025 - 12/15/2025			
Place of testing: <i>Ort der Prüfung:</i>	TUV Rheinland of North America Inc. 5015 Brandin Ct Fremont CA 94538 USA			
Testing laboratory: <i>Prüflaboratorium</i>	TUV Rheinland of North America, Inc.			
Test result*: <i>Prüfergebnis*:</i>	Pass			
Evaluated by: <i>geprüft von:</i>	Isaac Aguilar	Authorized by: <i>genehmigt von:</i>	Osvaldo Casorla	
Date: 9/18/2026 <i>Datum:</i>		Issue Date: 9/18/2026 <i>Ausstellungsdatum:</i>		
Position / Stellung:	Test Engineer	Position / Stellung:	Expert	
Others / Sonstiges:	N/A			
Condition of the test item at delivery: <i>Zustand des Prüfgegenstandes bei Anlieferung:</i>				
* Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested * Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet				
This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark. <i>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</i>				

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 2 of 24
 Seite 2 von 24

Remarks
Anmerkungen

1	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. <i>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.</i> <i>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</i>
2	As contractually agreed, this document has been signed digitally only. TÜV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TÜV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. <i>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.</i>
3	Test clauses with remark of * are subcontracted to qualified subcontractors and described 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. <i>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.</i> <i>Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</i>
4	Electromagnetic Compatibility Test Report. The above product was found to be Compliant to the above test standard(s).

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 3 of 24
 Seite 3 von 24

Product description
Produktbeschreibung

1	Product details: <i>Produktdetails:</i>	Handheld spectrophotometer with wireless radio capabilities.
2	Dimensions / Weight: <i>Maße / Gewicht:</i>	24.1 x 10.4 x 10.8 cm ³ / 0.82kg
3	Operating elements: <i>Bedienelemente:</i>	5 – 20 VDC / 750 mA; Battery & DC Powered
4	Equipment / Accessories: <i>Ausstattung / Zubehör:</i>	N/A
5	Used materials: <i>Verwendete Materialien:</i>	N/A
6	Other: <i>Sonstiges:</i>	Test sample(s), as well sample information, description, product details and intended usage was provided by customer.
7	Test sample obtaining: <i>Prüfmusterbereitstellung:</i>	☐ Sending by customer ☐ Sampling by TÜV Rheinland Group ☐ others:

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 4 of 24
Seite 4 von 24

Revisions

Revision No.	Date MM/DD/YYYY	Reason for Change	Author
001	1/2/2026	Original Report	Isaac Aguilar
002	9/18/2026	1. Client updated to from Lovibond Inc. to Tintometer Inc. 2. FCC ID updated and placed in table 4. 3. Table 4 updated to include all antenna gains for all bands supported.	Isaac Aguilar
Note: Latest revision report will replace all previous reports.			

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 5 of 24
Seite 5 von 24

Table of Contents

1	Executive Summary.....	7
1.1	Scope.....	7
1.2	Purpose.....	7
1.3	Summary of Test Results	8
1.4	Special Accessories.....	8
1.5	Equipment Modifications.....	8
2	Laboratory Information.....	9
2.1	Accreditations & Endorsements.....	9
2.2	Test Facilities	10
2.3	Measurement Uncertainty	11
2.4	Calibration Traceability	12
3	EMC Test Plan.....	13
3.1	Introduction.....	13
3.2	Customer.....	13
3.3	Equipment Under Test (EUT).....	14
4	Product Information.....	16
4.1	Product Description	16
4.2	Equipment Configuration.....	16
4.3	Operating Mode	16
5	RF Exposure.....	17
5.1	RF Exposure Exemption Evaluation.....	17
5.2	Maximum Permissible Exposure (MPE) – Power Density Calculation	18
5.3	Multiple RF Sources Exemption.....	19
5.4	Results.....	20
6	Annex: Separation Distance	23

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 6 of 24
Seite 6 von 24

List of Tables

Table 1: Summary of Test Results.....	8
Table 2: Customer Information.....	13
Table 3: Technical Contact Information	13
Table 4: EUT Specifications	14
Table 5: EUT Test Samples	15
Table 6: General Product Information	15
Table 7: Electrical Power Type.....	15
Table 8: EUT Interface/Port Specifications	15
Table 9: Support Equipment/Software.....	15
Table 10: Maximum Permissible Exposure Limits.....	18
Table 11: RF Exposure Exemption Evaluation.....	20
Table 12: Multiple RF Sources Exemption Evaluation	20

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 7 of 24
Seite 7 von 24

1 Executive Summary

1.1 Scope

This report is intended to document the status of conformance with the requirements of 47 CFR 2.1093, based on the results of testing performed on 12/15/2025 to 12/15/2025 & on WM-300-1100; WM-300-1101 manufactured by Tintometer Inc.. This report only applies to the specific samples tested under the stated test conditions. It is the responsibility of the manufacturer to assure that additional production units of this model are manufactured with identical or EMI equivalent electrical and mechanical components. This report is further intended to document changes and modifications to the EUT throughout its life cycle. All documentation will be included as a supplement.

1.2 Purpose

This report will evaluate compliance of RF exposure to the human body of WM-300-1100; WM-300-1101 according to the requirements of 47 CFR 2.1093. Transmitters and/or configurations that are not exempt from routine evaluation are assessed according to acceptable FCC measurement procedures.

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 8 of 24
Seite 8 von 24

1.3 Summary of Test Results

Table 1: Summary of Test Results

Regulation	Test/Evaluation Method	Result
47 CFR 2.1093	47 CFR 1.1307(b)(3)(i)	Compliant
47 CFR 2.1093	47 CFR 1.1307(b)(3)(ii)	Compliant
Note:		

1.4 Special Accessories

None

1.5 Equipment Modifications

None

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 9 of 24
Seite 9 von 24

2 Laboratory Information

2.1 Accreditations & Endorsements

2.1.1 US Federal Communications Commission, US1131



TUV Rheinland of North America EMC test facilities located at 1279 Quarry Lane, Ste. A, Pleasanton, CA, 94566, and 5015 Brandin Ct, Fremont Ca., 94538, are recognized by the Commission for performing testing services for the general public on a fee basis. These laboratory test facilities have been fully described in reports submitted to and accepted by the FCC (Pleasanton Registration No. US1131, Fremont Registration No. US1131). The laboratory Scopes of Accreditation include Title 47 CFR 15, 18 and 90. The accreditations are updated every three years.

2.1.2 NIST / A2LA, Testing Cert #3331.02



TUV Rheinland of North America EMC test facilities are accredited by the American Association for Laboratory Accreditation (A2LA). The laboratories have been assessed and accredited by A2LA in accordance with ISO Standard 17025:2017 (Testing Certificate #3331.02). The Scope of Laboratory Accreditation includes emission and immunity testing. The accreditations are updated annually.

2.1.3 Canada – Innovation, Science and Economic Development (ISED), 2932D



The Fremont 10-meter Semi-Anechoic Chamber, Registration No. 2932D, has been accepted by ISED to perform testing to 3 and 10 meters based on the test procedures described in ANSI C63.4-2014.

2.1.4 Japan – VCCI



The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) is a group that consists of Information Technology Equipment (ITE) manufacturers and EMC test laboratories. The purpose of the Council is to take voluntary control measures against electromagnetic interference from Information Technology Equipment, and thereby contribute to the development of a socially beneficial and responsible state of affairs in the realm of Information Technology Equipment in Japan. TUV Rheinland of North America EMC test facilities located at 1279 Quarry Lane, Ste. A, Pleasanton, CA, 94566, and 5015 Brandin Ct. Fremont Ca., 94538, have been assessed and approved in accordance with the Regulations for Voluntary Control Measures.

VCCI Registration No. for Fremont: A-409

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 10 of 24
Seite 10 von 24

2.1.5 Acceptance by Mutual Recognition Arrangement



The United States has an established agreement with specific countries under the Asia Pacific Laboratory Accreditation Corporation (APLAC) Mutual Recognition Arrangement. Under this agreement, all TÜV Rheinland at 1279 Quarry Ln, Pleasanton, CA 94566 test results and test reports within the scope of the laboratory NIST / A2LA accreditation will be accepted by each member

country.

2.1.6 BSMI

Registration No.: SL2-IN-E-1150R. The BSMI accreditation was obtained by NIST MRA with the BSMI

2.1.7 Korea

(Designation No.: US0185). Recognized by National Radio Research Agency (RRA) as an accredited Conformity Assessment Body (CAB) under the terms for Korea Phase I of the APEC TEL.

2.2 Test Facilities

Test facilities are located at 5015 Brandin Ct, Fremont, California, 94538, USA and 1279 Quarry Lane, Pleasanton, California 94566, USA (Fremont is the Pleasanton Annex).

2.2.1 Emission Test Facility

The Semi-Anechoic Chambers and AC Line Conducted measurement facilities used to collect radiated and conducted emissions data have been constructed in accordance with ANSI C63.7:1992. The Fremont 10 meter semi-anechoic chamber has been measured in accordance with and verified to comply with the theoretical volumetric normalized site attenuation of ANSI C63.4:2014 and SVSWR requirements of CISPR 16-1-4 Consol. Ed. 3.0 (2010-04), at test distances of 3 and 10 meters. This site has been described in reports dated November 1st, 2006, submitted to the FCC, and accepted by letter dated November 28, 2006. The site is listed with the FCC and accredited by A2LA (Testing Certificate #3331.02). The Pleasanton 5 meter semi-anechoic chamber has been verified to comply with the theoretical volumetric normalized site attenuation of ANSI C63.4:2009 and SVSWR requirements of CISPR 16-1-4 Consol. Ed. 3.0 (2010-04) at a test distance of 3 meters. This site has been described in reports dated November 1st, 2006, submitted to the FCC, and accepted by letter dated November 28, 2006. The site is listed with the FCC and accredited by A2LA (Testing Certificate #3331.02).

2.3 Measurement Uncertainty

Two types of measurement uncertainty are expressed in this report, per *ISO Guide To The Expression Of Uncertainty In Measurement*, 1st Edition, 1995.

The Combined Standard Uncertainty is the standard uncertainty of the result of a measurement when that result is obtained from the values of a number of other quantities; it is equal to the positive square root of the sum of the variances or co-variances of these other quantities, weighted according to how the measurement result varies with changes in these quantities. The term *standard uncertainty* is the result of a measurement expressed as a standard deviation.

The Expanded Uncertainty defines an interval about the result of a measurement that may be expected to encompass a large fraction of the distribution of values that could reasonably be attributed to the measurement and the fraction may be viewed as the coverage probability or level of confidence of the interval.

2.3.1 Sample Calculation – radiated & conducted emissions

The field strength is calculated by subtracting the Amplifier Gain and adding the Cable Loss and Antenna Correction Factor to the measured reading. The basic equation is as follows:

$$\text{Field Strength (dB}\mu\text{V/m)} = \text{RAW} - \text{AMP} + \text{CBL} + \text{ACF}$$

Where: RAW = Measured level before correction (dB μ V)

AMP = Amplifier Gain (dB)

CBL = Cable Loss (dB)

ACF = Antenna Correction Factor (dB/m)

$$\mu\text{V/m} = 10^{\frac{\text{dB}\mu\text{V/m}}{20}}$$

Sample radiated emissions calculation @ 30 MHz

Measurement +Antenna Factor–Amplifier Gain+Cable loss=Radiated Emissions (dB μ V/m)

$$25 \text{ dB}\mu\text{V/m} + 17.5 \text{ dB} - 20 \text{ dB} + 1.0 \text{ dB} = 23.5 \text{ dB}\mu\text{V/m}$$

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 12 of 24
Seite 12 von 24

2.3.2 Measurement Uncertainty

Measurement Type	Expanded Uncertainty
Conducted Emissions (Antenna Port)	
Output Power	± 0.48 dB
Adjacent Channel Power	± 0.54 dB
Harmonics/Spurious Emissions	± 1.78 dB
Radiated Disturbances (3M)	
30 – 1000 MHz	± 4.09 dB
1 – 18 GHz	± 4.96 dB
18 – 40 GHz	± 5.14 dB
Radiated Disturbances (10M)	
30 – 1000 MHz	± 4.09 dB
1 – 18 GHz	± 4.96 dB
18 – 26.5 GHz	± 5.14 dB
18 – 40 GHz	± 4.92 dB
Conducted Disturbances (AC Mains)	
AC Main Conducted Emissions	± 3.28 dB
Notes:	
1. The expanded uncertainty at a level of 95% confidence is obtained by multiplying the combined standard uncertainty by a coverage factor of 2. Compliance criteria are not based on measurement uncertainty.	

2.4 Calibration Traceability

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Measurement method complies with ANSI/NCSL Z540-1-1994 and ISO Standard 17025:2017. Equipment calibration records are kept on file at the test facility.

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 13 of 24
Seite 13 von 24

3 EMC Test Plan

3.1 Introduction

This section provides a description of the Equipment Under Test (EUT), configurations, operating conditions, and performance acceptance criteria. It is an overview of information provided by the manufacturer so that the test laboratory may perform the requested testing.

3.2 Customer

Table 2: Customer Information

Client	Tintometer Inc.
Address 1	6456 Parkland Drive Sarasota, FL 34243 USA
Contact Person	John Crowley
Telephone	+1 970-556-1963
Fax	john.crowley@lovibond.us

Table 3: Technical Contact Information

Contact Person	John Crowley
Telephone	+1 970-556-1963
E-Mail	john.crowley@lovibond.us

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 14 of 24
Seite 14 von 24

3.3 Equipment Under Test (EUT)

Table 4: EUT Specifications

EUT Specifications	
Exposure Condition	☒ General Population / Uncontrolled ☐ Occupational / Controlled
Dimensions	24.1 x 10.4 x 10.8 cm3 / 0.82kg
Operating Temperature Range:	0 – 50 °C
Multiple Feeds:	SISO
Hardware Version/Model	WM-300-1100; WM-300-1101
Firmware Version	6.6.52
RF Software Version	1.1.1.1
Product Marketing Name	MD750
Operating Mode	2.4G WLAN, 5G WLAN, BLE
Transmitter Frequency Band	BLE: 2402 – 2480 MHz 2.4G WLAN: 2412 – 2462 MHz UNII-1: 5.180 – 5.240 GHz UNII-2A: 5.26 – 5.320 GHz UNII-2C: 5.50 – 5.720 GHz UNII-3: 5.745 – 5.825 GHz
Antenna Manufacturer	Molex
Antenna Model	146153 (1461530250)
Antenna Type	Balanced Dipole
Antenna Gain	2.4GHz: +2.4 dBi 5GHz: +3.2 dBi
Modulation Type	GFSK, DSSS, BSPK, QPSK, 16QAM, 64QAM, 256QAM,
Data Rate	BLE: 1 / 2 Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps 802.11b: 1/2/5.5/11 Mbps 802.11g: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 300Mbps 802.11ac: up to 867Mbps
Supported Bandwidths	BLE: 1 / 2 MHz WLAN: 20 / 40 / 80 MHz
TX/RX Chain (s)	1 Tx / 1 Rx
Directional Gain Type	N/A
Type of Equipment	Handheld / Household
Contains FCC ID:	2BT39MD750
Note: 1. All EUT specifications are provided by the manufacturer or the TUV direct customer. Information supplied by the customer and can affect the validity of results.	

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 15 of 24
Seite 15 von 24

Table 5: EUT Test Samples

Equipment	Manufacturer	Model	Serial	Used for
01	Tintometer Inc.	WM-300-1100	P4: 103	N/A
02	Tintometer Inc.	WM-300-1100	P4: 104	N/A
Note: None.				

Table 6: General Product Information

Dimensions	Length:	24.1 cm	Width:	10.4 cm	Height:	10.8 cm
Weight	0.82 kg		Fork-lift Needed:		No	
Note: None						

Table 7: Electrical Power Type

Name	Type	Voltage		Frequency (Hz)	Current (A)
		Min	Max		
Phihong Switching Power Supply	AC	100	240	50 – 60	0.5
Note: None					

Table 8: EUT Interface/Port Specifications

EUT Port	Connect To	Location	Length	Shielded/Unshielded
USB Type-C	Power Supply	Bottom	2 meters	Unshielded
Note: None				

Table 9: Support Equipment/Software

Type	Manufacturer	Model / Software	Connected To	Version / Serial #
Test Software	Murata	Murata_NXP_RF_Test Tool.2.0	N/A	2.0
Serial Cable	Tag-Connect	TC2030-FTDI-TLL-232-3V3	EUT	--
Note: None				

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 16 of 24
Seite 16 von 24

4 Product Information

4.1 Product Description

Handheld spectrophotometer for measuring color and spectral properties of light across various surfaces and materials with wireless communication capabilities.

4.2 Equipment Configuration

A description of the equipment configuration is given in the Test Plan Section. The EUT was tested as called for in the test standard and was configured and operated in a manner consistent with its intended use. The placement of the EUT system components was guided by the test standard and selected to represent typical installation conditions.

In the case of an EUT that can operate in more than one configuration, preliminary testing was performed to determine the configuration that produced maximum radiation.

The final configuration was selected to produce the worst-case radiation for emissions testing.

4.3 Operating Mode

A description of the operation mode is given in the Test Plan Section. In the case of an EUT that can operate in more than one state, preliminary testing was performed to determine the operating mode that produced maximum radiation.

The final operating mode was selected to produce the worst-case radiation for emissions testing.

5 RF Exposure

Testing was performed in accordance with 47 CFR 2.1093. These test methods are listed under the laboratory's A2LA Scope of Accreditation. This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices.

5.1 RF Exposure Exemption Evaluation

RF exposure evaluation is exempt when the device operates under the prescribed values listed in §1.1307(b)(3)(i).

From §1.1307(b)(3)(i)(A), a product is exempt from routine RF exposure evaluation, when the available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

Or

From §1.1307(b)(3)(i)(B), A single RF source is exempt if the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th}(mW) = \begin{cases} ERP_{20cm} \left(\frac{d}{20cm} \right)^x, & d \leq 20 \text{ cm} \\ ERP_{20cm}, & 20cm < d \leq 40 \text{ cm} \end{cases}$$

Where:

$$x = -\log_{10} \left(\frac{60}{ERP_{20cm} \sqrt{f}} \right) \text{ and } f \text{ is in GHz}$$

And:

$$ERP_{20cm}(mW) = \begin{cases} 2040f, & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060, & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

$d = \text{the separation distance (cm)}$

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 18 of 24
Seite 18 von 24

5.2 Maximum Permissible Exposure (MPE) – Power Density Calculation

47 CFR 1.1310(e) sets the limits for Maximum Permissible Exposure (MPE) allowed to be incident on persons in an Occupational/Controlled and General Population/Uncontrolled Exposure condition. When a product is found to exceed the exemption limits of section 5.1 then the power density of the RF energy radiated from the EUT may be calculated and evaluated to the MPE limits.

The power density of the product was calculated as follows:

$$P_d = \frac{PG}{4\pi r^2}$$

Where:

$P_d \equiv$ Power Density

$P \equiv$ Maximum Output power

$G \equiv$ Isotropic Antenna Gain

$r \equiv$ separation distance from user

P_d is then compared to the allowed values for applicable controlled or uncontrolled exposure conditions.

5.2.1 RF Exposure Limits

Table 10: Maximum Permissible Exposure Limits

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	¹ 100	6
3 – 30	1842/f	4.89/f	¹ 900/f	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	f/300	6
1500 – 100000	--	--	5.0	6
General Population/Uncontrolled Exposure				
0.3 – 1.34	614	1.63	¹ 100	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. Plane-wave equivalent power density				
2. f is testing frequency in MHz				

5.3 Multiple RF Sources Exemption

A device which supports multiple radio sources which can transmit at the same time are subject exemption evaluation of 47 CFR 1.1307(b)(3)(ii). The sum of the fractional contributions is considered exempted from further evaluation if the sum is less than or equal to 1 as determined by the following equation.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{ExposureLimit_k} \leq 1$$

Where:

a = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(B) of this section for P_{th} , including existing exempt transmitters and those being added.

b = number of fixed, mobile, or portable RF sources claiming exemption using paragraph (b)(3)(i)(C) of this section for Threshold ERP, including existing exempt transmitters and those being added.

c = number of existing fixed, mobile, or portable RF sources with known evaluation for the specified minimum distance including existing evaluated transmitters.

P_i = the available maximum time-averaged power or the ERP, whichever is greater, for fixed, mobile, or portable RF source i at a distance between 0.5 cm and 40 cm (inclusive).

$P_{th,i}$ = the exemption threshold power (P_{th}) according to paragraph (b)(3)(i)(B) of this section for fixed, mobile, or portable RF source i.

ERP_j = the ERP of fixed, mobile, or portable RF source j.

$ERP_{th,j}$ = exemption threshold ERP for fixed, mobile, or portable RF source j, at a distance of at least $\lambda/2\pi$ according to the applicable formula of paragraph (b)(3)(i)(C) of this section.

$Evaluated_k$ = the maximum reported SAR or MPE of fixed, mobile, or portable RF source k either in the device or at the transmitter site from an existing evaluation at the location of exposure.

$Exposure Limit_k$ = either the general population/uncontrolled maximum permissible exposure (MPE) or specific absorption rate (SAR) limit for each fixed, mobile, or portable RF source k, as applicable from § 1.1310 of this chapter.

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 20 of 24
Seite 20 von 24

5.4 Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

5.4.1 RF Exposure Exemption Assessment

Table 11: RF Exposure Exemption Evaluation

Technology	Band (MHz)	Frequency (GHz)	Gain (dBi)	Power (dBm)	ERP, P _i (mW)	Separation Distance (cm)	P _{th} , Limit (mW)	Margin (mW)
BLE	2400 - 2483.5	2.442	2.4	16	42.18	5	219.25	177.06
WLAN 2.4G	2412 – 2462	2.437	2.4	20	105.96	5	219.38	113.42
WLAN 5G	5180 – 5825	5.785	3.2	18	80.38	5	169.12	88.73
Note:								
1. Power listed is Maximum conducted output power reported within the module manufacturer's RF Exposure report.								
2. Gain is converted to dB _d before ERP is calculated by the following: dB _d = dBi – 2.15								

5.4.2 Multiple RF Sources Exemption Assessment

Table 12: Multiple RF Sources Exemption Evaluation

Technology	Band (MHz)	Frequency (GHz)	ERP, P _i (mW)	P _{th,i} (mW)	ERP _j (mW)	ERP _{th,j} (mW)	Power Density (mW/cm ²)	Power Density Limit (mW/cm ²)	SUM
BLE / 2.4G WLAN									
BLE	2402 – 2480	2.442	42.18	219.25	--	--	--	--	0.68
WLAN 2.4G	2412 – 2462	2.437	105.96	219.38	--	--	--	--	
BLE / 5G WLAN									
BLE	2402 – 2480	2.442	42.18	219.25	--	--	--	--	0.67
WLAN 5G	5180 – 5825	2.437	80.38	169.12	--	--	--	--	
Note:									
1. Evaluation values taken from Tables 11.									

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 21 of 24
Seite 21 von 24

5.4.3 Conclusion

The device is hand-held device with an antenna at the top part of the EUT. An estimate of the separation distance was taken to be from the top of the display (at 50cm maker) where the user may hold the product during use to the edge of the antenna. This distance was measured to be approximately 5.4 cm; to be conservative, 5 cm distance was used for the analysis.

The evaluation determined the EUT meets the exemption criteria defined in 47 CFR 1.1307(b)(3)(i)(B) for single RF sources when minimum separation distance of 5 mm is maintained between the radiating element and the end-user. The EUT also meets the multiple RF source exemption requirements of 47 CFR 1.1307(b)(3)(ii) the simultaneous transmission modes listed in table 12 when a 5 mm separation distance is maintained between the radiating element and the end-user.

Test report no.: US253AMU 002
Prüfbericht-Nr.:

Page 22 of 24
Seite 22 von 24

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