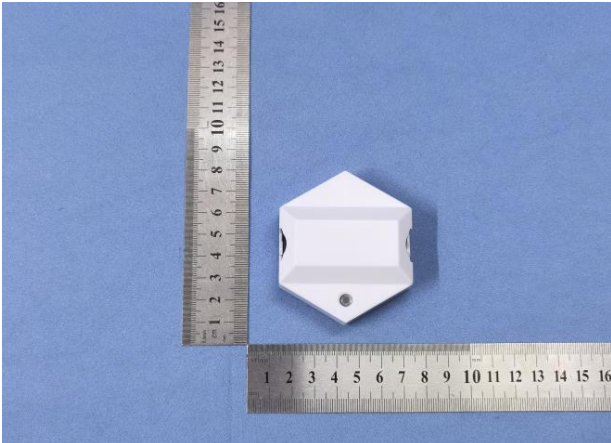


Prüfbericht-Nr.: <i>Test report no.:</i>	CN255GUC 001	Auftrags-Nr.: <i>Order no.:</i>	158317059 Seite 1 von 35 Page 1 of 35
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2025-09-09
Auftraggeber: <i>Client:</i>	Ravensburger Verlag GmbH Otto-Maier-Straße 1, 88214 Ravensburg, Germany		
Prüfgegenstand: <i>Test item:</i>	Short Range Device -GT-PWR Color detector (2.4GHz)		
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	910976		
Auftrags-Inhalt: <i>Order content:</i>	FCC Certification		
Prüfgrundlage: <i>Test specification:</i>	FCC Part 15 Subpart C, ANSI C63.10-2020		
Wareneingangsdatum: <i>Date of sample receipt:</i>	2024-05-21		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003723678-001		
Prüfzeitraum: <i>Testing period:</i>	2024-05-21 to 2024-05-31		
Ort der Prüfung: <i>Place of testing:</i>	Hong Kong		
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland Hong Kong Ltd.		
Prüfergebnis*: <i>Test result*:</i>	Pass		
geprüft von: <i>tested by/ supervised by:</i>	genehmigt von: <i>authorized by:</i>		
Datum: <i>Date:</i>	2025-10-10	Ausstellungsdatum: <i>Issue date:</i>	2025-10-10
Stellung / Position:	Assistant Test Engineer	Stellung / Position:	Authorizer
Sonstiges / <i>Other:</i>	“Decision Rule” document announced in our website (https://www.tuv.com/landingpage/en/qm-gcn/) describes the statement of conformity and its rule of enforcement for test results are applicable throughout this test report. FCC ID: 2A2XI976 Doc number: 37385-01-002 & 37385-01-003, SAP number: 1060969		
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * 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			
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>This test report only relates to the above mentioned 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>			

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 2 von 35
Page 2 of 35

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. <i>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>
2	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. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie auf folgender Webseite: go.tuv.com/digital-signature <i>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. For information on verifying the authenticity of our documents, please visit the following website: go.tuv.com/digital-signature</i>
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. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, 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 bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>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 115:2021, 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.</i>

Prüfbericht-Nr.: Test report no.:		CN255GUC 001	Seite 3 von 35 Page 3 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result

Table of Content

Page

Cover Page.....	1
Table of Content	3
Product Information	4
Manufacturers declarations	4
Product function and intended use.....	4
Submitted documents	4
Independent Operation Modes	4
Related Submittal(s) Grants.....	4
Remark	4
Test Set-up and Operation Mode.....	5
Principle of Configuration Selection.....	5
Test Operation and Test Software	5
Special Accessories and Auxiliary Equipment	5
Countermeasures to achieve EMC Compliance	5
Test Methodology	6
Radiated Emission	6
Field Strength Calculation.....	6
Conducted Emission Calculation	6
Test Setup Diagram	7
Test Facility	9
Test Laboratory Information	9
List of Test and Measurement Instruments	10
Measurement Uncertainty	11
Results FCC Part 15 - Subpart C.....	12
FCC 15.203 – Antenna Requirement 1	Pass..... 12
FCC 15.204 – Antenna Requirement 2	Pass..... 12
FCC 15.207 – Conducted Emission on AC Mains	N/A..... 12
FCC 15.215 (c) – 20 dB Bandwidth	Pass..... 13
ANSI C63.10 – 6.9.3 – Occupied Bandwidth	N/A..... 13
FCC 15.249 (a) – Field Strength of Fundamental and Harmonics	Pass..... 14
FCC 15.249 (d) – Out of Band Radiated Emission	Pass..... 17
Appendix 1 – Test Results	5 pages
Appendix 2 – Test Setup	3 pages
Appendix 3 – EUT External Photos	4 pages
Appendix 4 – EUT Internal Photos	3 pages
Appendix 5 – RF Exposure information.....	2 pages

Prüfbericht-Nr.: Test report no.:		CN255GUC 001	Seite 4 von 35 Page 4 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result

Product Information

Manufacturers declarations

	Transmitter
Operating frequency range	2402-2404, 2469-2471 MHz
Type of modulation	GFSK
Number of channels	6
Frequency channel	2402, 2403, 2404, 2469, 2470, 2471 MHz
Type of antenna	PCB antenna
Power level	fix
Connection to public utility power line	No
Nominal voltage	1.5 V DC
Occupied bandwidth	Not available
Channel bandwidth	1MHz
Emission designator	F1D
Frequency stability	Not available

Product function and intended use

The equipment under test (EUT) is a radio control toy transmitter operating at 2.4GHz. It is powered by battery only.

FCC ID: 2A2XI976

Models	Product description
910976	Short Range Device -GT-PWR Color detector (2.4GHz)

Submitted documents

Nil

Independent Operation Modes

The basic operation modes are:

- Transmitting mode.

For further information refer to User Manual

Related Submittal(s) Grants

This is a single application for certification of the transmitter.

Remark

This report is prepared for standard update. After evaluation, no test was performed. All other test result is originated from test report CN2499X5 001 issued on 2024-07-12.

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 5 von 35 Page 5 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level.
The test modes were adapted accordingly in reference to the instructions for use.

Test Operation and Test Software

Test operation should refer to test methodology.

- Test mode samples with maximum RF output power and duty cycle and capable to transmit continuously at the lowest, middle and highest frequency channels is provided by the applicant for the testing.
-

Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

- None

Countermeasures to achieve EMC Compliance

- None

Prüfbericht-Nr.: Test report no.:		CN255GUC 001		Seite 6 von 35 Page 6 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result	

Test Methodology

Radiated Emission

The radiated emission measurements of the transmitter part were performed according to the procedures in ANSI C63.10-2020.

For measurement below 1GHz - the equipment under test (EUT) was placed at the middle of the 80 cm height turntable. For measurement above 1GHz - the EUT was placed at the middle of the 1.5 m height turntable and RF absorbing material was placed on ground plane between turntable and measuring antenna. During the testing, the EUT was operated standalone and arranged for maximum emissions. The EUT was tested in three orthogonal planes.

The investigation is performed with the EUT rotated 360 °, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained.

All radiated tests were performed at an antenna to EUT with 3 meters distance, unless stated otherwise in particular parts of this test report.

Field Strength Calculation

The field strength at 3 m was established by adding the meter reading of the spectrum analyzer to the factors associated with antenna correction factor, cable loss, preamplifiers and filter attenuation.

The equation is expressed as follow:

$$FS = R + AF + CF + FA - PA$$

Where

- FS = Field Strength in dBuV/m at 3 meters.
- R = Reading of Spectrum Analyzer in dBuV.
- AF = Antenna Factor in dB.
- CF = Cable Attenuation Factor in dB.
- FA = Filter Attenuation Factor in dB.
- PA = Preamplifier Factor in dB.

FA and PA are only be used for the measuring frequency above 1 GHz.

Conducted Emission Calculation

Receiver reading R_r (dB μ V)

LISN insertion loss L_I (dB)

Cable loss C_I (dB)

$$\text{Result (dB}\mu\text{V)} = R_r + L_I + C_I$$

Sample: $R_r = 40.2$ dB μ V

$L_I = 10.2$ dB

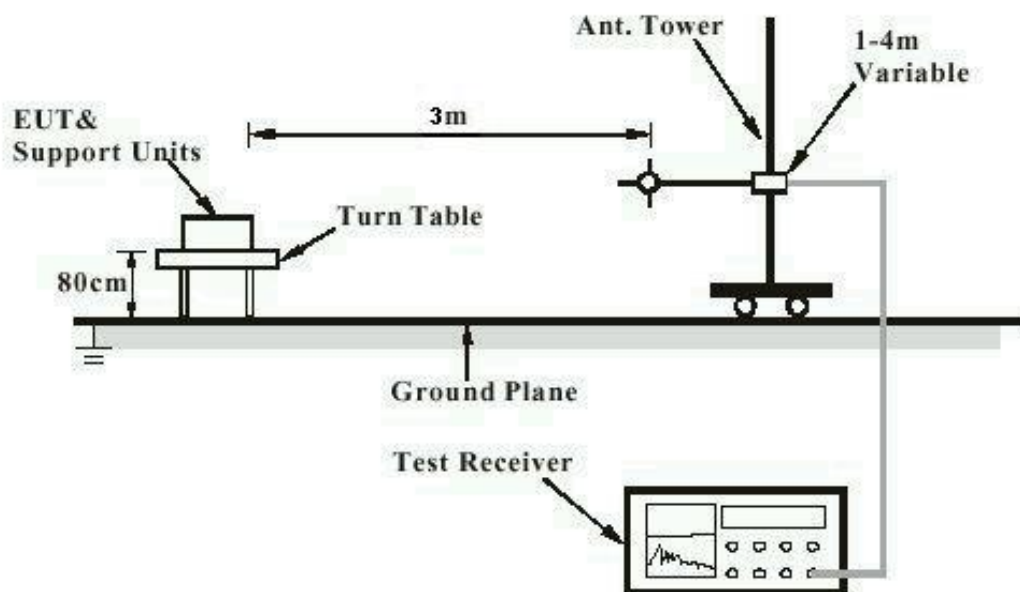
$C_I = 0.3$ dB

$$\text{Result} = 40.2 + 10.2 + 0.3 = 50.7 \text{ dB}\mu\text{V}$$

Prüfbericht-Nr.: <i>Test report no.:</i>	CN255GUC 001	Seite 7 von 35 Page 7 of 35	
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>

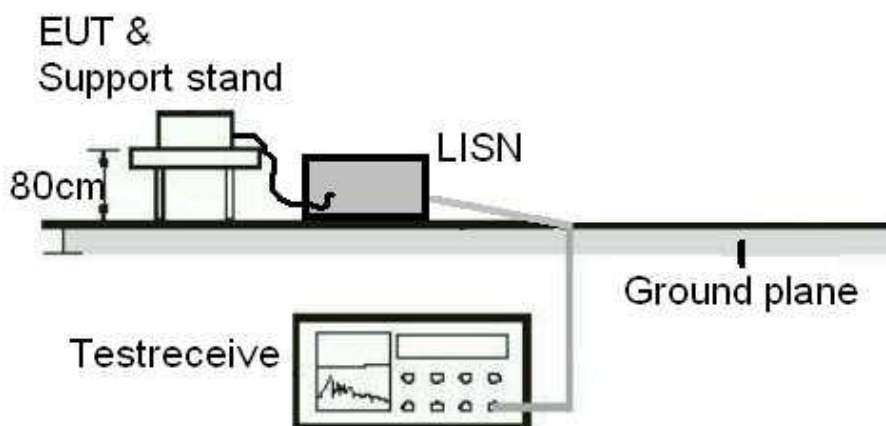
Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



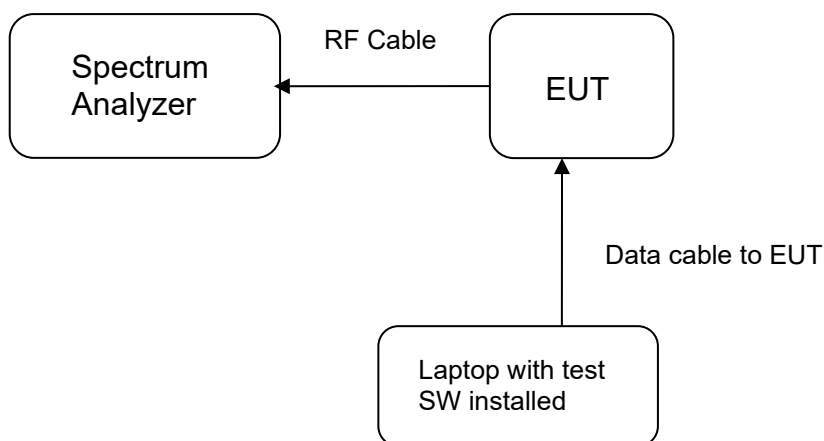
Note: Measurements above 1 GHz are done with a table height of 1.5m. In addition, there is RF absorbing material on the floor of the test site for above 1GHz measurement.

Diagram of Measurement Equipment Configuration for Mains Conduction Measurement (if applicable)



Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 8 von 35 Page 8 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Diagram of Equipment Configuration for Antenna-port Conducted Measurement (if applicable)



Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 9 von 35 Page 9 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Test Facility

Test Laboratory Information

TÜV Rheinland Hong Kong Ltd.

Address: 3-4/F, Fou Wah Industrial Building, 10-16 Pun Shan Street, Tsuen Wan, N.T., Hong Kong

Tel.: +852 2192 1000

Fax: +852 2192 1001

Email: service-gc@tuv.com

The test facility is recognized or accredited by the following organizations:

FCC

Designation Number : HK0013

Hong Kong Productivity Council

Address: LG 1/F., HKPC Building, 78 Tat Chee Road

Tel.: +852 2788 6396

Fax: +852 2788 5405

Email: emc@hkpc.org

The test facility is recognized or accredited by the following organizations:

FCC

Designation Number : HK0012

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 10 von 35 Page 10 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

List of Test and Measurement Instruments

Hong Kong Productivity Council

Radiated Emission

Equipment	Manufacturer	Type	Cal. Date	Due Date
Multi-functional Anechoic Chamber (NSA)	Albatross	---	2024-01-06	2025-01-06
Multi-functional Anechoic Chamber (VSWR)	Albatross	---	2024-01-04	2025-01-04
Test Receiver	Rohde & Schwarz	ESU40	2024-03-09	2025-03-09
Double-Ridged Waveguide Horn	EMCO	3117	2023-11-21	2024-11-21
Bi-conical Antenna	Rohde & Schwarz	HK116	2022-10-24	2024-10-24
Log Periodic Antenna	Rohde & Schwarz	HL223	2022-10-25	2024-10-25
Cable	SF118/11N/11 N/12000MM	Huber+Suhner	2024-01-06	2025-01-06
Microwave amplifier	COM-POWER Corporation	PAM-118A	2024-03-04	2025-03-04
High Pass Filter	Trilithic	23042	2024-10-29	2025-10-29

TÜV Rheinland Hong Kong Ltd.

Radio Test

Equipment	Manufacturer	Type	Cal. Date	Due Date
Spectrum Analyzer	R & S	FSV40	2023-07-13	2024-07-13

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 11 von 35 Page 11 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Measurement Uncertainty

The estimated combined standard uncertainty for powerline conducted emissions measurements is $\pm 3.22\text{dB}$.

The estimated combined standard uncertainty for radiated emissions measurements is $\pm 2.44\text{dB}$ (9kHz to 30MHz) and $\pm 5.92\text{dB}$ (30MHz to 1000MHz) and is $\pm 4.92\text{dB}$ (1GHz to 18GHz).

The estimated combined standard uncertainty for antenna conducted emission is $\pm 1.94\text{dB}$

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of $k=2$, which for the level of confidence is approximately 95%.

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 12 von 35 Page 12 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Results FCC Part 15 - Subpart C

FCC 15.203 – Antenna Requirement 1			Pass
Requirement:	No antenna other than that furnished by the responsible party shall be used with the device		
Results:	a) Antenna type	PCB antenna	
	b) Manufacturer and model no.:	N/A	
	c) Peak Gain:	0 dBi	
Verdict:	Pass		

FCC 15.204 – Antenna Requirement 2		Pass
Requirement:	An intentional radiator may be operated only with the antenna with which it is authorized. If an antenna is marketed with the intentional radiator, it shall be of a type which is authorized with the intentional radiator.	
Results:	Only one integral antenna can be used.	
Verdict:	Pass	

FCC 15.207 – Conducted Emission on AC Mains		N/A
There is no AC power input or output ports on the EUT.		

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 13 von 35 Page 13 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

FCC 15.215 (c) – 20 dB Bandwidth				Pass
Test Specification : ANSI C63.10 – 2020 Test date : 2024-05-31 Mode of operation : Tx mode Port of testing : Antenna port Supply voltage : 1.5 V DC Temperature : 21.4°C Humidity : 38.6%				
Requirement		The intentional radiators must be designed to ensure that the 20dB bandwidth of the emission, is contained within the frequency band designated in the rule section under which the equipment is operated.		
Results:		Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types. For test protocols refer to Appendix 1.		
Frequency (MHz)	20 dB left (MHz)	Limit (MHz)	20 dB right (MHz)	Limit (MHz)
2402	2401.667	> 2400	2402.701	< 2483.5
2404	2403.660	> 2400	2404.695	< 2483.5
2471	2470.559	> 2400	2471.709	< 2483.5

ANSI C63.10 – 6.9.3 – Occupied Bandwidth				N/A
Test Specification : ANSI C63.10 – 2020 Test date : 2024-05-31 Mode of operation : Tx mode Port of testing : Antenna port Supply voltage : 1.5 V DC Temperature : 21.4°C Humidity : 38.6%				
Requirement		N/A		
Results:		Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and packet types. For test protocols refer to Appendix 1.		
Frequency (MHz)	Left (MHz)	Right (MHz)	99% bandwidth (MHz)	
2402	2401.659	2402.687	1.027	
2404	2403.653	2404.687	1.035	
2471	2470.588	2471.767	1.179	

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 14 von 35
Page 14 of 35

Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
------------------	---	--	--------------------

FCC 15.249 (a) – Field Strength of Fundamental and Harmonics

Pass

Test Specification : ANSI C63.10 – 2020
Test date : 2024-05-28
Mode of operation : Tx mode
Port of testing : Enclosure
Frequency range : 9kHz - 25GHz
Supply voltage : 1.5 V DC
Temperature : 21°C
Humidity : 59%

Requirement: The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following limit.

Results:

Fundamental Frequency: 2402MHz Vertical Polarization

Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m
2402.000	84.1	114.0 / PK
2402.000	54.8	94.0 / AV

Fundamental Frequency: 2402MHz Horizontal Polarization

Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m
2402.000	85.9	114.0 / PK
2402.000	56.9	94.0 / AV

Harmonics: 2402MHz Vertical Polarization

Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m
4804.000	56.8	74.0 / PK
4804.000	32.4	54.0 / AV
7206.000	55.1	74.0 / PK
7206.000	32.0	54.0 / AV

Harmonics: 2402MHz Horizontal Polarization

Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m
4804.000	53.4	74.0 / PK
4804.000	31.0	54.0 / AV
7206.000	54.0	74.0 / PK
7206.000	31.7	54.0 / AV

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 15 von 35
Page 15 of 35

Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
------------------	---	--	--------------------

Fundamental Frequency: 2404MHz		Vertical Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
2404.000	83.9	114.0 / PK	
2404.000	54.5	94.0 / AV	
Fundamental Frequency: 2404MHz		Horizontal Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
2404.000	86.2	114.0 / PK	
2404.000	56.8	94.0 / AV	
Harmonics: 2404MHz		Vertical Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
4808.000	56.8	74.0 / PK	
4808.000	32.4	54.0 / AV	
7212.000	55.2	74.0 / PK	
7212.000	32.0	54.0 / AV	
Harmonics: 2404MHz		Horizontal Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
4808.000	56.4	74.0 / PK	
4808.000	32.4	54.0 / AV	
7212.000	54.9	74.0 / PK	
7212.000	32.0	54.0 / AV	

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 16 von 35
Page 16 of 35

Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
------------------	---	--	--------------------

Fundamental Frequency: 2471MHz		Vertical Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
2471.000	83.6	114.0 / PK	
2471.000	54.1	94.0 / AV	
Fundamental Frequency: 2471MHz		Horizontal Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
2471.000	86.4	114.0 / PK	
2471.000	56.9	94.0 / AV	
Harmonics: 2471MHz		Vertical Polarization	
Frequency MHz	Level dBuV/m	Limit / Detector dBµV/m	
4942.000	56.7	74.0 / PK	
4942.000	32.0	54.0 / AV	
7413.000	52.4	74.0 / PK	
7413.000	30.8	54.0 / AV	
Harmonics: 2471MHz		Horizontal Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
4942.000	59.0	74.0 / PK	
4942.000	33.5	54.0 / AV	
7413.000	51.1	74.0 / PK	
7413.000	30.3	54.0 / AV	

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 17 von 35 Page 17 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

FCC 15.249 (d) – Out of Band Radiated Emission			Pass
Test Specification : ANSI C63.10 – 2020 Test date : 2024-05-28 Mode of operation : Tx mode Port of testing : Enclosure Frequency range : 9kHz - 25GHz Supply voltage : 1.5 V DC Temperature : 21°C Humidity : 59%			
Requirement:		The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following limit.	
Results:		All three transmit frequency modes comply with the field strength limit of section 15.209. There is no spurious found below 30MHz.	
TX Frequency: 2402MHz		Vertical Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
2400.000	60.2	74.0 / PK	
2400.000	22.0	54.0 / AV	
2390.000	54.0	74.0 / PK	
2390.000	21.4	54.0 / AV	
TX Frequency: 2402MHz		Horizontal Polarization	
Frequency MHz	Level dBµV/m	Limit / Detector dBµV/m	
2400.000	64.3	74.0 / PK	
2400.000	23.5	54.0 / AV	
2390.000	49.6	74.0 / PK	
2390.000	21.5	54.0 / AV	

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 18 von 35
Page 18 of 35

Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>
--------------------------------	---	--	----------------------------------

TX Frequency: 2404MHz			Vertical Polarization		
Frequency MHz		Level dBµV/m		Limit / Detector dBµV/m	
No Peak Found		---		74.0 / PK	
No Peak Found		---		54.0 / AV	
TX Frequency: 2404MHz			Horizontal Polarization		
Frequency MHz		Level dBµV/m		Limit / Detector dBµV/m	
No Peak Found		---		74.0 / PK	
No Peak Found		---		54.0 / AV	
TX Frequency: 2471MHz			Vertical Polarization		
Frequency MHz		Level dBµV/m		Limit / Detector dBµV/m	
2483.500		47.9		74.0 / PK	
2483.500		21.2		54.0 / AV	
TX Frequency: 2471MHz			Horizontal Polarization		
Frequency MHz		Level dBµV/m		Limit / Detector dBµV/m	
2483.500		55.4		74.0 / PK	
2483.500		21.8		54.0 / AV	

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 19 von 35 Page 19 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Appendix 1

Test Results

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 20 von 35
Page 20 of 35

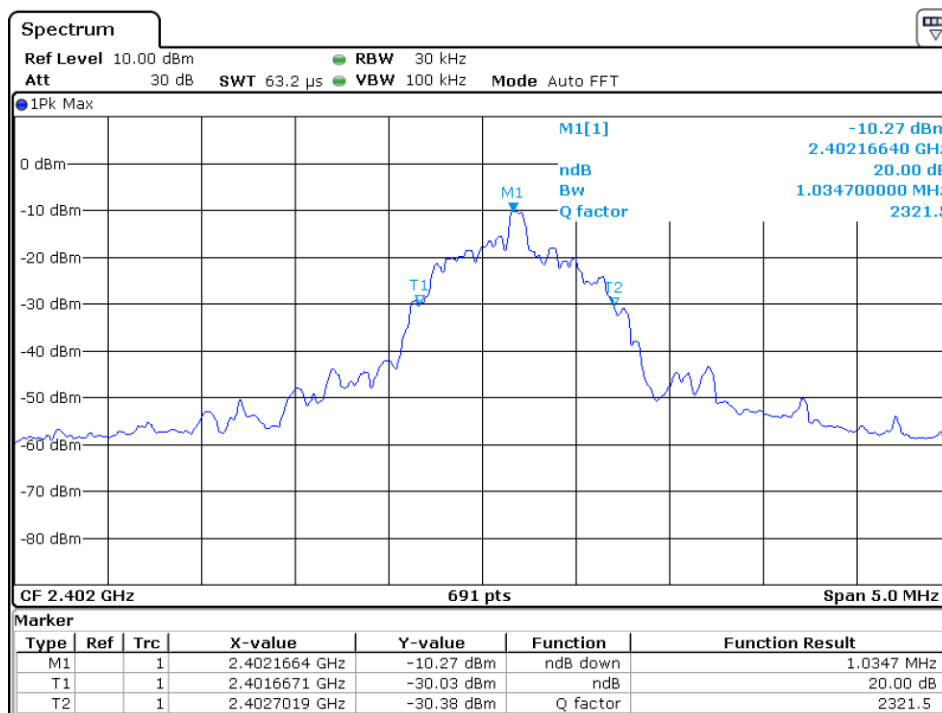
Absatz
Clause

Anforderungen - Prüfungen /
Requirements - Tests

Messergebnisse – Bemerkungen/
Measuring results - Remarks

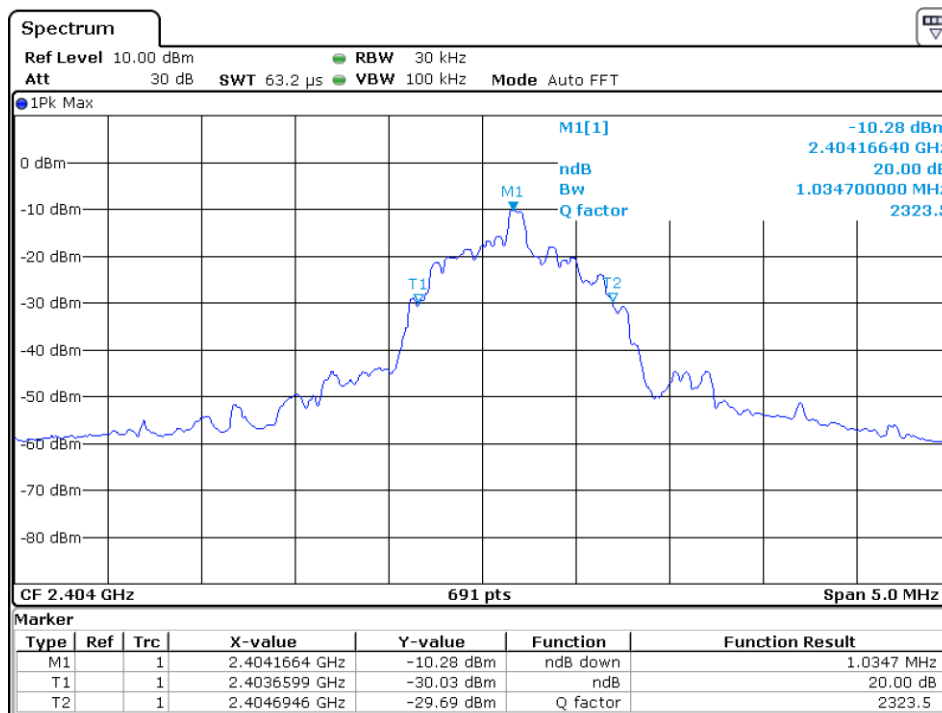
Ergebnis
Result

Test results of 20 dB Bandwidth



Date: 31.MAY.2024 15:15:00

Tx frequency: 2402MHz



Date: 31.MAY.2024 15:16:58

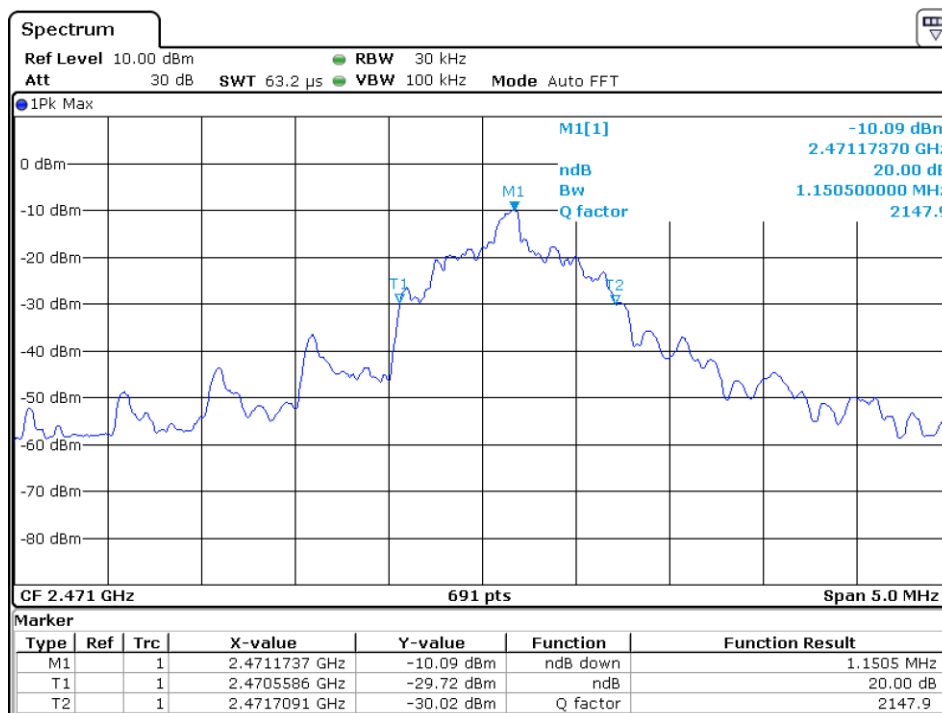
Tx frequency: 2404MHz

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 21 von 35
Page 21 of 35

Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
------------------	---	--	--------------------



Date: 31.MAY.2024 15:18:03

Tx frequency: 2471MHz

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 22 von 35
Page 22 of 35

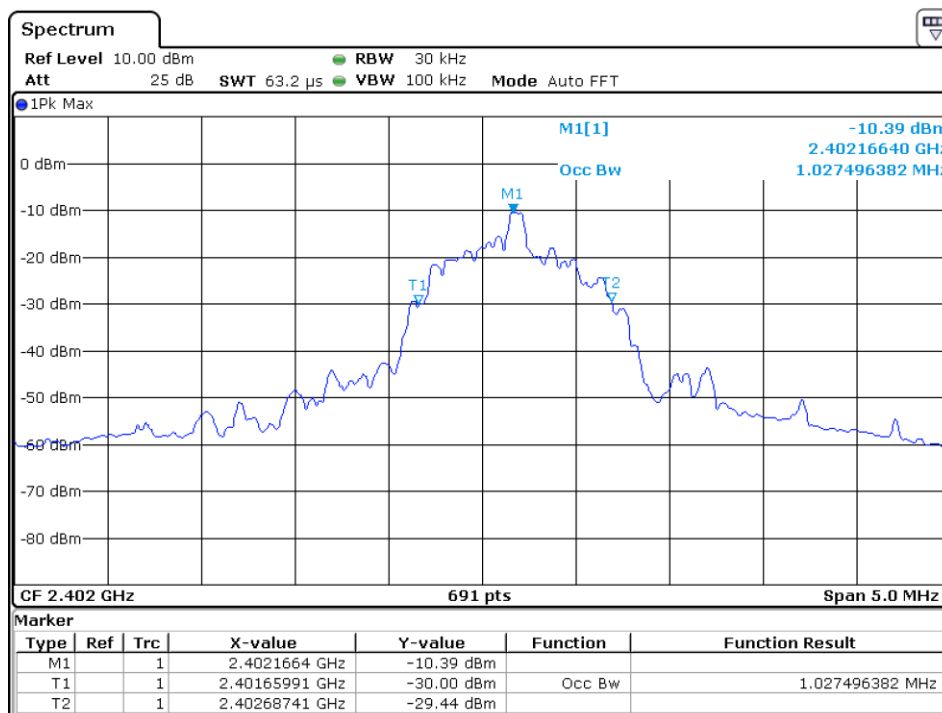
Absatz
Clause

Anforderungen - Prüfungen /
Requirements - Tests

Messergebnisse – Bemerkungen/
Measuring results - Remarks

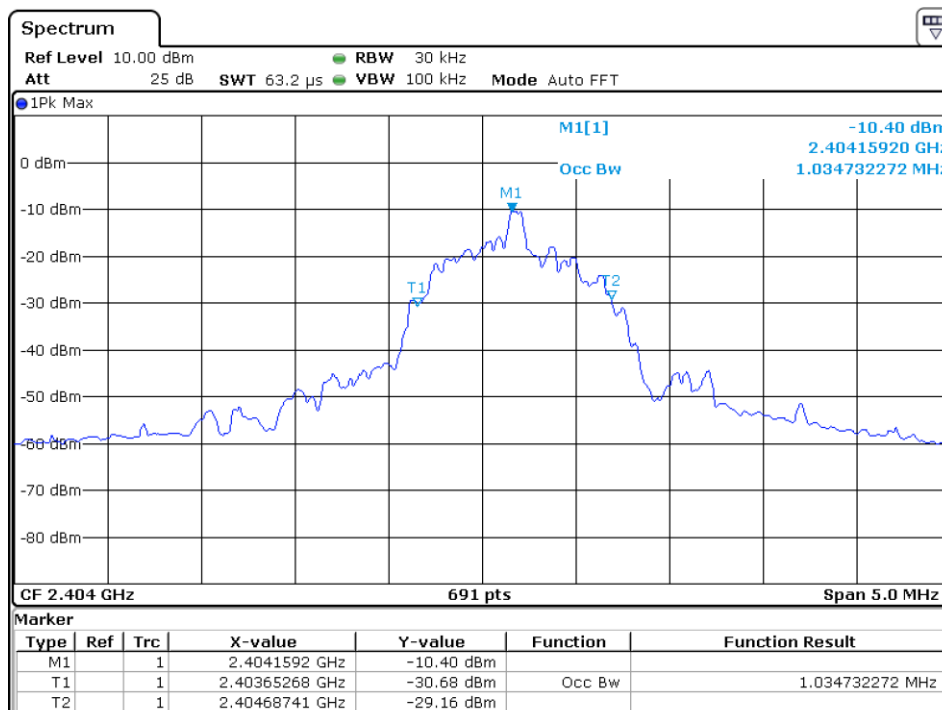
Ergebnis
Result

Test results of 99% Occupied Bandwidth



Date: 31.MAY.2024 15:16:09

Tx frequency: 2402MHz



Date: 31.MAY.2024 15:17:16

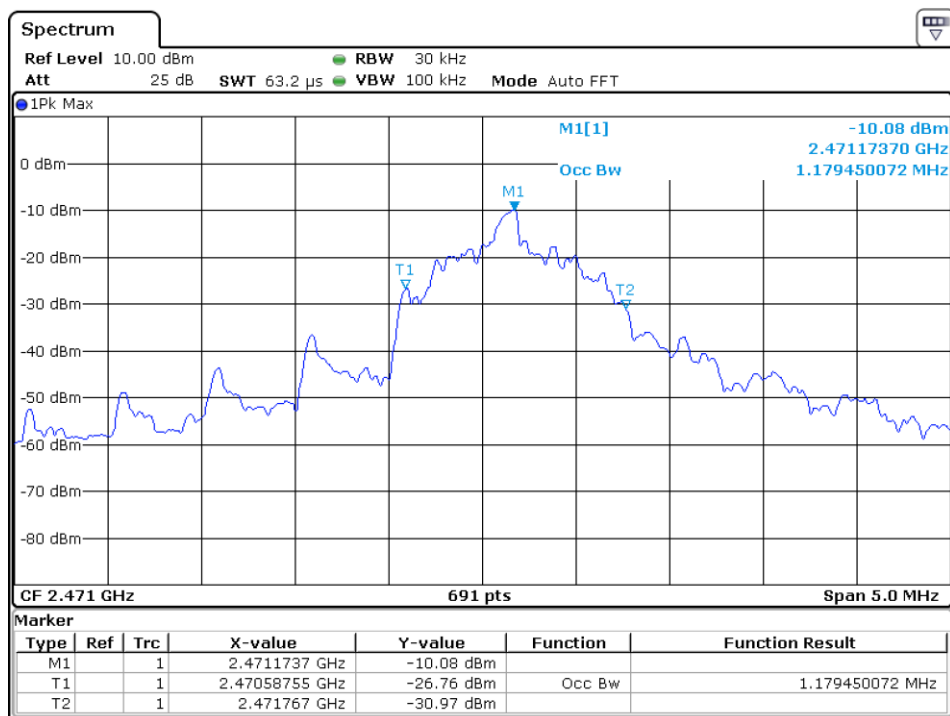
Tx frequency: 2404MHz

Prüfbericht-Nr.:
Test report no.:

CN255GUC 001

Seite 23 von 35
Page 23 of 35

Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
------------------	---	--	--------------------



Date: 31.MAY.2024 15:18:26

Tx frequency: 2471MHz

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 24 von 35 Page 24 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Appendix 2

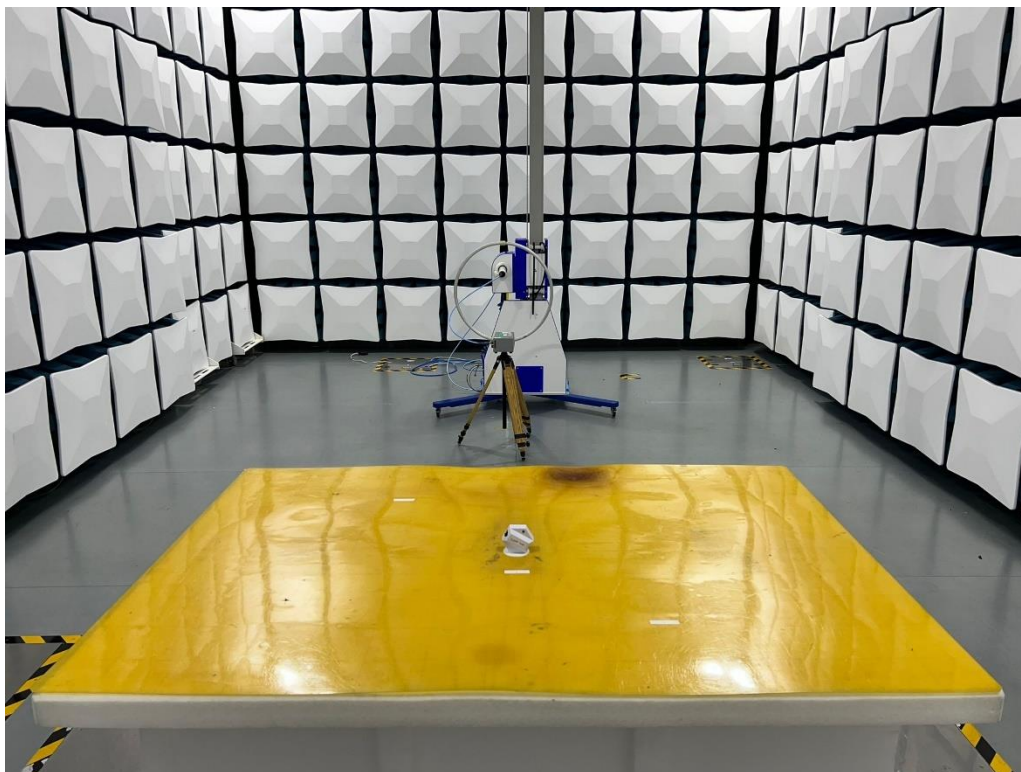
Test Setup Photos

Prüfbericht-Nr.:
Test report no.:

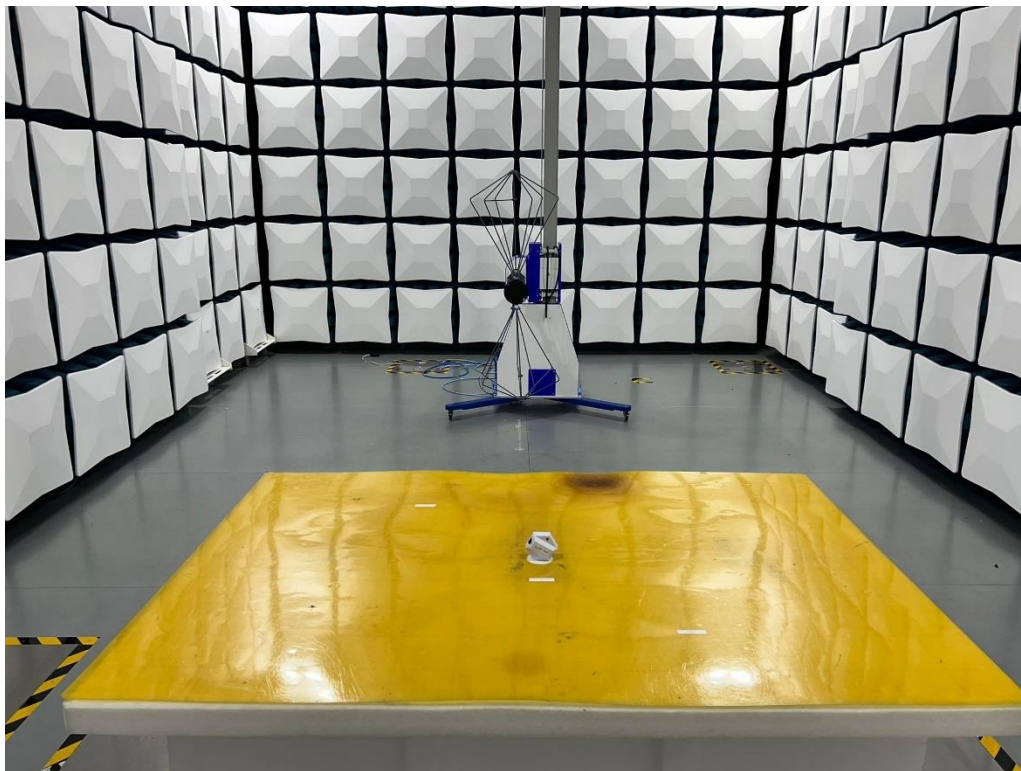
CN255GUC 001

Seite 25 von 35
Page 25 of 35

Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
------------------	---	--	--------------------

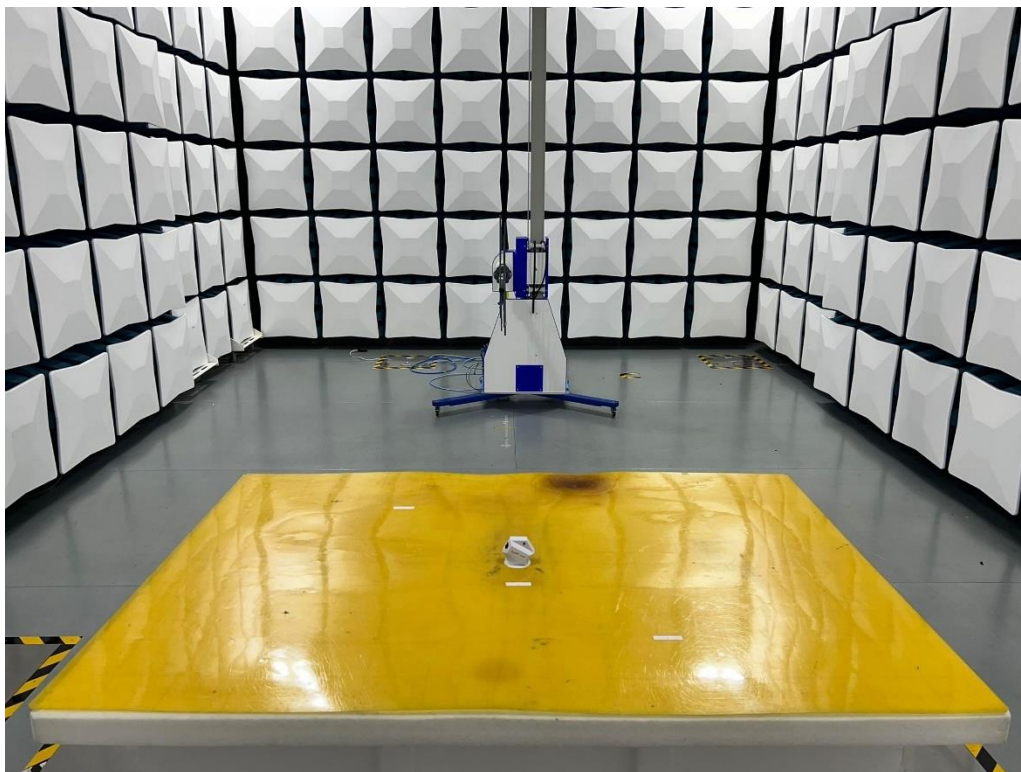


Set-up for Radiated Emission (9 kHz-30 MHz)



Set-up for Radiated Emission (30 MHz-200 MHz)

Prüfbericht-Nr.: Test report no.:		CN255GUC 001		Seite 26 von 35 Page 26 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result	



Set-up for Radiated Emission (200 MHz-1000 MHz)



Set-up for Radiated Emission (1 GHz above)

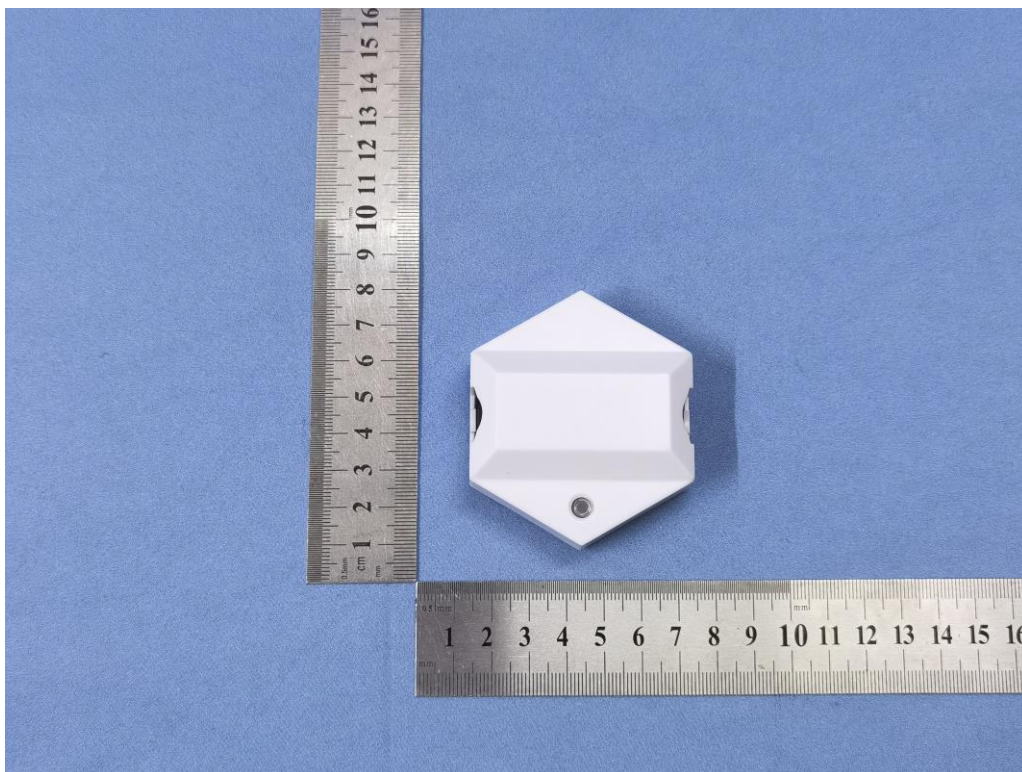
Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 27 von 35 Page 27 of 35
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Appendix 3

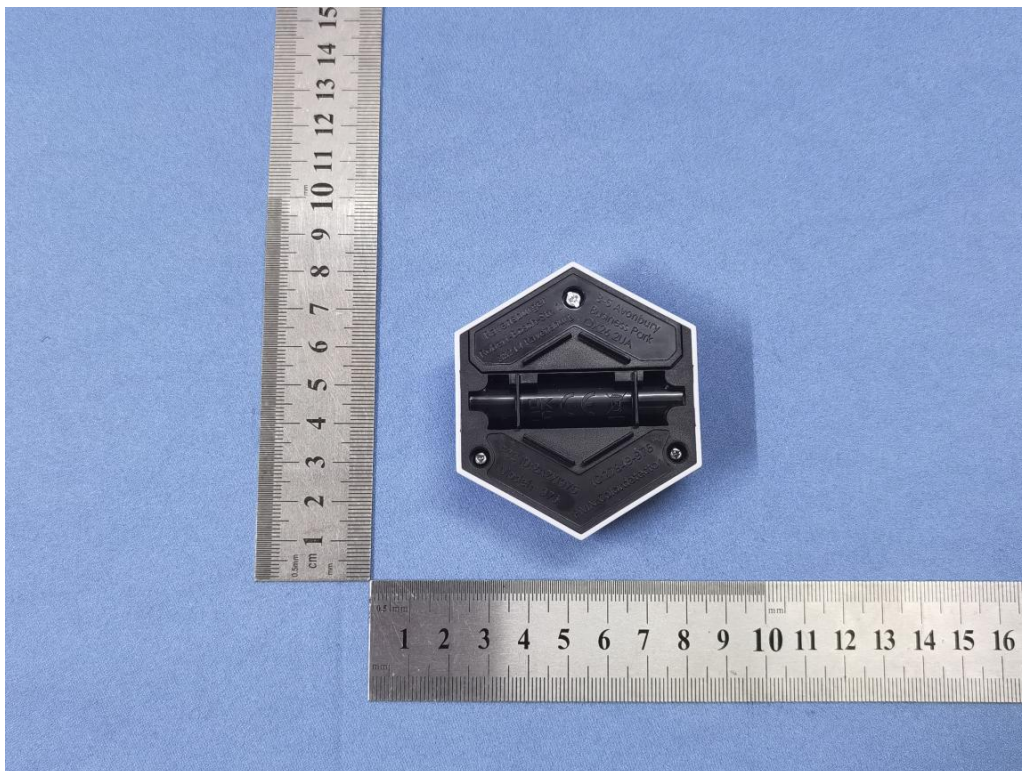
EUT External Photos

FCC ID: 2A2XI976

Prüfbericht-Nr.: Test report no.:		CN255GUC 001	Seite 28 von 35 Page 28 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result

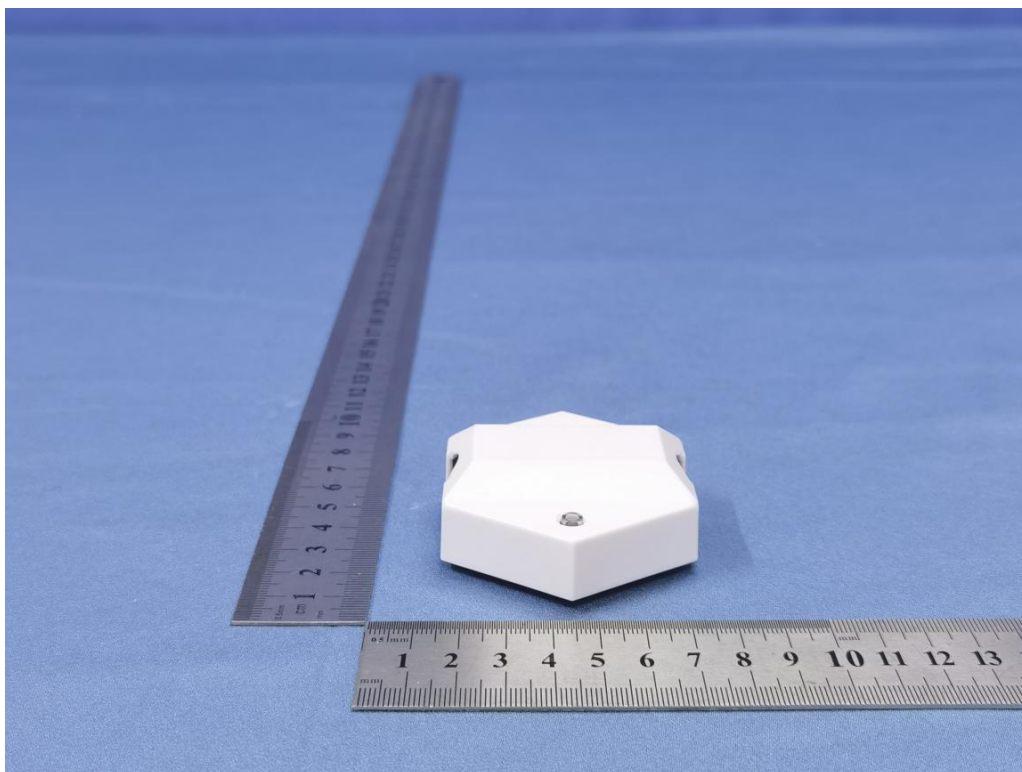


External View

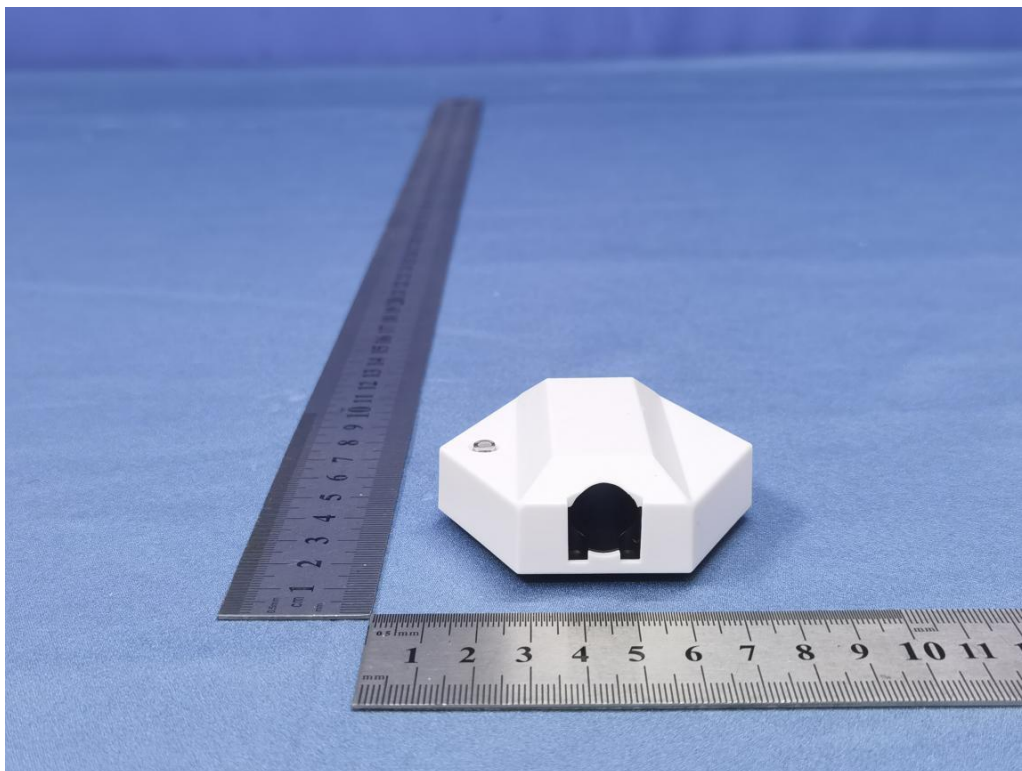


External View

Prüfbericht-Nr.: Test report no.:		CN255GUC 001		Seite 29 von 35 Page 29 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result	

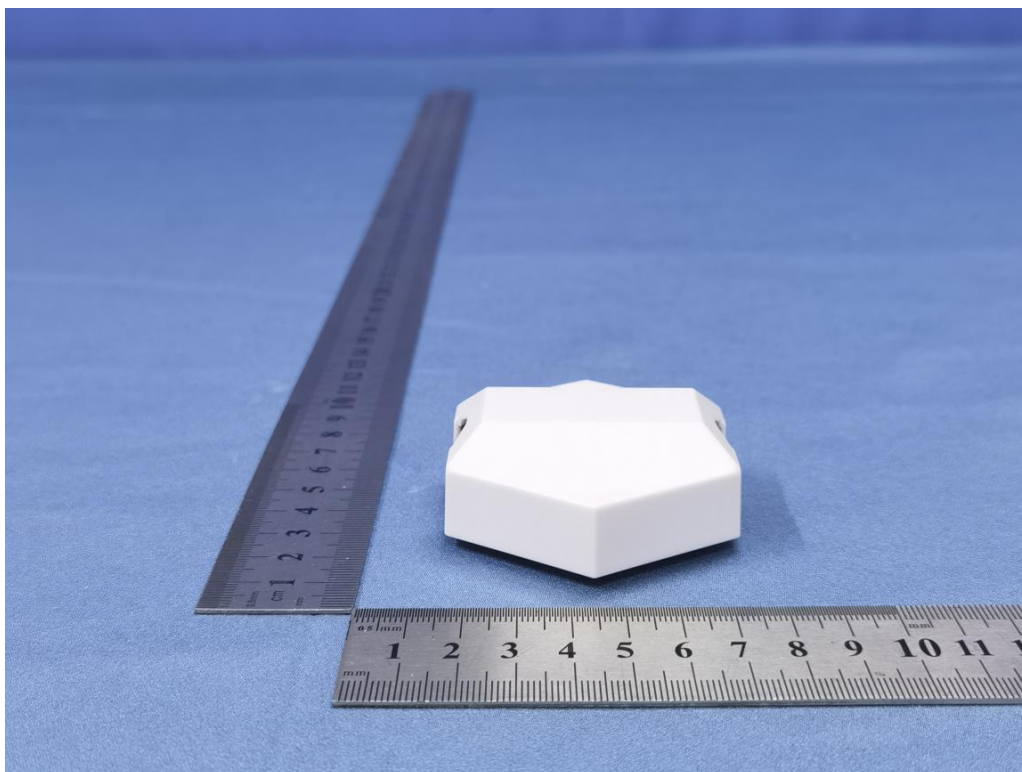


External View

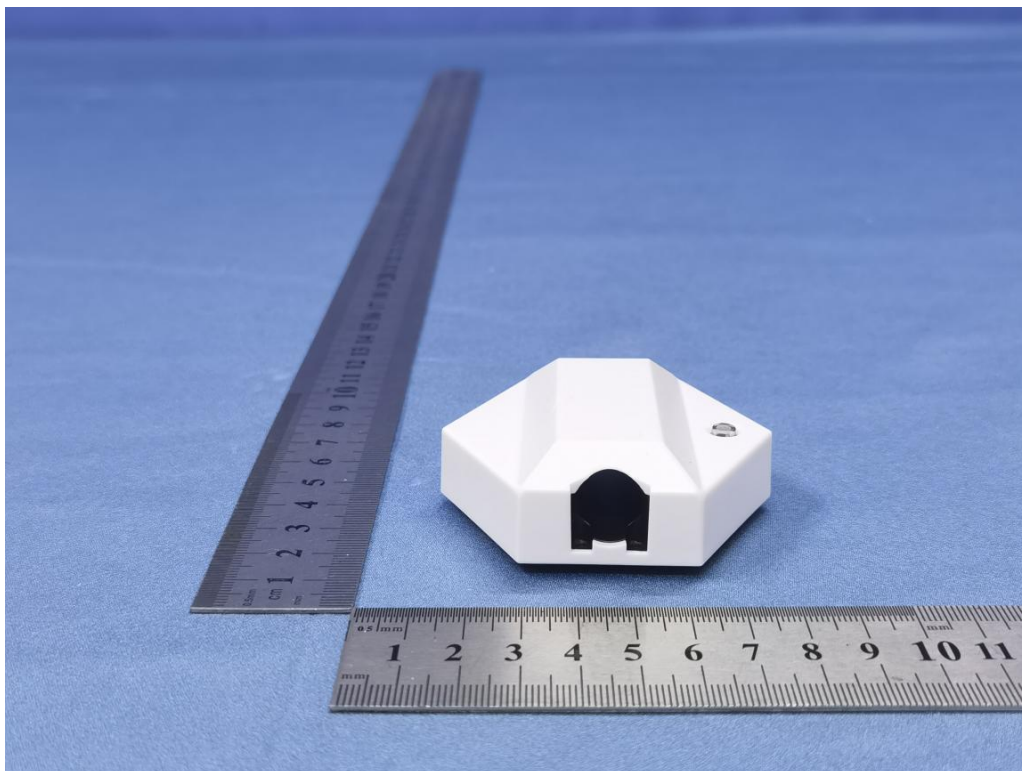


External View

Prüfbericht-Nr.: Test report no.:		CN255GUC 001		Seite 30 von 35 Page 30 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result	



External View



External View

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 31 von 35 <i>Page 31 of 35</i>
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Appendix 4

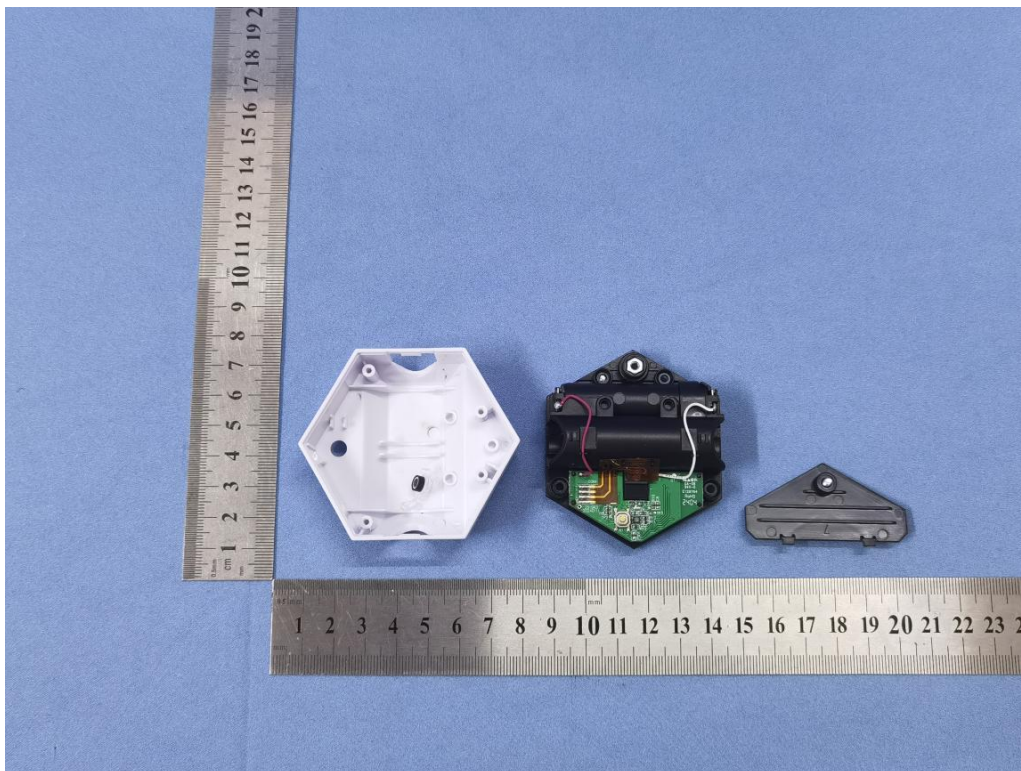
EUT Internal Photos

FCC ID: 2A2XI976

Prüfbericht-Nr.: Test report no.:		CN255GUC 001		Seite 32 von 35 Page 32 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result	



Internal View



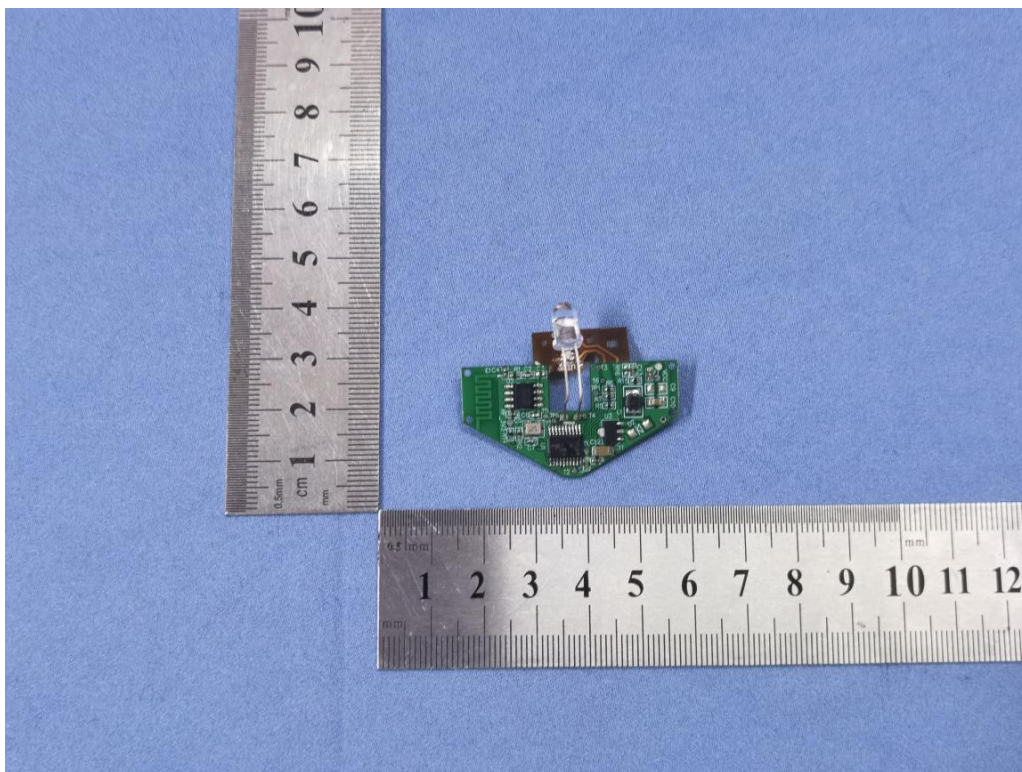
Internal View

Prüfbericht-Nr.:
Test report no.:

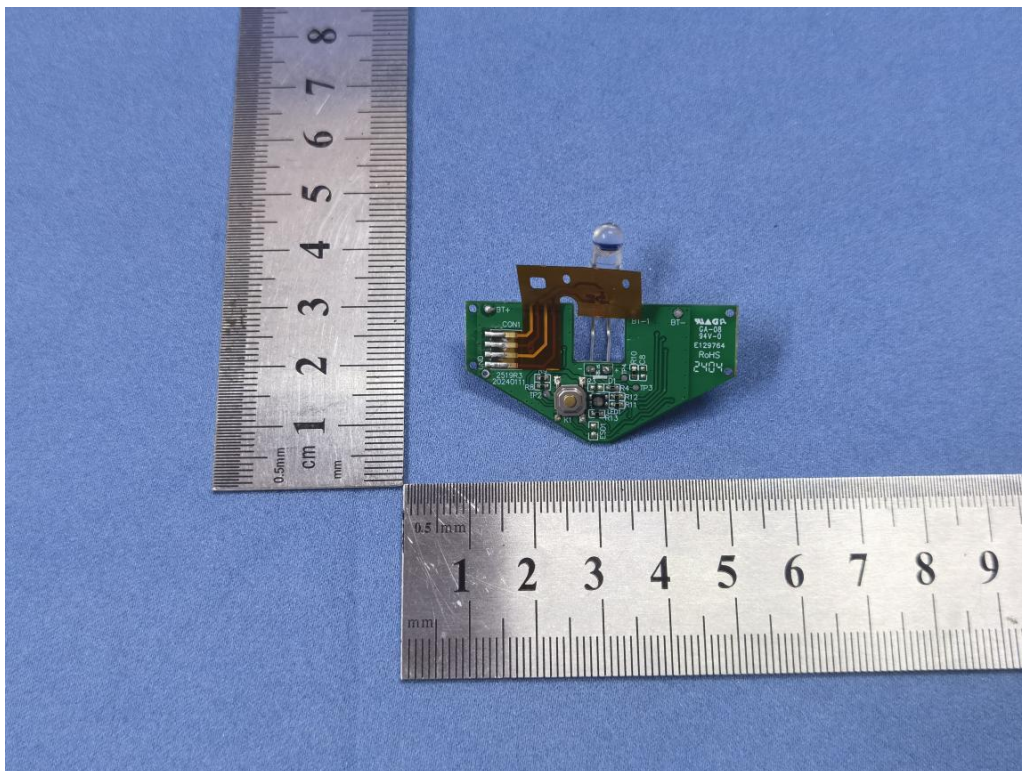
CN255GUC 001

Seite 33 von 35
Page 33 of 35

Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
------------------	---	--	--------------------



Internal View



Internal View

Prüfbericht-Nr.: <i>Test report no.:</i>		CN255GUC 001		Seite 34 von 35 <i>Page 34 of 35</i>
Absatz <i>Clause</i>	Anforderungen - Prüfungen / <i>Requirements - Tests</i>	Messergebnisse – Bemerkungen/ <i>Measuring results - Remarks</i>	Ergebnis <i>Result</i>	

Appendix 5

RF Exposure Information

FCC ID: 2A2XI976

Prüfbericht-Nr.: Test report no.:		CN255GUC 001	Seite 35 von 35 Page 35 of 35
Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result

Maximum Transmitter Power

Frequency (MHz)	Maximum peak field strength (dBμV/m)	Maximum transmitter power (mW)
2402	85.9	0.117
2404	86.2	0.125
2471	86.4	0.131

Note: The maximum peak field strength was taken from table of "Subclause 15.249(a) – Field Strength of Fundamental and Harmonics".

For FCC

According to KDB 447498 D01:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 5 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$
≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

Result:

$$(0.117/5) \cdot \sqrt{2.402} = 0.0363 < 3.0$$

$$(0.125/5) \cdot \sqrt{2.404} = 0.0388 < 3.0$$

$$(0.131/5) \cdot \sqrt{2.471} = 0.0412 < 3.0$$

Conclusion: No SAR is required.