

Prüfbericht-Nr.: <i>Test report no.:</i>	DE26VJYK 001	Auftrags-Nr.: <i>Order no.:</i>	1200141 60	Seite 1 von 17 Page 1 of 17
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	665263	Auftragsdatum: <i>Order date:</i>	2025-09-10	
Auftraggeber: <i>Client:</i>	seepex GmbH, Scharnhölzstr. 344, 46240 Bottrop, Deutschland			
Prüfgegenstand: <i>Test item:</i>	Laboratory Equipment / Sensor Gateway			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	SGRIQB024DC0000001			
Auftrags-Inhalt: <i>Order content:</i>	Prüfung der Funkparameter nach FCC & ISCED <i>Test of radio parameters acc. to FCC & ISCED</i>			
Prüfgrundlage: <i>Test specification:</i>	Vollprüfung / Complete test RF exposure evaluation acc. to FCC CFR 47 Part 1 Subpart I §1.1307 (b) acc. to RSS-102 Issue 6			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2026-03-30	For reasons of confidentiality, no photos of the EUT are included in this report. For EUT and test setup photos please see the Photo Documentation to this report Number.		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A004236733-001 to 008			
Prüfzeitraum: <i>Testing period:</i>	2026-07-10 - 2026-07-10			
Ort der Prüfung: <i>Place of testing:</i>	Nürnberg Nuremberg			
Prüflaboratorium: <i>Testing laboratory:</i>	Wireless Labor Wireless Test Lab			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	16.07.2026 		genehmigt von: <i>authorized by:</i>	16.07.2026 
Datum: <i>Date:</i>	Signiert von: Primoz Erzen		Ausstellungsdatum: <i>Issue date:</i>	Signiert von: Matthias Kraeutlein
Stellung / Position:	Sachverständige(r)/Expert		Stellung / Position:	Sachverständige(r)/Expert
Sonstiges / <i>Other:</i>	Product FCC ID: 2BV3O-SGRIQB024DC; Product IC: 35585-SGRIQB024DC			
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			
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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>
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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. <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 115:2023, 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 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 115:2023, 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.</i>
5	Wenn auf dem Bericht kein Akkreditierungshinweis aufgebracht ist, wurde der Bericht nicht im akkreditierten Bereich erstellt und ist folglich auch nicht vom EA MLA abgedeckt. Unabhängig davon wurde der Bericht auf Basis der allgemeinen Regeln der ISO/IEC 17000er Reihe erstellt. Mit "#" gekennzeichnete Prüfungen sind nicht Bestandteil der Akkreditierung D-PL-14169-03-00. <i>If there is no accreditation notice on the report, the report has not been produced in the accredited area and is consequently not covered by the EA MLA. Regardless of this, the report has been prepared based on the general rules of the ISO/IEC 17000 series. Tests marked with "#" are not covered by the accreditation D-PL-14169-03-00.</i>

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Produktbeschreibung
Product description

1	Test item	Laboratory Equipment / Sensor Gateway
2	Typ-No.	SGRIQB024DC0000001
3	Test sample obtaining	☒ Sampling by customer ☐ Sampling by TÜV Rheinland Group ☐ others:
4	Provided Samples	A004236733-001 to 008
5	Radiated measurements sample	A004236733-003 (rad. sample)
6	Serial-No.	A004236733-003 (rad. sample): SN1003
7	Supported radio technologies evaluated in this report	BLE; LTE Cat M1; LTE NB-IoT
8	Supported radio technologies not evaluated in this report	-
9	Description of EUT	Dry run protection with IoT monitoring capability
10	Rated Voltage / Frequency	24 V DC
11	Radio Module Name	BLE: - LTE: nRF9151
12	FCC-ID (Radio module)	BLE: - LTE: 2ANPO00NRF9151
13	IC (Radio module)	BLE: - LTE: 24529-NRF9151
14	Radio Module / Antenna Type BLE	☒ Radio module with antenna on module PCB ☐ Radio module with dedicated antenna ☐ Radio module with user accessible antenna connector
15	Radio Module / Antenna Type LTE	☒ Radio module with antenna on module PCB ☐ Radio module with dedicated antenna ☐ Radio module with user accessible antenna connector
16	Radio Module Certification LTE	Report Nr.: Part 22 / RSS-132: 77535RRF.001A1 Part 24 / RSS-133: 77535RRF.002A1 Part 27 / RSS130 / RSS 139: 77535RRF.003A1 ☒ Certified radio module ☐ Certified radio module with given antenna
17	Antenna Name	BLE: Würth 74889602454 LTE: 7488918022 Chip Antenna Würth Elektronik
18	Antenna number of chains BLE	1
19	Antenna number of chains LTE	1
20	Antenna Gain (declared*)	BLE:3dBi; LTE 4dBi
21	Software / Firmware (declared*)	V1.0 contains BLE: lq_base_nrf52_dtm (07.04.2026) LTE: lq_base_dualmode_rs485log_no_ble (07.04.2026) V2.2.1
22	Hardware (declared*)	V3.2
23	Companion Device used for radio connection with the EUT	EUT in Test Mode. Therefore, no Companion Device was used.
24	Auxiliary equipment used to set up the EUT	Laptop with USB to Serial adapter and NRF-Connect Software V5.2.1 (Direct Test Mode V. 2.5.3)
25	Accessory Devices used together with the EUT	Power Supply provided by TÜV Rheinland (ID 9077561)
26	Environment	Indoor and Outdoor

*declared by customer

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1 Registration

The measurement facilities for conducted and radiated disturbance measurements of the TÜV Rheinland LGA Products have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules. Measurement data will be accepted in conjunction with applications for Certification under Parts 15 and 18 of the Commission's Rules.

FCC Registration Number: 939976

Bundesnetzagentur Registration Number: BNetzA-CAB-17/21-16

The measurement facilities are also recognized by Innovation, Science and Economic Development (ISED) Canada to test to Canadian radio equipment requirements.

Company Number: 11235A

CAB Identifier: DE0018

2 EUT Classification

2.1 Wireless technologies and frequencies supported by the EUT.

Technology	Band (TX)	*IG	Used Test report for evaluation	Applied standard in the used Test report		Band f _{Range} TX [MHz]	Eval. in this report
				FCC 47 CFR	ISED RSS-		
BLE	2.4GHz	1	DE26RV8X 001	15.247	247	2400 – 2483.5	☒
LTE	85	3	77535RRF.003A1	27.5(c)	130	698-716	☒
LTE	12	3	77535RRF.003A1	27.5(c)	130	699-716	☒
LTE	17	3	77535RRF.003A1	27.5(c)	130	704-716	☒
LTE	13	3	77535RRF.003A1	27.5(b)	130	777-787	☒
LTE	26	3	77535RRF.004A1	#Part 90 S	NA	814-824	☒
			77535RRF.001A1	Part 22 H	132	824-849	☒
LTE	5	3	77535RRF.001A1	Part 22 H	132	824-849	☒
LTE	8	3	77535RRF.003A1	27.5(n)	NA	897.5-900.5	☒
LTE	66	3	77535RRF.003A1	27.5(h)	139	1710-1780	☒
LTE	4	3	77535RRF.003A1	27.5(h)	139	1710-1755	☒
LTE	25	3	77535RRF.002A1	Part 24 E	133	1850-1915	☒
LTE	2	3	77535RRF.002A1	Part 24 E	133	1850-1910	☒

*IG: Individual transmitter Group; Only one of the Technologies with the same Number can be active at a time as declared by customer.

If only one Technology can be active at a time, then all Technologies can be evaluated as a single RF-source.

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2.2 Technical data summary taken from Test reports in 2.1

Technology	Band	F _{Lowest_TX} [MHz]	P conducted [dBm]	Ant. Gain [dBi]	P EIRP [dBm]	Tune-up tolerance [dB]	P _{max} EIRP [dBm]	P _{max} ERP [dBm]
BLE	2.4GHz	2400	5.1	3	8.1	1	9.1	6.95
LTE	85	698	23.01	4	27.01	1	28.01	25.86
LTE	12	699	23.01	4	27.01	1	28.01	25.86
LTE	17	704	23.01	4	27.01	1	28.01	25.86
LTE	13	777	22.27	4	26.27	1	27.27	25.12
LTE	26	814	23.06	4	27.06	1	28.06	25.91
LTE	26/5	824	22.52	4	26.52	1	27.52	25.37
LTE	8	897.5	22.92	4	26.92	1	27.92	25.77
LTE	66	1710	22.87	4	26.87	1	27.87	25.72
LTE	4	1710	22.87	4	26.87	1	27.87	25.72
LTE	25	1850	22.79	4	26.79	1	27.79	25.64
LTE	2	1850	22.79	4	26.79	1	27.79	25.64

Conducted measurements in dBm are corrected to be EIRP values by using the following formula:

$$P_{\max} \text{ EIRP [dBm]} = P_{\max} \text{ conducted [dBm]} + \text{Antenna Gain [dBi]}.$$

EIRP values are corrected to be ERP values by using the following formula:

$$P_{\max} \text{ ERP [dBm]} = P_{\max} \text{ EIRP [dBm]} - 2.15 \text{ [dB]}.$$

Tune-up tolerances as declared by customer.

2.3 Standard specific classification of the EUT

2.3.1 Applied FCC standards

FCC CFR 47 Part 1 Subpart I §1.1307 (b)

FCC CFR 47 Part 1 Subpart I §1.1307 (b)

FCC CFR 47 Part 1 Subpart I §1.1310 (limits)

FCC CFR 47 Part 2 Subpart J §2.1091 (mobile)

FCC CFR 47 Part 2 Subpart J §2.1093 (portable)

FCC KDB 447498 D04 v01 – Interim General RF Exposure procedures Guidance (Procedures and Equipment Authorization Policies for Mobile and Portable Devices)

2.3.2 Applied ISED standards

ISED RSS-Gen I5 incl. Amendment 2:2021 General Requirements for Compliance of Radio Apparatus

RSS-102 I6 Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus

RSS-102.NS.MEAS I1 Measurement Procedure for Assessing Nerve Stimulation Compliance

Health Canada's Safety Code 6:2015

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2.3.3 Exposure conditions

	Type of exposure
☒	General public exposure
☐	Occupational exposure

	Separation distance – Intended usage location
☐	< 20 cm – portable device
☐	Body-worn device -
☐	Limb-worn device -
☐	Head exposure device -
☐	Implanted device
☒	≥ 20 cm – mobile or fixed device
☐	Fixed device (physically secured at one location, even temporarily) specific mitigation actions are required
☒	Mobile device

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3 Test results in detail FCC RF exposure evaluation

An application for FCC equipment authorization must include an RF exposure evaluation, as required by 47 CFR § 1.1307 and the applicable RF exposure procedures defined in FCC KDB 447498. Depending on the device characteristics and operating conditions, compliance is demonstrated by means of an MPE evaluation, SAR assessment, or an applicable test exclusion.

3.1 Maximum Permissible Exposure Evaluation (MPE) Mobile device or fixed RF source

3.1.1 Description

For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 to § 1.1310(e)(1), may be used instead of whole-body SAR limits to evaluate the environmental impact of human exposure to RF radiation as specified in § 1.1307(b) of this part, except for portable devices as defined in § 2.1093 of this chapter as these evaluations shall be performed according to the SAR provisions in § 2.1093.

3.1.2 Limits

Limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields from §1.1310(e)(1) are shown in the table below.

Table 1 to § 1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)				
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) 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
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) 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
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

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3.1.3 Evaluation for Technologies assumed to be in far field at the distance d

In the far-field zone of an electromagnetic source, electric field strength, magnetic field strength and power density are interrelated by simple mathematical expressions, where any one of these parameters defines the remaining two.

For the MPE evaluation the maximum measured output powers $P_{\max}$ for each Band from the above-mentioned test reports corrected for tune-up tolerance are considered.

With these, the respective power densities S in a distance of d can be calculated with $S = \frac{P_{\max}}{4\pi d^2}$. For this calculation $P_{\max}$ has to be specified as or transferred to an EIRP Value.

As some limits are frequency dependent, for each Band the limit is calculated based of the lowest band edge frequency f_{Lowest} .

Technology	Band	Note	d [cm]	f_{Lowest} [MHz]	$P_{\max}$ EIRP [dBm]	$P_{\max}$ EIRP [mW]	S [mW/cm ²]	S_L [mW/cm ²]	S/S_L
BLE	2.4GHz		20	2400	9.1	8.13	0.0016	5.0000	0.0003
LTE	85		20	698	28.01	632.41	0.1258	2.3267	0.0541
LTE	12		20	699	28.01	632.41	0.1258	2.3300	0.0540
LTE	17		20	704	28.01	632.41	0.1258	2.3467	0.0536
LTE	13		20	777	27.27	533.33	0.1061	2.5900	0.0410
LTE	26		20	814	28.06	639.73	0.1273	2.7133	0.0469
LTE	26/5		20	824	27.52	564.94	0.1124	2.7467	0.0409
LTE	8		20	880	27.92	619.44	0.1232	2.9333	0.0420
LTE	66		20	1710	27.87	612.35	0.1218	5.0000	0.0244
LTE	4		20	1710	27.87	612.35	0.1218	5.0000	0.0244
LTE	25		20	1850	27.79	601.17	0.1196	5.0000	0.0239
LTE	2		20	1850	27.79	601.17	0.1196	5.0000	0.0239

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3.1.4 Final evaluation

3.1.4.1 Multiple RF sources

Per § 1.1307(b)(3)(ii)(B)

In the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period then these are exempt if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1.

$$\sum_{k=1}^n \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

Where:

Evaluated_k = the maximum reported SAR or MPE

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.

Technology	Band	d [cm]	<i>Evaluated_k / Exposure Limit_k</i>
BLE	2.4GHz	20	0.0003
LTE	85	20	0.0541
Sum			0.0544

3.1.5 Final test result

Final test result	Pass
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4 ISED RF exposure Compliance of Radiocommunication Apparatus

Radio frequency devices operating under the provisions of RSS-Gen are subject to the radio frequency radiation exposure requirements specified in RSS-102.

Nerve stimulation (NS):

Devices that operate within the frequency range of 3 kHz to 10 MHz shall have an assessment against NS. Furthermore, portable devices operating between 100 kHz and 10 MHz shall also have an assessment against SAR.

SAR:

Specific absorption rate (SAR) is the rate of RF energy absorbed in tissue, per unit mass.

Portable devices (operated at 20 cm or less from the body) containing a radiating element operating at a frequency between 100 kHz and 6 GHz shall undergo a SAR evaluation.

Localized power density:

Devices that have a radiating element that operate above 6 GHz and up to 300 GHz shall undergo a power density evaluation.

Field reference level (FRL) evaluation:

Field reference level exposure evaluation is required if the separation distance between the device and the user or bystander is greater than 20 cm. This was referred to as 'RF exposure evaluation' in previous versions of RSS-102. An FRL evaluation is permitted for devices with antennas operating in the far field with separation distance of less than 20 cm; the exposure condition shall be in the far field of the antenna.

In situations where the determination of internal electric field strength is not possible or practical by measurement or simulation, external unperturbed field strength assessment shall be carried out and the reference levels shall be respected.

SAR values from exempted transmitters shall be included in the total exposure assessment. A SAR value of 0.4 W/kg for 1 g, 1 W/kg for 10 g, or an estimated SAR value based on the ratio of the power level and the power exemption limit may be used to determine the standalone SAR value for test configurations that do not require a SAR evaluation based on test reductions or on the exemption limits outlined in section 6.3.

The estimated SAR value, *SAR_{estimated}*, is calculated using equation :

$$SAR_{estimated} = P_{max}/P_{max,exemption}) * 0.25 * SAR_{limit} \text{ W/kg}$$

where: *P_{max}* is the maximum power level including tune-up tolerance for the exempted transmitter

P_{max,exemption} is the maximum power level of exemption at the same frequency and distance for the exempted transmitter

SAR_{limit} is the applicable SAR limit (e.g. 1.6 W/kg for 1 g or 4 W/kg for 10 g)

For example, transmitter A has a maximum output power of 2 mW and the power exemption threshold is 3 mW at that specific frequency and distance (i.e. 2.45 GHz with a separation distance of 5 mm). The estimated SAR = (2 mW / 3 mW) * 0.4 W/kg = 0.27 W/kg.

The SAR levels from exempted transmitters shall be included in the total exposure ratio assessment.

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4.1 ISED Maximum Exposure Requirements

According to RSS-102 issue 6, Industry Canada has adopted the SAR and RF field strength limits established in Health Canada's RF exposure guideline, Safety Code 6 (2015) and its Notice. Any updates to Safety Code 6 and/or its Notice will supersede the values outlined in RSS-102 issue 6

4.1.1 Limits

4.1.1.1 Electric and Magnetic Field Strength (3 kHz - 10 MHz)

Table 5: Electric field strength reference levels

Frequency range (MHz)	Reference level basis	Reference level (E_{RL}) for uncontrolled environment (V_{RMS}/m)	Reference level (E_{RL}) for controlled environment (V_{RMS}/m)	Reference period
0.003 -10	NS	83	170	Instantaneous
1.10-10	SAR	$87/f^{0.5}$	N/A	6 minutes
1.29-10	SAR	N/A	$193/f^{0.5}$	6 minutes

Note: f is frequency in MHz.

Table 6: Magnetic field strength reference levels

Frequency range (MHz)	Reference level basis	Reference level (H_{RL}) for uncontrolled environment (A_{RMS}/m)	Reference level (H_{RL}) for controlled environment (A_{RMS}/m)	Reference period
0.003-10	NS	90	180	Instantaneous
0.1-10	SAR	$0.73/f$	$1.6/f$	6 minutes

Note: f is frequency in MHz.

For both table 5 and table 6, refer to Health Canada's [Safety Code 6](#) for relevant notes and additional information.

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4.1.1.2 Electric Field Strength, Magnetic Field Strength and Power Density (10 MHz - 300 GHz) general public

To ensure compliance with the basic restrictions at frequencies between 10 MHz and 300 GHz, the reference levels for electric- and magnetic-field strength and power density must be complied with.

Table 7: RF field strength and power density limits for devices used by the general public (uncontrolled environment)

Frequency range (MHz)	Electric field (V _{RMS} /m)	Magnetic field (A _{RMS} /m)	Power density (W/m ²)	Reference period (minutes)
10-20	27.46	0.0728	2	6
20-48	$58.07 / f^{0.25}$	$0.1540 / f^{0.25}$	$8.944 / f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142 f^{0.3417}$	$0.008335 f^{0.3417}$	$0.02619 f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000 / f^{1.2}$
150000-300000	$0.158 f^{0.5}$	$4.21 \times 10^{-4} f^{0.5}$	$6.67 \times 10^{-5} f$	$616000 / f^{1.2}$

Note: f is frequency in MHz.

4.1.1.3 Electric Field Strength, Magnetic Field Strength and Power Density (10 MHz - 300 GHz) controlled-use devices

Table 8: RF field strength and power density limits for controlled-use devices (controlled environment)

Frequency range (MHz)	Electric field (V _{RMS} /m)	Magnetic field (A _{RMS} /m)	Power density (W/m ²)	Reference period (minutes)
10-20	61.4	0.163	10	6
20-48	$129.8 / f^{0.25}$	$0.3444 / f^{0.25}$	$44.72 / f^{0.5}$	6
48-100	49.33	0.1309	6.455	6
100-6000	$15.60 f^{0.25}$	$0.04138 f^{0.25}$	$0.6455 f^{0.5}$	6
6000-15000	137	0.364	50	6
15000-150000	137	0.364	50	$616000 / f^{1.2}$
150000-300000	$0.354 f^{0.5}$	$9.40 \times 10^{-4} f^{0.5}$	$3.33 \times 10^{-4} f$	$616000 / f^{1.2}$

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4.1.2 Evaluation for Technologies assumed to be in far field at the distance d

In the far-field zone of an electromagnetic source, electric field strength, magnetic field strength and power density are interrelated by simple mathematical expressions, where any one of these parameters defines the remaining two.

For the Maximum Exposure evaluation the maximum measured output powers $P_{\max}$ for each Band from the above-mentioned test reports are considered.

With these, the respective power densities S in a distance of d can be calculated with $S = \frac{P_{\max}}{4\pi d^2}$. For this calculation $P_{\max}$ has to be specified as or transferred to an EIRP Value.

As some limits are frequency dependent, for each Band the limit is calculated based of the lowest band edge frequency f_{Lowest} .

Technology	Band	Note	d [cm]	f_{Lowest} [MHz]	$P_{\max}$ EIRP [dBm]	$P_{\max}$ EIRP [mW]	S [mW/cm ²]	S_L [mW/cm ²]	S/ S_L
BLE	2.4GHz		20	2400	9.1	8.13	0.0016	5.34776	0.0003
LTE	85		20	698	28.01	632.41	0.1258	2.29946	0.0547
LTE	12		20	699	28.01	632.41	0.1258	2.30171	0.0547
LTE	17		20	704	28.01	632.41	0.1258	2.31295	0.0544
LTE	13		20	777	27.27	533.33	0.1061	2.47428	0.0429
LTE	26		20	814	28.06	639.73	0.1273	2.55421	0.0498
LTE	26/5		20	824	27.52	564.94	0.1124	2.57561	0.0436
LTE	8		20	1500	27.92	619.44	0.1232	3.87861	0.0318
LTE	66		20	1710	27.87	612.35	0.1218	4.24195	0.0287
LTE	4		20	1710	27.87	612.35	0.1218	4.24195	0.0287
LTE	25		20	1850	27.79	601.17	0.1196	4.47632	0.0267
LTE	2		20	1850	27.79	601.17	0.1196	4.47632	0.0267

4.1.3 Final evaluation

4.1.3.1 Multiple RF sources

Per Safety Code 6 clause 2.2.2, for simultaneous exposure to multiple frequencies and where exposure is estimated in terms of power density, each of the power density frequency component amplitudes shall be divided by the corresponding reference level for that frequency, and the sum of all these ratios shall not exceed unity.

Technology	Band	d [cm]	S/ S_L
BLE	2.4GHz	20	0.0003
LTE	85	20	0.0547
Sum			0.055

The equipment meets the requirements according to Safety Code 6 clause 2.2.2 since the sum of the calculated results for the power density frequency component amplitudes divided by the corresponding reference levels is below the applicable limit of 1.

4.1.4 Final test result

The equipment is compliant according to Health Canada Safety Code 6 (2015).

Final test result	Pass
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Photo documentation

5 Test Setup Photo

For reasons of confidentiality, no photos of the EUT are included in this report.
For EUT and test setup photos please see the Photo Documentation to this report Number.

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Zusatzdokumentation
Additional documentation

6 Application form

The following information was provided by the customer and form the basis for the execution of the tests and the assessment of conformity. The given information can affect the results of both.

No application form was provided.

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Change history

7 Change history

Revision Number	List of revisions
001	Initial Release
Note: Latest revision report will replace all previous reports.	

Ende des Prüfberichts
End of Test Report