R F – T E S T R E P O R T

- FCC Part 15B -

Model Name	:	OneTouch Verio Flex / HVIN: ZH
Product Description	:	Blood glucose meter with BLE 5.0
Applicant	:	Lifescan Scotland Ltd.
Address	:	Beechwood Park North
		INVERNESS, IV2 3ED, SCOTLAND
Manufacturer	:	Lifescan Europe GmbH
Address	:	Gubelstrasse 34
		6300 ZUG, SWITZERLAND
Licence holder	:	Lifescan Europe GmbH
Address	:	Gubelstrasse 34
		6300 ZUG, SWITZERLAND

Test Result according to the standards listed in clause 1 test standards:	**POSITIVE**

Test Report No. : 80125751-04 Rev_2	08. February 2023 Date of issue

Deutsche Akkreditierungsstelle
D-PL-12030-01-03
D-PL-12030-01-04

CSA Group Bayern GmbH
Ohmstrasse 1-4 · 94342 STRASSKIRCHEN · GERMANY
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1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules and Regulations Part 15 Subpart B - Unintentional Radiators (September 2022)

Part 15, Subpart B, Section 15.107	AC Line conducted emission ☐ Class A device ☒ Class B device
Part 15, Subpart B, Section 15.109	Radiated emission, general requirements ☐ Class A device ☒ Class B device
ANSI C63.4: 2014	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
CISPR 16-4-2: 2011 + A1: 2014 EN 55016-4-2: 2011	Uncertainty in EMC measurement

ISED Canada Rules and Regulations - Information Technology Equipment (Including Digital Apparatus)

ICES-003, Issue 7, October 15, 2020	AC Power Line Conducted Emissions ☐ Class A device ☒ Class B device
ICES-003, Issue 7, October 15, 2020	Radiated emission ☐ Class A device ☒ Class B device
ANSI C63.4: 2014	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

2 TEST RESULT SUMMARY

FCC Rule Part	ISED Standard	Description
15.107	ICES-003/RSS-Gen	AC power line conducted emissions
15.109	ICES-003/RSS-Gen	Radiated Emissions

Type of test		Test result
Emission:		
A4	Conducted emission (AC mains power / DC power)	passed
A5	Radiated emission (< 1 GHz)	passed
SER 3	Radiated emission (> 1 GHz)	passed

2.1 Revision history of test report

Test report No	Rev.	Issue Date	Changes
80125751-04	0	13 July 2022	Initial test report
80125751-04	1	30 January 2023	Test mode changed
80125751-04	2	08 February 2023	HVIN corrected, 3.9 AC adapter added

The test report with the highest revision number replaces the previous test reports.

2.2 Final assessment

The equipment under test fulfils the requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 10 January 2023

Testing concluded on : 10 January 2023

Checked by:

Klaus Gegenfurtner
2023.02.08 08:33:33
+01'00'

Klaus Gegenfurtner
Teamleader Radio

Tested by:

Sabine Kugler
2023.02.08 08:12:30
+01'00'

Sabine Kugler
Radio Team

3 EQUIPMENT UNDER TEST

3.1 Information provided by the Client

Please note, we do not take any responsibility for information provided by the client or his representative which may have an influence on the validity of the test results.

3.2 Sampling

The customer is responsible for the choice of sample. Sample configuration, start-up and operation is carried out by the customer or according his/her instructions.

3.3 Photo documentation of the EUT – Detailed photos see ATTACHMENT A

3.4 General remarks

None

3.5 Power supply system utilised

Power supply voltage, V_{nom} : 3 VDC (battery)

3.6 Highest internal frequency

Highest internal frequency : 2483.5 MHz

3.7 Short description of the Equipment under Test (EUT)

The EUT is a blood glucose meter equipped with Bluetooth Low Energy. A single PCB antenna is used within the system. The EUT has only one integrated antenna, no temporary connector and no external antenna can be connected. The modulation used by the EUT is GFSK with a data rate of 1 Mbit/s.

Number of tested samples	:	1
Serial number	:	Z1QGJ073
Firmware number	:	1.9.2
Type	:	OneTouch Verio Flex

3.8 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

- Data communication with notebook via USB

3.9 EUT configuration

The following peripheral devices and interface cables were connected during the measurements:

- Lab notebook 'Mess_Funk_2' Model : Lifebook, Fujitsu

- AC adapter (lab notebook) Model : PJW1942NA, Fujitsu Limited

Port	Cable	Screening	Transmission	Status	Length
1	USB	shielded	digital	active	1 m

Modifications during the EMC test: None

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

CSA Group Bayern GmbH
Ohmstrasse 1-4
94342 STRASSKIRCHEN
GERMANY

4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15 - 35 °C
Humidity:	30 - 60 %
Atmospheric pressure:	86 - 106 kPa

4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. It is noted that the expanded measurement uncertainty corresponds to the measurement results from the standard measurement uncertainty multiplied by the coverage factor k = 2. The true value is located in the corresponding interval with a probability of 95 %. The measurement uncertainty was calculated for all measurements listed in this test report on basis of the ETSI Technical Report TR 100 028 Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1 and Part 2. The results are documented in the quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

4.4 Conformity Decision Rule

The applied conformity decision rule is based on ILAC G8:09/2019 clause 4.2.1 Binary Statement for Simple Acceptance Rule (w = 0).
Details can be found in the procedure CSA_B_V50_29.

4.5 Measurement protocol for FCC and ISED

4.5.1 General information

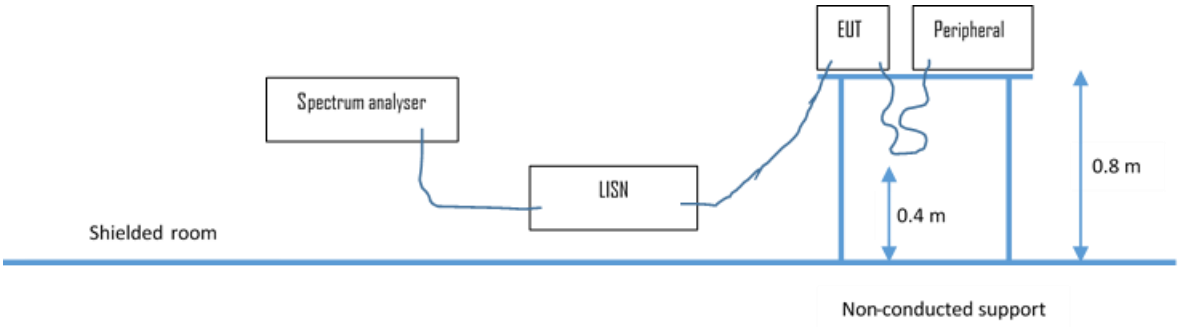
CSA Group Bayern GmbH is recognized as wireless testing laboratory under the CAB identifier:

FCC: DE 0011
ISED: DE0009

4.5.2 Details of test procedures

4.5.2.1 Conducted emission

Test setup according ANSI C63.4



Description of measurement

The final level, expressed in dBμV, is arrived at by taking the reading directly from the Spectrum analyser. This level is compared to the limit.

To convert between dBμV and μV, the following conversions apply:

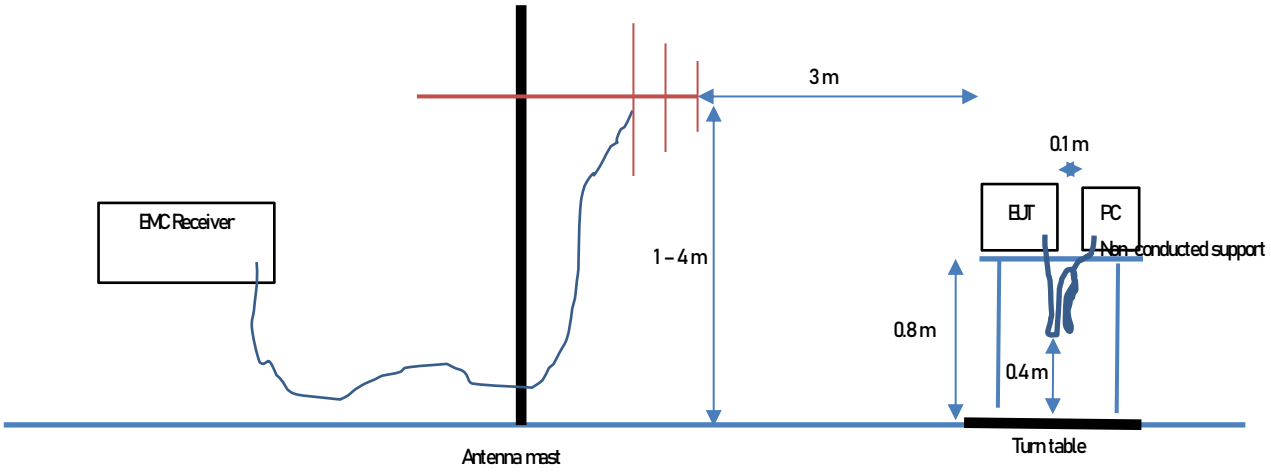
dBμV = 20(log μV)

μV = Inverse log(dBμV/20)

Conducted emissions on the 50 Hz and/or 60 Hz power interface of the EUT are measured in the frequency range of 150 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasi-peak detection and a Line Impedance Stabilization Network (LISN) with 50 Ω / 50 μH (CISPR 16) characteristics. The receiver is protected by means of an impedance matched pulse limiter connected directly to the RF input. Table top equipment is placed on a non-conducting table 80 centimetres above the floor and is positioned 40 centimetres from the vertical ground plane (wall) of the screen room. If the minimum limit margin appears to be less than 20 dB with a peak mode measurement, the emission is re-measured using a tuned receiver with quasi-peak and average detection and recorded on the data sheets.

4.5.2.2 Radiated emission

4.5.2.2.1 **OATS1 test site (30 MHz - 1 GHz)**
Test setup according ANSI C63.4



Description of measurement

Spurious emission from the EUT is measured in the frequency range of 30 MHz to 1000 MHz using a tuned receiver and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection. Table top equipment is placed on a 1.0 X 1.5 metre non-conducting table 80 centimetres above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. The setup of the equipment under test is established in accordance with ANSI C63.4. The interface cables that are closer than 40 centimetres to the ground plane are bundled in the centre in a serpentine fashion so that they are at least 40 centimetres from the ground plane. Cables to simulators/testers (if used in this test) are routed through the centre of the table and to a screened room located outside the test area.
The antenna is positioned 3 or 10 metres horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 metres, measurement scans are made with both horizontal and vertical antenna polarization planes and the EUT is rotated 360 degrees.

The final level is calculated in a calculation sheet by taking the reading from the EMI receiver (Level dBµV) and adding the correction factors and cable loss factor (Factor dB) on to it. The limit is subtracted from this result in order to provide the limit margin listed in the measurement protocols.

Example:

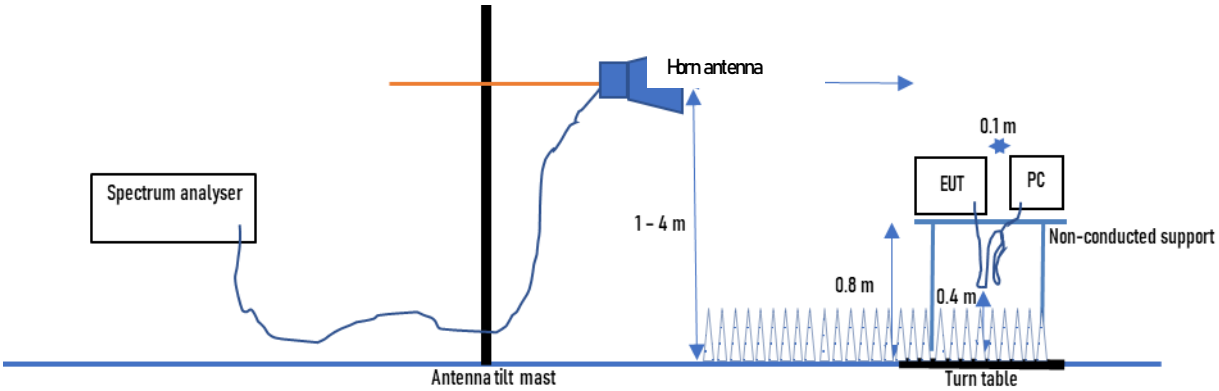
Frequency (MHz)	Reading (dBµV)	+	Correction* (dB/m)	=	Level (dBµV/m)	-	Limit (dBµV/m)	=	Dlimit (dB)
719.0	75.0	+	32.6	=	107.6	-	110.0	=	-2.4

*Correction Factor = Antenna Factor + Cable Attenuation = 30 dB/m + 2.6 dB = 32.6 dB/m

The resolution bandwidth during the measurement is as follows:
30 MHz – 1000 MHz: RBW: 120 kHz

4.5.2.2.2 **Anechoic chamber 1, 1000 MHz – 18000 MHz**

Test setup according ANSI C63.4

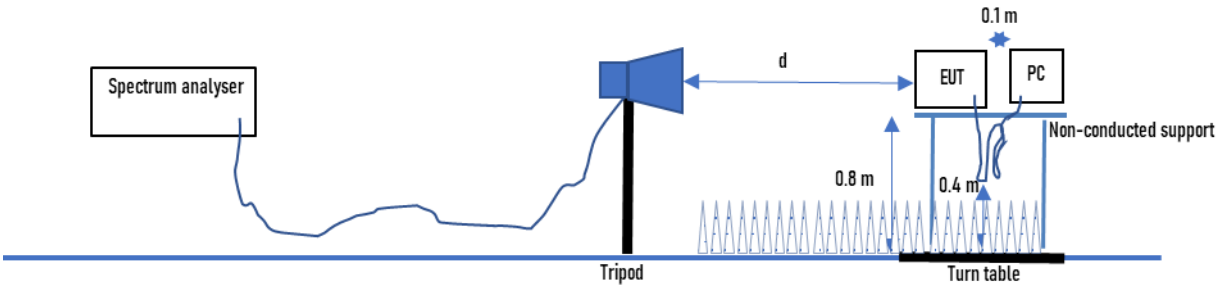


Description of measurement

Radiated emission from the EUT are measured in the frequency range of 1 GHz to the maximum frequency as specified in 47 CFR Part 15 Subpart A section 15.33, using a tuned receiver (spectrum analyser) and appropriate linearly polarized antennas. Table top equipment is placed on a 0.65 X 1.0 metre non-conducting table 80 centimetres above the ground plane. The turntable is fully covered with the appropriate absorber (Type VHP-12).
The interface cables that are closer than 40 centimetres to the ground plane are bundled in the centre in a serpentine fashion, so they are at least 40 centimetres from the ground plane. Measurements are made in both the horizontal and vertical polarization planes in a fully anechoic room using a spectrum analyser set to a peak detector function and a RBW= 1 MHz and VBW = 3 MHz. All tests are performed at a test distance of 3 metres. Hand-held or body-worn devices are rotated around three orthogonal axes in order to determine the position, angle and configuration having the maximum emission. The antenna height is then adjusted from 1 m to 4 m maximizing the measured value. The antenna is mounted to a boresight axis, so the antenna centre always points to the EUT. The turntable is rotated 360° until the spectrum analyser displays the maximum level at the observed frequency. The antenna height is then adjusted from 1 m to 4 m maximizing the measured value. The turntable is re-adjusted to re-affirm the maximum emission value which is then recorded. This procedure is repeated for all frequencies of interest.

4.5.2.2.3 **Anechoic chamber 1, 18 GHz – 40 GHz**

Test setup according ANSI C63.4



Description of measurement

Radiated emission from the EUT are measured in the frequency range of 1 GHz to the maximum frequency as specified in 47 CFR Part 15 Subpart A section 15.33, using a tuned receiver (spectrum analyser) and appropriate linearly polarized antennas. Table top equipment is placed on a 0.65 X 1.0 metre non-conducting table 80 centimetres above the ground plane. The turntable is fully covered with the appropriate absorber (Type VHP-12).
The interface cables that are closer than 40 centimetres to the ground plane are bundled in the centre in a serpentine fashion, so they are at least 40 centimetres from the ground plane. Measurements are made in both the horizontal and vertical polarization planes in a fully anechoic room using a spectrum analyser set to a peak detector function and an RBW= 1 MHz and VBW = 3 MHz. All tests are performed at a test distance of 3 metres. Hand-held or body-worn devices are rotated around three orthogonal axes in order to determine the position, angle and configuration having the maximum emission. The turntable is rotated 360° until the spectrum analyser displays the maximum level at the observed frequency, the maximum emission value is then recorded. This procedure is repeated for all frequencies of interest.
Where appropriate in frequency range 18 GHz - 40 GHz, the test distance may be reduced to 1 m in order to reduce the noise level to hold a minimum distance between noise level and limit. The limit will be adopted to the measurement distance.

5 TEST CONDITIONS AND RESULTS

5.1 Conducted emission

For test instruments and accessories used see section 6 Part **A 4**.

5.1.1 Description of the test location

Test location: Shielded Room S2

5.1.2 Photo documentation of the test setup

See Attachment B2 for detailed photo documentation of the test set-up.

5.1.3 Test result

Frequency range: 0.15 MHz - 30 MHz

Min. limit margin -10.6 dB at 0.263 MHz

Limit according to FCC Part 15, Section 15.107(a):

Frequency of Emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency

Limit according to ICES-003 3.2.1:

Frequency of Emission (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases linearly with the logarithm of frequency

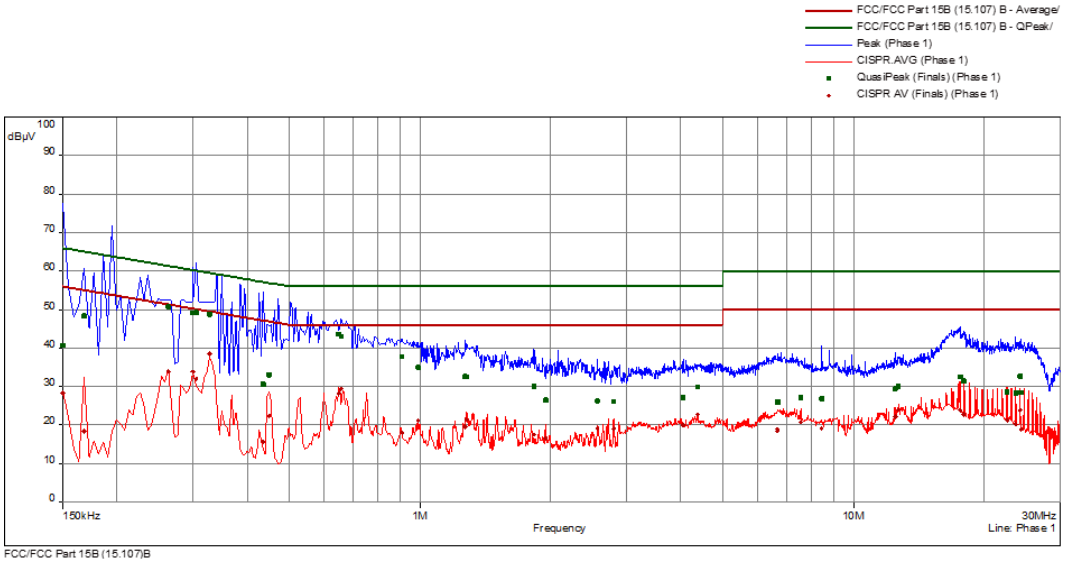
The requirements are **FULFILLED.**

Remarks: For detailed results, please see the following page(s).

For description of the measurement see 4.5.2.

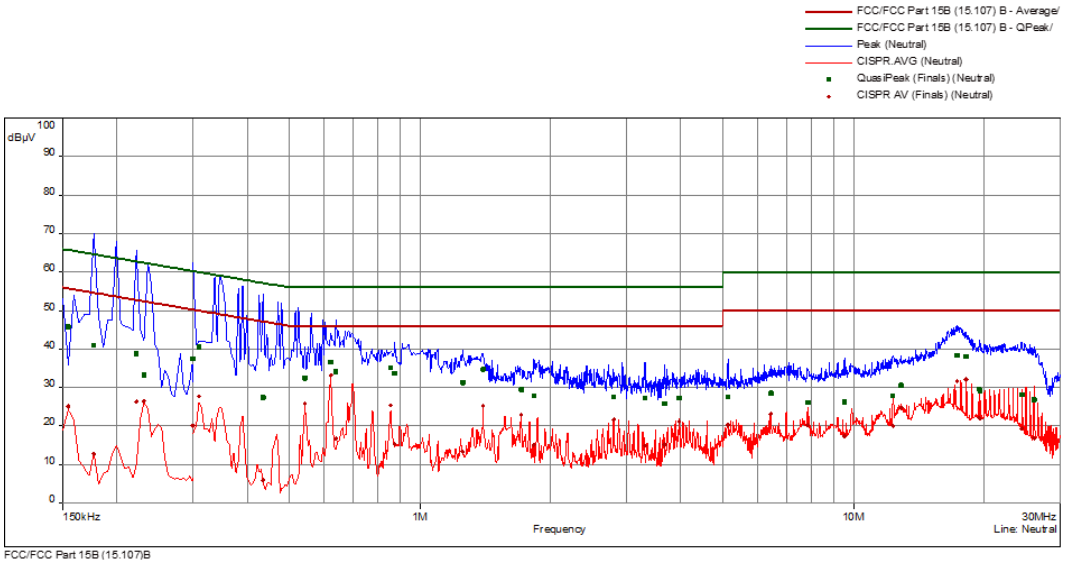
5.1.4 Test protocol

Test point: L1 Result: passed
Operation mode: Data communication with notebook via USB
Remarks: None



freq	SR	QP	margin	limit	AV	margin	limit	line	corr
MHz		dB(µV)	dB	dB	dB(µV)	dB	dB		dB
0.150	1	40.7	-25.3	66.0	28.4	-27.6	56.0	Phase 1	10.1
0.168	1	48.4	-16.7	65.1	18.4	-36.7	55.1	Phase 1	10.1
0.263	1	50.7	-10.6	61.4	33.9	-17.5	51.4	Phase 1	10.1
0.300	1	49.1	-11.1	60.2	33.8	-16.4	50.2	Phase 1	10.1
0.305	2	49.3	-10.8	60.1	32.0	-18.1	50.1	Phase 1	10.1
0.327	2	48.8	-10.8	59.5	38.6	-11.0	49.5	Phase 1	10.1
0.435	2	30.6	-26.6	57.2	15.7	-31.4	47.2	Phase 1	10.2
0.449	2	33.0	-23.9	56.9	22.4	-24.5	46.9	Phase 1	10.2
0.650	3	43.7	-12.3	56.0	28.2	-17.8	46.0	Phase 1	10.2
0.659	3	43.1	-12.9	56.0	29.4	-16.6	46.0	Phase 1	10.2
0.911	3	37.8	-18.3	56.0	18.1	-27.9	46.0	Phase 1	10.2
0.992	3	35.0	-21.0	56.0	21.1	-24.9	46.0	Phase 1	10.2
1.272	4	32.6	-23.4	56.0	19.5	-26.5	46.0	Phase 1	10.3
1.281	4	32.5	-23.5	56.0	21.4	-24.6	46.0	Phase 1	10.3
1.835	4	30.1	-25.9	56.0	17.5	-28.5	46.0	Phase 1	10.3
1.952	4	26.5	-29.6	56.0	16.6	-29.4	46.0	Phase 1	10.3
2.567	5	26.3	-29.7	56.0	19.1	-26.9	46.0	Phase 1	10.3
2.801	5	26.1	-29.9	56.0	19.2	-26.8	46.0	Phase 1	10.3
4.052	5	27.2	-28.8	56.0	20.0	-26.0	46.0	Phase 1	10.4
4.376	5	30.0	-26.0	56.0	22.8	-23.2	46.0	Phase 1	10.4
6.681	6	25.8	-34.2	60.0	18.6	-31.4	50.0	Phase 1	10.6
6.690	6	26.2	-33.8	60.0	18.9	-31.1	50.0	Phase 1	10.6
7.559	6	27.1	-33.0	60.0	20.8	-29.2	50.0	Phase 1	10.6
8.454	6	26.9	-33.1	60.0	19.1	-30.9	50.0	Phase 1	10.6
12.485	7	29.5	-30.5	60.0	22.2	-27.8	50.0	Phase 1	10.9
12.710	7	30.0	-30.0	60.0	24.0	-26.1	50.0	Phase 1	10.9
17.628	7	32.6	-27.4	60.0	23.8	-26.2	50.0	Phase 1	11.1
17.993	7	31.6	-28.5	60.0	22.7	-27.3	50.0	Phase 1	11.2
22.602	8	28.5	-31.5	60.0	21.3	-28.7	50.0	Phase 1	11.4
23.714	8	28.3	-31.7	60.0	20.2	-29.8	50.0	Phase 1	11.5
24.258	8	32.7	-27.3	60.0	23.8	-26.2	50.0	Phase 1	11.5
24.411	8	28.4	-31.6	60.0	19.0	-31.1	50.0	Phase 1	11.5

Test point: N Result: passed
Operation mode: Data communication with notebook via USB
Remarks: None



freq	SR	QP	margin	limit	AV	margin	limit	line	corr
MHz		dB(µV)	dB	dB	dB(µV)	dB	dB		dB
0.155	9	45.8	-19.9	65.8	25.1	-30.7	55.8	Neutral	10.1
0.177	9	41.0	-23.6	64.6	12.8	-41.8	54.6	Neutral	10.1
0.222	9	38.8	-24.0	62.7	26.4	-26.3	52.7	Neutral	10.1
0.231	9	33.3	-29.1	62.4	26.5	-25.9	52.4	Neutral	10.1
0.300	10	37.5	-22.7	60.2	20.1	-30.1	50.2	Neutral	10.2
0.309	10	40.6	-19.4	60.0	27.7	-22.3	50.0	Neutral	10.2
0.435	10	27.4	-29.7	57.2	6.0	-41.2	47.2	Neutral	10.2
0.543	10	32.4	-23.6	56.0	25.8	-20.2	46.0	Neutral	10.2
0.623	11	36.6	-19.4	56.0	33.2	-12.8	46.0	Neutral	10.2
0.641	11	34.2	-21.8	56.0	16.8	-29.2	46.0	Neutral	10.2
0.857	11	35.2	-20.8	56.0	25.4	-20.6	46.0	Neutral	10.2
0.875	11	33.7	-22.3	56.0	15.3	-30.7	46.0	Neutral	10.2
1.254	12	31.3	-24.7	56.0	13.4	-32.6	46.0	Neutral	10.3
1.398	12	34.8	-21.2	56.0	25.3	-20.7	46.0	Neutral	10.3
1.713	12	29.4	-26.6	56.0	22.9	-23.1	46.0	Neutral	10.3
1.835	12	28.0	-28.1	56.0	15.2	-30.8	46.0	Neutral	10.3
2.801	13	27.6	-28.4	56.0	21.7	-24.3	46.0	Neutral	10.4
3.305	13	27.3	-28.7	56.0	15.0	-31.0	46.0	Neutral	10.4
3.669	13	25.9	-30.1	56.0	15.2	-30.8	46.0	Neutral	10.4
3.962	13	27.4	-28.7	56.0	21.1	-24.9	46.0	Neutral	10.4
5.138	14	27.6	-32.4	60.0	20.3	-29.7	50.0	Neutral	10.5
6.447	14	28.6	-31.4	60.0	23.1	-26.9	50.0	Neutral	10.6
7.851	14	26.2	-33.8	60.0	20.3	-29.7	50.0	Neutral	10.6
9.543	14	26.3	-33.7	60.0	17.4	-32.6	50.0	Neutral	10.6
12.336	15	27.8	-32.2	60.0	20.1	-29.9	50.0	Neutral	10.8
12.894	15	30.6	-29.4	60.0	24.7	-25.3	50.0	Neutral	10.8
17.336	15	38.3	-21.7	60.0	31.7	-18.3	50.0	Neutral	11.0
18.218	15	38.0	-22.0	60.0	32.1	-17.9	50.0	Neutral	11.0
19.511	16	29.7	-30.3	60.0	22.2	-27.8	50.0	Neutral	11.1
19.601	16	29.1	-30.9	60.0	22.0	-28.0	50.0	Neutral	11.1
24.488	16	28.1	-31.9	60.0	19.3	-30.7	50.0	Neutral	11.1
26.117	16	26.9	-33.2	60.0	16.9	-33.1	50.0	Neutral	11.1

5.2 Radiated emission < 1 GHz (electric field)

For test instruments and accessories used see section 6 Part **A 5**.

5.2.1 Description of the test location

Test location: OATS 1
Test distance: 10 m

5.2.2 Photo documentation of the test setup

See Attachment B2 for detailed photo documentation of the test set-up.

5.2.3 Test result

Frequency range: 30 MHz - 1000 MHz
Min. limit margin -13.1 dB at 720.0 MHz

Limit according to FCC Part 15, Section 15.109(a):

Frequency of emission (MHz)	Field strength @3m (µV/m)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

Limit according to ICES-003 3.2.2:

Frequency range (MHz)	Quasi-peak @3m (dB µV/m)
30 - 88	40
88 - 216	43.5
216 - 230	46
230 - 960	47
960 - 1000	54

The requirements are **FULFILLED.**

Remarks: For detailed results, please see the following page(s).

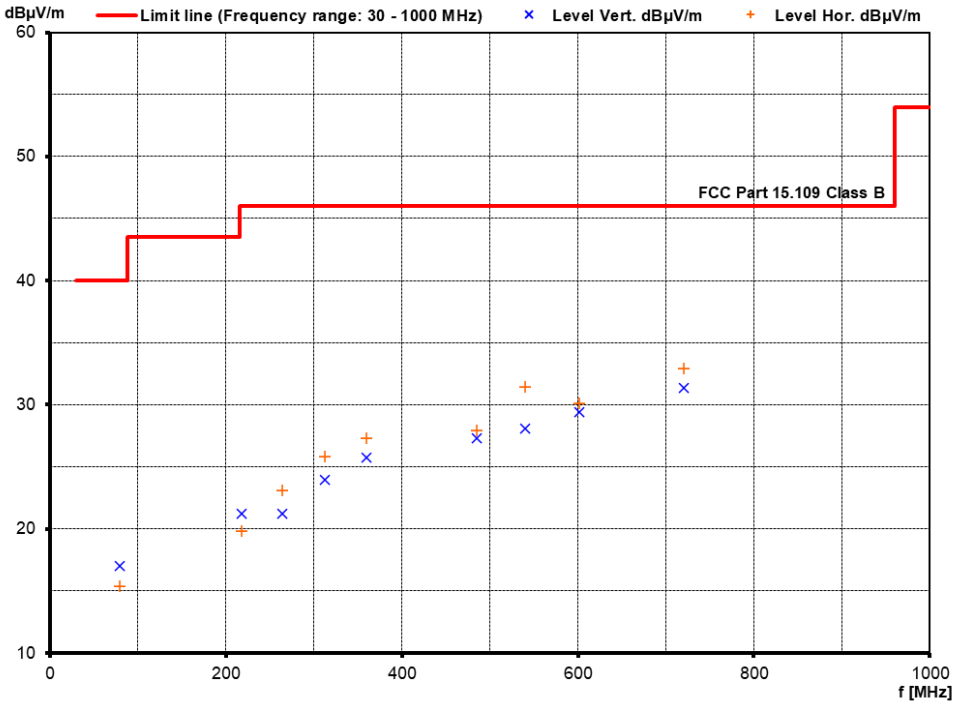
For description of the measurement see 4.5.2.

5.2.4 Test protocol

Operation mode: Data communication with notebook via USB Result: passed
Remarks: None

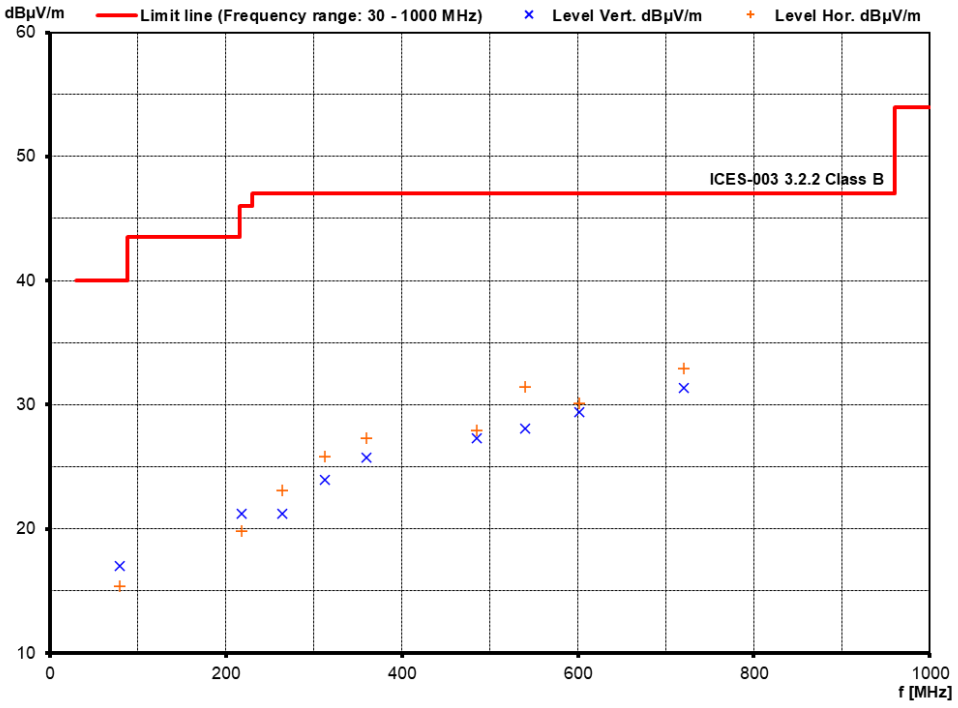
According to FCC Part 15, Section 15.109:

Frequency (MHz)	Reading Vert. (dBµV)	Reading Hor. (dBµV)	Correct. Vert. (dB)	Correct. Hor. (dB)	Level Vert. (dBµV/m)	Level Hor. (dBµV/m)	Limit (dBµV/m)	Dlimit (dB)
79.40	2.7	0.7	14.3	14.7	17.0	15.4	40.0	-23.0
218.00	3.6	2.7	17.6	17.2	21.2	19.9	46.0	-24.8
264.00	2.1	3.8	19.1	19.3	21.2	23.1	46.0	-22.9
312.00	3.4	4.8	20.5	21.0	23.9	25.8	46.0	-20.2
360.00	3.8	4.9	21.9	22.4	25.7	27.3	46.0	-18.7
485.00	2.0	2.3	25.3	25.6	27.3	27.9	46.0	-18.1
540.00	1.5	4.5	26.6	27.0	28.1	31.5	46.0	-14.5
602.00	1.4	1.7	28.0	28.4	29.4	30.1	46.0	-15.9
720.00	1.5	2.5	29.9	30.4	31.4	32.9	46.0	-13.1



According to ICES-003 3.2.2:

Frequency (MHz)	Reading Vert. (dBµV)	Reading Hor. (dBµV)	Correct. Vert. (dB)	Correct. Hor. (dB)	Level Vert. (dBµV/m)	Level Hor. (dBµV/m)	Limit (dBµV/m)	Dlimit (dB)
79.40	2.7	0.7	14.3	14.7	17.0	15.4	40.0	-23.0
218.00	3.6	2.7	17.6	17.2	21.2	19.9	46.0	-24.8
264.00	2.1	3.8	19.1	19.3	21.2	23.1	47.0	-23.9
312.00	3.4	4.8	20.5	21.0	23.9	25.8	47.0	-21.2
360.00	3.8	4.9	21.9	22.4	25.7	27.3	47.0	-19.7
485.00	2.0	2.3	25.3	25.6	27.3	27.9	47.0	-19.1
540.00	1.5	4.5	26.6	27.0	28.1	31.5	47.0	-15.5
602.00	1.4	1.7	28.0	28.4	29.4	30.1	47.0	-16.9
720.00	1.5	2.5	29.9	30.4	31.4	32.9	47.0	-14.1



5.3 Radiated emission > 1 GHz (electric field)

For test instruments and accessories used see section 6 Part **SER 3**.

5.3.1 Description of the test location

Test location: Anechoic chamber 1
Test distance: 3 m

5.3.2 Photo documentation of the test setup

See Attachment B2 for detailed photo documentation of the test set-up.

5.3.3 Test result

Frequency range: 1 GHz - 13 GHz
Min. limit margin -3.4 dB at 12.849 GHz

Limit according to FCC Part 15, Section 15.109(a):

Frequency of emission (MHz)	Field strength @3m (µV/m)
Above 960	500

Limit according to ICES-003 3.2.2:

Frequency range (GHz)	Average @3m (dB µV/m)	Peak @3m (dB µV/m)
1 - 40	54	74

The requirements are **FULFILLED.**

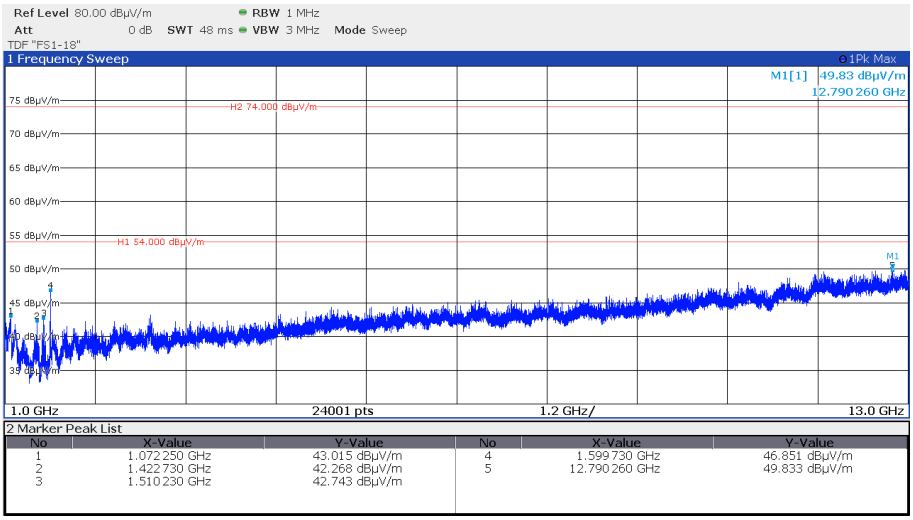
Remarks: For detailed results, please see the following page(s).

For description of the measurement see 4.5.2.

5.3.4 Test protocol

Operation mode:	Data communication with notebook via USB	Result: passed
Remarks:	None	

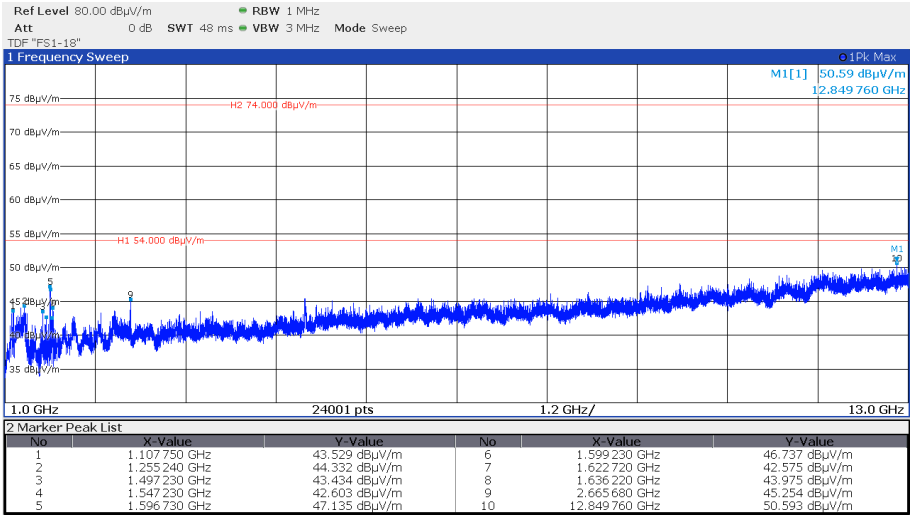
Antenna horizontal



2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.072 250 GHz	43.015 dBµV/m	4	1.599 730 GHz	46.851 dBµV/m
2	1.422 730 GHz	42.268 dBµV/m	5	12.790 260 GHz	49.833 dBµV/m
3	1.510 230 GHz	42.743 dBµV/m			

Antenna vertical



2 Marker Peak List

No	X-Value	Y-Value	No	X-Value	Y-Value
1	1.107 750 GHz	43.529 dBµV/m	6	1.599 230 GHz	46.737 dBµV/m
2	1.255 240 GHz	44.332 dBµV/m	7	1.622 720 GHz	42.575 dBµV/m
3	1.497 230 GHz	43.434 dBµV/m	8	1.636 220 GHz	43.975 dBµV/m
4	1.547 230 GHz	42.603 dBµV/m	9	2.665 680 GHz	45.254 dBµV/m
5	1.596 730 GHz	47.135 dBµV/m	10	12.849 760 GHz	50.593 dBµV/m

6 USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

Test ID	Model Type	Kind of Equipment	Manufacturer	Equipment No.	Next Calib.	Last Calib.	Next Verif.	Last Verif.
A 4	BAT-EMC 2022.0.21.0	Nexio Software	EMCO Elektronik GmbH	01-02/68-13-001				
	ESCI	EMI Test Receiver	Rohde & Schwarz München	02-02/03-15-001	17/06/2023	17/06/2022		
	ESH 2 - Z 5	LISN	Rohde & Schwarz München	02-02/20-05-004	13/10/2025	13/10/2022	13/04/2023	13/10/2022
	N-4000-BNC	RF Cable	CSA Group Bayern GmbH	02-02/50-05-138				
	ESH 3 - Z 2	Pulse Limiter	Rohde & Schwarz München	02-02/50-05-155	09/11/2025	09/11/2022	09/05/2023	09/11/2022
SER 2	ESR 7	EMI Test Receiver	Rohde & Schwarz München	02-02/03-17-001	05/08/2023	05/08/2022		
	VULB 9168	Trilog Broadband Antenn	Schwarzbeck Mess-Elektron	01-02/24-14-007	04/04/2023	04/04/2022		
	NW-2000-NB	RF Cable	Huber + Suhner	02-02/50-05-113				
	KK-EF393/U-16N-21N20 m	RF Cable 20m	Huber + Suhner	02-02/50-12-018				
	KK-SD_7/8-2X21N-33,0M	RF Cable 33 m	Huber + Suhner AG	02-02/50-15-028				
	50F-003 N 3 dB	Dämpfungsglied 3dB_5	Tactron Elektronik	02-02/50-21-010				
SER 3	FSW43	Spectrum Analyser	Rohde & Schwarz München	02-02/11-21-001	16/05/2023	16/05/2022		
	AMF-6D-01002000-22-10P	RF Amplifier	MITEQ, Inc.	02-02/17-15-004				
	3117	Horn Antenna 1 - 18 GH	EMCO Elektronik GmbH	02-02/24-05-009	23/06/2023	23/06/2022		
	BAM 4.5-P	Antenna Mast	maturo GmbH	02-02/50-17-024				
	NCD	Controller for Antenna M	maturo GmbH	02-02/50-17-025				
	KK-SF106-2X11N-6,5M	RF Cable	Huber + Suhner	02-02/50-18-016				

7 Detailed measurement uncertainty

7.1 Overview

Measurement instrumentation uncertainty shall be taken into account when determining compliance or non-compliance with a disturbance limit.
The measurement instrumentation uncertainty for a test laboratory shall be evaluated. The standard uncertainty $u(x_i)$ in decibels and the sensitivity coefficient c_i shall be evaluated for the estimate x_i of each quantity. The combined standard uncertainty $u_c(y)$ of the estimate y of the measurand shall be calculated as

$$u_c(y) = \sqrt{\sum_i c_i^2 \; u^2(x_i)}$$

The expanded measurement instrumentation uncertainty U_{lab} for a test laboratory shall be calculated as $U_{lab} = 2\, u_c(y)$

$$U_{lab} = 2\, u_c(y)$$

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} in the table below, then:
- compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} in the table below, then:
- compliance is deemed to occur if no measured disturbance, increased by ($U_{lab} – U_{cispr}$), exceeds the disturbance limit.
- non-compliance is deemed to occur if any measured disturbance, increased by ($U_{lab} – U_{cispr}$), exceeds the disturbance limit.

7.2 Definitions and symbols

X_i	Input quantity
x_i	estimate of X_i
$u(x_i)$	standard uncertainty of x_i
c_i	sensitivity coefficient
$u_c(y)$	(combined) standard uncertainty of y
Y	result of a measurement, (the estimate of the measured), corrected for all recognised significant systematic effects
U	expanded uncertainty of y

7.3 Measurement uncertainty

Measurement	U_{lab} [dB]
Conducted disturbance	+ 2.53 / - 2.77
Radiated disturbance (electric field) - 10 m test distance - 3 m test distance - Frequency range: 30 MHz – 200 MHz	 + 3.16 / - 3.22 + 3.16 / - 3.22
Radiated disturbance (electric field) - 10 m test distance - 3 m test distance - Frequency range: 200 MHz – 1000 MHz	 + 4.51 / - 4.51 + 4.51 / - 4.51
Radiated disturbance (electric field) - 3 m test distance - Frequency range: 1 GHz – 30 GHz	 + 5.07 / -3.70