



Test report No:
 NIE: 48930REM.001

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-15 Edition),
 Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207

Identification of item tested	Accessory to hearing instrument
Trademark	ReSound / Beltone / Intercon / GN Hearing
Model and/or type reference.....	CPD-1
Other identification of the product	S/N: 1581064108
Final HW version.....	AIRLINK-2, RevF
Final SW version	2.10
FCC ID	X26CPD-1
Features.....	Bluetooth LE and proprietary 2.4 GHz (Proximity)
Manufacturer.....	GN HEARING A/S Lautrupberg 7, 2750 Ballerup, Denmark.
Test method requested, standard	FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207
Summary	IN COMPLIANCE
Approved by (name / position & signature).....	Rafael López EMC Lab Manager
Date of issue	2016-08-30
Report template No.	FDT08_18

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Competences and guarantees

AT4 wireless is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

In order to assure the traceability to other national and international laboratories, AT4 wireless has a calibration and maintenance program for its measurement equipment.

AT4 wireless guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at AT4 wireless at the time of performance of the test.

AT4 wireless is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of AT4 wireless.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of AT4 wireless and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the AT4 wireless internal document PODT000.

Usage of samples

Samples under test have been selected by: the Client.

Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial number	Reception date
48930E/003	Accessory to hearing instrument	CPD-1	1581064108	2016-06-20
48930E/029	USB Cable	---	---	2016-06-20

Sample S/02 is the sample S/01 using an auxiliary PC for ANSI setup.

Test sample description

Wireless accessory to hearing instrument supporting Bluetooth LE and proprietary 2.4 GHz protocol called proximity.

Identification of the client

GN HEARING A/S
Lautrupbjerg 7, 2750 Ballerup, Denmark.

Testing period

The performed test started on 2016-07-02 and finished on 2016-07-08.

The tests have been performed at AT4 wireless.

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semianechoic chamber (21 meters x 11 meters x 8 meters), the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The tests have been performed by the technical personnel: Alberto Parada & Daniel López.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is $I = \pm 4,9$ dB for quasi-peak measurements, $I = \pm 4,6$ dB for peak measurements ($k = 2$)

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 26GHz is $I = \pm 2,6$ dB for peaks and average measurements ($k = 2$)

Testing verdicts (Legend)

Not applicable	N/A
Pass	P
Fail	F
Not measured	N/M

List of equipment used during the test

CONTROL NUMBER	DESCRIPTION	MANUFACTURER	MODEL	LAST CALIBRATION	NEXT CALIBRATION
2942	EMI TEST Receiver	ROHDE & SCHWARZ	ESU40	2016-06-14	2017-10-09
4578	Bilog Antenna	ETS LINDGREN	3142E	2014-03-17	2017-03-17
4658	Preamplifier	SCHWARZBECK	BBV9743	2016-04-28	2017-04-28
4612	Horn Antenna	SCHWARZBECK	BBHA 9120 D	2013-12-29	2016-12-29
3783	Preamplifier	BONN ELEKTRONIK	BLMA 0118-3A	2016-05-03	2017-05-03
4656	Horn Antenna	SCHWARZBECK	BBHA 9170	2014-03-28	2017-03-28
1975	Preamplifier	MITEQ	JS4-12002600-30-5A	2015-10-06	2017-10-06
4570	Thermohigrometer	HW GROUP	HWg-STE	2016-04-28	2017-04-28
4567	Thermohigrometer	HW GROUP	HWg-STE	2016-04-28	2017-04-28

Appendix A – Test result

CONTENT

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DESCRIPTION OF THE OPERATION MODES

The operation modes described in this paragraph constitute a functionality of the sample under test for itself. Every operation mode takes a failure criteria for the immunity test that they were applying to it and a monitoring to guarantee performance of the same ones.

The operation modes used by the samples to which the present report refers, are shown in the following table:

OPERATION MODE	DESCRIPTION
OM#01	EUT ON. IDLE Bluetooth. IDLE proximity radio. Power supply: 5Vdc.
OM#02	EUT ON. IDLE Bluetooth. IDLE proximity radio. Power supply: 5Vdc through USB port via laptop.
OM#03	EUT ON. TX Bluetooth TX Proximity. Power supply: 5Vdc through USB port via laptop.

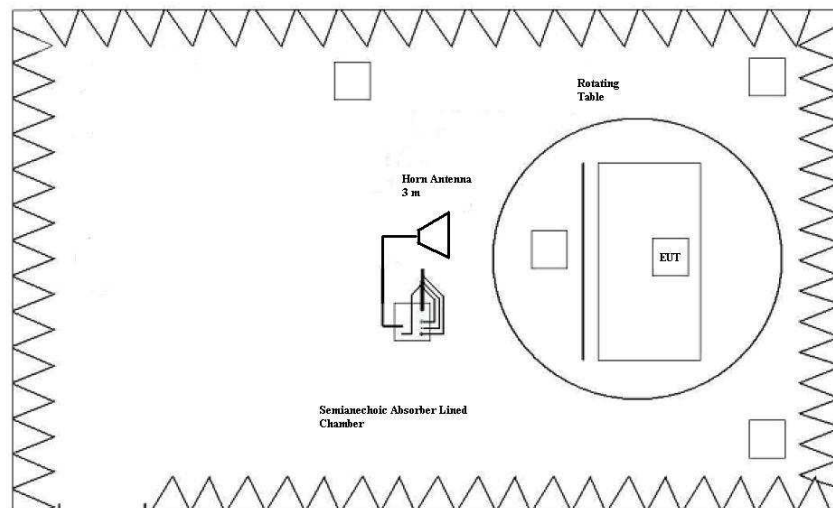
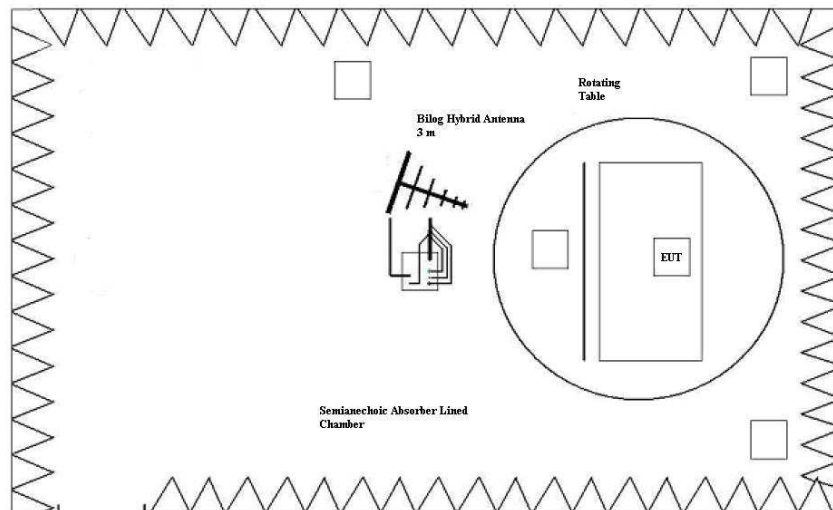
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207

Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15.109, Subpart B (10-01-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 in the frequency range 30 MHz to 26 GHz, for Class B equipment, which is a transmitter in a band over 500 MHz, was:

Frequency range (MHz)	QP Limit for 3 m ($\mu\text{V}/\text{m}$)	QP Limit for 3 m ($\text{dB}\mu\text{V}/\text{m}$)
30 to 88	100	40
88 to 216	150	43.52
216 to 960	200	46.02
Above 960	500	53.98
Above 1000	Limit for 3m AVG	Limit for 3m PK
	53.98 $\text{dB}\mu\text{V}/\text{m}$	73.98 $\text{dB}\mu\text{V}/\text{m}$



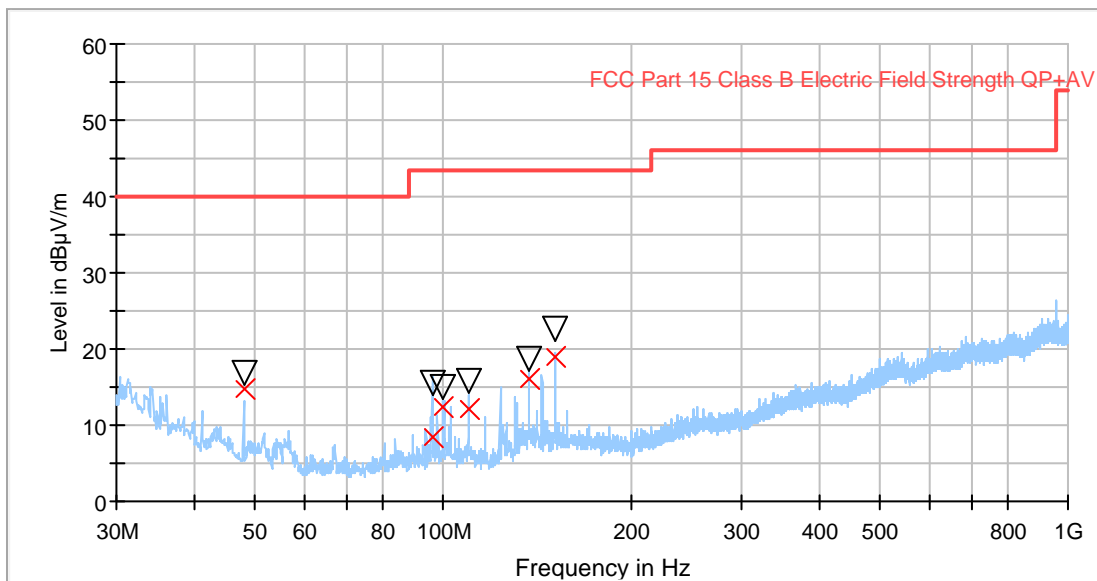
TESTED SAMPLES:	S/01 & 02
TESTED OPERATION MODES:	OM#01 & 02
TEST RESULTS:	CRmmnnRRPP: CR, Radiation Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR1_PH	Range: 1 GHz - 18 GHz. Horizontal Polarization.	P
CR0101HR1_PV	Range: 1 GHz - 18 GHz. Vertical Polarization.	P
CR0101HR2_PH	Range: 18 GHz - 26 GHz. Horizontal Polarization.	P
CR0101HR2_PV	Range: 18 GHz - 26 GHz. Vertical Polarization.	P
CR0202LR	Range: 30 MHz - 1000 MHz.	P
CR0202HR1_PH	Range: 1 GHz - 18 GHz. Horizontal Polarization.	P
CR0202HR1_PV	Range: 1 GHz - 18 GHz. Vertical Polarization.	P
CR0202HR2_PH	Range: 18 GHz - 26 GHz. Horizontal Polarization.	P
CR0202HR2_PV	Range: 18 GHz - 26 GHz. Vertical Polarization.	P

Radiated Emission. CR0101RB

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. IDLE Bluetooth IDLE Proximity. Power supply: 5Vdc.

Full Spectrum



— Peak Preview
 — FCC Part 15 Class B Electric Field Strength QP+AV
 X QuasiPeak
 ▽ MaxPeak

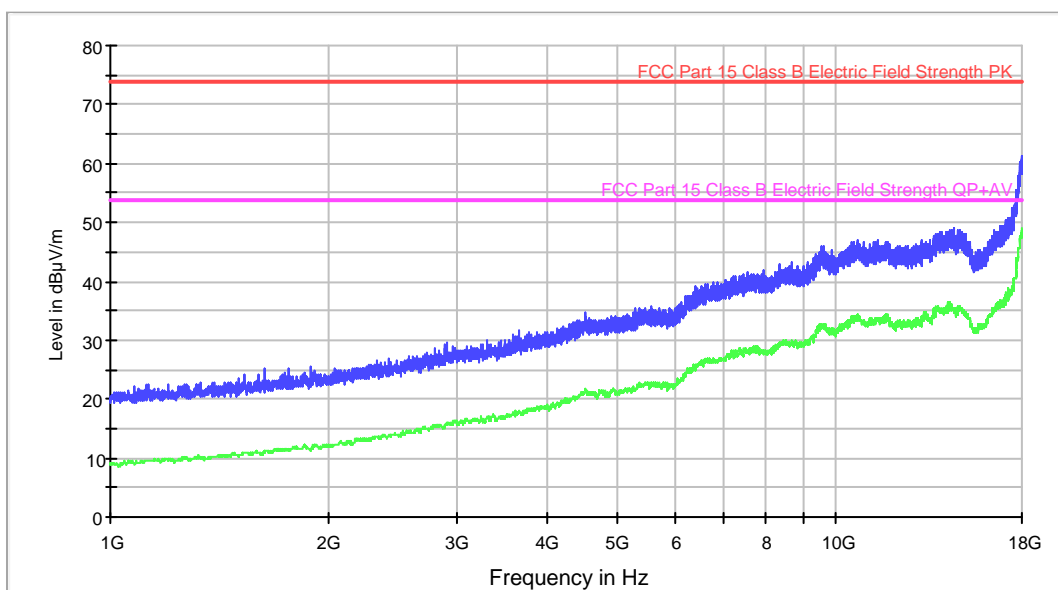
Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
47.961039	14.73	16.77	98.0	V	1.0
95.961039	8.34	15.53	364.0	V	249.0
99.832468	12.25	15.13	112.0	V	103.0
109.719481	11.99	15.86	120.0	V	1.0
137.135065	16.10	18.78	116.0	V	6.0
150.861039	18.98	22.55	108.0	V	40.0

Radiated Emission. CR0101RA1_PH

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. IDLE bluetooth, IDLE proximity radio. Power supply: 5Vdc

ER EMI FCC 15 Class B (1-18GHz)



— Peak Scan
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — FCC Part 15 Class B Electric Field Strength QP+AV

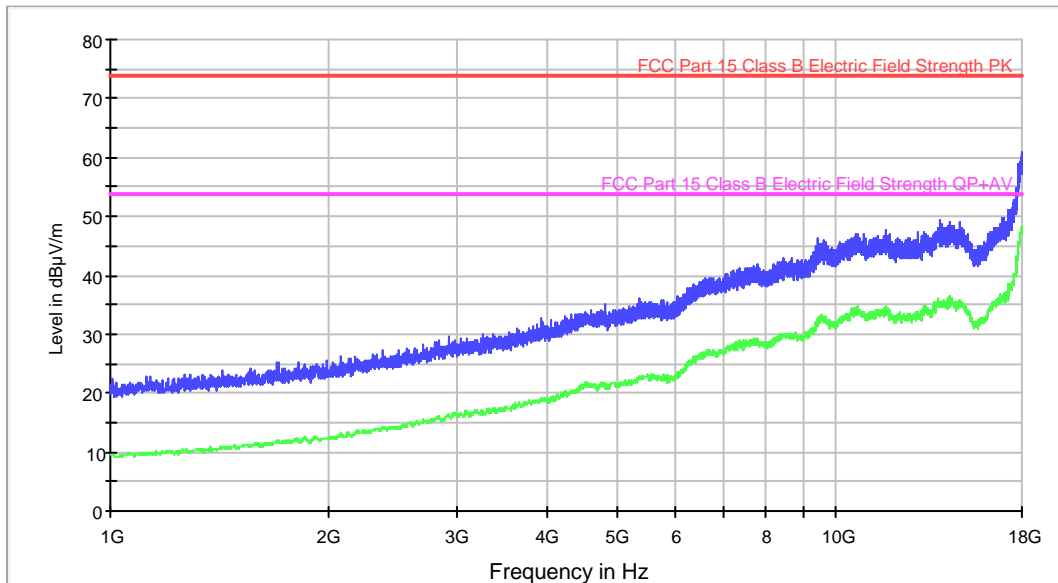
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
1332.000000	22.8	10.0
1760.000000	25.3	11.3
2327.000000	26.5	13.6
2905.000000	29.6	16.1
4190.000000	32.2	19.7
5567.000000	35.8	22.7
7528.000000	41.5	28.1
9611.000000	46.0	32.4
10687.000000	47.1	33.9
17967.000000	61.2	48.2

Radiated Emission. CR0101RA1_PV

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. IDLE bluetooth, IDLE proximity radio. Power supply: 5Vdc

ER EMI FCC 15 Class B (1-18GHz)



— Peak Scan
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — FCC Part 15 Class B Electric Field Strength QP+AV

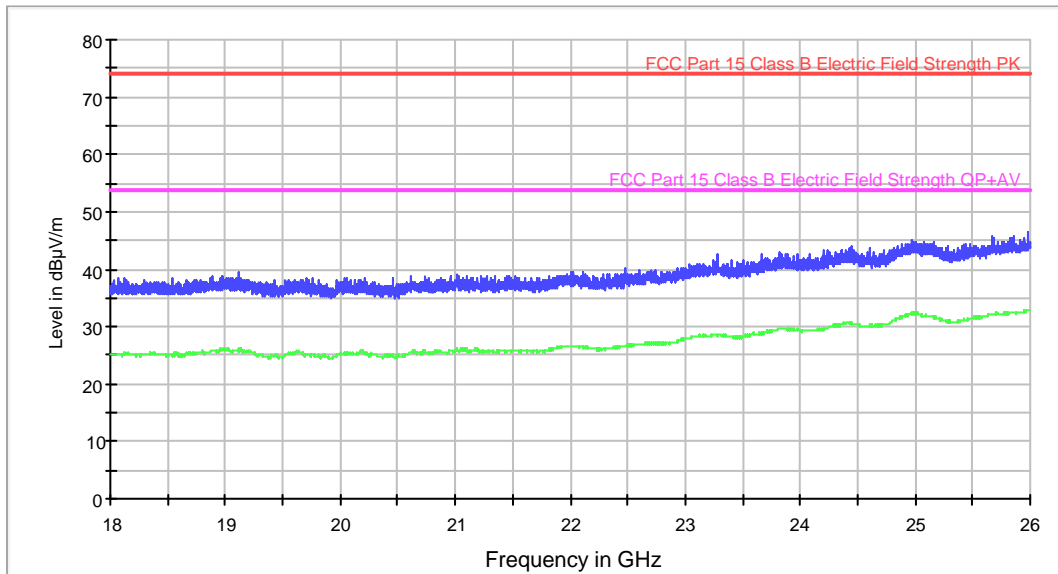
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
1287.000000	23.3	10.1
1692.000000	25.2	11.7
2370.000000	27.4	14.1
2926.000000	29.5	16.2
4234.000000	33.0	20.2
5353.000000	36.0	22.7
7472.000000	41.3	28.7
9409.000000	46.3	31.3
11701.000000	47.7	34.4
18000.000000	60.9	48.3

Radiated Emission. CR0101RA2_PH

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. IDLE bluetooth, IDLE proximity. Power supply: 5Vdc.
 Horizontal polarization.

ER EMI FCC 15 Class B(18-26GHz)



— Peak Scan
— FCC Part 15 Class B Electric Field Strength PK
— Average Scan
— FCC Part 15 Class B Electric Field Strength QP+AV

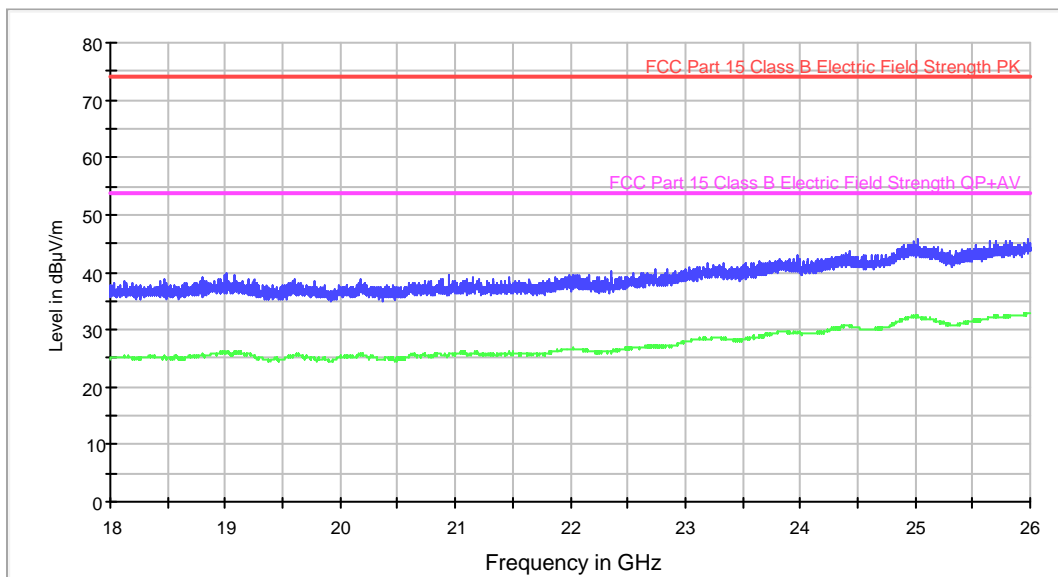
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
18533.000000	38.4	25.1
19111.000000	39.6	25.9
19758.000000	38.4	25.1
20612.000000	38.9	25.5
21023.000000	39.1	25.9
22014.000000	39.5	26.5
23284.000000	42.7	28.6
23824.000000	42.9	29.6
24974.000000	45.1	32.3
25977.000000	46.3	32.8

Radiated Emission. CR0101RA2_PV

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. IDLE bluetooth, IDLE proximity. Power supply: 5Vdc.
 Vertical polarization.

ER EMI FCC 15 Class B(18-26GHz)



— Peak Scan
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — FCC Part 15 Class B Electric Field Strength QP+AV

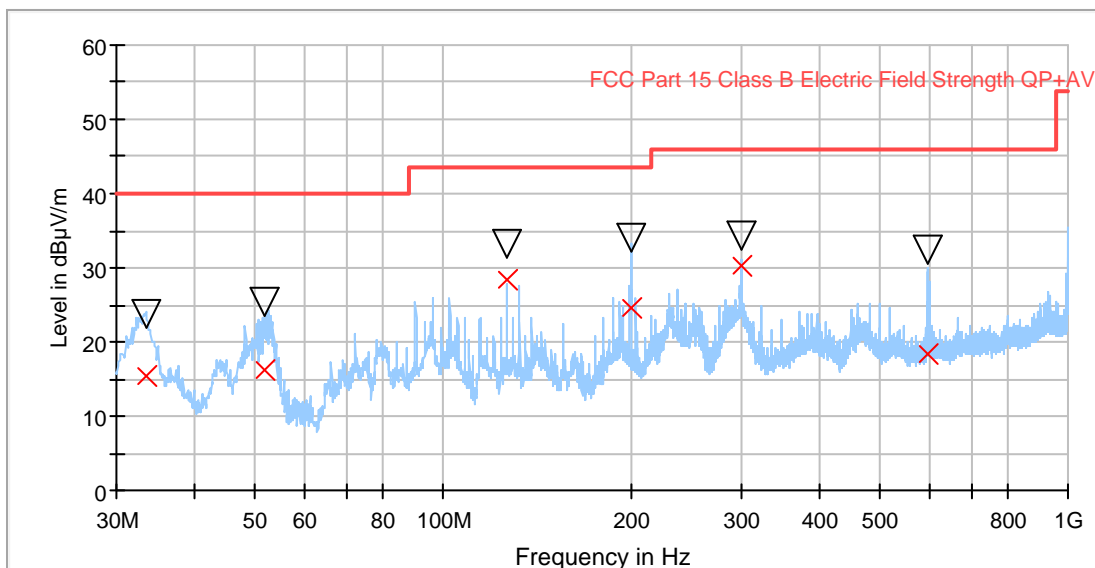
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
18477.000000	38.6	25.1
19015.000000	39.7	26.2
19603.000000	38.9	25.5
20182.000000	38.8	25.7
20950.000000	39.4	25.8
22360.000000	40.2	26.1
23189.000000	41.6	28.4
23977.000000	42.8	29.4
25020.000000	45.8	32.3
25987.000000	45.7	32.8

Radiated Emission. CR0202RB

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#02
 Description: EUT ON. IDLE Bluetooth IDLE Proximity. Power supply: 5Vdc throughout USB port, via laptop.

Full Spectrum



— Peak Preview
 — FCC Part 15 Class B Electric Field Strength QP+AV
 X QuasiPeak
 ▽ MaxPeak

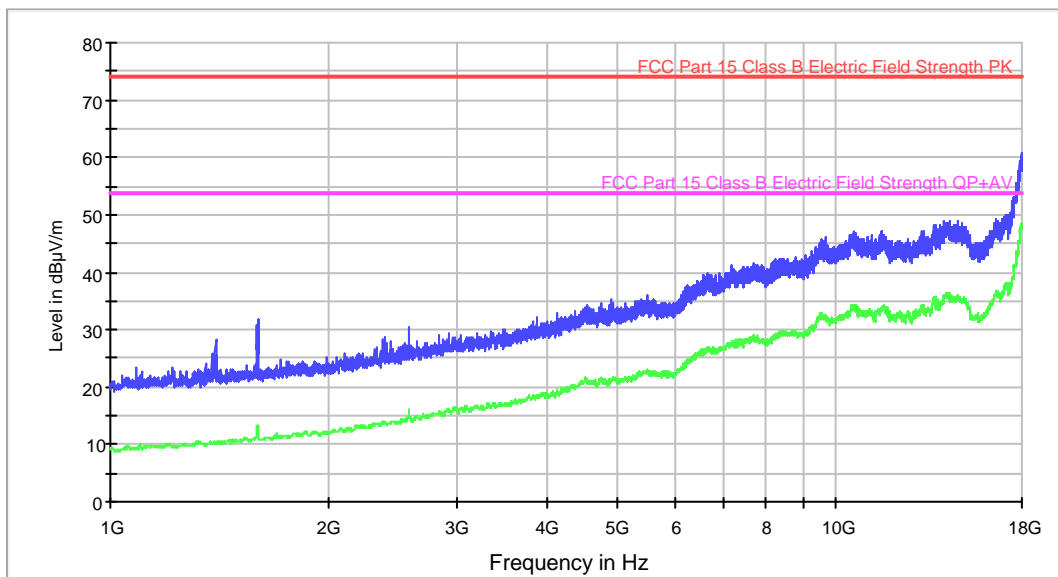
Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
33.477922	15.35	23.79	365.0	V	143.0
51.723377	16.17	25.30	125.0	V	294.0
126.584416	28.38	33.12	104.0	V	220.0
199.889610	24.62	34.15	116.0	H	268.0
300.045455	30.15	34.41	98.0	H	86.0
598.577922	18.43	32.54	137.0	H	228.0

Radiated Emission. CR0202RA1_PH

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#02
 Description: EUT ON. IDLE Bluetooth IDLE Proximity radio. Power supply: 5Vdc throughout USB port, via laptop. Horizontal polarization.

ER EMI FCC 15 Class B (1-18GHz)



— Peak Scan
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — FCC Part 15 Class B Electric Field Strength QP+AV

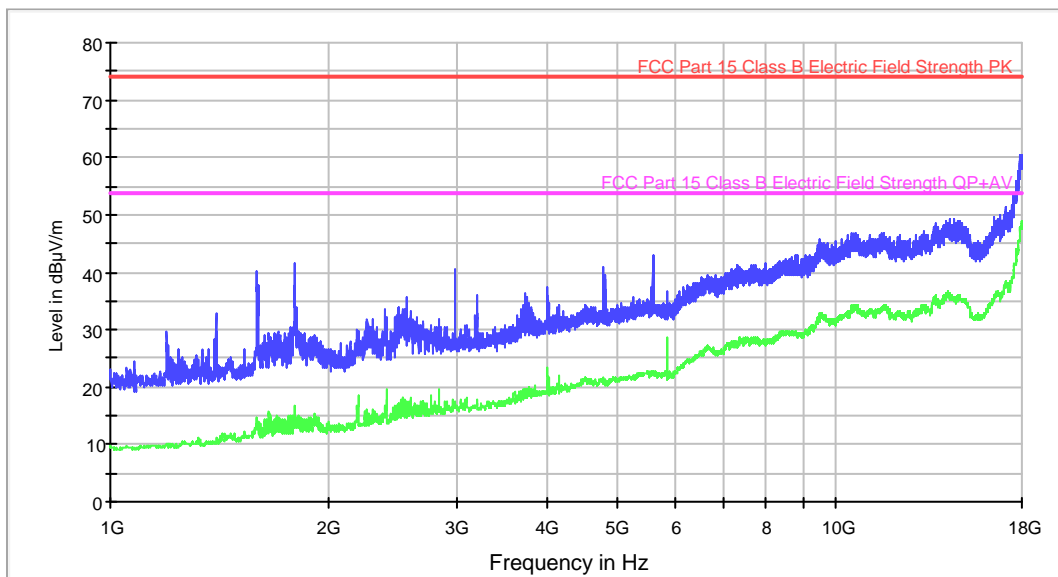
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
1219.000000	23.5	9.8
1599.000000	31.6	12.7
2368.000000	28.3	13.7
2574.000000	30.3	15.4
4122.000000	32.8	19.3
5480.000000	35.8	22.5
7173.000000	41.3	28.1
9669.000000	46.0	32.1
13200.000000	47.3	33.9
17983.000000	60.7	48.4

Radiated Emission. CR0202RA1_PV

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#02
 Description: EUT ON. IDLE Bluetooth IDLE Proximity radio. Power supply: 5Vdc throughout USB port, via laptop.

ER EMI FCC 15 Class B (1-18GHz)



— Peak Scan
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — FCC Part 15 Class B Electric Field Strength QP+AV

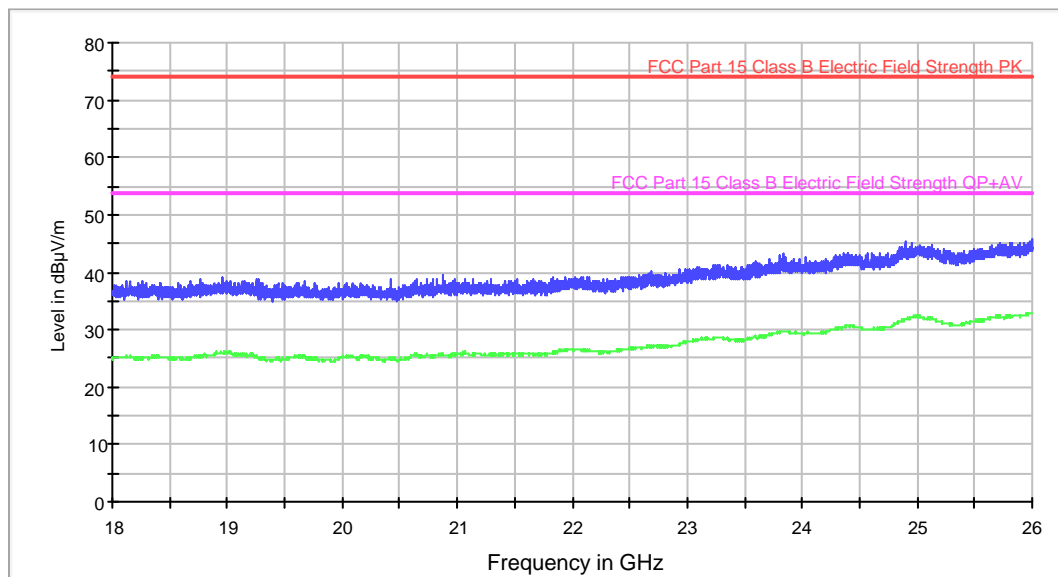
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
1198.000000	29.9	10.0
1593.000000	40.2	14.8
1795.000000	41.7	16.7
2987.000000	40.4	17.3
3992.000000	37.3	19.4
5588.000000	42.9	22.5
7287.000000	41.1	27.9
9493.000000	45.7	32.1
13215.000000	47.1	34.2
17997.000000	60.4	48.4

Radiated Emission. CR0202RA2_PH

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#02
 Description: EUT ON. IDLE Bluetooth IDLE Proximity radio. Power supply: 5Vdc throughout USB port, via laptop. Horizontal polarization.

ER EMI FCC 15 Class B(18-26GHz)



— Peak Scan
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — FCC Part 15 Class B Electric Field Strength QP+AV

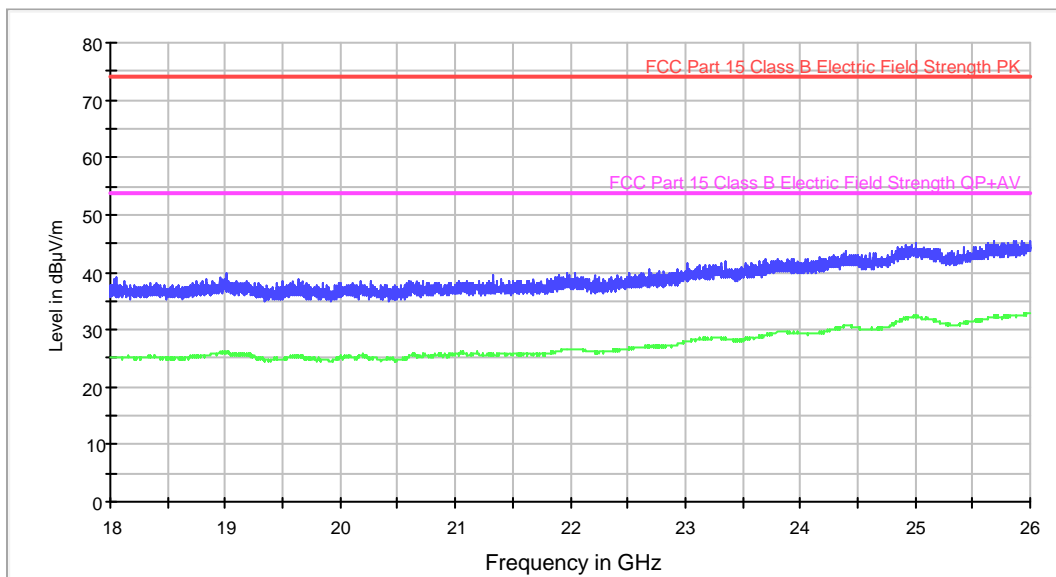
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
18267.000000	38.4	25.0
18952.000000	39.3	25.9
19669.000000	38.3	25.3
20425.000000	38.9	24.9
20872.000000	39.5	25.7
22100.000000	39.3	26.6
23241.000000	41.3	28.6
23831.000000	43.2	29.6
24894.000000	45.3	31.9
25996.000000	45.6	32.8

Radiated Emission. CR0202RA2_PV

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#02
 Description: EUT ON. IDLE Bluetooth IDLE Proximity radio. Power supply: 5Vdc throughout USB port, via laptop. Vertical polarization.

ER EMI FCC 15 Class B(18-26GHz)



— Peak Scan
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — FCC Part 15 Class B Electric Field Strength QP+AV

Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
18060.000000	39.2	25.2
19010.000000	39.7	25.9
19633.000000	38.8	25.4
20658.000000	38.6	25.4
21330.000000	39.3	25.6
22050.000000	39.7	26.5
23021.000000	41.7	28.0
23948.000000	42.4	29.5
25012.000000	44.9	32.2
25994.000000	45.5	32.8

CONTINUOUS CONDUCTED EMISSION

LIMITS:	Product standard :	FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016)
	Test standard :	FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016)

CLASS B

The applied limit for continuous conducted emissions in power leads, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-01-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016), in the frequency range 0,15 to 30 MHz, for Class B equipment was:

Frequency range (MHz)	Limit (dBµV)	
	Quasi-peak	Average
0,15 to 0,5	66-56	56-46
0,5 to 5	56	46
5 to 30	60	50

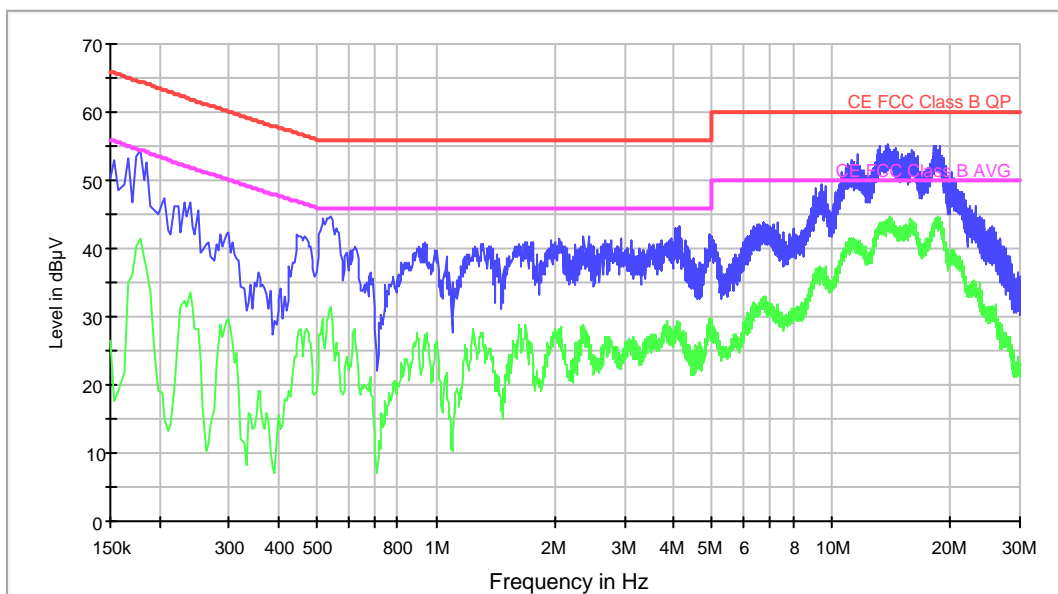
TESTED SAMPLES:	S/02
TESTED OPERATION MODES:	OM#02 & 03
TEST RESULTS :	CCmmnnhh: CC, Conducted Condition; mm: Sample number; nn: Operation mode; hh: wire

CCmmnnhh	Description	Result
CC02020N	Neutral wire noise.	P
CC0202L1	Phase wire noise.	P
CC02030N	Neutral wire noise.	P
CC0203L1	Phase wire noise.	P

Conducted Emission. CC02020N

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#02
 Description: EUT ON. IDLE Bluetooth IDLE Proximity. Power supply: 5Vdc throughout USB port, via laptop. Neutral wire noise.

EC FCC Class B ESPI CC



— Peak Scan — Average Scan — CE FCC Class B QP — CE FCC Class B AVG

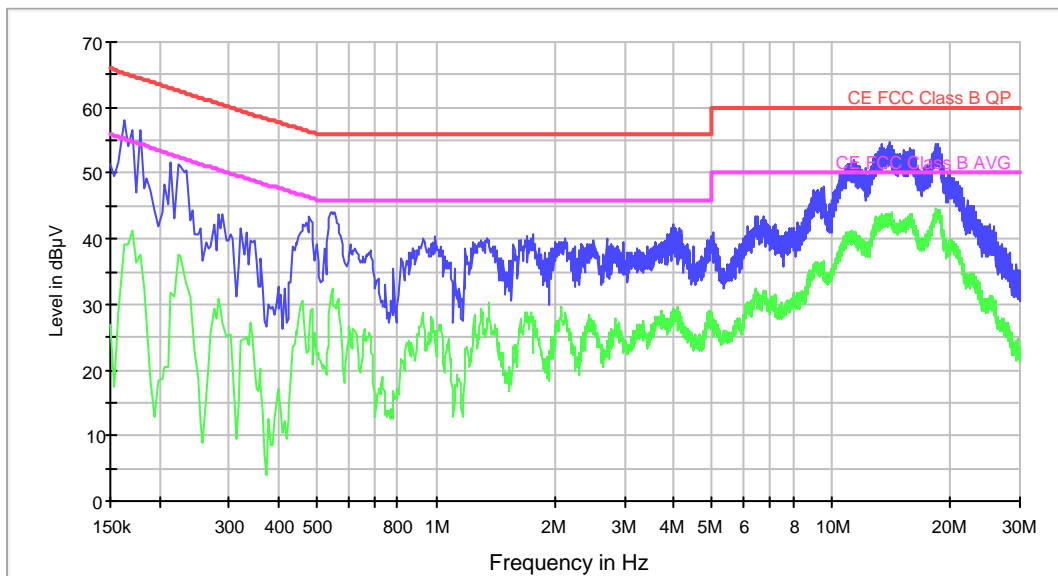
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.178000	54.3	41.6
0.298000	42.4	29.7
0.542000	44.6	31.4
0.934000	41.0	27.5
2.058000	41.3	25.4
2.430000	41.7	27.0
4.138000	43.1	29.1
9.422000	49.3	36.0
13.966000	55.3	44.2
18.246000	55.0	43.2

Conducted Emission. CC0202L1

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#02
 Description: EUT ON. IDLE Bluetooth IDLE Proximity. Power supply: 5Vdc throughout USB port, via laptop. Phase wire noise.

EC FCC Class B ESPI CC



— Peak Scan
 — Average-ClearWrite-AVG
 — CE FCC Class B QP
 — CE FCC Class B AVG

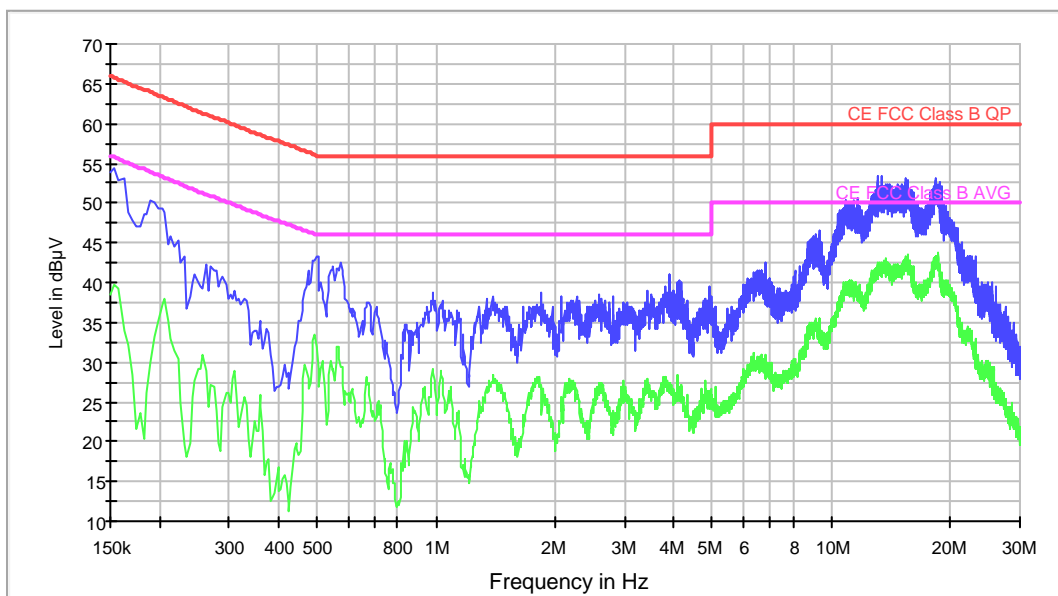
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.162000	58.2	39.3
0.290000	43.7	27.2
0.542000	44.0	31.2
0.998000	40.5	24.6
1.762000	40.7	22.7
2.698000	39.9	23.1
3.990000	42.1	28.6
10.326000	48.2	37.5
14.034000	54.6	43.7
18.398000	54.4	43.3

Conducted Emission. CC02030N

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#03
 Description: EUT ON. TX Bluetooth TX Proximity. Power supply: 5Vdc throughout USB port, via laptop. Neutral wire noise

EC FCC Class B ESPI CC



— Peak Scan — Average Scan — CE FCC Class B QP — CE FCC Class B AVG

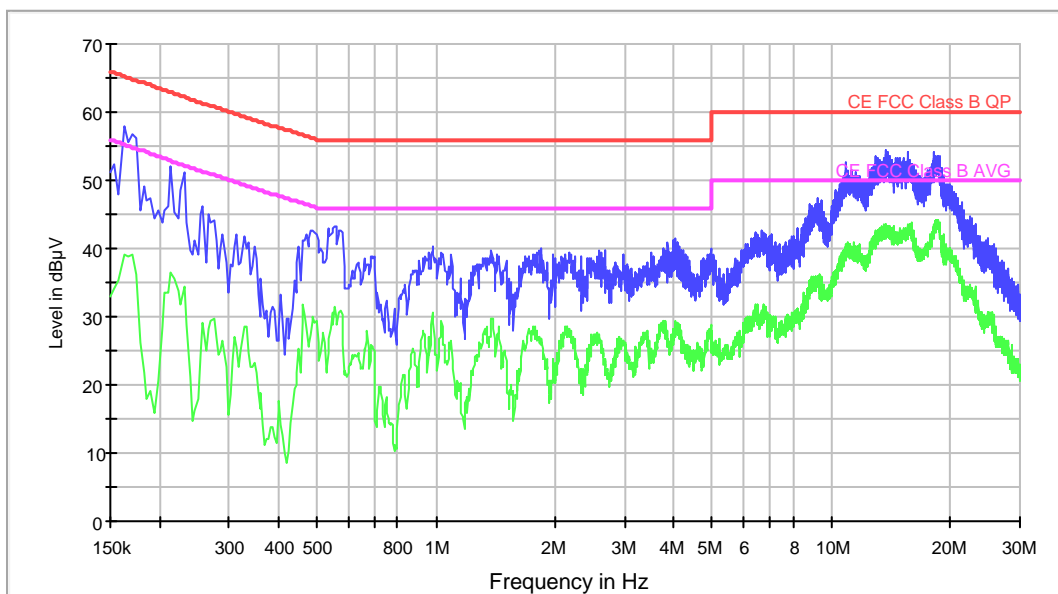
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.154000	54.3	39.7
0.262000	42.1	28.8
0.502000	43.3	29.3
0.982000	38.7	29.0
1.850000	38.7	26.1
3.430000	38.9	27.0
3.898000	41.1	26.6
10.374000	48.5	37.4
13.086000	53.4	41.6
18.470000	53.1	42.8

Conducted Emission. CC0203L1

Project: 48930REM.001
 Company: GN RESOUND
 Sample: S/02
 Operation mode: OM#03
 Description: EUT ON. TX Bluetooth TX Proximity. Power supply: 5Vdc throughout USB port, via laptop. Phase wire noise

EC FCC Class B ESPI CC



— Peak Scan — Average Scan — CE FCC Class B QP — CE FCC Class B AVG

Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.162000	57.8	39.1
0.258000	46.2	29.1
0.554000	43.2	31.4
0.982000	40.2	30.3
1.850000	40.0	26.1
2.598000	39.6	27.0
4.046000	41.3	28.6
10.282000	48.5	36.9
13.798000	54.4	42.7
18.166000	54.0	42.4