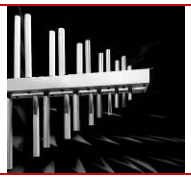
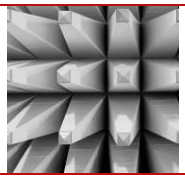

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consulting - testing - certification >>>

TEST REPORT

Test report no.: 1-7445/14-03-10-A

DAkkS Deutsche Akkreditierungsstelle D-PL-12076-01-01

Testing laboratory

CETECOM ICT Services GmbH
Untertuerkheimer Strasse 6 – 10
66117 Saarbruecken / Germany
Phone: + 49 681 5 98 - 0
Fax: + 49 681 5 98 - 9075
Internet: http://www.cetecom.com
e-mail: ict@cetecom.com

Accredited Testing Laboratory:
The testing laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025 (2005) by the Deutsche Akkreditierungsstelle GmbH (DAkkS)
The accreditation is valid for the scope of testing procedures as stated in the accreditation certificate with the registration number: D-PL-12076-01-01
Area of Testing:
Radio Communications & EMC (RCE)

Applicant

Phonak AG
Laubisruetistrasse 28
8712 Staefa / SWITZERLAND
Phone: -/-
Fax: +41 5 89 28 20 11
Contact: Valentina Shcherba
e-mail: valentina.shcherba@phonak.com
Phone: +41 5 89 28 01 01

Manufacturer

Phonak AG
Laubisruetistrasse 28
8712 Staefa / SWITZERLAND

Test standard/s

47 CFR Part 15	Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices
RSS - 210 Issue 8	Spectrum Management and Telecommunications Radio Standards Specification - Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment

For further applied test standards please refer to section 3 of this test report.

Test Item

Kind of test item:	**Hearing Aid Remote Control & Media Gateway**
Model name:	**Phonak ComPilot II**
FCC ID:	**KWC-COMPILOT2**
IC:	**2262A-COMPILOT2**
Frequency:	ISM band 2400 MHz to 2483.5 MHz (lowest channel 00 – 2402 MHz; highest channel 39 – 2480 MHz)
Technology tested:	Bluetooth®, +EDR
Antenna:	Integrated antenna
Power supply:	3.70 V DC by Li - polymer battery and charger
Temperature range:	±0°C to +40°C

This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorised:

cn=Stefan Boes, o=CETECOM ICT Services GmbH, ou=BOE-111011, email=Stefan.Boes@cetecom.com, c=DE
2014.07.21 16:28:56 +02'00'

Stefan Bös
Senior Testing Manager

Test performed:

cn=Marco Bertolino, o=CETECOM ICT Services GmbH, ou=BTL-100826, email=marco.bertolino@cetecom.com, c=DE
2014.06.05 14:40:29 +02'00'

Marco Bertolino
Testing Manager

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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.
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In no case this test report can be considered as a Letter of Approval.

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

2.2 Application details

Date of receipt of order:	2014-04-03
Date of receipt of test item:	2014-04-07
Start of test:	2014-04-11
End of test:	2014-04-11
Person(s) present during the test:	-/-

3 Test standard/s

Test standard	Date	Test standard description
47 CFR Part 15	-/-	Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices
RSS - 210 Issue 8	01.12.2010	Spectrum Management and Telecommunications Radio Standards Specification - Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment

4 Test environment

Temperature:	T_{nom}	+22 °C	during room temperature tests
	T_{max}	+40 °C	during high temperature tests
	T_{min}	±0 °C	during low temperature tests
Relative humidity content:		42 %	
Barometric pressure:		not relevant for this kind of testing	
Power supply:	V_{nom}	3.70 V	DC by Li - polymer battery and charger
	V_{max}	4.20 V	
	V_{min}	3.55 V	

5 Test item

Kind of test item	**:**	**Hearing Aid Remote Control & Media Gateway**
Type identification	**:**	**Phonak ComPilot II**
S/N serial number	**:**	**No serial number available!**
HW hardware status	**:**	**REV3**
SW software status	**:**	**0.4.33.16**
Frequency band [MHz]	**:**	**ISM band 2400 MHz to 2483.5 MHz (lowest channel 00 – 2402 MHz; highest channel 39 – 2480 MHz)**
Type of radio transmission **Use of frequency spectrum**	**:** **:**	**FHSS**
Type of modulation	**:**	**GFSK; Pi/4 DQPSK and 8 DPSK**
Number of channels	**:**	**40**
Antenna	**:**	**Integrated antenna**
Power supply	**:**	**3.70 V DC by Li - polymer battery and charger**
Temperature range	**:**	**±0°C to +40 °C**

5.1 Additional information

Test setup- and EUT-photos are included in test report: 1-7445/14-03-01_AnnexA
1-7445/14-03-01_AnnexB
1-7445/14-03-01_AnnexD

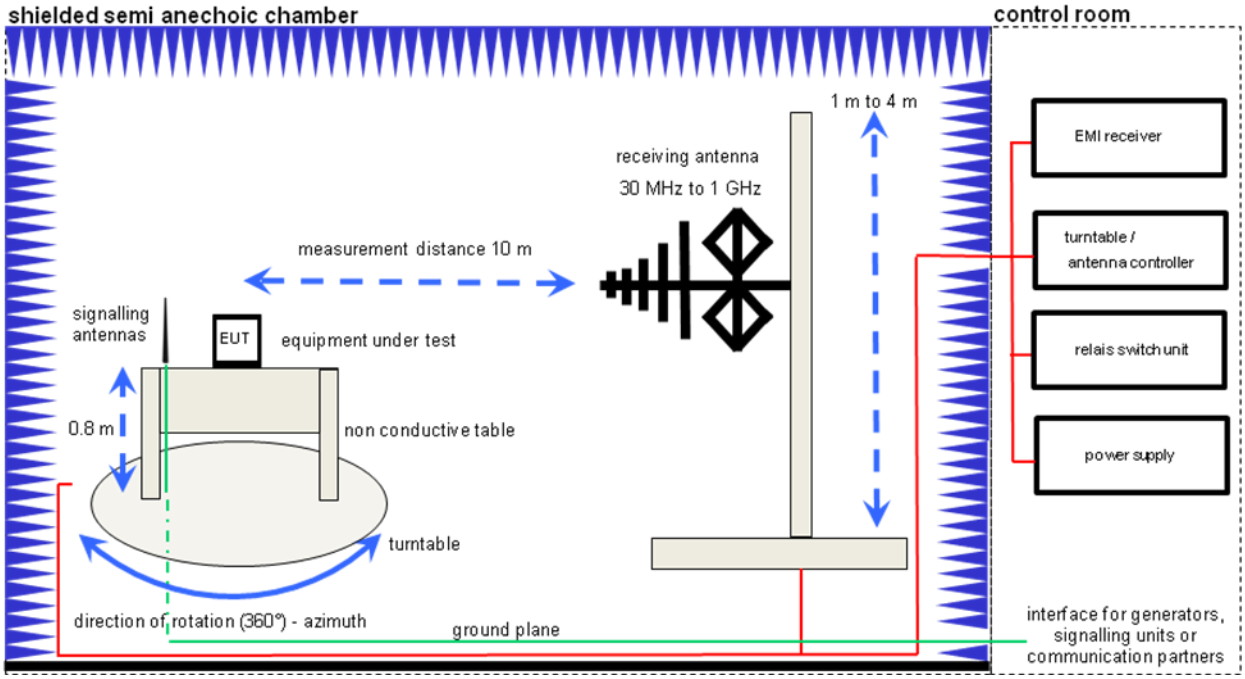
6 Test laboratories sub-contracted

None

7 Description of the test setup

7.1 Radiated measurements chamber F

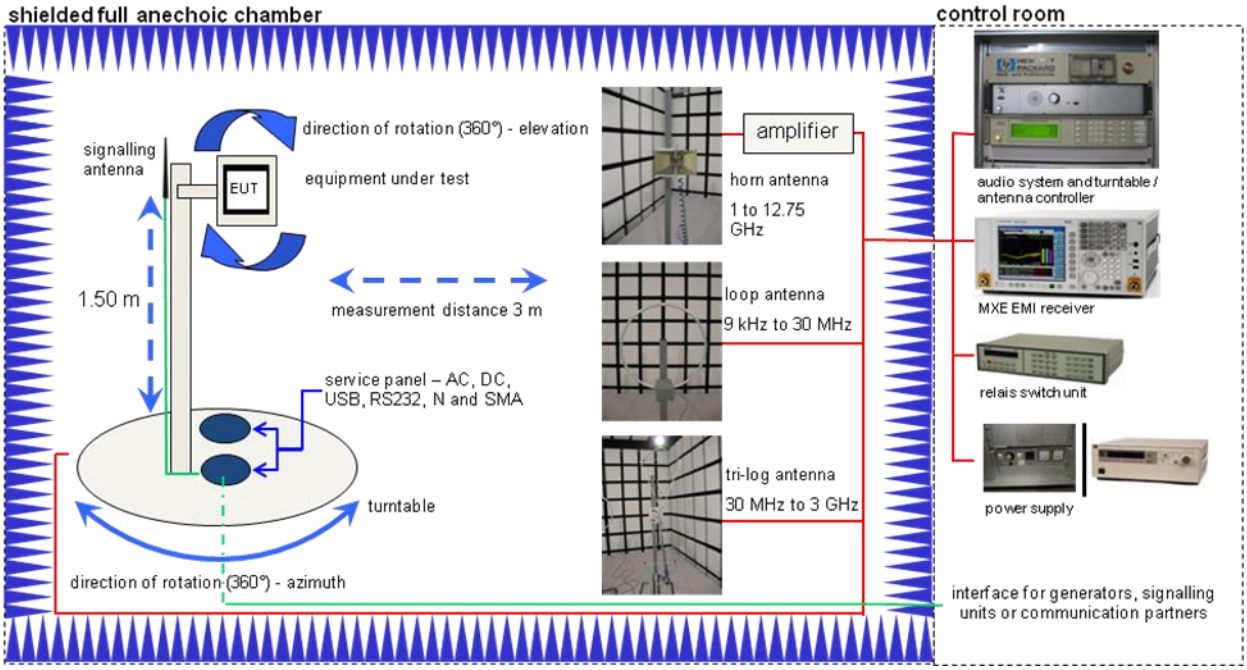
The radiated measurements are performed in vertical and horizontal plane in the frequency range from 9 kHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are confirmed with specifications ANSI C63. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analysers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368
DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580
EMI Test Receiver	ESCI 3	R&S	100083	300003312
Amplifier	JS42-00502650-28-5A	MITEQ	1084532	300003379
Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745
Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746
Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747
TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787
CBT (Bluetooth Tester + EDR Signalling)	CBT 1153.9000K35, CBT-B55, CBT-K55	R&S	100313	300003516

7.2 Radiated measurements chamber C



Equipment table:

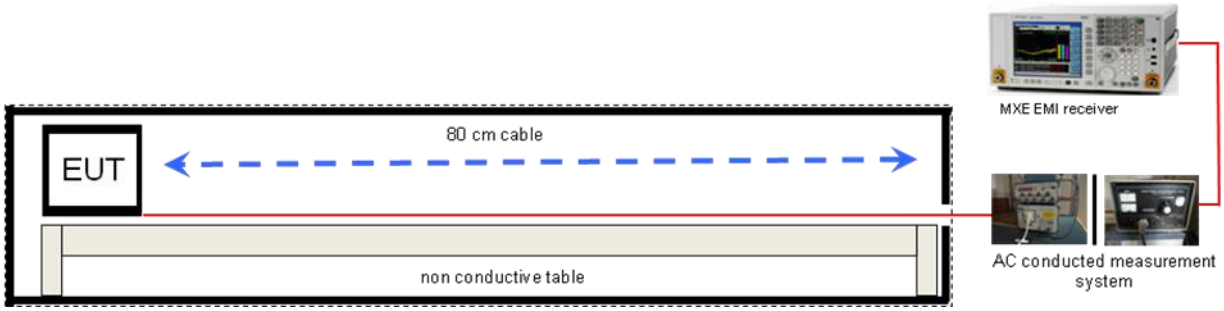
Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405
TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854
Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351
Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789
Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032
Active Loop Antenna	6502	EMCO	8905-2342	300000256
Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996
Switch / Control Unit	3488A	HP Meßtechnik	*	300000199
Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156
Isolating Transformer	MPL IEC625 Bus Regeltrenntravo	Erfi	91350	300001155
Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997
Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143
CBT (Bluetooth Tester + EDR Signalling)	CBT 1153.9000K35, CBT-B55, CBT-K55	R&S	100313	300003516

7.3 Radiated measurements 12.75 GHz to 25 GHz

Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Std. Gain Horn Antenna 12.4 to 18.0 GHz	639	Narda	8402	300000787
Std. Gain Horn Antenna 18.0 to 26.5 GHz	638	Narda	8205	300002442
Microwave System Amplifier, 0.5-26.5 GHz	83017A	HP Meßtechnik	00419	300002268
Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517
CBT (Bluetooth Tester + EDR Signalling)	CBT 1153.9000K35, CBT-B55, CBT-K55	R&S	100313	300003516

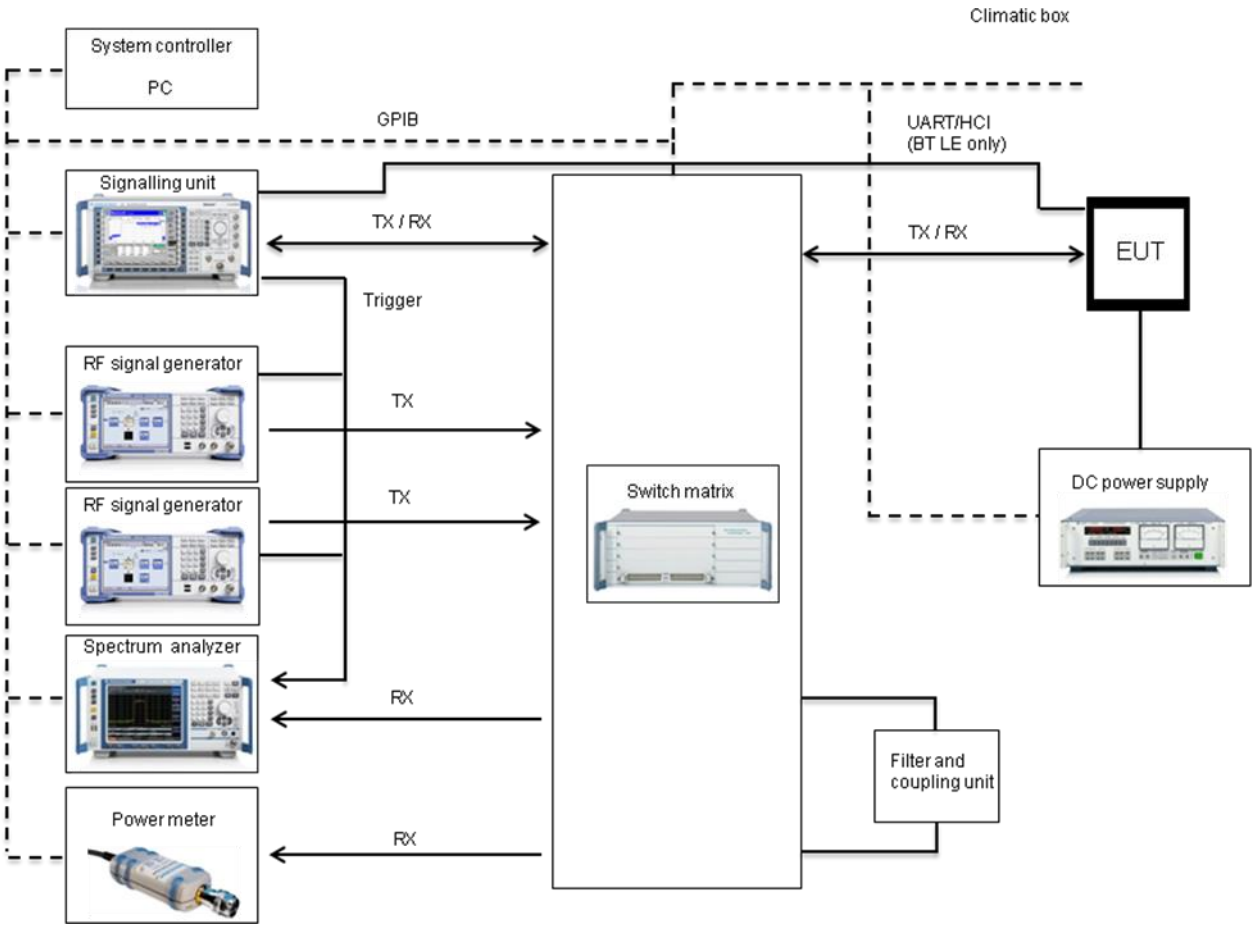
7.4 AC conducted



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405
Isolating Transformer	MPL IEC625 Bus Regeltrenntravo	Erfi	91350	300001155
Switch / Control Unit	3488A	HP Meßtechnik	*	300000199
Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001168
Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210
CBT (Bluetooth Tester + EDR Signalling)	CBT 1153.9000K35, CBT-B55, CBT-K55	R&S	100313	300003516

7.5 Conducted bluetooth test system



Equipment table:

Equipment	Type	Manufacturer	Serial No.	INV. No Cetecom
Switch / Control Unit	3488A	HP Meßtechnik		300001691
Power Supply DC	NGPE 40/40	R&S	388	400000078
Signal Analyzer 20Hz-26,5GHz-150 to + 30 DBM	FSIQ26	R&S	835540/018	300002681-0005
Frequency Standard (Rubidium Frequency Standard)	MFS (Rubidium)	R&S (Datum)	002	300002681-0009
Directional Coupler	101020010	Krytar	70215	300002840
DC-Blocker	8143	Inmet Corp.	none	300002842
Powersplitter	6005-3	Inmet Corp.		300002841
Temperature Test Chamber	VT 4002	Heraeus Voetsch	58566046820010	300003019
CBT (Bluetooth Tester + EDR Signalling)	CBT 1153.9000K35	R&S	100185	300003416
NRP Power meter Display and control unit AC sup	NRP + NRP-Z81	R&S	100212 + 100010	300003780

8 Summary of measurement results

☒	**No deviations from the technical specifications were ascertained**
☐	There were deviations from the technical specifications ascertained

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	CFR Part 15 RSS 210, Issue 8, Annex 8	Passed	2014-06-05	-/-

Test specification clause	Test case	Temperature conditions	Power source voltages	Mode	Pass	Fail	NA	NP	Remark
§15.247(b)(4) RSS 210 / A8.4(2)	Antenna gain	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.247(e) RSS 210 / A8.2(b)	Power spectral density	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.247(a)(1) RSS 210 / A8.1(b)	Carrier frequency separation	Nominal	Nominal	-/-	☐	☐	☒	☐	-/-
§15.247(a)(1) RSS 210 / A8.1(d)	Number of hopping channels	Nominal	Nominal	-/-	☐	☐	☒	☐	-/-
§15.247(a)(1)(iii) RSS 210 / A8.3(1)	Time of occupancy (dwell time)	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.247(a)(2) RSS 210 / A8.2(a)	Spectrum bandwidth of a FHSS system 6 dB bandwidth	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.247(a)(1) RSS 210	Spectrum bandwidth of a FHSS system 99 % bandwidth	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.247(b)(1) RSS-210 / A8.4(2)	Maximum output power	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	Band edge compliance conducted	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.205 RSS-210 / A8.5	Band edge compliance radiated	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions conducted	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.247(d) RSS-210 / A8.5	TX spurious emissions radiated	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.109 RSS-Gen.	RX spurious emissions radiated	Nominal	Nominal	-/-	☒	☐	☐	☐	complies
§15.209(a) RSS-Gen	TX spurious emissions radiated < 30 MHz	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies
§15.107(a) §15.207	Conducted emissions < 30 MHz	Nominal	Nominal	GFSK	☒	☐	☐	☐	complies

Note: NA = Not Applicable; NP = Not Performed

9 Additional comments

The Bluetooth® word mark and logos are owned by the Bluetooth SIG Inc. and any use of such marks by Cetecom ICT Services GmbH is under license.

Reference documents:	None
Special test descriptions:	None
Configuration descriptions:	TX tests: were performed with LE packets (37 byte payload) and static PRBS pattern. RX/Standby tests: BT enabled, TX Idle
Test mode:	☐ Bluetooth LE Test mode enabled (EUT is controlled over CBT) ☒ Special software is used. EUT is transmitting pseudo random data by itself

10 RSP100 test report cover sheet / performance test data

Test report number	**:**	**1-7445/14-03-10-A**
Equipment model number	**:**	**Phonak ComPilot II**
Certification number	**:**	**2262A-COMPILOT2**
Manufacturer (complete address)	**:**	**Phonak AG Laubisruetistrasse 28 8712 Staefa / SWITZERLAND**
Tested to radio standards specification no.	**:**	**RSS 210, Issue 8, Annex 8**
Open area test site IC No.	**:**	**IC 3462C-1**
Frequency range	**:**	**lowest channel 2402 MHz, highest channel 2480 MHz**
RF-power [mW] (max.)	**:**	**Cond.: 5.73 mW (GFSK) EIRP: 5.46 mW (GFSK)**
Occupied bandwidth (99%-BW) [kHz]	**:**	**1090 (GFSK)**
Type of modulation	**:**	**GFSK**
Emission designator (TRC-43)	**:**	**1M90FXD (GFSK)**
Antenna information	**:**	**Integrated antenna**
Transmitter spurious (worst case)	**:**	**40 dBµV/m @ 3 m @ 4804 MHz**

ATTESTATION:
DECLARATION OF COMPLIANCE:

I attest that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned Industry Canada standard(s); and that the equipment identified in this application has been subjected to all the applicable test conditions specified in the Industry Canada standards and all of the requirements of the standard have been met.

Laboratory manager:

2014-06-05	Marco Bertolino	cn=Marco Bertolino, o=CETECOM ICT Services GmbH, ou=BTL-100826, email=marco.bertolino@cetecom.com, c=DE 2014.06.05 14:41:08 +02'00'
Date	Name	Signature

11 Measurement results

11.1 Antenna gain

Measurement:

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module. For normal Bluetooth® devices, the GFSK modulation is used.

Measurement parameters:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 MHz
Video bandwidth:	3 MHz
Span:	5 MHz
Trace-Mode:	Max hold

Limits:

FCC	IC
Antenna Gain	
6 dBi	

Results:

T_{nom}	V_{nom}	lowest channel 2402 MHz	middle channel 2440 MHz	highest channel 2480 MHz
Conducted power [dBm] Measured with GFSK modulation		6.90	7.58	6.50
Radiated power [dBm] Measured with GFSK modulation		0.91	5.97	7.37
Gain [dBi] Calculated		-5.99	-1.61	0.87

Result: **Passed**

11.2 Power spectral density

Description:

Measurement of the power spectral density of a digital modulated system.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 kHz
Video bandwidth:	10 kHz
Span:	≥ EBW
Trace-Mode:	Max Hold

Limits:

FCC	IC
Power Spectral Density	
For digitally modulated systems the transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission or over 1.0 second if the transmission exceeds 1.0-second duration.	

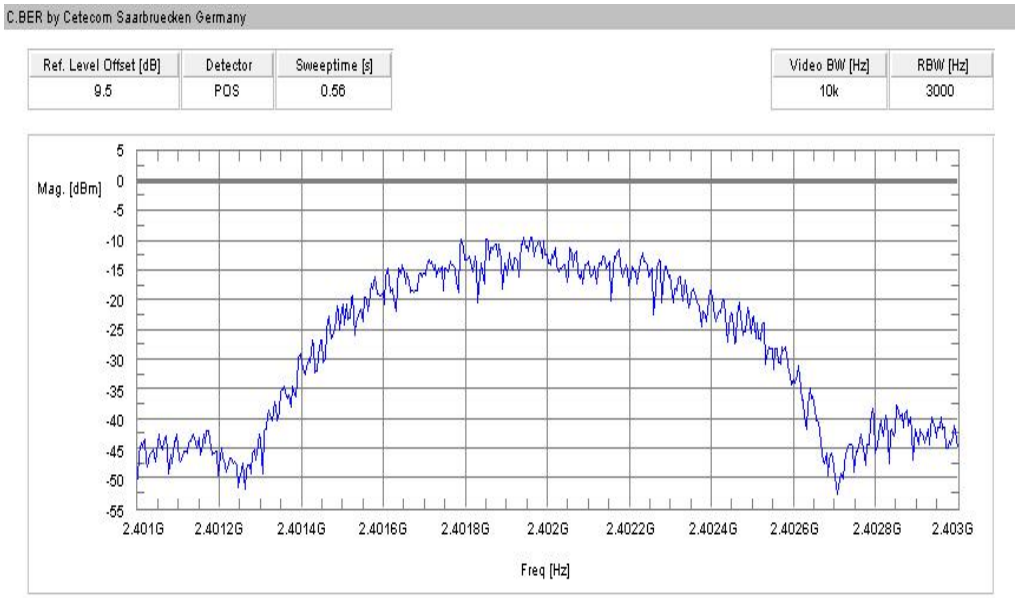
Results:

Modulation	Power spectral density		
Frequency	2402 MHz	2440 MHz	2480 MHz
[dBm / 3kHz]	-9.35	-8.68	-9.58
Measurement uncertainty	± 1.5 dB		

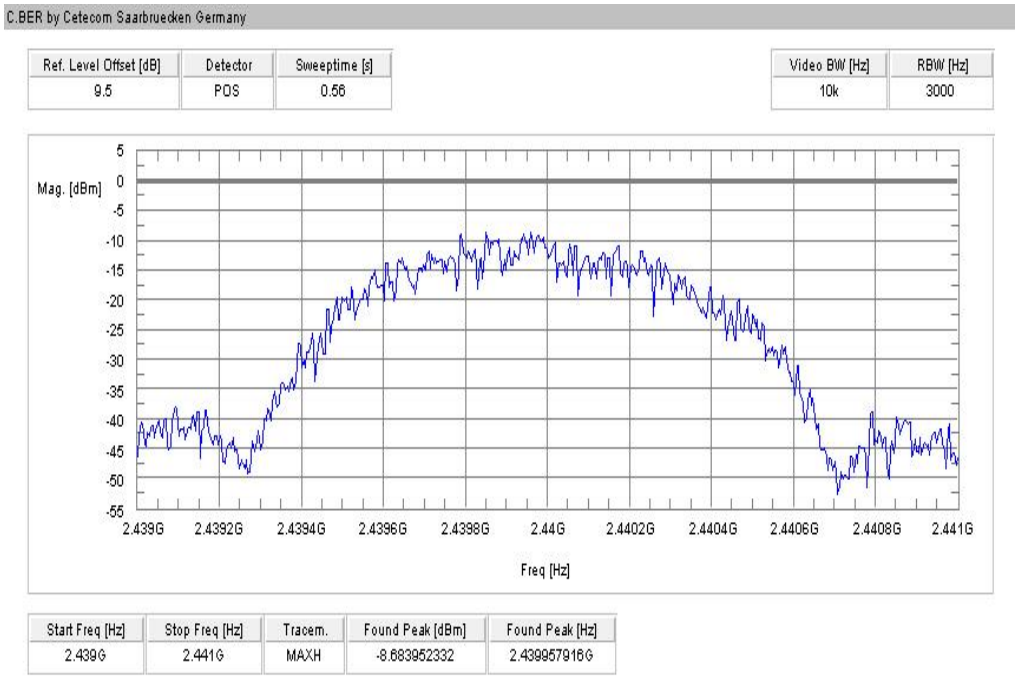
Result: **Passed**

Plots:

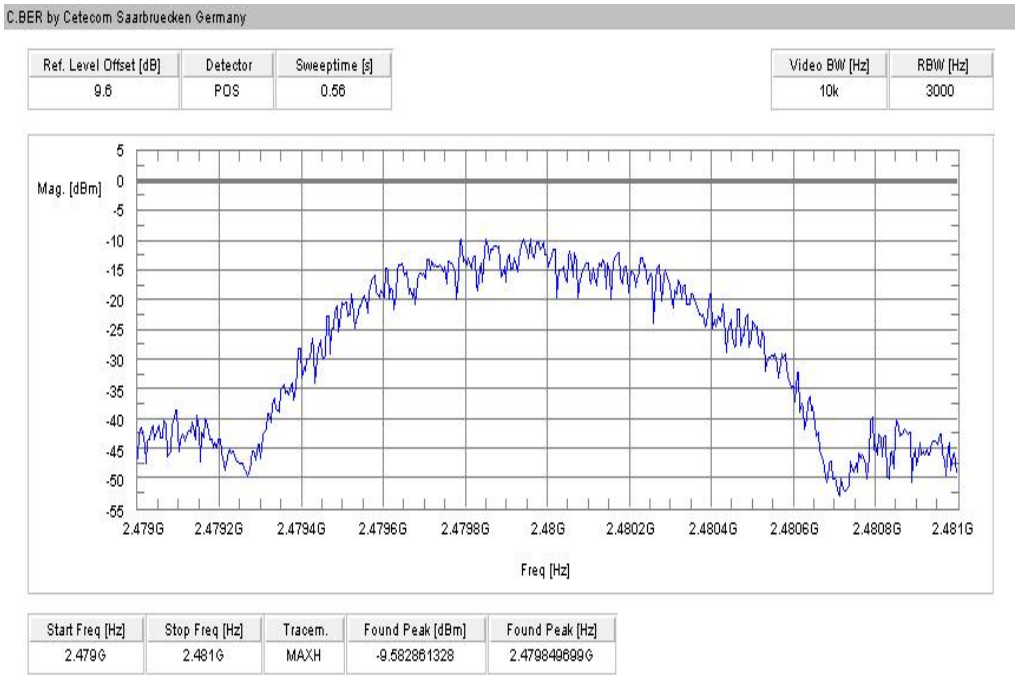
Plot 1: lowest channel



Plot 2: middle channel



Plot 3: highest channel



Start Freq [Hz]	Stop Freq [Hz]	Tracem.	Found Peak [dBm]	Found Peak [Hz]
2.479G	2.481G	MAXH	-9.582861328	2.479849699G

11.3 Time of occupancy (dwell time)

Measurement:

Measuring/calculation of the pulse width in data transmit mode on one hopping channel for a Bluetooth® LE device.

Measurement parameters:

Detector: Peak
Video bandwidth: 1 MHz
Resolution bandwidth: 1 MHz
Span: Zero Span
Trace: Video triggered

For Bluetooth® LE devices:

Time slot length:	625us
Number of channels:	40
Number of time slots per second:	1600/s
Max. number of transmissions per channel in 1 s:	1600/s / 40 = 40
Max. number of transmissions per channel in 16 s:	40 ×16 = 640
Period:	Number of channels × 0.4s = 16s

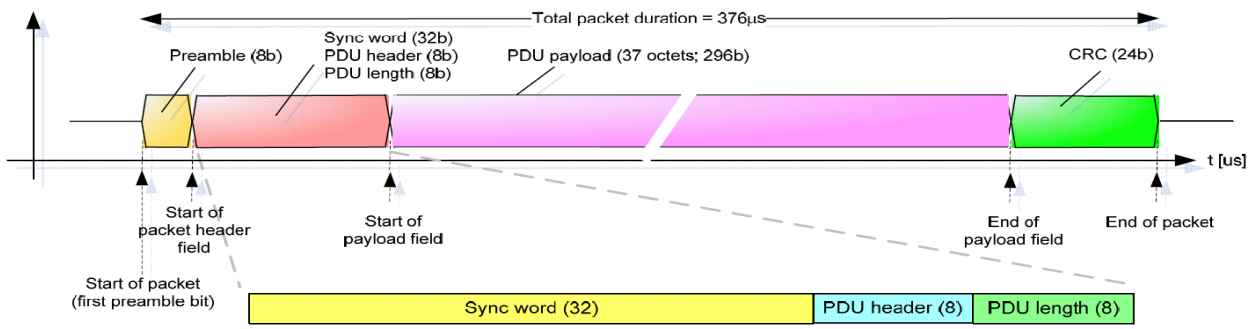
Under normal test conditions only	400 ms within in a period

Results:

Dwell time = standard test packet pulse width*) × number of transmission per channel in 15.6 seconds

Packet type	*standard test packet pulse width [ms]*	*number of hops in 16 sec*	*calculated dwell time[ms]*
Data Transmit mode	0.376	640	241

*) For Bluetooth® LE devices no measurements are mandatory due to the fixed requirements of the Bluetooth® Core Specification. The standard test packet is defined as:



Result: **Passed**

11.4 Spectrum bandwidth of a FHSS system – 6 dB bandwidth

Description:

Measurement of the 6 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	2 s
Resolution bandwidth:	20 kHz
Video bandwidth:	30 kHz
Span:	3 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
Spectrum bandwidth of a FHSS system – 6 dB bandwidth	
> 500 kHz	

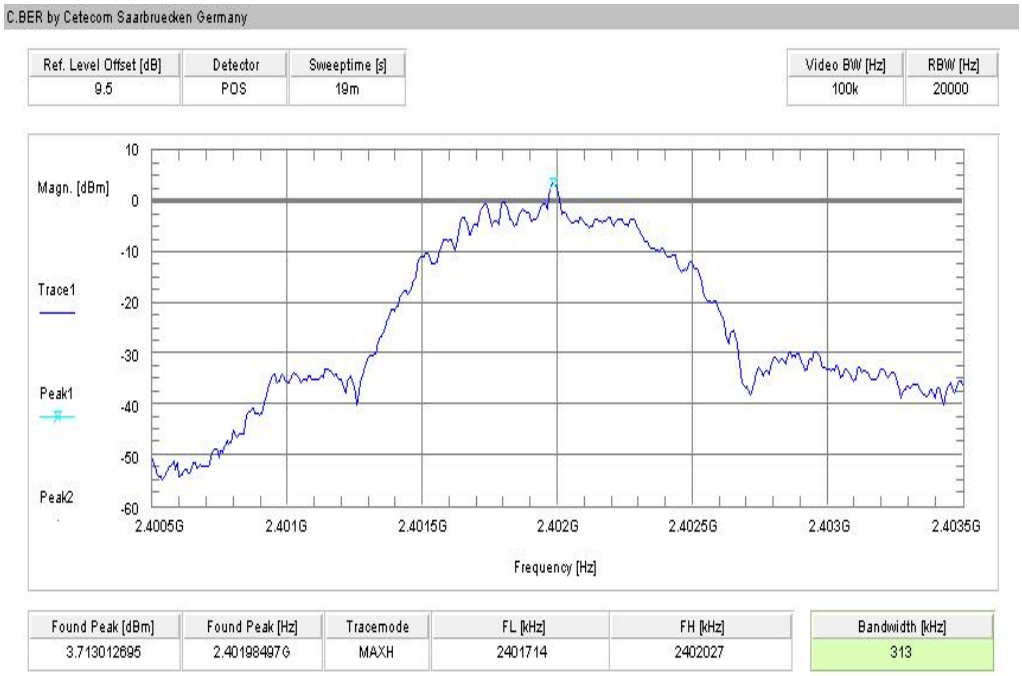
Results:

Modulation	6 dB BANDWIDTH [kHz]		
Frequency	2402 MHz	2440 MHz	2480 MHz
GFSK	313	313	313
Measurement uncertainty	± 20 kHz		

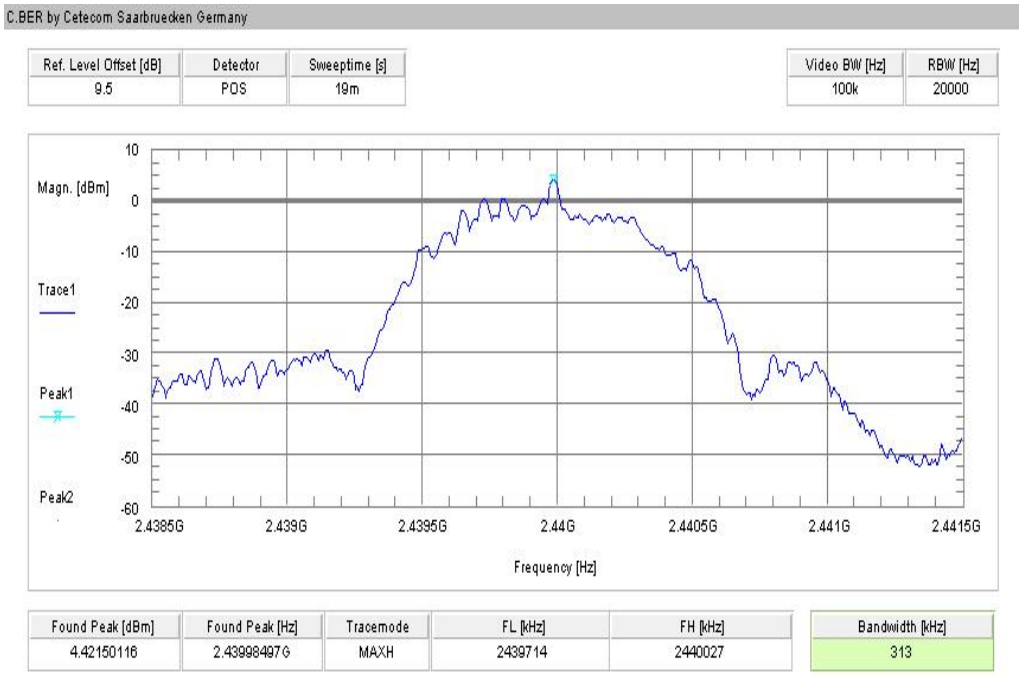
Result: **Passed**

Plots:

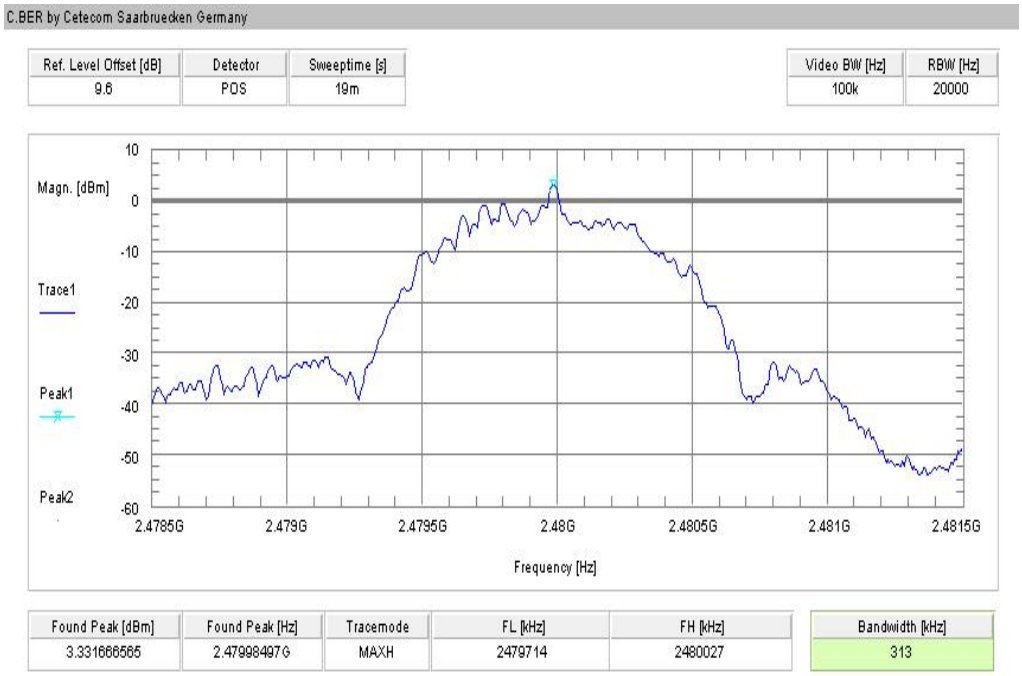
Plot 1: lowest channel



Plot 2: mid channel



Plot 3: highest channel



Found Peak [dBm]	Found Peak [Hz]	Tracemode	FL [kHz]	FH [kHz]	Bandwidth [kHz]
3.331666565	2.47998497G	MAXH	2479714	2480027	313

11.5 Spectrum bandwidth of a FHSS system – 99 % bandwidth

Description:

Measurement of the 20 dB bandwidth of the modulated signal. The measurement is performed according to the "Measurement Guidelines" (DA 00-705, March 30, 2000). EUT in single channel mode.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	2 s
Resolution bandwidth:	30 kHz
Video bandwidth:	100 kHz
Span:	3 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
Spectrum bandwidth of a FHSS system – 99 % bandwidth	
Bandwidth < 3/2 * Channel spacing	

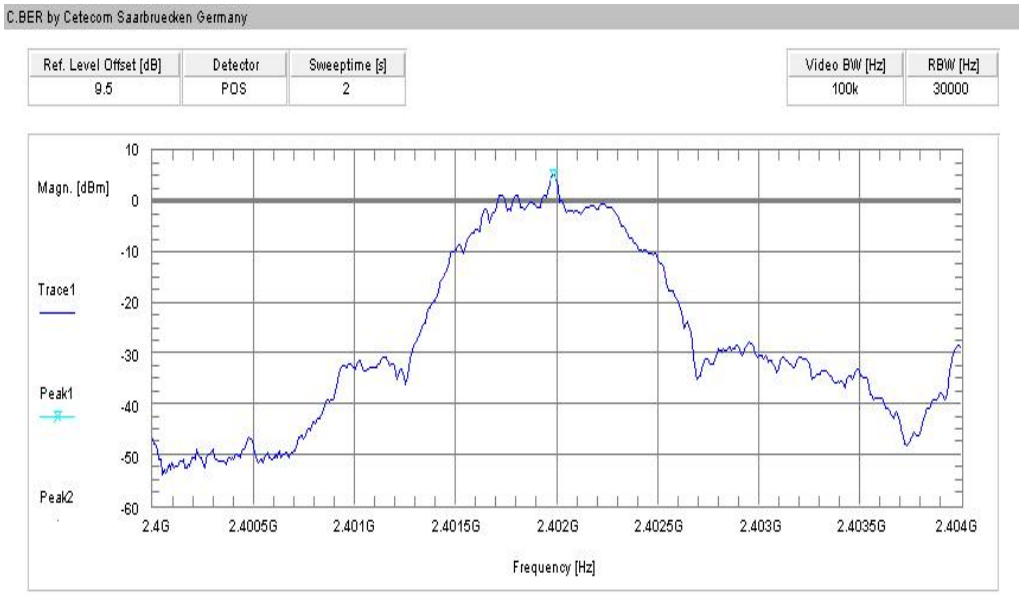
Results:

Modulation	99 % bandwidth [kHz]		
Frequency	2402 MHz	2440 MHz	2480 MHz
GFSK	1090	1090	1090
Measurement uncertainty	± 30 kHz		

Result: **Passed**

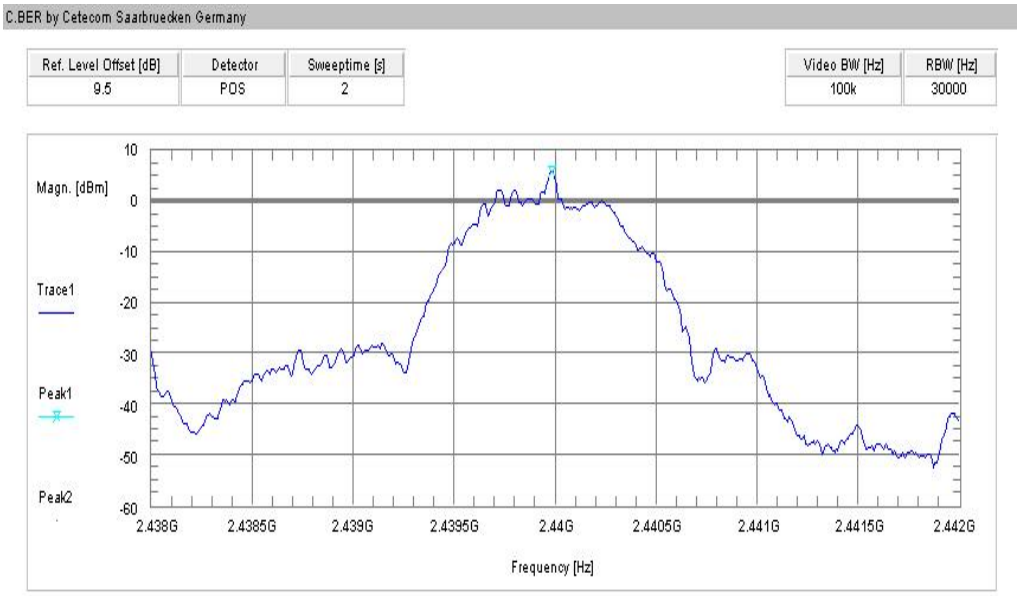
Plots:

Plot 1: lowest channel



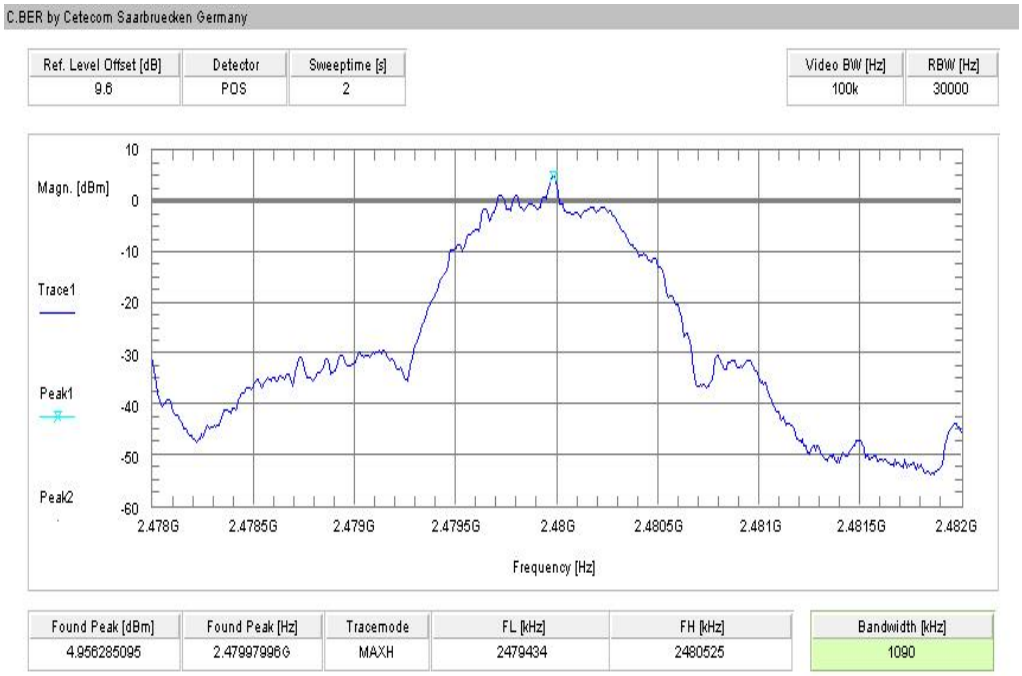
Found Peak [dBm]	Found Peak [Hz]	Tracemode	FL [kHz]	FH [kHz]	Bandwidth [kHz]
5.346115112	2.40197996G	MAXH	2401442	2402533	1090

Plot 2: mid channel



Found Peak [dBm]	Found Peak [Hz]	Tracemode	FL [kHz]	FH [kHz]	Bandwidth [kHz]
6.034263611	2.43997996G	MAXH	2439434	2440525	1090

Plot 3: highest channel



Found Peak [dBm]	Found Peak [Hz]	Tracemode	FL [kHz]	FH [kHz]	Bandwidth [kHz]
4.956285095	2.47997996G	MAXH	2479434	2480525	1090

11.6 Maximum output power

Description:

Measurement of the maximum output power conducted and radiated. EUT in single channel mode.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	3 MHz
Video bandwidth:	10 MHz
Span:	6 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
Maximum output power	
[Conducted: 0.125 W – antenna gain max. 6 dBi] Systems using more than 75 hopping channels: Conducted: 1.0 W – antenna gain max. 6 dBi	

Results:

Modulation	Maximum output power conducted [dBm]		
Frequency	2402 MHz	2440 MHz	2480 MHz
GFSK	6.90	7.58	6.50
Measurement uncertainty	± 1.5 dB		

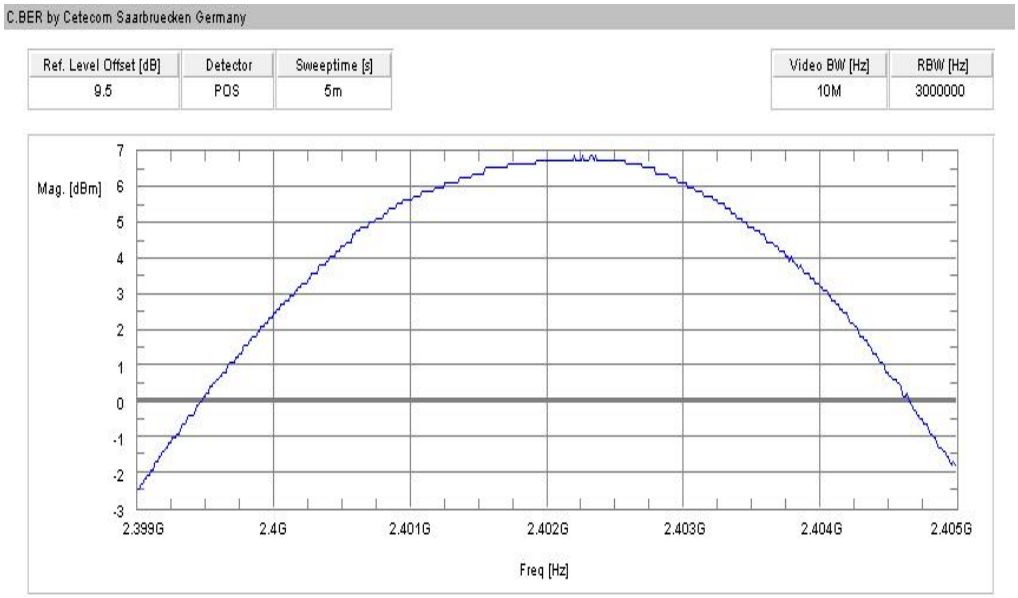
Modulation	Maximum output power radiated - EIRP [dBm]		
Frequency	2402 MHz	2440 MHz	2480 MHz
GFSK	0.91	5.97	7.37
Measurement uncertainty	± 3 dB		

*) - Values calculated with antenna gain

Result: **Passed**

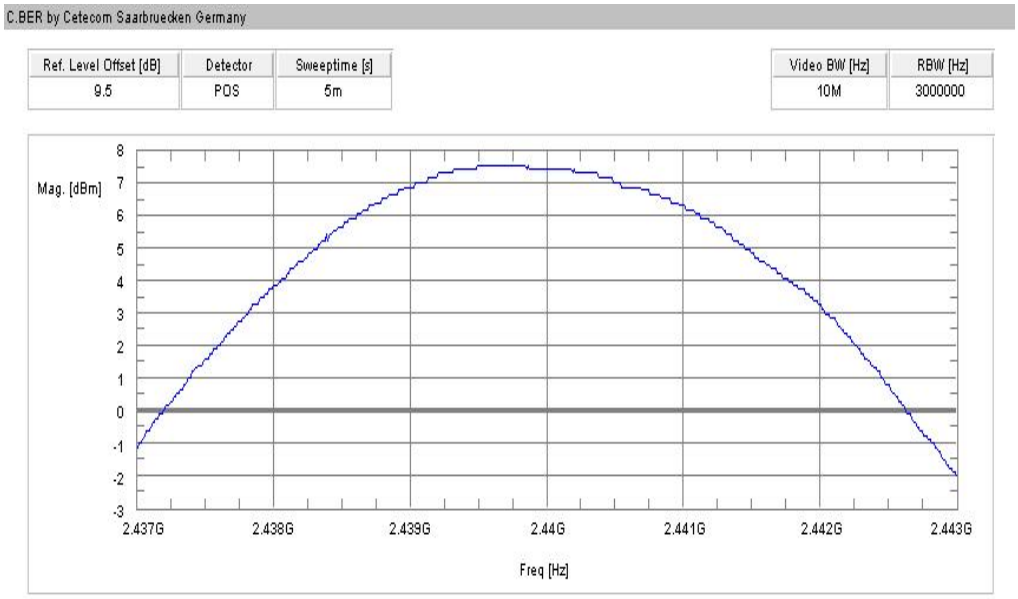
Plots:

Plot 1: lowest channel



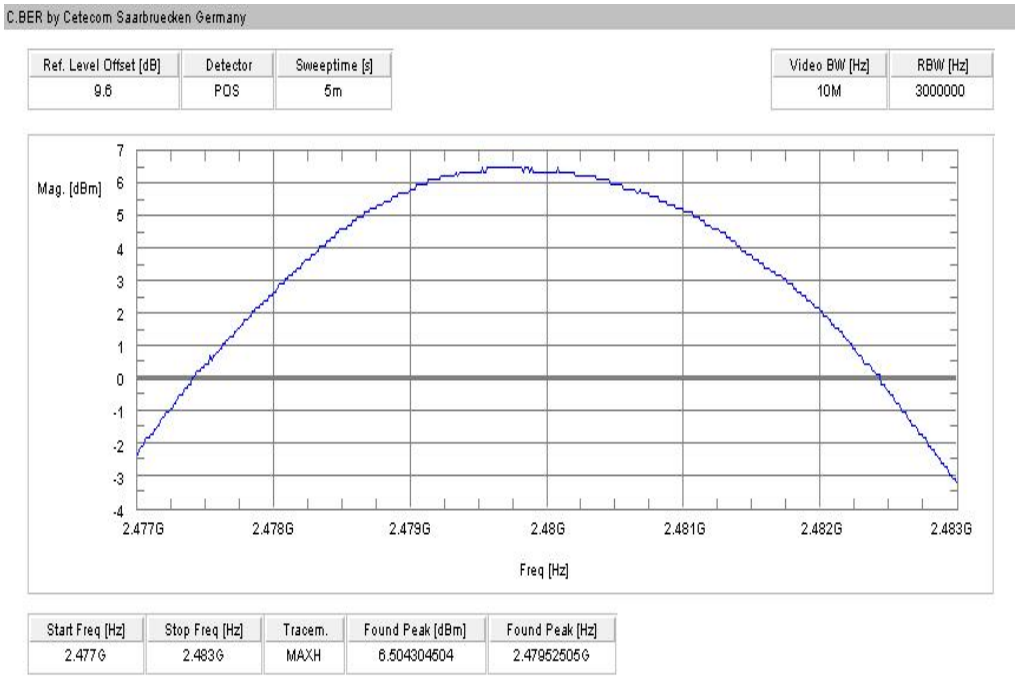
Start Freq [Hz]	Stop Freq [Hz]	Tracem.	Found Peak [dBm]	Found Peak [Hz]
2.399G	2.405G	MAXH	6.904304504	2.402198397G

Plot 2: mid channel



Start Freq [Hz]	Stop Freq [Hz]	Tracem.	Found Peak [dBm]	Found Peak [Hz]
2.437G	2.443G	MAXH	7.58228302	2.439488978G

Plot 3: highest channel



Start Freq [Hz]	Stop Freq [Hz]	Tracem.	Found Peak [dBm]	Found Peak [Hz]
2.477G	2.483G	MAXH	6.504304504	2.47952505G

11.7 Band edge compliance conducted

Description:

Measurement of the conducted band edge compliance. EUT is measured at the lower and upper band edge in single channel and hopping mode. The measurement is repeated for all modulations.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	100 kHz
Span:	Lower Band Edge: 2395 – 2405 MHz Upper Band Edge: 2478 – 2489 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
Band edge compliance conducted	
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.	

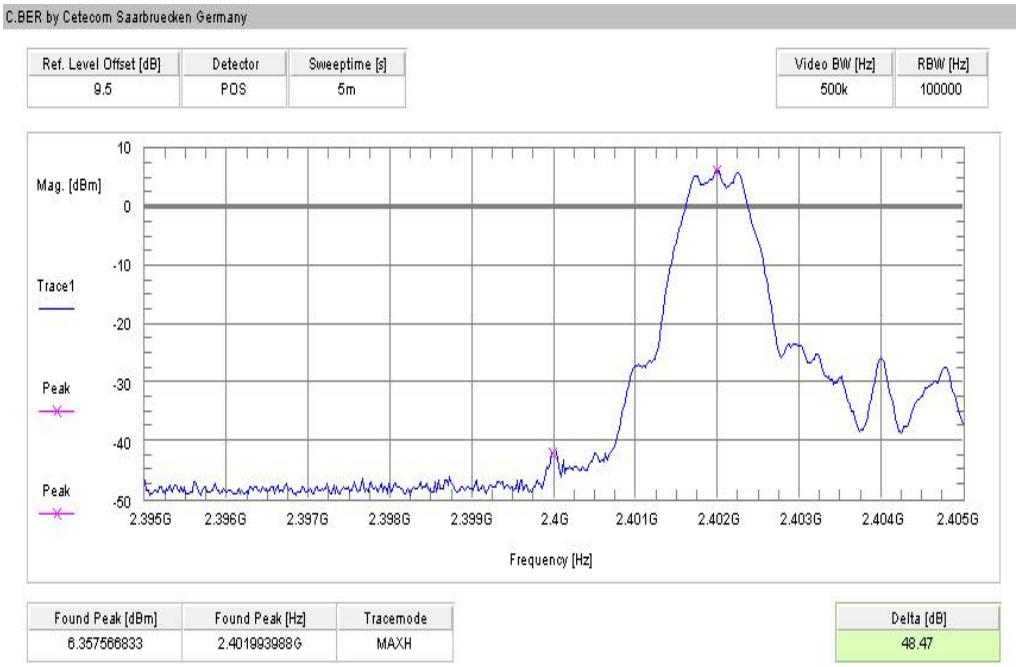
Result:

Scenario	Band edge compliance conducted [dB]
Modulation	GFSK
Lower band edge – hopping off	> 20 dB
Upper band edge – hopping off	> 20 dB
Measurement uncertainty	± 1.5 dB

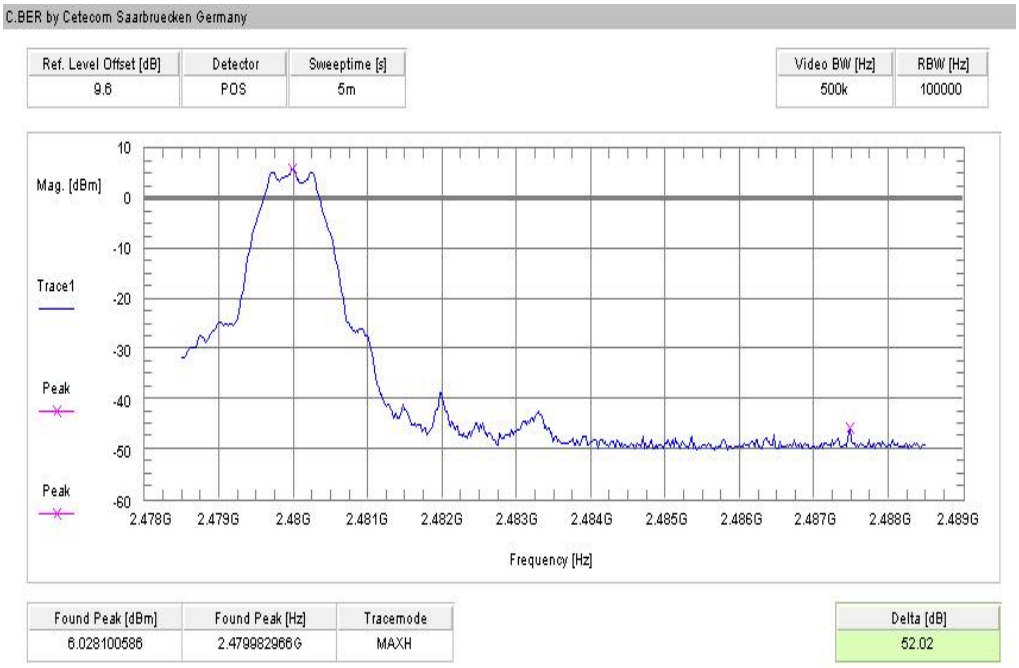
Result: **Passed**

Plots:

Plot 1: Lower band edge – hopping off



Plot 2: Upper band edge – hopping off



11.8 Band edge compliance radiated

Description:

Measurement of the radiated band edge compliance. The EUT is turned in the position that results in the maximum level at the band edge. Then a sweep over the corresponding restricted band is performed. The EUT is set to single channel mode and the transmit channel is channel 00 for the lower restricted band and channel 39 for the upper restricted band. The measurement is repeated for all modulations. Measurement distance is 3m.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1 MHz
Video bandwidth:	10 Hz
Span:	Lower Band: 2300 – 2400 MHz Upper Band: 2480 – 2500 MHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
Band edge compliance radiated	
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).	
54 dBµV/m AVG 74 dBµV/m Peak	

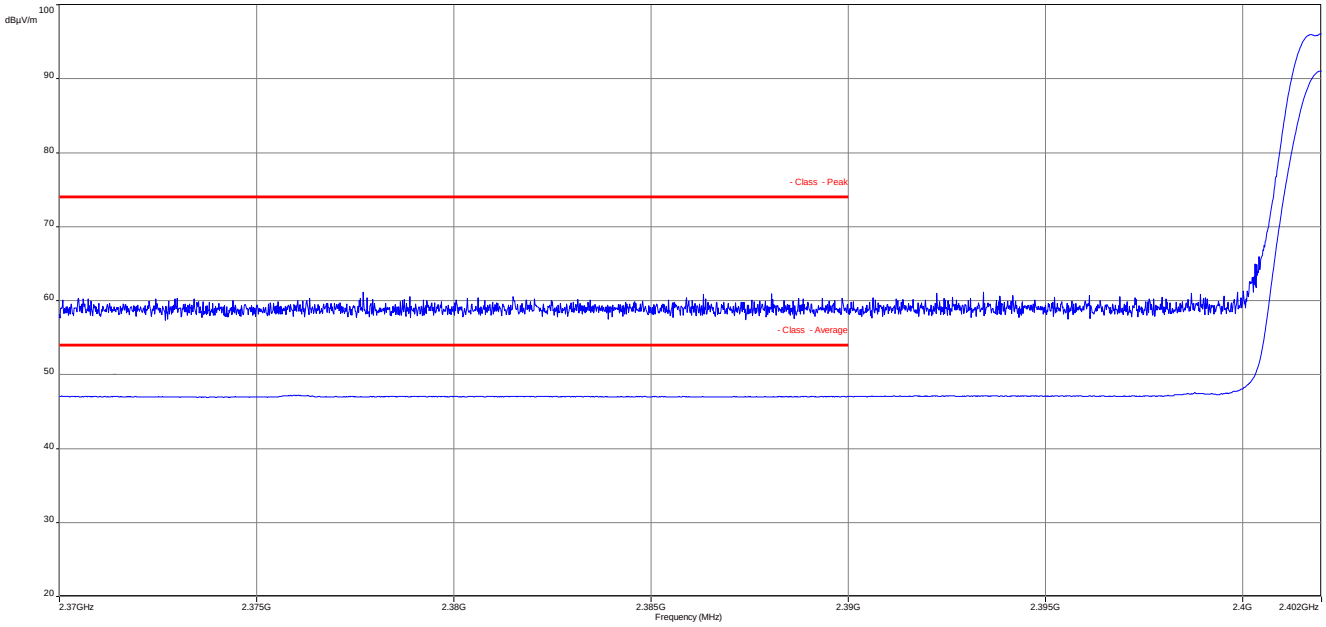
Result:

Scenario	Band edge compliance radiated [dBµV/m]
Modulation	GFSK
Lower restricted band	< 54 AVG < 74 Peak
Upper restricted band	< 54 AVG < 74 Peak
Measurement uncertainty	± 3 dB

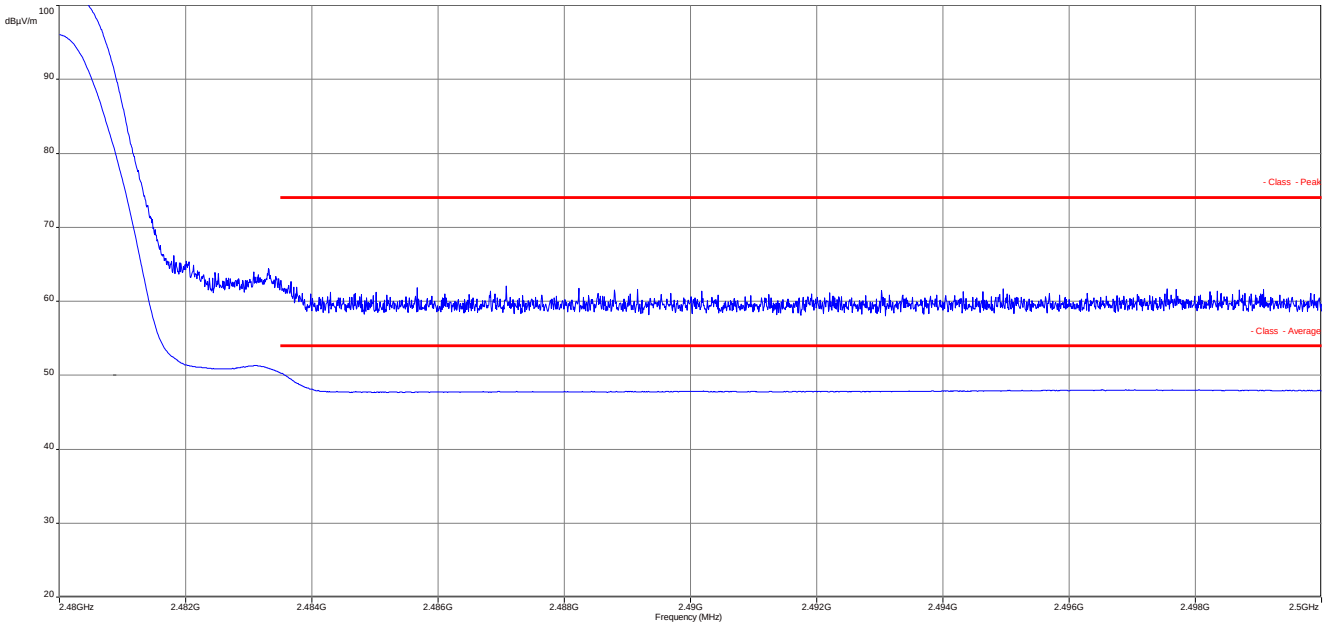
Result: **Passed**

Plots:

Plot 1: Lower restricted band



Plot 2: Upper restricted band



11.9 TX spurious emissions conducted

Description:

Measurement of the conducted spurious emissions in transmit mode. The EUT is set to single channel mode and the transmit channel is channel 00, channel 19 and channel 39.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	100 kHz
Video bandwidth:	300 kHz or 500 kHz
Span:	9 kHz to 25 GHz
Trace-Mode:	Max Hold

Limits:

FCC	IC
TX spurious emissions conducted	
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required	

Results:

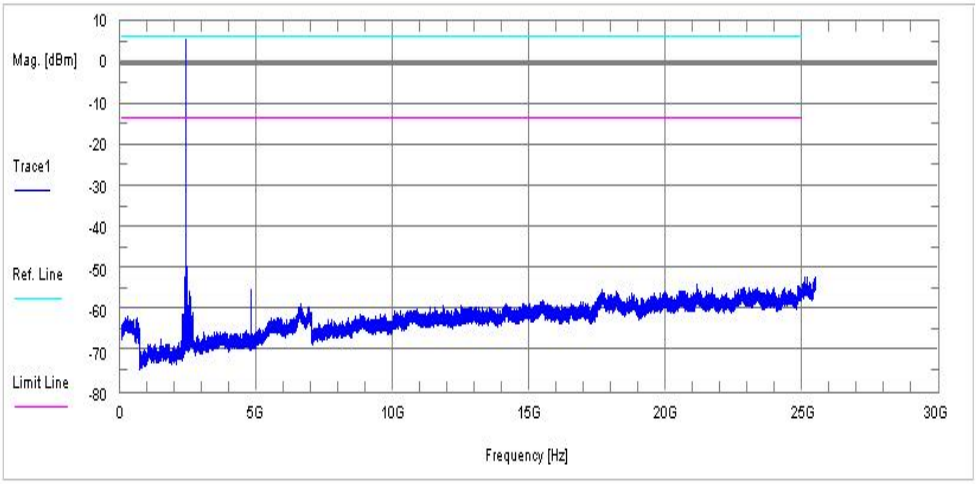
TX spurious emissions conducted					
f [MHz]		amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below frequency of operation [dB]	results
2402		6.57	30 dBm		Operating frequency
All detected emissions are more than 6 dB below the limit!			-20 dBc		complies
2440		6.58	30 dBm		Operating frequency
All detected emissions are more than 6 dB below the limit!			-20 dBc		complies
2480		6.33	30 dBm		Operating frequency
All detected emissions are more than 6 dB below the limit!			-20 dBc		complies
Measurement uncertainty		± 3 dB			

Result: **Passed**

Plots:

Plot 1: lowest channel

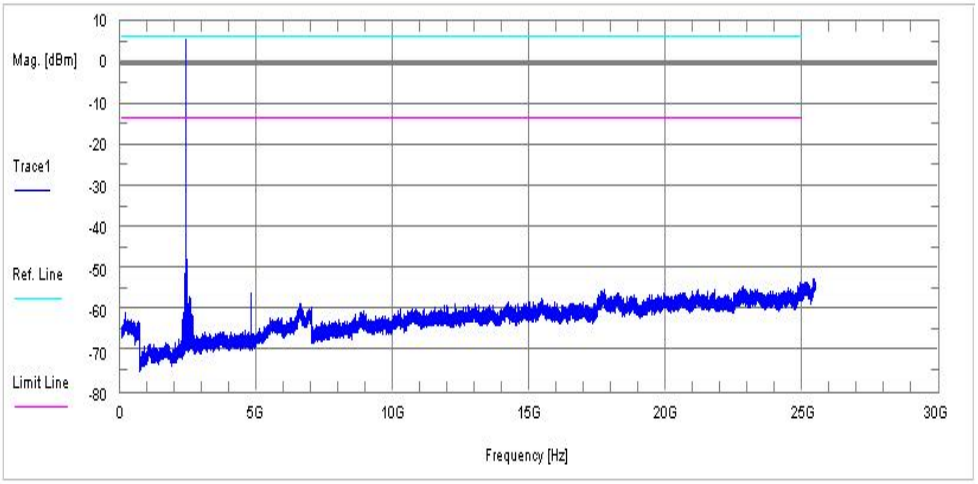
Detector	BW/VBW [Hz] f<1GHz	last VBW [Hz]	last RBW [Hz]
POS	100k	300k	100000



Limit [dBm]	Tracemode	Reference [dBm]
-13.43498993	MAXH	6.565010071

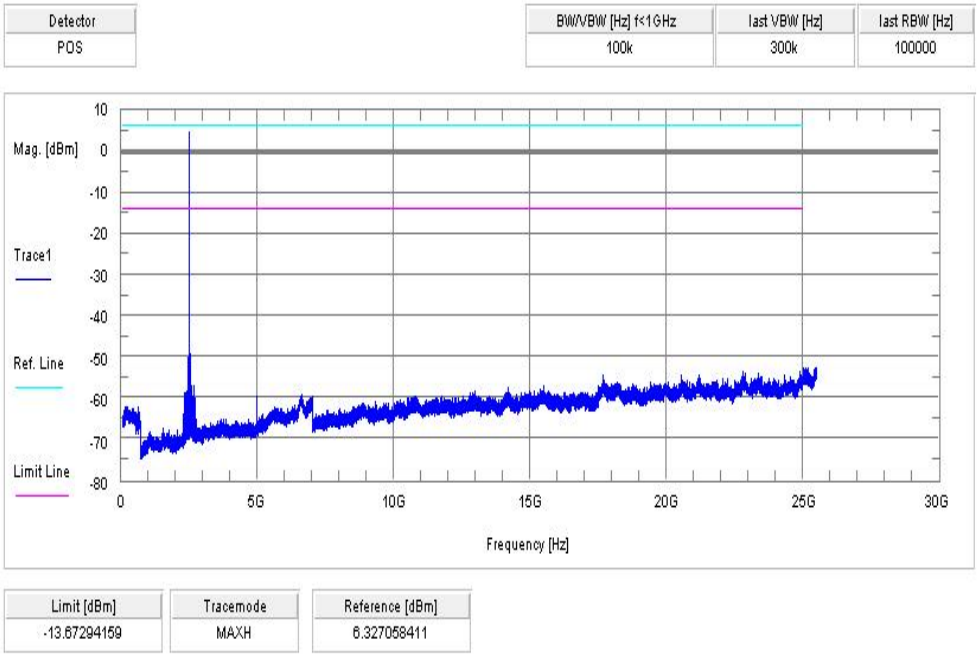
Plot 2: mid channel

Detector	BW/VBW [Hz] f<1GHz	last VBW [Hz]	last RBW [Hz]
POS	100k	300k	100000



Limit [dBm]	Tracemode	Reference [dBm]
-13.42279053	MAXH	6.577209473

Plot 3: highest channel



11.10 TX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in transmit mode. The EUT is set to single channel mode and the transmit channel is channel 00, channel 19 and channel 39.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi Peak
Sweep time:	Auto
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Video bandwidth:	3 x RBW Remeasurement: 10 Hz
Span:	30 MHz to 25 GHz
Trace-Mode:	Max Hold
Measured Modulation:	GFSK

Limits:

FCC		IC
TX spurious emissions radiated		
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).		
§15.209		
Frequency (MHz)	Field strength (dBµV/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

Results:

TX spurious emissions radiated [dBµV/m]								
2402 MHz			2440 MHz			2480 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz take a look at the table below the 1 GHz plot.			For emissions below 1 GHz take a look at the table below the 1 GHz plot.			For emissions below 1 GHz take a look at the table below the 1 GHz plot.		
All detected peak emissions above 1 GHz are below the average limit.			All detected peak emissions above 1 GHz are below the average limit.			All detected peak emissions above 1 GHz are below the average limit.		
Measurement uncertainty			± 3 dB					

Result: **Passed**

Note: The limit was recalculated with 20 dB / decade (Part 15.31) for all radiated spurious emissions 30 MHz to 1 GHz from 3 meter limit to a 10 meter distance. (40dB/decade for emissions < 30MHz)

Plots:

Plot 1: 30 MHz to 1 GHz, lowest channel, vertical & horizontal polarization

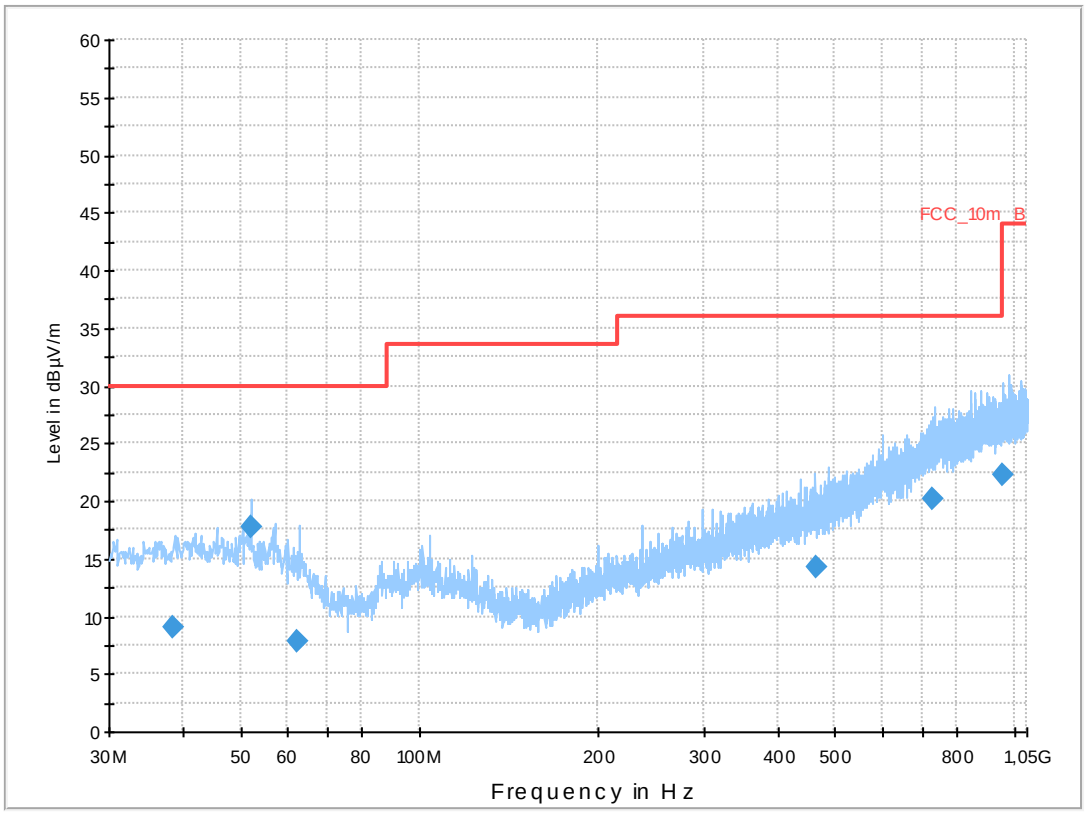
Common Information

EUT:	Phonak ComPilot II
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	BTLE tx CH0 + audio in + charging
Operator Name:	Wolsdorfer
Comment:	AC 115V/60Hz, neckloop antenna (long) connected

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

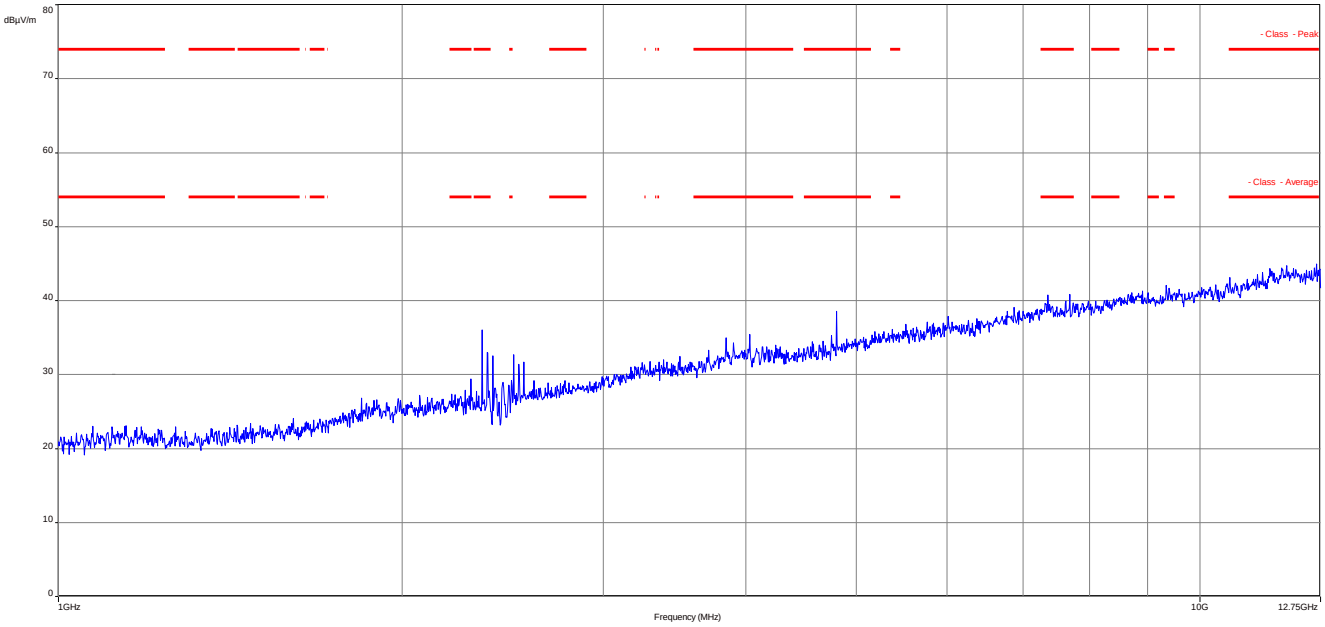
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

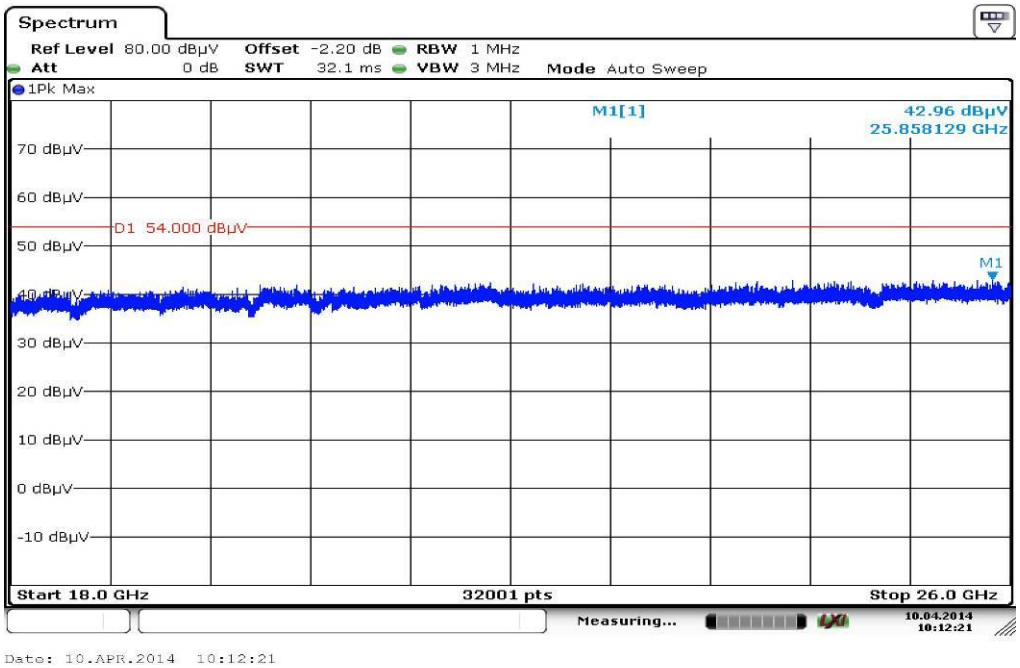
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
38.367600	9.0	1000.0	120.000	120.0	V	88.0	13.3	21.0	30.0	
52.015800	17.7	1000.0	120.000	98.0	V	-10.0	13.2	12.3	30.0	
62.387700	7.7	1000.0	120.000	98.0	V	100.0	11.0	22.3	30.0	
463.026900	14.3	1000.0	120.000	111.0	V	0.0	17.9	21.7	36.0	
728.129850	20.1	1000.0	120.000	170.0	V	-9.0	23.2	15.9	36.0	
953.106600	22.3	1000.0	120.000	170.0	V	92.0	25.4	13.7	36.0	

Plot 2: 1 GHz to 12.75 GHz, lowest channel, vertical & horizontal polarization

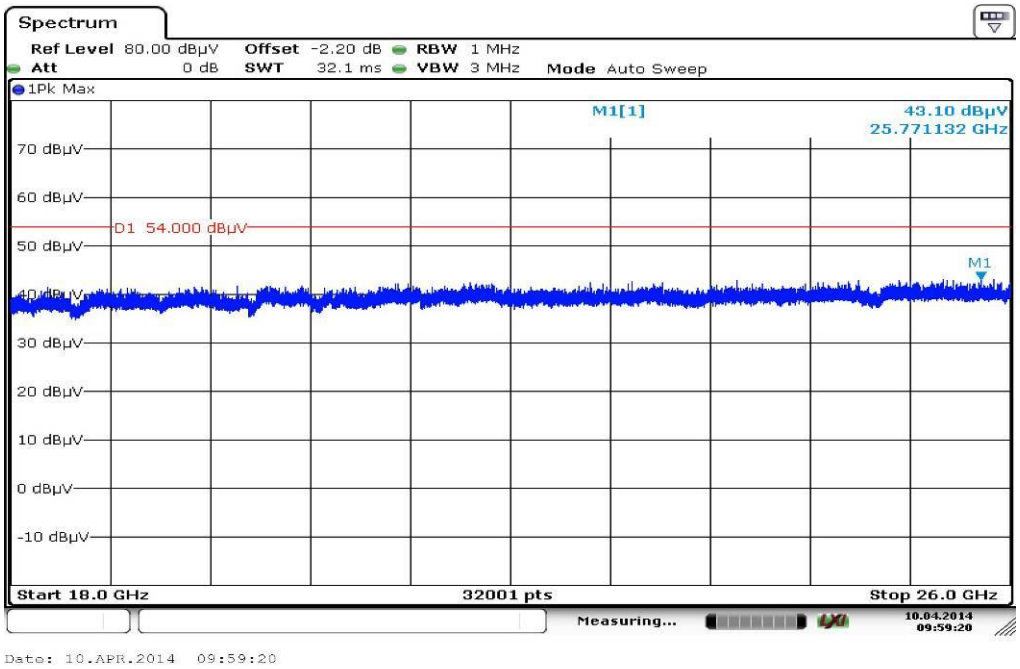


Carrier suppressed with a 2.4 GHz-band rejection filter.

Plot 3: 12 GHz to 18 GHz, lowest channel, vertical & horizontal polarization



Plot 4: 18 GHz to 25 GHz, lowest channel, vertical & horizontal polarization



Plot 5: 30 MHz to 1 GHz, mid channel, vertical & horizontal polarization

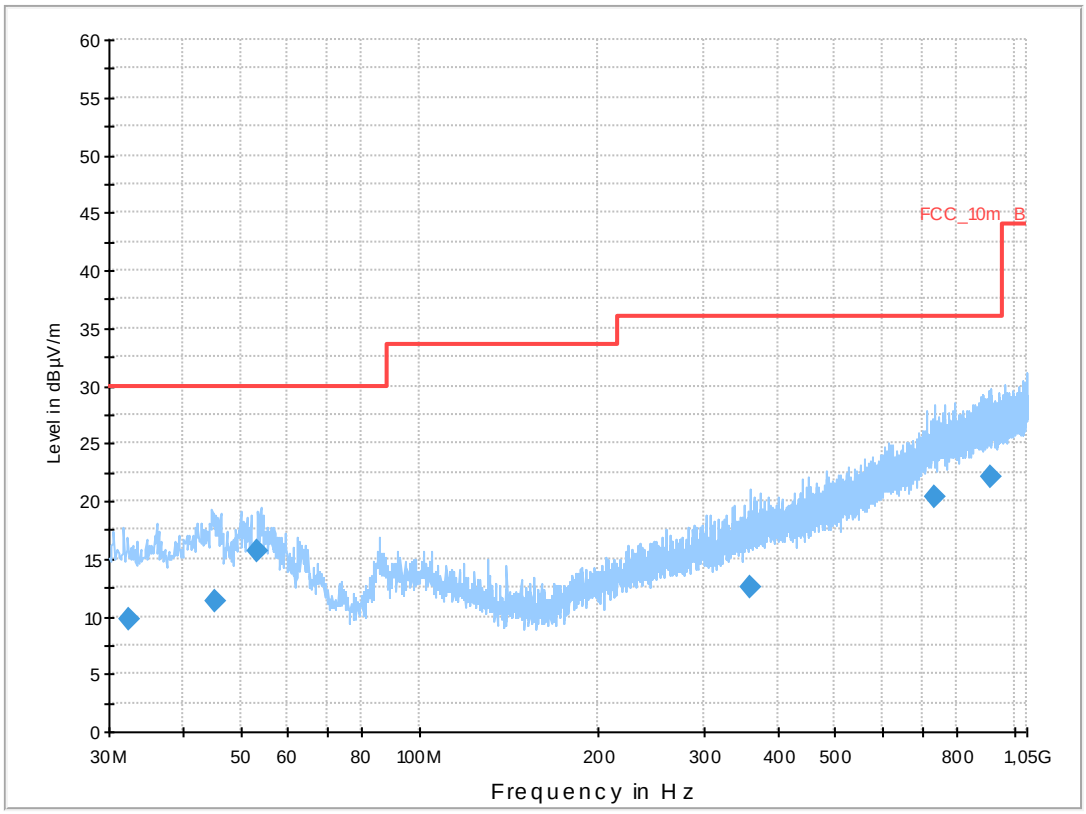
Common Information

EUT:	Phonak ComPilot II
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	BTLE tx CH19 + audio in + charging
Operator Name:	Wolsdorfer
Comment:	AC 115V/60Hz, neckloop antenna (long) connected

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

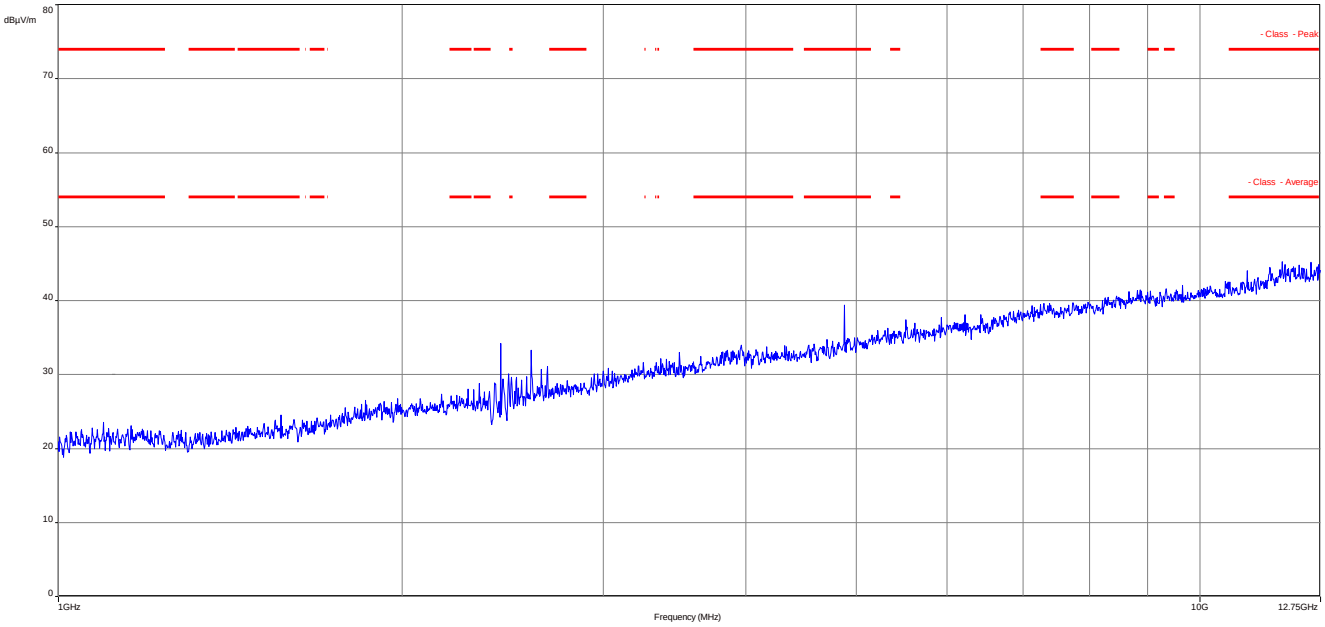
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

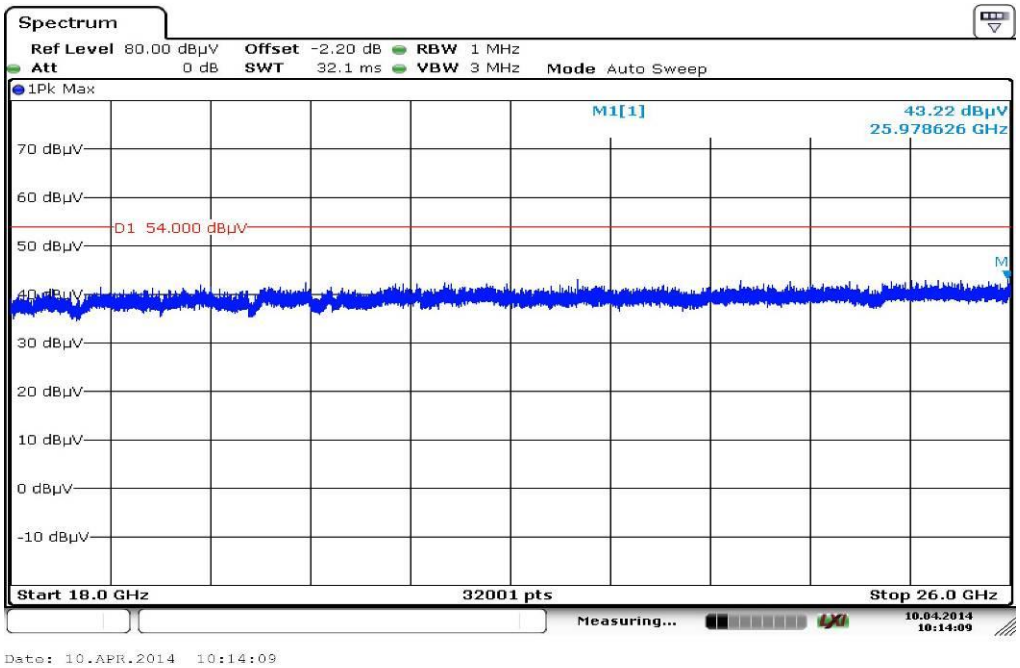
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
32.380050	9.8	1000.0	120.000	132.0	H	92.0	12.8	20.2	30.0	
45.358650	11.3	1000.0	120.000	98.0	V	93.0	13.3	18.7	30.0	
53.452650	15.7	1000.0	120.000	111.0	V	280.0	13.0	14.3	30.0	
359.166300	12.5	1000.0	120.000	154.0	H	261.0	16.2	23.5	36.0	
734.190300	20.3	1000.0	120.000	170.0	V	2.0	23.3	15.7	36.0	
911.252550	22.1	1000.0	120.000	170.0	H	85.0	25.2	13.9	36.0	

Plot 6: 1 GHz to 12.75 GHz, mid channel, vertical & horizontal polarization

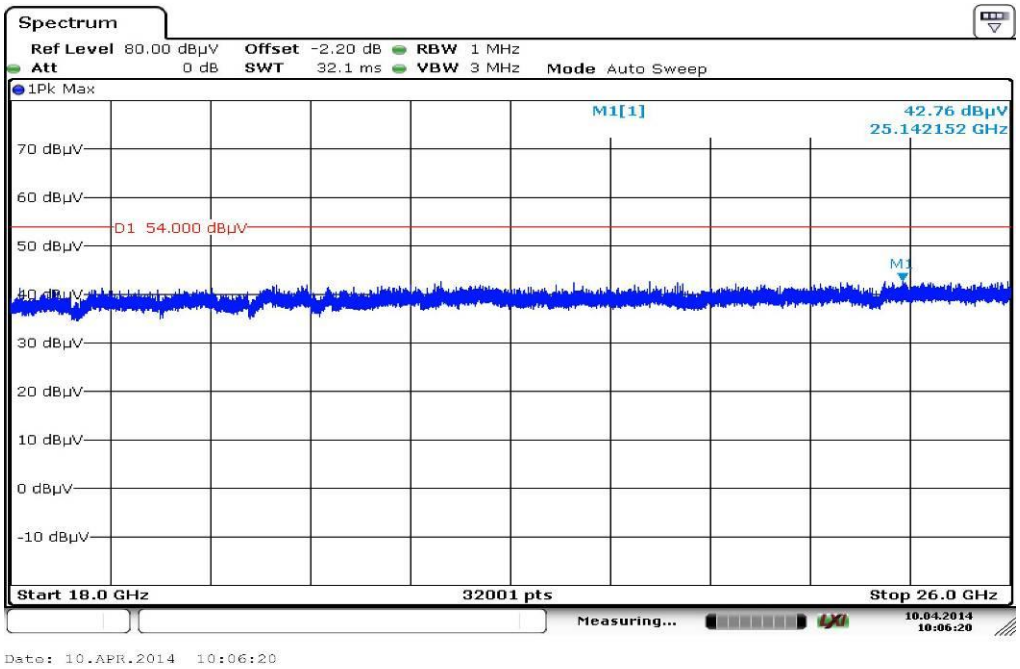


Carrier suppressed with a 2.4 GHz-band rejection filter.

Plot 7: 12 GHz to 18 GHz, mid channel, vertical & horizontal polarization



Plot 8: 18 GHz to 25 GHz, mid channel, vertical & horizontal polarization



Plot 9: 30 MHz to 1 GHz, highest channel, vertical & horizontal polarization

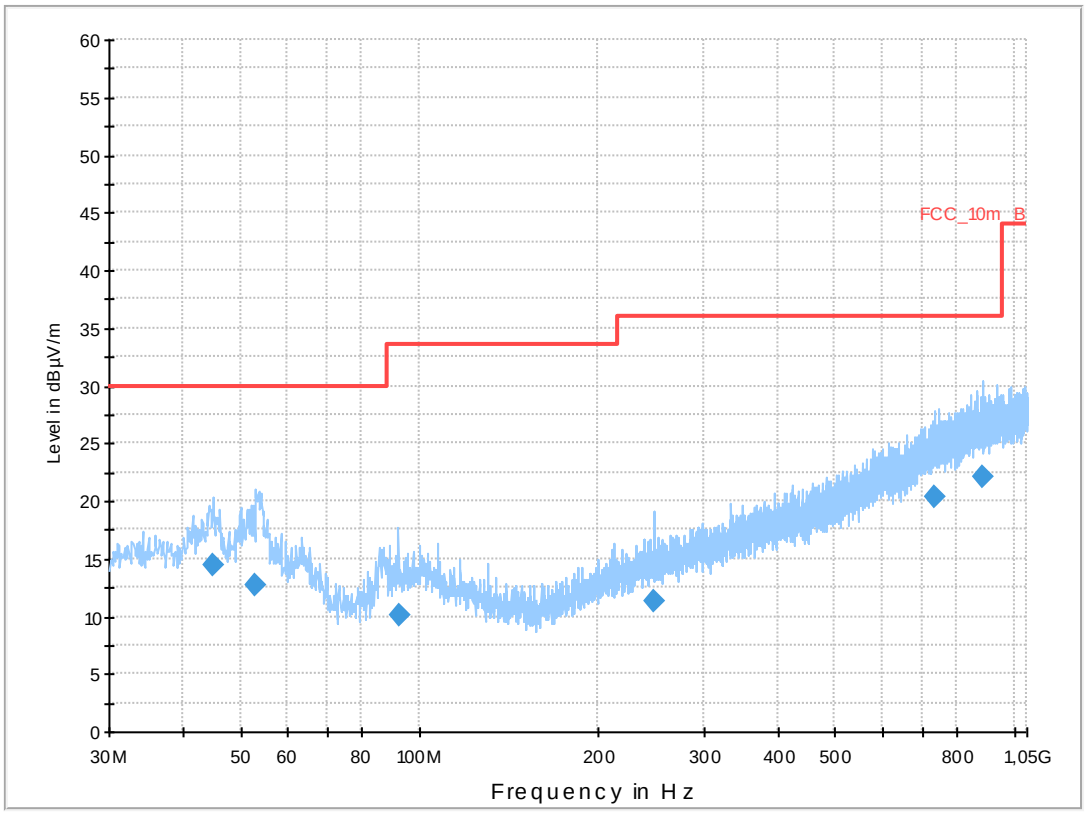
Common Information

EUT:	Phonak ComPilot II
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	BTLE tx CH39 + audio in + charging
Operator Name:	Wolsdorfer
Comment:	AC 115V/60Hz, neckloop antenna (long) connected

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

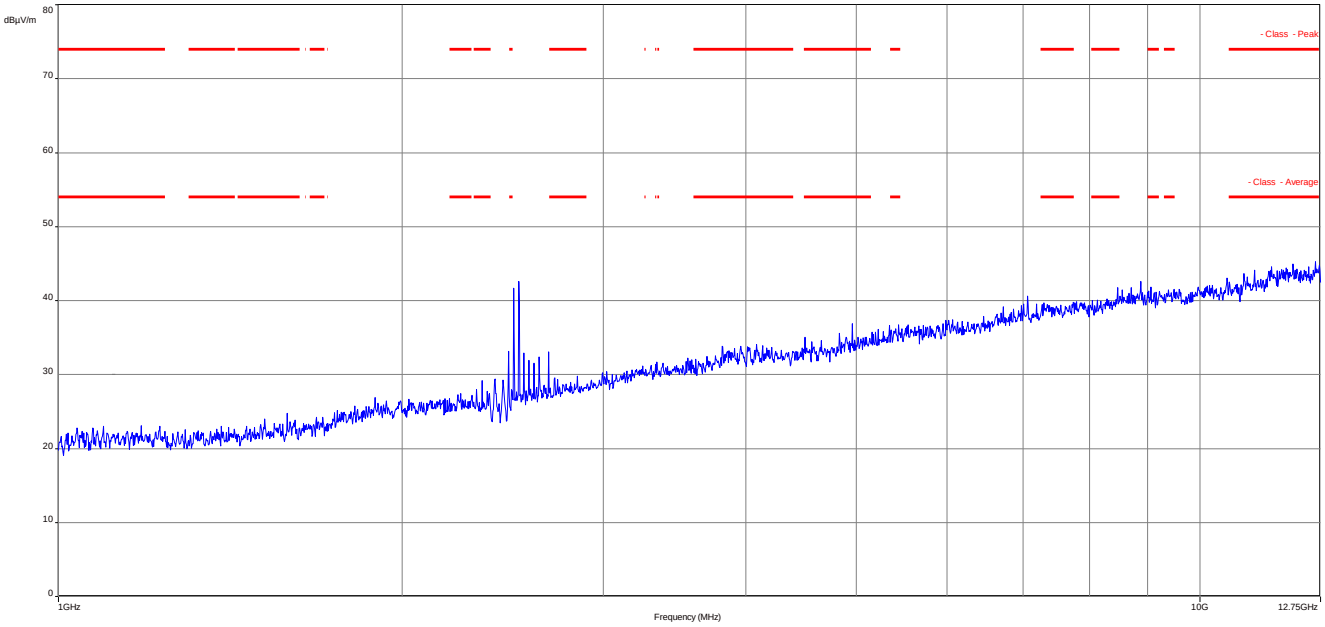
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



Final Result 1

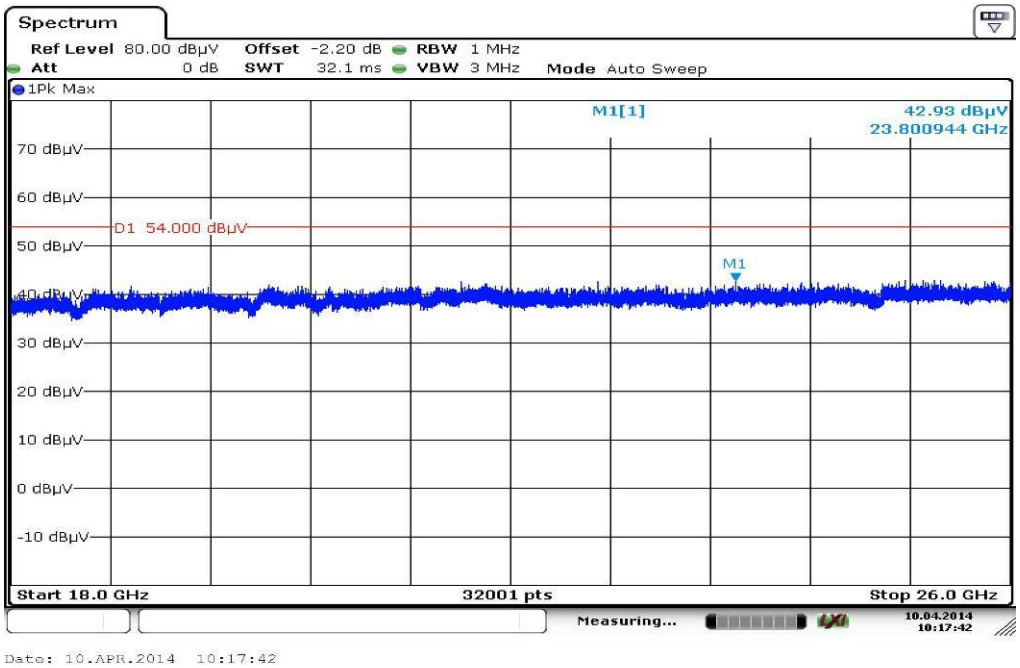
Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
44.875350	14.4	1000.0	120.000	98.0	V	100.0	13.3	15.6	30.0	
53.018400	12.6	1000.0	120.000	98.0	V	272.0	13.1	17.4	30.0	
92.241300	10.0	1000.0	120.000	132.0	V	-5.0	10.9	23.5	33.5	
247.995600	11.3	1000.0	120.000	170.0	V	90.0	13.3	24.7	36.0	
735.967200	20.3	1000.0	120.000	162.0	H	85.0	23.3	15.7	36.0	
883.265100	22.1	1000.0	120.000	170.0	V	10.0	25.0	13.9	36.0	

Plot 10: 1 GHz to 12.75 GHz, highest channel, vertical & horizontal polarization

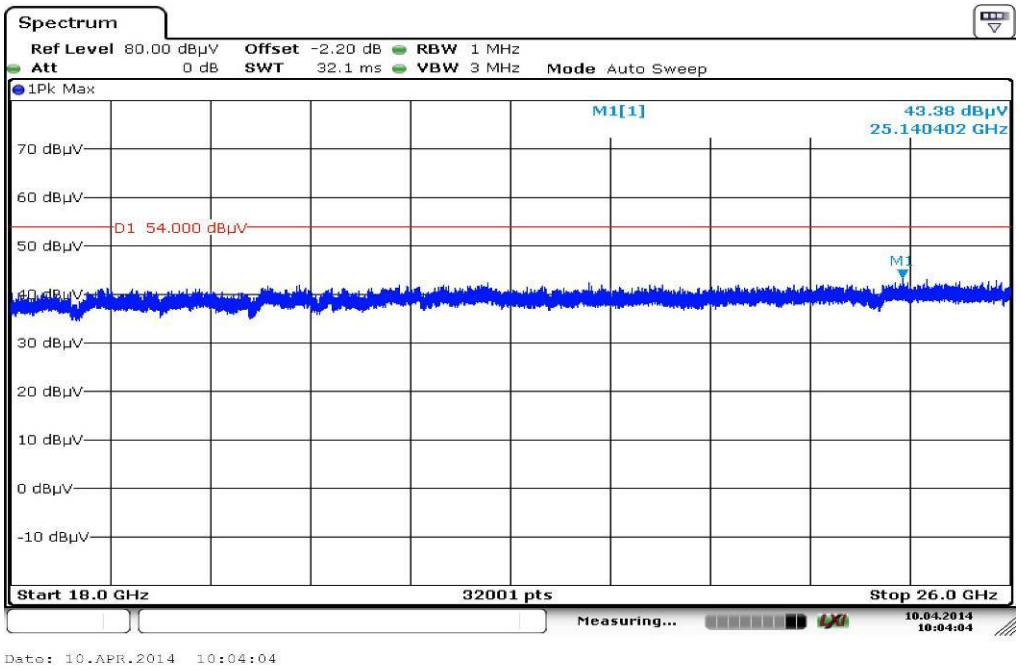


Carrier suppressed with a 2.4 GHz-band rejection filter.

Plot 11: 12 GHz to 18 GHz, highest channel, vertical & horizontal polarization



Plot 12: 18 GHz to 25 GHz, highest channel, vertical & horizontal polarization



11.11 RX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in idle/receive mode. The EUT is detached so all oscillators are active.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi peak
Sweep time:	Auto
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Video bandwidth:	3 x RBW Remeasurement: 10 Hz
Span:	30 MHz to 25 GHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
RX Spurious Emissions Radiated		
Frequency (MHz)	Field strength (dBµV/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

Results:

RX spurious emissions radiated [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
For emissions below 1 GHz take a look at the table below the 1 GHz plot.		
All detected peak emissions above 1 GHz are below the average limit.		
Measurement uncertainty	±3 dB	

Result: **Passed**

Note: The limit was recalculated with 20 dB / decade (Part 15.31) for all radiated spurious emissions 30 MHz to 1 GHz from 3 meter limit to a 10 meter distance. (40dB/decade for emissions < 30MHz)

Plots:

Plot 1: 30 MHz to 1 GHz, RX / idle – mode, vertical & horizontal polarization

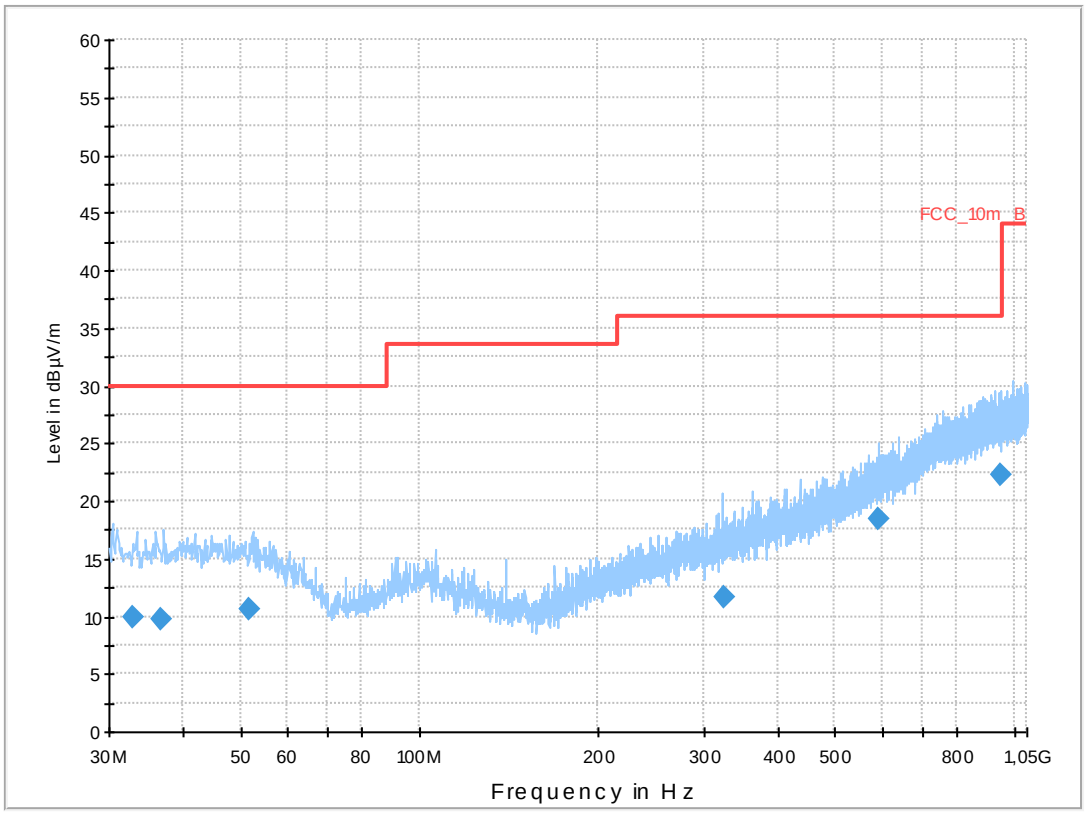
Common Information

EUT:	Phonak ComPilot II
Test Description:	FCC part 15 class B @ 10 m
Operating Conditions:	Idle + audio in + charging
Operator Name:	Wolsdorfer
Comment:	AC 115V/60Hz, neckloop antenna (long) connected

Scan Setup: STAN_Fin [EMI radiated]

Hardware Setup:	Electric Field (NOS)
Receiver:	[ESCI 3]
Level Unit:	dBµV/m

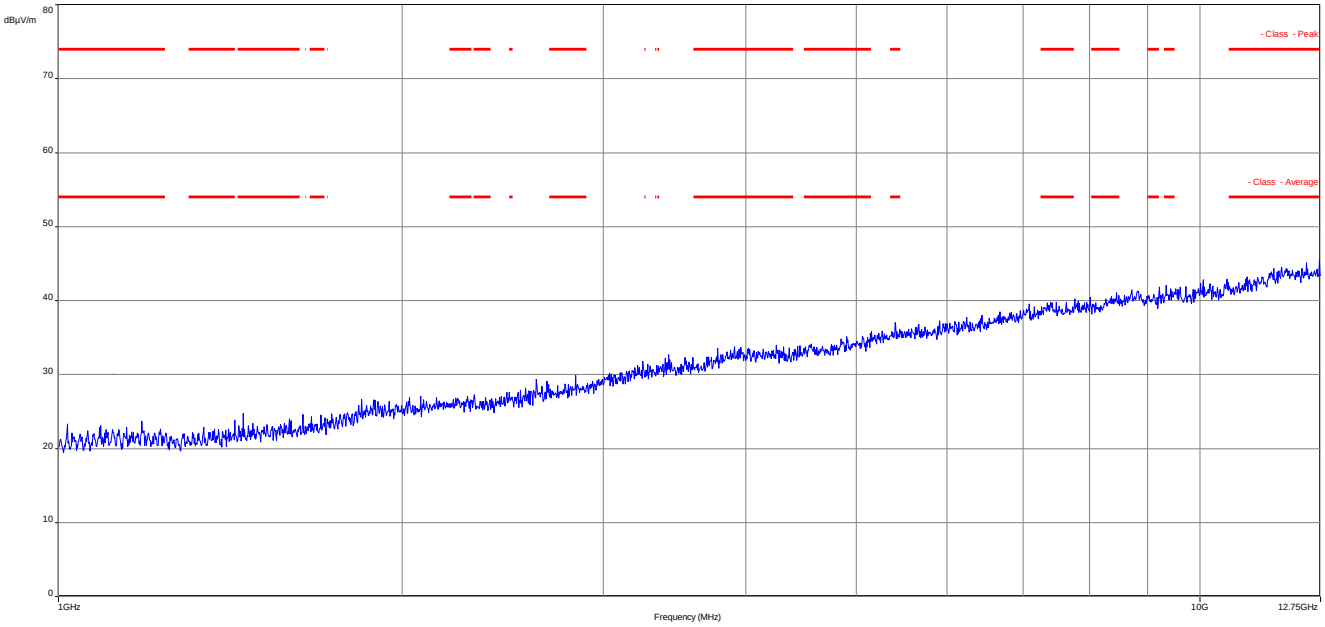
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 2 GHz	60 kHz	QPK	120 kHz	1 s	20 dB



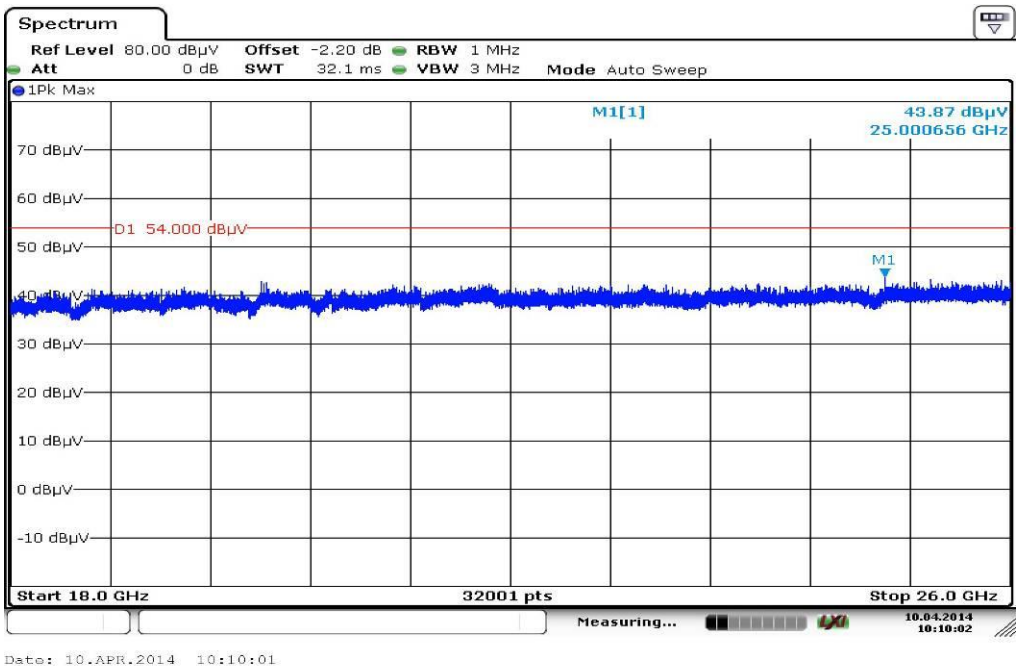
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Comment
32.855700	10.0	1000.0	120.000	170.0	V	183.0	12.8	20.0	30.0	
36.817200	9.8	1000.0	120.000	170.0	H	280.0	13.2	20.2	30.0	
51.781350	10.6	1000.0	120.000	104.0	V	178.0	13.2	19.4	30.0	
324.074100	11.7	1000.0	120.000	170.0	H	171.0	15.3	24.3	36.0	
589.998600	18.5	1000.0	120.000	170.0	V	268.0	20.5	17.5	36.0	
946.101750	22.2	1000.0	120.000	155.0	V	190.0	25.3	13.8	36.0	

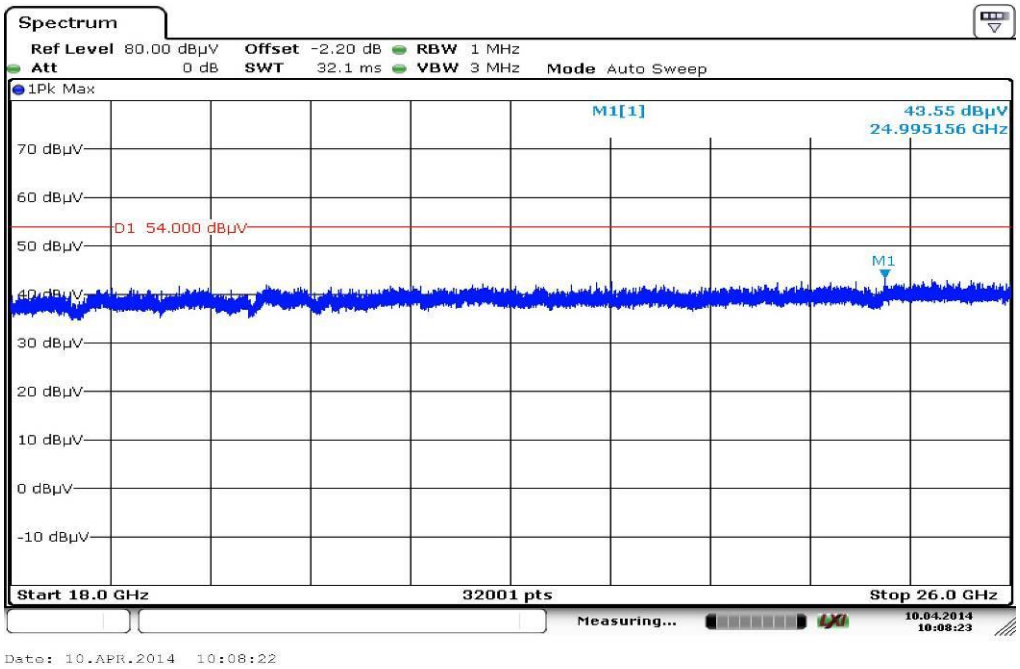
Plot 2: 1 GHz to 12.75 GHz, RX / idle – mode, vertical & horizontal polarization



Plot 3: 12 GHz to 18 GHz, RX / idle – mode, vertical & horizontal polarization



Plot 4: 18 GHz to 25 GHz, RX / idle – mode, vertical & horizontal polarization



11.12 Spurious emissions radiated < 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode below 30 MHz. The EUT is set to single channel mode and the transmit channel is channel 19. This measurement is representative for all channels and modes. If peaks are found channel 00 and channel 39 will be measured too. The measurement is performed in the mode with the highest output power. The limits are recalculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi peak
Sweep time:	Auto
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
TX spurious emissions radiated < 30 MHz		
Frequency (MHz)	Field strength (dBµV/m)	Measurement distance
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

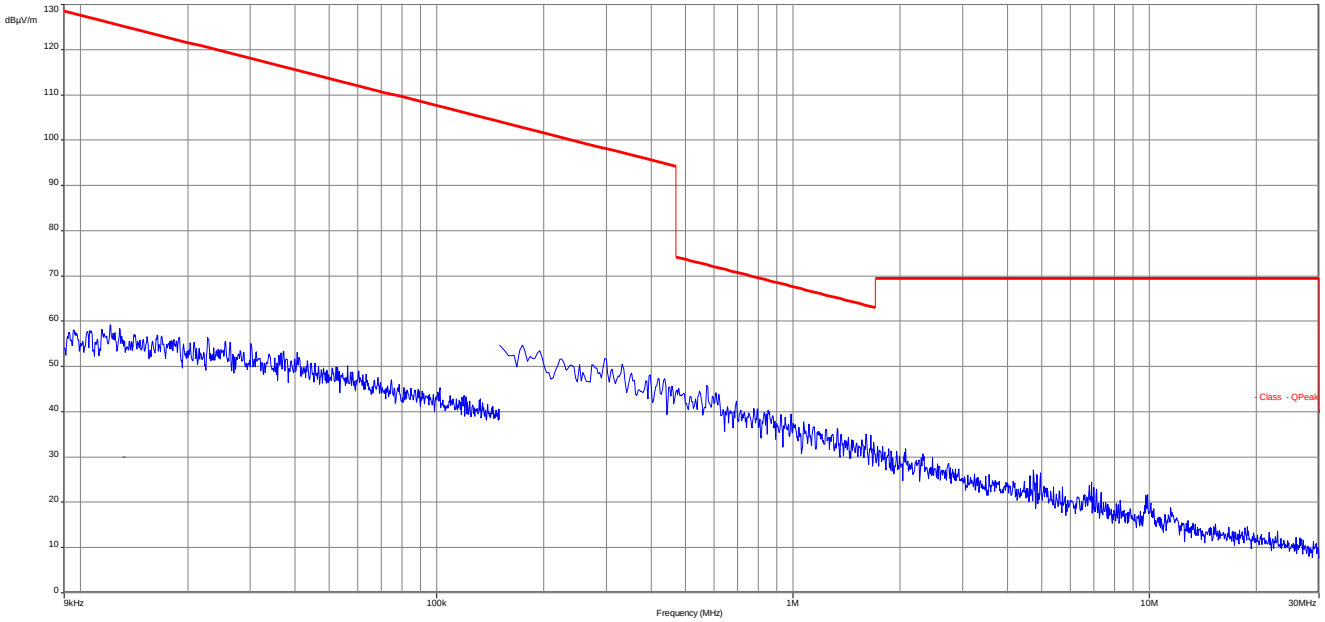
Results:

TX spurious emissions radiated < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No emissions detected.		
Measurement uncertainty	± 3 dB	

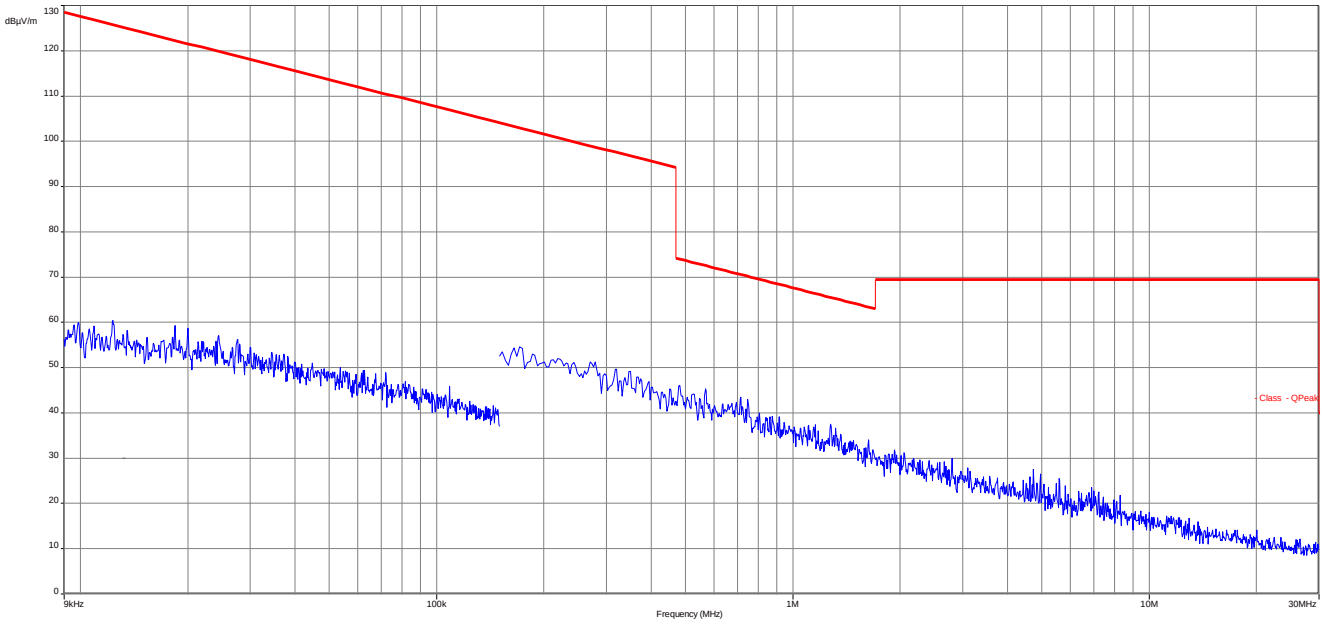
Result: **Passed**

Plot:

Plot 1: 9 kHz to 30 MHz, TX mode



Plot 2: 9 kHz to 30 MHz, RX mode



11.13 Spurious emissions conducted < 30 MHz

Description:

Measurement of the conducted spurious emissions in transmit mode below 30 MHz. The EUT is set to single channel mode and the transmit channel is channel 19. This measurement is representative for all channels and modes. If peaks are found channel 00 and channel 39 will be measured too. The measurement is performed in the mode with the highest output power. Both power lines, phase and neutral line, are measured. Found peaks are remeasured with average and quasi peak detection to show compliance to the limits.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi peak / average
Sweep time:	Auto
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
TX spurious emissions conducted < 30 MHz		
Frequency (MHz)	Quasi-peak (dBµV/m)	Average (dBµV/m)
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30.0	60	50

*Decreases with the logarithm of the frequency

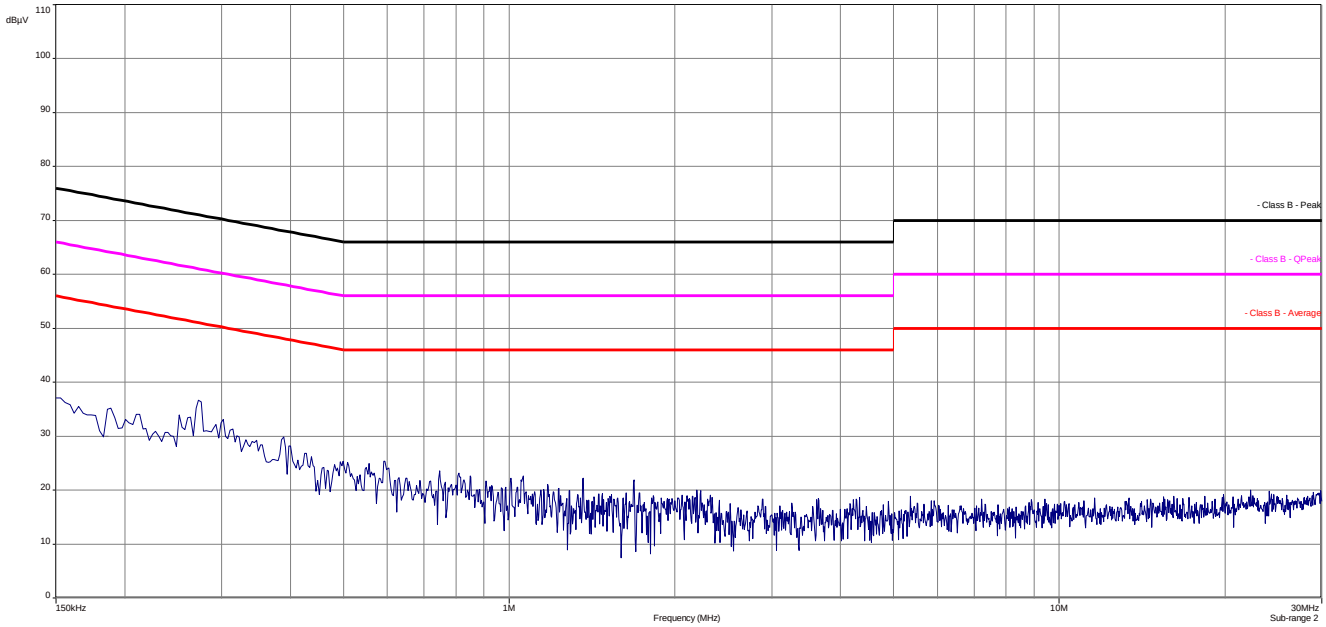
Results:

TX spurious emissions conducted < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No emissions detected.		
Measurement uncertainty	± 3 dB	

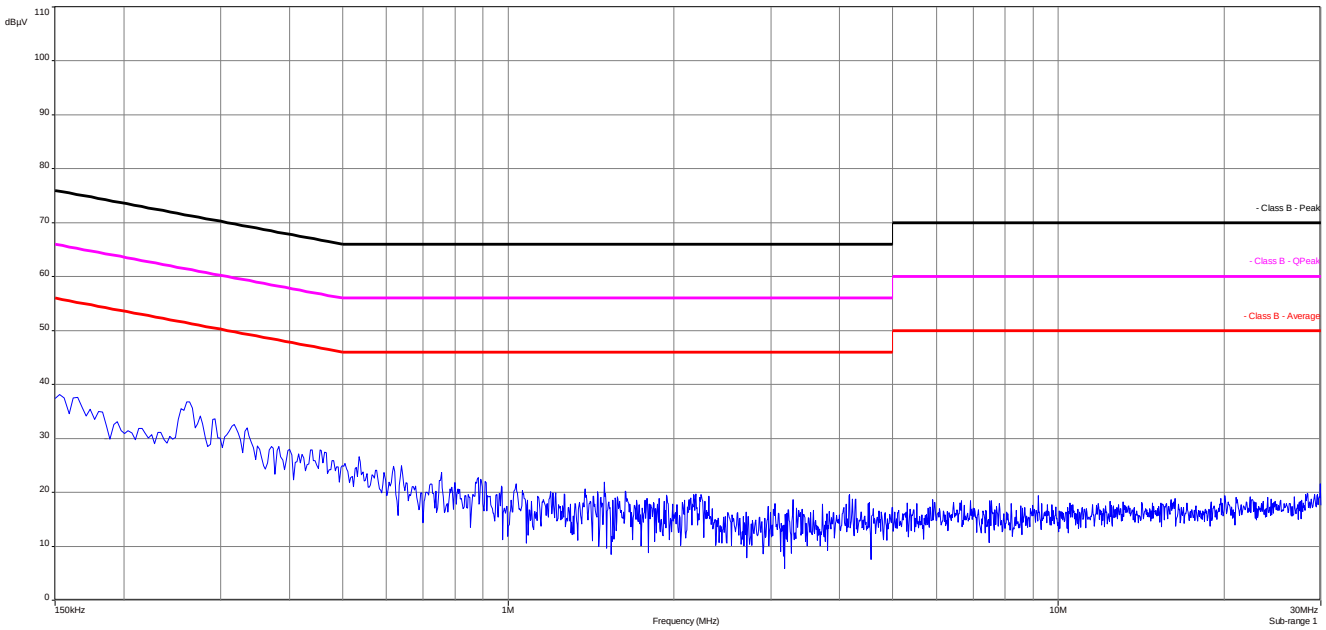
Result: **Passed**

Plots:

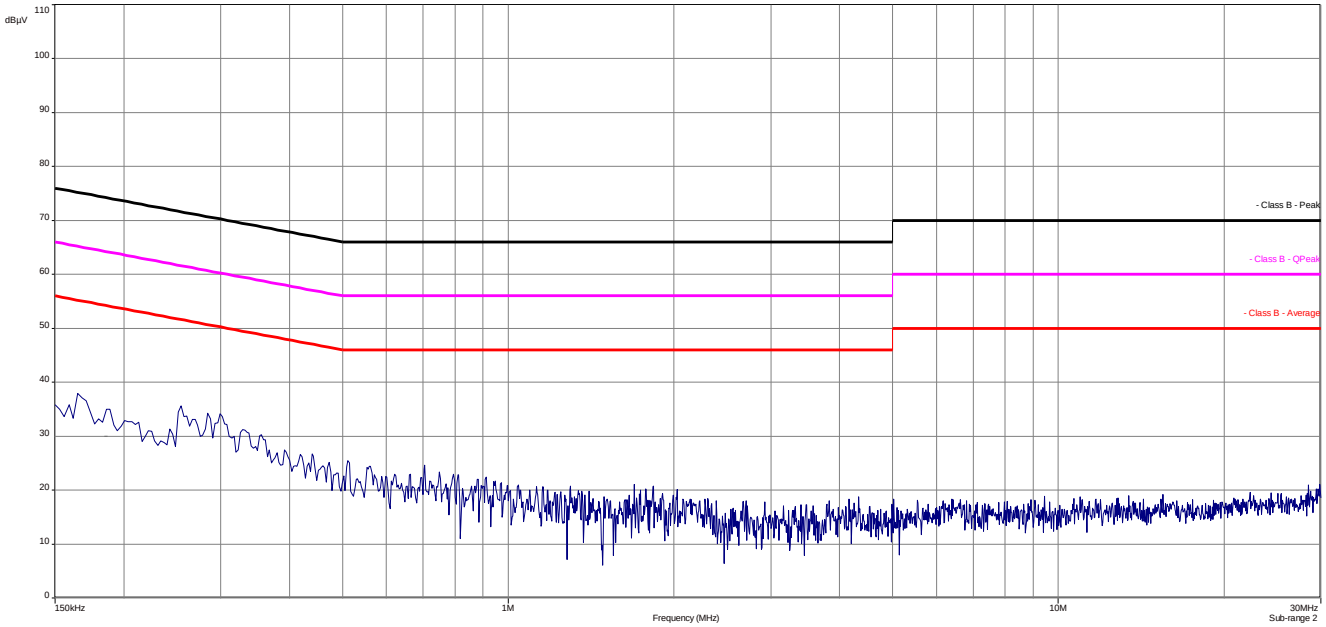
Plot 1: 150 kHz to 30 MHz, TX mode, phase line



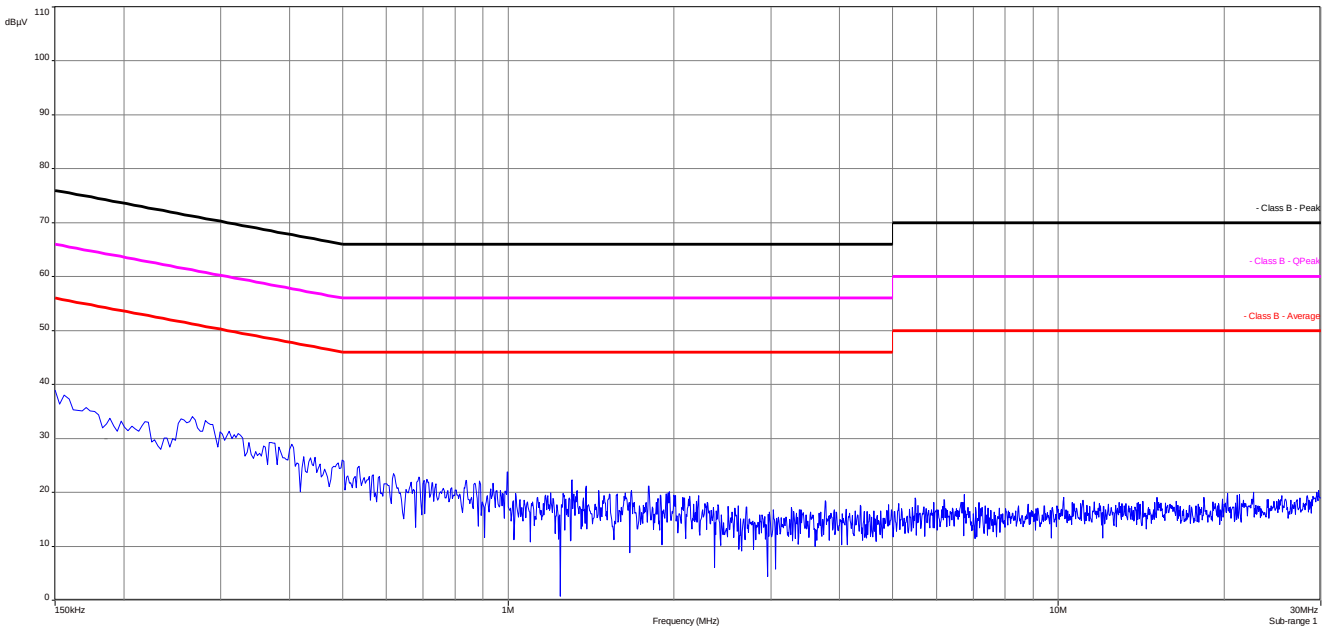
Plot 2: 150 kHz to 30 MHz, TX mode, neutral line



Plot 3: 150 kHz to 30 MHz, RX mode, phase line



Plot 4: 150 kHz to 30 MHz, RX mode, neutral line



12 Test equipment and ancillaries used for tests

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, rf-generating and signalling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Lab/Item).

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	45	Switch-Unit	3488A	HP Meßtechnik	2719A14505	300000368	g		
2	50	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2920A04466	300000580	ne		
3	n. a.	EMI Test Receiver	ESCI 3	R&S	100083	300003312	k	27.01.2014	27.01.2015
4	n. a.	Funkstörmessempfänger 20Hz-26,5GHz	ESU26	R&S	100037	300003555	k	28.02.2014	28.02.2015
5	n. a.	Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745	izw		
6	n. a.	Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746	izw		
7	n. a.	Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747	izw		
8	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787	k	22.04.2014	22.04.2016
9	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vlKl!	08.05.2013	08.05.2015
10	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev		
11	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	*	300000199	ne		
12	9	Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210	Ve	30.01.2014	30.01.2016
13	n. a.	Switch / Control Unit	3488A	HP Meßtechnik	2719A15013	300001156	ne		
14	9	Isolating Transformer	MPL IEC625 Bus Regeltrennt ravo	Erfi	91350	300001155	ne		
15	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
16	90	Active Loop Antenna 10 kHz to 30 MHz	6502	Kontron Psychotech	8905-2342	300000256	k	13.06.2013	13.06.2015
17	n. a.	Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143	ne		
18	n. a.	Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351	ev		
19	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vlKl!	14.10.2011	14.10.2014
20	n. a.	MXE EMI Receiver 20 Hz bis 26,5 GHz	N9038A	Agilent Technologies	MY51210197	300004405	k	13.03.2014	13.03.2015
21	n. a.	Switch / Control Unit	3488A	HP Meßtechnik		300001691	ne		
22	n. a.	Power Supply DC	NGPE 40/40	R&S	388	400000078	vlKl!	21.08.2012	21.08.2014
23	n. a.	Signal Analyzer	FSIQ26	R&S	835540/018	300002681-	k	30.01.2014	30.01.2016

		20Hz-26,5GHz-150 to + 30 DBM				0005			
24	n. a.	Frequency Standard (Rubidium Frequency Standard)	MFS (Rubidium)	R&S (Datum)	002	300002681-0009	Ve	21.08.2012	21.08.2014
25	n. a.	Directional Coupler	101020010	Krytar	70215	300002840	ev		
26	n. a.	DC-Blocker	8143	Inmet Corp.	none	300002842	ne		
27	n. a.	Powersplitter	6005-3	Inmet Corp.		300002841	ev		
28	n. a.	CBT (Bluetooth Tester + EDR Signalling)	CBT 1153.9000 K35	R&S	100185	300003416	vlKl!	21.08.2012	21.08.2014

Agenda: Kind of Calibration

k	calibration / calibrated	EK	limited calibration
ne	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
ev	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vlkl!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress

13 Observations

No observations exceeding those reported with the single test cases have been made.

Annex A Document history

Version	Applied changes	Date of release
	Initial release	2014-04-28
A	Editorial changes	2014-06-05

Annex B Further information

Glossary

AVG - Average
DUT - Device under test
EMC - Electromagnetic Compatibility
EN - European Standard
EUT - Equipment under test
ETSI - European Telecommunications Standard Institute
FCC - Federal Communication Commission
FCC ID - Company Identifier at FCC
HW - Hardware
IC - Industry Canada
Inv. No. - Inventory number
N/A - Not applicable
PP - Positive peak
QP - Quasi peak
S/N - Serial number
SW - Software

Annex C Accreditation Certificate

Front side of certificate

DAkkS Deutsche Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH

Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
Unterzeichnerin der Multilateralen Abkommen
von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung

Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

CETECOM ICT Services GmbH
Untertürkheimer Straße 6-10, 66117 Saarbrücken

die Kompetenz nach DIN EN ISO/IEC 17025:2005 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

Drahtgebundene Kommunikation einschließlich xDSL
VoIP und DECT
Akustik
Funk einschließlich WLAN
Short Range Devices (SRD)
RFID
WiMax und Richtfunk
Mobilfunk (GSM / DCS, Over the Air (OTA) Performance)
Elektromagnetische Verträglichkeit (EMV) einschließlich Automotive
Produktsicherheit
SAR und Hearing Aid Compatibility (HAC)
Umweltsimulation
Smart Card Terminals
Bluetooth*
Wi-Fi- Services

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 07.03.2014 mit der Akkreditierungsnummer D-PL-12076-01 und ist gültig 17.01.2018. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 77 Seiten.

Registrierungsnummer der Urkunde: **D-PL-12076-01-00**

Frankfurt am Main, 07.03.2014

Im Auftrag Dipl.-Ing. (FH) Ralf Egner
Abteilungsleiter

Siehe Rückseite der Urkunde

Back side of certificate

Deutsche Akkreditierungsstelle GmbH

Standort Berlin Spittelmarkt 10 10117 Berlin	Standort Frankfurt am Main Gartenstraße 6 60594 Frankfurt am Main	Standort Braunschweig Bundesallee 100 38116 Braunschweig

Die auszugsweise Veröffentlichung der Akkreditierungsurkunde bedarf der vorherigen schriftlichen Zustimmung der Deutsche Akkreditierungsstelle GmbH (DAkkS). Ausgenommen davon ist die separate Weiterverbreitung des Deckblattes durch die umseitig genannte Konformitätsbewertungsstelle in unveränderter Form.

Es darf nicht der Anschein erweckt werden, dass sich die Akkreditierung auch auf Bereiche erstreckt, die über den durch die DAkkS bestätigten Akkreditierungsbereich hinausgehen.

Die Akkreditierung erfolgte gemäß des Gesetzes über die Akkreditierungsstelle (AkkStelleG) vom 31. Juli 2009 (BGBl. I S. 2625) sowie der Verordnung (EG) Nr. 765/2008 des Europäischen Parlaments und des Rates vom 9. Juli 2008 über die Vorschriften für die Akkreditierung und Marktüberwachung im Zusammenhang mit der Vermarktung von Produkten (Abl. L 218 vom 9. Juli 2008, S. 30).
Die DAkkS ist Unterzeichnerin der Multilateralen Abkommen zur gegenseitigen Anerkennung der European co-operation for Accreditation (EA), des International Accreditation Forum (IAF) und der International Laboratory Accreditation Cooperation (ILAC). Die Unterzeichner dieser Abkommen erkennen ihre Akkreditierungen gegenseitig an.

Der aktuelle Stand der Mitgliedschaft kann folgenden Webseiten entnommen werden:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

Note:

The current certificate including annex is published on our website (see link below) or may be received from CETECOM ICT Services on request.

http://www.cetecom.com/eu/de/cetecom-group/europa/deutschland-saarbruecken/akkreditierungen.html