

Federal Communication Commission
Equipment Authorization Division,
Application Processing Branch
7435 Oakland Mills Road
Columbia, MD 21048

Phonak Communications AG

Länggasse 17
3280 Murten
Switzerland

Phone +41 26 672 96 72
Fax +41 26 672 35 11

May 30, 2014

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

Herewith we confirm that the transmitter emissions from the product:

FCC ID Number
KWCDME

Trade Name/Model
Roger Earpiece

is in compliance with the exposure limits for maximum permissible exposure specified in §1.1310, §1.1307(b)(1) and (2), §2.1093(c) of 47 C.F.R. and are categorically excluded from routine RF evaluation. Furthermore, according to section 4.3.1 of the FCC guidance for RF exposure evaluation of mobile and portable devices (KDB publication 447498 D01 General RF exposure guidance) standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or simulation, is not required when the corresponding SAR Exclusion Threshold condition is satisfied. The above mentioned product, which is subject to this Equipment Authorization Filing, is a portable device as defined in §2.1093(b) of 47 CFR, operates in the frequency range 2.402-2.481 GHz with maximum conducted output power 0.68 mW at normal conditions (conducted power measurement results are enclosed as excerpt from Report No: 15-MO-0238.R01 issued by Electrosuisse Montena EMC on November 19, 2015). Following the formula in section 4.3.1 (1) for the range 100 MHz to 6 GHz and using the most conservative separation distance of 5 mm we obtain a result of 0.1 which is lower than the 1-g SAR test exclusion threshold. Therefore, the above mentioned product qualifies for SAR test exclusion and in lieu of SAR report we are submitting this statement of justification and compliance.

Should you have further questions, please do not hesitate to contact us.

Sincerely,



Neviana Nikoloski
Phonak Communications AG
Laenggasse 17, CH-3280 Murten, Switzerland
Tel: +41 26 672 92 42
email: neviana.nikoloski@phonak.com

8.1 Effective radiated power (radiated)

Introduction: The effective radiated power is the power radiated by the antenna of an interrogator in its direction of maximum gain under specified conditions of measurement.

Test site: ☐ semi-anechoic chamber (ferrites) ☒ semi-anechoic chamber (foam)
☐ semi-anechoic chamber (hybrid) ☐ open test site

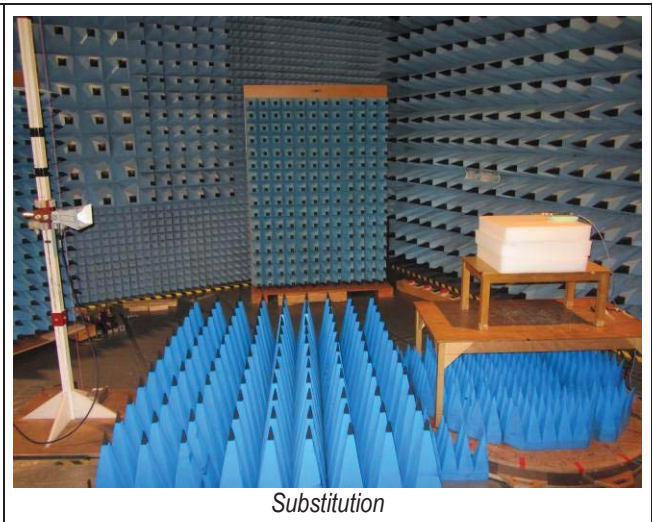
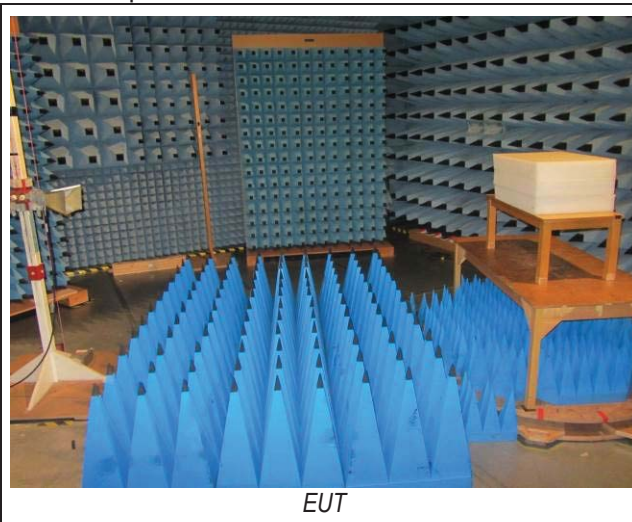
Distance: ☒ 3 m ☐ 10 m ☐ 30m

Position of EUT: 1.5 m (height of the equipment under test above floor)

Meas. uncertainty: ± 1.3 dB ($f < 300$ MHz) / ± 1.6 dB ($f > 300$ MHz)

Measuring method: The electromagnetic disturbance radiated by the equipment is measured using a spectrum analyser and a wide band antenna. The ERP / EIRP values are determined replacing the EUT by a substitution antenna (dipole or other). The limits on the plots represent the equivalent field levels for the required power limits.

Test set-up:



Remarks: - - -

Test equipment:

Spectrum analyser	☐ 88-14	☐ 02-06	☐ 03-45	☐ 05-39	☒ 07-53	☐ 10-70	
Receiver	☐ 94-35	☐ 04-29	☐ 10-70				
Preamplifier	☒ 14-27	☐ 95-86	☐ 05-56	☐ 05-59	☐ 05-62	☐ 05-87	
Antenna (biconical)	☐ 82-02	☐ 87-05	☐ 87-16	☐ 91-05	☐ 94-37		
Antenna (log-per)	☐ 88-20	☐ 90-30	☐ 91-35	☐ 94-64			
Antenna (bilog)	☐ 94-03	☐ 05-38					
Antenna (horn)	☒ 90-24	☐ 98-12	☐ 98-13	☐ 07-31			
HF-wattmeter	☐ 95-97	☐ 01-15	☐ 01-17	☐ 03-12	☒ 04-96	☐ 05-20	☐ 05-73
Thermocouple detector	☐ 92-03	☐ 05-74	☐ 05-88	☐ 07-03	☐ 09-03	☒ 03-14	
Substitution antenna	☐ 89-01	☒ 00-52					
Oscilloscope	☐ 80-14	☐ 93-85	☐ 93-86	☐ 01-20	☐ 04-06	☐ 04-50	☐ 05-22
Multimeter	☐ 89-07	☐ 90-38	☐ 92-25	☐ 94-51	☐ 95-93	☐ 02-03	☐ 03-22
Temperature probe	☐ 91-11	☐ 03-05	☐ 05-34				
Frequency generator	☐ 88-23	☐ 00-42	☐ 03-39	☐ 04-03	☐ 04-89	☐ 05-78	☒ 15-09
Cables	☒ 06-00	☐ 06-01	☒ 10-51				

Result: ☒ pass ☐ fail ☐ not applicable ☐ not tested

Results of the test

Client: *Phonak Communications AG*

Equipment: *Roger Earpiece*

Operating mode: *Max. power, special communication test mode, modulated*
 $T_{on} = 0.184\text{ ms} + 0.076\text{ ms}$; $T = 36.6\text{ ms}$

Cables connected: *- - -*

Remarks: *The 10 mW EIRP limit is verified under extreme conditions, see § 8.2*

f [GHz]	Measurement with EUT		Power at substitution ant.		Meas. with subst. ant.	Parameters of substitution ant.		Result			Remarks
	E [dBuV/m]	preamp [dB]	P [dBm]	factor [dB]	E [dBuV/m]	gain [dB]	att. Cable [dB]	corr. [dB]	P EIRP [dBm]	P EIRP [W]	
2.402	84.4	0.0	-20.0	0	78.8	2.15	0	-96.65	-12.29	59.08 μ W	Vertical
2.402	77.8	0.0	-20.0	0	78.7	2.15	0	-96.55	-18.78	13.24 μ W	Horizontal
2.440	85.6	0.0	-20.0	0	78.0	2.15	0	-95.8	-10.16	96.29 μ W	Vertical
2.440	78.1	0.0	-20.0	0	78.5	2.15	0	-96.36	-18.25	14.95 μ W	Horizontal
2.480	81.9	0.0	-20.0	0	77.7	2.15	0	-95.55	-13.70	42.66 μ W	Vertical
2.480	72.1	0.0	-20.0	0	78.4	2.15	0	-96.25	-24.14	3.85 μ W	Horizontal

Place and date of test: *Rossens, October 12, 2015*
 Operator: *B. Itzcovich*

8.2 Effective radiated power (conducted)

Introduction: The effective radiated power is the power radiated by the antenna of an interrogator in its direction of maximum gain under specified conditions of measurement.
For EUT's with integral antenna the variations of the conducted power under extreme conditions are measured and expressed relatively to the measurements of the radiated measurement.

Test site: ☐ semi-anechoic chamber (foam) ☐ open test site
☐ semi-anechoic chamber (ferrites) ☒ laboratory

Meas. uncertainty: 9 kHz – 3 GHz: ± 1 dB
 3 GHz – 6.7 GHz: ± 2.1 dB
 6.7 GHz – 13.2 GHz: ± 2.6 dB
 13.2 GHz – 19 GHz: ± 2.8 dB
 19 GHz – 26.5 GHz: ± 3 dB

Test method: Measurement of the conducted power on the antenna connector or a test fixture.

Limit: 10 mW e.i.r.p. (Generic use, 2400 MHz to 2483.5 MHz band)

Test set-up:



Remarks: - - -

Test equipment:

Spectrum analyser	☐ 88-14	☐ 02-06	☐ 03-45	☐ 05-39	☒ 07-53	☐ 10-70
Temperature probe	☐ 91-11	☐ 03-05	☐ 05-34	☒ 08-03		
Multimeter	☒ 08-17	☐ 90-38	☐ 92-25	☐ 94-51	☐ 06-52	☐ 05-46
Power supply	☐ 99-04	☒ 99-07	☐ 06-62			
Cables	☐ 06-00	☐ 06-01	☒ 11-45			
Temperature chamber	☒ 06-66					

Result: ☒ pass ☐ fail ☐ not applicable ☐ not tested

Results of the test

Client: *Phonak Communications AG*

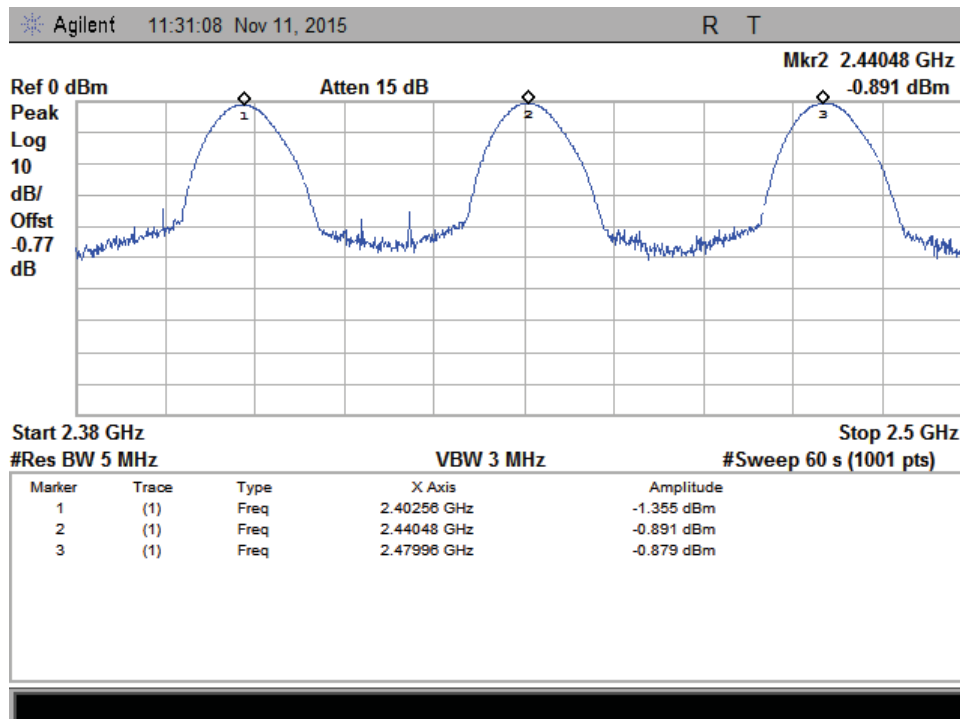
Equipment: *Roger Earpiece*

Operating mode: *Max. power, special communication test mode, modulated*
 $T_{on} = 0.184 \text{ ms} + 0.076 \text{ ms}; T = 36.6 \text{ ms}$

Cables connected: *Temporary antenna and supply cables*

Remarks: *Referenced to the effective radiated power under normal conditions (see § 8.1)*
Measured on temporary antenna connector with analyser

Temp [°C]	U [V]	Conducted power [dBm]	P eirp [dBm]	Limit [dBm]	Antenna gain [dB]	Remarks	Pass Yes	No
24	1.20	-2.02	-12.29	10	-10.27	<i>P eirp value taken from § 8.1</i>	☒	☐
-10	1.00	-1.42	-11.69	10	-	---	☒	☐
-10	1.50	-1.36	-11.63	10	-	---	☒	☐
60	1.00	-2.68	-12.95	10	-	---	☒	☐
60	1.50	-2.65	-12.92	10	-	---	☒	☐
24	1.20	-1.68	-10.16	10	-8.48	<i>P eirp value taken from § 8.1</i>	☒	☐
-10	1.00	-0.93	-9.41	10	-	---	☒	☐
-10	1.50	-0.89	-9.37	10	-	---	☒	☐
60	1.00	-2.44	-10.92	10	-	---	☒	☐
60	1.50	-2.44	-10.92	10	-	---	☒	☐
24	1.20	-1.77	-13.70	10	-11.93	<i>P eirp value taken from § 8.1</i>	☒	☐
-10	1.00	-0.91	-12.84	10	-	---	☒	☐
-10	1.50	-0.88	-12.81	10	-	---	☒	☐
60	1.00	-2.63	-14.56	10	-	---	☒	☐
60	1.50	-2.62	-14.55	10	-	---	☒	☐



Place and date of test: *Rossens, November 10 – 11, 2015*

Operator: *B. Itzcovich*