

DELTA Test Report



TEST Reg. no. 19

Radio parameter test of KlikKit

Performed for LEO Pharma A/S, LEO Innovation Lab

DANAK-19/18090

Project no.: 117-24389-1

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13 July 2017

DELTA

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Title	Radio parameter test of KlikKit
Test object	KlikKit
Report no.	DANAK-19/18090
Project no.	117-24389-1
Test period	16 June to 04 July 2017
Client	LEO Pharma A/S, LEO Innovation Lab Silkegade 8 1113 Copenhagen K Denmark Tel.: +45 56759514
Contact person	Christian Sejersen E-mail: Christian.sejersen@leoilab.com
Manufacturer	LEO Pharma A/S
Specifications	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10
Results	The test object was found to be in compliance with the specifications
Test personnel	Johan Weisbjerg Poul Nørgaard
Test site	DELTA, Venlighedsvej 4, 2970 Hørsholm, Denmark

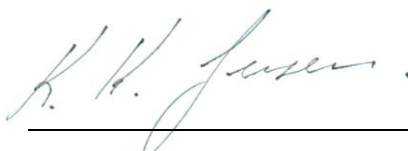
Date 13 July 2017

Project Manager



Jan Askov
Senior Specialist
DELTA

Responsible



Karsten Kruse Jensen
Head of Department
DELTA

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1. Summary of tests

Tests	Test methods	Rule Section	Results
Measurement of radiated emission / field strength of harmonics	ANSI C63.10:2013	47 CFR Part 15.209&15.249 RSS-Gen:2014 RSS-210:2016 Annex B.10	Passed
Measurement of 20 dB bandwidth	ANSI C63.10:2013	47 CFR Part 15.215(c)	Passed
Measurement of band edge compliance	ANSI C63.10:2013	47 CFR Part 15.209&15.249 RSS-210:2016 Annex B.10	Passed
Measurement of field strength of fundamental	ANSI C63.10:2013	47 CFR Part 15.249 RSS-210:2016 Annex B.10	Passed
Measurement of occupied bandwidth	ANSI C63.10:2013	RSS-Gen:2014 clause 6.6	Passed

The given result is based on a shared risk principle with respect to the measurement uncertainty.

Conclusion

The test objects mentioned in this report meet the requirements of the standards stated below with respect to the test listed above.

- 47 CFR Part 15, Subpart C (Specific rule part §15.249)
- RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10.

The test results relate only to the objects tested.



2. Test object and auxiliary equipment

2.1 Test objects



Photo 2.1.1 Test objects.

Test object 2.1.1

Name of test object	KlikKit
Model / type	KlikKit ver. 1
Part no.	KlikKit ver. 1
Serial no.	10
FCC ID	FCC ID 2AMRDKLIKKIT
IC ID (ISED)	IC: 22900-KLIKKIT
Manufacturer	LEO Pharma A/S
Supply voltage	3 V Lithium manganese dioxide battery
Software version	Prod_test_hex 27-11-2016 17:51
Hardware version	V3Rb
Cycle time	-
Highest frequency generated or used	-
Comment	Emission test SW - TX-2402MHz, #1
Received	Date: 16 June 2017. Status: Test object sampled and provided by customer

Test object 2.1.2

Name of test object	KlikKit
Model / type	KlikKit ver. 1
Part no.	KlikKit ver. 1
Serial no.	15
FCC ID	FCC ID 2AMRDKLIKKIT
IC ID (ISED)	IC: 22900-KLIKKIT
Manufacturer	LEO Pharma A/S
Supply voltage	3 V Lithium manganese dioxide battery
Software version	Prod_test_hex 27-11-2016 17:51
Hardware version	V3Rb
Cycle time	-
Highest frequency generated or used	-
Comment	Emission test SW - TX-2440MHz, #2
Received	Date: 15 June 2017. Status: Test object sampled and provided by customer

Test object 2.1.3

Name of test object	KlikKit
Model / type	KlikKit ver. 1
Part no.	KlikKit ver. 1
Serial no.	16
FCC ID	FCC ID 2AMRDKLIKKIT
IC ID (ISED)	IC: 22900-KLIKKIT
Manufacturer	LEO Pharma A/S
Supply voltage	3 V Lithium manganese dioxide battery
Software version	Prod_test_hex 27-11-2016 17:51
Hardware version	V3Rb
Cycle time	-
Highest frequency generated or used	-
Comment	Emission test SW - TX-2480MHz, #3
Received	Date: 16 June 2017. Status: Test object sampled and provided by customer



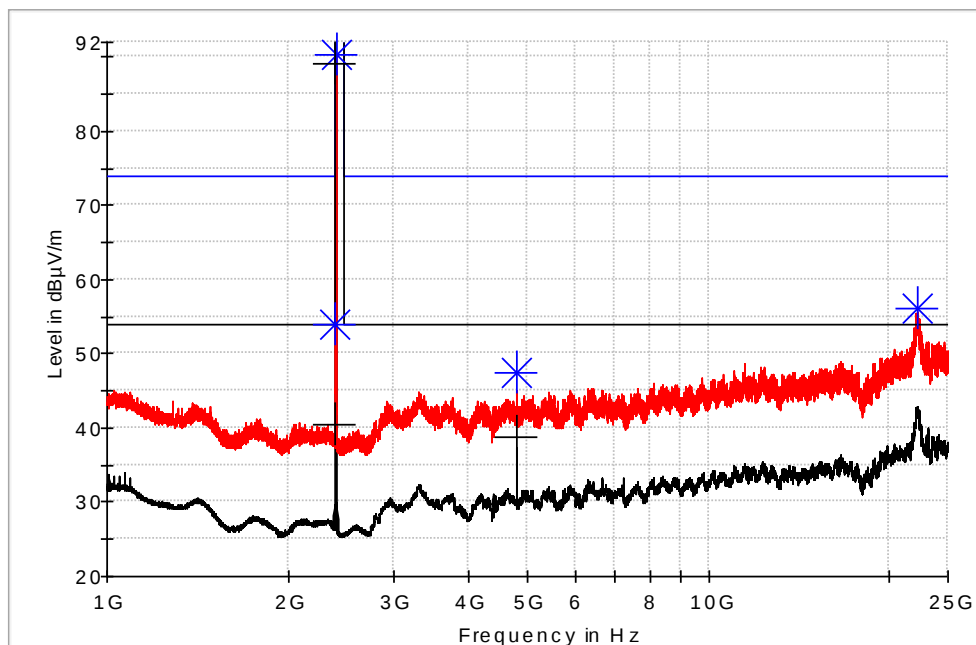
4. Test results

4.1 Measurement of radiated emission / field strength of harmonics (above 1 GHz)

Test object	KlikKit	Sheet	RE-1
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	10	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	1-25 GHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	53 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Full Spectrum



— Preview Result 2-AVG — Preview Result 1-PK+
— FCC Part 15.249 2,4 GHz Pk 3-m — FCC Part 15.249 2,4 GHz Avg 3 m
* Final_Result PK+ + Final_Result CAV

Comments

None



Test object	KlikKit	Sheet	RE-2
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	10	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	1-25 GHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	53 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2400.00	---	40.54	53.90	13.36	15000.0	1000.000	102.0	H	87
2400.00	53.88	---	73.90	60.12	15000.0	1000.000	124.0	H	115
2402.00	---	89.07	94.00	4.93	15000.0	1000.000	102.0	H	83
2402.25	90.23	---	114.00	23.77	15000.0	1000.000	102.0	H	85
4804.00	---	38.89	53.90	15.01	15000.0	1000.000	111.0	H	64
4804.50	47.54	---	73.90	26.36	15000.0	1000.000	108.0	H	73
22241.00	56.13	---	73.90	17.77	15000.0	1000.000	102.0	V	251

Test result The measured field strengths were below the limit

Compliant Yes

Comments Final measurements by variation of turntable azimuth, antenna height, and antenna polarisation



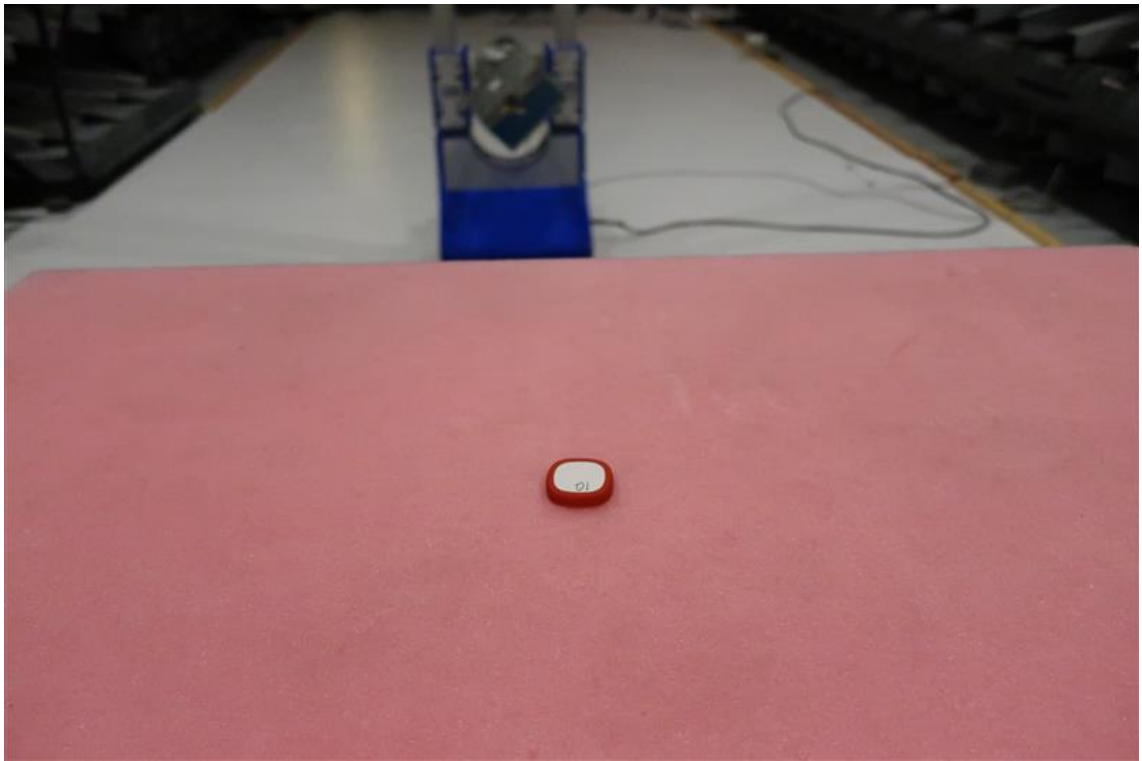


Photo 4.1.1 Test setup regarding measurement of radiated emission / field strength of harmonics (above 1 GHz).

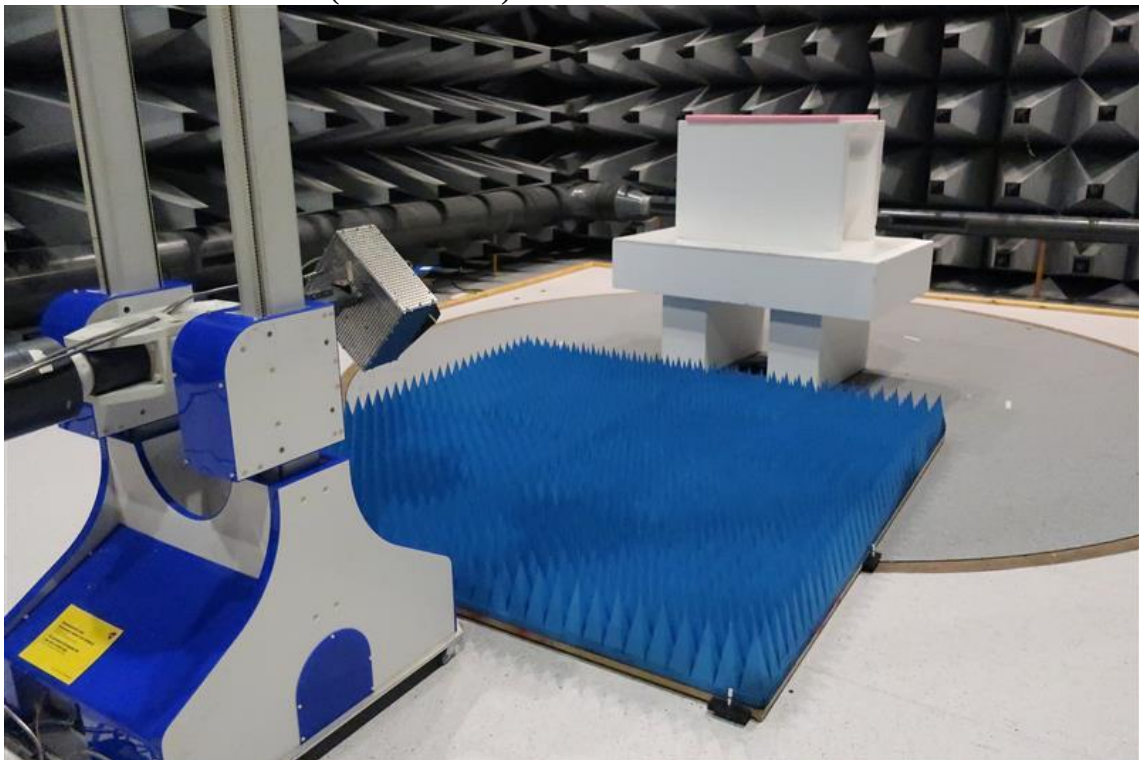


Photo 4.1.2 Test setup regarding measurement of radiated emission / field strength of harmonics (above 1 GHz).

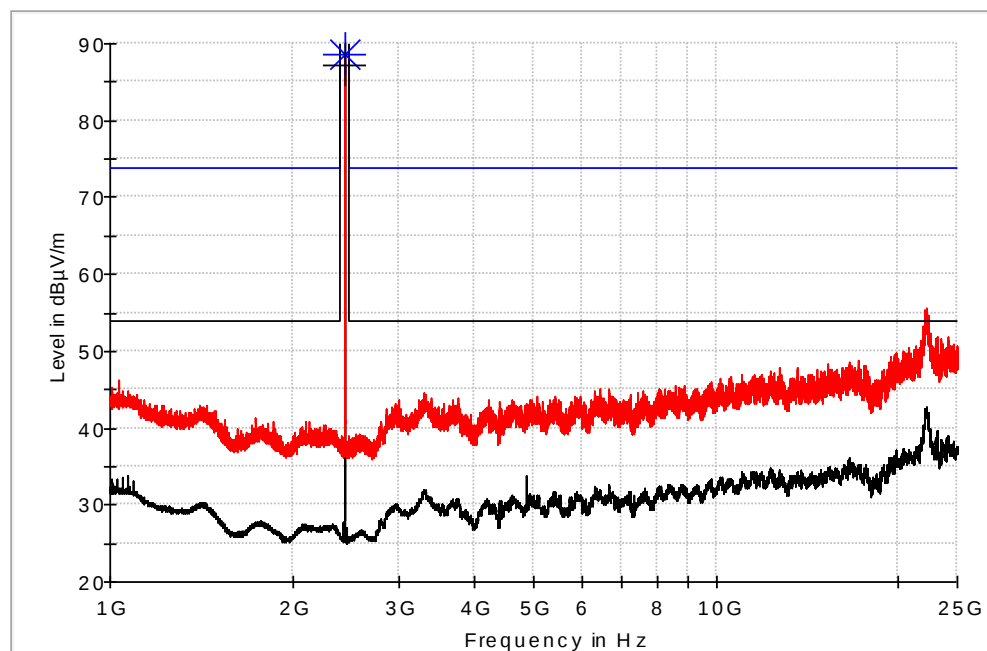


4.2 Measurement of radiated emission / field strength of harmonics (above 1 GHz)

Test object	KlikKit	Sheet	RE-3
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	15	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	1-25 GHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Full Spectrum



— Preview Result 2-AVG — Preview Result 1-PK+
— FCC Part 15.249 2,4 GHz Pk 3-m — FCC Part 15.249 2,4 GHz Avg 3 m
* Final_Result PK+ + Final_Result CAV

Comments None



Test object	KlikKit	Sheet	RE-4
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	15	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	1-25 GHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2440.00	---	87.23	94.00	6.78	15000.0	1000.000	102.0	H	4
2440.25	88.54	---	114.00	25.46	15000.0	1000.000	100.0	H	2

Test result	The measured field strengths were below the limit
Compliant	Yes
Comments	Final measurements by variation of turntable azimuth, antenna height, and antenna polarisation



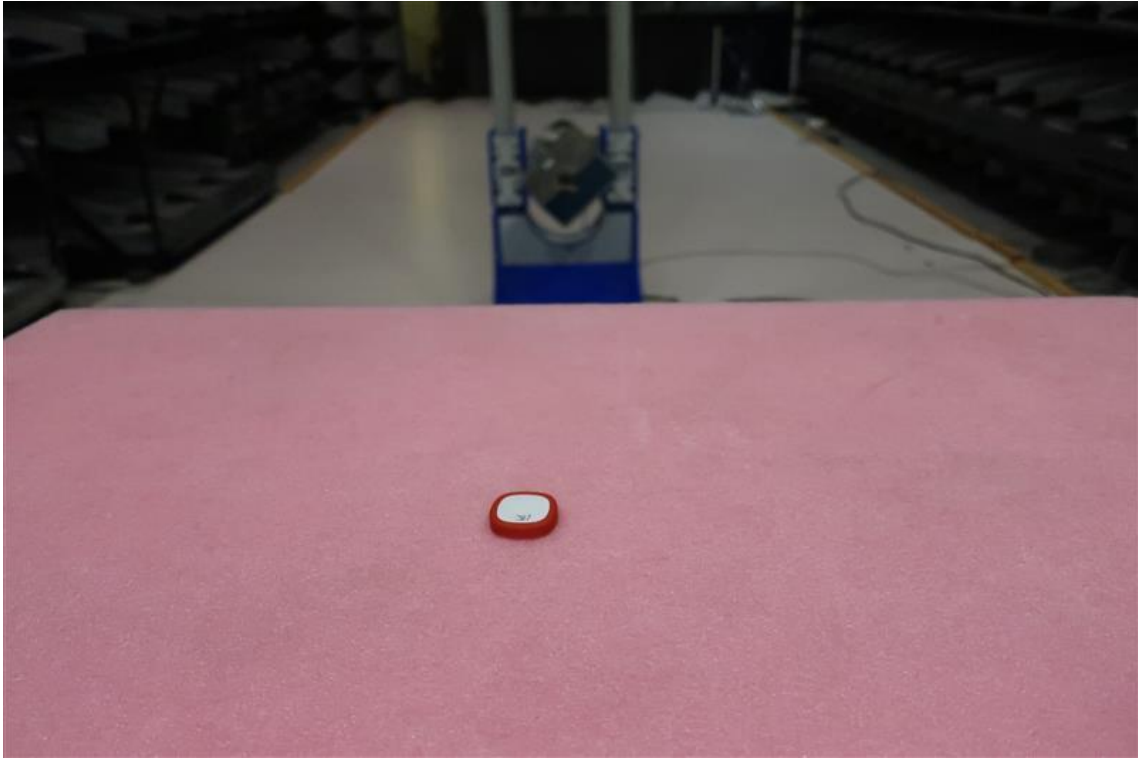


Photo 4.2.1 Test setup regarding measurement of radiated emission / field strength of harmonics (above 1 GHz).

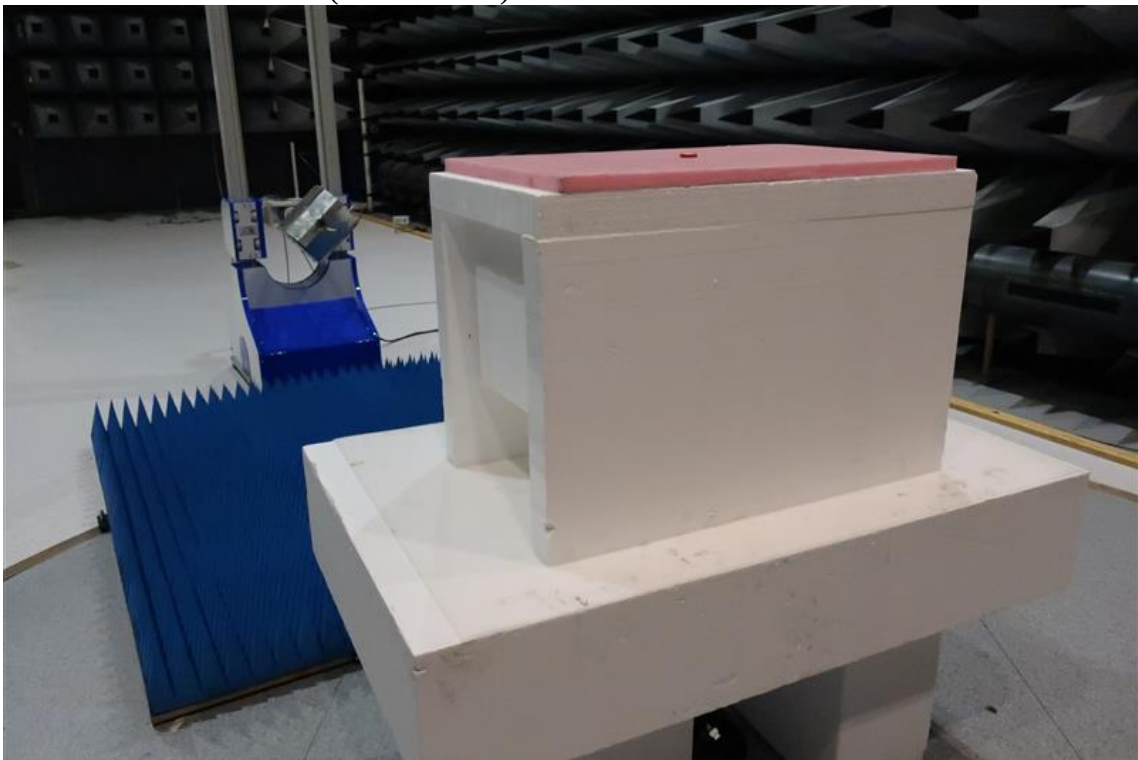


Photo 4.2.2 Test setup regarding measurement of radiated emission / field strength of harmonics (above 1 GHz).

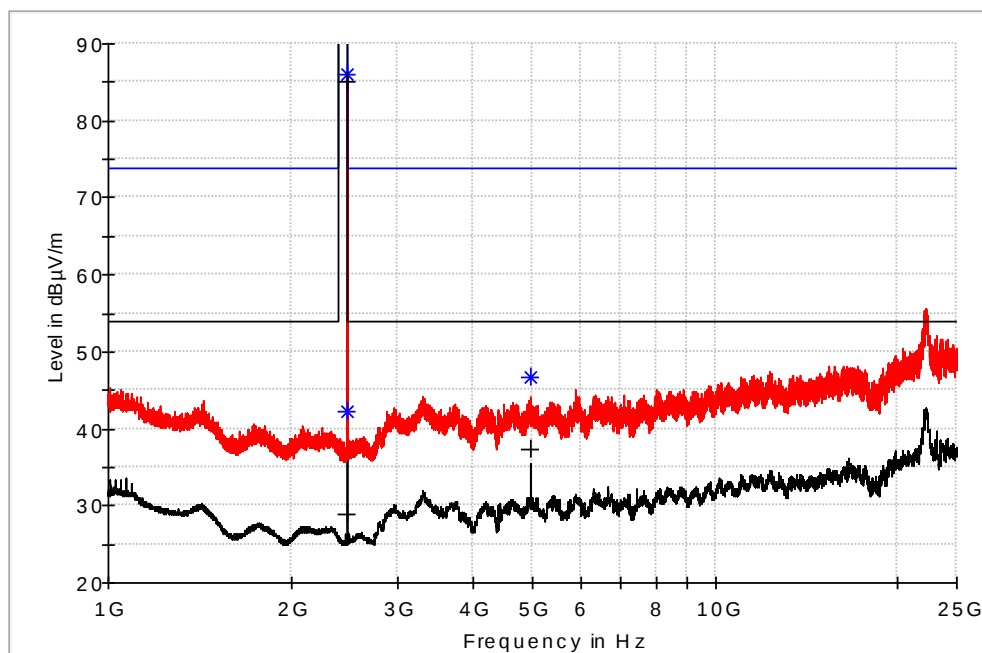


4.3 Measurement of radiated emission / field strength of harmonics (above 1 GHz)

Test object	KlikKit	Sheet	RE-5
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	16	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	1-25 GHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Full Spectrum



— Preview Result 2-AVG — Preview Result 1-PK+
 — FCC Part 15.249 2,4 GHz Pk 3-m — FCC Part 15.249 2,4 GHz Avg 3 m
 * Final_Result PK+ + Final_Result CAV

Comments

None



Test object	KlikKit	Sheet	RE-6
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	16	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	1-6 GHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2479.75	86.00	---	114.00	28.00	15000.0	1000.000	102.0	H	271
2480.00	---	84.97	94.00	9.03	15000.0	1000.000	102.0	H	271
2483.50	---	28.93	53.90	24.97	15000.0	1000.000	102.0	H	270
2483.50	42.30	---	73.90	31.60	15000.0	1000.000	104.0	H	247
4960.00	46.58	---	73.90	27.32	15000.0	1000.000	125.0	H	216
4960.00	---	37.43	53.90	16.47	15000.0	1000.000	102.0	H	194

Test result The measured field strengths were below the limit

Compliant Yes

Comments Final measurements by variation of turntable azimuth, antenna height, and antenna polarisation



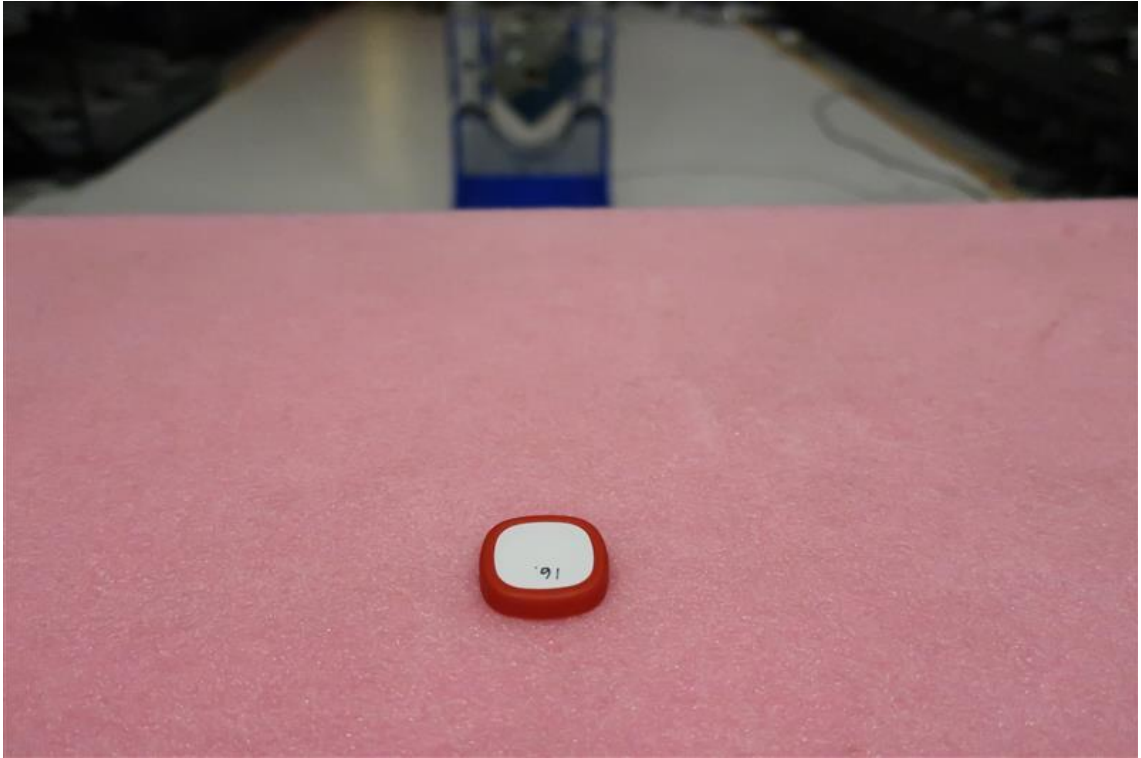


Photo 4.3.1 Test setup regarding measurement of radiated emission / field strength of harmonics (above 1 GHz).

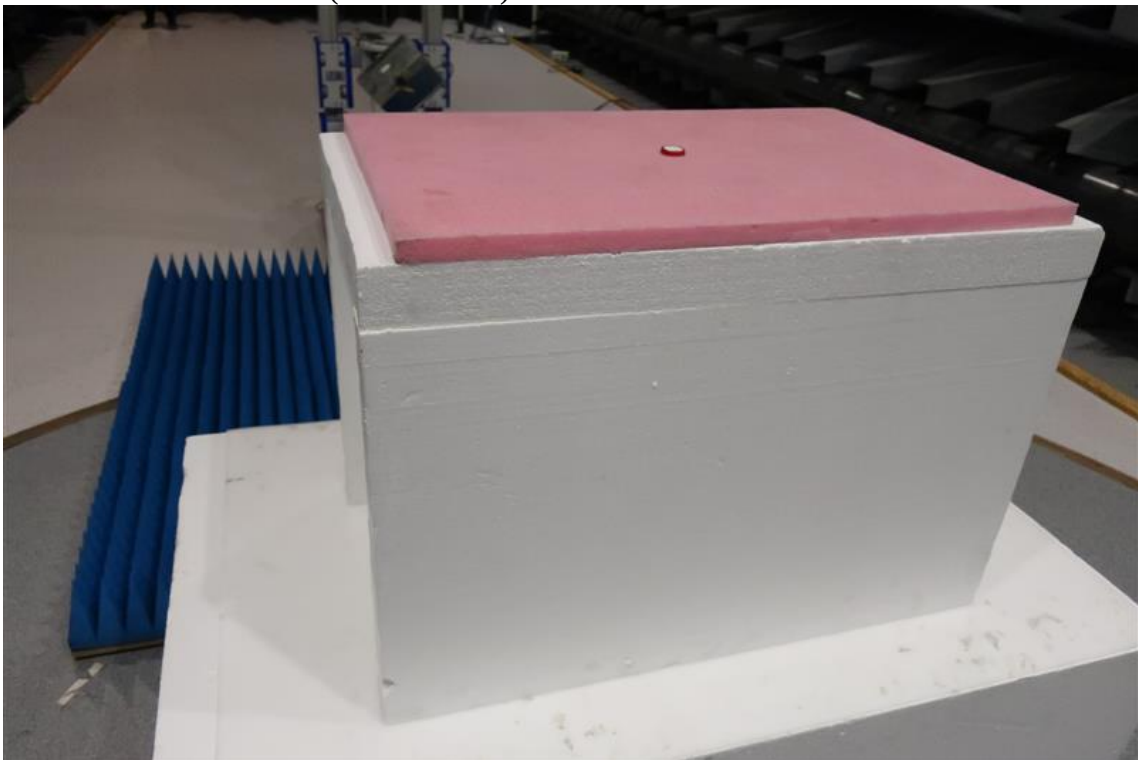


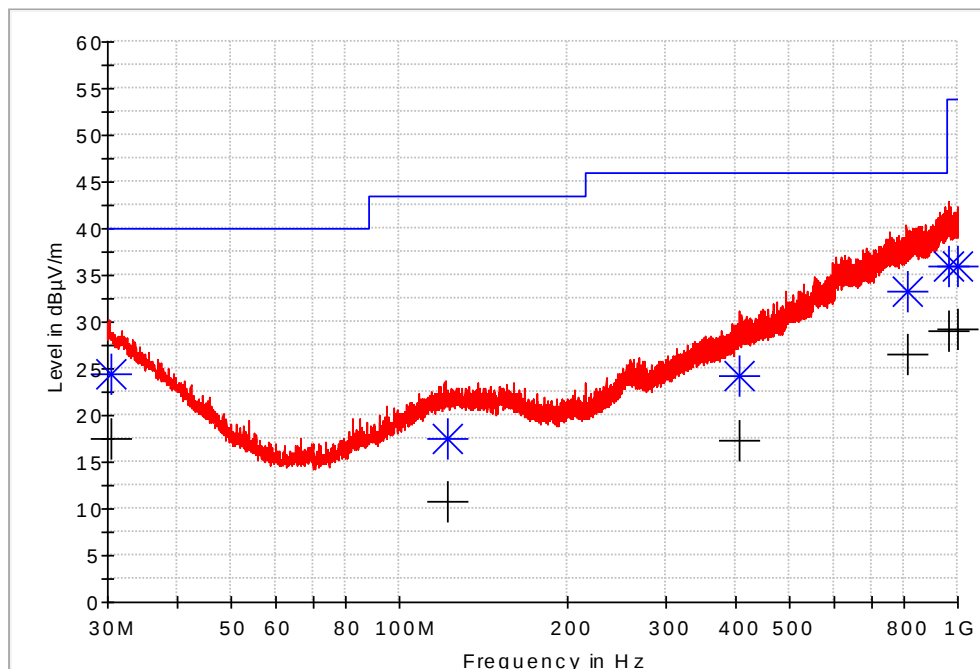
Photo 4.3.2 Test setup regarding measurement of radiated emission / field strength of harmonics (above 1 GHz).

4.4 Measurement of radiated emission / field strength of harmonics (below 1 GHz)

Test object	Combination of 2.1.1: KlikKit 2.1.2: KlikKit 2.1.3: KlikKit	Sheet	RE-7
Type	See Section 2	Project no.	117-24389-1
Serial no.	See Section 2	Date	04 July 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	PFN
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	30-1000 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	50 % RH
Detector	Peak, quasi peak and average	Bandwidth	120 kHz
Test equipm.	EMI room Hørsholm 49704 49590 49817 49807 49154 49154	Uncertainty	6.3 dB

Full Spectrum



— Preview Result 1-PK — FCC Part 15C QP 3 m
* Fina_Result QPK + Fina_Result CAV

Comments None



Test object	Combination of 2.1.1: KlikKit 2.1.2: KlikKit 2.1.3: KlikKit	Sheet	RE-8
Type	See Section 2	Project no.	117-24389-1
Serial no.	See Section 2	Date	04 July 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	PFN
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	30-1000 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	50 % RH
Detector	Peak, quasi peak and average	Bandwidth	120 kHz
Test equipm.	EMI room Hørsholm 49704 49590 49817 49807 49154 49154	Uncertainty	6.3 dB

Frequency (MHz)	QuasiPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
30.42	---	17.54	---	---	15000.	120.000	264.0	V	276
30.42	24.34	---	40.00	15.66	15000.	120.000	264.0	V	276
122.28	---	10.70	---	---	15000.	120.000	319.0	V	32
122.28	17.55	---	43.50	25.95	15000.	120.000	319.0	V	32
405.99	24.14	---	46.00	21.86	15000.	120.000	184.0	H	2
405.99	---	17.32	---	---	15000.	120.000	184.0	H	2
810.27	---	26.49	---	---	15000.	120.000	174.0	H	331
810.27	33.31	---	46.00	12.69	15000.	120.000	174.0	H	331
961.41	---	29.10	---	---	15000.	120.000	392.0	H	156
961.41	35.93	---	53.90	17.97	15000.	120.000	392.0	H	156
999.84	36.05	---	53.90	17.85	15000.	120.000	274.0	H	337
999.84	---	29.22	---	---	15000.	120.000	274.0	H	337

Test result	The measured field strengths were below the limit
Compliant	Yes
Comments	Final maximal measurements by variation of turntable azimuth, antenna height, and antenna polarisation



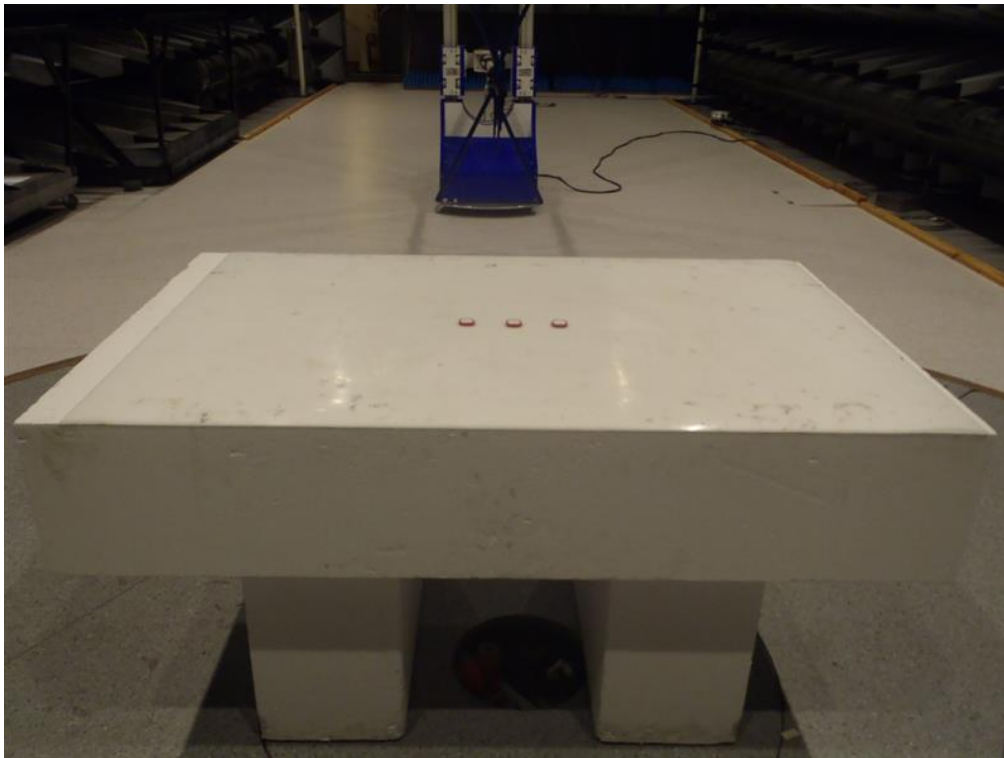


Photo 4.4.1 Test setup regarding measurement of radiated emission / field strength of harmonics (below 1 GHz).

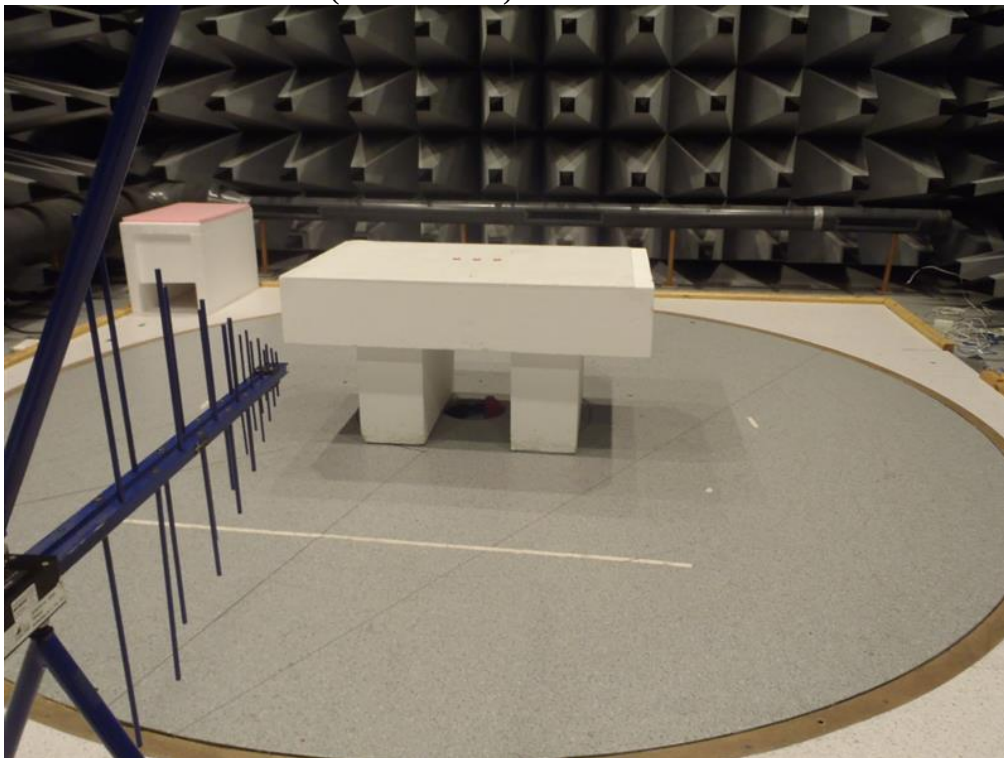


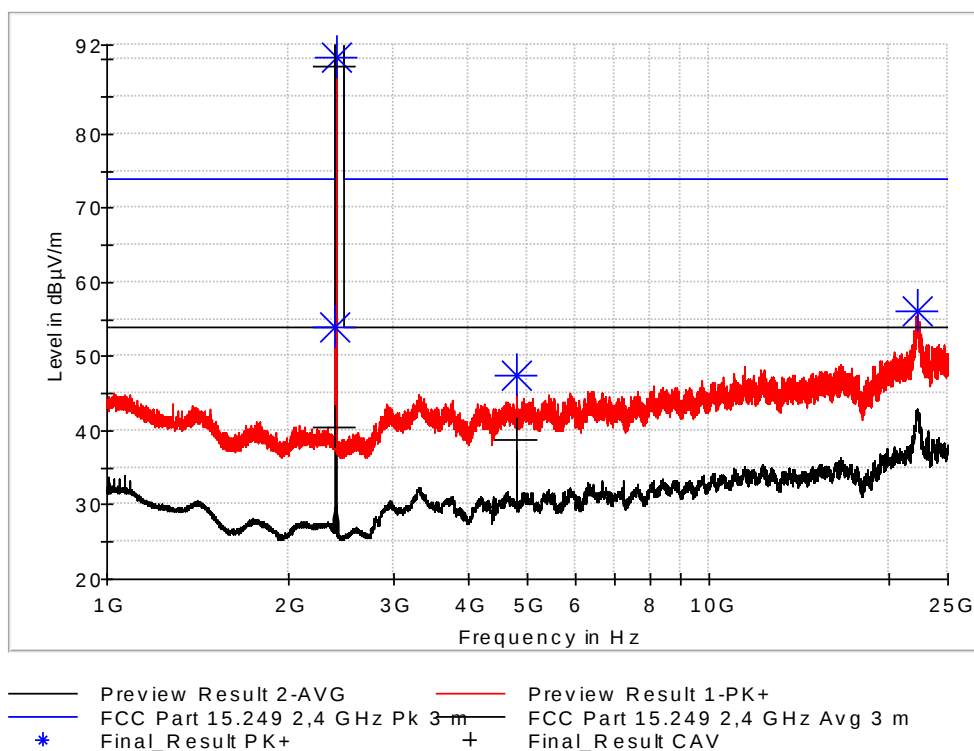
Photo 4.4.2 Test setup regarding measurement of radiated emission / field strength of harmonics (below 1 GHz).



4.5 Measurement of field strength of fundamental

Test object	KlikKit	Sheet	RE-9
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	10	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2402 MHz
Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	53 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Full Spectrum



Comments None



Test object	KlikKit	Sheet	RE-10
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	10	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2402 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	53 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2402.00	---	89.07	94.00	4.93	15000.0	1000.000	102.0	H	83
2402.25	90.23	---	114.00	23.77	15000.0	1000.000	102.0	H	85

Test result The measured field strengths were below the limit

Compliant Yes

Comments Final measurements by variation of turntable azimuth, antenna height, and antenna polarisation



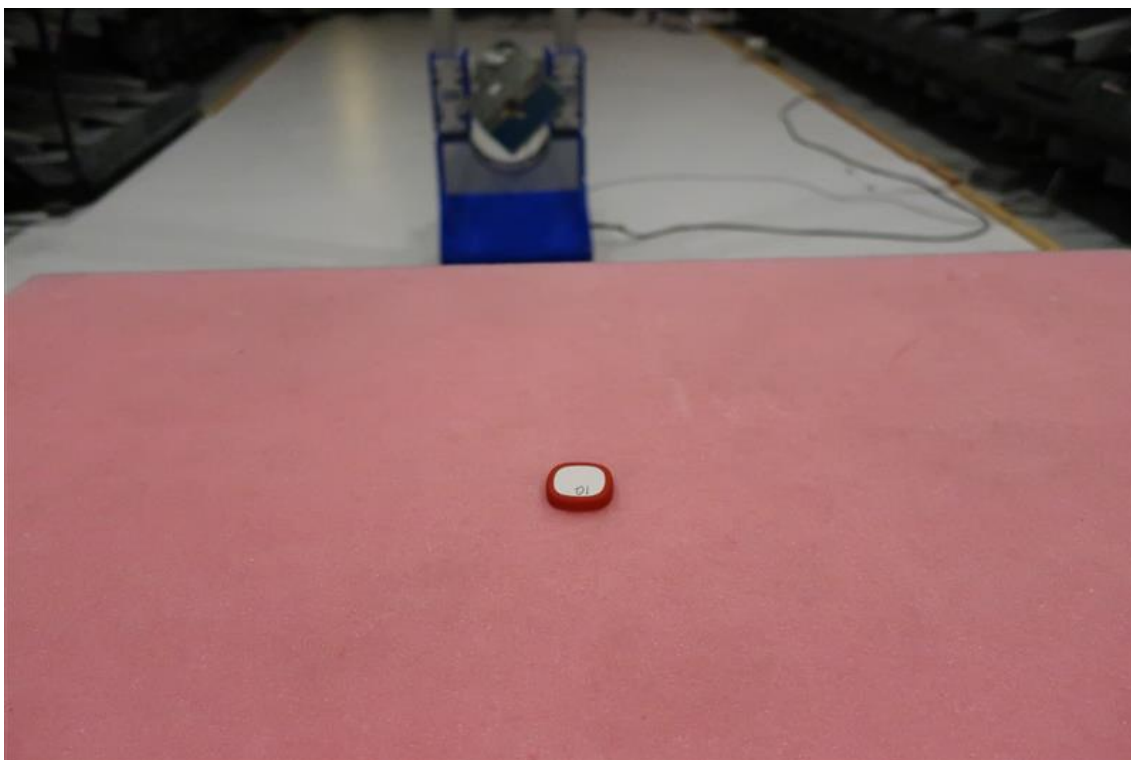


Photo 4.5.1 Test setup regarding measurement of field strength of fundamental.

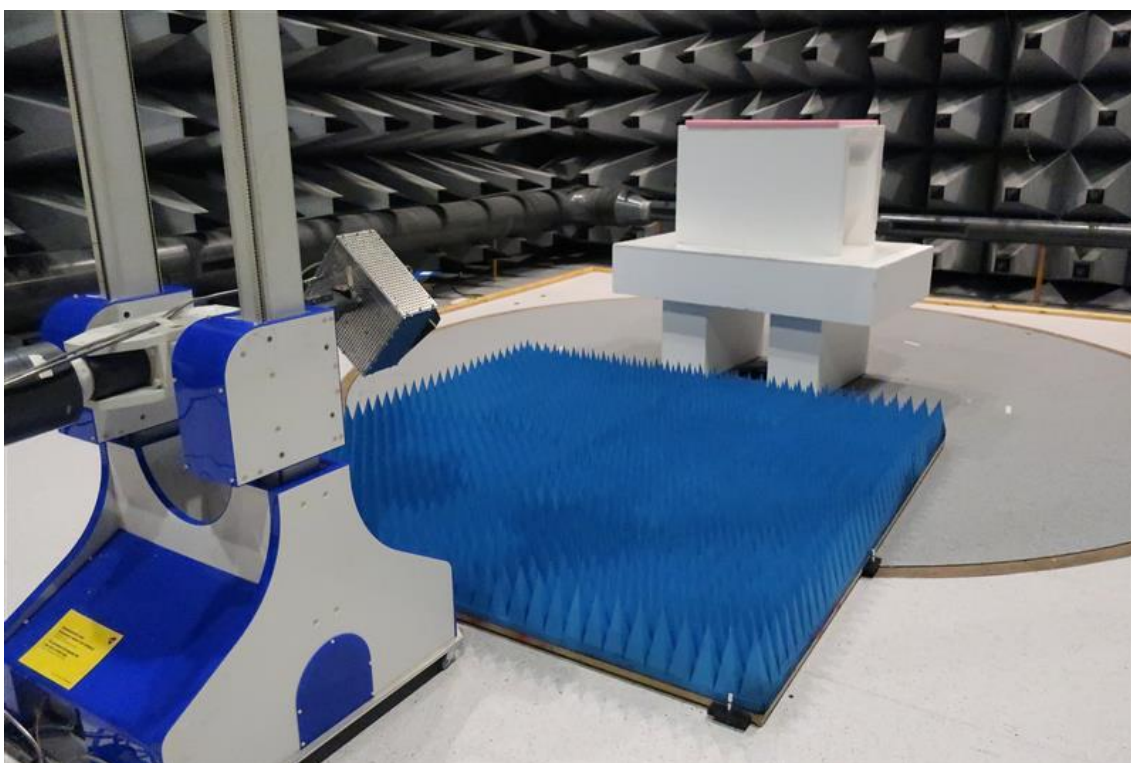


Photo 4.5.2 Test setup regarding measurement of field strength of fundamental.

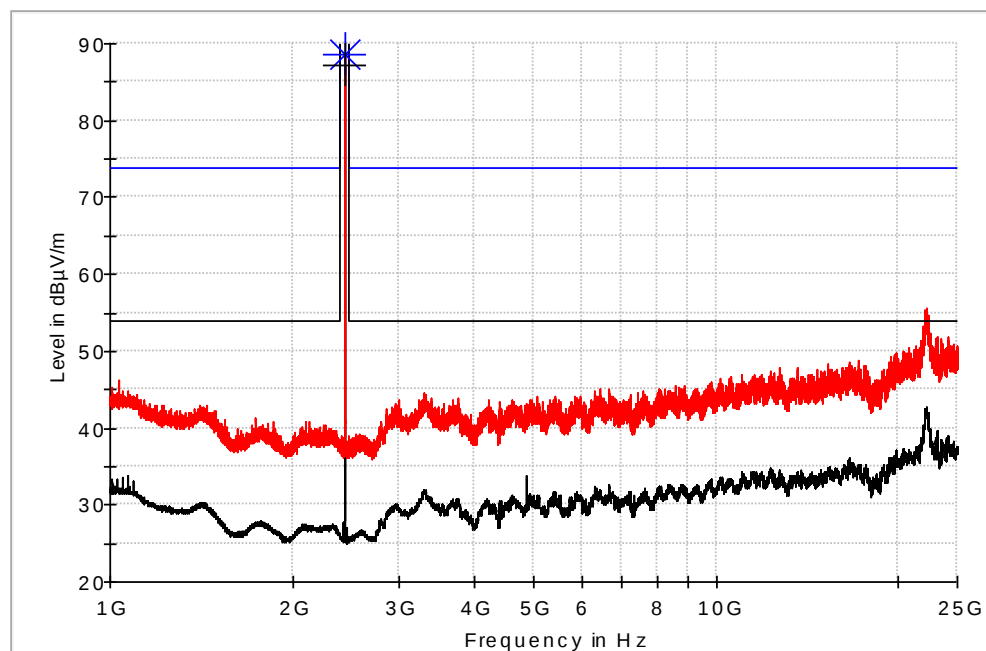


4.6 Measurement of field strength of fundamental

Test object	KlikKit	Sheet	RE-11
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	15	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2440 MHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Full Spectrum



— Preview Result 2-AVG — Preview Result 1-PK+
 — FCC Part 15.249 2,4 GHz Pk 3-m — FCC Part 15.249 2,4 GHz Avg 3 m
 * Final_Result PK+ + Final_Result CAV

Comments None



Test object	KlikKit	Sheet	RE-12
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	15	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2440 MHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2440.00	---	87.23	94.00	6.78	15000.0	1000.000	102.0	H	4
2440.25	88.54	---	114.00	25.46	15000.0	1000.000	100.0	H	2

Test result	The measured field strengths were below the limit
Compliant	Yes
Comments	Final measurements by variation of turntable azimuth, antenna height, and antenna polarisation



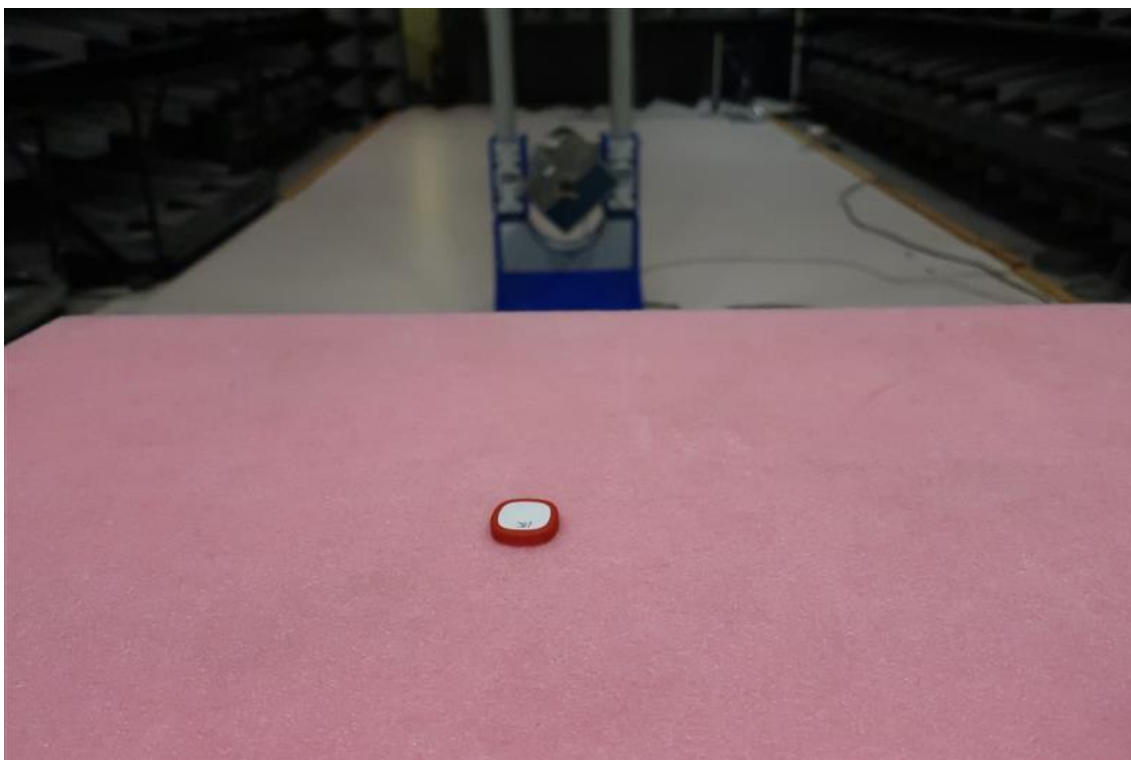


Photo 4.6.1 Test setup regarding measurement of field strength of fundamental.



Photo 4.6.2 Test setup regarding measurement of field strength of fundamental.

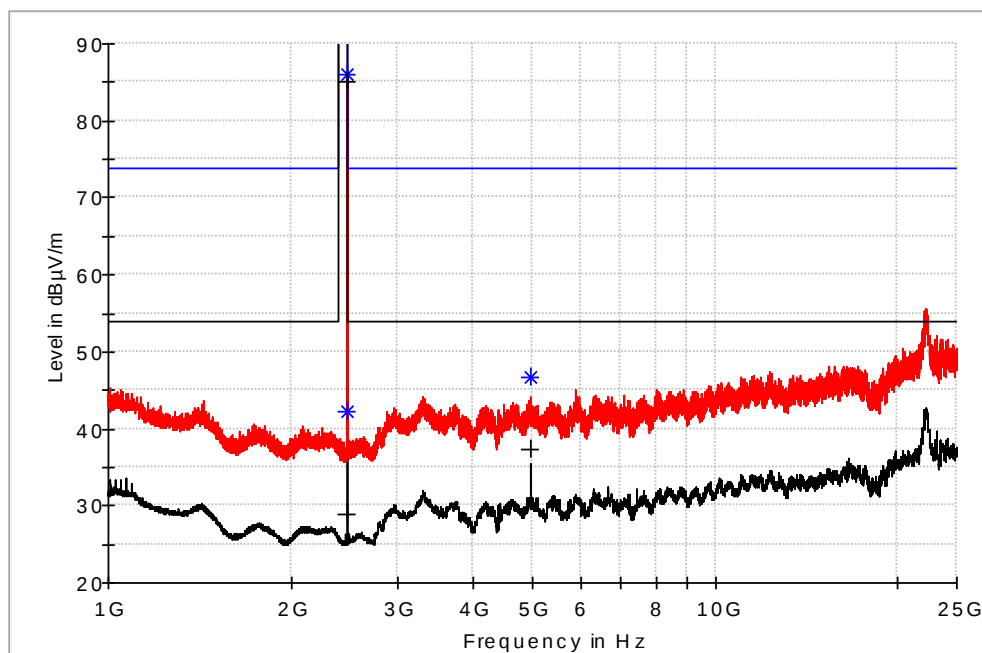


4.7 Measurement of field strength of fundamental

Test object	KlikKit	Sheet	RE-13
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	16	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2480 MHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Full Spectrum



— Preview Result 2-AVG — Preview Result 1-PK+
 — FCC Part 15.249 2,4 GHz Pk 3-m — FCC Part 15.249 2,4 GHz Avg 3 m
 * Final_Result PK+ + Final_Result CAV

Comments

None



Test object	KlikKit	Sheet	RE-14
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	16	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2480 MHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2479.75	86.00	---	114.00	28.00	15000.0	1000.000	102.0	H	271
2480.00	---	84.97	94.00	9.03	15000.0	1000.000	102.0	H	271

Test result	The measured field strengths were below the limit
Compliant	Yes
Comments	Final measurements by variation of turntable azimuth, antenna height, and antenna polarisation



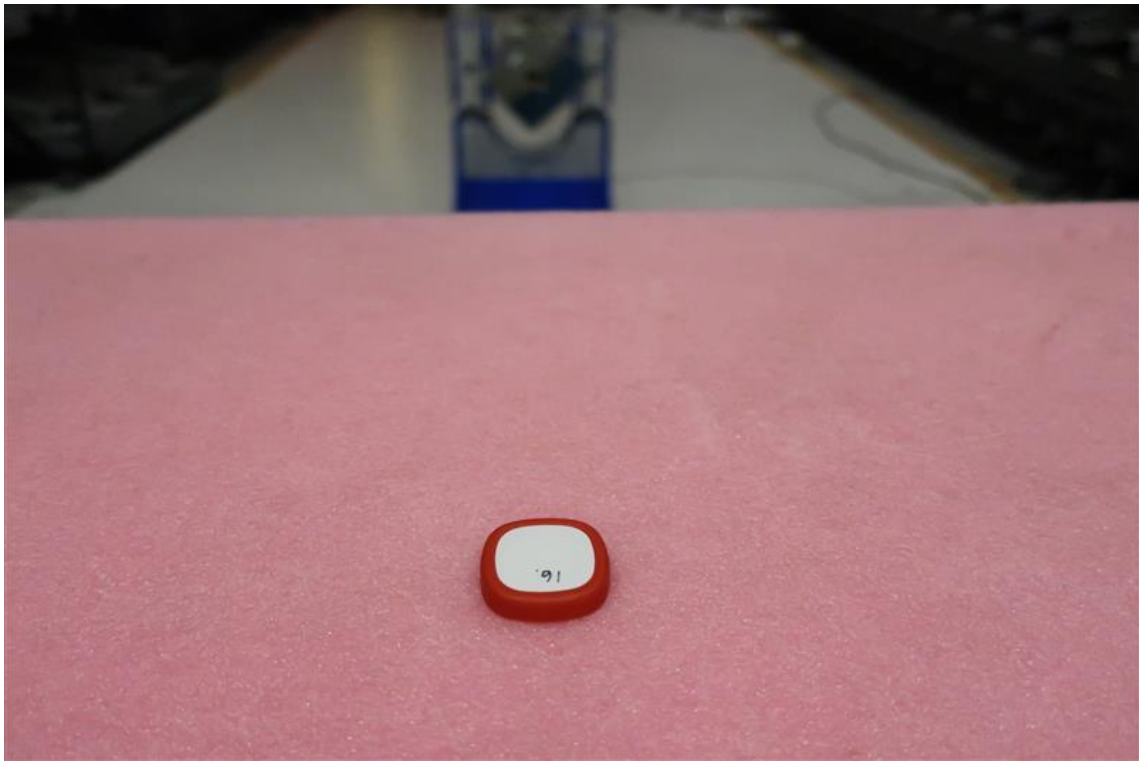


Photo 4.7.1 Test setup regarding measurement of field strength of fundamental.

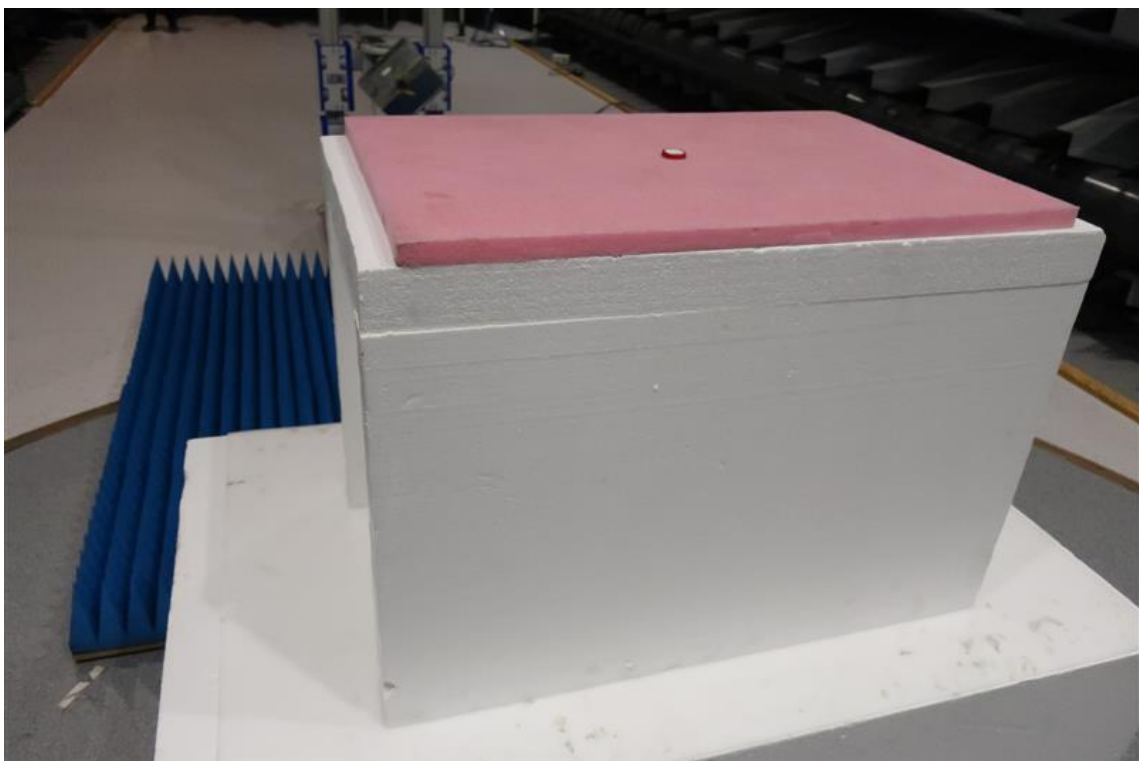


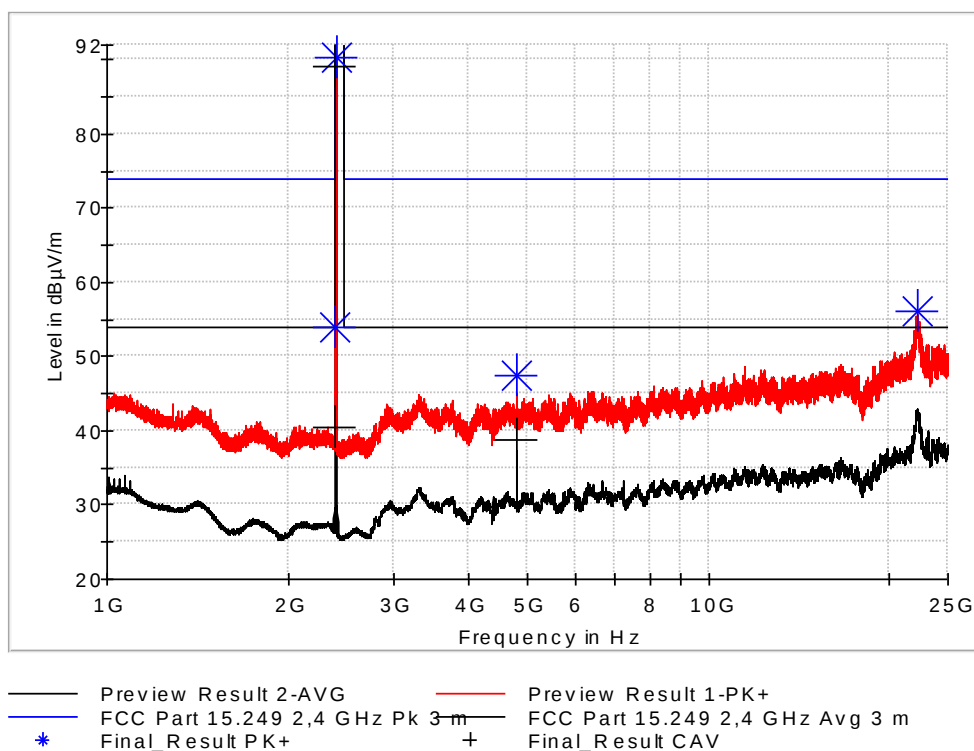
Photo 4.7.2 Test setup regarding measurement of field strength of fundamental.

4.8 Measurement of band edge compliance

Test object	KlikKit	Sheet	RE-95
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	10	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2400 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	53 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Full Spectrum



Comments

None



Test object	KlikKit	Sheet	RE-16
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	10	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2400 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	53 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2400.00	---	40.54	53.90	13.36	15000.0	1000.000	102.0	H	87
2400.00	53.88	---	73.90	60.12	15000.0	1000.000	124.0	H	115

Test result The measured field strengths were below the limit at the band edge

Compliant Yes

Comments Final measurements by variation of turntable azimuth, antenna height, and antenna polarisation



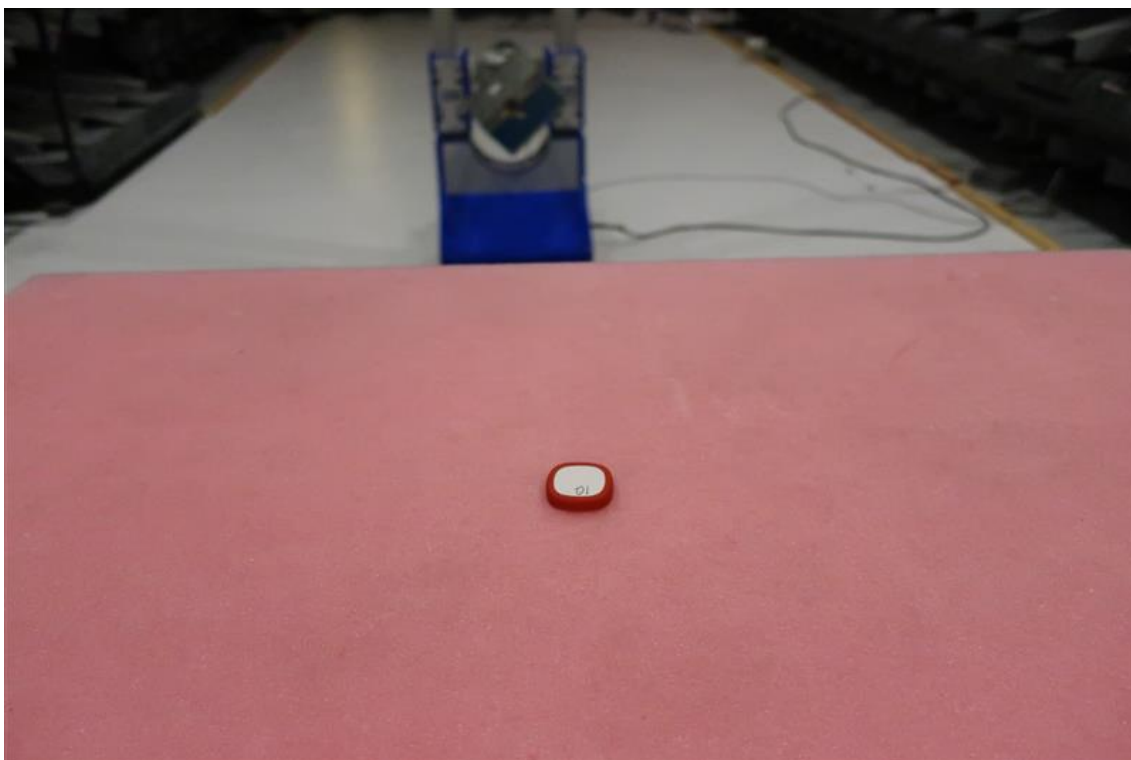


Photo 4.8.1 Test setup regarding measurement of band edge compliance.

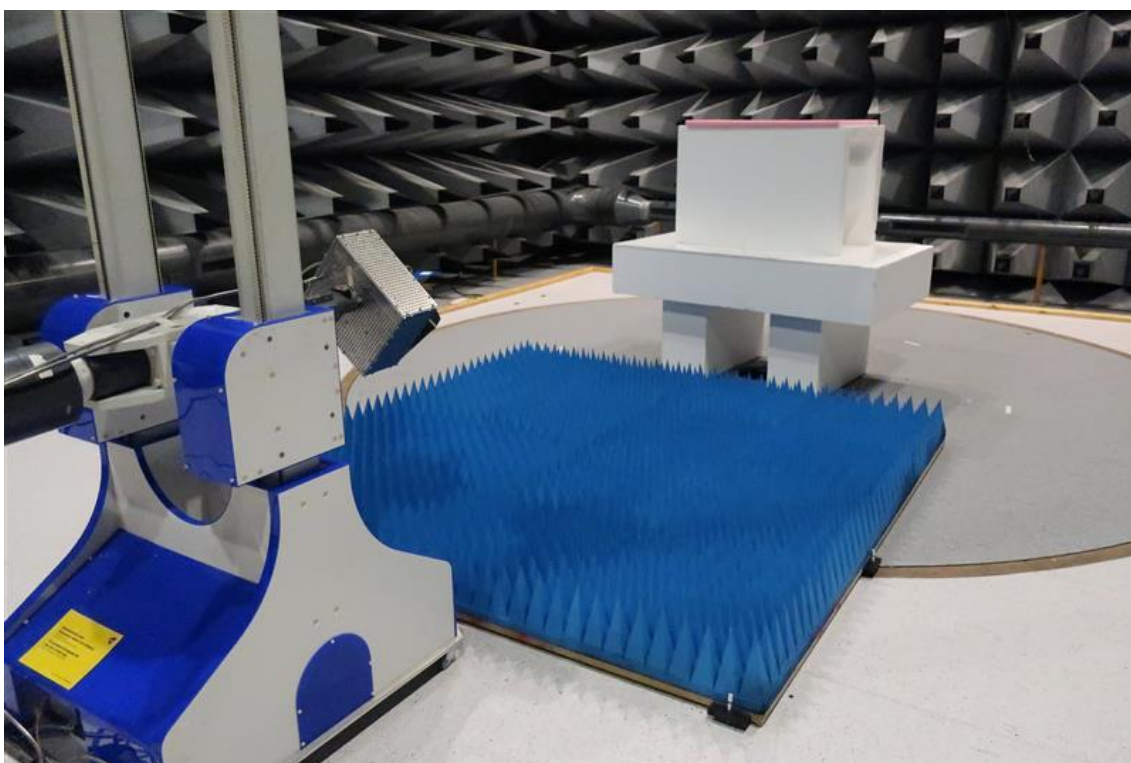


Photo 4.8.2 Test setup regarding measurement of band edge compliance.

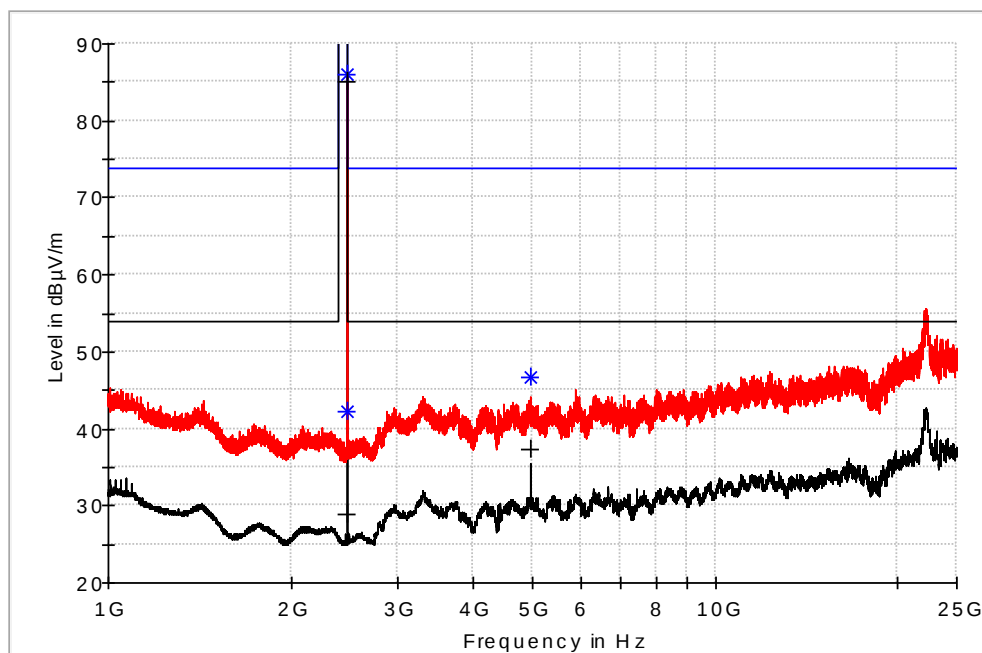


4.9 Measurement of band edge compliance

Test object	KlikKit	Sheet	RE-17
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	16	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2480 MHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Full Spectrum



— Preview Result 2-AVG — Preview Result 1-PK+
 — FCC Part 15.249 2,4 GHz Pk 3-m — FCC Part 15.249 2,4 GHz Avg 3 m
 * Final_Result PK+ + Final_Result CAV

Comments

None



Test object	KlikKit	Sheet	RE-18
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	16	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2480 MHz

Test method	ANSI C63.10:2013	Temperature	22 °C
Characteristics	Complete search, antenna distance 3 m	Humidity	56 % RH
Detector	Peak and average	Bandwidth	1 MHz
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
2483.50	---	28.93	53.90	24.97	15000.0	1000.000	102.0	H	270
2483.50	42.30	---	73.90	31.60	15000.0	1000.000	104.0	H	247

Test result The measured field strengths were below the limit at the band edge

Compliant Yes

Comments Final measurements by variation of turntable azimuth, antenna height, and antenna polarisation



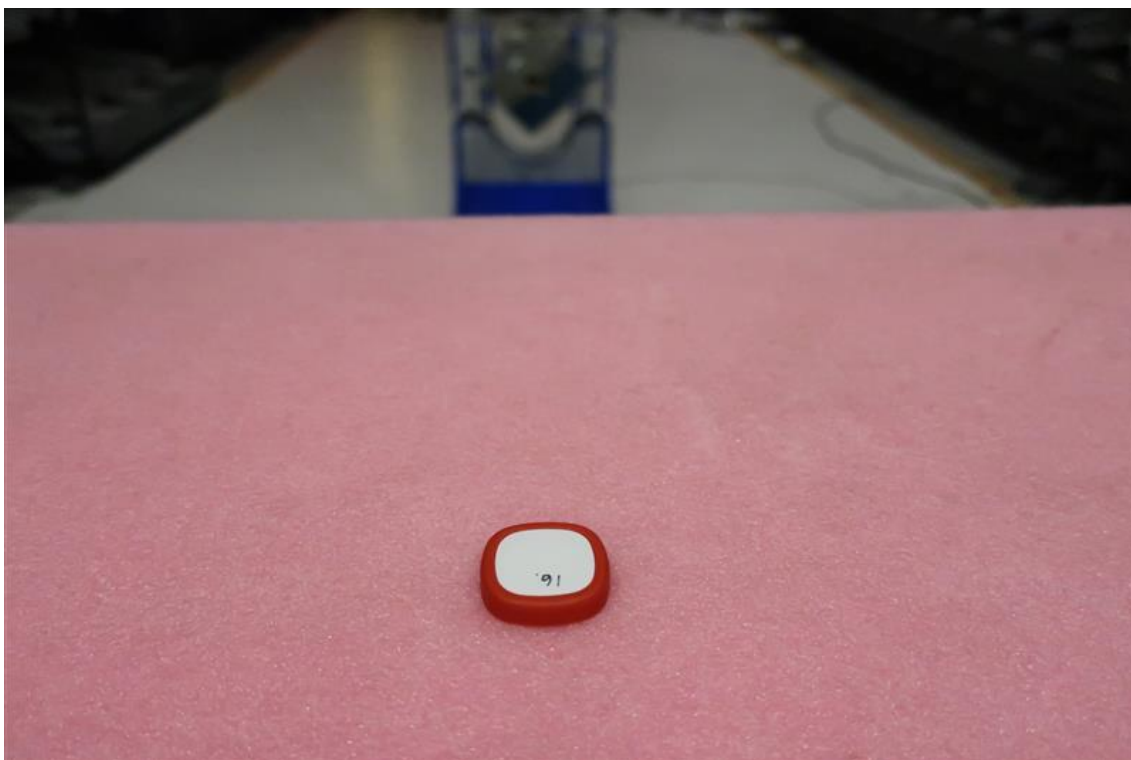


Photo 4.9.1 Test setup regarding measurement of band edge compliance.

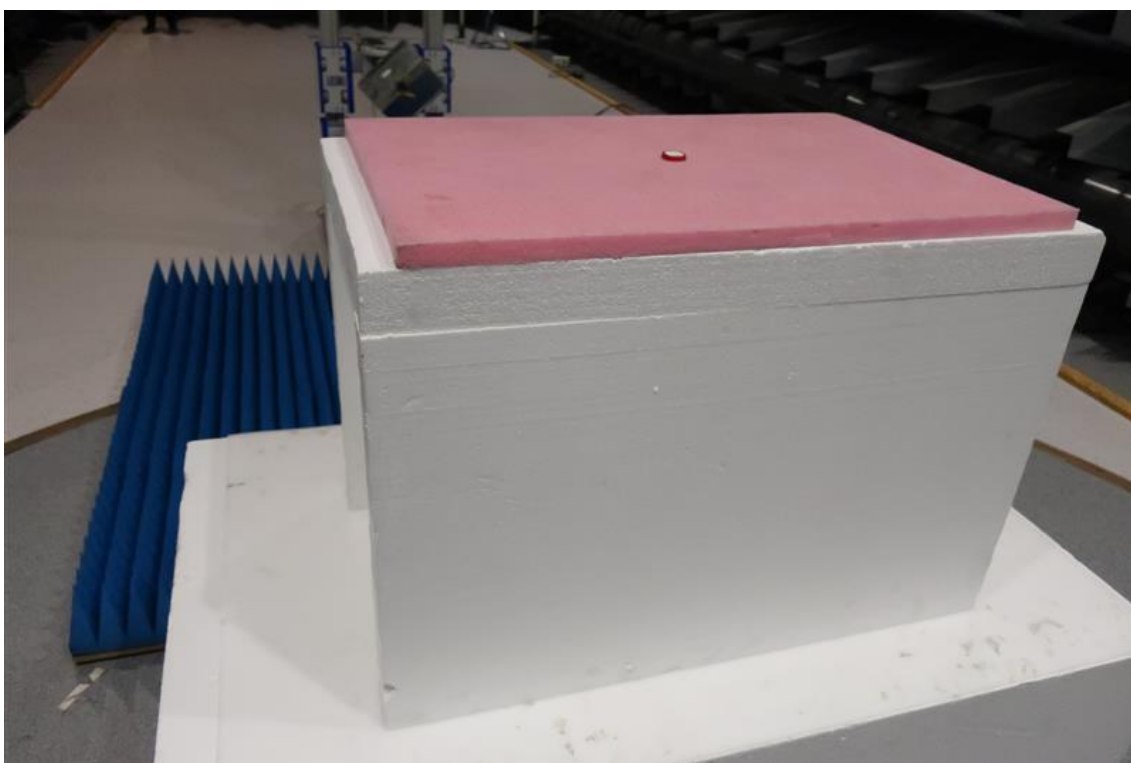
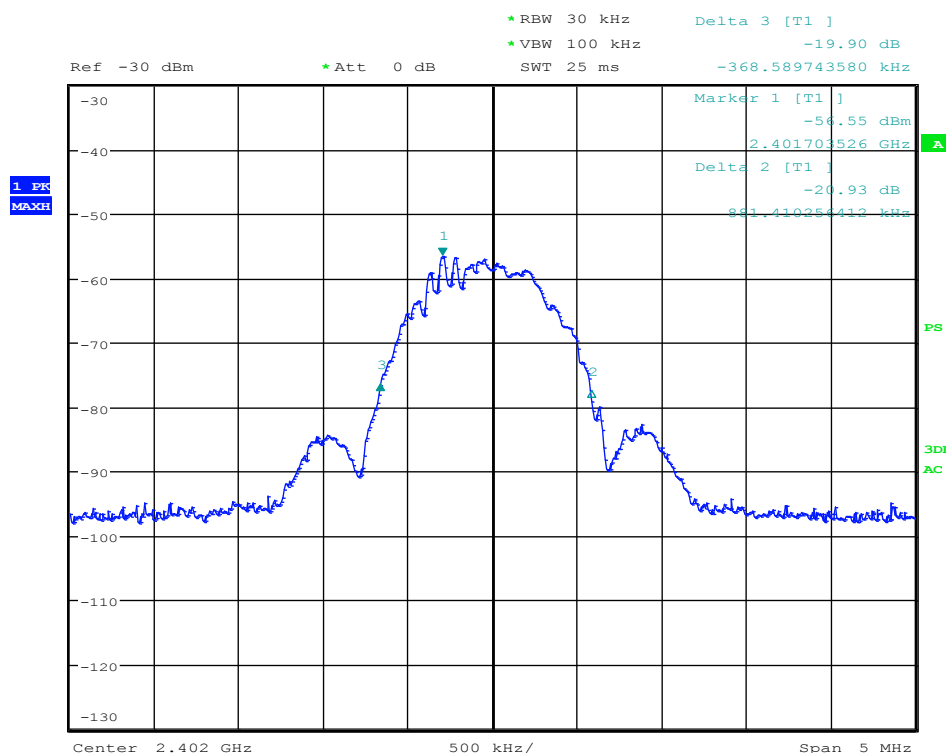


Photo 4.9.2 Test setup regarding measurement of band edge compliance.



4.10 Measurement of 20 dB bandwidth

Test object	KlikKit	Sheet	PROF-1
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	10	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2402 MHz
Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Radiated measurement, antenna distance 3 m	Humidity	53 % RH
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB
SA Settings	RBW: 30 kHz VBW: 100 kHz SPAN: 5 MHz DET: Peak CF: 2402 MHz Trace: Max. hold		



Date: 16.JUN.2017 11:07:05

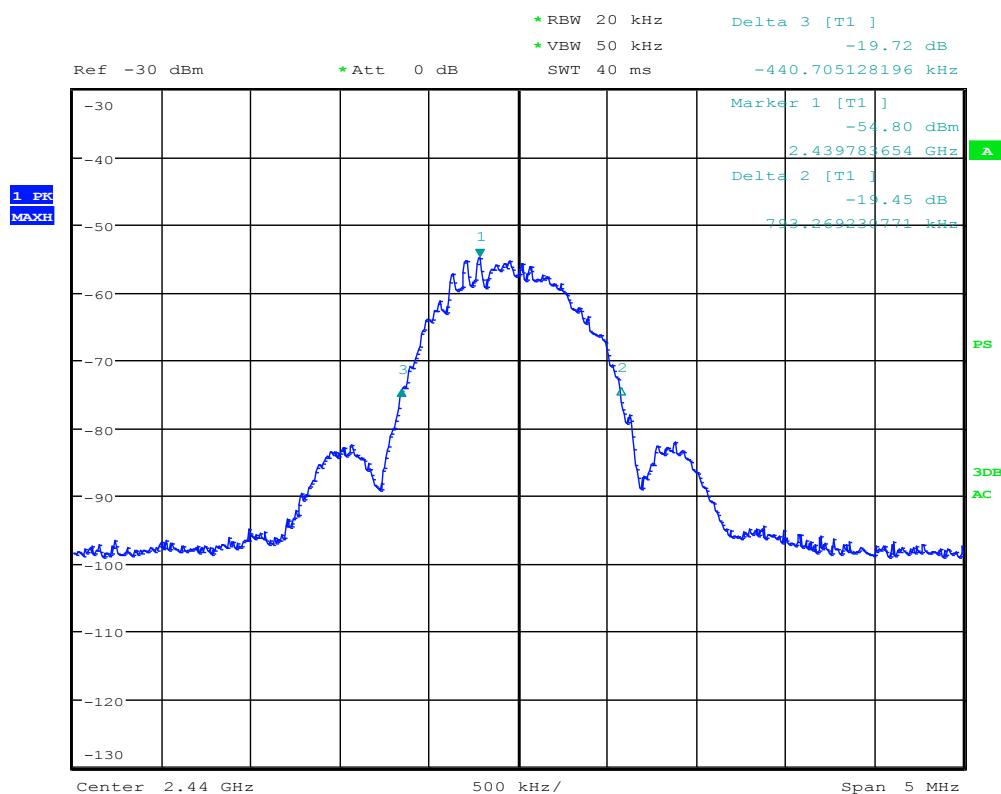
Comments

Radiated measurement, -20 dBc



Test object	KlikKit	Sheet	PROF-2
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	15	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2440 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Radiated measurement, antenna distance 3 m	Humidity	53 % RH
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB
SA Settings	RBW: 20 kHz VBW: 50 kHz SPAN: 5 MHz DET: Peak CF: 2440 MHz Trace: Max. hold		



Date: 16.JUN.2017 11:21:15

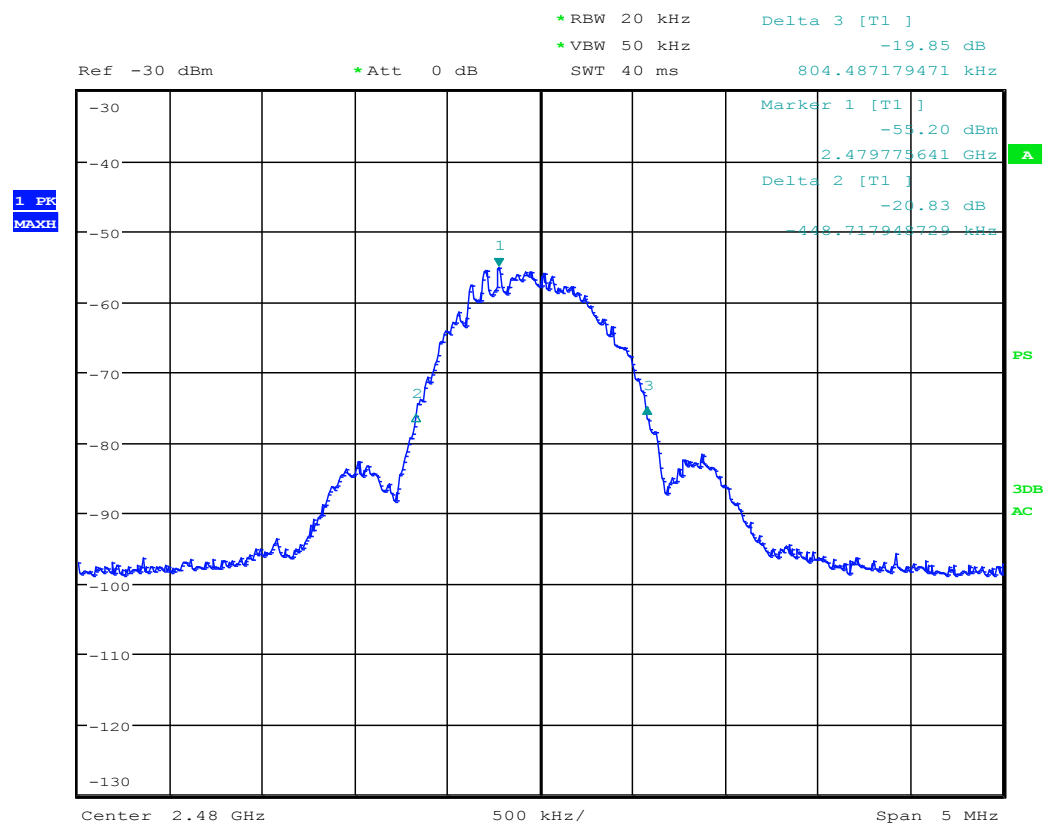
Comments

Radiated measurement, -20 dBc



Test object	KlikKit	Sheet	PROF-3
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	16	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2480 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Radiated measurement, antenna distance 3 m	Humidity	53 % RH
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB
SA Settings	RBW: 20 kHz VBW: 50 kHz SPAN: 5 MHz DET: Peak CF: 2480 MHz Trace: Max. hold		



Date: 16.JUN.2017 11:28:57

Comments

Radiated measurement, -20 dBc



Test object	Combination of 2.1.1: KlikKit 2.1.2: KlikKit 2.1.3: KlikKit	Sheet	PROF-4
Type	See Section 2	Project no.	117-24389-1
Serial no.	See Section 2	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	Operating frequency

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Radiated measurement, antenna distance 3 m	Humidity	53 % RH
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Remarks
2402	2401.33	2402.58	-
2440	2439.34	2440.58	-
2480	2479.33	2480.58	-
Note 1: -			

Operating frequency [MHz]	Measured [MHz]	Limit [MHz]	Remarks
Lowest frequency	2401.33	2400.00	Passed
Highest frequency	2480.58	2483.50	Passed

Band edge criteria	20 dB bandwidth (-20 dBc)
Test result	The measured 20 dB bandwidth were within limit.
Test port	Enclosure
Test mode	Continuous Tx - normal modulation
Condition	Normal
Compliant	Yes
Comments	Test voltage: Internal battery The test is performed radiated



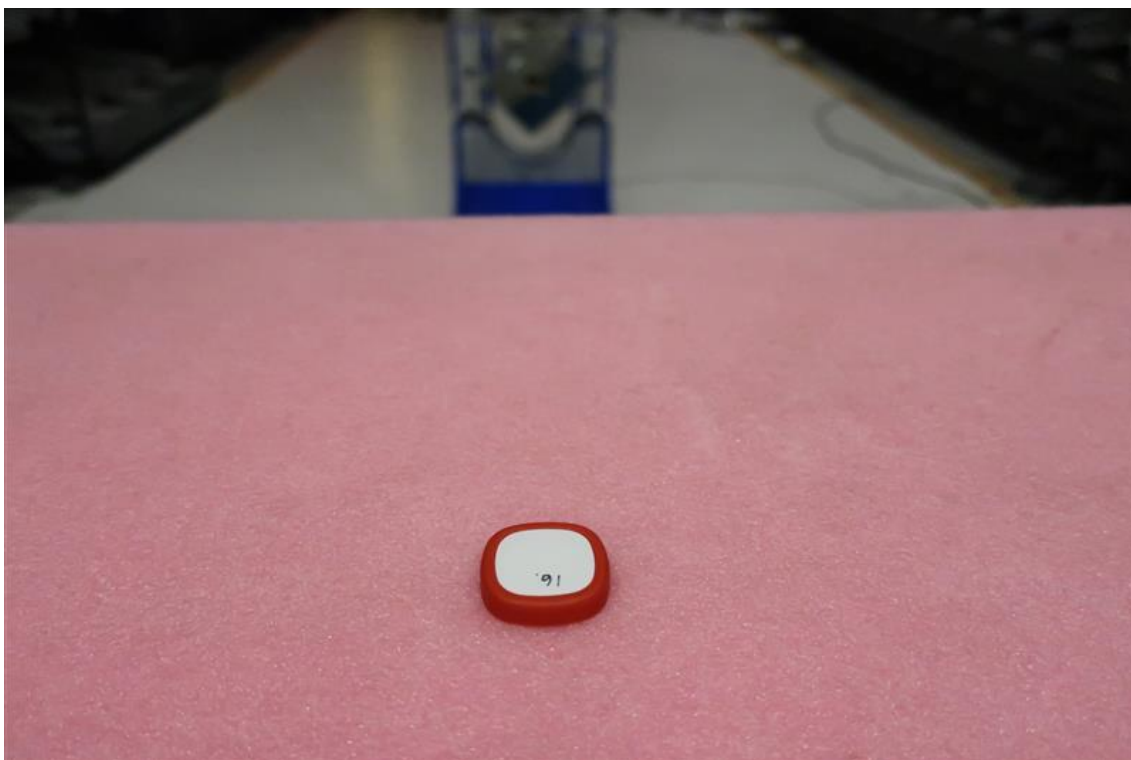


Photo 4.10.1 Test setup regarding measurement of 20 dB bandwidth.

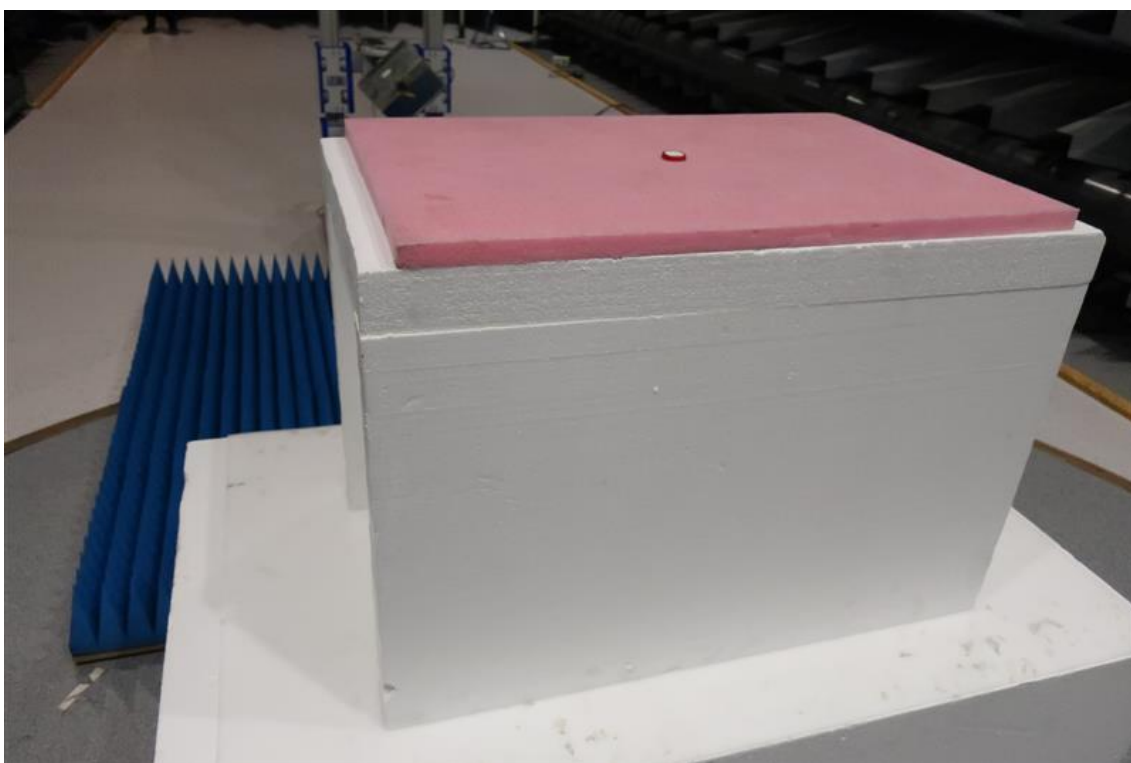


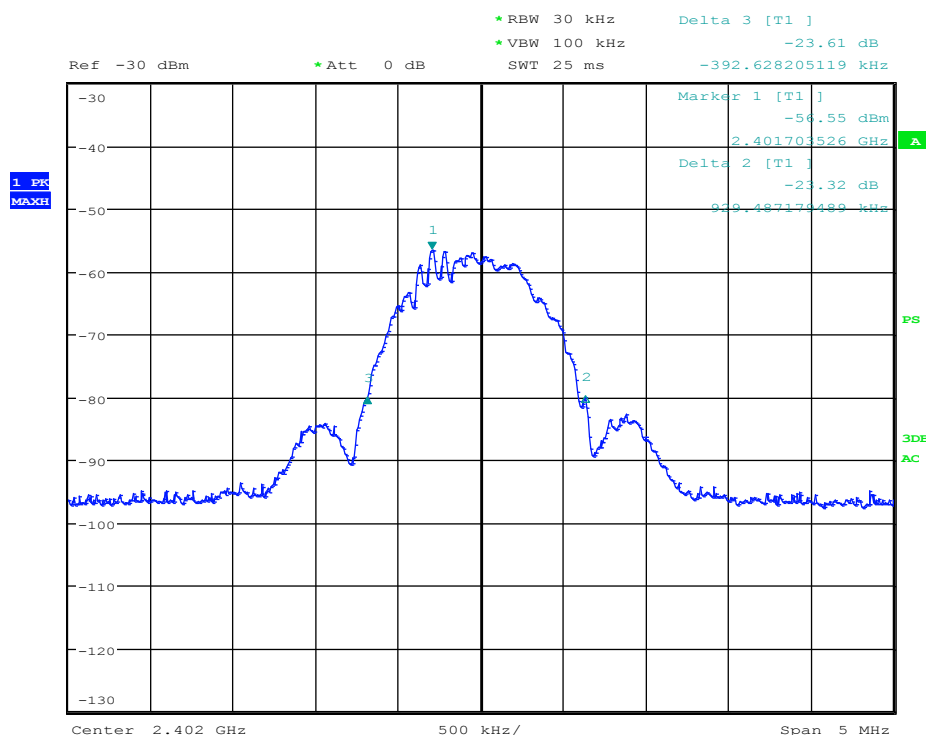
Photo 4.10.2 Test setup regarding measurement of 20 dB bandwidth.



4.11 Measurement of occupied bandwidth

Test object	KlikKit	Sheet	PROF-5
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	10	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2402 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Radiated measurement, antenna distance 3 m	Humidity	53 % RH
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB
SA Settings	RBW: 30 kHz VBW: 100 kHz SPAN: 5 MHz DET: Peak CF: 2402 MHz Trace: Max. hold		



Date: 16.JUN.2017 11:08:15

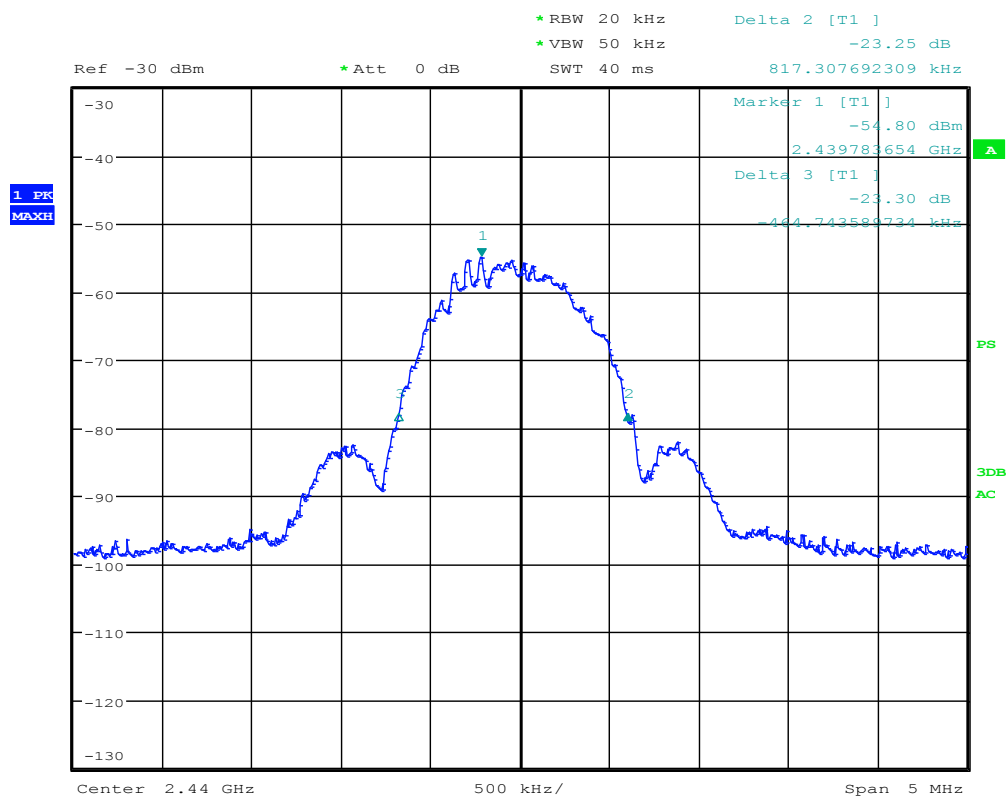
Comments

Radiated measurement, -23 dBc



Test object	KlikKit	Sheet	PROF-6
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	15	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2440 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Radiated measurement, antenna distance 3 m	Humidity	53 % RH
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB
SA Settings	RBW: 20 kHz VBW: 50 kHz SPAN: 5 MHz DET: Peak CF: 2440 MHz Trace: Max. hold		



Date: 16.JUN.2017 11:21:38

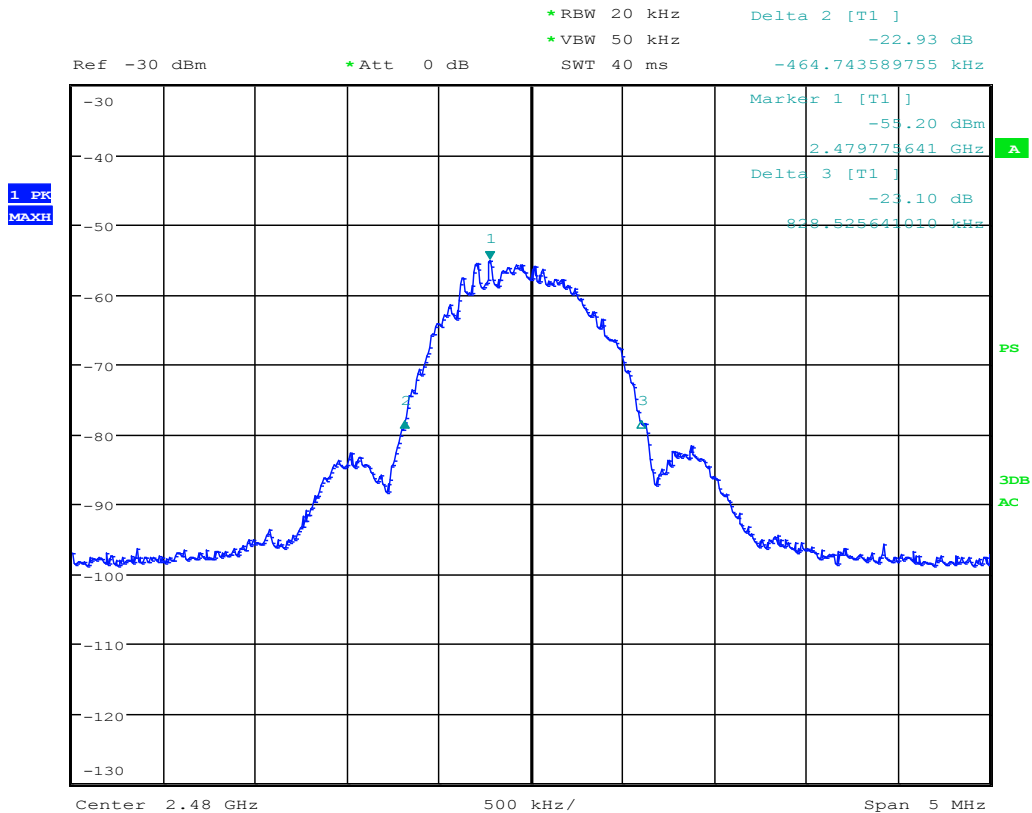
Comments

Radiated measurement, -23 dBc



Test object	KlikKit	Sheet	PROF-7
Type	KlikKit ver. 1	Project no.	117-24389-1
Serial no.	16	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	2480 MHz

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Radiated measurement, antenna distance 3 m	Humidity	53 % RH
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB
SA Settings	RBW: 20 kHz VBW: 50 kHz SPAN: 5 MHz DET: Peak CF: 2480 MHz Trace: Max. hold		



Date: 16.JUN.2017 11:29:13

Comments

Radiated measurement, -23 dBc



Test object	Combination of 2.1.1: KlikKit 2.1.2: KlikKit 2.1.3: KlikKit	Sheet	PROF-8
Type	See Section 2	Project no.	117-24389-1
Serial no.	See Section 2	Date	16 June 2017
Client	LEO Pharma A/S, LEO Innovation Lab	Initials	JOW
Specification	47 CFR Part 15, Subpart C (Specific rule part §15.249) RSS-Gen, Issue 4:2014 as required by RSS-210:2016 Annex B.10	Frequency	Operating frequency

Test method	ANSI C63.10:2013	Temperature	23 °C
Characteristics	Radiated measurement, antenna distance 3 m	Humidity	53 % RH
Test equipm.	EMI room Hørsholm 49999 49623 49622 49625 49726 49624 49677 49098 49674 29953 49600	Uncertainty	4.9 dB

Operating frequency [MHz]	Low frequency [MHz]	High frequency [MHz]	Measured 99% emission bandwidth [MHz]
2402	2401.311	2402.633	1.322
2440	2439.319	2440.601	1.282
2480	2479.311	2480.604	1.293

Band edge criteria	-23 dBc
Test result	The measured occupied bandwidths were within limit
Test port	Enclosure
Test mode	Continuous Tx - normal modulation
Condition	Normal
Compliant	Yes
Comments	Test voltage: Internal battery The test is performed radiated



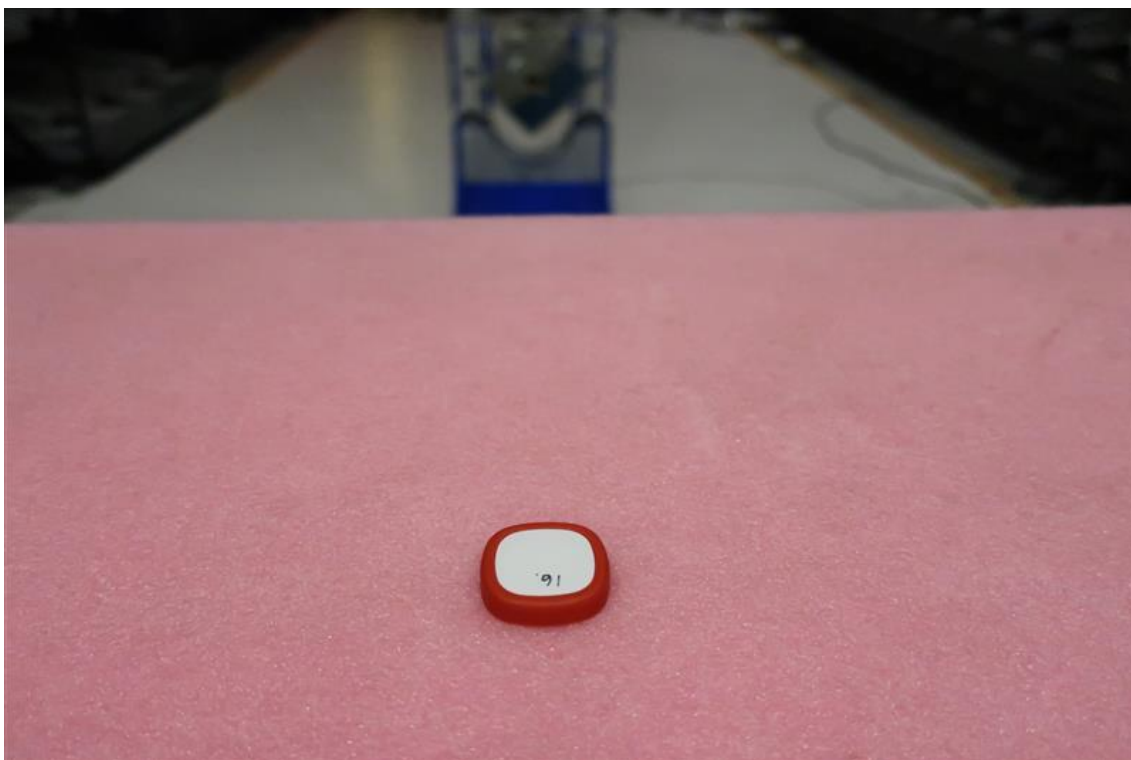


Photo 4.11.1 Test setup regarding measurement of occupied bandwidth.

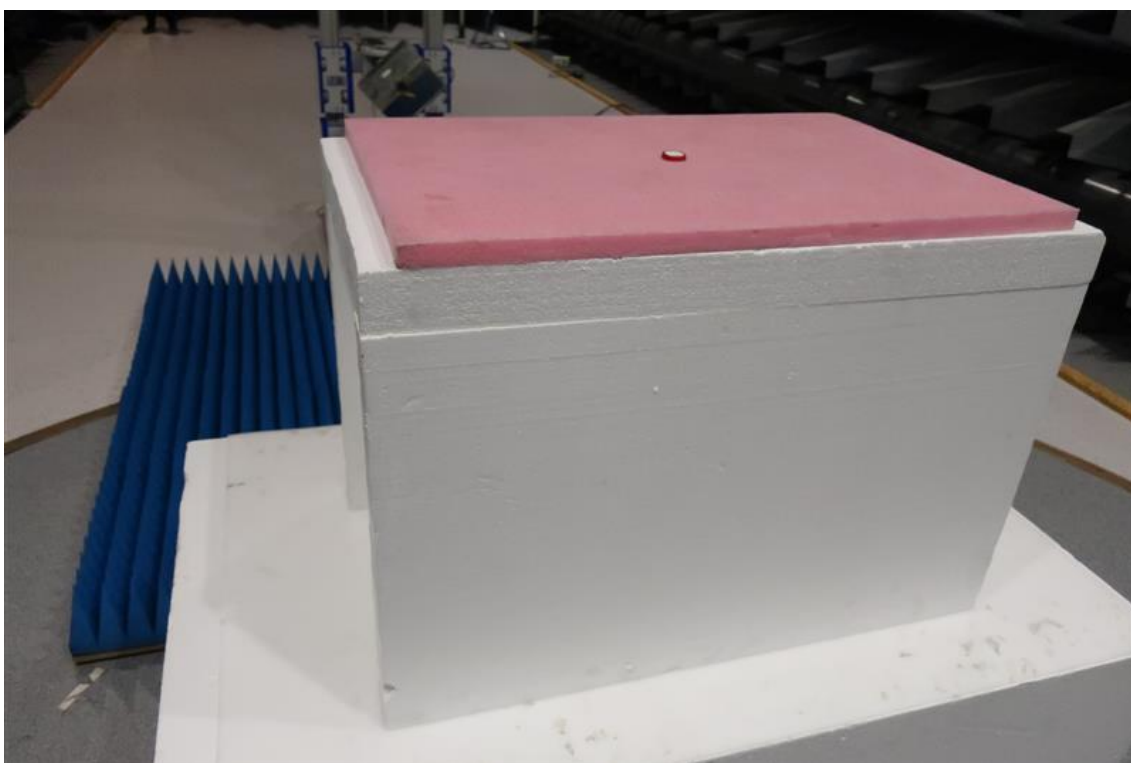


Photo 4.11.2 Test setup regarding measurement of occupied bandwidth

5. National registrations and accreditations

5.1 DANAK Accreditation

Organization: Danish Accreditation and Metrology Fund - DANAK, see www.danak.dk and www.ilac.org

Registration Number: 19

Area Number: C

DANAK is part of ILAC (International Laboratory Accreditation Cooperation) including its MRA (Mutual Recognition Arrangement). The MRA includes the Australian NATA and Canadian SCC.

5.2 FCC Registrations

Organization: Federal Communications Commission, USA

Registration Number: 913950

Facilities: EMC room 2 Hørsholm (EMC-2)
EMC room 3 Hørsholm (EMC-3)
EMC room 4 Hørsholm (EMC-4)
EMI room Hørsholm (EMC-5)

5.3 VCCI Registrations

Organization: Voluntary Control Council for Interference by Information Technology, Japan

Member Number: 910

Facilities: EMC room 3 Hørsholm (EMC-3): C-2532 and T-1548
EMC room 4 Hørsholm (EMC-4): C-2533 and T-1549
EMI room Hørsholm (EMC-5): R-1180, C-706, T-1550 and G-470

5.4 IC Registrations

Organization: Industry Canada, Certification and Engineering Bureau

Registration Number: IC4187A-5

Facilities: EMI room Hørsholm (EMC-5)



6. List of instruments

No.	Description	Manufacturer	Type no.	Cal. date	Cal. exp.
29953	ANTENNA TOWER/TURNTABLE CONTROLLER	EMCO	2090	N/A	N/A
49098	TEMPERATURE/HUMIDITY LOGGER, EMI CONTROL ROOM	ELPRO ECOLOG	TH-2	08-07-2016	08-07-2017
49154	BILOG ANTENNA	CHASE	CBL6111A	23-06-2016	23-06-2018
49590	CABLE, LOW-LOSS uWAVE CABLE, N-N, 8.0 M "EMI"	SUHNER	SUCOFLEX 104 PB	04-11-2016	04-11-2017
49600	SPECTRUM ANALYZER / MEASUREMENT RECEIVER	ROHDE & SCHWARZ	ESU40	29-06-2016	29-07-2017
49622	CABLE 3.25 M PC3.5 MALE-FEMALE SUCOFLEX 104	HUBER+SUHNER	SUCOFLEX 104	24-10-2016	24-10-2017
49623	CABLE 16 M PC3.5 MALE-MALE SUCOFLEX 104PB	HUBER+SUHNER	SUCOFLEX 104	24-10-2016	24-10-2017
49624	DUAL RIDGE HORN ANTENNA – 1 GHz – 26 GHz (2 GHz-32 GHz)	SATIMO	SH2000	04-11-2014	04-11-2017
49625	SRD COAX SWITCH MATRIX USED IN 1GHZ TO 26GHZ SRD ANTENNASYSTEM	DELTA	COAX SWITCH MATRIX	24-10-2016	24-10-2017
49674	MATURO CONTROLLER	MATURO		N/A	N/A
49677	L4445A COMMUNICATION BOX			N/A	N/A
49704	CABLE 3 M SMA-N	SUHNER	SUCOFLEX104	04-11-2016	04-11-2017
49807	ATTENUATOR, DC-12.4 GHz, 6 dB	HUBER-SUHNER	6806.17A	15-02-2017	15-02-2018
49817	CABLE, LOW-LOSS uWAVE CABLE, N-N, 8.0 M "EMI"	SUHNER	SUCOFLEX 104 PB	04-11-2016	04-11-2017
49999	EMC32-SOFTWARE VER. 10	ROHDE & SCHWARZ		N/A	N/A

