

FCC Part 15C Compliance Test Report

Test Report no.:	FCC15C_BTLE_RM-1150_01.docx	Date of Report:	02-Dec-2015
Number of pages:	28	Customer's Contact person:	Juha Paukku
Testing laboratory:	TCC Microsoft Tampere Laboratory P.O. Box 403 Visiokatu 3 FIN-33101 TAMPERE, FINLAND Tel. +358 71 800 8000 Fax. +358 71 804 6880	Customer:	Microsoft P.O. Box 403 Visiokatu 4 FIN-33720 TAMPERE, FINLAND Tel. +358 (0) 7180 46800 Fax. +358 (0) 7180 46880
FCC listing no.:	94436		
IC recognition no.:	661AK-1		
Tested devices/ accessories:	Phone RM-1150 / Charger AC-18E / Battery BV-T3G (LG) / Headset WH-108 / Dummy battery SD-134		
FCC ID:	PYARM-1150	IC:	
Supplement reports:	-		
Testing has been carried out in accordance with:	47 CFR 15C, ANSI C63.10 (2013), RSS-247 (Issue 1) and RSS-Gen (Issue 4). Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		
Documentation:	The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 15 years at TCC Microsoft.		
Test Results:	The EUT complies with the requirements in respect of all parameters subject to the test. The test results relate only to devices specified in this document		
Date and signature for the contents:			

Hannu Soderholm, Engineer, EMC

1. Summary for FCC Part 15C Compliance Test Report

Date of receipt	21-Oct-2015
Testing completed	25-Oct-2015
The customer's contact person	Juha Paukku
Test Plan referred to	T:\Projects\RM-1152\TestPlan\Test_plan EMC FCC_RM-1152.xlsx
Notes	-
Document name	T:\Projects\RM-1150\EMC\Copy reports\FCC15C_BTLE_RM-1150_01.docx

1.1. EUT and Accessory Information

Product	Type	SN	HW	MV	SW	DUT
Phone	RM-1152	004402742963899	1540	-	01078.10006.15421.42000	400052
Charger	AC-18E	4090493521750501701;0675695	-	-	-	400050
Battery	BV-T3G (LG)	4955405343010304094;0670783	1.0	-	-	400051
Headset	WH-108	-	4.0	4.0	-	42927
Dummy battery	SD-134	2301637	v.1	-	-	400053

EUT antenna gain

Gain [dBi]	2400-2483.5 MHz
Antenna 1	0
Antenna 2	-

1.2. Summary of Test Results

Bluetooth Low Energy:

Section in CFR 47	Section in RSS-GEN or RSS-247	Name of the test	Result
15.247(b)(1)	5.4 (4)	Conducted peak output power	PASSED
15.247(d), 15.205(b)	5.5	Band edge compliance of RF emissions	PASSED
15.247(d)	5.5	Spurious RF conducted emissions	PASSED
15.247(d), 15.209	5.5	Spurious radiated emissions	PASSED
15.207	8.8	AC powerline conducted emissions	PASSED
15.247(a)(2)	5.2 (1)	6 dB bandwidth	PASSED
15.247(e)	5.2 (2)	Power spectral density	PASSED

The test results of RM-1152 are re-used for certification of the RM-1150. The table above indicates the results, which will be re-used.

PASSED
FAILED
NP

The EUT complies with the essential requirements in the standard.
The EUT does not comply with the essential requirements in the standard.
The test was not performed by the TCC Microsoft Laboratory.

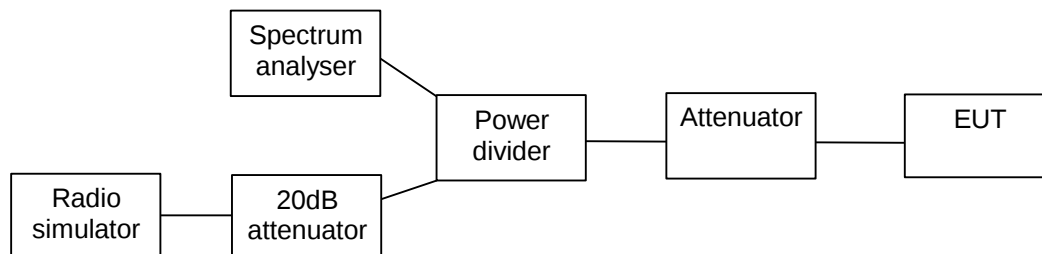
CONTENTS

1. Summary for FCC Part 15C Compliance Test Report.....	2
1.1. EUT and Accessory Information	2
1.2. Summary of Test Results	2
2. Conducted peak output power	4
2.1. Test Setup	4
2.2. Test method and limit	4
2.3. Bluetooth Low Energy Test results	5
3. Band edge compliance of RF emissions	7
3.2. Test method and limit	7
3.3. Bluetooth Low Energy test results, Orthogonal position 1 and 2	8
3.4. Bluetooth Low Energy test results, Orthogonal position 3	10
4. Spurious RF conducted emissions.....	12
4.1. Test Setup	12
4.2. Test method and limit	12
4.3. Bluetooth Low Energy Test results	13
5. Spurious radiated emissions.....	15
5.2. Test method and limit	16
5.3. Bluetooth Low Energy test results, Orthogonal position 1 and 2	17
5.4. Bluetooth Low Energy test results, Orthogonal position 3	18
6. AC powerline conducted emissions	19
6.1. Test Setup	19
6.2. Test method and limit	19
6.3. Bluetooth Low Energy Test results	20
7. 6 dB bandwidth	21
7.1. Test Setup	21
7.2. Test method and limit	21
7.3. Bluetooth Low Energy Test results	22
8. Power spectral density.....	24
8.1. Test Setup	24
8.2. Test method and limit	24
8.3. Bluetooth Low Energy Test results	25
9. Test Equipment.....	27
9.1. Conducted measurements	27
9.2. Radiated measurements	28

2. Conducted peak output power

EUT with DUT number	RM-1152, DUT 400052
Accessories with DUT numbers	SD-134, DUT 400053
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	RF Cond 2
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 38 / 101
Date of measurements	25-Oct-2015
Measured by	Hannu Soderholm

2.1. Test Setup



2.2. Test method and limit

The measurement is made according to ANSI C63.10 and RSS-247.

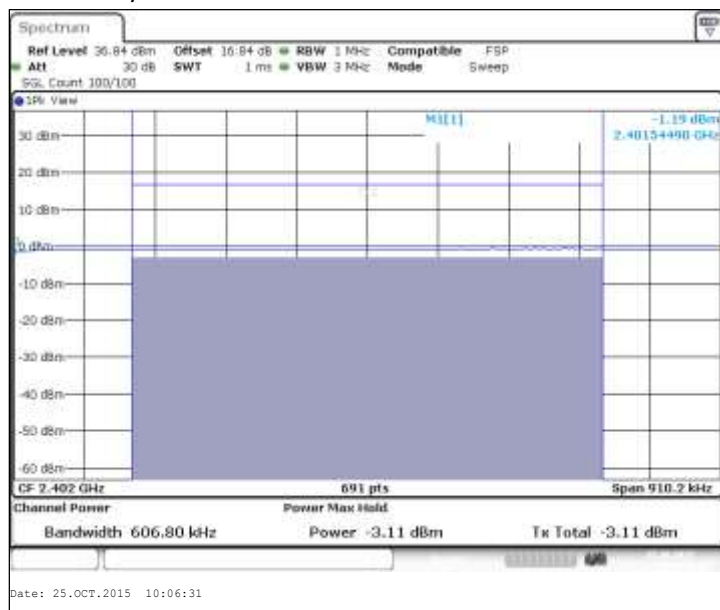
Limits for conducted peak output power measurements

Frequency range [MHz]	Limit [W]	Limit [dBm]	IC only Limit [dBm eirp]
2400 – 2483.5	1	30	36

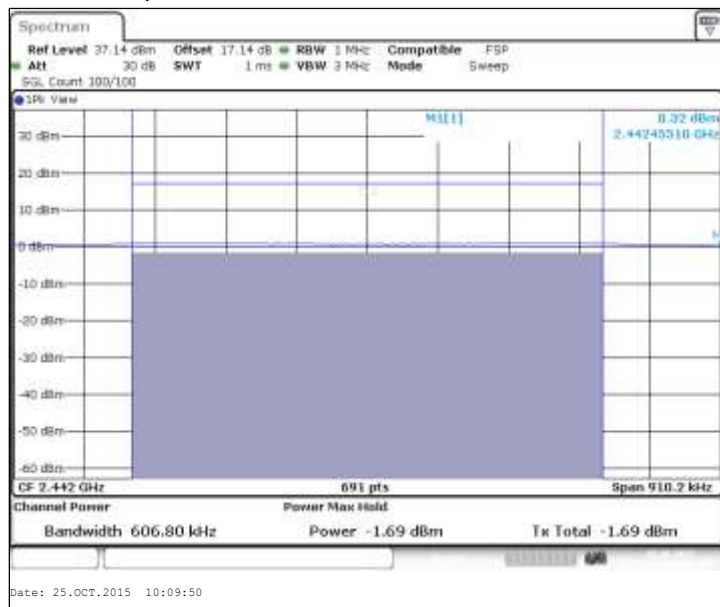
2.3. Bluetooth Low Energy Test results

Channel / f _c [MHz]	P [dBm]	P [mW]	Result
0 / 2402	-3.11	0.489	PASSED
20 / 2442	-1.69	0.678	PASSED
39 / 2480	-3.96	0.402	PASSED

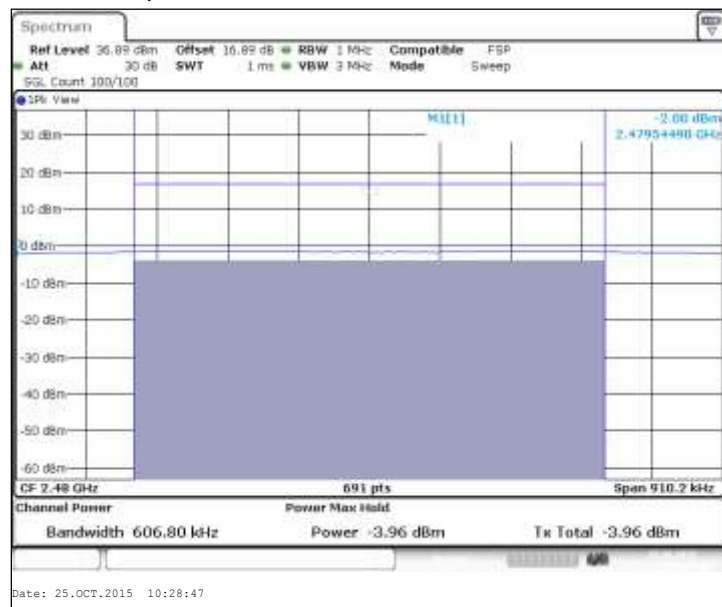
Channel 0 / 2402 MHz



Channel 20 / 2442 MHz



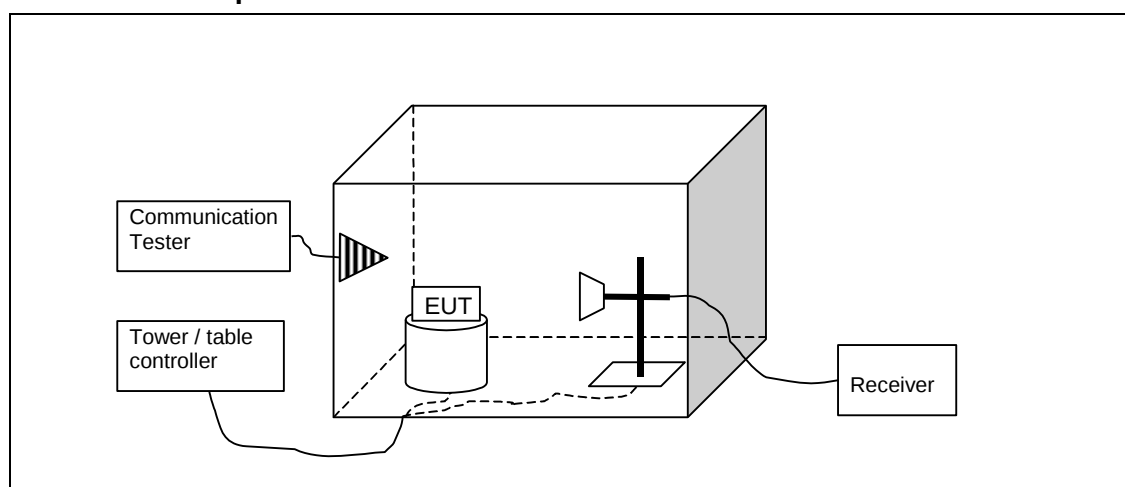
Channel 39 / 2480 MHz



3. Band edge compliance of RF emissions

EUT with DUT number	RM-1152, DUT 400049
Accessories with DUT numbers	BV-T3G (LG), DUT 400051 ; AC-18E, DUT 400050 ; WH-108, DUT 42927
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 40 / 100.4
Date of measurements	09-Nov-2015
Measured by	Hannu Söderholm

3.1.1 Test setup



3.2. Test method and limit

The measurement is made according to ANSI C63.10 and RSS-247 as follows:

The measurement is made with absorbers on the floor, measuring antenna at fixed height in horizontal and vertical polarizations, EUT set in three orthogonal positions on the turn table and turn table rotated 0...360 degrees.

The measurement results are obtained as described below:

$$E [dB\mu V/m] = U_{RX} + A_{TOT}$$

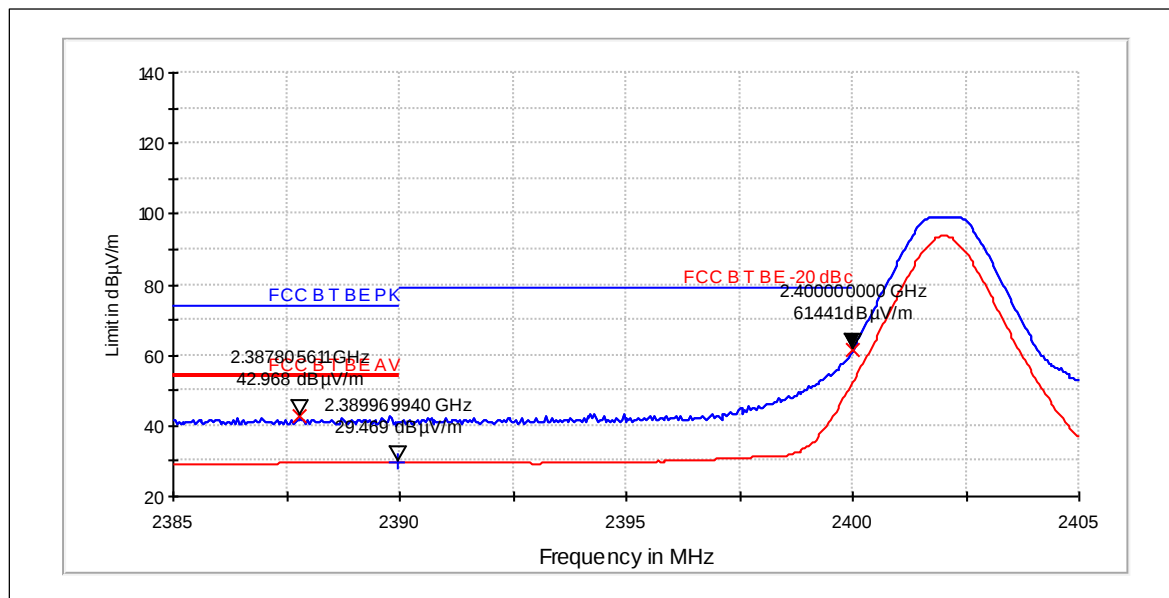
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable loss, antenna factor and preamplifier gain ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

Limits for band edge compliance of RF emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit
Below 2390 and above 2483.5	54 dBuV/m (avg) and 74 dBuV/m (pk)
2390 - 2400	-20 dBc (pk)

3.3. Bluetooth Low Energy test results, Orthogonal position 1 and 2

Channel 0 / 2402 MHz



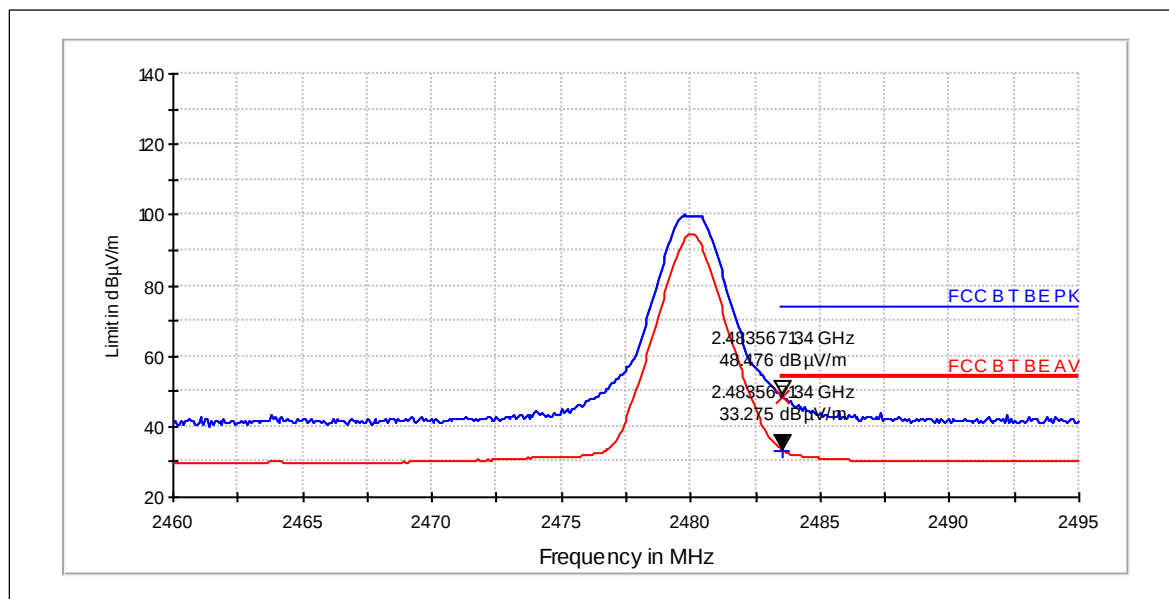
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2388	42.97	140.734	52.68	-9.71	PASSED
2400	61.44	1180.457	71.15	-9.71	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2390	29.47	29.747	39.18	-9.71	PASSED

Channel 39 / 2480 MHz



Peak (RBW: 1 MHz, VBW: 1 MHz)

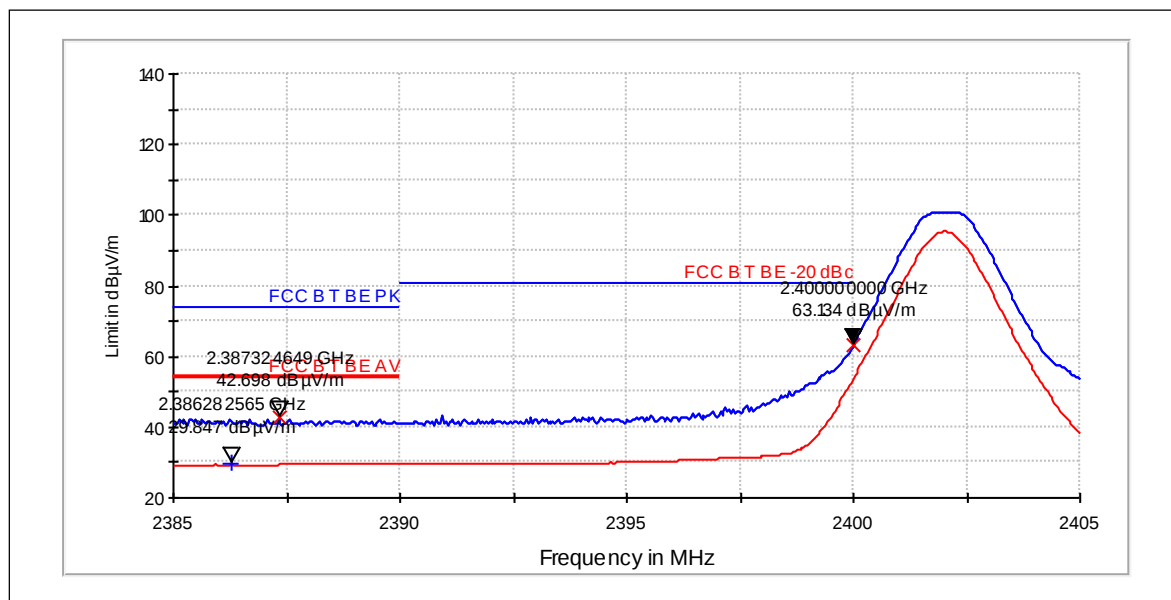
Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2484	48.48	265.338	57.71	-9.23	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2484	33.28	46.105	42.51	-9.23	PASSED

3.4. Bluetooth Low Energy test results, Orthogonal position 3

Channel 0 / 2402 MHz



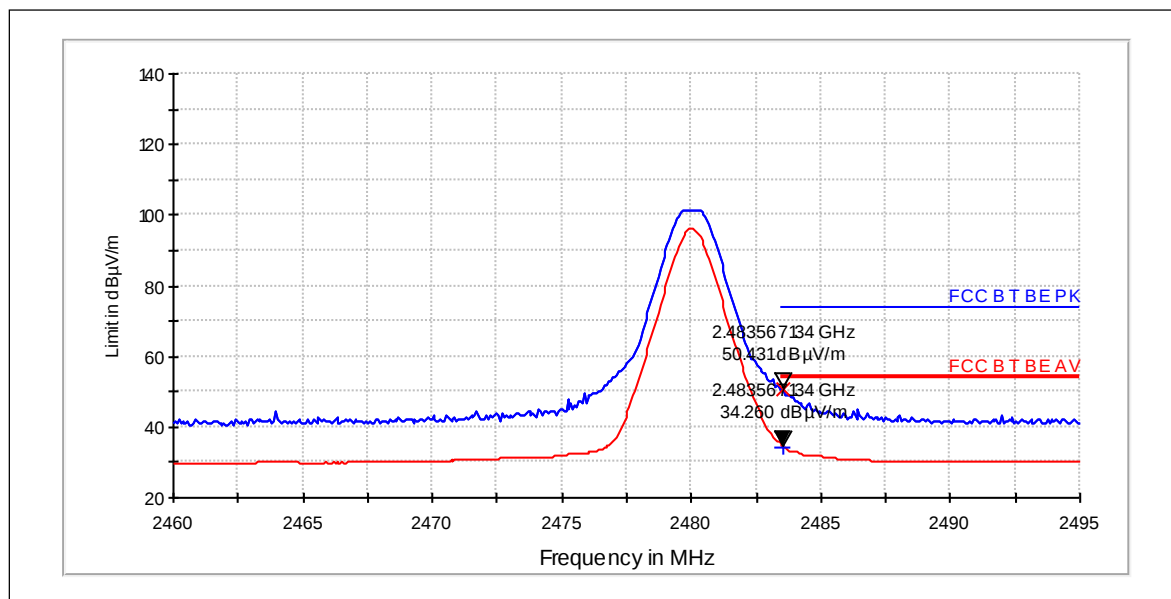
Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2387	42.7	136.427	52.41	-9.71	PASSED
2400	63.13	1434.498	72.84	-9.71	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2386	29.85	31.071	39.56	-9.71	PASSED

Channel 39 / 2480 MHz



Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2484	50.43	332.315	59.66	-9.23	PASSED

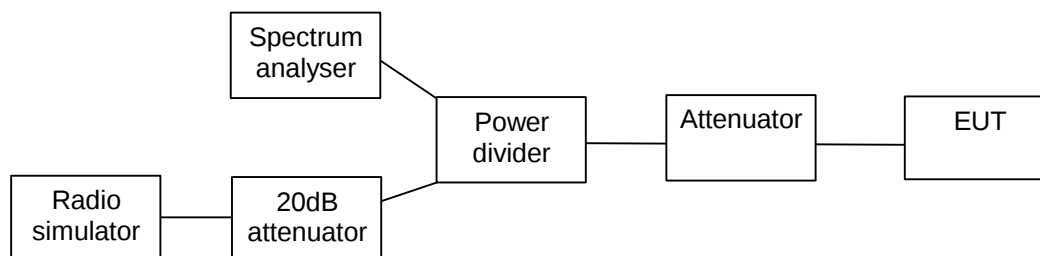
Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Results
2484	34.26	51.642	43.49	-9.23	PASSED

4. Spurious RF conducted emissions

EUT with DUT number	RM-1152, DUT 400052
Accessories with DUT numbers	SD-134, DUT 400053
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	RF Cond 2
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 38 / 101
Date of measurements	25-Oct-2015
Measured by	Hannu Soderholm

4.1. Test Setup



4.2. Test method and limit

The measurement is made according to ANSI C63.10 and RSS-247.

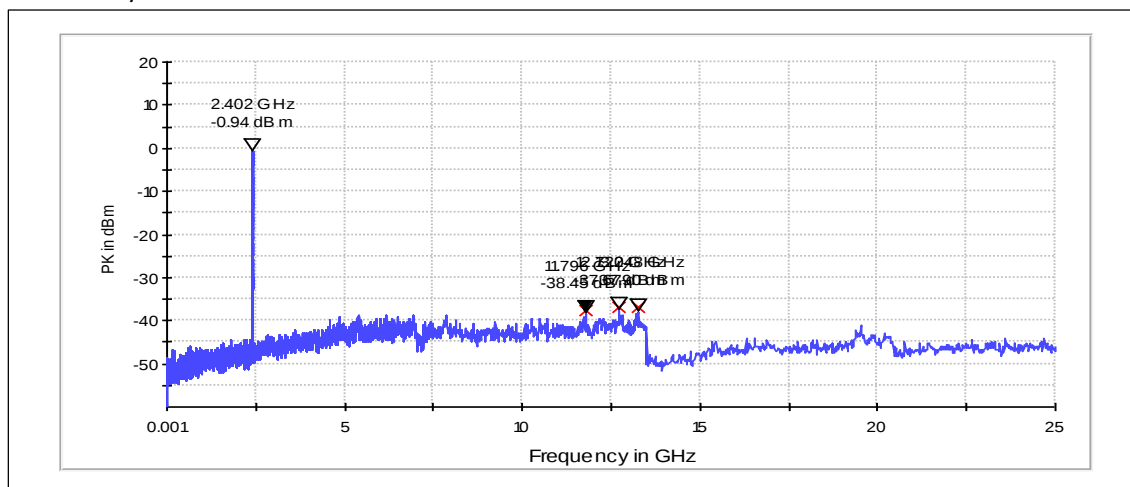
The reference level for the -20 dBc measurement was obtained as instructed in section 11.11.2 of ANSI C63.10, using a span of 1.5 times the OBW.

Limits for spurious RF conducted emissions measurements

Frequency range [MHz]	Limit [dBc]
1 – 25000	-20

4.3. Bluetooth Low Energy Test results

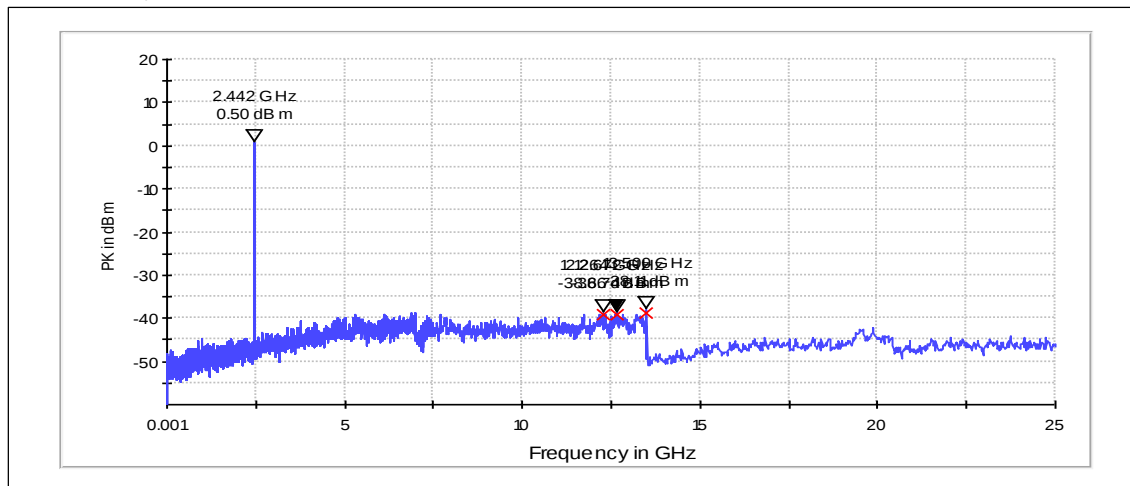
Channel 0 / 2402 MHz



Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
12720.000	-36.73	PASSED
13248.000	-36.96	PASSED
11796.000	-37.51	PASSED

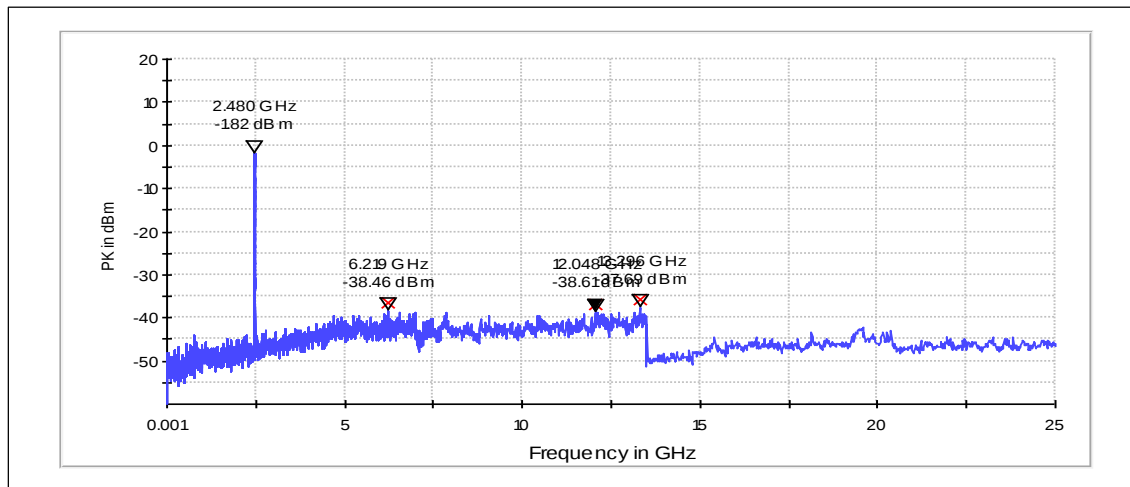
Channel 20 / 2442 MHz



Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
13500.000	-38.62	PASSED
12264.000	-39.17	PASSED
12672.000	-39.24	PASSED

Channel 39 / 2480 MHz



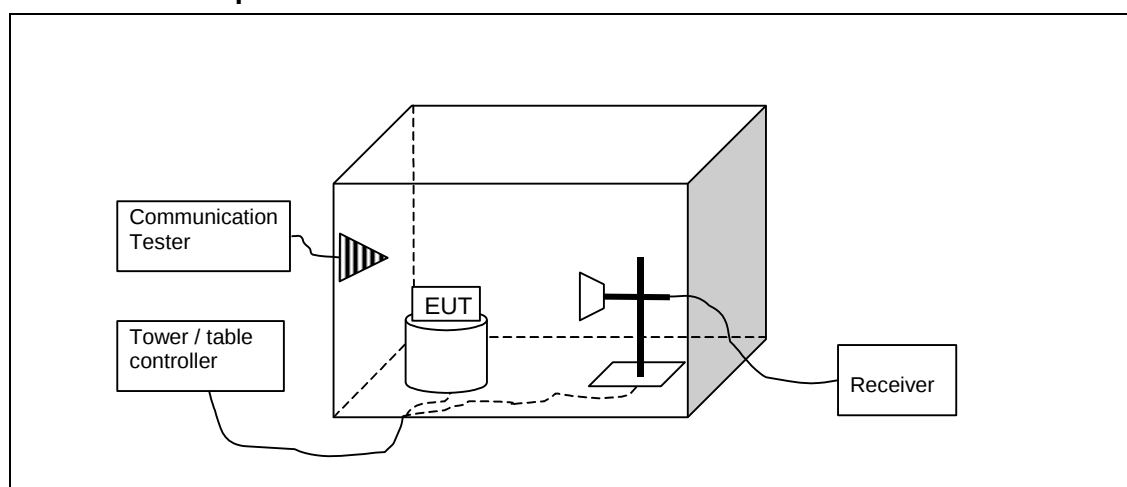
Peak (RBW: 100 kHz, VBW: 300 kHz)

Frequency [MHz]	P [dBc]	Result
13296.000	-35.87	PASSED
6218.800	-36.65	PASSED
12048.000	-36.79	PASSED

5. Spurious radiated emissions

EUT with DUT number	RM-1152, DUT 400049
Accessories with DUT numbers	BV-T3G (LG), DUT 400051 ; AC-18E, DUT 400050 ; WH-108, DUT 42927
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	21 / 40 / 100.4
Date of measurements	09-Nov-2015
Measured by	Hannu Söderholm

5.1.1 Test setup



5.2. Test method and limit

The measurement is made according to ANSI C63.10 and RSS-247 as follows:

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with absorbers on the floor, measuring antenna at fixed height and EUT set in three orthogonal positions on the turn table.

The Final Measurement is performed in the Semi-Anechoic Chamber with conducting metal floor, if the Preliminary Measurement results are closer than 20 dB to the permissible value.

For each suspected frequency, the turntable is rotated 360 degrees and antenna is scanned from 1 to 4 m. This is repeated for both horizontal and vertical receive antenna polarizations.

The emissions less than 20 dB below the permissible value are reported.

The measurement is made up to 10th harmonic of the EUT highest TX channel.
The measurement results are obtained as described below:

$$E [dB\mu V/m] = U_{RX} + A_{TOT}$$

Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable loss, antenna factor and preamplifier gain ($A_{TOT} = L_{CABLES} + A_F - G_{PREAMP}$).

Limits for spurious radiated emissions measurements (3 m measurement distance)

Frequency range [MHz]	Limit [$\mu V/m$]	Limit [dB $\mu V/m$]	Detector
30 - 88	100	40	Quasi peak
88 - 216	150	43.5	Quasi peak
216 - 960	200	46	Quasi peak
960 - 1000	500	54	Quasi peak
Above 1000	500	54	Average
Above 1000	5000	74	Peak

5.3. Bluetooth Low Energy test results, Orthogonal position 1 and 2

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4824.7	40.67	108.019	44.67	-4	74	33.31	PASSED
7235.1	46.08	201.372	44.28	1.8	95	49.15	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4824.7	27.73	24.35	31.73	-4	54	26.25	PASSED
7235.1	32.77	43.501	30.97	1.8	---	---	PASSED

Channel 20 / 2442 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
35.752	15.94	6.266	38.74	-22.8	40	24.06	PASSED
97.716	15.09	5.682	44.79	-29.7	44	28.43	PASSED
98.16	15.89	6.23	45.59	-29.7	44	27.63	PASSED

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4878.8	40.55	106.537	44.55	-4	74	33.43	PASSED
7320.9	45.78	194.536	43.78	2	74	28.2	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4878.8	27.83	24.632	31.83	-4	54	26.15	PASSED
7320.9	32.96	44.463	30.96	2	54	21.02	PASSED

Channel 39 / 2480 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4924.3	40.28	103.276	44.28	-4	74	33.7	PASSED
7386.6	46.09	201.604	43.79	2.3	74	27.89	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4924.3	28	25.119	32	-4	54	25.98	PASSED
7386.6	33.14	45.394	30.84	2.3	54	20.84	PASSED

5.4. Bluetooth Low Energy test results, Orthogonal position 3

Channel 0 / 2402 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4824.5	40.12	101.391	44.12	-4	74	33.86	PASSED
7235.5	46.76	217.771	44.96	1.8	95	48.47	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4824.5	27.71	24.294	31.71	-4	54	26.27	PASSED
7235.5	32.73	43.301	30.93	1.8	---	---	PASSED

Channel 20 / 2442 MHz

Quasi peak (RBW: 100 kHz, VBW: 100 kHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
30.42	17.6	7.586	38.2	-20.6	40	22.4	PASSED
35.818	16.48	6.668	39.28	-22.8	40	23.52	PASSED
945.935	32.67	43.003	47.67	-15	46	13.35	PASSED

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4878.1	40.95	111.558	44.95	-4	74	33.03	PASSED
7319.8	45.62	190.985	43.62	2	74	28.36	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4878.1	27.73	24.35	31.73	-4	54	26.25	PASSED
7319.8	32.95	44.412	30.95	2	54	21.03	PASSED

Channel 39 / 2480 MHz

Peak (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4922.2	40.69	108.268	44.69	-4	74	33.29	PASSED
7386.5	46.49	211.106	44.19	2.3	74	27.49	PASSED

Average (RBW: 1 MHz, VBW: 1 MHz)

Frequency [MHz]	E [dBμV/m]	E [μV/m]	U _{RX} [dBμV]	A _{TOT} [dB]	Limit [dBμV/m]	Margin	Results
4922.2	28.01	25.148	32.01	-4	54	25.97	PASSED
7386.5	33.2	45.709	30.9	2.3	54	20.78	PASSED

6. AC powerline conducted emissions

EUT with DUT number	RM-1152, DUT 400049
Accessories with DUT numbers	AC-18E, DUT 400050 ; BV-T3G (LG), DUT 400051 ; WH-108, DUT 42927
Operation Voltage [V] / [Hz]	115 / 60
Results	PASSED
Remarks	-
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	20 / 41 / 101.5
Date of measurements	03-Nov-2015
Measured by	Hannu Söderholm

6.1. Test Setup



6.2. Test method and limit

The measurement is made according to ANSI C63.10 and RSS-GEN as follows:

The EUT is placed on a wooden table 80 cm above the reference groundplane.

The EUT is connected via LISN to a test power supply.

The measurement results are obtained as described below:

$$U [dB\mu V] = U_{RX} + A_{TOT}$$

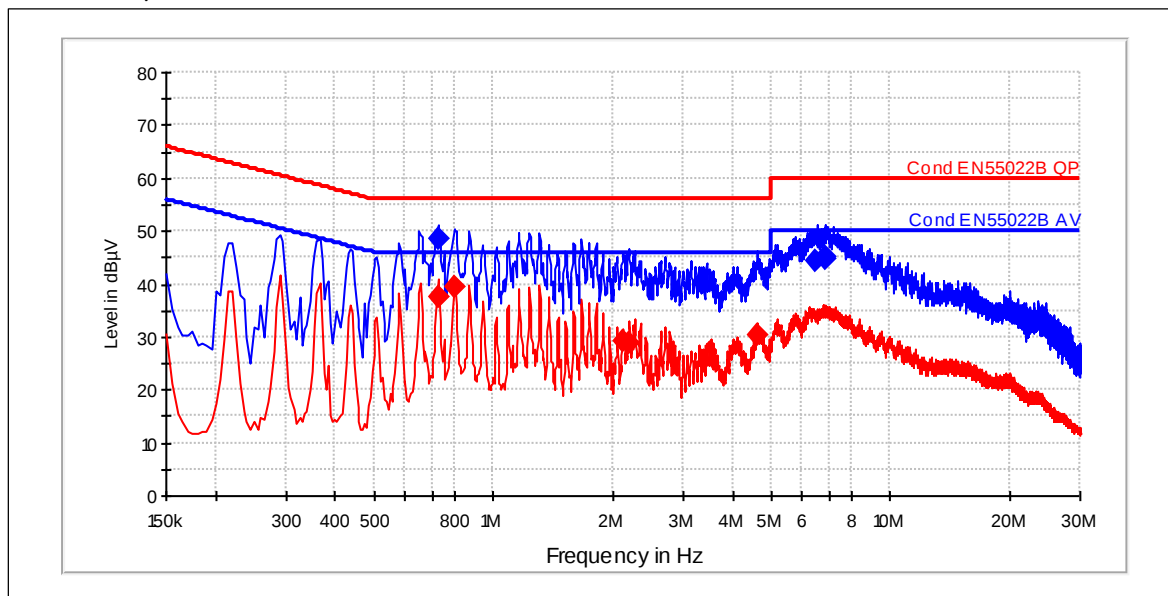
Where U_{RX} is receiver reading and A_{TOT} is total correction factor including cable and pulse limiter attenuations.

CISPR 22 Class B limits

Frequency range [MHz]	Quasi peak limit [dBμV]	Average limit [dBμV]
0.15 - 0.5	66 - 56	56 - 46
0.5 - 5	56	46
5 - 30	60	50

6.3. Bluetooth Low Energy Test results

Channel 20 / 2442 MHz



QuasiPeak

Frequency [MHz]	QuasiPeak [dBμV]	Limit [dBμV]	Margin [dB]	Line	Results
0.725	48.58	56	7.42	L1	PASSED
6.49	44.46	60	15.54	L1	PASSED
6.83	44.75	60	15.25	L1	PASSED
6.875	44.97	60	15.03	L1	PASSED

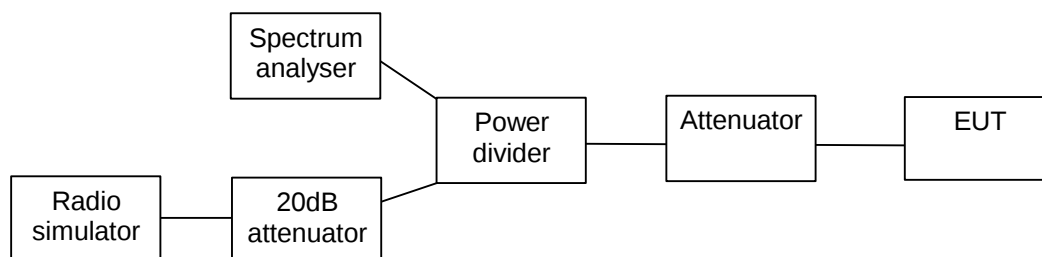
Average

Frequency [MHz]	Average [dBμV]	Limit [dBμV]	Margin [dB]	Line	Results
0.725	37.47	46	8.53	L1	PASSED
0.8	39.31	46	6.69	L1	PASSED
2.13	29.25	46	16.75	L1	PASSED
2.2	28.86	46	17.14	L1	PASSED
4.645	30.45	46	15.55	L1	PASSED

7. 6 dB bandwidth

EUT with DUT number	RM-1152, DUT 400052
Accessories with DUT numbers	SD-134, DUT 400053
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	RF Cond 2
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 38 / 101
Date of measurements	25-Oct-2015
Measured by	Hannu Soderholm

7.1. Test Setup



7.2. Test method and limit

The measurement is made according to ANSI C63.10 and RSS-247.

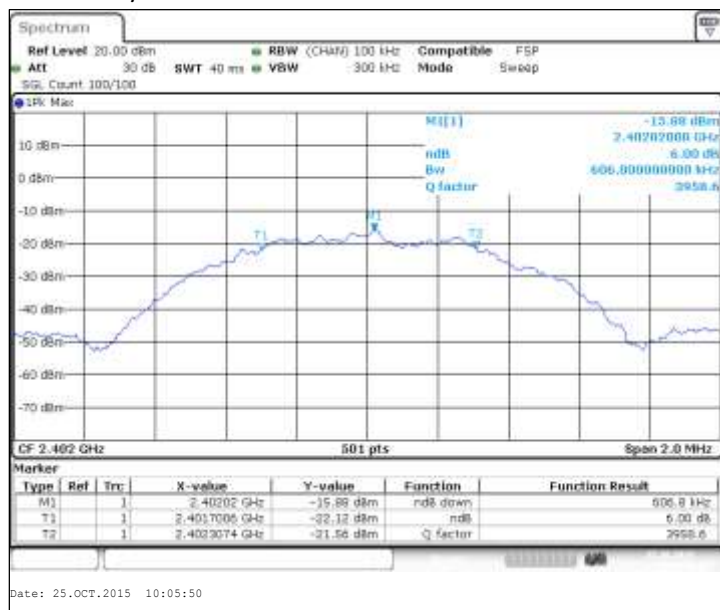
Limits for 6 dB bandwidth measurements

Limit [kHz]
≥ 500

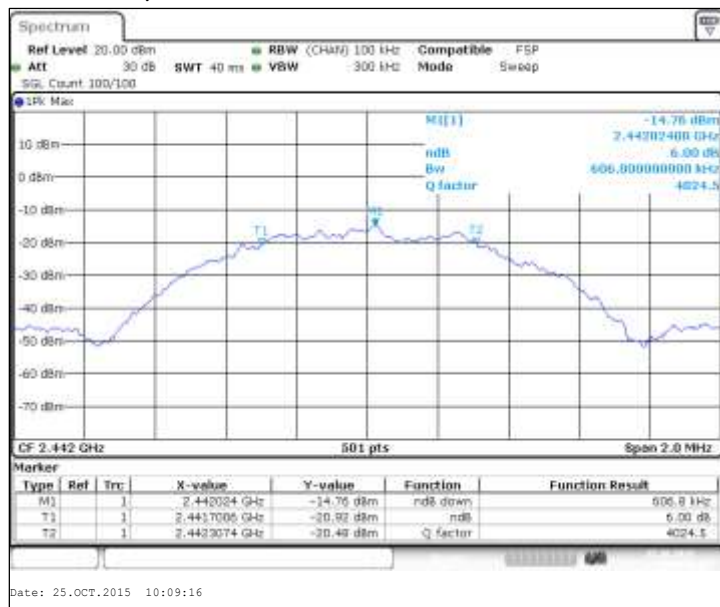
7.3. Bluetooth Low Energy Test results

Channel / f_c [MHz]	6 dB bandwidth [kHz]	Result
0 / 2402	606.8	PASSED
20 / 2442	606.8	PASSED
39 / 2480	606.8	PASSED

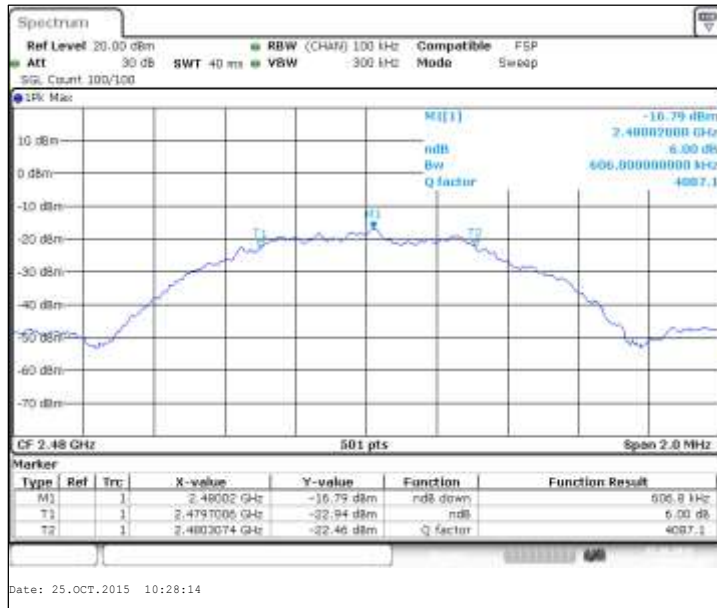
Channel 0 / 2402 MHz



Channel 20 / 2442 MHz



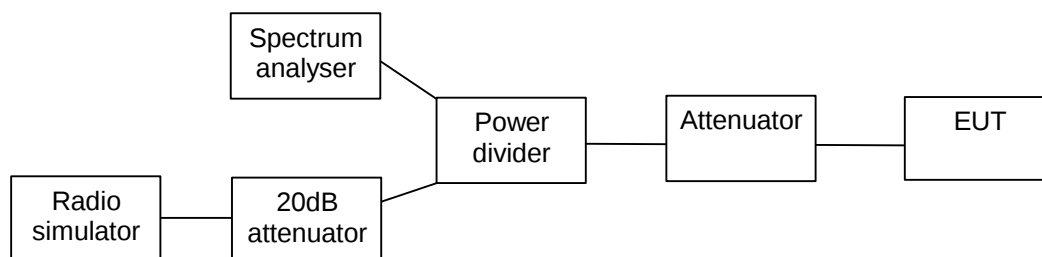
Channel 39 / 2480 MHz



8. Power spectral density

EUT with DUT number	RM-1152, DUT 400052
Accessories with DUT numbers	SD-134, DUT 400053
Operation Voltage [V] / [Hz]	Nominal
Results	PASSED
Remarks	RF Cond 2
Temp [°C] / Humidity [%RH] / Air Pressure [kPa]	23 / 38 / 101
Date of measurements	25-Oct-2015
Measured by	Hannu Soderholm

8.1. Test Setup



8.2. Test method and limit

The measurement is made according to ANSI C63.10 and RSS-247.

Limits for power spectral density measurements

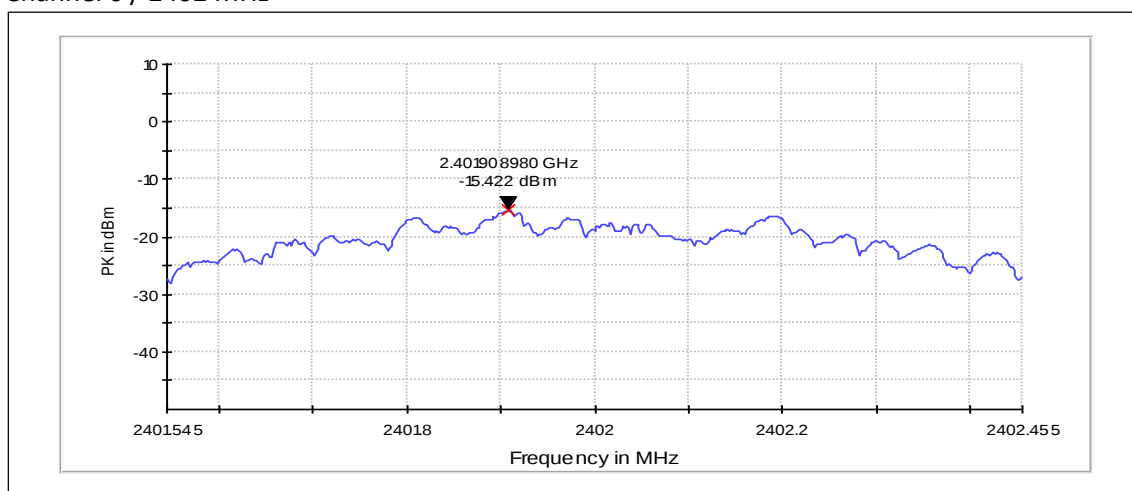
Limit [dBm] @ 3 kHz
<= 8

8.3. Bluetooth Low Energy Test results

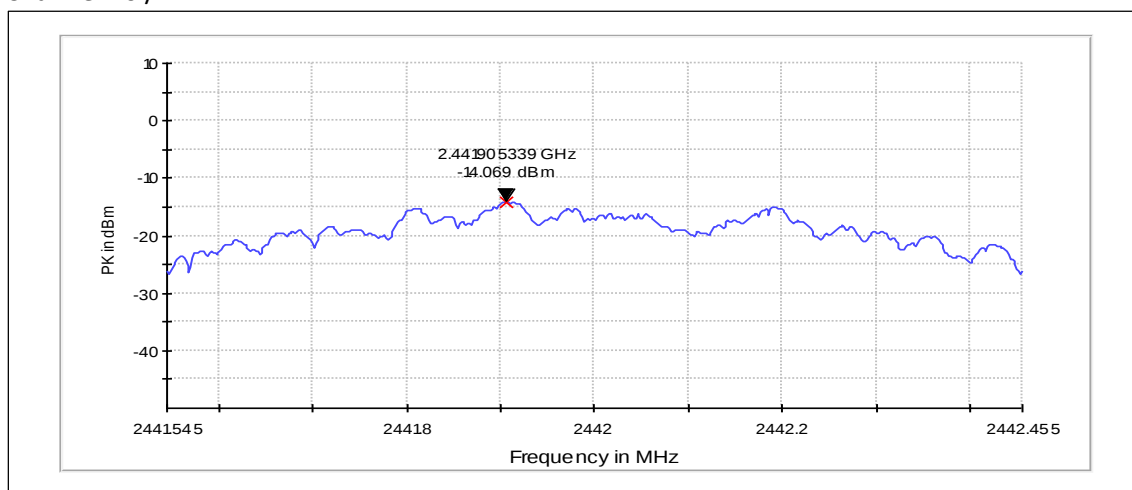
Peak (RBW: 3 kHz, VBW: 10 kHz, Max hold)

Channel / f_c [MHz]	P [dBm]	Result
0 / 2402	-15.42	PASSED
20 / 2442	-14.07	PASSED
39 / 2480	-16.27	PASSED

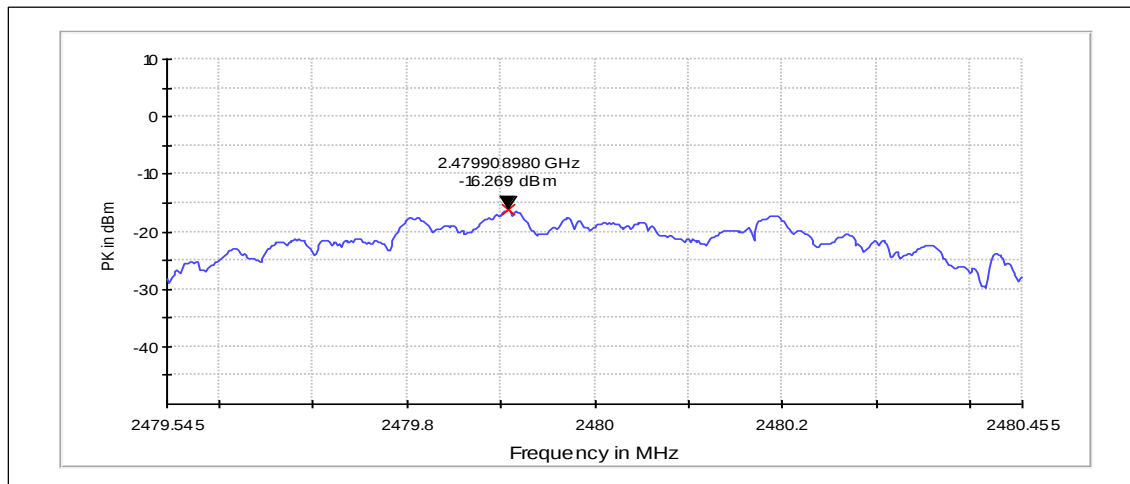
Channel 0 / 2402 MHz



Channel 20 / 2442 MHz



Channel 39 / 2480 MHz



9. Test Equipment

The calibration dates for all test equipment are maintained in the equipment register. The register alerts the test lab about expired calibrations. Therefore, tests are always done with calibrated equipment. The dates are provided by request.

9.1. Conducted measurements

Eq. No	Equipment	Type	Manufacturer	Used in
TM350089	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM350090	Power supply	6632A	Agilent	22/24/27, 15C, 15E
TM30600	Impulse limiter	ESH3-Z2	R&S	15C, 15B
TM490017	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
TM490018	LISN 50 μ H	ESH3-Z5	R&S	15C, 15B
TM150128	Spectrum Analyzer	FSU26	R&S	22/24/27, 15C, 15E
TM23007	Oscilloscope	TDS684B	Tektronix	15E
TM22806	Battery	BAT 20/E	Fiskars	15C, 15B
TM22805	UPS	PS 20/1.2	Fiskars	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
-	Temperature test chamber	VT 4002	Vötsch	22/24/27
2001	Bluetooth tester	CBT	R&S	15C, 15B
2009	LISN 50 μ H	ENV216	R&S	15C, 15B
2010	LISN 50 μ H	ENV216	R&S	15C, 15B
2012	Power splitter	11667B	Agilent	22/24/27, 15C
2013	Attenuator	8493C	Agilent	22/24/27, 15C
2014	Attenuator	8493C	Agilent	22/24/27, 15C
2019	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
2020	Power splitter	ZN2PD-9G-S+	Mini-Circuits	15E
TM210166	Communication Tester	CMW500	R&S	22/24/27
TM210205	Communication Tester	CMU200	R&S	22/24/27
2023	Spectrum Analyzer	ESMI-RF	R&S	15B/15C
2024	Analyzer display unit	ESAI-D	R&S	15B/15C
TM110070	Signal Generator	SMF 100A	R&S	22/24/27, 15C, 15E, 15B
TM220065	Bluetooth tester	CBT	R&S	15C, 15B
TM210330	Communication Tester	CMU200	R&S	22/24/27, 15B
TM150131	Spectrum Analyzer	FSP30	R&S	22/24/27, 15C, 15E
TM210049	Communication Tester	CMU200	R&S	22/24/27

9.2. Radiated measurements

Eq. No	Equipment	Type	Manufacturer	Used in
-	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C
TM38845	Receiver	ESIB 26	R&S	22/24/27, 15C, 15E, 15B
-	Antenna	HL562	R&S	22/24/27, 15C, 15E, 15B
-	Turntable	2188	EMCO	22/24/27, 15C, 15E, 15B
-	Turntable controller	2090	EMCO	22/24/27, 15C, 15E, 15B
-	RF system panel	OSP130	R&S	22/24/27, 15C, 15E, 15B
-	Mini mast	2075-2	ETS Lindgren	22/24/27, 15C, 15B
TM38843	Mini mast	2075	Emco	22/24/27, 15C, 15B
TM38842	Antenna mast controller	2090	Emco	22/24/27, 15C, 15B
TM30643	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
TM30644	LISN 50 µH	LISN-5-20-2	FCC	22/24/27, 15C, 15B
-	Temperature and humidity logger	175-H2	Testo	22/24/27, 15C, 15B
-	Air pressure and temperature logger	635-2	Testo	22/24/27, 15C, 15B
-	Air pressure sensor	0638-1835	Testo	22/24/27, 15C, 15B
TM37523	Preamplifier	AMF-4D-10M-3G-25-20P	Miteq	22/24/27, 15C, 15B
TM37498	Preamplifier	AMF-5D-020180-26-10P	Miteq	22/24/27, 15C, 15B
TM30599	Semi anechoic chamber	UNKNOWN	TDK	22/24/27, 15C, 15B
TM22638	Power supply	OL63743-901	-	22/24/27, 15C, 15E, 15B
TM38066	High pass filter	WHKX3.0/18G-12SS	Wainwright	22/24/27, 15C, 15E, 15B
2028	High pass filter	WHKX 1.0/15G-12SS	Wainwright	22/24/27, 15C, 15E, 15B
TM37545	Tunable notch filter	800.0/960.0-0.2/40-8SSK	Wainwright	22
TM26512	Tunable notch filter	WRCD1850/1910-0.2/40-10SSK	Wainwright	24
-	Band reject filter	WRCG1877/1883-1870/1890-40/6EE	Wainwright	24
-	Band reject filter	WRCG1729.4/1735.4-1722.4/1742.4-40/6SS	Wainwright	27
TM23892	Controller	G-1000SDX	Yaesu	22/24/27, 15C, 15E
2001	Bluetooth tester	CBT	R&S	15C, 15B
TM210203	Communication Tester	CMU200	R&S	22/24/27, 15B
6023	Antenna	VUBA 9117	Schwarzbeck	22/24/27
TM210166	Communication Tester	CMW500	R&S	22/24/27
2025	Antenna	HFH2-Z2	R&S	15C
TM110070	Signal Generator	SMF 100A	R&S	22/24/27, 15C, 15E, 15B
2052	Antenna	BBHA 9120 D	Schwarzbeck	22/24/27, 15C, 15B, 15E
-	Antenna	QSH18S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Antenna	QSH20S20	Q-Par	22/24/27, 15C, 15B, 15E
-	Antenna	QSH20S20	Q-Par	22/24/27, 15C, 15B, 15E
TM220065	Bluetooth tester	CBT	R&S	15C, 15B

END OF REPORT