FCC Test Report

Equipment	:	**Infotag 1.54"**
Brand Name	:	**DIGI**
Model No.	:	**IFT-21542**
FCC ID	:	**SUFIFT21542**
Standard	:	**47 CFR FCC Part 15.249**
Operating Band	:	**2400 MHz – 2483.5 MHz**
FCC Classification	:	**DXX**
Applicant Manufacturer	:	**Teraoka Weigh System Pte Ltd 4 Leng Kee Rd, #05-03/04/05&11, SIS Building, Singapore 159088**

The product sample received on Sep. 03, 2015 and completely tested on Sep. 23, 2015. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

James Fan / Assistant Manager

Testing Laboratory
1190

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APPENDIX A. TEST PHOTOS A1-A4

Summary of Test Result

Conformance Test Specifications					
Report Clause	**Ref. Std. Clause**	**Description**	**Measured**	**Limit**	**Result**
1.1.2	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.207	AC Power-line Conducted Emissions	See Note.	FCC 15.207	N/A
3.2	15.215(c)	Emission Bandwidth	0.70 MHz; fall in band	Information only	Complied
3.3	15.249(a)	Fundamental Emissions	[dBuV/m at 3m]: 2440 MHz 87.98 (Margin 26.02dB) peak	[dBuV/m at 3m]: peak: 114	Complied
3.4	15.249(a)/(d)	Transmitter Radiated Unwanted Emissions	[dBuV/m at 3m]: 45.52 MHz 33.19 (Margin 6.81dB) - peak	Harmonics: 50 dB below the level of the fundamental or FCC 15.209, whichever is the lesser attenuation.	Complied

Note: Conducted emission test is not applicable since the EUT consumes DC power from battery.

Revision History

Report No.	Version	Description	Issued Date
FR590418	Rev. 01	Initial issue of report	Oct. 16, 2015

1 General Description

1.1 Information

1.1.1 RF General Information

RF General Information				
Frequency Range (MHz)	**Modulation**	**Ch. Frequency (MHz)**	**Channel Number**	**Fundamental Field Strength (dBuV/m)**
2400-2483.5	GFSK	2402-2480	0-78 [79]	87.98
Note: Field strength performed peak level at 3m.				

1.1.2 Antenna Information

Antenna Category	
☒	Integral antenna (antenna permanently attached)
☐	External antenna (dedicated antennas) ; Unique antenna connector

Antenna General Information						
No.	**Ant. Cat.**	**Ant. Type**	**Brand**	**Model**	**Gain (dBi)**	**Connector**
1	Integral	CHIP	N/A	N/A	-1.9	PCB SURFACE MOUNT

1.1.3 Type of EUT

Identify EUT	
EUT Serial Number	N/A
Presentation of Equipment	☐ Production ; ☒ Pre-Production ; ☐ Prototype
Type of EUT	
☒	Stand-alone
☐	Combined (EUT where the radio part is fully integrated within another device) Combined Equipment - Brand Name / Model No.: …
☐	Plug-in radio (EUT intended for a variety of host systems) Host System - Brand Name / Model No.: …
☐	Other:

1.1.4 EUT Operational Condition

Power Supply Type	3Vdc from battery (Brand: Panasonic; Model: CR2450)

1.2 Support Equipment

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**Serial No.**
1	Notebook	DELL	Latitude E6430	F2JB4X1

1.3 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013

1.4 Testing Location Information

Testing Location						
☒	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C TEL : 886-3-327-3456 FAX : 886-3-327-0973				
Test Condition		**Test Site No.**	**Test Engineer**	**Test Environment**	**Test Date**	
Radiated Emission		03CH09-HY	Aaron Liang	21°C / 60%	Sep. 23, 2015	
Test site registered number [213289] with FCC. Test site registered number [4086G-1] with IC.						

1.5 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty			
Test Item		**Uncertainty**	**Limit**
AC power-line conducted emissions		±2.26 dB	N/A
Emission bandwidth,		±1.42 %	N/A
Unwanted emissions, conducted	30 – 1000 MHz	±0.51 dB	N/A
	1 – 18 GHz	±0.67 dB	N/A
	18 – 40 GHz	±0.83 dB	N/A
	40 – 200 GHz	N/A	N/A
All emissions, radiated	30 – 1000 MHz	±2.56 dB	N/A
	1 – 18 GHz	±3.59 dB	N/A
	18 – 40 GHz	±3.82 dB	N/A
	40 – 200 GHz	N/A	N/A
Temperature		±0.8 °C	N/A
Humidity		±3 %	N/A
DC and low frequency voltages		±3 %	N/A
Time		±1.42 %	N/A
Duty Cycle		±1.42 %	N/A

2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Modulation Used for Conformance Testing	
Test Mode	**Field Strength (dBuV/m at 3 m)**
GFSK-Transmit	87.98

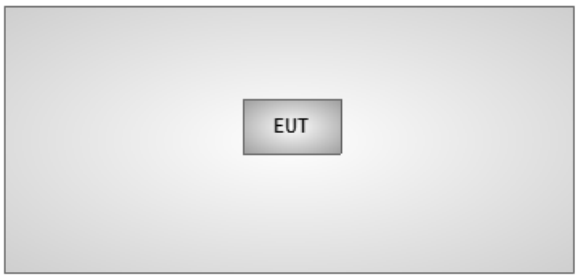
2.2 Test Channel Frequencies Configuration

Test Channel Frequencies Configuration	
Test Mode	**Test Channel Frequencies (MHz)**
GFSK-Transmit	2402-(F1), 2440-(F2), 2480-(F3)

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emission Bandwidth, Fundamental Emissions, Radiated Unwanted Emissions		
Test Condition	Radiated measurement		
User Position	☐ EUT will be placed in fixed position.		
	☐ EUT will be placed in mobile position and operating multiple positions. EUT shall be performed two orthogonal planes. The worst planes is X.		
	☒ EUT will be a hand-held and battery-powered devices and operating multiple positions. EUT shall be performed three orthogonal planes. The worst plane is Z.		
Operating Mode	☒ 1. Transmit		
Test Mode	GFSK-Transmit		
Orthogonal Planes of EUT	**X Plane**	**Y Plane**	**Z Plane**

2.4 Test Setup Diagram

Test Setup Diagram


Note: The support notebook and controller board are disconnected from EUT and removed from test table when EUT is set to transmit continuously.

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

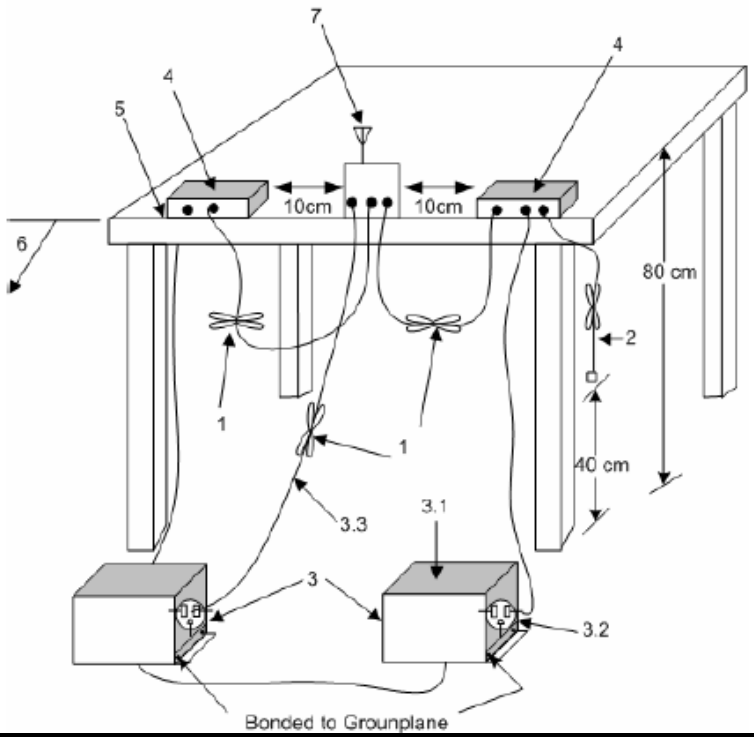
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

The EUT consumes DC power, therefore, conducted emission test is not applicable.

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit
☒ Emission bandwidth falls completely within authorized band.

3.2.2 Measuring Instruments

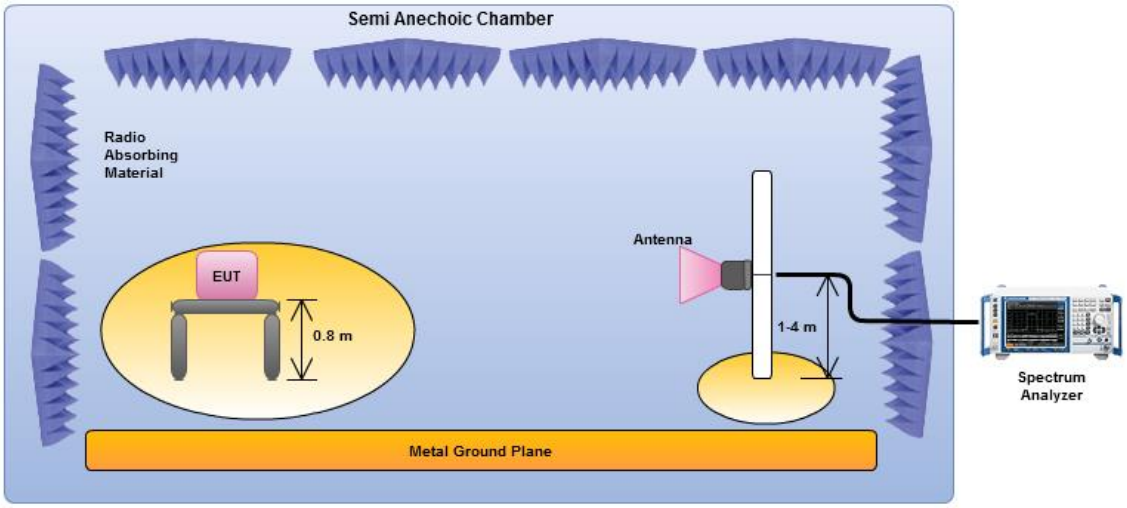
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10, clause 6.9 for 20 dB emission bandwidth and 99% occupied bandwidth measurement.

3.2.4 Test Setup

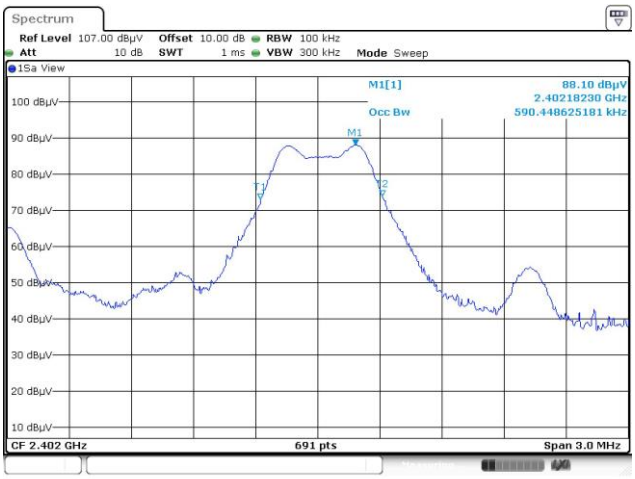
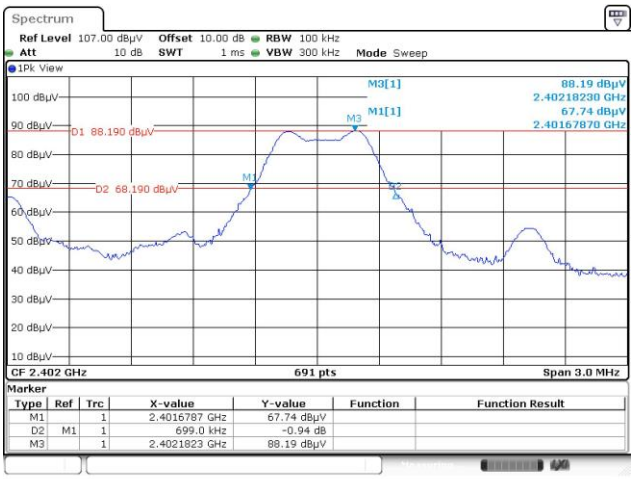
Emission Bandwidth



Note: Test distance is 3m

3.2.5 Test Result of Emission Bandwidth

Emission Bandwidth Result					
Modulation Mode	**Frequency (MHz)**	**99% Bandwidth (MHz)**	**F_L at 20dB BW (MHz)**	**F_H at 20dB BW (MHz)**	**20dB BW (MHz)**
GFSK-Transmit	2402	0.59	2401.6787	-	0.70
GFSK-Transmit	2440	0.58	-	-	0.68
GFSK-Transmit	2480	0.58	-	2480.3647	0.69
Limit		**N/A**	**2400**	**2483.5**	**N/A**
Result		**Complied**			

Worst Occupied Bandwidth Plot	Worst 20dB Bandwidth Plot
	

3.3 Fundamental Emissions

3.3.1 Fundamental Emissions Limit

Fundamental Emissions E-Field Strength Limit (3m)	
☐	902-928 MHz Band: 94 dBuV/m (quasi peak)
☒	2400-2483.5 MHz Band: 94 dBuV/m (average)
☐	5725-5785 MHz Band: 94 dBuV/m (average)

3.3.2 Measuring Instruments

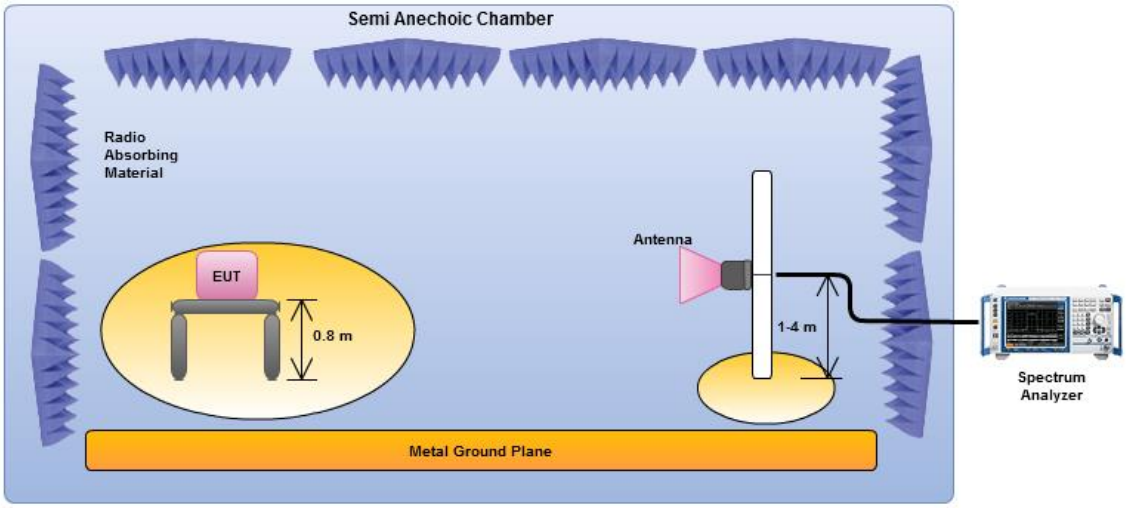
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

☐	The average emission levels shall be measured in [duty cycle ≥ 100 or by duty cycle correction factor].	
☒	For the transmitter emissions shall be measured using following options below:	
	☐	Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW) – Duty cycle ≥ 100%.
	☒	Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions. Adjusted by a “duty cycle correction factor”, derived from 20log (dwell time/100 ms). Average emission = peak emission + 20 log (duty cycle).
	☒	Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
☒	For radiated measurement, refer as ANSI C63.10, clause 6.6 for radiated emissions	

3.3.4 Test Setup

Fundamental Emissions



Note: Test distance is 3m

3.3.5 Test Result of Fundamental Emissions

Field Strength of Fundamental Emissions Result					
Modulation Mode	**Frequency (MHz)**	**Fundamental (dBuV/m)@3m**	**Margin (dB)**	**Limit (dBuV/m)@3m**	**Type**
GFSK-Transmit	2402	86.67	-27.33	114	peak
GFSK-Transmit	2402	52.46	-41.54	94	average
GFSK-Transmit	2440	**87.98**	-26.02	114	peak
GFSK-Transmit	2440	53.77	-40.23	94	average
GFSK-Transmit	2480	87.06	-26.94	114	peak
GFSK-Transmit	2480	52.85	-41.15	94	average
Result		**Complied**			
Note 1: Measurement worst emissions of receive antenna polarization: Vertical. Note 2: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).					

3.4 Transmitter Radiated Unwanted Emissions

3.4.1 Transmitter Radiated Unwanted Emissions Limit

Transmitter Radiated Unwanted Emissions Limit
Harmonics:
☒ 54 dBuV/m (average)
Other Unwanted Emissions:
☒ 50 dB below the level of the fundamental or FCC 15.209, whichever is the lesser attenuation.

3.4.2 Measuring Instruments

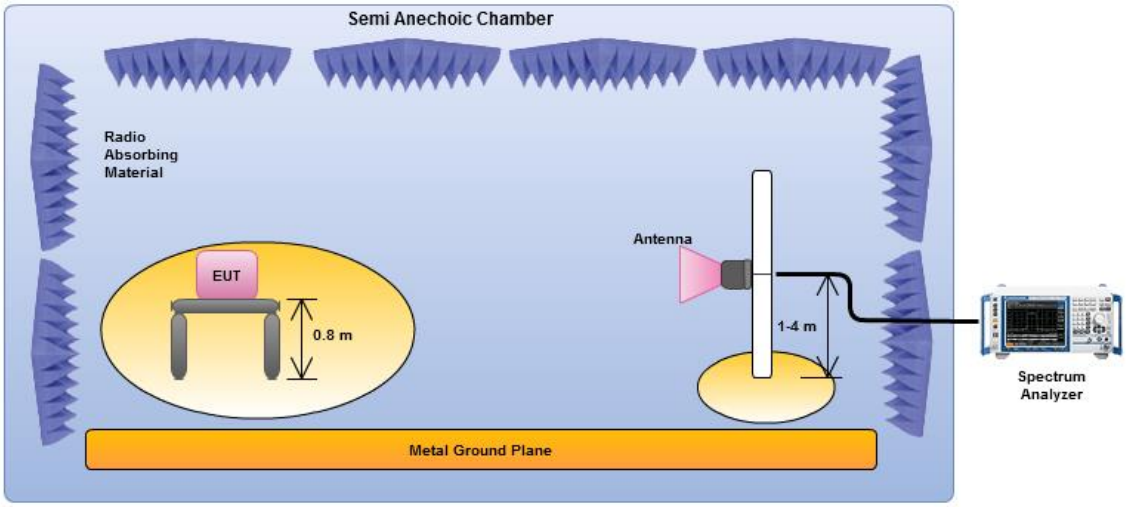
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

	Test Method – General Information
☒	Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
	☒ Measurements in the frequency range 5 GHz - 10GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.
	☒ Measurements in the frequency range 10 GHz - 18GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.
	☒ Measurements in the frequency range above 18 GHz - 25GHz are typically made at a closer distance 0.5m, because the instrumentation noise floor is typically close to the radiated emission limit.
☒	Refer as ANSI C63.10, clause 6.9.2.2 bandedge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
☒	For the transmitter unwanted emissions shall be measured using following options below:
	☐ Refer as ANSI C63.10, clause 4.1.4.2.3 (Reduced VBW) – Duty cycle ≥ 100%.
	☒ Refer as ANSI C63.10, clause 4.1.4.2.4 average value of pulsed emissions. Adjusted by a “duty cycle correction factor”, derived from 20log (dwell time/100 ms). Average emission = peak emission + 20 log (duty cycle).
	☒ Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.
☒	For the transmitter bandedge emissions shall be measured using following options below:
	☒ Refer as ANSI C63.10, clause 6.10 for band-edge testing.
	☐ Refer as ANSI C63.10, clause 6.10 for marker-delta method for band-edge measurements.
☒	For radiated measurement.
	☒ Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz.
	☒ Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1000 MHz.
	☒ Refer as ANSI C63.10, clause 6.6 for radiated emissions from above 1 GHz.

3.4.4 Test Setup

Transmitter Radiated Bandedge Emissions



Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna and the frequency range of 1 GHz to 40 GHz using a calibrated horn antenna.

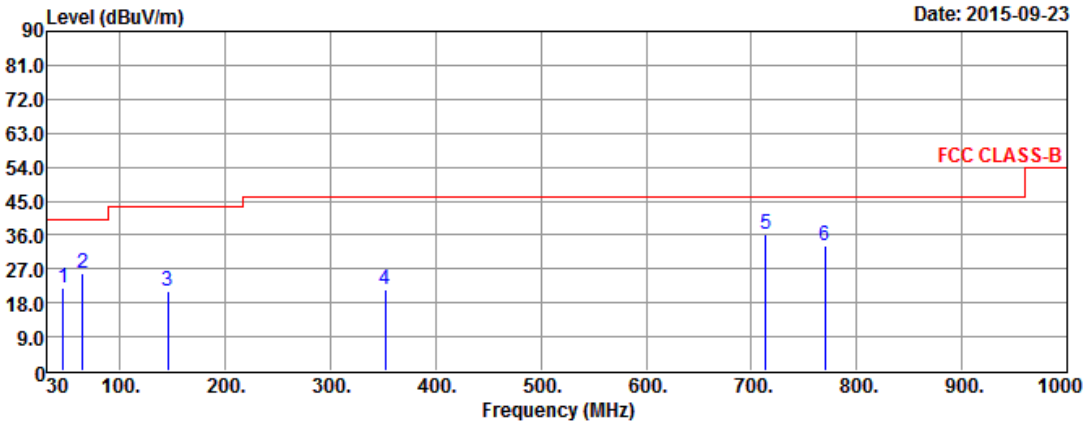
Note: Test distance is 3m

3.4.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.4.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)

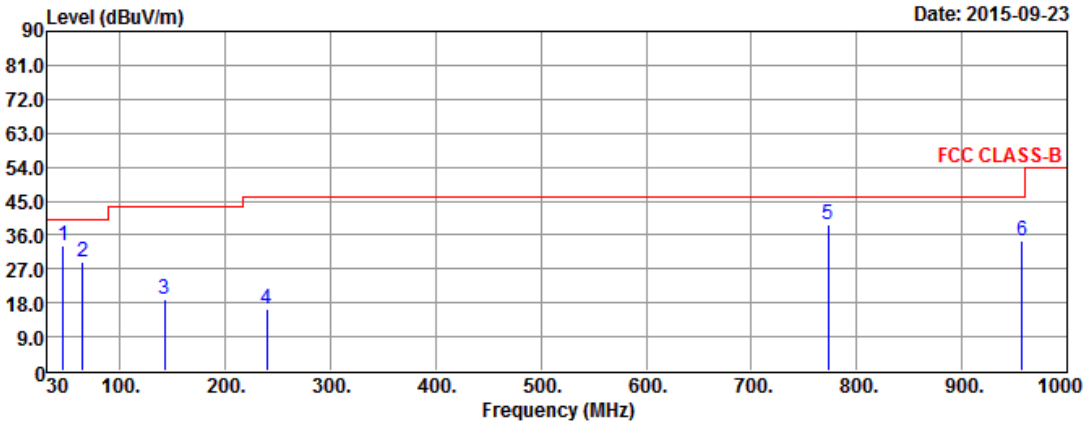
Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Operating Mode	1	**Polarization**	H
Operating Function	Transmit		



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	45.52	21.92	-18.08	40.00	38.67	14.53	0.54	31.82	---	---	Peak
2	63.95	25.64	-14.36	40.00	43.47	13.39	0.60	31.82	---	---	Peak
3	145.43	21.18	-22.32	43.50	38.32	13.67	0.82	31.63	---	---	Peak
4	352.04	21.51	-24.49	46.00	36.44	15.25	1.25	31.43	---	---	Peak
5	713.85	36.08	-9.92	46.00	44.04	21.65	1.76	31.37	---	---	Peak
6	770.11	33.03	-12.97	46.00	40.17	22.42	1.79	31.35	---	---	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Transmitter Radiated Unwanted Emissions (Below 1GHz)			
Operating Mode	1	**Polarization**	V
Operating Function	Transmit		

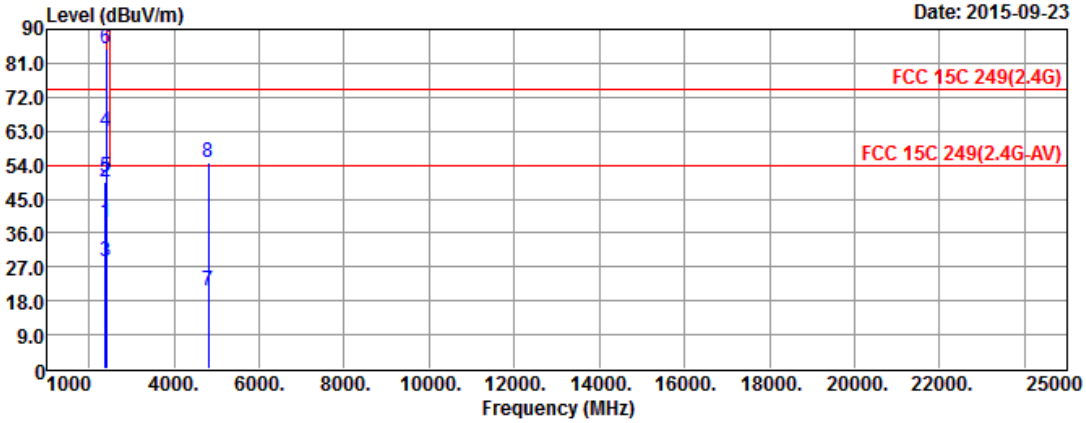


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	45.52	33.19	-6.81	40.00	49.94	14.53	0.54	31.82	---	---	Peak
2	63.95	28.83	-11.17	40.00	46.66	13.39	0.60	31.82	---	---	Peak
3	142.52	18.76	-24.74	43.50	36.05	13.53	0.81	31.63	---	---	Peak
4	239.52	16.27	-29.73	46.00	34.39	12.38	0.99	31.49	---	---	Peak
5	773.02	38.78	-7.22	46.00	45.90	22.44	1.79	31.35	---	---	Peak
6	957.32	34.24	-11.76	46.00	38.96	24.63	1.98	31.33	---	---	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found spurious emissions (No spurious emissions were detected.)
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

3.4.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)

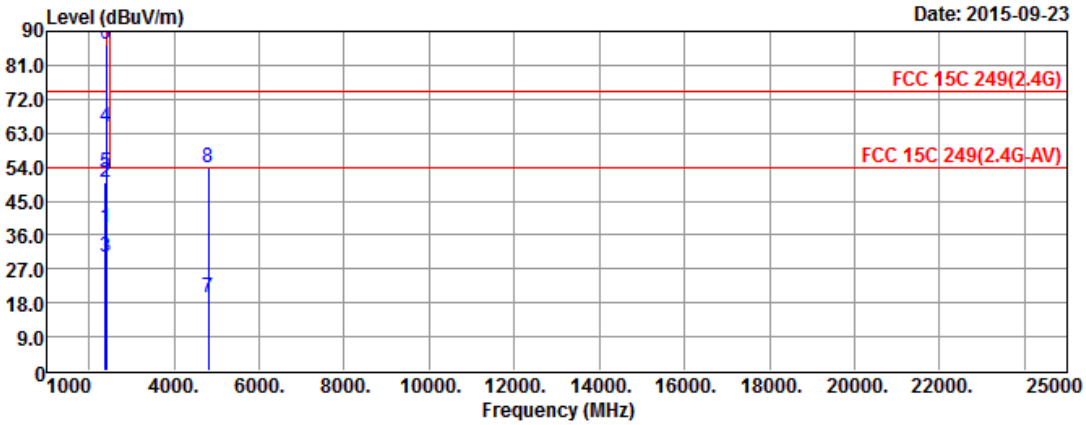
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	GFSK-Transmit	**Test Freq. (MHz)**	2402
Operating Function	Transmit	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	38.79	-15.21	54.00	42.10	27.26	4.57	35.14	155	234	Average
2	2390.00	49.67	-24.33	74.00	52.98	27.26	4.57	35.14	155	234	Peak
3	2400.00	28.58	-25.42	54.00	31.86	27.28	4.58	35.14	155	234	Average
4	2400.00	62.79	-11.21	74.00	66.07	27.28	4.58	35.14	155	234	Peak
5	2402.00	50.77	-43.23	94.00	54.05	27.28	4.58	35.14	155	234	Average
6	2402.00	84.98	-29.02	114.00	88.26	27.28	4.58	35.14	155	234	Peak
7	4804.00	20.52	-33.48	54.00	17.83	31.13	6.78	35.22	206	299	Average
8	4804.00	54.73	-19.27	74.00	52.04	31.13	6.78	35.22	206	299	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 3: For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 4: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).

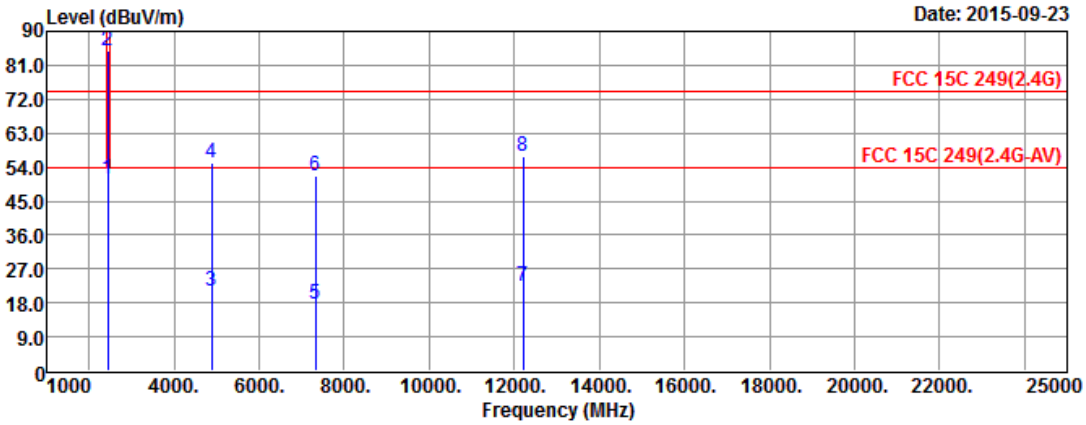
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	GFSK-Transmit	**Test Freq. (MHz)**	2402
Operating Function	Transmit	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	37.97	-16.03	54.00	41.28	27.26	4.57	35.14	303	235	Average
2	2390.00	50.06	-23.94	74.00	53.37	27.26	4.57	35.14	303	235	Peak
3	2400.00	30.25	-23.75	54.00	33.53	27.28	4.58	35.14	303	235	Average
4	2400.00	64.46	-9.54	74.00	67.74	27.28	4.58	35.14	303	235	Peak
5	2402.00	52.46	-41.54	94.00	55.74	27.28	4.58	35.14	303	235	Average
6	2402.00	86.67	-27.33	114.00	89.95	27.28	4.58	35.14	303	235	Peak
7	4804.00	19.57	-34.43	54.00	16.88	31.13	6.78	35.22	303	67	Average
8	4804.00	53.78	-20.22	74.00	51.09	31.13	6.78	35.22	303	67	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 3: For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 4: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).

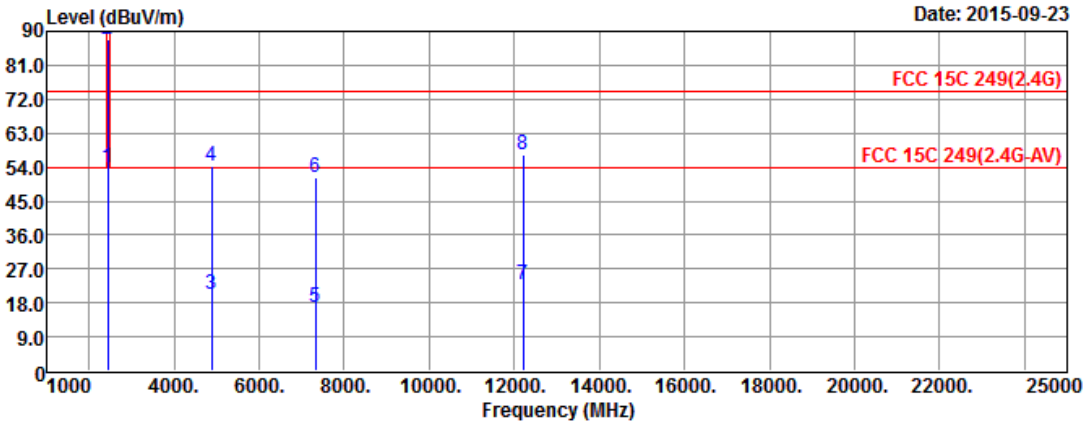
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	GFSK-Transmit	**Test Freq. (MHz)**	2440
Operating Function	Transmit	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2441.00	50.69	-43.31	94.00	53.88	27.37	4.60	35.16	269	138	Average
2	2441.00	84.90	-29.10	114.00	88.09	27.37	4.60	35.16	269	138	Peak
3	4882.00	21.11	-32.89	54.00	18.28	31.23	6.82	35.22	218	296	Average
4	4882.00	55.32	-18.68	74.00	52.49	31.23	6.82	35.22	218	296	Peak
5	7323.00	17.50	-36.50	54.00	8.43	36.04	8.50	35.47	218	296	Average
6	7323.00	51.71	-22.29	74.00	42.64	36.04	8.50	35.47	218	296	Peak
7	12205.00	22.50	-31.50	54.00	7.43	39.01	11.48	35.42	298	174	Average
8	12205.00	56.71	-17.29	74.00	41.64	39.01	11.48	35.42	298	174	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 3: For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 4: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).

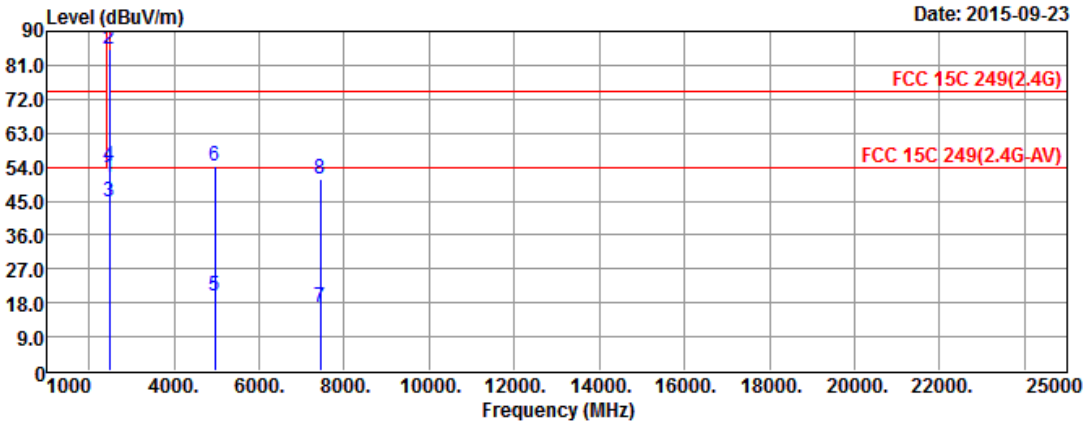
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	GFSK-Transmit	**Test Freq. (MHz)**	2440
Operating Function	Transmit	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2441.00	53.77	-40.23	94.00	56.96	27.37	4.60	35.16	269	210	Average
2	2441.00	87.98	-26.02	114.00	91.17	27.37	4.60	35.16	269	210	Peak
3	4882.00	20.09	-33.91	54.00	17.26	31.23	6.82	35.22	224	31	Average
4	4882.00	54.30	-19.70	74.00	51.47	31.23	6.82	35.22	224	31	Peak
5	7323.00	16.82	-37.18	54.00	7.75	36.04	8.50	35.47	224	20	Average
6	7323.00	51.03	-22.97	74.00	41.96	36.04	8.50	35.47	224	20	Peak
7	12205.00	22.90	-31.10	54.00	7.83	39.01	11.48	35.42	255	104	Average
8	12205.00	57.11	-16.89	74.00	42.04	39.01	11.48	35.42	255	104	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 3: For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 4: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).

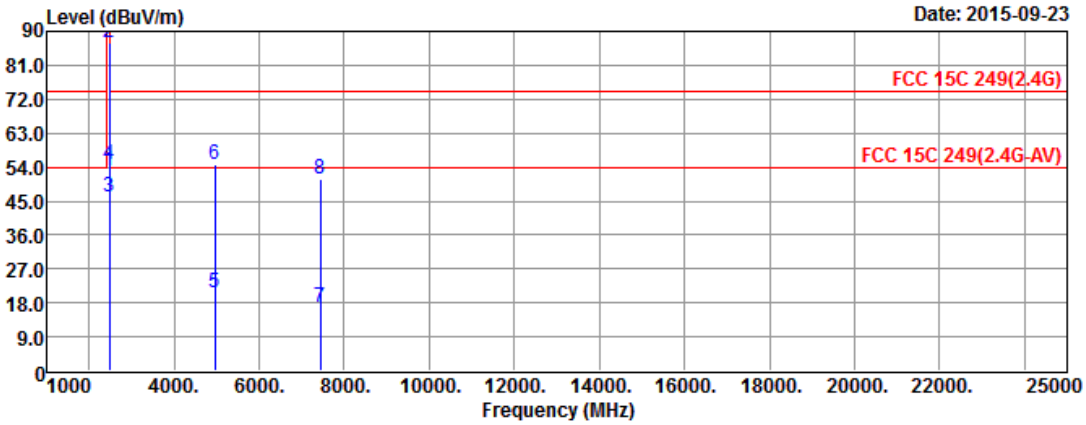
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	GFSK-Transmit	**Test Freq. (MHz)**	2480
Operating Function	Transmit	**Polarization**	H



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2480.00	51.05	-42.95	94.00	54.14	27.46	4.62	35.17	269	341	Average
2	2480.00	85.26	-28.74	114.00	88.35	27.46	4.62	35.17	269	341	Peak
3	2483.50	44.62	-9.38	54.00	47.71	27.46	4.62	35.17	269	341	Average
4	2483.50	54.31	-19.69	74.00	57.40	27.46	4.62	35.17	269	341	Peak
5	4960.00	20.01	-33.99	54.00	17.03	31.34	6.85	35.21	215	297	Average
6	4960.00	54.22	-19.78	74.00	51.24	31.34	6.85	35.21	215	297	Peak
7	7440.00	16.77	-37.23	54.00	7.28	36.34	8.64	35.49	226	217	Average
8	7440.00	50.98	-23.02	74.00	41.49	36.34	8.64	35.49	226	217	Peak

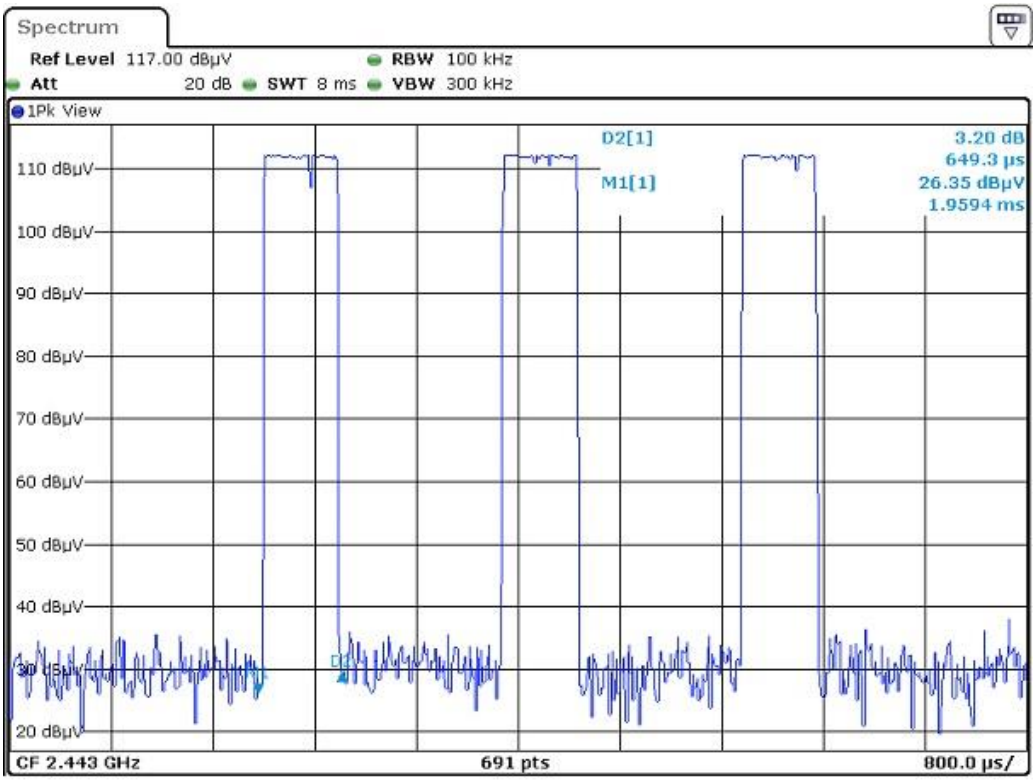
Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 3: For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 4: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).

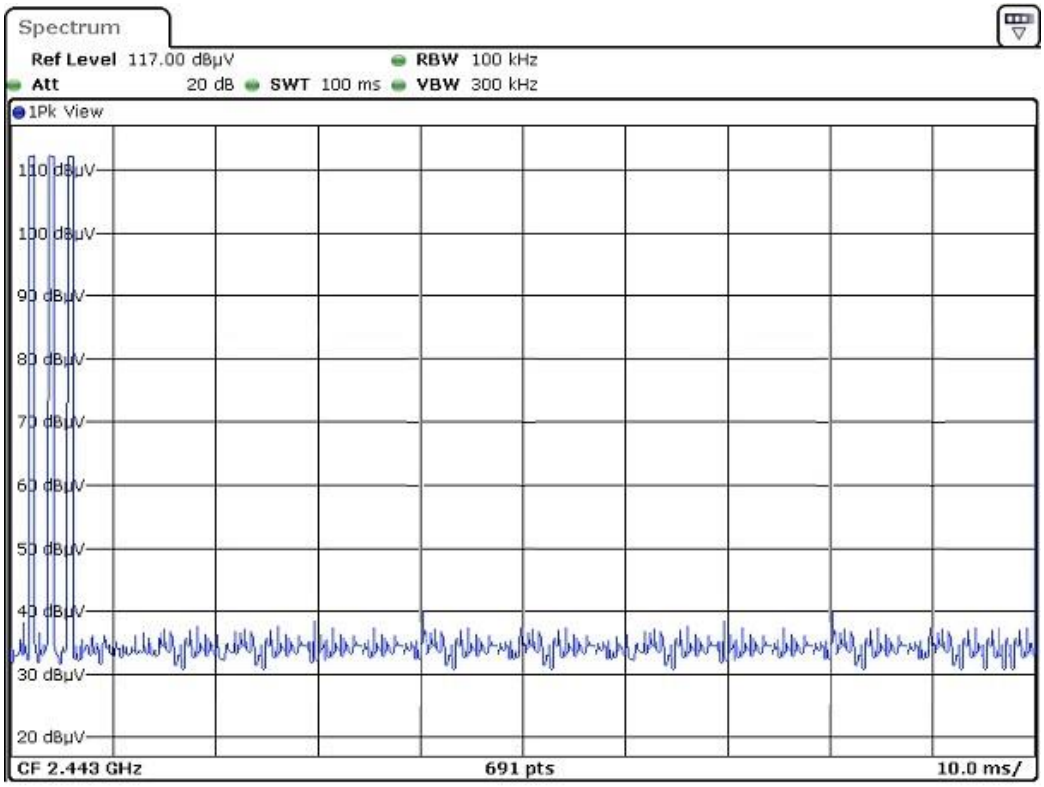
Transmitter Radiated Unwanted Emissions (Above 1GHz)			
Modulation Mode	GFSK-Transmit	**Test Freq. (MHz)**	2480
Operating Function	Transmit	**Polarization**	V



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2480.00	52.85	-41.15	94.00	55.94	27.46	4.62	35.17	153	134	Average
2	2480.00	87.06	-26.94	114.00	90.15	27.46	4.62	35.17	153	134	Peak
3	2483.50	46.04	-7.96	54.00	49.13	27.46	4.62	35.17	153	134	Average
4	2483.50	54.86	-19.14	74.00	57.95	27.46	4.62	35.17	153	134	Peak
5	4960.00	20.52	-33.48	54.00	17.54	31.34	6.85	35.21	271	298	Average
6	4960.00	54.73	-19.27	74.00	51.75	31.34	6.85	35.21	271	298	Peak
7	7440.00	16.78	-37.22	54.00	7.29	36.34	8.64	35.49	271	298	Average
8	7440.00	50.99	-23.01	74.00	41.50	36.34	8.64	35.49	271	298	Peak

Note 1: “>20dB” means spurious emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: Measurement receive antenna polarization: H (Horizontal), V (Vertical)
Note 3: For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.
Note 4: If duty cycle < 100%, average emission = peak emission + 20 log (duty cycle).





$$20\log(\text{Duty cycle}) = 20\log\frac{3^{*}\ 0.6493\ \text{ms}}{100\ \text{ms}} = -34.21\text{dB}$$

4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz 3m	Jul. 01, 2015	Radiation (03CH09-HY)
Amplifier	EMC	EMC9135	980232	9kHz ~ 1.0GHz	Jan. 27, 2015	Radiation (03CH09-HY)
Amplifier	EMC	EMC051845	980240	500MHz ~ 18GHz	Mar. 04, 2015	Radiation (03CH09-HY)
Spectrum	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	Jul. 15, 2015	Radiation (03CH09-HY)
Bilog Antenna	TESEQ	CBL 6112D	35418	30MHz ~ 1GHz	Mar. 30, 2015	Radiation (03CH09-HY)
Horn Antenna	AARONIA AG	POWERLOG 70180	05192	1GHz ~ 18GHz	Jan. 05, 2015	Radiation (03CH09-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170614	18GHz ~ 40GHz	Dec. 29, 2014	Radiation (03CH09-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	Jul. 23, 2015	Radiation (03CH09-HY)
RF Cable-high	Jye Bao	RG142	03CH09-HY	1GHz ~ 40GHz	Jul. 23, 2015	Radiation (03CH09-HY)
Turn Table	Chain Tek	T-200S	1308028	0 ~ 360 degree	N/A	Radiation (03CH09-HY)
Antenna Mast	Chain Tek	MBS-400	1308049	1 ~ 4 m	N/A	Radiation (03CH09-HY)

Note: Calibration Interval of instruments listed above is one year.