

NCC Test Report

Equipment : Philips HUE Motion sensor
Brand Name : Philips
Model Name : 9290012607
Applicant : 台灣昕諾飛股份有限公司
台北市南港區 115 園區街 3-1 號 15 樓之 1
Manufacturer : Signify (China) Investment Co., Ltd.
Building 9, Lane 888, Tianlin Road, Minhang District,
Shanghai 200233 China
Standard : LP0002 Section 3.10 (2018-01-10)

The product was received on Nov. 09, 2016, and testing was started from Nov. 09, 2016 and completed on Jun. 19, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, 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 report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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



Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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TEL : 886-3-3273456
FAX : 886-3-3270973
Report Template No.: HE1-C11 Ver2.3

Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	3.10.1.4	Antenna Requirement	PASS	LP0002-2.2
-	2.3	AC Power-line Conducted Emissions	Not Required	LP0002-2.3
3.1	3.10.1.6	DTS Bandwidth	PASS	≥500kHz
3.2	3.10.1.2	Maximum Conducted Output Power	PASS	Power [dBm]:30
3.3	3.10.1.6	Power Spectral Density	PASS	PSD [dBm/3kHz]:8
3.4	3.10.1.5	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: > 20 dBc
3.5	3.10.1.5	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: LP0002-2.8
3.6	2.11	Receiver Radiated Unwanted Emissions	PASS	Restricted Bands: LP0002-2.8

Note 1: From Sporton Project No. : FR650628-01AZ

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and explanations:
None

Reviewed by: Sam Tsai

Report Producer: Ann Hou

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std.	Ch. Frequency (MHz)	Channel Number
2400-2483.5	802.15.4	2405-2475	11-25 [15]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	Zigbee	5	1

Note:.

- ♦ Zigbee uses a O-PSK (250kbps) modulation for DSSS.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Walsin	SZ1007AT	chip	N/A	3.14

Note 1: The EUT has one antenna.

For Zigbee function:

For Zigbee mode (1TX/1RX)

Ant. 1 (port 1) could transmit/receive simultaneously.

1.1.3 EUT Information

Operational Condition	
EUT Power Type	From Battery
EUT Function	☒ Point-to-multipoint ☐ Point-to-point
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 Mode Test Duty Cycle

Operated Mode for Worst Duty Cycle	
☒	Operated test mode for worst duty cycle
Test Signal Duty Cycle (x)	Power Duty Factor [dB] – (10 log 1/x)
☒ 100.00% - Zigbee	0.00

1.2 Testing Applied Standards

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

- ♦ LP0002 (2018-01-10)
- ♦ ANSI C63.10-2013
- ♦ KDB 558074 D01 v05r02
- ♦ ANSI C63.4-2014

1.3 Testing Location Information

Testing Location			
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)	
		TEL : 886-3-327-3456	FAX : 886-3-327-0973
☐	JHUBEI	ADD : No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County, Taiwan (R.O.C.)	
		TEL : 886-3-656-9065	FAX : 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Howard	23.5°C / 65%	14/Jun/2016
Radiated (TX)	03CH09-HY	Thor	24.1~22.8°C / 67~56%	17/Jun/2016~09/Nov/2016
Radiated (RX)	03CH09-HY	Lego	23.5~24.2°C / 46~52%	19/Jun/2019

1.4 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))

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.54 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	1.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 °C	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

2.2 Test Channel Mode

Test Software	CMD
---------------	-----

Mode	Power Setting
Zigbee	-
2405MHz	0
2440MHz	0
2475MHz	0

2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Non-restricted Frequency Bands Emissions in Restricted Frequency Bands Receiver Radiated Unwanted Emissions		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX/CRX		
1	Battery mode		
Operating Mode > 1GHz	CTX/CRX		
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			
Worst Planes of EUT		V	

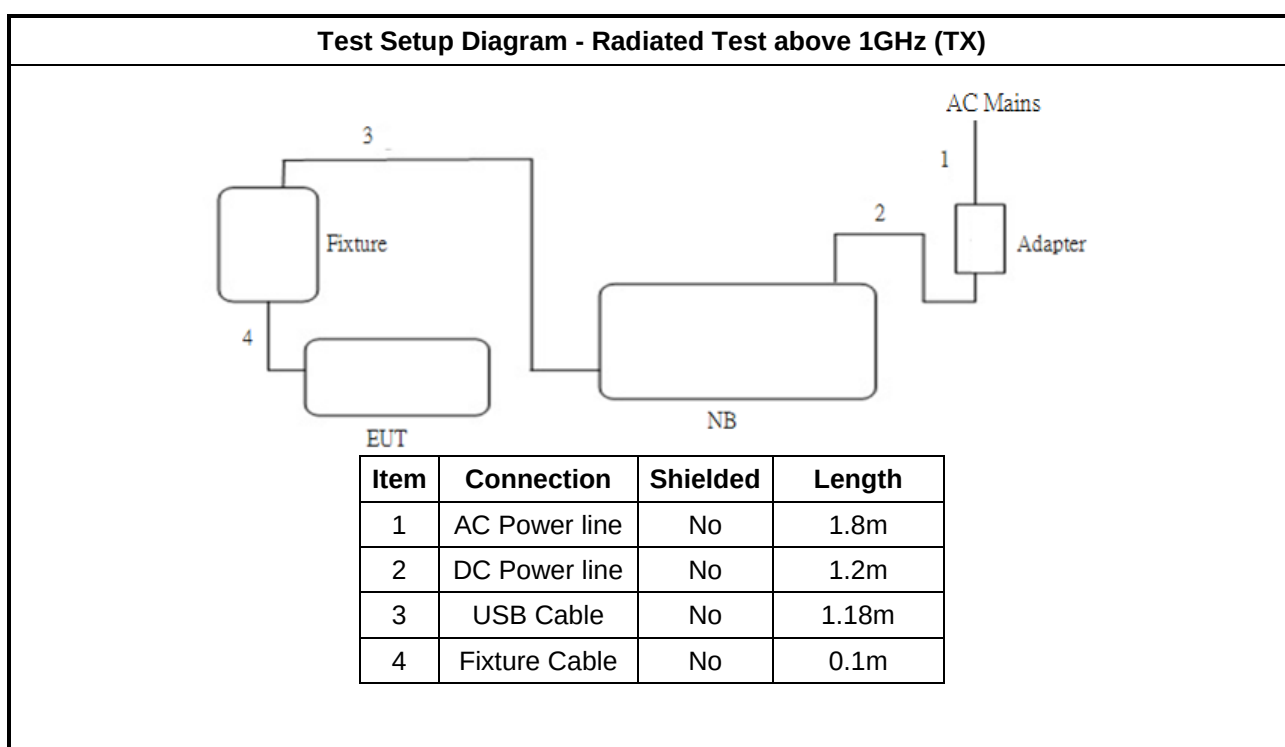
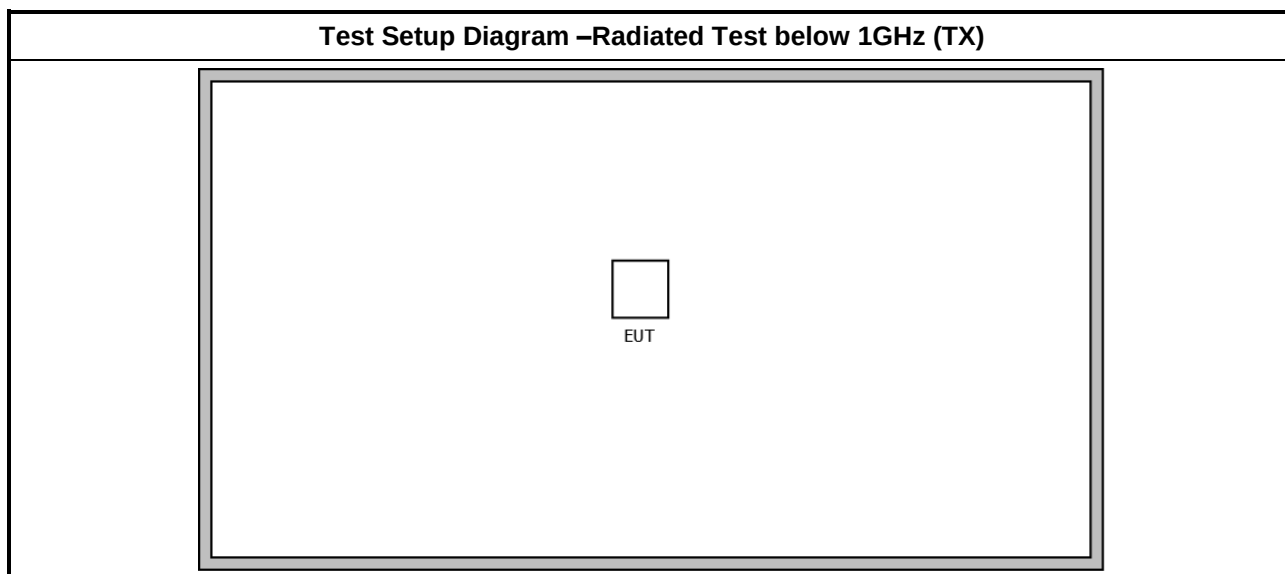
2.4 Support Equipment

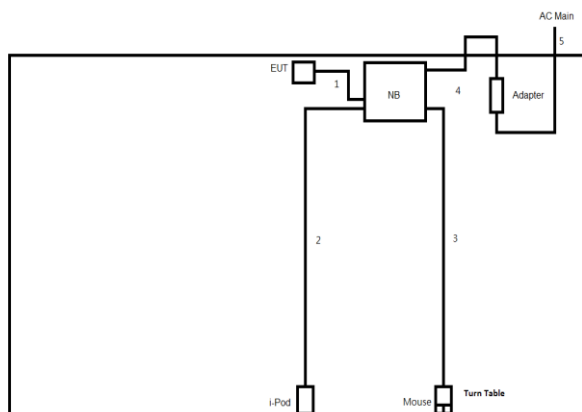
Support Equipment – RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5540	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	AC Mains	-	-	-
4	USB cable	-	-	-

Support Equipment – Radiated Emission (TX)				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5540	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	AC Mains	-	-	-
4	USB cable	-	-	-

Support Equipment – Radiated Emission (RX)				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	HP	ProBook5220m	DoC
2	Adapter for NB	HP	-	DoC
3	iPod	Apple	YM719D8YVQ5	-
4	Mouse(USB)	ASUS	DS-2126	-
5	Fixture	-	-	-

2.5 Test Setup Diagram



Test Setup Diagram - Radiated Test (RX)


Item	Connection	Shielded	Length
1	Fixture cable	No	0.2m
2	Audio Cable	No	0.75m
3	Mouse line	No	1.1m
4	DC Power line	No	1.0 m
5	AC Power line	No	1.8 m

3 Transmitter Test Result

3.1 DTS Bandwidth

3.1.1 6dB Bandwidth Limit

6dB Bandwidth Limit	
Systems using digital modulation techniques:	
▪	6 dB bandwidth $\geq$ 500 kHz.

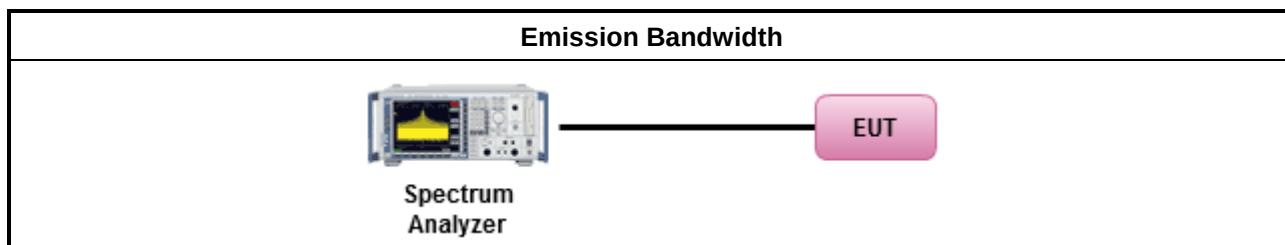
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

Test Method	
▪ For the emission bandwidth shall be measured using one of the options below:	
☒	Refer as KDB 558074, clause 8.2 (11.8 of ANSI C63.10) DTS bandwidth measurement.
☐	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.
☐	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

3.1.4 Test Setup



3.1.5 Test Result of Emission Bandwidth

Refer as Appendix A

3.2 Maximum Conducted Output Power

3.2.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
	If $G_{TX} \leq 6$ dBi, then $P_{Out} \leq 30$ dBm (1 W)
	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm
	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	Smart antenna system (SAS):
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm
e.i.r.p. Power Limit:	
	2400-2483.5 MHz Band
	Point-to-multipoint systems (P2M): $P_{eirp} \leq 36$ dBm (4 W)
	Point-to-point systems (P2P): $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX}])$ dBm
	Smart antenna system (SAS)
	- Single beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Overlap beam: $P_{eirp} \leq \text{MAX}(36, P_{Out} + G_{TX})$ dBm
	- Aggregate power on all beams: $P_{eirp} \leq \text{MAX}(36, [P_{Out} + G_{TX} + 8])$ dBm
P_{Out} = maximum peak conducted output power or maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

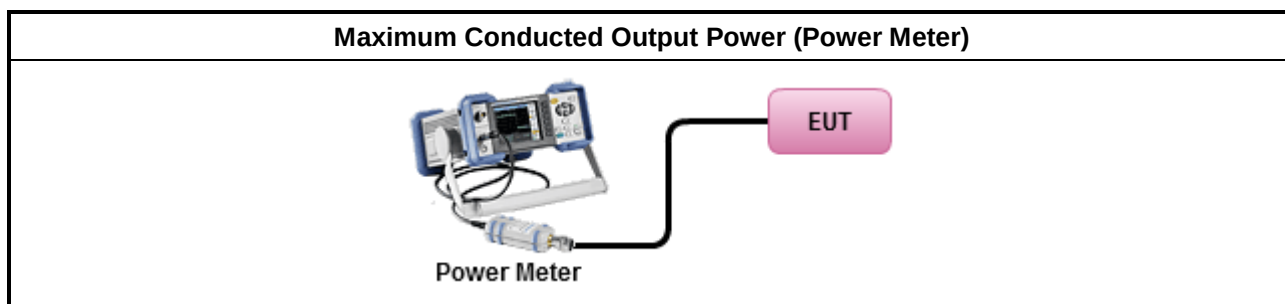
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
Maximum Peak Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.
☐	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.
☐	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.
Maximum Average Conducted Output Power	
☐	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.
☒	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.
For conducted measurement.	
If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.	
If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$	

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Refer as Appendix B

3.3 Power Spectral Density

3.3.1 Power Spectral Density Limit

Power Spectral Density Limit	
▪	Power Spectral Density (PSD) ≤ 8 dBm/3kHz

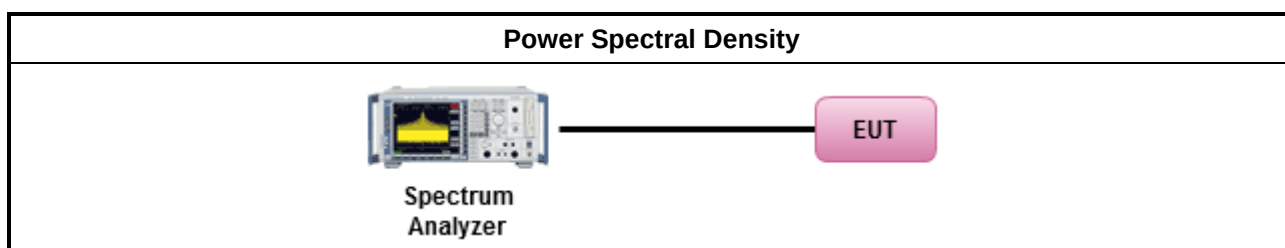
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
▪	Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
☒	Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Method PKPSD.
▪	For conducted measurement.
▪	If The EUT supports multiple transmit chains using options given below:
▪	Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Refer as Appendix C

3.4 Emissions in Non-restricted Frequency Bands

3.4.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit	
RF output power procedure	Limit (dB)
Peak output power procedure	20
Average output power procedure	30

Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak level.

Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average level.

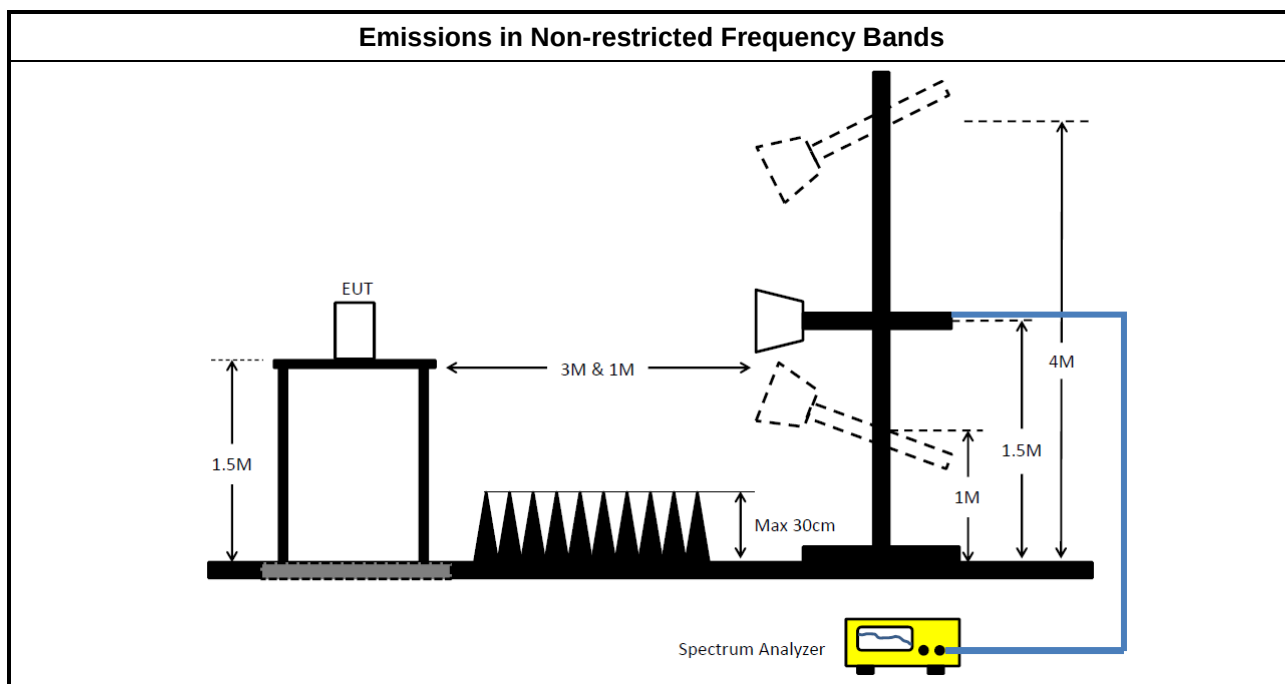
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

Test Method
Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

3.4.4 Test Setup



3.4.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix D

3.5 Emissions in Restricted Frequency Bands

3.5.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, 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).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

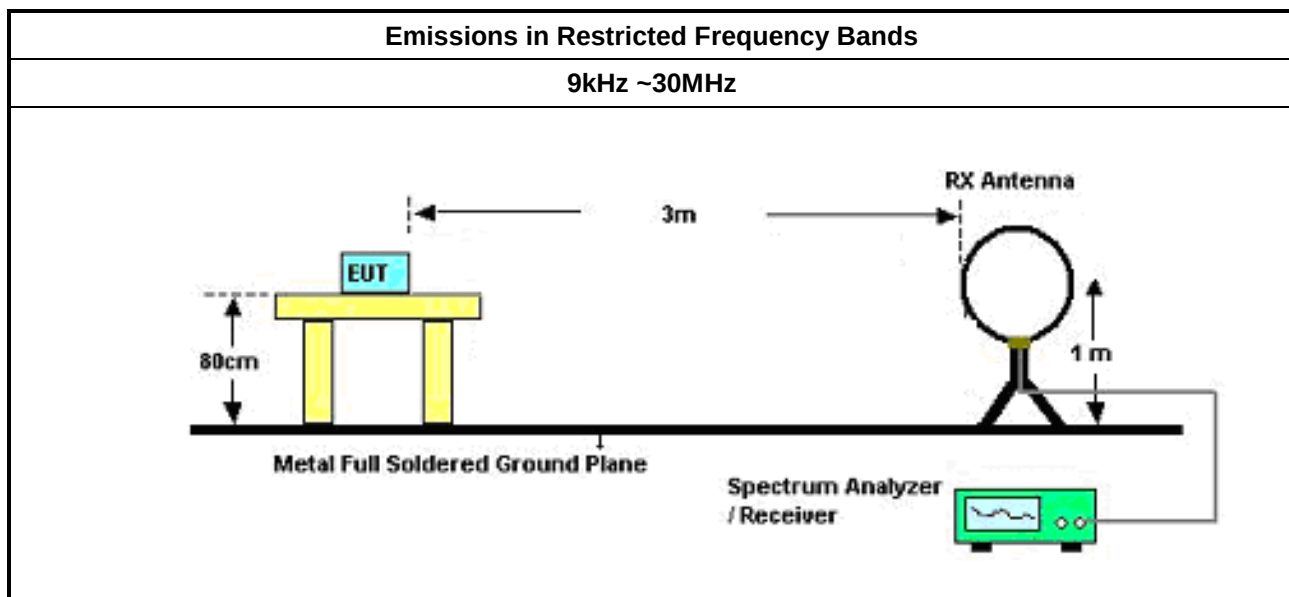
3.5.2 Measuring Instruments

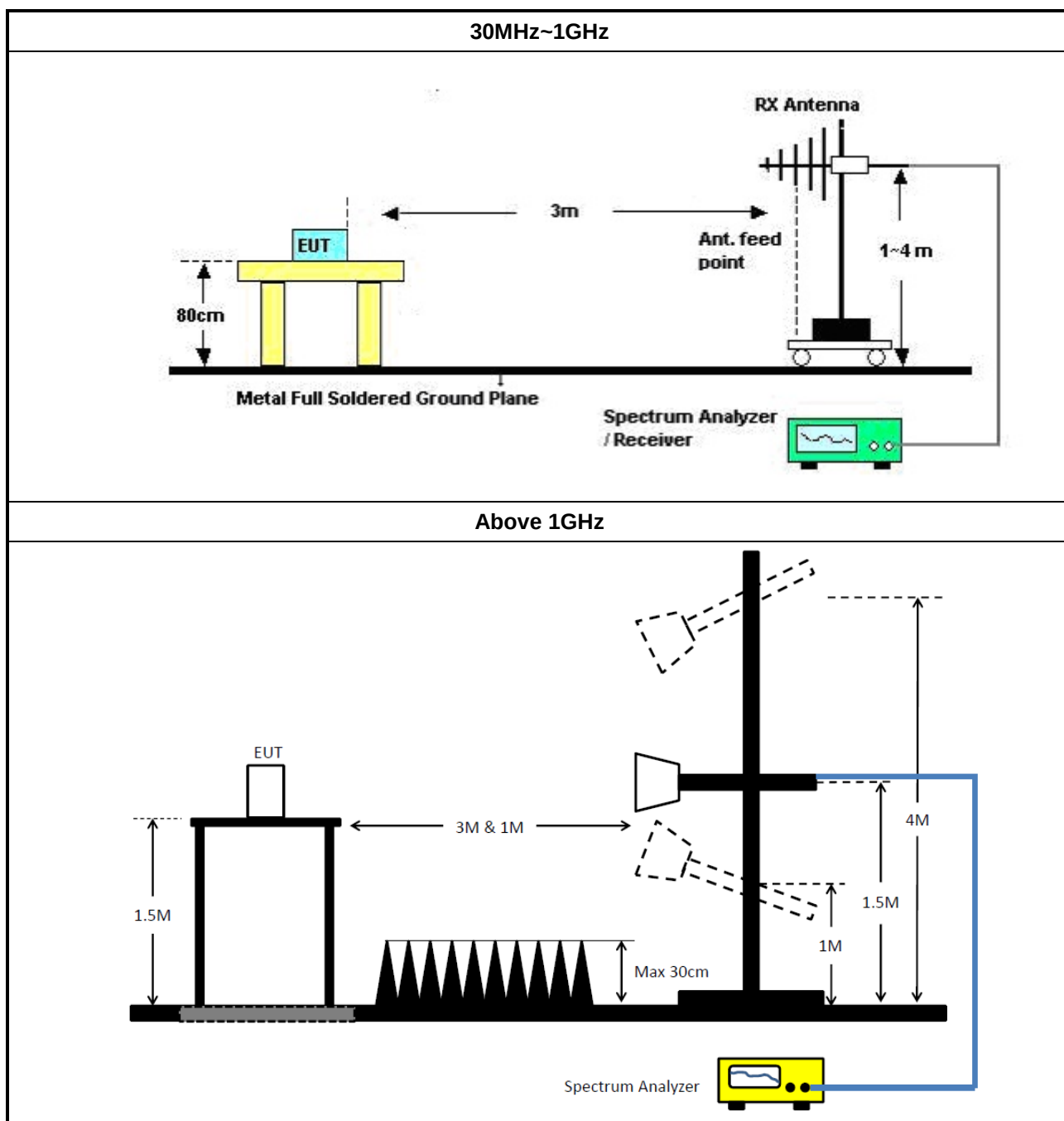
Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].	
Refer as ANSI C63.10, clause 6.10.3 band-edge 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 KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
For the transmitter band-edge emissions shall be measured using following options below:	
	Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
	Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
	Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
Use the following spectrum analyzer settings:	
	Set RBW=100 kHz for $f < 1$ GHz; VBW=3 * RBW; Sweep = auto; Detector function = peak; Trace = max hold.
	Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. For average measurement, refer as 1.1.4.

3.5.4 Test Setup





3.5.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

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

3.5.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix E

3.6 Receiver Radiated Spurious Emissions

3.6.1 Receiver in Radiated Spurious Emissions Limit

Restricted Spurious Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, 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).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

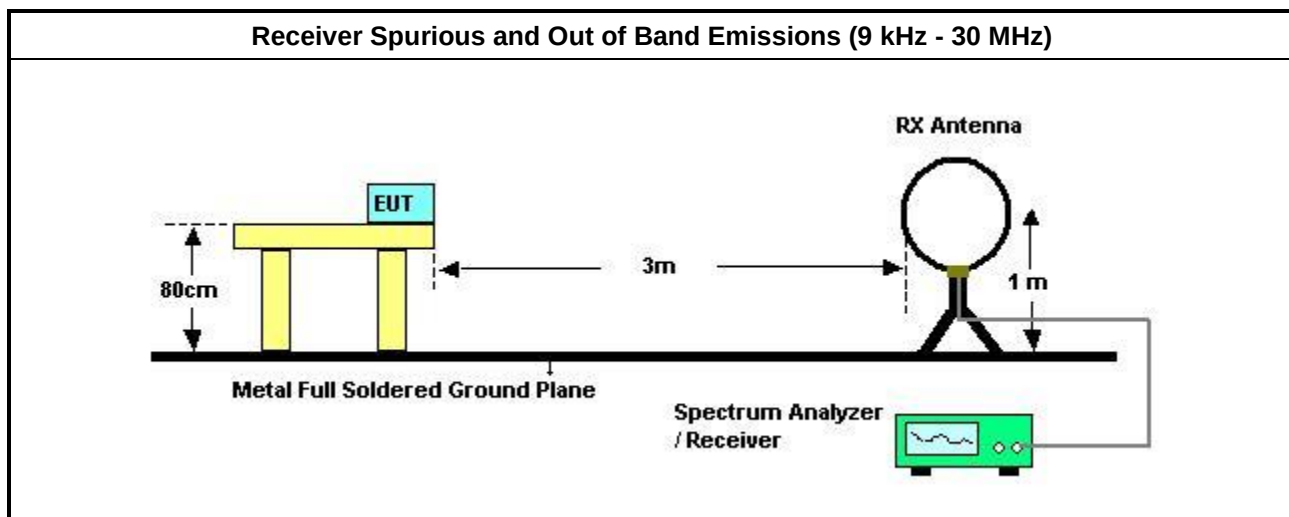
3.6.2 Measuring Instruments

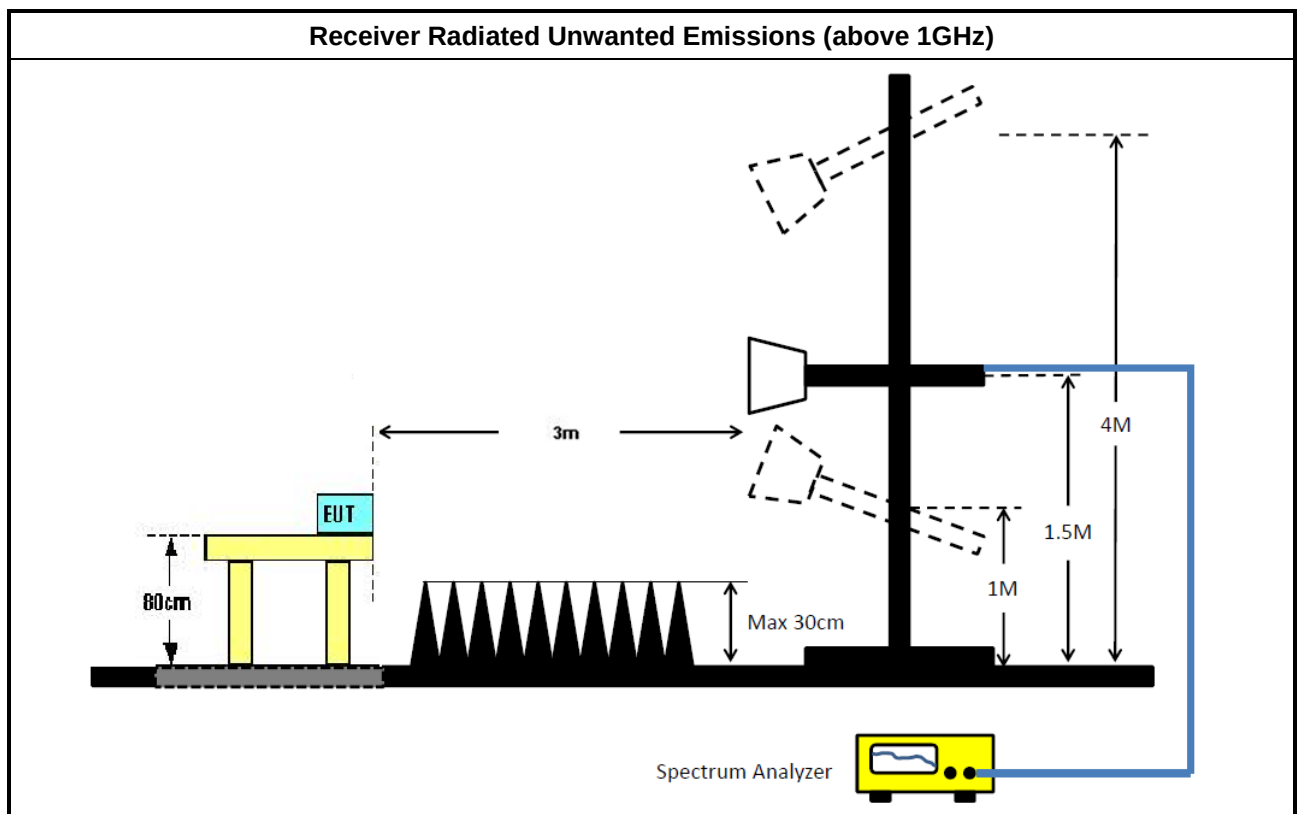
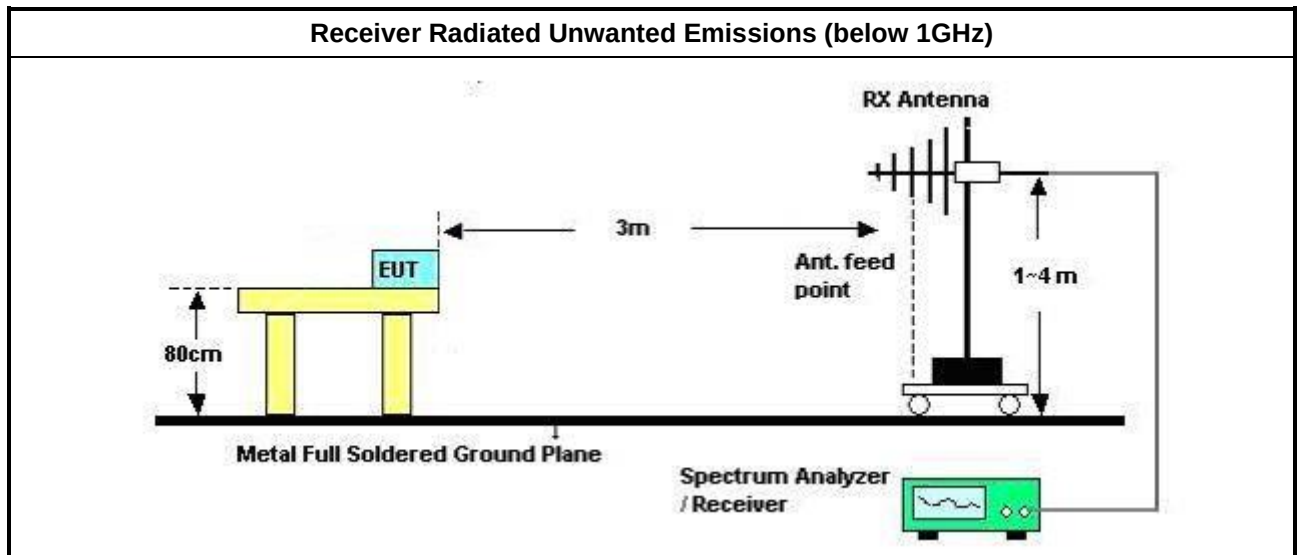
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
☒	The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is higher, without exceeding 40 GHz.
☒	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).
☒	For radiated measurement, refer as ANSI C63.4, clause 8.3.
☒	Refer as ANSI C63.4, clause 8.3.1.1 and 8.3.2.1 for radiated emissions from below 30 MHz.
☒	Refer as ANSI C63.4, clause 8.3.1.1 and 8.3.2.1 for radiated emissions from 30 MHz-1 GHz. For the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the QP-Limit so that the QP level does not need to be reported in addition.
☒	Refer as ANSI C63.4, clause 8.3.1.2 and 8.3.2.2 for radiated emissions from above 1 GHz. 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.
☒	All amplitude of spurious emissions that are attenuated by more than 30 dB below the permissible value has no need to be reported.

3.6.4 Test Setup





3.6.5 Receiver Radiated Unwanted Emissions (Below 30MHz)

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

3.6.6 Test Result of Receiver Radiated Unwanted Emissions

Refer as Appendix F

4 Test Equipment and Calibration Data

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	9KHz~40GHz	16/02/2016	15/02/2017
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	28/07/2015	27/07/2016
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	22/07/2015	21/07/2016
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	04/02/2016	03/02/2017
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	04/02/2016	03/02/2017

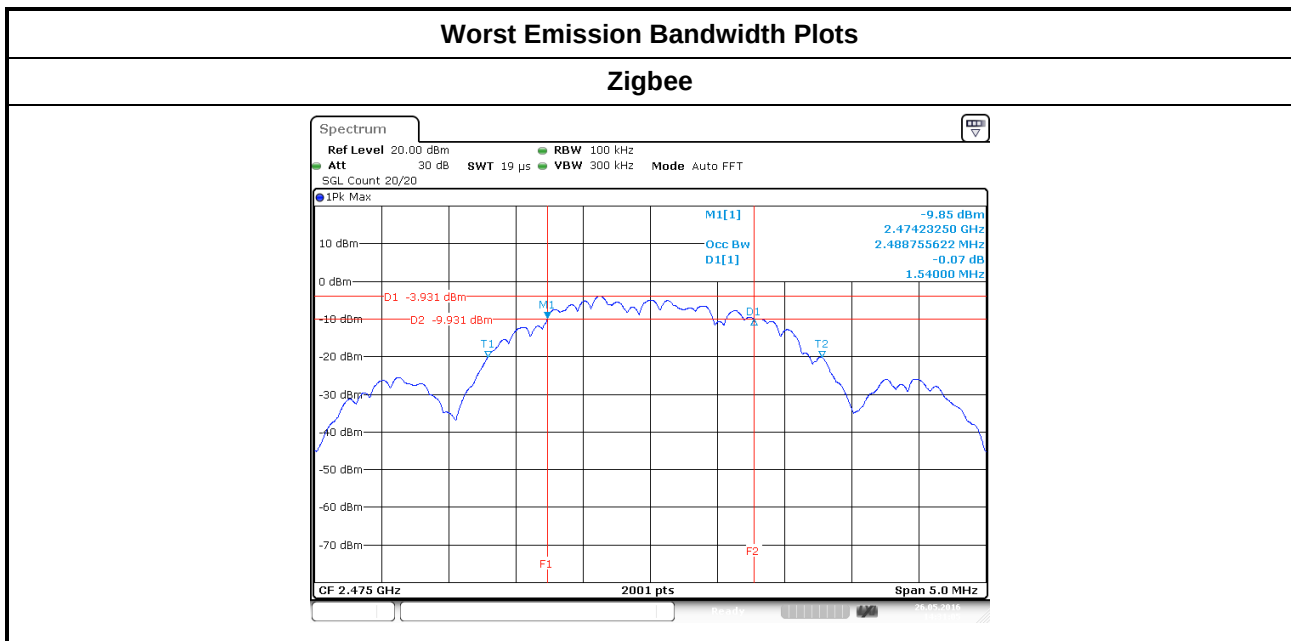
Instrument for Radiated Test (TX)

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz 3m	01/07/2015	30/07/2016
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz 3m	14/05/2016	13/05/2017
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz 3m	25/04/2016	24/04/2017
Amplifier	EMC	EMC9135	980232	9kHz ~ 1.0GHz	29/01/2016	28/01/2017
Amplifier	Agilent	8449B	3008A02096	1GHz ~ 26.5GHz	11/04/2016	10/04/2017
Spectrum	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	15/07/2015	14/07/2016
Spectrum	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	04/07/2016	03/07/2017
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL 6111D & MTJ6102	35418	30MHz ~ 1GHz	31/05/2016	30/05/2017
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL 6111D & MTJ6102	35418	30MHz ~ 1GHz	1/10/2016	30/09/2017
Loop Antenna	ROHDE&SCHWARZ	HFH2-Z2	100330	9 kHz~30 MHz	10/11/2014	09/11/2016
Horn Antenna	SCHWARZBECK	BBHA 9120D	BBHA 9120D 1534	1GHz ~ 18GHz	22/04/2016	21/04/2017
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170614	18GHz ~ 40GHz	04/01/2016	03/01/2017

Instrument for Radiated Test (RX)

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz	30/Mar/2019	29/Mar/2020
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	30/Mar/2019	29/Mar/2020
Microwave Preamplifier	Agilent	8449B	3008A02326	1GHz ~ 26.5GHz	03/Jul/2018	02/Jul/2019
Microwave Preamplifier with 10 dB Pad	EMC	EMC051845 & WK0602-10	980240 & 01	1GHz ~ 18GHz	11/Jan/2019	10/Jan/2020
EMI Test Receiver	R&S	ESR3	102052	9kHz ~ 3.6GHz	09/Apr/2019	08/Apr/2020
EXA Signal Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	31/Jul/2018	30/Jul/2019
Bilog Antenna & 5dB Attenuator	TESEQ & MTJ	CBL6111D & MTJ6102-05	35418 / 3	30MHz~1GHz	02/Oct/2018	03/Oct/2019
Double ridged Guide Horn Antenna	COM-POWER	AH-118	10094	1GHz~18GHz	13/Jul/2018	12/Jul/2019
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	15/Mar/2019	14/Mar/2020
LF-CABLE-2019 0218	Jye Bao	RG142	CB028	9kHz ~ 1GHz	18/Feb/2019	17/Feb/2020
RF Cable-high	HUBER+SUHNER	SUCOFLEX104	SN 556626/4 + 556627	1GHz ~ 40GHz	14/Mar/2019	13/Mar/2020

Emission Bandwidth Result			
Modulation Mode	Freq. (MHz)	99% Bandwidth (MHz)	6dB Bandwidth (MHz)
Zigbee	2405	2.39	1.55
Zigbee	2440	2.43	1.63
Zigbee	2475	2.48	1.54
Limit		N/A	≥500 kHz
Result		Complied	

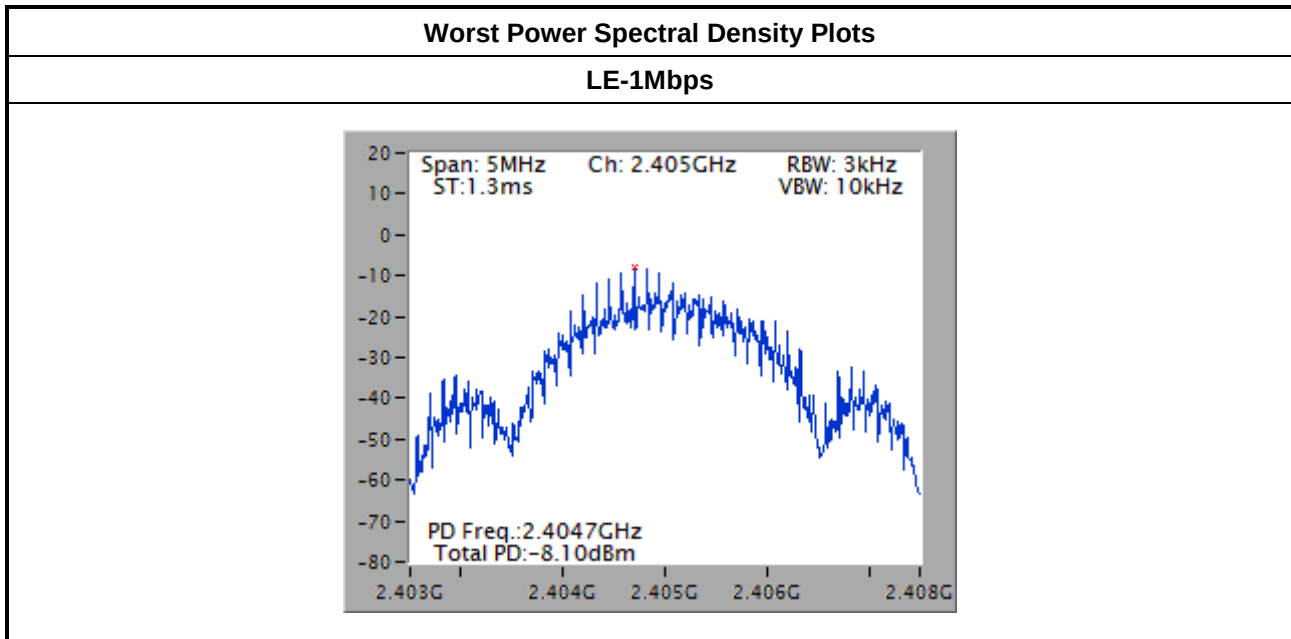


Maximum Peak Conducted Output Power Result						
Condition		RF Output Power (dBm)				
Modulation Mode	Freq. (MHz)	RF Output Power	Power Limit	Antenna Gain (dBi)	EIRP Power	EIRP Limit
Zigbee	2405	3.75	30.00	3.14	6.89	36.00
Zigbee	2440	3.49	30.00	3.14	6.63	36.00
Zigbee	2475	3.40	30.00	3.14	6.54	36.00
Result		Complied				

Test Result of Maximum Average Conducted Output Power

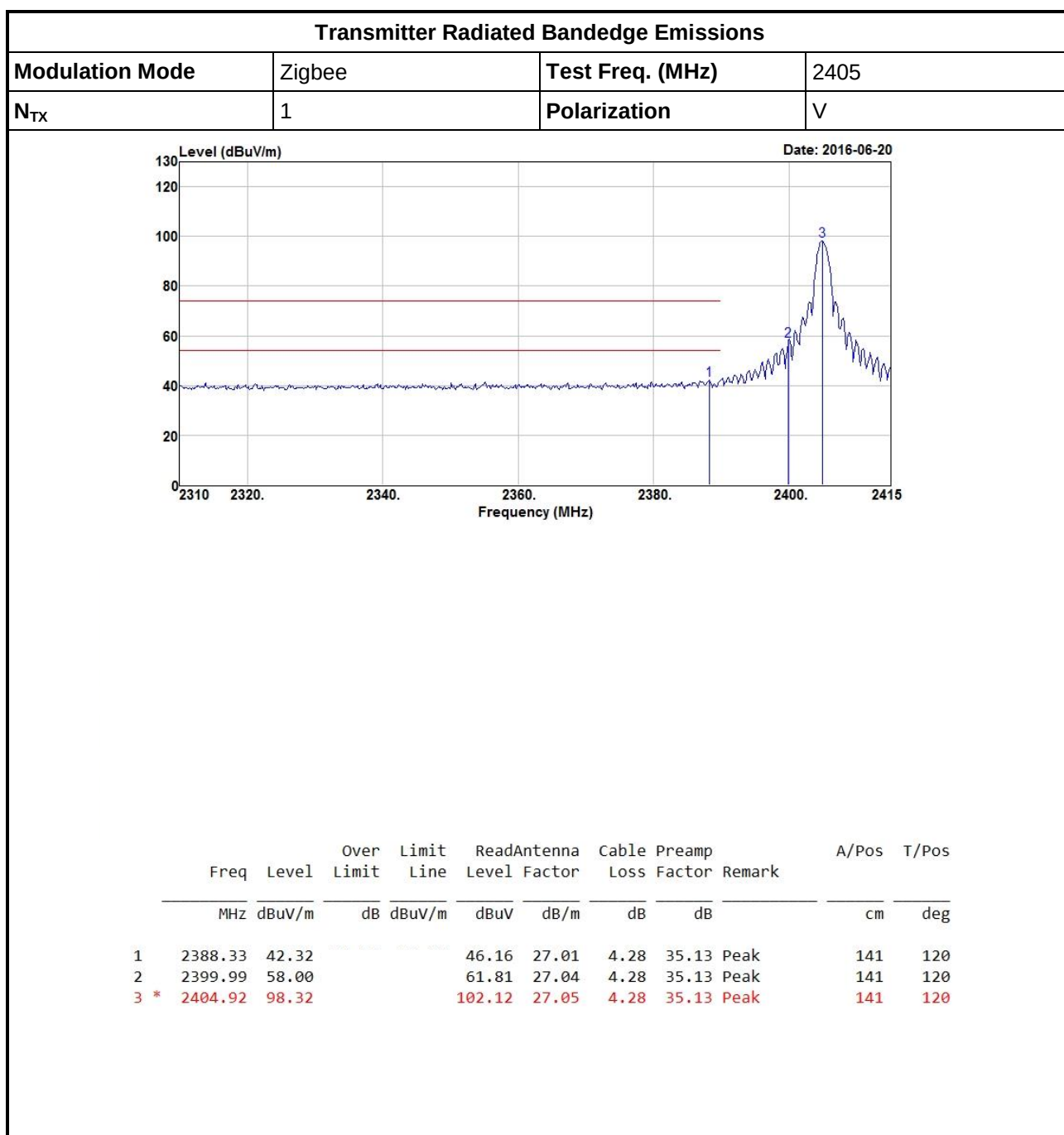
Maximum Average Conducted Output Power Result						
Condition		RF Output Power (dBm)				
Modulation Mode	Freq. (MHz)	RF Output Power	Power Limit	Antenna Gain (dBi)	EIRP Power	EIRP Limit
Zigbee	2405	3.68	30.00	3.14	6.82	36.00
Zigbee	2440	3.41	30.00	3.14	6.55	36.00
Zigbee	2475	3.33	30.00	3.14	6.47	36.00
Result		Complied				

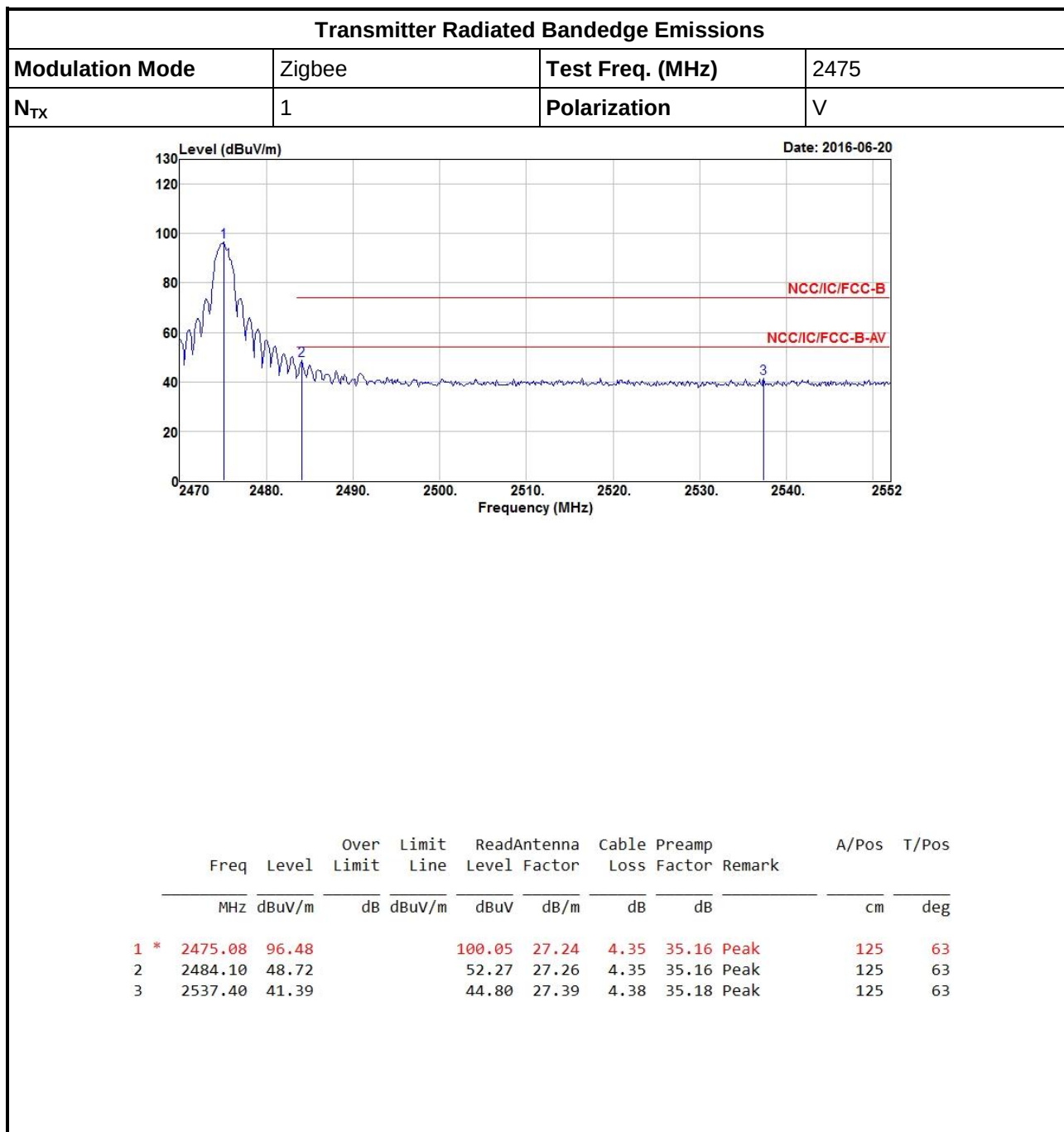
Power Spectral Density Result			
Modulation Mode	Freq. (MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)
Zigbee	2405	-8.10	8
Zigbee	2440	-8.38	8
Zigbee	2475	-8.50	8
Result		Complied	



2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Non-restricted Band)								
Modulation	N _{TX}	Test Freq. (MHz)	In-band PSD [i] (dBuV/100kHz)	Freq. (MHz)	Out-band PSD [o] (dBuV/100kHz)	[i] – [o] (dB)	Limit (dB)	Pol.
Zigbee	1	2405	96.63	2399.990	56.98	39.65	20	V
Zigbee	1	2475	97.69	2500.180	41.91	55.78	20	V

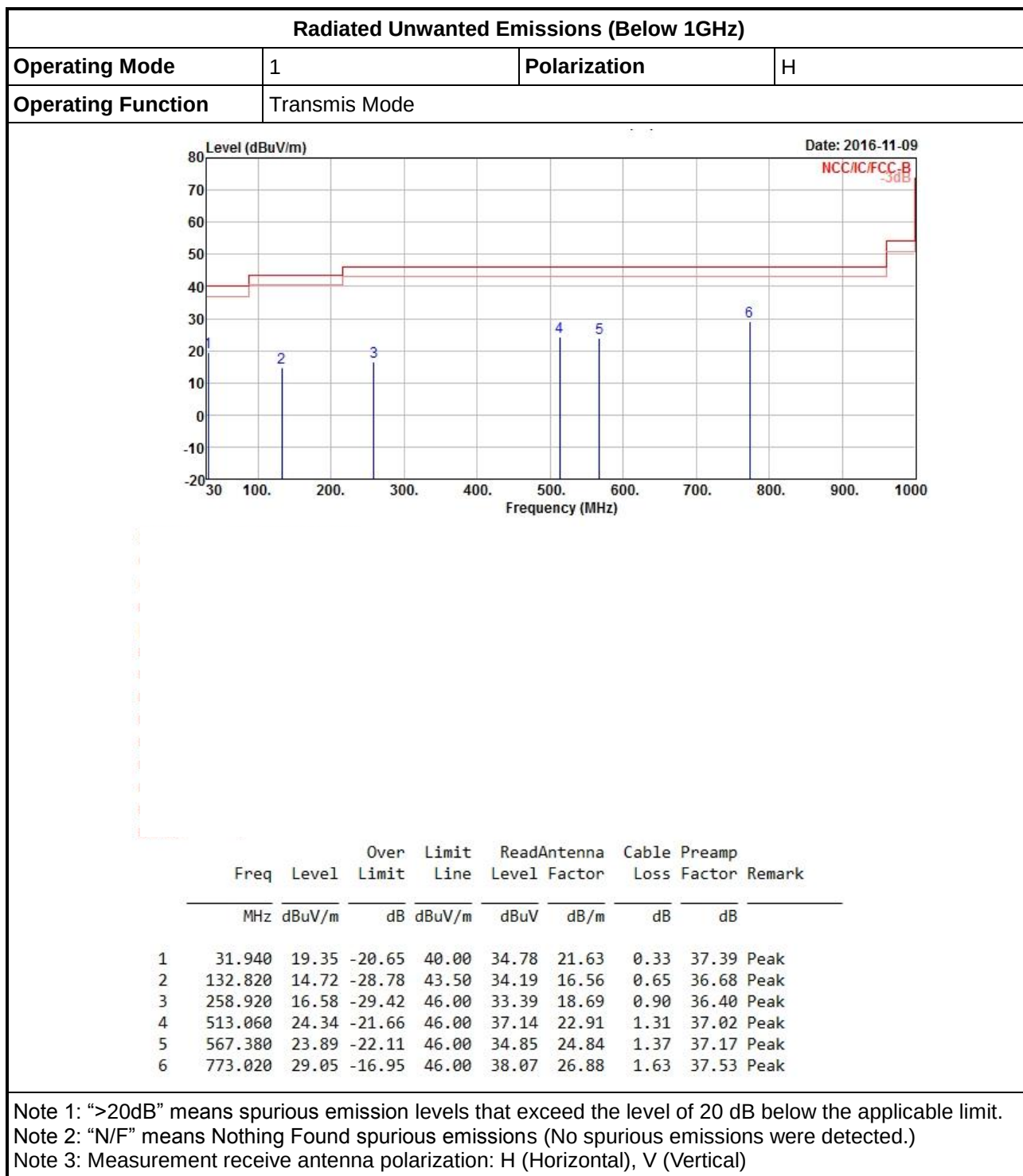
Note 1: Measurement worst emissions of receive antenna polarization





Transmitter Radiated Unwanted Emissions (Below 1GHz)

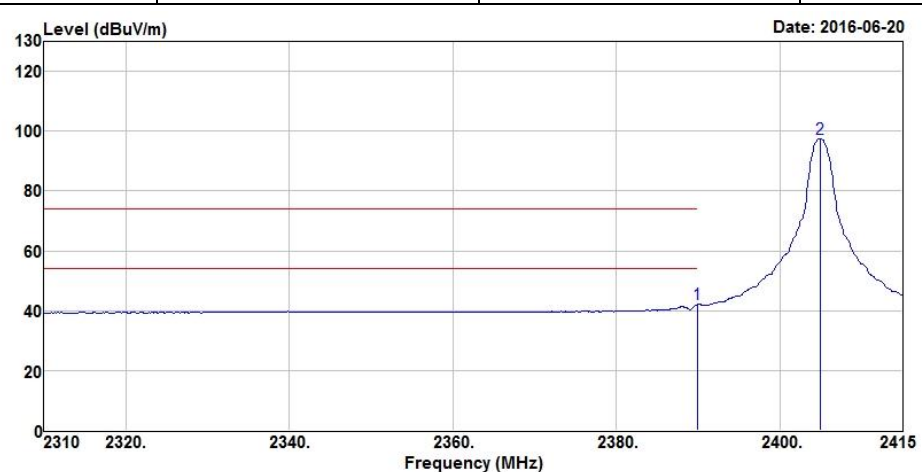




Transmitter Radiated Unwanted Emissions (Above 1GHz)

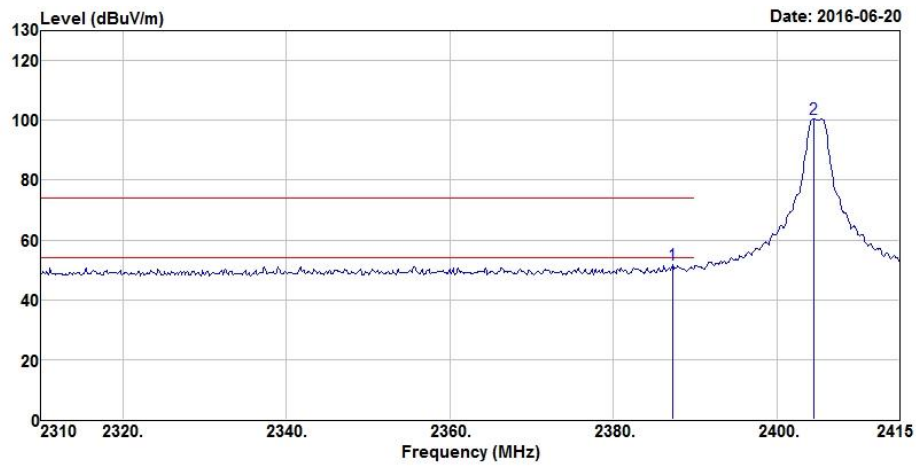
2400-2483.5MHz Transmitter Radiated Bandedge Emissions (Restricted Band)										
Modulation Mode	N _{TX}	Freq. (MHz)	Measure Distance (m)	Freq. (MHz) PK	Level (dBuV/m) PK	Limit (dBuV/m) PK	Freq. (MHz) AV	Level (dBuV/m) AV	Limit (dBuV/m) AV	Pol.
Zigbee	1	2405	3	2388.540	52.36	74	2389.905	42.20	54	H
Zigbee	1	2475	3	2483.610	58.27	74	2483.610	49.87	54	H

Note 1: Measurement worst emissions of receive antenna polarization.

Transmitter Radiated Bandedge Emissions											
Modulation Mode		Zigbee				Test Freq. (MHz)		2405			
N _{TX}		1				Remark		V			
Level (dBuV/m)  Frequency (MHz) Date: 2016-06-20											
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	2390.00	42.03	-11.97	54.00	45.87	27.01	4.28	35.13	Average	141	120
2 *	2404.92	97.47			101.27	27.05	4.28	35.13	Average	141	120

Transmitter Radiated Bandedge Emissions

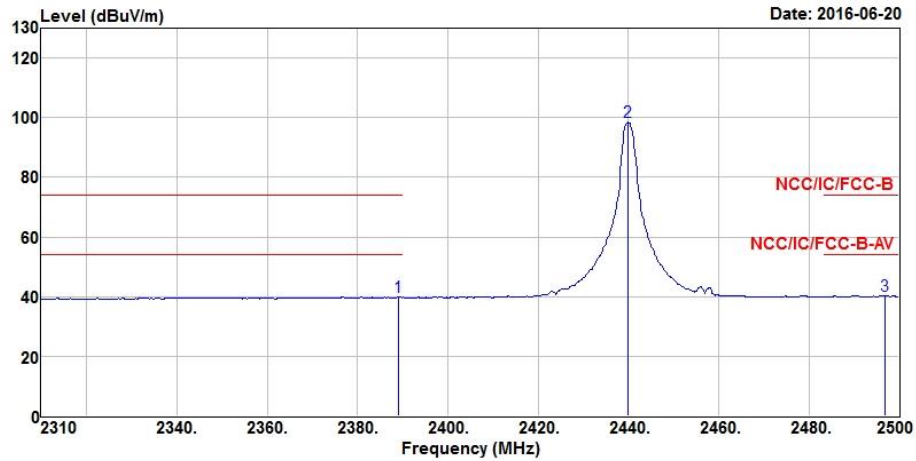
Modulation Mode	Zigbee	Test Freq. (MHz)	2405
N _{TX}	1	Remark	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	2387.28	51.69	-22.31	74.00	55.53	27.01	4.28	35.13	Peak	141	120
2 *	2404.50	100.61			104.41	27.05	4.28	35.13	Peak	141	120

Transmitter Radiated Bandedge Emissions

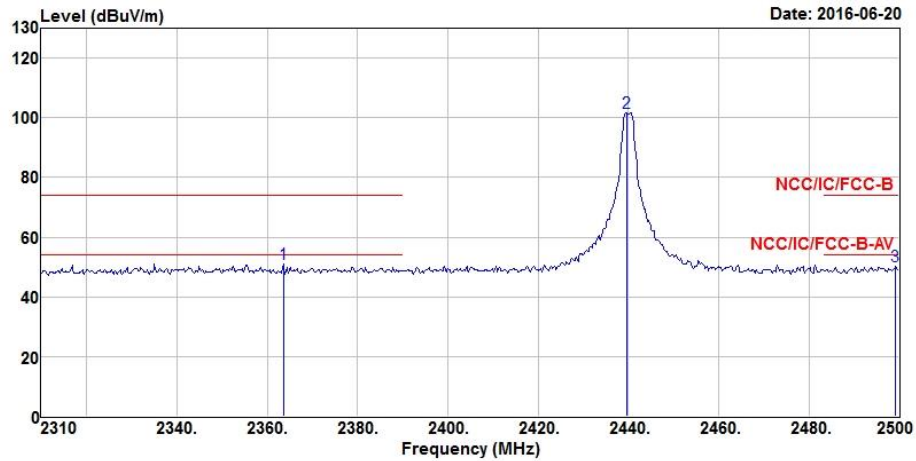
Modulation Mode	Zigbee	Test Freq. (MHz)	2440
N _{TX}	1	Remark	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamplifier	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	2389.04	39.89	-14.11	54.00	43.73	27.01	4.28	35.13 Average	101	295
2 *	2439.96	98.43			102.12	27.14	4.32	35.15 Average	101	295
3	2496.96	40.40	-13.60	54.00	43.93	27.29	4.35	35.17 Average	101	295

Transmitter Radiated Bandedge Emissions

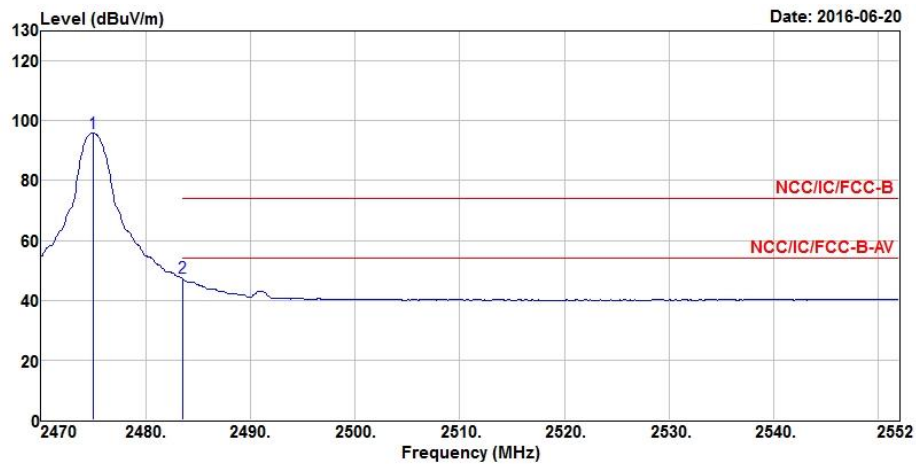
Modulation Mode	Zigbee	Test Freq. (MHz)	2440
N _{TX}	1	Remark	V



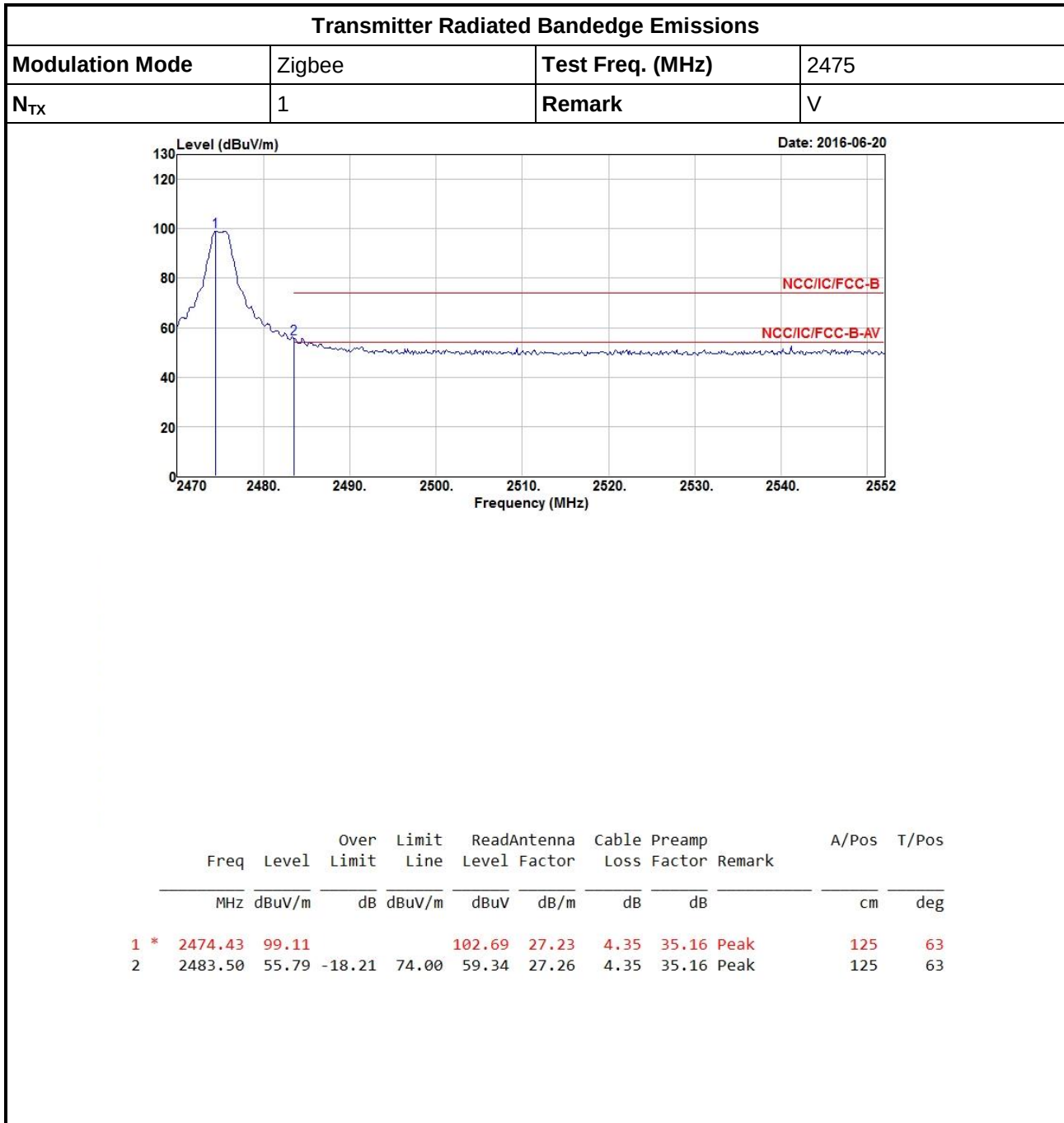
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	2363.58	51.12	-22.88	74.00	55.04	26.95	4.25	35.12	Peak	101	295
2 *	2439.58	101.78			105.47	27.14	4.32	35.15	Peak	101	295
3	2499.24	50.35	-23.65	74.00	53.87	27.30	4.35	35.17	Peak	101	295

Transmitter Radiated Bandedge Emissions

Modulation Mode	Zigbee	Test Freq. (MHz)	2475
N _{TX}	1	Remark	V

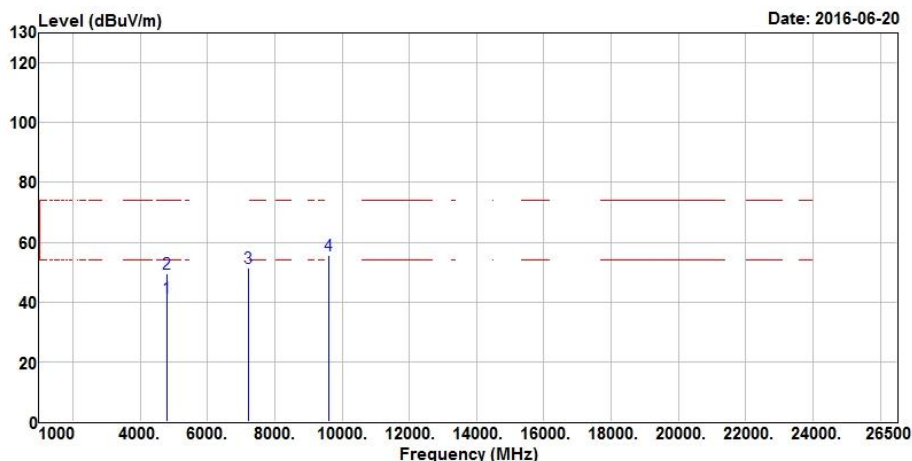


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamplifier Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 *	2474.92	95.81			99.39	27.23	4.35	35.16 Average	125	63
2	2483.50	47.44	-6.56	54.00	50.99	27.26	4.35	35.16 Average	125	63



Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	Zigbee	Test Freq. (MHz)	2405
Operating Function	Transmit	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4810.00	41.50	-12.50	54.00	39.42	31.13	6.11	35.16	Average	0	0
2	4810.00	49.33	-24.67	74.00	47.25	31.13	6.11	35.16	Peak	0	0
3	7215.00	51.59	-22.41	74.00	43.58	35.86	7.56	35.41	Peak	0	0
4	9620.00	55.43	-18.57	74.00	43.96	38.67	8.75	35.95	Peak	0	0

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)

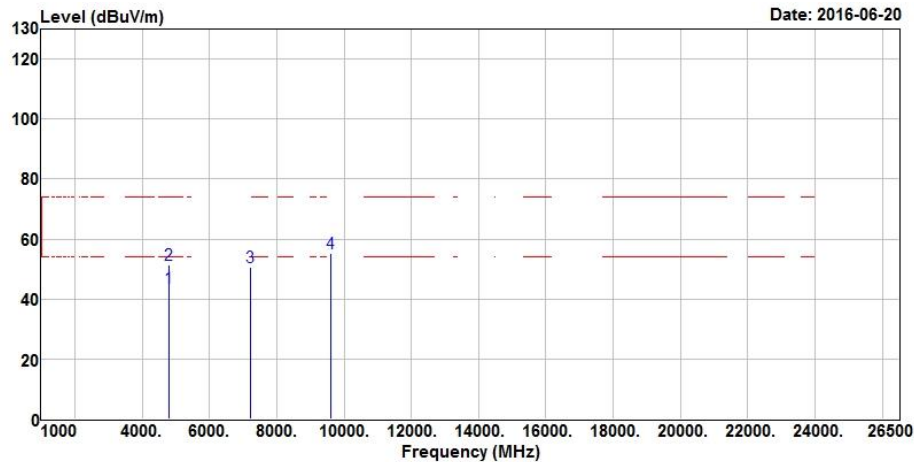
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (100.61 dBuV/m).

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	Zigbee	Test Freq. (MHz)	2405
Operating Function	Transmit	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4810.00	43.67	-10.33	54.00	41.59	31.13	6.11	35.16	Average	0	0
2	4810.00	51.44	-22.56	74.00	49.36	31.13	6.11	35.16	Peak	0	0
3	7215.00	50.69	-23.31	74.00	42.68	35.86	7.56	35.41	Peak	0	0
4	9620.00	55.25	-18.75	74.00	43.78	38.67	8.75	35.95	Peak	0	0

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)

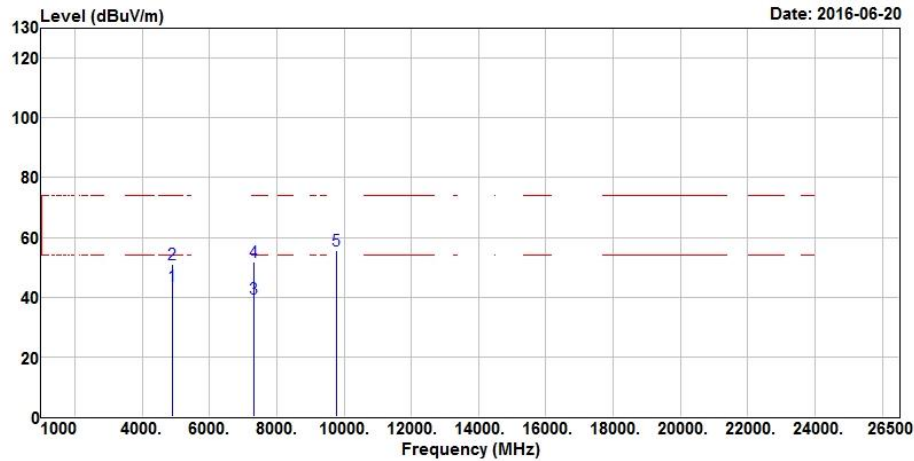
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (100.61dBuV/m).

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	Zigbee	Test Freq. (MHz)	2440
Operating Function	Transmit	Polarization	V

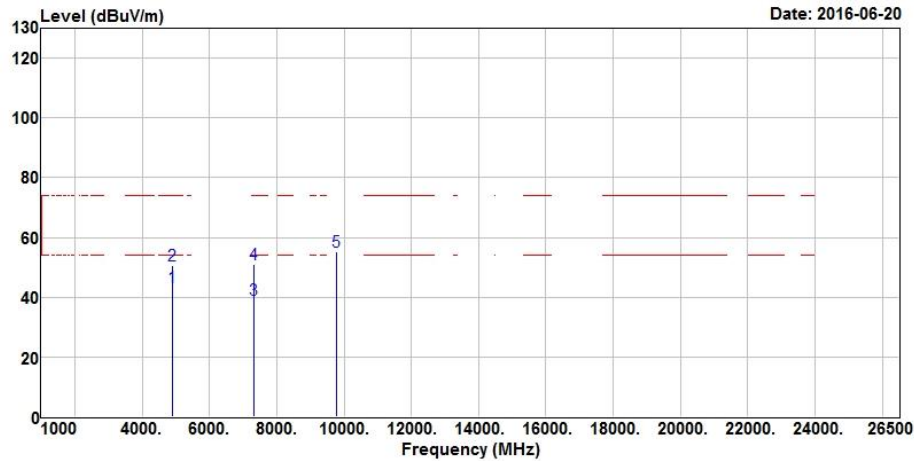


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4880.00	43.83	-10.17	54.00	41.62	31.23	6.13	35.15	Average	0	0
2	4880.00	50.89	-23.11	74.00	48.68	31.23	6.13	35.15	Peak	0	0
3	7320.00	39.56	-14.44	54.00	31.25	36.13	7.60	35.42	Average	0	0
4	7320.00	51.90	-22.10	74.00	43.59	36.13	7.60	35.42	Peak	0	0
5	9760.00	55.72	-18.28	74.00	43.98	38.76	8.94	35.96	Peak	0	0

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)
 Note 4: For restricted bands, 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 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (101.78 dBuV/m).
 Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	Zigbee	Test Freq. (MHz)	2440
Operating Function	Transmit	Polarization	H

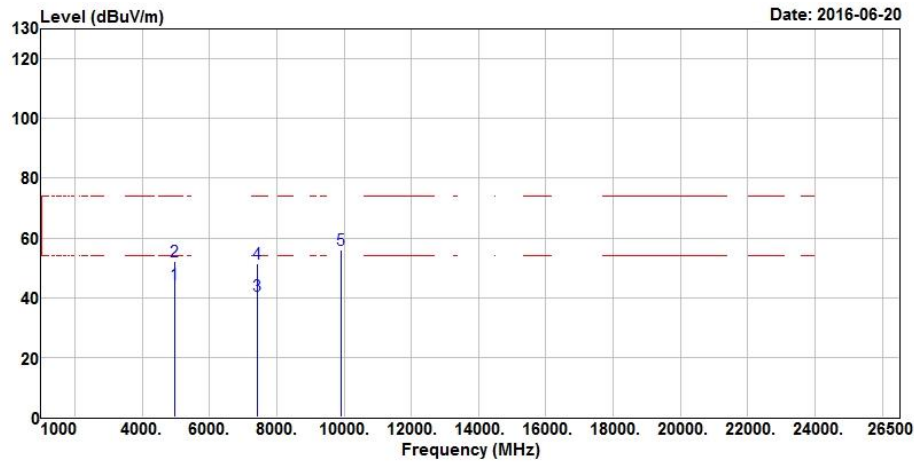


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4880.00	43.39	-10.61	54.00	41.18	31.23	6.13	35.15	Average	0	0
2	4880.00	50.69	-23.31	74.00	48.48	31.23	6.13	35.15	Peak	0	0
3	7320.00	39.20	-14.80	54.00	30.89	36.13	7.60	35.42	Average	0	0
4	7320.00	51.09	-22.91	74.00	42.78	36.13	7.60	35.42	Peak	0	0
5	9760.00	55.42	-18.58	74.00	43.68	38.76	8.94	35.96	Peak	0	0

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)
 Note 4: For restricted bands, 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 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (101.78 dBUV/m).
 Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	Zigbee	Test Freq. (MHz)	2475
Operating Function	Transmit	Polarization	V



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4950.00	44.44	-9.56	54.00	42.09	31.33	6.17	35.15	Average	0	0
2	4950.00	52.04	-21.96	74.00	49.69	31.33	6.17	35.15	Peak	0	0
3	7425.00	40.59	-13.41	54.00	31.98	36.40	7.64	35.43	Average	0	0
4	7425.00	51.47	-22.53	74.00	42.86	36.40	7.64	35.43	Peak	0	0
5	9900.00	55.95	-18.05	74.00	43.99	38.84	9.08	35.96	Peak	0	0

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)

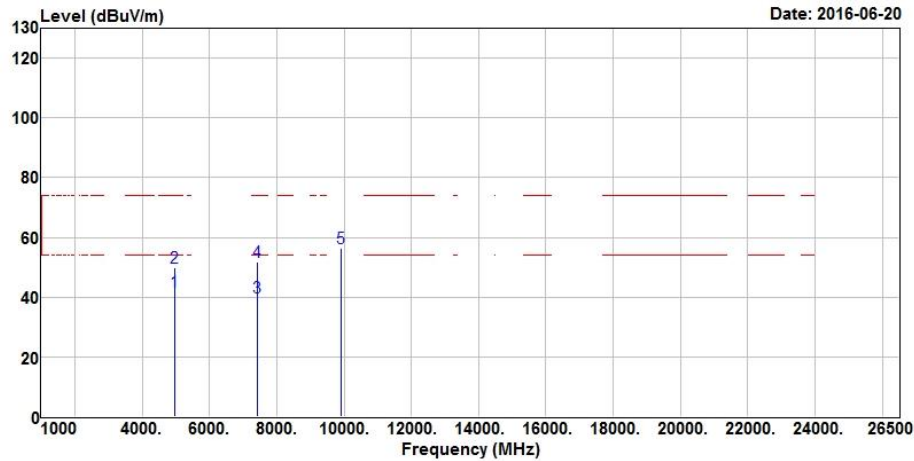
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (99.11 dBuV/m).

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode	Zigbee	Test Freq. (MHz)	2475
Operating Function	Transmit	Polarization	H



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4950.00	41.86	-12.14	54.00	39.51	31.33	6.17	35.15	Average	0	0
2	4950.00	49.87	-24.13	74.00	47.52	31.33	6.17	35.15	Peak	0	0
3	7425.00	39.97	-14.03	54.00	31.36	36.40	7.64	35.43	Average	0	0
4	7425.00	51.60	-22.40	74.00	42.99	36.40	7.64	35.43	Peak	0	0
5	9900.00	56.32	-17.68	74.00	44.36	38.84	9.08	35.96	Peak	0	0

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)

Note 4: For restricted bands, 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 5: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level (99.11dBuV/m).

Note 6: No level of unwanted emissions exceeds the level of the fundamental emission.



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
Zigbee_Nss1_1TX	Pass	PK	64.92M	33.15	40.00	-6.85	-15.78	3	Vertical	360	2.00	-

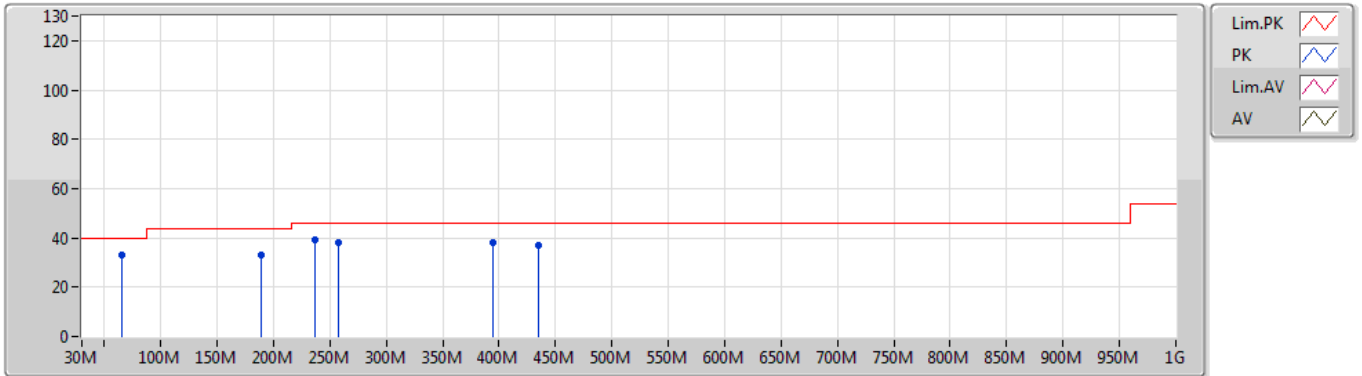
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Zigbee_Nss1_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	PK	64.92M	33.15	40.00	-6.85	-15.78	3	Vertical	360	2.00	-
2440MHz	Pass	PK	189.08M	32.88	43.50	-10.62	-11.84	3	Vertical	360	2.00	-
2440MHz	Pass	PK	236.61M	38.96	46.00	-7.04	-9.39	3	Vertical	360	2.00	-
2440MHz	Pass	PK	256.98M	37.90	46.00	-8.10	-6.39	3	Vertical	360	2.00	-
2440MHz	Pass	PK	394.72M	37.83	46.00	-8.17	-4.70	3	Vertical	360	2.00	-
2440MHz	Pass	PK	435.46M	36.71	46.00	-9.29	-3.56	3	Vertical	360	2.00	-
2440MHz	Pass	PK	94.99M	35.45	43.50	-8.05	-12.08	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	259.89M	36.07	46.00	-9.93	-5.94	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	278.32M	36.29	46.00	-9.71	-7.19	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	290.93M	34.56	46.00	-11.44	-7.04	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	337.49M	33.37	46.00	-12.63	-6.10	3	Horizontal	0	1.00	-
2440MHz	Pass	PK	775.93M	38.38	46.00	-7.62	1.99	3	Horizontal	0	1.00	-

Zigbee_Nss1_1RX

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2440MHz_Battery

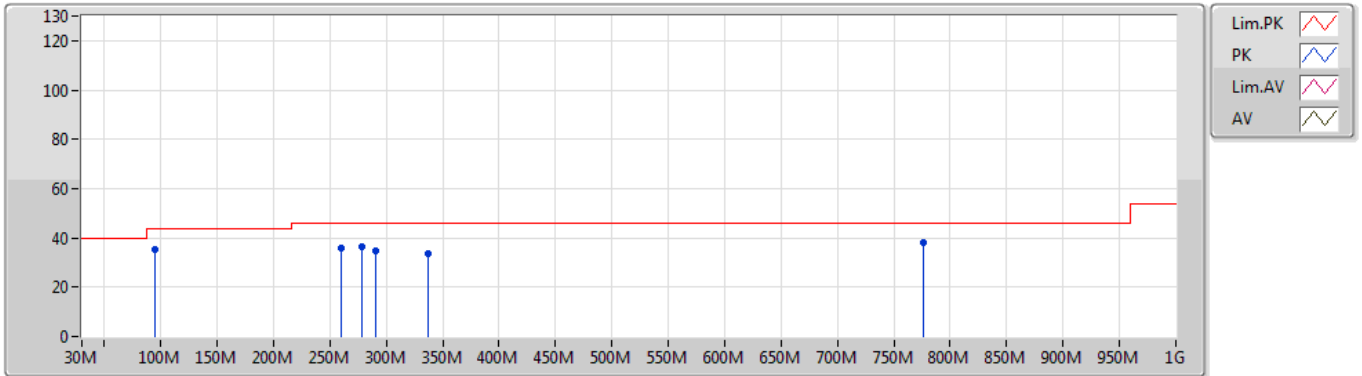


Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	64.92M	33.15	40.00	-6.85	-15.78	3	Vertical	360	2.00	-				
PK	189.08M	32.88	43.50	-10.62	-11.84	3	Vertical	360	2.00	-				
PK	236.61M	38.96	46.00	-7.04	-9.39	3	Vertical	360	2.00	-				
PK	256.98M	37.90	46.00	-8.10	-6.39	3	Vertical	360	2.00	-				
PK	394.72M	37.83	46.00	-8.17	-4.70	3	Vertical	360	2.00	-				
PK	435.46M	36.71	46.00	-9.29	-3.56	3	Vertical	360	2.00	-				

Zigbee_Nss1_1RX

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Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
PK	94.99M	35.45	43.50	-8.05	-12.08	3	Horizontal	0	1.00	-				
PK	259.89M	36.07	46.00	-9.93	-5.94	3	Horizontal	0	1.00	-				
PK	278.32M	36.29	46.00	-9.71	-7.19	3	Horizontal	0	1.00	-				
PK	290.93M	34.56	46.00	-11.44	-7.04	3	Horizontal	0	1.00	-				
PK	337.49M	33.37	46.00	-12.63	-6.10	3	Horizontal	0	1.00	-				
PK	775.93M	38.38	46.00	-7.62	1.99	3	Horizontal	0	1.00	-				



Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
Zigbee_Nss1_1TX	Pass	AV	2.29G	36.15	54.00	-17.85	-9.74	3	Vertical	0	1.00	-

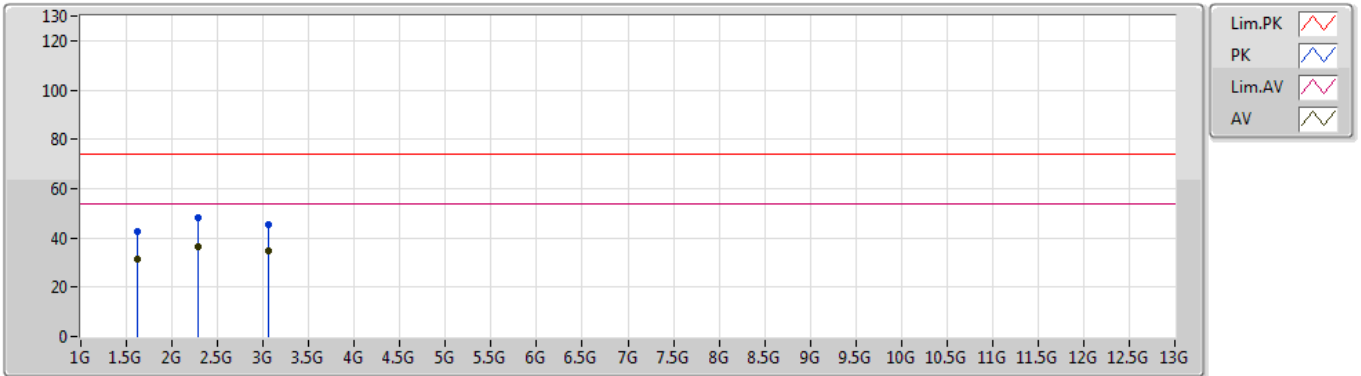
Result

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
Zigbee_Nss1_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2440MHz	Pass	AV	1.625G	31.39	54.00	-22.61	-13.69	3	Vertical	0	1.00	-
2440MHz	Pass	AV	2.29G	36.15	54.00	-17.85	-9.74	3	Vertical	0	1.00	-
2440MHz	Pass	AV	3.06G	34.79	54.00	-19.21	-7.84	3	Vertical	0	1.00	-
2440MHz	Pass	PK	1.625G	42.43	74.00	-31.57	-13.69	3	Vertical	0	1.00	-
2440MHz	Pass	PK	2.29G	48.01	74.00	-25.99	-9.74	3	Vertical	0	1.00	-
2440MHz	Pass	PK	3.06G	45.32	74.00	-28.68	-7.84	3	Vertical	0	1.00	-
2440MHz	Pass	AV	2.235G	33.92	54.00	-20.08	-9.89	3	Horizontal	360	1.00	-
2440MHz	Pass	AV	2.465G	31.65	54.00	-22.35	-9.89	3	Horizontal	360	1.00	-
2440MHz	Pass	AV	3.185G	31.23	54.00	-22.77	-7.32	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	2.235G	44.96	74.00	-29.04	-9.89	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	2.465G	42.40	74.00	-31.60	-9.89	3	Horizontal	360	1.00	-
2440MHz	Pass	PK	3.185G	41.82	74.00	-32.18	-7.32	3	Horizontal	360	1.00	-

Zigbee_Nss1_1RX

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2440MHz_RX

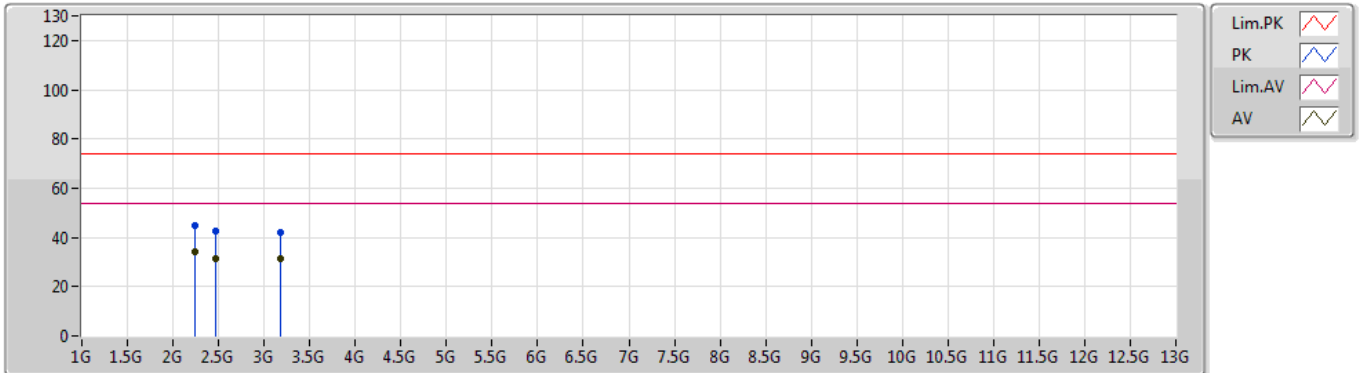


Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment				
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)					
AV	1.625G	31.39	54.00	-22.61	-13.69	3	Vertical	0	1.00	-				
AV	2.29G	36.15	54.00	-17.85	-9.74	3	Vertical	0	1.00	-				
AV	3.06G	34.79	54.00	-19.21	-7.84	3	Vertical	0	1.00	-				
PK	1.625G	42.43	74.00	-31.57	-13.69	3	Vertical	0	1.00	-				
PK	2.29G	48.01	74.00	-25.99	-9.74	3	Vertical	0	1.00	-				
PK	3.06G	45.32	74.00	-28.68	-7.84	3	Vertical	0	1.00	-				

Zigbee_Nss1_1RX

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2440MHz_RX



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment				
AV	2.235G	33.92	54.00	-20.08	-9.89	3	Horizontal	360	1.00	-				
AV	2.465G	31.65	54.00	-22.35	-9.89	3	Horizontal	360	1.00	-				
AV	3.185G	31.23	54.00	-22.77	-7.32	3	Horizontal	360	1.00	-				
PK	2.235G	44.96	74.00	-29.04	-9.89	3	Horizontal	360	1.00	-				
PK	2.465G	42.40	74.00	-31.60	-9.89	3	Horizontal	360	1.00	-				
PK	3.185G	41.82	74.00	-32.18	-7.32	3	Horizontal	360	1.00	-				