

Produkte
Products

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<i>Test Report No.:</i>				<i>Page 1 of 25</i>	
Auftraggeber: <i>Client:</i>		The Kroger Co. 11450 Grooms Rd., Blue Ash, OH 45242, United States			
Gegenstand der Prüfung: <i>Test item:</i>		Gen 2 Zooter			
Bezeichnung: <i>Identification:</i>		G2Z-NCZGBAP	Serien-Nr.: <i>Serial No.</i>	Engineering Sample	
Wareneingangs-Nr.: <i>Receipt No.:</i>		1803317814	Eingangsdatum: <i>Date of receipt:</i>	09.05.2018	
Prüfort: <i>Testing location:</i>		Refer Page 5 of 25 for test facilities			
Prüfgrundlage: <i>Test specification:</i>		FCC Part 15 Subpart C 15.247 ANSI C63.10-2013			
Prüfergebnis: <i>Test Result:</i>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test items passed the test specification(s).</i>			
Prüflaboratorium: <i>Testing Laboratory:</i>		TÜV Rheinland (India) Pvt. Ltd. 27/B, 2nd corss, Electronic City Phase 1 Bangalore – 560 100. India FCC Test Site Registration no.: 496599			
geprüft / tested by:			kontrolliert / reviewed by:		
10.05.2018	Girish Kumar G Engineer		17.07.2018	Saibaba Siddapur Assistant Manager	
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges / Other Aspects: FCC ID:PBR-SZG2ZBNCR1, On receipt the equipment was in good condition					
Abkürzungen: P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet			Abbreviations: P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested		
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.					
<i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i>					

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TEST SUMMARY

Section	Test item	Result	Remarks
15.247 (b) (3)	Maximum Conducted Output Power	*Pass	Gen 2 Zooter contains FCC certified radio modules; hence, antenna port measurements are excluded. Refer FCC IDs of the radio modules listed in the below table.
15.247 (d) / (15.209 & 15.205)	Restricted bands of Emissions and Restricted Bands of Operation.	Pass	
15.207	Conducted emission on A.C power lines	NA	

* -> RF power verified

NA -> Not Applicable, as DUT will power on over PoE

Gen 2 Zooter has integrated with following certified radio modules:

SI No.	Radio Protocol	FCC ID	Tested By	Report Number
1	ZigBee	PBR-SZMDLNR1	TUV Rheinland India	01200091 001
2	ZigBee	PBR-SZMDLNR1	TUV Rheinland India	01200091 001
3	ZigBee	PBR-SZMDLBR1	TUV Rheinland India	19660056 001
4	ZigBee	PBR-SZMDLM3BR1	TUV Rheinland India	19660372 001

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1 GENERAL REMARKS

1.1 Complimentary Materials

All attachments are integral part of this test report.

APPENDIX 1: TEST SETUP PHOTOS

APPENDIX 2: EUT EXTERNAL PHOTOS

APPENDIX 3: EUT INTERNAL PHOTOS

APPENDIX 4: FCC LABEL AND LABEL LOCATION

APPENDIX 5: BLOCK DIAGRAM

APPENDIX 6: SPECIFICATION OF EUT

APPENDIX 7: SCHEMATIC DIAGRAM

APPENDIX 8: BILL OF MATERIAL

APPENDIX 9: USER MANUAL

APPENDIX 10: MAXIMUM PERMISSIBLE EXPOSURE INFORMATION

2 TEST SITES

2.1 Testing Facilities

TUV Rheinland (India) Private Limited
108 , Beside ISBR Business School,
Electronic city Phase I
Bangalore - 560 100.

2.2 List of Test and Measurement Instruments

Table 1: Test and measurements instrument used

Equipment	Manufacturer	Model Name	Serial Number	Calibration Due Date	Periodicity	Used for Test Items
Signal Analyser	Rohde & Schwarz	FSV7	101644	15.12.2018	Yearly	Antenna - Port Measurements
EMI Test Receiver	Rohde & Schwarz	ESU 40	100288	24-10-2018	Yearly	Radiated Spurious Emission
Active loop antenna	Frankonia	LAX-10	LAX-10-800	15-01-2019	Yearly	
Biconical Antenna	Schwarzbeck mess-elektronik	VHBB-9124 / BBA-9106	9124-656	09-01-2019	Yearly	
Log-Periodic Antenna	Schwarzbeck mess-elektronik	VUSLP-9111B	9111B-111	16-01-2019	Yearly	
Broadband Horn Antenna	Frankonia	HAX-18	HAX18-802	16-09-2018	Yearly	
Emission Horn Antenna	ETS Lindgren	116706	00107323	22-06-2018	Yearly	
Semi Anechoic Chamber	Frankonia	-	-	-	-	

3 GENERAL PRODUCT INFORMATION

3.1 Product Function and Intended Use

Gen 2 Zooter (G2Z-NCZGBAP)

G2Z-NCZGBAP has four ZigBee / IEEE-802.15.4 modules mounted on it. These ZigBee / IEEE-802.15.4 Modules are used for wireless data communication with other ZigBee / IEEE-802.15.4 devices. It also has Ethernet interface for LAN connectivity. It is used as wired and wireless access point.

3.2 Ratings and System Details

Table 2: Ratings and System Details

Operating frequency range	2400 MHz to 2483.5 MHz	
Radio Protocol	ZigBee	
Verified RF Power	PBR-SZMDLNR1	2.59 dBm
	PBR-SZMDLNR1	3.05 dBm
	PBR-SZMDLM3BR1	10.50 dBm
	PBR-SZMDLBR1	18.93 dBm
Channel Spacing	5 MHz	
Modulation	DSSS	
Number of antennas	4	
Antenna type	PCB	
Antenna gain	PBR-SZMDLNR1	2.0 dBi
	PBR-SZMDLNR1	2.0 dBi
	PBR-SZMDLM3BR1	3.27 dBi
	PBR-SZMDLBR1	3.27 dBi
Supply Voltage to Product	+48 VDC, 4 pair Power over Ethernet	
Environmental conditions	Temp: 5°C to 40°C Humidity: 20% to 80% RH	

3.3 Measurement Uncertainty:

Table 3: Measurement Uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±3 °C
Supply Voltages	±3 %
Time	±5 %

4 TEST SET-UP AND OPERATION MODE

4.1 Principle of Configuration Selection

Transmission was enabled with highest possible duty cycle transmission on low, mid and high channels to obtain maximum emissions.

4.2 Test Operation and Test Software

Testing software was used to enable the continuous transmission on low/mid/high channels.

Test Software, Software Version, Hardware Version used:

Protocol	FCC ID	Software used for TX	Software Version	Hardware Version
ZigBee	PBR-SZMDLNR1	Chipconflash Utility	1	Rev C
ZigBee	PBR-SZMDLNR1	Chipconflash Utility	1	Rev C
ZigBee	PBR-SZMDLBR1	Chipconflash Utility	1.7.5	Rev B
ZigBee	PBR-SZMDLM3BR1	Smart RF Flashprogrammer 2	1.7.5	Rev A

4.3 Special Accessories and Auxiliary Equipment

- None

4.4 Countermeasures to achieve EMC Compliance

- None

4.5 Test modes – data rates and modulations

For Radiated spurious emissions only the worst case results i.e the emissions with less margin are reported in this report.

4.6 List of Frequencies and Frequency bands

Frequency Band (MHz)	Channel No.	Frequency (MHz)
2400-2483.5	11	2405
	12	2410
	13	2415
	14	2420
	15	2425
	16	2430
	17	2435
	18	2440
	19	2445
	20	2450
	21	2455
	22	2460
	23	2465
	24	2470
	25	2475
	26	2480

Table 4: List of Center Frequencies of ZigBee

Note:

- The test was performed with the following power settings during transmission,

Protocol	FCC ID	Channel	Power settings
ZigBee	PBR-SZMDLNR1	11 to 26	3 dBm
ZigBee	PBR-SZMDLNR1	11 to 26	3 dBm
ZigBee	PBR-SZMDLBR1	11 to 26	9 dBm
ZigBee	PBR-SZMDLM3BR1	11 to 25	19 dBm
		26	13 dBm

- Testing was performed on the sample with the TUV Identification Number: 1803317814-1-1

5 RADIATED TEST METHODOLOGY

5.1 Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.10-2013. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable for below 1 GHz & 1.5 m height for above 1 GHz measurement, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000 MHz was performed by horn antenna, The measurement below 30 MHz was performed by loop antenna, Measurement from 30 MHz to 200 MHz was performed by Baloon and Biconical Antenna, and measurement from 200 MHz to 1 GHz was performed by Log-Periodic Antenna.

The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.

5.1.1 Test Setup Configuration

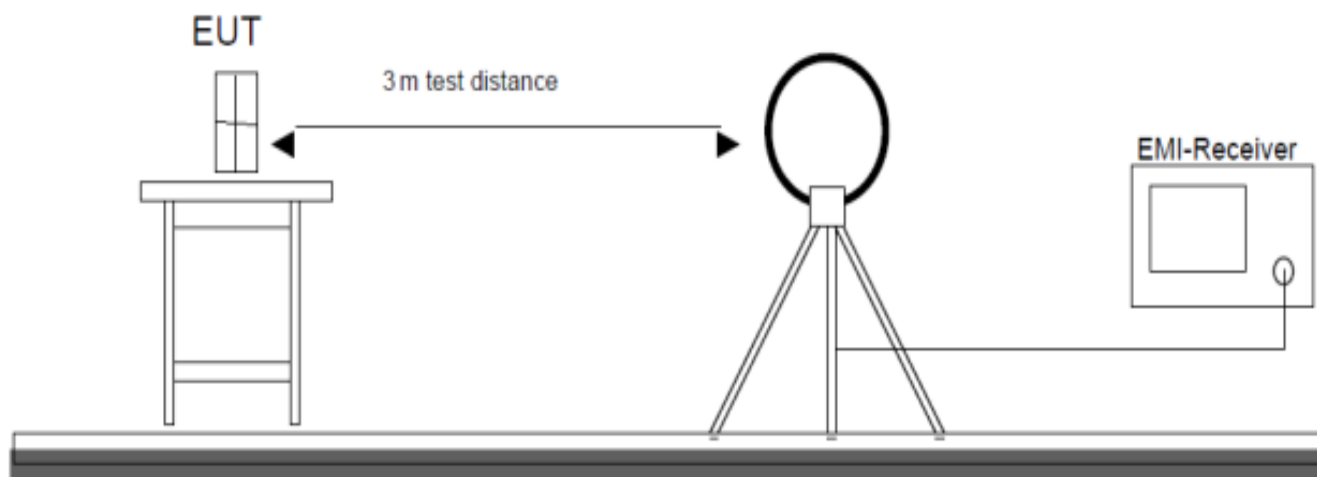


Figure 1: Frequency Range 9 kHz- 30 MHz

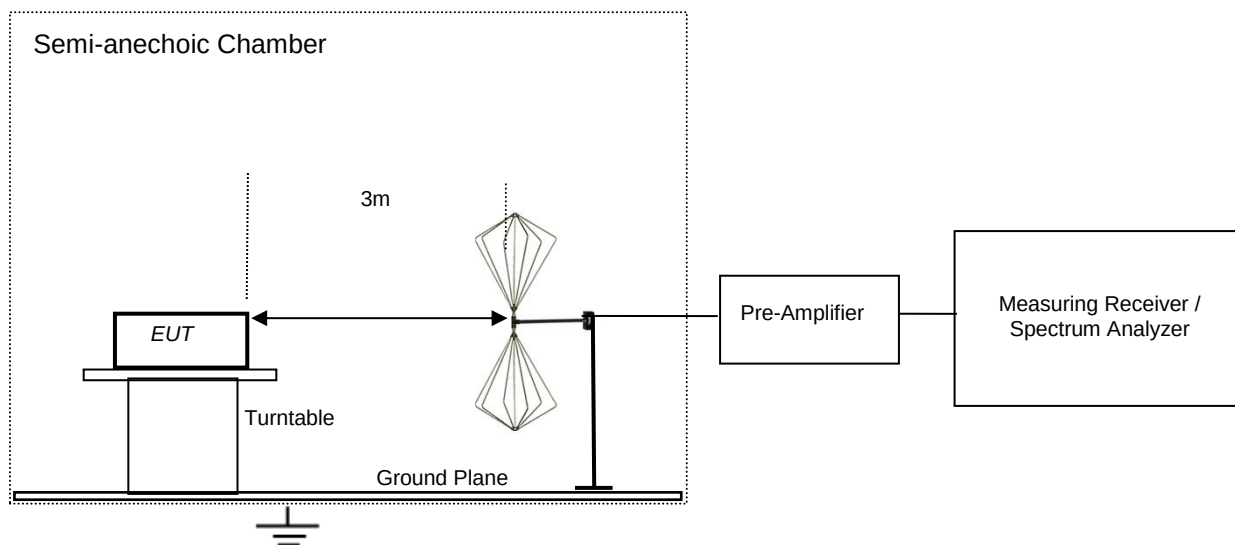


Figure 2: Frequency Range 30 MHz – 200 MHz

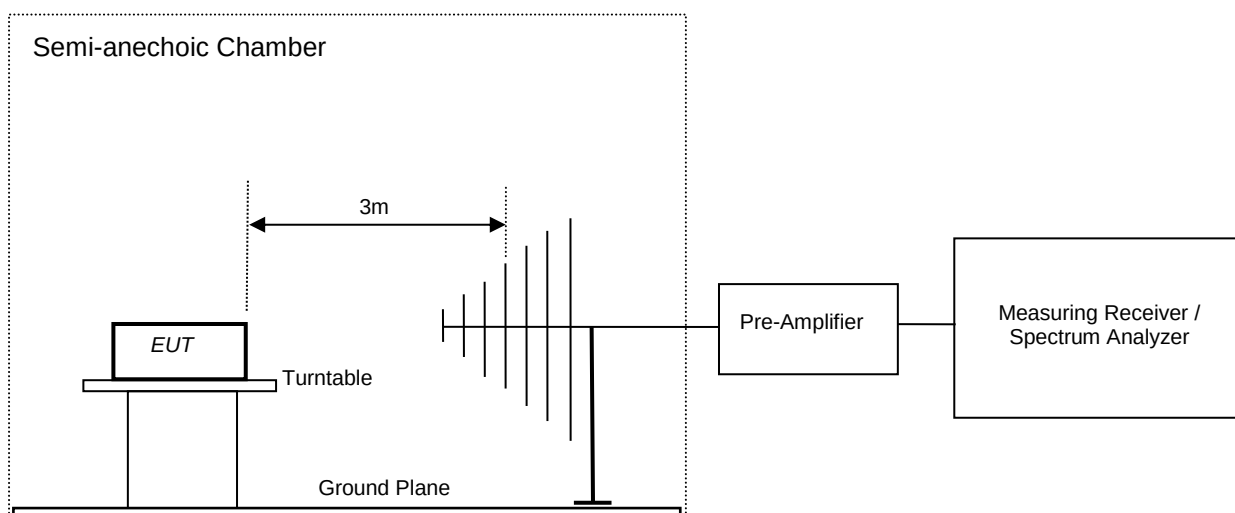


Figure 3: Frequency Range 200 MHz - 1GHz

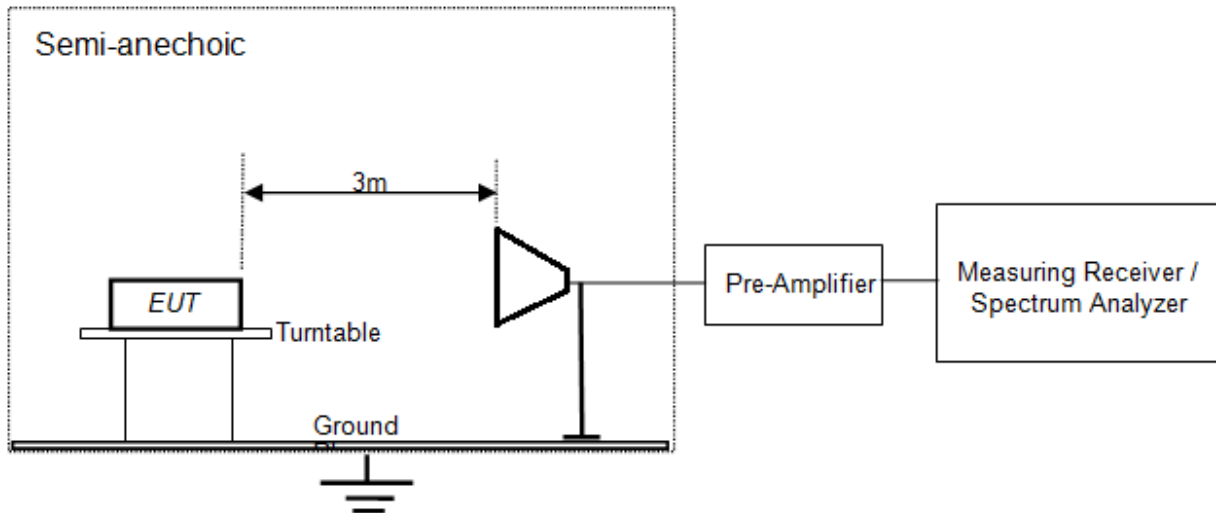


Figure 4: Frequency Range above 1 GHz

6 Test Results

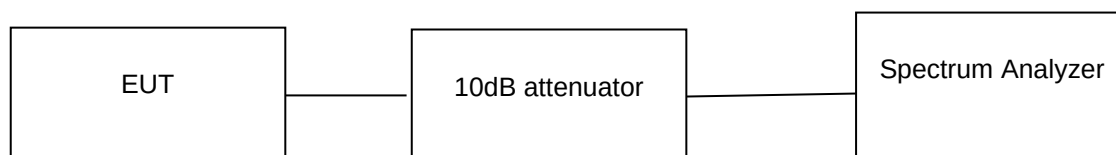
6.1 Maximum conducted output power

Result

Verified

Test Specification	FCC part 15 Subpart C 15.247 (b)(3)
Measurement Bandwidth	1 MHz
Detector	Peak
Requirement	≤ 1 W (30 dBm)

Test Method:



Test results:

10 dB attenuator + 0.8 Cable loss = 10.8 dB offset is considered in below result

Note: Measurements were made as per section 9.1.1 in KDB 558074 D01 DTS Meas Guidance v04.

Test Results:

FCC ID	Channel	Frequency (MHz)	Verified output power (dBm)	Limit (dBm)
PBR-SZMDLNR1	Low	2405	2.09	30
	Mid	2440	2.59	30
	High	2480	2.25	30
PBR-SZMDLNR1	Low	2405	2.49	30
	Mid	2440	3.05	30
	High	2480	2.79	30
PBR-SZMDLBR1	Low	2405	10.50	30
	Mid	2440	10.18	30
	High	2480	9.79	30
PBR-SZMDLM3BR1	Low	2405	18.93	30
	Mid	2440	18.45	30
	25	2475	17.73	30
	High	2480	10.90	30

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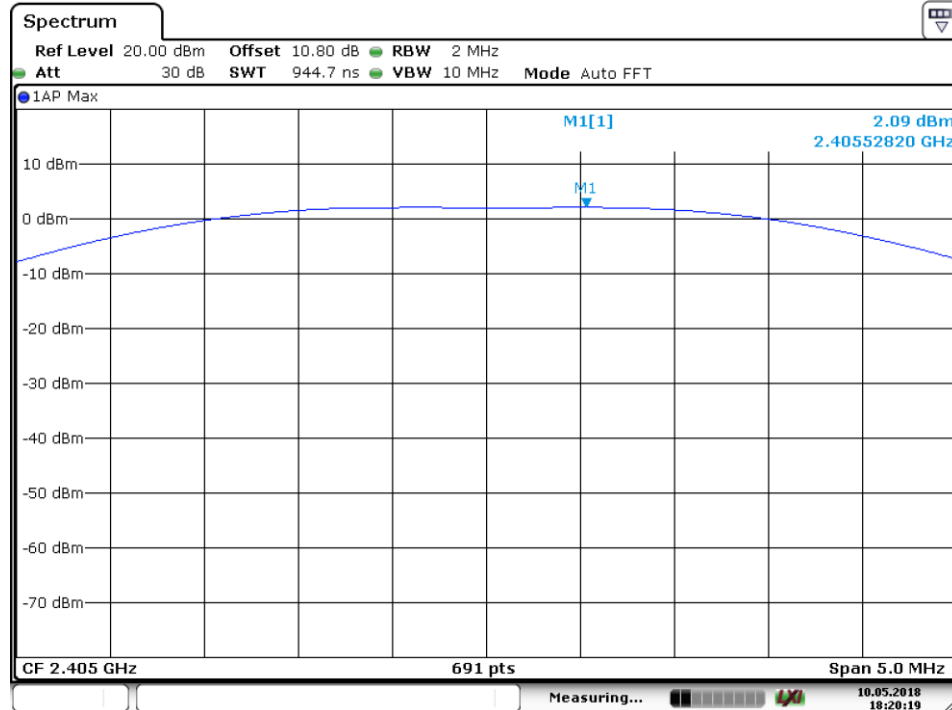
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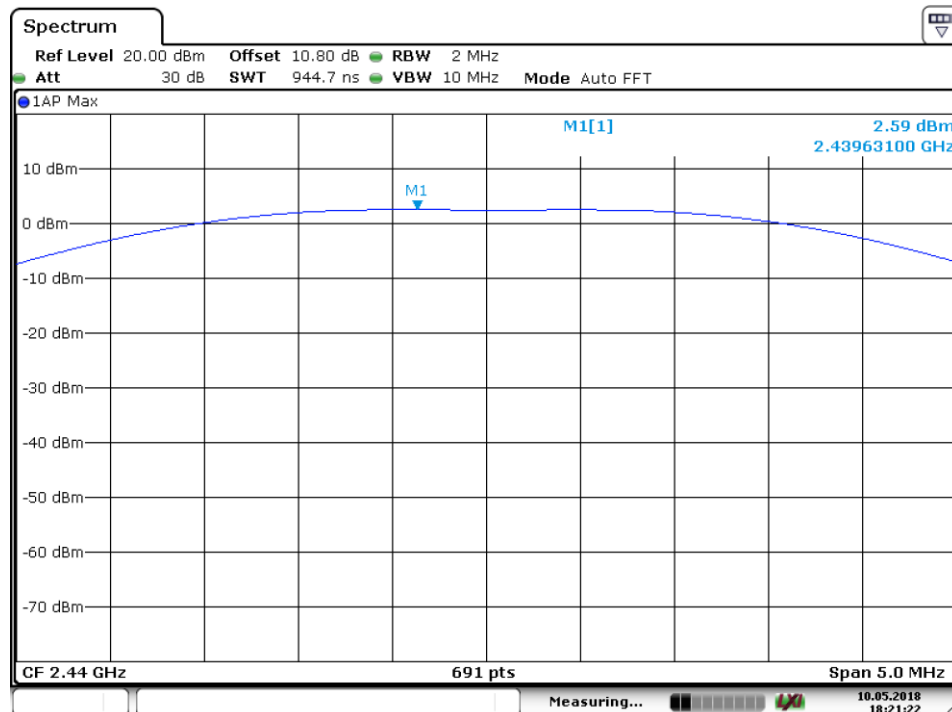
Test results:

ZigBee (with FCC ID: PBR-SZMDLNR1)



Date: 10.MAY.2018 18:20:19

Channel low



Date: 10.MAY.2018 18:21:22

Channel mid

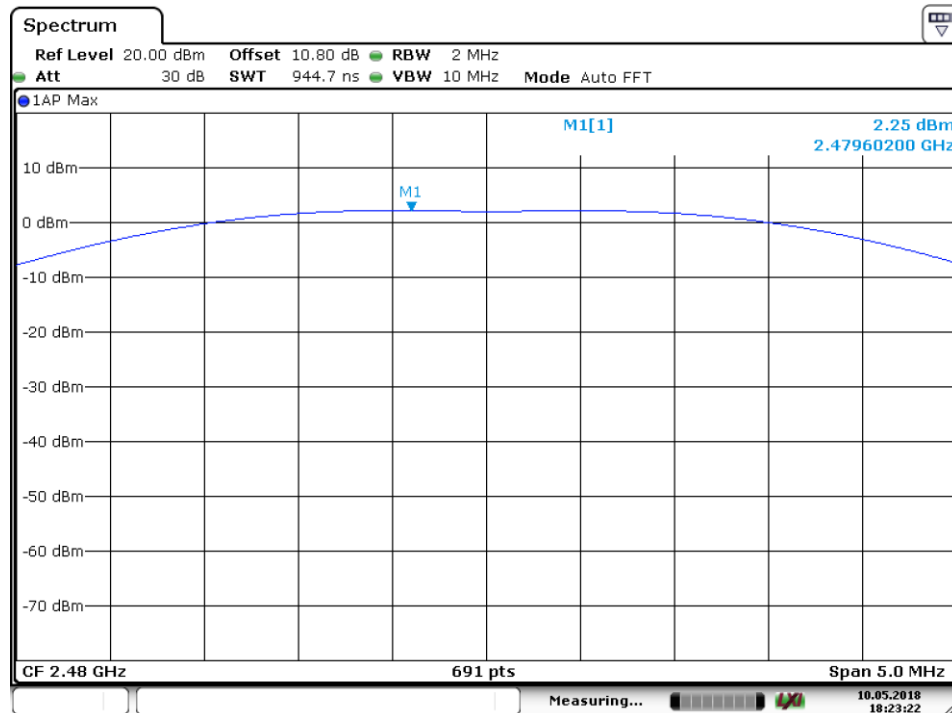
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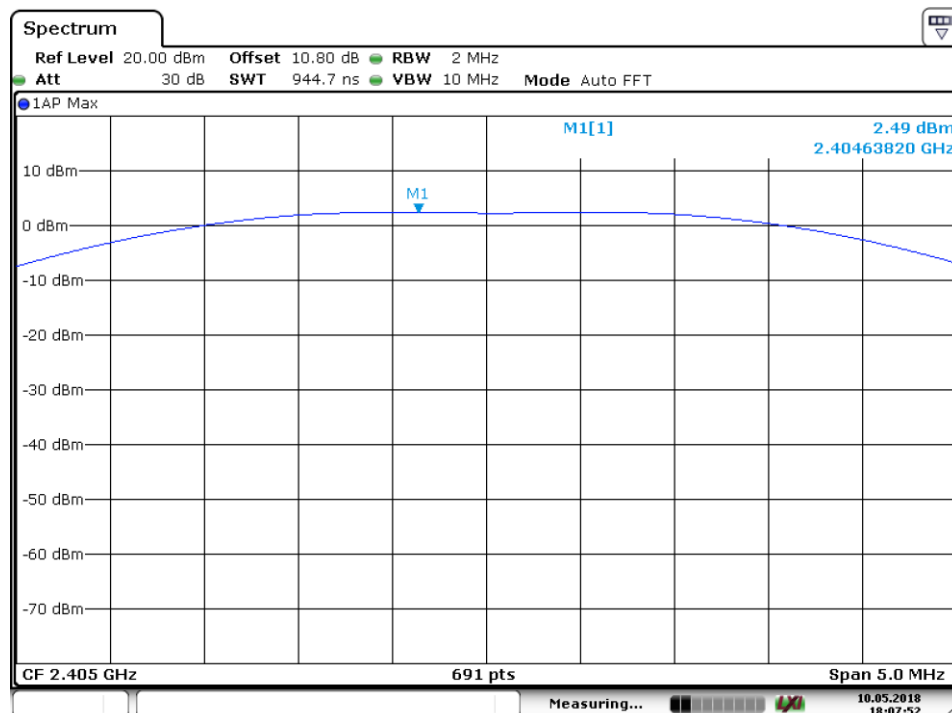
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Date: 10.MAY.2018 18:23:23

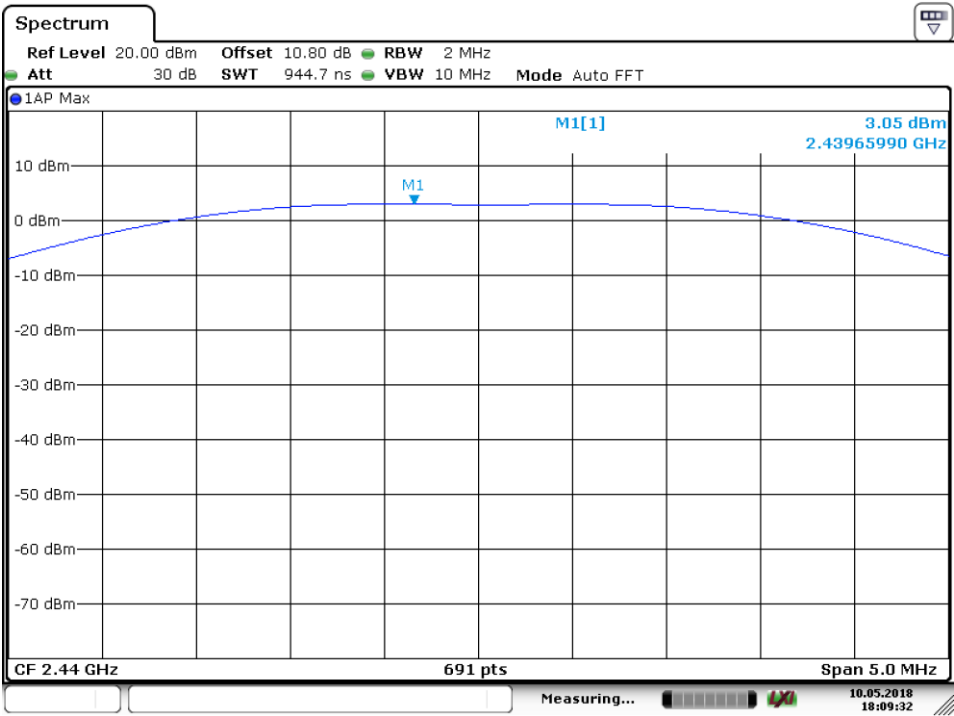
Channel high

ZigBee (with FCC ID: PBR-SZMDLNR1)



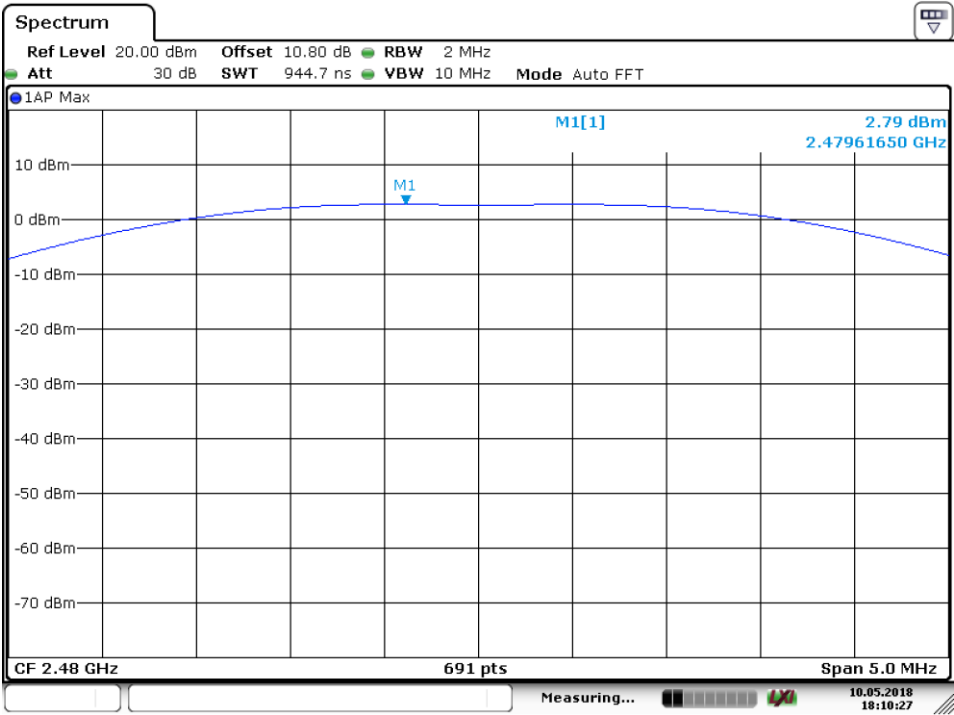
Date: 10.MAY.2018 18:07:52

Channel low



Date: 10.MAY.2018 18:09:33

Channel mid



Date: 10.MAY.2018 18:10:27

Channel high

Prüfbericht - Nr.:

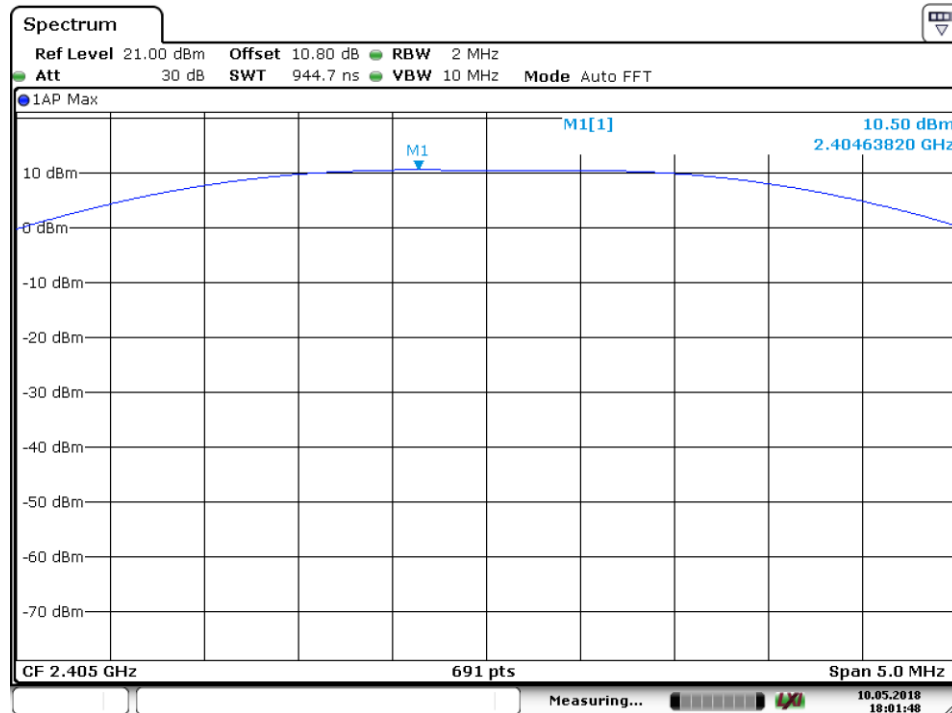
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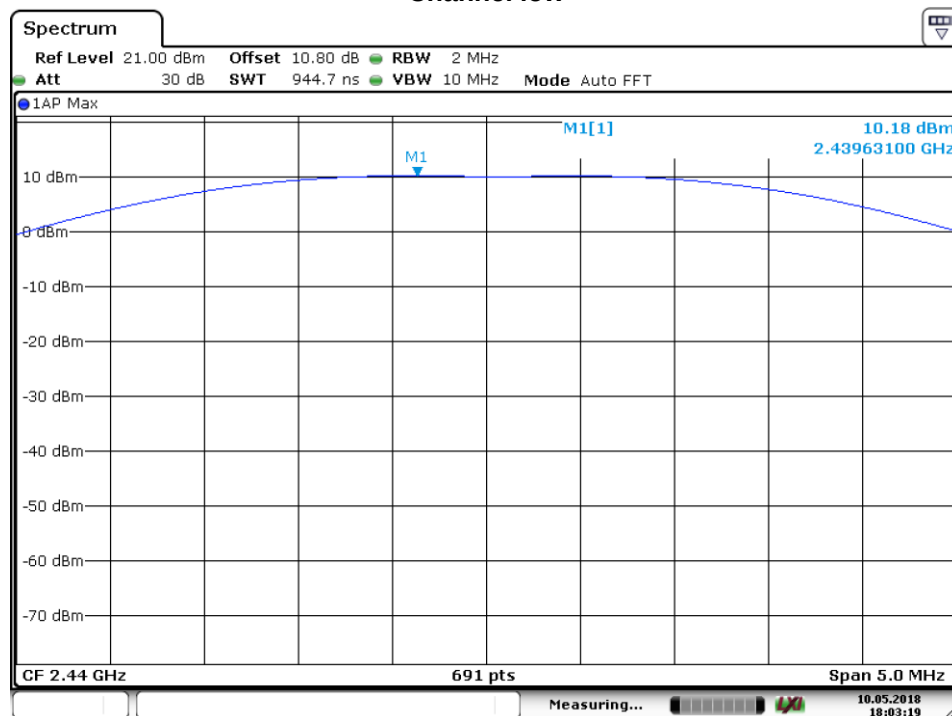
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ZigBee (with FCC ID: PBR-SZMDLBR1)



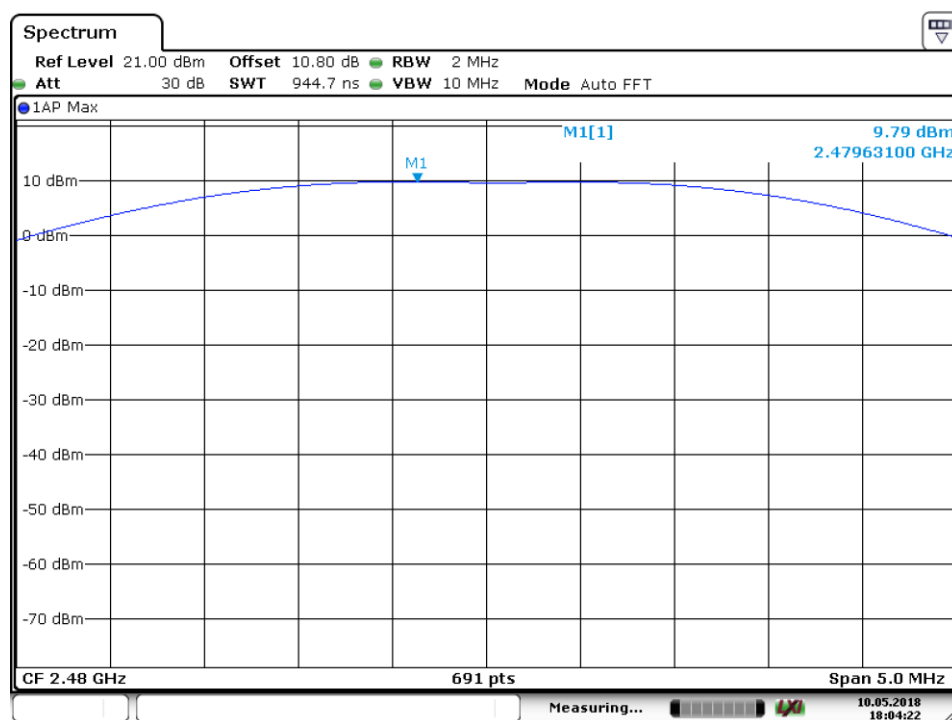
Date: 10.MAY.2018 18:01:48

Channel low



Date: 10.MAY.2018 18:03:19

Channel mid



Date: 10.MAY.2018 18:04:22

Channel high

- Power table for simultaneous transmissions of the ZigBee modules

Channel Frequency	ZigBee (PBR-SZMDLNR1)	ZigBee (PBR-SZMDLNR1)	ZigBee (PBR-SZMDLBR1)	ZigBee (PBR-SZMDLM3BR1)	Sum	Sum
	mW	mW	mW	mW	mW	dBm
2405	1.618	1.774	11.22	78.16	92.77	19.67
2440	1.815	2.018	10.42	69.98	84.23	19.25
2480	1.678	1.901	9.52	12.30	25.39	14.04

Maximum possible power value = 1.815 mW + 2.018 mW + 11.22 mW + 78.16 mW = 93.213 mW = 19.69 dBm

Note: Transmitter output signals from the modules are declared as Uncorrelated.

6.2 Restricted bands of Emissions & Restricted Bands of Operation

Result

Pass

Test Specification	FCC part 15 Subpart C Section 15.247(d) / (15.209 & 15.205)
Test Method	ANSI C 63.10 – 2013
Measurement Location	Semi Anechoic Chamber
Measuring Distance	3 m
Detector	QP for frequency below 1 GHz, Average for frequency above 1 GHz
Requirement	As per the limits mentioned in the below table

Table 5: Limits for Radiated Emission of Section 15.209:

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Distance of Measurement (m)
0.009 – 0.490	2400/F(kHz)	48.50 – 13.80	300*
0.490 – 1.705	24000/F(kHz)	33.80 – 23.00	30*
1.705 -30	30	69.54	30*
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Remark: * the limit shows in the table above of frequency range 0.009 – 0.490, 0.490 – 1.705 MHz and 1.705-30MHz is at 300 meter, 30 meter and 30 meter range respectively, which corresponds to 128-93.8, 73.8 – 62.95, 69.54 dBμV/m at 3m range by extrapolation calculation and the measurement of loop antenna.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

Test results:

No emission found in the frequency range 9 KHz to 30 MHz

For frequency range 30 MHz - 1 GHz

Note: The product has digital devices which cannot control the functions of intentional radiator (ZigBee)) in such condition Radiated spurious emission for the frequency range from 30MHz to 1GHz was performed as per FCC part 15 subpart B 15.109, Class A requirement.

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FCC Part 15 Subpart B 15.109 Class A limits

Frequency MHz	Field Strength dBuV/m	Measured Distance (meter)	Field Strength (dBµV/m)
30-88	90.00	10.00	39.08
88-216	150.00	10.00	43.52
216-960	210.00	10.00	46.43
above 960	300.00	10.00	49.54

Table 6: Radiated Spurious Emissions for the range 30 MHz to 1 GHz

Polarization	Measured Frequency (MHz)	Radiated Spurious Emissions (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Vertical	38.95	23.23	39.08	-15.85
	66.26	20.78	39.08	-18.30
	125.01	26.22	43.52	-17.30
	250.00	32.26	46.43	-14.17
	500.00	23.85	46.43	-22.58
Horizontal	125.01	17.15	43.52	-26.37
	250.00	28.76	46.43	-17.67
	500.00	26.58	46.43	-19.85

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Test results for frequency range 1 GHz to 26.5 GHz

Table 7: ZigBee module with FCC ID:PBR-SZMDLBR1

Channel	Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Radiated Spurious Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Low	2405	Vertical	2390 (Pk)	38.5	74	-35.5
			2390 (Av)	27.27	54	-26.73
			2405 (Pk)	74.47	*	-
			2405 (Av)	69.56	*	-
			4810 (Pk)	51.95	74	-22.05
			4810 (Av)	40.24	54	-13.76
			7215(Pk)	59.17	74	-14.83
			7215(Av)	47.04	54	-6.96
		Horizontal	2390 (Pk)	39.79	74	-34.21
			2390 (Av)	27.43	54	-26.57
			2405 (Pk)	85.78	*	-
			2405 (Av)	80.66	*	-
			4810 (Pk)	53.31	74	-20.69
			4810 (Av)	43.96	54	-10.04
			7215(Pk)	59.68	74	-14.32
			7215(Av)	47.04	54	-6.96
Mid	2440	Vertical	2440(Pk)	73.76	*	-
			2440(Av)	67.96	*	-
			4880(Pk)	53.08	74	-20.92
			4880(Av)	40.82	54	-13.18
			7320(Pk)	59.96	74	-14.04
			7320(Av)	47.57	54	-6.43
		Horizontal	2440(Pk)	85.22	*	-
			2440(Av)	80.62	*	-
			4880(Pk)	54.67	74	-19.33
			4880(Av)	44.78	54	-9.22
High	2480	Vertical	2483.5 (Pk)	39.66	74	-34.34
			2483.5 (Av)	28.58	54	-25.42
			2480 (Pk)	74.51	*	-
			2480 (Av)	69.21	*	-
			4960 (Pk)	53.27	74	-20.73
			4960 (Av)	40.93	54	-13.07
			7440(Pk)	60.32	74	-13.68
			7440(Av)	48.23	54	-5.77
		Horizontal	2483.5 (Pk)	44.16	74	-29.84
			2483.5 (Av)	33.16	54	-20.84
			2480 (Pk)	84.69	*	-
			2480 (Av)	79.29	*	-
			4960 (Pk)	56.22	74	-17.78
			4960 (Av)	47.07	54	-6.93
			7440(Pk)	60.65	74	-13.35
			7440(Av)	48.27	54	-5.73

*-> Fundamental frequency
Pk-> Peak
Av-> Average

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Table 8: ZigBee module with FCC ID:PBR-SZMDLNR1

Channel	Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Radiated Spurious Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Low	2405	Vertical	2390 (Pk)	50.29	74	-23.71
			2390 (Av)	32.49	54	-21.51
			2405 (Pk)	86.08	*	-
			2405 (Av)	78.74	*	-
			4810 (Pk)	51.85	74	-22.15
			4810 (Av)	39.88	54	-14.12
			7215(Pk)	59.11	74	-14.89
			7215(Av)	47.05	54	-6.95
		Horizontal	2390 (Pk)	43.24	74	-30.76
			2390 (Av)	29.03	54	-24.97
			2405 (Pk)	98.67	*	-
			2405 (Av)	93.74	*	-
			4810 (Pk)	52.8	74	-21.20
			4810 (Av)	41.1	54	-12.90
			7215(Pk)	60.08	74	-13.92
			7215(Av)	47.09	54	-6.91
Mid	2440	Vertical	2440(Pk)	85.75	*	-
			2440(Av)	79.63	*	-
			4880(Pk)	52.6	74	-21.4
			4880(Av)	40.24	54	-13.76
			7320(Pk)	59.77	74	-14.23
			7320(Av)	47.59	54	-6.41
		Horizontal	2440(Pk)	98.73	*	-
			2440(Av)	92.98	*	-
			4880(Pk)	54.14	74	-19.86
			4880(Av)	41.09	54	-12.91
			7320(Pk)	59.8	74	-14.20
			7320(Av)	47.62	54	-6.38
High	2480	Vertical	2483.5 (Pk)	44.47	74	-29.53
			2483.5 (Av)	35.69	54	-18.31
			2480 (Pk)	85.51	*	-
			2480 (Av)	80.06	*	-
			4960 (Pk)	52.73	74	-21.27
			4960 (Av)	40.35	54	-13.65
			7440(Pk)	60.36	74	-13.64
			7440(Av)	48.26	54	-5.74
		Horizontal	2483.5 (Pk)	58.36	74	-15.64
			2483.5 (Av)	50.38	54	-3.62
			2480 (Pk)	100.14	*	-
			2480 (Av)	94.89	*	-
			4960 (Pk)	52.74	74	-21.26
			4960 (Av)	41.34	54	-12.66
			7440(Pk)	60.6	74	-13.40
			7440(Av)	48.27	54	-5.73

*-> Fundamental frequency

Pk-> Peak

Av-> Average

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Table 9: ZigBee module with FCC ID:PBR-SZMDLNR1

Channel	Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Radiated Spurious Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Low	2405	Vertical	2390 (Pk)	39.49	74	-34.51
			2390 (Av)	27.36	54	-26.64
			2405 (Pk)	86.04	*	-
			2405 (Av)	79.97	*	-
			4810 (Pk)	52.28	74	-21.72
			4810 (Av)	39.77	54	-14.23
			7215(Pk)	59.82	74	-14.18
			7215(Av)	46.99	54	-7.01
		Horizontal	2390 (Pk)	39.69	74	-34.31
			2390 (Av)	28.16	54	-25.84
			2405 (Pk)	99.46	*	-
			2405 (Av)	94.37	*	-
			4810 (Pk)	53.54	74	-20.46
			4810 (Av)	42.48	54	-11.52
			7215(Pk)	59.68	74	-14.32
			7215(Av)	47.1	54	-6.90
Mid	2440	Vertical	2440(Pk)	86.46	*	-
			2440(Av)	81.48	*	-
			4880(Pk)	52.91	74	-21.09
			4880(Av)	40.18	54	-13.82
			7320(Pk)	59.67	74	-14.33
			7320(Av)	47.57	54	-6.43
		Horizontal	2440(Pk)	99.92	*	-
			2440(Av)	91.3	*	-
			4880(Pk)	53.23	74	-20.77
			4880(Av)	42.76	54	-11.24
High	2480	Vertical	2483.5 (Pk)	47.19	74	-26.81
			2483.5 (Av)	37.6	54	-16.40
			2480 (Pk)	87.2	*	-
			2480 (Av)	81.41	*	-
			4960 (Pk)	52.65	74	-21.35
			4960 (Av)	40.45	54	-13.55
			7440(Pk)	60.53	74	-13.47
			7440(Av)	48.28	54	-5.72
		Horizontal	2483.5 (Pk)	61.7	74	-12.3
			2483.5 (Av)	47.14	54	-6.86
			2480 (Pk)	101.49	*	-
			2480 (Av)	97.53	*	-
			4960 (Pk)	53.13	74	-20.87
			4960 (Av)	42.33	54	-11.67
			7440(Pk)	60.54	74	-13.46
			7440(Av)	48.25	54	-5.75

*-> Fundamental frequency
Pk-> Peak
Av-> Average

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Table 10: ZigBee module with FCC ID:PBR-SZMDLM3BR1

Channel	Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Radiated Spurious Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low	2405	Vertical	2390 (Pk)	47.75	74	27.64
			2390 (Av)	31.04	54	-22.96
			2405 (Pk)	101.64	*	-
			2405 (Av)	98.73	*	-
			4810 (Pk)	55.37	74	-18.63
			4810 (Av)	44.74	54	-9.26
			7215(Pk)	63.25	74	-10.75
			7215(Av)	51.93	54	-2.07
		Horizontal	2390 (Pk)	49.68	74	-24.32
			2390 (Av)	35.73	54	-18.27
			2405 (Pk)	108.09	*	-
			2405 (Av)	104.01	*	-
			4810 (Pk)	52.53	74	-21.47
			4810 (Av)	43.58	54	-10.42
			7215(Pk)	61.68	74	-12.32
			7215(Av)	49.87	54	-4.13
Mid	2440	Vertical	2440(Pk)	100.01	*	-
			2440(Av)	97.03	*	-
			4880(Pk)	54.61	74	-19.39
			4880(Av)	43.67	54	-10.33
			7320(Pk)	63.73	74	-10.27
			7320(Av)	51.97	54	-2.03
		Horizontal	2440(Pk)	106.89	*	-
			2440(Av)	103.34	*	-
			4880(Pk)	54.43	74	-19.57
			4880(Av)	42.4	54	-11.60
25	2475	Vertical	7320(Pk)	61.52	74	-12.48
			7320(Av)	50.19	54	-3.81
		Horizontal	2475(Pk)	100.02	*	-
			2475(Av)	96.83	*	-
			4950(Pk)	54.77	74	-19.23
			4950(Av)	43.7	54	-10.30
		Vertical	7425(Pk)	63.7	74	-10.30
			7425(Av)	52.07	54	-1.93
			2475(Pk)	107.7	*	-
			2475(Av)	104.71	*	-
			4950(Pk)	53.3	74	-20.70
			4950(Av)	41.31	54	-12.69
		Horizontal	7425(Pk)	60.51	74	-13.49
			7425(Av)	49.54	54	-4.46

*-> Fundamental frequency

Pk-> Peak

Av-> Average

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High	2480	Vertical	2483.5 (Pk)	48.3	74	-25.70
			2483.5 (Av)	40.2	54	-13.80
			2480 (Pk)	94.55	*	-
			2480 (Av)	91.05	*	-
			4960 (Pk)	52.67	74	-21.33
			4960 (Av)	40.26	54	-13.74
			7440(Pk)	60.17	74	-13.83
			7440(Av)	48.28	54	-5.72
		Horizontal	2483.5 (Pk)	56.43	74	-17.57
			2483.5 (Av)	46.78	54	-7.22
			2480 (Pk)	101.16	*	-
			2480 (Av)	97.71	*	-
			4960 (Pk)	54.03	74	-19.97
			4960 (Av)	40.63	54	-13.37
			7440(Pk)	60.44	74	-13.56
			7440(Av)	48.25	54	-5.75

Table 11: Simultaneous transmission of operation

Channel	Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Radiated Spurious Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Low	2405	Vertical	2390 (Pk)	48.15	74	29.69
			2390 (Av)	31.35	54	-22.65
			2405 (Pk)	103.69	*	-
			2405 (Av)	97.96	*	-
			4810 (Pk)	56.31	74	-17.69
			4810 (Av)	42.85	54	-11.15
			7215(Pk)	63.30	74	-10.70
			7215(Av)	52.40	54	-1.60
		Horizontal	2390 (Pk)	48.69	74	-25.31
			2390 (Av)	34.42	54	-19.58
			2405 (Pk)	110.25	*	-
			2405 (Av)	103.48	*	-
			4810 (Pk)	54.85	74	-19.15
			4810 (Av)	44.51	54	-9.49
			7215(Pk)	61.97	74	-12.03
			7215(Av)	49.59	54	-4.41
High	2480	Vertical	2483.5 (Pk)	52.75	74	-21.25
			2483.5 (Av)	43.46	54	-10.54
			2480 (Pk)	98.19	*	-
			2480 (Av)	91.33	*	-
			4960 (Pk)	54.22	74	-19.78
			4960 (Av)	43.7	54	-10.30
			7440(Pk)	60.14	74	-13.86
			7440(Av)	48.36	54	-5.64
		Horizontal	2483.5 (Pk)	62.68	74	-11.32
			2483.5 (Av)	53.11	54	-0.89
			2480 (Pk)	107.13	*	-
			2480 (Av)	99.54	*	-
			4960 (Pk)	56.2	74	-17.80
			4960 (Av)	47.54	54	-6.46
			7440(Pk)	60.43	74	-13.57
			7440(Av)	48.27	54	-5.73

*-> Fundamental frequency

Pk-> Peak

Av-> Average

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