



시험성적서

TEST REPORT

페이지(page) : (1) / 총(Total) (31)

성적서 번호 Report No.	ICRT-TR-E251544-0A	
신청자 Client	기관명 Name	Eta Electronics Co.,Ltd.
	주 소 Address	27, Sampung-ro, Gyeongsan-si, Gyeongsangbuk-do, Republic of Korea
시험대상품목 Sample description	Wireless Modules	
모델명 Type description	UTO-NBL-52	
정 격 Ratings	DC 3.3 V	
시험장소 Place of test	<input checked="" type="checkbox"/> 고정시험실(Permanent Testing Lab) <input type="checkbox"/> 현장시험(On Site Testing) 주소지(Address): 112, 113 Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea	
시험기간 Date of test	12. May. 2025 ~ 01. Aug. 2025	
시험방법/항목 Test Method/Item	FCC Part 15 Subpart C IC RSS-Gen & RSS-247	
시험결과 Test Results	Refer to 3. Test Summary	
확인 Affirmation	작성자 Tested by 성명 Name Tae-Yeong, Gim 	기술책임자 Technical Manager 성명 Name Yong-Min, Won

위 성적서는 고객이 제공한 시료에 대한 시험결과입니다.

The above test report is certified that the above mentioned products have been tested for the sample.

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The above test report is not related to accreditation by KS Q ISO/IEC 17025 and Korea Laboratory Accreditation scheme.

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2025. 08. 04

주식회사 아이씨알 대표이사

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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
ICRT-TR-E251544-0A	2025. 08. 04	Initial Issue	All



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1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant information

Applicant	Eta Electronics Co.,Ltd.
Address	27, Sampung-ro, Gyeongsan-si, Gyeongsangbuk-do, Republic of Korea

1.2 Manufacturer Information

Applicant	Eta Electronics Co.,Ltd.
Address	27, Sampung-ro, Gyeongsan-si, Gyeongsangbuk-do, Republic of Korea

1.3 Test Laboratory Information

Laboratory	ICR Co., Ltd.
Address	112, Hwanggeum 3-ro 7beon-gil, Hagun-ri, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea
Telephone No.	+82-2-6351-9002
Fax No.	+82-2-6351-9007
KOLAS No.	KT652
KC & FCC	KR0165

1.4 Measurement Uncertainty

Parameter	Uncertainty	Limit
Occupied Channel Bandwidth	0.14%	±5 %
RF output power, conducted	0.85 dB	±1.5 dB
Power Spectral Density, conducted	1.44 dB	±3 dB
Unwanted Emissions, conducted	1.35 dB	±3 dB
Supply voltages	0.02%	±3 %
Time	0.58%	±5 %
All emissions, radiated (Under the 30 MHz)	2.10 dB	±6 dB
All emissions, radiated (Range 30 MHz ~ 1 GHz)	1.95 dB	±6 dB
All emissions, radiated (Range 1 GHz ~ 18 GHz)	2.47 dB	±6 dB
All emissions, radiated (Range 18 GHz ~ 26.5 GHz)	2.61 dB	±6 dB



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2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	Wireless Modules
Model Name	UTO-NBL-52
Additional Model Name	-
FCC ID	2BO6O-NBL52
ISED certification number	33929-NBL52
Test device serial No.	ETB250701
Power Supply	DC 3.3 V

2.2 Additional Information

Equipment Class	DTS-Digital Transmission System	
Device Type	Stand-alone	
Operating Frequency	Bluetooth LE 1M	2 402 MHz ~ 2 480 MHz
RF Output Power	Bluetooth LE 1M	-0.99 dBm
Number of Channel	Bluetooth LE 1M	40
Modulation Type	GFSK	
Antenna Type	Dipol Antenna, PCB Antenna	
Antenna Gain	Dipol Antenna	4.01 dBi
	PCB Antenna	-2.36 dBi

2.3 Modifications of EUT

- None



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3. Test Summary

3.1 Test standards and results

FCC Part 15 Subpart C & IC RSS-Gen & RSS-247				
FCC Part Section	RSS Section	Test items	Applied	Results
§15.247 (a) (2)	RSS-247 6.3.1 (a)	6 dB Bandwidth	■	PASS
N/A	RSS-Gen 6.7	99 % Bandwidth	■	PASS
§15.247 (b) (3)	RSS-247 6.3.2	Maximum Conducted Output Power	■	PASS
§15.247 (e)	RSS-247 6.3.1 (b)	Power Spectral Density	■	PASS
§15.247 (d)	RSS-247 6.6	Conducted Spurious Emission & Band edge	■	PASS
§15.247 (d) & §15.209 & § 15.205	RSS-Gen 8.9 & RSS-Gen 8.10 & RSS-247 6.6	Radiated Spurious Emission	■	PASS
§15.207 (a)	RSS-Gen 8.8	AC Conducted Emissions	■	PASS

3.2 Purpose of the test

- To determine whether the equipment under test fulfills the requirements of the standards stated in section 3.1 and the provision of Article 3.2 of Directive 2014/53/EU

3.3 Test Methodology

- Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

3.4 Configuration of Test System

- Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013. Radiated testing was performed at a distance of 3 m from EUT to the antenna.

3.4.1 Radiated emission test

- Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions. Final radiated emission tests were conducted at 3 m Semi Anechoic Chamber. The turntable was rotated through 360 degrees and the EUT was tested by positioned three orthogonal planes to obtain the highest reading on the field strength meter. Once maximum reading was determined, the search antenna was raised and lowered in both vertical and horizontal polarization.



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3.5 Antenna requirement

- According to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi.

Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

- According to RSS-Gen Section 6.8, The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level.

However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

Result: Pass

The transmitter uses two types of antennas.

The directional gain of the dipole antenna is 4.01 dBi and The directional gain of the PCB antenna is -2.36 dBi.

The dipole antenna uses a fixed RP-SMA connector, which is considered a unique coupling method.

The RP-SMA connector prevents substitution with standard SMA antennas.

The antenna is not intended for user replacement.



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4. Test Result

4.1. 6 dB Bandwidth and 99 % Bandwidth

4.1.1 Test procedure

ANSI C63.10-2013 Clause 11.8

4.1.2 Limit

§15.247 (a) (2) & RSS-247 6.3.1 (a)

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

4.1.3 Test data

Result : Pass

Mode	Frequency (MHz)	6 dB Bandwidth Measured Value (MHz)	99 % Bandwidth Measured Value (MHz)	Limit (kHz)
Bluetooth LE 1M	2 402	0.71	1.04	at least 500
	2 440	0.71	1.05	
	2 480	0.72	1.05	

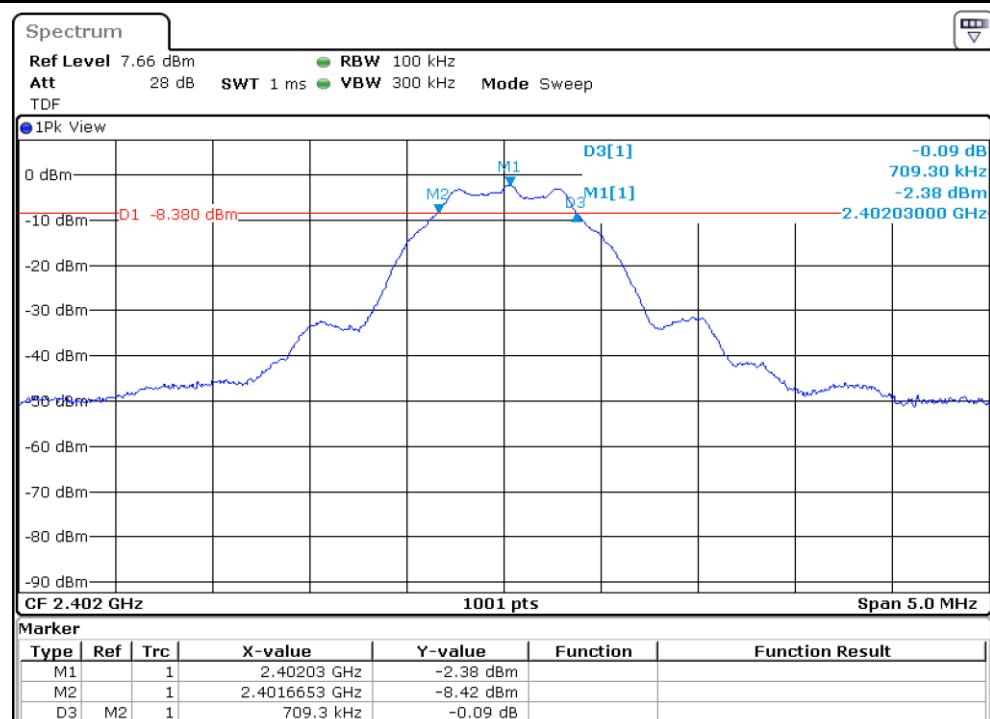


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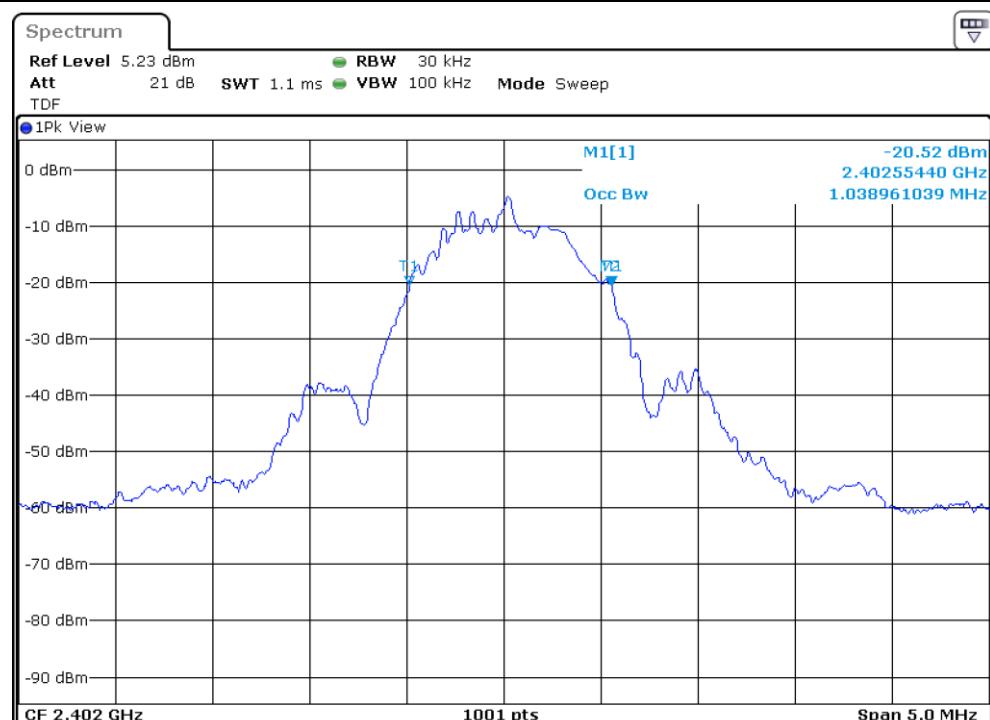
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6 dB Bandwidth_Bluetooth LE 1M_Low ch



99 % Bandwidth_Bluetooth LE 1M_Low ch



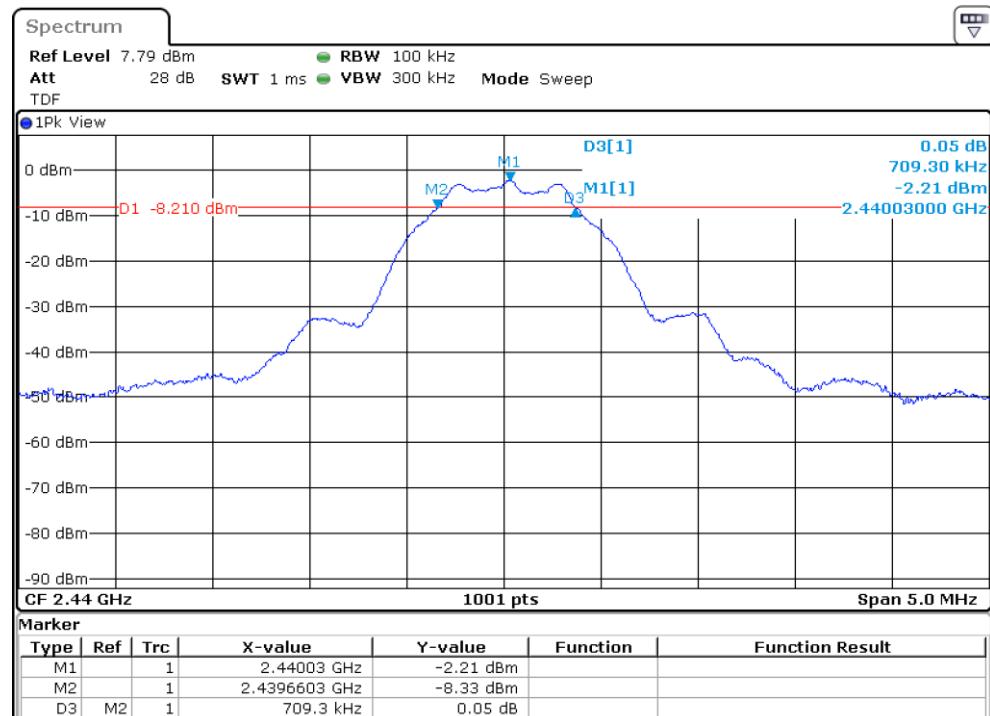


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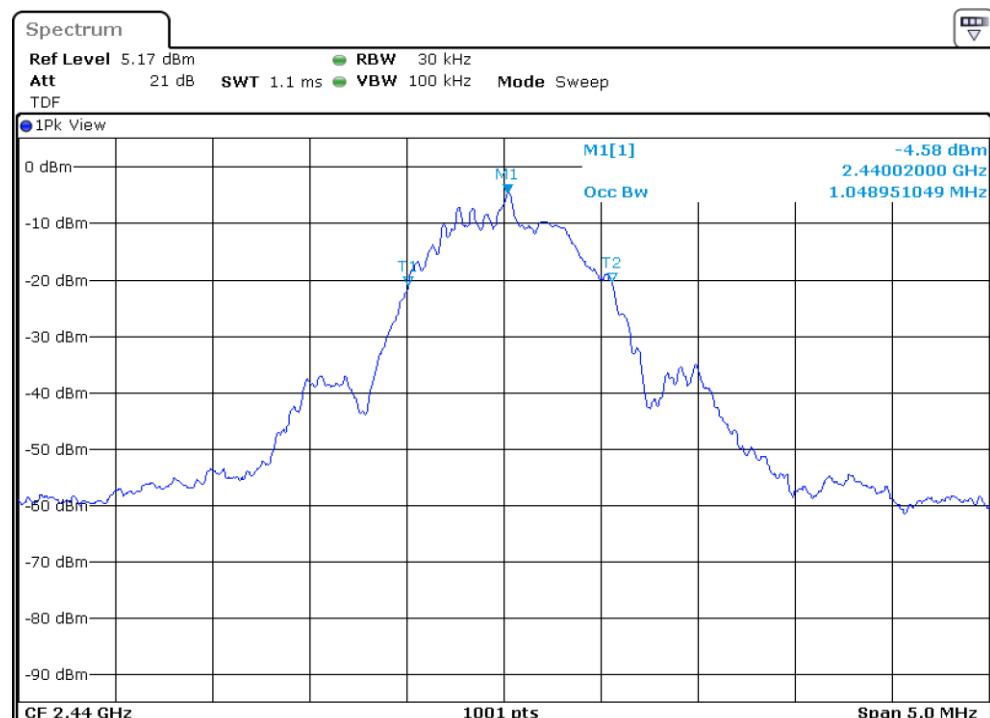
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6 dB Bandwidth_Bluetooth LE 1M_Mid ch



99 % Bandwidth_Bluetooth LE 1M_Mid ch



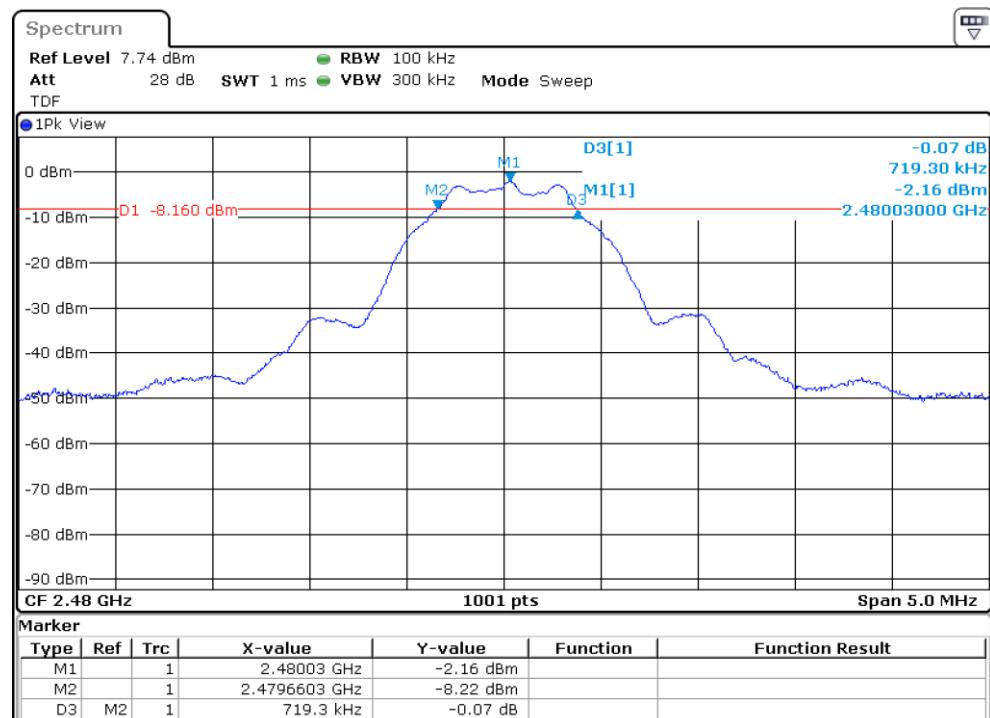


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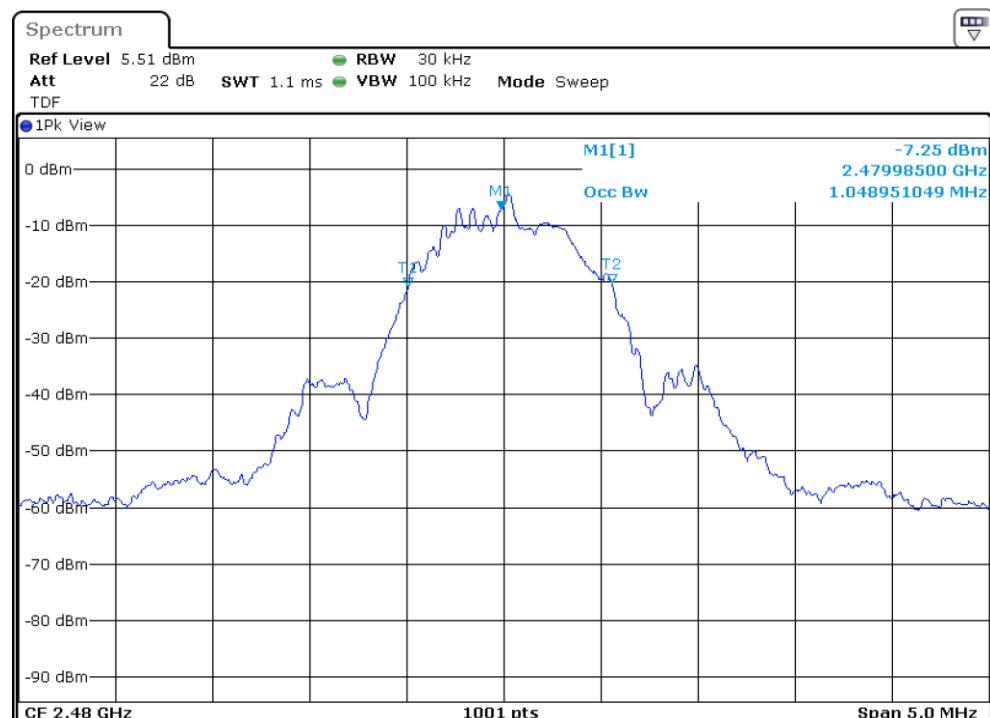
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6 dB Bandwidth_Bluetooth LE 1M_High ch



99 % Bandwidth_Bluetooth LE 1M_High ch





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4.2 Maximum Conducted Output Power

4.2.1 Test procedure

ANSI C63.10-2013 Clause 11.9

4.2.2 Limit

§15.247 (b) (3)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

RSS-247 6.3.2

For DTS operating in the band 902-928 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W.

For DTS operating in the band 2400-2483.5 MHz, the maximum peak conducted output powershall not exceed 1W, and the e.i.r.p. shall not exceed 4 W, except as provided in section 6.5 a)and b).

As an alternative to a peak power measurement, compliance can be based on a measurementof the maximum conducted output power.

4.2.3 Test data

Result : Pass

Mode	Frequency (MHz)	Measured Value (dBm)	Limit (dBm)
Bluetooth LE 1M	2 402	-0.99	30
	2 440	-1.06	
	2 480	-1.03	

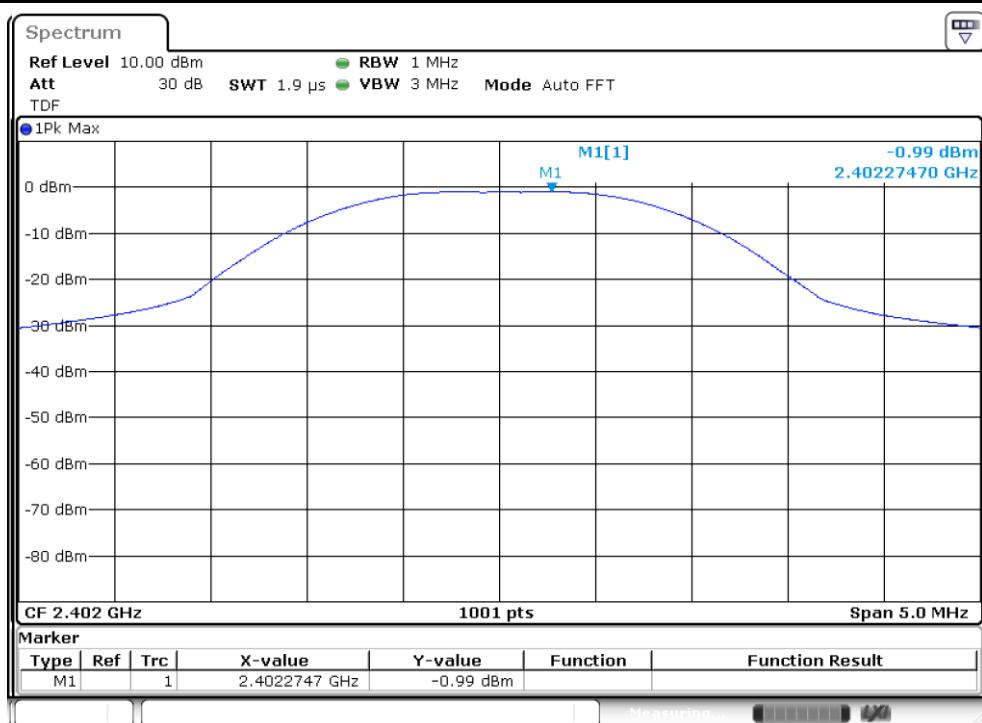


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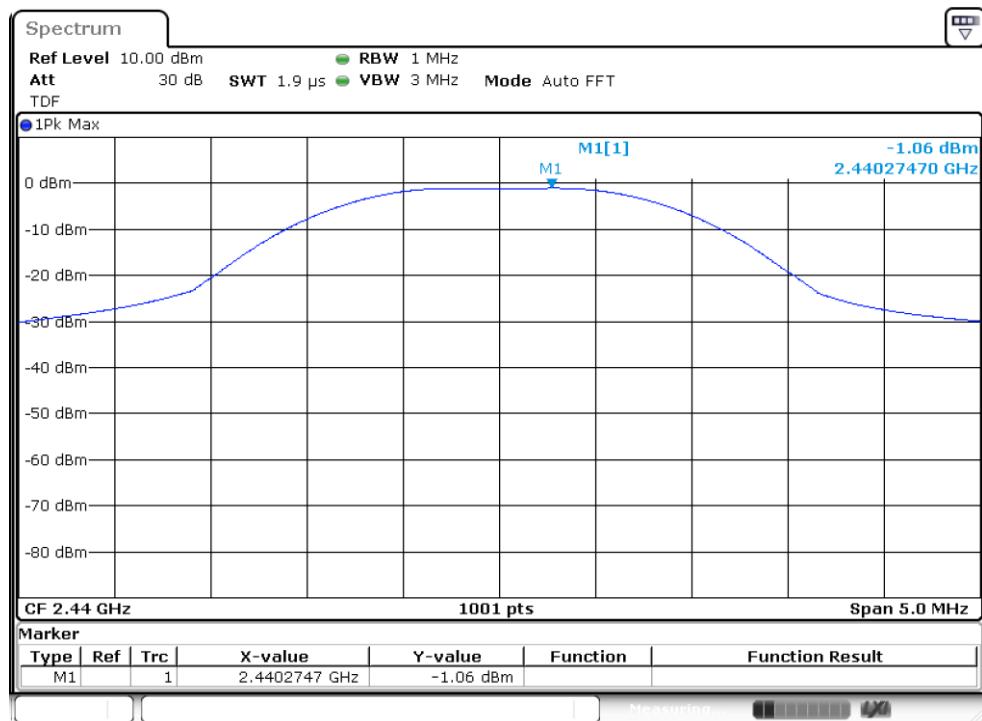
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Bluetooth LE 1M_Low ch



Bluetooth LE 1M_Mid ch



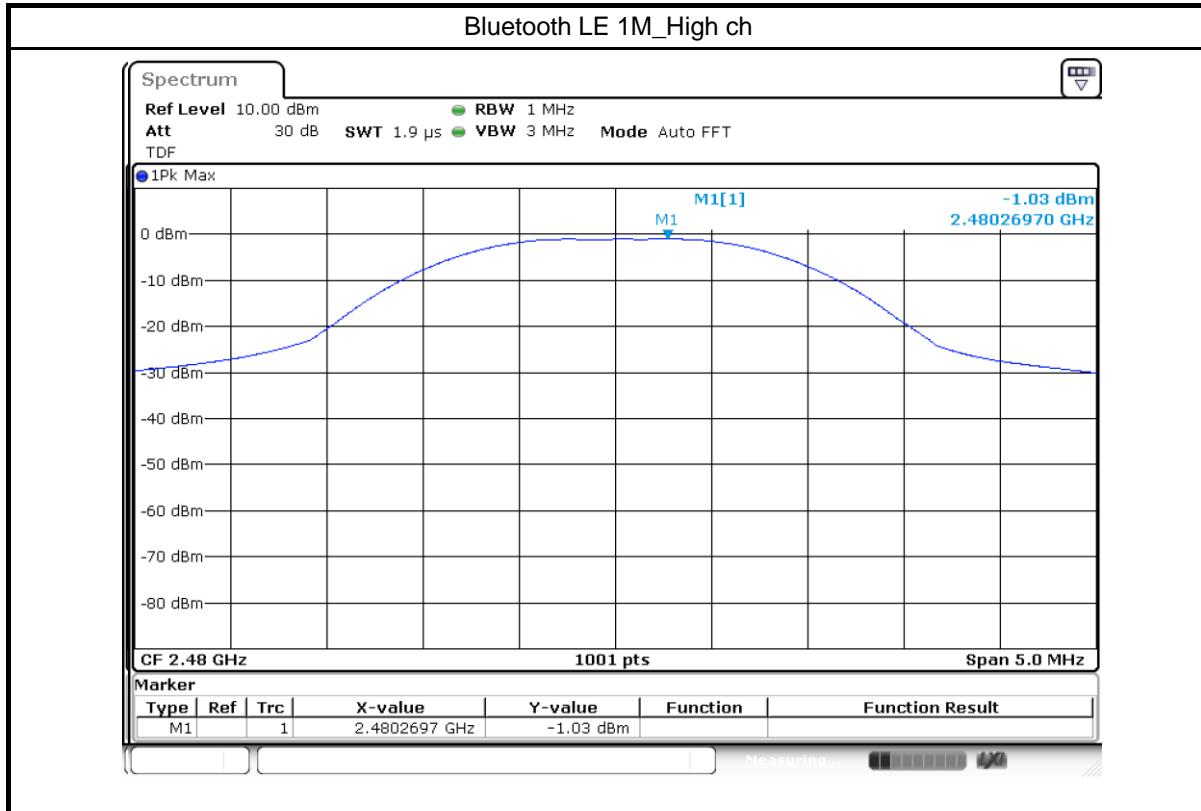


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Bluetooth LE 1M_High ch





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4.3 Power Spectral Density

4.3.1 Test procedure

ANSI C63.10-2013 Clause 11.10

4.3.2 Limit

§15.247 (e) & RSS-247 6.3.1 (b)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

4.3.3 Test data

Result : Pass

Mode	Frequency (MHz)	Measured Value (dBm)	Limit (dBm/3 kHz)	
Bluetooth LE 1M	2 402	-17.92	8	
	2 440	-17.68		
	2 480	-17.66		
Bluetooth LE 1M_Low ch				

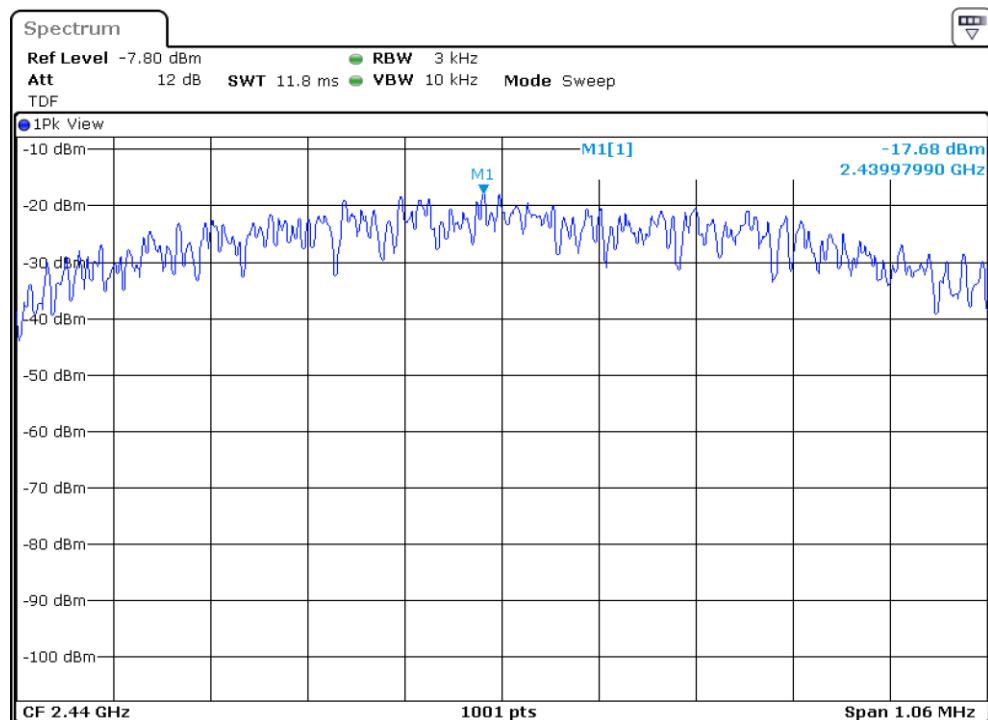


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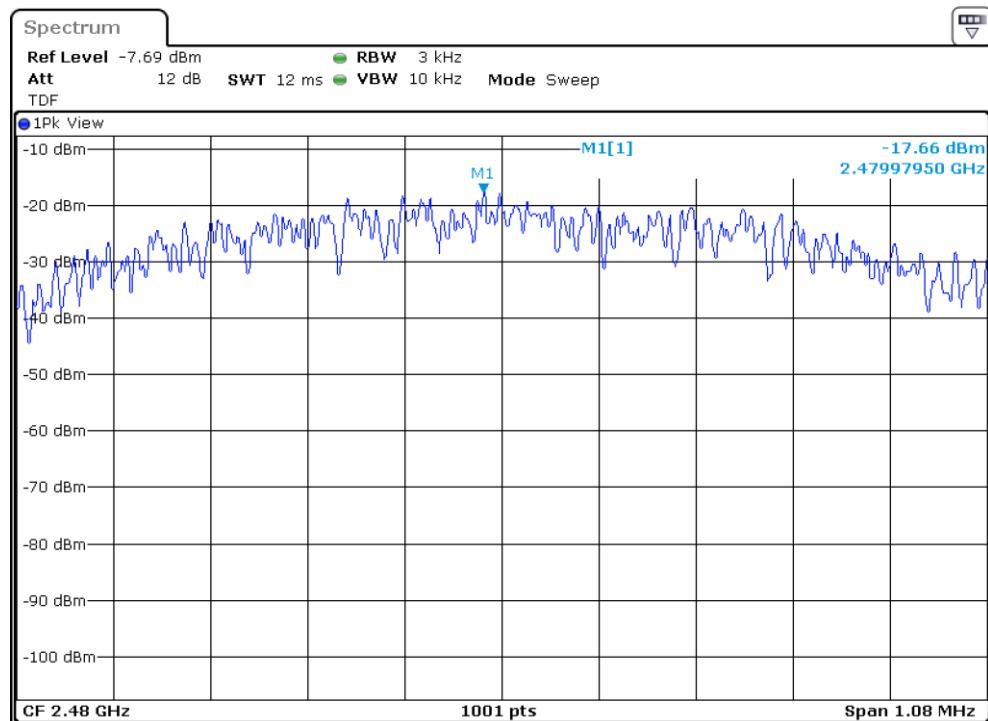
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Bluetooth LE 1M_Mid ch



Bluetooth LE 1M_High ch





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4.4 Conducted Spurious Emission & Band Edge

4.4.1 Test procedure

ANSI C63.10-2013 Clause 11.11, 11.13

4.4.2 Limit

§15.247 (d) & RSS-247 (6.6)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

4.4.3 Test data

Result : Pass

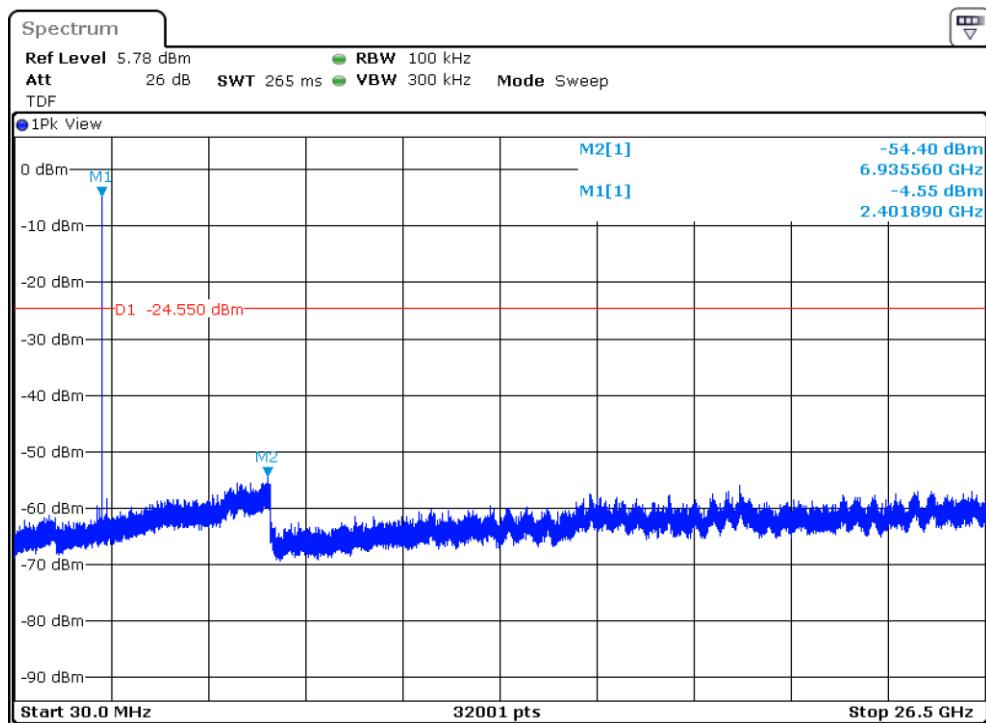


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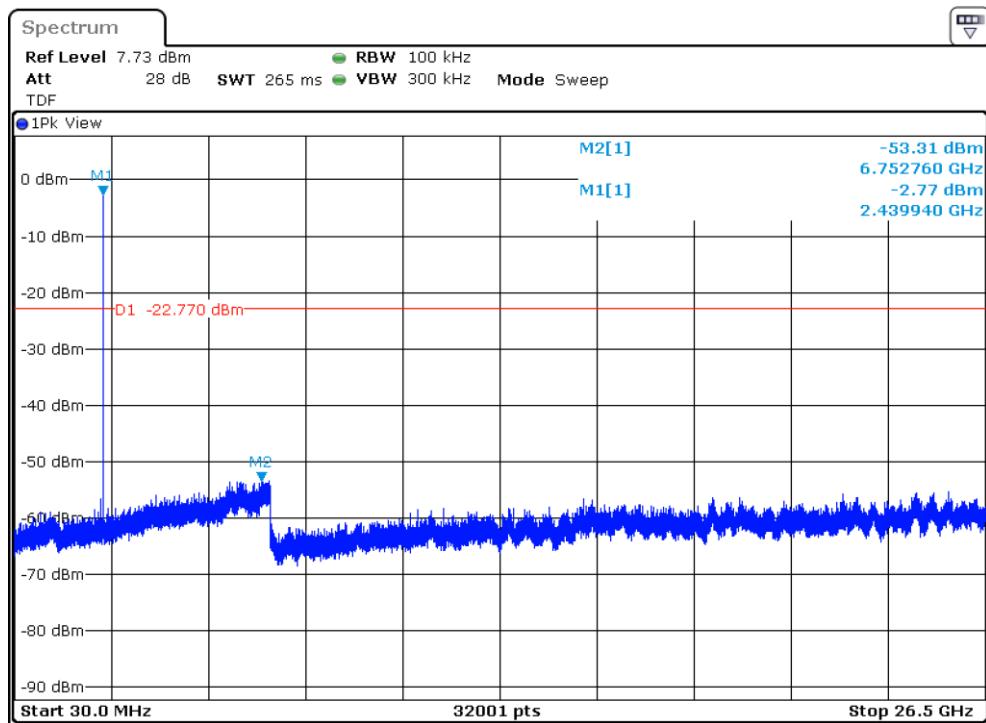
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Conducted Spurious Emission_Bluetooth LE 1M_Low ch



Conducted Spurious Emission_Bluetooth LE 1M_Mid ch



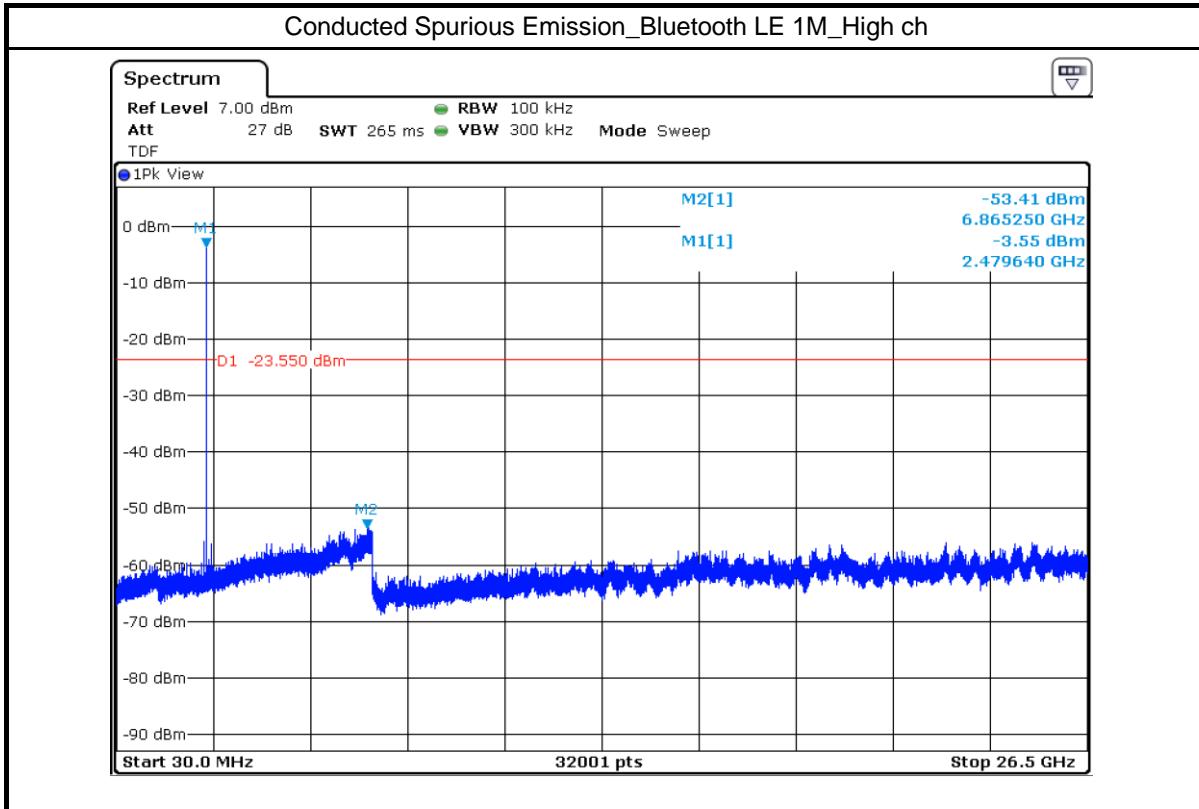


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Conducted Spurious Emission_Bluetooth LE 1M_High ch



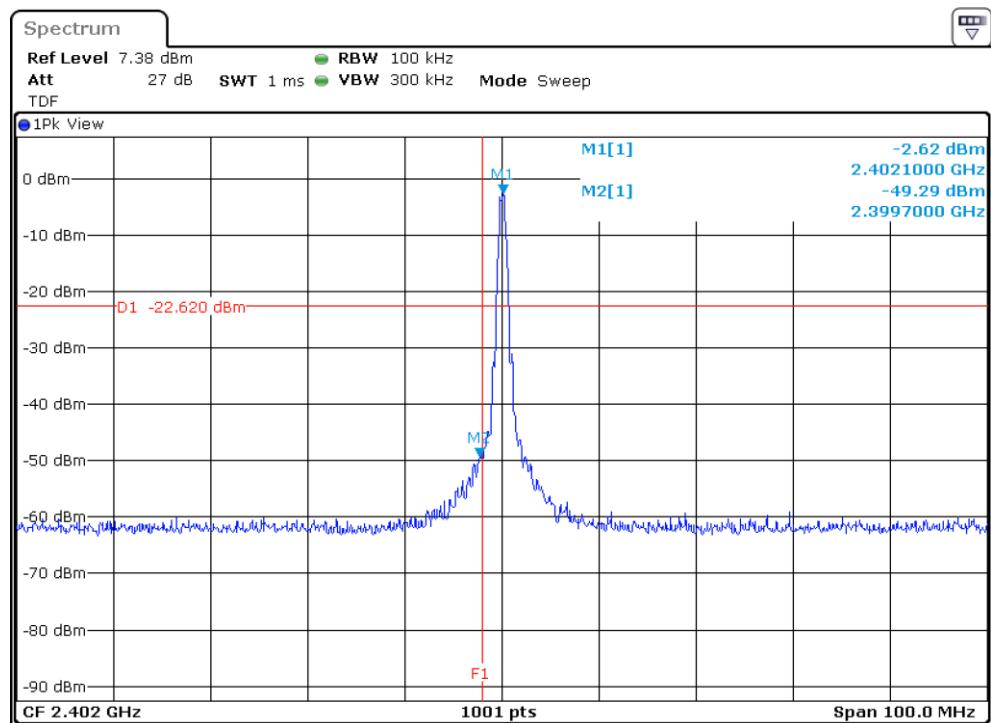


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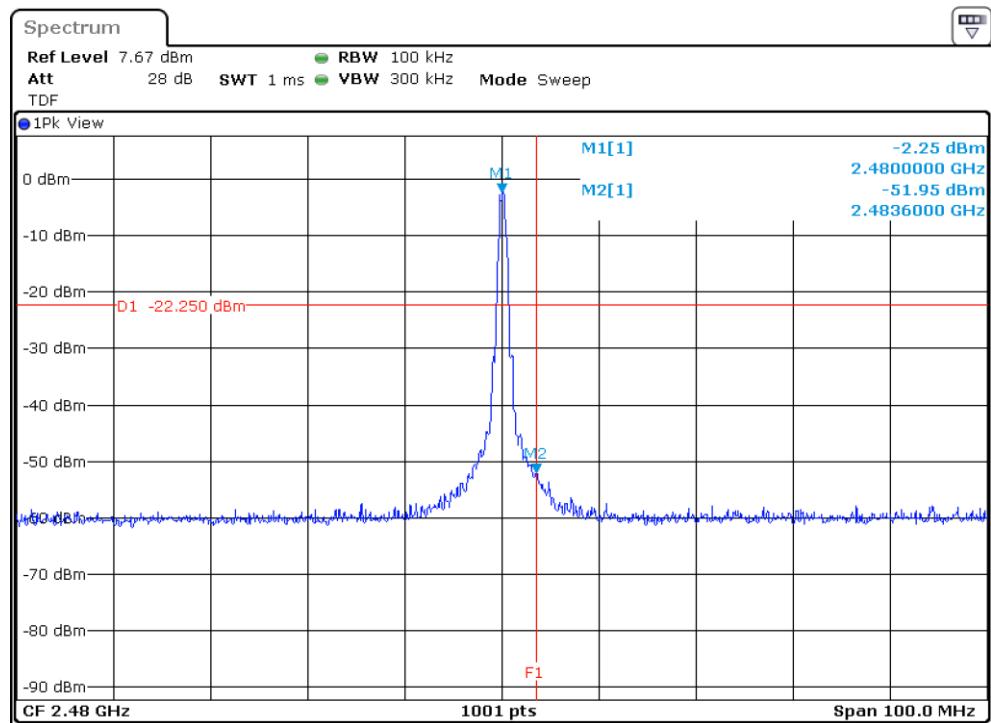
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Band Edge_Bluetooth LE 1M_Low ch



Band Edge_Bluetooth LE 1M_High ch





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4.5 Radiated Spurious Emission

4.5.1 Test procedure

ANSI C63.10-2013 Clause 11.11, 11.12

4.5.2 Limit

§15.247 (d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

§15.209 Radiated emission limits; general requirements.(a)

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., [§§ 15.231](#) and [15.241](#).



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§15.205 Restricted bands of operation.(a),(b)

MHz	MHz	MHz	GHz
0.090–0.110	16.42–16.423	399.9–410	4.5–5.15
¹ 0.495–0.505	16.69475–16.69525	608–614	5.35–5.46
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2
4.20725–4.20775	73–74.6	1645.5–1646.5	9.3–9.5
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4
6.31175–6.31225	123–138	2200–2300	14.47–14.5
8.291–8.294	149.9–150.05	2310–2390	15.35–16.2
8.362–8.366	156.52475–156.52525	2483.5–2500	17.7–21.4
8.37625–8.38675	156.7–156.9	2690–2900	22.01–23.12
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5
12.57675–12.57725	322–335.4	3600–4400	(²)
13.36–13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490–0.510 MHz.

² Above 38.6

Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply to these measurements.



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4.5.3 Test data

Result : Pass

Dipol Antenna

Worst case : Bluetooth LE 1M_Low ch

- Below 30 MHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
8.73	11.02	QP	H	20.30	31.32	69.54	38.22	
13.90	7.37	QP	H	20.40	27.77	69.54	41.77	
25.95	7.09	QP	V	21.10	28.19	69.54	41.35	

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
62.88	40.87	QP	V	-20.00	20.87	40.00	19.13	
93.05	33.18	QP	V	-20.90	12.28	43.52	31.24	

PCB Antenna

Worst case : Bluetooth LE 1M_Low ch

- Below 30 MHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
3.04	13.63	QP	V	20.10	33.73	69.54	35.81	
9.32	7.13	QP	H	20.30	27.43	69.54	42.11	
23.19	5.84	QP	V	21.10	26.94	69.54	42.60	
27.27	6.79	QP	H	21.00	27.79	69.54	41.75	

- 30 MHz ~ 1 GHz

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
50.56	37.88	QP	V	-18.00	19.88	40.00	20.12	
101.39	33.37	QP	V	-19.60	13.77	43.52	29.75	
953.54	25.36	QP	H	-5.00	20.36	46.02	25.66	



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Dipol Antenna

- 1 GHz Above_Bluetooth LE 1M_Low ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2 530.00	51.79	PK	V	-9.80	41.99	74.00	32.01	Spurious Emission
	42.08	AVG	V		32.28	54.00	21.72	
2 387.25	56.64	PK	H	-10.80	45.84	74.00	28.16	Restricted band
	35.17	AVG	H		24.37	54.00	29.63	
4 803.69	49.49	PK	H	-2.80	46.69	74.00	27.31	2nd Harmonic
	38.58	AVG	H		35.78	54.00	18.22	
7 206.20	51.18	PK	V	0.90	52.08	74.00	21.92	3rd Harmonic
	38.47	AVG	V		39.37	54.00	14.63	

- 1 GHz Above_Bluetooth LE 1M_Mid ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2 311.75	54.67	PK	V	-11.20	43.47	74.00	30.53	Spurious Emission
	43.32	AVG	V		32.12	54.00	21.88	
4 880.05	47.07	PK	V	-2.40	44.67	74.00	29.33	2nd Harmonic
	36.90	AVG	V		34.50	54.00	19.50	
7 320.75	51.85	PK	V	0.90	52.75	74.00	21.25	3rd Harmonic
	39.27	AVG	V		40.17	54.00	13.83	

- 1 GHz Above_Bluetooth LE 1M_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2 352.00	54.07	PK	H	-11.00	43.07	74.00	30.93	Spurious Emission
	44.71	AVG	H		33.71	54.00	20.29	
2 483.55	69.28	PK	H	-10.20	59.08	74.00	14.92	Restricted band
	39.92	AVG	H		29.72	54.00	24.28	
4 960.15	51.34	PK	H	-2.30	49.04	74.00	24.96	2nd Harmonic
	43.33	AVG	H		41.03	54.00	12.97	
7 439.65	51.07	PK	V	1.00	52.07	74.00	21.93	3rd Harmonic
	39.32	AVG	V		40.32	54.00	13.68	



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PCB Antenna

- 1 GHz Above_Bluetooth LE 1M_Low ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
1 328.50	49.78	PK	V	-16.90	32.88	74.00	41.12	Spurious Emission
	35.20	AVG	V		18.30	54.00	35.70	
2 370.00	47.10	PK	H	-11.20	35.90	74.00	38.10	Restricted band
	33.86	AVG	H		22.66	54.00	31.34	
4 803.55	50.54	PK	V	-2.90	47.64	74.00	26.36	2nd Harmonic
	39.47	AVG	V		36.57	54.00	17.43	
7 206.20	45.89	PK	V	1.00	46.89	74.00	27.11	3rd Harmonic
	32.54	AVG	V		33.54	54.00	20.46	

- 1 GHz Above_Bluetooth LE 1M_Mid ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
1 234.75	59.90	PK	V	-17.50	42.40	74.00	31.60	Spurious Emission
	36.19	AVG	V		18.69	54.00	35.31	
4 880.40	50.35	PK	V	-2.00	48.35	74.00	25.65	2nd Harmonic
	39.22	AVG	V		37.22	54.00	16.78	
7 320.75	45.87	PK	V	1.00	46.87	74.00	27.13	3rd Harmonic
	32.68	AVG	V		33.68	54.00	20.32	

- 1 GHz Above_Bluetooth LE 1M_High ch

Frequency (MHz)	Reading (dBuV/m)	Detector	Pol.	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dBuV/m)	note
2 130.00	54.75	PK	V	-11.70	43.05	74.00	30.95	Spurious Emission
	33.69	AVG	V		21.99	54.00	32.01	
2 484.00	56.91	PK	H	-10.50	46.41	74.00	27.59	Restricted band
	35.89	AVG	H		25.39	54.00	28.61	
4 960.15	48.47	PK	H	-1.80	46.67	74.00	27.33	2nd Harmonic
	37.50	AVG	H		35.70	54.00	18.30	
7 441.10	46.96	PK	V	1.50	48.46	74.00	25.54	3rd Harmonic
	33.38	AVG	V		34.88	54.00	19.12	



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4.6 Power Line Conducted Emission

4.6.1 Test procedure

ANSI C63.10-2013 Clause 6.2

4.6.2 Limit

§15.207 (a)

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.



시험 성적서

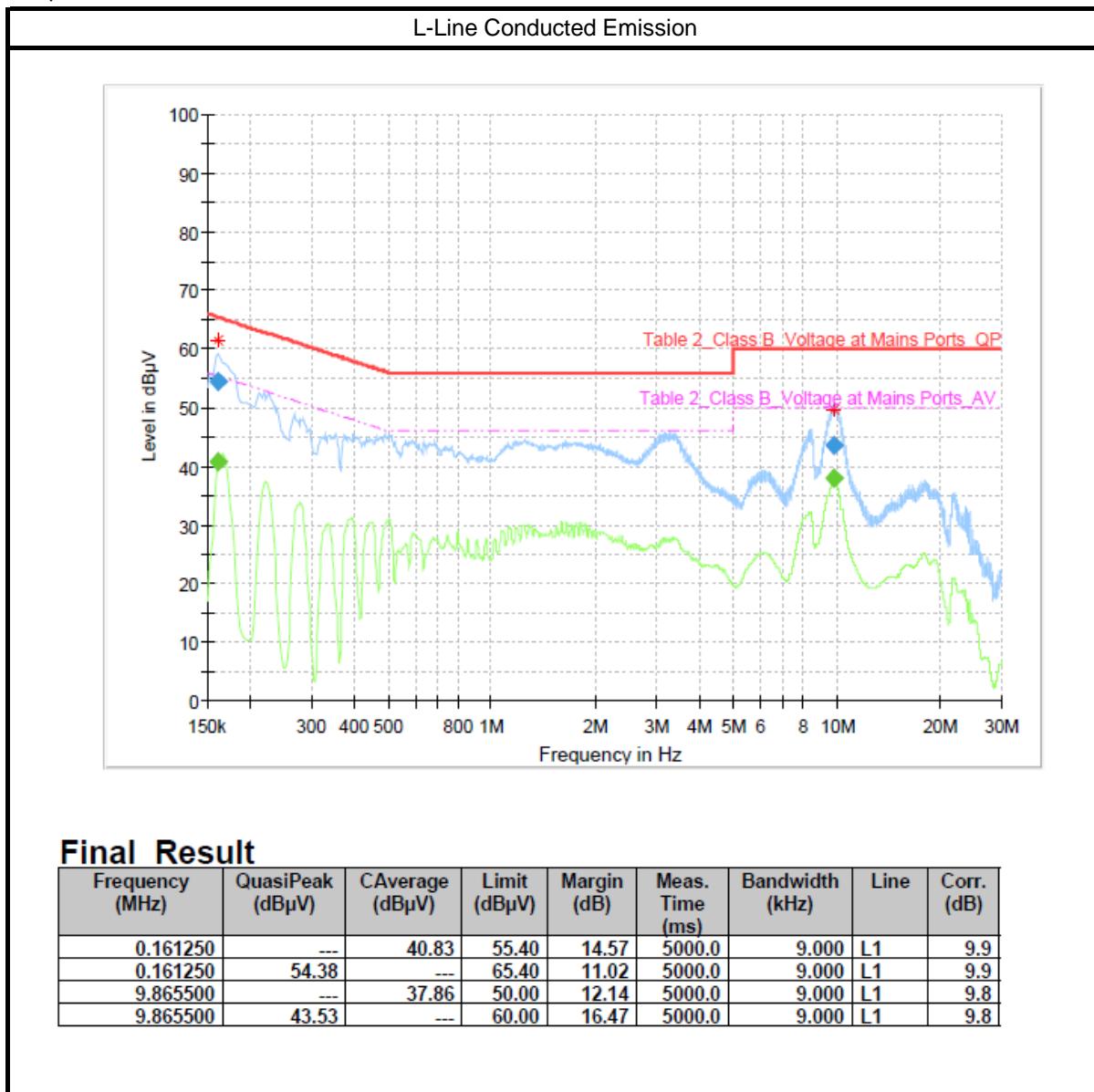
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4.6.3 Test data

Result : Pass

- Dipole Antenna



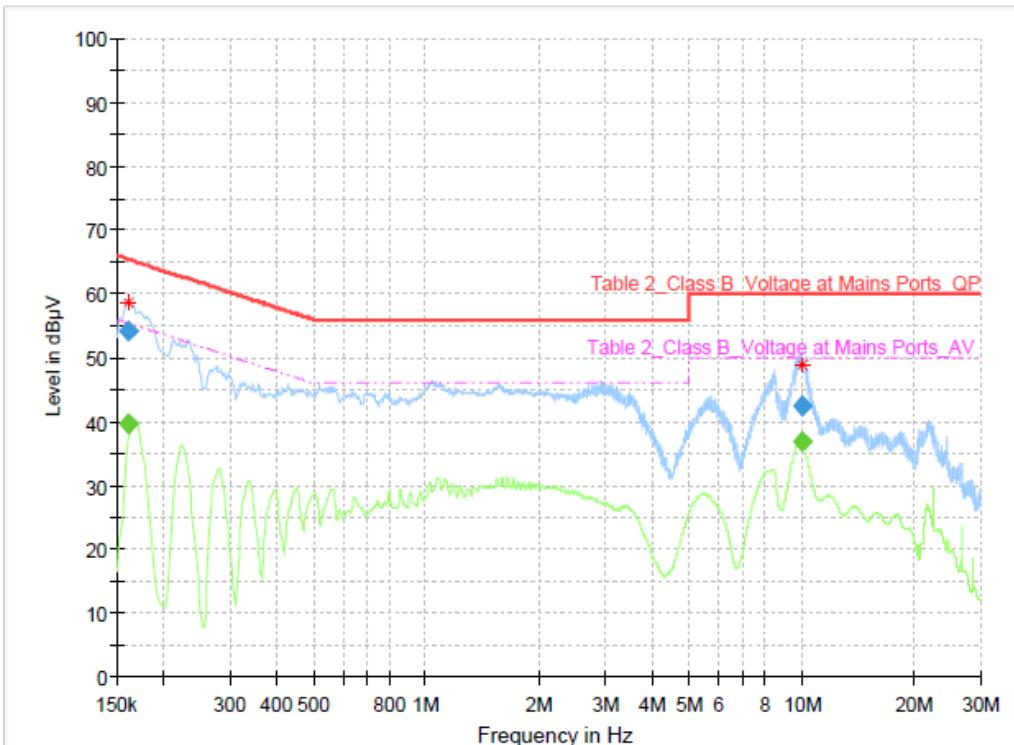


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N-Line Conducted Emission



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.161250	---	39.65	55.40	15.75	5000.0	9.000	N	9.9
0.161250	54.09	---	65.40	11.31	5000.0	9.000	N	9.9
10.052250	---	36.84	50.00	13.16	5000.0	9.000	N	9.8
10.052250	42.56	---	60.00	17.44	5000.0	9.000	N	9.8



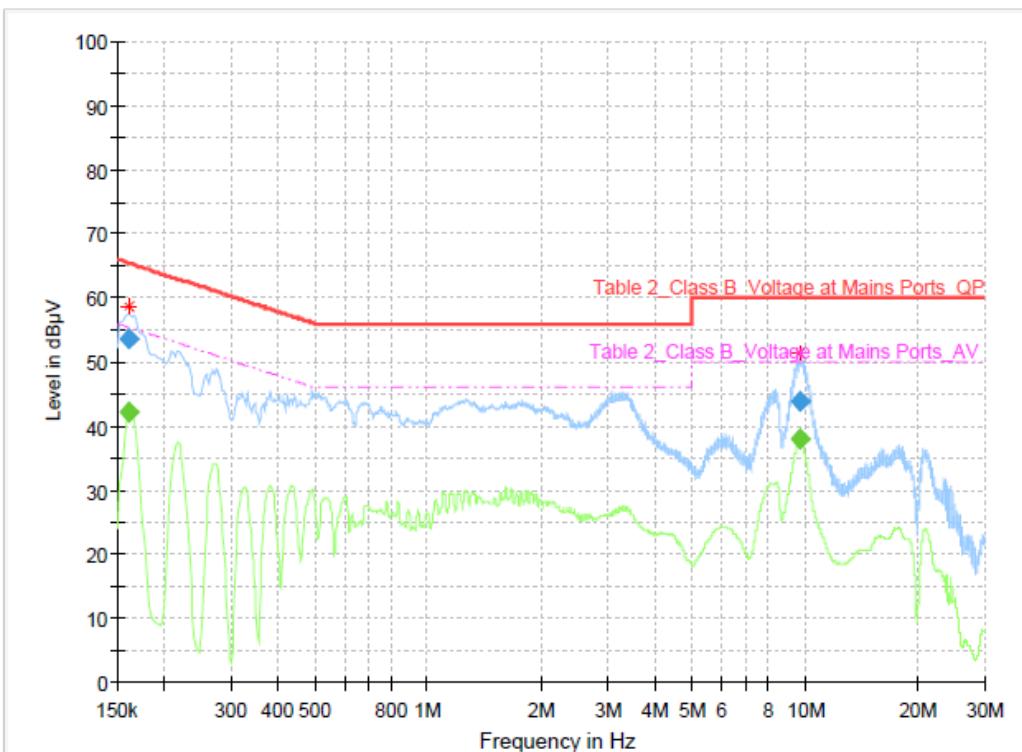
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- PCB Antenna

L-Line Conducted Emission



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.161250	---	42.20	55.40	13.20	5000.0	9.000	L1	9.9
0.161250	53.73	---	65.40	11.67	5000.0	9.000	L1	9.9
9.737250	---	37.88	50.00	12.12	5000.0	9.000	L1	9.8
9.737250	43.84	---	60.00	16.16	5000.0	9.000	L1	9.8

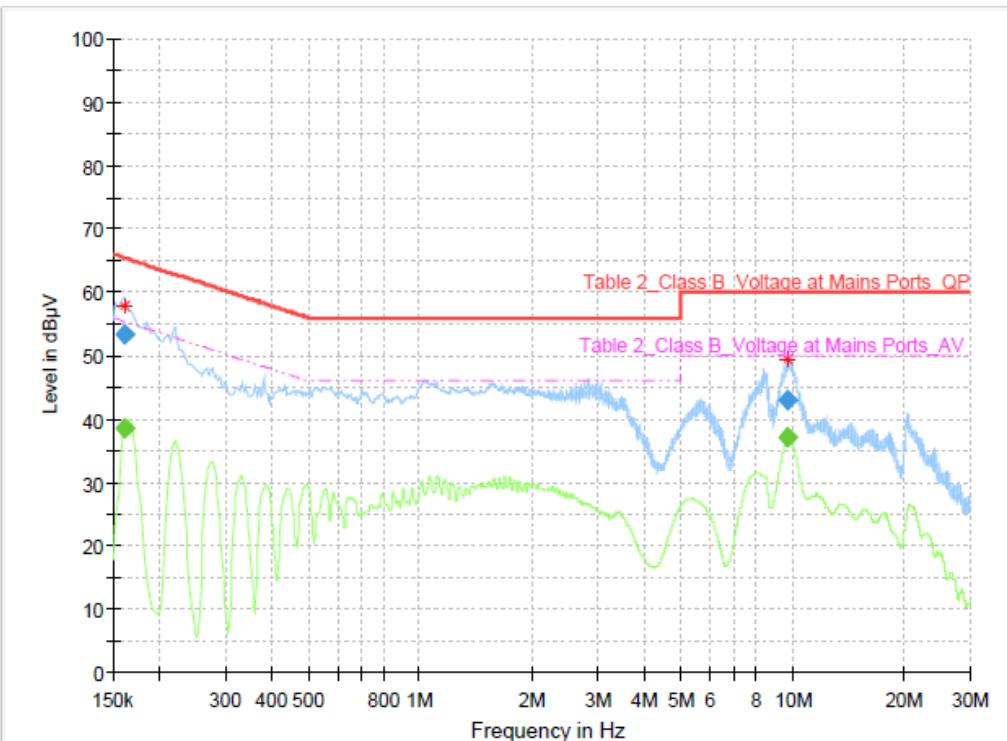


시험 성적서

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N-Line Conducted Emission



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.161250	---	38.52	55.40	16.88	5000.0	9.000	N	9.9
0.161250	53.32	---	65.40	12.08	5000.0	9.000	N	9.9
9.696750	---	37.24	50.00	12.76	5000.0	9.000	N	9.8
9.696750	42.96	---	60.00	17.04	5000.0	9.000	N	9.8



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5. Used equipment

	Description	Model Name	Manufacturer	Serial Number	Next Cal
■	SIGNAL GENERATOR	SMB100A	ROHDE & SCHWARZ	180607	2026-02-24
■	SIGNAL ANALYZER	FSV30	ROHDE & SCHWARZ	103030	2026-02-24
■	DC BLOCK	PDCB-00012650-SMSF-3	PSATEK INC.	-	2026-03-04
■	DC POWER SUPPLY	E3632A	AGILANT	MY40010250	2026-02-25
■	LOOP ANTENNA	HFH2-Z2	ROHDE & SCHWARZ	100271	2027-03-04
■	TRILOG BROADBAND ANTENNA	VULB 9162	SCHWARZBECK	142	2027-03-01
■	RF Pre Amplifier	SCU08	ROHDE& SCHWARZ	100744	2026-03-24
■	EMI TEST RECEIVER	ESR26	ROHDE& SCHWARZ	101461	2026-03-24
■	HORN ANTENNA	HF907	ROHDE & SCHWARZ	102556	2025-07-25
■	RF Pre Amplifier	SCU18	ROHDE & SCHWARZ	102342	2026-03-24
■	EMI Test Receiver	ESR26	ROHDE & SCHWARZ	101462	2026-03-24
■	HORN ANTENNA	DRH0844	RF SPIN	KV2E08A0844	2026-03-07
■	AMPLIFIER	ELNA40-50	EXYNOD	631300	2026-03-04
■	HIGH PASS FILTER	WT-A1698-HS	WT MICROWAVE	WT171201-6-4	2026-02-24
■	EMI TEST RECEIVER	ESR7	R&S	102034	2026-03-24
■	LISN	ENV216	ROHDE & SCHWARZ	102196	2025-09-12

- END OF REPORT.