DEKRA Certification, Inc.
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Sterling, VA 20164
United States of America

Test Lab
Cert 2764.01

FCC LISTED, REGISTRATION NUMBER: 2764.01

ISED LISTED REGISTRATION NUMBER: 23595-1

Test report No:
2581ERM.006

Partial Test report

Reference Standard:
USA FCC Part 15.247, 15.407

Identification of item tested	Automotive Infotainment System
Trademark	Mercedes-Benz
Model and /or type reference	NTG7RSU
Other identification of the product	FCC ID: T8GNTG7RSU IC: 6434A-NTG7RSU HW Version: C0 SW Version: E13.205
Features	FM, AM, USB, HDD, Bluetooth, WLAN, GPS
Manufacturer	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH BECKER-GOERING-STR. 16; 76307 KARLSBAD GERMANY.
Test method requested, standard	USA FCC Part 15.247, 10-1-18 Edition: Operation within the bands 902 - 928 MHz, 2400 -2483.5 MHz, and 5725 - 5850 MHz. CANADA RSS-247 Issue 2 (February 2017). CANADA RSS-Gen Issue 5 (April 2018). 558074 D01 15.247 Meas Guidance v05r02. Guidance for Compliance Measurements on Digital Transmission Systems, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under section §15.247 of the FCC Rules ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Domingo Galvez EMC&RF Lab Manager Digitally signed by Domingo Galvez DN: cn=Domingo Galvez, o=DEKRA Certification Inc., ou=Regulatory Lab, email=dgalvez@dekra.com, c=US Date: 2019.12.19 05:39:19 -05'00'
Date of issue	12-18-2019
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Competences and guarantees

DEKRA Certification Inc. is a testing laboratory accredited by A2LA (The American Association for Laboratory Accreditation), to perform the tests indicated in the Certificate 2764.01

DEKRA Certification Inc. is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Certification Inc. has a calibration and maintenance program for its measurement equipment.

DEKRA Certification Inc. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Certification at the time of performance of the test.

DEKRA Certification Inc. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA Certification Inc.

General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Certification Inc.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Certification Inc. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Certification internal document PODT000.

Frequency (MHz)	U(k=2)	Units
30-180	3.82	dB
180-1000	2.61	dB
1000-18000	2.92	dB
18000-40000	2.15	dB

Data provided by the client

The test sample consist of an automotive RSU to be installed in cars with the following features: FM, AM, USB, HDD, Bluetooth, WLAN, GPS.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Sample S/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
2581/04	NTG7RSU USA Unit	NTG7 RSU	HBM411K4001002	10/22/2019

1. Sample S/01 has undergone following test(s): All radiated tests indicated in appendix A.

Sample S/is composed of the following accessories:

Control Nº	Description	Model	Serial Nº	Date of reception
2581/16	Harness	--	--	10/22/2019
2581/17	Ethernet Cable	--	--	10/22/2019
2581/18	USB/Ethernet Adapter	UE300	218C420000396	10/22/2019
2581/19	USB Cable	--	--	10/22/2019
2581/20	Fakra to SMA Connector	--	--	10/22/2019
2581/23	BT/WLAN Antenna	--	--	10/22/2019

Test sample description

Ports…… :	Port name and description	Cable			
		Specified max length [m]	Attached during test	Shielded	Coupled to patient(3)
	Car Connector	>3m(x1)	☒	☐	☐
	BT/WLAN-Antenna	tbd	☒	☒	☐
	USB Connector - ***not used by customer***		☐	☐	☐
	Display Connector (Video IN / OUT)	>3m(x1	☒	☒	☐
	HDBase-T	>3m(x1)	☐	☐	☐
			☐	☐	☐

Supplementary information to the ports…….. :							
Rated power supply ..... :	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 12V Car battery / attenuator (9,5-15,5V normal operation)					
Rated Power..... :	9,5-15,5V normal operation						
Clock frequencies..... :	see schematics						
Other parameters ..... :	See Technical Description						
Software version..... :	D2						
Hardware version ..... :	E13.205						
Dimensions in cm (W x H x D) ... :	225 x 140 x 48 mm						
Mounting position ..... :	☐	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☒	Other: automotive RSU (Rear Seat Unit)					

Modules/parts..... :	Module/parts of test item	Type	Manufacturer
	n/a	-	
Accessories (not part of the test item) ..... :	Description	Type	Manufacturer
	RSU-Testbench including NTG7 HU	-	HBAS
	Cable harness		HBAS
	Two RSU Displays		Phanasonic
	BT/WLAN-Antenna		Hirschmann
Documents as provided by the applicant..... :	Description	File name	Issue date
	Technical Description		

Copy of marking plate:

Identification of the client

HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
BECKER-GOERING-STR. 16;76307 KARLSBAD GERMANY

Testing period and place

Test Location	DEKRA Certification Inc.
Date (start)	11-07-2019
Date (finish)	11-08-2019

Document history

Report number	Date	Description
2581ERM.006	12-18-2019	First release

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The tests have been performed by the technical personnel: Divya Adusumilli, BhagyaShree Chaudhary, Poojita Bhattu and Koji Nishimoto.

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

FCC PART 15 PARAGRAPH / RSS-247					
Section	**FCC Spec Clause**	**RSS Spec Clause**	**Test Description**	**Verdict**	**Remark**
A.1	§ 2.1049 & § 15.247 (a) (1)	RSS-247 5.1 (b)	20dB Emission Bandwidth, Occupied Bandwidth & Carrier Frequency Separation	N/A	Refer 1
A.2	§ 15.247 (a) (1) (iii)	RSS-247 5.1 (d)	Number of hopping channels	N/A	Refer 1
A.3	§ 15.247 (a) (1) (iii)	RSS-247 5.1 (d)	Time of Occupancy (Dwell Time)	N/A	Refer 1
A.4	§ 15.247 (b) (3)	RSS-247 5.4 (b)	Maximum peak conducted output power and antenna gain	N/A	Refer 1
A.5	§ 15.247 (d)	RSS-247 5.5	Band-edge conducted emissions compliance (Transmitter)	N/A	Refer 1
A.6	§ 15.247 (d)	RSS-247 5.5	Emission limitations Conducted (Transmitter)	N/A	Refer 1
A.7	§ 15.247 (d)	RSS-247 5.5	Emission limitations Radiated (Transmitter)	P	N/A

Supplementary information and remarks:

Note 1: Only multi-transmitter radiated spurious emission test was requested.

List of equipment used during the test

Conducted Measurements

Test system Rohde & Schwarz TS 8997:

CONTROL NUMBER	DESCRIPTION	LAST CALIBRATION	NEXT CALIBRATION
1039	Signal analyzer Rohde & Schwarz FSV40	2018/10	2020/10
1009	RF generator Rohde & Schwarz SMB100A	2019/08	2021/08
1042	RF generator Rohde & Schwarz SMBV100A	2018/01	2021/01
101	Climatic chamber Espec	2019/01	2020/01

Radiated Measurements

CONTROL NUMBER	DESCRIPTION	LAST CALIBRATION	NEXT CALIBRATION
1179	Semi anechoic Absorber Lined Chamber Frankonia SAC 3 plus “L”	N/A	N/A
1064	BiconicalLog antenna ETS LINDGREN 3142E	2017/03	2020/03
1057	Double-ridge Waveguide Horn antenna 1-18 GHz	2017/03	2020/03
1056	Double-ridge Waveguide Horn antenna 18-40 GHz	2017/03	2020/03
1014	Spectrum analyzer Rohde & Schwarz FSV40	2019/04	2021/04
0980	RF pre-amplifier 30 MHz-6 GHz Bonn Elektronik BLMA 0360-01N	2019/08	2021/05
0981	RF pre-amplifier 1-18 GHz Bonn Elektronik BLMA 0118-2A	2018/10	2021/05
1015, 1017, 1019, 1020	Rohde & Schwarz EMC32 software	N/A	N/A

Appendix A:
Test results (Co-location)

Appendix A Content

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PRODUCT INFORMATION

The following information is provided by the client

Information	Description
Modulation	FHSS
Adaptive	Non-adpative equipment
Operation mode 1: Single Antenna Equipment	Equipment with only one antenna
Operating Frequency Range	2400 – 2483.5 MHz
Nominal Channel Bandwidth	20 MHz
RF Output Power	<10 dBm
Extreme operating conditions	
- Temperature range	-20 ºC to +55 ºC
Antenna type	Dedicated Antenna
Antenna gain	Chip1: 0.5 dBi
Nominal Voltage	
- Supply Voltage	13.5 Vdc
- Type of power source	DC voltage
Equipment type	Bluetooth EDR, Wi-Fi 2.4 GHz and Wi-Fi 5GHz
Geo-location capability	No

DESCRIPTION OF TEST CONDITIONS

TEST CONDITIONS	DESCRIPTION
TC#01	Power supply (V): $V_{nominal}$ = 13.5 Vdc Test Frequencies for Radiated test for BTEDR:**(Port 2 CHIP 1)** Middle channel: 2441 MHz Test Frequencies for Radiated test for Wi-Fi 2.4 GHz :**(Port 1 CHIP 1 and Port 2 CHIP 2):** Middle channel: 2441 MHz Test Frequencies for Radiated test for Wi-Fi 5 GHz :**(Port 2 CHIP 1 SISO, Port 4 CHIP 2 SISO, Port 1 & 2 CHIP 1 MIMO and Port 3 & 4 CHIP 2 MIMO):** Middle channel: 5200 MHz(UNII-1 band) Middle channel: 5785 MHz(UNII-3 band) The test was performed with the equipment transmitting with Bluetooth and Wi-Fi radios simultaneously. These measurements have been performed in order to check the impact of the multi-transmitter of all radio interfaces that can be transmitting simultaneously (Worst cases were detected)

TEST A.1: EMISSION LIMITATIONS RADIATED (TRANSMITTER)

LIMITS:	Product standard:	Part 15 Subpart C §15.407 and RSS-247
	Test standard:	Part 15 Subpart C §15.407(b) (1)(6)(7) and RSS-247 6.2.1.2

For transmitters operating in the 5.15 – 5.25 GHz band: all emissions outside of the 5.15 – 5.25 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.23 dBμ V/m at 3m distance).

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) / RSS-Gen):

Frequency Range (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
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	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 25000	500	54	3

The emission limits shown in the above table are based on measurements employing 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.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

RSS-247. Attenuation below the general field strength limits specified in RSS-Gen is not required

TEST SETUP

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna is situated at 3 m for the frequency range 30-1000 MHz (Bi-log antenna) and at 1m for the frequency range 1-40 GHz (1 GHz-18 GHz and 18 GHz-40 GHz Double ridge horn antennas).

For radiated emissions in the range 1-40 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

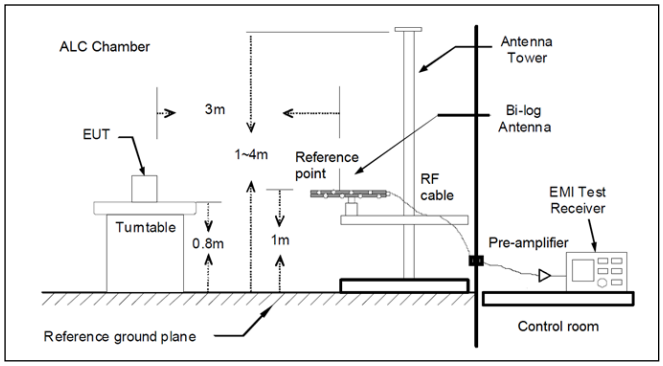
The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360º and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission.

Measurements were made in both horizontal and vertical planes of polarization.

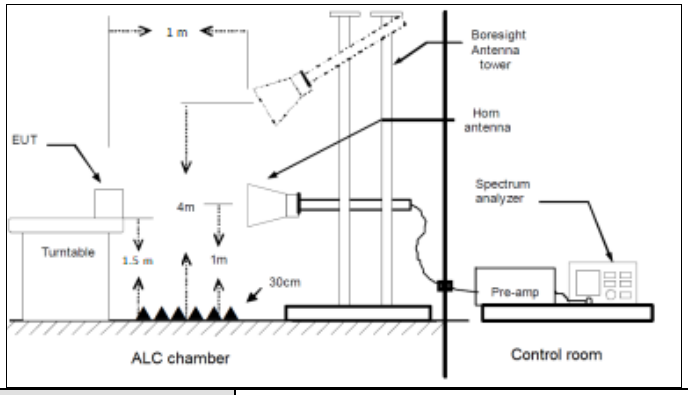
The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

TEST SETUP (CONT.)	

Radiated measurements Setup f < 1 GHz



Radiated measurements setup f > 1 GHz



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	BT EDR, Wi-Fi 5 GHz SISO UNII-1 (CHIP 1 WLAN 1), WiFi 2.4 GHz (CHIP 2 WLAN 0).
TEST RESULTS:	PASS

Co-Location

The test was performed with the equipment transmitting first with only the WiFi 2.4 GHz (WLAN0) radio and WiFi 2.4 GHz (WLAN1) repeated with the 2.4 GHz BTEDR (WLAN 0), WiFi 5GHz (WLAN0) and WiFi 5GHz (WLAN1) radios transmitting simultaneously to check the impact of the co-location of the other radio interfaces. The results and plots below show the worst results obtained.

Frequency range 30 MHz – 1000 MHz

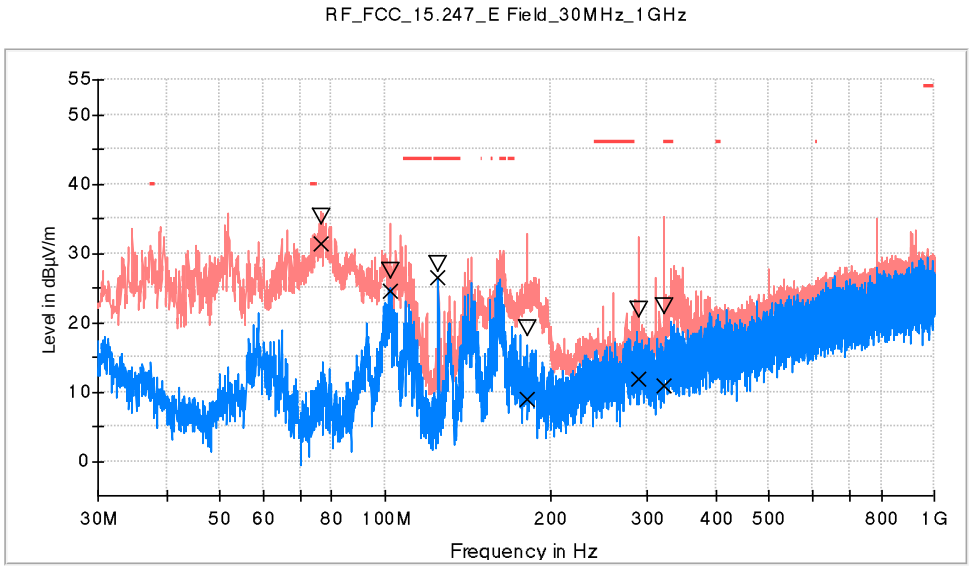
The spurious emissions below 1 GHz do not depend on the operating channel selected in the EUT. See worst operation a mode selected for all channels as a worst case.

Frequency range 1 GHz – 26 GHz

The results in the next tables show the maximum measured levels in the 1-26 GHz The radiated spurious signals detected at less than 10 dB respect to the limit for the lowest, middle and highest operating channels are showed in the tables below of each frequency range

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**30 MHz – 1 GHz**

Middle Frequency

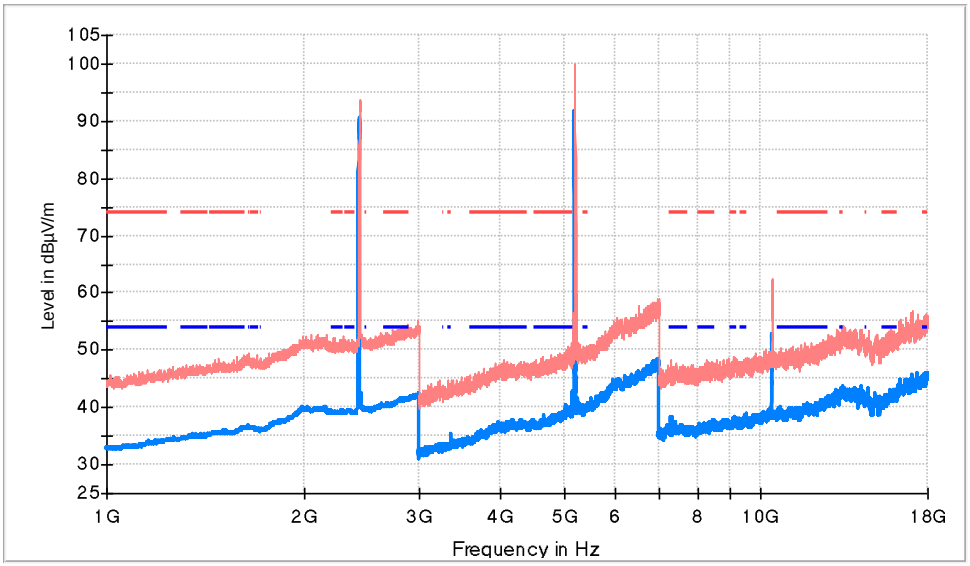


Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Pol	Azimuth (deg)
76.511500	35.2	31.4	V	64.0
101.877000	27.4	24.5	H	44.0
125.011500	28.5	26.5	H	144.0
181.562500	19.2	8.8	V	-159.0
289.814500	21.8	11.9	H	-162.0
321.000000	22.3	10.8	H	-140.0

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**1 GHz – 18 GHz**

Middle Frequency



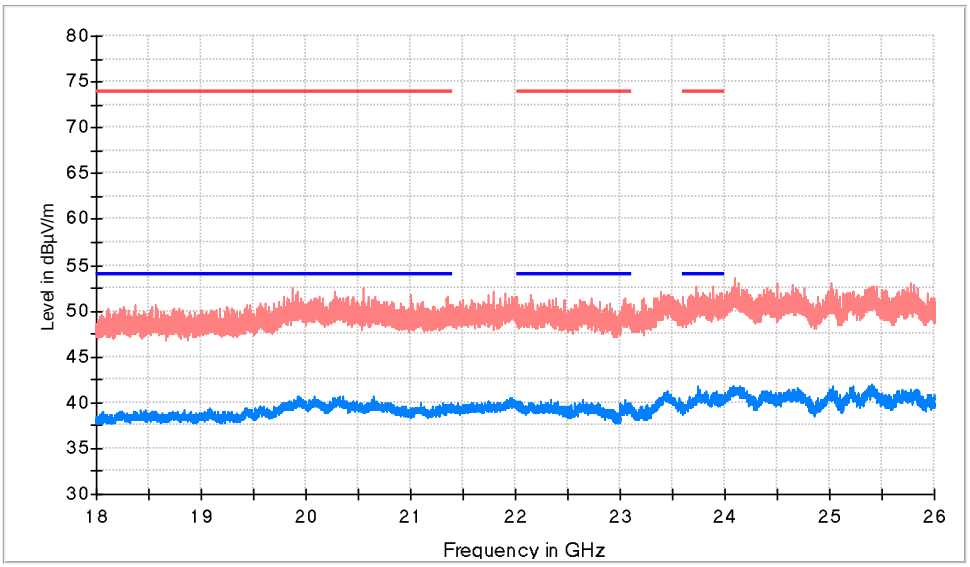
AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

Frequency (MHz)	PK+_MAXH (dBµV/m)	AVG_MAXH (dBµV/m)	Pol	Comment
2438.000000	93.8	90.5	V	BT & Wi-Fi 2.4 GHz Fundamental
3371.000000	43.8	35.3	V	
5205.000000	100.0	91.7	H	Wi-Fi 5 GHz Fundamental
7310.000000	45.6	38.2	V	
10399.000000	60.8	52.9	V	

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**18 GHz – 26 GHz**

Middle Frequency

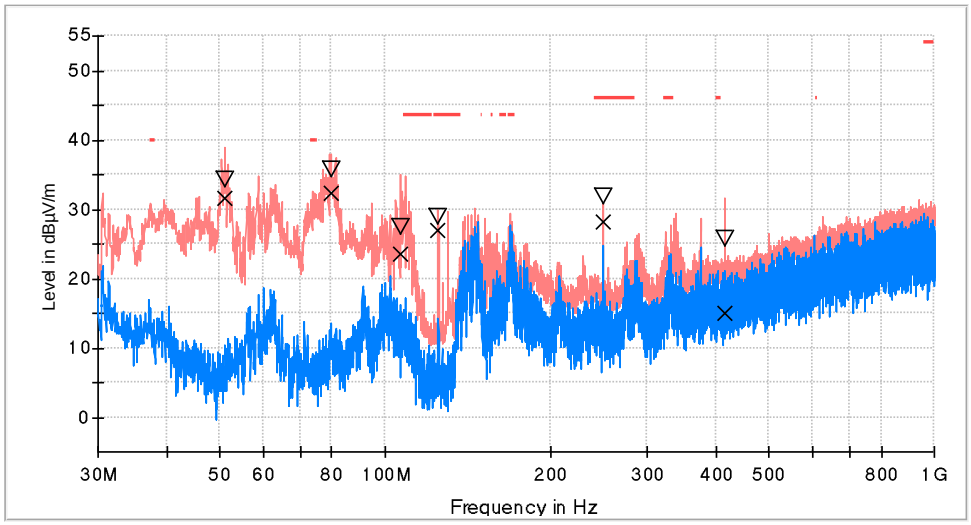


AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	BT EDR, Wi-Fi 5 GHz SISO UNII-1 (CHIP 2 WLAN 0), WiFi 2.4 GHz (CHIP 1 WLAN 1).
FREQUENCY RANGE	**30 MHz – 1 GHz**

Middle Frequency

RF_FCC_15.247_E Field_30MHz_1GHz



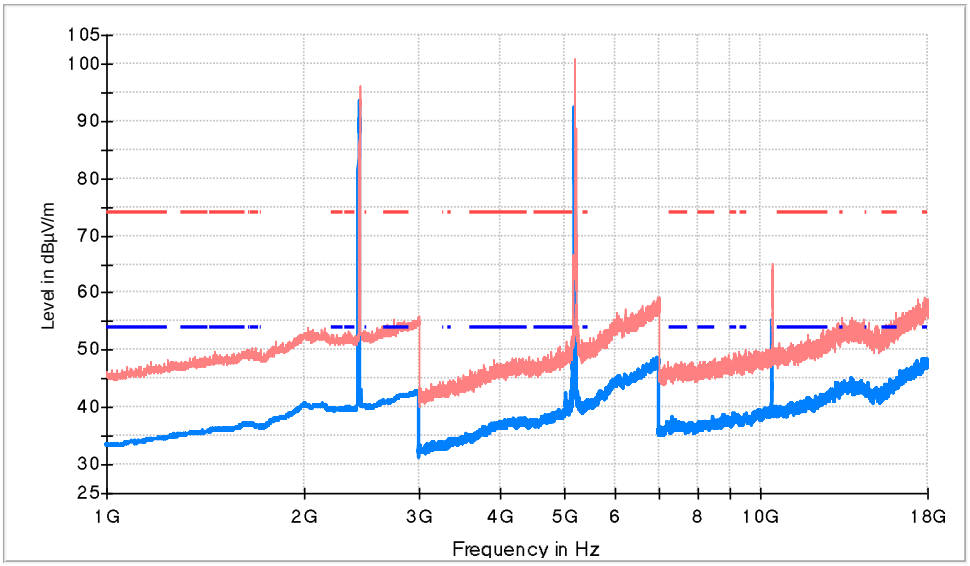
PK+_MAXH
PK+_CLRWR
TX limits to Spurious Emission FCC15.247 (30MHz to 1GHz) Restricted Bands QPK Limit
MaxPeak-PK+ (Single)
QuasiPeak-QPK (Single)

Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Pol	Azimuth (deg)
51.097500	34.2	31.5	V	-32.0
79.712500	35.6	32.3	V	-180.0
106.678500	27.4	23.5	H	105.0
124.963000	29.0	26.9	V	-180.0
249.996000	31.8	28.1	H	-2.0
414.459500	25.6	14.9	H	134.0

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**1 GHz – 18 GHz**

Middle Frequency



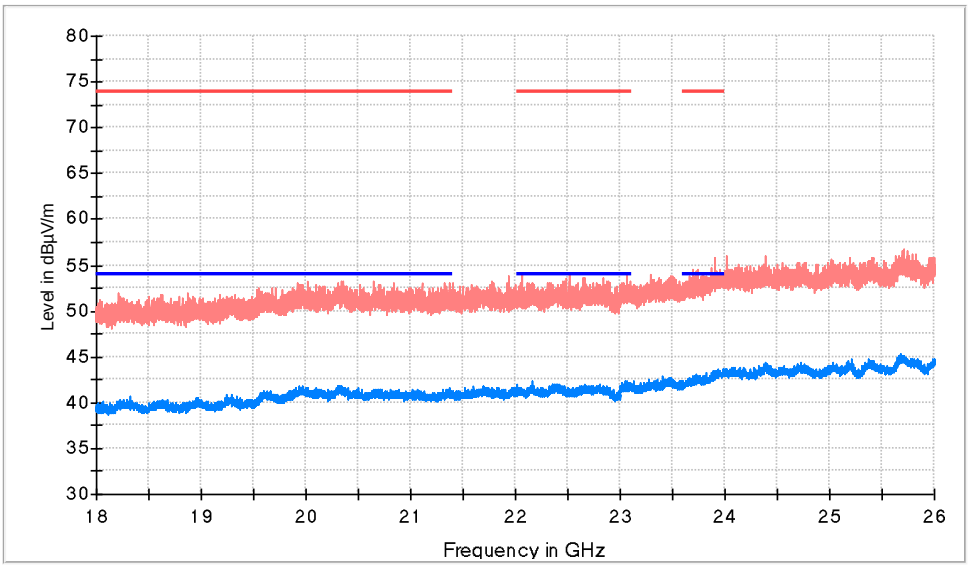
AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

Frequency (MHz)	PK+_MAXH (dBµV/m)	AVG_MAXH (dBµV/m)	Pol	Comment
2441.000000	96.2	93.4	V	BT & WiFi 2.4 GHz Fundamental
5198.000000	99.5	92.3	V	WiFi 5 GHz Fundamental
10403.500000	62.2	55.0	V	

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**18 GHz – 26 GHz**

Middle Frequency

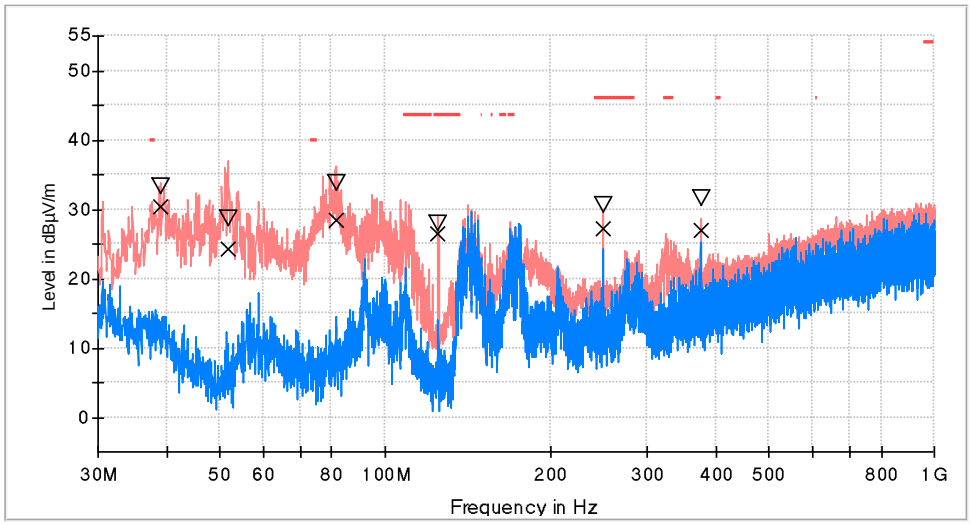


AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	BT EDR, Wi-Fi 5 GHz MIMO UNII-1 (CHIP 1 WLAN 1), WiFi 2.4 GHz (CHIP 2 WLAN 0).
FREQUENCY RANGE	**30 MHz – 1 GHz**

Middle Frequency

RF_FCC_15.247_E Field_30MHz_1GHz



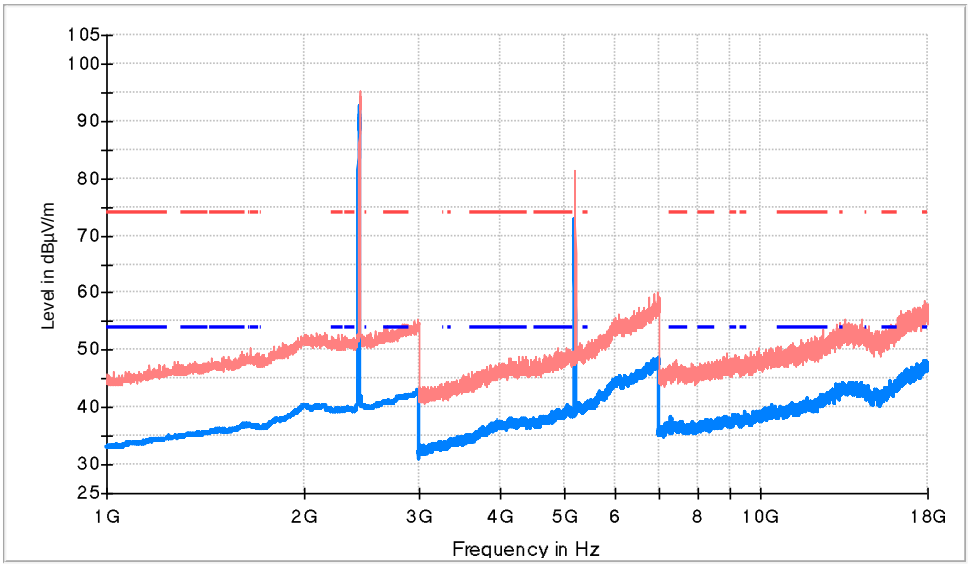
PK+_MAXH
PK+_CLRWR
TX limits to Spurious Emission FCC15.247 (30MHz to 1GHz) Restricted Bands QPK Limit
▽ MaxPeak-PK+ (Single)
× QuasiPeak-QPK (Single)

Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Pol	Azimuth (deg)
38.924000	33.3	30.3	V	-180.0
51.776500	28.6	24.3	V	-28.0
81.167500	33.7	28.5	V	160.0
124.963000	28.0	26.4	V	-180.0
249.996000	30.6	27.1	H	-14.0
374.980500	31.5	27.0	H	73.0

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**1 GHz – 18 GHz**

Middle Frequency

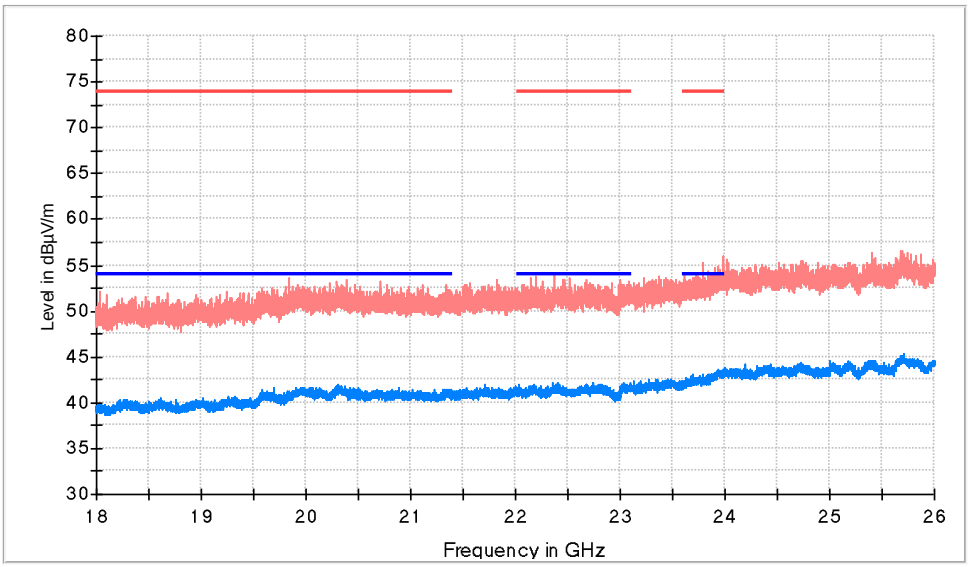


Maximizations

Frequency (MHz)	PK+_MAXH (dBµV/m)	AVG_MAXH (dBµV/m)	Pol	Comment
2441.000000	95.3	92.5	V	BT & WiFi 2.4 GHz Fundamental
5198.500000	81.3	72.8	H	WiFi 5 GHz Fundamental
7309.500000	46.6	38.2	V	

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**18 GHz – 26 GHz**

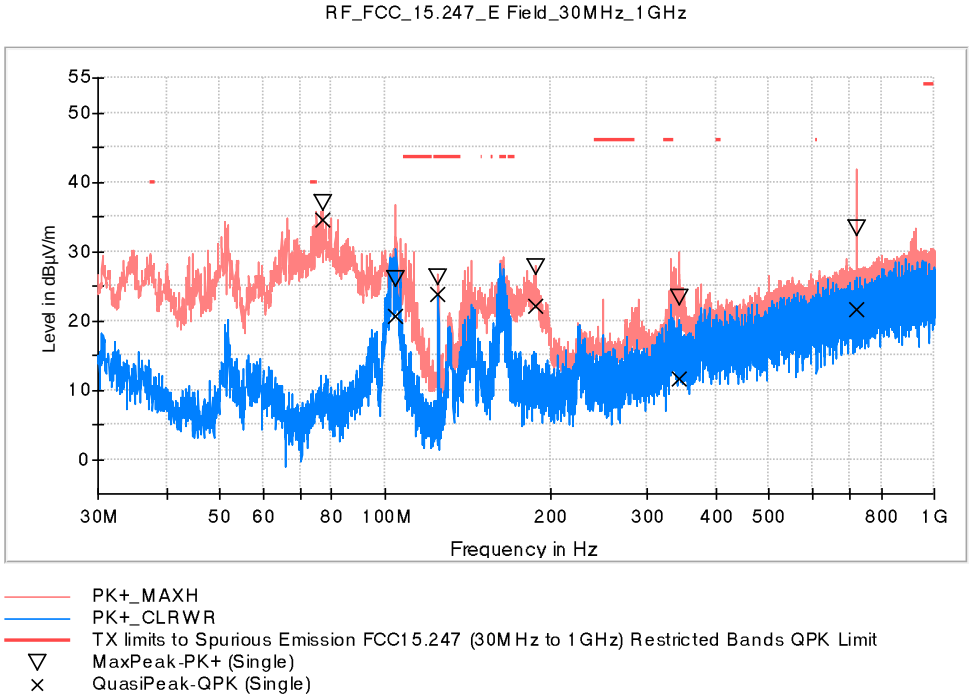
Middle Frequency



AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	BT EDR, Wi-Fi 5 GHz MIMO UNII-1 (CHIP 2 WLAN 0), WiFi 2.4 GHz (CHIP 1 WLAN 1)
FREQUENCY RANGE	**30 MHz – 1 GHz**

Middle Frequency

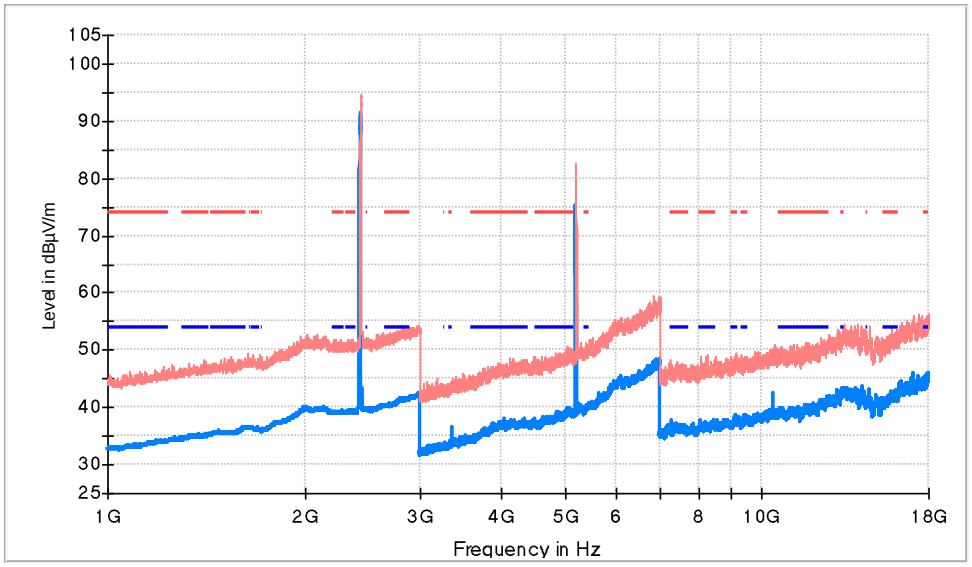


Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Pol	Azimuth (deg)
77.190500	37.0	34.4	V	64.0
104.205000	26.0	20.6	V	15.0
125.011500	26.3	23.9	V	30.0
187.479500	27.6	22.2	V	21.0
342.000500	23.4	11.5	V	0.0
724.132000	33.2	21.5	H	-63.0

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**1 GHz – 18 GHz**

Middle Frequency

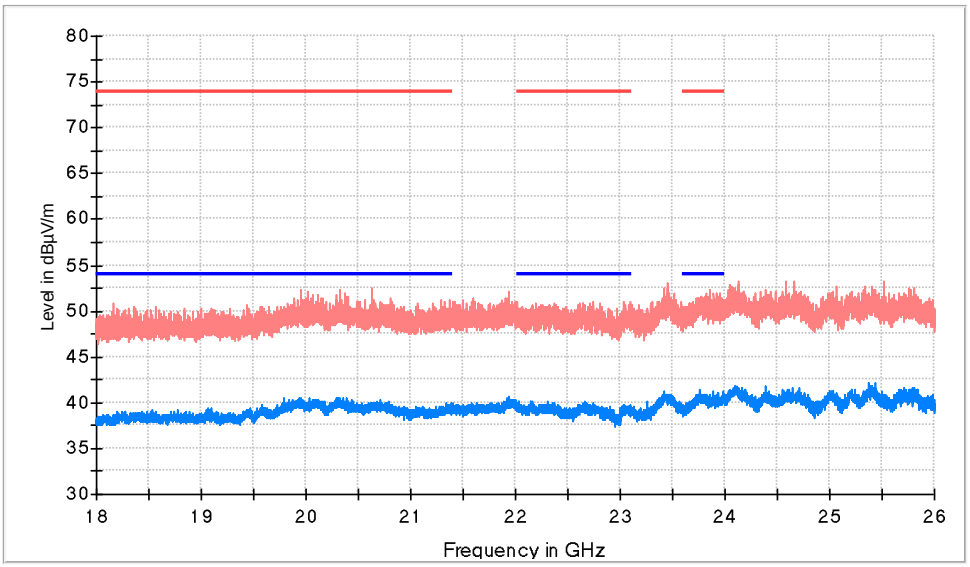


Maximizations

Frequency (MHz)	PK+_MAXH (dBµV/m)	AVG_MAXH (dBµV/m)	Pol	Comment
2438.000000	94.7	91.4	V	BT & Wi-Fi 2.4 GHz Fundamental
3371.000000	45.2	36.5	V	
5202.000000	80.8	75.2	H	Wi-Fi 5 GHz Fundamental

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**18 GHz – 26 GHz**

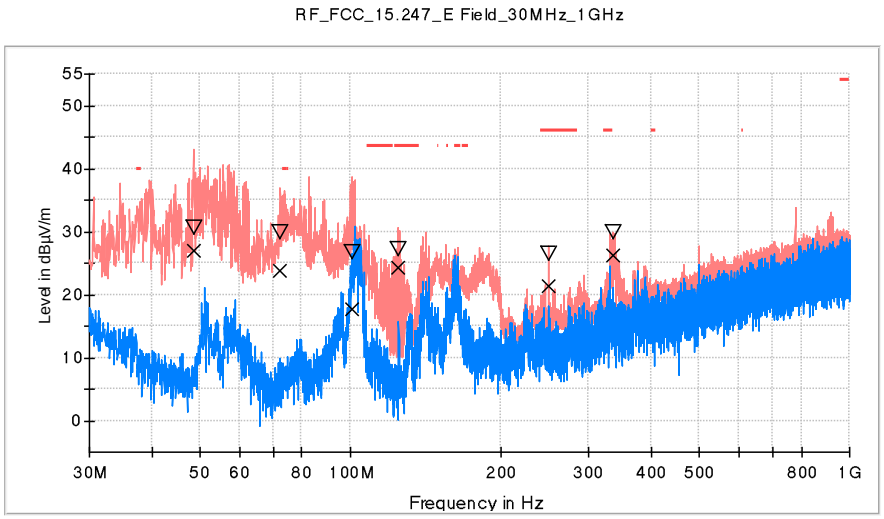
Middle Frequency



AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	BT EDR, Wi-Fi 5 GHz SISO UNII-3 (CHIP 1 WLAN 1), WiFi 2.4 GHz (CHIP 2 WLAN 0).
FREQUENCY RANGE	**30 MHz – 1 GHz**

Middle Frequency

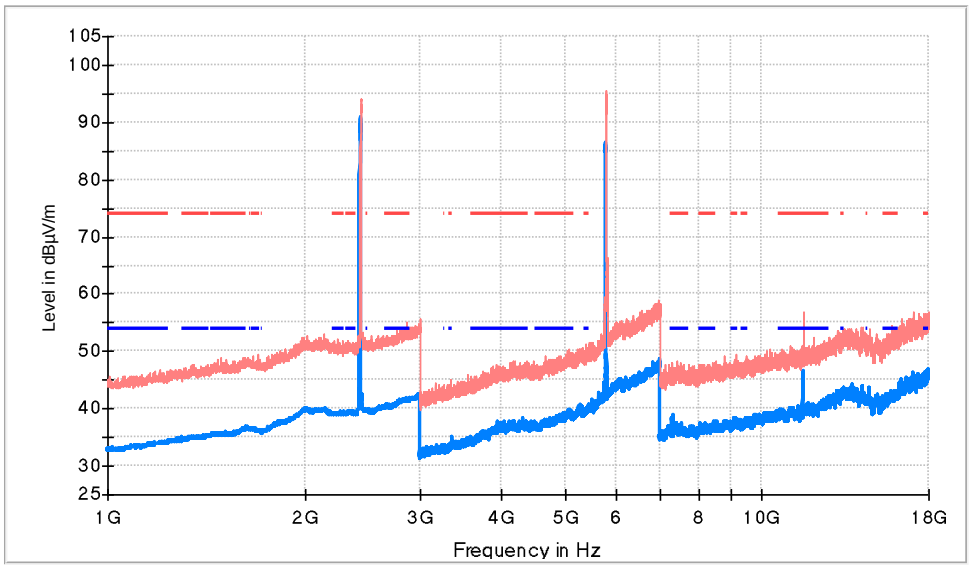


Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Pol	Azimuth (deg)
48.430000	30.6	27.0	V	-147.0
72.437500	30.0	23.8	V	-57.0
100.664500	26.6	17.7	V	-57.0
124.963000	27.3	24.3	V	-147.0
249.996000	26.5	21.3	V	0.0
336.083500	29.8	26.1	H	-53.0

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**1 GHz – 18 GHz**

Middle Frequency



Maximizations

Frequency (MHz)	PK+_MAXH (dBµV/m)	AVG_MAXH (dBµV/m)	Pol	Comment
2438.000000	94.2	90.9	V	BT and Wi-Fi 2.4 GHz Fundamental
5786.000000	94.7	86.3	V	Wi-Fi 5 GHz Fundamental
7311.500000	47.2	39.0	H	
11566.500000	56.8	46.4	H	

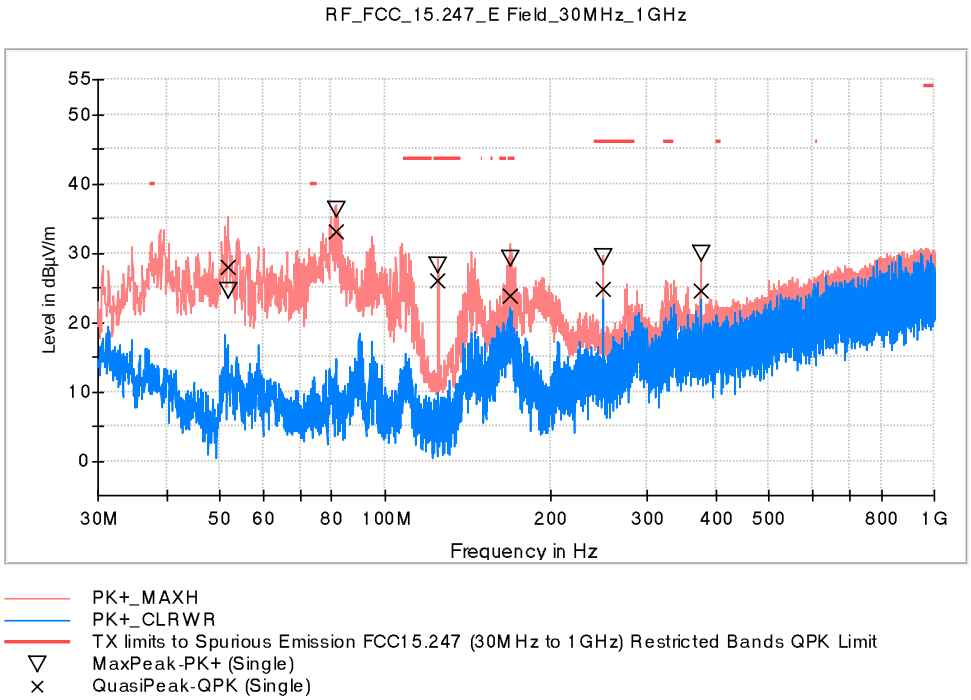
TEST RESULTS (Cont.)	
FREQUENCY RANGE	**18 GHz – 26 GHz**

Middle Frequency

AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	BT EDR, Wi-Fi 5 GHz SISO UNII-3 (CHIP 2 WLAN 0), WiFi 2.4 GHz (CHIP 1 WLAN 1)
FREQUENCY RANGE	**30 MHz – 1 GHz**

Middle Frequency

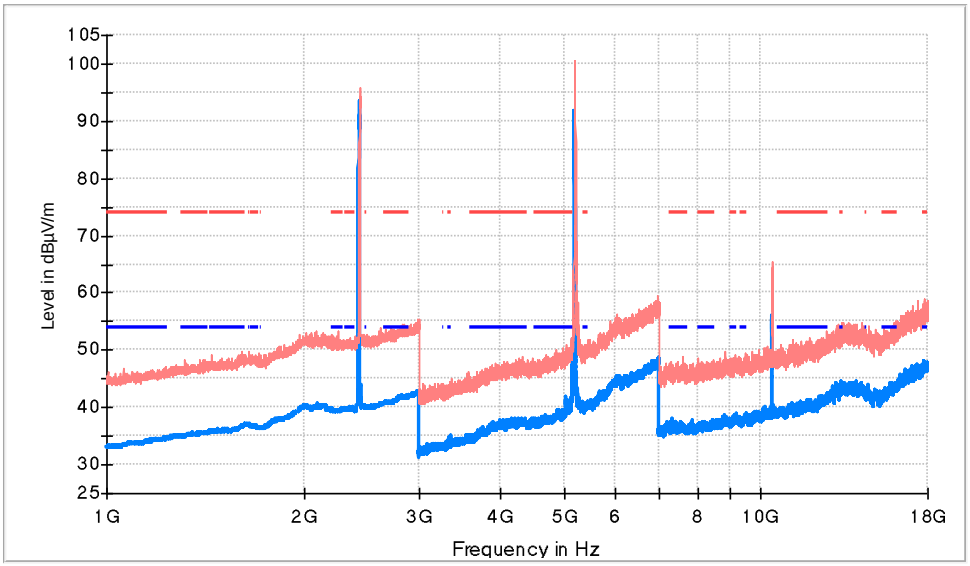


Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Pol	Azimuth (deg)
51.776500	24.6	27.9	V	-180.0
81.167500	36.3	33.1	V	115.0
124.963000	28.2	25.9	V	-169.0
168.758500	29.3	23.7	H	169.0
249.947500	29.5	24.7	V	44.0
374.980500	29.9	24.6	H	55.0

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**1 GHz – 18 GHz**

Middle Frequency



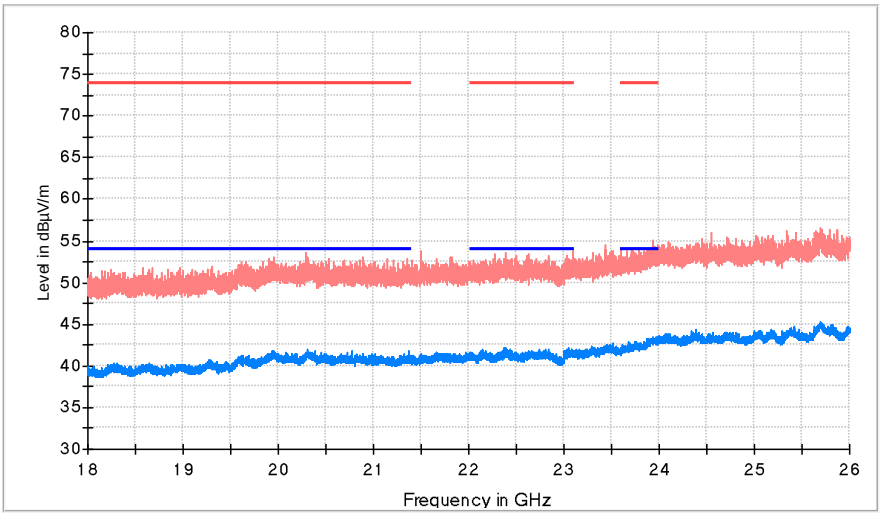
AVG_MAXH
PK+_MAXH
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands PK Limit
TX limits to Spurious Emission FCC15.247 (1GHz to 26 GHz) Restricted Bands AVG Limit

Maximizations

Frequency (MHz)	PK+_MAXH (dBµV/m)	AVG_MAXH (dBµV/m)	Pol	Comment
2441.000000	95.9	93.6	V	BT & WiFi 2.4 GHz Fundamental
5201.500000	99.2	91.8	H	WiFi 5 GHz Fundamental
10399.000000	65.3	55.9	V	

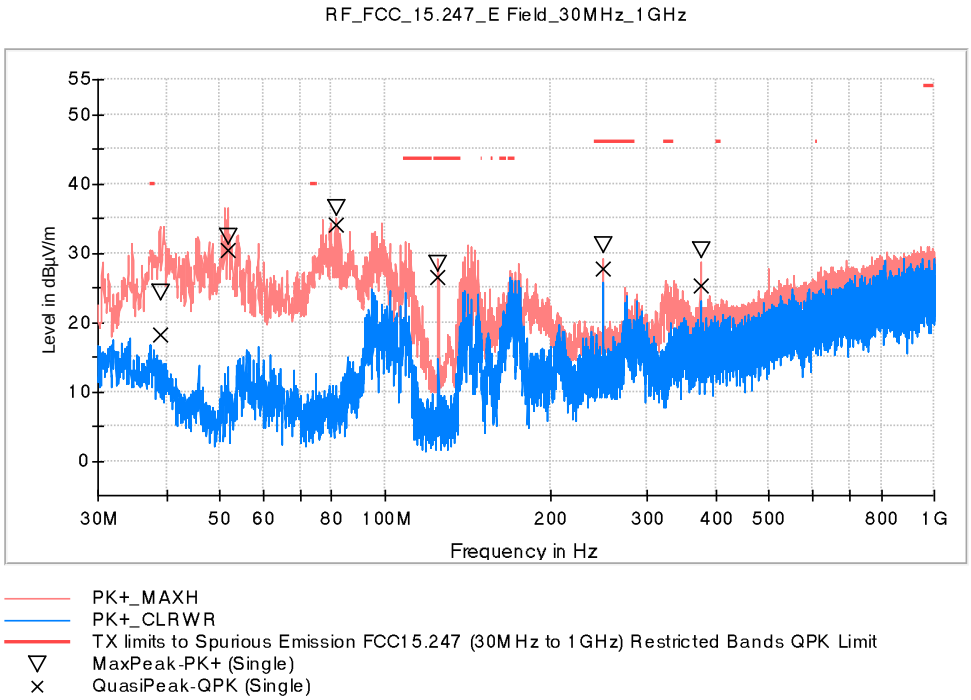
TEST RESULTS (Cont.)	
FREQUENCY RANGE	**18 GHz – 26 GHz**

Middle Frequency



TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	BT EDR, Wi-Fi 5 GHz MIMO UNII-3 (CHIP 1 WLAN 1), WiFi 2.4 GHz (CHIP 2 WLAN 0).
FREQUENCY RANGE	**30 MHz – 1 GHz**

Middle Frequency

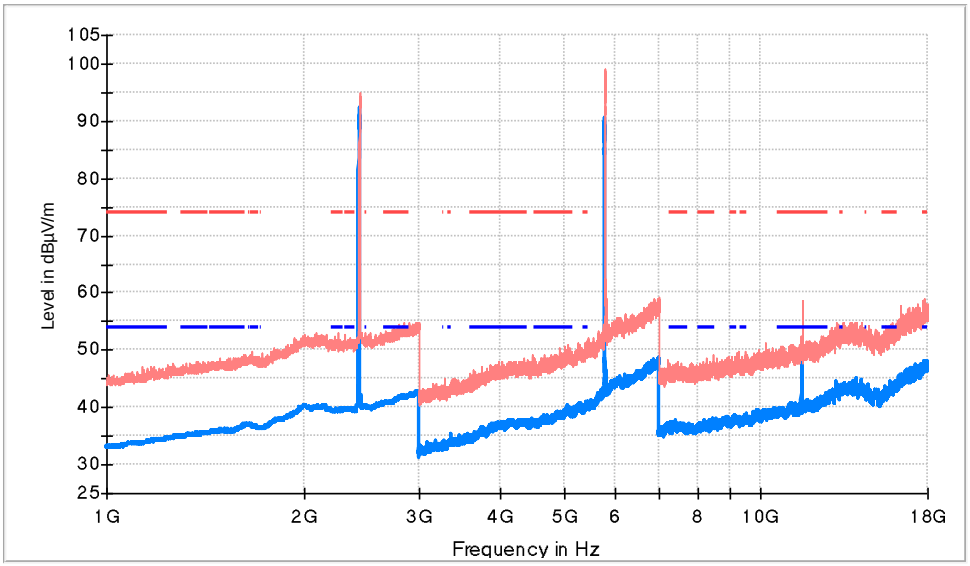


Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Pol	Azimuth (deg)
38.972500	24.3	18.1	V	-180.0
51.776500	32.4	30.3	V	-42.0
81.216000	36.4	34.0	V	93.0
124.963000	28.4	26.4	V	-180.0
249.996000	31.2	27.8	H	-11.0
375.029000	30.3	25.2	H	81.0

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**1 GHz – 18 GHz**

Middle Frequency

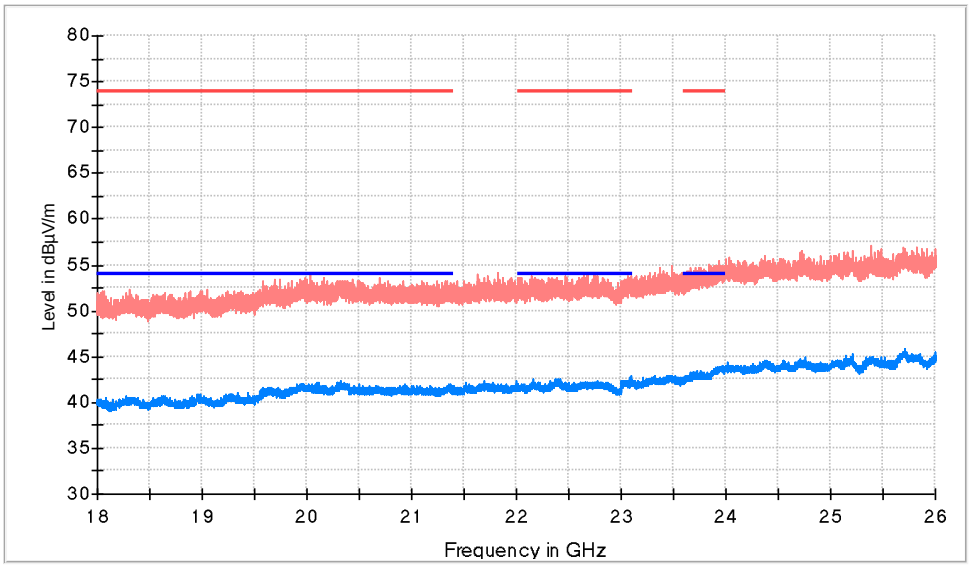


Maximizations

Frequency (MHz)	PK+_MAXH (dBµV/m)	AVG_MAXH (dBµV/m)	Pol	Comment
2441.000000	95.1	92.2	V	BT and WiFi 2.4 Ghz Fundamental
5786.500000	95.9	90.5	V	WiFi 5 GHz Fundamental
11568.000000	55.3	48.2	H	

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**18 GHz – 26 GHz**

Middle Frequency

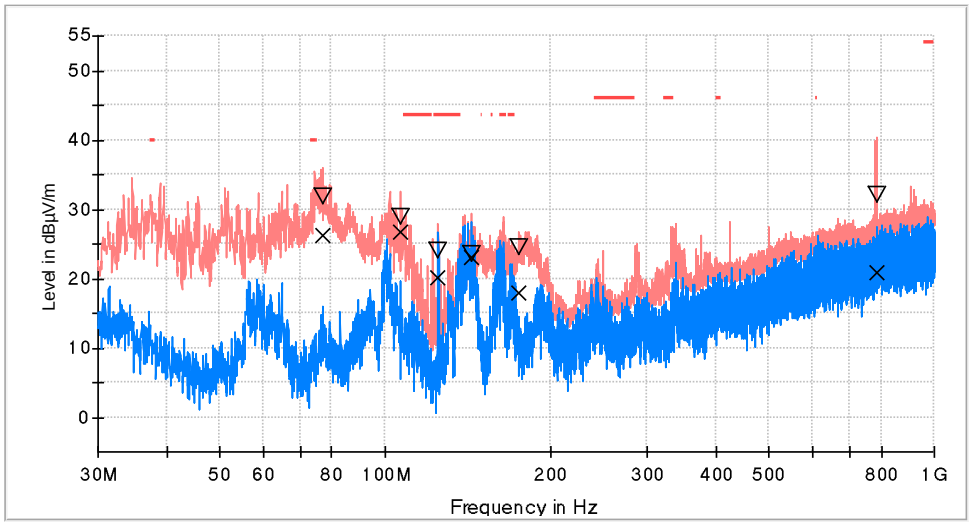


5.5

TESTED SAMPLES:	S/01
TESTED CONDITIONS MODES:	BT EDR, Wi-Fi 5 GHz MIMO UNII-3 (CHIP 2 WLAN 0), WiFi 2.4 GHz (CHIP 1 WLAN 1)
FREQUENCY RANGE	**30 MHz – 1 GHz**

Middle Frequency

RF_FCC_15.247_E Field_30MHz_1GHz



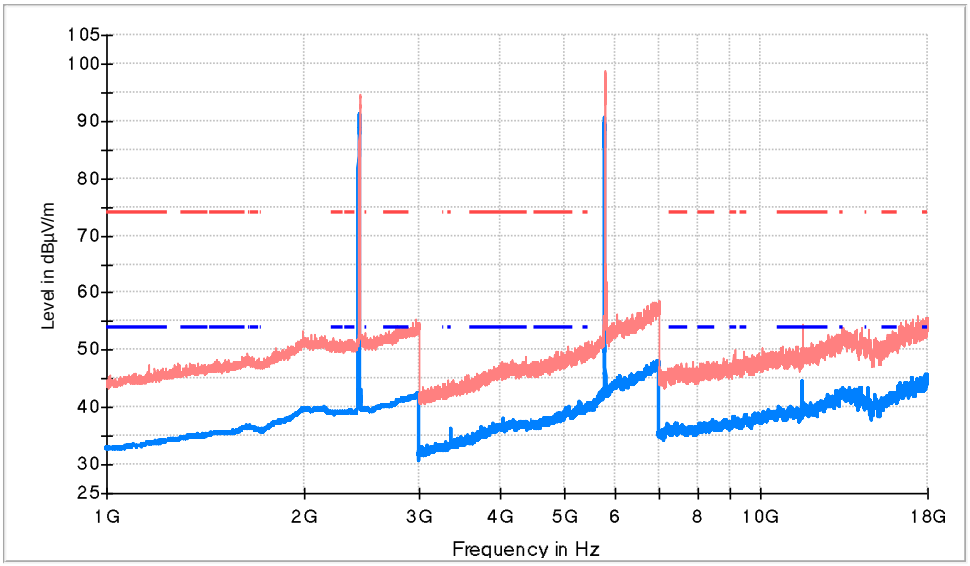
PK+_MAXH
PK+_CLRWR
TX limits to Spurious Emission FCC15.247 (30MHz to 1GHz) Restricted Bands QPK Limit
▽ MaxPeak-PK+ (Single)
× QuasiPeak-QPK (Single)

Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Pol	Azimuth (deg)
77.142000	31.8	26.3	V	24.0
106.678500	29.0	26.8	H	81.0
124.963000	24.0	20.1	H	180.0
143.296000	23.6	23.1	H	180.0
175.403000	24.6	18.0	V	24.0
783.738500	32.2	20.9	H	180.0

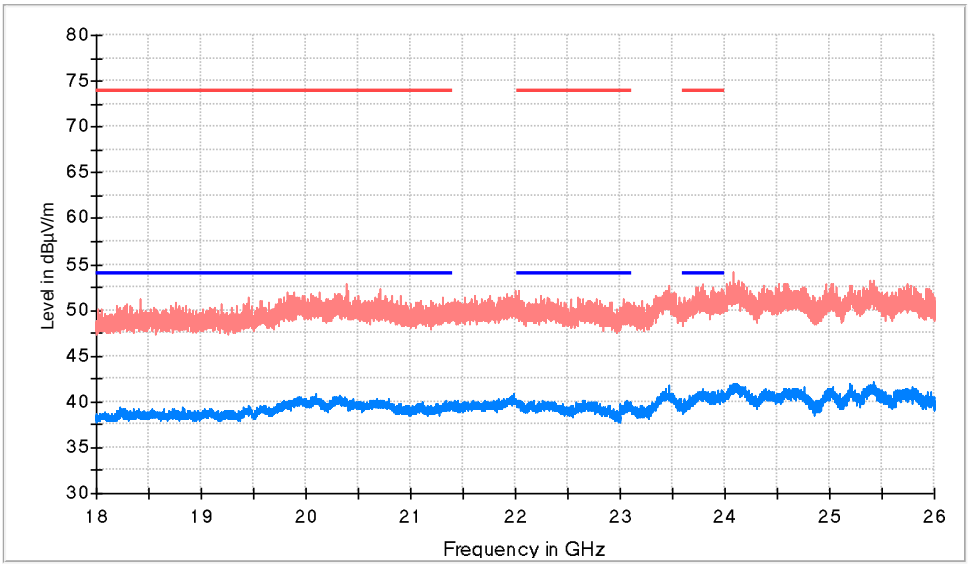
TEST RESULTS (Cont.)	
FREQUENCY RANGE	**1 GHz – 18 GHz**

Middle Frequency



Maximizations

Frequency (MHz)	PK+_MAXH (dBµV/m)	AVG_MAXH (dBµV/m)	Pol	Comment
2438.000000	94.5	91.2	V	BT & Wi-Fi 2.4 GHz Fundamental
3371.000000	43.1	36.1	V	
5783.500000	96.1	90.5	V	Wi-Fi 5 GHz Fundamental
11570.000000	54.2	44.6	H	

TEST RESULTS (Cont.)	
FREQUENCY RANGE	**18 GHz – 26 GHz**

Middle Frequency