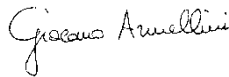


TEST REPORT

APPLICANT:	EMBIT S.r.l EMBEDDED & WIRELESS SOLUTION Via Emilia Est, 911 – 41100 Modena (MO) Italy Phone +39 059 371714 Fax +39 059 3680498	
APPLICANT REFEREE:	Mr. Daniele Rosani	
EUT DESCRIPTION	ZIGBEE Radio module	
EUT MODEL	EMB-Z2538PA	
EUT VERSIONS	EMB-Z2538PA / UL, EMB-Z2538PA / IA	
EUT FCC ID	Z7H-EMB2538PA	
EUT TRADEMARK		
MANUFACTURER	EMBIT S.r.l EMBEDDED & WIRELESS SOLUTION.	
REFERENCE STANDARDS	47 CFR FCC part 15.247	
TEST REPORT NUMBER	FCCTR_140934-2	
TEST REPORT ISSUE DATE	23/12/2015	
TESTING LABORATORY	Prima Ricerca & Sviluppo S.r.l. Via Campagna, 92 -22020 Faloppio (Co) – Italy FCC test registration number: 421808	
TESTING LOCATION	As Above	
DATE OF TEST SAMPLE RECEIPT	08/08/2014	
DATE OF TEST	August/September 2014	
TESTED BY	Giacomo ARMELLINI Responsabile Laboratorio EMC e RADIO/ EMC and RADIO Laboratory Manager	
APPROVED BY	Vincenzo LA FRAGOLA Direttore generale / Managing director	

The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.

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1. RELEASE CONTROL RECORD

TEST REPORT NUMBER	REASON OF CHANGE	DATE OF ISSUE
FCCTR_140934-0	Original release	10/06/2015
FCCTR_140934-1	Editorial Change	04/12/2015
FCCTR_140934-2	Editorial Change	23/12/2015

2. TECHNICAL INFORMATION OF EQUIPMENT UNDER TEST (EUT)

2.1 Identification

Trademark:	
Manufacturer:	EMBIT S.r.l EMBEDDED & WIRELESS SOLUTION.
Type of Equipment :	ZIGBEE Radio module
Model name:	EMB-Z2538PA
Versions:	EMB-Z2538PA / UL, EMB-Z2538PA / IA In the EMB- Z2538PA / UL version: the RF output is connected to the uF.I connector via the 0ohm resistor In the EMB- Z2538PA / IA version: the RF output is connected to the integrated PIFA antenna via the 0ohm resistor
Serial number :	prototype
FCC ID :	Z7H-EMB2538PA
Country of manufacturer:	ITALY

2.2 Technical data

Product type:	Radio Equipment
Radio type:	Intentional radiators
Product description / application	The EUT is 2.4GHz Zigbee Transceiver
Power supply requirements :	2V to 3.6V (typ. 3V) 3,3V (powered by demoboard connected to PC USB port)
Operating Frequency range	2400-2483,5MHz
Operating Frequency:	From 2405MHz to 2480MHz
Channel bandwidth	5MHz
Channel spacing	5MHz
Number of Channel	16 (from 11 to 26) Note: In order to achieve compliance with band edge requirements is not possible to use the last channel (26). The use of this channel has been blocked by the manufacturer
Modulation Type	QPSK
Antenna Type	EMB-Z2538PA / IA: Manufacturer: EMBIT Type: Printed Integrated PIFA Antenna Model: EMB-AN24-15PFA Gain: -2 dbi Connector: pad
	EMB-Z2538PA / UL: Antenna: Manufacturer: EMBIT Type: Swivel Antenna Model: EMB-AN24-70SA-R1 Gain: 7dbi Connector: SMA Reverse Polarity Cable: Manufacturer: EMBIT Type: SMA-RP (Female) To U.FL diameter 1.37mm Model: EMB-CA-SU-100 Loss: 0.25dB Connector: u.FI – SMA Reverse Polarity
Power Control Setting	EA

2.3 Ports identification

This section contains descriptions of all signal ports and AC/DC power input/output ports, the length and the type of the cable provided by manufacturer needed for the tests. Moreover it is specified if the ports are ever or optionally connected.

Port		Description	Connection
1	Enclosure	Not present (electronic PCB board only)	Plug-in electronic board
2	AC Power Supply	Not present (electronic PCB board only)	-----
3	DC power supply	3.3Vdc	Plug-in electronic board
4	Signal lines	Signal line	Plug-in electronic board
5	Telecomm. Lines	Not present (electronic PCB board only)	-----
6	Antenna port	For external antenna	u.FI connector
<i>Note: During the tests all cables must be what provided the manufacturer or the same that used in the real employment of the EUT.</i>			

2.4 Auxiliary equipment

- EMBIT Evaluation Board EMB-Z2538PA(/xx)-EVB (used during the session to power supply the EUT and for channel setting)

3. OPERATING TEST MODES AND CONDITIONS

In the following table there are the operating conditions adopted during tests identified by an indicator (#..) at which has been referred the item “Operating condition of the equipment under test”

<i>Operating condition</i>	<i>Description</i>
#1	<i>Continuous transmission, modulated carrier, on channel 11</i> <i>Power control setting: EA</i>
#2	<i>Continuous transmission, modulated carrier, on channel 18</i> <i>Power control setting: EA</i>
#3	<i>Continuous transmission, modulated carrier, on channel 26</i> <i>Power control setting: EA</i>

Special Test Software: Special software and hardware by the Applicant to operate the EUT at each channel frequency continuously. For example, the transmitter will be operated at each of the lowest, middle and highest frequencies individually continuously during testing.

Special Hardware Used: The RF Module has been tested by an evaluation board supplied by Embit (See Photographic documentation).

Transmitter Test Antenna: The EUT has been tested with the antenna fitted in a manner typical of normal intended use as integral antenna equipment as described with the test results.

4. REFERENCE STANDARD / DOCUMENT FOR PERFORMED TESTS

Cfr 47 part 15 subpart C par. 15.247	Radio Frequency Devices – Intentional Radiators Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz
ANSI C63.10:2009	American National Standard for Testing Unlicensed Wireless Devices
KDB 558074 D01	Guidance for performing Compliance measurements on Digital Transmission Systems (DTS) Operating under §15.247

5. SUMMARY OF TEST RESULTS

Port	Phenomena	Basic standard	Operating condition ¹	Result
Antenna port	Antenna requirement	FCC Part 15 §15.203	---	Compliant
	Maximum Peak Output Power	FCC Part 15 §15.247 (b) (3)	#1 #2	Within the limit
	6 dB Bandwidth	FCC Part 15 §15.247 (a) (2)	#1 #2	Within the limit
	Power Spectral Density	FCC Part 15 §15.247 (e)	#1 #2	Within the limit
	Band-Edge	FCC Part 15 § 15.247 (d)	#1 #2	Within the limit
	RF radiated Spurious Emissions at the Transmitter Antenna Terminal	FCC Part 15 § 15.247 (d)	#1 #2	Within the limit

NOTE:

CONDUCTED MEASUREMENT HAS BEEN PERFORMED ON EMB-Z2538PA / UL version

RADIATED MEASUREMENT HAS BEEN PERFORMED ON EMB-Z2538PA / IA version

6. TEST RESULTS

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Band-Edge.....	16
Power Spectral Density.....	20
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**TEST
1.**

ANTENNA REQUIREMENTS

**REFERENCE
DOCUMENT**

According to §15.203 / 15.204

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. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sec. 15.211, Sec. 15.213, Sec. 15.217, Sec. 15.219, or Sec. 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Sec. 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded

Antenna requirement
The EMB-Z2538PA / IA version have a integrated Printed PIFA antenna
The EMB-Z2538PA / UL: u.FI connector
RESULT: COMPLIANT

**TEST
2.**

MAXIMUM PEAK OUTPUT POWER

**REFERENCE
DOCUMENT**

According to §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.

TEST SETUP	In according to ref std
TEST LOCATION	Semi Anechoic Chamber / Radio test Area
TEST METHOD	KDB 558074 D01 par. 9.1.1 Maximum peak conducted output power
TYPE OF MEASUREMENT	CONDUCTED & RADIATED
TEST EQUIPMENT	Emi Receiver / Spectrum Analyzer Rohde&Schwarz mod. ESU40
TEST PERFORMED BY	Giacomo Armellini
TESTING DATE	August 2014

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 – 75 %rH	45%
Pressure : 85 – 106 kPa (860 mbar – 1060 mbar)	960mbar

OPERATING CONDITION	#1, #2, #3 DUTY CYCLE 100%
----------------------------	----------------------------

TEST RESULT	WITHIN THE LIMITS
--------------------	--------------------------

CONDUCTED MEASUREMENTS

(PERFORMED ON EMB-Z2538PA / UL)

Channel	Frequency (MHz)	Conducted Output Power at antenna cable connector (dBm)	Cable Loss (dB)	Conducted Output Power at u.FI connector (dBm)
		(see note 1)		
11	2405	22.19	0.25	22.44
18	2440	22.00	0.25	22.25
26	2480	21.85	0.25	22.10

Incertezza di misura / Measurement Uncertainty : ± 3 dB

Note 1

The conducted measurements has been performed at the RP-SMA connector of the EMB-CA-SU-100 Cable

The conducted output power at u.FI connector of the EMB-Z2538PA / UL has been calculated adding the EMB-CA-SU-100 cable loss.

EMB-Z2538PA / UL + EMB-CA-SU-100 CABLE + EMB-AN24-70SA-R1 ANTENNA EIRP

Channel	Frequency (MHz)	Conducted Output Power at u.FI connector (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
11	2405	22.44	0.25	7	29.19	30	WITHIN THE LIMITS
18	2440	22.25	0.25	7	29.00		
26	2480	22.10	0.25	7	28.85		

Incertezza di misura / Measurement Uncertainty : ± 3 dB

EMB-Z2538PA / IA EIRP

Channel	Frequency (MHz)	Conducted Output Power (dBm) (see note 2)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Result
11	2405	22.44	NA	-2	20.44	30	WITHIN THE LIMITS
18	2440	22.25	NA	-2	20.25		
26	2480	22.10	NA	-2	20.10		

Incertezza di misura / Measurement Uncertainty : ± 3 dB

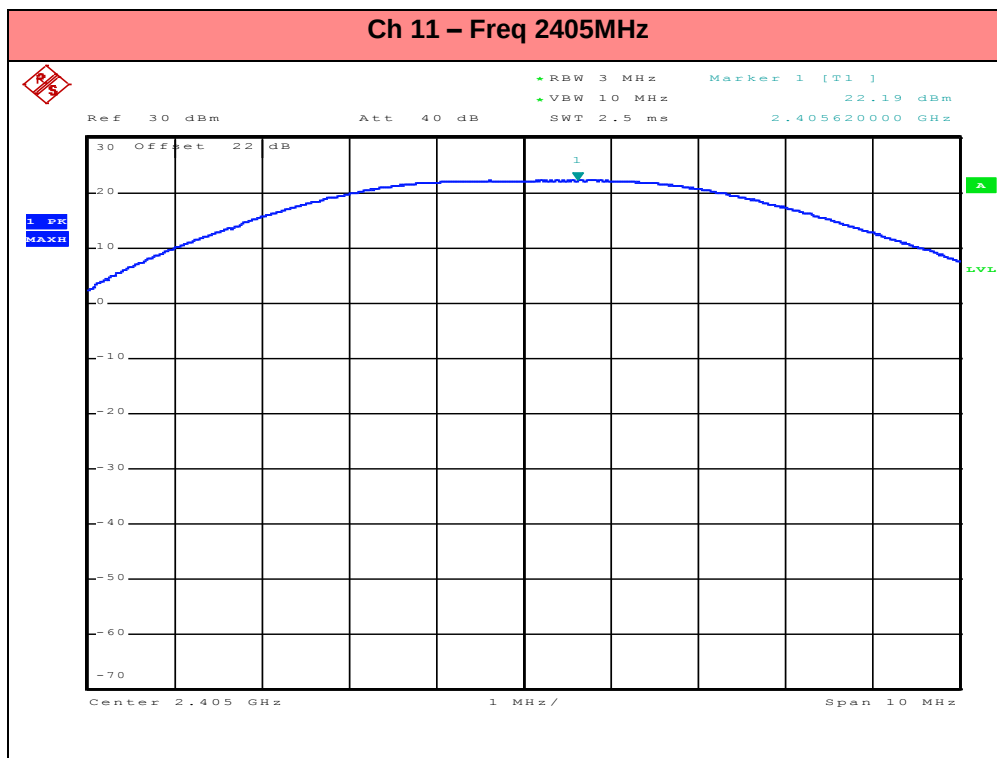
Note 2

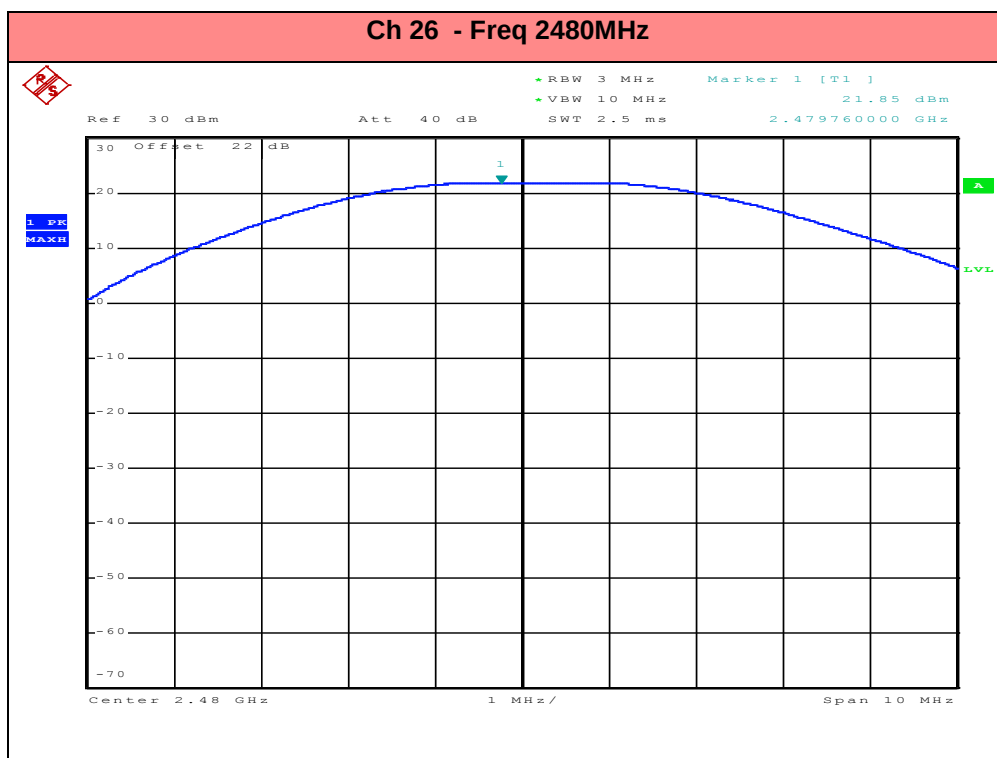
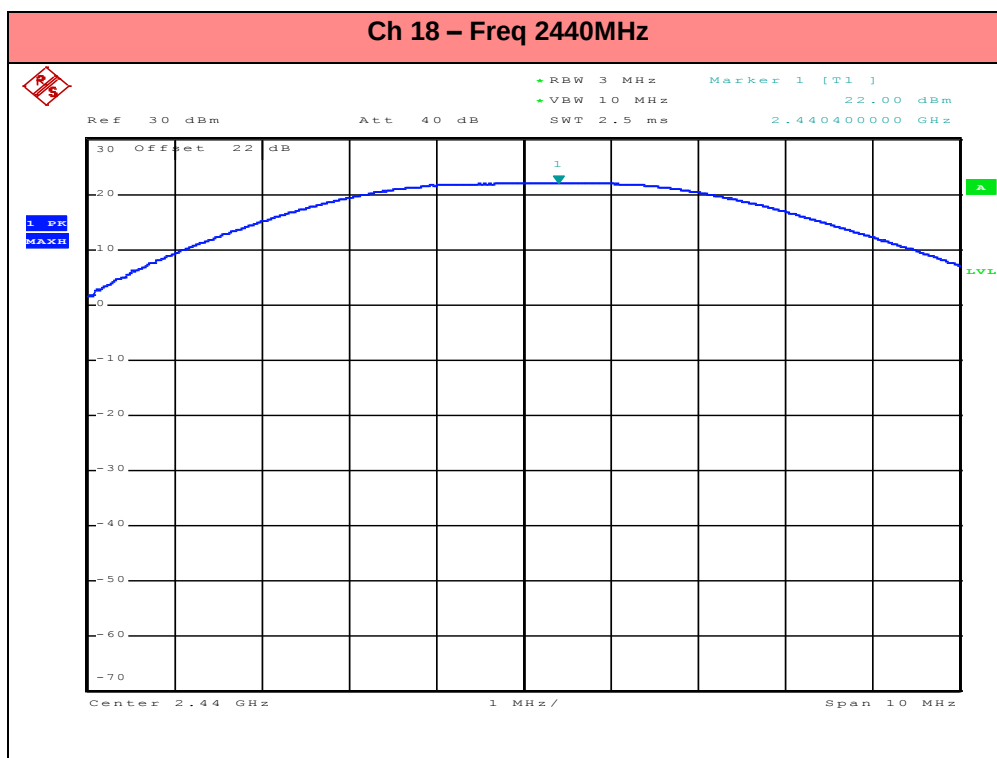
In the EMB-Z2538PA / UL version the RF output power is delivered to the external antenna connecting the 0 Ω resistor to the u.FI connector.

In the EMB-Z2538PA / IA version the RF output power is delivered to the printed PCB Antenna connecting the 0 Ω resistor to the pad of the printed antenna.

For this reason the Conducted output power measured on the EMB-Z2538PA / UL u.FI connector has been used to calculate the EIRP of the EMB-Z2538PA / IA

GRAPHICS





**TEST
3.**

6dB CHANNEL BANDWIDTH

REFERENCE DOCUMENT According to §15,247(a)(2), 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,

TEST SETUP	In according to ref std
TEST LOCATION	Radio test area
TEST METHOD	KDB 558074 D01 par. 8.2 DTS Bandwidth Option 2
TYPE OF MEASUREMENT	CONDUCTED
TEST EQUIPMENT	Spectrum Analyzer Rohde&Schwarz mod. FSP40 SYSTEM DC POWER SUPPLY HP mod. 6623A
TEST PERFORMED BY	Giacomo Armellini
TESTING DATE	August 2014

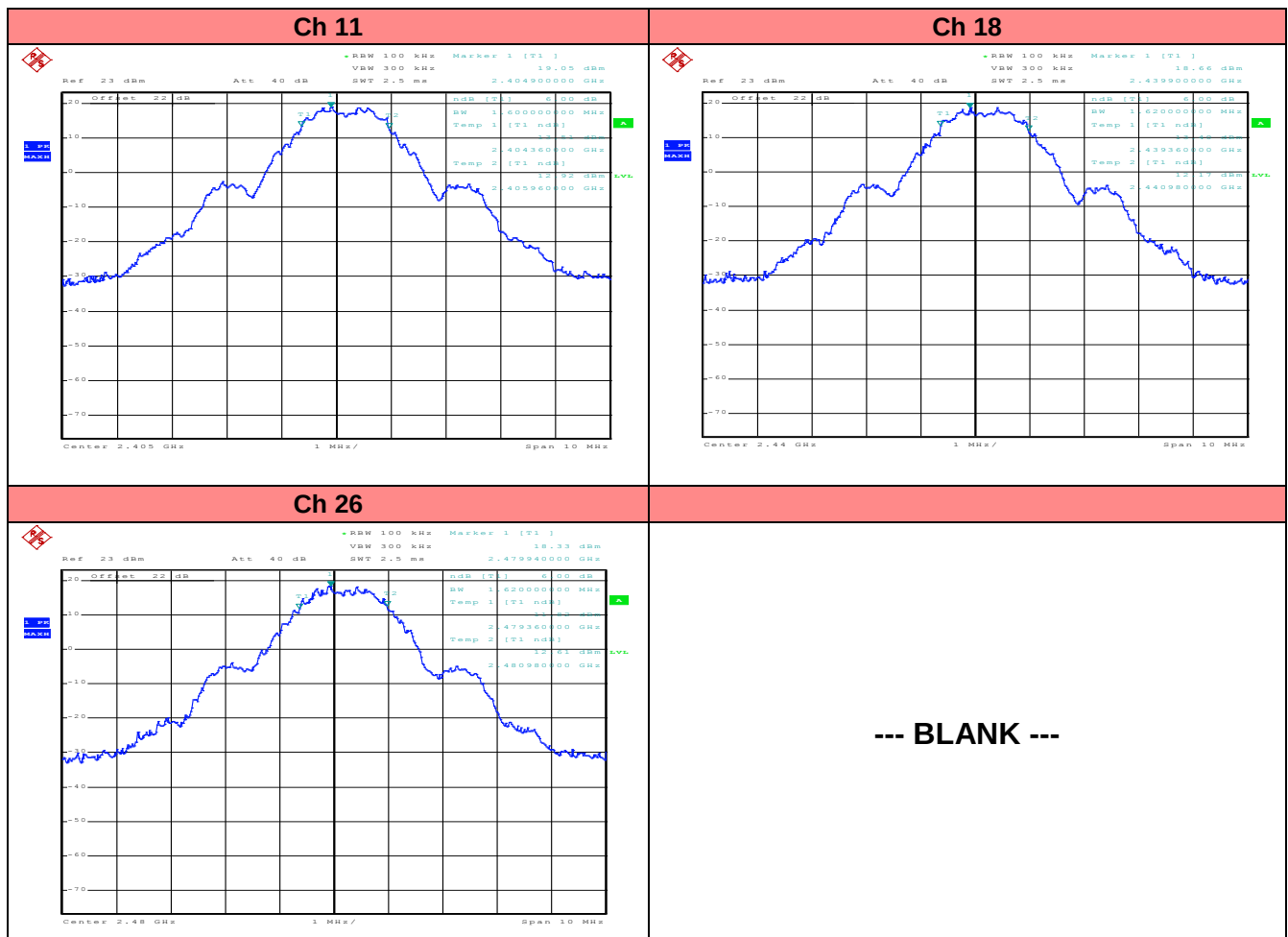
TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

OPERATING CONDITION	#1, #2, #3 DUTY CYCLE 100%
----------------------------	----------------------------

TEST RESULT	WITHIN THE LIMITS
--------------------	--------------------------

Measurement Result

Channel	Frequency (MHz)	6dB Channel Bandwidth (kHz)	Limit (kHz)	Result
11	2405	1600	>500	WITHIN THE LIMITS
18	2440	1620		
26	2480	1620		
Incertezza di misura / Measurement Uncertainty : ±1 KHz				



**TEST
4.**

Band-Edge

**REFERENCE
DOCUMENT**

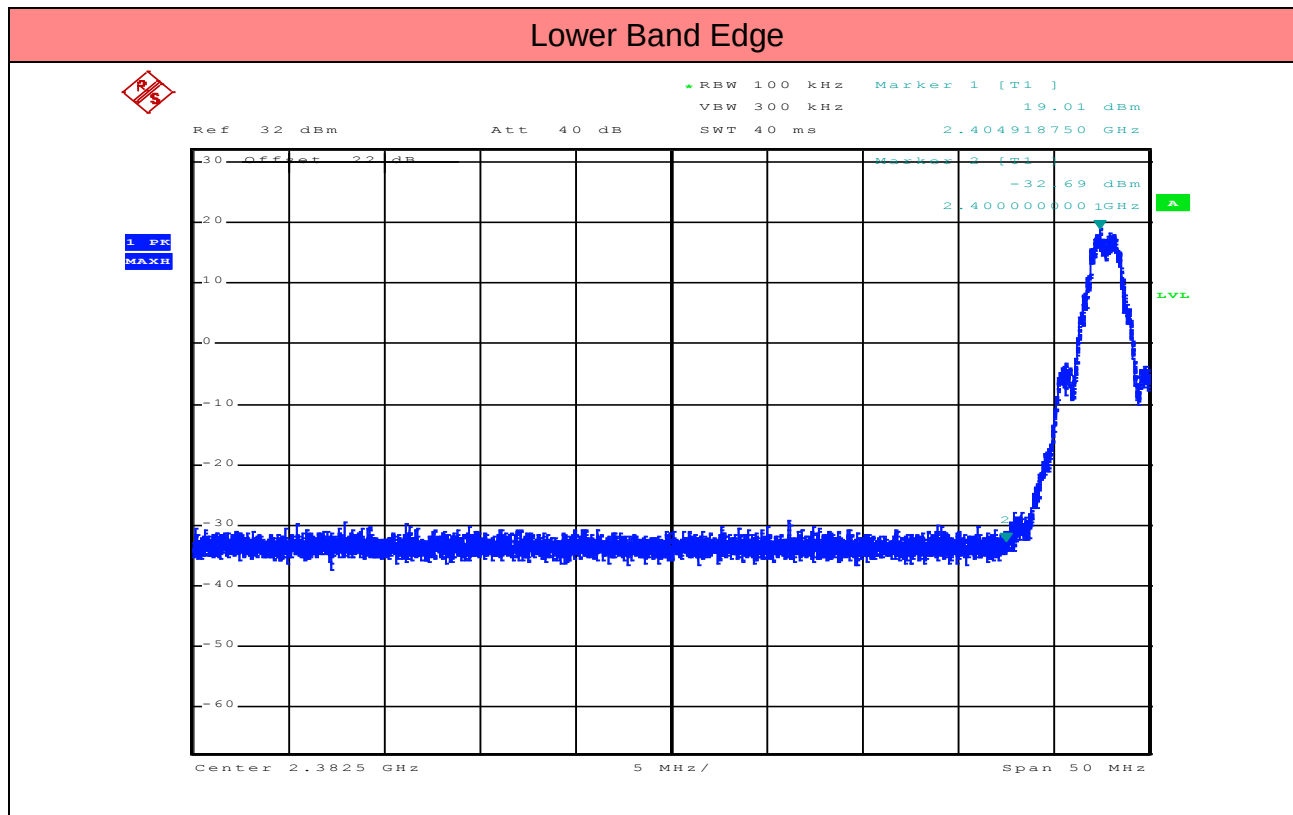
According to §15,247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within 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 Sec, 15,209(a) is not required, In addition, radiated emissions which fall in the restricted bands, as defined in Sec, 15,205(a), must also comply with the radiated emission limits specified in Sec, 15,209(a) (see Sec, 15,205(c)),

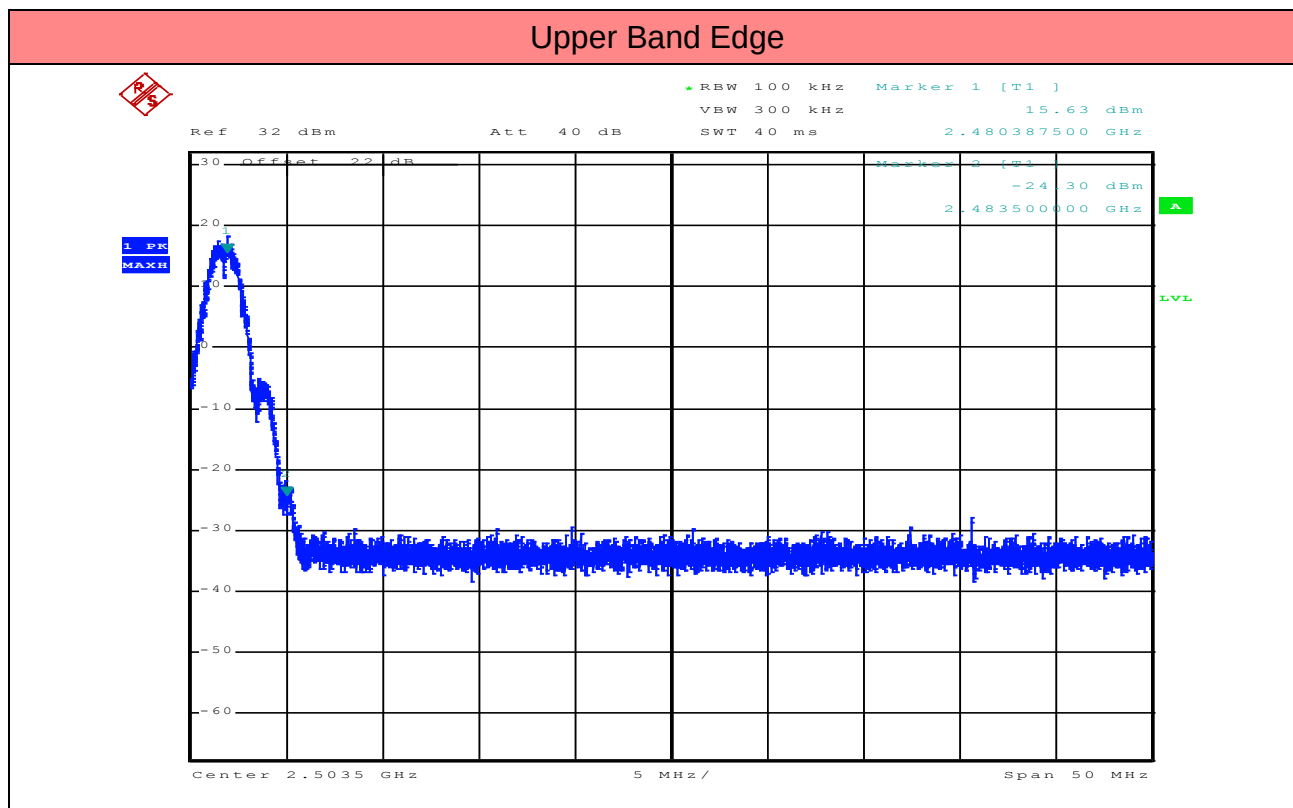
TEST SETUP	In according to ref std
TEST LOCATION	Radio test area
TYPE OF MEASUREMENT	CONDUCTED
TEST EQUIPMENT	Spectrum Analyzer Rohde&Schwarz mod. FSP40 SYSTEM DC POWER SUPPLY HP mod. 6623A
TEST PERFORMED BY	Giacomo Armellini
TESTING DATE	August 2014

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

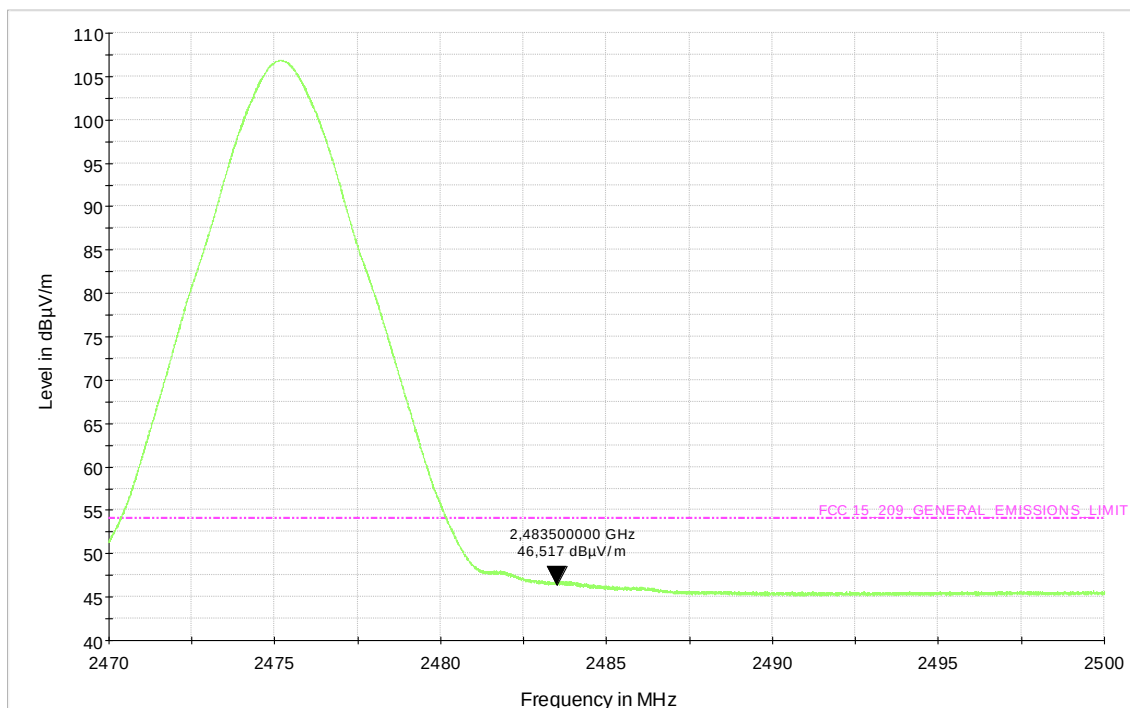
OPERATING CONDITION	#1, #2, #3 DUTY CYCLE 100%
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TEST RESULT	WITHIN THE LIMITS
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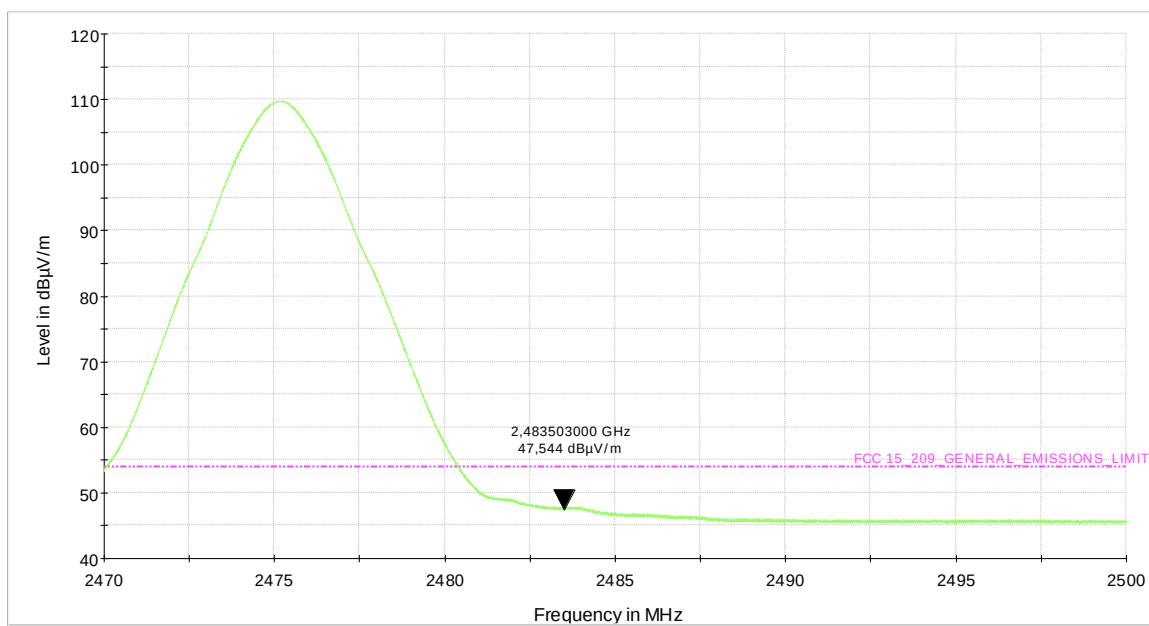




Upper Band Edge - EMB-Z2538PA / IA – CH25



Upper Band Edge - EMB-Z2538PA / UL – CH25



**TEST
5.**

POWER SPECTRAL DENSITY

**REFERENCE
DOCUMENT**

According to §15,247) (e) 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,

TEST SETUP	In according to ref std
TEST LOCATION	Radio test area
TYPE OF MEASUREMENT	CONDUCTED
	KDB 558074 D01 par. 10.2 Method PKPSD (peak PSD)
TEST EQUIPMENT	Spectrum Analyzer Rohde&Schwarz mod. FSP40 SYSTEM DC POWER SUPPLY HP mod. 6623A
TEST PERFORMED BY	Giacomo Armellini
TESTING DATE	August 2014

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C ± 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

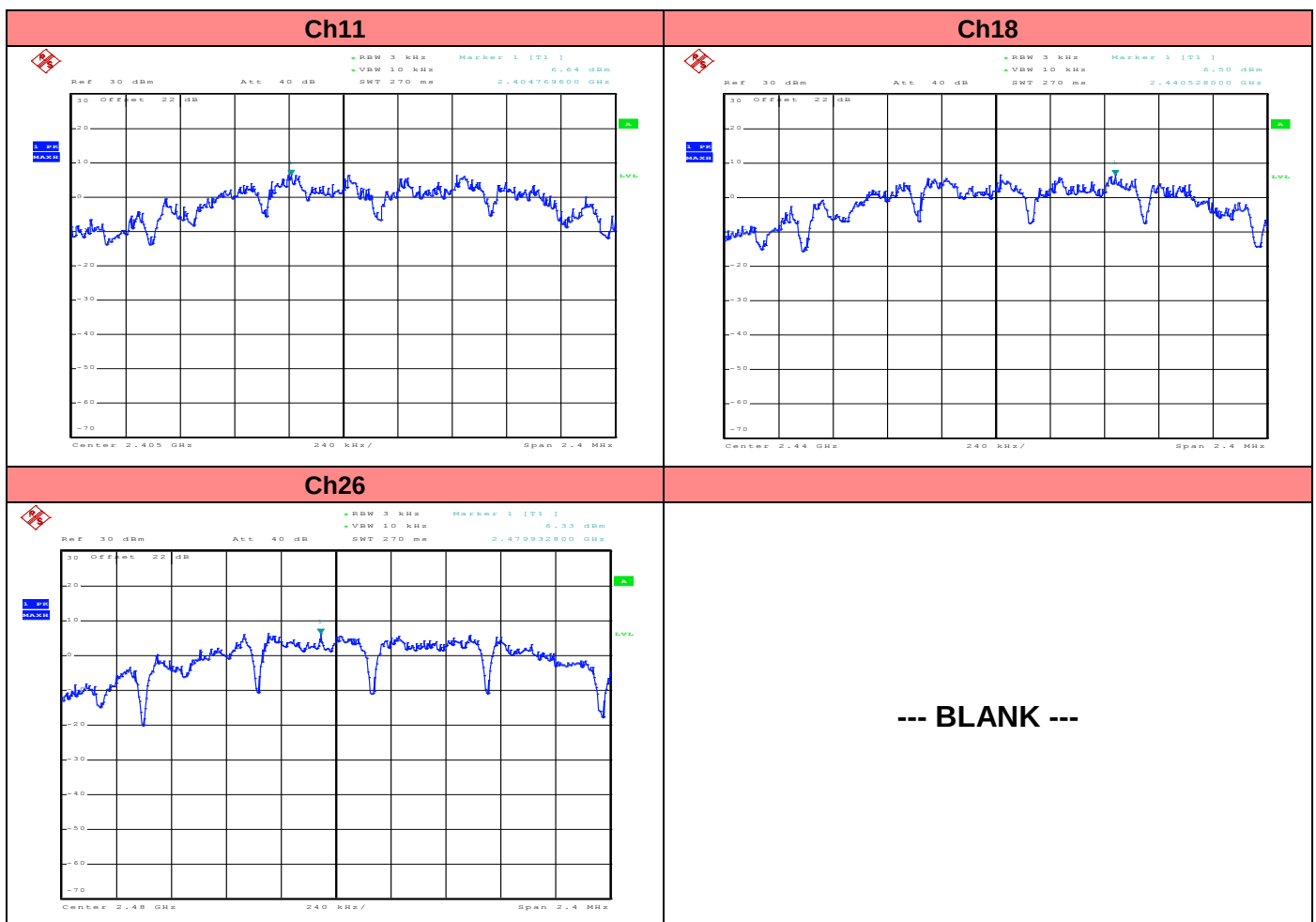
OPERATING CONDITION	#1, #2, #3 DUTY CYCLE 100%
----------------------------	----------------------------

TEST RESULT	WITHIN THE LIMITS
--------------------	--------------------------

Measurement Result

Channel	Frequency (MHz)	PSD (dBm)	Limit (dBm)	Margin (dB)	Result
11	2405	6.64	8	1.36	WITHIN THE LIMITS
18	2440	6.50	8	1.50	
26	2480	6.33	8	1.67	
		Incertezza di misura / Measurement Uncertainty : ±1dB			

GRAPHICS



**TEST
6.**

RADIATED EMISSION 9KHZ ÷10TH HARMONIC

**REFERENCE
DOCUMENT**

According to §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)).

TEST SETUP	In according to ref std
TEST LOCATION	Semi Anechoic Chamber
TYPE OF MEASUREMENT	RADIATED & CONDUCTED
	KDB 558074 D01 par. 11.0
TEST EQUIPMENT	EMI receiver Rohde & Schwarz Mod, ESU 40 Spectrum Analyzer Rohde & Schwarz Mod, FSP40 Chase Antenna Mod, CBL 6111 C Antenna Rohde & Schwarz mod, HL050 Tunable notch filter Wainwright mod, WRCT2200/2500-5/40-10SK High pass filter Wainwright WHNX 2,8/18G-10SS
TEST PERFORMED BY	Giacomo Armellini
TESTING DATE	August 2014
UNCERTAINTY OF MEASURE:	Combined uncertainty = $\pm 1,75$ dB Total uncertainty = (k=2) $\pm 3,5$ dB

TEST CONDITIONS:	MEASURED
Ambient temperature : 23°C $\pm$ 5°C	24°C
Ambient humidity : 25 - 75 %rH	45%
Pressure : 85 - 106 kPa (860 mbar - 1060 mbar)	960mbar

OPERATING CONDITION	#1, #2, #3 DUTY CYCLE 100%
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TEST RESULT	WITHIN THE LIMITS
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EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH11

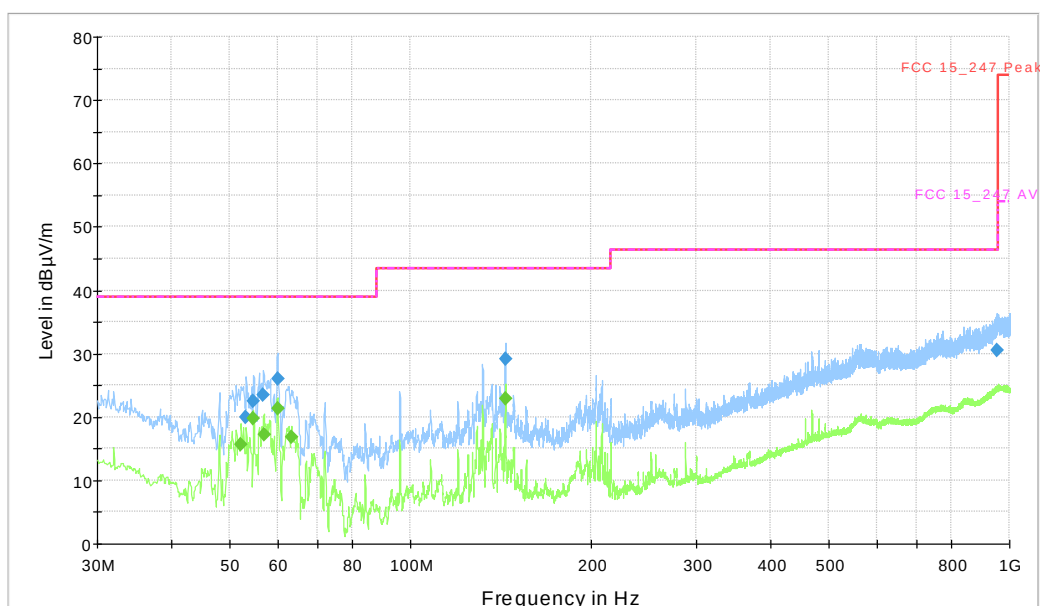
VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH11

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Final Result - Quasi Peak

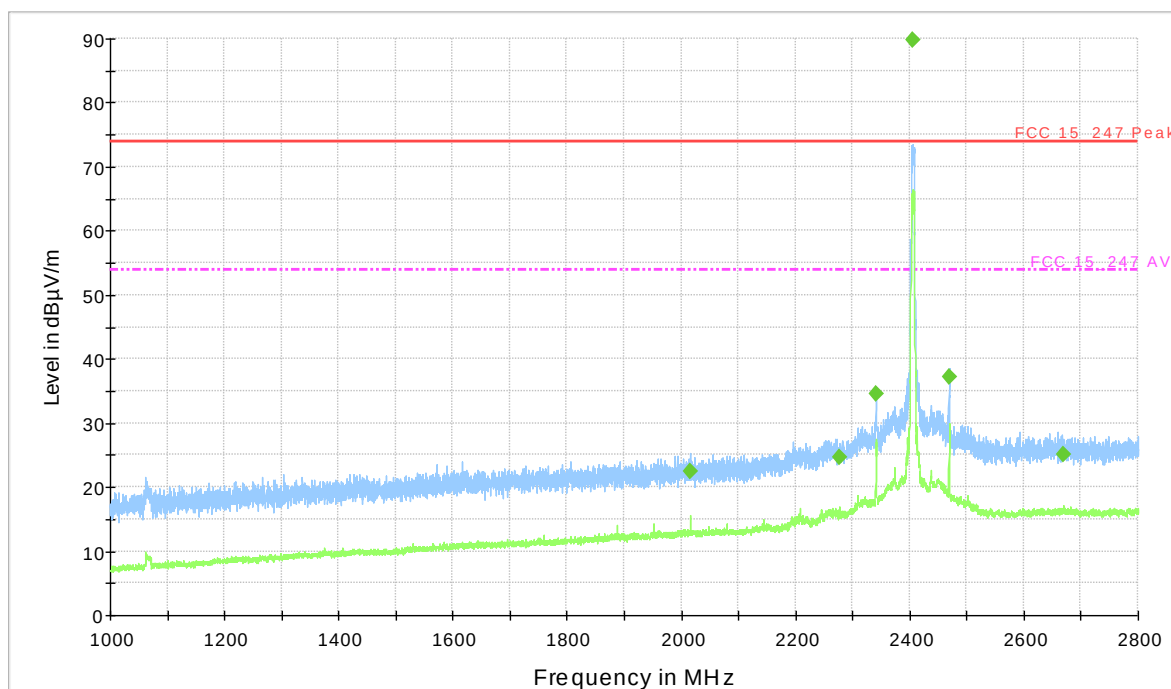
Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
53.183000	19.9	100.0	V	90.0	19.10	39.00
54.735000	22.6	100.0	V	90.0	16.40	39.00
56.869000	23.5	100.0	V	0.0	15.50	39.00
59.973000	26.1	100.0	V	90.0	12.90	39.00
143.975000	29.1	100.0	V	180.0	14.40	43.50
955.089000	30.5	100.0	V	0.0	15.90	46.40

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH11

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Average Final Result

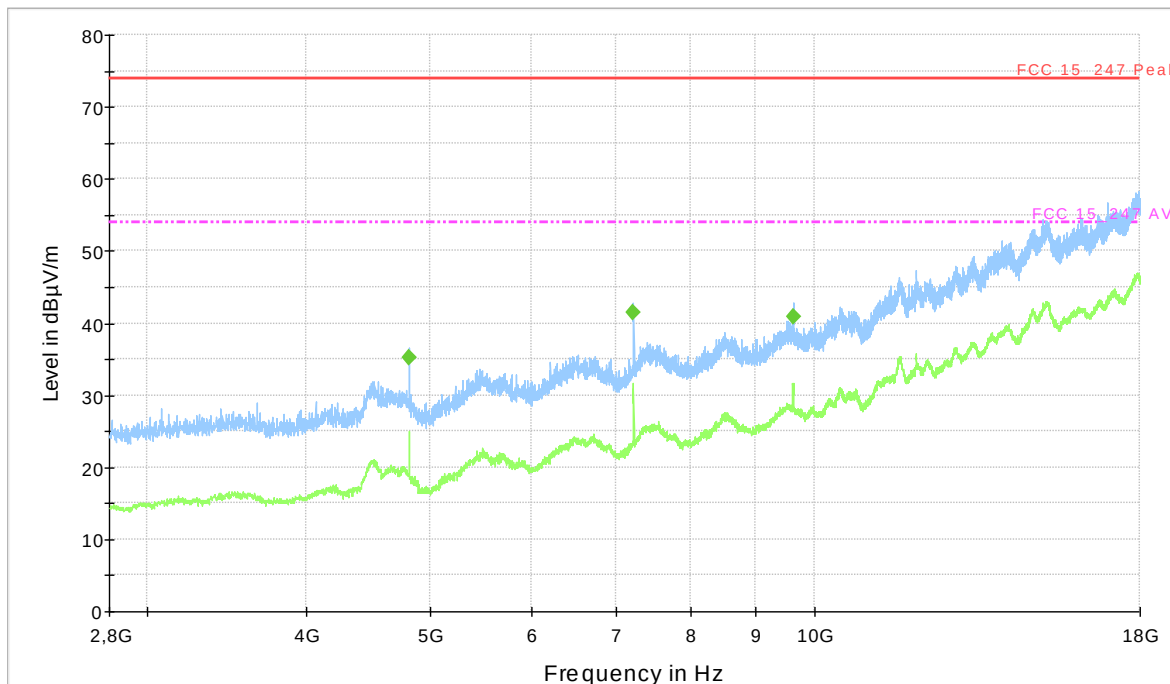
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2016.100000	22.4	100.0	V	180.0	31.60	54.00
2277.640000	24.7	100.0	V	0.0	29.30	54.00
2340.820000	34.4	100.0	V	0.0	19.60	54.00
2405.620000	89.8	100.0	V	90.0	-535.80	54.00
2468.800000	37.2	100.0	V	90.0	16.80	54.00
2669.500000	25.0	100.0	V	180.0	29.00	54.00

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH11

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Green trace average detector, Green marker Average detector

Final Result - Average

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
4809.440000	35.1	100.0	V	270.0	18.90	54.00
7214.080000	41.5	100.0	V	89.0	12.50	54.00
9621.760000	40.9	100.0	V	0.0	13.10	54.00

FREQUENCY RANGE 18GHz to 10th HARMONIC CH11

VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH11

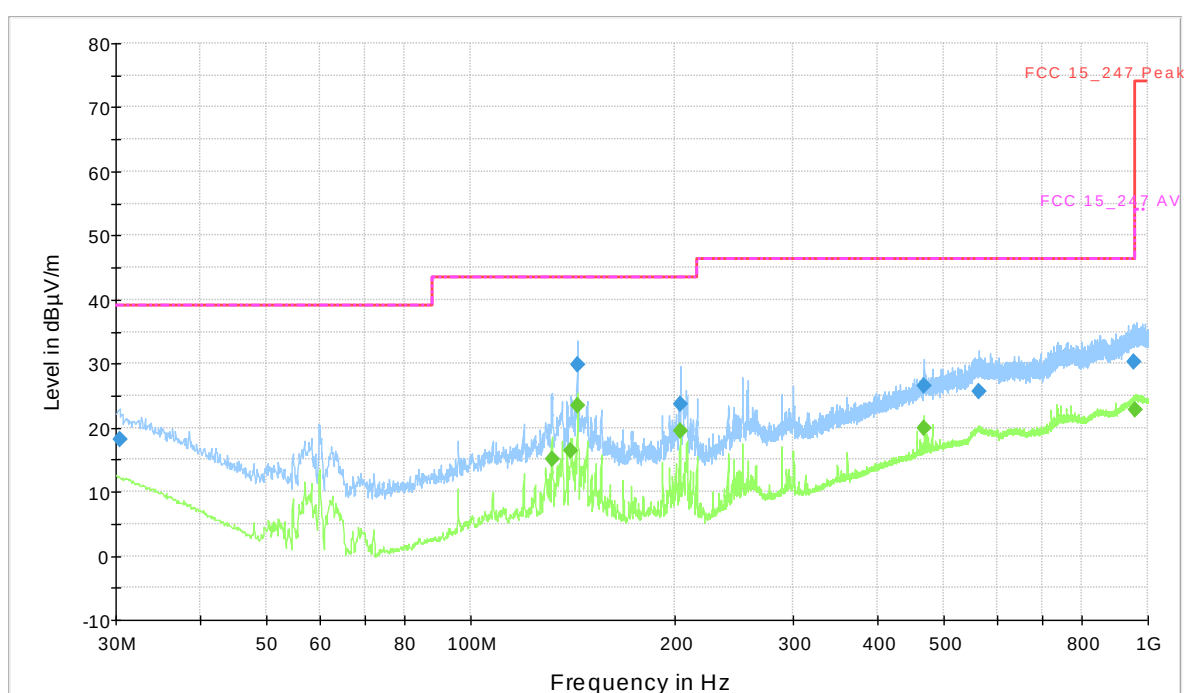
HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH11

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Final Result – Quasi Peak

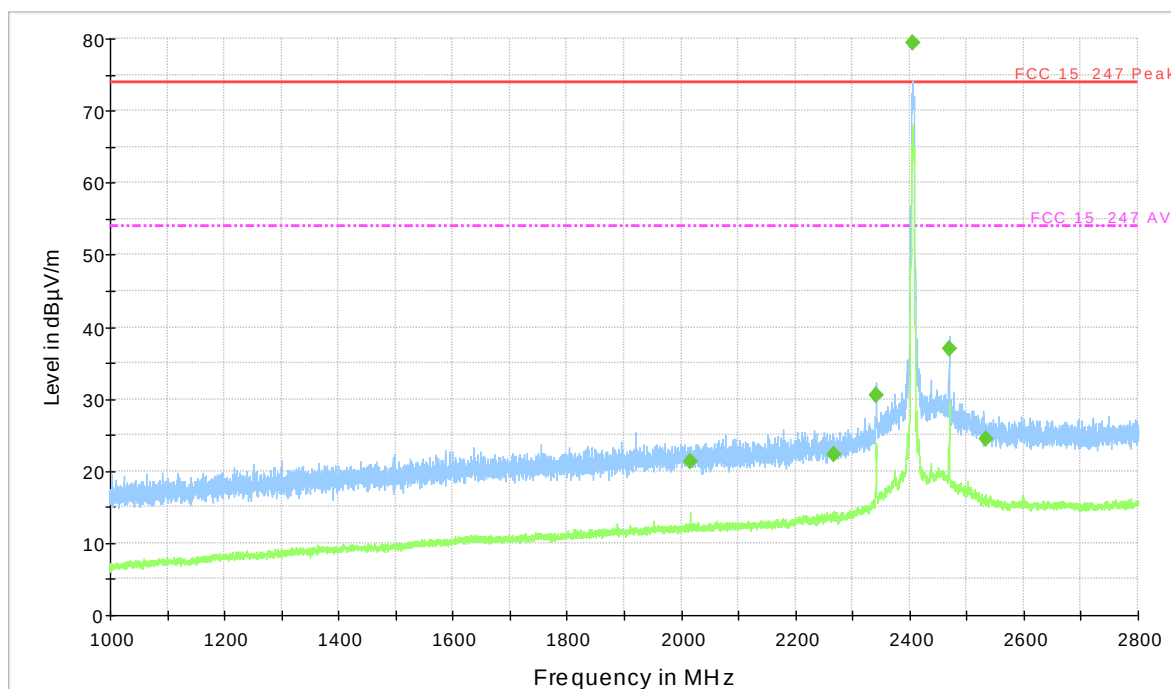
Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
30.388000	18.2	100.0	H	90.0	20.80	39.00
143.975000	29.8	100.0	H	270.0	13.70	43.50
204.018000	23.8	100.0	H	0.0	19.70	43.50
468.052000	26.6	100.0	H	0.0	19.80	46.40
562.724000	25.7	100.0	H	0.0	20.70	46.40
953.828000	30.3	100.0	H	0.0	16.10	46.40

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH11

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Average Final Result

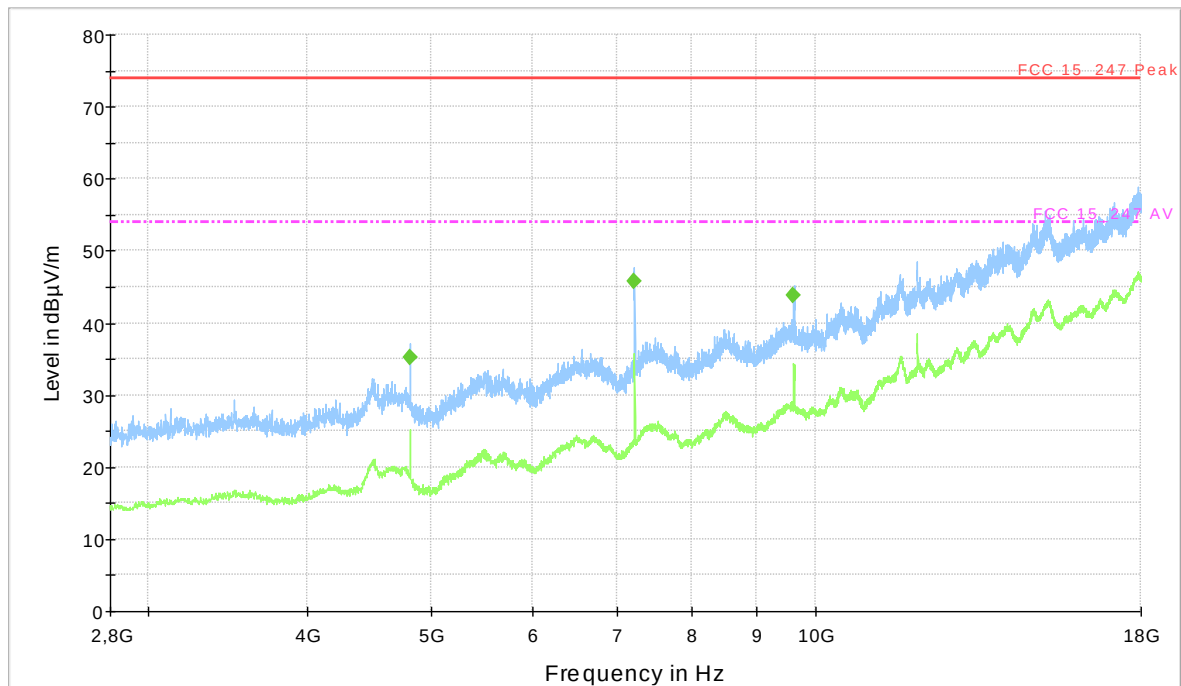
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2016.100000	21.3	100.0	H	0.0	32.70	54.00
2267.740000	22.2	100.0	H	0.0	31.80	54.00
2341.540000	30.6	100.0	H	0.0	23.40	54.00
2405.620000	79.5	100.0	H	90.0	-25.50	54.00
2468.800000	37.0	100.0	H	0.0	17.00	54.00
2533.600000	24.4	100.0	H	270.0	29.60	54.00

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH11

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Green trace & Green marker average detector

Average Final Result

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
4809.44000	35.3	100.0	H	270.0	18.70	54.00
7214.08000	45.8	100.0	H	0.0	8.20	54.00
9618.72000	43.8	100.0	H	90.0	10.20	54.00

FREQUENCY RANGE 18GHz to 10th HARMONIC CH11

HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH 18

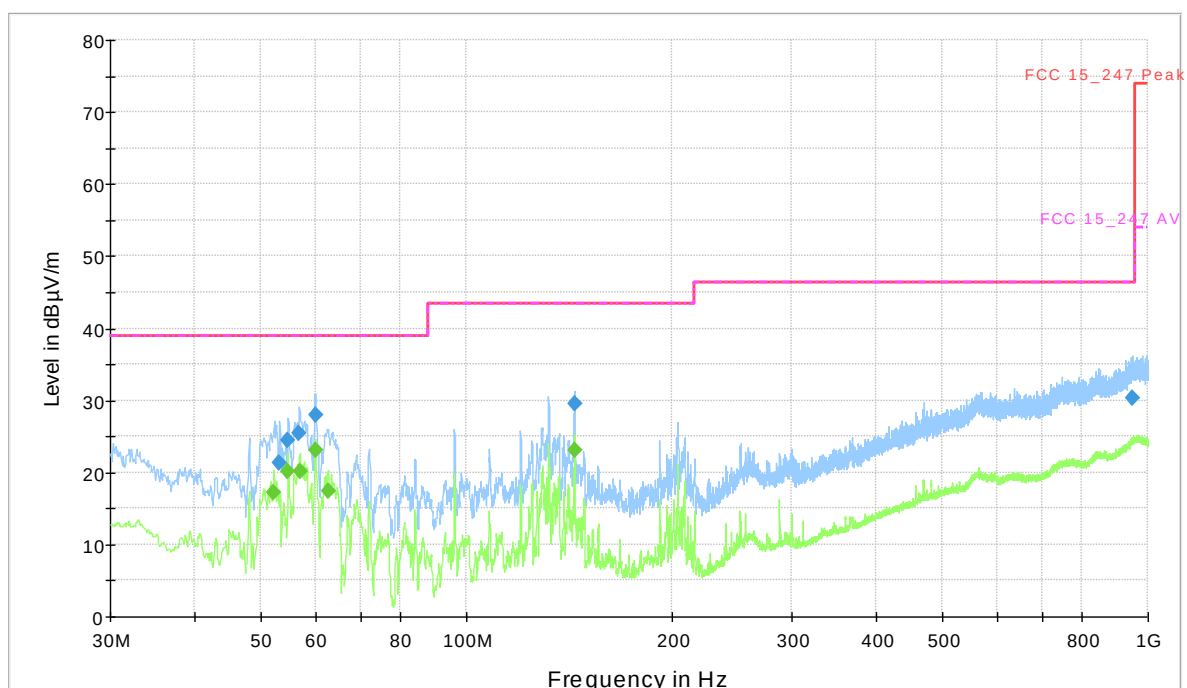
VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH 18

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Quasi Peak Final Result

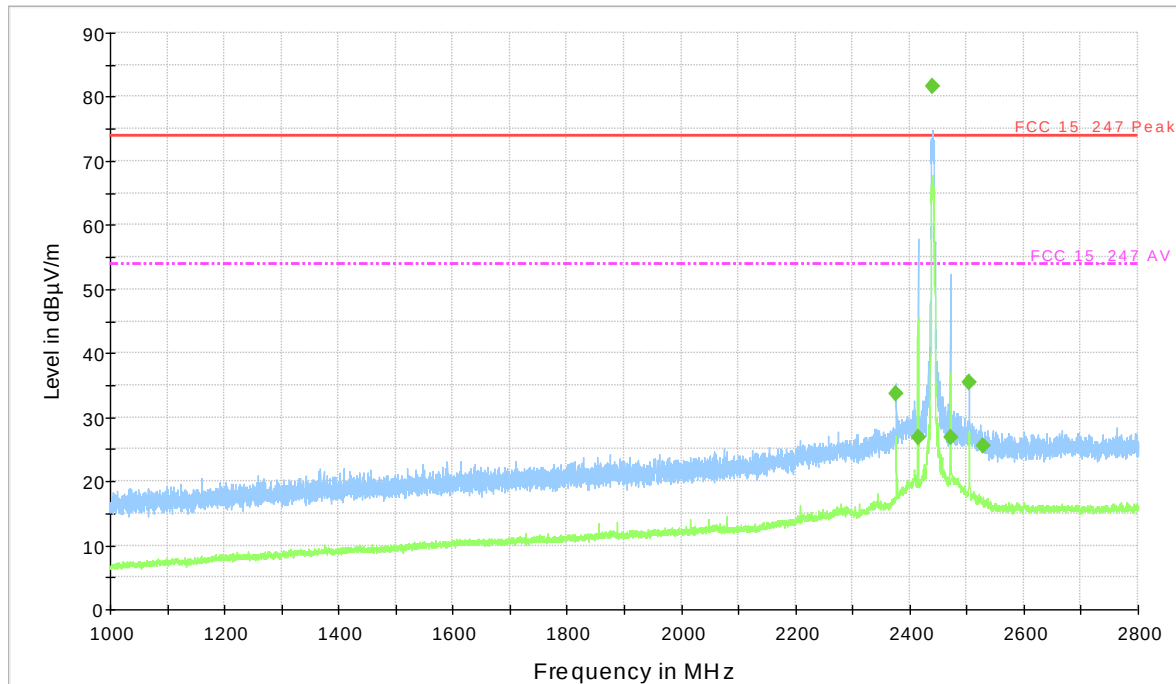
Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
53.183000	21.3	100.0	V	0.0	17.70	39.00
54.735000	24.5	100.0	V	0.0	14.50	39.00
56.869000	25.5	100.0	V	0.0	13.50	39.00
59.973000	28.0	100.0	V	270.0	11.00	39.00
143.975000	29.5	100.0	V	180.0	14.00	43.50
951.015000	30.3	100.0	V	270.0	16.10	46.40

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH 18

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Average Final Result

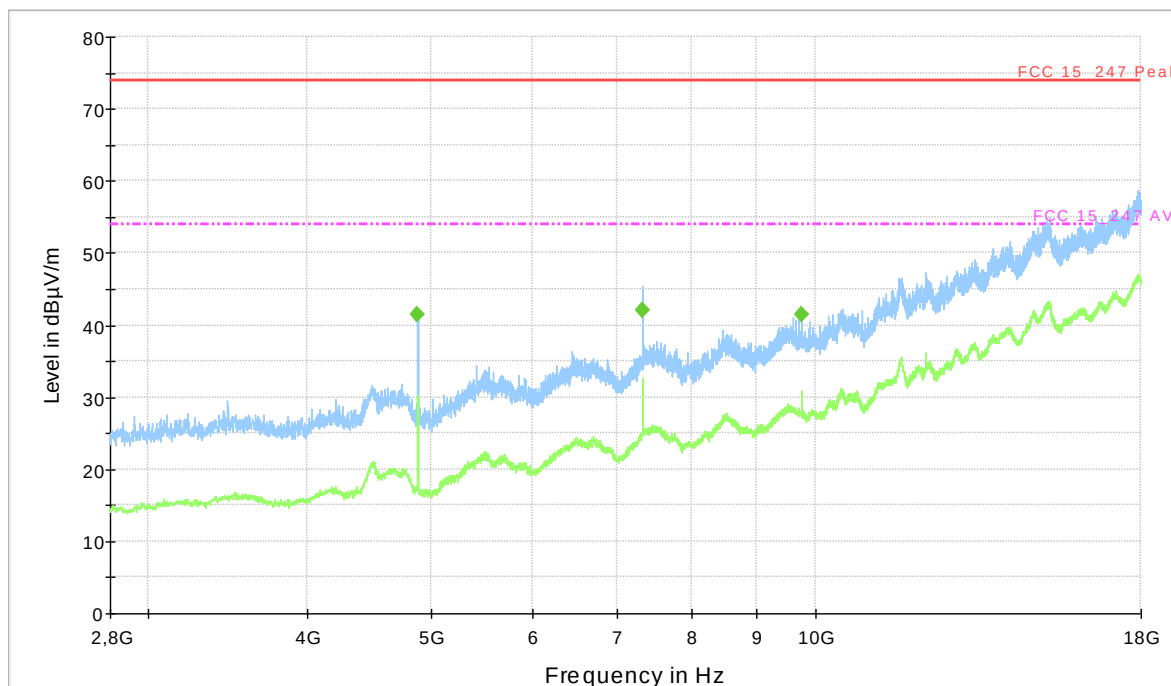
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2376.640000	33.8	100.0	V	0.0	20.20	54.00
2414.260000	26.8	100.0	V	180.0	27.20	54.00
2439.820000	81.7	100.0	V	270.0	-27.70	54.00
2471.140000	26.8	100.0	V	0.0	27.20	54.00
2503.900000	35.3	100.0	V	90.0	18.70	54.00
2527.660000	25.4	100.0	V	90.0	28.60	54.00

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH 18

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Green trace average detector

Average Final Result

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
4879.360000	41.6	100.0	V	0.0	12.40	54.00
7318.960000	42.0	100.0	V	270.0	12.00	54.00
9758.560000	41.4	100.0	V	90.0	12.60	54.00

FREQUENCY RANGE 18GHz to 10th HARMONIC CH 18

VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH 18

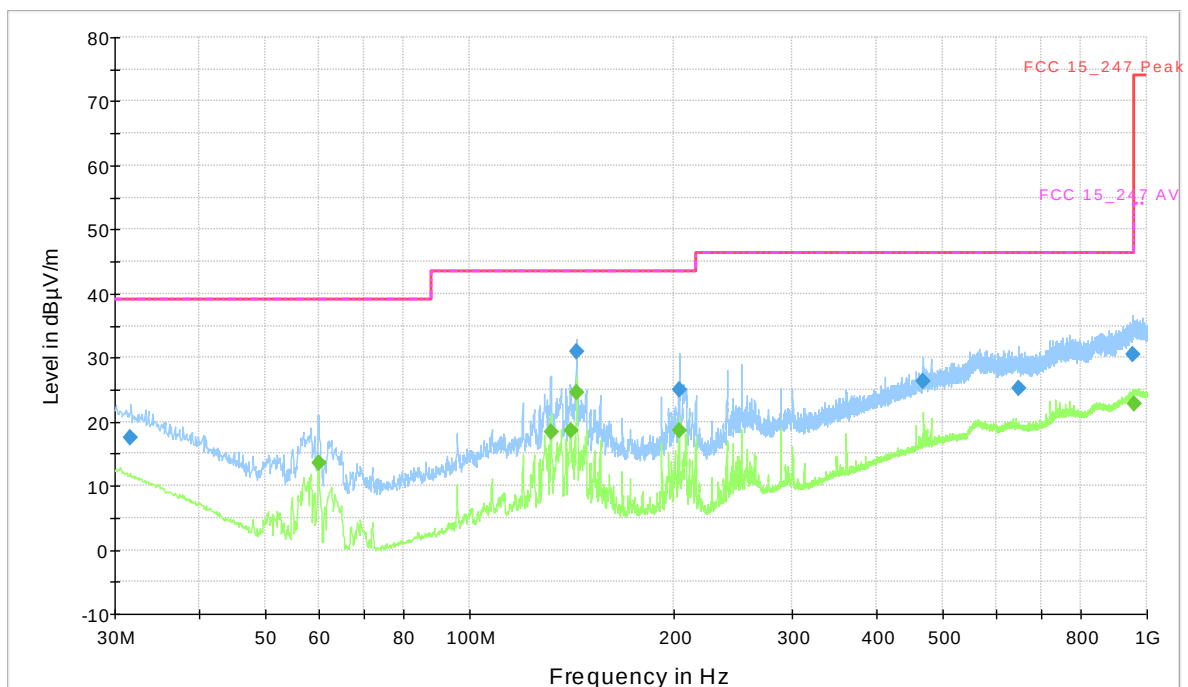
HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH 18

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Quasi Peak Final Result

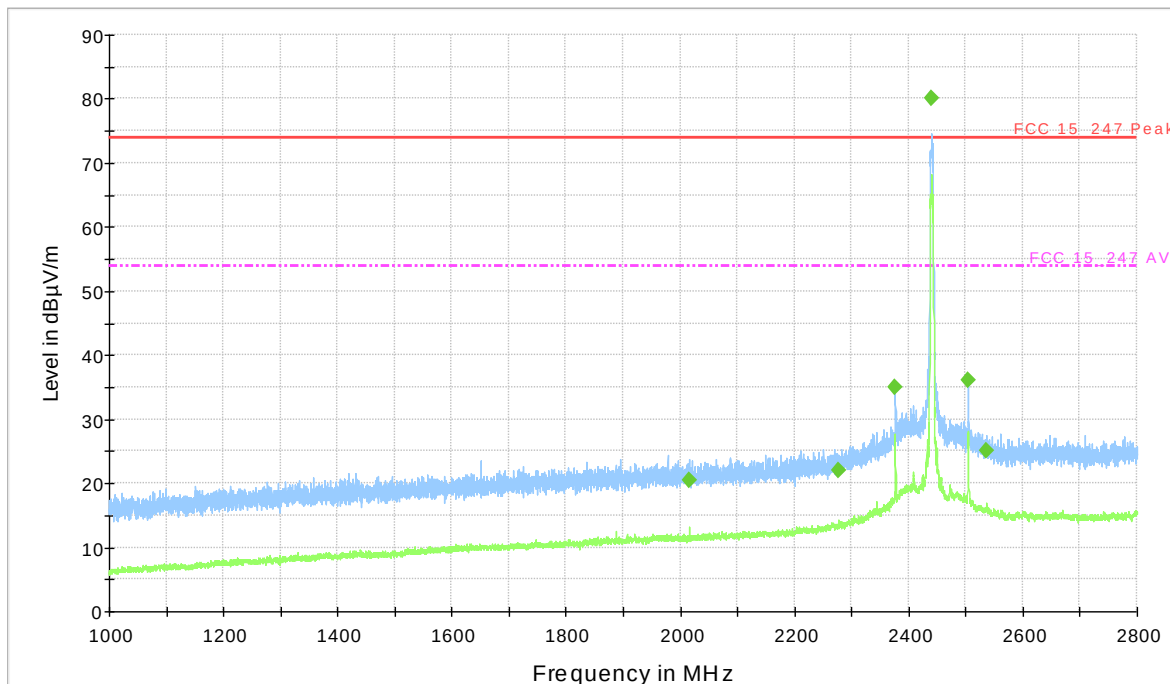
Frequency (MHz)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
31.649000	17.4	100.0	H	0.0	21.60	39.00
143.975000	30.8	100.0	H	270.0	12.70	43.50
204.018000	25.0	100.0	H	0.0	18.50	43.50
468.246000	26.2	100.0	H	0.0	20.20	46.40
646.338000	25.2	100.0	H	180.0	21.20	46.40
955.089000	30.5	100.0	H	180.0	15.90	46.40

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH 18

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Final Result - Average

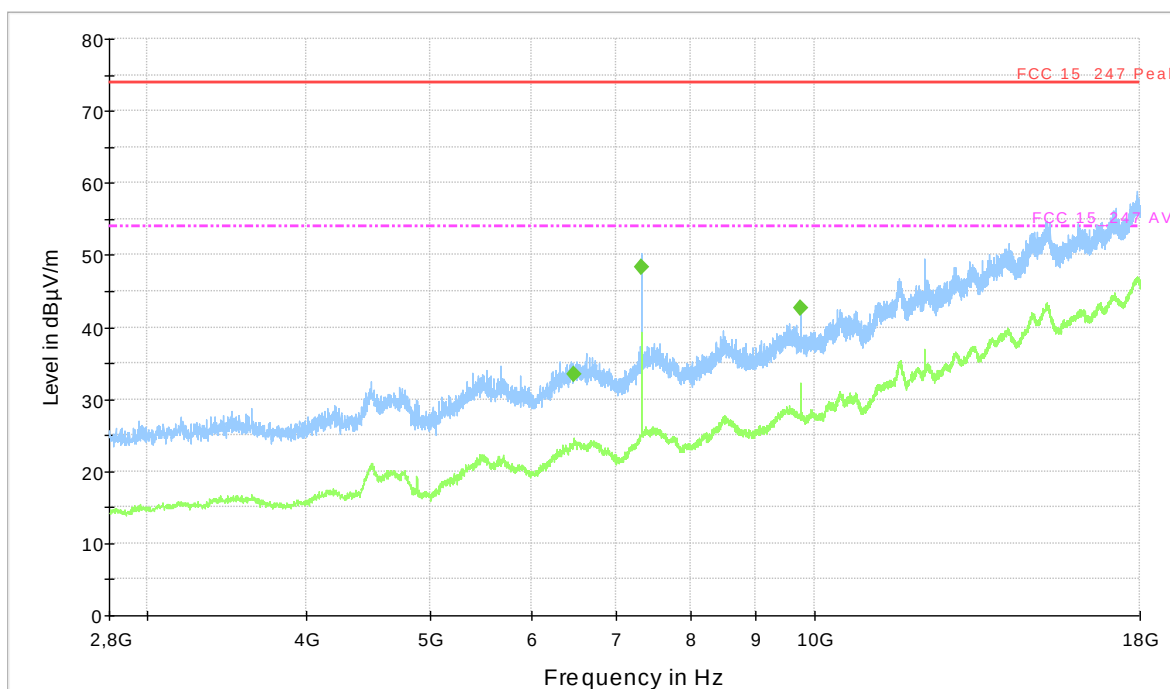
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2016.100000	20.5	100.0	H	0.0	33.50	54.00
2277.100000	22.0	100.0	H	0.0	32.00	54.00
2375.740000	34.9	100.0	H	0.0	19.10	54.00
2439.820000	80.0	100.0	H	180.0	-26.00	54.00
2503.900000	36.1	100.0	H	270.0	17.90	54.00
2535.760000	25.0	100.0	H	270.0	29.00	54.00

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH 18

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Green trace average detector

Final Result - Average

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
6478.400000	33.5	100.0	H	270.0	20.50	54.00
7318.960000	48.4	100.0	H	0.0	5.60	54.00
9758.560000	42.5	100.0	H	90.0	11.50	54.00

FREQUENCY RANGE 18GHz to 10th HARMONIC CH 18

HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH 26

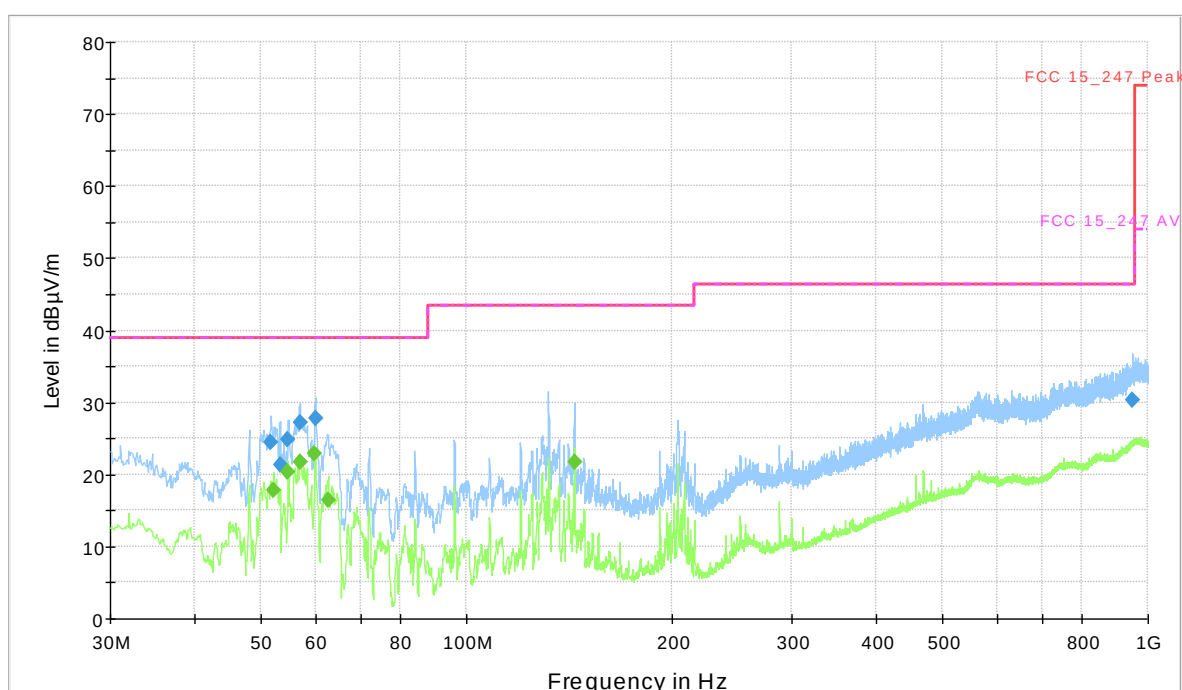
VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH 26

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Quasi Peak Final Result

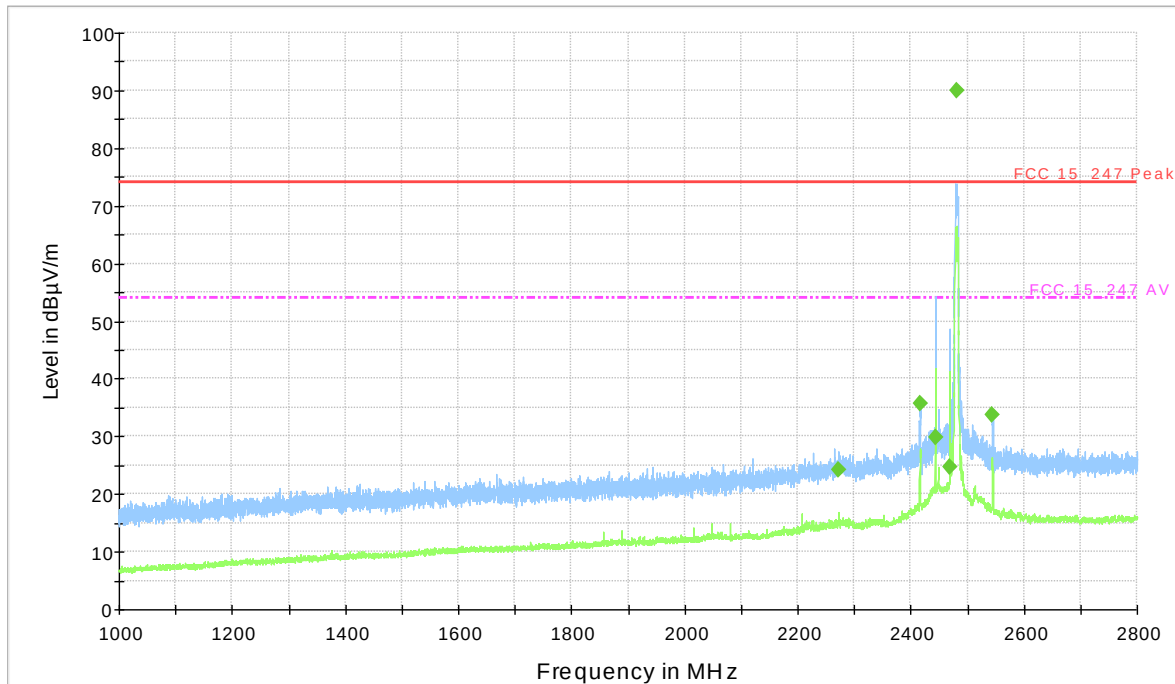
Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
51.631000	24.4	100.0	V	0.0	14.60	39.00
53.280000	21.3	100.0	V	90.0	17.70	39.00
54.735000	24.9	100.0	V	0.0	14.10	39.00
56.966000	27.2	100.0	V	0.0	11.80	39.00
59.973000	27.7	100.0	V	180.0	11.30	39.00
948.978000	30.3	100.0	V	90.0	16.10	46.40

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH 26

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Average Final Result

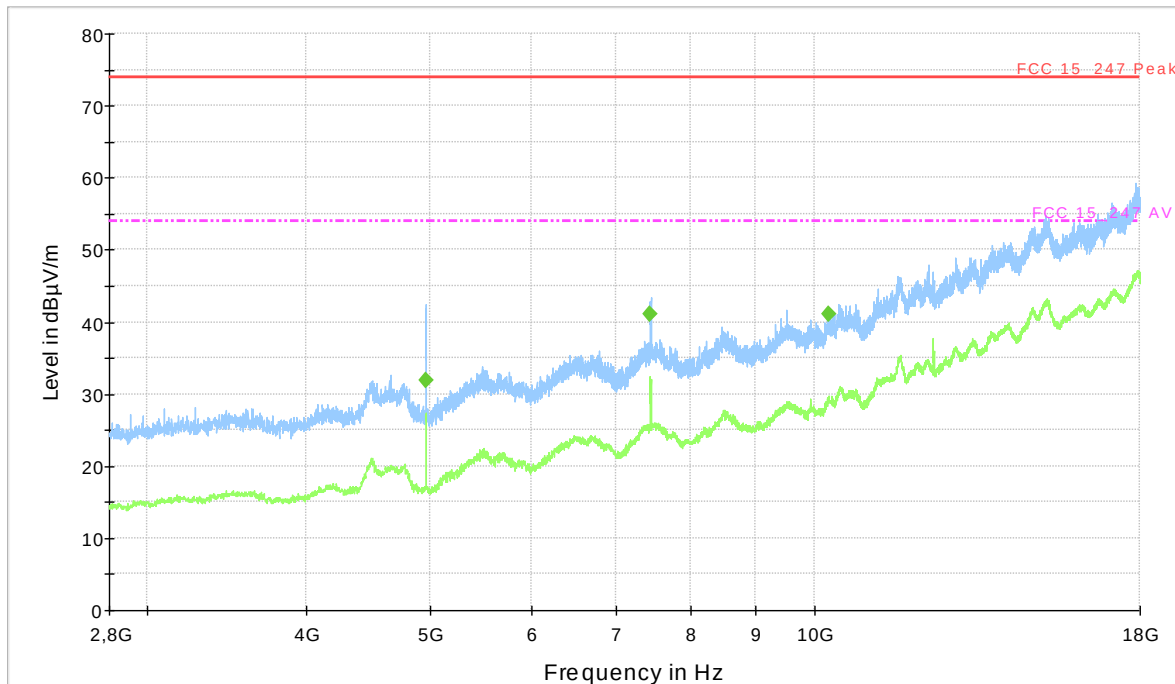
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2272.240000	24.2	100.0	V	0.0	29.80	54.00
2415.880000	35.7	100.0	V	90.0	18.30	54.00
2443.060000	29.7	100.0	V	90.0	24.30	54.00
2468.260000	24.6	100.0	V	270.0	29.40	54.00
2480.680000	90.0	100.0	V	90.0	-36.00	54.00
2543.860000	33.7	100.0	V	90.0	20.30	54.00

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH 26

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Green trace average detector

Average Final Result

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)
4958.400000	31.8	100.0	V	0.0	22.20
7439.040000	41.0	100.0	V	0.0	13.00
10269.280000	41.0	100.0	V	0.0	13.00

FREQUENCY RANGE 18GHz to 10th HARMONIC CH 26

VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH 26

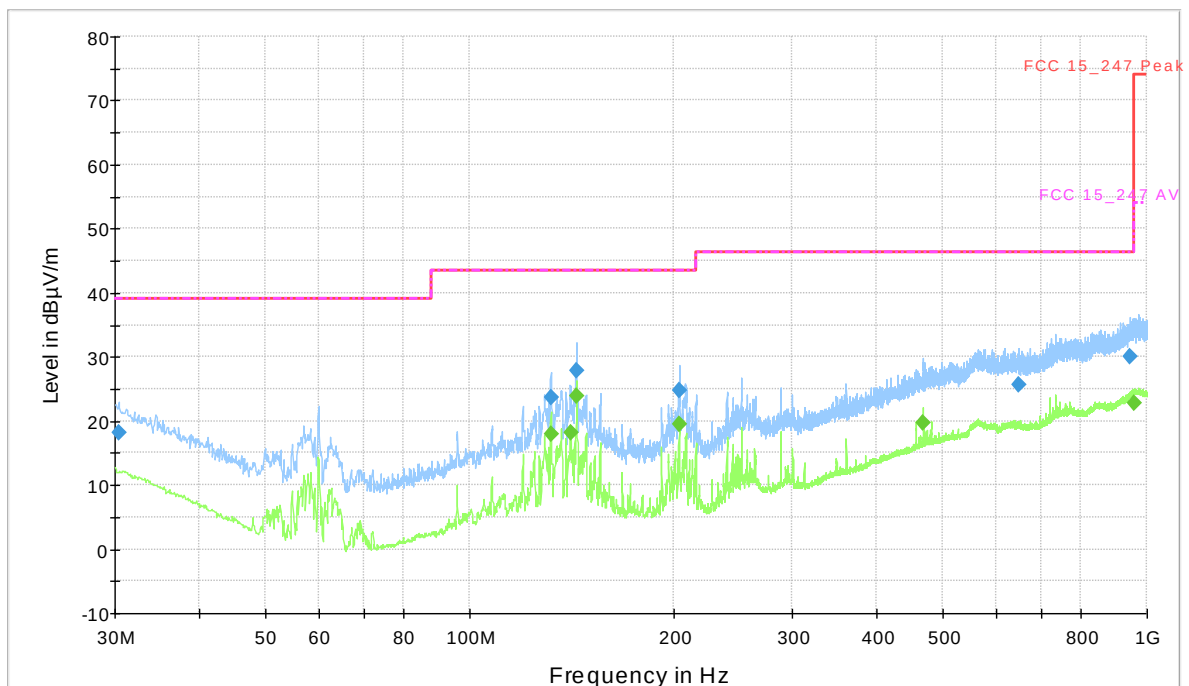
HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH 26

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Quasi Peak Final Result

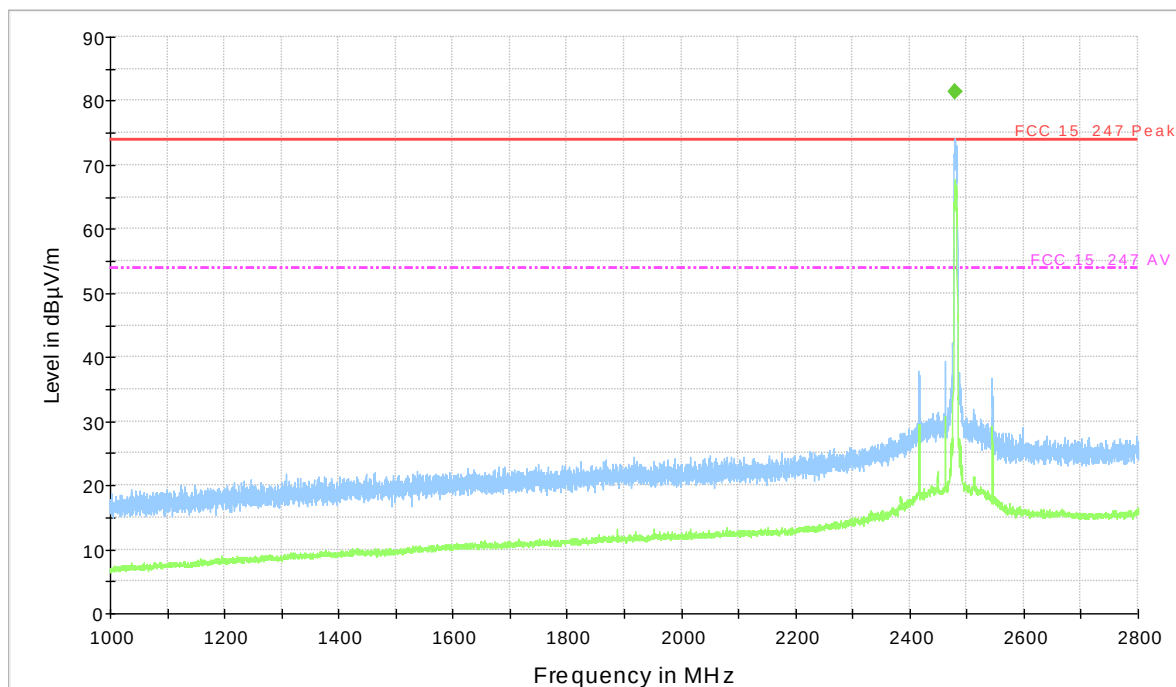
Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
30.388000	18.2	100.0	H	180.0	20.80	39.00
131.947000	23.7	100.0	H	270.0	19.80	43.50
143.878000	27.9	100.0	H	270.0	15.60	43.50
204.018000	24.8	100.0	H	0.0	18.70	43.50
648.375000	25.6	100.0	H	180.0	20.80	46.40
945.486000	30.1	100.0	H	180.0	16.30	46.40

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH 26

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Final Result - Average

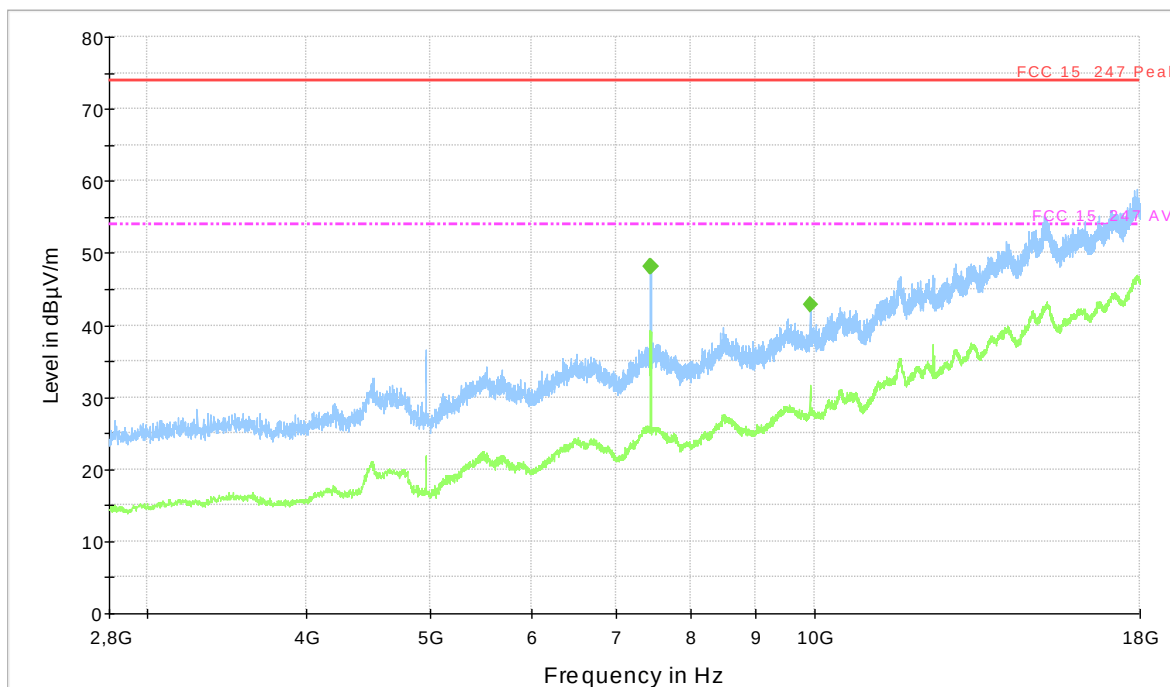
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2479.600000	81.4	100.0	H	90.0	-27.40	54.00

EMB-Z2538PA / IA - RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH 26

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Green trace average detector

Final Result - Average

Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
7439.040000	48.2	100.0	H	0.0	5.80	54.00
7442.080000	48.1	100.0	H	0.0	5.90	54.00
9922.720000	42.9	100.0	H	0.0	11.10	54.00

FREQUENCY RANGE 18GHz to 10th HARMONIC CH 26

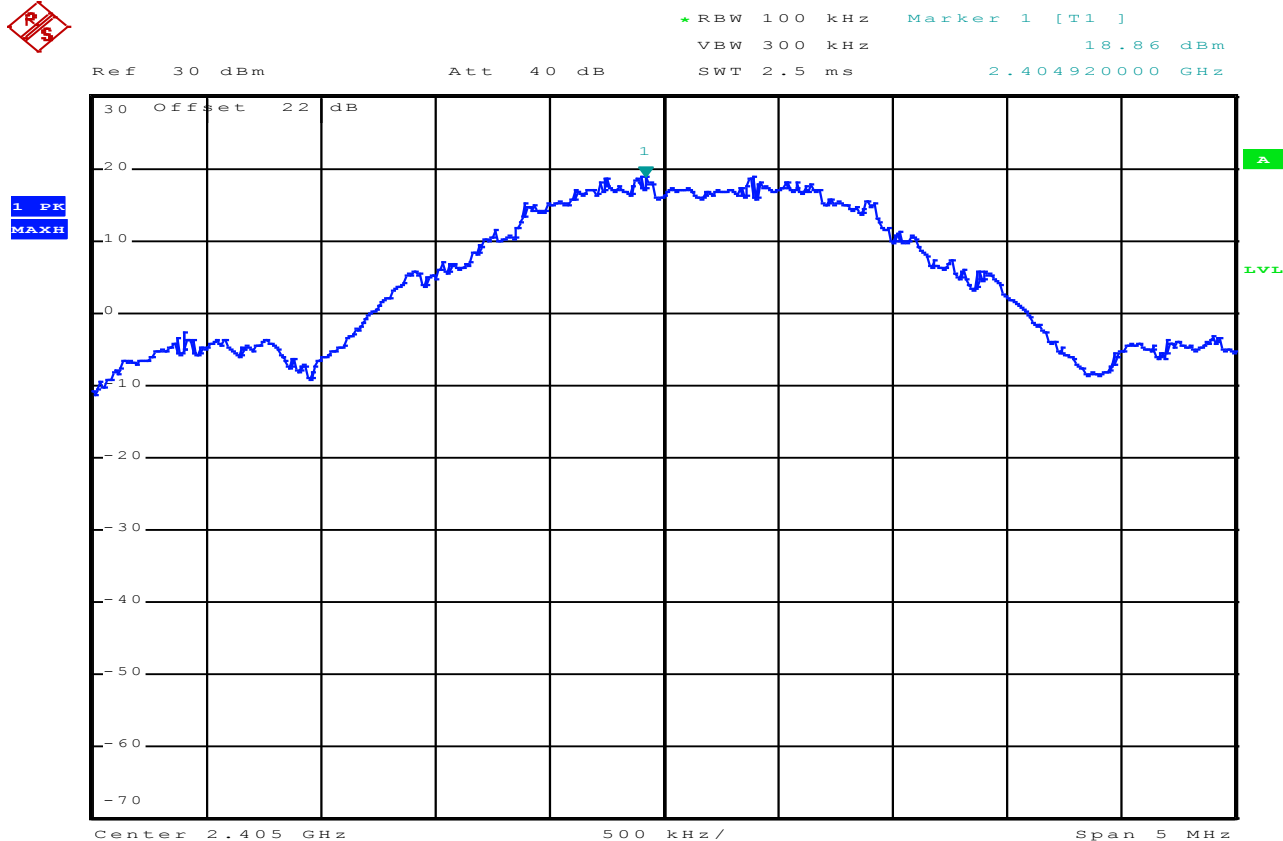
HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

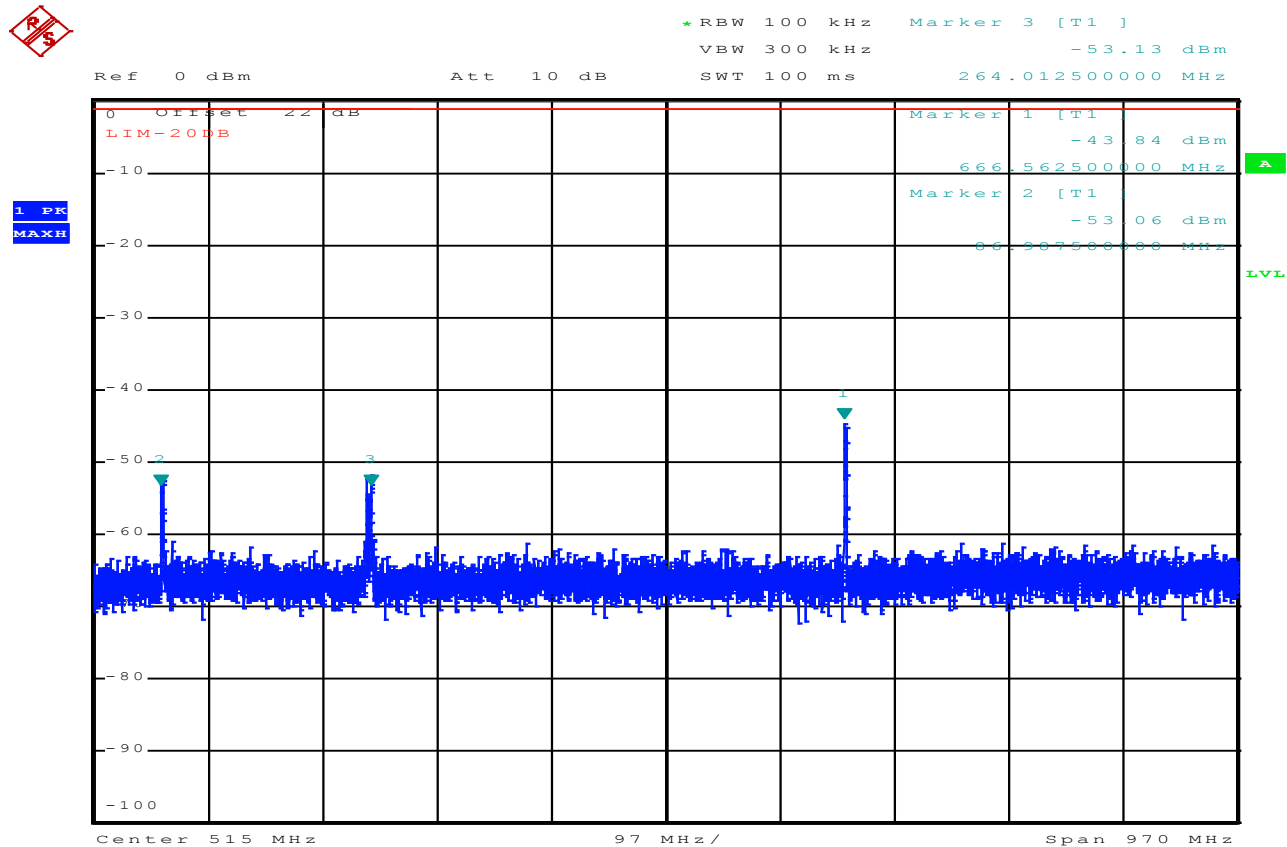
CONDUCTED MEASUREMENTS

REFERENCE LEVEL FOR SPURIOUS EMISSION LIMIT EVALUATION – CH11



EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 30MHz – 1GHz CH11



EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 1-2GHz CH11



*RBW 1 MHz Marker 1 [T1]
VBW 3 MHz -50.75 dBm
SWT 40 ms 1.248125000 GHz

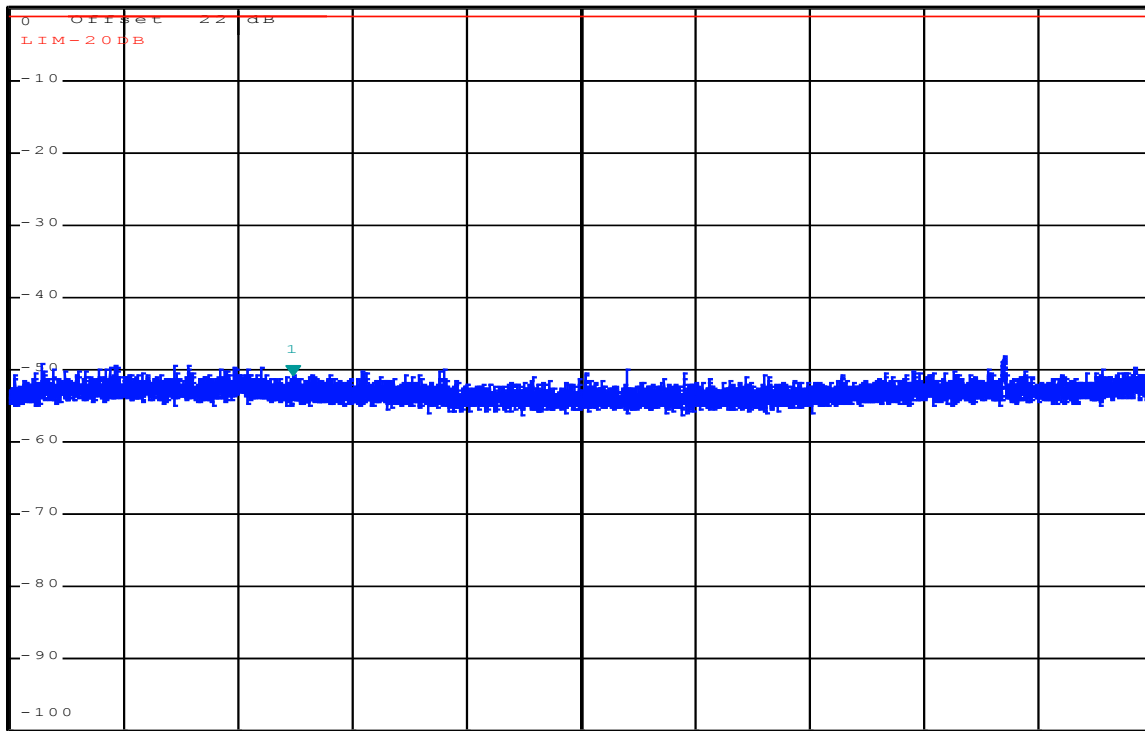
Ref 0 dBm

Att 10 dB

SWT 40 ms

1.248125000 GHz

1 PK
MAX



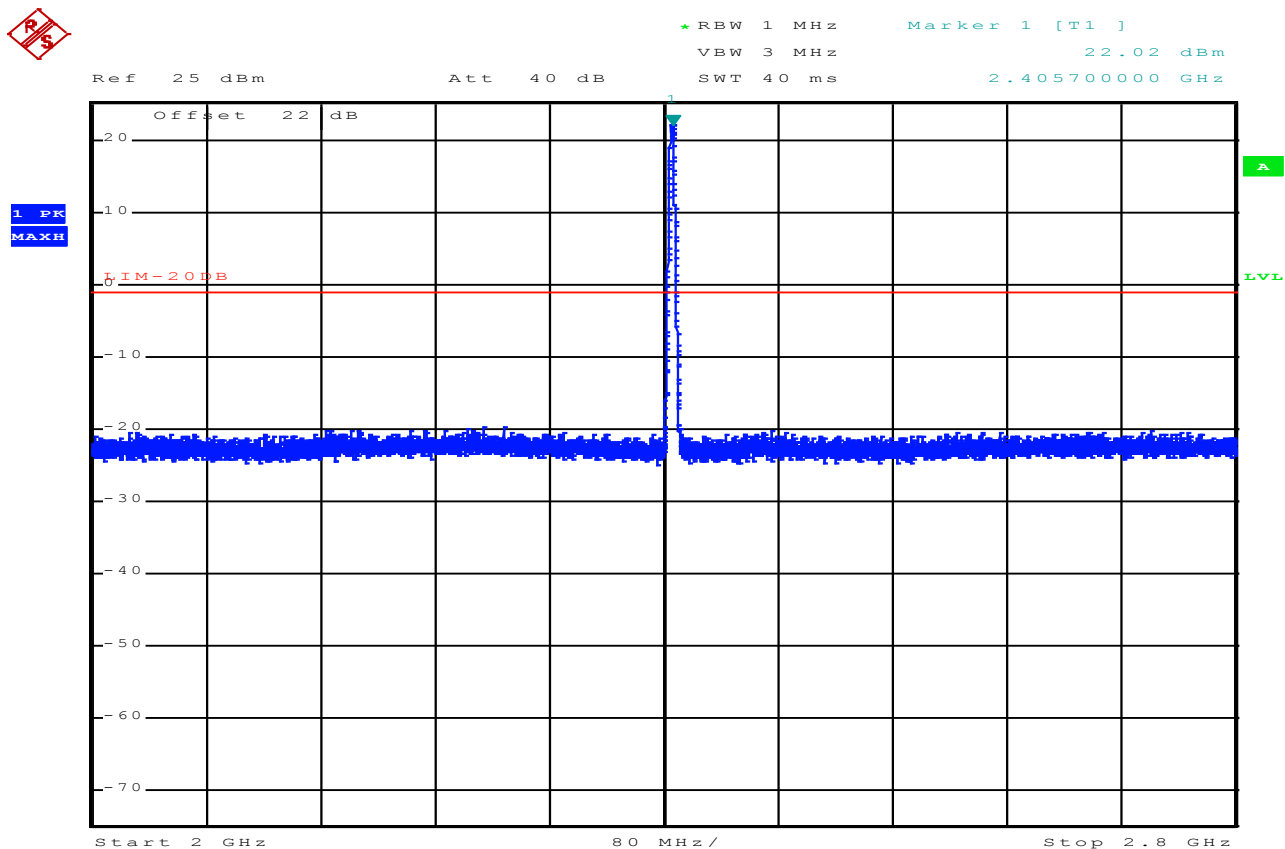
Center 1.5 GHz

100 MHz /

Span 1 GHz

EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

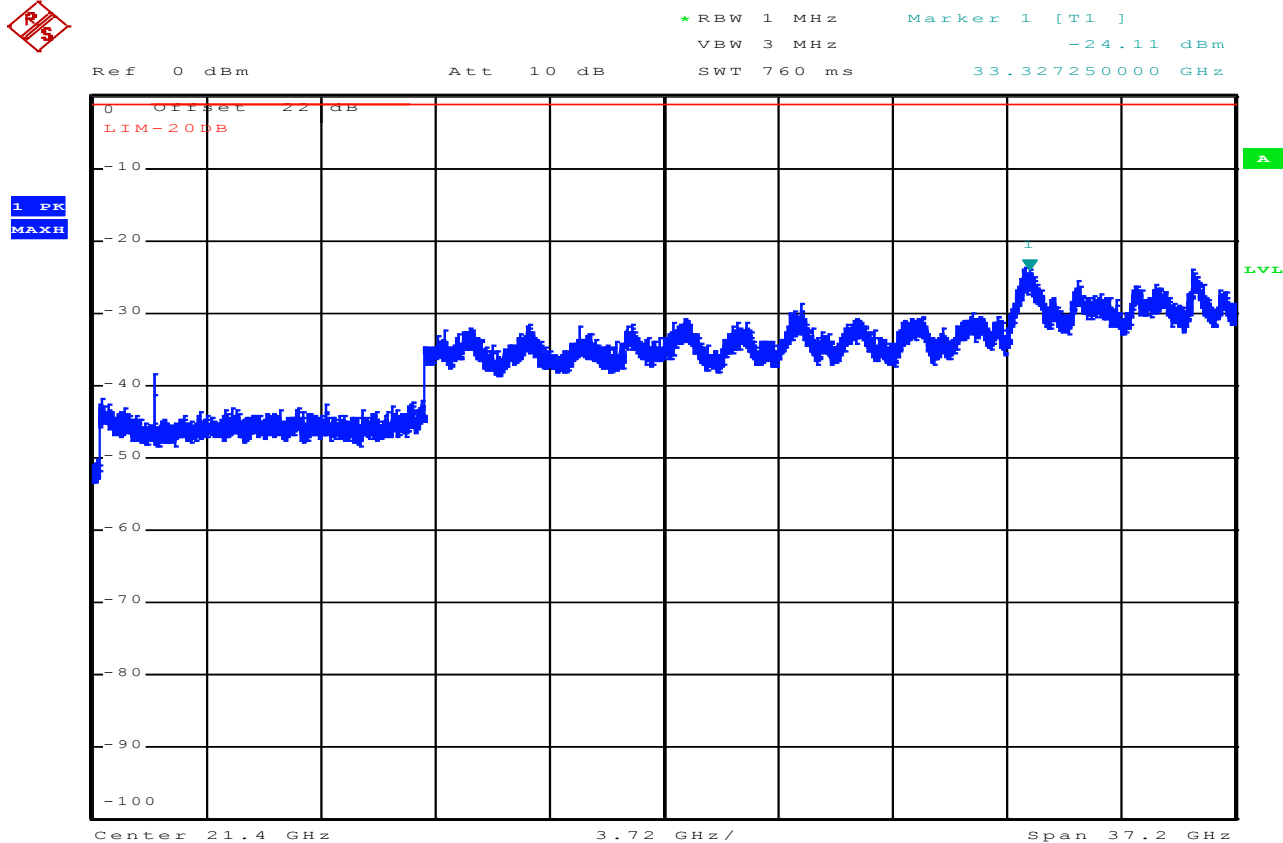
FREQ. RANGE 2-2.8 GHz CH11



Date: 4. JAN. 2000 23:55:43

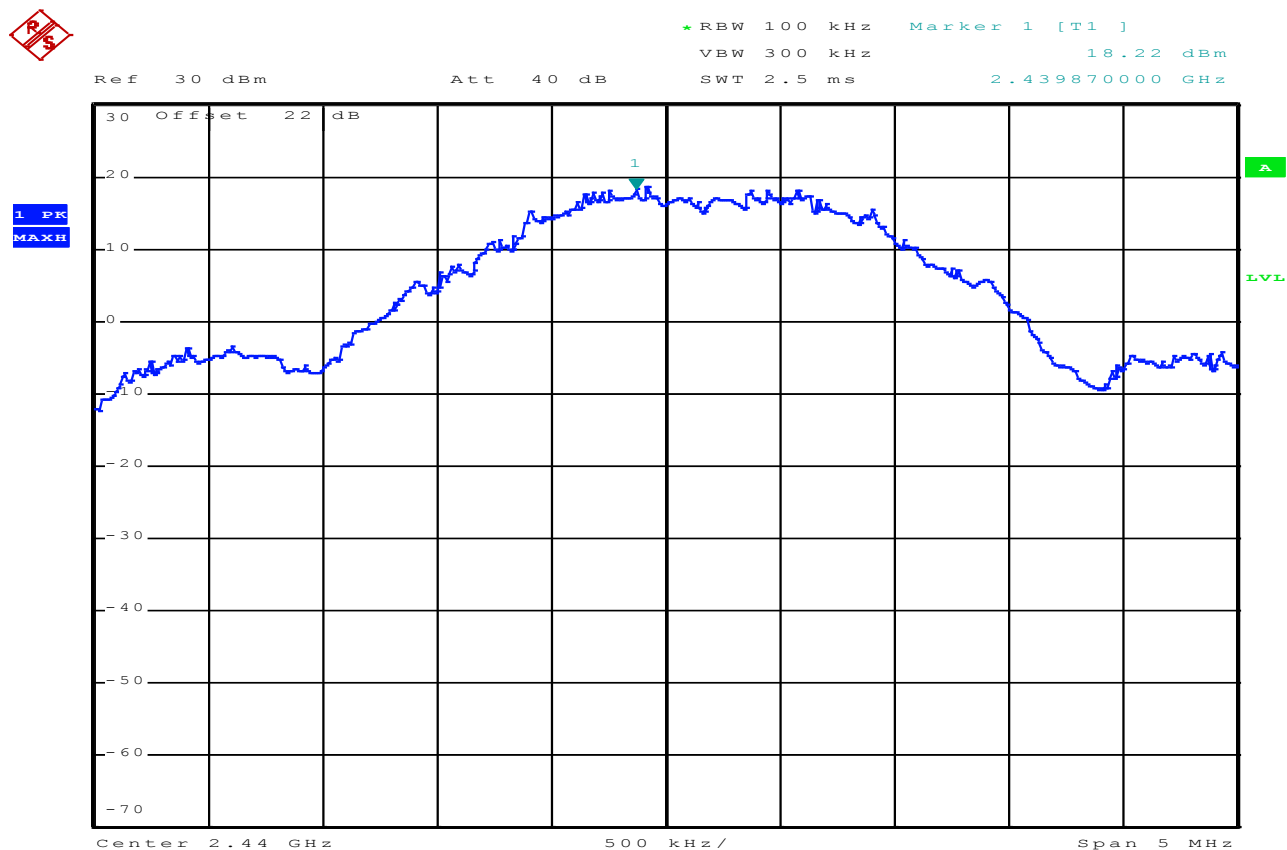
EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 2.8-40 GHz CH11



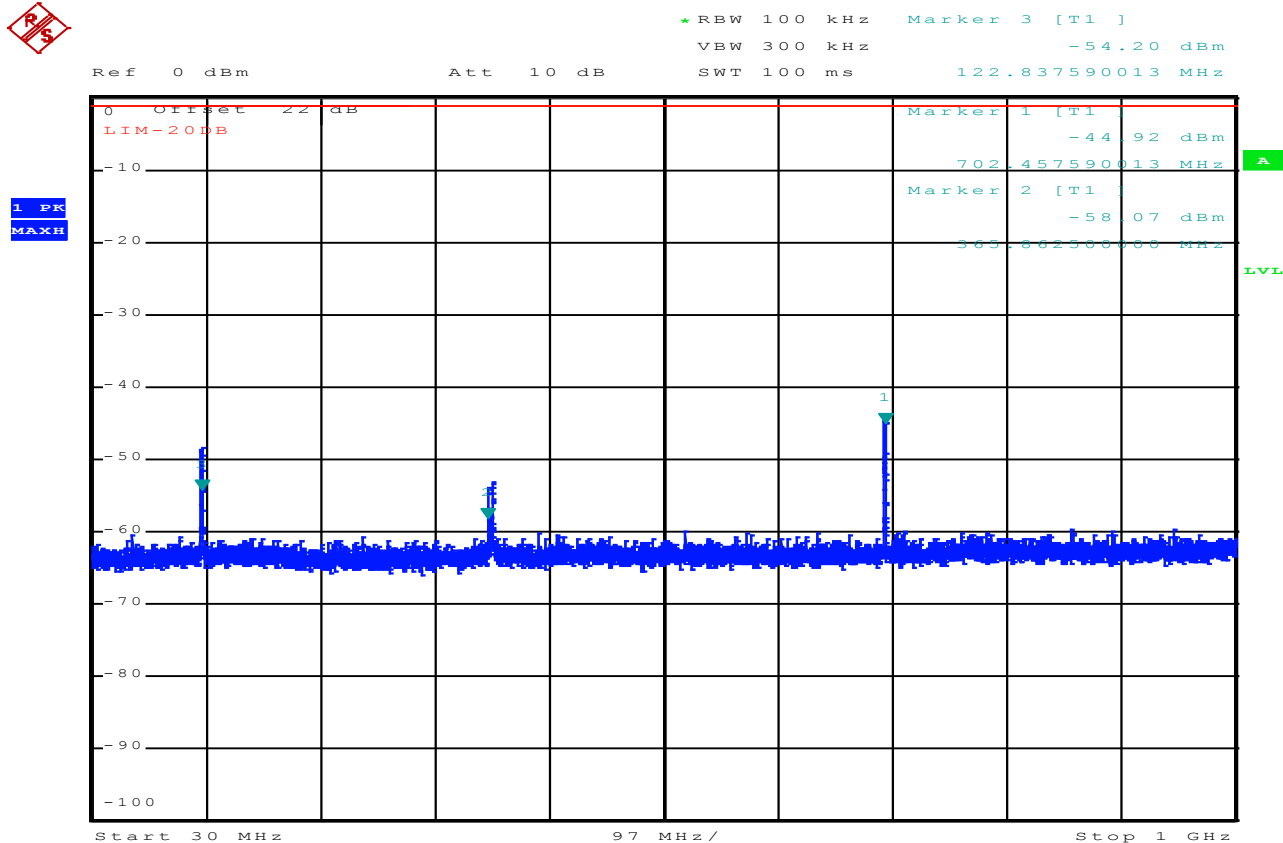
EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

REFERENCE LEVEL FOR SPURIOUS EMISSION LIMIT EVALUATION – CH18



EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 30MHz – 1GHz CH18

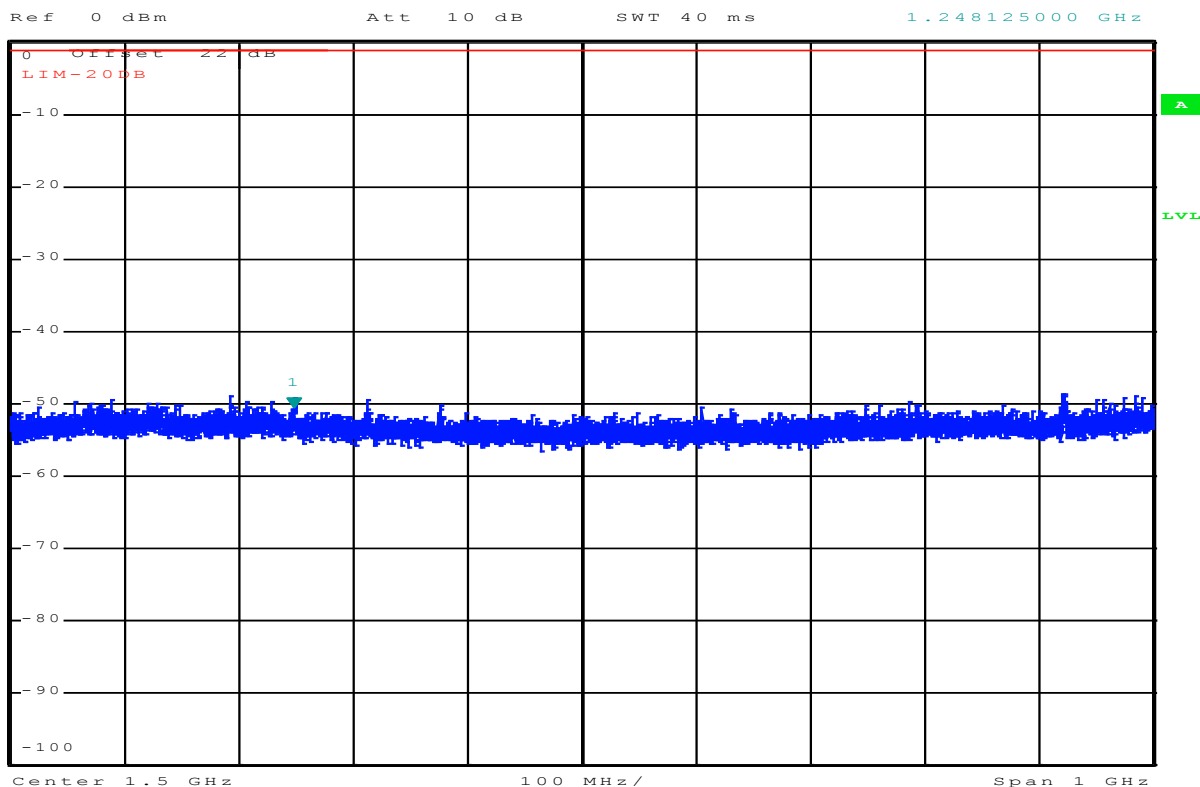


EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 1-2GHz CH18



*RBW 1 MHz Marker 1 [T1]
VBW 3 MHz -50.52 dBm
SWT 40 ms 1.248125000 GHz

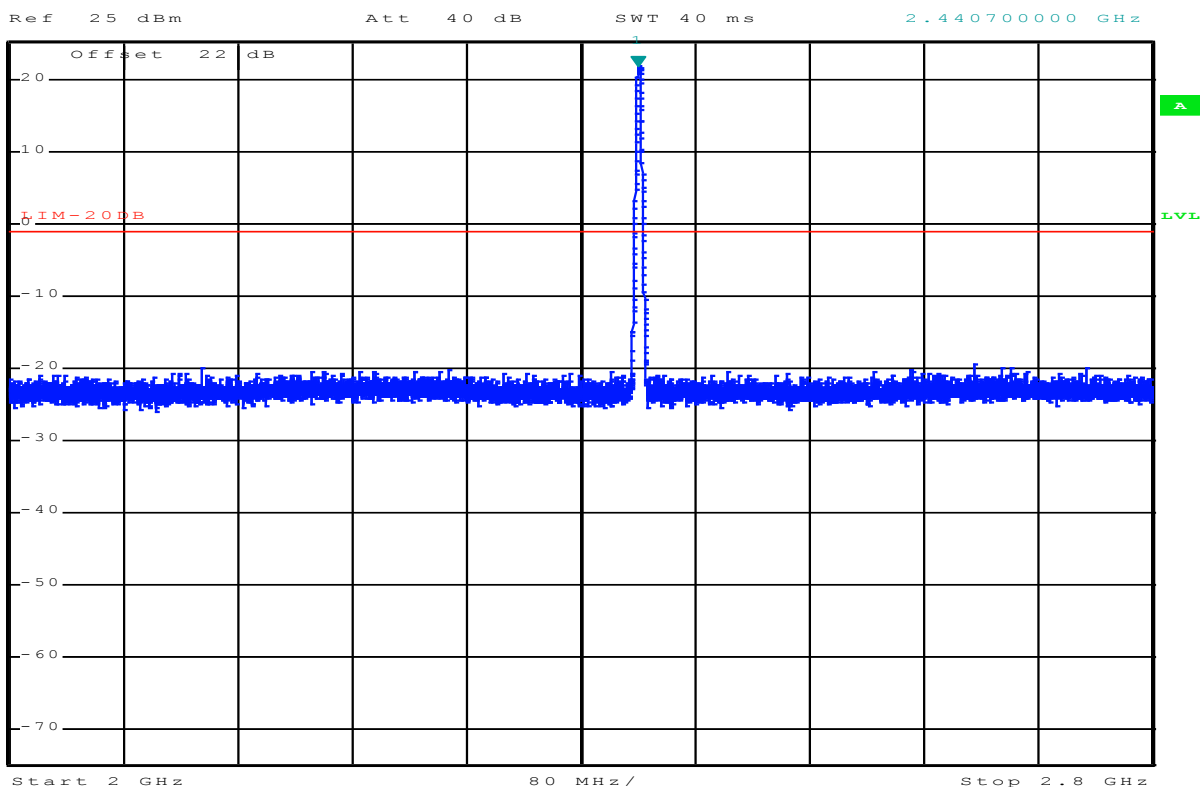


EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 2-2.8 GHz CH18

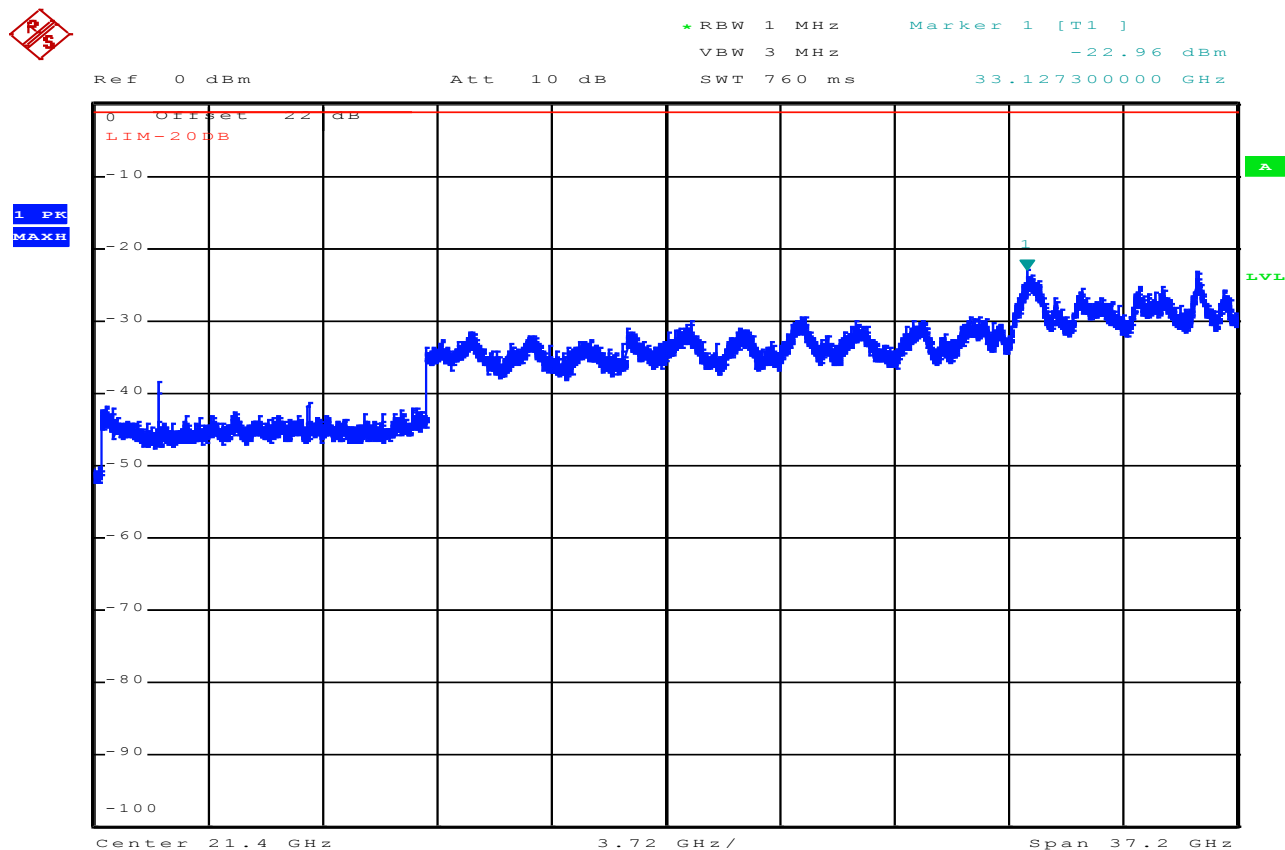


*RBW 1 MHz Marker 1 [T1]
VBW 3 MHz 21.80 dBm
SWT 40 ms 2.440700000 GHz



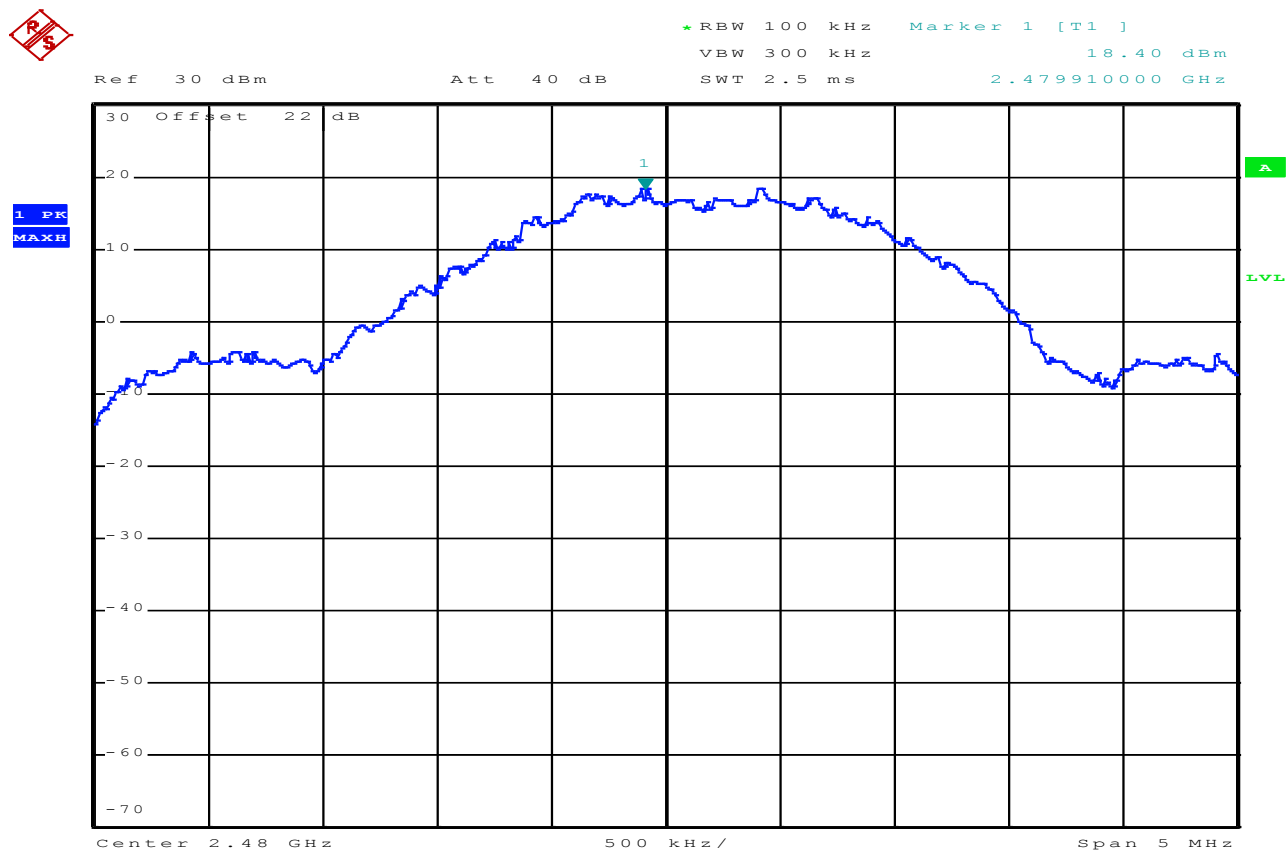
EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 2.8-40 GHz CH18



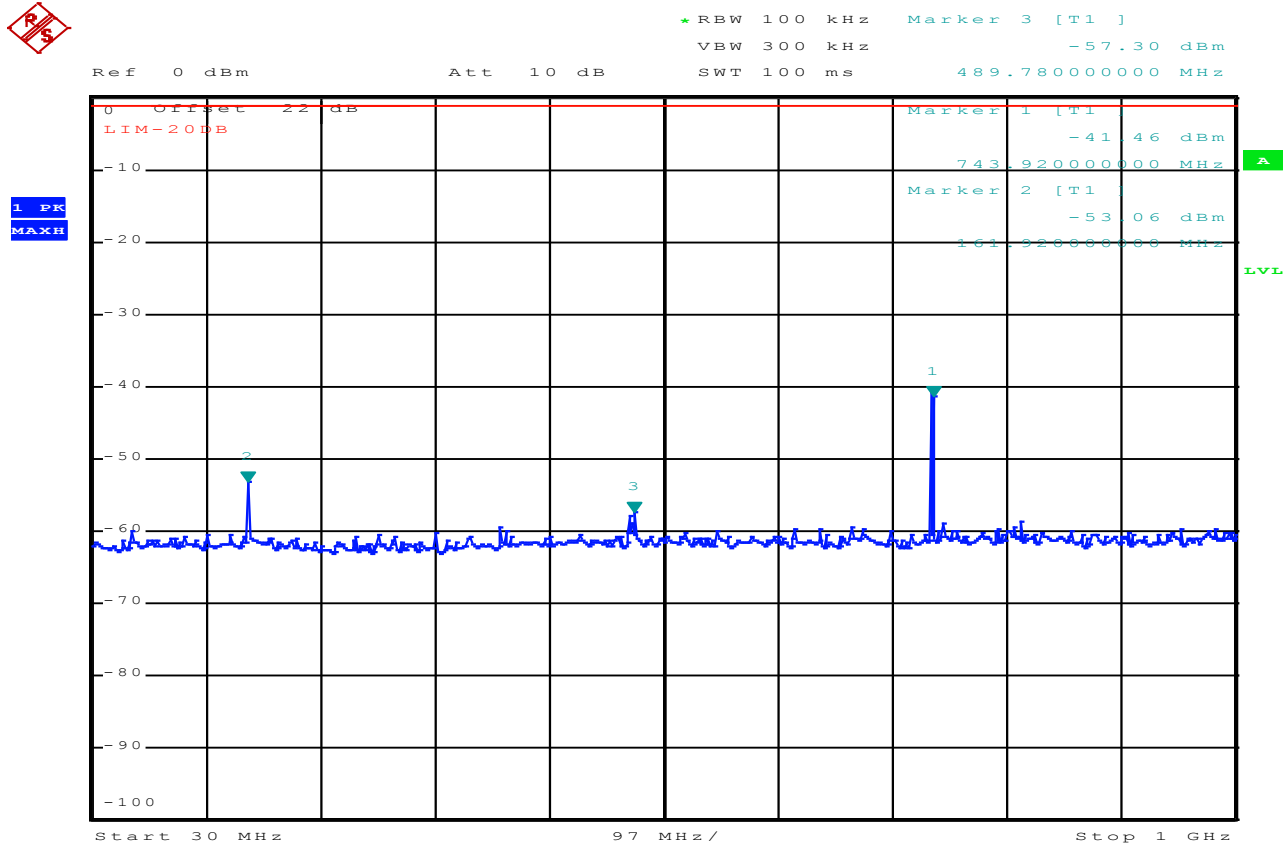
EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

REFERENCE LEVEL FOR SPURIOUS EMISSION LIMIT EVALUATION – CH26



EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 30MHz – 1GHz CH26



EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 1-2GHz CH26



* RBW 1 MHz

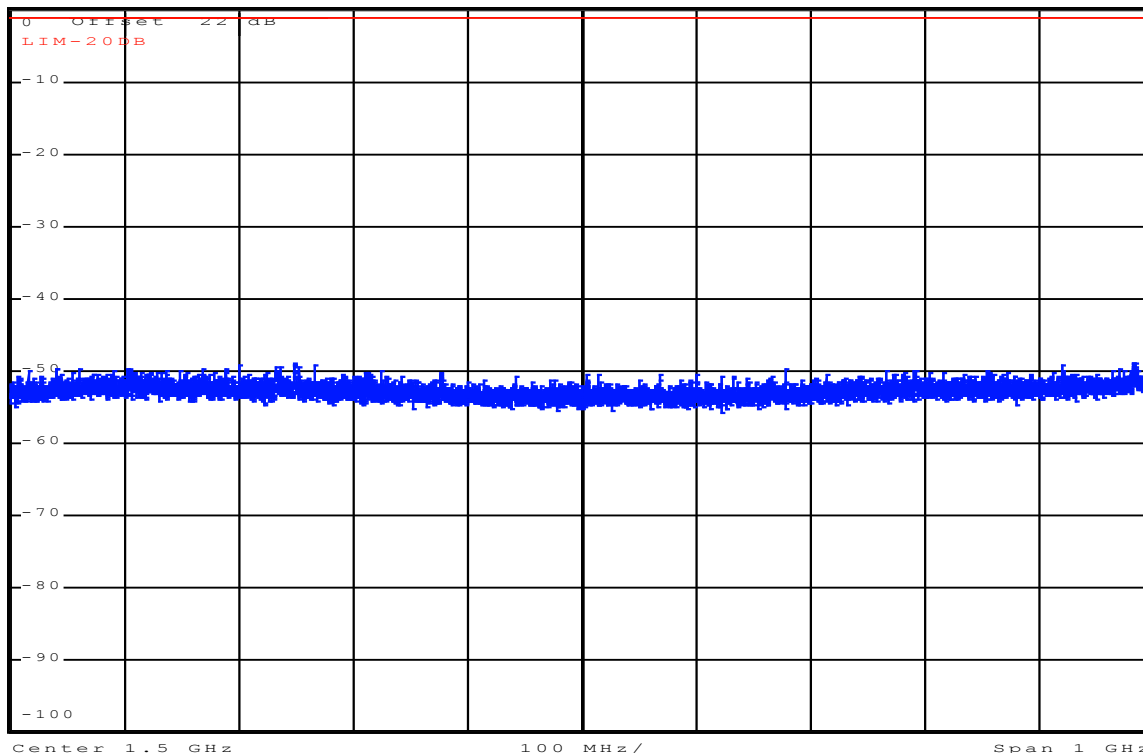
VBW 3 MHz

SWT 40 ms

Ref 0 dBm

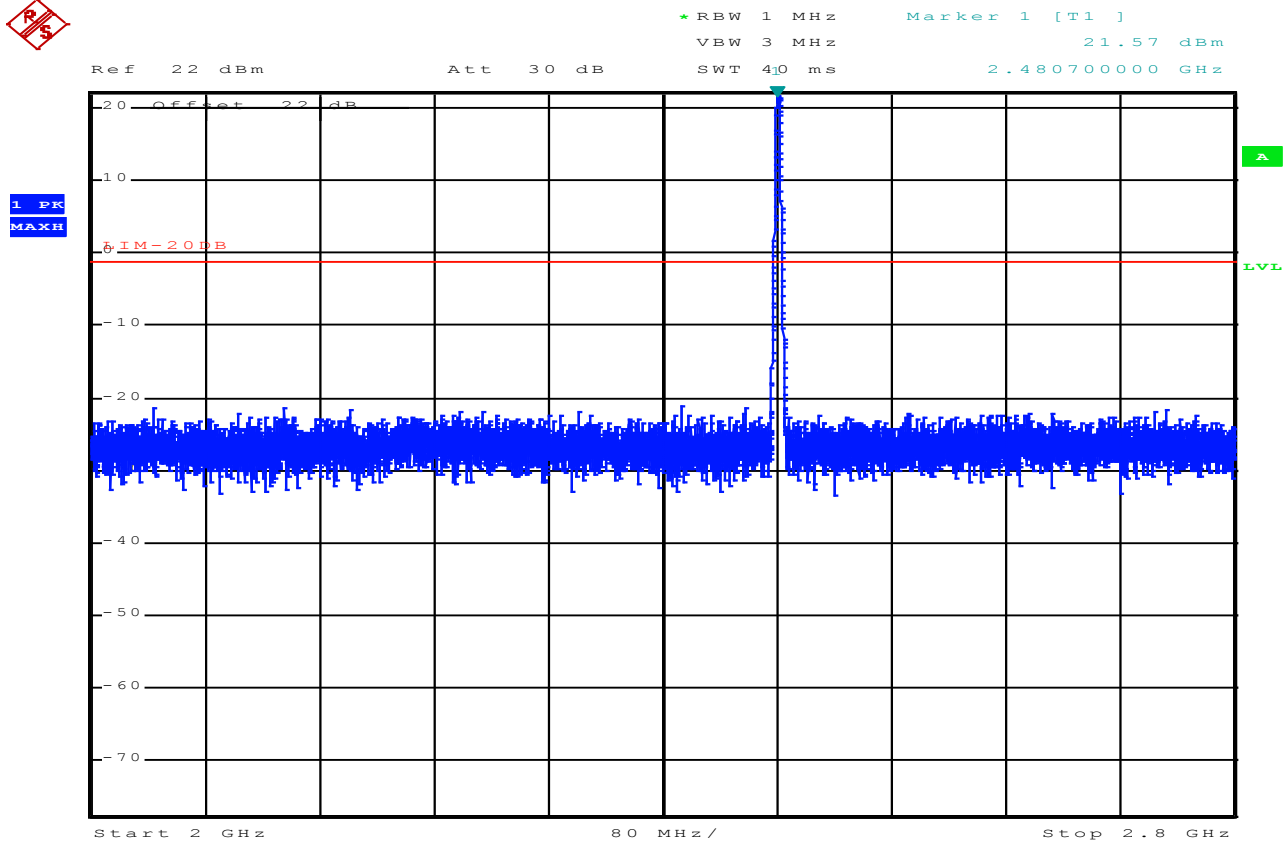
Att 10 dB

1 PK
MAXH



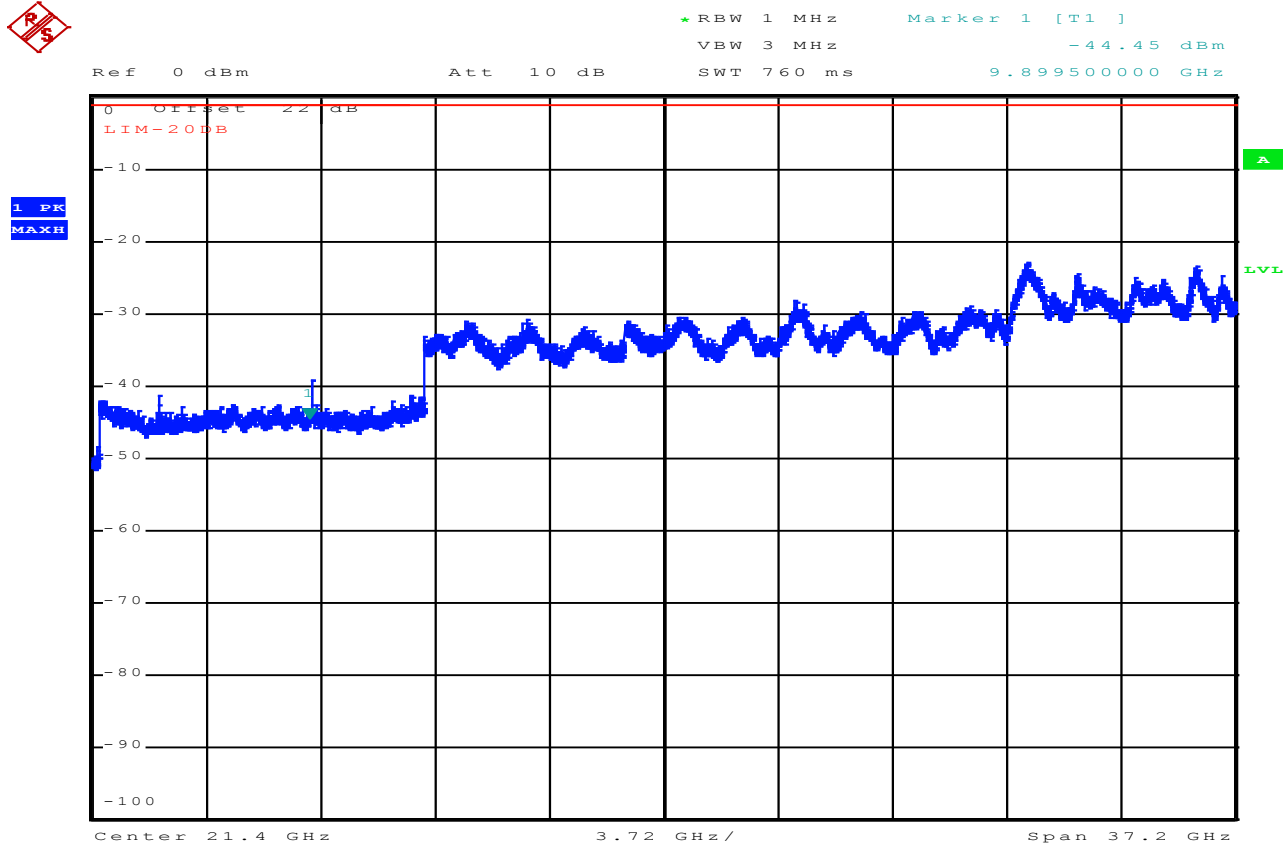
EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 2-2.8 GHz CH26



EMB-Z2538PA / UL - CONDUCTED MEASUREMENT

FREQ. RANGE 2.8-40 GHz CH26



EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH11

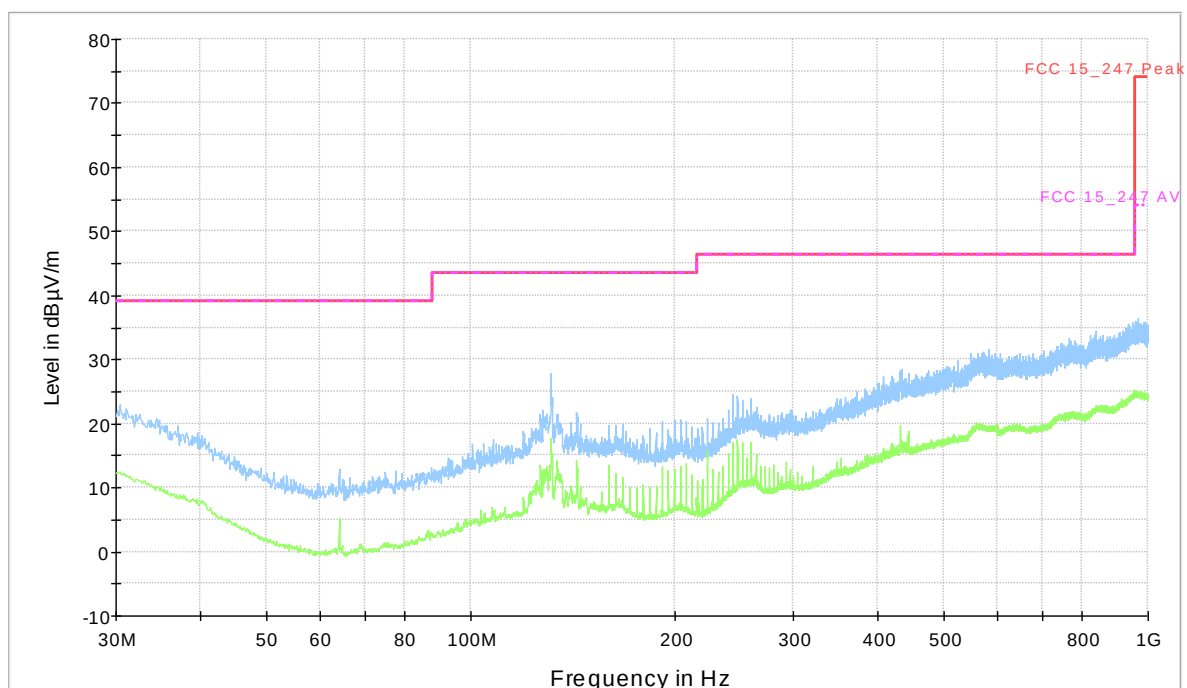
VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH11

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



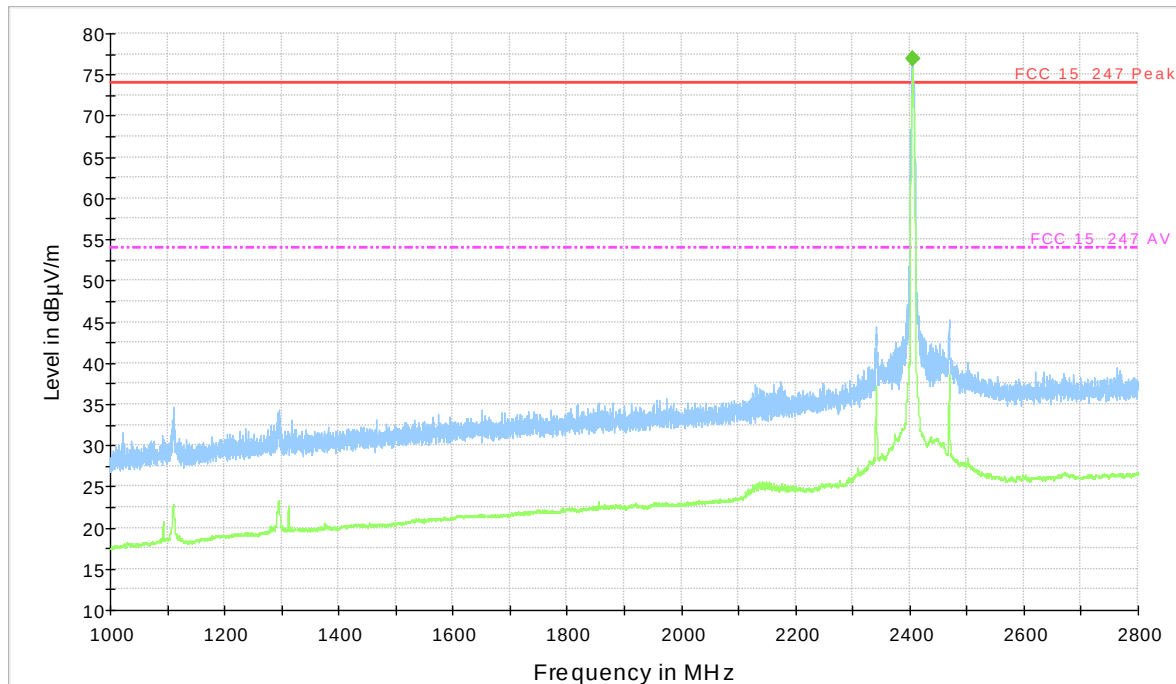
Blue trace Peak detector, Green trace average detector

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH11

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector, Green Marker average detector

Average Final Result

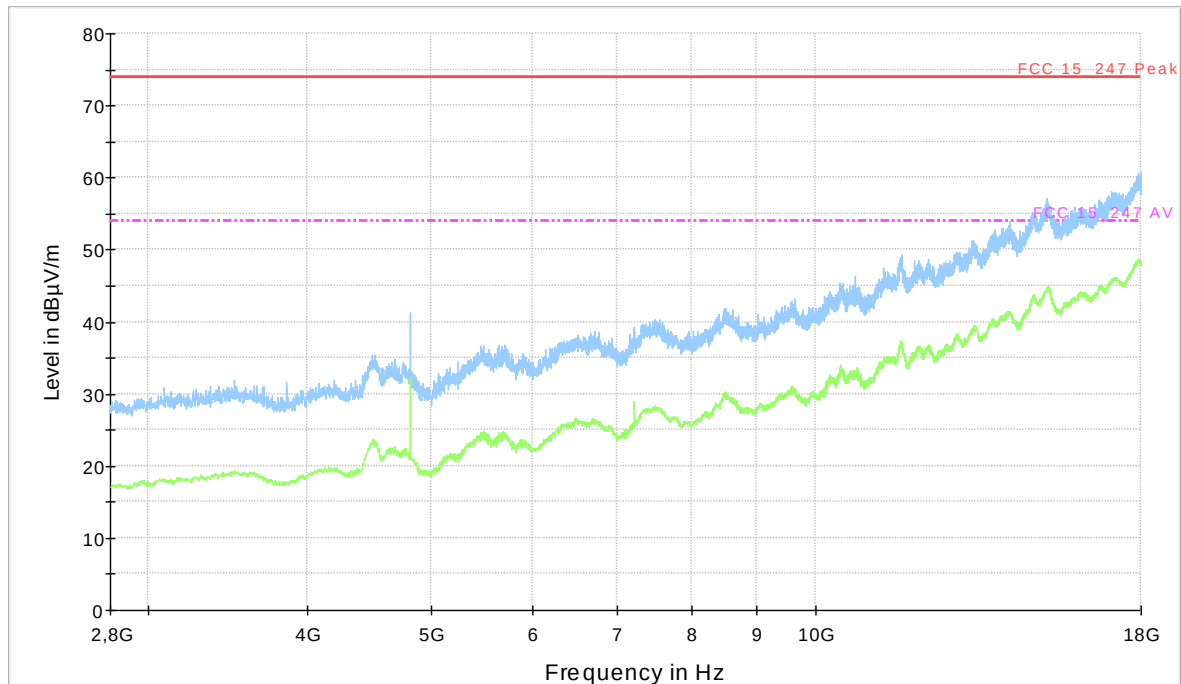
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2405.260000	77.0	104.0	V	1.0	-537.90	54.00

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH11

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Green trace average detector

FREQUENCY RANGE 18GHz to 10th HARMONIC CH11

VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH11

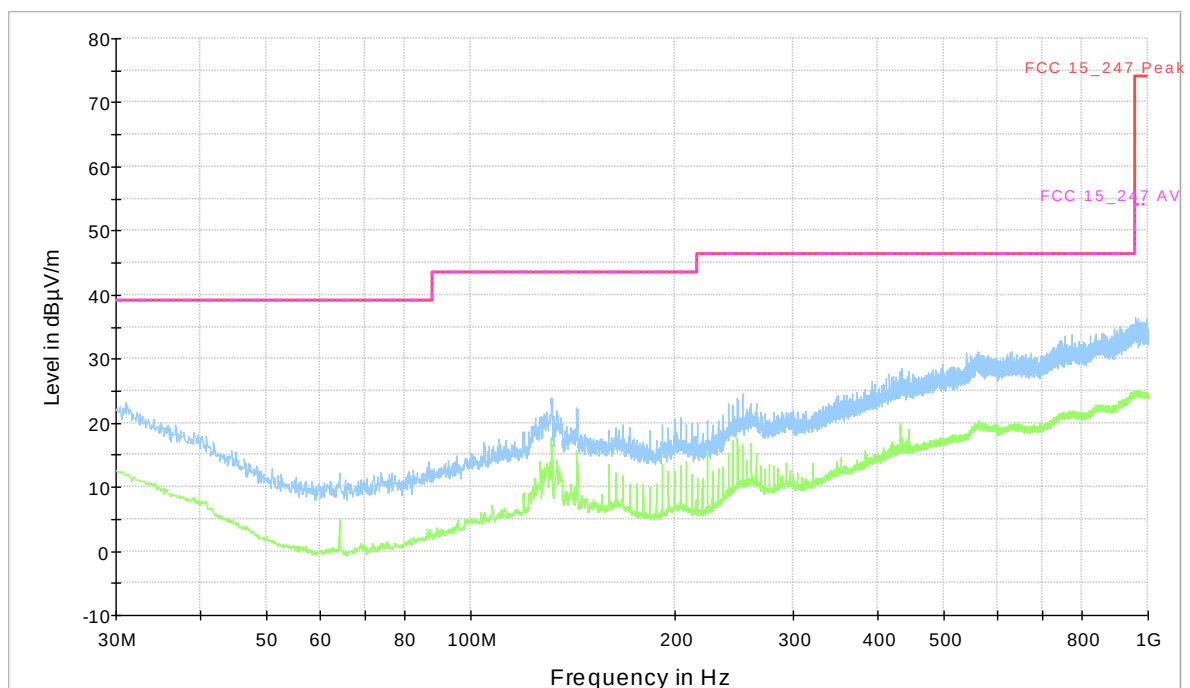
HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH11

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



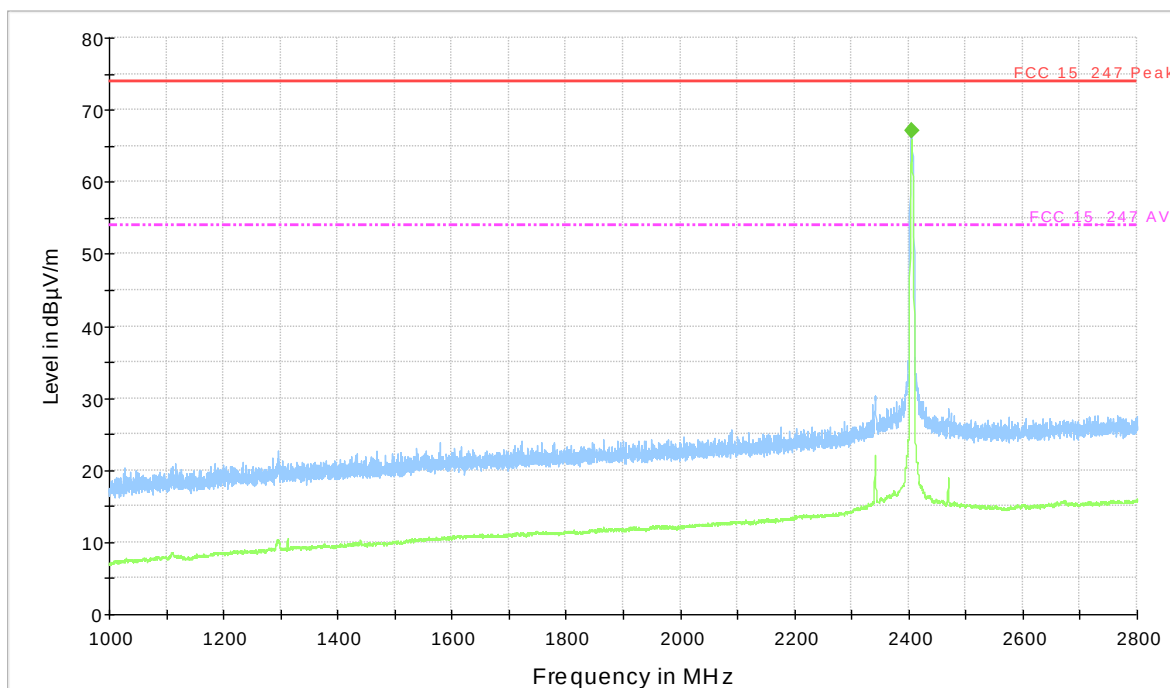
Blue trace Peak detector, Green trace average detector

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH11

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Green trace average detector

Average Final Result

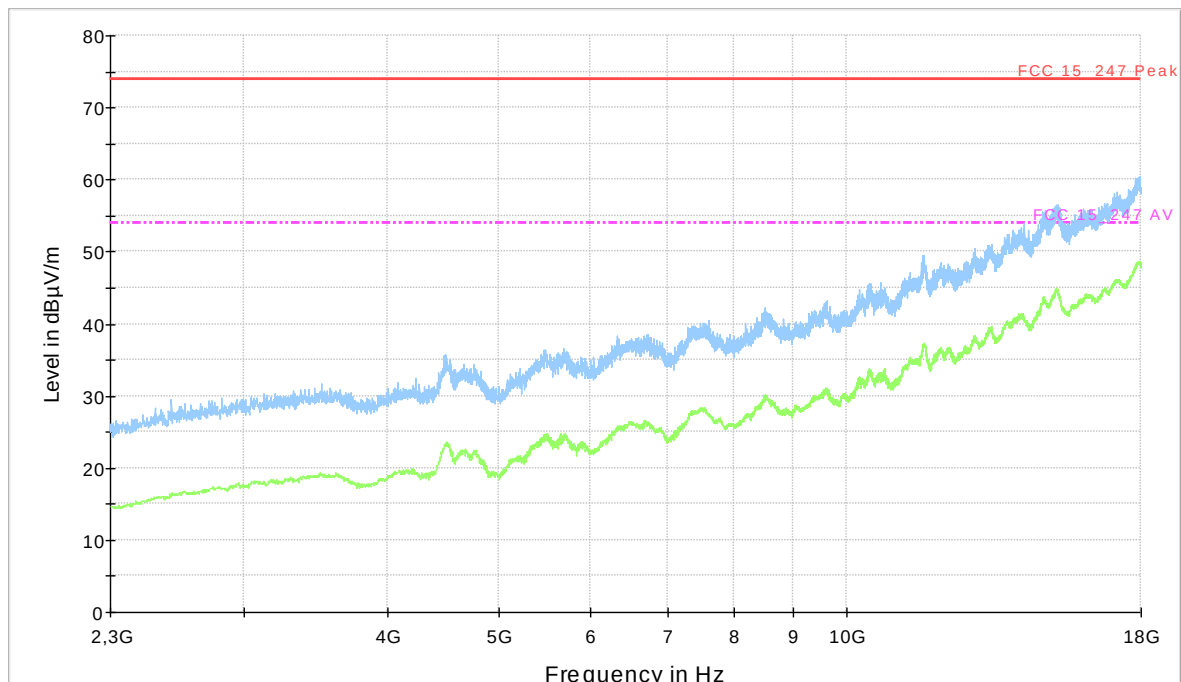
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2405.440000	67.0	104.0	H	90.0	-28.30	54.00

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH11

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Green trace average detector

FREQUENCY RANGE 18GHz to 10th HARMONIC CH11

HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH 18

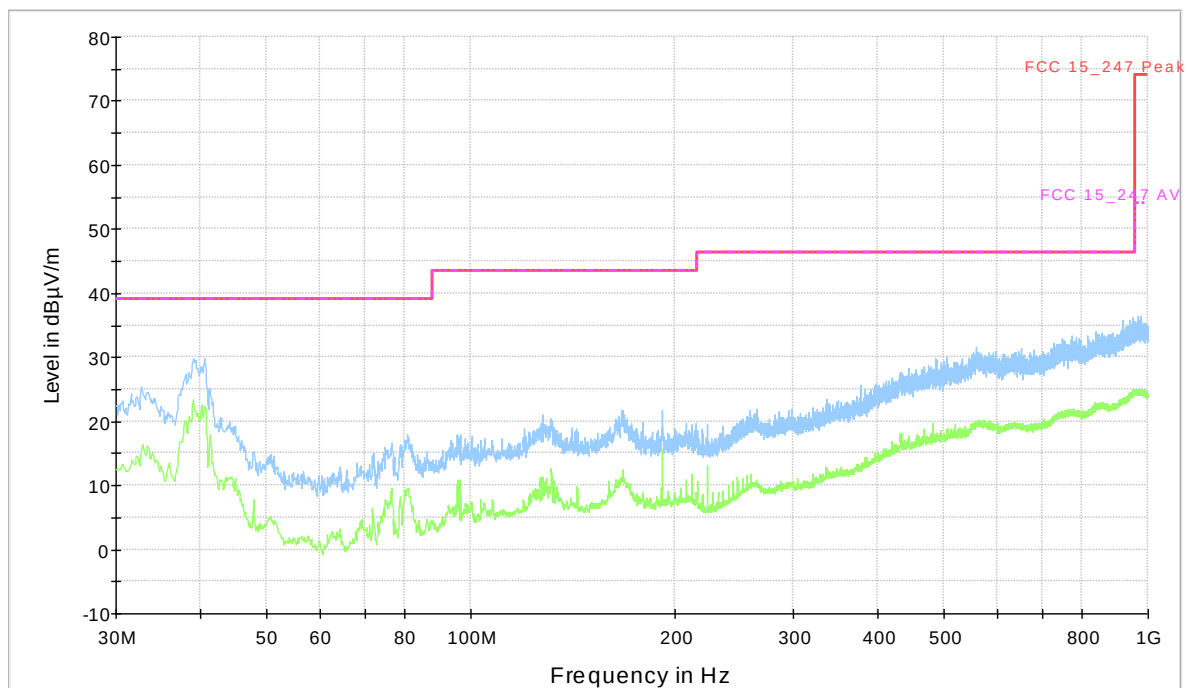
VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH 18

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



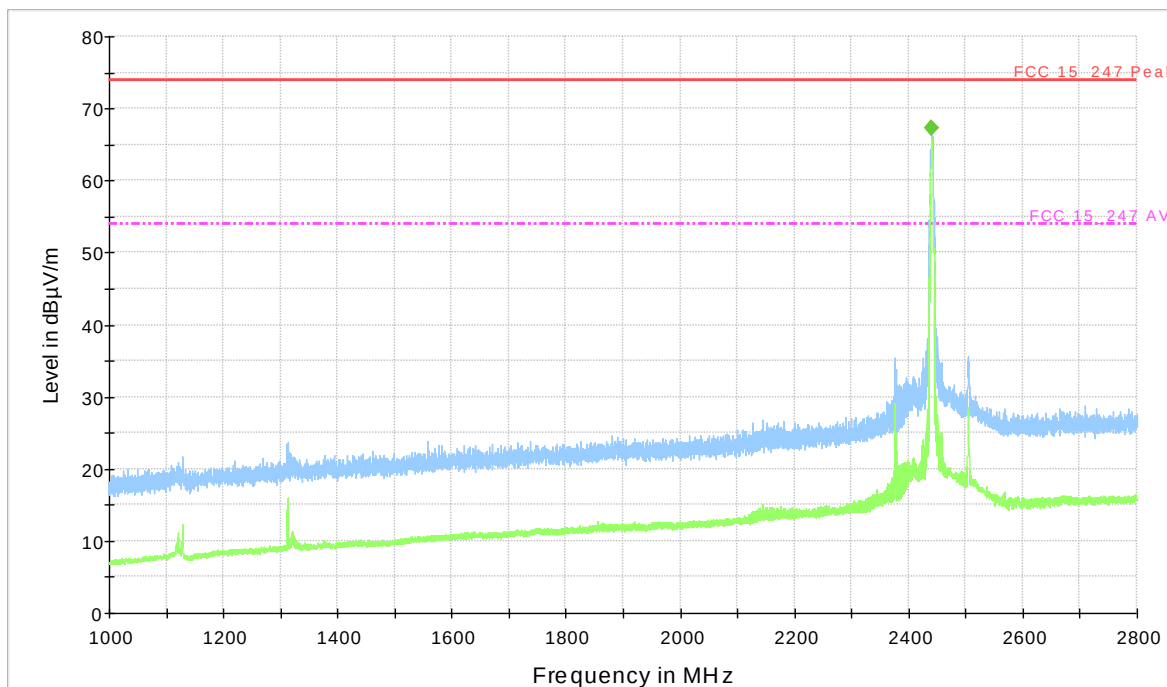
Blue trace Peak detector, Green trace average detector

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH 18

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Green trace average detector

Average Final Result

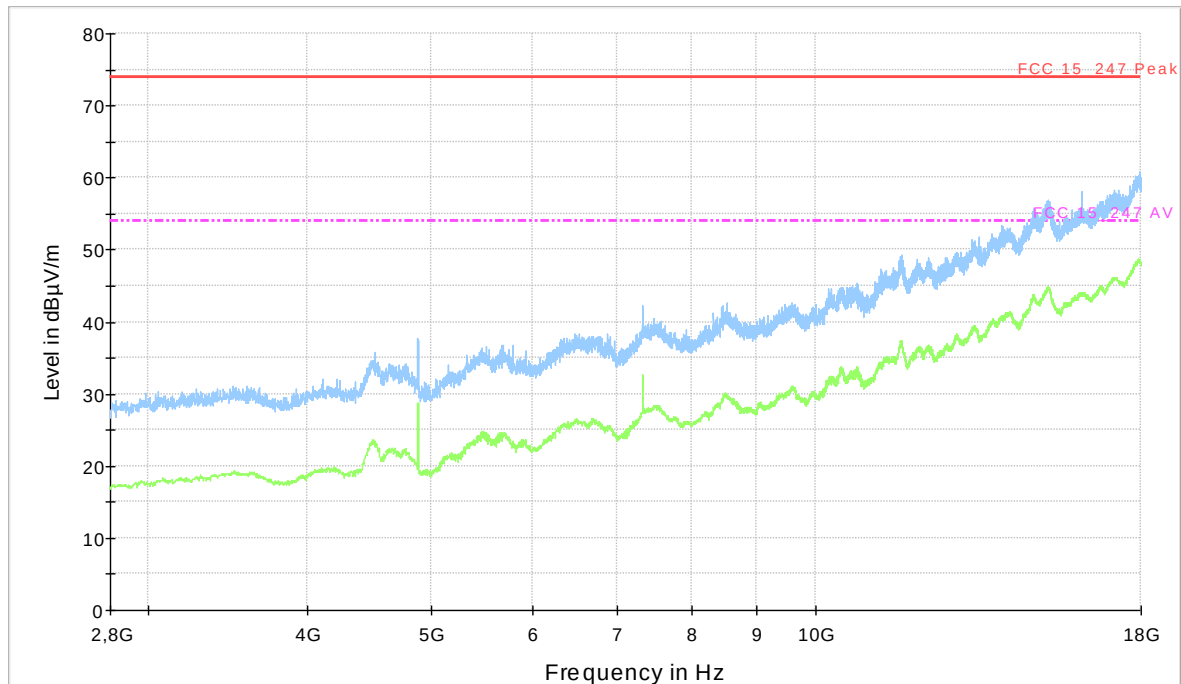
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2440.360000	67.3	104.0	V	1.0	-537.40	54.00

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH 18

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Green trace average detector

FREQUENCY RANGE 18GHz to 10th HARMONIC CH 18

VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH 18

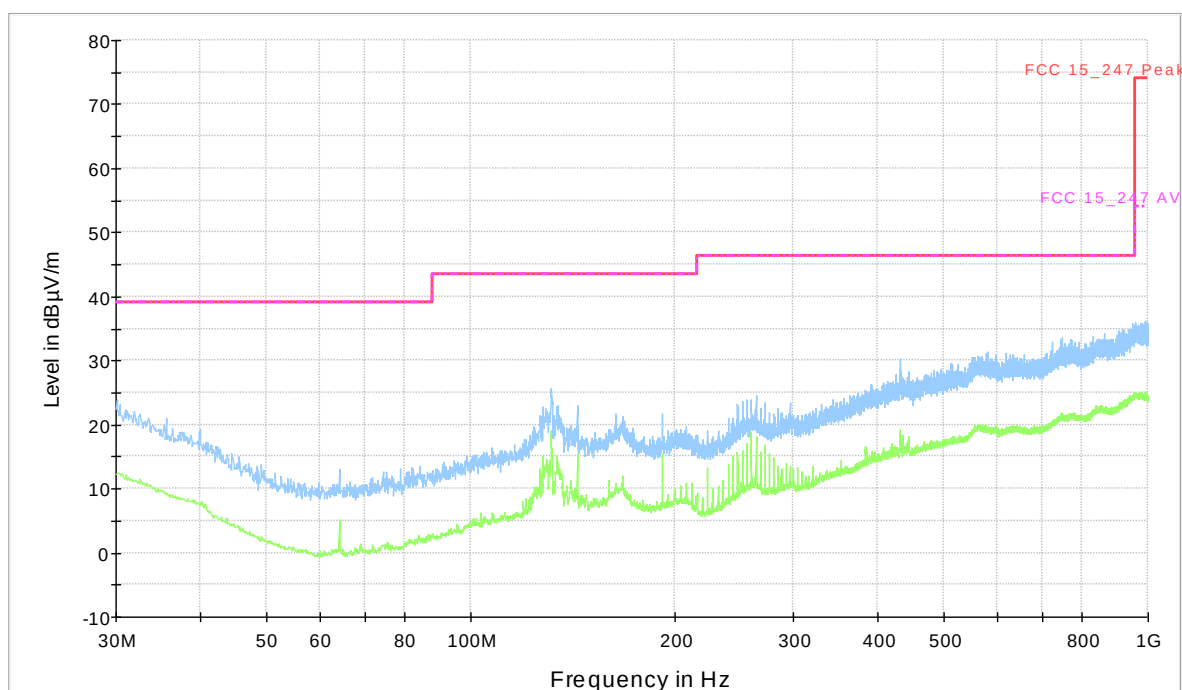
HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH 18

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



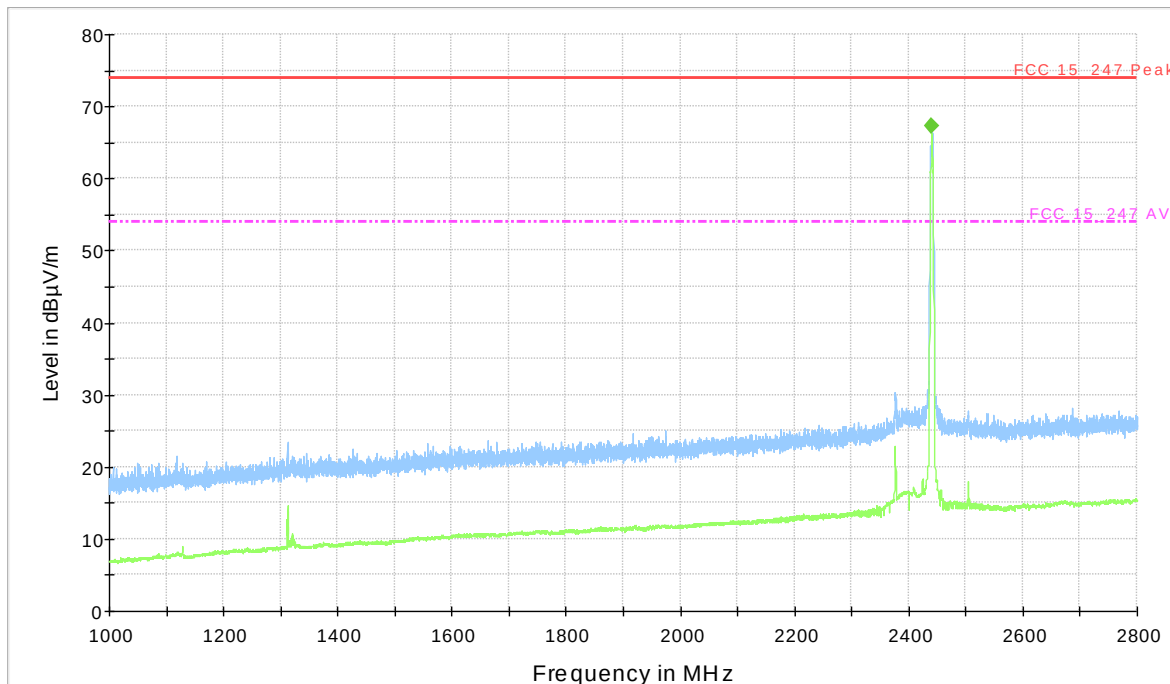
Blue trace Peak detector, Green trace average detector

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH 18

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Blue Marker Quasi-Peak detector; Green trace average detector

Final Result - Average

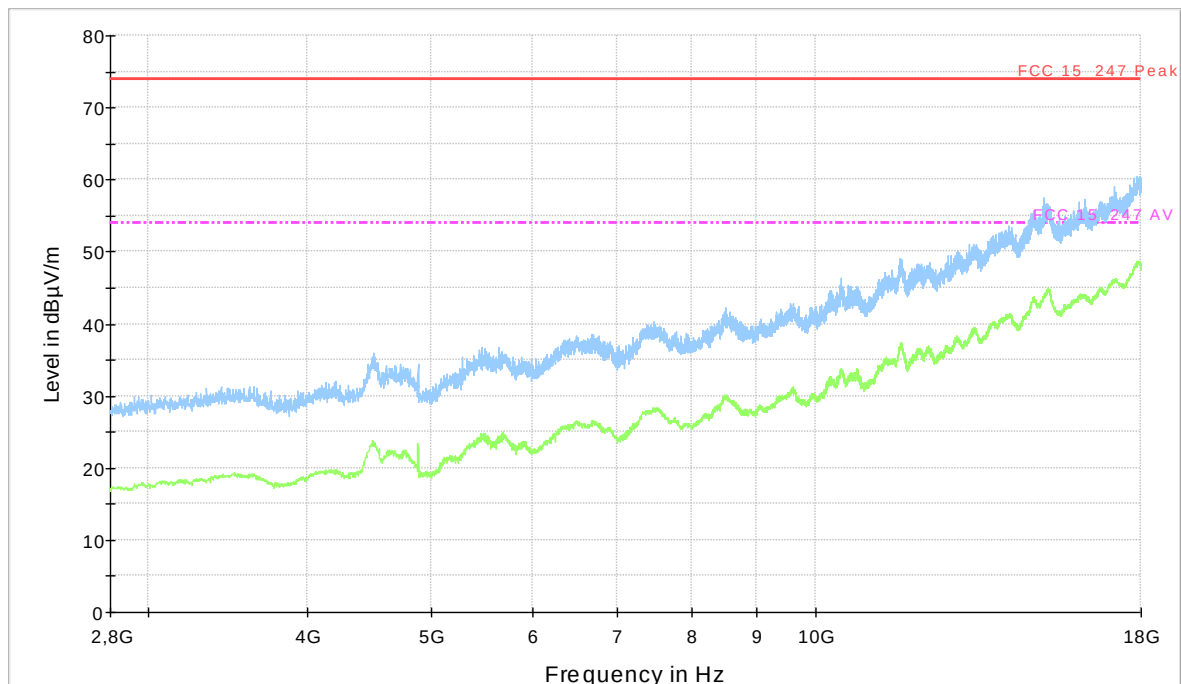
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2440.360000	67.3	104.0	H	179.0	-26.60	54.00

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH 18

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Green trace average detector

FREQUENCY RANGE 18GHz to 10th HARMONIC CH 18

HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH 26

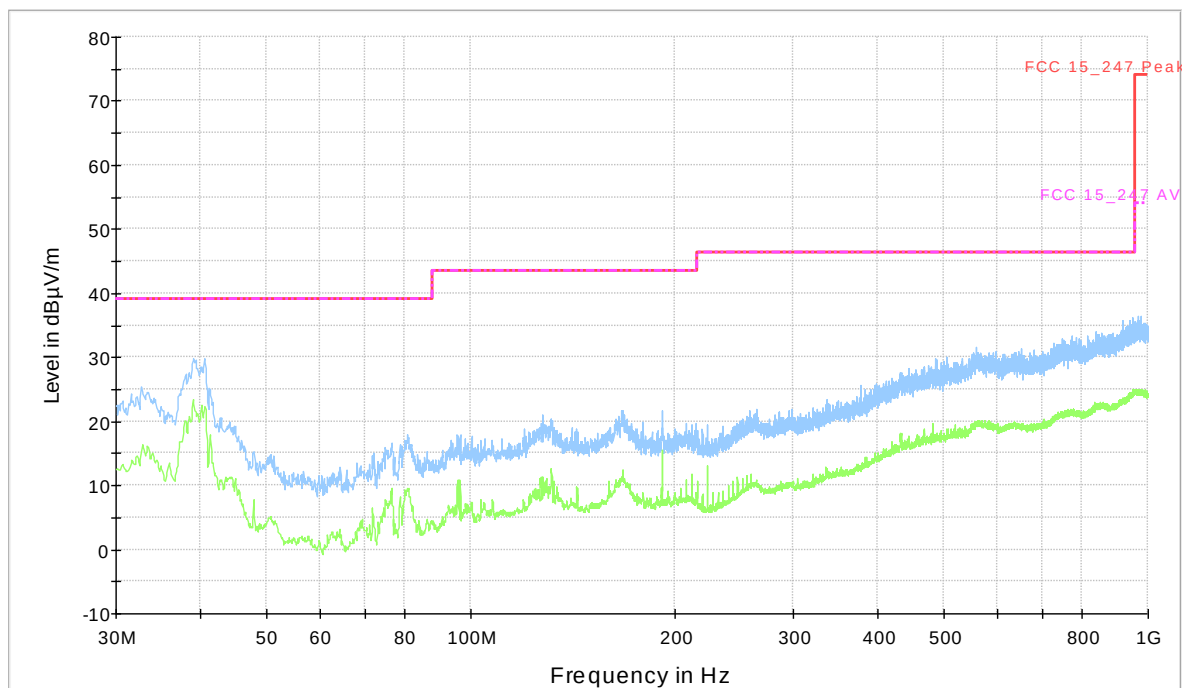
VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH 26

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



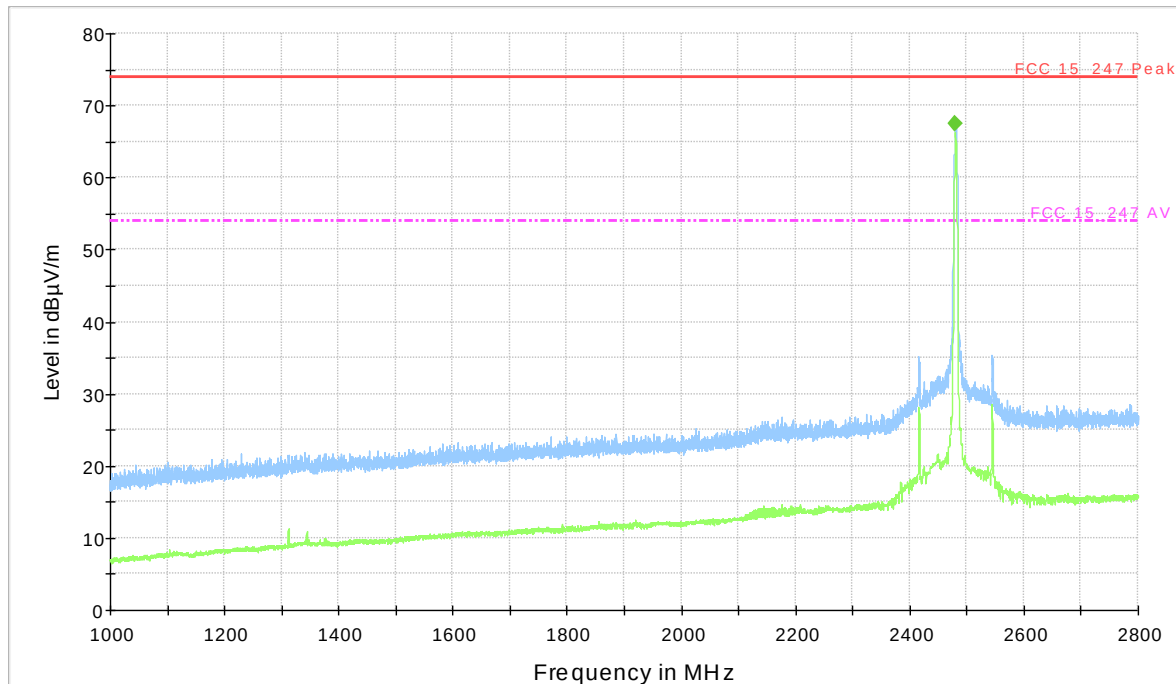
Blue trace Peak detector; Green trace average detector

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH 26

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector; Green trace average detector, Green Marker average detector

Average Final Result

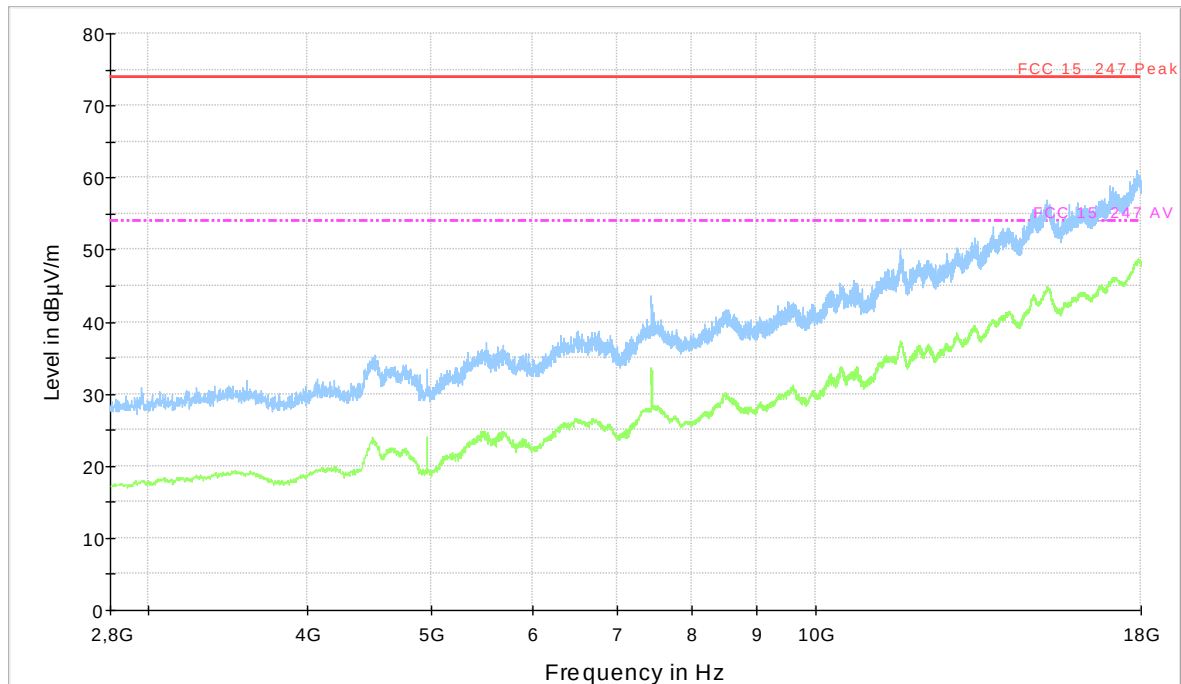
Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBμV/m)
2480.320000	67.5	104.0	V	179.0	-538.00	54.00

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH 26

VERTICAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_VERTICAL



Blue trace Peak detector, Green trace average detector

FREQUENCY RANGE 18GHz to 10th HARMONIC CH 26

VERTICAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 9kHz - 30MHz CH 26

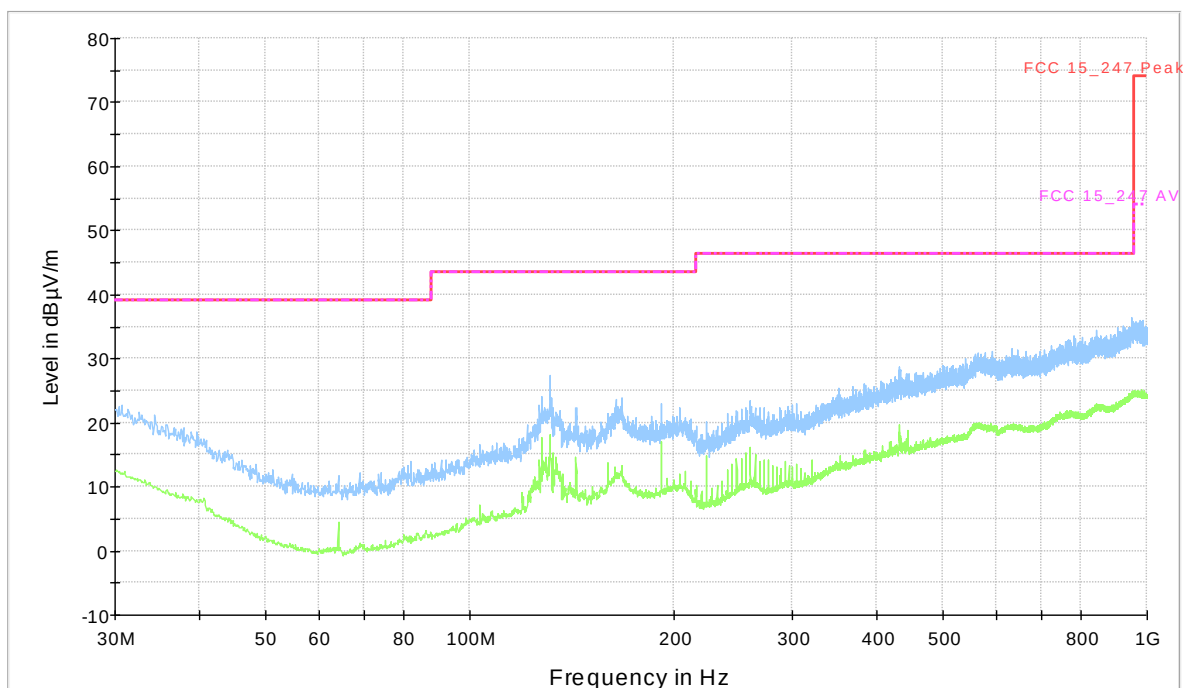
HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

FREQUENCY RANGE 30MHz – 1GHz CH 26

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



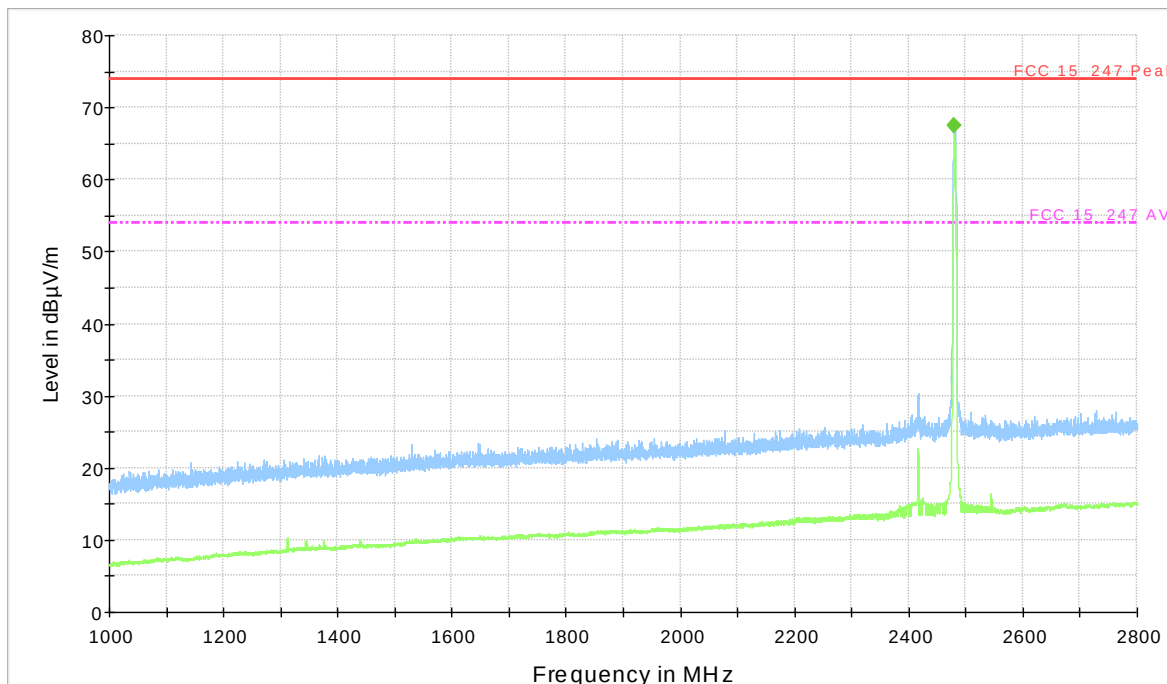
Blue trace Peak detector; Green trace average detector,

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 1GHz-2.8GHz CH 26

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector; Green trace average detector, Green Marker average detector

Final Result - Average

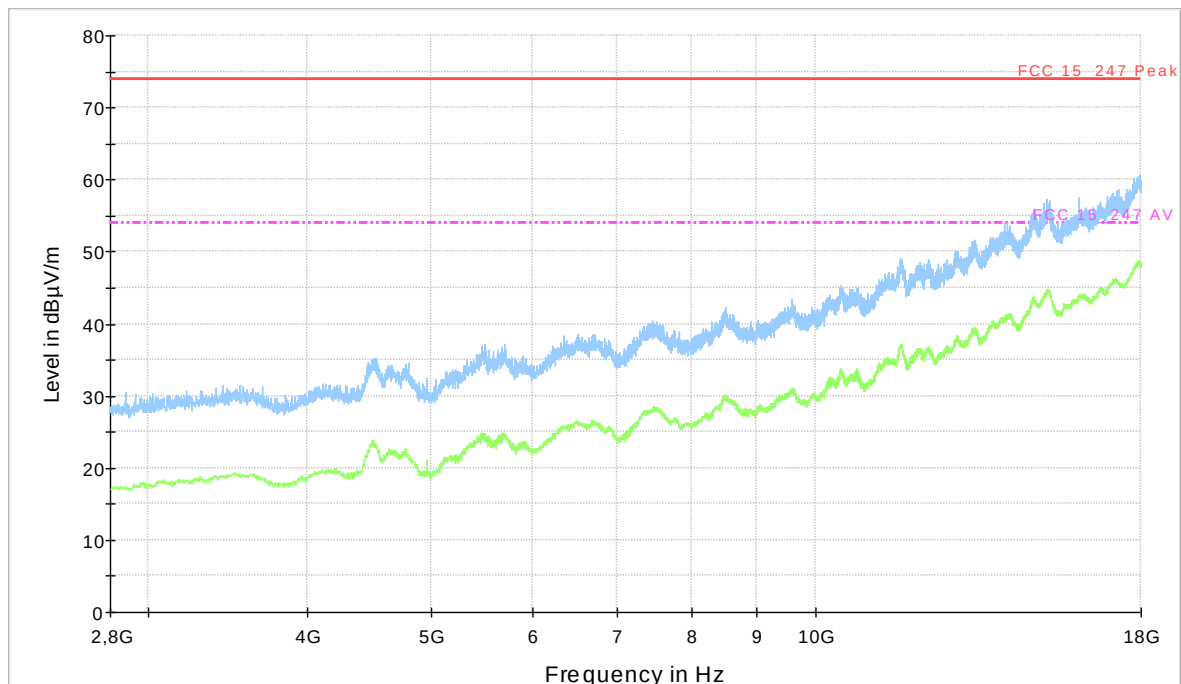
Frequency (MHz)	Average (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBµV/m)
2480.320000	67.5	104.0	H	1.0	-32.60	54.00

EMB-Z2538PA / UL + ANTENNA EMB-AN24-70SA-R1
RADIATED MEASUREMENT

FREQUENCY RANGE 2.8GHz-18GHz CH 26

HORIZONTAL POLARIZATION

FCC_15_247_RADIATED_SPURIOUS_HORIZONTAL



Blue trace Peak detector, Green trace average detector

FREQUENCY RANGE 18GHz to 10th HARMONIC CH 26

HORIZONTAL POLARIZATION

The amplitude of spurious emissions are attenuated more than 20 dB so the permissible value need not be reported

7. LIST OF EQUIPMENT USED

EQUIPMENT	MANUFACTURER	MODEL	SERIAL Nr.	CAL. DUE
EMI TEST RECEIVER 20Hz - 40GHz	Rohde & Schwarz	ESU40	100111	04/02/2016
RF SEMI-ANECHOIC CHAMBER (CSSA)	Siemens	B83117-D6019- T232	003-005- 134/94C	26/01/2016
BILOG ANTENNA	Chase	CBL6111C	2717	05/05/2016
LOG PERIODIC ANTENNA BROAD BAND 1-26,5GHz	Rohde & Schwarz	HL050	100437	01/04/2016
SPECTRUM ANALYZER	Rohde & Schwarz	FSP40	100038	16/01/2016
SYSTEM DC POWER SUPPLY	HP	6623A	3448A04501	10/01/2016
TUNABLE NOTCH FILTER	Wainwright	WRCT2200/2500- 5/40-10SK	5	11/11/2016
HIGH PASS FILTER	Wainwright	WHNX 2,8/18G- 10SS	1	11/11/2016