



ETS Dr.GenZ Taiwan PS Co., LTD

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679

A2LA Cert.No.: 2300.01

PCTRB Accredited Type Certification Test House

FCC TEST - REPORT

FCC RULES PART 15 / SUBPART C

FCC ID: R48WSP510RX

Test report no.: W6M20609-7420-P-15-S

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample which has Passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

The test report may only be reproduced or published in full.

Reproduction or publication of extracts from the report requires the prior written approval of the ETS DR. GENZ TAIWAN PS CO., LTD.

Tester:

Nov 10, 2006

Jay Chaing



Date

ETS-Lab.

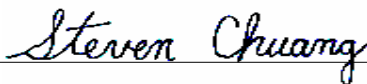
Name

Signature

Technical responsibility for area of testing:

Nov 10, 2006

Steven Chuang



Date

ETS

Name

Signature

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1.2 Testing laboratory

1.2.1 Location

OATS
No.5-1, Shuang Sing Village,
LiShuei Rd., Wanli Township,
Taipei County 207, Taiwan (R.O.C.)

Company
ETS DR. GENZ TAIWAN PS CO., LTD.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : 886-2-66068877
Fax : 886-2-66068879

1.2.2 Details of accreditation status

Accredited testing laboratory

A2LA-registration number: 2300.01

FCC filed test laboratory Reg. No. 930600

Industry Canada filed test laboratory Reg. No. IC 5679

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1.3 Details of approval holder

Name	: MEILOON INDUSTRIAL CO., LTD.
Street	: No.77, Lane 1775, Chuen-Ryh Road
Town	: Taoyuan City
Country	: Taiwan
Telephone	: +886-3-326-1611
Fax	: +886-3-326-3884

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1.4 Application details

Date of receipt of application : Sep 18, 2006
Date of receipt of test item : Oct 12, 2006
Date of test : from Oct 12, 2006 to Nov 10, 2006

1.5 General information of Test item

Type of test item : Wireless Subwoofer Speaker Ampilifer
Model Number : WSP-510
Hardware : Ver. 3.4
Software : Ver. 1.01
Serial number : without
Photos : see Annex

Technical data

Frequency band : 2.4 GHz – 2.4835 GHz
Frequency (ch A) : 2.403 GHz
Frequency (ch B) : 2.443 GHz
Frequency (ch C) : 2.479 GHz

Transmitter

Unom

Power (ch A) : **Conducted: 14.90 dBm**
Power (ch B) : **Conducted: 15.73 dBm**
Power (ch C) : **Conducted: 16.81 dBm**

Power supply : 120 VAC
Operation modes : duplex
Modulation Type : FHSS
Antenna Type : Dipole Antenna
Antenna gain : 2.09 dBi

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Host device : none

Classification :

Fixed Device	☒
Mobile Device (Human Body distance > 20cm)	☐
Portable Device (Human Body distance < 20cm)	☐

Manufacturer:
(if applicable)

Name : ./.
Street : ./.
Town : ./.
Country : ./.

Additional information : Wireless Subwoofer Speaker Ampilifer has two transceivers. One is Transmitter Box and the other is Speaker Amplifier.
Their RF module is the same.
This test report results are for Speaker Amplifier only.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART B /
SUBPART C § 15.247 : February 2006

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2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



or

The deviations as specified in 2.5 were ascertained in the course of the tests performed.



2.2 Test environment

Temperature	: 23 °C
Relative humidity content	: 20 ... 75 %
Air pressure	: 86 ... 103 kPa
Details of power supply	: 120 VAC
Extreme conditions parameters	: test voltage : -- extreme min :-- V max :-- V

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2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2006/10/16	2007/10/15
ETSTW-CE 002	PREREGULATOR MODE DC POWER SUPPLY	None	None		Function Test	
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2006/10/16	2007/10/15
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2006/10/16	2007/10/15
ETSTW-CE 006	IMPULS-BEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	In House Certificate	
ETSTW-CE 008	ABSORBING CLAMP	MDS 21	3469	ABSORPTIONS-MESSWANDLER-ZANGE	2005/10/24	2007/10/23
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2006/8/17	2007/8/16
ETSTW-CE 012	Dual-Phase-V-Network	NNB-2/16Z	03/10201	Telemeter	2006/6/13	2007/6/12
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	2005/10/14	2007/10/13
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2006/10/20	2007/10/19
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2006/10/30	2007/10/29
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2006/10/12	2007/10/11
ETSTW-RE 010	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070181	MOTECH	Function Test	
ETSTW-RE 011	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070165	MOTECH	Function Test	
ETSTW-RE 017	ANTENNA	HL025	352886/001	R&S	2006/5/4	2008/5/3
ETSTW-RE 018	ANTENNA	AT4560	27212	AR	2004/11/8	2007/11/7
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2006/10/11	2007/10/10
ETSTW-RE 027	Passive Loop Antenna	6512	34563	EMCO	2004/6/30	2007/6/29
ETSTW-RE 028	Log-Periodic DipoleArray Antenna	3148	34429	EMCO	2006/5/26	2008/5/25
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	2006/5/26	2008/5/25
ETSTW-RE 030	Double-Ridged Waveguide Horn Antenna	3117	35224	EMCO	2006/5/3	2008/5/2
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2006/10/11	2007/10/10
ETSTW-RE 033	4CH 1GHz 5GS/s DSO	WAVERUNNER 6100A	LCRY0604P14508	LeCroy	2006/7/27	2007/7/26
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2006/10/11	2007/10/10
ETSTW-RE 042	ANTENNA	HK116	100172	R&S	2005/1/14	2007/1/13
ETSTW-RE 043	ANTENNA	HL223	100166	R&S	2006/5/8	2008/5/7
ETSTW-RE 044	ANTENNA	HL050	100094	R&S	2006/5/29	2008/5/28
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2005/3/22	2008/3/21

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ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2005/5/19	2007/5/18
ETSTW-RE 055	SPECTRUM ANALYZER	FSU-26	200074	R&S	2006/7/28	2007/7/27
ETSTW-EMS 002	Frequency Converter	YF-6020	308014	T-Power	Function Test	
ETSTW-EMS 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2005/12/8	2008/12/8
ETSTW-EMS 014	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T2-02	20241	FCC	2005/12/7	2007/12/7
ETSTW-GSM 01	SIM Simulator	IT3	B2004-50106	ORGA	2006/7/26	2007/7/25
ETSTW-GSM 02	Universal Radio Communication Tester	CMU 200	103489	R&S	2005/11/15	2006/11/14
ETSTW-GSM 03	Agilent 8960 Test Set 1	E5515C	GB44052675	Agilent	2006/6/26	2008/6/25
ETSTW-GSM 04	Agilent 8960 Test Set 2	E5515C	GB44052665	Agilent	2006/7/13	2008/7/12
ETSTW-GSM 05	Agilent 8960 Test Set 3	E5515C	GB44052652	Agilent	2006/7/16	2008/7/15
ETSTW-GSM 06	Agilent 8960 Test Set 4	E5515C	GB44052684	Agilent	2006/7/4	2008/4/3
ETSTW-GSM 07	Agilent 8960 Test Set 5	E5515C	GB44052658	Agilent	2006/7/12	2008/7/11
ETSTW-GSM 08	Agilent 8960 Test Set 6	E5515C	GB44052666	Agilent	2006/7/6	2008/7/5
ETSTW-GSM 09	Controller PC	Dell GX 270	700F61J	Dell	Function Test	
ETSTW-GSM 10	Combiner Wessex / Anite	B4605/100	0053	Wessex / Anite	2006/7/13	2008/7/12
ETSTW-GSM 11	GSM 850,900,1800,1900 Test system	TS8950G	101087	R&S	2005/11/1	2007/4/30
ETSTW-GSM 12	Acoustical Calibrator	4231	2463874	Brüel&Kjær	2006/7/26	2007/7/25
ETSTW-GSM 13	Conditioning Amplifier	2690	2437856	Brüel&Kjær	2006/7/26	2007/7/25
ETSTW-GSM 15	Mouth Simulator	4227	2462516	Brüel&Kjær	2006/7/26	2007/7/25
ETSTW-GSM 16	TEMP.&HUMIDITY CHAMBER	GTH-120-40-1P-U	MAA0501002	GIANT FORCE	2005/12/29	2006/12/28
ETSTW-GSM 18	AUDIO ANALYZER	UPL16	100173	R&S	2006/10/28	2007/10/27
ETSTW-GSM 23	SPLITTER	4901.19.A	None	SUHNER	Function Test	
ETSTW-GSM 24	Vibration Testing System	VS-100V	5494	Vibration	2005/12/20	2006/12/19
ETSTW-GSM 29	Microphone	4192	2458739	Brüel&Kjær	2006/7/26	2007/7/25
ETSTW-GSM 30	Ear Simulator	4195	2457416	Brüel&Kjær	2006/7/26	2007/7/25

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2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 using a 50 μ H LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.4-2003 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 23°C with a humidity of 40 %.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dB μ V) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz)	METER READING + ACF + CABLE LOSS (to the receiver) = FS
33	20 dB μ V + 10.36 dB + 6 dB = 36.36 dB μ V/m @3m

The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2003 Section 13.1.2. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

- (1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
- (2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
- (3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.
- (4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

Measurements were made by ETS Dr. Genz Taiwan PS Co., Ltd. at the registered open field test site located No.5-1, Shuang Sing Village, LiShuei Rd., Wanli Township, Taipei County 207, Taiwan (R.O.C.). The Registration Number: 930600.

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When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

The formula is as follows:

Average = Peak + Duty Factor

Duty Factor = $20 \log (\text{dwell time}/T)$

T = 100ms when the pulse train period is over 100 ms or the period of the pulse train.

Modified Limits for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

ANTENNA & GROUND:

This unit uses Dipole Antenna.

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3 Test results (enclosure)

TEST CASE	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.247(b)	☒	☒	☐
Equivalent radiated Power	15.247(b)	☒	☒	☐
Spurious Emissions radiated – Transmitter operating	15.247(c)	☒	☒	☐
Spurious Emissions conducted – Transmitter operating	15.247	☐	☐	☐
Carrier Frequency Separation	15.247(a) (1)	☒	☒	☐
Number of Hopping Frequencies	15.247(a) (1)(i)	☒	☒	☐
Time of Occupancy (Dwell Time)	15.247(a) (1)(i)	☒	☒	☐
20 dB Bandwidth	15.247(a) (1)(i)	☒	☒	☐
Band-edge Compliance of RF Emission	15.247(c)	☒	☒	☐
Radiated Emission from Digital Part And Receiver L.O.	15.109	☒	☒	☐
Power Line Conducted Emission	15.207(a)	☒	☒	☐

The follows is intended to leave blank.

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3.1 Peak Output Power (transmitter)

FCC Rule: 15.247

This measurement applies to equipment with an integral antenna and to equipment with an antenna connector and equipped with an antenna as declared by the applicant.

The power was measured with modulation (declared by the applicant).

Test conditions		Conducted Power		
		Channel A [dBm]	Channel B [dBm]	Channel C [dBm]
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120\text{ V}$	14.90	15.73	16.81
Measurement uncertainty		< 3 dB		

Test conditions		Radiated Power		
		Channel A [dBm]	Channel B [dBm]	Channel C [dBm]
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120\text{ V}$	--	--	--
Measurement uncertainty		< 3 dB		

Test conditions	Signal Field strength TX highest power mode
$T_{nom} = 23^{\circ}\text{C}$, $V_{nom} = 120\text{ V}$	dB $\mu\text{V/m}$
Frequency[MHz]	
2480	110.11
Measurement uncertainty	< 3 dB

The diagrams for the field strength measurements are included in Appendix.

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 055

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Maximum Peak Output Power

Limits:

Frequency MHz	Number of hopping channels			
	≥ 75	≥ 50	$49 \geq 25$	$74 \geq 15$
902-928		30 dBm	24 dBm	
2400-2483.5 MHz	30 dBm	-		21 dbm
5725-5850 MHz	30 dBm	-		

In case of employing transmitter antennas having antenna gain >dBi and using fixed poin-to point operation consider §15.247 (b)(4).

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3.2 Equivalent isotropic radiated power

FCC Rule: 15.239(b), 15.35

Because using an internal antenna there are no deviations from the radiated test results according 3.1.

3.2.1 Transmitter

Integral Antenna:

At the transmitter the measurement was transacted with the modulation declared by the manufacturer and the maximum available output power of the EUT.

In this arrangement the EUT fulfils the requirements of the FCC rules § 15.247, subpart C, section b. This unit uses an internal antenna. There is no provision for an external antenna (see photo).

3.3 RF Exposure Compliance Requirements

According to Supplement C, Edition 01-01 to OET Bulletin 65, Edition 97-01 this spread spectrum transmitter is categorically excluded from routine environmental evaluation because of the low power level, where there is a high likelihood of compliance with RF exposure standards.

The antenna used for this Bluetooth transceiver module must not be co-located or operating in conjunction with any other antenna or transmitter.

3.4 Out of Band Radiated Emissions

FCC Rule: 15.247(c) , 15.35

For out of band emissions that are close to or that exceed the 20 dB attenuation requirement described in the specification, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the general radiated emission requirement.

Limits:

For frequencies below 1GHz :

Max. reading – 20 dB

110.11 dBμV/m- 20 dB= 90.11 dBμV/m

Guidance on Measurement of FHSS Systems:

“If the emission is pulsed, modify the unit for continuous operation , use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.” Here the correction was added to the limit instead subtracted from the reading.

Duty Cycle correction = 20 log (dwell time/100ms)

For frequencies above 1GHz (Peak measurements).

Limit = max. aver. reading-20dB +20dB(because Peak detector is used)

90.11 dBμV/m

For frequencies above 1GHz (Average measurements).

Max. reading – 20 dB - duty cycle correction:

No duty cycle correction was added to the reading

110.11 dBμV/m- 20 dB= 90.11 dBμV/m

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 021

ETSTW-RE 028 ETSTW-RE 030 ETSTW-RE 043 ETSTW-RE 044

Comment: See attached diagrams.

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3.5 Transmitter Radiated Emissions in restricted Bands

FCC Rules: 15.247 (c), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 26000 MHz.

For radiated emission tests, the analyzer setting was as followings:

RES BW VID BW

Frequency <1 GHz 100 kHz 100 kHz (Peak measurements)

Frequency >1 GHz 1 MHz 1 MHz (Peak measurements)

1 MHz 1 MHz (Average measurements)

Limits:

For frequencies below 1GHz :

Frequency of Emission (MHz)	Field strength (microvolts/meter)	Field Strength (dB microvolts/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of FHSS Systems:

“If the emission is pulsed, modify the unit for continues operation , use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.” Here the correction was added to the limit instead subtracted from the reading.

Duty cycle correction = $20 \log (\text{dwell time}/100\text{ms})$

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

54.0dB μ V/m

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

54.0dB μ V/m + 20 dB= 74 dB μ V/m

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017ETSTW-RE 028
 ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043
 ETSTW-RE 044

Comment: See attached diagrams.

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3.6 Spurious emissions (tx)

Spurious emission was measured with modulation (declared by manufacturer).

In any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB 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. 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))

SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance to point 2.3.

Calculation of test results:

Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

The peak and average spurious emission plots was measured with the average limits.

In the Table being listed the critical peak and average value an exhibit the compliance with the above calculated Limits.

If in the column's correction factor states a value then the max. Field strength in the same row is corrected by a value gained from the "Marker-Delta-Method" or the „Duty-Cycle Correction Factor“.

Summary table with radiated data of the test plots

Low Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
H	2390.000	45.76	2.07	PK	47.83	54	6.17	110	227
	4000.0928	49.62	3.46	PK	53.08	74	20.92	105	317
	4000.0928	36.55	3.46	AV	40.11	54	13.89	105	317
	4810.2591	52.39	4.45	PK	56.84	74	17.16	100	189
	4810.2591	37.81	4.45	AV	42.26	54	11.74	100	189
	7214.3542	54.96	7.51	PK	62.47	90.11	27.64	110	248

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
V	2390.000	45.94	2.07	PK	48.01	54	5.99	105	229
	4000.0928	49.78	3.46	PK	53.24	74	20.76	100	309
	4000.0928	37.63	3.46	AV	41.09	54	12.91	100	309
	4810.2591	50.71	4.45	PK	55.16	74	18.84	115	202
	4810.2591	36.64	4.45	AV	41.09	54	12.91	115	202
	7214.3542	54.03	7.51	PK	61.54	90.11	28.57	105	250

Registration number: W6M20609-7420-P-15-S
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Middle Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
H	4092.2843	51.14	2.78	PK	53.92	74	20.08	110	276
	4092.2843	37.39	2.78	AV	40.17	54	13.83	110	276
	4889.2731	52.51	4.92	PK	57.43	74	16.57	105	179
	4889.2731	39.31	4.92	AV	44.23	54	9.77	105	179
	7335.8423	55.24	6.24	PK	61.48	74	12.52	115	301
	7335.8423	42.05	6.24	AV	48.29	54	5.71	115	301

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
V	4092.2843	51.03	2.78	PK	53.81	74	20.19	100	333
	4092.2843	37.30	2.78	AV	40.08	54	13.92	100	333
	4889.2731	51.01	4.92	PK	55.93	74	18.07	110	317
	4889.2731	36.35	4.92	AV	41.27	54	12.73	110	317
	7335.8423	53.59	6.24	PK	59.83	74	14.17	105	165
	7335.8423	40.20	6.24	AV	46.44	54	7.56	105	165

High Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
H	2483.500	49.99	-1.51	PK	48.48	54	5.52	110	268
	4132.6743	50.11	2.82	PK	52.93	74	21.07	105	196
	4132.6743	38.46	2.82	AV	41.28	54	12.72	105	196
	4959.275	49.43	4.43	PK	53.86	74	20.14	100	218
	4959.275	38.14	4.43	AV	42.57	54	11.43	100	218
	7439.7369	53.53	6.40	PK	59.93	74	14.07	110	300
	7439.7369	42.42	6.40	AV	48.82	54	5.18	110	300

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
V	2483.500	52.00	-1.51	PK	50.49	54	3.51	105	260
	4132.6743	47.30	2.82	PK	50.12	54	3.88	110	289
	4959.275	48.38	4.43	PK	52.81	74	21.19	110	189
	4959.275	36.73	4.43	AV	41.16	54	12.84	110	189
	7439.7369	52.34	6.40	PK	58.74	74	15.26	115	221
	7439.7369	42.96	6.40	AV	49.36	54	4.64	115	221

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

- Note**
- 1. Correction Factor = Antenna factor + Cable loss - Preamplifier**
 - 2. The formula of measured value as: Test Result = Corrected Reading + Correction Factor**
 - 3. Detector function in the form : P = Peak, QP = Quasi Peak, AV = Average**

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028
ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043
ETSTW-RE 044

All other not noted test plots do not contain significant test results in relation to the limits.

TEST RESULT (Transmitter): The unit DOES meet the FCC requirements.

Comment: see attached diagrams

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

3.7 Carrier Frequency Separation

Carrier Frequency Separation was measured with modulation (declared by manufacturer).

According to FCC rules part 15 subpart C §15.247 frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or 20 dB bandwidth of the hopping channel, whichever is greater.

Test conditions		Channel Separation	
		Channel B	Channel B+1
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120\text{ V}$	2.051282051 MHz	
Measurement uncertainty		< 10 Hz	

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 055

Limits:

Frequency Range MHz	Limits	
	20 dB bandwidth < 25 kHz	20 dB bandwidth > 25 kHz
902-928	25 kHz	20 dB bandwidth
2400-2483.5 5725-5850.0	25 kHz	20 dB bandwidth

Comment: see attached diagram

Registration number: W6M20609-7420-P-15-S
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3.8 Number of Hopping Frequencies

According to FCC rules part 15 subpart C §15.247 frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies. Frequency hopping systems in 5725-5850 MHz bands shall use least 75 hopping frequencies.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies; if the 20dB bandwidth of the hopping channel 250 kHz or greater, the system shall use at least 25 hopping frequencies.

Test conditions		Operating Mode	Number of Channels
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120\text{ V}$	normal transmitting	20

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 055

Limits:

Frequency Range MHz	Limit			
	20dB Bandwidth		20dB Bandwidth < 250 kHz	20dB Bandwidth ≥ 250 kHz
	≤ 1MHz			
902-928 MHz			≥ 50	≥ 25
2400-2483.5	≥ 15	≥ 15		
5725-5850.0 MHz	≥ 75			

Comment: see attached diagrams

3.8.1 Pseudorandom Frequency Hopping Sequence

The generation of the hopping sequence is determined by the Bluetooth cord specification and complies with the FCC requirements.

3.8.2 Coordination of hopping sequences to other transmitters

According to the Bluetooth core specification V1.1 such a coordination is not possible. During scatternet function only one of the two hopping sequences will be used at a definite moment.

3.8.3 System Receiver Hopping Capability

According to the Bluetooth core specification. The system receivers shift frequencies in synchronization with the transmitted signals.

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3.9 Time of Occupancy (Dwell Time)

Frequency hopping systems operating in the 5725-5850 MHz band shall use an average time of occupancy on any frequency not greater than 0.4 seconds within a 30 second period.

In 2400-2483,5 MHz band the average time of occupancy on any channel shall not be greater than 0,4 seconds multiplied by the number of hopping channels employed.

For frequency hopping systems operating in the 902-928 MHz band: if the 20dB bandwidth of the hopping channel is less than 250 kHz, the average time of occupancy on any frequency shall not greater than 0.4 seconds within a 20 second period; if the 20dB bandwidth of the hopping channel is 250 kHz or greater, the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.

Test conditions	Operating mode	Measurement periode	Time of Occupancy
$T_{nom} = 23^{\circ}\text{C}$ $V_{nom} = 120\text{ V}$ Channel B	normal transmitting		172.252ms
Measurement uncertainty	< 1 μs		

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 055

Limits and measurement periods:

Frequency MHz	Number of channels	Measurement Periode	Limit
902 – 928	≥ 50	20 s	0,4 s
	$49 \geq 25$	10 s	0,4 s
2400 – 2483,5	≥ 15	0,4 s * number of used channels	0,4 s
5725- 5850	≥ 75	30 s	0,4s

Comment: See attached diagram, which show the On-time and the number of counted events during the measurement period

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3.10 20dB Bandwidth

Frequency hopping systems operating in the 5725-5850 MHz bands shall use a maximum 20dB bandwidth of 1 MHz.

The 20dB bandwidth is measured on the lowest, middle and highest hopping channel.

For frequency hopping systems operating in the 902-928 MHz band the maximum 20dB bandwidth of the hopping channel is 500 kHz.

Test conditions		20 dB Bandwidth		
		Channel A	Channel B	Channel C
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120\text{ V}$	1.833333333 MHz	1.820512821 MHz	1.820512821 MHz
Measurement uncertainty		< 10 Hz		

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 055

Limits:

Frequency Range / MHz	Number of channels	Limit
902-928	< 50	< 250 kHz
	$49 \geq 25$	$500\text{ kHz} \geq 250\text{ kHz}$
2400-2483.5	≥ 15	not determined
5725-5850	75	$\leq 1\text{ MHz}$

Comment: see attached diagram

3.10.1 System Receiver Input Bandwidth

It is determined in the Bluetooth core specification. The value matches to the bandwidth of transmitter signal.

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3.11 Band-edge Compliance of RF Emissions

According to FCC rules part 15 subpart C §15.247(c) in any 100 kHz bandwidth outside the frequency band in which the intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB 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. Attenuation below the general limits specified in § 15.209(a) is not required.

In addition radiated emission which fall in the restricted bands, as defined in section 15.205(a), must also with the radiated emission limits.

Test conditions		Attenuation at or outside band-edges	
		Lower Band-edge	Upper Band-edge
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120 \text{ V}$	56.57 dB	59.63 dB
Measurement uncertainty		< 100 Hz	

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017ETSTW-RE 028
 ETSTW-RE 030 ETSTW-RE 043 ETSTW-RE 044

Limits:

Frequency Range / MHz	Limit
902 – 928	- 20 dB
2400 – 2483.5	
5725 - 5850	

Comment: see attached diagrams

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3.12 Radiated Emissions from Receiver Section of Transceiver

FCC Rule: 15.109

Summary table with radiated data of the test plots

(RX)

Low Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuv)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
H	198.156	13.00	11.59	QP	24.59	43.50	18.91	270	169
	508.186	22.85	20.21	QP	43.06	46.00	2.94	305	268
	3977.1486	45.43	3.24	PK	48.67	54.00	5.33	110	243

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuv)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
V	199.879	13.09	11.57	QP	24.66	43.50	18.84	310	211
	358.426	20.72	16.70	QP	37.42	46.00	8.58	245	196
	3688.6299	47.05	1.18	PK	48.23	54.00	5.77	115	286

Middle Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuv)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
H	199.324	14.27	11.57	QP	25.84	43.50	17.66	250	178
	513.243	23.30	20.13	QP	43.43	46.00	2.57	305	246
	3724.0241	47.06	1.56	PK	48.62	54.00	5.38	105	300

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuv)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
V	143.658	11.92	14.13	QP	26.05	43.50	17.45	300	333
	273.456	26.66	14.42	QP	41.08	46.00	4.92	310	216
	3706.325	46.35	1.34	PK	47.69	54.00	6.31	110	198

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High Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuv)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
H	194.682	13.04	11.63	QP	24.67	43.50	18.83	305	276
	502.625	23.13	20.14	QP	43.27	46.00	2.73	250	148
	3694.1682	46.92	1.22	PK	48.14	54.00	5.86	110	193

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuv)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Azimuth (degree)
V	195.495	13.81	11.65	QP	25.46	43.50	18.04	235	242
	266.370	26.12	14.21	QP	40.33	46.00	5.67	250	266
	3694.1682	45.62	1.22	PK	46.84	54.00	7.16	105	198

- Note**
1. **Correction Factor = Antenna factor + Cable loss - Preamplifier**
 2. **The formula of measured value as: Test Result = Corrected Reading + Correction Factor**
 3. **Detector function in the form : P = Peak, QP = Quasi Peak, AV = Average**

Test equipment used: ETSTW-RE 003 ETSTW-RE 004 ETSTW-RE 017 ETSTW-RE 028
ETSTW-RE 029 ETSTW-RE 030 ETSTW-RE 042 ETSTW-RE 043
ETSTW-RE 044

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Field Strength (dBmicrovolts/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

Comment: see attached diagram

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FCC ID : R48WSP510RX

3.13 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

Frequency	Level (dBμV)	
	quasi-peak	average
150 kHz	lower limit line	Lower limit line

LISN type	Frequency Marker	Corrected Reading (dBuV)		Correction Factor	Test Result (dBuV)		Compliance Limit (dBuV)		Margin (dB)	
N	MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	0.19	27.27	0.47	10.1	37.37	10.57	64.03	54.03	26.66	43.46
	0.56	16.43	6.02	10.1	26.53	16.12	56	46	29.47	29.88
	27.65	9.54	0.56	10.1	19.64	10.66	60	50	40.36	39.34

LISN type	Frequency Marker	Corrected Reading (dBuV)		Correction Factor	Test Result (dBuV)		Compliance Limit (dBuV)		Margin (dB)	
L1	MHz	QP	AV	dB	QP	AV	QP	AV	QP	AV
	0.17	27.66	0.64	10.1	37.76	10.74	64.96	54.96	27.2	44.22
	0.56	17.45	5.55	10.1	27.55	15.65	56	46	28.45	30.35
	27.6	9.56	0.88	10.1	19.66	10.98	60	50	40.34	39.02

Note: 1. The formula of measured value as: **Test Result = Corrected Reading + Correction Factor**
2. The **Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss**
3. Detector function in the form : **P = Peak, QP = Quasi Peak, AV = Average**

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Test equipment used: ETSTW-CE 001 ETSTW-CE 003 ETSTW-CE 004 ETSTW-CE 006
ETSTW-EMS 013 ETSTW-EMS 014

Limits:

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi Peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Comment: see attached diagram

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

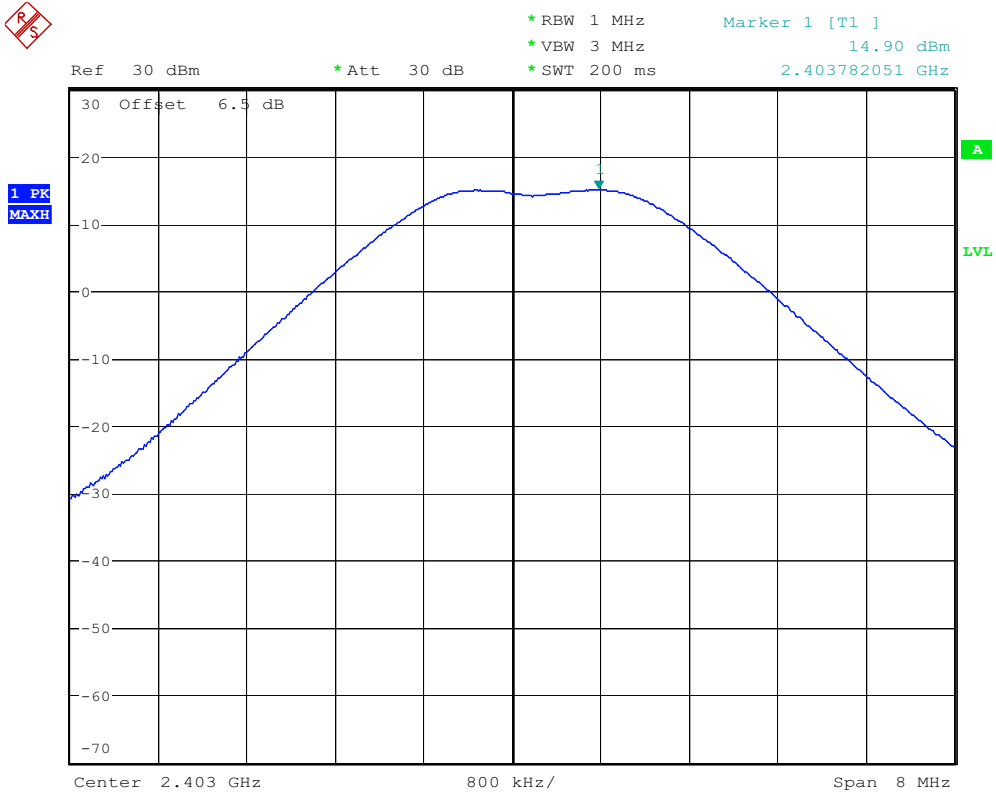
Appendix

- A Peak Output Power
- B Spurious Emissions radiated
- C Carrier Frequency Separation
- D Number of Hopping Frequencies
- E Time of Occupancy (Dwell Time)
- F 20dB Bandwidth
- G Band-edge Compliance of RF Conducted Emissions
- H Radiated Emissions from Receiver Section of Transceiver
- I Power Line Conducted Emission
- J Pictures

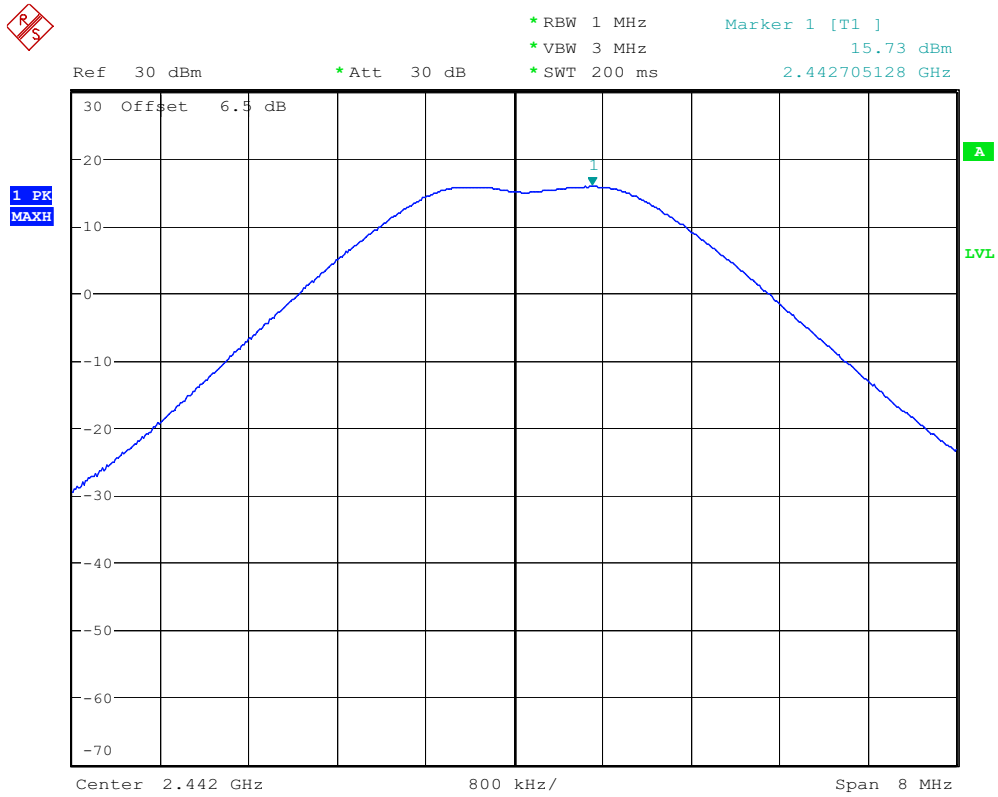
Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

Appendix A

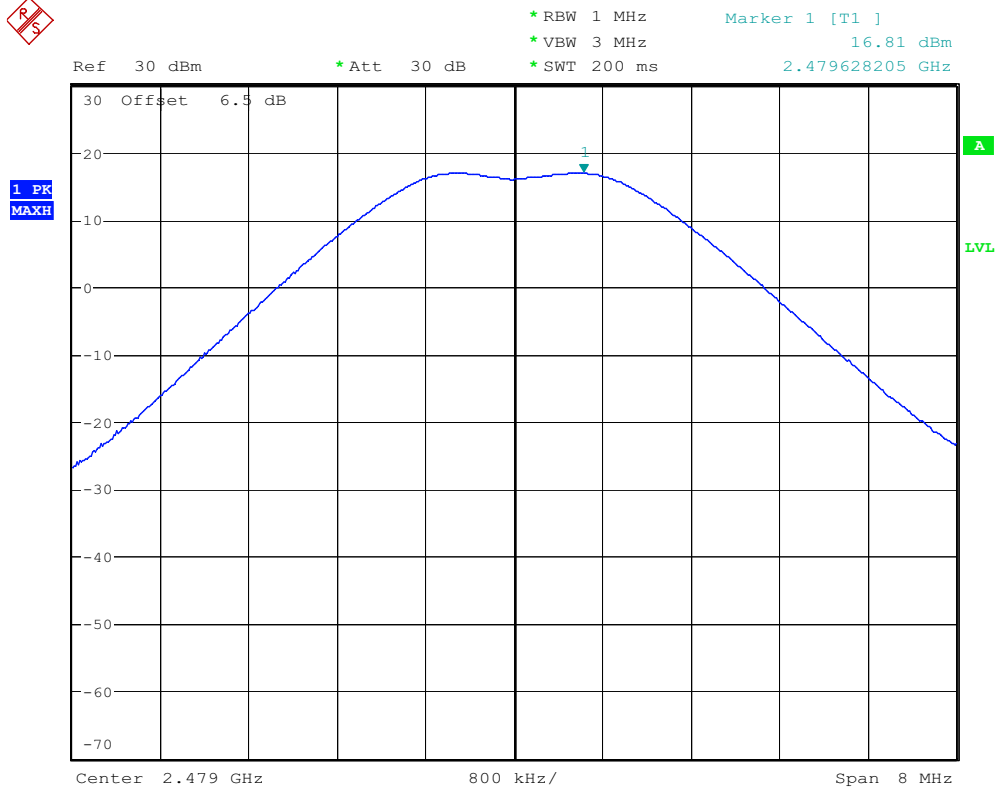
Peak Output Power



MAX OUTPUT POWER LOW CH
Date: 11.SEP.2006 09:29:20



MAX OUTPUT POWER MIDDLE CH
Date: 11.SEP.2006 09:36:00

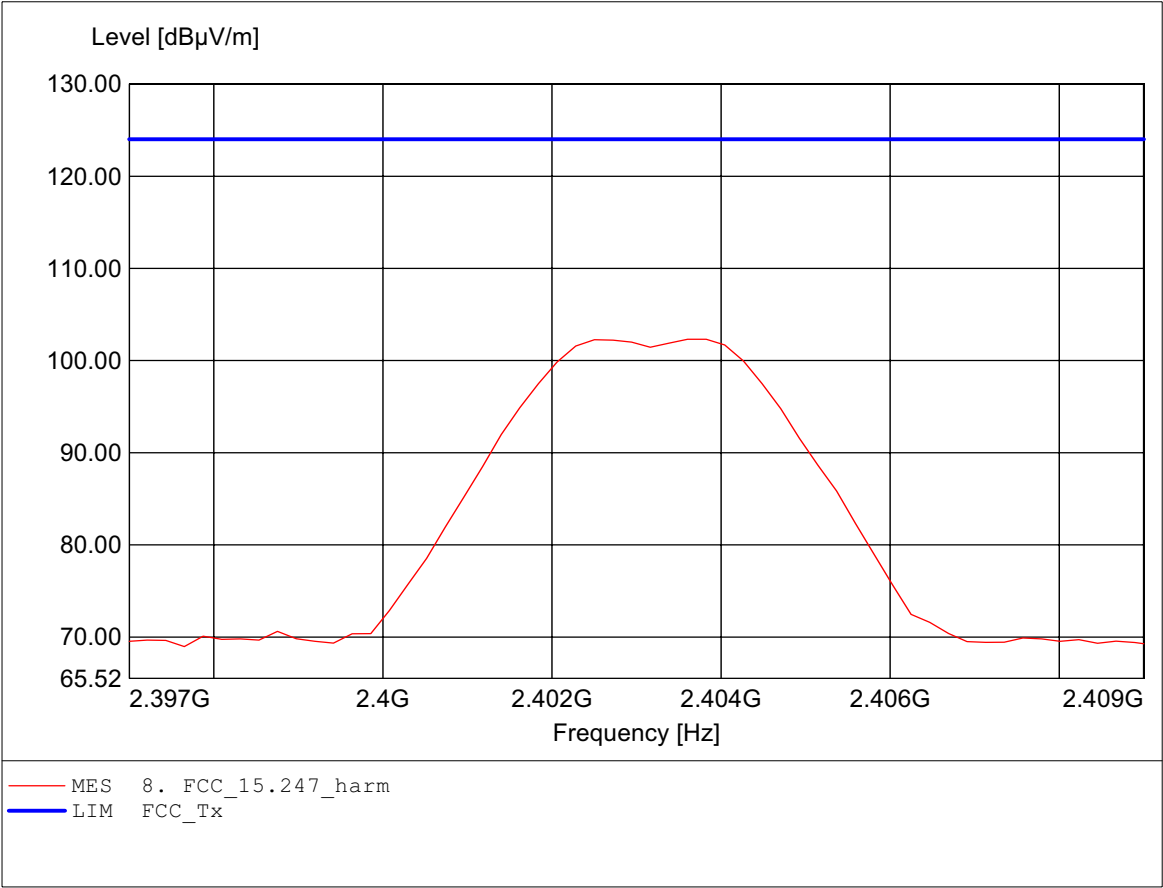


MAX OUTPUT POWER HIGH CH

Date: 5.SEP.2006 13:03:03

Carrier power (Field Strength)
FCC RULES PART 15, SUBPART C / LP0002

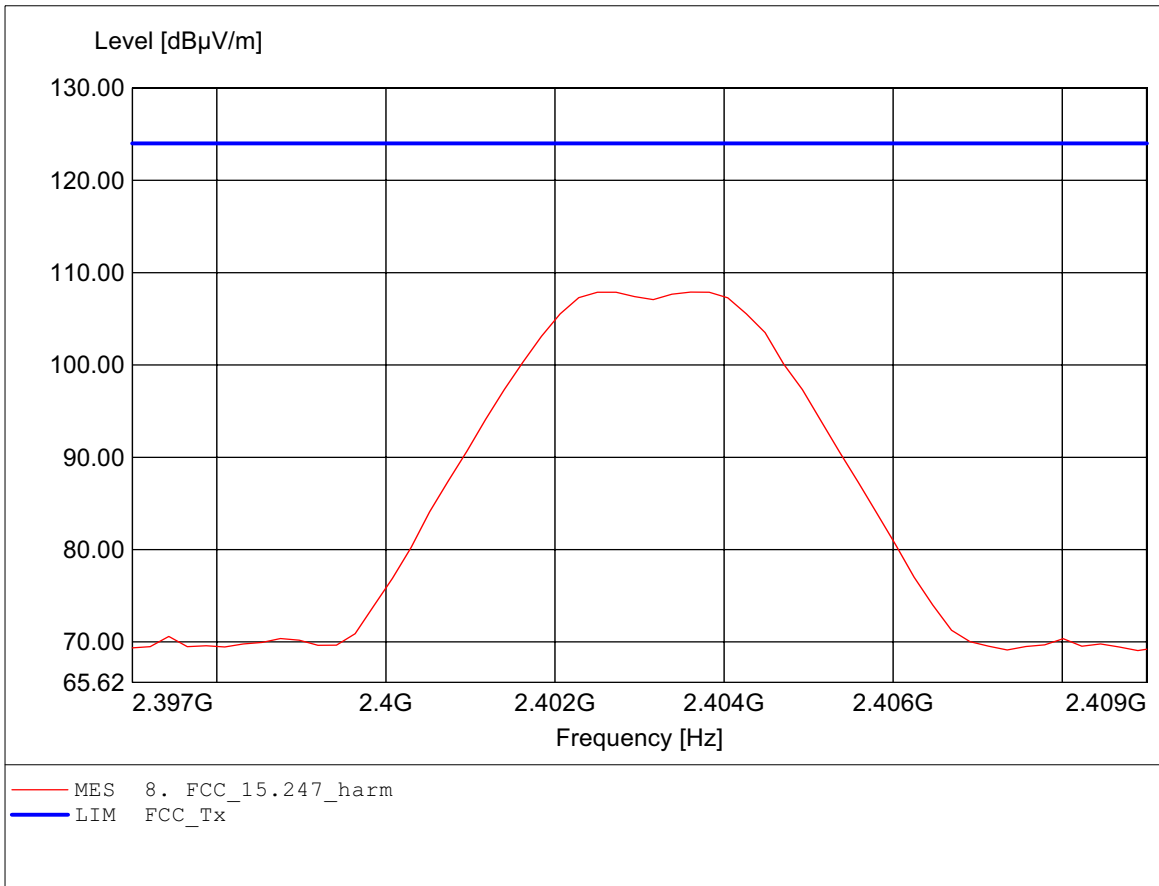
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.404GHz, Emax: 102.32dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

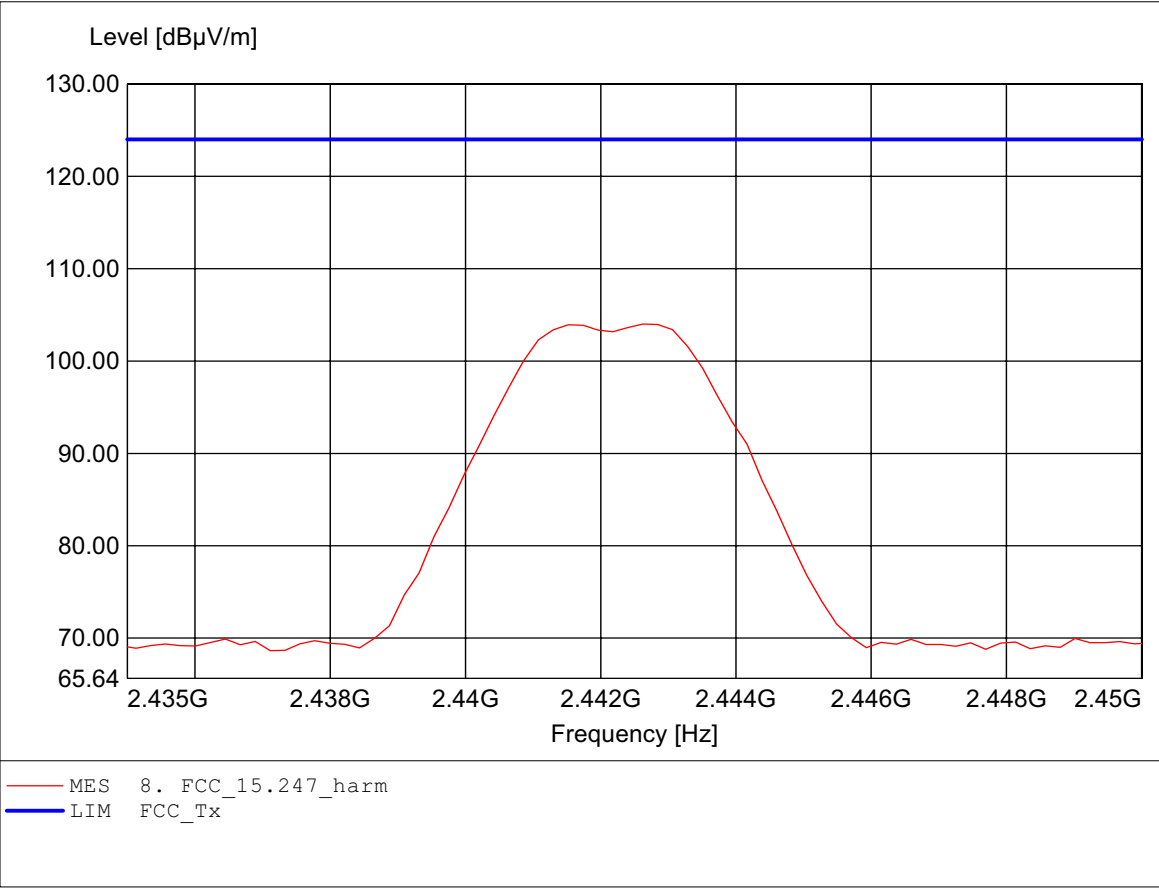
FCC RULES PART 15, SUBPART C / LP0002

Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.404GHz, Emax: 107.90dBµV/m, RBW: 1MHz



Carrier power (Field Strength)
FCC RULES PART 15, SUBPART C / LP0002

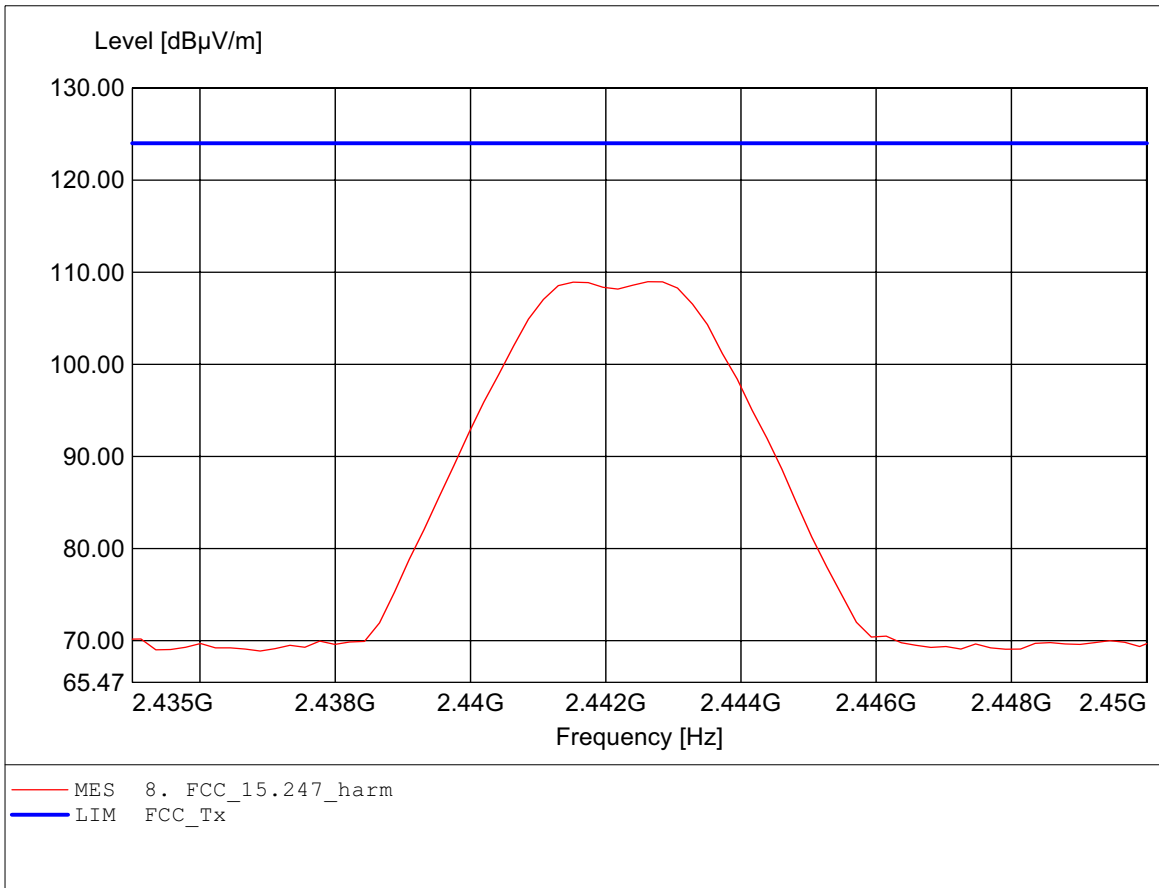
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.443GHz, Emax: 104.00dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP0002

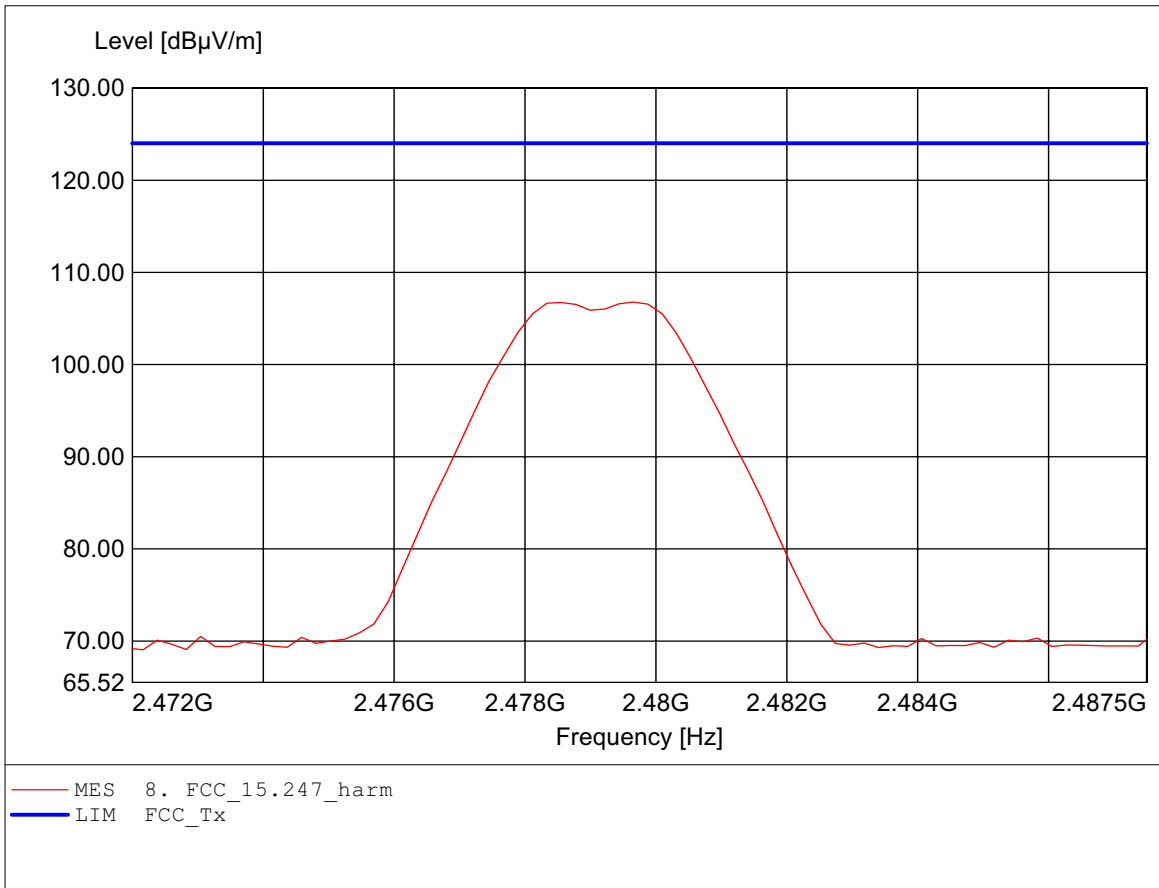
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.443GHz, Emax: 108.97dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP0002

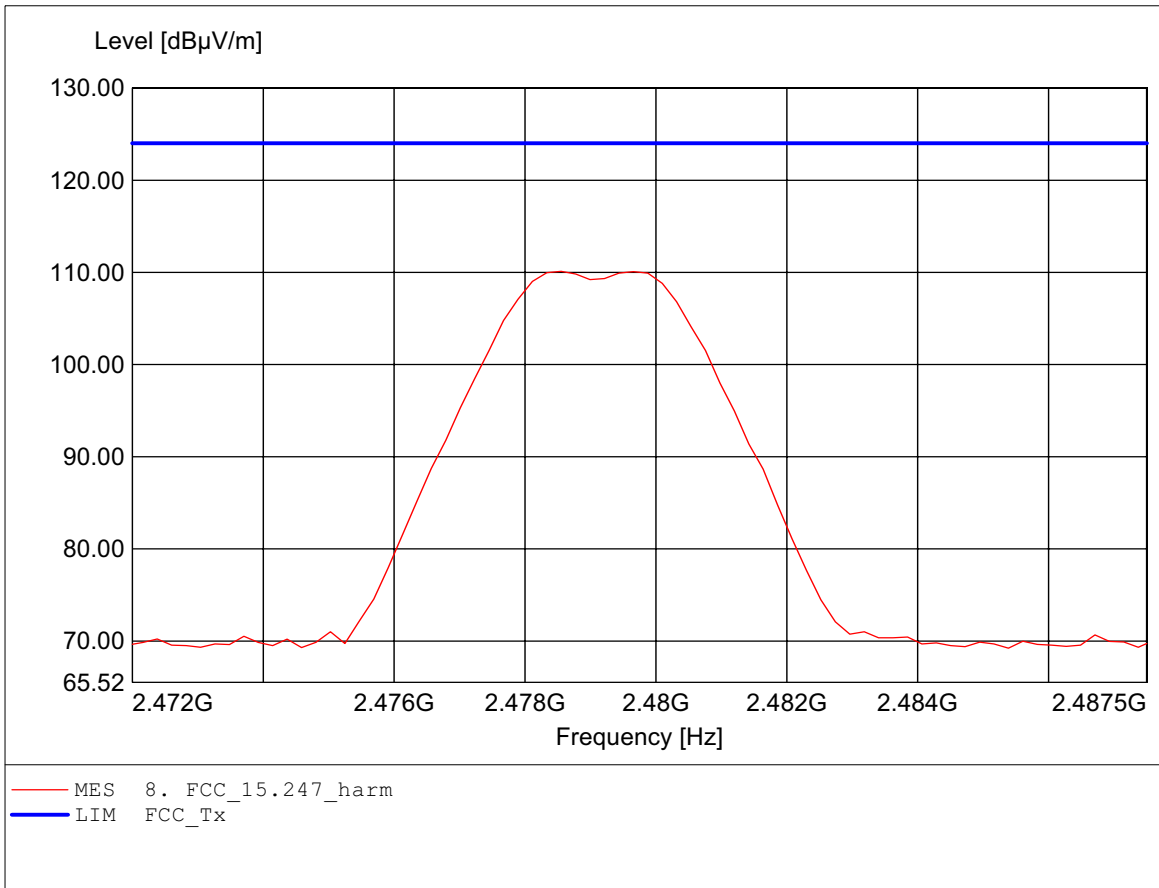
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.480GHz, Emax: 106.78dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP0002

Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.479GHz, Emax: 110.11dBµV/m, RBW: 1MHz



Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

Appendix B

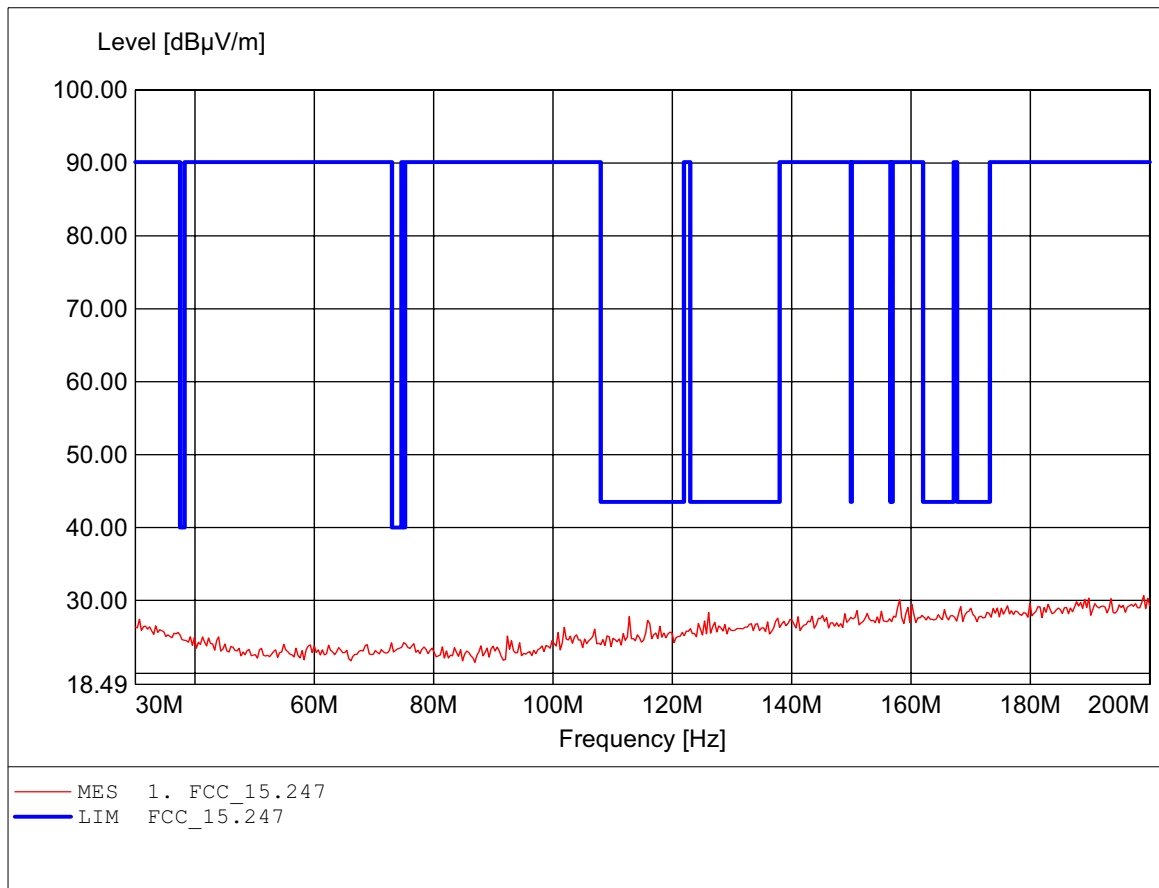
Spurious Emissions radiated

The measurement diagrams plots attached below are preliminary wideband scan with a peak detector and for reference only. The final test results are listed on section 3.6

Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

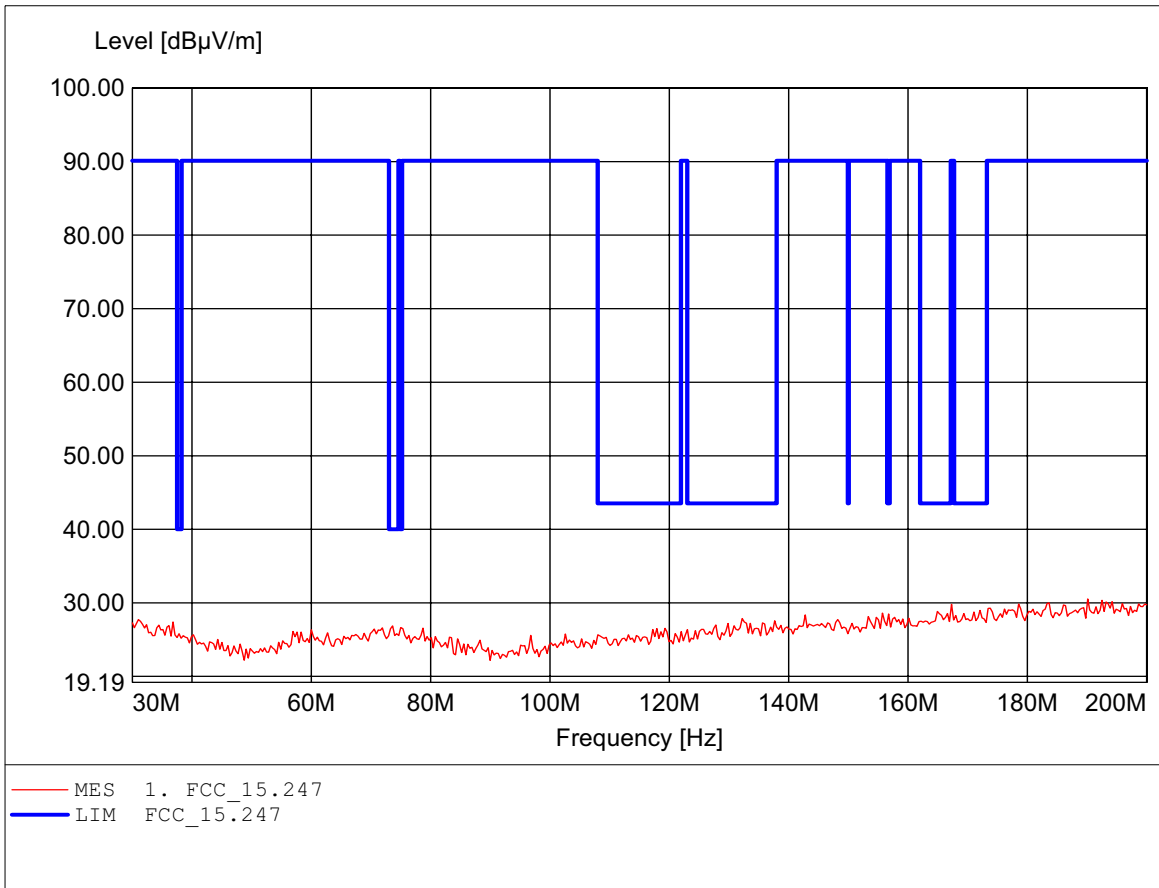
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 198.978MHz, Emax: 30.67dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

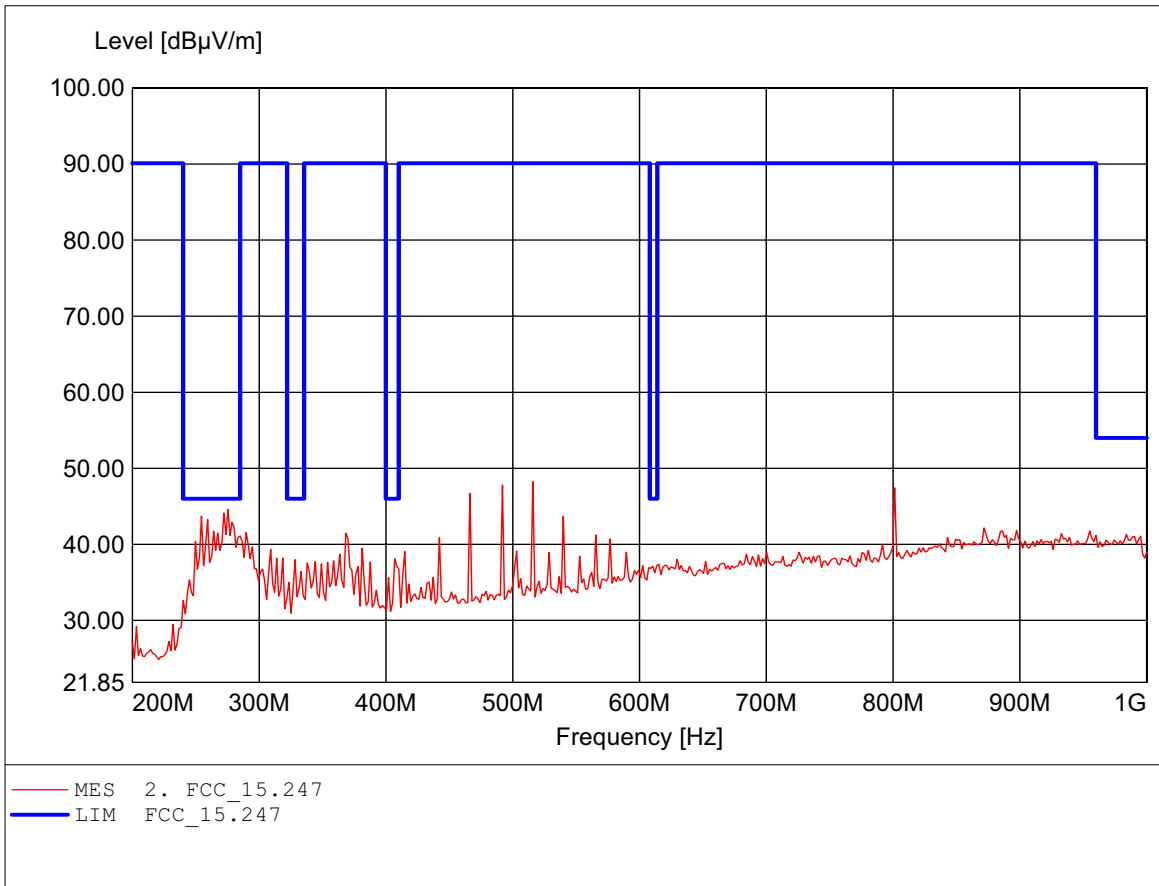
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 190.120MHz, Emax: 30.53dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

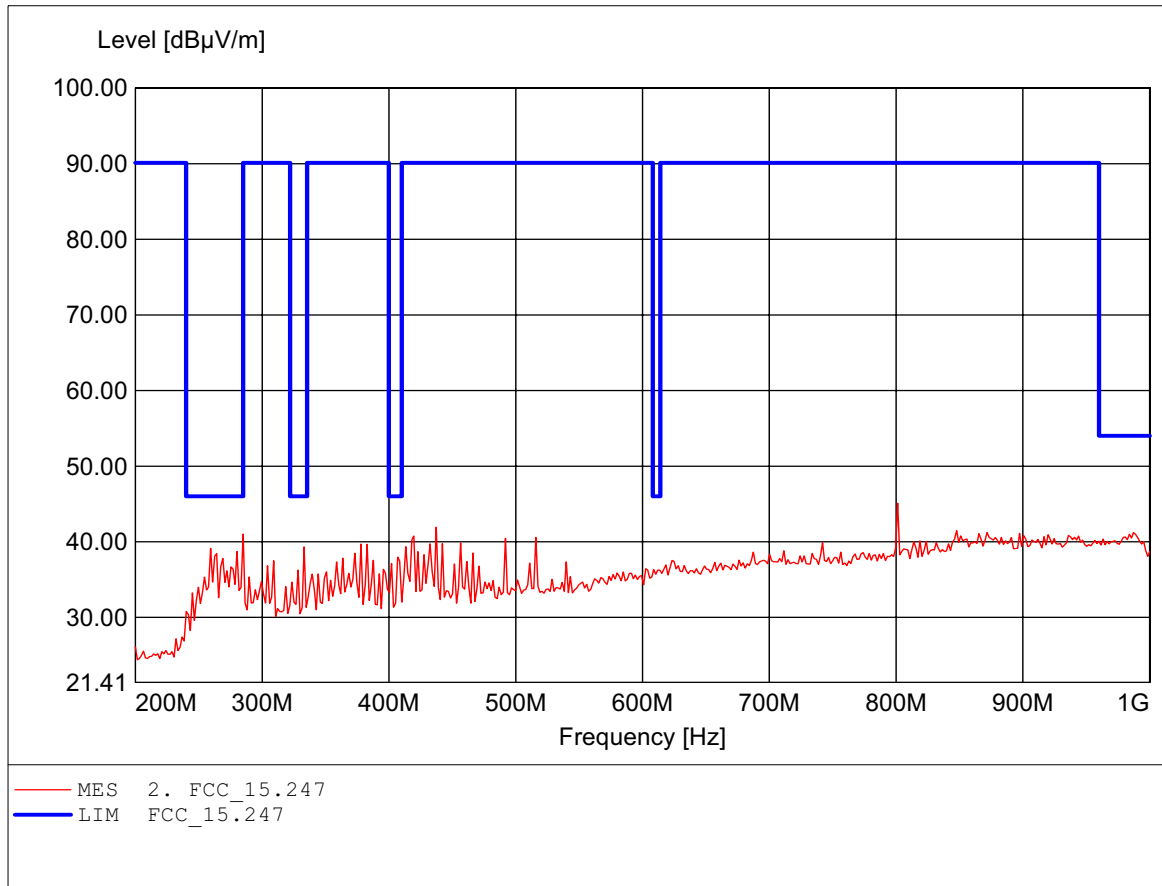
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Freq: 515.832MHz, Emax: 48.23dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

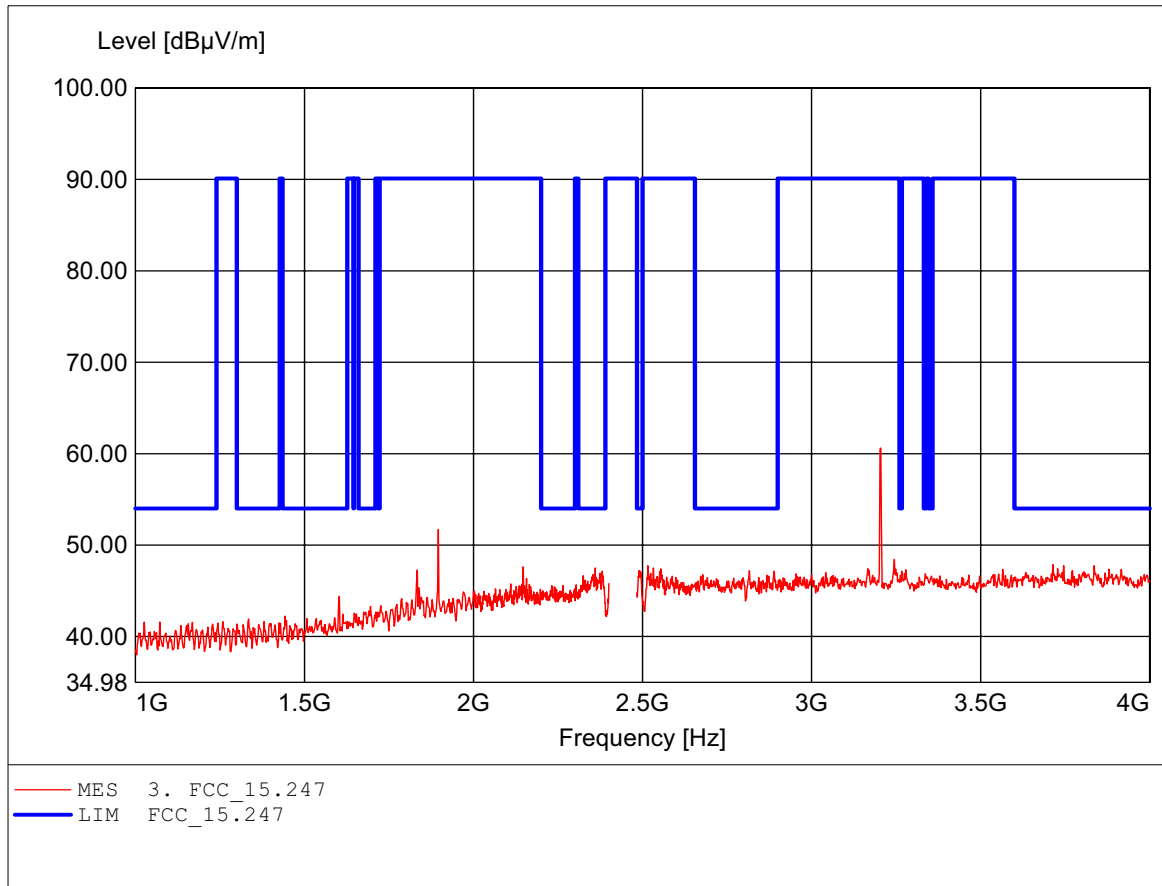
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Freq: 801.202MHz, Emax: 45.11dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

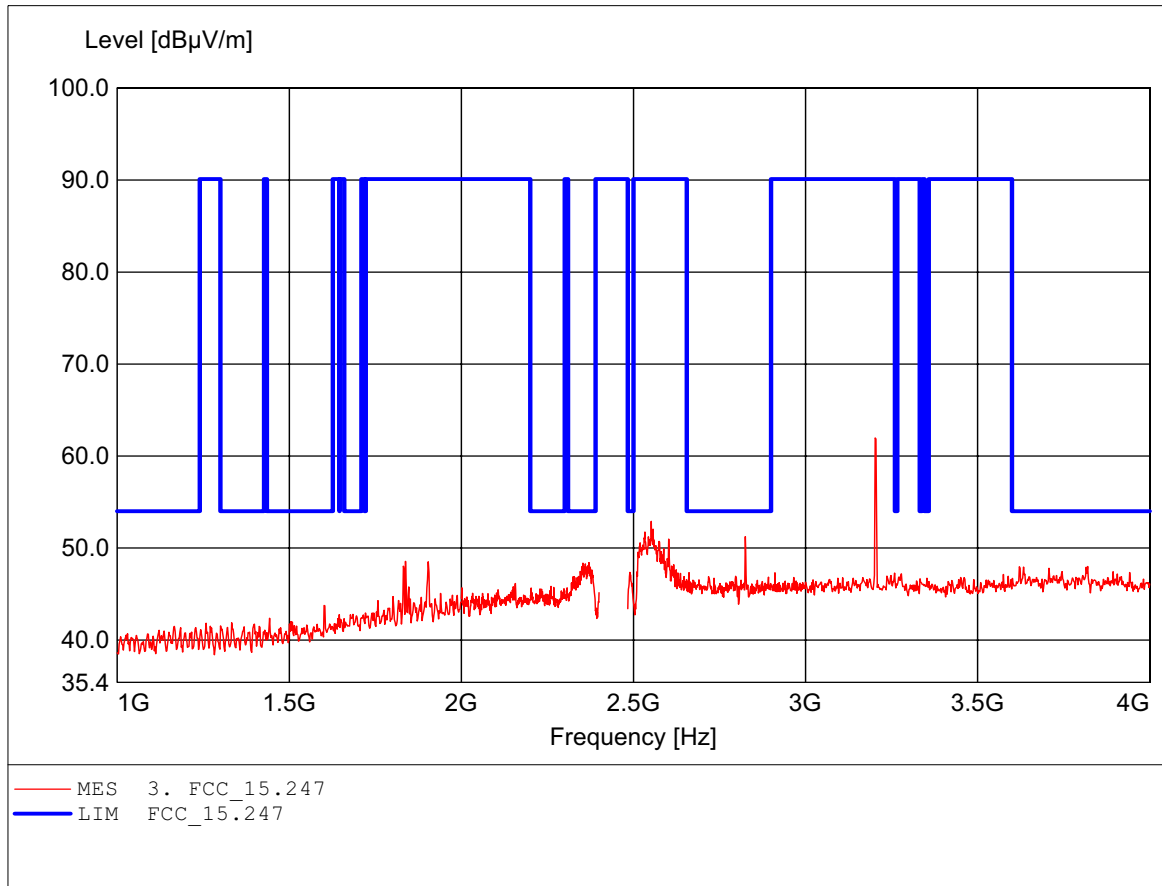
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 3.204GHz, Emax: 60.62dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

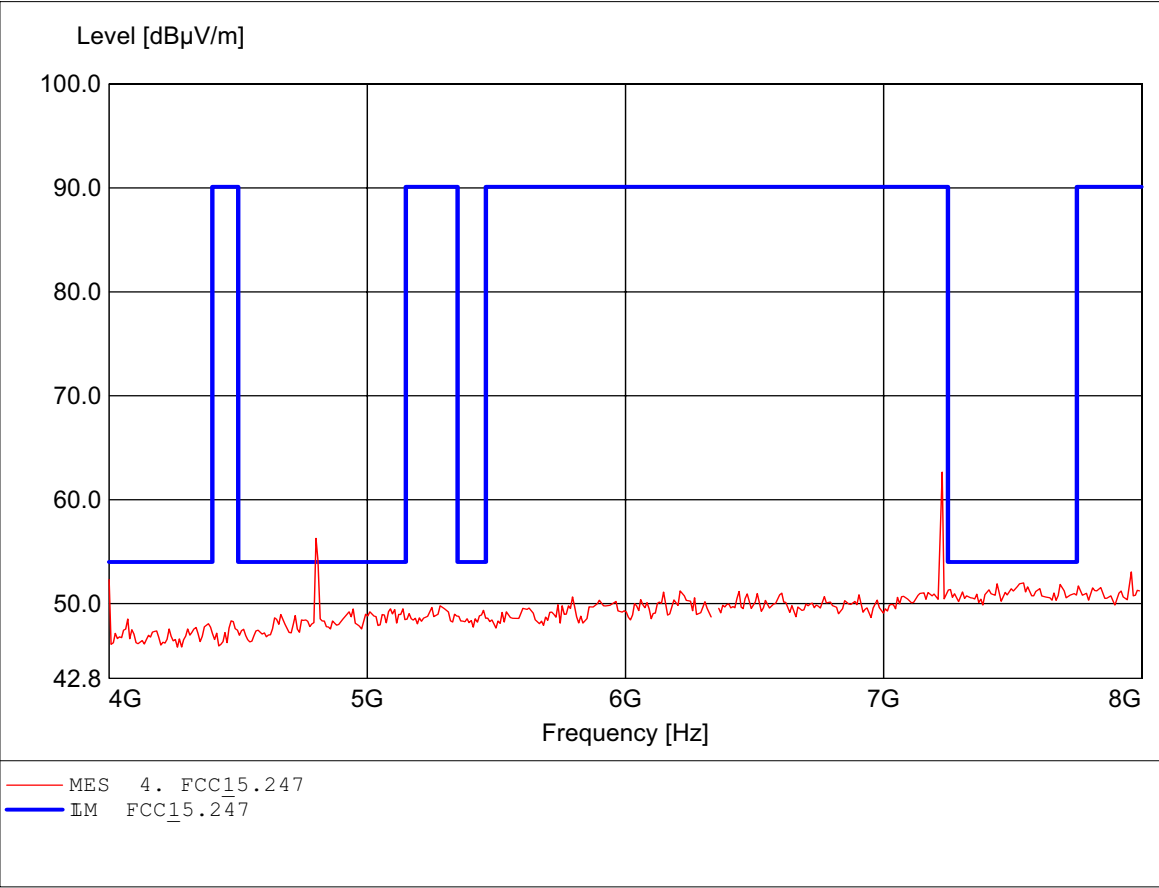
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 3.202GHz, Emax: 61.96dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

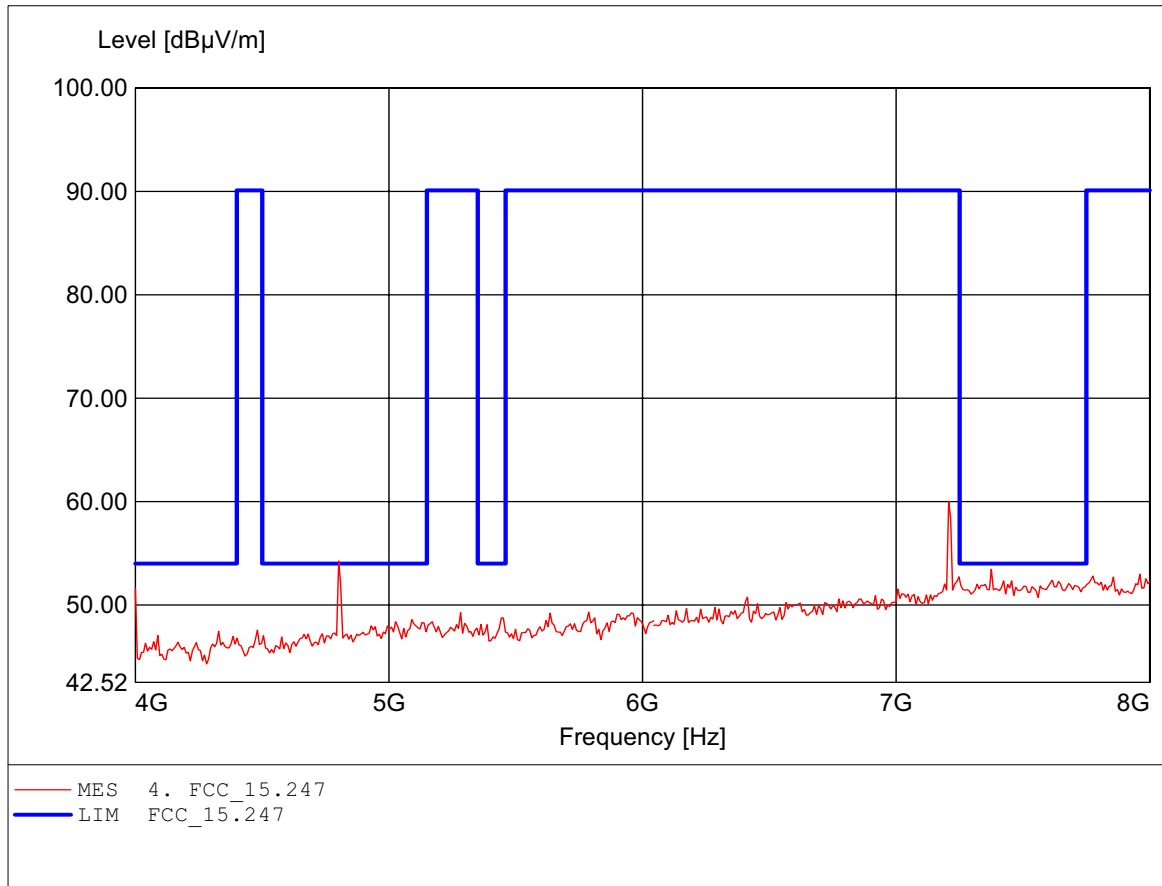
Order N  ber: W6M20609-7420 (1 channel RxtoTx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9  
Test Speed: addingto\$5.247,peak detecto
Comment 1: Dist.: 3m,Ant.: H025,ampl.#P.
Freq 7.214GHz,Emax 61.96dB  /m,RBW: 1MHz



Spurious emissions Field Strength

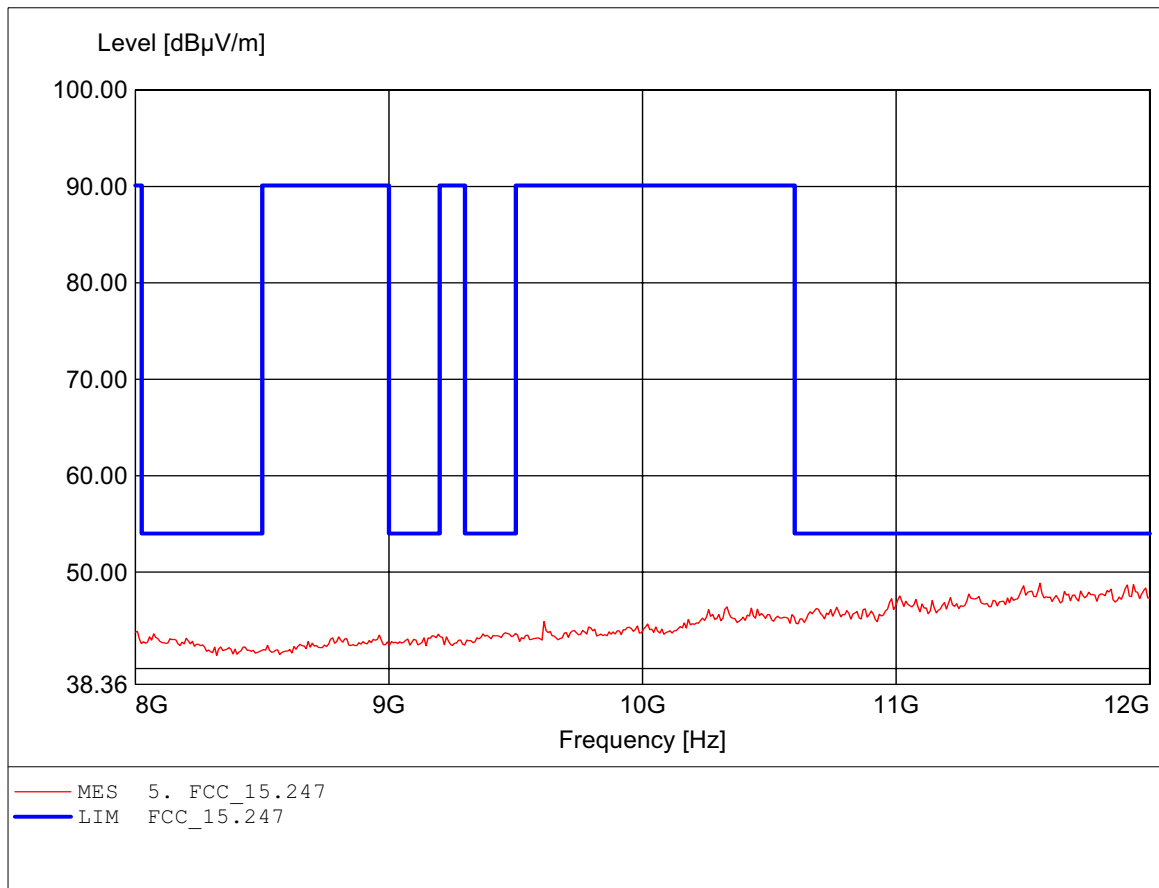
FCC RULES PART 15, SUBPART C / LP0002

Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.214GHz, Emax: 60.35dBμV/m, RBW: 1MHz



Spurious emissions Field Strength
FCC RULES PART 15, SUBPART C / LP0002

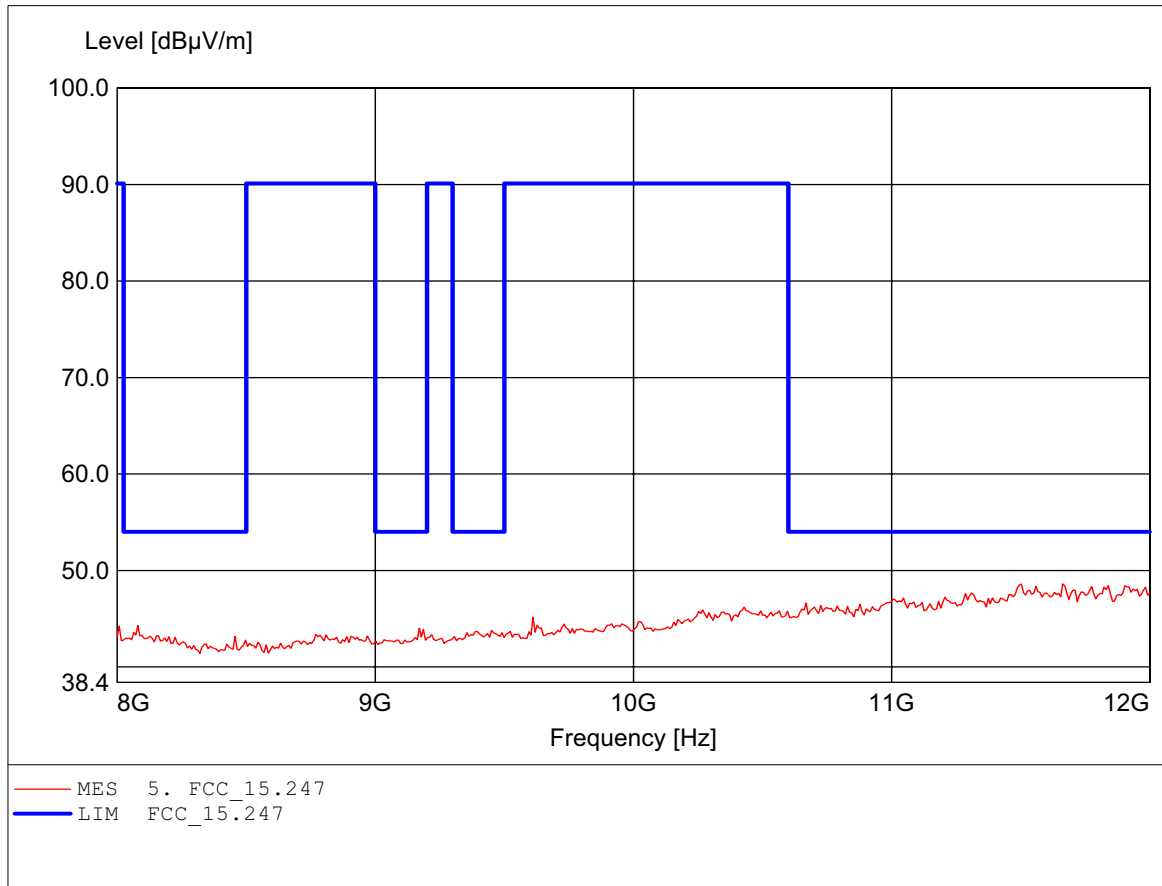
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.567GHz, Emax: 48.85dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

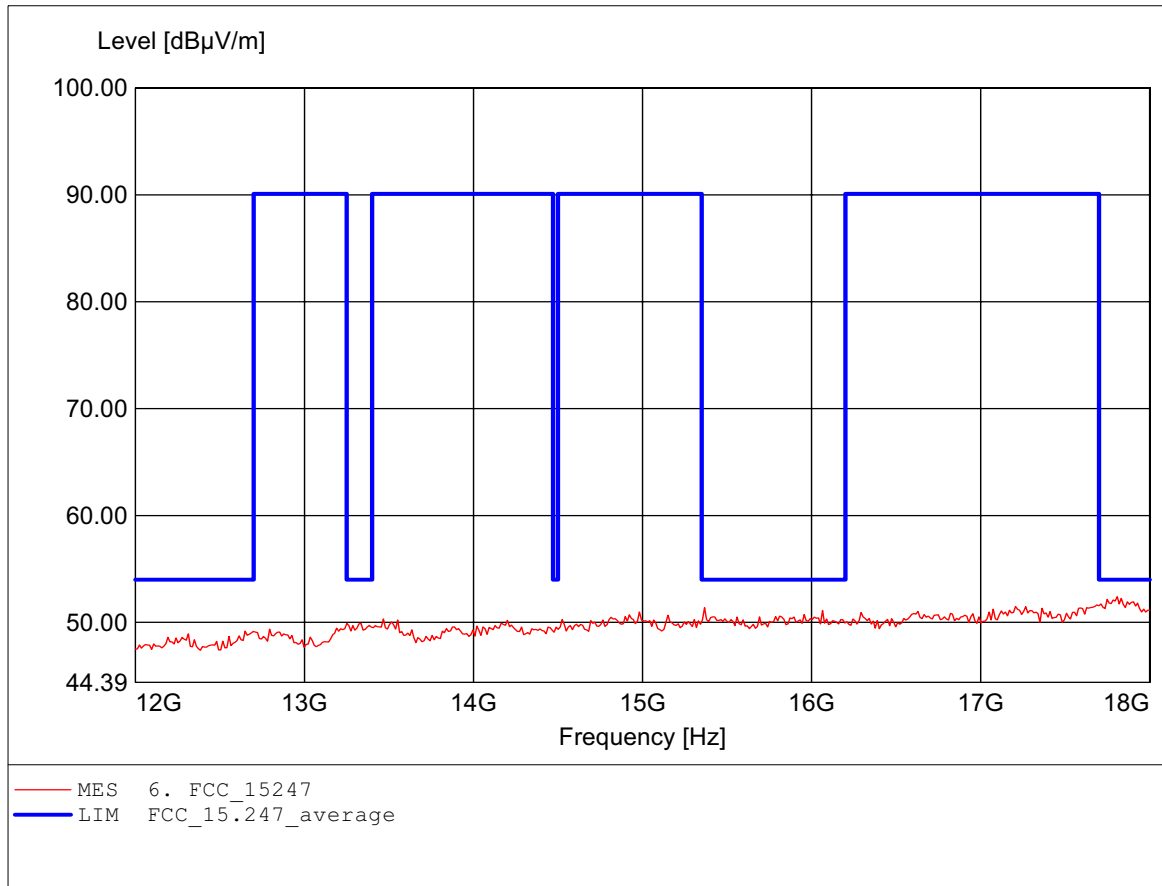
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.663GHz, Emax: 48.60dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

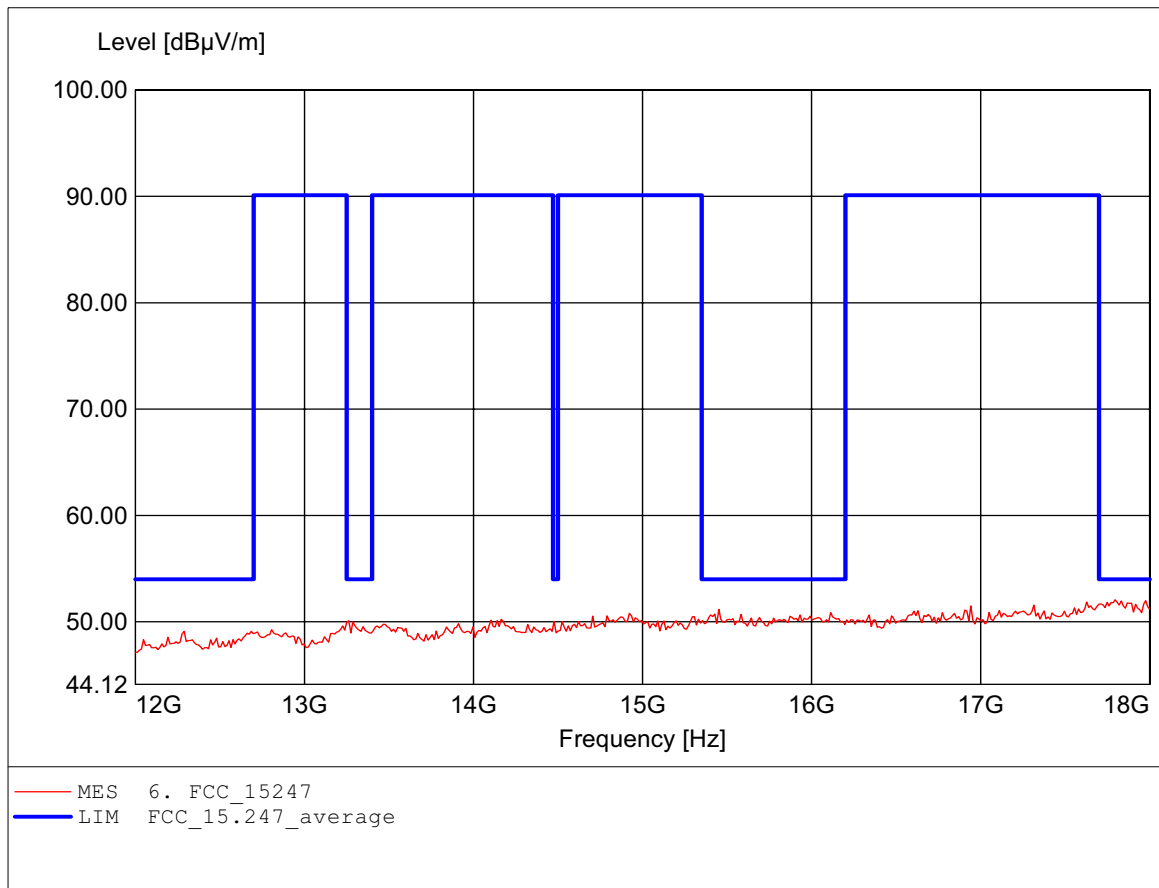
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.808GHz, Emax: 52.41dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

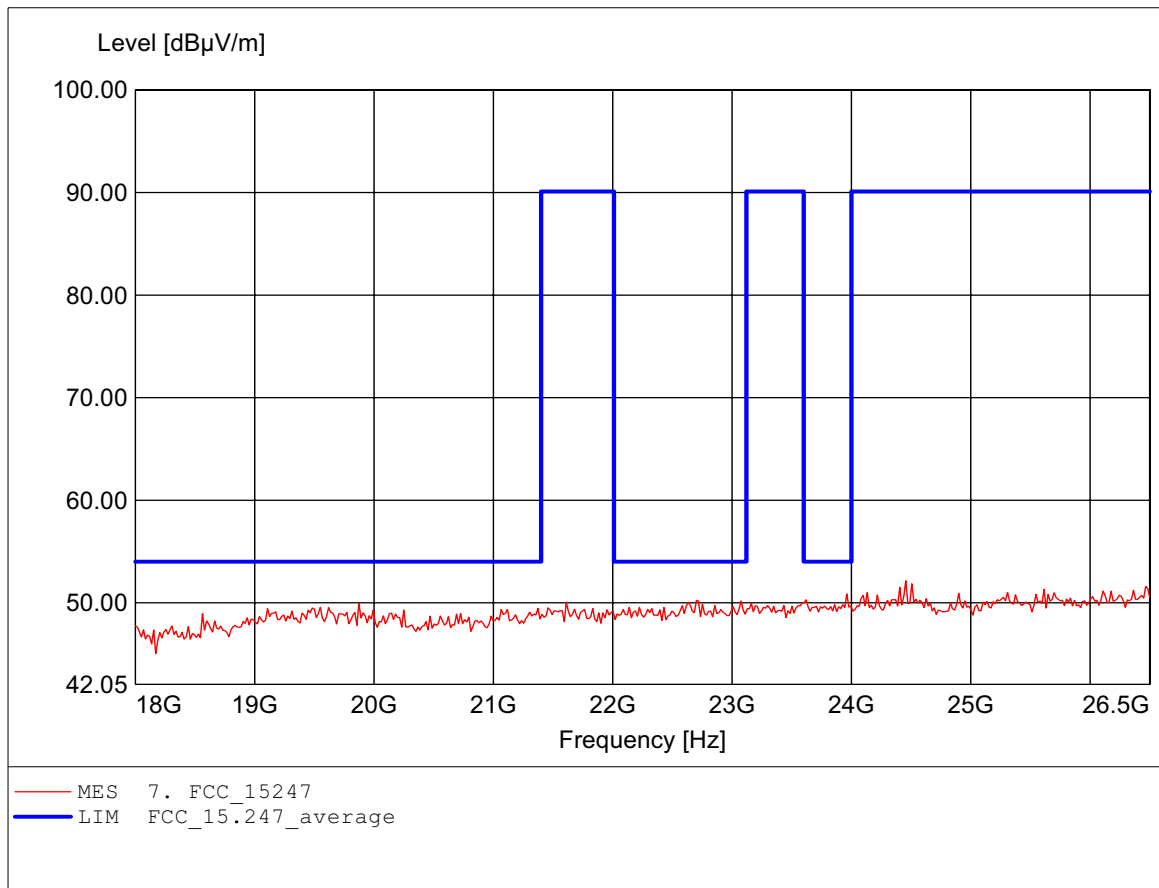
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.796GHz, Emax: 52.08dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

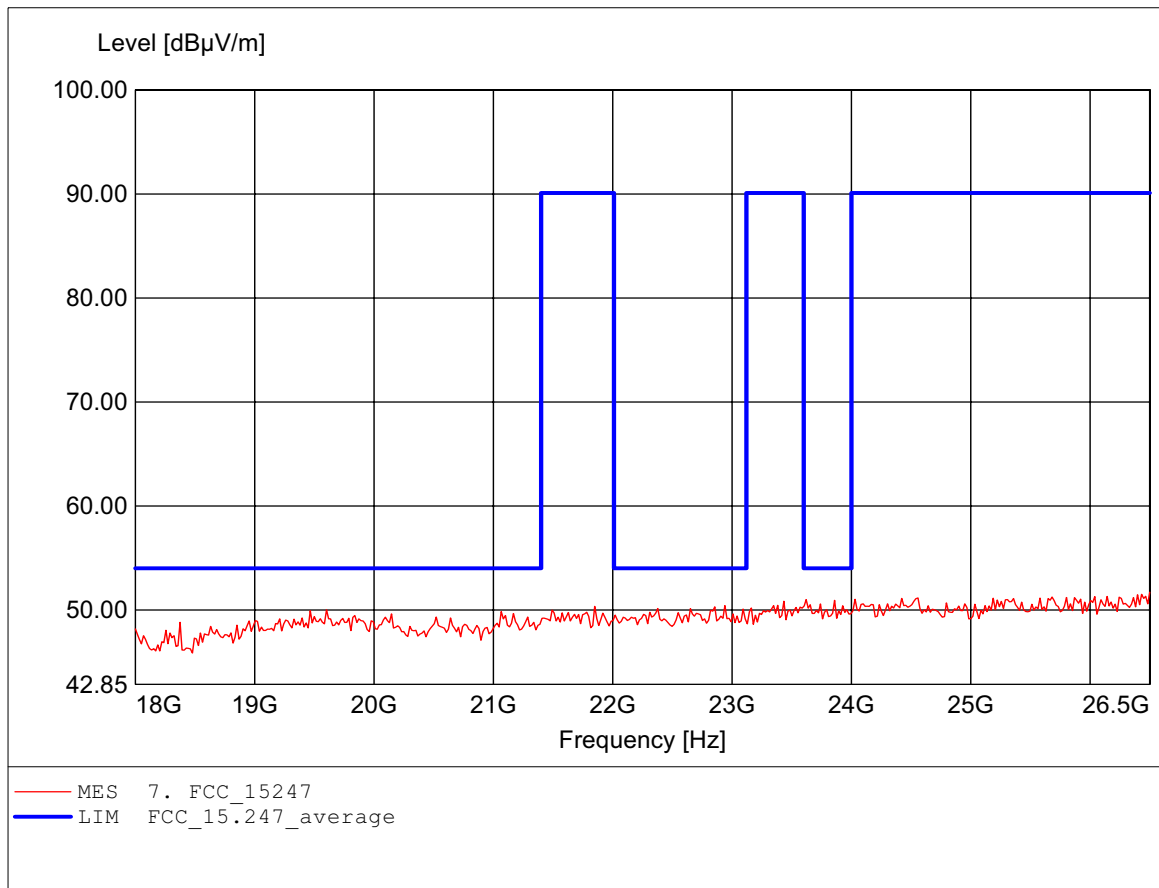
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 24.456GHz, Emax: 52.14dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

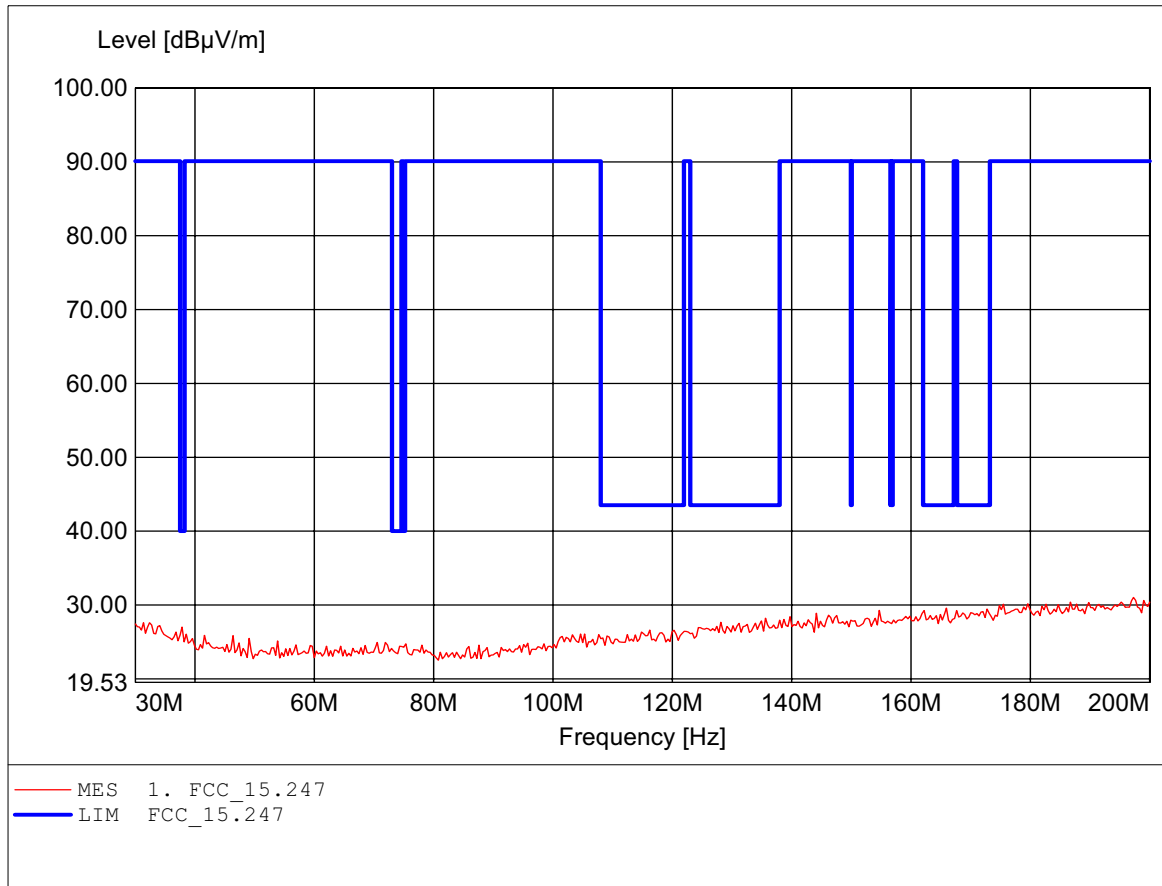
Order Number: W6M20609-7420 (low channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 26.500GHz, Emax: 51.71dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

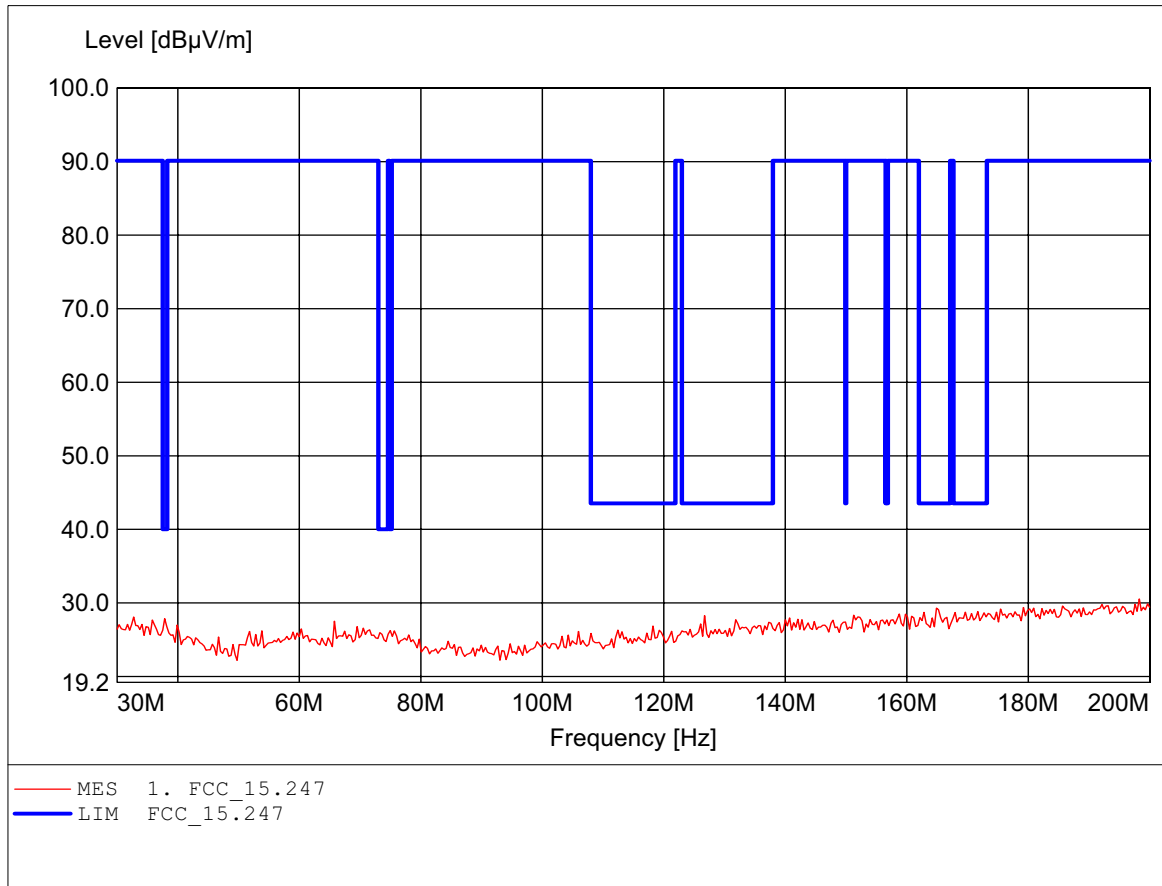
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 197.275MHz, Emax: 31.03dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

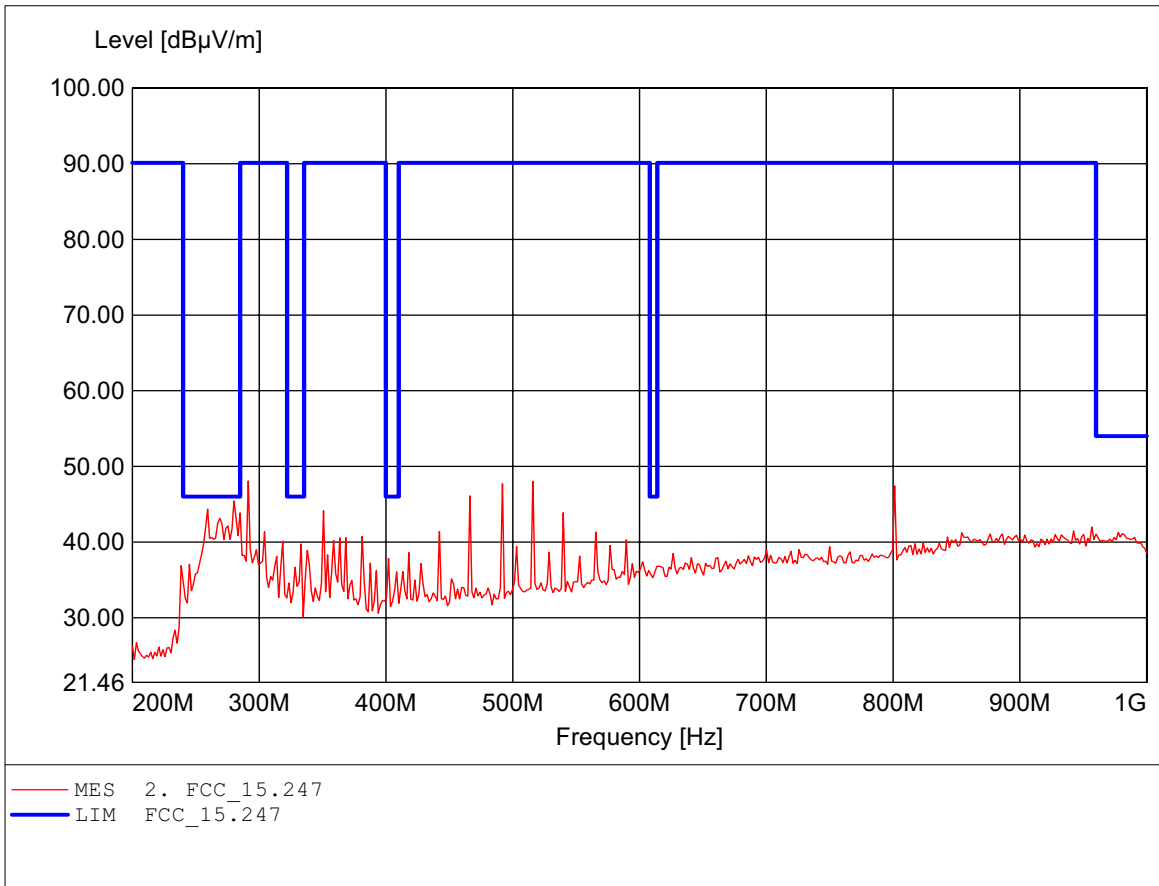
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 198.297MHz, Emax: 30.52dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

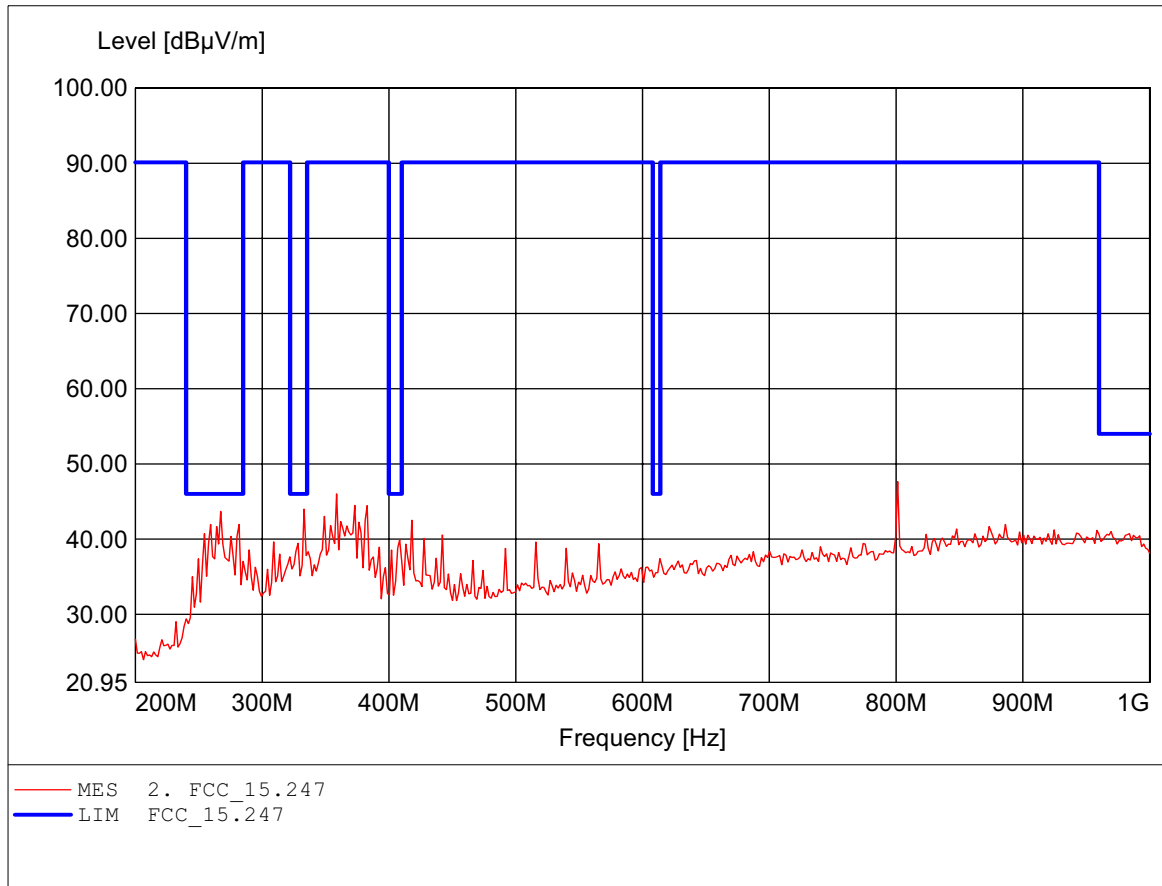
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Freq: 291.383MHz, Emax: 48.09dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

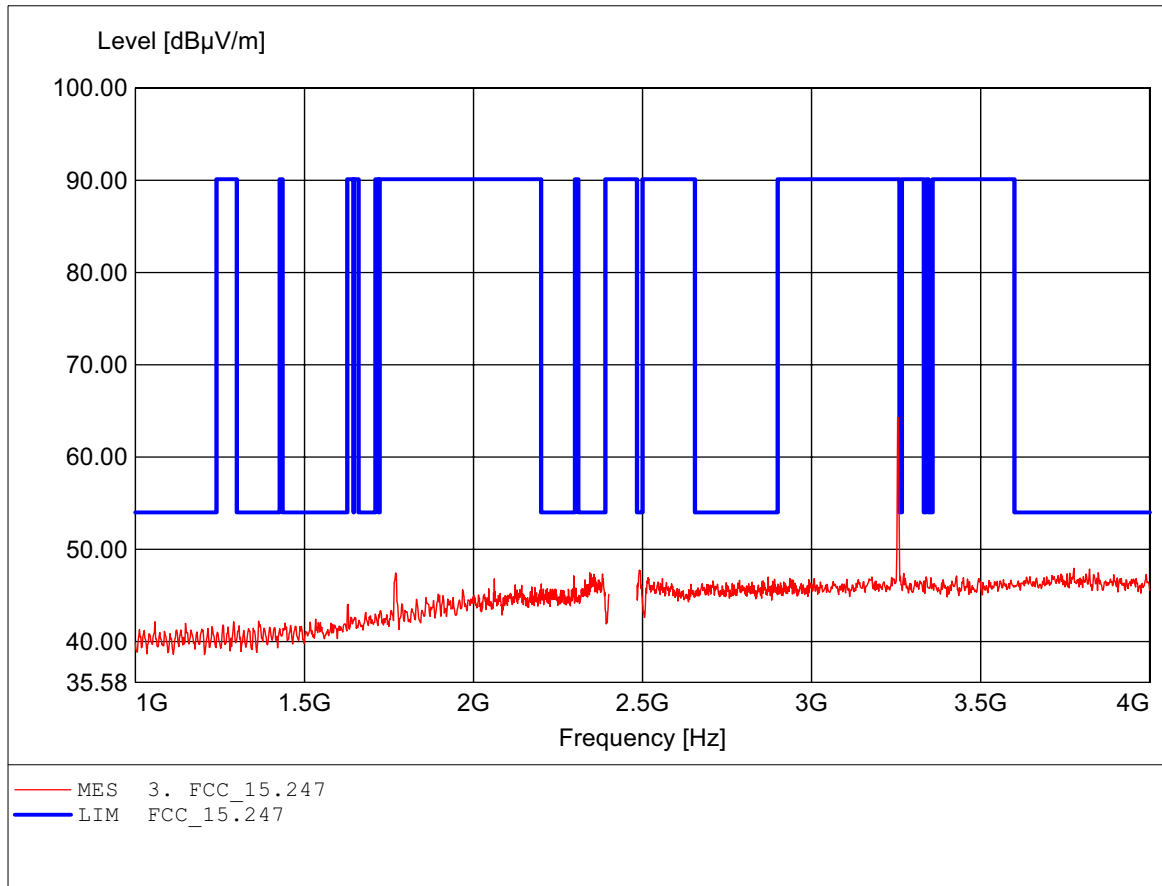
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Freq: 801.202MHz, Emax: 47.64dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

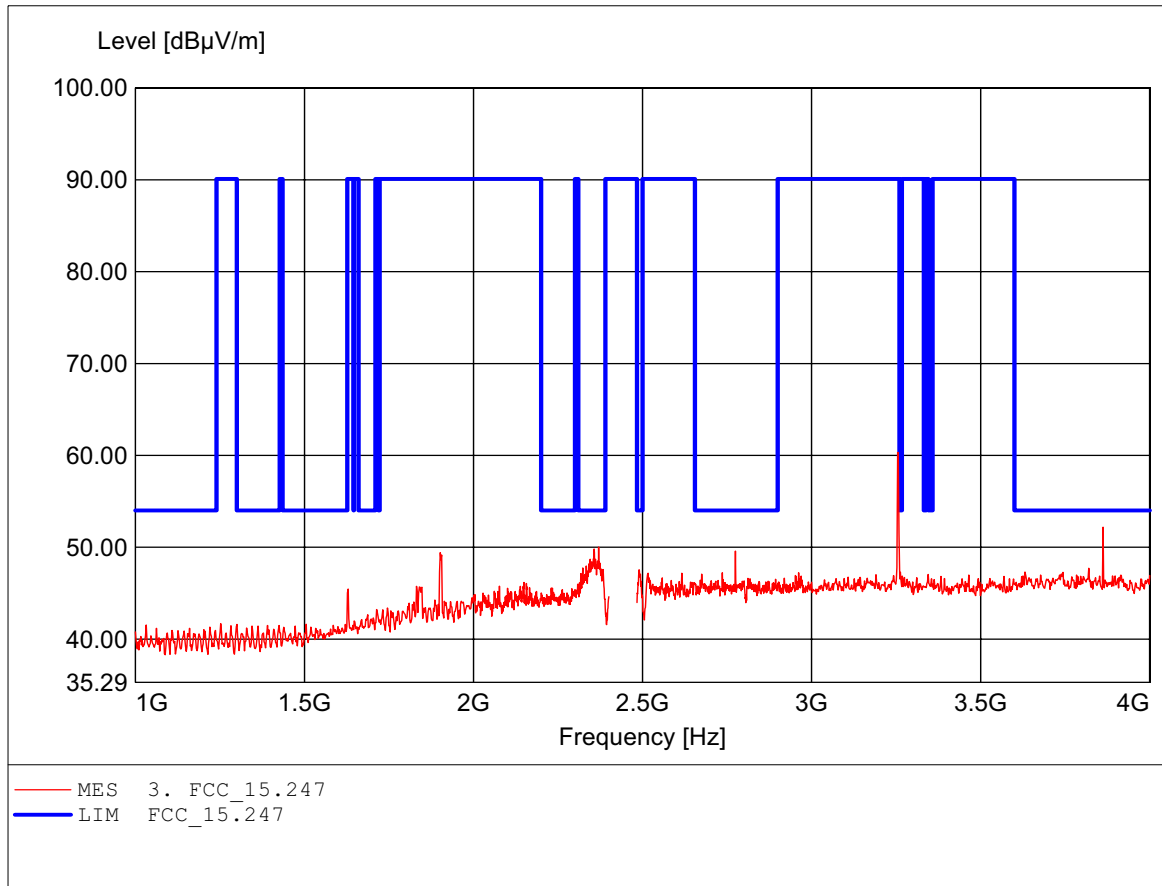
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 3.257GHz, Emax: 64.31dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

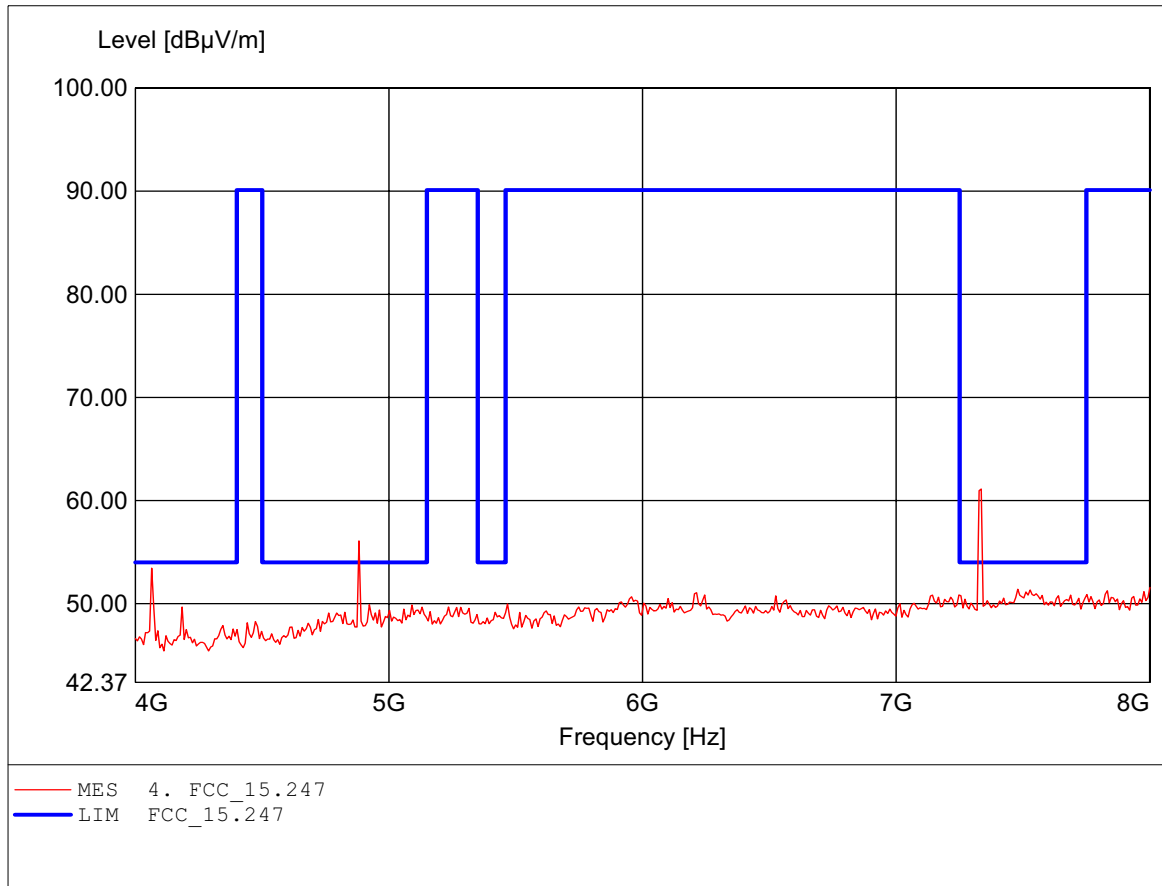
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 3.255GHz, Emax: 60.32dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

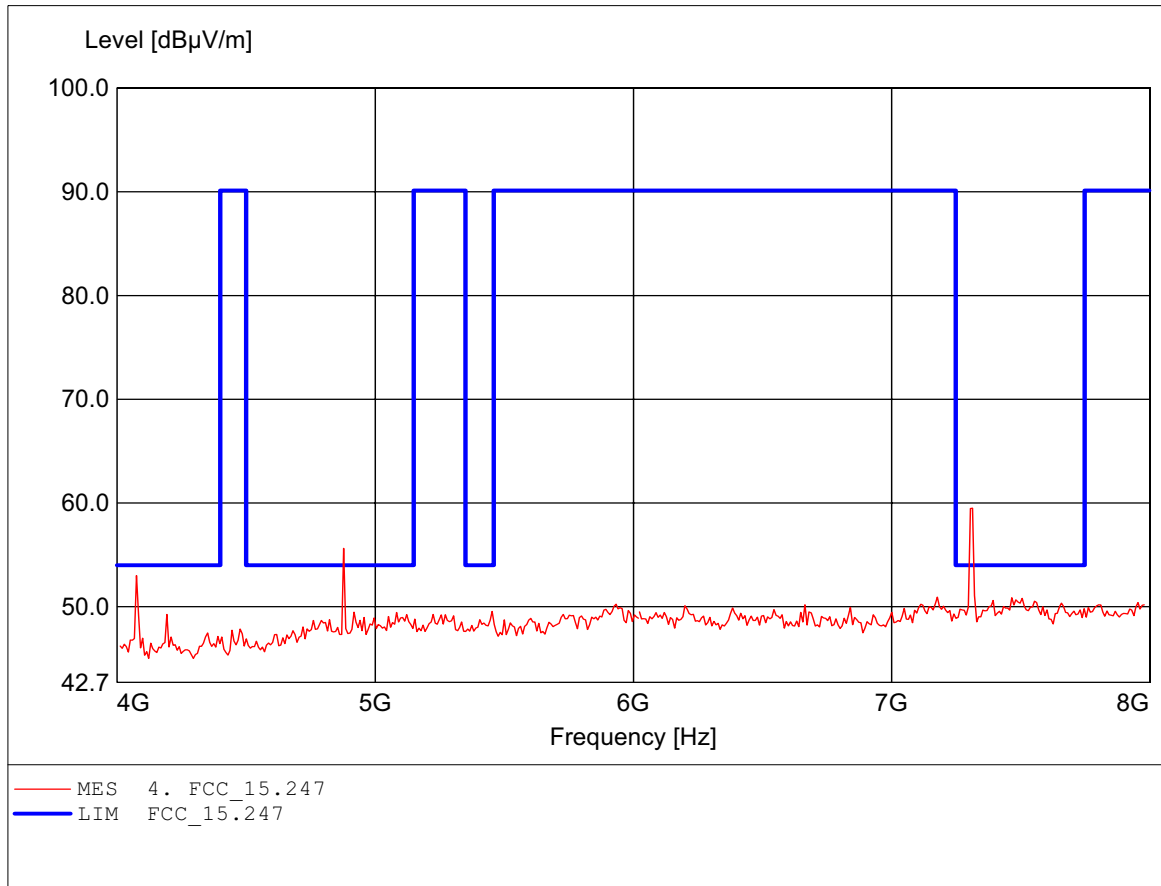
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.327GHz, Emax: 60.84dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

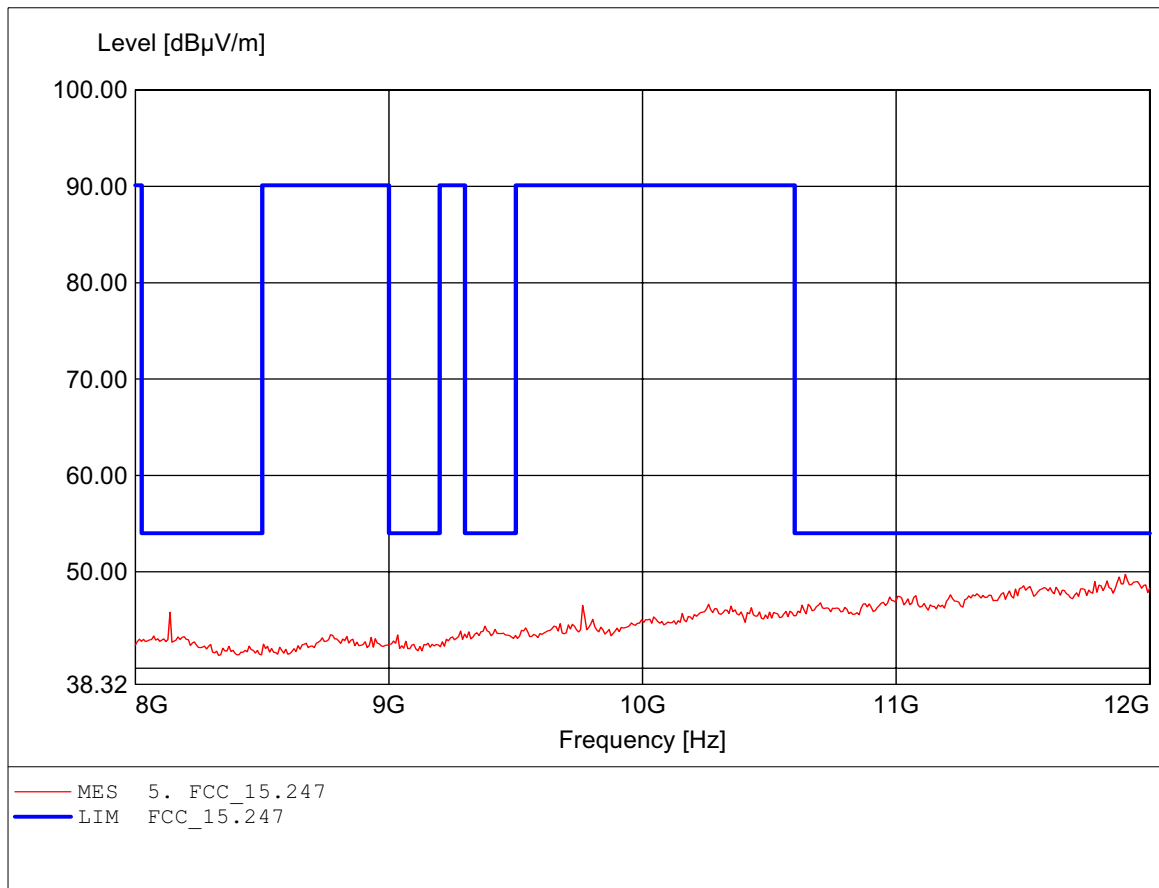
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.335GHz, Emax: 59.81dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

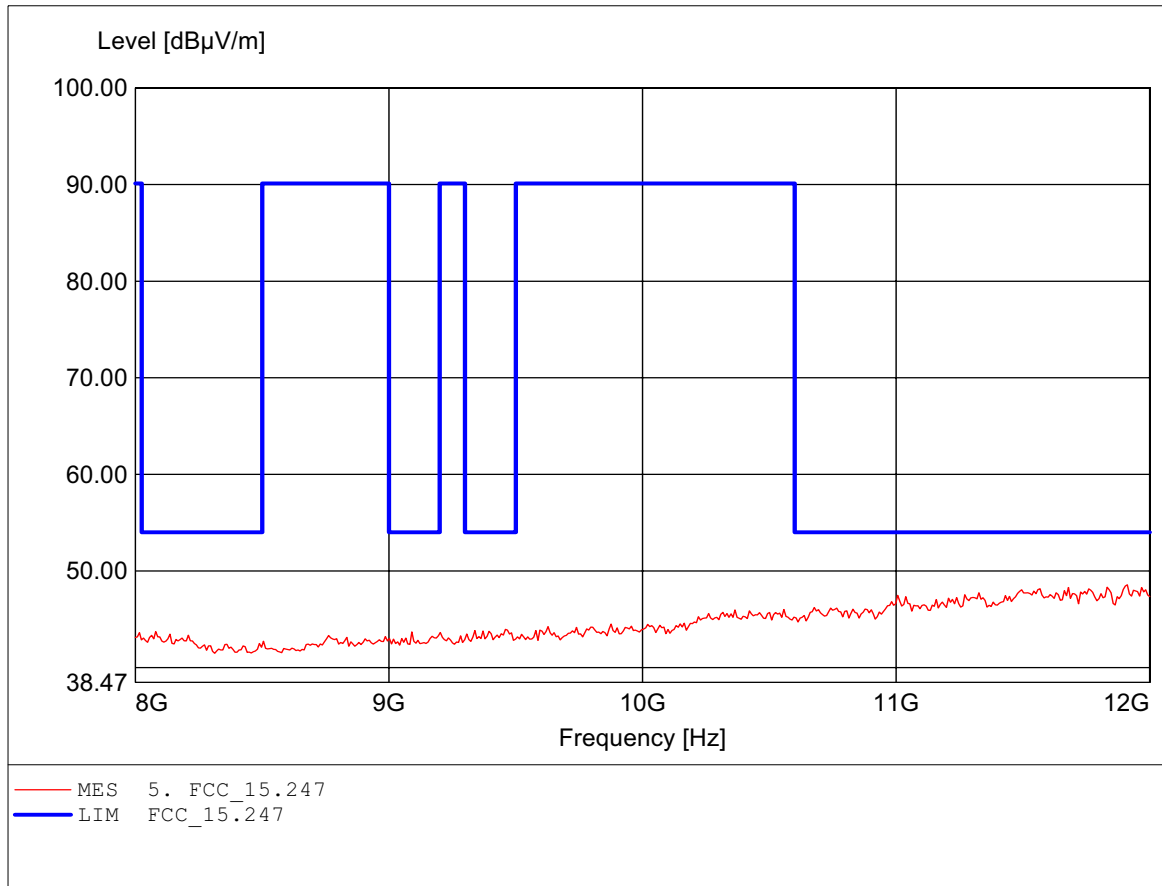
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.904GHz, Emax: 49.74dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

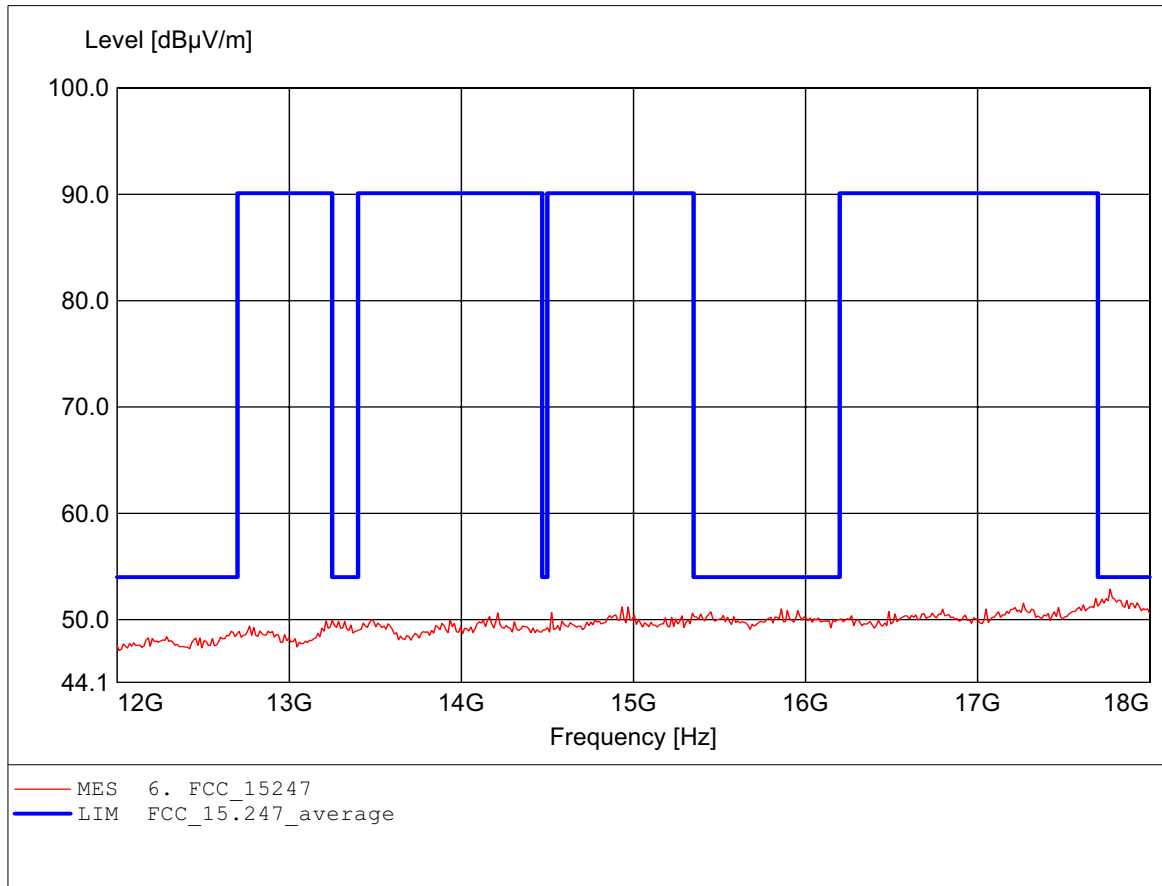
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.912GHz, Emax: 48.57dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

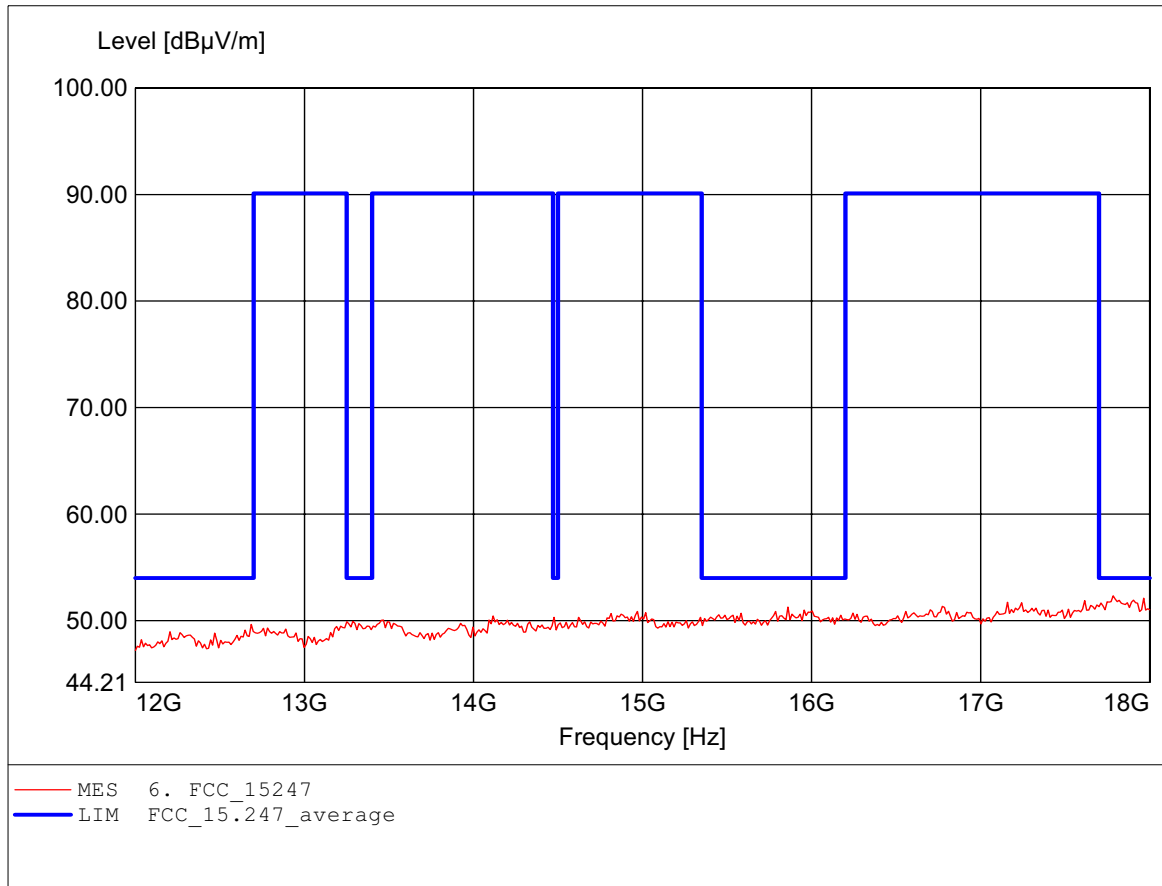
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.772GHz, Emax: 52.88dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

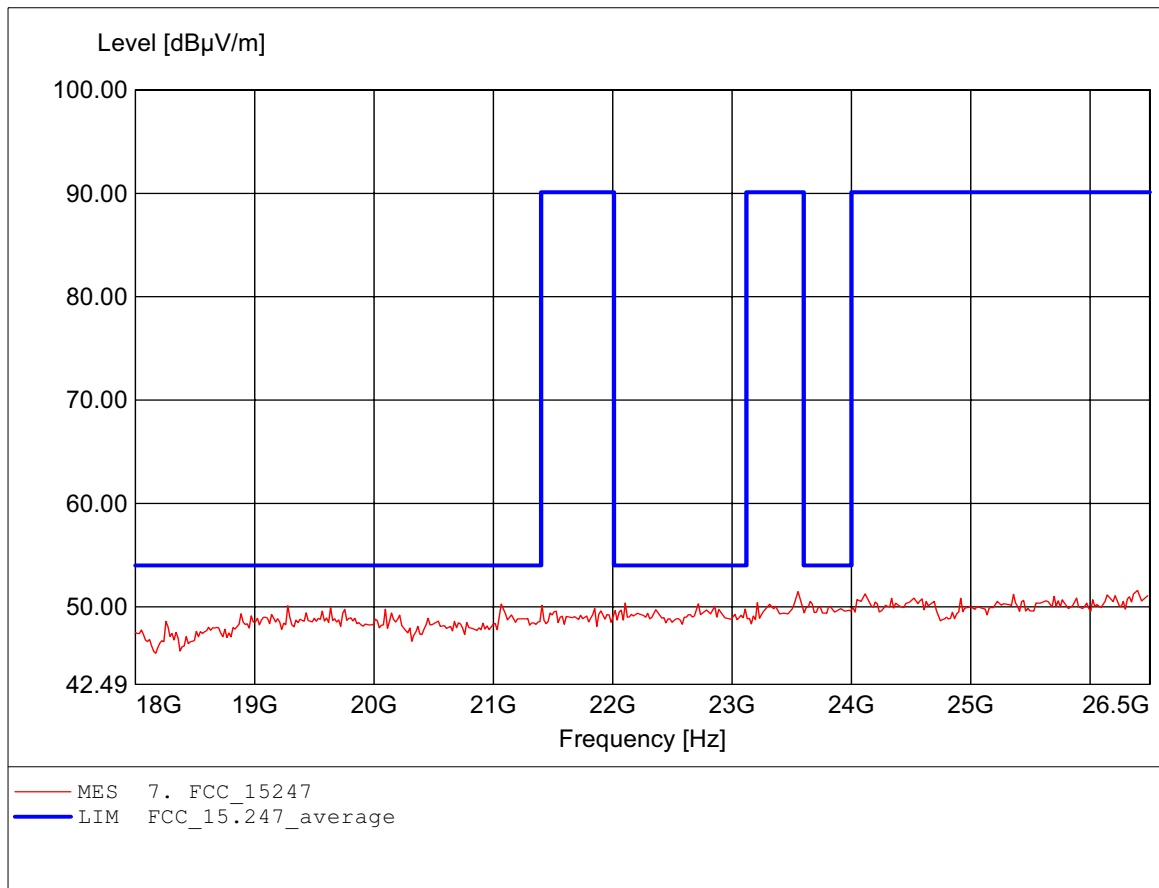
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.784GHz, Emax: 52.33dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

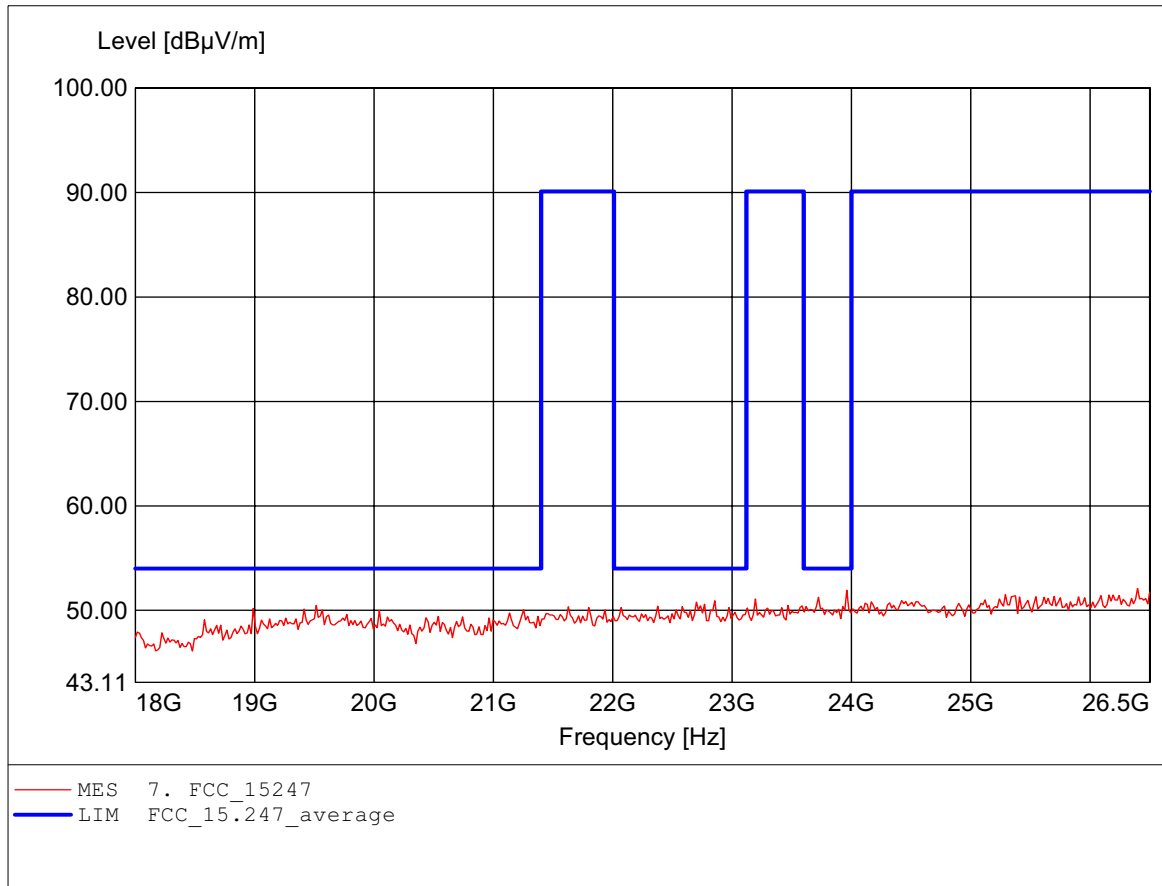
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 26.398GHz, Emax: 51.59dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

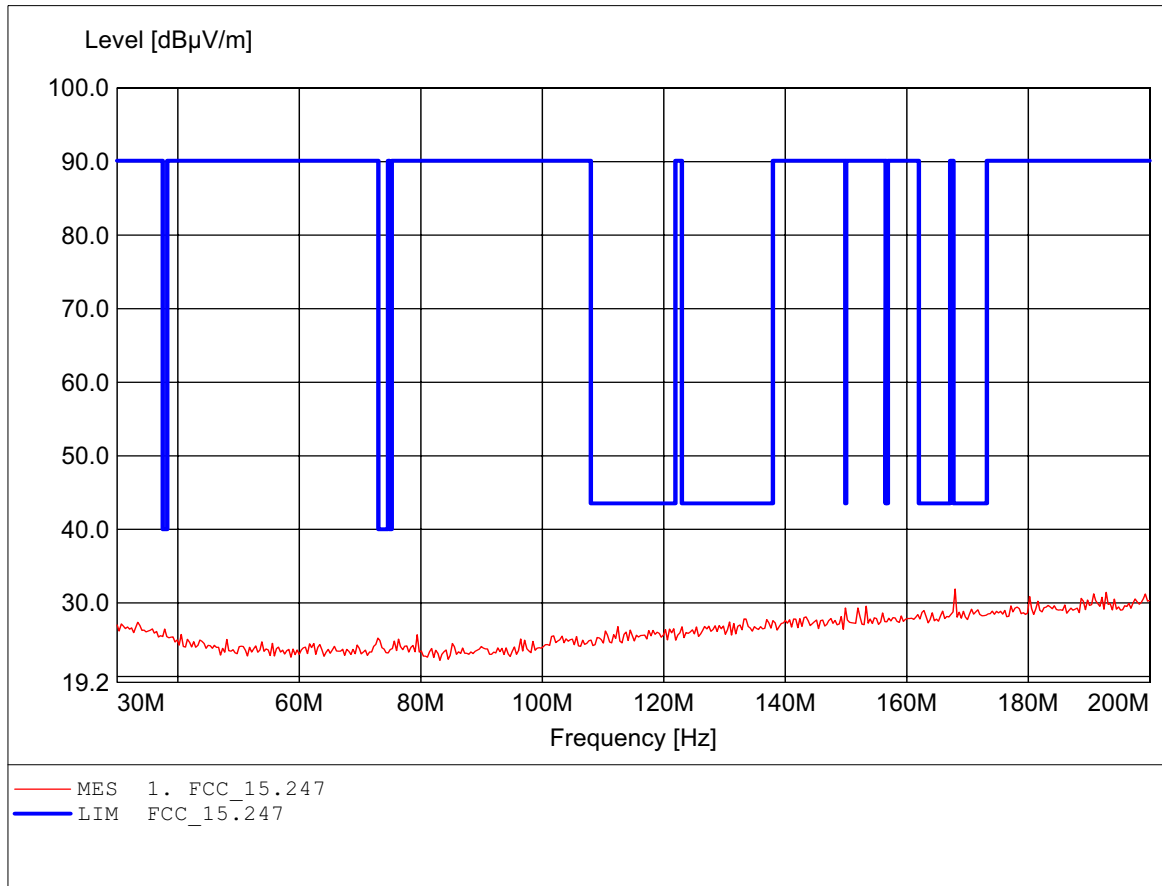
Order Number: W6M20609-7420 (middle channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 26.398GHz, Emax: 52.11dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

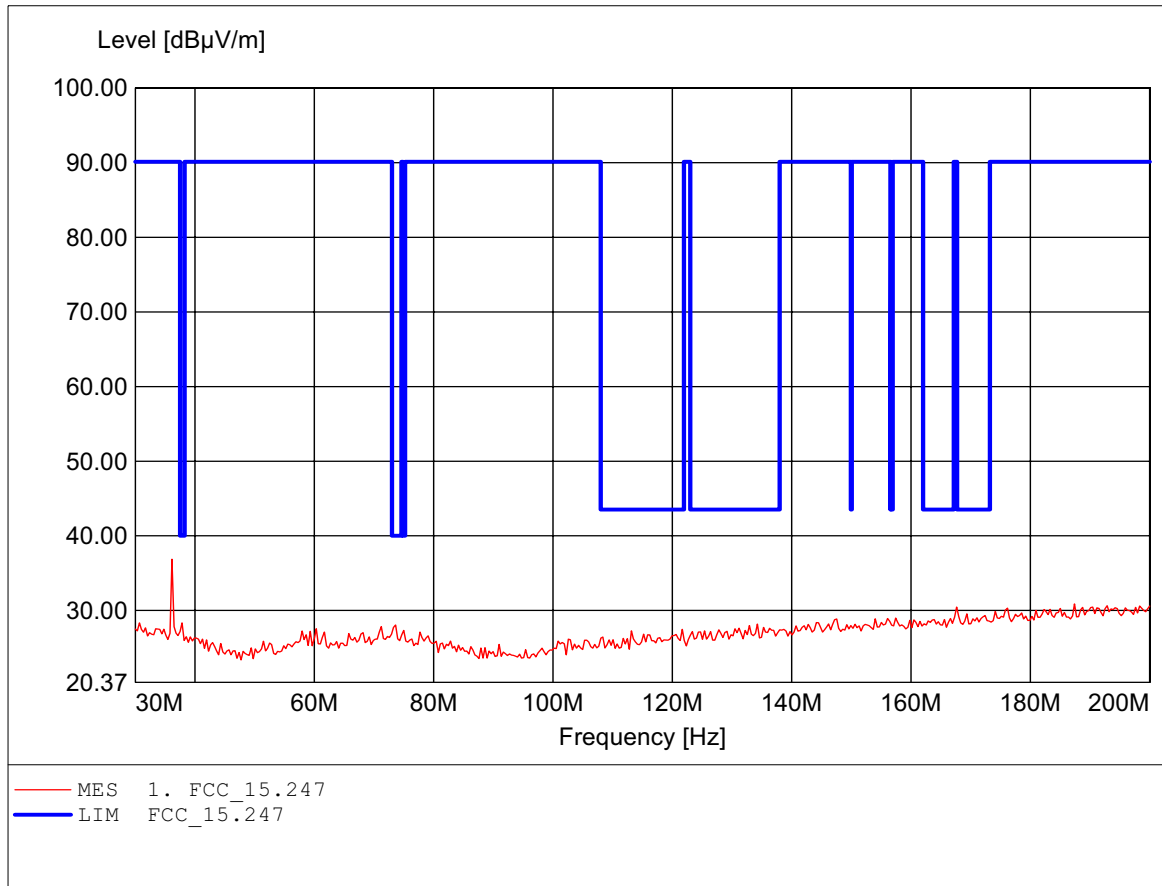
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 167.976MHz, Emax: 31.89dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

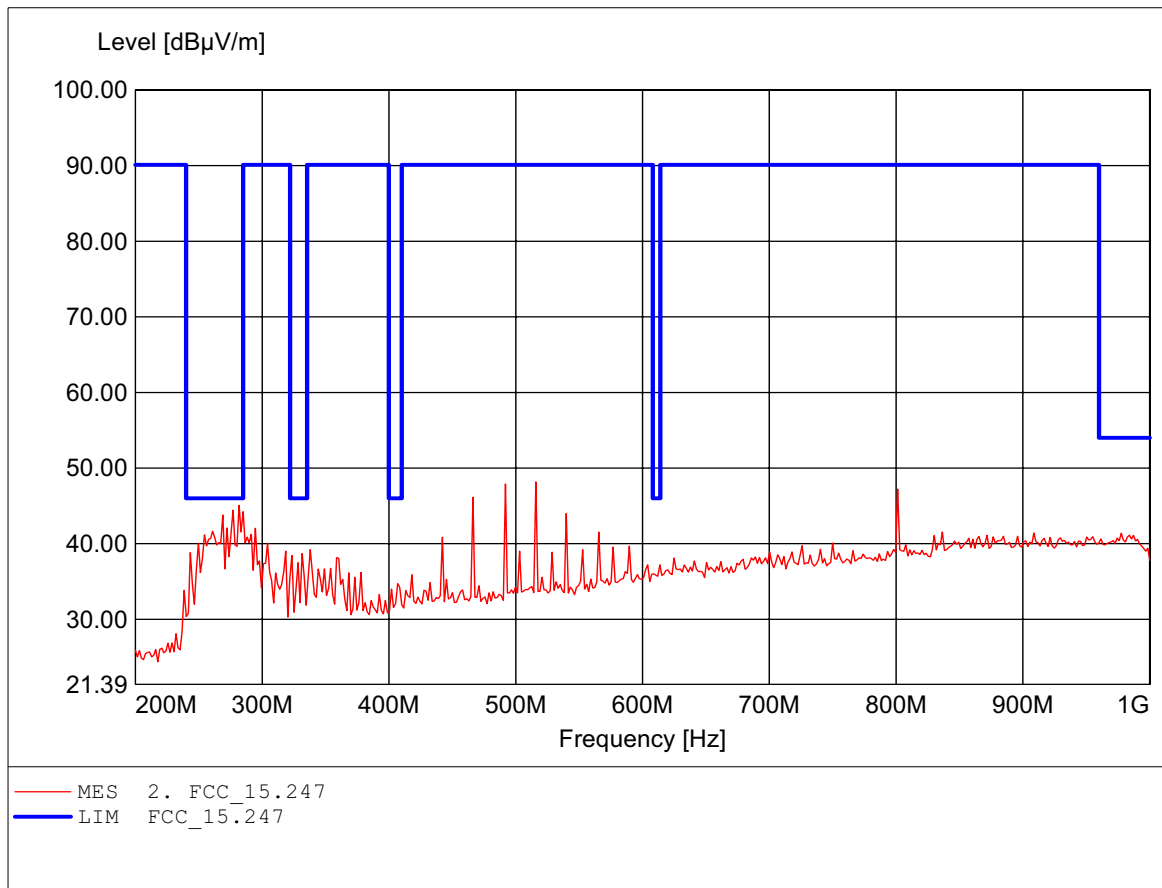
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 36.132MHz, Emax: 36.88dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

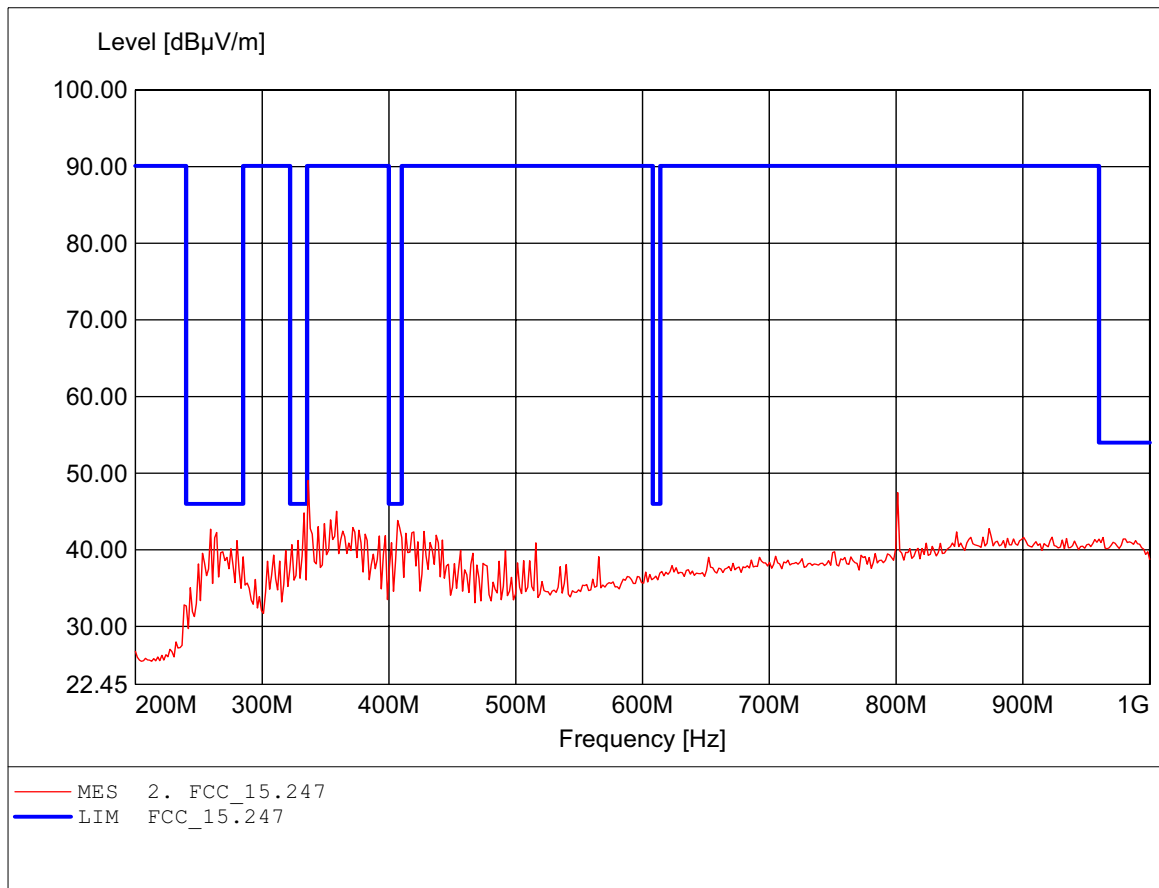
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Freq: 515.832MHz, Emax: 48.16dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

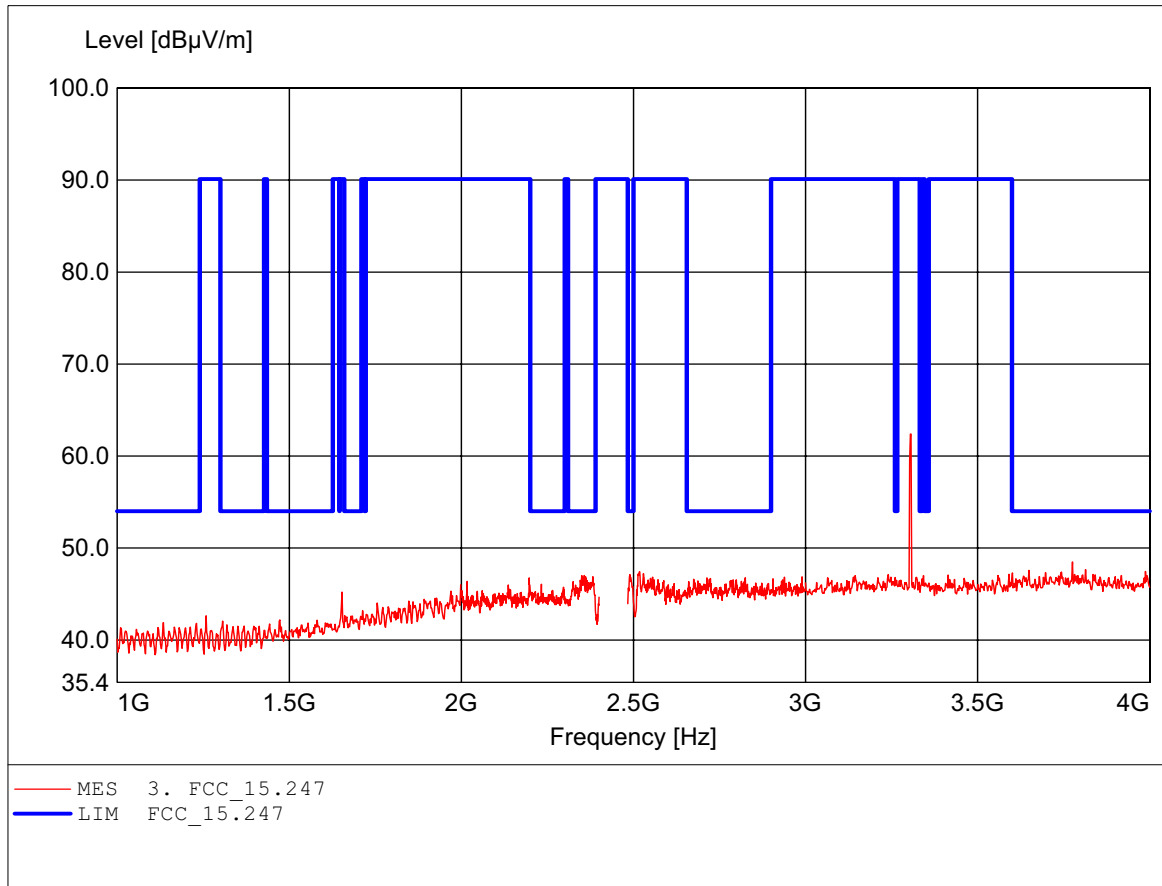
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9C
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Freq: 336.273MHz, Emax: 49.06dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

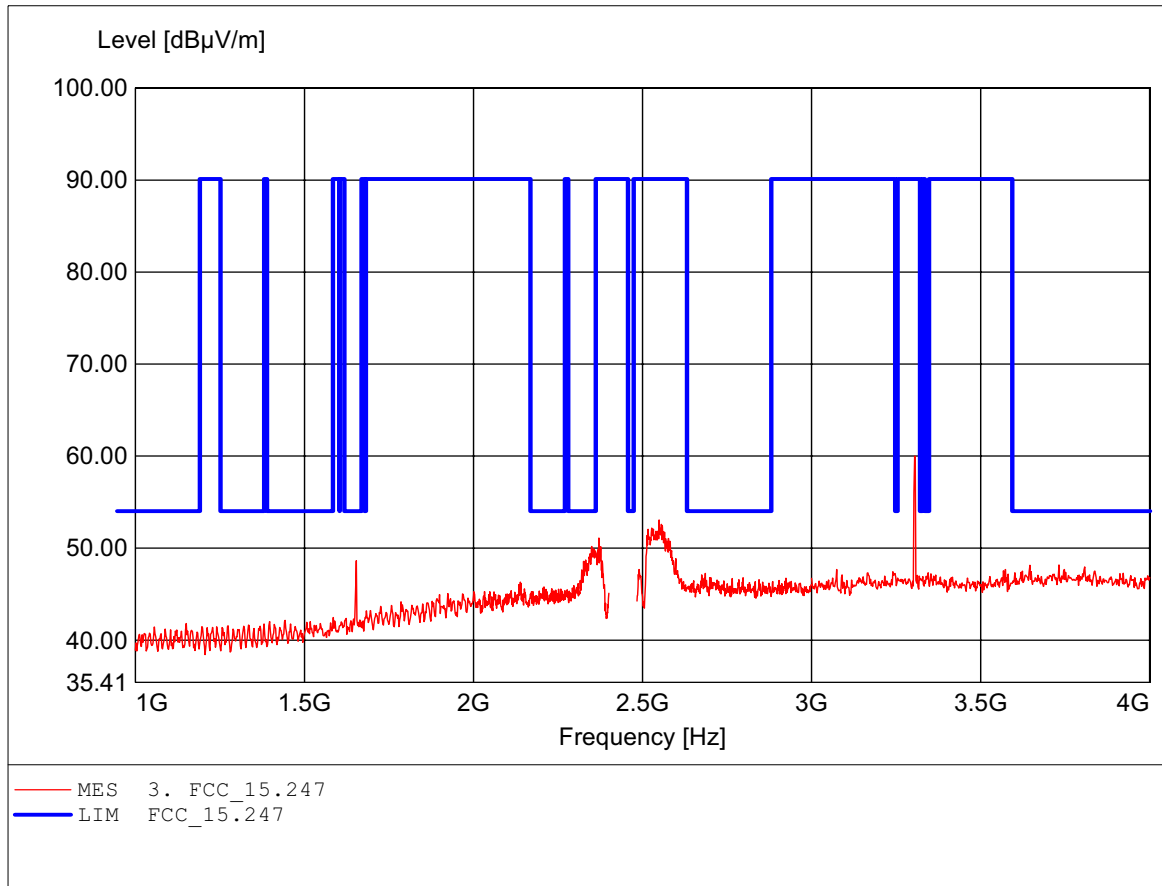
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 3.307GHz, Emax: 62.40dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

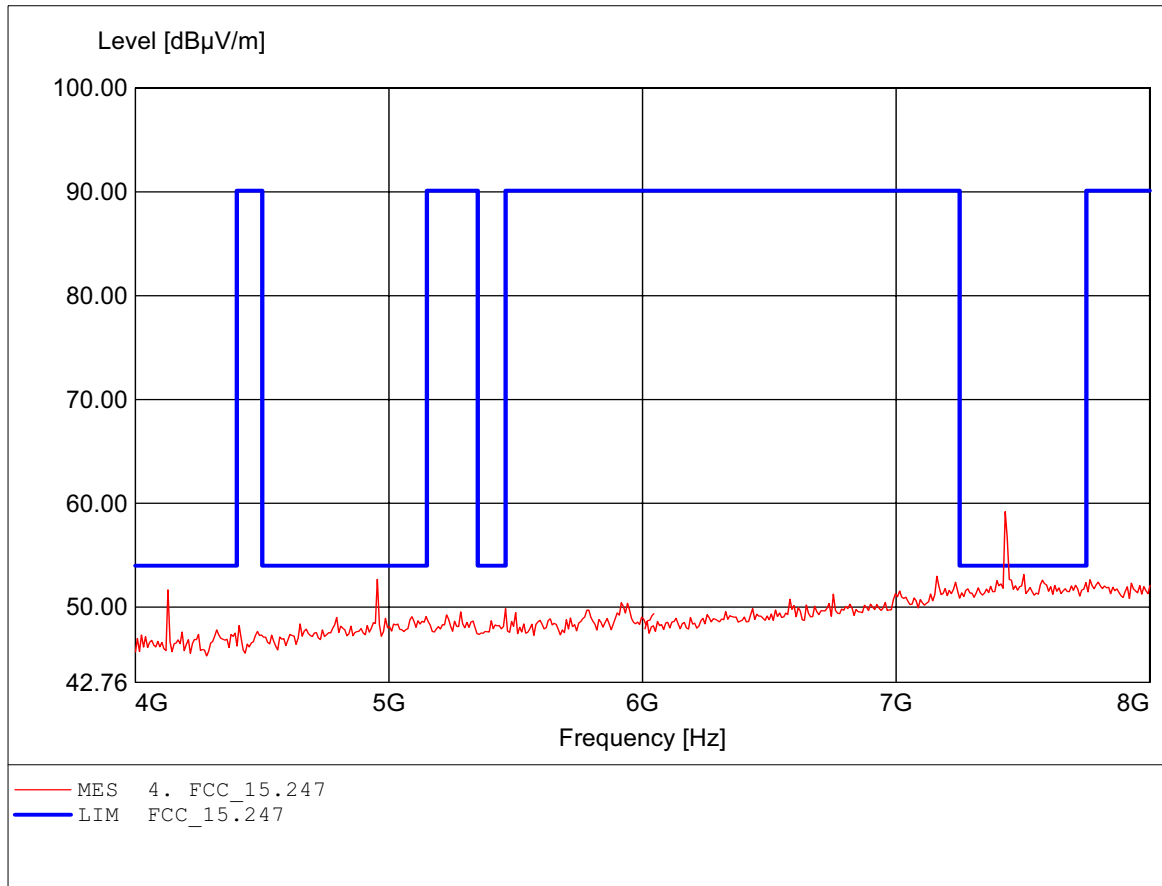
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 3.305GHz, Emax: 60.00dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

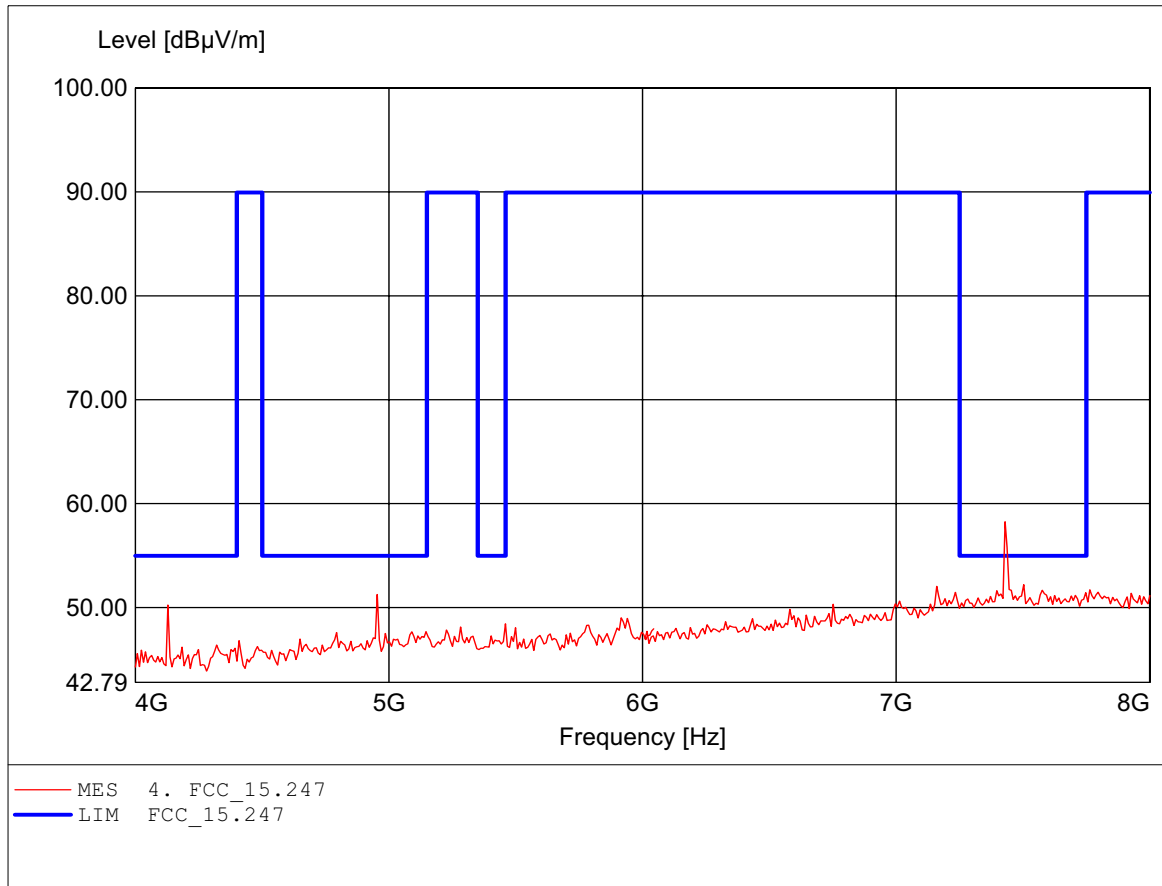
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.439GHz, Emax: 59.87dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

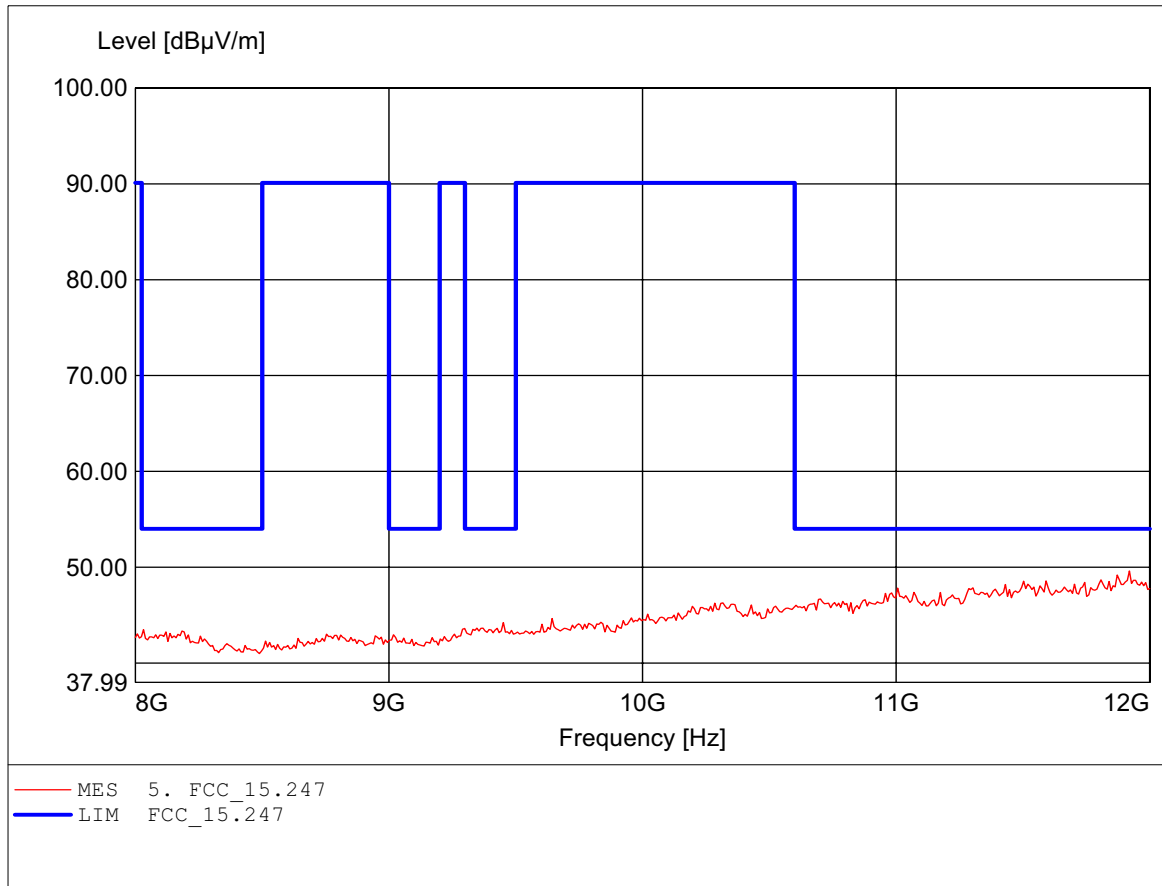
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.439GHz, Emax: 59.07dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

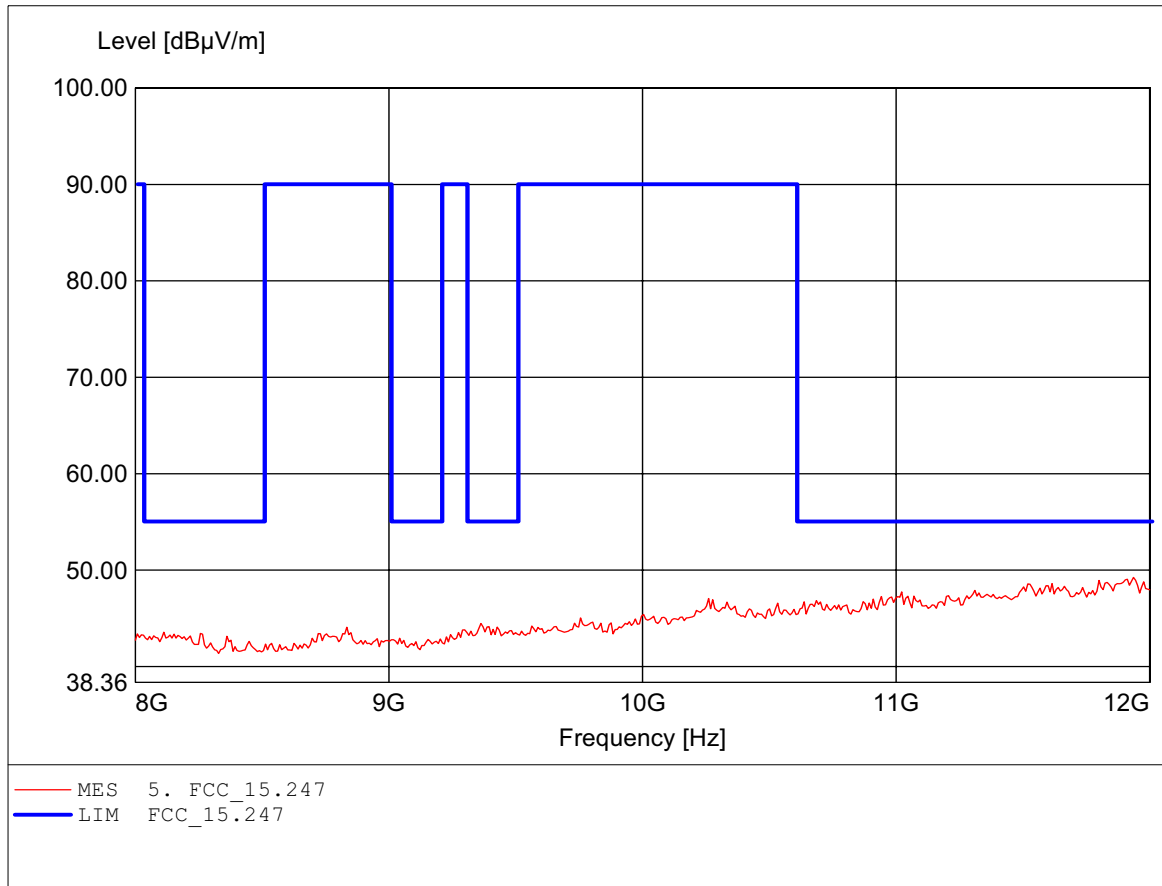
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.920GHz, Emax: 49.61dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

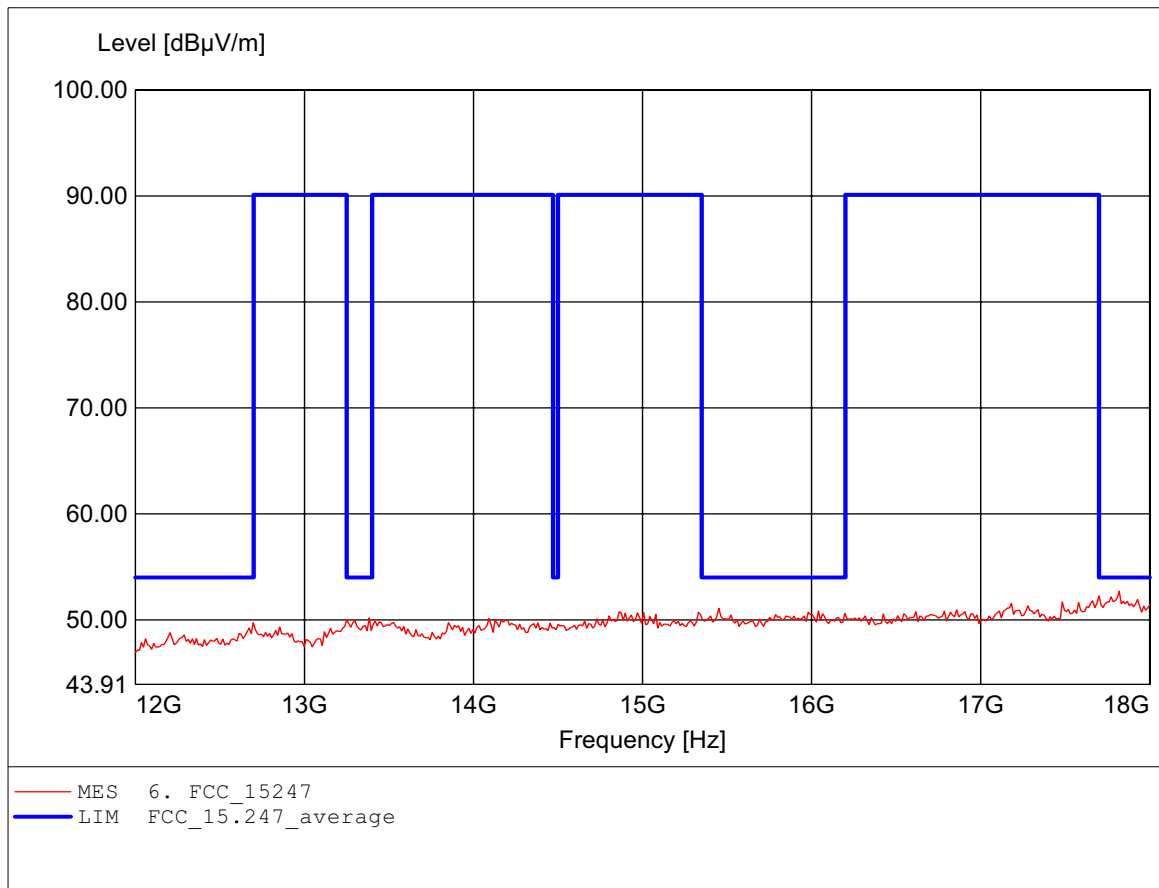
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.936GHz, Emax: 49.24dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

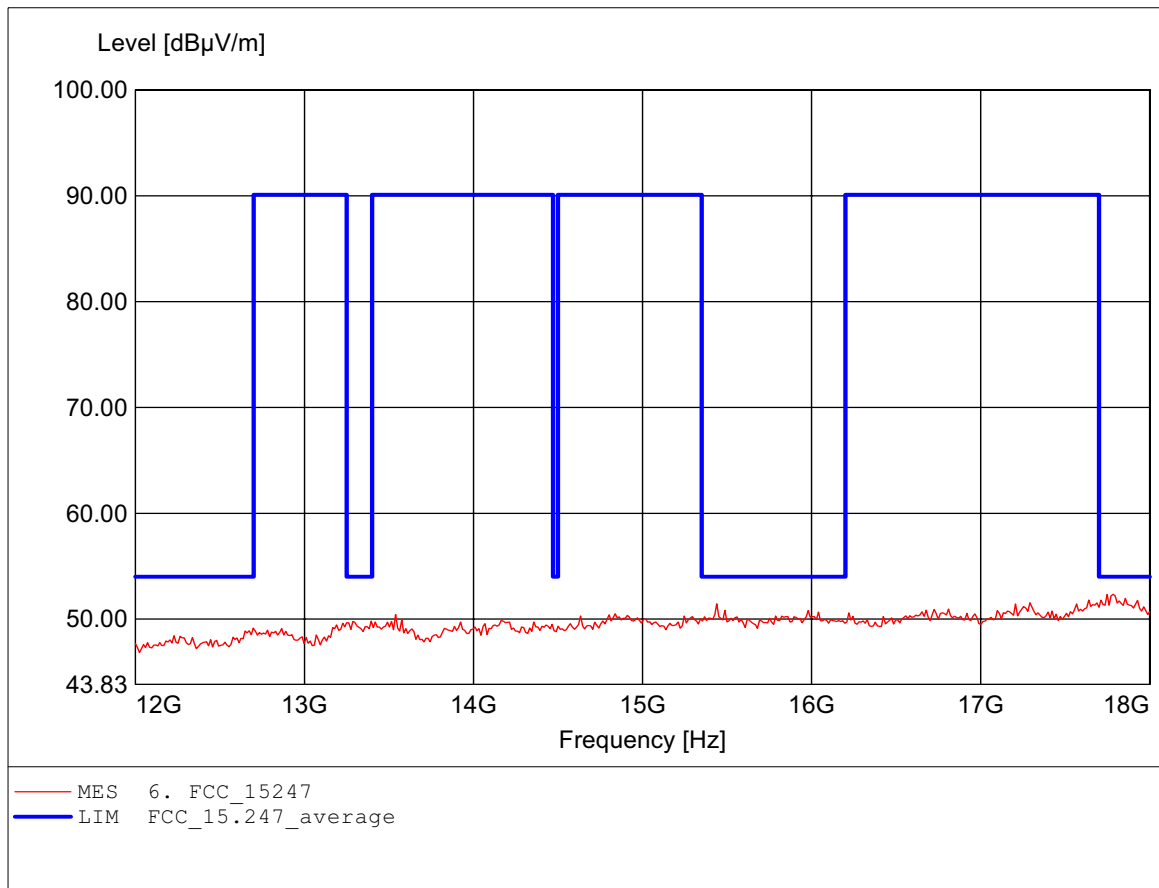
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.820GHz, Emax: 52.70dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

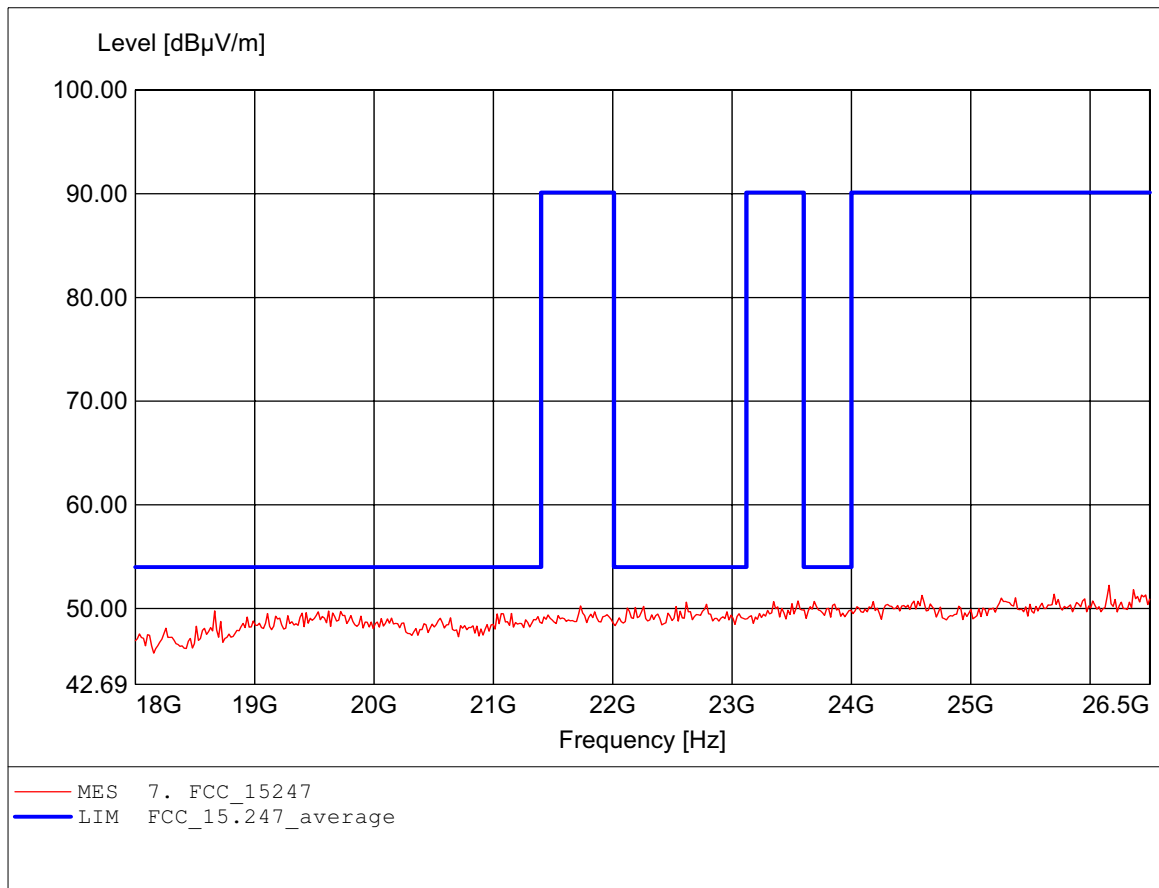
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.784GHz, Emax: 52.33dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

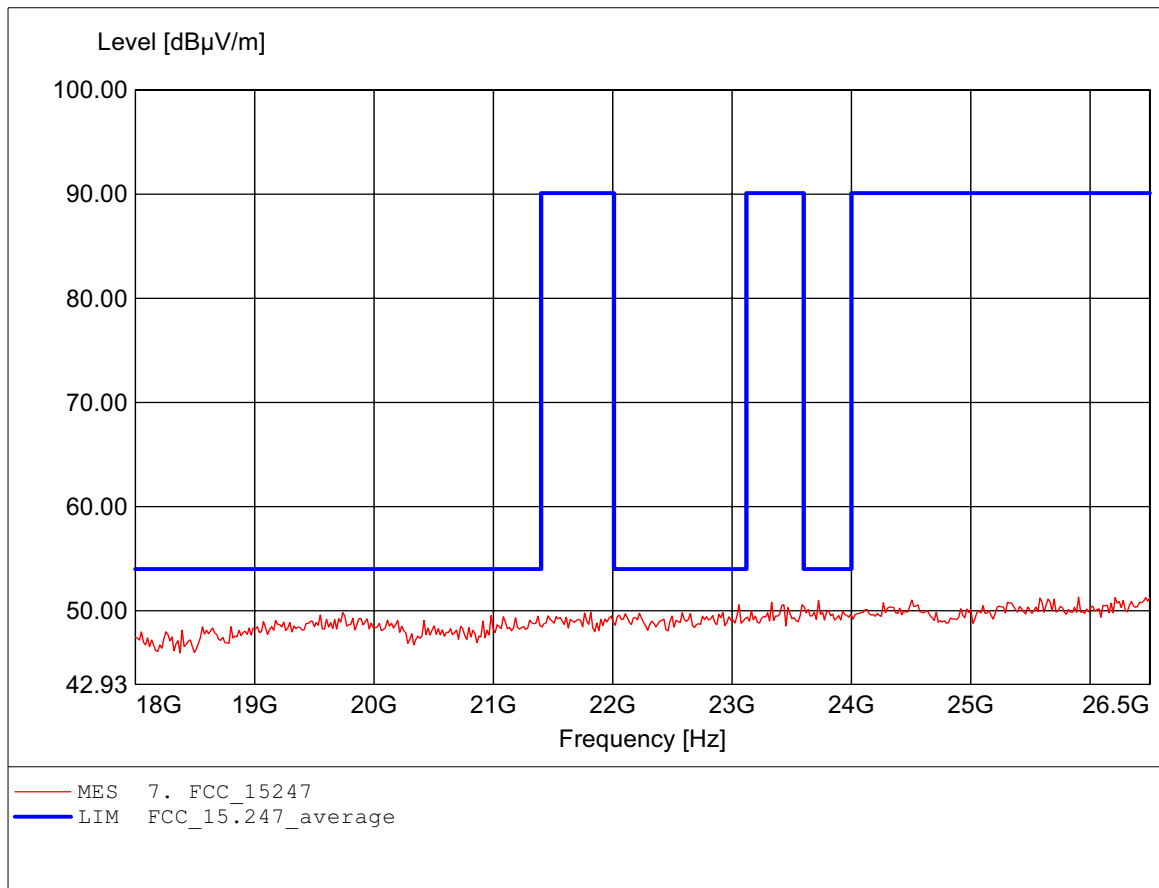
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 26.159GHz, Emax: 52.24dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP0002

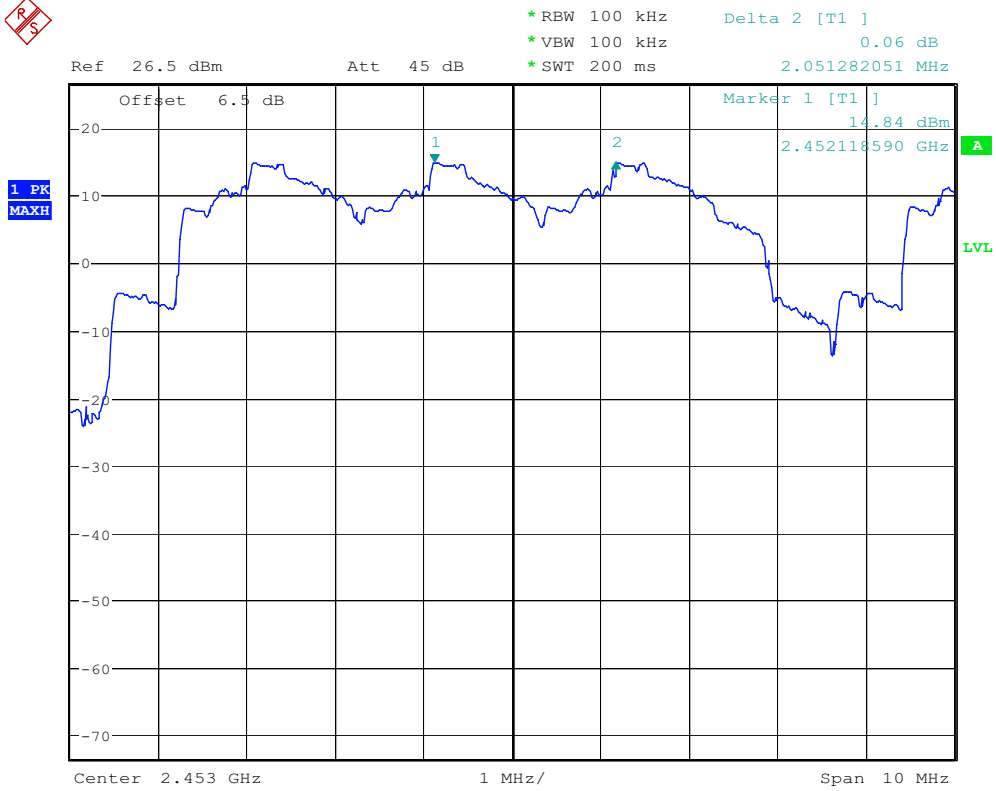
Order Number: W6M20609-7420 (high channel Rx to Tx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 25.904GHz, Emax: 51.29dBμV/m, RBW: 1MHz



Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

Appendix C

Carrier Frequency Separation



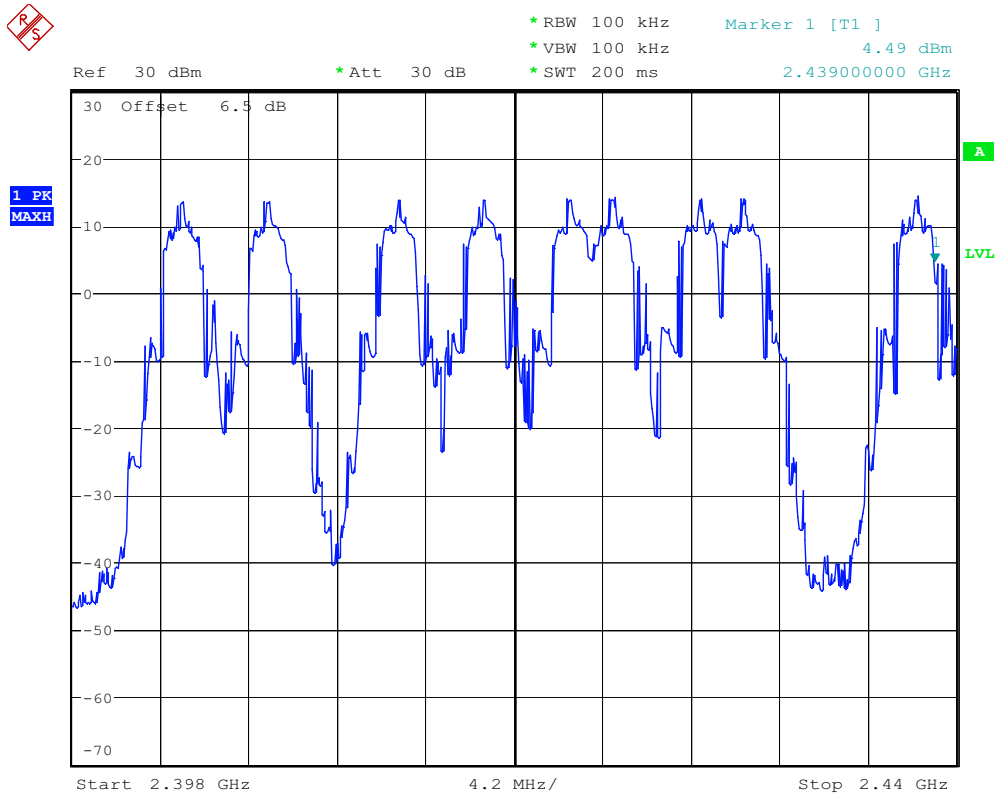
FREQUENCY SEPARATION

Date: 15.SEP.2006 09:09:35

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

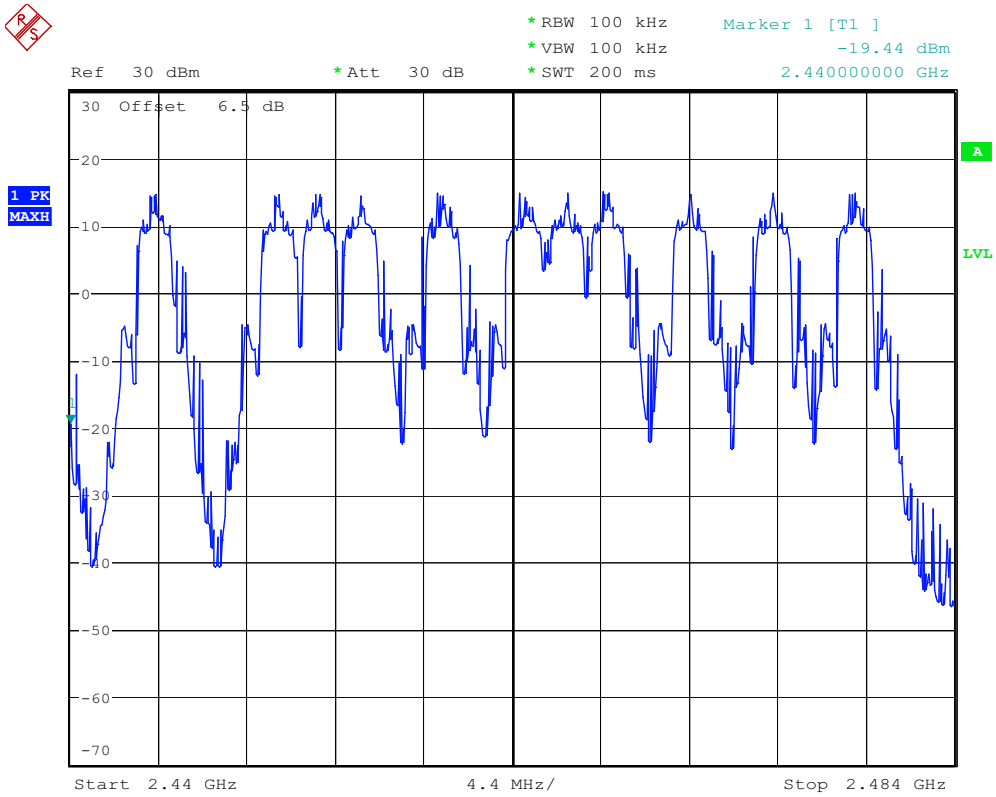
Appendix D

Number of Hopping Frequencies



NUMBER OF HOPPING

Date: 11.SEP.2006 13:42:56



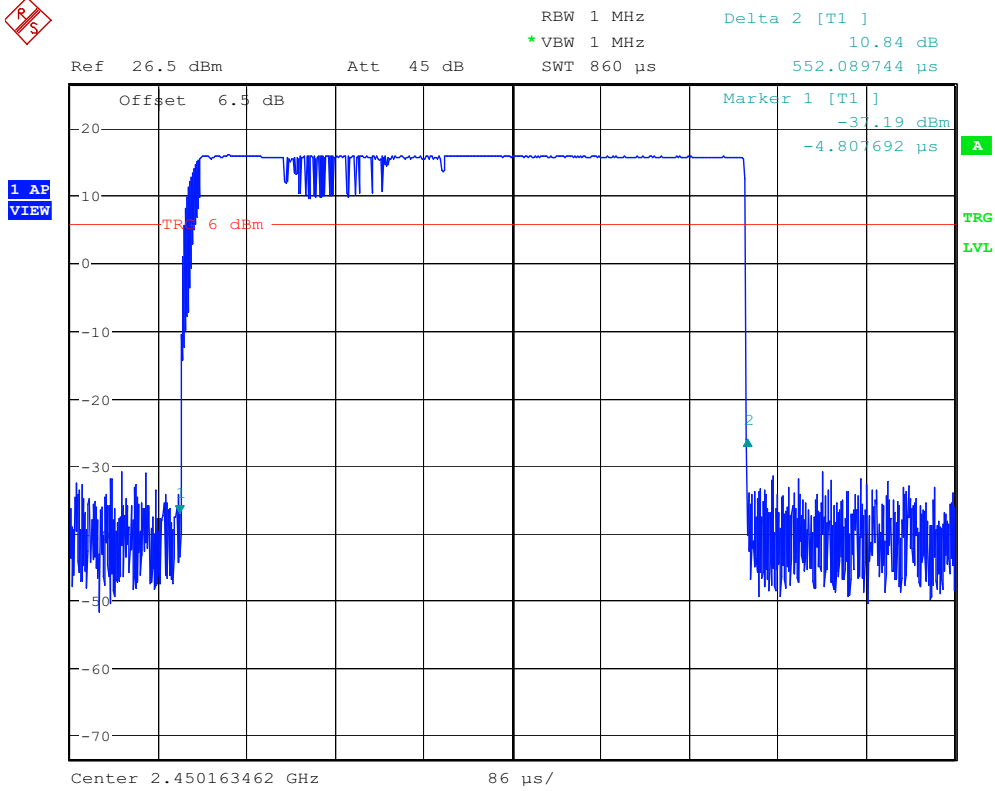
NUMBER OF HOPPING

Date: 11.SEP.2006 13:43:43

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

Appendix E

Time of Occupancy (Dwell Time)



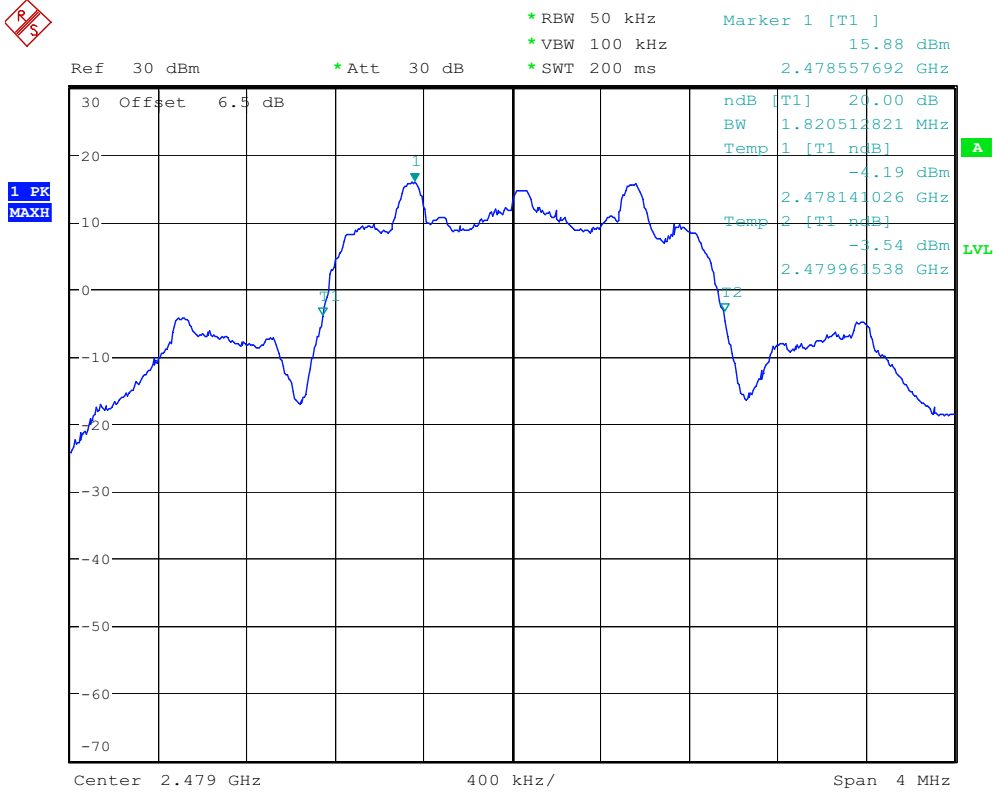
Time of occup ancy (Hopping DH1) = 552.09 μ s * 312 ev ents = 172.252ms

Date: 15.SEP.2006 09:34:35

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

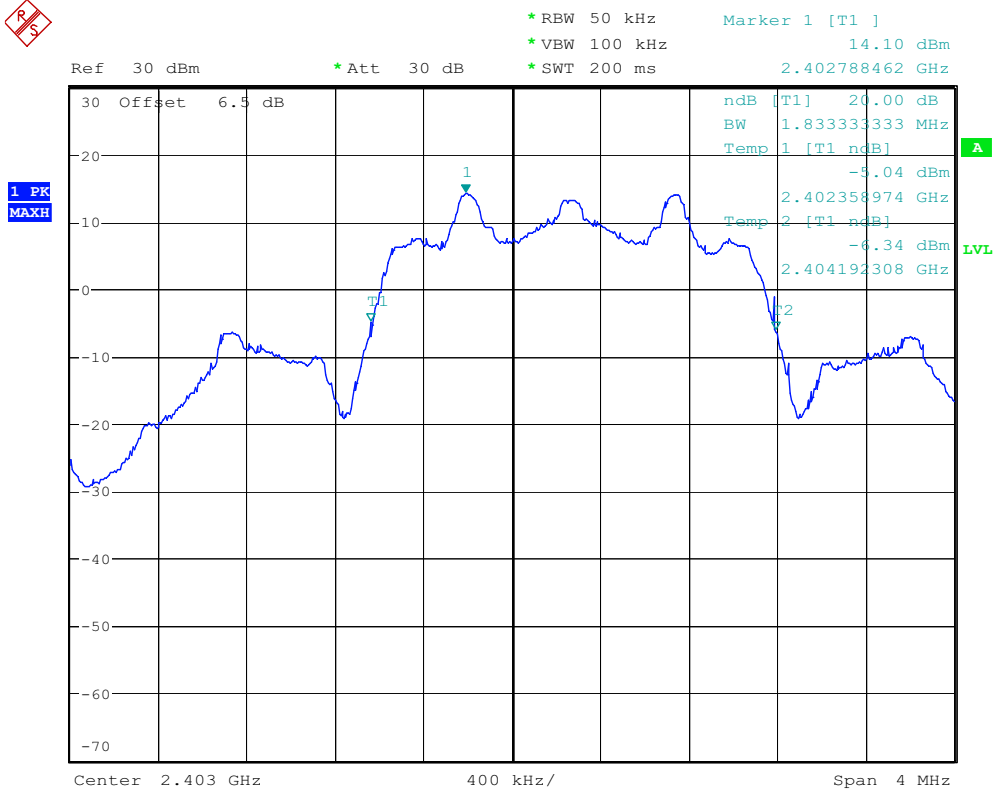
Appendix F

20dB Bandwidth



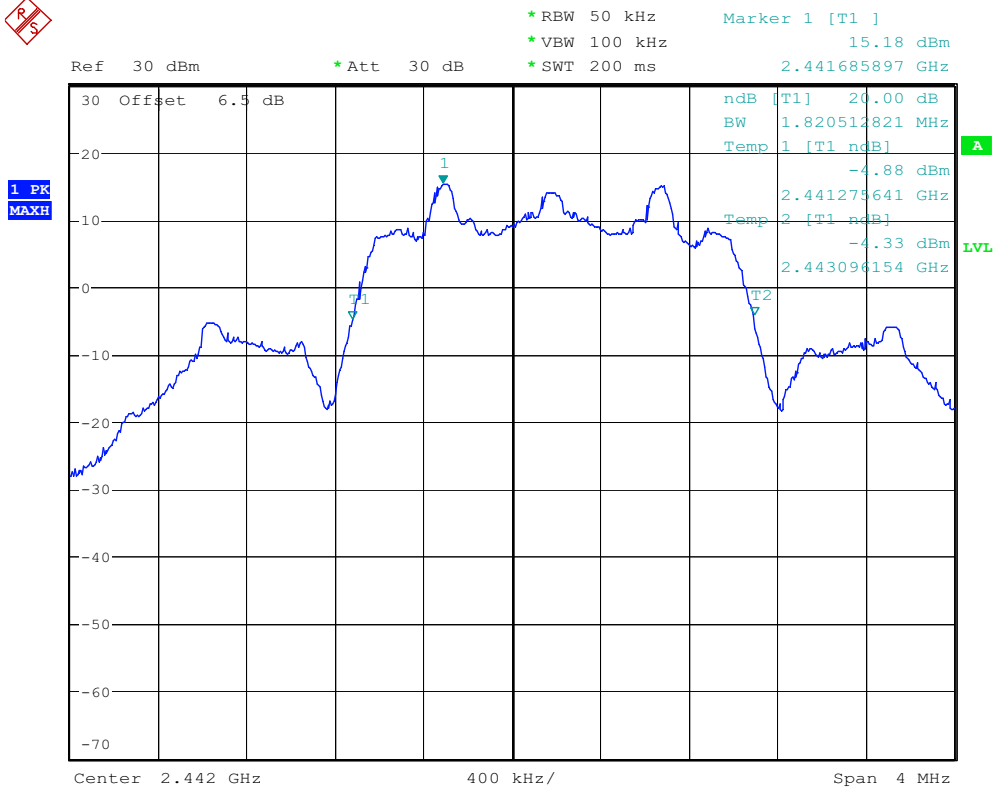
20dB BANDWIDTH HIGH CH

Date: 5.SEP.2006 13:17:55



20dB BANDWIDTH LOW CH

Date: 11.SEP.2006 09:32:49

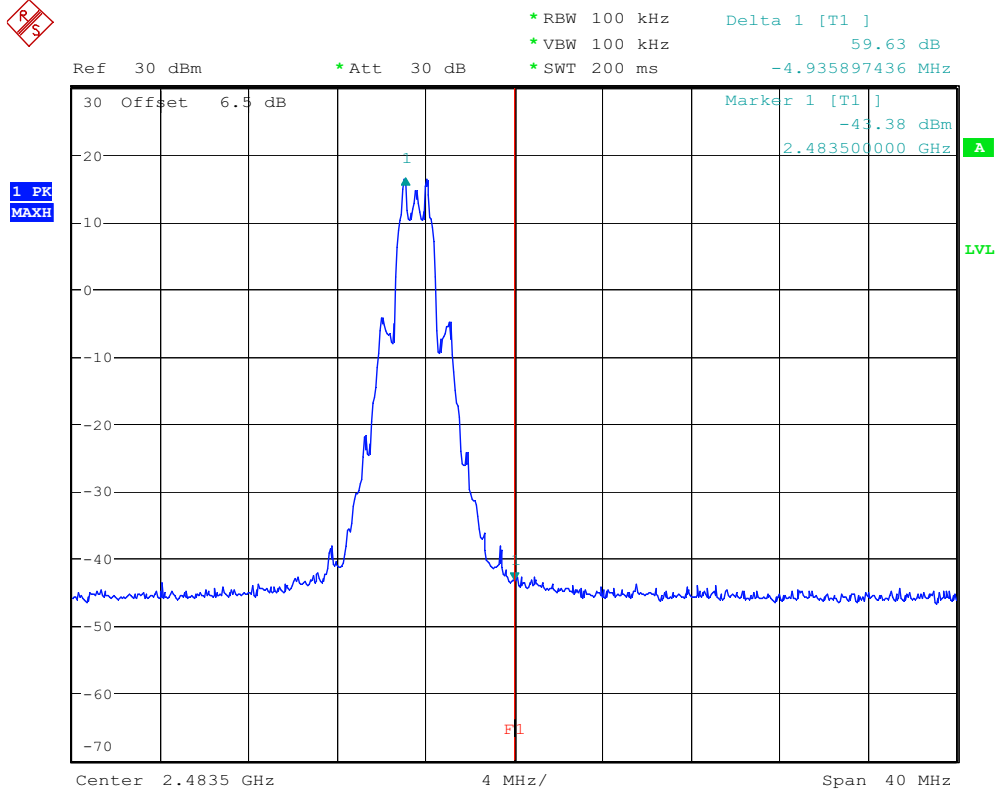


20dB BANDWIDTH MIDDLE CH
Date: 11.SEP.2006 09:34:41

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

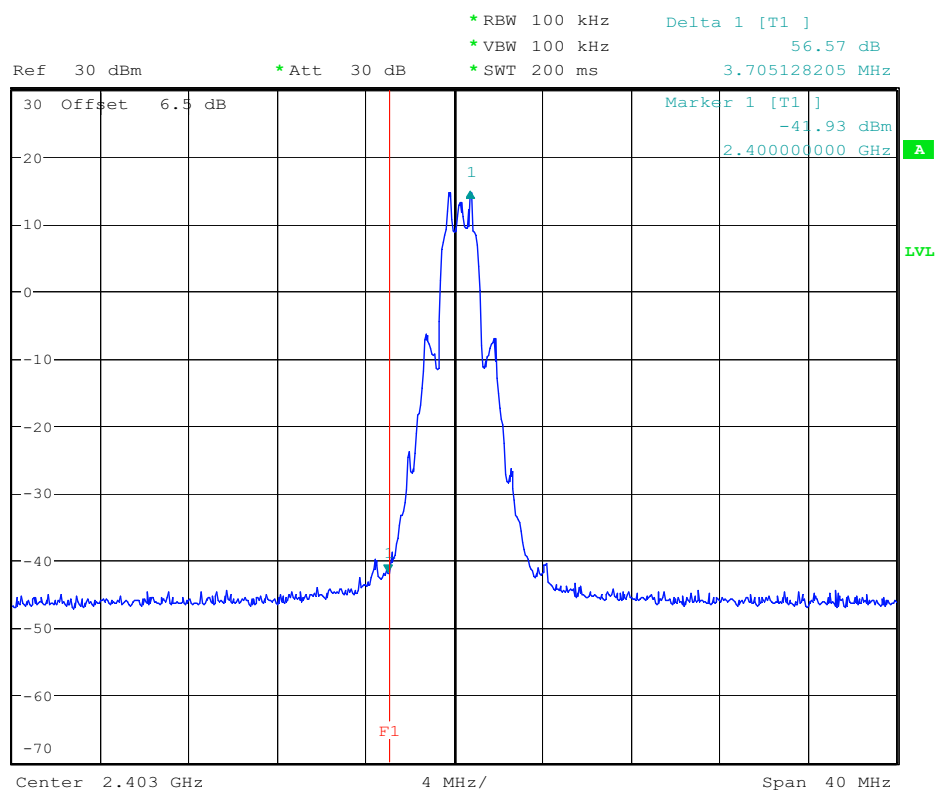
Appendix G

Band-edge Compliance of RF Conducted Emissions



BANDEGE HIGH CH

Date: 5.SEP.2006 13:29:54



Date: 11.SEP.2006 09:31:09

Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

Appendix H

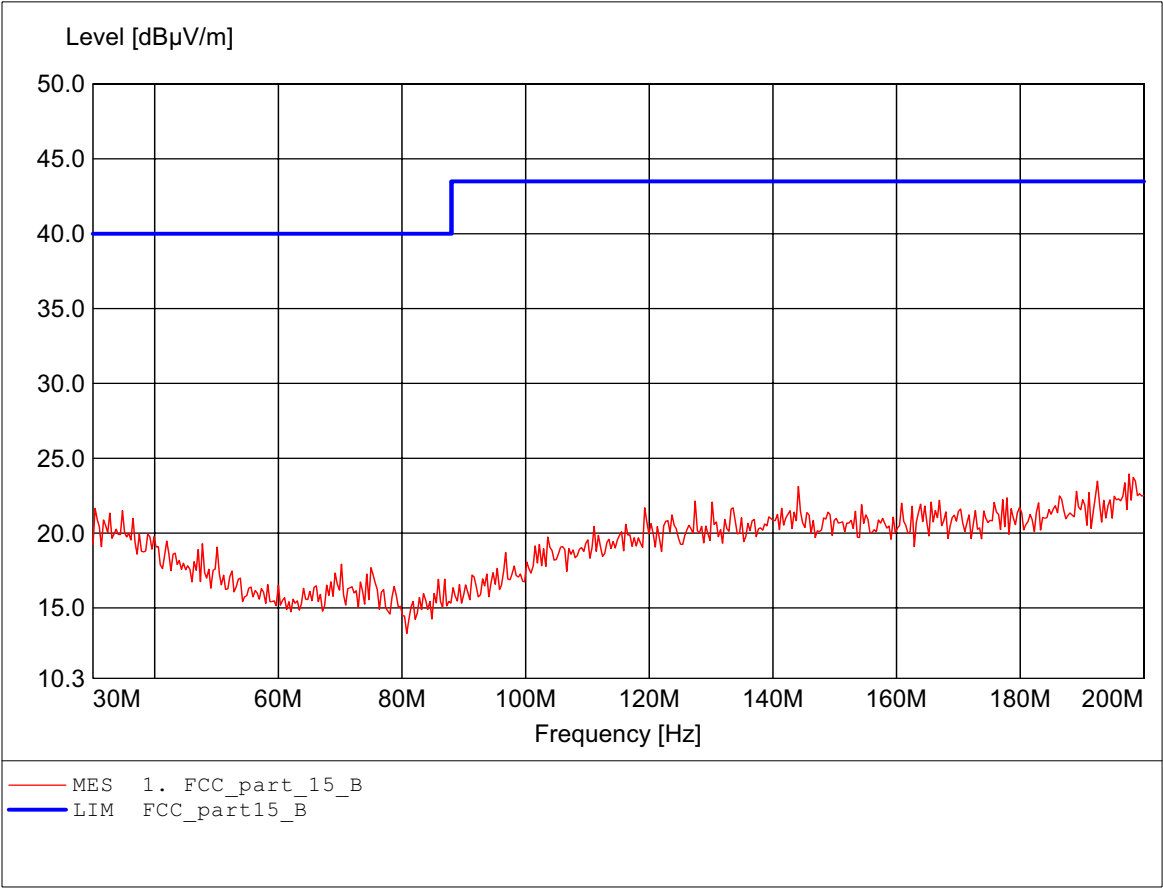
Radiated Emissions from Receiver Section of Transceiver

The measurement diagrams plots attached below are preliminary wideband scan with a peak detector and for reference only. The final test results are listed on section 3.12

Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

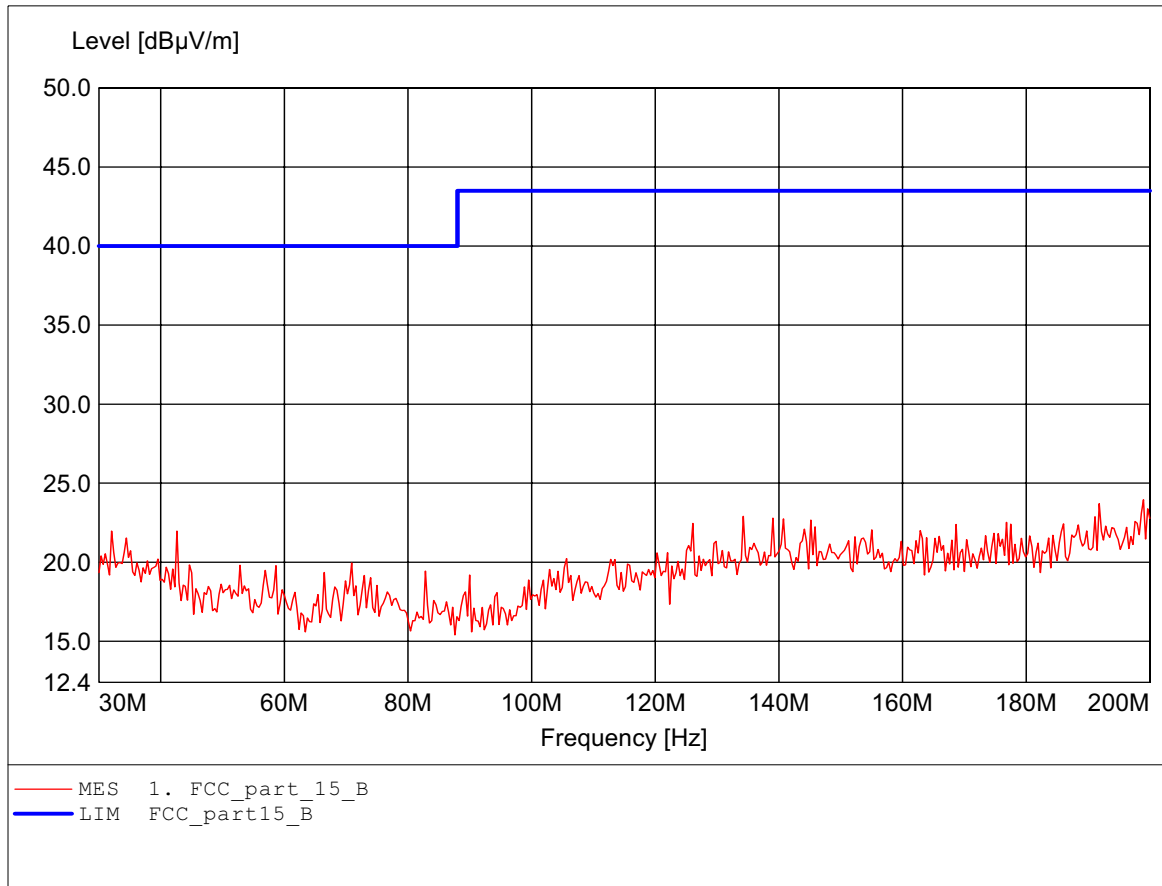
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:197.615MHz Emax:23.95dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

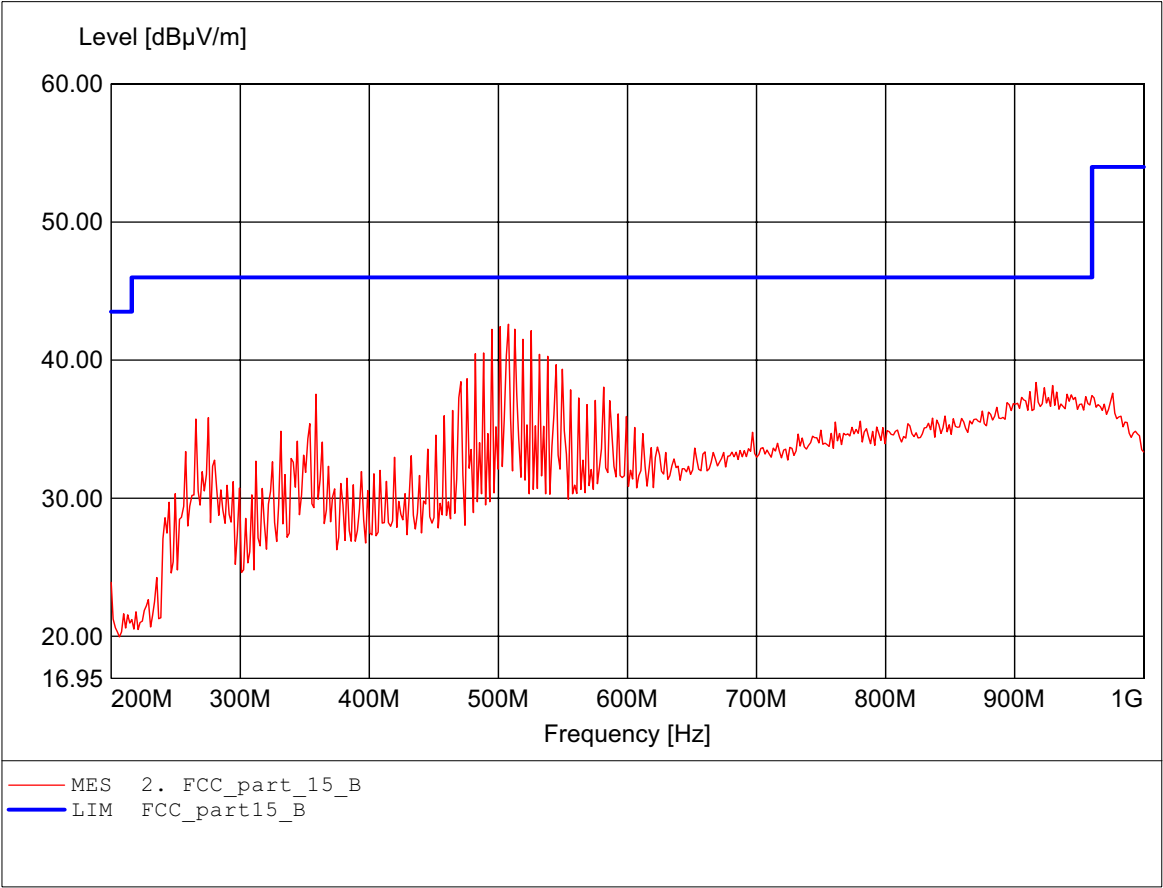
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:198.978MHz Emax:23.95dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

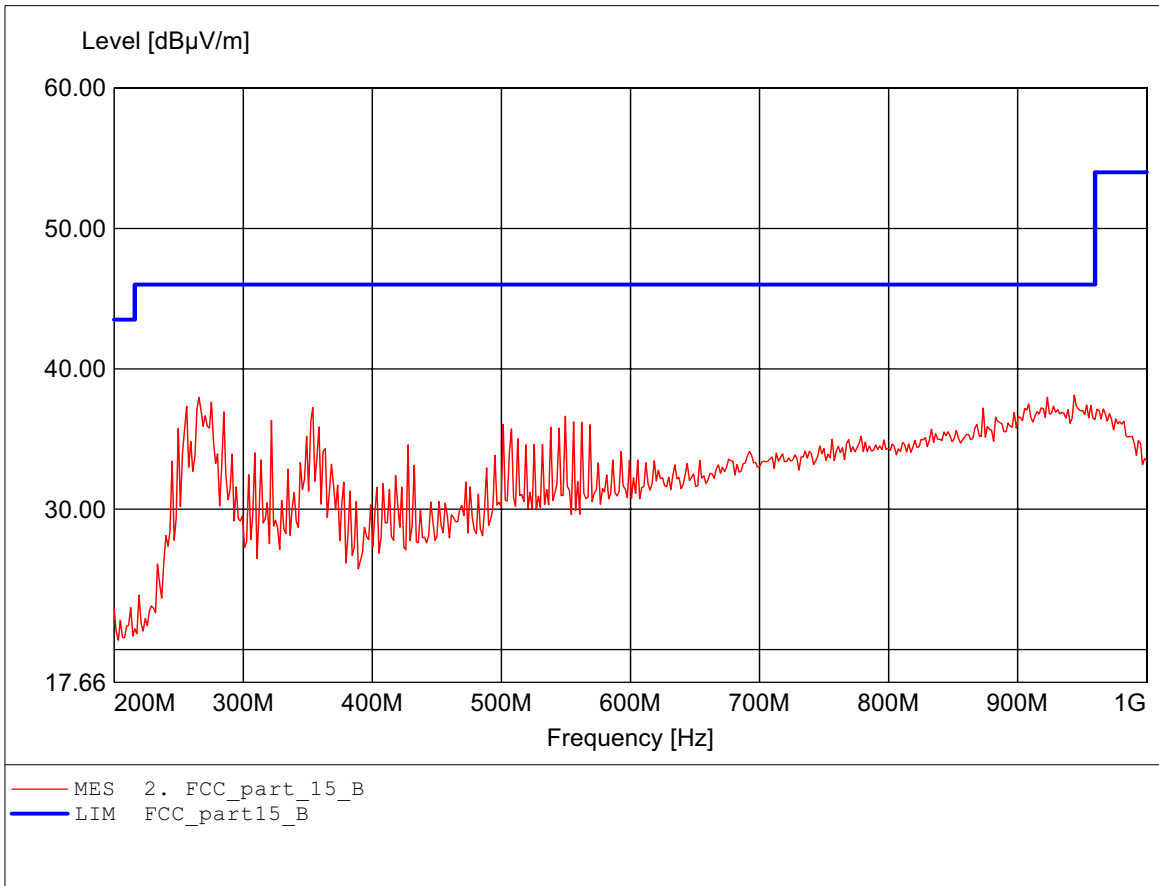
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:507.816MHz Emax:42.60dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

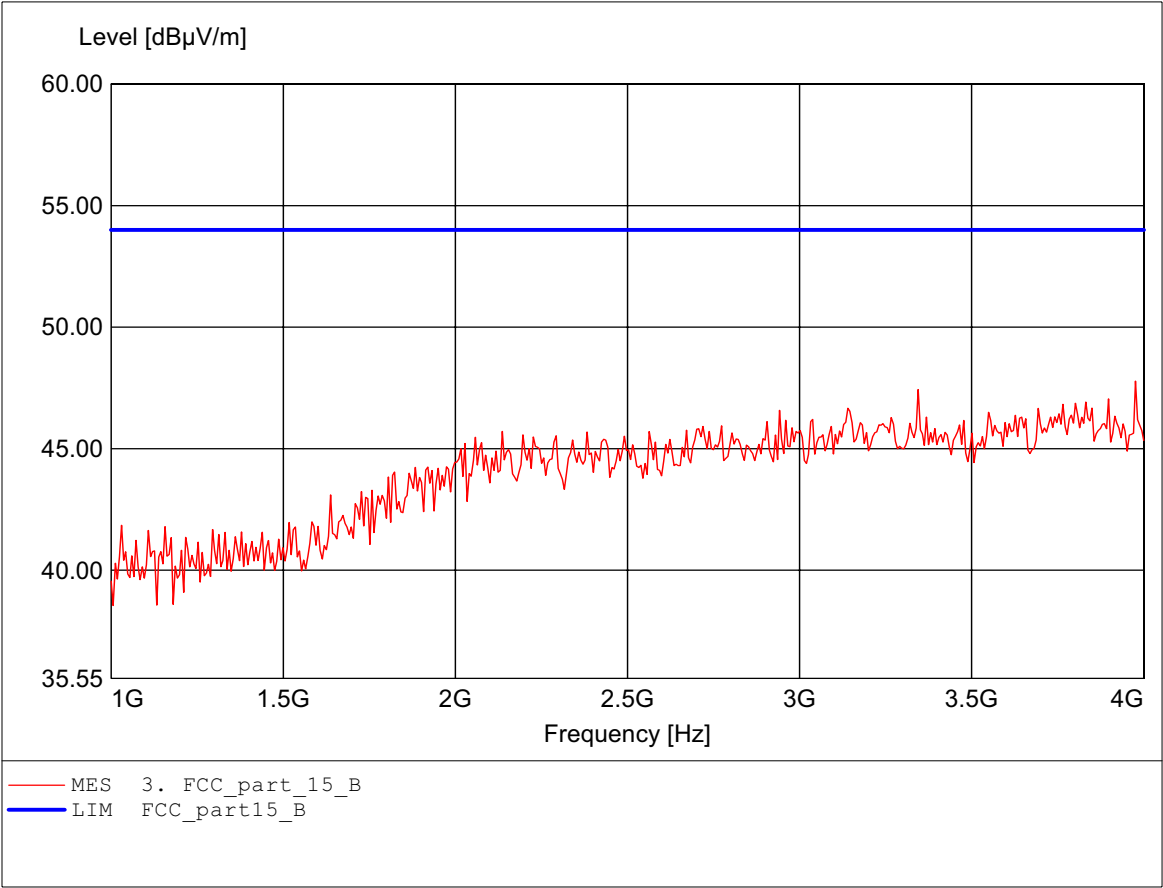
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq: 943.888MHz Emax: 38.13dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

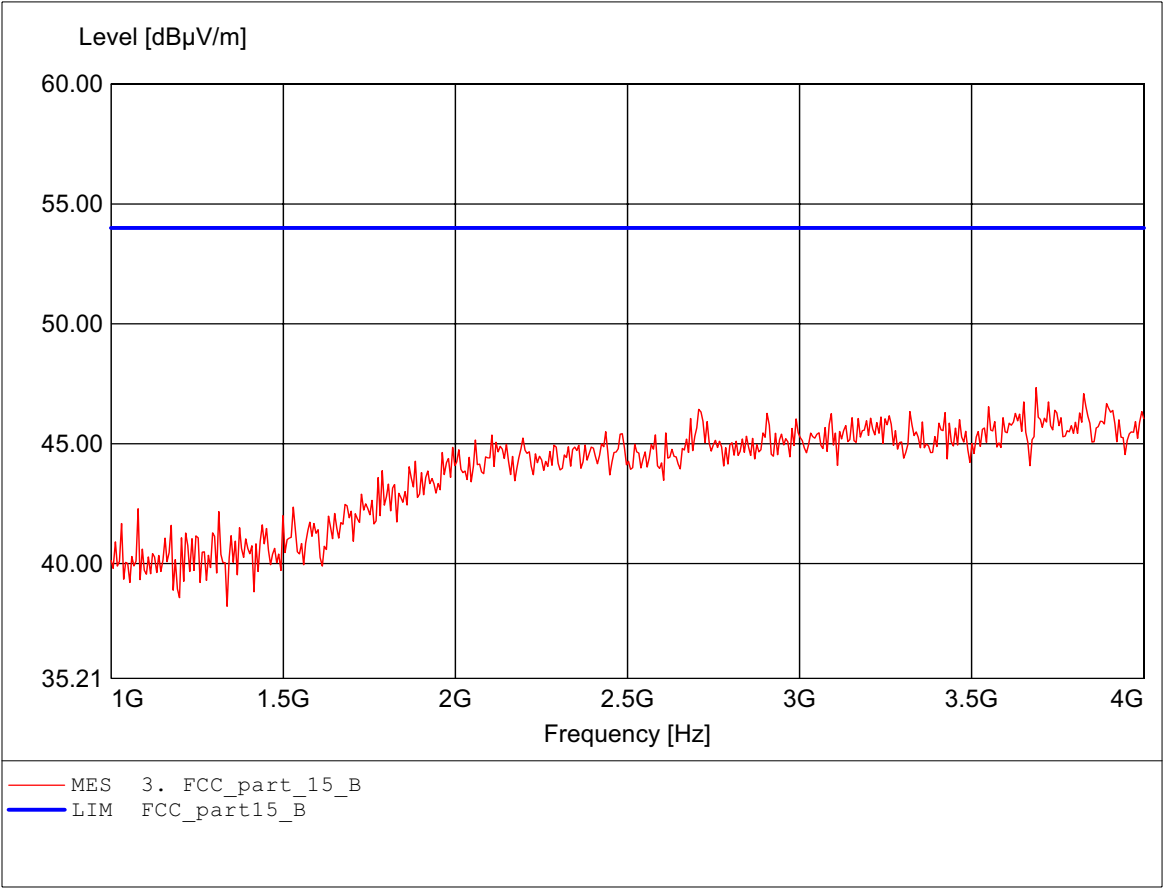
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.976GHz Emax:47.78dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

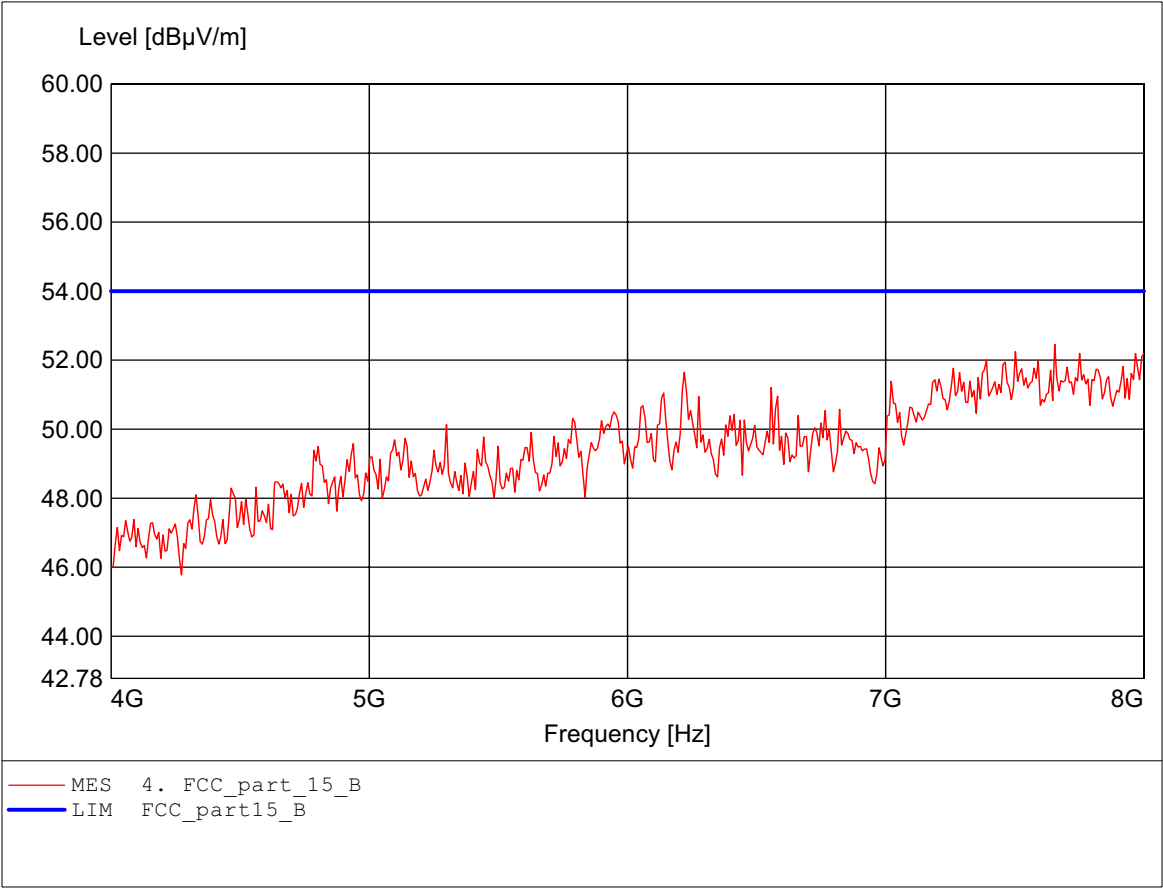
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.687GHz Emax:47.34dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

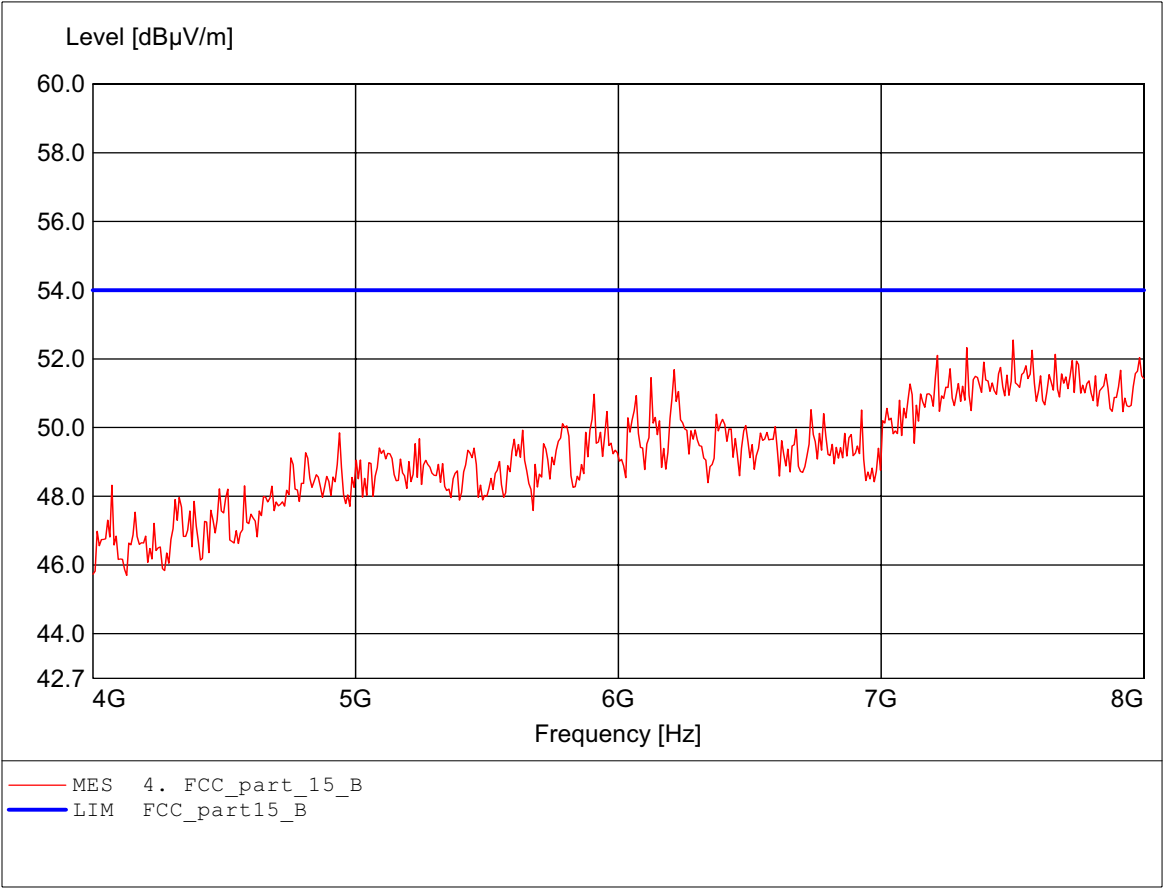
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.655GHz Emax:52.46dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

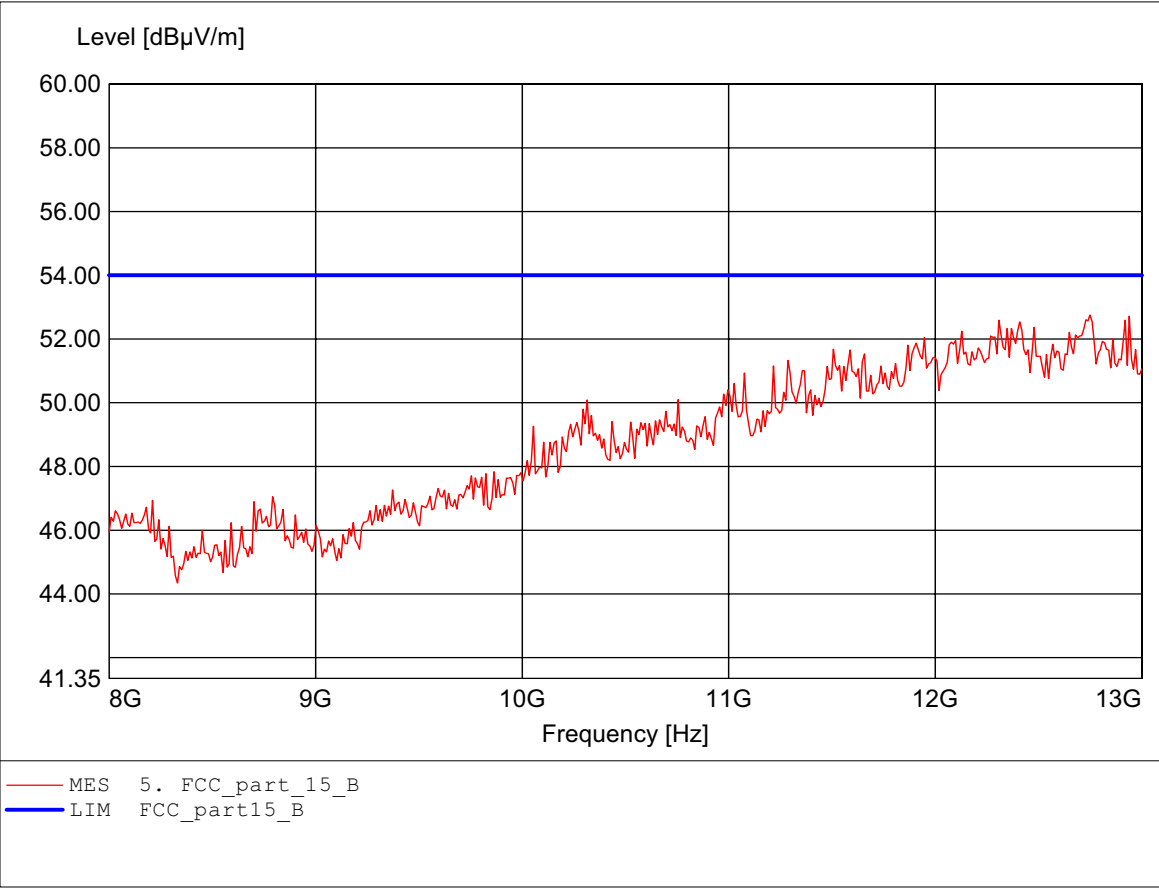
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.503GHz Emax:52.55dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

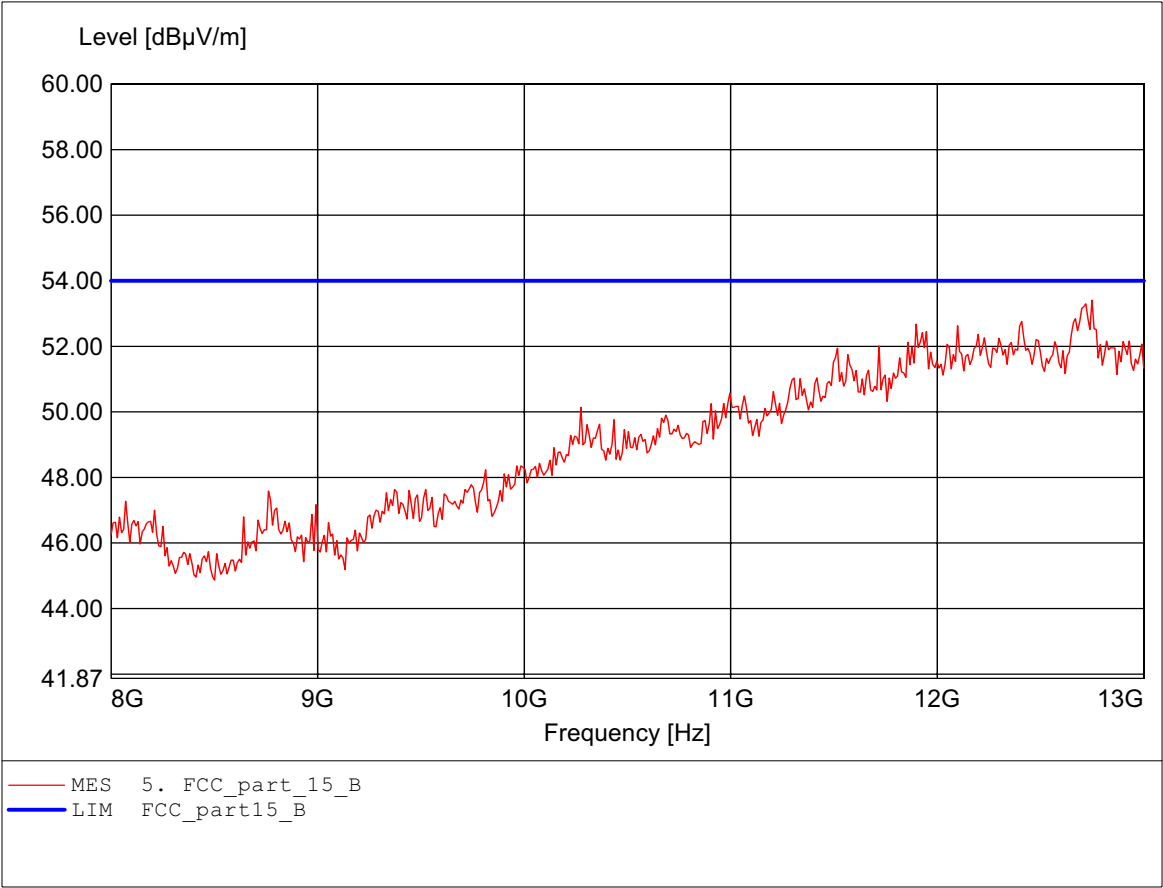
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:12.749GHz Emax:52.75dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

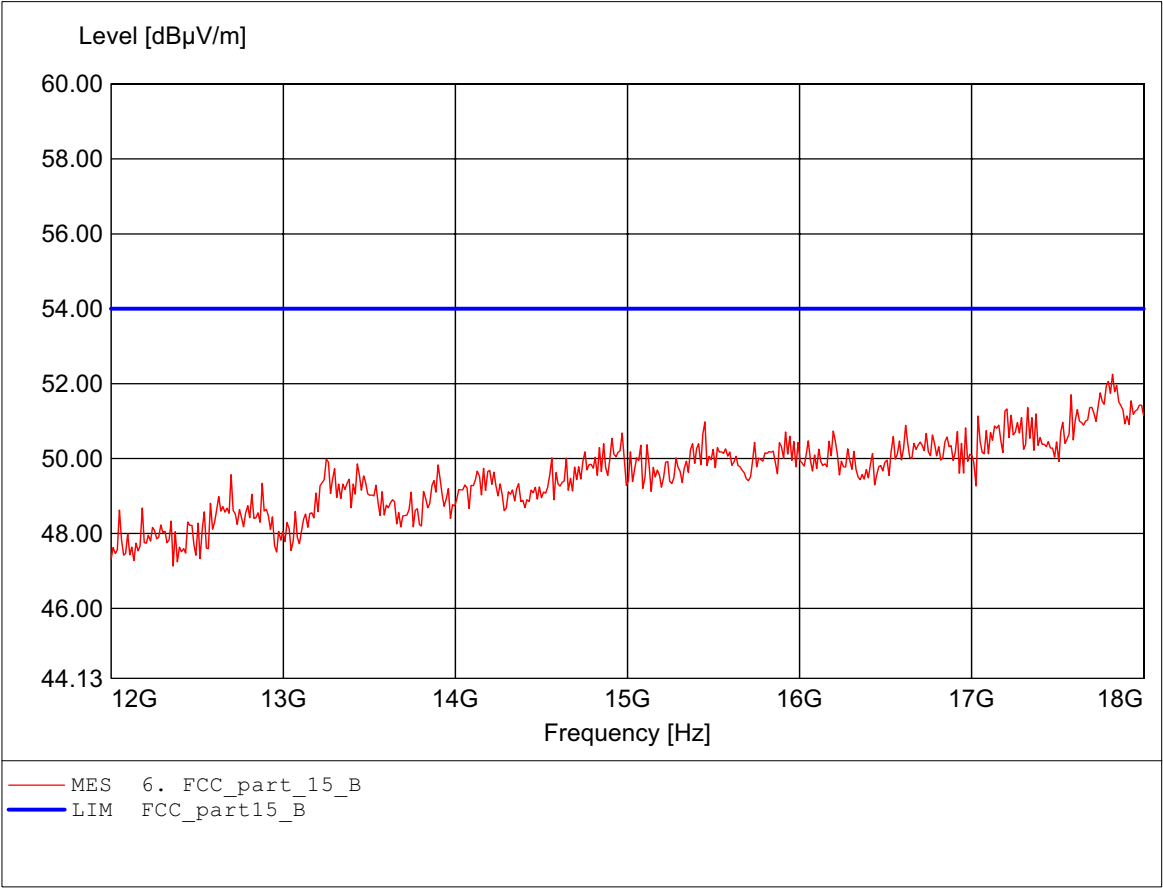
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:12.749GHz Emax:53.40dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

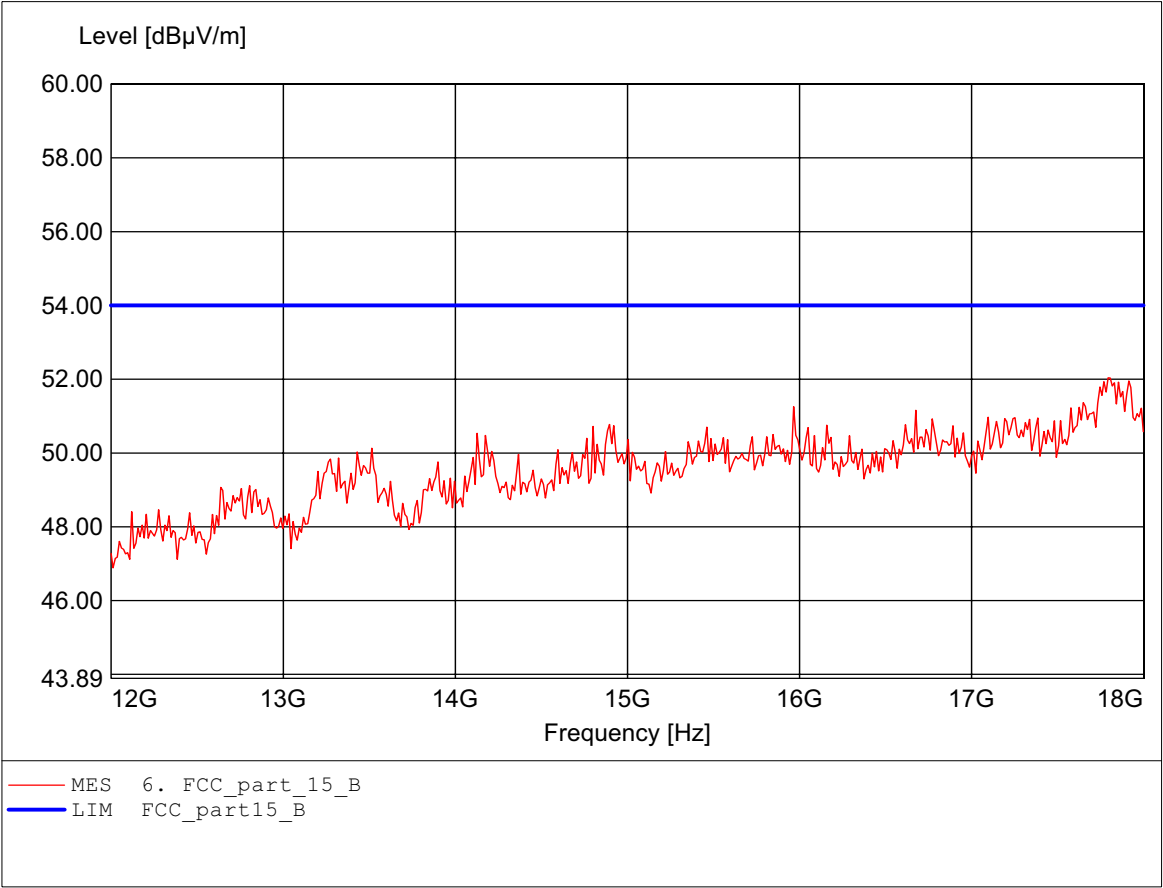
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.820GHz Emax:52.25dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

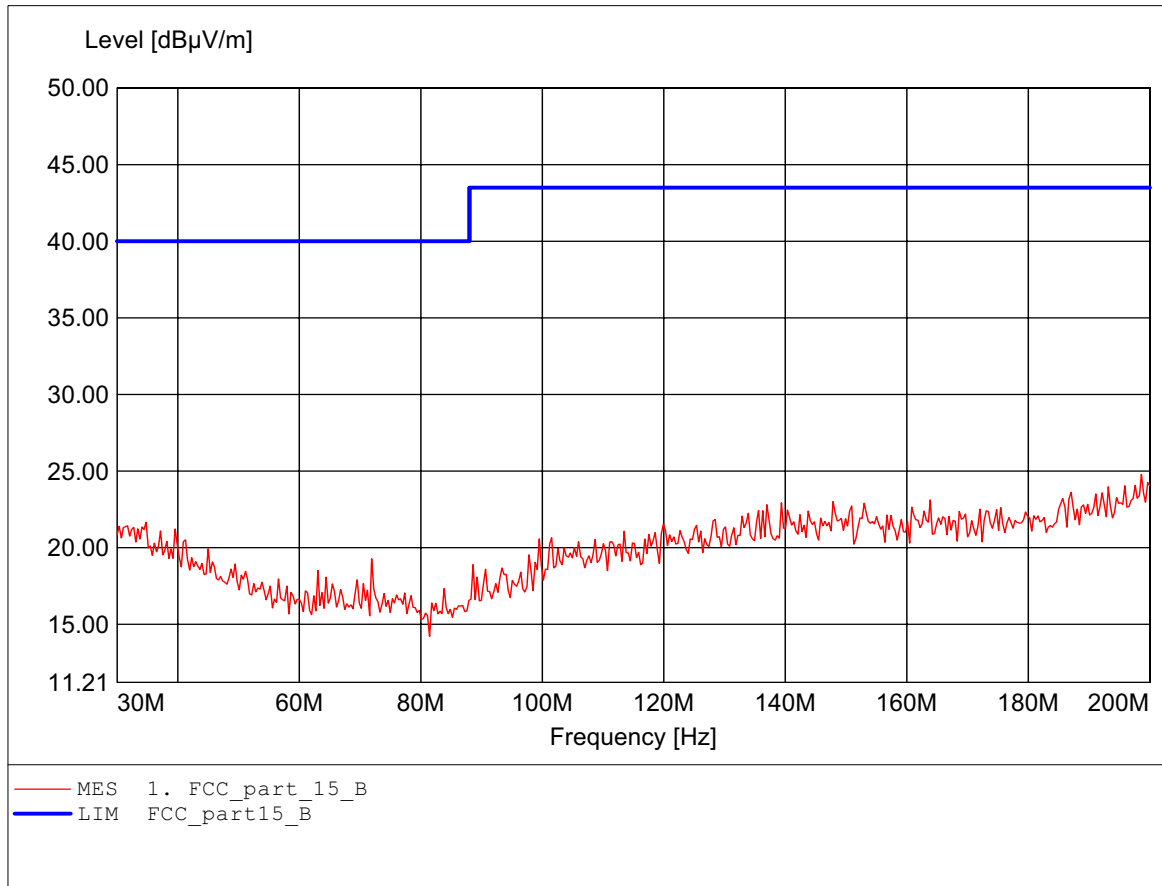
Order Number: W6M20609-7420 (low channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.796GHz Emax:52.04dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

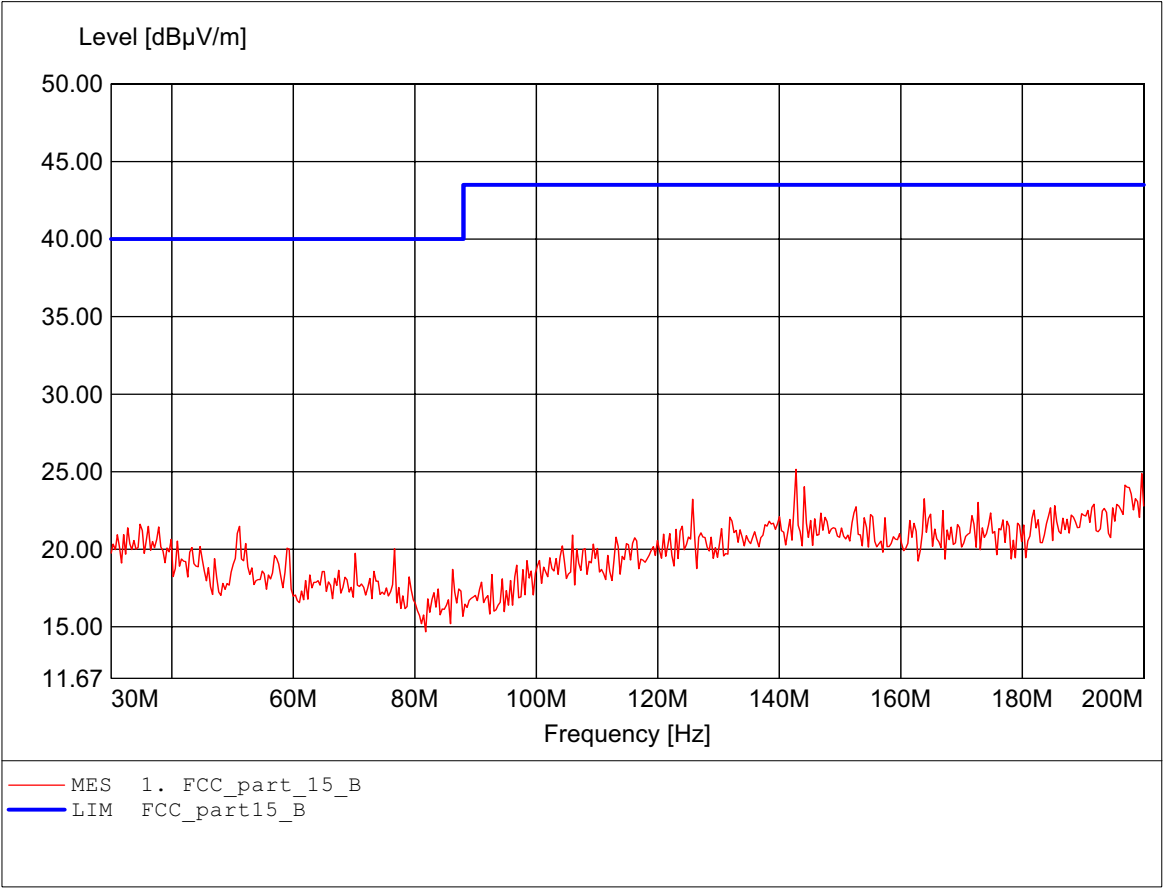
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:198.637MHz Emax:24.78dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

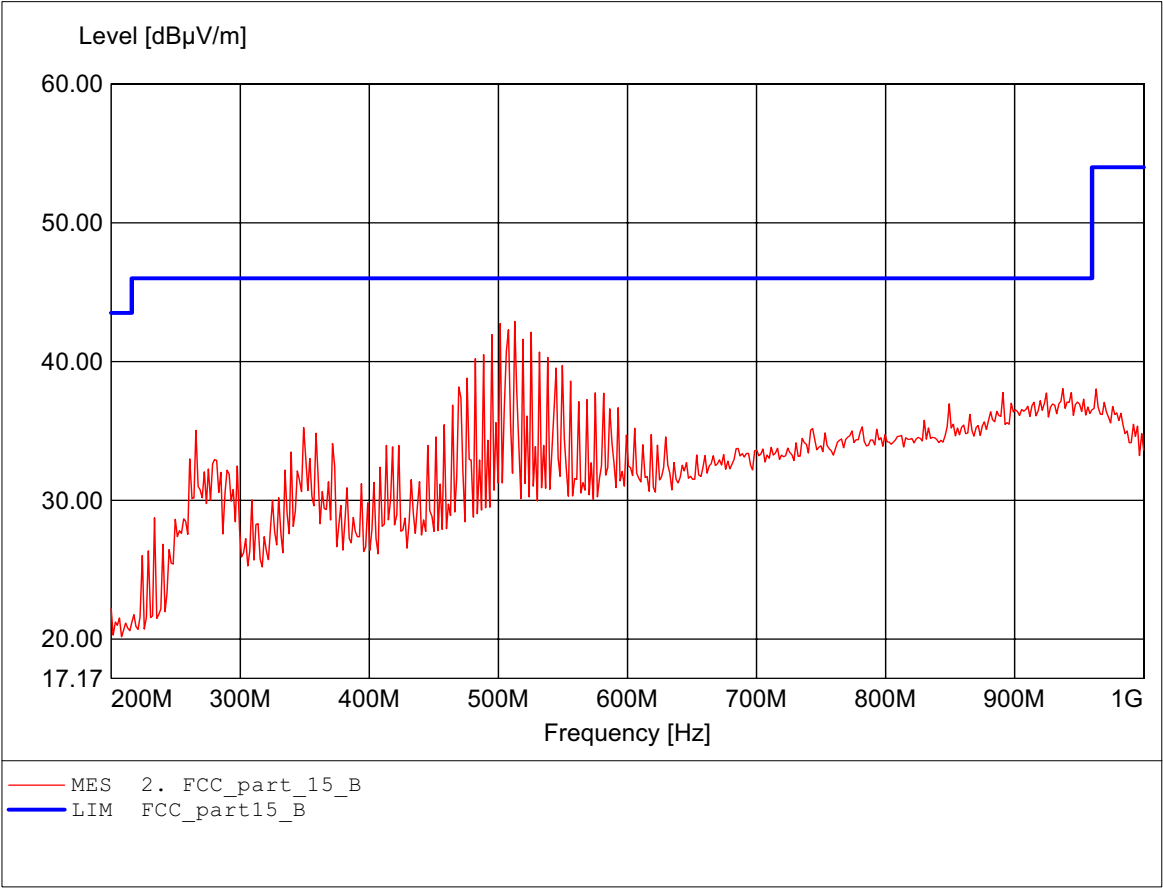
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:142.766MHz Emax:25.16dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

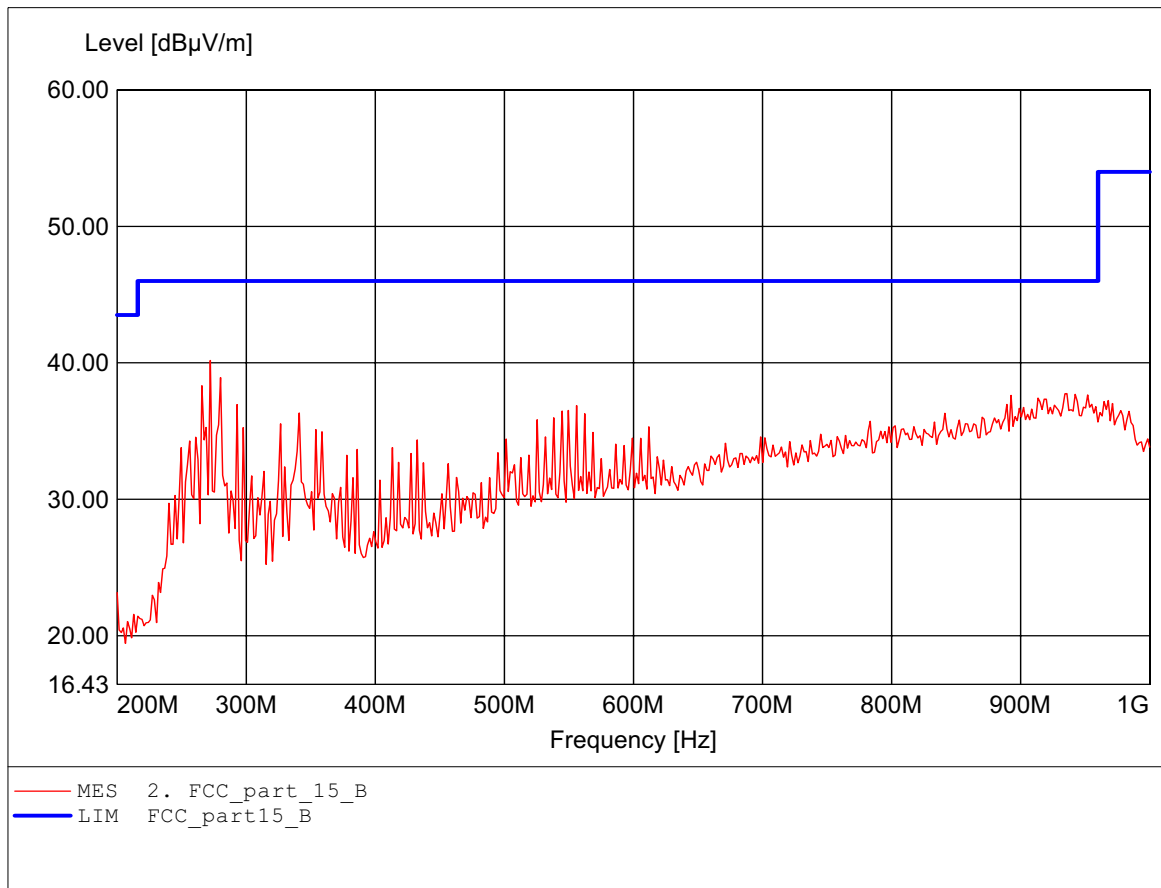
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:512.625MHz Emax:42.89dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

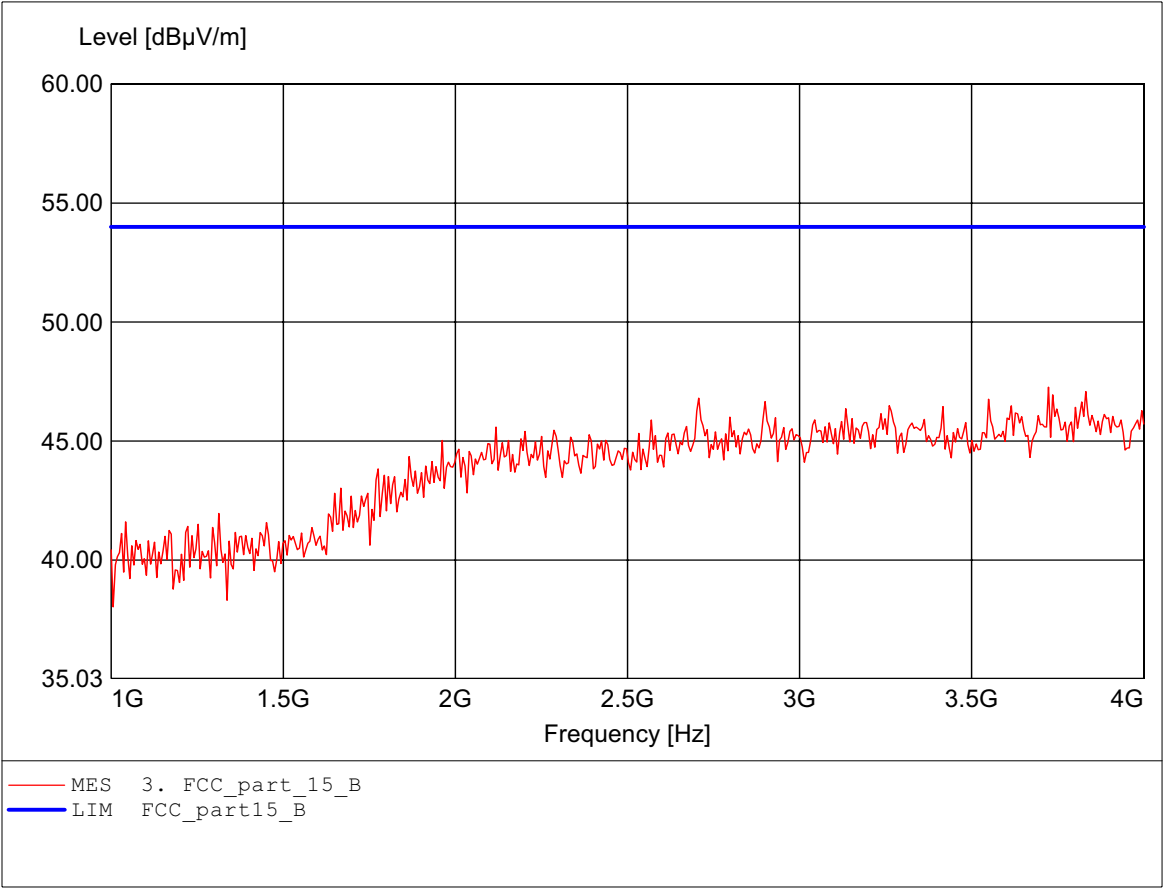
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:272.144MHz Emax:40.18dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

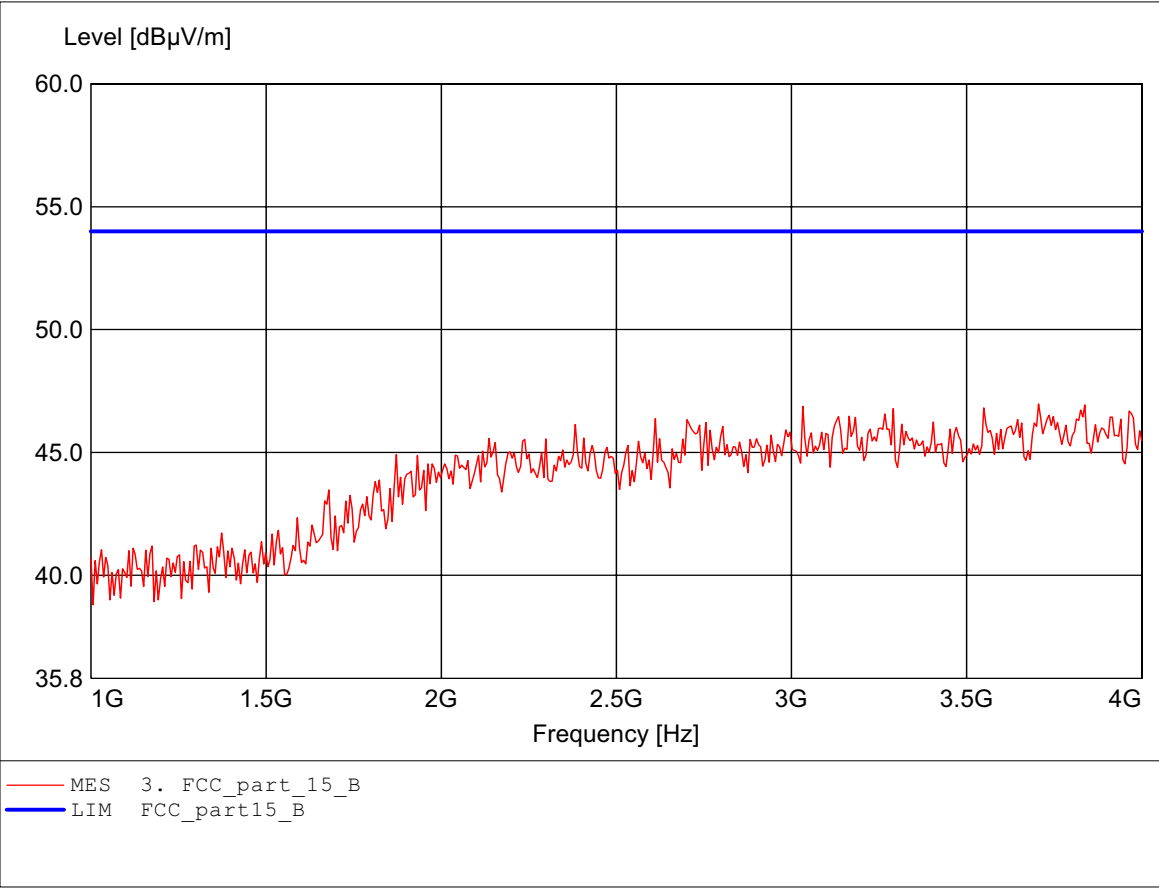
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.723GHz Emax:47.26dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

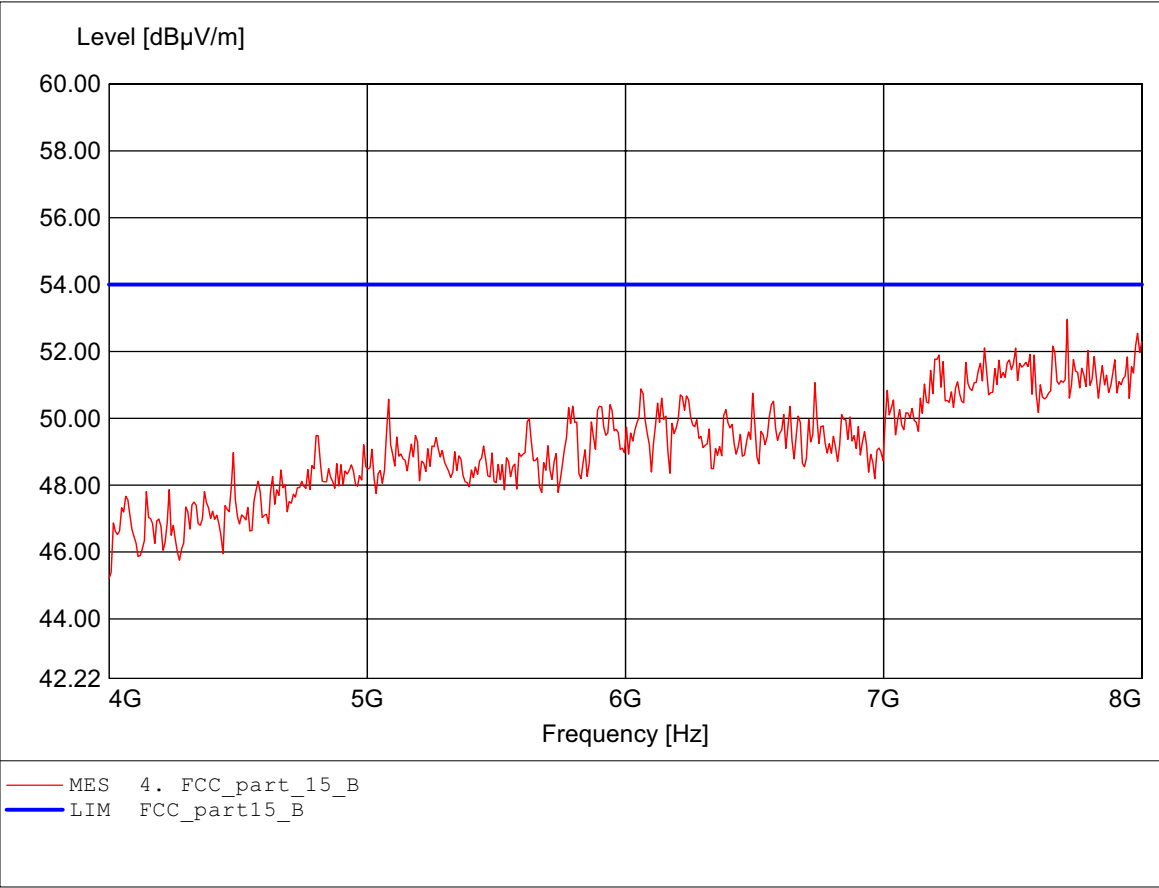
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.705GHz Emax:46.97dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

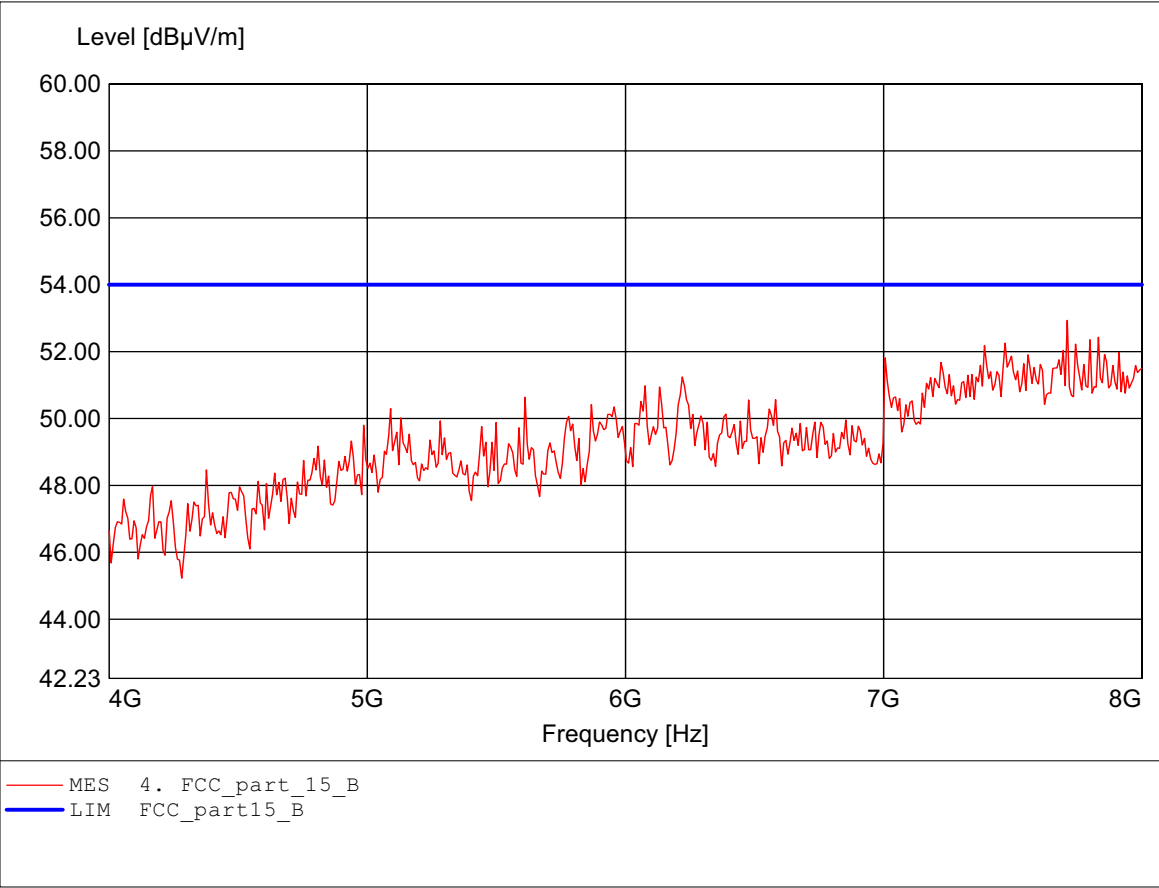
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.711GHz Emax:52.96dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

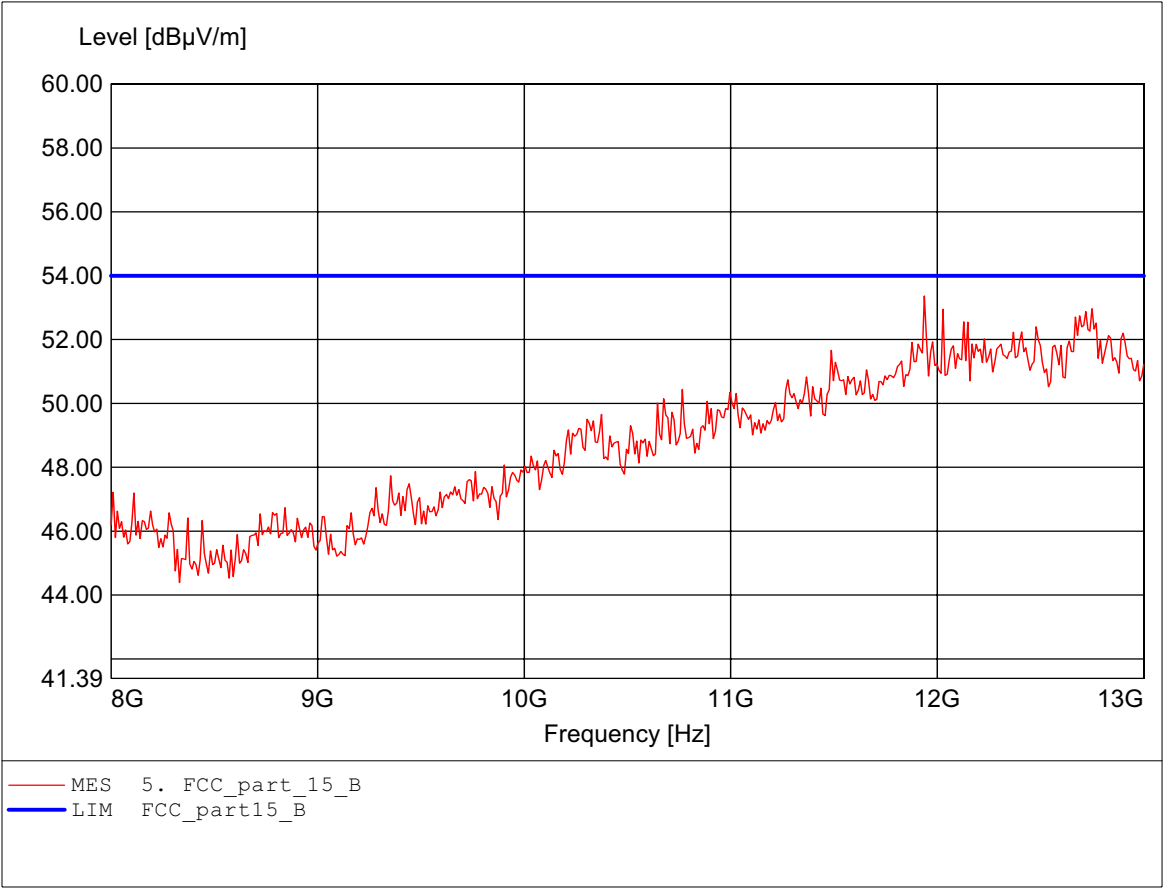
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.711GHz Emax:52.94dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

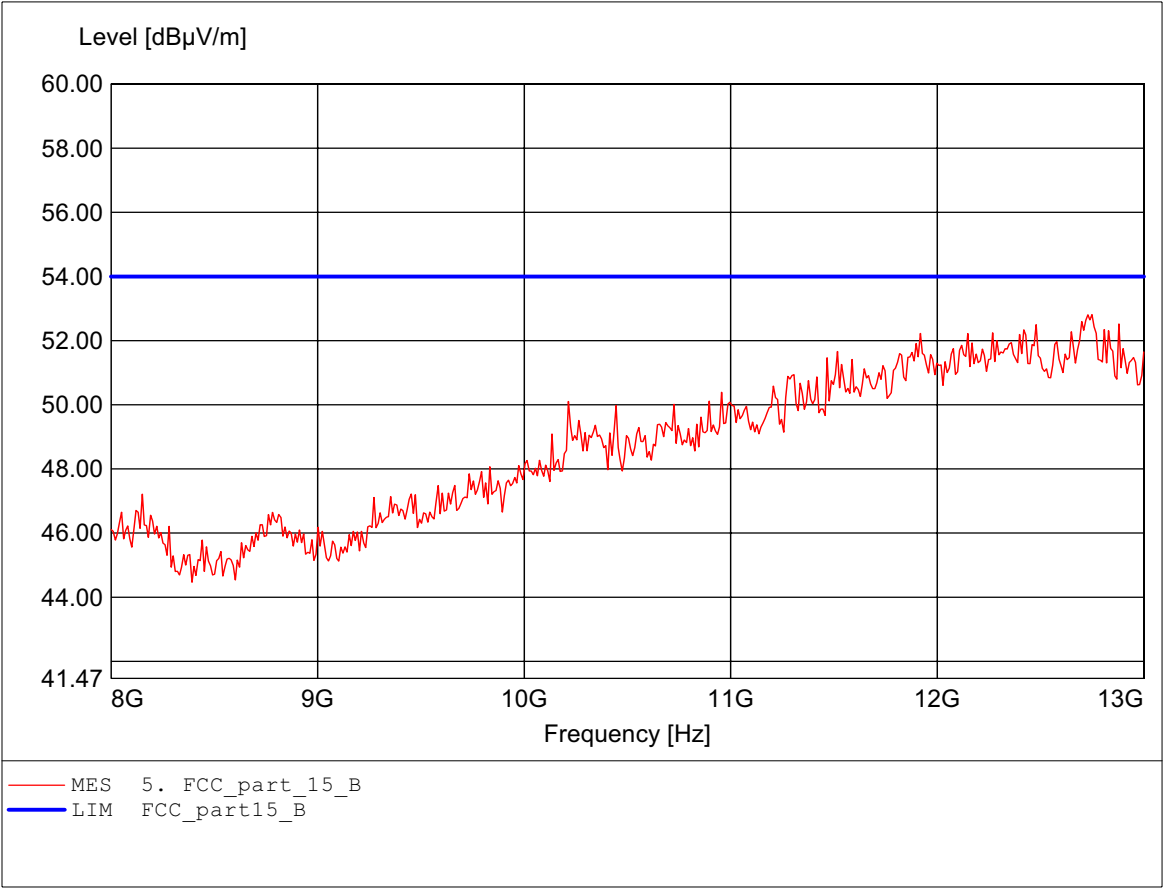
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:11.938GHz Emax:53.36dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

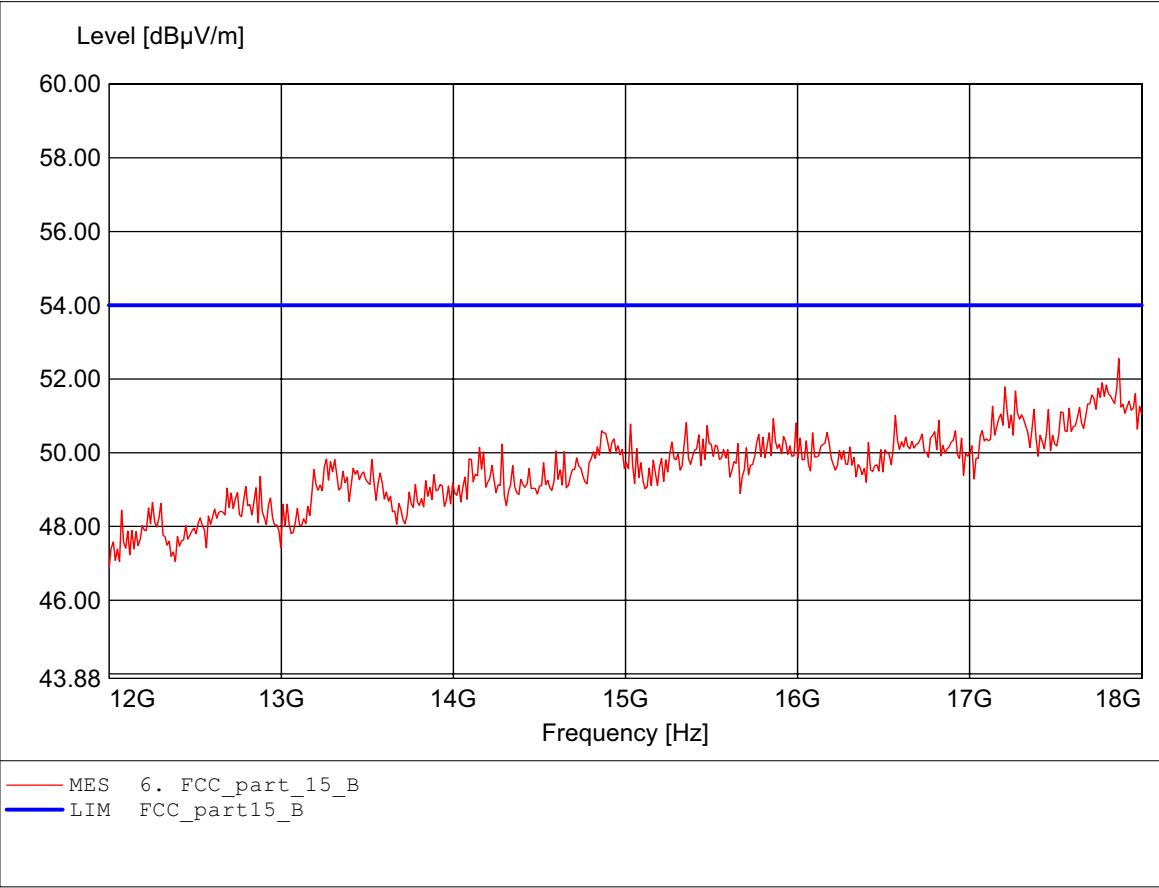
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:12.749GHz Emax:52.81dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

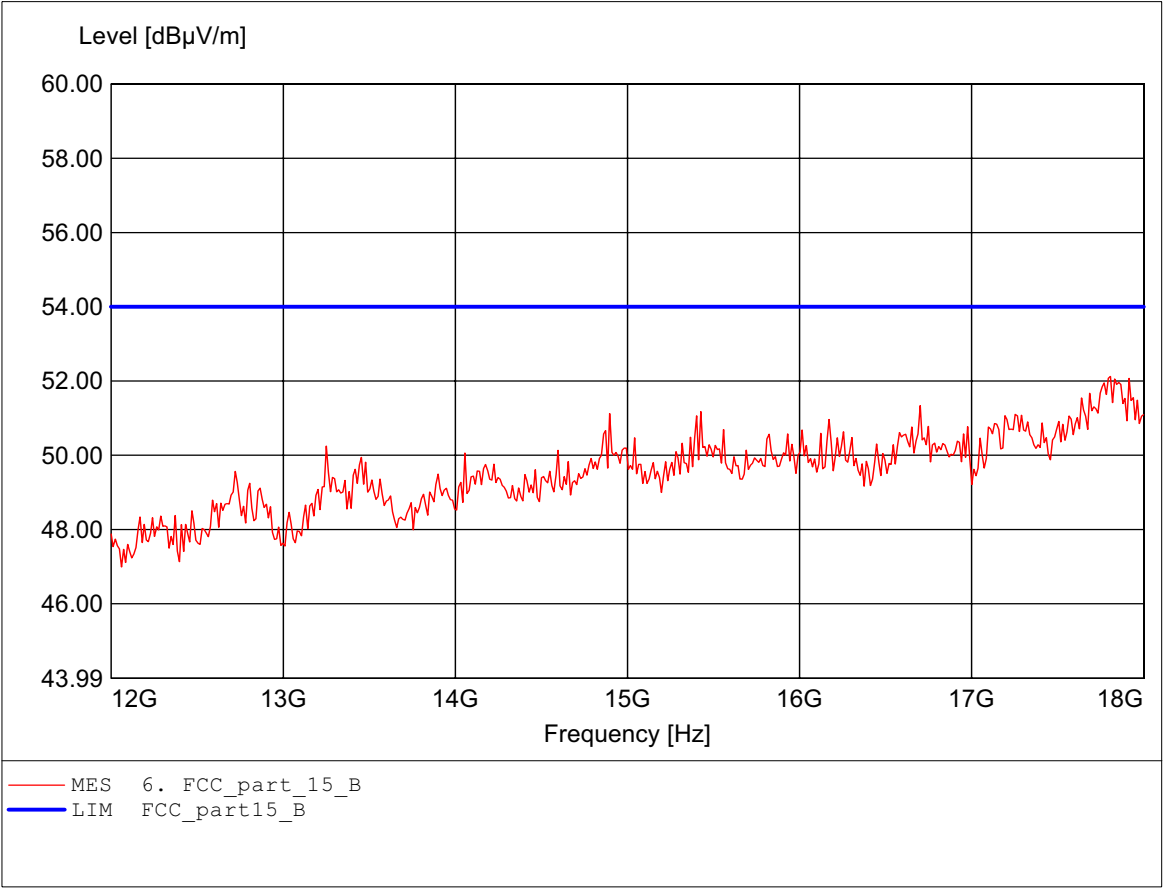
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.868GHz Emax:52.55dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

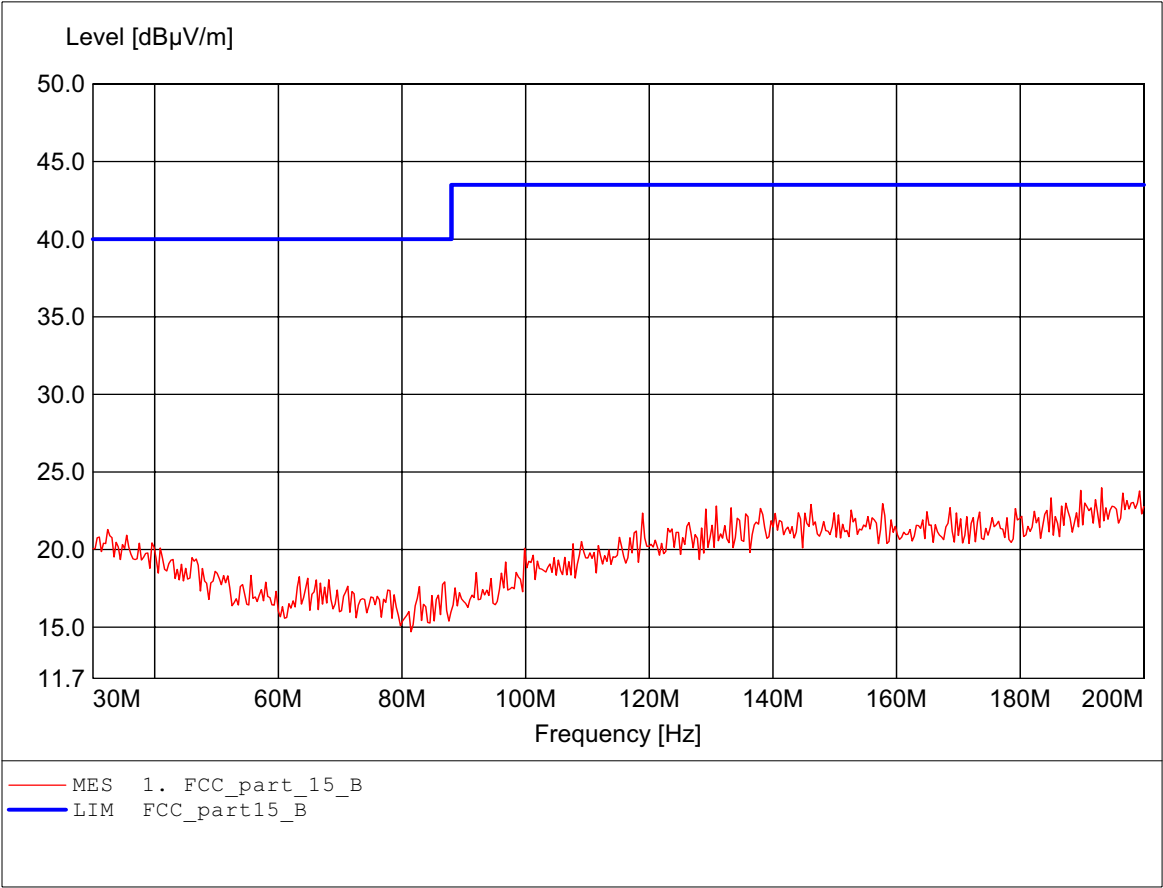
Order Number: W6M20609-7420 (middle channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.808GHz Emax:52.12dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

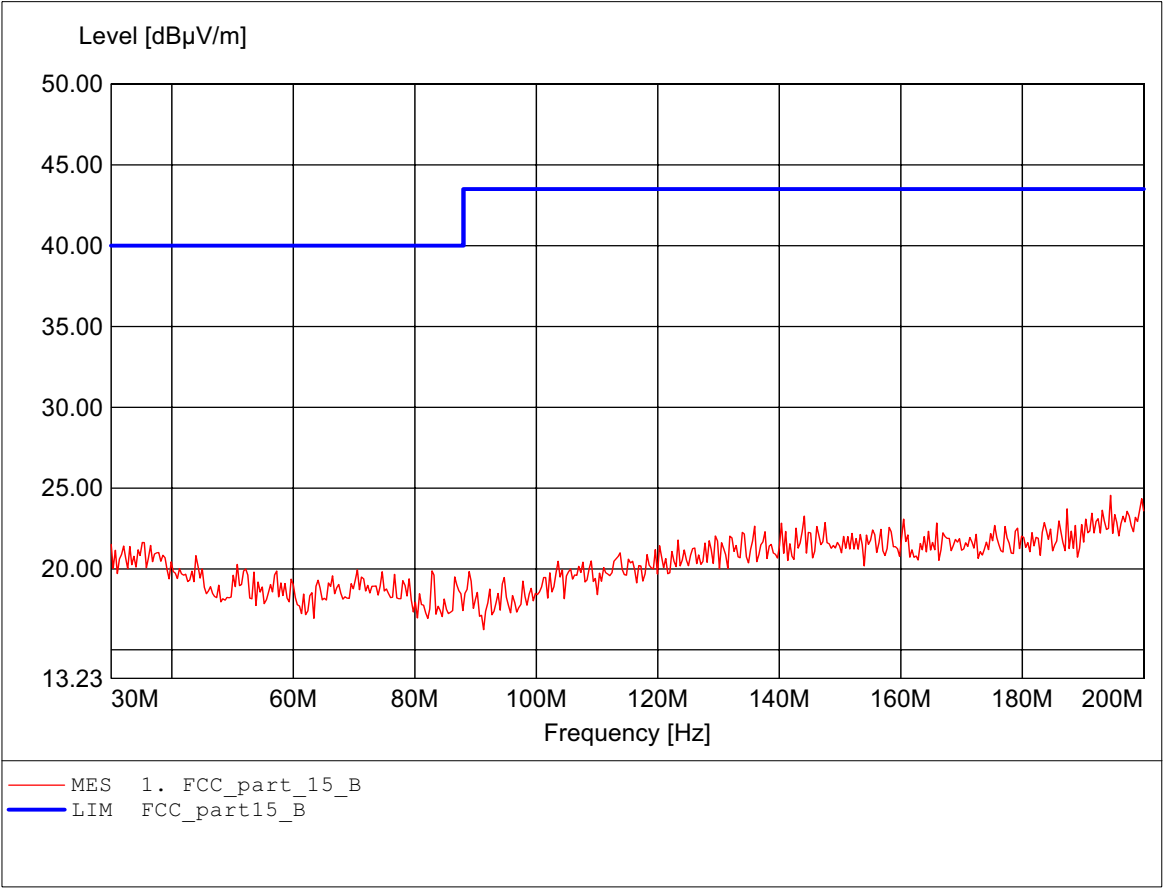
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:193.186MHz Emax:23.99dBuV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

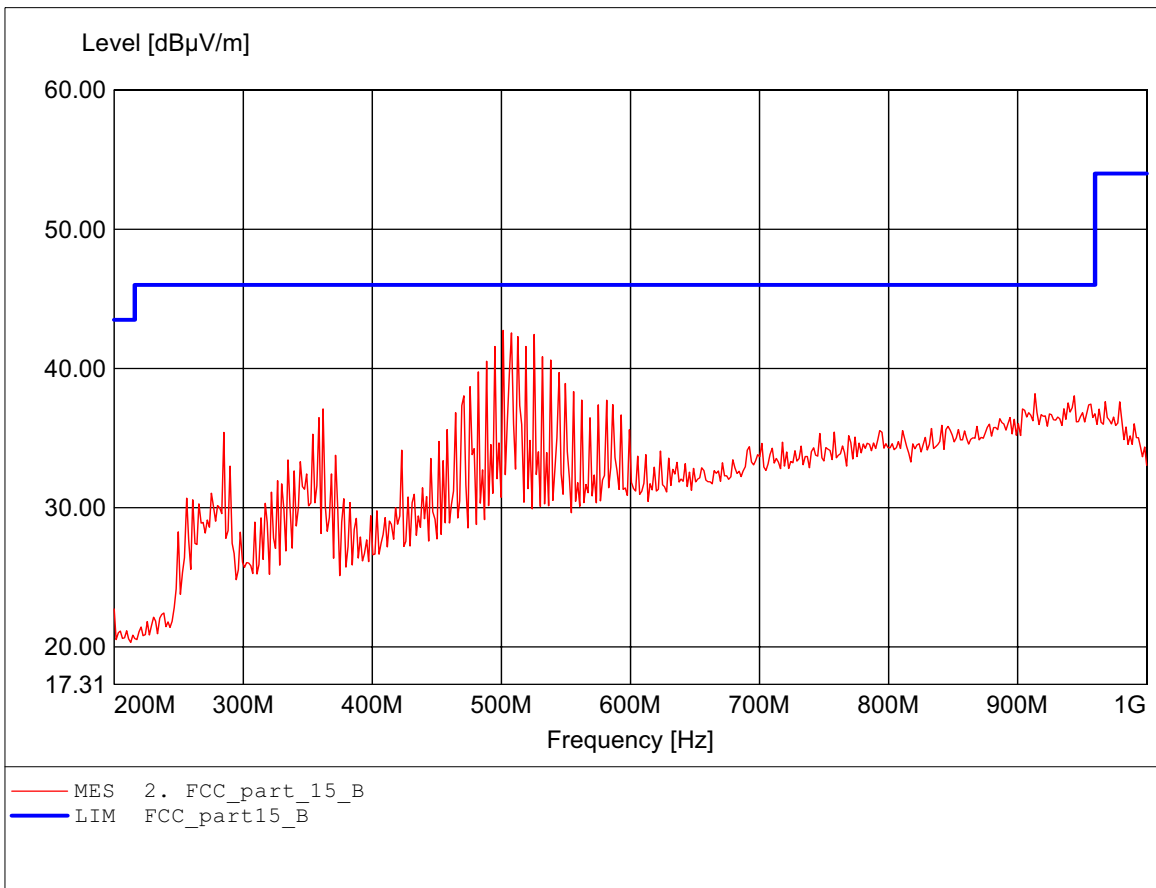
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:194.549MHz Emax:24.56dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

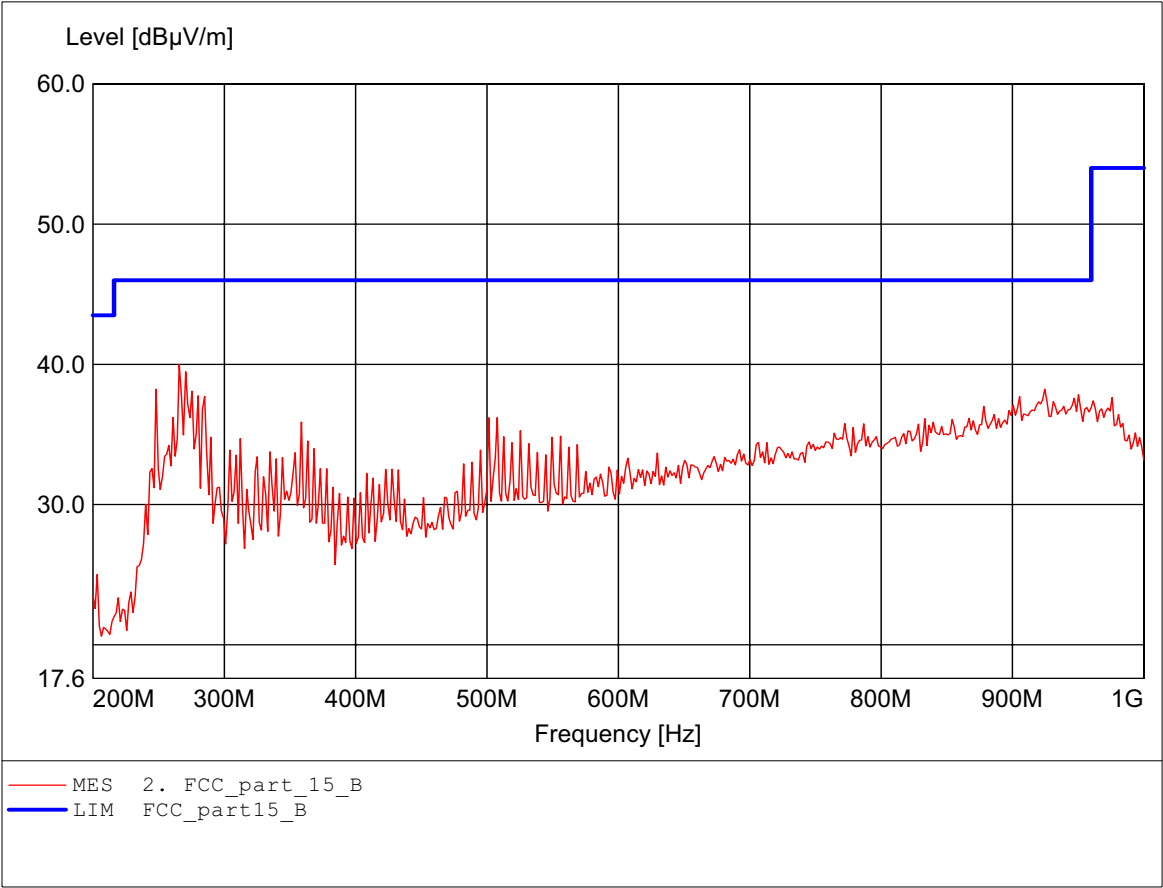
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:501.403MHz Emax:42.73dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

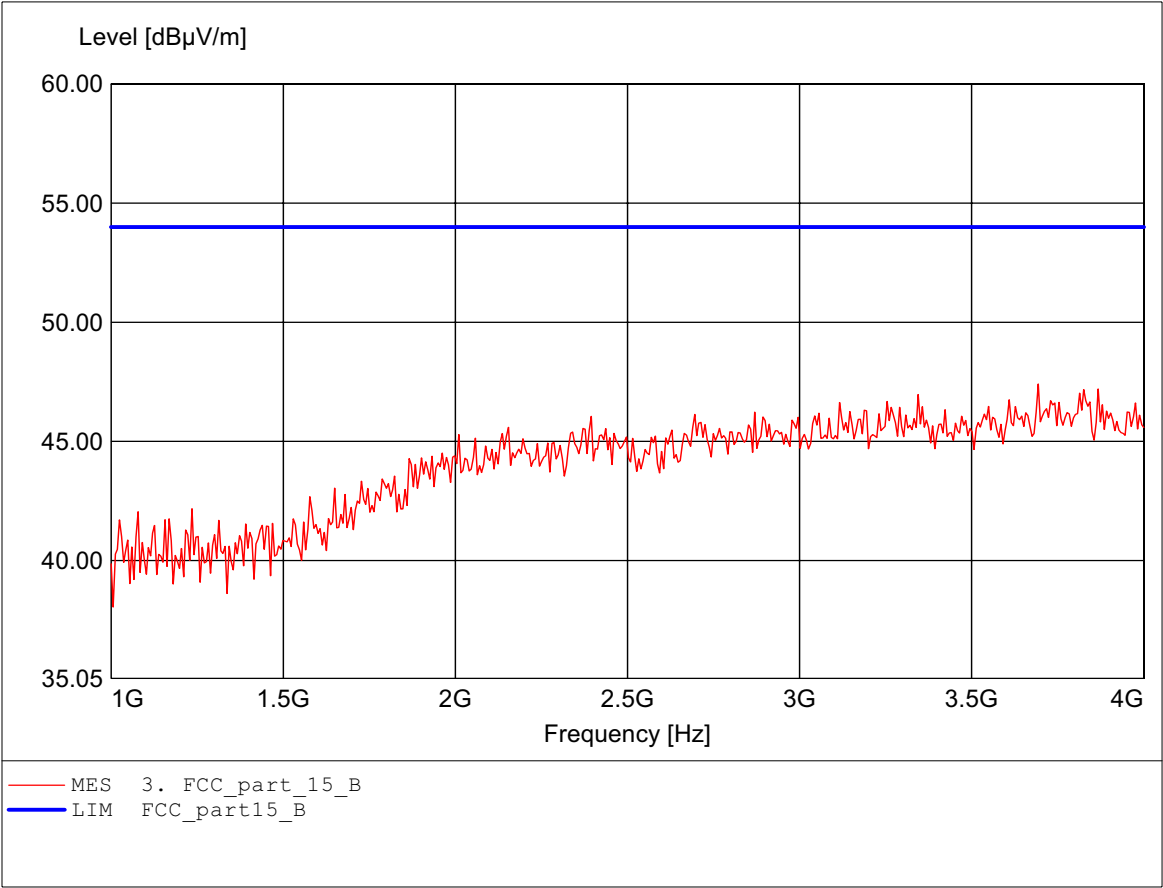
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:265.731MHz Emax:39.99dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

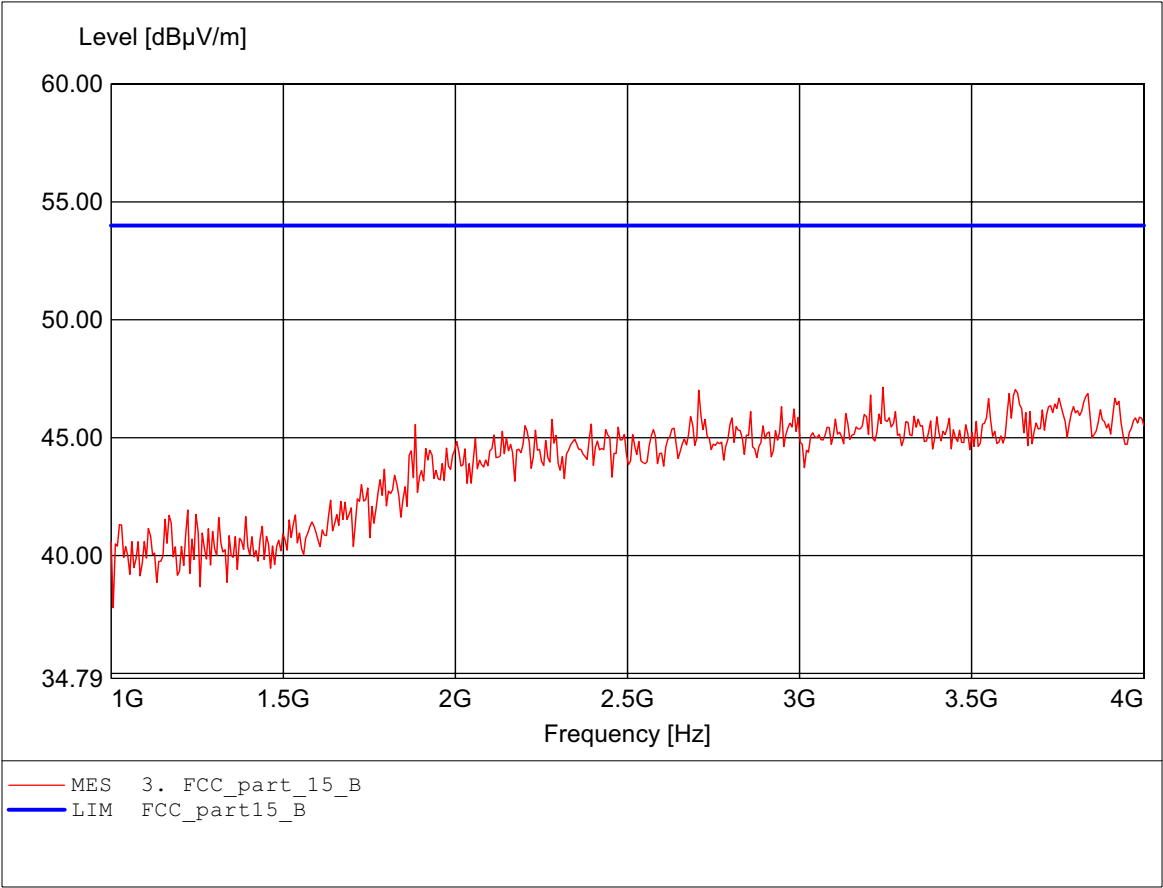
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.693GHz Emax:47.41dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

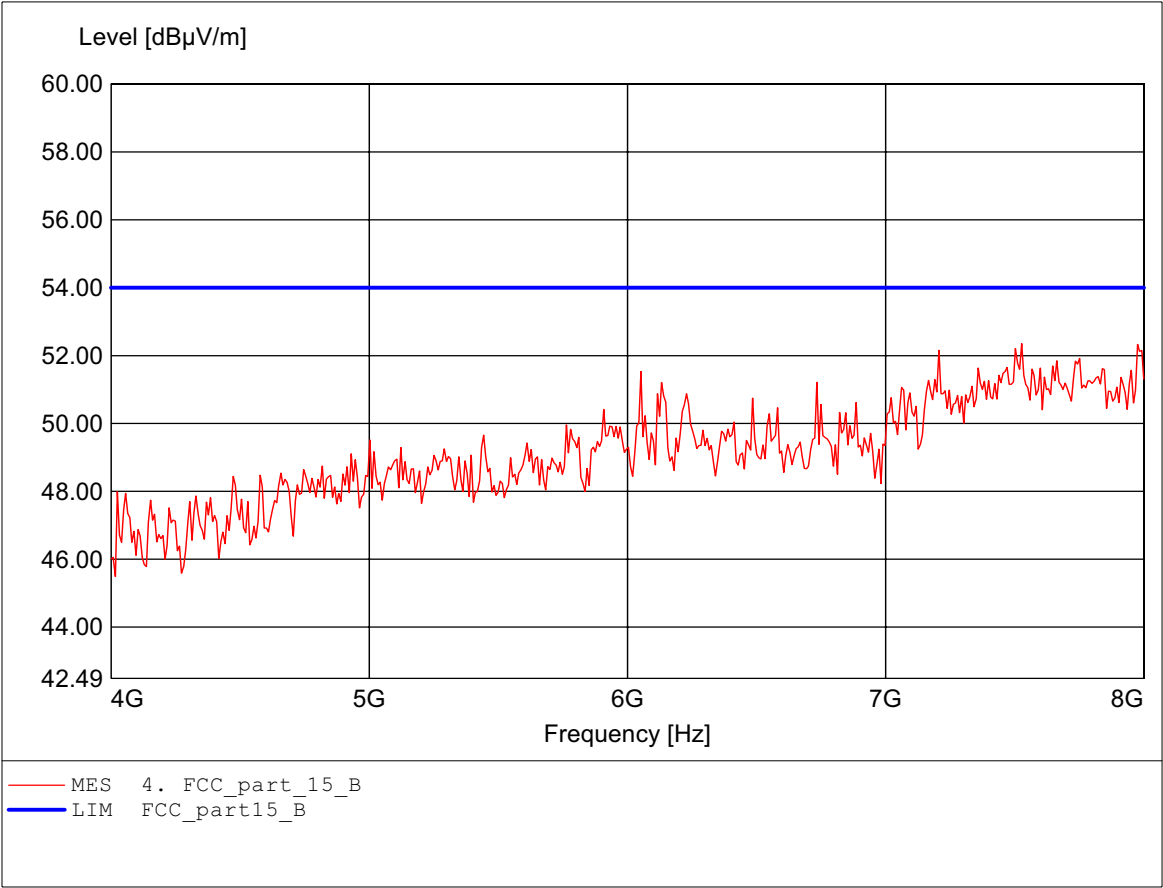
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.242GHz Emax:47.13dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

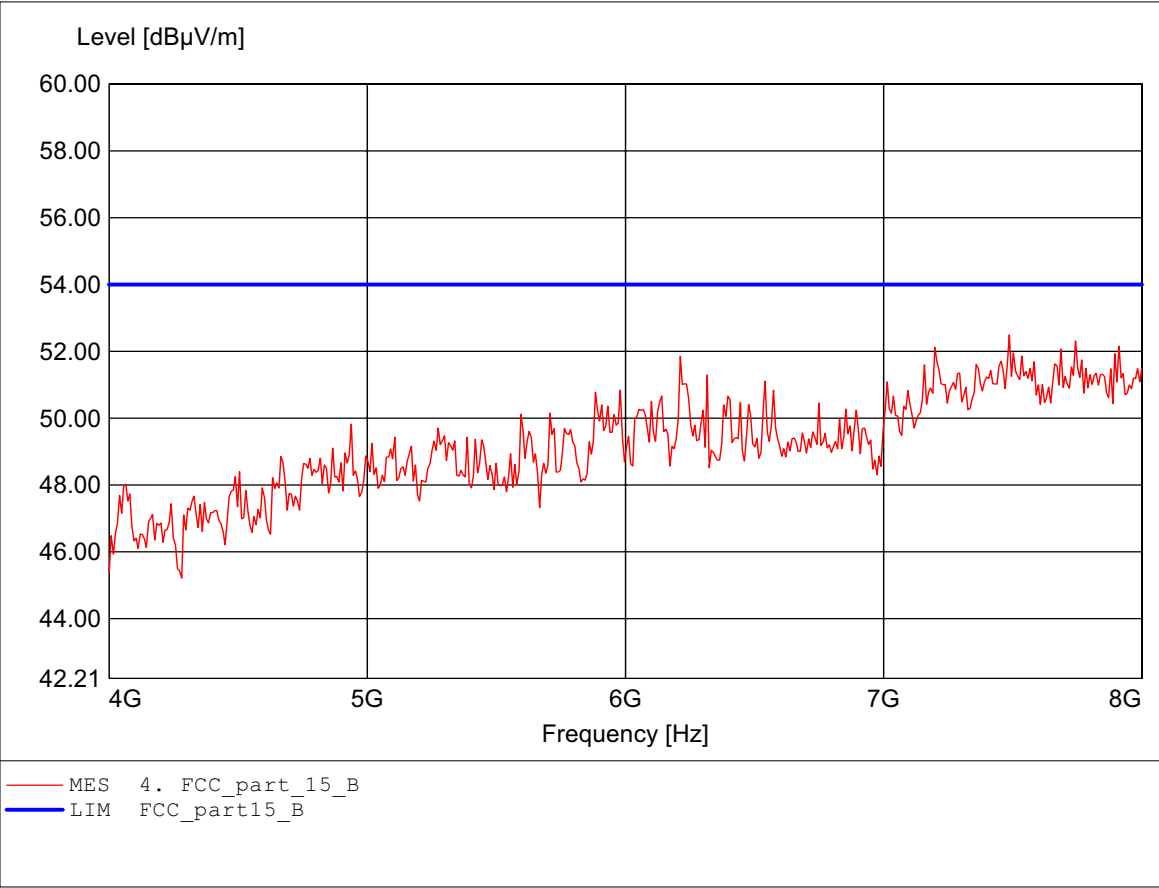
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.527GHz Emax:52.35dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

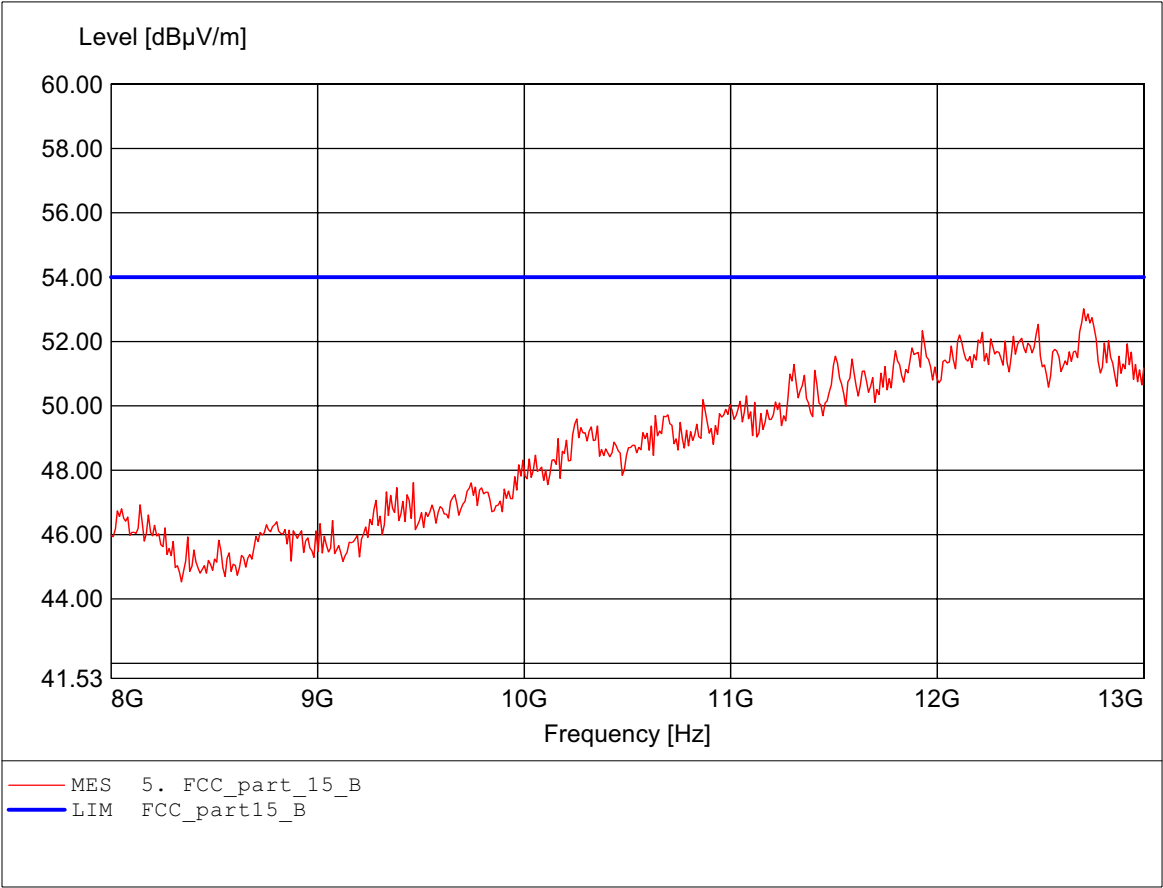
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.487GHz Emax:52.49dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

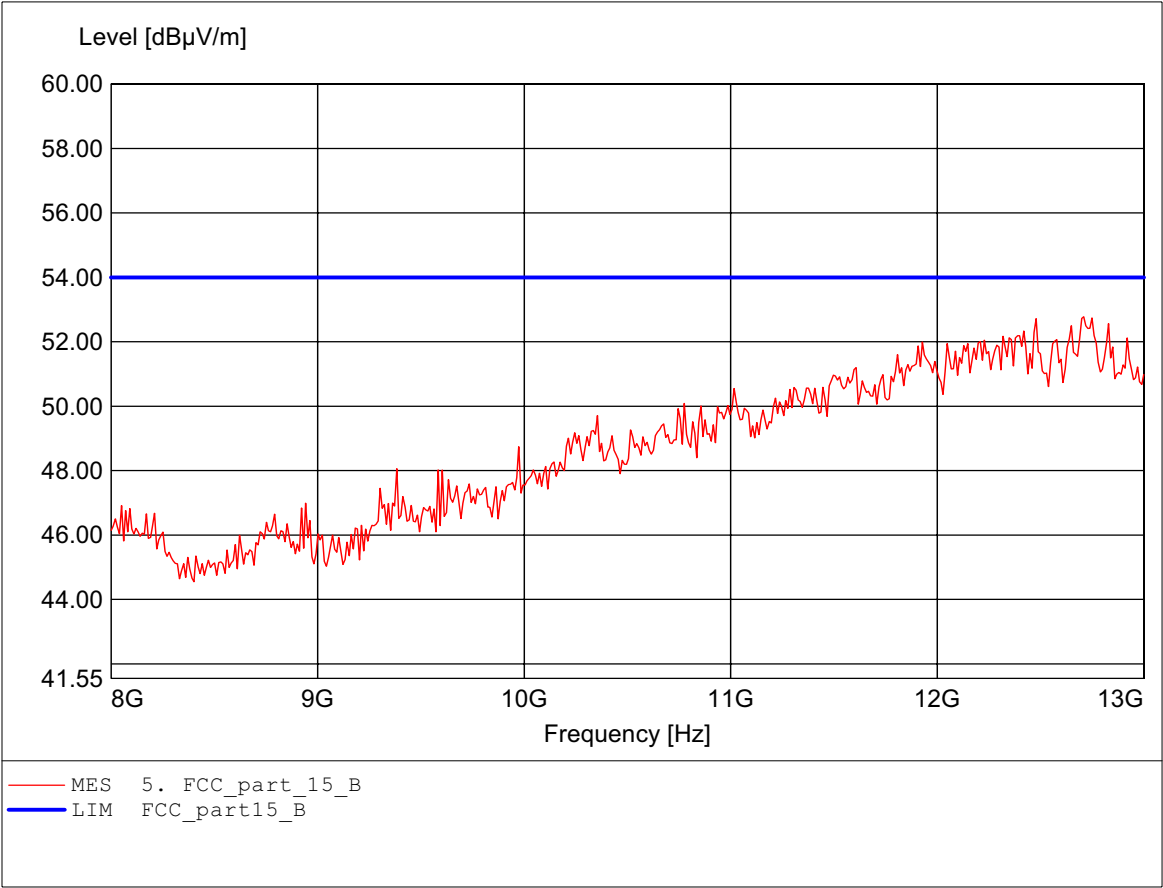
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:12.709GHz Emax:53.02dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

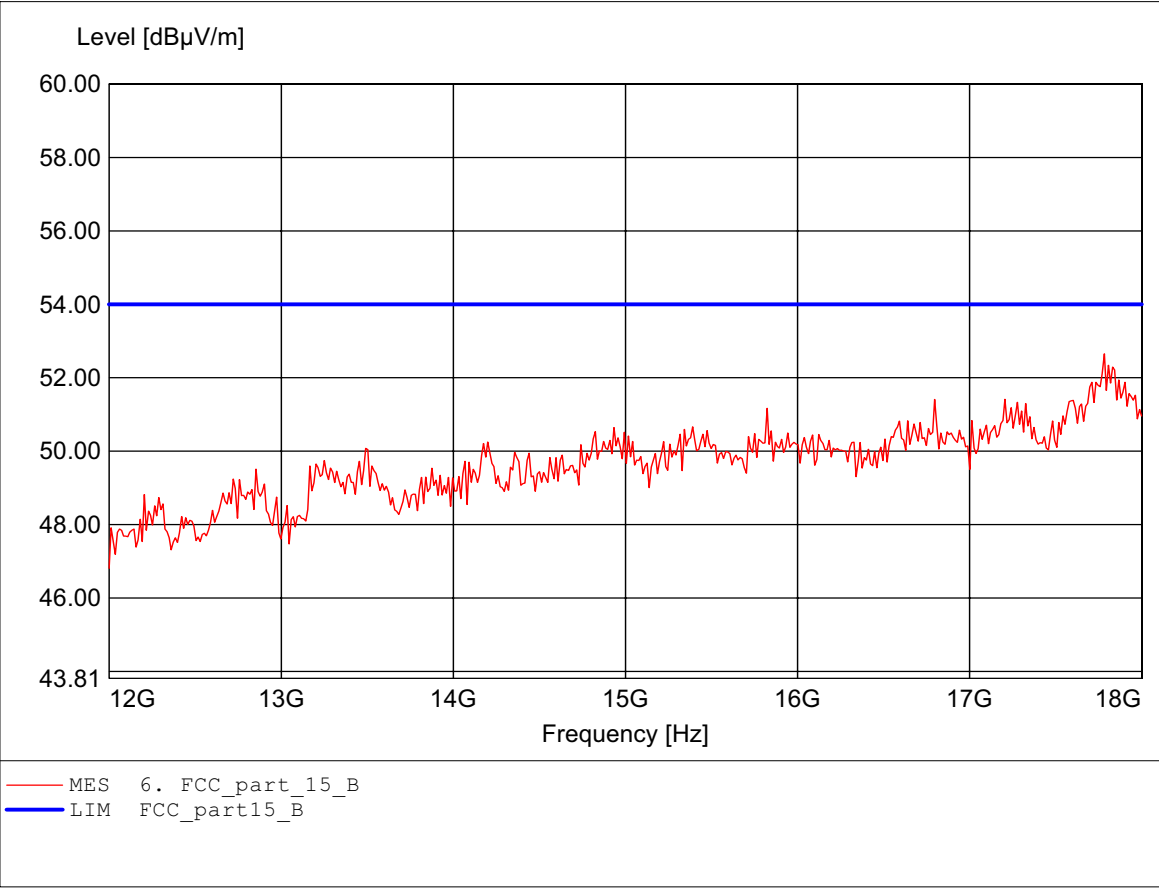
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:12.709GHz Emax:52.78dBµV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

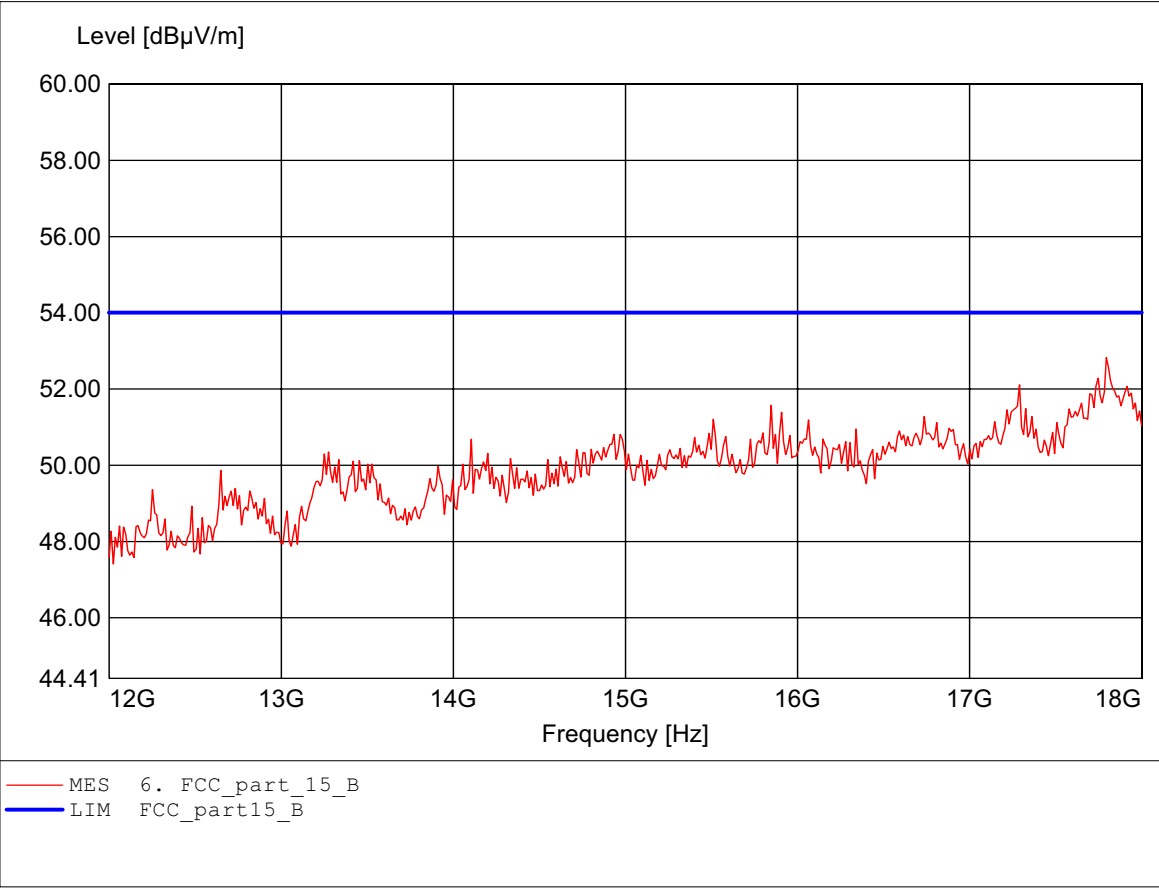
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.784GHz Emax:52.65dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

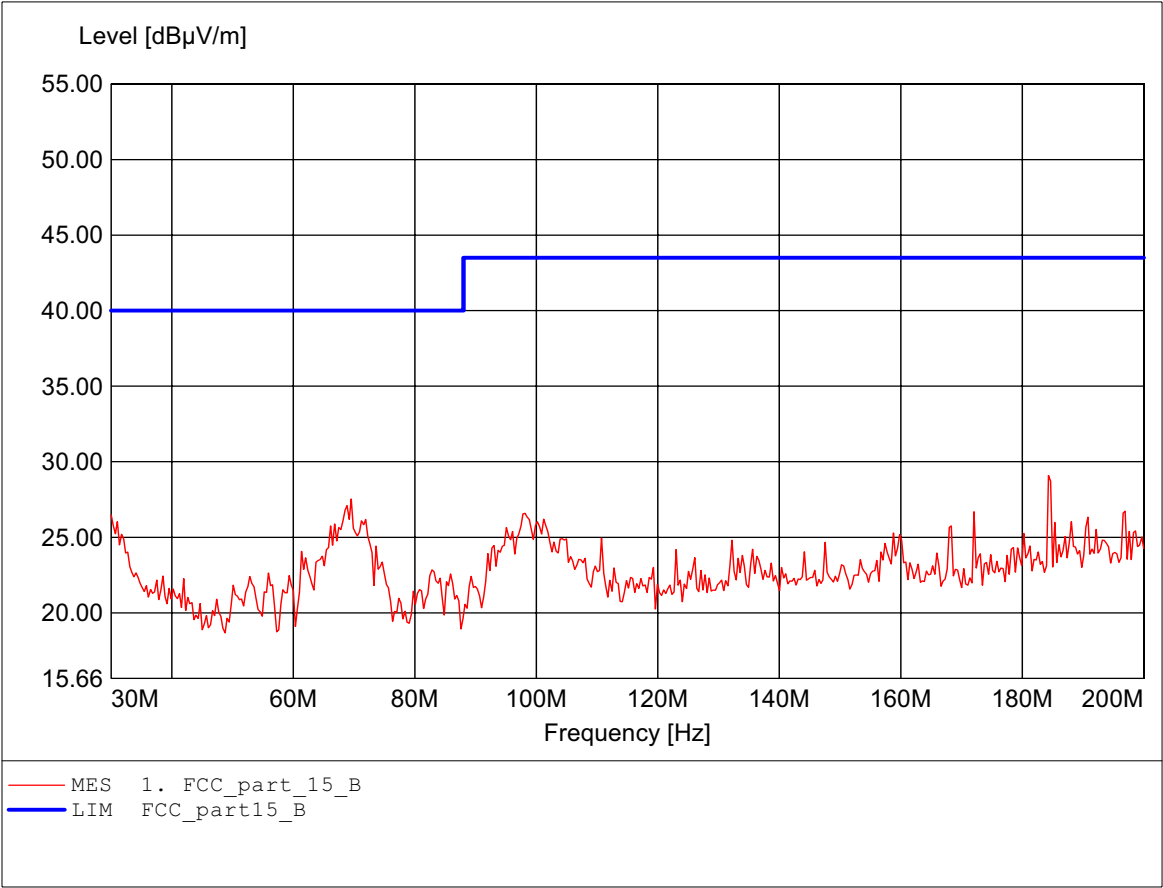
Order Number: W6M20609-7420 (high channel Rx to Rx)
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.796GHz Emax:52.82dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

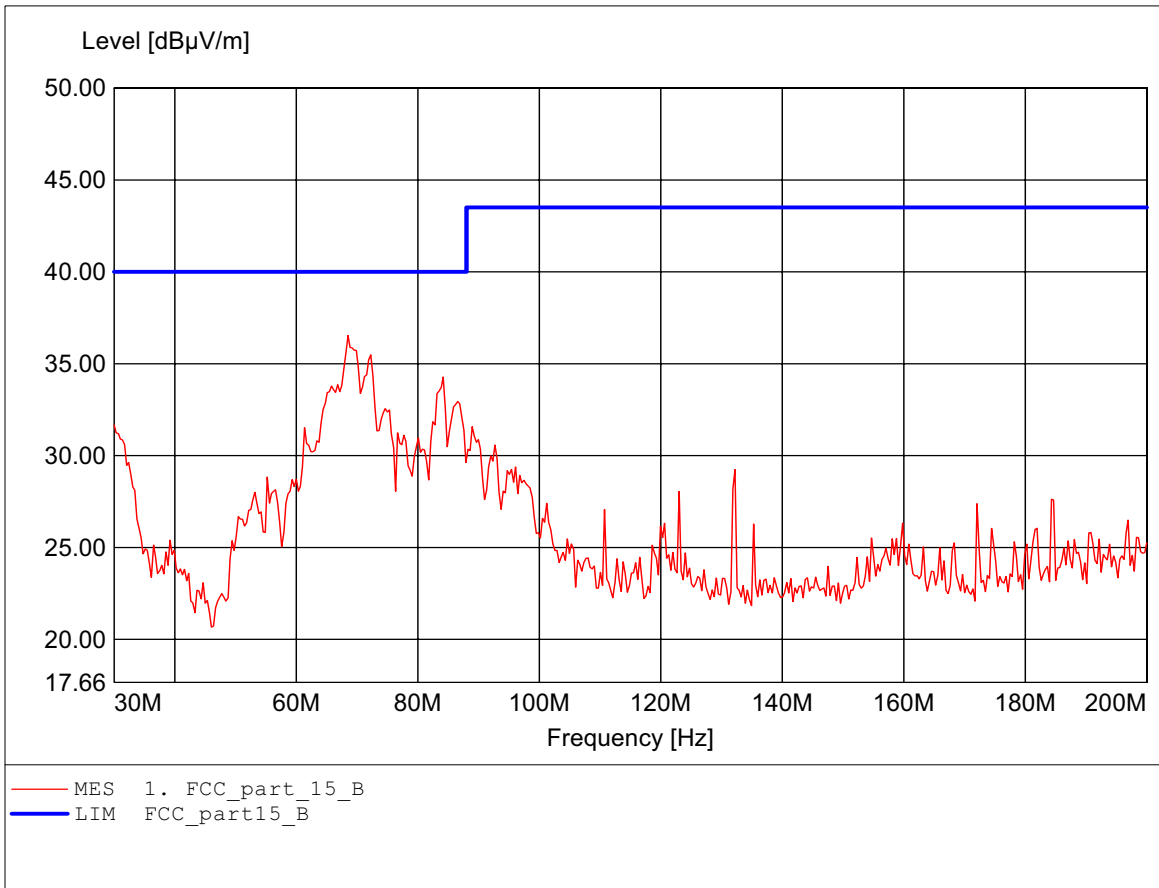
Order Number: W6M20609-7420
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:184.329MHz Emax:29.09dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

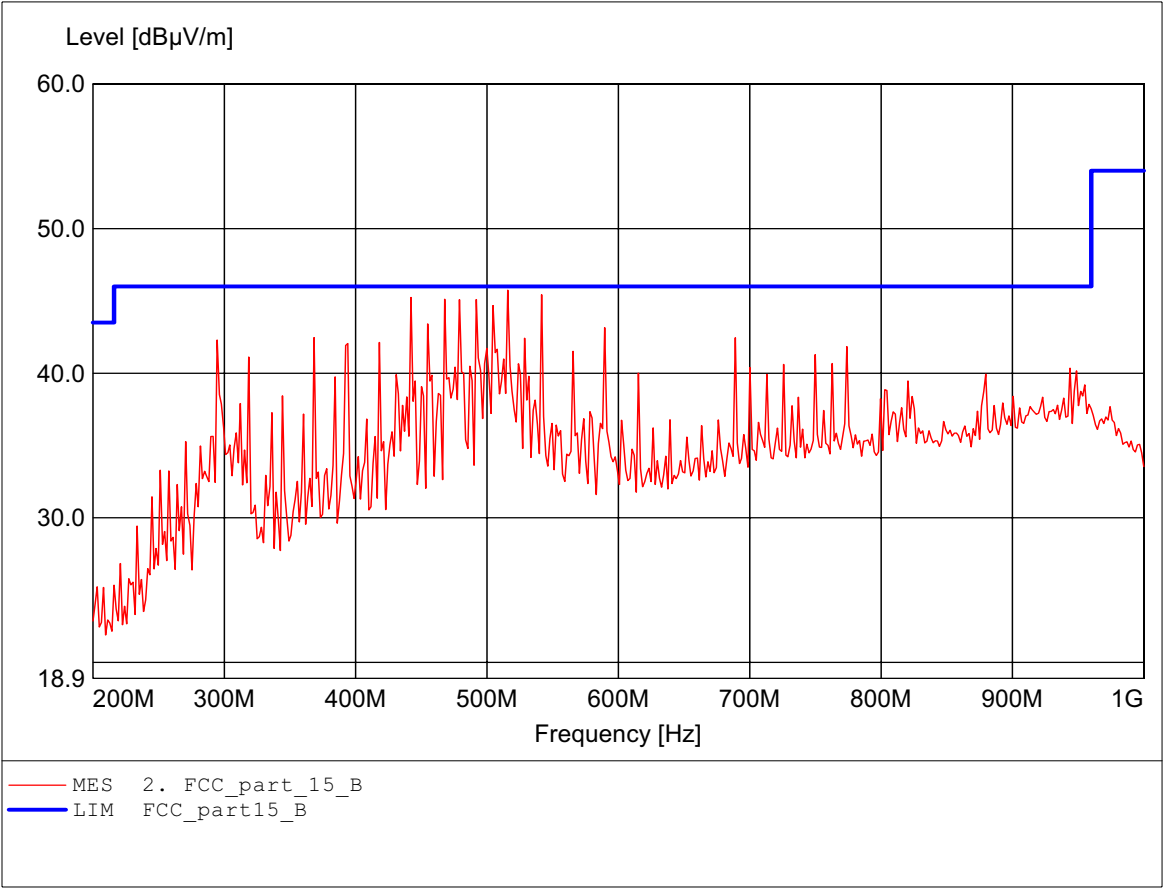
Order Number: W6M20609-7420
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 68.497MHz Emax: 36.54dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

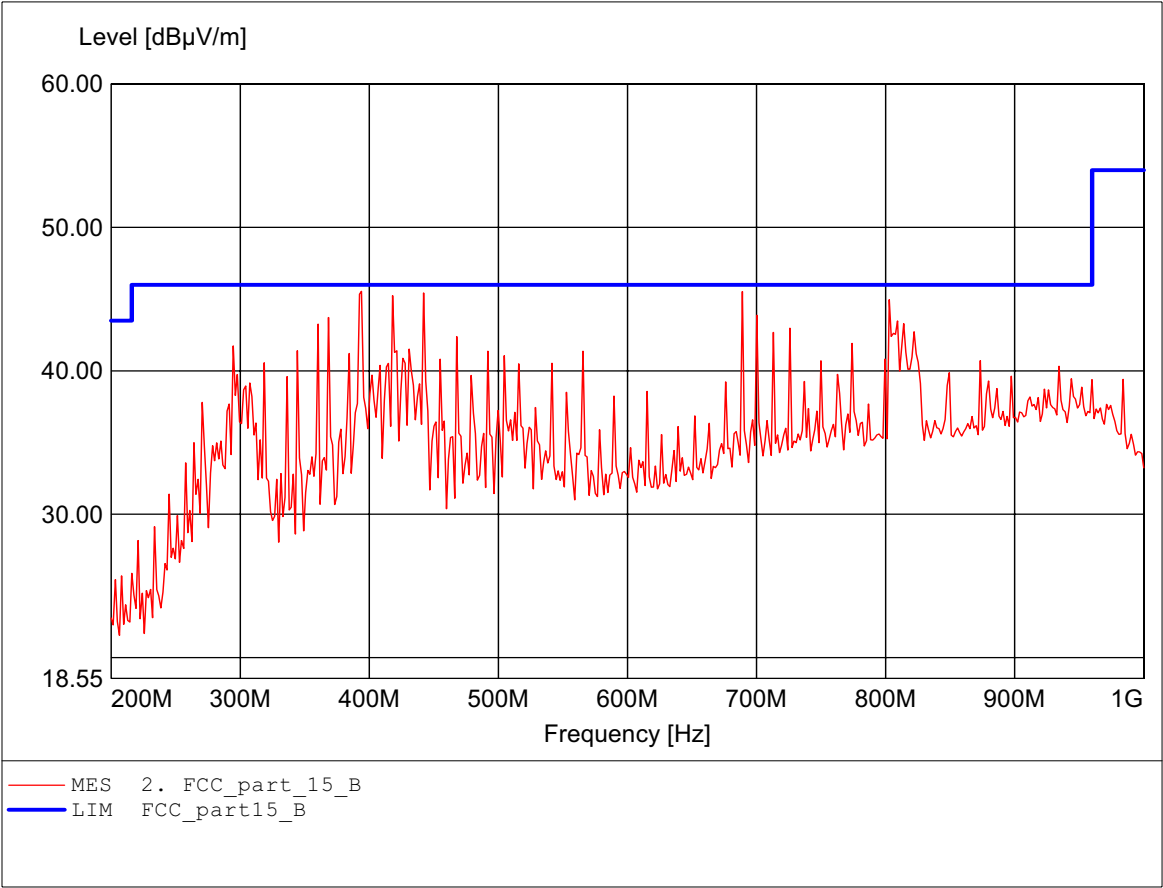
Order Number: W6M20609-7420
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:515.832MHz Emax:45.74dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

Order Number: W6M20609-7420
Test Site / Operator: ETS / Charles
Temperature: Temp.: 23.9°C
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:393.988MHz Emax:45.55dBµV/m RBW: 100 kHz



Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

Appendix I

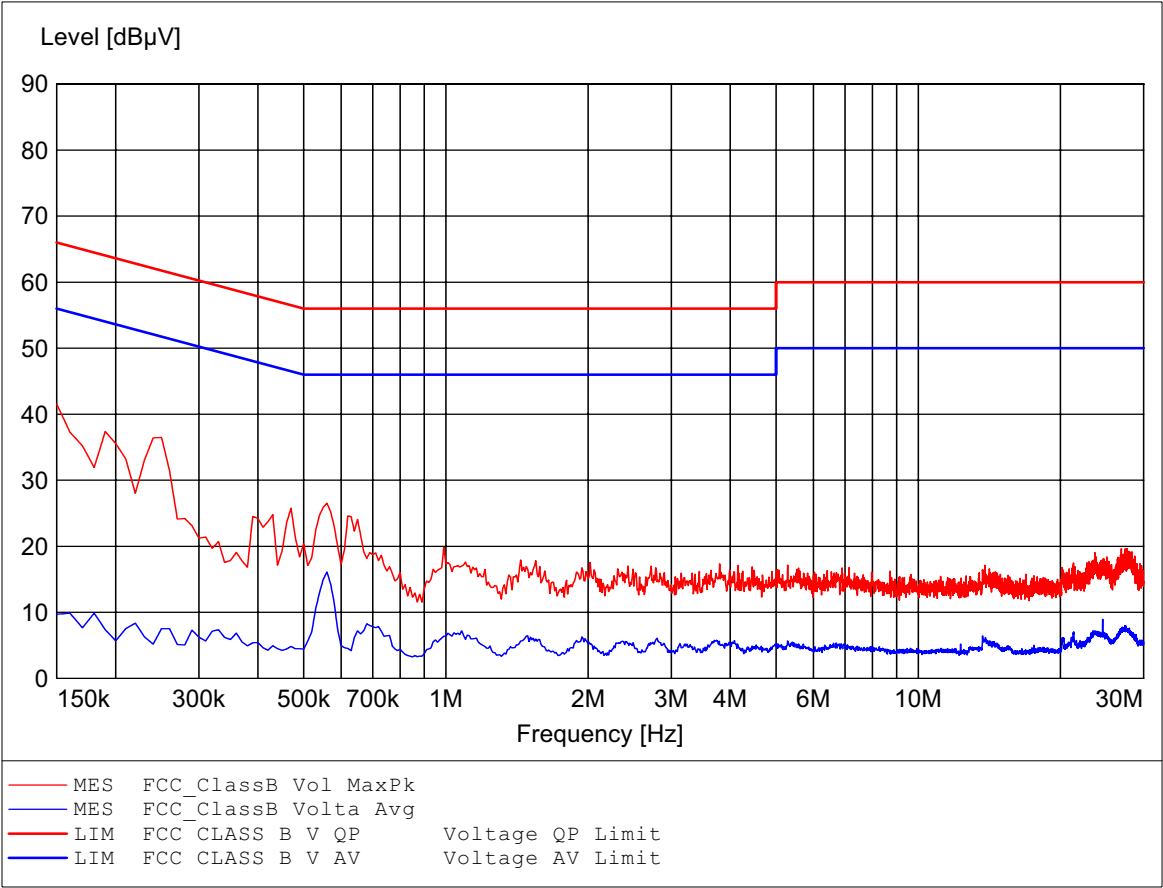
Power Line Conducted Emission

The measurement diagrams plots attached below are preliminary wideband scan with a quasi peak and average detector for reference only. The final test results are listed on section 3.13

EMI voltage test in the ac-mains according to FCC PART 15

CLASS B

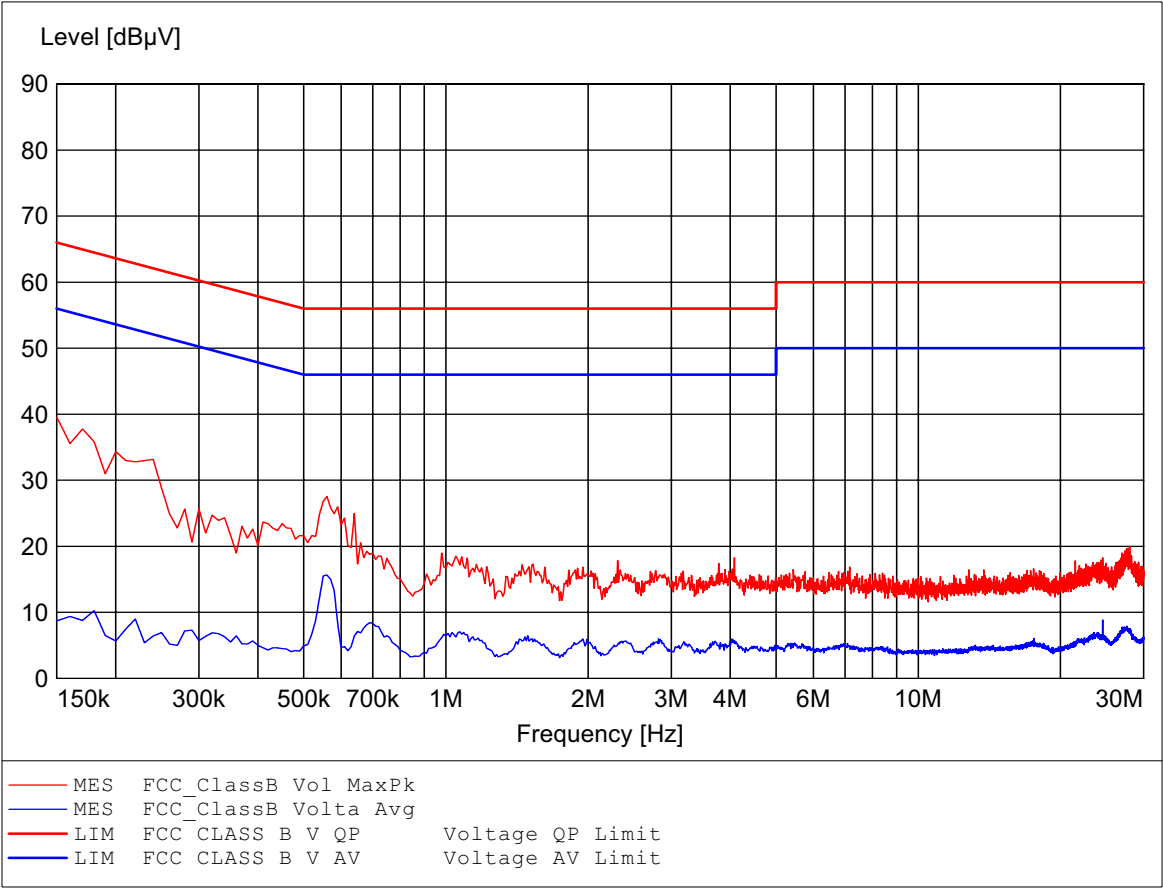
Order Number: W6M20609-7420 Rx
Operating Condition: Tnom: 23.9°C
Test Site: ETS
Operator: Jason
Test Specification: V-network: ESH3-Z5 N



EMI voltage test in the ac-mains according to FCC PART 15

CLASS B

Order Number: W6M20609-7420 Rx
Operating Condition: Tnom: 23.9°C
Test Site: ETS
Operator: Jason
Test Specification: V-network: ESH3-Z5 L1



Registration number: W6M20609-7420-P-15-S
FCC ID : R48WSP510RX

Appendix J

Pictures