



ETS Dr.GenZ Taiwan PS Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679

Accredited Testing Laboratory



A2LA Cert.No.: 2300.01

PTCRB Accredited Type Certification Test House

FCC

TEST - REPORT

FCC Part 15 C for IEEE 802.11 b device

FCC ID: S83-AWK-1100A

Test report no.: W6M20606-7070-C-1

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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 is 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.

Specific Conditions:

Usage of the hereunder tested device in combination with other integrated or external antennas requires at least additional output power measurements, spurious emission measurements, conducted emission measurements (AC supply lines) and radio frequency exposure evaluations for each individual configuration performed, for certification by FCC.

The test sample is able to work according IEEE 802.11 b.

This report is related to FCC Part 15 C (DSSS device).

Tester:

July 17, 2006

Jay Chaing

Date

ETS-Lab.

Name

Signature

Technical responsibility for area of testing:

July 17, 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.Genx 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

PTCRB Accredited Type Certification Test House

1.3 Details of approval holder

Name	: Moxa Networking Co.,Ltd.
Street	: F1.8,No.6,Alley 6,Lane235, Pao-Chiao Rd. Shing Tien City,
Town	: Taipei
Country	: Taiwan, R.O.C.
Telephone	: +886-2-2910-1230
Fax	: +886-2-2910-1231

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1.4 Application details

Date of receipt of application : June 21, 2006
 Date of receipt of test item : June 22, 2006
 Date of test : from June 23, 2006 to July 17, 2006

1.5 General information of Test item

Type of test item : Industrial IEEE 802.11g Wireless AP/Bridge/AP Client
 Model Number : AWK-1100-US
 Brand Name : MOXA

Hardware : 1.0
 Software : 1.0.0.1
 Serial number : ./.
 Photos : see Annex

Technical data

Frequency band : 2.4 GHz – 2.4835 GHz
 Frequency (ch A) : 2.412 GHz
 Frequency (ch B) : 2.437 GHz
 Frequency (ch C) : 2.462 GHz
 Number of Channels : 11
 Operation modes : duplex
 Modulation Type : DSSS / OFDM

Fixed point-to-point operation: ☐ Yes / ☒ No
 Type of Antenna : Swivel Type, 1/4λ Dipole Antenna RP-SMA (M) (Black)
 Antenna gain of Antenna : 2 dBi
 Power supply Input : 120 VAC(ac/dc adaptor)
 Output : 12 VDC
 Emission designator : 14M6G1D

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Host device: none

Classification :

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

Transmitter

Unom

Power (ch A) : Conducted: 15.72 dBm
Power (ch B) : Conducted: 14.58 dBm
Power (ch C) : Conducted: 13.53 dBm

Manufacturer:

(if different from applicant)

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

Additional information: The sample is using WLAN technology according IEEE 802.11 b/g. For this report the function according IEEE 802.11b is considered only. The scheme for frequency generation, spectrum spreading, receiver parameters, synchronization procedure, and other parameters are determined by the mentioned standard above.

1.6 Test standards

Technical standard : FCC RULES PART 15 SUBPART B / SUBPART C § 15.247 : September 2005

2 Technical test

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

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

Temperature	:	23 °C
Relative humidity content	:	20 ... 75 %
Air pressure	:	86 ... 103 kPa
Power supply	Adaptor	Input : 120 VAC(ac/dc adaptor)
		Output : 12 VDC
Extreme conditions parameters	:	--

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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	2005/10/27	2006/10/26
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2005/10/25	2006/10/24
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2005/10/21	2006/10/20
ETSTW-CE 006	IMPULS-BEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2004/11/11	2006/11/10
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	2005/8/18	2006/8/17
ETSTW-CE 011	Power Line Conducted Emission Only	None	None	ETS	2005/10/25	2006/10/24
ETSTW-CE 012	Dual-Phase-V-Network	NNB-2/16Z	03/10201	Telemeter	2006/6/13	2007/6/12
ETSTW-CS 001	SIGNAL GENERATOR	SMX	849254/003	R&S	2005/10/14	2006/10/13
ETSTW-CS 002	COUPLING AND DECOUPLING NETWORK	CDN S751	19263	SCHAFFNER	2005/10/14	2006/10/13
ETSTW-CS 003	COUPLING AND DECOUPLING NETWORK	CDN T400	19820	SCHAFFNER	2005/10/14	2006/10/13
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	SCHAFFNER	2005/10/27	2006/10/26
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	2005/10/14	2006/10/13
ETSTW-CS 008	6 dB Attenuator	HFP-5100-3/06 N M/F	2010876106		In House Certificate	
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	2005/10/24	2006/10/23
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2005/10/29	2006/10/30
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2005/10/16	2006/10/15
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	2005/10/14	2006/10/13
ETSTW-RE 022	AMPLIFIER	8447D	2944A09837	Agilent	2005/10/14	2006/10/13
ETSTW-RE 027	Passive Loop Antenna	6512	34563	EMCO	2004/6/30	2007/6/29
ETSTW-RE 028	Log-Periodic Dipole Array 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	2005/10/17	2006/10/16
ETSTW-RE 033	4CH 1GHz 5GS/s DSO	WAVERUNNER 6100A	LCRY0604P14508	LeCory	2005/8/11	2006/8/10

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ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2005/10/17	2006/10/16
ETSTW-RE 037	Log-Periodic DipoleArray Antenna	3148	00034546	EMCO	2004/11/18	2006/11/17
ETSTW-RE 038	Log-Periodic DipoleArray Antenna	3148	00034547	EMCO	2004/11/18	2006/11/17
ETSTW-RE 039	Biconical Antenna	3110B	41760	EMCO	2004/11/18	2006/11/17
ETSTW-RE 040	Biconical Antenna	3110B	41761	EMCO	2004/11/18	2006/11/17
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
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	2005/9/6	2006/9/5
ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	93	EMC-PARTNER	2005/9/12	2006/9/11
ETSTW-EMS 001	Clamp BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	2004/11/2	2006/11/1
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014		Function Test	
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	2005/10/27	2006/10/26
ETSTW-EMS 004	ESD generator minizap	ESD2000	016	EMC-PARTNER	2005/10/27	2006/10/26
ETSTW-EMS 005	Attenautor (50Ω)	VERI50	051	EMC-PARTNER	2004/8/31	2006/8/30
ETSTW-EMS 006	Attenautor (1 KΩ)	VERI1K	019	EMC-PARTNER	2004/10/21	2006/10/20
ETSTW-EMS 007	20GΩ Divider	ESD-VERI-V	021	EMC-PARTNER	2006/6/13	2008/6/12
ETSTW-EMS 008	Safety Test Solutions	ELT-400	E-0039	Narda	2005/5/4	2007/5/3
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	2004/12/3	2007/12/2
ETSTW-EMS 010	Coupling De-coupling Network	CDN-UTP8	014	EMC-PARTNER	2005/9/1	2008/8/31
ETSTW-EMS 011	Calibration Fixture	F-2031-CF-23MM	451	FCC	2005/8/11	2007/8/11
ETSTW-EMS 012	EM Injection Clamp	F-2031-23MM	476	FCC	2005/8/11	2007/8/10
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR		
ETSTW-RS 004	RF Power Amplifier	150W1000	307009	AR	2005/10/21	2006/10/20
ETSTW-RS 005	Electric Field Probe Type 8.3	EMR-20	BN 2244/20	Narda	2005/9/7	2007/9/6
ETSTW-RS 006	SIGNAL GENERATOR	SML03	101551	R&S	2005/10/21	2006/10/20
ETSTW-GSM 01	SIM Simulator	IT3	B2004-50106	ORGA	2005/9/15	2006/9/14
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	2006/7/13	2008/7/12
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	2006/7/16	2008/7/15
ETSTW-GSM 07	Agilent 8960 Test Set 5	E5515C	GB44052658	Agilent	2006/7/13	2008/7/12
ETSTW-GSM 08	Agilent 8960 Test Set 6	E5515C	GB44052666	Agilent	2006/7/16	2008/7/15



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ETSTW-GSM 10	Combiner Wessex / Anite	B4605/100	053	Wessex / Anite	2006/7/13	2008/7/12
ETSTW-GSM 11	GSM 850,900,1800,1900 Test system	TS8950G		R&S	2005/11/1	2006/10/31
ETSTW-GSM 12	Acoustical Calibrator	4231	2463874	Brüel&Kjær	2005/10/31	2006/10/30
ETSTW-GSM 13	Conditioning Amplifier	2690-0S2	2437856	Brüel&Kjær		
ETSTW-GSM 14	Telephone Test Head	4602B	2465324	Brüel&Kjær		
ETSTW-GSM 15	Mouth Simulator	4227	2462516	Brüel&Kjær		
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	2005/10/29	2006/10/28
ETSTW-GSM 24	Vibration Testing System	VS-100V	5494	Vibration	2005/12/20	2006/12/19

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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 at 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 Swivel Type, $1/4 \lambda$ Dipole Antenna RP-SMA (M) (Black). (see photos)

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3 Test results (enclosure)

TEST CASE	Para. Number	Required	Test passed	Test failed
Peak Output Power	15.247(b)(3)	☒	☒	☐
Equivalent radiated Power	15.247(b)(3)	☒	☒	☐
Spurious Emissions radiated – Transmitter operating	15.247(c)	☒	☒	☐
Band Edge Measurement	15.247(c)	☒	☒	☐
Minimum 6 dB Bandwidth	15.247(a)(2)	☒	☒	☐
Peak Power Spectral Density	15.247(d)	☒	☒	☐
Radiated Emission from Digital Part And Receiver L.O.	15.109	☒	☒	☐
Power Line Conducted Emission	15.207	☒	☒	☐

The follows is intended to leave blank.

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3.1 Peak Output Power (transmitter)

FCC Rule: 15.247(b)(3)

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 condition		Conducted Power		
		Channel A	Channel B	Channel C
		[dBm]	[dBm]	[dBm]
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120 \text{ V}$	15.72	14.58	13.53
Measurement uncertainty		< 3 dB		

Test condition $T_{nom} = 23^{\circ}\text{C}$, $V_{nom} = 120 \text{ V}$	Signal Field strength TX highest power mode dB $\mu\text{V/m}$
Frequency [MHz]	
2437	108.28
Measurement uncertainty	< 3 dB

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

Limits:

Frequency MHz	Power dBm
902 - 928	30
2400 – 2483.5	30
5725 – 5850	30

In case of employing transmitter antennas having antenna gain $> 6 \text{ dBi}$ and using fixed point-to-point operation consider §15.247 (b)(4)

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

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3.2 Equivalent isotropic radiated power

FCC Rule: 15.247(b)(3)

EIRP = max. conducted output power + antenna gain

EIRP = 15.72 dBm + 2 dBi

= 17.72 dBm

Limit: EIRP = +36 dBm for Antenna gain <6dBi

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.

3.3 RF Exposure Compliance Requirements

The test sample is a WLAN access point intended for fixed installation.

FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.

The prediction for power density in the far-field but will over-predict power density in the near field, where it could be used for walking a “worst case” or conservative prediction.

$$S = \frac{PG}{4\pi R^2}$$

S – Power Density

P – Output power ERP

R – Distance

D – Cable Loss

AG – Antenna Gain G = AG-D

Item	Unit	Value	Remarks
P	mW	37.32502	Peak value
D	dB		
AG	dBi	1.6	
G		2	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.01485	Calculated value

Limits:

Limit for General Population / Uncontrolled Exposure	
Frequency (MHz)	Power Density (mW/cm ²)
1500 – 100.000	1,0

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3.4 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 1000 MHz.

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

Frequency $\leq$ 1 GHz, RBW:100 kHz, VBW: 100 kHz (Peak measurements)

Frequency $>$ 1 GHz, RBW: 1 MHz, VBW: 1 MHz (Peak measurements)

Frequency $>$ 1 GHz , RBW:1 MHz , VBW: 100Hz (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	500	54.0

For frequencies above 1GHz (Average measurements).

Guidance on Measurement of DSSS Systems:

“If the emission is pulsed, modify the unit for continuous operation, use the setting shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.”

The correction factor, based on the total channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

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

No duty cycle correction was added to the reading.

$54.0\text{dB } \mu\text{V/m} + 20 \text{ dB} = 74 \text{ dB } \mu\text{V/m}$

Remarks: see attached diagrams

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

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3.5 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))

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

 $108.28 \text{ dB } \mu\text{V/m} - 20 \text{ dB} = 88.28 \text{ dB } \mu\text{V/m}$

Guidance on Measurement of DSSS 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.”

The correction factor, based on the total channel dwell time in a 100 ms period, may be mathematically applied to a measurement made with an average detector, to further reduce the value.

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

For frequencies above 1GHz (Peak measurements).

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

 $88.28 \text{ dB } \mu\text{V/m}$

For frequencies above 1GHz (Average measurements).

Max. reading – 20dB

No duty cycle correction was added to the reading

 $108.28 \text{ dB } \mu\text{V/m} - 20 \text{ dB} = 88.28 \text{ dB } \mu\text{V/m}$

Remarks: see attached diagrams

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 017

ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 042 ETSTW-RE 043

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SAMPLE CALCULATION OF LIMIT. All results will be updated by an automatic measuring system in accordance with 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 and 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 "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)	Table Azimuth (degree)	Antenna Height (cm)
H	2389.579	40.49	2.05	PK	42.54	54	11.46	213	347
	250.01	2.2	13.72	QP	44	46	13.2	25	343
	499.8	25.92	19.80	PK	45.72	88.28	42.56	44	337
	166.613	22	15.2	PK	37.20	43.52	6.32	49	314

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
V	2390	60.23	2.05	PK	62.28	74	11.72	246	197
	2390	50.12	2.05	AV	52.17	54	1.83	246	197
	2490.973	54.4	-1.7	PK	52.7	74	21.3	257	211
	2490.973	40.6	-1.7	AV	38.9	54	15.1	257	211
	250	30.88	13.72	QP	44.6	46	1.4	164	217
	499.8	23.67	19.8	PK	43.47	88.3	44.81	42	222
	37.835	24.48	13.41	QP	37.89	40	2.11	93	215

Middle Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
H	2491.781	44.42	-1.1	PK	43.32	54	10.68	202	342
	250.02	2.2	13.72	QP	44.1	46	13.2	25	343
	499.800	26.7	19.8	PK	46.5	88.28	41.78	43	335
	166.613	23.2	15.2	PK	38.4	43.52	5.12	48	317

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Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
V	2388.778	47.45	2.05	PK	49.5	54	4.5	211	178
	2484.757	53.99	-1.09	PK	52.9	74	21.1	185	222
	2484.757	39.29	-1.09	AV	38.2	54	15.8	185	222
	4873.747	45.57	4.81	PK	50.38	54	3.62	187	231
	249.499	30.78	13.72	QP	44.5	46	1.5	110	224
	499.799	24.58	19.8	PK	44.38	88.28	43.9	41	225
	37.835	24.01	13.41	QP	37.42	40	2.58	94	219

High Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
H	2483.5	51.84	-1.09	PK	50.75	54	3.25	194	337
	250.02	2.2	13.72	QP	44.02	46	13.2	24	342
	499.799	33.03	13.8	PK	46.83	88.28	41.45	42	330
	166.613	24.7	12.5	PK	37.2	43.52	6.32	47	319

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
V	2483.5	68.3	-1.09	PK	67.21	74	6.79	184	221
	2483.5	54.31	-1.09	AV	53.22	54	0.78	184	221
	4921.906	48.91	4.35	PK	53.26	74	20.74	192	214
	4921.906	34.93	4.35	AV	39.28	54	14.72	192	214
	249.999	30.88	13.72	QP	44.6	46	1.4	111	223
	499.799	24.28	19.8	PK	44.08	88.28	44.2	42	230
	37.835	24.48	13.41	QP	37.89	40	2.11	92	214

- 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



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Freq. – Frequency Range:

1:	30	-	200 MHz
2:	200	-	1000 MHz
3:	1	-	4 GHz
4:	4	-	8 GHz
5:	8	-	12 GHz
6:	12	-	17 GHz
7:	17	-	26.5 GHz

All not in the table noted test results are more than 20 dB below the relevant limits.

All other not noted test polts 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

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 017

Registration number: W6M20606-7070-C-1

FCC ID: S83-AWK-1100A

3.6 Minimum 6 dB Bandwidth

The analyzer ResBW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK reading was taken, two markers were set 6 dB below the maximum level on the right and the left side of the emission.

The 6 dB bandwidth is the frequency difference between the two markers.

Test conditions		6 dB Bandwidth		
		Channel A	Channel B	Channel C
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120\text{ V}$	10.929 MHz	10.544 MHz	10.929MHz
Measurement uncertainty			< 10 Hz	

Limits:

Frequency Range MHz	Limits
902-928	min 500 kHz
2400-2483.5	min 500 kHz
5725-5850	min 500 kHz

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

Comment: see attached diagram

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3.7 Peak Power Spectral Density

Peak Power Spectral density is a measured at low, middle and high channel.

The peak output power is measured with a measurement bandwidth of 10 MHz and displayed on diagram together with Peak Power Spectral Density result which was measured with a bandwidth of 3 kHz, appreciate frequency span and sweep time.

Test conditions		Peak Power Spectral Density (3 kHz)		
		Channel A [dBm]	Channel B [dBm]	Channel C [dBm]
$T_{nom} = 23^{\circ}\text{C}$	$V_{nom} = 120 \text{ V}$	-11.81	-13.01	-14.01
Measurement uncertainty		< 3 Hz		

Limits:

Frequency Range MHz	dBm
902-928	8
2400-2483,5	8
5725-5850	8

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

Comment: see attached diagram

Registration number: W6M20606-7070-C-1
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3.8 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)	Table Azimuth (degree)	Antenna Height (cm)
H	1498.998	39.21	-7.2	PK	32.01	54	21.99	145	312
	3218.437	2.2	0.31	PK	38.59	54	13.2	93	349
	299.399	29.96	15.24	QP	45.2	46	0.8	345	321
	933.295	18.25	26.93	QP	45.18	46	0.82	318	349
	878.992	13.48	25.79	QP	39.27	46	6.73	292	354
	166.613	21.69	15.2	PK	36.89	43.5	6.61	312	357

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
V	1030.06	40.63	-9.65	PK	30.98	54	23.02	270	154
	1198.397	40.78	-7.77	PK	33.01	54	20.99	132	168
	3218.437	44.92	0.31	PK	45.23	54	8.77	75	135
	299.399	27.63	15.24	PK	42.87	46	3.13	145	219
	934.268	17.27	26.93	QP	44.2	46	1.8	79	189
	34.439	24.81	13.2	QP	38.01	40	1.99	44	212

Middle Channel

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
H	1462.926	41.65	-7.9	PK	33.75	54	20.25	141	324
	3218.437	2.2	0.31	PK	37.6	54	13.2	92	348
	299.399	30.06	15.24	QP	45.3	46	0.7	341	325
	933.296	18.28	26.93	QP	45.21	46	0.79	321	348
	166.613	21.52	15.2	PK	36.72	43.5	6.78	311	354

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
V	1030.06	40.91	-9.65	PK	31.26	54	22.74	271	189
	3218.437	44.89	0.31	PK	45.2	54	8.8	74	212
	299.399	28	15.24	PK	43.24	46	2.76	144	217
	934.269	17.13	26.93	PK	44.06	46	1.94	78	187
	34.439	24.82	13.20	QP	38.02	40	1.98	47	218

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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)	Table Azimuth (degree)	Antenna Height (cm)
H	1498.998	41.14	-7.20	PK	33.94	54	20.06	144	310
	3218.437	2.2	0.31	PK	37.54	54	13.2	93	350
	299.998	30.18	15.24	QP	45.42	46	0.58	340	327
	933.299	18.2	26.92	QP	45.12	46	0.88	320	341
	166.613	20.32	15.2	PK	35.52	43.5	7.98	310	352

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)	Correction Factor (dB)	Detector	Test Result (dBuV/m)	Compliance Limit (dBuV/m)	Margin (dB)	Table Azimuth (degree)	Antenna Height (cm)
V	1030.06	41.11	-9.65	PK	31.46	54	22.54	270	190
	3218.437	45.42	0.31	PK	45.73	54	8.27	73	214
	299.399	27.55	15.24	PK	42.79	46	3.21	144	212
	878.038	16.13	25.79	QP	41.92	46	4.08	92	200
	35.412	24.87	13.30	QP	38.17	40	1.83	49	256

- 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

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Digital

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)		Correction Factor (dB)	Test Result (dBUV/m)		Compliance Limit (dBUV/m)	Margin (dB)		Table Azimuth (degree)	Antenna Height (cm)
		PK	QP		PK	QP		PK	QP		
H	499.799	13.63	--	20.09	33.72	--	37.0	3.28	--	217	296
	967.936	3.65	--	27.83	31.48	--	37.0	5.52	--	312	383
	200	--	16.06	11.56	--	27.62	30.0	--	2.38	255	214
	47.715	12.68	--	12.91	25.59	--	30.0	4.41	--	38	217
	166.682	--	14.24	14.33	--	28.57	30.0	--	1.43	214	256
	179.929	--	5.51	13.27	--	18.78	30.0	--	11.22	83	243

Antenna Polarization	Frequency Marker (MHz)	Corrected Reading (dBuV)		Correction Factor (dB)	Test Result (dBUV/m)		Compliance Limit (dBUV/m)	Margin (dB)		Table Azimuth (degree)	Antenna Height (cm)
		PK	QP		PK	QP		PK	QP		
V	200	--	17.43	11.56	--	28.99	30.0	--	1.01	312	176
	523.848	8.07	--	20.51	28.58	--	37.0	8.42	--	217	177
	801.202	5.22	--	25.67	30.89	--	37.0	6.11	--	156	196
	34.429	--	15.65	12.53	--	28.18	30.0	--	1.82	173	214
	98.477	--	16.47	10.75	--	27.22	30.0	--	2.78	216	183
	166.954	--	12.50	14.33	--	26.83	30.0	--	3.17	179	264

- 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

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

Test equipment used: ETSTW-RE 003, ETSTW-RE 004, ETSTW-RE 028
ETSTW-RE 029, ETSTW-RE 042, ETSTW-RE 043

Comment: see attached diagram

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3.9 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
	0.150	21.70	--	10.10	31.80	--	66.00	56.00	34.20	--
	0.185	20.30	--	10.10	30.40	--	64.24	54.25	33.85	--
	0.235	17.20	--	10.10	27.30	--	62.27	52.27	34.97	--
	0.460	9.10	--	10.10	19.20	--	56.69	46.69	37.49	--

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
	0.150	21.60	--	10.10	31.70	--	66.00	56.00	34.30	--
	0.190	19.50	--	10.10	29.60	--	64.03	54.03	34.43	--
	0.295	24.50	--	10.10	34.60	--	60.38	50.38	25.78	--
	0.555	28.40	--	10.10	38.50	--	56.00	46.00	17.50	--

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

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

Test equipment used: ETSTW-CE 001, ETSTW-CE 003, ETSTW-CE 004, ETSTW-CE 006

Comment: see attached diagram

Appendix

- A Peak Output Power
- B Spurious Emissions radiated
- C Band Edge Measurement
- D Minimum 6dB Bandwidth
- E Peak Power Spectral Density
- F Radiated Emissions from Receiver Section of Transceiver
- G Power Line Conducted Emission
- H Pictures

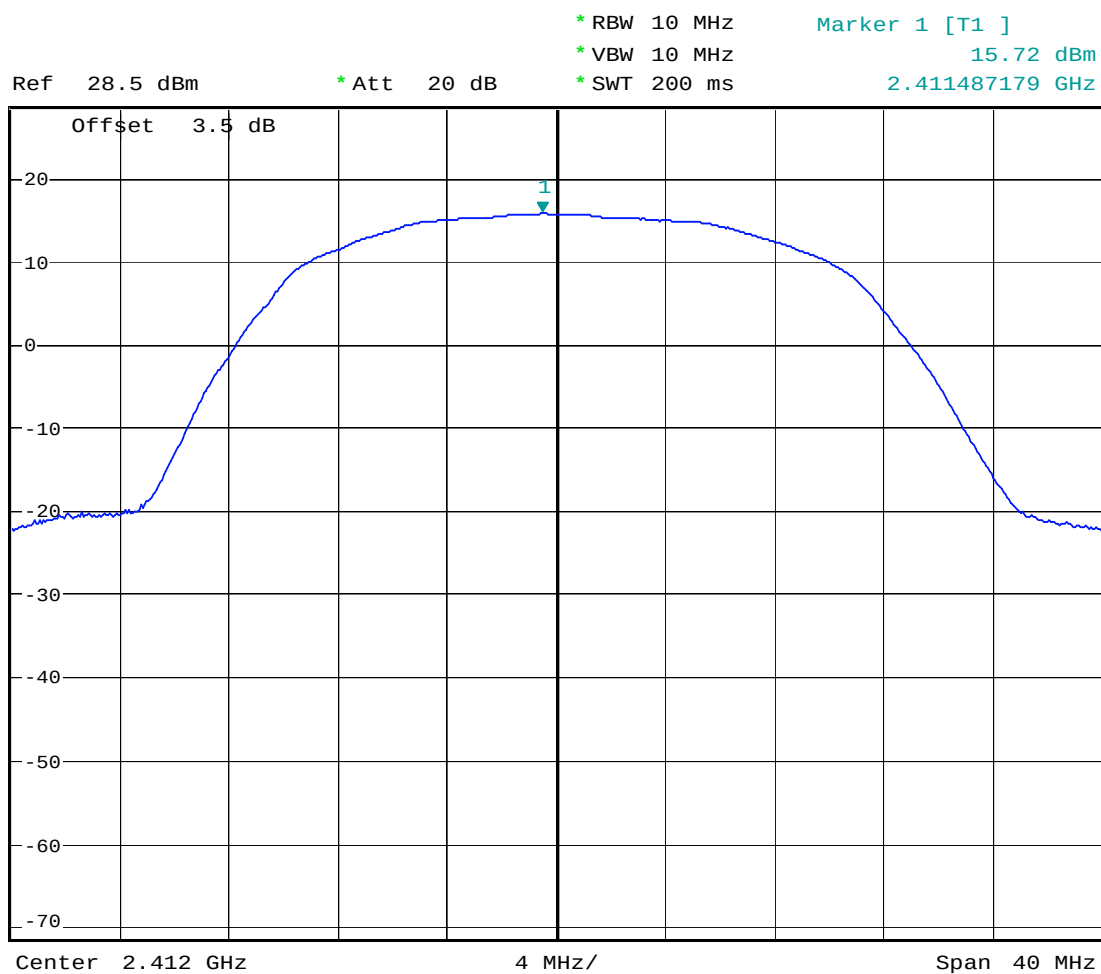
Appendix A

Peak Output Power

The measurement diagram are wideband pre-scan results; only for reference.



1 PK
MAXH

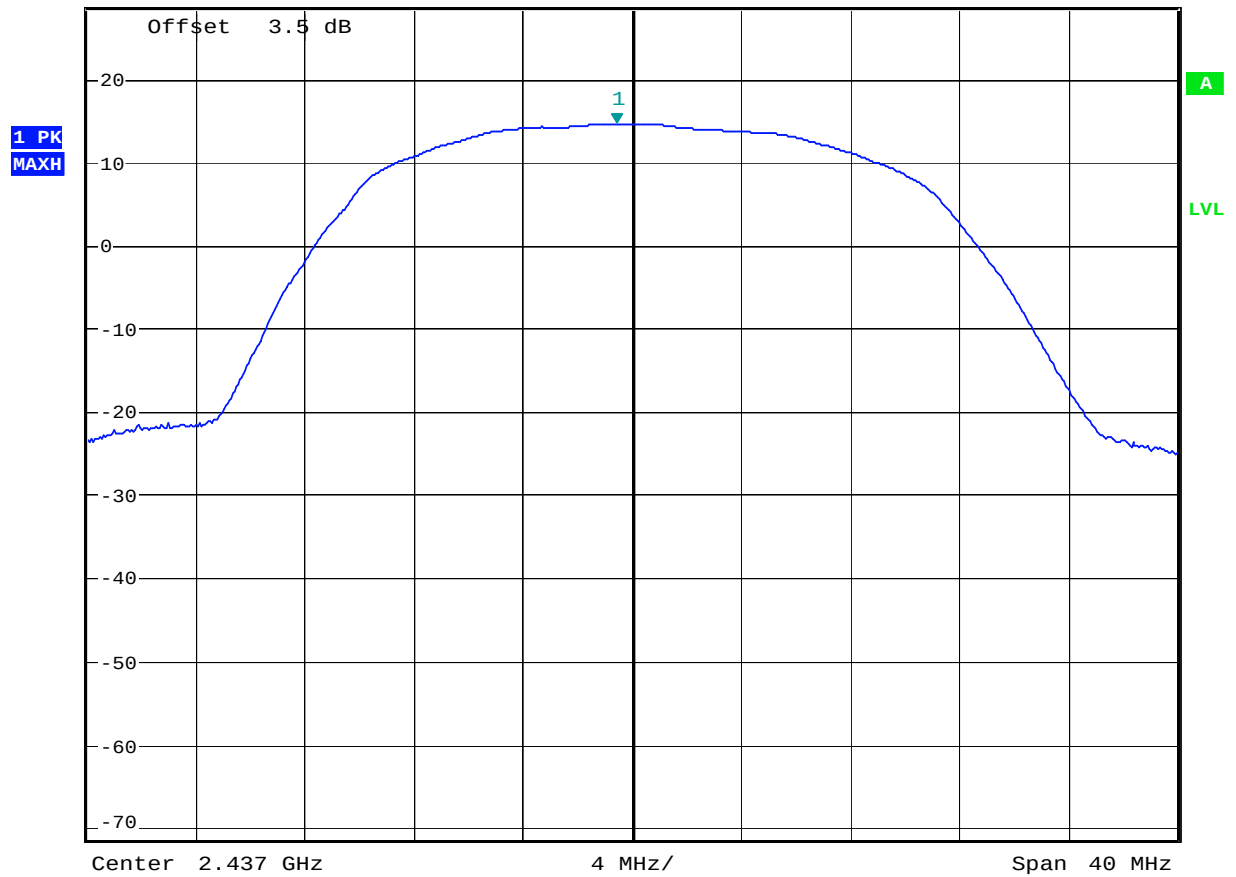


Output power 802.11b ch 1

Date: 26.JUN.2006 15:24:07



Ref 28.5 dBm * Att 20 dB * RBW 10 MHz Marker 1 [T1]
* VBW 10 MHz 14.58 dBm
* SWT 200 ms 2.436423077 GHz



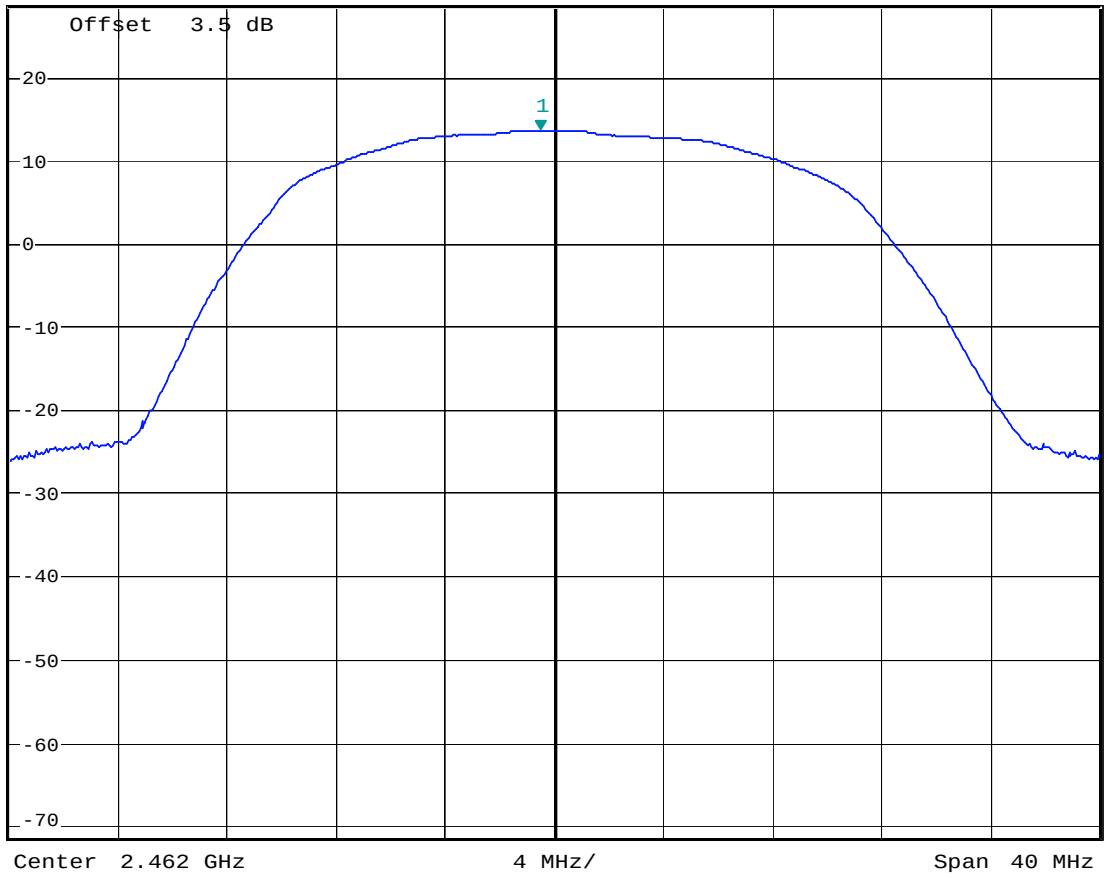
Output power 802.11b ch 6

Date: 26.JUN.2006 15:24:47



1 PK
MAXH

Ref 28.5 dBm * Att 20 dB * RBW 10 MHz Marker 1 [T1]
* VBW 10 MHz 13.53 dBm
* SWT 200 ms 2.461487179 GHz



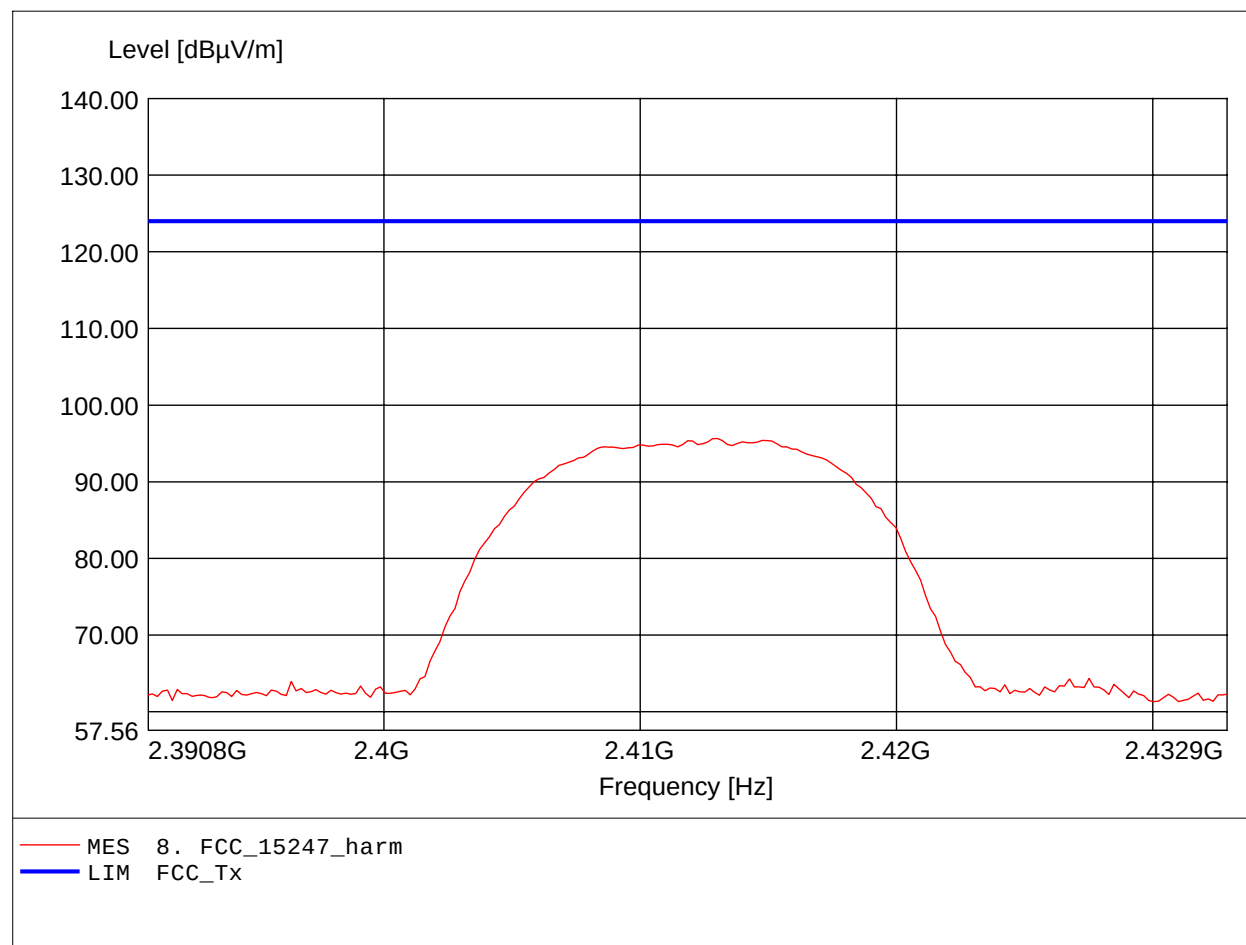
Output power 802.11b ch 11

Date: 26.JUN.2006 15:25:12

Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP002

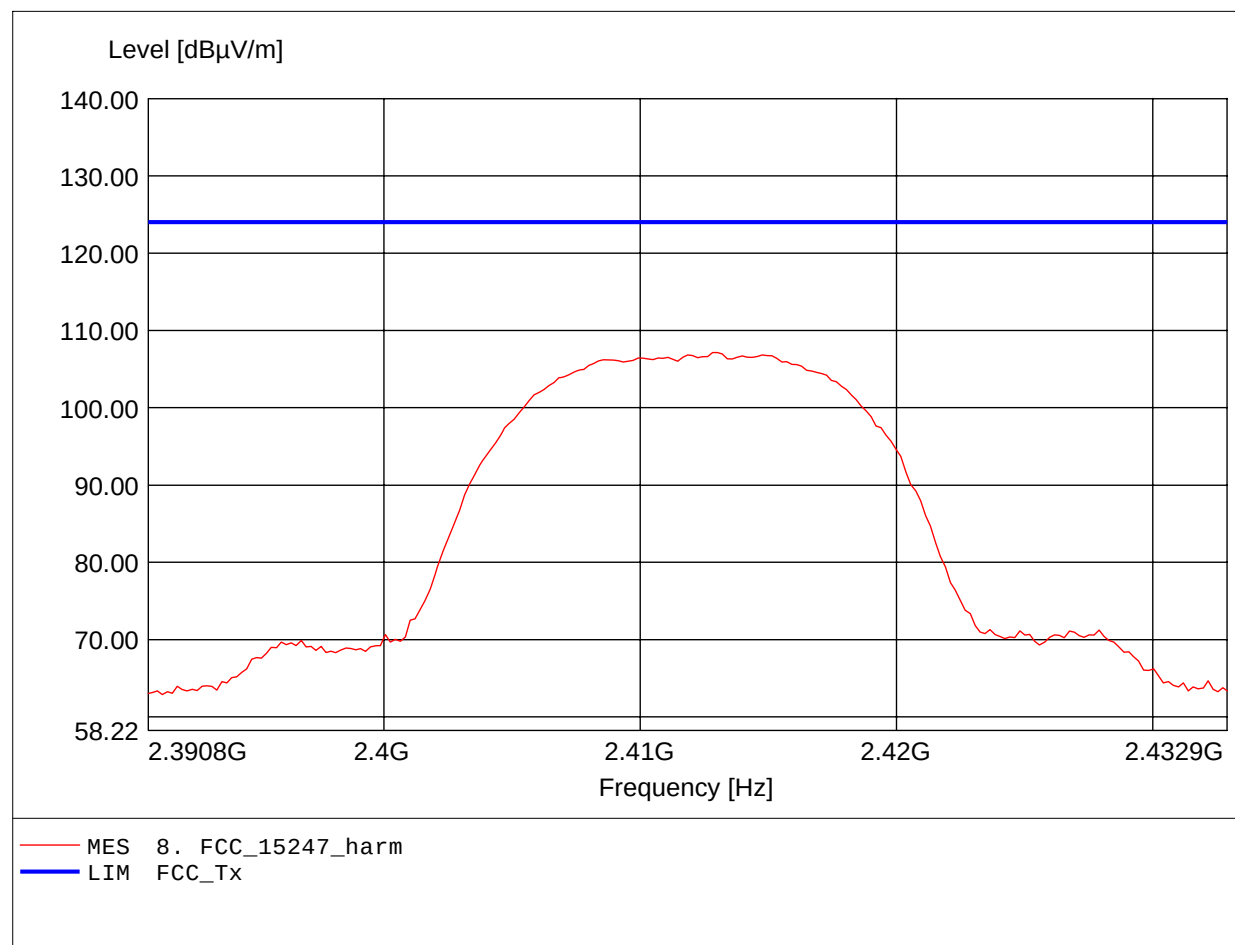
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.413GHz, Emax: 95.64dBμV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP002

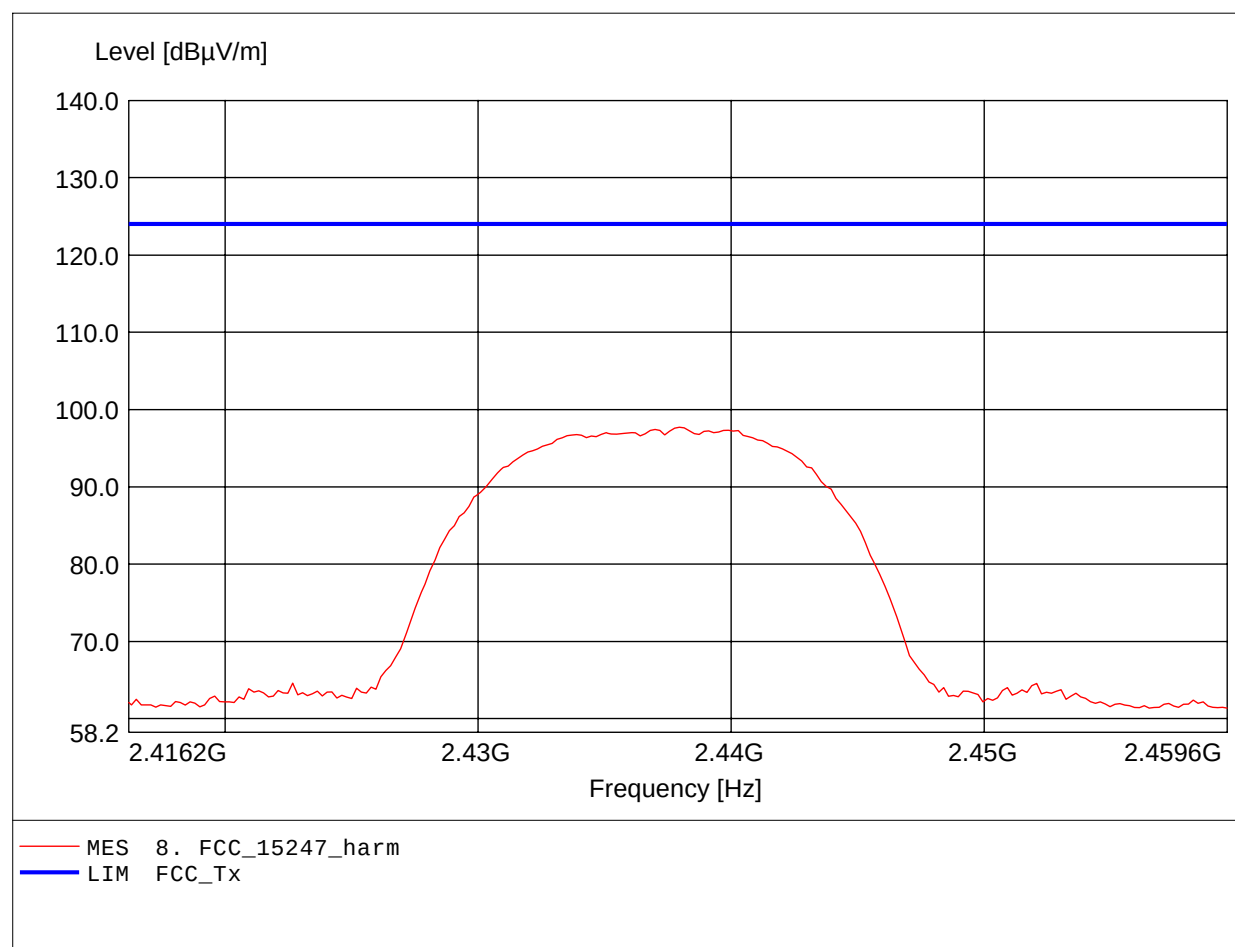
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Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.413GHz, Emax: 107.13dBμV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP002

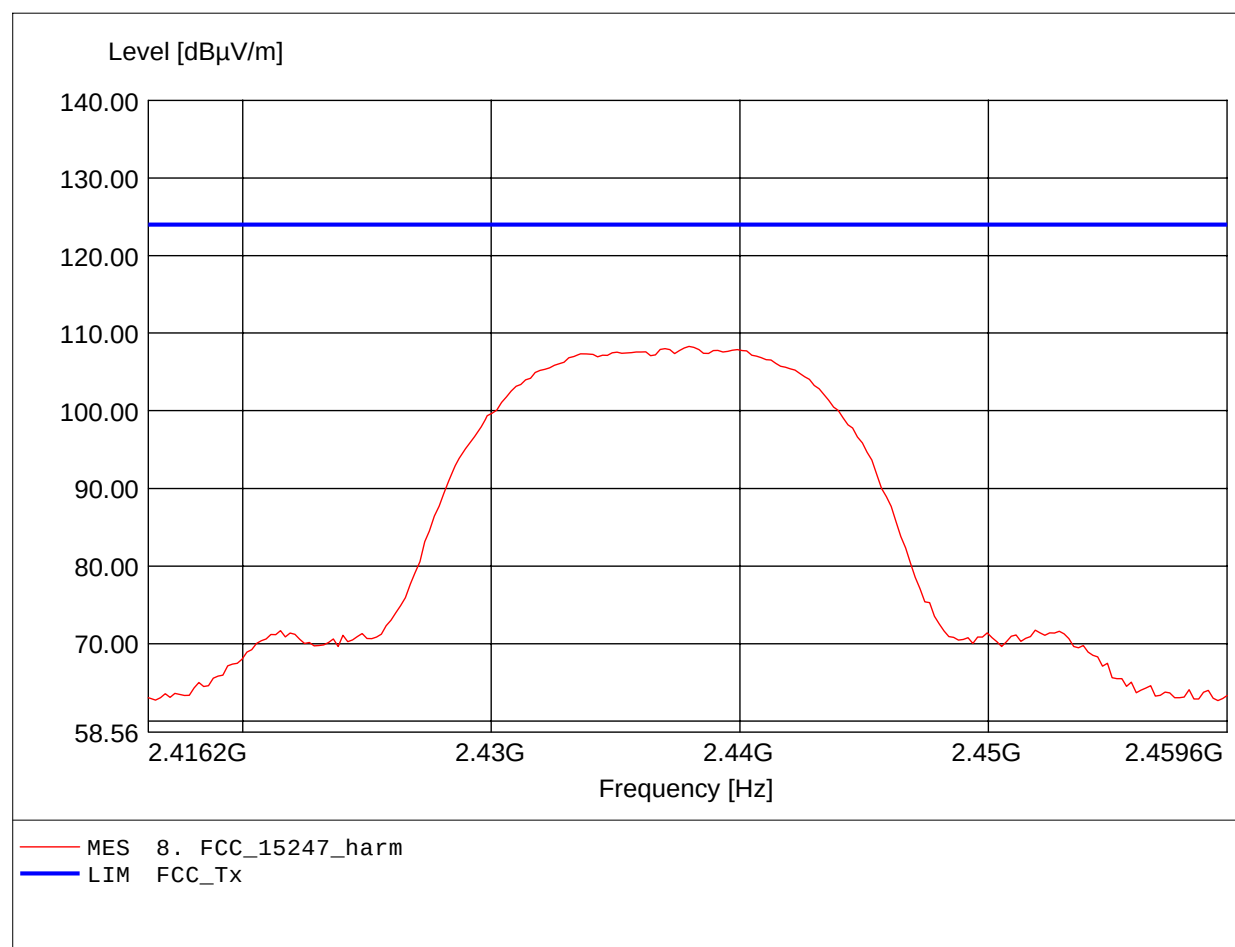
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.438GHz, Emax: 97.70dBμV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP002

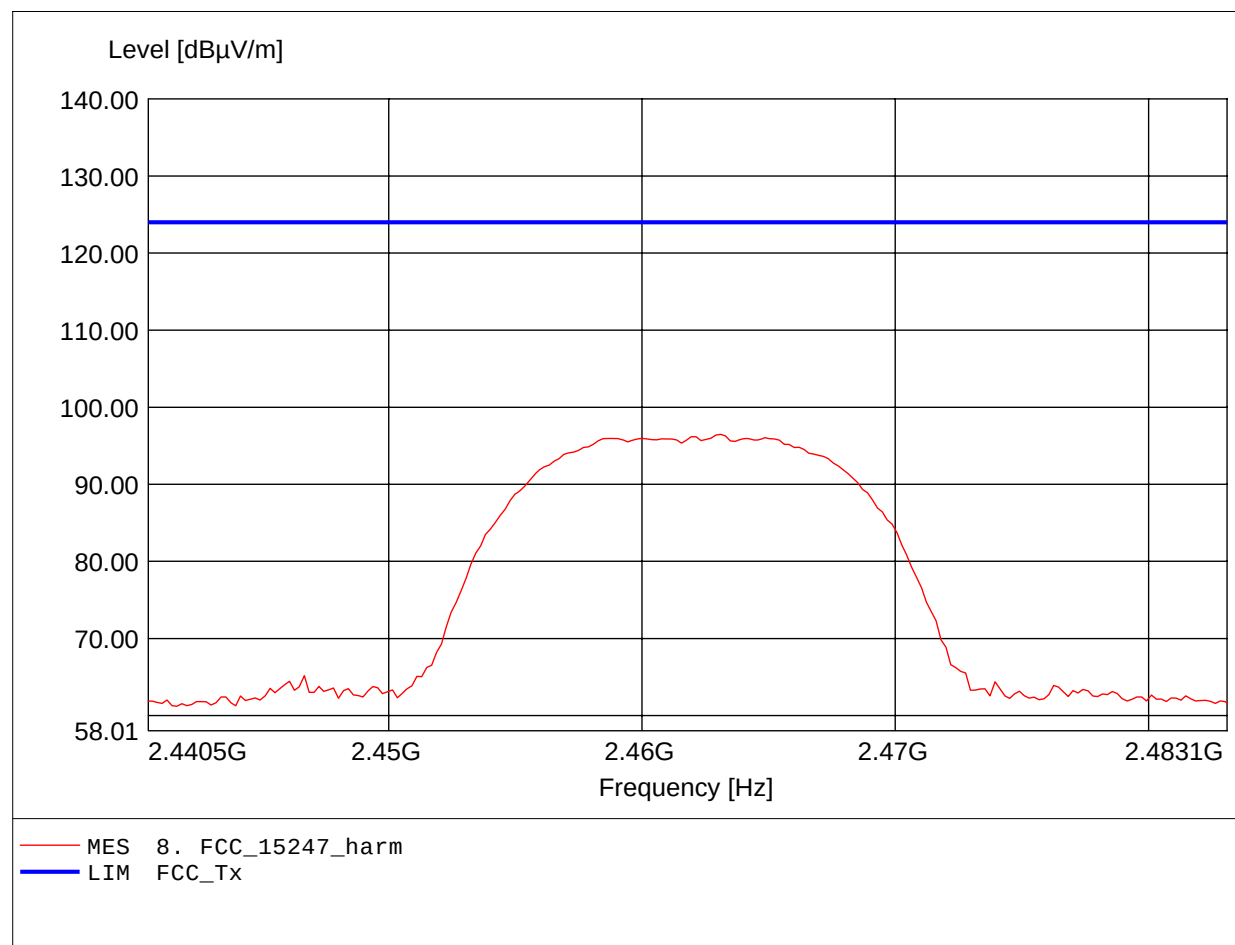
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.438GHz, Emax: 108.28dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP002

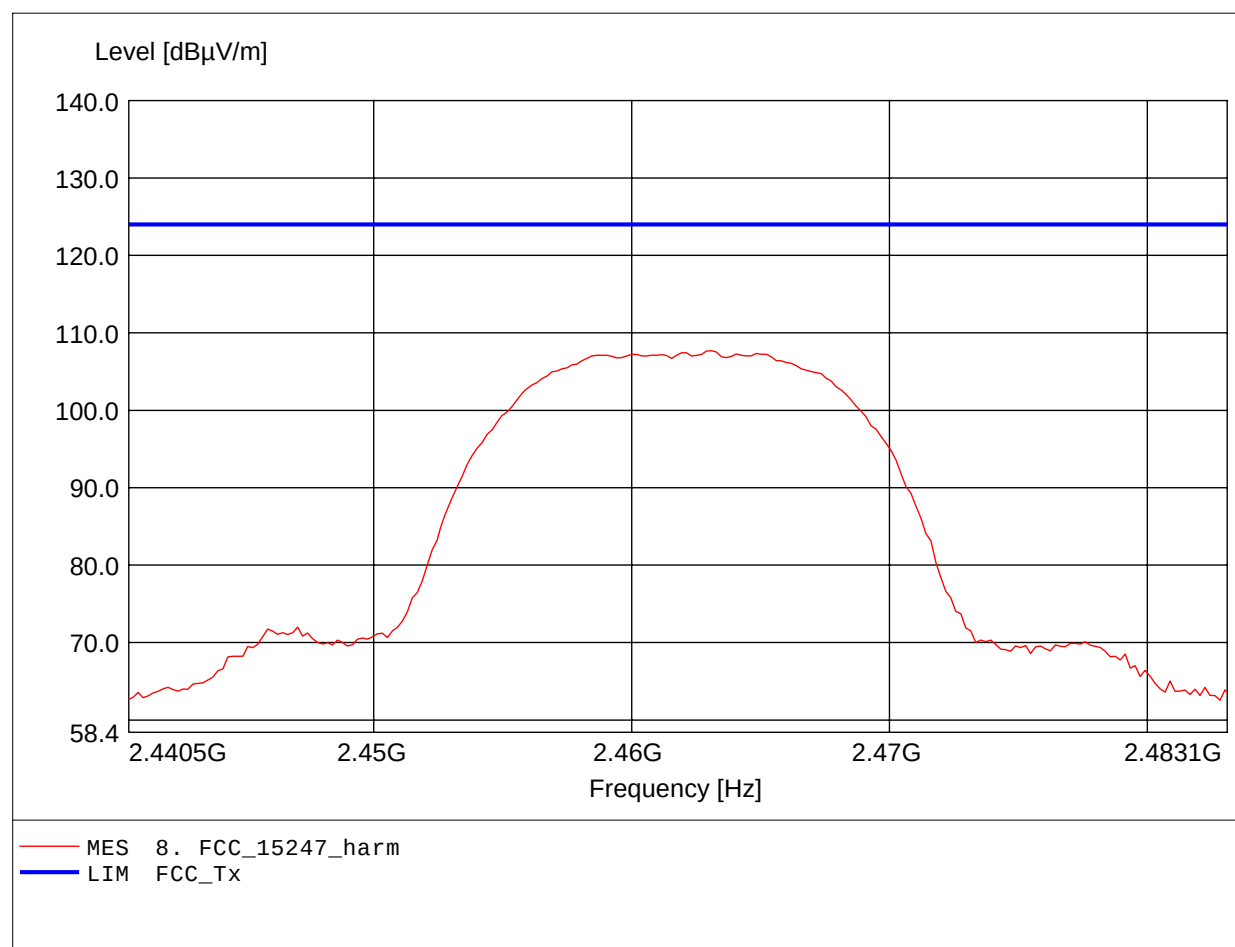
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.463GHz, Emax: 96.48dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C / LP002

Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL025
Freq: 2.463GHz, Emax: 107.68dBμV/m, RBW: 1MHz



Appendix B

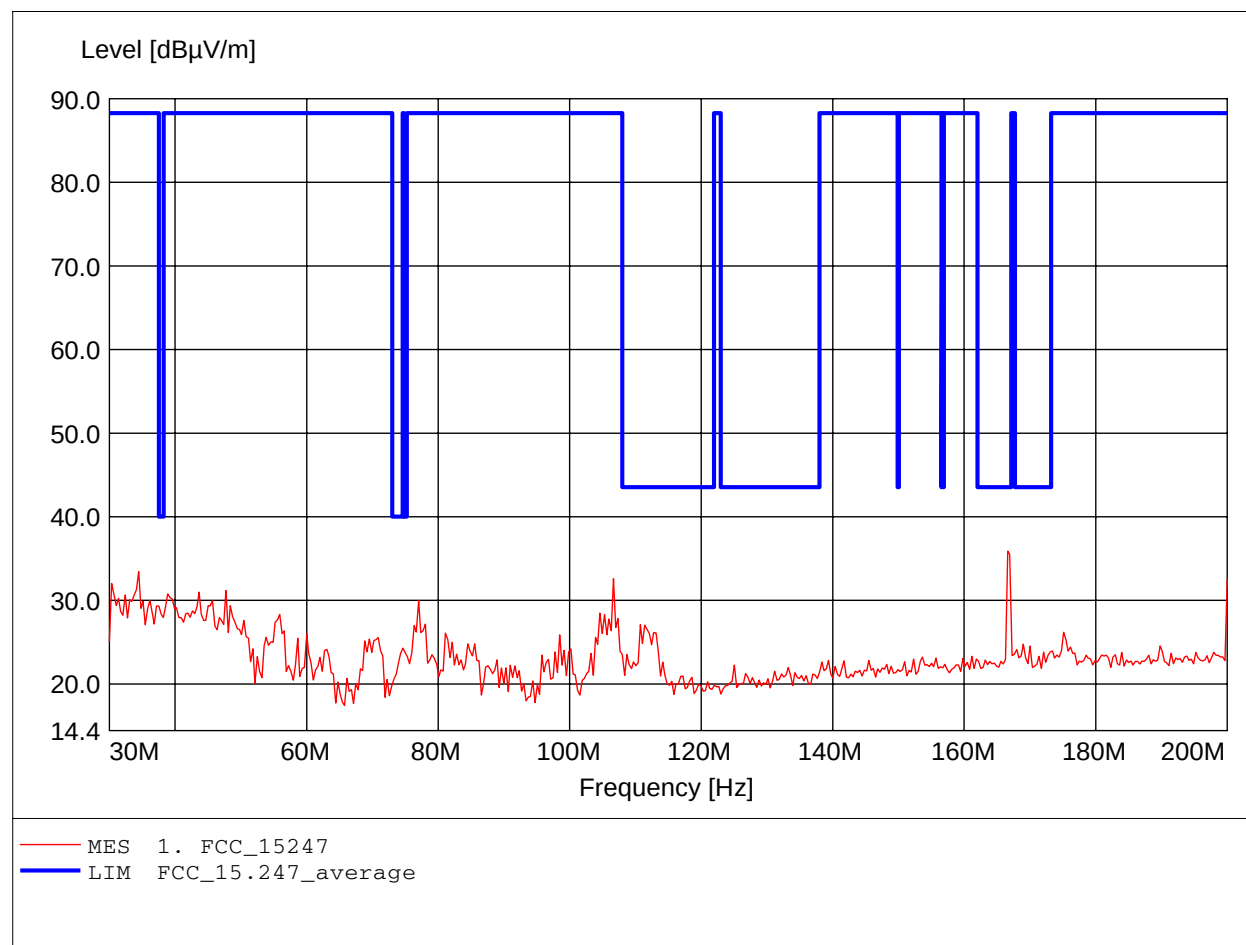
Spurious Emissions radiated

The measurement diagram are wideband pre-scan results; only for reference.

Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

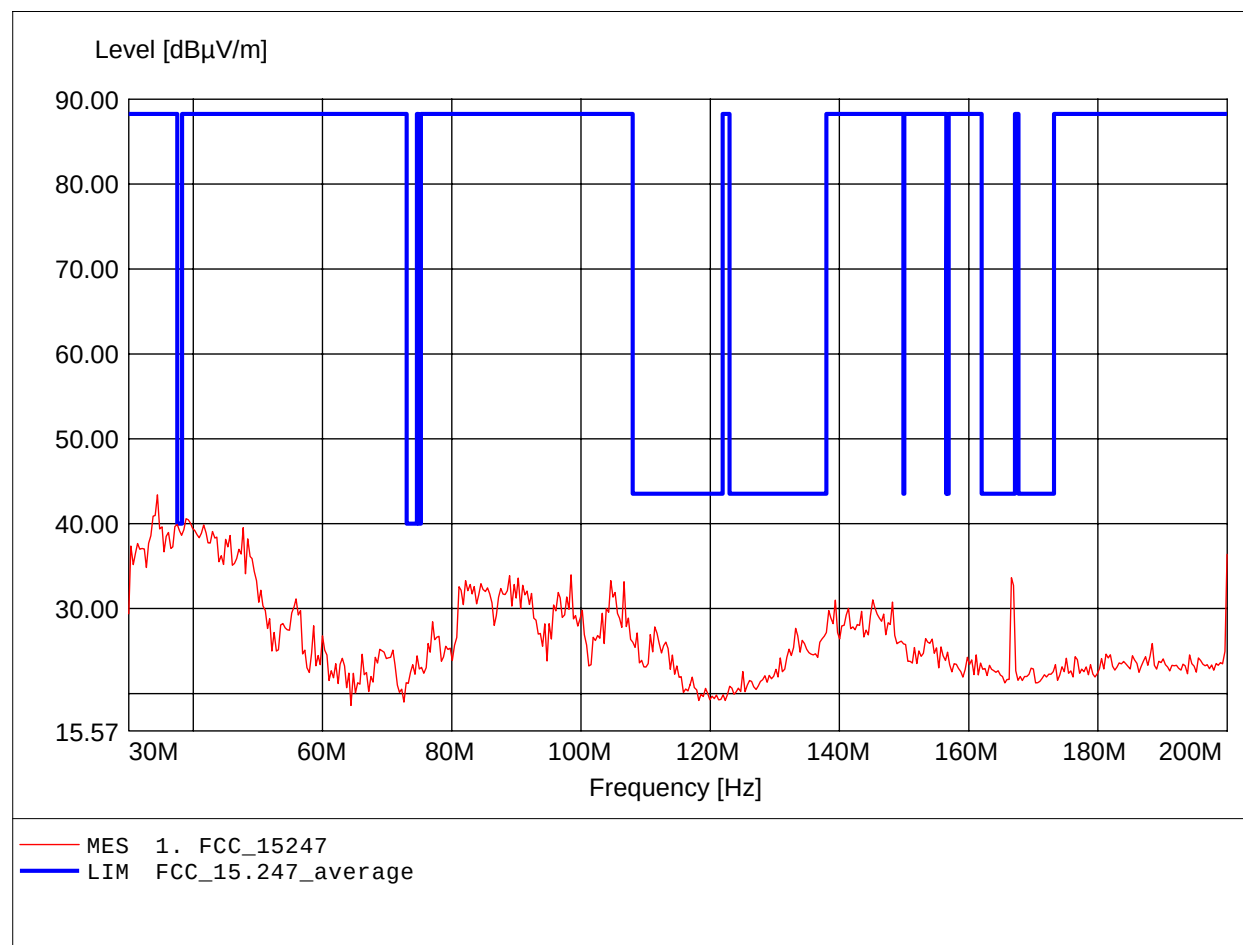
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 166.613MHz, Emax: 35.88dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

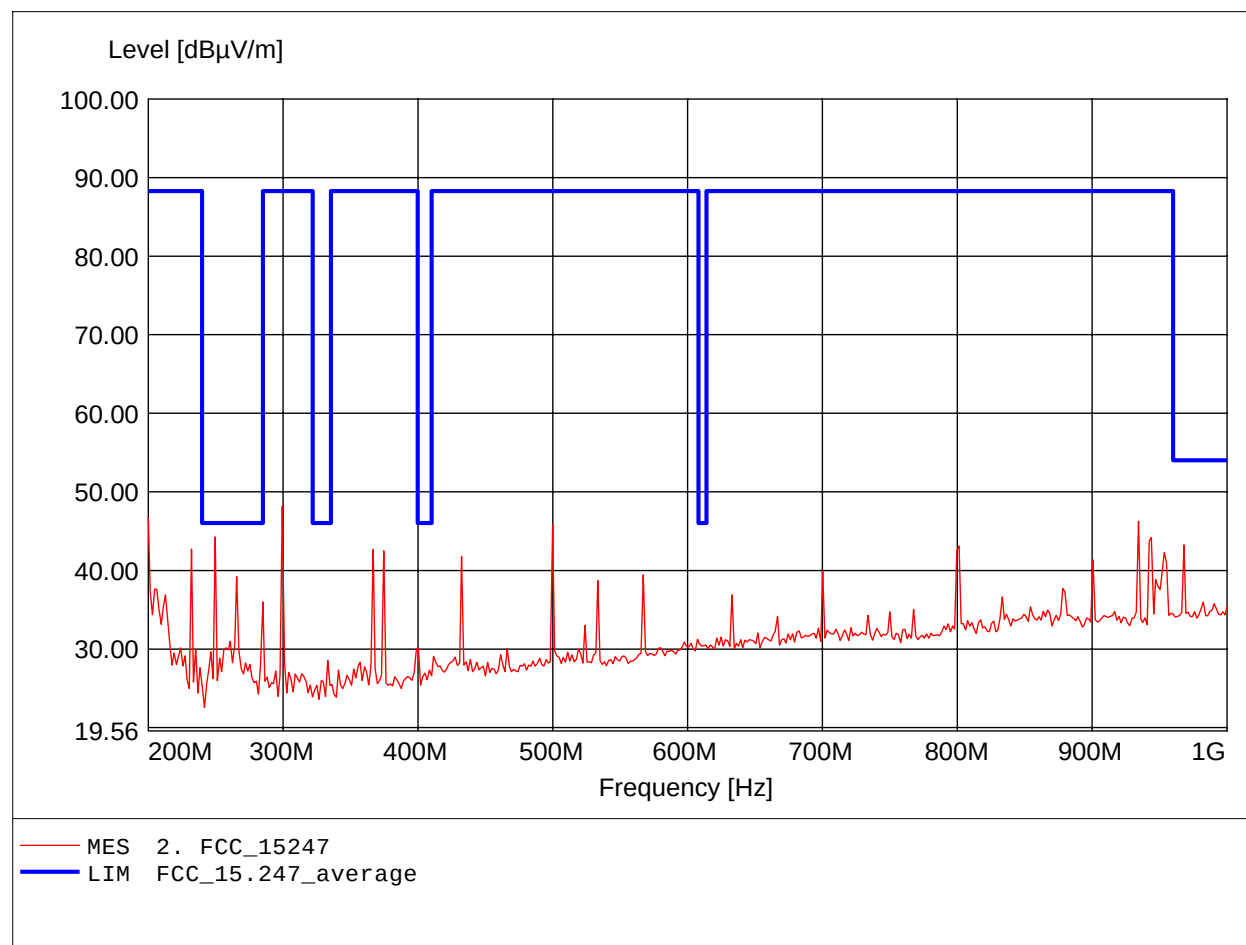
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 34.429MHz, Emax: 43.41dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

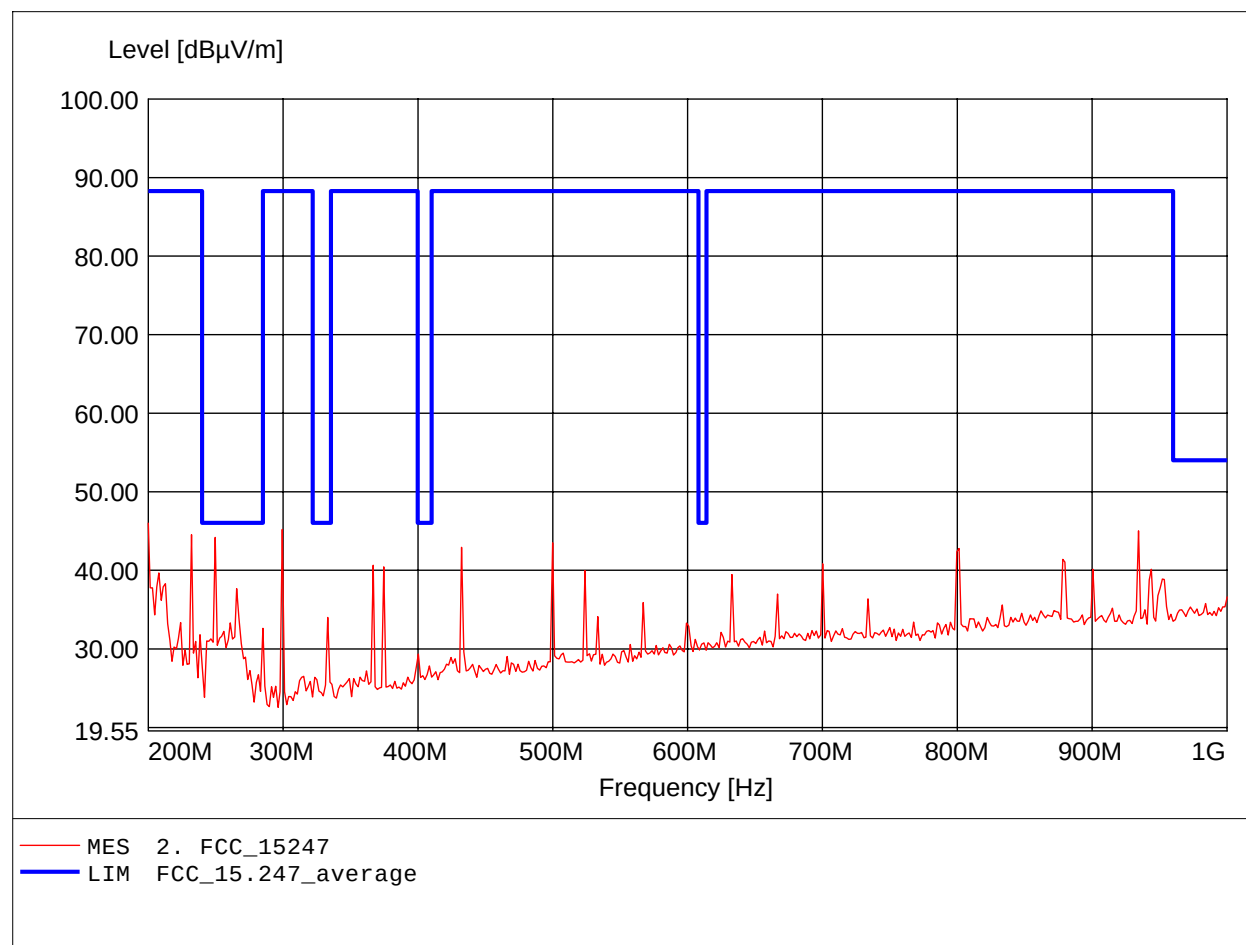
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223,
Freq: 299.399MHz, Emax: 48.14dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

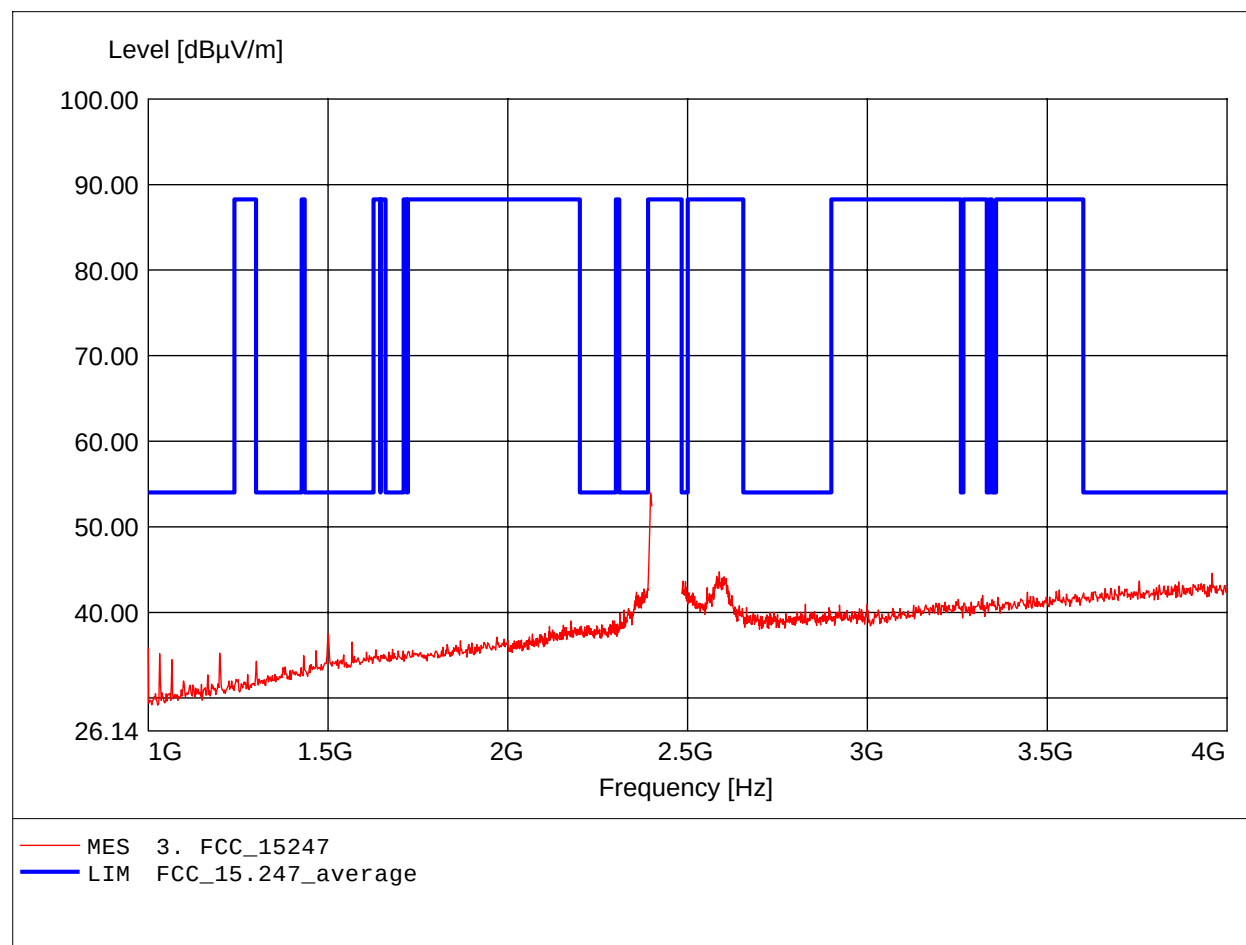
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223,
Freq: 894.188MHz, Emax: 63.06dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

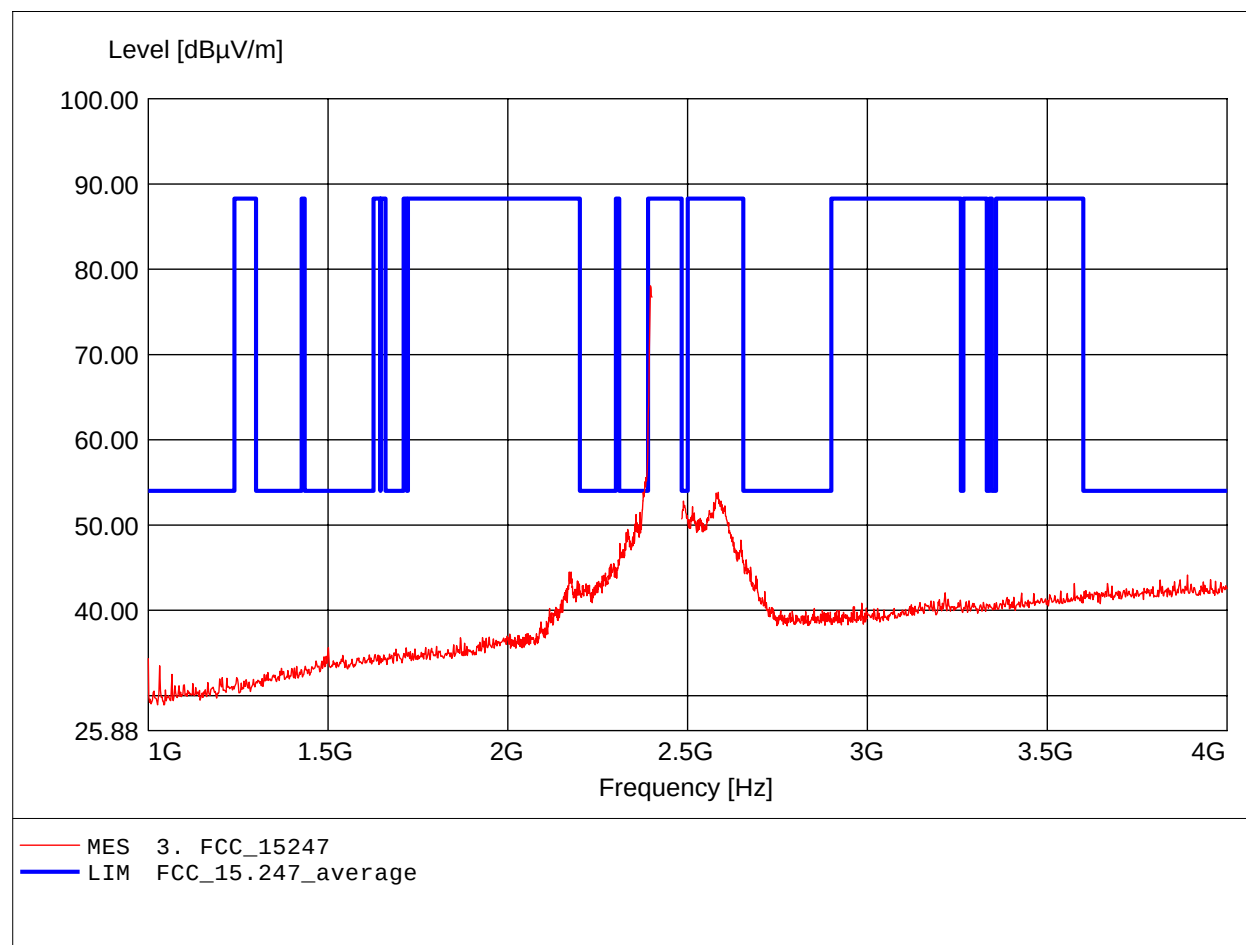
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C / Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 2.397GHz, Emax: 53.97dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

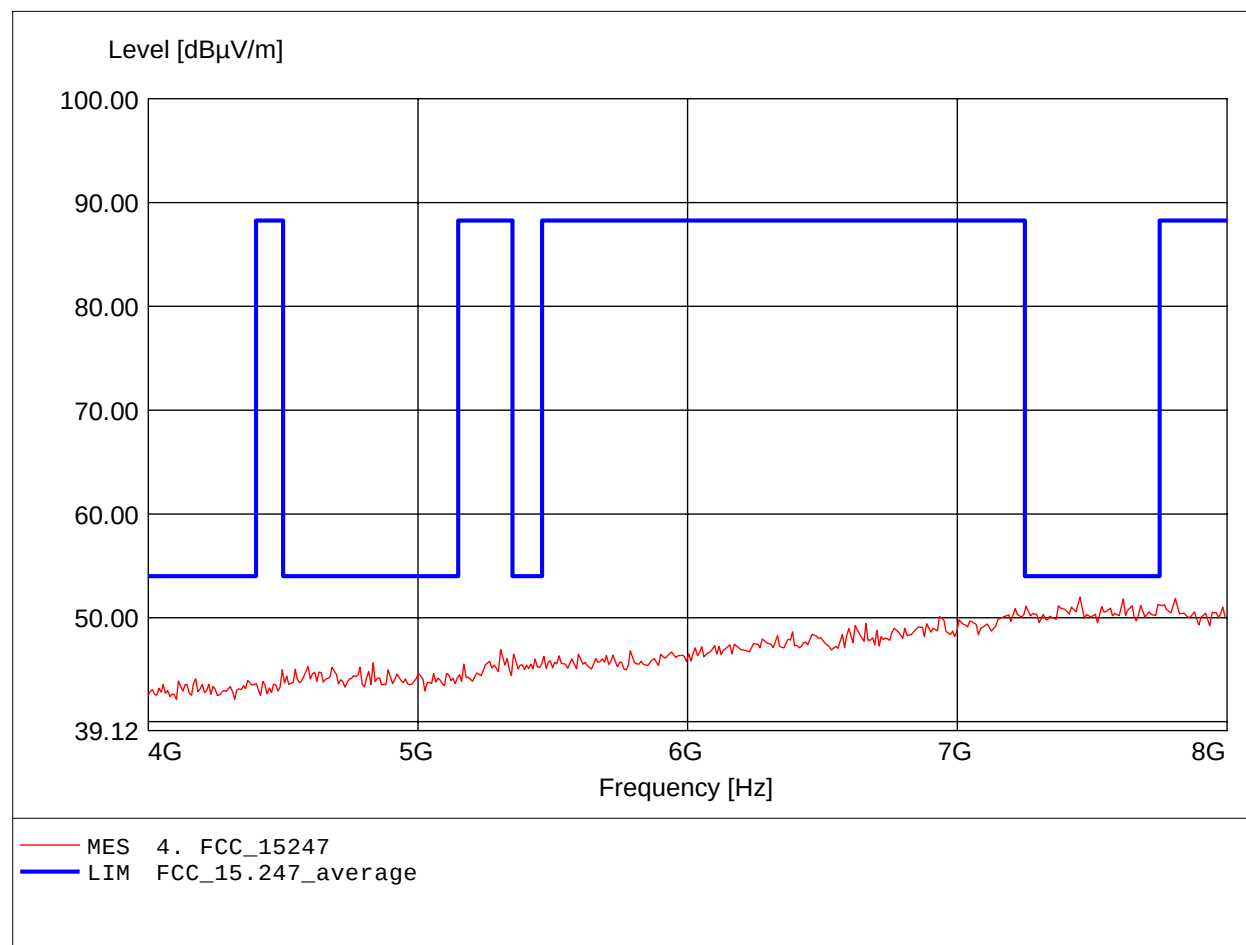
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 2.397GHz, Emax: 78.06dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

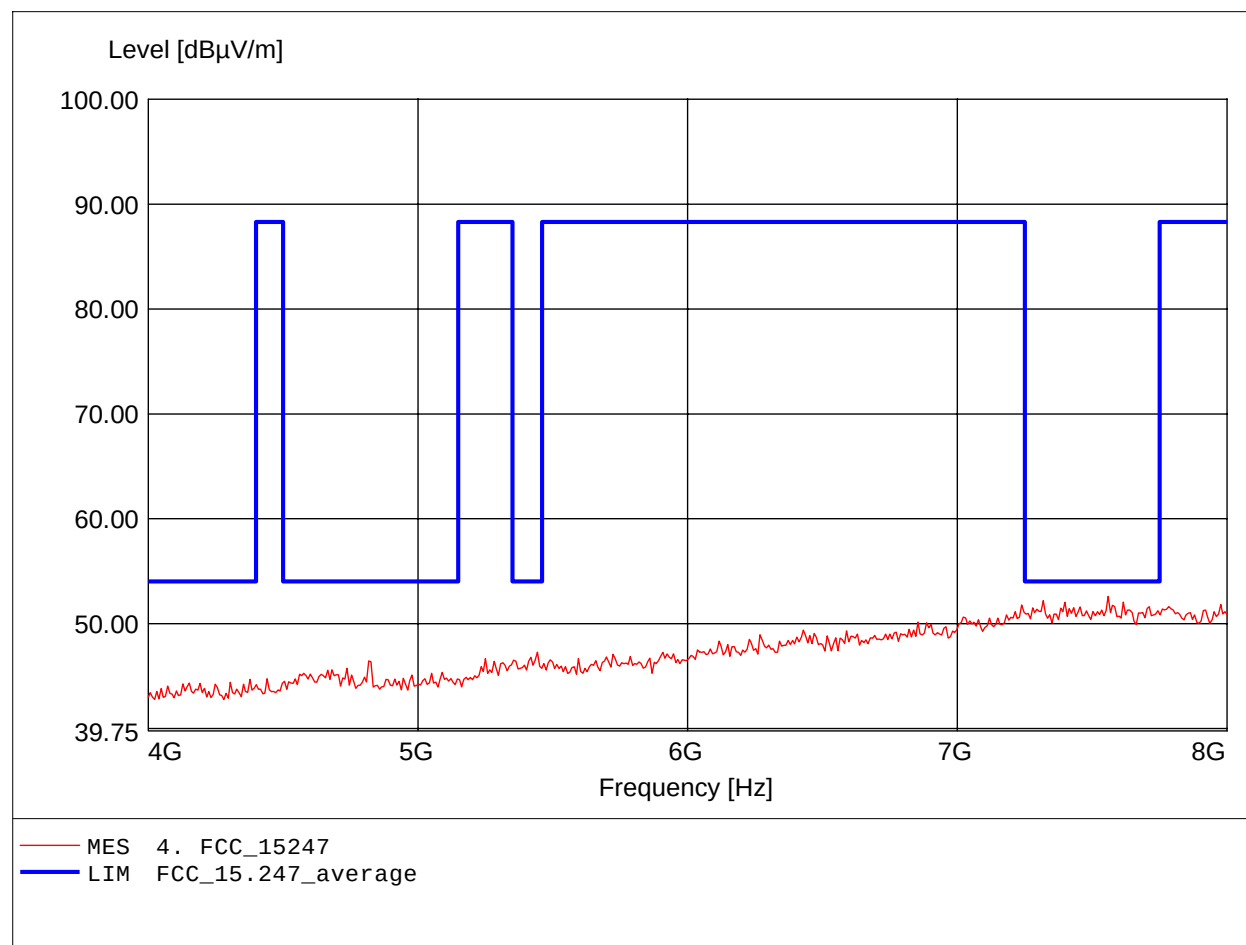
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.455GHz, Emax: 51.98dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

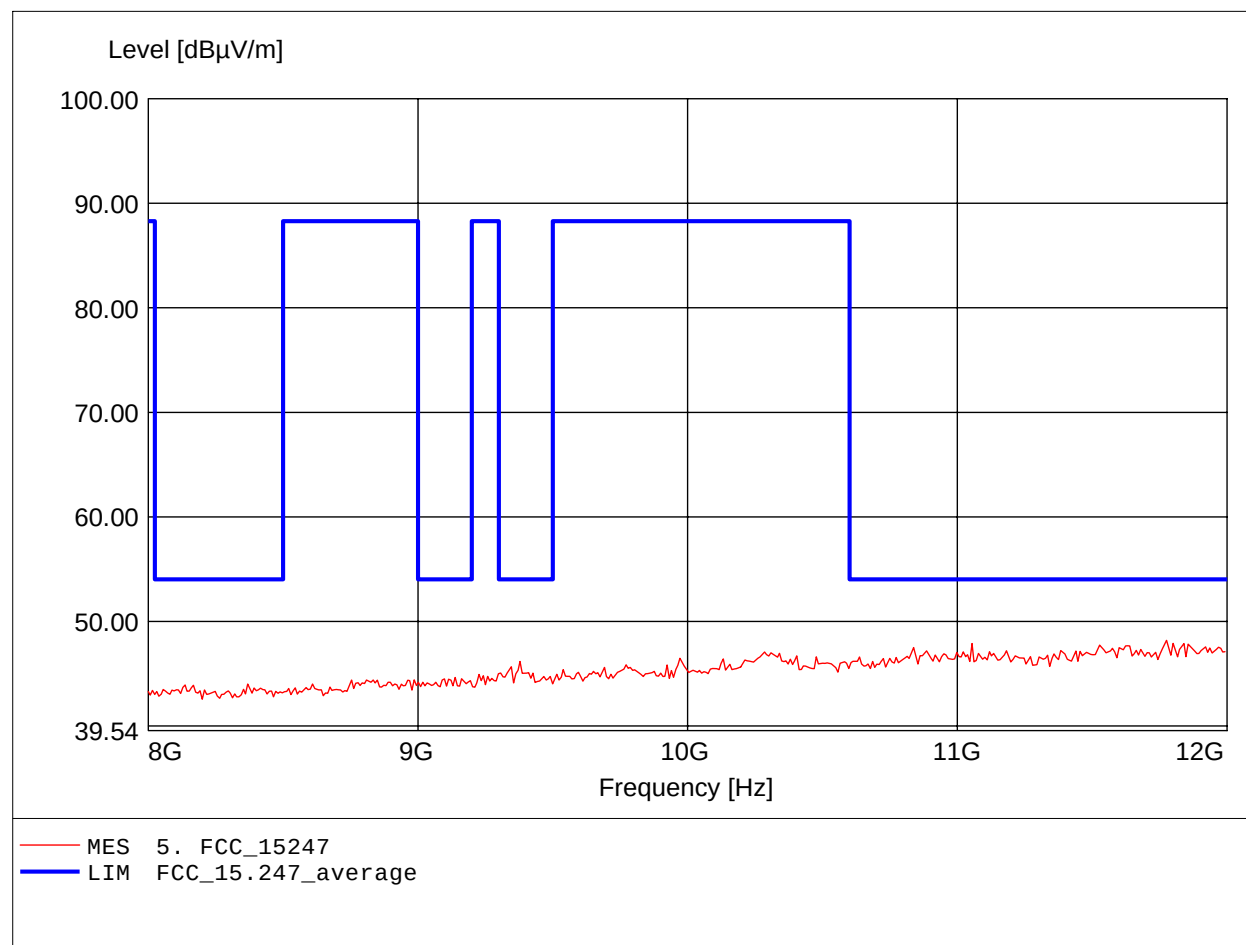
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.559GHz, Emax: 52.59dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

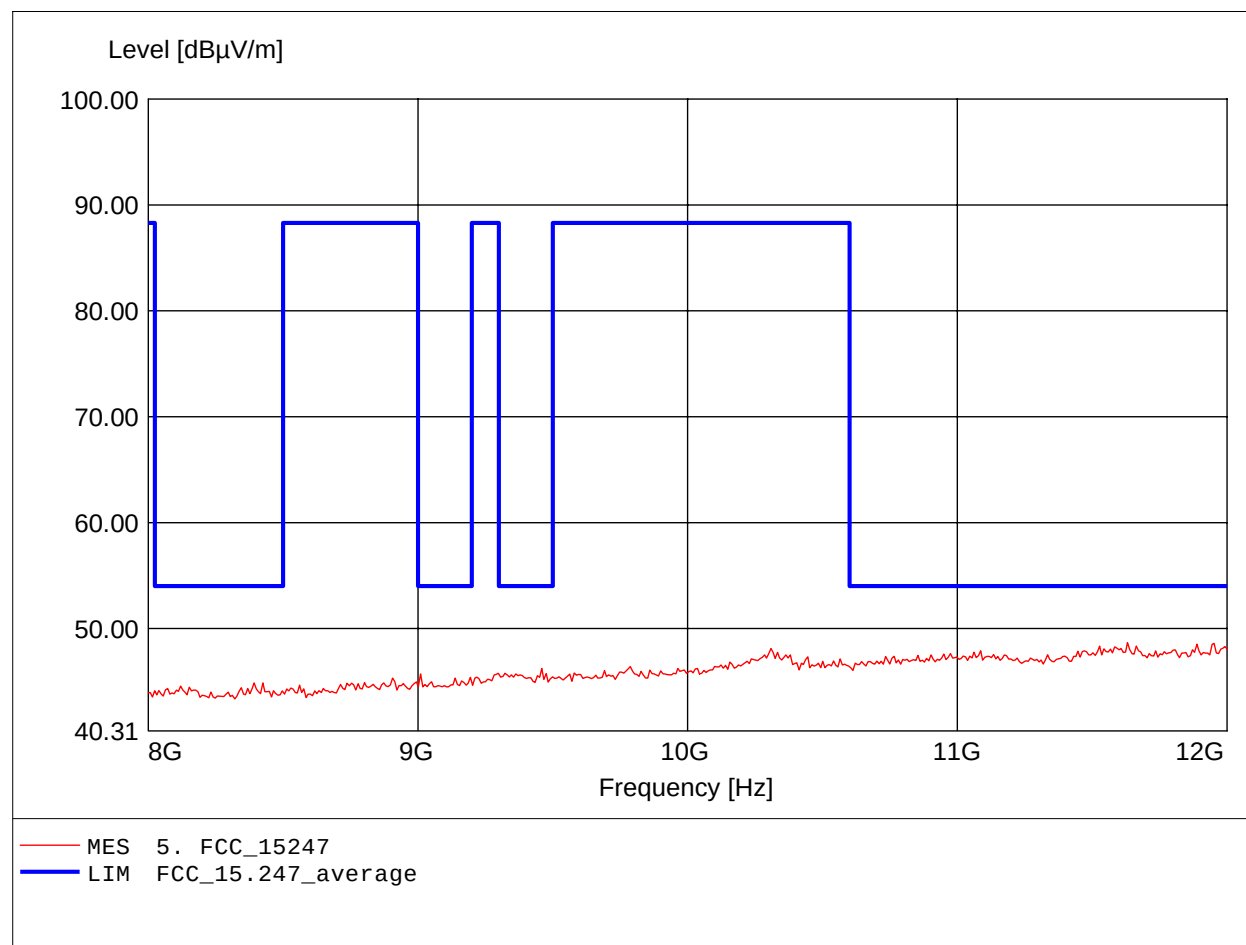
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.776GHz, Emax: 48.20dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

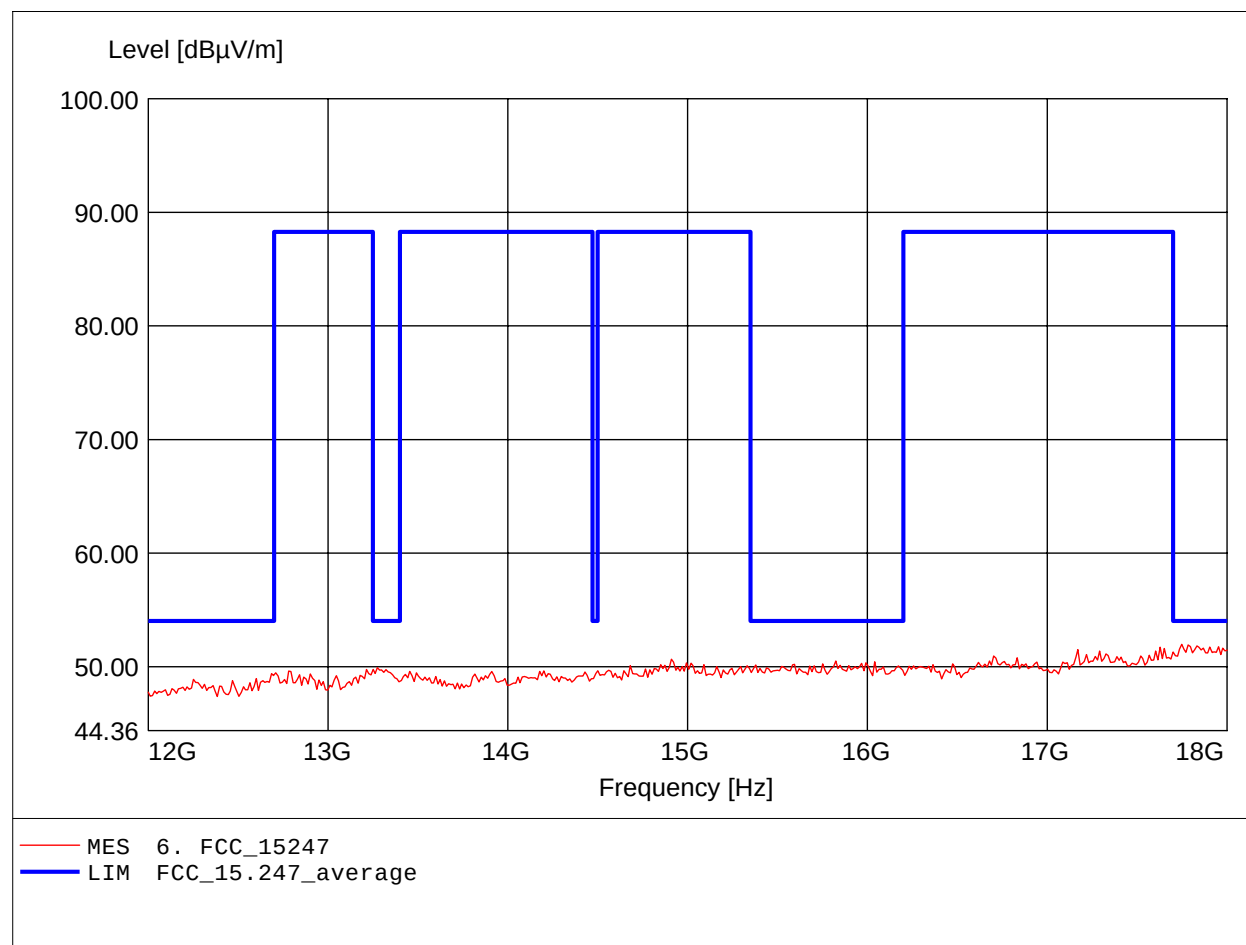
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.631GHz, Emax: 48.66dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

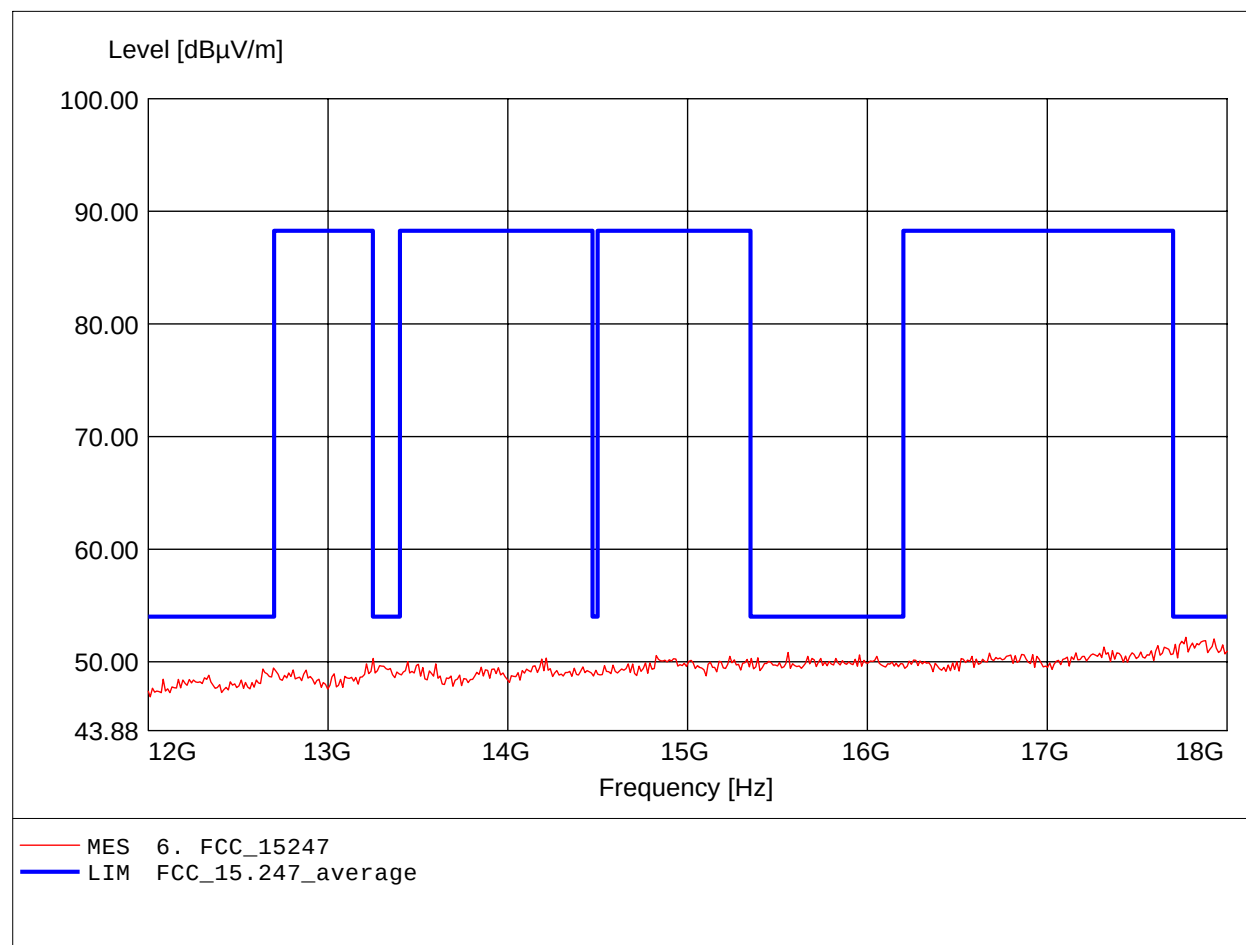
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.747GHz, Emax: 51.97dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

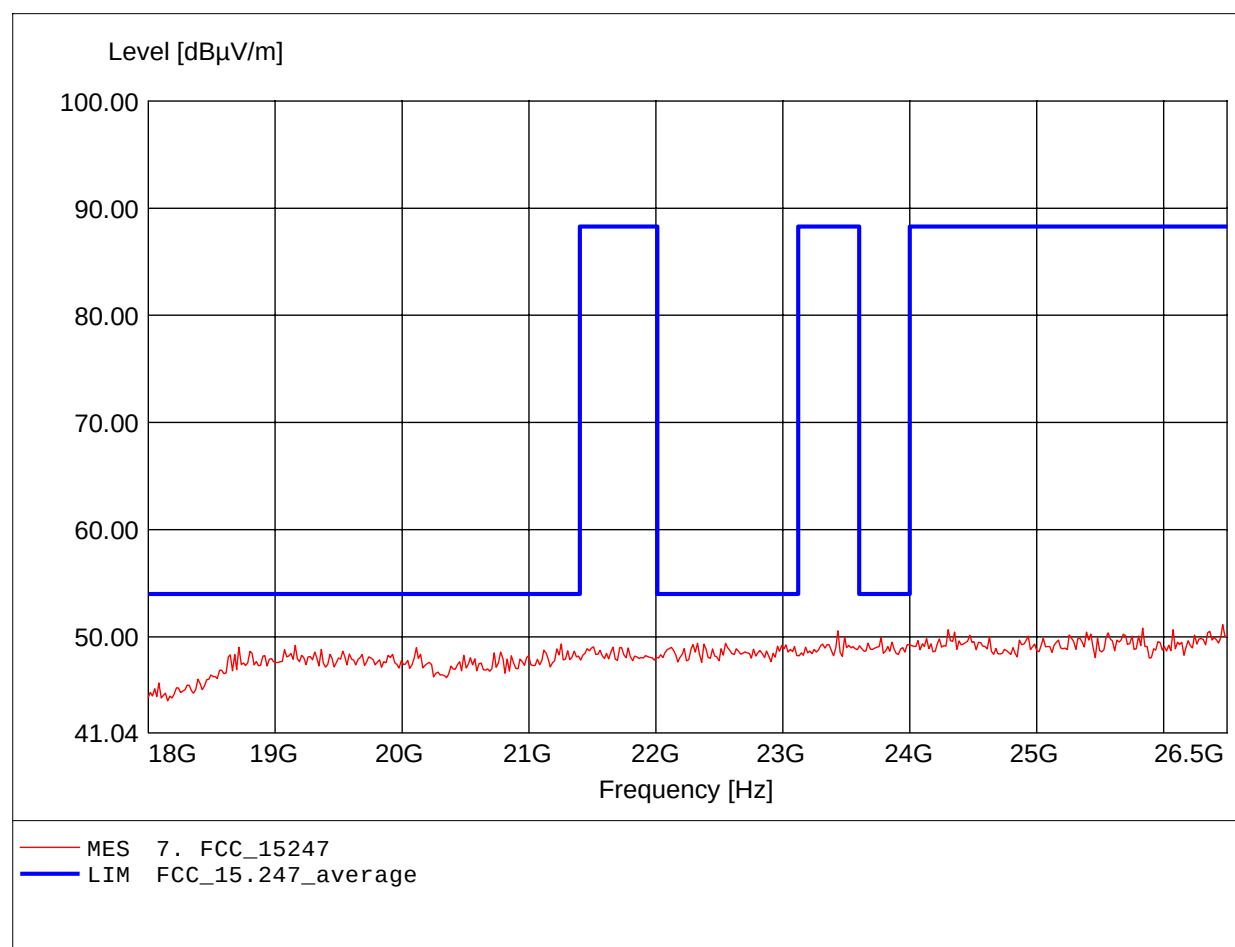
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.772GHz, Emax: 52.16dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

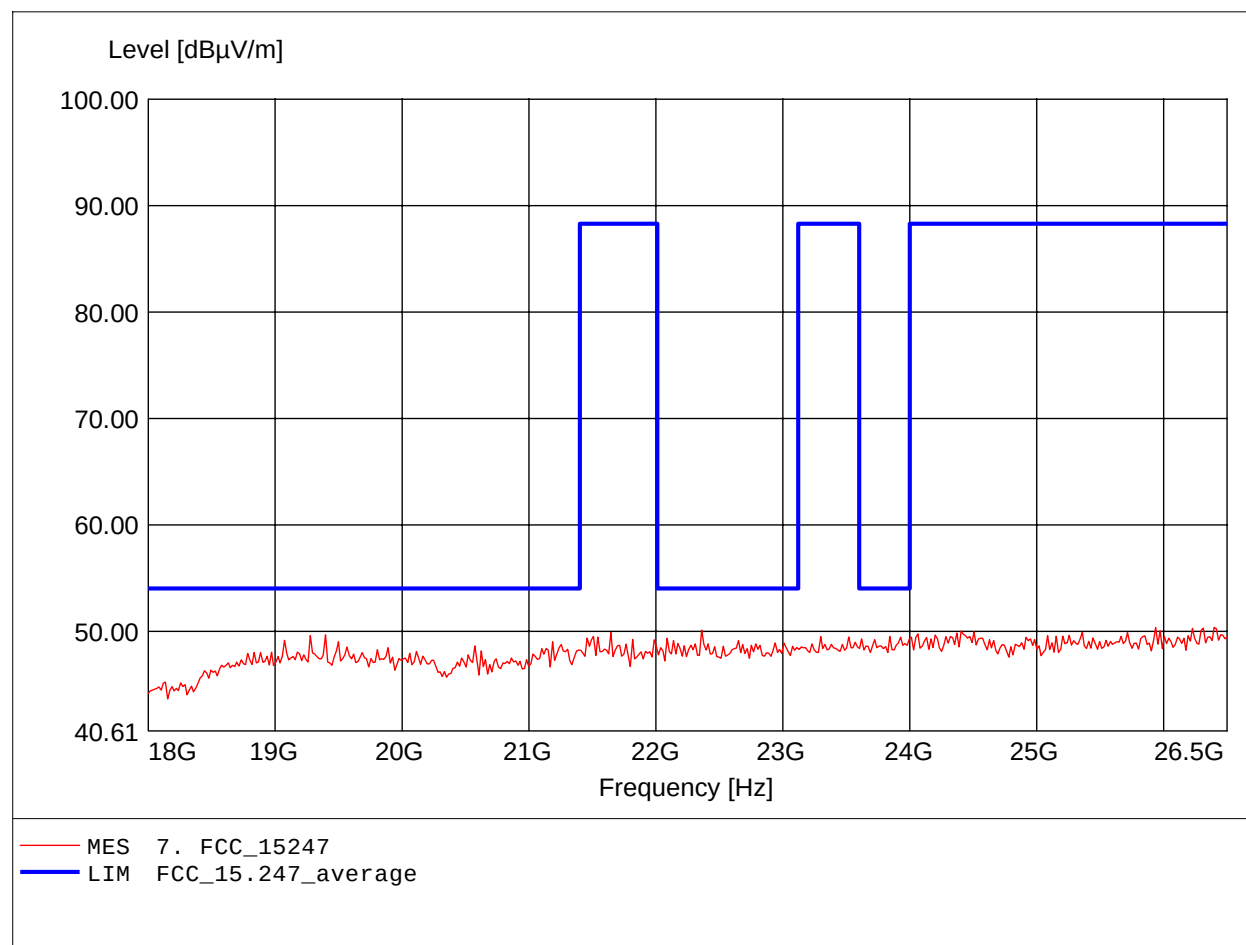
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 26.466GHz, Emax: 51.17dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

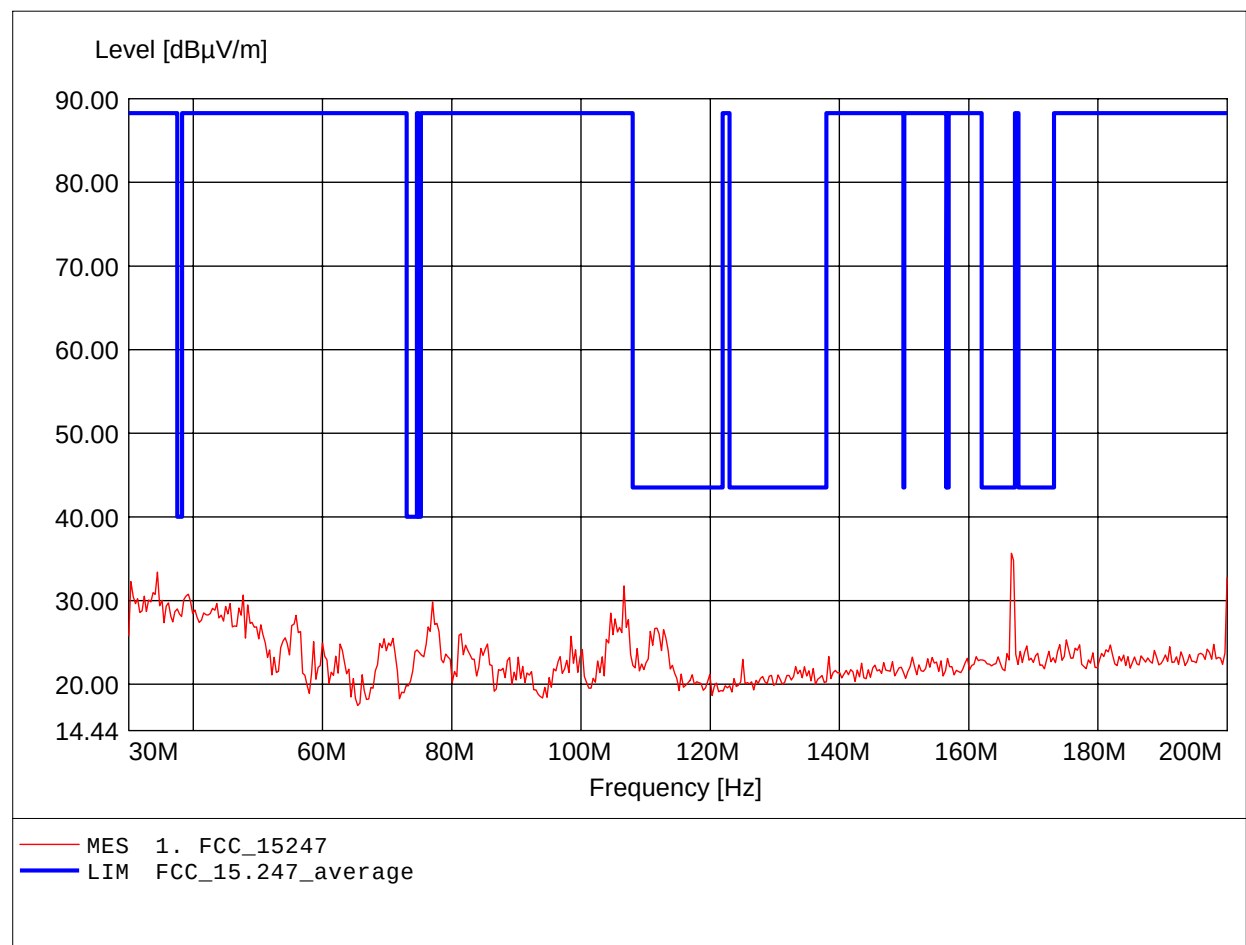
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 26.398GHz, Emax: 50.36dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

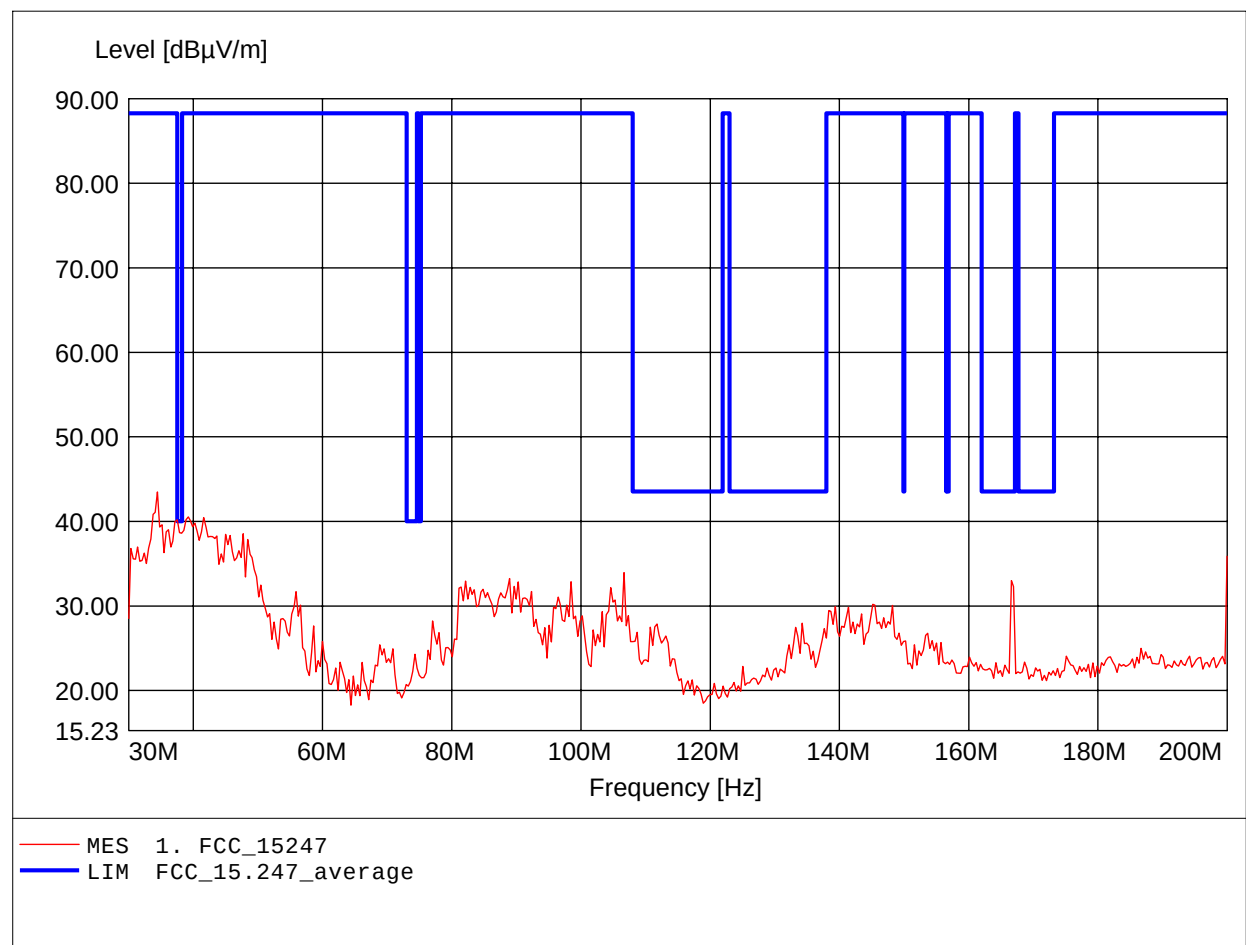
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 166.613MHz, Emax: 35.67dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

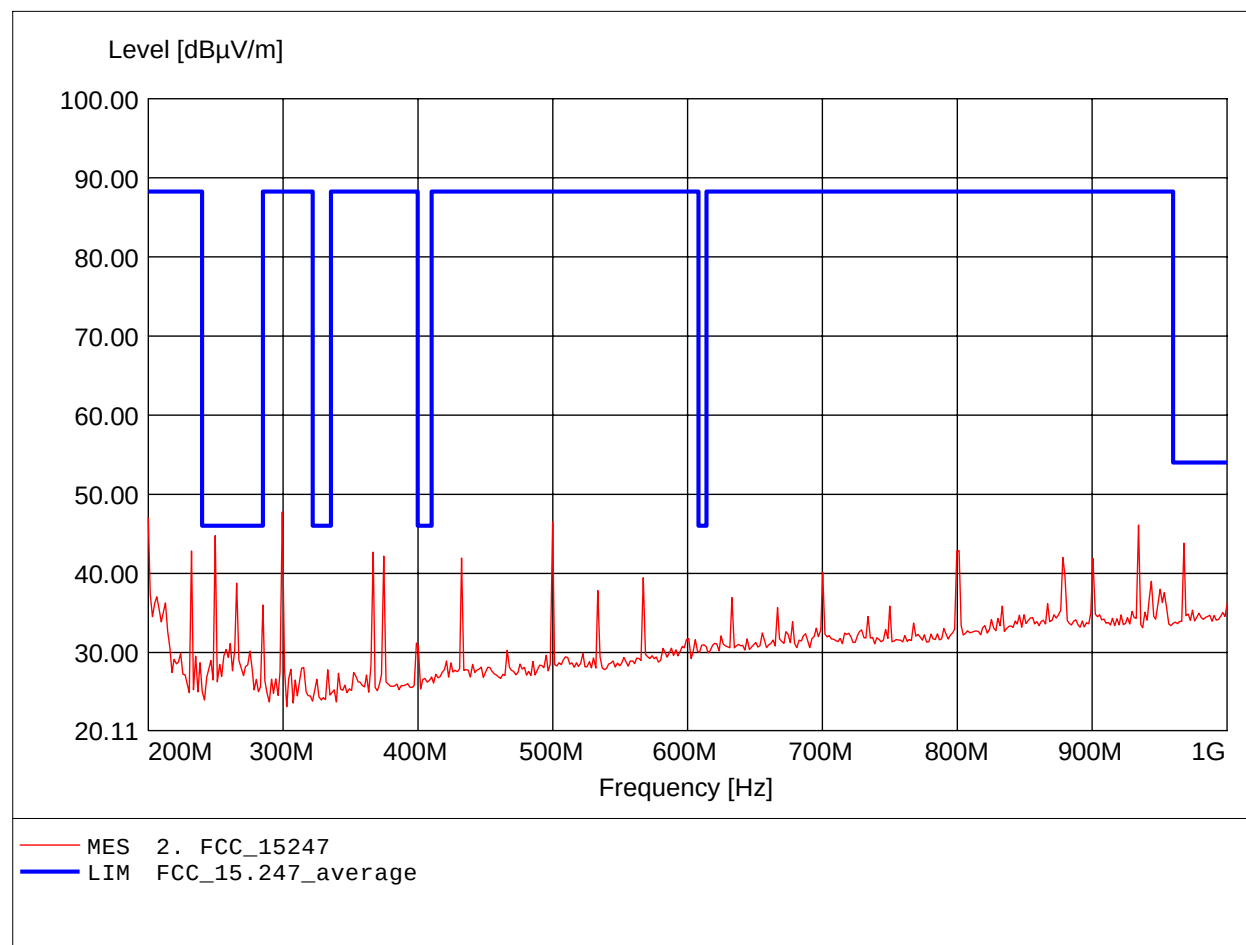
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 34.429MHz, Emax: 43.49dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

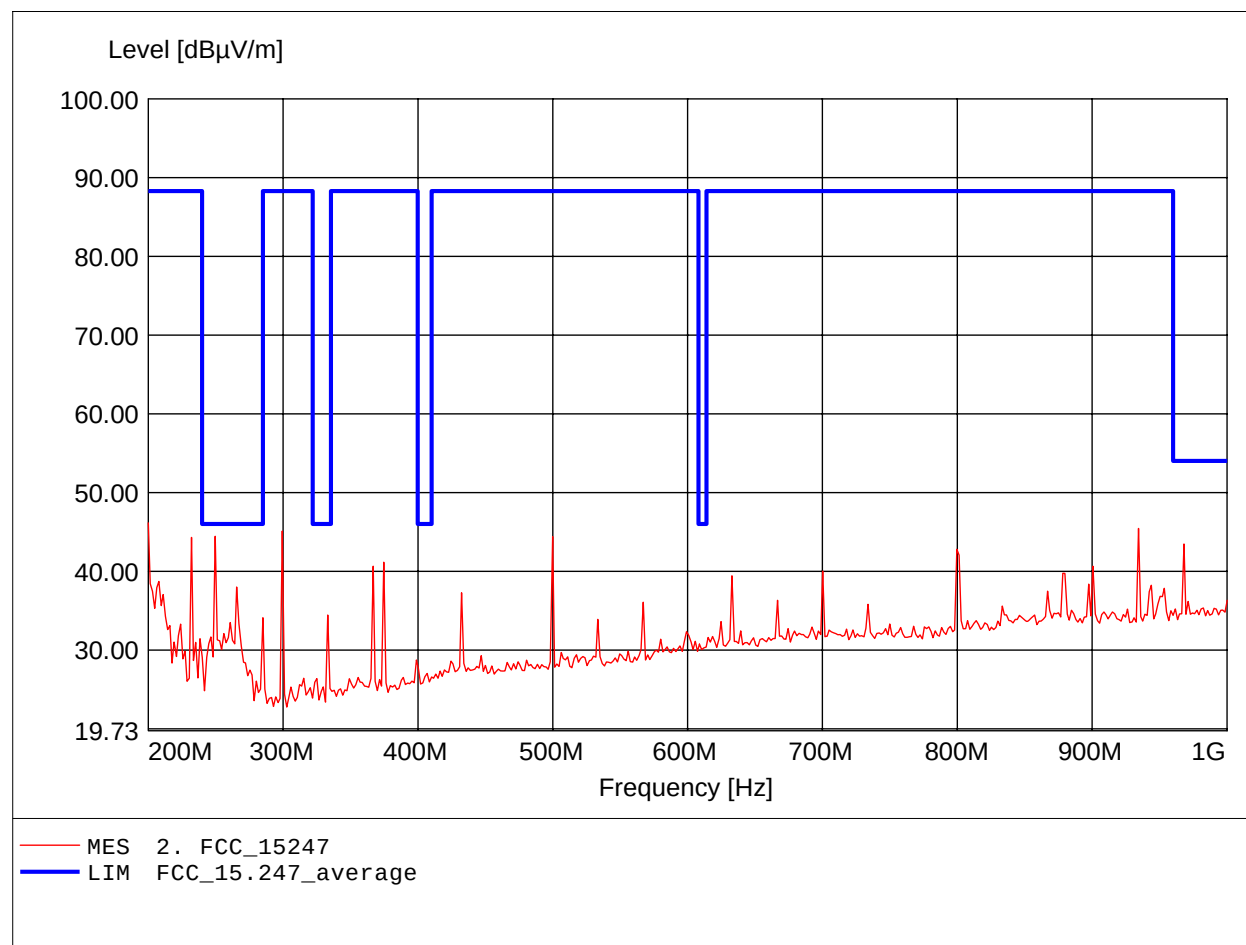
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223,
Freq: 299.399MHz, Emax: 47.77dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

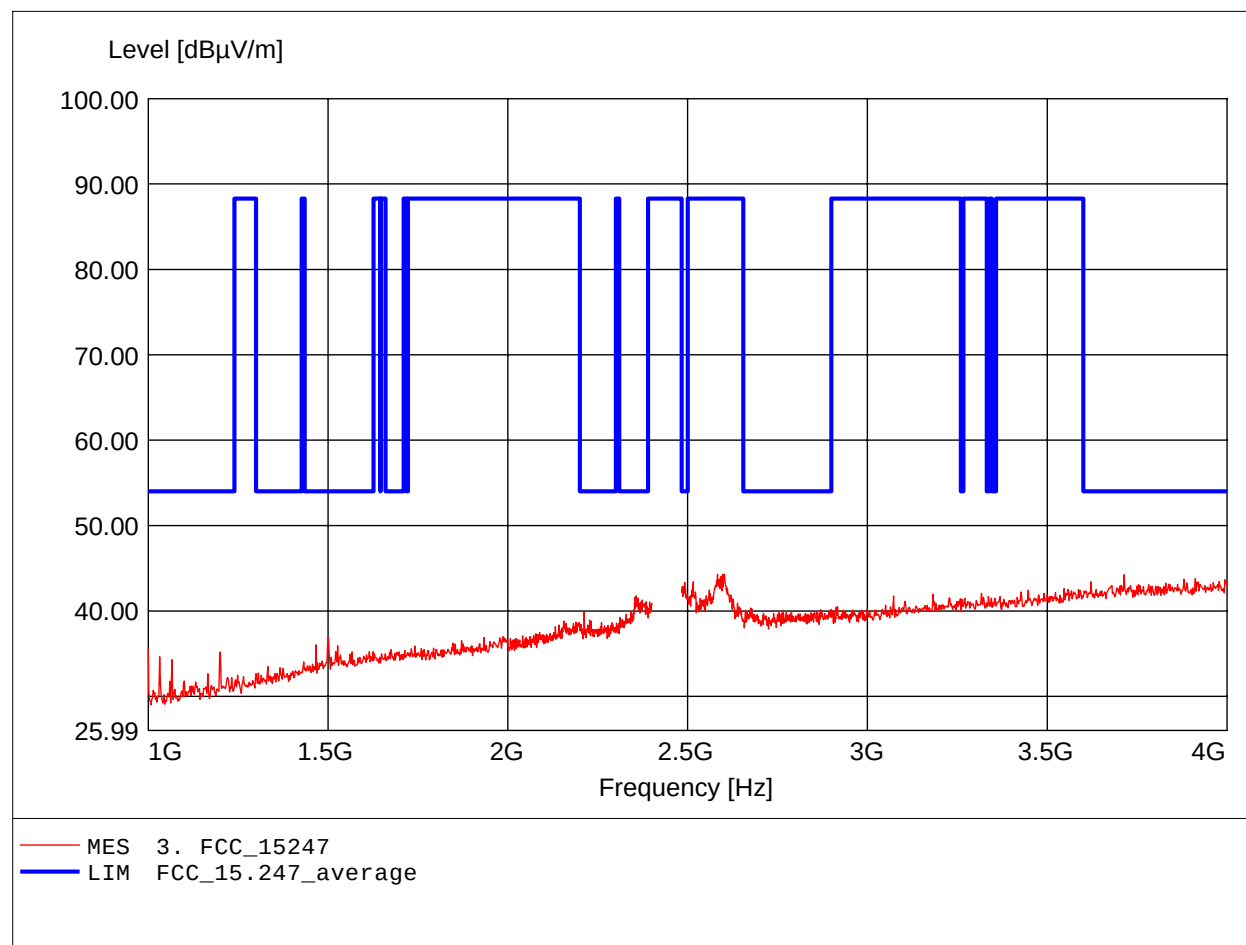
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223,
Freq: 200.000MHz, Emax: 46.12dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

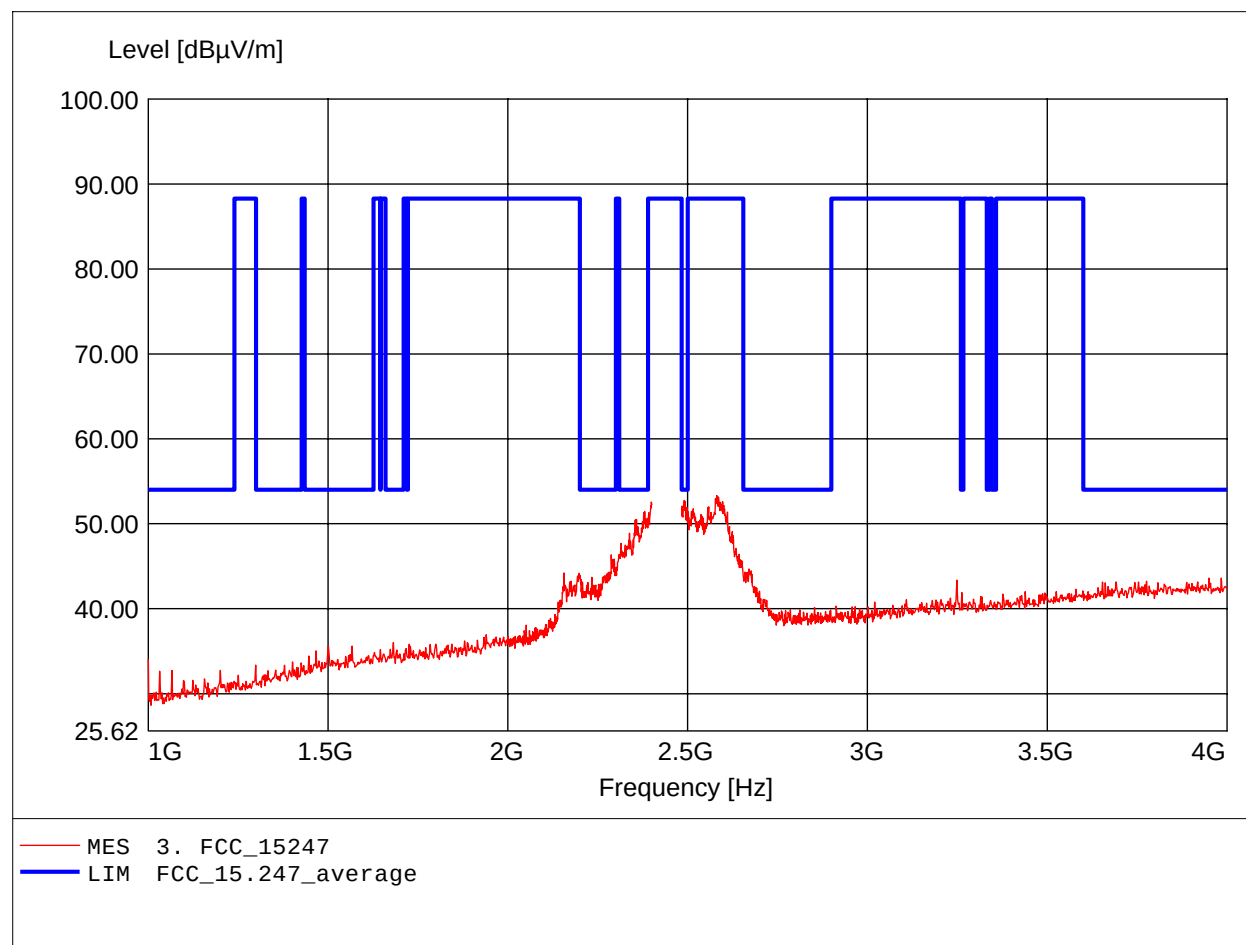
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 2.583GHz, Emax: 44.31dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

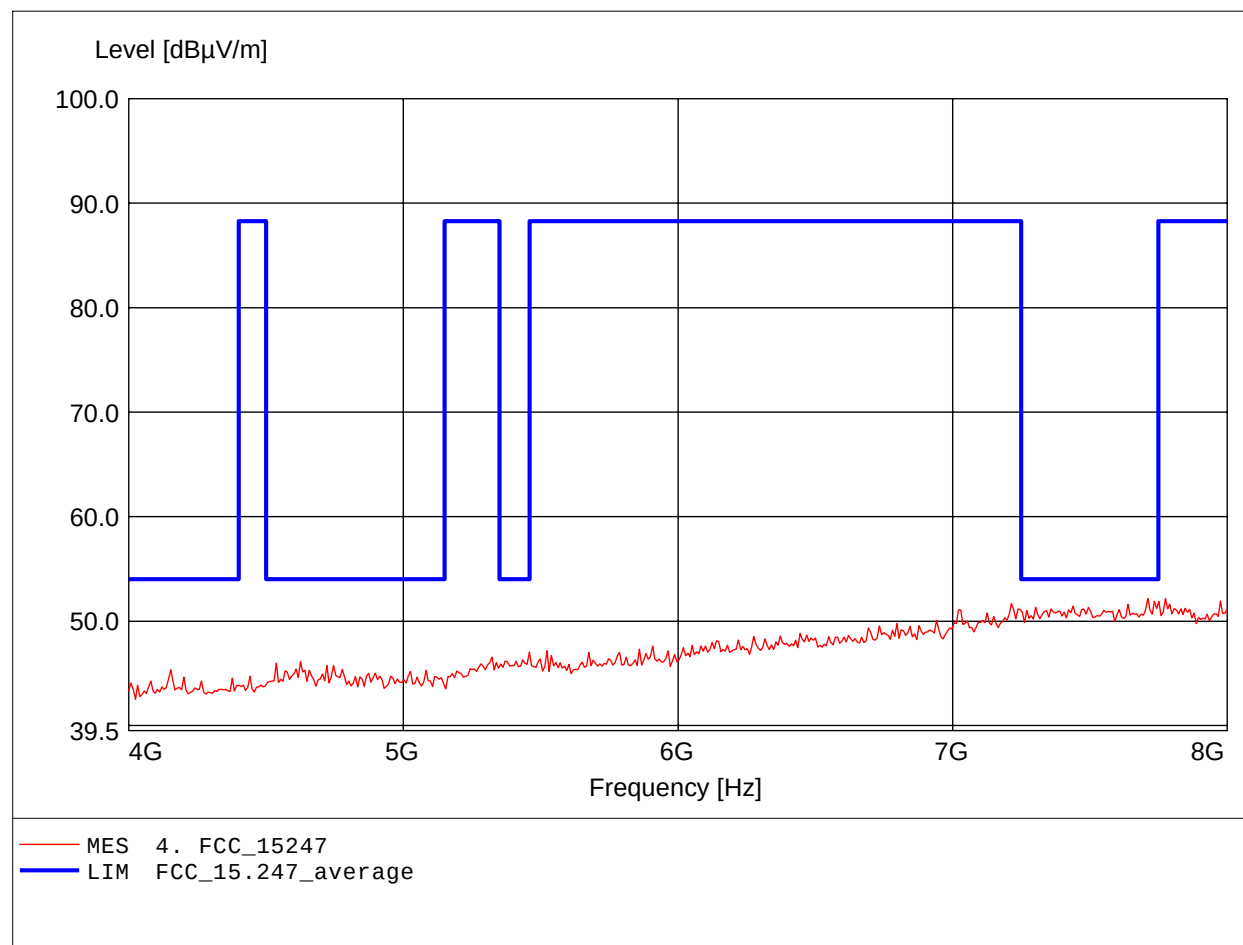
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 2.581GHz, Emax: 53.32dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

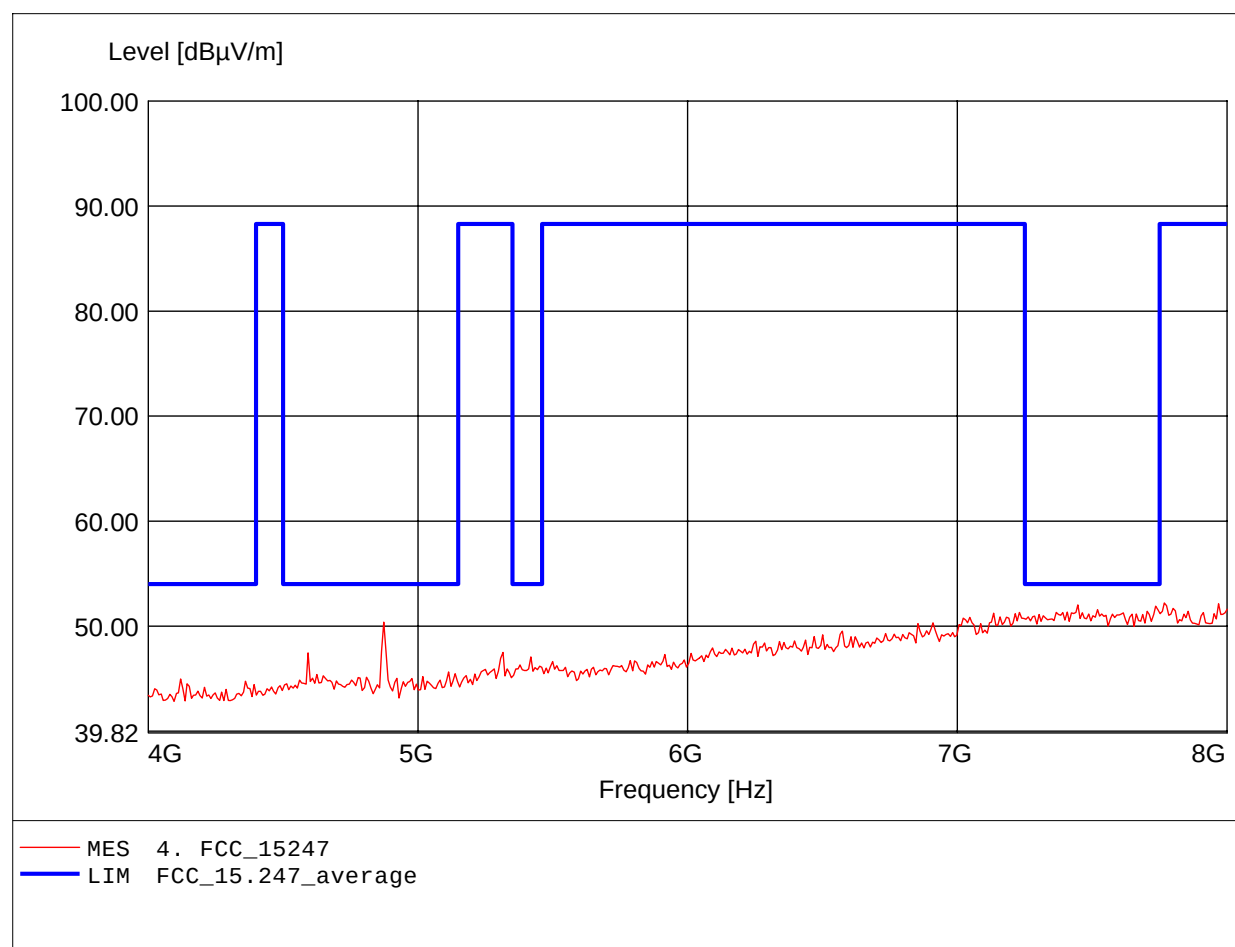
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.711GHz, Emax: 52.16dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

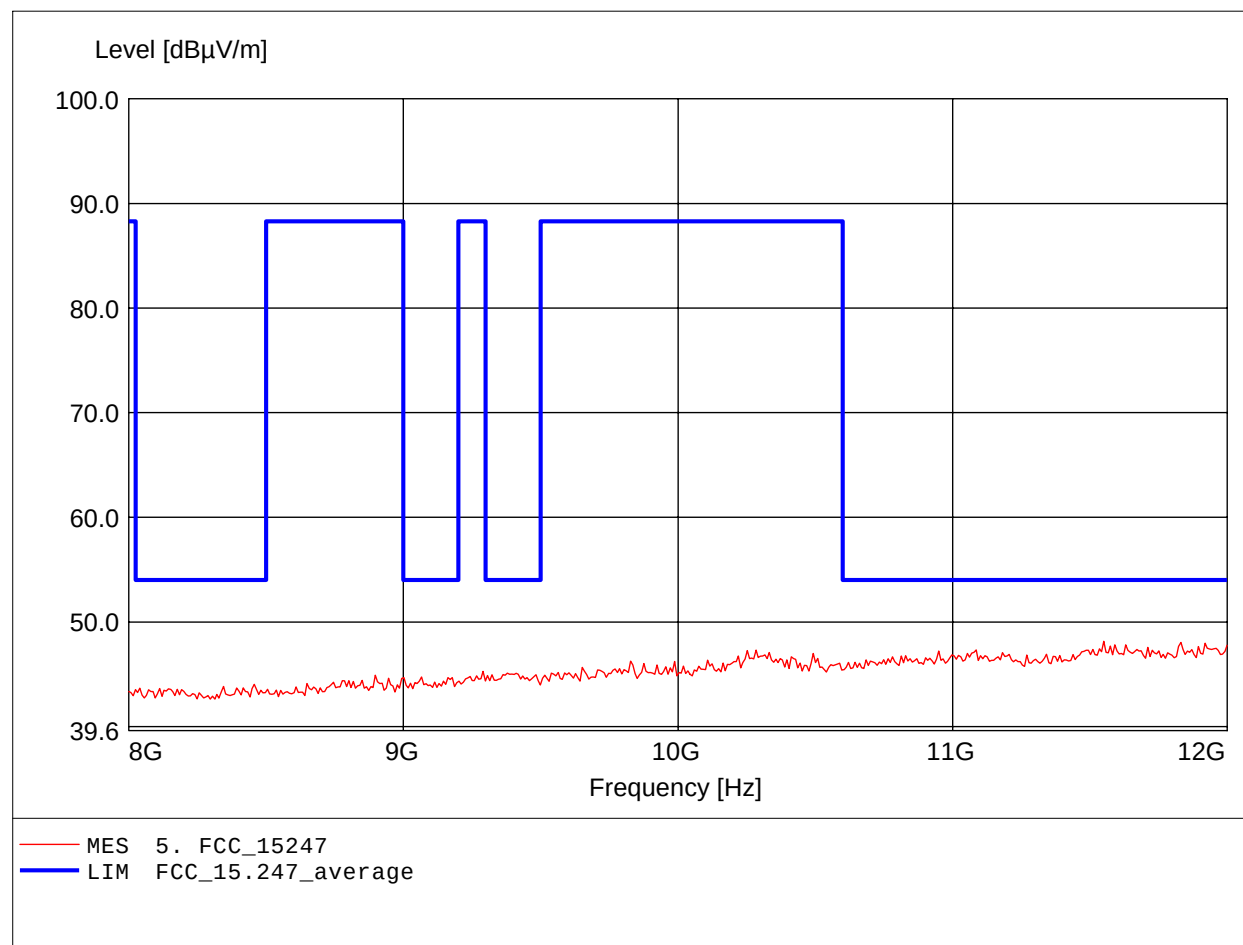
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.768GHz, Emax: 52.21dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

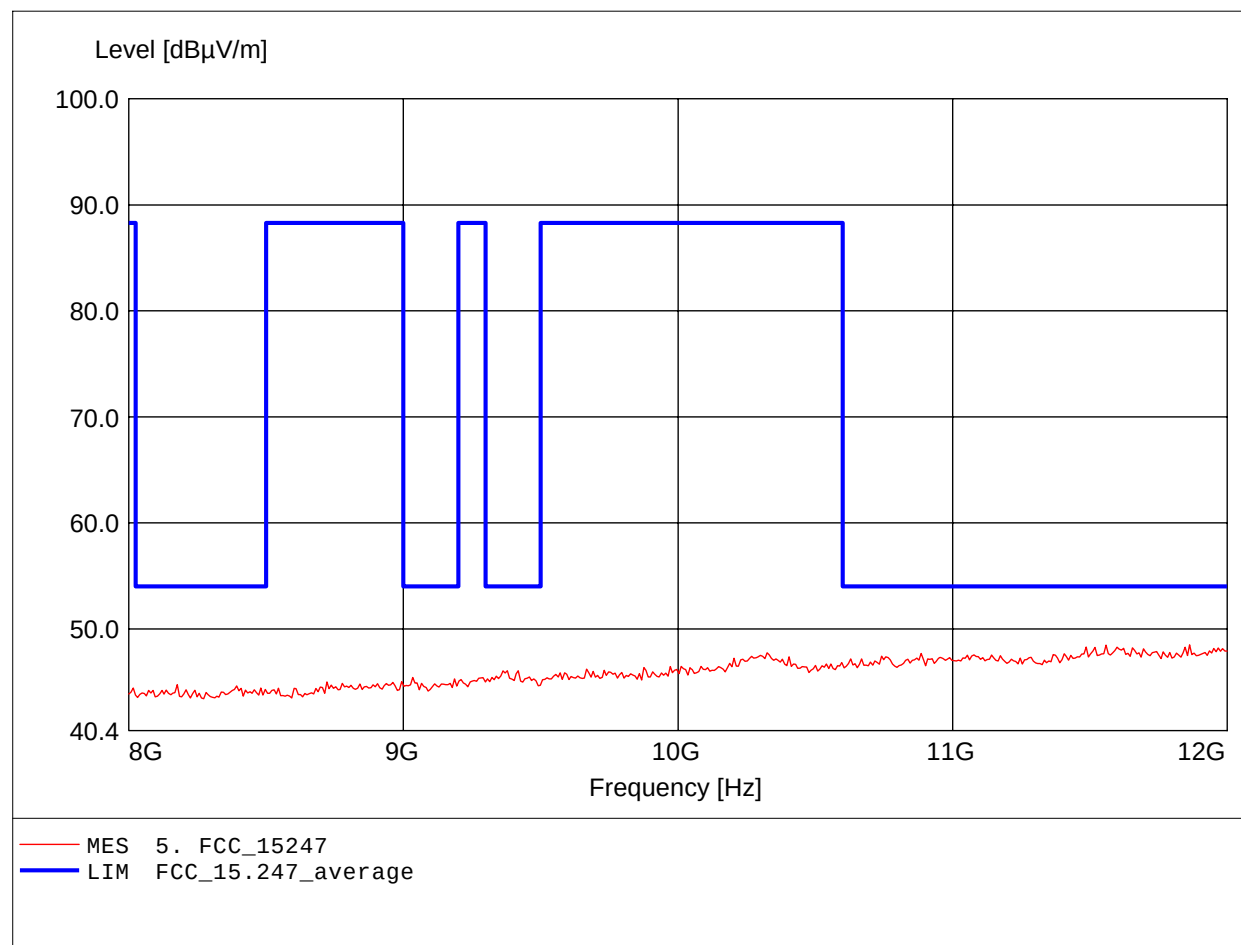
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.551GHz, Emax: 48.16dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

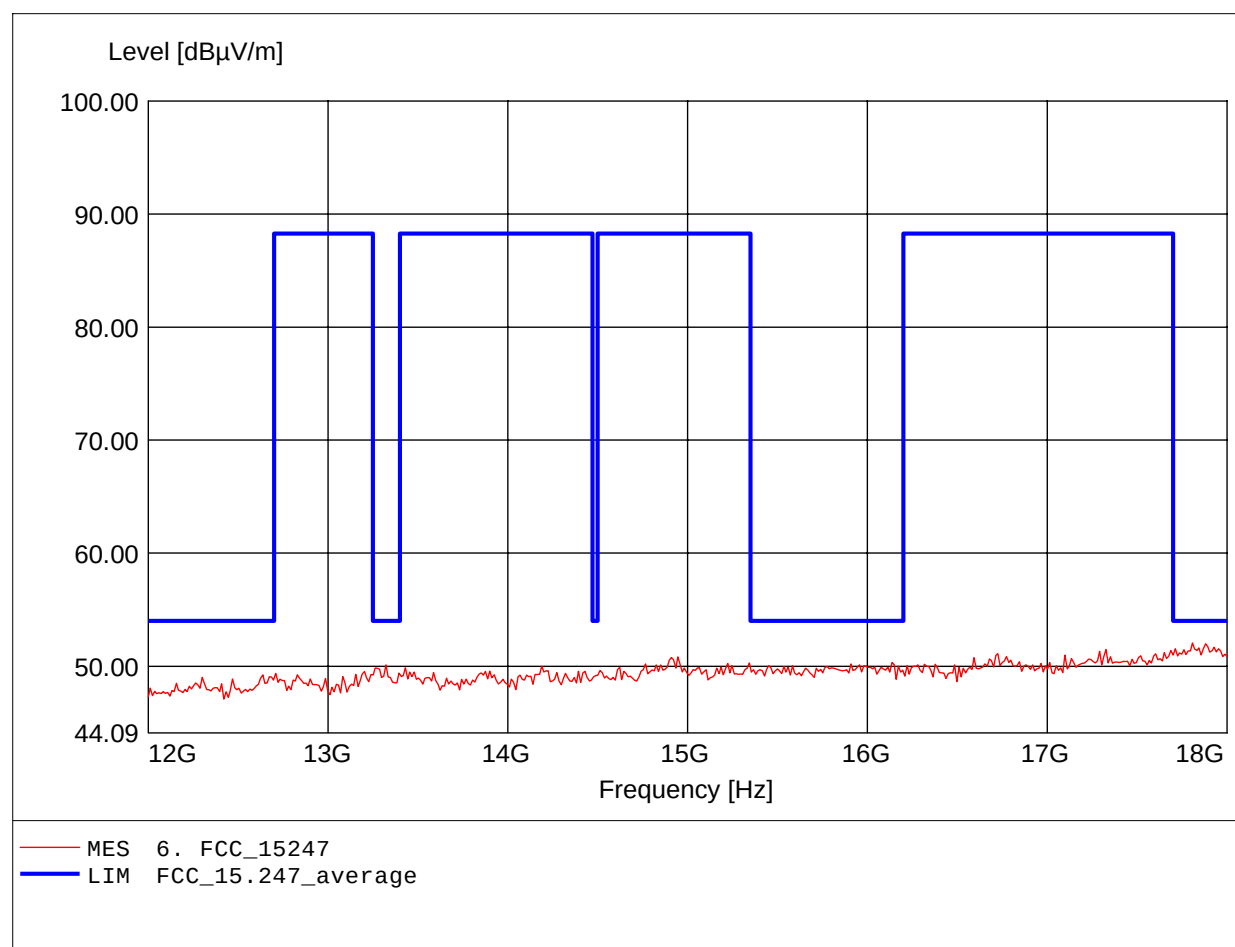
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.864GHz, Emax: 48.51dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

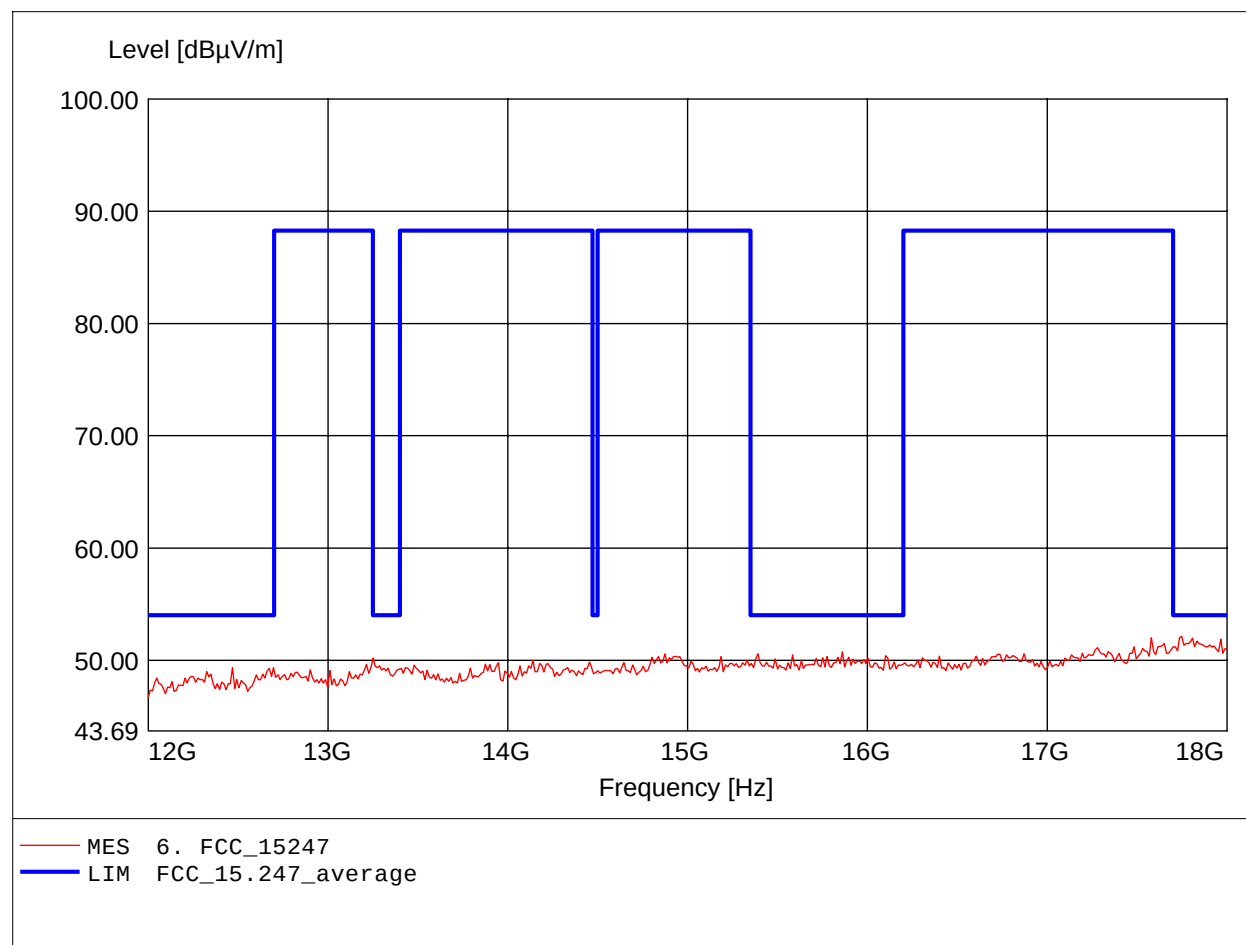
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.808GHz, Emax: 52.06dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

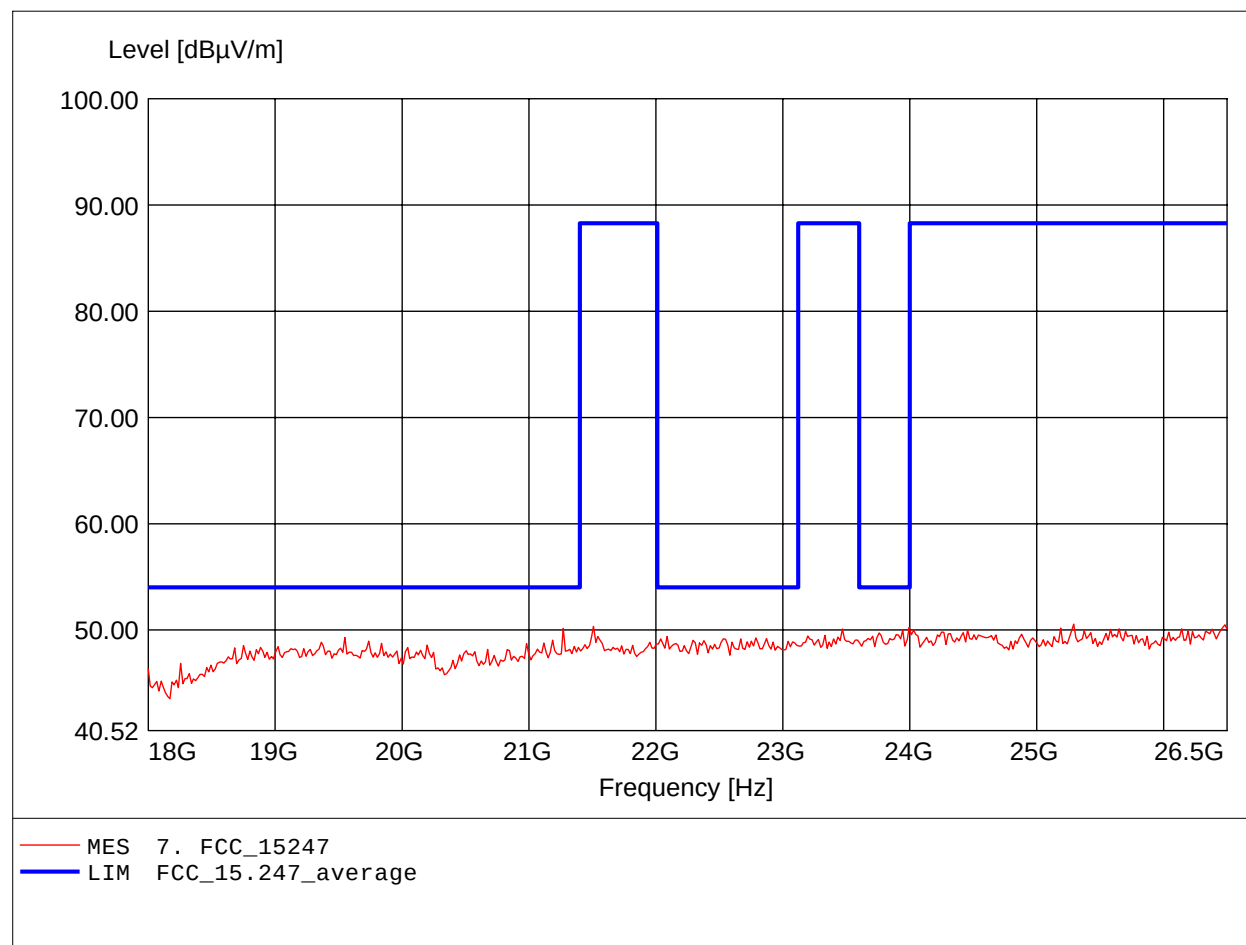
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.747GHz, Emax: 52.11dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

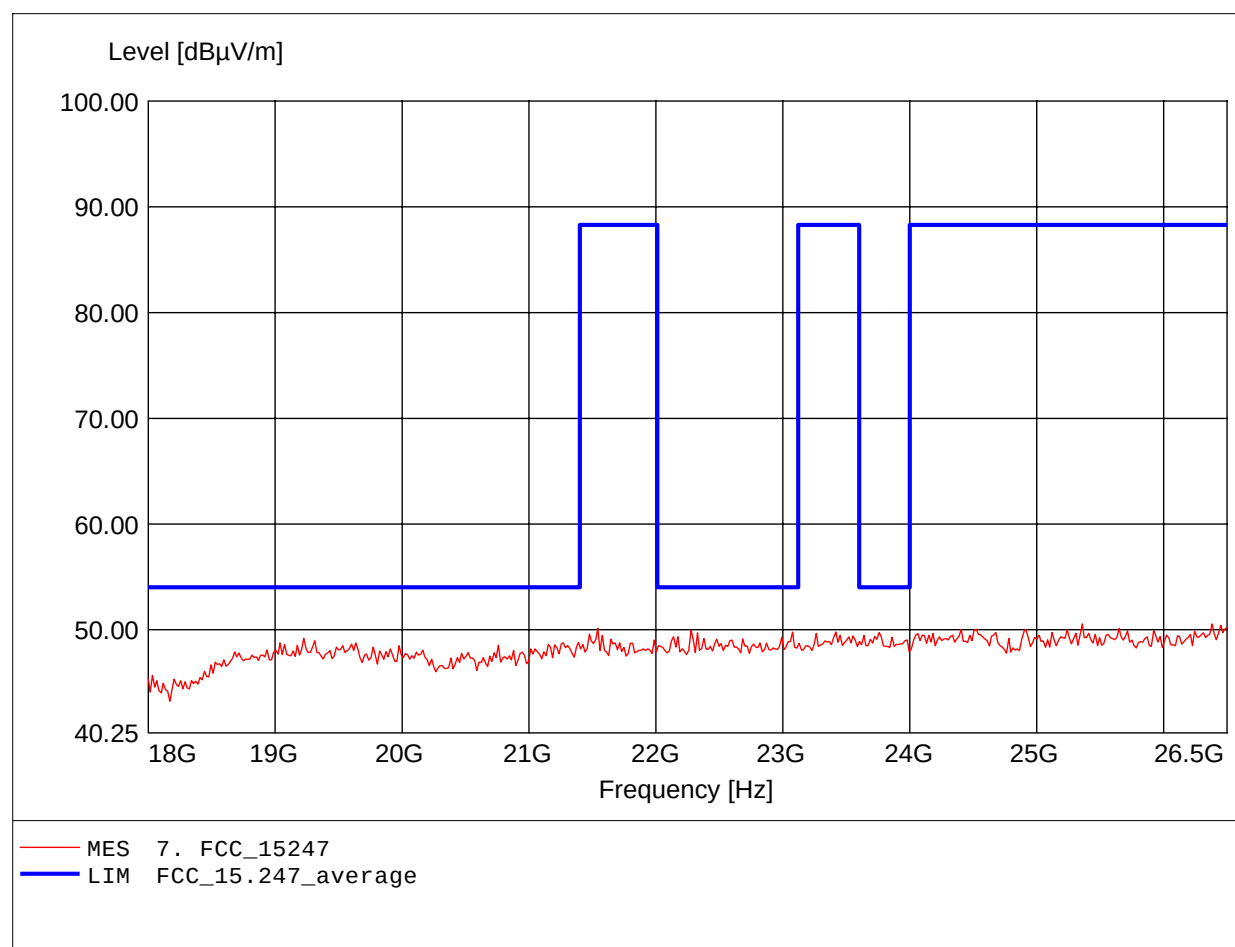
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 25.291GHz, Emax: 50.56dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

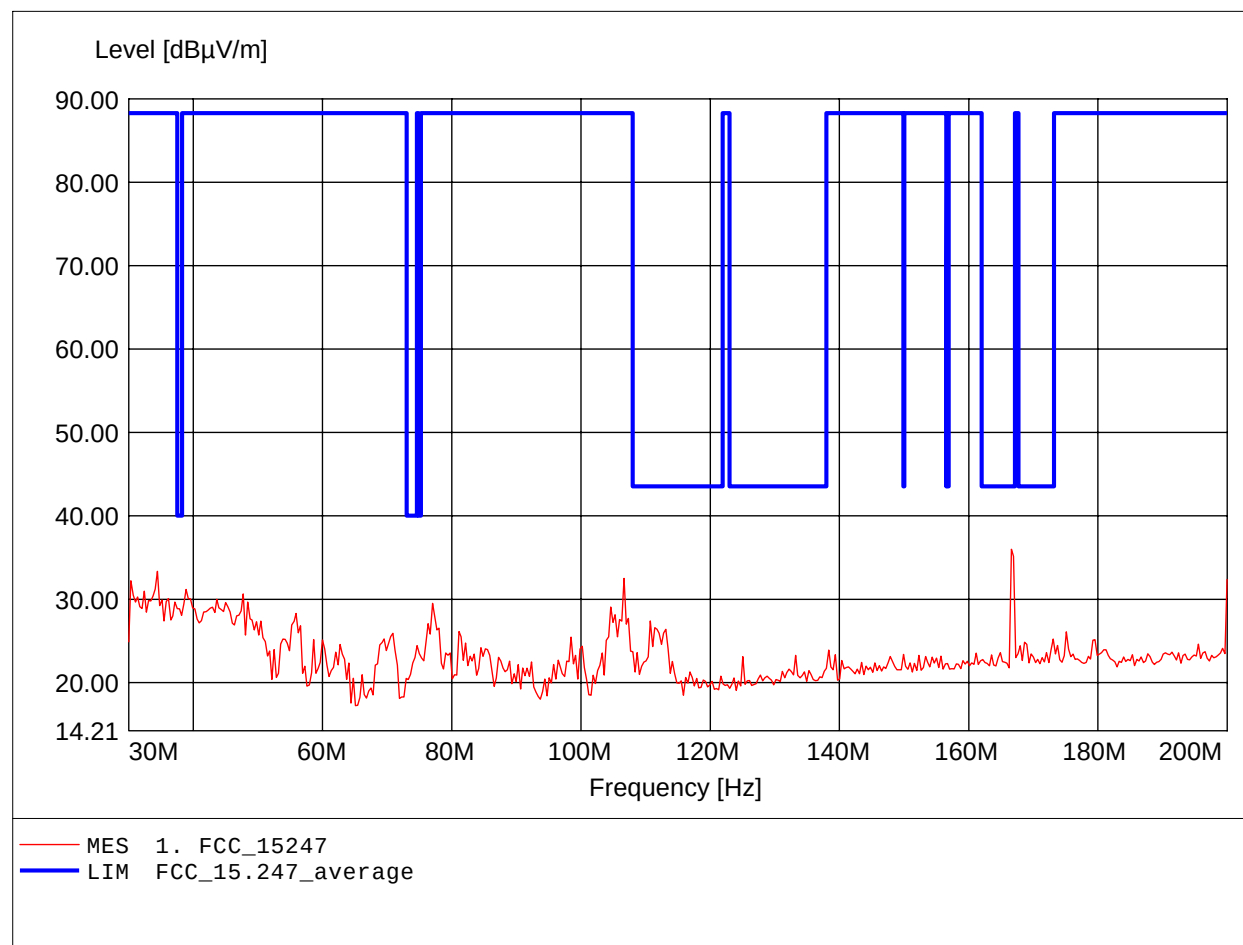
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 26.381GHz, Emax: 50.57dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

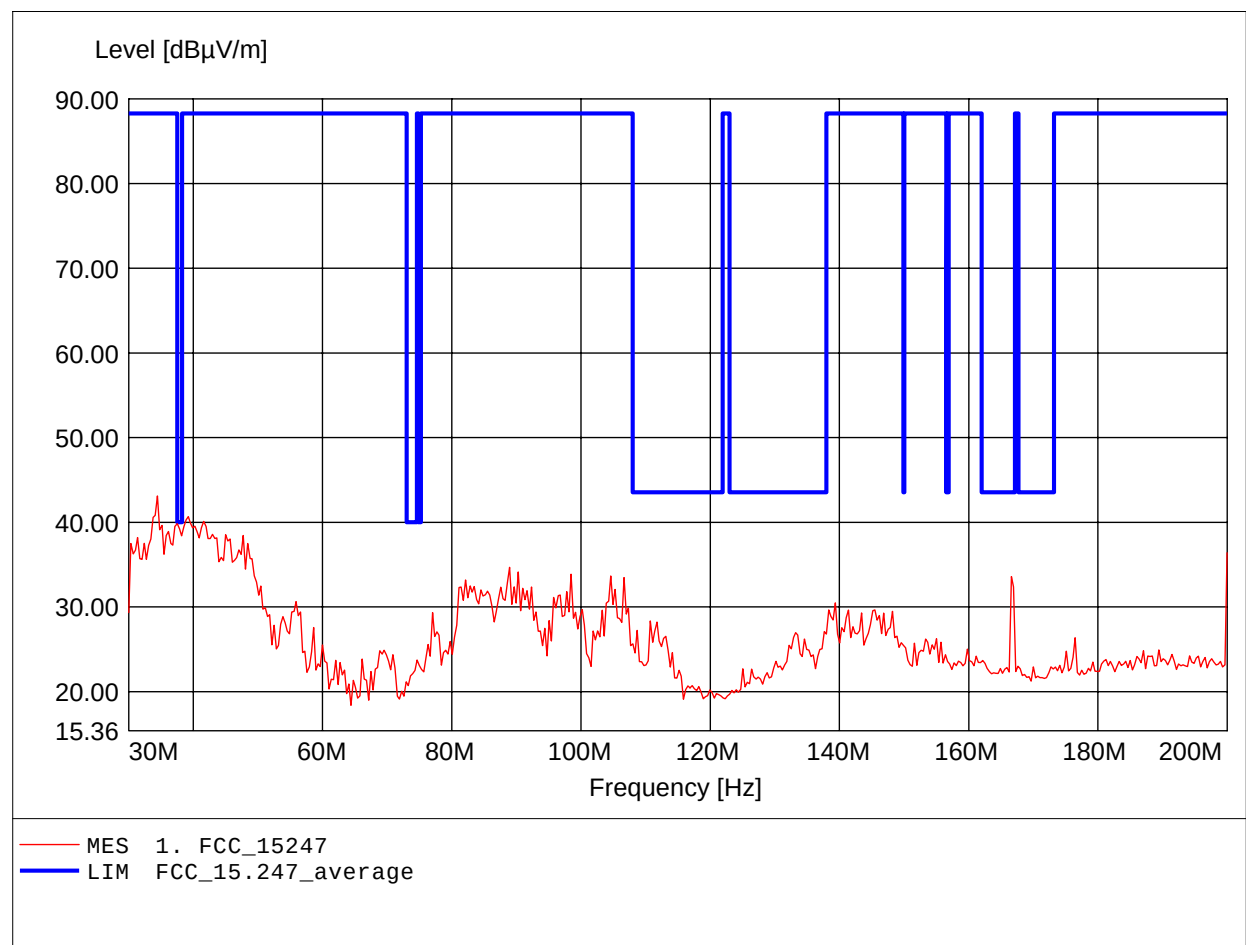
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 166.613MHz, Emax: 35.98dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

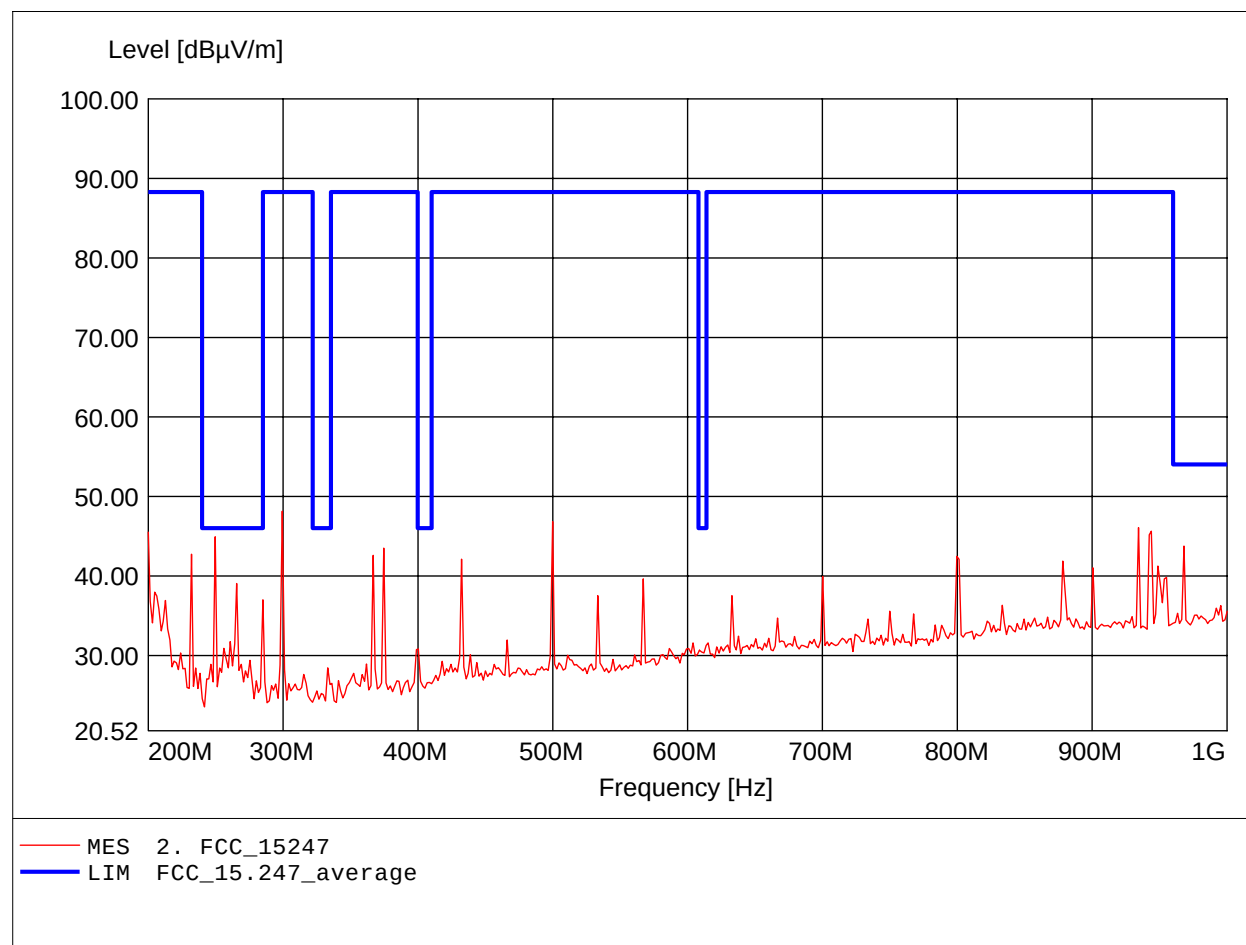
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Freq: 34.429MHz, Emax: 43.10dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

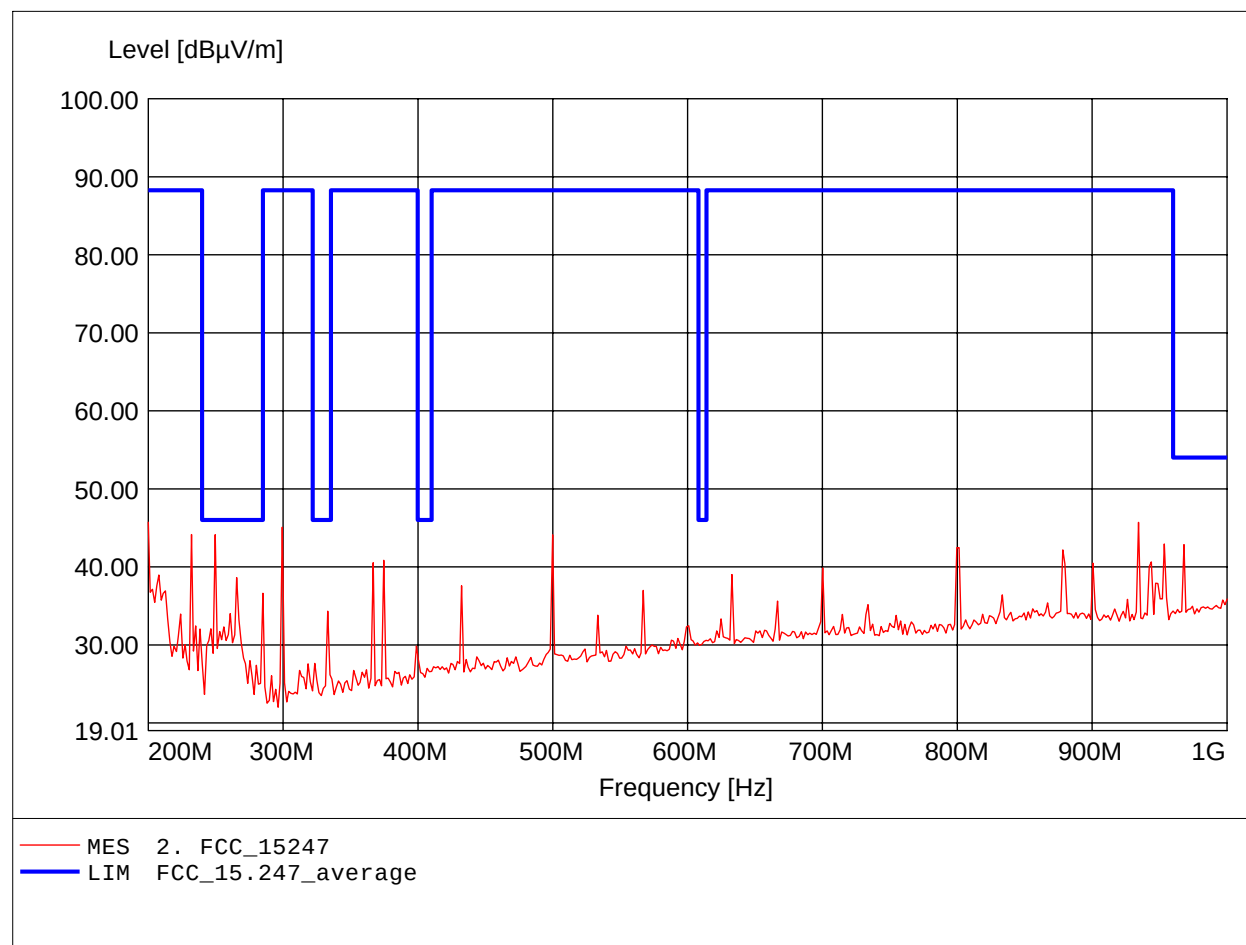
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223,
Freq: 299.399MHz, Emax: 48.15dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

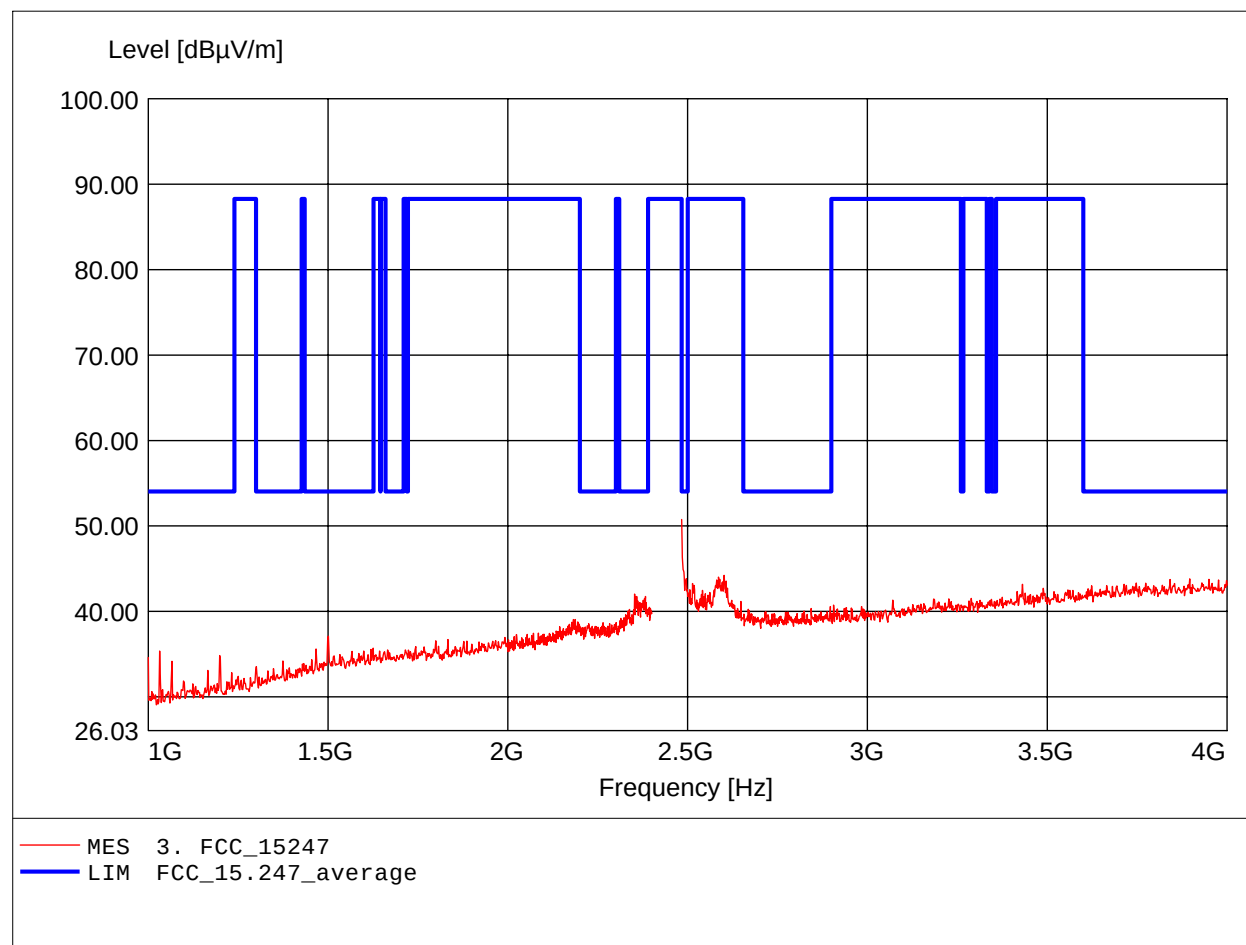
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223,
Freq: 200.000MHz, Emax: 45.74dBμV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

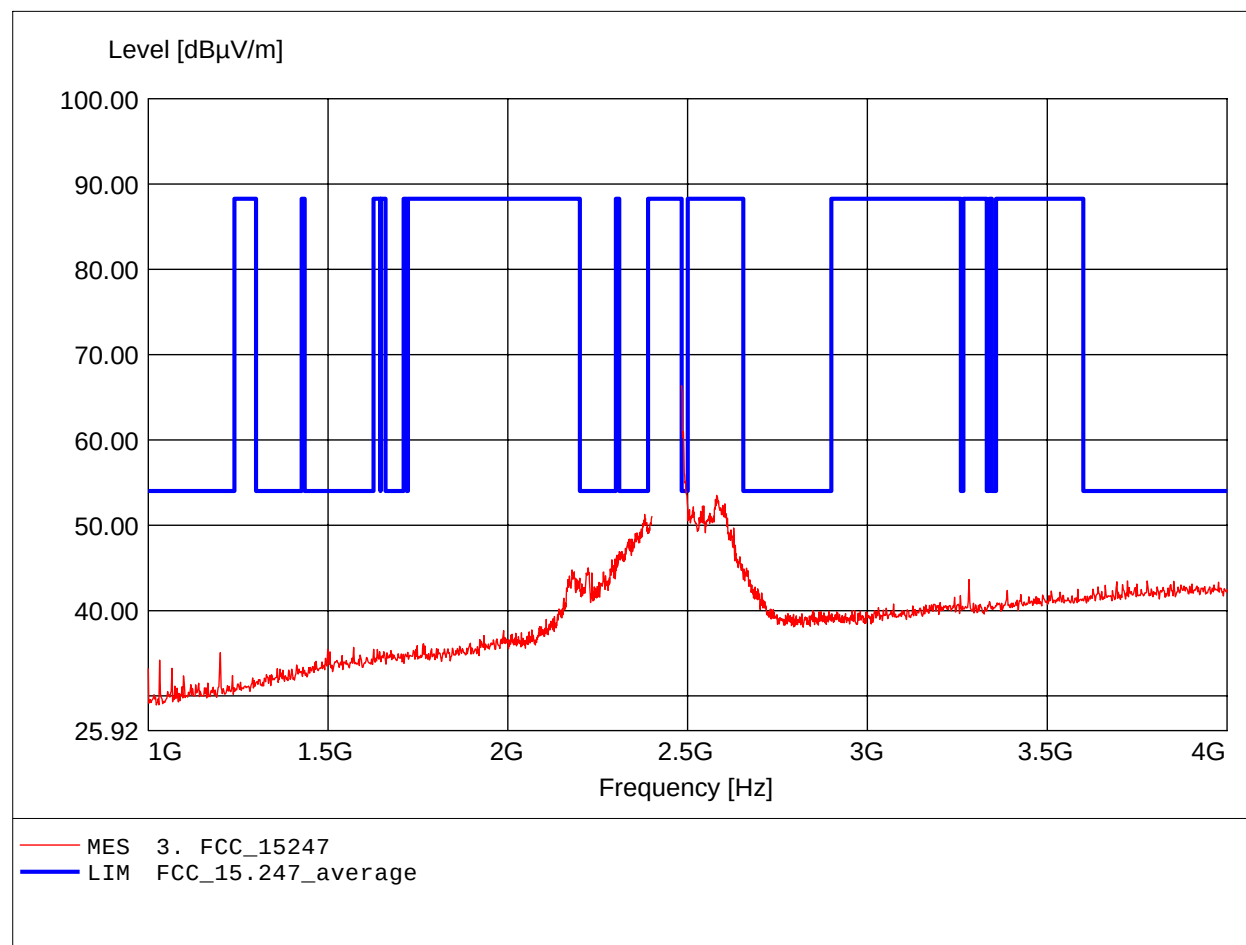
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 2.484GHz, Emax: 50.75dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

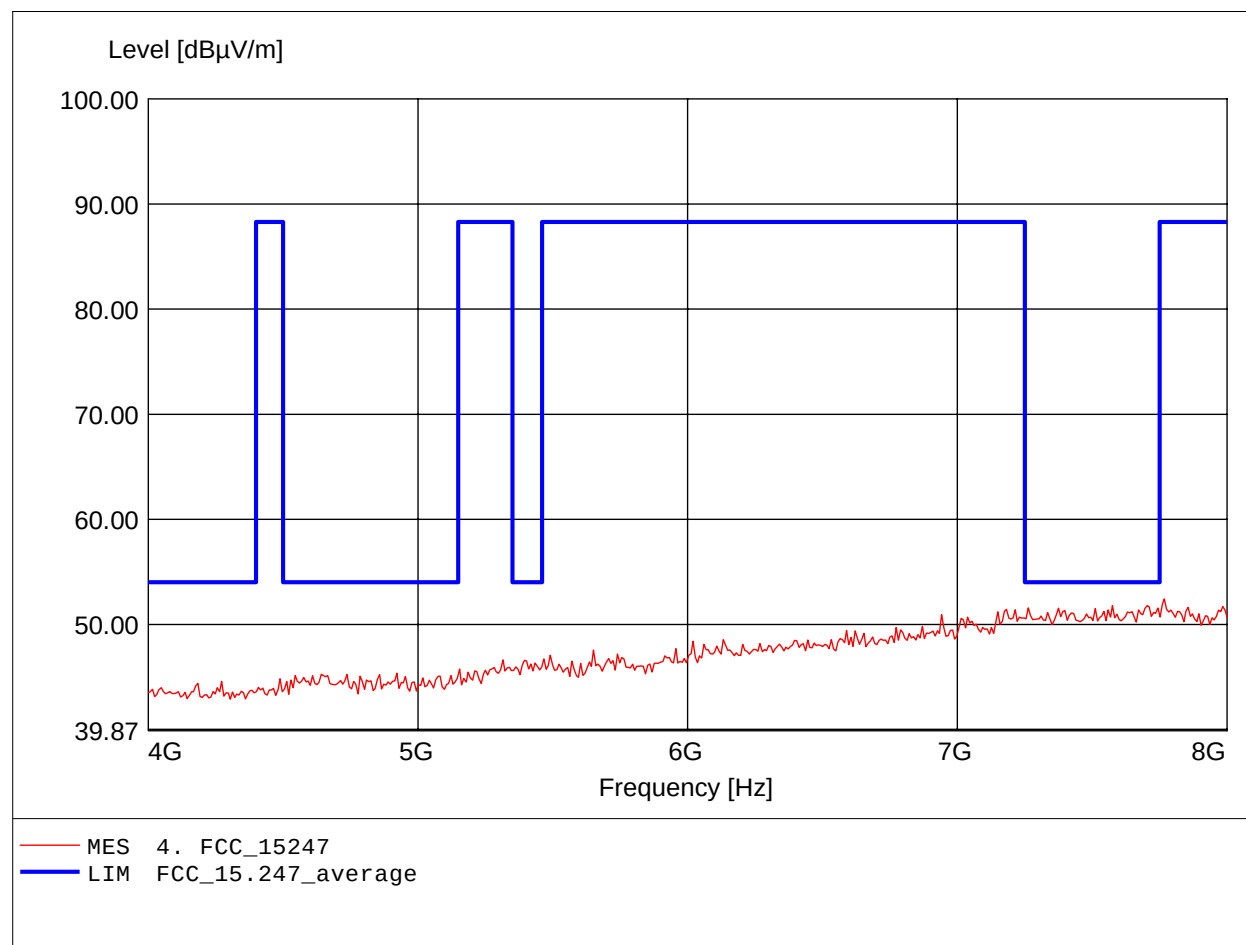
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 2.484GHz, Emax: 66.37dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

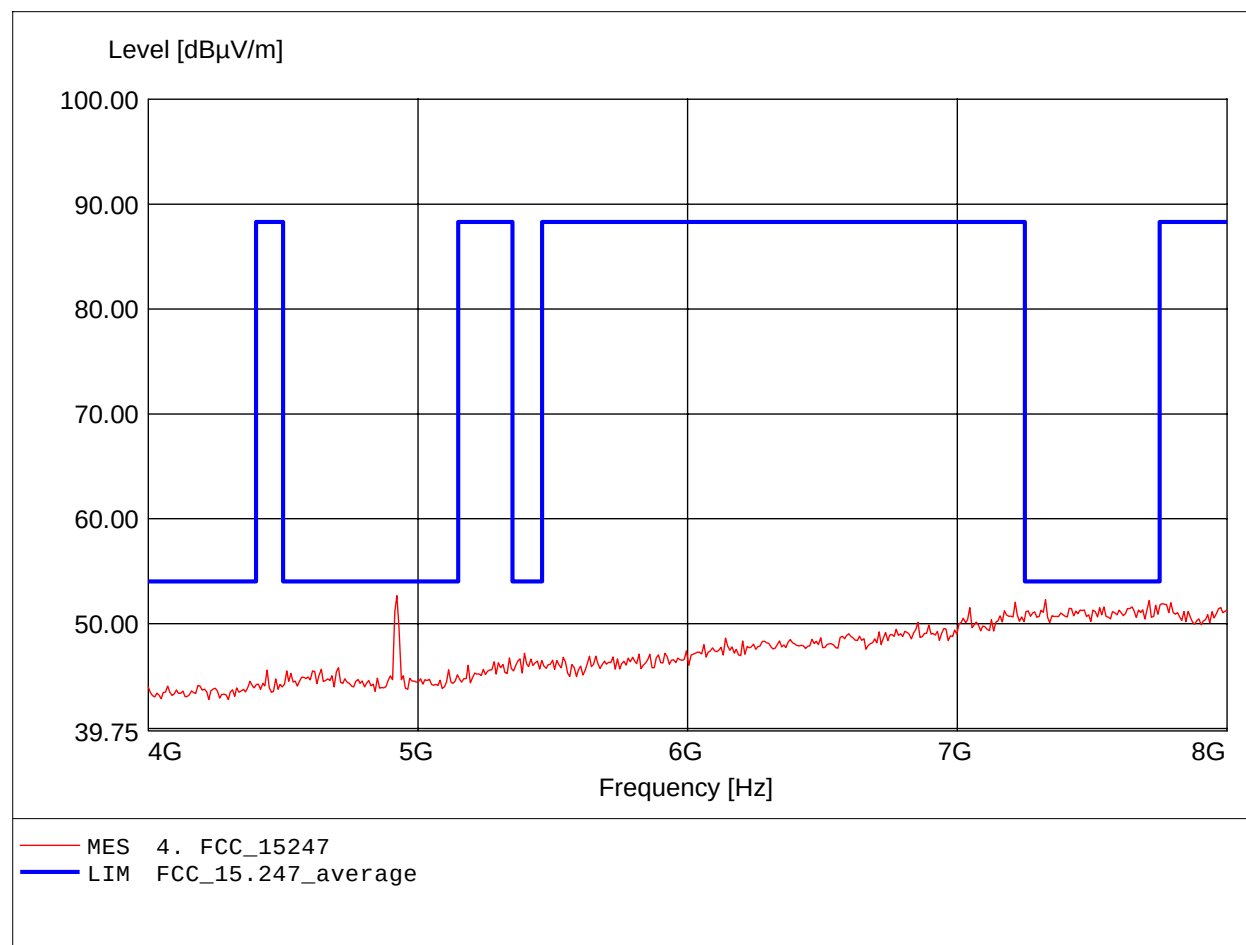
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 7.768GHz, Emax: 52.41dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

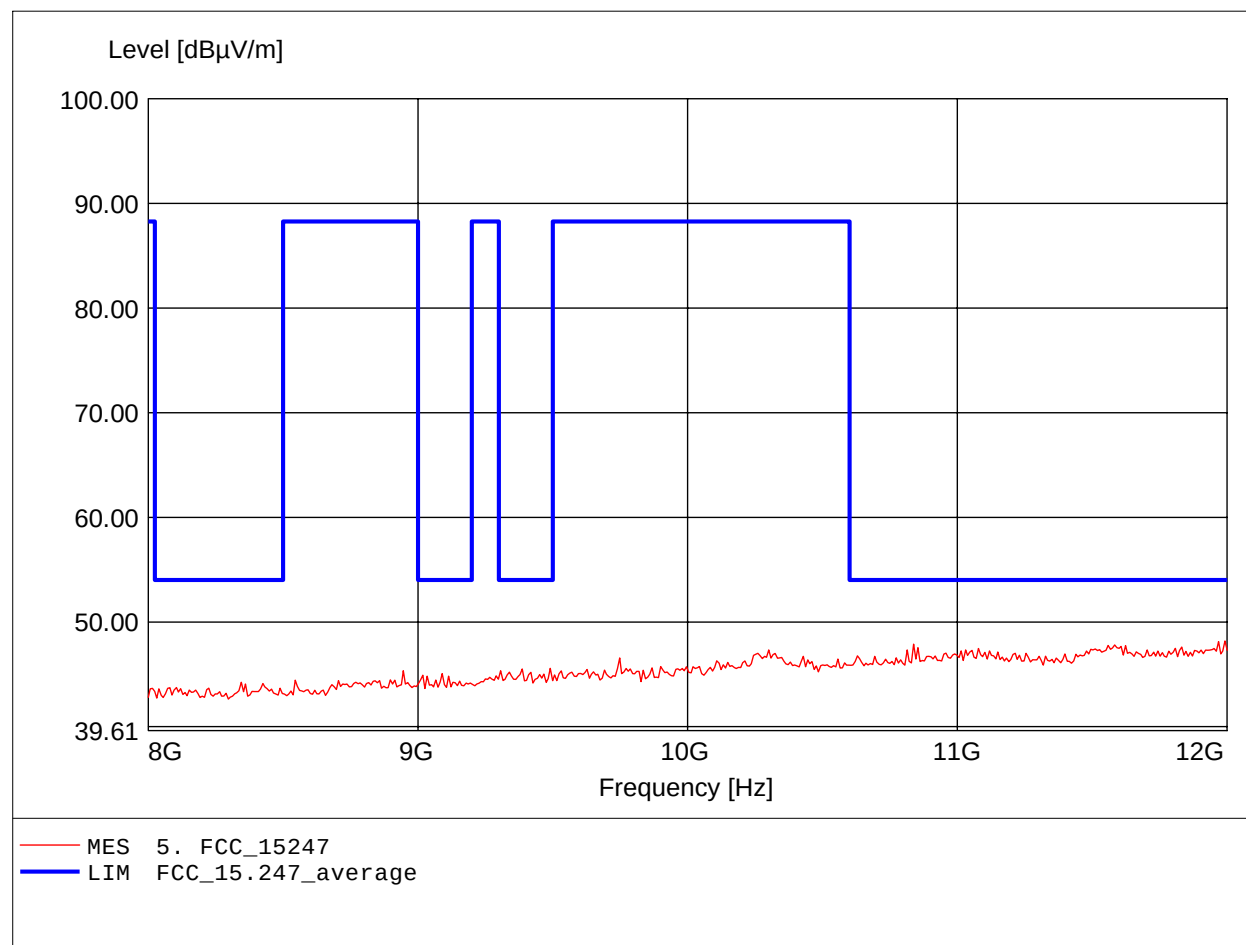
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 4.922GHz, Emax: 52.66dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

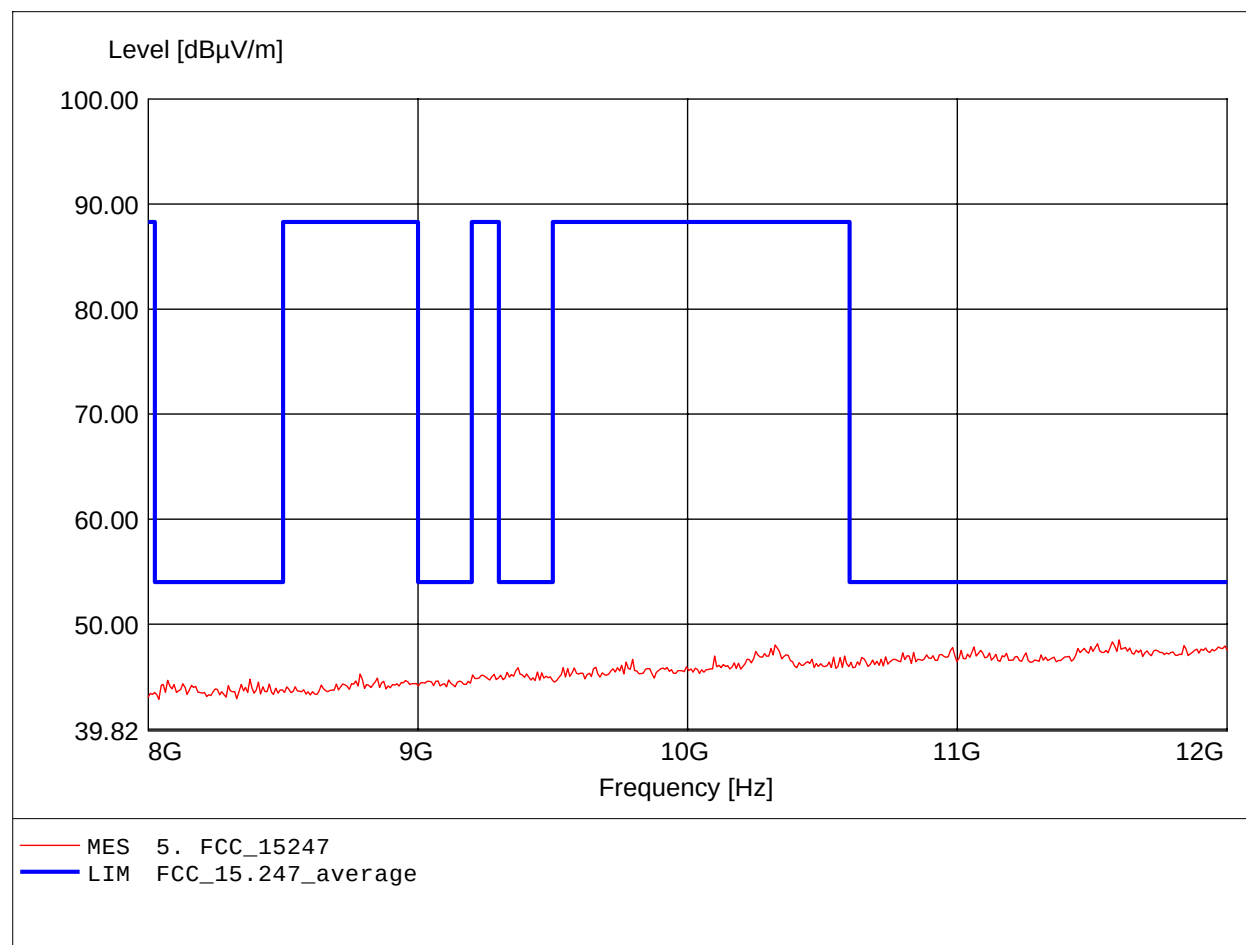
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.992GHz, Emax: 48.19dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

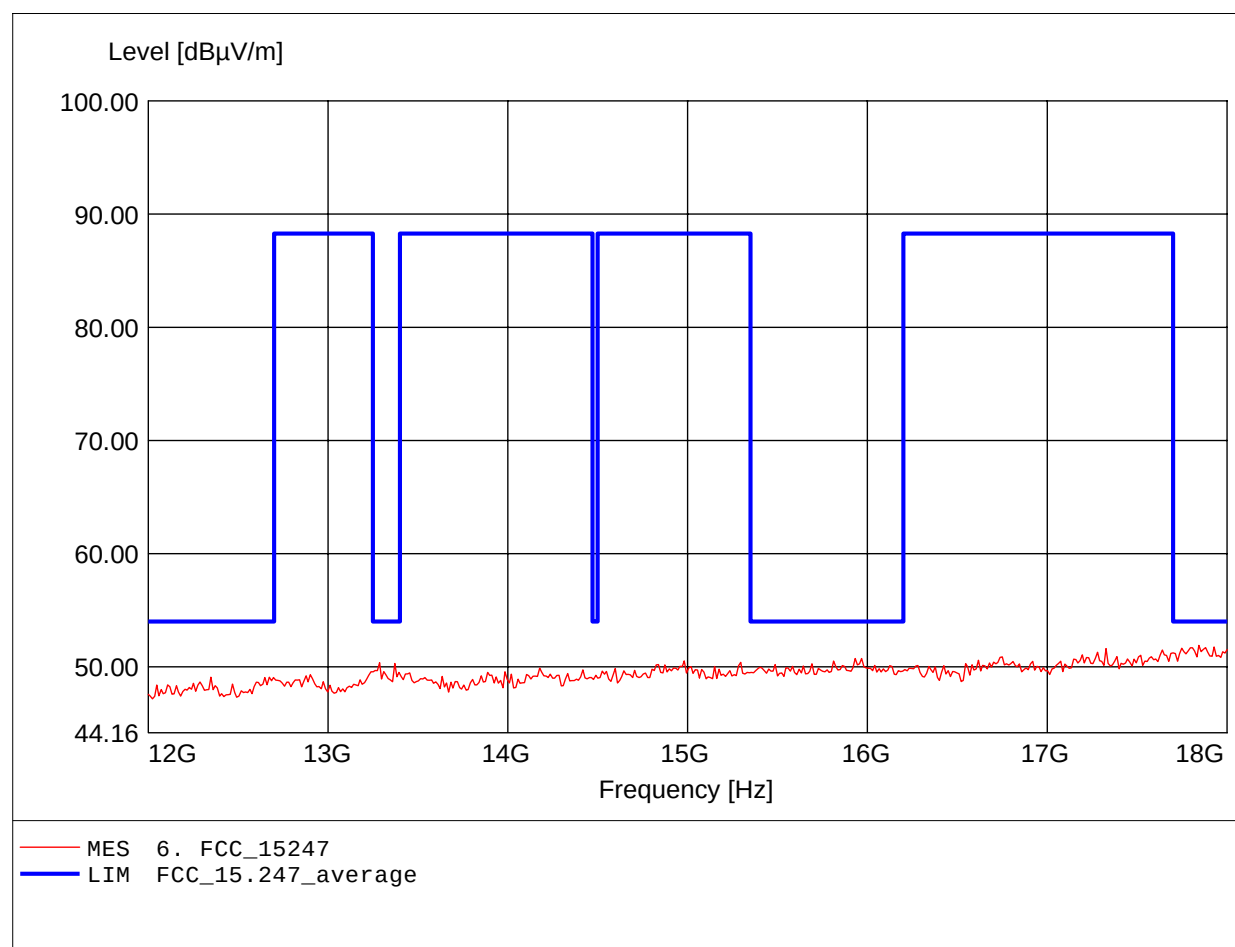
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 11.599GHz, Emax: 48.48dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

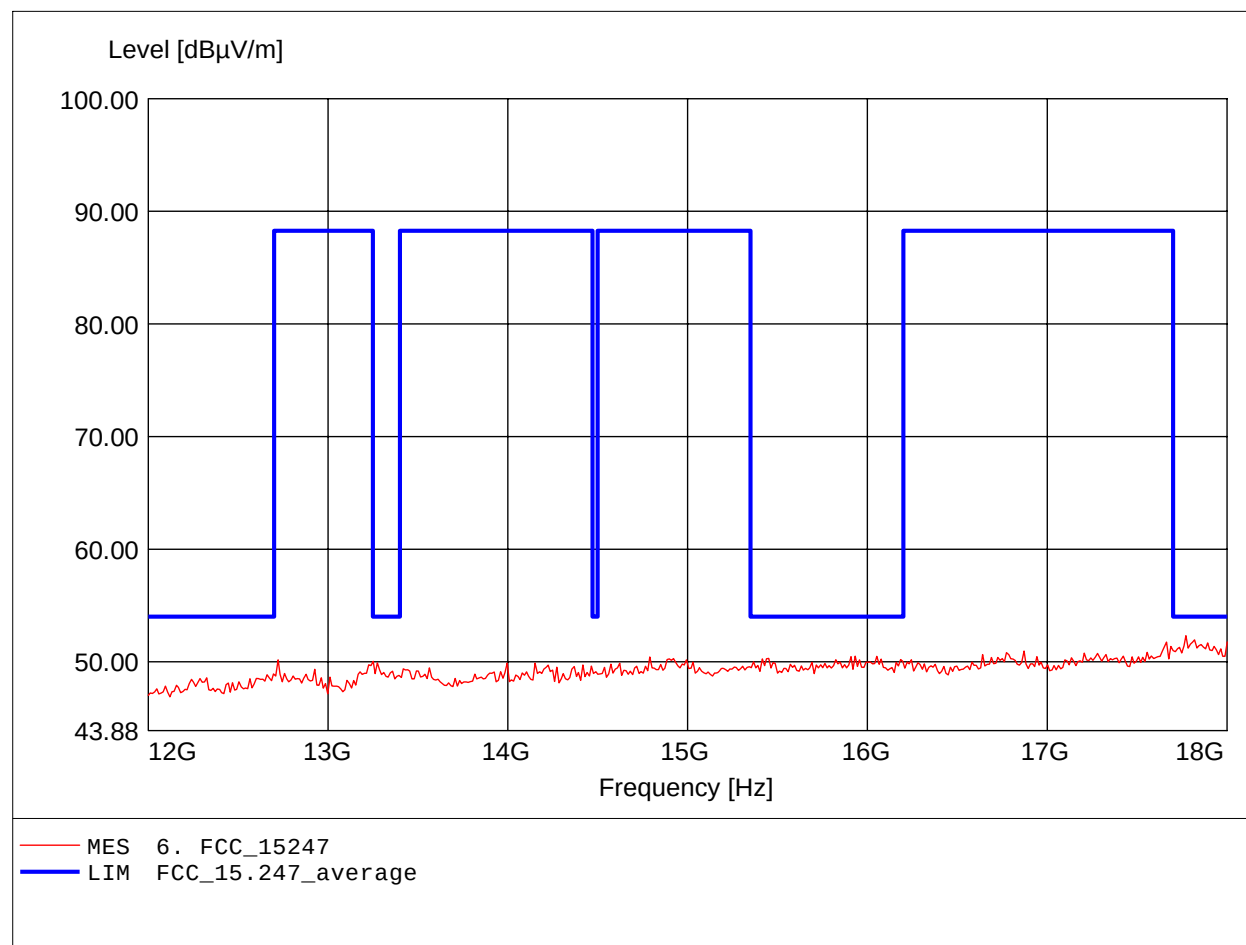
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.844GHz, Emax: 51.89dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

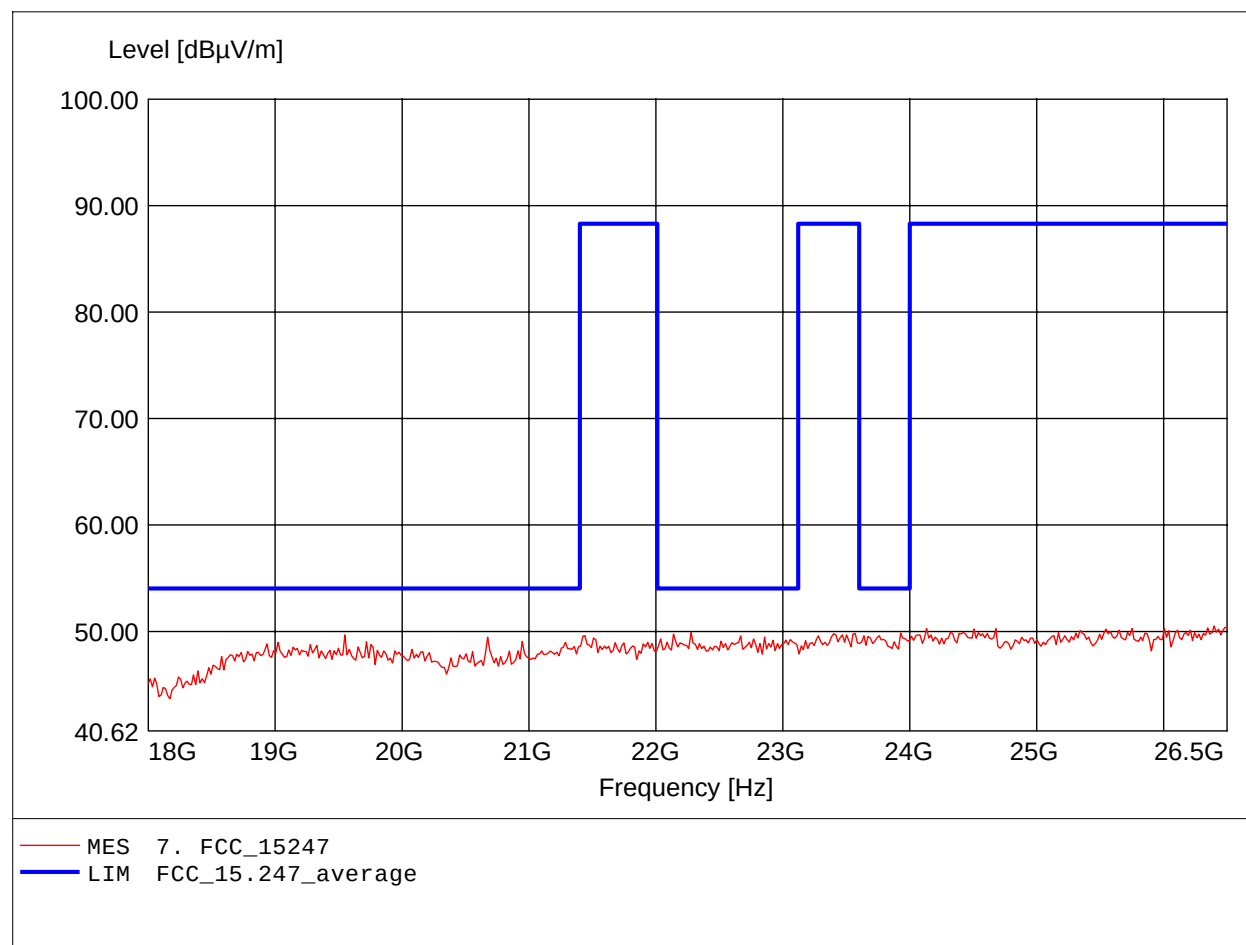
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, ampl.+HP.
Freq: 17.772GHz, Emax: 52.32dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

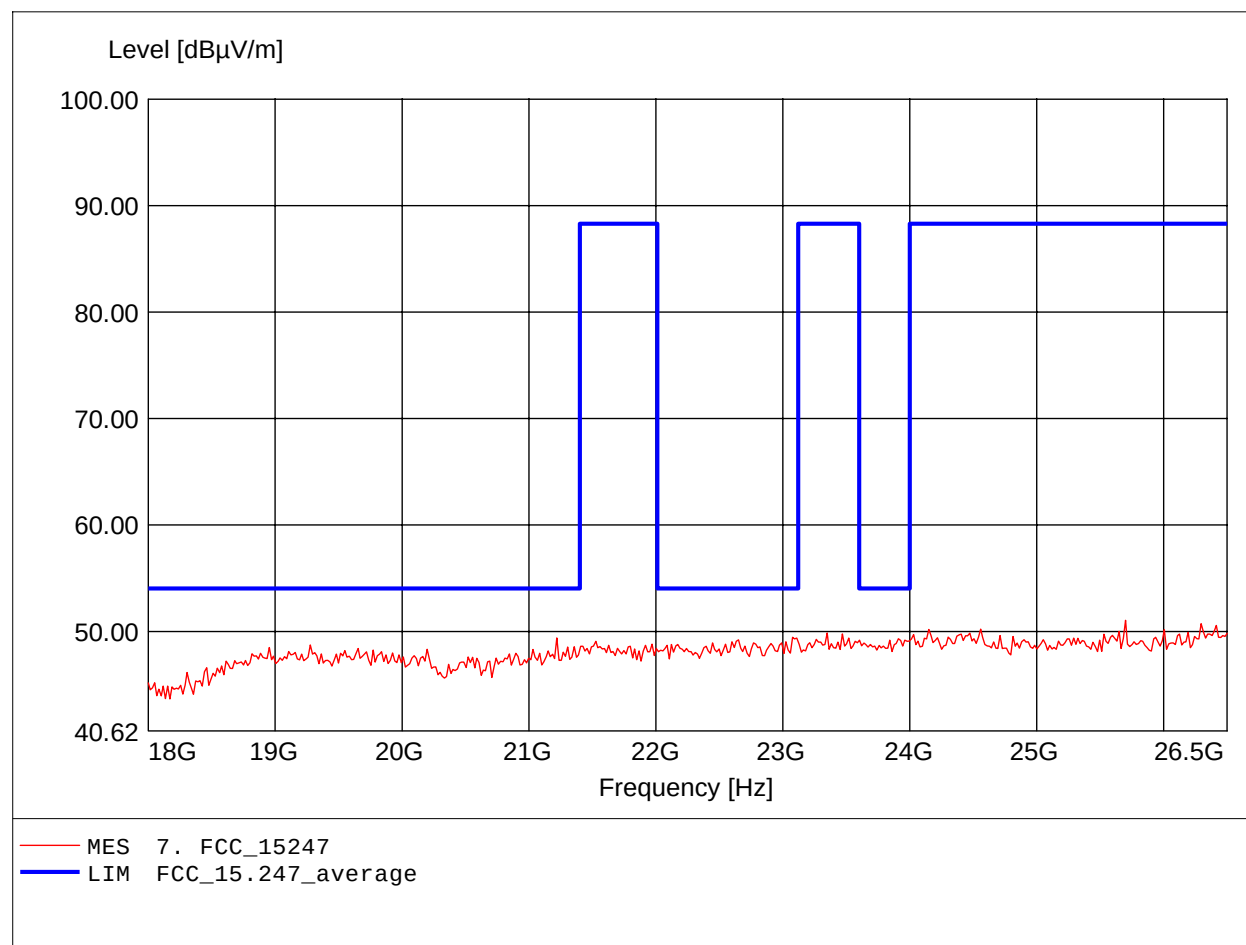
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 26.398GHz, Emax: 50.47dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C / LP002

Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Freq: 25.699GHz, Emax: 51.04dBμV/m, RBW: 1MHz





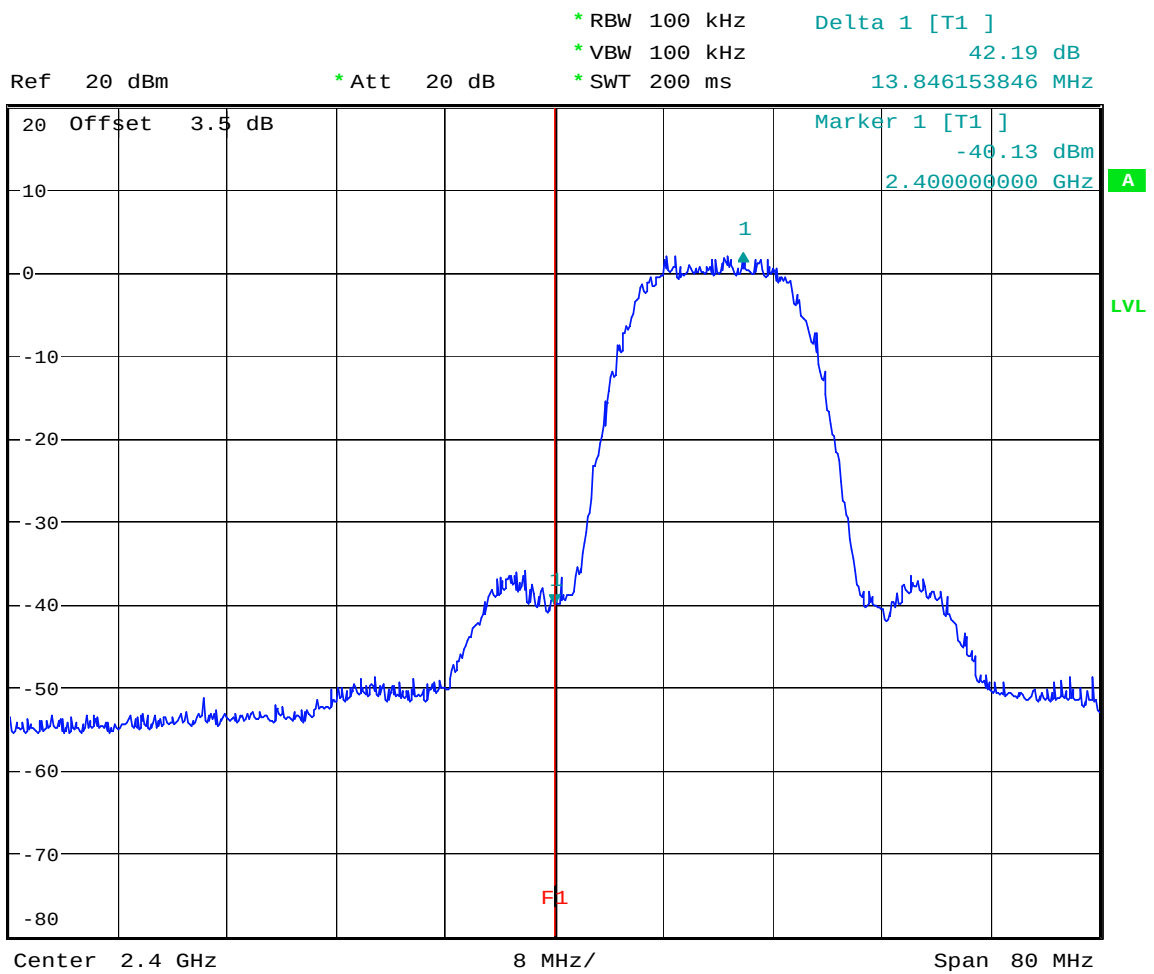
Registration number: W6M20606-7070-C-1
FCC ID: S83-AWK-1100A

Appendix C

Band Edge Measurement



1 PK
MAXH



Bandedge 802.11b ch 1

Date: 26.JUN.2006 15:31:01

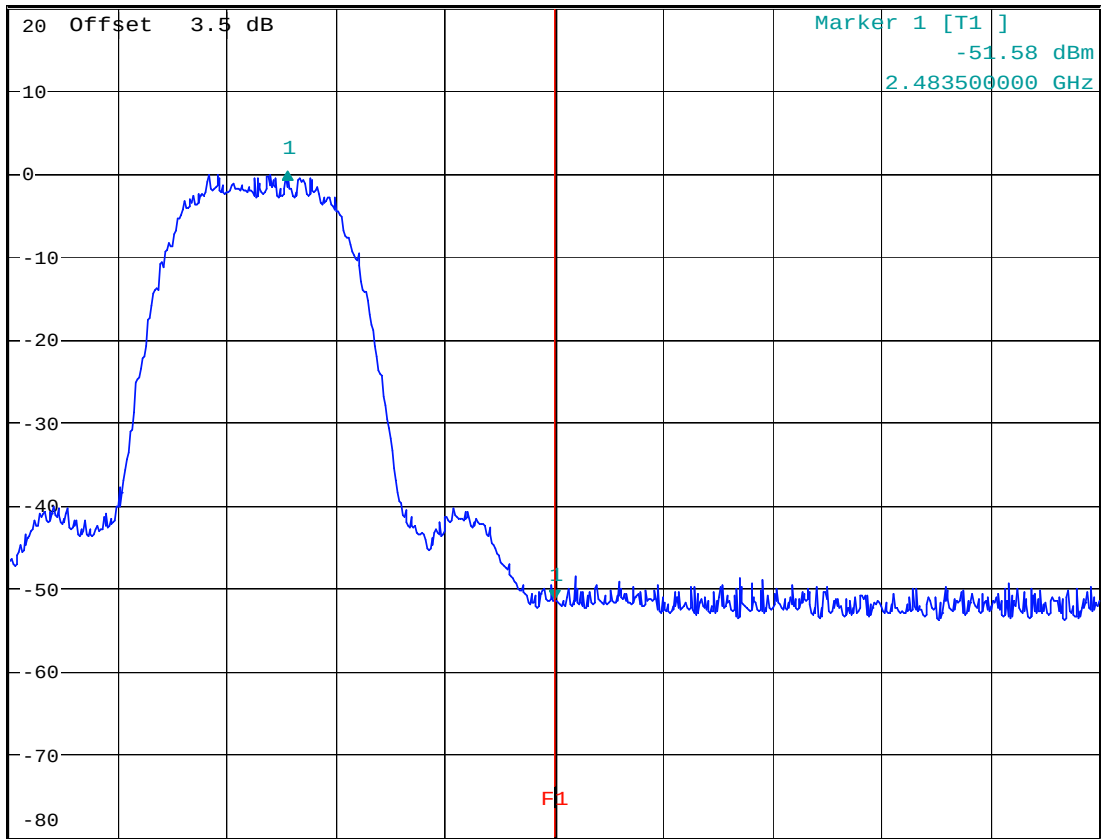


* RBW 100 kHz Delta 1 [T1]
* VBW 100 kHz 51.42 dB
* SWT 200 ms -19.615384615 MHz

Ref 20 dBm

* Att 20 dB

1 PK
MAXH



Center 2.4835 GHz

8 MHz/

Span 80 MHz

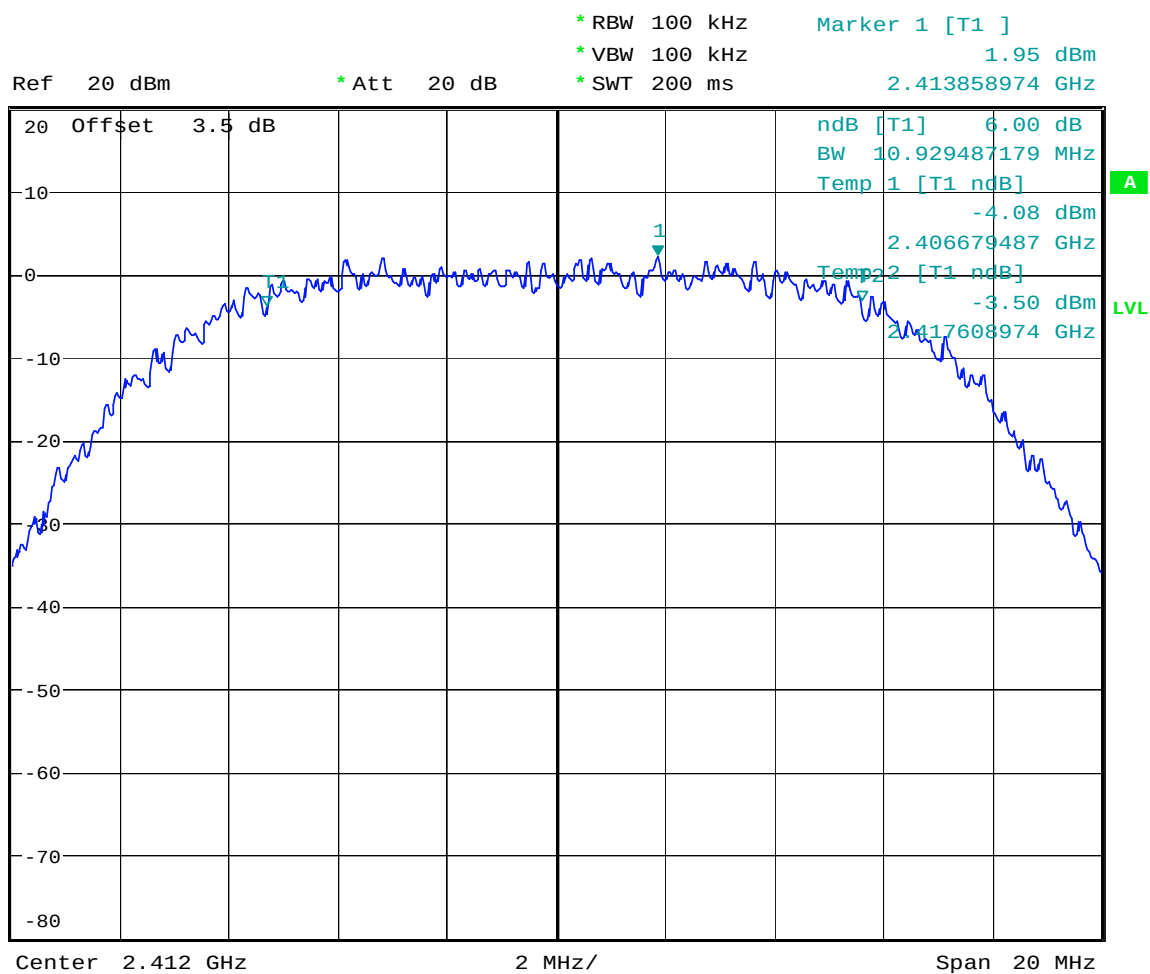
Bandedge 802.11b ch 11

Date: 26.JUN.2006 15:27:06



Appendix D

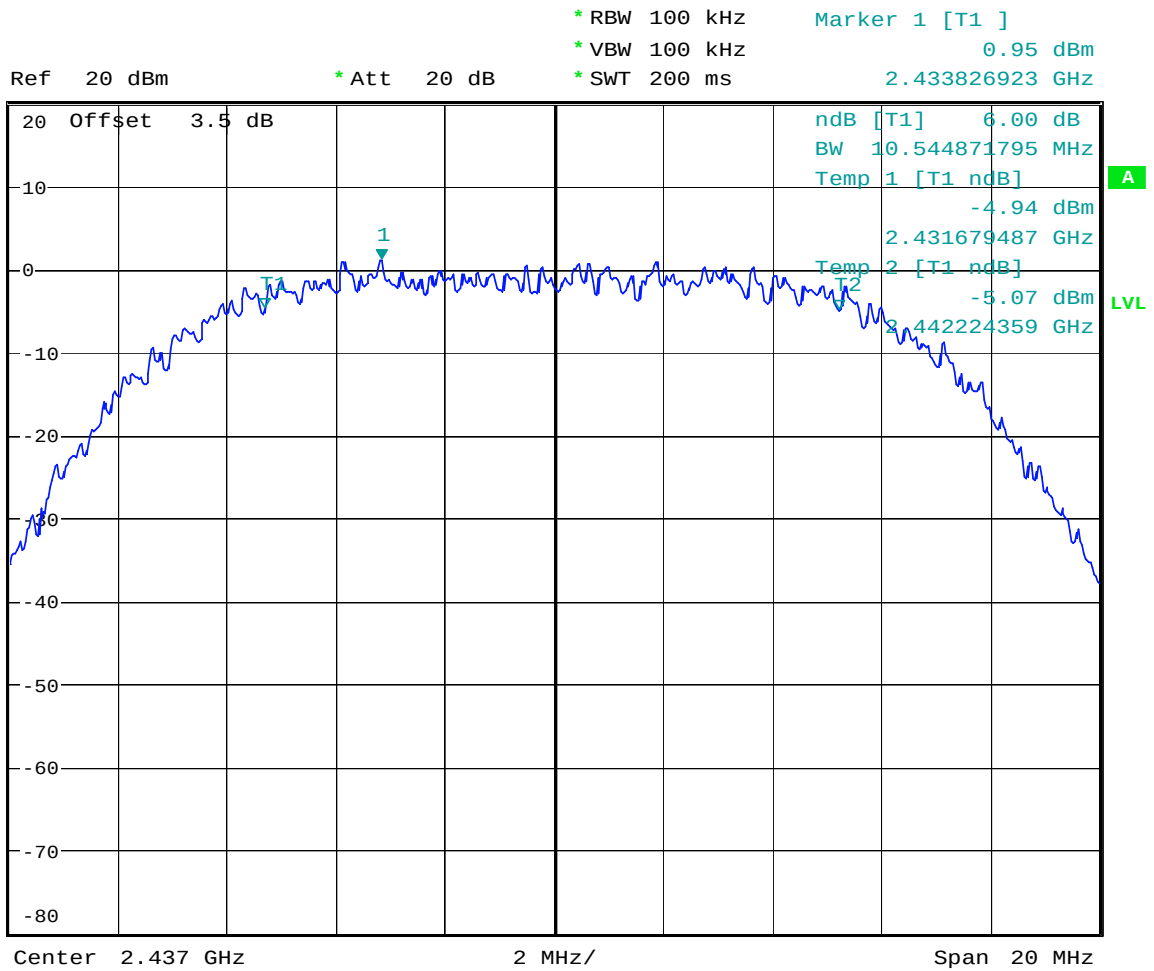
Minimum 6dB Bandwidth



Date: 26.JUN.2006 15:41:57



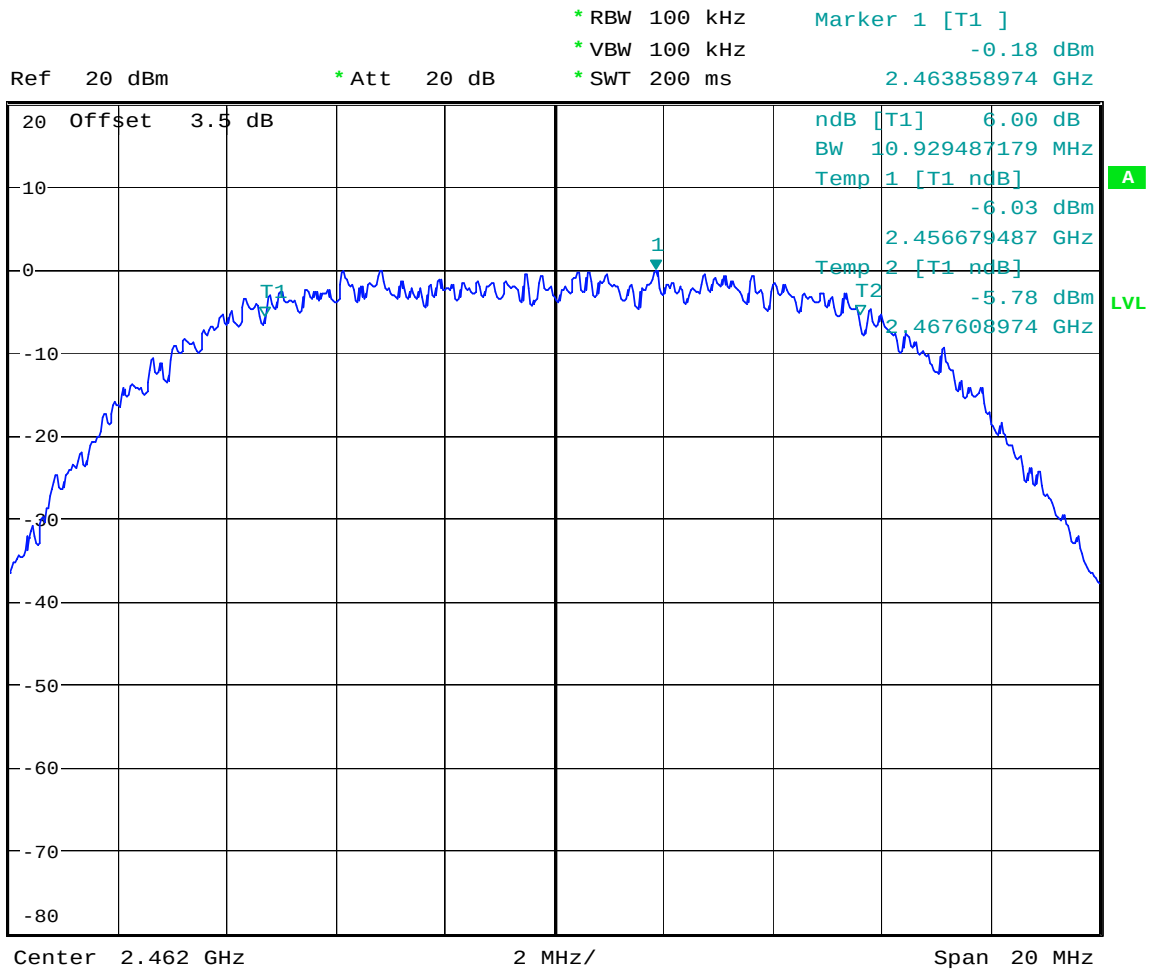
1 PK
MAXH



6dB bandwidth 802.11b ch 6
Date: 26.JUN.2006 15:41:38



1 PK
MAXH



6dB bandwidth 802.11b ch 11

Date: 26.JUN.2006 15:41:09



Registration number: W6M20606-7070-C-1
FCC ID: S83-AWK-1100A

Appendix E

Peak Power Spectral Density



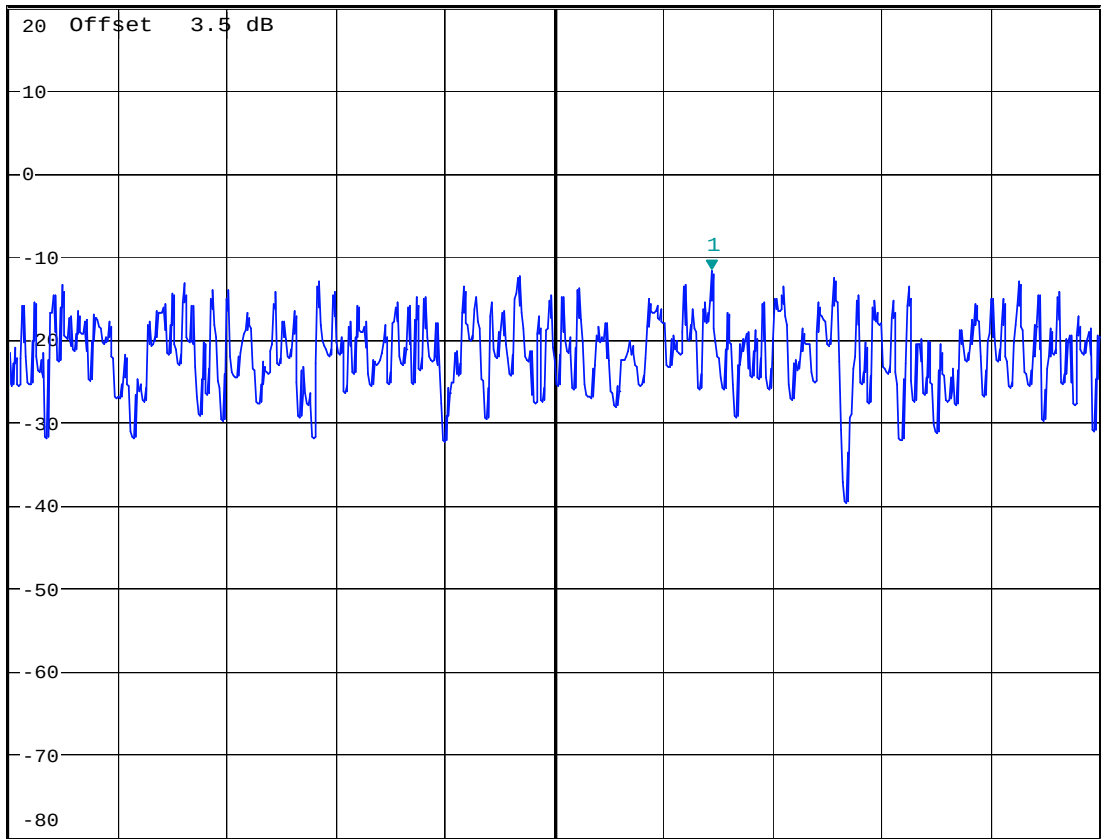
* RBW 3 kHz
* VBW 100 kHz
* SWT 500 s

Marker 1 [T1]
-11.81 dBm
2.412216346 GHz

Ref 20 dBm

* Att 20 dB

1 PK
MAXH



A

LVL

Center 2.412 GHz

150 kHz/

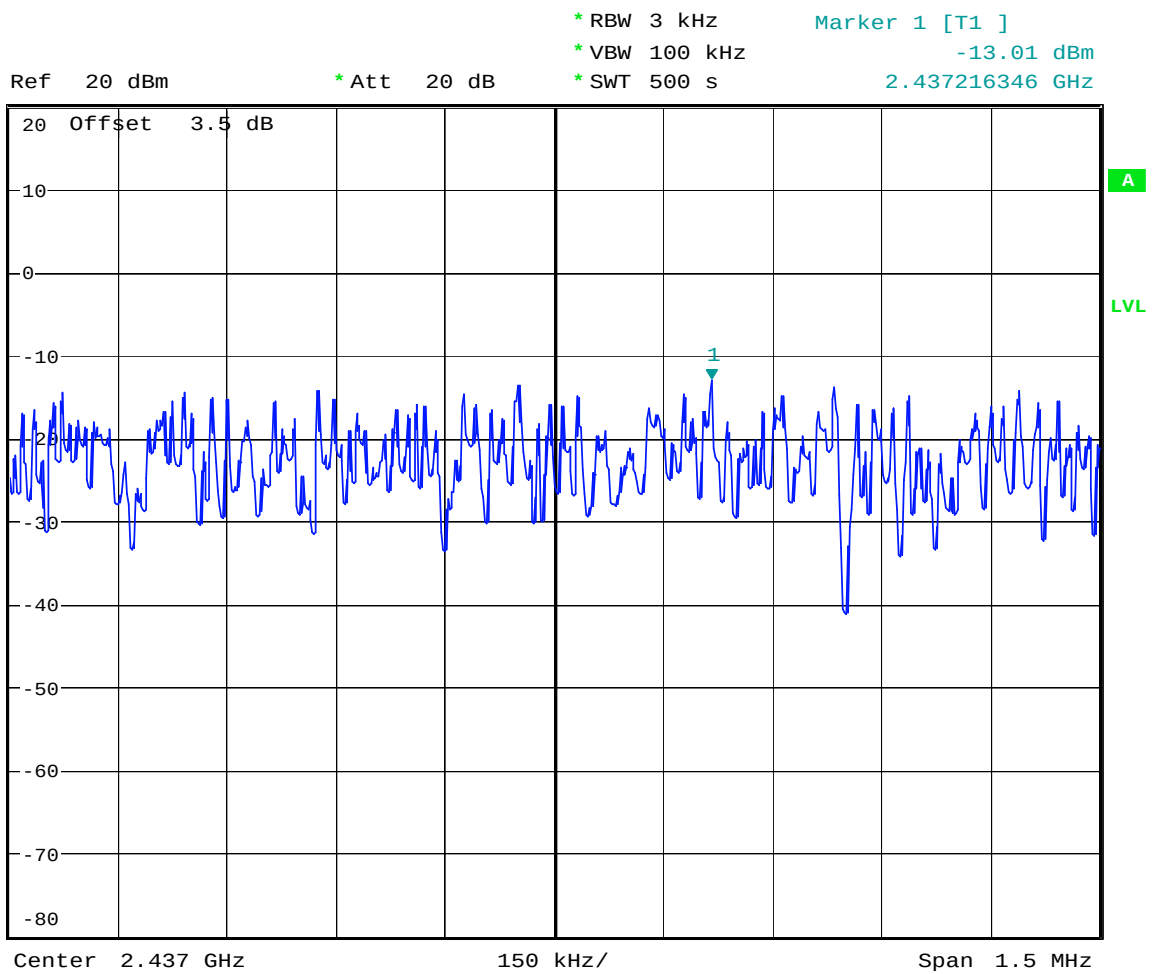
Span 1.5 MHz

Power density 802.11b ch 1

Date: 26.JUN.2006 15:32:16



1 PK
MAXH



Power density 802.11b ch 6

Date: 26.JUN.2006 15:33:12



* RBW 3 kHz

Marker 1 [T1]

* VBW 100 kHz

-14.01 dBm

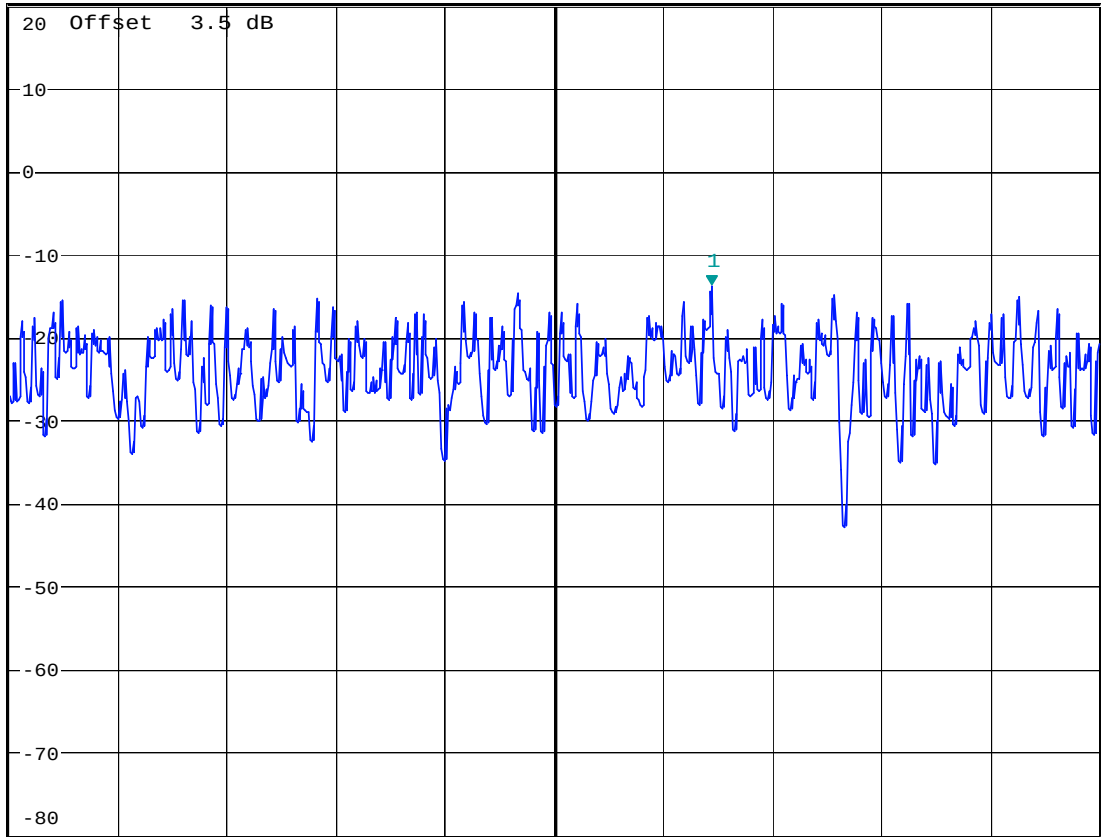
* SWT 500 s

2.462216346 GHz

Ref 20 dBm

* Att 20 dB

1 PK
MAXH



Center 2.462 GHz

150 kHz/

Span 1.5 MHz

Power density 802.11b ch 11

Date: 26.JUN.2006 15:33:46

Appendix F

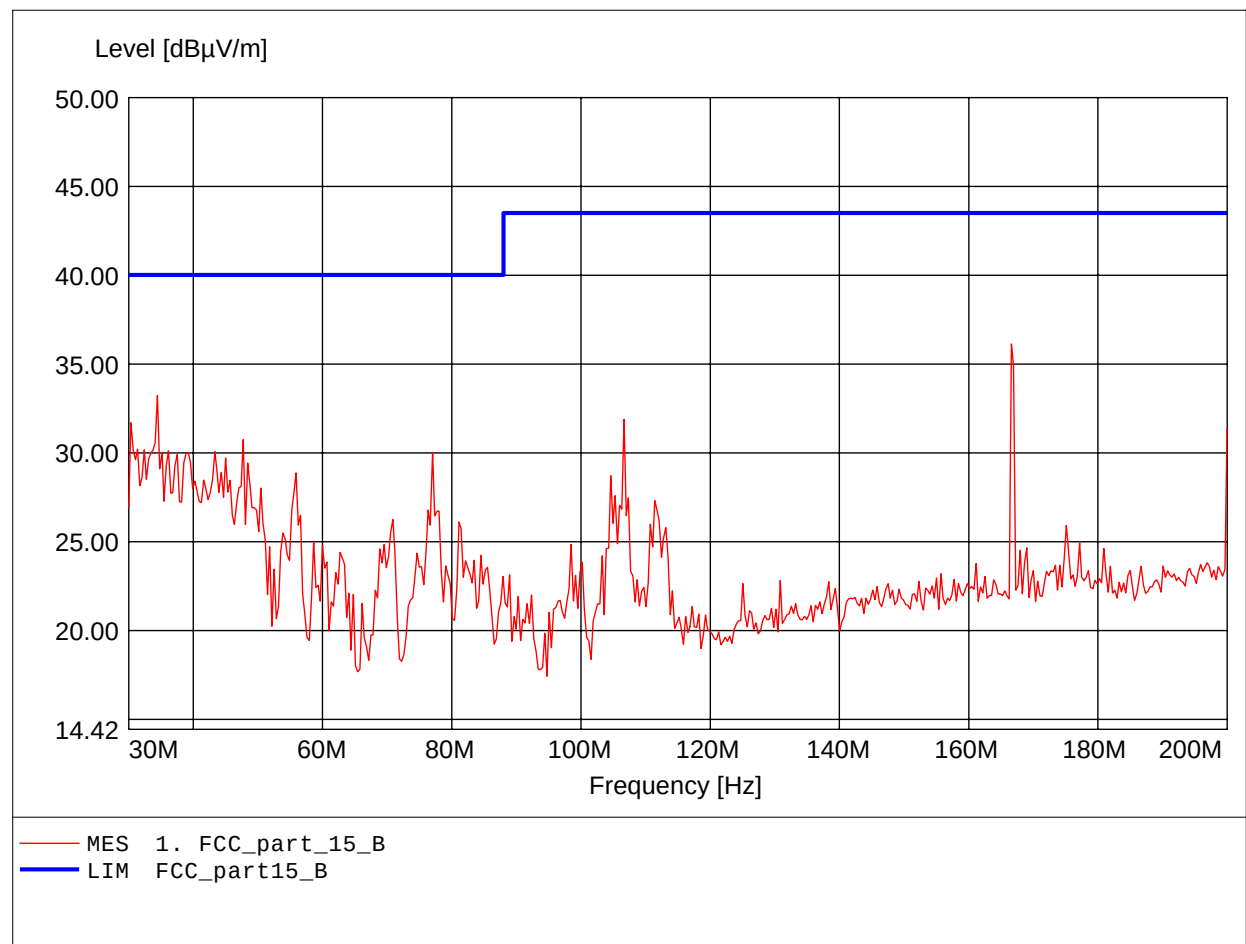
Radiated Emissions from Receiver Section of Transceiver

The measurement diagram are wideband pre-scan results; only for reference.

Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

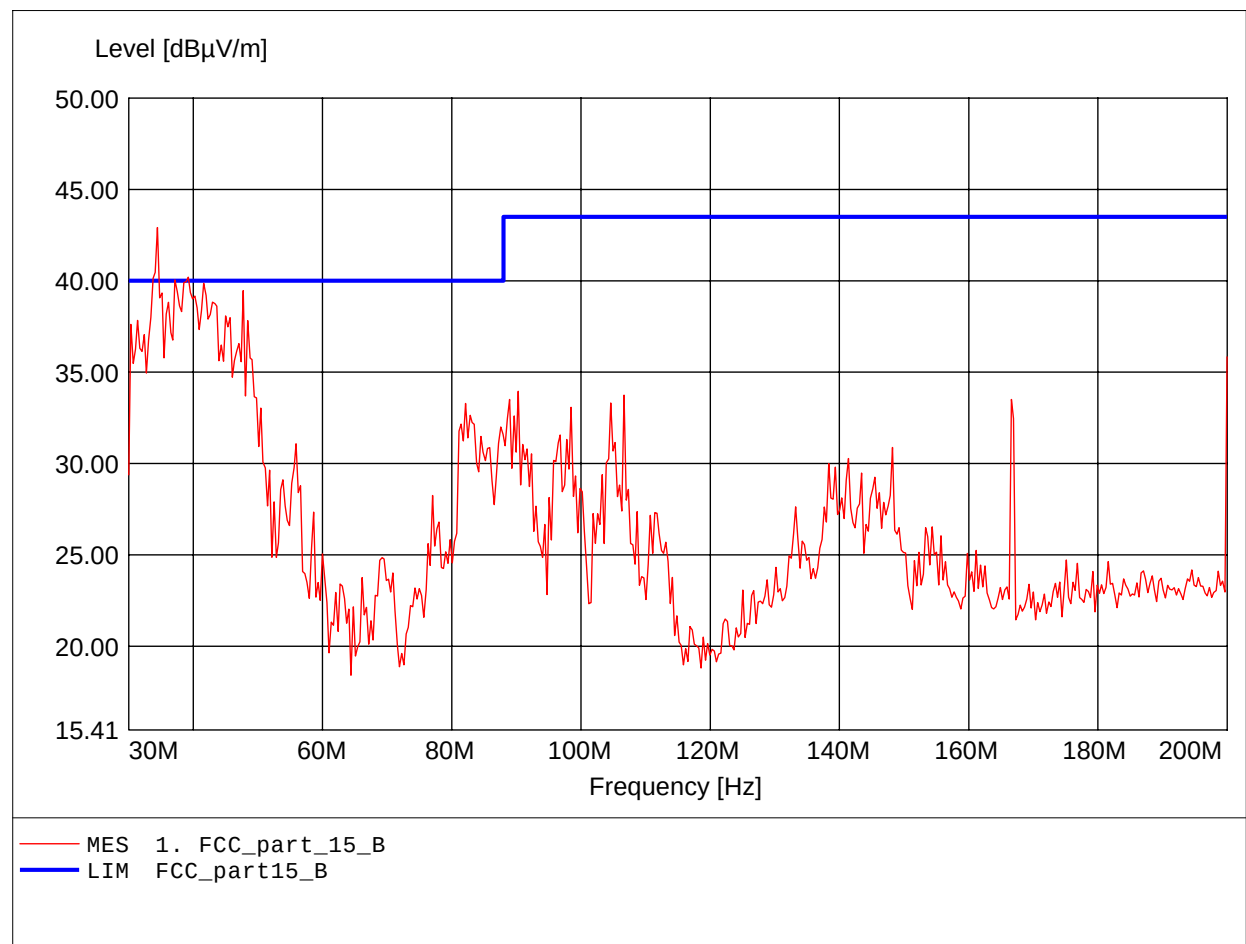
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:166.613MHz Emax:36.13dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

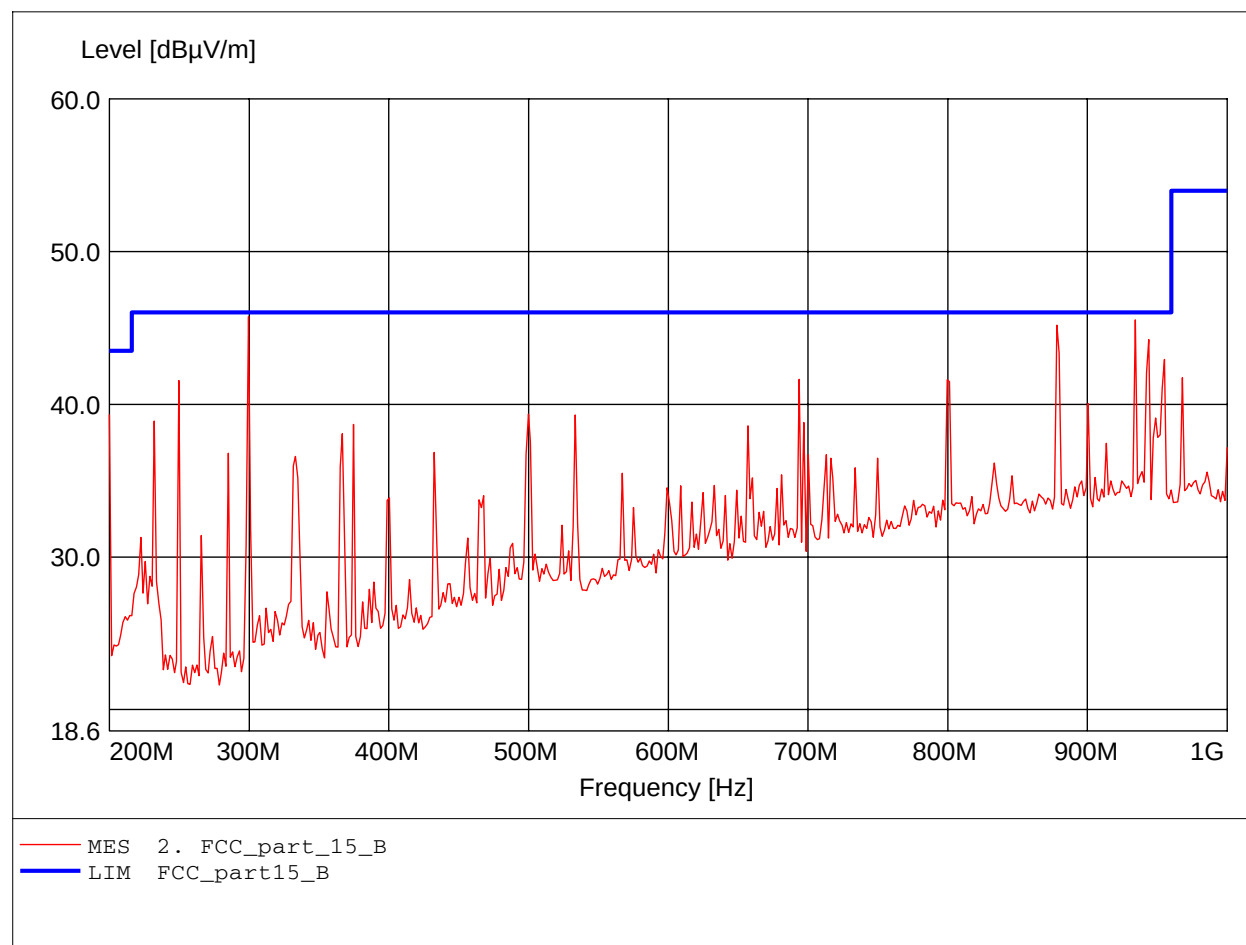
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:34.429MHz Emax:42.91dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

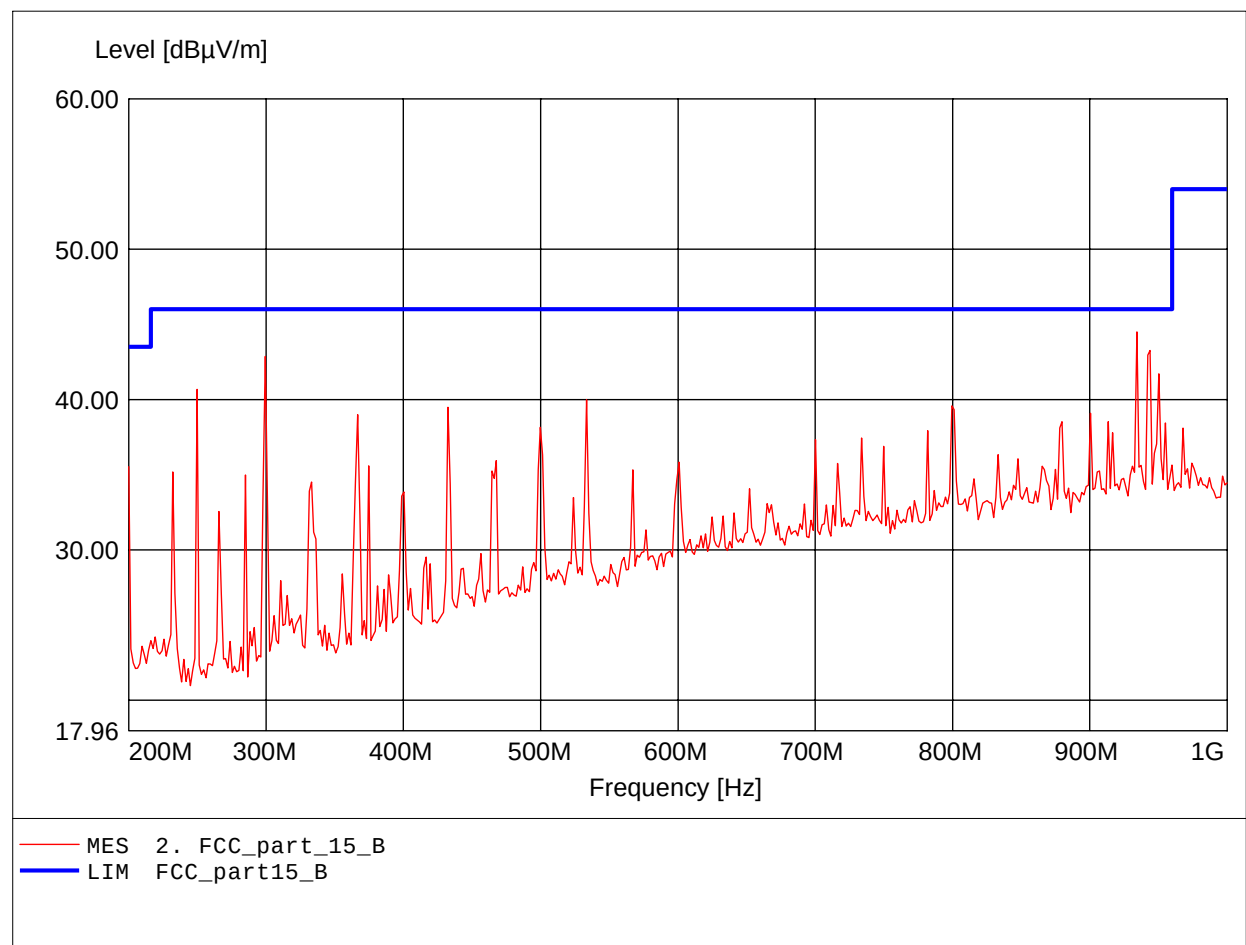
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:299.399MHz Emax:45.74dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

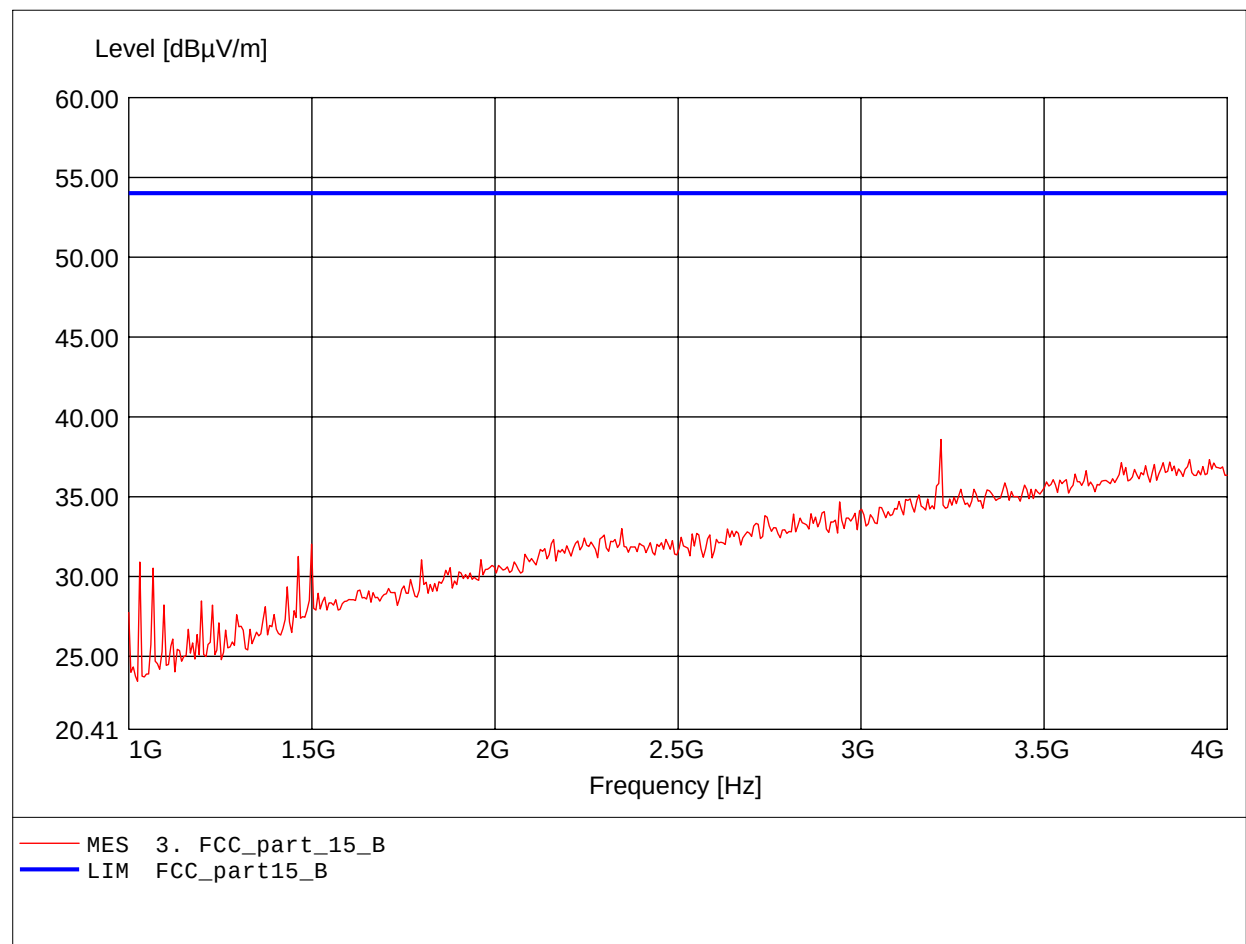
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:934.269MHz Emax:44.50dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

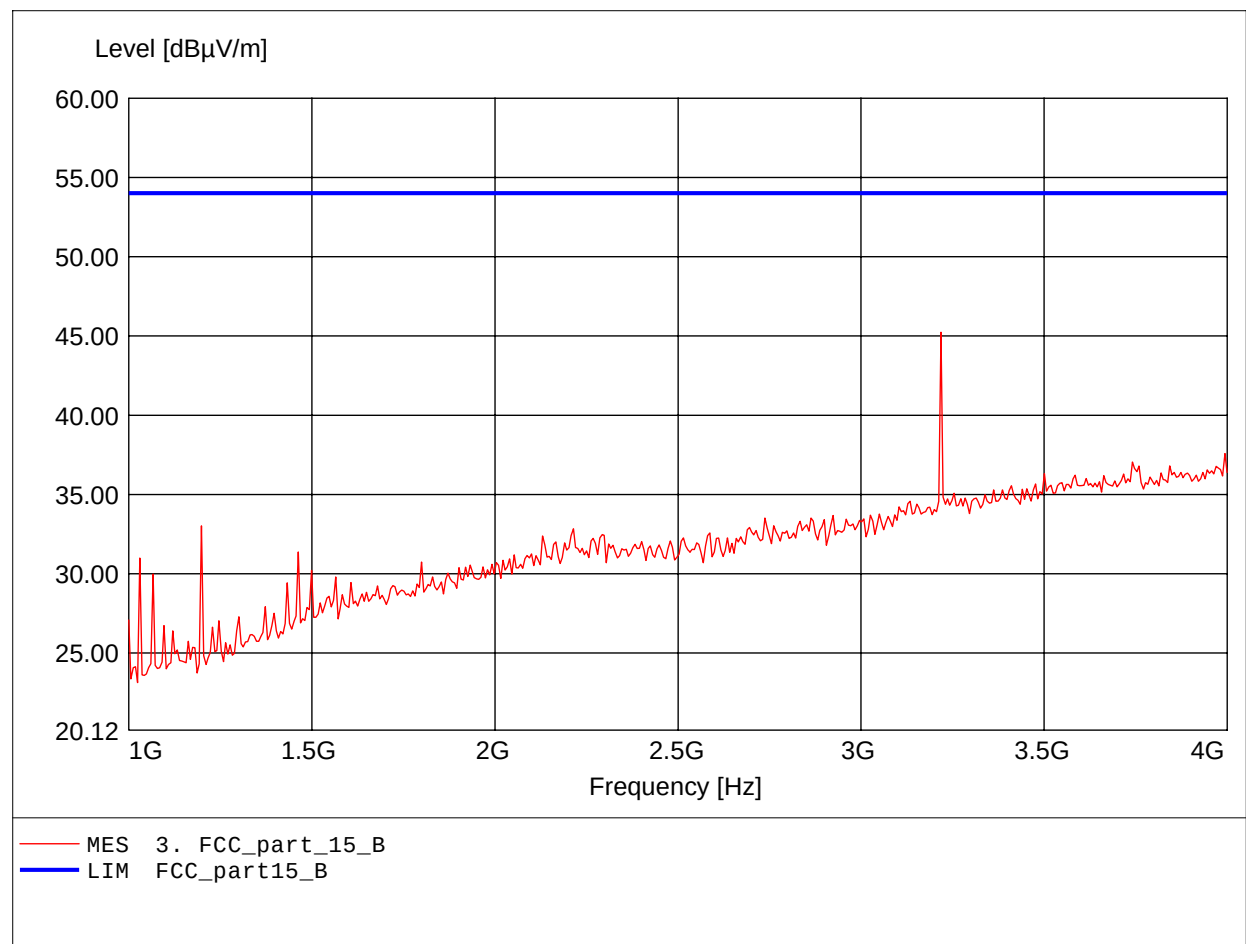
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.218GHz Emax:38.59dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

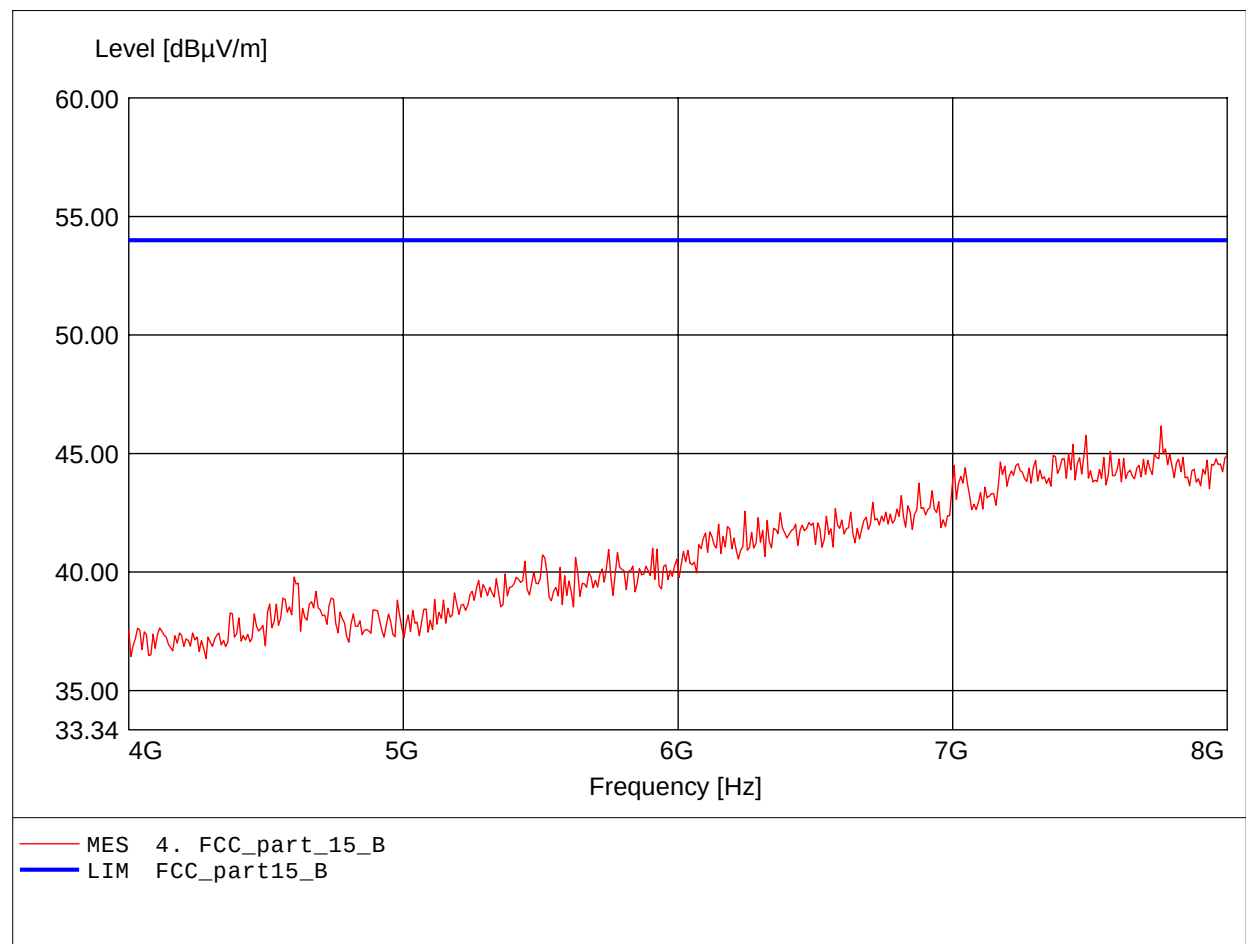
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.218GHz Emax:45.23dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

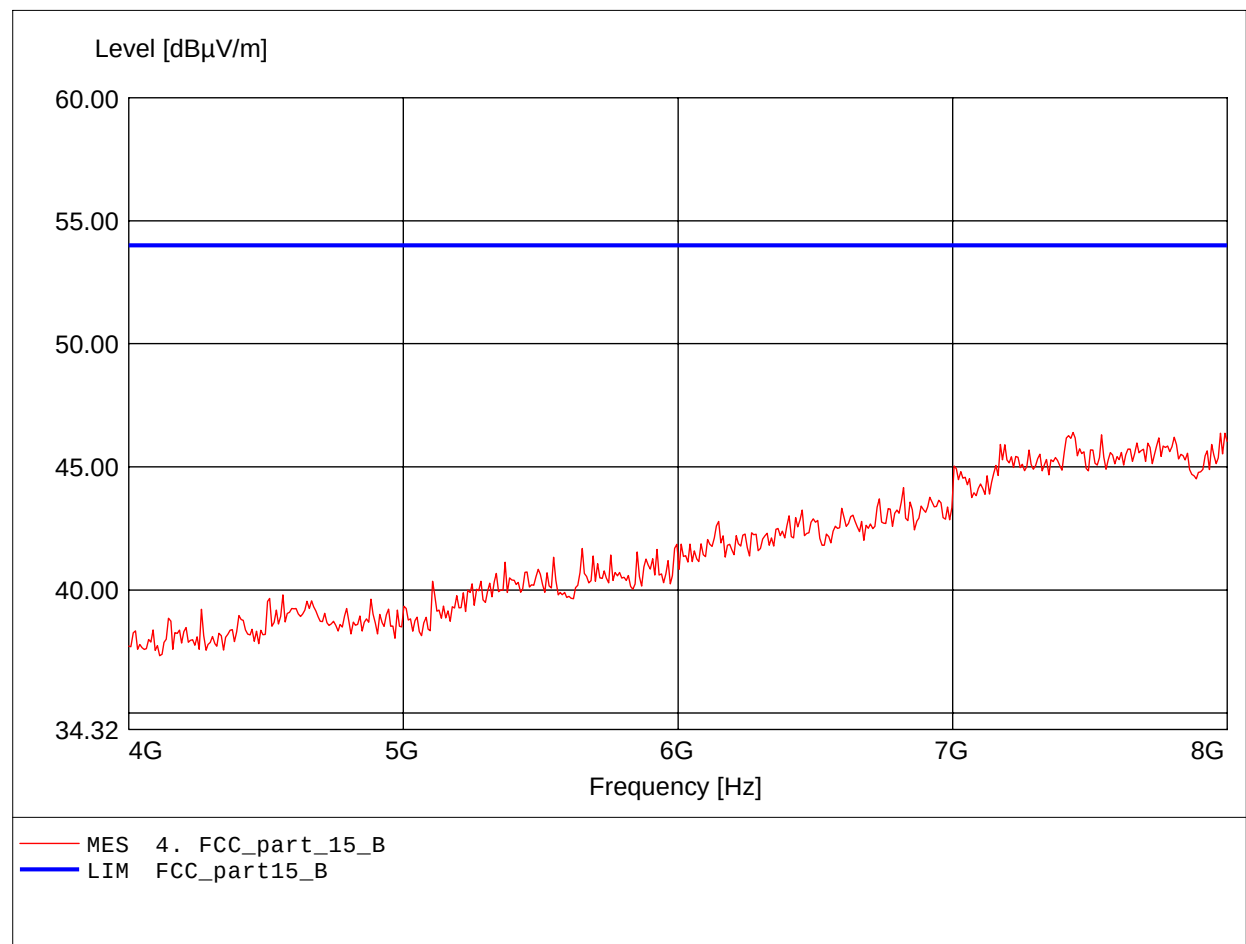
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.760GHz Emax:46.16dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

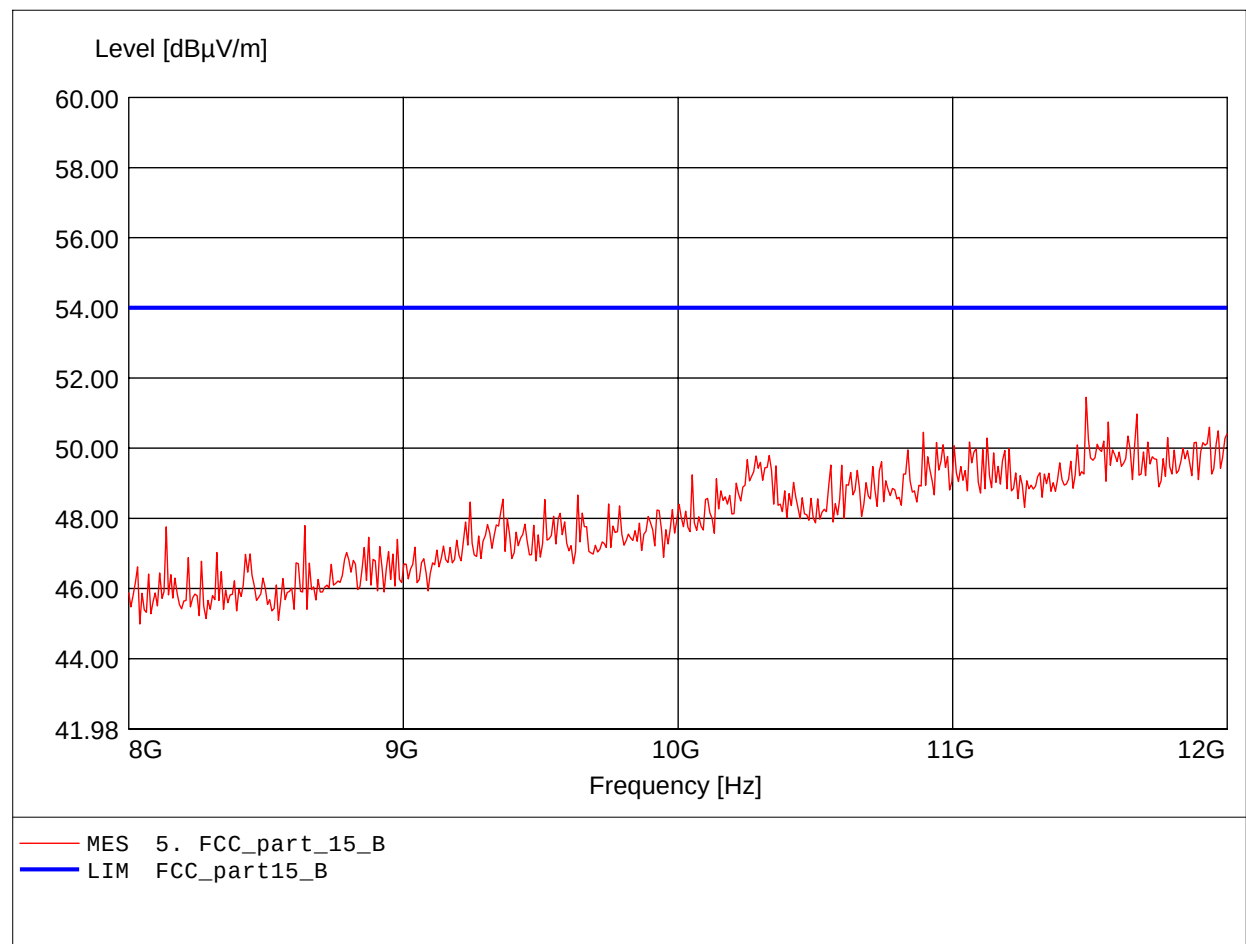
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.439GHz Emax:46.40dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

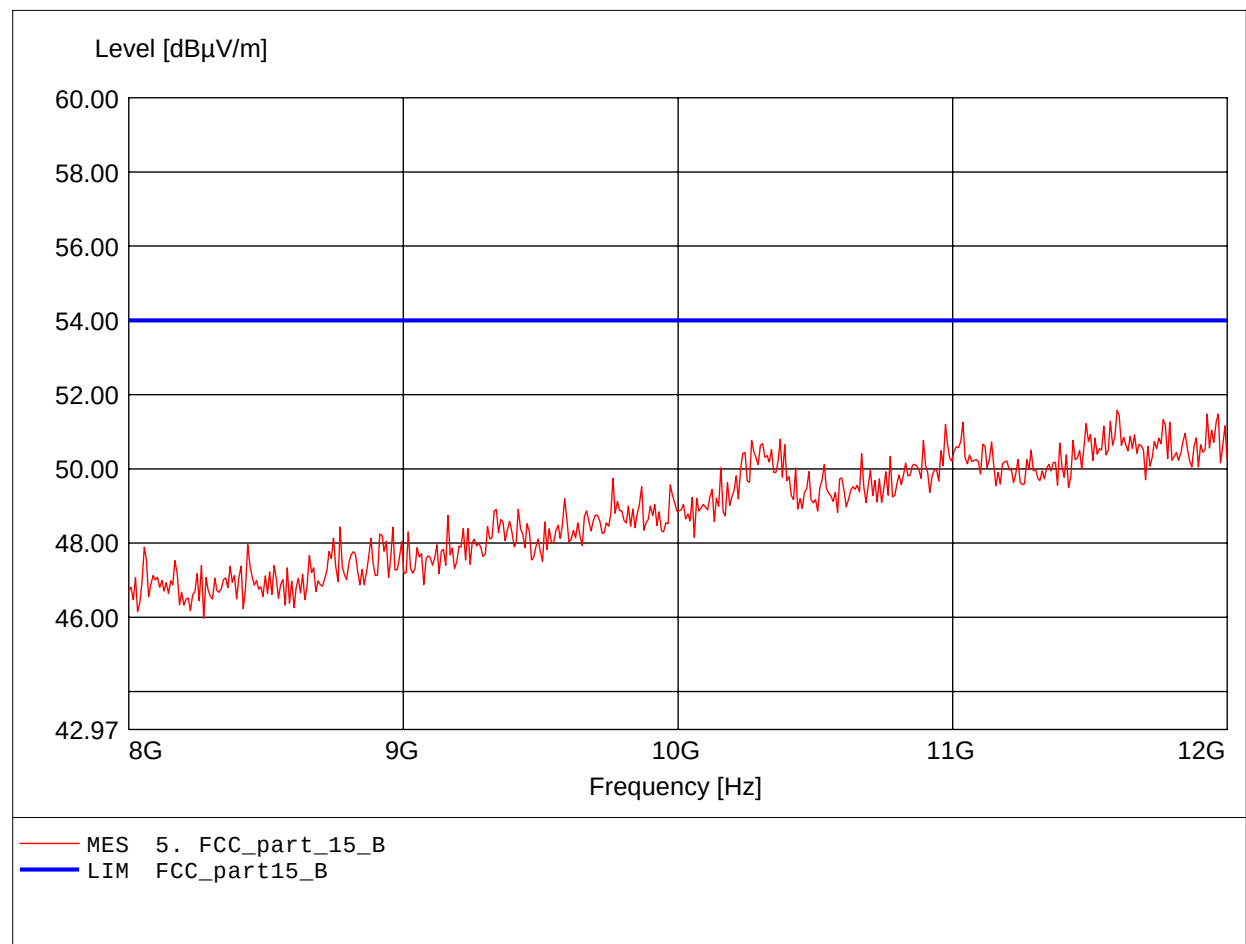
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:11.487GHz Emax:51.45dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

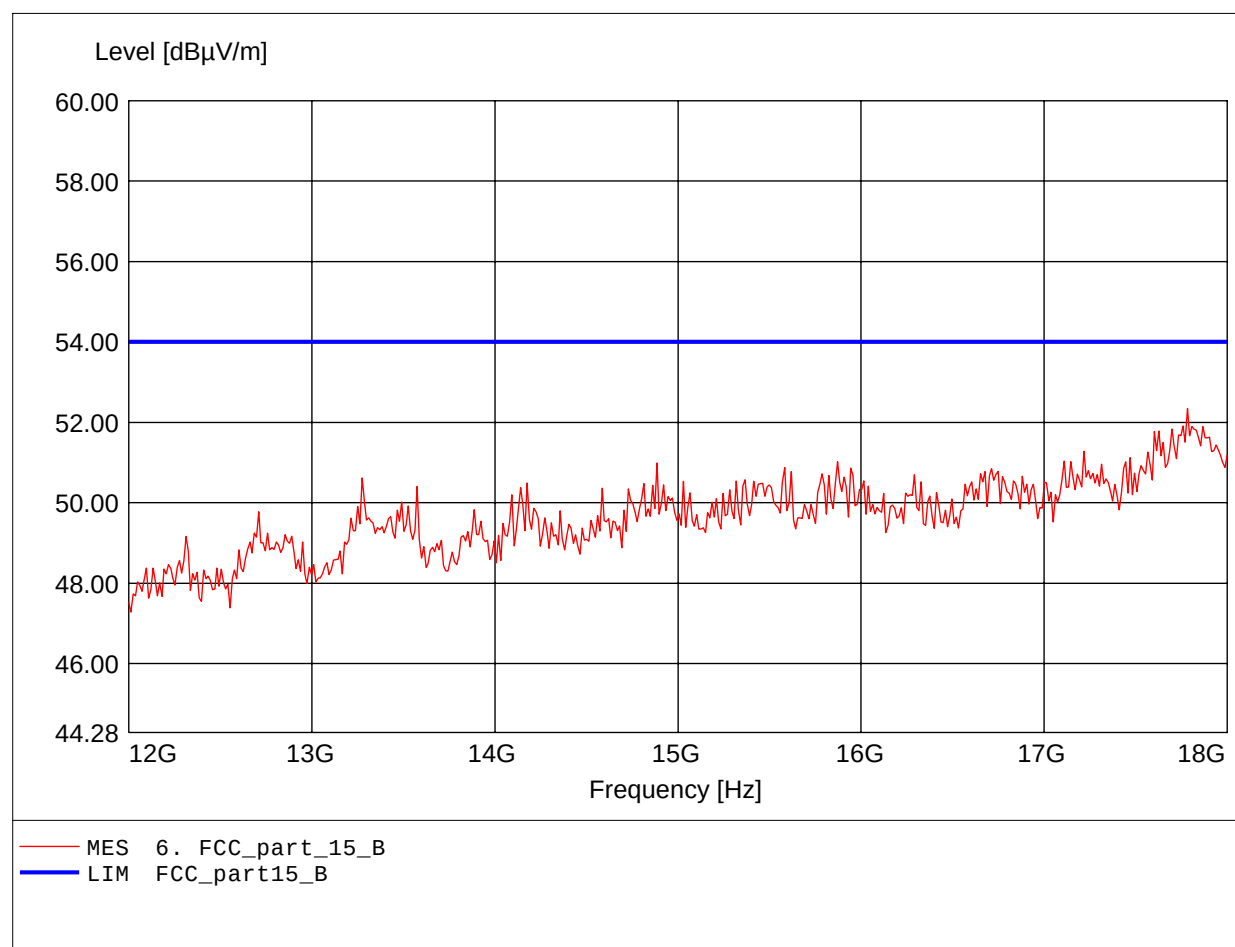
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:11.599GHz Emax:51.57dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

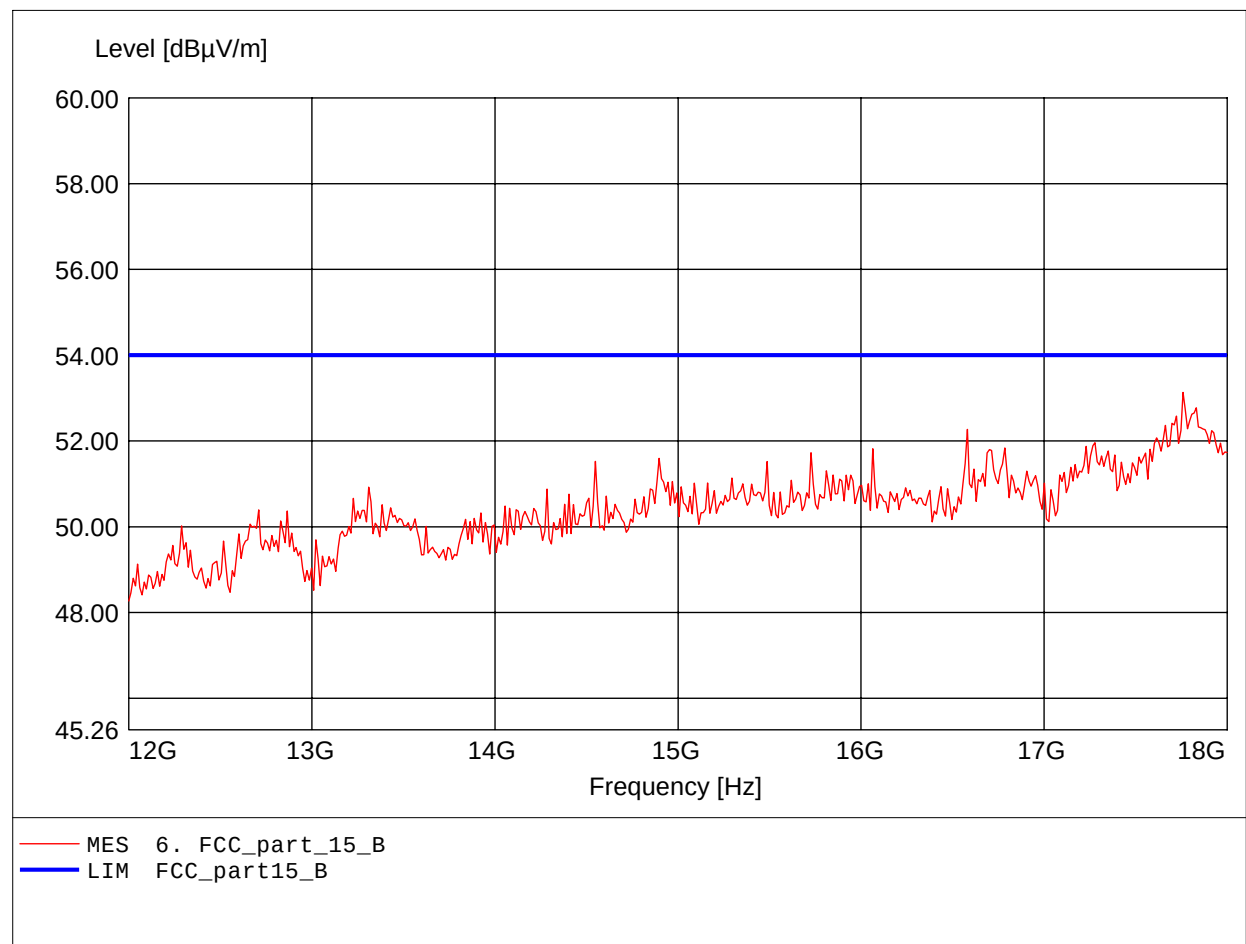
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.784GHz Emax:52.34dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

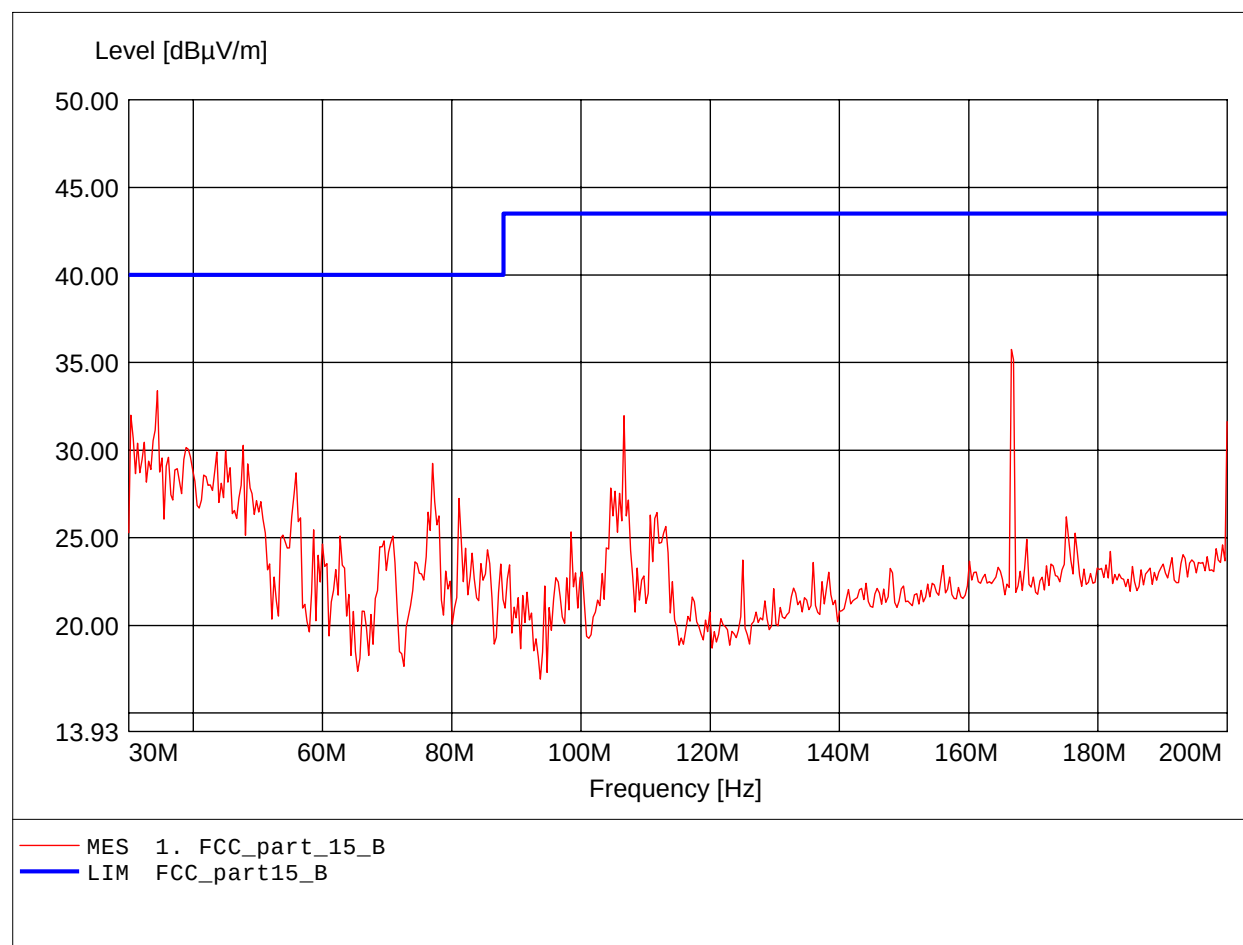
Order Number : W6M20606-7070 802.11b low channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.760GHz Emax:53.13dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

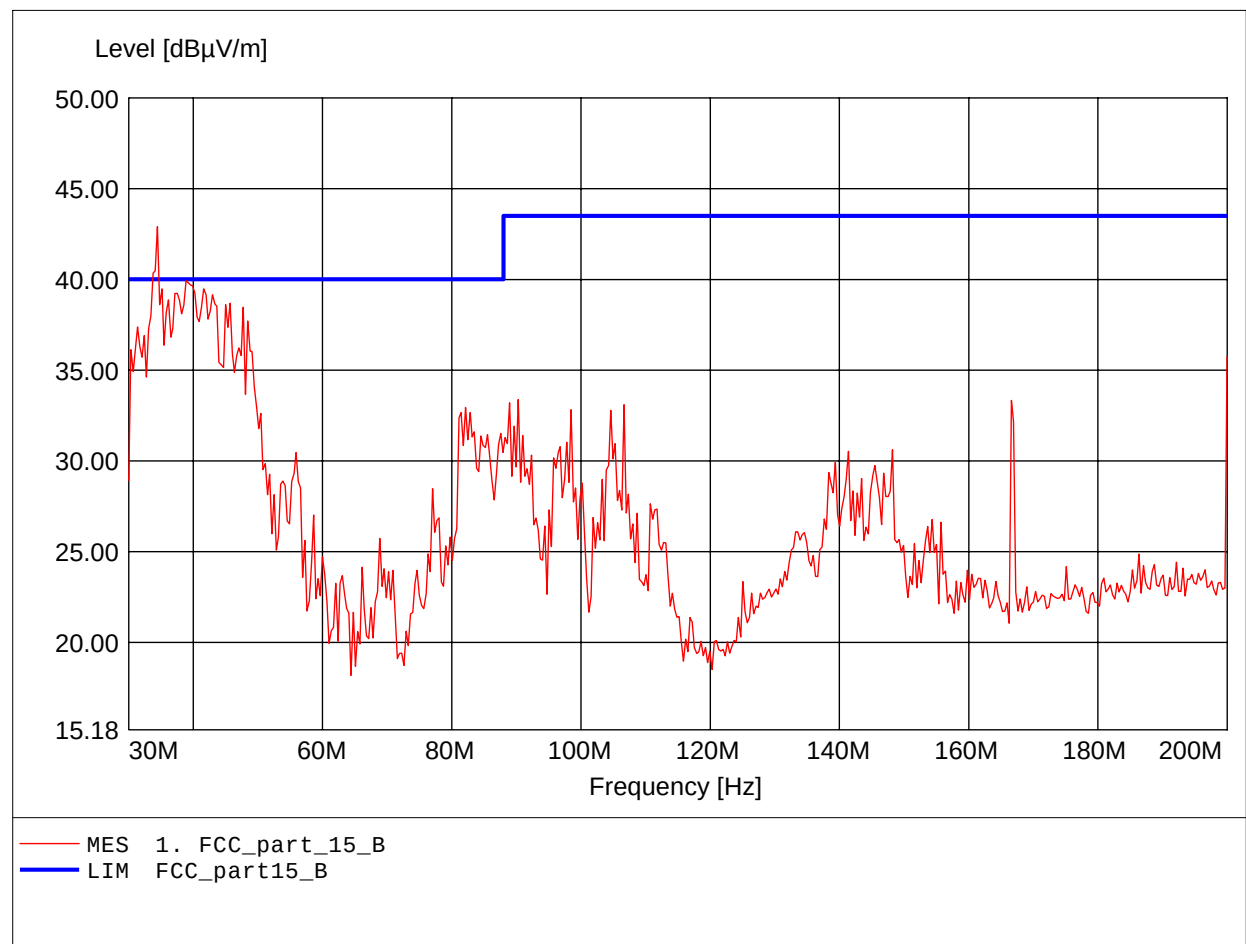
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:166.613MHz Emax:35.75dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

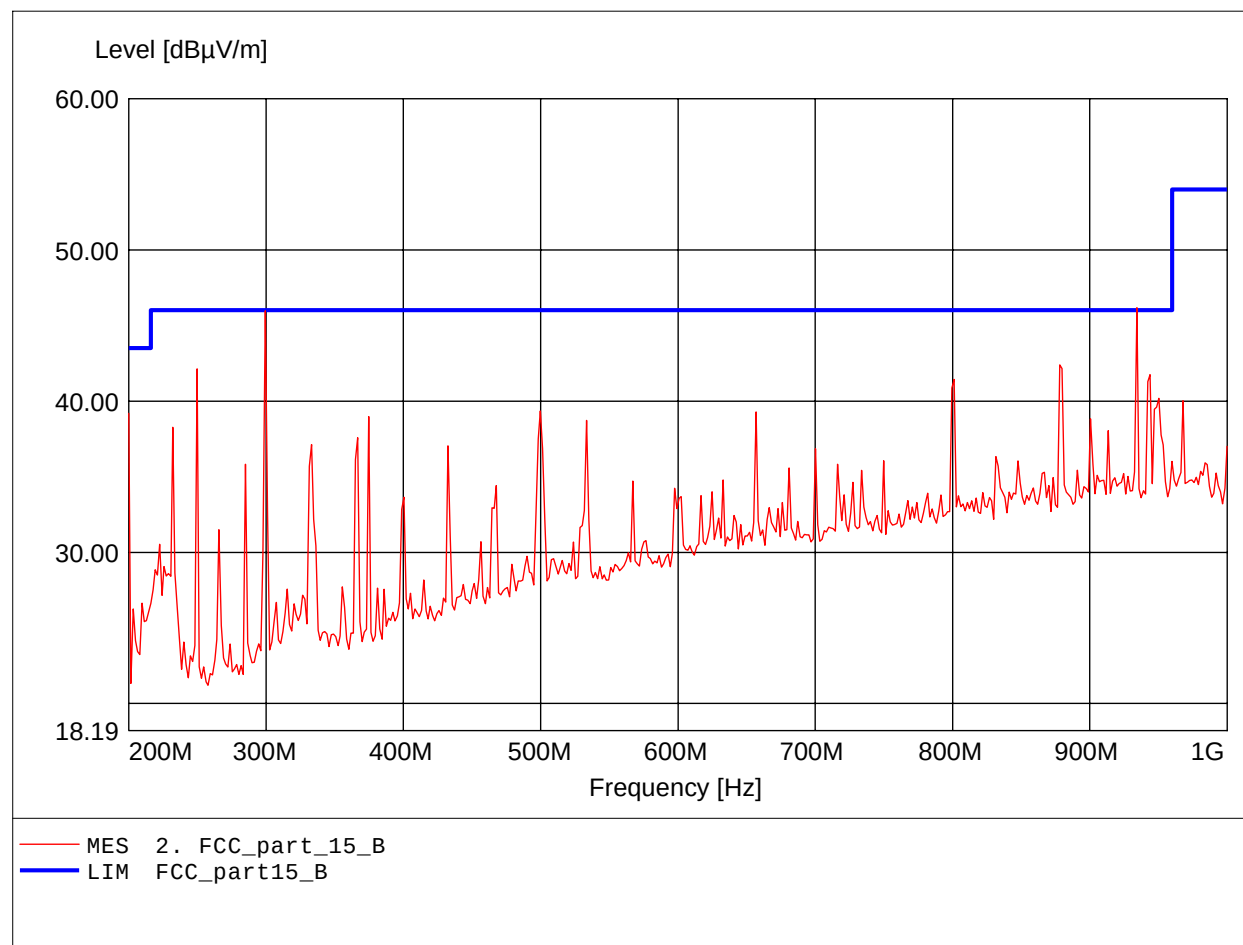
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:34.429MHz Emax:42.90dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

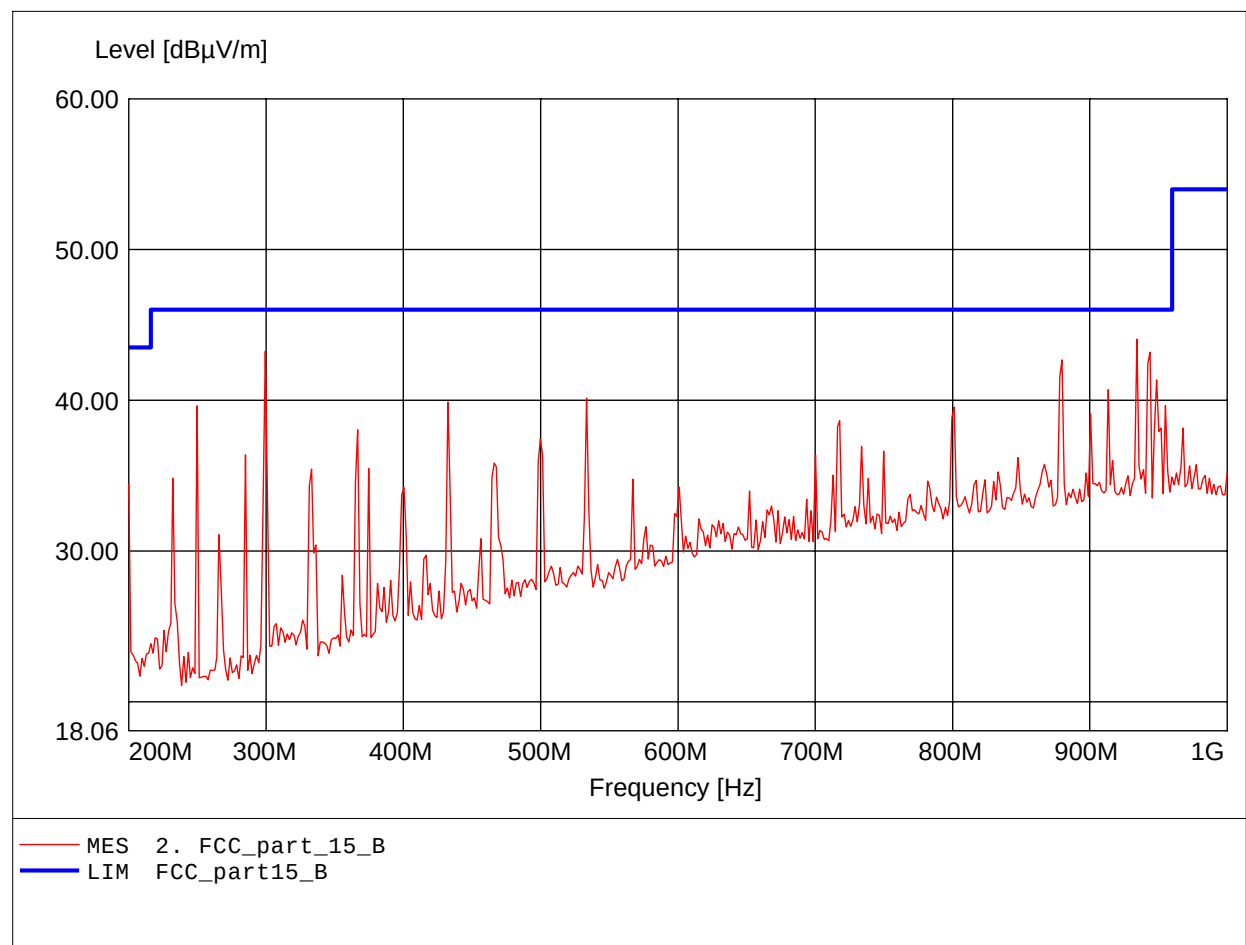
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:934.269MHz Emax:46.16dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

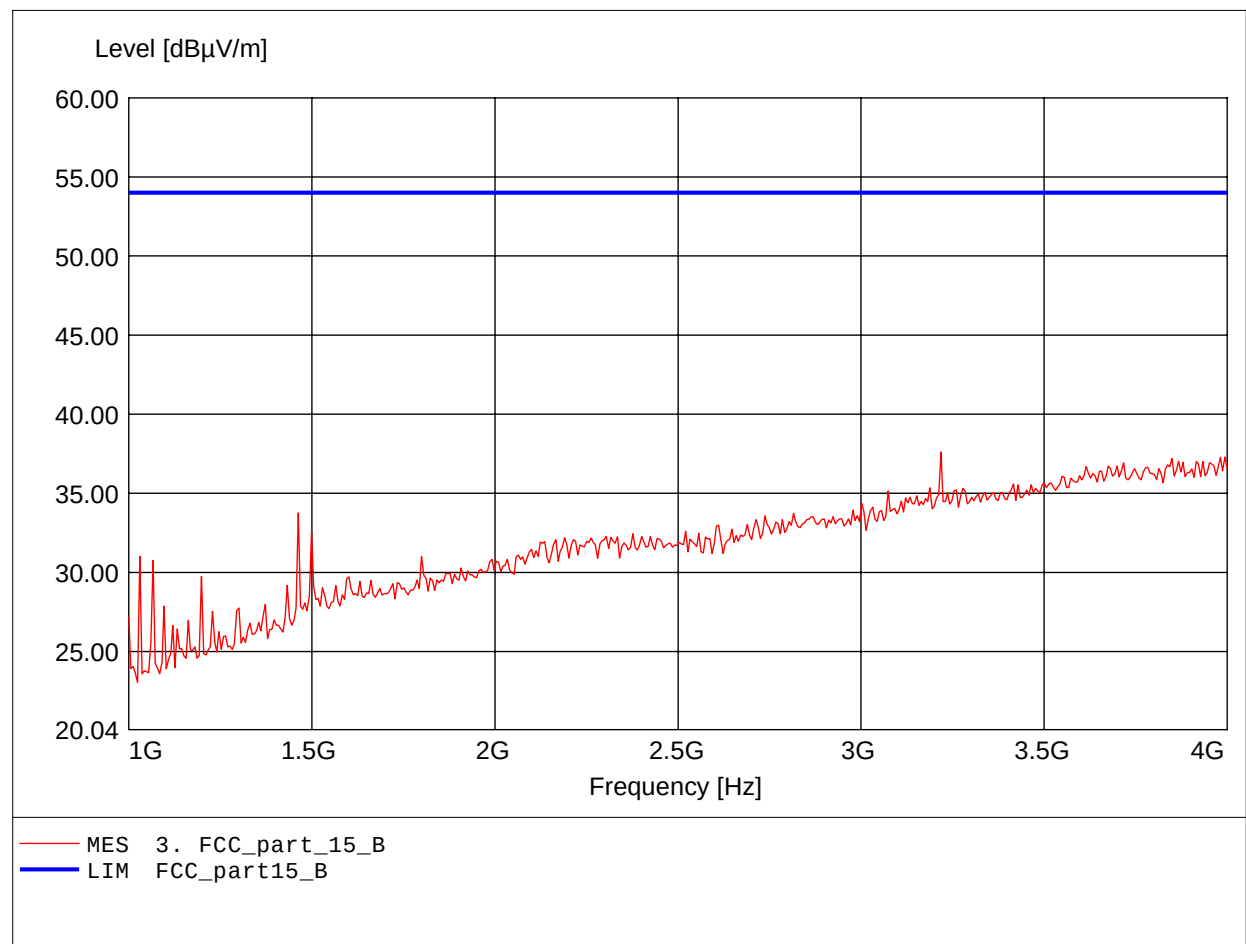
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:934.269MHz Emax:44.06dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

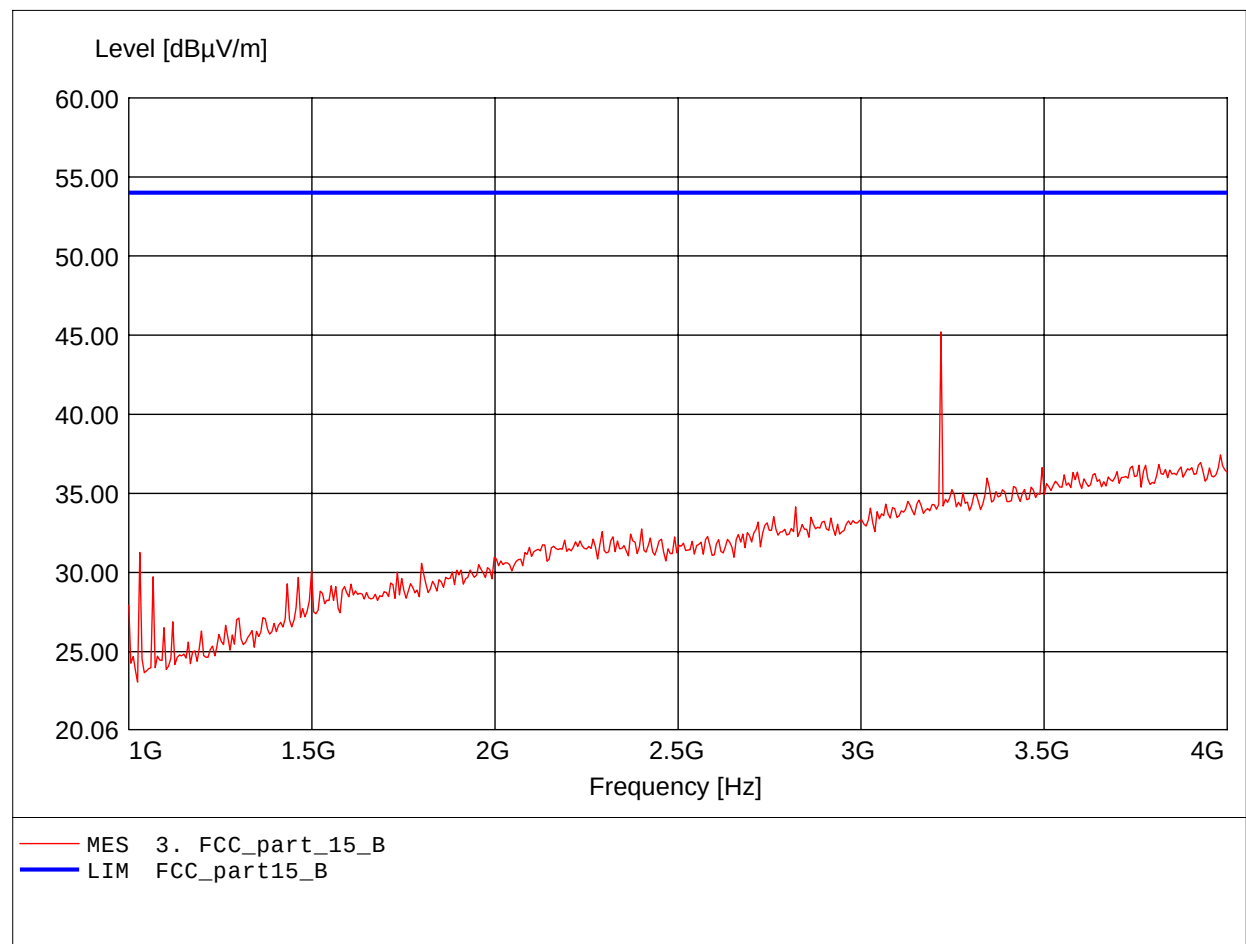
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.218GHz Emax:37.60dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

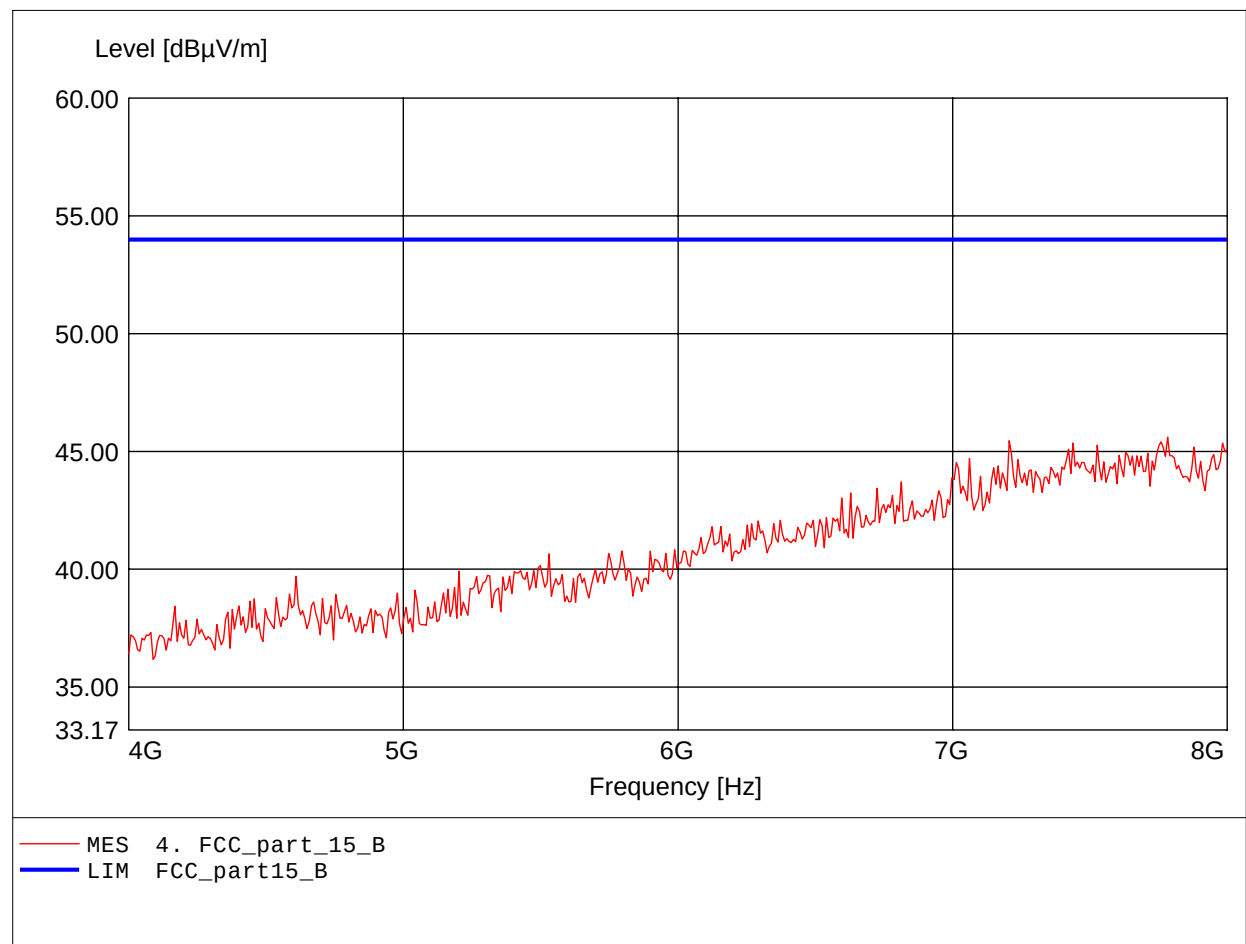
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.218GHz Emax:45.20dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

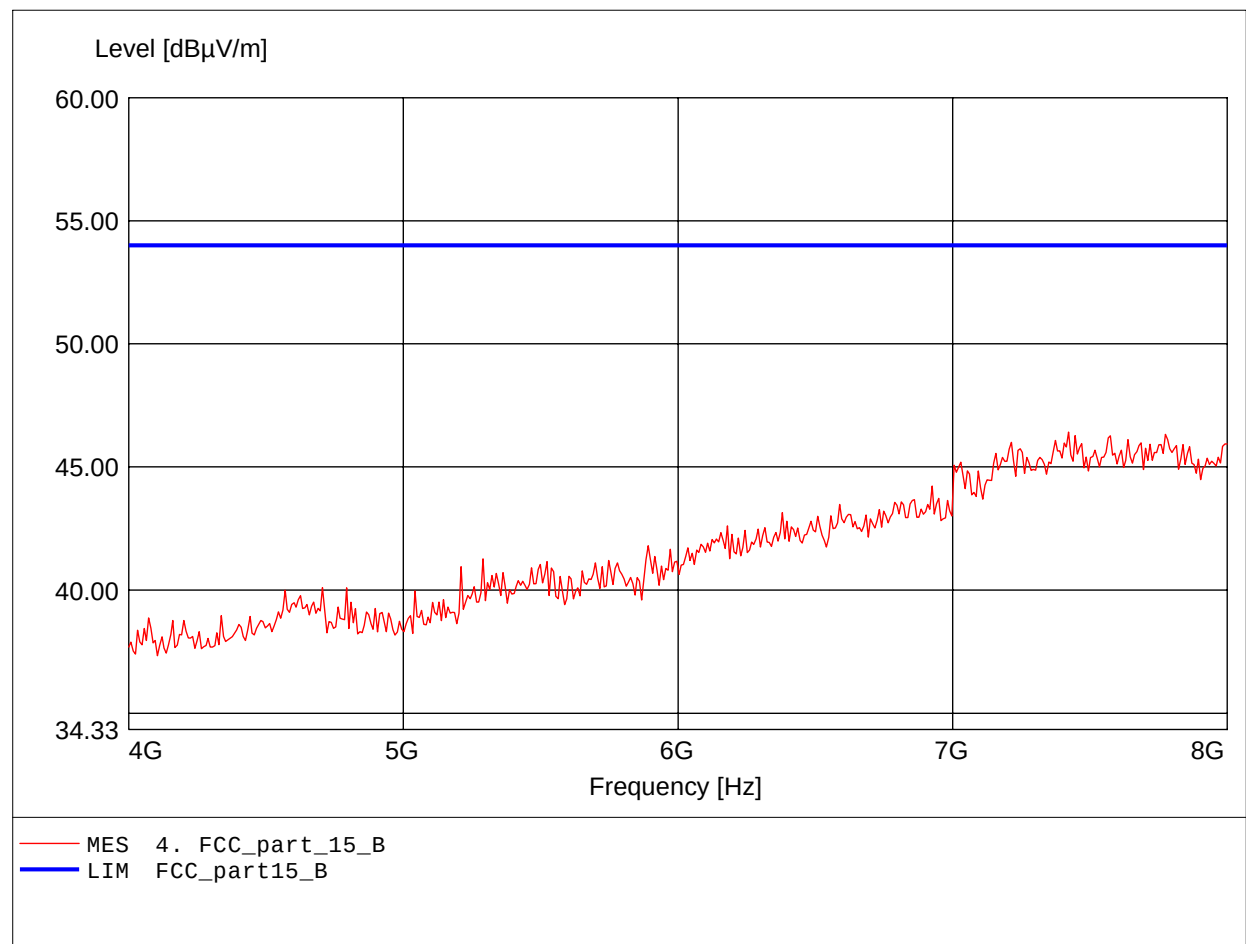
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.784GHz Emax:45.61dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

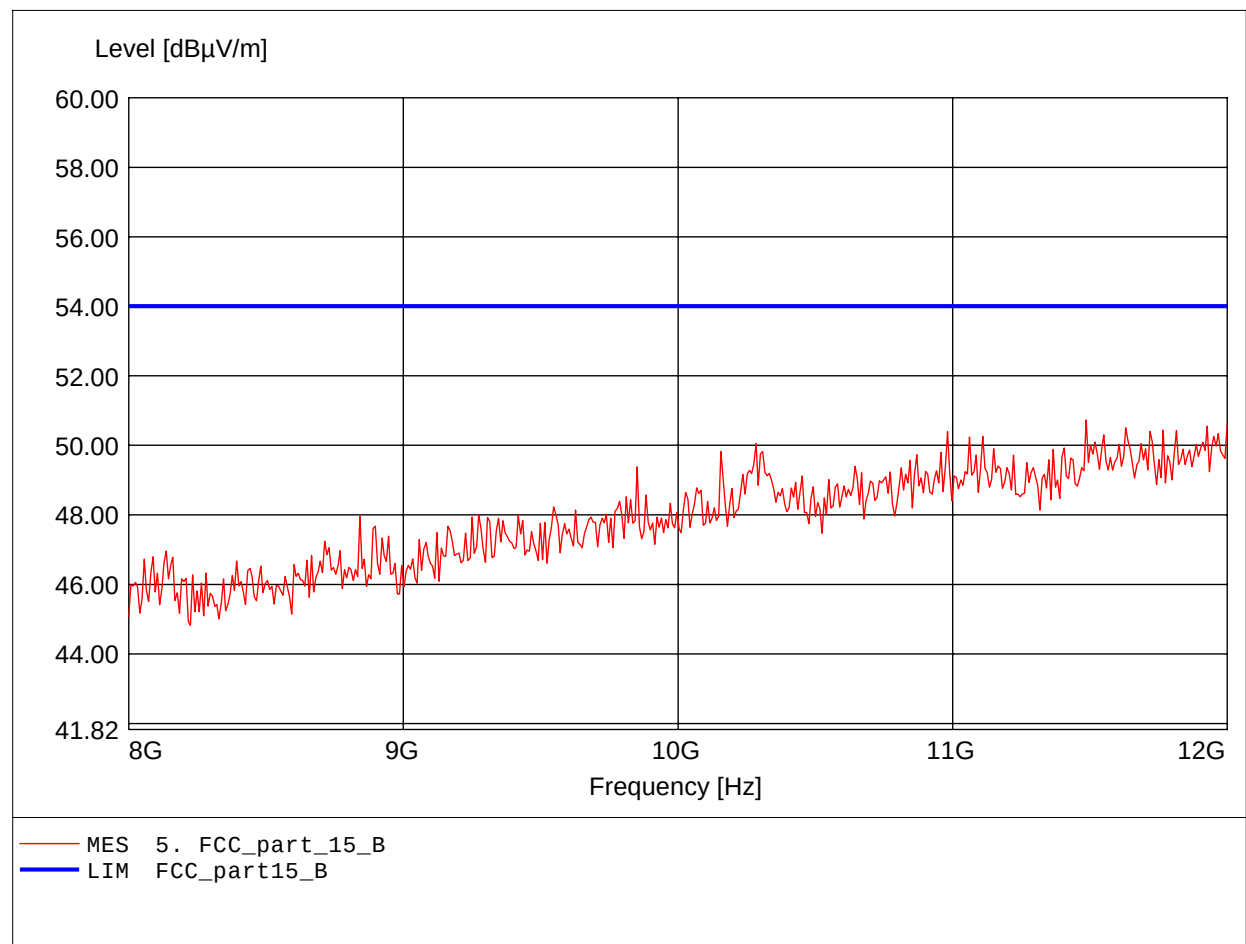
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.423GHz Emax:46.41dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

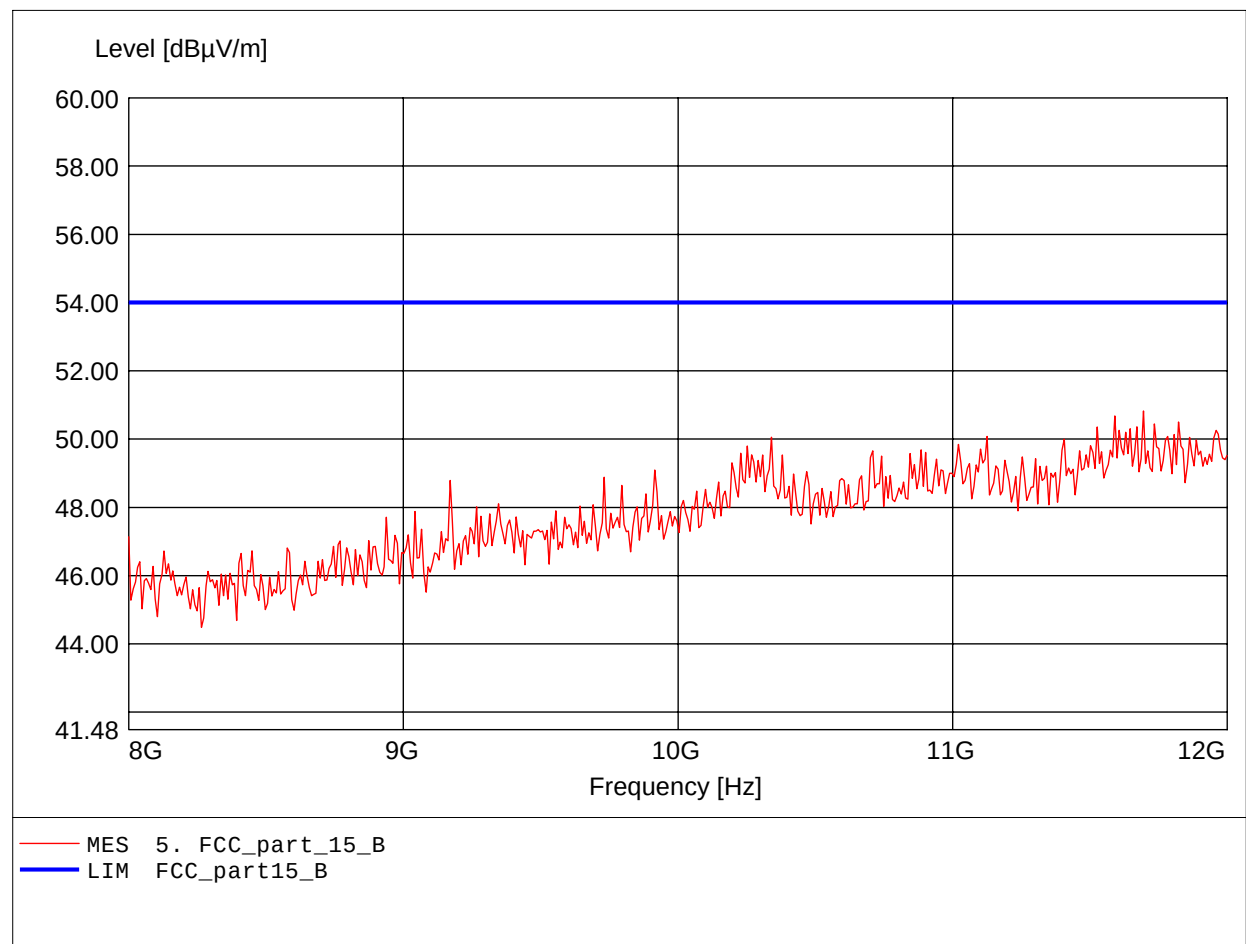
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:11.487GHz Emax:50.73dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

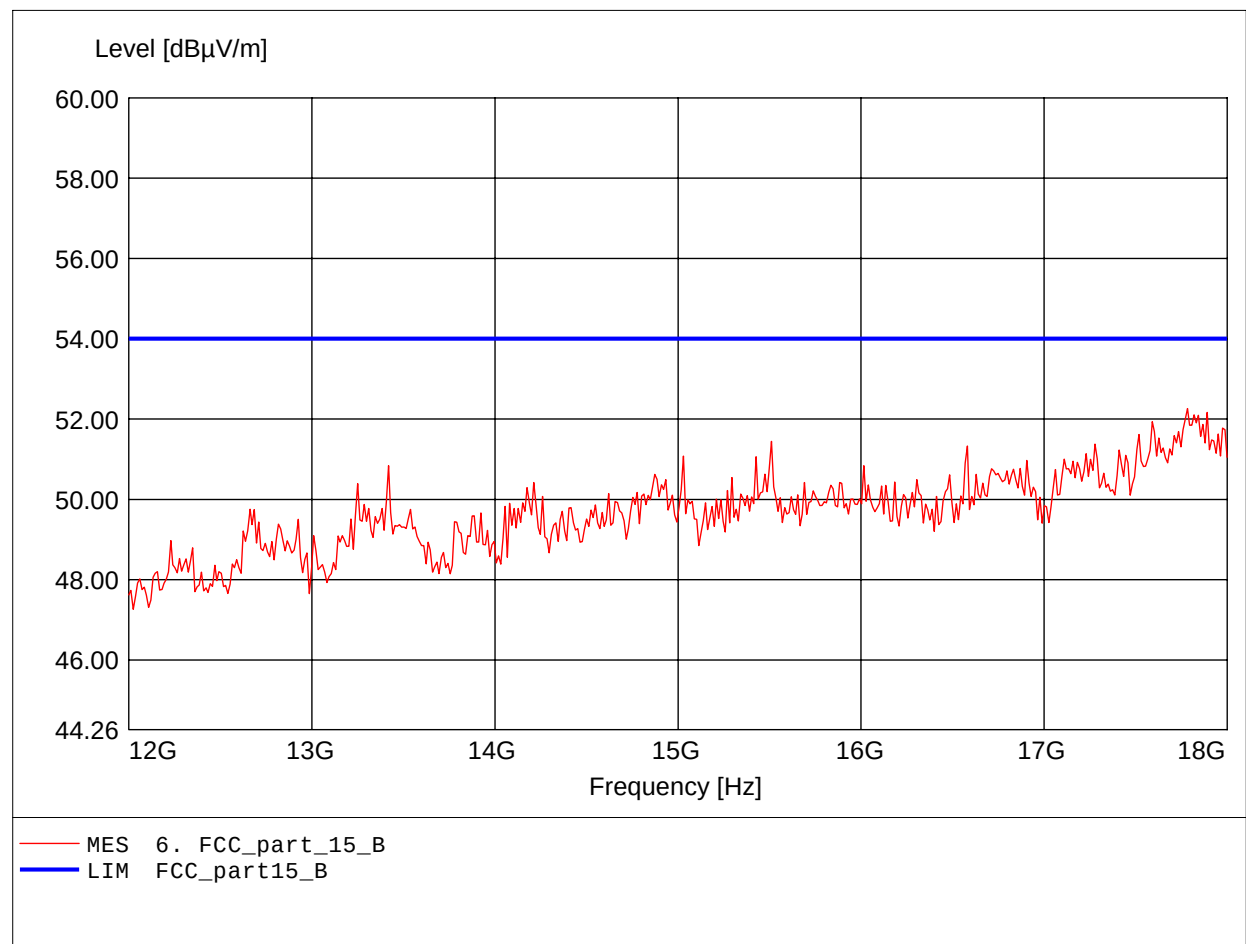
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:11.695GHz Emax:50.82dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

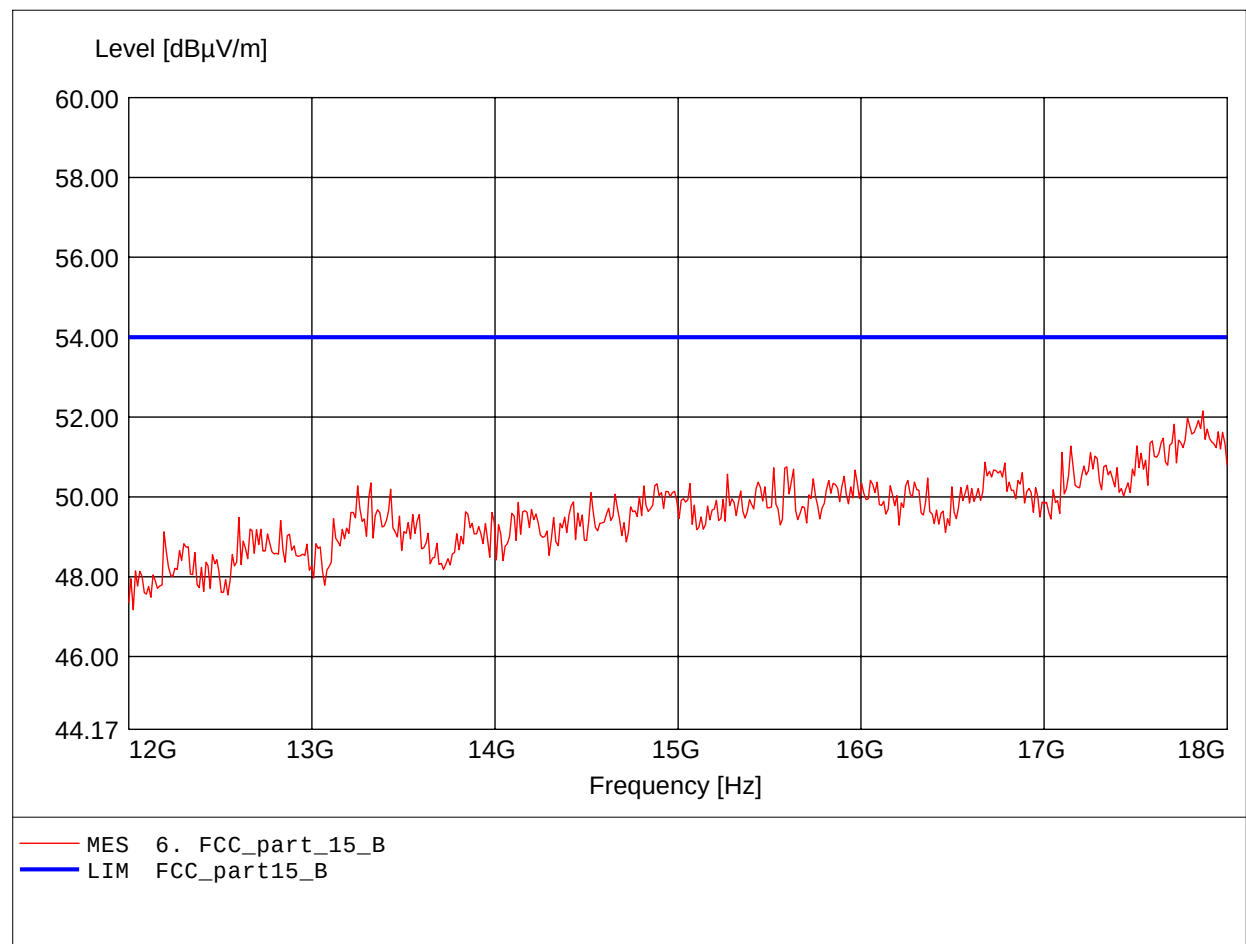
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.784GHz Emax:52.26dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

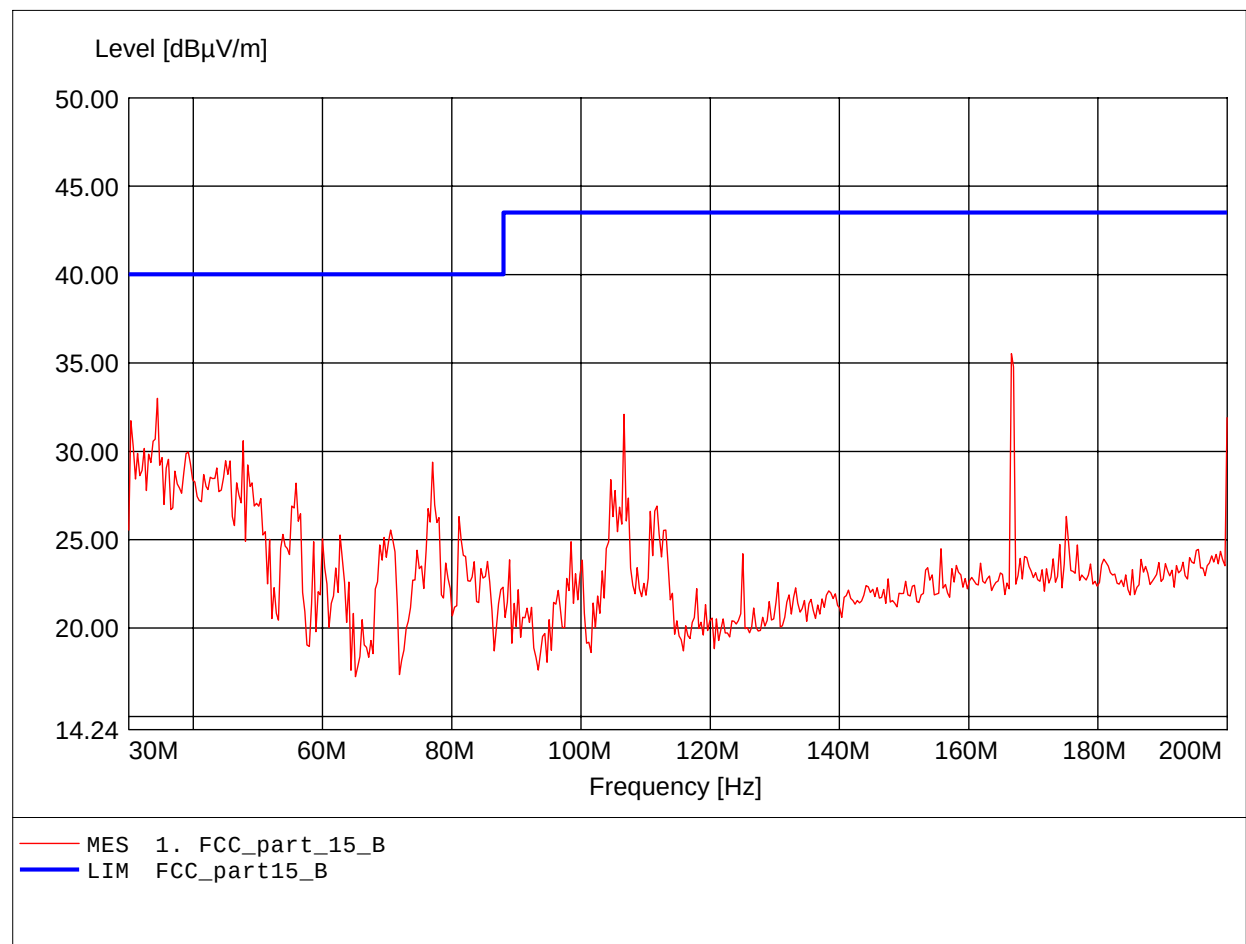
Order Number : W6M20606-7070 802.11b middle channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.868GHz Emax:52.15dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

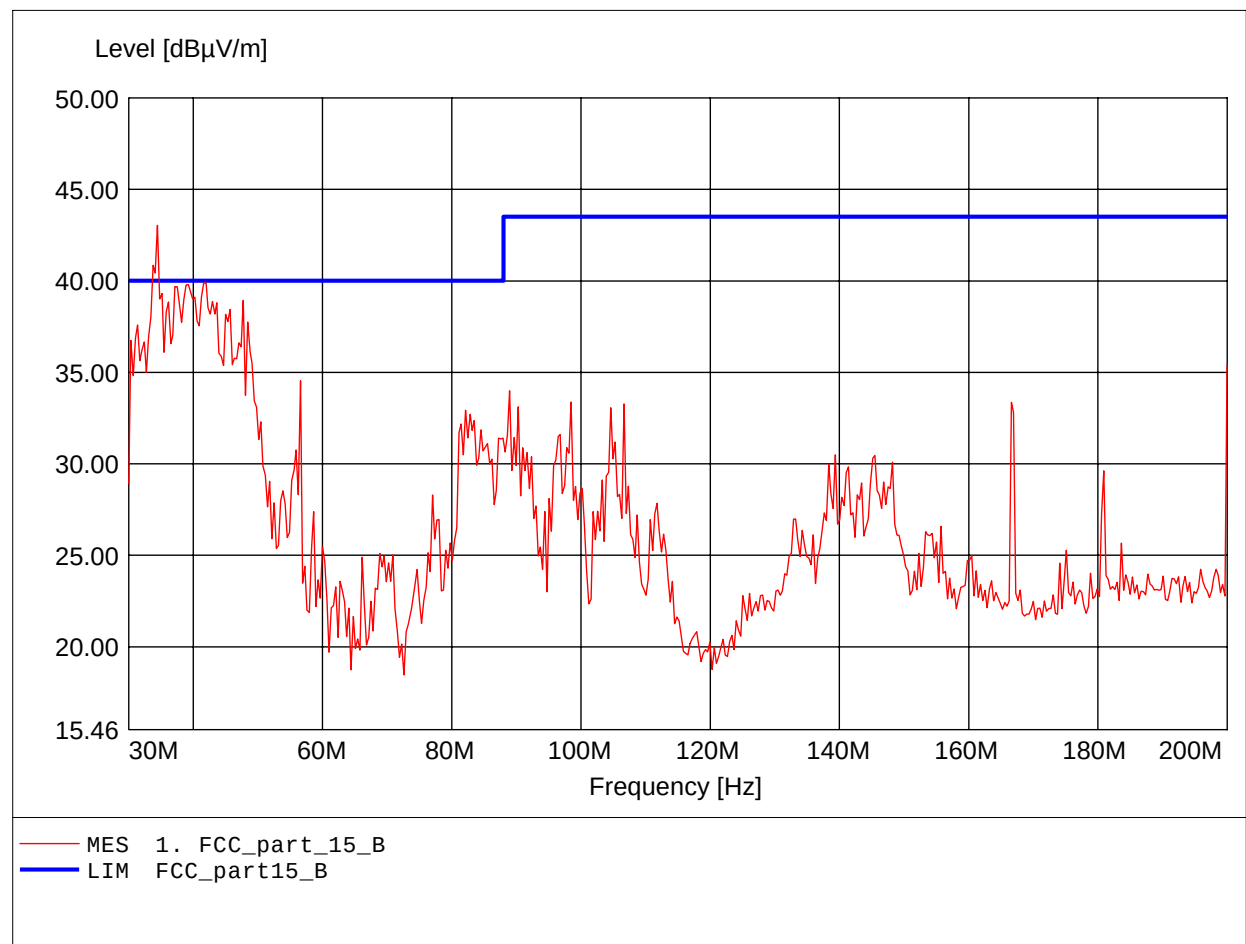
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:166.613MHz Emax:35.52dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

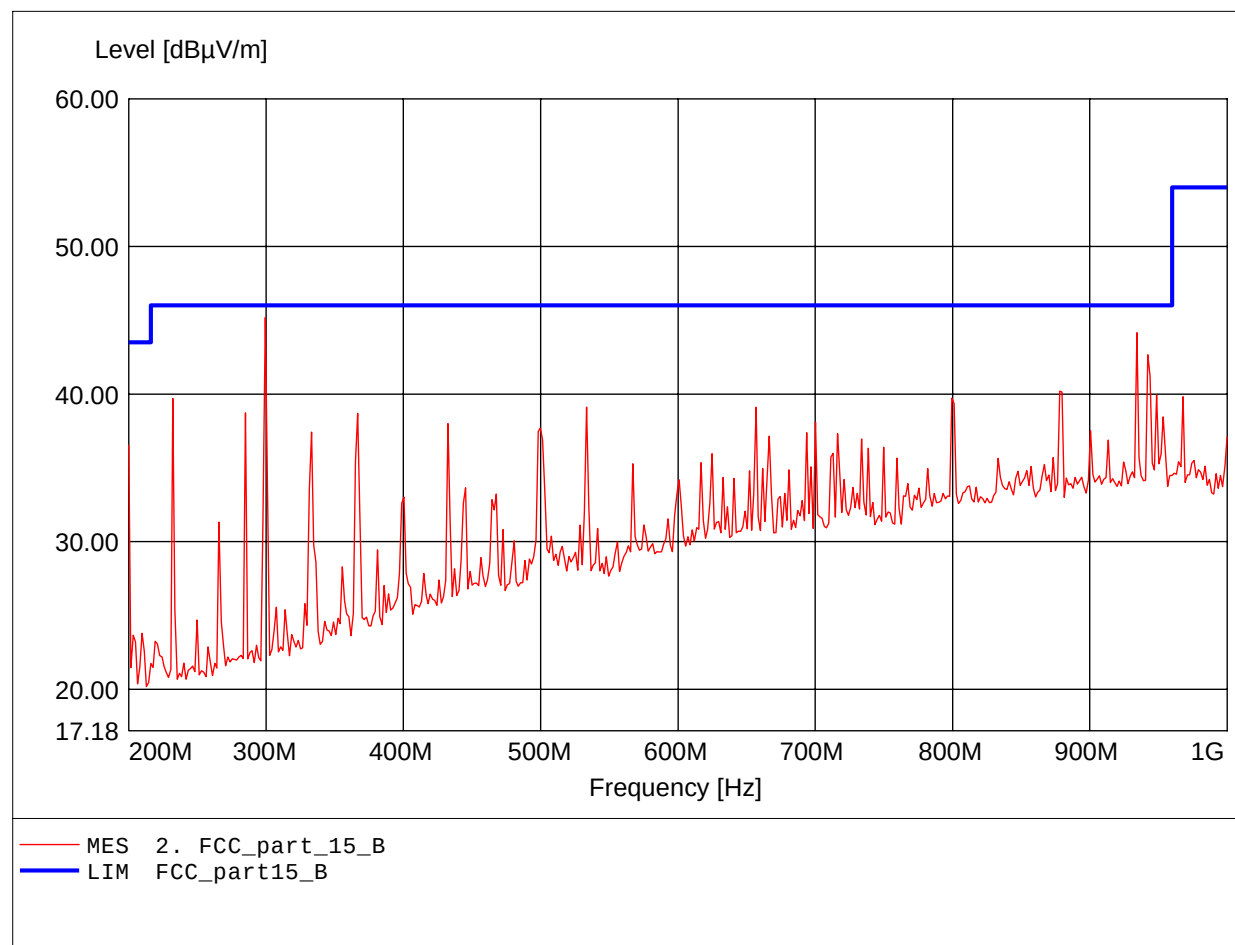
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HK 116
Freq:34.429MHz Emax:43.03dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

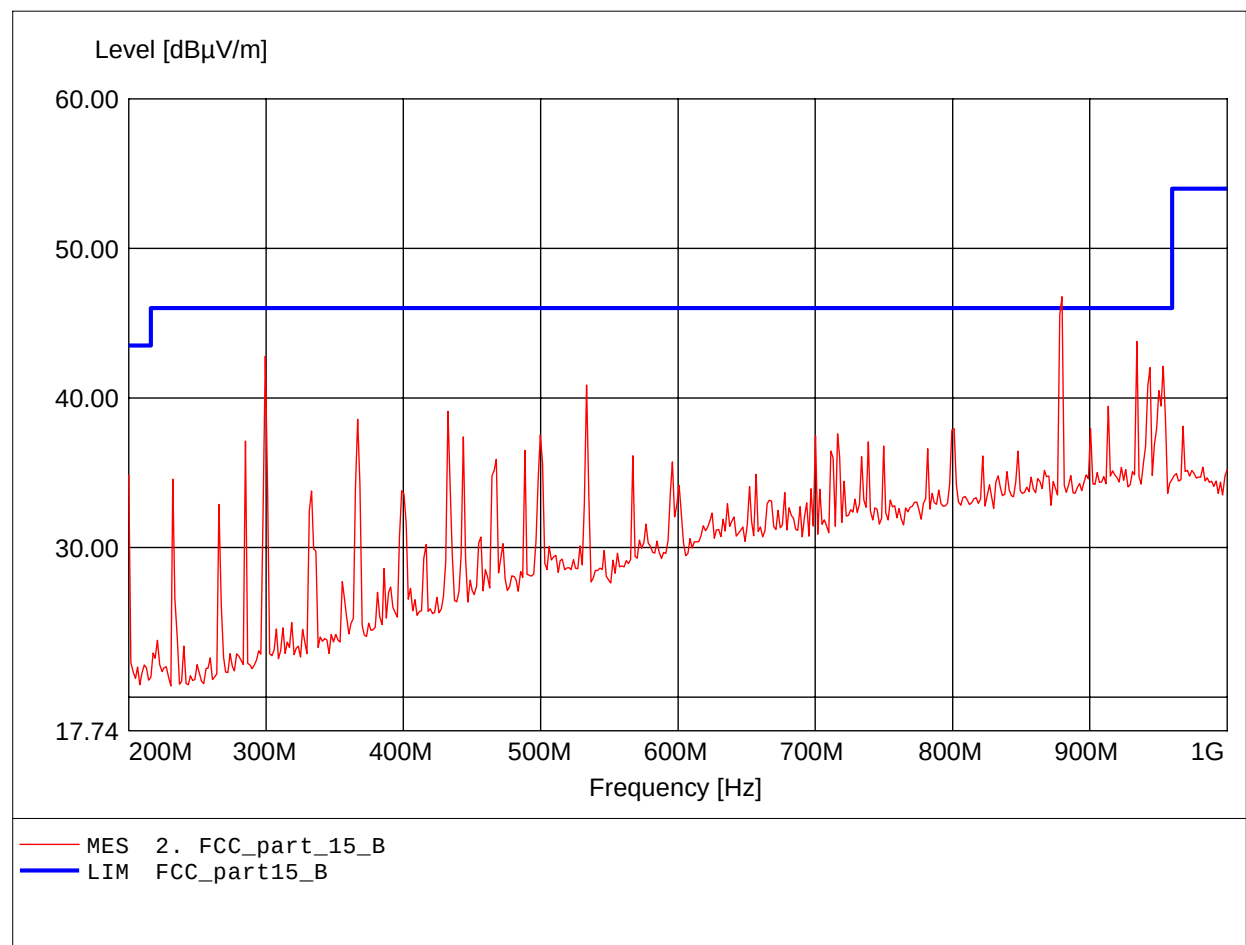
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:299.399MHz Emax:45.19dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

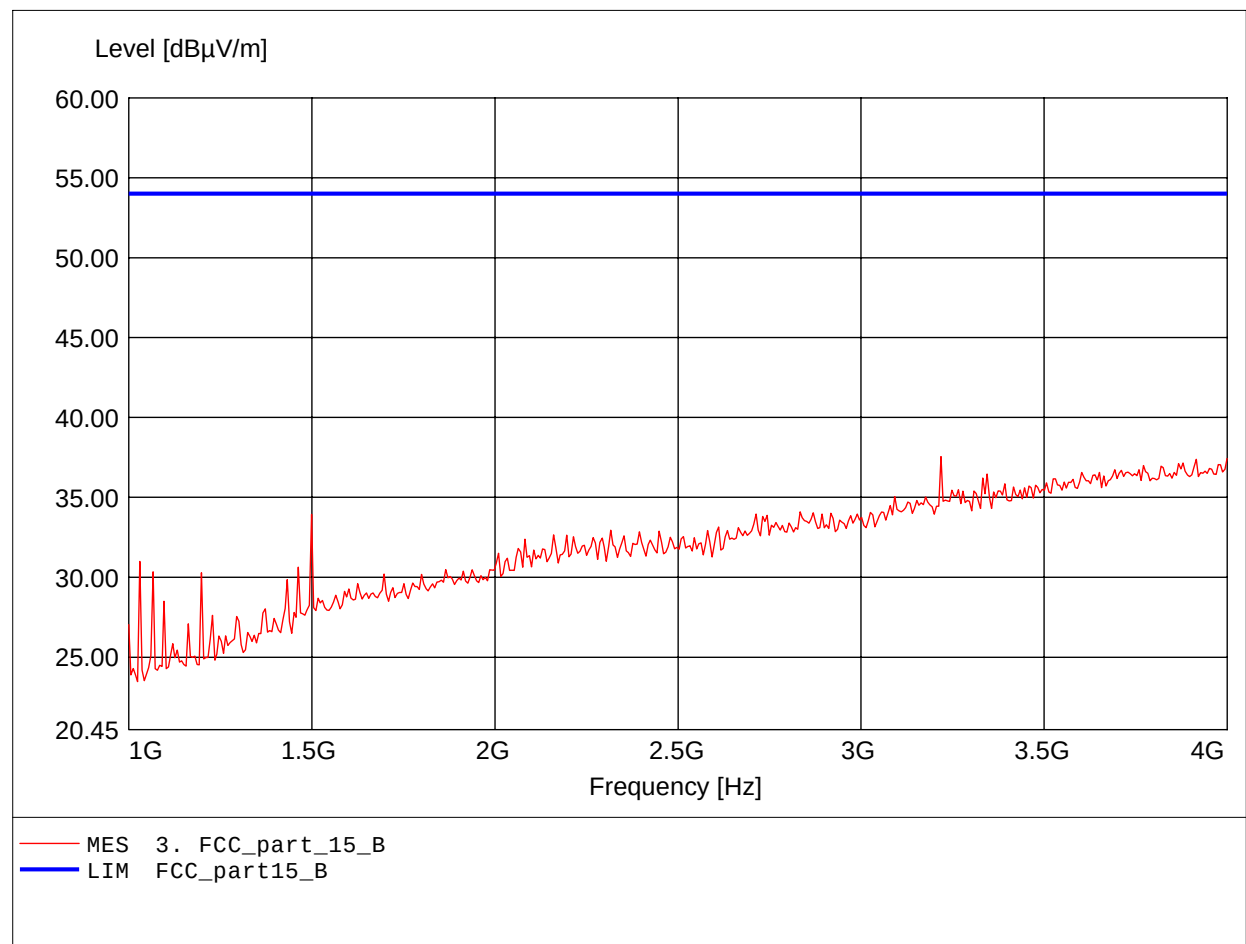
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Freq:879.760MHz Emax:46.78dBμV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

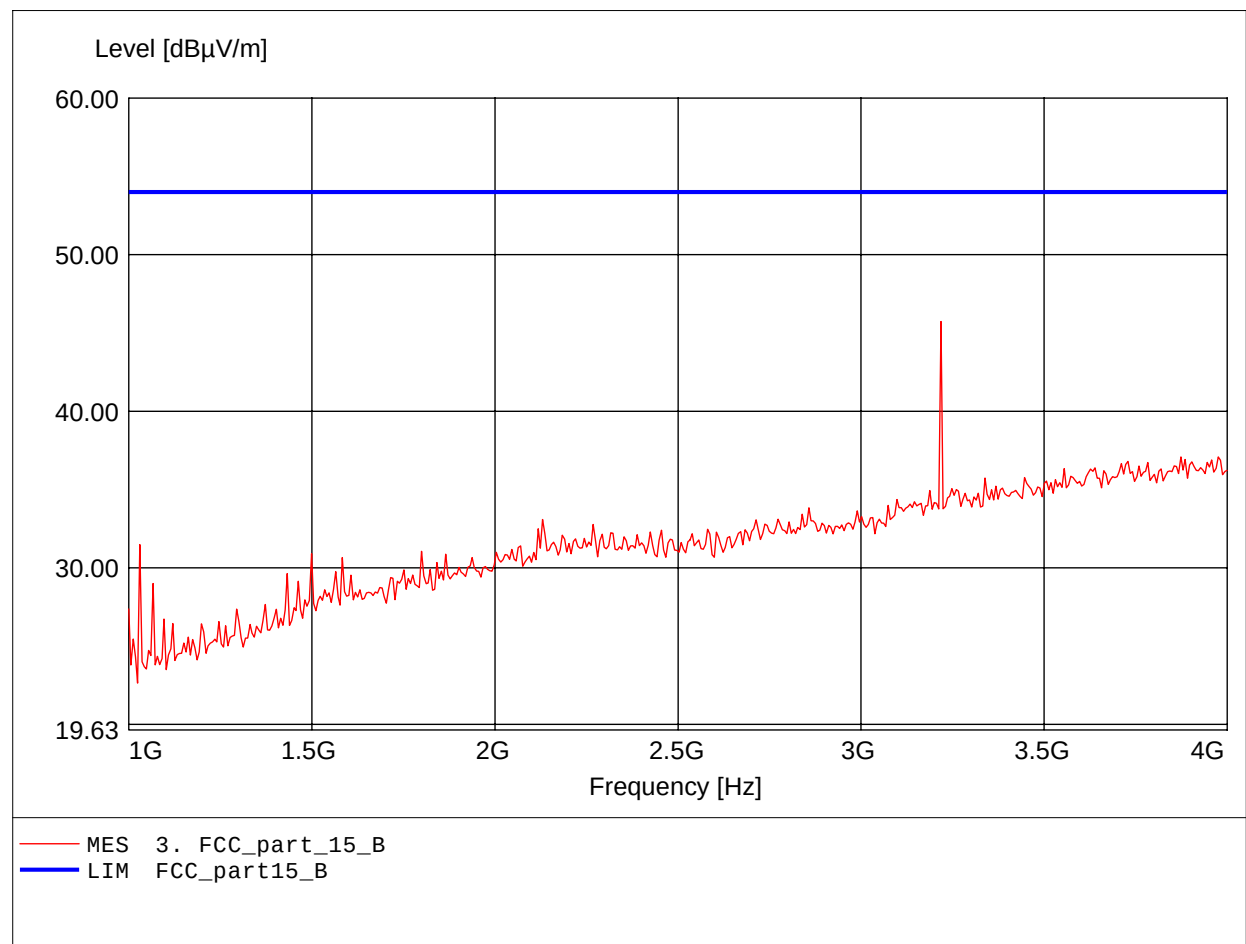
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.218GHz Emax:37.54dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

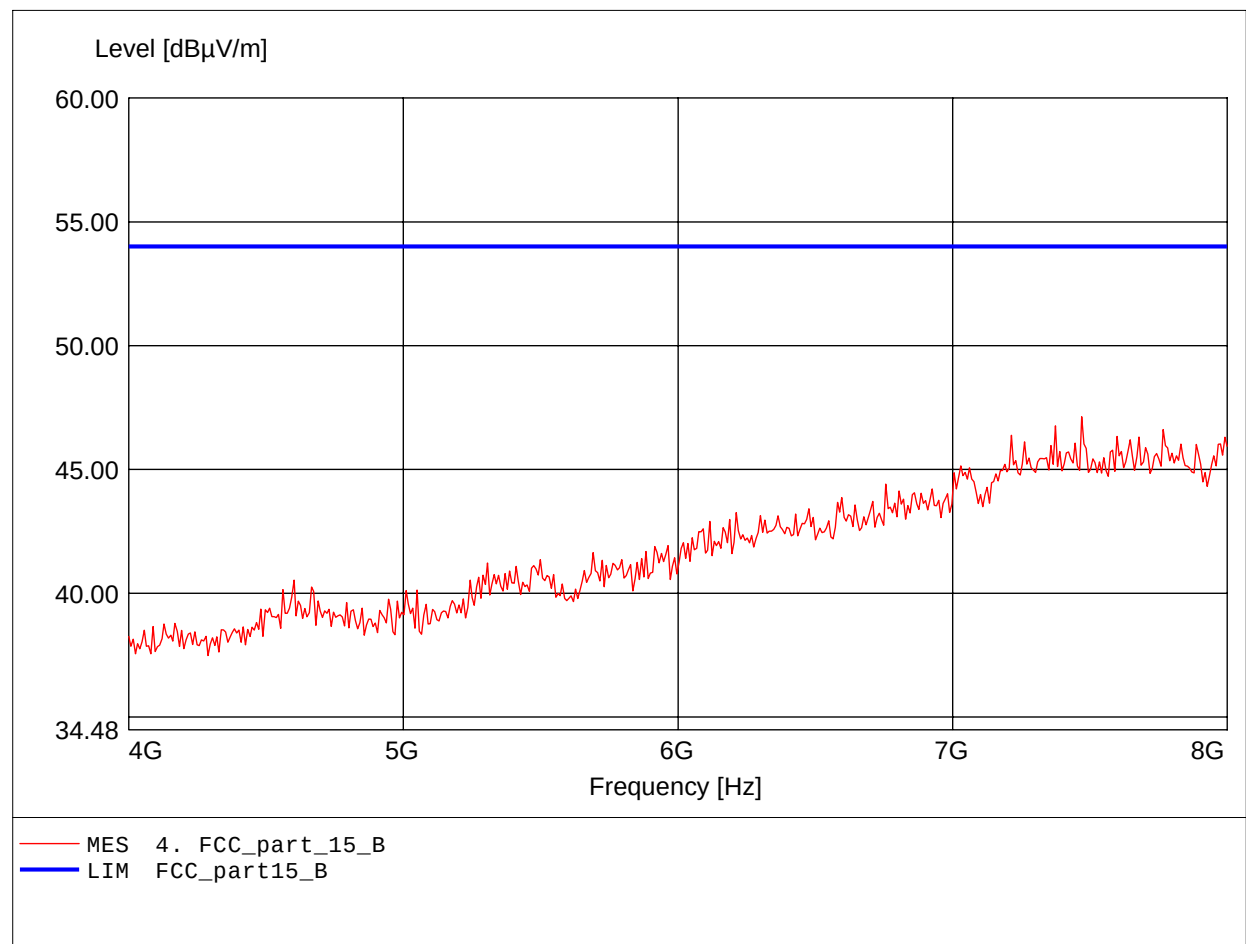
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:3.218GHz Emax:45.73dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

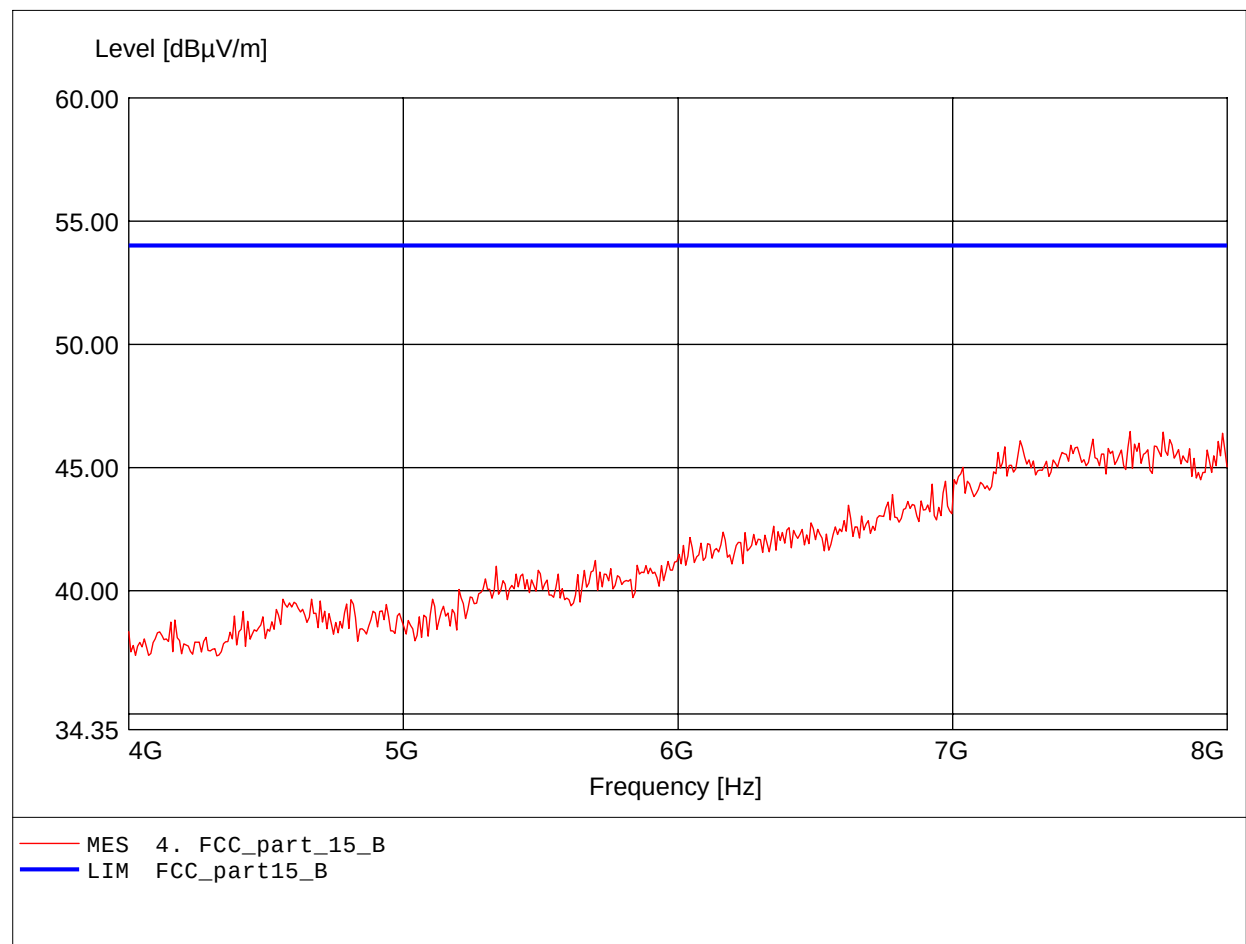
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.471GHz Emax:47.13dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

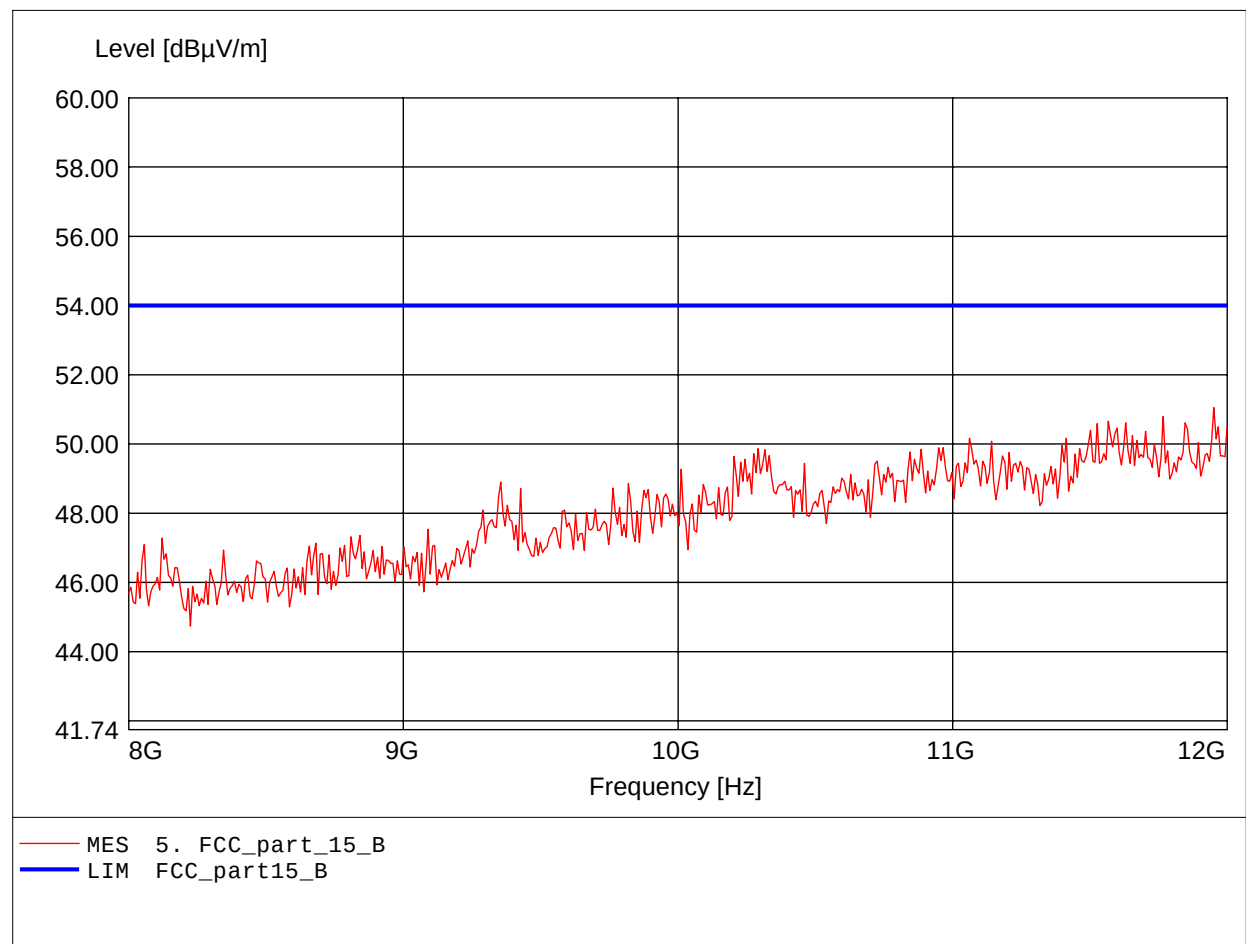
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:7.647GHz Emax:46.46dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

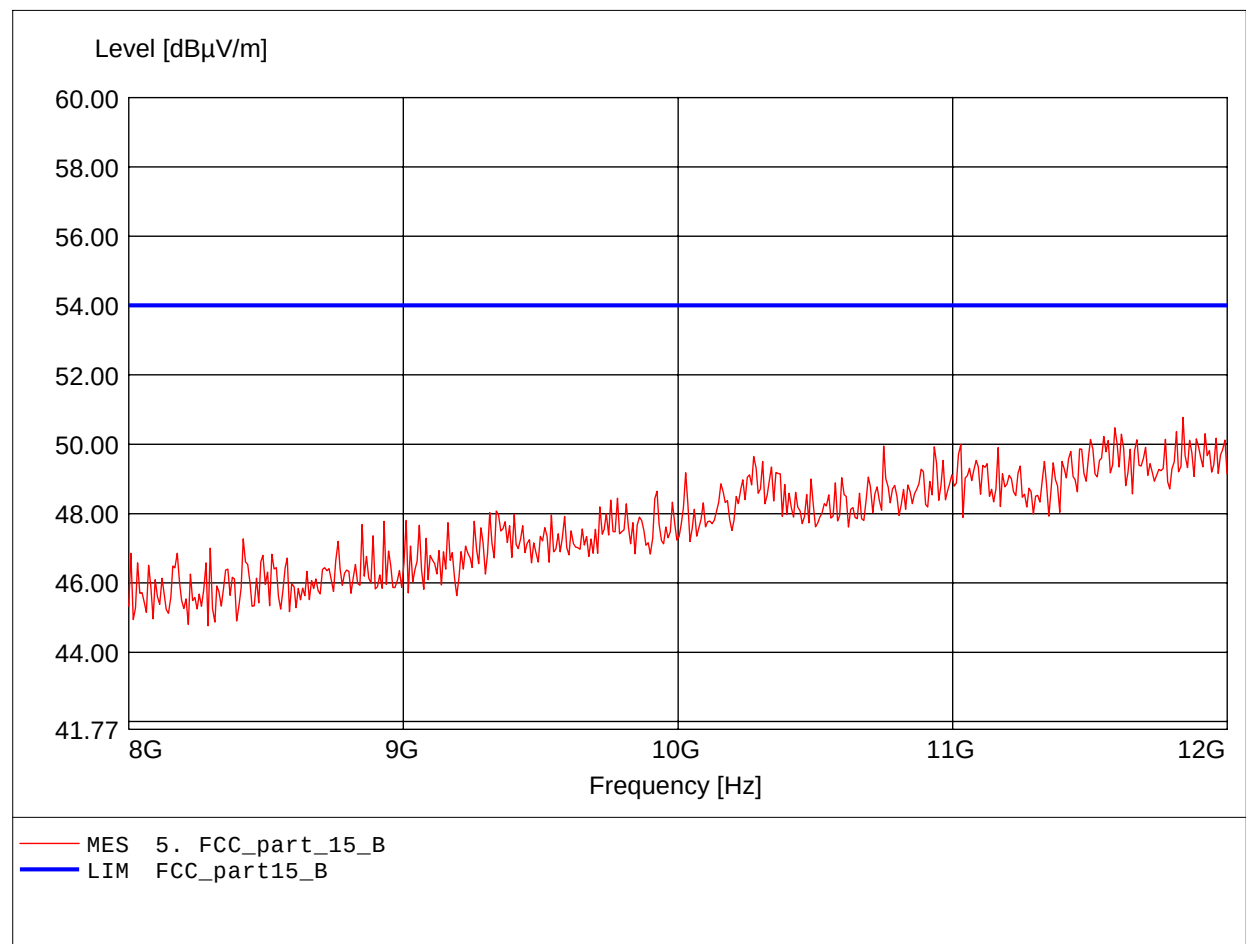
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:11.952GHz Emax:51.05dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

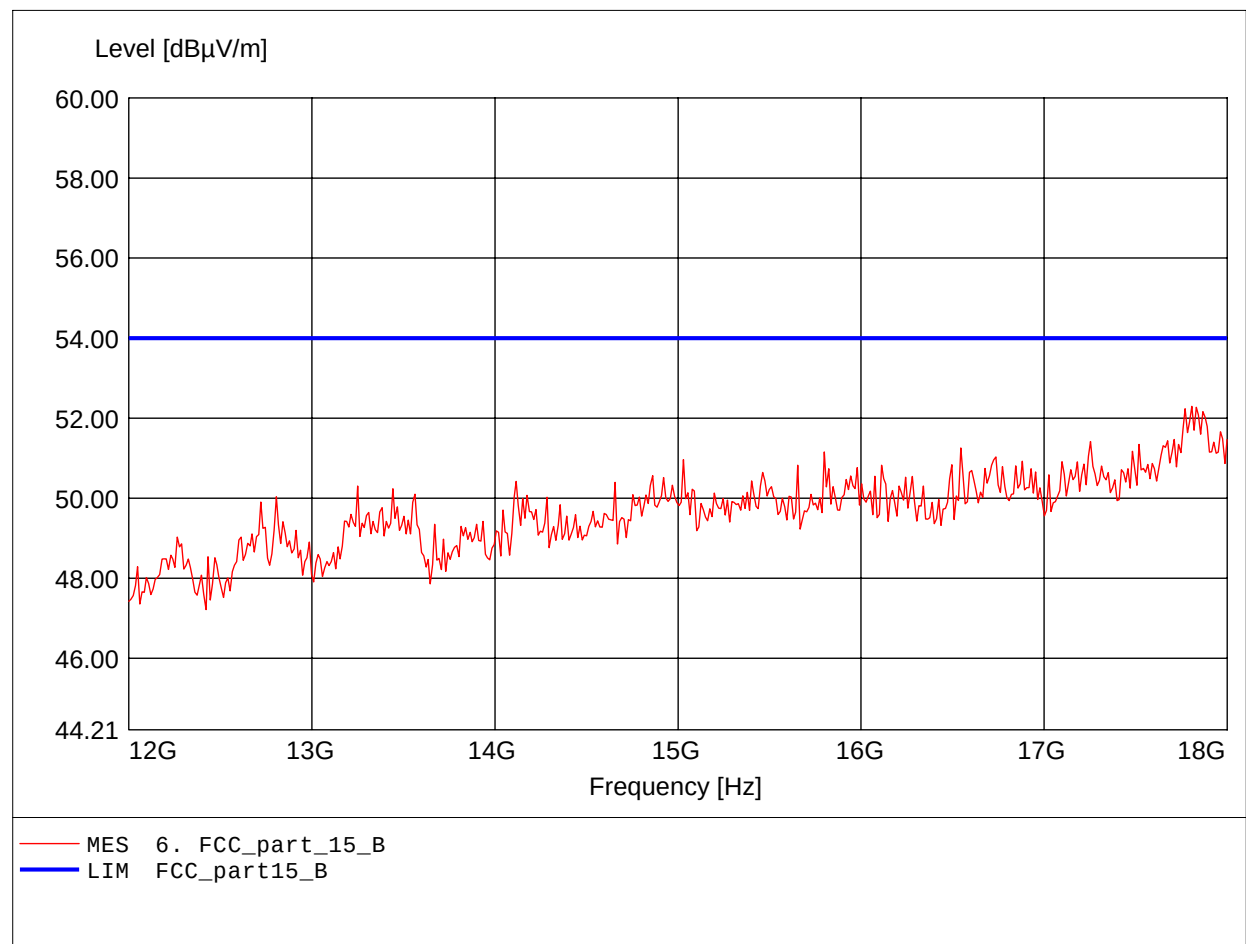
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:11.840GHz Emax:50.77dBμV/m RBW: 1 MHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

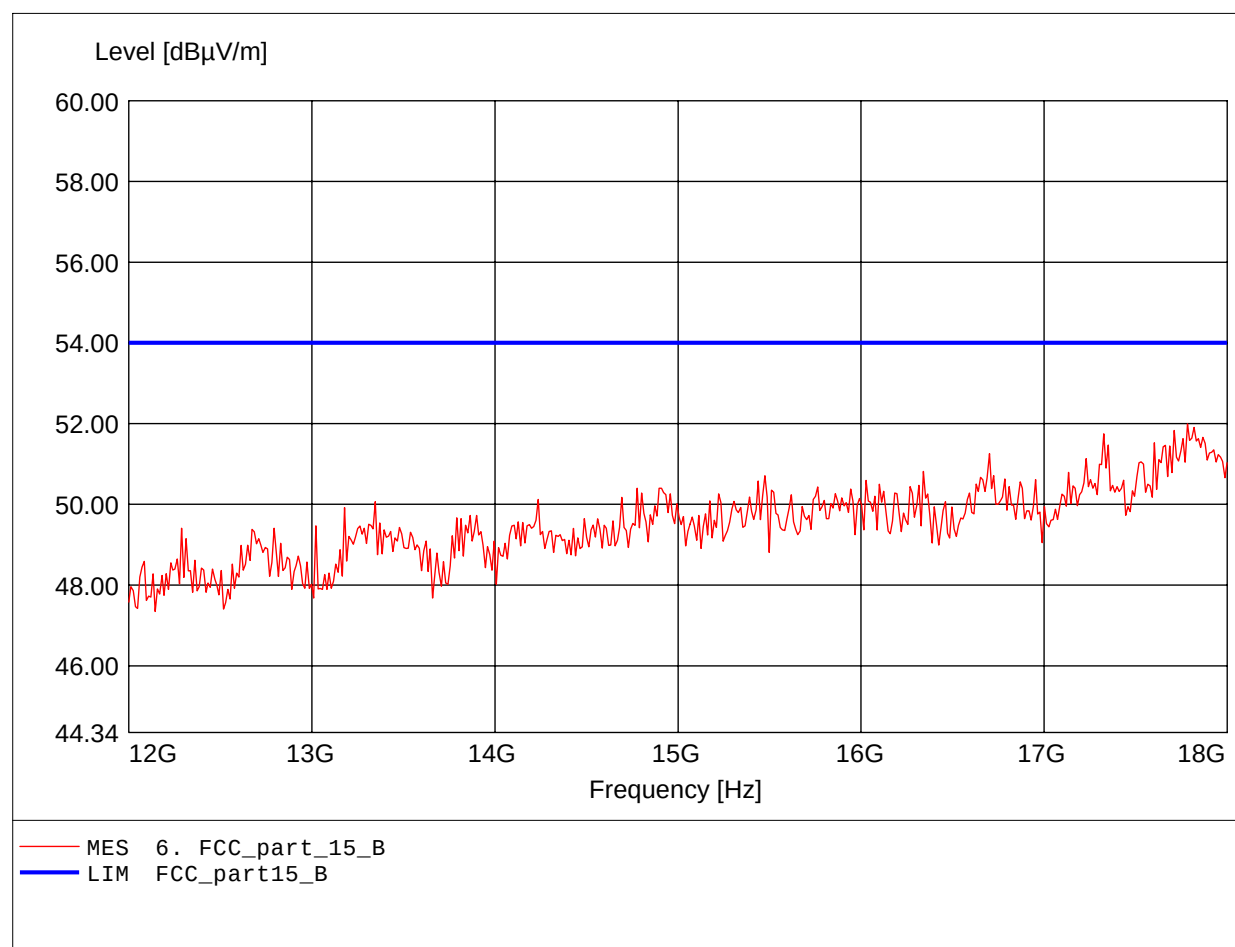
Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.808GHz Emax:52.30dBμV/m RBW: 1 MHz



Field Strength under normal conditions

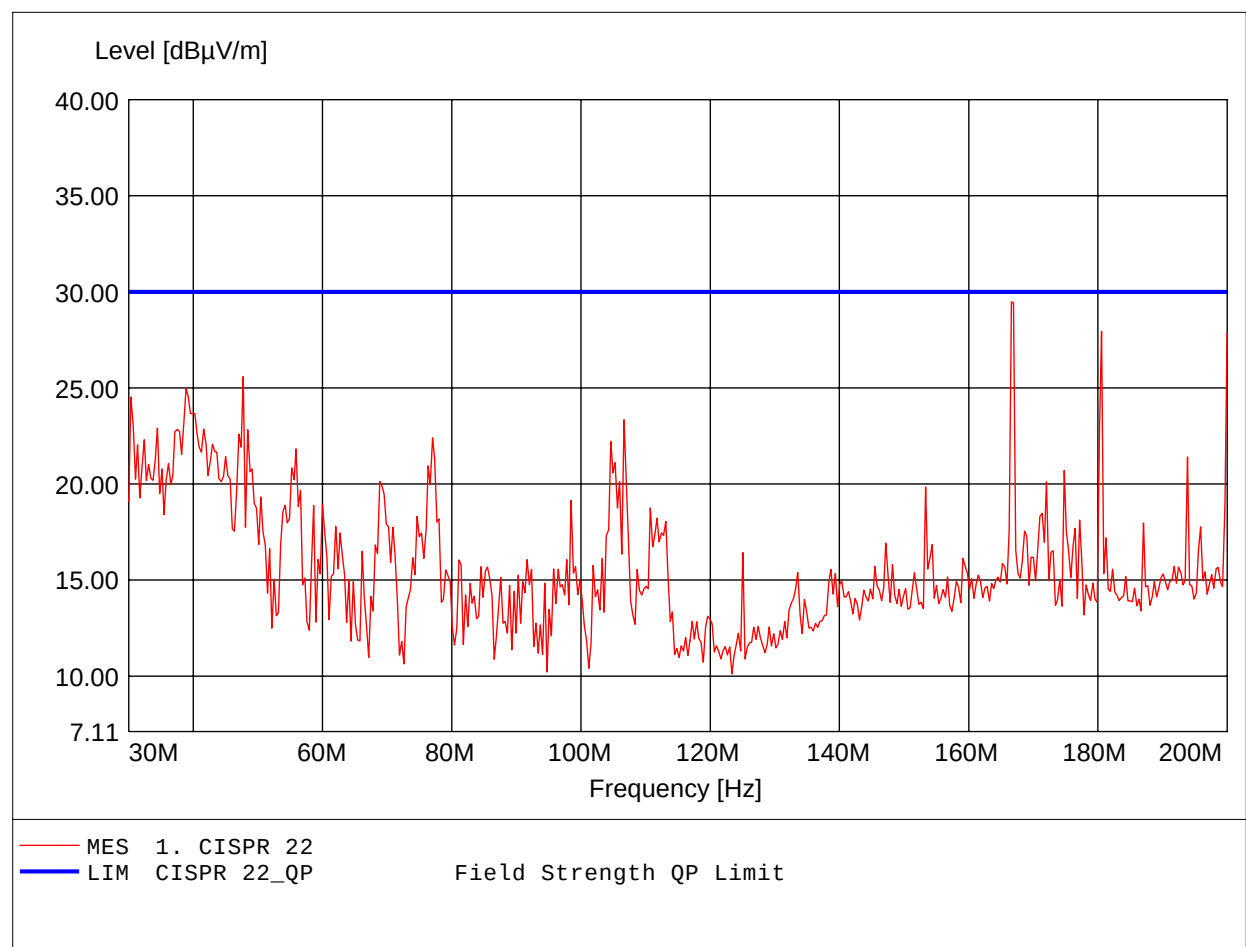
FCC RULES PART 15, SUBPART B

Order Number : W6M20606-7070 802.11b high channel
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: according to subpart B
Comment 1: Dist.: 3m, Ant.: HL25, ampl.
Freq:17.784GHz Emax:51.99dBμV/m RBW: 1 MHz



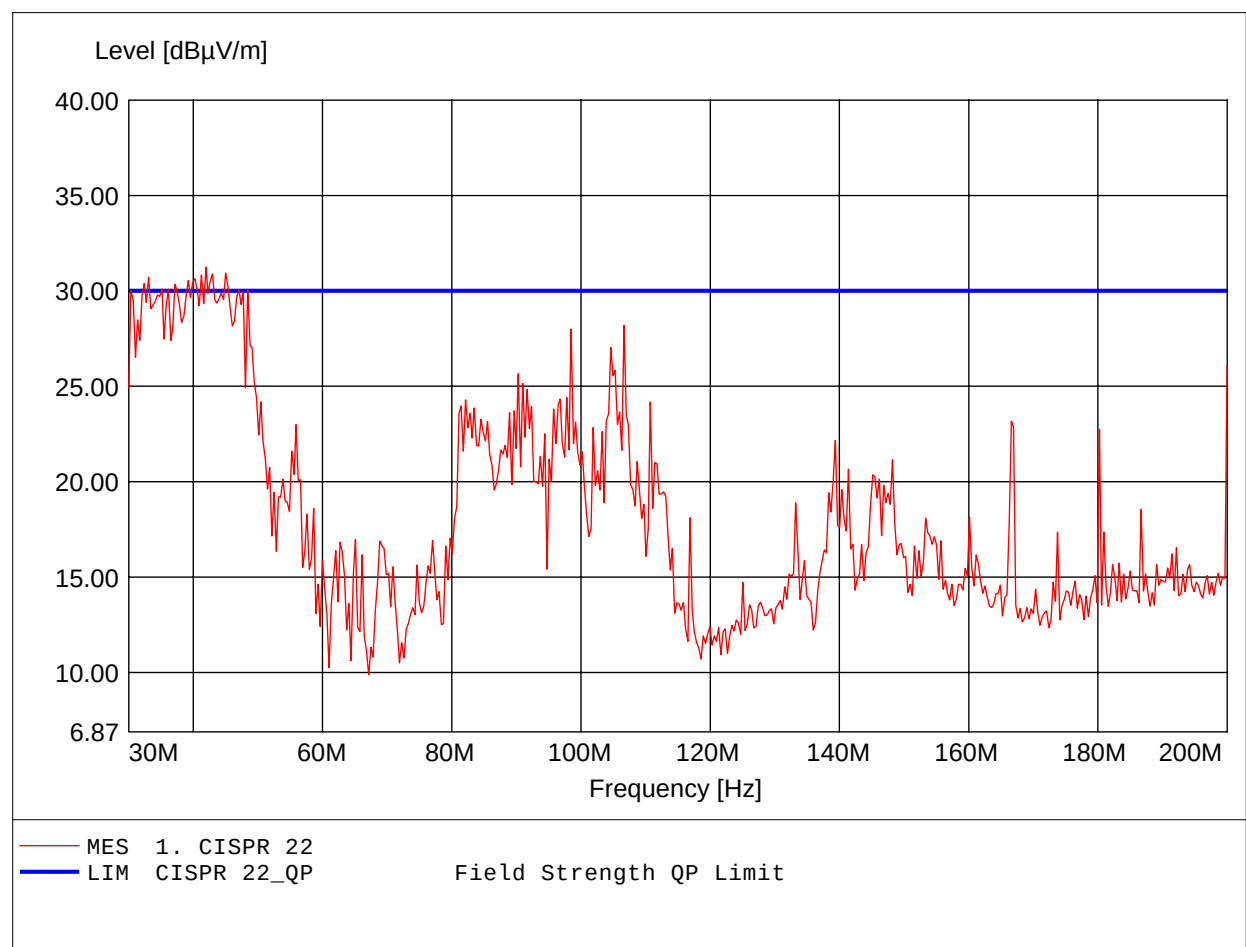
**Spurious emissions under normal conditions
in accordance to the CISPR 22**

Order Number : W6M20606-7070
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: OATS
Comment 1: Dist.: 10m, Ant.: HK 116
Freq:166.613MHz Emax:29.48dBμV/m RBW: 100 kHz



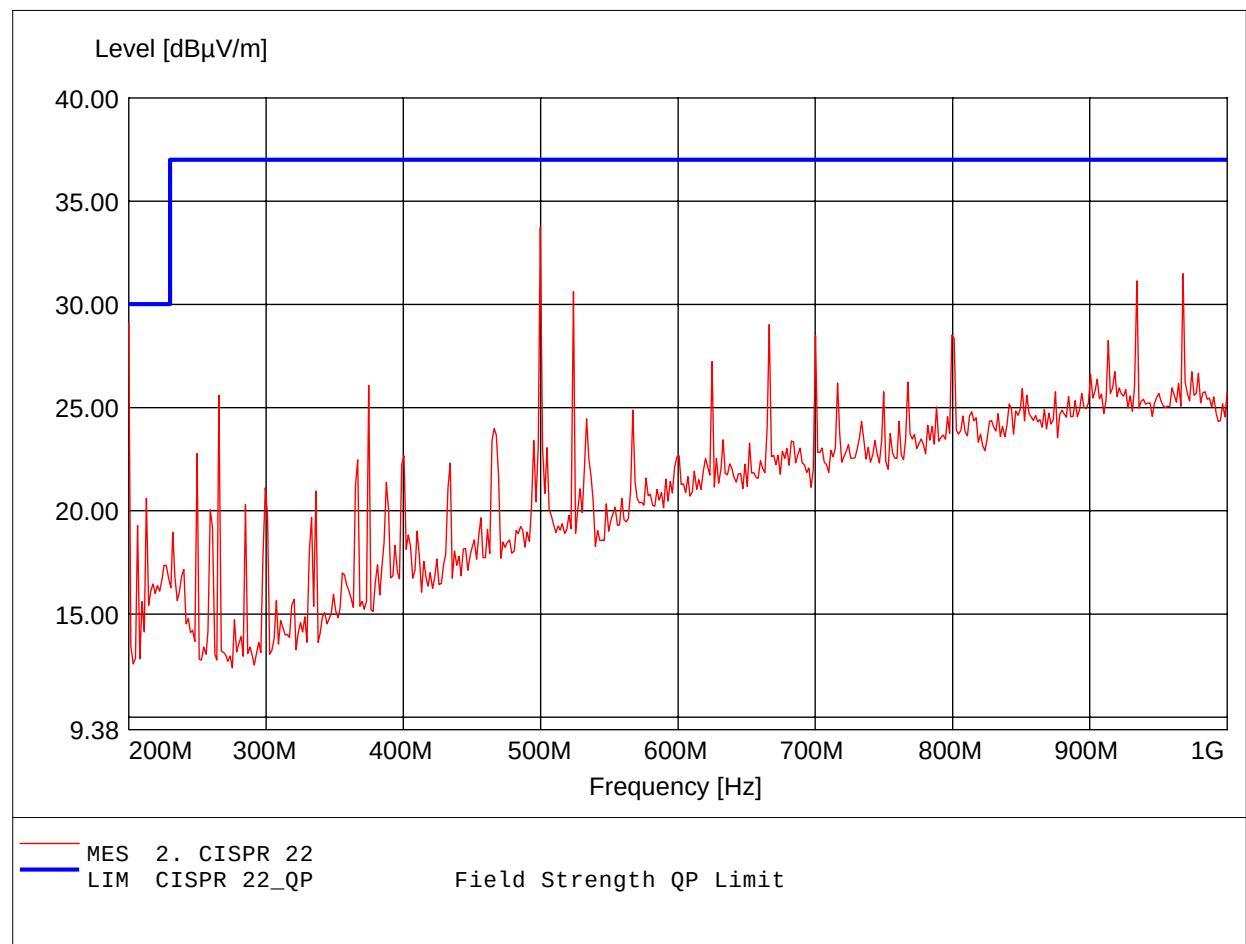
**Spurious emissions under normal conditions
in accordance to the CISPR 22**

Order Number : W6M20606-7070
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: OATS
Comment 1: Dist.: 10m, Ant.: HK 116
Freq:41.924MHz Emax:31.24dBμV/m RBW: 100 kHz



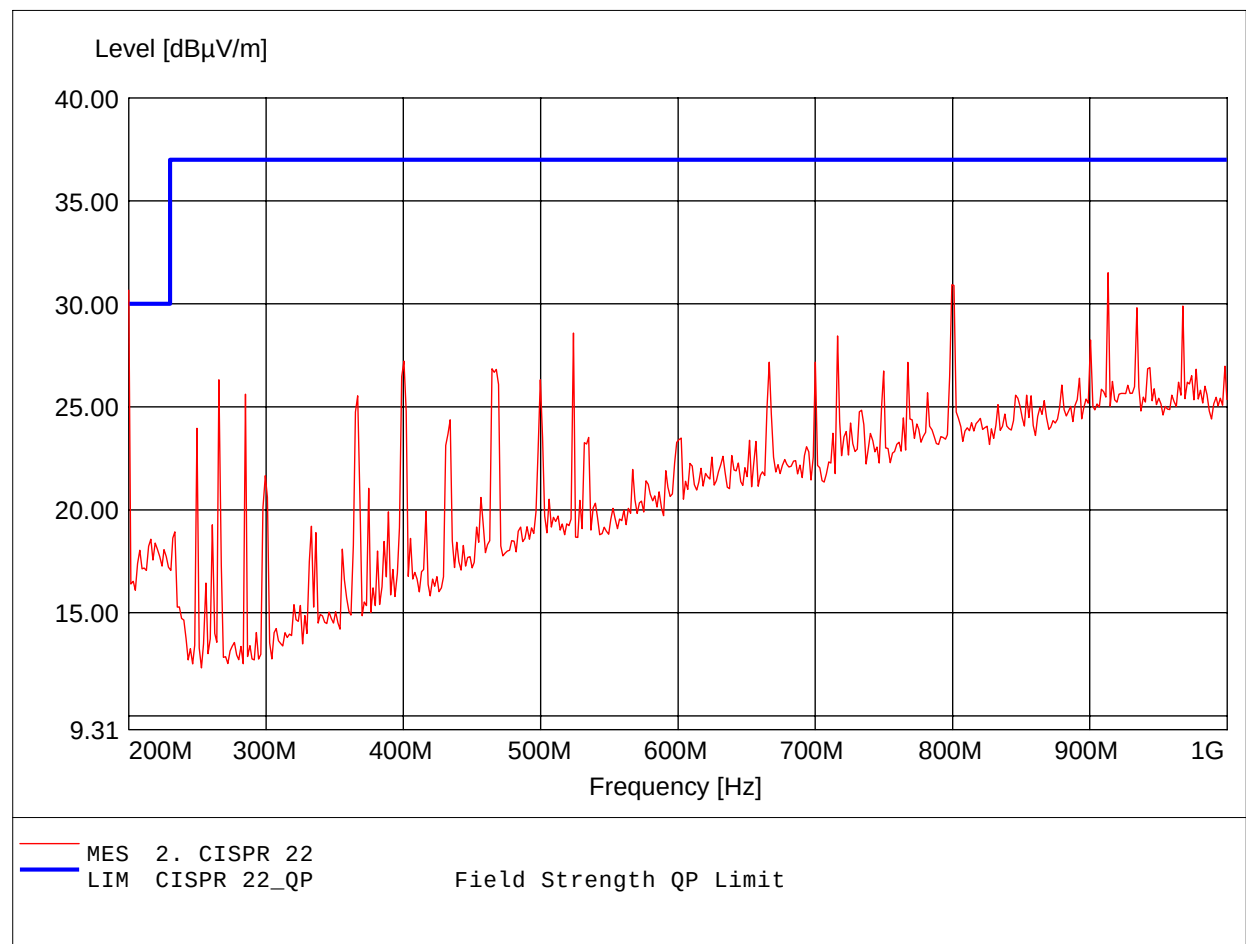
**Spurious emissions under normal conditions
in accordance to the CISPR 22**

Order Number : W6M20606-7070
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: OATS
Comment 1: Dist.: 10m, Ant.: HL 223
Freq:499.800MHz Emax:33.72dBμV/m RBW: 100 kHz



**Spurious emissions under normal conditions
in accordance to the CISPR 22**

Order Number : W6M20606-7070
Test Site / Operator: ETS / Dennis
Temperature/Voltage: Temp.: 23.9°C/ Unom.: 12 VDC (power on power supply)
Test Specification: OATS
Comment 1: Dist.: 10m, Ant.: HL 223
Freq:913.427MHz Emax:31.50dBμV/m RBW: 100 kHz



Appendix G

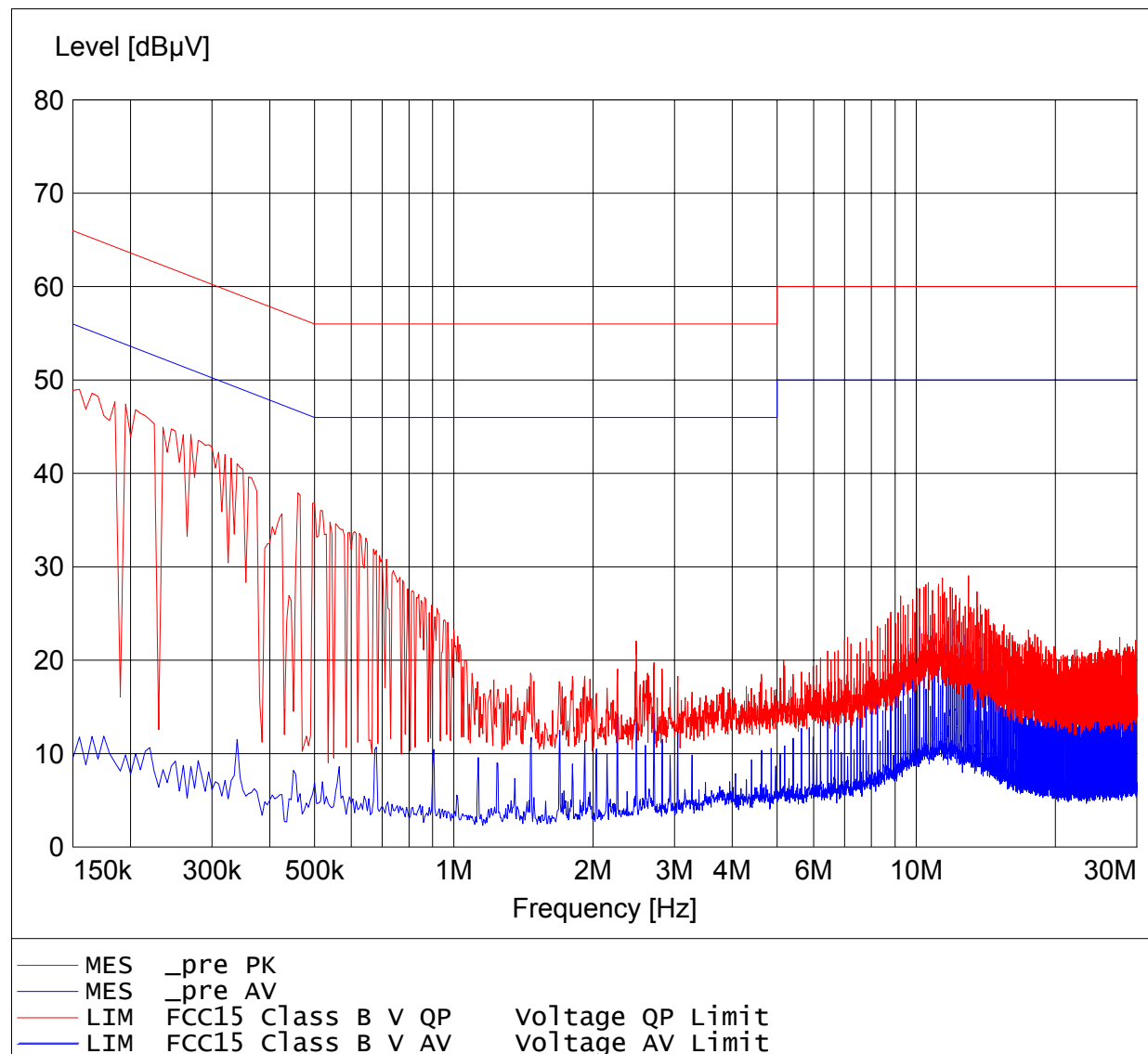
Power Line Conducted Emission

The measurement diagram are wideband pre-scan results; only for reference.

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

Class B

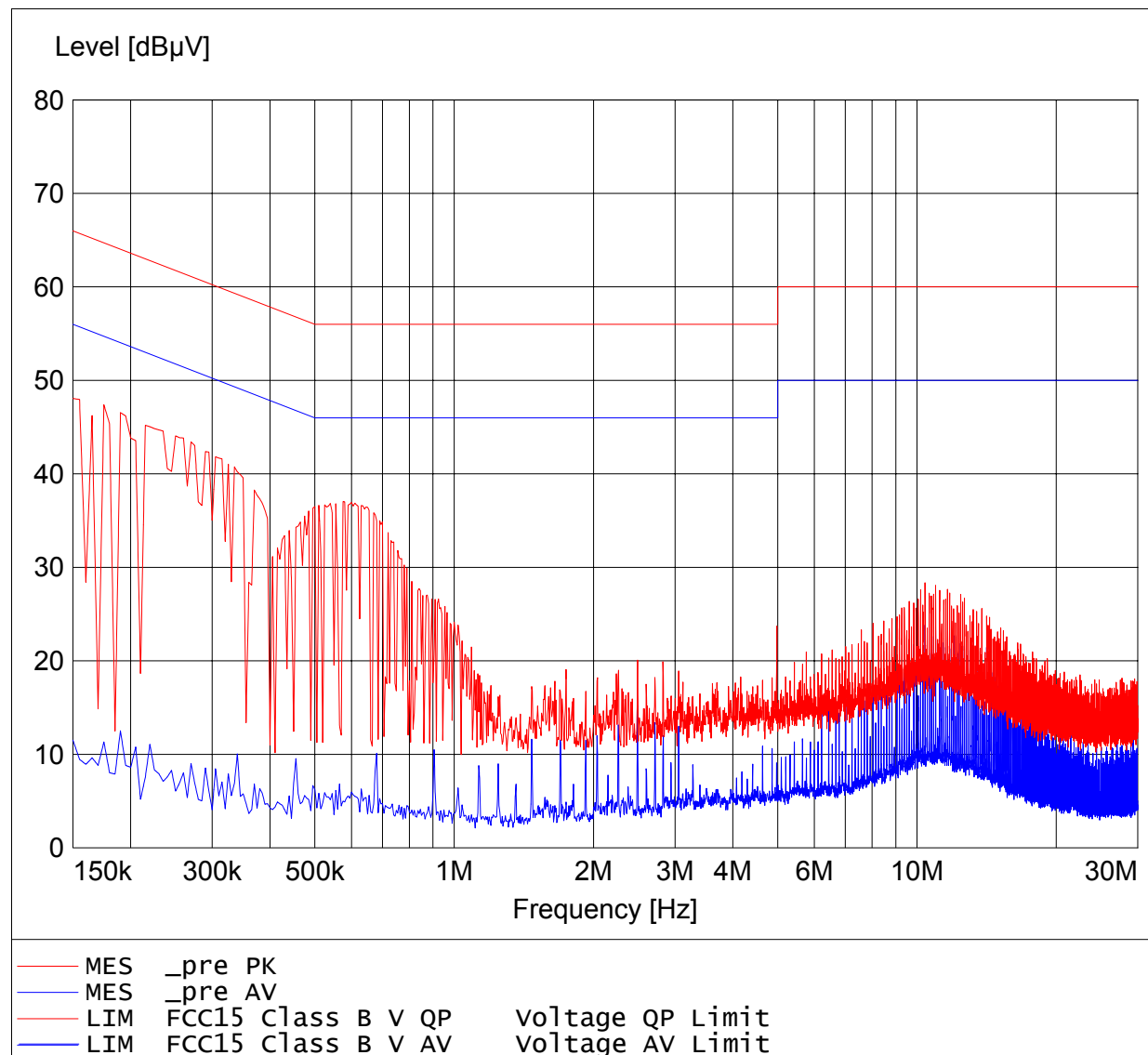
Order Number: W6M20606-7070
Operating Condition: Unom: 120VDC (ac /dc adaptor), Tnom: 23.9°C
Operator: Dennis
Test Specification: V-network: ESH3-Z5 N



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

Class B

Order Number: W6M20606-7070
Operating Condition: Unom: 120 VAC (ac /dc adaptor), Tnom: 23.9°C
Operator: Dennis
Test Specification: V-network: ESH3-Z5 L1





Registration number: W6M20606-7070-C-1
FCC ID: S83-AWK-1100A

Appendix H

Pictures