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

FCC

TEST - REPORT

FCC RULES PART 15 / SUBPART C

FCC ID:QQGBU2061J

Test report no.:

W6M20503-5777-P-15

ETS DR. GENZ TAIWAN PS CO., LTD.
6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU, TAIPEI 114, TAIWAN, R.O.C.
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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.

Tester:

Date	ETS-Lab.	Name	Signature
04.15.2005		Jay Chaing	Jay Chaing

Technical responsibility for area of testing:

Date	ETS	Name	Signature
04.15.2005		Steven Chuang	Steven Chuang

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

1.3 Details of approval holder

Name	: J-Three International Holding Co., Ltd.
Street	: No. 23-7, Dungshyh 12 Lirn, Dungshyh Lii, Pingchien City
Town	: Taoyuan Hsien
Country	: 324 Taiwan R.O.C.
Telephone	: +886-2-8227-5069
Fax	: +886-2-3234-4064
Contact	: Mr. David Wu
Telephone	: +886-2-8227-5069

1.4 Application details

Date of receipt of application : 28.03.2005

Date of receipt of test sample : 29.03.2005

Date of test : from 29.03.2005 to 01.04.2005

1.5 General information of Test item

Type of test item : BLUETOOTH USB ADAPTOR

Model Number : BU-2061-J(ClassII)

Hardware : V1.0

Software : V1.0

Serial number : without

Photos : see Annex

Technical data

Frequency band : 2.4 GHz – 2.4835 GHz
Frequency (ch A) : 2.402 GHz
Frequency (ch B) : 2.441 GHz
Frequency (ch C) : 2.480 GHz

Transmitter **Unom**

Power (ch A or **ch 0**) : **Conducted: -4.01 dBm**
Power (ch B or **ch 39**) : **Conducted: -5.25 dBm**
Power (ch C or **ch 78**) : **Conducted: -5.57 dBm**

Power supply : 120 VAC (Power on PC)

Operation modes : duplex

Modulation Type : GFSK

Antenna Type : PCB Antenna

Antenna gain : -2.83dBi

Registration number: W6M20503-5777-P-15
FCC ID: QQGBU2061J

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 : The test sample is designed as BU-2061-J device. Its pseudorandom hopping scheme, authentication, receiver parameters, synchronization procedure and other parameters are determined by BU-2061-J Specification.

1.6 Test standards

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

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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 (Power on PC)
Extrem conditions parameters	: test voltage : -- extreme min :-- V max :-- V

2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	08.11.2005
ETSTW-CE 002	PREREULATOR MODE DC POWER SUPPLY				
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	08.11.2006
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	03.11.2006
ETSTW-CE 006	IMPULS-BEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	10.11.2006
ETSTW-CE 007	SPECTRUM ANALYZER 5GHz	FSB	849670/001	R&S	
ETSTW-CE 008	ABSORBING CLAMP	MDS 21	3469	ABSORPTIONS-MESSWANDLER-ZANGE	04.11.2006
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	10.05.2005
ETSTW-CE 010	Comb Generator-conducted			ETS	
ETSTW-CE 011	Power Line Conducted Emission Only			ETS	
ETSTW-CS 001	SIGNAL GENERATOR	SMX	849254/003	R&S	31.10.2005
ETSTW-CS 002	COUPLING AND DECOUPLING NETWORK	CDN S751	19263	CHAFFNER	03.11.2006
ETSTW-CS 003	COUPLING AND DECOUPLING NETWORK	CDN T400	19820	CHAFFNER	03.11.2006
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	CHAFFNER	03.11.2006
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	03.11.2005
ETSTW-RE 001	2MHz SWEEP FUNCTION GENERATOR	EGC-3230	02050018	Escort	
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	03.11.2005
ETSTW-RE 003	EMI TEST RECEIVER	ESI	831438/001	R&S	16.11.2005
ETSTW-RE 004	EMI TEST RECEIVER	ESI	831459/012	R&S	09.11.2005
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	01.11.2005
ETSTW-RE 006	HF-EICHLEITUNG RF STEP ATTENUATOR	DPSP	848220/003	R&S	
ETSTW-RE 007	HF-EICHLEITUNG RF STEP ATTENUATOR	DPSP	844581/024	R&S	
ETSTW-RE 008	Controller	HD100	C0100-L/047/ 6670703/L	Heinrich Deisel	
ETSTW-RE 009	Controller	HD100	100/341	Heinrich Deisel	
ETSTW-RE 010	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070181	MOTECH	
ETSTW-RE 011	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070165	MOTECH	
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0036	397	K&L	
ETSTW-RE 014	DUAL TRACKING WITH 5V FIXED	GPC-3030D		GW	
ETSTW-RE 015	ANTENNA	HK116	841489/003	R&S	
ETSTW-RE 016	ANTENNA	HL223	848953/006	R&S	
ETSTW-RE 017	ANTENNA	HL025	352886/001	R&S	

ETSTW-RE 018	ANTENNA	AT 4560	27212	AR	07.11.2006
ETSTW-RE 019	ANTENNA , HORN	22240-25	121074	FM	
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	10.11.2005
ETSTW-RE 022	AMPLIFIER	8447D	2944A09837	Agilent	01.11.2005
ETSTW-RE 023	Shielded room	SR 1		Frankonia	
ETSTW-RE 024	Anechoic Chamber	CHC 1		Frankonia	
ETSTW-RE 025	Anechoic Chamber	CHC 2		Frankonia	
ETSTW-RE 026	Open Area Test Site	10m		ETS	
ETSTW-RE 027	Passive Loop Antenna	6512	34563	EMCO	29.06.2006
ETSTW-RE 028	Log-Periodic DipoleArray Antenna	3148	34429	EMCO	14.06.2006
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	16.06.2006
ETSTW-RE 030	Double-Ridged Waveguide Horm Antenna	3117	35224	EMCO	04.05.2006
ETSTW-RE 031	Comb Generator-radiated			ETS	
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	17.11.2005
ETSTW-RE 033	4CH 1GHz 5GS/s DSO	WAVERUNNER 6100A	LCRY0604P14508	LeCory	
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	17.11.2005
ETSTW-RE 035	1.5GHz Active Voltage Probe	HFP1500	2332	LeCory	
ETSTW-RE 036	100MHz High Voltage Diff Probe	ADP305	3305	LeCory	
ETSTW-RE 037	Log-Periodic DipoleArray Antenna	3148	00034546	EMCO	17.11.2006
ETSTW-RE 038	Log-Periodic DipoleArray Antenna	3148	00034547	EMCO	17.11.2006
ETSTW-RE 039	Biconical Antenna	3110B	41760	EMCO	17.11.2006
ETSTW-RE 040	Biconical Antenna	3110B	41761	EMCO	17.11.2006
ETSTW-RE 041	Anechoic Chamber	CHC 3		Frankonia	
ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	93	EMC-PARTNER	17.11.2005
ETSTW-EMS 001	Clamp BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	01.11.2005
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014		
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	01.11.2005
ETSTW-EMS 004	ESD generator minizap	ESD2000	016	EMC-PARTNER	01.11.2005
ETSTW-EMS 005	Attenautor (50Ω)	VERI50	051	EMC-PARTNER	30.08.2006
ETSTW-EMS 006	Attenautor (1 KO)	VERI1K	019	EMC-PARTNER	20.10.2006
ETSTW-EMS 007	20GO Divider	ESD-VERI-V	021	EMC-PARTNER	16.03.2006
ETSTW-RS 001	14" COLOR VIDEO MONITOR	TP-1480HR	P009799	TOPICA	
ETSTW-RS 002	14" COLOR VIDEO MONITOR	TP-1480HR	P009814	TOPICA	
ETSTW-RS 003	AMPLIFIER RESEARCH	30S1G3	306933	AR	
ETSTW-RS 004	RF Power Amplifier	150W1000	307009	AR	18.11.2005
ETSTW-RS 005	Electric Field Probe Type 8.3	EMR-20	BN 2244/20	GW	03.09.2005

ETSTW-RS 006	SIGNAL GENERATOR	SML03	101551	R&S	15.11.2005
ETSTW-RS 007	AUDIO ANALYZER	UPA3	843458/029	R&S	15.11.2005
ETSTW-GSM 01	SIM Simulator	IT3	B2004-50106	ORGA Testsystems GmBh	
ETSTW-GSM 02	Universal Radio Communication Tester	CMU 200	103489	R&S	
	Parts of Anite SAT (6)E Platform Protocol Test System				
ETSTW-GSM 03	Agilent 8960 Test Set 1	E5515C	GB44052675	Agilent	07.14.06
ETSTW-GSM 04	Agilent 8960 Test Set 2	E5515C	GB44052665	Agilent	07.14.06
ETSTW-GSM 05	Agilent 8960 Test Set 3	E5515C	GB44052852	Agilent	07.17.06
ETSTW-GSM 06	Agilent 8960 Test Set 4	E5515C	GB44052984	Agilent	07.16.06
ETSTW-GSM 07	Agilent 8960 Test Set 5	E5515C	GB44052658	Agilent	07.14.06
ETSTW-GSM 08	Agilent 8960 Test Set 6	E5515C	GB44052666	Agilent	07.16.06
ETSTW-GSM 09	Controler PC	Dell GX 270	700F61J	Dell	
ETSTW-GSM 10	Combiner Wessex / Anite	B4605/100	053	Wessex / Anite	07.06
ETSTW-GSM 11	GSM 850,900,1800,1900 Test system	TS8950G		Rohde & Schwarz	11.05

2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 using a 50µH 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 dBµV) 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 dBµV + 10.36 dB + 6 dB = 36.36 dBµV/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.

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 (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 PCB antenna.

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)	☒	☒	☐
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°C	V_{nom} = 120 V	-4.01	-5.25	-5.57
Measurement uncertainty		< 3 dB		

Test conditions		Radiated Power		
		Channel A [dBm]	**Channel B** [dBm]	**Channel C** [dBm]
T_{nom}= 23°C	V_{nom} = 120 V	--	--	--
Measurement uncertainty		< 3 dB		

Test conditions		Radiated Power		
		Channel A [dBm]	**Channel B** [dBm]	**Channel C** [dBm]
T_{nom}= 23°C	V_{nom} = 120 V	--	--	--
Measurement uncertainty		< 3 dB		

Test conditions		Radiated Power		
		Channel A [dBm]	**Channel B** [dBm]	**Channel C** [dBm]
T_{nom}= 23°C	V_{nom} = 120 V	--	--	--
Measurement uncertainty		< 3 dB		

Test conditions T_{nom}= 23°C, V_{nom}= 120 V Frequency[MHz]	Signal Field strength TX highest power mode dBµV/m
2402	92.43
Measurement uncertainty	< 3 dB

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

Maximum Peak Output Power

Limits:

Frequency MHz	Number of hopping channels			
	≥ 75	≥ 50	49 ≥ 25	74 ≥ 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).

Test equipment used: ETSTW-RE 003, ETSTW-RE 012, ETSTW-RE 017, ETSTW-RE 024

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 manufactrer 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

92.43 dBµV/m- 20 dB= 72.43 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)
72.43 dBµV/m
For frequencies above 1GHz (Average measurements).
Max. reading – 20 dB - duty cycle correction:

No duty cycle correction was added to the reading

92.43 dBµV/m- 20 dB= 72.43 dBµV/m

Remarks: See attached diagrams.
Test equipment used: ETSTW-CE 003 , ETSTW-RE 003

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 (dwell time/100ms)

For frequencies above 1GHz (Average measurements).

Limit – duty cycle correction

No duty cycle correction was added to the reading.

54.0dBµV/m

For frequencies above 1GHz (Peak measurements).

Limit + 20dB

54.0dBµV/m + 20 dB= 74 dBµV/m

Remarks: See attached diagrams.

Test equipment used: ETSTW-RE 003, ETSTW-RE 012, ETSTW-RE 015, ETSTW-RE 016, ETSTW-RE 017, ETSTW-RE 024

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

Freq,	Used Ch,	Frequency Marker [MHz]	Polari-zation	corrections dB	Corrected Reading [dBuV/m]	Compliance Limit [dBuV/m]	Detec-tor	BW [MHz]	Margin
1	0	130,501	H		30,6	43,5	PK	0,1	12,90
1	0	130,501	V		26,25	43,5	PK	0,1	17,25
2	0	256,112	H		28,35	46	PK	0,1	17,65
2	0	256,112	V		28,6	46	PK	0,1	17,40
3	0	1350,701	H		37,84	54	PK	1	16,16
3	0	1350,701	V		37,31	54	PK	1	16,69
3	0	2386,373	H		49,74	54	PK	1	4,26
3	0	2386,373	V		42,29	54	PK	1	11,71
4	0	4801,603	H		48,2	54	PK	1	5,80
4	0	4801,603	V		49,86	54	PK	1	4,14
5	0	11951,904	H		49,21	54	PK	1	4,79
5	0	11951,904	V		49,03	54	PK	1	4,97
6	0	17771,543	H		53,29	54	PK	1	0,71

6	0	17771,543	V		53,51	54	PK	1	0,49
7	0	23621,242	H		50,73	54	PK	1	3,27
7	0	23621,242	V		51,34	54	PK	1	2,66
1	39	130,842	H		29,92	43,5	PK	0,1	13,58
1	39	130,842	V		25,54	43,5	PK	0,1	17,96
2	39	259,319	H		28,44	46	PK	0,1	17,56
2	39	259,319	V		28,68	46	PK	0,1	17,32
3	39	1350,701	H		39,12	54	PK	1	14,88
3	39	1350,701	V		37,27	54	PK	1	16,73
3	39	2758,829	H		43,92	54	PK	1	10,08
3	39	2758,829	V		42,23	54	PK	1	11,77
4	39	4881,764	H		47,47	54	PK	1	6,53
4	39	4881,764	V		48,58	54	PK	1	5,42
5	39	11775,551	H		49,33	54	PK	1	4,67
5	39	11775,551	V		48,64	54	PK	1	5,36
6	39	17783,567	H		53,54	54	PK	1	0,46
6	39	17783,567	V		53,14	54	PK	1	0,86
7	39	23655,311	H		50,48	54	PK	1	3,52
7	39	23655,311	V		51,37	54	PK	1	2,63
1	78	130,497	H		29,87	43,5	PK	0,1	13,63
1	78	130,497	V		25,57	43,5	PK	0,1	17,93
2	78	256,112	H		27,58	46	PK	0,1	18,42
2	78	256,112	V		28,04	46	PK	0,1	17,96
3	78	1350,701	H		35,35	54	PK	1	18,65
3	78	1350,701	V		35,85	54	PK	1	18,15
3	78	2494,886	H		48,60	54	PK	1	5,40
3	78	2494,886	V		42,73	54	PK	1	11,27
4	78	4961,924	H		47,67	54	PK	1	6,33
4	78	4961,924	V		48,81	54	PK	1	5,19
5	78	11438,878	H		48,76	54	PK	1	5,24
5	78	11438,878	V		48,19	54	PK	1	5,81
6	78	17783,567	H		53,40	54	PK	1	0,60
6	78	17783,567	V		53,20	54	PK	1	0,80
7	78	21321,643	H		50,28	54	PK	1	3,72
7	78	21321,643	V		51,22	54	PK	1	2,78

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

Test equipment used: ETSTW-RE 003, ETSTW-RE 012, ETSTW-RE 015, ETSTW-RE 016, ETSTW-RE 017, ETSTW-RE 024

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°C	V_{nom} = 120 V	997.99599199 kHz	
Measurement uncertainty		< 10 Hz	

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

Test equipment used: ETSTW-CE 003, ETSTW-RE 003

Comment: see attached diagram

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°C	V_{nom}= 120 V	normal transmitting	79
T_{nom}= 23°C	V_{nom}= 120 V	Inquiry mode	32

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			

Test equipment used: ETSTW-CE 003 , ETSTW-RE 003

Comment: see attached diagrams

3.8.1 Pseudorandom Frequency Hopping Sequence

The generation of the hopping sequence is determined by the Bluethooth 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.

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°C V_{nom} = 120 V Channel B	normal transmitting		182.6 ms
	inquiry mode		84.8 ms
Measurement uncertainty	< 1 µs		

Limits and measurement periods:

Frequency MHz	Number of channels	Measurement Periode	Limit
902 – 928	≥50	20 s	0,4 s
	49 ≥ 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

Test equipment used: ETSTW-CE 003 , ETSTW-RE 003

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

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°C	V_{nom} =120 V	937.87575150 kHz	937.87575150 kHz	937.87575150 kHz
Measurement uncertainty		< 10 Hz		

Limits:

Frequency Range / MHz	Number of channels	Limit
902-928	< 50	< 250 kHz
	49 ≥ 25	500 kHz ≥ 250 kHz
2400-2483.5	≥ 15	not determined
5725-5850	75	= 1 MHz

Test equipment used: ETSTW-CE 003 , ETSTW-RE 003

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.

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 **Single Frequency**	
		Lower Band-edge	Upper Band-edge
T_{nom}= 23°C	V_{nom} = 120 V	56.21 dB	56.92 dB
Measurement uncertainty		< 100 Hz	

Test conditions		Attenuation at or outside band-edges **Hopping Fequency**	
		Lower Band-edge	Upper Band-edge
T_{nom}= 23°C	V_{nom} = 120 V	47.42 dB	51.36 dB
Measurement uncertainty		< 100 Hz	

Limits:

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

Test equipment used: ETSTW-CE 003 , ETSTW-RE 003

Comment: see attached diagrams

3.12 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

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 is not required if the sample is using a battery.

Test equipment used: ETSTW-CE 004, ETSTW-CE 001, ETSTW-RE 023

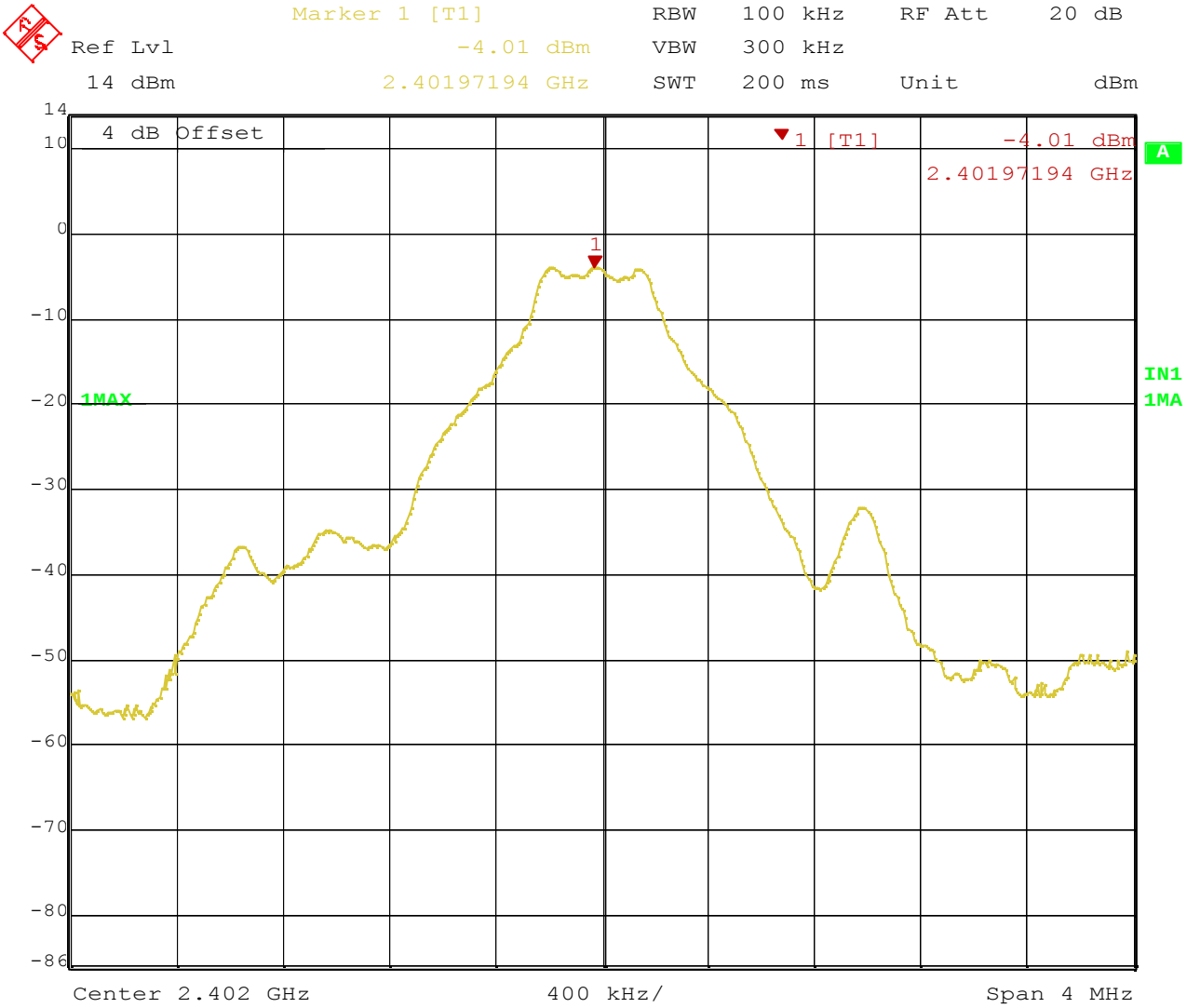
Comment: see attached diagram

Appendix

A Peak Output Power
B Spurious Emissions radiated - Transmitter operating
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 Power Line Conducted Emission
I Pictures

Appendix A

Peak Output Power



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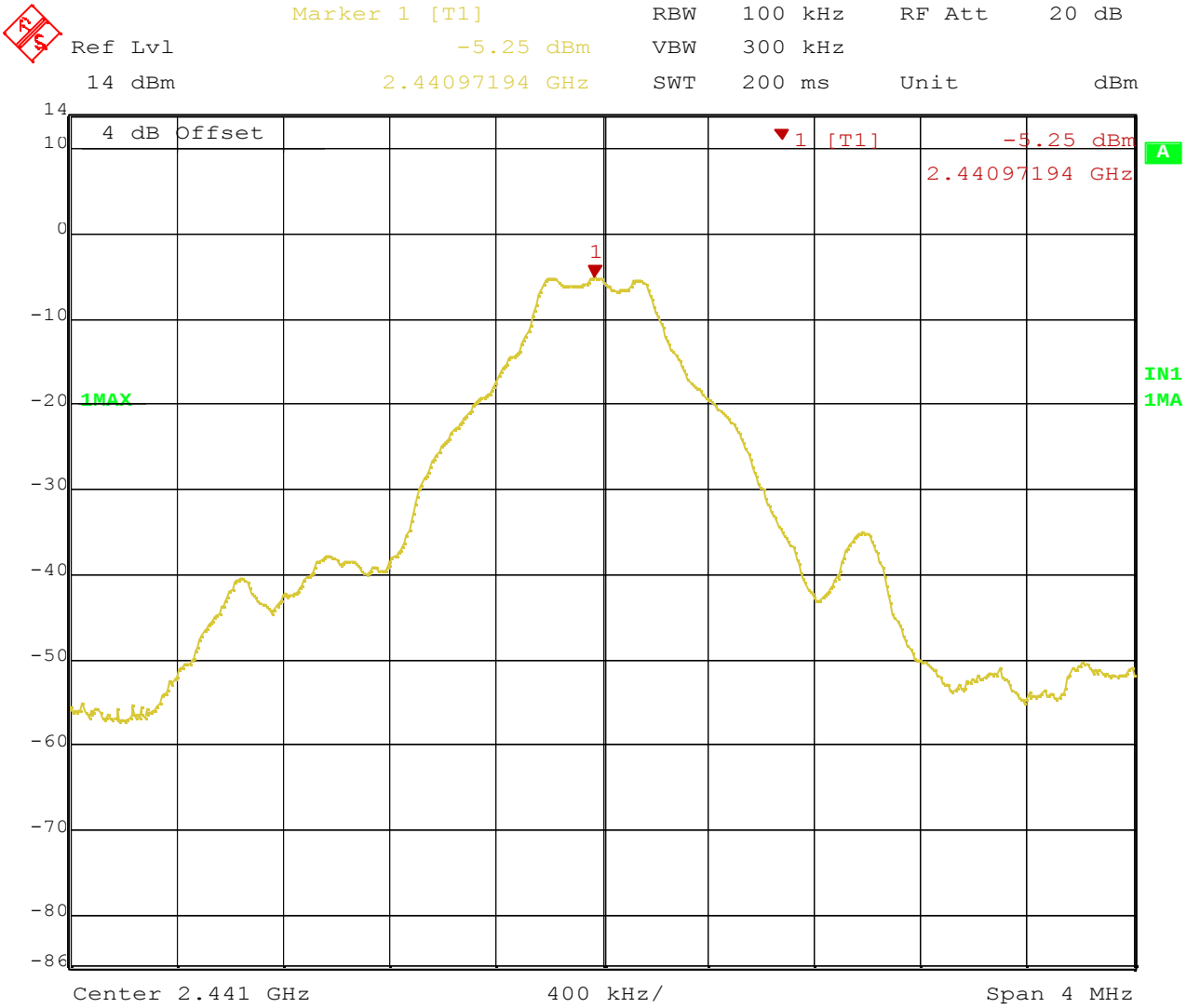
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 11:25:36



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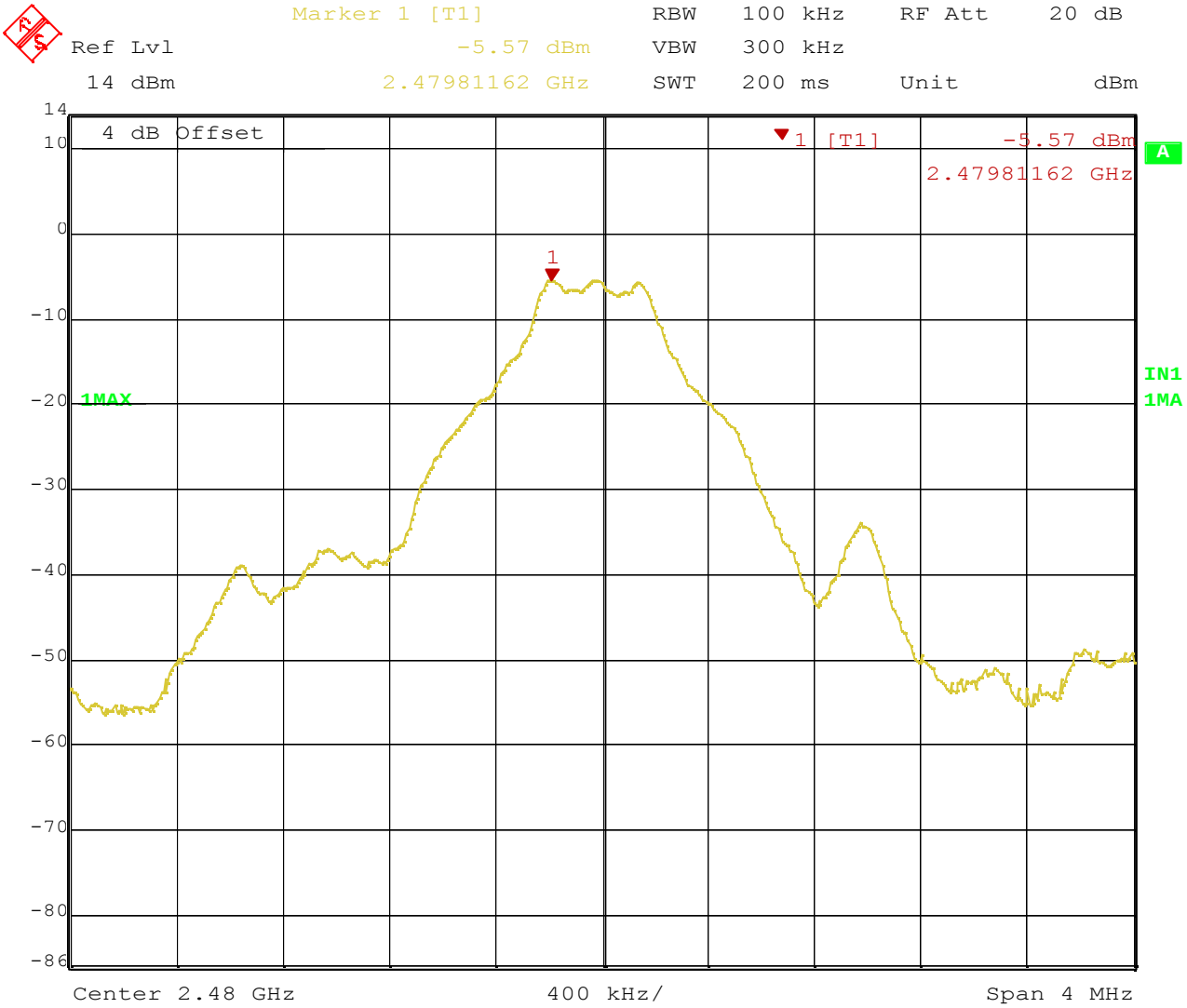
Date: 31.MAR.2005 11:29:22



Title: MAX OUTPUT POWER CH78
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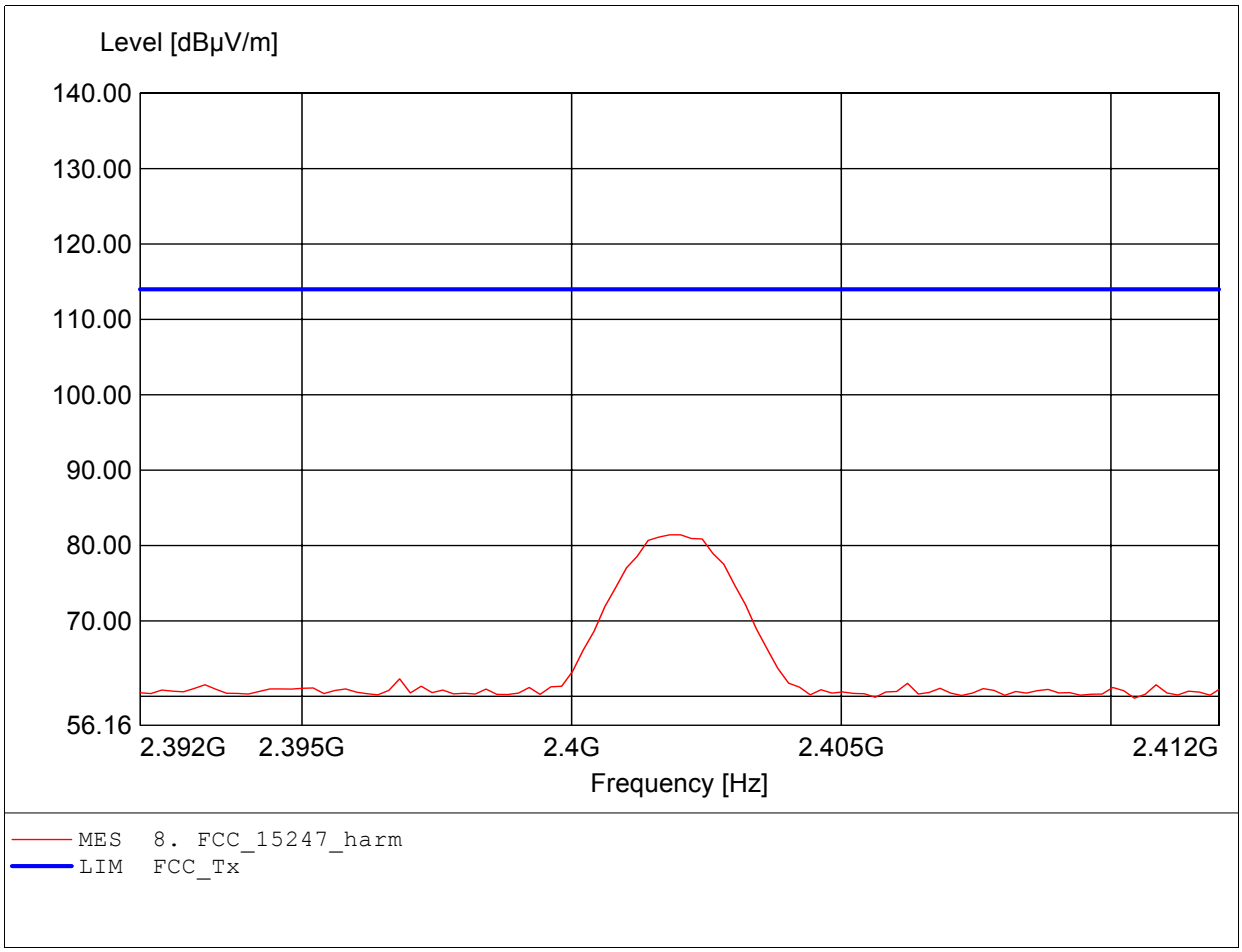
Date: 31.MAR.2005 11:29:56

Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

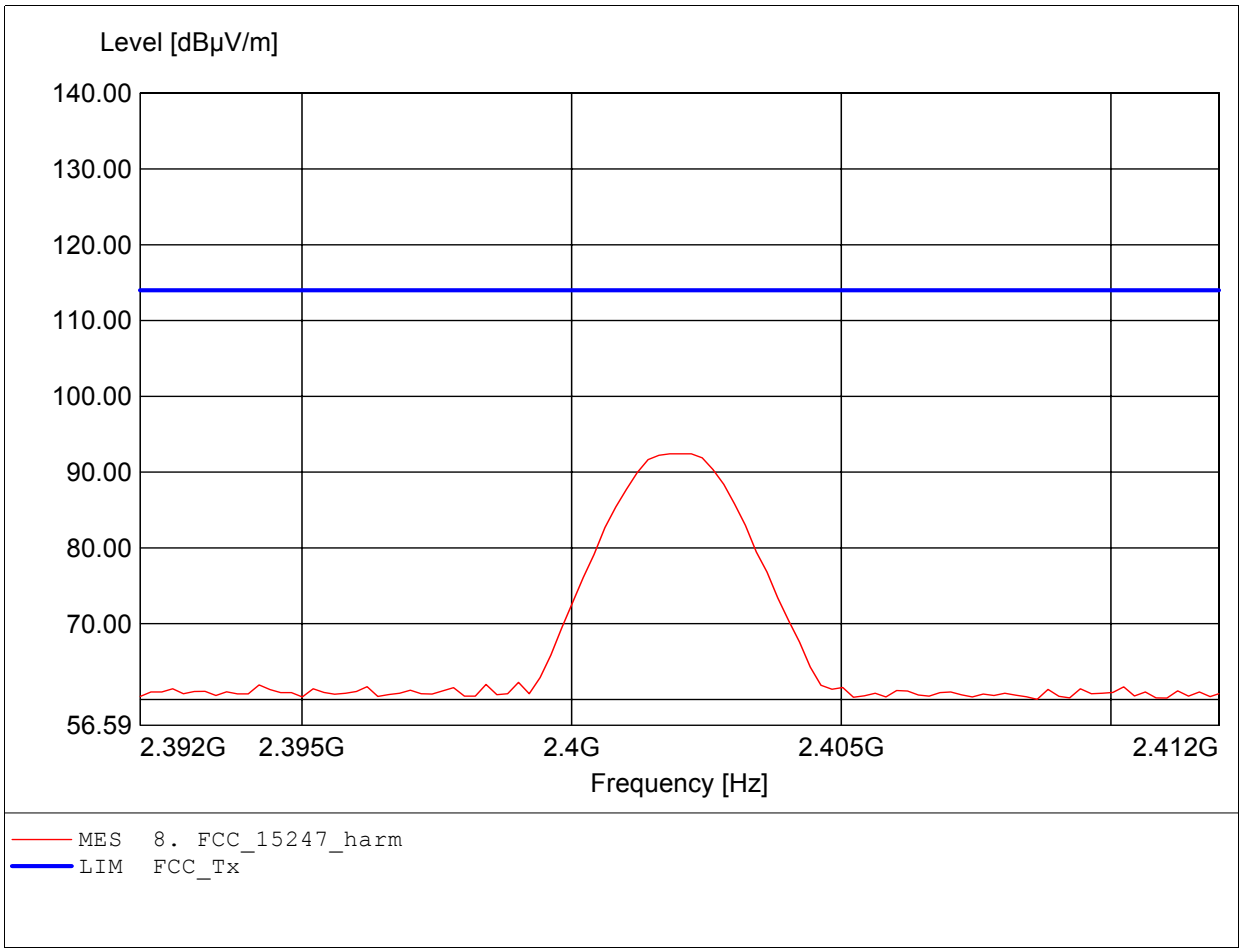
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL025
	Freq: 2.402GHz, Emax: 81.44dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

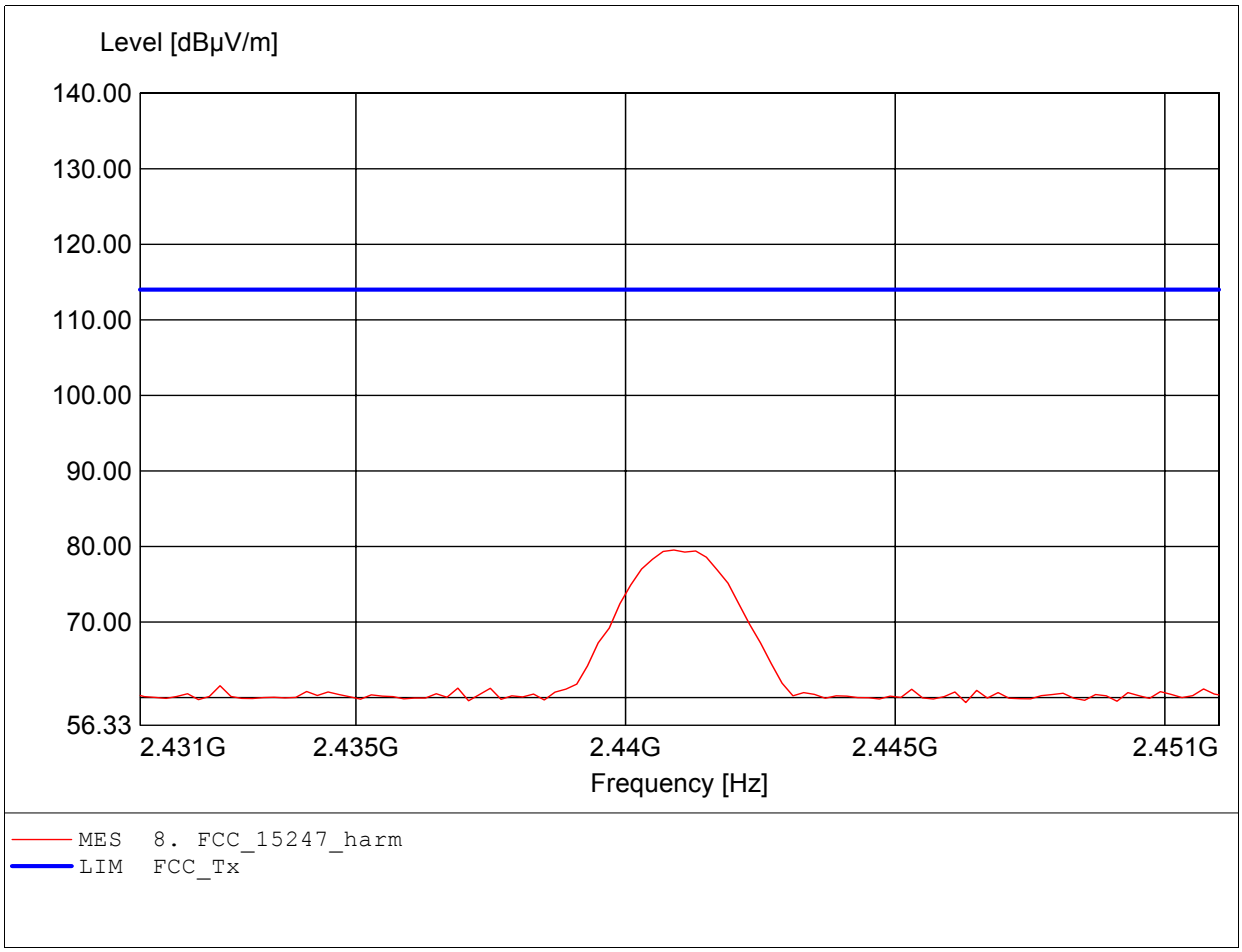
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL025
	Freq: 2.402GHz, Emax: 92.43dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

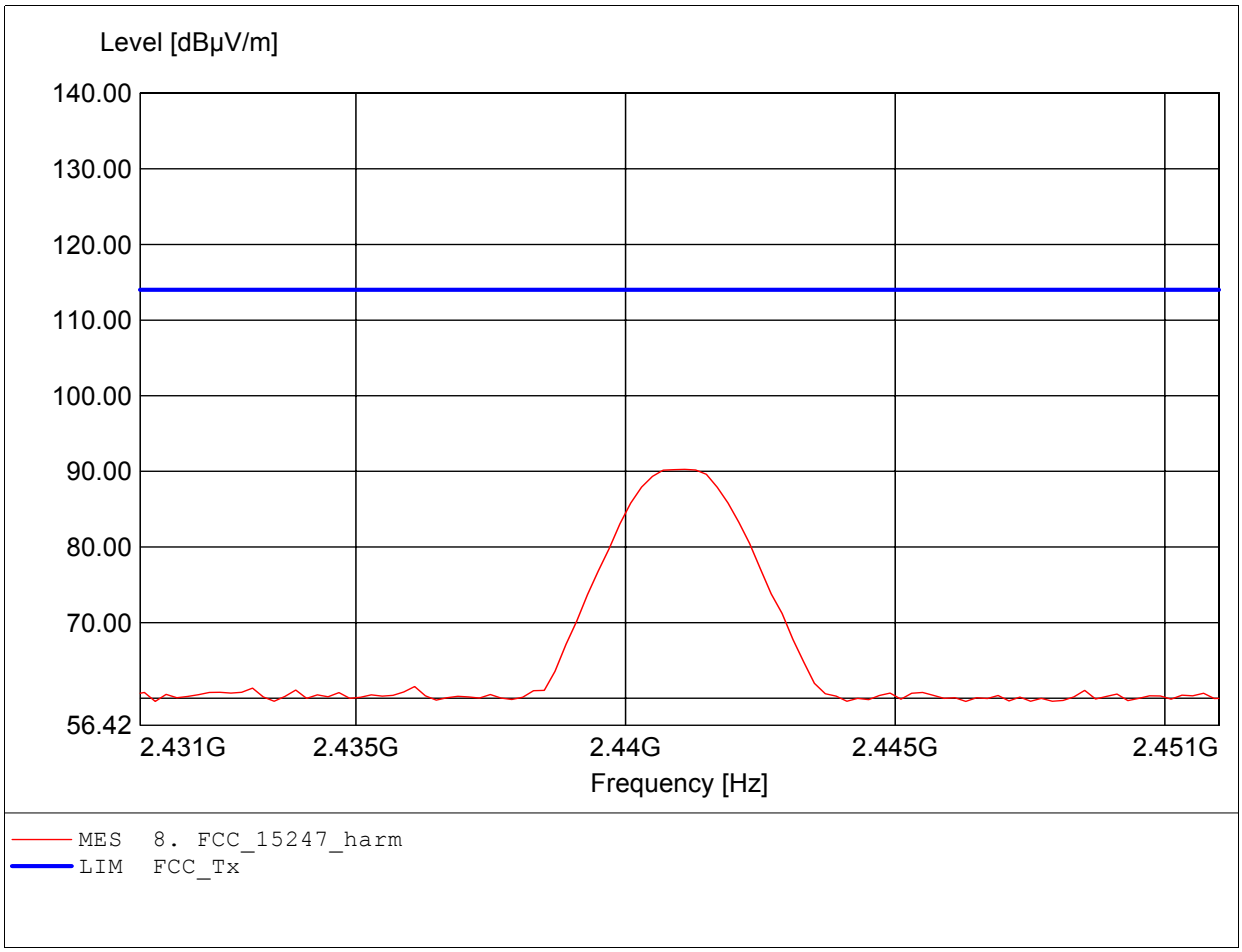
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL025
	Freq: 2.441GHz, Emax: 79.52dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

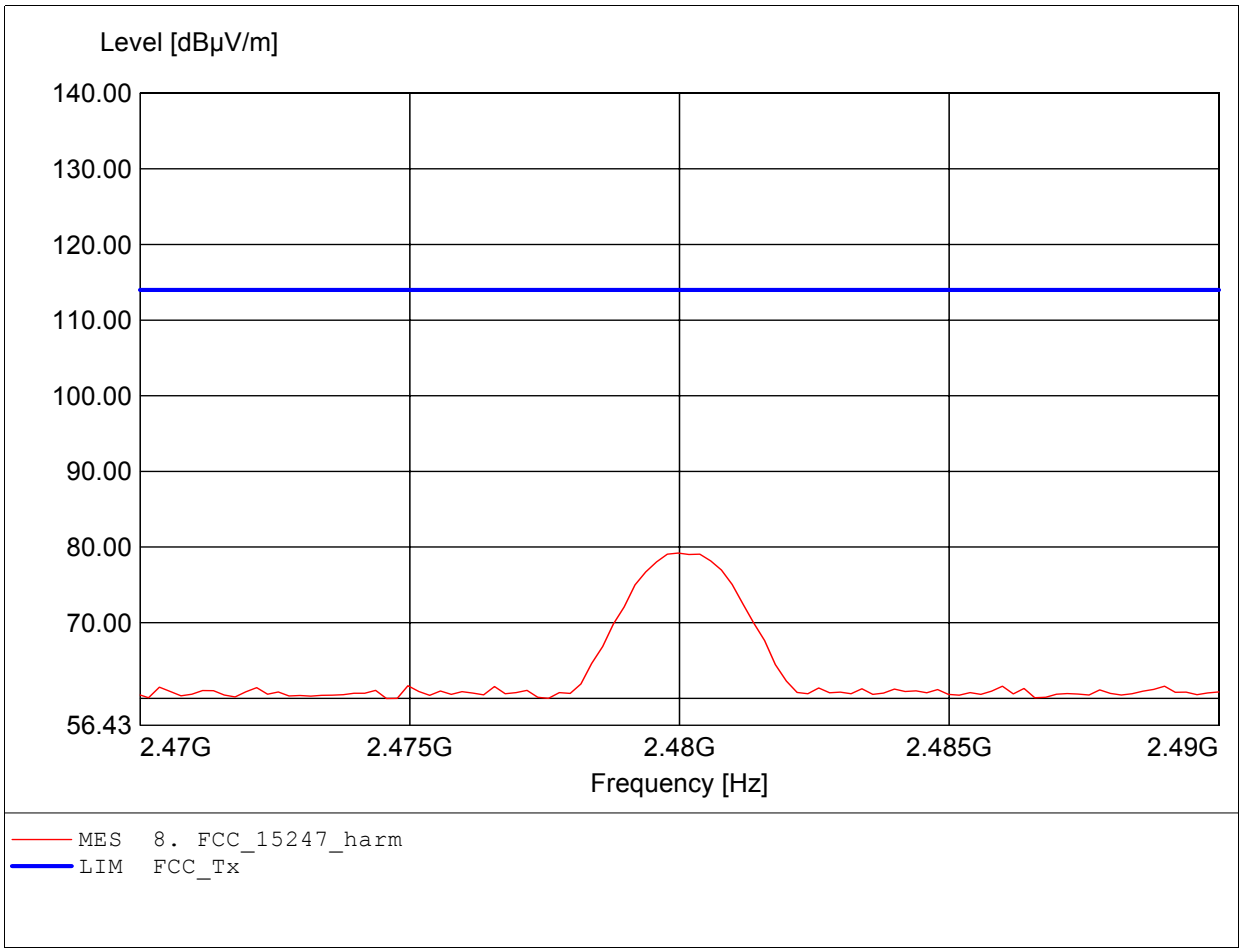
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL025
	Freq: 2.441GHz, Emax: 90.26dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

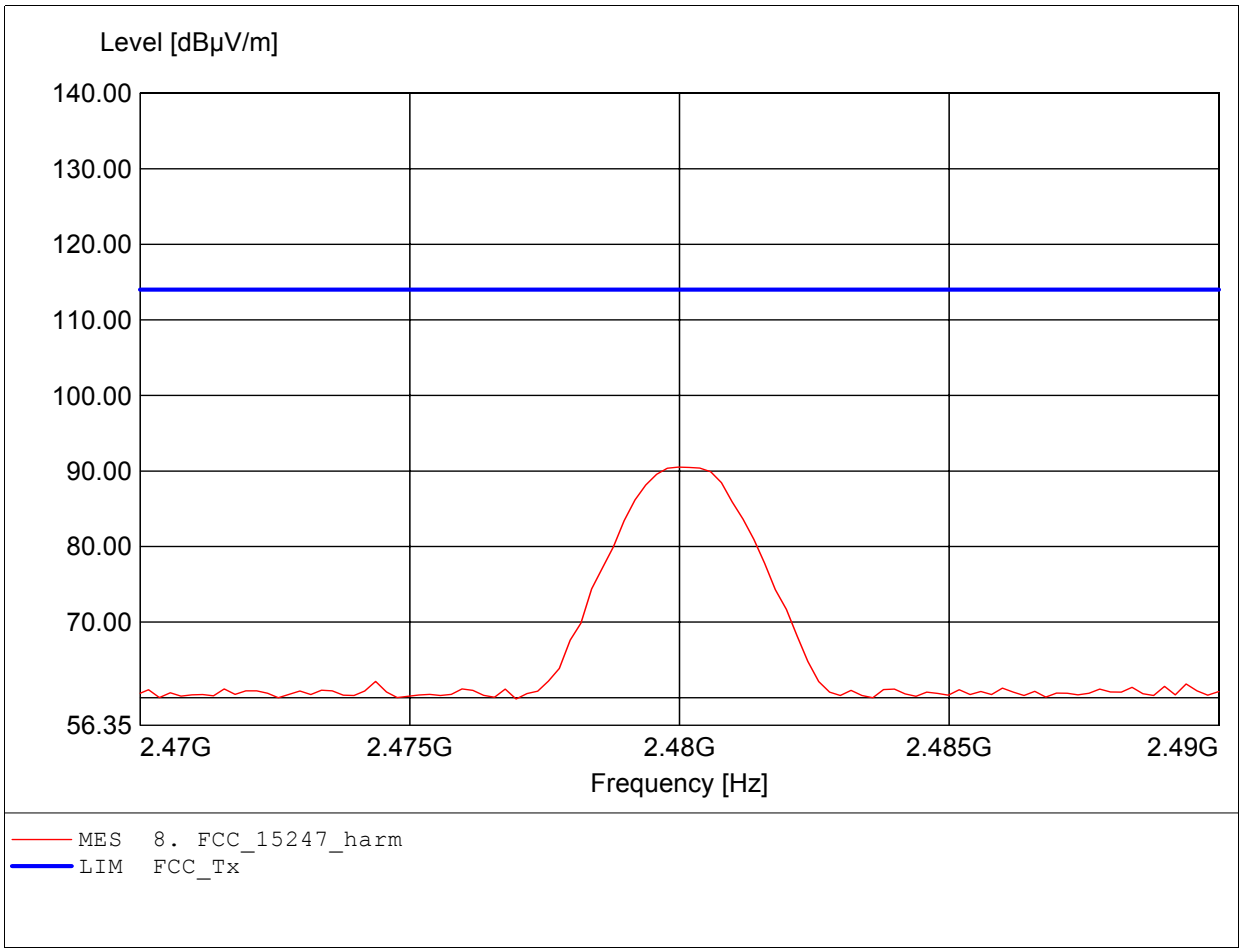
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL025
	Freq: 2.480GHz, Emax: 79.21dBµV/m, RBW: 1MHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL025
	Freq: 2.480GHz, Emax: 90.52dBµV/m, RBW: 1MHz



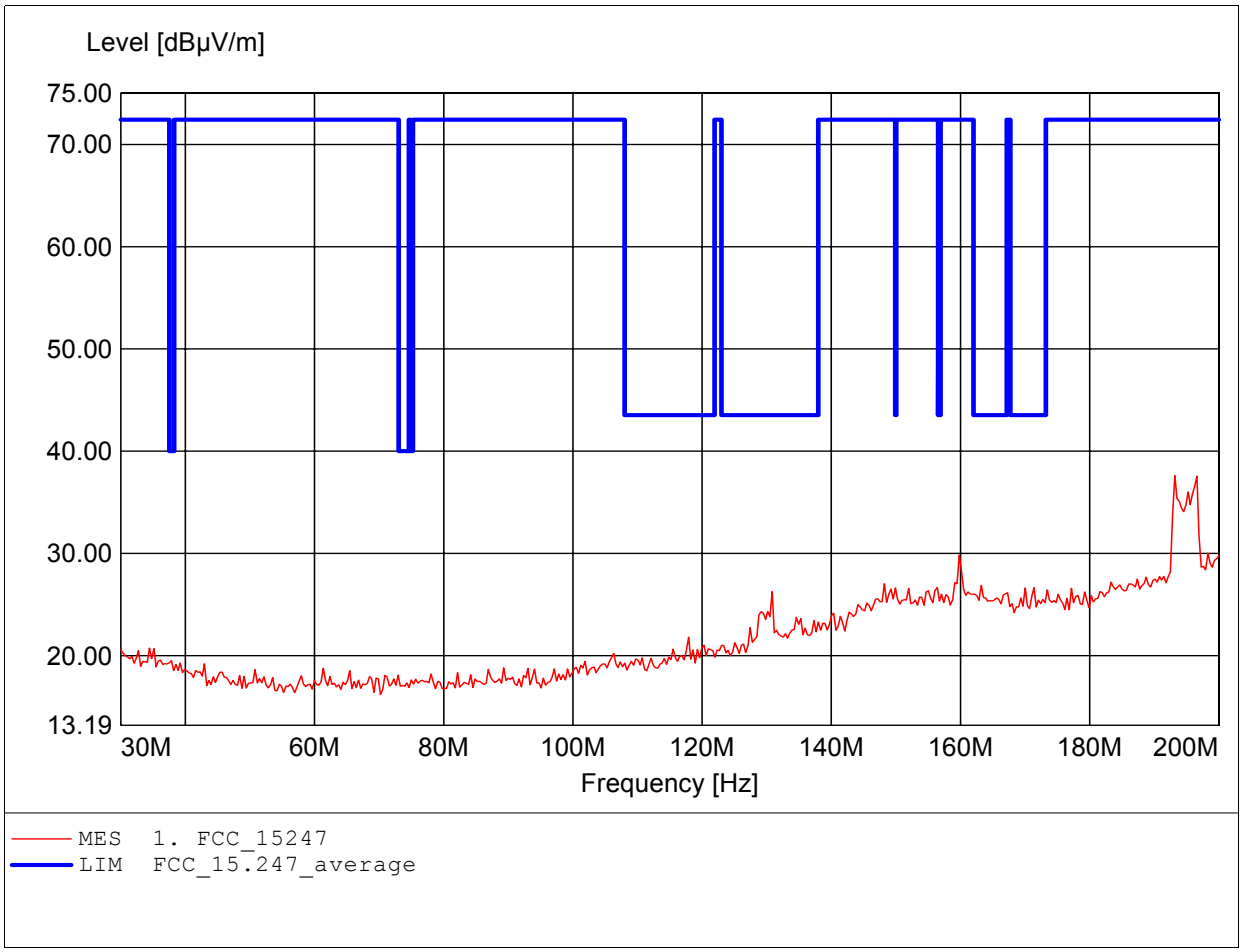
Appendix B

Spurious Emissions radiated - Transmitter operating

Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

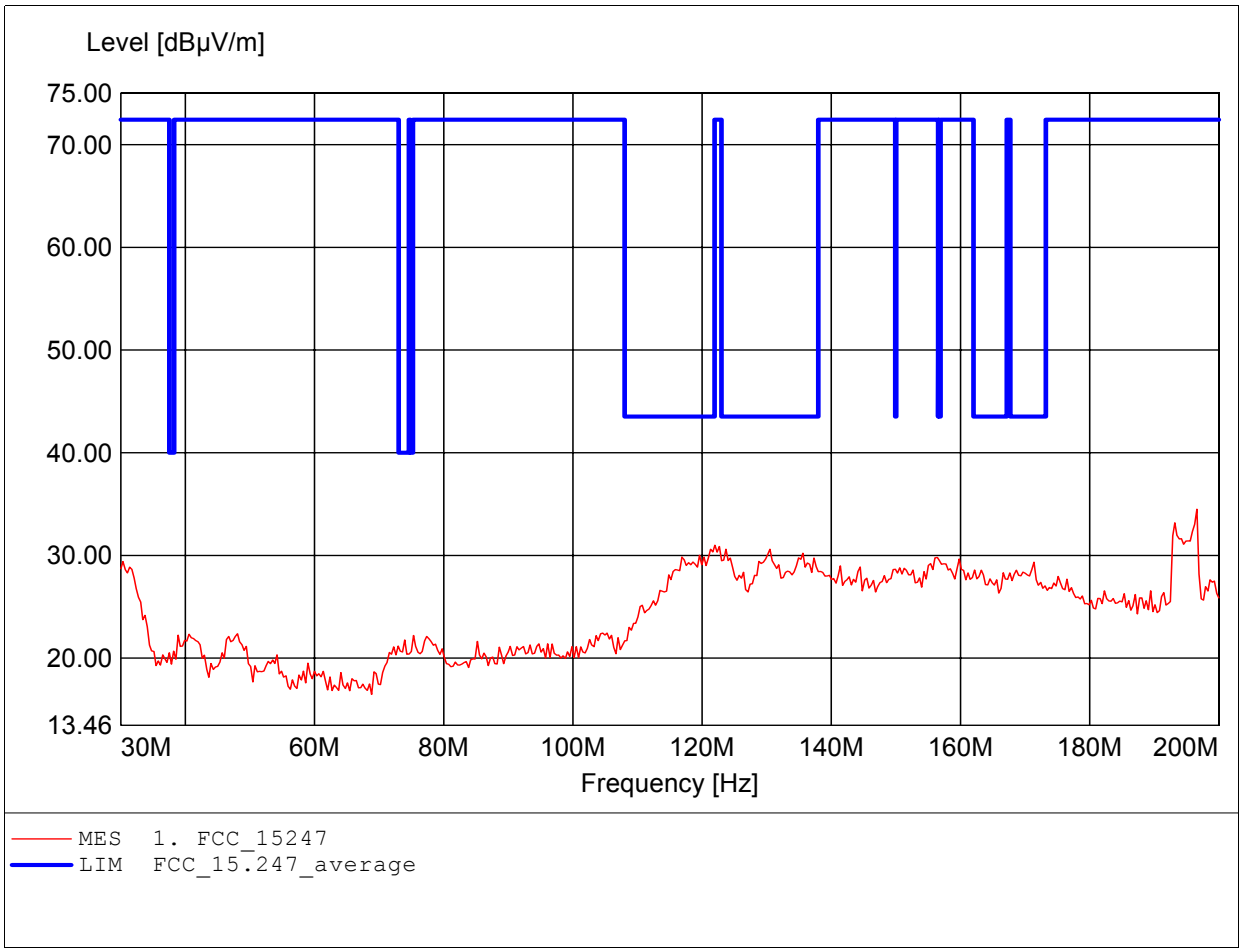
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 230 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HK 116
	Freq: 193.186MHz, Emax: 37.61dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

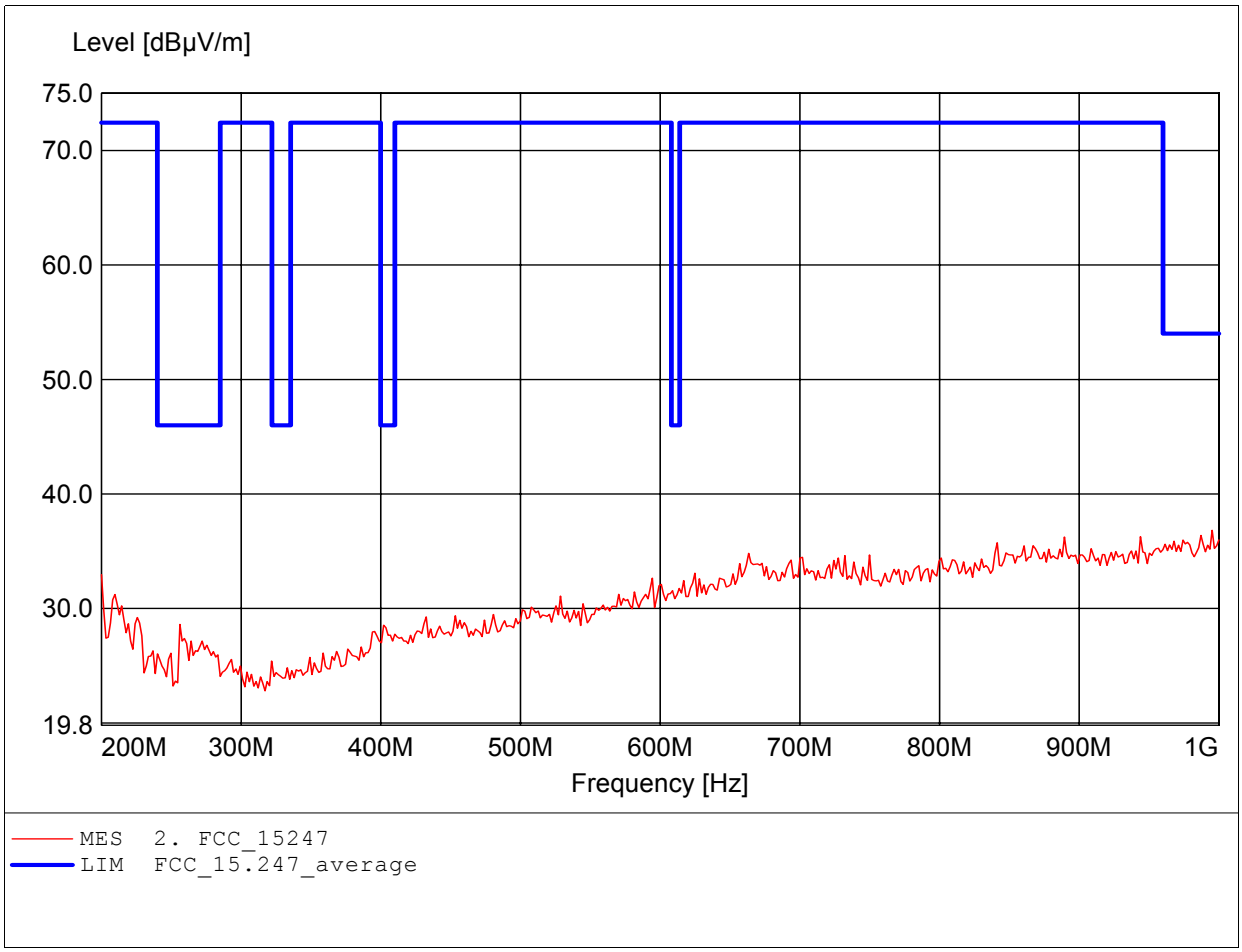
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HK 116
	Freq: 196.593MHz, Emax: 34.50dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

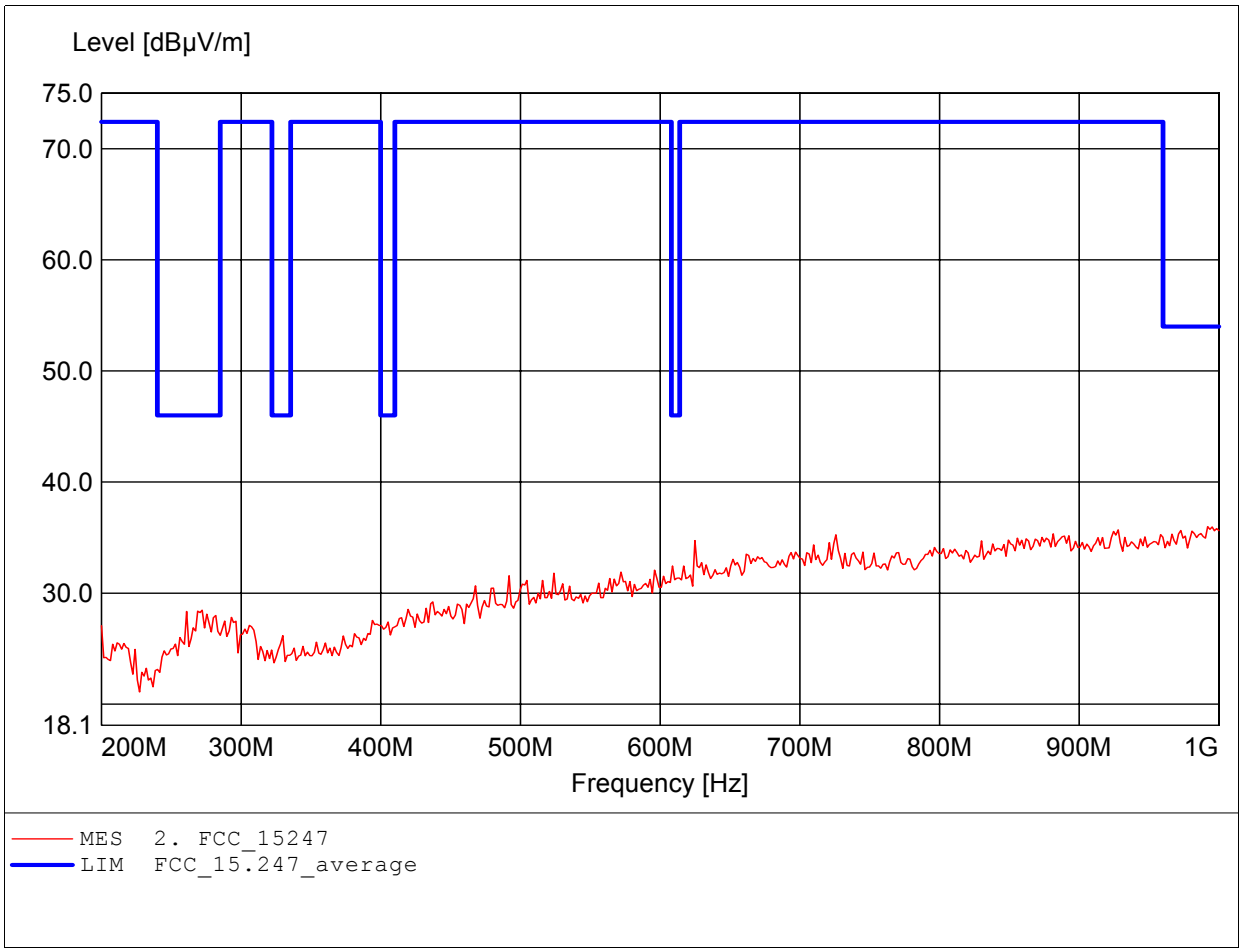
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223,
	Freq: 995.190MHz, Emax: 36.82dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

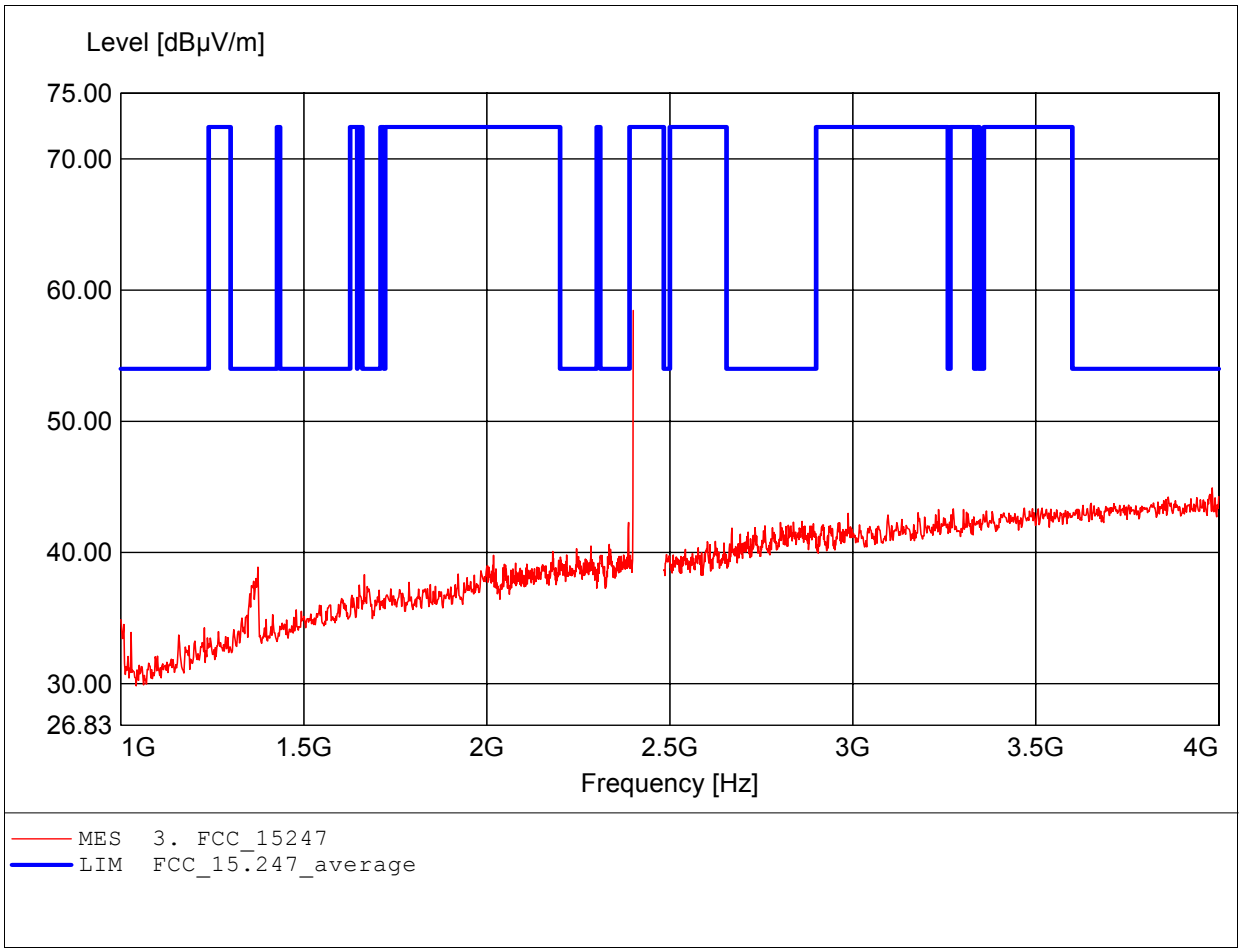
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223,
	Freq: 991.984MHz, Emax: 35.99dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

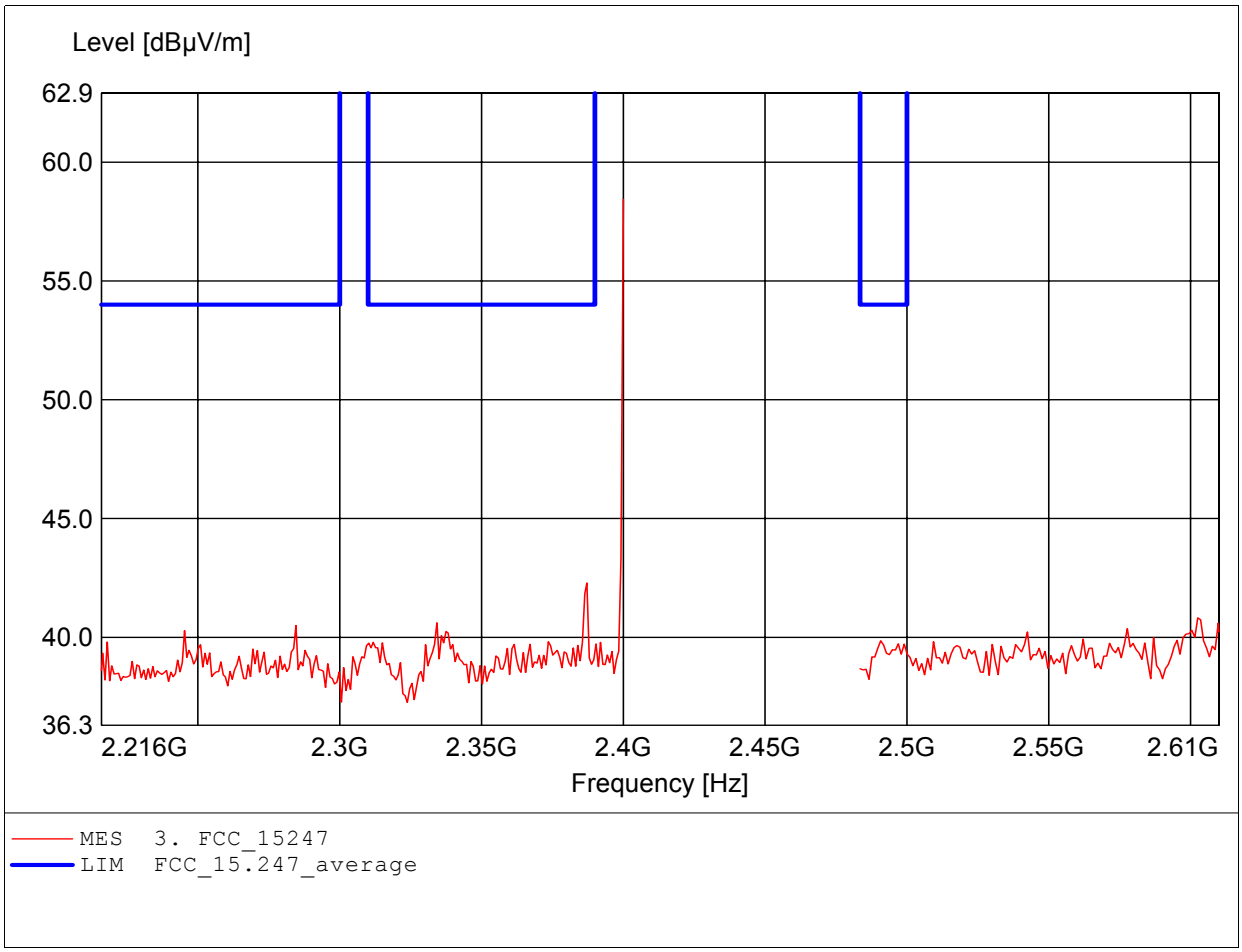
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 2.400GHz, Emax: 58.44dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

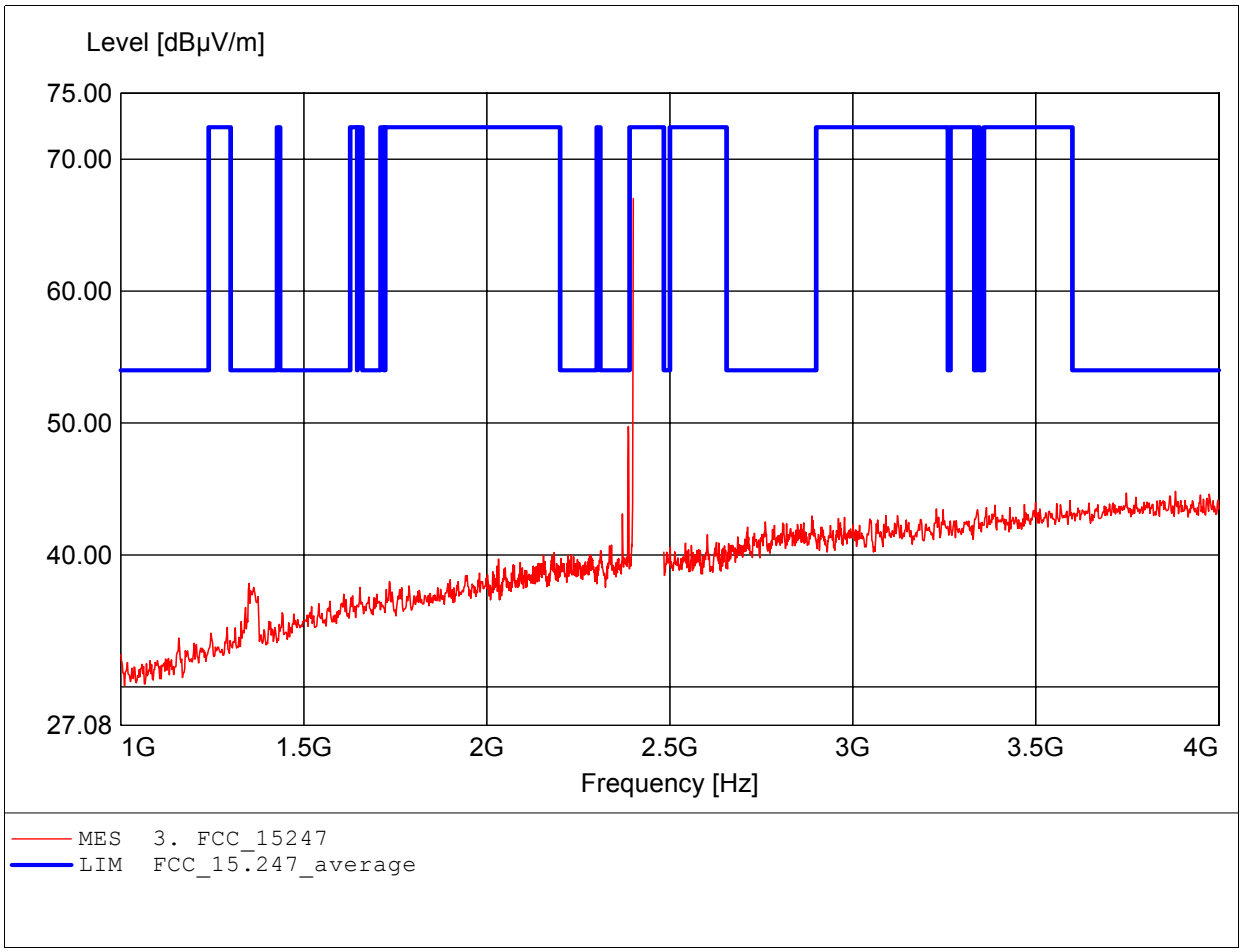
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 2.400GHz, Emax: 58.44dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

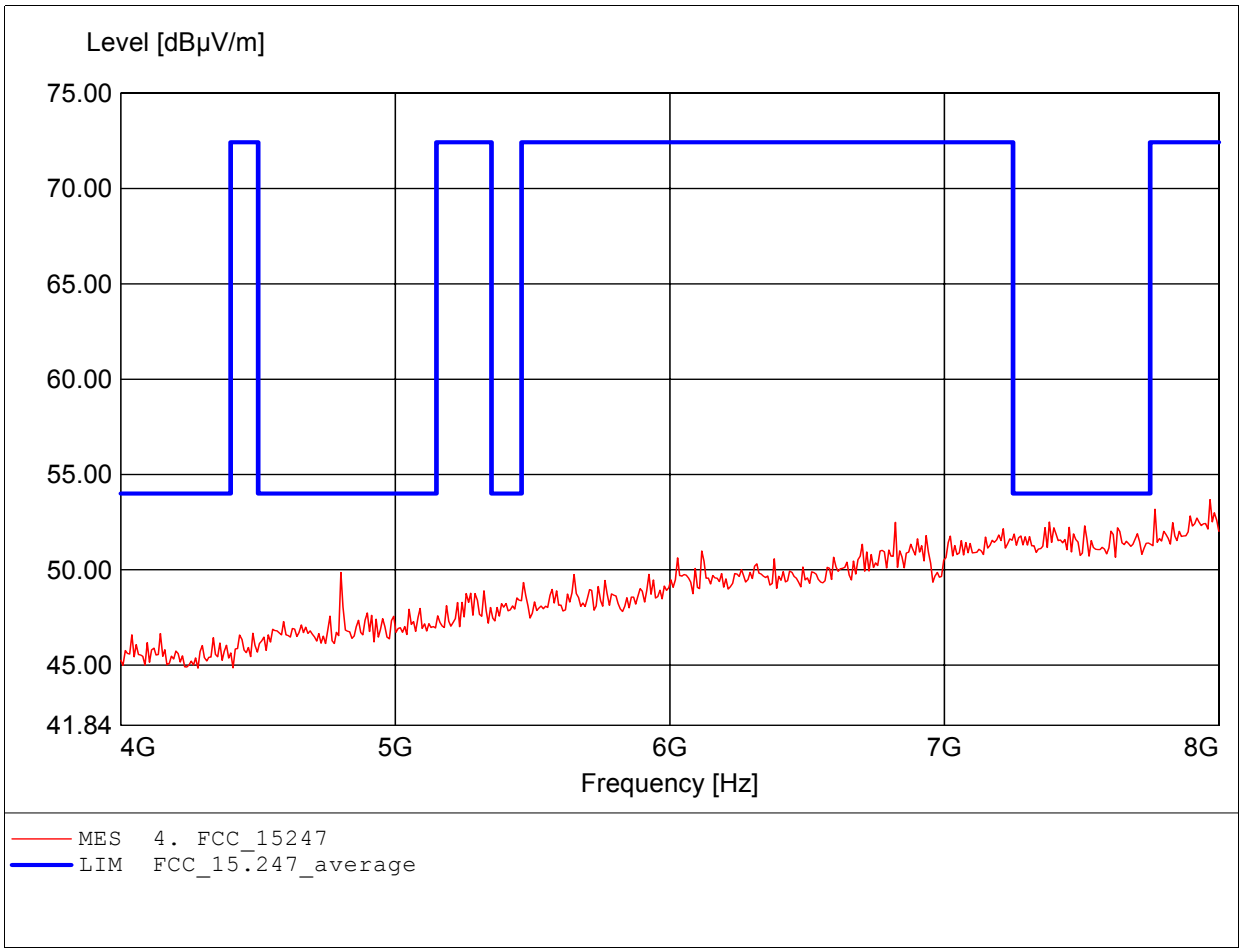
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 2.400GHz, Emax: 67.03dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

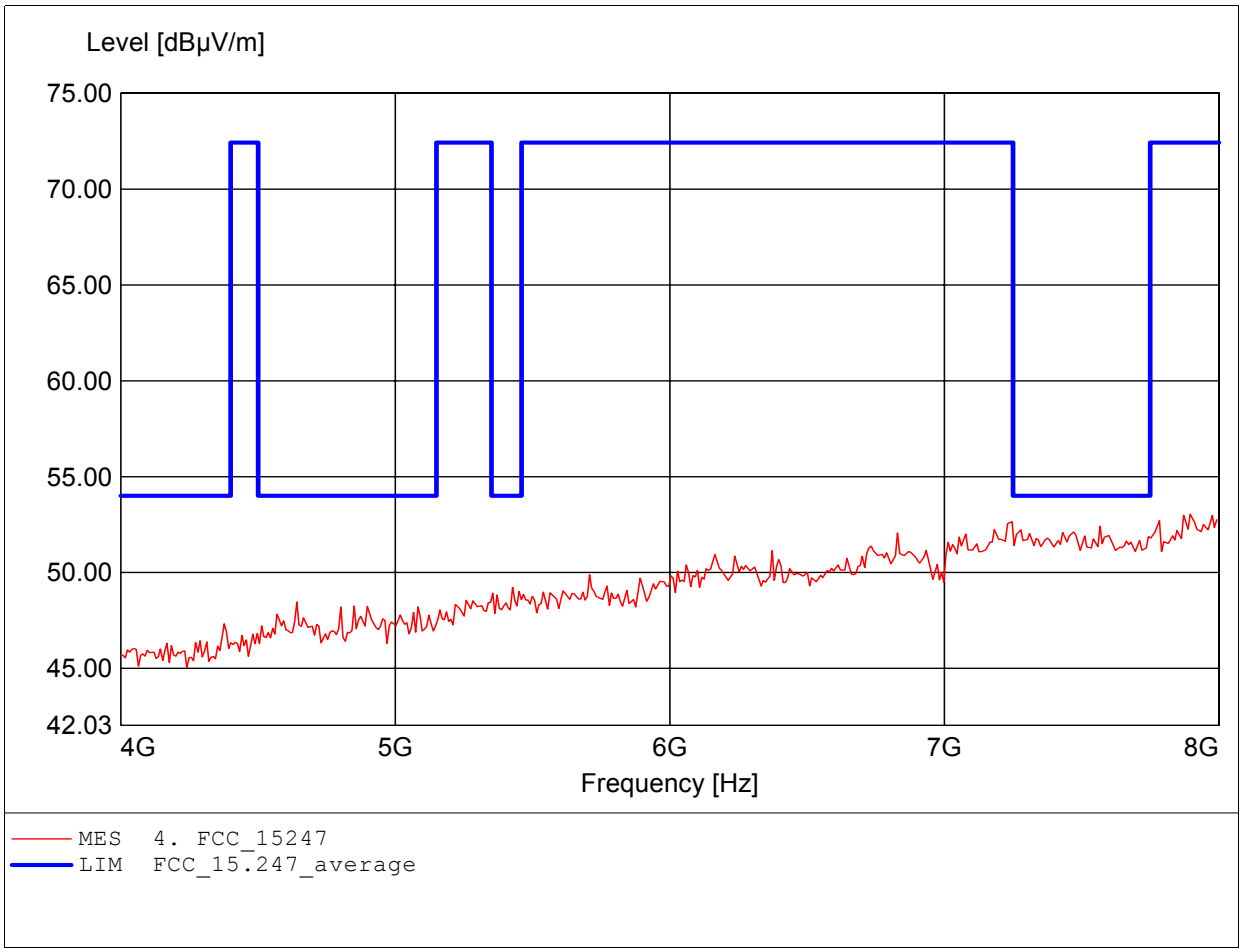
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 7.968GHz, Emax: 53.68dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

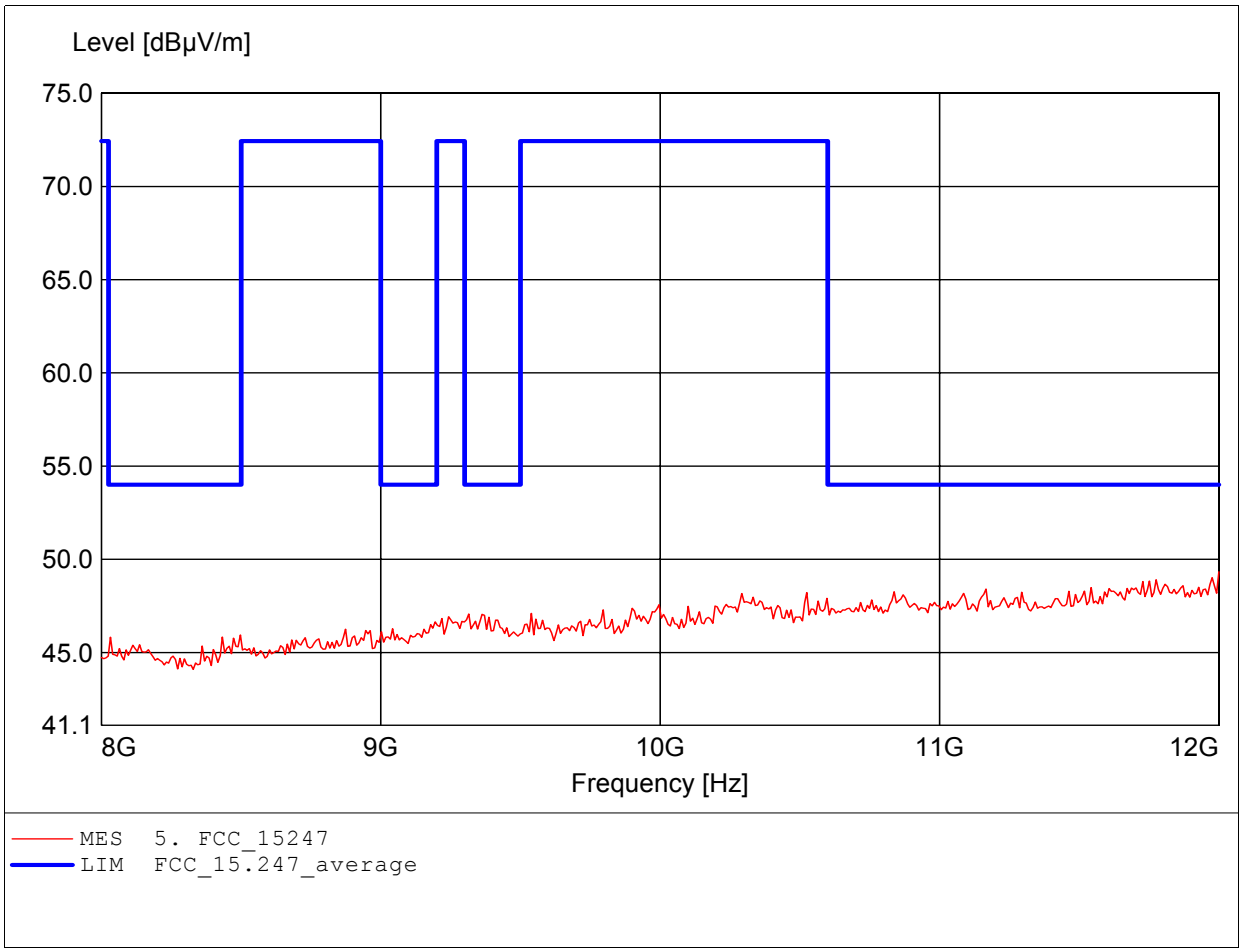
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 7.896GHz, Emax: 53.04dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

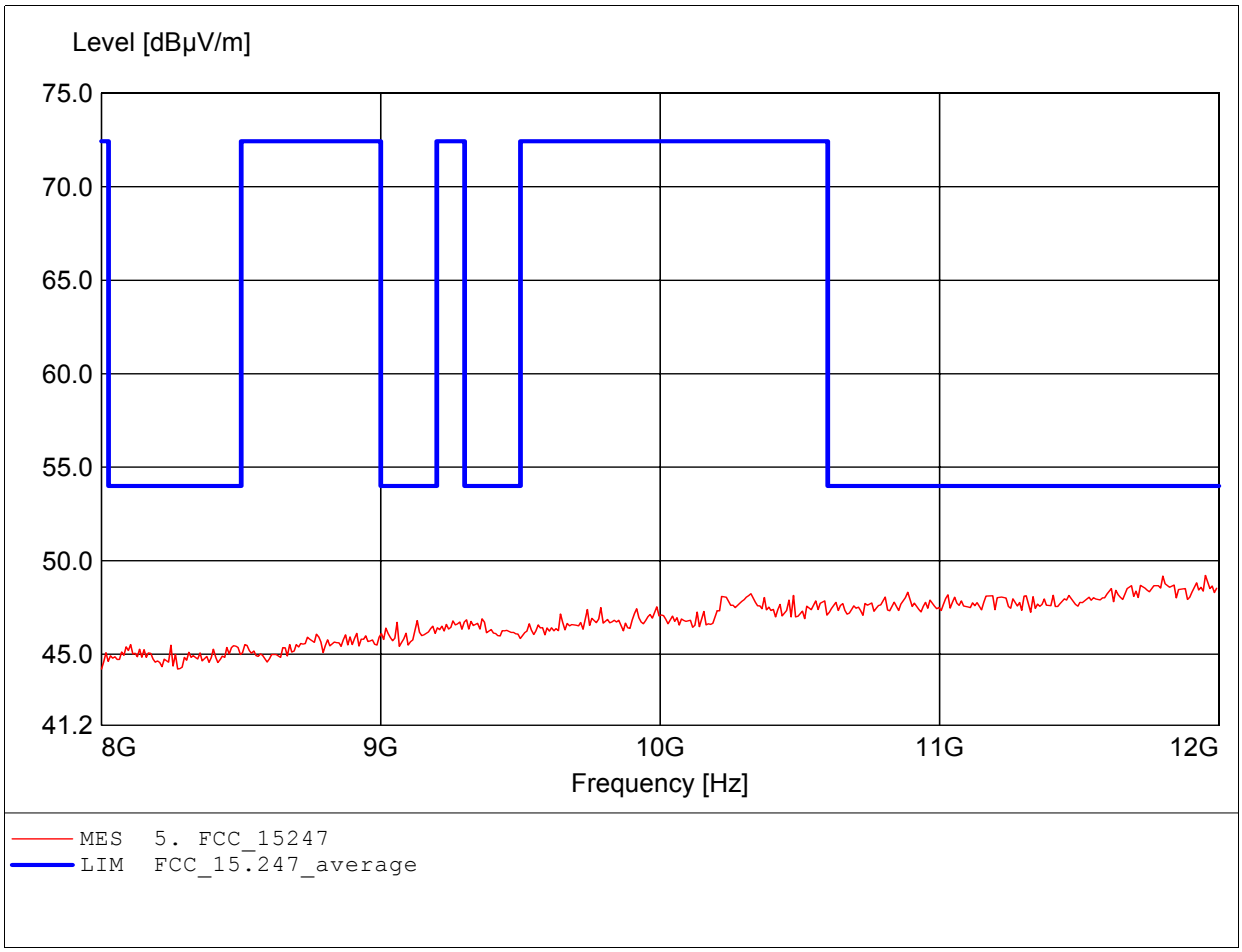
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 12.000GHz, Emax: 49.34dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

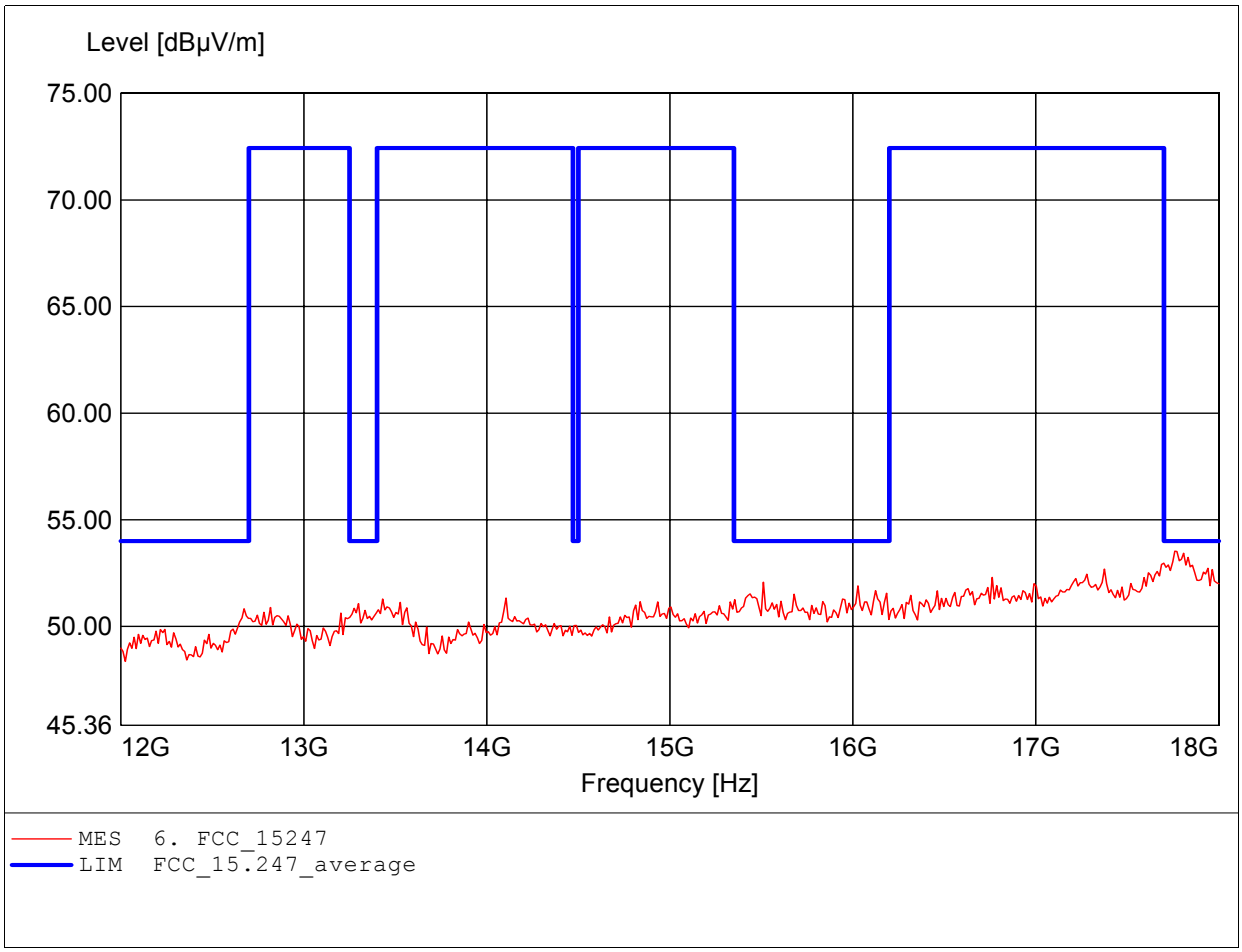
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 11.952GHz, Emax: 49.21dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

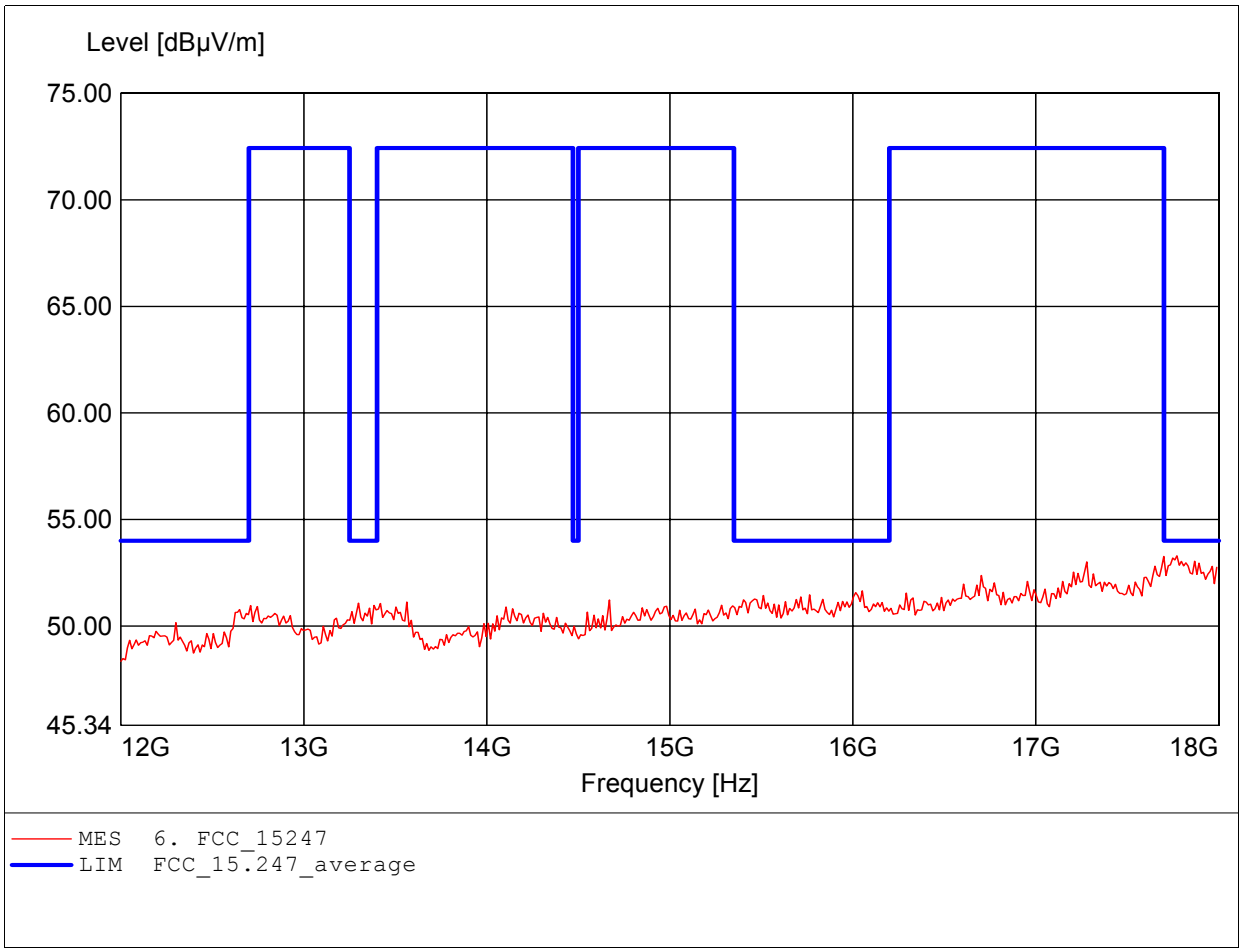
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 17.760GHz, Emax: 53.53dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

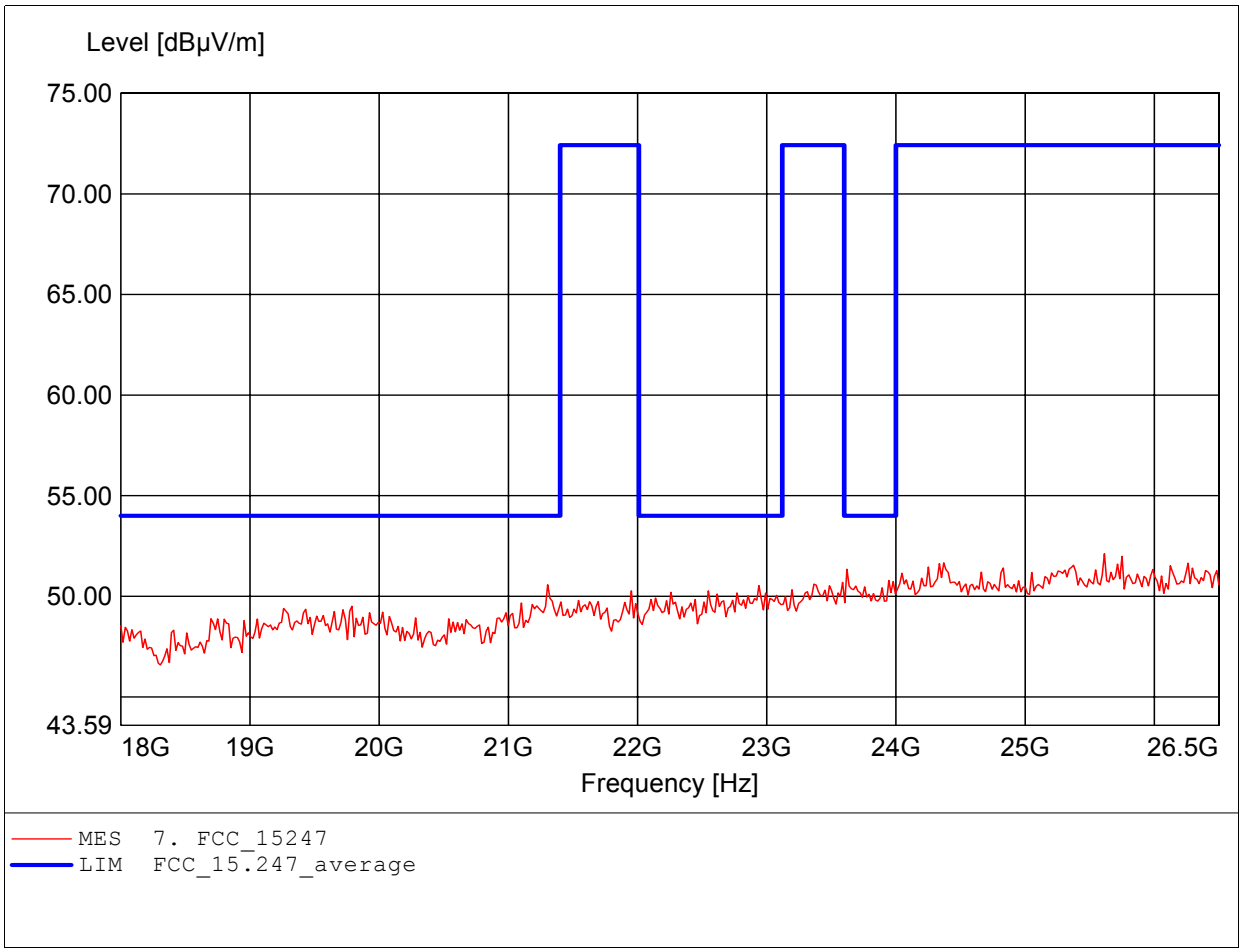
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 17.772GHz, Emax: 53.29dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

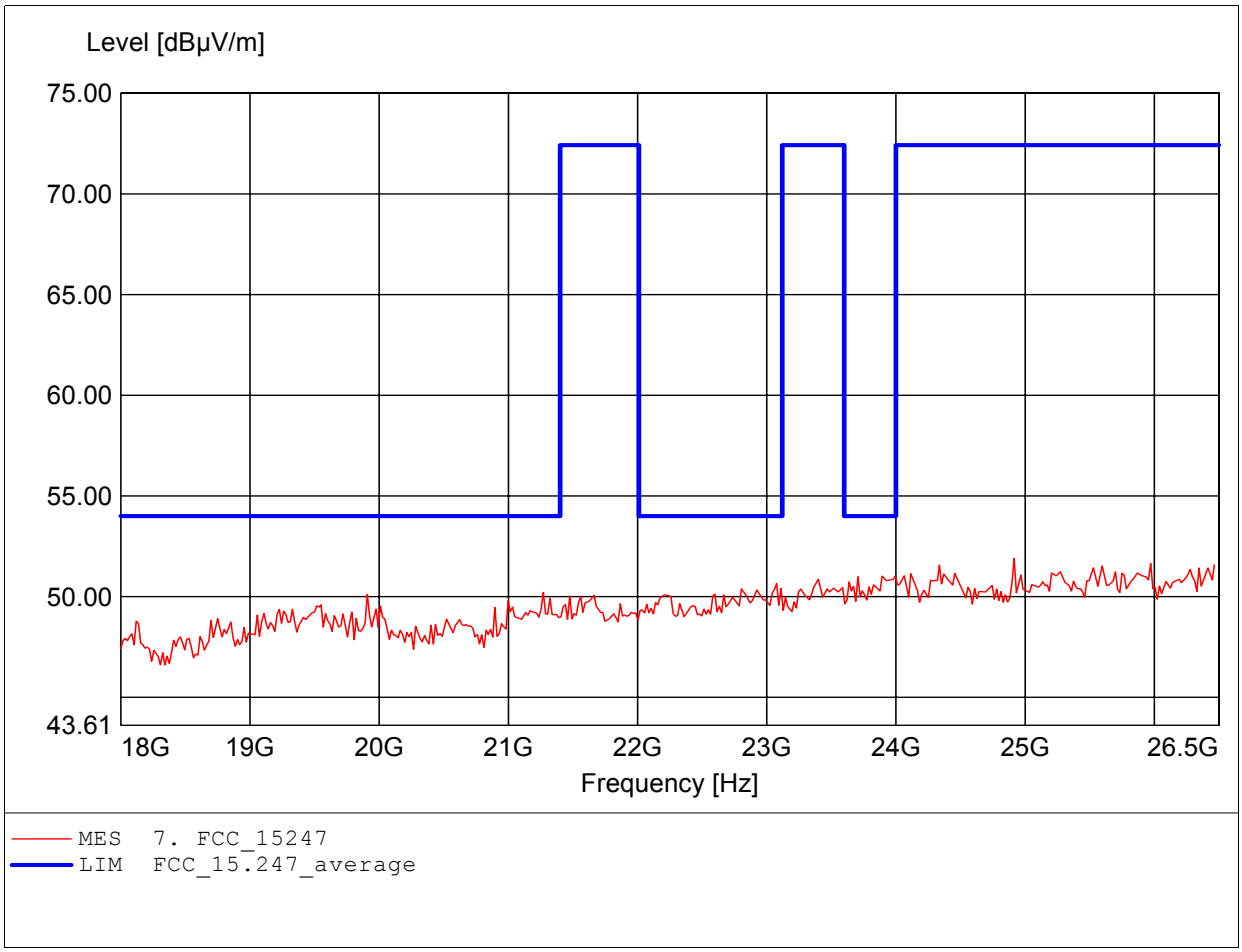
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 25.614GHz, Emax: 52.12dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

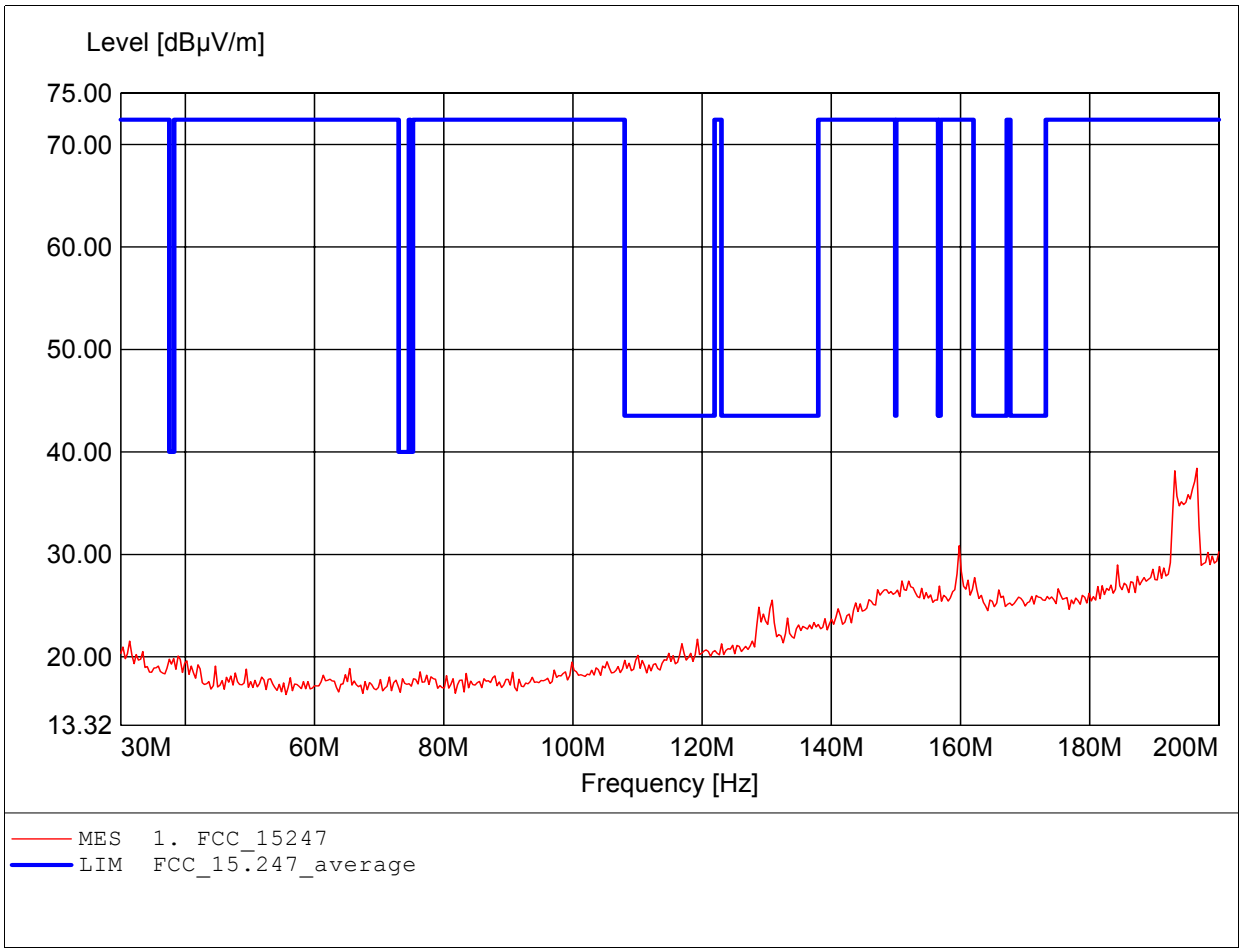
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Low Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 24.916GHz, Emax: 51.90dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

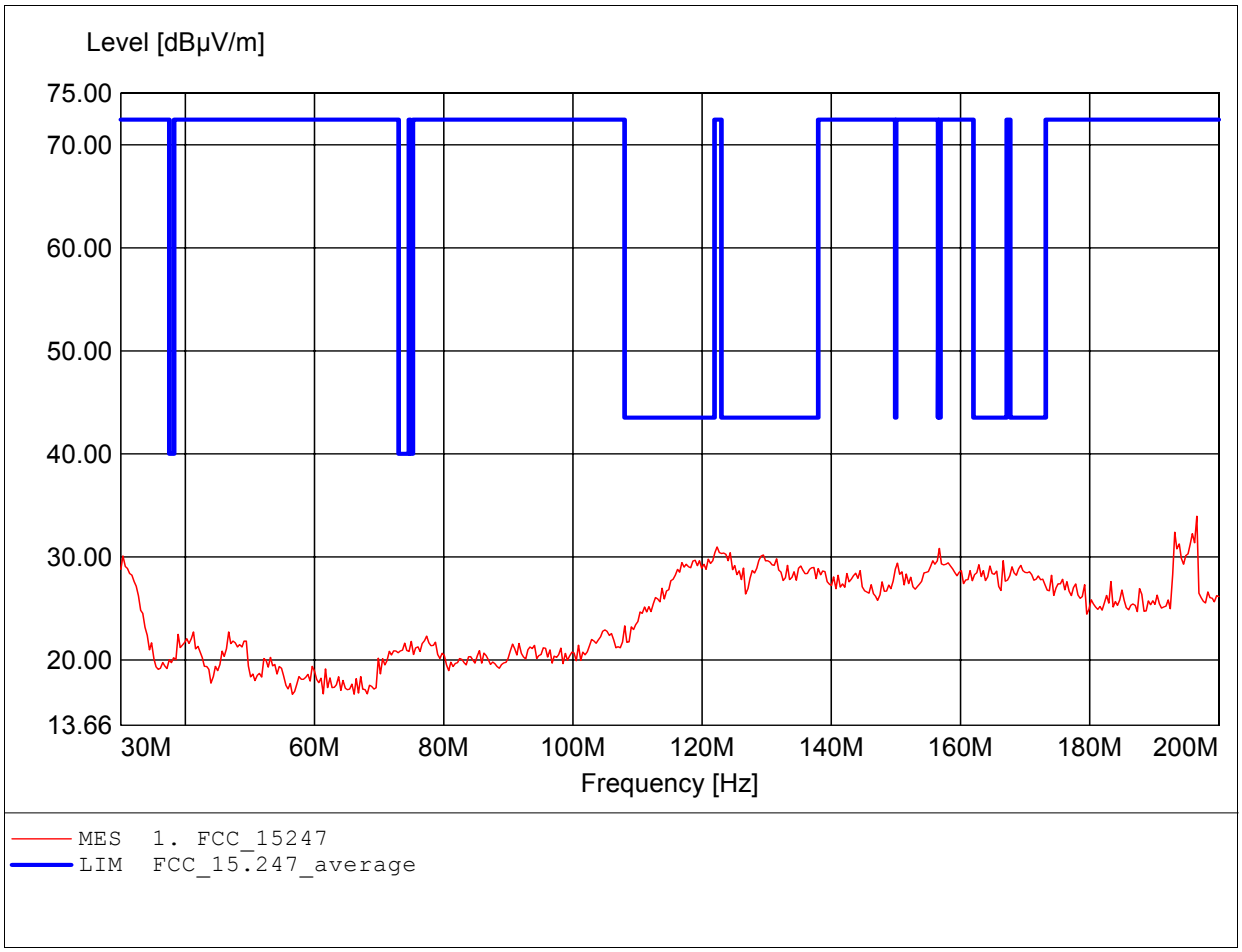
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 230 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HK 116
	Freq: 196.593MHz, Emax: 38.40dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

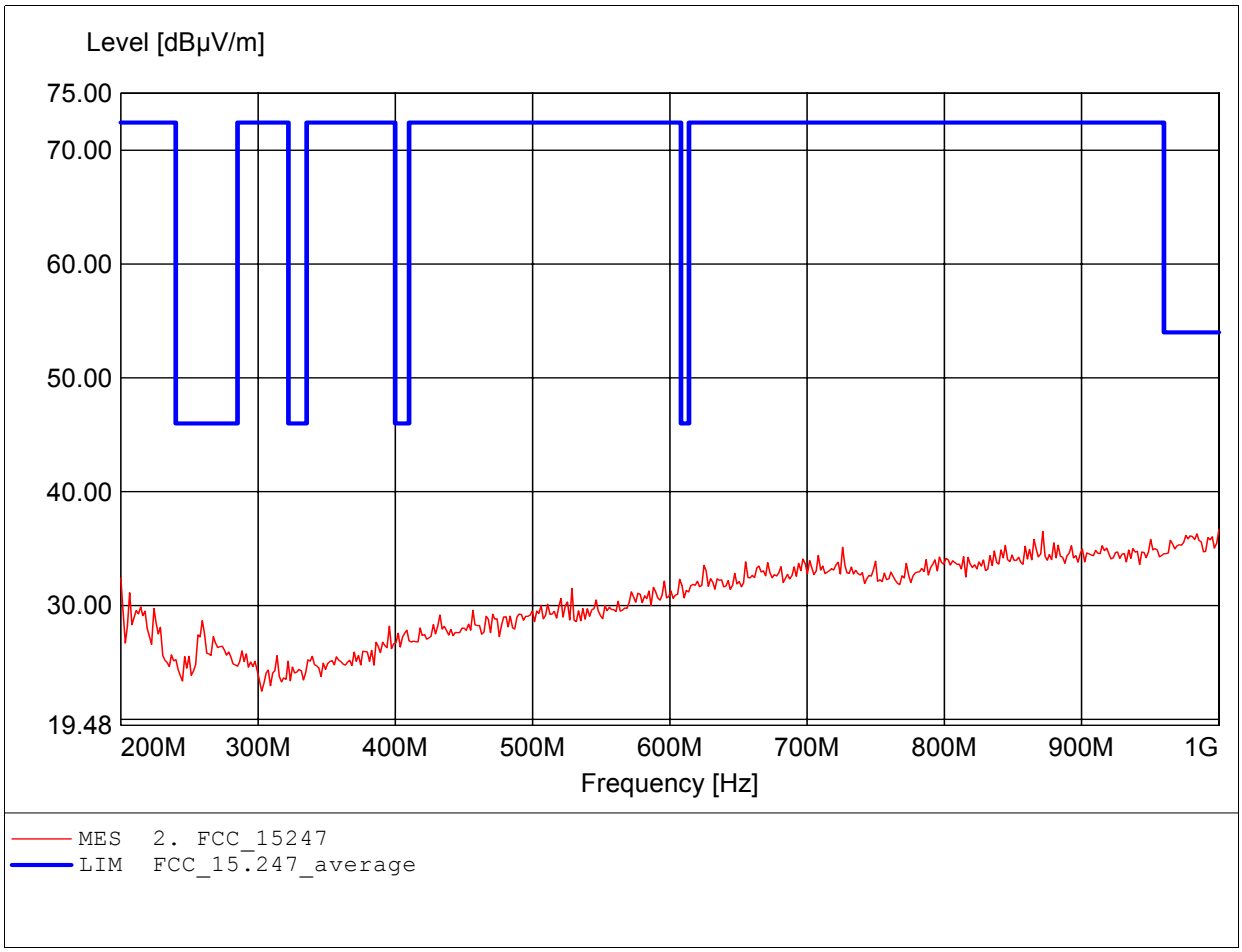
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HK 116
	Freq: 196.593MHz, Emax: 33.95dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

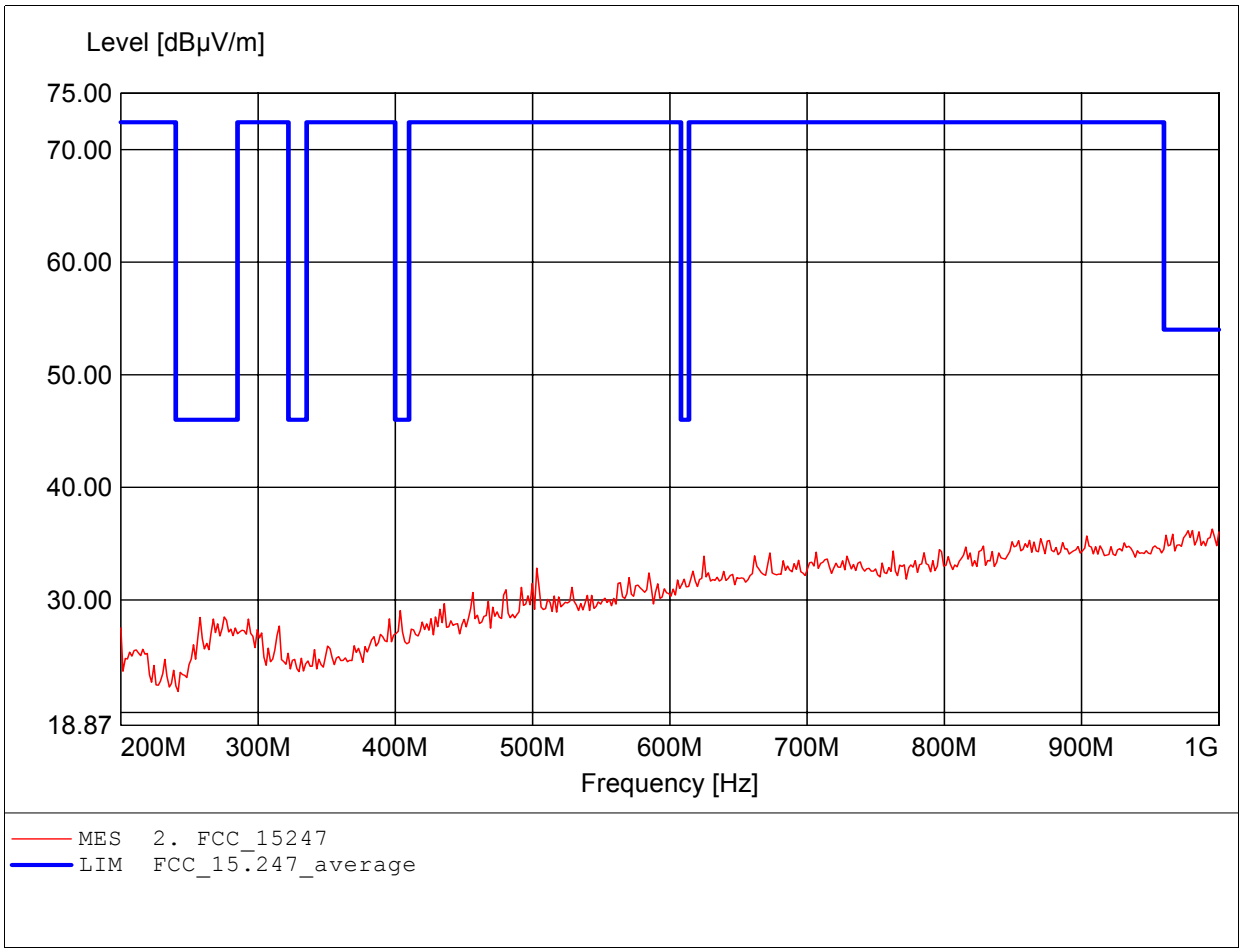
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223,
	Freq: 1.000GHz, Emax: 36.66dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

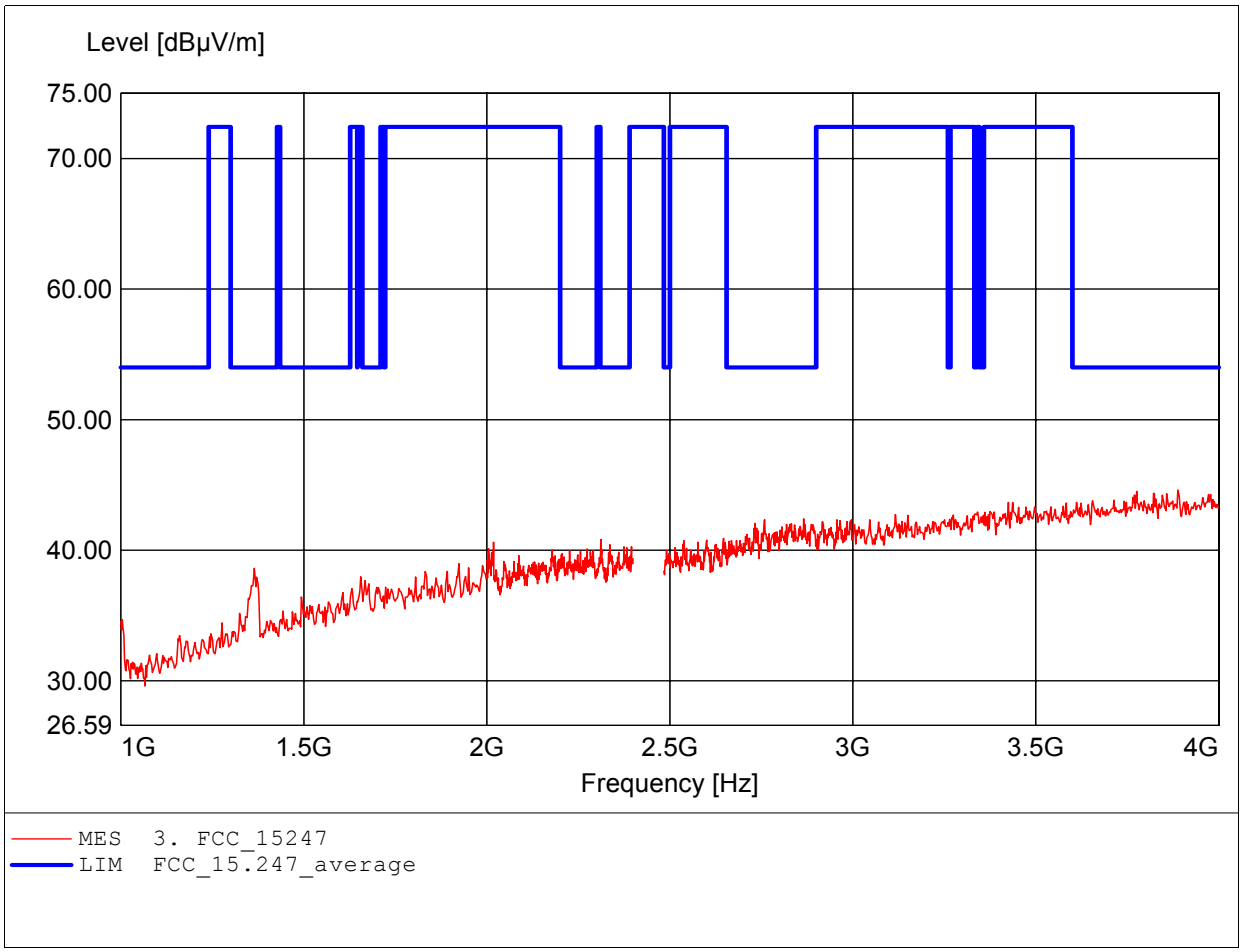
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223,
	Freq: 995.190MHz, Emax: 36.30dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

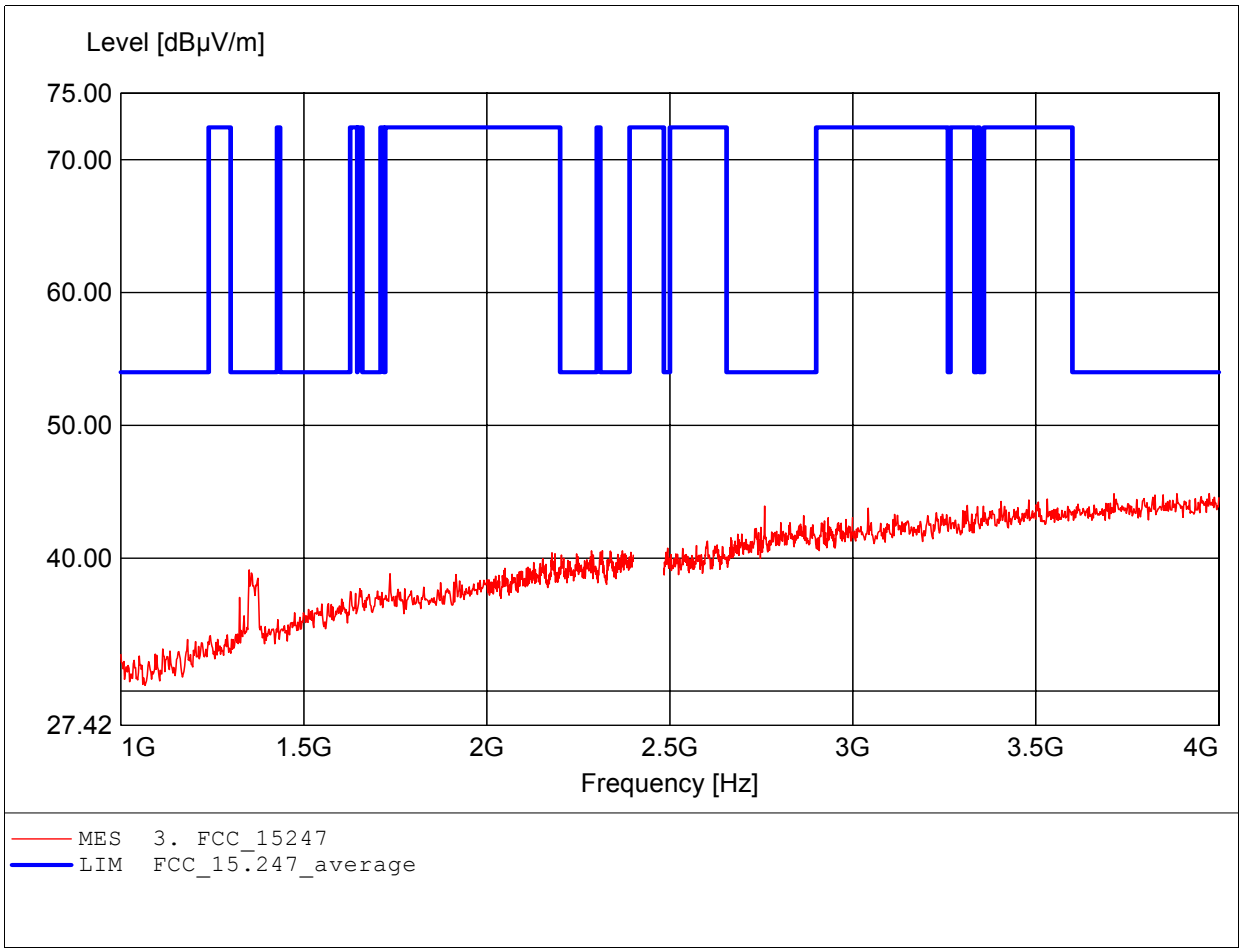
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 3.888GHz, Emax: 44.62dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

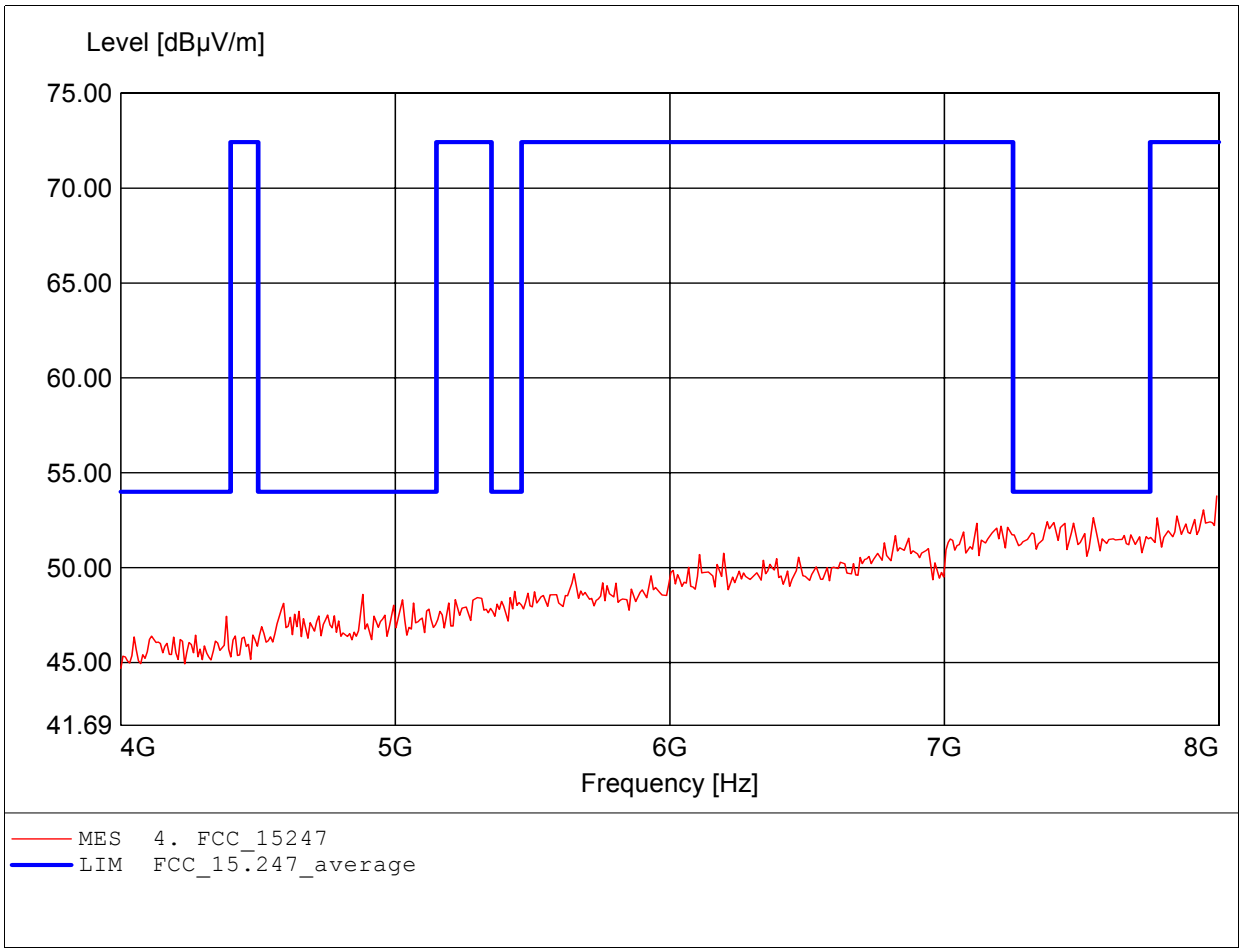
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 3.974GHz, Emax: 44.87dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

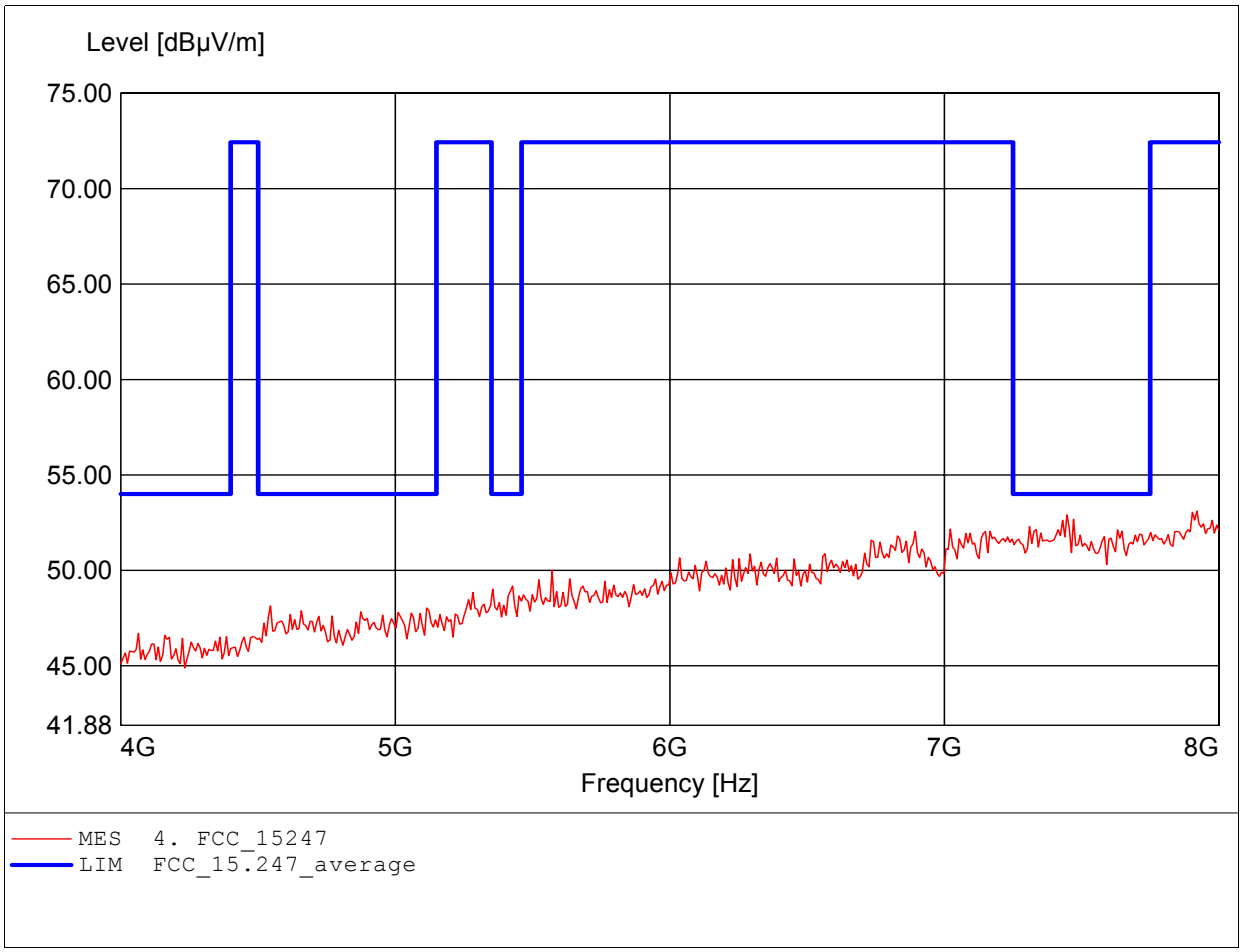
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 7.992GHz, Emax: 53.78dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

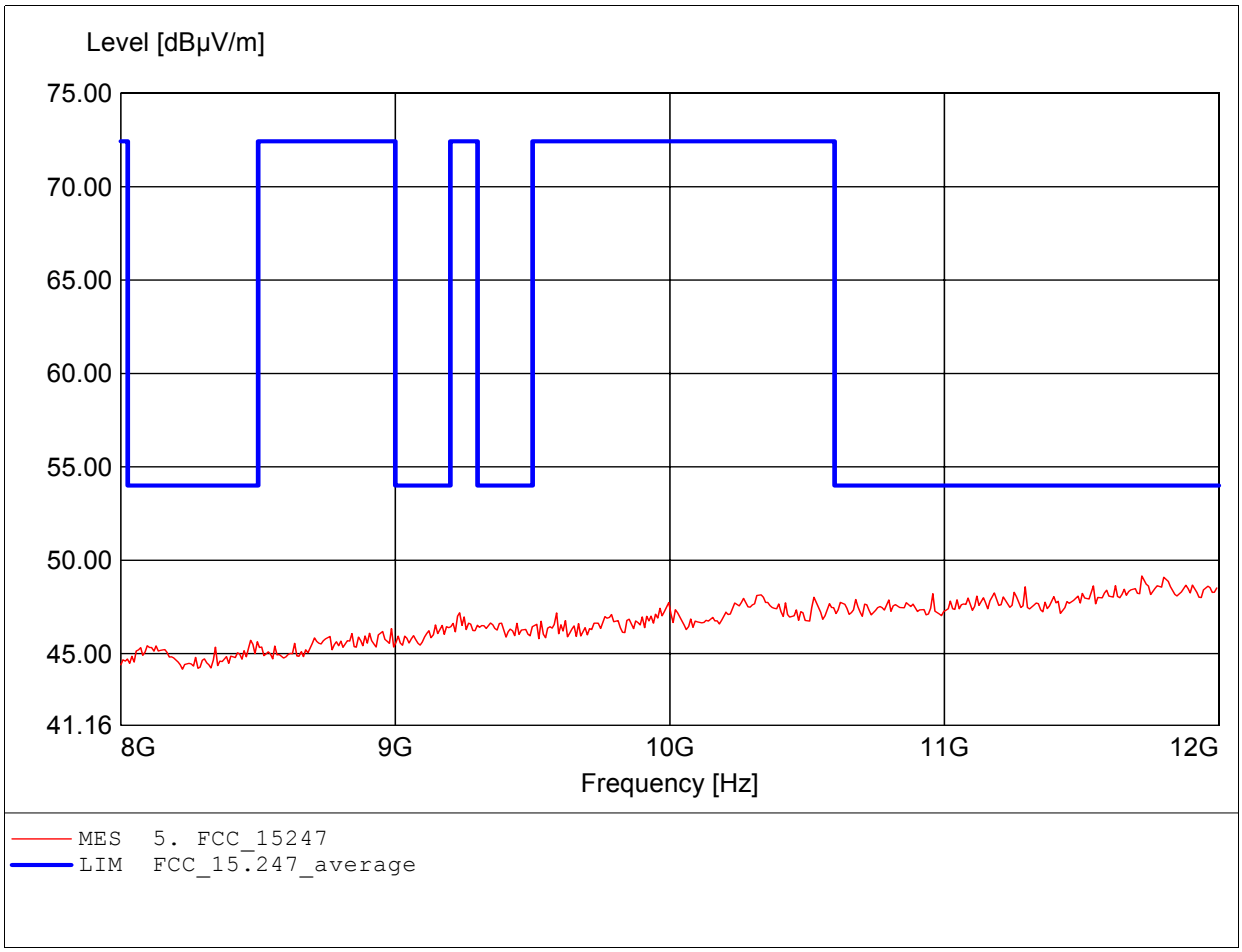
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 7.920GHz, Emax: 53.11dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

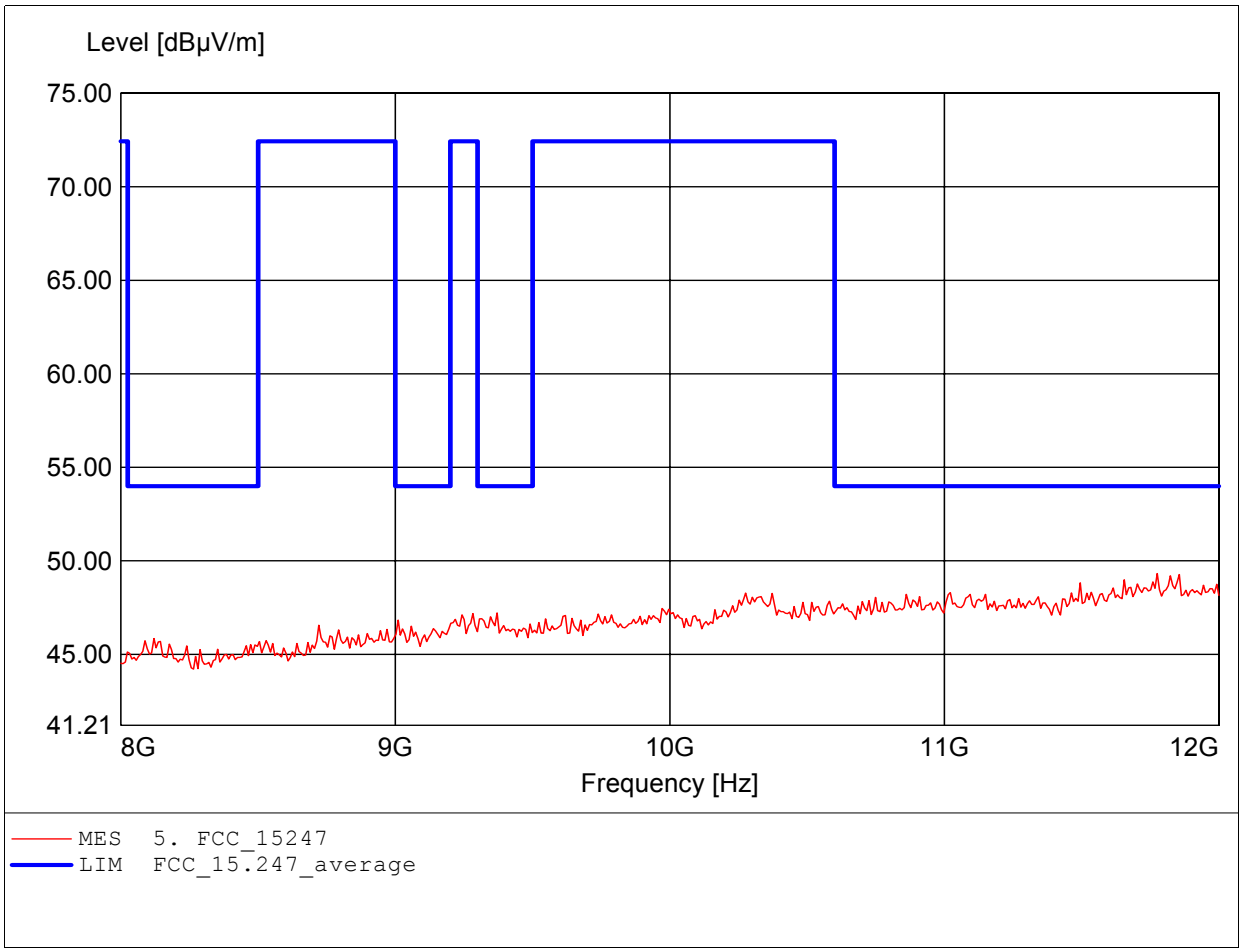
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 11.719GHz, Emax: 49.15dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

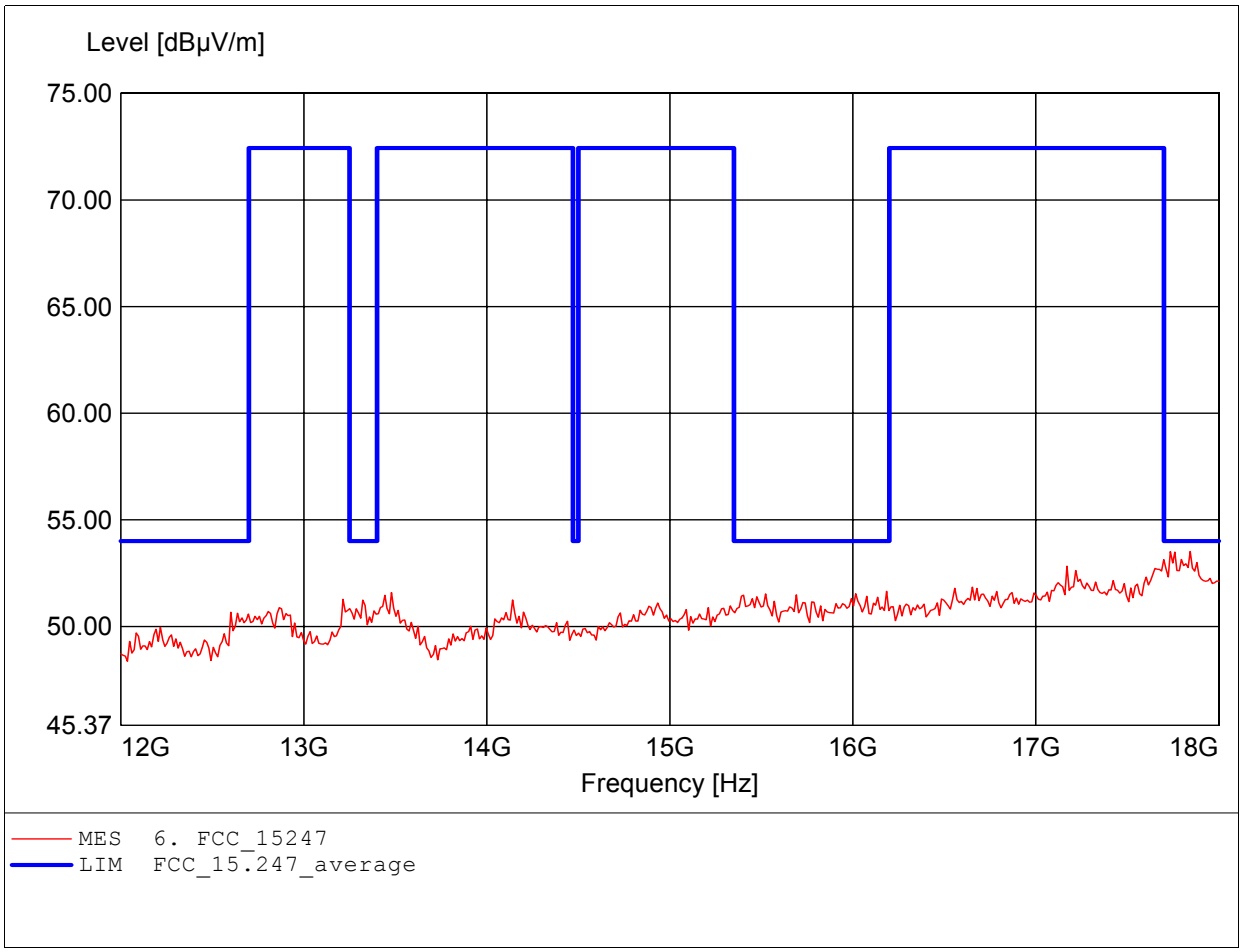
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 11.776GHz, Emax: 49.33dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

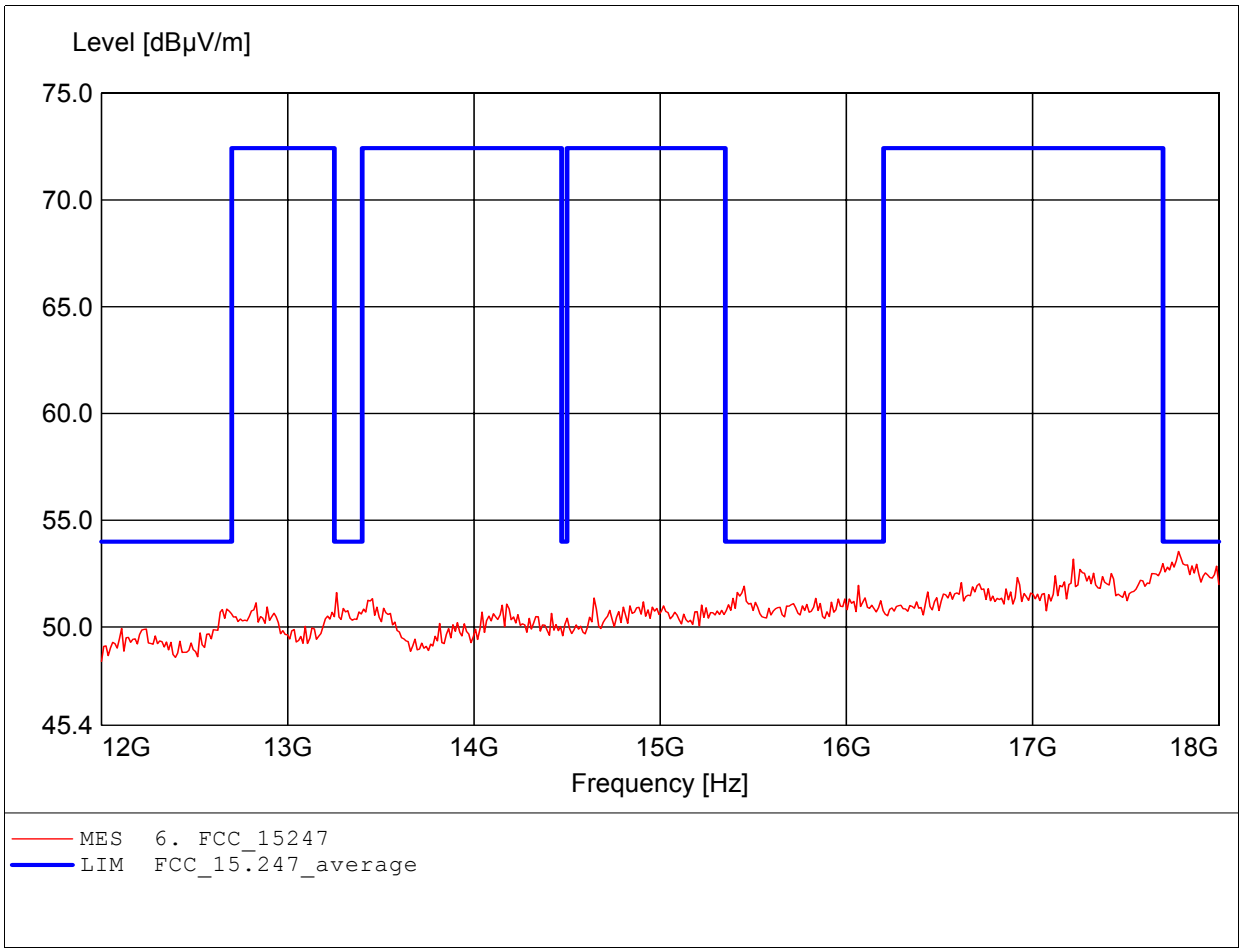
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 17.844GHz, Emax: 53.52dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

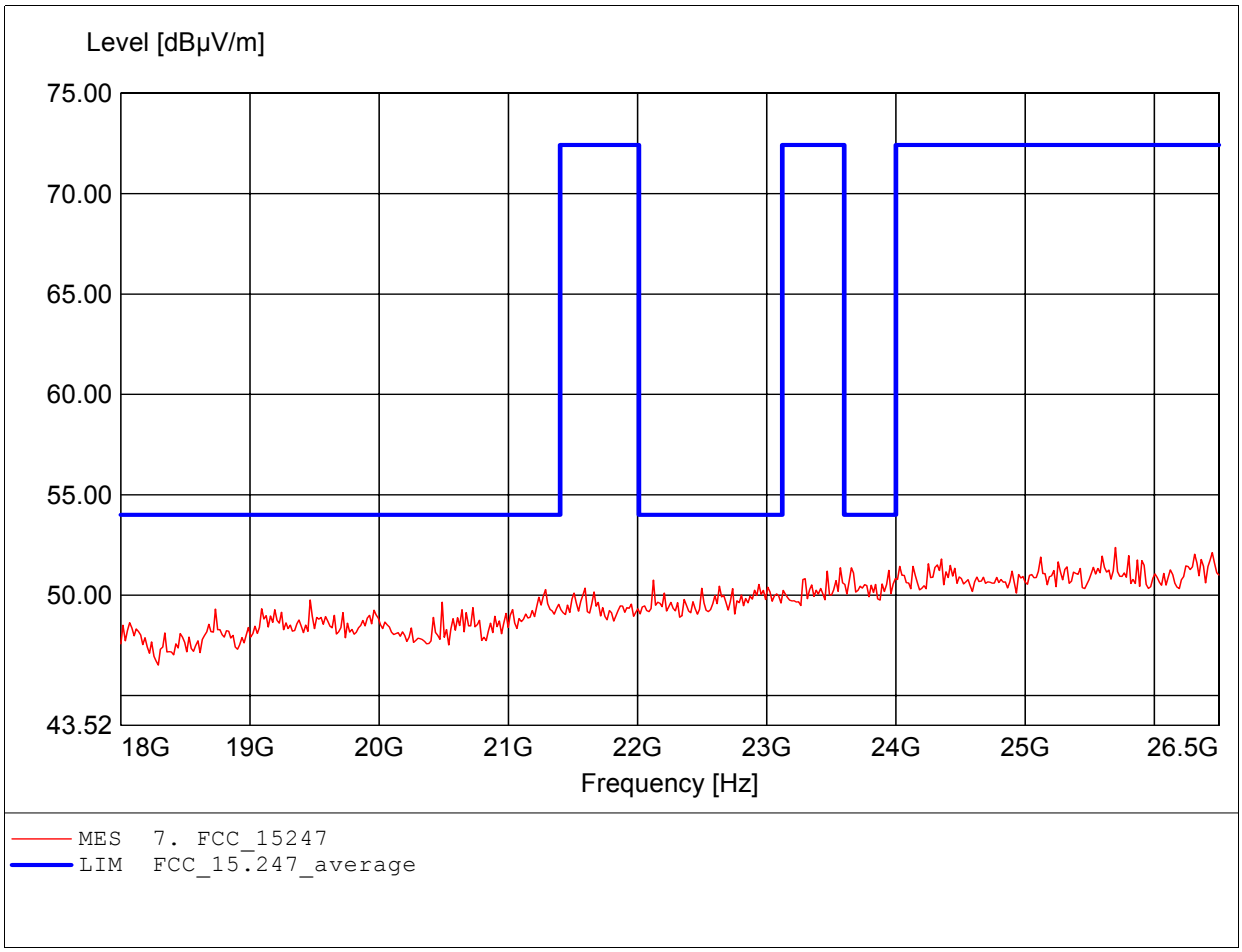
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 17.784GHz, Emax: 53.54dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

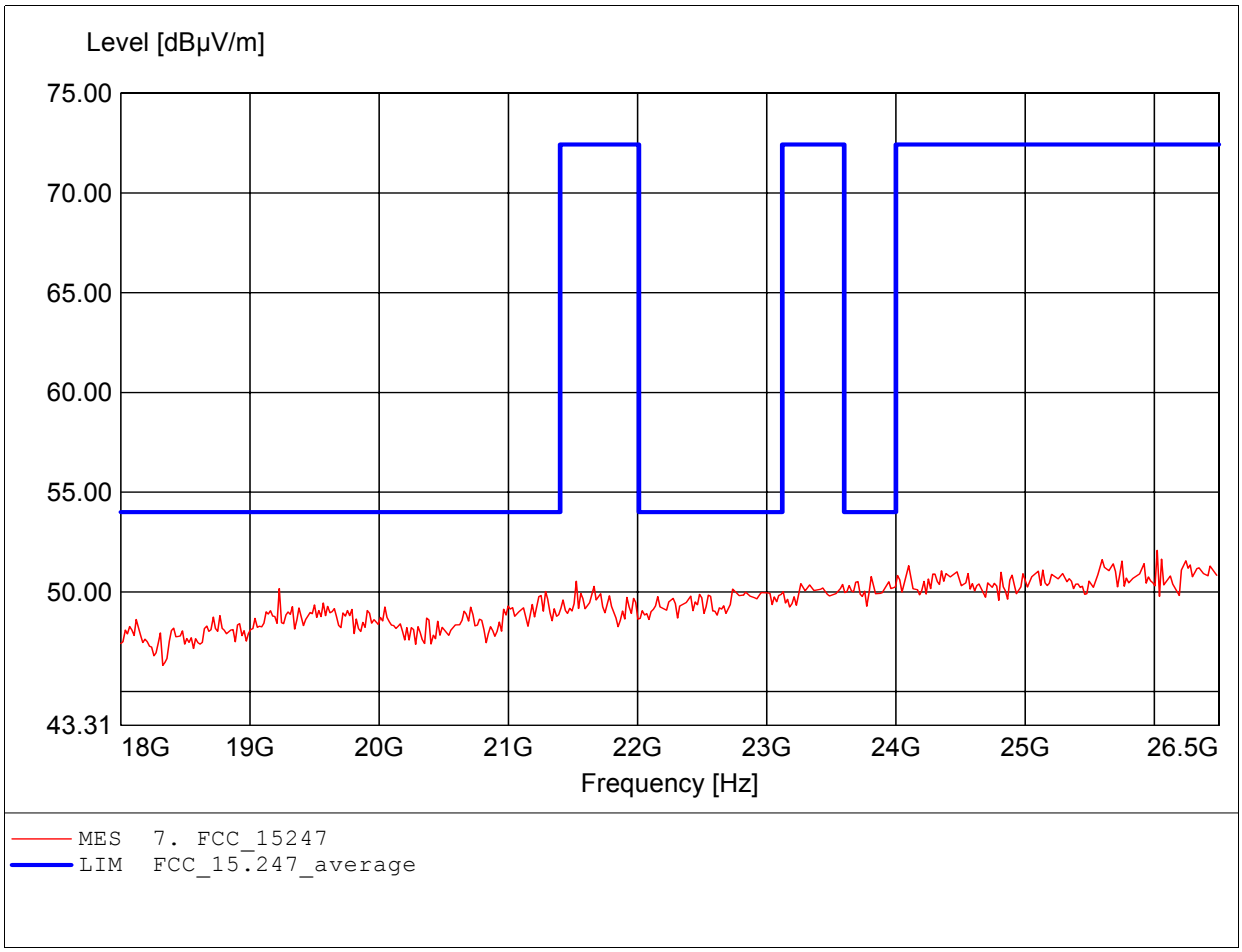
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 25.699GHz, Emax: 52.37dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

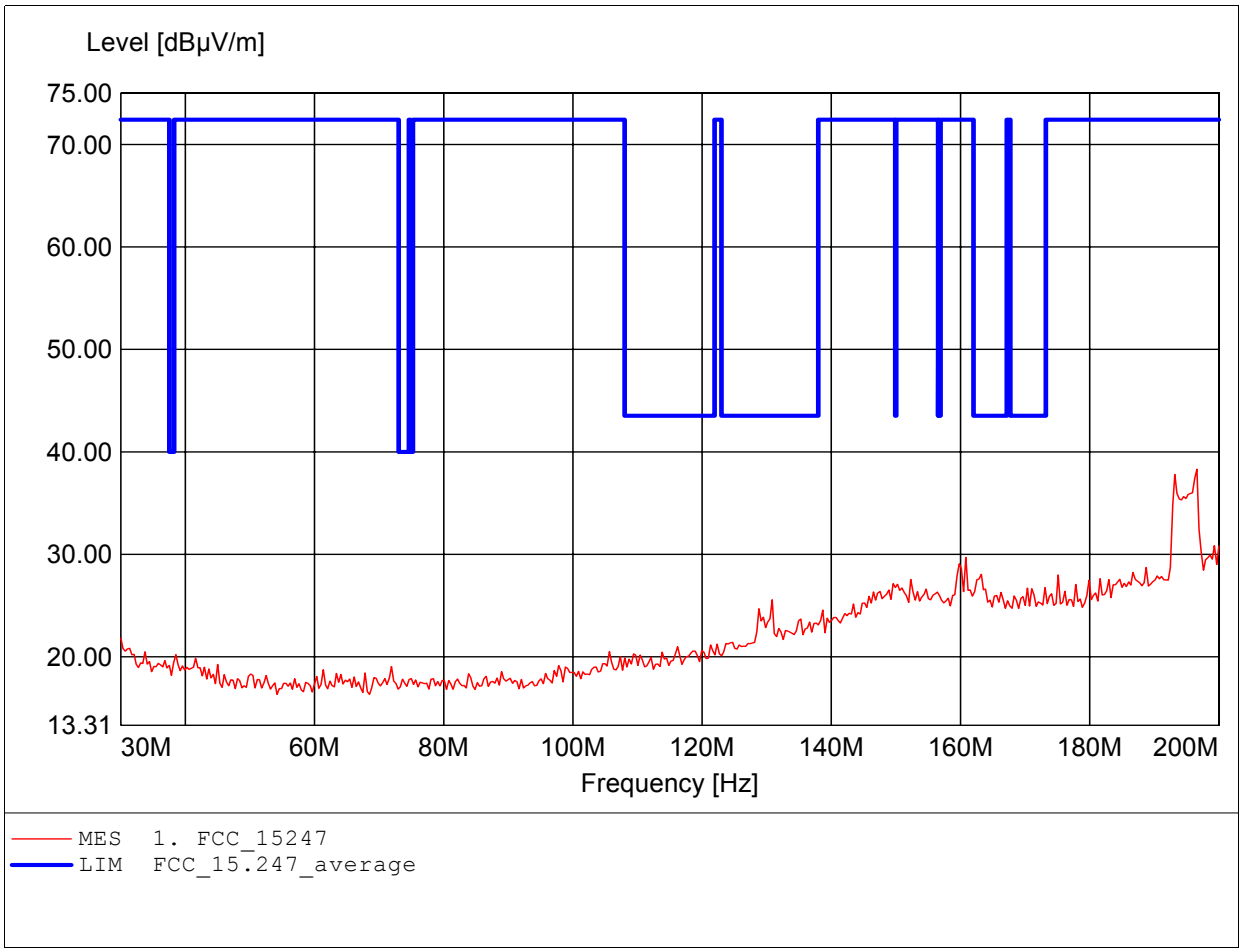
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) Middle Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 26.023GHz, Emax: 52.08dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

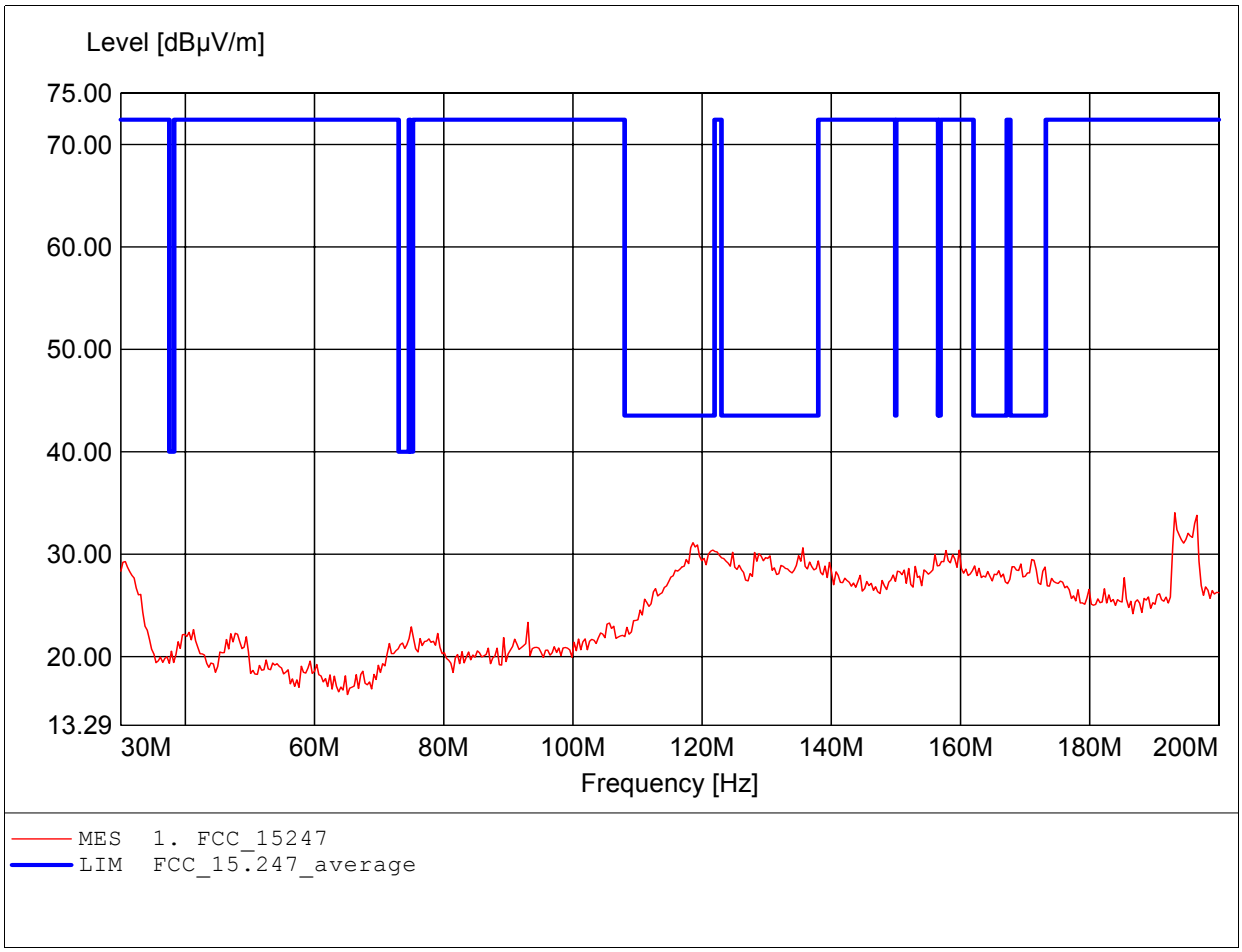
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 230 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HK 116
	Freq: 196.593MHz, Emax: 38.31dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

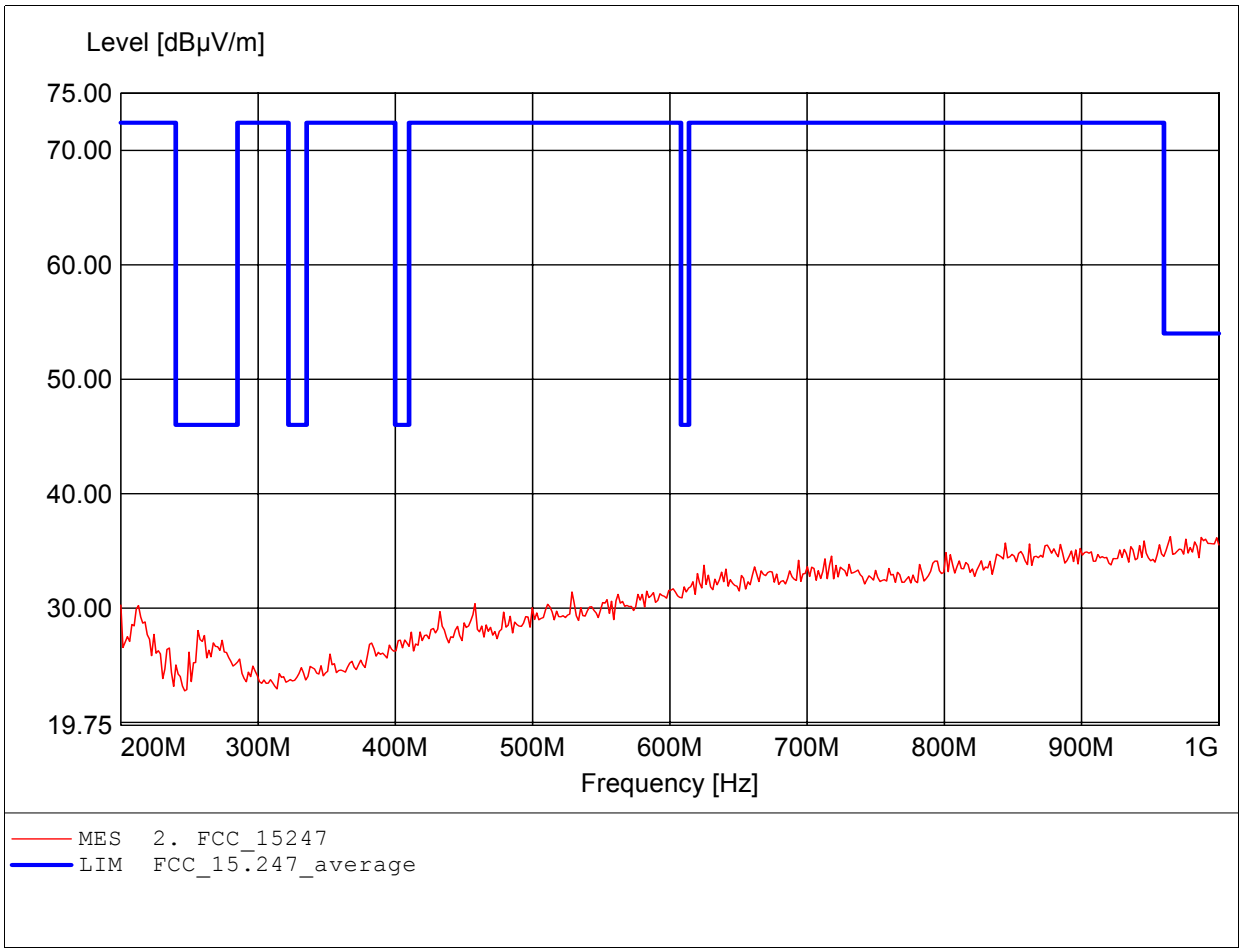
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HK 116
	Freq: 193.186MHz, Emax: 34.04dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

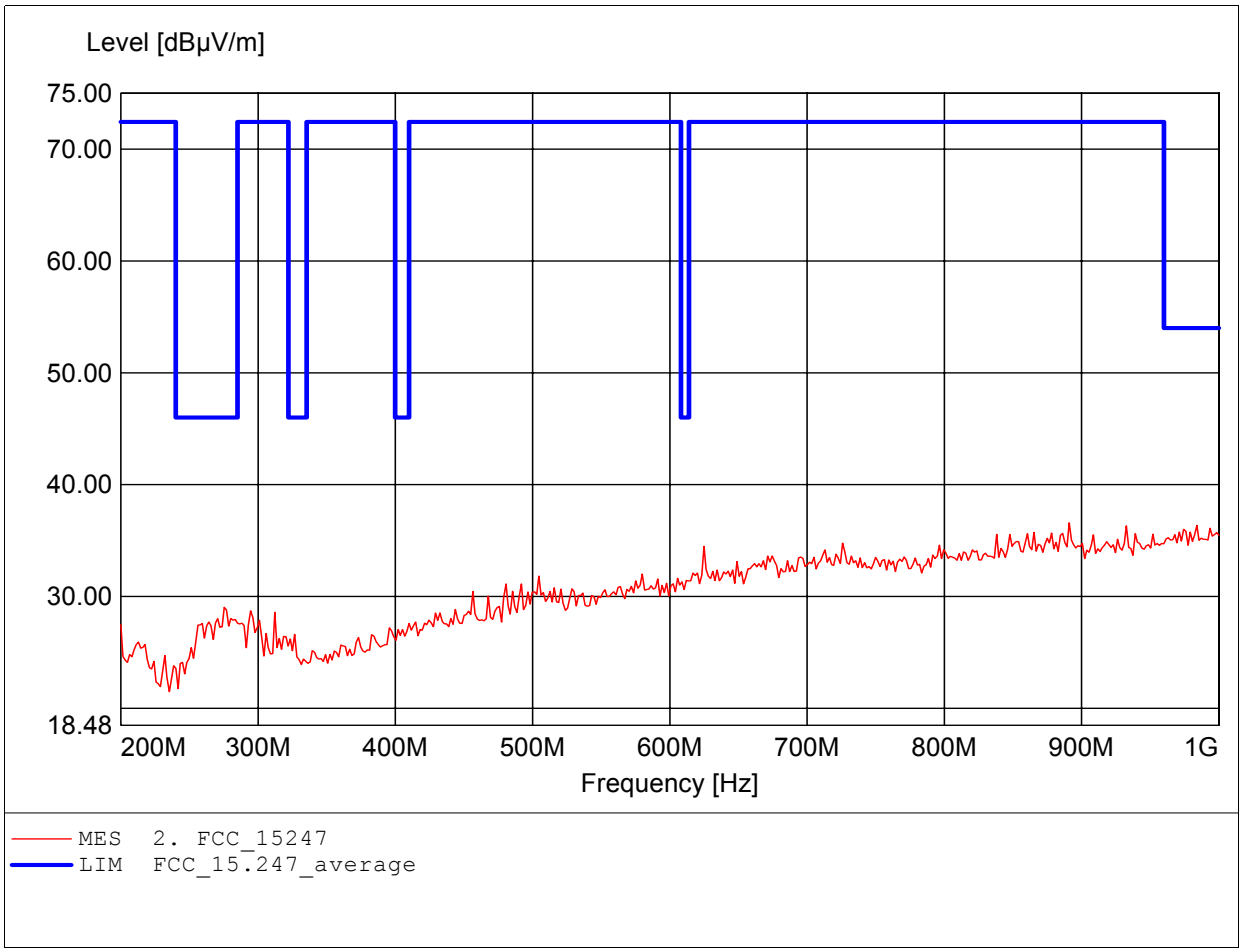
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223,
	Freq: 964.729MHz, Emax: 36.24dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

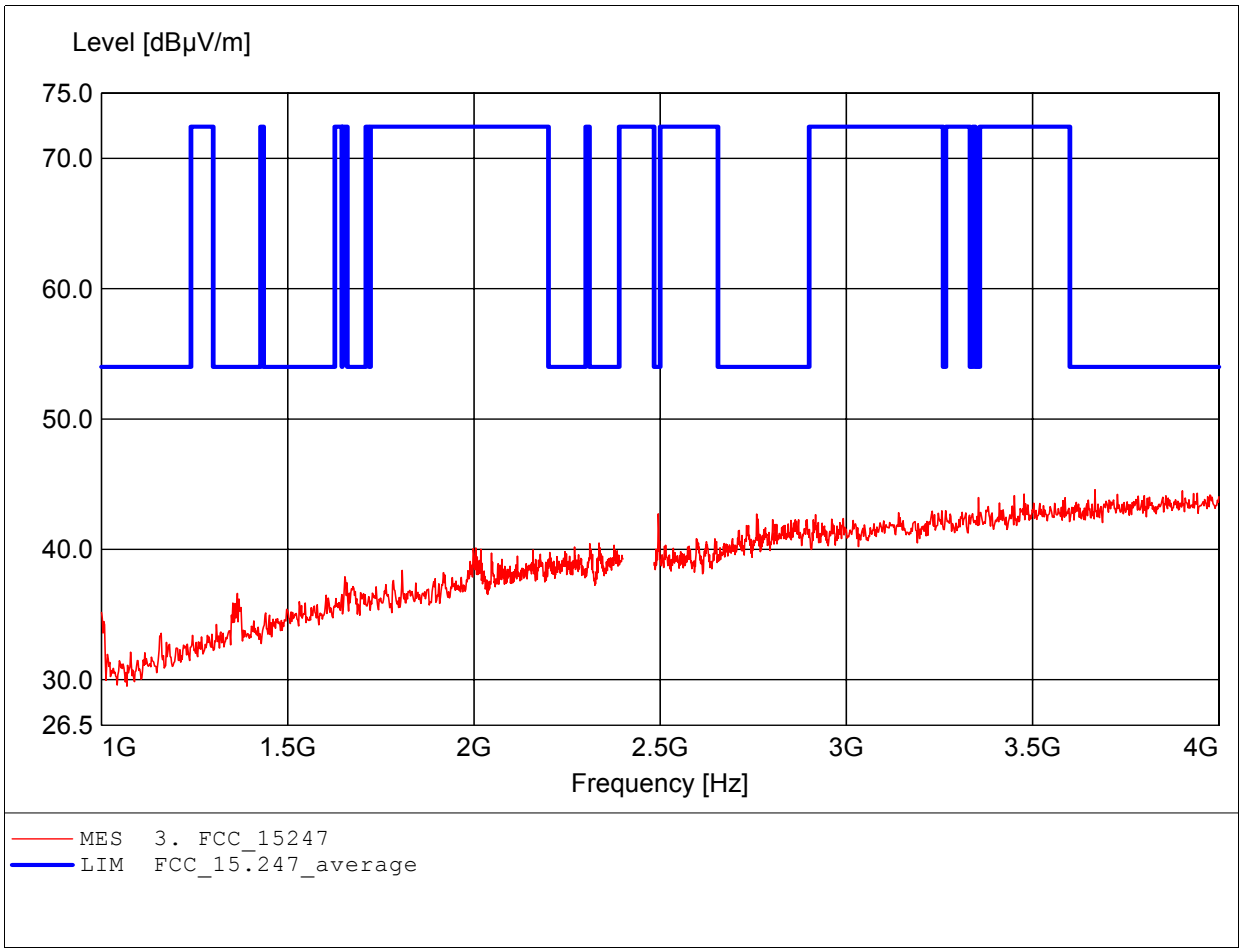
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223,
	Freq: 890.982MHz, Emax: 36.58dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

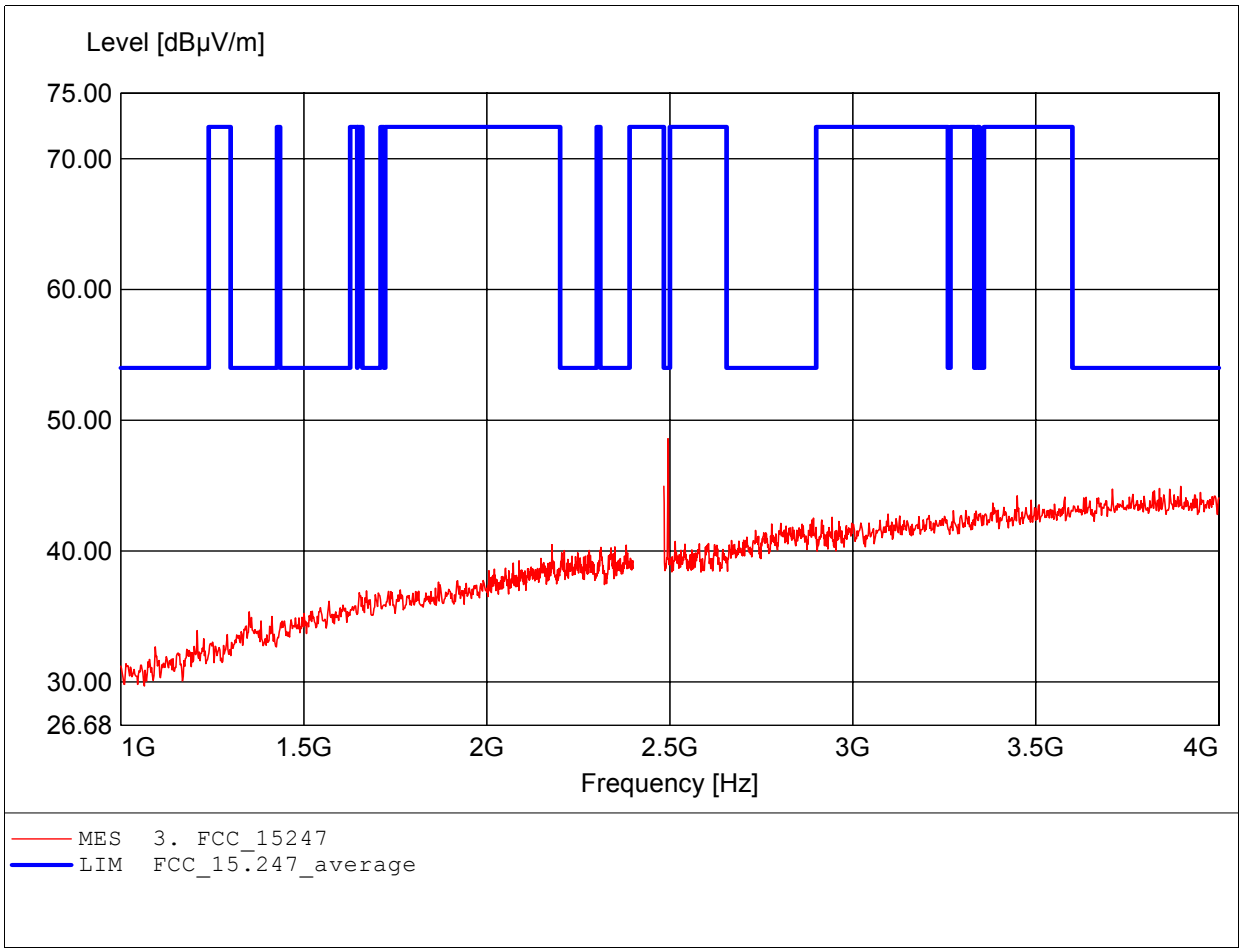
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 3.667GHz, Emax: 44.57dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

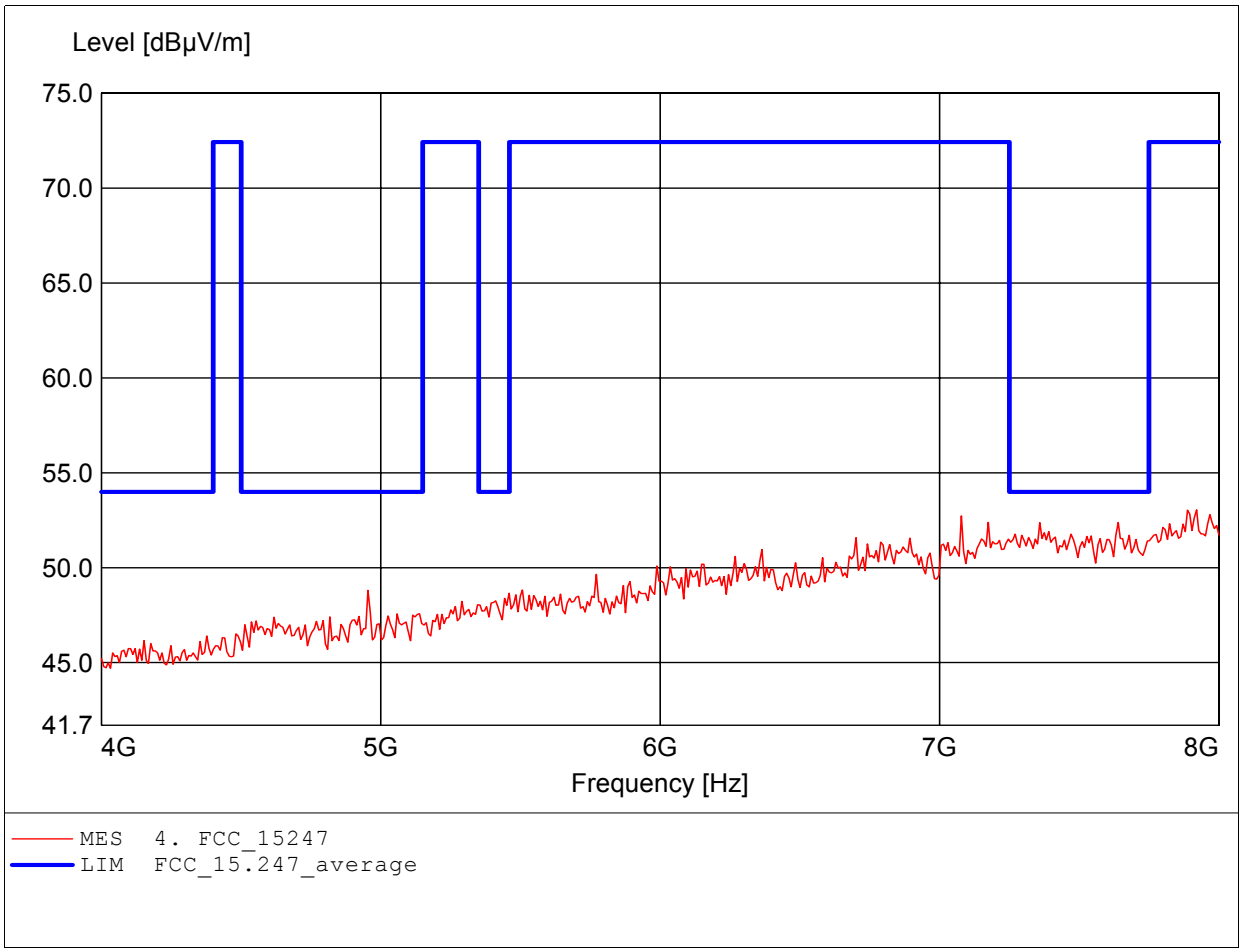
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 2.495GHz, Emax: 48.60dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

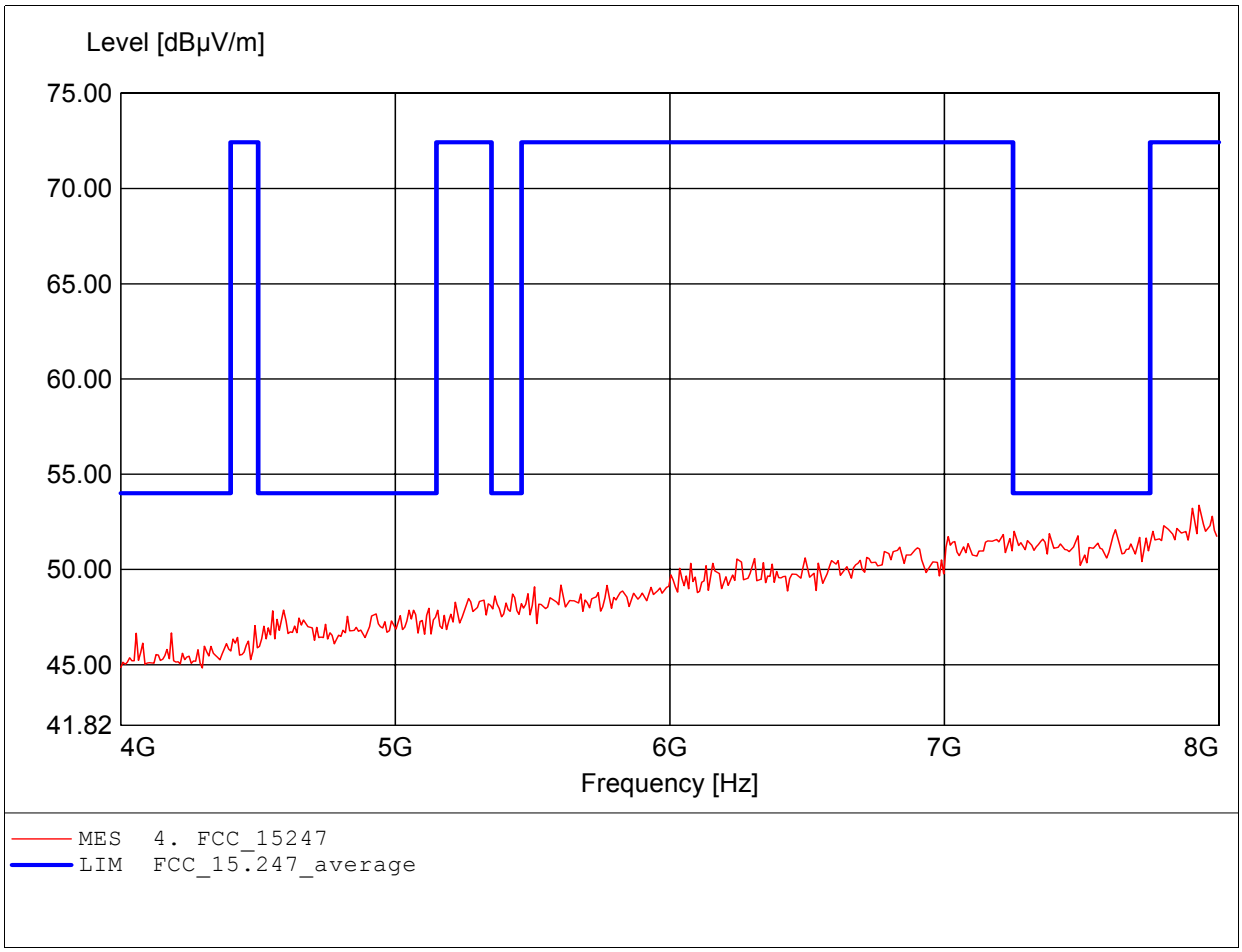
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 7.920GHz, Emax: 53.04dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

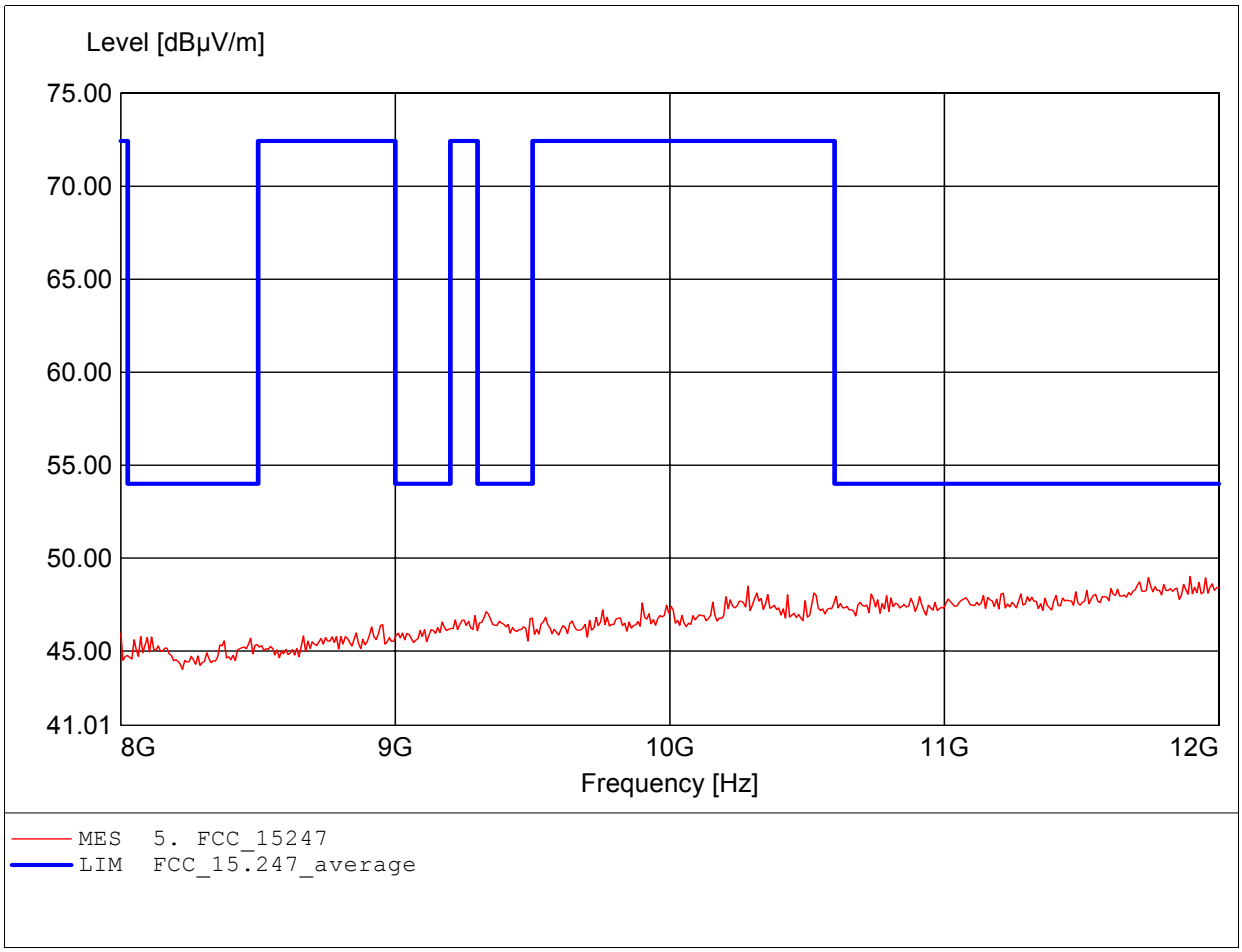
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 7.928GHz, Emax: 53.37dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

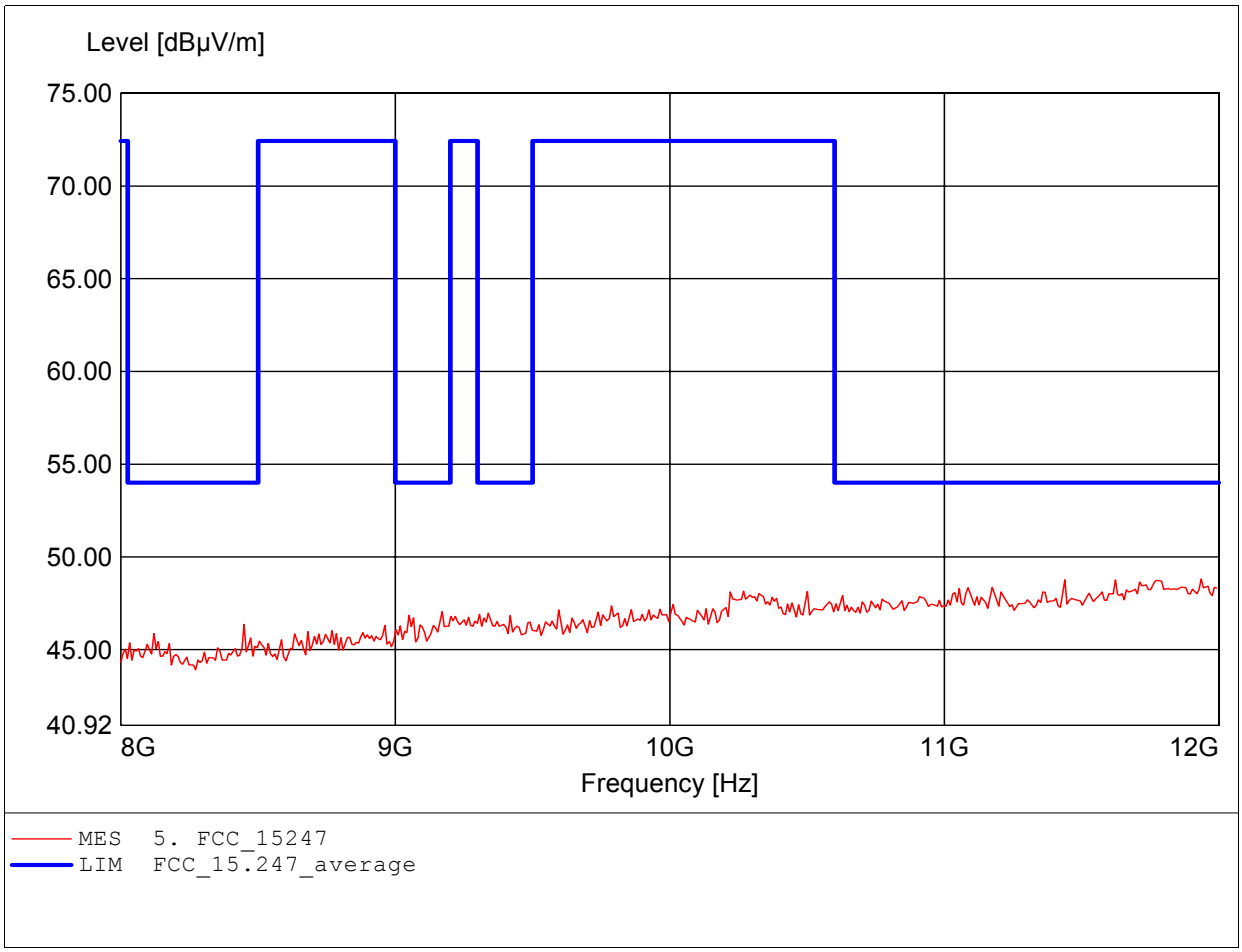
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 11.896GHz, Emax: 49.02dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

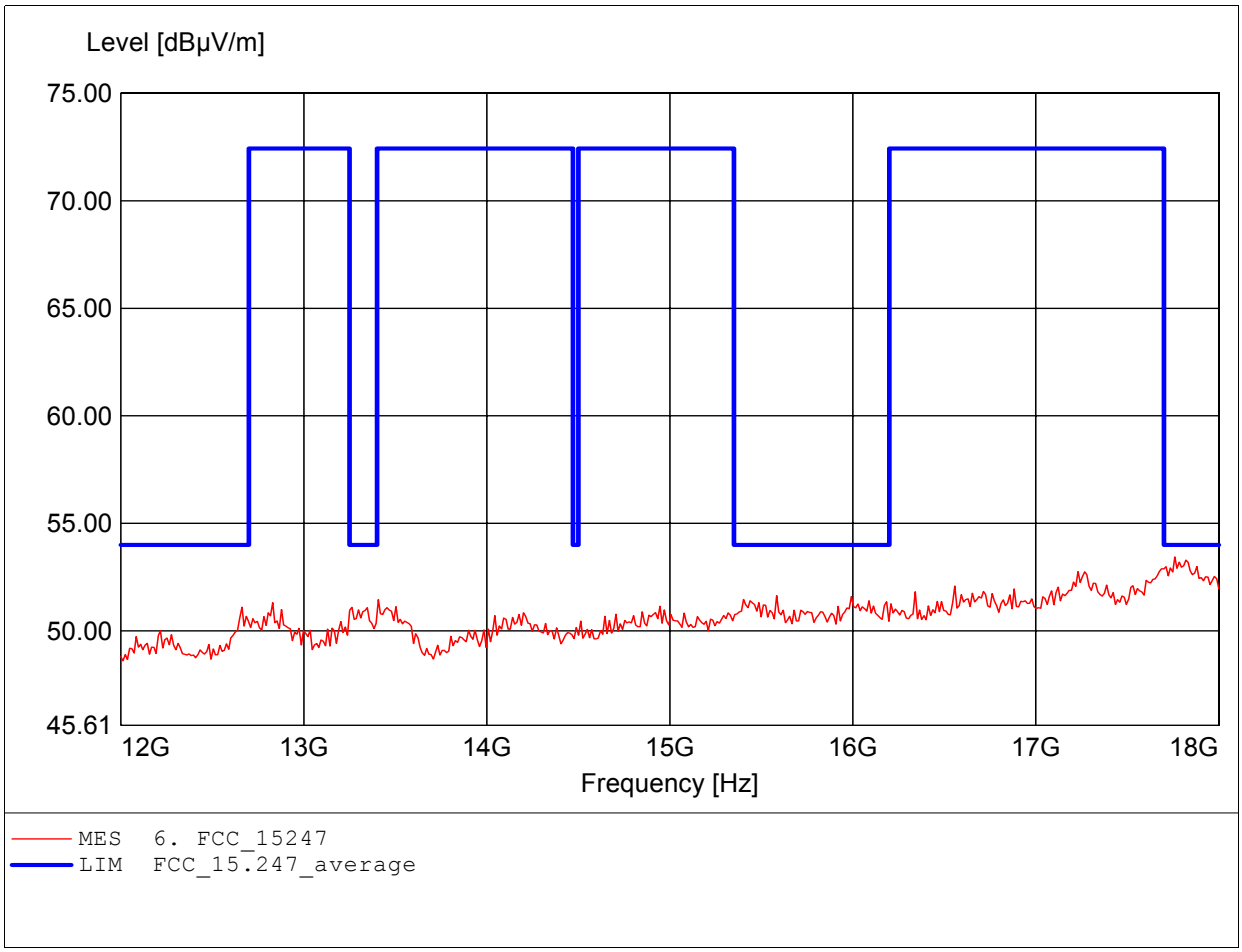
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 11.936GHz, Emax: 48.81dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

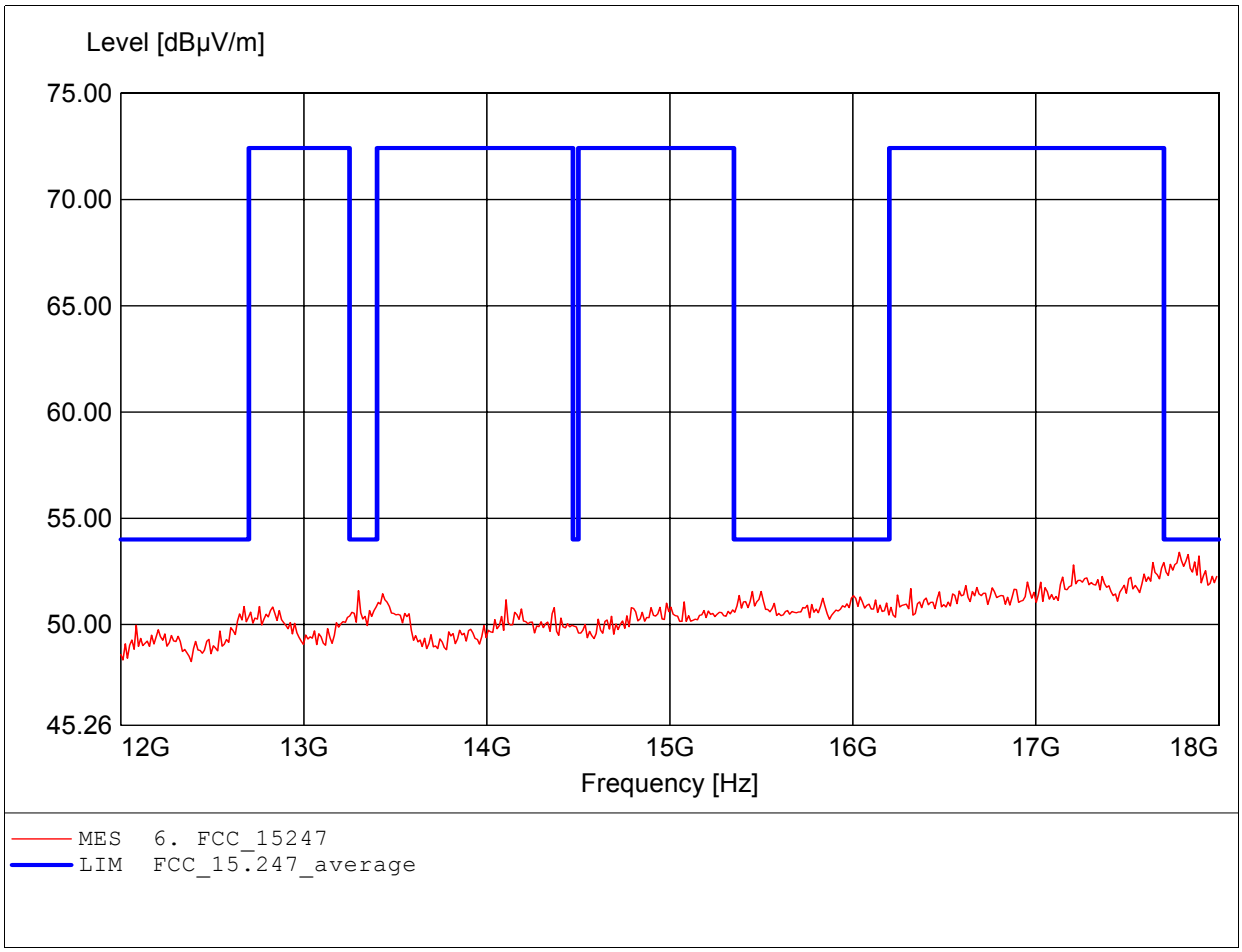
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 17.760GHz, Emax: 53.44dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

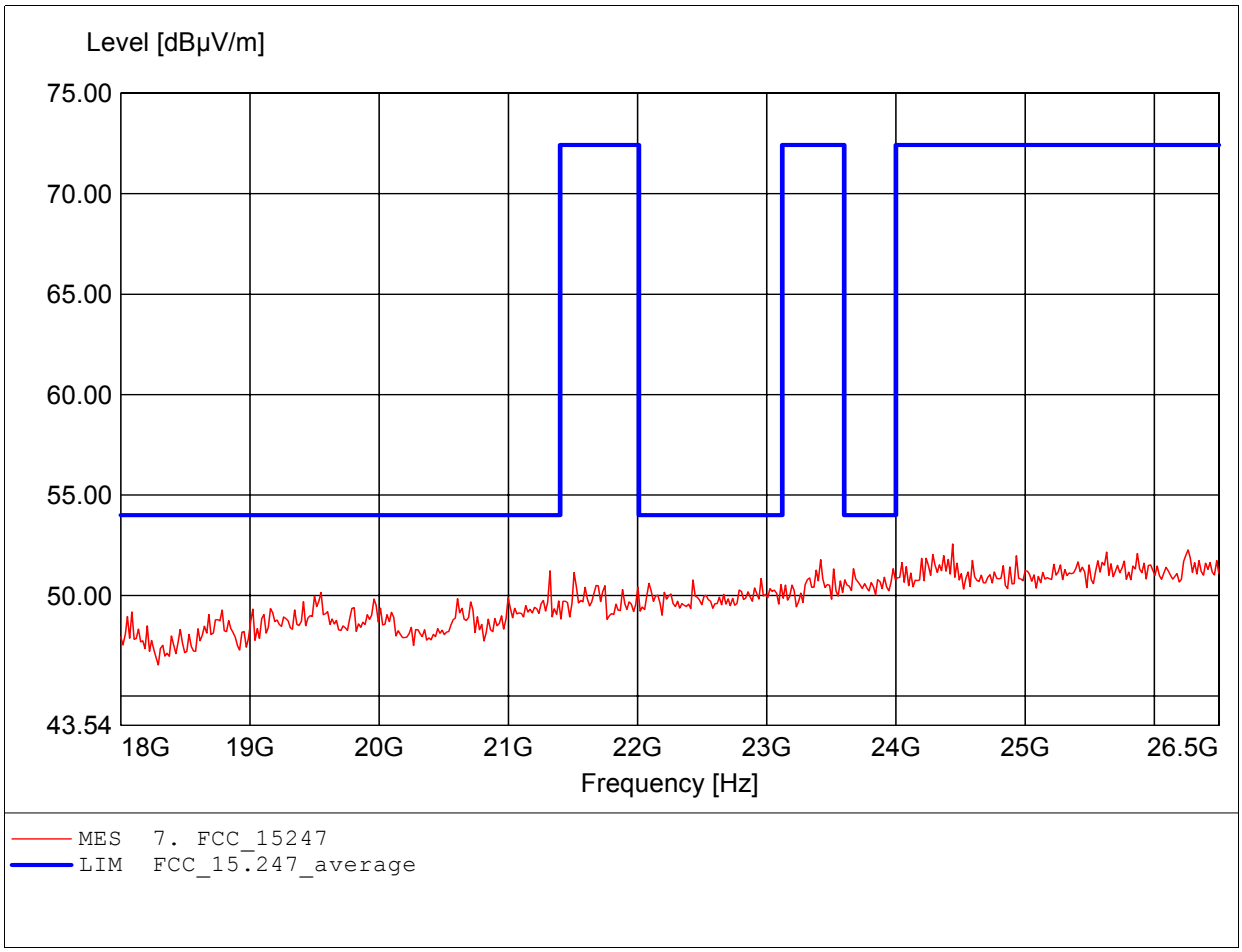
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.+HP.
	Freq: 17.784GHz, Emax: 53.40dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

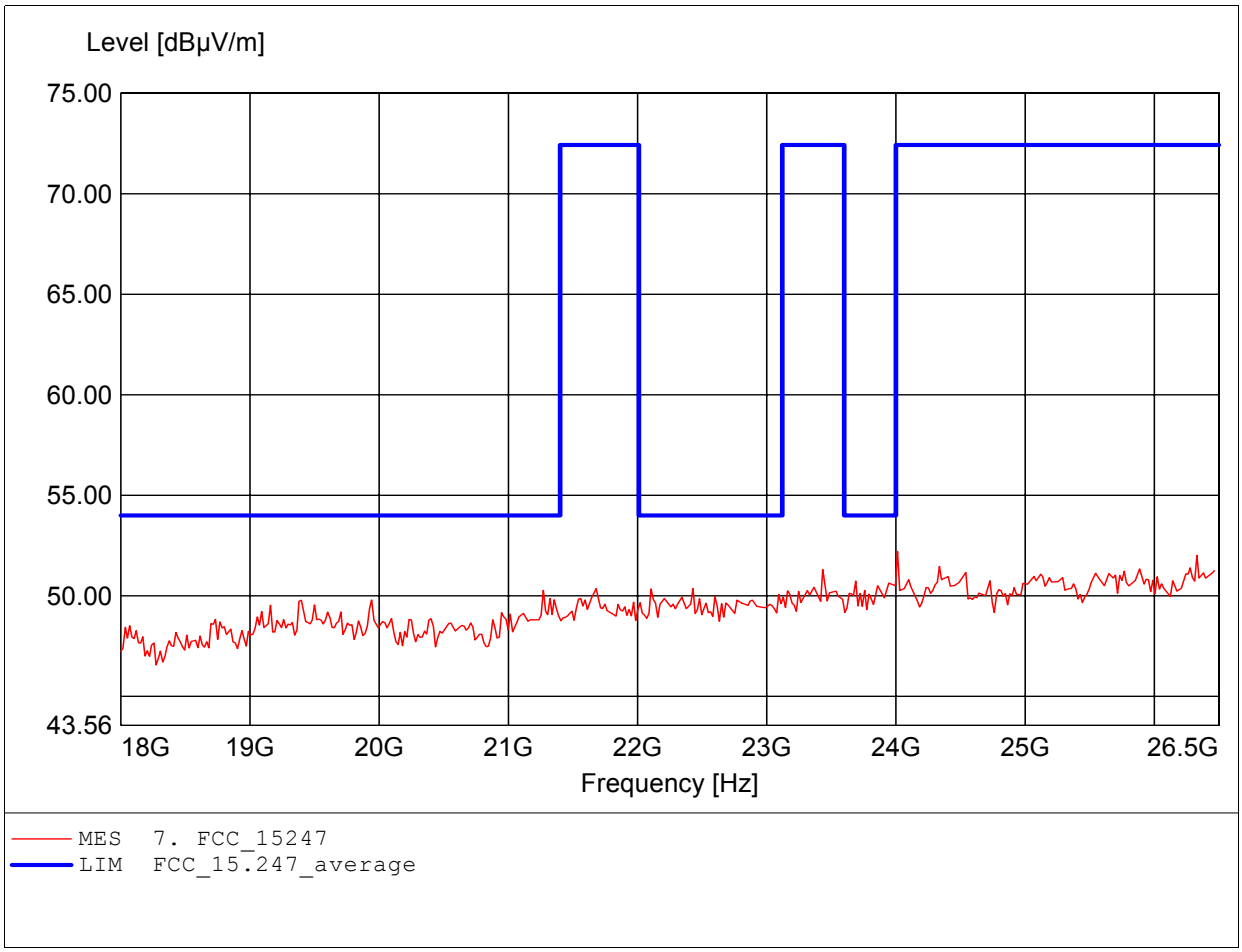
EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 24.439GHz, Emax: 52.57dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

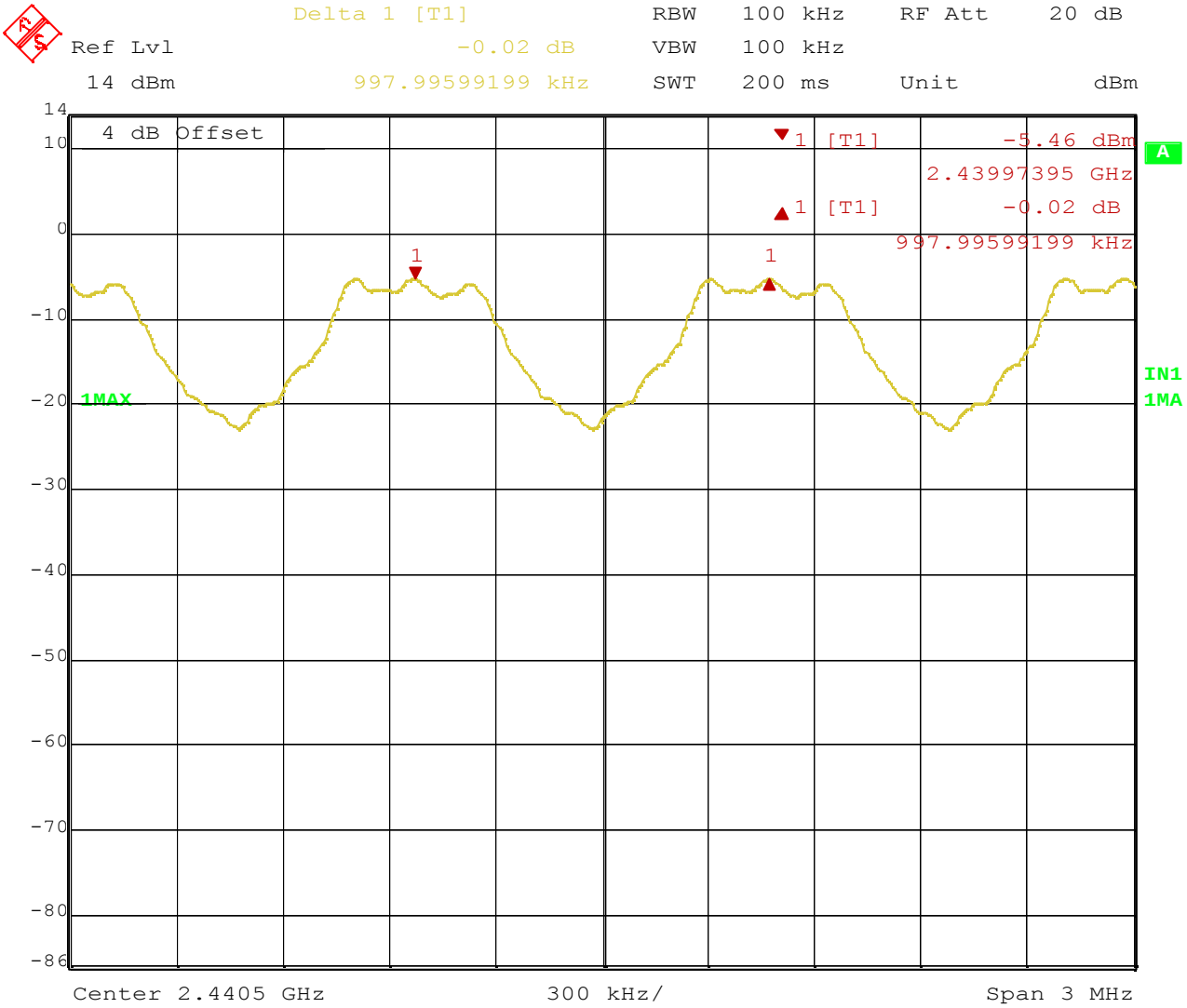
FCC RULES PART 15, SUBPART C

EUT:	BLUETOOTH USB ADAPTER
MODEL NO.:	BU-2061-J(ClassII) High Channel
Approval Holder:	J-Three International Holding
Test Site / Operator:	ETS / Orville Chang
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120 VAC (Power on PC)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
	Freq: 24.013GHz, Emax: 52.20dBµV/m, RBW: 1MHz



Appendix C

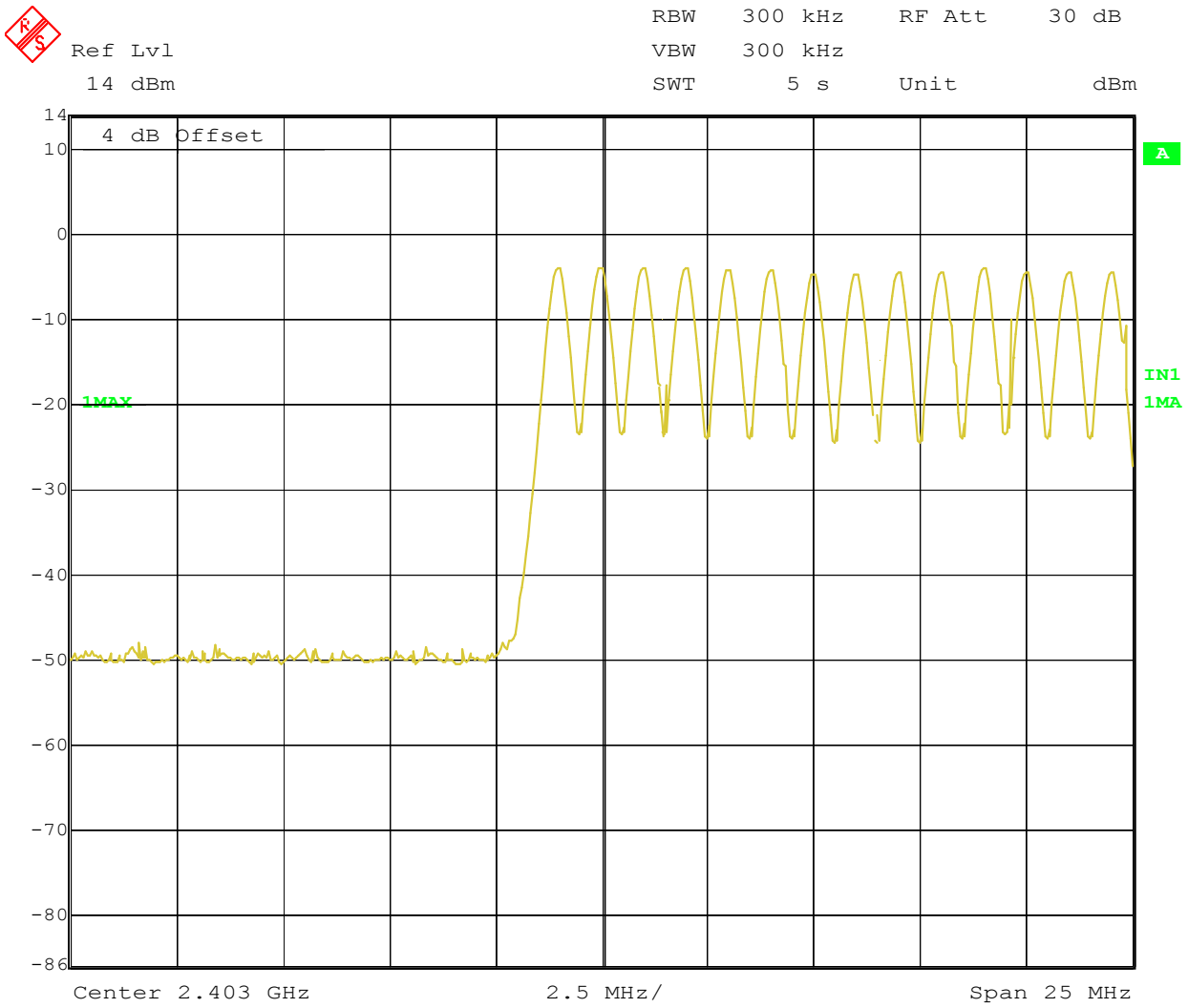
Carrier Frequency Separation



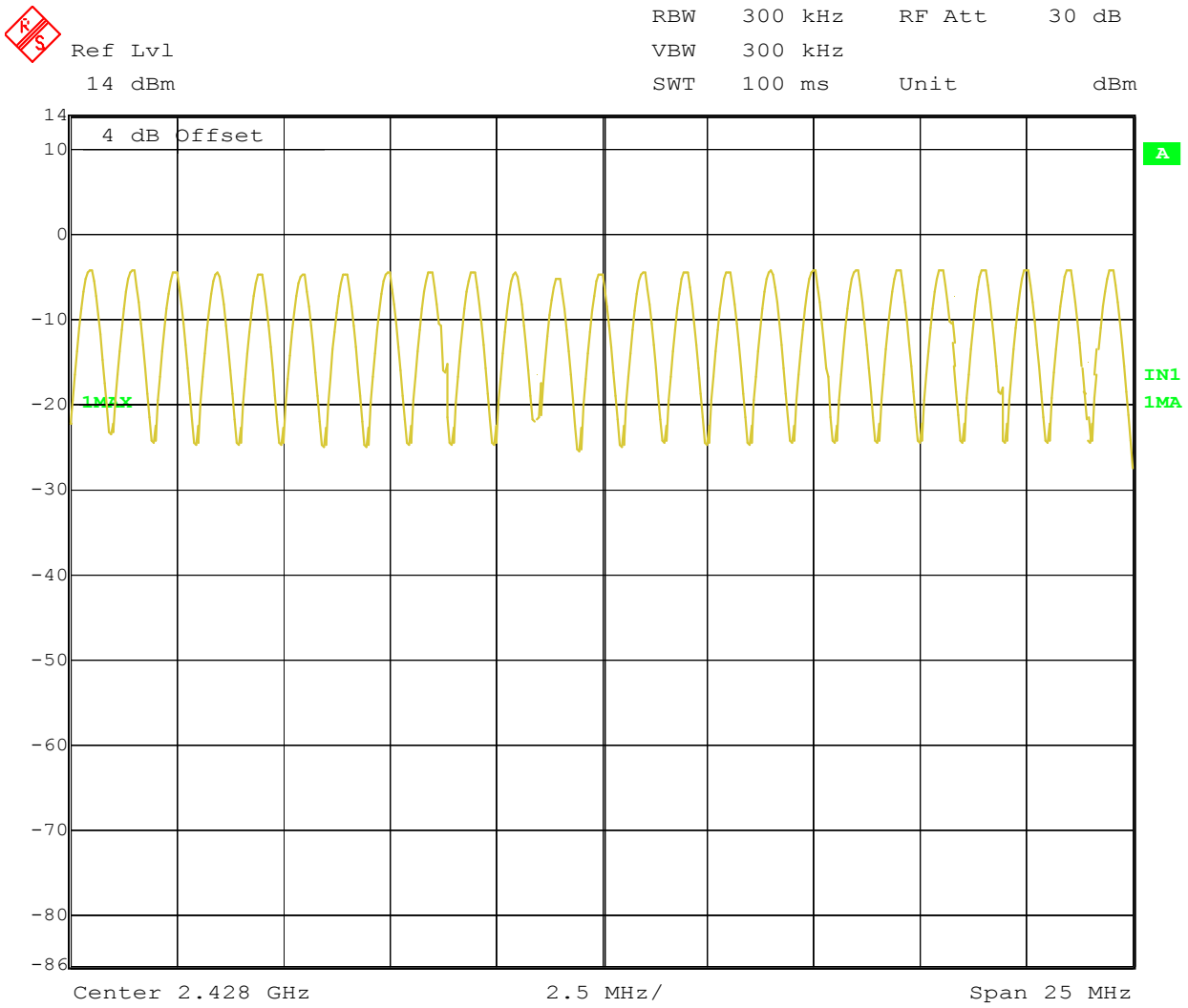
Title: FREQUENCY SEPARATION CH38 AND CH39
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 12:04:28

Appendix D

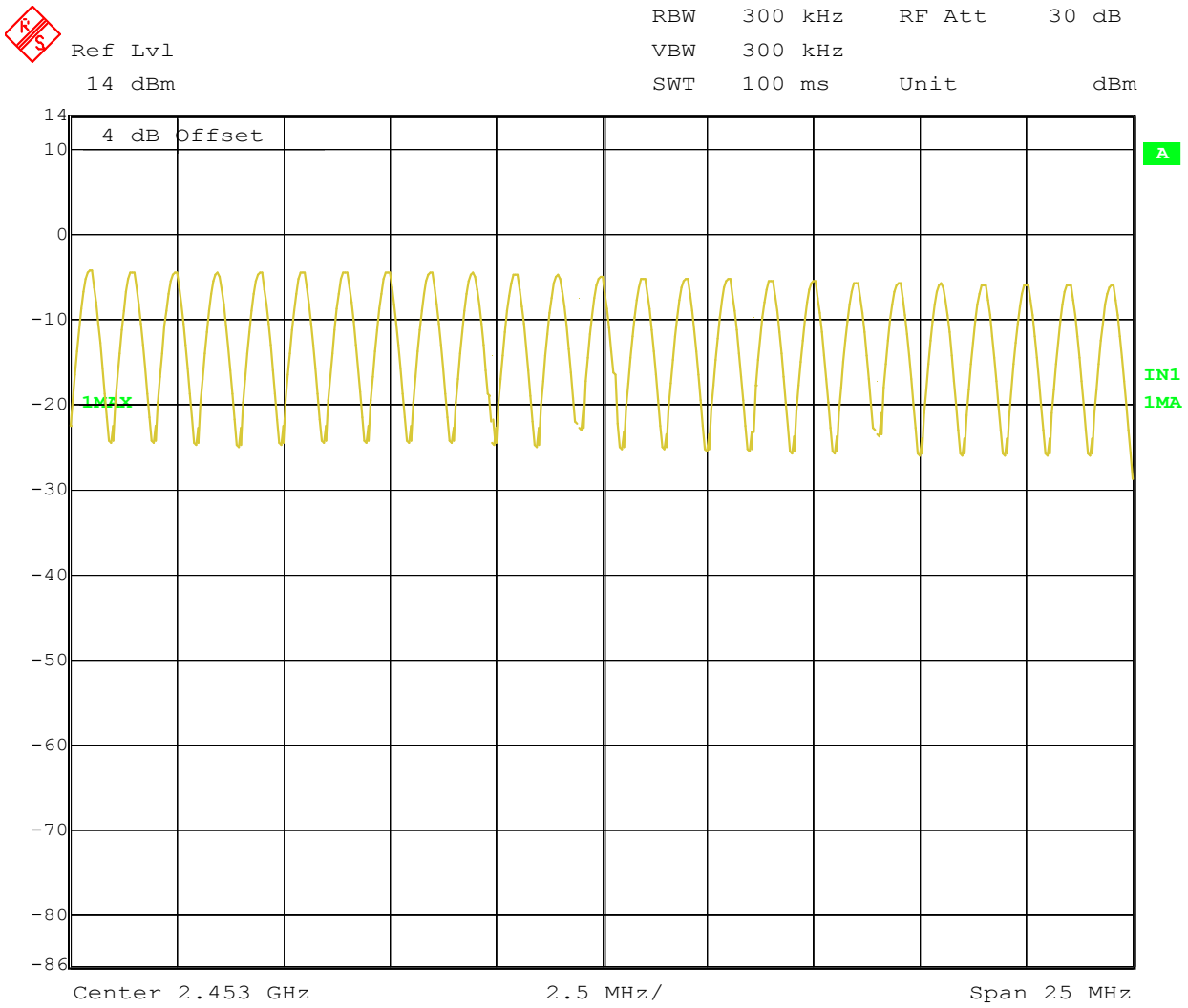
Number of Hopping Frequencies



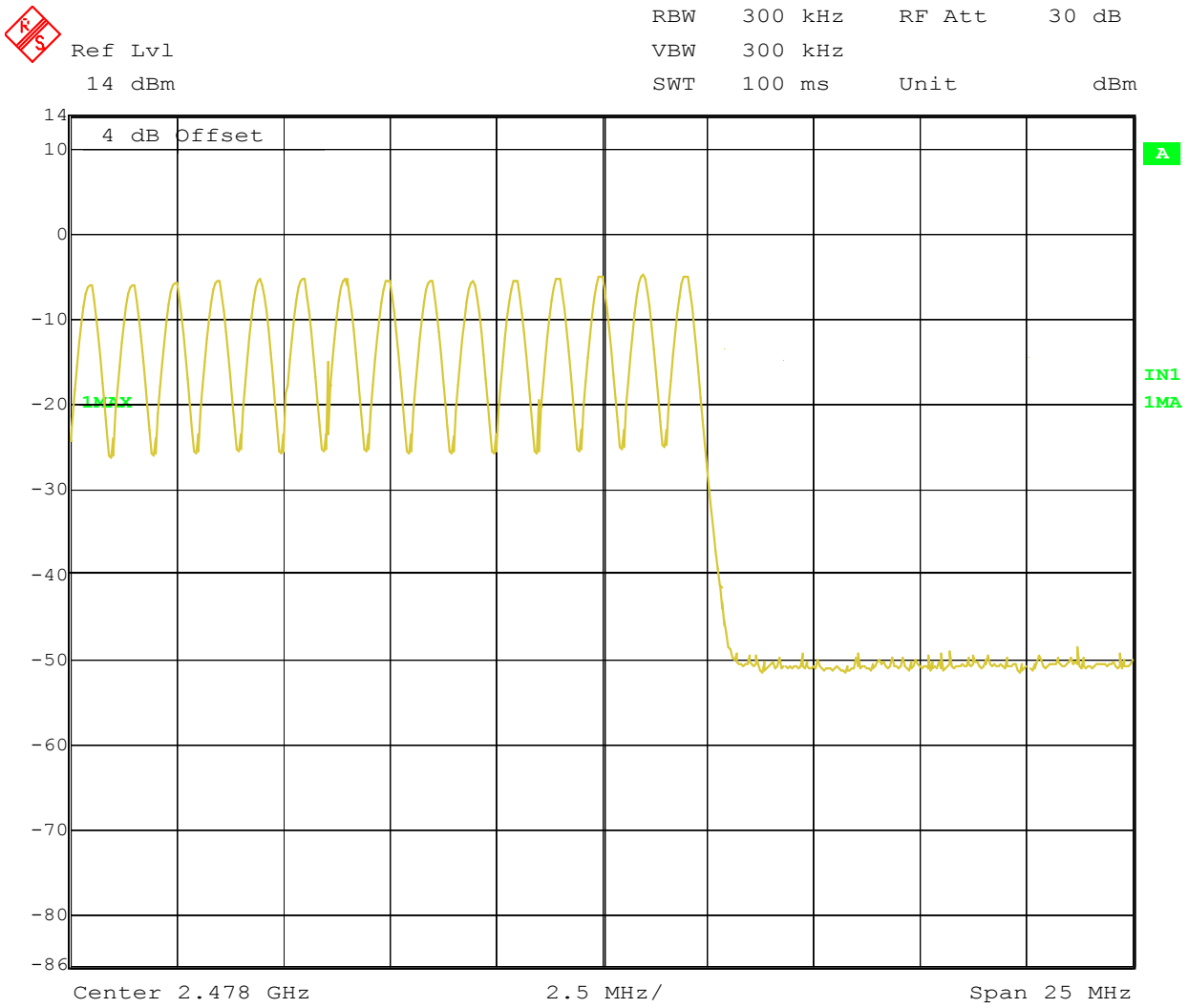
Title: NUMBER OF HOPPING FREQUENCIES (CH.: 0-13)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 17:55:58



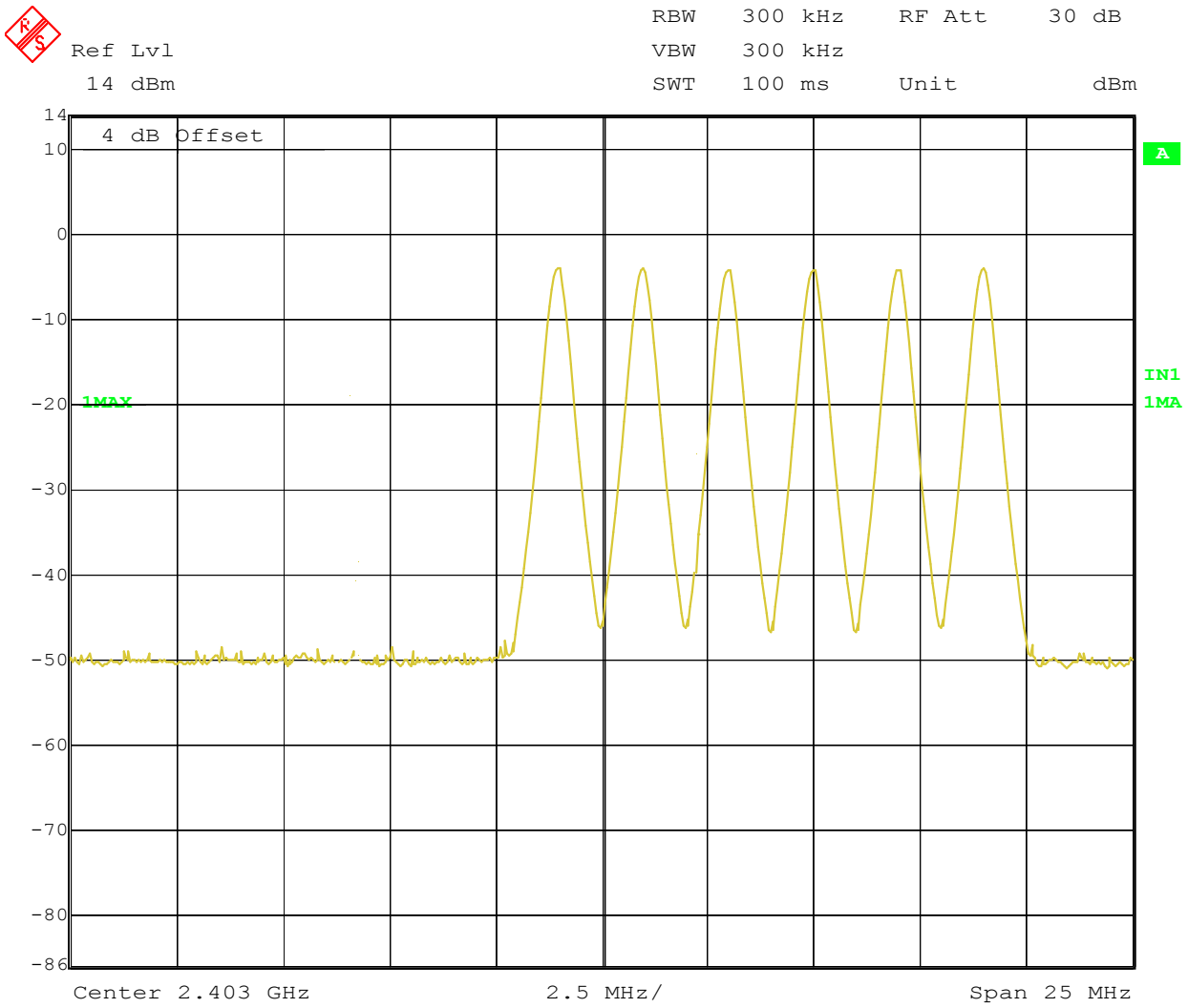
Title: NUMBER OF HOPPING FREQUENCIES (CH.: 14-38)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 17:57:52



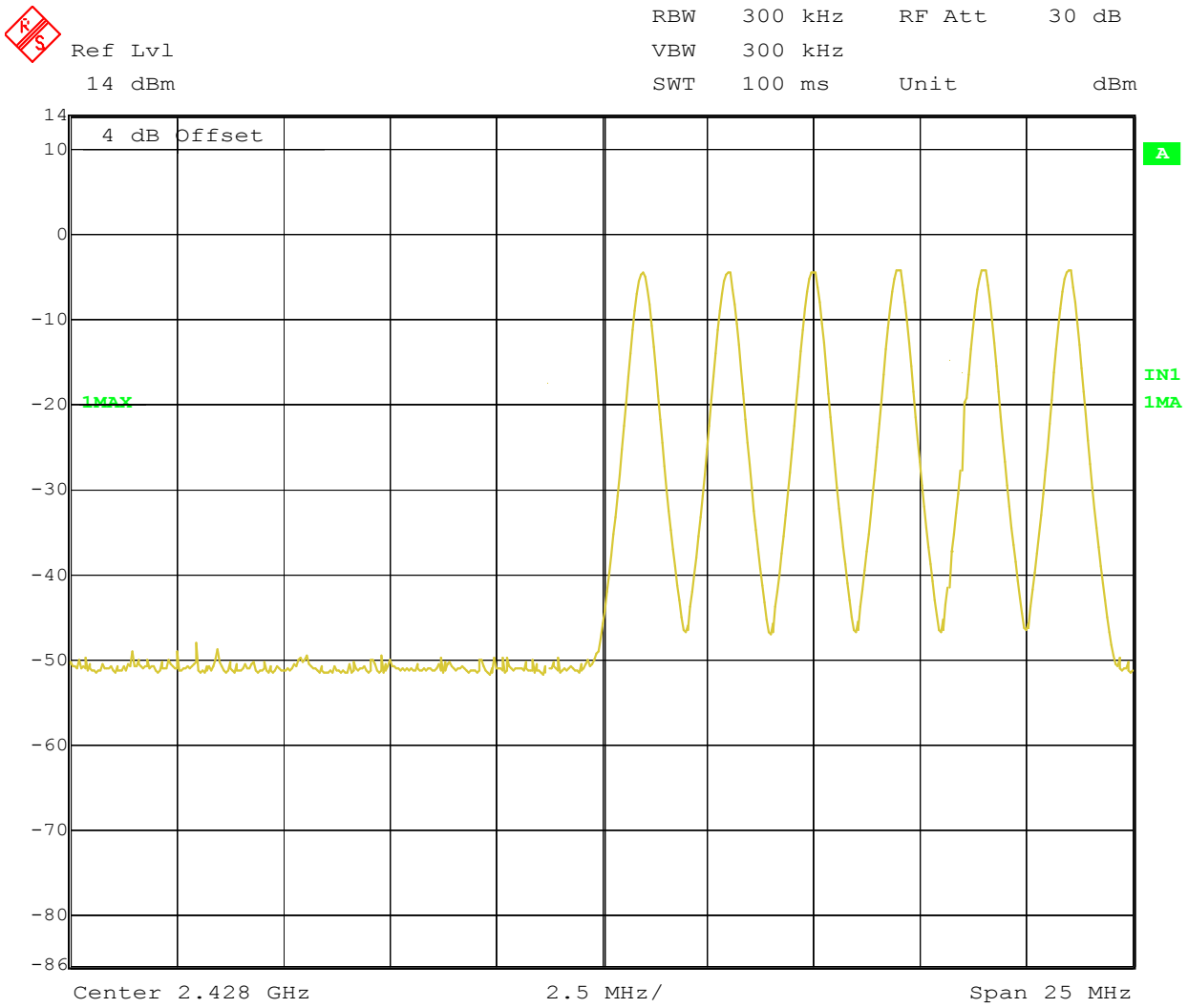
Title: NUMBER OF HOPPING FREQUENCIES (CH.: 39-63)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 17:59:12



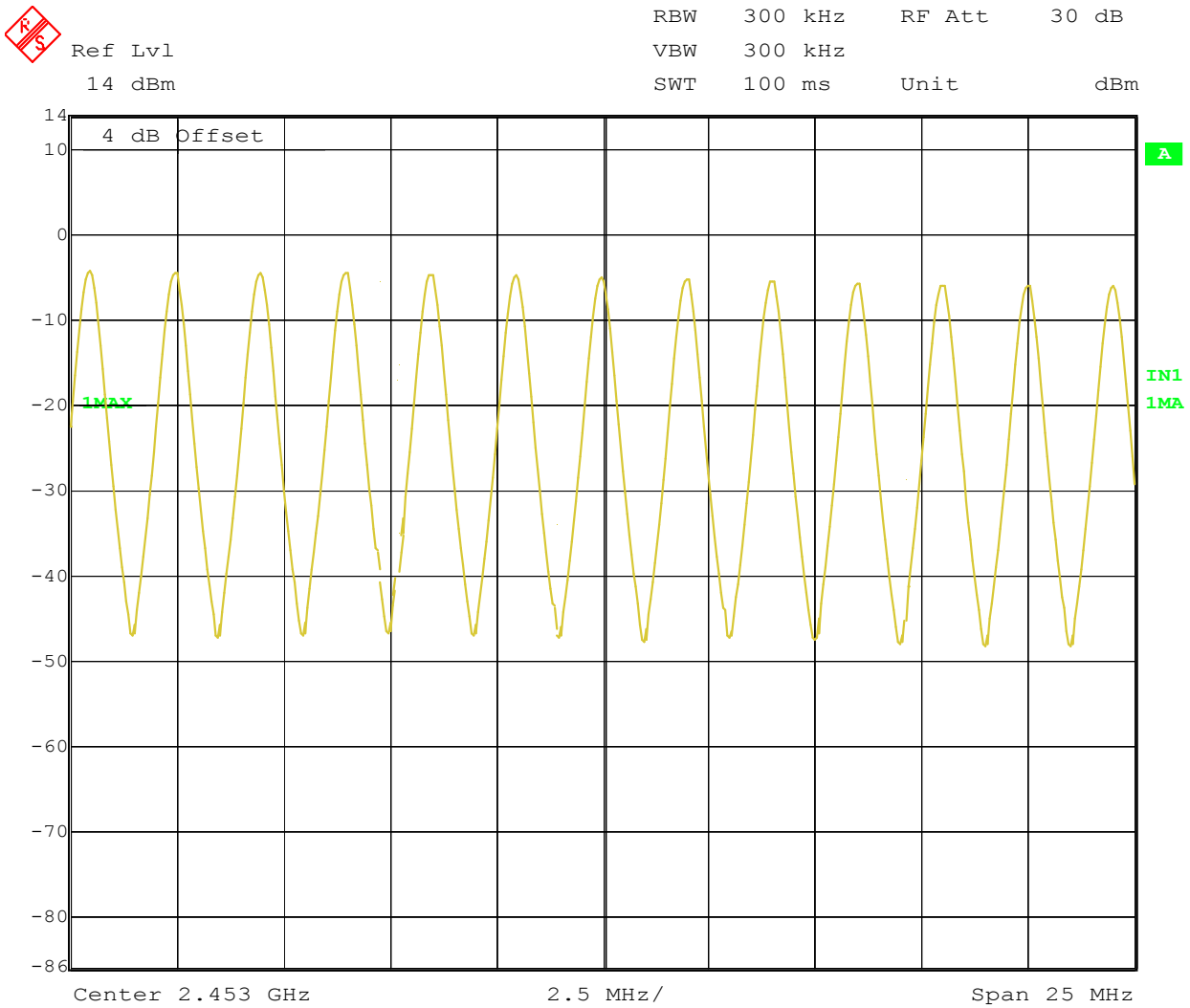
Title: NUMBER OF HOPPING FREQUENCIES (CH.: 64-78)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 18:00:28



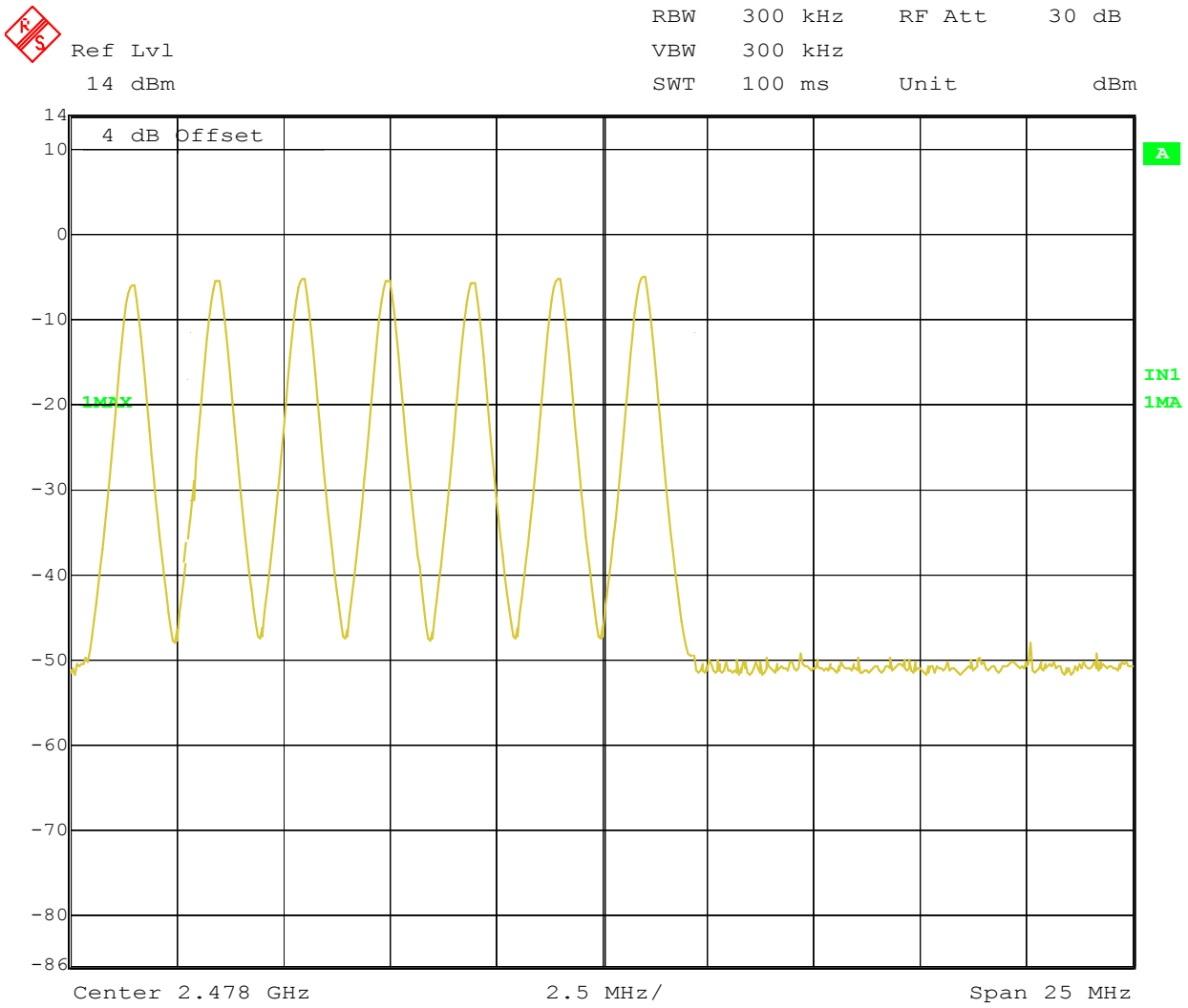
Title: NUMBER OF HOPPING FREQUENCIES (MASTER INQUIRY MODE)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 18:05:50



Title: NUMBER OF HOPPING FREQUENCIES (MASTER INQUIRY MODE)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 18:08:05



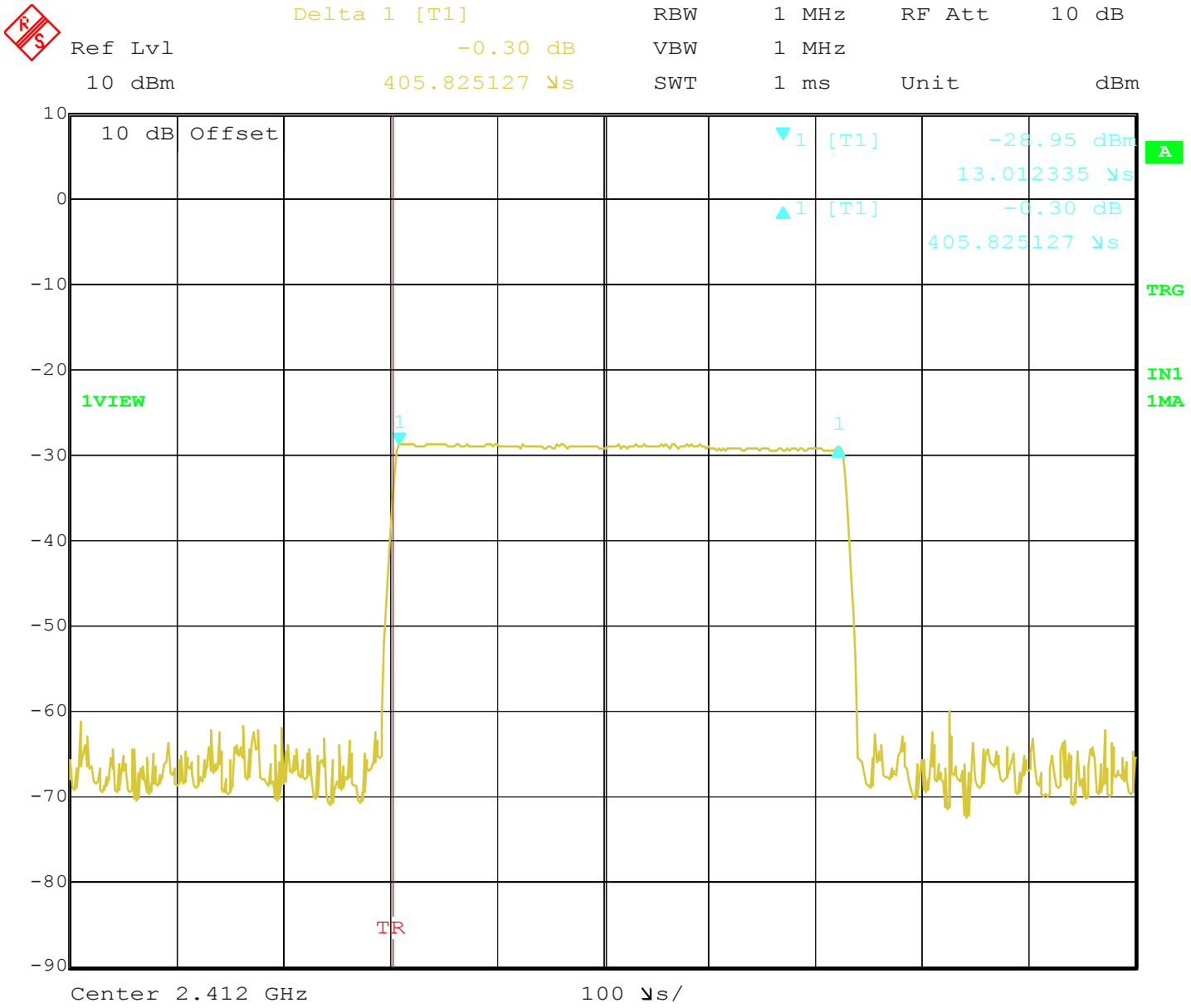
Title: NUMBER OF HOPPING FREQUENCIES (MASTER INQUIRY MODE)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 18:09:15



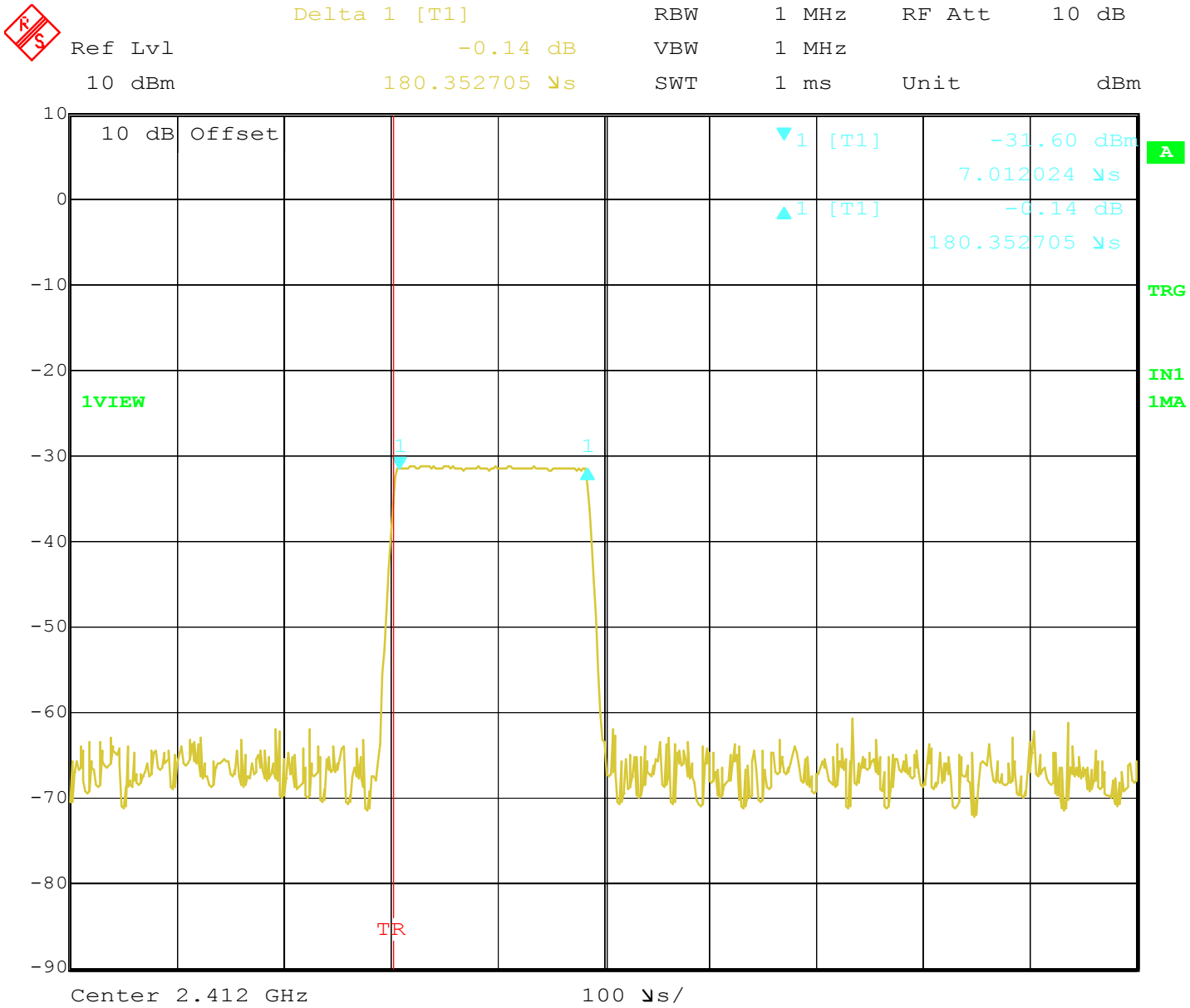
Title: NUMBER OF HOPPING FREQUENCIES (MASTER INQUIRY MODE)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 18:11:05

Appendix E

Time of Occupancy (Dwell Time)



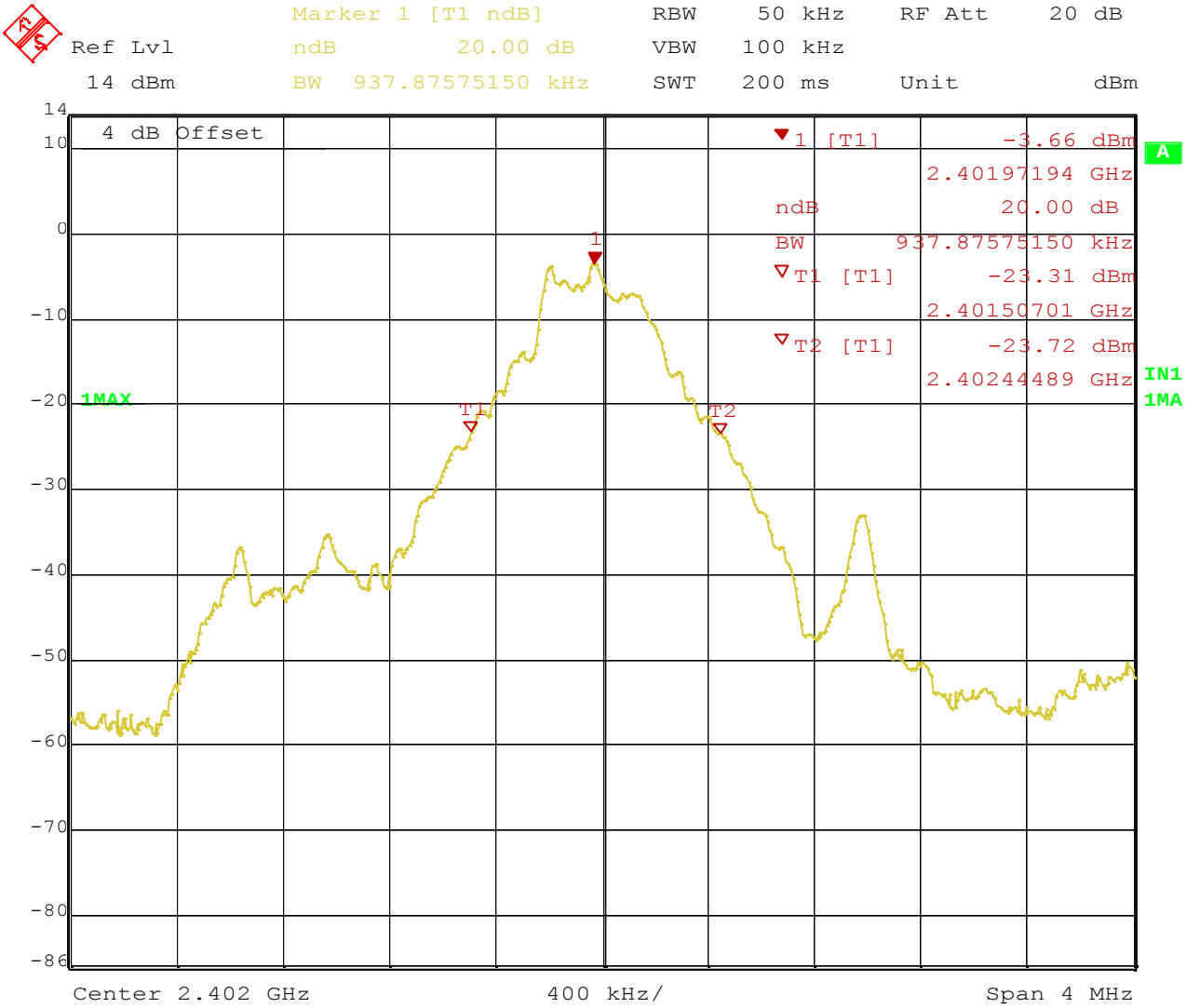
Title: Time of occupancy (Hopping Mode) 405.8us*450events=182.6ms
Comment A: J-Three International Holding
Date: 31.MAR.2005 08:43:44



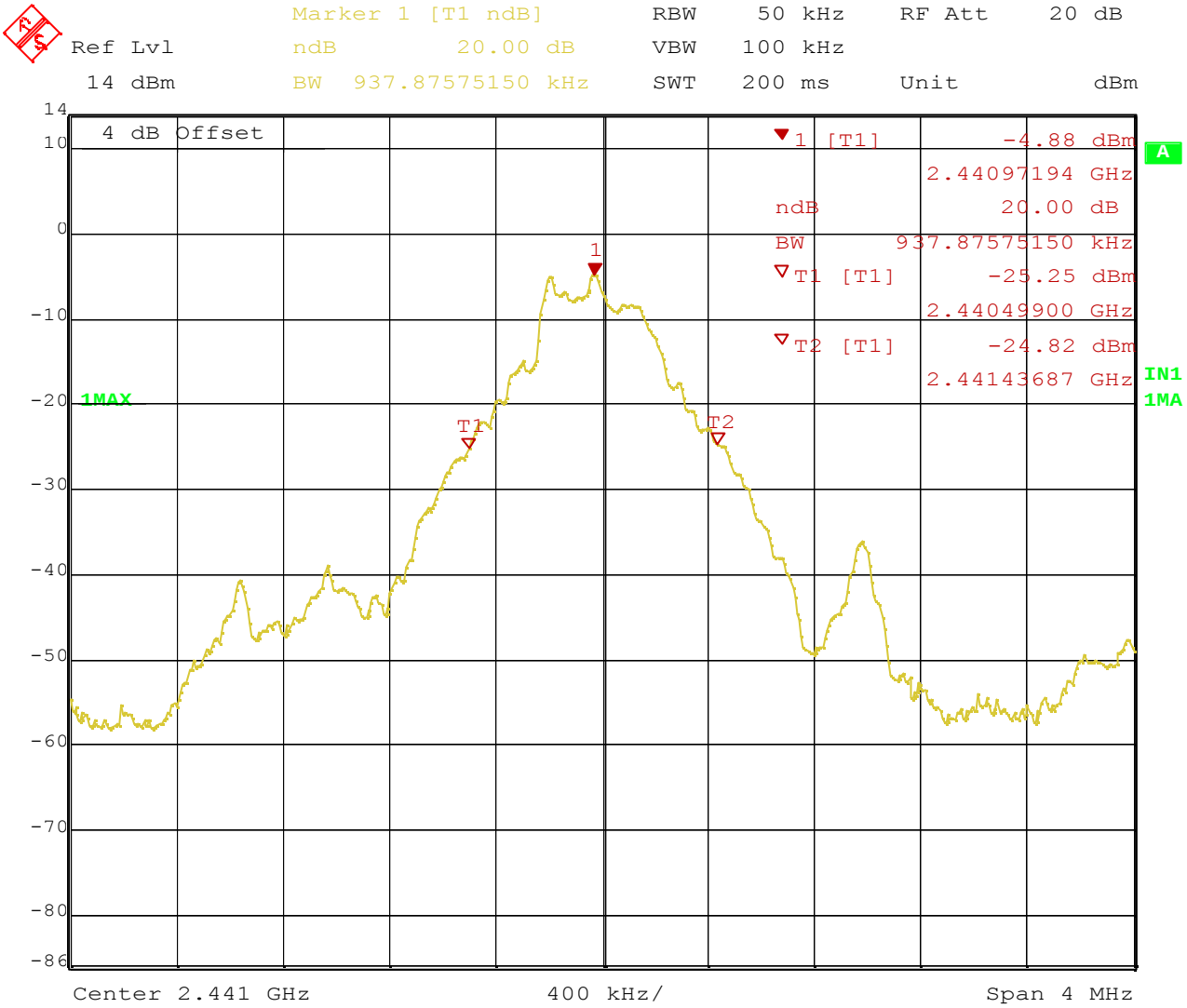
Title: Time of occupancy (Inquiry Mode)180.35us*470events=84.8ms
Comment A: J-Three International Holding
Date: 31.MAR.2005 18:46:05

Appendix F

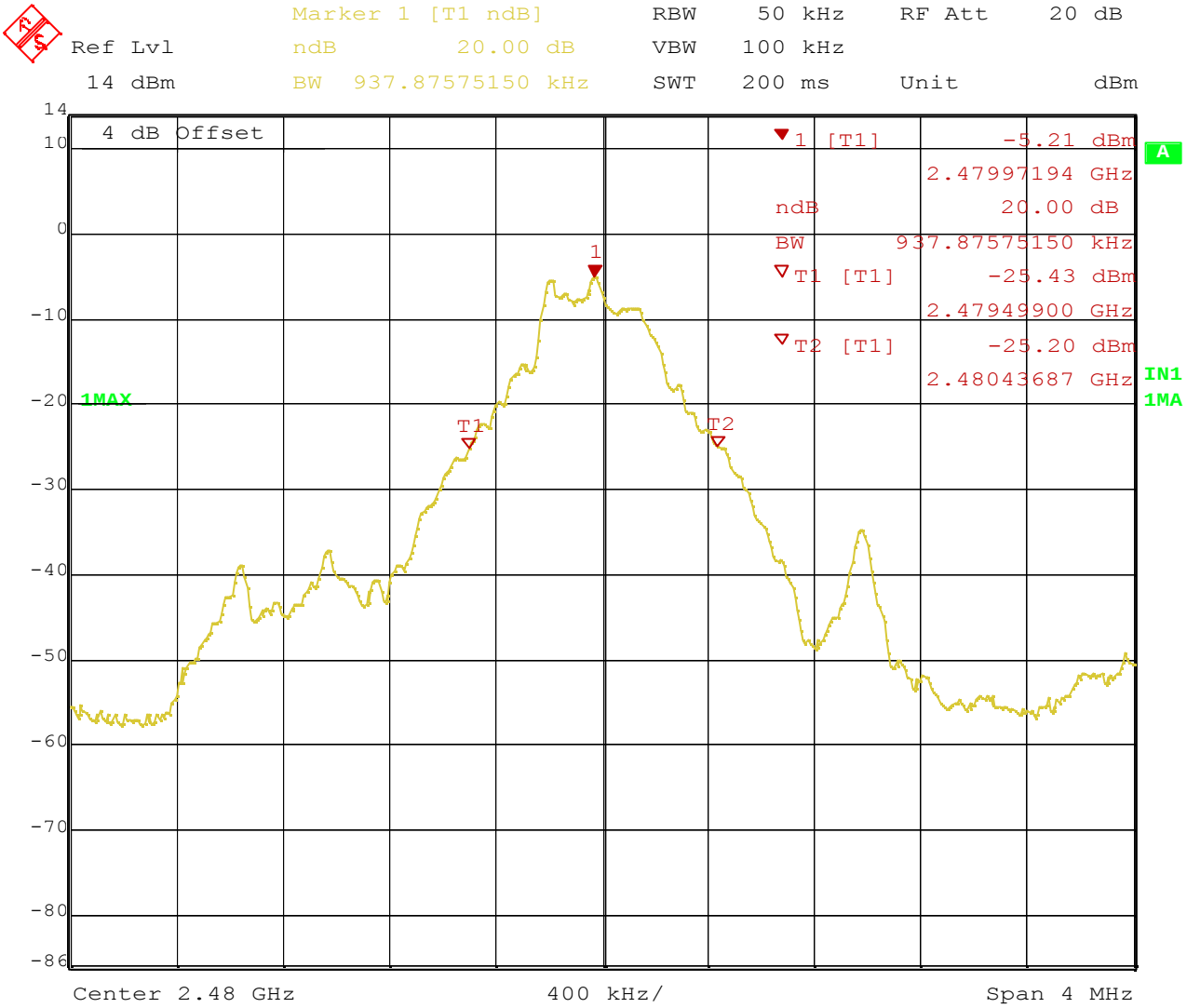
20dB Bandwidth



Title: 20dB BANDWIDTH CH 0
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 11:37:54



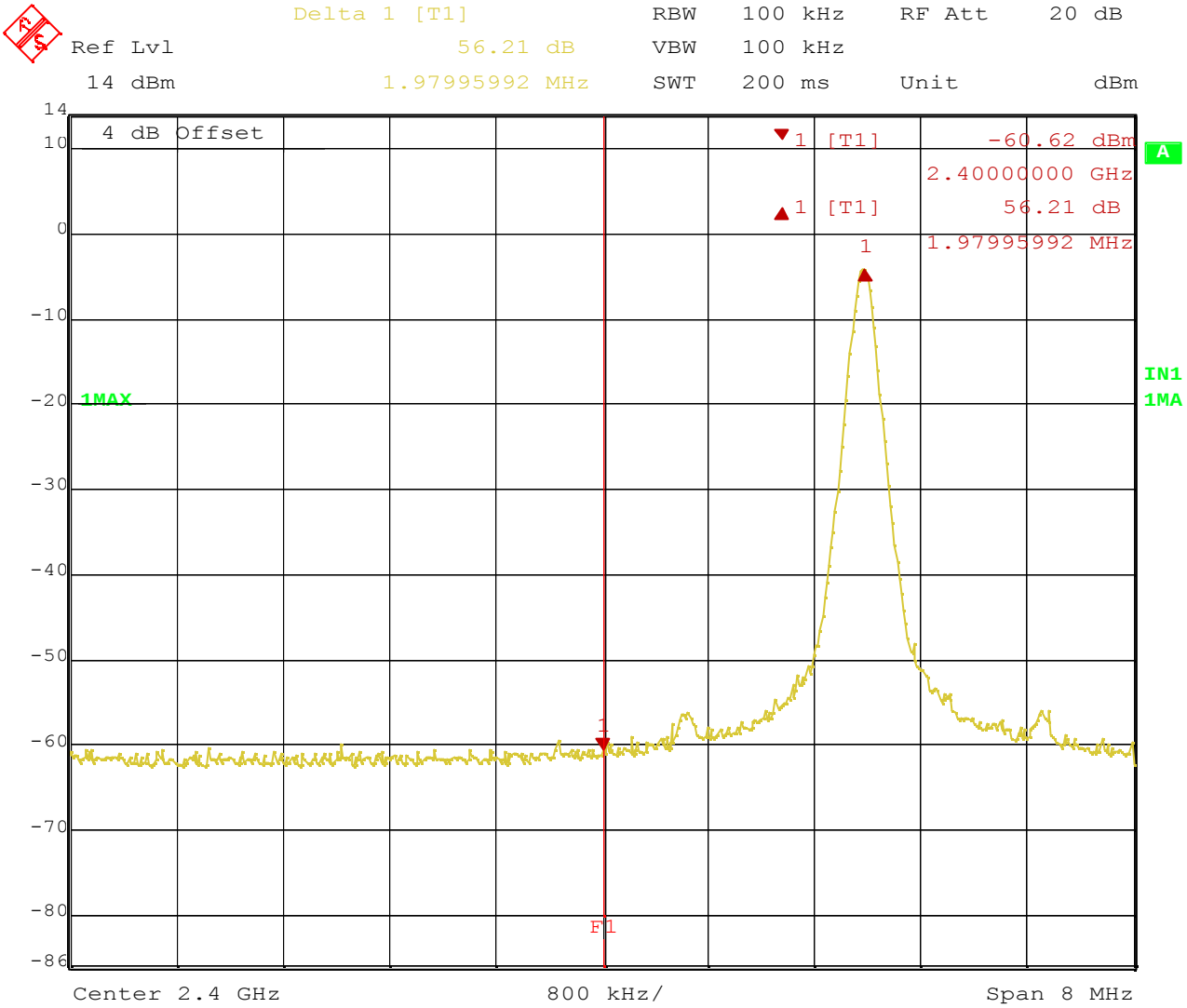
Title: 20dB BANDWIDTH CH39
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 11:37:08



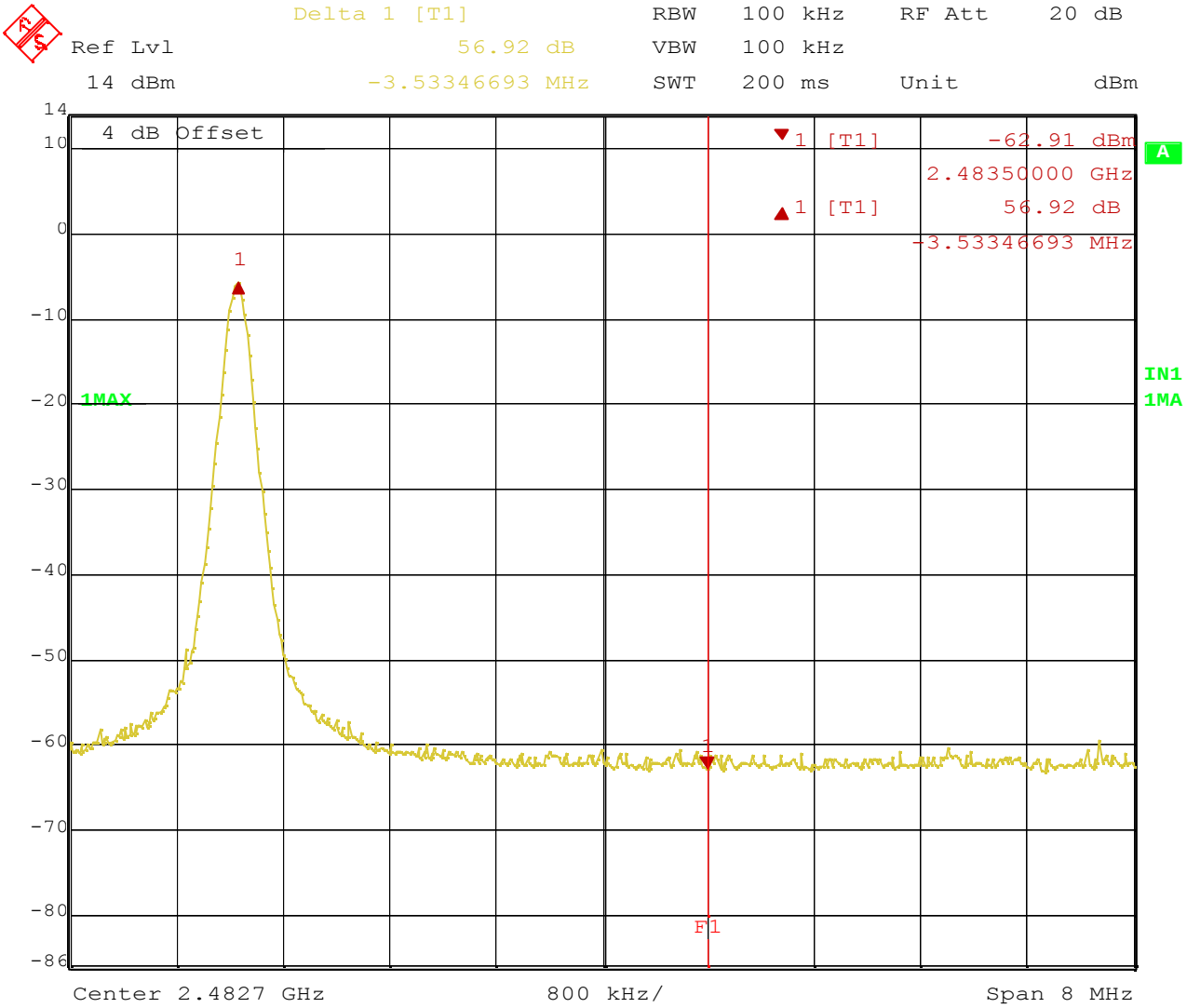
Title: 20dB BANDWIDTH CH78
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 11:36:31

Appendix G

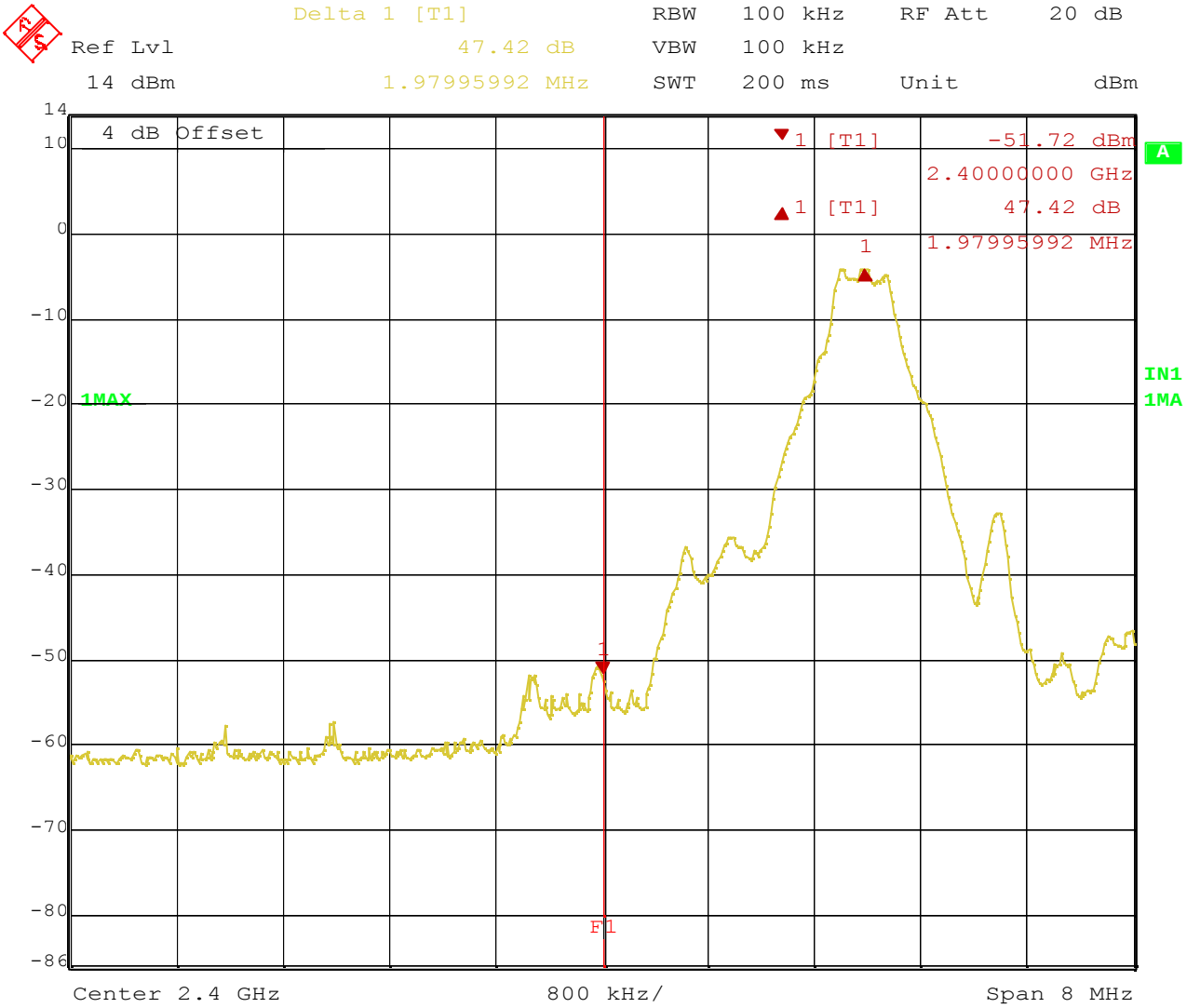
Band-edge Compliance of RF Conducted Emissions



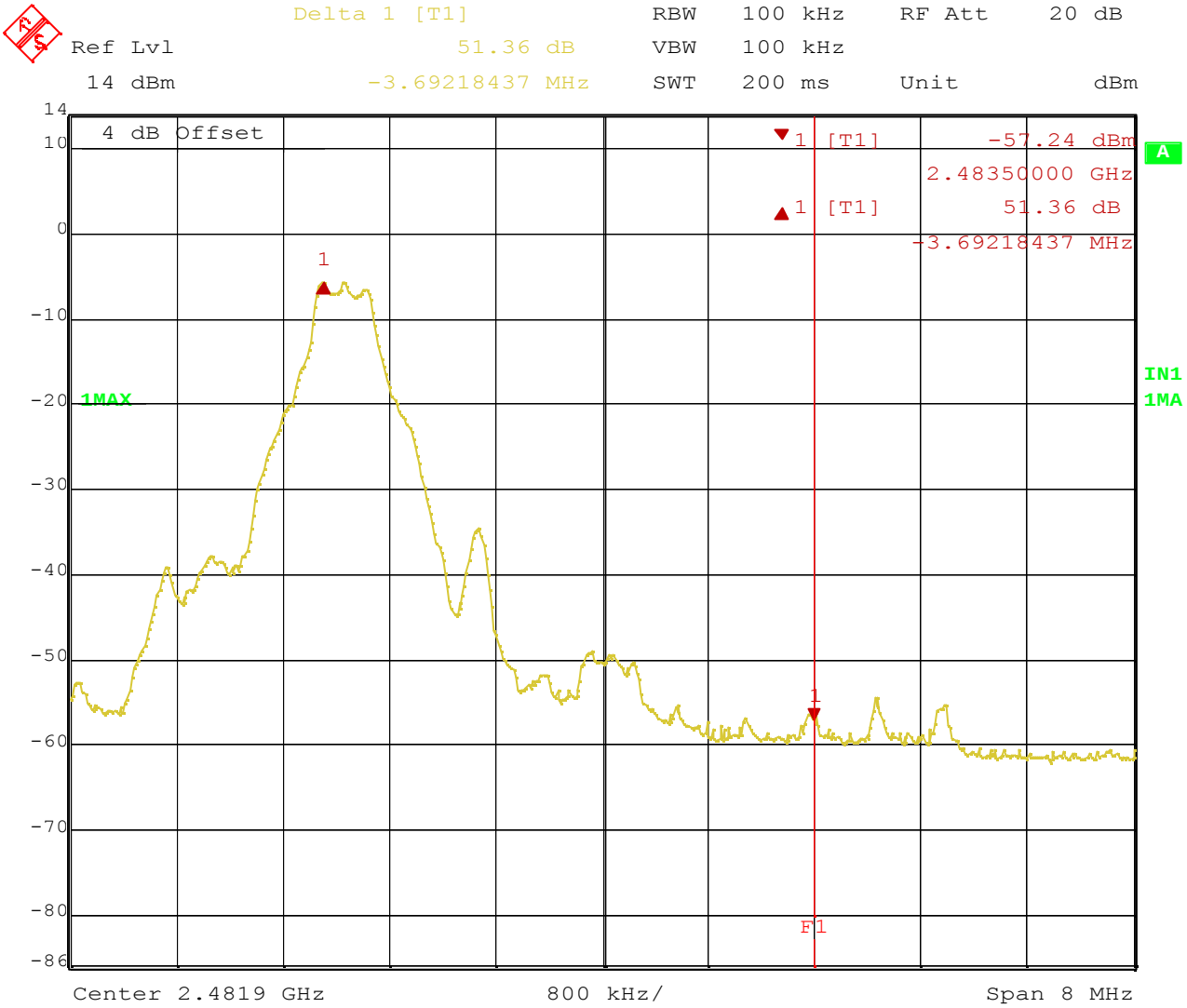
Title: BANDEDGE COMPLIANCE CH 0 (CONDUCT, SINGLE MODE)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 12:15:04



Title: BANDEDGE COMPLIANCE CH78 (CONDUCT, SINGLE MODE)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 12:15:55



Title: BANDEDGE COMPLIANCE CH 0 (CONDUCT, HOPPING MODE)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 12:13:59



Title: BANDEDGE COMPLIANCE CH78 (CONDUCT, HOPPING MODE)
Comment A: J-Three International Holding Co., Ltd.
Date: 31.MAR.2005 12:12:42

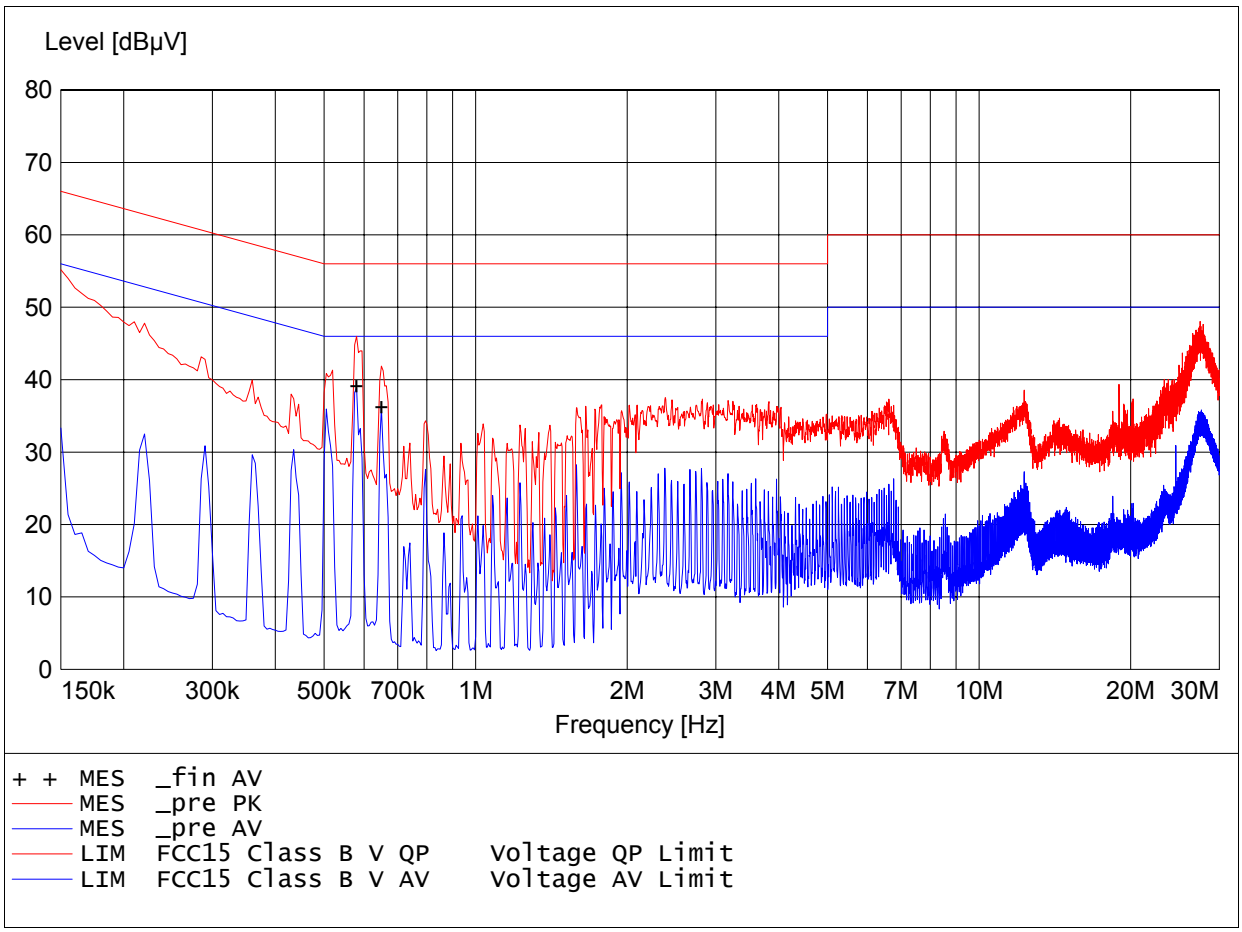
Appendix H

Power Line Conducted Emission

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

Class B

EUT:	BLUETOOTH USB ADAPTER
Manufacturer:	J-Three International Holding Co., Ltd.
Operating Condition:	Unom: 120 VAC (ac/dc adaptor) , Tnom: 23°C
Test Site:	ETS
Operator:	Orville Chang
Test Specification:	V-network: ESH3-Z5 L1
Comment:	model: BU-2061-J(Class II) mode: active



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

Class B

EUT:	BLUETOOTH USB ADAPTER
Manufacturer:	J-Three International Holding Co., Ltd.
Operating Condition:	Unom: 120 VAC (ac/dc adaptor) , Tnom: 23°C
Test Site:	ETS
Operator:	Orville Chang
Test Specification:	V-network: ESH3-Z5 L1
Comment:	model: BU-2061-J(Class II) mode: active

MEASUREMENT RESULT: "_fin AV"

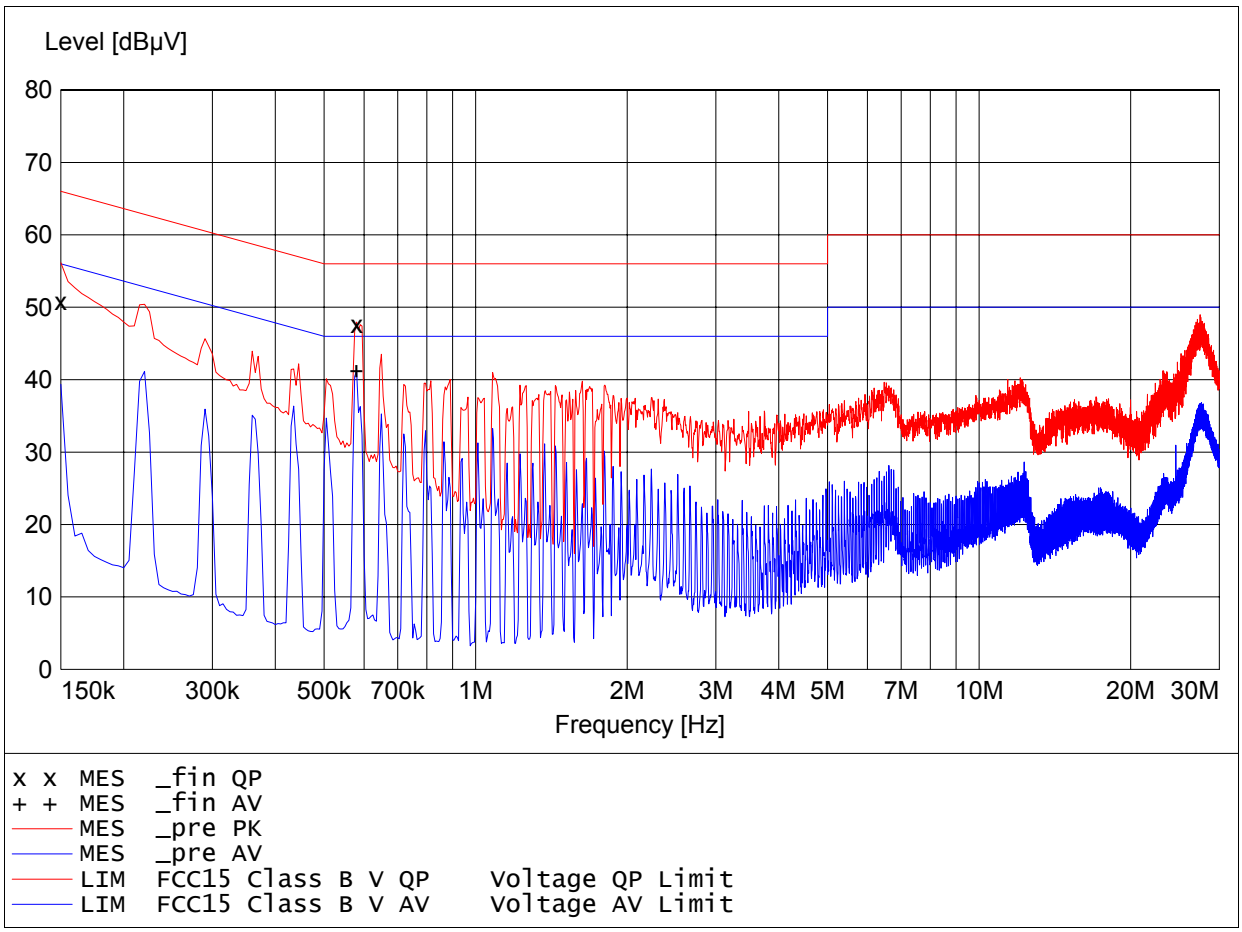
3/31/05 5:44PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.580000	39.10	10.0	46	6.9	---	---
0.650000	36.10	10.0	46	9.9	---	---

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

Class B

EUT:	BLUETOOTH USB ADAPTER
Manufacturer:	J-Three International Holding Co., Ltd.
Operating Condition:	Unom: 120 VAC (ac/dc adaptor) , Tnom: 23°C
Test Site:	ETS
Operator:	Orville Chang
Test Specification:	V-network: ESH3-Z5 L1
Comment:	model: BU-2061-J(Class II) mode: active



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

Class B

EUT:	BLUETOOTH USB ADAPTER
Manufacturer:	J-Three International Holding Co., Ltd.
Operating Condition:	Unom: 120 VAC (ac/dc adaptor) , Tnom: 23°C
Test Site:	ETS
Operator:	Orville Chang
Test Specification:	V-network: ESH3-Z5 L1
Comment:	model: BU-2061-J(Class II) mode: active

MEASUREMENT RESULT: "_fin AV"

3/31/05 6:03PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.580000	41.20	10.0	46	4.8	---	---

MEASUREMENT RESULT: "_fin QP"

3/31/05 6:03PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.150000	50.80	10.0	66	15.2	---	---
0.580000	47.60	10.0	56	8.4	---	---

Registration number: W6M20503-5777-P-15
FCC ID: QQGBU2061J

Appendix I

Pictures