EUROFINS PRODUCT SERVICE GMBH

Testing Cert #1983.01

TEST- REPORT

Compliance Test Report

FCC PART 15 SUBPART C
IC RSS 210 ISSUE 7

FCC ID: TUKMIR040

Medical device

spirodoc

TEST REPORT NUMBER: G0M21003-3001-P-15

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1 General Information

1.1 Notes

The results of this test report relate exclusively to the item tested as specified in chapter "Description of test item" and are not transferable to any other test items.

Eurofins Product Service GmbH is not responsible for any generalisations and conclusions drawn from this report. Any modification of the test item can lead to invalidity of test results and this test report may therefore be not applicable to the modified test item.

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Operator:

Date	Eurofins-Lab.	Name	Signature
07.05.2010		W. Treffke	

Technical responsibility for area of testing:

Date	Eurofins	Name	Signature
07.05.2010		J. Zimmermann	

1.2 Testing laboratory

EUROFINS PRODUCT SERVICE GMBH
Storkower Strasse 38c
D-15526 Reichenwalde b. Berlin
Germany
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DAR ACCREDITED TESTING LABORATORY
DAR-REGISTRATION NUMBER: DAT-P-268/08

RECOGNIZED NOTIFIED BODY EMC
REGISTRATION NUMBER: BNetzA-bS EMV-07/61

RECOGNIZED NOTIFIED BODY R&TTE
REGISTRATION NUMBER: BNetzA-bS-02/51-53

FCC FILED TEST LABORATORY
REG.-NO. 96970

A2LA ACCREDITED TESTING LABORATORY
CERTIFICATE NO. 1983.01

BLUETOOTH QUALIFICATION TEST FACILITY (BQTF)
ACCREDITED BY BLUETOOTH QUALIFICATION REVIEW BOARD

INDUSTRY CANADA FILED TEST LABORATORY
REG. NO. IC 3470

Test location, where different:

Name	: ./.
Street	: ./.
Town	: ./.
Country	: ./.
Telephone	: ./.
Fax	: ./.

1.3 Details of approval holder

Name	: MIR Medical International Research
Street	: Via del Maggiolino 125
Town	: Roma
Country	: Italy
Telephone	: +39 06 22754777
Fax	: +39 06 22754785
Contact	: Gerda van Houts
Telephone	: +39 06 22754777

1.4 Application details

Date of receipt of application	: 18.03.2010
Date of receipt of test item	: 18.03.2010
Date of test	: 19.04.2010 - 28.04.2010

1.5 Test item

Description of test item	: Medical device
Type identification	: spirodoc

Technical data

Frequency range	: 2400 - 2483.5MHz
Tested frequencies	: F_1 2402MHz
Tested frequencies	: F_2 2441MHz
Tested frequencies	: F_3 2480MHz
Antenna type	: internal
Antenna Gain	: 0dBi
Power supply	: 3.7VDC (Battery) 5V (USB link to notebook) 120V AC/DC Adapter (FW7333SM/0599)
Operating mode	: semi duplex
Modulation	: FHSS
Device classification	: Mobile Device (Human Body distance > 20 cm)

Manufacturer:
(if applicable)

Name	: MIR Medical International Research
Street	: Via del Maggiolino 125
Town	: Roma
Country	: Italy

1.6 Test standards

Technical standard	: **FCC PART 15 SUBPART C** **IC RSS 210 ISSUE 7**

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 2.4 were ascertained in the course of the tests performed. ☐

2.2 Test environment

Temperature	: 22	...	26°C
Relative humidity content	: 20	...	75%
Air pressure	: 86	...	103kPa

Extreme conditions parameters:

V_{nom}	:	3.7VDC
V_{min} (V_{nom}-15%)	:	3.0VDC
V_{max} (V_{nom}+15%)	:	4.2VDC
T_{nom}	:	25°C

2.3 Test equipment utilized

Measurement Equipment List			
No.	**Measurement device:**	**Type:**	**Manufacturer:**
ETS 0086	Semi-anechoic chamber	AC1	Frankonia
ETS 0271	Spectrum Analyzer	FSEK30	Rhode & Schwarz
ETS 0030	Biconical Antenna	HK 116	Rhode & Schwarz
ETS 0013	LPD Antenna	HL 223	Rhode & Schwarz
ETS 0019	Horn Antenna	BBHA 9120D	Schwarzbeck
ETS 0432	Amplifier-Matrix		
ETS 0259	Power Meter	NRVD	Rhode & Schwarz
ETS 0278	Power Sensor	NRV-Z31	Rhode & Schwarz
ETS 0496	Spectrum Analyzer	FSP30	Rhode & Schwarz
ETS 0543	CBT Bluetooth Tester	CBT	Rhode & Schwarz

2.4 Test results

☒ 1st test ☐ test after modification ☐ production test

Test case	Subclause	Required	Test passed	Test failed
INFORMATIONAL TRANSMITTER PARAMETERS				
Occupied Bandwidth	IC RSS-Gen. 4.6.1	☒		
TRANSMITTER PARAMETERS				
20dB Bandwidth	FCC § 15.247(a)(1) IC RSS-210 § A8.1	☒	☒	☐
Frequency hopping channel number	FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1	☒	☒	☐
Frequency hopping channel spacing	FCC § 15.247(a)(1) IC RSS-210 § A8.1	☒	☒	☐
Time of occupancy (dwell time)	FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1	☒	☒	☐
Maximum peak conducted output power	FCC § 15.247(b) IC RSS-210 § A8.4	☒	☒	☐
Maximum peak e.i.r.p. output power	FCC § 15.247(b) IC RSS-210 § A8.4	☒	☒	☐
Band-edge Compliance	FCC § 15.247(d) IC RSS-210 § A8.5	☒	☒	☐
Conducted spurious emissions	FCC § 15.247(d) IC RSS-210 § A8.5	☒	☒	☐
Radiated spurious emissions	FCC § 15.247(d) FCC § 15.209 IC RSS-210 § A8.5 IC RSS-Gen § 4.9	☒	☒	☐
RECEIVER PARAMETERS				
Radiated spurious emissions	FCC § 15.109 IC RSS-Gen § 4.10 IC RSS-Gen § 7.2.3	☐	☐	☐
POWER LINE PARAMETERS				
AC power line conducted emissions	FCC § 15.207 IC RSS-Gen. 7.2.2	☒	☒	☐

3 Informational Transmitter parameters

3.1 Transmitter Modes for conformance testing

The following transmission modes are elected for compliance testing.

TEST MODE DH5	
Conditions	
Spread Spectrum :	☒ Yes ☐ No
Spreading Technique :	FHSS
Modulation :	GFSK
Packet Type :	DH5
Data rate :	1Mbps
Duty Cycle :	47%

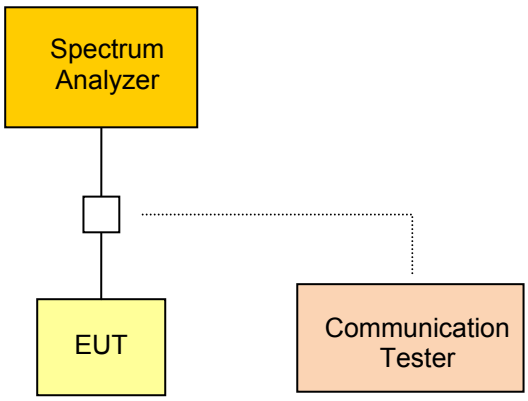
TEST MODE 3-DH5	
Conditions	
Spread Spectrum :	☒ Yes ☐ No
Spreading Technique :	FHSS
Modulation :	8-DPSK
Packet Type :	3-DH5
Data rate :	3Mbps
Duty Cycle :	47%

TEST MODE 2-DH5	
Conditions	
Spread Spectrum :	☒ Yes ☐ No
Spreading Technique :	FHSS
Modulation :	π/4-DQPSK
Packet Type :	2-DH5
Data rate :	2Mbps
Duty Cycle :	47%

3.2 Occupied Bandwidth

According RSS-Gen Section 4.6.1 the 99% emission bandwidth occupied by the modulated transmitted signal has to be reported as calculated or measured.

3.2.1 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode (using a communication tester if needed) with maximum power under normal test conditions. The span of the analyzer is set wide enough to capture all significant emissions of the modulation spectrum. The resolutions bandwidth is set as close as possible to 1% of the selected span without being below 1%. The occupied bandwidth is than measured evaluated by an internal measurement procedure of the analyzer.

3.2.2 Results

Transmitter occupied bandwidth			
Measurement Conditions			
Power occupation :		99%	
Channel [MHz]	**Lower edge frequency [MHz]**	**Upper edge frequency [MHz]**	**Occupied Bandwidth [MHz]**
Test mode 3-DH5			
2402	2401.31	2402.57	1.26
2441	2440.31	2441.58	1.27
2480	2479.31	2480.58	1.27
See attached diagram in Annex			
Verdict			**PASS**

4 Transmitter parameters

4.1 20dB Bandwidth

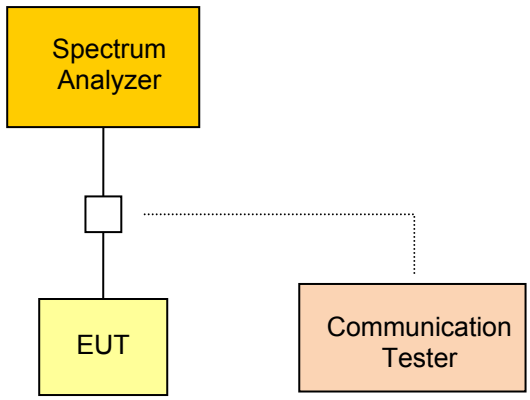
According FCC rules 47 CFR 15.247(a)(1) and RSS-210 Section A8.1 the 20dB Bandwidth determines the necessary carrier spacing used in the frequency hopping system.

4.1.1 Limits

According FCC and IC rules frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

20dB Bandwidth limits	
Output Power	**20dB Bandwidth Limit**
≤ 125mW / 21dBm	1.5 * carrier spacing
125mW – 1W / 21 – 30dBm	1.0 * carrier spacing

4.1.2 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode (using a communication tester if needed) with maximum power under normal test conditions. The resolution bandwidth is set to 1% of the 20dB bandwidth of the emission spectrum (VBW≥RBW). The center frequency is set to the hopping channel center frequency. The span of the analyzer is set to 2 -3 times the 20dB bandwidth. The bandwidth is determined using markers with peak detector and max hold.

According to 47 CFR 15.31 battery power equipment is measured using new batteries and equipment using external power supply is measured with 85%, 100% and 115% of the nominal rated supply voltage.

4.1.3 Results

20dB Bandwidth		
Measurement Conditions		
Max. output power :	-8.3dBm	
Carrier spacing :	1MHz	
Channel [MHz]	**20dB Bandwidth [MHz]**	**Bandwidth Limit [MHz]**
Test mode DH5		
2402	0.930	1.5
2441	0.939	1.5
2480	0.939	1.5
Test mode 3-DH5		
2402	1.331	1.5
2441	1.322	1.5
2480	1.353	1.5
Test mode 2-DH5		
2402	1.335	1.5
2441	1.335	1.5
2480	1.335	1.5
See attached diagrams in Annex		
Measurement uncertainty		4.22dB
Verdict		**PASS**

4.2 Frequency hopping channel number

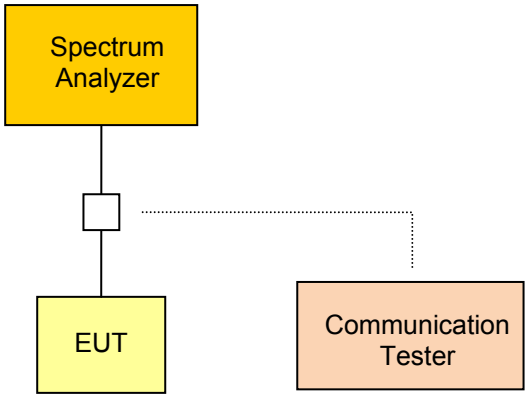
According FCC rules 47 CFR 15.247(a)(1)(iii) and RSS-210 Section A8.1 the number of hopping channels used, determines if the system can be certified as a hopping system and also the power level the system can use.

4.2.1 Limits

According FCC and IC rules frequency hopping systems shall use a minimum of 15 hopping channels. If the hopping system uses at least 75 hopping channels, the maximum conducted output power can be increased from 0.125W to 1W.

Frequency hopping channel number limits	
Max. conducted output Power	**Minimum number of channels**
≤ 125mW / 21dBm	15
125mW – 1W / 21 - 30dBm	75

4.2.2 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode (using a communication tester if needed) with hopping activated. The resolution bandwidth is set to 1% of the span (VBW≥RBW) and the span is set to 2400 – 2483.5MHz. The power level is measured with peak detector and max hold.

4.2.3 Results

Number of hopping channels		
Measurement Conditions		
Test mode :	DH5	
Max. output power :	-8.3dBm	
Number of channels	**Hopping channel limit**	
79	15	
See attached diagrams in Annex		
Measurement uncertainty		4.22dB
Verdict		**PASS**

4.3 Frequency hopping channel spacing

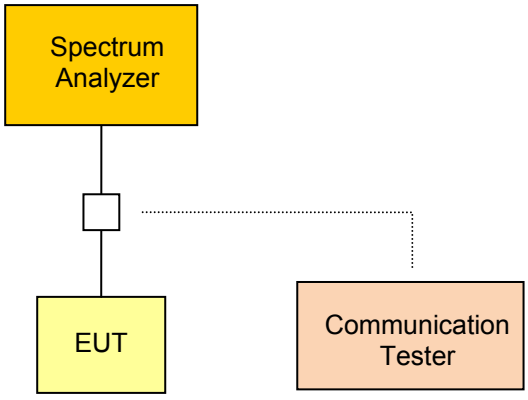
According FCC rules 47 CFR 15.247(a)(1) and RSS-210 Section A8.1 the minimum hopping channel frequency spacing is correlated to the 20dB bandwidth of the hopping channel emission and and maximum peak output power.

4.3.1 Limits

According FCC and IC rules frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Frequency hopping channel spacing limits	
Max. conducted output Power	**Minimum hopping channel spacing**
≤ 125mW / 21dBm	≥ 25kHz or ⅔ of 20dB bandwidth
125mW – 1W / 21 – 30dBm	≥ 25kHz or 20dB bandwidth

4.3.2 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode (using a communication tester if needed) with hopping activated. The resolution bandwidth is set to 1% of the span (VBW≥RBW) and the span is set wide enough to capture two adjacent channels. The power level is measured with peak detector and max hold.

4.3.3 Results

Frequency hopping channel spacing		
Measurement Conditions		
Test mode :	DH5	
Tested channels :	2441MHz / 2442MHz	
Max. output power :	-8.3dBm	
Channel spacing [kHz]	**Channel spacing limit [kHz]**	
1000.8	⅔ * 939 = 626	
See attached diagrams in Annex		
Measurement uncertainty		4.22dB
Verdict		**PASS**

4.4 Time of occupancy (Dwell time)

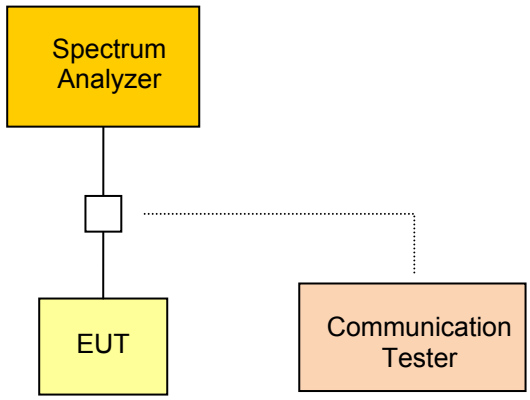
According FCC rules 47 CFR 15.247(a)(1)(iii) and RSS-210 Section A8.1 the average time of occupancy on any channel is limited.

4.4.1 Limits

According FCC and IC rules the average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

Frequency hopping channel number limits	
Dwell time limit	**Channel occupancy period**
0.4s	0.4 * Number of hopping channels

4.4.2 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode (using a communication tester if needed) with hopping activated. The resolution bandwidth is set to 1MHz (VBW≥RBW) and the span is set to zero centered on a hopping channel. The sweep time is set large enough to capture the dwell time. The power level is measured with peak detector and max hold.

4.4.3 Results

Time of occupancy (Dwell time)	
Measurement Conditions	
Test mode :	DH5
Tested channel :	2441
Number of hopping channels :	79
Time of occupancy	**Channel occupancy periode**
63 * 2.915ms = 0.184s	31.6s
See attached diagrams in Annex	
Measurement uncertainty	4.22dB
Verdict	**PASS**

4.5 Maximum peak conducted output power

According FCC rules 47 CFR 15.247(b)(1) and RSS-210 Section A8.4 the maximum peak conducted output power is limited and has be verified.

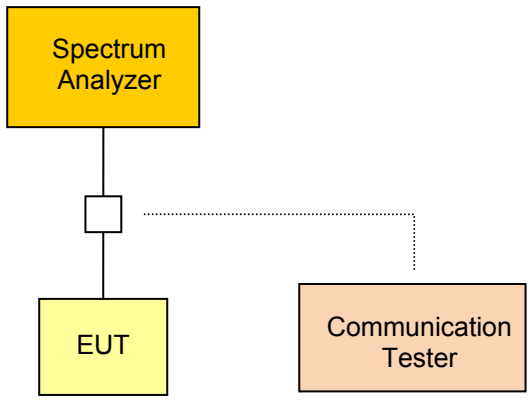
4.5.1 Limits

For frequency hopping systems operating in the band 2400-2483.5 MHz employing at least 75 hopping channels, the maximum peak conducted output power shall not exceed 1 W; for all other frequency hopping systems in the band, the maximum peak conducted output power shall not exceed 0.125 W.

Transmitter spurious emission limits	
Number of Hopping Channels	**Conducted Power Limit**
≥ 75	1W (30dBm)*
15 - 74	125mW (21dBm)*

*) The conducted output power limit specified above is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.5.2 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode (using a communication tester if needed) with maximum power under normal test conditions. The resolution bandwidth is set higher than the 20dB Bandwidth of the emission spectrum (VBW≥RBW). The span of the analyzer is set larger than 5 times the resolution bandwidth. The maximum power emitted by the EUT is measured using peak detector and max hold.

According to 47 CFR 15.31 battery power equipment is measured using new batteries and equipment using external power supply is measured with 85%, 100% and 115% of the nominal rated supply voltage.

4.5.3 Results

Maximum peak conducted output power		
Measurement Conditions		
Antenna gain :	0dBi	
Power correction :	0dB	
Number of Hopping channels :	79	
Channel [MHz]	**Conducted ouput power [dBm]**	**Power Limit [dBm]**
Test mode DH5		
2402	-9.5	30
2441	-9.5	30
2480	-8.7	30
Test mode 3-DH5		
2402	-9.3	30
2441	-9.3	30
2480	-8.3	30
Test mode 2-DH5		
2402	-9.2	30
2441	-9.4	30
2480	-8.5	30
See attached diagrams in Annex		
Measurement uncertainty		4.22dB
Verdict		**PASS**

4.6 Maximum e.i.r.p. output power

According FCC rules 47 CFR 15.247(b)(1) and RSS-210 Section A8.4 the maximum peak e.i.r.p. conducted output power is limited and has be verified.

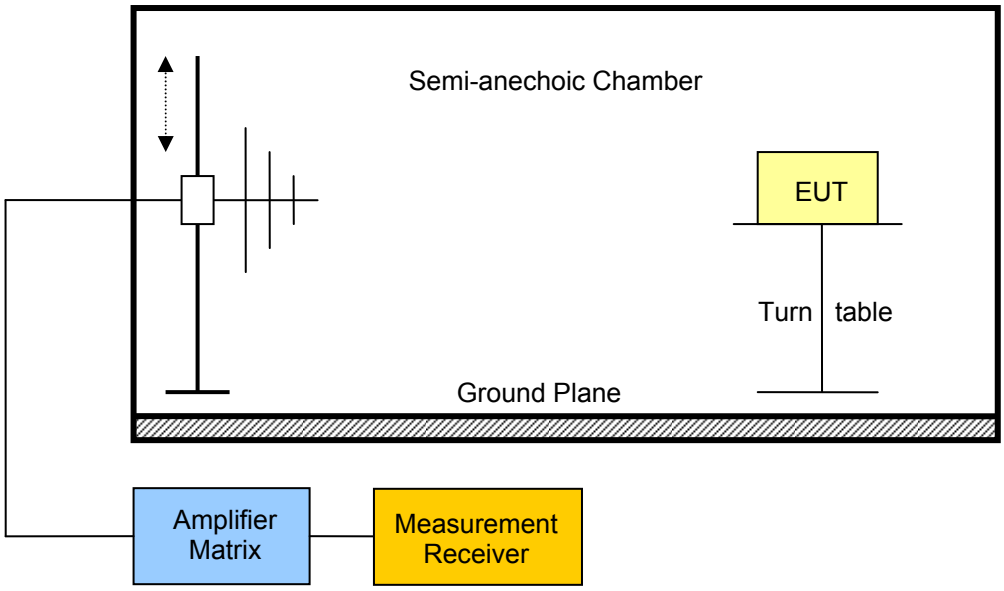
4.6.1 Limits

According to the FCC Rules the conducted output power limit specified is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in the table, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi. This translates to the following e.i.r.p. power limits.

Transmitter spurious emission limits	
Number of Hopping Channels	**E.I.R.P. Power Limit**
≥ 75	4W e.i.r.p. (36dBm e.i.r.p.)
15 - 74	500mW e.i.r.p. (27dBm e.i.r.p.)*

*) According RSS-210 the e.i.r.p. output power is generally limited to 4W (36dBm) without limit on the number of hopping channels.

4.6.2 Measurement procedure



The EUT is placed on a table in a semi-anechoic chamber. The EUT is actived with the transmission modes stated in the test report. The emission level of all emission up to the 10th harmonic is scanned. In the frequency range below 1GHz a resolution bandwidth of 100kHz is used and above 1GHz a resolution bandwidth of 1MHz is used. To obtain the peak emission level the EUT is rotated through 360° and the hight of the measurement antenna changed. All emission that come to within 20dB of the limit line are recorded.

Alternate validation procedure

Alternatively the e.i.r.p. power is calculated form the declared antenna gain and the measured maximum peak conducted output power.

Which method has been used is stated in the result table.

4.6.3 Results

Maximum e.i.r.p. output power		
Measurement Conditions		
Validation methode :	☐ Measurement ☒ Alternate	
Antenna gain :	0dBi	
Channel [MHz]	**E.I.R.P. output power [dBm e.i.r.p.]**	**E.I.R.P. Power Limit [dBm e.i.r.p.]**
Test mode DH5		
2402	-9.5	36
2441	-9.5	36
2480	-8.7	36
Test mode 3-DH5		
2402	-9.3	36
2441	-9.3	36
2480	-8.3	36
Test mode 2-DH5		
2402	-9.2	36
2441	-9.4	36
2480	-8.5	36
See attached diagrams in Annex		
Measurement uncertainty		4.22dB
Verdict		**PASS**

4.7 Transmitter band-edge compliance

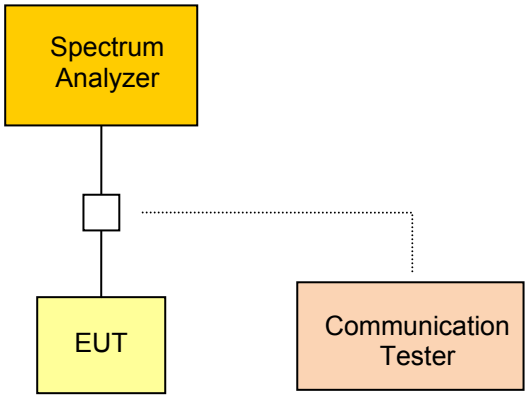
According FCC rules 47 CFR 15.209, 15.247(d) and RSS-210 Section A8.5 the emission level of out-of-band emissions are limited and has be to cvalidated.

4.7.1 Limits

The emission limit of out of band emission in any 100kHz bandwidth outside the frequency band in which the spread spectrum device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits (see "Transmitter spurious emissions"-measurement) is not required.

Transmitter band-edge emission limits	
TX-Power Detector	**Out of band attenuation**
Peak	-20dBc/100kHz
RMS	-30dBc/100kHz

4.7.2 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode (using a communication tester if needed) without hopping with maximum power under normal test conditions. The span of the analyzer is set large enough to capture the maximum emission within the emission band as well as any modulation product which fall outside the authorized band of operation. The resolution bandwidth is set to 1% of the span (VBW≥RBW). The

A marker is set on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Using the delta-marker function the highest peak of of the in-band emission is measured.

The same measurement procedure is repeated in hopping mode.

4.7.3 Results

Transmitter band-edge emissions		
Measurement Conditions		
Power mode :	Peak	
Mode	**Lower edge emission [dBc]**	**Upper edge emission [dBc]**
Test mode DH5		
Hopping	-44.79	-48.20
Single	-44.37	-47.93
Test mode 3-DH5		
Hopping	-39.92	-48.27
Single	-39.29	-47.69
Test mode 2-DH5		
Hopping	-38.25	-46.84
Single	-38.33	-46.47
See attached diagram in Annex		
Verdict		**PASS**

4.8 Transmitter conducted spurious emissions

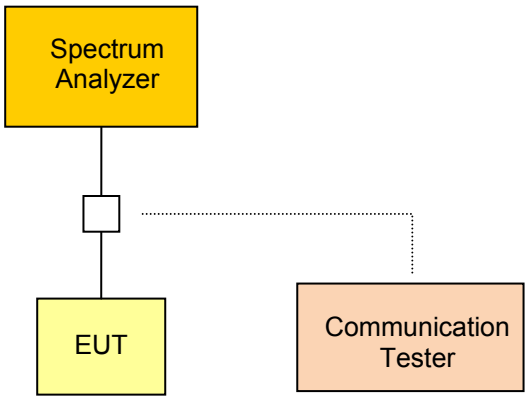
According FCC rules 47 CFR 15.247(d) and RSS-210 Section A8.5 unwanted emissions in the spurious domain are power limited and has to be validated.

4.8.1 Limits

The emission limit of out of band emission in any 100kHz bandwidth outside the frequency band in which the spread spectrum device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits (see "Transmitter radiated spurious emissions"-measurement) is not required.

Transmitter band-edge emission limits	
TX-Power Detector	**Out of band attenuation**
Peak	-20dBc/100kHz
RMS	-30dBc/100kHz

4.8.2 Measurement procedure



The EUT is connected to a spectrum analyzer and set to transmission mode with maximum power under normal test conditions. The span of the analyzer is set large enough to capture the maximum emission within the emission band as well as any spurious emission outside the authorized band of operation. The resolution bandwidth is set to 100kHz (VBW≥RBW). The emissions are measured using peak detector and max hold.

The measurement is performed over the frequency range of 30MHz up to the tenth harmonic.

4.8.3 Results

Transmitter conducted spurious Emissions						
Measurement Conditions						
Modulated :	☒ Yes ☐ No					
Channel Frequency [MHz]	**Emission Frequency [MHz]**	**Emission Level [dBm]**	**Peak field Strength [dBm]**	**Limit [dBm]**	**Detector**	**Margin [dB]**
Test mode DH5						
2402	4803	-53.01	-9.5	-30.5	peak	-22.51
2441	4883	-53.06	-9.5	-31.0	peak	-22.06
2480	4943	-53.90	-8.7	-30.0	peak	-23.90
Test mode 3-DH5						
2402	4803	-56.06	-9.3	-30.6	peak	-25.46
2441	4883	-56.34	-9.3	-31.7	peak	-24.64
2480	6753	-53.21	-8.3	-29.4	peak	-23.81
See attached diagrams in Annex						
Verdict				**PASS**		

4.9 Transmitter radiated spurious emissions

According FCC rules 47 CFR 15.209, 15.247(d) and RSS-210 Section A8.5 unwanted emissions in the spurious domain are power limited and has to be validated.

4.9.1 Limits

The emission limit of out of band emission in any 100kHz bandwidth outside the frequency band in which the spread spectrum device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits (see "Transmitter spurious emissions"-measurement) is not required.

Transmitter out-of-band emission limits	
TX-Power Detector	**Out of band attenuation**
Peak	-20dBc/100kHz
RMS	-30dBc/100kHz

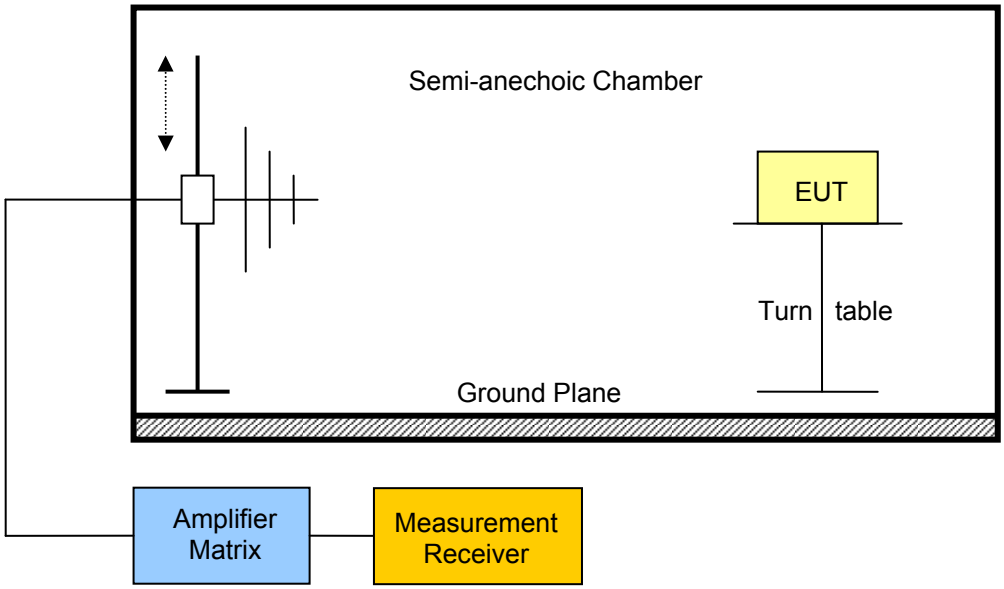
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Tranmitter restricted band spurious emission limits				
Frequency range [MHz]	**Detector**	**Limit [µV/m]**	**Calculated Limit 3m [dBµV/m]**	**Measurement Distance [m]**
30 – 88	Quasi-Peak	100	40	3
88 – 216	Quasi-Peak	150	43.5	3
216 – 960	Quasi-Peak	200	46	3
960 – 1000	Quasi-Peak	500	54	3
> 1000	Average	500	54	3

When average radiated emission measurements are specified, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

4.9.2 Measurement procedure

The spurious emission measurement is performed on 3m a semi-anechoic test site.



The EUT is placed on a non-metallic table. Any emission is received by the measurement antenna and measured via a measurement receiver connected to the antenna. To obtain the maximum emission the EUT is rortated through 360°.

Due to pratical reasons the spurious emission level check is first performed with a peak detector and the quasi-peak and average limits.

If any emission is detected that gets close to the emission limit the detector is changed and the quasi-peak or average detector is used. Which detector is used is determined by the emission frequency. If pulsed transmission is used, averaging over the pulse train is used.

The measurement values are also corrected to obtain the field strength values at the defined measurement distances of the emission limits.

The measurement is performed over the frequency range of 30MHz up to the tenth harmonic.

4.9.3 Results

Transmitter radiated spurious Emissions						
Measurement Conditions						
Measurement distance :		3m				
Modulated :		☒ Yes ☐ No				
Channel Frequency [MHz]	**Emission Frequency [MHz]**	**Polarization**	**Measured Field Strength [dBµV/m]**	**Limit@3m [dBµV/m]**	**Detector**	**Margin [dB]**
Test mode DH5						
2402	4.802	vertical	54.38	74	peak	-19.62
2402	4.804	vertical	47.89	54	average	-6.11
2441	4.882	vertical	57.97	74	peak	-16.03
2441	4.882	vertical	49.83	54	average	-4.17
2441	4.882	horizontal	55.96	74	peak	-18.04
2441	4.882	horizontal	48.48	54	average	-5.52
2480	4.962	vertical	59.04	74	peak	-14.96
2480	4.960	vertical	52.03	54	average	-1.97
2480	4.954	horizontal	57.87	74	peak	-16.13
2480	4.960	horizontal	50.64	54	average	-3.36
2402	4.802	vertical	54.38	74	peak	-19.62
Test mode 3-DH5						
2441	4.882	vertical	55.19	74	peak	-18.81
2441	4.882	vertical	46.67	54	average	-7.33
2480	4.962	vertical	57.96	74	peak	-16.04
2480	4.960	vertical	47.15	54	average	-6.85
2480	4.954	horizontal	55.72	74	peak	-18.28
2480	4.960	horizontal	45.65	54	average	-8.35
See attached diagrams in Annex						
Verdict					**PASS**	

5 Power Line parameters

5.1 AC power line conducted emissions

According FCC rules 47 CFR 15.207 and RSS-Gen Section 7.2.2 for any intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits given below.

5.1.1 Limits

AC power line emission limits		
Frequency [MHz]	**Conducted Limit [dBµV]**	
	Quasi-Peak	**Average**
0.15 – 0.5	66 to 56	56 to 46
0.5 - 5	56	46
5 - 30	60	50

5.1.2 Measurement procedure

The ac power line emissions are measured using a 50µH / 50Ω line impedance stabilization network (LINS). The radio frequency voltage between each power line and ground at the power terminal is measured.

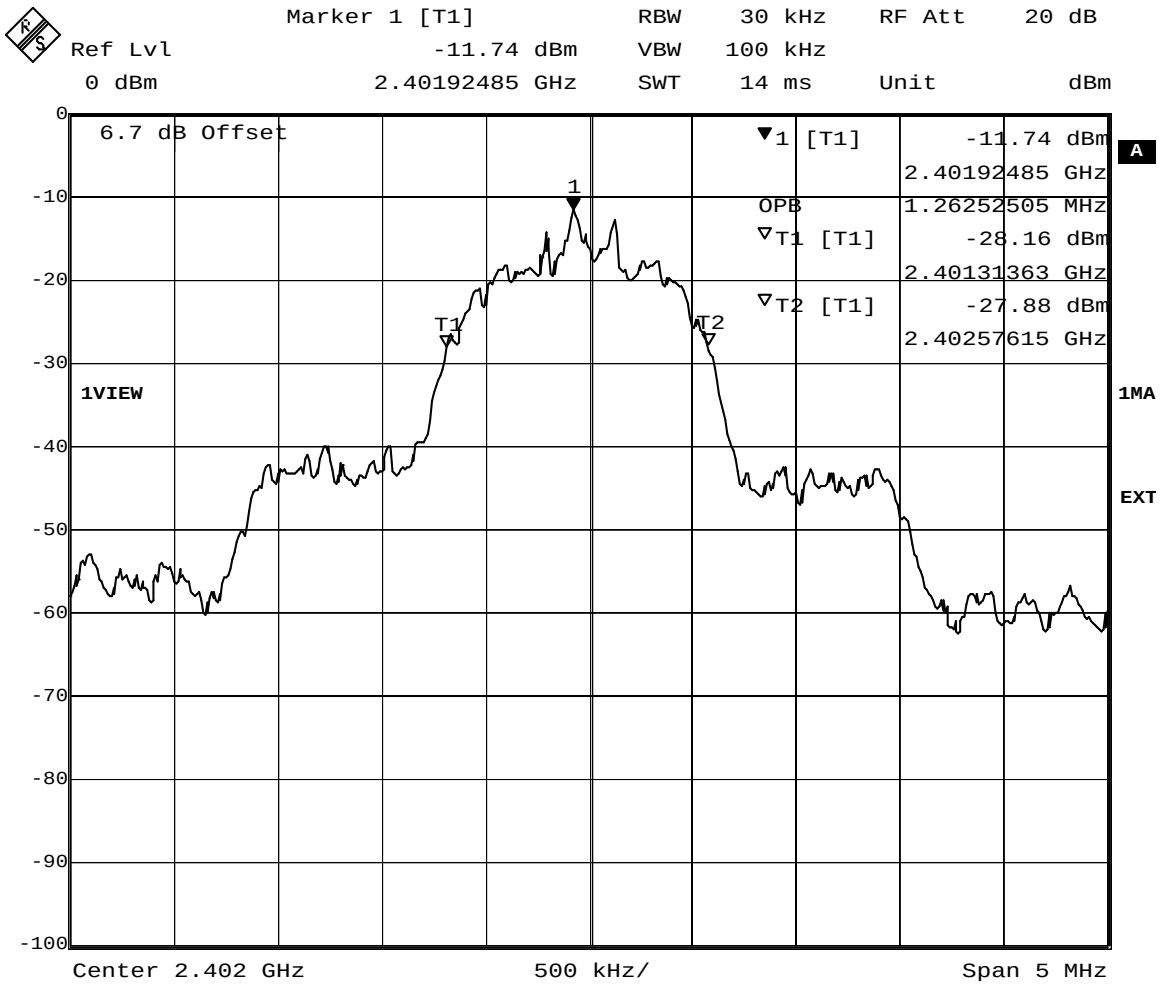
5.1.3 Results

AC power line emissions	
Conducted emission level	
See attached Diagram	
Verdict	**PASS**

Annex B Transmitter occupied bandwidth

RSS Gen
Occupied Bandwidth

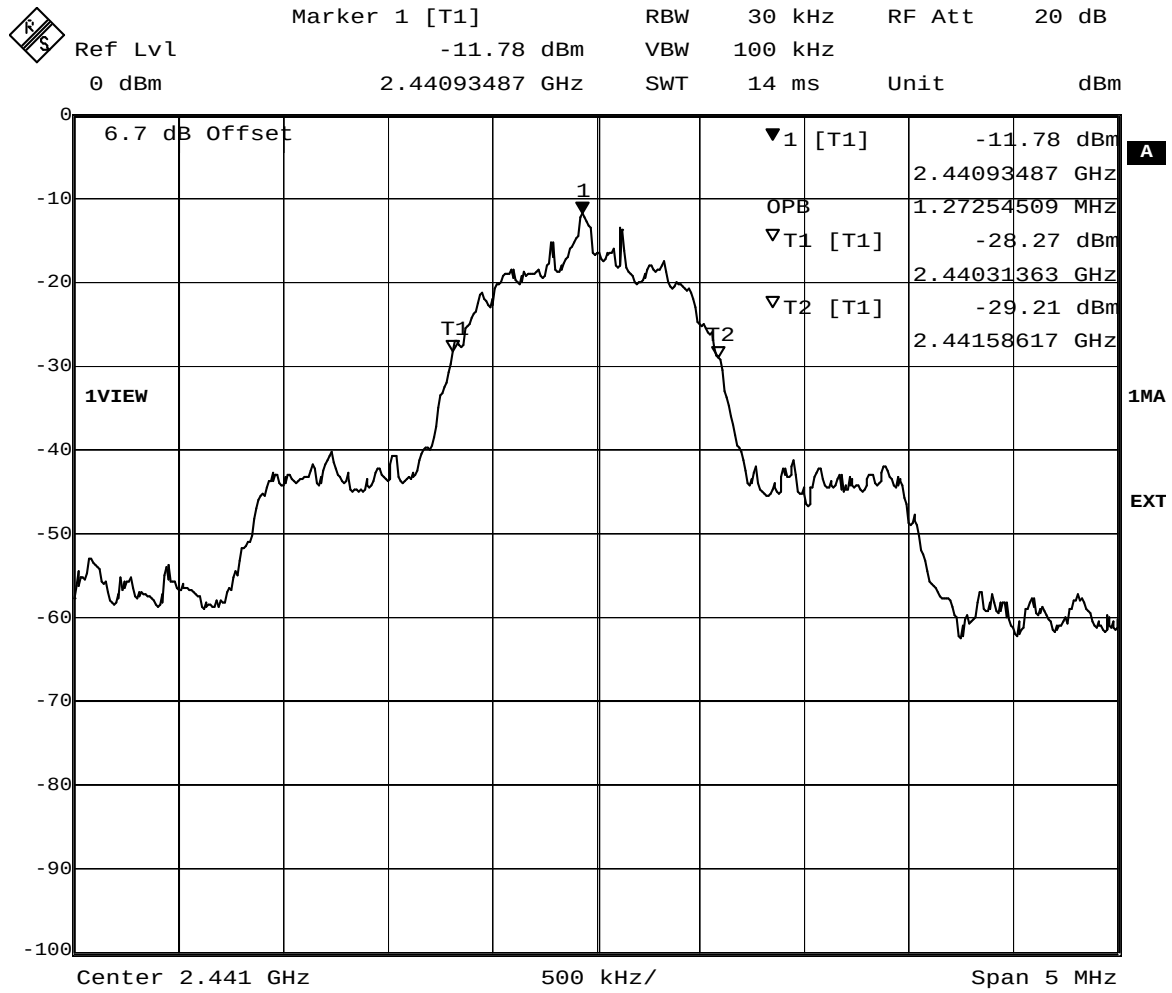
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	Channel.: 0 / 2402 MHz / 3DH5
Comment 2	A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3	



Comment A: Occupied bandwidth: 1262.5 KHz
Date: 19.APR.2010 14:21:24

RSS Gen
Occupied Bandwidth

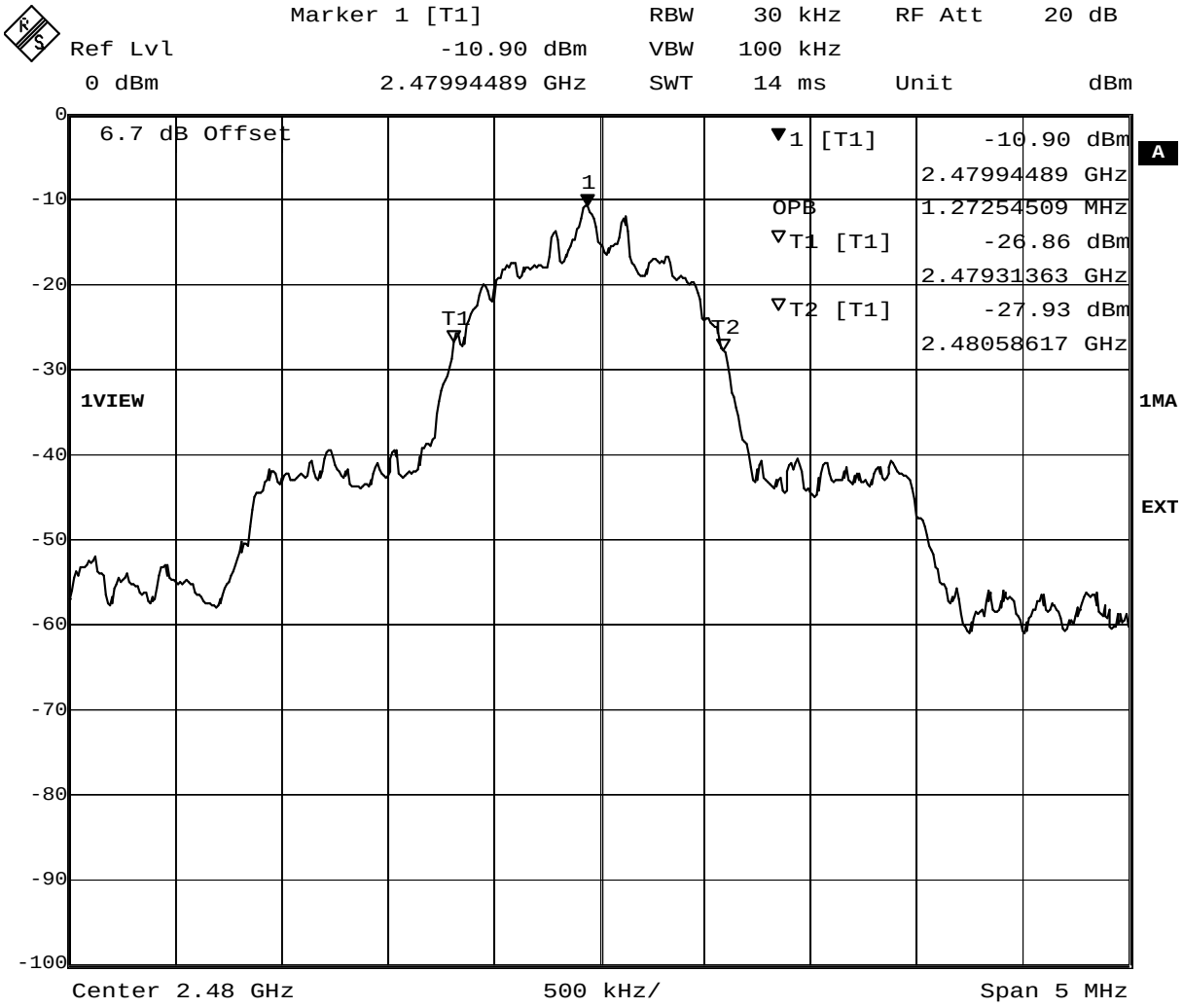
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	Channel.: 39 / 2441 MHz / 3DH5
Comment 2	A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3	



Comment A: Occupied bandwidth: 1272.5 KHz
Date: 19.APR.2010 14:24:10

RSS Gen
Occupied Bandwidth

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	Channel.: 78 / 2480 MHz / 3DH5
Comment 2	A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3	

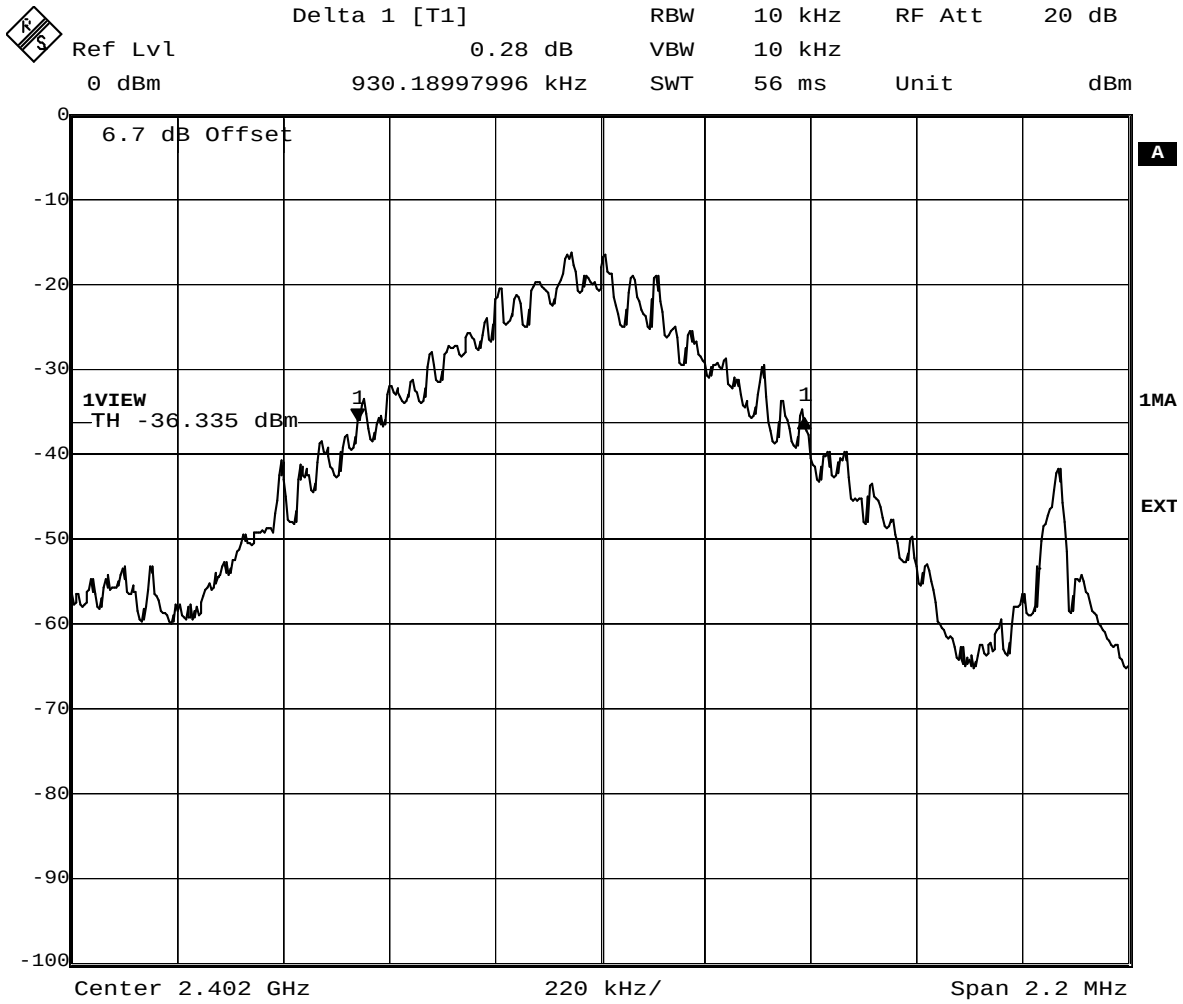


Comment A: Occupied bandwidth: 1272.5 KHz
Date: 19.APR.2010 14:26:16

Annex C Transmitter 20dB bandwidth

FCC part 15.247
20 dB bandwidth

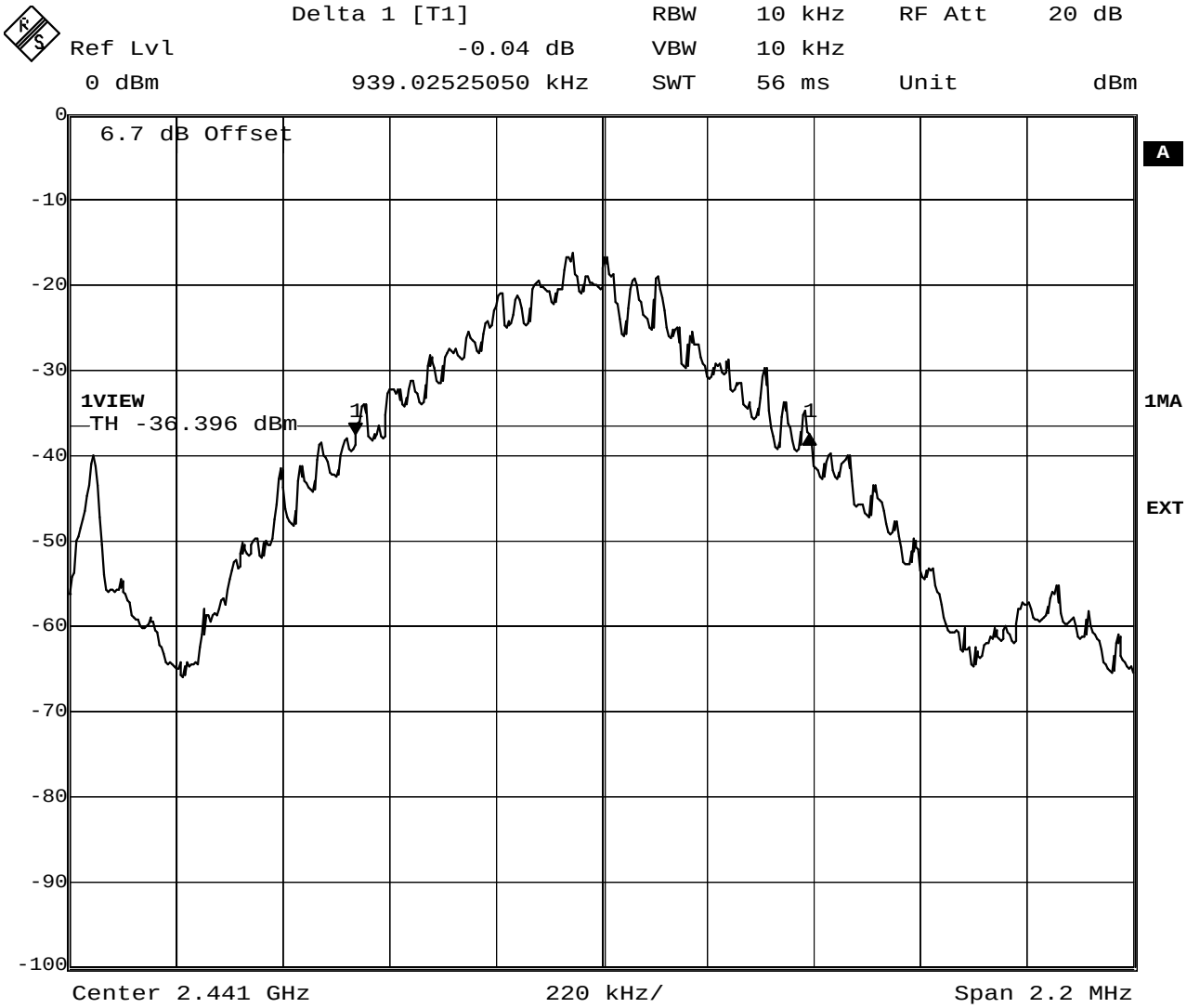
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 0 / DH5 / GFSK



Comment A: 20 dB bandwidth: 930.2 KHz
Date: 19.APR.2010 11:31:03

FCC part 15.247
20 dB bandwidth

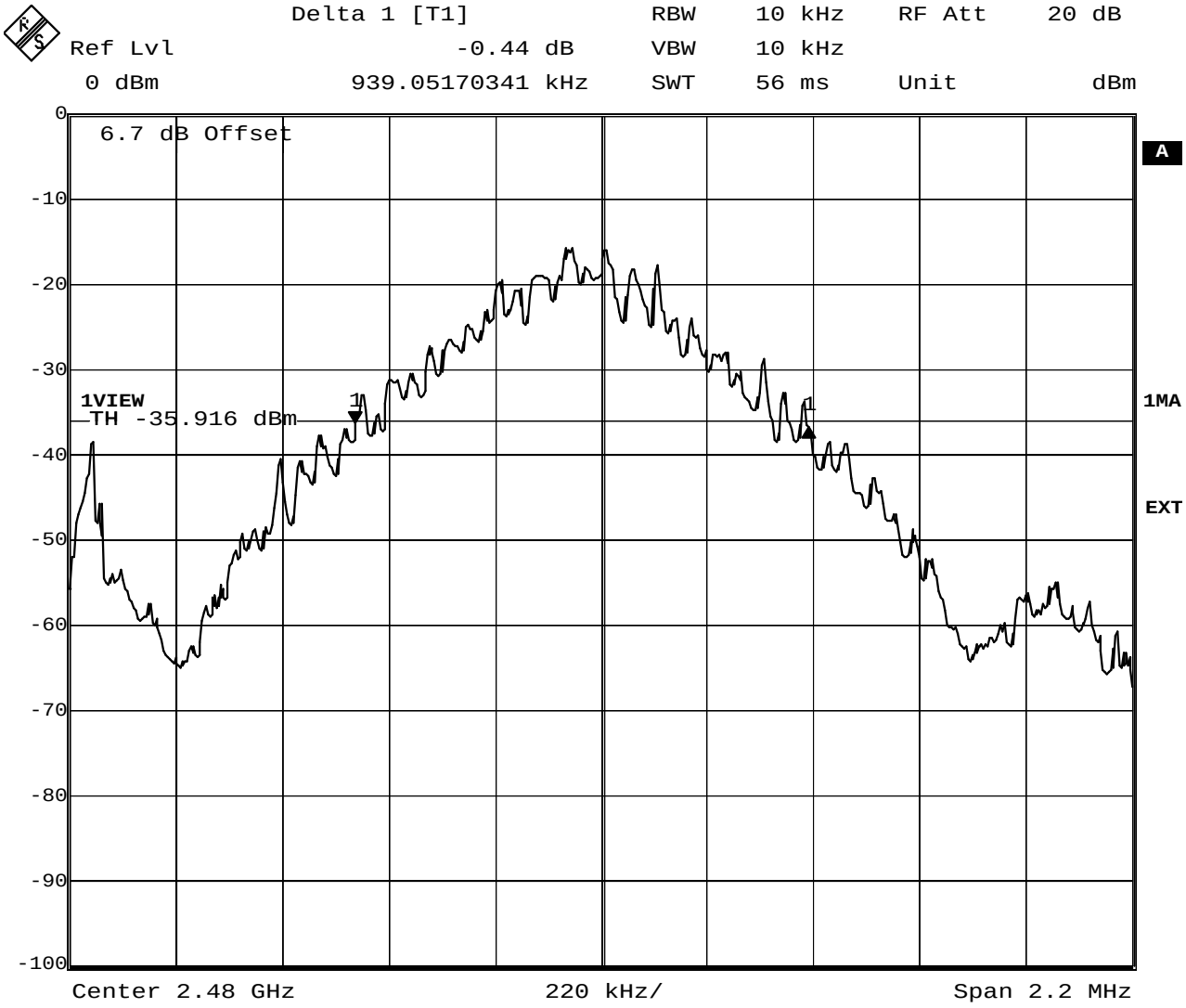
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 39 / DH5 / GFSK
Comment 3	



Comment A: 20 dB bandwidth: 939 KHz
Date: 19.APR.2010 11:38:43

FCC part 15.247
20 dB bandwidth

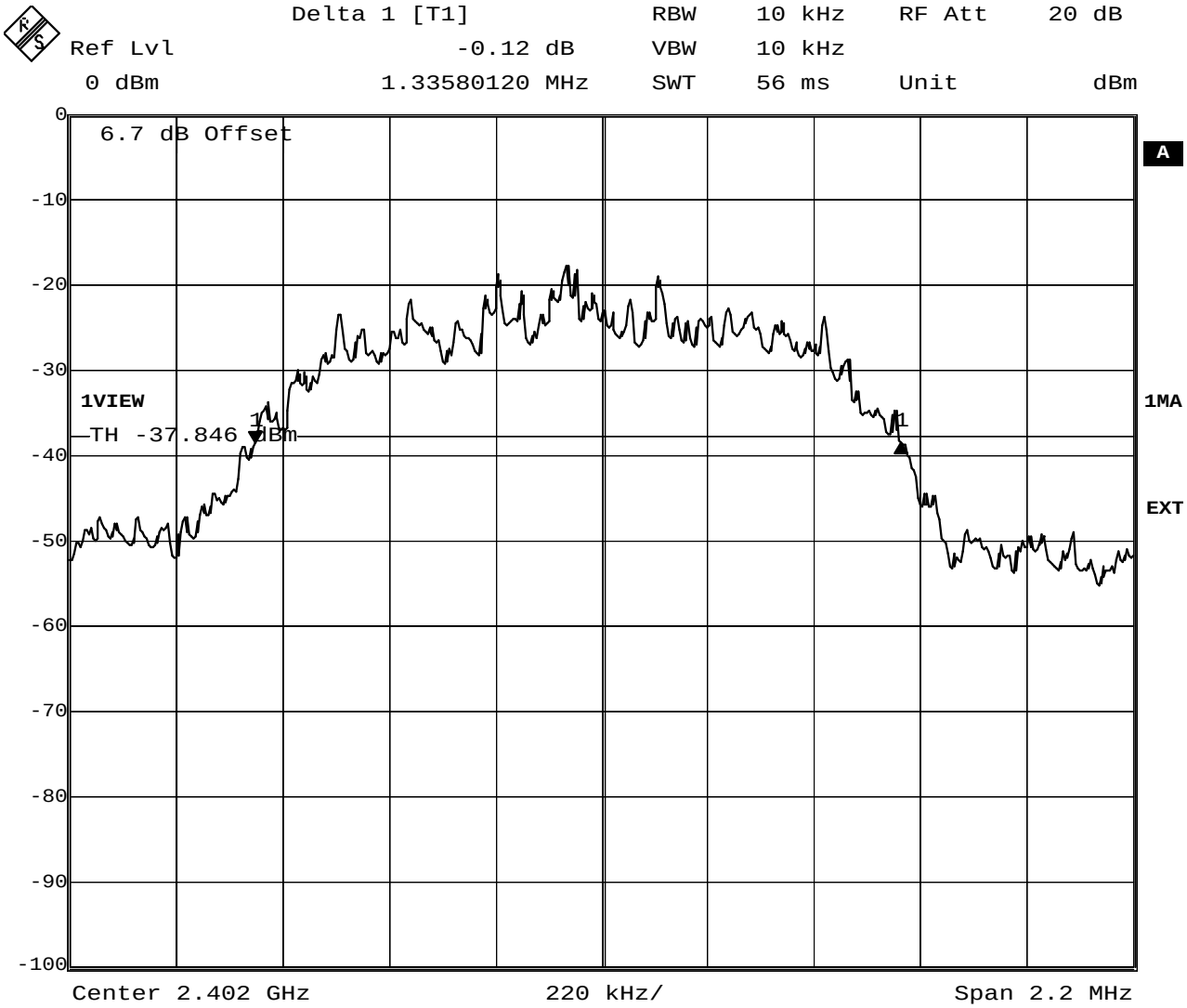
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 78 / DH5 / GFSK
Comment 3	



Comment A: 20 dB bandwidth: 939.1 KHz
Date: 19.APR.2010 11:40:28

FCC part 15.247
20 dB bandwidth

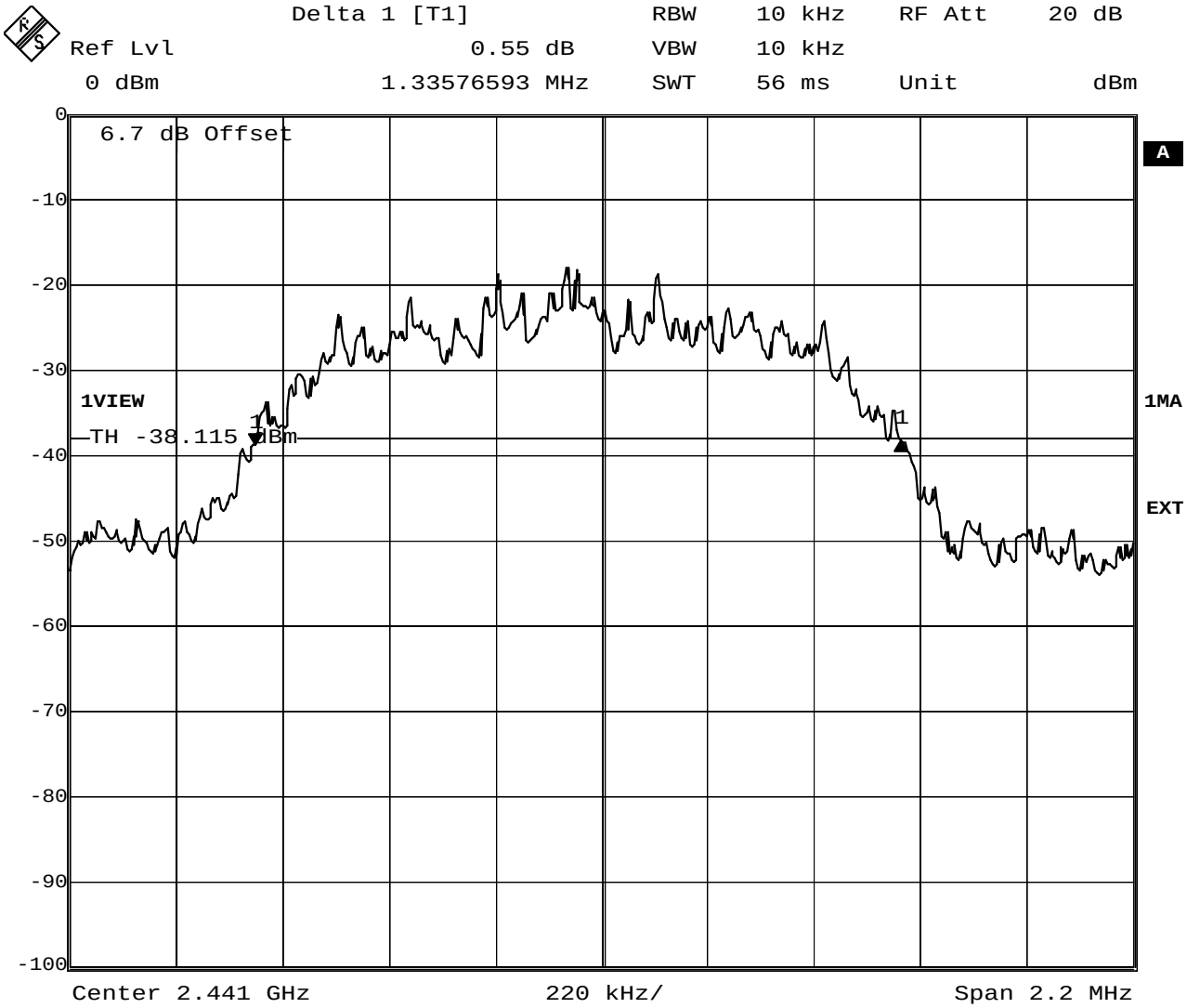
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 0 / 2DH5 / π/4-DQPSK



Comment A: 20 dB bandwidth: 1335.8 KHz
Date: 19.APR.2010 11:43:51

FCC part 15.247
20 dB bandwidth

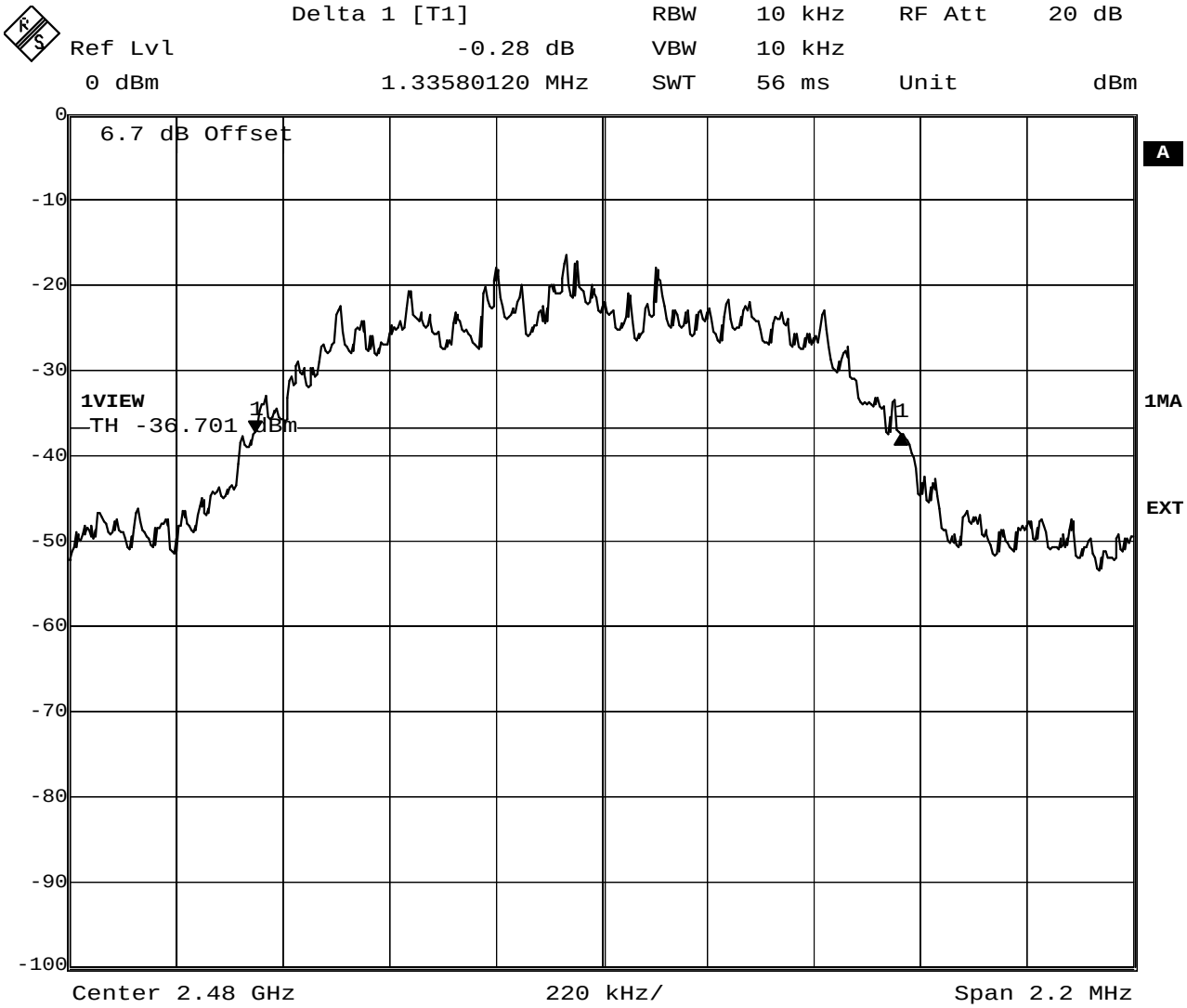
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 39 / 2DH5 / π/4-DQPSK



Comment A: 20 dB bandwidth: 1335.8 KHz
Date: 19.APR.2010 11:50:38

FCC part 15.247
20 dB bandwidth

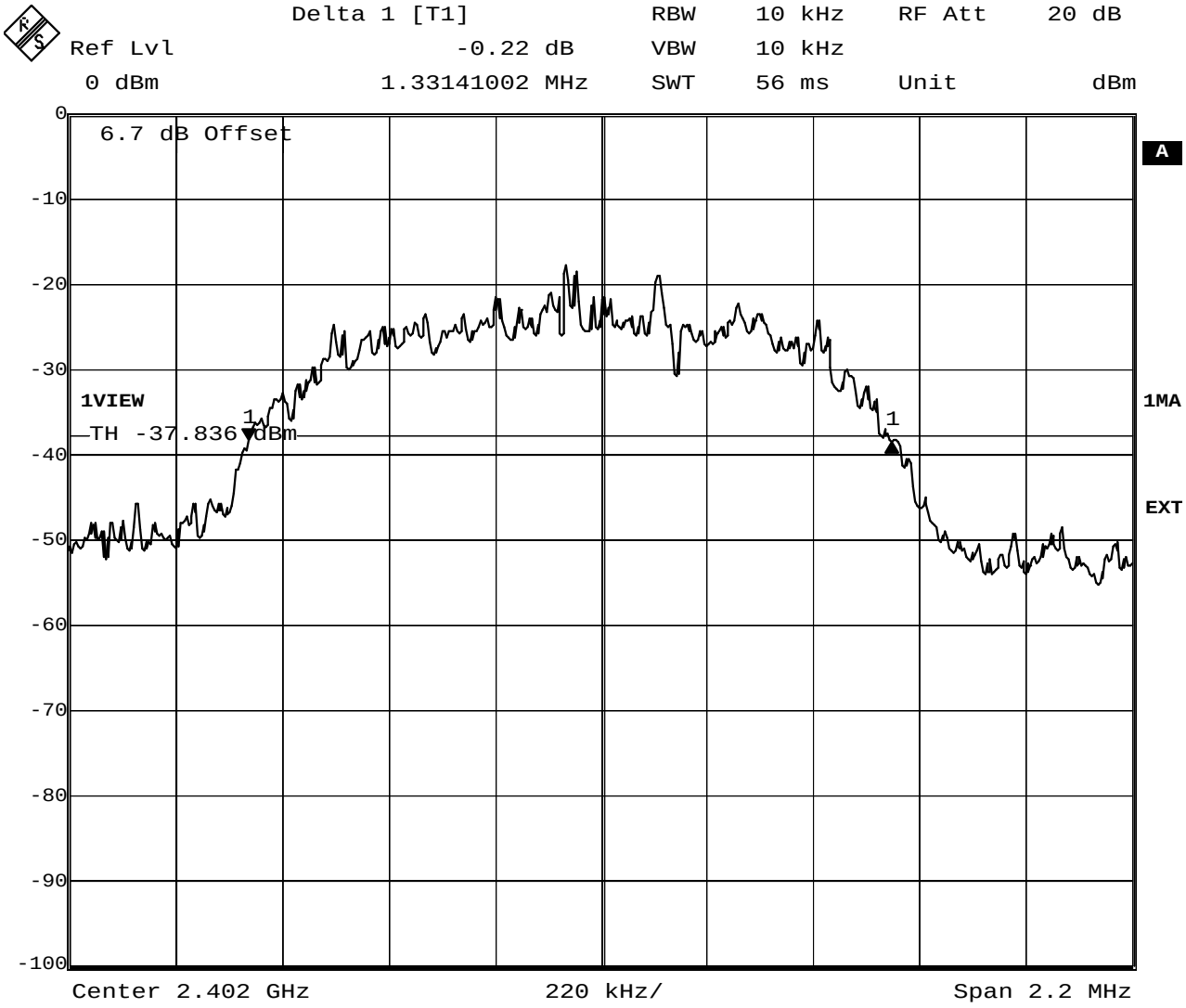
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 78 / 2DH5 / π/4-DQPSK



Comment A: 20 dB bandwidth: 1335.8 KHz
Date: 19.APR.2010 11:58:42

FCC part 15.247
20 dB bandwidth

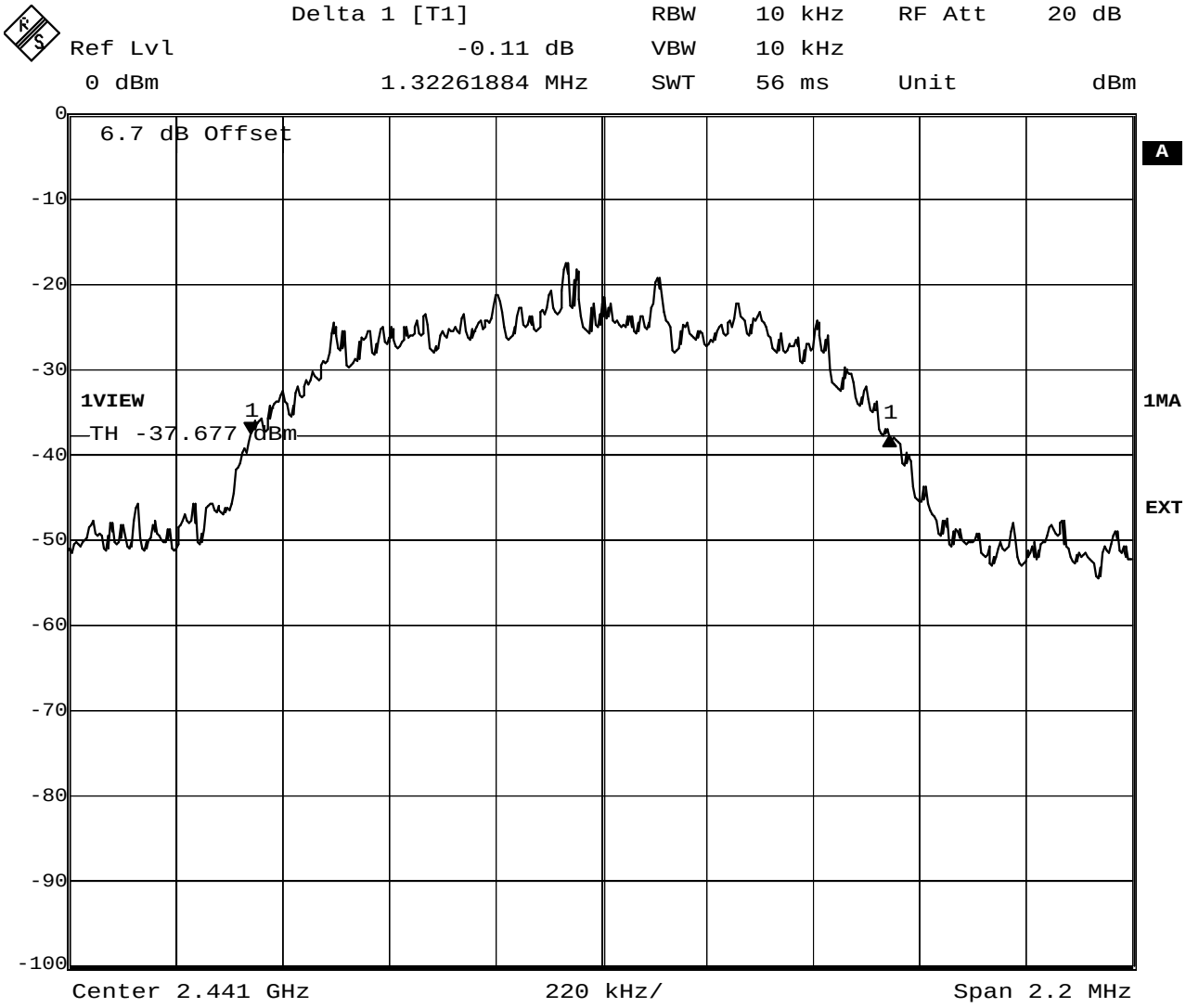
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 0 / 3DH5 / 8DPSK
Comment 3	



Comment A: 20 dB bandwidth: 1331.4 KHz
Date: 19.APR.2010 11:52:30

FCC part 15.247
20 dB bandwidth

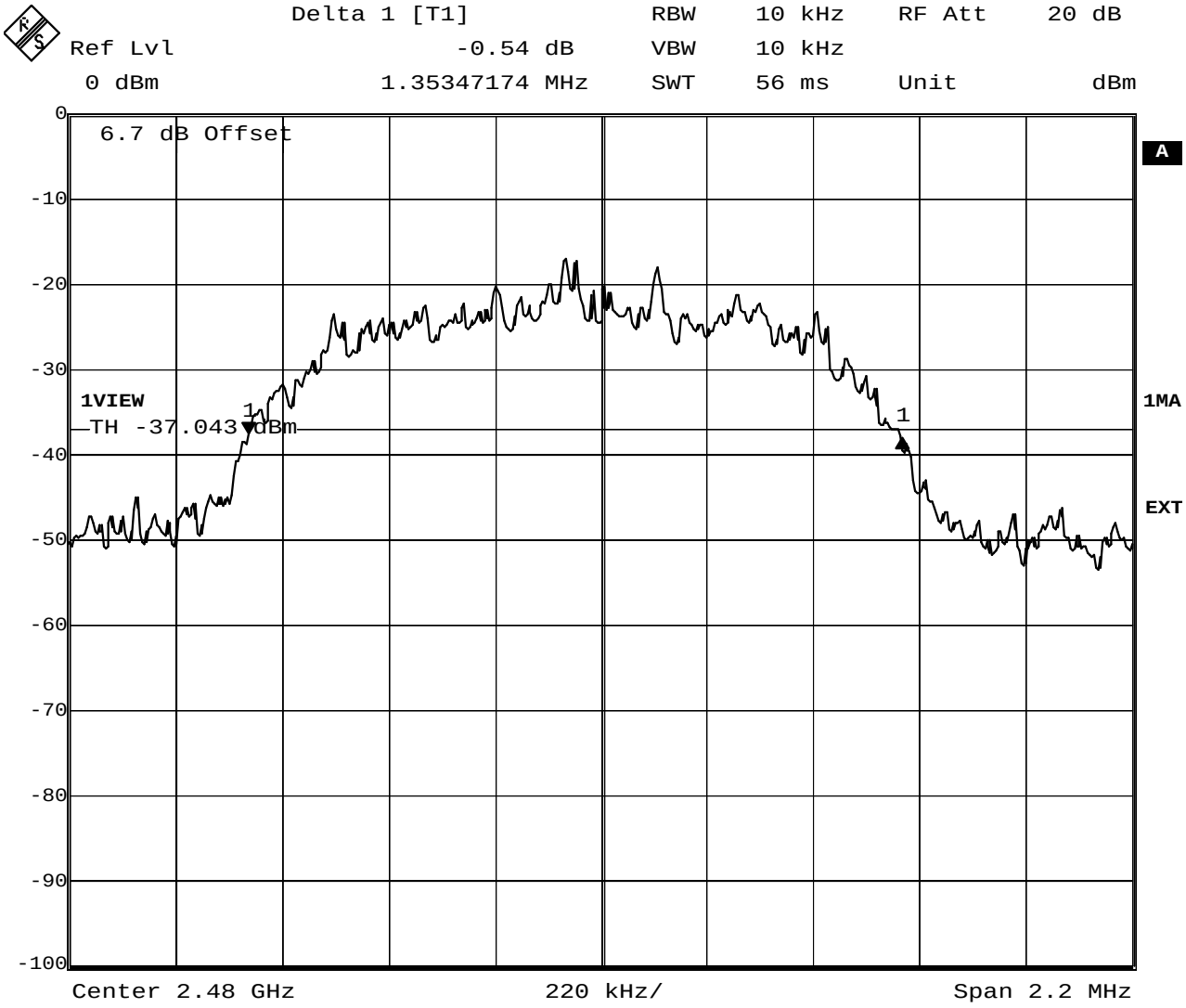
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 39 / 3DH5 / 8DPSK
Comment 3	



Comment A: 20 dB bandwidth: 1322.6 KHz
Date: 19.APR.2010 12:00:53

FCC part 15.247
20 dB bandwidth

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	20 dB bandwidth
Comment 2	Channel.: 78 / 3DH5 / 8DPSK
Comment 3	

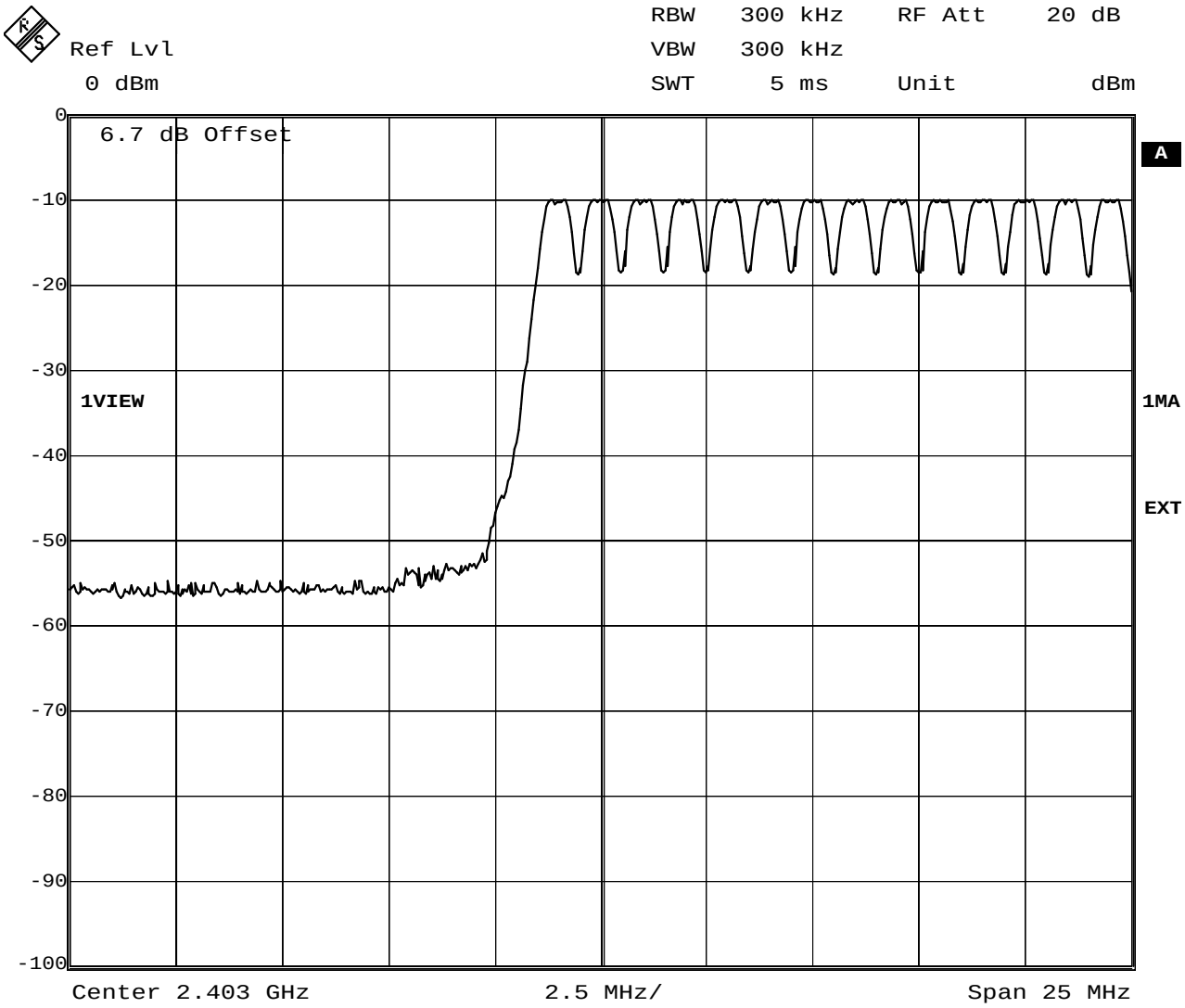


Comment A: 20 dB bandwidth: 1353.5 KHz
Date: 19.APR.2010 12:02:59

Annex D Hopping channels

FCC part 15.247
Number of hopping frequencies

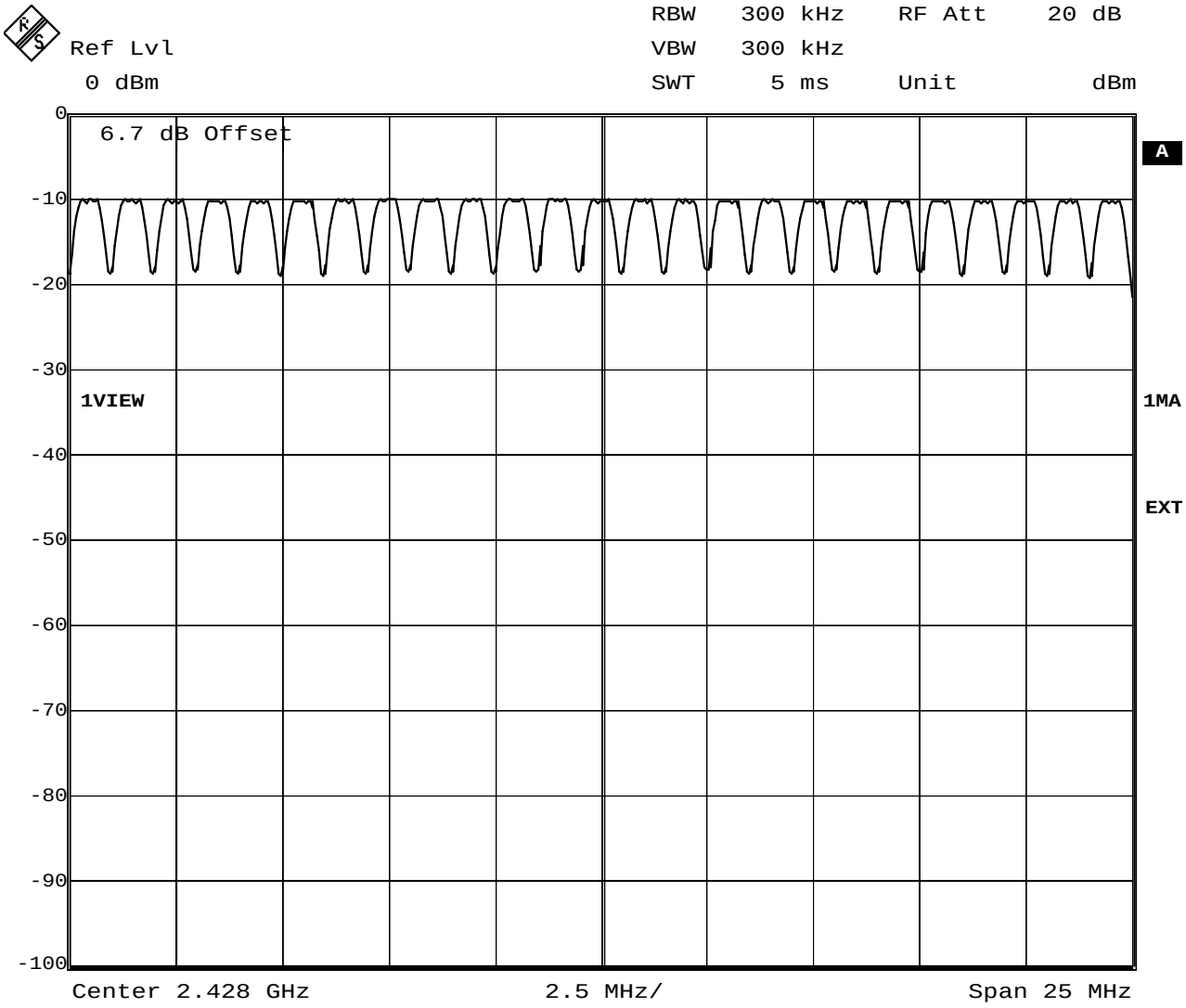
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	Number of hopping frequencies
Comment 2	Channel.: 0-13
Comment 3	



Comment A: Number of hopping frequencies
Date: 19.APR.2010 13:54:55

FCC part 15.247
Number of hopping frequencies

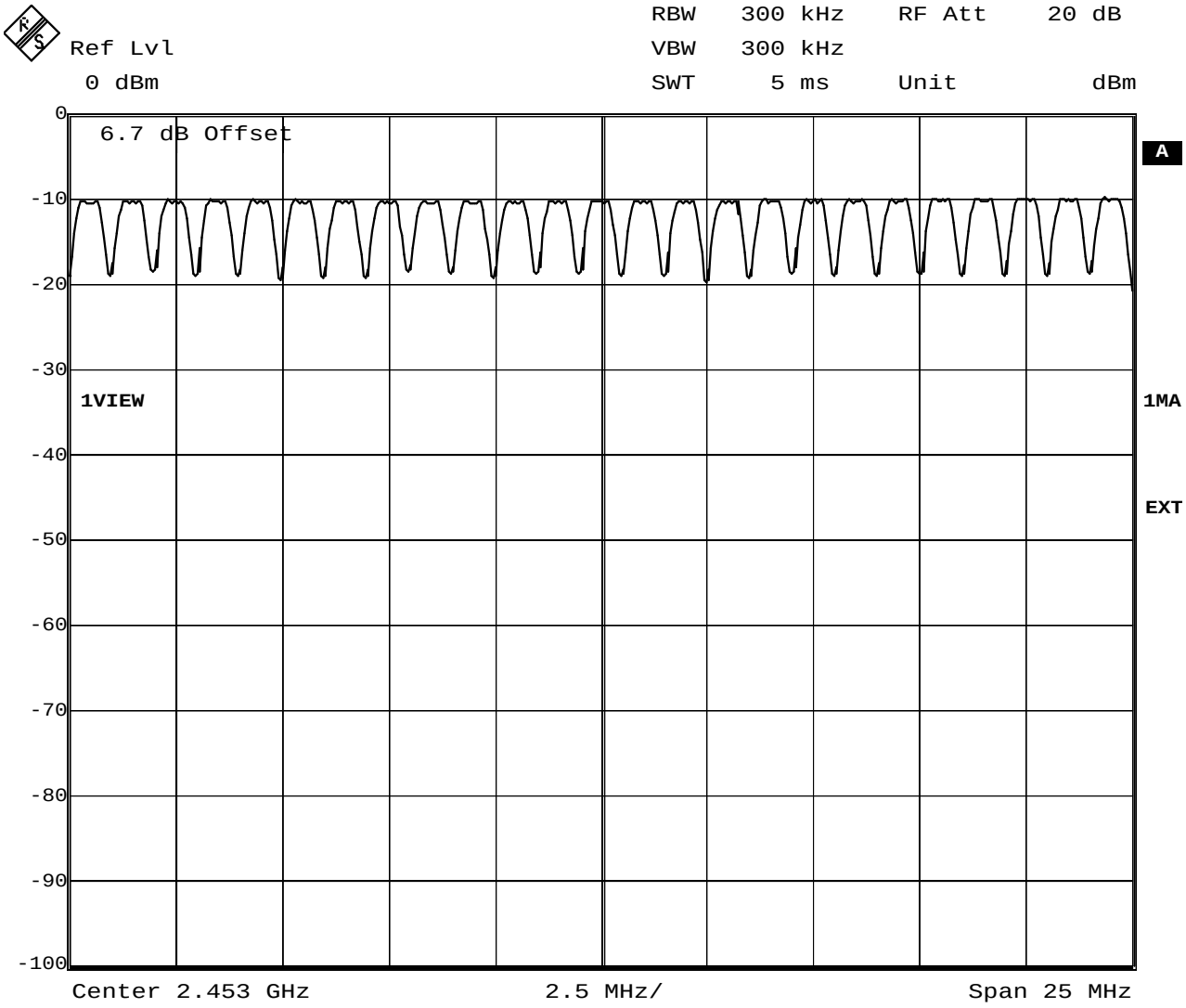
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	Number of hopping frequencies
Comment 2	Channel.: 14-38
Comment 3	



Comment A: Number of hopping frequencies
Date: 19.APR.2010 14:02:05

FCC part 15.247
Number of hopping frequencies

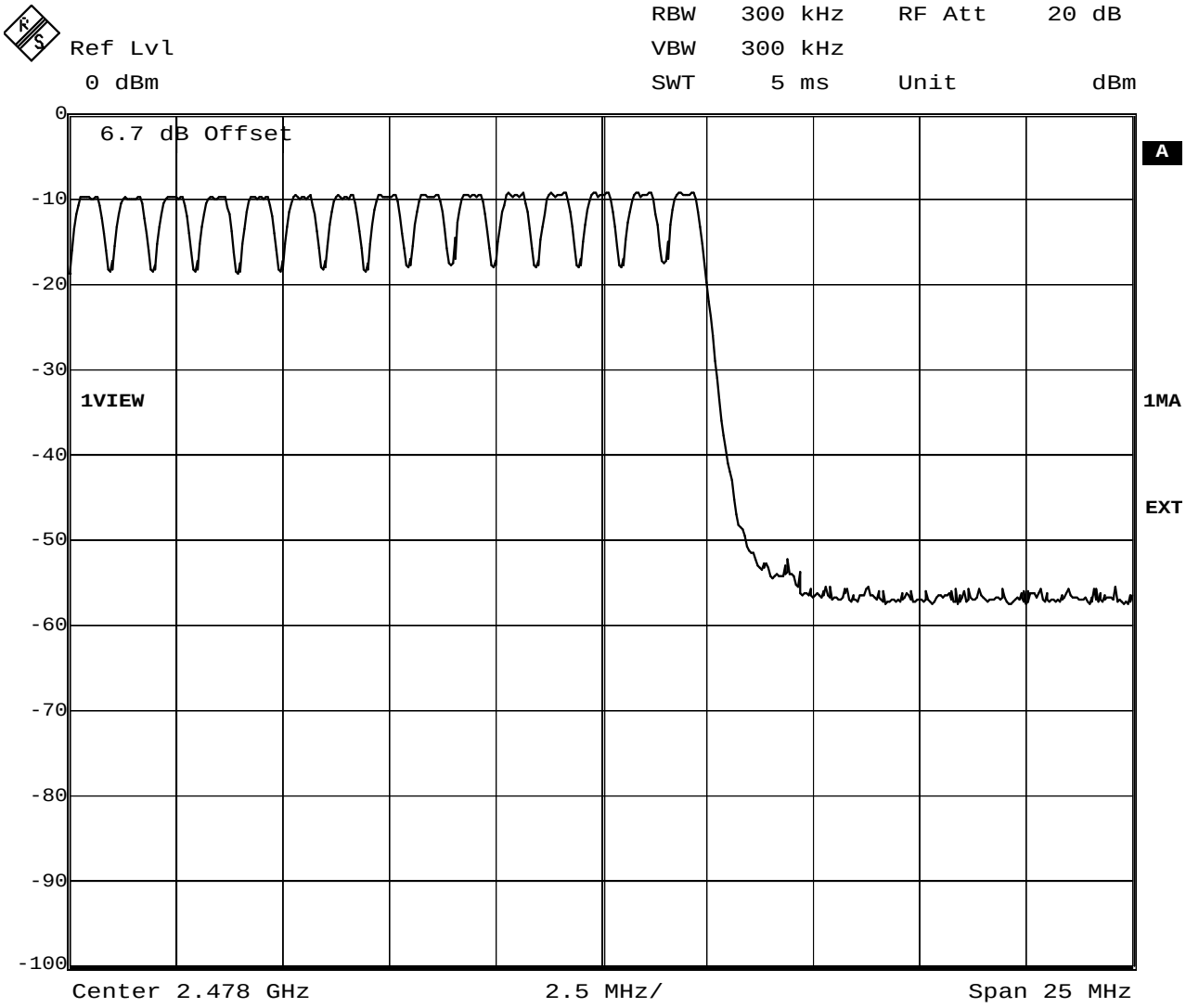
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	Number of hopping frequencies
Comment 2	Channel.:39-63
Comment 3	



Comment A: Number of hopping frequencies
Date: 19.APR.2010 14:04:10

FCC part 15.247
Number of hopping frequencies

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	Number of hopping frequencies
Comment 2	Channel.: 64-78
Comment 3	

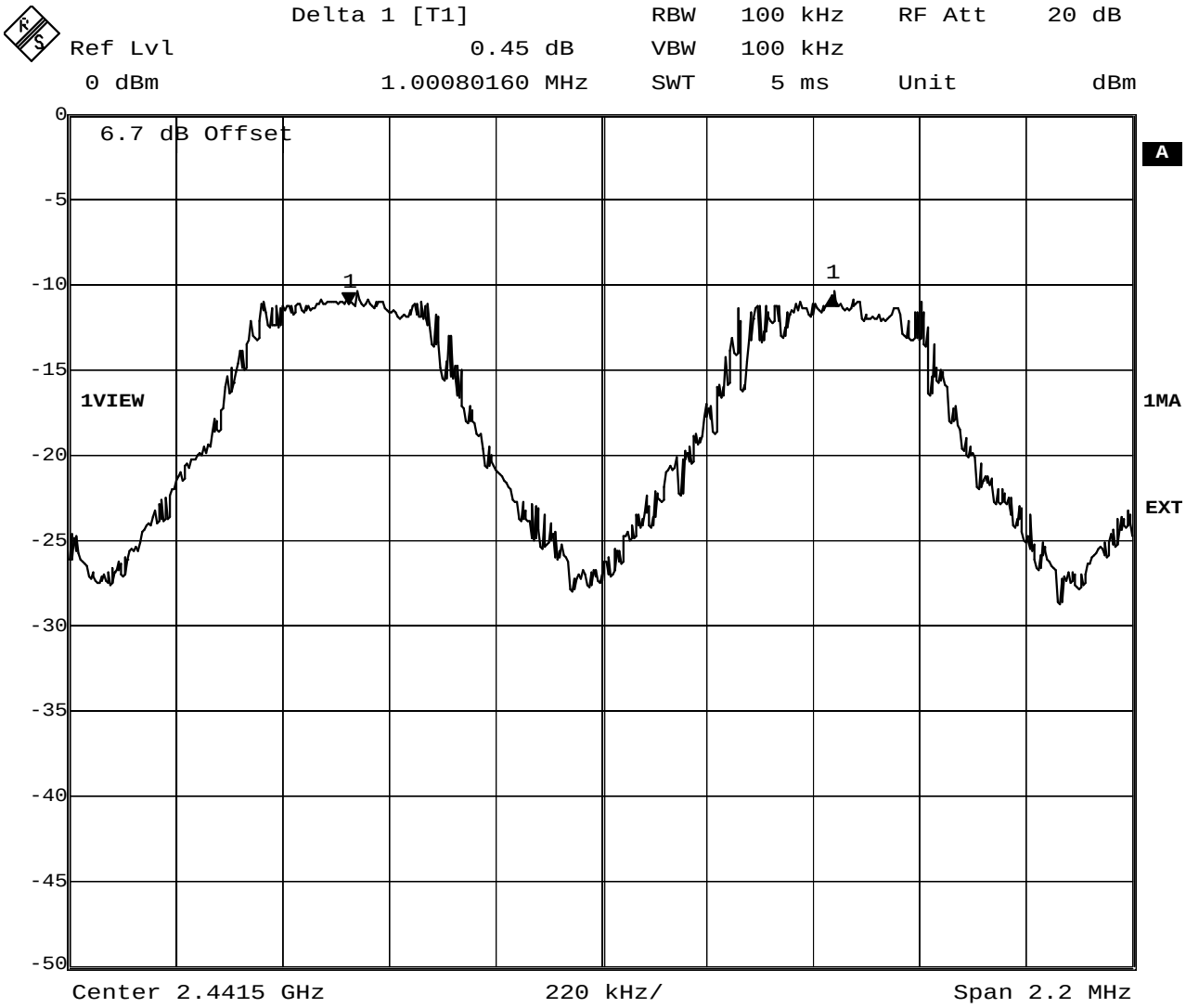


Comment A: Number of hopping frequencies
Date: 19.APR.2010 14:07:07

Annex E Hopping channel separation

FCC part 15.247
Carrier frequency separation

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)(1)
Comment 1	Carrier frequency separation
Comment 2	Channel.: 39/40 / 2441/2442 MHz
Comment 3	Hopping mode

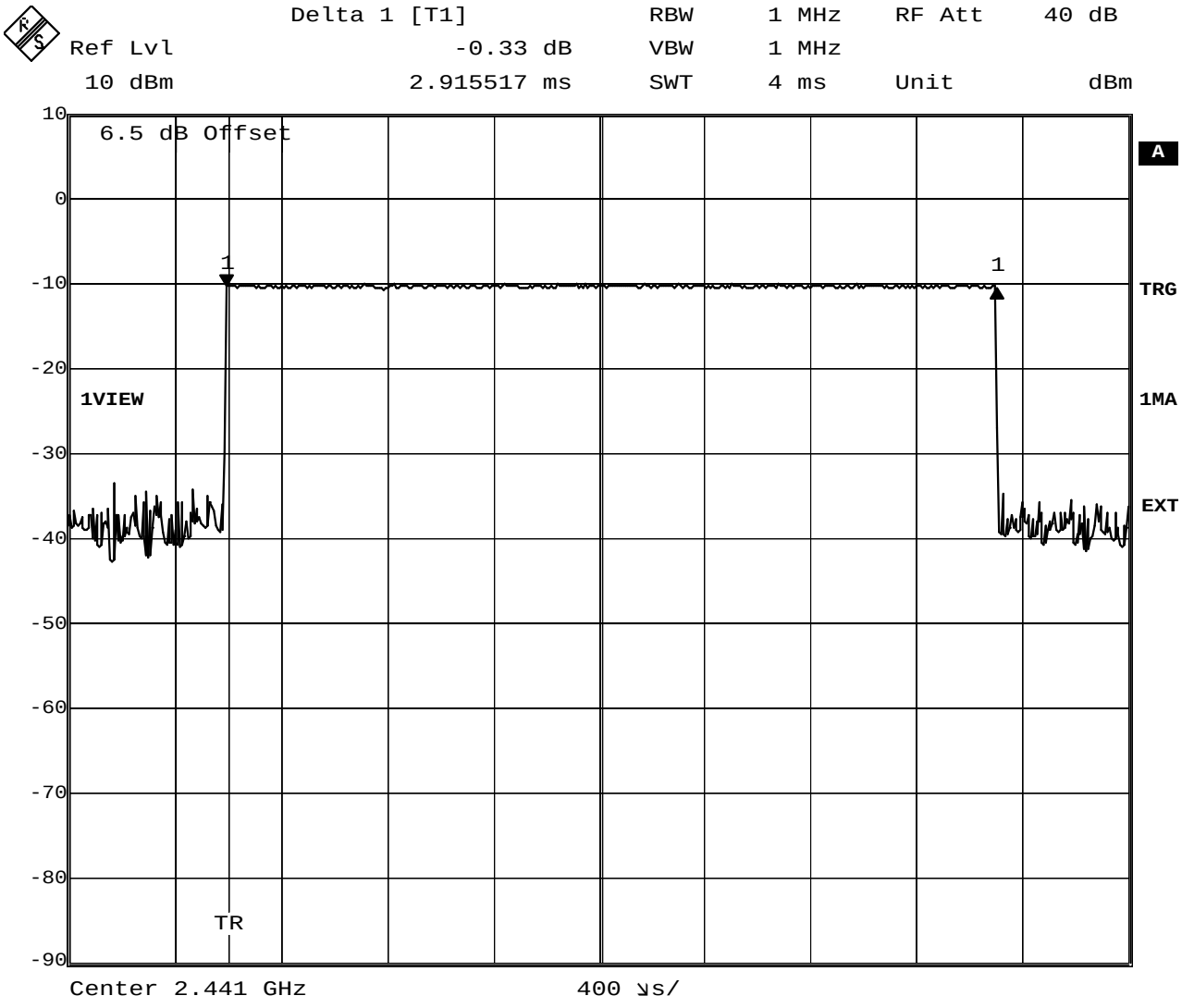


Comment A: Limit: > two-thirds of the 20 dB bandwidth ; Result: Pass
Date: 19.APR.2010 13:42:12

Annex F Time of occupancy

FCC part 15.247
Time of occupancy (dwell time)

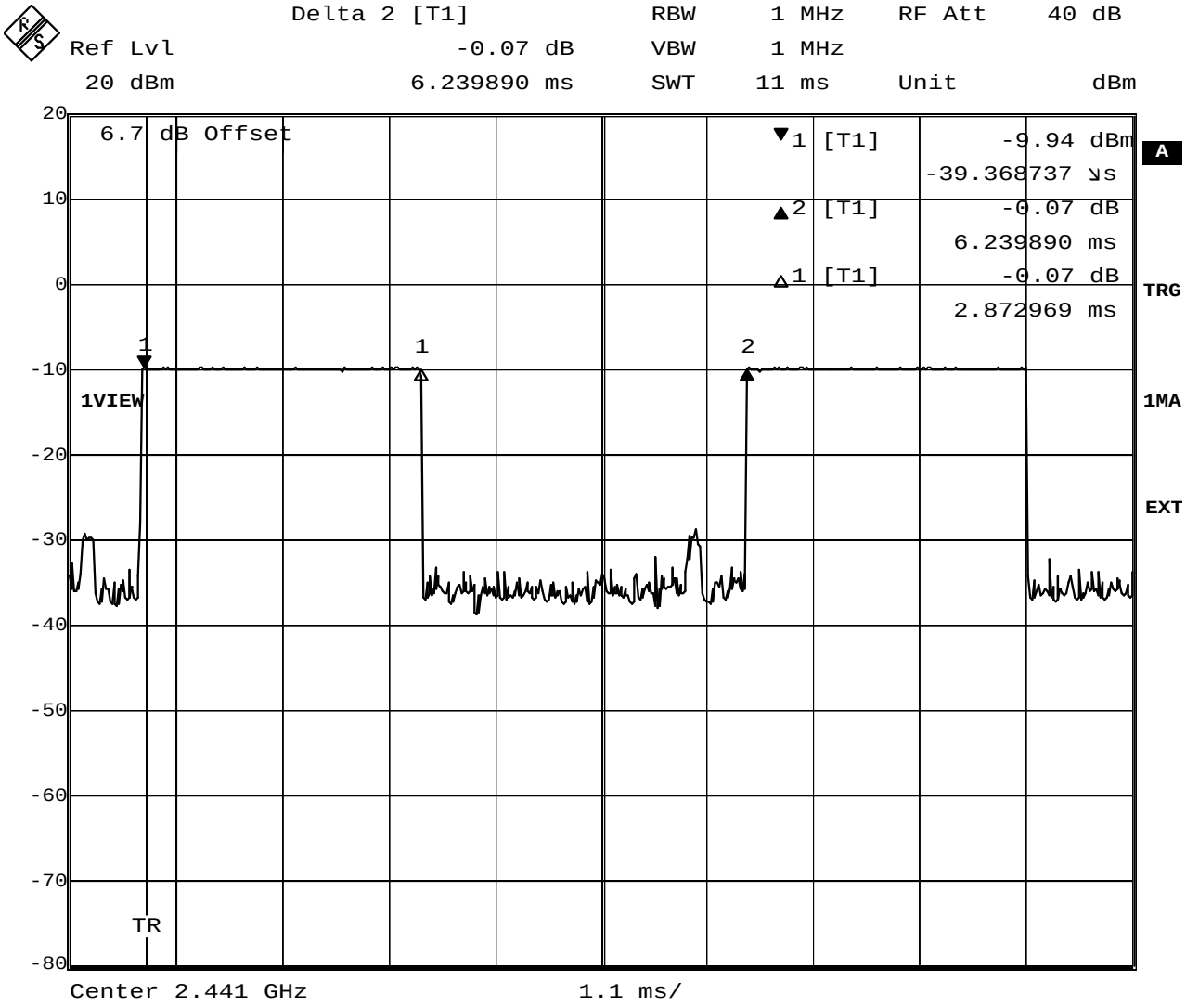
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(a)
Comment 1	Time of occupancy
Comment 2	Channel.: 39 / 2441 MHz (Hopping mode)
Comment 3	63 events * 2.915 ms result: 184.6 ms



Comment A: Burst length=2.91552 ms
Date: 19.APR.2010 14:30:55

FCC part 15.247
Duty cycle

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(b)
Comment 1	Duty cycle
Comment 2	Channel.: 39 / 2441 MHz
Comment 3	

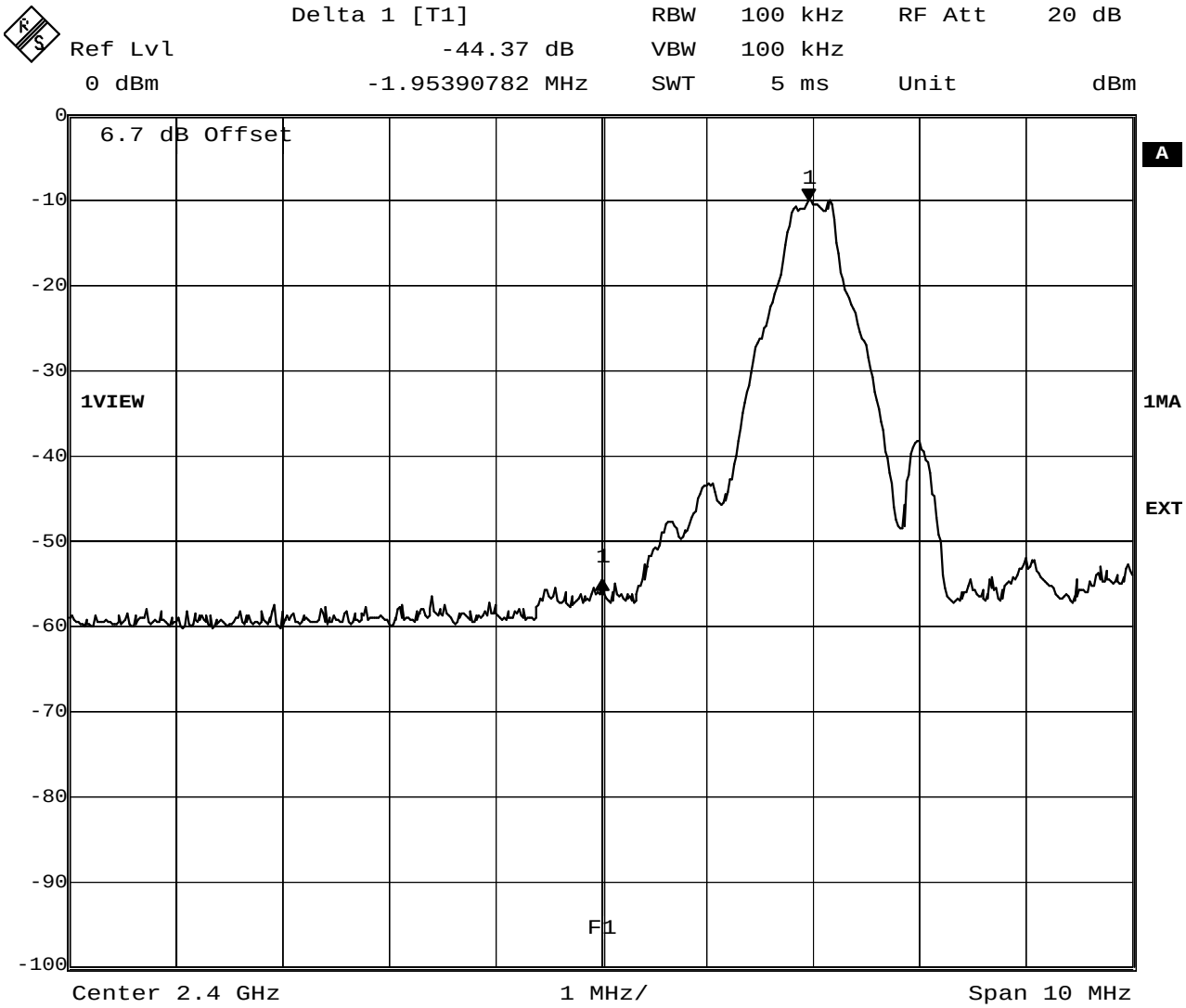


Comment A: Duty cycle=0.46
Date: 19.APR.2010 14:15:06

Annex G Band edge compliance

FCC part 15.247
Band-edge compliance of RF conducted emissions

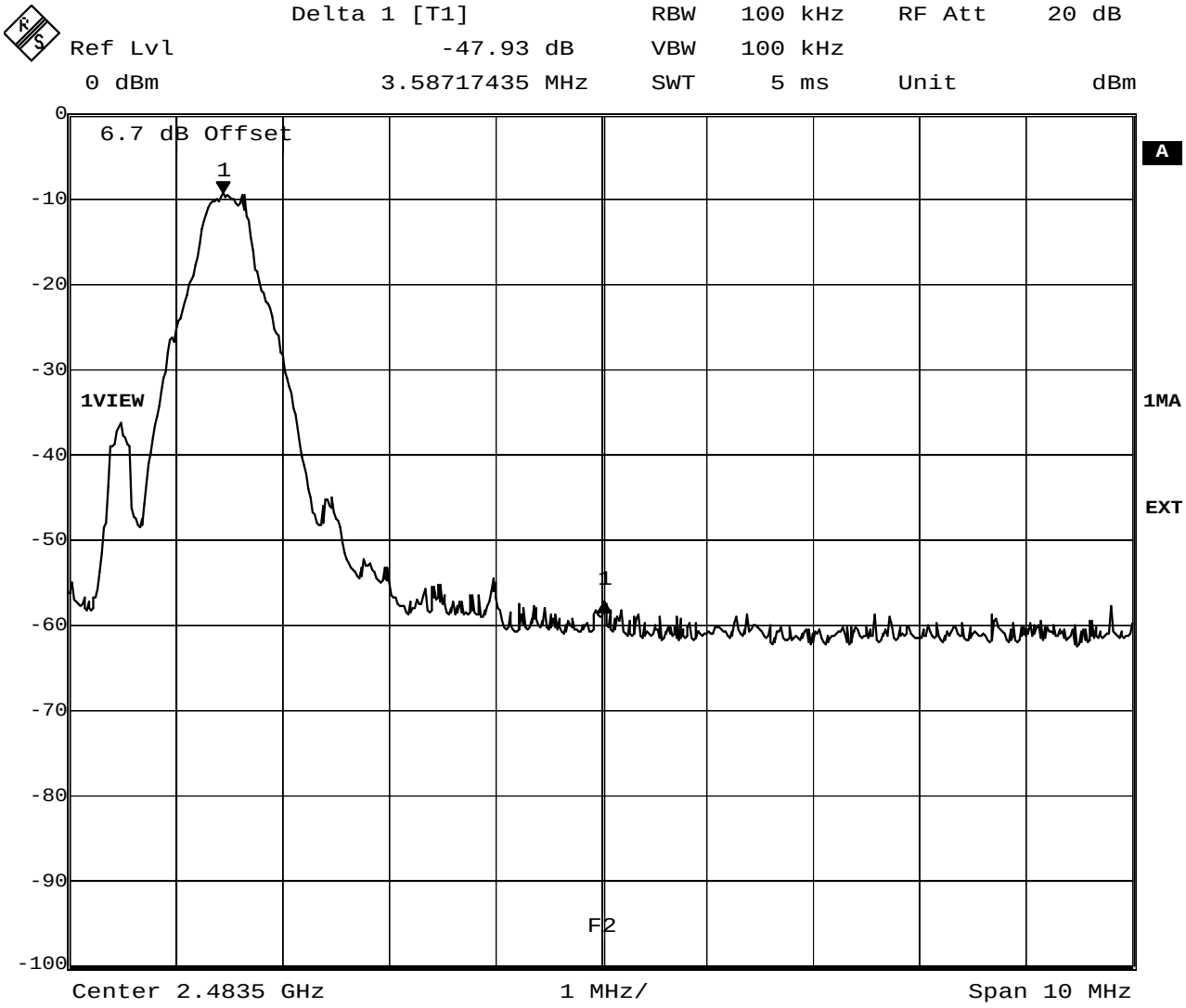
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 0 / DH5
Comment 3	Single frequency mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:21:22

FCC part 15.247
Band-edge compliance of RF conducted emissions

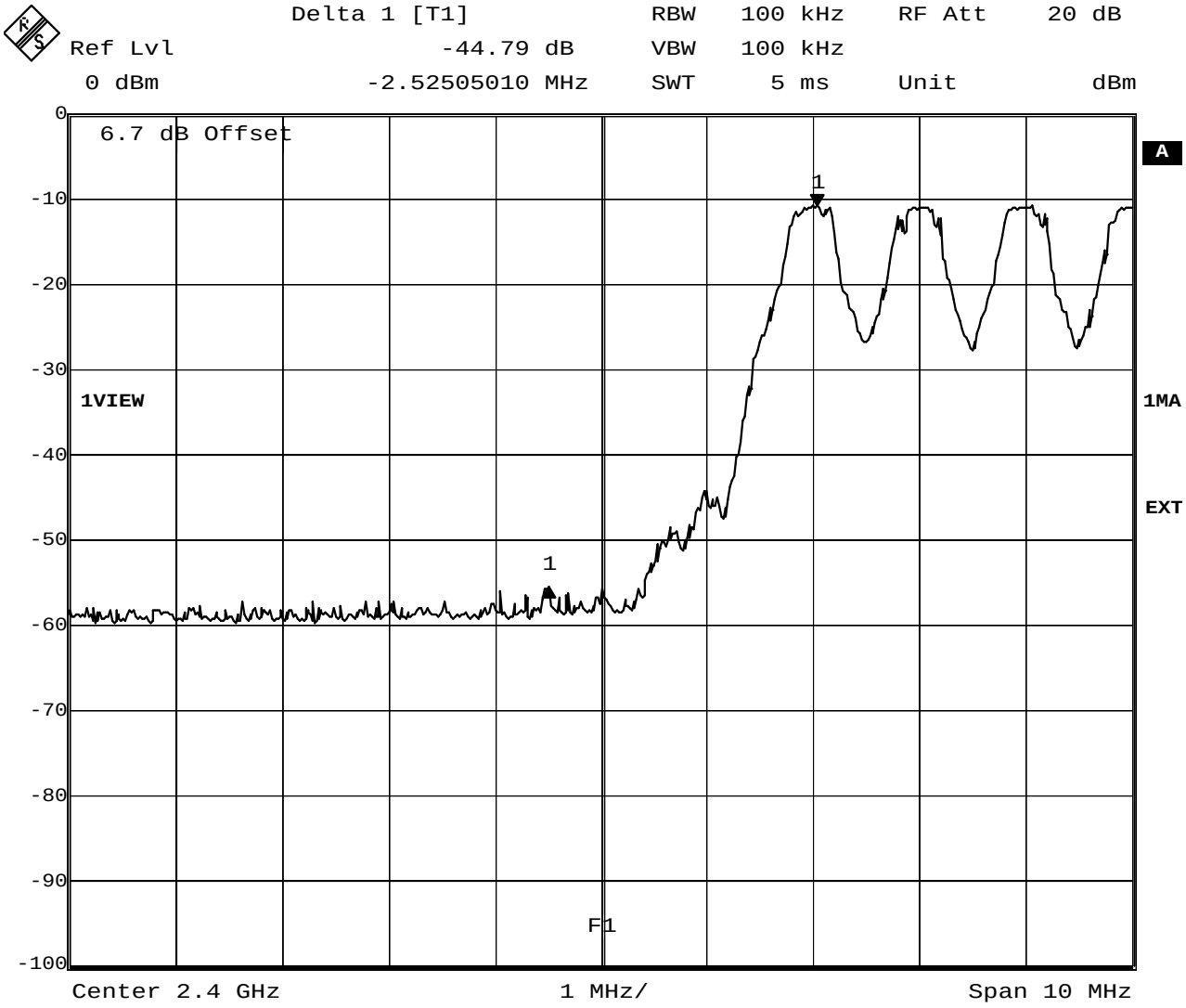
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 78 / DH5
Comment 3	Single frequency mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:24:15

FCC part 15.247
Band-edge compliance of RF conducted emissions

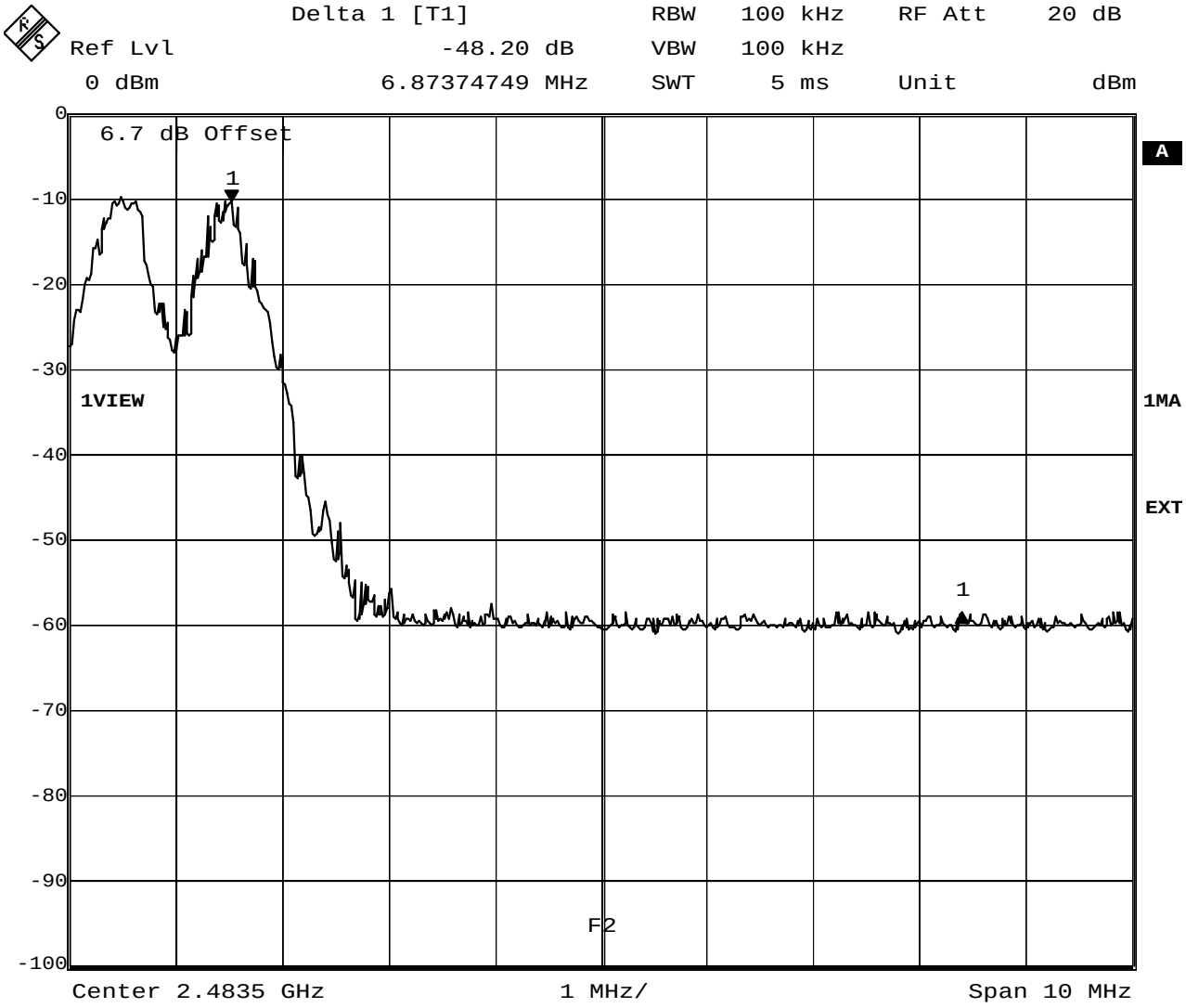
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 0 / DH5
Comment 3	hopping mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:30:38

FCC part 15.247
Band-edge compliance of RF conducted emissions

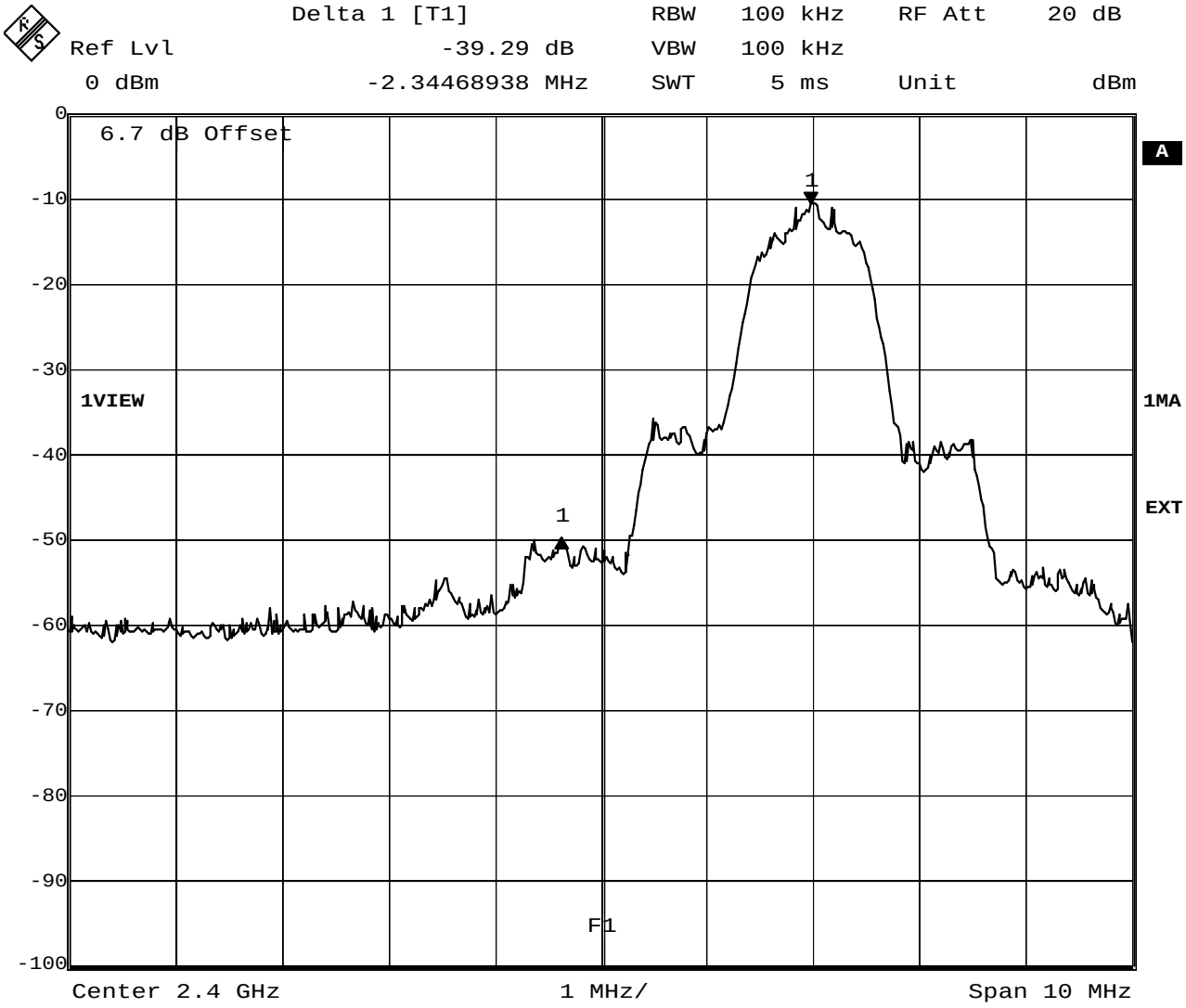
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 78 / DH5
Comment 3	hopping mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:26:32

FCC part 15.247
Band-edge compliance of RF conducted emissions

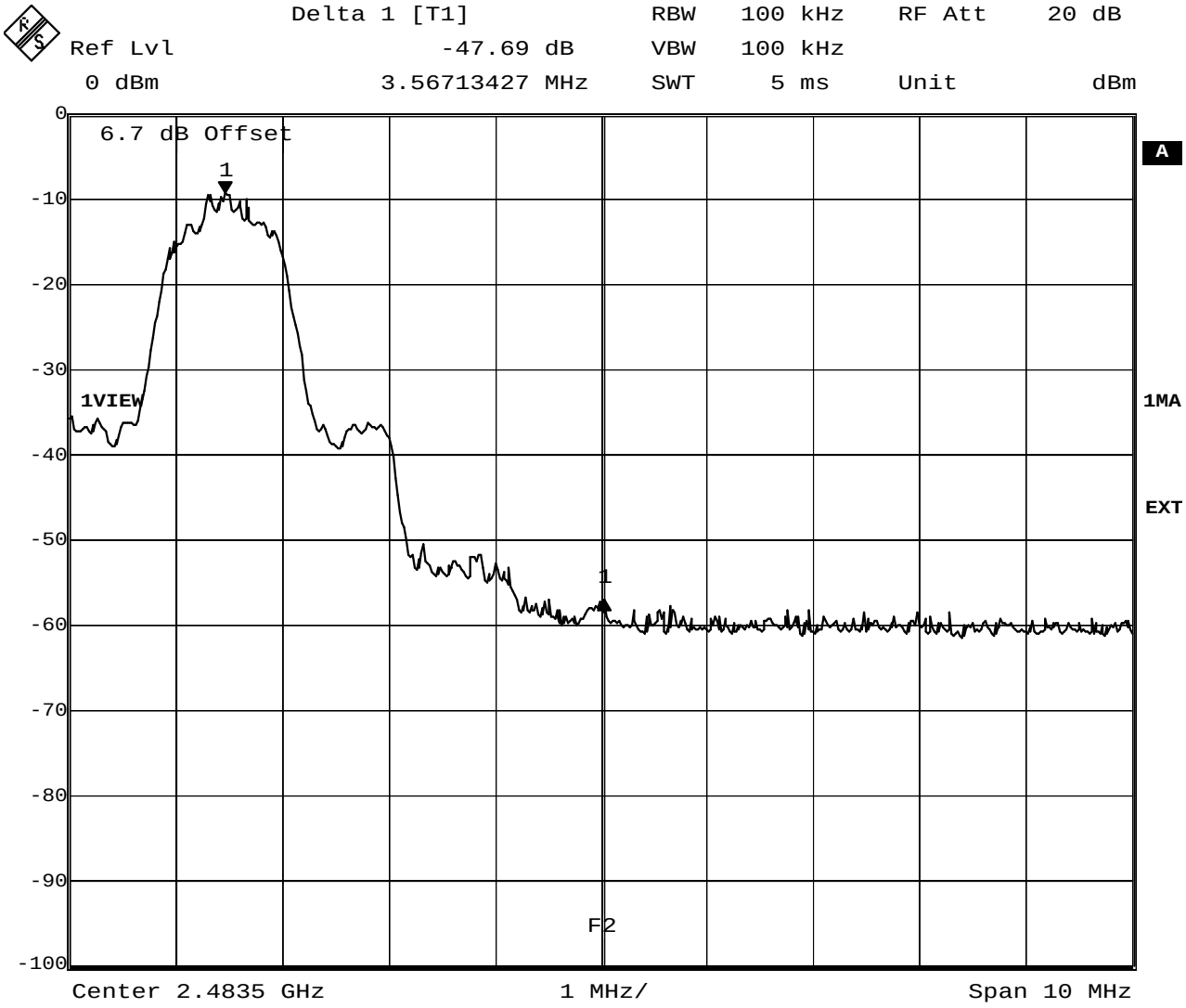
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 0 / 2DH5
Comment 3	single frequency mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:40:15

FCC part 15.247
Band-edge compliance of RF conducted emissions

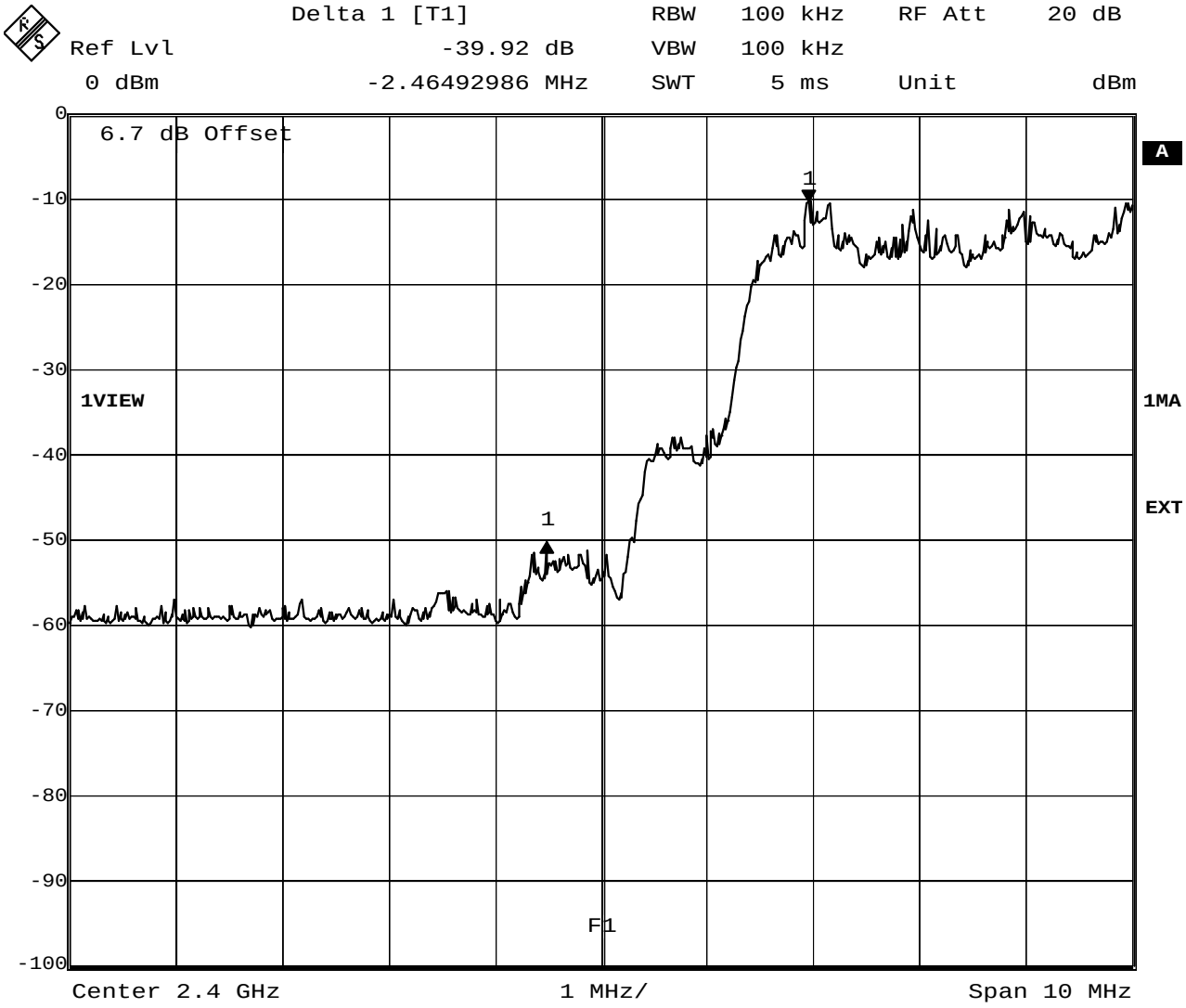
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 78 / 2DH5
Comment 3	single frequency mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:39:13

FCC part 15.247
Band-edge compliance of RF conducted emissions

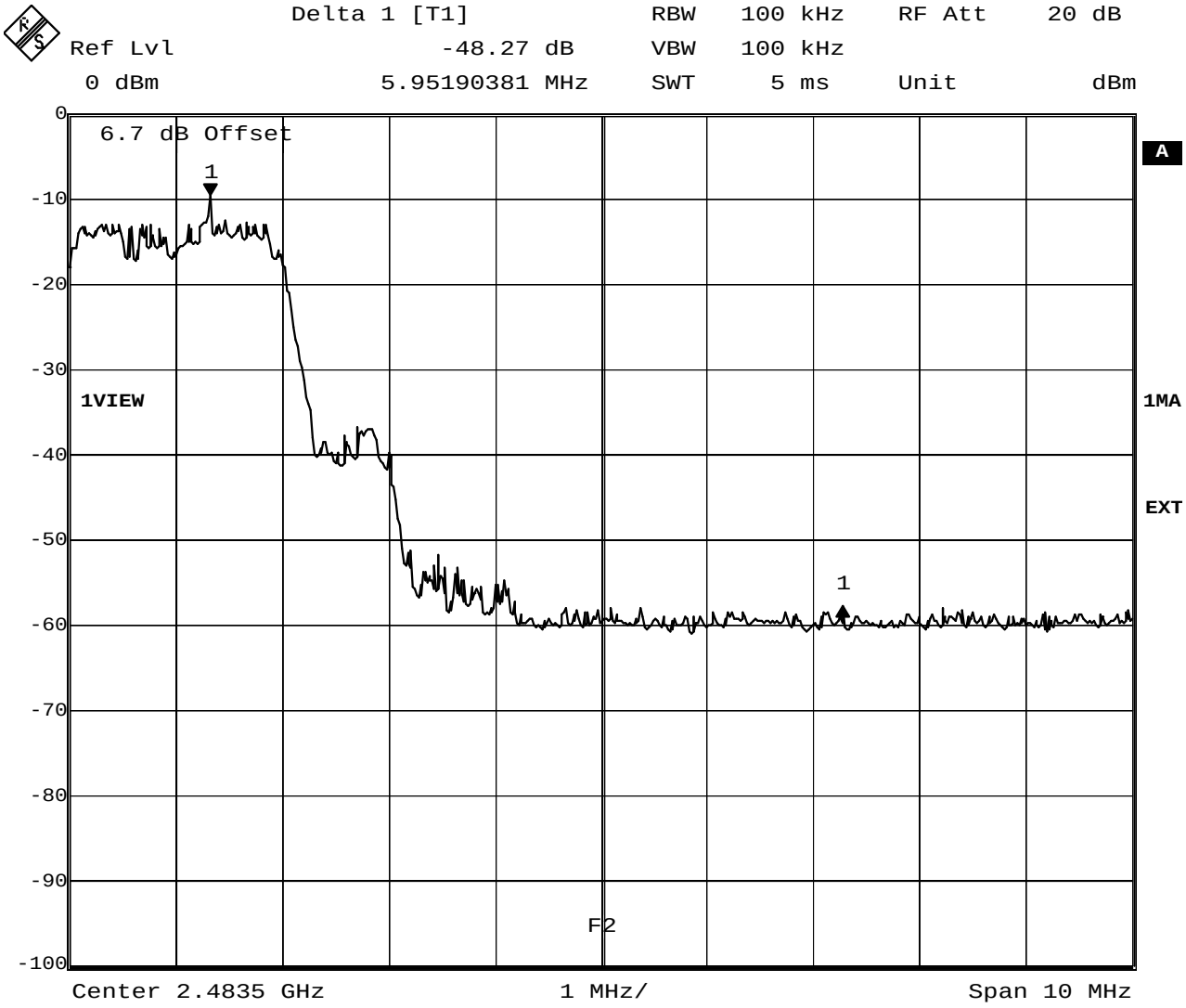
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 0 / 2DH5
Comment 3	hopping mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:34:04

FCC part 15.247
Band-edge compliance of RF conducted emissions

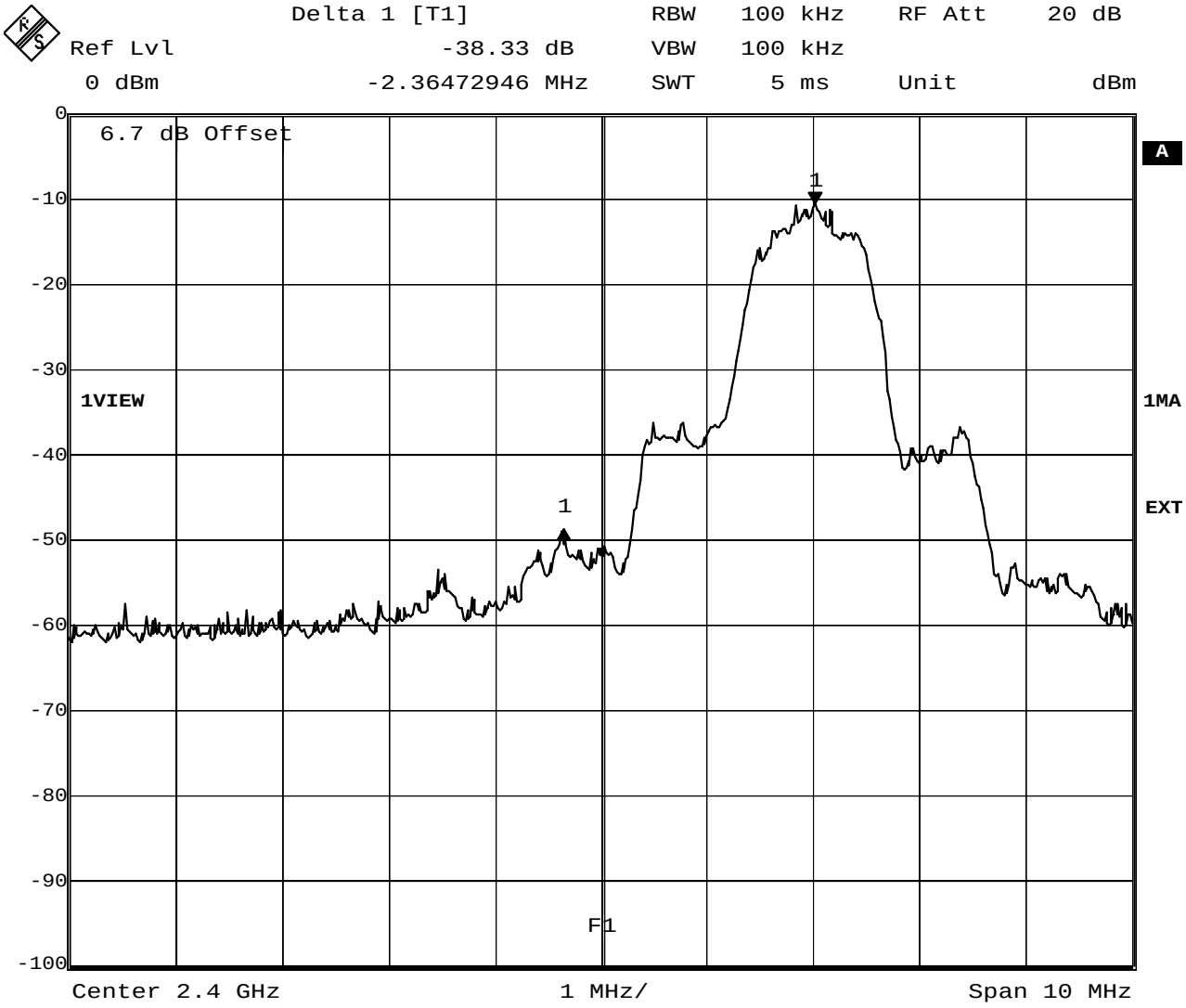
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 78 / 2DH5
Comment 3	hopping mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:37:17

FCC part 15.247
Band-edge compliance of RF conducted emissions

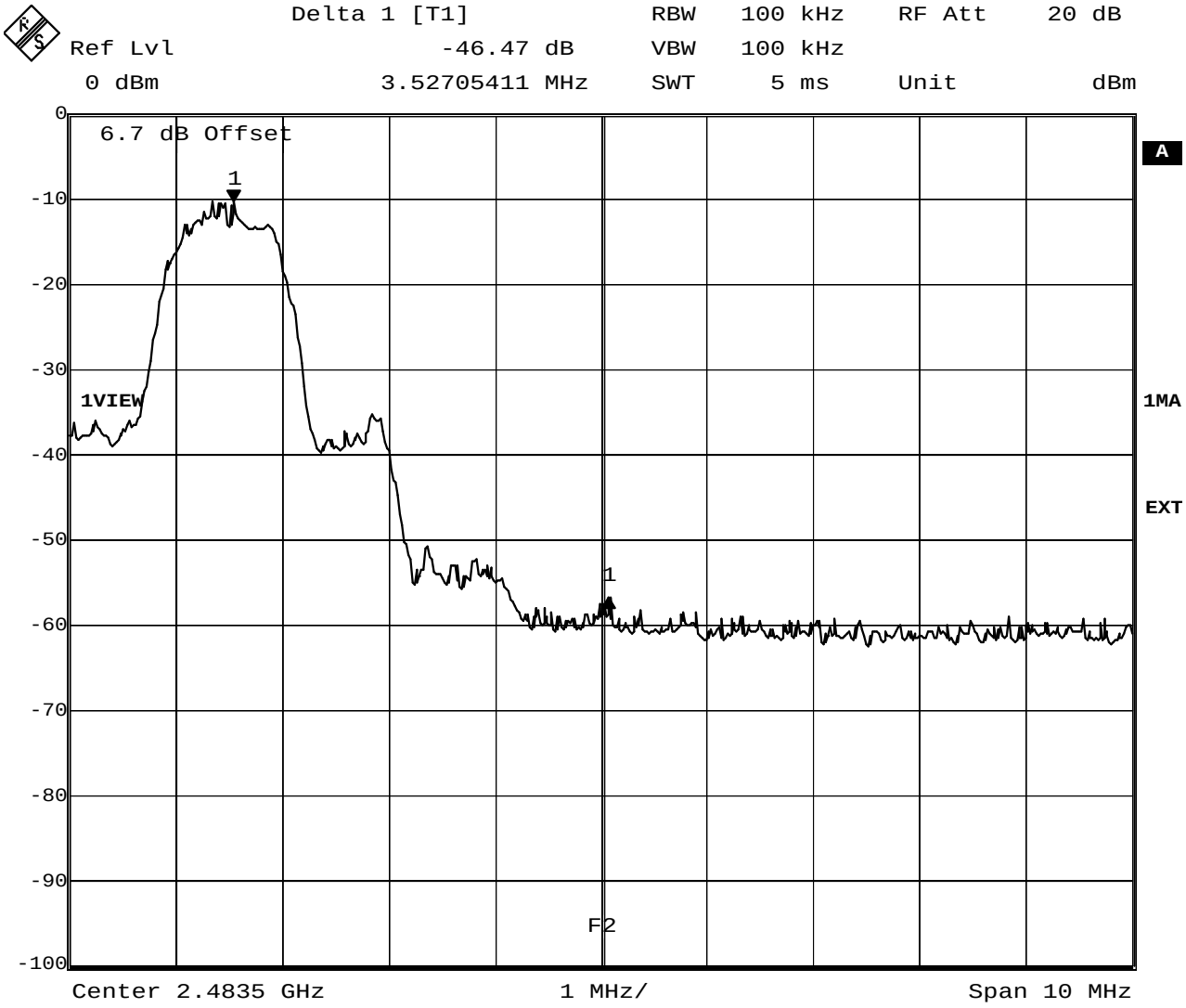
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 0 / 3DH5
Comment 3	single frequency mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:44:26

FCC part 15.247
Band-edge compliance of RF conducted emissions

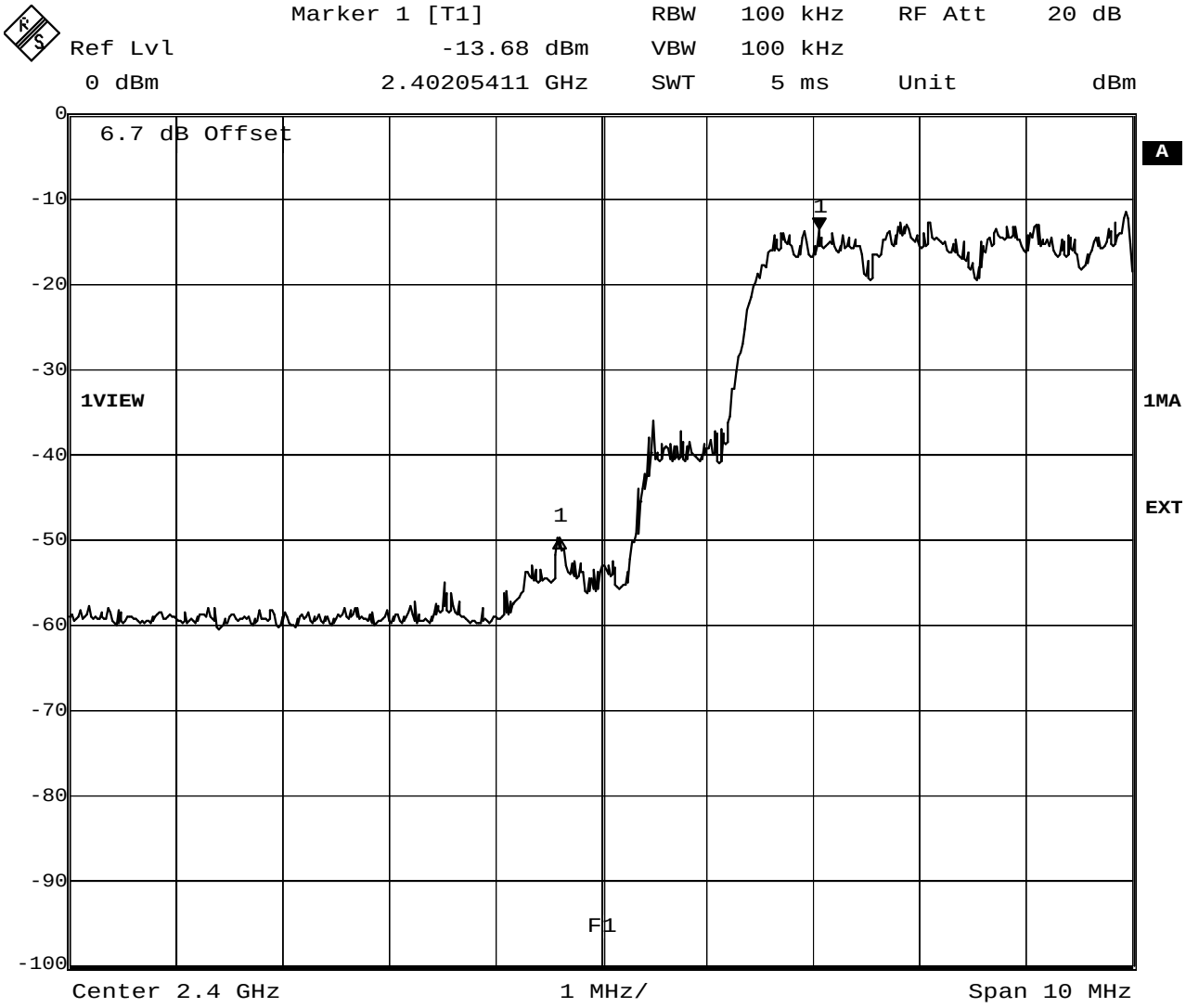
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 78 / 3DH5
Comment 3	single frequency mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:45:26

FCC part 15.247
Band-edge compliance of RF conducted emissions

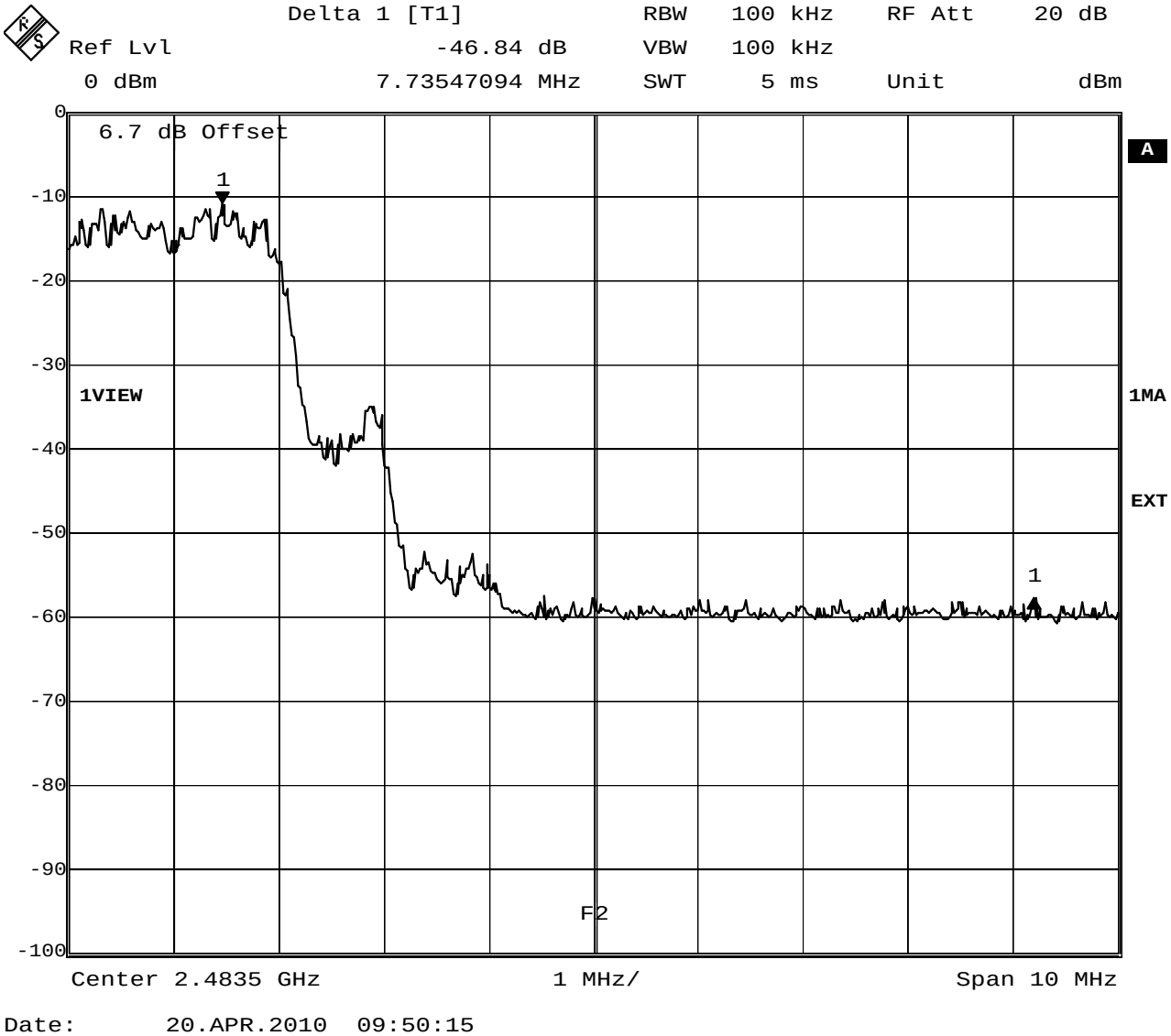
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 0 / 3DH5
Comment 3	hopping mode



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 20.APR.2010 09:47:50

FCC part 15.247
Band-edge compliance of RF conducted emissions

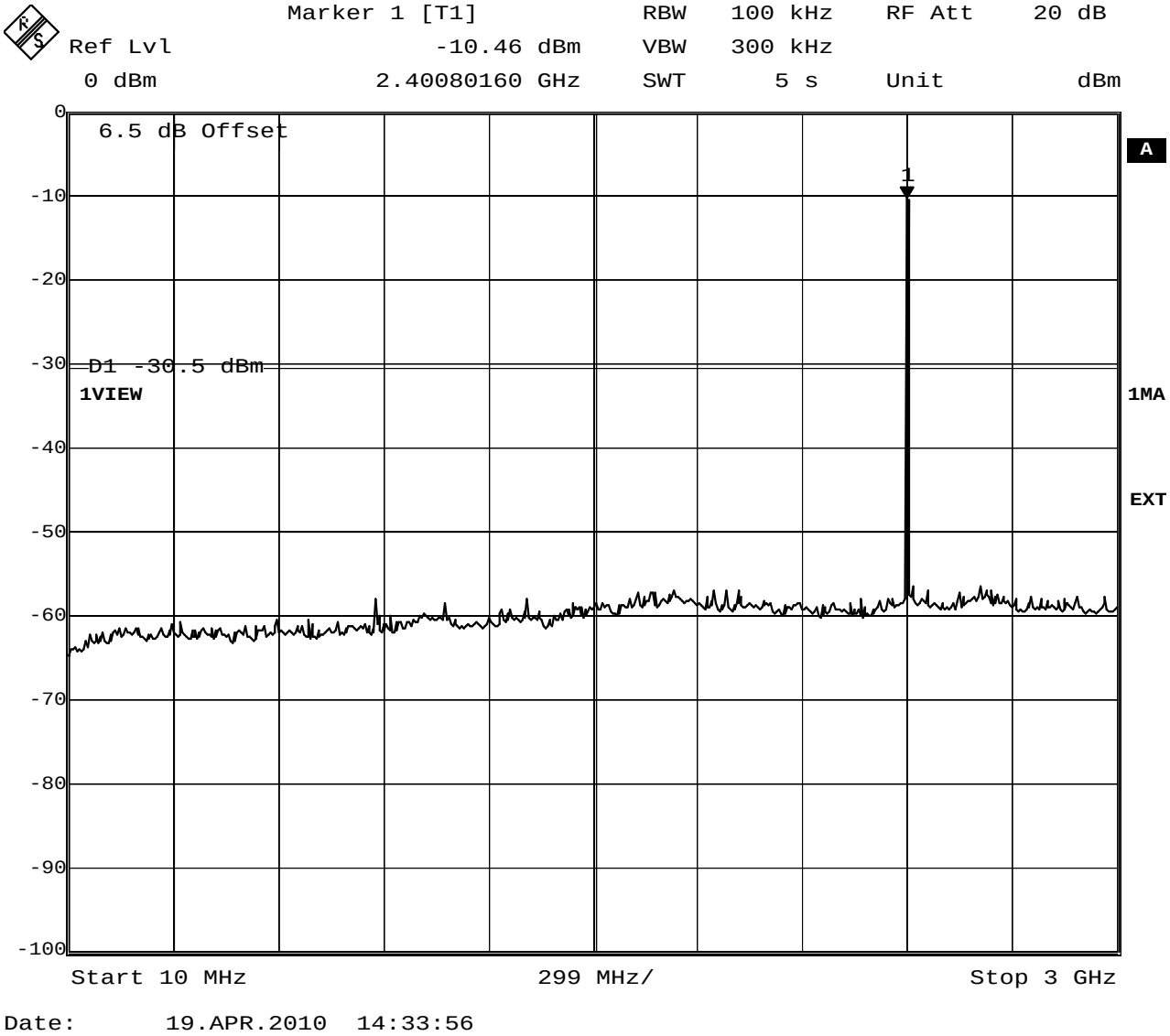
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15 section 247(c)
Comment 1	Band-edge compliance
Comment 2	Channel.: 78 / 3DH5
Comment 3	hopping mode



Annex H Transmitter conducted spurious emissions

FCC part 15.247 (d)
Spurious Emissions

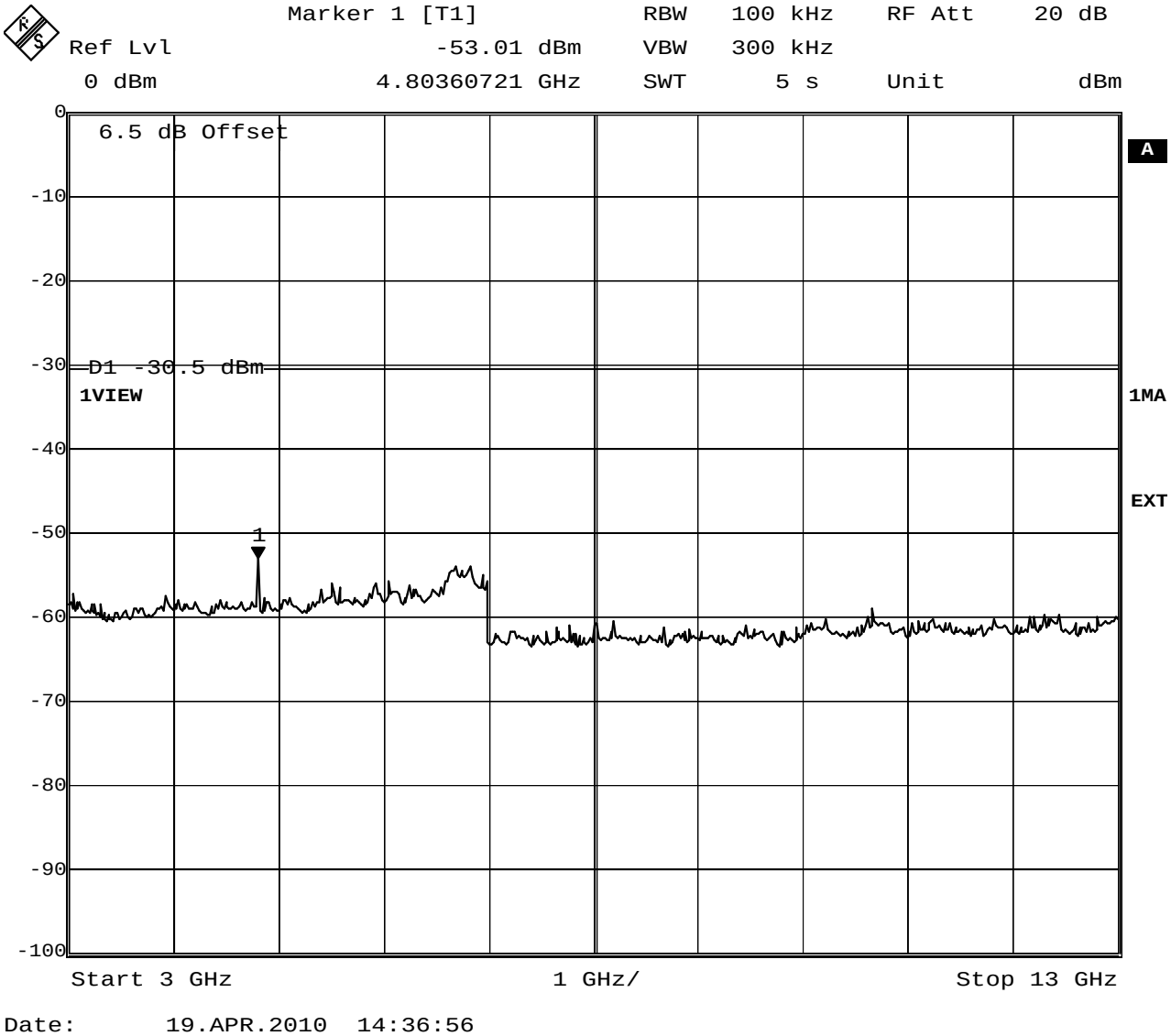
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2402 MHz
Comment 3	GFSK / DH5



Date: 19.APR.2010 14:33:56

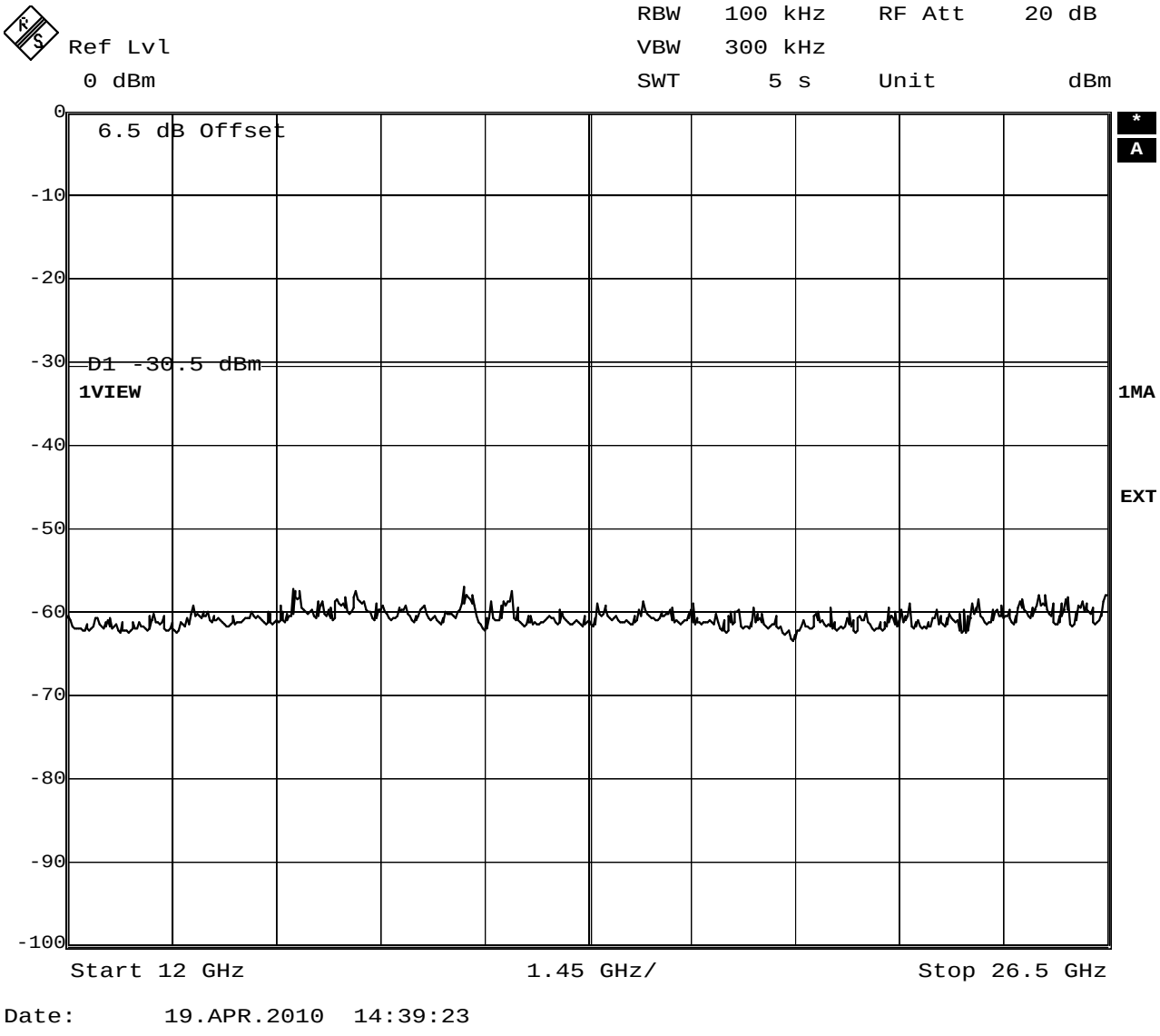
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2402 MHz
Comment 3	GFSK / DH5



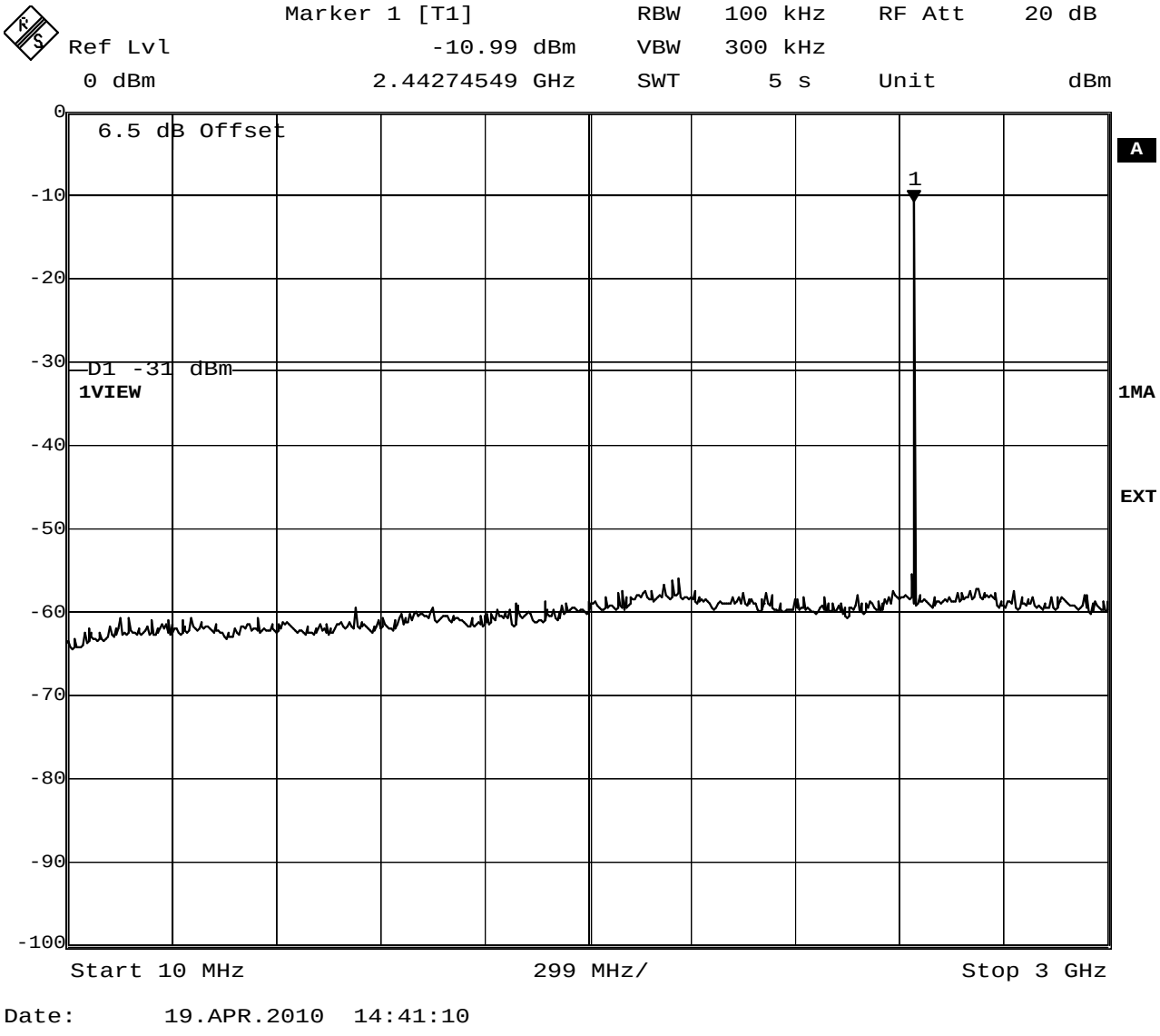
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2402 MHz
Comment 3	GFSK / DH5



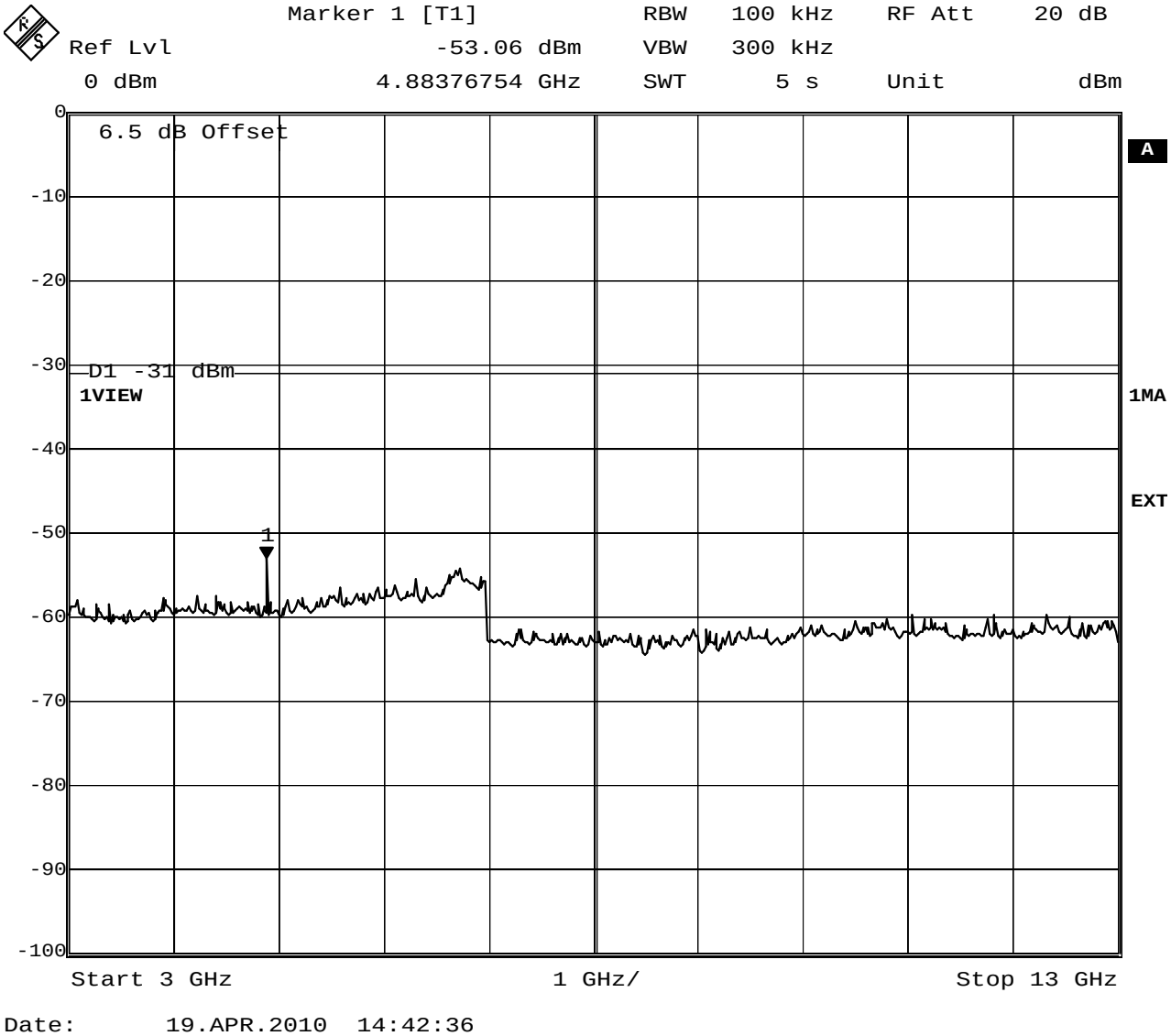
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2441 MHz
Comment 3	GFSK / DH5



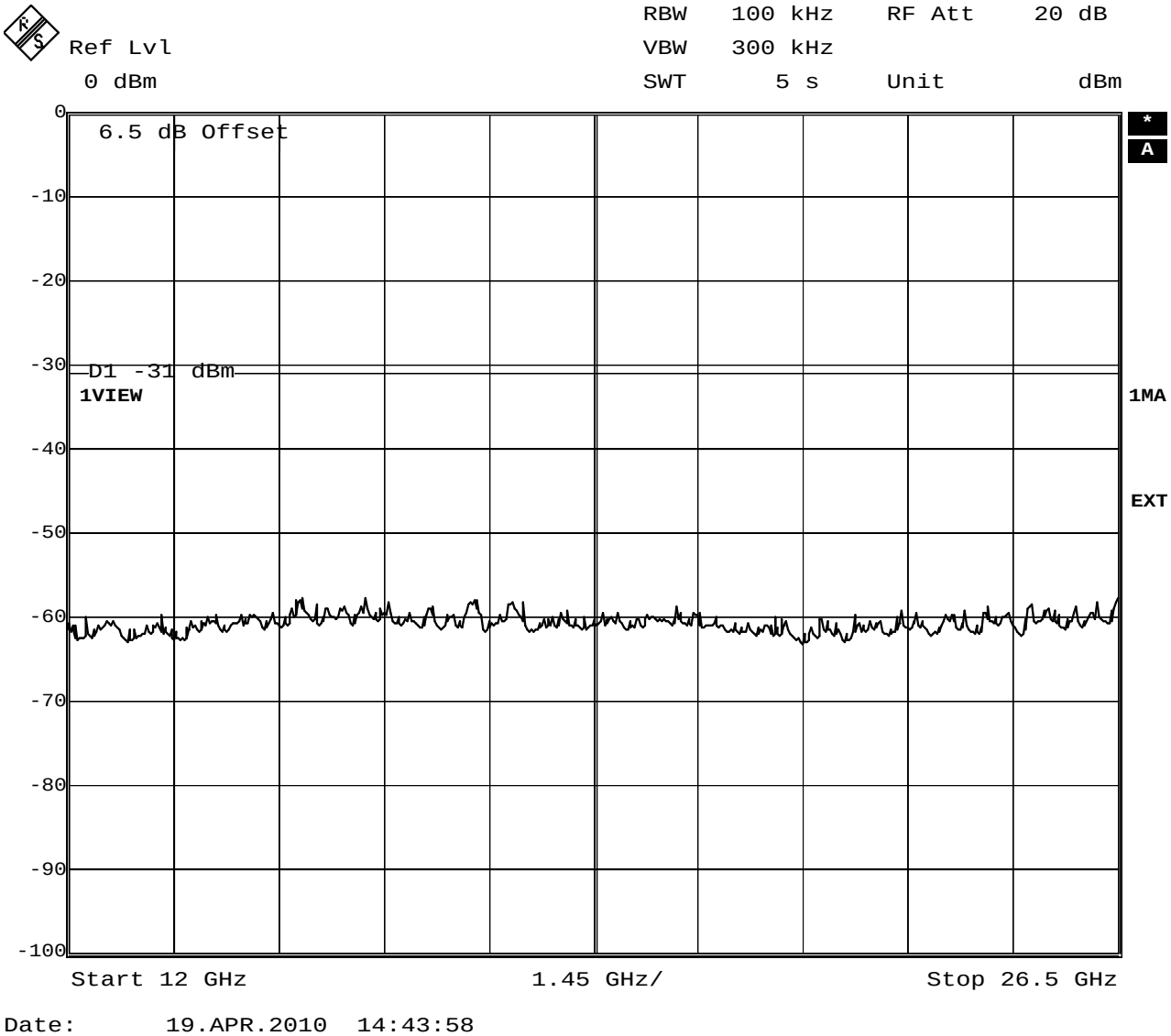
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2441 MHz
Comment 3	GFSK / DH5



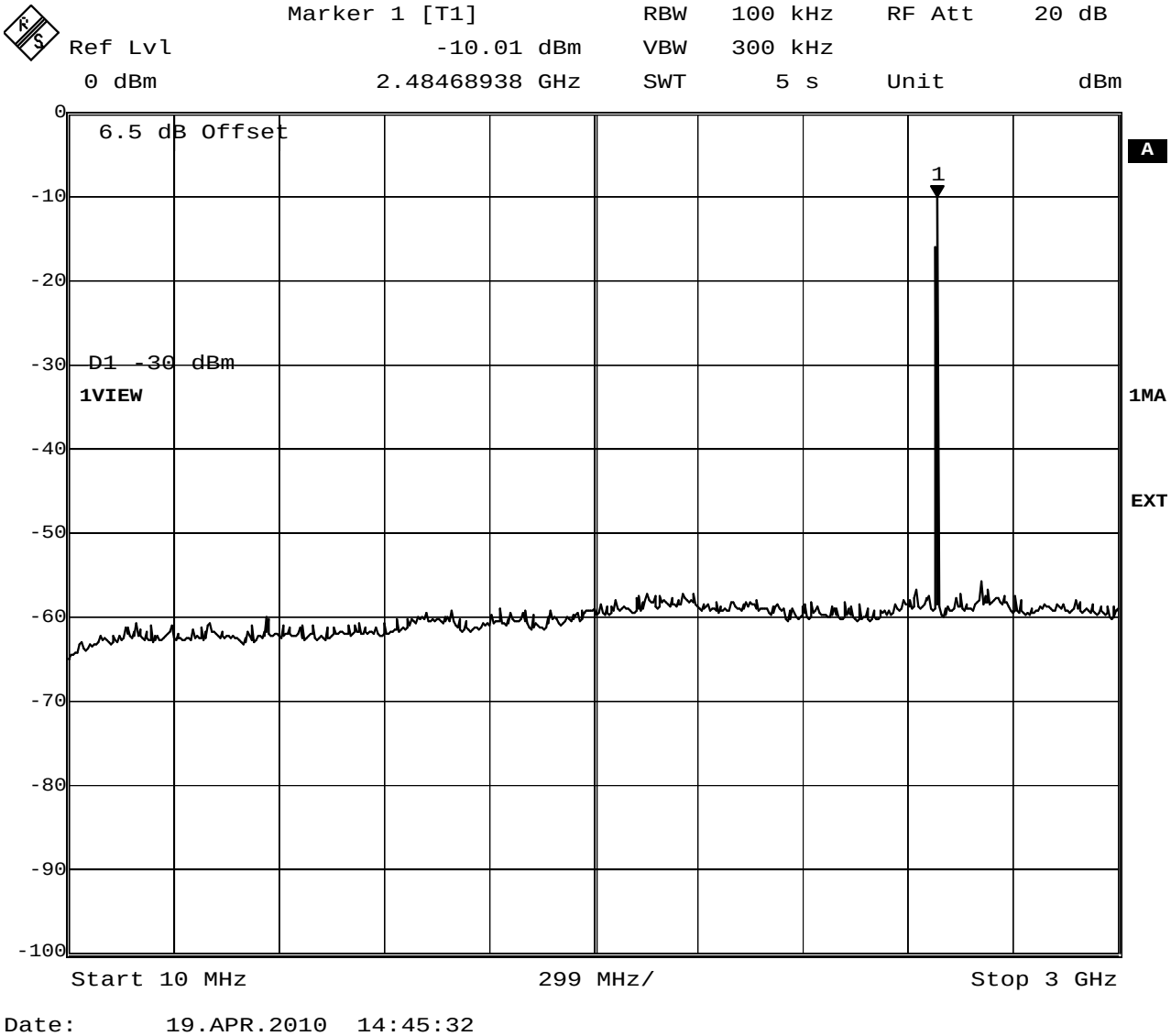
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2441 MHz
Comment 3	GFSK / DH5



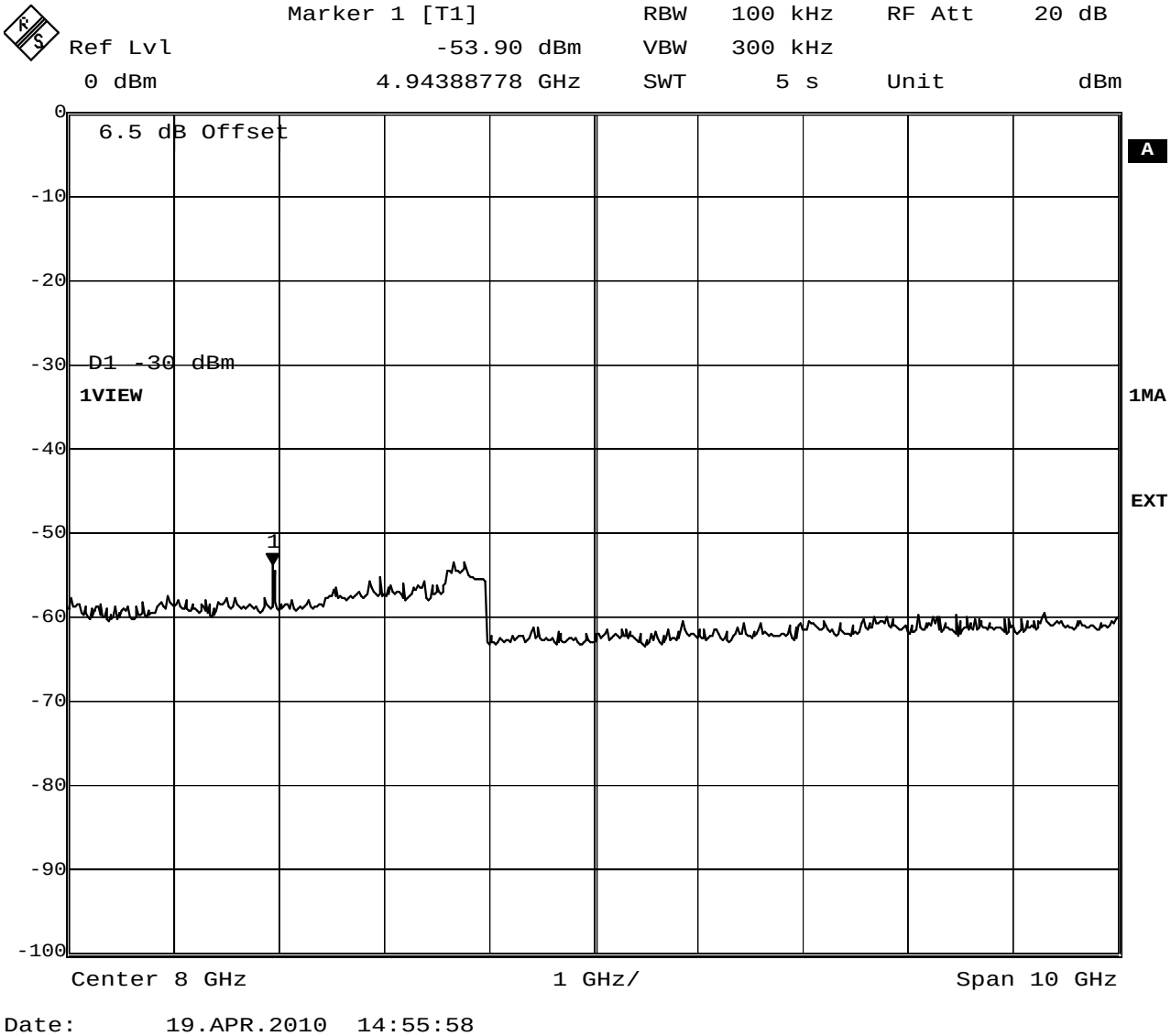
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2480 MHz
Comment 3	GFSK / DH5



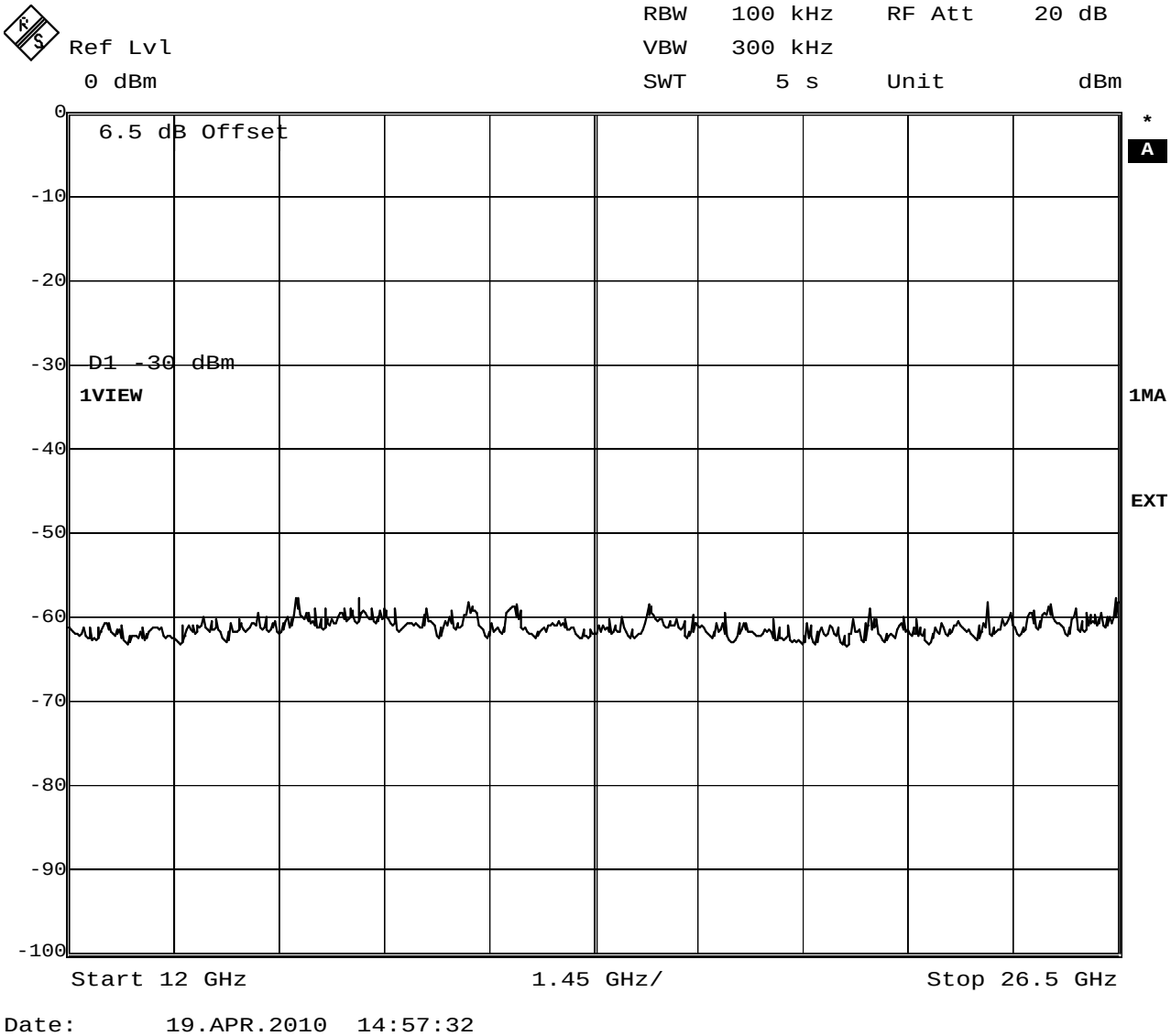
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2480 MHz
Comment 3	GFSK / DH5



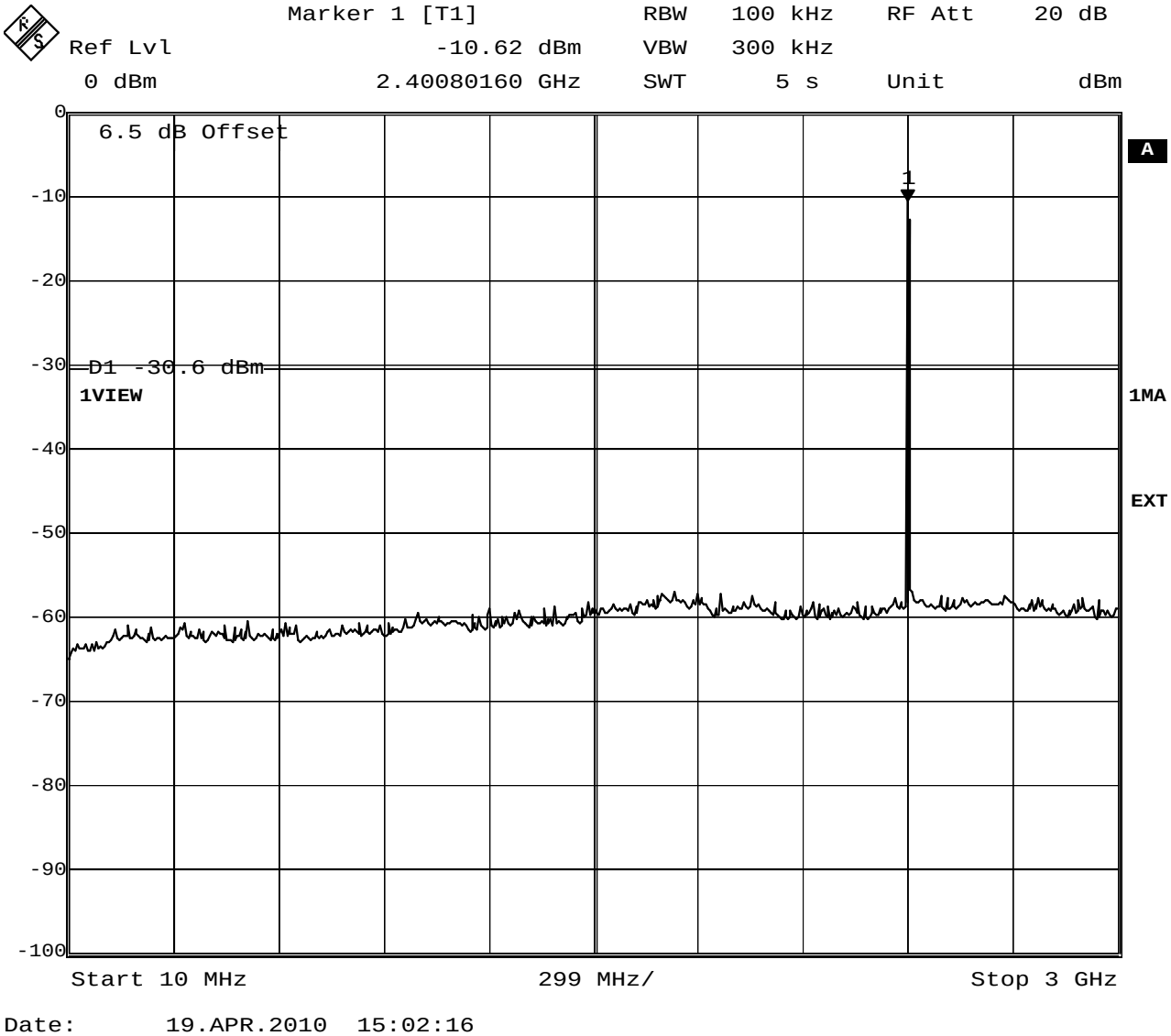
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2480 MHz
Comment 3	GFSK / DH5



FCC part 15.247 (d)
Spurious Emissions

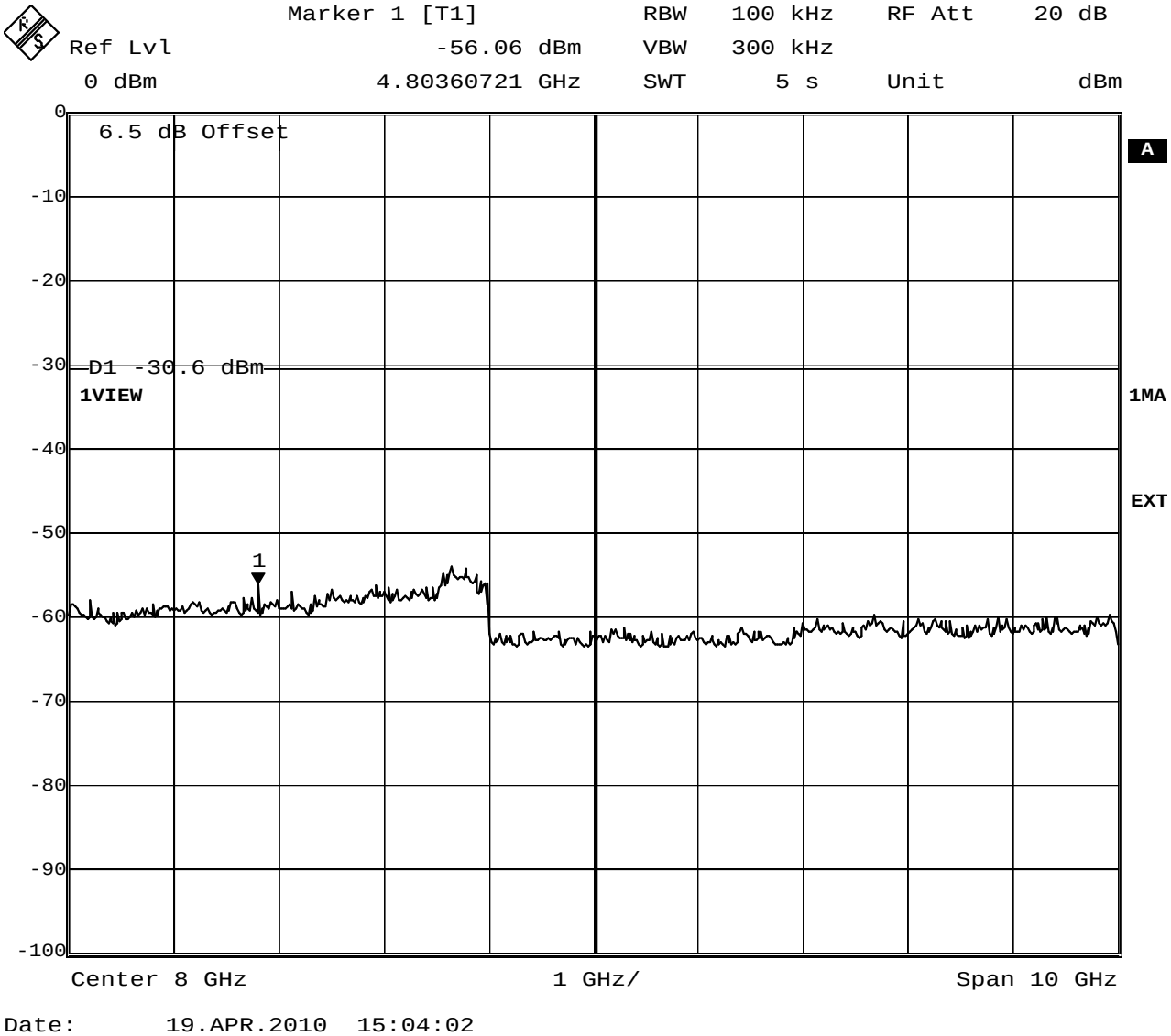
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2402 MHz
Comment 3	8DPSK / 3DH5



Date: 19.APR.2010 15:02:16

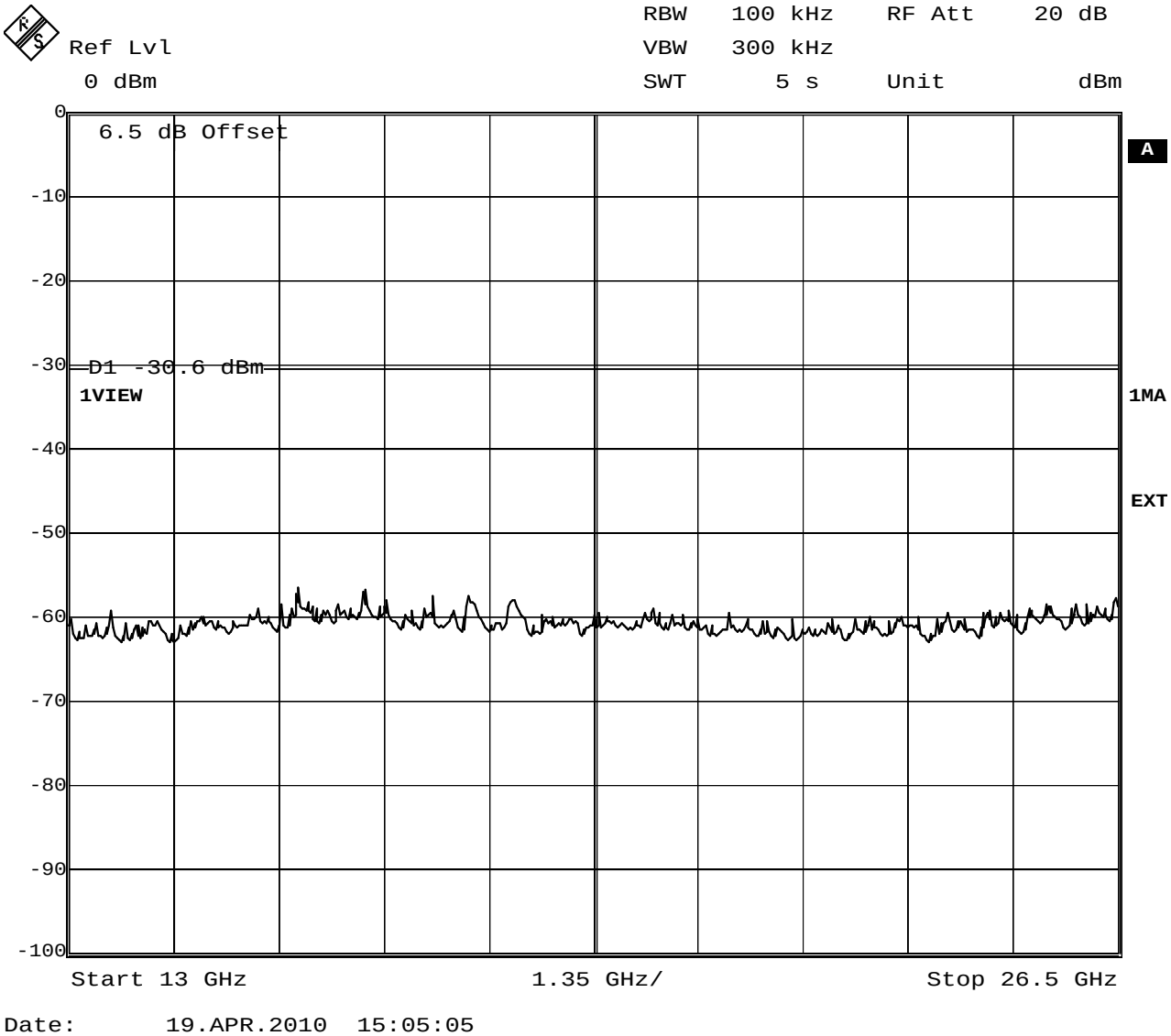
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2402 MHz
Comment 3	8DPSK / 3DH5



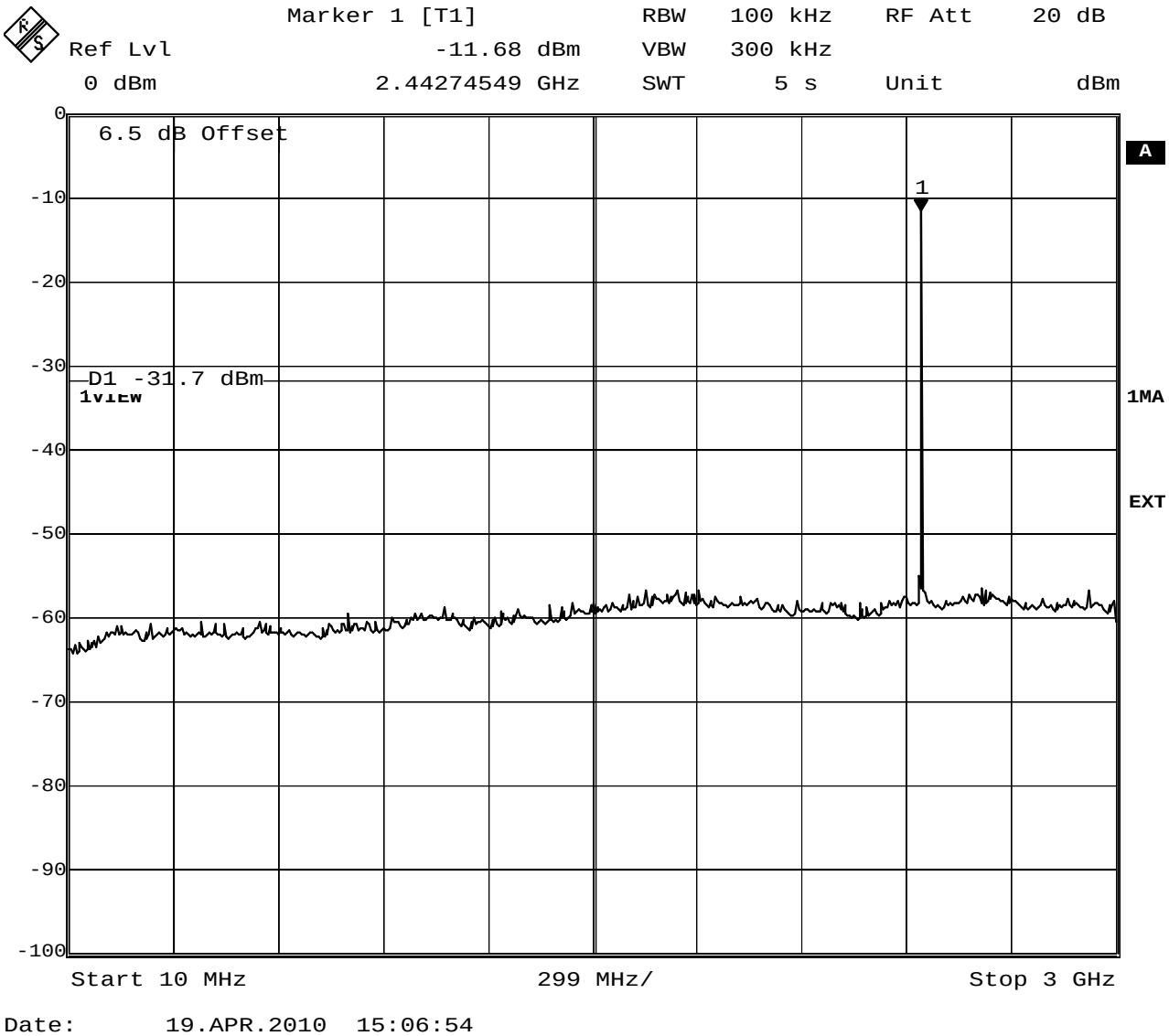
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2402 MHz
Comment 3	8DPSK / 3DH5



FCC part 15.247 (d)
Spurious Emissions

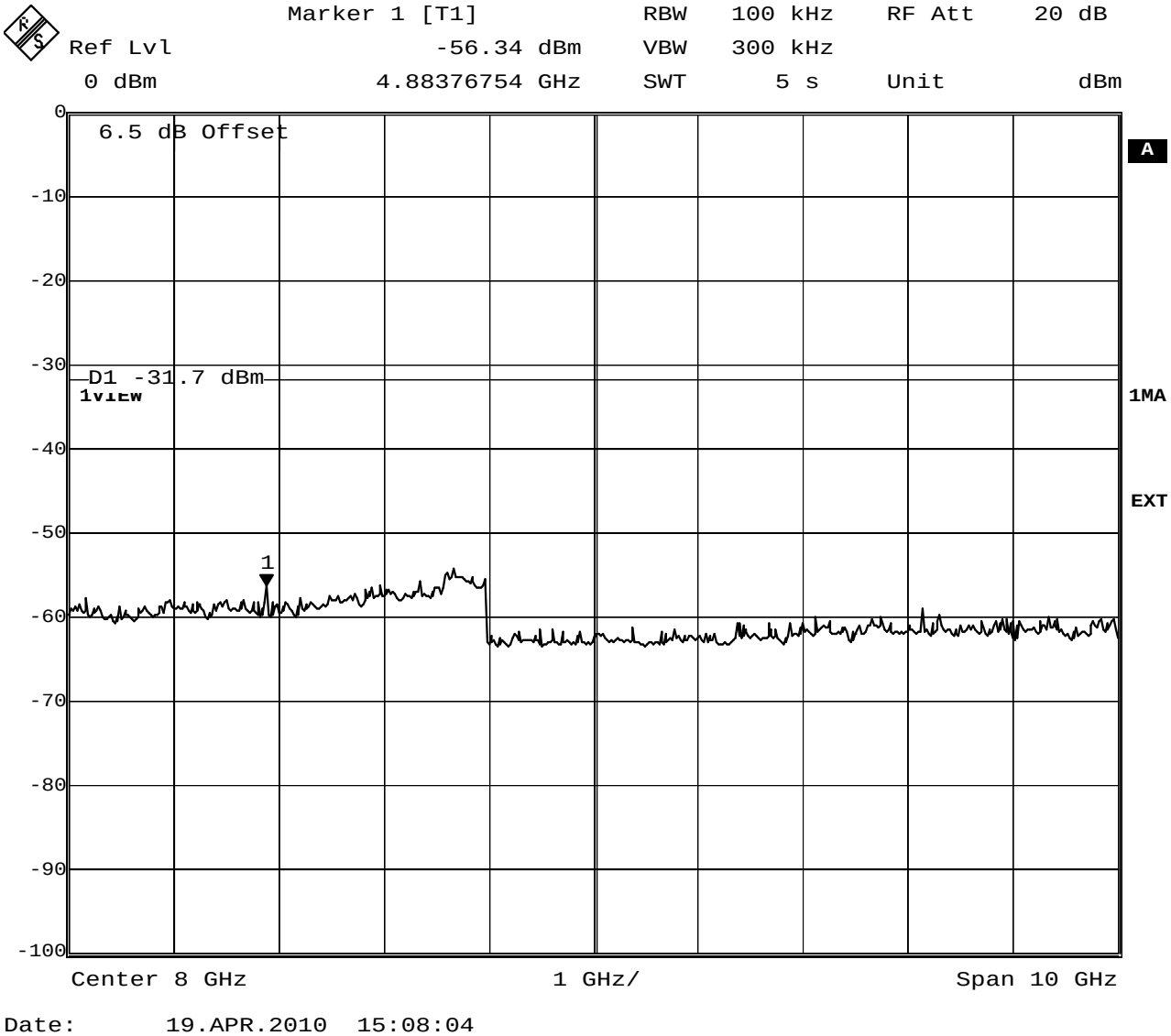
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2441 MHz
Comment 3	8DPSK / 3DH5



Date: 19.APR.2010 15:06:54

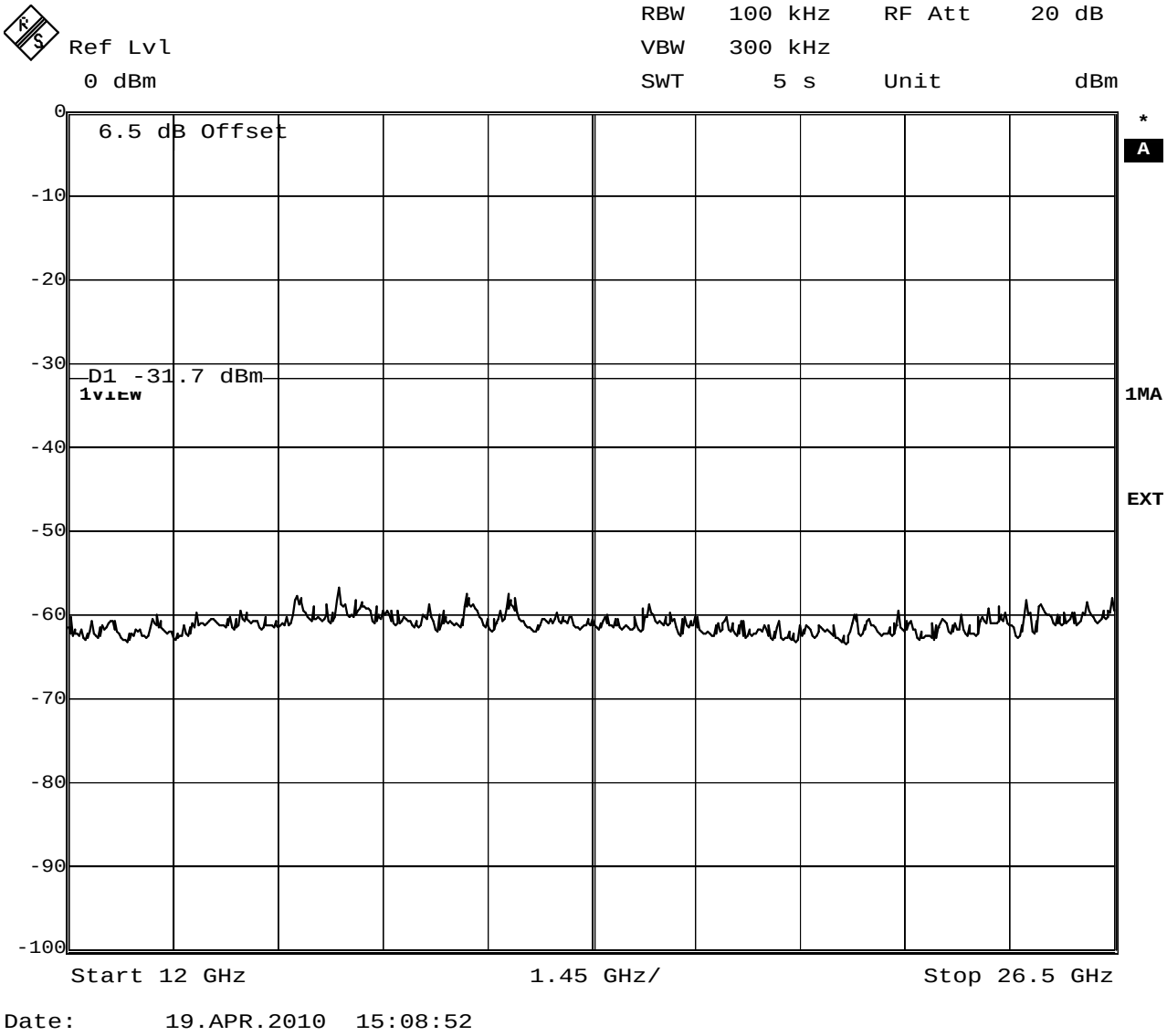
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2441 MHz
Comment 3	8DPSK / 3DH5



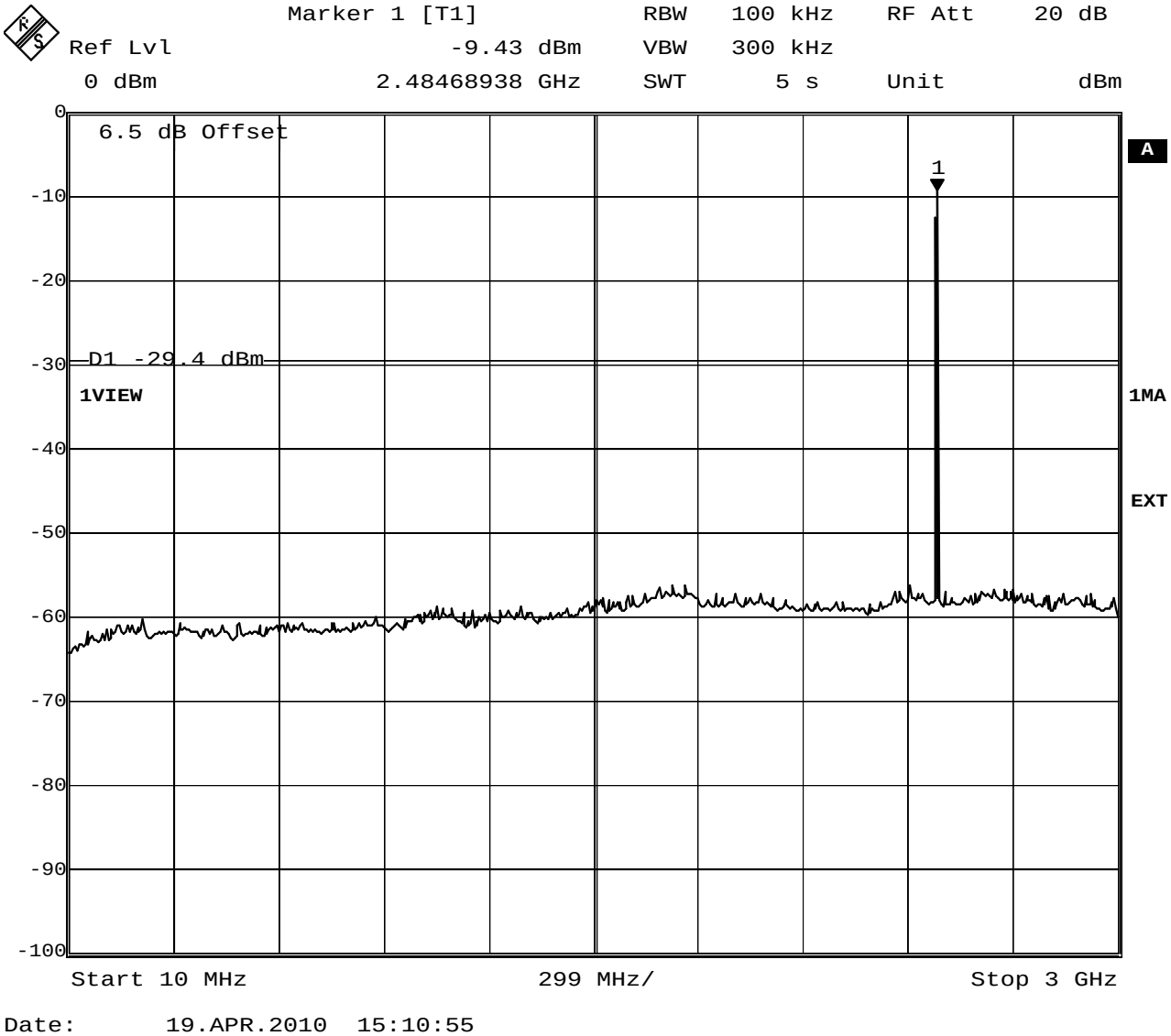
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2441 MHz
Comment 3	8DPSK / 3DH5



FCC part 15.247 (d)
Spurious Emissions

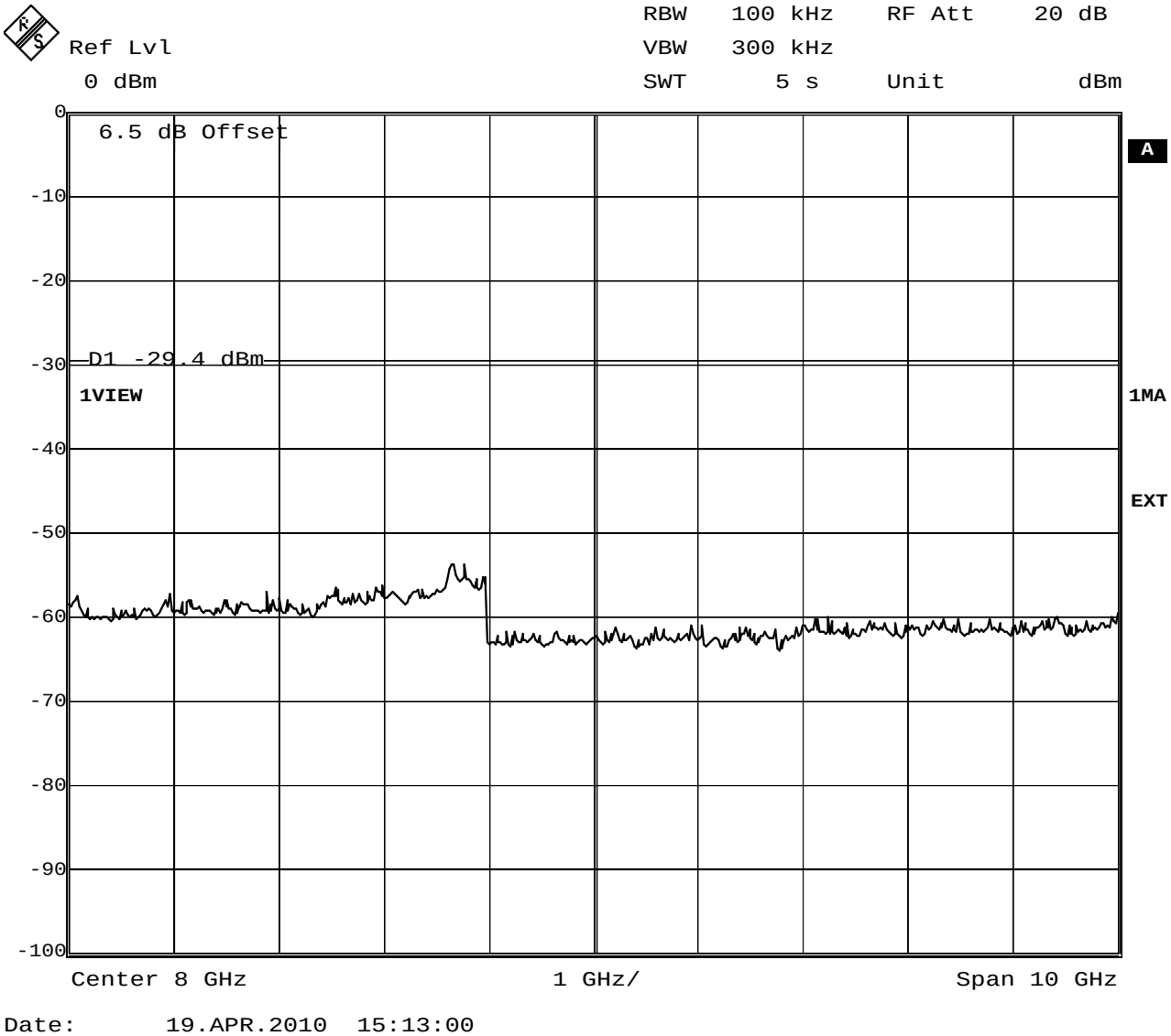
EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2480 MHz
Comment 3	8DPSK / 3DH5



Date: 19.APR.2010 15:10:55

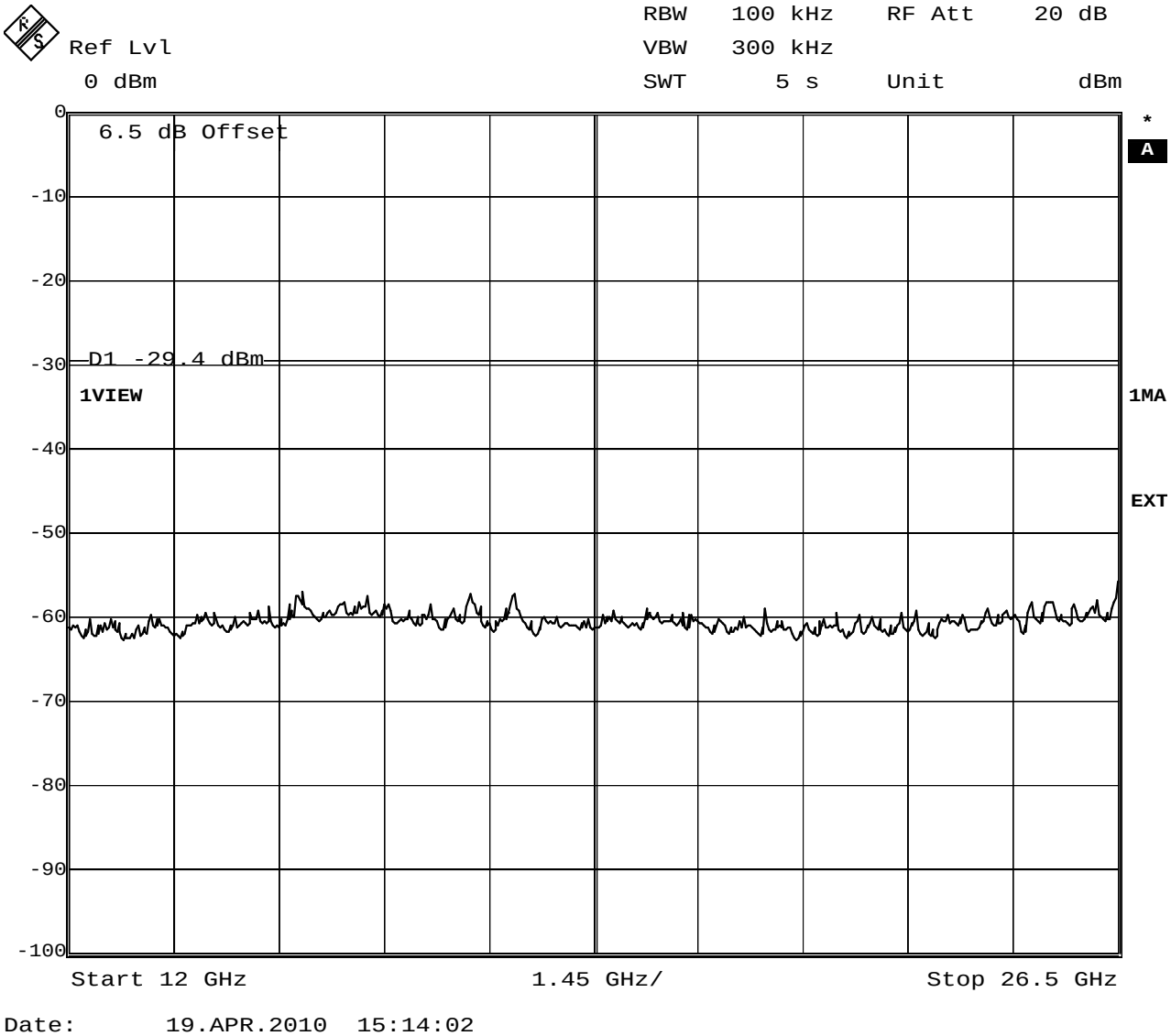
FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2480 MHz
Comment 3	8DPSK / 3DH5



FCC part 15.247 (d)
Spurious Emissions

EUT	Spirometer
Model	Spirodoc
Approval Holder	MIR Medical International Research
Temperature / Voltage	23°C / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC part 15.247 (d)
Comment 1	Spurious Emissions conducted
Comment 2	Channel : 2480 MHz
Comment 3	8DPSK / 3DH5



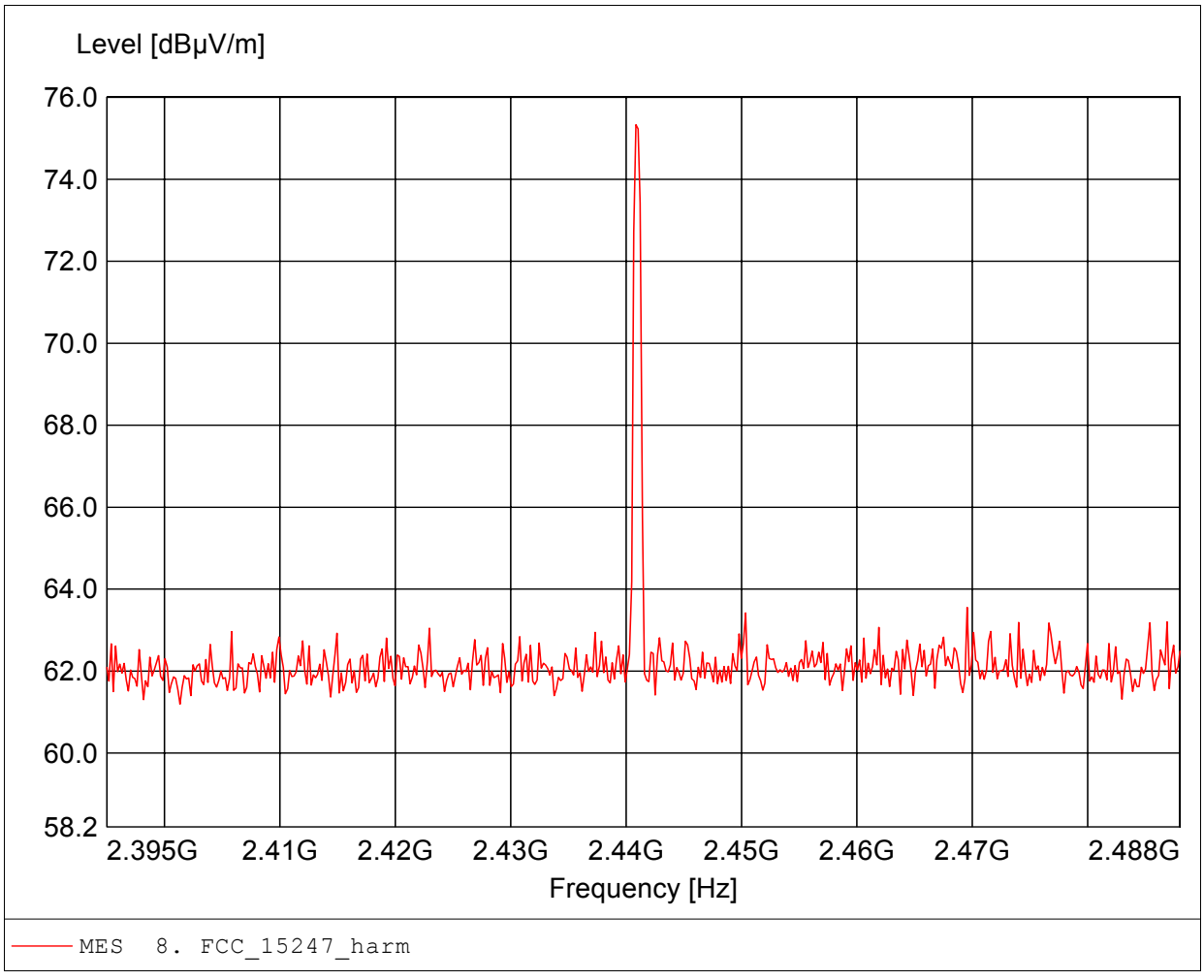
Annex I Transmitter radiated spurious emissions

Only plots containing emissions are given in this section. All missing plots or frequency ranges are free of spurious emissions and contain only background noise.

Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

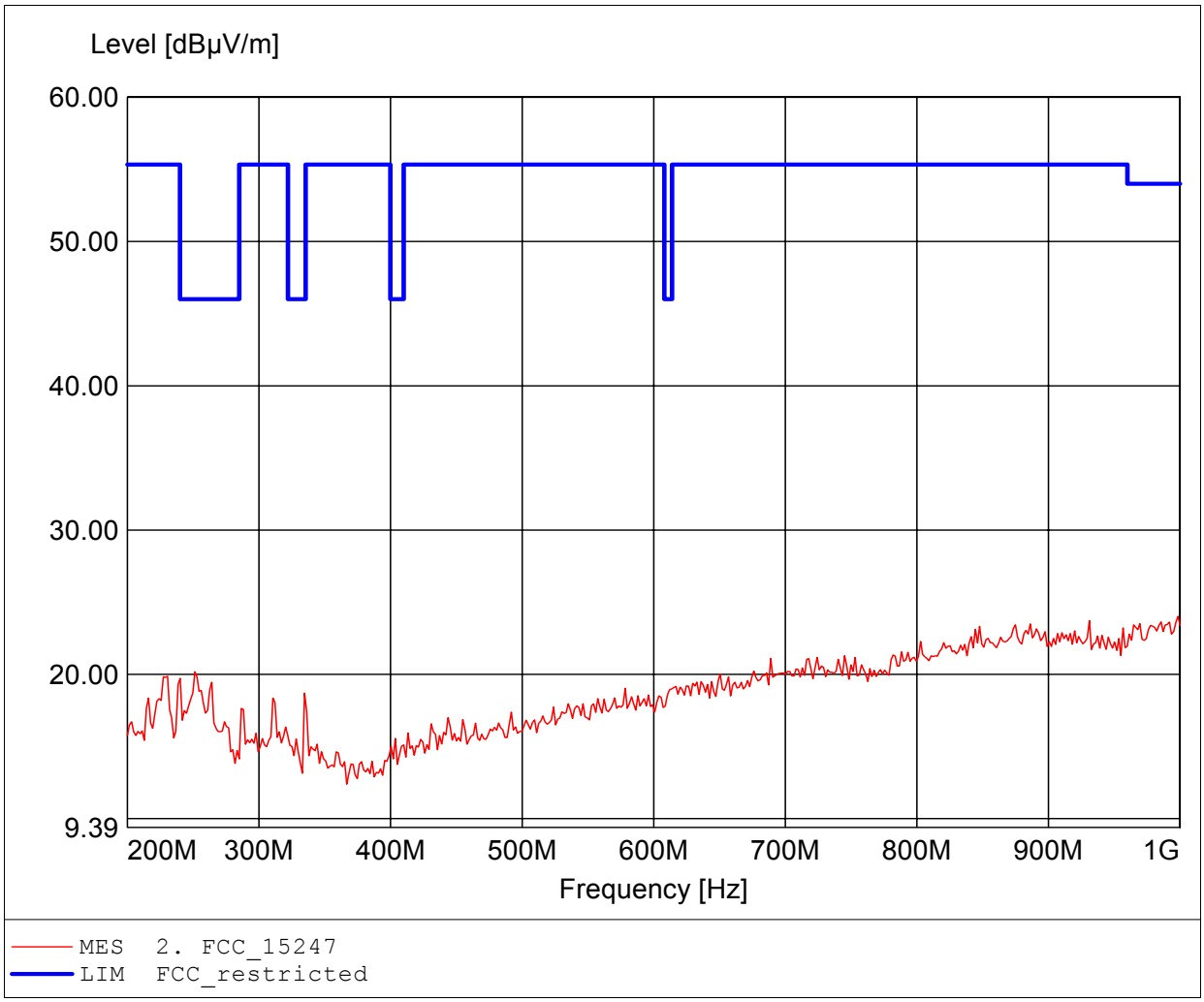
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: BBHA9120D
Comment 2:	Freq: 2.441GHz, Emax: 75.33dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

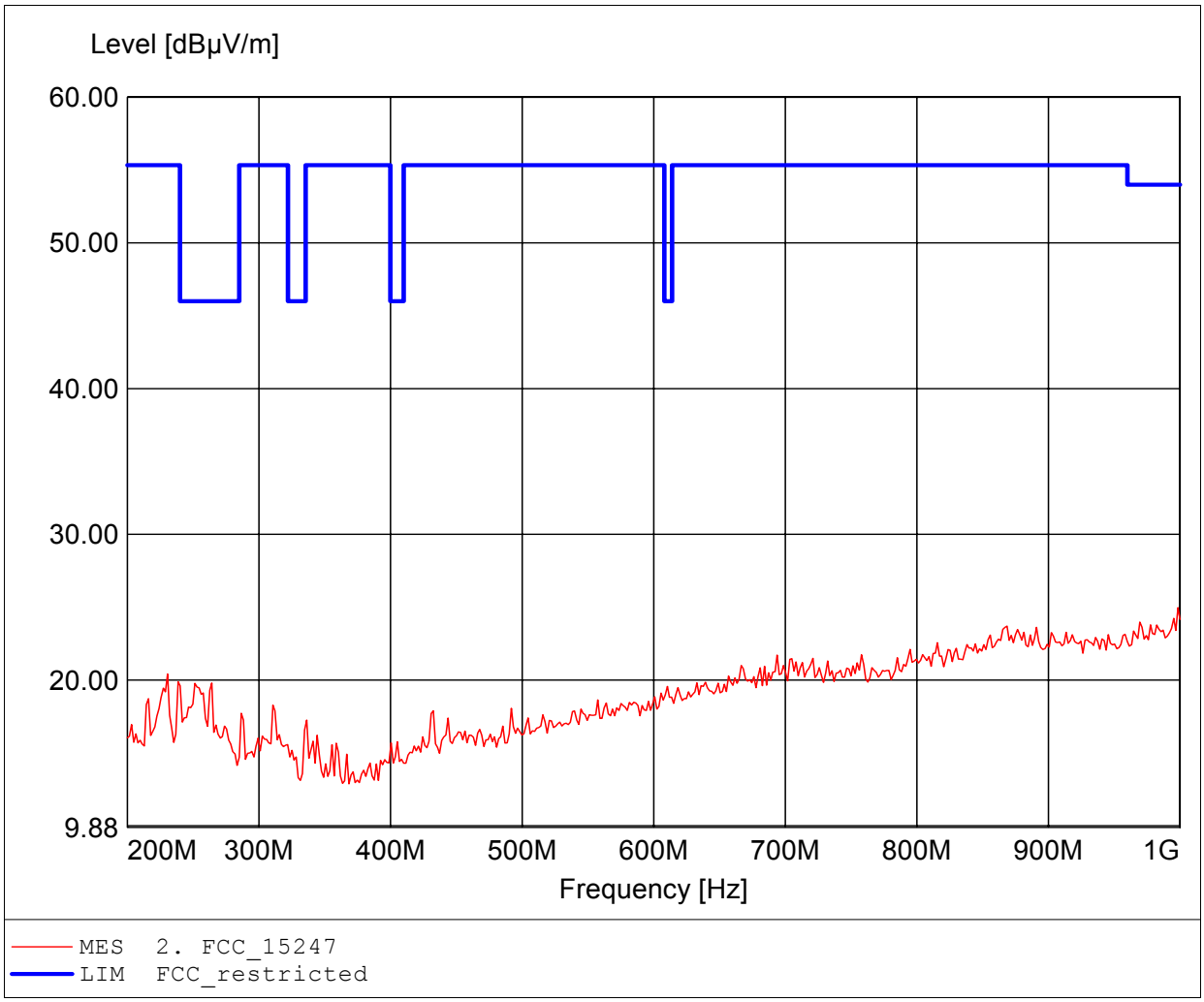
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223, amplif.
Comment 2:	Freq: 998.397MHz, Emax: 24.01dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

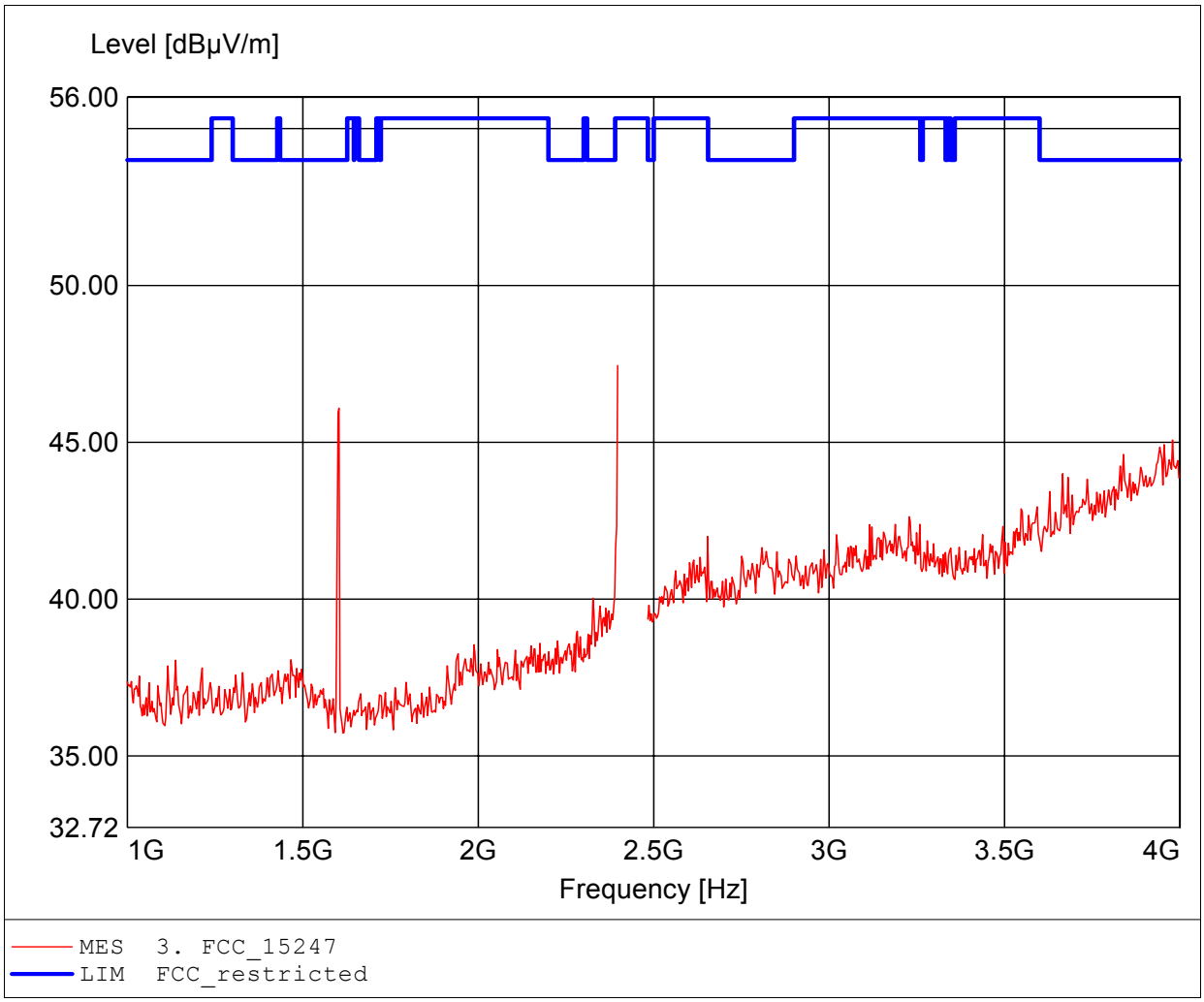
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223, amplif.
Comment 2:	Freq: 998.397MHz, Emax: 24.96dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

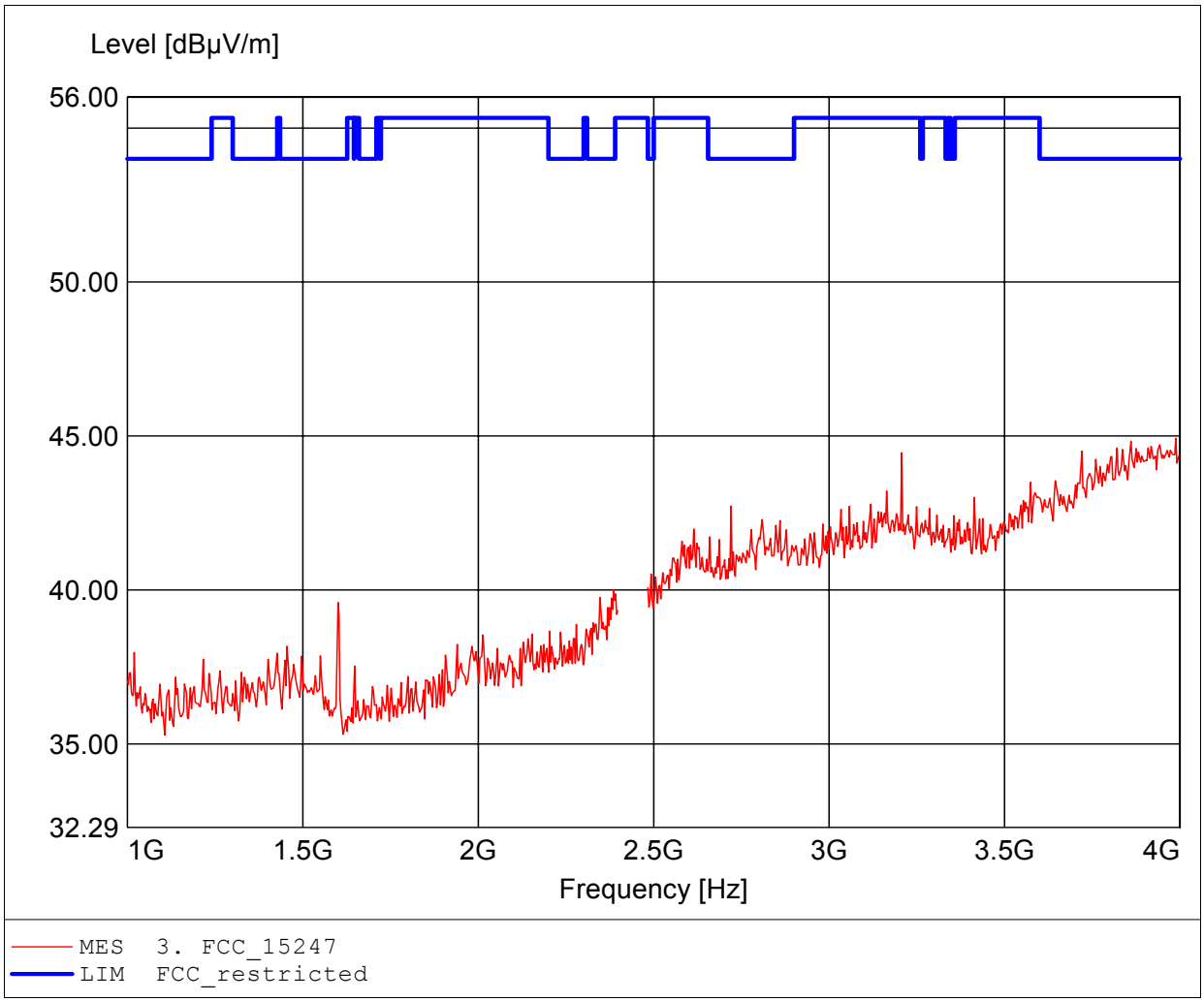
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 2.397GHz, Emax: 47.45dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

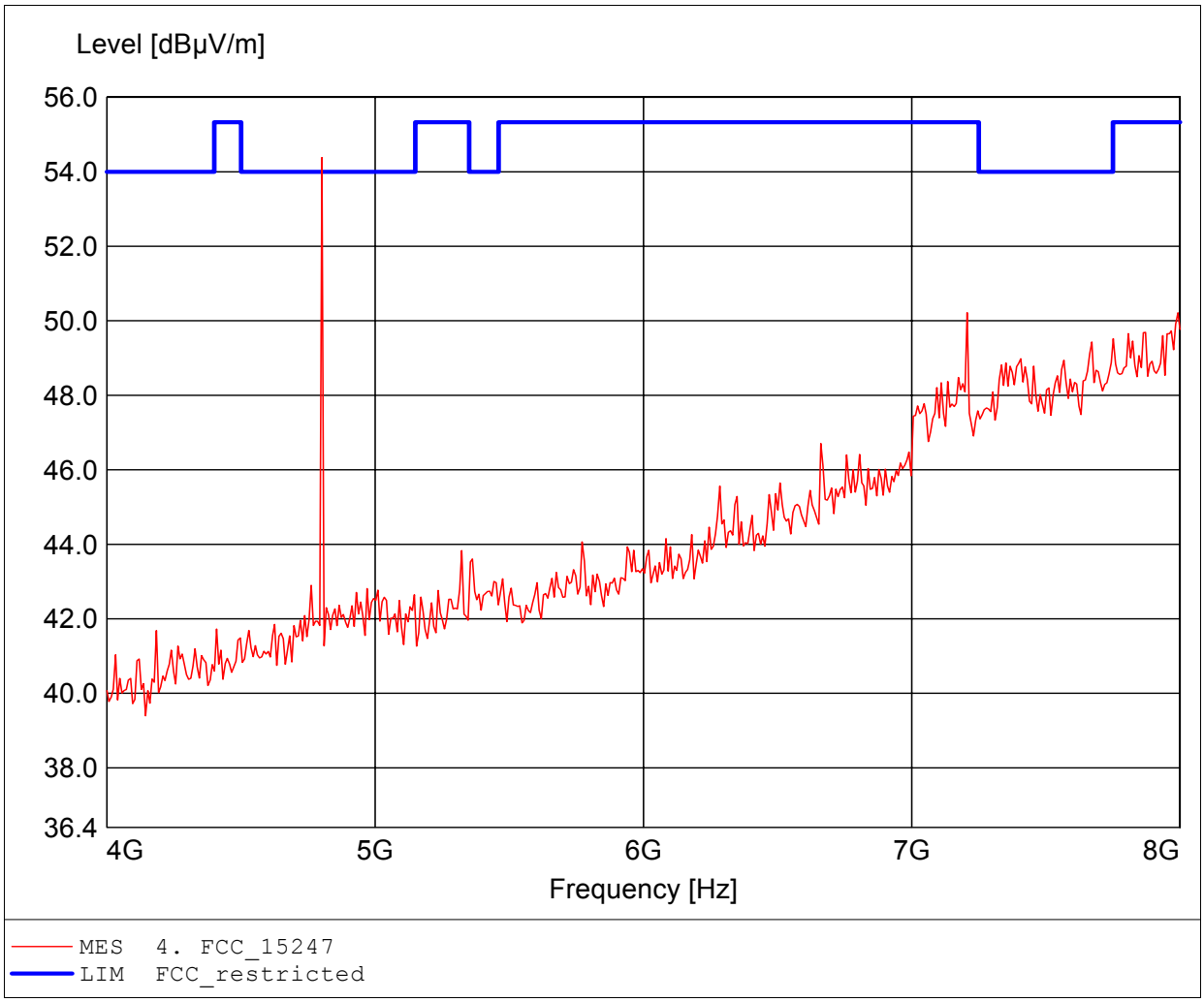
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 3.988GHz, Emax: 44.93dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

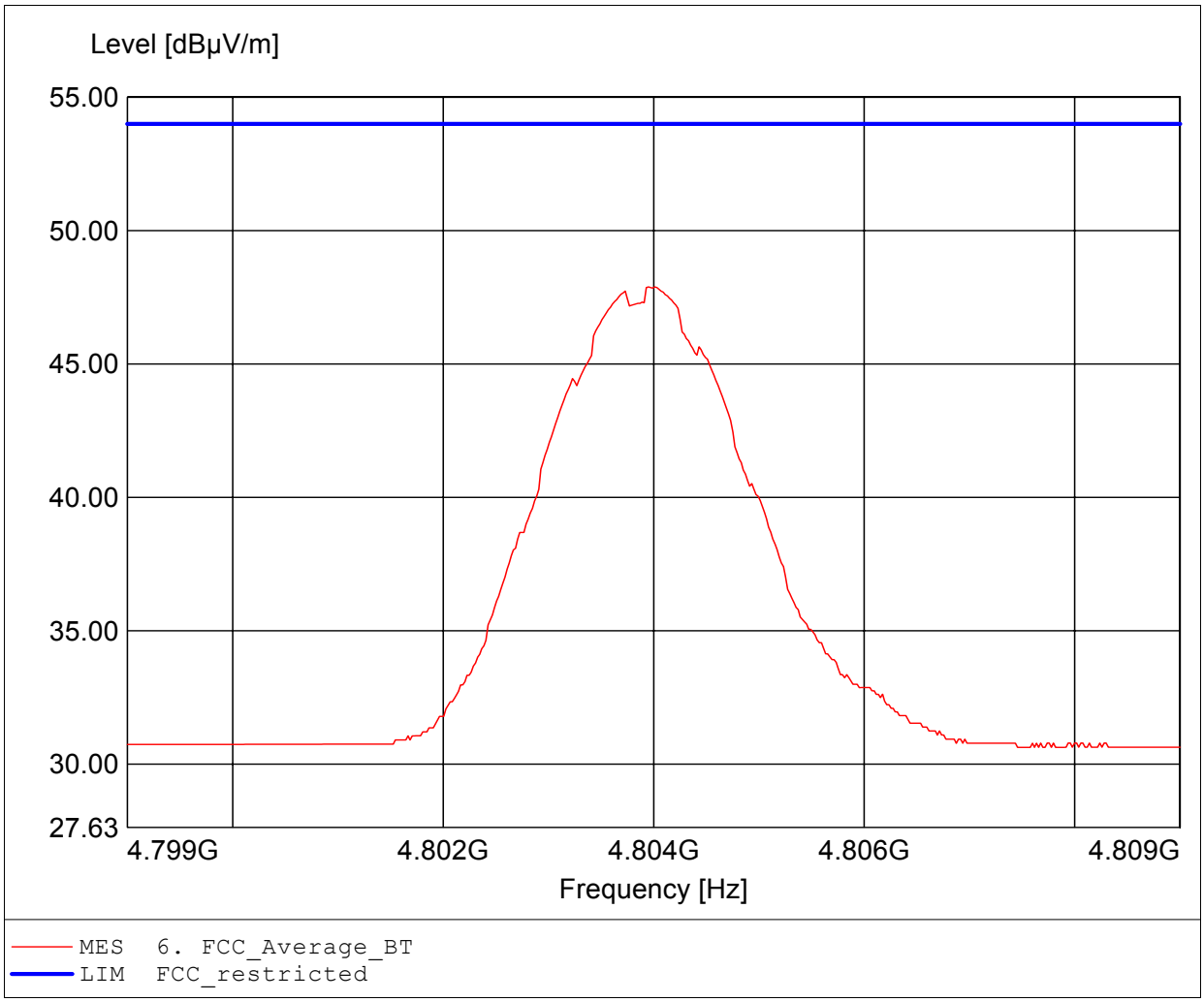
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.802GHz, Emax: 54.38dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

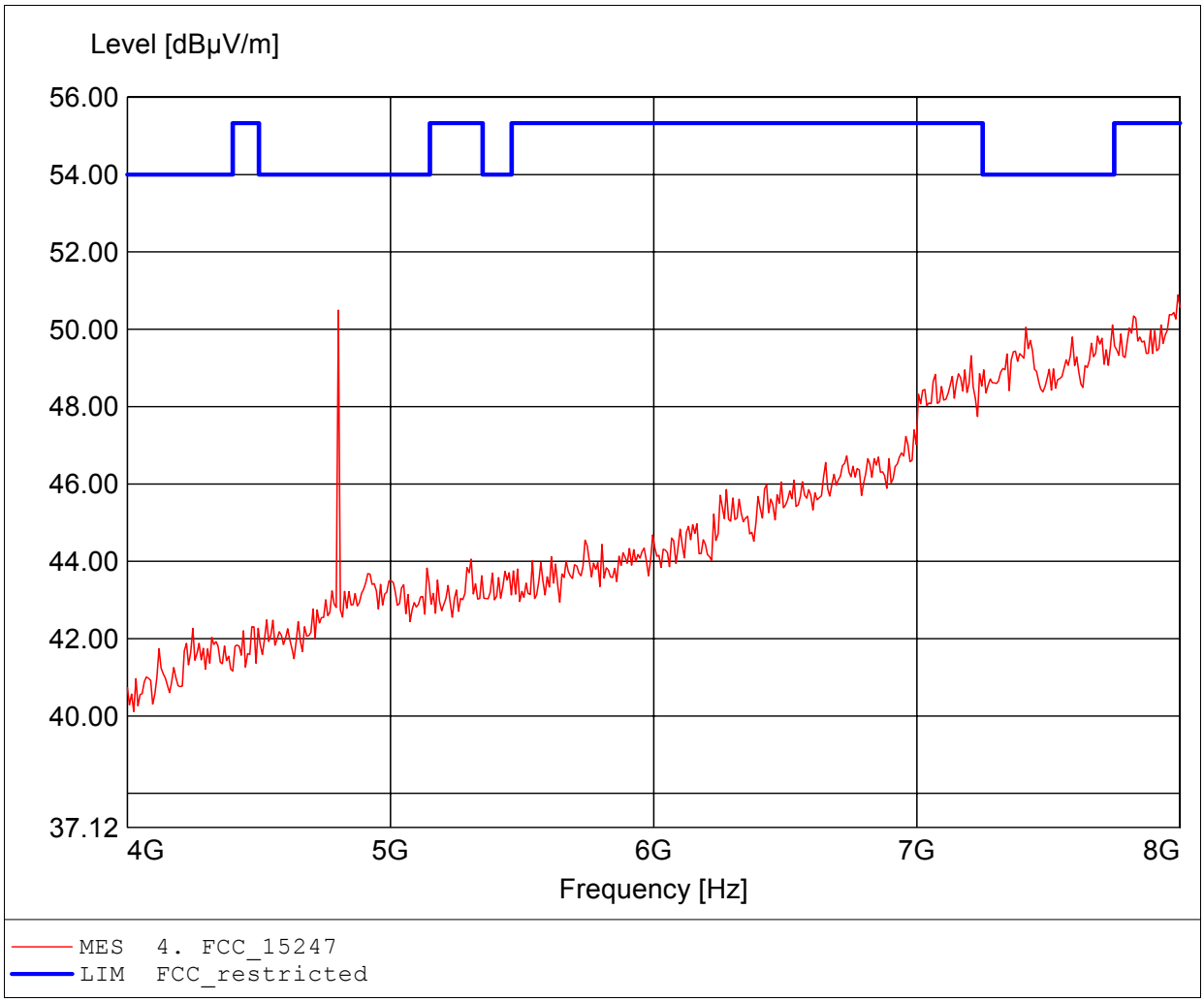
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.804GHz, Emax: 47.89dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

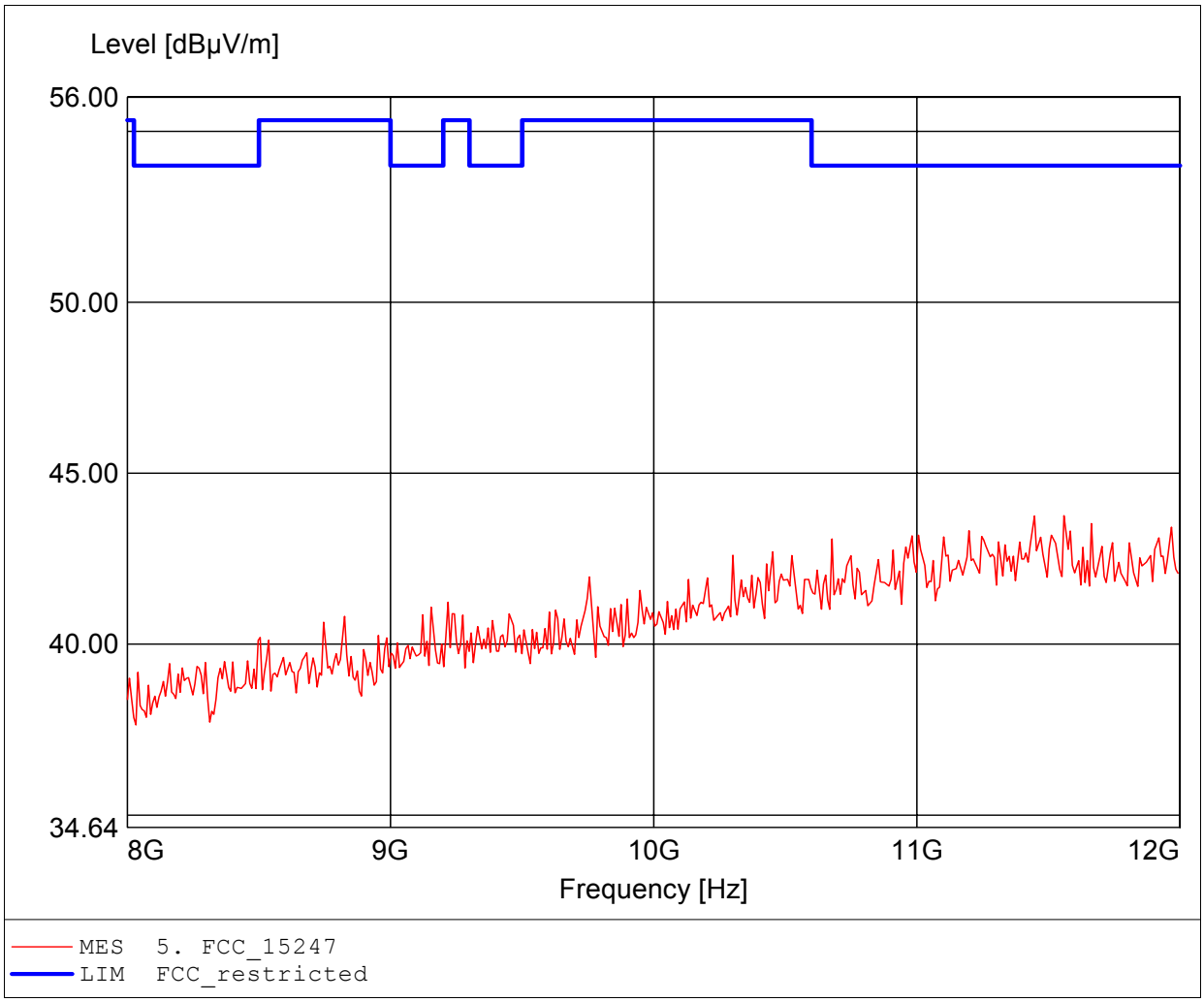
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 7.992GHz, Emax: 50.89dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

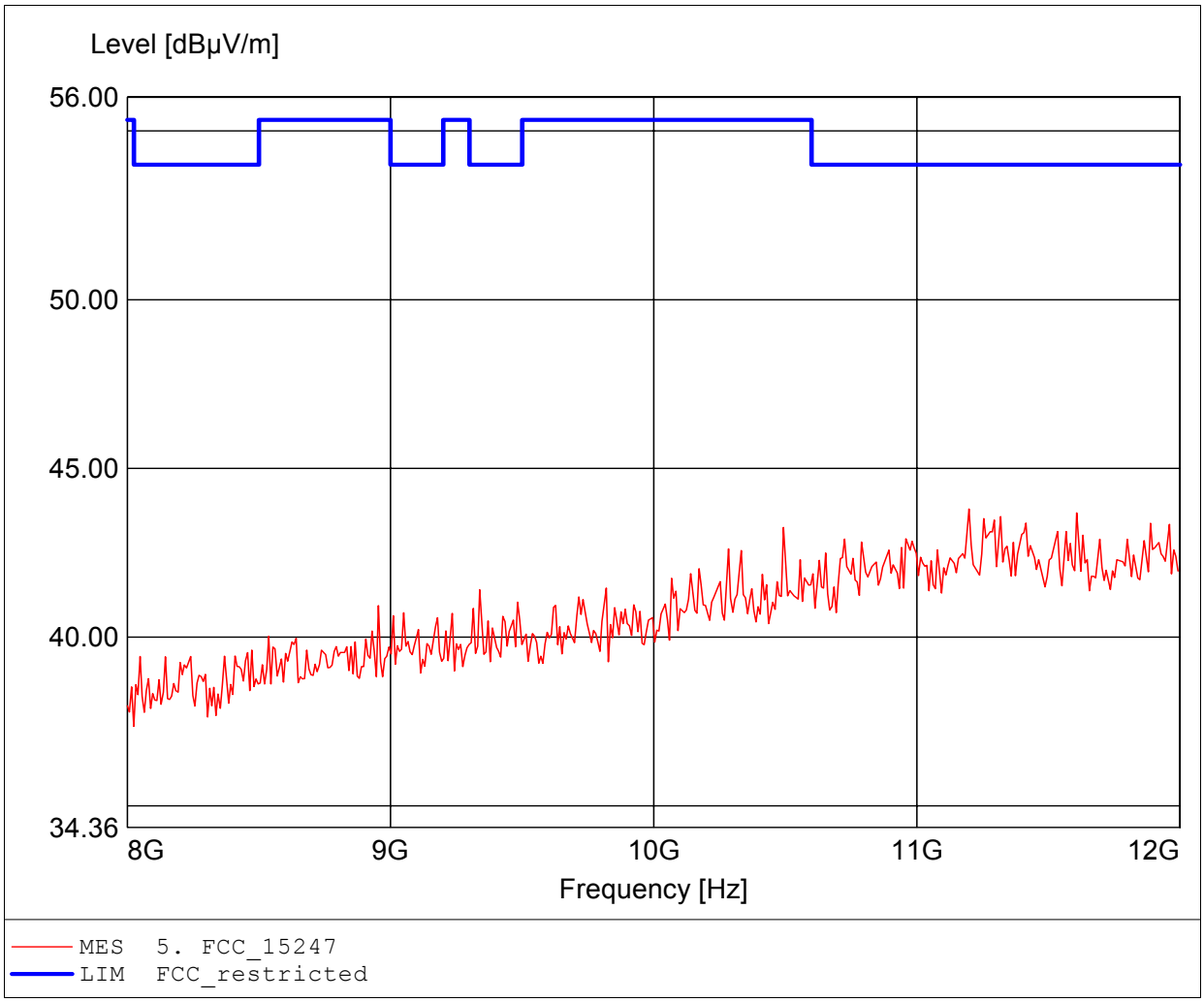
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 11.559GHz, Emax: 43.76dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

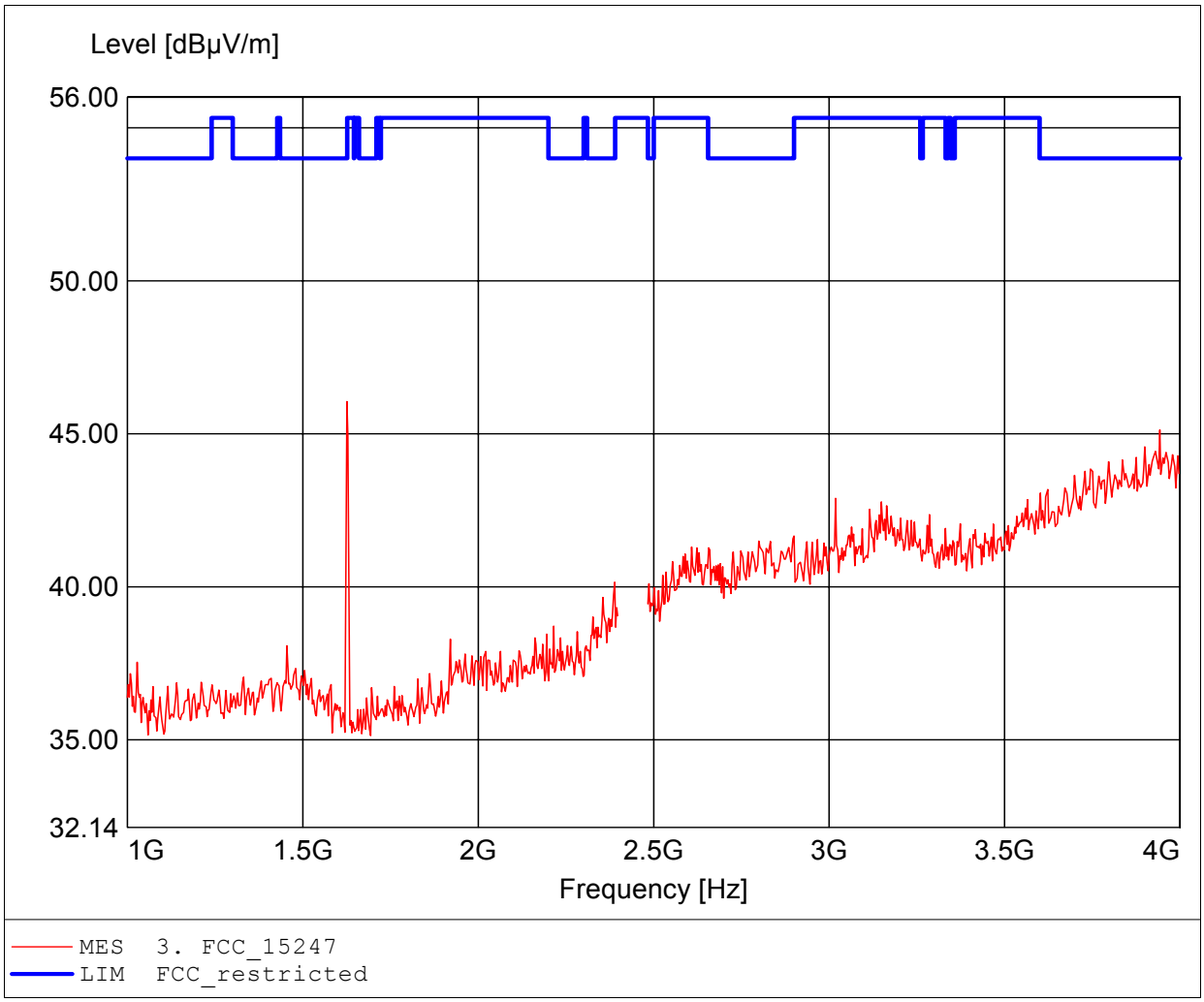
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 11.198GHz, Emax: 43.79dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

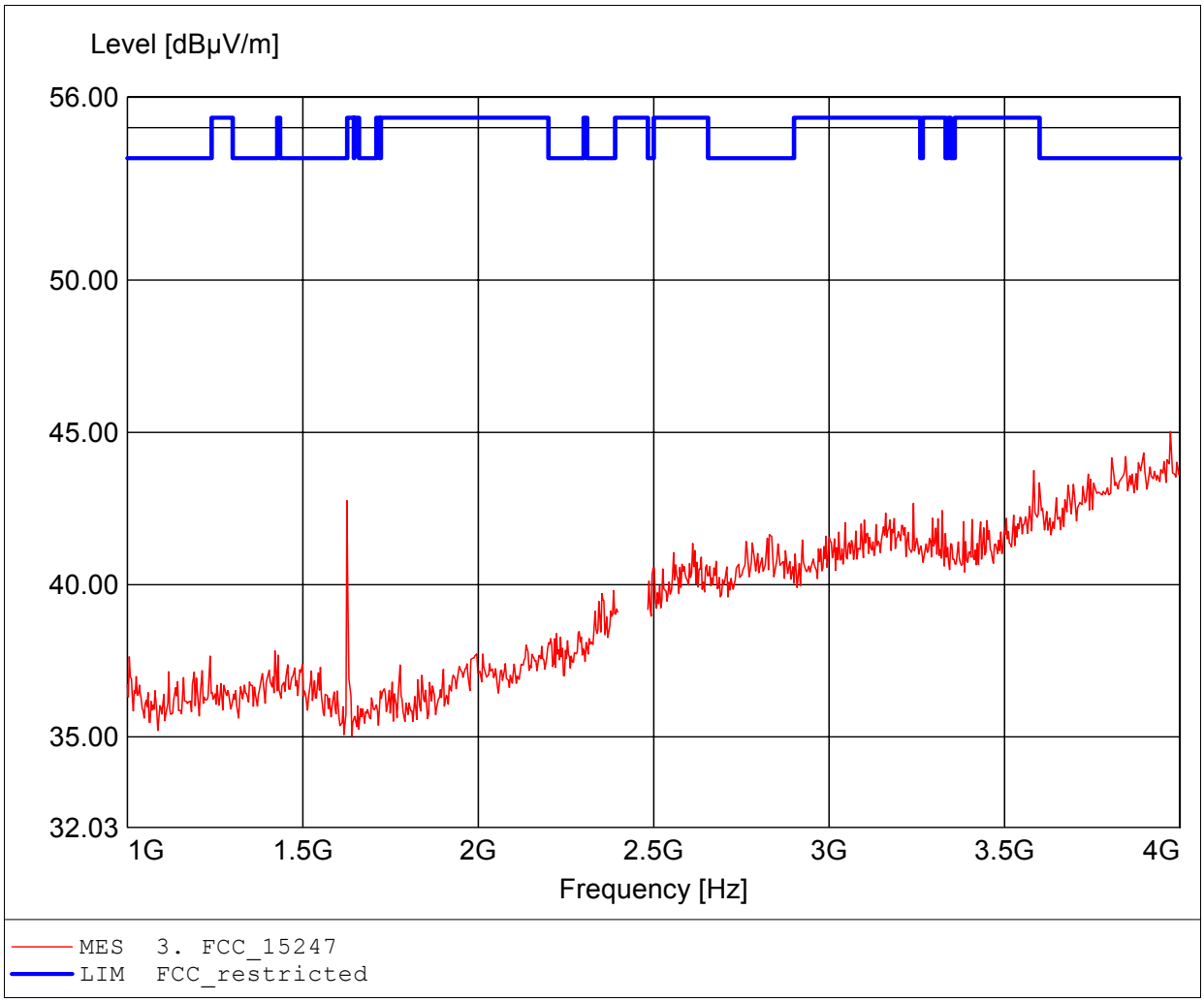
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 1.626GHz, Emax: 46.06dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

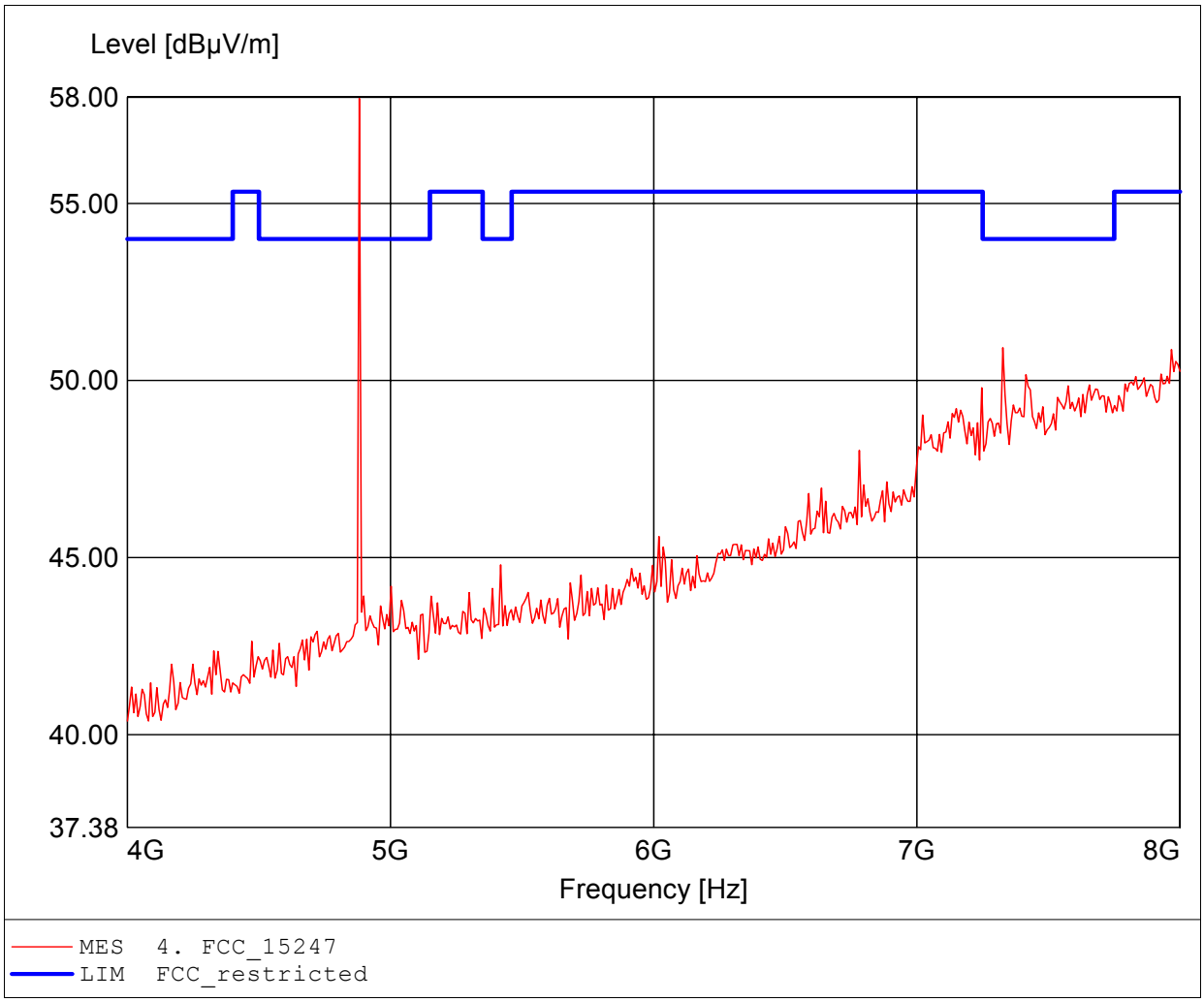
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 3.973GHz, Emax: 45.03dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

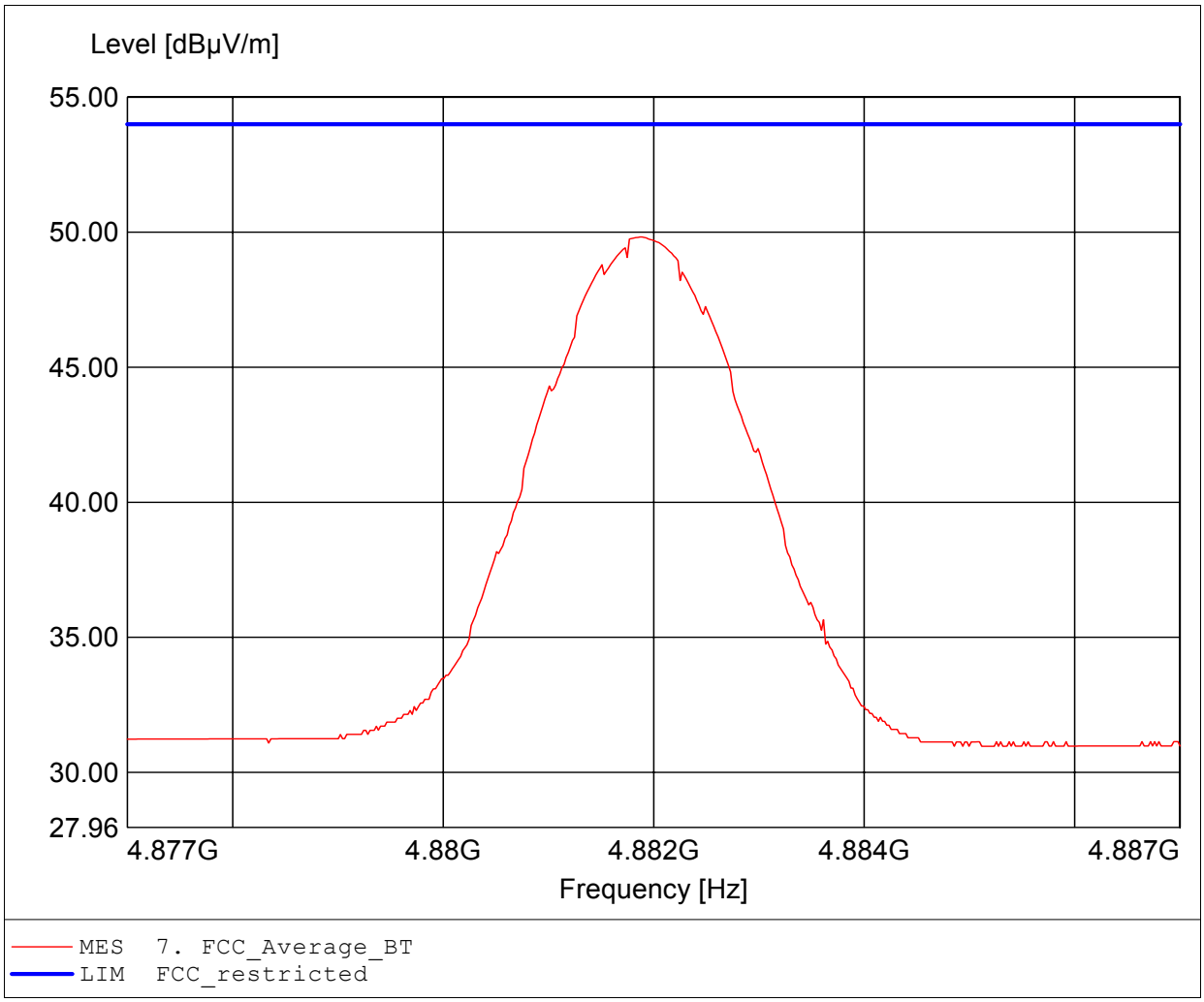
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.882GHz, Emax: 57.97dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

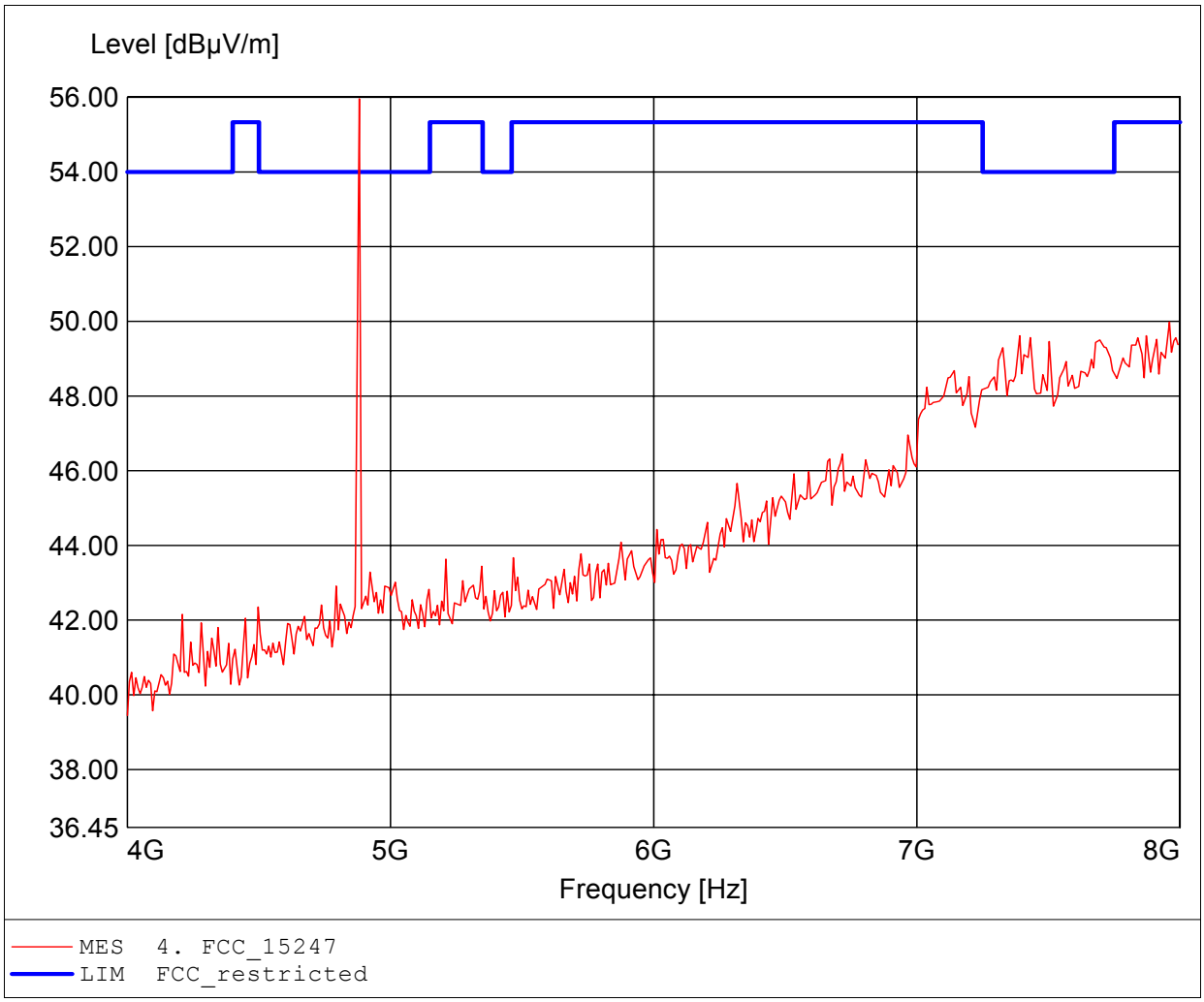
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 4.882GHz, Emax: 49.83dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

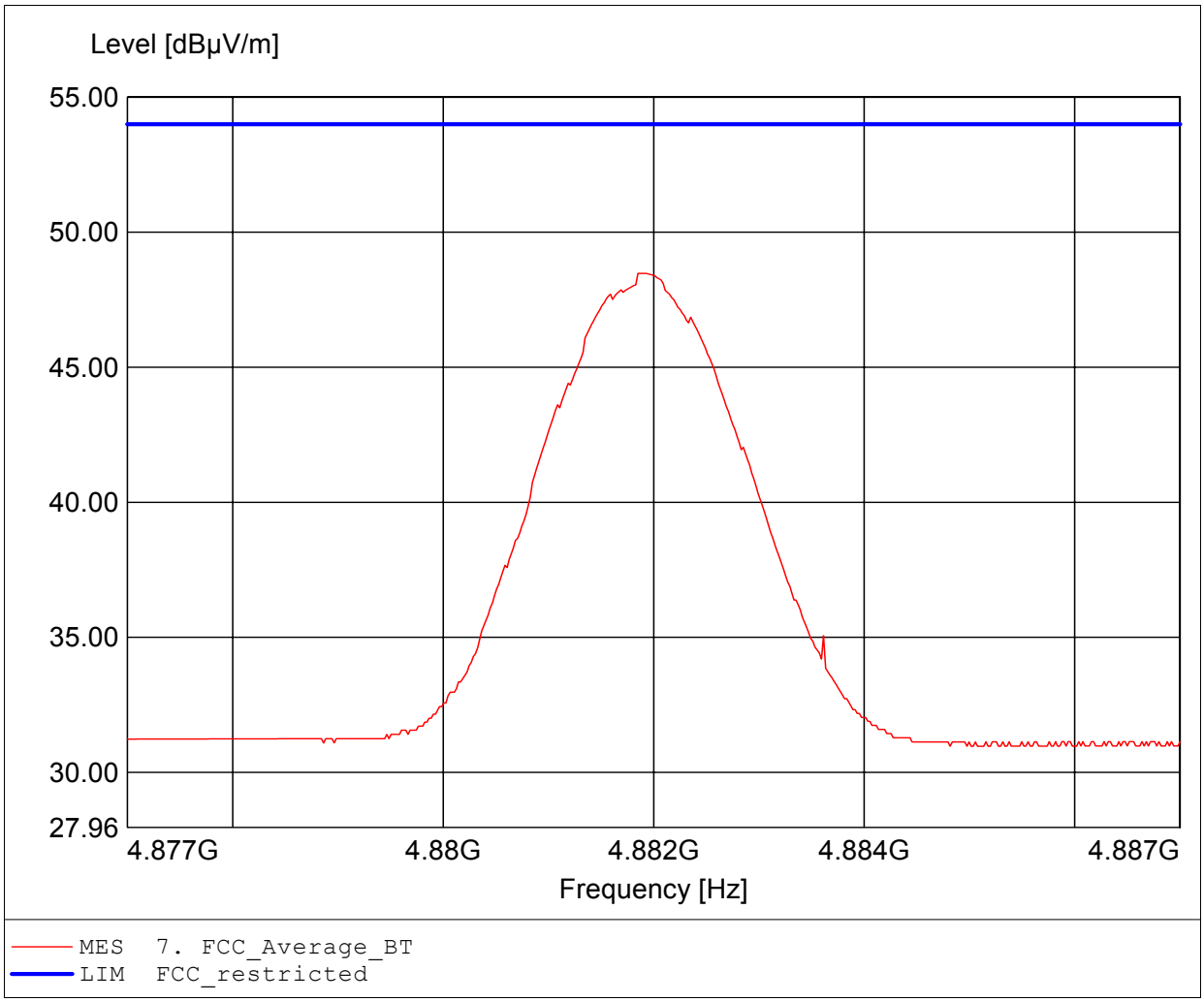
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.882GHz, Emax: 55.96dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

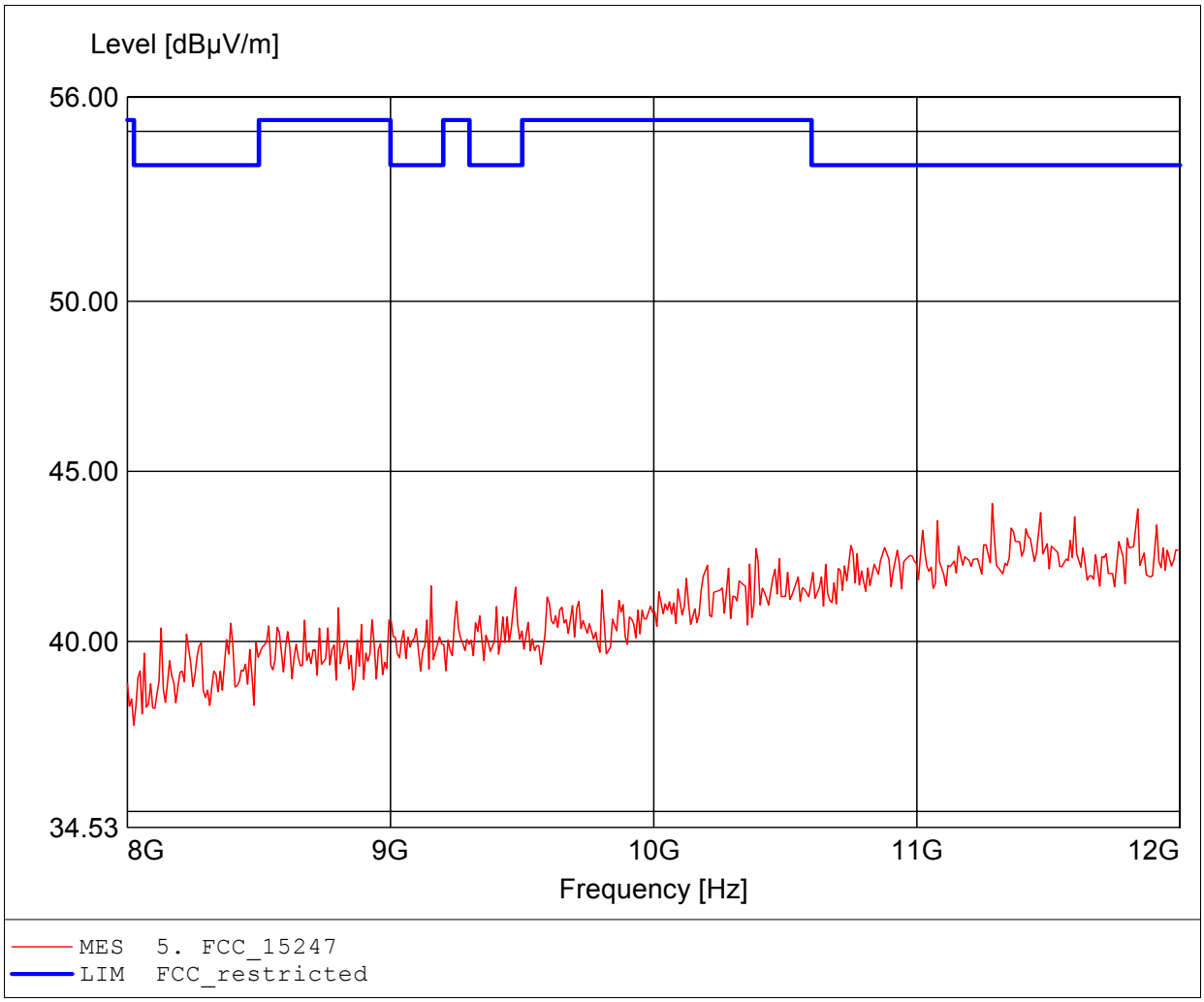
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 4.882GHz, Emax: 48.48dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

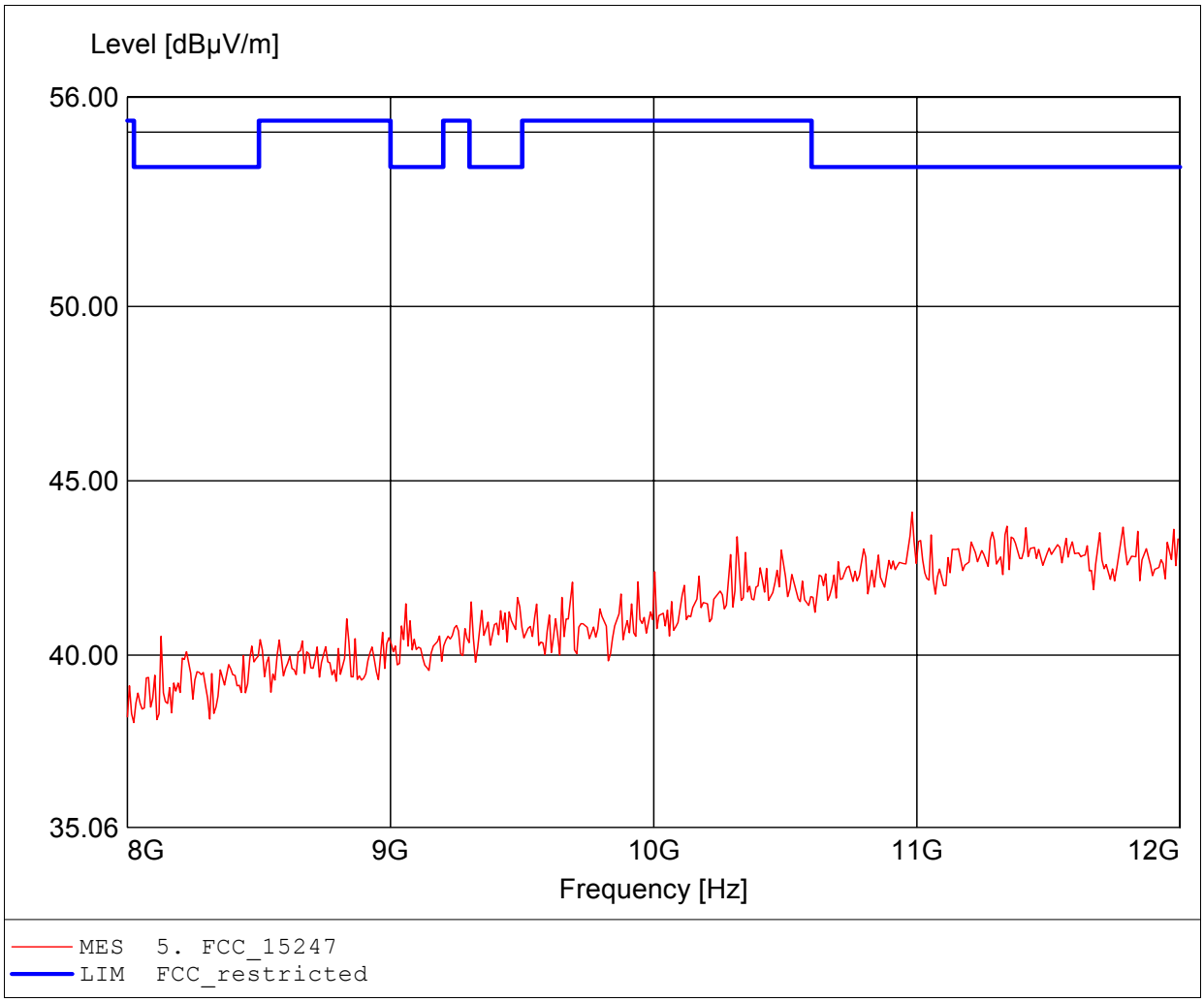
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 11.287GHz, Emax: 44.05dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

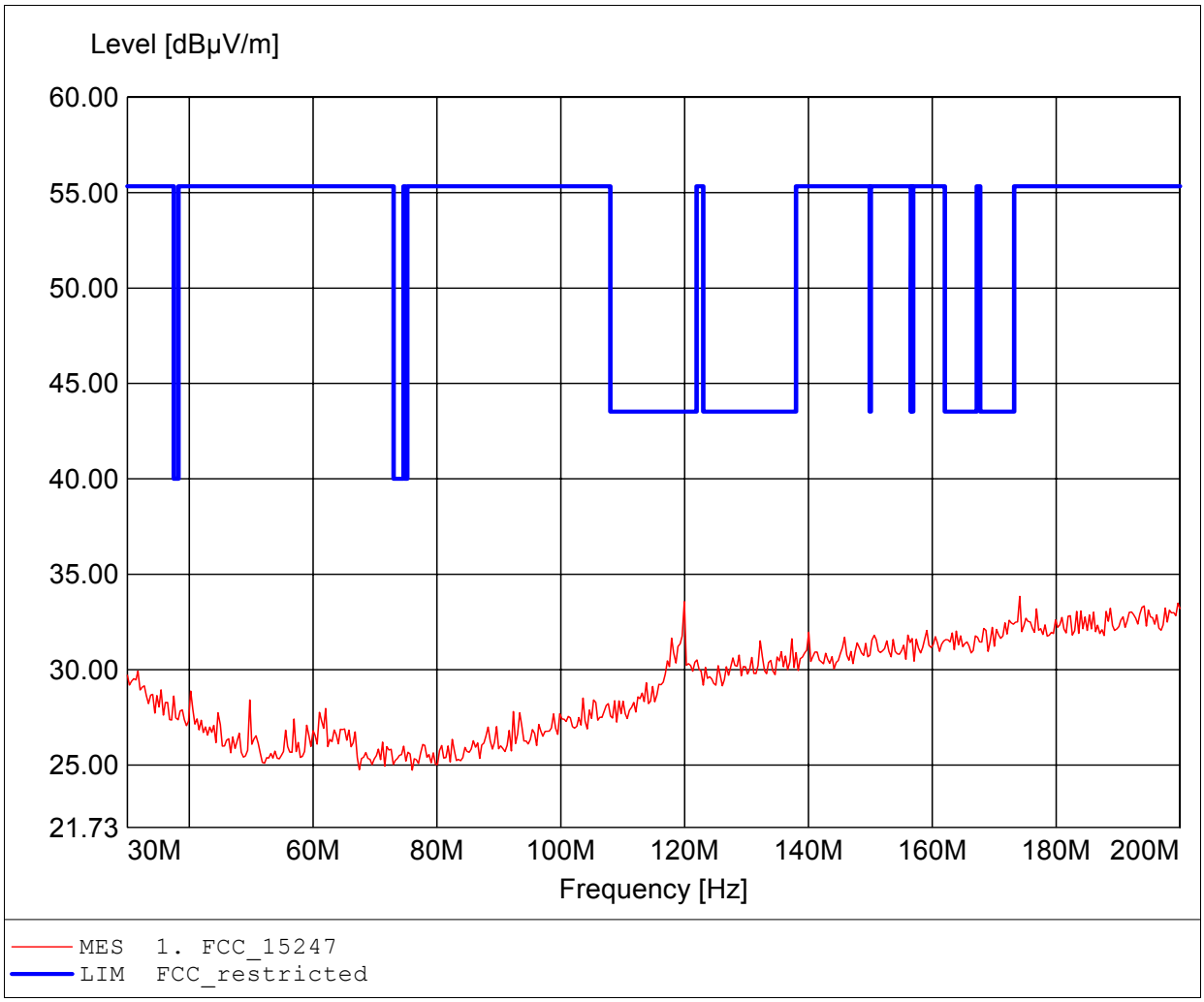
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 10.982GHz, Emax: 44.10dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

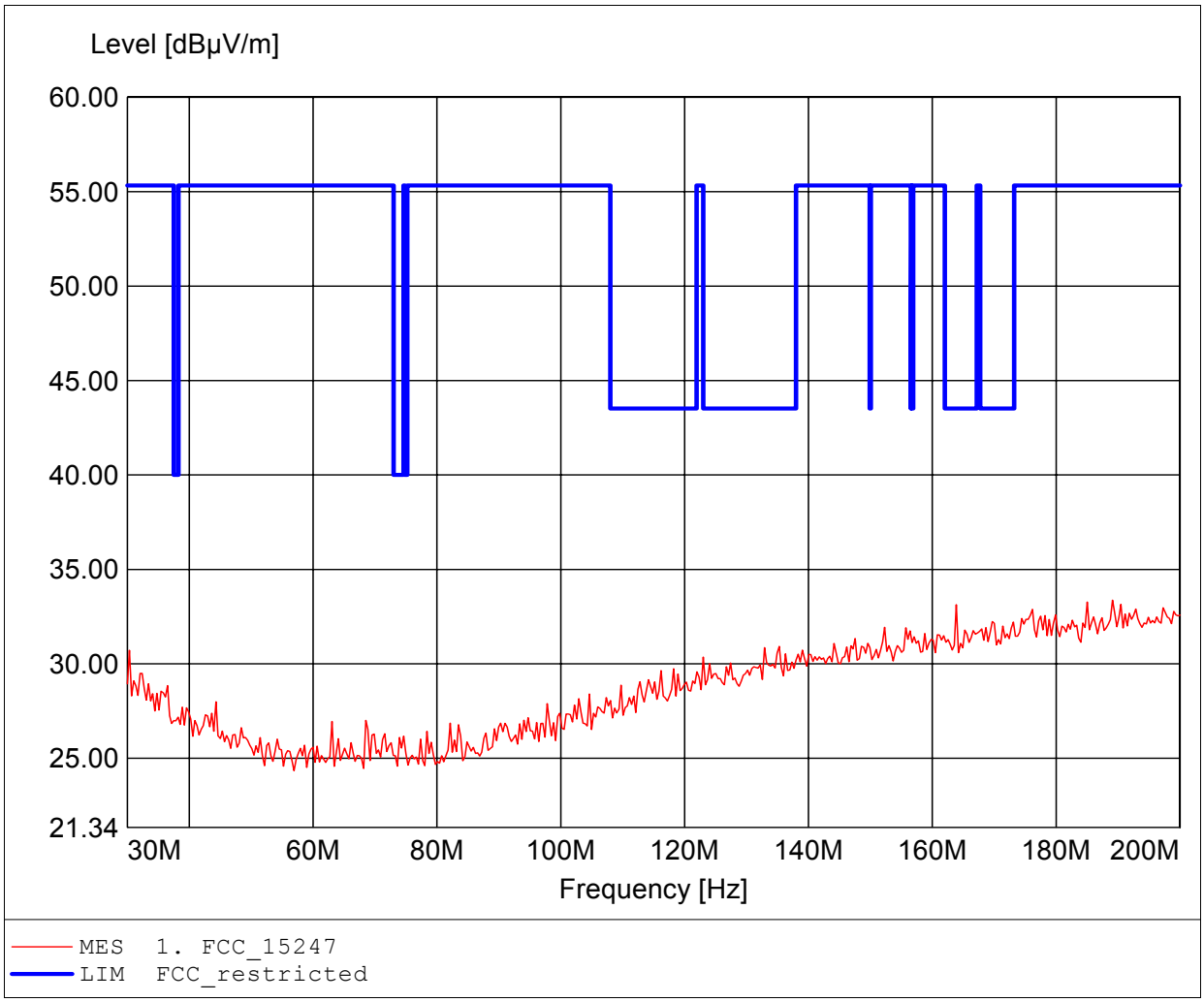
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HK 116
Comment 2:	Freq: 174.108MHz, Emax: 33.84dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

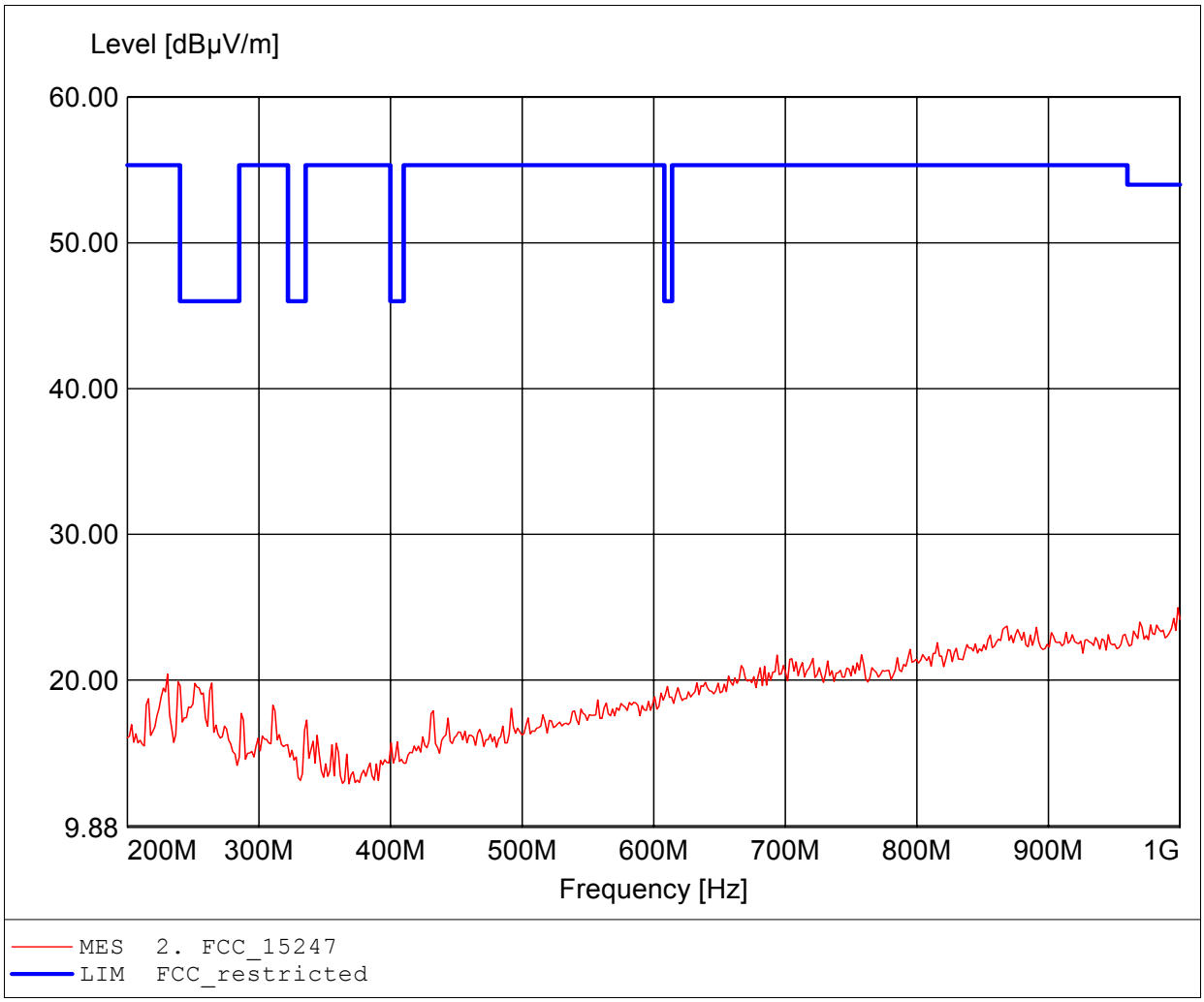
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HK 116
Comment 2:	Freq: 189.098MHz, Emax: 33.37dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

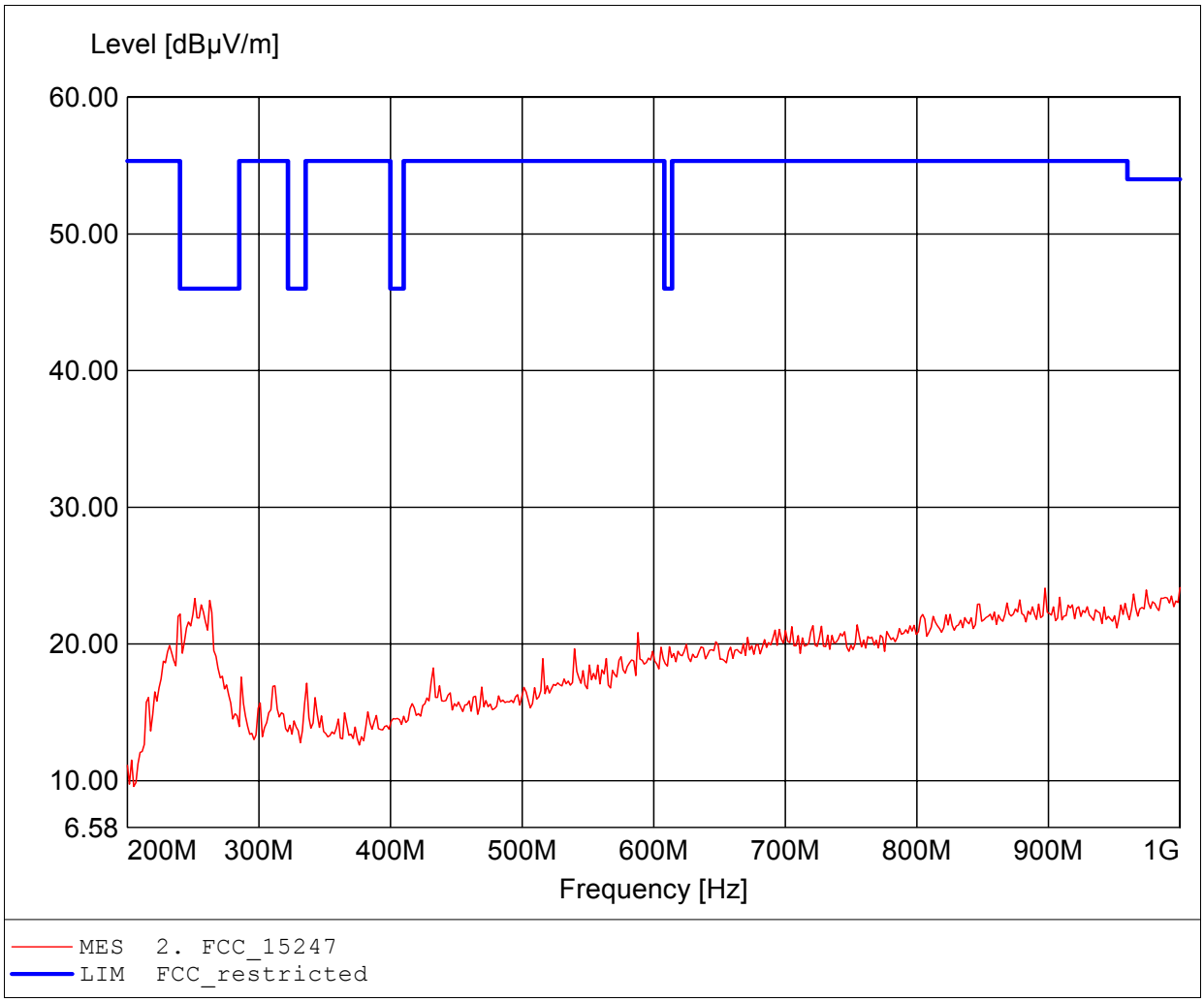
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223, amplif.
Comment 2:	Freq: 998.397MHz, Emax: 24.96dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

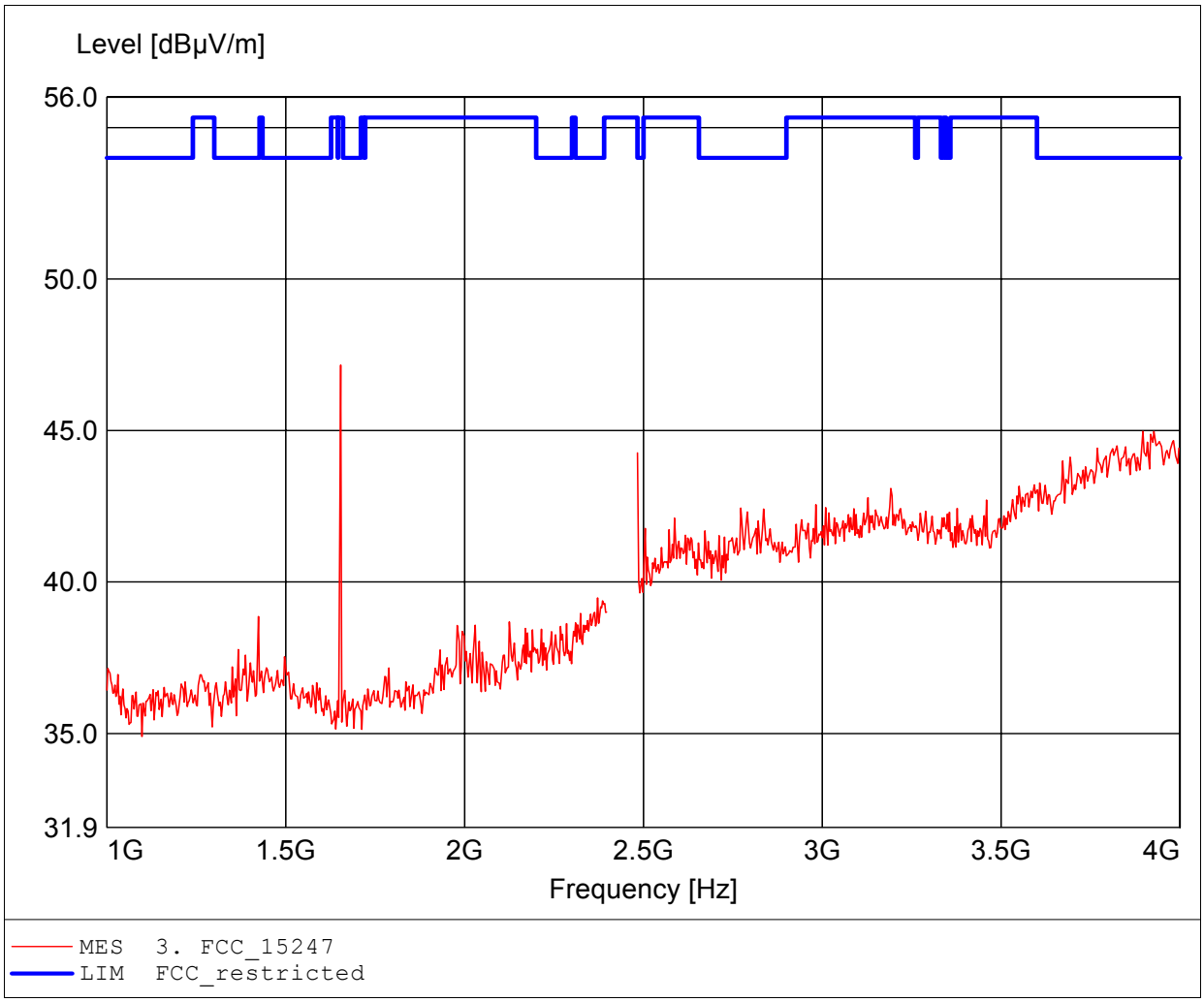
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247
Comment 1:	Dist.: 3m, Ant.: HL 223, amplif.
Comment 2:	Freq: 1.000GHz, Emax: 24.14dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

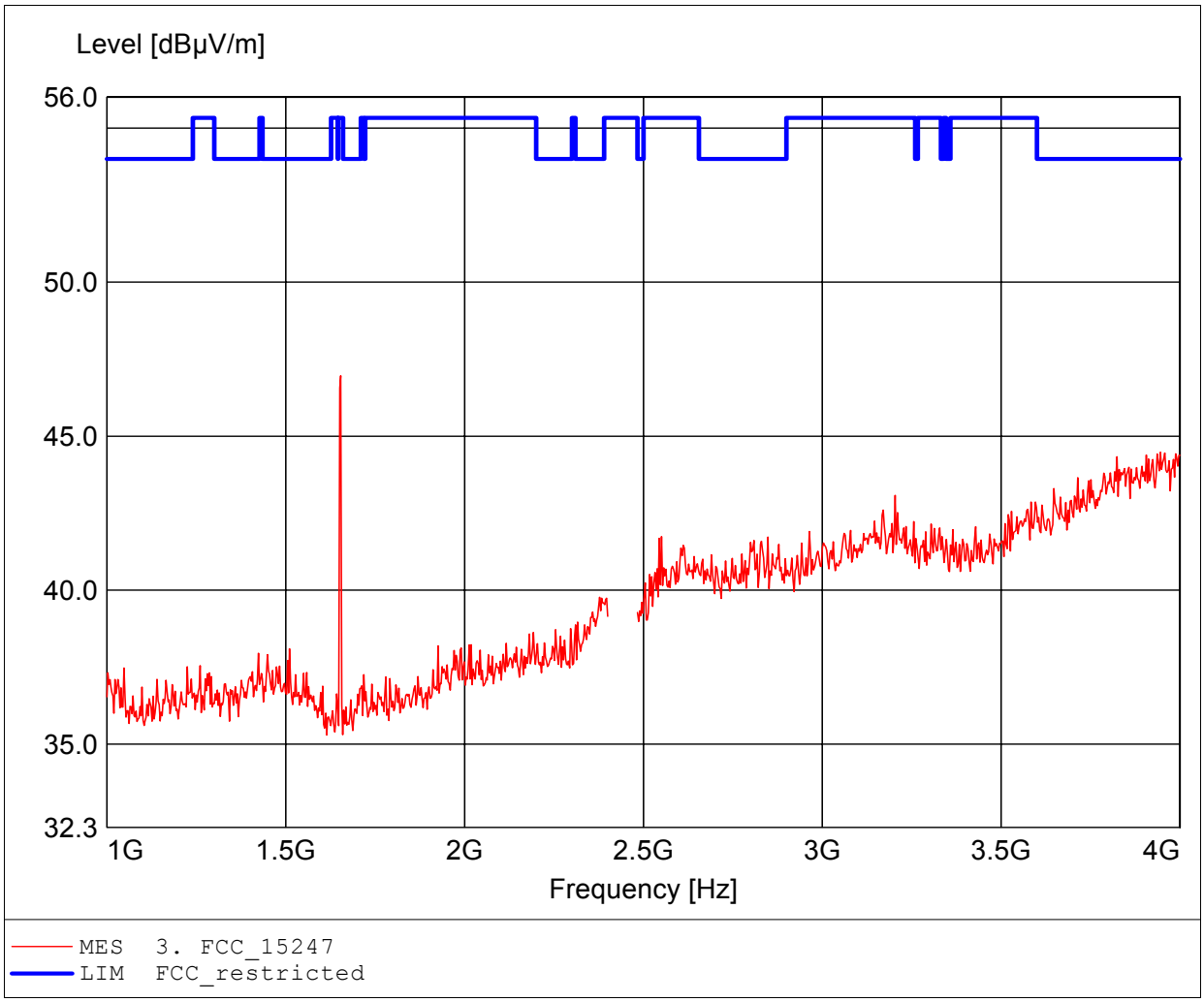
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 1.654GHz, Emax: 47.16dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

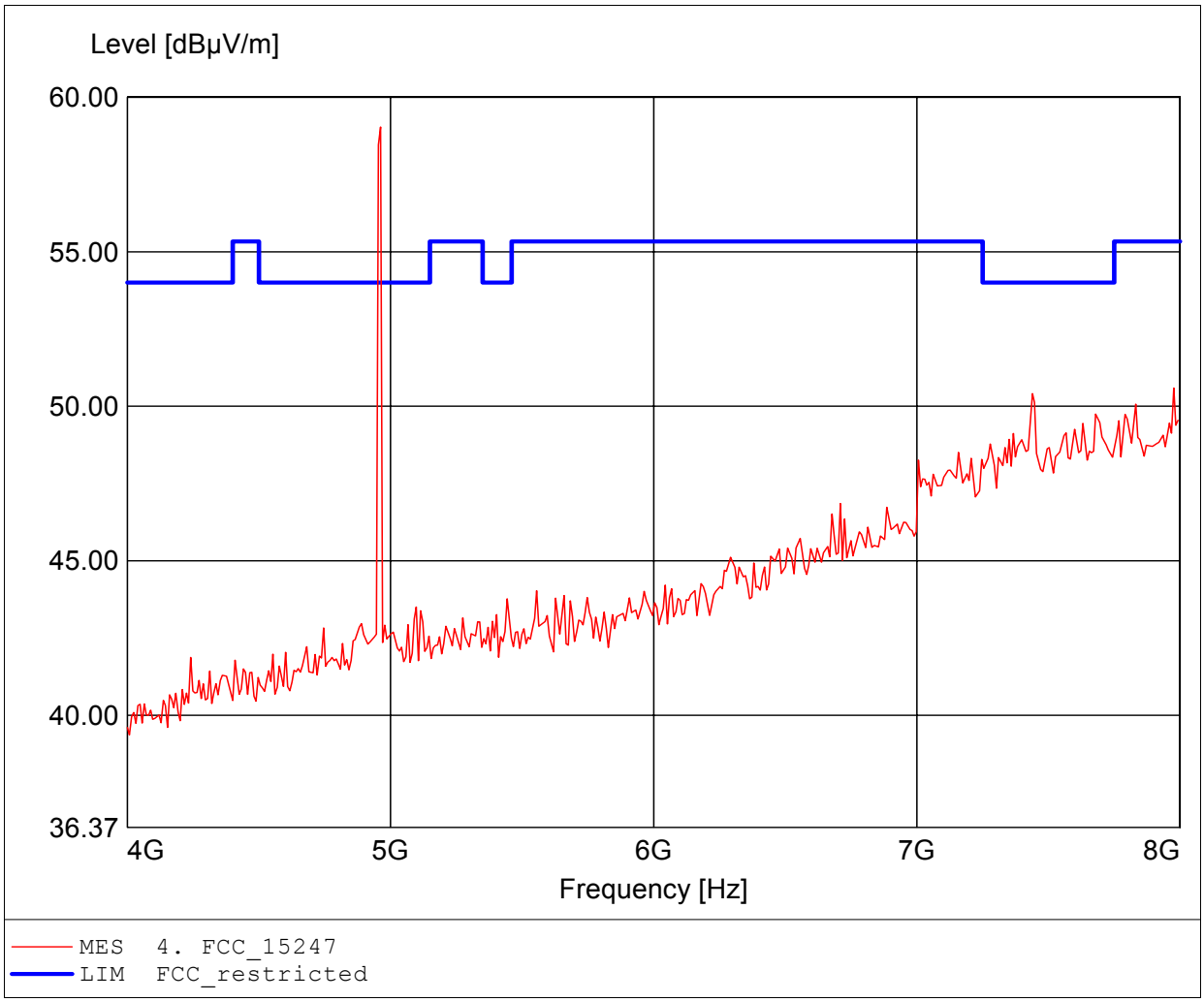
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 1.654GHz, Emax: 46.96dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

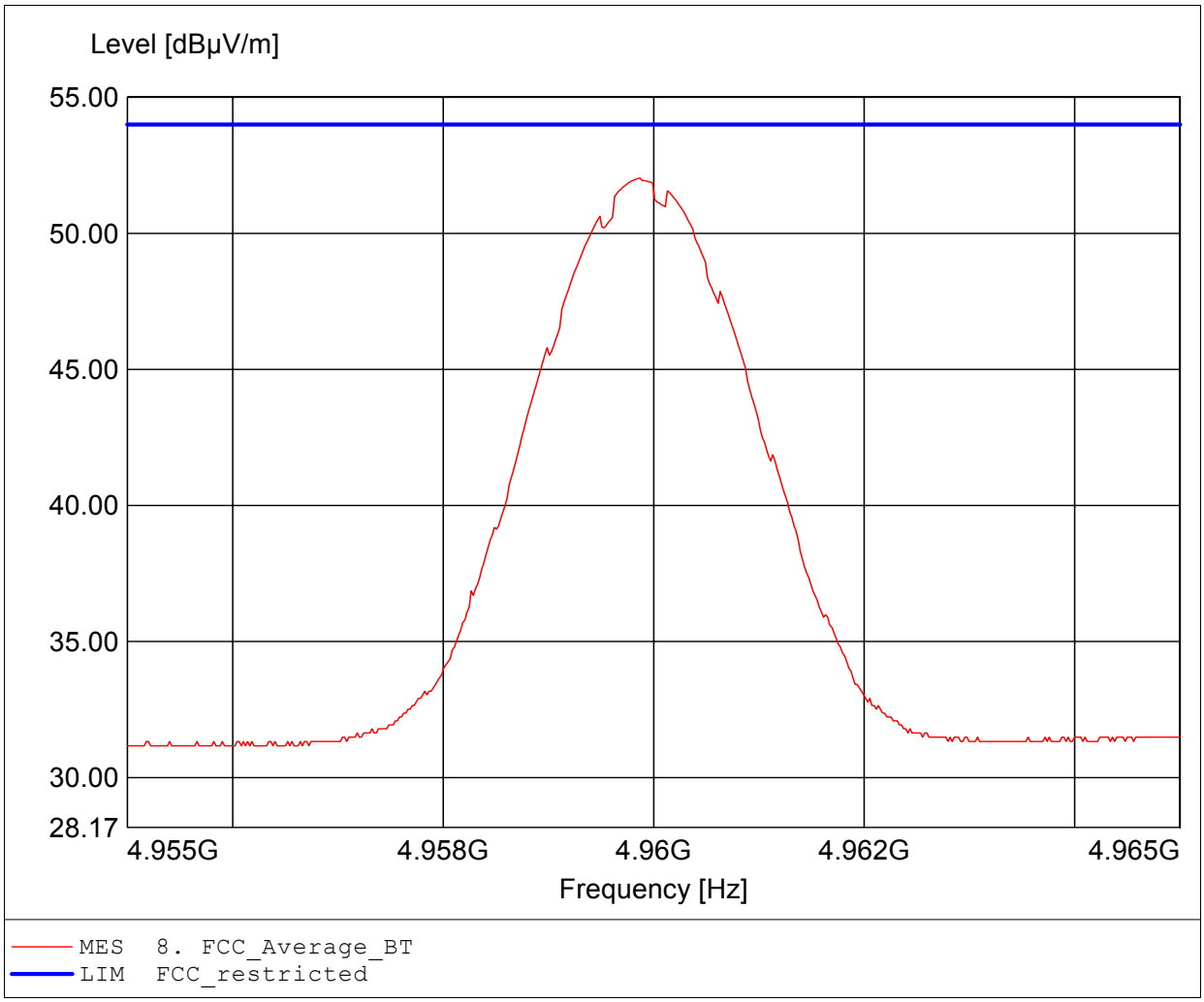
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.962GHz, Emax: 59.04dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

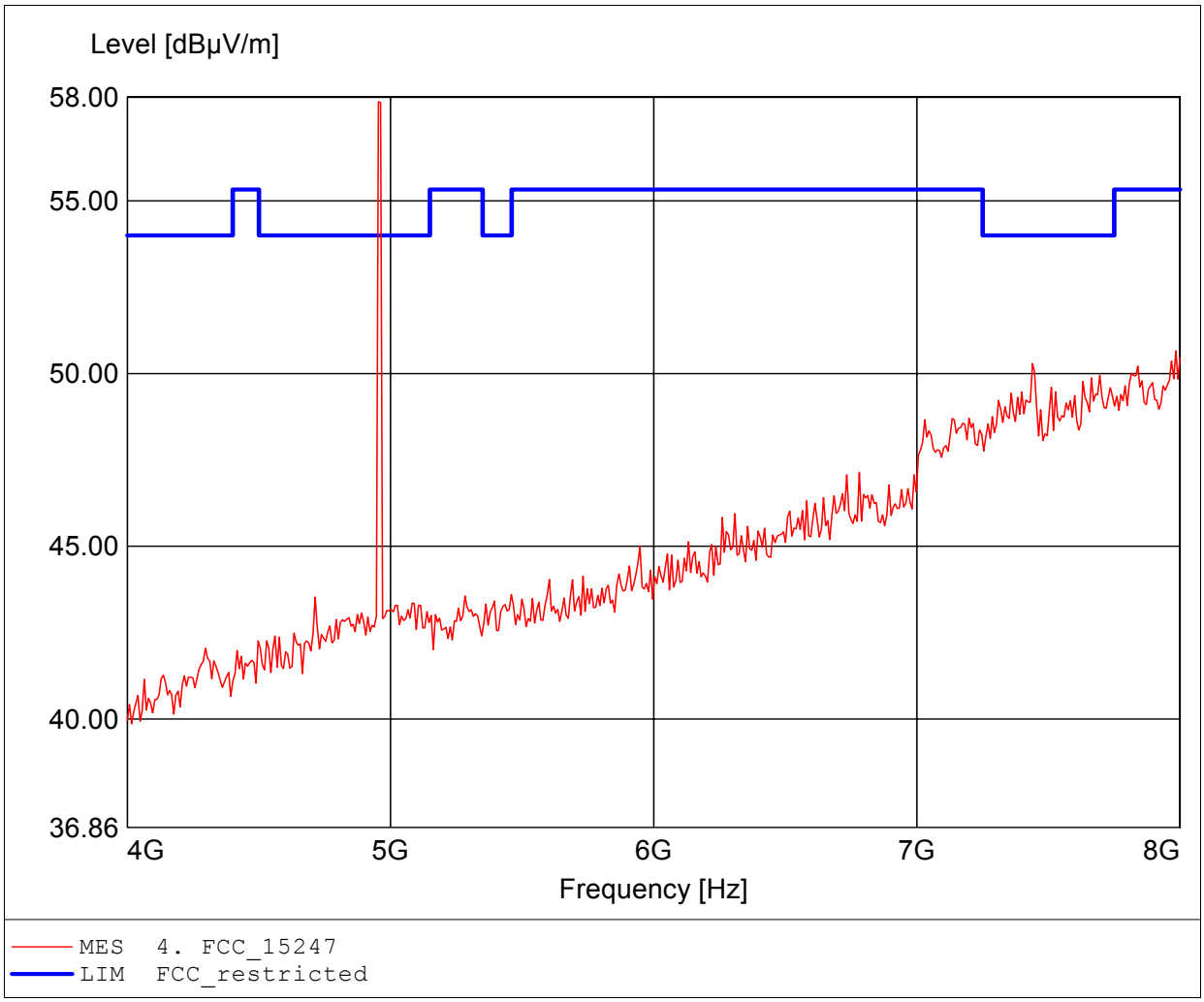
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 4.960GHz, Emax: 52.03dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

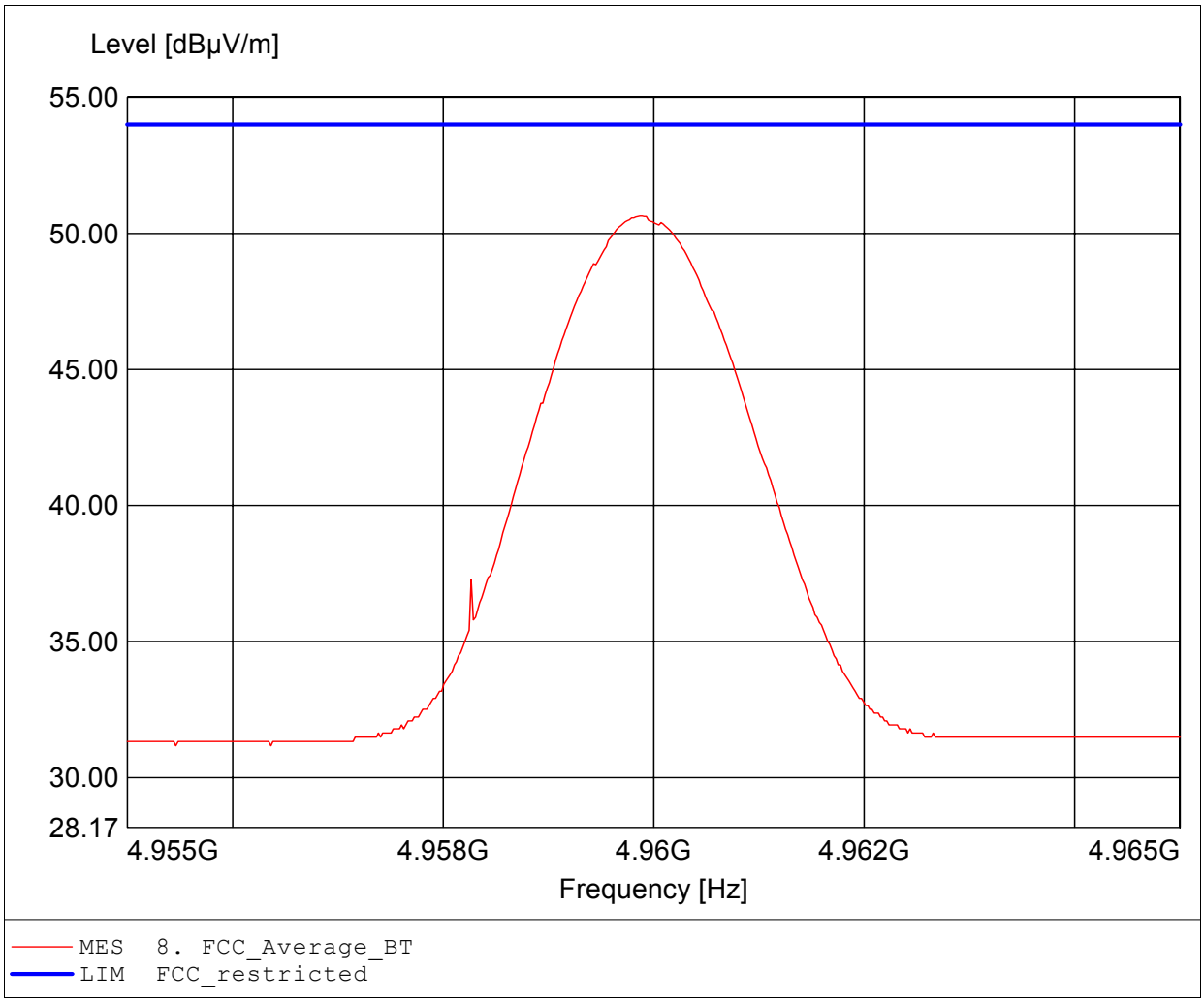
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.954GHz, Emax: 57.87dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

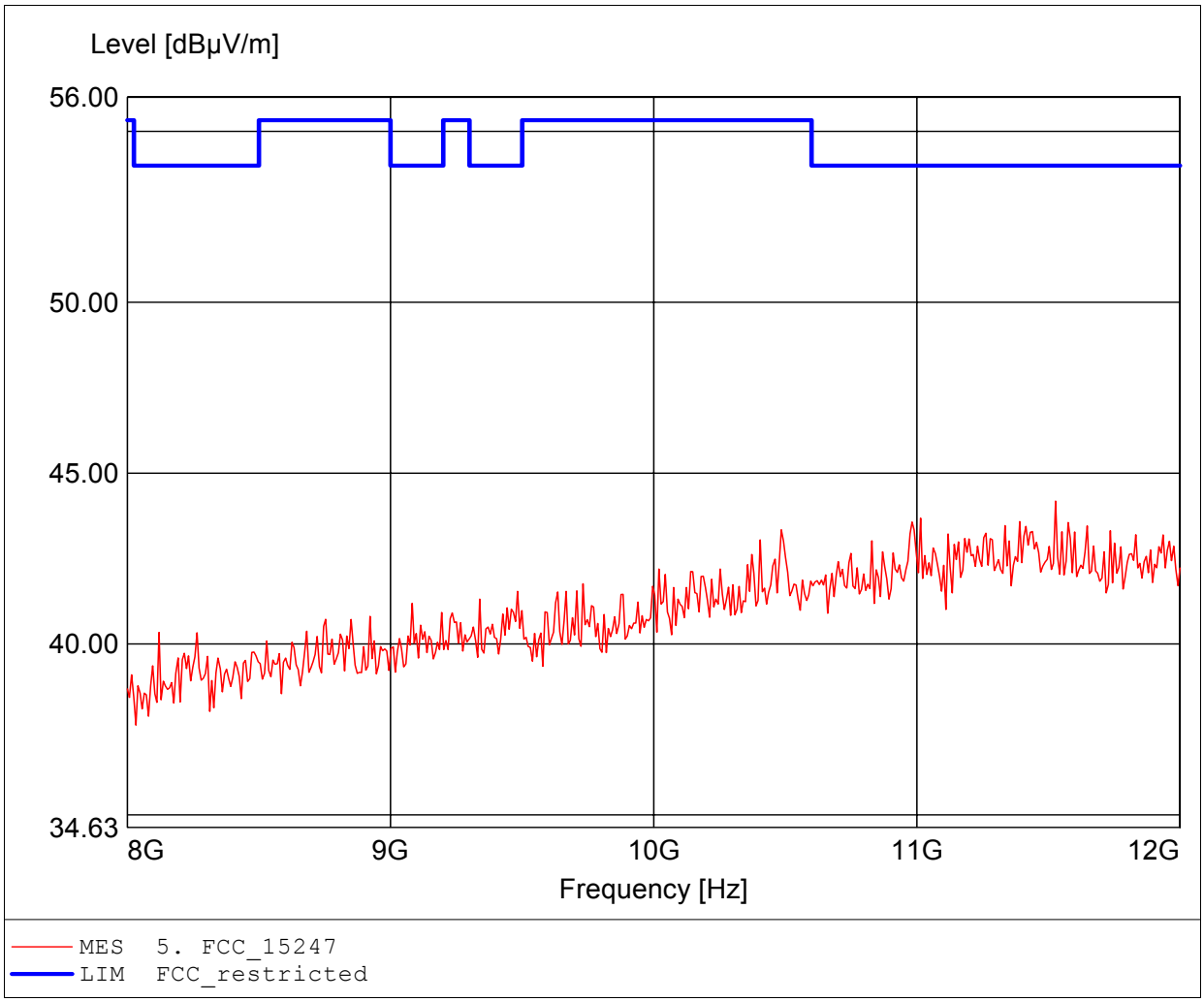
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 4.960GHz, Emax: 50.64dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

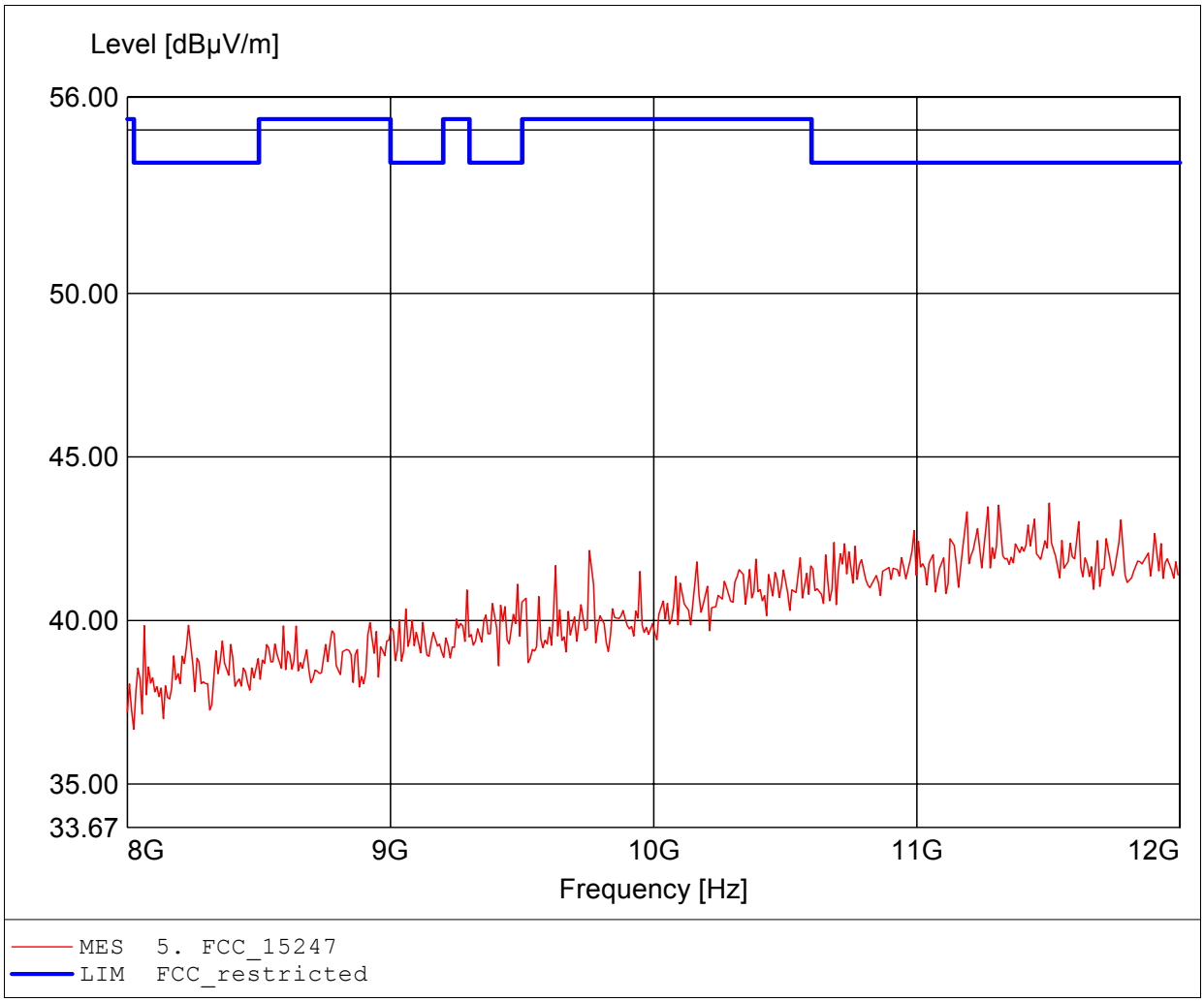
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 11.527GHz, Emax: 44.18dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

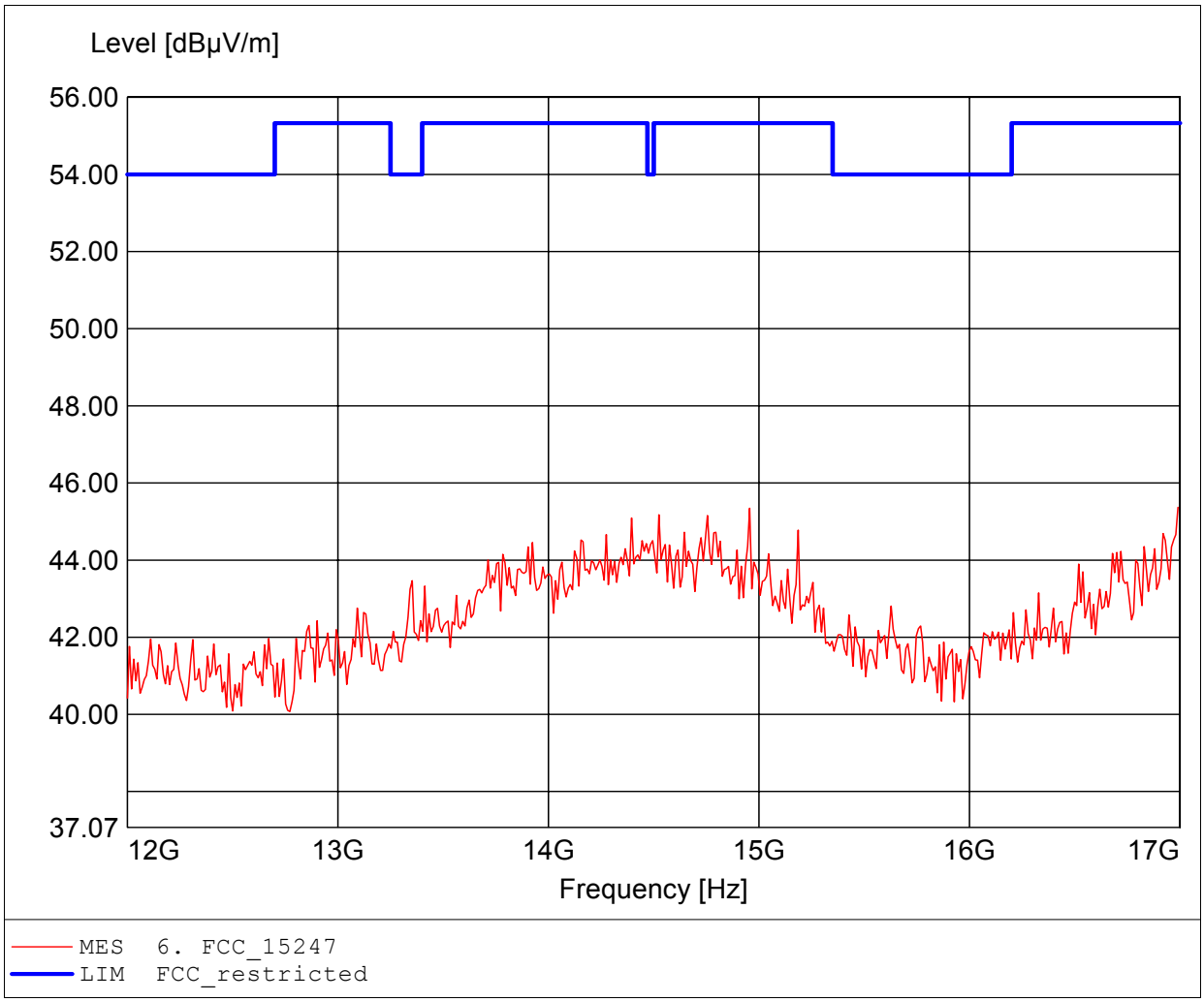
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 11.503GHz, Emax: 43.59dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

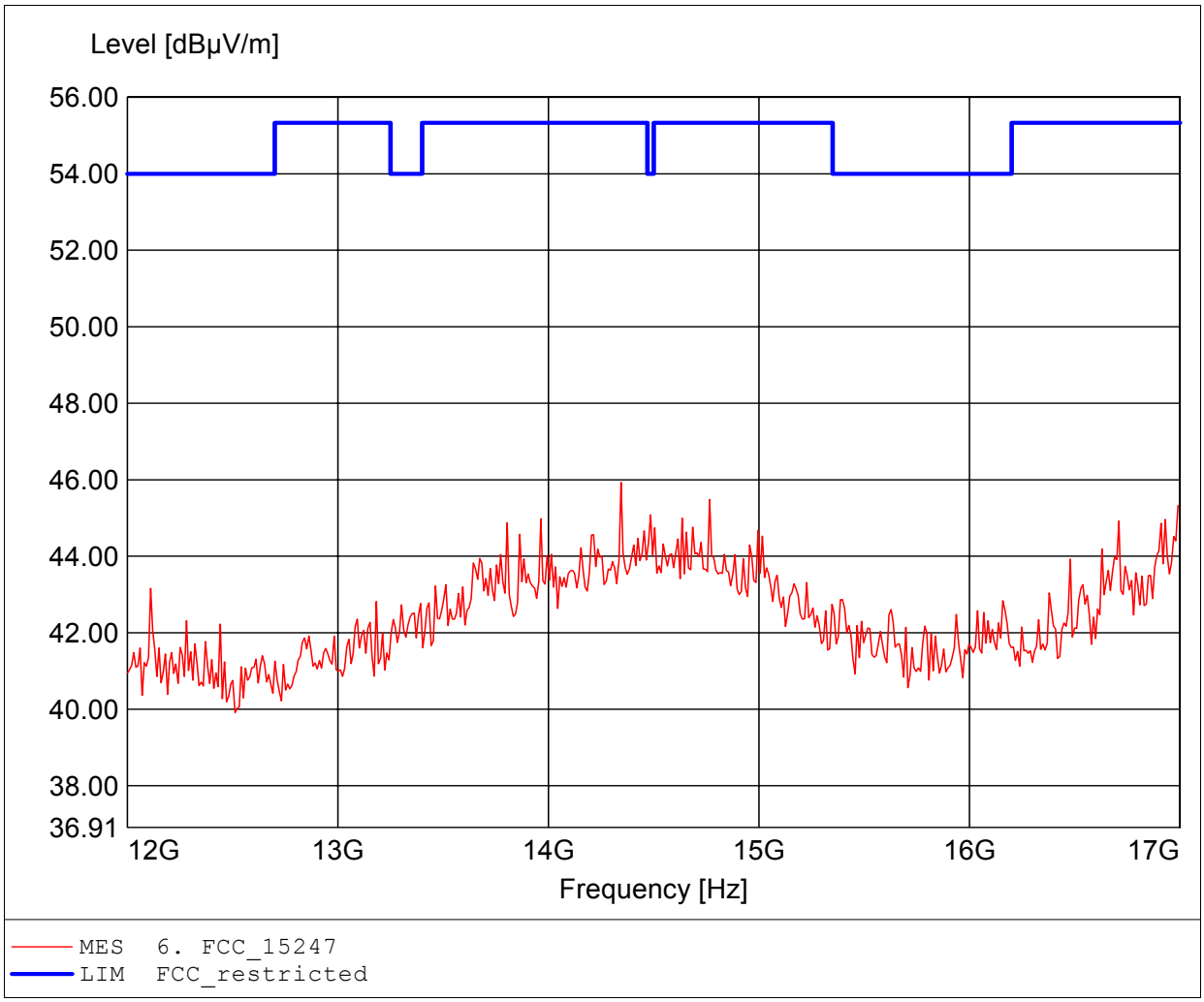
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 16.990GHz, Emax: 45.37dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

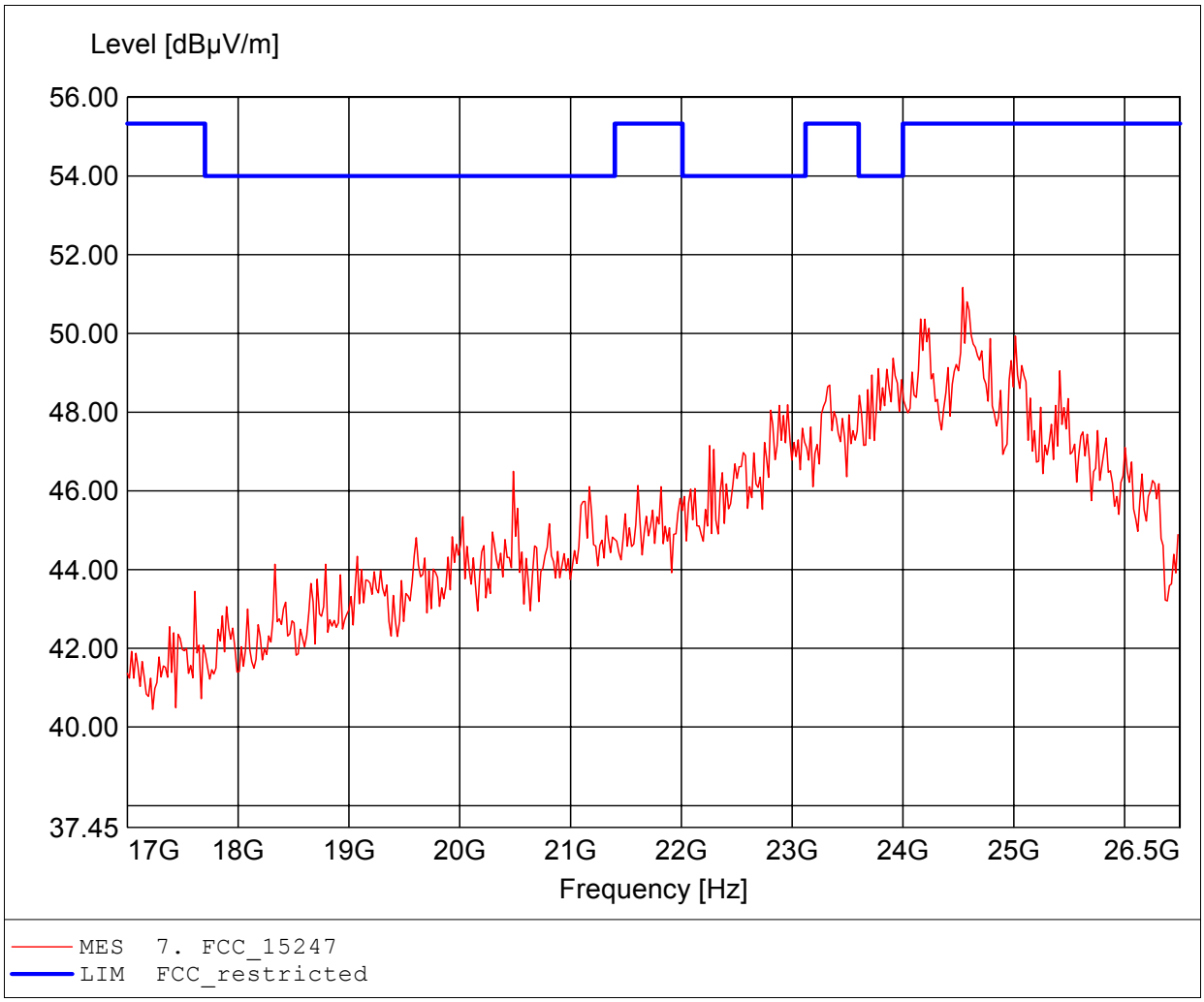
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 14.345GHz, Emax: 45.93dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

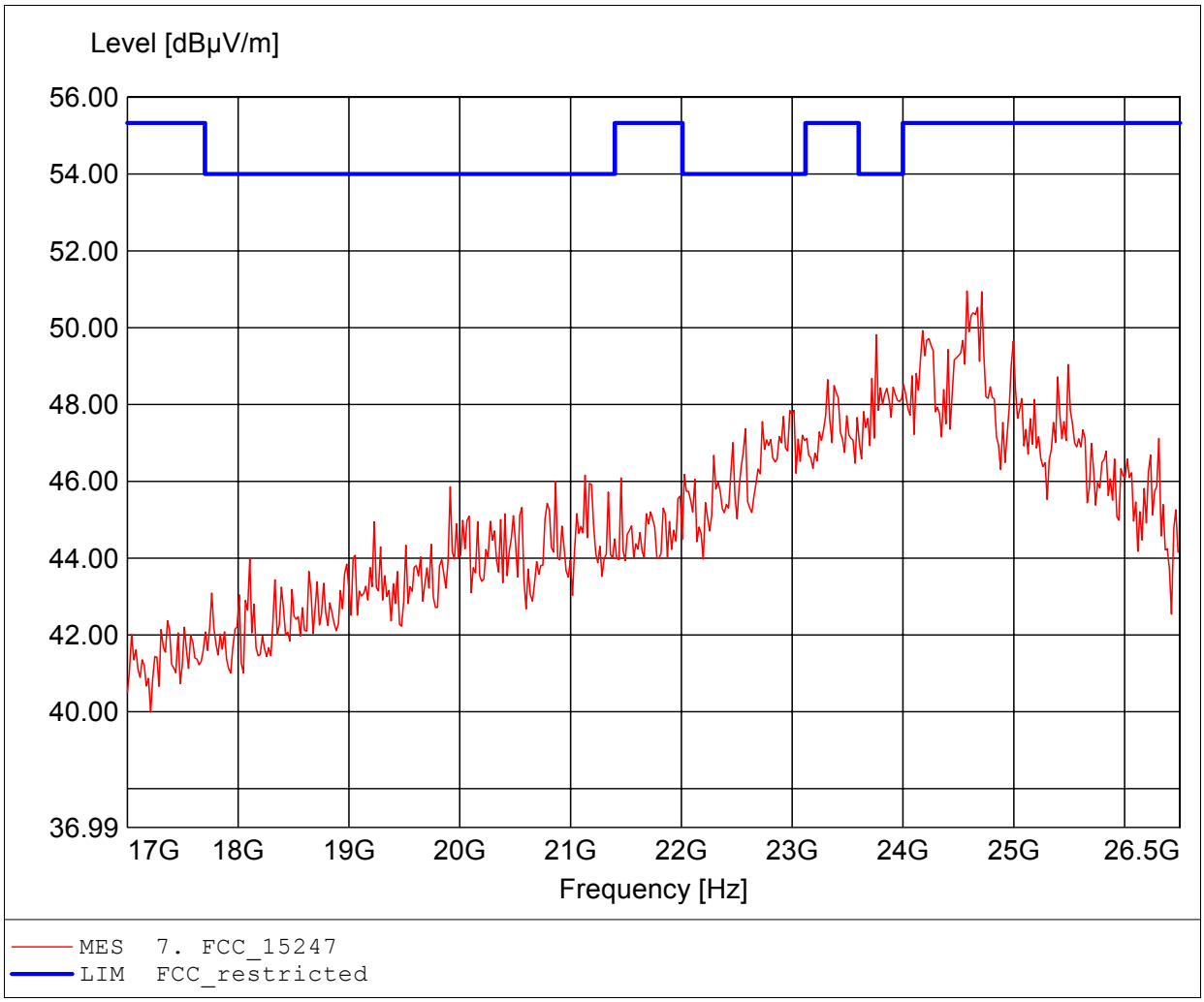
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
Comment 2:	Freq: 24.539GHz, Emax: 51.16dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

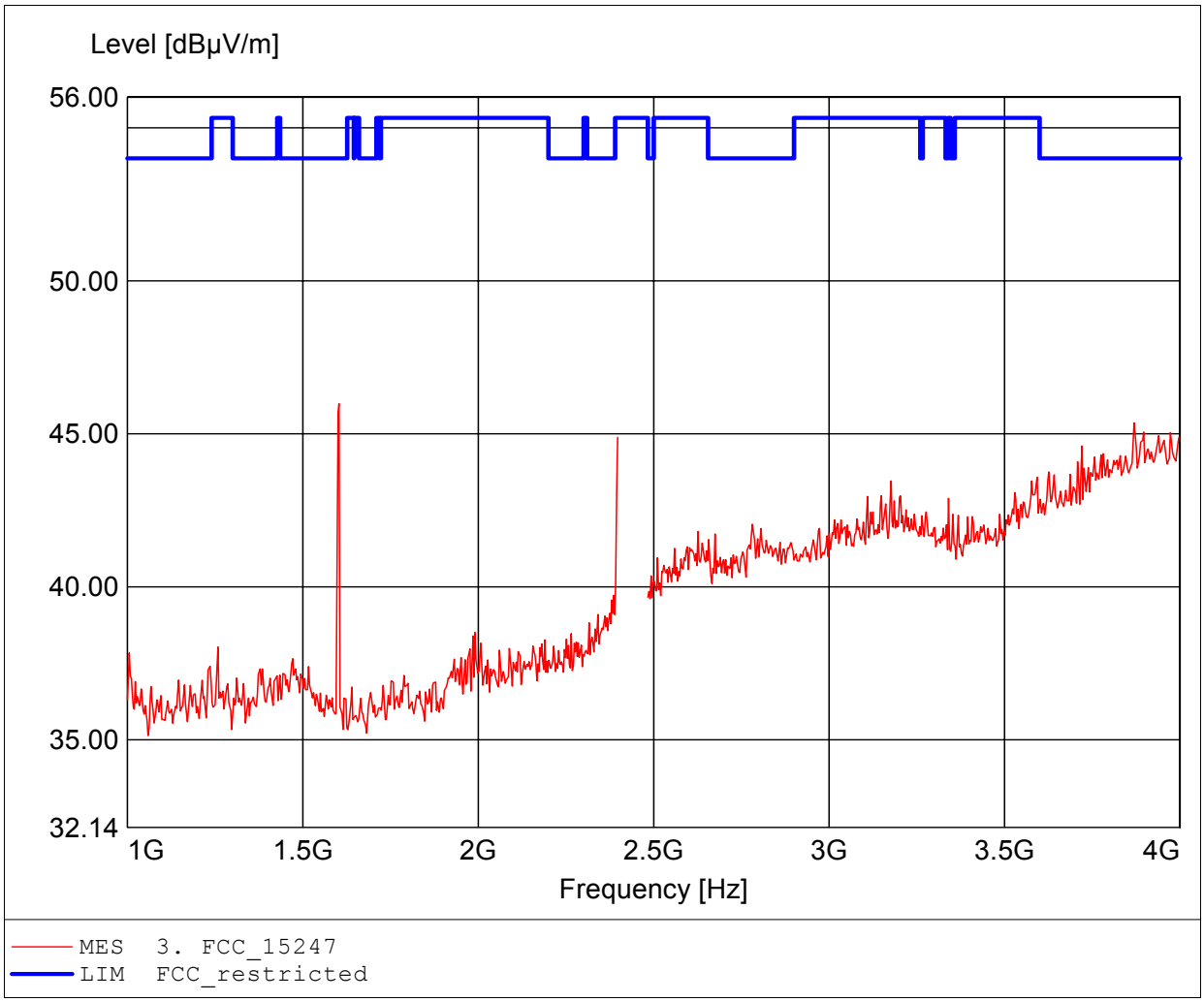
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: HL025, amplif.
Comment 2:	Freq: 24.577GHz, Emax: 50.96dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

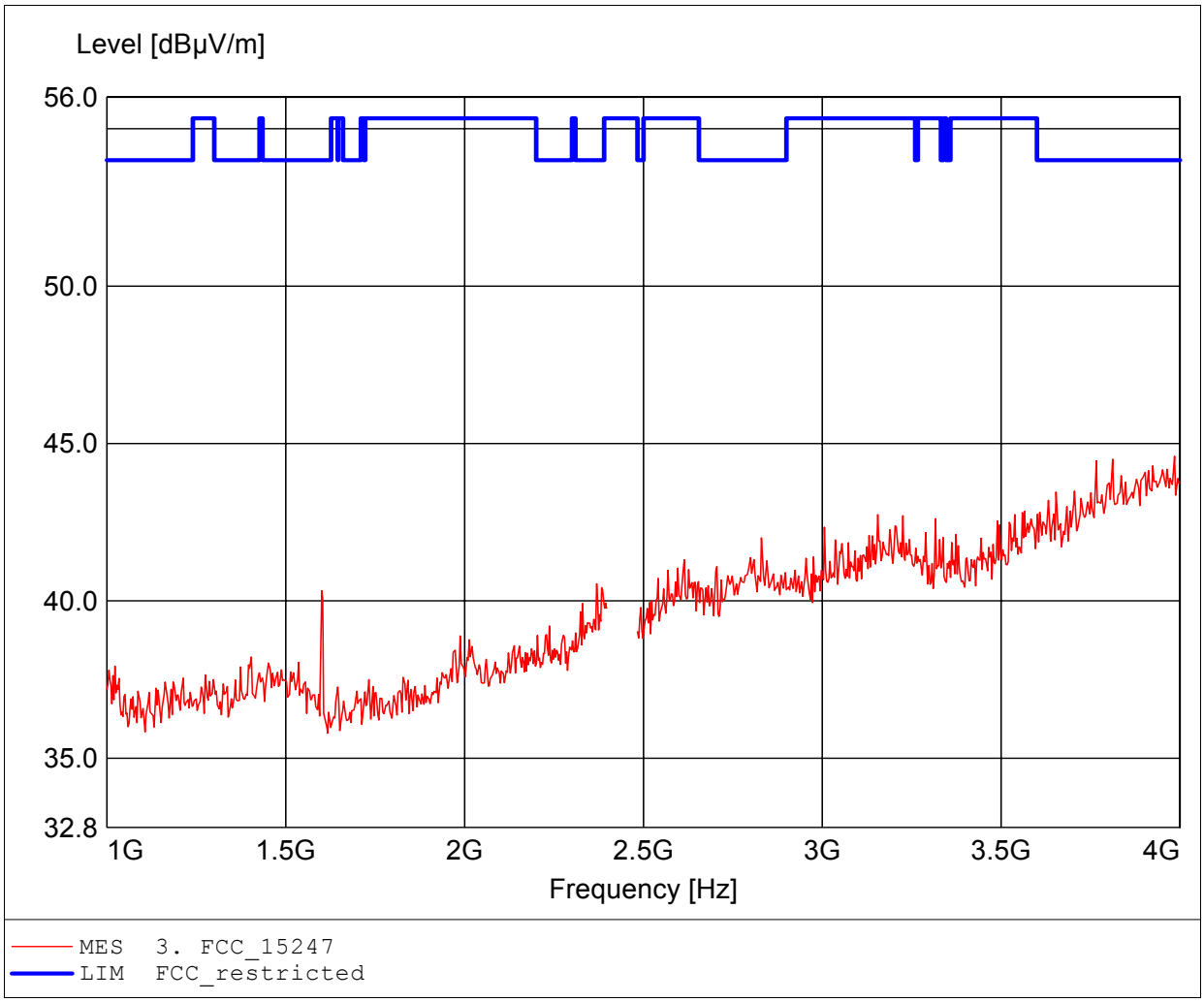
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 1.603GHz, Emax: 45.98dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

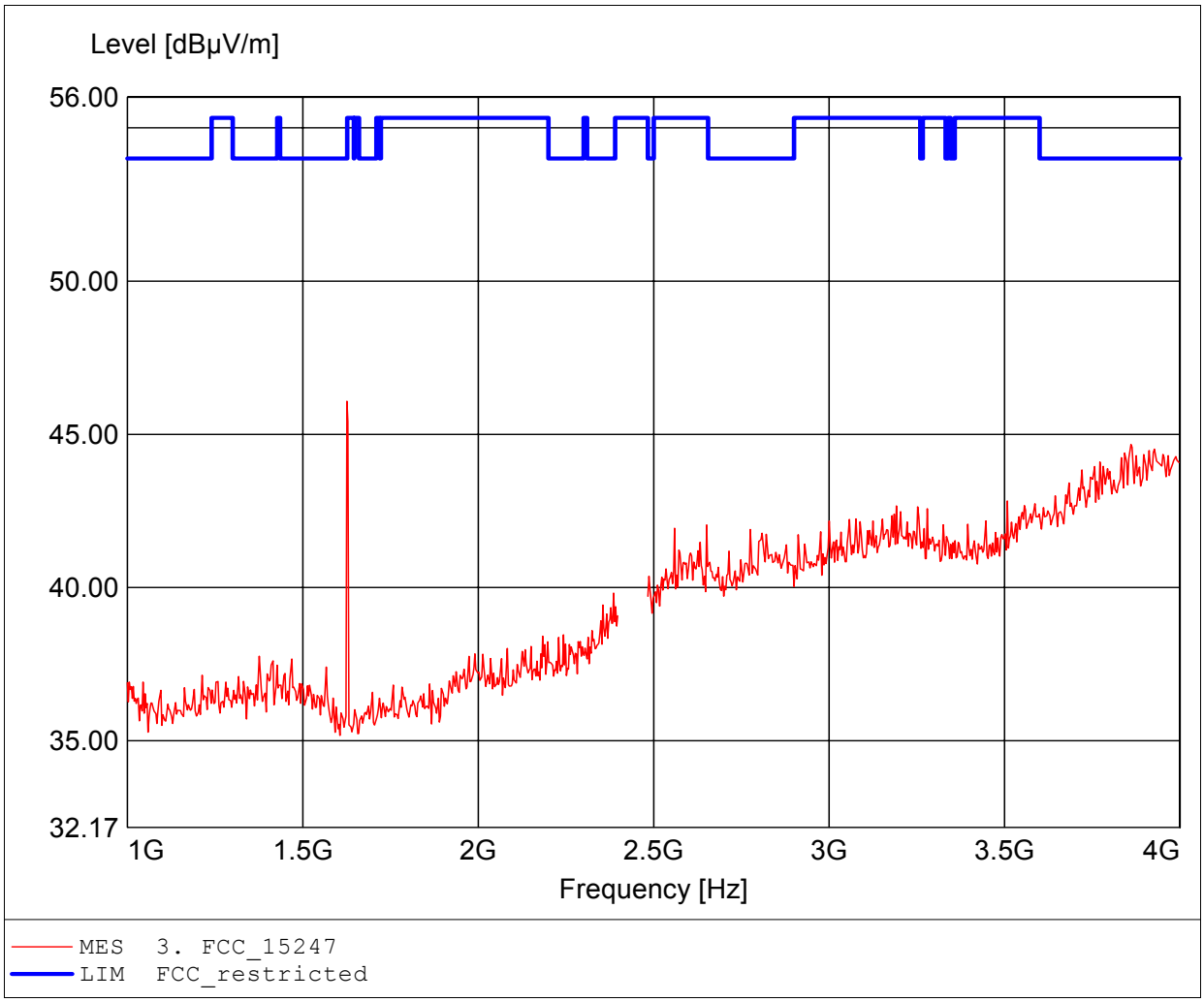
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 3.985GHz, Emax: 44.59dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

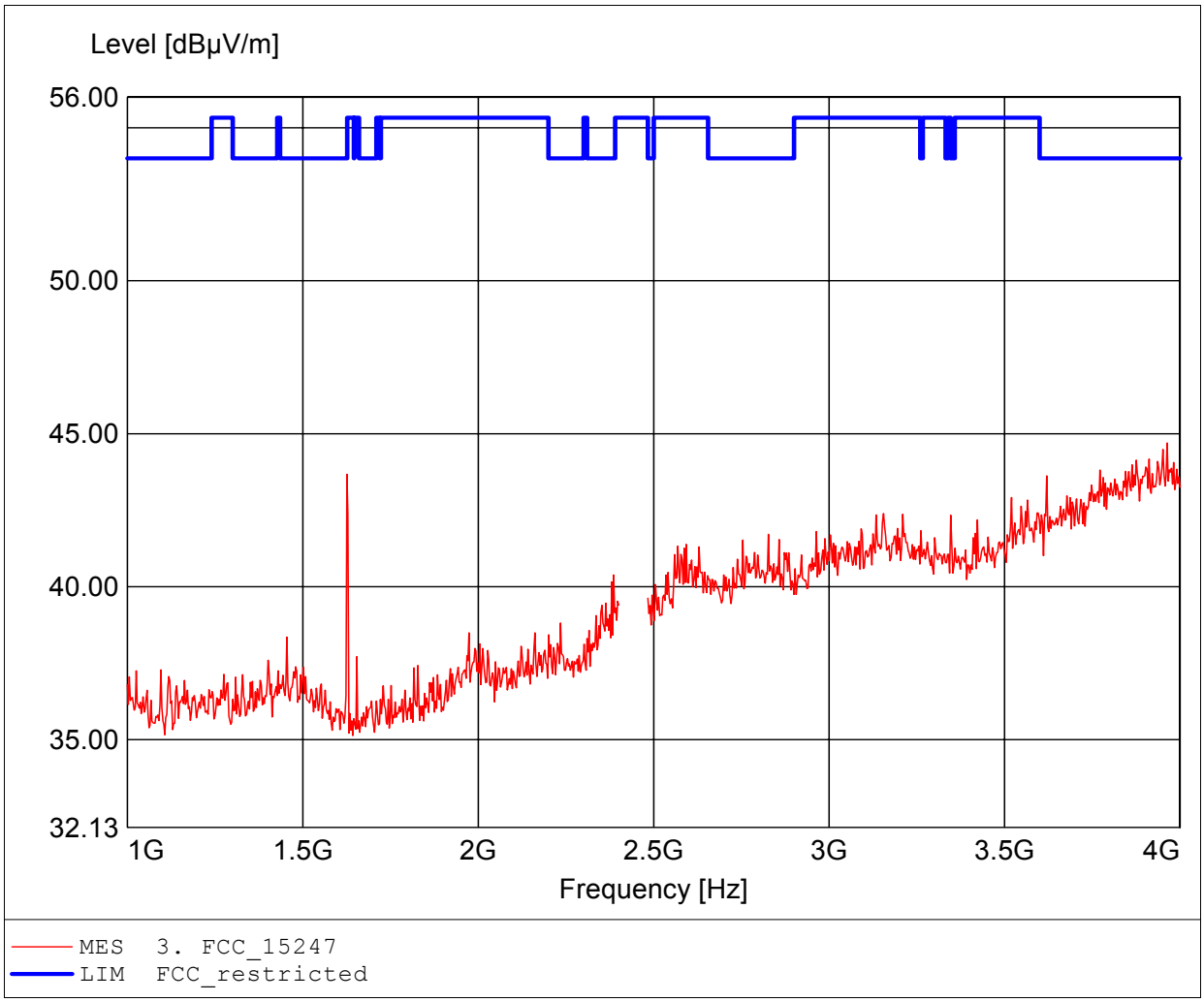
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 1.626GHz, Emax: 46.08dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

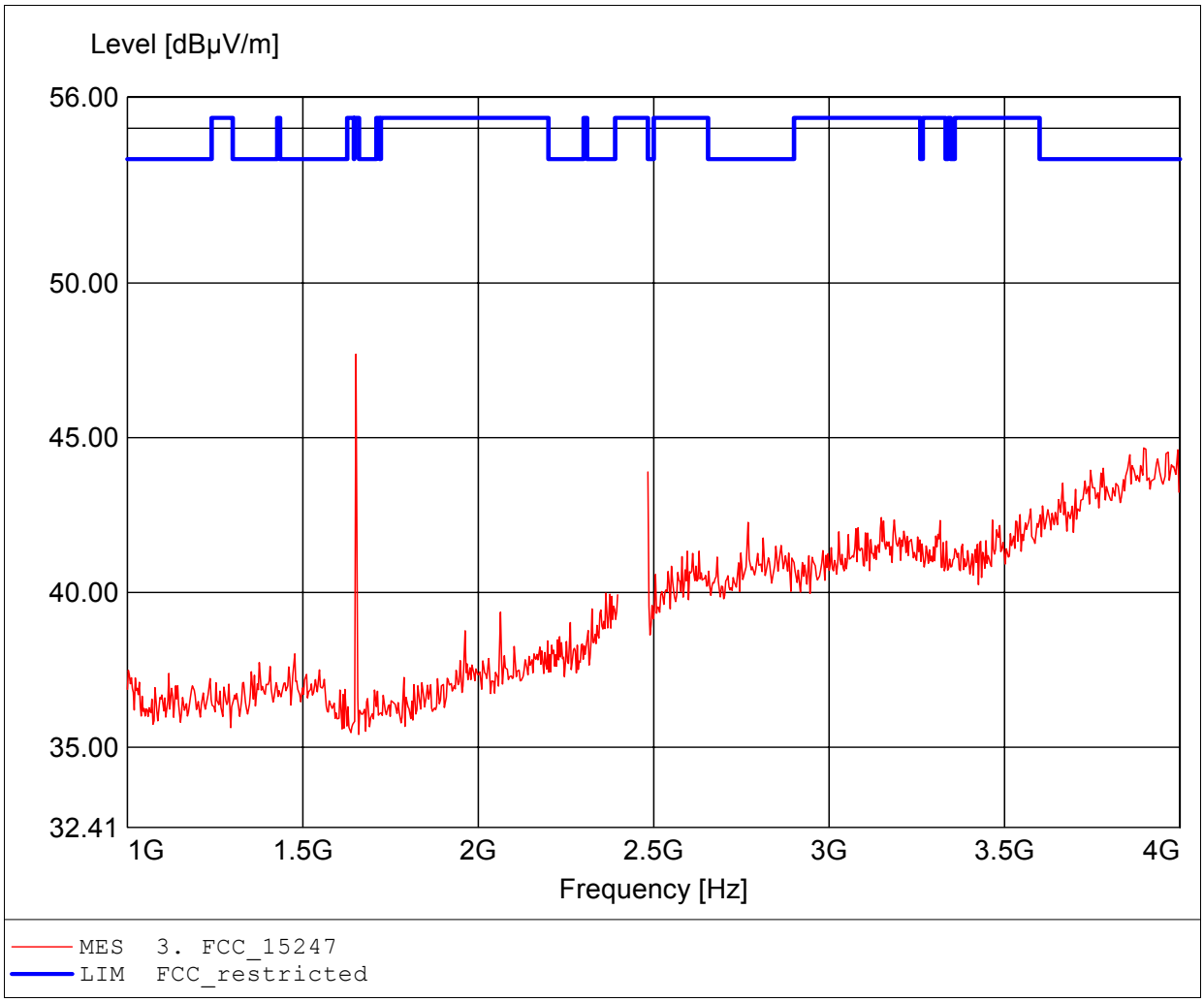
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 3.964GHz, Emax: 44.70dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

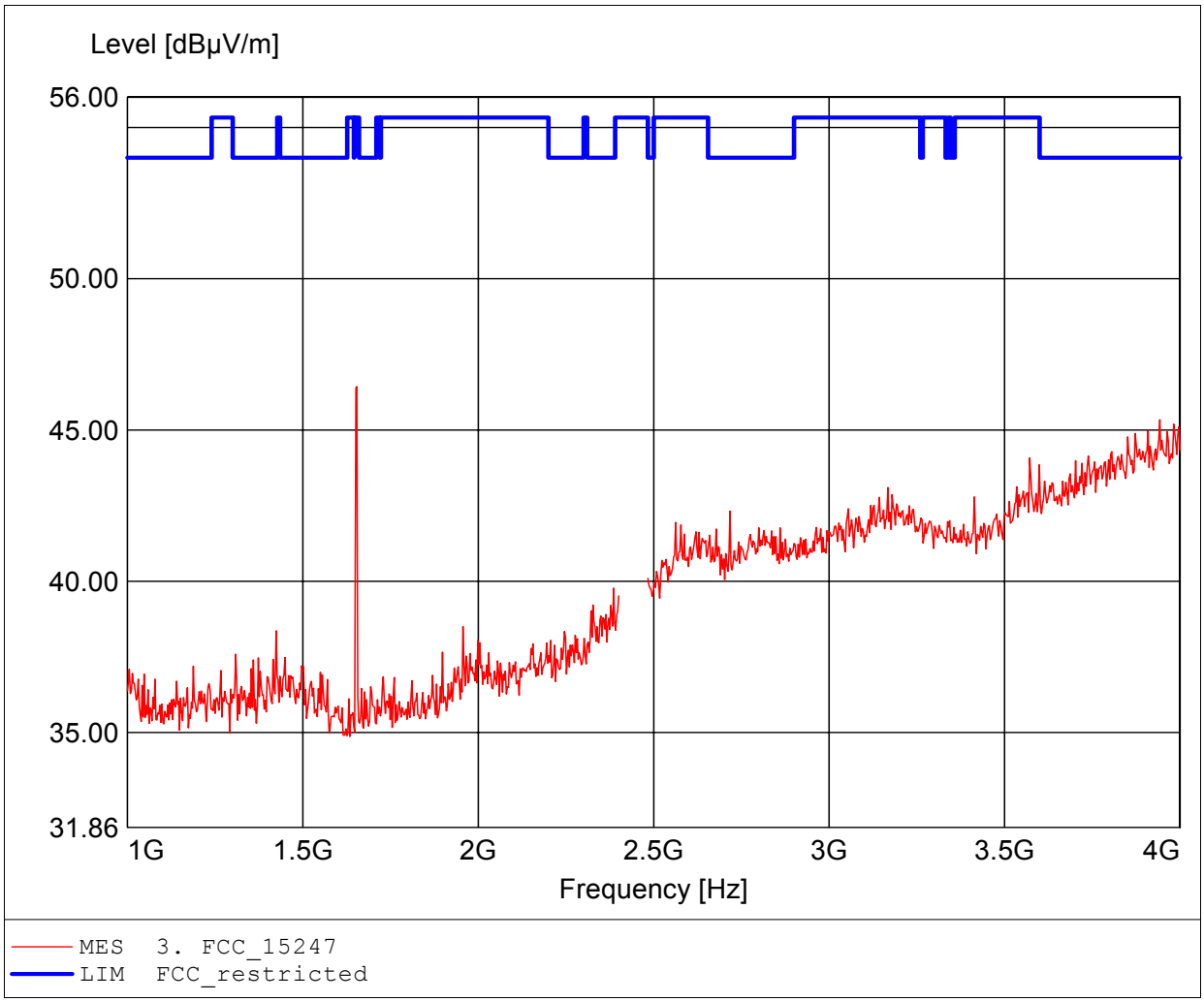
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 1.651GHz, Emax: 47.70dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

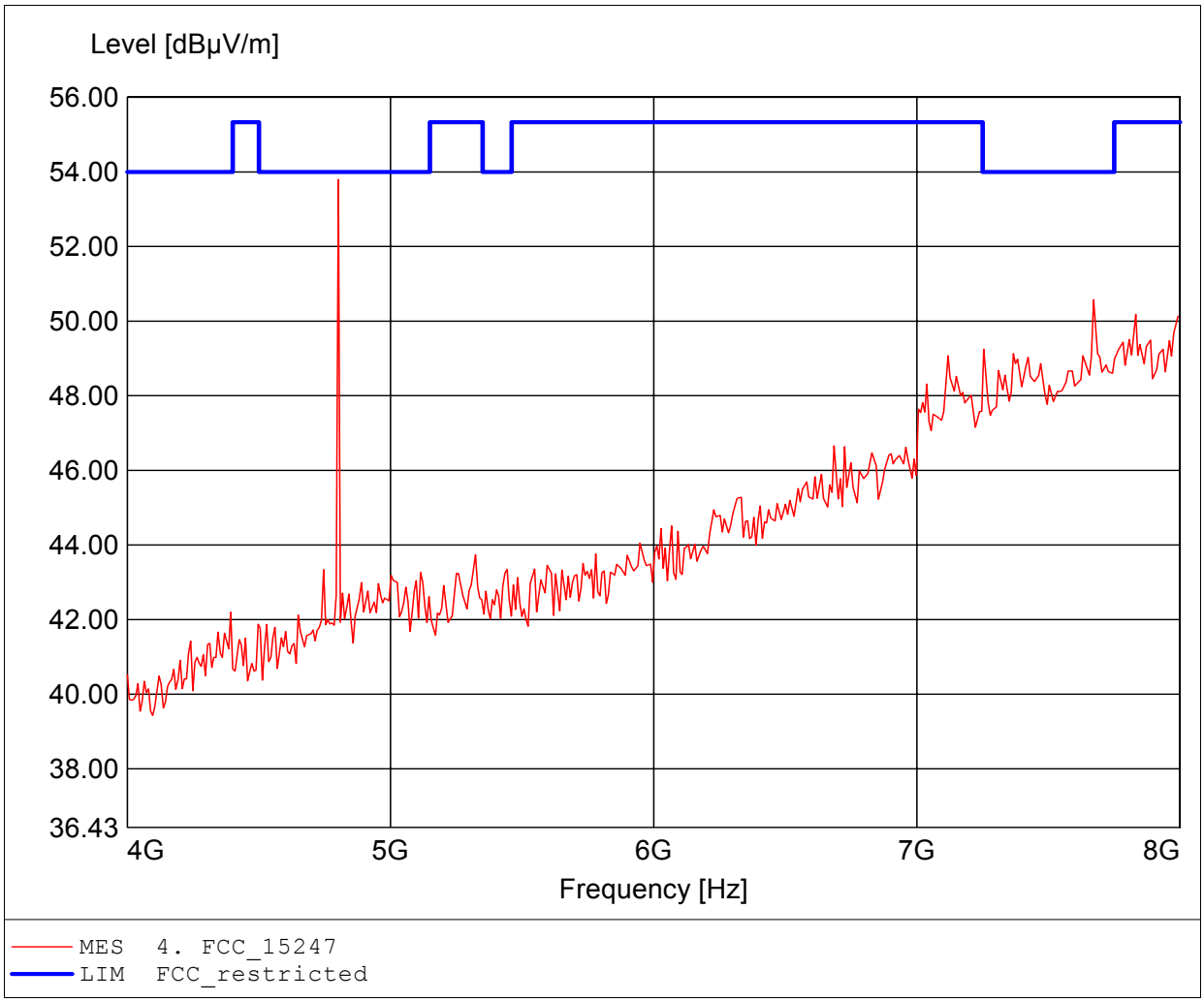
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 1.654GHz, Emax: 46.43dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

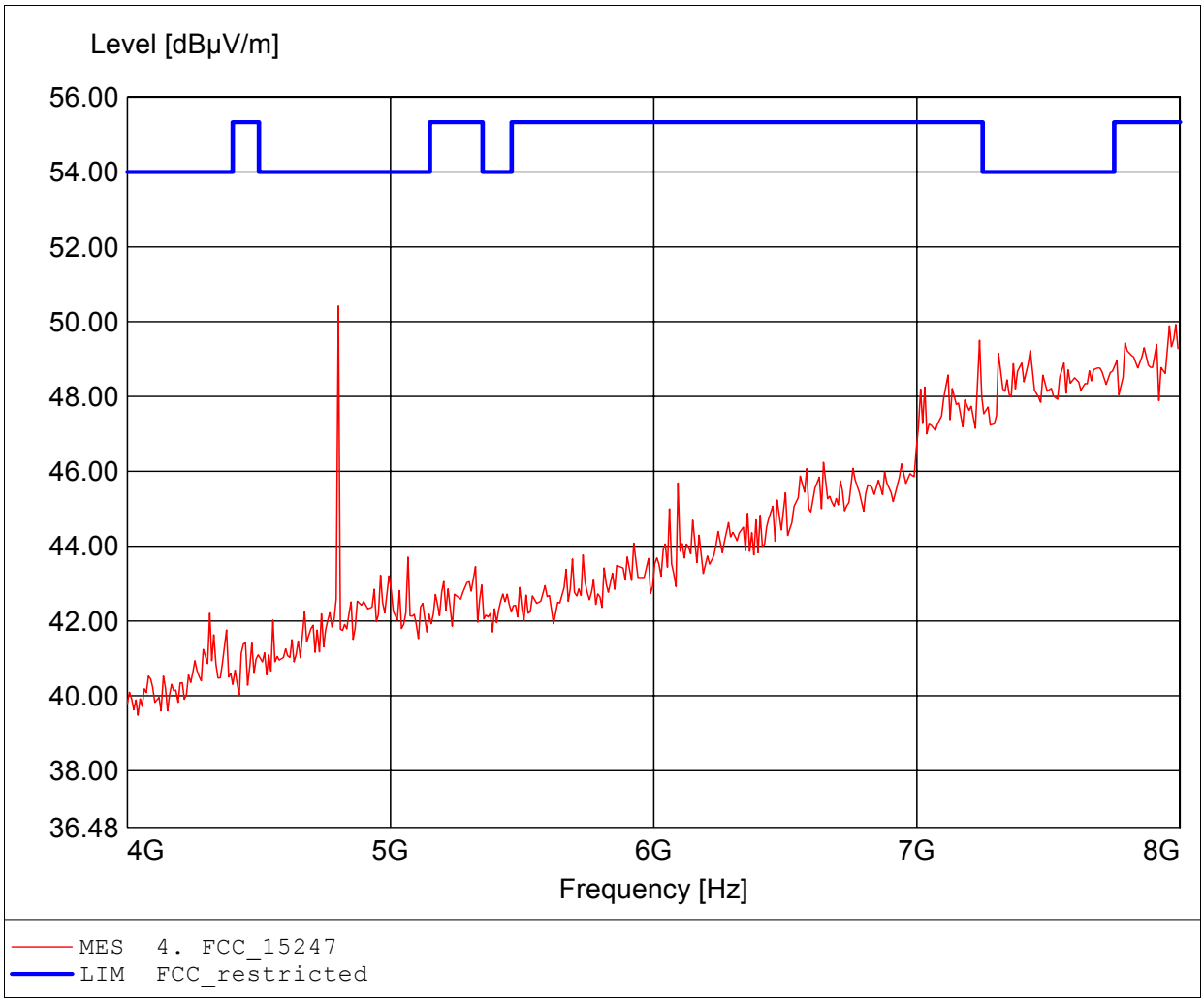
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.802GHz, Emax: 53.80dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

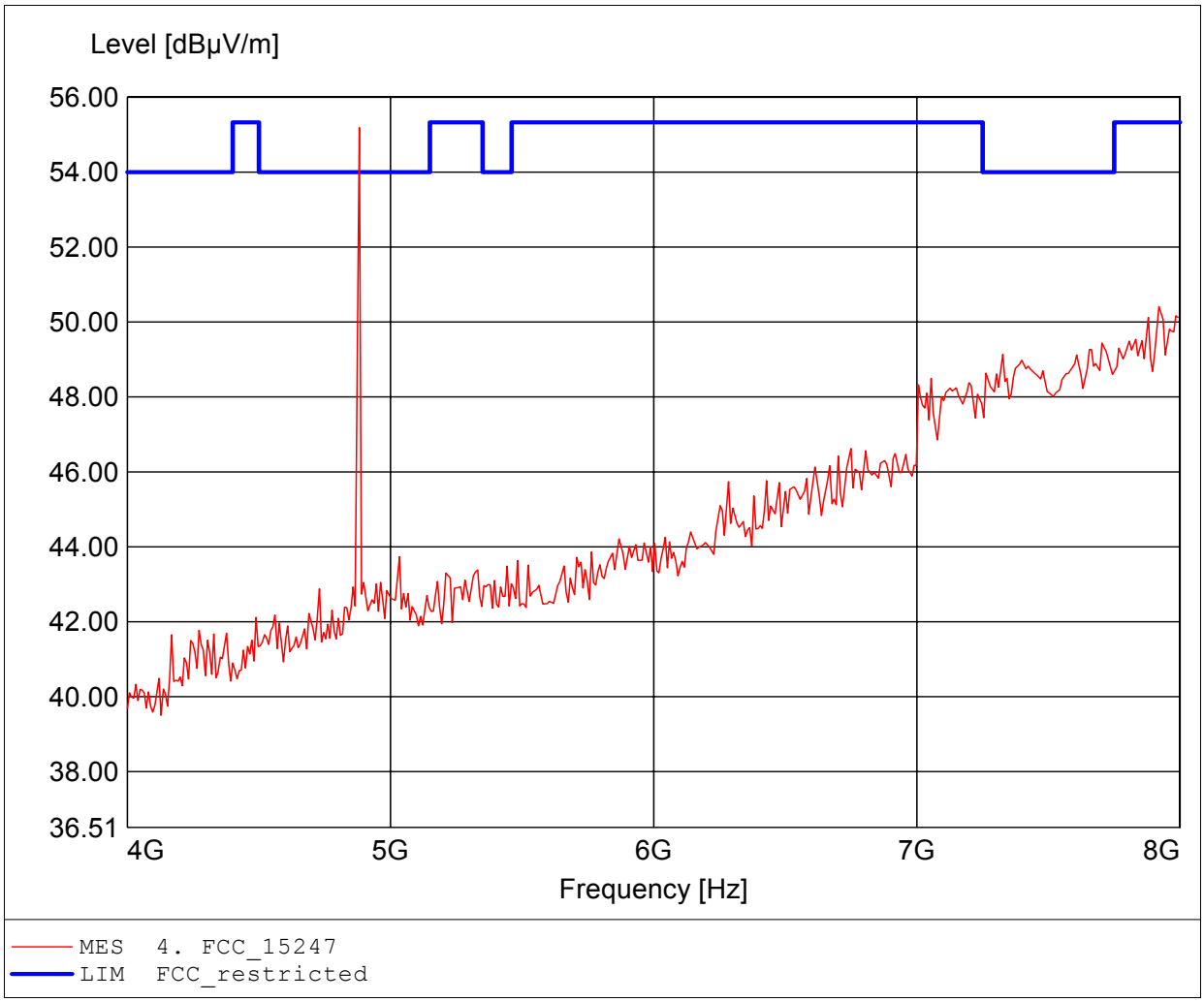
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2402 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.802GHz, Emax: 50.42dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

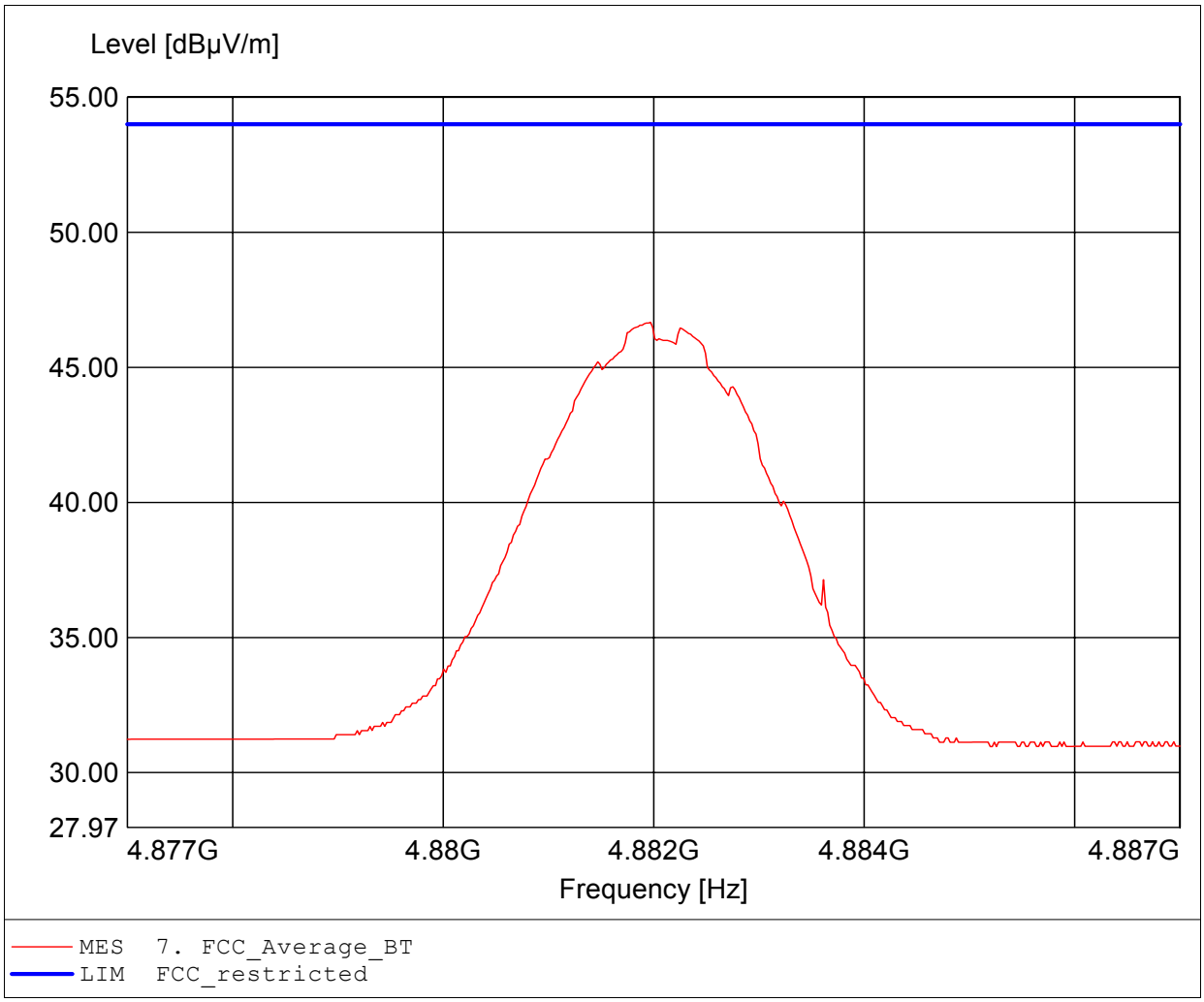
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.882GHz, Emax: 55.19dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

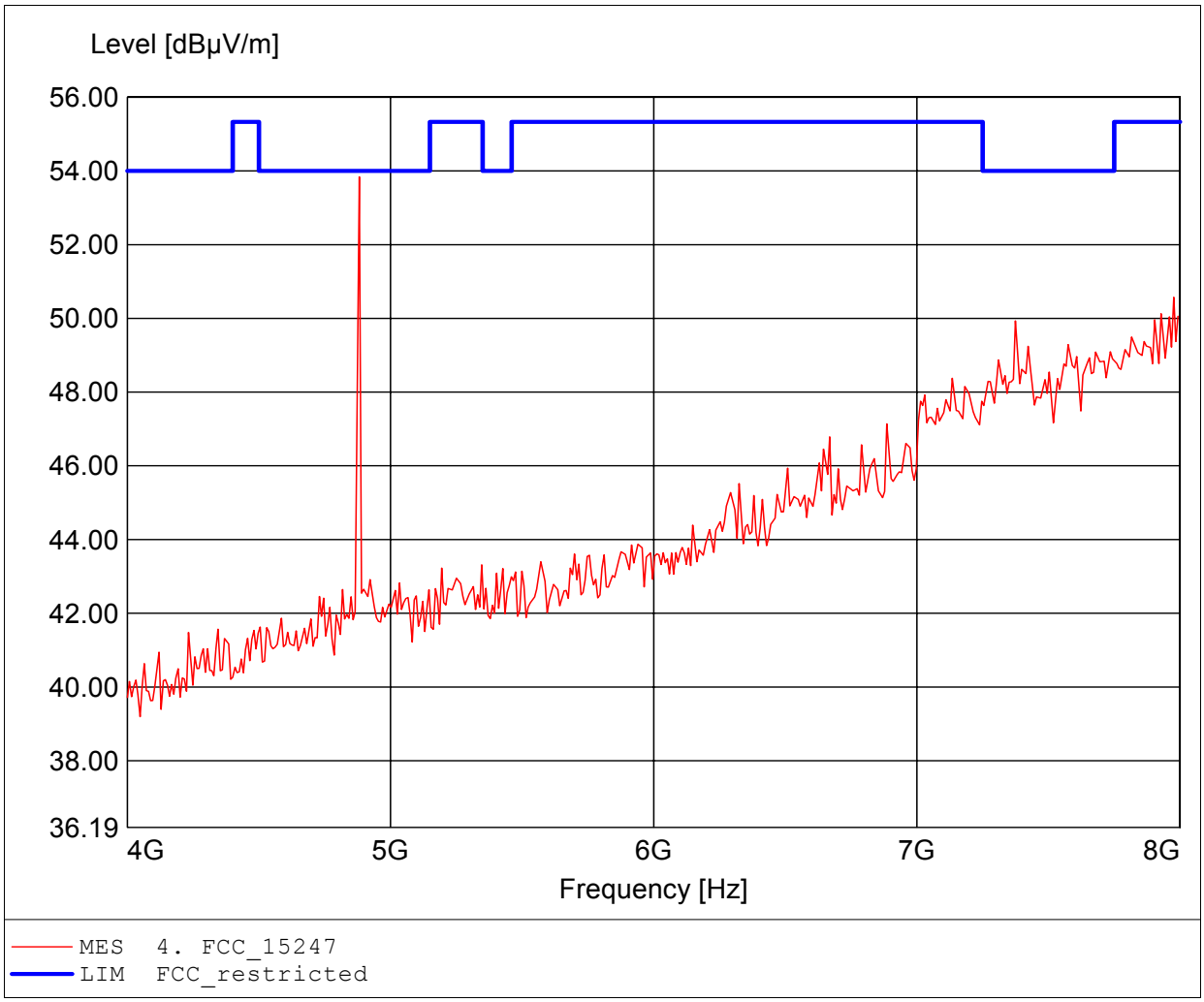
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 4.882GHz, Emax: 46.67dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

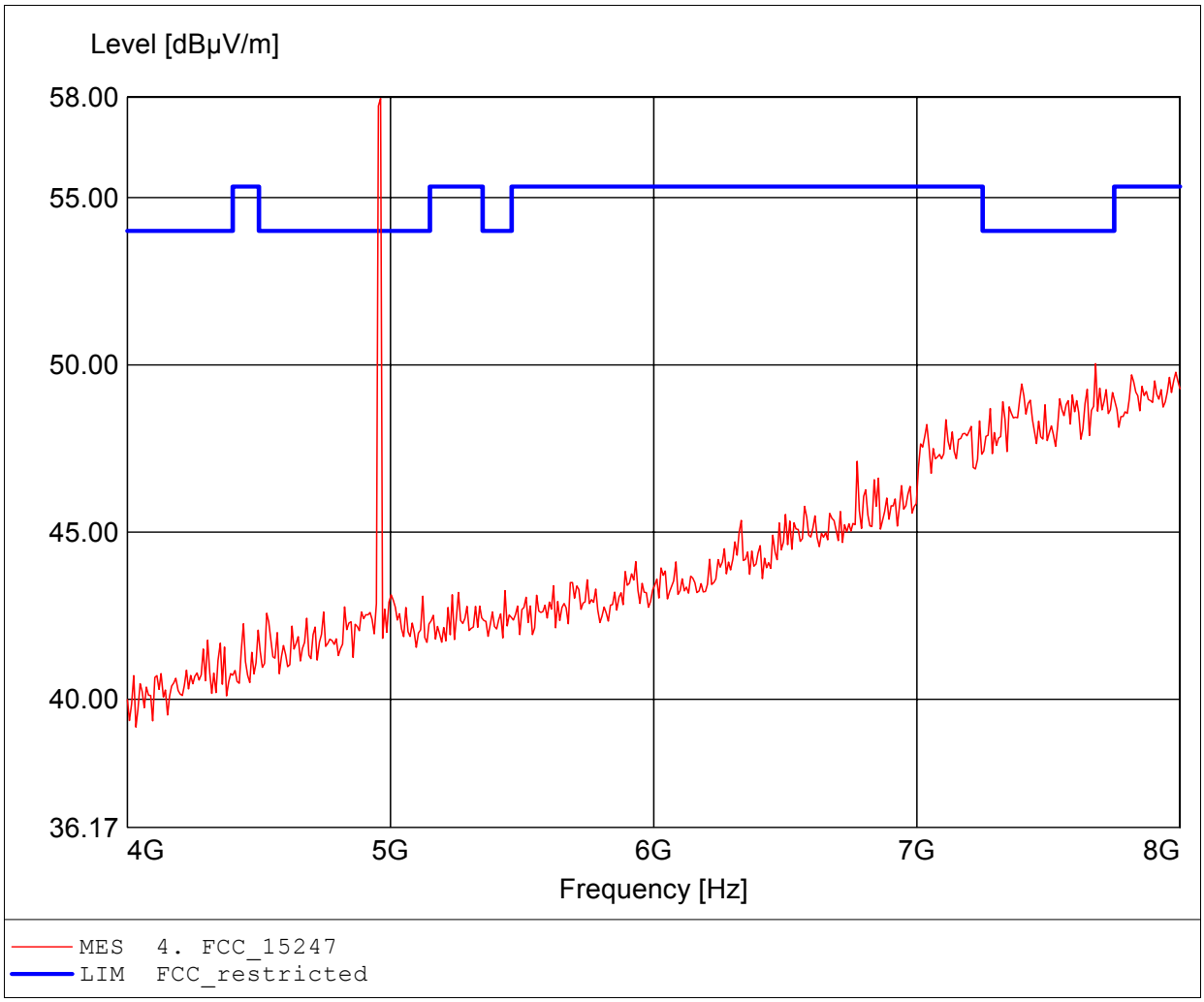
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2441 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.882GHz, Emax: 53.84dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

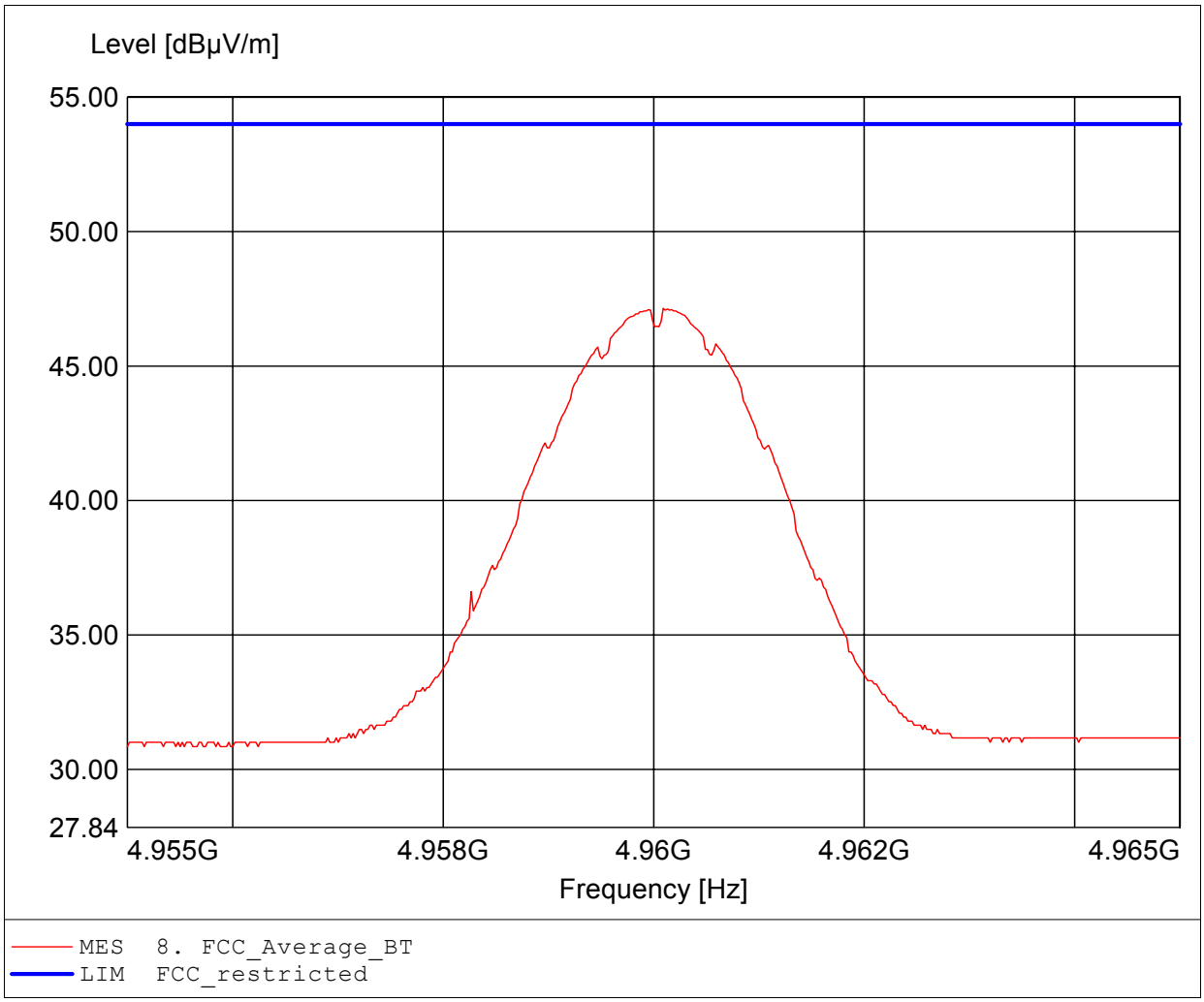
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.962GHz, Emax: 57.96dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

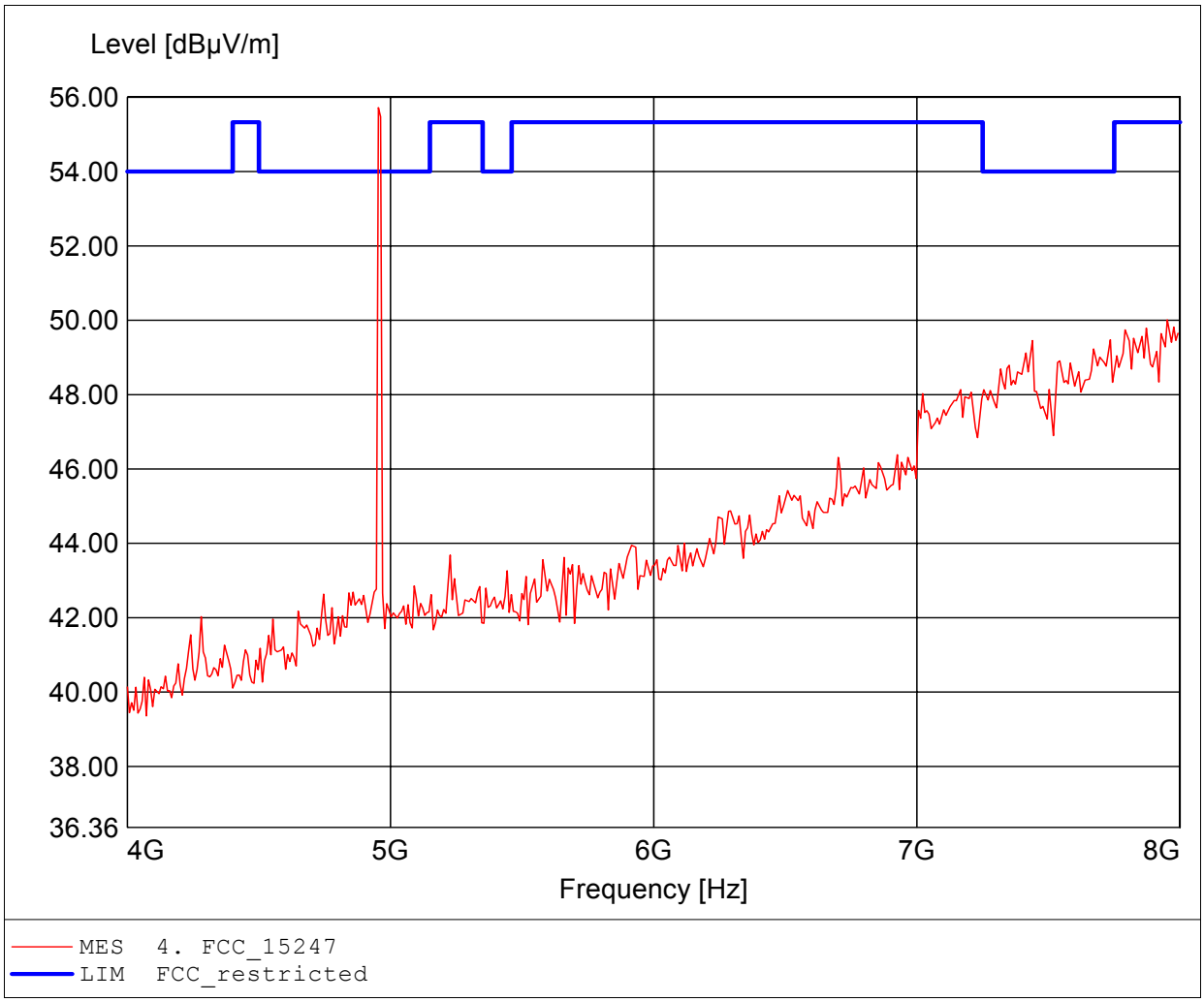
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 4.960GHz, Emax: 47.15dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

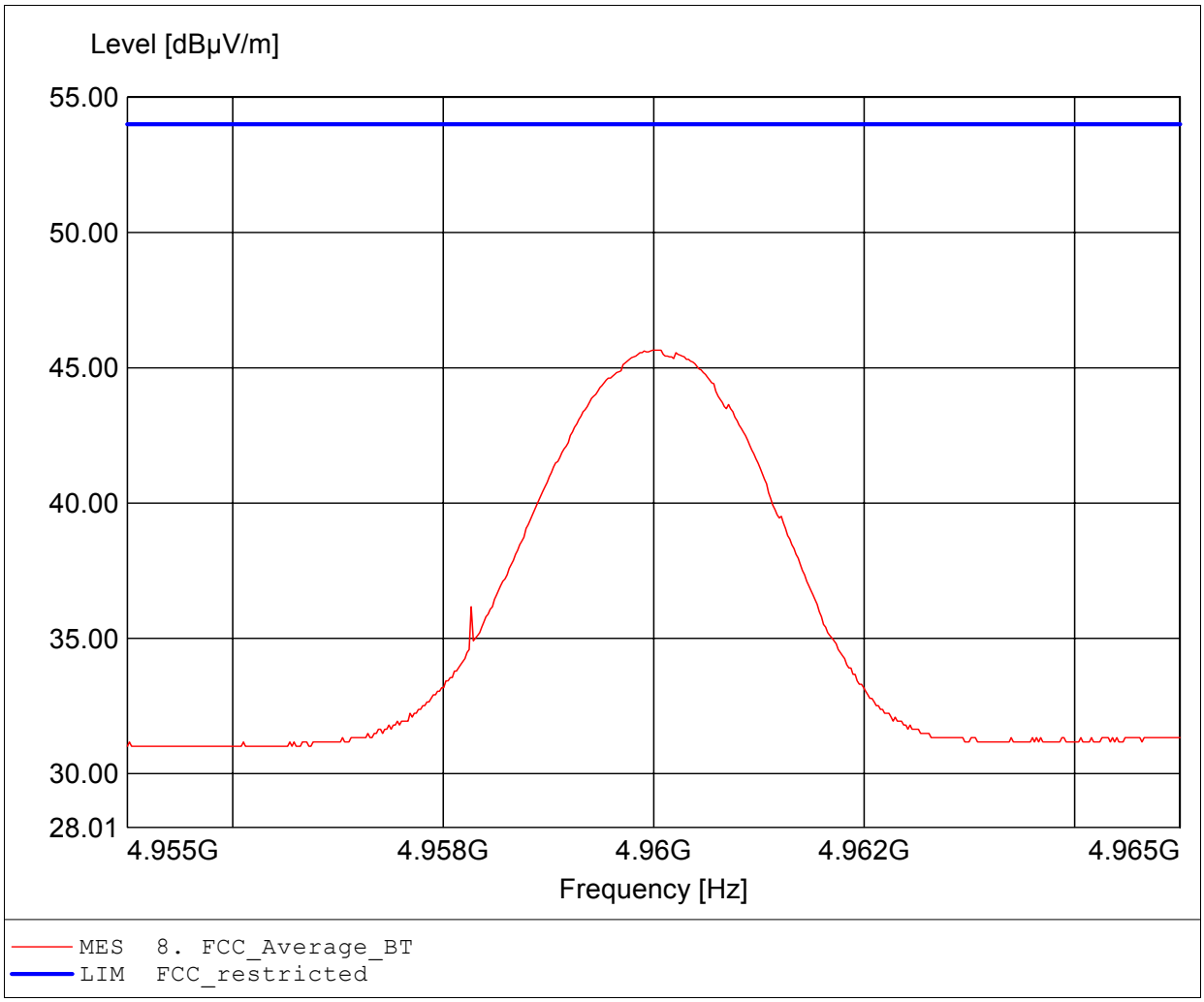
Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2:	Freq: 4.954GHz, Emax: 55.72dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

Approval Holder:	MIR Medical International Research / Ord.: G0M21003-3001
EUT:	Bluetooth Medical Device
Model:	Spirometer / Pmax; 3-DH5; 2480 MHz
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Handrik
Test Condition:	Tnom: 23°C / Unom.: 3.7V DC (ac/dc adaptor->charging)
Test Specification:	according to §15.247, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2:	Freq: 4.960GHz, Emax: 45.65dBµV/m, RBW: 1MHz

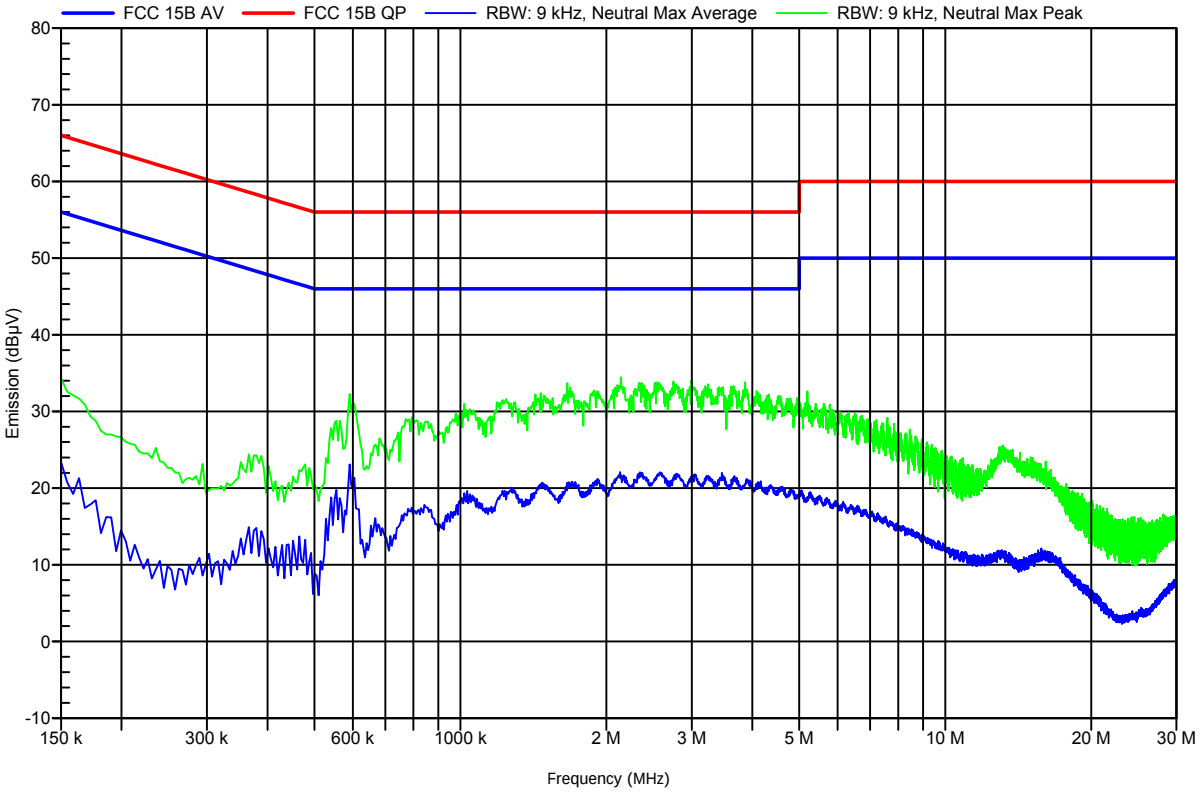


Annex J AC Powerline Conducted Emissions

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

Order number: G0M21003-3001

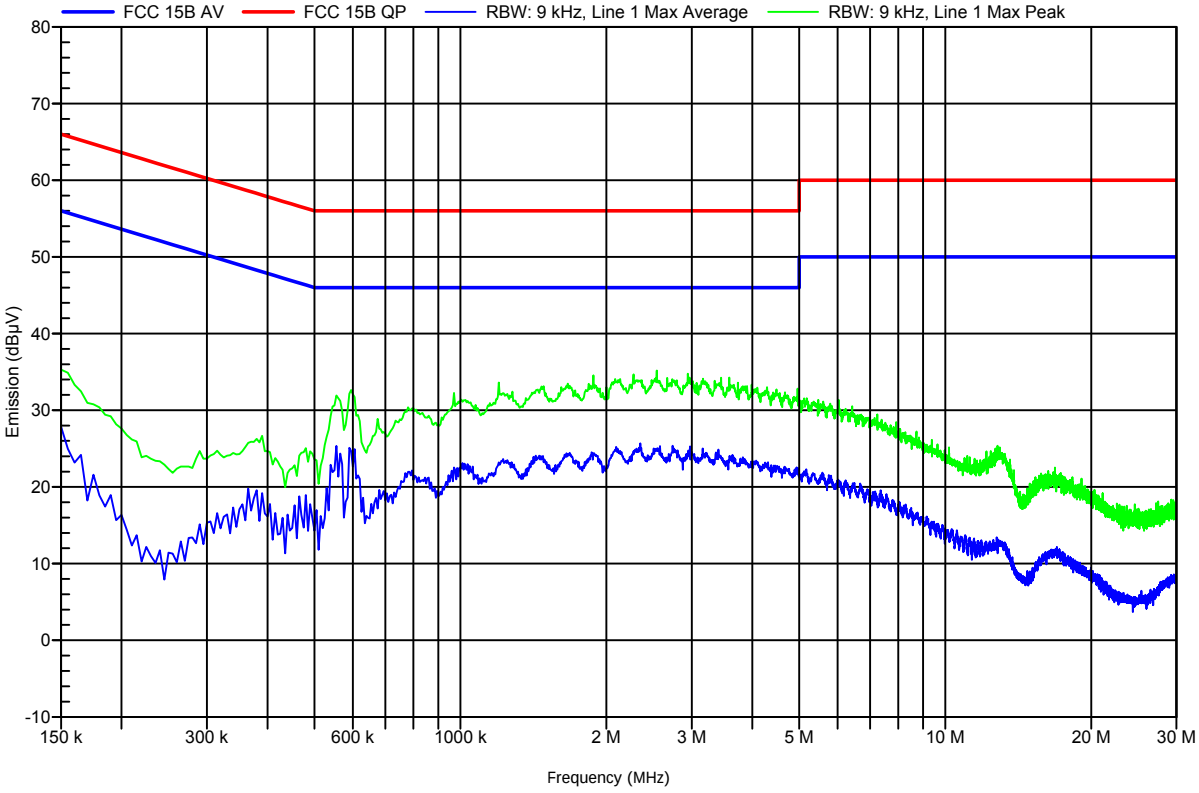
Manufacturer:	MIR Medical International Research
EUT Name:	Spirometer
Model:	A23-0W.00006
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC (AC/DC-Adapter)
LISN:	ESH2-Z5 N
Mode:	charging
Test Date:	28.04.2010
Note:	Power supply FW7333SM/05



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

Order number: G0M21003-3001

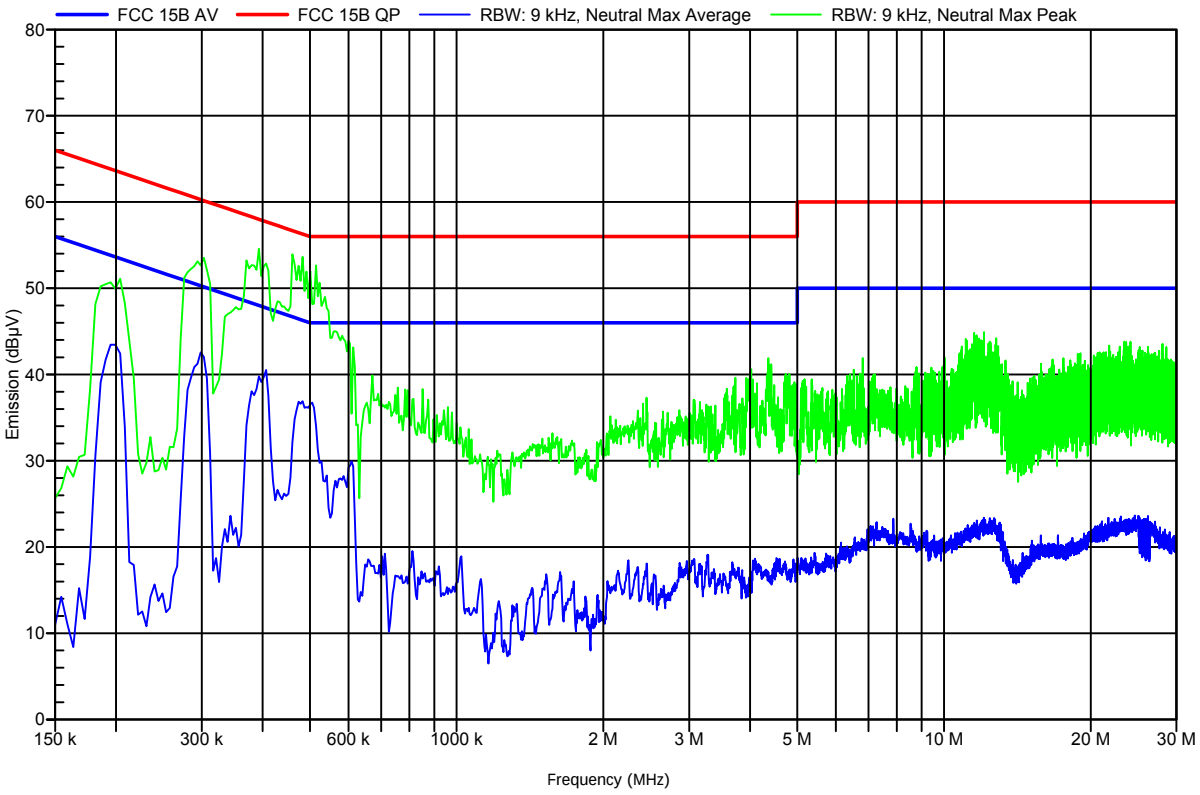
Manufacturer:	MIR Medical International Research
EUT Name:	Spirometer
Model:	A23-0W.00006
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC (AC/DC-Adapter)
LISN:	ESH2-Z5 L
Mode:	charging
Test Date:	28.04.2010
Note:	Power supply FW7333SM/05



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

Order number: G0M21003-3001

Manufacturer:	MIR Medical International Research
EUT Name:	Spirometer
Model:	A23-0W.00006
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC (AC/DC-Adapter)
LISN:	ESH2-Z5 N
Mode:	charging from notebook, lenovo R61
Test Date:	28.04.2010



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

Order number: G0M21003-3001

Manufacturer:	MIR Medical International Research
EUT Name:	Spirometer
Model:	A23-0W.00006
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Klein
Test Conditions:	Tnom: 23°C, Unom: 120VAC (AC/DC-Adapter)
LISN:	ESH2-Z5 L
Mode:	charging from notebook, lenovo R61
Test Date:	28.04.2010