



EUROFINS PRODUCT SERVICE GMBH



TEST-REPORT

**FCC PART 15 SUBPART C
IC RSS 210 ISSUE 8**

**Bluetooth Speakerphone
AT-650**

**FCC ID: ZOQAT-650
IC: 9734A-AT650**

TEST REPORT NUMBER: G0M-1105-1156-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 generalizations 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:

30.08.2011

W. Treffke



Date

Eurofins-Lab.

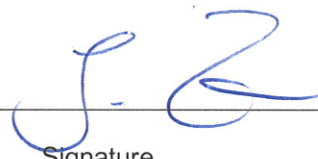
Name

Signature

Technical responsibility for area of testing:

30.08.2011

J. Zimmermann



Date

Eurofins

Name

Signature

1.2 Testing laboratory

EUROFINS PRODUCT SERVICE GMBH
Storkower Strasse 38c
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Germany
Telephone :+49 33631 888 00
Telefax :+49 33631 888 660

DAKKS ACCREDITED TESTING LABORATORY
DAKKS-REGISTRATION NUMBER: D-PL-12092-01-01

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 : Hughes Telematics, Inc.
Street : 2002 Summit Blvd, Suite 1800
Town : GA 30319 Atlanta, Georgia
Country : USA
Telephone : +1 404 573 5848
Fax : +1 404 285 0648

Contact : Mr. Bryant Elliott
Telephone : +1 404 573 5848

Manufacturer:
(if applicable)

Name : Hughes Telematics, Inc.
Street : 2002 Summit Blvd, Suite 1800
Town : GA 30319 Atlanta, Georgia
Country : USA

1.4 Application details

Date of receipt of application : 14.06.2011
Date of receipt of test item : 14.06.2011
Date of test : 22.06.2011 – 27.06.2011

1.5 Acronyms and abbreviations

EUT : Equipment under Test
TX : Transmission
RX : Reception
RBW : Measurement Resolution Bandwidth
Pol : Measurement Polarization
e.i.r.p. : Equivalent isotropic radiated power
FHSS : Frequency hopping spread spectrum
DSSS : Direct Sequence Spread Spectrum
OFDM : Orthogonal frequency division multiplexing
CCK : Complementary code keying
GFSK : Gaussian frequency shift keying
DQPSK : Differential quadrature phase shift keying
PSK : Phase shift keying
 T_{nom} : Nominal Temperature
 T_{min} : Minimum Temperature
 T_{max} : Maximum Temperature
 V_{nom} : Nominal Supply Voltage
 V_{min} : Minimum Supply Voltage
 V_{max} : Maximum Supply Voltage
VDC : DC voltage
N/A : Not applicable
IC : Industry Canada

1.6 Test standards

Technical standard : ☒ **FCC PART 15 SUBPART C**
☒ **IC RSS 210 ISSUE 8**

1.7 Test item

Description of test item : Bluetooth Speakerphone
Type identification : AT-650
Serial number : without
Hardware version : A00
Software version : 2.0.0
Equipment type : End product
FCC-ID : ZOQAT-650
IC : 9734A-AT650

Technical data

Radio type : Transceiver
Radio technology : Bluetooth
Frequency range : 2400 - 2483.5MHz
Assigned frequency band : 2400 - 2483.5MHz
Tested frequencies : F₁ 2402MHz
F₂ 2441MHz
F₃ 2480MHz
Spreading : FHSS
Modulation(s) : GFSK, PI/4-DQPSK, 8-PSK
Operating mode(s) : semi duplex
Number of channels : 79
Duty cycle(s) : 46%
Number of antennas : 1
Antenna type(s) : integrated
Antenna model(s) : PCB antenna
Antenna gain(s) : 2.1dBi
Power supply : 5VDC (USB)
Device classification : Mobile Device (Human Body distance > 20 cm)

1.8 Additional information

None

2 Technical test

2.1 Summary of test results

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



or

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



2.2 Test environment

Temperature : 22 ... 26°C

Relative humidity content : 20 ... 75%

Air pressure : 86 ... 103kPa

Extreme conditions parameters:

V_{nom} : 5VDC
 $V_{min} (V_{nom}-15\%)$: N/A
 $V_{max} (V_{nom}+15\%)$: N/A

T_{nom} : 25°C

Other parameter: None

2.3 Test equipment utilized

| Measurement Equipment List | | | | | |
|----------------------------|-----------------------|------------|-----------------|------------|------------|
| No.: | Measurement device: | Type: | Manufacturer: | Last Cal. | Next Cal. |
| ETS 0086 | Semi-anechoic chamber | AC1 | Frankonia | 09.12.2010 | 09.12.2012 |
| ETS 0253 | Spectrum Analyzer | FSIQ26 | Rohde & Schwarz | 04.11.2010 | 04.11.2012 |
| ETS 0030 | Biconical Antenna | HK 116 | Rohde & Schwarz | 10.02.2011 | 20.02.2012 |
| ETS 0295 | LPD Antenna | HL 223 | Rohde & Schwarz | 09.02.2011 | 09.02.2012 |
| ETS 0018 | Horn Antenna | BBHA 9120D | Schwarzbeck | 26.08.2010 | 26.08.2011 |
| ETS 0432 | Amplifier-Matrix | | | 02.06.2010 | 02.06.2012 |
| ETS 0496 | Spectrum Analyzer | FSP30 | Rohde & Schwarz | 26.08.2010 | 26.08.2011 |
| ETS 0288 | LISN | ESH2-Z5 | Rohde & Schwarz | 07.09.2010 | 07.09.2012 |

2.4 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dB μ V. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

$$\text{Reading on Analyzer (dB}\mu\text{V)} + \text{A.F. (dB)} = \text{Net field strength (dB}\mu\text{V/m)}$$

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dB μ V/m). The FCC limits are given in units of μ V/m. The following formula is used to convert the units of μ V/m to dB μ V/m:

$$\text{Limit (dB}\mu\text{V/m)} = 20 * \log (\mu\text{V/m})$$

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Example only:

| | | | | | | |
|-----------------|---|-------|---|-------------------|---|---|
| Reading | + | AF | = | Net Reading | : | Net reading - FCC limit = Margin |
| 21.5 dB μ V | + | 26 dB | = | 47.5 dB μ V/m | : | 47.5 dB μ V/m - 57.0 dB μ V/m = -9.5 dB |

2.5 Test results

| Test case | Clause | Required | Result | Remarks |
|---|--|-------------------------------------|--------|---------|
| INFORMATIONAL TRANSMITTER PARAMETERS | | | | |
| Occupied Bandwidth | IC RSS-Gen. 4.6.1 | <input checked="" type="checkbox"/> | | |
| TRANSMITTER PARAMETERS | | | | |
| 20dB Bandwidth | FCC § 15.247(a)(1) IC RSS-210 § A8.1 | <input checked="" type="checkbox"/> | PASS | |
| Frequency hopping channel number | FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1 | <input checked="" type="checkbox"/> | PASS | |
| Frequency hopping channel spacing | FCC § 15.247(a)(1) IC RSS-210 § A8.1 | <input checked="" type="checkbox"/> | PASS | |
| Time of occupancy (dwell time) | FCC § 15.247(a)(1)(iii) IC RSS-210 § A8.1 | <input checked="" type="checkbox"/> | PASS | |
| Maximum peak conducted output power | FCC § 15.247(b) IC RSS-210 § A8.4 | <input checked="" type="checkbox"/> | PASS | |
| Maximum peak e.i.r.p. output power | FCC § 15.247(b) IC RSS-210 § A8.4 | <input checked="" type="checkbox"/> | PASS | |
| Band-edge Compliance | FCC § 15.247(d) IC RSS-210 § A8.5 | <input checked="" type="checkbox"/> | PASS | |
| Conducted spurious emissions | FCC § 15.247(d) IC RSS-210 § A8.5 | <input checked="" type="checkbox"/> | PASS | |
| Radiated spurious emissions | FCC § 15.247(d) FCC § 15.209 IC RSS-210 A8.5 IC RSS-Gen 4.9 IC RSS-Gen 7.2.5 | <input checked="" type="checkbox"/> | PASS | |
| RECEIVER PARAMETERS | | | | |
| Radiated spurious emissions | FCC § 15.109 IC RSS-Gen 4.10 IC RSS-Gen 6.1 | <input checked="" type="checkbox"/> | PASS | |
| POWER LINE PARAMETERS | | | | |
| AC power line conducted emissions | FCC § 15.207 IC RSS-Gen. 7.2.4 | <input checked="" type="checkbox"/> | PASS | |

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 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Spreading Technique | FHSS |
| Modulation | GFSK |
| Packet Type | DH5 |
| Data rate | 1Mbps |
| Duty Cycle | 46% |

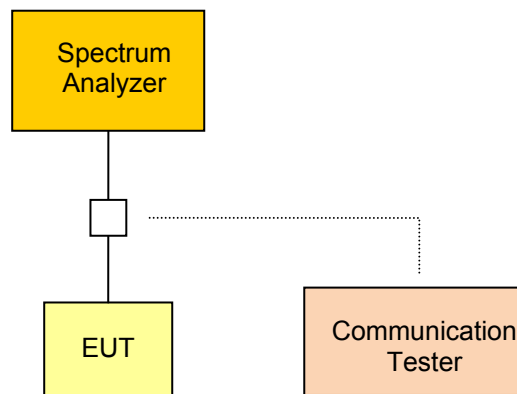
| TEST MODE 2-DH5 | |
|---------------------|---|
| Conditions | |
| Spread Spectrum | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Spreading Technique | FHSS |
| Modulation | $\pi/4$ -DQPSK |
| Packet Type | 2-DH5 |
| Data rate | 2Mbps |
| Duty Cycle | 46% |

| TEST MODE 3-DH5 | |
|---------------------|---|
| Conditions | |
| Spread Spectrum | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| Spreading Technique | FHSS |
| Modulation | 8-DPSK |
| Packet Type | 3-DH5 |
| Data rate | 3Mbps |
| Duty Cycle | 46% |

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 then 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 DH5 | | | |
| 2402 | 2401.504 | 2402.395 | 0.891 |
| 2441 | 2440.493 | 2441.395 | 0.901 |
| 2480 | 2479.493 | 2480.385 | 0.891 |
| Test mode 3-DH5 | | | |
| 2402 | 2401.353 | 2402.566 | 1.212 |
| 2441 | 2440.343 | 2441.556 | 1.212 |
| 2480 | 2479.333 | 2480.546 | 1.212 |
| See attached diagram in Annex | | | |

4 Transmitter parameters

4.1 20dB Bandwidth

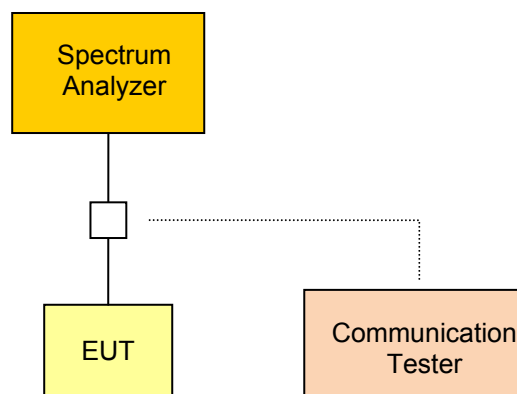
According FCC rules 47 CFR 15.247(a)(1) and RSS-210 Section A8.1 the 20dB Bandwidth determines the necessary carrier spacing used in the frequency hopping system.

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 |
| $\leq 125\text{mW} / 21\text{dBm}$ | $1.5 * \text{carrier spacing}$ |
| $125\text{mW} - 1\text{W} / 21 - 30\text{dBm}$ | $1.0 * \text{carrier spacing}$ |

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 ($VBW \geq RBW$). 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 | 2.9dBm | |
| Carrier spacing | 1MHz | |
| Channel [MHz] | 20dB Bandwidth [MHz] | Bandwidth Limit [MHz] |
| Test mode DH5 | | |
| 2402 | 0.935 | ≤ 1.5 |
| 2441 | 0.939 | ≤ 1.5 |
| 2480 | 0.939 | ≤ 1.5 |
| Test mode 2-DH5 | | |
| 2402 | 1.313 | ≤ 1.5 |
| 2441 | 1.309 | ≤ 1.5 |
| 2480 | 1.313 | ≤ 1.5 |
| Test mode 3-DH5 | | |
| 2402 | 1.269 | ≤ 1.5 |
| 2441 | 1.278 | ≤ 1.5 |
| 2480 | 1.269 | ≤ 1.5 |
| See attached diagrams in Annex | | |
| Measurement uncertainty | | 4.22dB |
| Verdict | | PASS |

4.2 Frequency hopping channel number

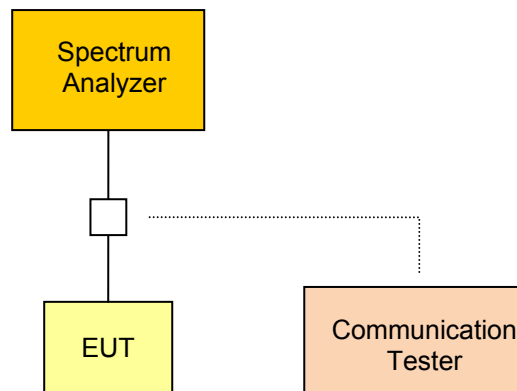
According FCC rules 47 CFR 15.247(a)(1)(iii) and RSS-210 Section A8.1 the number of hopping channels used, determines if the system can be certified as a hopping system and also the power level the system can use.

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 |
| $\leq 125\text{mW} / 21\text{dBm}$ | 15 |
| $125\text{mW} - 1\text{W} / 21 - 30\text{dBm}$ | 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 ($\text{VBW} \geq \text{RBW}$) 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 |
| Maximum output power | 2.9dBm |
| 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

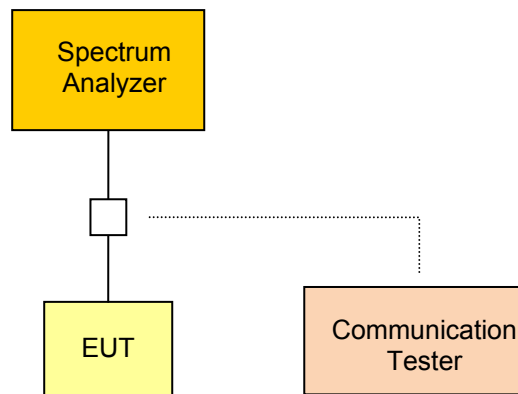
According FCC rules 47 CFR 15.247(a)(1) and RSS-210 Section A8.1 the minimum hopping channel frequency spacing is correlated to the 20dB bandwidth of the hopping channel emission and maximum peak output power.

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 |
| $\leq 125\text{mW} / 21\text{dBm}$ | $\geq 25\text{kHz}$ or $\frac{2}{3}$ of 20dB bandwidth |
| $125\text{mW} - 1\text{W} / 21 - 30\text{dBm}$ | $\geq 25\text{kHz}$ 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 ($\text{VBW} \geq \text{RBW}$) 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 | 2.9dBm |
| Channel spacing [kHz] | Channel spacing limit [kHz] |
| 1000 | $\geq \frac{2}{3} * 939 = 626$ |
| See attached diagrams in Annex | |
| Measurement uncertainty | 4.22dB |
| Verdict | PASS |

4.4 Time of occupancy (Dwell time)

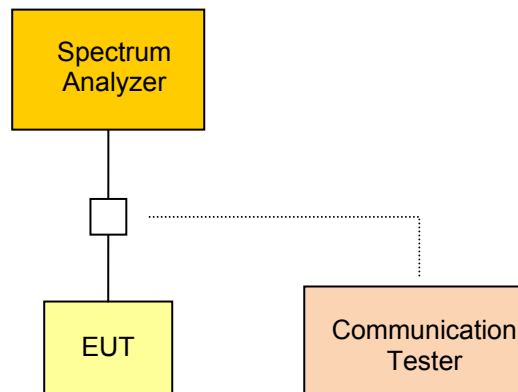
According FCC rules 47 CFR 15.247(a)(1)(iii) and RSS-210 Section A8.1 the average time of occupancy on any channel is limited.

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.

| Time of occupancy (dwell time) limits | |
|---------------------------------------|---|
| Dwell time limit | Channel occupancy period |
| 0.4s | $0.4 * \text{Number of hopping channels}$ |

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 ($VBW \geq RBW$) 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 period |
| 186.2ms | 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 been verified.

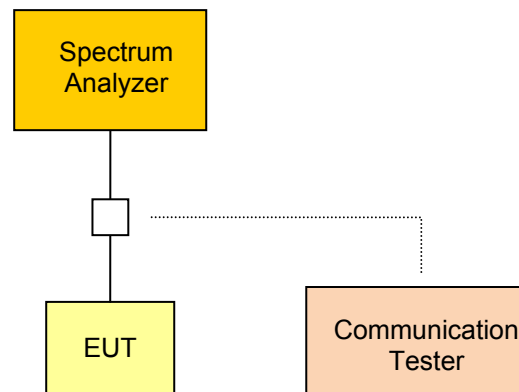
4.5.1 Limits

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.

| Maximum peak conducted output power 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 ($VBW \geq RBW$). 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 | 2.1dBi | |
| Number of hopping channels | 79 | |
| Channel [MHz] | Conducted output power [dBm] | Power Limit [dBm] |
| Test mode DH5 | | |
| 2402 | 2.4 | 30 |
| 2441 | 2.5 | 30 |
| 2480 | 2.1 | 30 |
| Test mode 2-DH5 | | |
| 2402 | 2.7 | 30 |
| 2441 | 2.6 | 30 |
| 2480 | 1.9 | 30 |
| Test mode 3-DH5 | | |
| 2402 | 2.9 | 30 |
| 2441 | 2.8 | 30 |
| 2480 | 2.2 | 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.

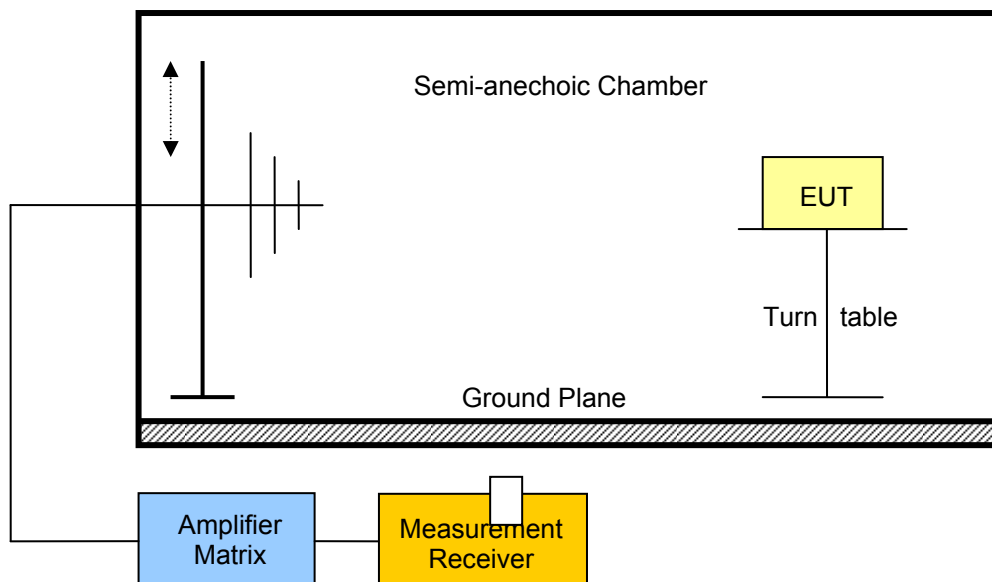
4.6.1 Limits

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.

| Maximum e.i.r.p. output power 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 activated 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 height of the measurement antenna changed. All emissions that come to within 20dB of the limit line are recorded.

Alternate validation procedure

Alternatively the e.i.r.p. power is calculated from 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 method | <input type="checkbox"/> Measurement <input checked="" type="checkbox"/> Alternate | |
| Antenna gain | 2.1dBi | |
| 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 | 4.5 | 36 |
| 2441 | 4.6 | 36 |
| 2480 | 4.2 | 36 |
| Test mode 2-DH5 | | |
| 2402 | 4.8 | 36 |
| 2441 | 4.7 | 36 |
| 2480 | 4.0 | 36 |
| Test mode 3-DH5 | | |
| 2402 | 5.0 | 36 |
| 2441 | 4.9 | 36 |
| 2480 | 4.3 | 36 |
| See attached diagrams in Annex | | |
| Measurement uncertainty | | 4.22dB |
| Verdict | | PASS |

4.7 Transmitter band-edge compliance

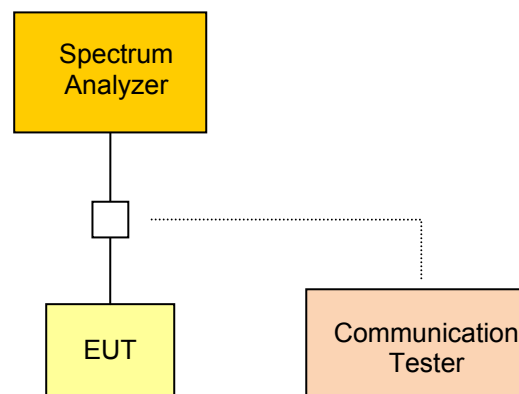
According FCC rules 47 CFR 15.209, 15.247(d) and RSS-210 Section A8.5 the emission level of out-of-band emissions are limited and has to be validated.

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 ($VBW \geq RBW$). The

A marker is set on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. Using the delta-marker function the highest peak 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 | -42.67 | -45.50 |
| Single | -42.92 | -46.46 |
| Test mode 2-DH5 | | |
| Hopping | -40.45 | -44.95 |
| Single | -43.33 | -45.60 |
| Test mode 3-DH5 | | |
| Hopping | -44.52 | -45.08 |
| Single | -44.20 | -46.22 |
| See attached diagram in Annex | | |
| Verdict | | PASS |

4.8 Transmitter conducted spurious emissions

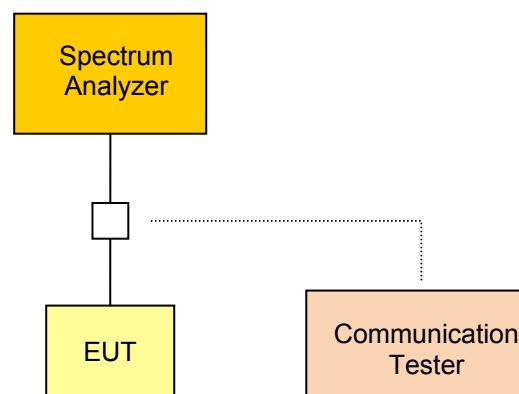
According FCC rules 47 CFR 15.247(d) and RSS-210 Section A8.5 unwanted emissions in the spurious domain are power limited and has to be validated.

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 conducted spurious 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 ($VBW \geq RBW$). 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 | | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | |
| Channel Frequency [MHz] | Emission Frequency [MHz] | Emission Level [dBm] | Peak field Strength [dBm] | Limit [dBm] | Detector | Margin [dB] |
| Test mode DH5 | | | | | | |
| 2402 | no significant spurious emissions | | | | | |
| 2441 | no significant spurious emissions | | | | | |
| 2480 | no significant spurious emissions | | | | | |
| Test mode 3-DH5 | | | | | | |
| 2402 | no significant spurious emissions | | | | | |
| 2441 | no significant spurious emissions | | | | | |
| 2480 | no significant spurious emissions | | | | | |
| 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 |

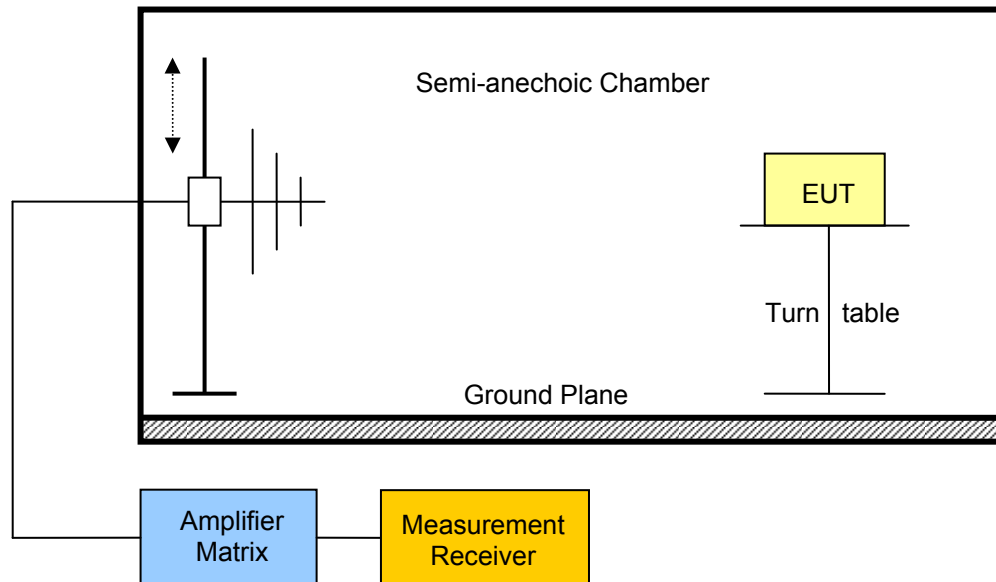
In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

| Transmitter restricted band spurious emission limits | | | | |
|--|------------|--------------|----------------|--------------------|
| Frequency range [MHz] | Detector | Limit [μV/m] | Limit [dBμV/m] | Limit 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 rotated through 360°.

Due to practical 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 | | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | |
| Channel Frequency [MHz] | Emission Frequency [MHz] | Polarization | Measured Field Strength [dBμV/m] | Limit [dBμV/m] | Detector | Margin [dB] |
| Test mode DH5 | | | | | | |
| 2402 | 4802 | v | 51.3 | 74 | Peak | -22.70 |
| 2402 | 4802 | h | 50.5 | 74 | Peak | -23.50 |
| 2441 | 4882 | v | 54.5 | 74 | Peak | -19.50 |
| 2441 | 4882 | v | 46.2 | 54 | Average | -7.80 |
| 2480 | 2483.5 | h | 45.6 | 74 | Peak | -28.40 |
| 2480 | 4954 | v | 51.5 | 74 | Peak | -22.50 |
| Test mode 3-DH5 | | | | | | |
| no significant spurious emissions | | | | | | |
| See attached diagrams in Annex | | | | | | |
| Verdict | | | | | PASS | |

* **Note:** Physical distance between EUT and measurement antenna.

5 Receiver parameters

5.1 Receiver spurious emissions

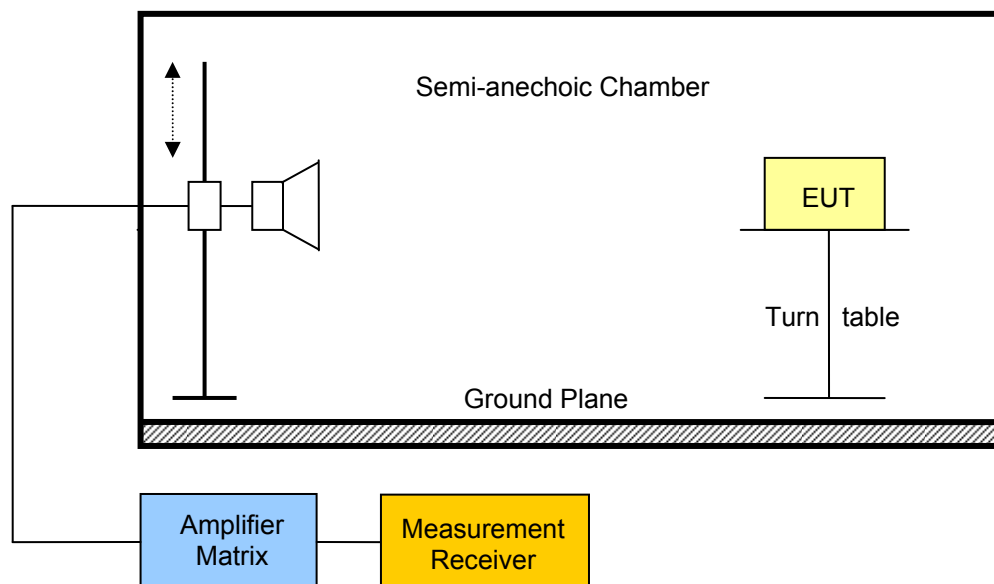
According RSS-Gen Section 4.9 the emissions of unintentional radiators have to comply with limits stated in the rules.

5.1.1 Limits

| Receiver spurious emission limits @ 3m | | | | |
|--|------------|---------------------------|------------------------------------|--------------------|
| Frequency range [MHz] | Detector | Limit [$\mu\text{V/m}$] | Limit [$\text{dB}\mu\text{V/m}$] | Limit 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 |

5.1.2 Measurement procedure

The spurious emission measurement is performed on a 3m open area test site.



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

Due to practical 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 3rd harmonic.

5.1.3 Results

| Receiver spurious Emissions | | | | | | |
|--------------------------------|--------------------------|--------------|--------------------------------|--------------|----------|---------------|
| Measurement Conditions | | | | | | |
| Measurement distance * | | 3m | | | | |
| Channel Frequency [MHz] | Emission Frequency [MHz] | Polarization | Measured Field Strength [μV/m] | Limit [μV/m] | Detector | Margin [μV/m] |
| 2441MHz | 178.878 | v | 47.92 | 150 | Peak | -102.08 |
| | 197.956 | h | 46.88 | 150 | Peak | -103.12 |
| | 996.794 | v | 14.29 | 500 | Peak | -485.71 |
| | 977.555 | h | 15.12 | 500 | Peak | -484.88 |
| | 3832.000 | v | 142.07 | 500 | Peak | -357.93 |
| | 3820.000 | h | 157.94 | 500 | Peak | -342.06 |
| | 7816.000 | v | 309.03 | 500 | Peak | -190.97 |
| | 7960.000 | h | 308.67 | 500 | Peak | -191.33 |
| See attached diagrams in Annex | | | | | | |
| Verdict | | | | | PASS | |

* **Note:** Physical distance between EUT and measurement antenna.

6 Power Line parameters

6.1 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.

6.1.1 Limits

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

6.1.2 Measurement procedure

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

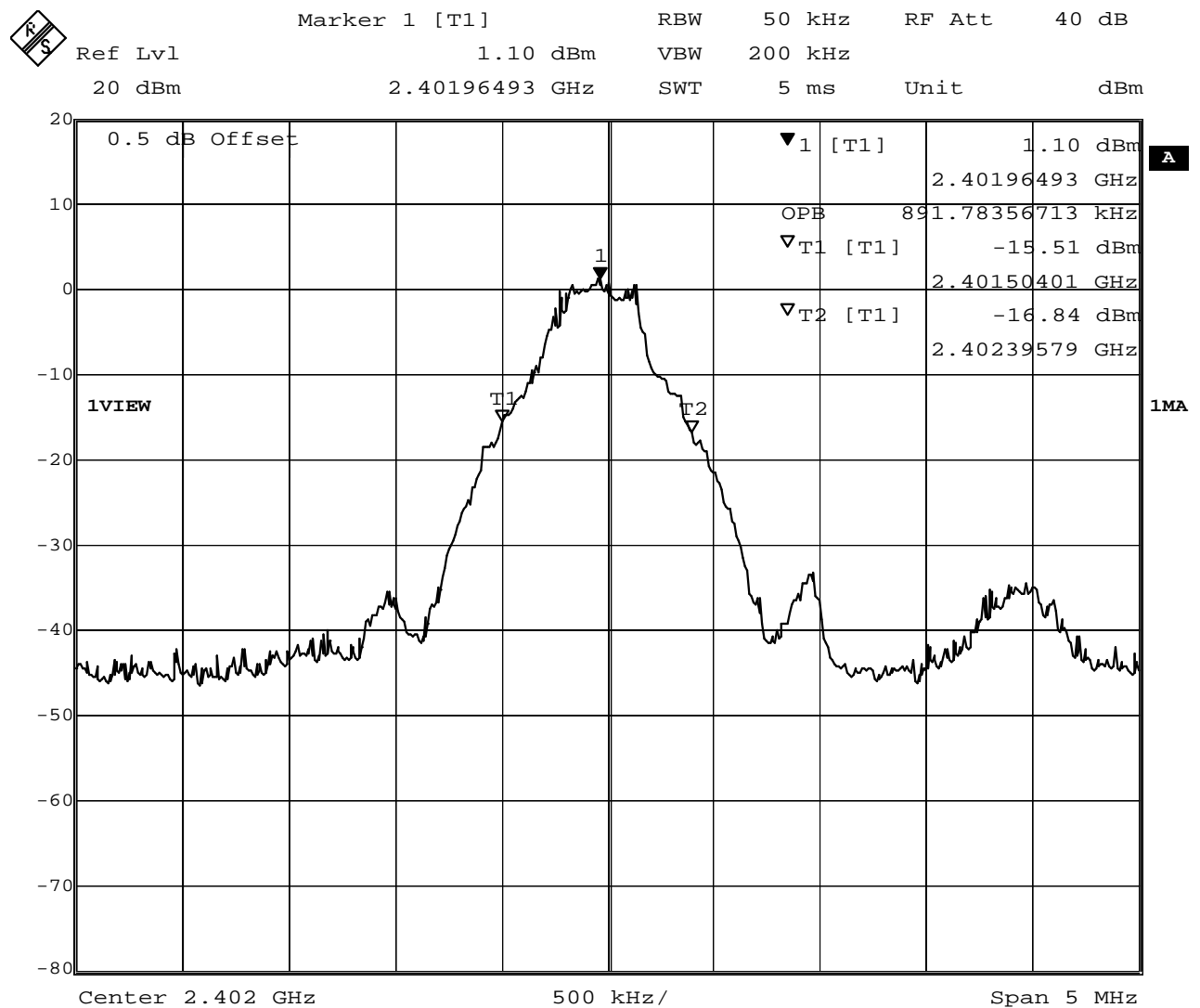
6.1.3 Results

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

Annex B Transmitter occupied bandwidth

RSS Gen Occupied Bandwidth

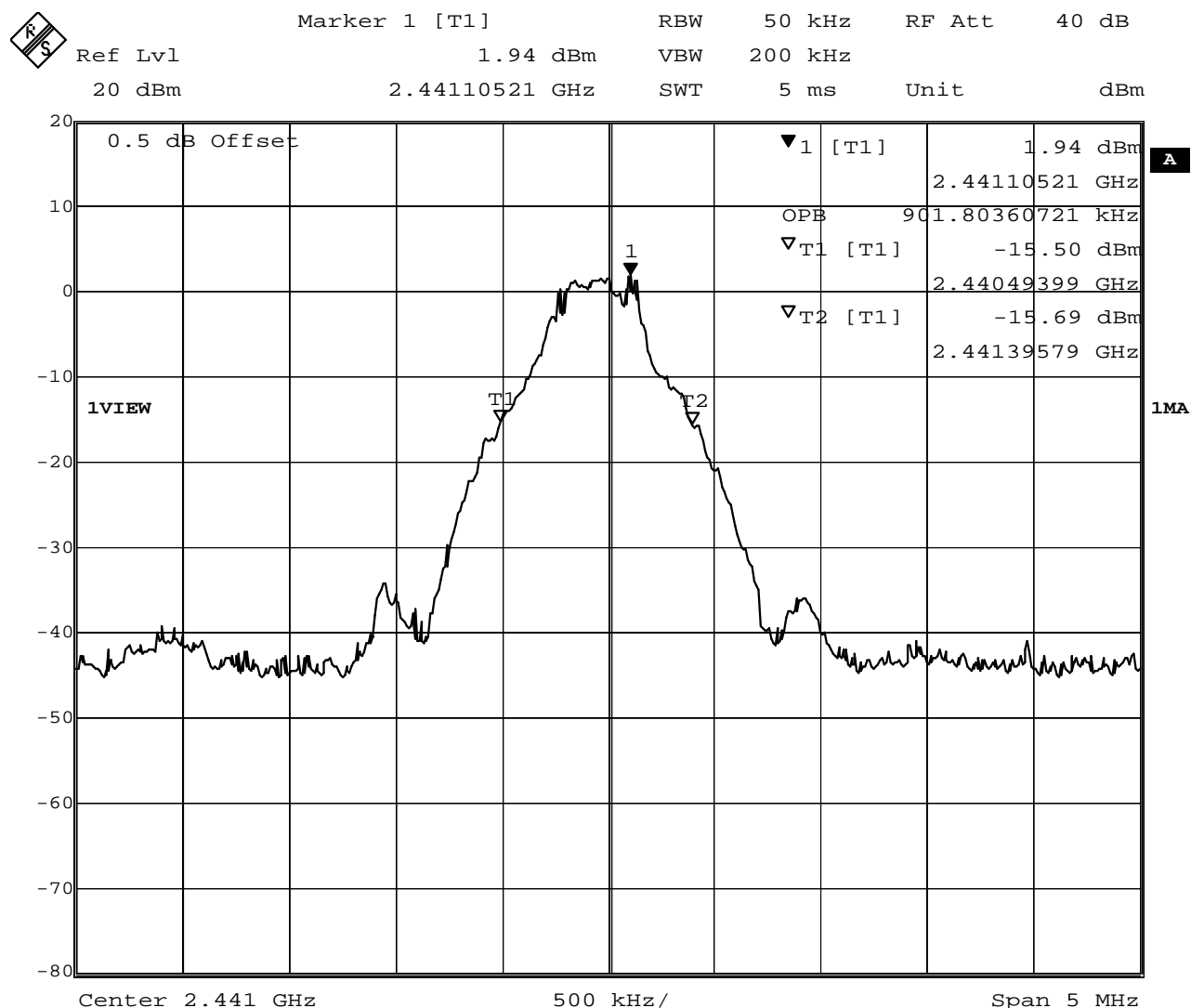
EUT Bluetooth Speakerphone
Model AT-650
Approval Holder Hughes Telematics, Inc. / Ord.: G0M-1105-1156
Temperature / Voltage tnom / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. Treffke
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 0 / 2402 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 GFSK



Comment A: Occupied bandwidth: 891.8 KHz
Date: 23.JUN.2011 08:37:19

RSS Gen Occupied Bandwidth

EUT Bluetooth Speakerphone
Model AT-650
Approval Holder Hughes Telematics, Inc. / Ord.: G0M-1105-1156
Temperature / Voltage tnom / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. Treffke
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 39 / 2441 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 GFSK

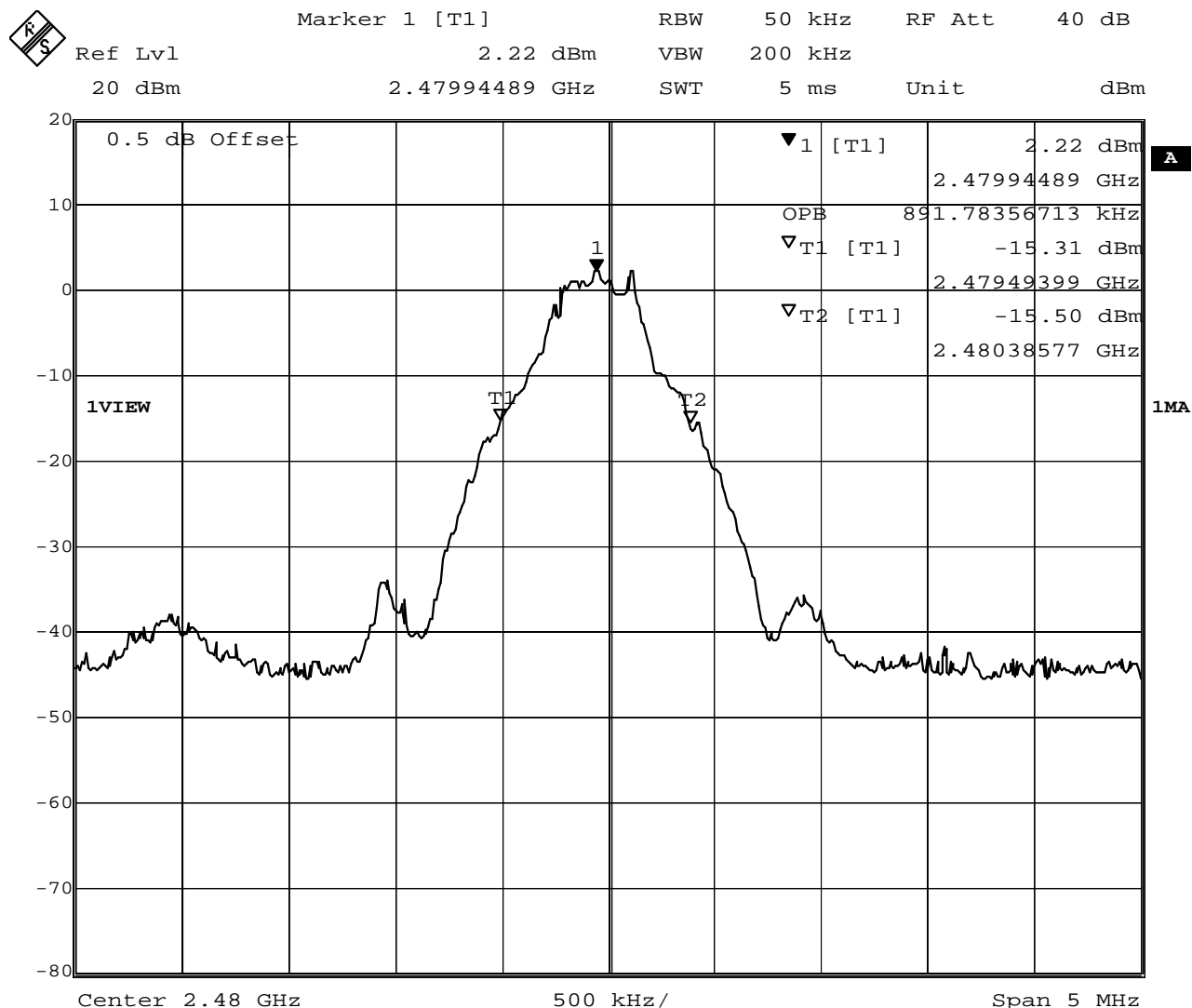


Comment A: Occupied bandwidth: 901.8 KHz

Date: 23.JUN.2011 08:39:48

RSS Gen Occupied Bandwidth

EUT Bluetooth Speakerphone
Model AT-650
Approval Holder Hughes Telematics, Inc. / Ord.: G0M-1105-1156
Temperature / Voltage tnom / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. Treffke
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 78 / 2480 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 GFSK

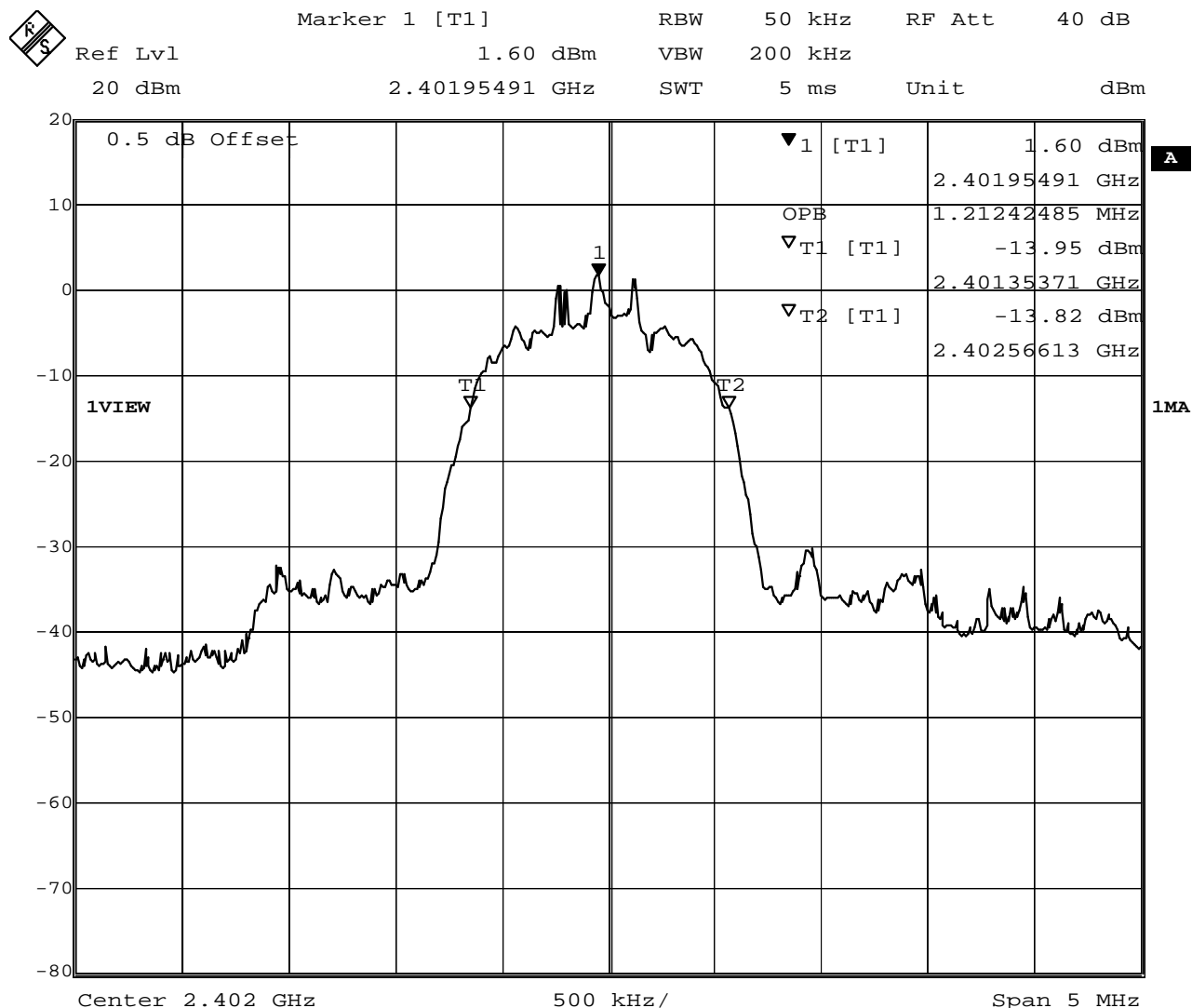


Comment A: Occupied bandwidth: 891.8 KHz

Date: 23.JUN.2011 08:45:41

RSS Gen Occupied Bandwidth

EUT Bluetooth Speakerphone
Model AT-650
Approval Holder Hughes Telematics, Inc. / Ord.: G0M-1105-1156
Temperature / Voltage tnom / Vnom
Test Site / Operator Eurofins Product Service GmbH / Mr. Treffke
Test Specification 4.4.1 Occupied Bandwidth
Comment 1 Channel.: 0 / 2402 MHz
Comment 2 A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3 8DPSK

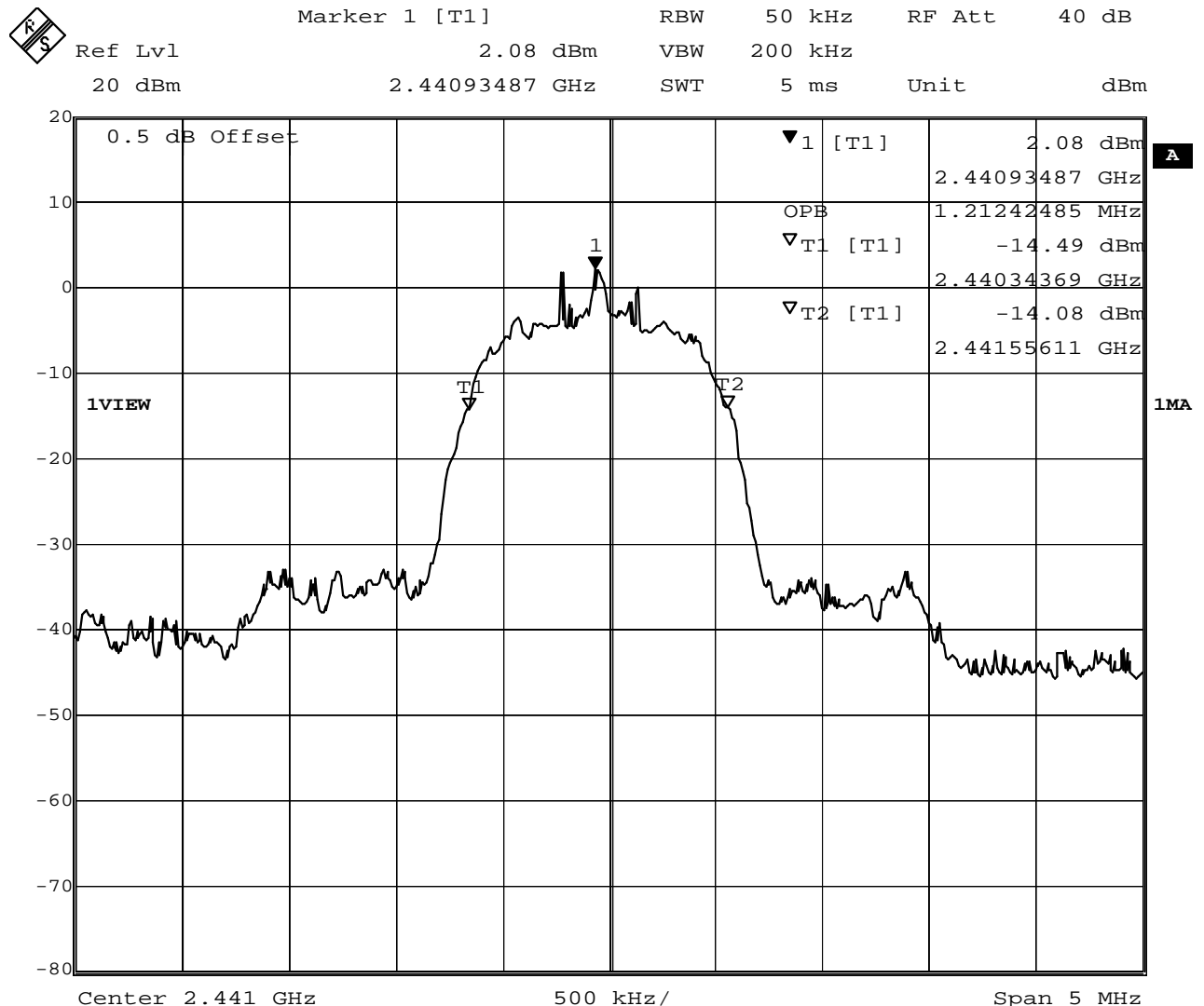


Comment A: Occupied bandwidth: 1212.4 KHz

Date: 23.JUN.2011 08:48:47

RSS Gen Occupied Bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | 4.4.1 Occupied Bandwidth |
| Comment 1 | Channel.: 39 / 2441 MHz |
| Comment 2 | A spectrum analyzer with an integrated 99% power bandwidth function is used |
| Comment 3 | 8DPSK |

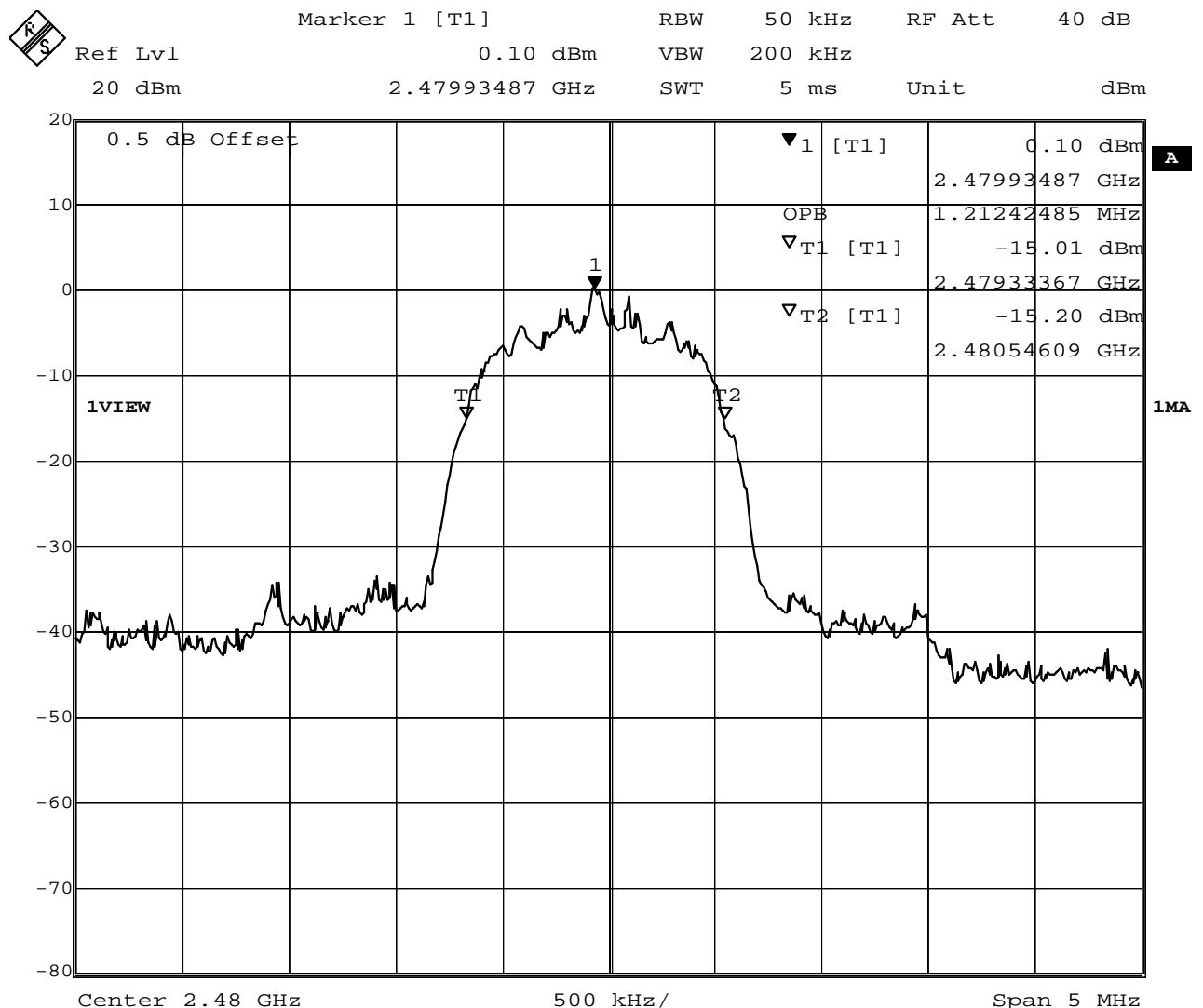


Comment A: Occupied bandwidth: 1212.4 KHz

Date: 23.JUN.2011 08:50:49

**RSS Gen
Occupied Bandwidth**

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | 4.4.1 Occupied Bandwidth |
| Comment 1 | Channel.: 78 / 2480 MHz |
| Comment 2 | A spectrum analyzer with an integrated 99% power bandwidth function is used |
| Comment 3 | 8DPSK |



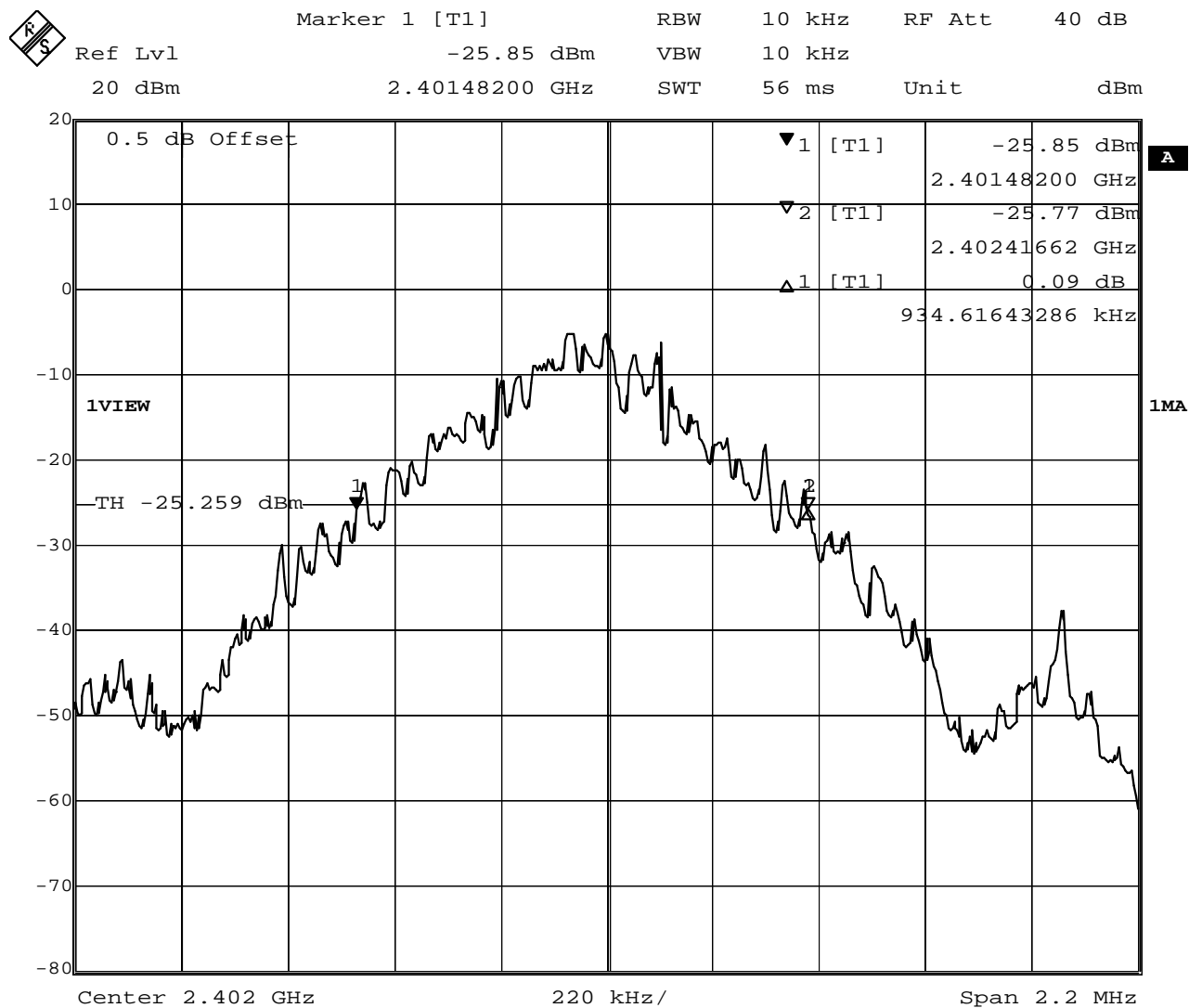
Comment A: Occupied bandwidth: 1212.4 KHz

Date: 23.JUN.2011 08:57:42

Annex C Transmitter 20dB bandwidth

FCC part 15.247 20 dB bandwidth

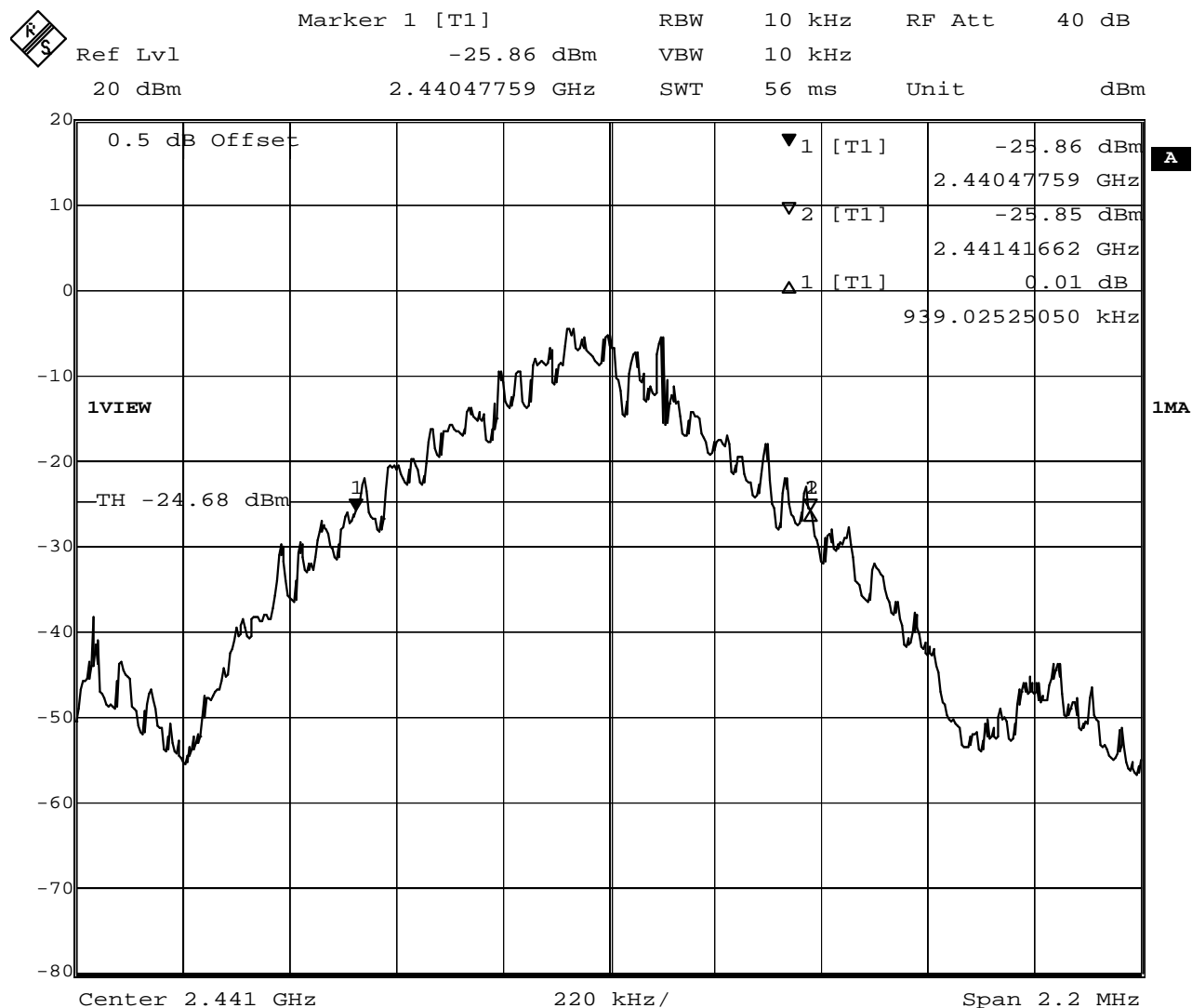
| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | FCC part 15 section 247(a) |
| Comment 1 | 20 dB bandwidth |
| Comment 2 | Channel.: 0 / 2402 MHz / GFSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 0 KHz
Date: 22.JUN.2011 15:07:58

FCC part 15.247
20 dB bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2441 MHz / GFSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 0 KHz
 Date: 22.JUN.2011 15:11:21

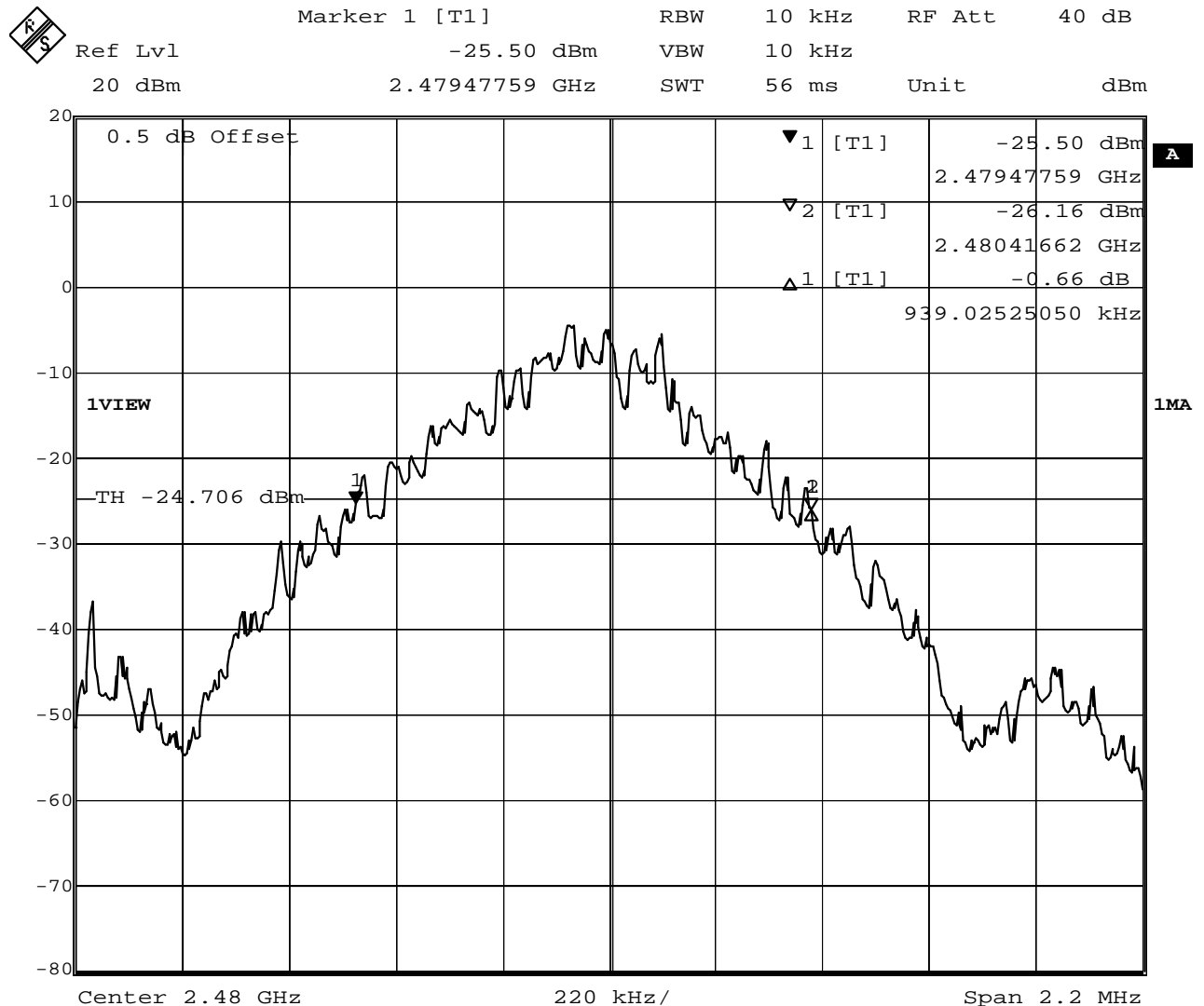
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247
20 dB bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2480 MHz / GFSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 939 KHz
Date: 22.JUN.2011 15:13:54

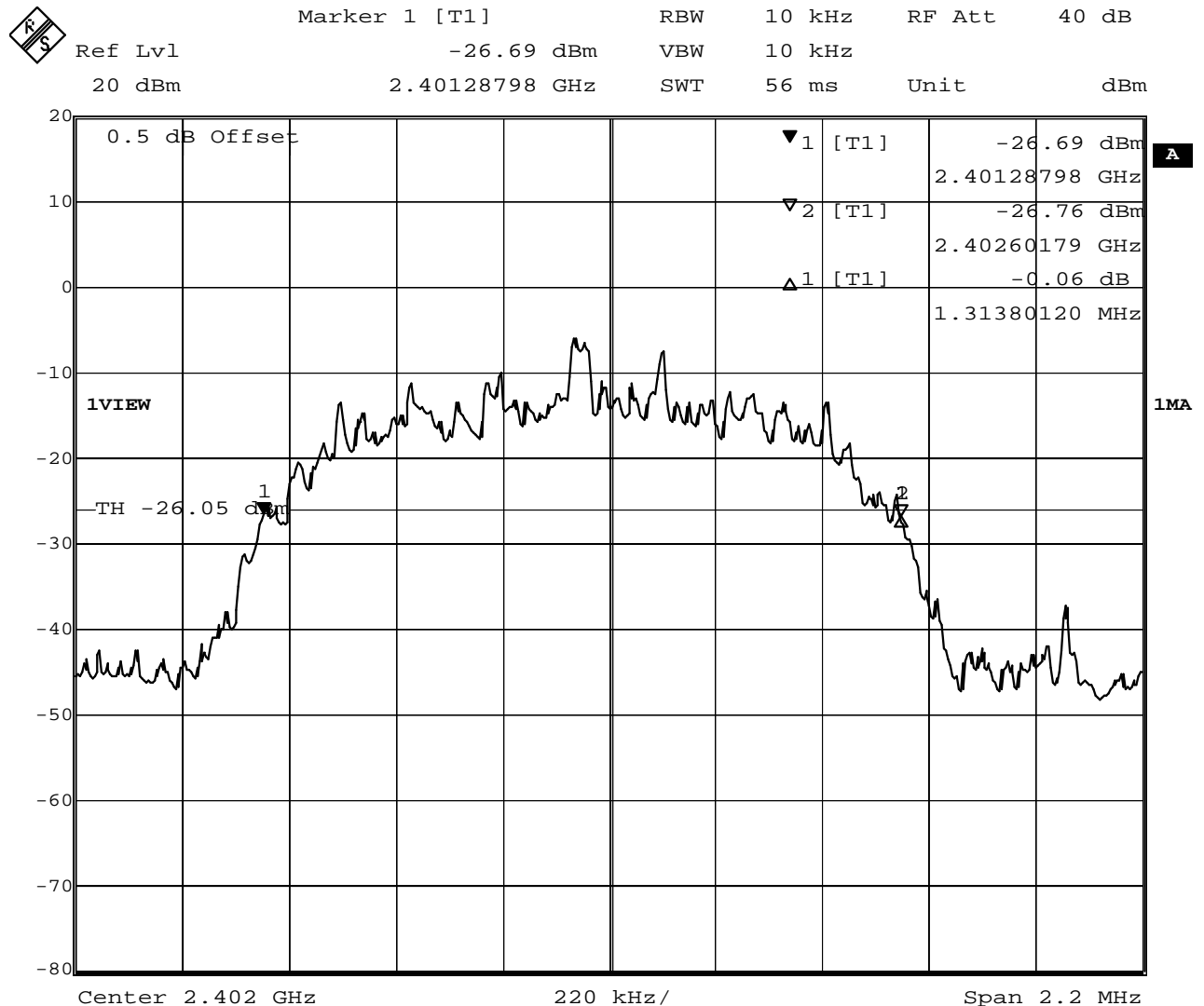
Test Report No.: G0M-1105-1156-P-15

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Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247
20 dB bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2402 MHz / Pi/4DQPSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 0 KHz
Date: 22.JUN.2011 15:18:17

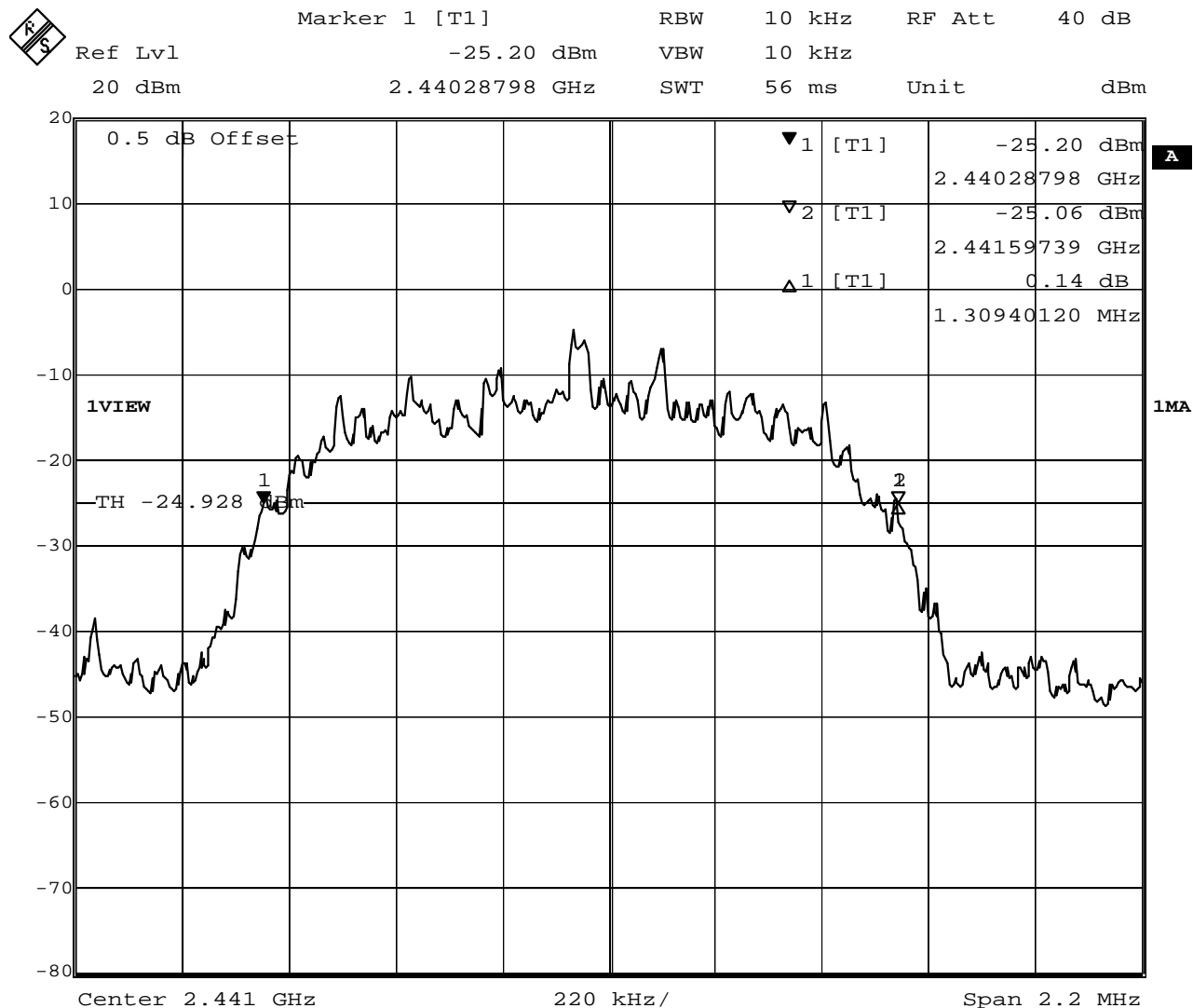
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247
20 dB bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2441 MHz / Pi/4QPSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 0 KHz
Date: 22.JUN.2011 15:26:00

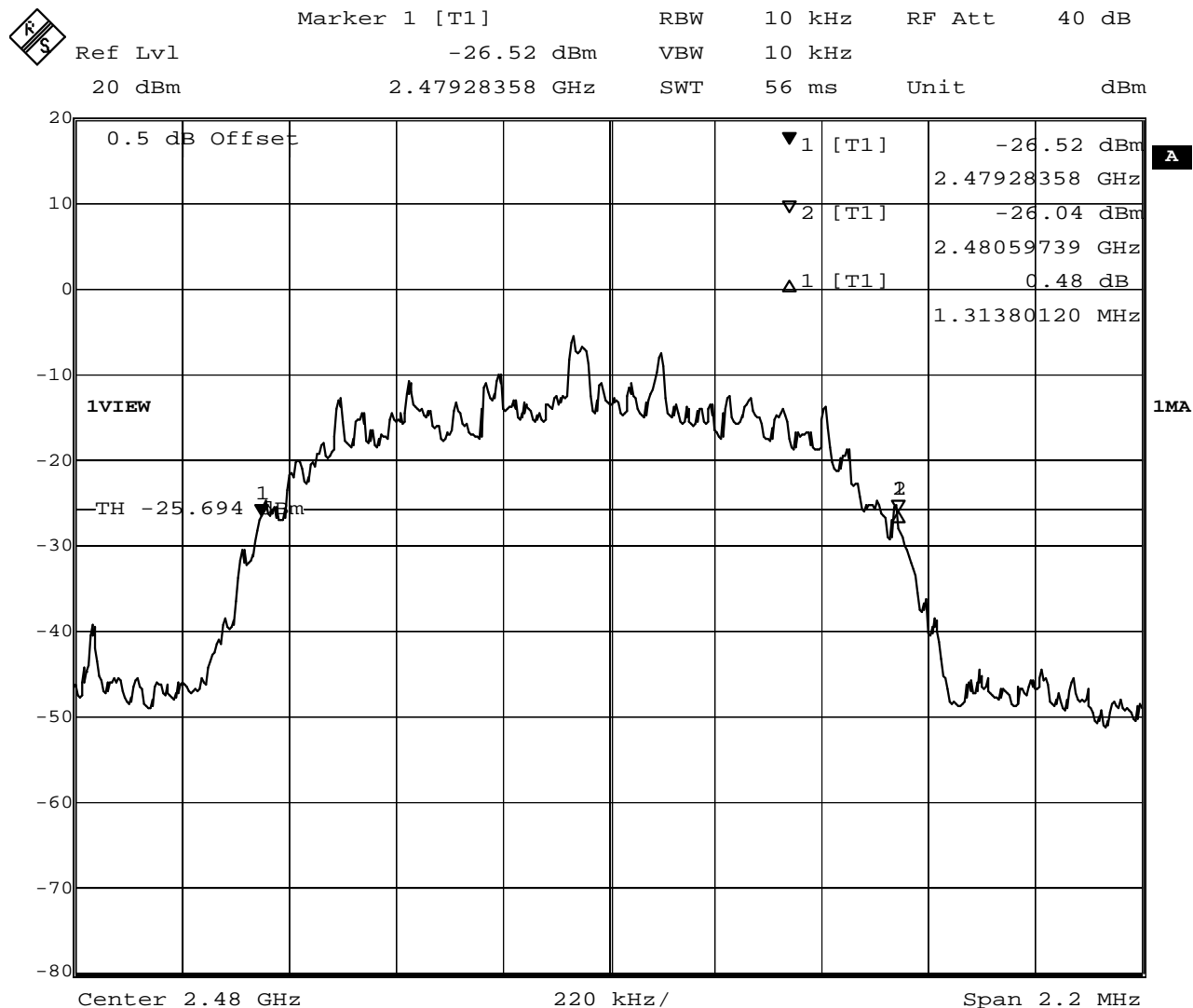
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247
20 dB bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2480 MHz / Pi/4QPSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 0 KHz
Date: 22.JUN.2011 15:28:03

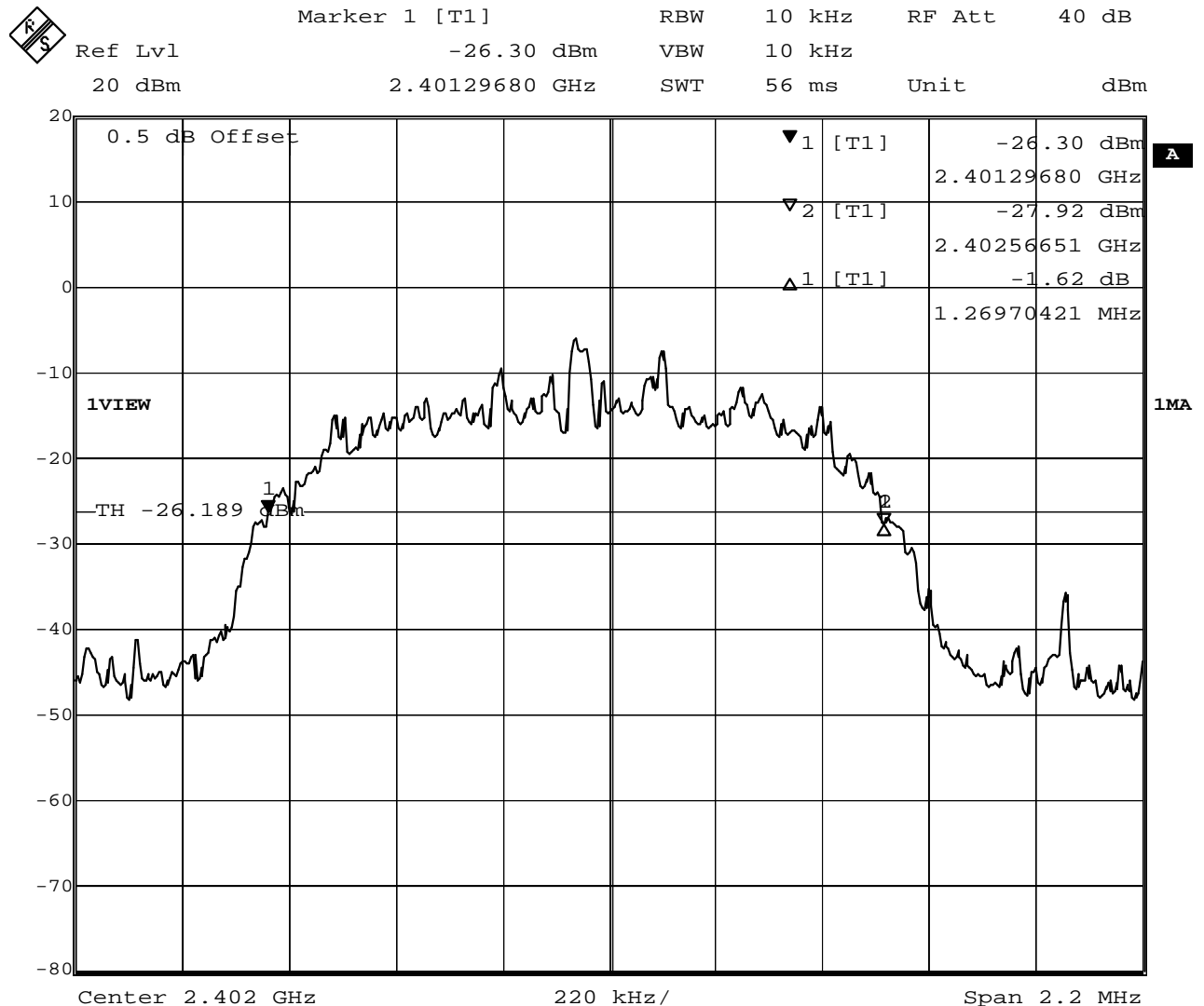
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247
20 dB bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2402 MHz / 8DPSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 0 KHz
Date: 22.JUN.2011 15:31:18

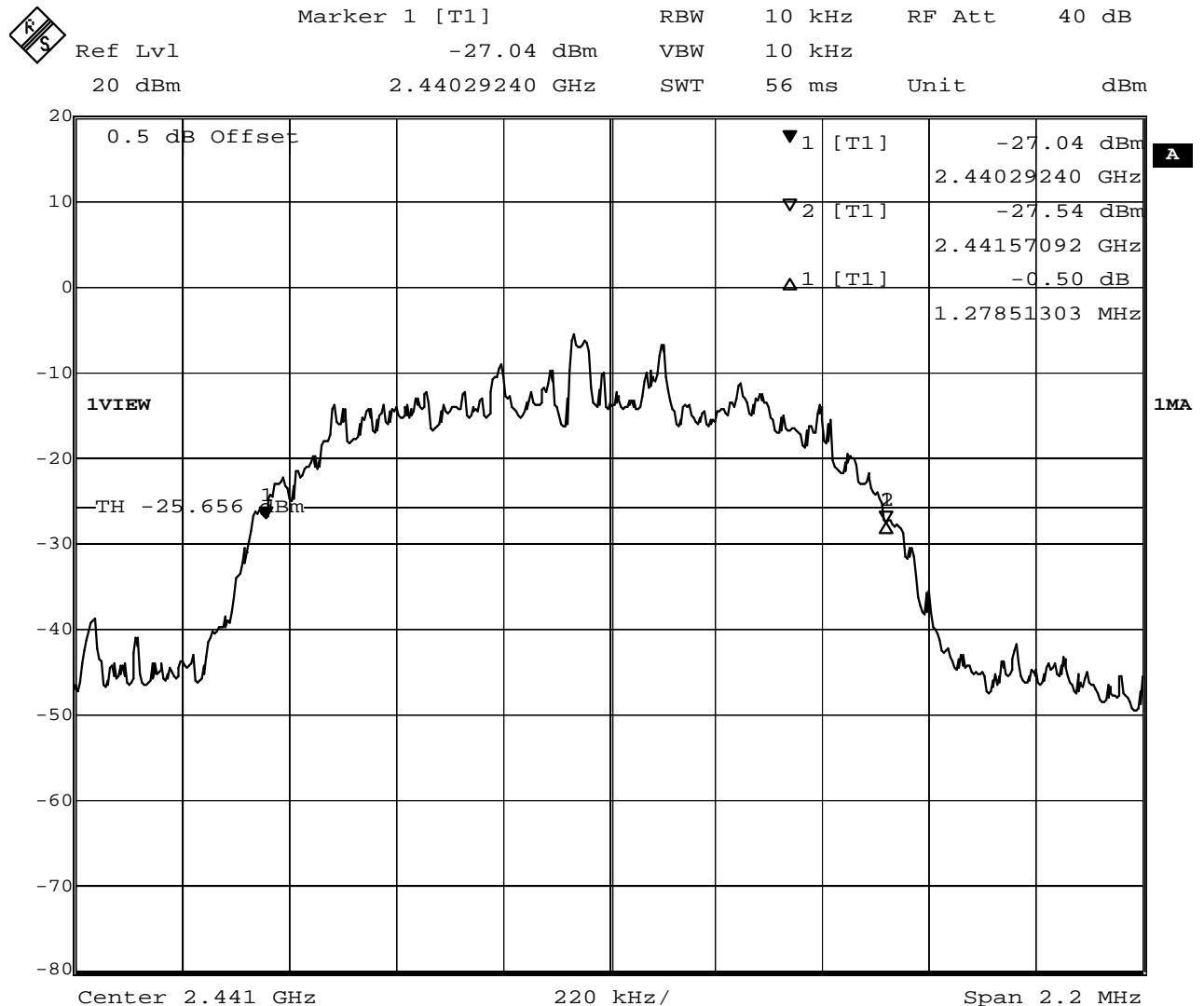
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247
20 dB bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2441 MHz / 8DPSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 0 KHz

Date: 22.JUN.2011 15:35:39

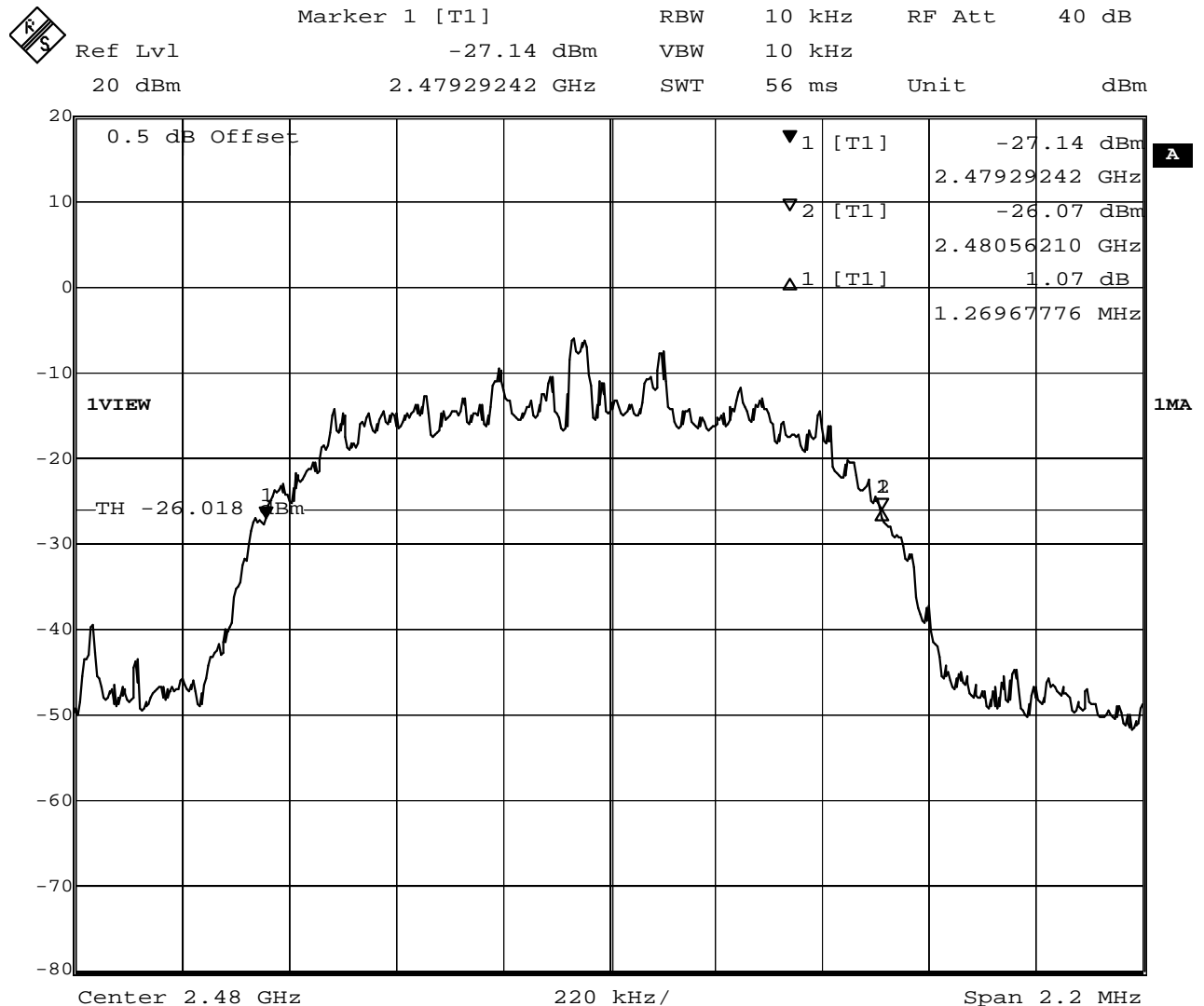
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247
20 dB bandwidth

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2480 MHz / 8DPSK |
| Comment 3 | pass |



Comment A: 20 dB bandwidth: 0 KHz
Date: 22.JUN.2011 15:38:02

Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

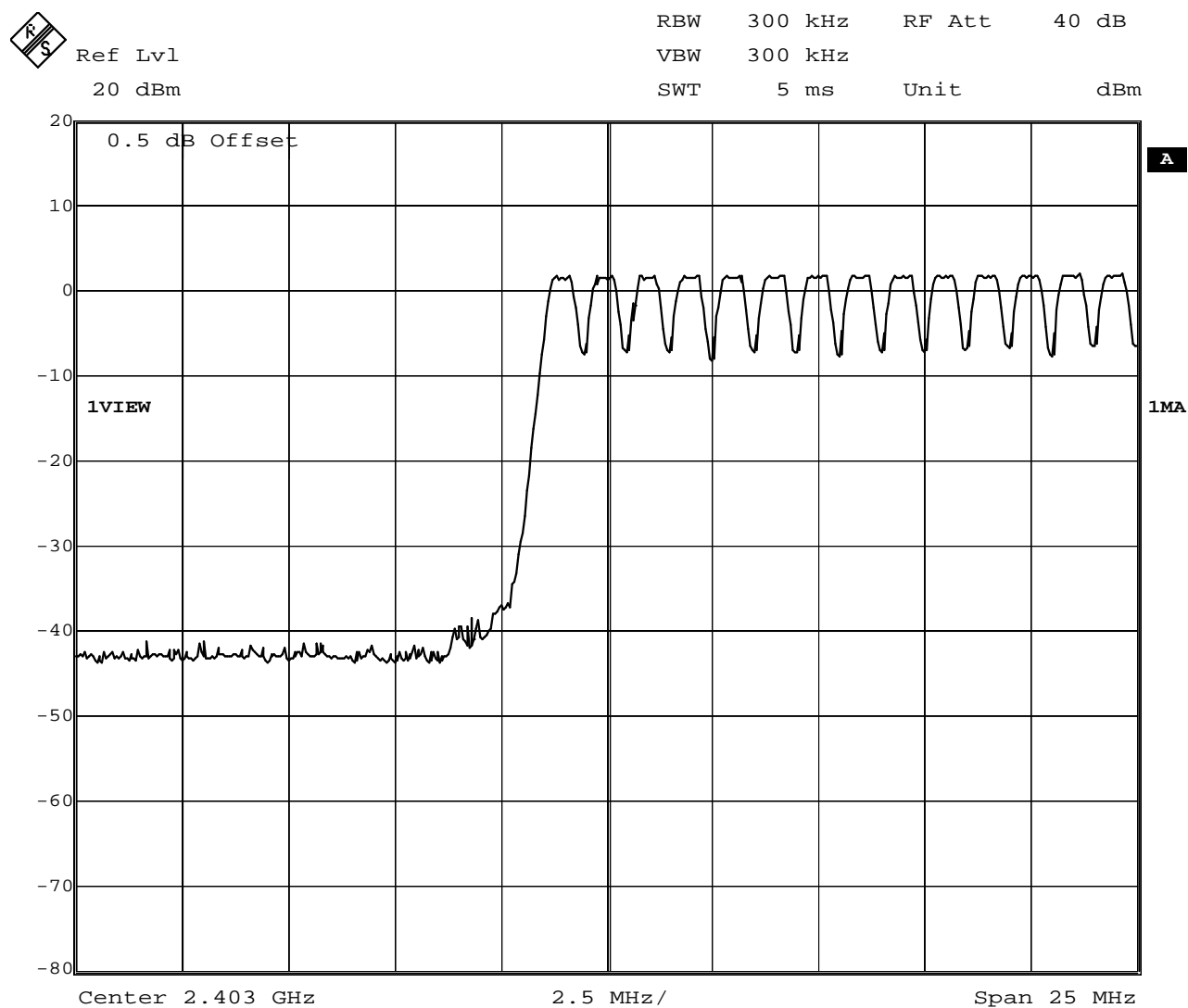
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Annex D Hopping channels

FCC part 15.247

Number of hopping frequencies

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 | pass |



Comment A: Number of hopping frequencies

Date: 23.JUN.2011 08:24:15

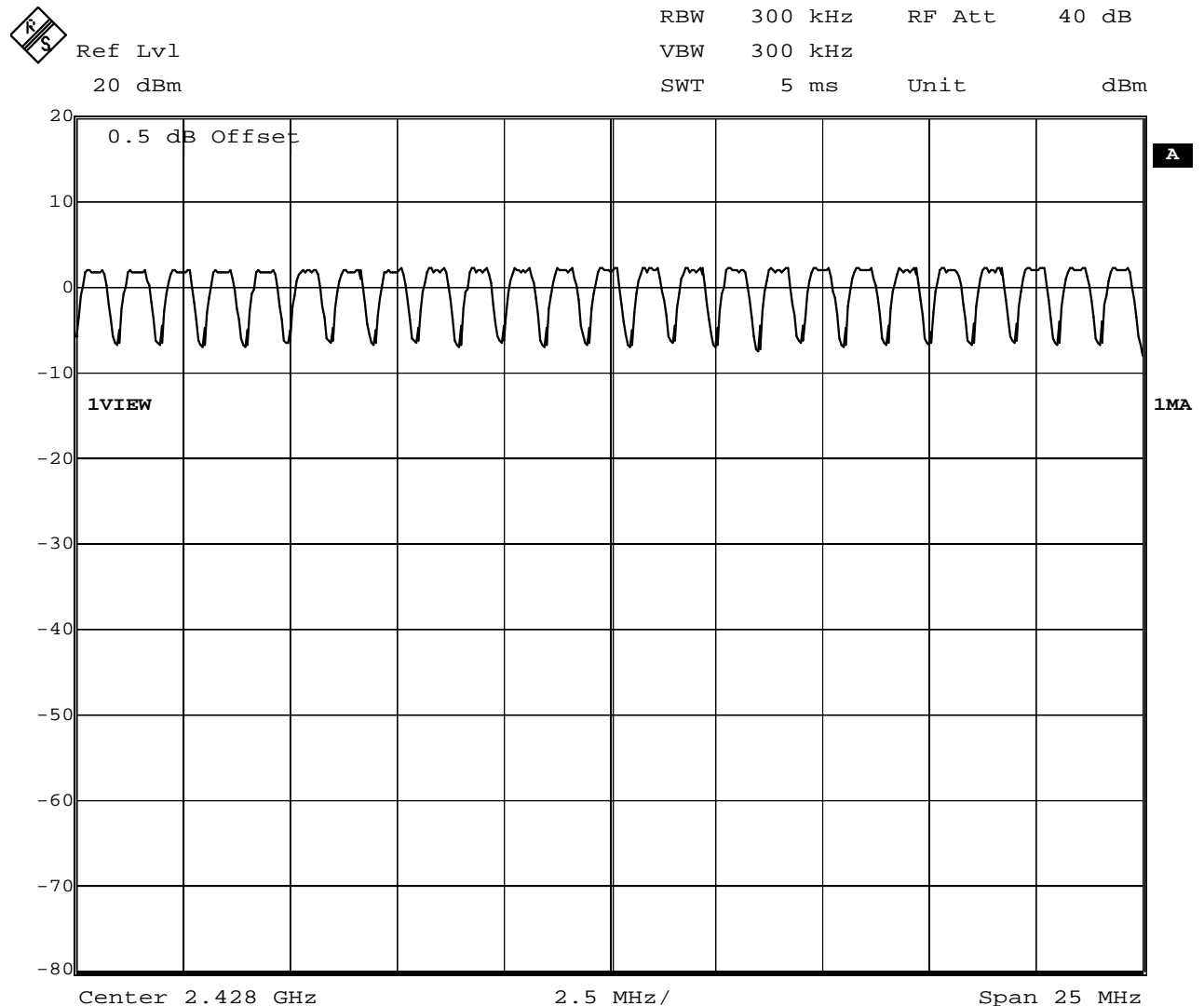
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247
Number of hopping frequencies

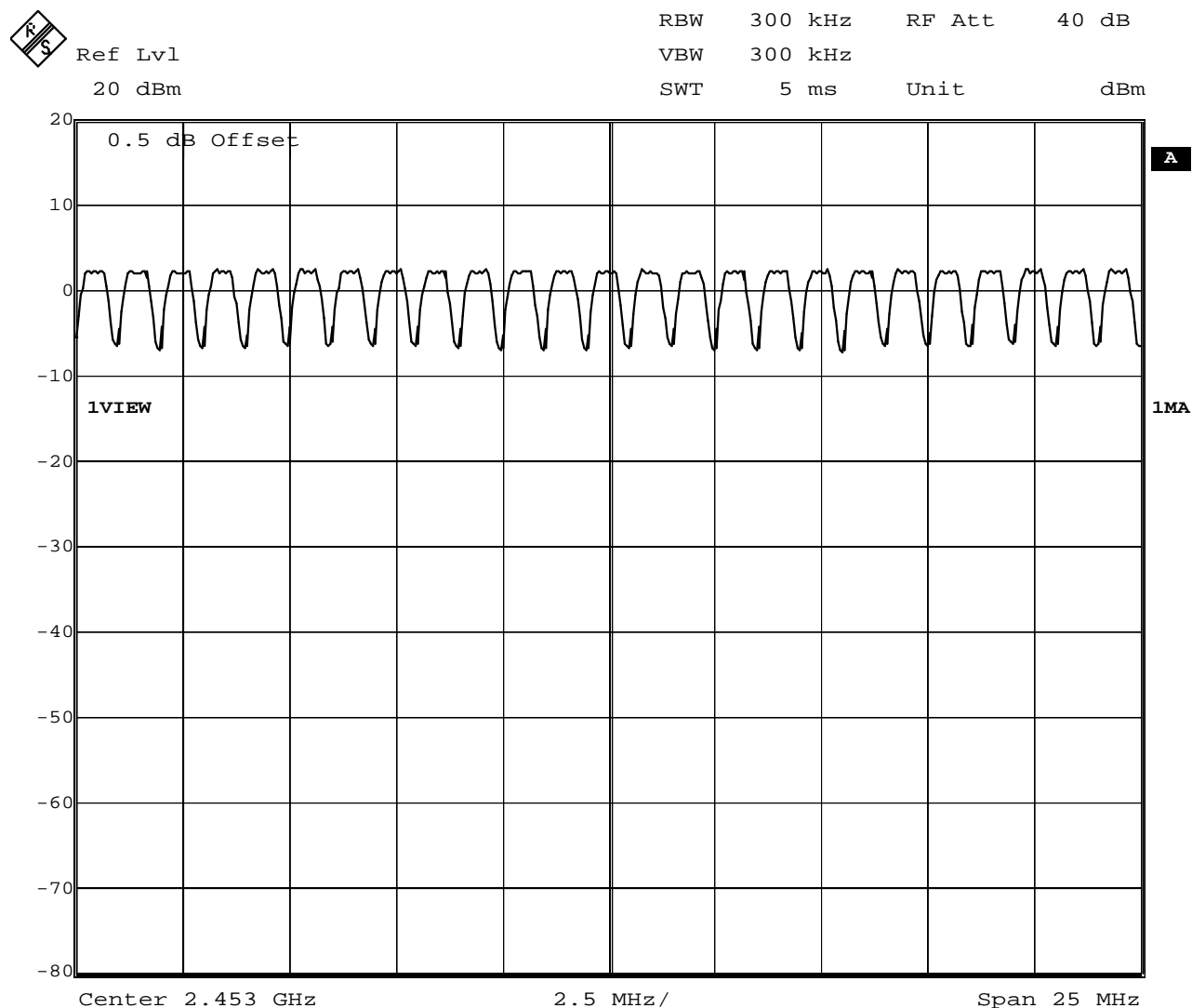
| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | FCC part 15 section 247(a) |
| Comment 1 | Number of hopping frequencies |
| Comment 2 | Channel.: 14-38 |
| Comment 3 | pass |



Comment A: Number of hopping frequencies
 Date: 23.JUN.2011 08:26:42

FCC part 15.247 Number of hopping frequencies

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 | pass |



Comment A: Number of hopping frequencies
Date: 23.JUN.2011 08:29:24

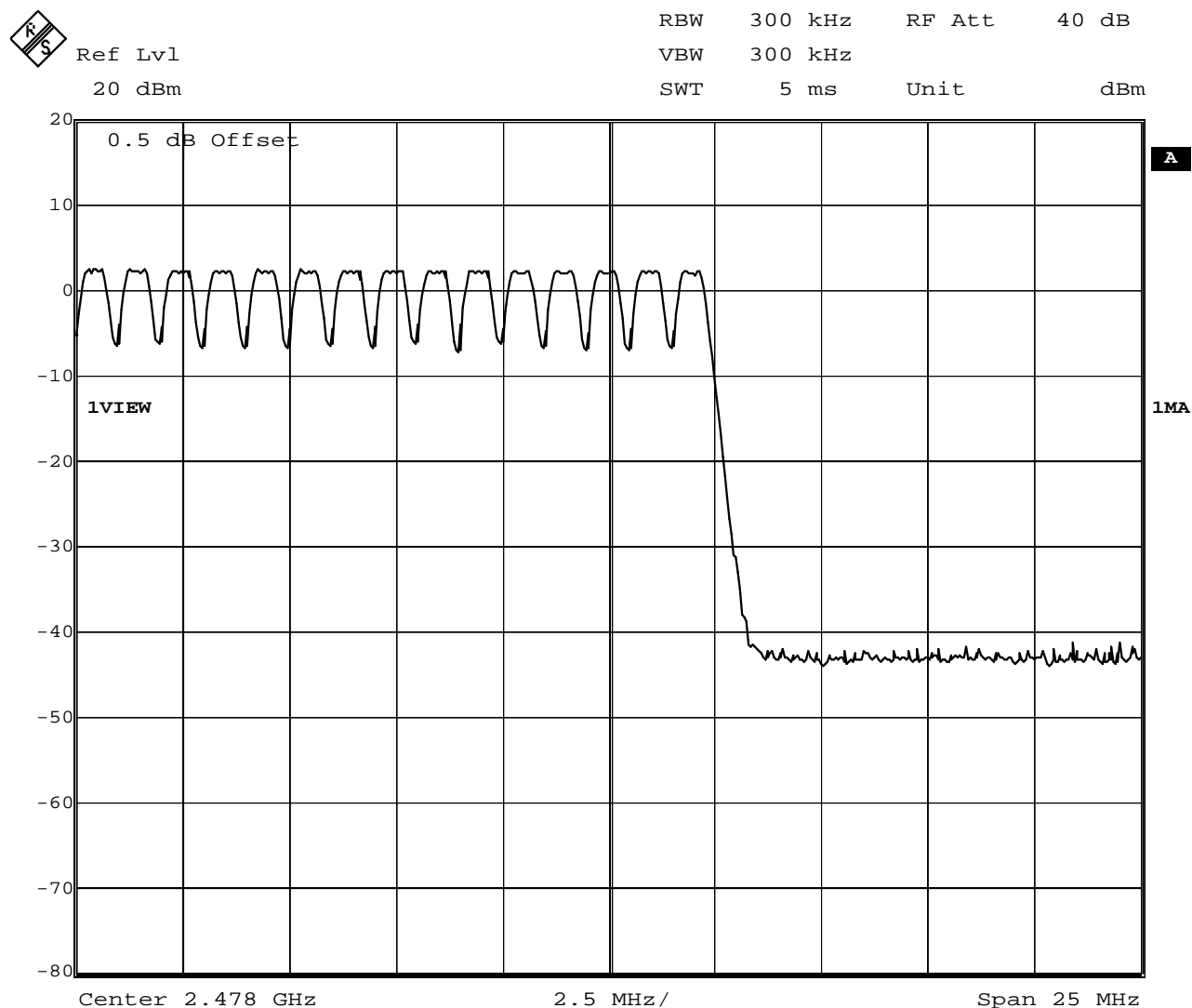
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 Number of hopping frequencies

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 | pass |



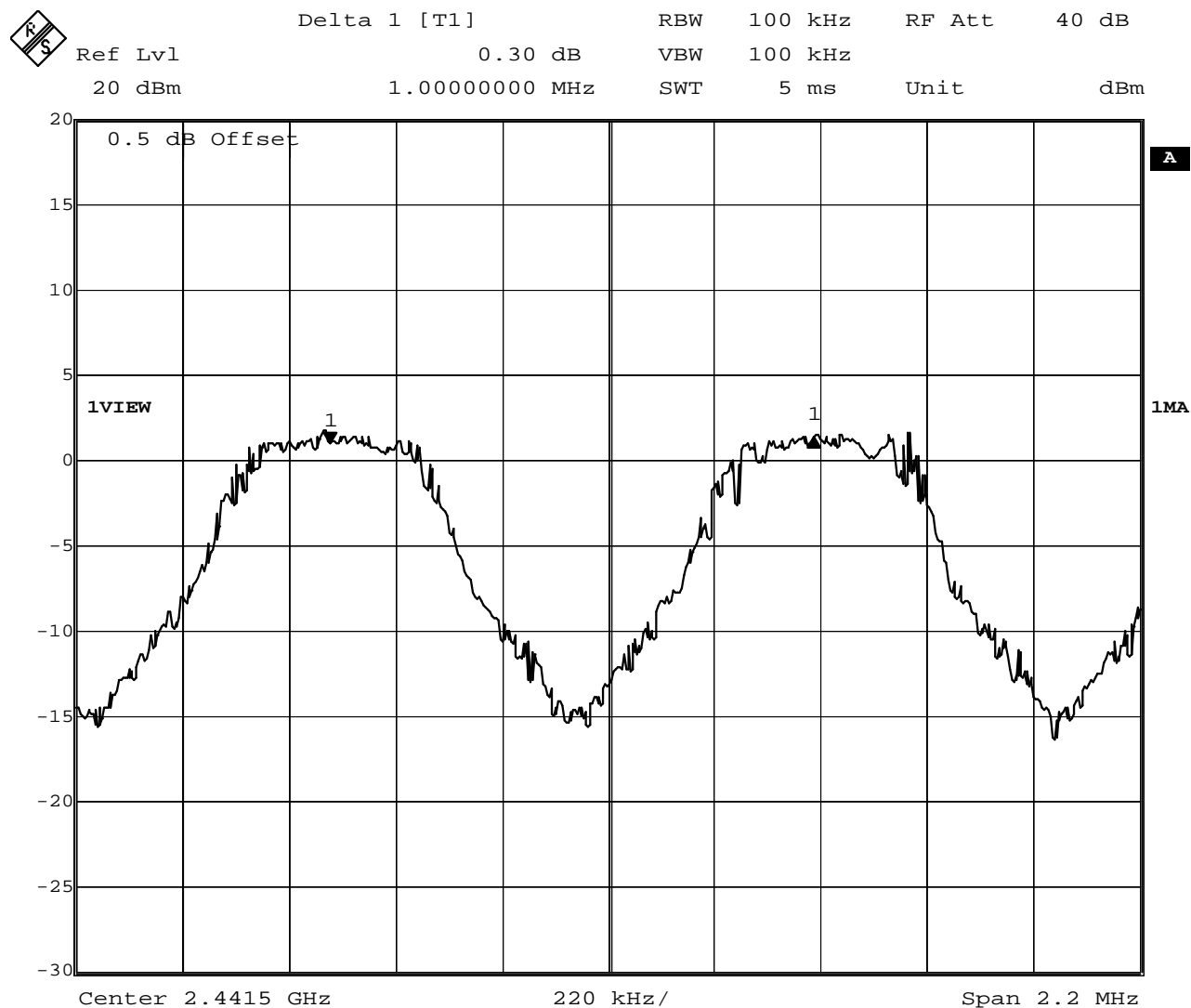
Comment A: Number of hopping frequencies
Date: 23.JUN.2011 08:32:40

Annex E Hopping channel separation

FCC part 15.247

Carrier frequency separation

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 22.JUN.2011 16:34:19

Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

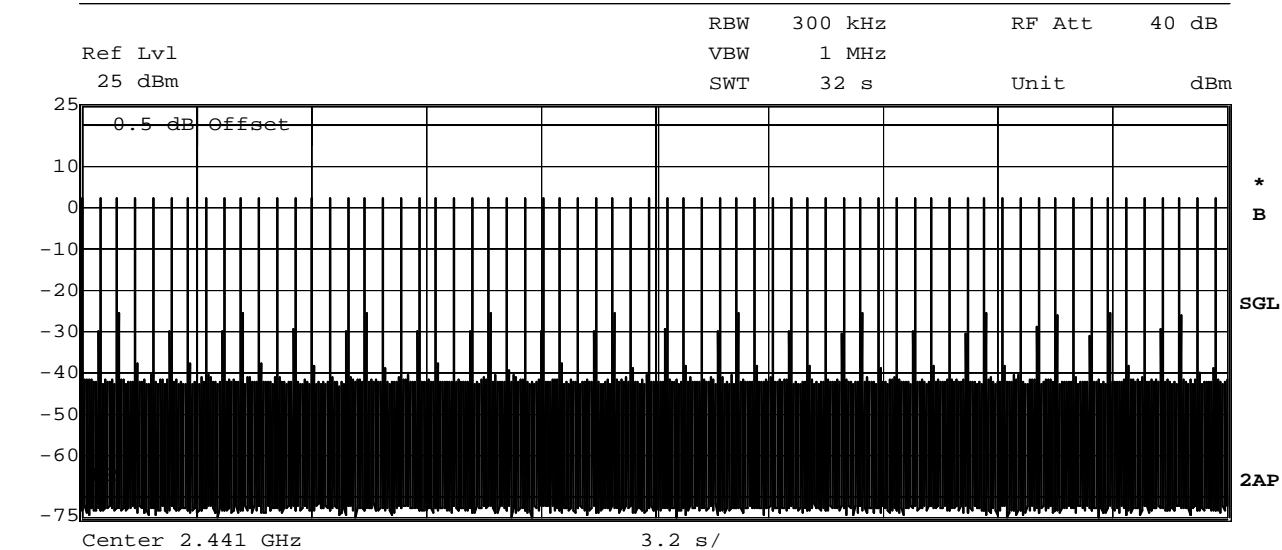
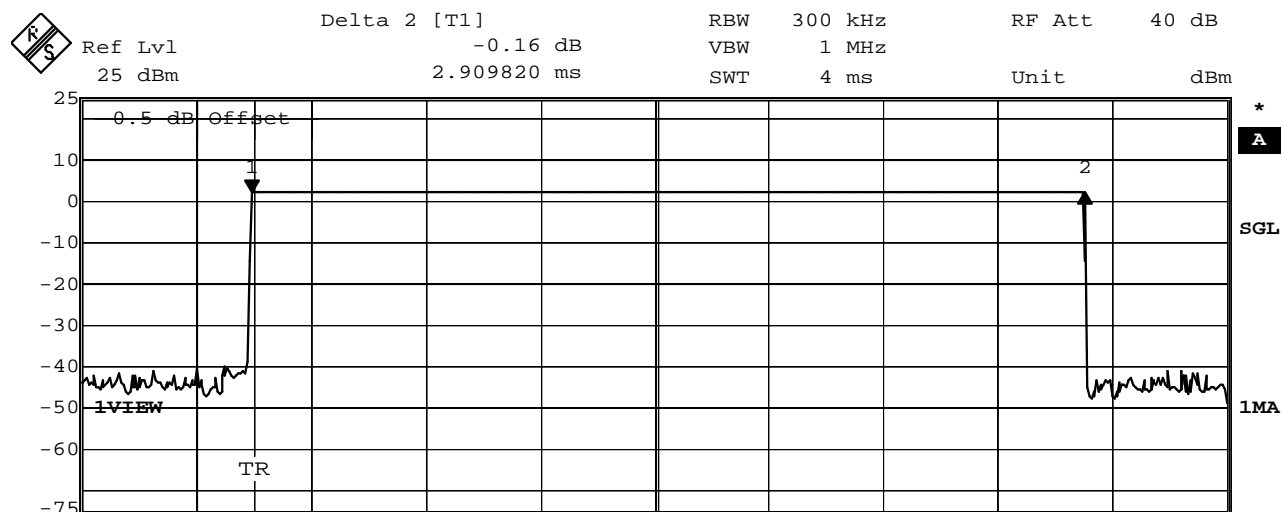
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Annex F Time of occupancy

FCC part 15.247

Time of occupancy (dwell time)

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 | 64 events * 2.910 ms result: 186.2 ms |



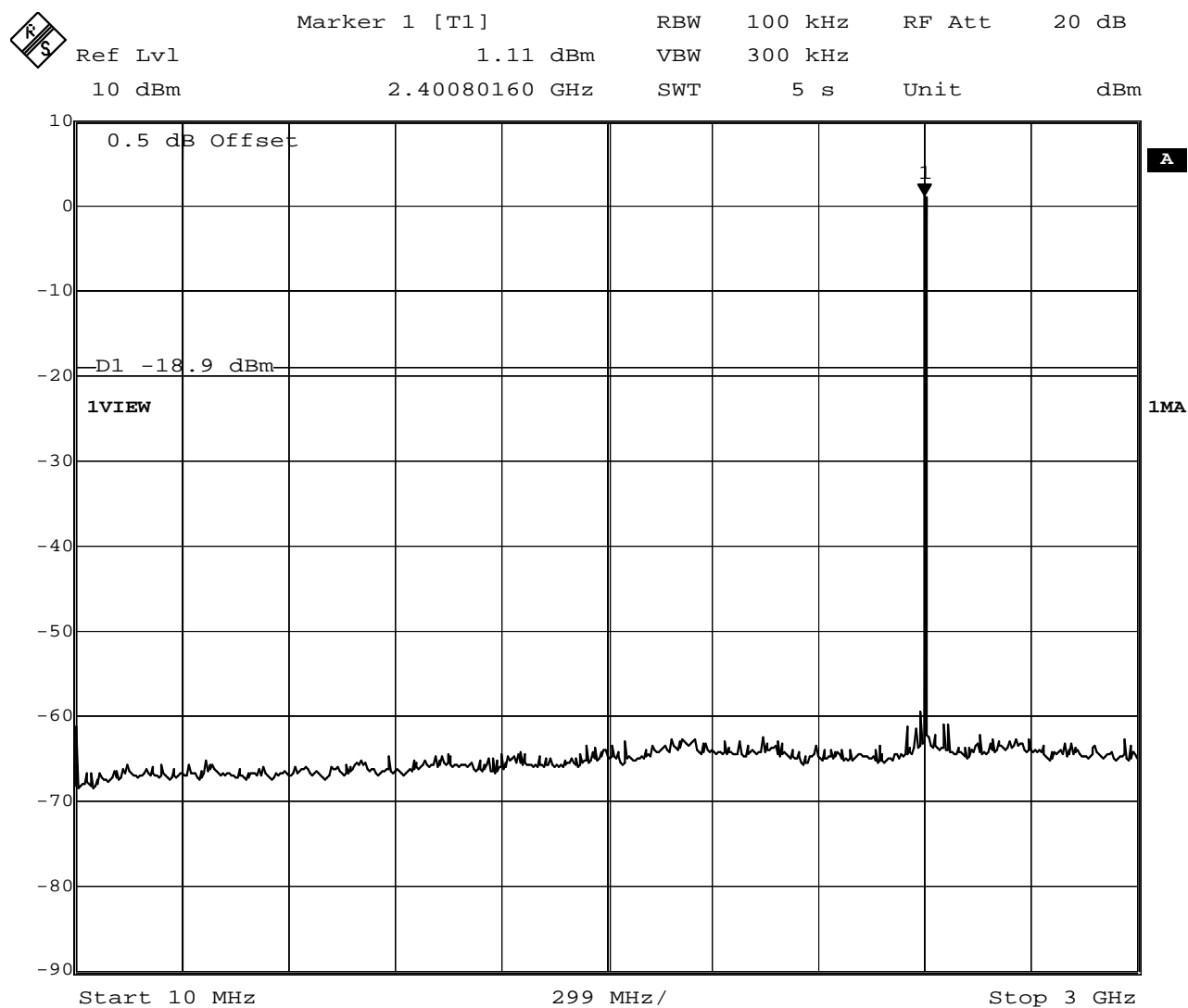
Comment A: Burst length=2.91222 ms

Date: 23.JUN.2011 09:29:52

Annex G Transmitter conducted spurious emissions

FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 09:33:59

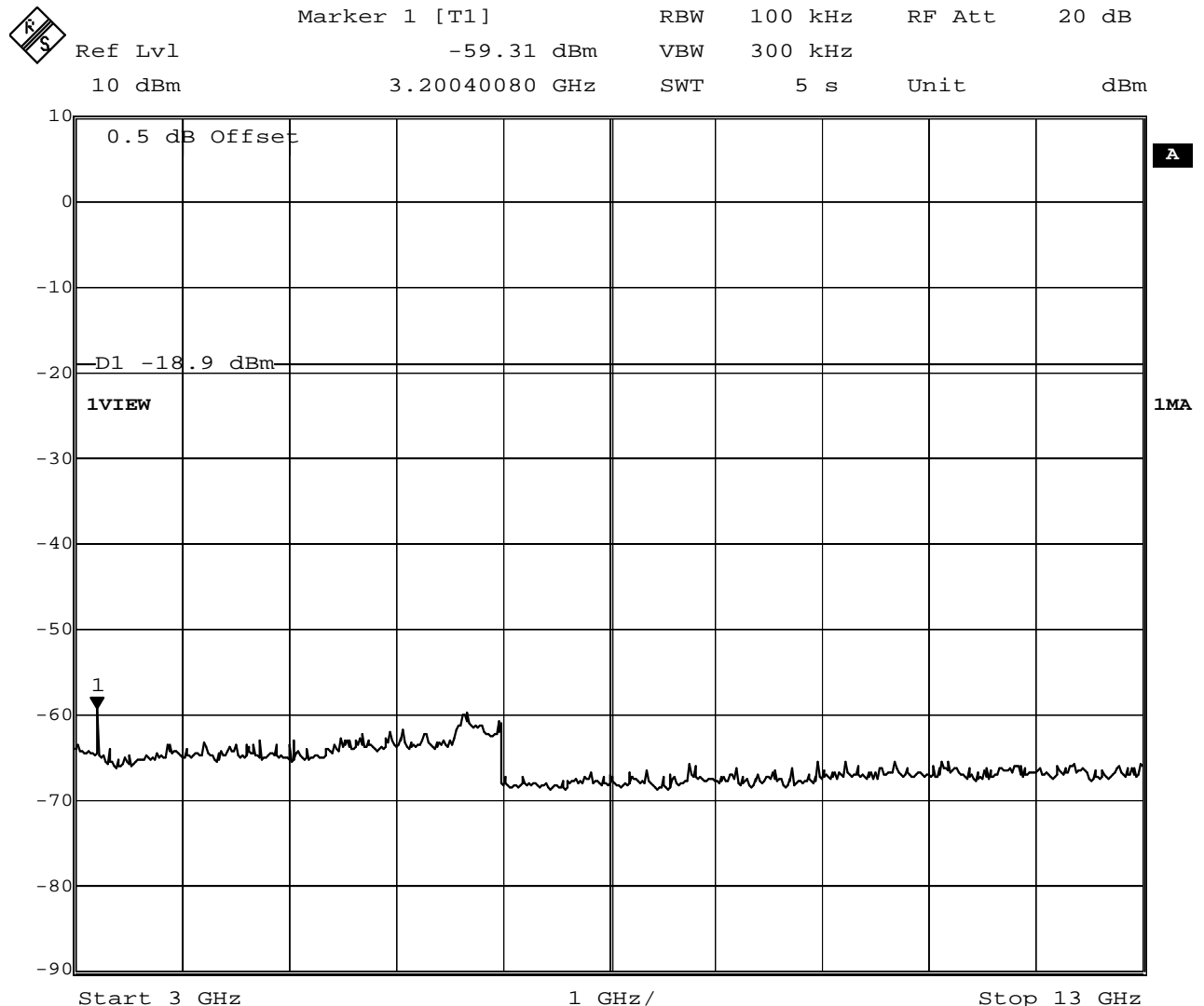
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
 Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 09:37:12

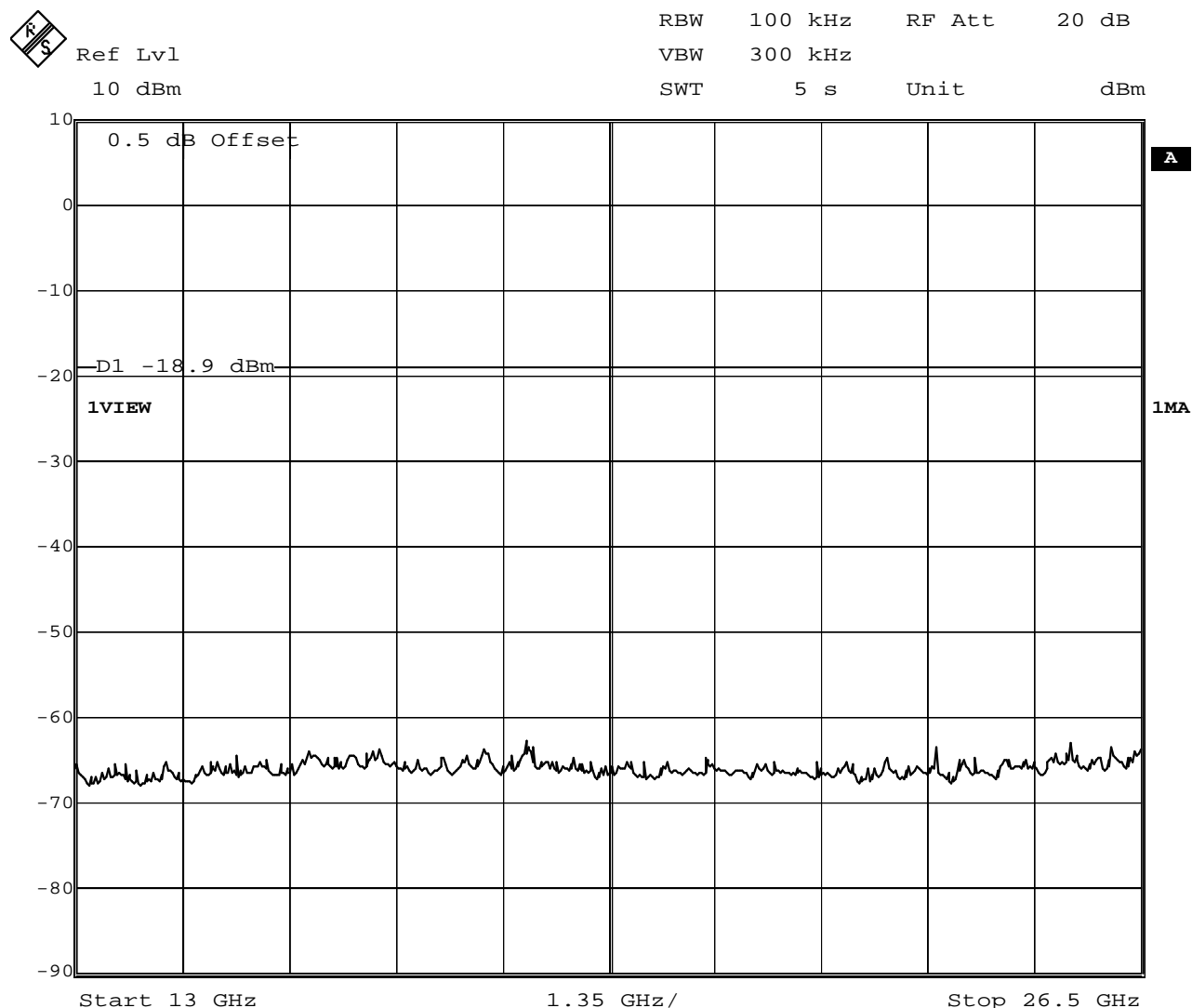
Test Report No.: G0M-1105-1156-P-15

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Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 09:38:47

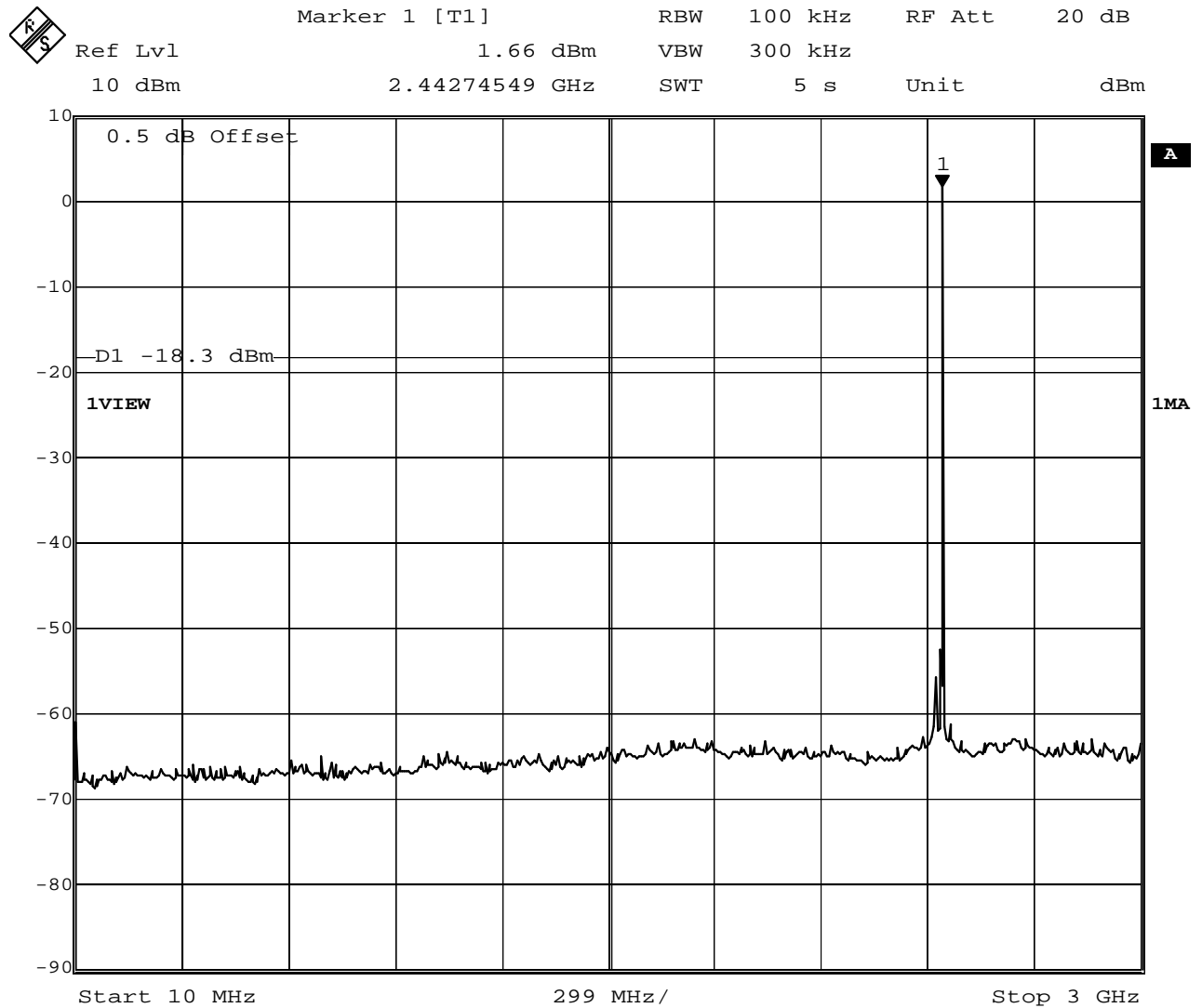
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 |



Date: 23.JUN.2011 09:40:01

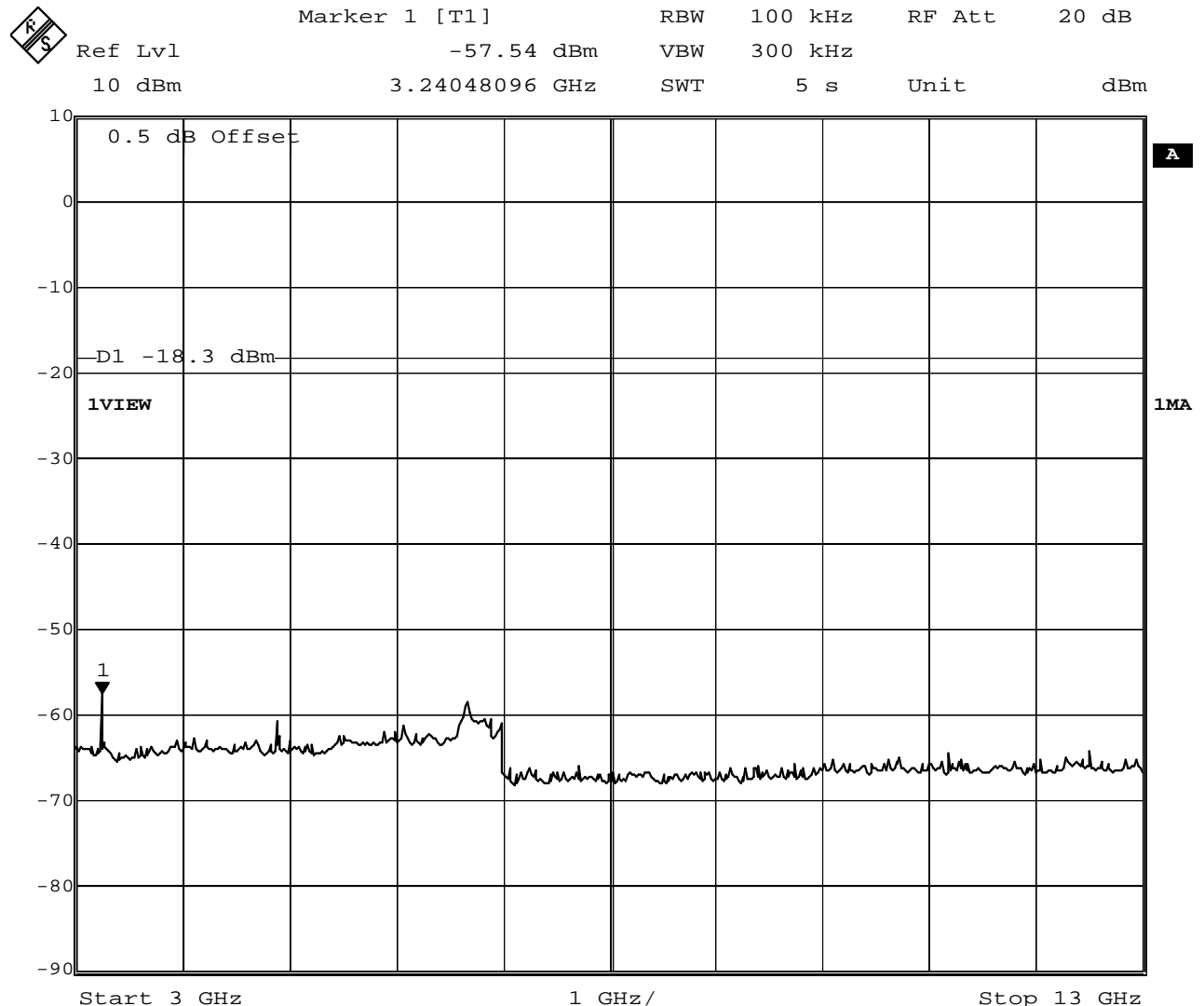
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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**FCC part 15.247 (d)
Spurious Emissions**

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 |



Date: 23.JUN.2011 09:42:04

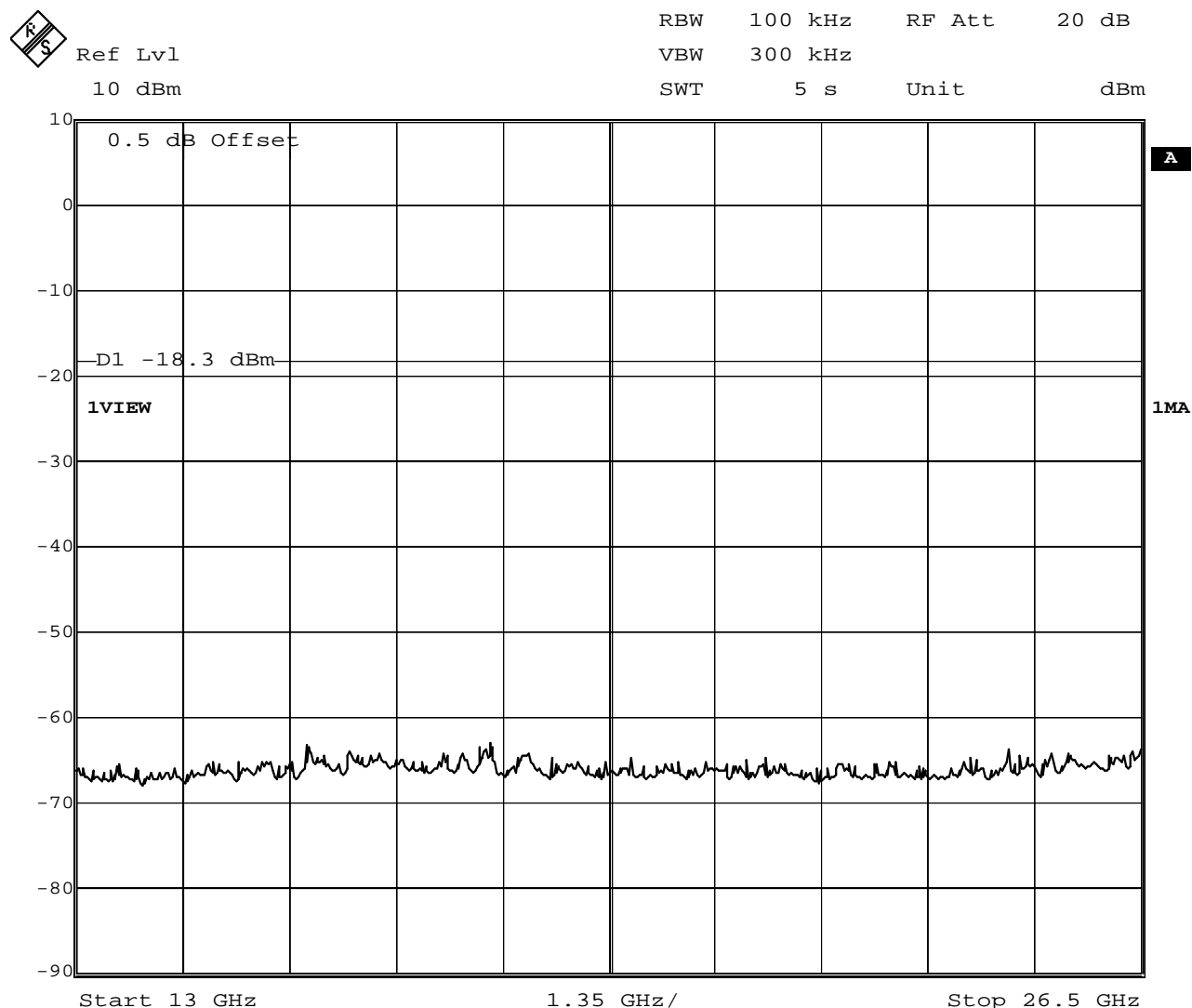
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 |



Date: 23.JUN.2011 09:43:20

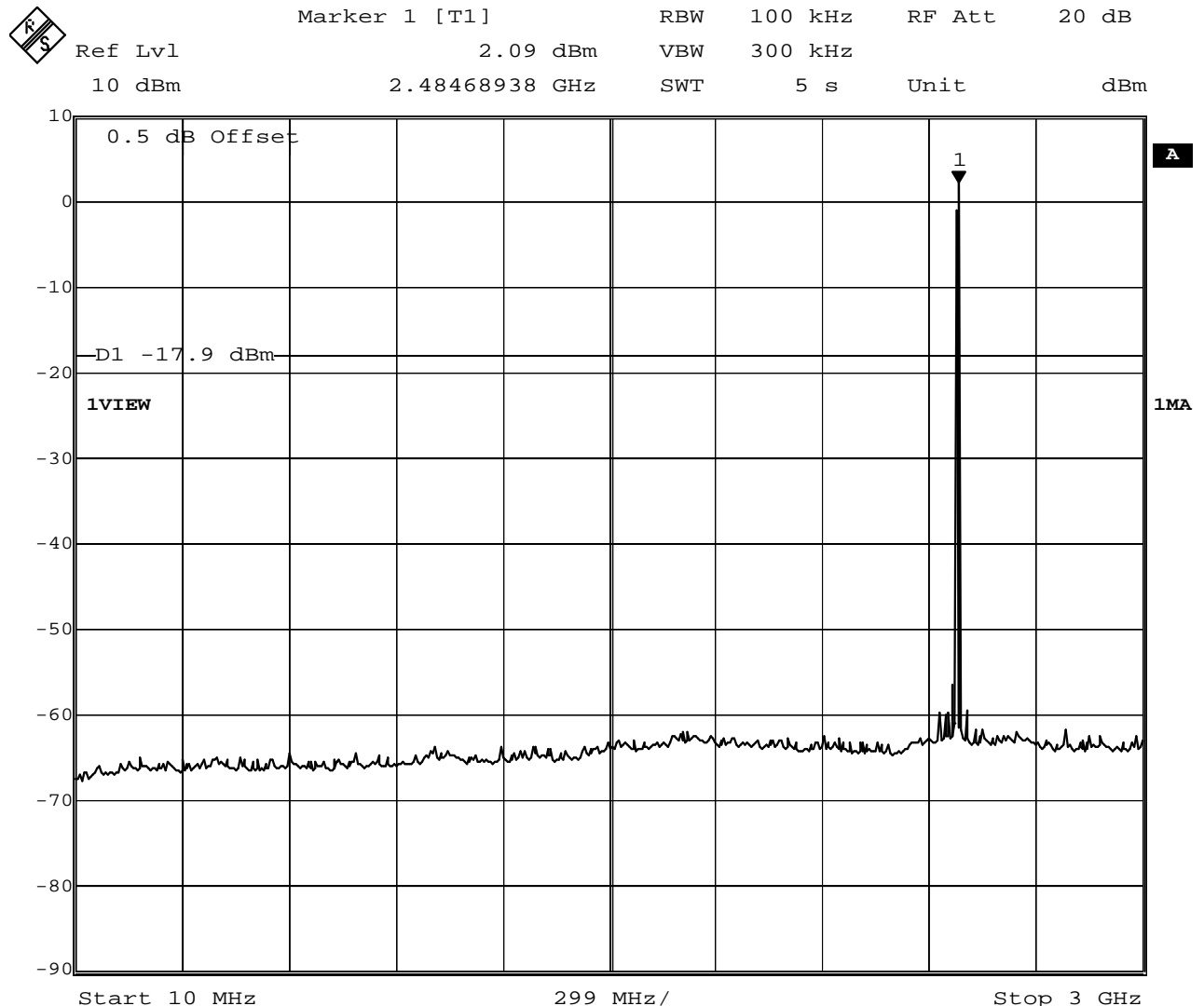
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 |



Date: 23.JUN.2011 09:47:40

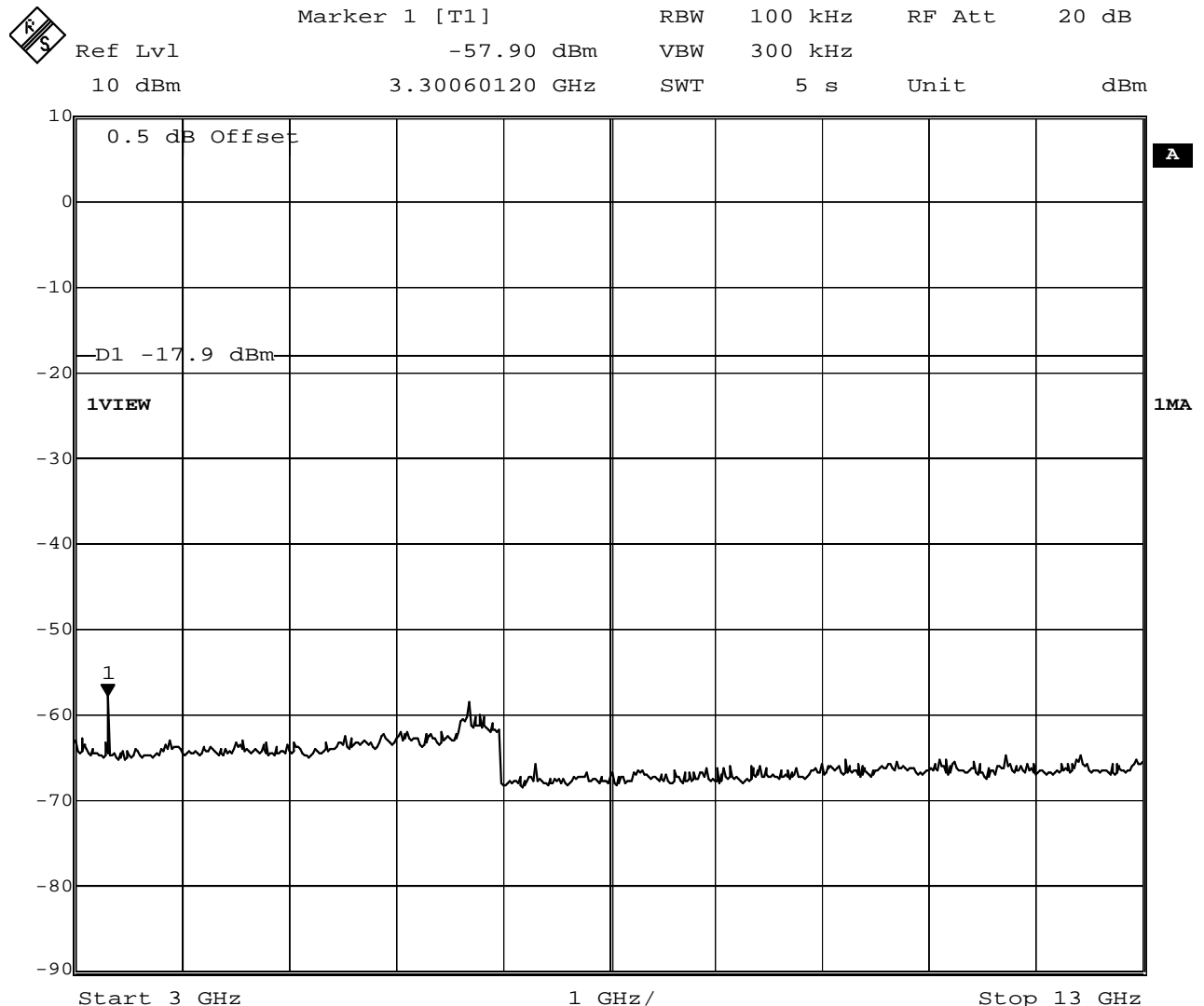
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 |



Date: 23.JUN.2011 09:49:28

Test Report No.: G0M-1105-1156-P-15

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Storkower Str. 38c, D-15526 Reichenwalde, Germany

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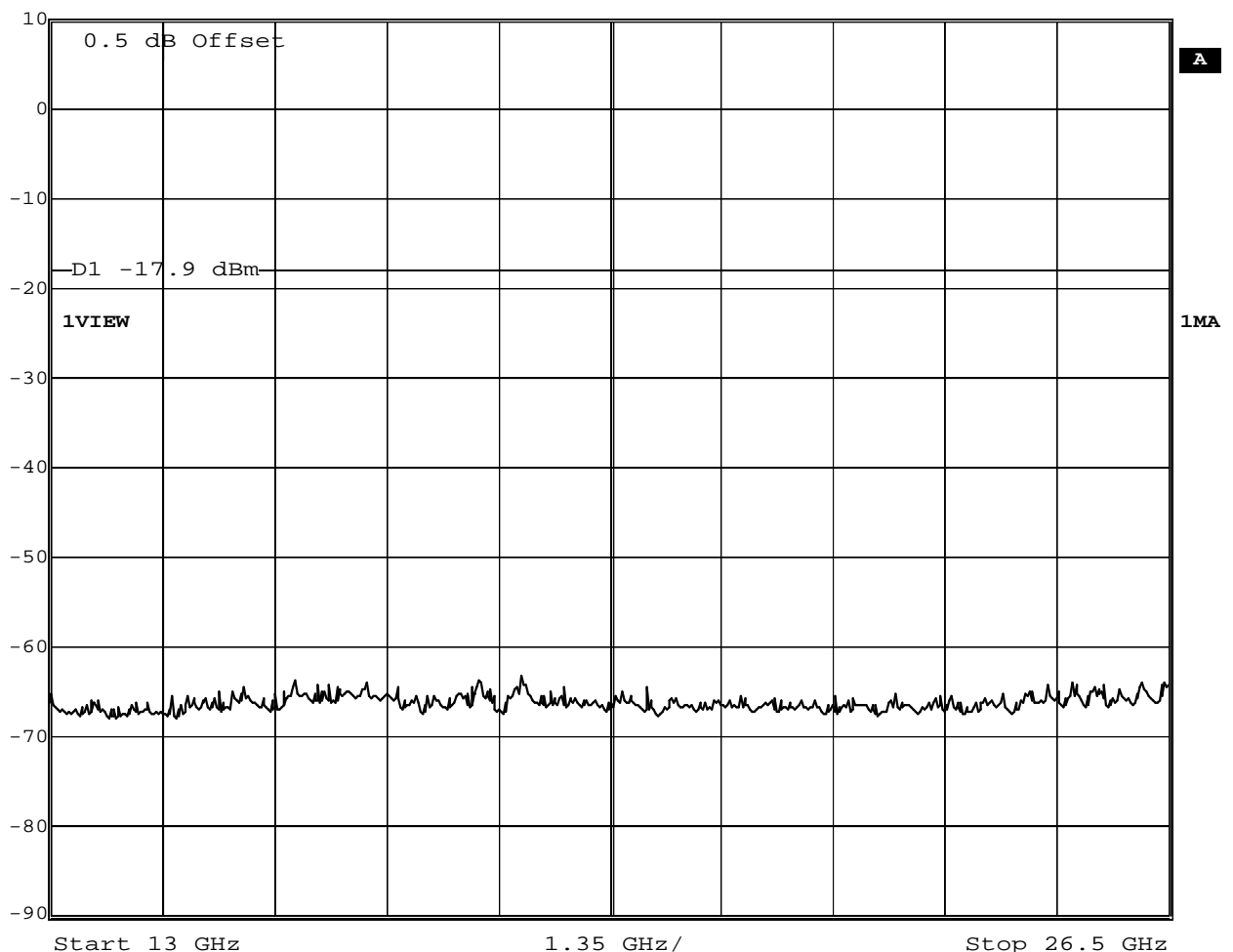
**FCC part 15.247 (d)
Spurious Emissions**

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 |



Ref Lvl
10 dBm

RBW 100 kHz RF Att 20 dB
VBW 300 kHz
SWT 5 s Unit dBm



Date: 23.JUN.2011 09:51:40

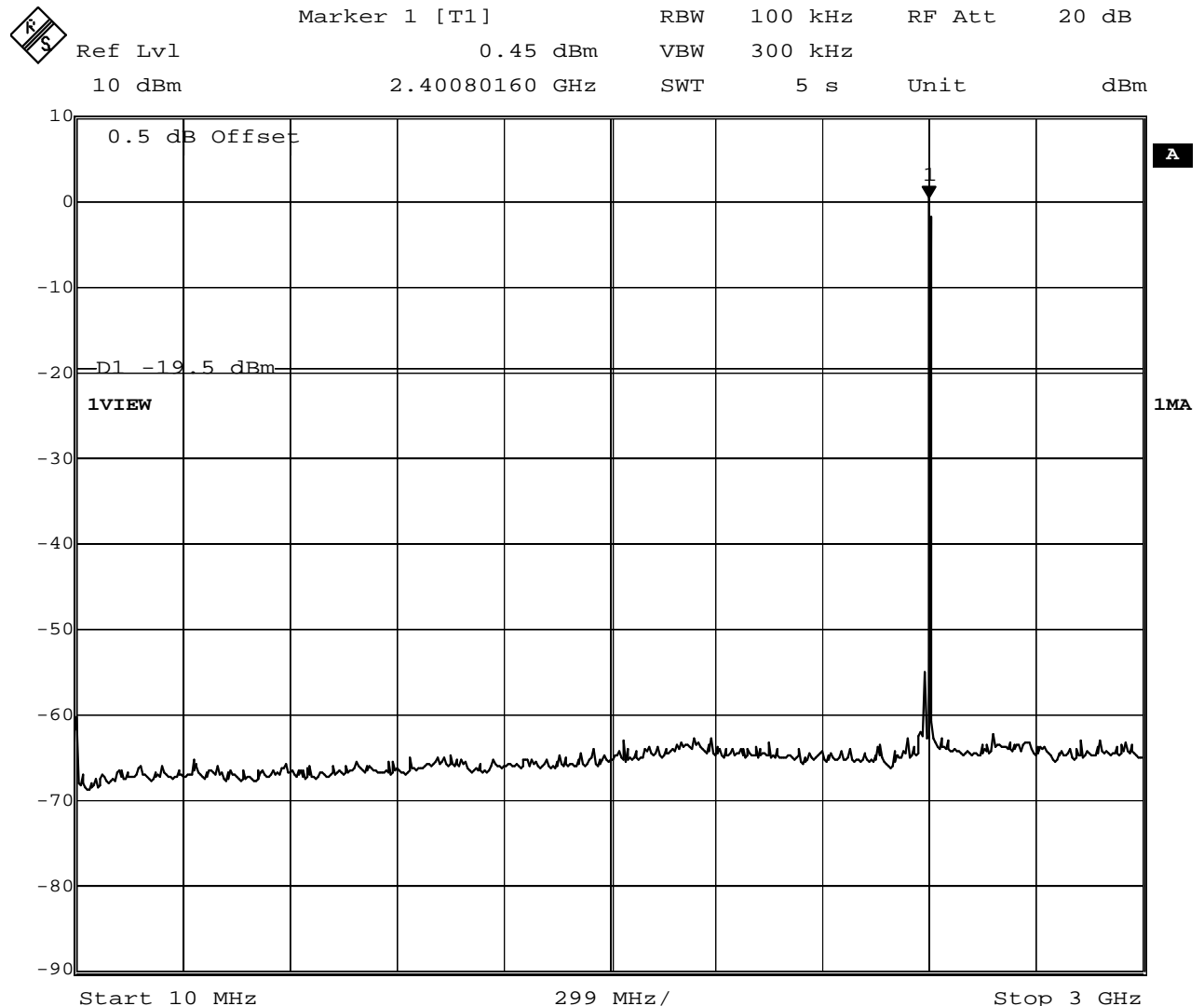
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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**FCC part 15.247 (d)
Spurious Emissions**

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 09:54:30

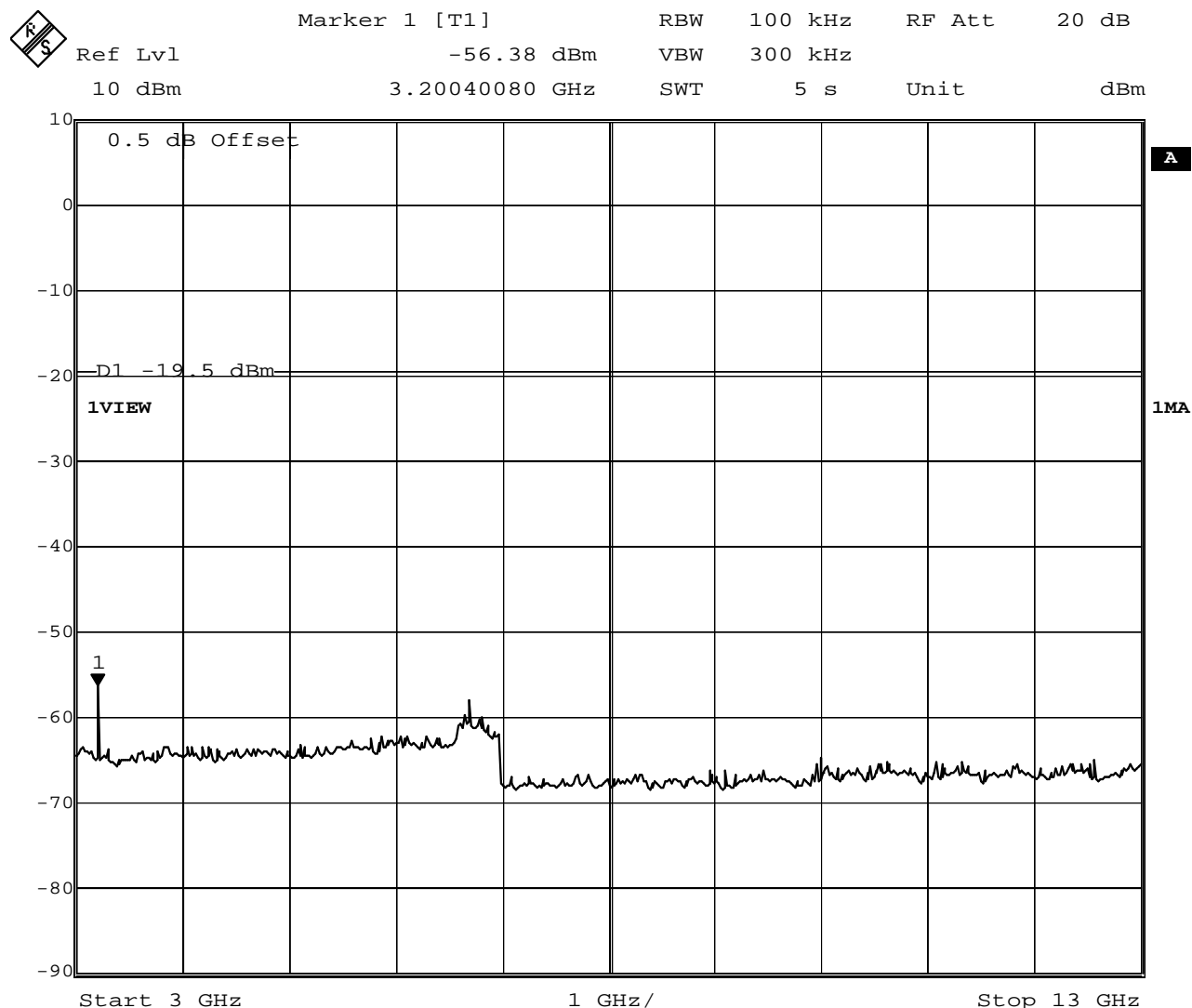
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 09:56:12

Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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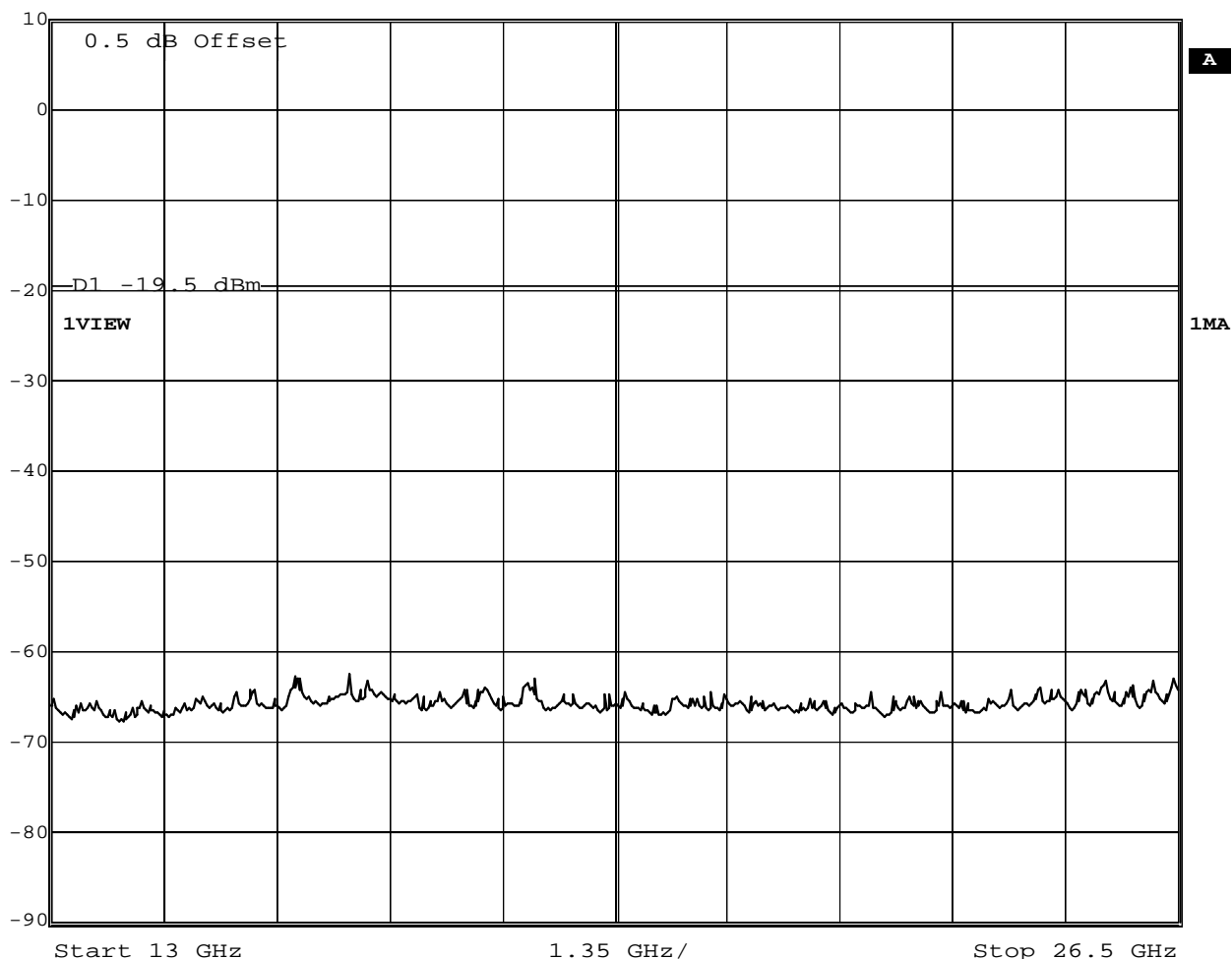
FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 |



Ref Lvl
10 dBm

RBW 100 kHz RF Att 20 dB
VBW 300 kHz
SWT 5 s Unit dBm



Date: 23.JUN.2011 09:58:00

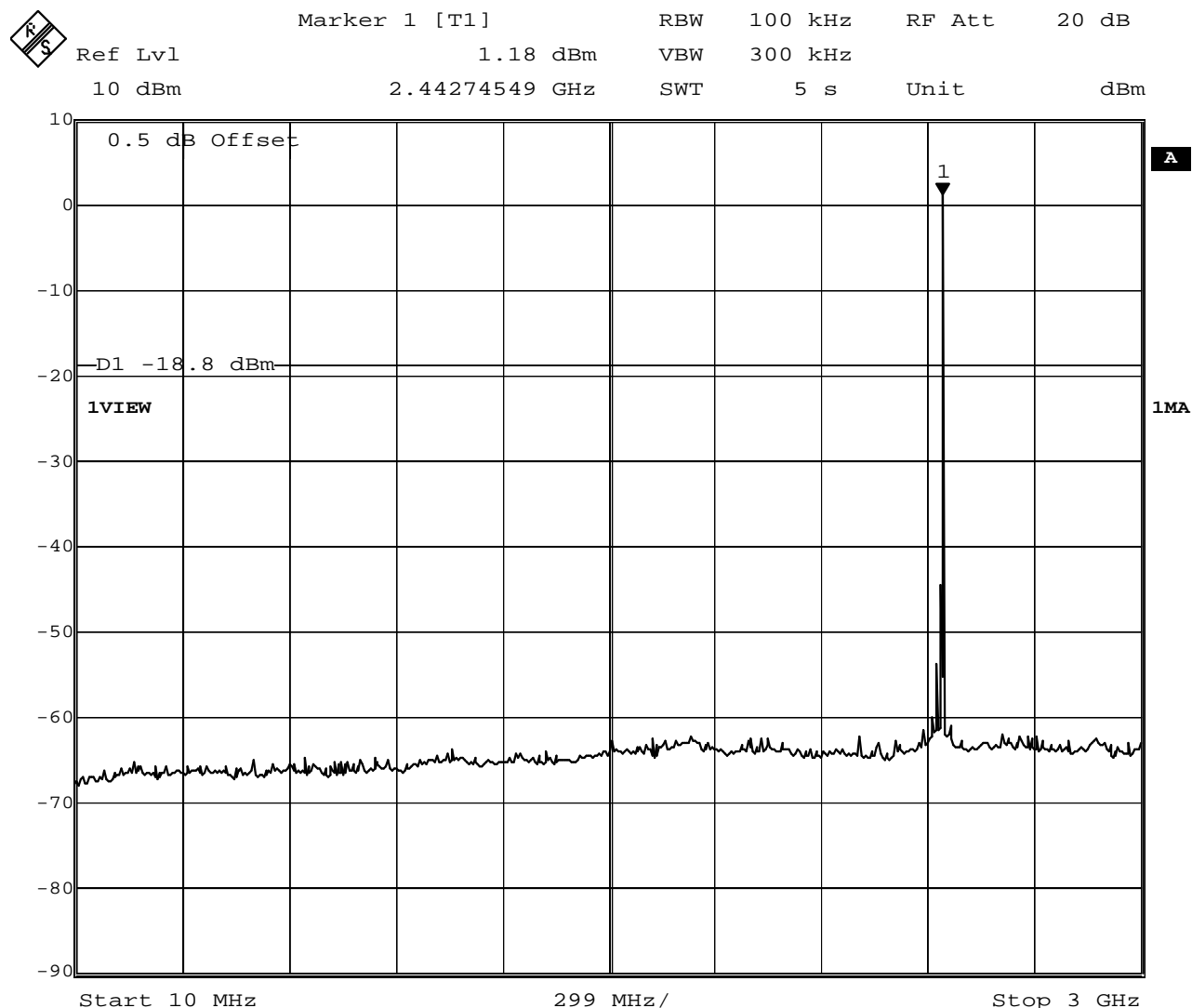
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 10:00:54

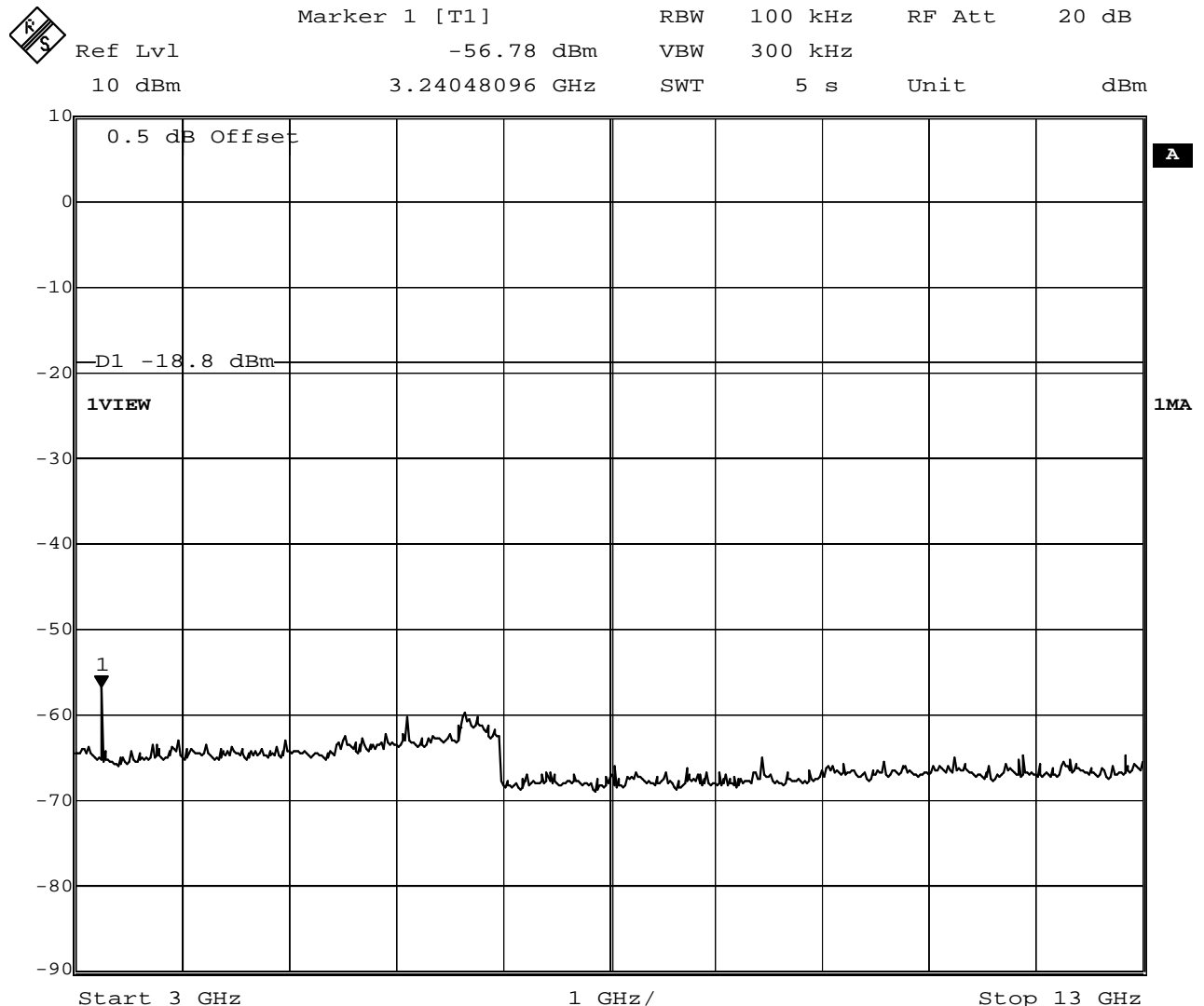
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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**FCC part 15.247 (d)
Spurious Emissions**

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 10:02:15

Test Report No.: G0M-1105-1156-P-15

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 Storkower Str. 38c, D-15526 Reichenwalde, Germany

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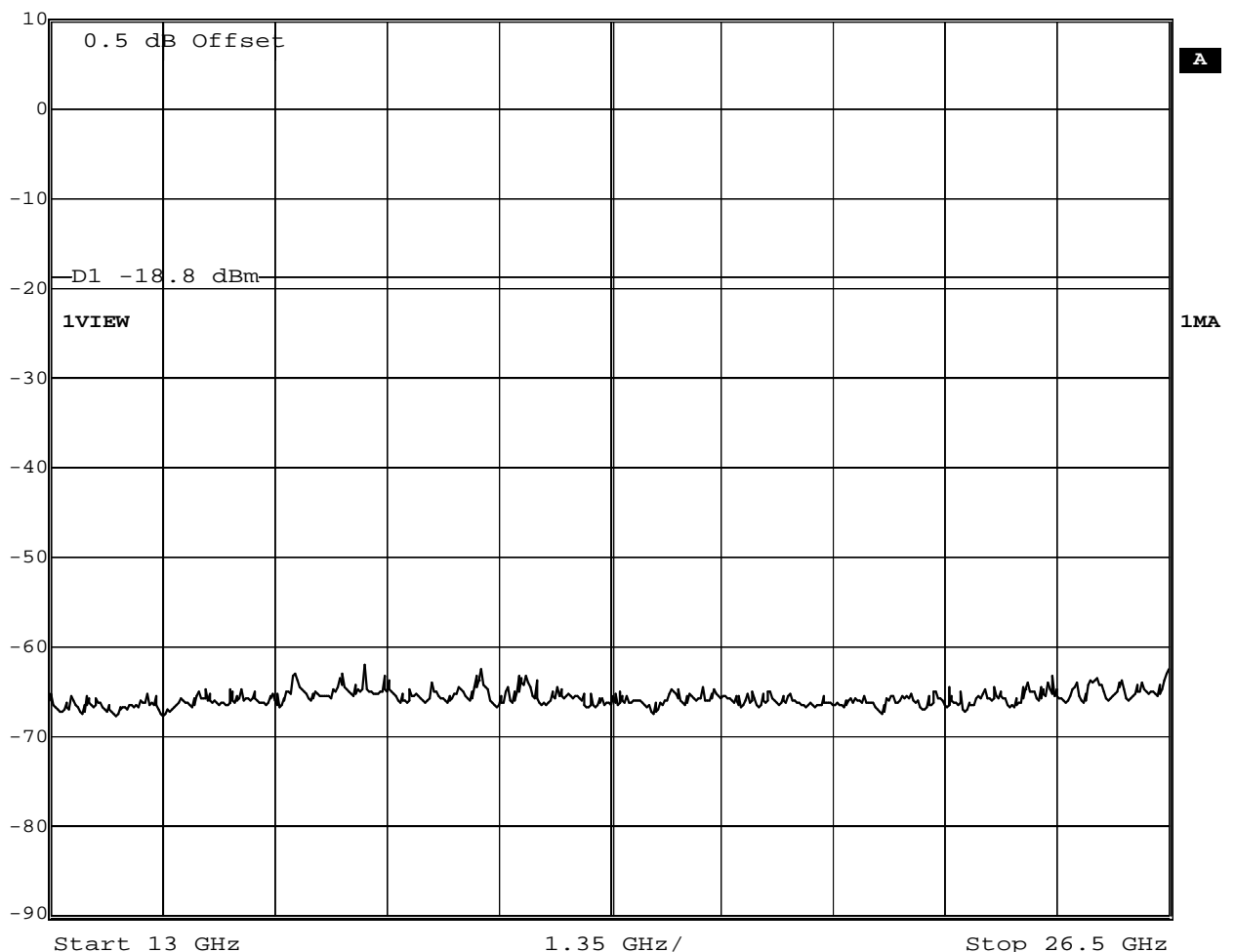
**FCC part 15.247 (d)
Spurious Emissions**

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 |



Ref Lvl
10 dBm

RBW 100 kHz RF Att 20 dB
VBW 300 kHz
SWT 5 s Unit dBm



Date: 23.JUN.2011 10:04:05

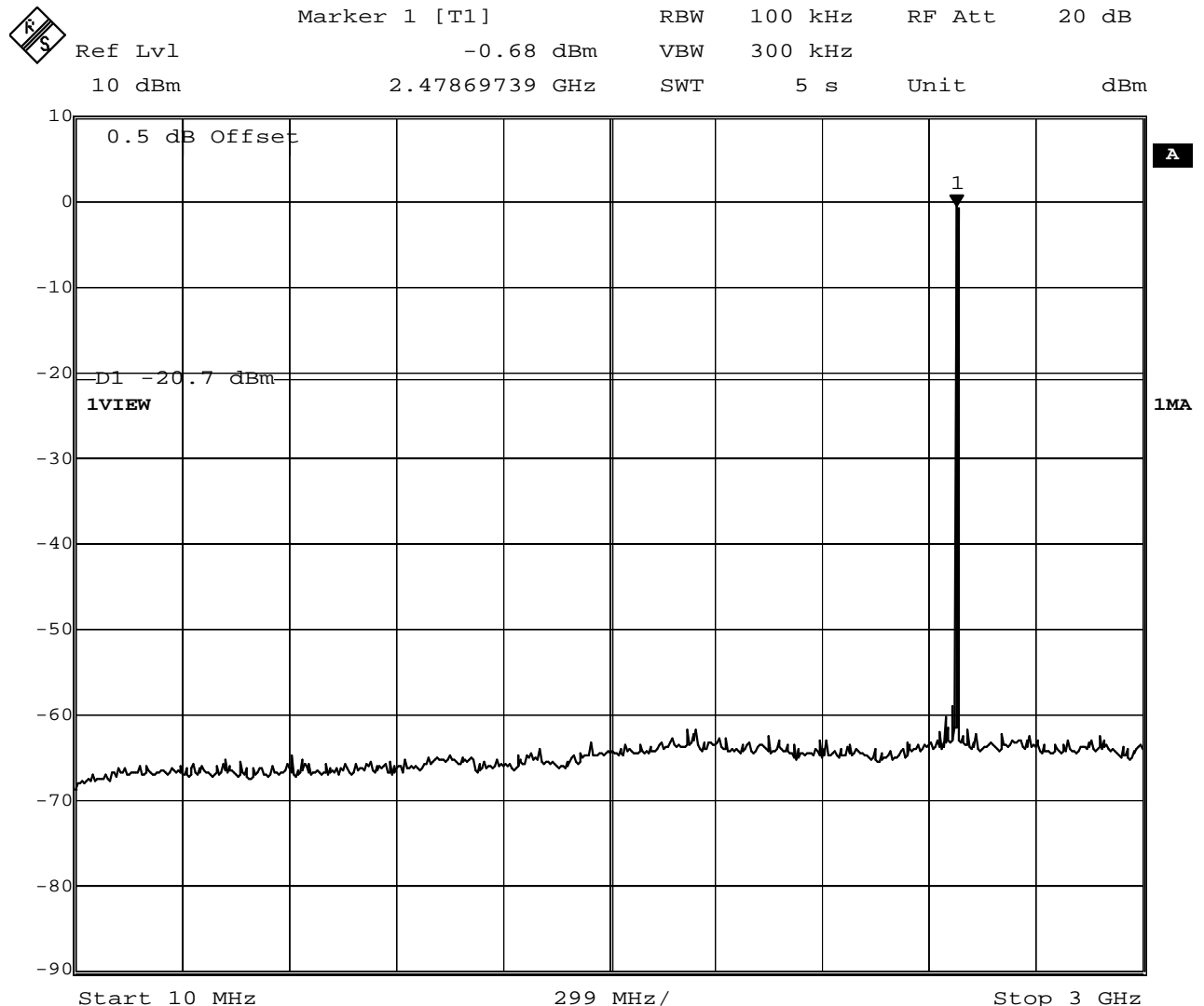
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 10:05:58

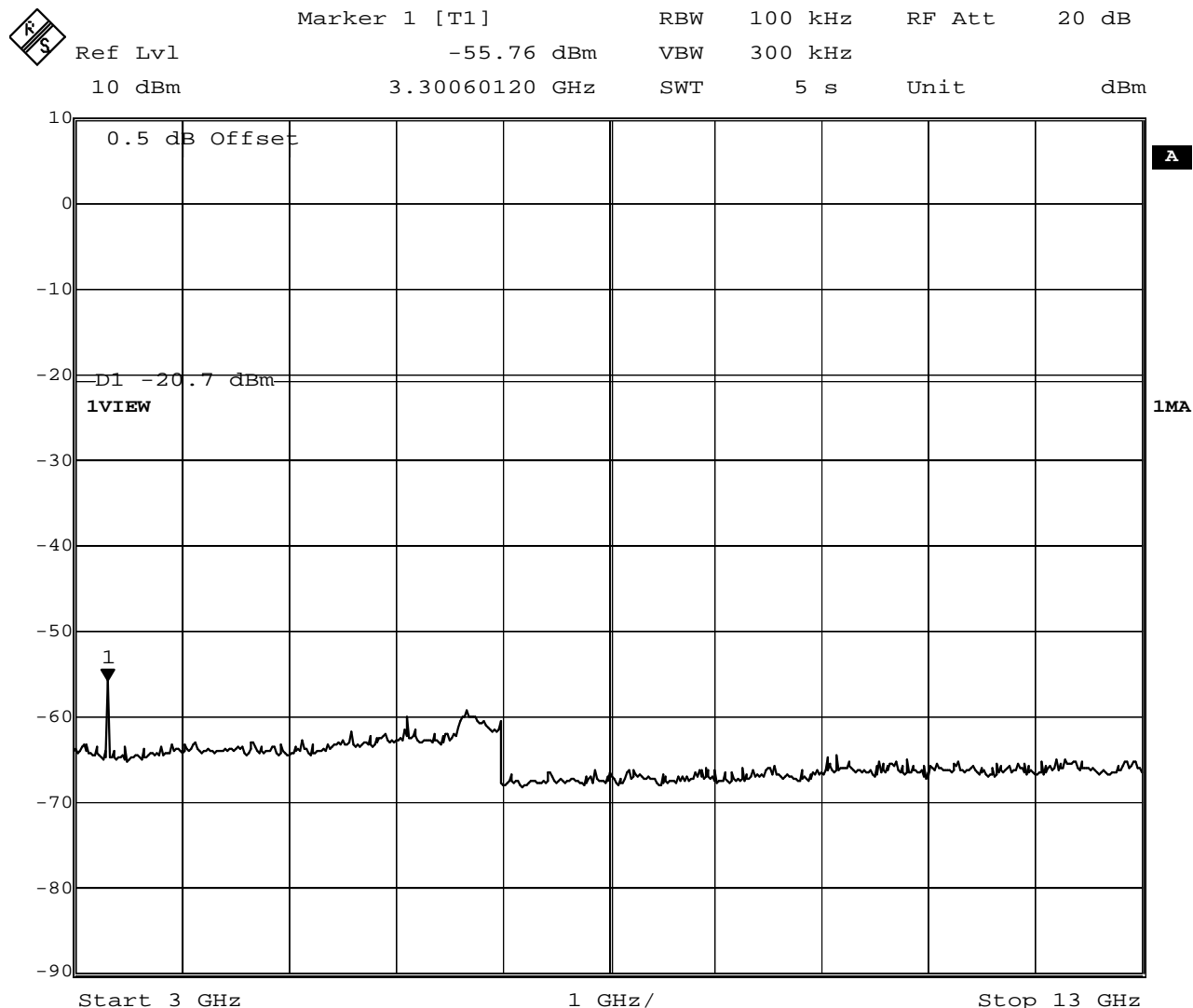
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 10:08:54

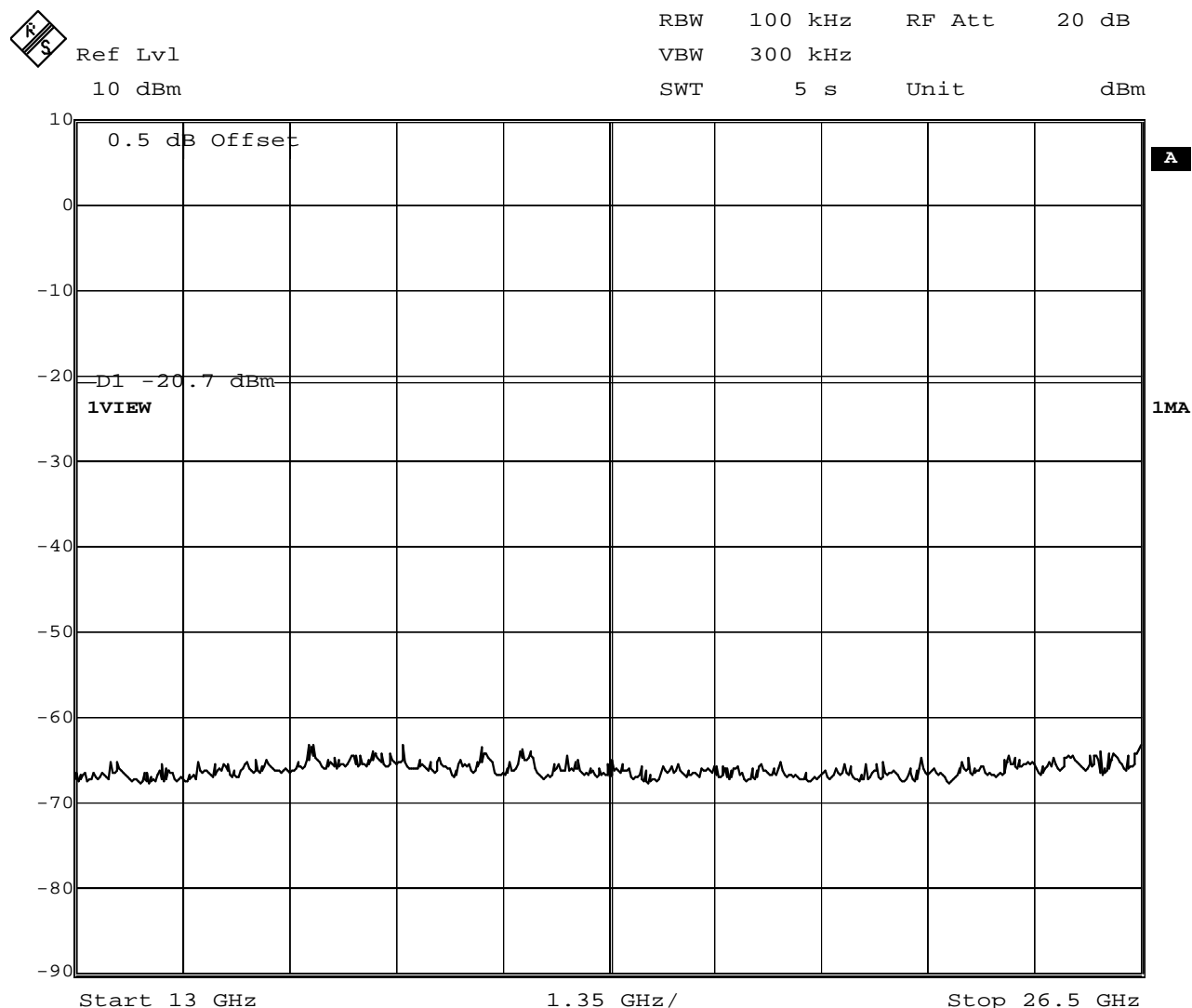
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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FCC part 15.247 (d) Spurious Emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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: 23.JUN.2011 10:10:14

Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

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Annex H Band edge compliance

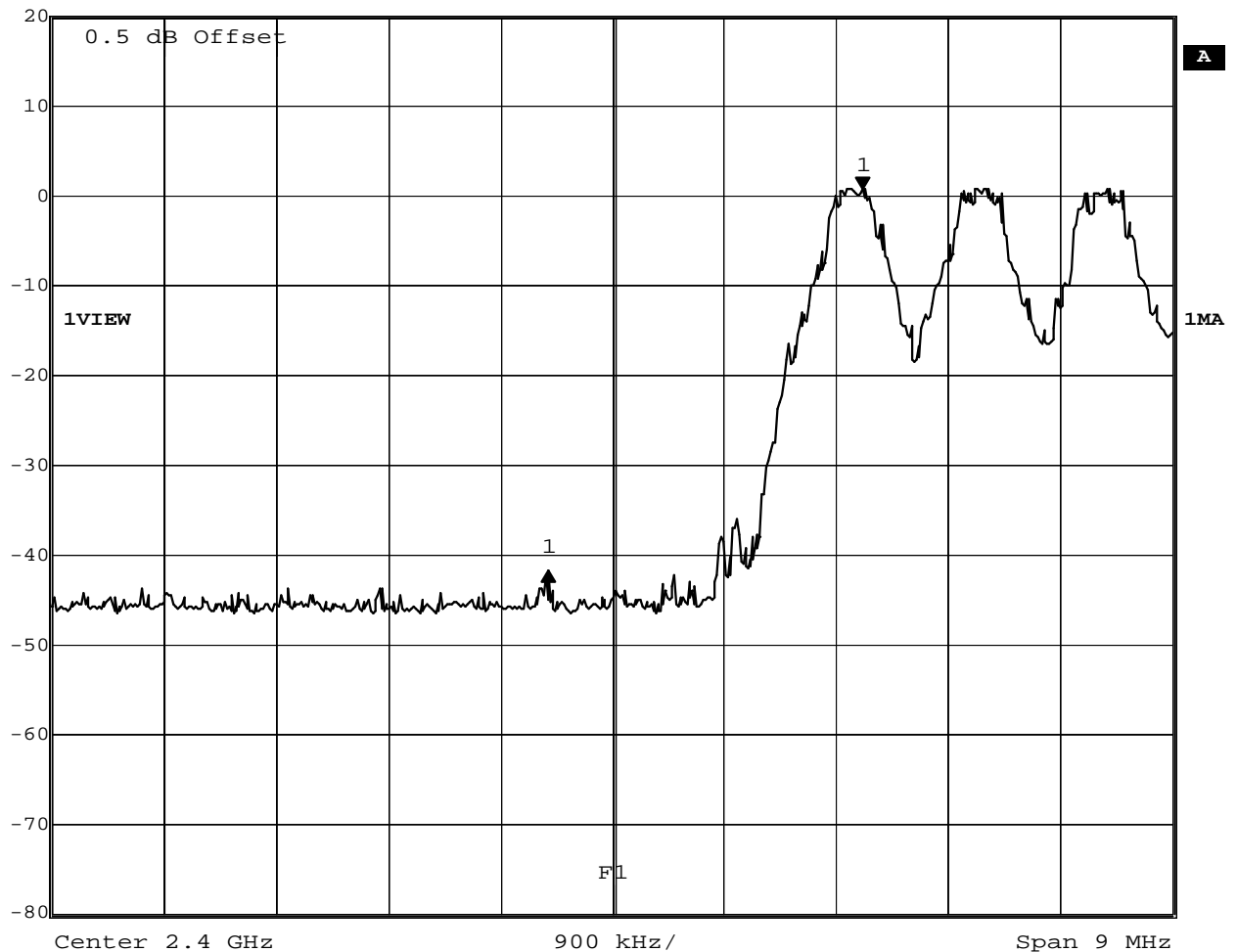
FCC part 15.247

Band-edge compliance of RF conducted emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2402 MHz, GFSK |
| Comment 3 | Hopping mode |



| | | | | |
|--------------|-----------------|---------|---------|----------|
| Delta 1 [T1] | RBW | 100 kHz | RF Att | 40 dB |
| Ref Lvl | -42.67 dB | VBW | 100 kHz | |
| 20 dBm | -2.52505010 MHz | SWT | 5 ms | Unit dBm |

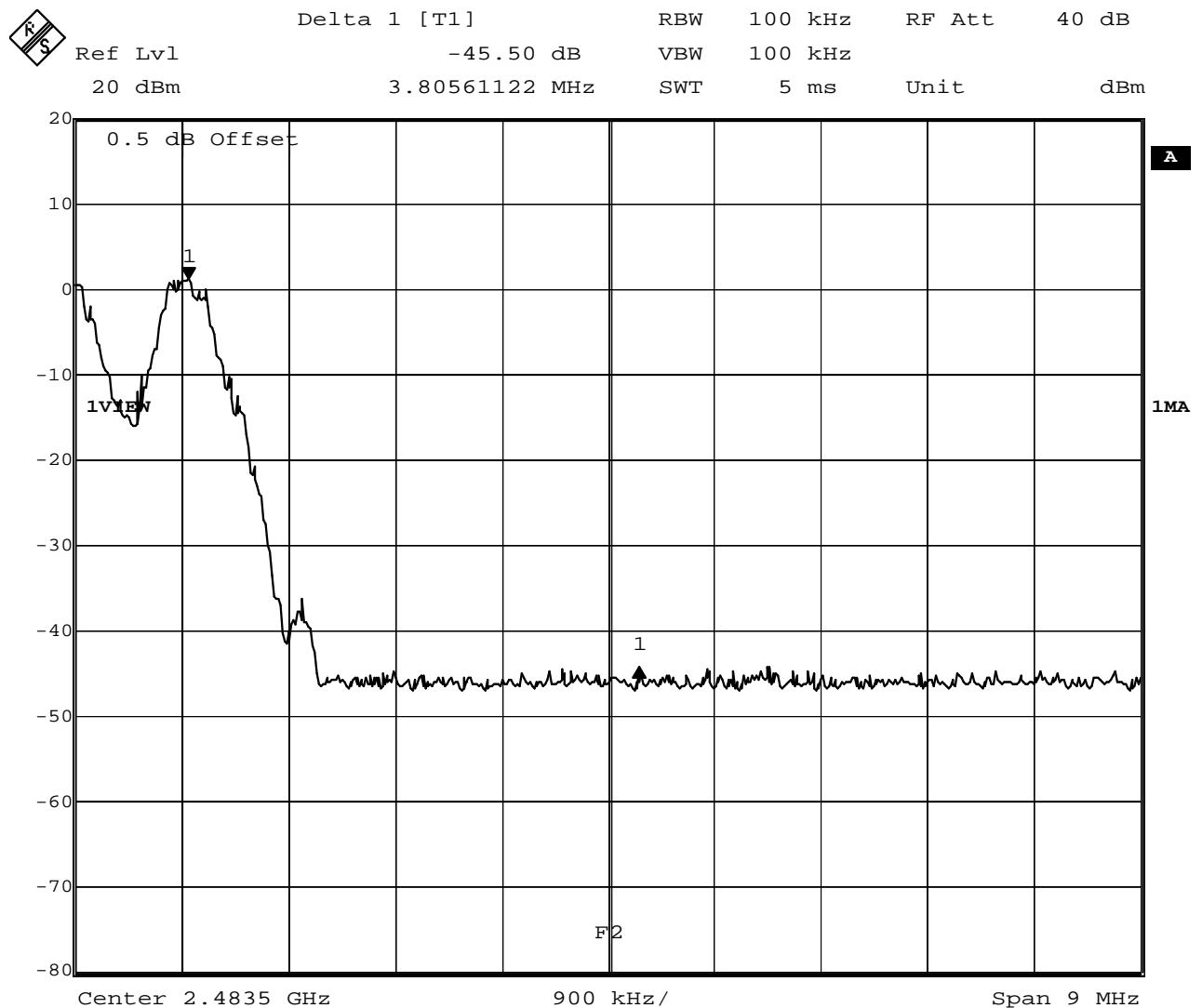


Comment A: Limit: Marker Delta value >20 dB; Result: PASS

Date: 22.JUN.2011 16:03:02

FCC part 15.247
Band-edge compliance of RF conducted emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2470 MHz, GFSK |
| Comment 3 | Hopping mode |



Date: 22.JUN.2011 16:05:15

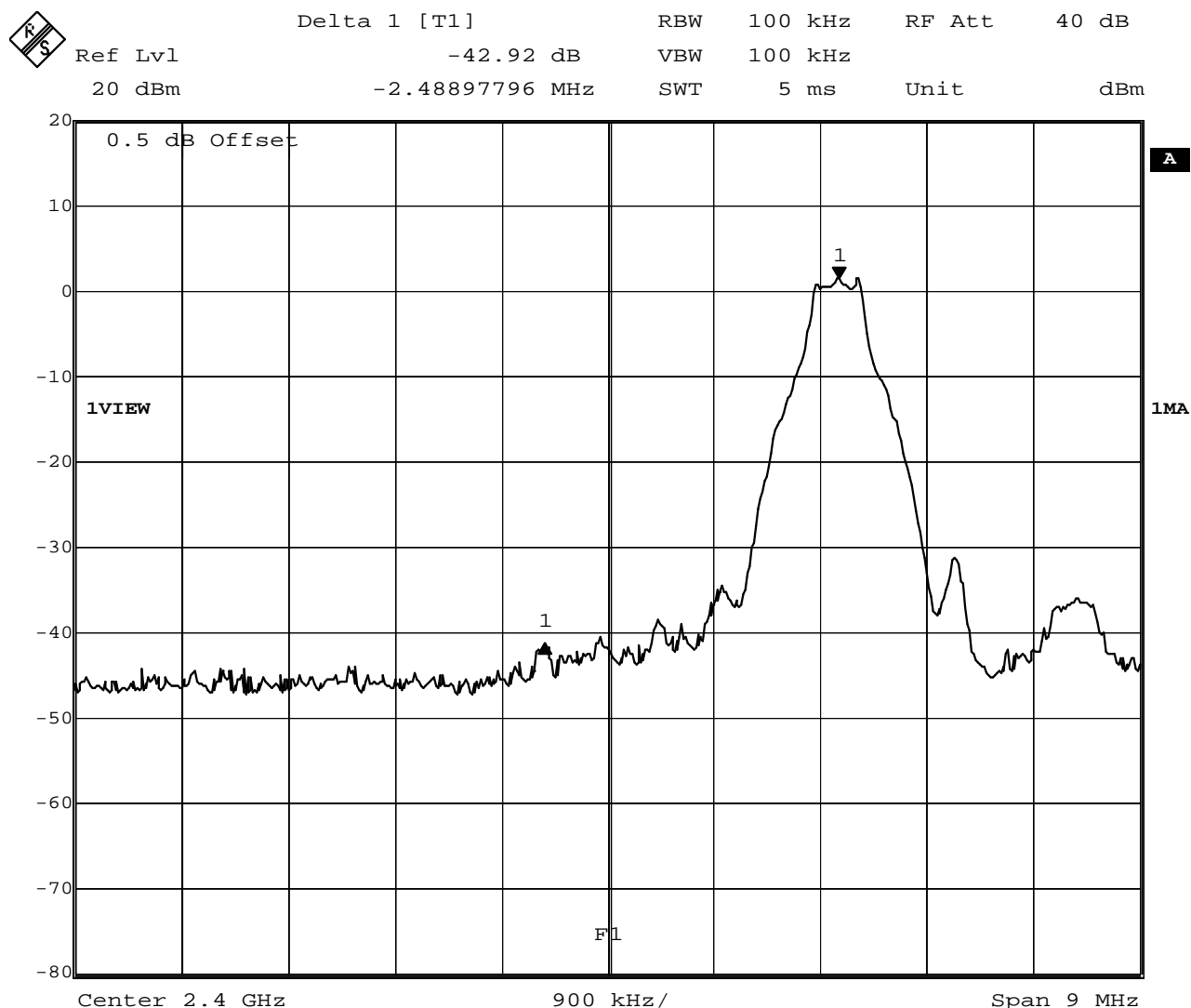
Test Report No.: G0M-1105-1156-P-15

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

Page 82 of 146

FCC part 15.247 Band-edge compliance of RF conducted emissions

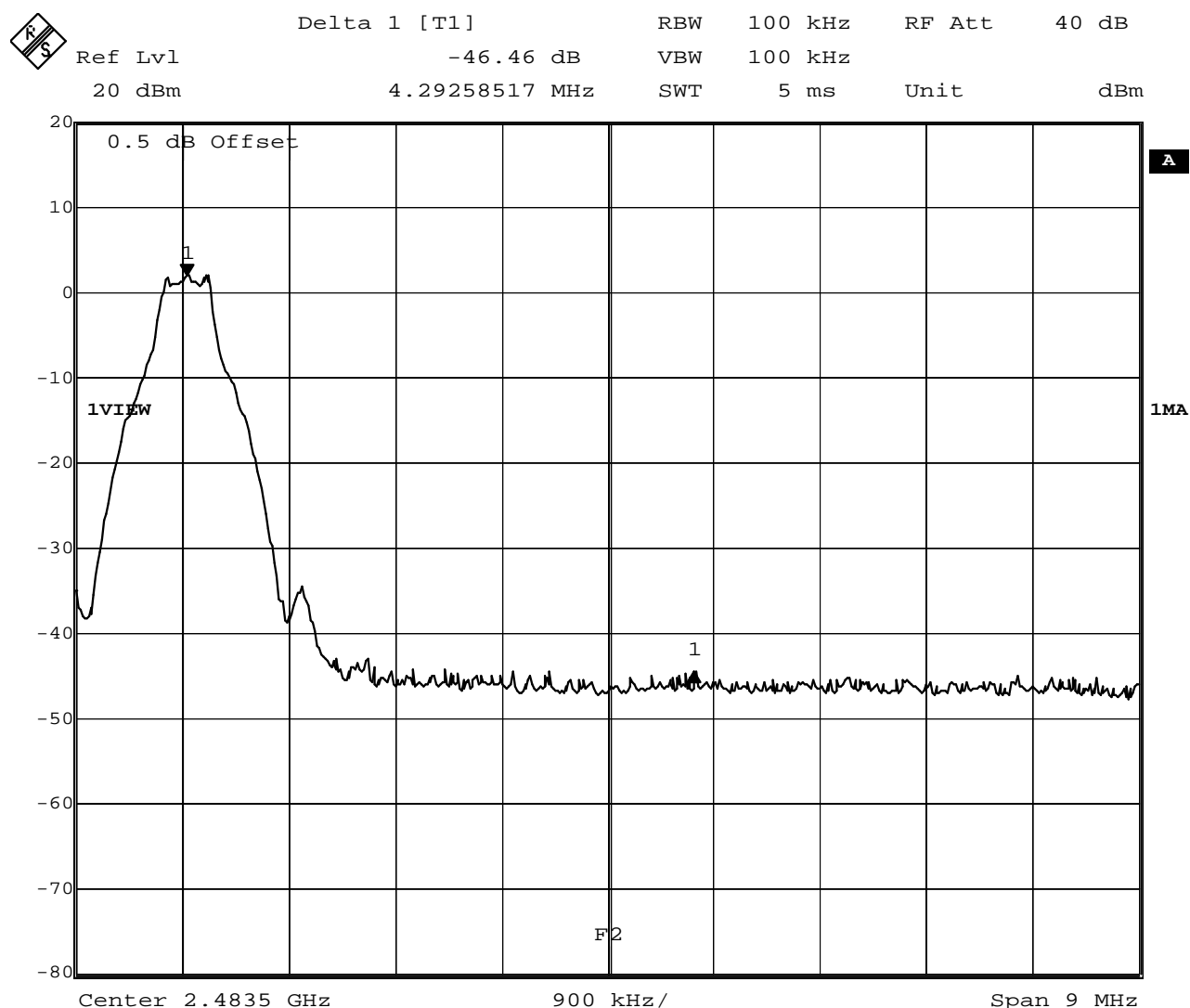
| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | FCC part 15 section 247(c) |
| Comment 1 | Band-edge compliance |
| Comment 2 | Channel.: 0 / 2402 MHz; GFSK |
| Comment 3 | Single frequency mode |



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 22.JUN.2011 15:59:53

FCC part 15.247
Band-edge compliance of RF conducted emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2480 MHz; GFSK |
| Comment 3 | Single frequency mode |

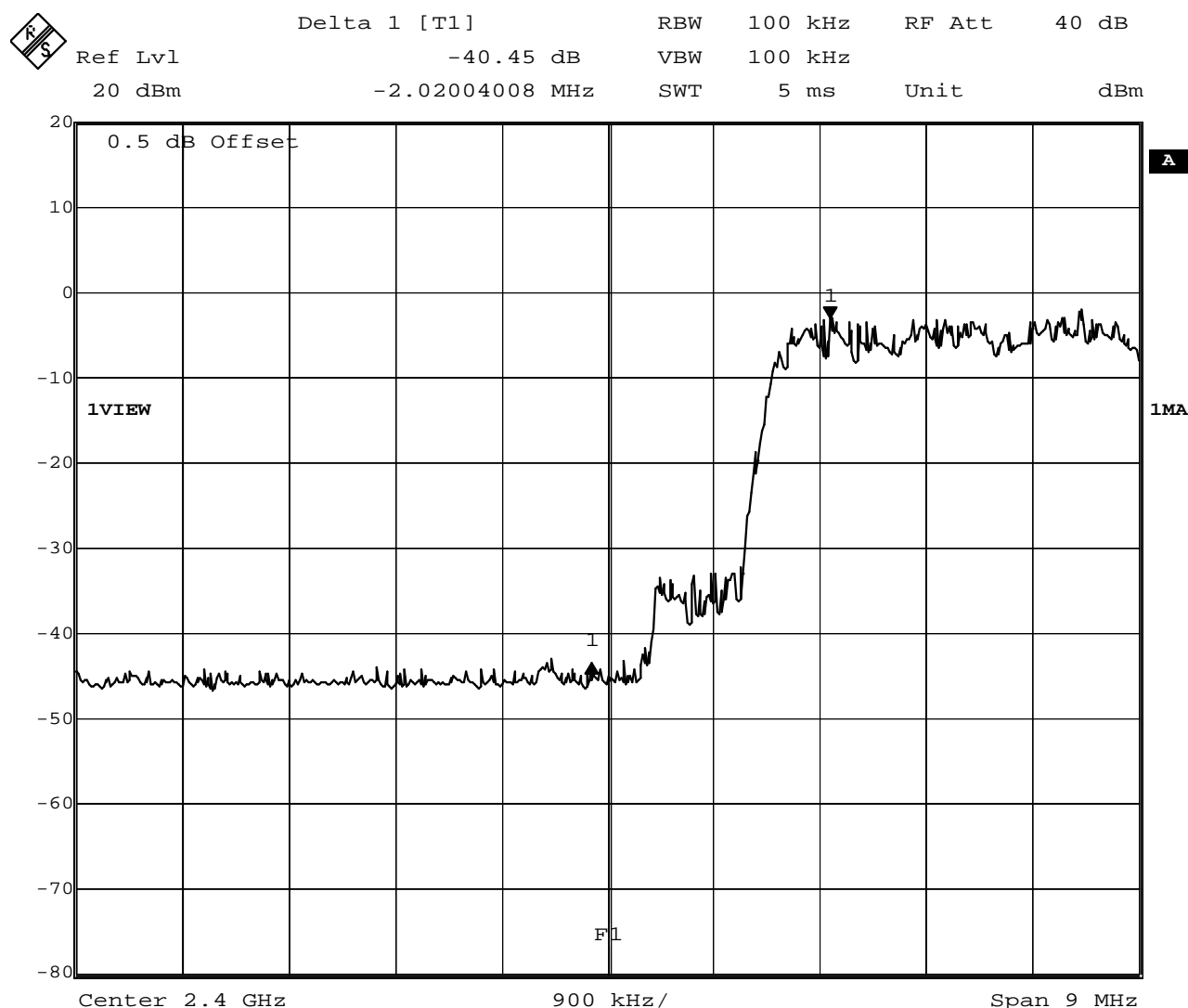


Comment A: Limit: Marker Delta value >20 dB; Result: PASS

Date: 22.JUN.2011 15:57:07

FCC part 15.247
Band-edge compliance of RF conducted emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2402 MHz, Pi/4-DQPSK |
| Comment 3 | Hopping mode |

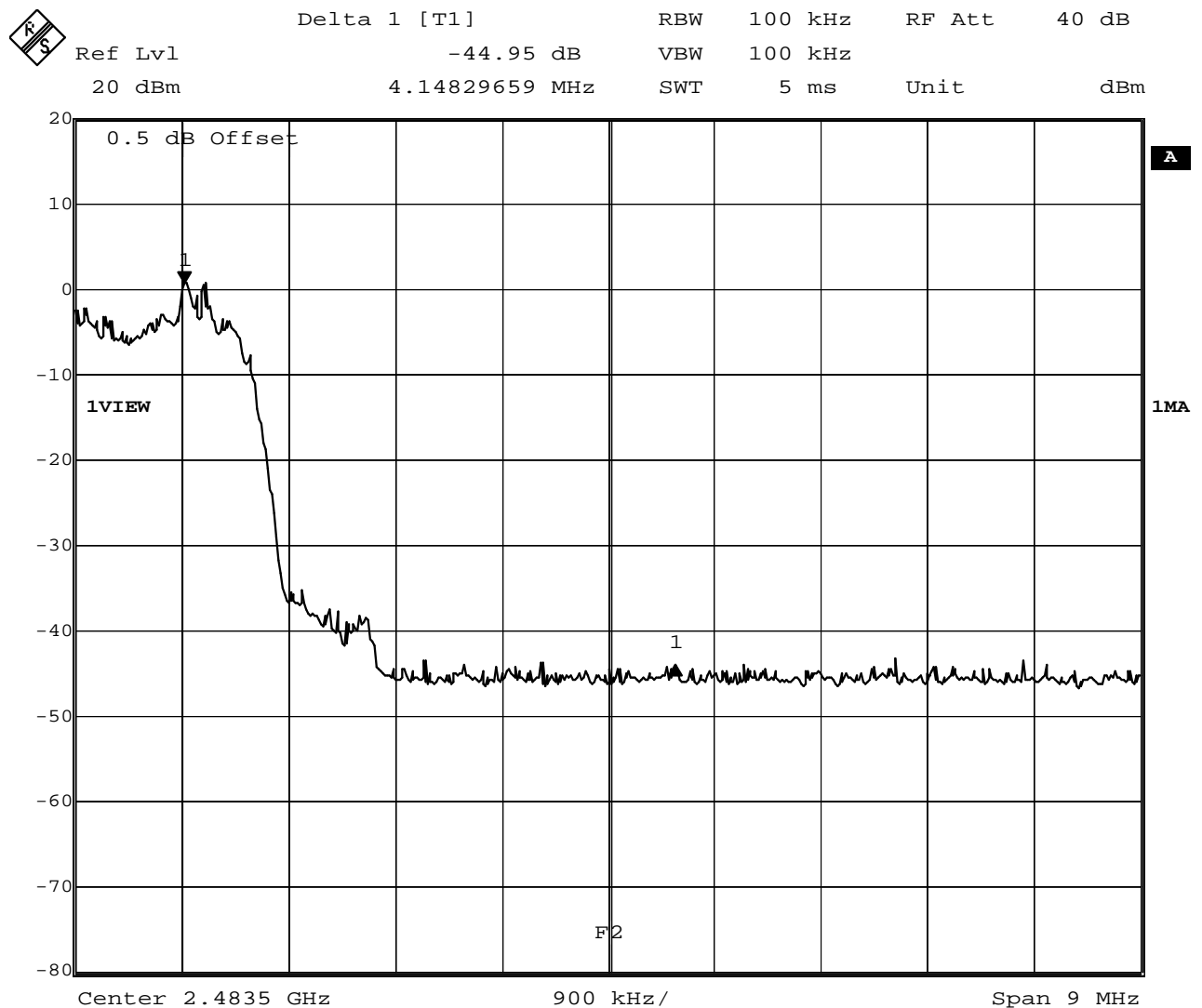


Comment A: Limit: Marker Delta value >20 dB; Result: PASS

Date: 22.JUN.2011 16:09:35

FCC part 15.247
Band-edge compliance of RF conducted emissions

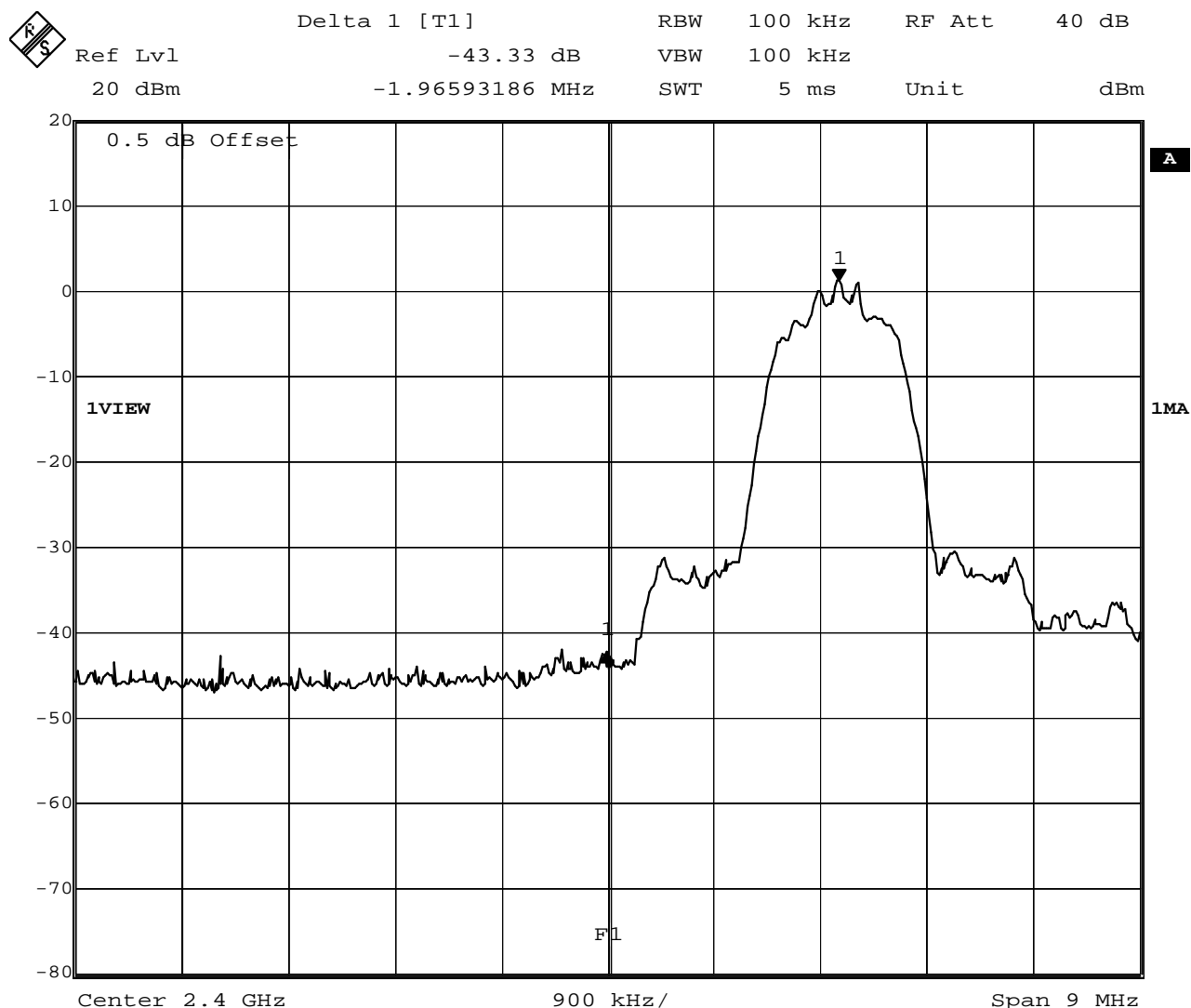
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|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | FCC part 15 section 247(c) |
| Comment 1 | Band-edge compliance |
| Comment 2 | Channel.: 78 / 2480 MHz, Pi/4-DQPSK |
| Comment 3 | Hopping mode |



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 22.JUN.2011 16:13:43

FCC part 15.247
Band-edge compliance of RF conducted emissions

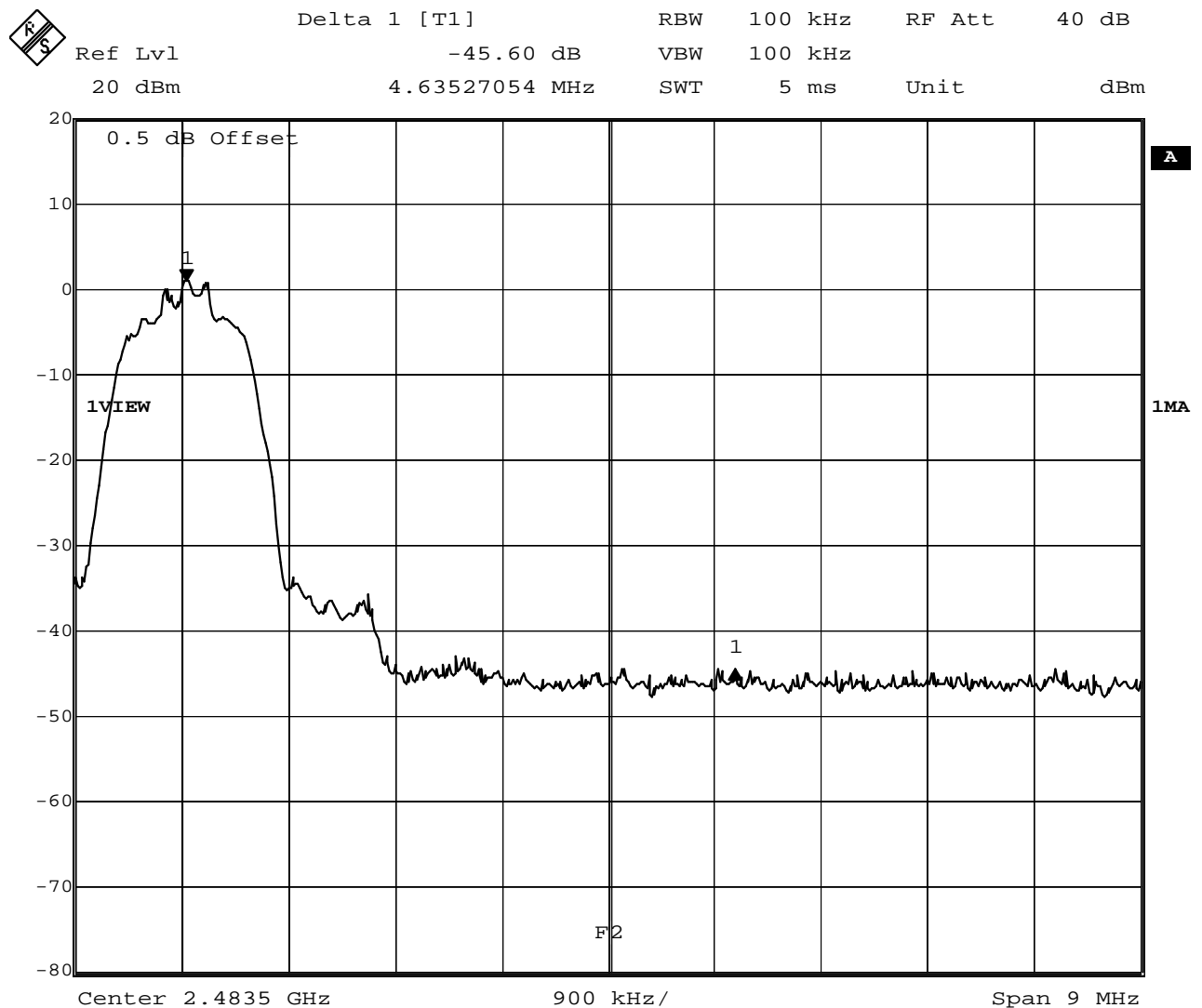
| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | FCC part 15 section 247(c) |
| Comment 1 | Band-edge compliance |
| Comment 2 | Channel.: 0 / 2402 MHz; Pi/4DQPSK |
| Comment 3 | Single frequency mode |



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 22.JUN.2011 15:50:54

FCC part 15.247
Band-edge compliance of RF conducted emissions

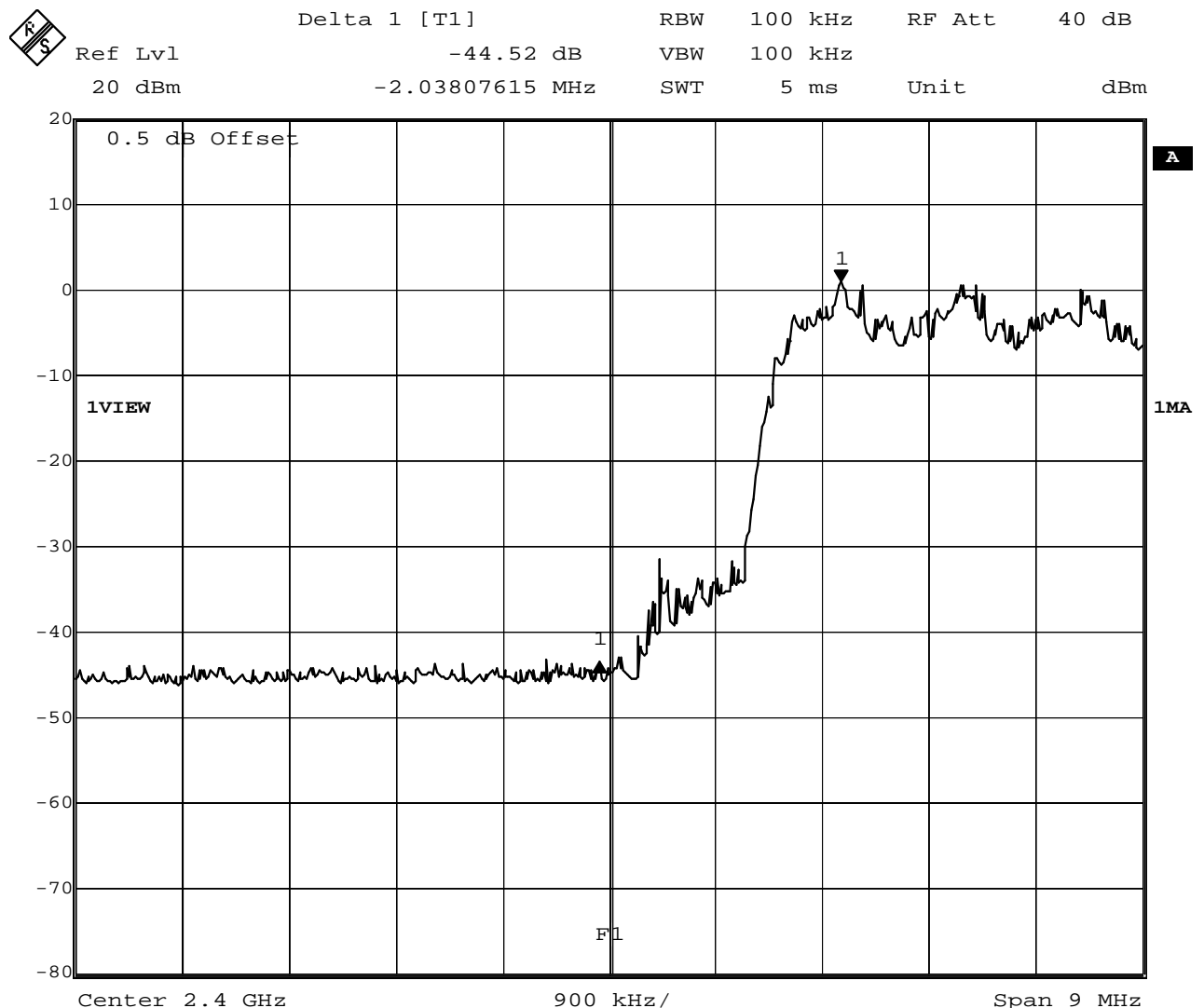
| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | FCC part 15 section 247(c) |
| Comment 1 | Band-edge compliance |
| Comment 2 | Channel.: 78 / 2480 MHz; Pi/4DQPSK |
| Comment 3 | Single frequency mode |



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 22.JUN.2011 15:53:13

FCC part 15.247
Band-edge compliance of RF conducted emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2402 MHz, 8DPSK |
| Comment 3 | Hopping mode |

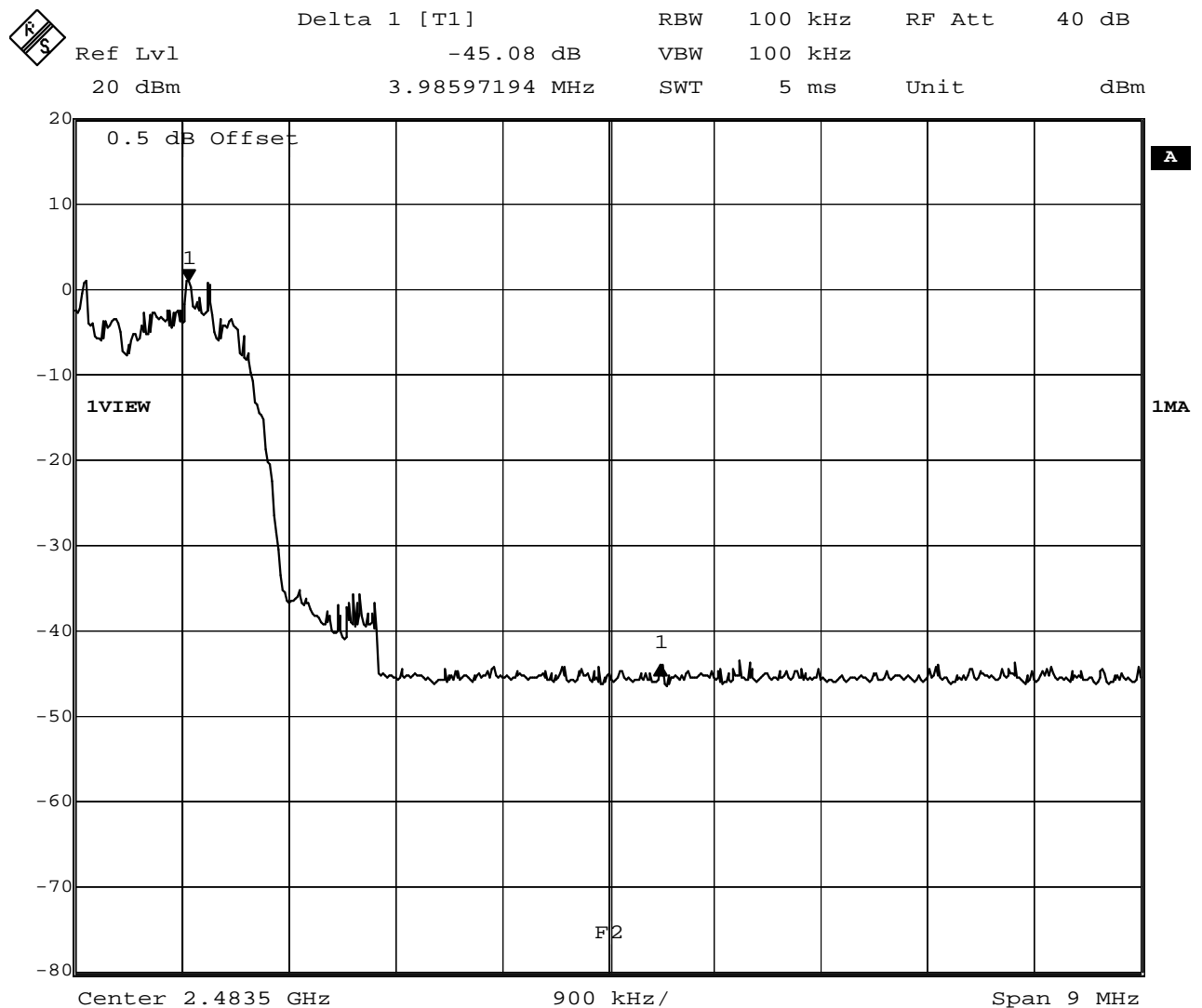


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Date: 22.JUN.2011 16:19:49

FCC part 15.247
Band-edge compliance of RF conducted emissions

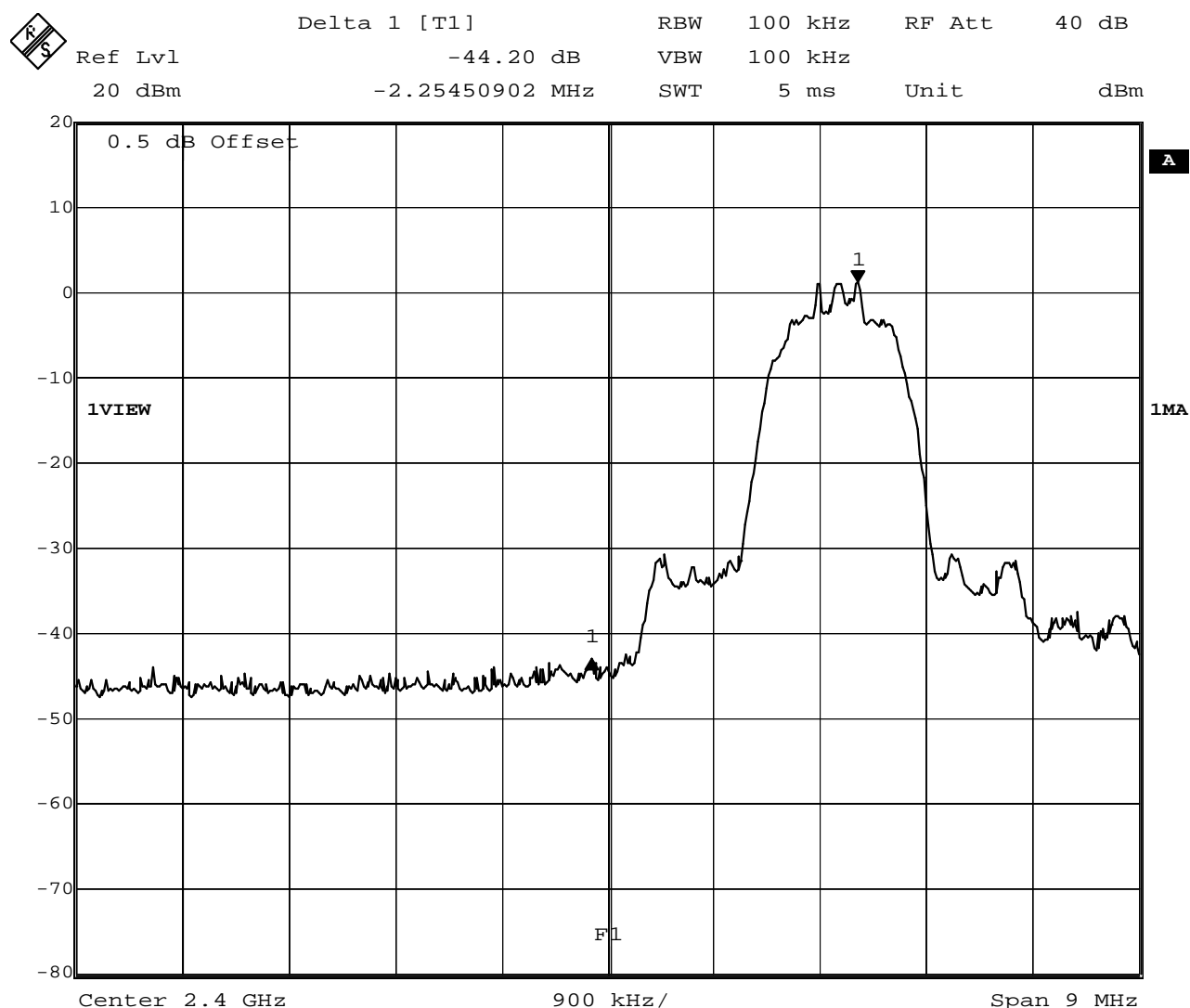
| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / Vnom |
| Test Site / Operator | Eurofins Product Service GmbH / Mr. Treffke |
| Test Specification | FCC part 15 section 247(c) |
| Comment 1 | Band-edge compliance |
| Comment 2 | Channel.: 78 / 2480 MHz, 8DPSK |
| Comment 3 | Hopping mode |



Comment A: Limit: Marker Delta value >20 dB; Result: PASS
Date: 22.JUN.2011 16:25:09

FCC part 15.247
Band-edge compliance of RF conducted emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2402 MHz; 8DPSK |
| Comment 3 | Single frequency mode |

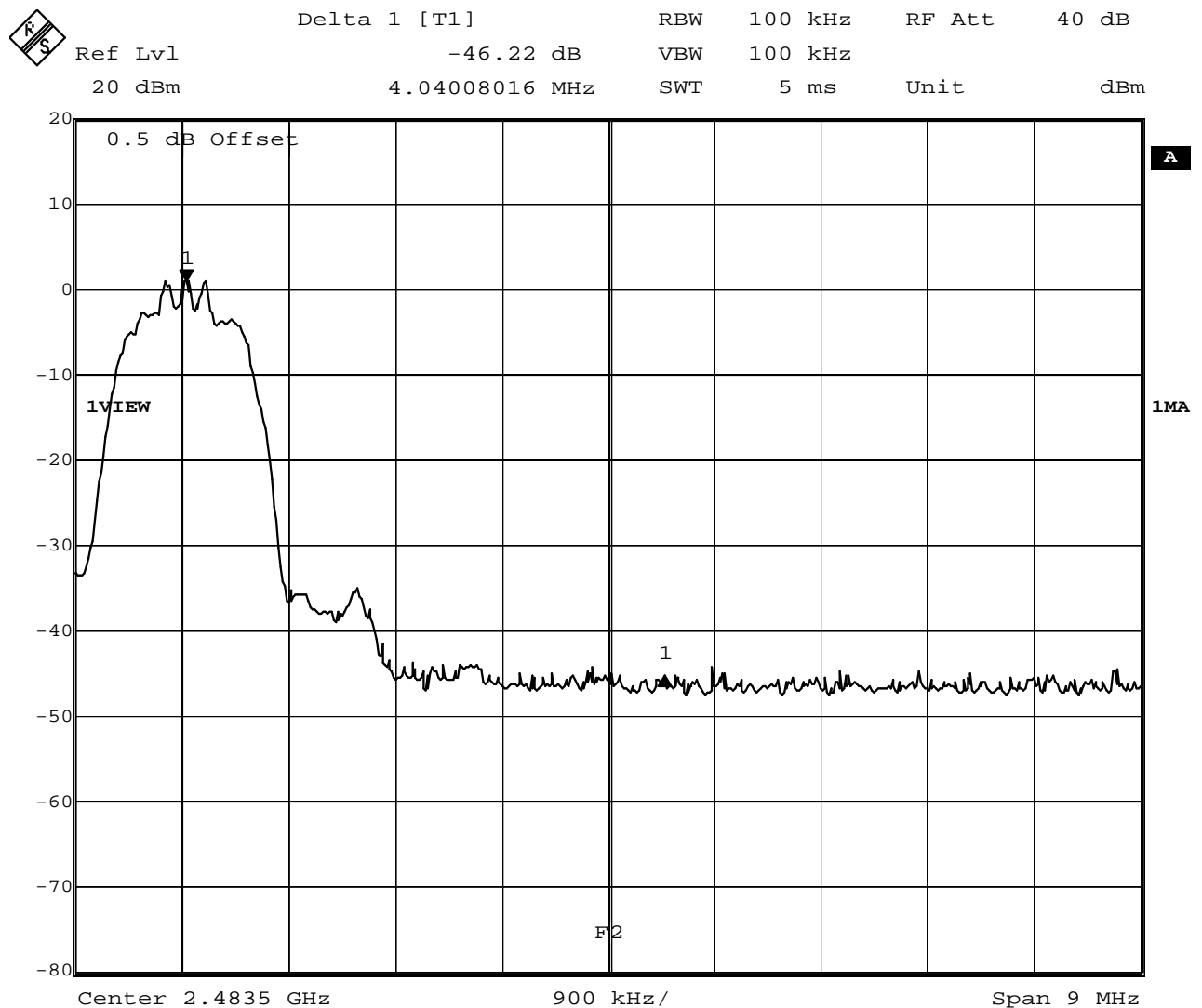


Comment A: Limit: Marker Delta value >20 dB; Result: PASS

Date: 22.JUN.2011 15:47:52

FCC part 15.247
Band-edge compliance of RF conducted emissions

| | |
|-----------------------|---|
| EUT | Bluetooth Speakerphone |
| Model | AT-650 |
| Approval Holder | Hughes Telematics, Inc. / Ord.: G0M-1105-1156 |
| Temperature / Voltage | tnom / 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 / 2480 MHz; 8DPSK |
| Comment 3 | Single frequency mode |



Date: 22.JUN.2011 15:41:32

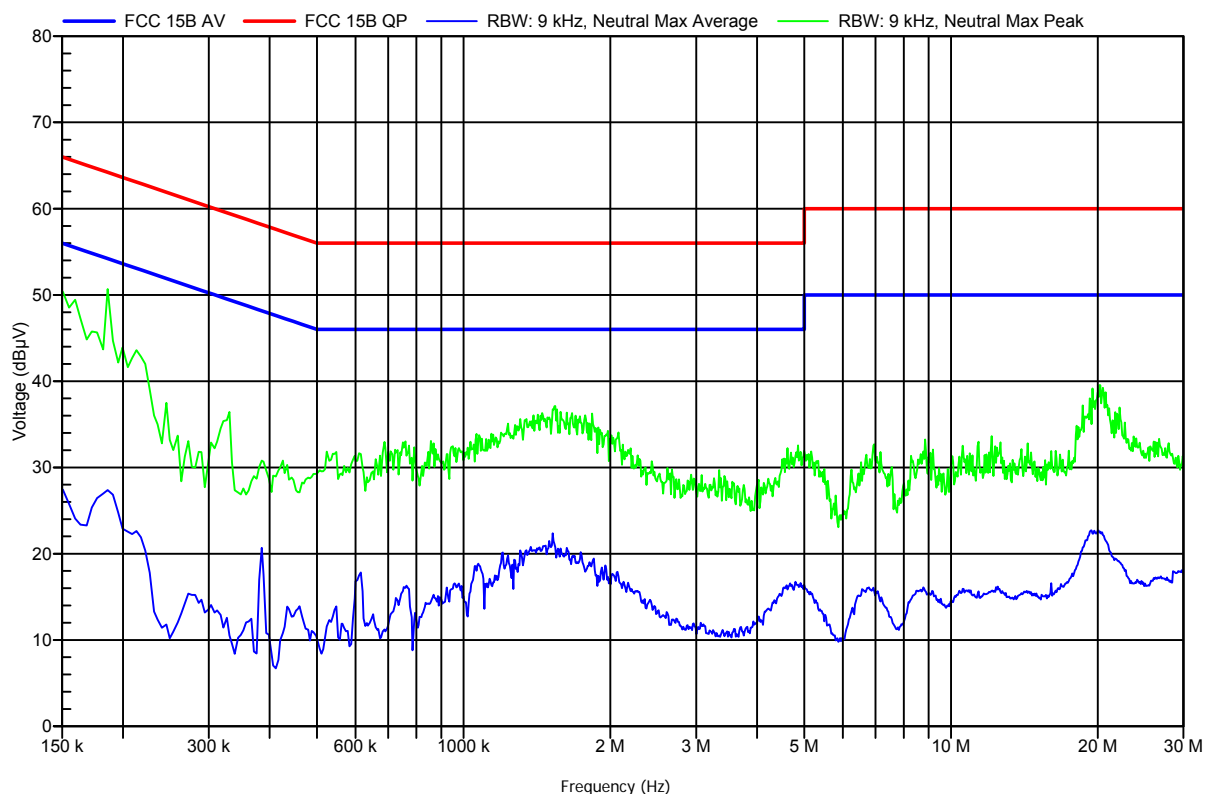
Annex I AC Power line Conducted Emissions

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

Order number: G0M-1105-1156

| | |
|------------------|---|
| Manufacturer: | Hughes Telematics, Inc. |
| EUT Name: | Bluetooth Speakerphone |
| Model: | AT-650 |
| Test Site: | Eurofins Product Service GmbH |
| Operator: | Mr. Klein |
| Test Conditions: | Tnom: 23°C, Unom: 5VDC (USB via Notebook powered with 120VAC) |
| LISN: | ESH2-Z5 N |
| Mode: | charging + BT link |
| Test Date: | 29.06.2011 |
| Note: | |

Index 6

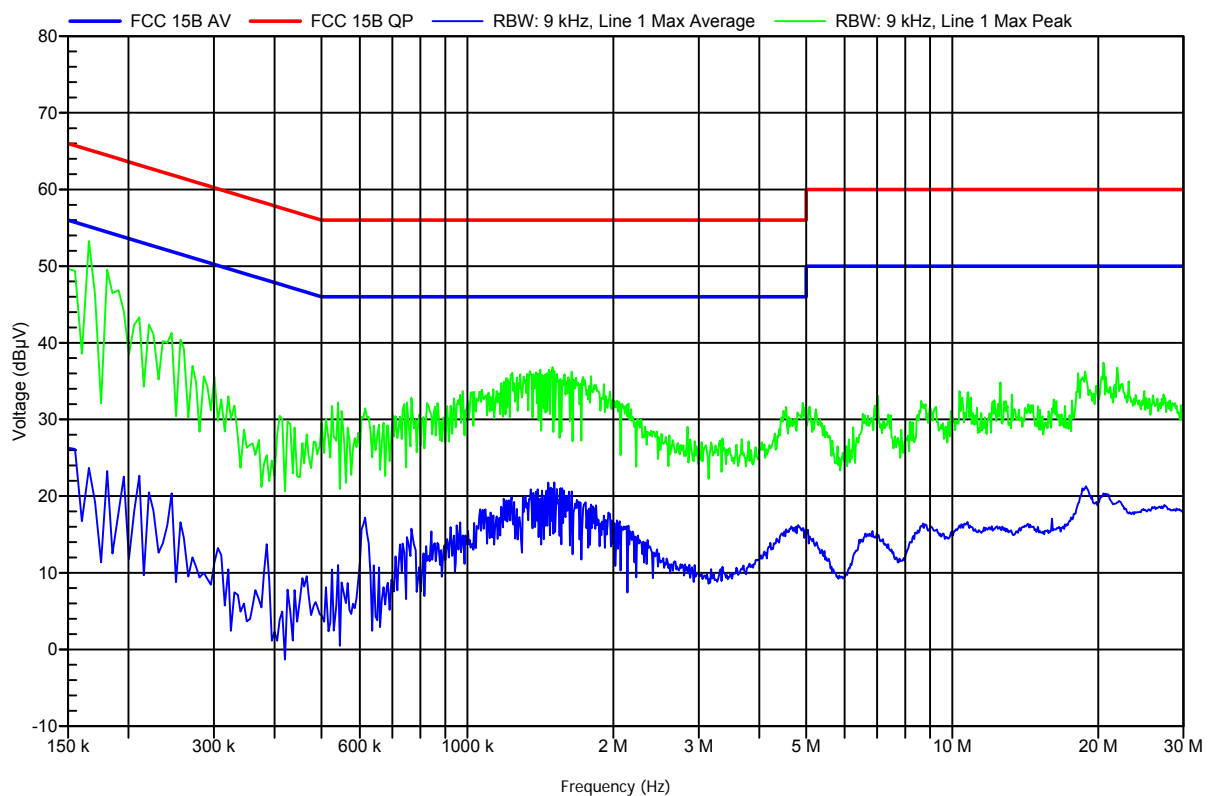


EMI voltage test in the ac-mains according to FCC Part 15b

Order number: G0M-1105-1156

Manufacturer: Hughes Telematics, Inc.
 EUT Name: Bluetooth Speakerphone
 Model: AT-650
 Test Site: Eurofins Product Service GmbH
 Operator: Mr. Klein
 Test Conditions: Tnom: 23°C, Unom: 5VDC (USB via Notebook powered with 120VAC)
 LISN: ESH2-Z5 L
 Mode: charging + BT link
 Test Date: 29.06.2011
 Note:

Index 7

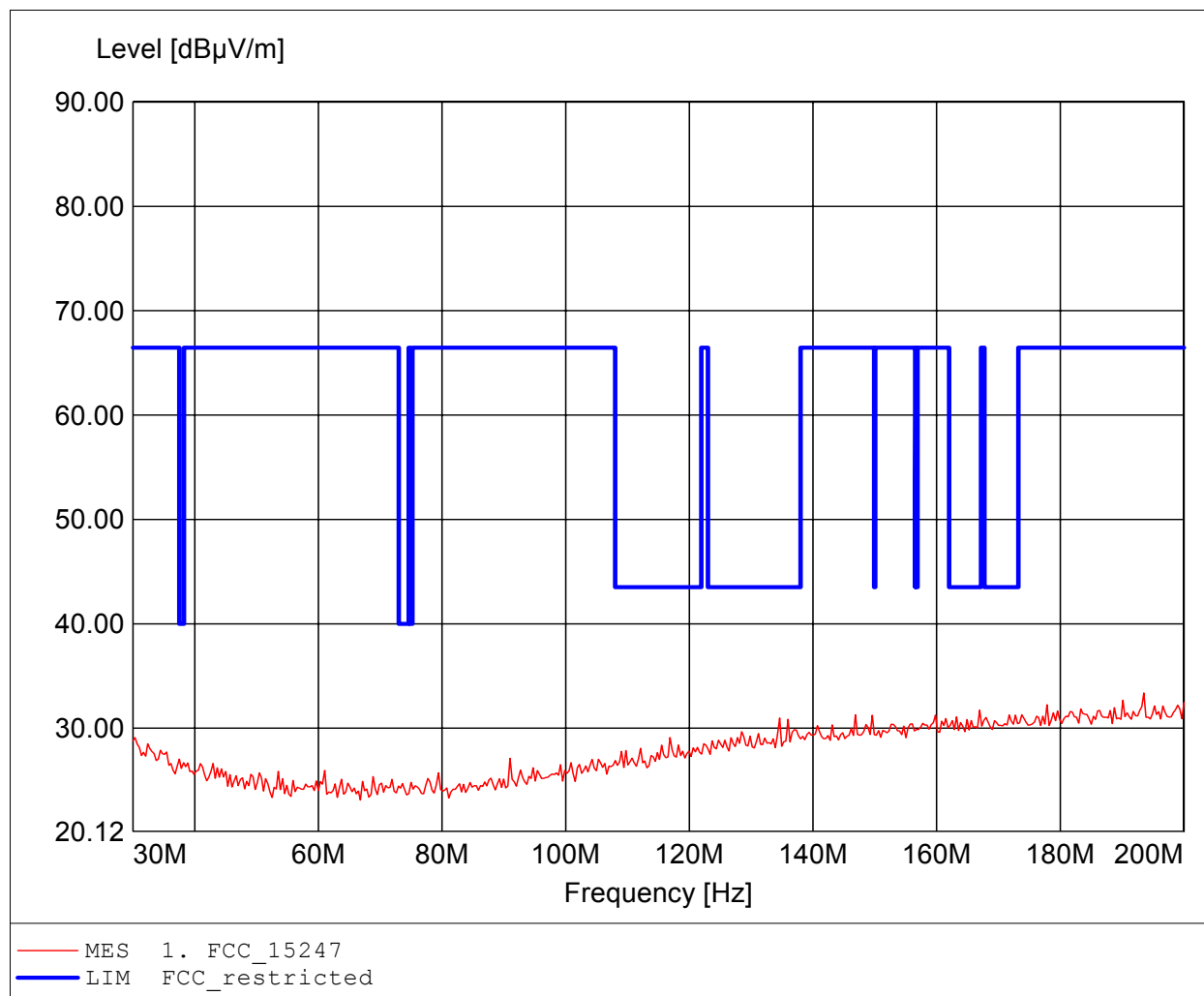


Annex J Transmitter radiated spurious emissions

Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq: 193.527MHz, Emax: 33.38dBµV/m, RBW: 100kHz



FCC RULES PART 15, SUBPART C

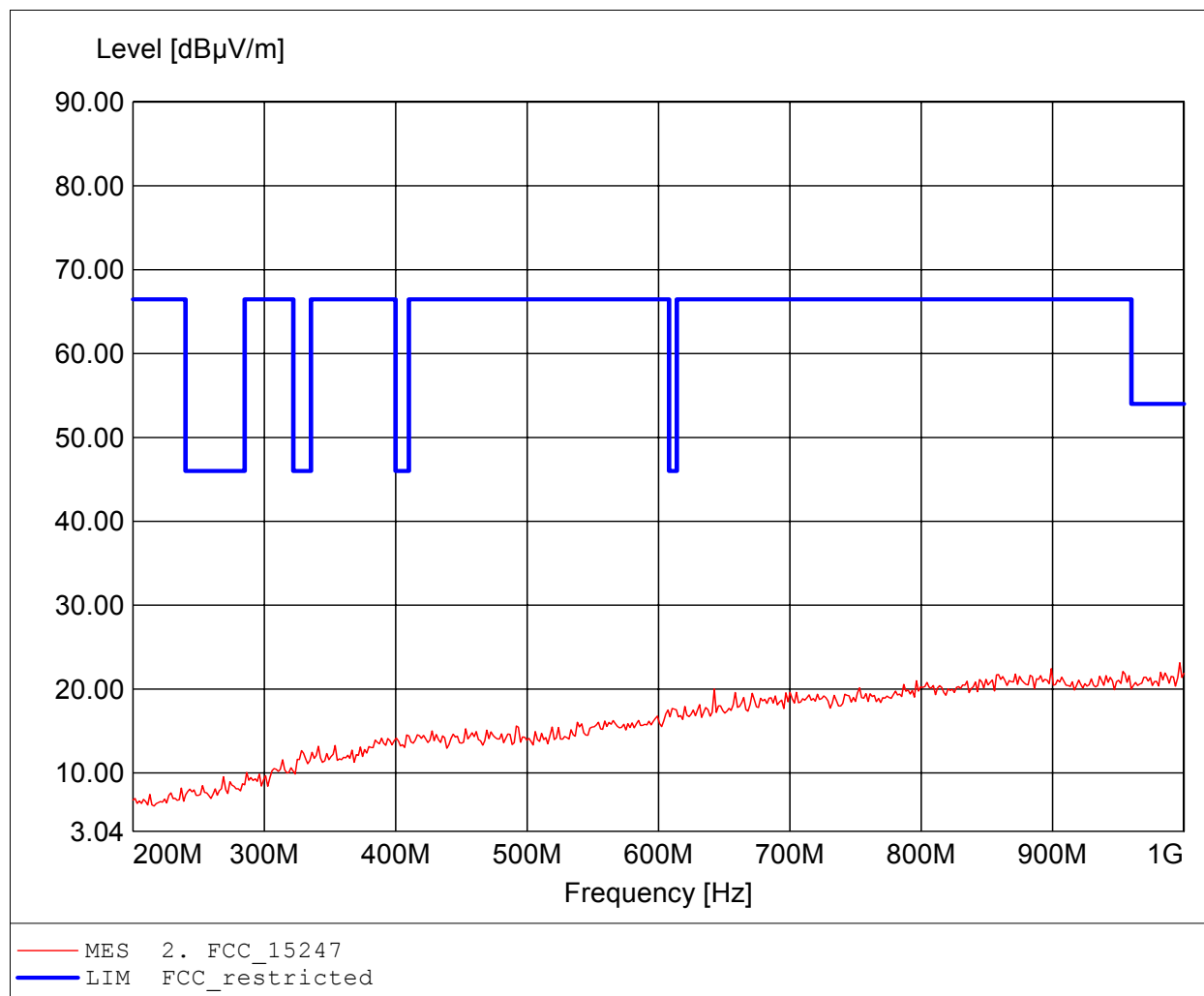
— MES 1. FCC_15247
— LIM FCC_restricted



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

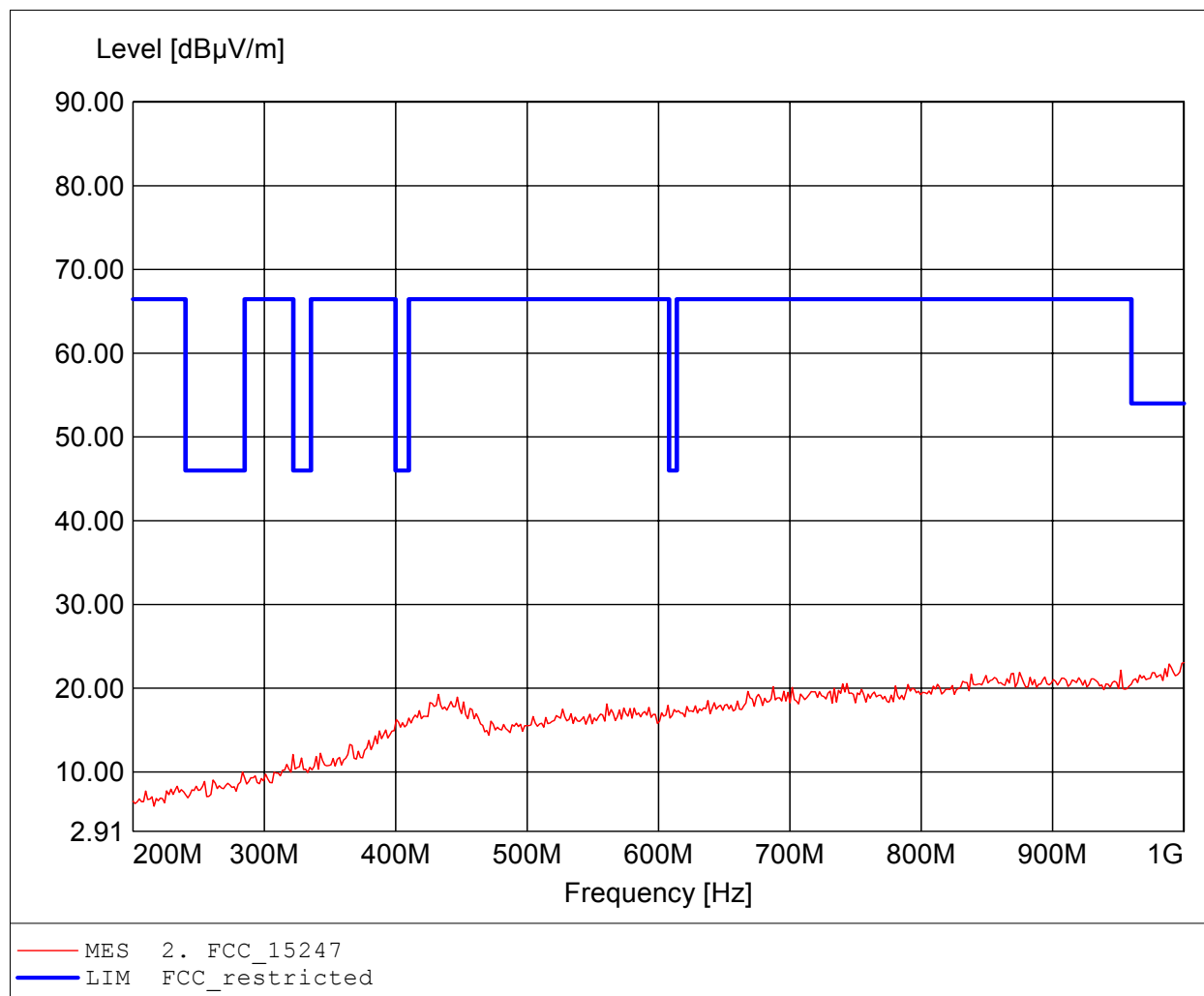
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Comment 2: Freq: 996.794MHz, Emax: 23.13dBµV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

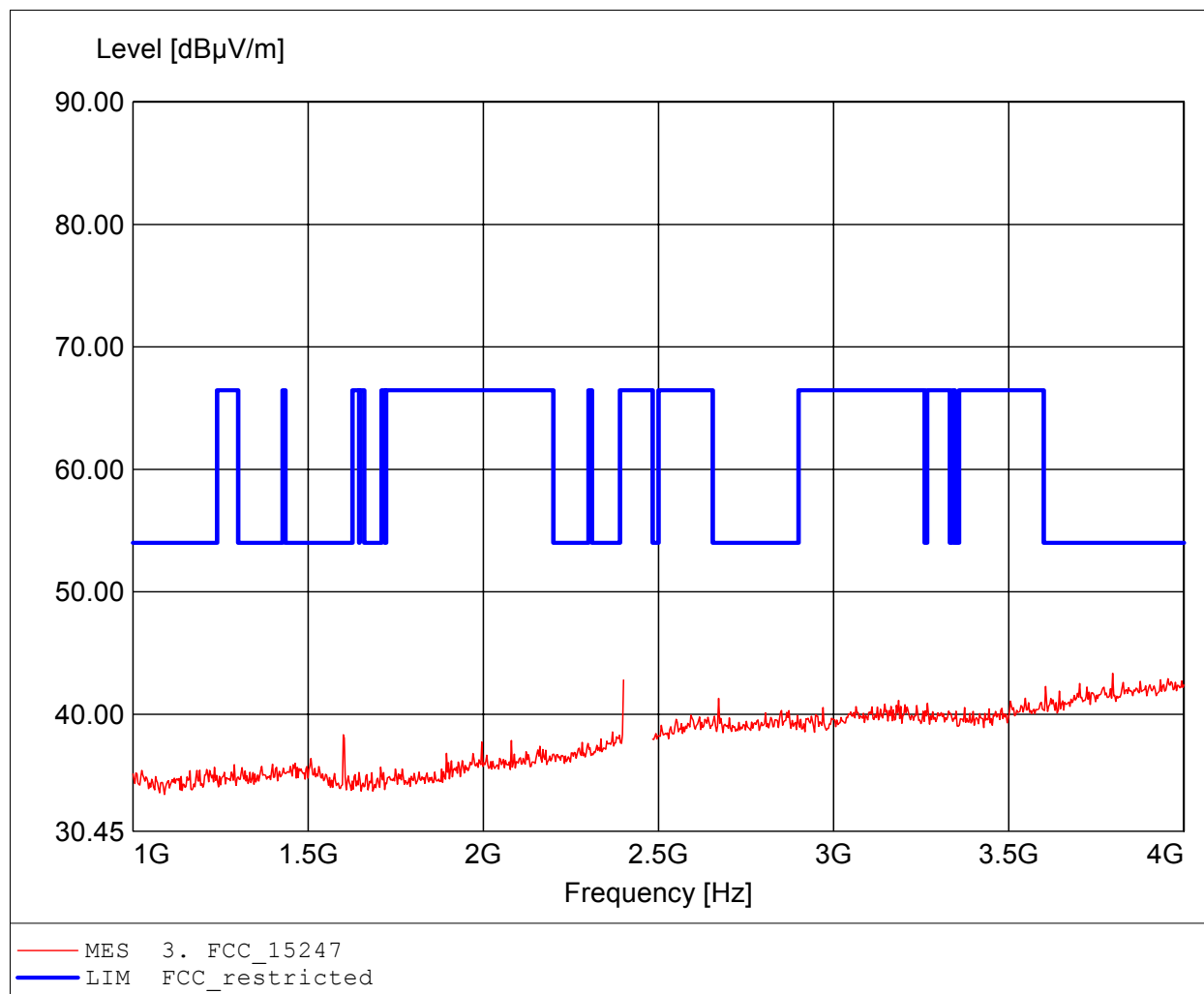
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247
Comment 1: Dist.: 3m, Ant.: HL 223, amplif.
Comment 2: Freq: 1.000GHz, Emax: 23.05dBuV/m, RBW: 100kHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

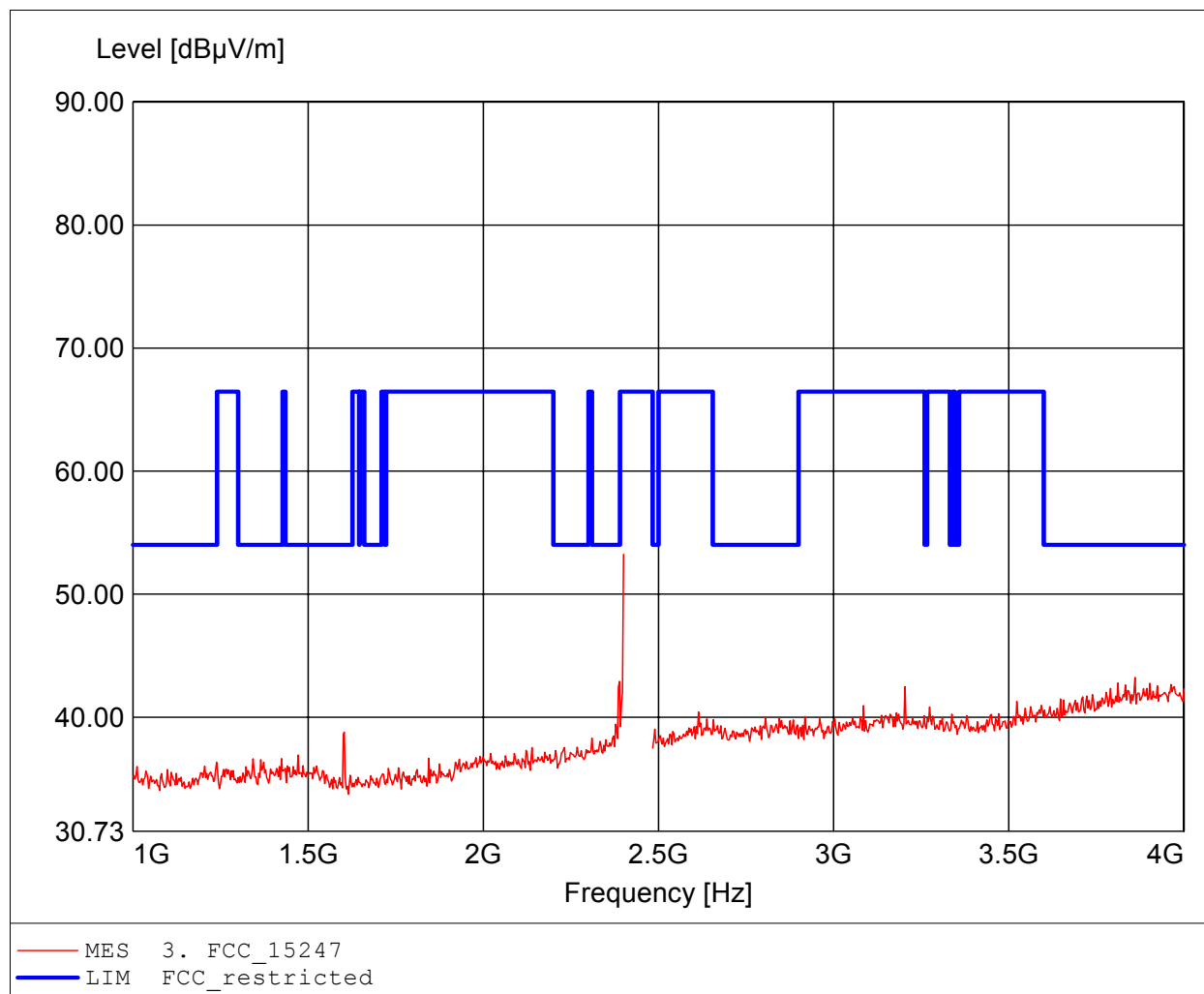
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.796GHz, Emax: 43.36dBuV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

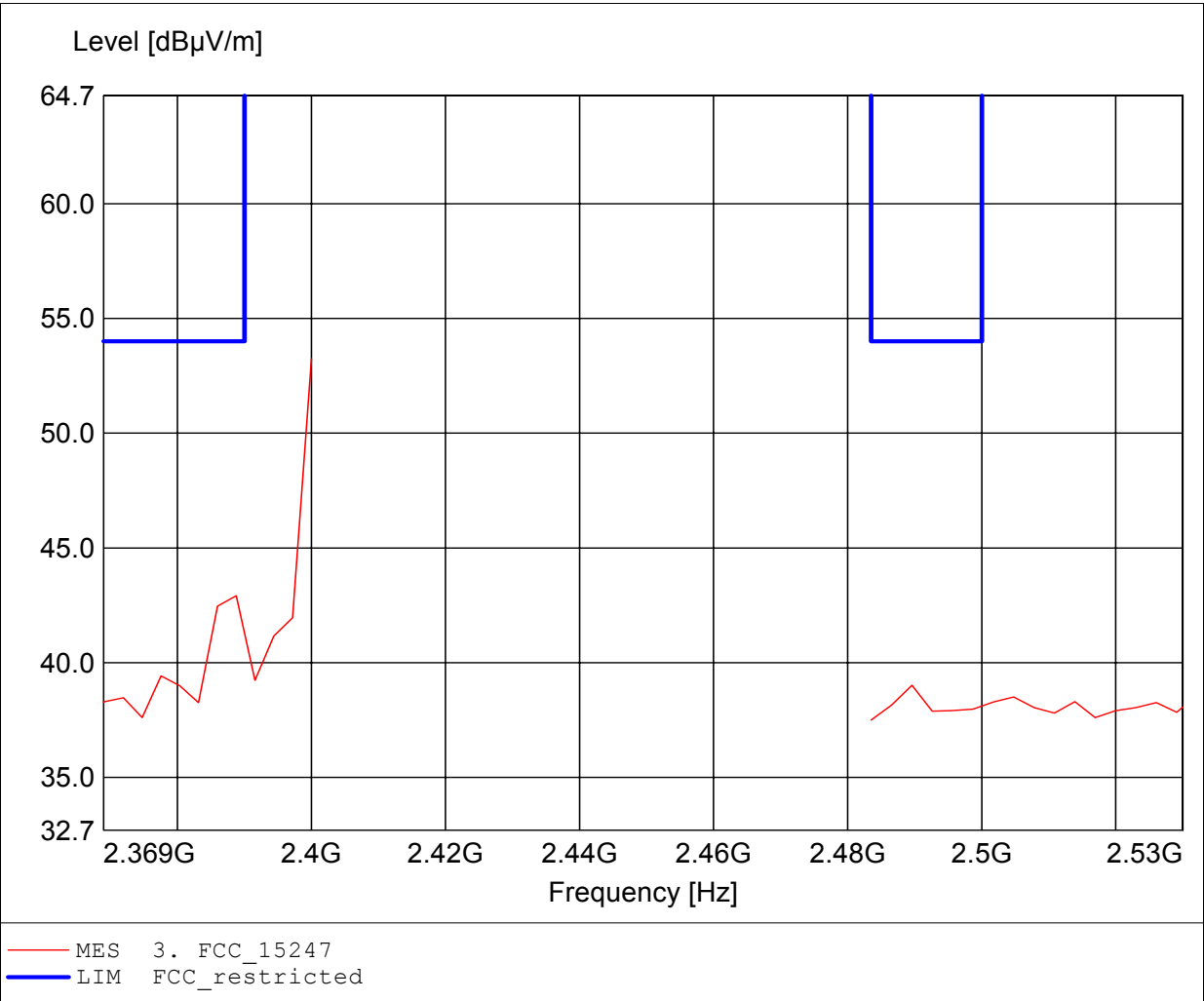
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 2.400GHz, Emax: 53.24dBuV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

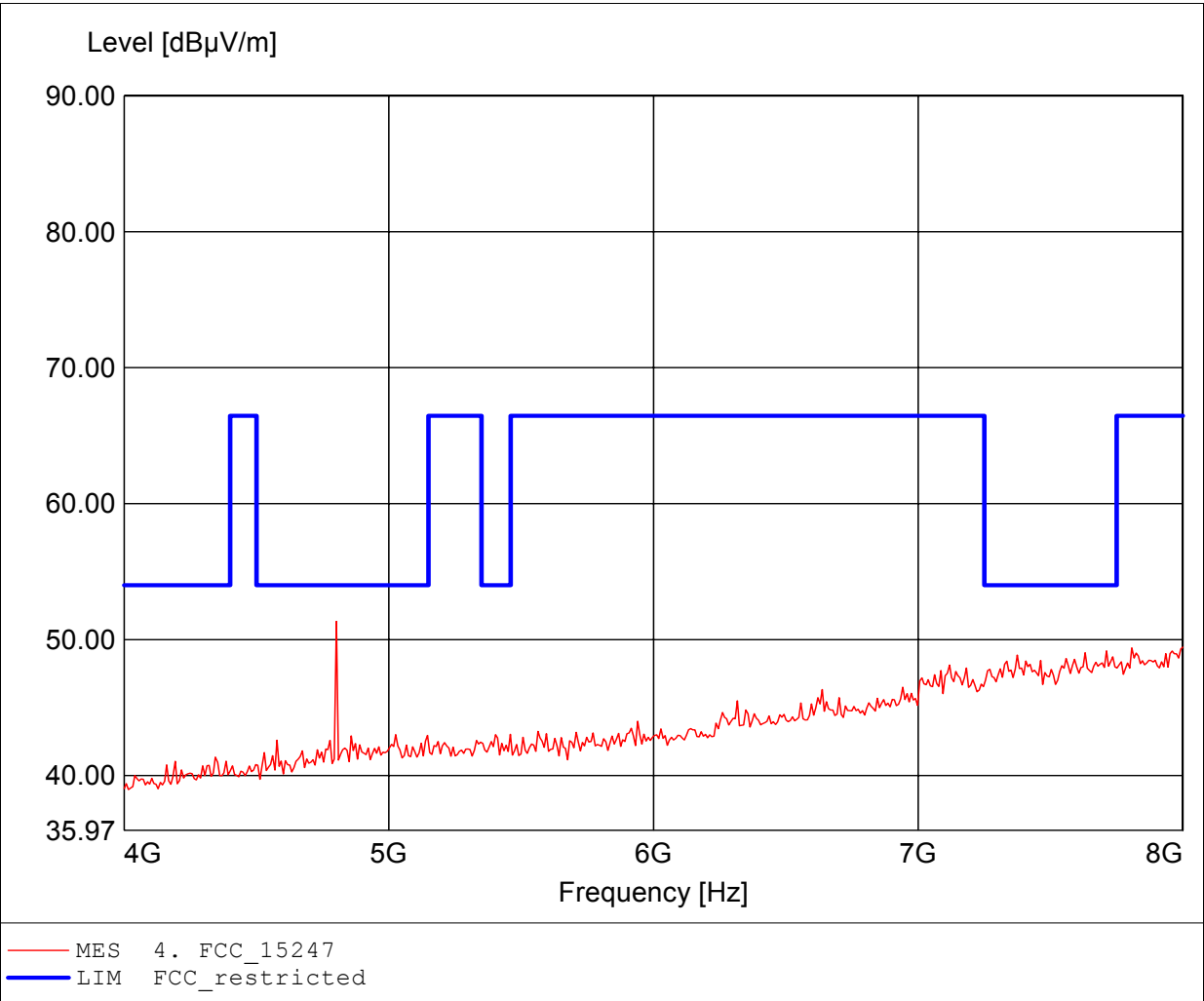
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 2.400GHz, Emax: 53.24dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

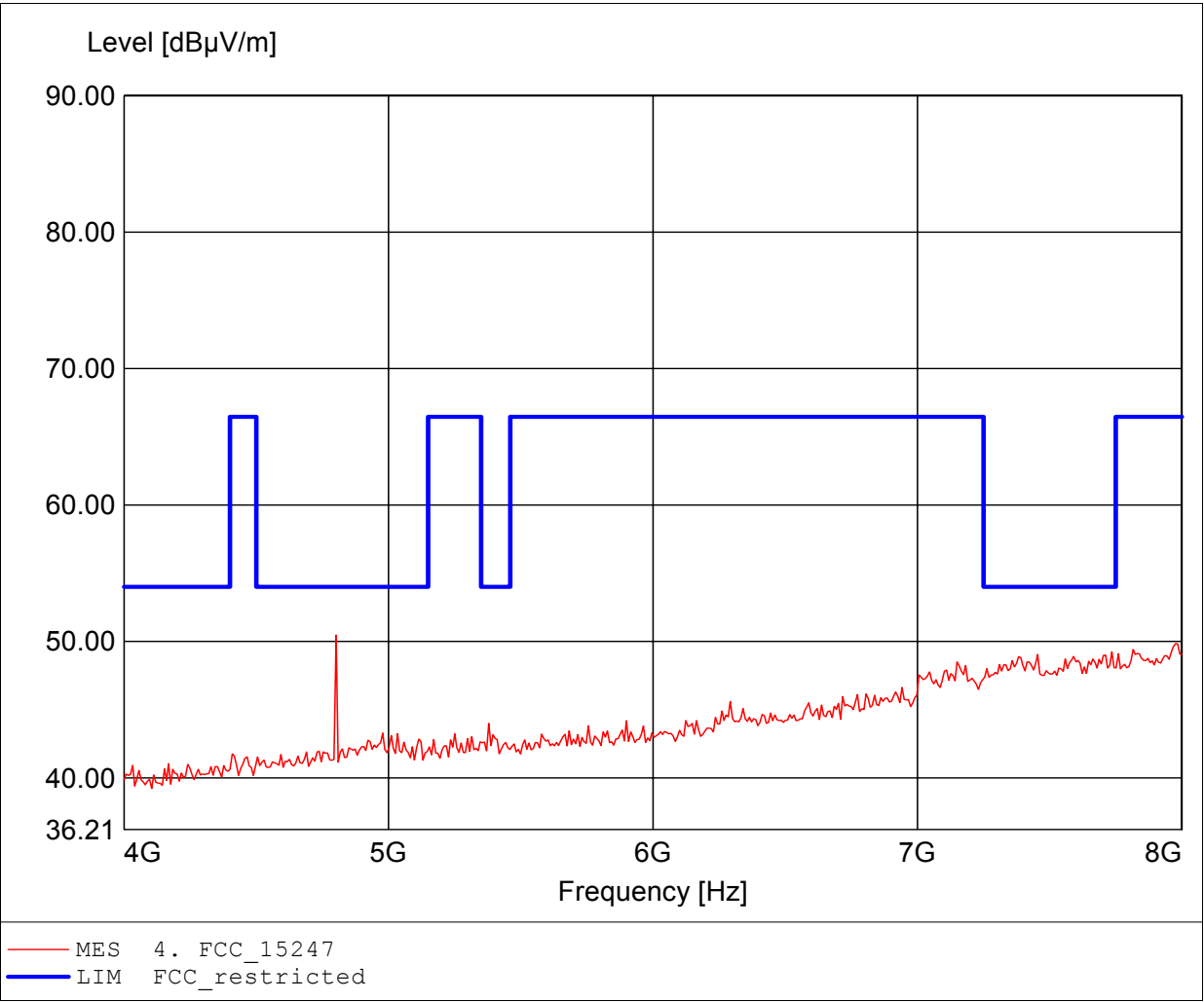
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 4.802GHz, Emax: 51.34dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

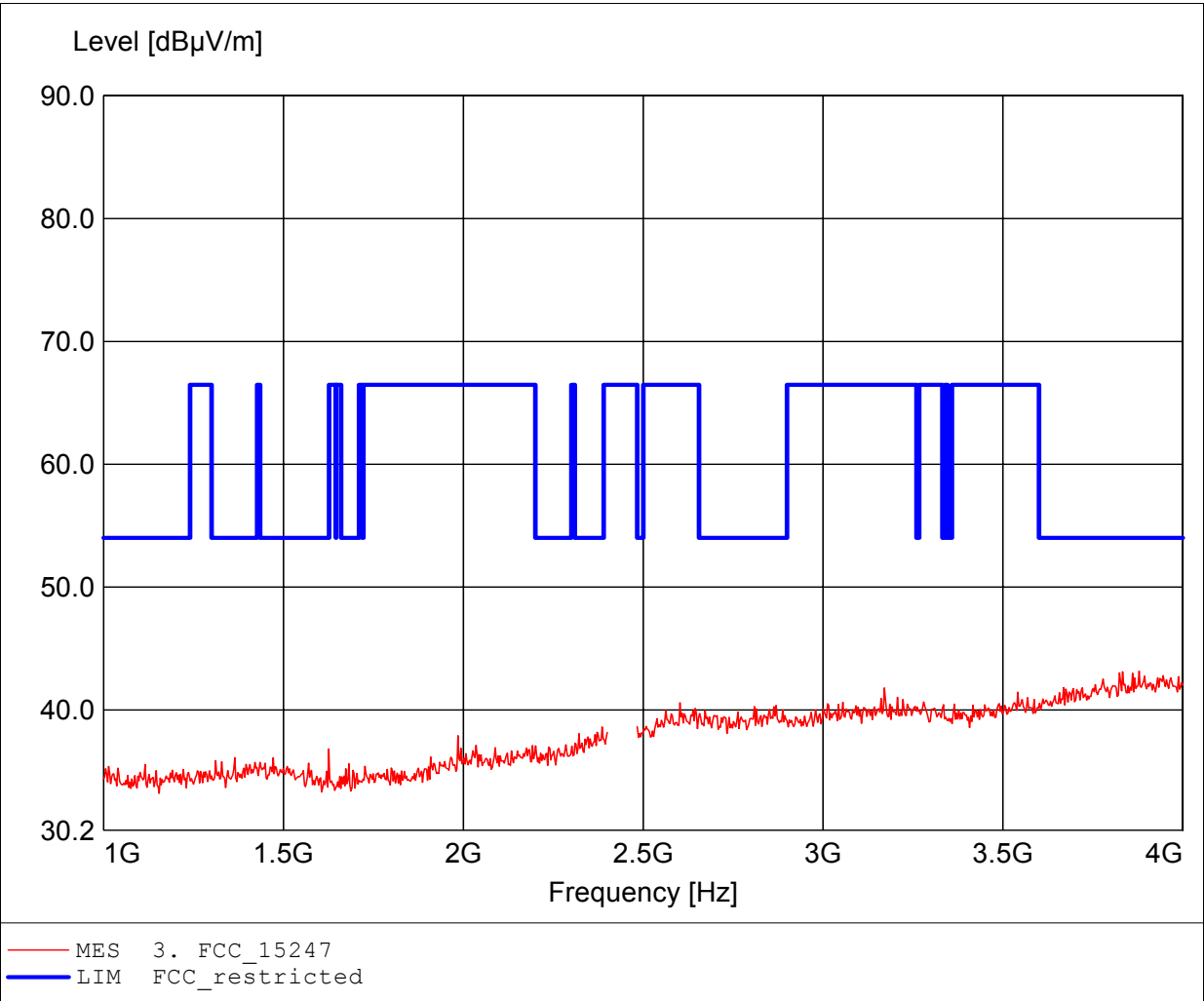
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 4.802GHz, Emax: 50.46dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

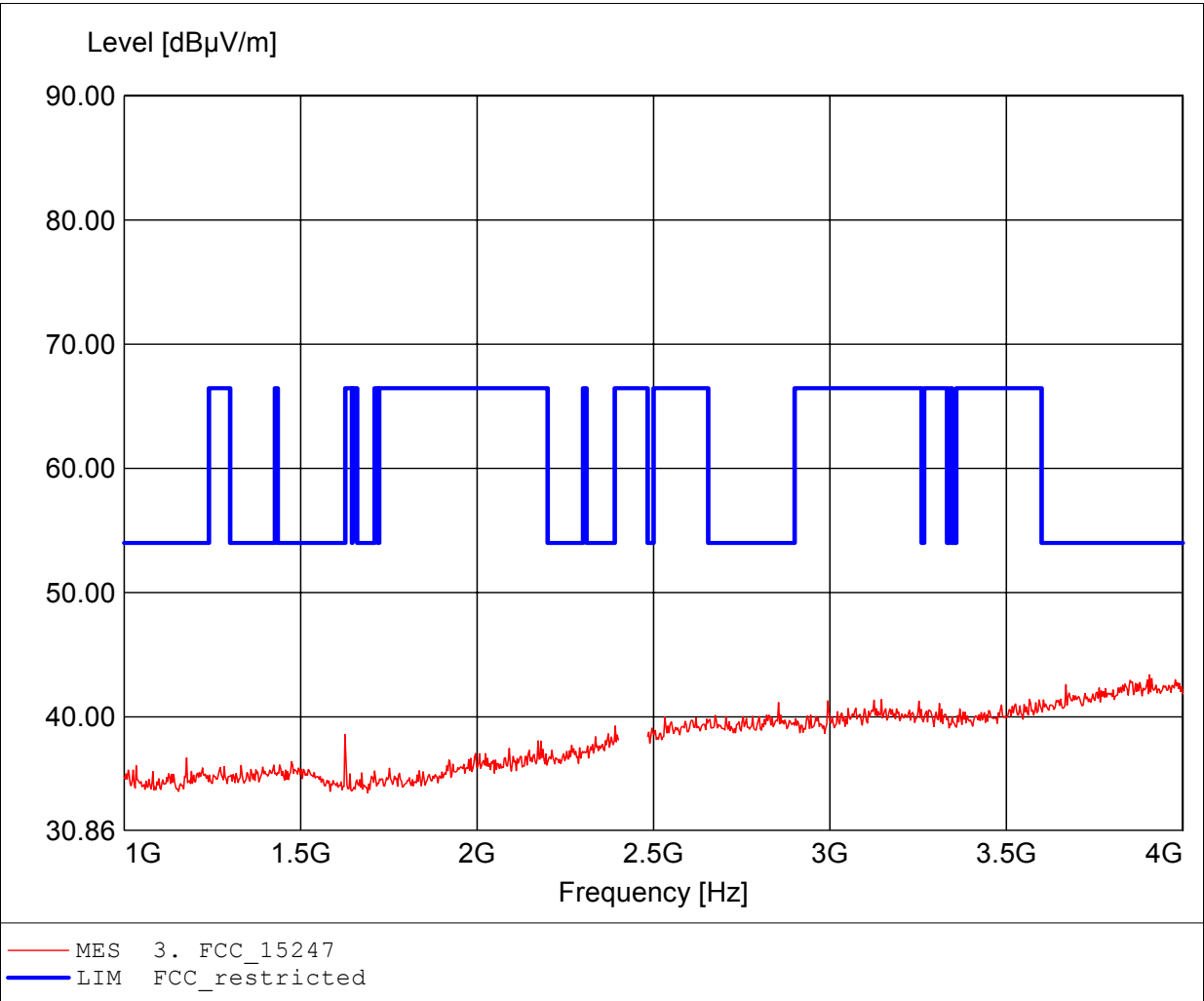
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.878GHz, Emax: 43.15dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

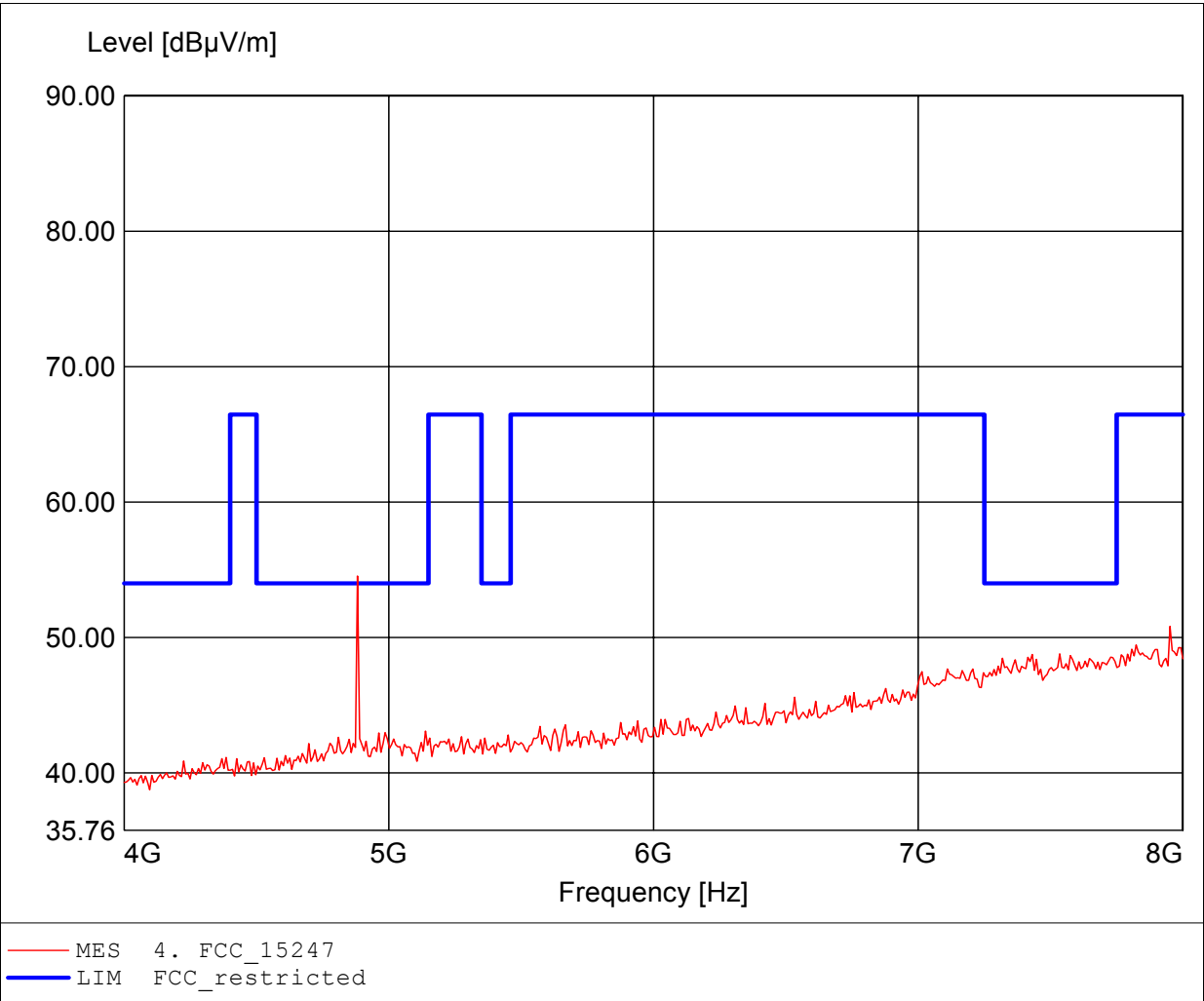
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.906GHz, Emax: 43.39dBuV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

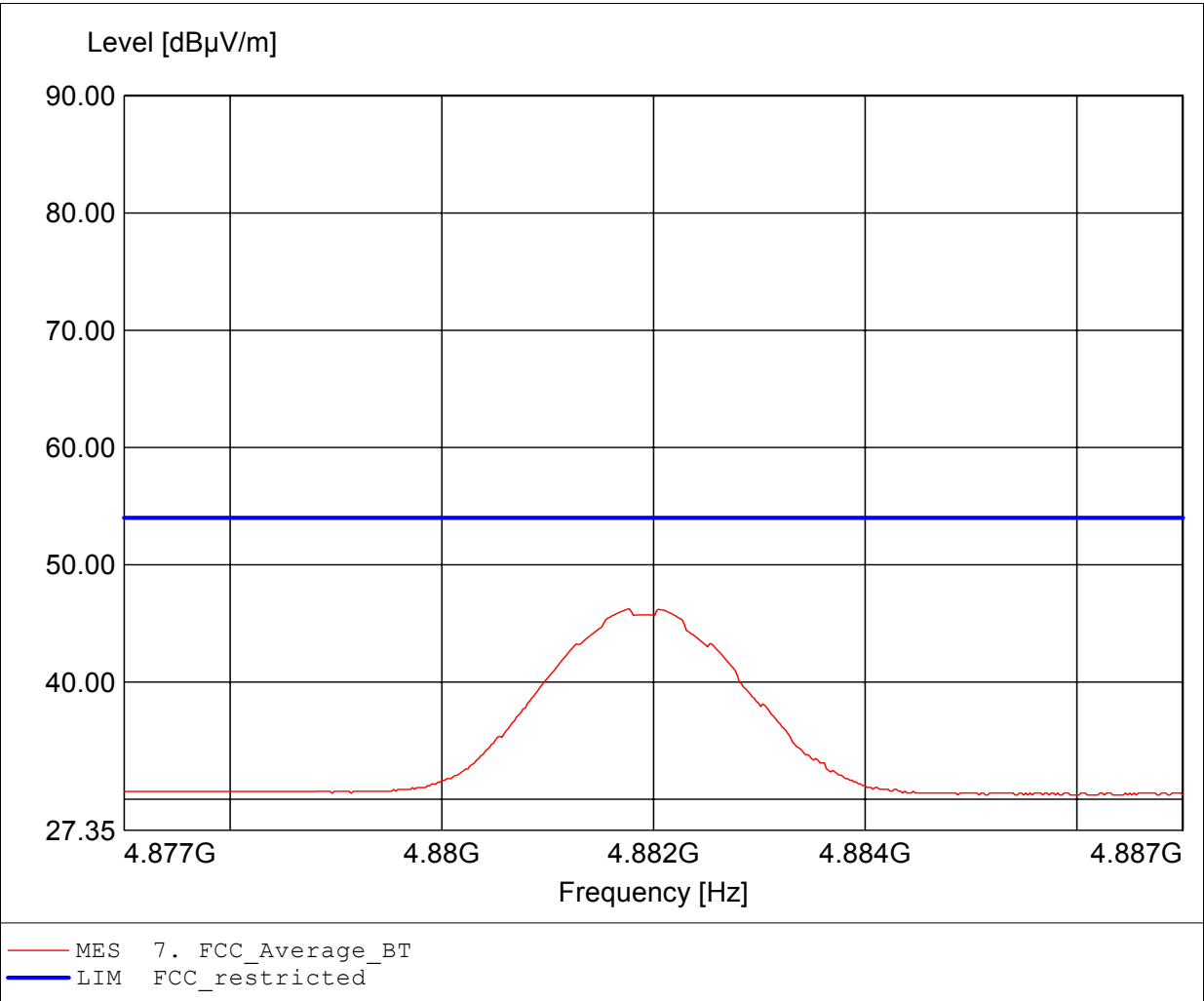
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 4.882GHz, Emax: 54.54dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

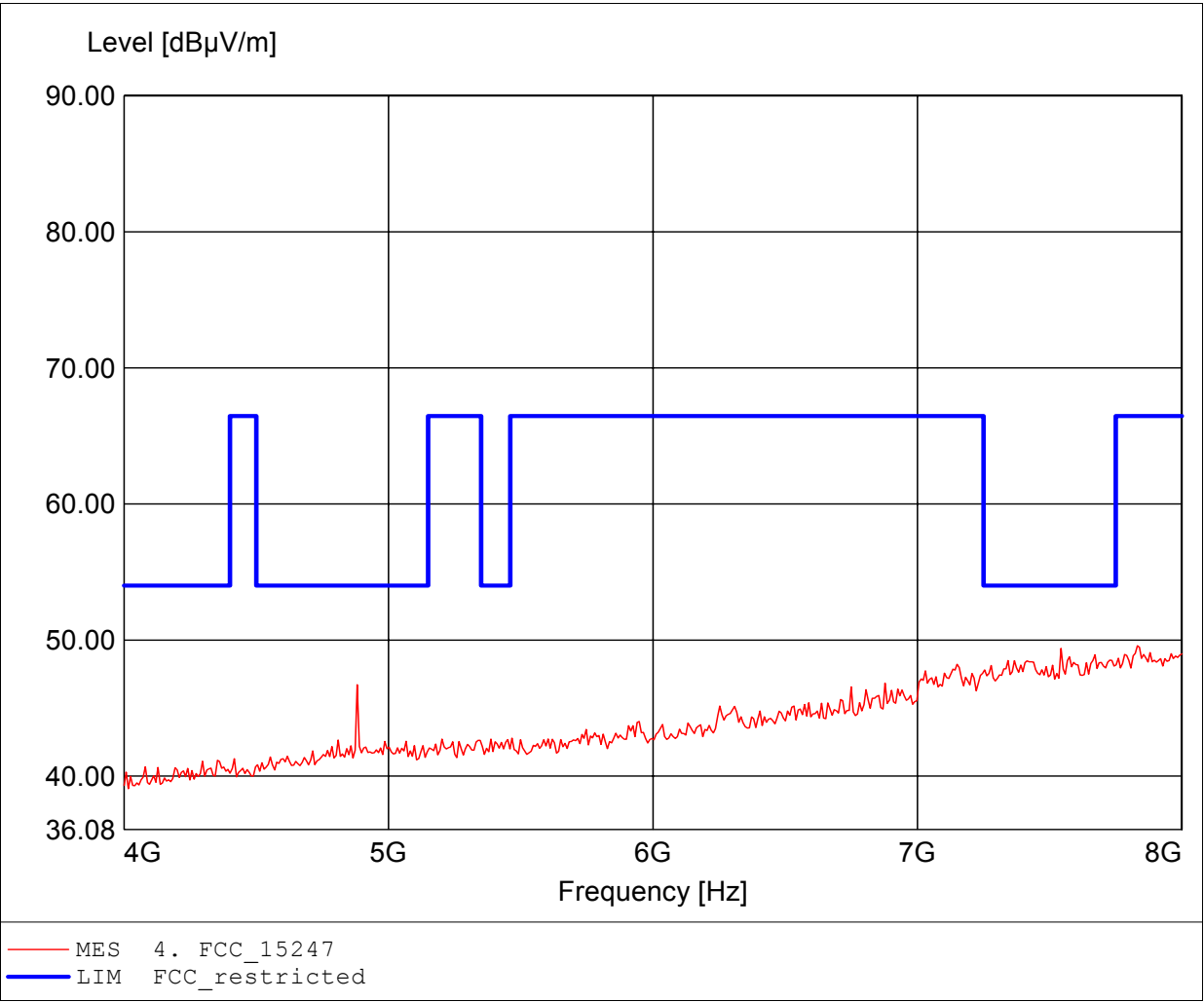
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, average detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 4.882GHz, Emax: 46.24dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

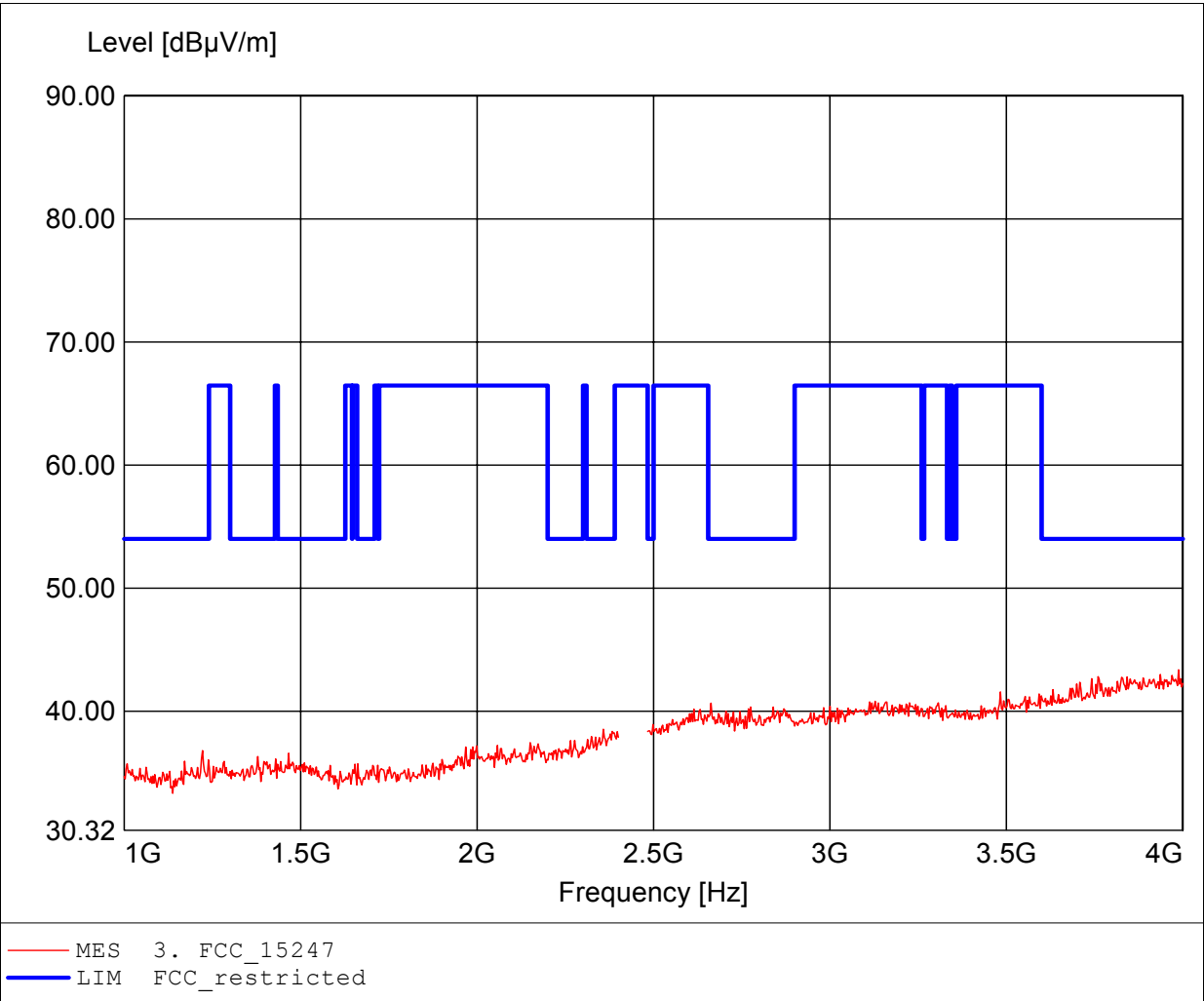
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 7.832GHz, Emax: 49.59dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

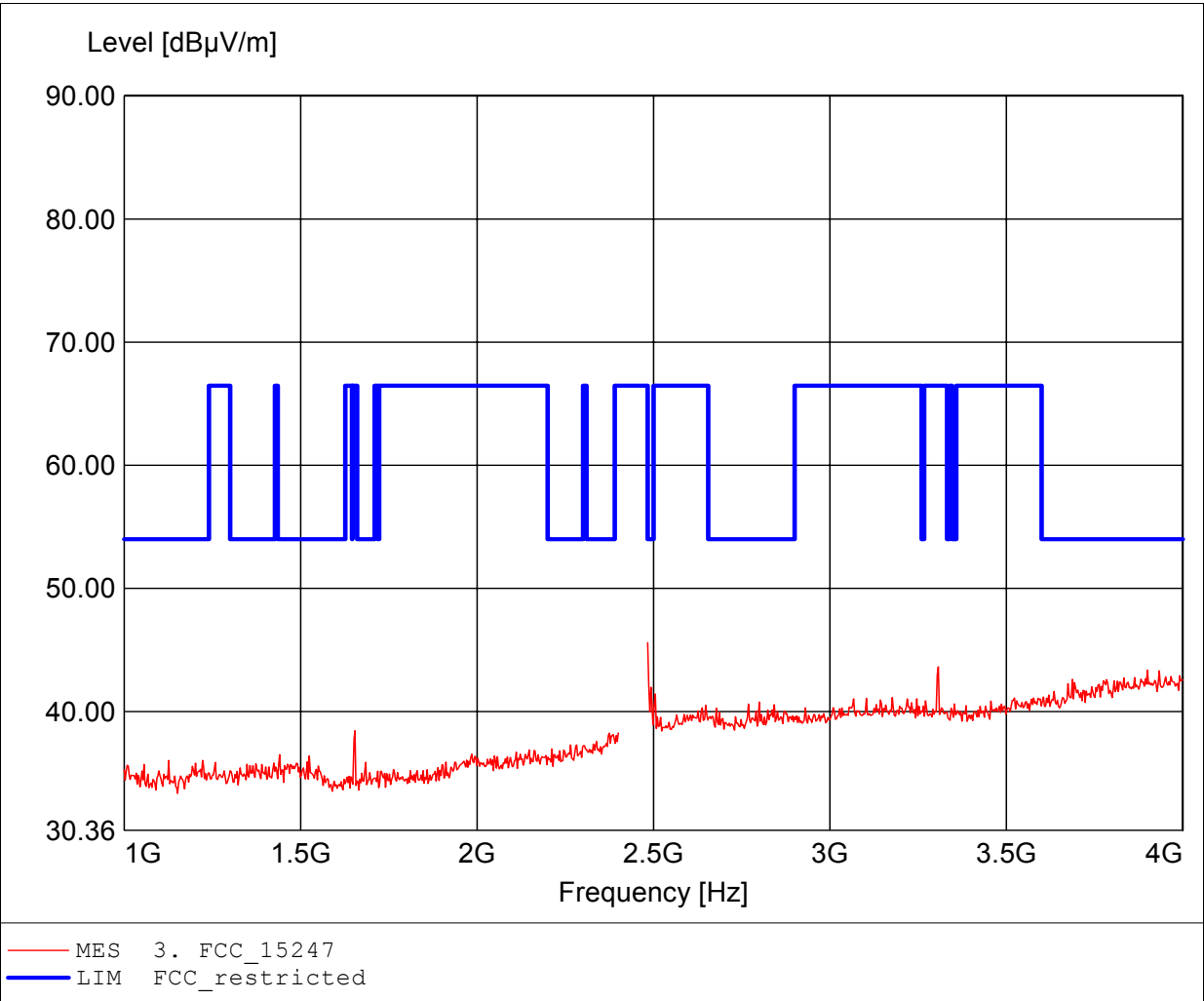
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.988GHz, Emax: 43.37dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

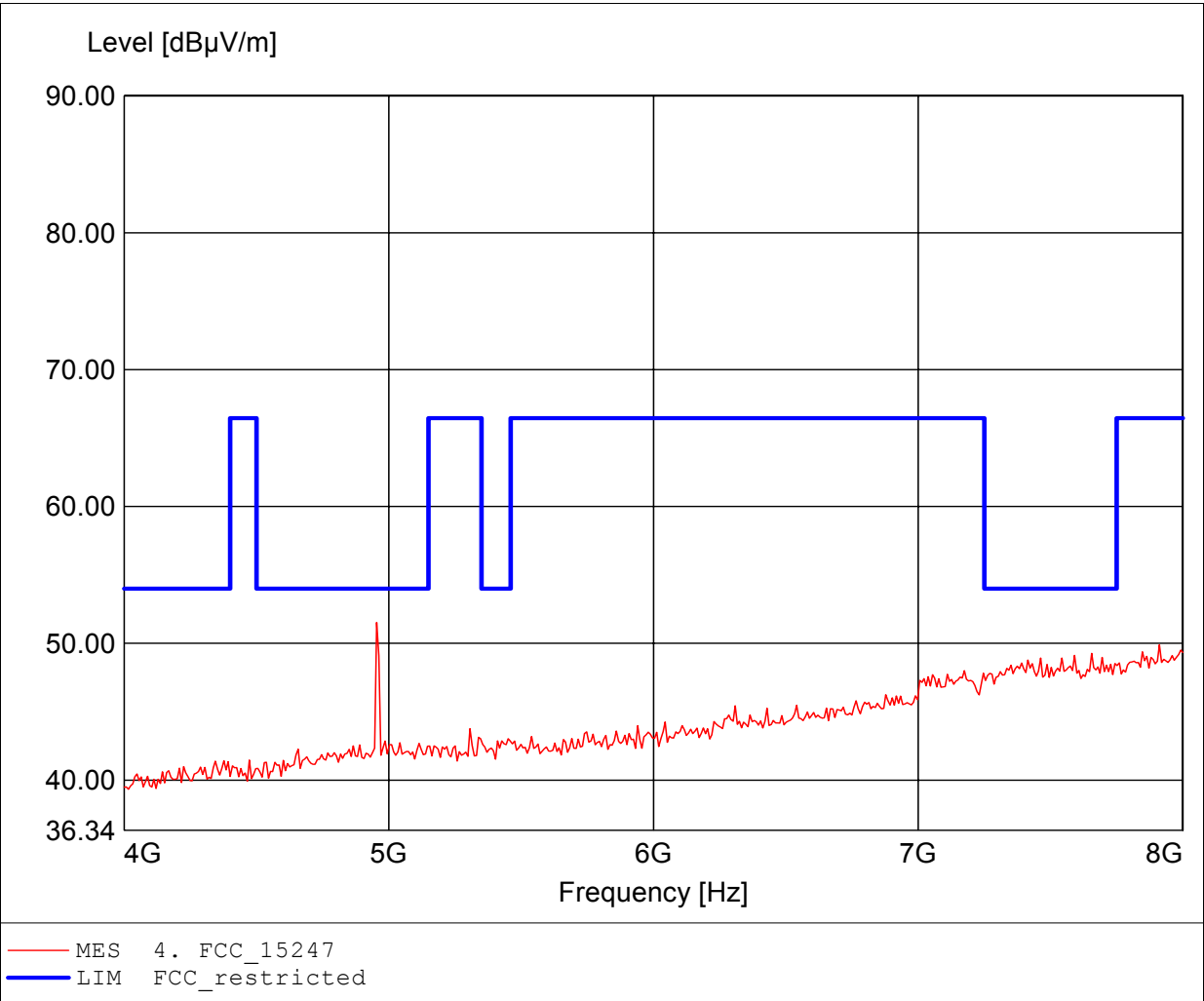
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 2.484GHz, Emax: 45.60dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

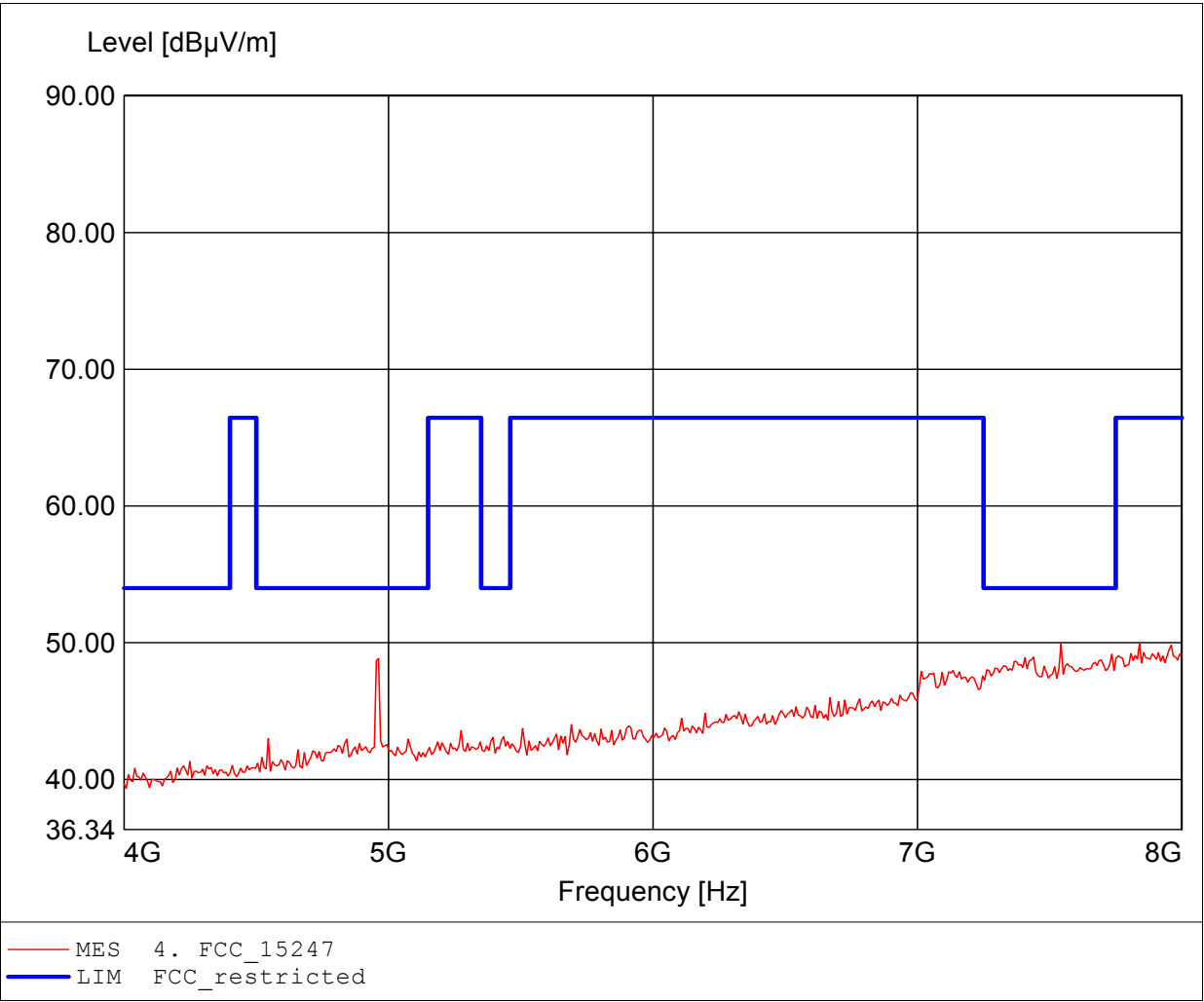
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 4.954GHz, Emax: 51.52dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

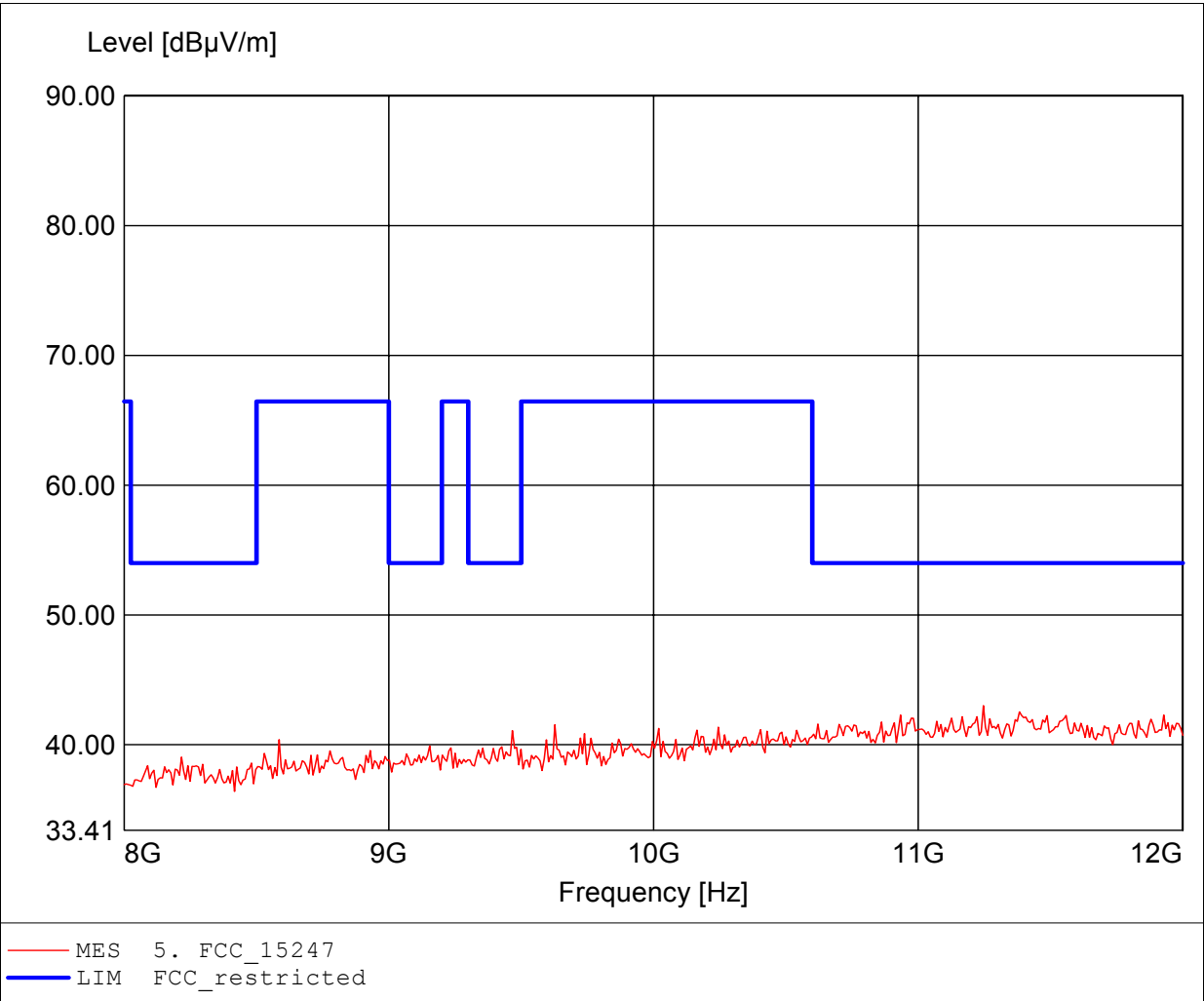
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 7.840GHz, Emax: 49.91dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

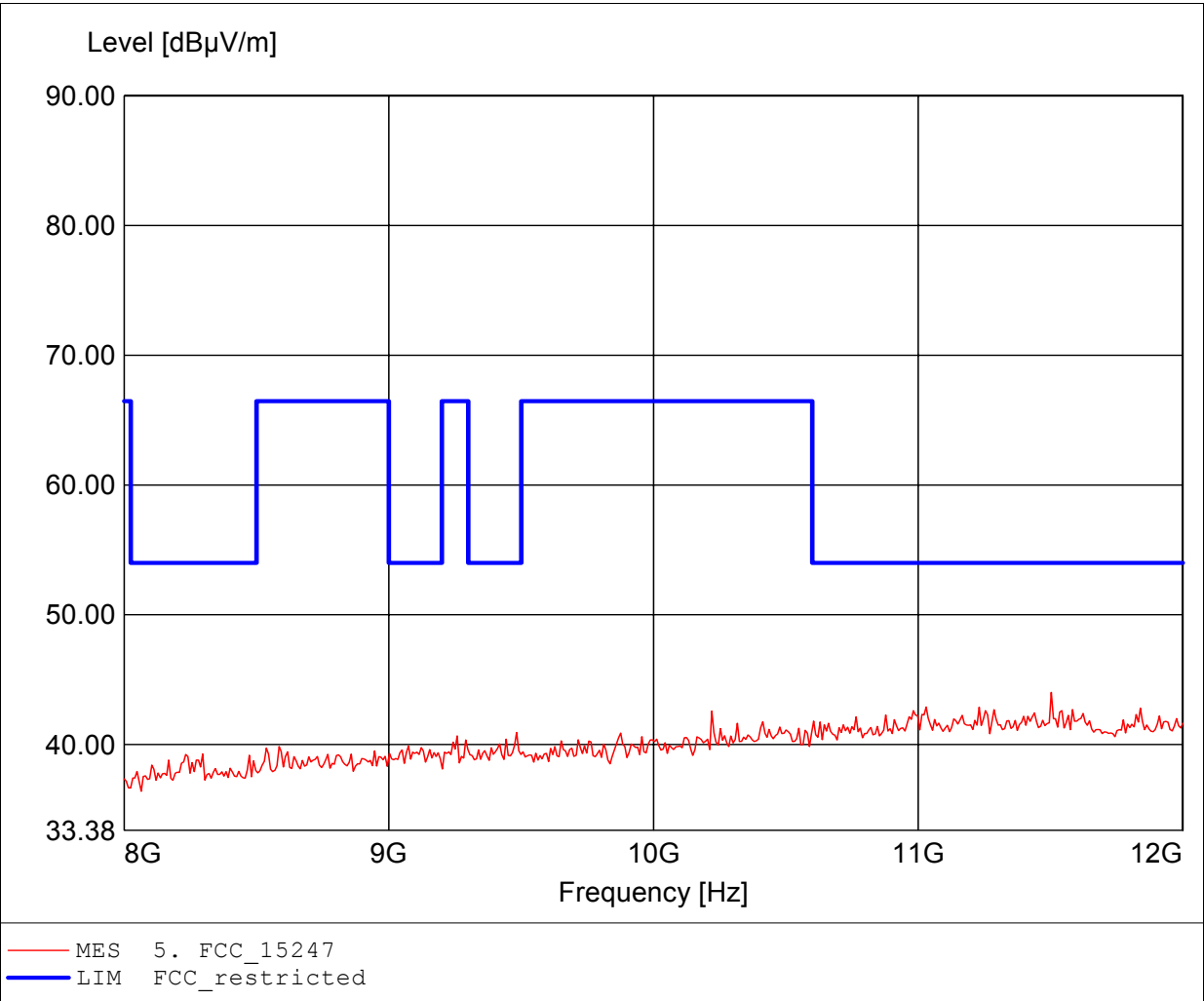
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 11.246GHz, Emax: 43.02dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

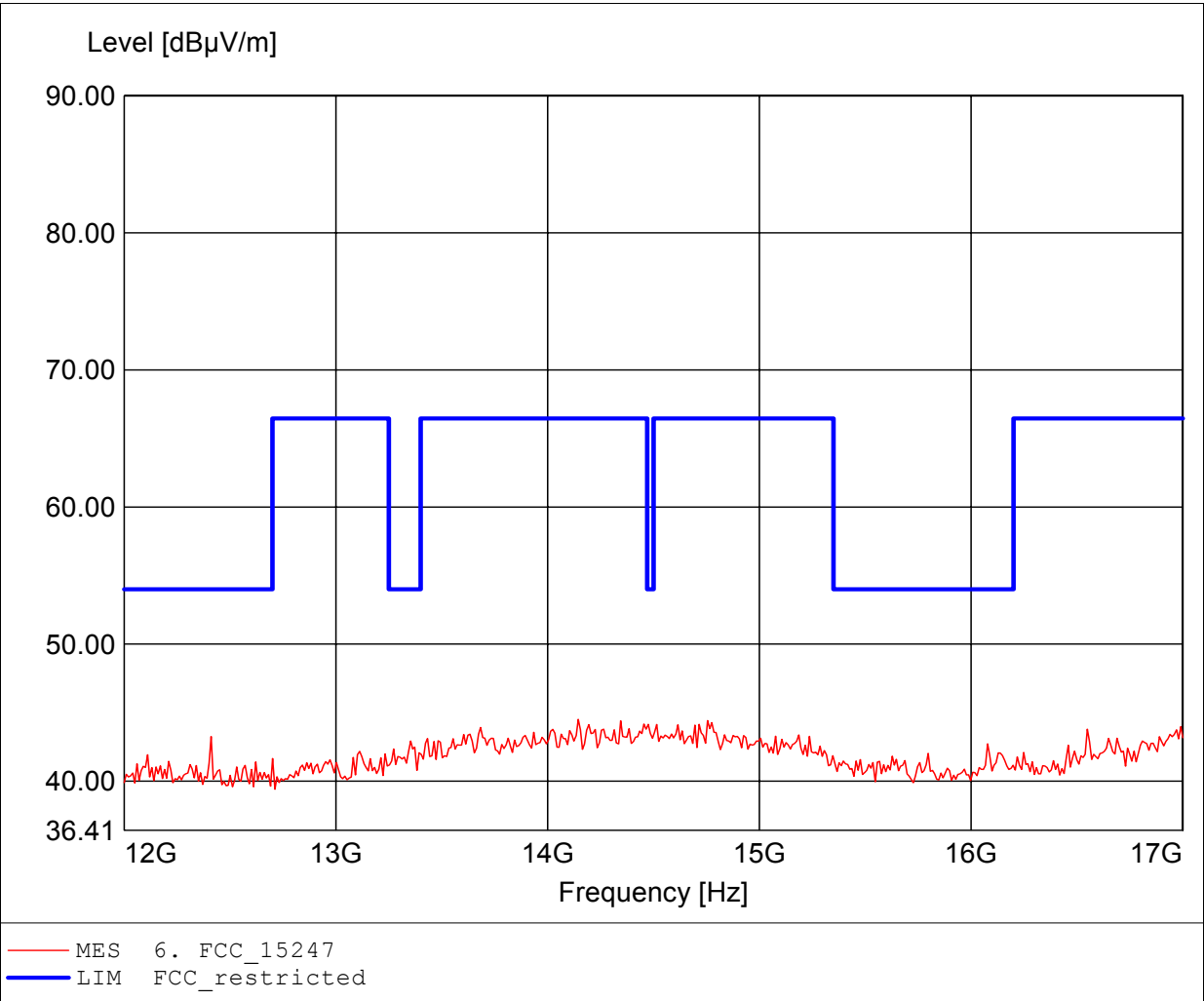
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 11.503GHz, Emax: 44.01dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

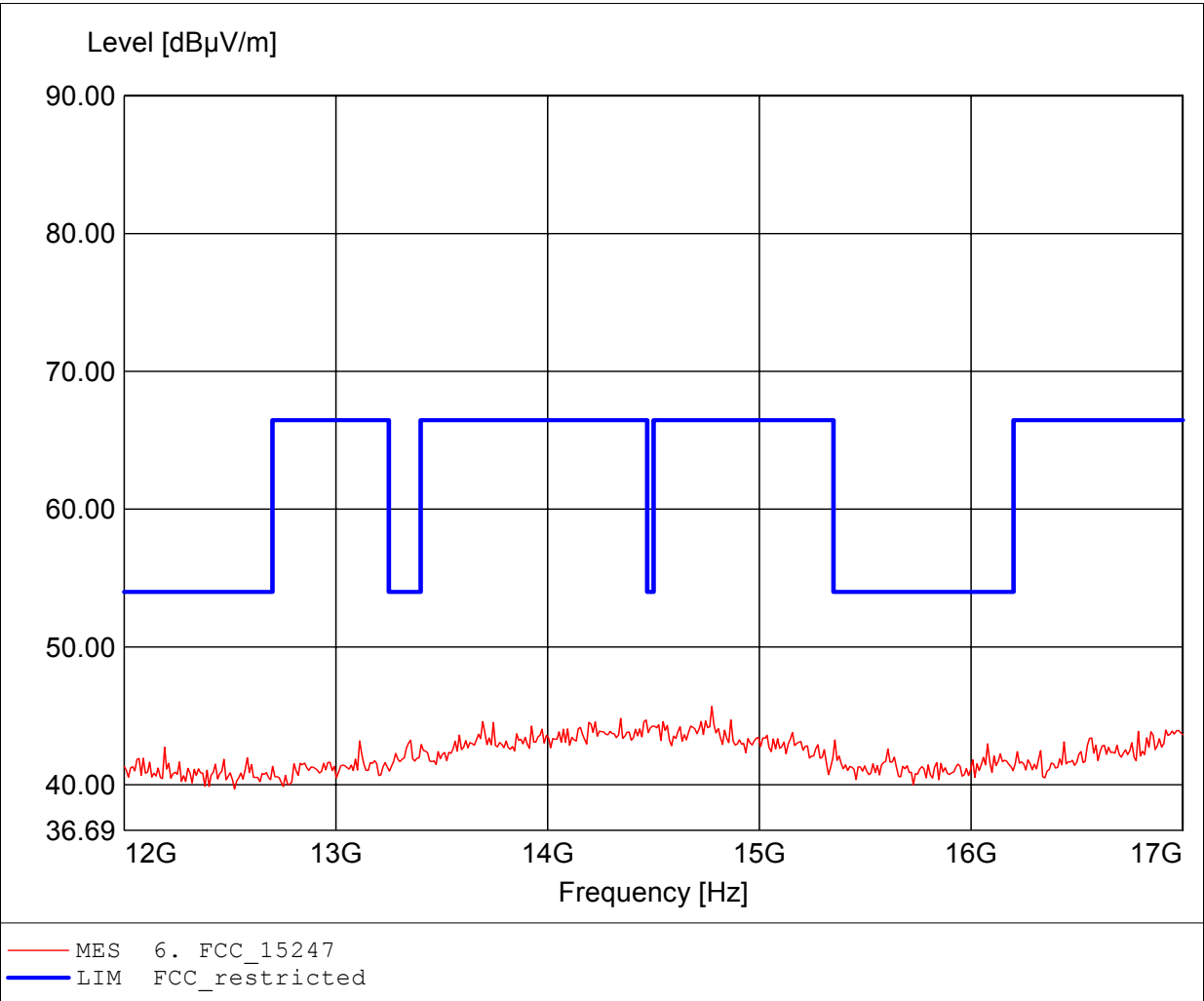
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 14.144GHz, Emax: 44.50dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

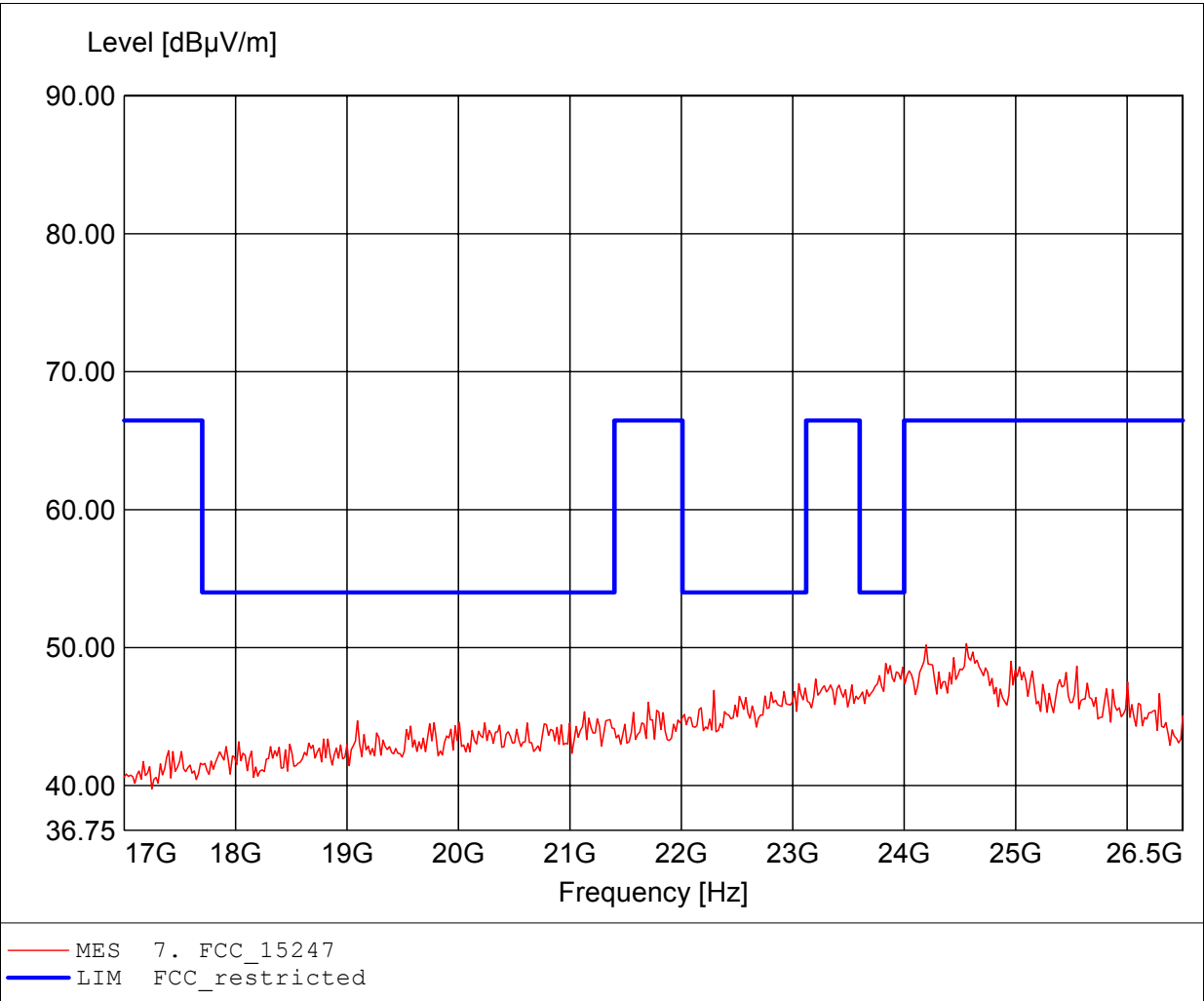
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 14.776GHz, Emax: 45.68dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

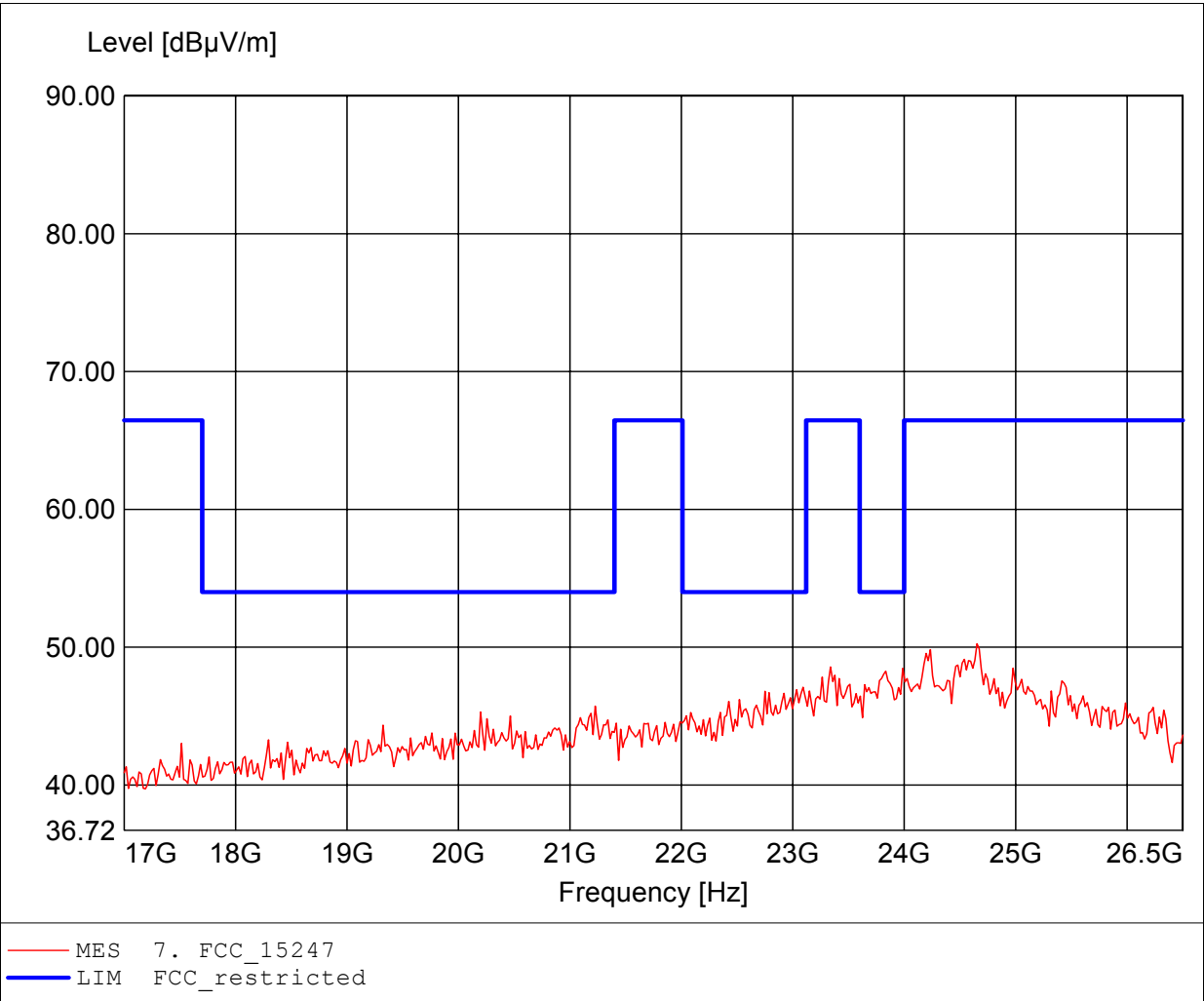
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Comment 2: Freq: 24.558GHz, Emax: 50.29dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

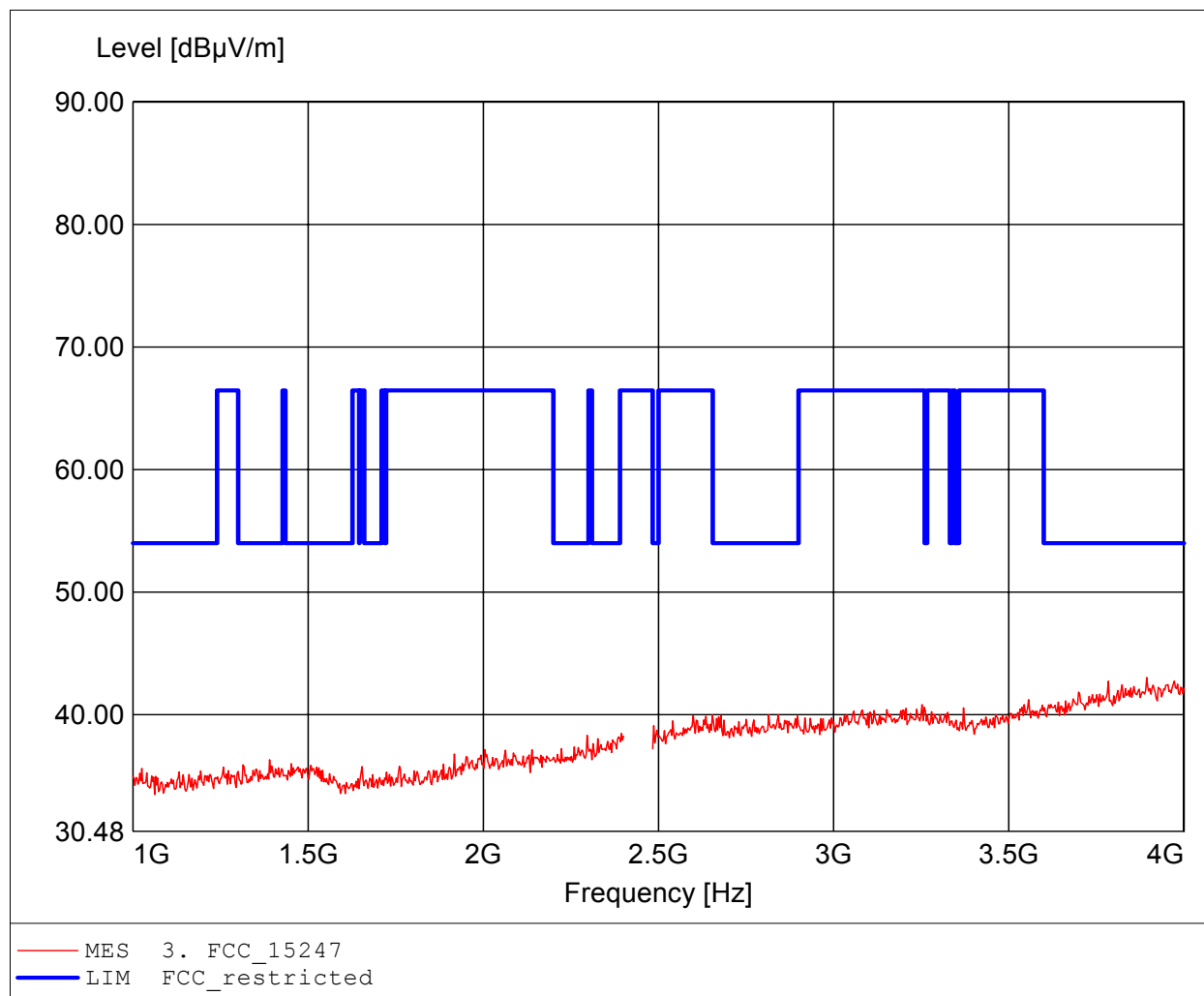
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: basic, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Comment 2: Freq: 24.653GHz, Emax: 50.25dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

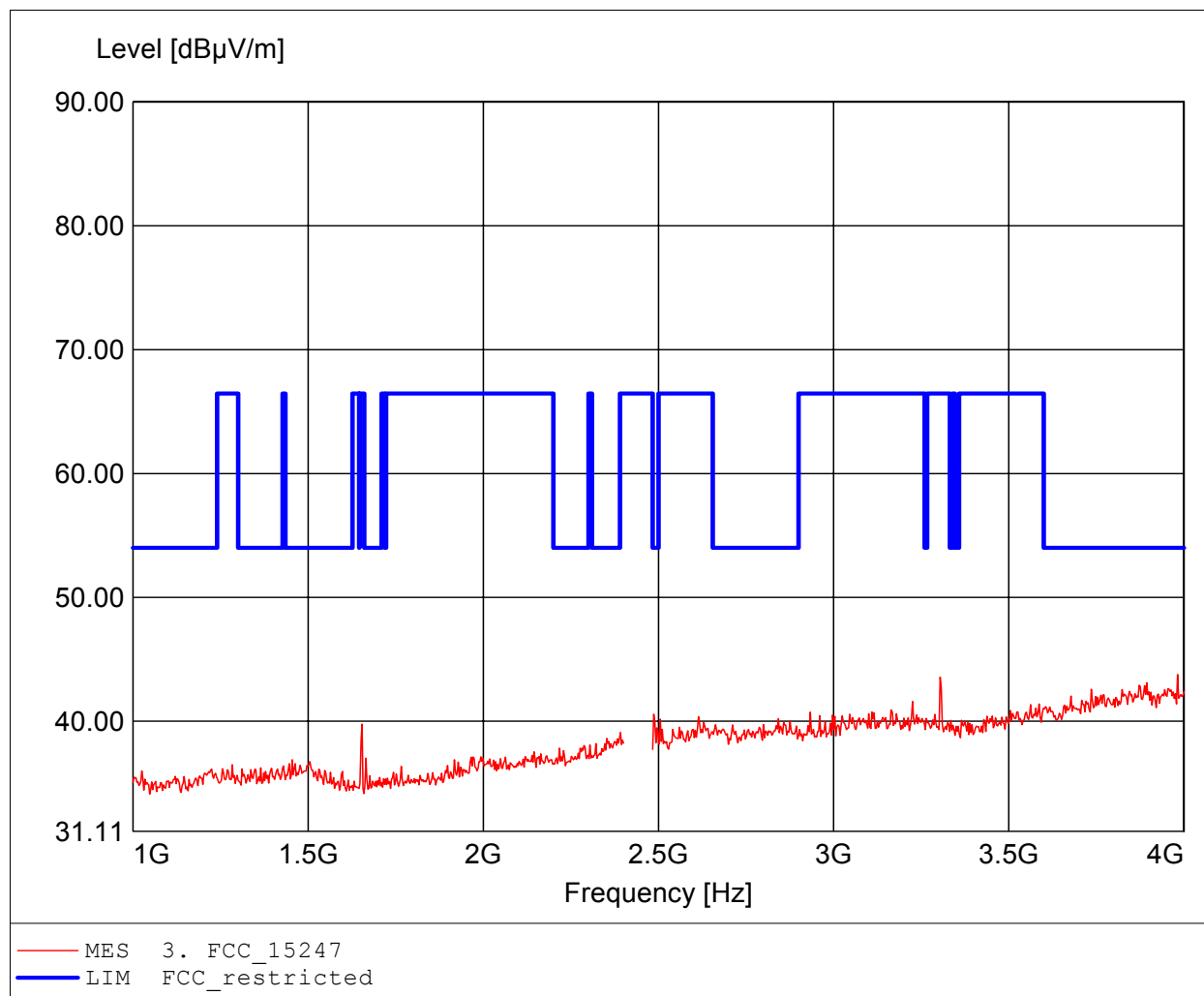
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.894GHz, Emax: 43.03dBuV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

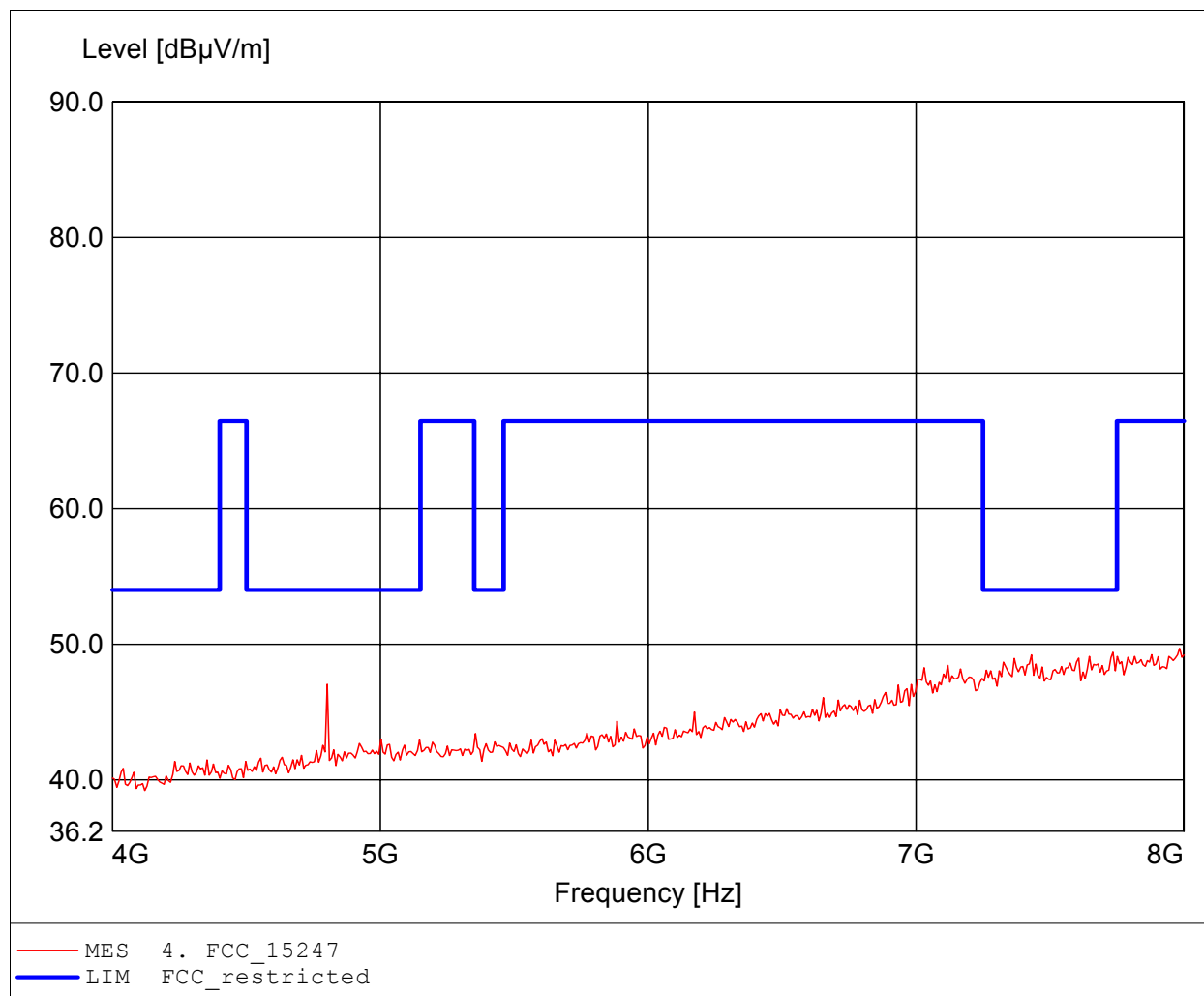
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.982GHz, Emax: 43.77dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

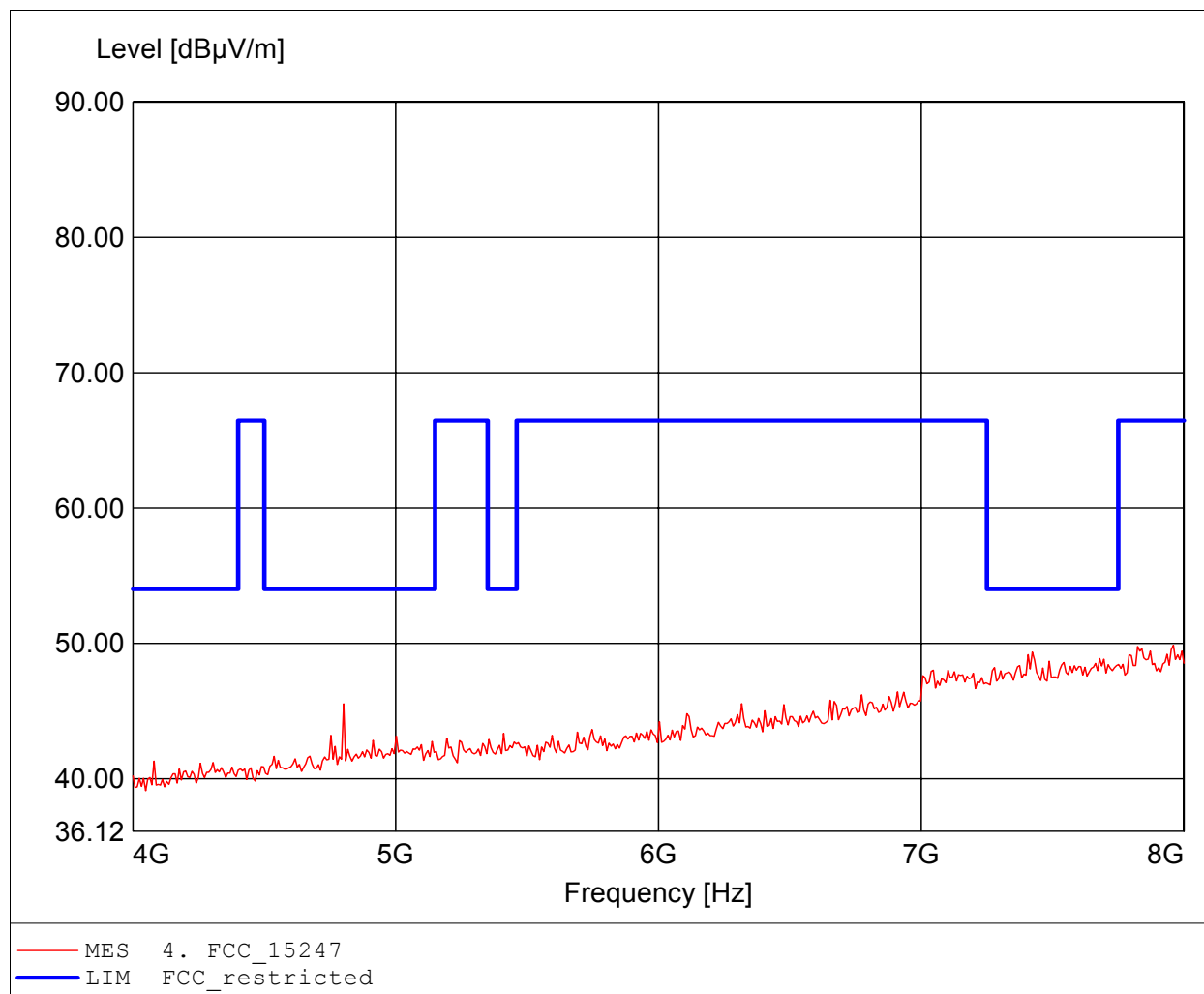
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 7.984GHz, Emax: 49.69dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

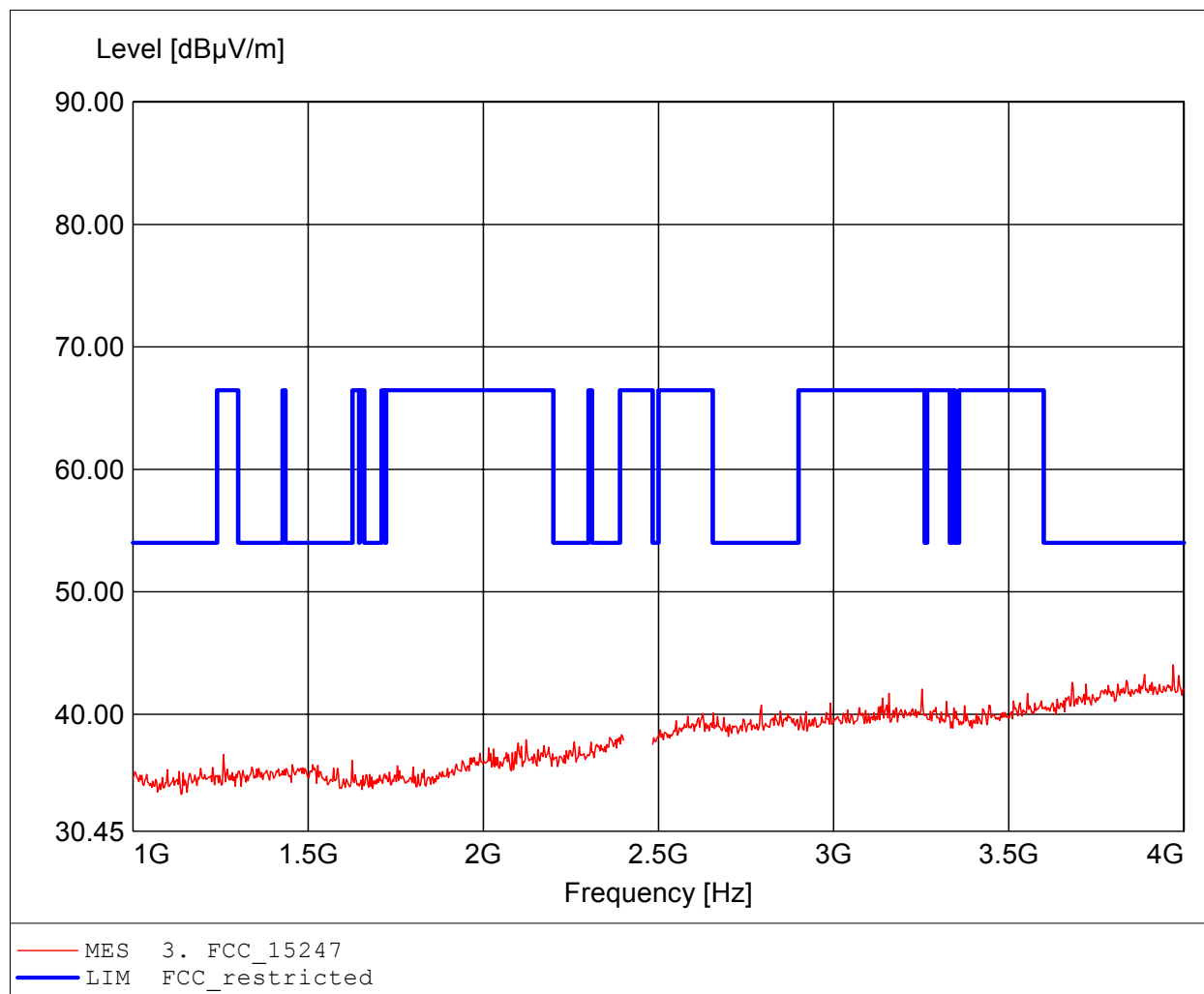
Approval Holder: Hughes Telematics, Inc. / GOM-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2402 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 7.960GHz, Emax: 49.86dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

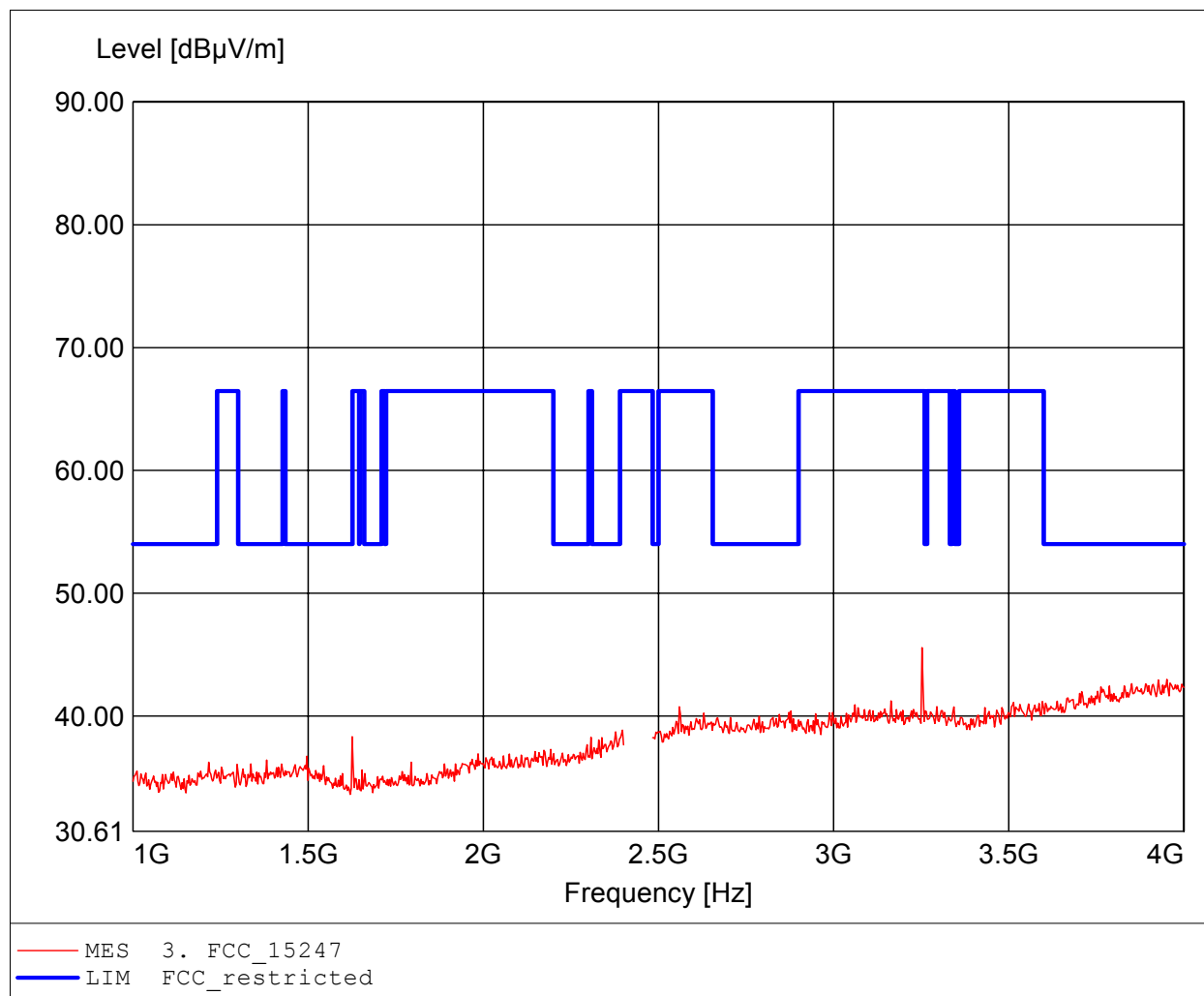
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.970GHz, Emax: 44.05dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

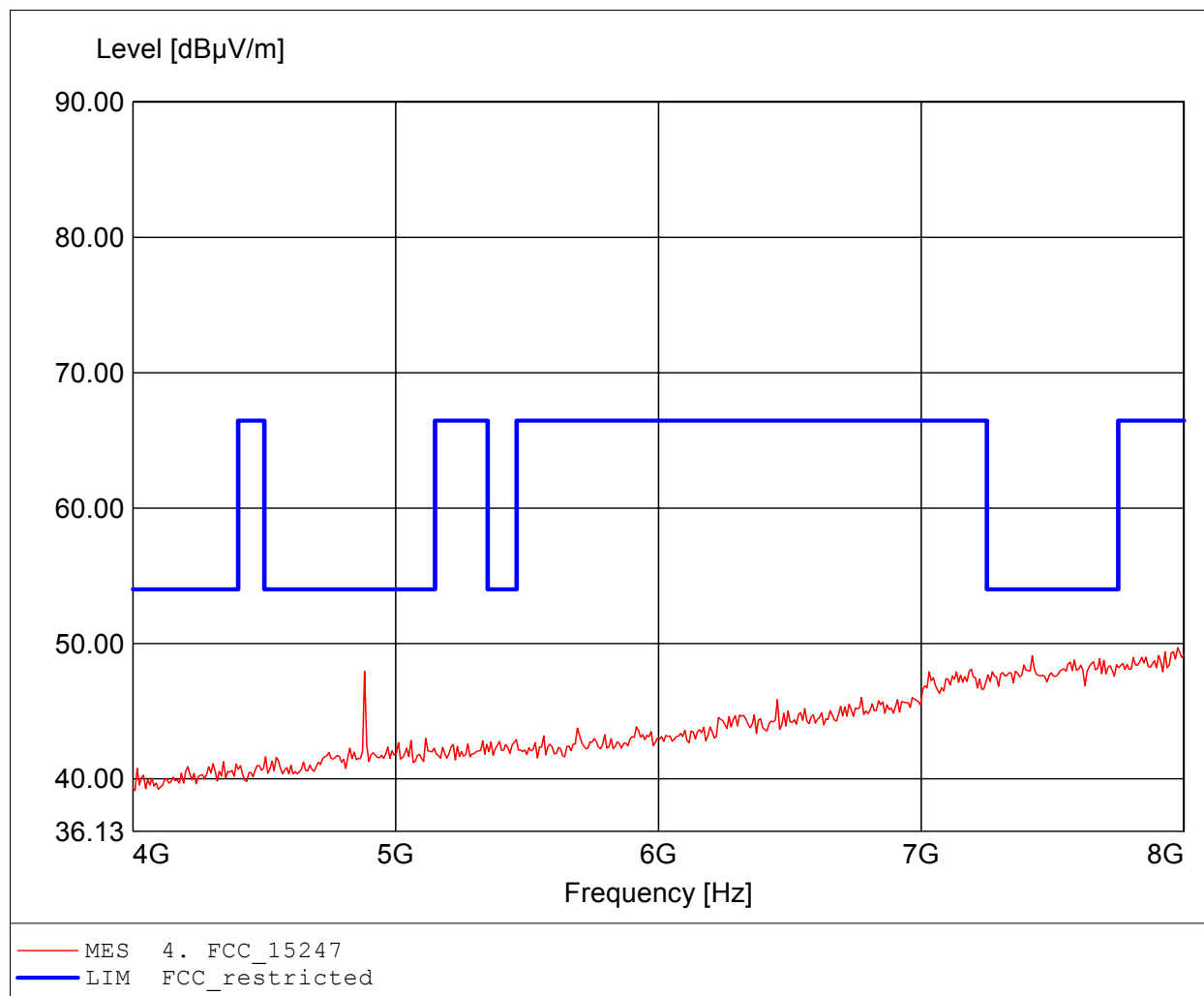
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.252GHz, Emax: 45.57dBuV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

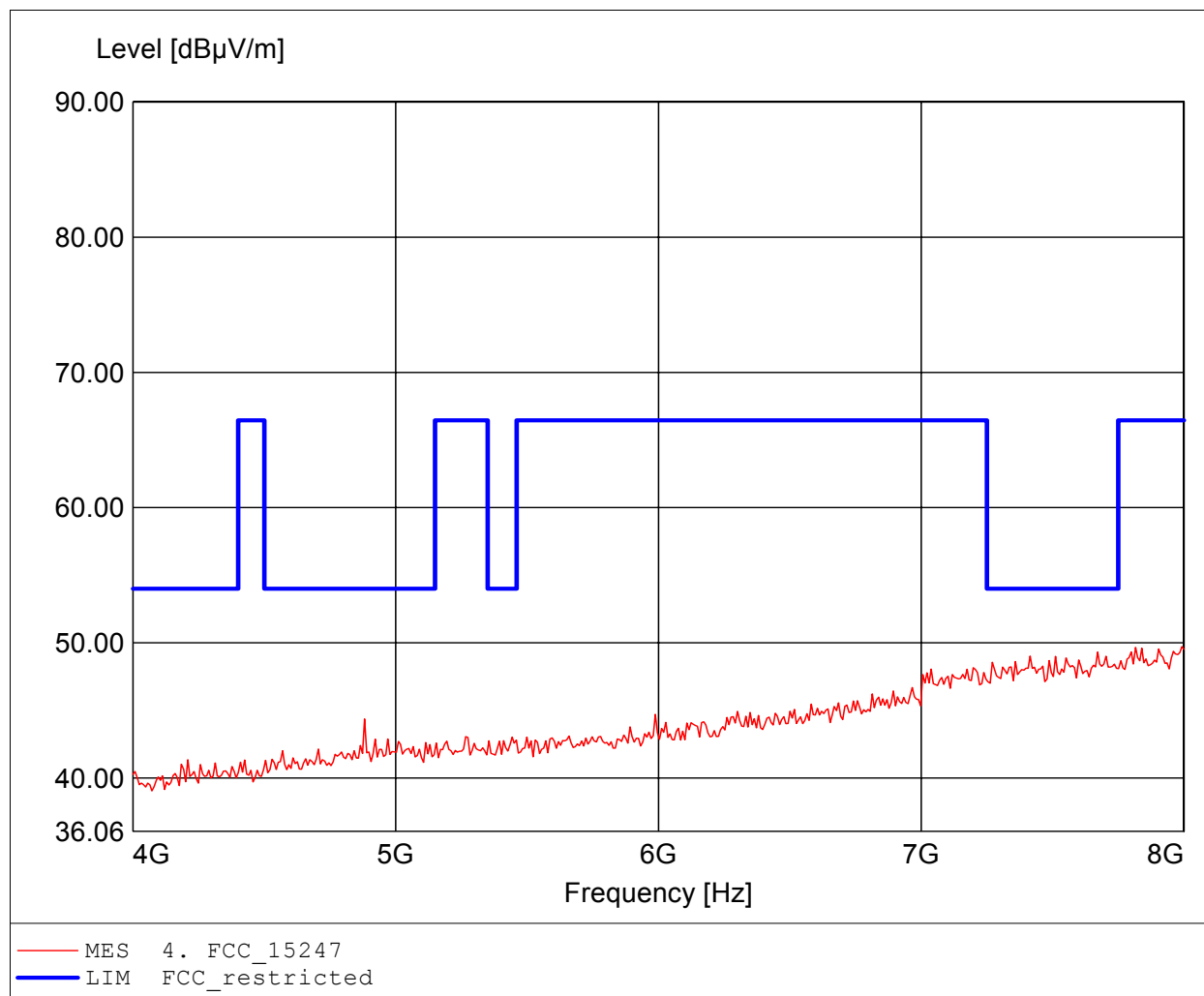
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 7.976GHz, Emax: 49.70dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

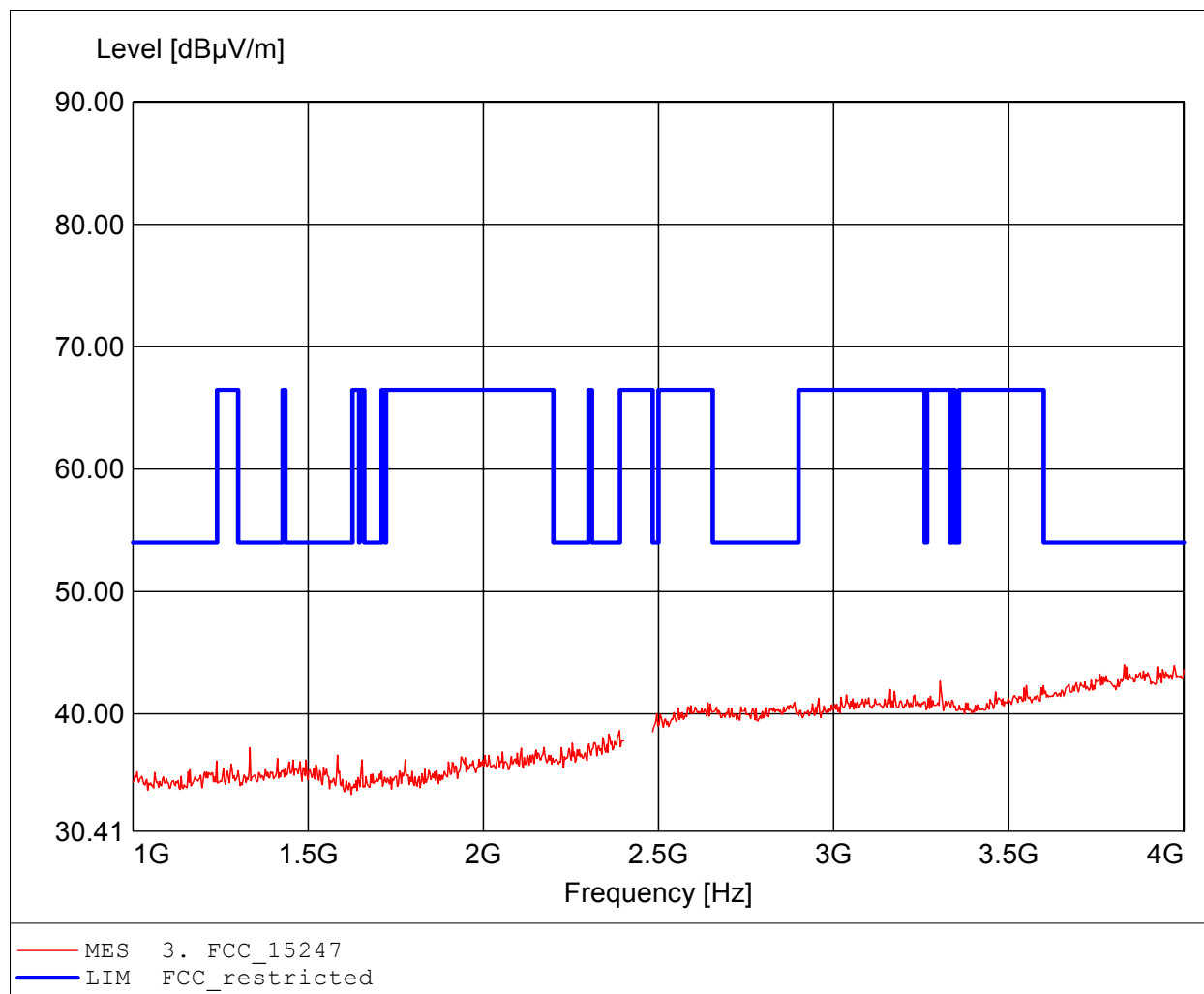
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 7.992GHz, Emax: 49.72dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

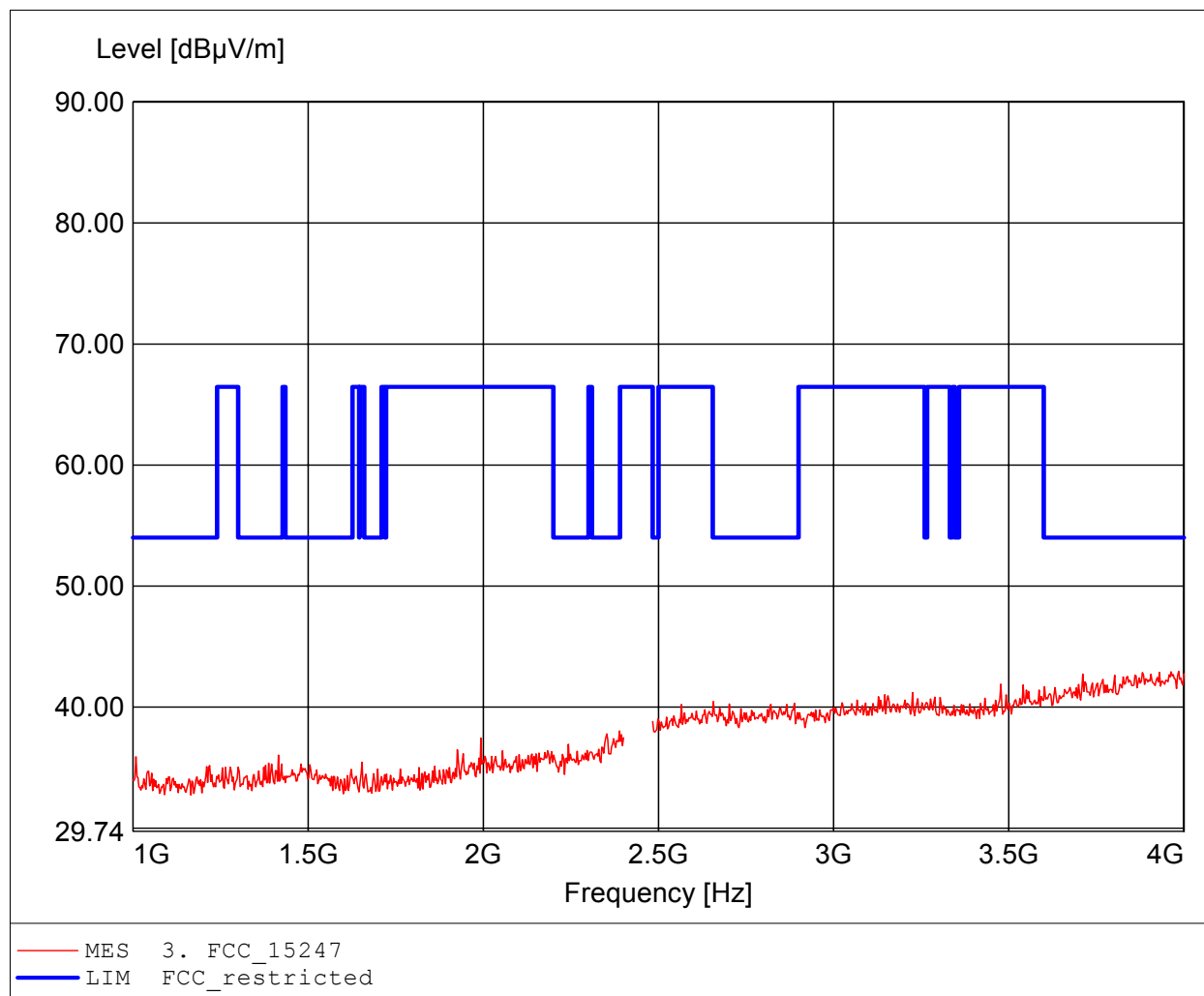
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.830GHz, Emax: 44.01dBuV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

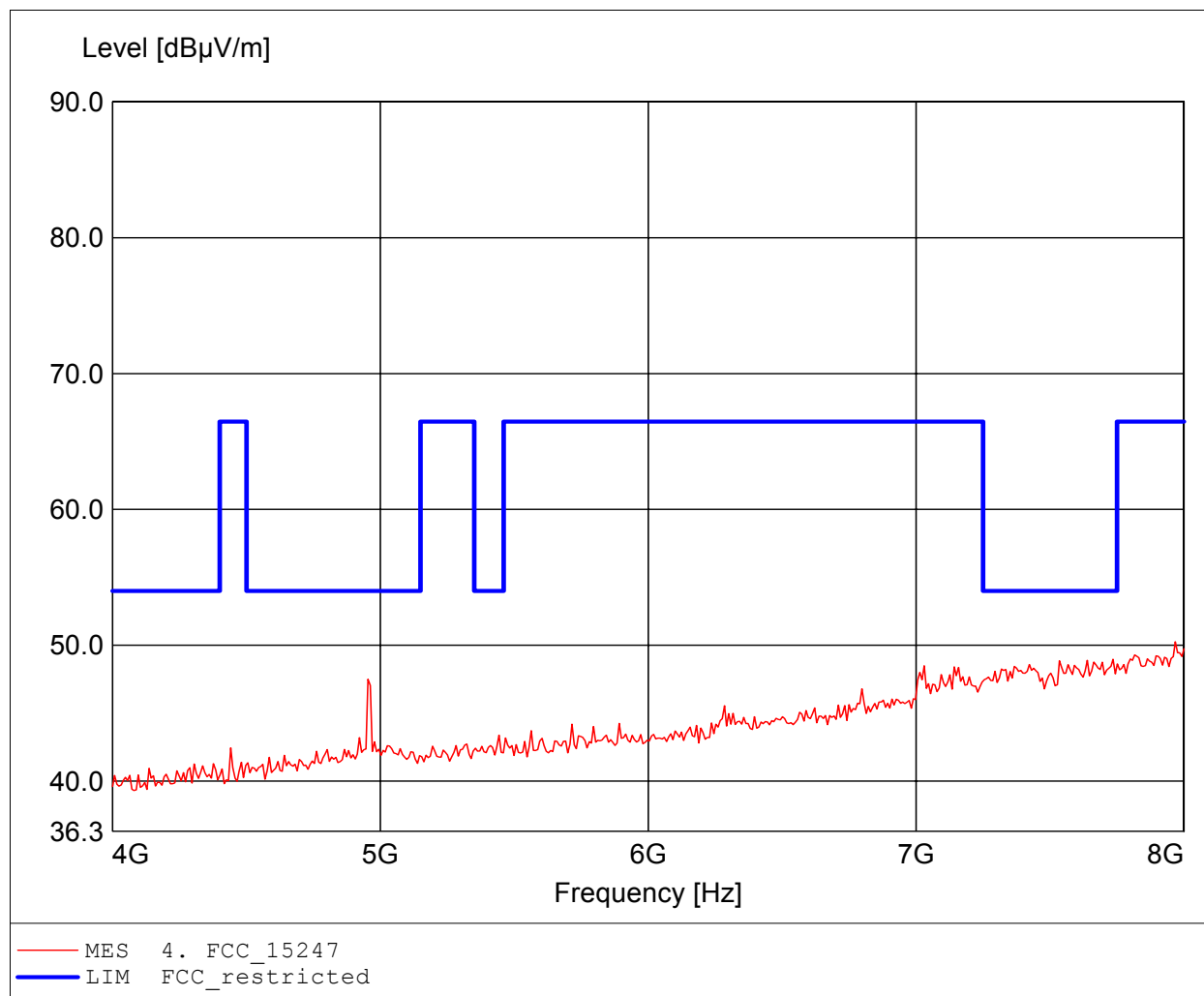
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, amplif.
Comment 2: Freq: 3.985GHz, Emax: 42.97dBuV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

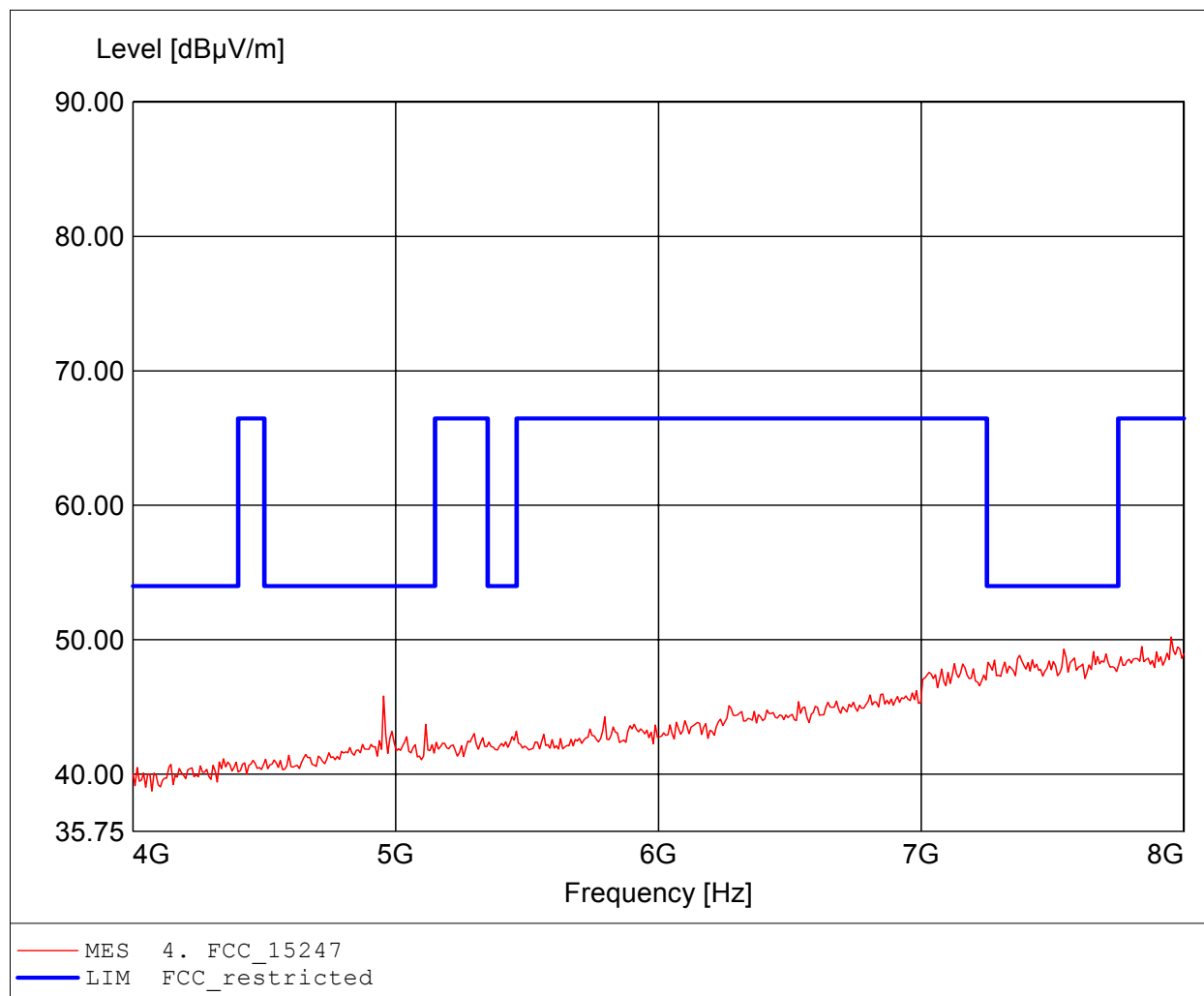
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 7.968GHz, Emax: 50.25dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

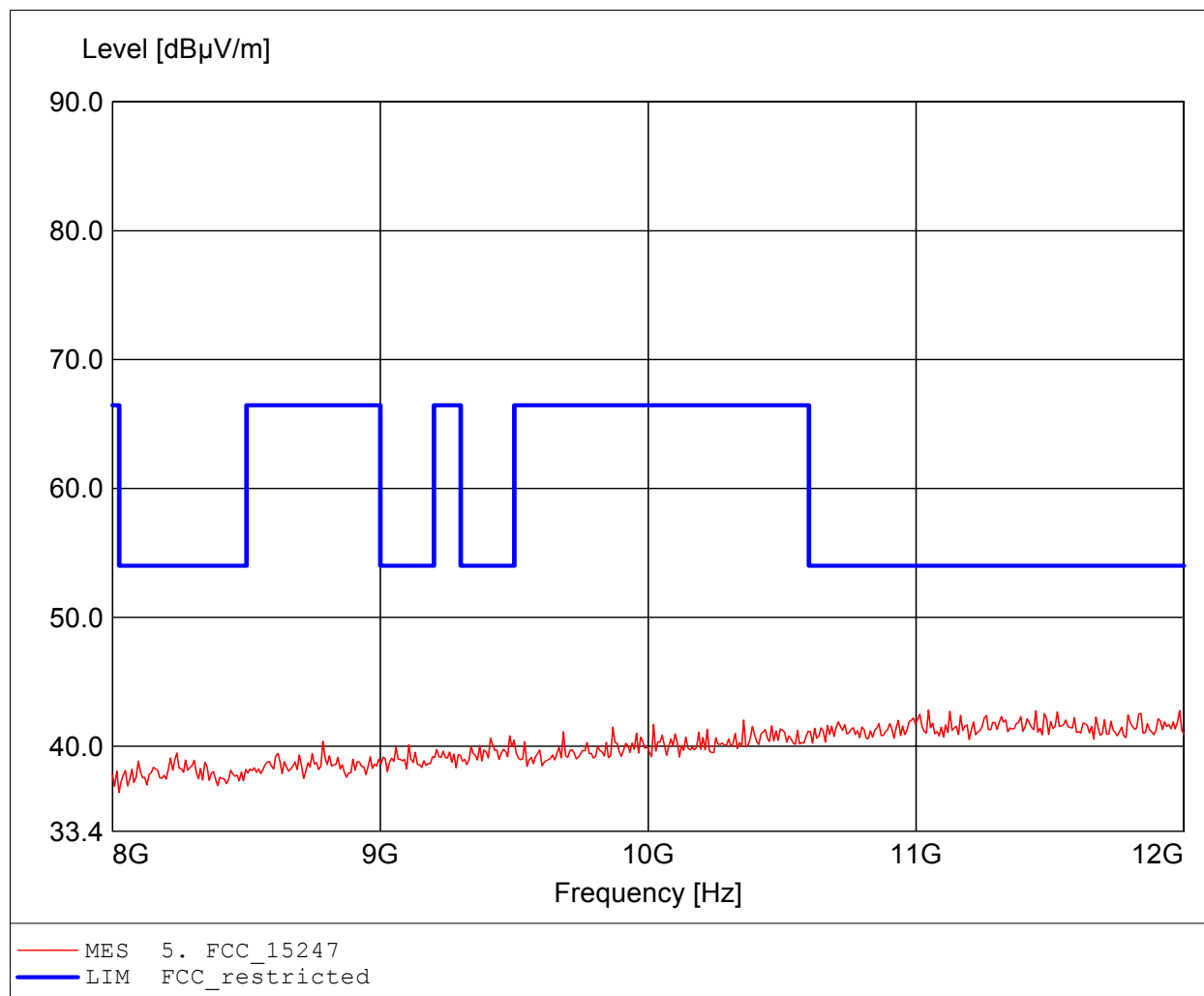
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 7.952GHz, Emax: 50.21dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

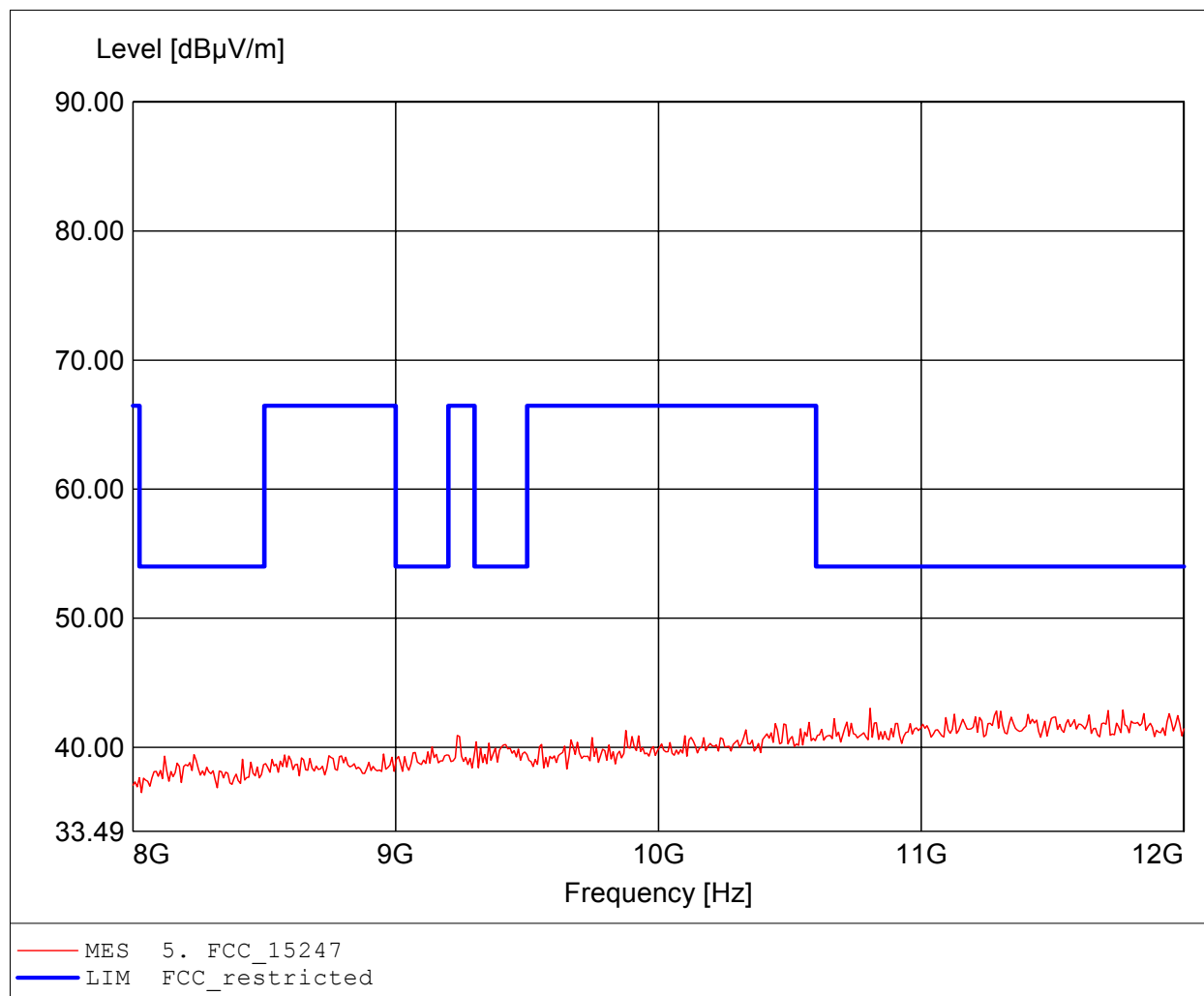
Approval Holder: Hughes Telematics, Inc. / GOM-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 11.046GHz, Emax: 42.81dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

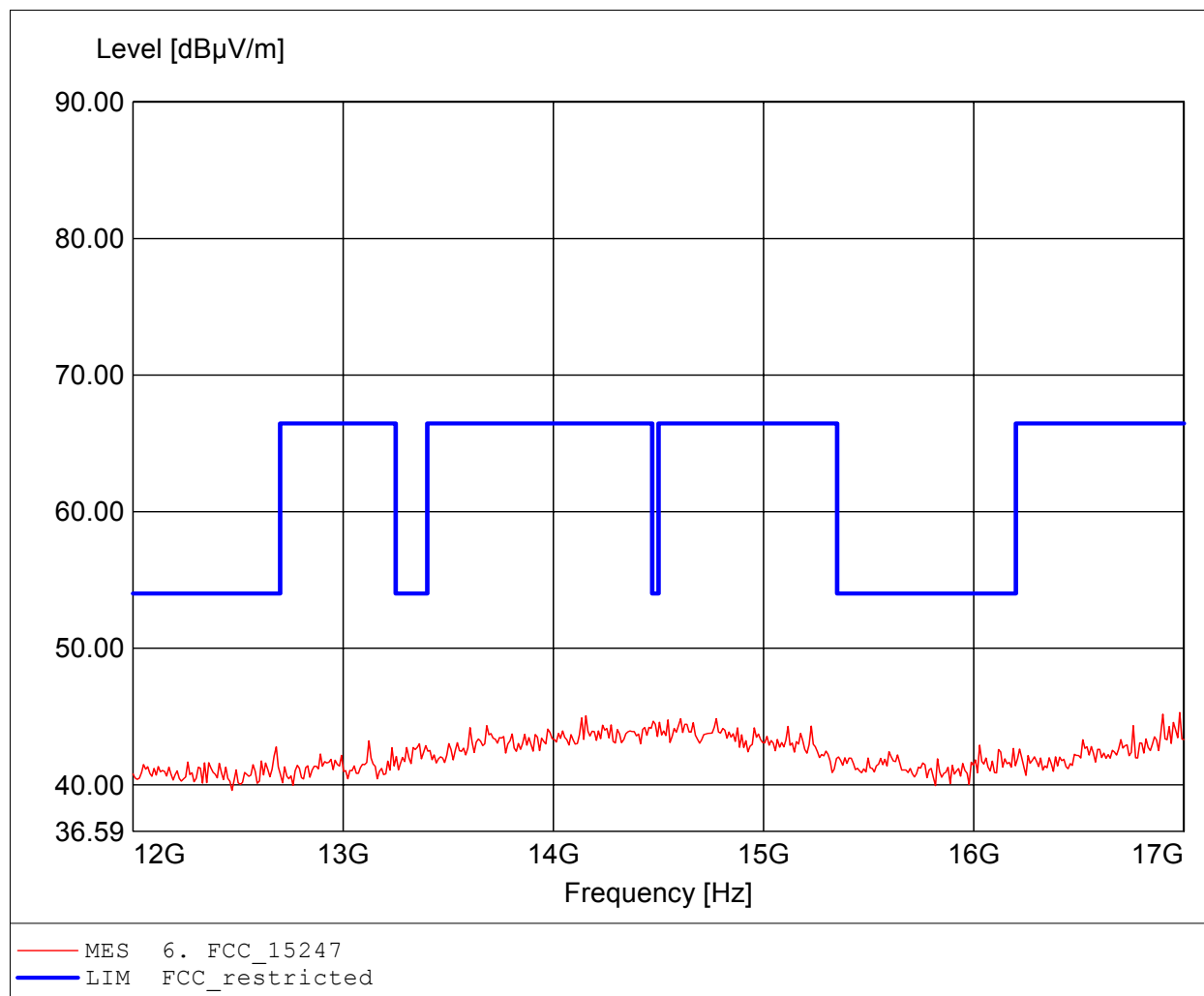
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 10.806GHz, Emax: 43.03dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

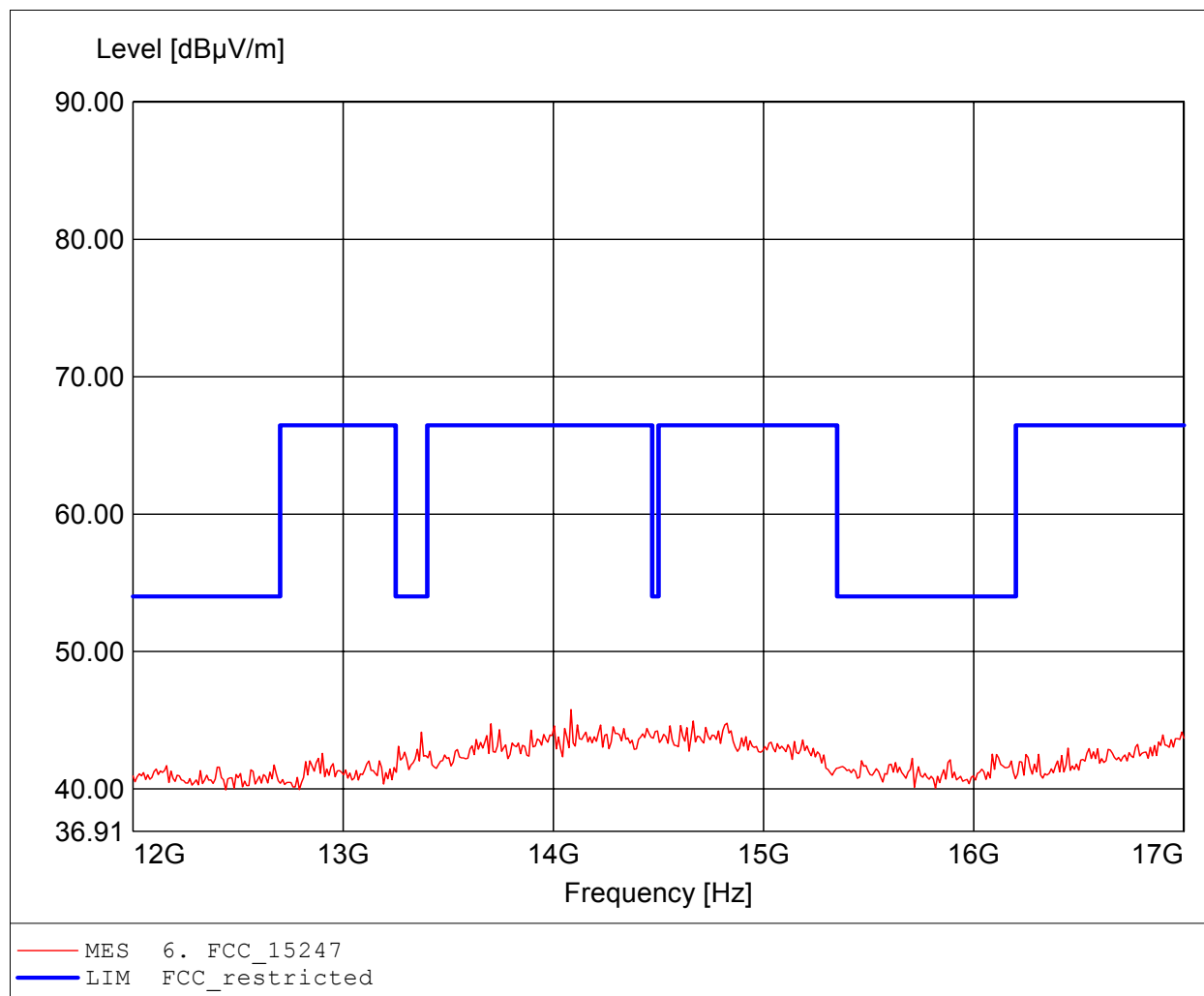
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 16.980GHz, Emax: 45.29dBµV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

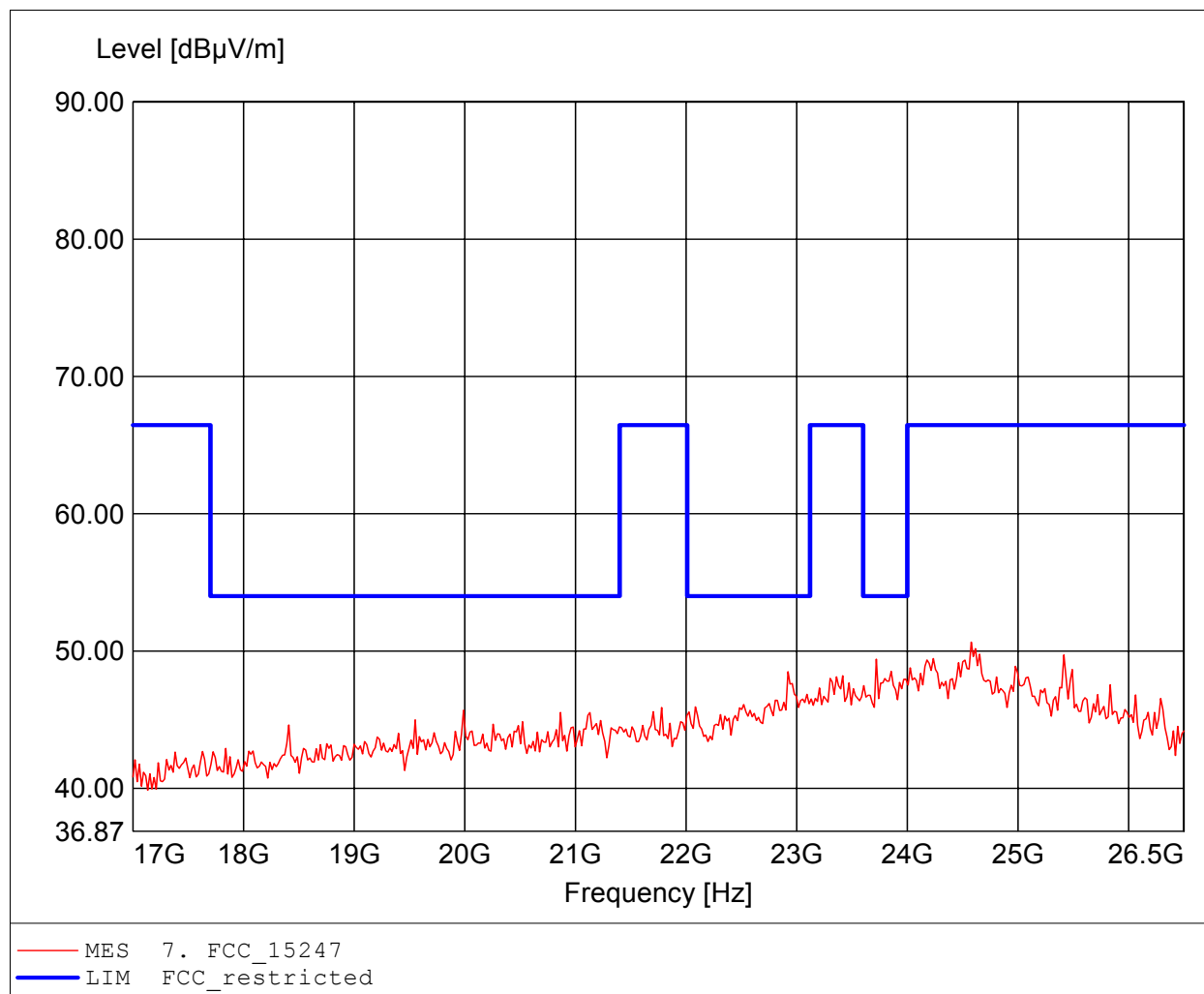
Approval Holder: Hughes Telematics, Inc. / GOM-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: BBHA9120D, ampl.+HP.
Comment 2: Freq: 14.084GHz, Emax: 45.77dBuV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

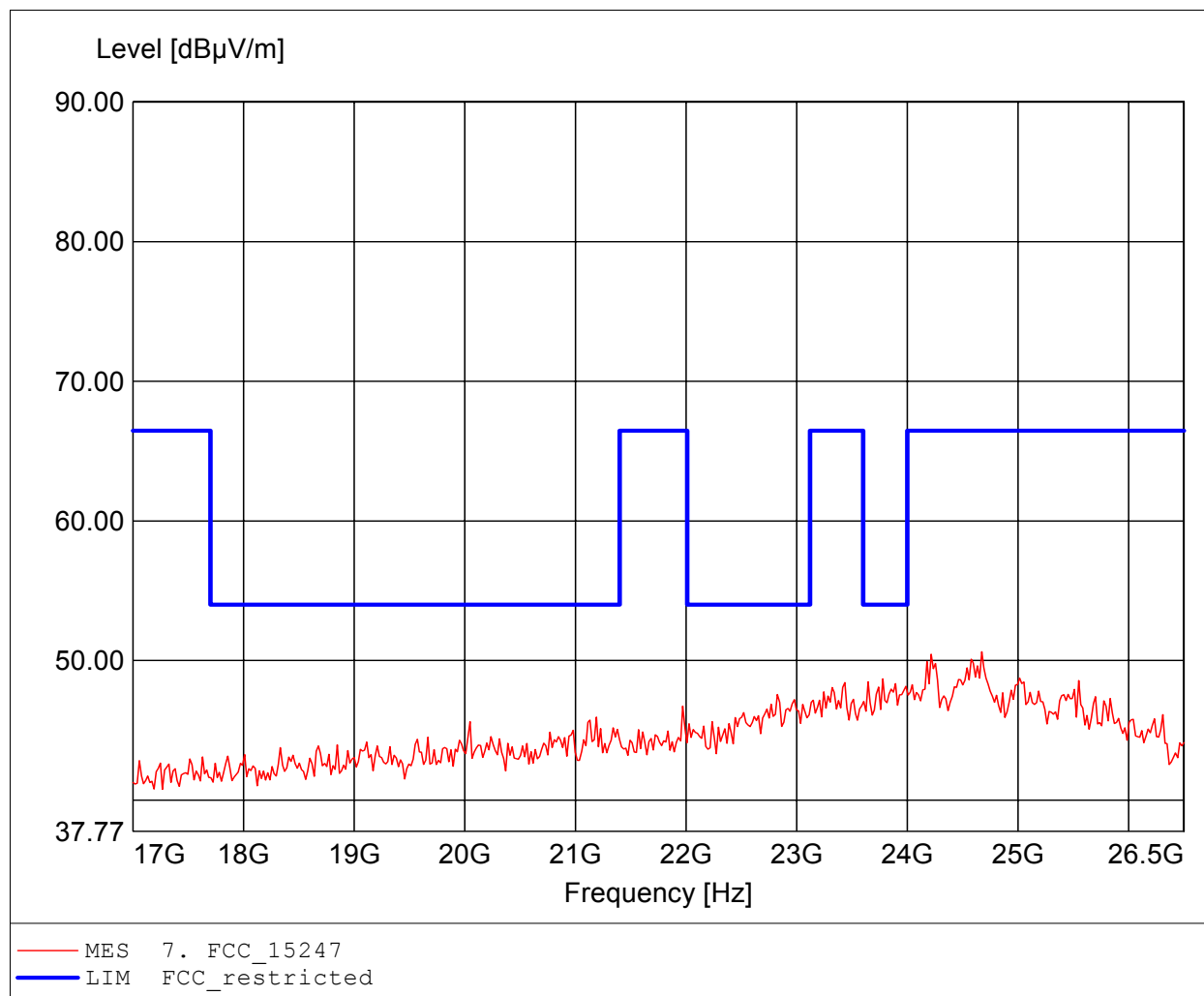
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Comment 2: Freq: 24.577GHz, Emax: 50.65dBμV/m, RBW: 1MHz



Spurious emissions Field Strength

FCC RULES PART 15, SUBPART C

Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: EDR, Tx, 2480 MHz worst case
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: according to §15.247, peak detector
Comment 1: Dist.: 3m, Ant.: HL025, amplif.
Comment 2: Freq: 24.672GHz, Emax: 50.63dBμV/m, RBW: 1MHz

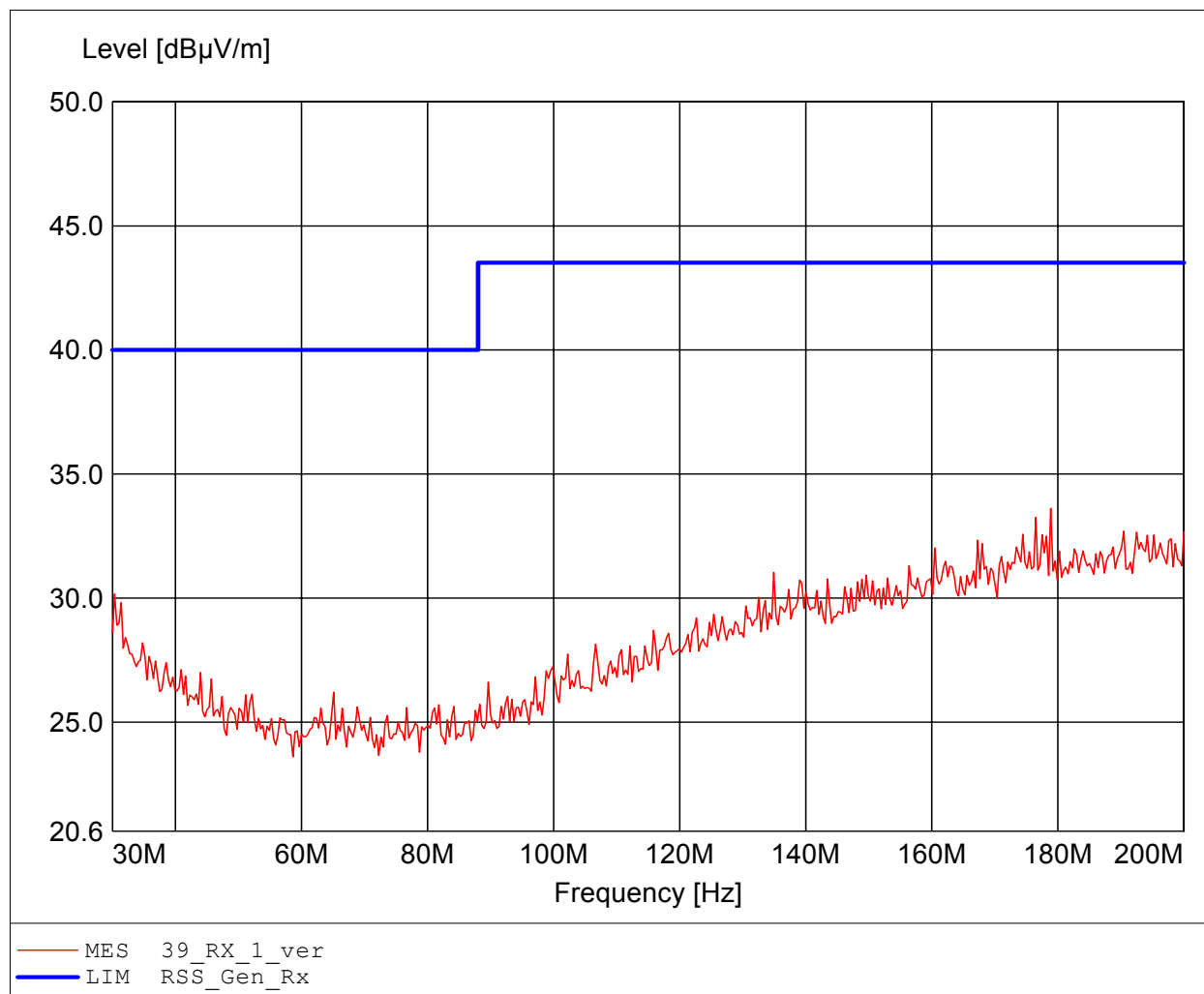


Annex K Receiver radiated spurious emissions

Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

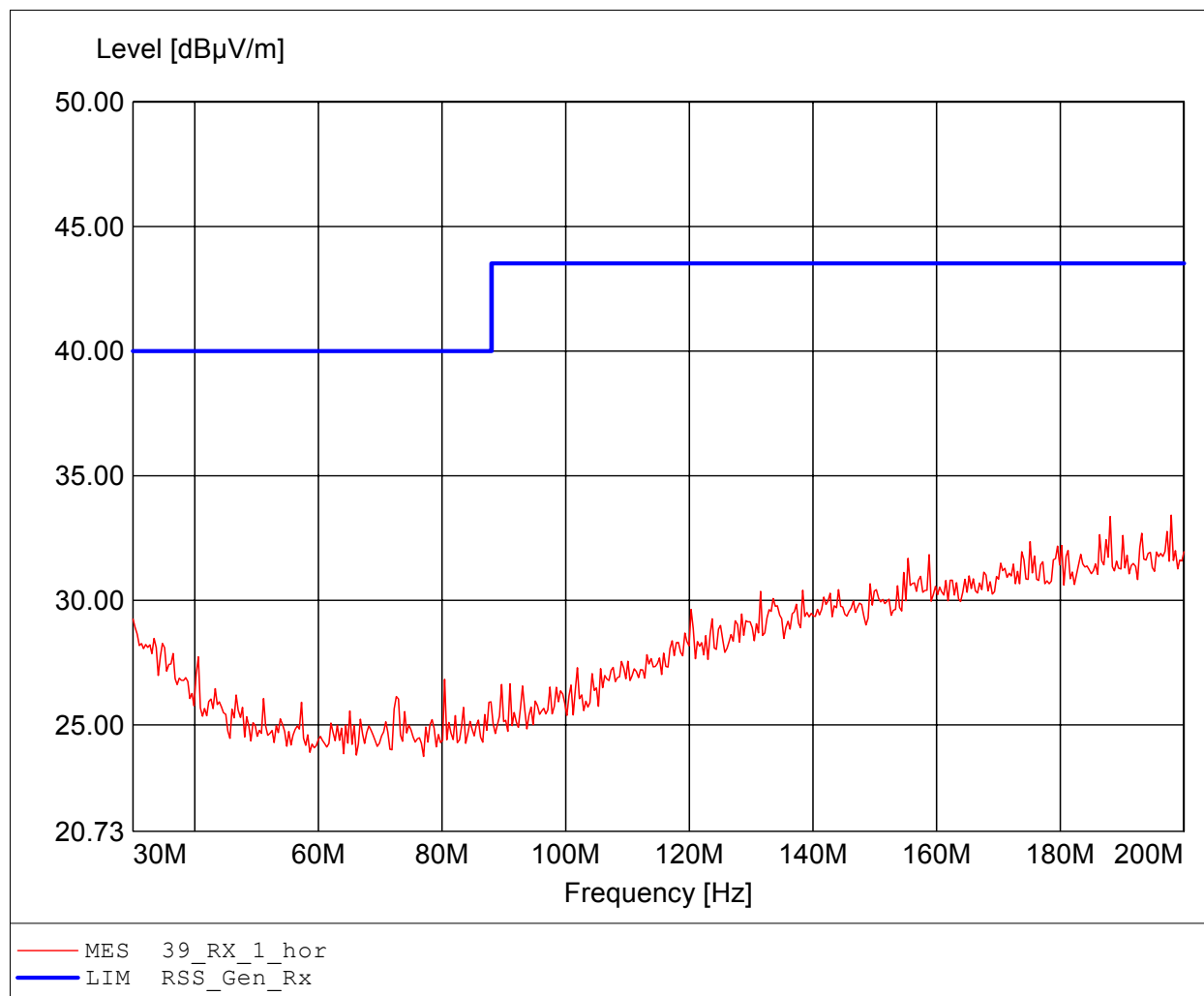
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: Rx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: Freq. / CH: 39
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq:178.878MHz Emax:33.61dBuV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

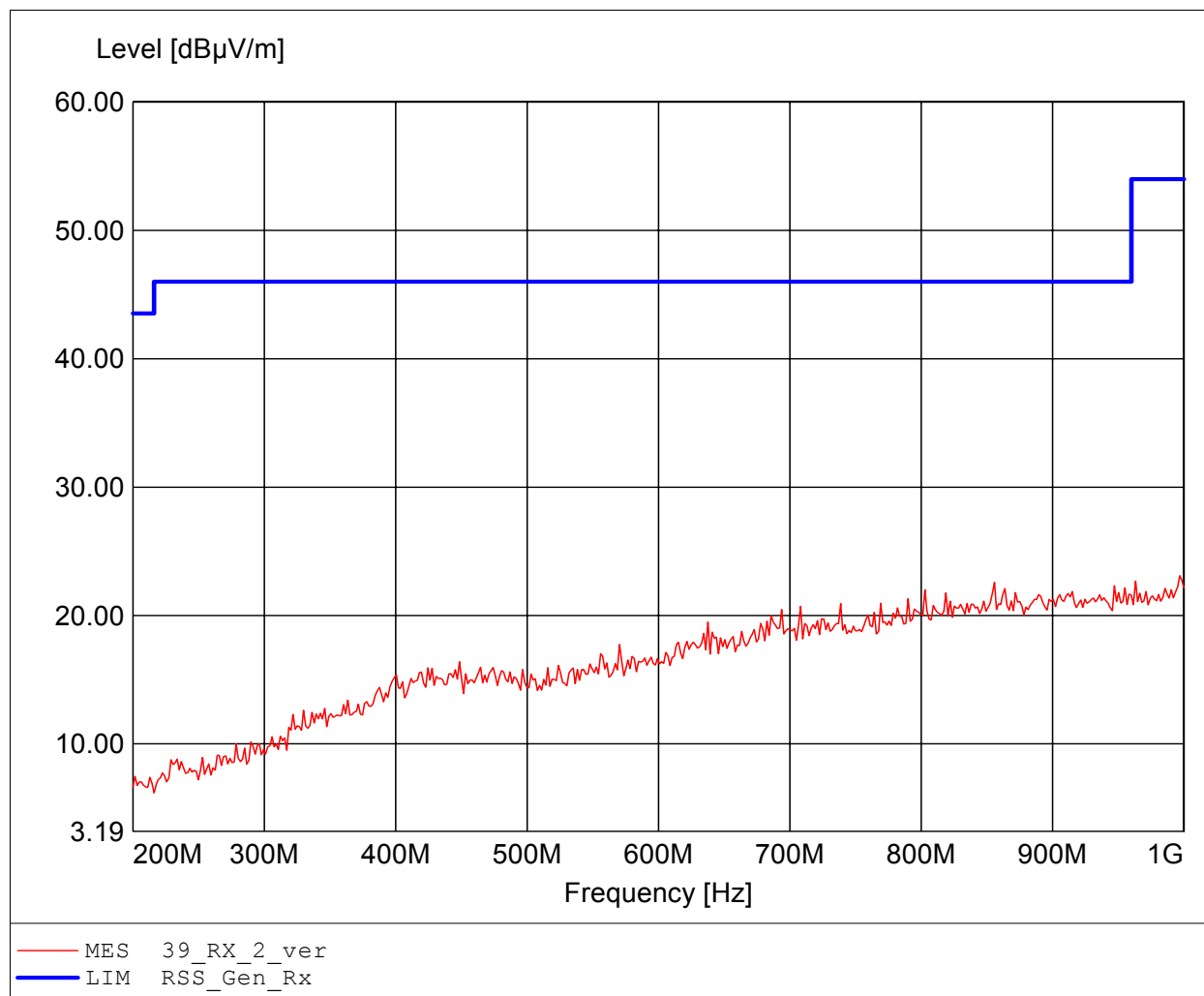
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: Rx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: Freq. / CH: 39
Comment 1: Dist.: 3m, Ant.: HK 116
Comment 2: Freq:197.956MHz Emax:33.42dBuV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

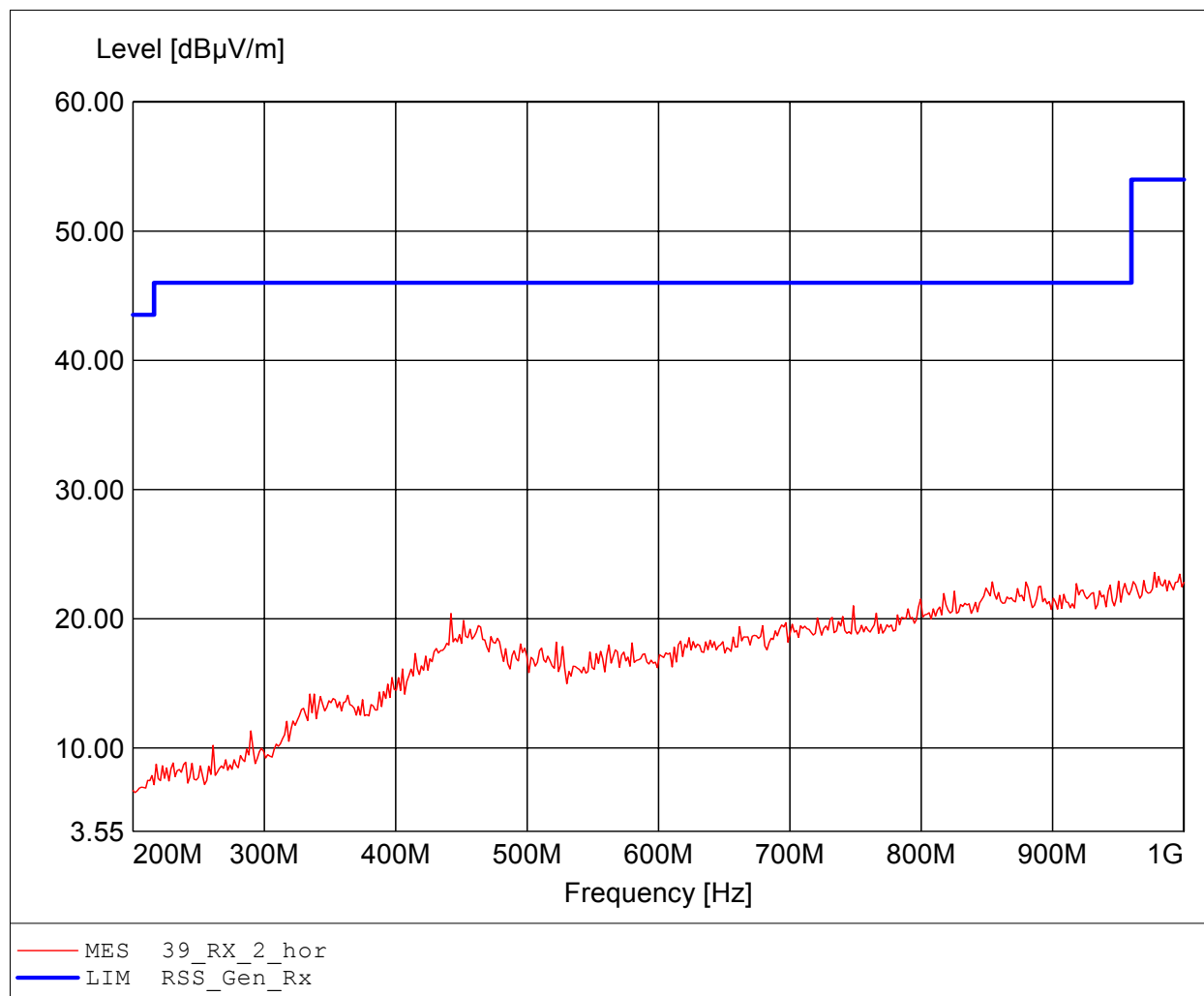
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: Rx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: Freq. / CH: 39
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Comment 2: Freq: 996.794MHz Emax: 23.10dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

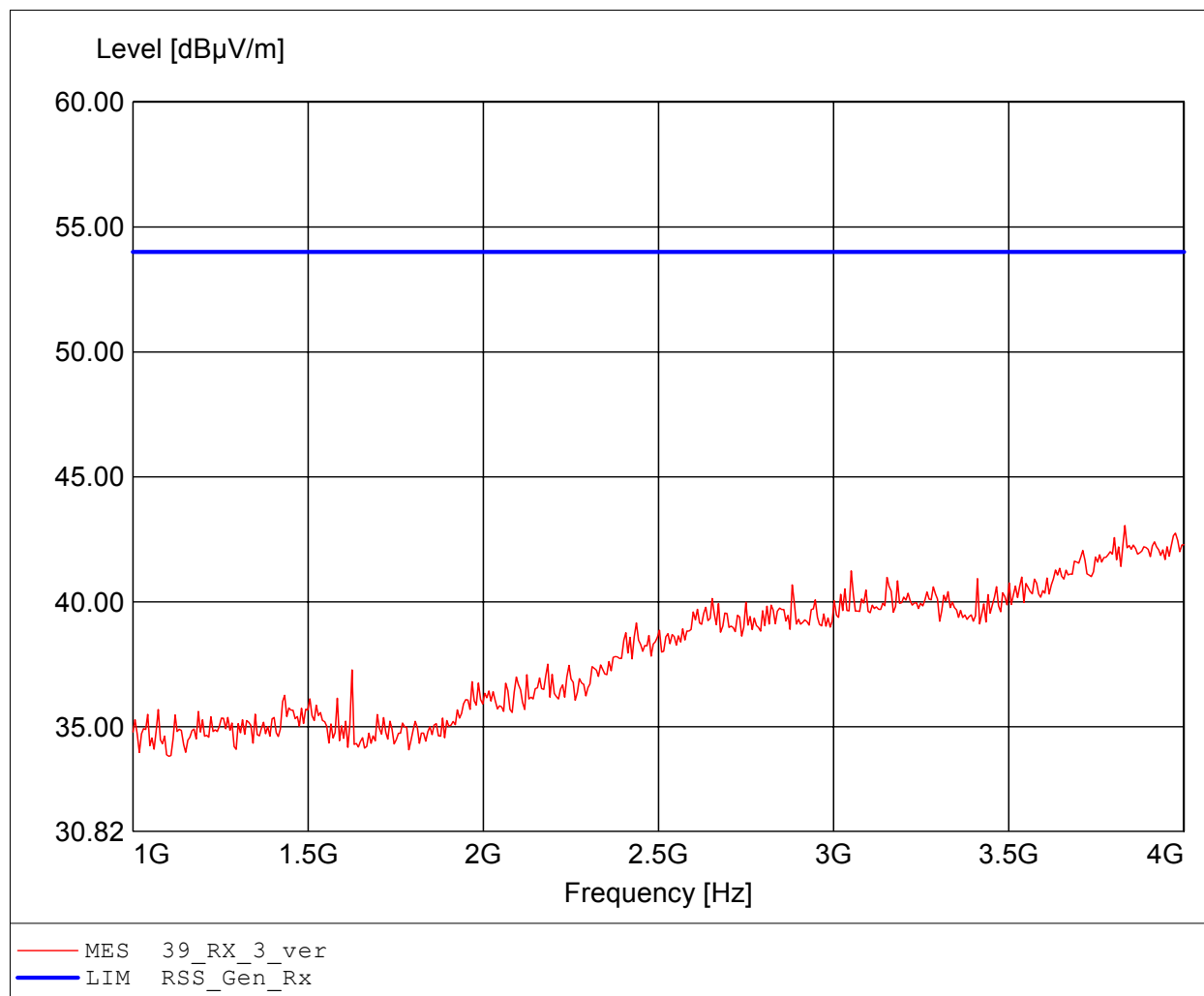
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: Rx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: Freq. / CH: 39
Comment 1: Dist.: 3m, Ant.: HL 223, ampl.
Comment 2: Freq: 977.555MHz Emax: 23.59dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

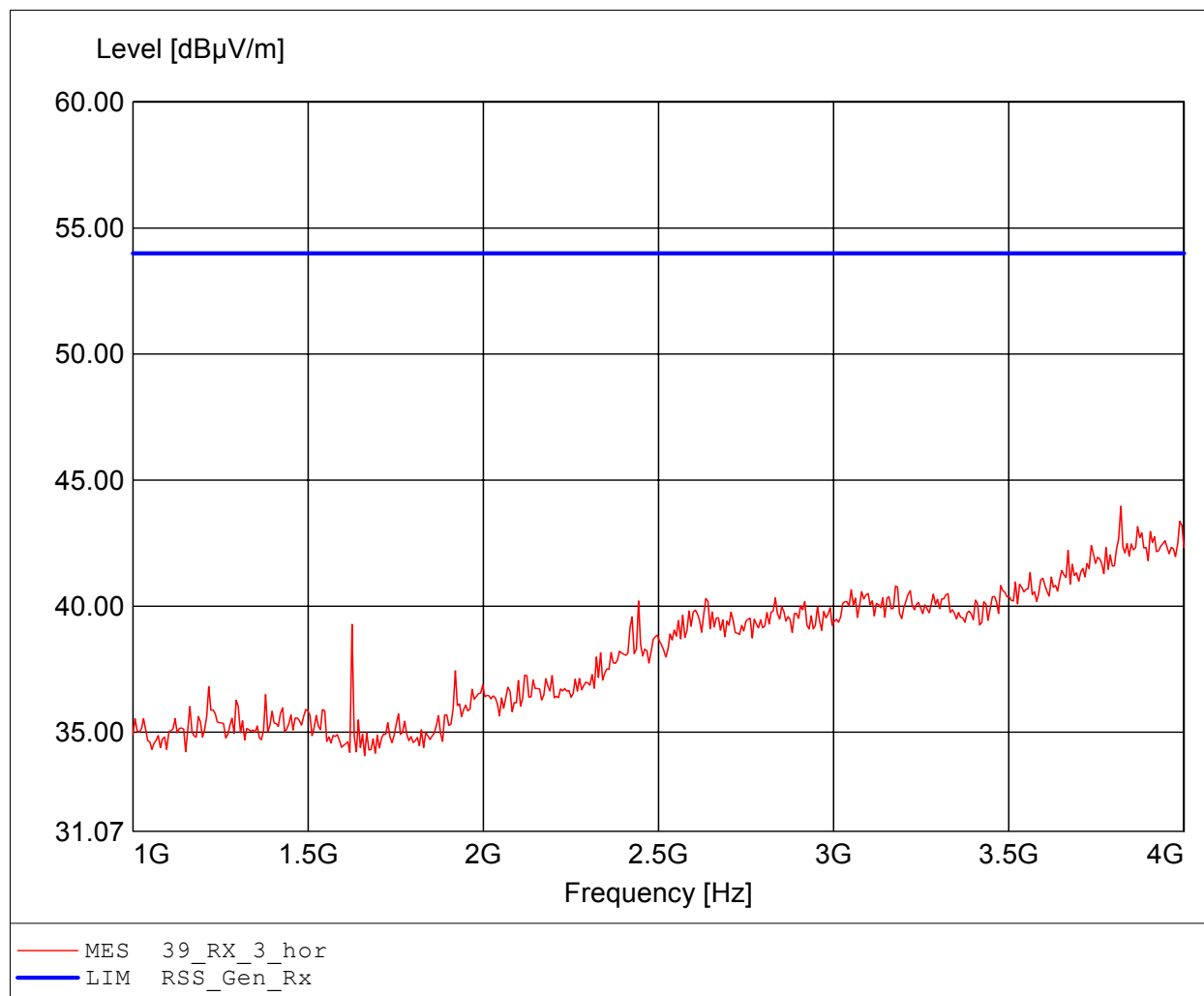
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: Rx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: Freq. / CH: 39
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:3.832GHz Emax:43.05dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

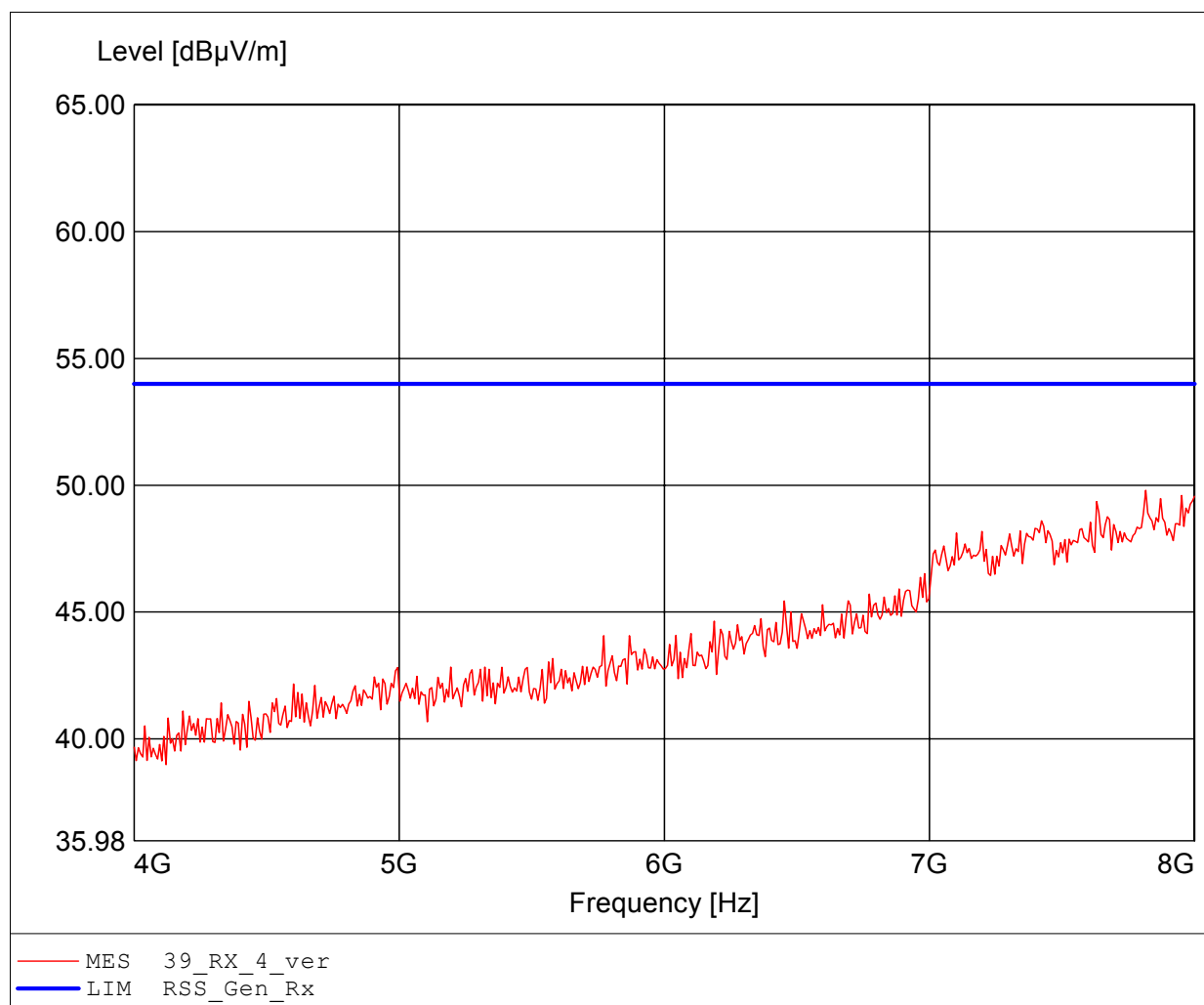
Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: Rx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: Freq. / CH: 39
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:3.820GHz Emax:43.97dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

Approval Holder: Hughes Telematics, Inc. / G0M-1105-1156
EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: Rx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: Freq. / CH: 39
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:7.816GHz Emax:49.80dBμV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

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EUT / Model: Bluetooth Speakerphone / AT-650
Configuration: Setup: Rx, 2441 MHz
Test Site / Operator: Eurofins Product Service GmbH / Mr. Treffke
Test Condition: Tnom.: 25°C / Vnom: 3.6V battery
Test Specification: Freq. / CH: 39
Comment 1: Dist.: 3m, Ant.: HL025, ampl.
Comment 2: Freq:7.960GHz Emax:49.79dBµV/m RBW: 1 MHz

