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FCC TEST REPORT

FCC 47 CFR Part 15C
Industry Canada RSS-210

Periodic operation in the 40.66-40.70 MHz and above 70 MHz

Report Reference No. ..... :	G0M-1203-1865-TFC231P-V01
Testing Laboratory ..... :	Eurofins Product Service GmbH
Address ..... :	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation ..... :	 A2LA Accredited Testing Laboratory, Certificate No.: 1983.01 FCC Filed Test Laboratory, Reg.-No.: 96970 IC OATS Filing assigned code: 3470A
Applicant's name ..... :	Kieback&Peter GmbH & Co KG
Address ..... :	Tempelhofer Weg 50 12347 Berlin GERMANY
Test specification:	
Standard..... :	47 CFR Part 15C RSS-210, Issue 8, 2010-12 RSS-Gen, Issue 3, 2010-12 ANSI C63.4:2009
Equipment under test (EUT):	
Product description	Actuator
Model No.	MD15-FtL 315
Hardware version	11627901
Firmware / Software version	Vers. 2.37
	FCC-ID: NY3MD15FtL IC: 10353A-MD15FtL
Test result	**Passed**

Possible test case verdicts:	
- neither assessed nor tested ..... :	N/N
- required by standard but not appl. to test object ..... :	N/A
- required by standard but not tested ..... :	N/T
- not required by standard for the test object ..... :	N/R
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)

Testing:

Date of receipt of test item ..... :	2012-05-07	
Date (s) of performance of tests ..... :	2012-05-07	
Compiled by ..... :	Christian Weber	
Tested by (+ signature) ..... : (Testing Manager)	Wilfried Treffke	W. Treffke
Approved by (+ signature) ..... : (Test Lab Manager)	Jens Zimmermann	
Date of issue ..... :	2012-08-07	
Total number of pages ..... :	46	

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

Additional comments:

REPORT INDEX

1 Equipment (Test item) Description:

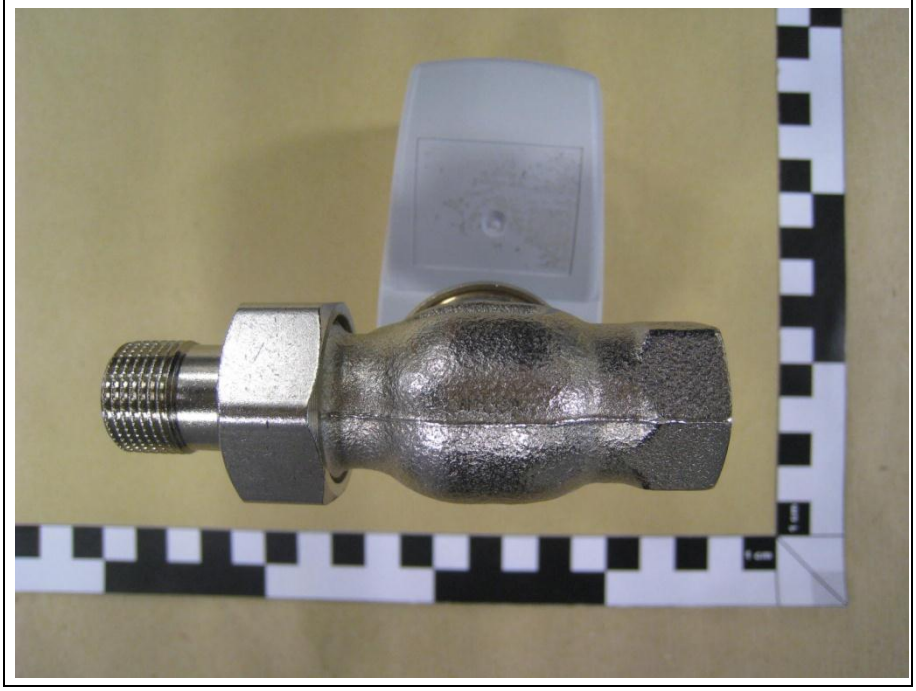
Description	Actuator	
Model	MD15-FtL 315	
Serial number	None	
Hardware version	11627901	
Software / Firmware version	Vers. 2.37	
FCC-ID	NY3MD15FtL	
IC	10353A-MD15FtL	
Equipment type	End product	
Radio type	Transceiver	
Radio technology	custom	
Operating frequency range	315 MHz	
Frequency range	F_{MID}	315 MHz
Spreading	None	
Modulations	ASK	
Number of channels	1	
Channel spacing	None	
Number of antennas	1	
Antenna	Type	integrated
	Model	printed antenna
	Manufacturer	see Manufacturer
	Gain	-10.0 dBi
Manufacturer	Kieback&Peter GmbH & Co KG Tempelhofer Weg 50 12347 Berlin GERMANY	
Power supply	V_{NOM}	3.0 VDC (Nickel-Metal-Hybrid Battery)
	V_{MIN}	N/A
	V_{MIN}	N/A

1.1 Photos – Equipment External

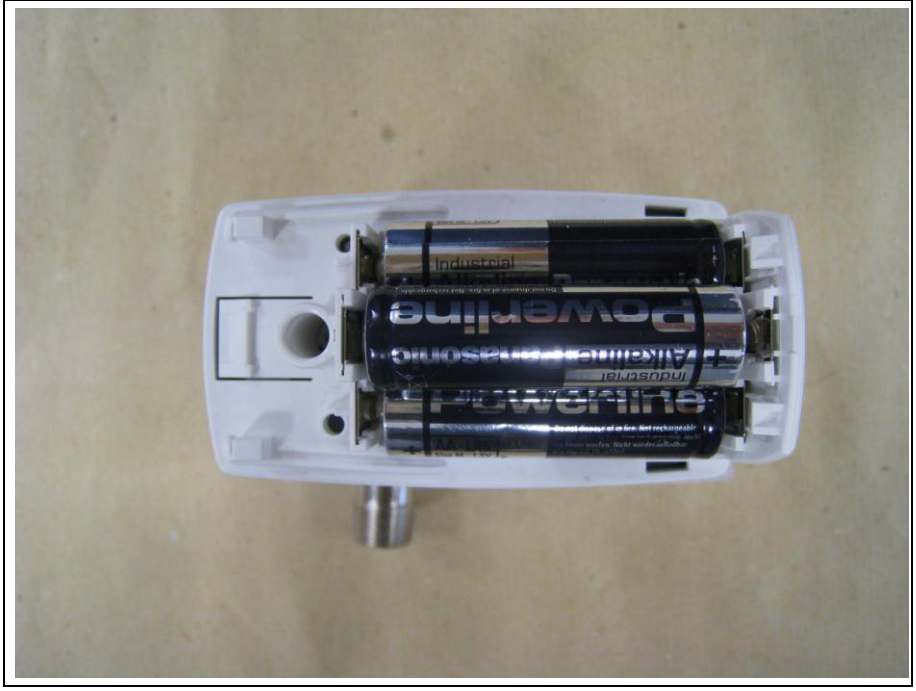
EUT FRONT

EUT SIDE VIEW

EUT BACK

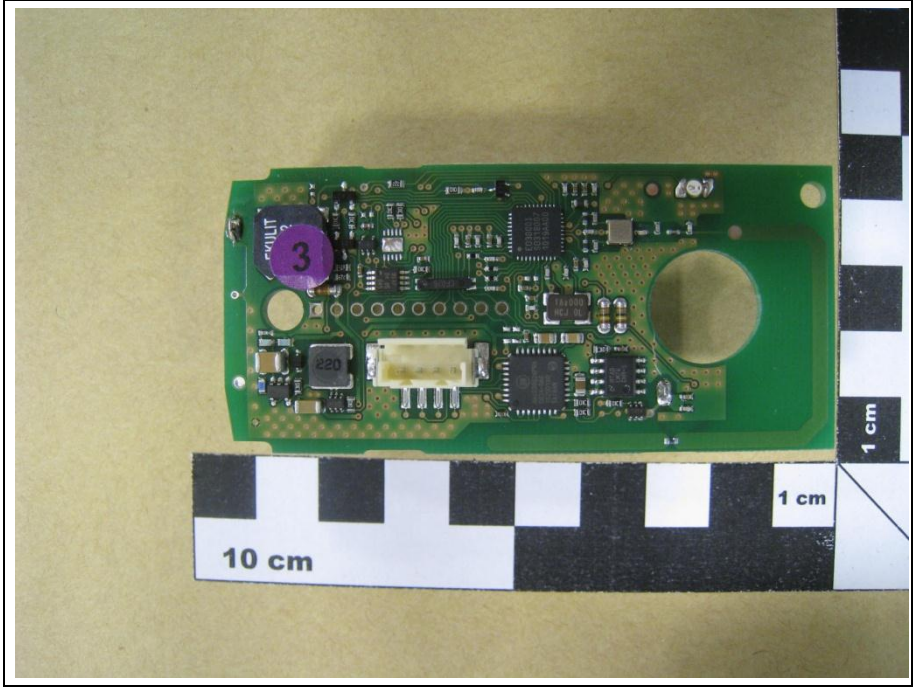


EUT BATTERIES

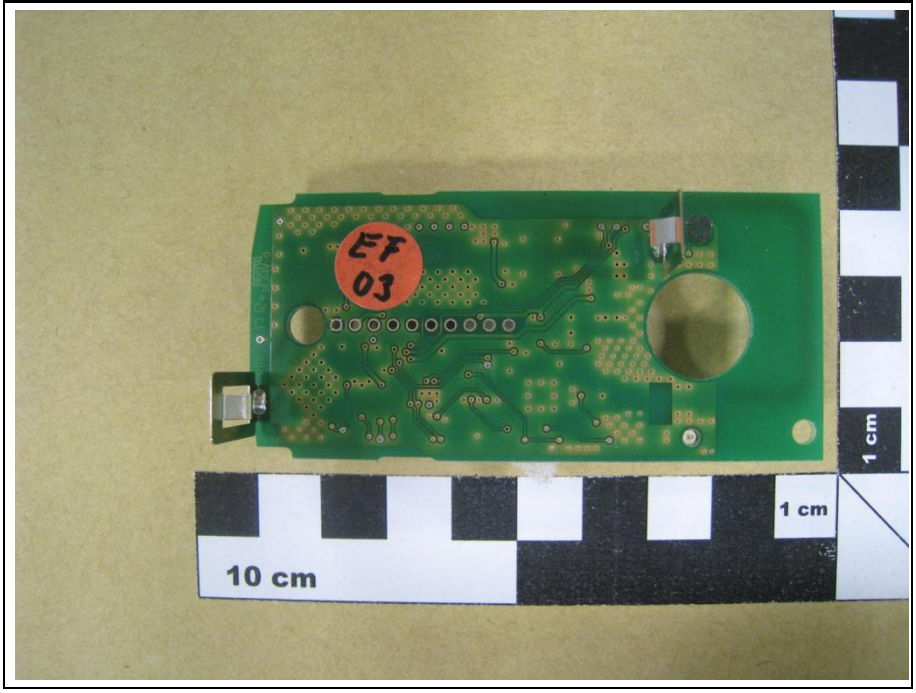


1.2 Photos – Equipment internal

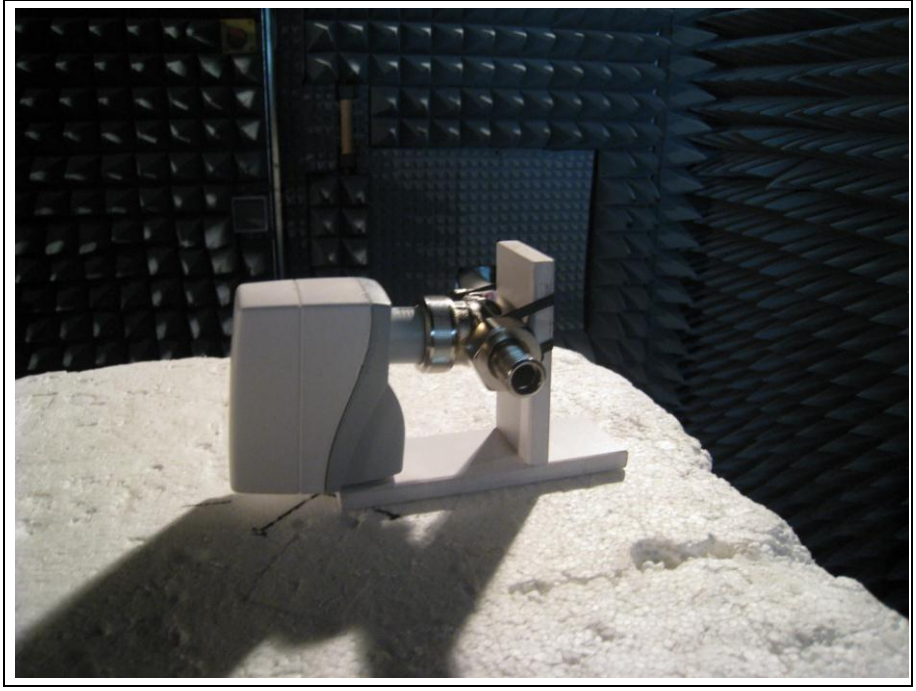
EUT PCB TOP



EUT PCB BOTTOM



1.3 Photos – Test setup

Test setup : radiated emissions


1.4 Supporting Equipment Used During Testing

Product Type*	Device	Manufacturer	Model No.	Comments
None				

***Note:** Use the following abbreviations:

AE : Auxiliary/Associated Equipment, or

SIM : Simulator (Not Subjected to Test)

CABL : Connecting cables

1.5 Test Modes

Mode #	Description	
Single	General conditions:	EUT powered by fully charged battery
	Radio conditions:	Mode = standalone transmit Modulation = On Power level = Maximum
Receive	General conditions:	EUT powered by fully charged battery
	Radio conditions:	Mode = standalone receive

1.6 Test Equipment Used During Testing

Occupied Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2011-12	2012-12

Emission Bandwidth					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2011-12	2012-12

Cease of transmission					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2011-12	2012-12

Total transmission time					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2011-12	2012-12

Duty Cycle					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSP 30	EF00312	2011-12	2012-12

Field strength emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-anechoic chamber	Frankonia	AC 5	EF00395	-	-
Spectrum Analyzer	R&S	FSIQ26	EF00242	2011-04	2012-04
Biconical Antenna	R&S	HK 116	EF00012	2010-01	2013-01
LPD Antenna	R&S	HL 223	EF00187	2011-02	2014-02
LPD Antenna	R&S	HL 025	EF00327	2010-02	2013-02

AC powerline conducted emissions					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
AMN	R&S	ESH2-Z5	EF00182	2010-09	2012-09
AMN	R&S	ESH3-Z5	EF00036	2010-11	2012-11
EMI Test Receiver	R&S	ESCS 30	EF00295	2011-06	2012-06

1.7 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 dBµV. 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:

Reading on Analyzer (dBµV) + A.F. (dB) = Net field strength (dBµV/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 dBµV/m). The FCC limits are given in units of µV/m. The following formula is used to convert the units of µV/m to dBµV/m:

Limit (dBµV/m) = 20*log (µV/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 dBµV	+	26 dB	=	47.5 dBµV/m	:	47.5 dBµV/m - 57.0 dBµV/m	= -9.5 dB

2 Result Summary

FCC 47 CFR Part 15C, IC RSS-210				
Product Specific Standard Section	**Requirement – Test**	**Reference Method**	**Result**	**Remarks**
RSS-Gen 4.6.1	Occupied Bandwidth	RSS-Gen 4.6.1	N/R	Informational only
FCC 15.231(a)(1) IC RSS-210 A1.1.1(a)	Deactivation of manually operated transmitter	non specific	N/R	EUT not manually operated
FCC 15.231(a)(2) IC RSS-210 A1.1.1(b)	Cease of transmission of automatically operated transmitter	non specific	PASS	
FCC 15.231(a)(3) IC RSS-210 A1.1.1(c)	Total transmission time	non specific	PASS	
FCC 15.231(a)(4) IC RSS-210 A1.1.1(d)	Radio control during emergencies	non specific	N/R	EUT not for emergencies
FCC 15.231(a)(5)	Transmission of set-up information for security systems	non specific	N/R	EUT not for security systems
FCC 15.249(b) FCC 15.205 IC RSS-210 A1.1.2(1)	Field strength of fundamental and spurious emissions	ANSI C63.4	PASS	
FCC 15.231(b)(2) FCC 15.205 IC RSS-210 A1.1.2(2)	Duty cycle	non specific	PASS	
FCC 15.231(c) IC RSS-210 A1.1.3	Emission bandwidth	non specific	PASS	
FCC 15.231(d) IC RSS-210 A1.1.3	Emission bandwidth for the 40.66-40.70 MHz band	non specific	N/R	EUT is not operating in the 40.66-40-70 MHz band
FCC 15.231(d) IC RSS-210 A1.1.4	Frequency Stability for the 40.66-40.70 MHz band	non specific	N/R	EUT is not operating in the 40.66-40-70 MHz band
FCC 15.231(e) IC RSS-210 A1.1.5	Reduced field strength and spurious emissions of radiators operating at a rate exceeding 15.231(a)	ANSI C63.4	N/R	No reduction used
IC RSS-210 Section 2.3 IC RSS-Gen 4.10 6.1	Receiver radiated spurious emissions	ANSI C63.4	PASS	
FCC § 15.107 FCC § 15.207 IC RSS-Gen 7.2.4	AC power line conducted emissions	ANSI C63.4	N/R	EUT exclusively battery powered

Remarks:

For the spurious emission measurement according to 15.231 the general emission limit according to 15.209 has been used. With this more stringent limit the requirements according to 15.109 are automatically fulfilled.

3 Test Conditions and Results

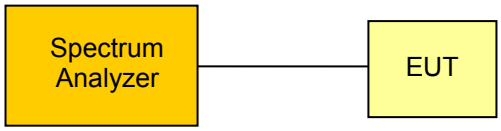
3.1 Test Conditions and Results – Occupied Bandwidth

Occupied Bandwidth acc. IC RSS-Gen	**Verdict: PASS**
Test according to measurement reference	Reference Method
	RSS-Gen 4.6.1
Test frequency range	Tested frequencies
	F_{MID}
EUT test mode	Single

Limits

None (Informational only)

Test setup



Test procedure

1. EUT set to test mode (Communication tester is used if needed)
2. Span set to at least twice the emission spectrum
3. Resolution bandwidth set to 1% of span
4. Occupied Bandwidth (99%) measurement with spectrum analyzer built in measurement function

Test results

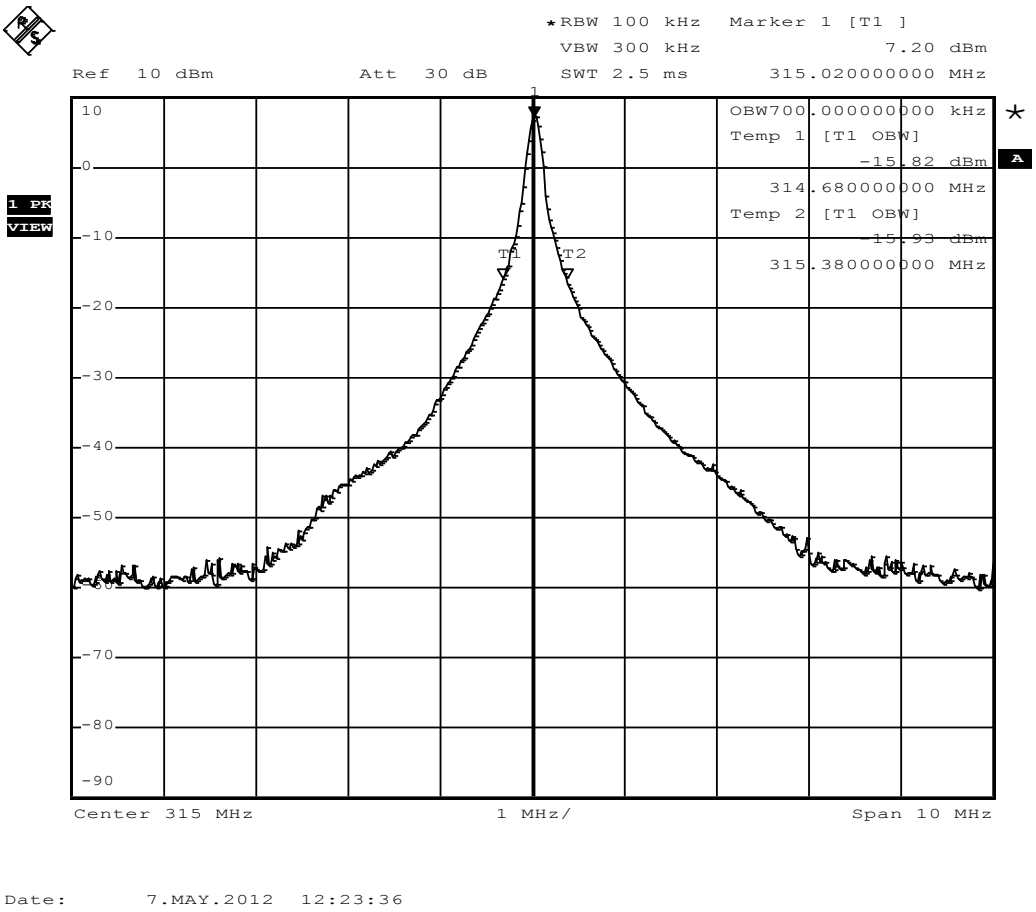
Channel	Frequency [MHz]	Occupied Bandwidth [kHz]
F_{MID}	315	700.00

Comments: Measurement is applicable to all variants

Occupied Bandwidth - F_{MID}

RSS Gen
Occupied Bandwidth

EUT	Actuator
Model	MD15-FtL-315
Approval Holder	Kieback&Peter GmbH Co.KG / G0M-1203-1865
Temperature / Voltage	Tnom / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	Channel.: 315 MHz / ASK
Comment 2	A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3	OBW=700kHz



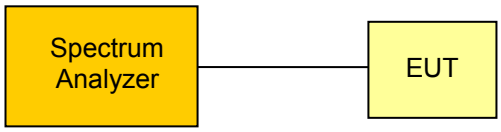
3.2 Test Conditions and Results – Cease of transmission of automatically activated transmitters

Cease of transmission of automatically activated transmitters acc. FCC 47 CFR 15.231 / IC RSS-210	**Verdict: PASS**
Test according referenced standards	Reference Method
	FCC 15.231(a)(2) / IC RSS-210 A1.1.1(b)
Test according to measurement reference	Reference Method
	non specific
Test frequency range	Tested frequencies
	F_{MID}
EUT test mode	Single

Limits

Cease of transmission after 5 seconds after activation

Test setup



Test procedure

1. EUT set to test mode
2. Center frequency is set to test frequency
3. Span it set to zero span
4. Resolution bandwidth is set large enough to accurately capture transmission burts
5. Transmission times after activation is measured

Test results

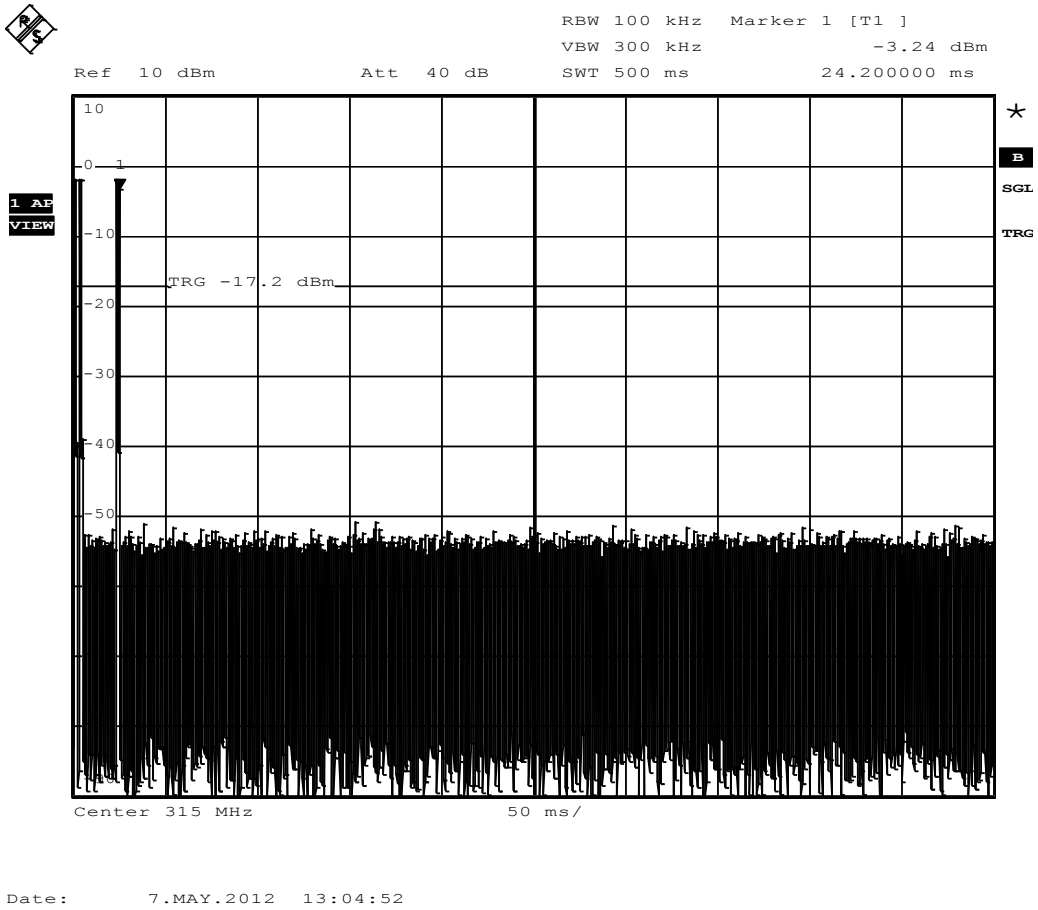
Channel	Frequency [MHz]	Transmission time [s]	Limit [s]	Margin [s]
F_{MID}	315	0.024	5	-4.976

Comments:

Cease of transmission - F_{MID}

FCC 15.231(a)(2)
Cease of Transmission

EUT	Actuator
Model	MD15-FtL-315
Approval Holder	Kieback&Peter GmbH Co.KG / G0M-1203-1865
Temperature / Voltage	Tnom / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC 15.231(a)(2)
Comment 1	Channel.: 315 MHz
Comment 2	Case of transmission of automatically activated transmitter
Comment 3	Transmitter case of transmission time = 24ms Signal is transmitted every 10 minuts



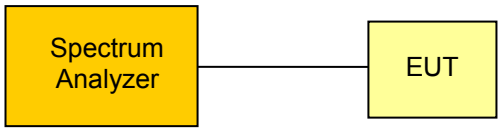
3.3 Test Conditions and Results – Total transmission time

Total transmission time acc. FCC 47 CFR 15.231 / IC RSS-210	**Verdict: PASS**
Test according referenced standards	Reference Method
	FCC 15.231(a)(3) / IC RSS-210 A1.1.1(c)
Test according to measurement reference	Reference Method
	non specific
Test frequency range	Tested frequencies
	F_{MID}
EUT test mode	Single

Limits

Total transmission time shall not exceed 2 seconds per hour

Test setup



Test procedure

1. EUT set to test mode
2. Center frequency is set to test frequency
3. Span it set to zero span
4. Resolution bandwidth is set large enough to accurately capture transmission burts
5. Total transmission time is measured

Test results

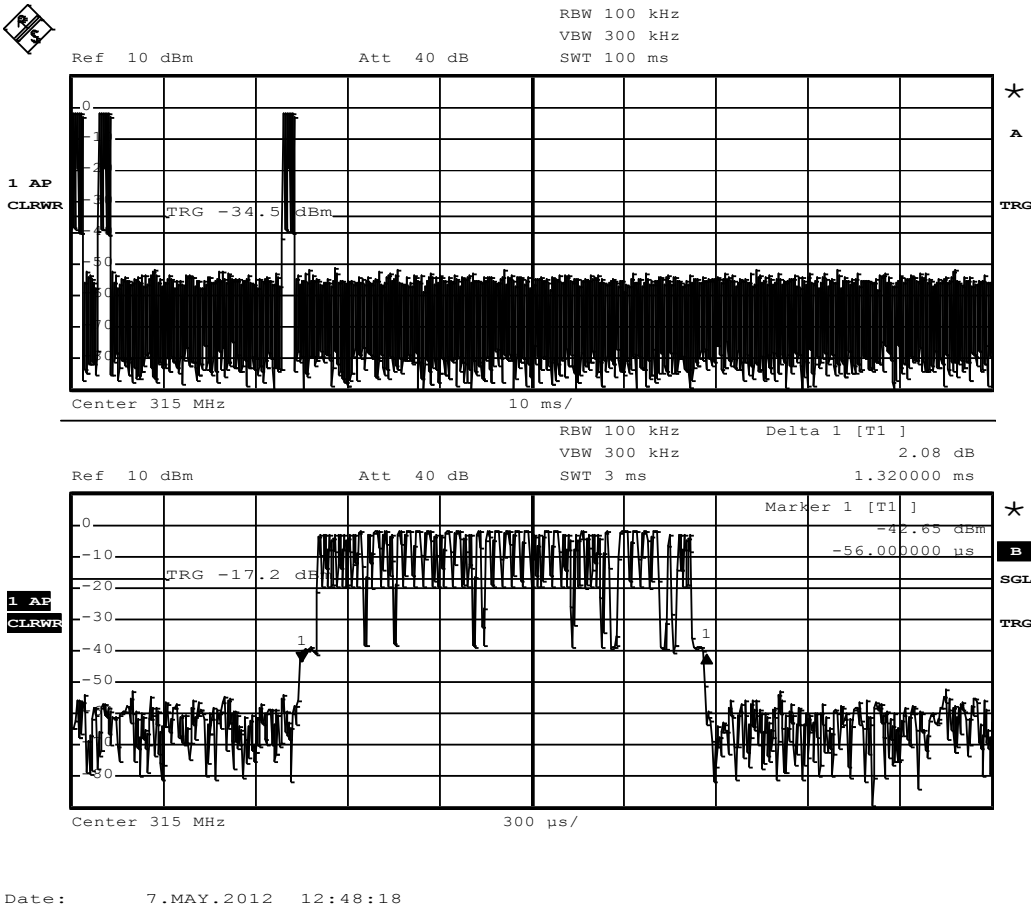
Channel	Frequency [MHz]	Total transmission time [s]	Limit [s]	Margin [s]
F_{MID}	315	0.0234	2	-1.9766

Comments: * Physical distance between EUT and measurement antenna.

Total transmission time - F_{MID}

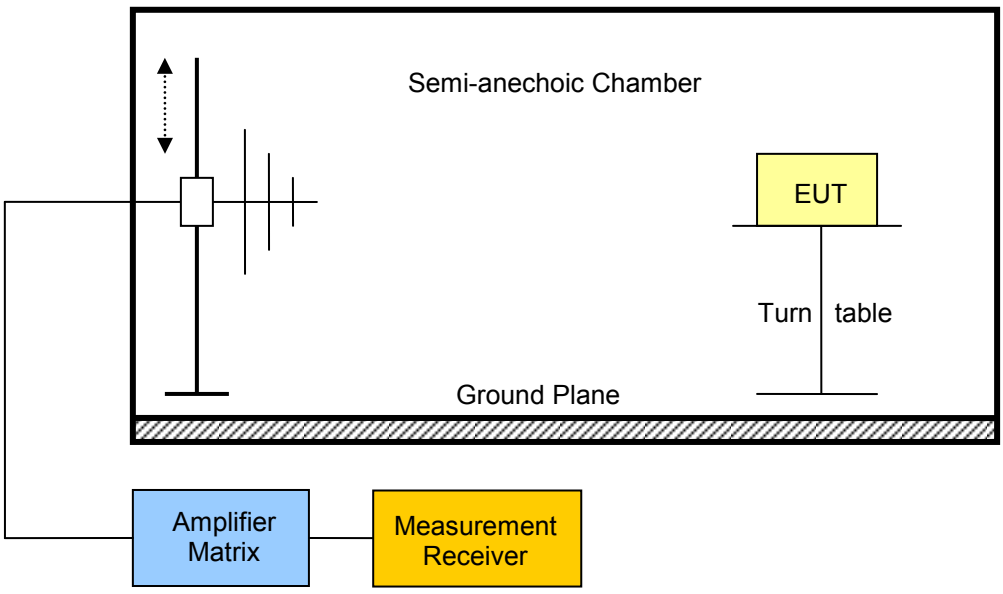
FCC 15.231(a)(2)
Cease of Transmission & Total transmission time & Duty Cycle

EUT	Actuator
Model	MD15-FtL-315
Approval Holder	Kieback&Peter GmbH Co.KG / G0M-1203-1865
Temperature / Voltage	Tnom / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC 15.231(a)(2)
Comment 1	Channel.: 315 MHz
Comment 2	Case of transmission of automatically activated transmitter & Duty Cycle
Comment 3	Duty cycle 3*1.3ms/100ms=3.9ms/100ms ->-28dB -> 20dB used Signal is transmitted every 10 minuts; Transmission per hour=6*3.9 = 23.4ms



3.4 Test Conditions and Results – Field strength of fundamental and spurious emissions

Field strength of fundamental and spurious emissions acc. FCC 47 CFR 15.231 / IC RSS-210				**Verdict: PASS**
Test according referenced standards	Reference Method			
	FCC 15.231(b) / IC RSS-210 A1.1.2(b)			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Test frequency range	Tested frequencies			
	30 MHz – 10th hamonic			
EUT test mode	Single			
Limits				
Fundamental Frequency [MHz]	Fundamental Limit [µV/m]	Fundamental Limit [dBµV/m]	Spurious Limit [dBµV/m]	Limit Distance [m]
40.66-40.70	2250	66.95	46.95	3
70-130	1250	61.94	41.94	3
130-174	1250-3750	61.94 – 71.48	41.94 – 51.48	3
174-260	3750	71.48	51.48	3
260-470	3750-12500	71.48 – 81.94	51.48 – 61.94	3
> 470	12500	81.94	61.94	3
Detector = Quasi-Peak or Average				
Test setup				



Test procedure
1. EUT set to test mode 2. Span it set according to measurement range 3. Resolution bandwidth below 1GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1MHz with peak/average detector is used above 1GHz 4. Markers are set to maximum emission levels

Test results	
EUT Fundamental frequency	315 MHz
EUT Fundamental Limit	Average = 75.62 dbµV/m / Peak = 95.62 dbµV/m
EUT Spurious Limit	Average = 55.62 dbµV/m / Peak = 75.62 dbµV/m

Channel	Frequency [MHz]	Emission [MHz]	Level [dbµV/m]	Detector	Pol.	Limit [dbµV/m]	Limit distance [m]*	Margin [dB]
F_{MID}	315	315	81.85	pk	ver	95.62	3	-13.77
F_{MID}	315	315	61.85	avg	ver	75.62	3	-13.77
F_{MID}	315	315	72.87	pk	hor	95.62	3	-22.75
F_{MID}	315	315	52.87	avg	hor	75.62	3	-22.75
F_{MID}	315	2521	57.20	pk	ver	74***	3	-16.80
F_{MID}	315	2521	37.20	avg	ver	54***	3	-16.80

Comments: * Physical distance between EUT and measurement antenna.
** Average value determined by duty cycle correction (see plot “Total transmission time”)
*** General 15.209 emission limits used as spurious emission limit. (Hence the requirements of 15.109 are also fulfilled)

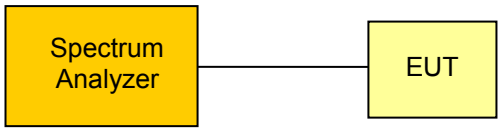
3.5 Test Conditions and Results – Duty Cycle

Total transmission time acc. FCC 47 CFR 15.231 / IC RSS-210	**Verdict: PASS**
Test according referenced standards	Reference Method
	FCC 15.231(a)(3) / IC RSS-210 A1.1.1(c)
Test according to measurement reference	Reference Method
	non specific
Test frequency range	Tested frequencies
	F_{MID}
EUT test mode	Single

Limits

None (only for peak to average correction, 20dB max)

Test setup



Test procedure

1. EUT set to test mode
2. Center frequency is set to test frequency
3. Span it set to zero span
4. Resolution bandwidth is set large enough to accurately capture transmission burts
5. Total transmission time is measured

Test results

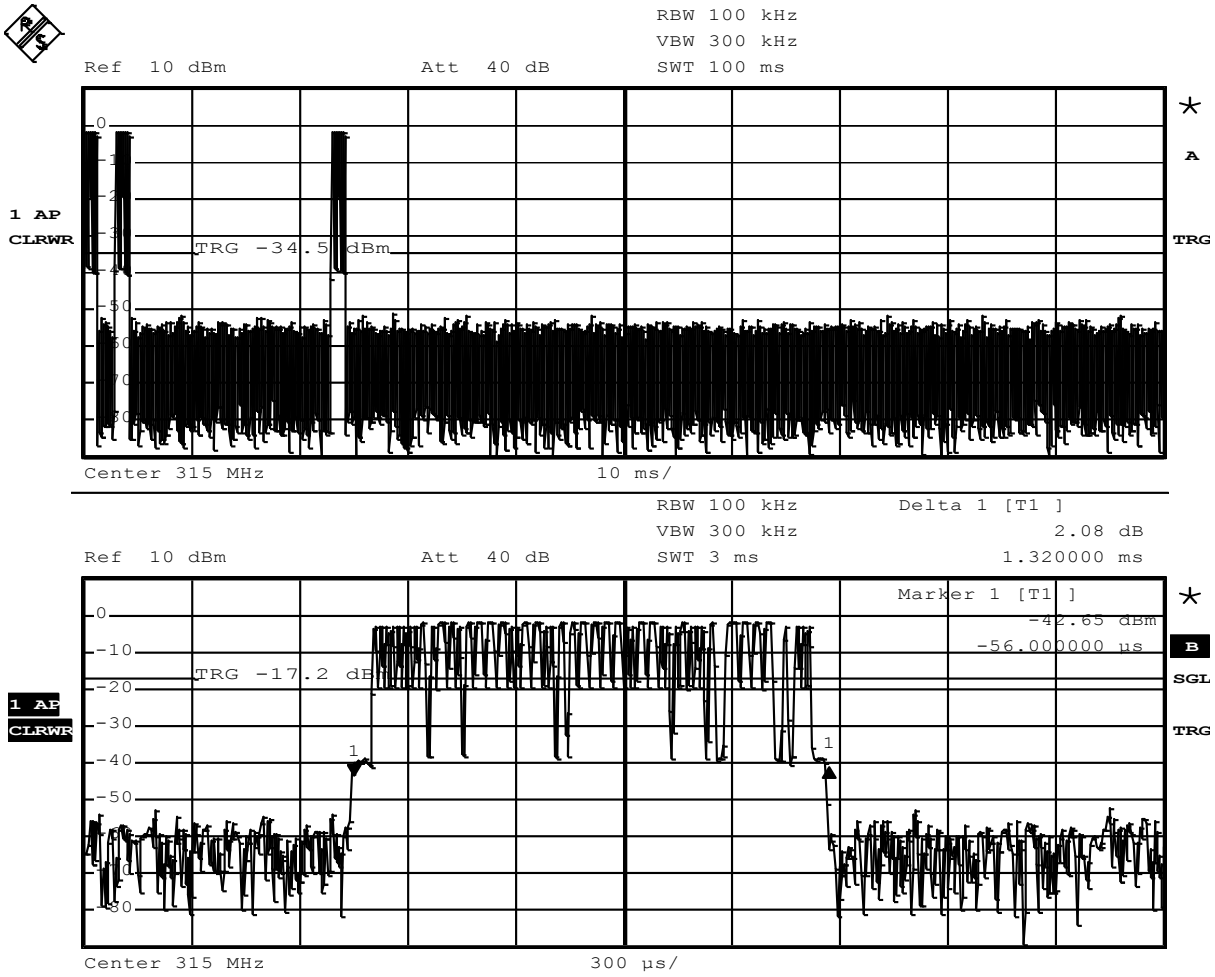
Channel	Frequency [MHz]	Duty Cycle [% @ 100ms]	Duty Cycle correction [dB]
F_{MID}	315	3.9	28.18 -> 20dB

Comments: * Physical distance between EUT and measurement antenna.

Duty Cycle - F_{MID}

FCC 15.231(a)(2)
Cease of Transmission & Total transmission time & Duty Cycle

EUT	Actuator
Model	MD15-FtL-315
Approval Holder	Kieback&Peter GmbH Co.KG / G0M-1203-1865
Temperature / Voltage	Tnom / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC 15.231(a)(2)
Comment 1	Channel.: 315 MHz
Comment 2	Case of transmission of automatically activated transmitter & Duty Cycle
Comment 3	Duty cycle 3*1.3ms/100ms=3.9ms/100ms ->-28dB -> 20dB used Signal is transmitted every 10 minuts; Transmission per hour=6*3.9 = 23.4ms



Date: 7.MAY.2012 12:48:18

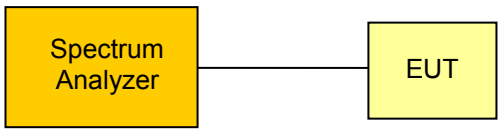
3.6 Test Conditions and Results – Emission Bandwidth

Emission Bandwidth acc. FCC 15.231 / IC RSS-210	**Verdict: PASS**
Test according to measurement reference	Reference Method
	FCC 15.231(c) / IC RSS-210 A1.1.3
Test frequency range	Tested frequencies
	F_{MID}
EUT test mode	Single

Limits

0.25 % of center frequency

Test setup



Test procedure

1. EUT set to test mode (Communication tester is used if needed)
2. Span set to at least twice the emission spectrum
3. Resolution bandwidth set to 1% of span
4. For Industry Canada the occupied bandwidth (99%) is measurement with spectrum analyzer built in measurement function
5. For FCC the 20 dB bandwidth is measurement with spectrum analyzer

Test results - FCC

Channel	Frequency [MHz]	Emission Bandwidth [kHz]	Limit [kHz]	Margin [kHz]
F_{MID}	315	512.8	787.5	-274.7

Test results – IC

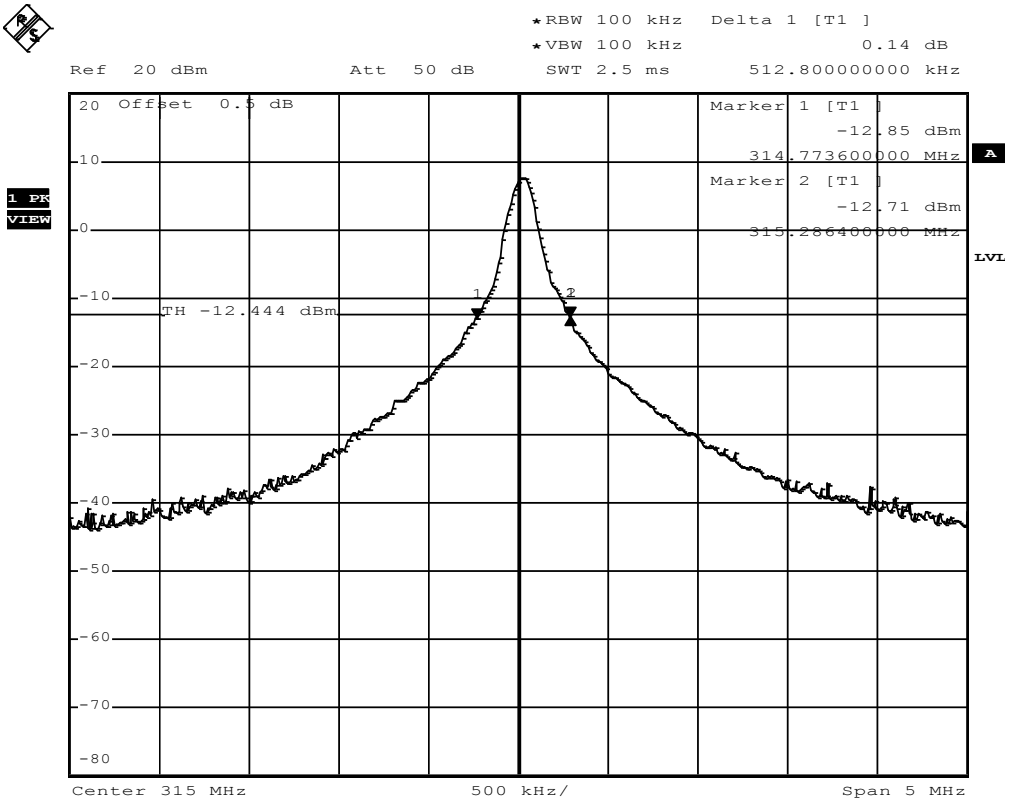
Channel	Frequency [MHz]	Emission Bandwidth [kHz]	Limit [kHz]	Margin [kHz]
F_{MID}	315	700.00	787.5	-87.5

Comments: Measurement is applicable to all variants

FCC Emission Bandwidth - F_{MID}

20dBBandwidth

EUT	Actuator
Model	MD15-FtL-315
Approval Holder	Kieback&Peter GmbH Co.KG / G0M-1203-1865
Temperature / Voltage	Tnom / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	FCC 15.231(a)(2)
Comment 1	Channel.: 315 MHz
Comment 2	20 dB Bandwidth= 512kHz

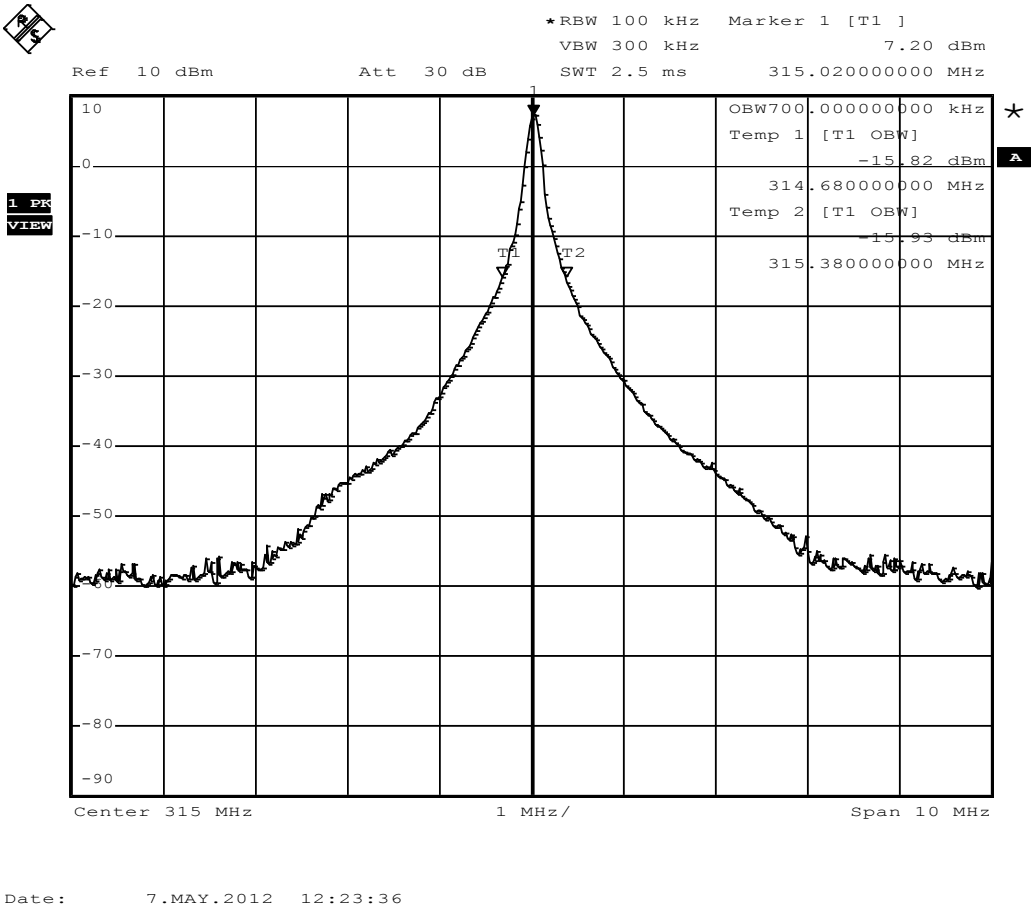


Comment: 20 dB bandwidth: 512.8 KHz
Date: 7.MAY.2012 13:15:16

IC Emission Bandwidth - F_{MID}

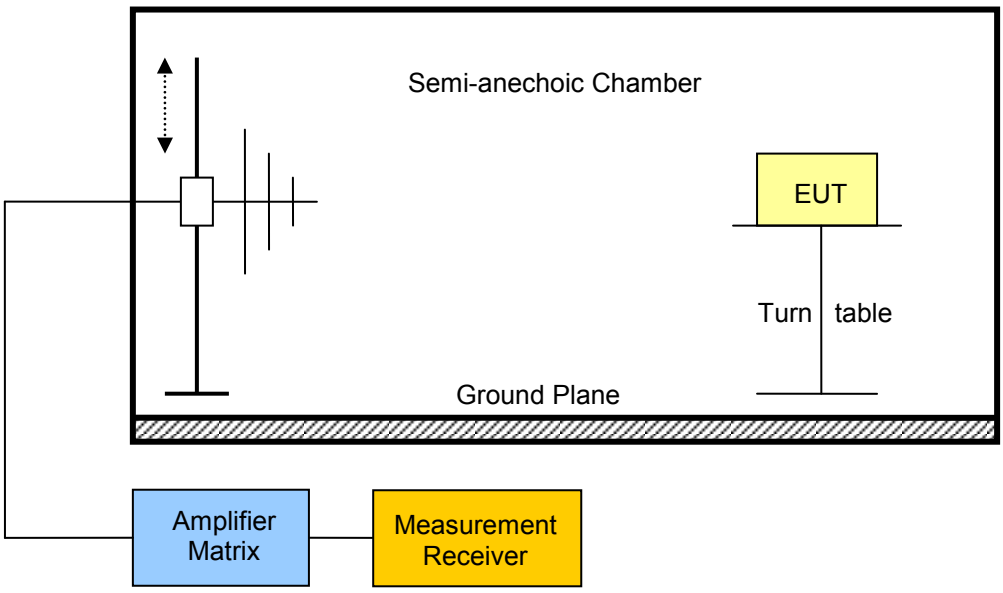
Occupied Bandwidth

EUT	Actuator
Model	MD15-FtL-315
Approval Holder	Kieback&Peter GmbH Co.KG / G0M-1203-1865
Temperature / Voltage	Tnom / Vnom
Test Site / Operator	Eurofins Product Service GmbH / Mr. Treffke
Test Specification	4.4.1 Occupied Bandwidth
Comment 1	Channel.: 315 MHz / ASK
Comment 2	A spectrum analyzer with an integrated 99% power bandwidth function is used
Comment 3	OBW=700kHz



3.7 Test Conditions and Results – Receiver radiated emissions

Receiver radiated emissions acc. IC RSS-210				**Verdict: PASS**
Test according referenced standards	Reference Method			
	IC RSS-210 A8.5			
Test according to measurement reference	Reference Method			
	ANSI C63.4			
Test frequency range	Tested frequencies			
	30 MHz – 3th Harmonic			
EUT test mode	Receive			
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
Test setup				



Test procedure
1. EUT set to receive mode (Communication tester is used if needed) 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Markers are set to peak emission levels

Test results

Channel	Frequency [MHz]	Emission [MHz]	Emission Level [dbµV/m]	Emission Level [µV/m]	Det.	Limit [µV/m]	Margin [µV/m]
F_{MID}	315	3952	43.25	145.38	pk	500.00	-354.62

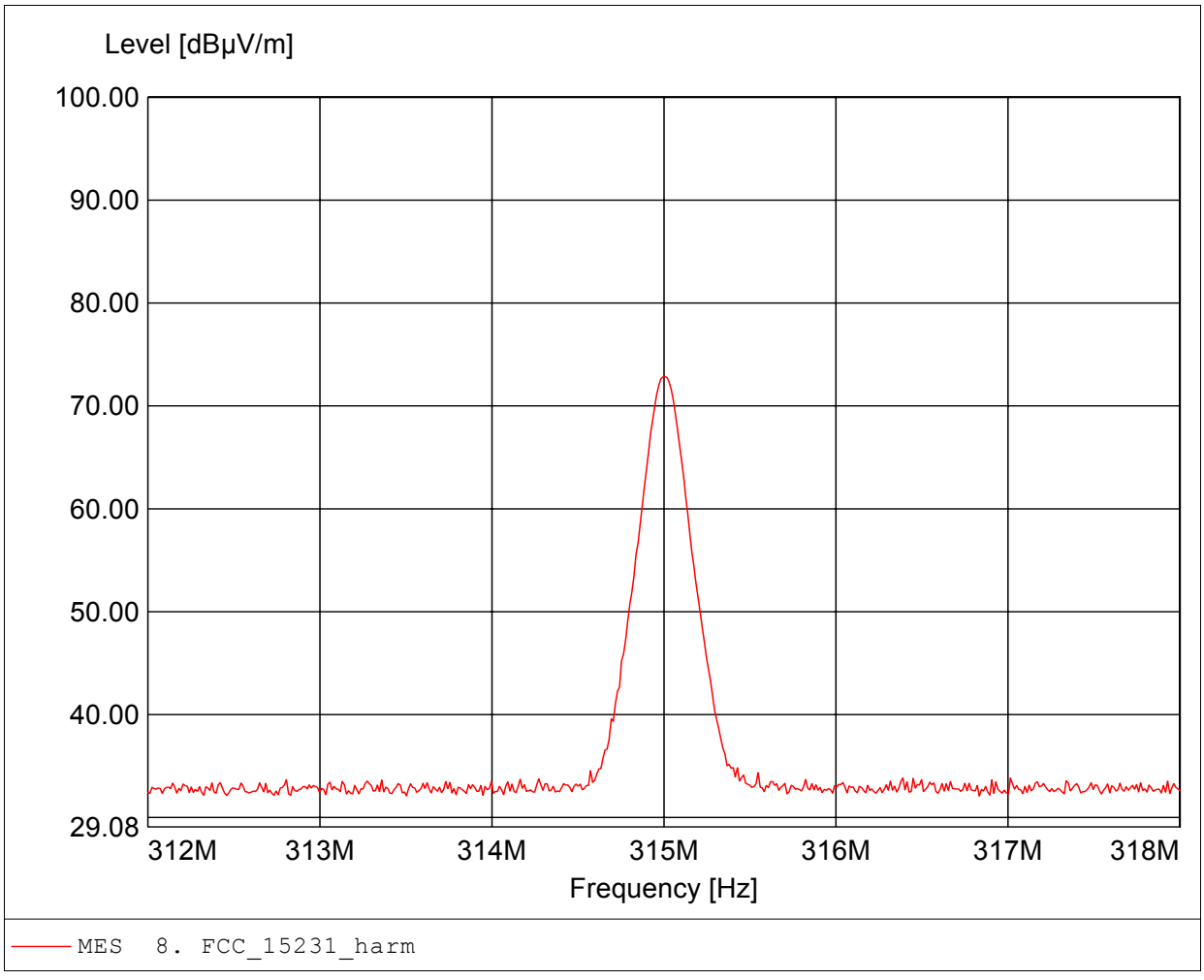
Comments: * Physical distance between EUT and measurement antenna.
The stated emission level corresponds to ambient noise floor. No real spurious emission has been measured.

ANNEX A Transmitter fundamental field strength

Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

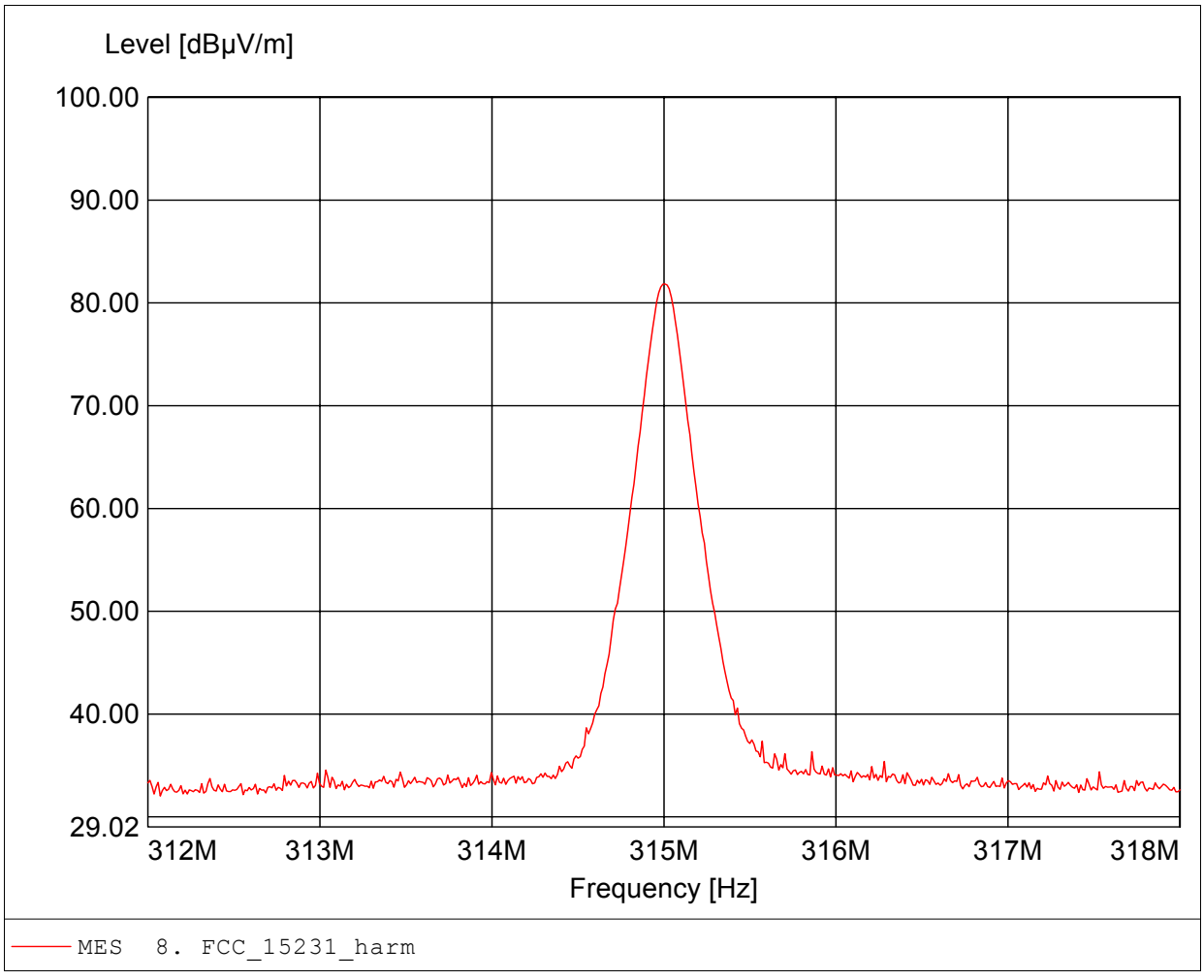
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 100% duty cycle / Tx-Mode 315MHz / vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: HL 223
Comment 2:	Freq: 315.006MHz, Emax: 72.87dBµV/m, RBW: 100kHz



Carrier power (Field Strength)

FCC RULES PART 15, SUBPART C

Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 100% duty cycle / Tx-Mode 315MHz / vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: HL 223
Comment 2:	Freq: 315.006MHz, Emax: 81.85dBµV/m, RBW: 100kHz

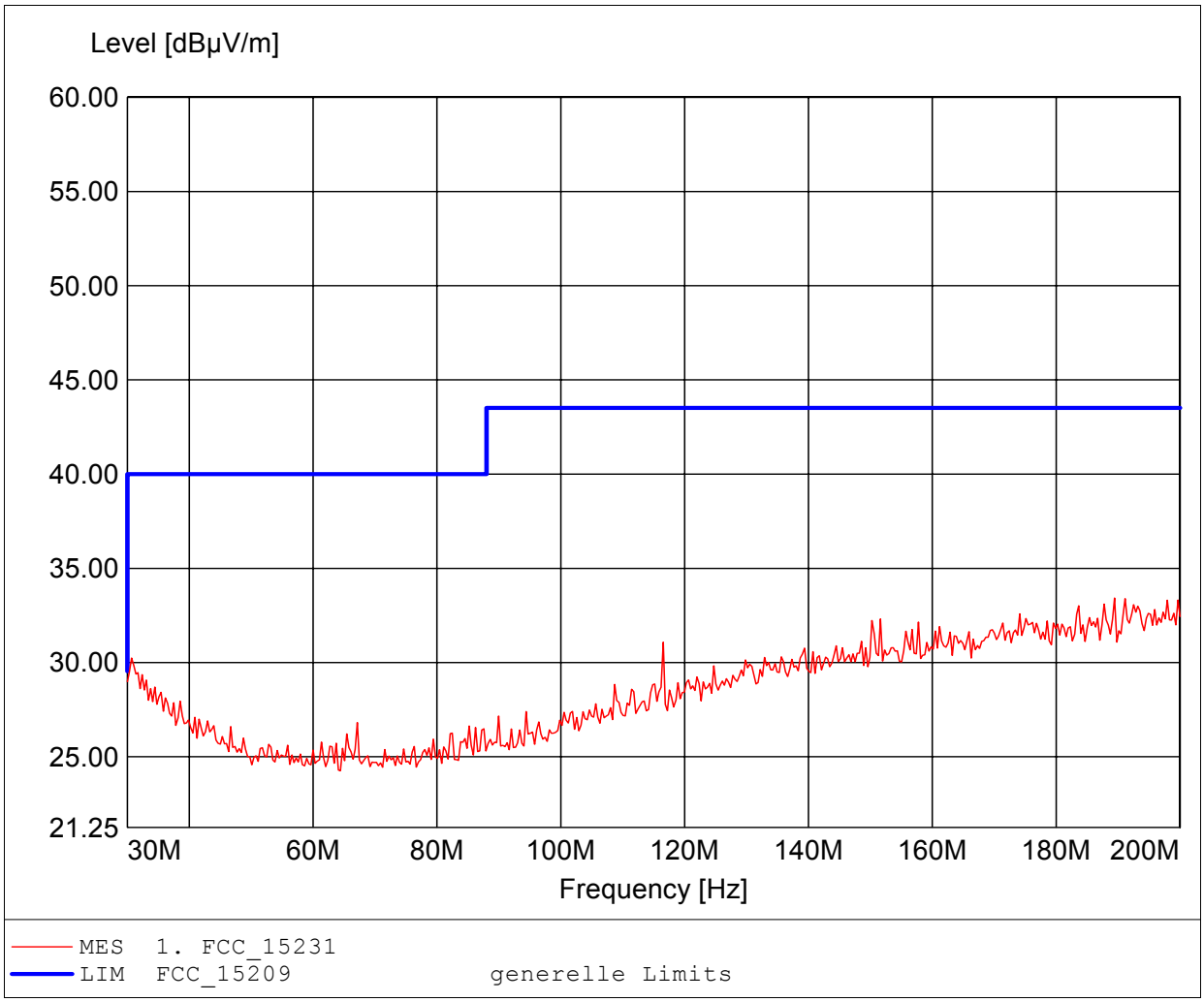


ANNEX B Transmitter radiated spurious emissions

Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

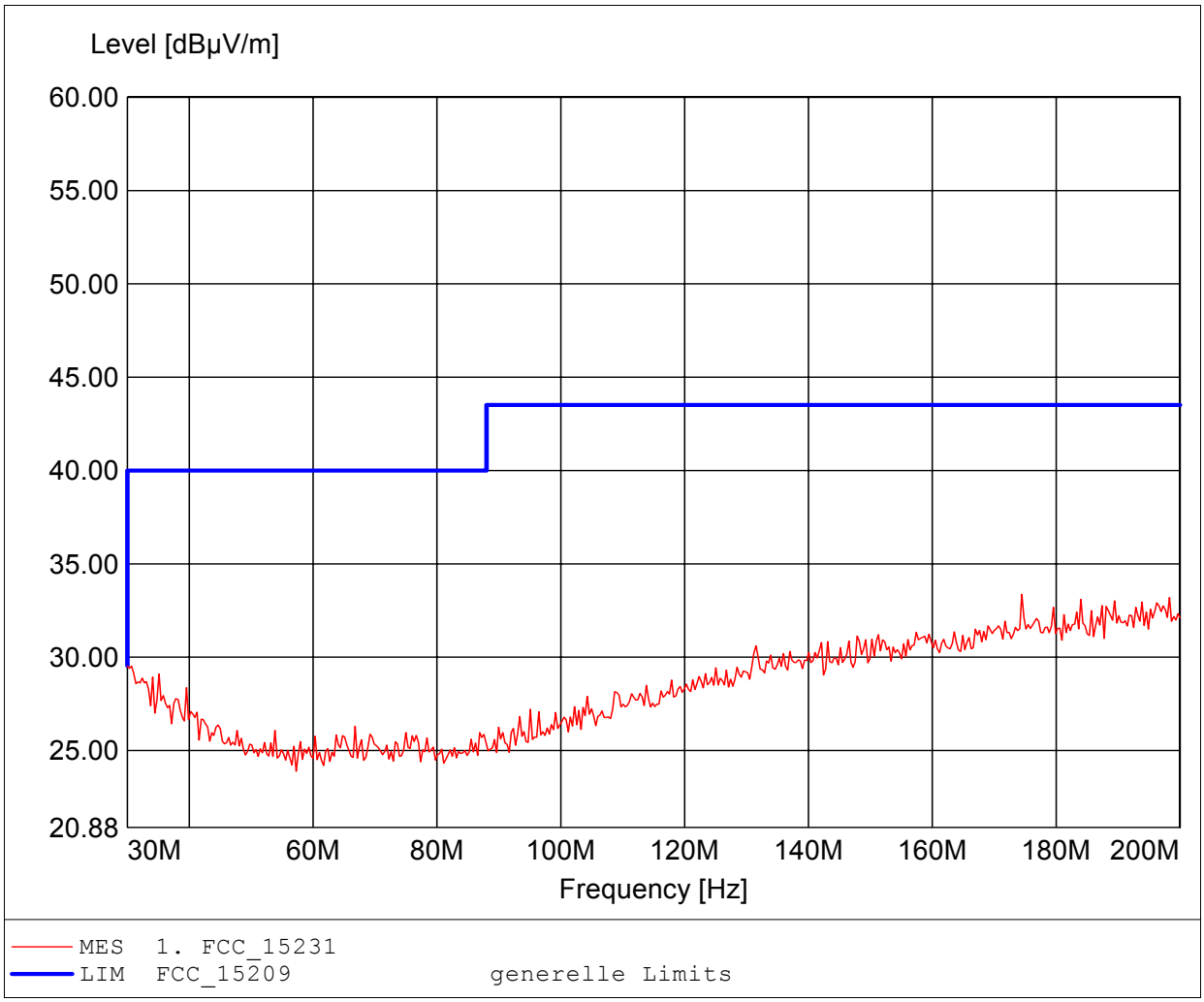
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 100% duty cycle / Tx-Mode 315MHz / vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: HK 116
Comment 2:	Freq: 189.439MHz, Emax: 33.42dBµV/m, RBW: 100kHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

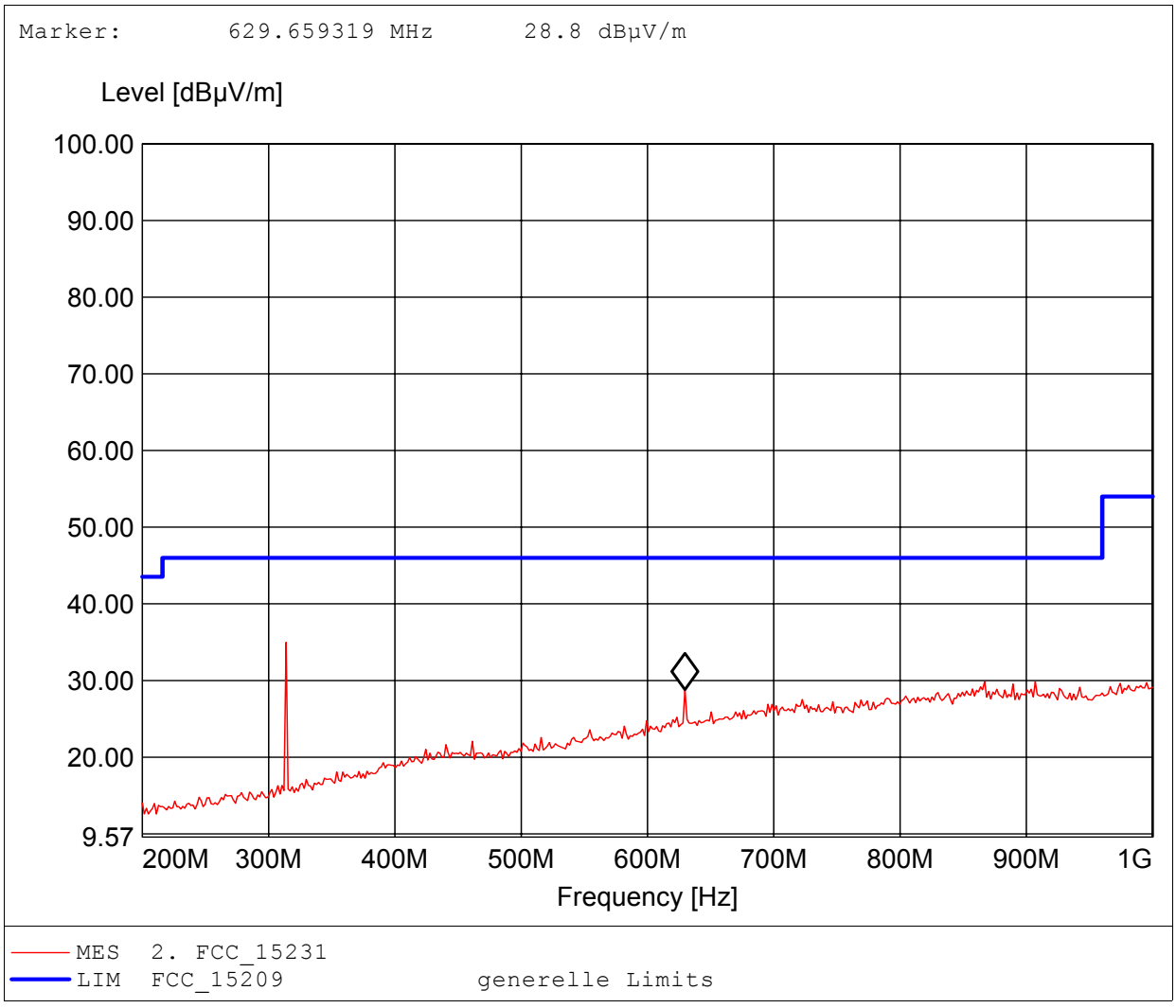
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 100% duty cycle / Tx-Mode 315MHz / vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: HK 116
Comment 2:	Freq: 174.449MHz, Emax: 33.37dBµV/m, RBW: 100kHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

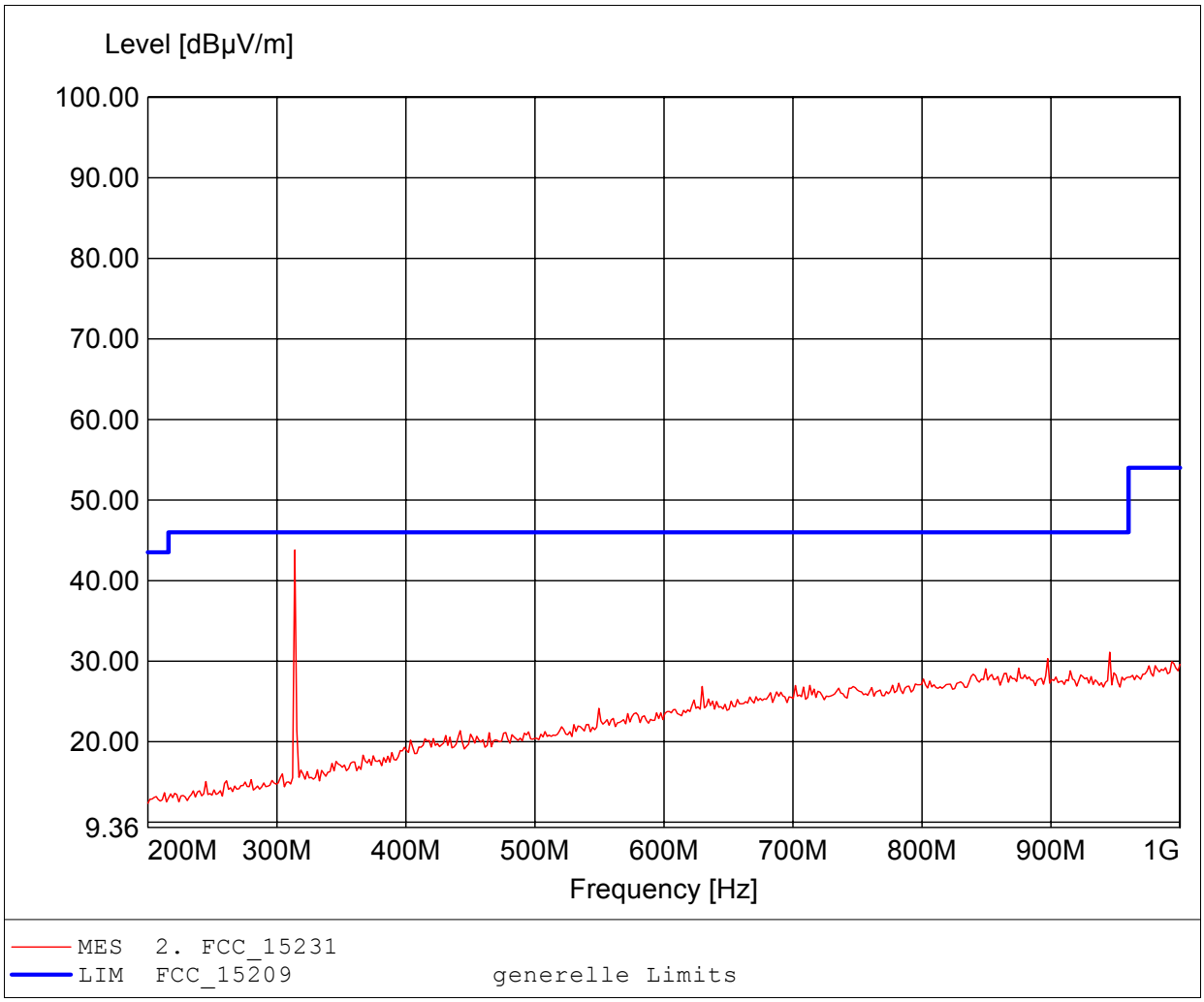
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 100% duty cycle / Tx-Mode 315MHz / vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: HL 223,notch-filter amplif.
Comment 2:	Freq: 313.828MHz, Emax: 34.97dBµV/m, RBW: 100kHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

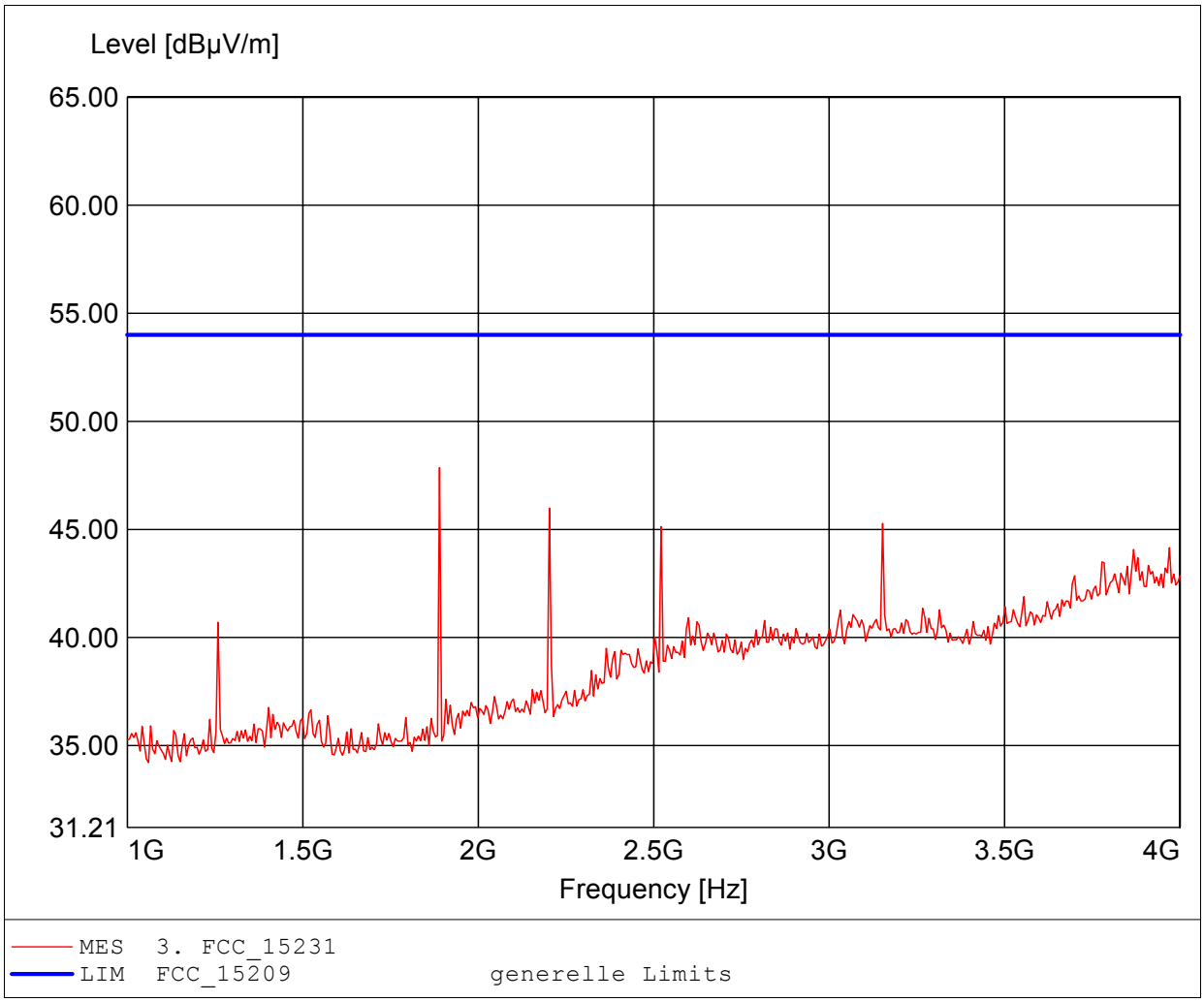
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 100% duty cycle / Tx-Mode 315MHz / vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: HL 223,notch-filter amplif.
Comment 2:	Freq: 313.828MHz, Emax: 43.79dBµV/m, RBW: 100kHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

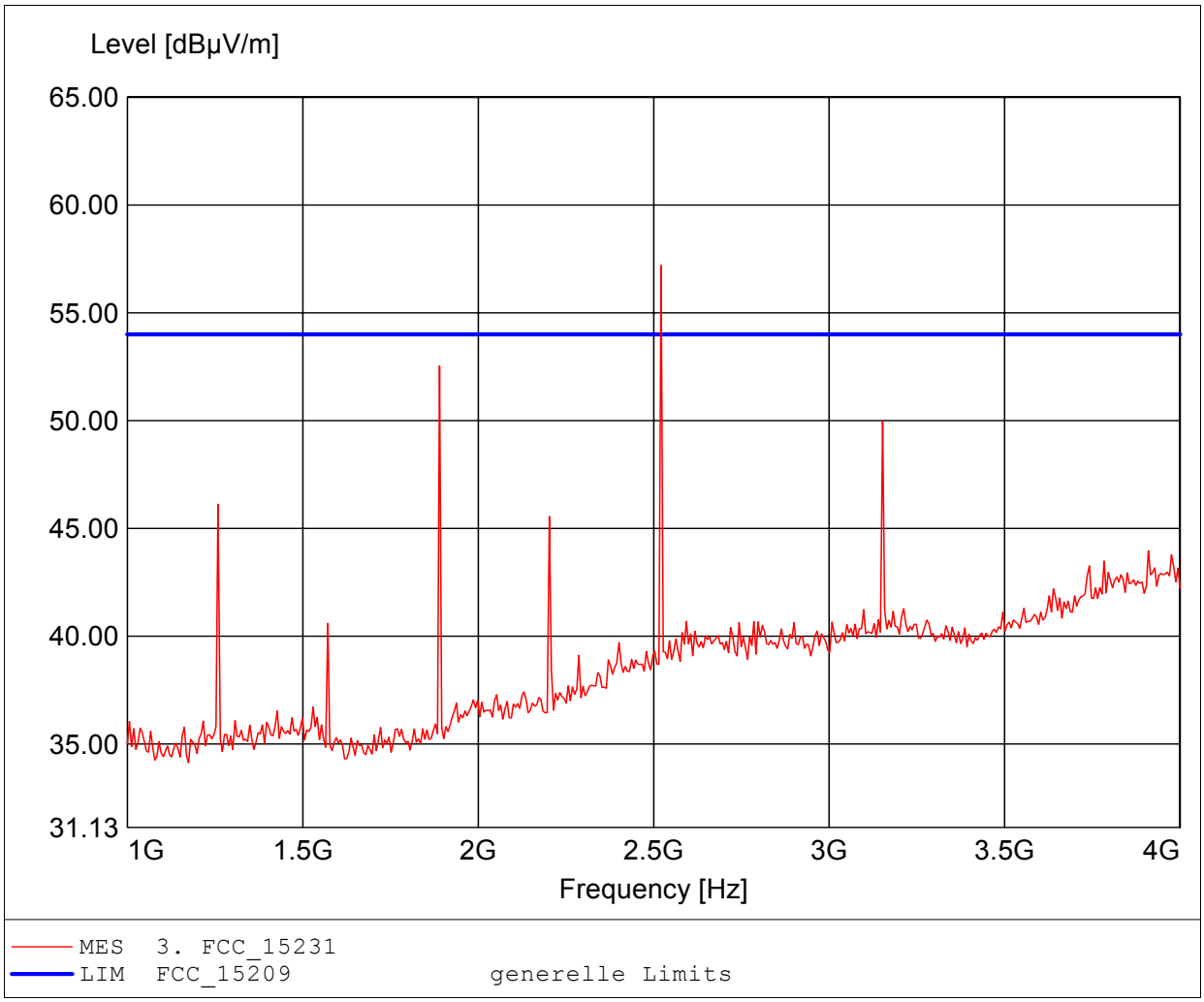
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 100% duty cycle / Tx-Mode 315MHz / vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA2190D, amplif.
Comment 2:	Freq: 1.890GHz, Emax: 47.86dBµV/m, RBW: 1MHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

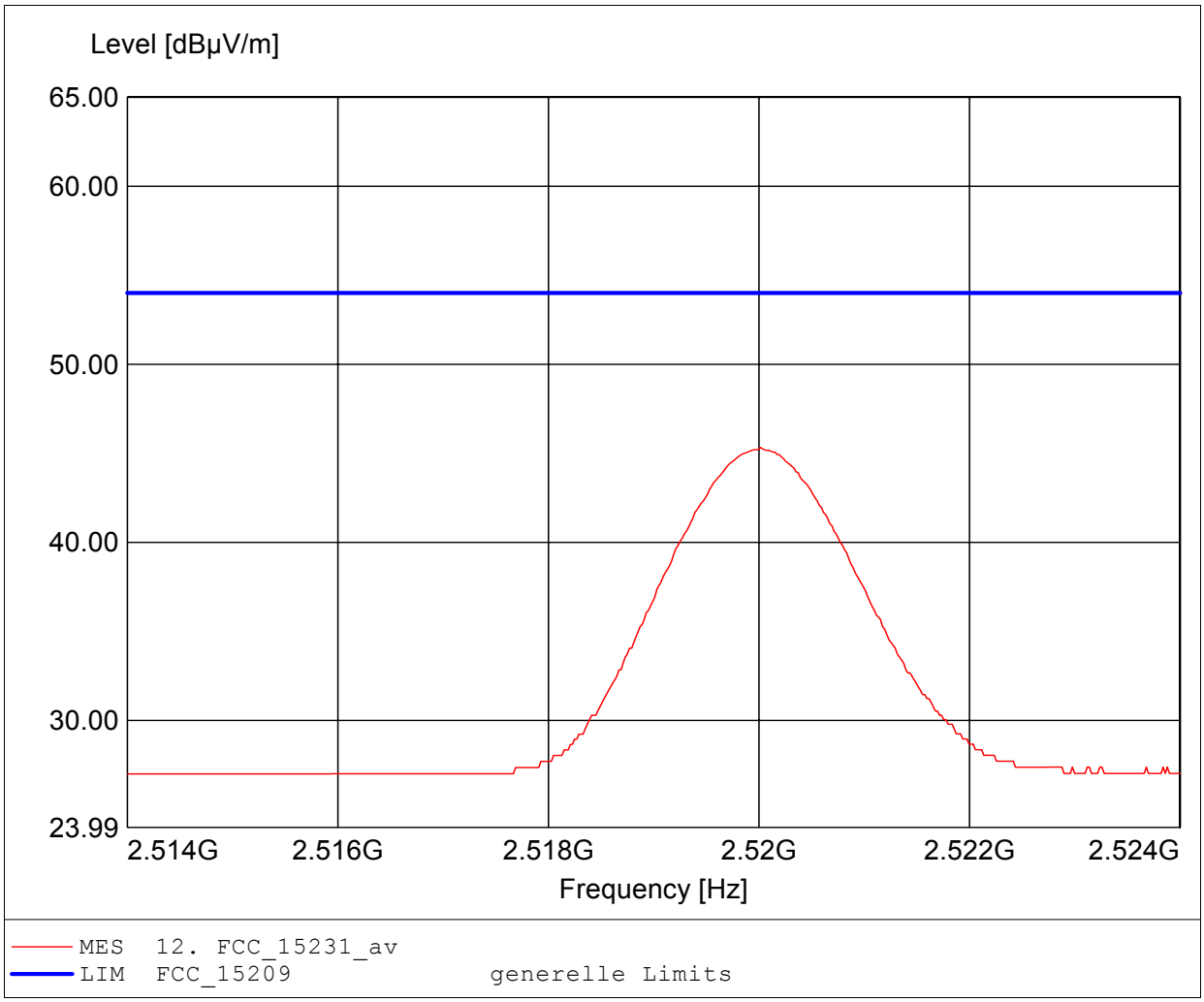
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 100% duty cycle / Tx-Mode 315MHz / vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, peak detector
Comment 1:	Dist.: 3m, Ant.: BBHA2190D, amplif.
Comment 2:	Freq: 2.521GHz, Emax: 57.20dBµV/m, RBW: 1MHz



Spurious emissions Field Strength Tx

FCC RULES PART 15, SUBPART C

Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode CW 50% duty cycle Tx 315MHz / EUT vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	according to §15.231, average detector
Comment 1:	Dist.: 3m, Ant.: BBHA2190D, amplif.
Comment 2:	Freq: 2.520GHz, Emax: 45.34dBµV/m, RBW: 1MHz

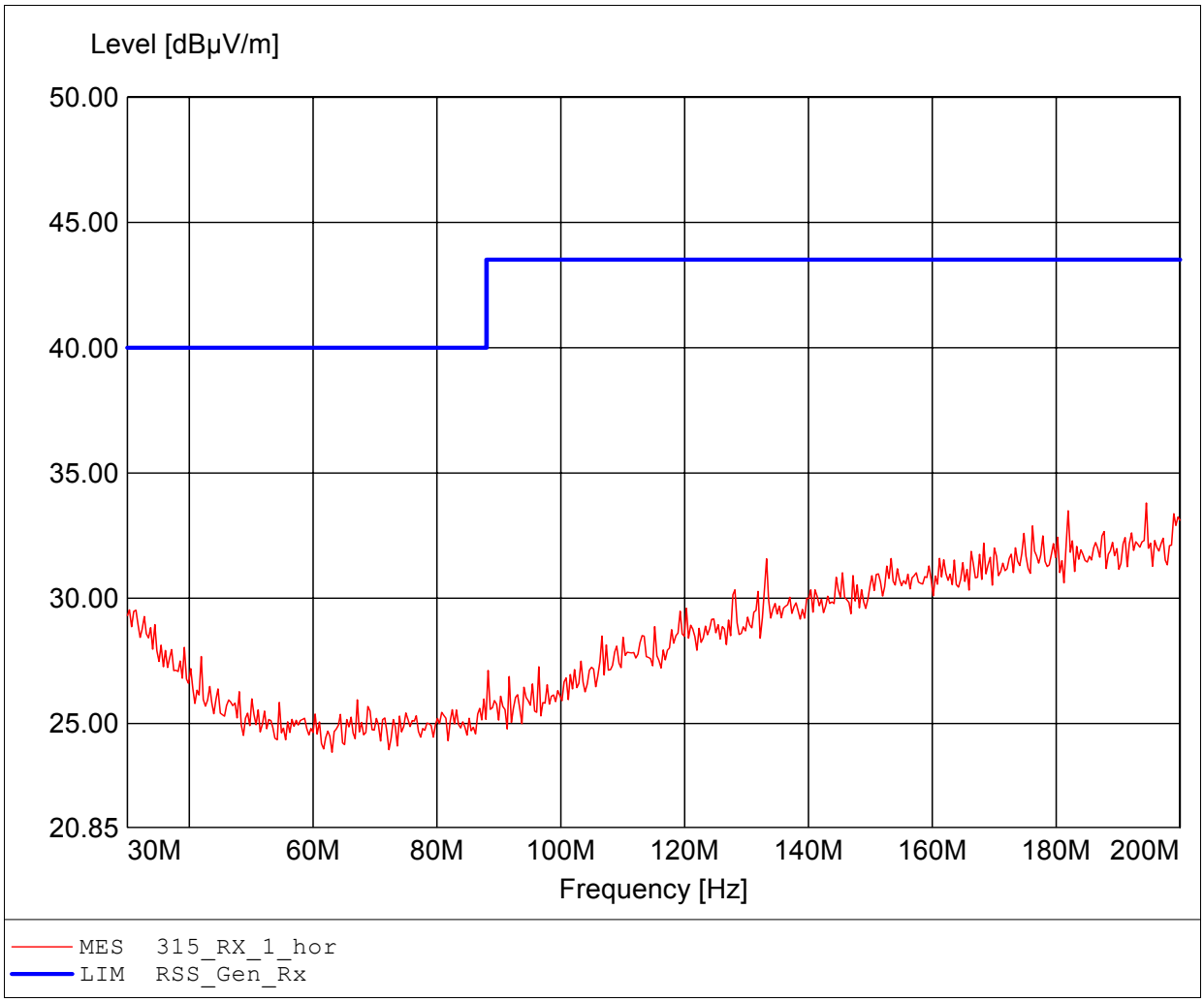


ANNEX C Receiver radiated spurious emissions

Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

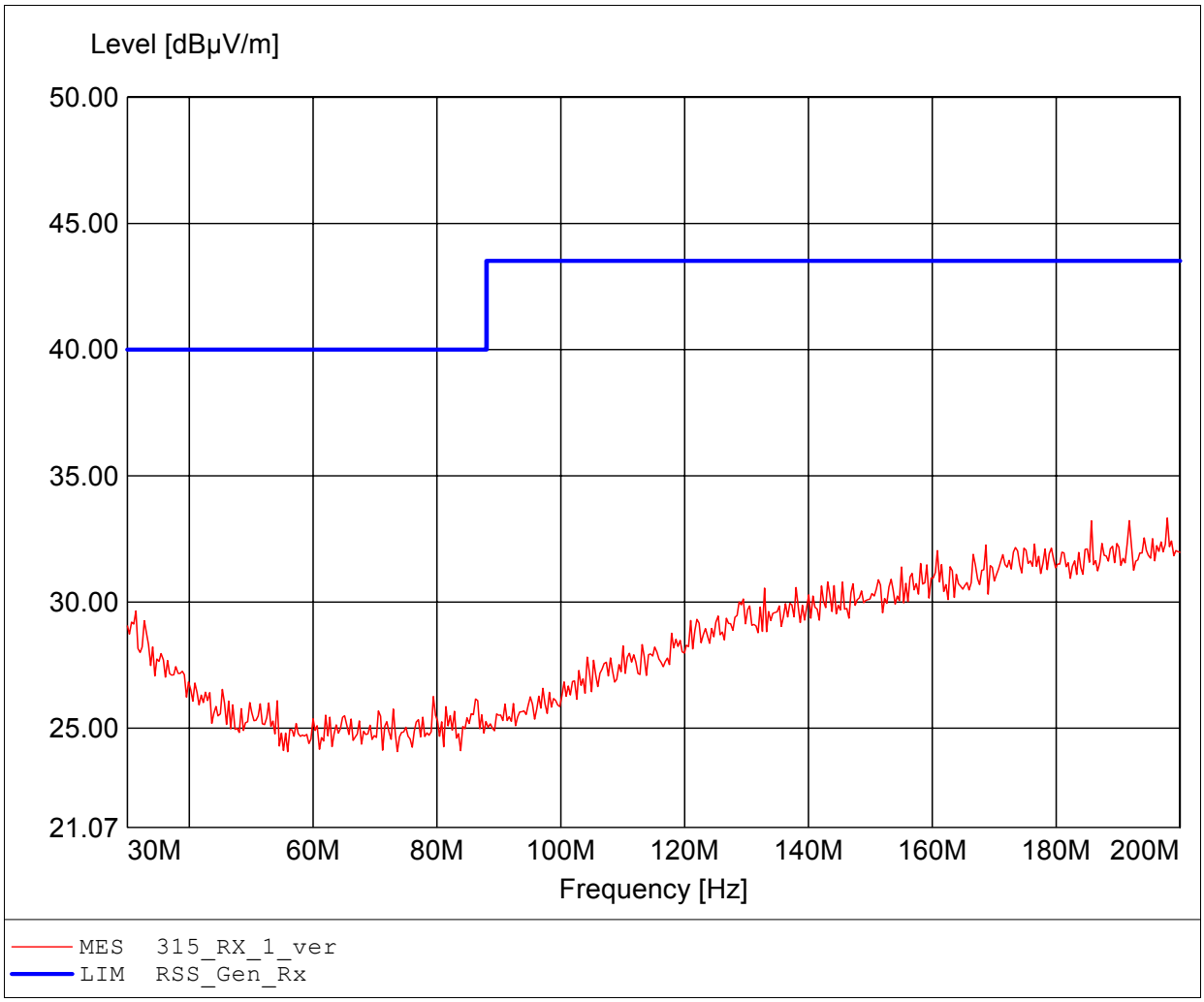
```
Applicant:              Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT /  Model:           Actuator  /  MD15-FtL-315
Mode:                   test mode  / Rx-Mode 315MHz  / EUT vertical
Test Site / Operator:   Eurofins Product Service GmbH    /   Mr. Treffke
Test Condition:         Tnom: 24°C / Vnom.: 4.5V DC  (3x1.5V battery)
Test Specification:     Freq. / CH: 315
Comment 1:              Dist.: 3m, Ant.: HK 116
Comment 2:              Freq:194.549MHz Emax:33.80dBµV/m RBW: 100 kHz
```



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

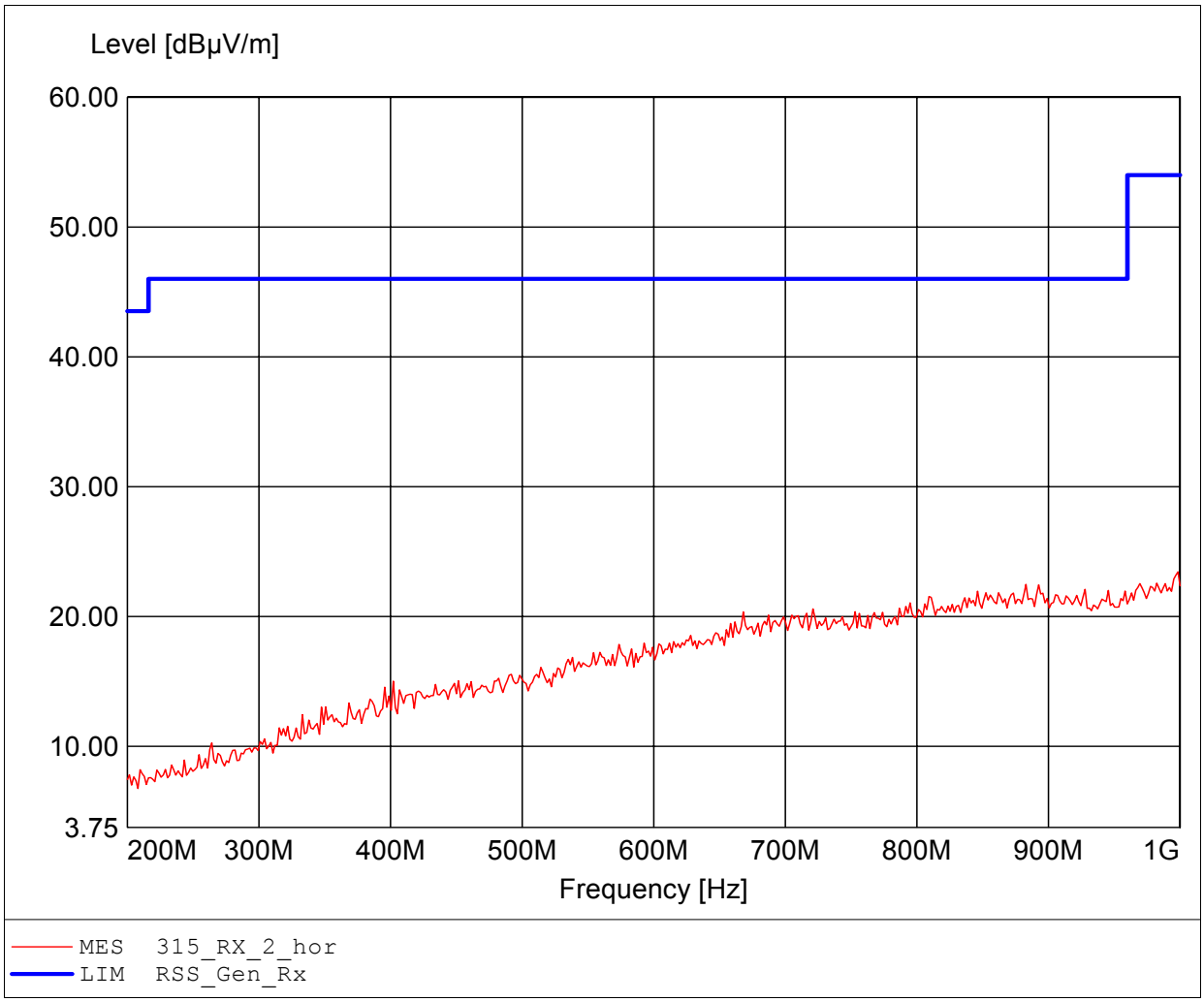
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode / Rx-Mode 315MHz / EUT vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	Freq. / CH: 315
Comment 1:	Dist.: 3m, Ant.: HK 116
Comment 2:	Freq:197.956MHz Emax:33.33dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

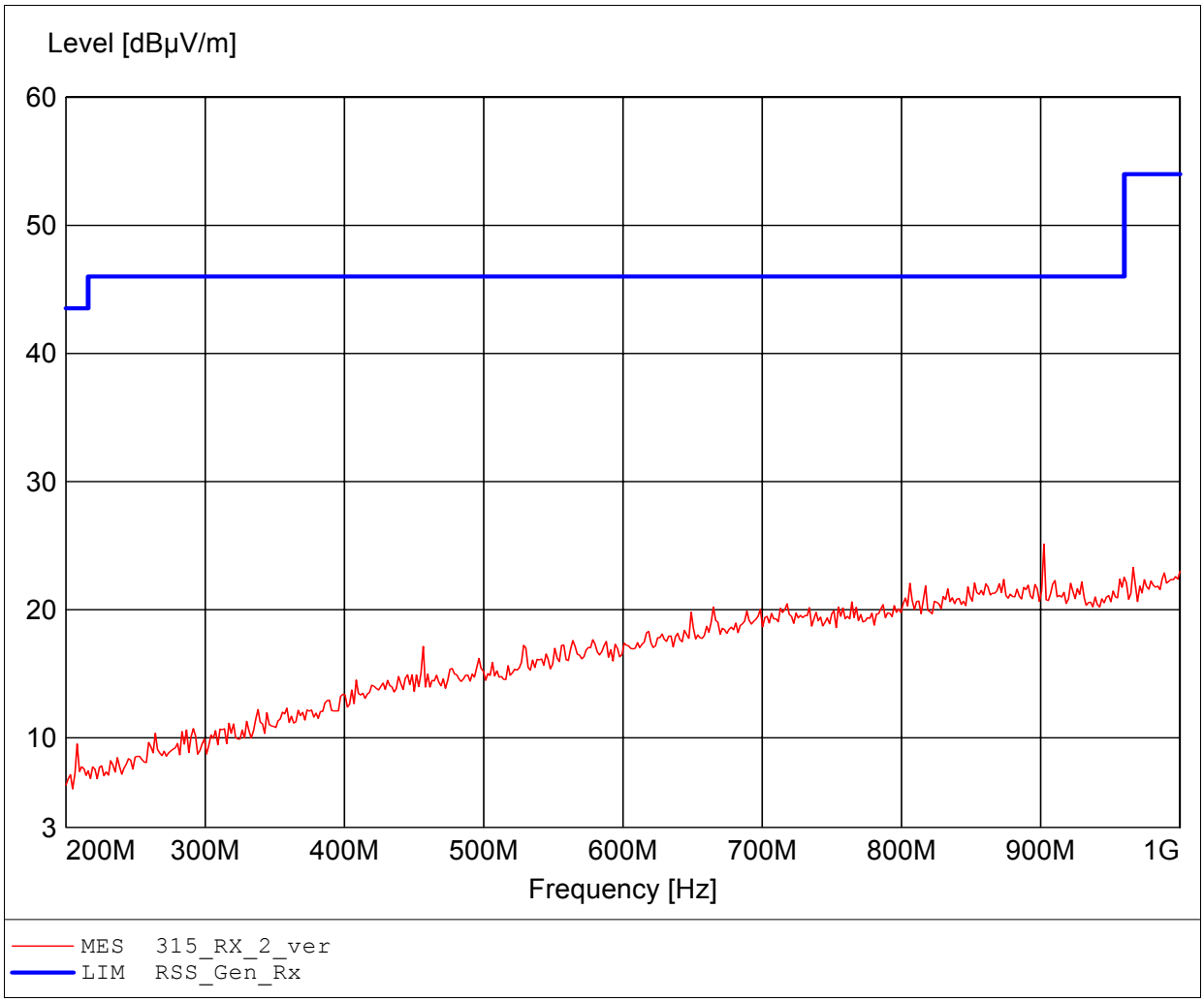
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode / Rx-Mode 315MHz / EUT vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	Freq. / CH: 315
Comment 1:	Dist.: 3m, Ant.: HL 223, ampl.
Comment 2:	Freq:998.397MHz Emax:23.44dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

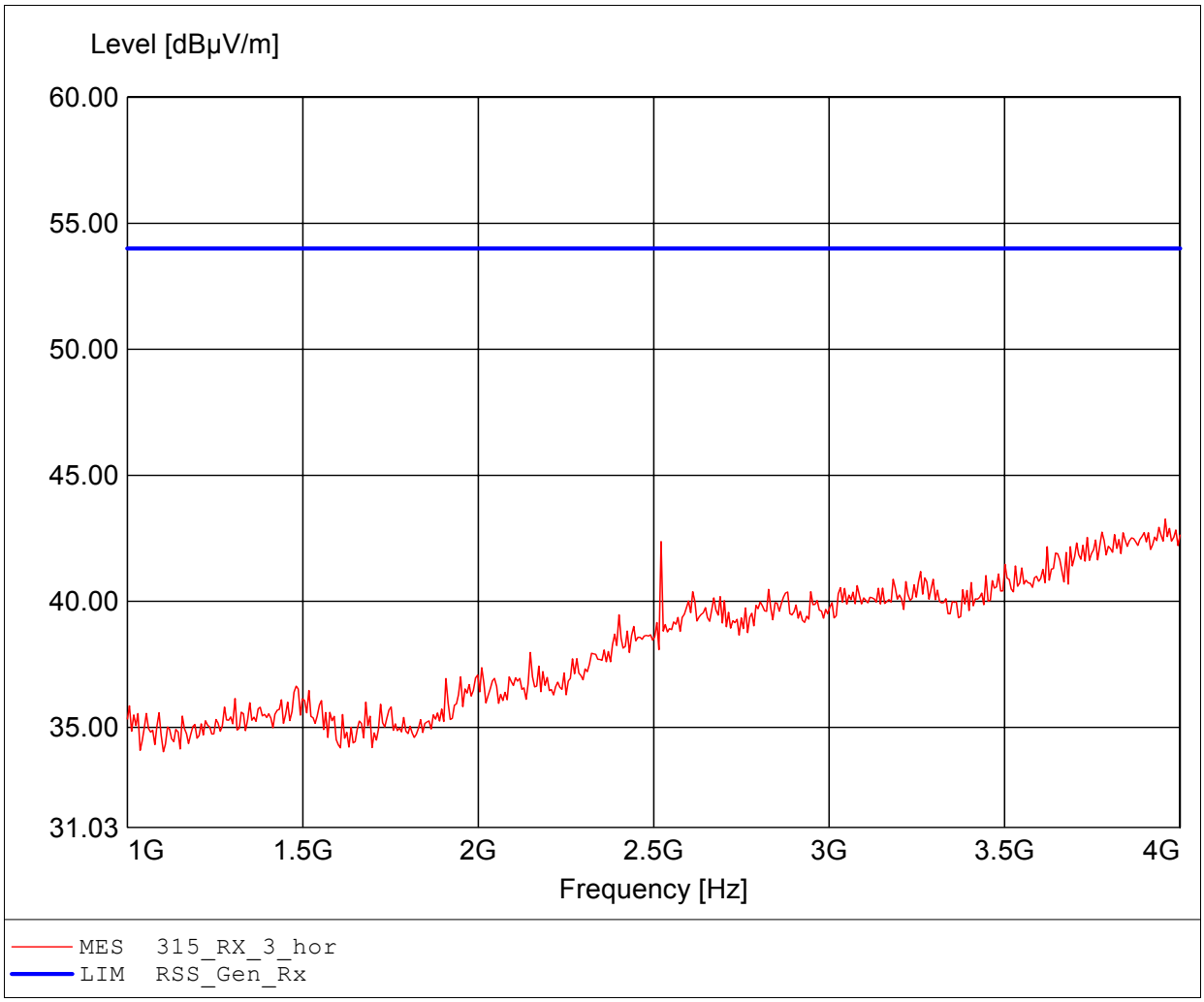
Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode / Rx-Mode 315MHz / EUT vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	Freq. / CH: 315
Comment 1:	Dist.: 3m, Ant.: HL 223, ampl.
Comment 2:	Freq:902.204MHz Emax:25.11dBµV/m RBW: 100 kHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode / Rx-Mode 315MHz / EUT vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	Freq. / CH: 315
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.
Comment 2:	Freq:3.958GHz Emax:43.27dBµV/m RBW: 1 MHz



Field Strength under normal conditions

Standards Industry Canada, RSS-GEN

Applicant:	Kieback und Peter GmbH & Co.KG / G0M-1203-1865
EUT / Model:	Actuator / MD15-FtL-315
Mode:	test mode / Rx-Mode 315MHz / EUT vertical
Test Site / Operator:	Eurofins Product Service GmbH / Mr. Treffke
Test Condition:	Tnom: 24°C / Vnom.: 4.5V DC (3x1.5V battery)
Test Specification:	Freq. / CH: 315
Comment 1:	Dist.: 3m, Ant.: HL025, ampl.
Comment 2:	Freq:3.952GHz Emax:43.25dBµV/m RBW: 1 MHz