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ELECTROMAGNETIC EMISSIONS TEST REPORT

according to 47CFR Part 15, §15.247 and subpart B

for

WaveIP Ltd.

EQUIPMENT UNDER TEST:

Wireless Radio for Internet Broadband Access
Model: GigAccess 2.4

Document ID: WAVRAD_FCC.15365_rev2.doc
Date of Issue: December 02

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Contents

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1 Project information

Description of equipment under test

Test items	: Wireless Radio for Internet Broadband Access
Manufacturer	: WaveIP Ltd.
Types (Models)	: GigAccess 2.4
Software revision(s) of radio unit as tested	: Sys V2.1701
Hardware version:	: PC_003, Rev 2.00
Equipment FCC code	: DSS

Applicant information

Applicant's responsible person	: Mr. Michael Dayan, software director
Company	: WaveIP Ltd.
Address	: 1 Tavor Building
Postal code	: 20692
City	: Yokneam
Country	: Israel
Telephone number	:+972-4993 7333
Telefax number	:+972-4959 2614

Test performance

Project Number:	: 15365
Location	: Hermon Laboratories
Receipt date	: December 5, 2002
Test started	: December 18, 2002
Test completed	: December 24, 2002
Purpose of test	: Apparatus compliance verification in accordance with emission requirements
Test specification(s)	47CFR Part 15, §15.247 and subpart B

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2 Summary of tests

The tests listed in the table below were performed. The EUT was found complying with the limits of 47CFR Part 15, §15.247 and subpart B.

Parameter	Subclause	C	NC	NT	NA	Tested by	Date tested	Remarks
Transmitter characteristics, §15.247								
Direct sequence systems								
Minimum 6 dB bandwidth	a(2)	**C**				Mr. Y. Neuman, test engineer	December 18, 2002	
Maximum peak output power	b(1)	**C**				Mr. Y. Neuman, test engineer	December 18, 2002	
Exposure compliance requirements	b(4)	**C**						
Spurious emissions (conducted)	c	**C**				Mr. Y. Neuman, test engineer	December 18, 2002	
Spurious emissions (radiated)	c			NT				
Spurious emissions (radiated) in restricted bands	15.209, 15.205 (a, c)	**C**				Mr. Y. Neuman, test engineer	December 23, 2002	
Peak power spectral density	d	**C**				Mr. Y. Neuman, test engineer	December 23, 2002	
Unintentional radiation, §15.107, §15.109								
Conducted emissions	15.107				**NA**			
Radiated emissions	15.109	**C**				Mr. Y. Neuman, test engineer	December 23, 2002	

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General conditions under Part 15						
The intentional radiator operates in 2412 MHz – 2472 MHz	15.247	**C**				
The intentional radiator has permanently attached antenna or antenna that uses a unique coupling to the intentional radiator.	15.203	**C**				
No antenna other than that furnished by the responsible party can be used with the device.	15.203	**C**				
Antenna technical characteristics, as referred to in "Transmitter description" table in the test report	15.204	**C**				
NOTE: C: The parameter is compliant with the requirements. NC: The parameter is not compliant with the requirements. NT: The parameter is not tested. NA: The test of this parameter is not applicable.						

Test report prepared by: Mrs. M. Cherniavsky, certification engineer

Test report approved by: Dr. E. Usoskin, CEO

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3 EUT description

3.1 General description

The EUT, GigAccess™, is WaveIP's wireless point-to-point and point-to-multipoint broadband communication system. The basic subsystem is composed of a single sector, which consists of an AU (Access Unit) and up to 100 SUs (Subscriber Units). Each sector is a stand-alone communication network operating on a star topology with a gateway to the WAN, which allows two-way communication between individual SU's, and between SUs and the WAN via the AU. A sector may be divided into subsectors, which are consecutive to the SUs within the sector. The sector uses a single radio channel frequency with certain amount of bandwidth which in the unlicensed 2.4 GHz spectrum band carries up to 11 MBPS of data. The bandwidth is divided between the traffic from the AU to SUs (downstream) and the traffic from the SUs to AU (upstream). The Time Domain Duplex (TDD) technique is utilized to divide the bandwidth periodically. The portion of the frame, which is allocated to the upstream traffic, is divided between the SUs in the time domain using TDMA (Time Division Multiplex Access) technique.

3.2 EUT test configuration

The EUT ports and lines description is given in Table 3.2.1, the support/test equipment description - in Table 3.2.2, operating frequencies generated by clocks and oscillators are provided in Table 3.2.3 and test configuration - in Figure 3.2.1.

Table 3.2.1 EUT ports and lines

Port type	Port description	Connector type	Quantity	Cable type description	Cable length, m	Connected to
GigAccess Data input (AU)	48 V DC + Ethernet 802.3	RJ45	1	CAT 5 shielded	100	Indoor Outlet output
GigAccess Data input (SU)	48 V DC + Ethernet 802.3	RJ45	1	CAT 5 shielded	100	Indoor Outlet output
Indoor Outlet data input	Ethernet 802.3	RJ45	2	CAT 5 shielded	100	Smart-Bits analyzer
Indoor Outlet power input	48 V DC	DC Jack	2	unshielded	2	AC/DC adapter
AC power	AC	Non-detachable	2	unshielded	2	mains

Table 3.2.2 EUT support/test equipment

Description	Manufacturer	Model number	Serial number	Note
Laptop	IBM	Think Pad	55565C0	NA
Multi Port Stream Layer-Performance Analysis System	Smart-Bits	Smart-Bits 200	63682850	NA

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Table 3.2.3 EUT operating frequencies

Frequency, MHz	Description
25 MHz	Clock for Ethernet section
44 MHz	Clock for digital section
132 MHz	Clock for SDRAM / DDR
748 MHz	Synthesizer for IF section
374 MHz	Output of IF section
2038 ÷ 2110 MHz	Synthesizer for RF section
2412 MHz	CH0 output frequency
2417 MHz	CH1 output frequency
2422 MHz	CH2 output frequency
2427 MHz	CH3 output frequency
2432 MHz	CH4 output frequency
2437 MHz	CH5 output frequency
2442 MHz	CH6 output frequency
2447 MHz	CH7 output frequency
2452 MHz	CH8 output frequency
2457 MHz	CH9 output frequency
2462 MHz	CH10 output frequency
2467 MHz	CH11 output frequency
2472 MHz	CH12 output frequency

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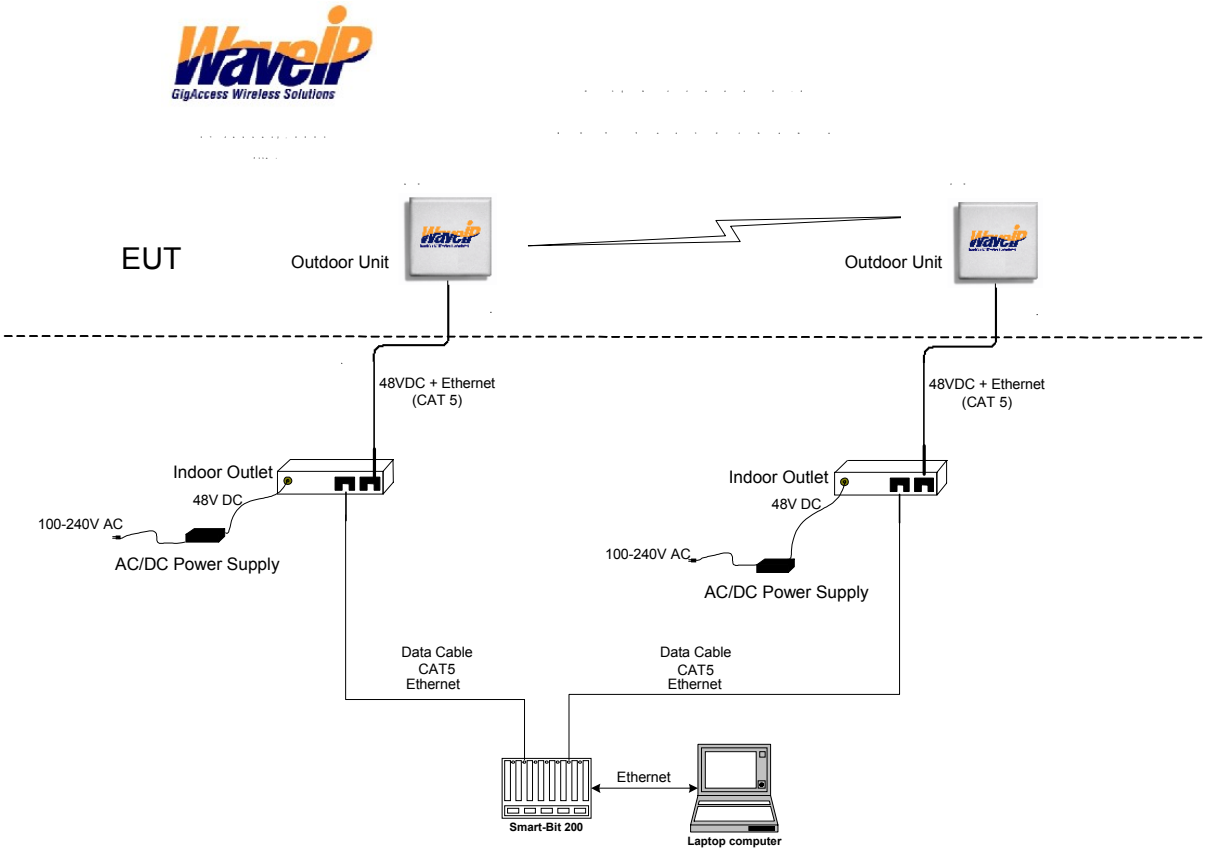
Figure 3.2.1 EUT test configuration



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3.3 EUT technical characteristics

Type of equipment					
X	Stand-alone (Equipment with or without its own control provisions)				
	Combined equipment (Equipment where the radio part is fully integrated within another type of equipment)				
	Plug-in card (Equipment intended for a variety of host systems)				
Operating frequency range	2412 - 2472 MHz				
Spread spectrum technique used					
	Frequency hopping (FHSS)				
X	Direct sequence (DSSS)				
	Combined				
Spread spectrum parameters					
X	chip sequence length (bits)	11 – chip Barker sequence			
	spectrum width (MHz)	20			
Transmitter aggregate data rate (bits per second)	1.5, 2, 4.125, 5.5, 8.25, 11 Mbps				
Chip rate is **constant and equal to 11 Mbit/sec** regardless of data rate on GigAccess system input					
Normal test signal					
Maximum rated output power					
At transmitter permanent external 50 Ω rf output connector (dBm)	+18.5 dBm				
Is transmitter output power variable?		No			
	X	Yes		continuous variable	
			X	stepped variable	
			X	stepsize :....1 dB.....	
			X	minimum RF power :-6 dBm	
			X	maximum RF power :+18.5 dBm	
Transmitter power source					
	Battery	**Nominal rated voltage (VDC)**			
	Lithium				
	Other				
X	**DC**	**Nominal rated voltage**	48 V DC		
	AC mains	**Nominal rated voltage (VAC)**			
Is there common power source for transmitter and receiver			**X**	yes	no

Antenna technical characteristics

	Type	Manufacturer	Model number	Gain, dBi
Integral with temporary RF connector	Directional	MTI	10004/C/A	13.5
Integral with temporary RF connector	Directional	MTI	30081/C/A	15.5
Integral with temporary RF connector	Directional	MARS	MA-WA24-1X	15.5
Integral with temporary RF connector for point-to-point system	Directional	MTI	345010/C/A	18
External for point-to-point system	Directional	HyperLink Tech.	HG2424G	24
External for point-to-point system	Directional	Andrew	26T-2400-1	23
External for point-to-multipoint	Omni	HyperLink Tech.	HGV-2409U	8
External for point-to-multipoint	Omni	HyperLink Tech.	HGV-2410U	10
External for point-to-multipoint	Omni	HyperLink Tech.	HGV-2412U	12
External for point-to-multipoint	Omni	NCG Company	GP-24	12
External for point-to-multipoint	Omni	NCG Company	GP-24-3	12
External for point-to-multipoint	Base Station	MTI	363010/HN/NV	13
External for point-to-multipoint	Base Station	MTI	364028/NV	17
External for point-to-multipoint	Base Station	MARS	MA-WC24-5X	14
External for point-to-multipoint	Base Station	MARS	MA-WC24-6X	17

External antenna connection		
X		Non-standard TNC connector

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4 Test results

4.1 Occupied bandwidth for DSSS systems according to § 15.247(a) (2)

METHOD OF MEASUREMENTS	ANSI 63.4 §13.1.7
DATE:	December 18, 2002
RELATIVE HUMIDITY:	44 %
AMBIENT TEMPERATURE:	24°C
AIR PRESSURE:	1015 hPa
OPERATING FREQUENCY RANGE:	2.412 – 2.472 GHz
MODULATION TECHNIQUE:	DSSS
BIT RATE:	11 Mbps
MEASUREMENT UNCERTAINTY:	+0.36/-0.38 dB

Carrier frequency, MHz	Measured 6 dB bandwidth, MHz	Reference to Plot in Appendix A
2.412	10.63	A1
2.442	10.73	A2
2.472	10.70	A3

LIMIT

Operating frequency range, MHz	Minimum allowed bandwidth
2400 - 2483.5	≥ 500 kHz @ 6 dBc

TEST PROCEDURE

The EUT RF output was connected to the spectrum analyzer through 30 dB attenuator (plus 1.5 dB cable loss), the settings are shown in the plots. The measurements were performed in normal (transmitting) mode of operation for carrier (channel) frequency at low and high edges and at the middle of the 2.412 - 2.472 GHz frequency range.

TEST EQUIPMENT USED:

HL 1424	HL 1650	HL 1874	HL 1940			

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4.2 Maximum peak output power test according to §15.247 (b)(3)

METHOD OF MEASUREMENTS	ANSI 63.4 §13.1.4
DATE:	December 18, 2002
RELATIVE HUMIDITY:	44 %
AMBIENT TEMPERATURE:	24°C
AIR PRESSURE:	1015 hPa
OPERATING FREQUENCY RANGE	2.412 – 2.472 GHz
MODULATION TECHNIQUE	DSSS
BIT RATE:	11 Mbps
MEASUREMENT UNCERTAINTY:	+0.36/-0.38 dB

Carrier frequency, GHz	Peak output power, dBm	Limit for P-to-P system, dBm	Margin, dB	Limit for P-to-MP system, dBm	Margin, dB	Reference to Plots in Appendix A
2.412	16.6	24	7.4	19	2.4	A4
2.442	16.9		7.1		2.1	A5
2.472	18.4		5.6		0.6	A6

LIMIT

Operating frequency range, MHz	Maximum peak output power*, W
2400-2483.5	1

* Notes to table
1. If transmitting antennas of directional gain greater than 6 dB are used, the peak output power shall be reduced below the stated values by the amount in dB that the directional gain of the antenna exceeds 6 dBi with the following exceptions:
   a) Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi;
   b) Fixed, point-to-point operation as used in paragraph a) of Notes, excludes the use of point-to-multipoint systems, omnidirectional applications, and multiple co-located intentional radiators transmitting the same information.

For fixed point-to-point operations:
The maximum directional antenna gain is 24 dBi, the maximum peak output limit is 30 – (24-6)/3 =24 dBm.
For point-to-multipoint operations:
The maximum omnidirectional antenna gain is 17 dBi, the maximum peak output limit is 30 – (17-6) =19 dBm.

TEST PROCEDURE
The EUT RF output was connected to the spectrum analyzer through 30 dB attenuator (plus 1.5 dB cable loss), the settings are shown in the plots. The measurements were performed in normal (transmitting) mode of operation for carrier (channel) frequency at low and high edges and at the middle of the 2.412 - 2.472 GHz frequency range.

TEST EQUIPMENT USED:

HL 1424	HL 1650	HL 1874	HL 1940			

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4.3 Exposure limit according to §15.247(b)(4) and §1.1310

Limit for power density for general population/uncontrolled exposure is 1 mW/cm^2 (for 1500 –100,000 MHz frequency range).

The power density **P (mW/cm^2) = P_T / 4π r^2**

1) Full transmitter power

P_{T1} is the transmitted power, which is equal to the full transmitter output power 18.4 dBm plus maximum antenna gain 17 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_{T1} = 18.4 \text{ dBm} + 17 \text{ dBi} = 35.4 \text{ dBm} = 3467 \text{ mW}.$$

The minimum safe distance "r", where RF exposure does not exceed FCC permissible limit, is 16.6 cm.

$$r1 = \text{sqrt} (P_{T1} / (Px4\pi)) = \text{sqrt} (3467 / 12.56) = 16.6 \text{ cm}$$

2) Reduced transmitter power

a) P_{T2} is the transmitted power, which is equal to the reduced transmitter output power 11 dBm (as shown in attachment to WAVRAD_FCC.15365_attach.doc) plus maximum antenna gain 24 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_{T2} = 11 \text{ dBm} + 24 \text{ dBi} = 35 \text{ dBm} = 3162 \text{ mW}.$$

b) P_{T3} is the transmitted power, which is equal to the reduced transmitter output power 17 dBm plus antenna gain 18 dBi, the maximum equivalent isotropically radiated power EIRP is

$$P_{T3} = 17 \text{ dBm} + 18 \text{ dBi} = 35 \text{ dBm} = 3162 \text{ mW}.$$

The minimum safe distance "r", where RF exposure does not exceed FCC permissible limit, is 15.9 cm.

$$r2 = \text{sqrt} (P_{T2} / (Px4\pi)) = \text{sqrt} (3162 / 12.56) = 15.9 \text{ cm}$$

Conclusion: The public cannot be exposed to dangerous RF level.

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4.4 Out of band conducted emissions test according to §15.247(c)

METHOD OF MEASUREMENTS	ANSI 63.4 §13.1.5
DATE:	December 18, 2002
RELATIVE HUMIDITY:	44 %
AMBIENT TEMPERATURE:	24°C
AIR PRESSURE:	1015 hPa
OPERATING FREQUENCY RANGE	2400-2483.5 MHz
MODULATION TECHNIQUE	DSSS
BIT RATE:	11 Mbps
FREQUENCY RANGE*	9 kHz - 25 GHz
MEASUREMENT UNCERTAINTY:	± 2.5 dB

* The frequency spectrum was investigated from the lowest radio frequency signal generated in the equipment, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency.
All emissions were found below the specified limit. For test results refer to Plots A10 – A60.

Frequency, MHz	Carrier frequency, MHz	Resolution bandwidth, MHz	Spurious emission level, dBm	Spurious calculated limit, dBm	Reference to Plots in Appendix A
2397.2	2412	100 kHz	-22.5	-15	A42, A50
2486.28	2472	100 kHz	-15	-13.67	A24, A32

LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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.

TEST PROCEDURE
The EUT RF output was connected through attenuator to spectrum analyzer, which settings are shown in the plots.

TEST EQUIPMENT USED:

HL 1424	HL 1650	HL 1874	HL 1940			

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4.5 Radiated emissions which fall in restricted bands test according to §15.247(c) and § 15.205, §15.209(a)

METHOD OF MEASUREMENTS	ANSI 63.4 §13.1.4
DATE:	December 23, 2002
RELATIVE HUMIDITY:	45 %
AMBIENT TEMPERATURE:	17°C
AIR PRESSURE:	1014 hPa
OPERATING FREQUENCY RANGE	2400-2483.5 MHz
MODULATION TECHNIQUE	DSSS
BIT RATE:	11 Mbps
FREQUENCY RANGE*	9 kHz - 25 GHz
MEASUREMENT UNCERTAINTY:	+5.42 dB/-5.26 dB

* The frequency spectrum was investigated from the lowest radio frequency signal generated in the equipment, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency. All emissions were found below the specified limit. For test results refer to Plots A61 – A118.

Quasi-peak detector

Frequency, MHz	Antenna type	Radiated emissions, dB (µV/m)	Limit, dB (µV/m)	Margin, dB	Reference to Plots in Appendix A
120.0	Biconical	23.36	43.50	20.14	A82, A101
125.0	Biconical	26.98	43.50	16.52	A82, A101
264.0	Log-periodic	43.13	46.00	2.87	A64, A83, A102

The recorded test results were obtained through measurements with antennas in vertical polarization.

Peak detector

Frequency, MHz	Radiated emissions, dB (µV/m)	Limit, dB (µV/m)	Margin, dB	Reference to Plots in Appendix A
2494.6	42.67	74	31.33	A67
4883.6	49.83	74	24.17	A71
4994.0	46.33	74	27.67	A110

Average detector

Frequency, MHz	Radiated emissions, dB (µV/m)	Limit, dB (µV/m)	Margin, dB	Reference to Plots in Appendix A
2378.1	36.83	54	17.17	A87
2486.7	41.13	54	12.87	A106

The recorded test results were obtained through measurements with double ridged guide antenna in vertical polarization.

Table abbreviations:
Margin = dB below (negative if above) specification limit.

LIMIT

Radiated emissions, which fall in the restricted bands, must comply with §15.209(a) limits.

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TEST PROCEDURE

The test was performed with transmitter operating 3 carrier frequencies F_{min} = 2412 MHz, F_{cent} = 2442 MHz, F_{max} = 2472 MHz from 9 kHz to 25 GHz.

9 kHz – 30 MHz frequency range. The loop antenna was positioned with its plane horizontal. The loop center was 1 meter above the ground plane. To find maximum radiation the turntable was rotated 360°. Then the loop position was changed to vertical. To find maximum radiation the turntable was rotated 360° and the measuring antenna was rotated about its vertical axis. Plots A61, A62, A80, A81, A99, A100 in Appendix A refer to vertical antenna polarization as the worst case.

30 MHz – 25 GHz frequency range. The EUT was placed on a wooden 80 cm height turntable. To find maximum radiation the turntable was rotated 360°, measuring antenna height was changed from 1 to 4 m, and the antennas polarization was changed from vertical to horizontal.

TEST EQUIPMENT USED AT OATS:

HL 0032	HL 0034	HL 0038	HL 0041	HL 0091	HL 0275	HL 0287
HL 0415	HL 0763	HL 0812	HL 1424	HL 1430	HL 1940	HL 1942
HL 2258	HL 2260					

TEST EQUIPMENT USED IN ANECHOIC CHAMBER:

HL 0041	HL 0446	HL 1424	HL 1430	HL 1567	HL 1942	HL 2109
HL 2258	HL 2260					

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4.6 Peak power spectral density of DSSS according to § 15.247(d)

DATE:	December 23, 2002
RELATIVE HUMIDITY:	49 %
AMBIENT TEMPERATURE:	24°C
AIR PRESSURE:	1015 hPa
OPERATING FREQUENCY RANGE	2412 - 2742 MHz
MODULATION TECHNIQUE	DSSS
BIT RATE:	11 Mbps
LIMIT FOR PEAK POWER SPECTRAL DENSITY	8 dBm
MEASUREMENT UNCERTAINTY:	+5.42 dB/-5.26 dB

Carrier frequency, MHz	**Measured peak power spectral density, dBm/3 kHz**	**Reference to Plots in Appendix A**
2412	-13.29	A7
2442	-13.63	A8
2.471	-12.29	A9

For the peak power spectral density in any 3 kHz band calculation refer to pages 24-26 (Plots A7 – A9).

LIMIT

The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission

TEST EQUIPMENT USED:

HL 1424	HL 1650	HL 1874	HL 2254			

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4.7 Unintentional radiated emissions test according to §15.109

METHOD OF MEASUREMENT: ANSI 63.4 §11.6 / ANSI 63.4 §12.1.4
DATE December 23, 2002
TEST PERFROMED AT: OATS
AMBIENT TEMPERATURE: 24°C
RELATIVE HUMIDITY 49%
DISTANCE BETWEEN ANTENNA AND EUT: 3 m
THE EUT WAS TESTED AS: Table-top
FREQUECNY RANGE: 30 MHz – 1 GHz
DETECTOR TYPE: Quasi-peak
RESOLUTION BANDWIDTH: 120 kHz
MEASUREMENT UNCERTAINTY: +5.42 dB/-5.26 dB

Frequency, MHz	Antenna polarization	Antenna height, m	Turntable position (°)	Radiated emissions, dB (µV/m)	Limit, dB (µV/m)	Margin, dB	Reference to Plots in Appendix A
40.000000	Vertical	1	121	34.89	40.00	5.11	A82, A101
59.000000	Vertical	1	12	19.64	40.00	20.36	A82, A101
120.000000	Vertical	1.1	347	23.36	43.50	20.14	A82, A101
125.000000	Vertical	1	181	26.98	43.50	16.52	A82, A101
220.000000	Horizontal	1.5	0	30.07	46.00	15.93	A64, A83, A102
264.000000	Vertical	1.1	76	43.13	46.00	2.87	A64, A83, A102
396.003000	Vertical	1	91	36.84	46.00	9.16	A64, A83, A102
500.112500	Vertical	1	7	37.69	46.00	8.31	A64, A83, A102
528.000000	Vertical	1	61	34.03	46.00	11.97	A64, A83, A102

Table abbreviations:
Turntable position: 0^{o} = EUT front panel faces the receiving antenna

LIMIT (§ 15.109)

Frequency, MHz	Class B equipment @ 3 m dB(µV/m)
30 - 88	40
88 - 216	43.5
216 - 960	46
960 - 5000	54

TEST EQUIPMENT USED:

HL 0032	HL 0034	HL 0038	HL 0091	HL 0287	HL 0415	HL 0812
HL 1430						

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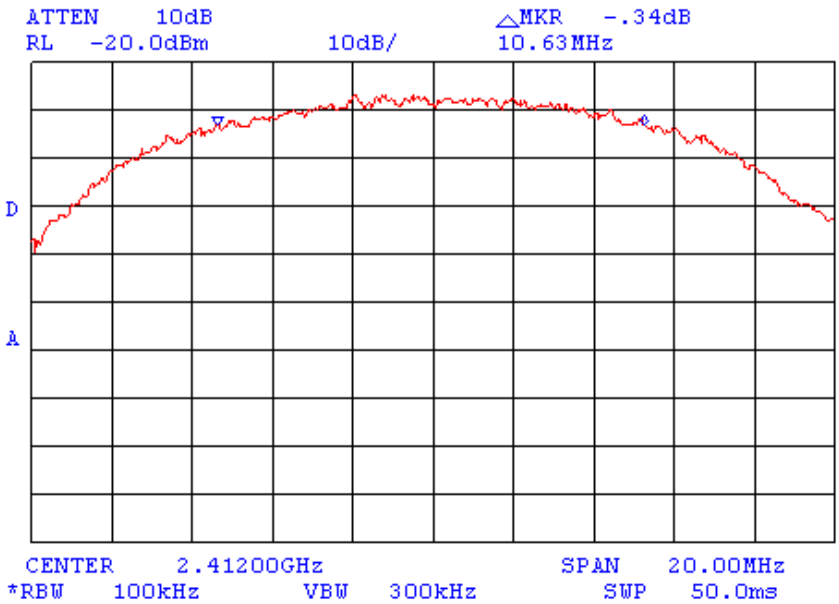
Appendix A Plots

Plot A 1

6 dB bandwidth @ 2.412 GHz

EUT:	GigAccess 2.4
Limit:	>500 kHz
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB

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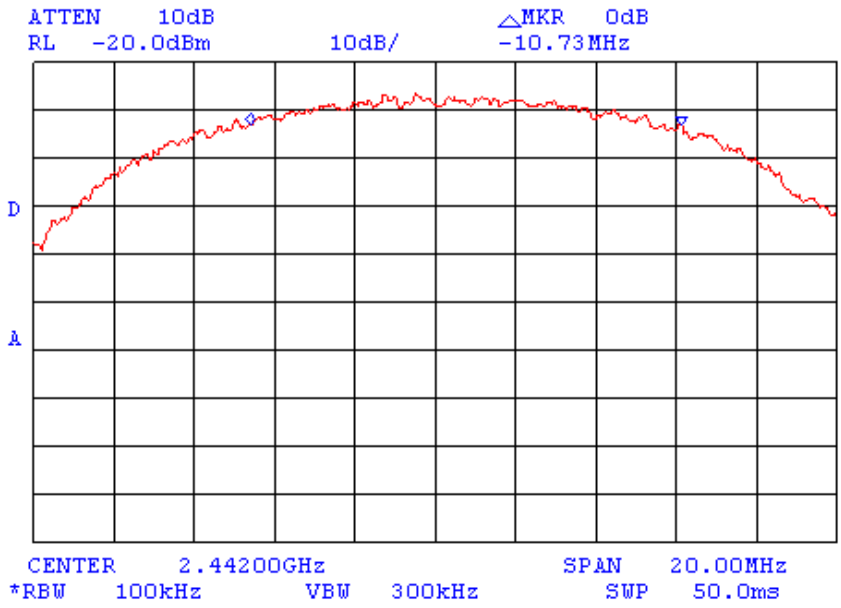
Plot A 2

6 dB bandwidth @ 2.442 GHz

EUT:	GigAccess 2.4
Limit:	>500 kHz
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB

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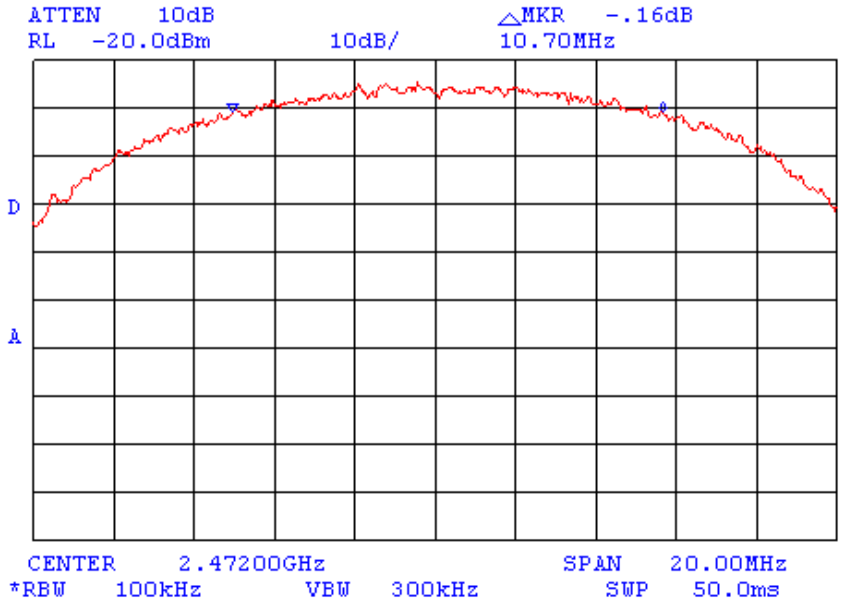
Plot A 3

6 dB bandwidth @ 2.472 GHz

EUT:	GigAccess 2.4
Limit:	>500 kHz
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB

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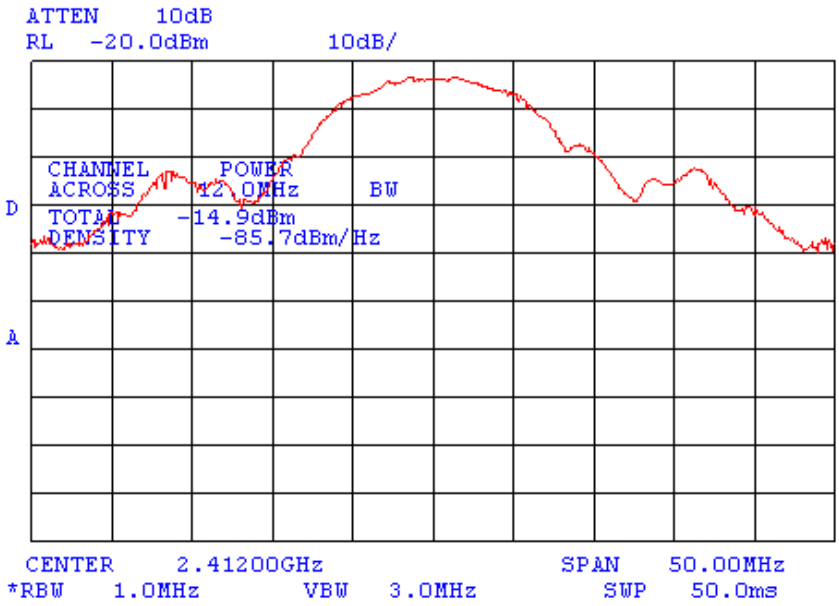
Plot A 4

Peak output power measurements@ 2.412 GHz

Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB
P_{out}=-14.9 dBm(measured)+30+1.5=16.6 dBm

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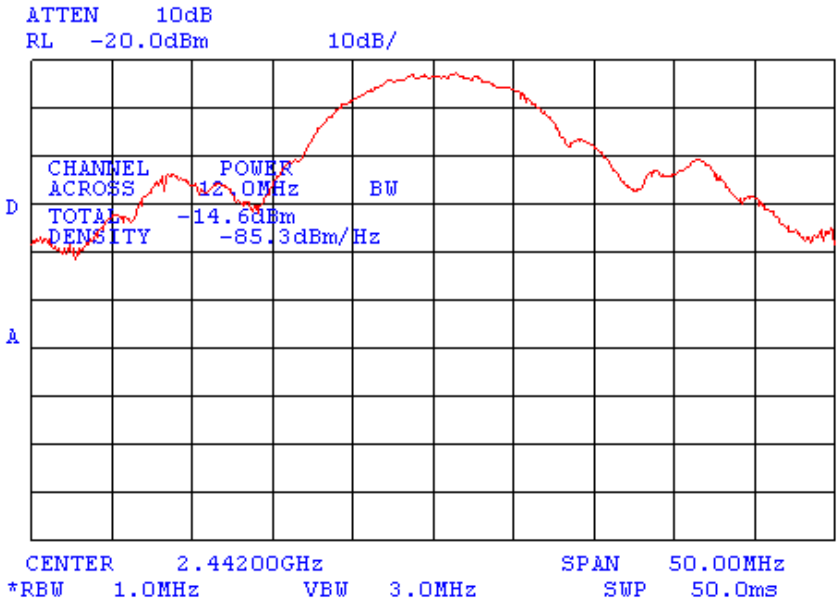
Plot A 5

Peak output power measurements@ 2.442 GHz

Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB
P_{out}=-14.6 dBm(measured)+30+1.5=16.9 dBm

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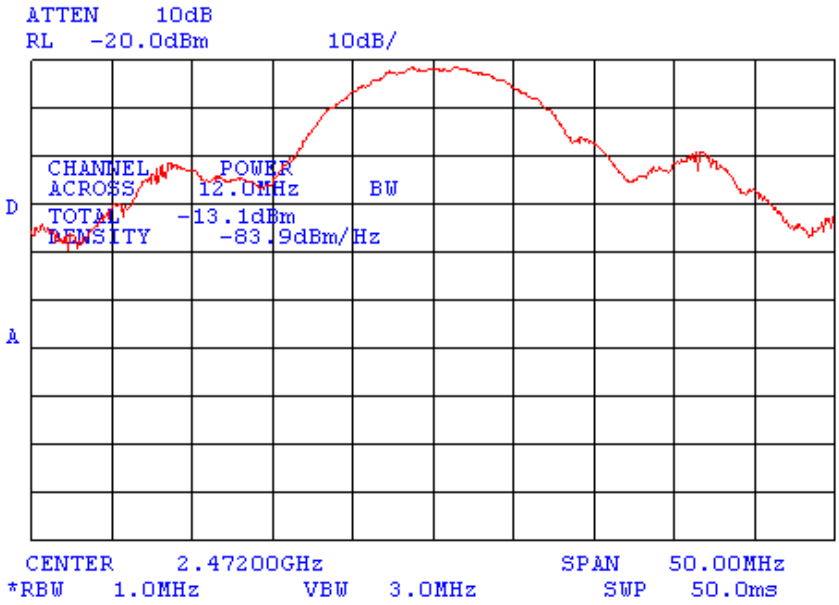
Plot A 6

Peak output power measurements@ 2.472 GHz

Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB
P_{out}=-13.1 dBm(measured)+30+1.5=18.4 dBm

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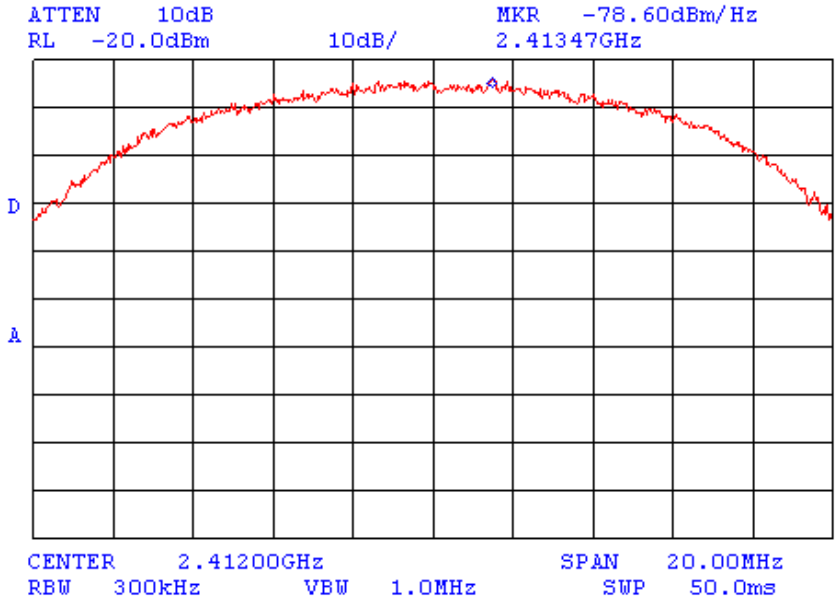
Plot A 7

Peak power spectral density measurements @ 2.412 GHz



External attenuator: 30 dB
Cable loss: 0.54 dB

The power density measured in 1 Hz band with 20 MHz span was –78.60 dBm. The peak power spectral density in 3 kHz band was calculated from equation:

$$SD_{peak} = D_{meas} + 10 \log (3\ kHz/1\ Hz) + External\ attenuation + cable\ loss=$$
$$-78.60\ dBm + 34.77\ dB + 30.54\ dB = -13.29\ dBm,\ where$$

SD_{peak} - peak power spectral density in any 3 kHz band
D_{meas} - power density measured in 1 Hz band.

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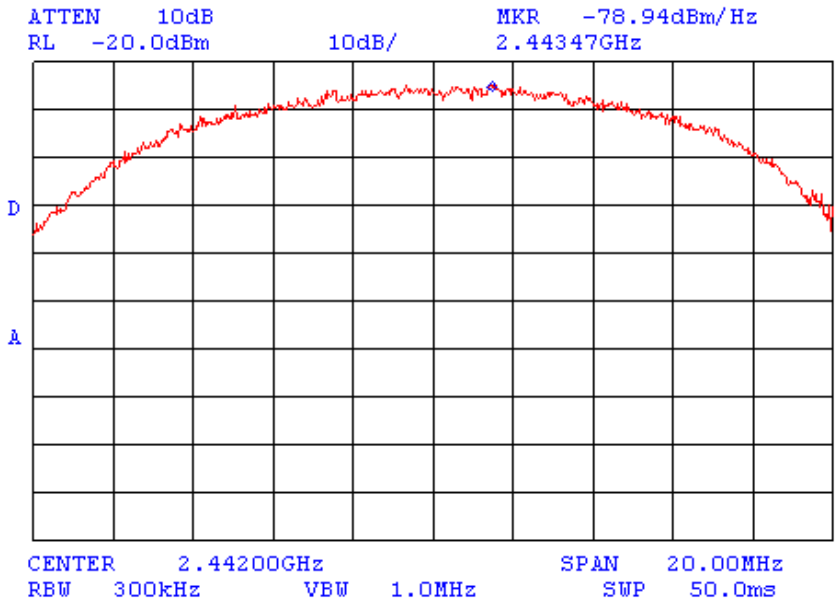
Plot A 8

Peak power spectral density measurements @ 2.442 GHz



External attenuator: 30 dB
Cable loss: 0.54 dB

The power density measured in 1 Hz band with 20 MHz span was –78.94 dBm. The peak power spectral density in 3 kHz band was calculated from equation:

$$SD_{peak} = D_{meas} + 10 \log (3 \text{ kHz}/1 \text{ Hz}) + \text{External attenuation} + \text{cable loss} =$$
$$-78.94 \text{ dBm} + 34.77 \text{ dB} + 30.54 \text{ dB} = -13.63 \text{ dBm, where}$$

SD_{peak} - peak power spectral density in any 3 kHz band
D_{meas} - power density measured in 1 Hz band.

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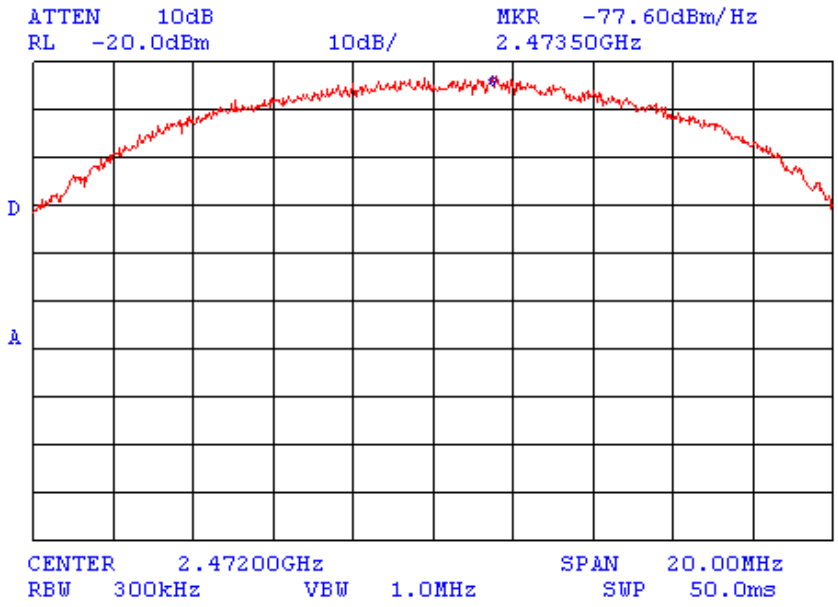
Plot A 9

Peak power spectral density measurements @ 2.472 GHz



External attenuator: 30 dB
Cable loss: 0.54 dB

The power density measured in 1 Hz band with 20 MHz span was –77.60 dBm. The peak power spectral density in 3 kHz band was calculated from equation:

$$SD_{peak} = D_{meas} + 10 \log (3 \text{ kHz}/1 \text{ Hz}) + \text{External attenuation} + \text{cable loss} =$$
$$-78.60 \text{ dBm} + 34.77 \text{ dB} + 30.54 \text{ dB} = -12.29 \text{ dBm, where}$$

SD_{peak} - peak power spectral density in any 3 kHz band
D_{meas} - power density measured in 1 Hz band.

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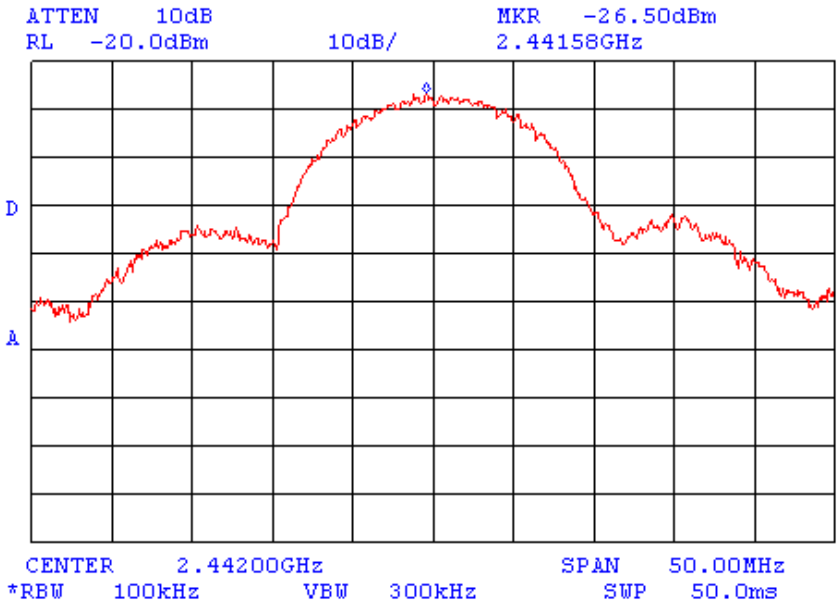
Plot A 10

In-band emission measurements @ 2.442 MHz carrier

Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB
Limit for spurious=-26.5 dBm +30 dB + 1.5 dB – 20 dB =-15 dBm

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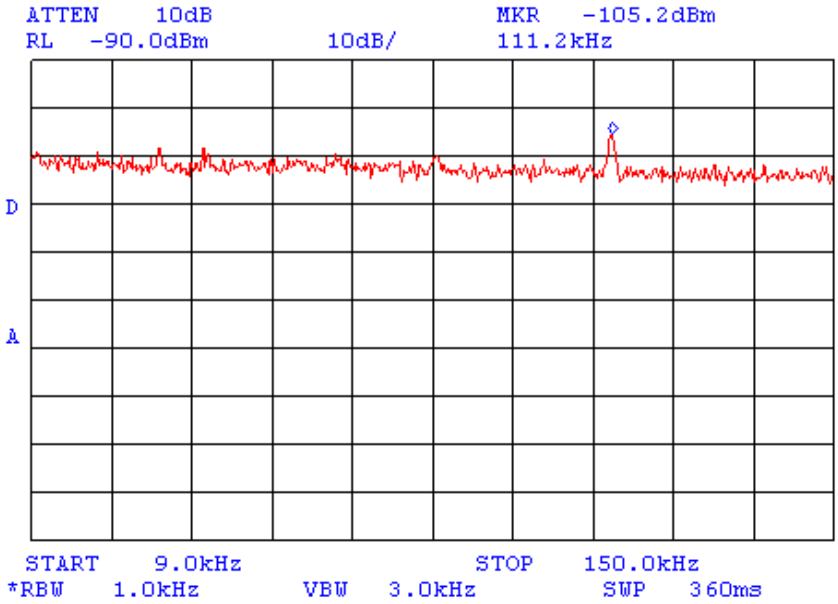
Plot A 11

Conducted spurious emission measurements in 9 kHz – 150 kHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB

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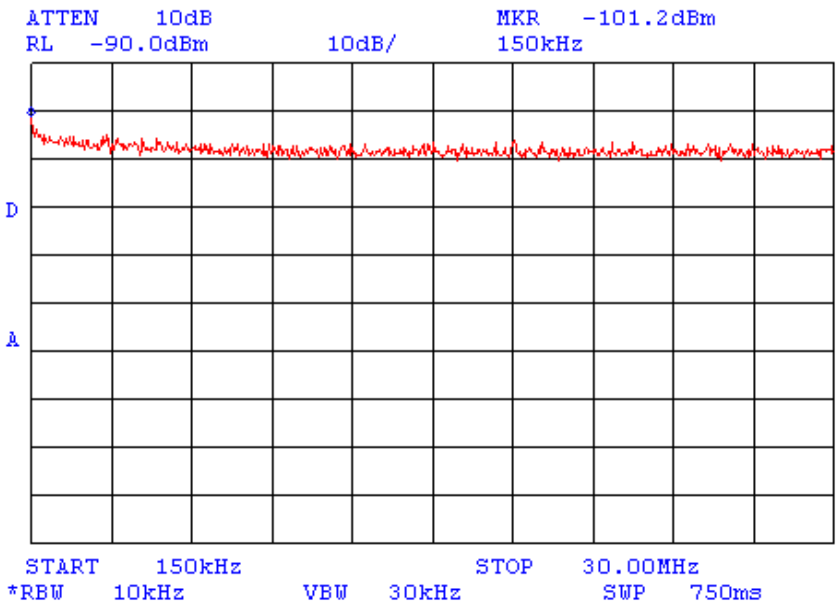
Plot A 12

Conducted spurious emission measurements in 150 kHz – 30 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Test Equipment:	HL#1424, 1940, 1650, 1874
Operator Name:	Neuman
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 0.2 dB

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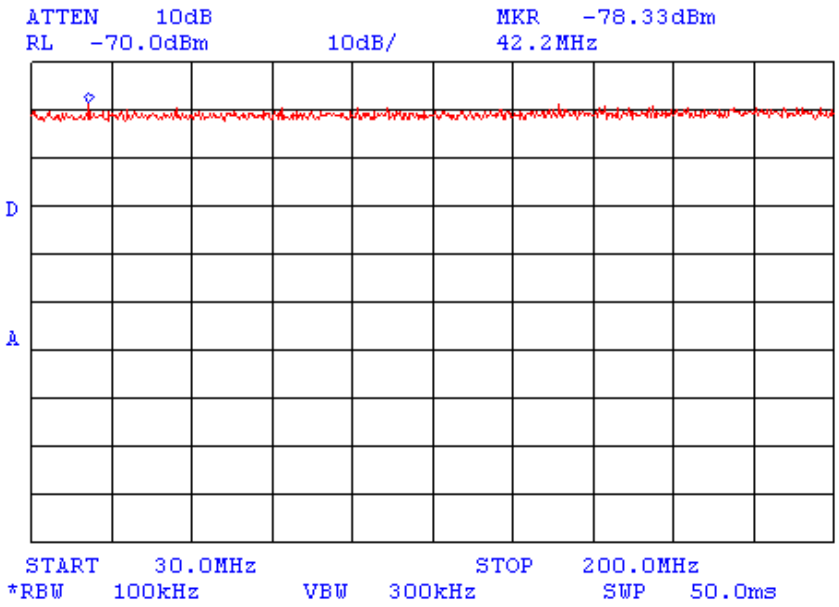
Plot A 13

Conducted spurious emission measurements in 30 MHz – 200 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.4 dB

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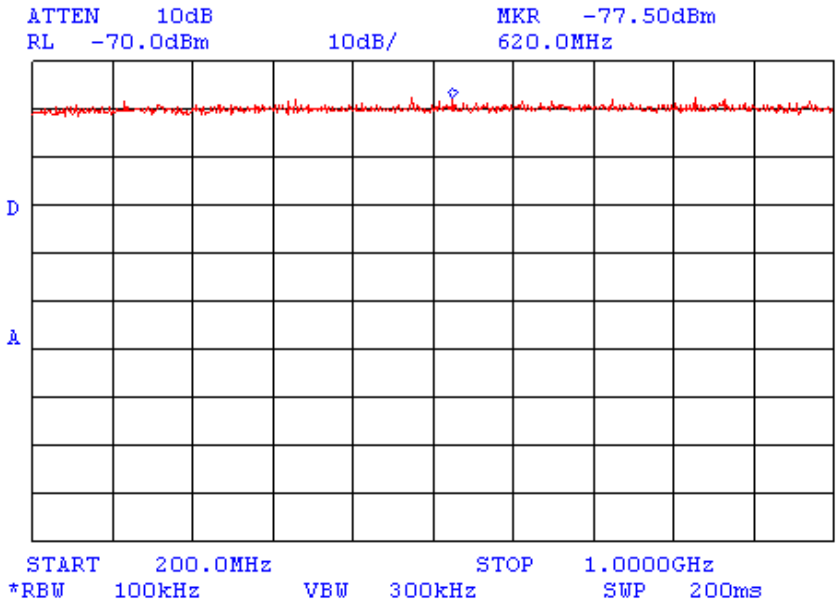
Plot A 14

Conducted spurious emission measurements in 200 MHz – 1000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 0.9 dB

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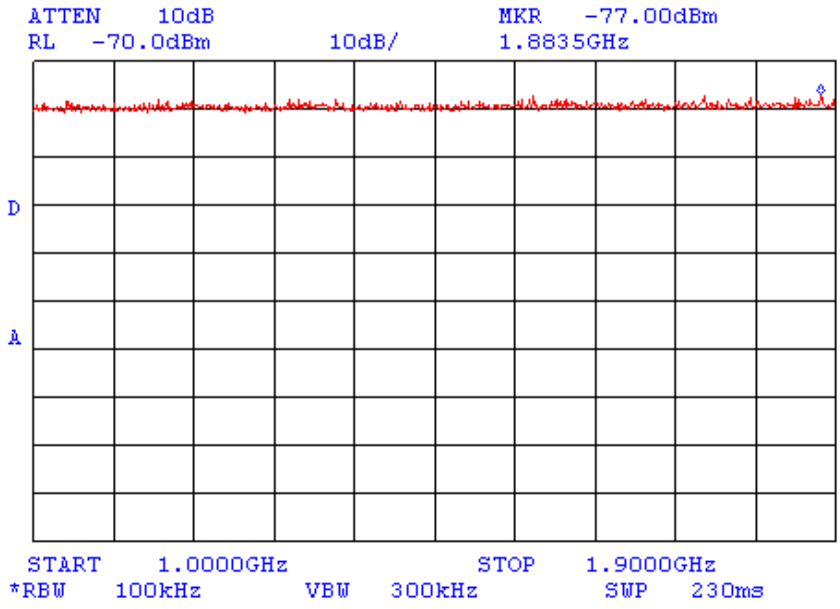
Plot A 15

Conducted spurious emission measurements in 1000 MHz – 1900 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.3 dB

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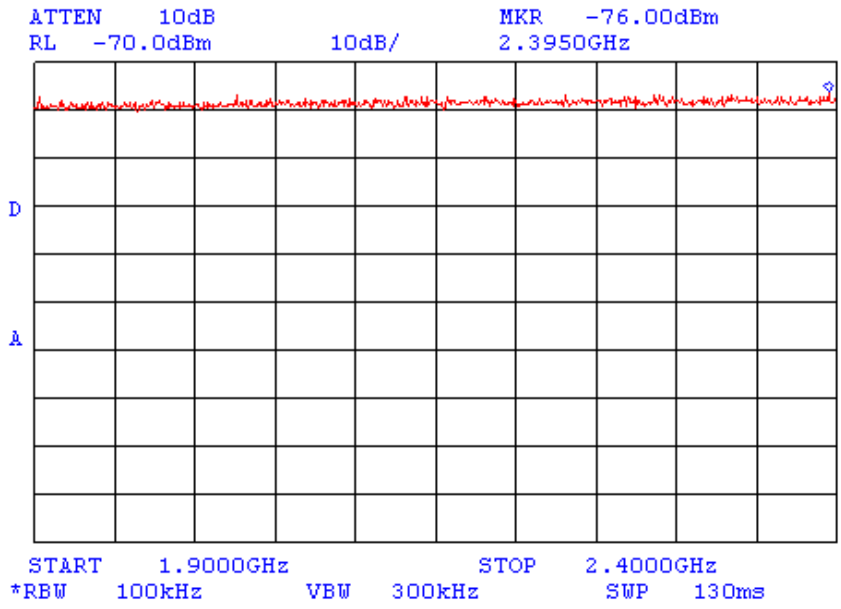
Plot A 16

Conducted spurious emission measurements in 1900 MHz – 2400 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB

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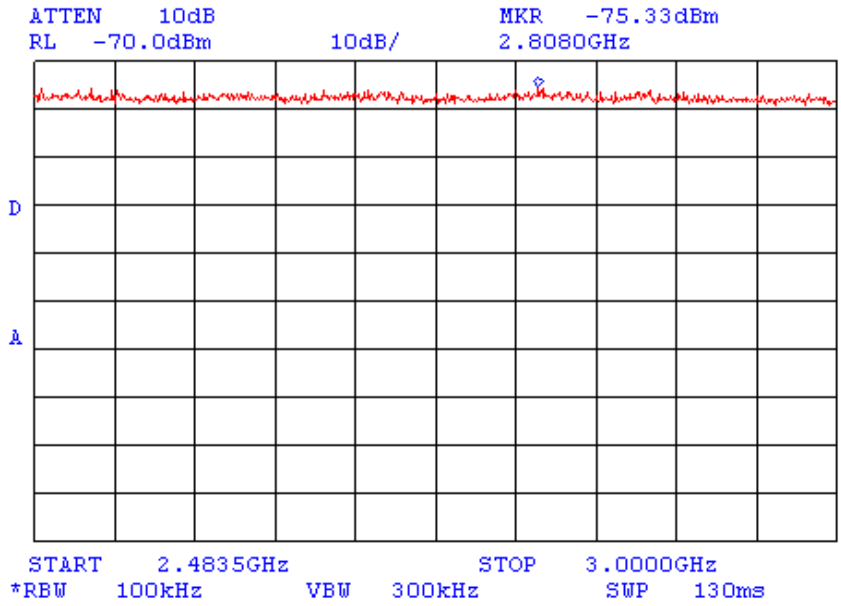
Plot A 17

Conducted spurious emission measurements in 2483.5 MHz – 3000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Test Equipment:	HL#1424, 1940, 1650, 1874
Operator Name:	Neuman
Notes:	f(Tx)=2442 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.6 dB

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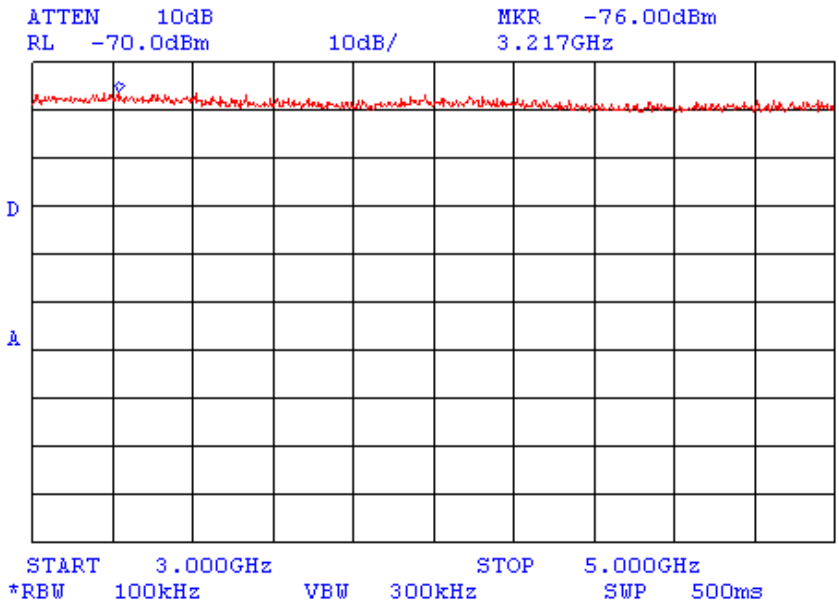
Plot A 18

Conducted spurious emission measurements in 3000 MHz – 5000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 2.1 dB

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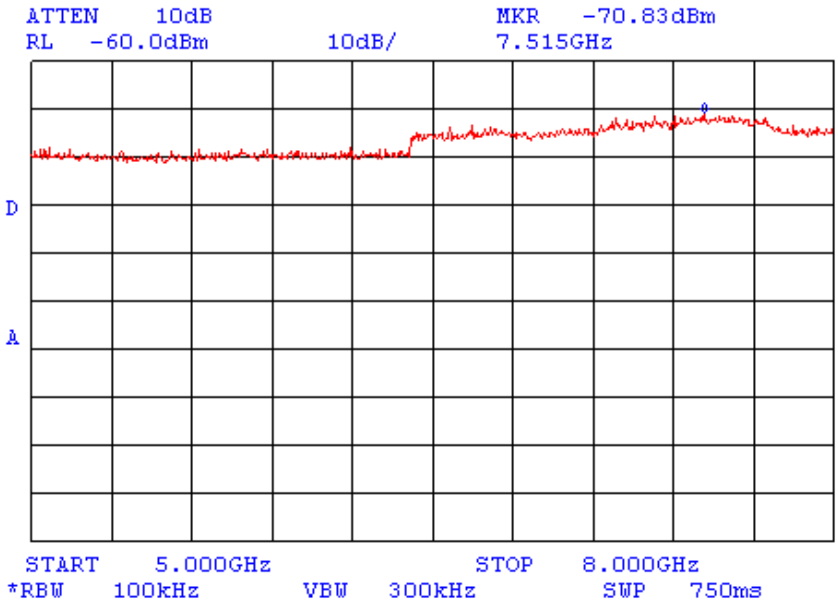
Plot A 19

Conducted spurious emission measurements in 5000 MHz – 8000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 2.6 dB

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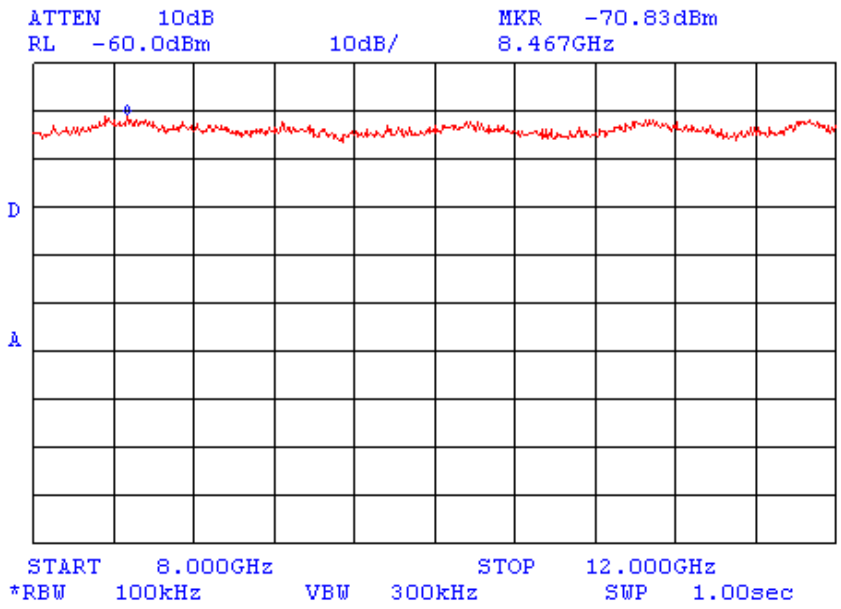
Plot A 20

Conducted spurious emission measurements in 8000 MHz – 12000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 3.0 dB

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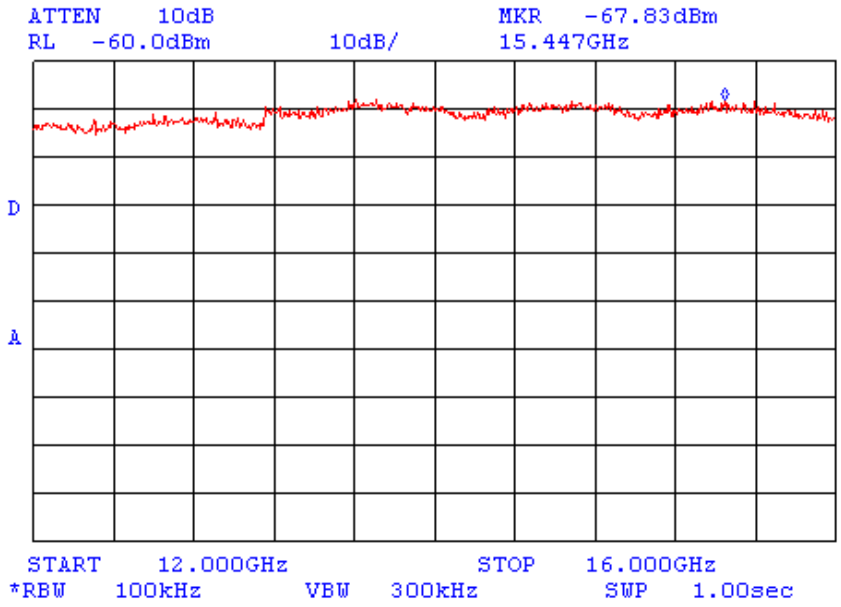
Plot A 21

Conducted spurious emission measurements in 12000 MHz – 16000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 3.3 dB

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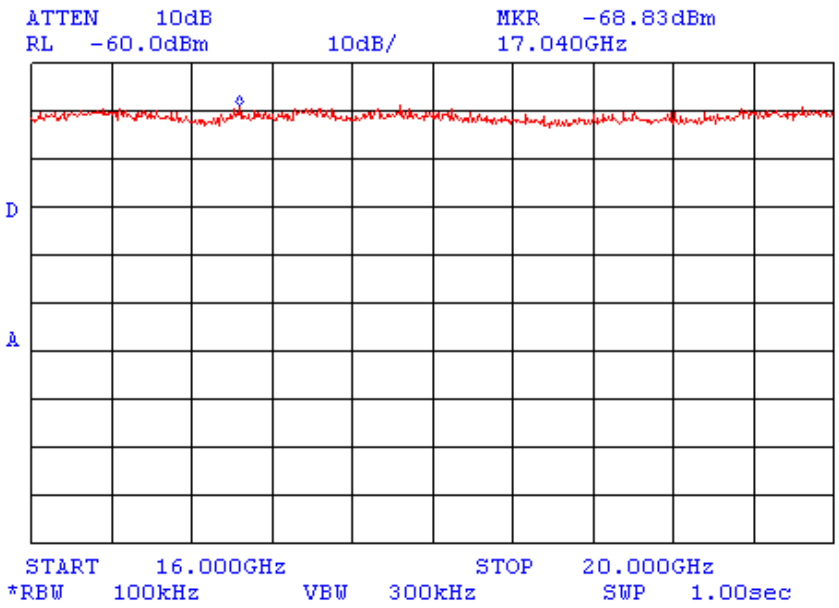
Plot A 22

Conducted spurious emission measurements in 16000 MHz – 20000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11Mbit/sec



No external attenuator
Cable loss 3.6 dB

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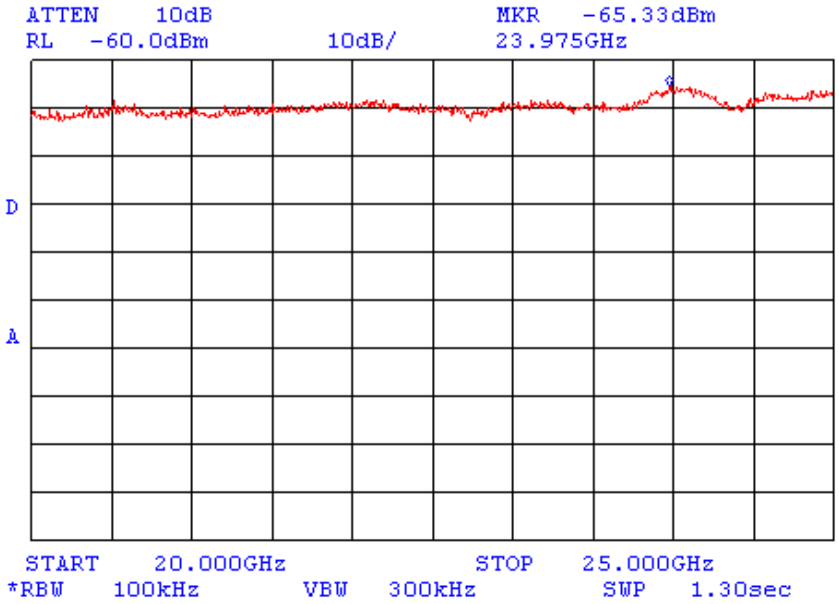
Plot A 23

Conducted spurious emission measurements in 20000 MHz – 25000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2442 MHz, bitrate 11 Mbit/sec



No external attenuator
Cable loss 4.1 dB

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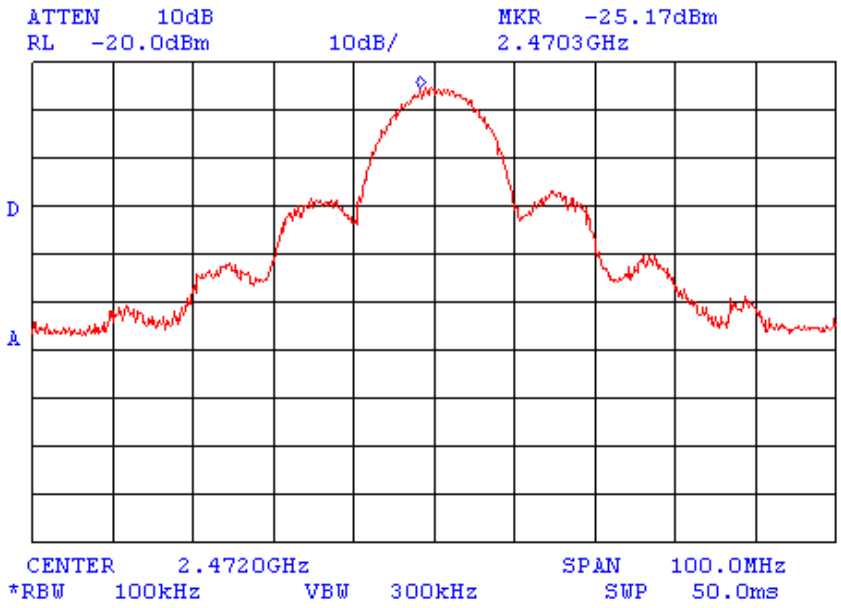
Plot A 24

In-band spurious emission measurements @ 2472 MHz

Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB

Limit for spurious emissions=-25.17 dBm + 30 dB + 1.5 dB – 20 dB = -13.67 dBm

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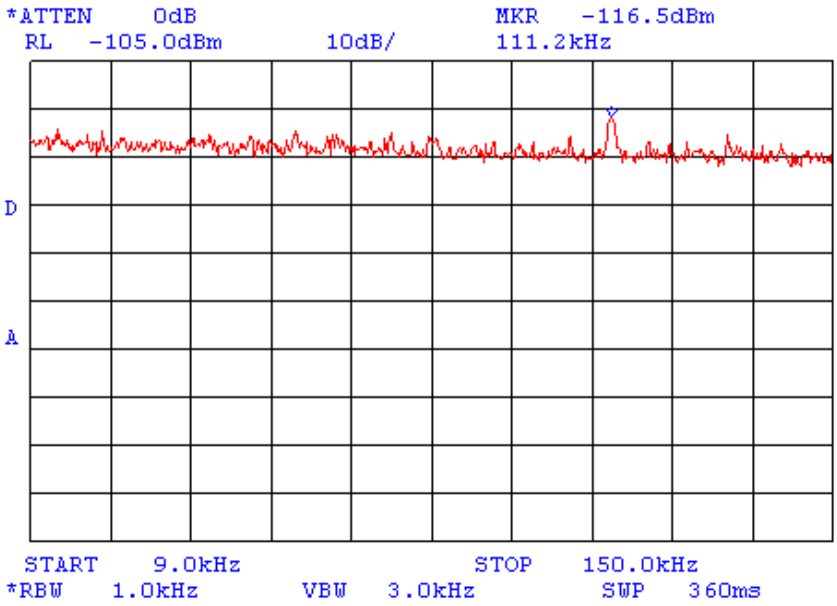
Plot A 25

Conducted spurious emission measurements in 9 kHz – 150 kHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



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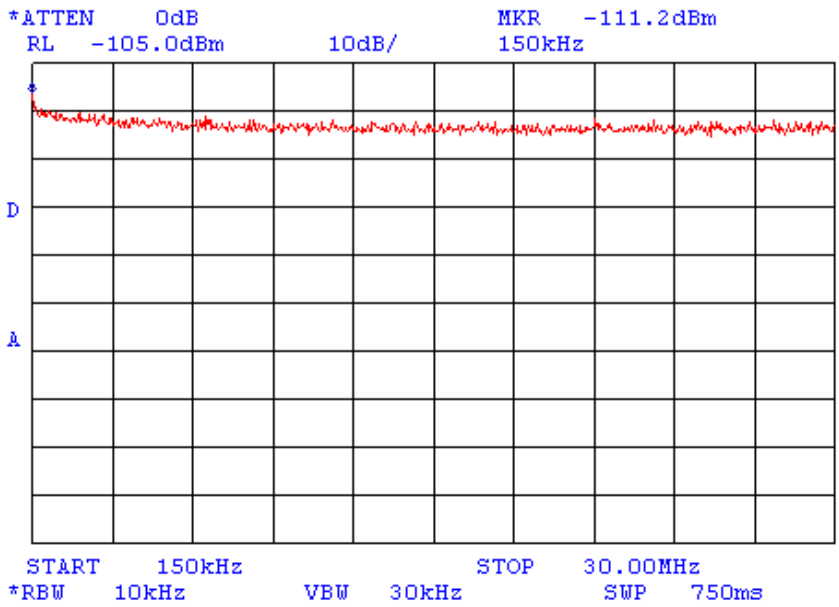
Plot A 26

Conducted spurious emission measurements in 150 kHz – 30 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



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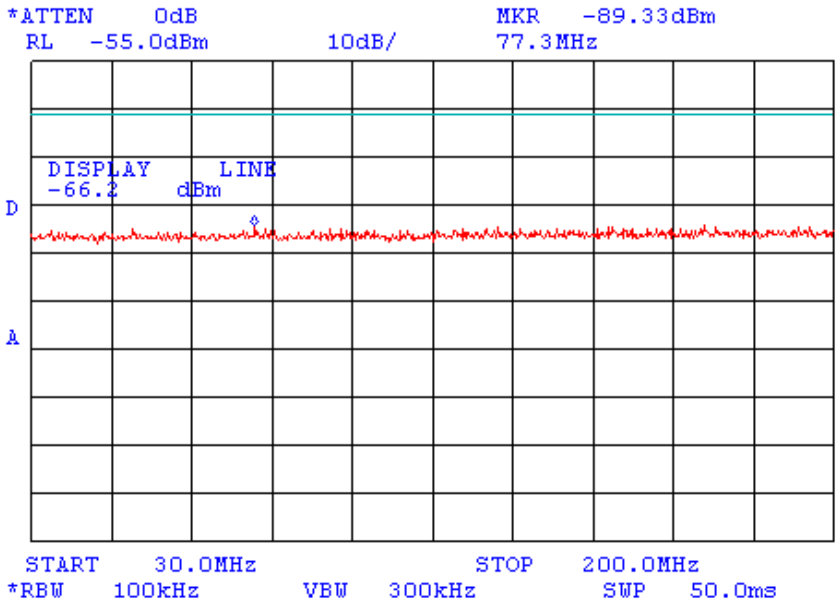
Plot A 27

Conducted spurious emission measurements in 30 MHz – 200 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.2 dB

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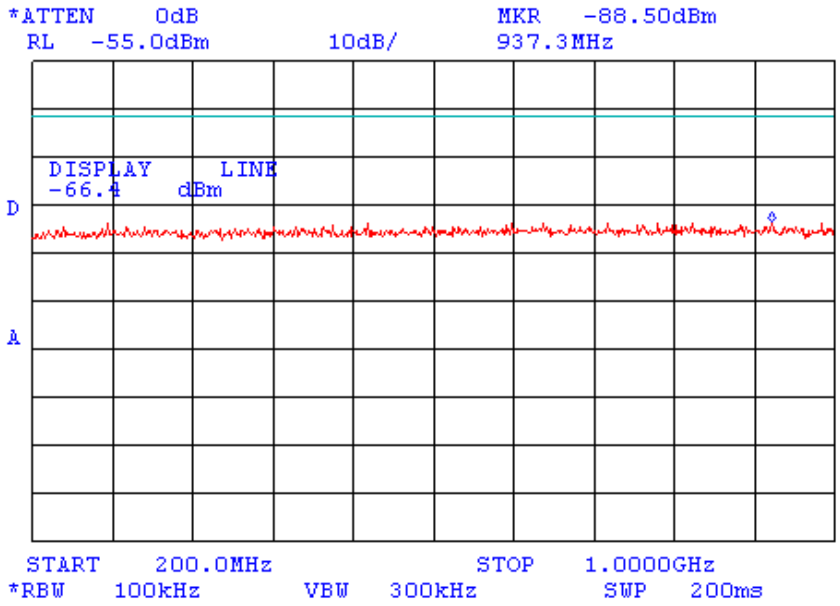
Plot A 28

Conducted spurious emission measurements in 200 MHz – 1000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.4 dB

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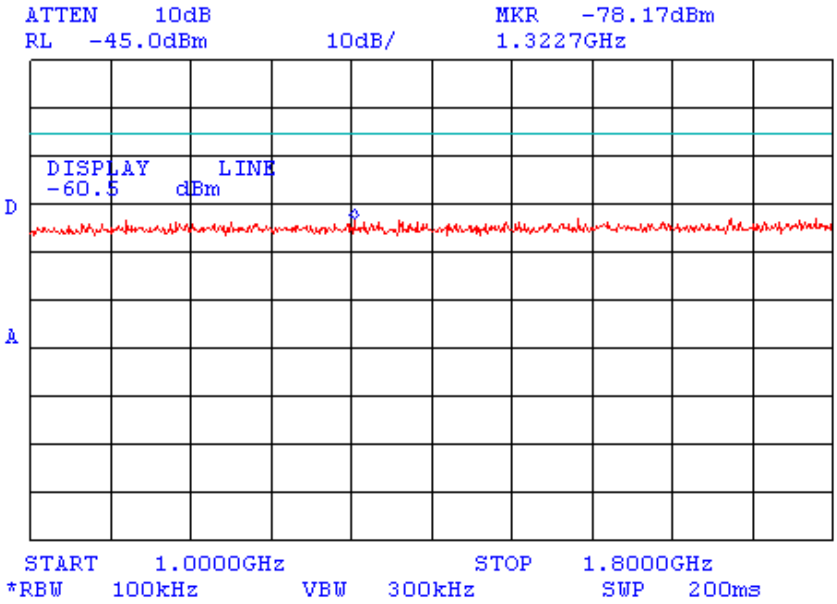
Plot A 29

Conducted spurious emission measurements in 1000 MHz - 1800 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.5 dB

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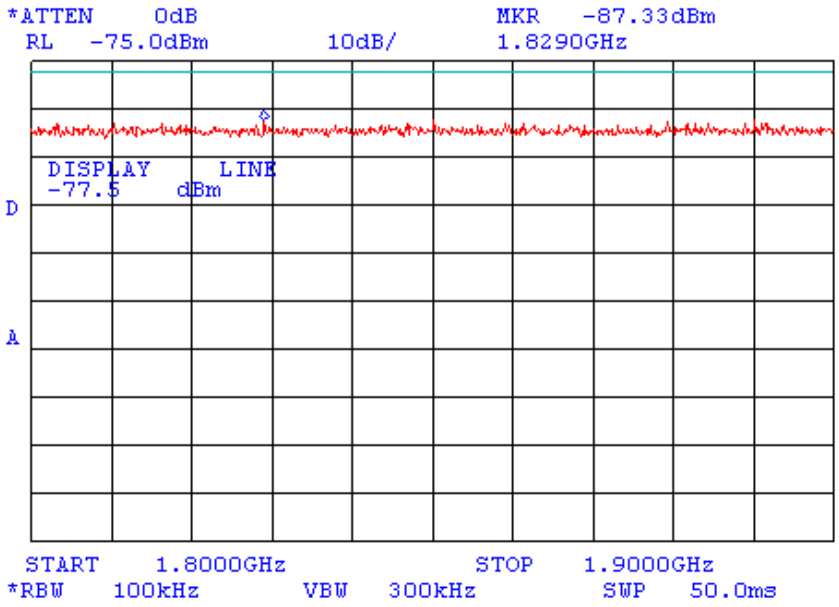
Plot A 30

Conducted spurious emission measurements in 1800 MHz – 1900 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.5 dB

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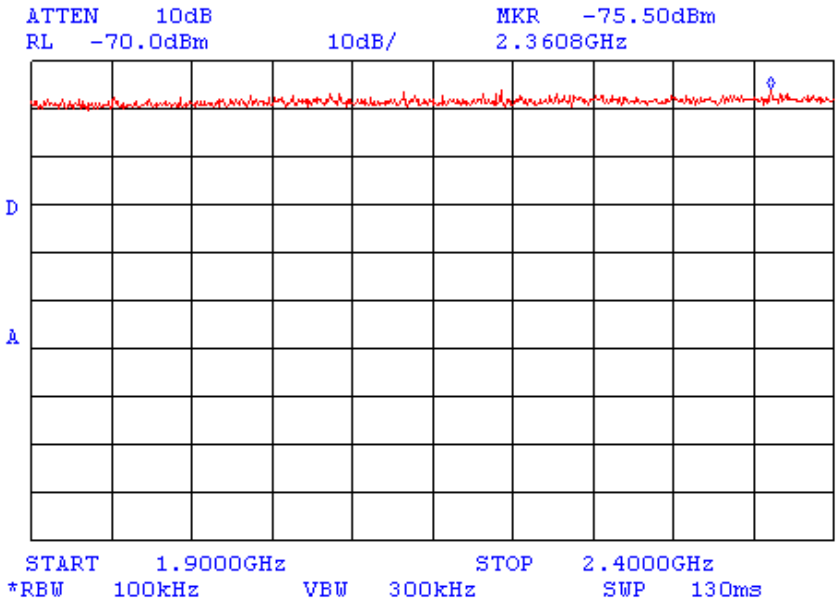
Plot A 31

Conducted spurious emission measurements in 1900 MHz – 2400 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB

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Intentionally blank

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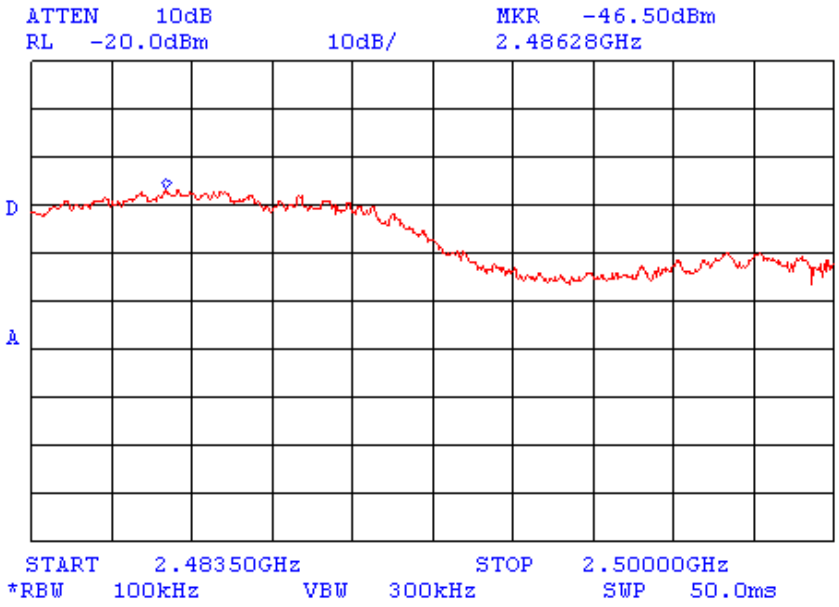
Plot A 32

Conducted spurious emission measurements in 2483.5 MHz – 2500 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB
-46.5 dBm + 30 dB + 1.5 dB = -15 dBm
Limit=-13.67 dBm
Verdict: PASS

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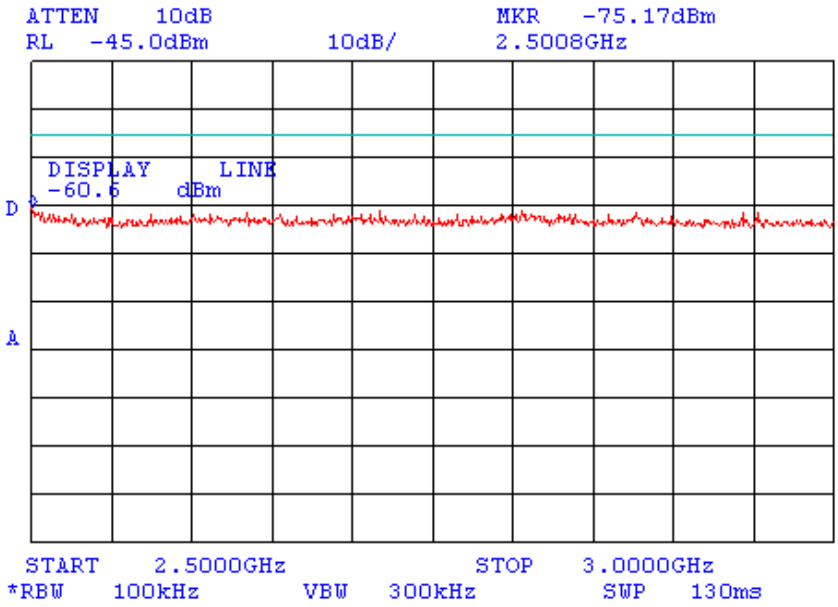
Plot A 33

Conducted spurious emission measurements in 2500 MHz – 3000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
cable loss 0.6 dB

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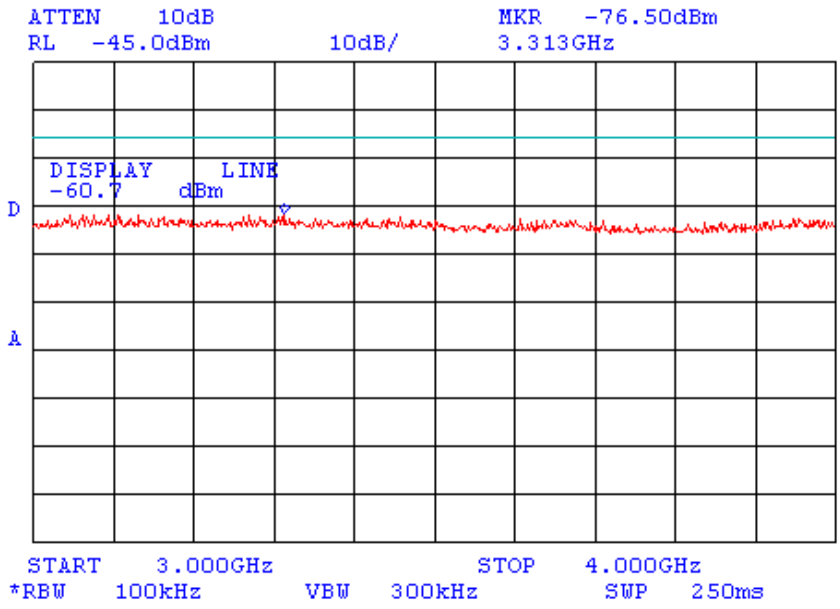
Plot A 34

Conducted spurious emission measurements in 3000 MHz – 4000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.7 dB

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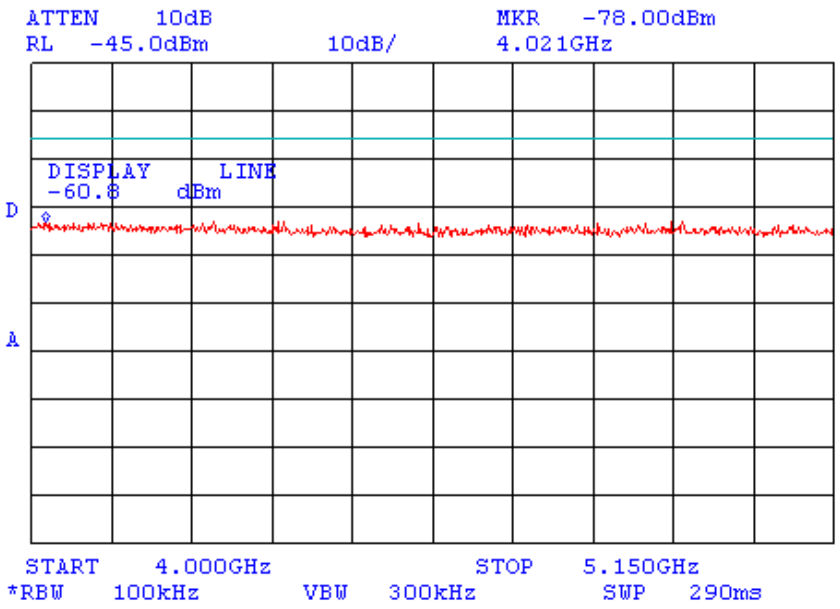
Plot A 35

Conducted spurious emission measurements in 4000 MHz – 5150 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.8 dB

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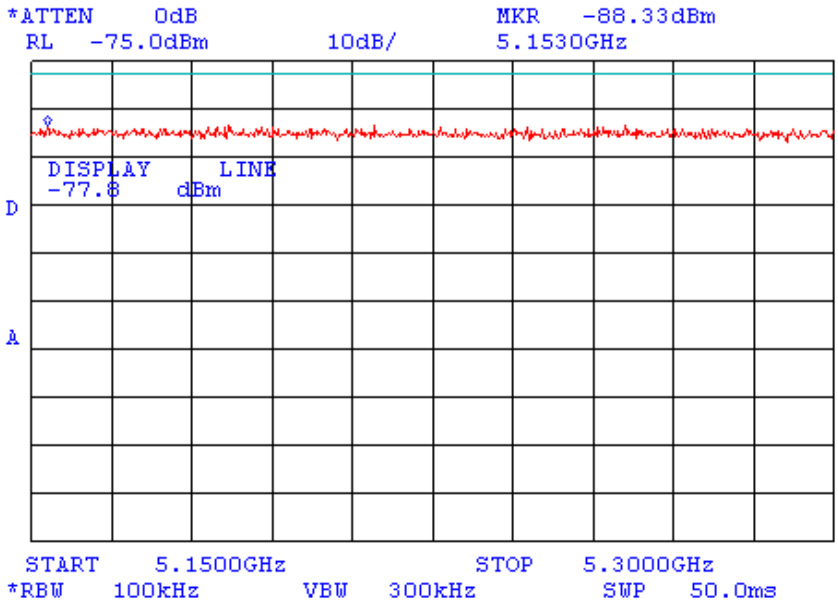
Plot A 36

Conducted spurious emission measurements in 5150 MHz –5300 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.8 dB

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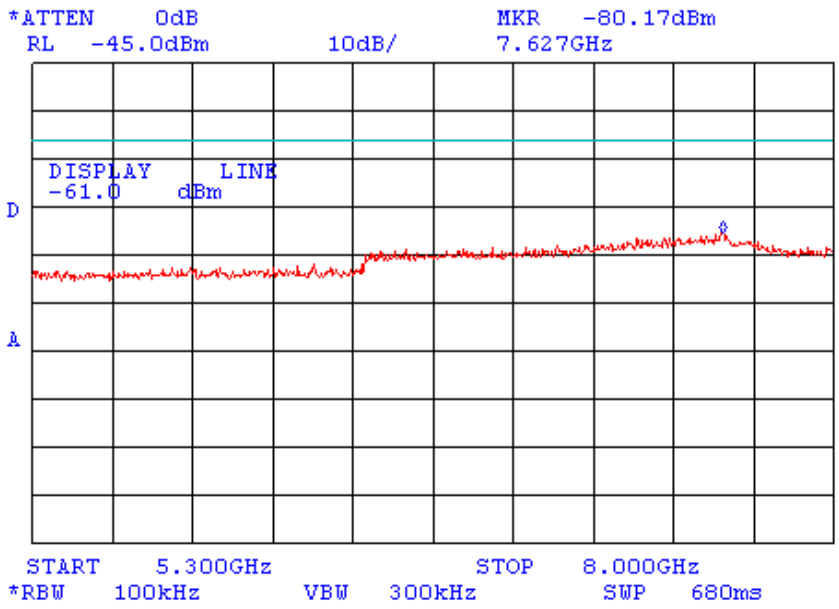
Plot A 37

Conducted spurious emission measurements in 5300 MHz – 8000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.0 dB

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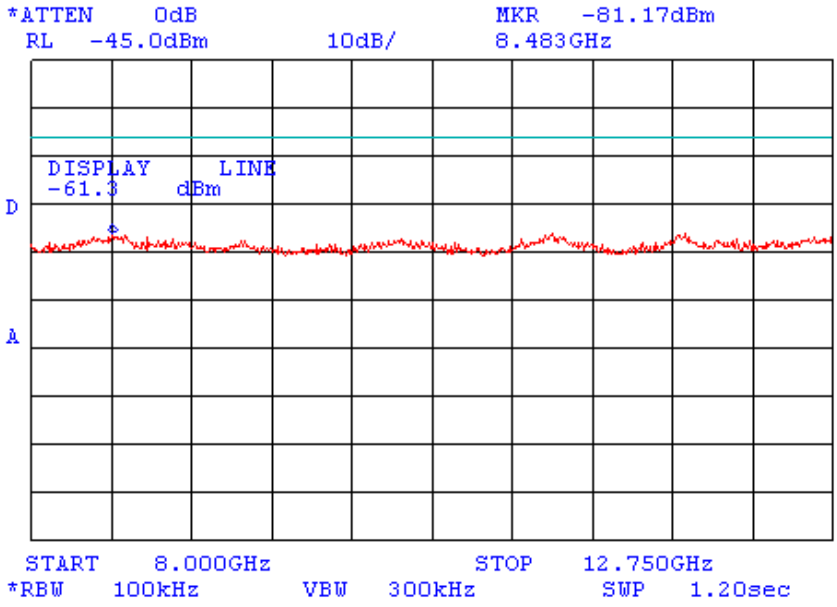
Plot A 38

Conducted spurious emission measurements in 8000 MHz – 12750 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2462 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.3 dB

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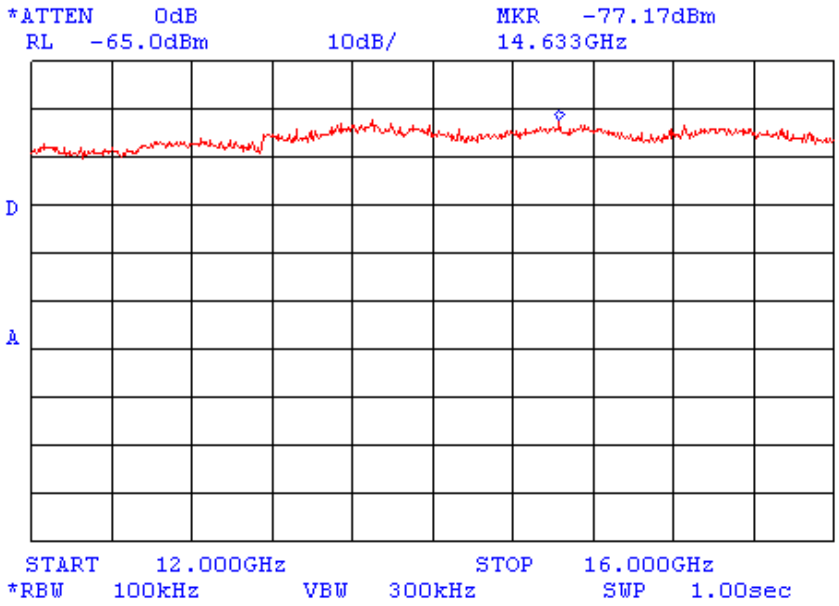
Plot A 39

Conducted spurious emission measurements in 12000 MHz – 16000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Maximum cable loss 3.3 dB

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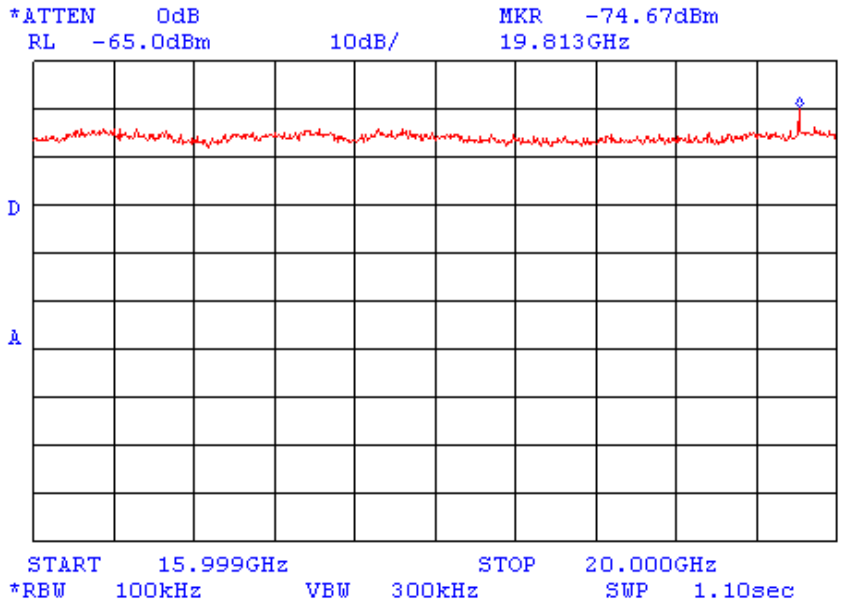
Plot A 40

Conducted spurious emission measurements in 16000 MHz – 20000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11Mbit/sec



No external attenuator
Maximum cable loss 3.6 dB

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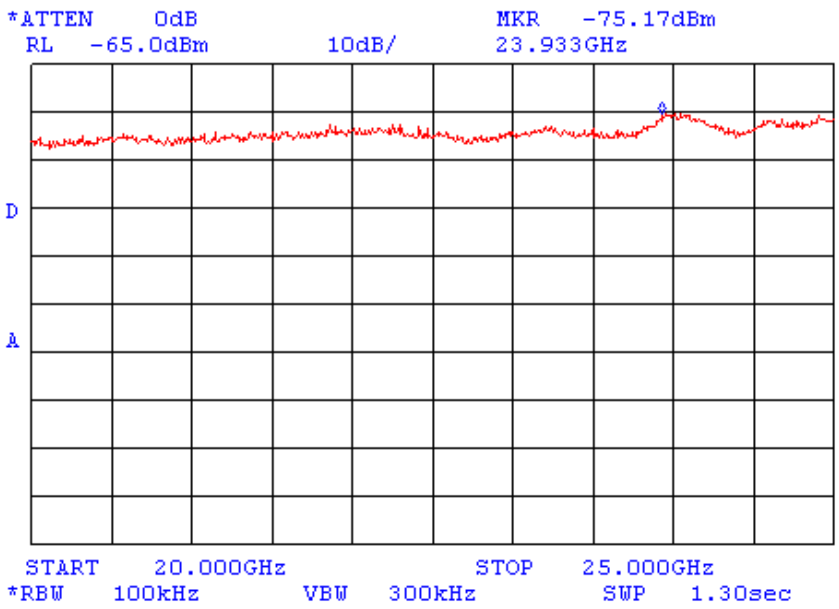
Plot A 41

Conducted spurious emission measurements in 20000 MHz – 25000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2472 MHz, bitrate 11Mbit/sec



No external attenuator
Maximum cable loss 4.1 dB

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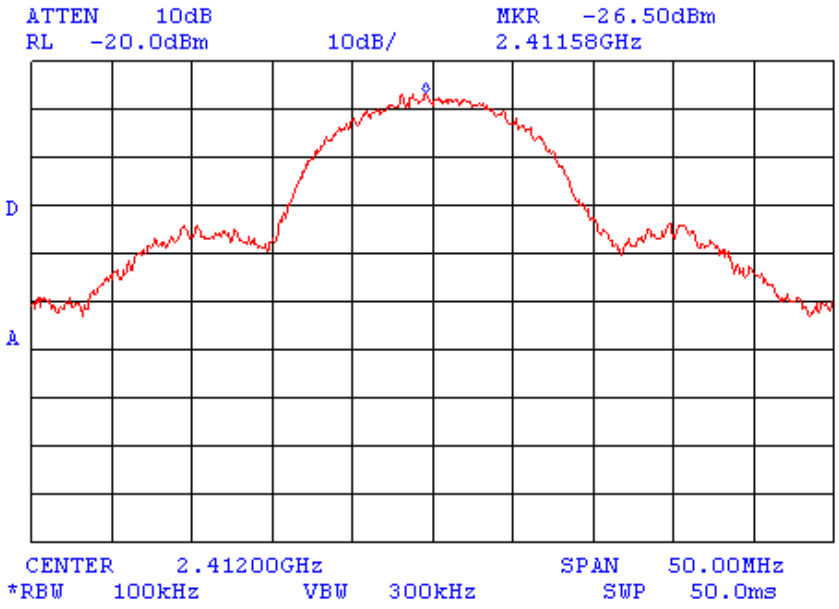
Plot A 42

In-band spurious emission measurements @ 2412 MHz

Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB
Limit for spurious= -26.5 dBm + 30 dB + 1.5 dB – 20 dB = -15 dBm

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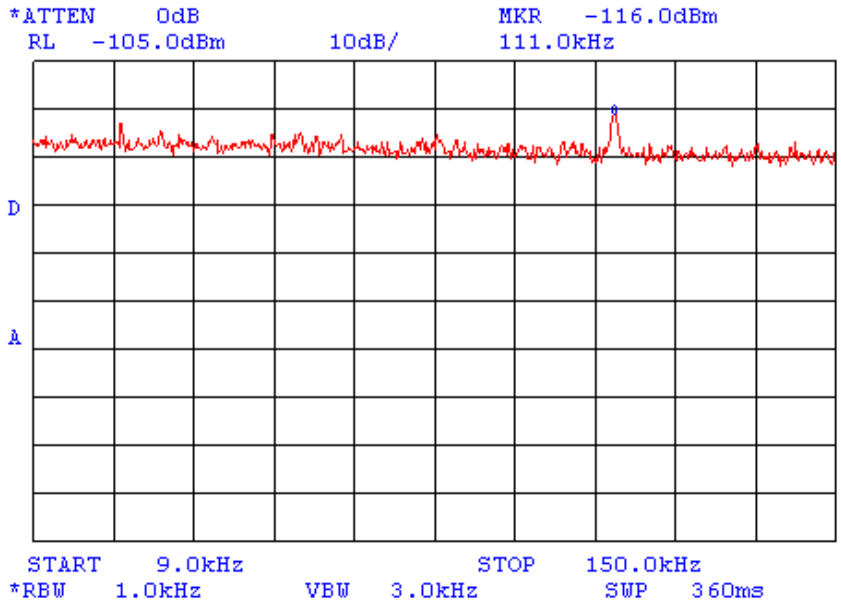
Plot A 43

Conducted spurious emission measurements in 9 kHz – 150 kHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



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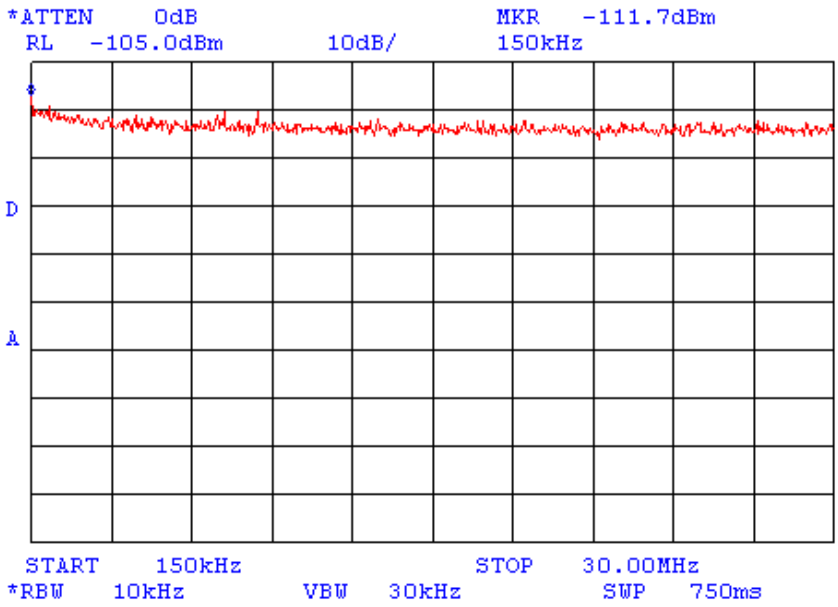
Plot A 44

Conducted spurious emission measurements in 150 kHz – 30 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



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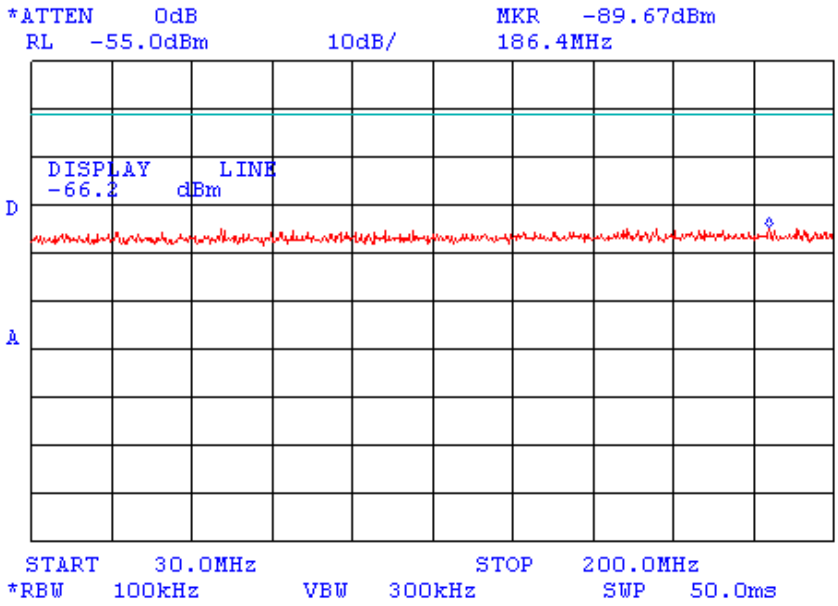
Plot A 45

Conducted spurious emission measurements in 30 MHz – 200 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.2 dB

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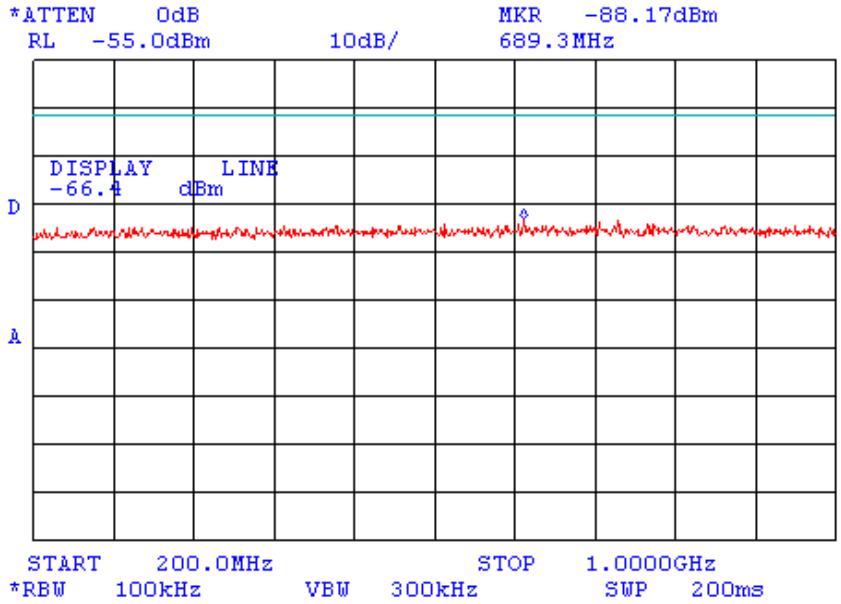
Plot A 46

Conducted spurious emission measurements in 200 MHz – 1000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.4 dB

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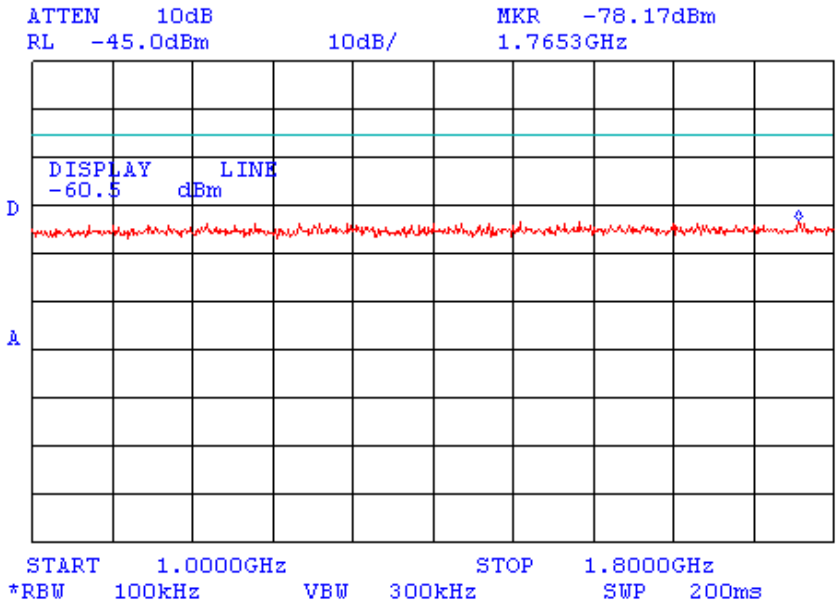
Plot A 47

Conducted spurious emission measurements in 1000 MHz – 1800 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.5 dB

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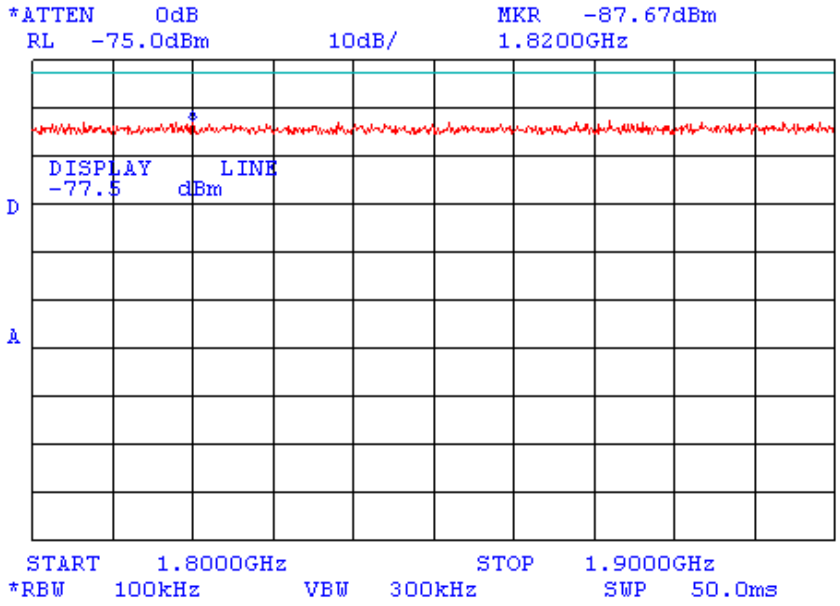
Plot A 48

Conducted spurious emission measurements in 1800 MHz – 1900 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.5 dB

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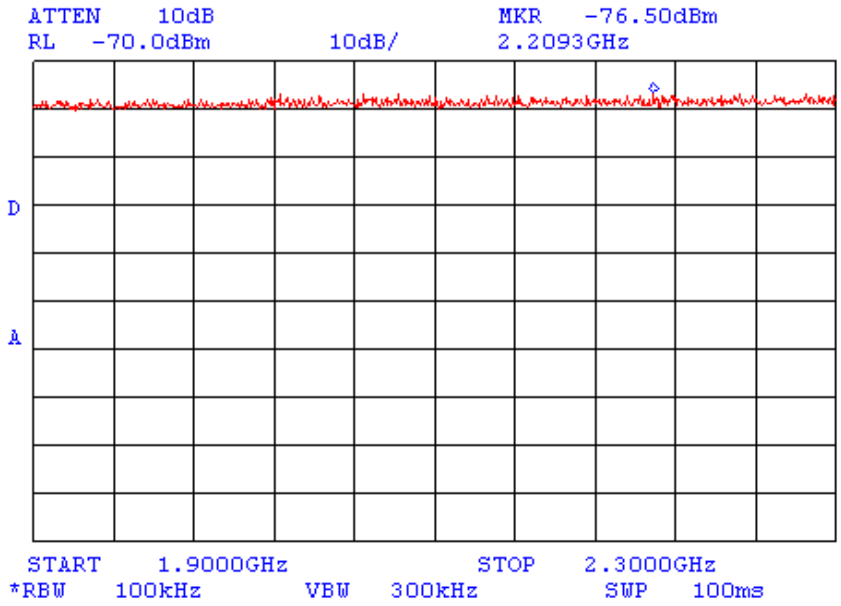
Plot A 49

Conducted spurious emission measurements in 1900 MHz – 2300 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB

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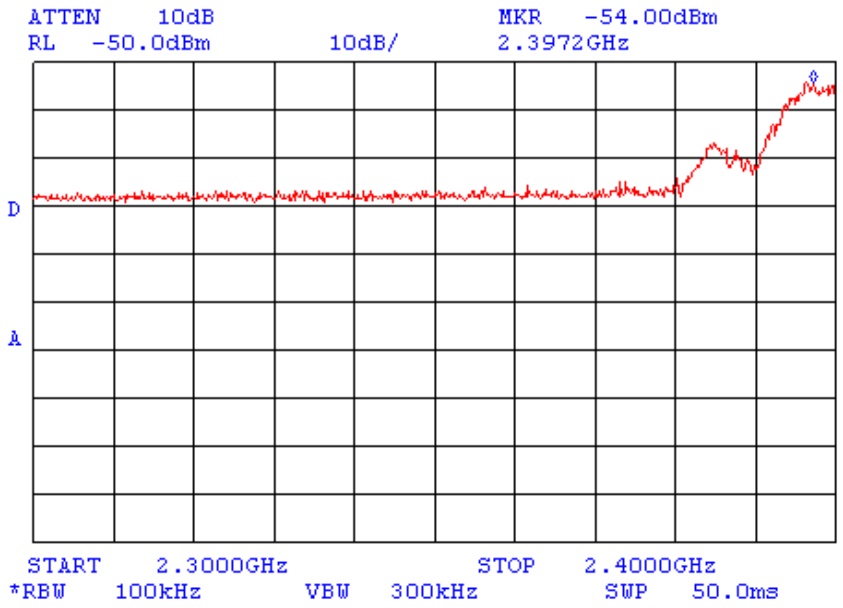
Plot A 50

Conducted spurious emission measurements in 2300 MHz – 2400 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB
-54 dBm + 30 dB + 1.5 dB =-22.5 dBm
Verdict: PASS

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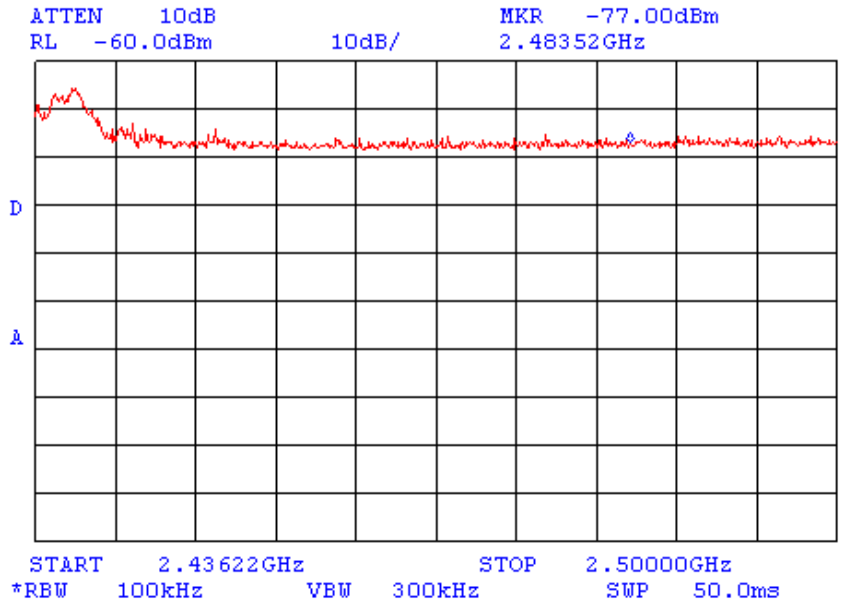
Plot A 51

Conducted spurious emission measurements in 2436.2 MHz – 2500 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.5 dB

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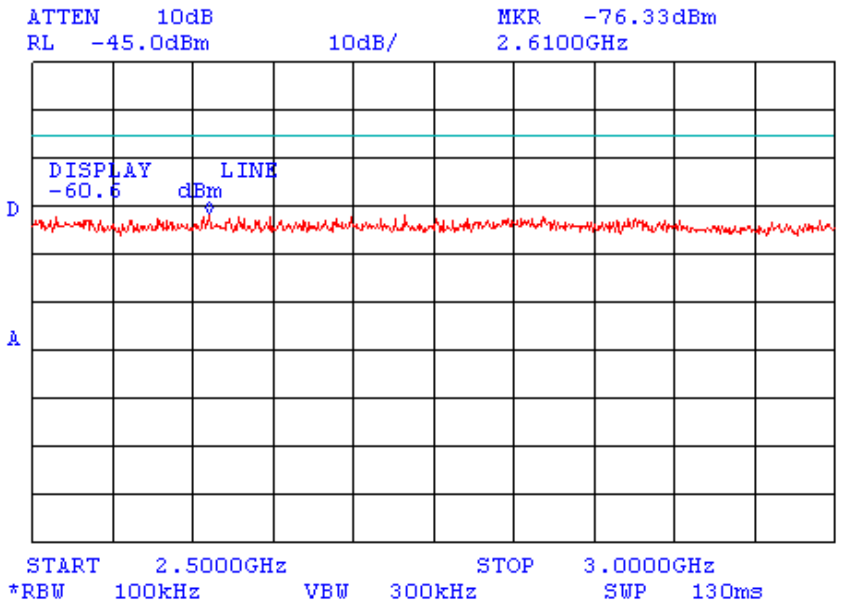
Plot A 52

Conducted spurious emission measurements in 2500 MHz – 3000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.6 dB

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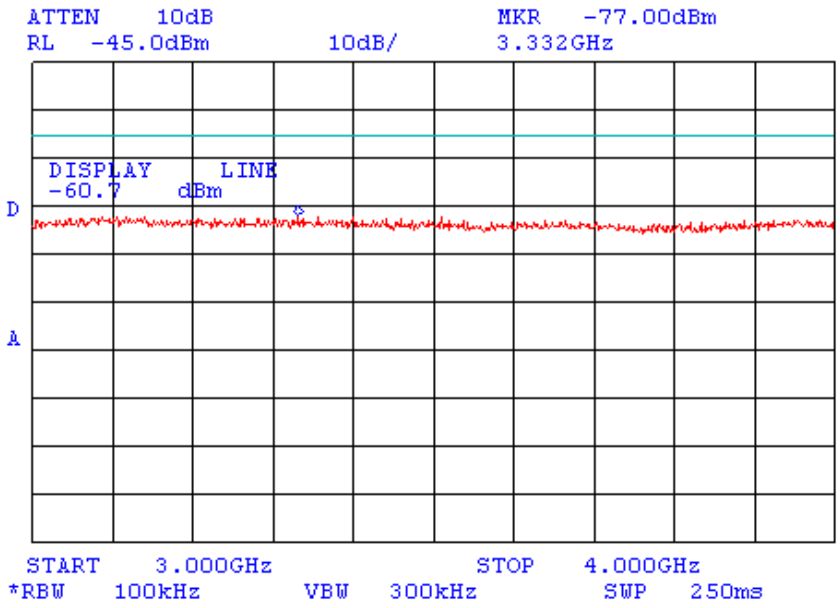
Plot A 53

Conducted spurious emission measurements in 3000 MHz – 4000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.7 dB

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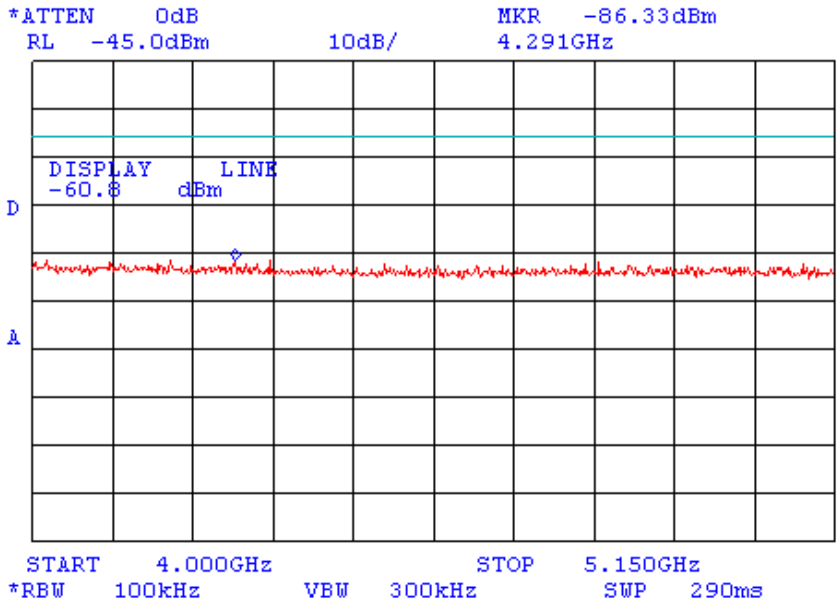
Plot A 54

Conducted spurious emission measurements in 4000 MHz – 5150 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.8 dB

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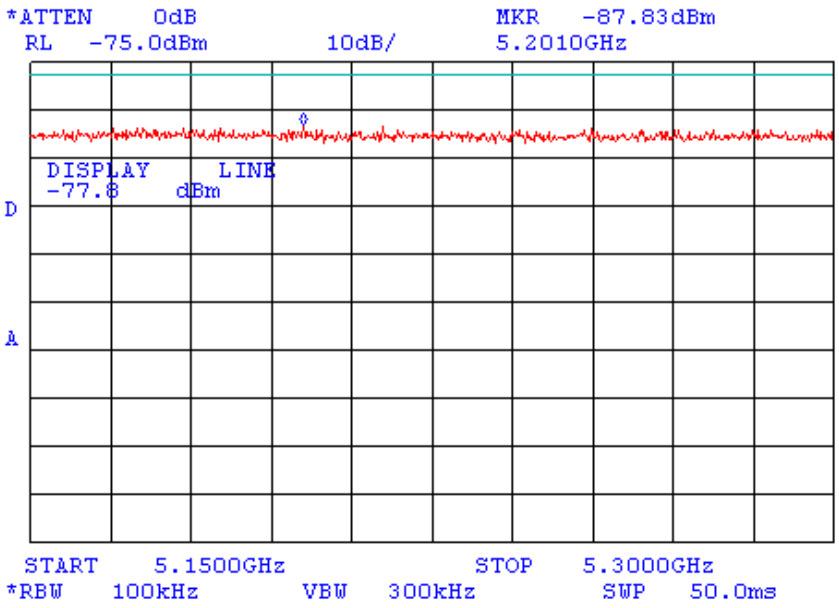
Plot A 55

Conducted spurious emission measurements in 5150 MHz – 5300 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 0.8 dB

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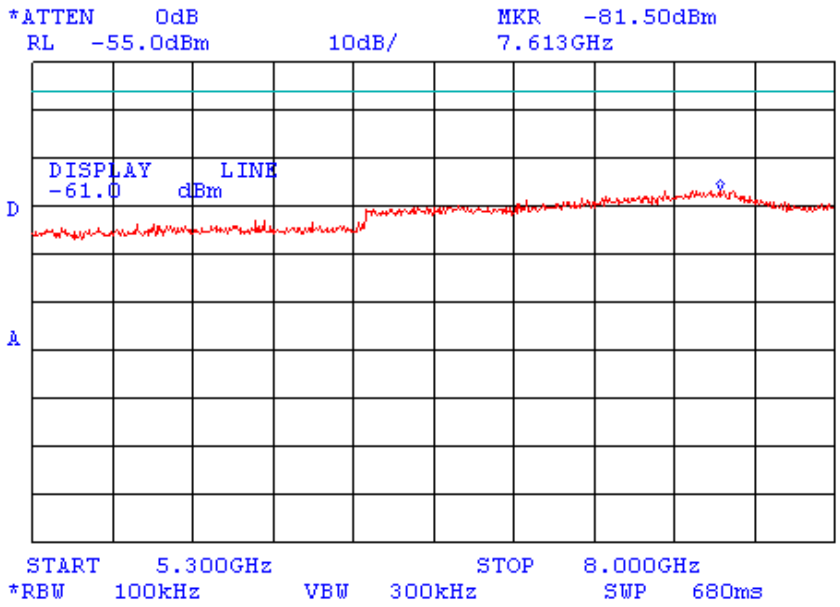
Plot A 56

Conducted spurious emission measurements in 5300 MHz – 8000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11Mbit/sec



External attenuator 30 dB
Cable loss1.0 dB

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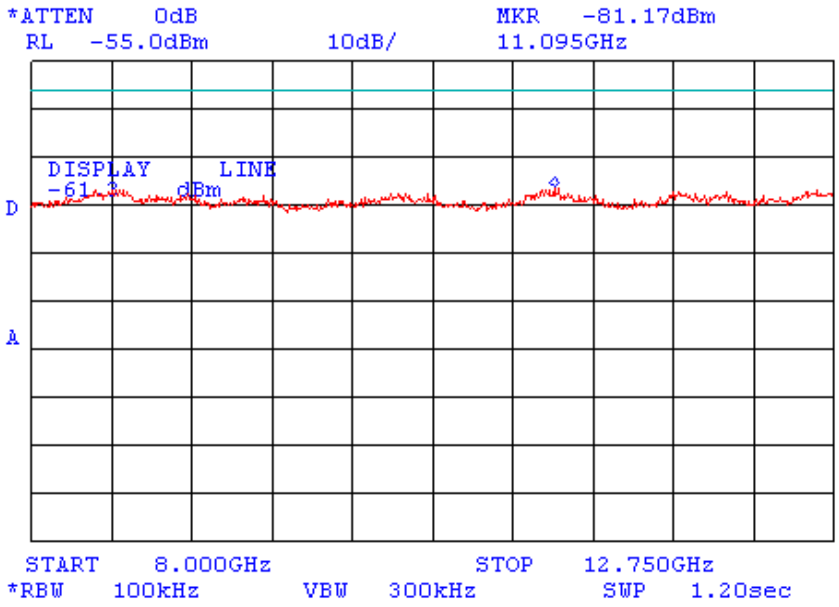
Plot A 57

Conducted spurious emission measurements in 8000 MHz – 12750 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Cable loss 1.3 dB

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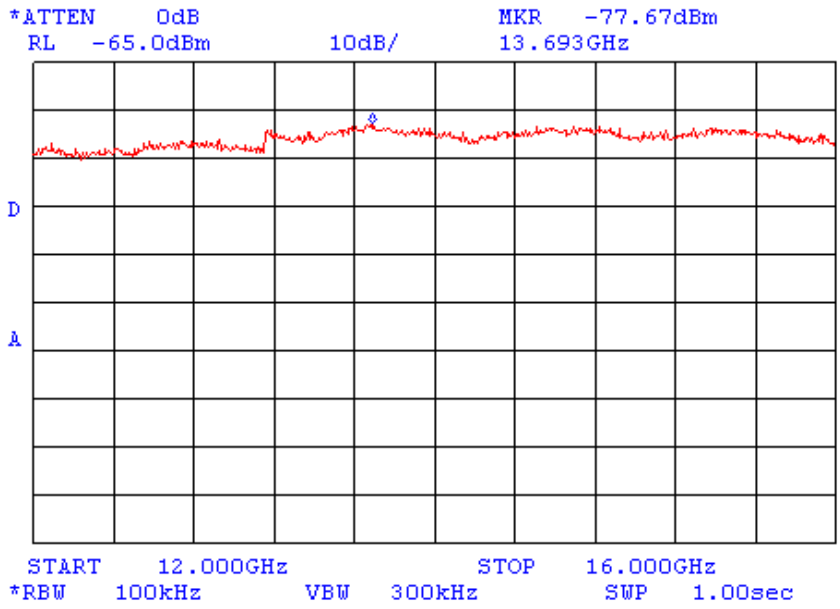
Plot A 58

Conducted spurious emission measurements in 12000 MHz – 16000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



External attenuator 30 dB
Maximum cable loss 3.3 dB

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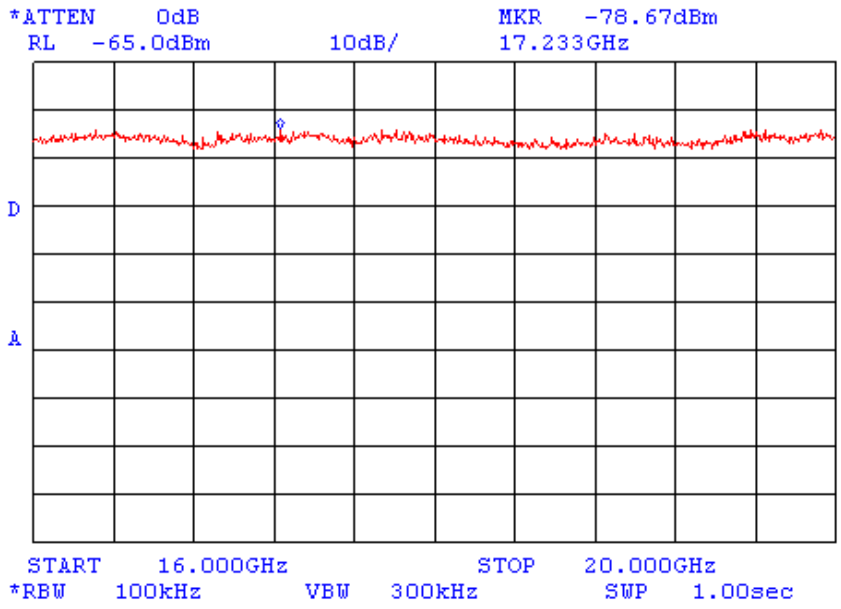
Plot A 59

Conducted spurious emission measurements in 16000 MHz – 20000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



No external attenuator
Maximum cable loss 3.6 dB

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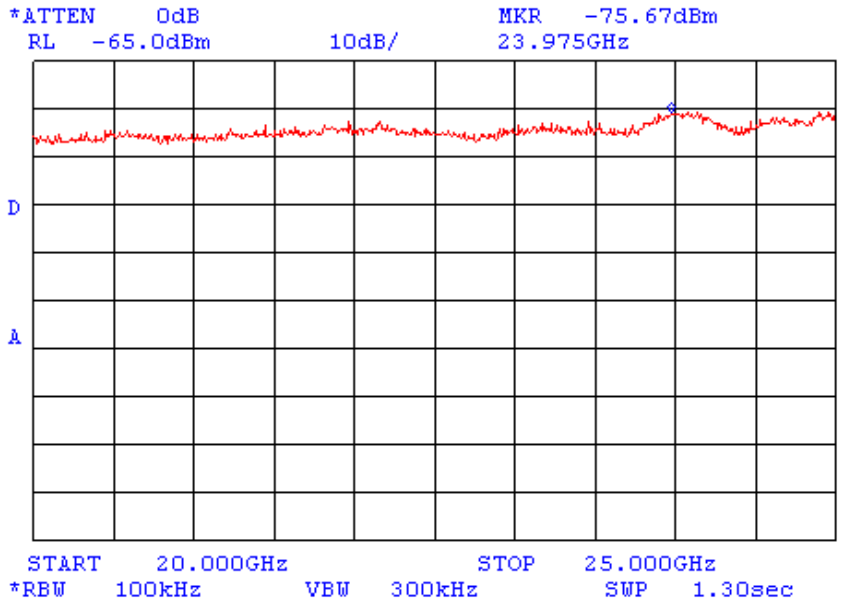
Plot A 60

Conducted spurious emission measurements in 20000 MHz – 25000 MHz

Limit:	20 dB below the carrier
Detector:	Peak
Test Method:	measurement at antenna connector
Notes:	f(Tx)=2412 MHz, bitrate 11 Mbit/sec



No external attenuator
Maximum cable loss 4.1 dB

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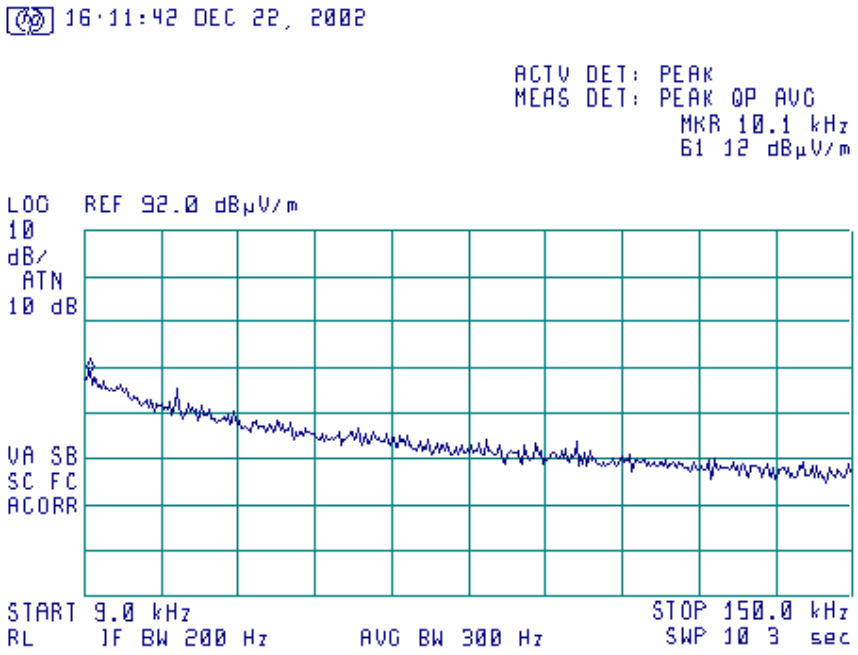
Plot A 61

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2442 MHz



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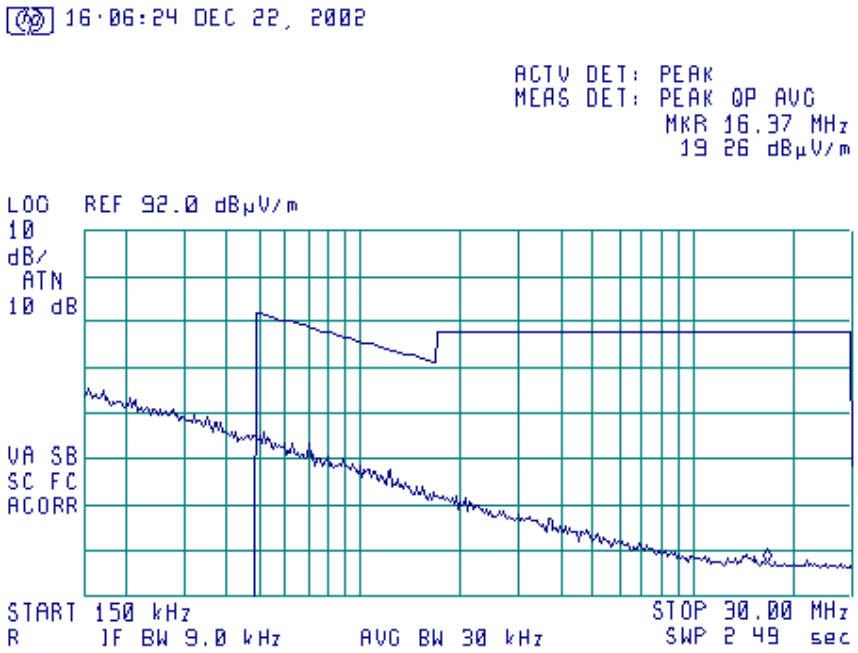
Plot A 62

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2442 MHz



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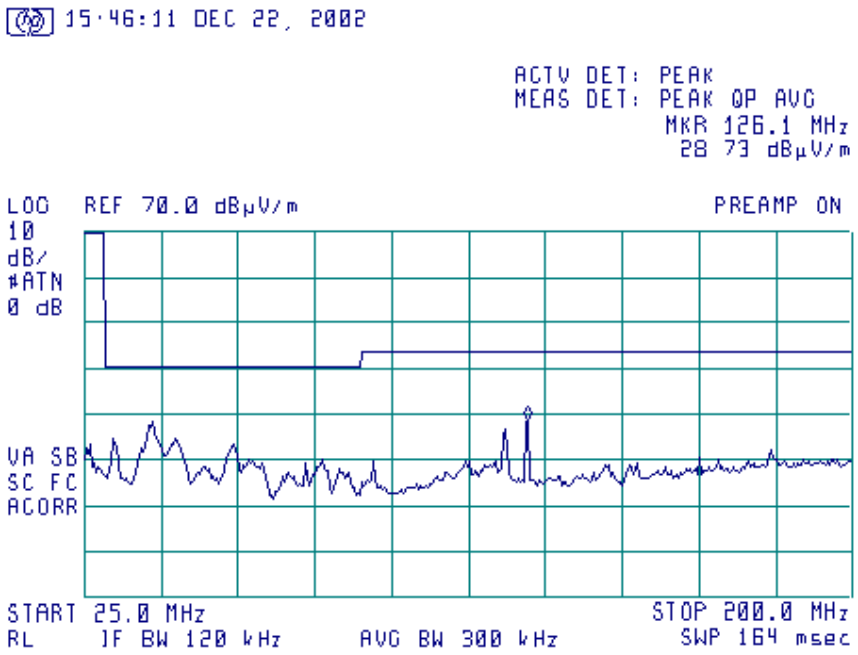
Plot A 63

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2442 MHz



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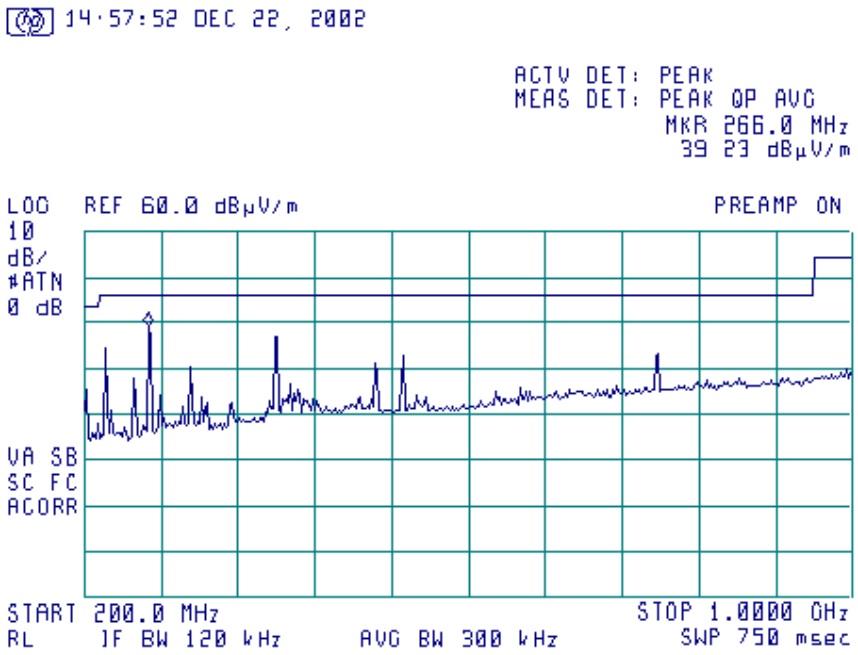
Plot A 64

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2442 MHz



Frequency, MHz	Note
220	Not restricted band
264	Restricted band
396	Not restricted band
500	Not restricted band
528	Not restricted band
792	Not restricted band

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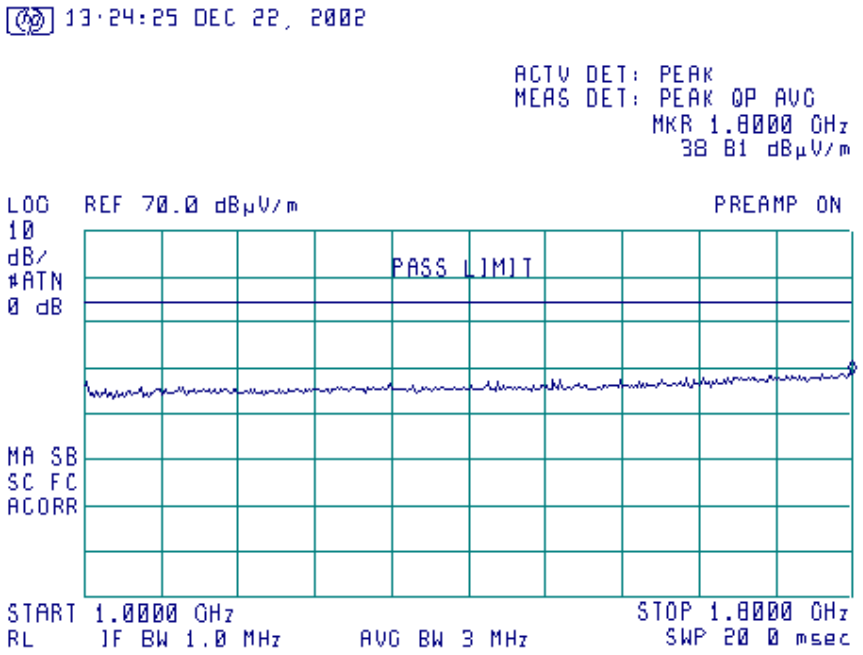
Plot A 65

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2442 MHz



No spurious emissions were found

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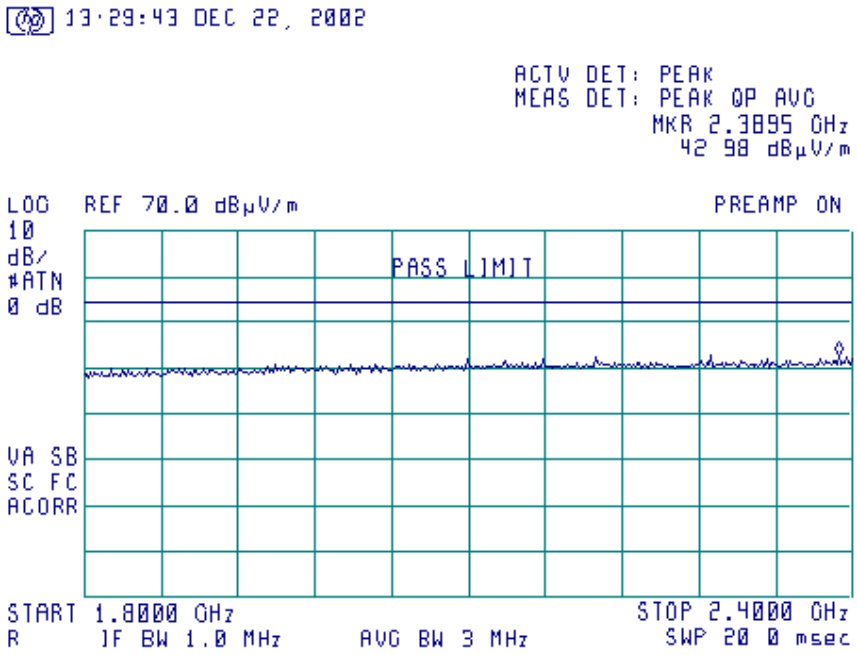
Plot A 66

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2442 MHz



No spurious emissions were found

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Intentionally blank

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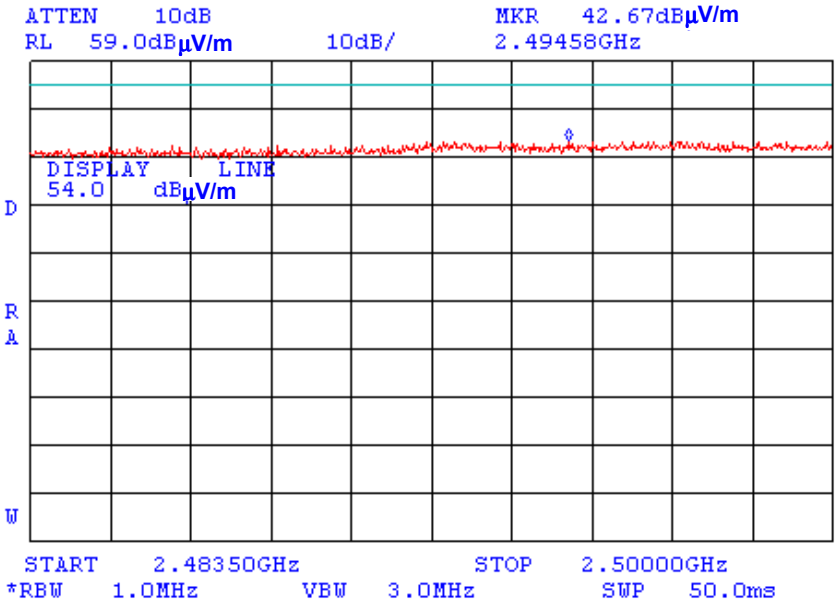
Plot A 67

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



RESTRICTED BAND
Limit: according to §15.209, 15.35
Peak value 42.67 dB(µV/m)

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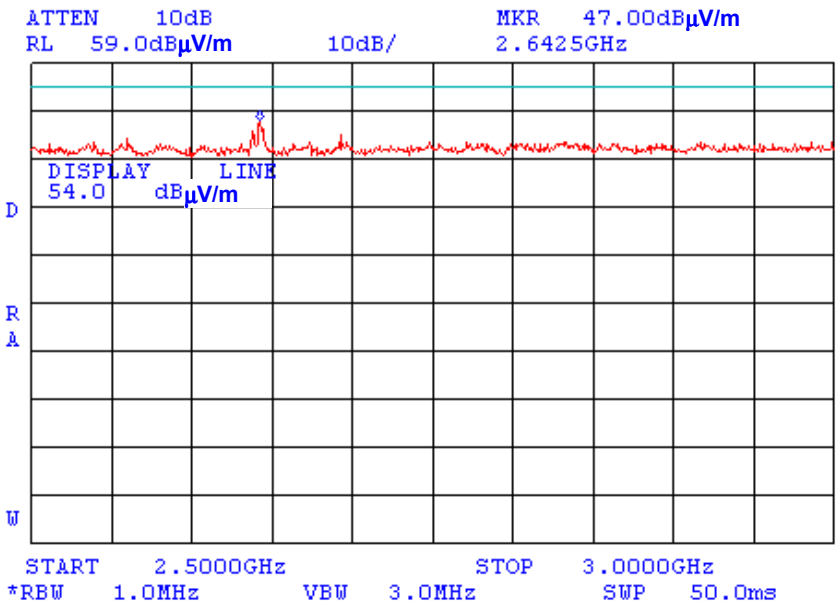
Plot A 68

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



No spurious emissions were found.
2642.5 MHz-ambient noise.

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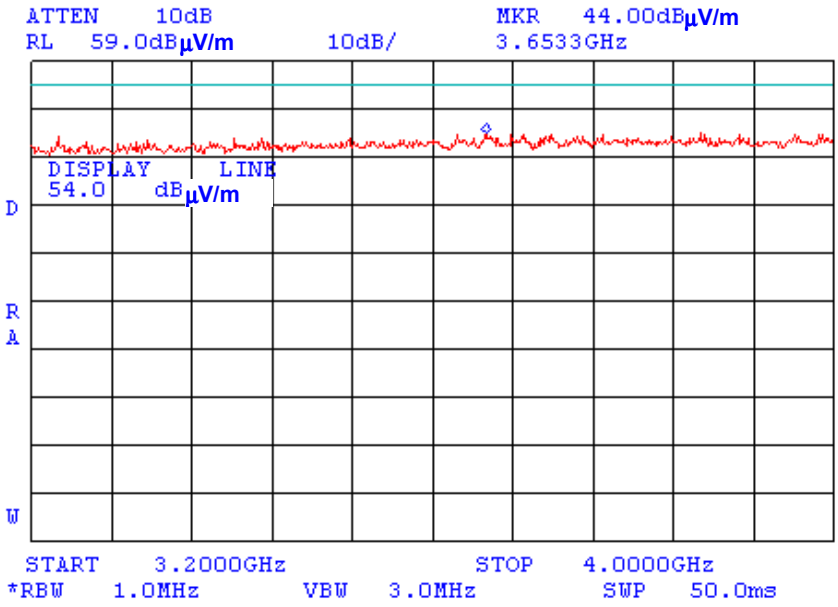
Plot A 69

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



No spurious emissions were found

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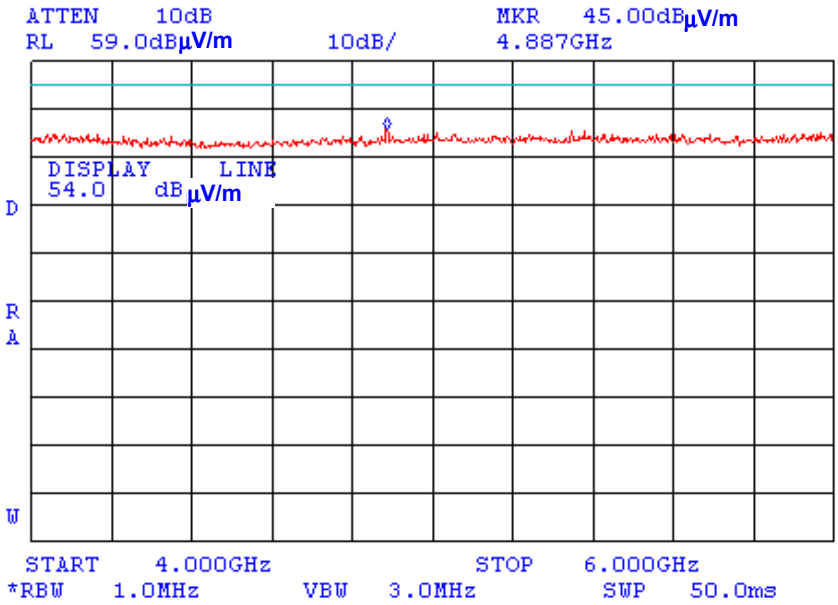
Plot A 70

Radiated spurious emission measurements at the OATS, carrier frequency 2442 MHz



No spurious emissions were found except 2nd harmonic.

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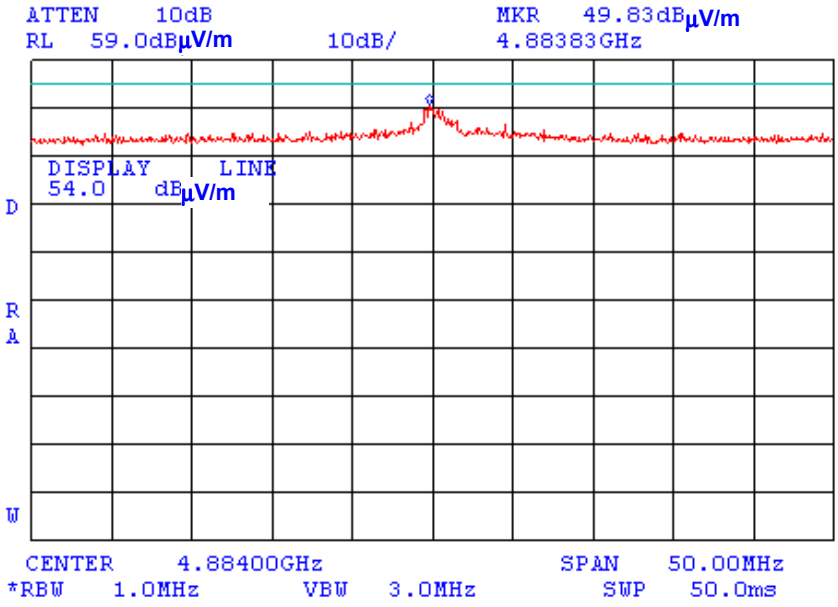
Plot A 71

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



RESTRICTED BAND
2nd harmonic of fundamental, peak value 49.83 dB(µV/m)
Limit: according to §15.209, 15.35

The maximum was found with vertical polarization of test antenna.

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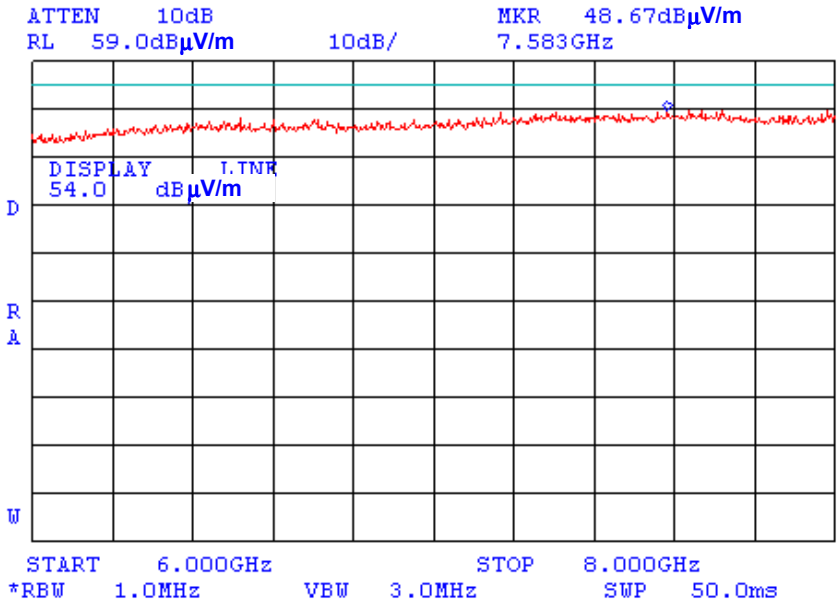
Plot A 72

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



No spurious emissions were found

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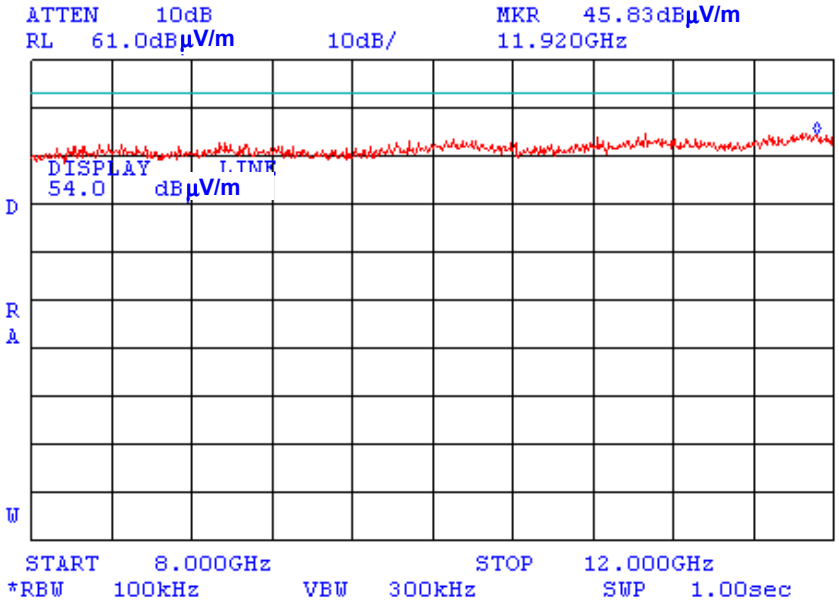
Plot A 73

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



No spurious emissions were found

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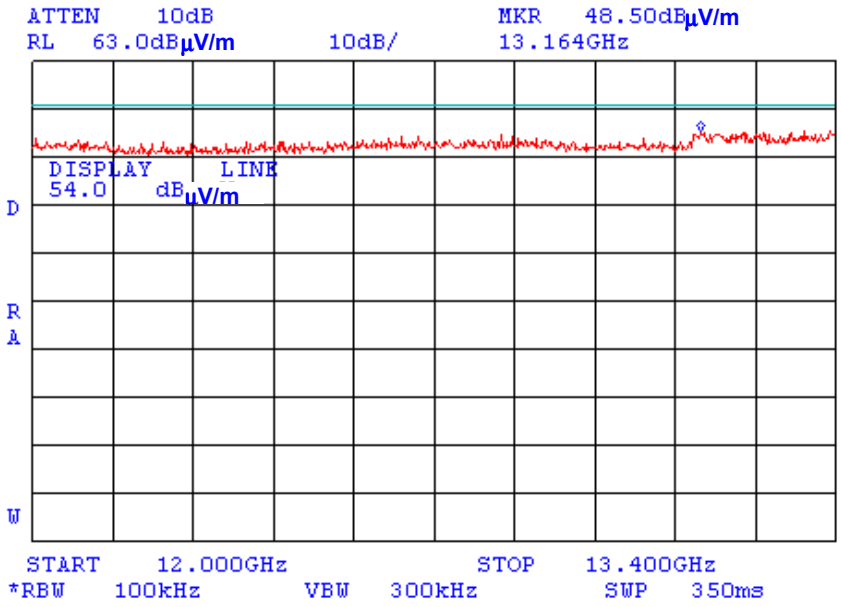
Plot A 74

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



No spurious emissions were found

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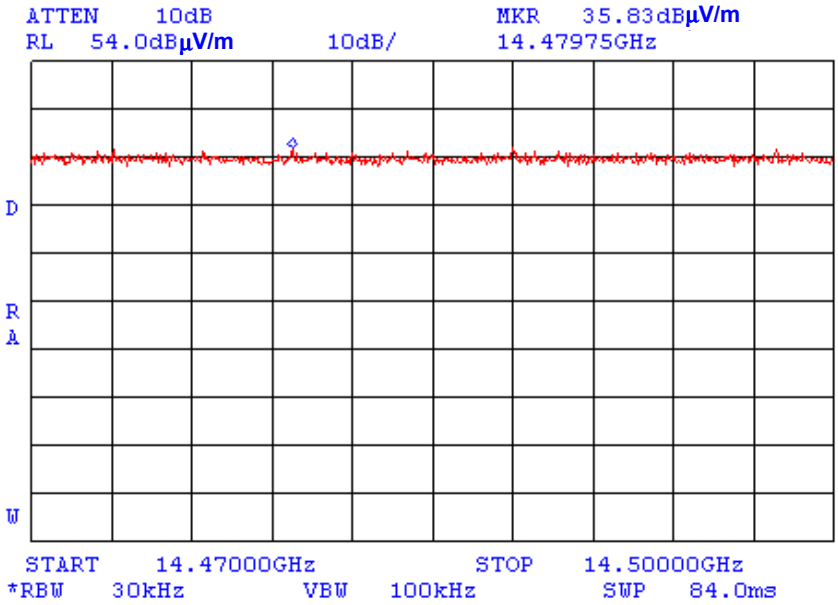
Plot A 75

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



No spurious emissions were found

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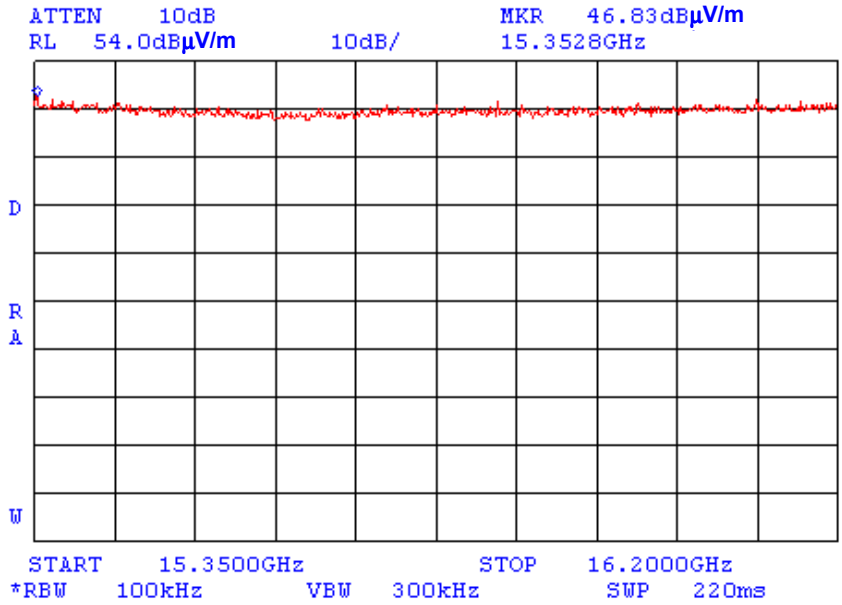
Plot A 76

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



No spurious emissions were found

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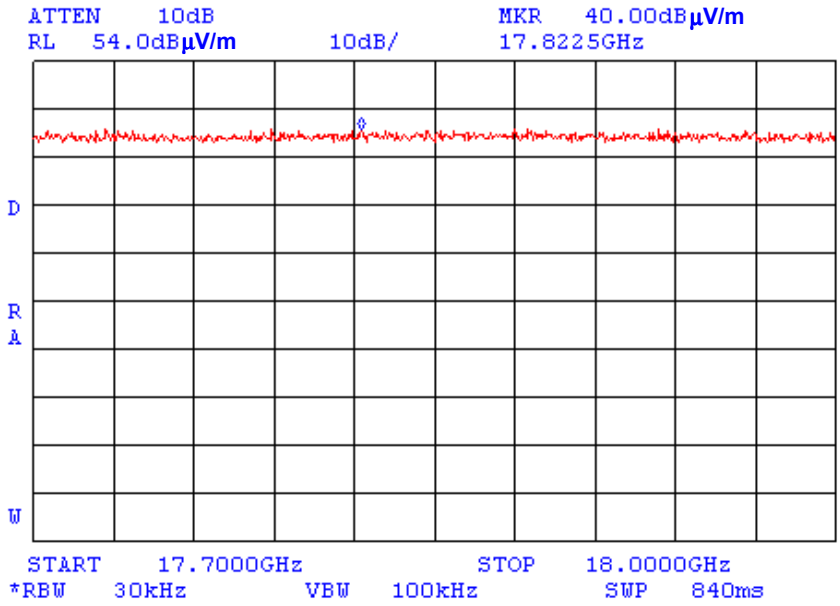
Plot A 77

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



No spurious emissions were found

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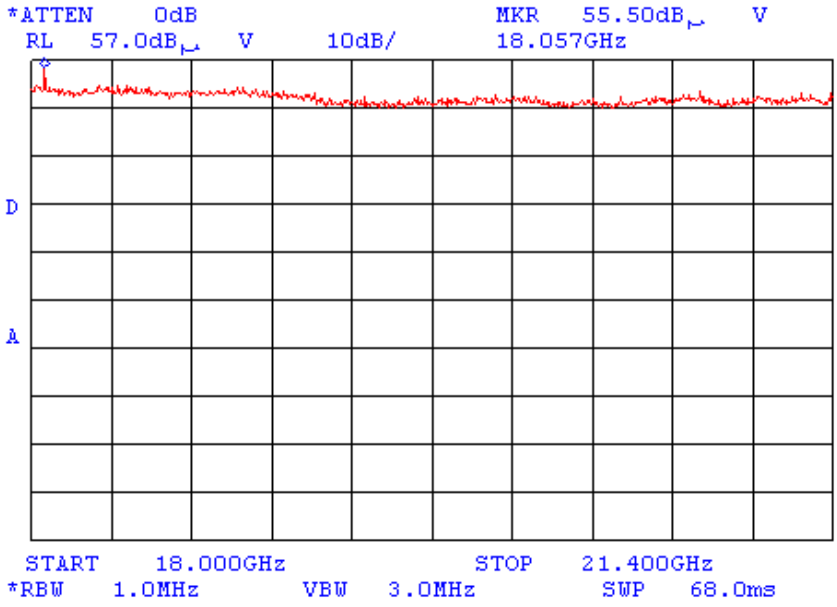
Plot A 78

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



18057 MHz-ambient noise.
E=55.5 dBuV-43 dB (ext.LNA) +3.4 dB(CL) + 32 dB(1/m)(AF) = 47.9 dB(uV/m) – Pass

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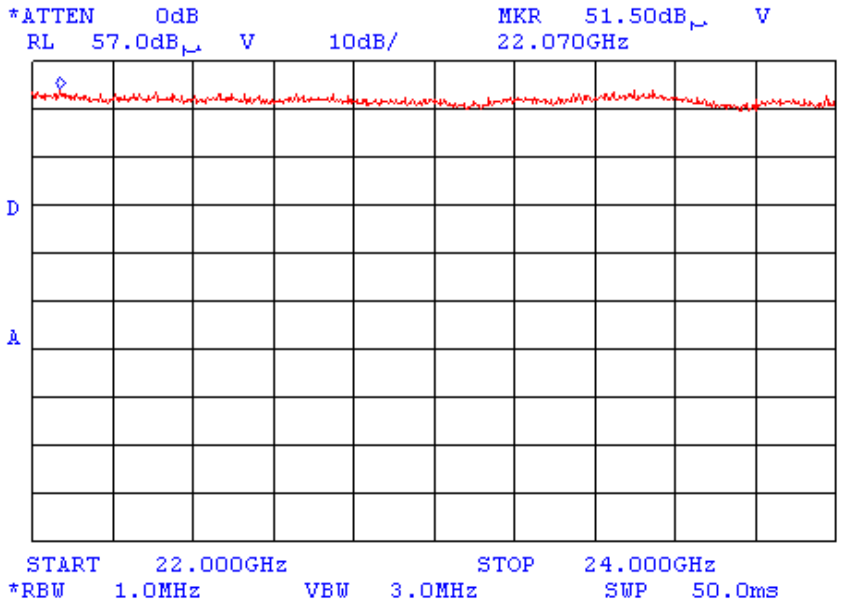
Plot A 79

**Radiated spurious emission measurements at the OATS,
carrier frequency 2442 MHz**



RESTRICTED BAND
Limit 54 dB(µV/m) according to §15.209

Noise floor: Peak value 44.5 dB(µV/m)
E= 51.5 dBuV-43 dB(ext.LNA)+4 dB(maxCL)+32 dB(1/m)(AF)=44.5 dB(uV/m) – Pass

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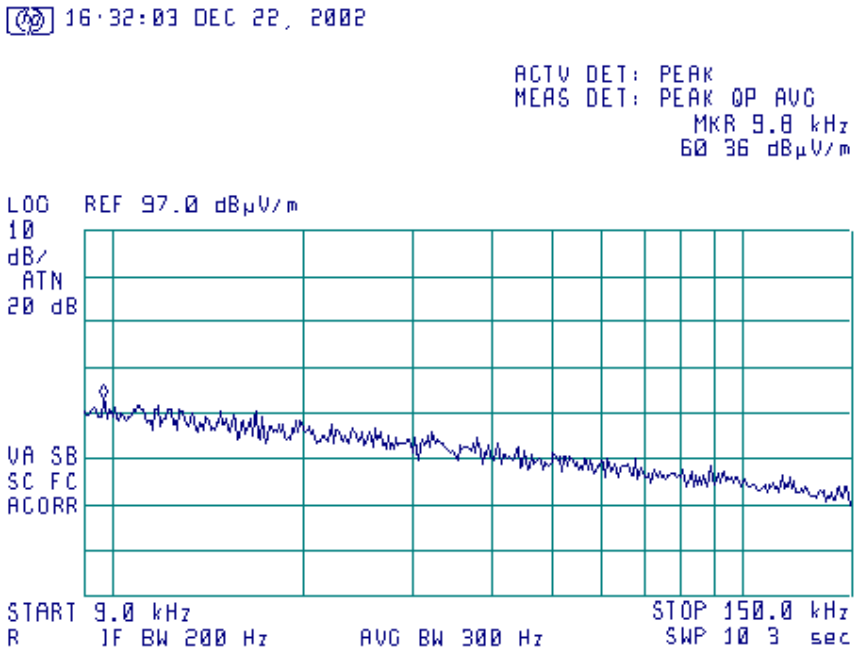
Plot A 80

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



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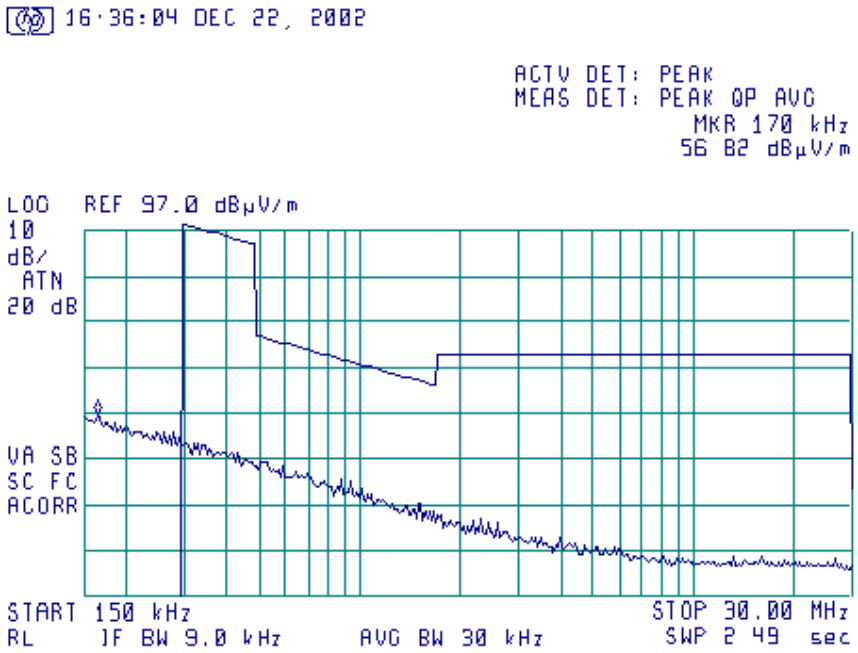
Plot A 81

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



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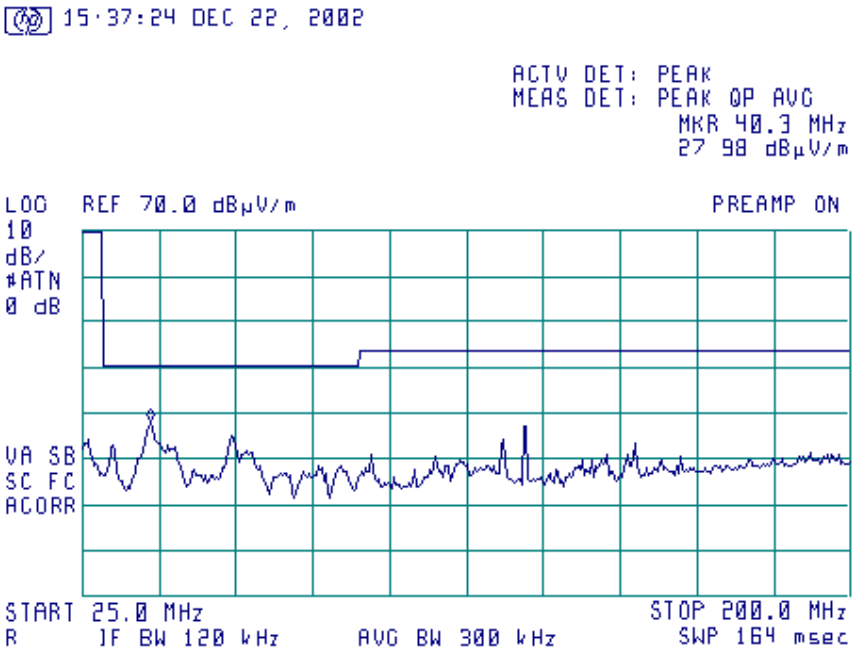
Plot A 82

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



Frequency, MHz	Note
40	Not restricted band
59	Not restricted band
120	Restricted band
125	Restricted band

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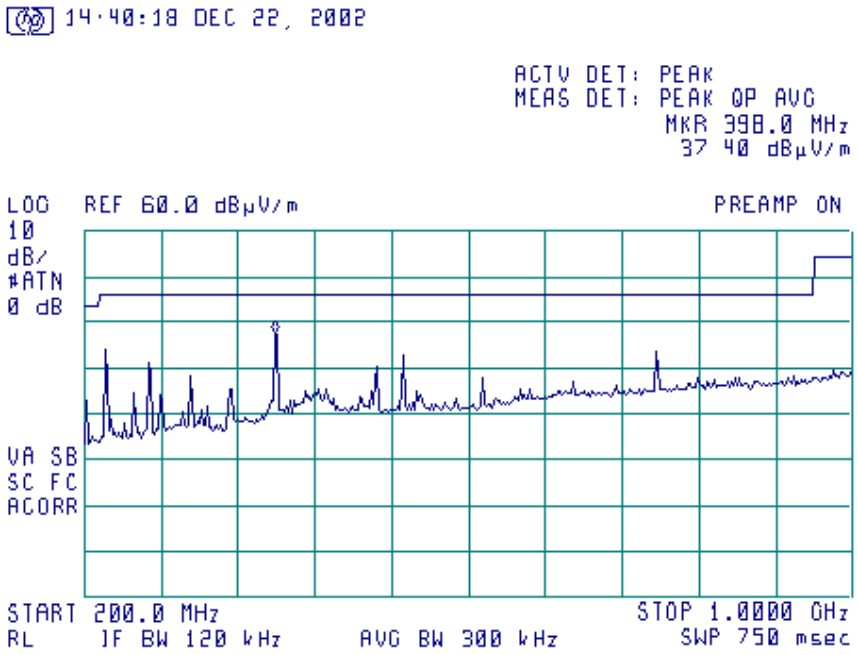
Plot A 83

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



Frequency, MHz	Note
220	Not restricted band
264	Restricted band
396	Not restricted band
500	Not restricted band
528	Not restricted band
792	Not restricted band

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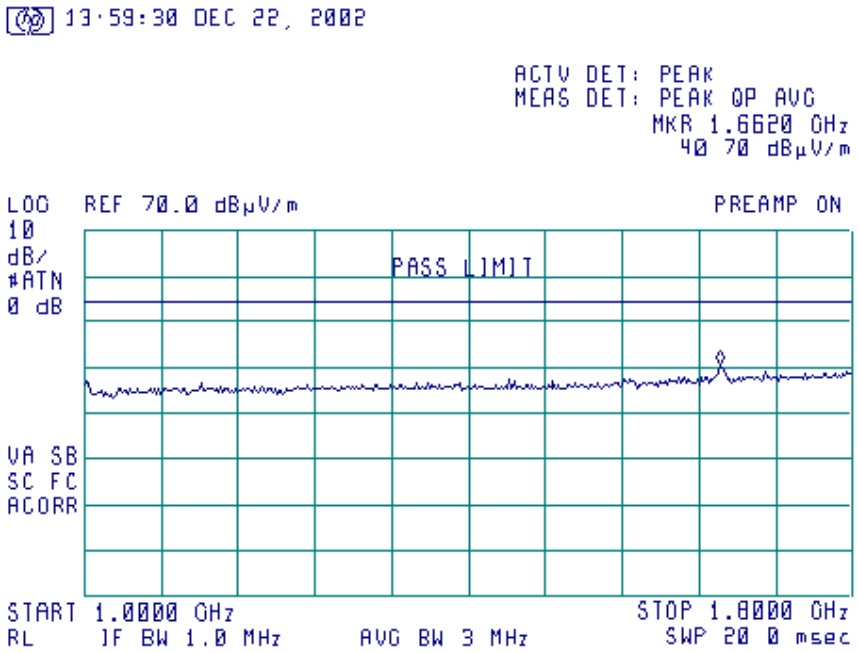
Plot A 84

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



2412 MHz-2*374 MHz(IF)=1664 MHz

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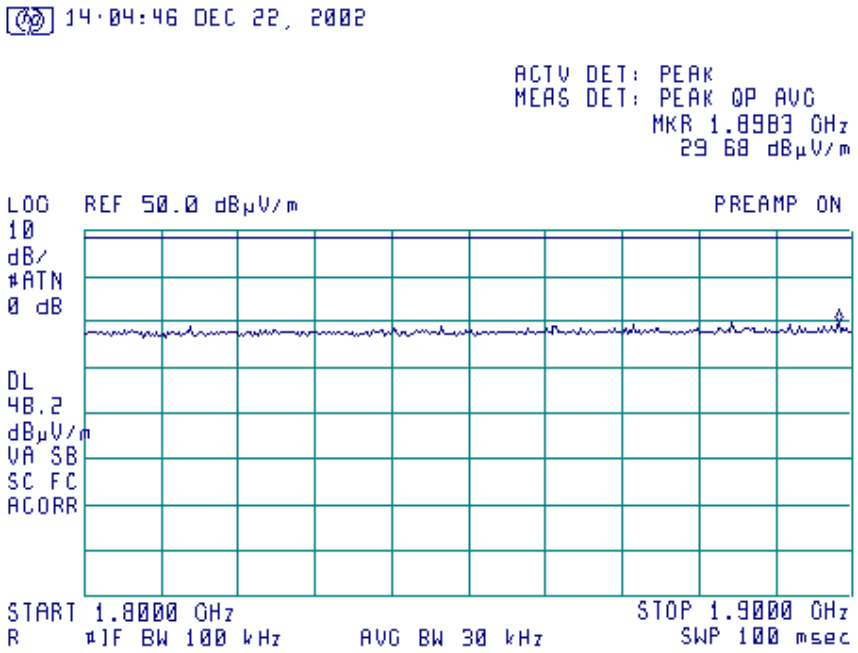
Plot A 85

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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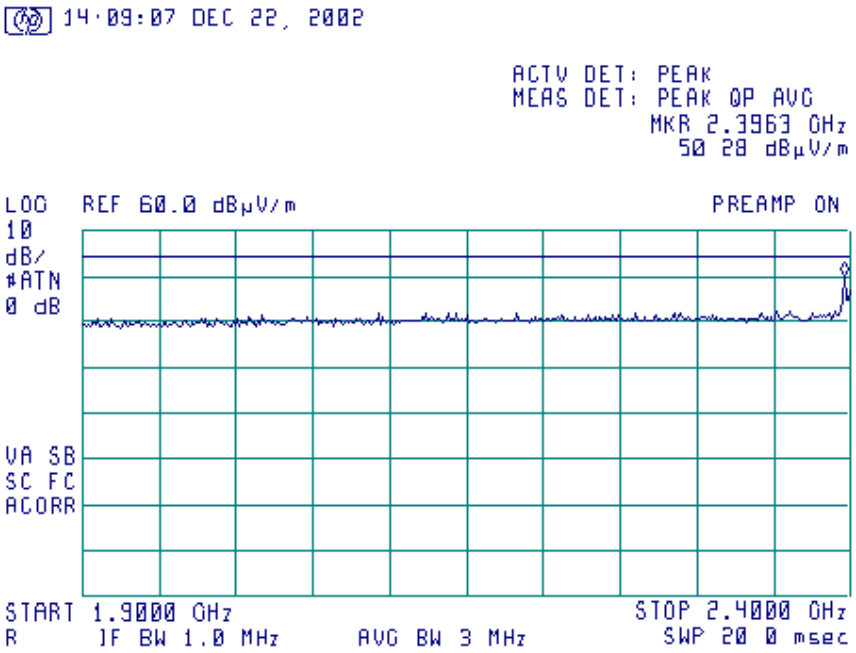
Plot A 86

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



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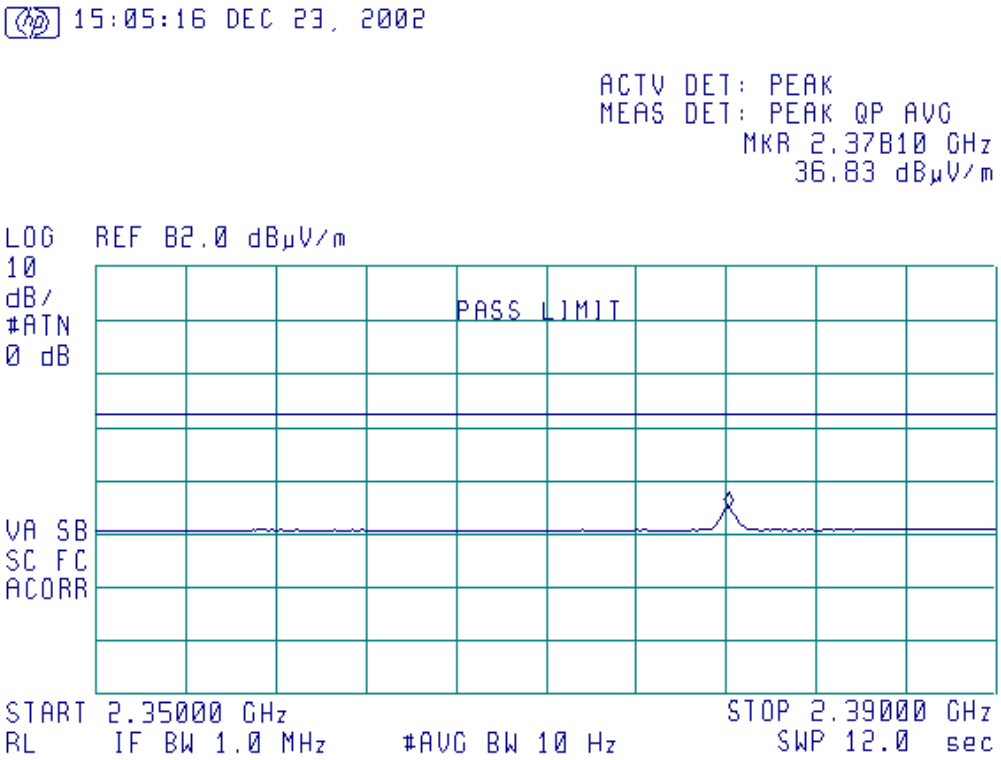
Plot A 87

**Radiated spurious emission measurements at the OATS,
carrier frequency 2412 MHz**



RESTRICTED BAND
Limit: according to §15.209, 15.35
Average value 36.83 dB(µV/m)

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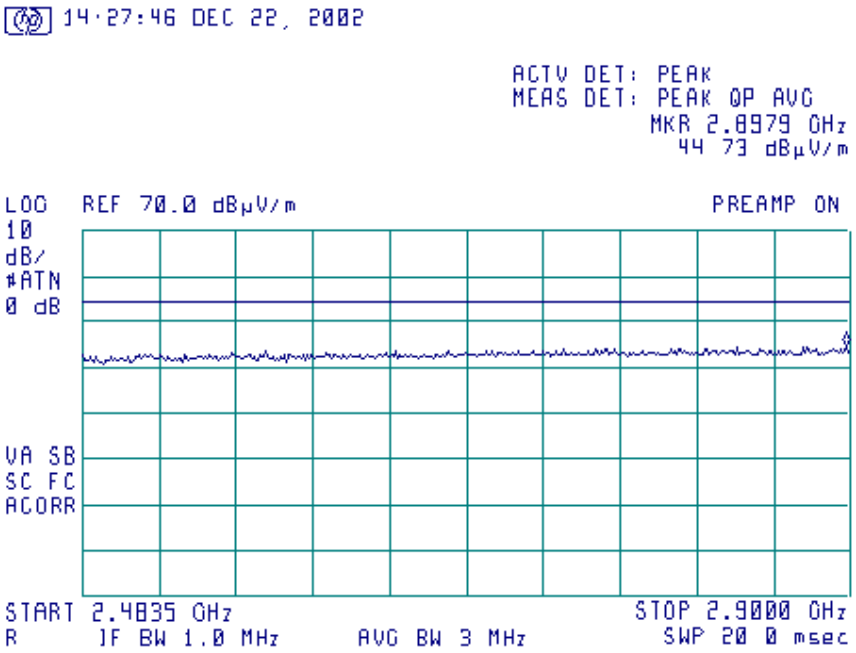
Plot A 88

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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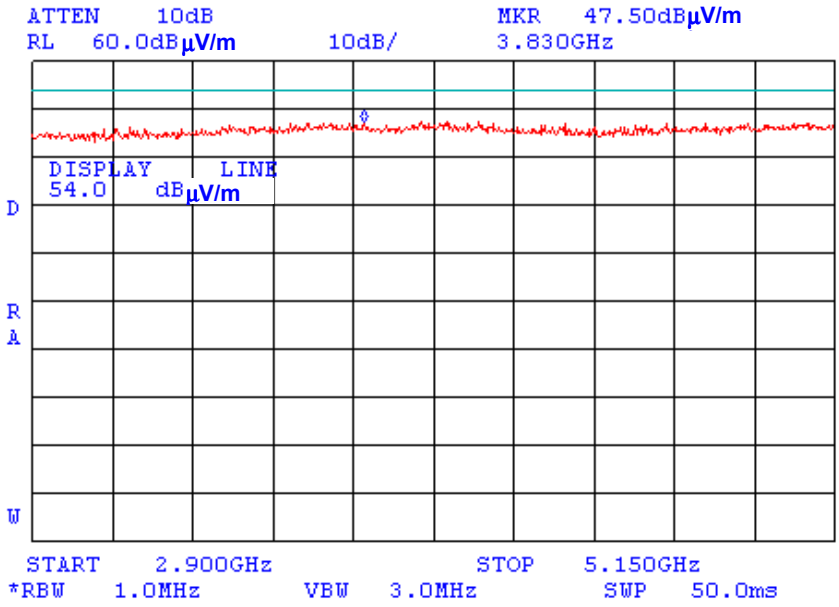
Plot A 89

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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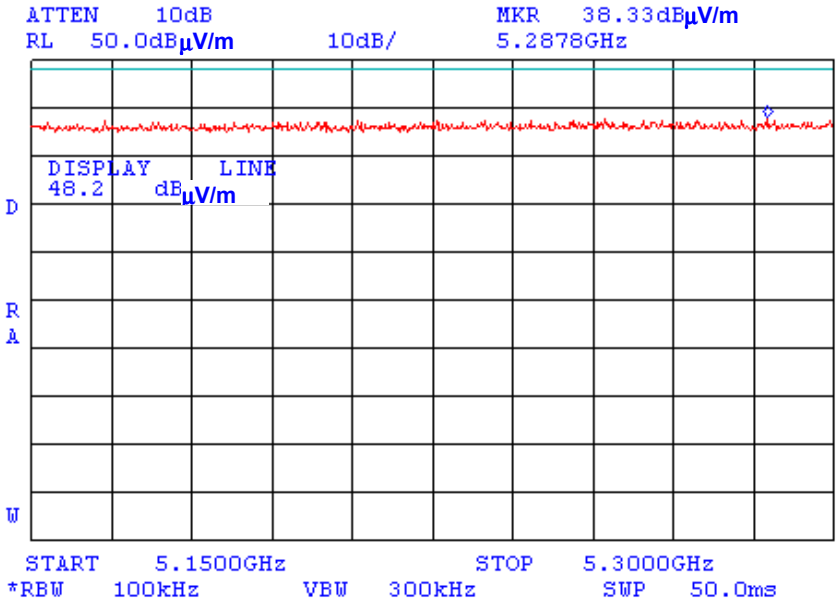
Plot A 90

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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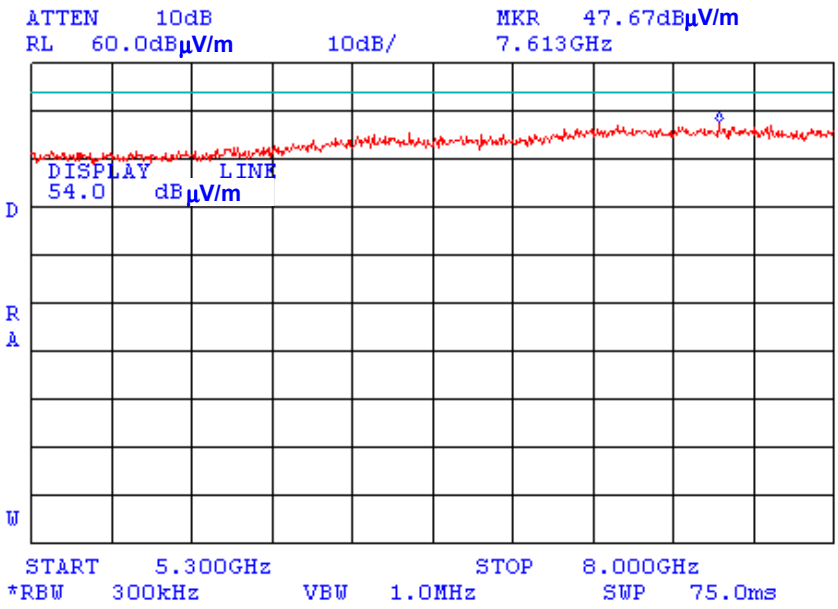
Plot A 91

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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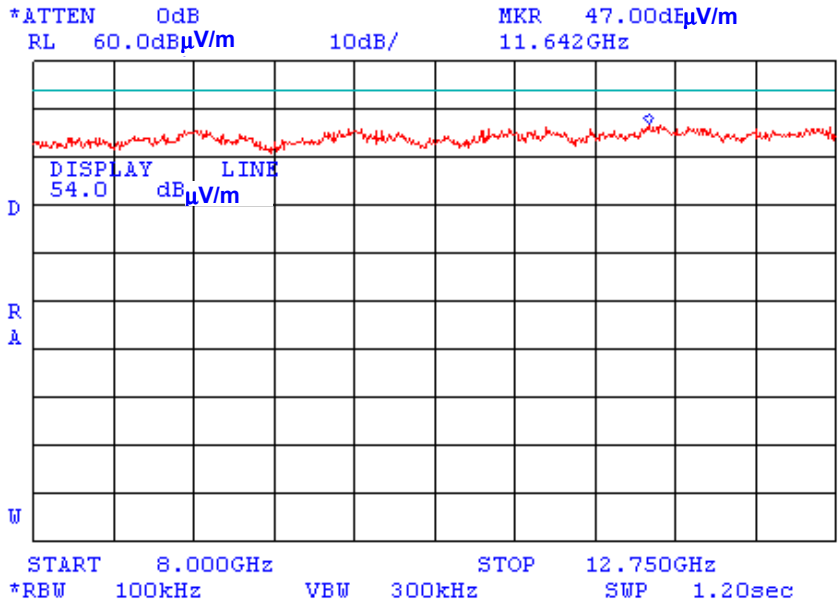
Plot A 92

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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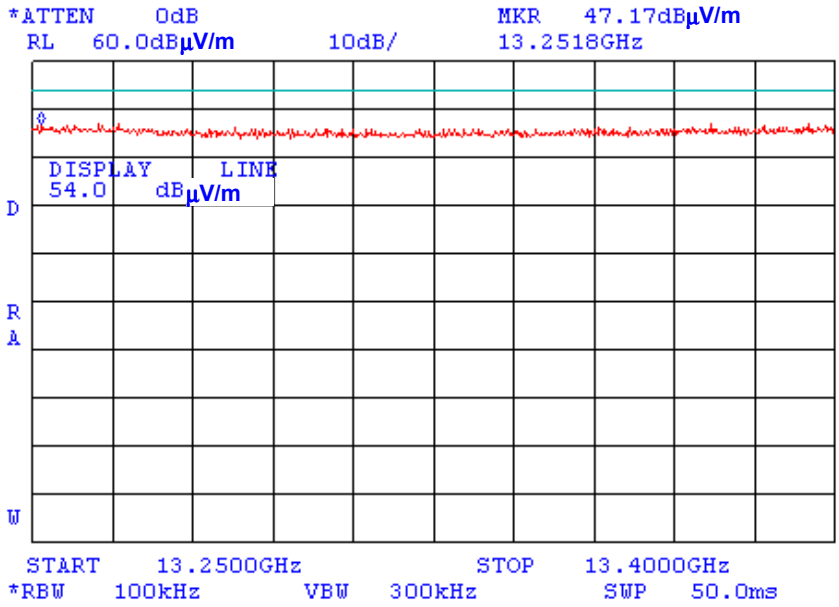
Plot A 93

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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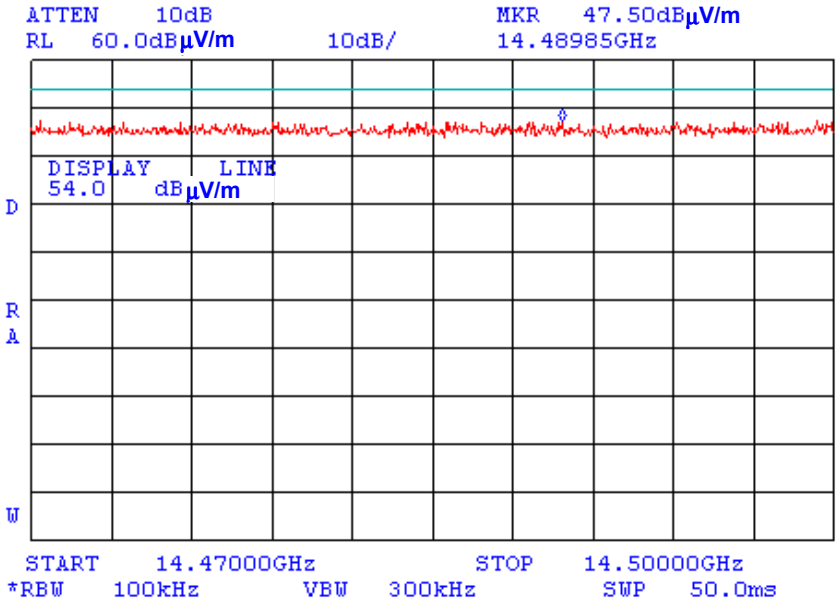
Plot A 94

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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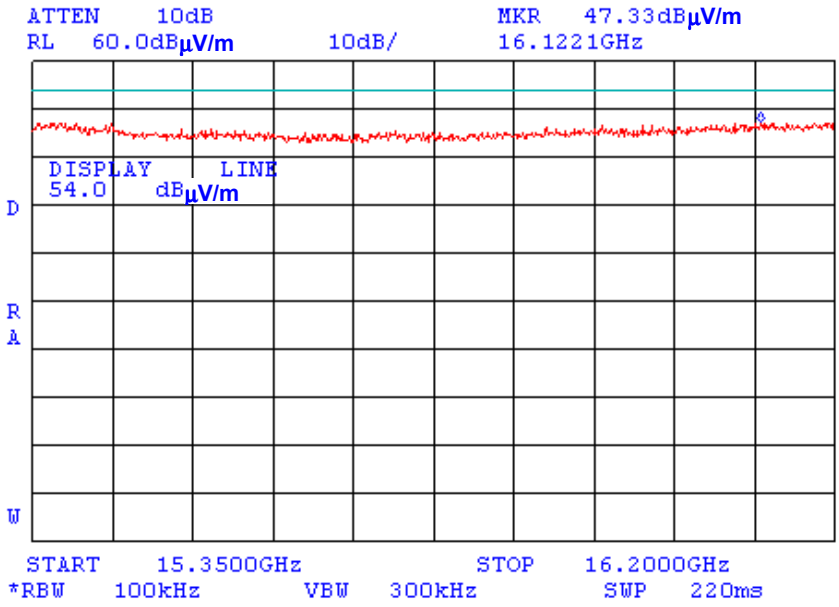
Plot A 95

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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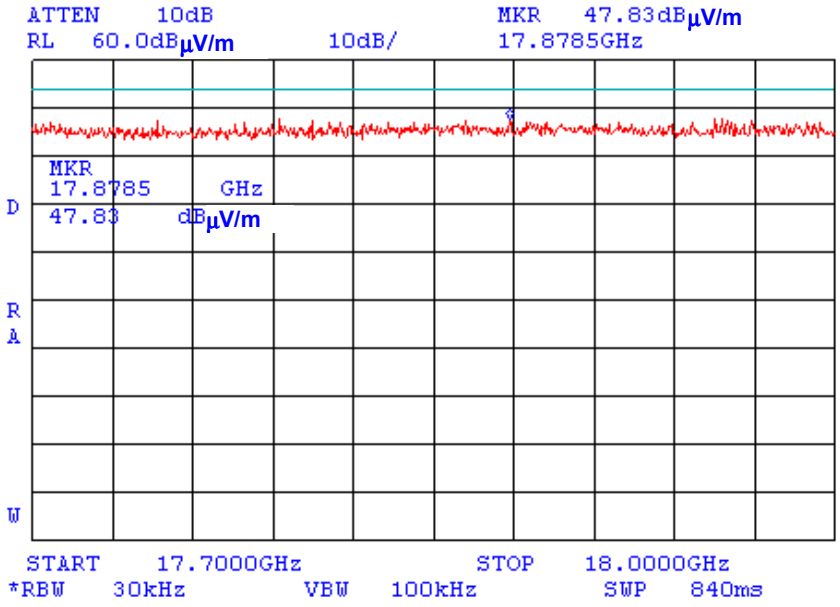
Plot A 96

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2412 MHz



No spurious emissions were found.

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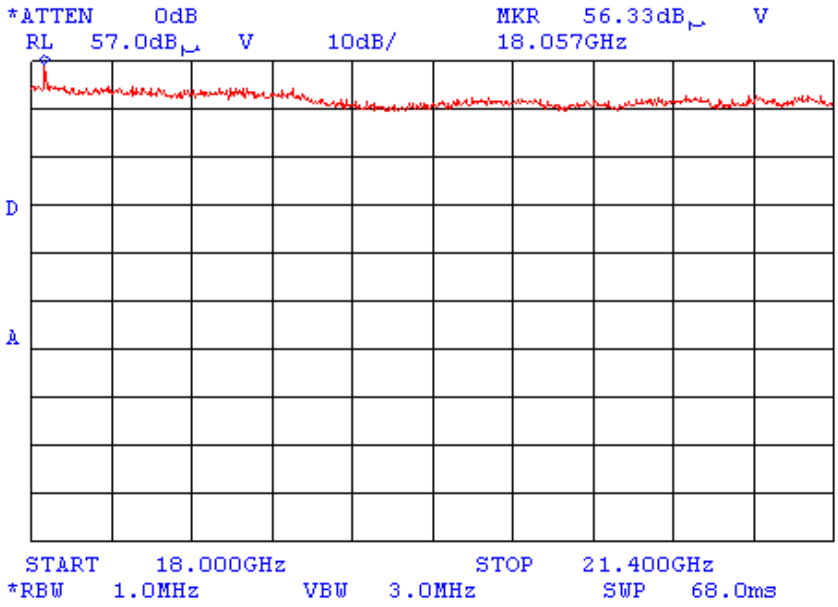
Plot A 97

**Radiated spurious emission measurements at the OATS,
carrier frequency 2412 MHz**



18057 MHz-ambient noise.
E=56.33 dBuV-43 dB(ext.LNA)+3.4 dB(CL)+32 dB(1/m)(AF)=48.73 dB(uV/m) – Pass

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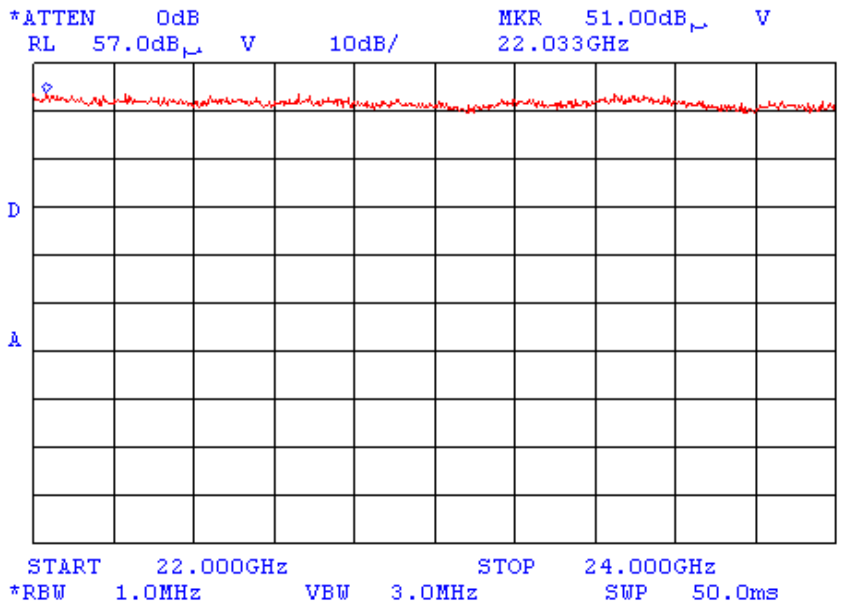
Plot A 98

**Radiated spurious emission measurements at the OATS,
carrier frequency 2412 MHz**



RESTRICTED BAND
Limit 54 dB(µV/m) according to §15.209

Noise floor: Peak value 44 dB(µV/m)

E=51 dBuV-43 dB(ext.LNA)+4 dB(maxCL)+32 dB(1/m)(AF)=44 dB(uV/m) – Pass

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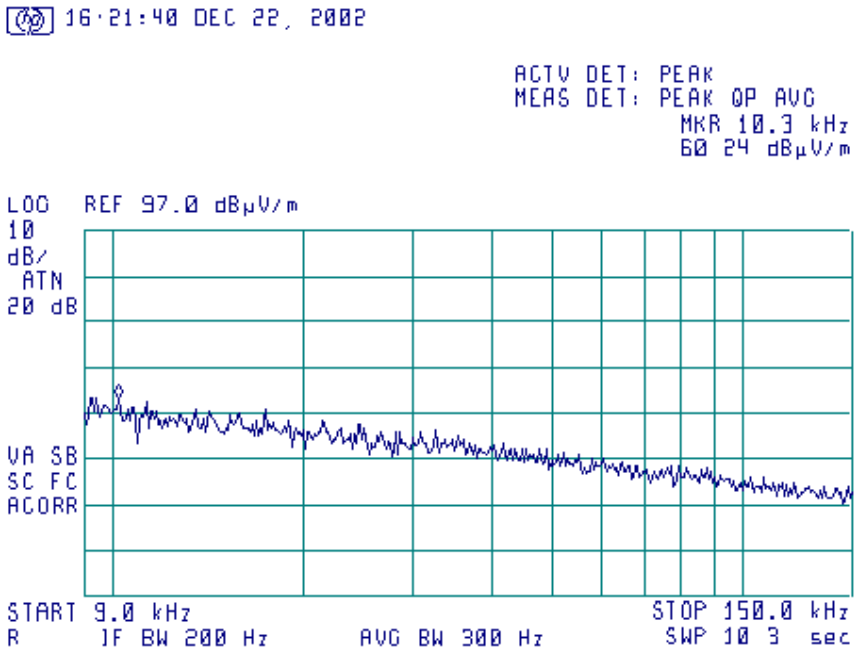
Plot A 99

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2472 MHz



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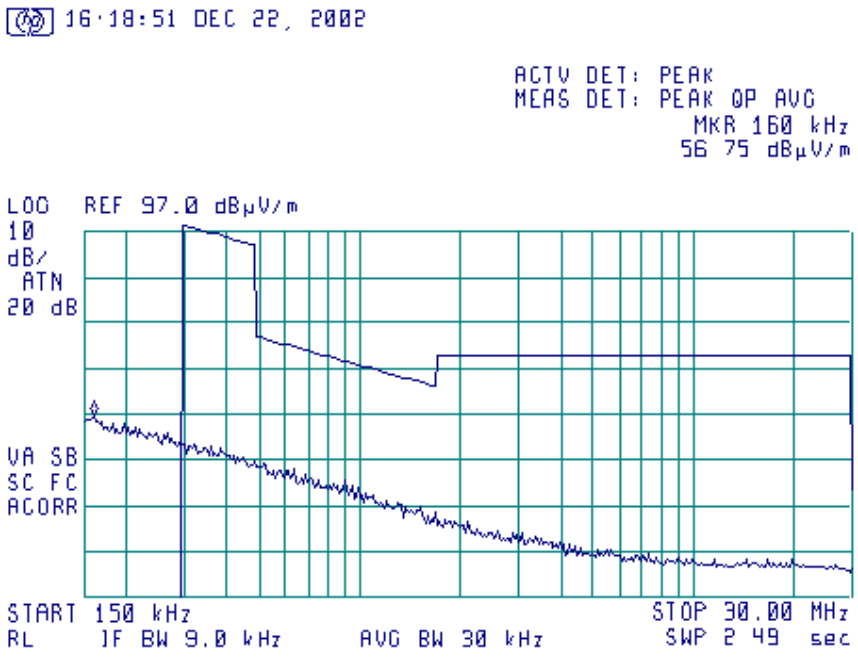
Plot A 100

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2472 MHz



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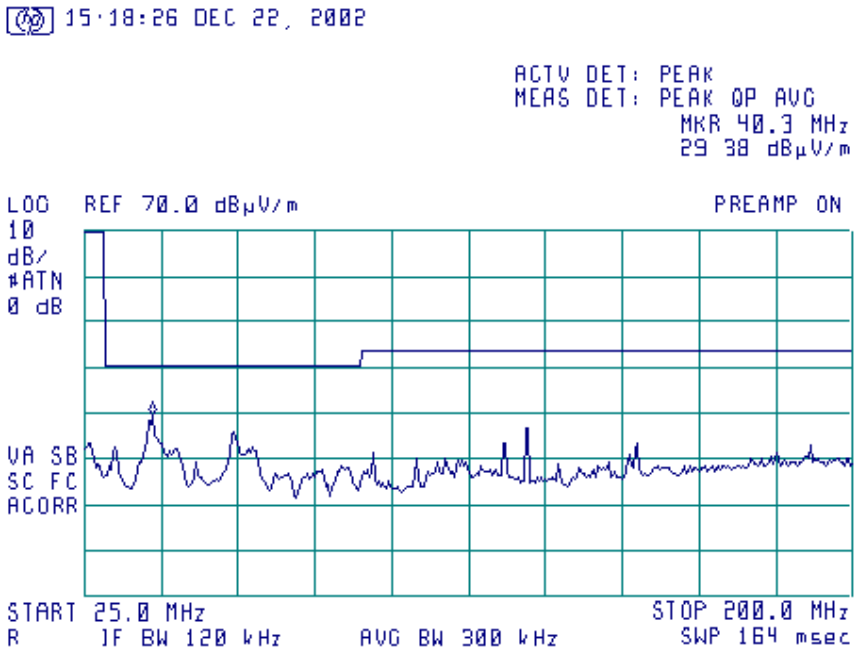
Plot A 101

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2472 MHz



Frequency, MHz	Note
40	Not restricted band
59	Not restricted band
120	Restricted band
125	Restricted band

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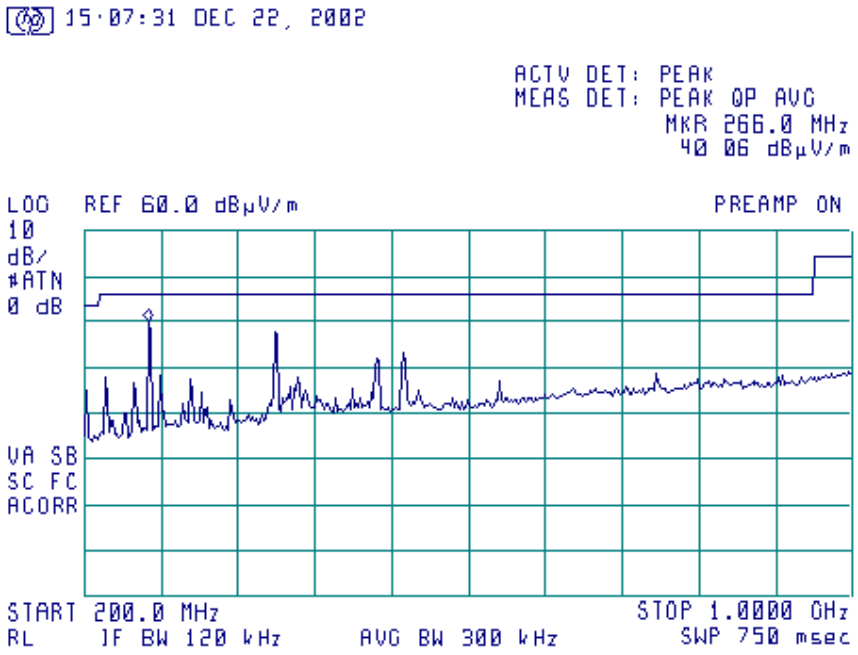
Plot A 102

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2472 MHz



Frequency, MHz	Note
220	Not restricted band
264	Restricted band
396	Not restricted band
500	Not restricted band
528	Not restricted band
792	Not restricted band

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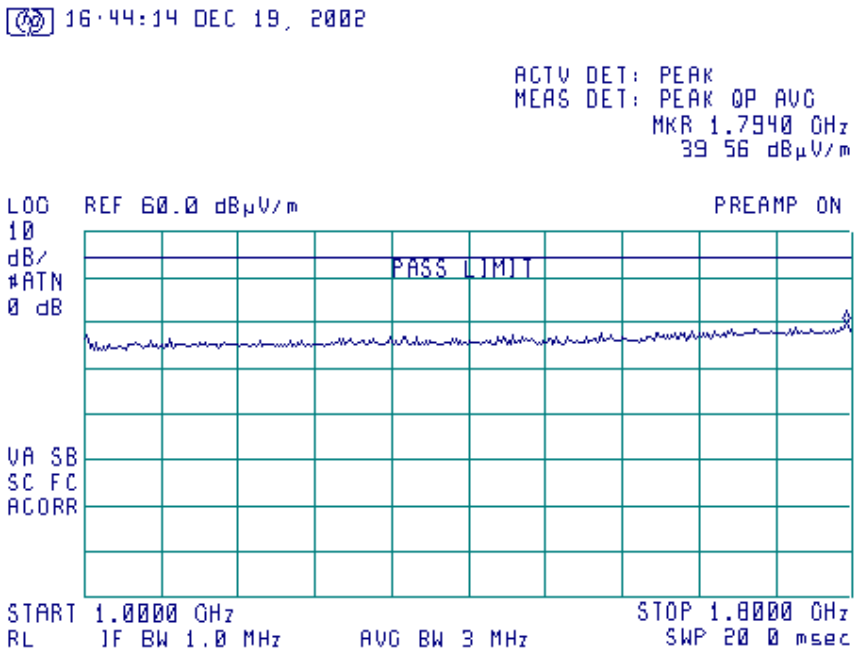
Plot A 103

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2472 MHz



No spurious emissions were found

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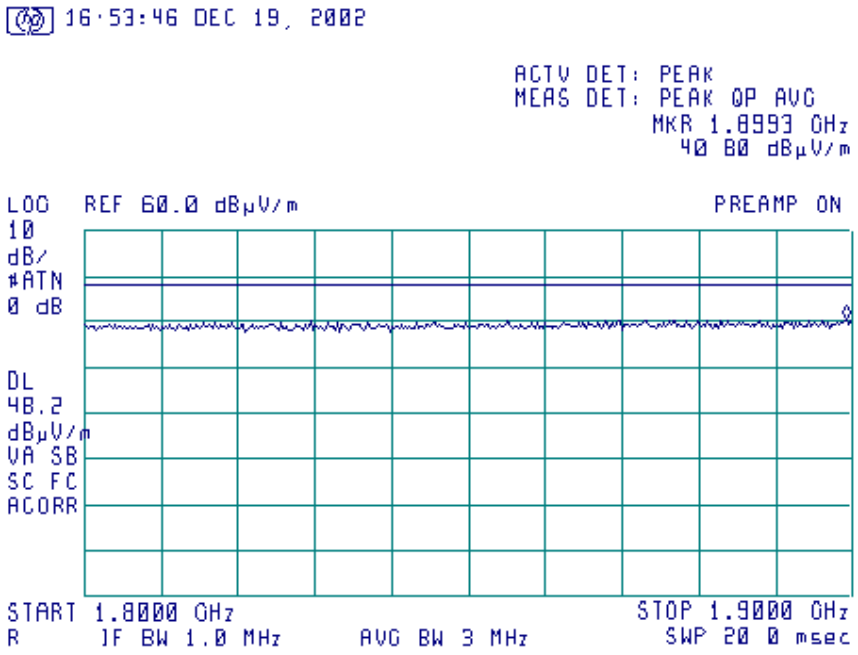
Plot A 104

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2472 MHz



No spurious emissions were found

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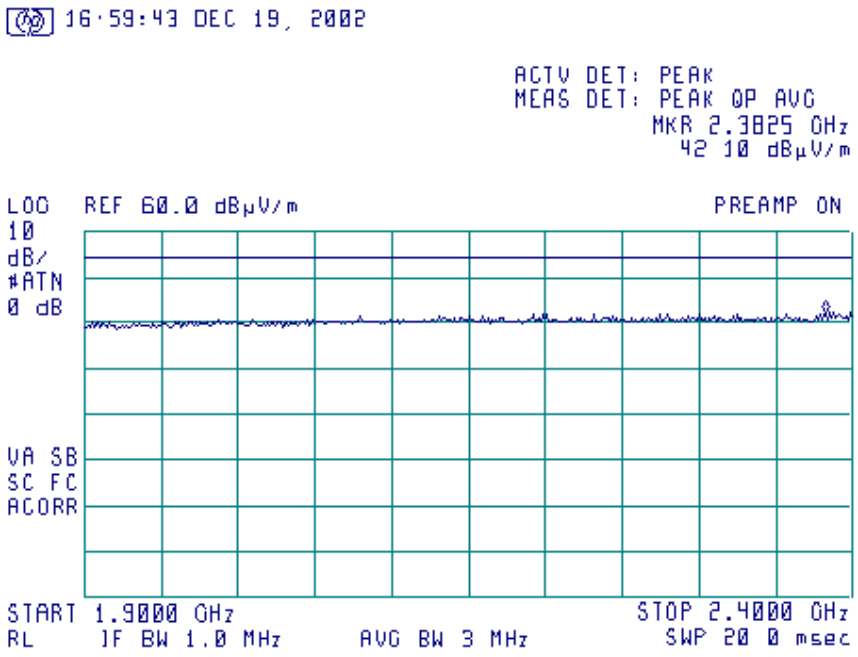
Plot A 105

Radiated spurious emission measurements in the anechoic chamber, carrier frequency 2472 MHz



No spurious emissions were found

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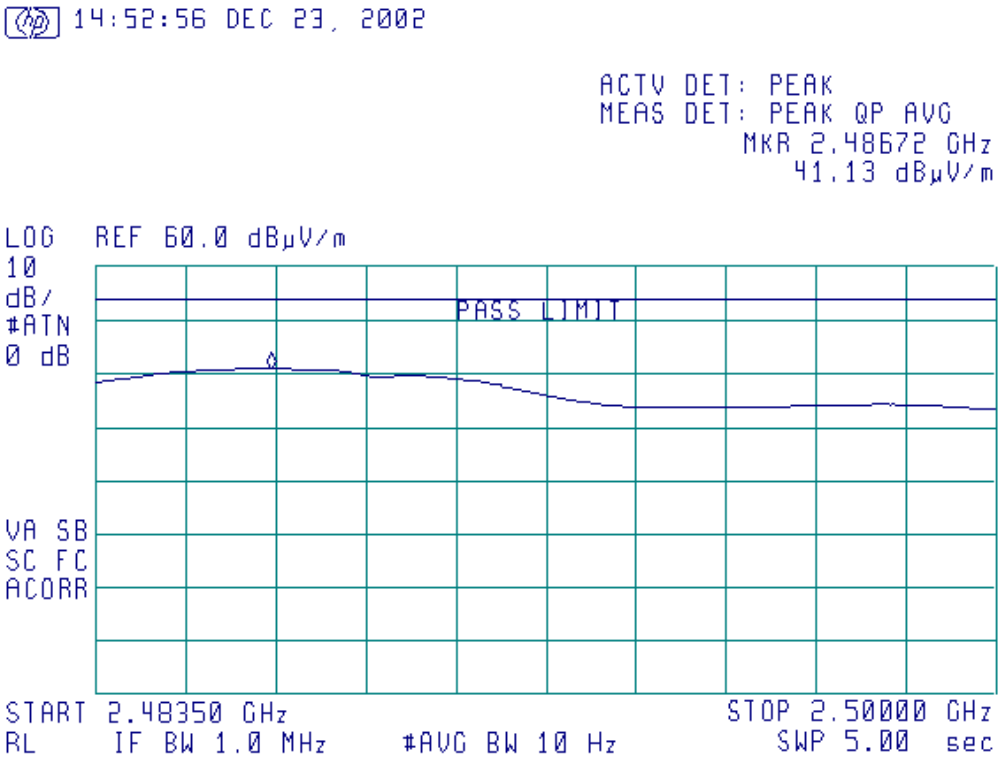
Plot A 106

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



RESTRICTED BAND
Limit: according to §15.209, 15.35
Average value 41.13 dB(µV/m)

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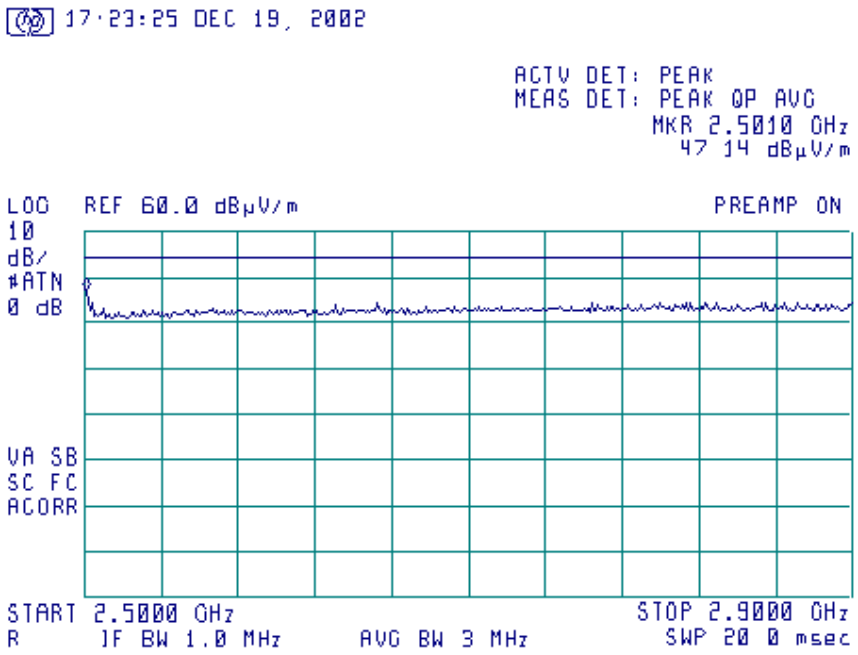
Plot A 107

**Radiated spurious emission measurements,
carrier frequency 2472 MHz**



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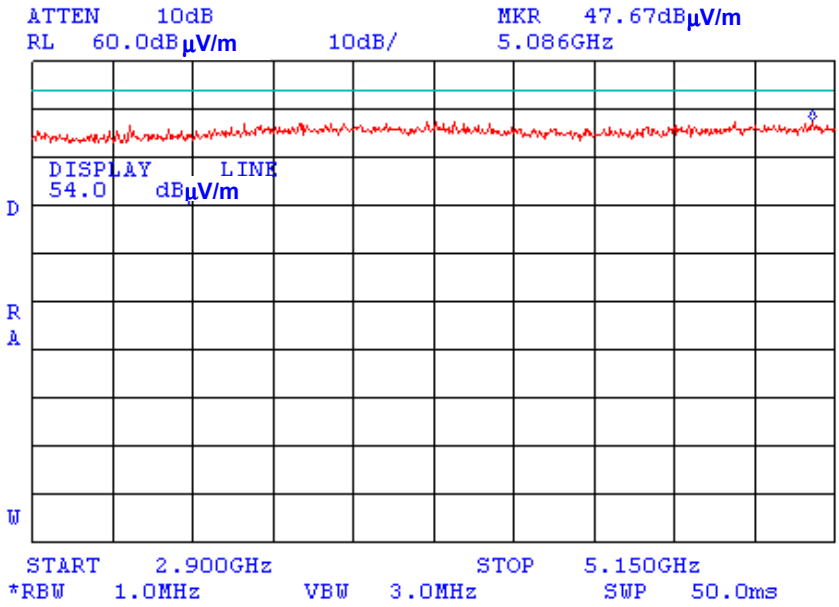
Plot A 108

**Radiated spurious emission measurements,
carrier frequency 2472 MHz**



No spurious emissions were found

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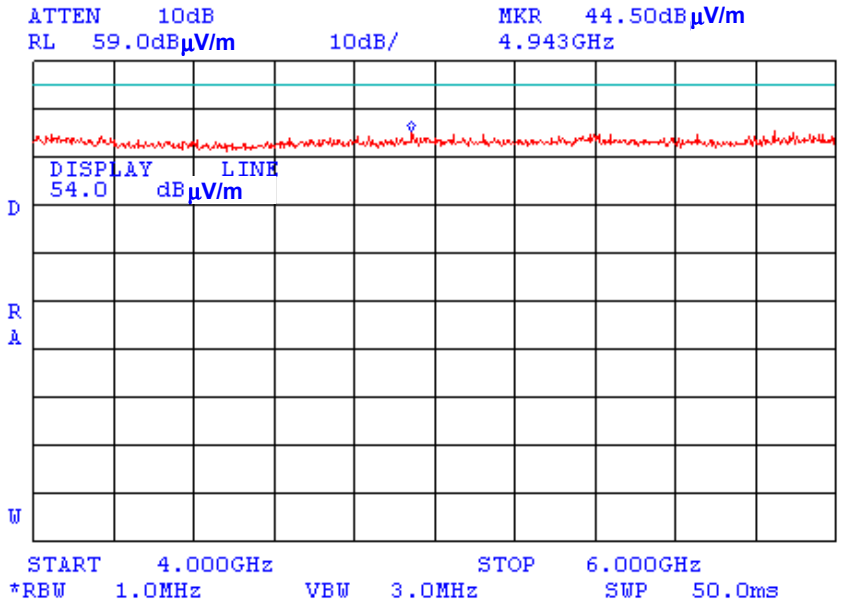
Plot A 109

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



No spurious emissions were found except 2nd harmonic.

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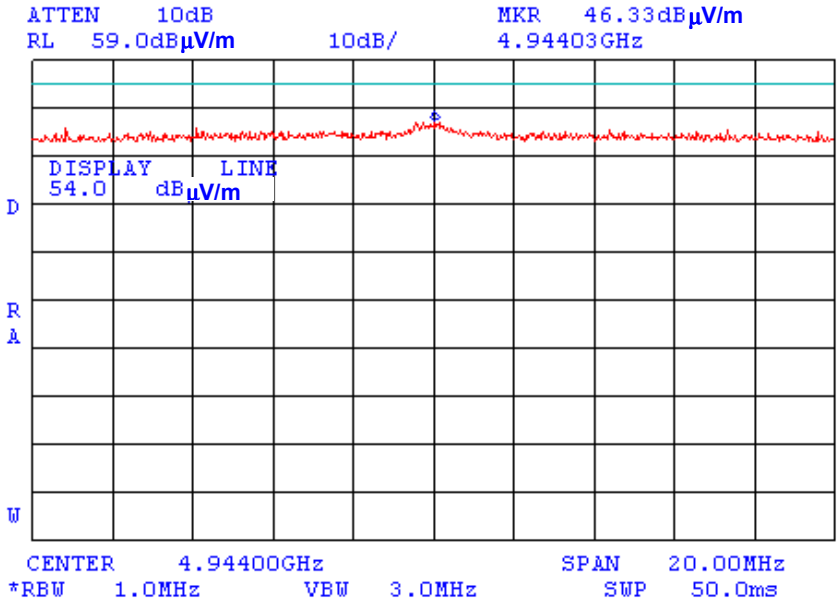
Plot A 110

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



RESTRICTED BAND
Limit: according to §15.209, 15.35

The 2nd harmonic of fundamental, peak value 46.33 dB(µV/m)

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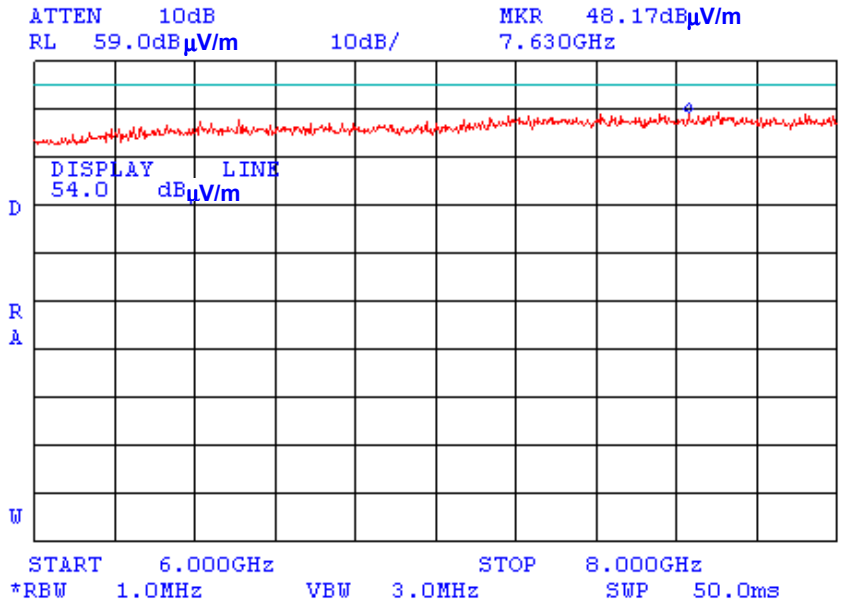
Plot A 111

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



No spurious emissions were found

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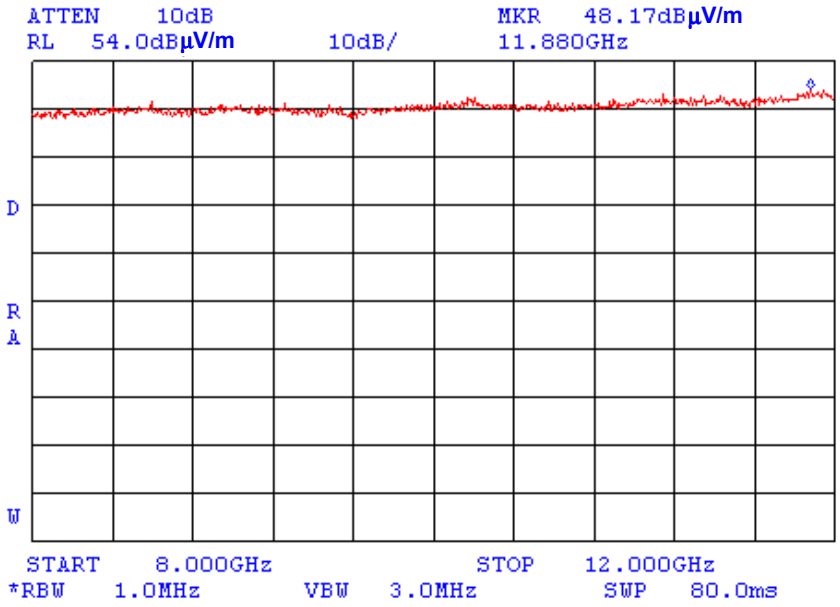
Plot A 112

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



No spurious emissions were found

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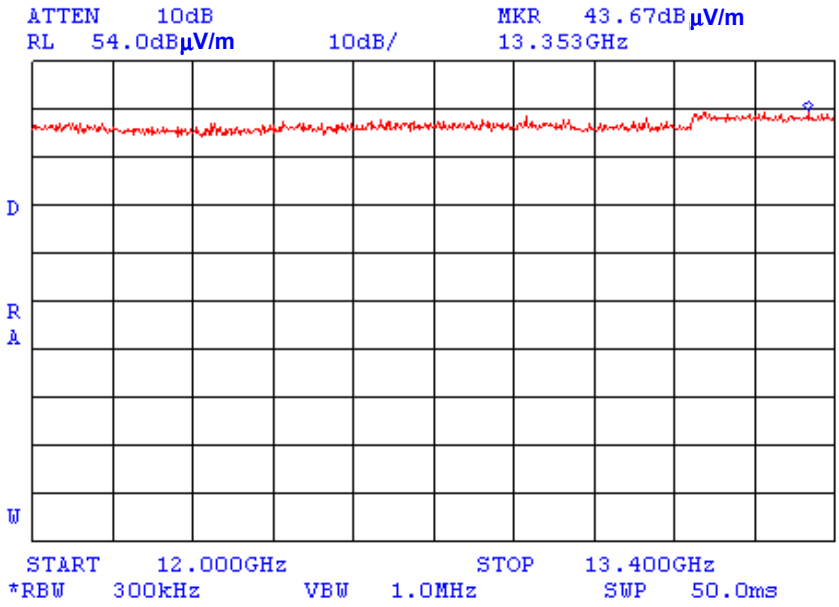
Plot A 113

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



No spurious emissions were found

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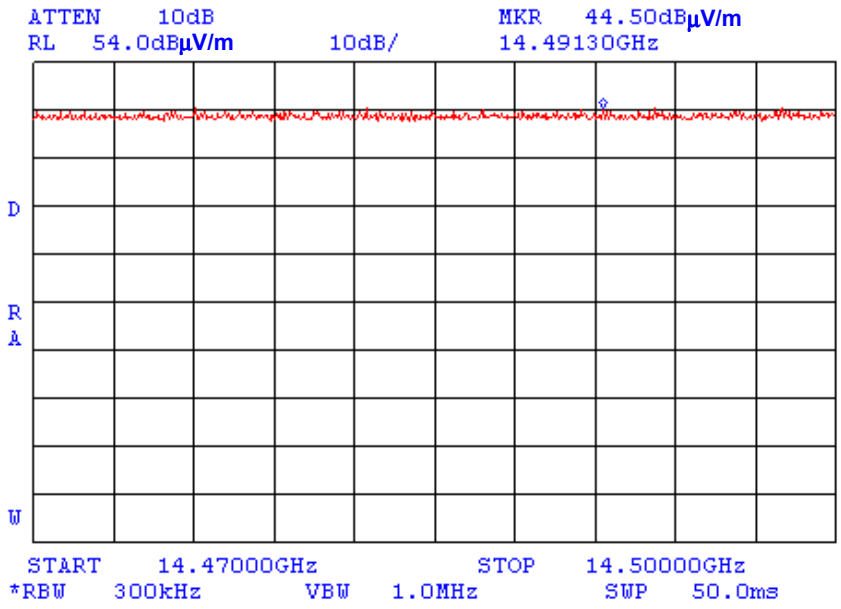
Plot A 114

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



No spurious emissions were found

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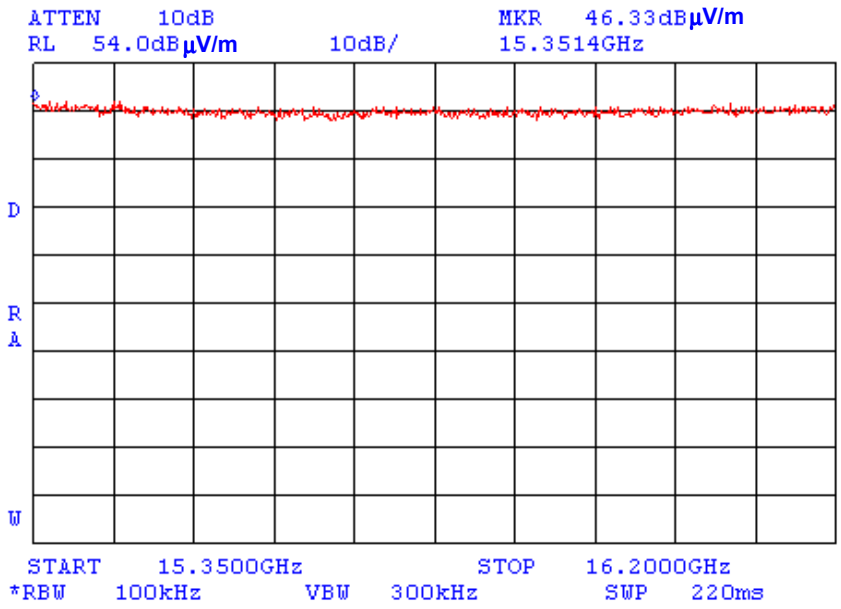
Plot A 115

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



No spurious emissions were found

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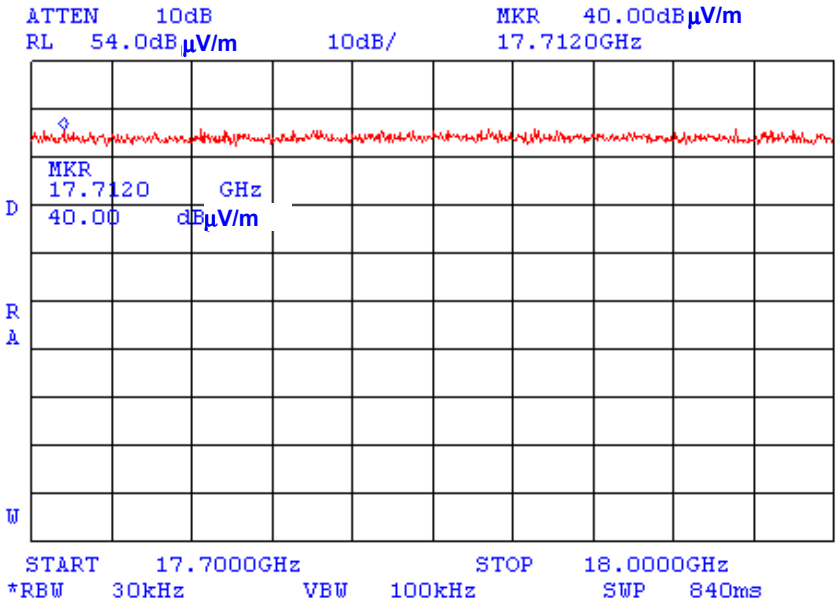
Plot A 116

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



No spurious emissions were found

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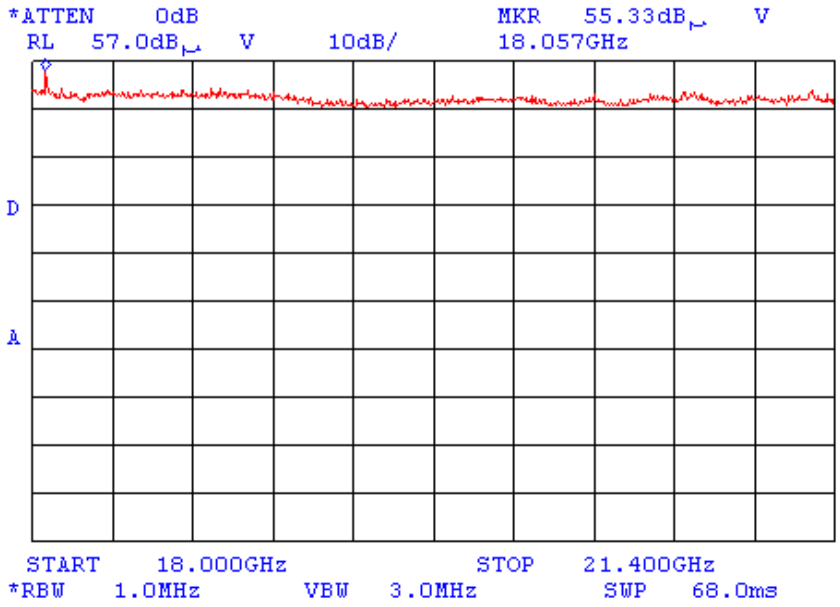
Plot A 117

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



18057 MHz-ambient noise.
E=55.33 dBuV-43 dB(ext.LNA)+3.4 dB(CL)+32 dB(1/m)(AF)=47.73 dB(uV/m) – Pass

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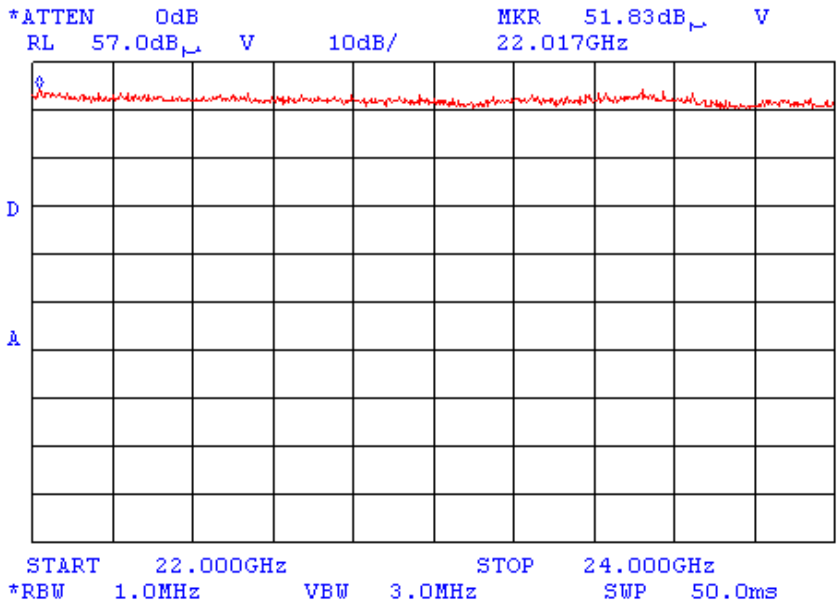
Plot A 118

**Radiated spurious emission measurements at the OATS,
carrier frequency 2472 MHz**



RESTRICTED BAND
Limit 54 dB(µV/m) according to §15.209

Noise floor: Peak value 44.83 dB(µV/m)

E=51.83 dBuV-43 dB(ext.LNA)+4 dB(maxCL)+32 dB(1/m)(AF)=44.83 dB(uV/m) – Pass

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Appendix B Antenna factors and cable loss

Antenna factor
Biconical antenna
Electro-Metrics, model BIA-25/30
Ser.No.3577

Frequency MHz	Antenna Factor dB(1/m)	Frequency MHz	Antenna Factor dB(1/m)
20	15.1	115	16.7
25	14.6	120	14.1
30	13.7	125	13.1
35	11.8	130	13.0
40	11.4	135	12.9
45	11.7	140	12.7
50	11.4	145	12.5
55	10.5	150	14.3
60	10.3	155	14.8
65	8.9	160	14.7
70	7.6	165	15.1
75	7.3	170	15.6
80	7.3	175	16.5
85	7.8	180	16.7
90	9.4	185	17.3
95	10.6	190	17.9
100	11.8	195	17.6
105	12.5	200	17.9
110	13.7		

Antenna factor in dB (1/m) is to be added to receiver meter reading in dB(μV) to convert it into field intensity in dB(μV/m).

Antenna factor
Log periodic antenna
Electro-Metrics, model LPA-25/30
Ser.No.1988

Frequency MHz	Antenna Factor dB(1/m)	Frequency MHz	Antenna Factor dB(1/m)
200	12.6	625	20.4
225	12.2	650	20.9
250	13.4	675	22.0
275	14.3	700	22.2
300	15.2	725	22.7
325	15.7	750	22.5
350	15.9	775	22.7
375	16.4	800	22.8
400	17.0	825	23.2
425	17.4	850	23.5
450	17.9	875	23.9
475	18.6	900	24.0
500	19.1	925	24.0
525	19.3	950	24.2
550	19.6	975	24.7
575	19.8	1000	25.1
600	20.0		

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μV) to convert it into field intensity in dB(μV/m).

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Antenna factor
Double ridged guide antenna
Model RGA-50/60
S/N 2811

Frequency, MHz	Antenna factor, dB
1000	24.3
1500	25.4
2000	28.4
2500	29.2
3000	30.5
3500	31.6
4000	33.7
4500	32.2
5000	34.5
5500	34.5
6000	34.6
6500	35.3
7000	35.5
7500	35.9
8000	36.6
8500	37.3
9000	37.7
9500	37.7
10000	38.2
10500	38.5
11000	39.0
11500	40.1
12000	40.2
12500	39.3
13000	39.9
13500	40.6
14000	41.1
14500	40.5
15000	39.9
15500	37.8
16000	39.1
16500	41.1
17000	41.7
17500	45.1
18000	44.3

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μV) to convert it into field intensity in dB(μV/m).

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Antenna factor
Active Loop Antenna
Model 6502
S/N 2857

Frequency, MHz	Magnetic antenna factor, dB	Electric antenna factor, dB
0.009	-32.8	18.7
0.010	-33.8	17.7
0.020	-38.3	13.2
0.050	-41.1	10.4
0.075	-41.3	10.2
0.100	-41.6	9.9
0.150	-41.7	9.8
0.250	-41.6	9.9
0.500	-41.8	9.8
0.750	-41.9	9.7
1.000	-41.4	10.1
2.000	-41.5	10.0
3.000	-41.4	10.2
4.000	-41.4	10.1
5.000	-41.5	10.1
10.000	-41.9	9.6
15.000	-41.9	9.6
20.000	-42.2	9.3
25.000	-42.8	8.7
30.000	-44.0	7.5

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μV) to convert it into field intensity in dB(μV/m).

Antenna Gain
Waveguide standard gain horn antenna
Continental Microwave & Tool Co., Inc.
P/N LHA 042
Ser.No.980976-002

Frequency, GHz	H-3dB BW degrees	E-3dB BW degrees	Gain, dBi
18.000	10	9	23.3
18.850	10	9	23.6
19.700	10	9	23.7
20.550	9	8	24.1
21.400	9	8	24.3
22.250	9	8	24.3
23.100	8	7	24.5
23.950	8	7	24.5
24.800	8	7	24.8
25.650	7	6	24.9
26.500	7	6	24.9

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μV) to convert it into field intensity in dB(μV/m).

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Cable loss
Cable RF, 2 m, model: Sucoflex 104PE, s/n 13095/4PE, HL 1567

No.	Frequency, MHz	Cable loss, dB
1	30	0.09
2	50	0.15
3	100	0.23
4	300	0.31
5	500	0.46
6	800	0.63
7	1000	0.67
8	1500	0.89
9	2000	1.05
10	2500	1.18
11	300	1.26
12	5300	1.51
13	4000	1.66
14	4500	1.61
15	5000	1.67
16	5500	1.91
17	6000	1.98
18	6500	1.91
19	7000	2.04
20	7500	2.36
21	8000	2.36
22	8500	2.61
23	9000	2.69
24	9500	2.62
25	10000	2.73
26	10500	2.83
27	11000	2.84
28	11500	3.22
29	12000	3.17
30	12500	3.17
31	13000	3.18
32	13500	3.49
33	14000	3.43
34	14500	3.57
35	15000	3.76
36	15500	4.20
37	16000	4.10
38	16500	4.49
39	17000	4.53
40	17500	4.46
41	18000	4.47

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Cable loss
Cable 40 GHz, 1.5 m, blue, model: KPS-1503A-1500-KPS, S/N T4663, HL 1940

Frequency, GHz	Cable loss, dB	Frequency, GHz	Cable loss, dB	Frequency, GHz	Cable loss, dB
0.03	0.13	5.10	1.33	15.00	2.27
0.05	0.14	5.30	1.33	15.50	2.32
0.10	0.19	5.50	1.38	16.00	2.39
0.20	0.25	5.70	1.41	16.50	2.41
0.30	0.31	5.90	1.43	17.00	2.36
0.40	0.37	6.10	1.50	17.50	2.42
0.50	0.41	6.30	1.47	18.00	2.50
0.60	0.46	6.50	1.56	18.50	2.89
0.70	0.49	6.70	1.50	19.00	2.86
0.80	0.53	6.90	1.53	19.50	2.84
0.90	0.56	7.10	1.53	20.00	2.77
1.00	0.59	7.30	1.56	20.50	2.73
1.10	0.62	7.50	1.59	21.00	3.05
1.20	0.65	7.70	1.62	21.50	3.07
1.30	0.68	7.90	1.68	22.00	2.97
1.40	0.70	8.10	1.67	22.50	2.91
1.50	0.73	8.30	1.70	23.00	3.02
1.60	0.76	8.50	1.69	23.50	3.29
1.70	0.77	8.70	1.70	24.00	3.31
1.80	0.80	8.90	1.68	24.50	3.49
1.90	0.82	9.10	1.70	25.00	3.37
2.00	0.84	9.30	1.70	25.50	3.56
2.10	0.85	9.50	1.77	26.00	3.56
2.20	0.87	9.70	1.80	26.50	3.33
2.30	0.88	9.90	1.88	27.00	3.52
2.40	0.90	10.10	1.93	28.00	3.38
2.50	0.91	10.30	1.94	29.00	3.34
2.60	0.93	10.50	1.99	30.00	3.33
2.70	0.95	10.70	1.91	31.00	3.48
2.80	0.97	10.90	2.00	32.00	3.63
2.90	0.98	11.10	1.92	33.00	3.69
3.10	1.02	11.30	1.97	34.00	3.79
3.30	1.05	11.50	1.98	35.00	3.77
3.50	1.09	11.70	1.99	36.00	3.92
3.70	1.12	11.90	2.06	37.00	3.94
3.90	1.15	12.10	2.01	38.00	3.80
4.10	1.18	12.40	2.08	39.00	4.15
4.30	1.21	13.00	2.05	40.00	4.03
4.50	1.24	13.50	2.15		
4.70	1.29	14.00	2.25		
4.90	1.27	14.50	2.26		

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Cable loss
Cable 18 GHz, 4 m, blue, model: SPS-1803A-4000-NPS, S/N T4658, HL 1942

Frequency, GHz	Cable loss, dB
0.03	0.21
0.05	0.26
0.10	0.36
0.20	0.50
0.30	0.61
0.40	0.70
0.50	0.78
0.60	0.85
0.70	0.93
0.80	0.99
0.90	1.04
1.00	1.10
1.10	1.16
1.20	1.22
1.30	1.26
1.40	1.31
1.50	1.35
1.60	1.41
1.70	1.45
1.80	1.49
1.90	1.53
2.00	1.57
2.10	1.61
2.20	1.65
2.30	1.69
2.40	1.72
2.50	1.76
2.60	1.79
2.70	1.83
2.80	1.87
2.90	1.90
3.10	1.97
3.30	2.04
3.50	2.11
3.70	2.18
3.90	2.24
4.10	2.31
4.30	2.38
4.50	2.43
4.70	2.53
4.90	2.53
5.10	2.63
5.30	2.65
5.50	2.72
5.70	2.76
5.90	2.79

Frequency, GHz	Cable loss, dB
6.10	2.88
6.30	2.90
6.50	2.97
6.70	3.02
6.90	3.04
7.10	3.07
7.30	3.12
7.50	3.13
7.70	3.19
7.90	3.24
8.10	3.30
8.30	3.36
8.50	3.45
8.70	3.41
8.90	3.45
9.10	3.42
9.30	3.55
9.50	3.48
9.70	3.58
9.90	3.61
10.10	3.66
10.30	3.68
10.50	3.70
10.70	3.70
10.90	3.75
11.10	3.78
11.30	3.86
11.50	3.98
11.70	4.10
11.90	4.12
12.10	4.09
12.40	4.13
13.00	4.23
13.50	4.35
14.00	4.40
14.50	4.44
15.00	4.57
15.50	4.66
16.00	4.64
16.50	4.66
17.00	4.75
17.50	4.85
18.00	4.93

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Cable loss
Cable RF, HL 0415 + HL 0812

No.	Frequency, MHz	Cable loss, dB
1	20	0.73
2	30	0.91
3	50	1.2
4	80	1.56
5	100	1.76
6	200	2.59
7	300	3.26
8	400	3.93
9	500	4.42
10	600	4.92
11	700	5.36
12	800	5.88
13	900	6.41
14	1000	6.71
15	1500	8.63
16	2000	10.39

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Cable loss
Cable 40 GHz, 0.8 m, blue, model: KPS-1503A-800-KPS, S/N W4907, HL 2254

Frequency, GHz	Cable loss, dB	Frequency, GHz	Cable loss, dB	Frequency, GHz	Cable loss, dB
0.03	0.04	5.10	0.80	15.00	1.49
0.05	0.07	5.30	0.83	15.50	1.49
0.10	0.09	5.50	0.83	16.00	1.46
0.20	0.15	5.70	0.84	16.50	1.47
0.30	0.19	5.90	0.87	17.00	1.50
0.40	0.25	6.10	0.86	17.50	1.57
0.50	0.29	6.30	0.89	18.00	1.63
0.60	0.33	6.50	0.90	18.50	1.57
0.70	0.37	6.70	0.89	19.00	1.63
0.80	0.41	6.90	0.93	19.50	1.65
0.90	0.44	7.10	0.92	20.00	1.64
1.00	0.45	7.30	0.95	20.50	1.75
1.10	0.48	7.50	0.96	21.00	1.72
1.20	0.51	7.70	0.97	21.50	1.78
1.30	0.53	7.90	1.01	22.00	1.76
1.40	0.54	8.10	1.00	22.50	1.72
1.50	0.57	8.30	1.05	23.00	1.83
1.60	0.59	8.50	1.04	23.50	1.80
1.70	0.04	8.70	1.07	24.00	1.90
1.80	0.07	8.90	1.11	24.50	1.81
1.90	0.09	9.10	1.09	25.00	1.98
2.00	0.15	9.30	1.14	25.50	1.91
2.10	0.19	9.50	1.12	26.00	2.02
2.20	0.25	9.70	1.15	26.50	1.92
2.30	0.29	9.90	1.16	27.00	1.97
2.40	0.33	10.10	1.16	28.00	2.02
2.50	0.37	10.30	1.19	29.00	1.95
2.60	0.41	10.50	1.14	30.00	1.94
2.70	0.44	10.70	1.19	31.00	2.11
2.80	0.45	10.90	1.17	32.00	2.17
2.90	0.48	11.10	1.13	33.00	2.27
3.10	0.61	11.30	1.20	34.00	2.27
3.30	0.64	11.50	1.13	35.00	2.29
3.50	0.65	11.70	1.20	36.00	2.35
3.70	0.68	11.90	1.18	37.00	2.37
3.90	0.69	12.10	1.14	38.00	2.40
4.10	0.71	12.40	1.19	39.00	2.57
4.30	0.73	13.00	1.34	40.00	2.36
4.50	0.75	13.50	1.33		
4.70	0.77	14.00	1.48		
4.90	0.79	14.50	1.45		

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Appendix C Test equipment used for tests

HL Serial No.	Description	Manufacturer information			Due Calibr. Month/ year
		Name	Model No.	Serial No.	
0032	Biconical antenna, 20-200 MHz	Electro-Metrics	BIA-25/30	3577	11/03
0034	Log periodic antenna, 200 - 1000 MHz	Electro-Metrics	LPA 25/30	1988	1/03
0038	Antenna Mast, 1-4 m	Hermon Labs	AM-1	028	2/03 Check
0041	Double ridged guide antenna, 1-18 GHz	Electro-Metrics	RGA 50/60	2811	3/03
0091	Position controller for antenna mast + turntable, OFTS	Hermon Labs	CRL-2	NA	4/03 Check
0275	Table non-metallic, 1.5 x 1.0 x 0.8 m	Hermon Labs	TNM	040	3/03 Check
0287	Turntable, motorized diameter, 2 m	Hermon Labs	TMD-2	042	11/03 Check
0415	Cable coax RF, RG-58	Hermon Labs	CC-3	056	5/03
0446	Active Loop Antenna, 10 kHz-30 MHz	Electro-Mechanics	6502	2857	10/03
0763	Antenna Linear Horn (Optium Gain) 18 - 26.5 GHz	Continental Mictowave & Tool Co.	LHA042	980976-002	06/04 check
0812	Cable, coax, RG-214, 11.5 m, N-type connectors	Hermon Labs	C214-11	148	5/03
1424	Spectrum analyzer, 30 Hz - 40 GHz	Agilent Technologies	8564EC	3946A00219	8/03
1430	EMI Receiver System, 9 kHz - 2.9 GHz	Agilent Technologies	8542E	3807A00262	9/03
1567	Cable RF, 2 m	Huber-Suhner	Sucoflex 104PE	13094/4PE	12/03
1650	Attenuators set (2, 3, 5, 20 dB), DC – 18 GHz	M/A –COM	2082		03/03
1874	Attenuator, 50 Ohm, 2W, DC-18 GHz, 10 dB	Omni Spectra	6193-10	NA	05/03
1940	Cable 40 GHz, 1.5 m, blue	Rhophase Microwave Ltd.	KPS-1503A-1500-KPS	T4663	10/03
1942	Cable 18 GHz, 4 m, blue	Rhophase Microwave Ltd	SPS-1803A-4000-NPS	T4658	10/03
2109	Anechoic chamber 6 (L) x 5.5 (W) x 2.95 (H) m	Hermon Labs	AC-2	NA	12/03 Check
2254	Cable 40 GHz, 0.8 m, blue	Rhophase Microwave	KPS-1503A-800-KPS	W4907	11/03
2258	Amplifier Low Noise 2-20 GHz	Sophia Wireless	LNA0220-C	0222	11/03
2260	Amplifier Low Noise 14-33 GHz	Sophia Wireless	LNA28-B	0233	11/03

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Appendix D General information

Test facility description

Tests were performed at Hermon Laboratories Ltd., which is a fully independent, private EMC, safety, environmental and telecommunication testing facility. Hermon Laboratories is listed by the Federal Communications Commission (USA) for all parts of Code of Federal Regulations 47 (CFR 47) and by Industry Canada for electromagnetic emissions (file numbers IC 2186-1 for OATS and IC 2186-2 for anechoic chamber), certified by VCCI, Japan (the registration numbers are R-808 for OATS, R-1082 for anechoic chamber, C-845 for conducted emissions site), assessed by TNO Certification EP&S (Netherlands) for a number of EMC, telecommunications, environmental, safety standards, and by AMTAC (UK) for safety of medical devices. The laboratory is accredited by American Association for Laboratory Accreditation (USA) according to ISO/IEC 17025 for electromagnetic compatibility, product safety, telecommunications testing and environmental simulation (for exact scope please refer to Certificate No. 839.01) and approved by Israel Ministry of environmental protection, radiation hazards department (Permit number 1158).

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Abbreviations and acronyms

The following abbreviations and acronyms are applicable to this test report:

AC	alternating current
cm	centimeter
dB	decibel
dBm	decibel referred to one milliwatt
dB(μV)	decibel referred to one microvolt
dB(μV/m)	decibel referred to one microvolt per meter
EMC	electromagnetic compatibility
EUT	equipment under test
GHz	gigahertz
H	height
Hz	hertz
kHz	kilohertz
kV	kilovolt
L	length
LNA	low noise amplifier
m	meter
MHz	megahertz
NA	not applicable
QP	quasi-peak
P-to-MP	point-to-multipoint
P-to-P	point-to-point
RF	radio frequency
RE	radiated emission
rms	root mean square
s	second
V	volt
W	width

Specification references

47CFR part 15: 2002	Radio Frequency Devices
ANSI C63.2:96	American National Standard for Instrumentation-Electromagnetic Noise and Field Strength, 10 kHz to 40 GHz-Specifications.
ANSI C63.4:92	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.