Test Report

FCC Part 15.247
Industry Canada RSS210

DTS Devices Operating in range 2400-2483.5MHz and 5725–5850 MHz

Elektrobit Wireless Communications, Ltd.
Automaatiotie 1
FI-90460 OULUNSALO
FINLAND
Product Name: Integrated Service Access Point

FCC ID: V27-DT40ISAP
IC ID: 3282B-DT40ISAP

TEST REPORT #: EMC_CETEC_030_15_247
DATE: 2008-6-17

ilac-MRA A2LA ACCREDITED Certificate # 2135.01

Bluetooth

Bluetooth Qualification Test Facility (BQTF)

CTIA Authorized Test Lab
LAB CODE 20020328-00

FCC listed: A2LA accredited

IC recognized # 3462B

***CETECOM* Inc.**
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1 Assessment

The following is in compliance with the applicable criteria specified in FCC rules Part 15.247 of the Code of Federal Regulations.

Company	Product Name
Elektrobit Wireless Communications, Ltd.	**Integrated Service Access Point**

This report is reviewed by:

Date	Section	Name	Signature
2008-6-17	**EMC & Radio**	**Ivaylo Tankov (EMC Project Engineer)**	Ivaylo Tankov I am approving this document

This report is prepared by:

Date	Section	Name	Signature
2008-6-17	**EMC & Radio**	**Peter Mu (EMC Project Engineer)**	Peter Mu I am the author of this document

2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

TESTING LABORATORY	
Company Name:	**CETECOM Inc.**
Department:	**EMC**
Address:	**411 Dixon Landing Road Milpitas, CA 95035 U.S.A.**
Telephone:	**+1 (408) 586 6200**
Fax:	**+1 (408) 586 6299**
Responsible Test Lab Manager:	**Lothar Schmidt**
Responsible Project Leader:	**Peter Mu**
Date of test:	**2008-4-25 to 2008-5-20**

2.2 Identification of the Client

APPLICANT	
Applicant (Company Name)	**Elektrobit Wireless Communications, Ltd.**
Street Address	**Automaatiotie 1**
City/Zip Code	**FI-90460 OULUNSALO**
Country	**FINLAND**
Contact Person	**Jussi Harju**
Telephone	**+41 55 253 2055**
Fax	**+41 55 253 2070**
e-mail	**jussi.harju@elektrobit.com**

2.3 Identification of the Manufacturer

Same as above applicant.

3 Equipment under Test (EUT)

3.1 Specification of the Equipment under Test

EUT	
Marketing Name of EUT (if not same as Model No.):	**Integrated Service Access Point**
Description:	**Wireless LAN Access Point**
Model No:	**ISAP**
FCC ID:	**V27-DT40ISAP**
IC ID:	**3282B-DT40ISAP**

Frequency Range:	**2400-2483.5MHz** **Channel 1, 6, 11 for HT20 mode** **Channel 2, 6, 10 for HT40 mode** **5725–5850 MHz** **Channel 149, 157, 165 for HT20 mode** **Channel 151, 159, 167 for HT40 mode**
Type(s) of Modulation:	**OFDM**
Antenna Type:	**Whip 2.6dBi**
Max Output Power:	**Subband 1, 2400-2483.5MHz HT20:** **Radiated: 17.14dBm (51.81mW) EIRP** **Conducted: 14.54dBm (28.47mW)** **Subband 1, 2400-2483.5MHz HT40:** **Radiated: 16.73dBm (47.11mW) EIRP** **Conducted: 14.13dBm (25.89mW)** **Subband 2, 5725-5850MHz HT20:** **Radiated: 18.63dBm (72.94mW) EIRP** **Conducted: 16.03dBm (40.08mW)** **Subband 2, 5725-5850MHz HT40:** **Radiated: 18.33dBm (68.04mW) EIRP** **Conducted: 15.73dBm (37.39mW)**

Specified Operating Temperature Range:	**-10C to +50C**

3.2 Identification of the Equipment under Test (EUT)

EUT #	TYPE	MANF.	MODEL	SERIAL #
1	EUT	Elektrobit	ISAP	009
2	EUT	Elektrobit	ISAP	015

3.3 Identification of Accessory equipment

None

4 Subject Of Investigation

All testing was performed on the product referred to in Section 3 as EUT. EUT operates in the band 2400-2483.5MHz and 5725–5850 MHz in 20MHz mode (HT20) and 40MHz mode (HT40). The EUT does not support 802.11b/g legacy mode of operation.

The EUT is a 3x3 Spatial Multiplexing MIMO system; it transmits and receives on three chains. All three ports are measured during testing and worse case performances are reported here to show compliance to applicable standards. Total conducted output power and power spectral density is a sum of the threes port. No beam-forming is used as stated by the manufacturer. The external whip antennae used on all three ports are identical with stated gain 2.6dBi. Since each antenna elements are always driven incoherently at each frequency the directional gain is the gain of each antenna and is equal to 2.6Bi.

The objective of the measurements done by Cetecom Inc. was to measure the performance of the EUT operating under 20MHz mode (HT20) and 40MHz mode (HT40) in the 2400-2483.4MHz and 5725–5850 MHz range as specified by requirements listed in FCC rules Part 15.247 of Title 47 of the Code of Federal Regulations. The maximization of portable equipment is conducted in accordance with ANSI C63.4

5 Radiated Measurements

5.1 Maximum Peak Output Power § 15.247 (b)(1) (Radiated)

EIRP is calculated from conducted peak power with the following formula:

EIRP = Conducted Peak Power + Directional Antenna Gain (G)

Directional Antenna Gain = Max Stated Antenna Gain = 2.6dBi

No beam-forming is used as stated by the manufacturer. The external whip antennae used on all three ports are identical with stated gain 2.6dBi. Since each antenna elements are always driven incoherently at each frequency the directional gain is the gain of each antenna and is equal to 2.6Bi.

5.1.1 Limits

FCC15.247 (b) (1): 4W (36dBm), with antenna gain < 6dBi.
RSS-210 A8.4 (4): 4W (36dBm)

5.1.2 Results:

EIRP 802.11na HT20 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	EIRP (dBm)	EIRP (mW)	Margin (mW)
Sub-band 1: 2400-2483.5MHz	2412	**17.14**	**51.81**	**3948.19**
	2437	**16.97**	**49.75**	**3950.25**
	2462	**17.06**	**50.80**	**3949.20**
Sub-band 3: 5725-5850MHz	5745	**18.63**	**72.94**	**3927.06**
	5785	**18.62**	**72.80**	**3927.20**
	5825	**18.53**	**71.35**	**3928.65**

EIRP 802.11na HT40 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	EIRP (dBm)	EIRP (mW)	Margin (mW)
Sub-band 1: 2400-2483.5MHz	2422	**16.64**	**46.08**	**3953.92**
	2437	**16.73**	**47.11**	**3952.89**
	2452	**15.58**	**36.16**	**3963.84**
Sub-band 3: 5725-5850MHz	5755	**18.32**	**67.87**	**3932.13**
	5795	**18.27**	**67.11**	**3932.89**
	5835	**18.33**	**12.63**	**3987.37**

5.2 Restricted Band Edge Compliance §15.247/15.205

5.2.1 Limits

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

***PEAK LIMIT= 74dBuV/m**
***AVG. LIMIT= 54dBuV/m**

Notes:

1. Radiated emissions are maximized by rotating the EUT 360° at 0.5 meter height increments between 1 and 4 meters.
2. Measurements were performed with the EUT in X, Y and Z orientations with the measurement antenna in both horizontal and vertical polarity. The plots below show the results of the worst case orientation and polarity.

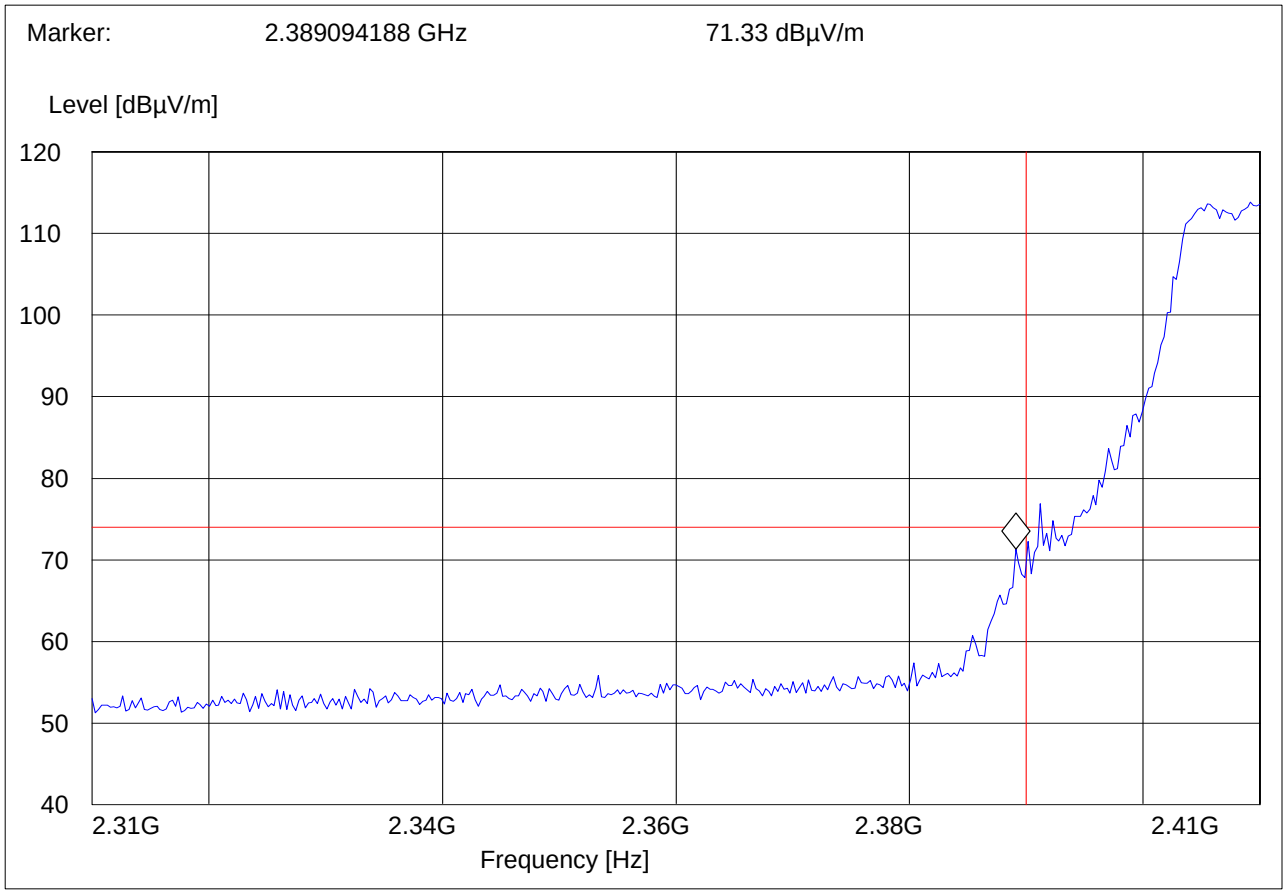
5.2.2 802.11 (ng) HT20 MODE

2412MHz, Lower band edge PEAK

```
EUT:              isap
Customer::        EB
Test Mode:        CH.1; 2412MHz; 20 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247 LBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.3 GHz	2.4 GHz	MaxPeak MaxPeak	Coupled	1 MHz	#326horn_AF_vert

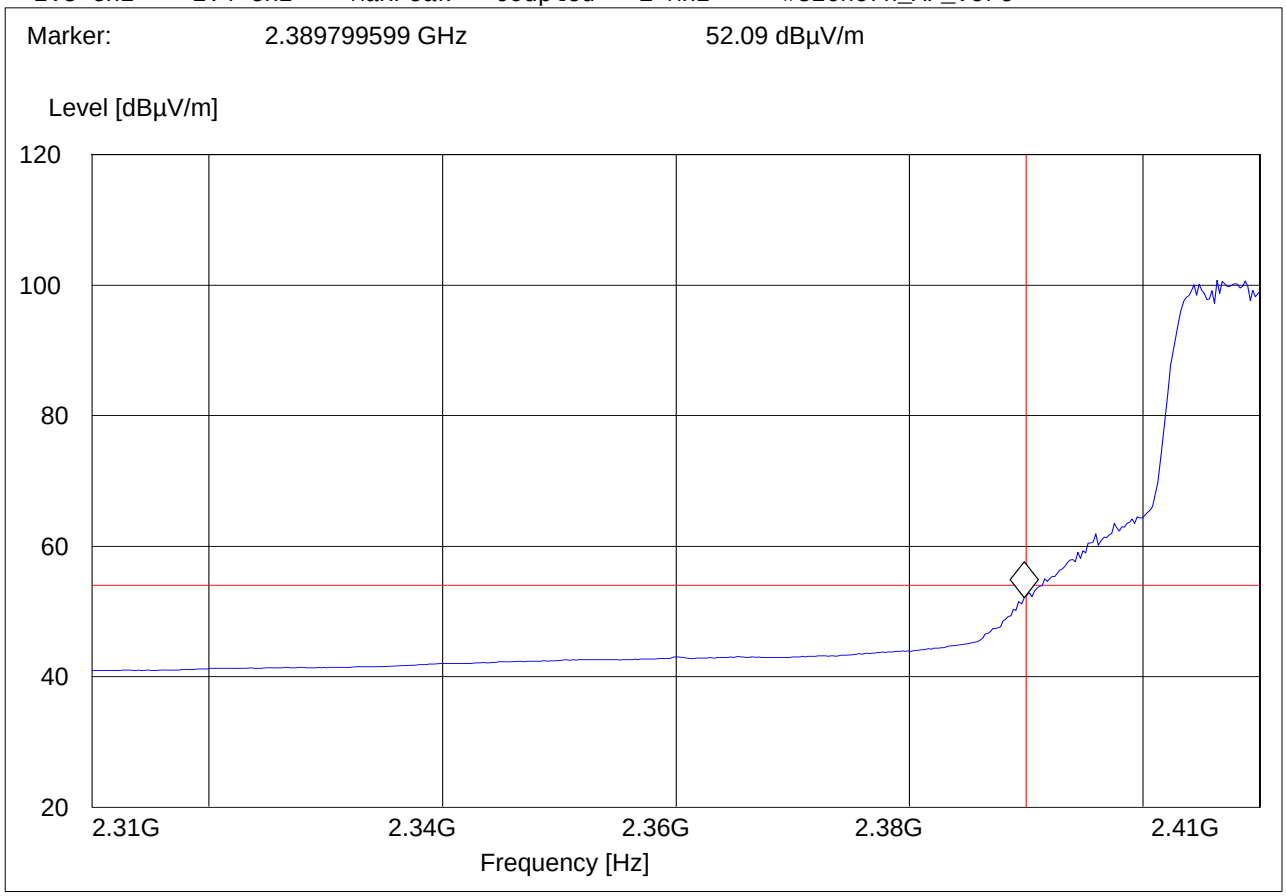


2412MHz, Lower band edge AVERAGE

```
EUT:              isap
Customer::        EB
Test Mode:        CH.1; 2412MHz; 20 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247 LBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

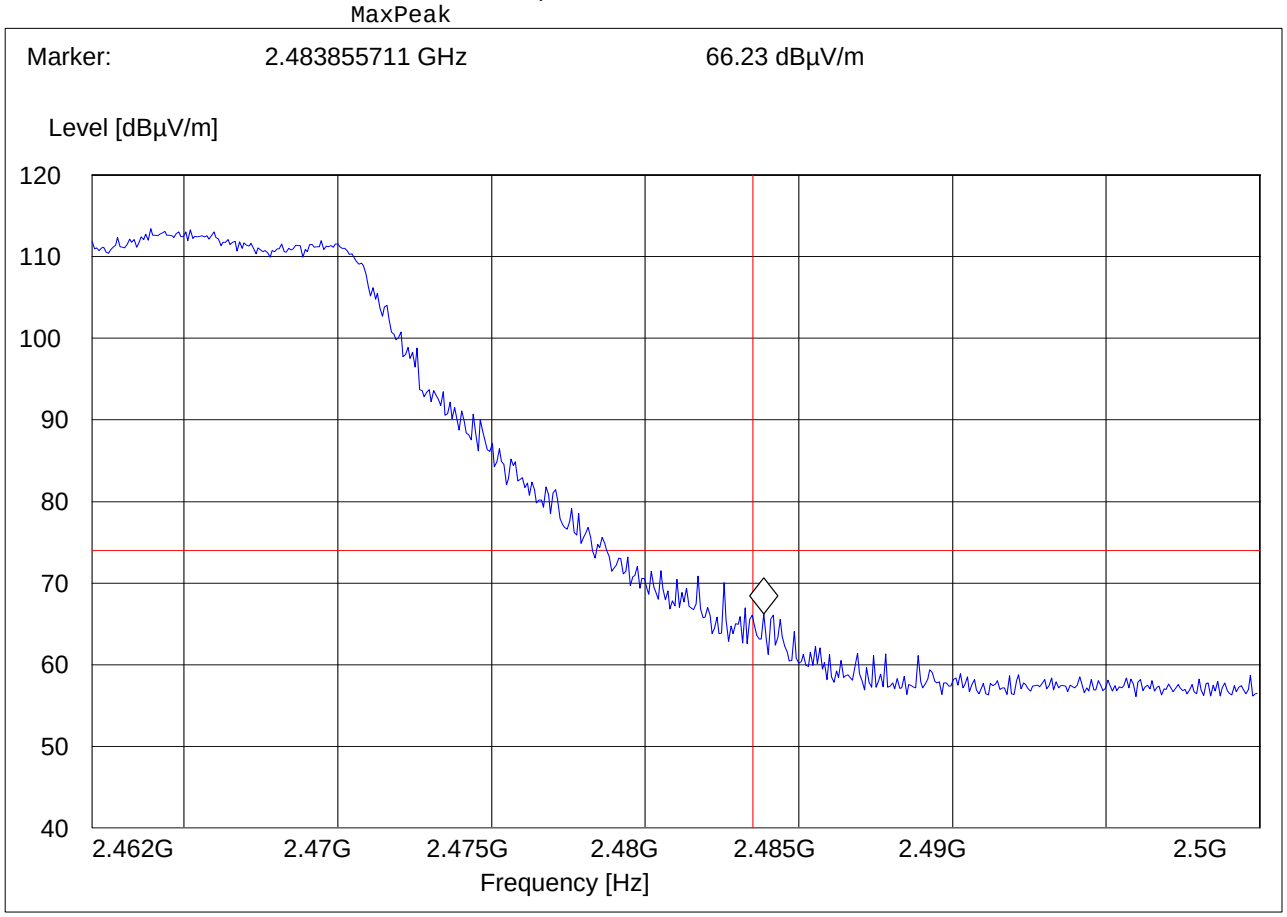


2462MHz, Upper band edge PEAK

```
EUT:              isap
Customer::        EB
Test Mode:        CH.11; 2462MHz; 20 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247 HBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.5 GHz	2.5 GHz	MaxPeak MaxPeak	Coupled	1 MHz	#326horn_AF_vert

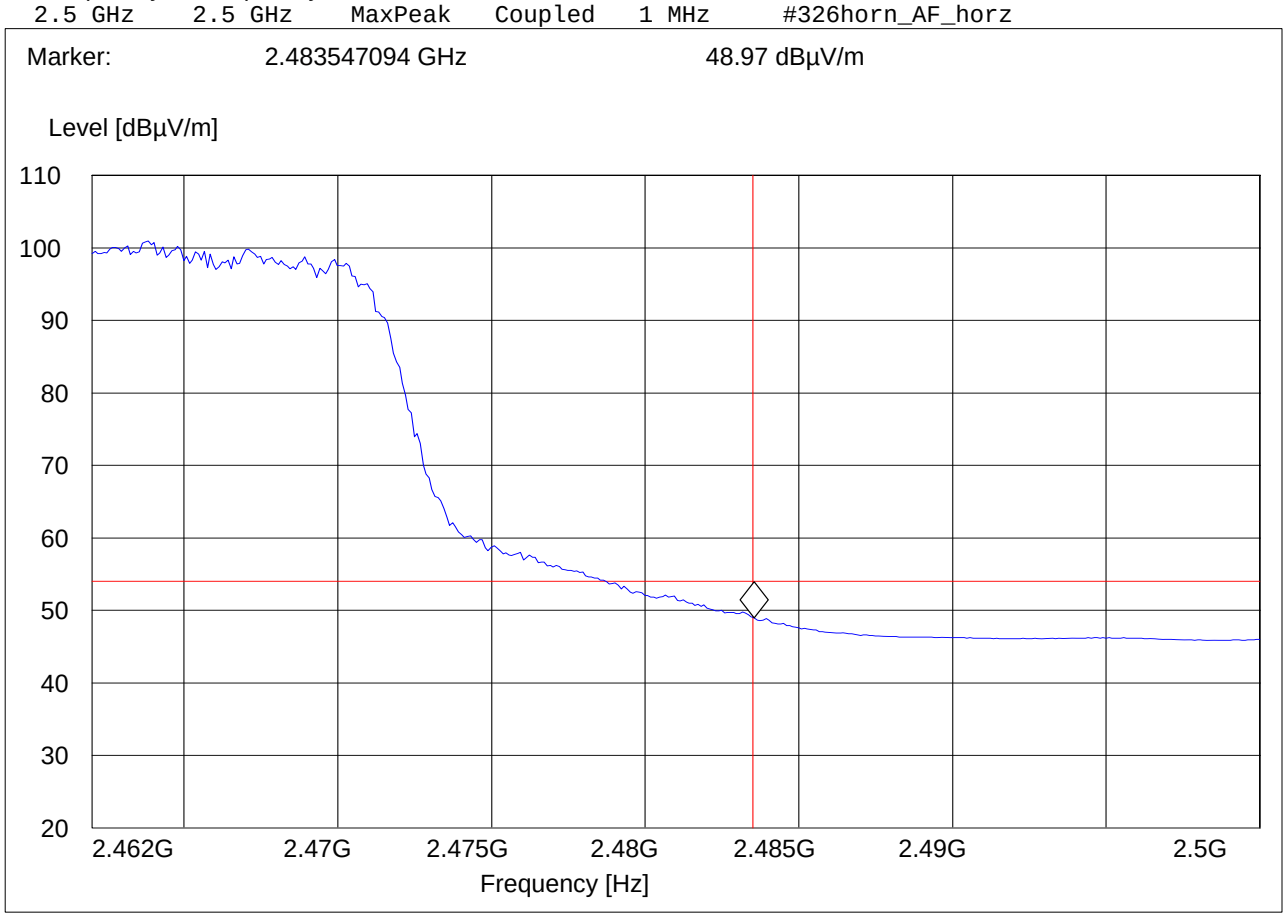


2462MH, Upper band edge AVERAGE

```
EUT:              isap
Customer::        EB
Test Mode:        CH.11; 2462MHz; 20 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247 HBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.5 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



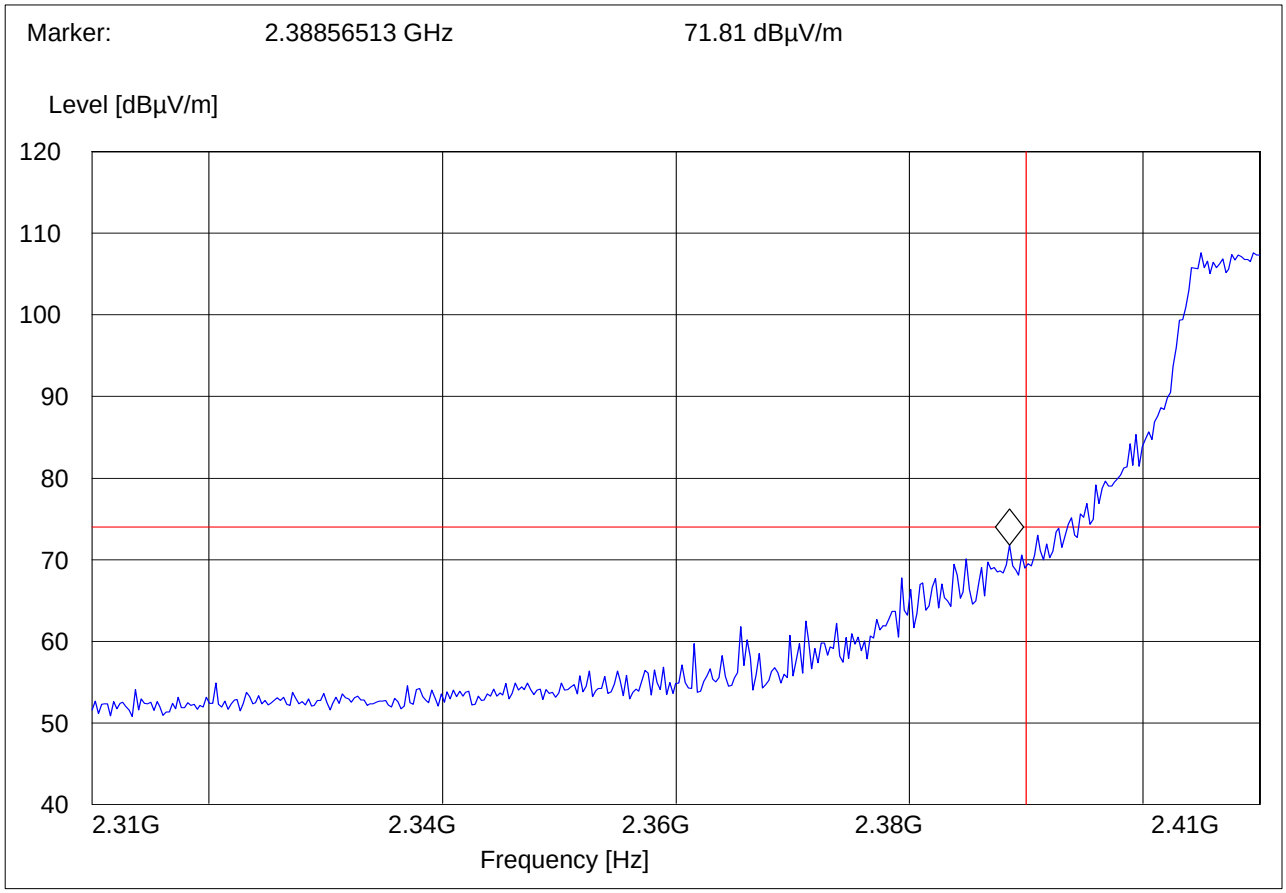
5.2.3 802.11 (ng) HT40 MODE

2422MHz, Lower band edge PEAK

```
EUT:              isap
Customer::        Electrobit
Test Mode:        HT40
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Peter
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247 LBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.3 GHz	2.4 GHz	MaxPeak MaxPeak	Coupled	1 MHz	#326horn_AF_vert

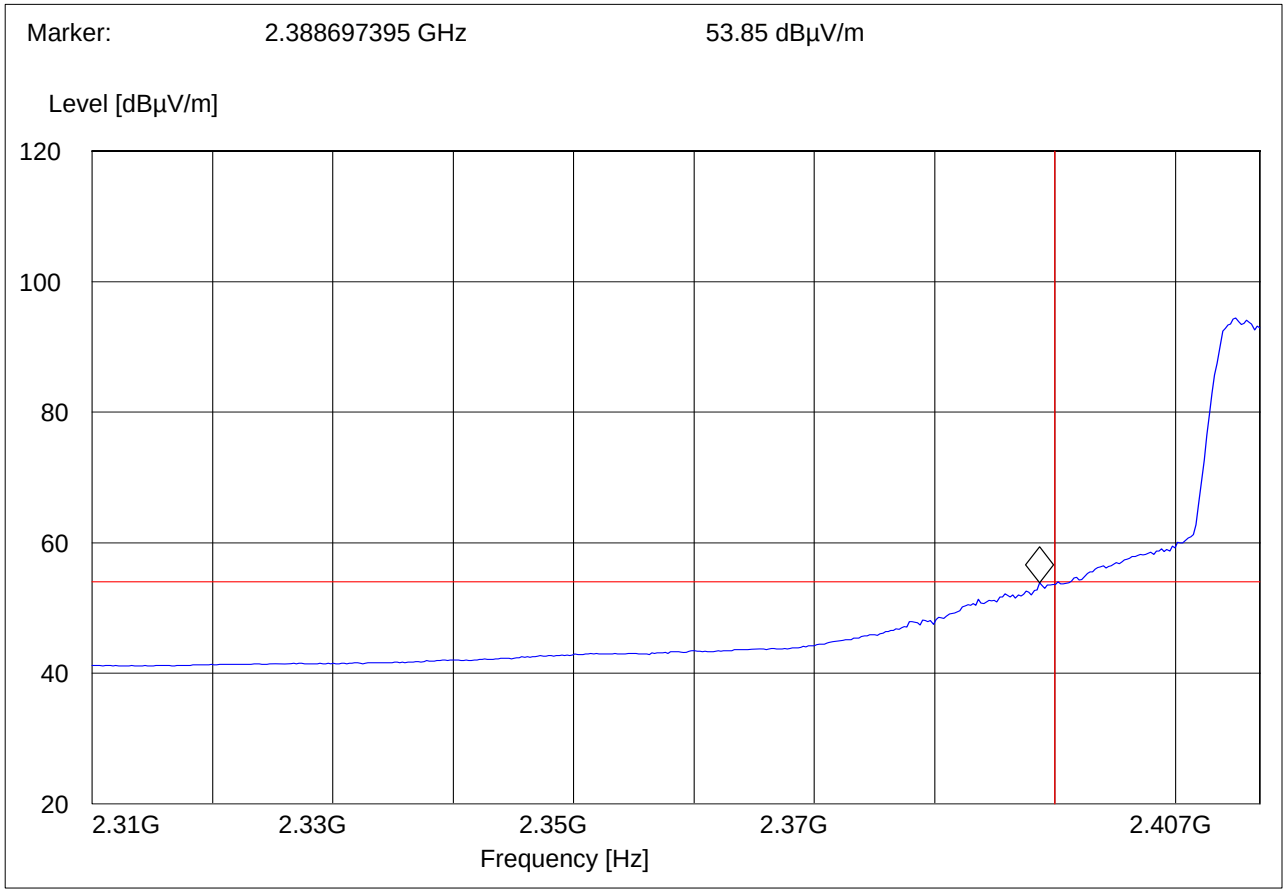


2422MHz, Lower band edge AVERAGE

```
EUT:              isap
Customer::        Electrobit
Test Mode:        HT40
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Peter
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247 LBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.3 GHz	2.4 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

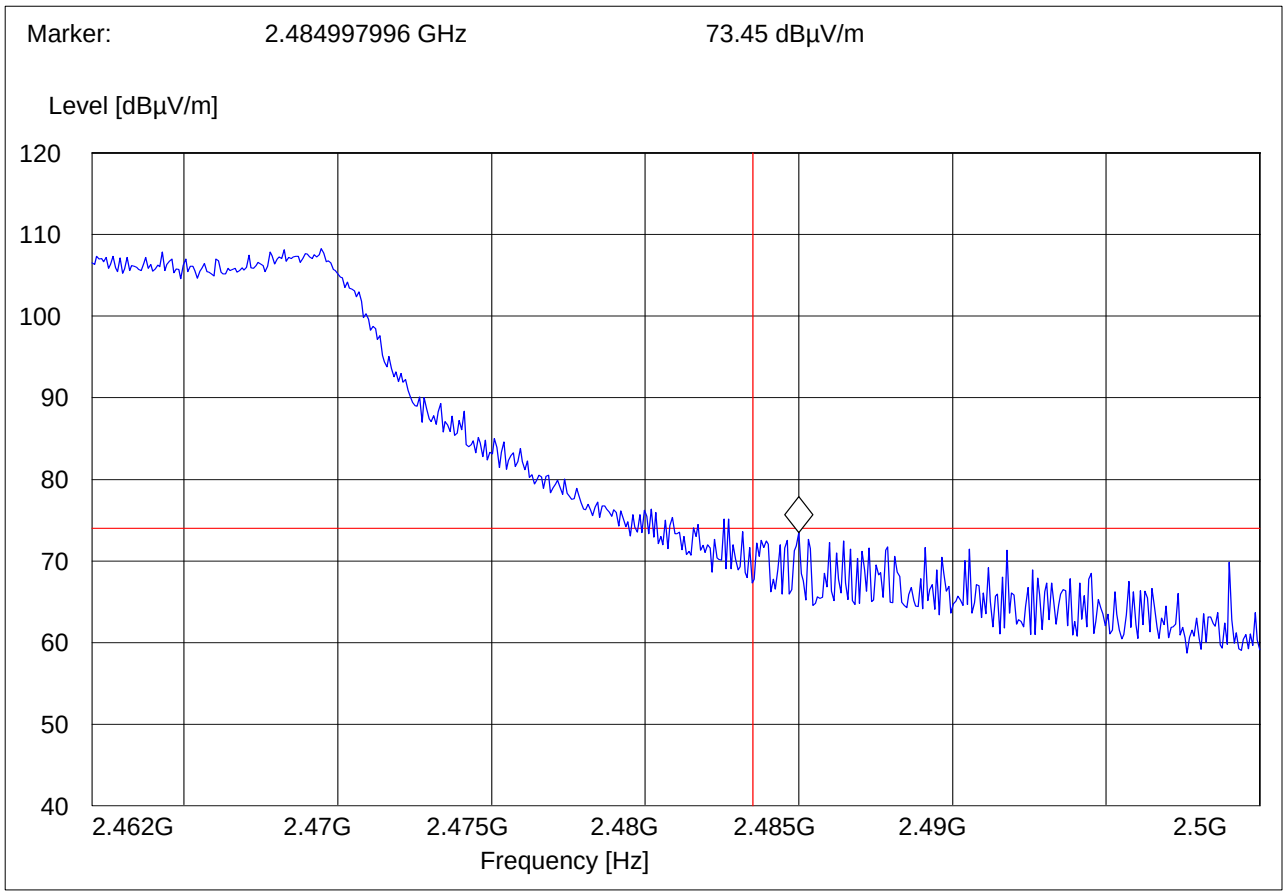


2452MHz, Upper band edge PEAK

```
EUT:              isap
Customer::        Electrobit
Test Mode:        HT40
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Peter
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247 HBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.5 GHz	2.5 GHz	MaxPeak MaxPeak	Coupled	1 MHz	#326horn_AF_vert

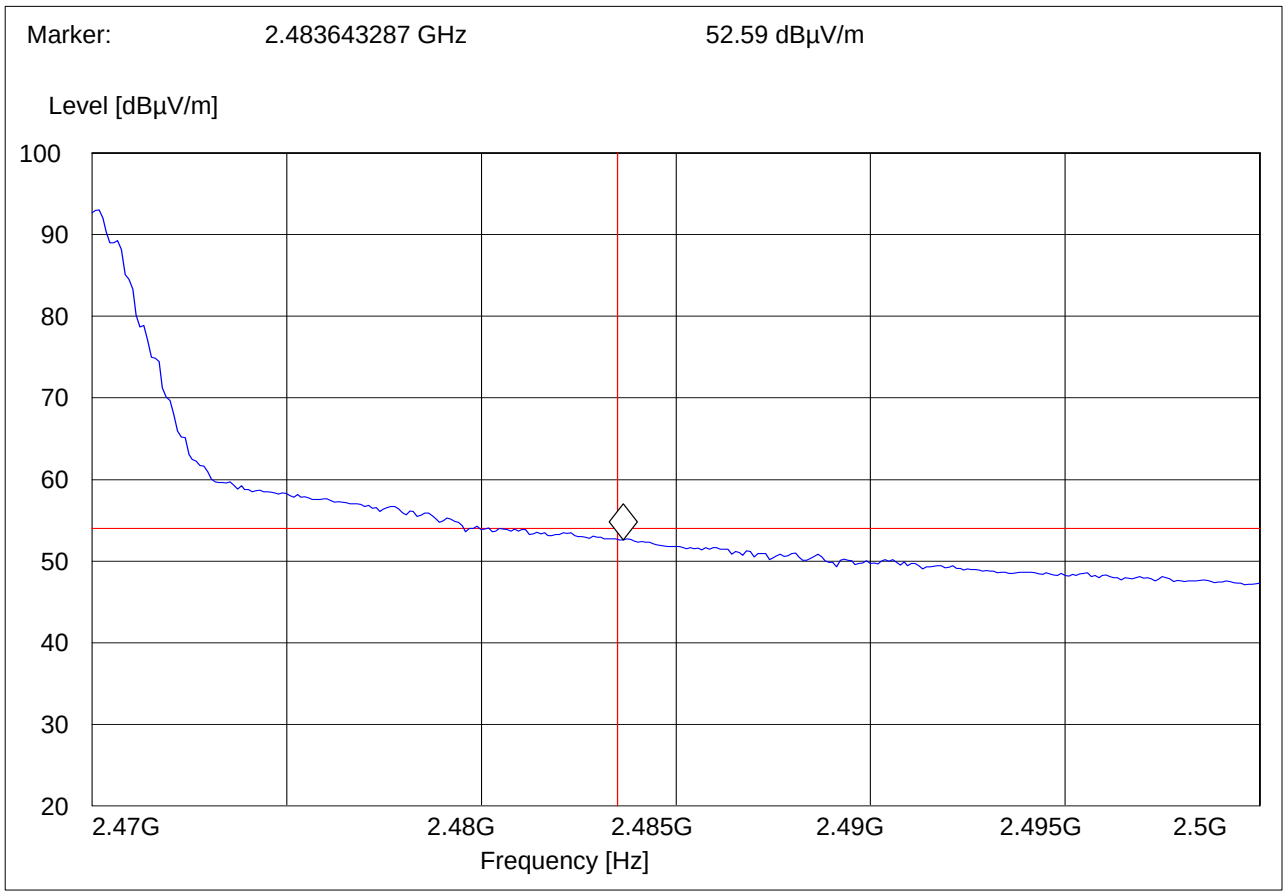


2452MHz, Upper band edge AVERAGE

```
EUT:              isap
Customer::        Electrobit
Test Mode:        HT40
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Peter
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247 HBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
2.5 GHz	2.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



5.3 Transmitter Spurious Emission § 15.247/15.205/15.209

5.3.1 Limits

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

***PEAK LIMIT= 74dBuV/m**
***AVG. LIMIT= 54dBuV/m**

Notes:

1. The radiated emissions were done with different settings, using the relevant pre-amplifiers for the relevant frequency ranges. This is the reason that the graphs show different noise levels. In the range between 3 and 25 GHz very short cable connections to the antenna was used to minimize the noise level.
2. All measurements are done in peak mode using an average limit , unless specified with the plots.
3. Radiated emissions are maximized by rotating the EUT 360° at 0.5 meter height increments between 1 and 4 meters.
4. Measurements were performed with the EUT in X, Y and Z orientations with the measurement antenna in both horizontal and vertical polarity. The plots below show the results of the worst case orientation and polarity

Results for the radiated measurements below 30MHz according § 15.33

Frequency	Measured values	Remarks
9KHz – 30MHz	No emissions found, caused by the EUT	This is valid for all the tested channels

5.3.2 RESULTS 802.11 (ng) HT20 MODE

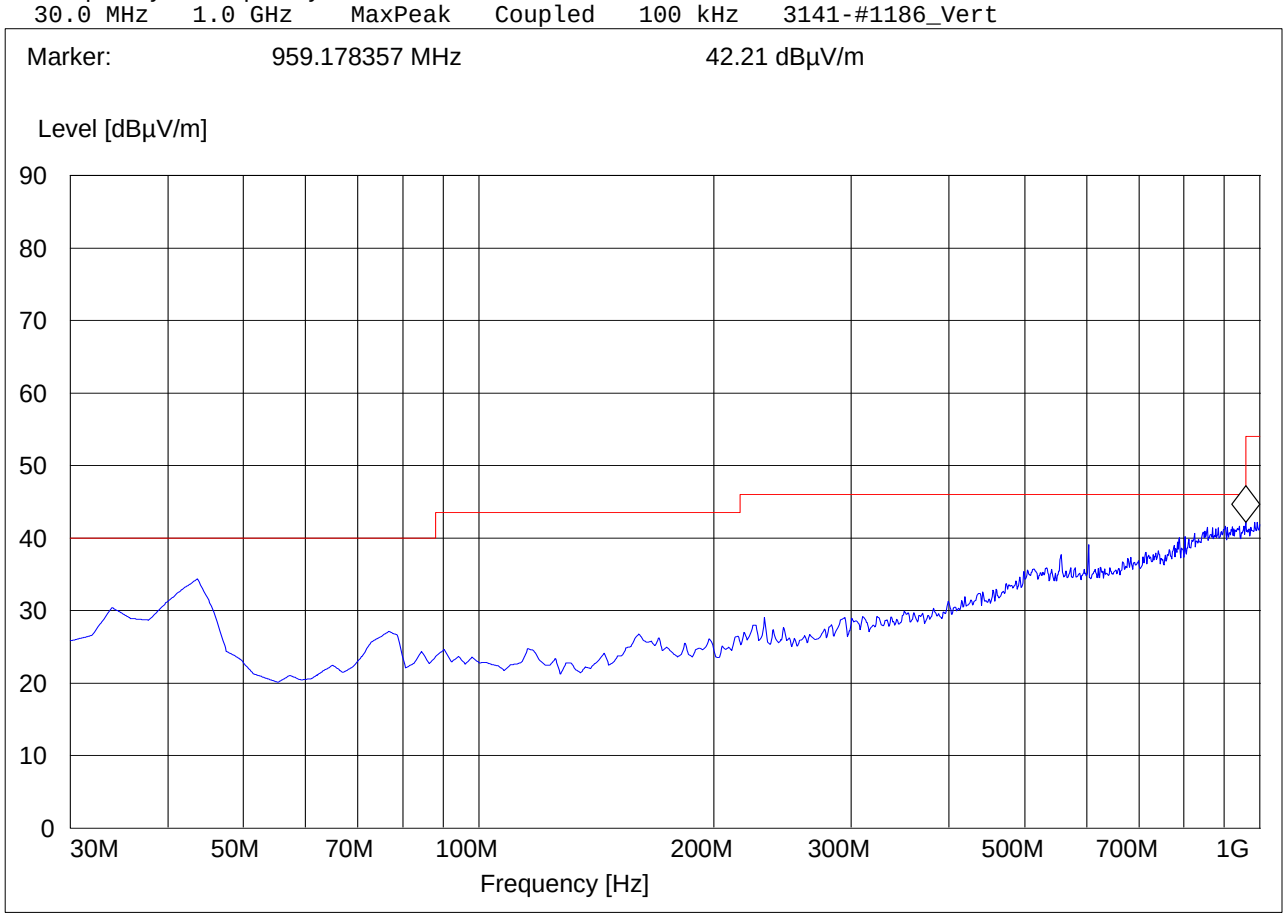
30MHz – 1GHz, Antenna: Vertical

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.1; 2462MHz; 20 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Vert



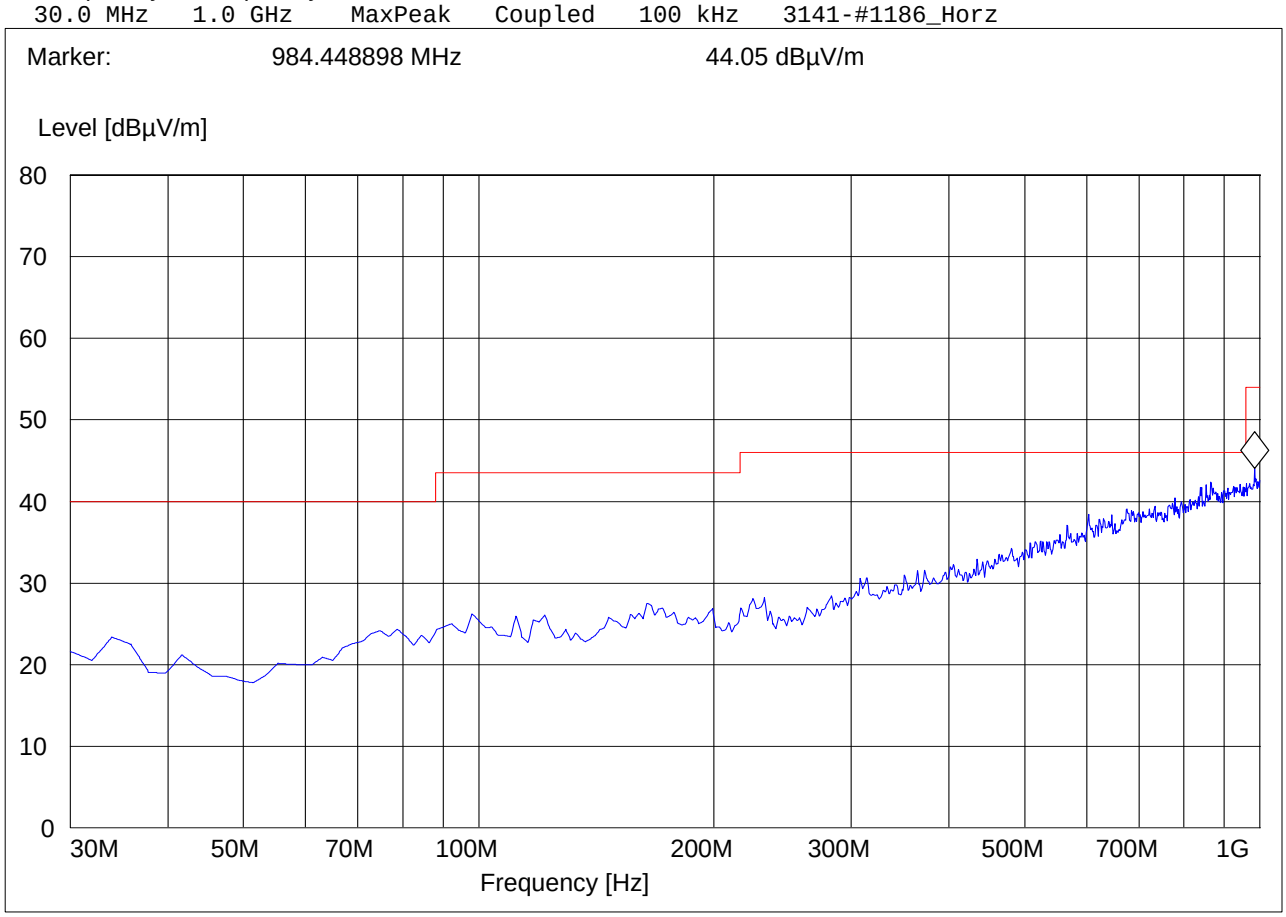
30MHz – 1GHz, Antenna: Horizontal

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.1; 2462MHz; 20 MHz
ANT Orientation:  H
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Hor"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Horz



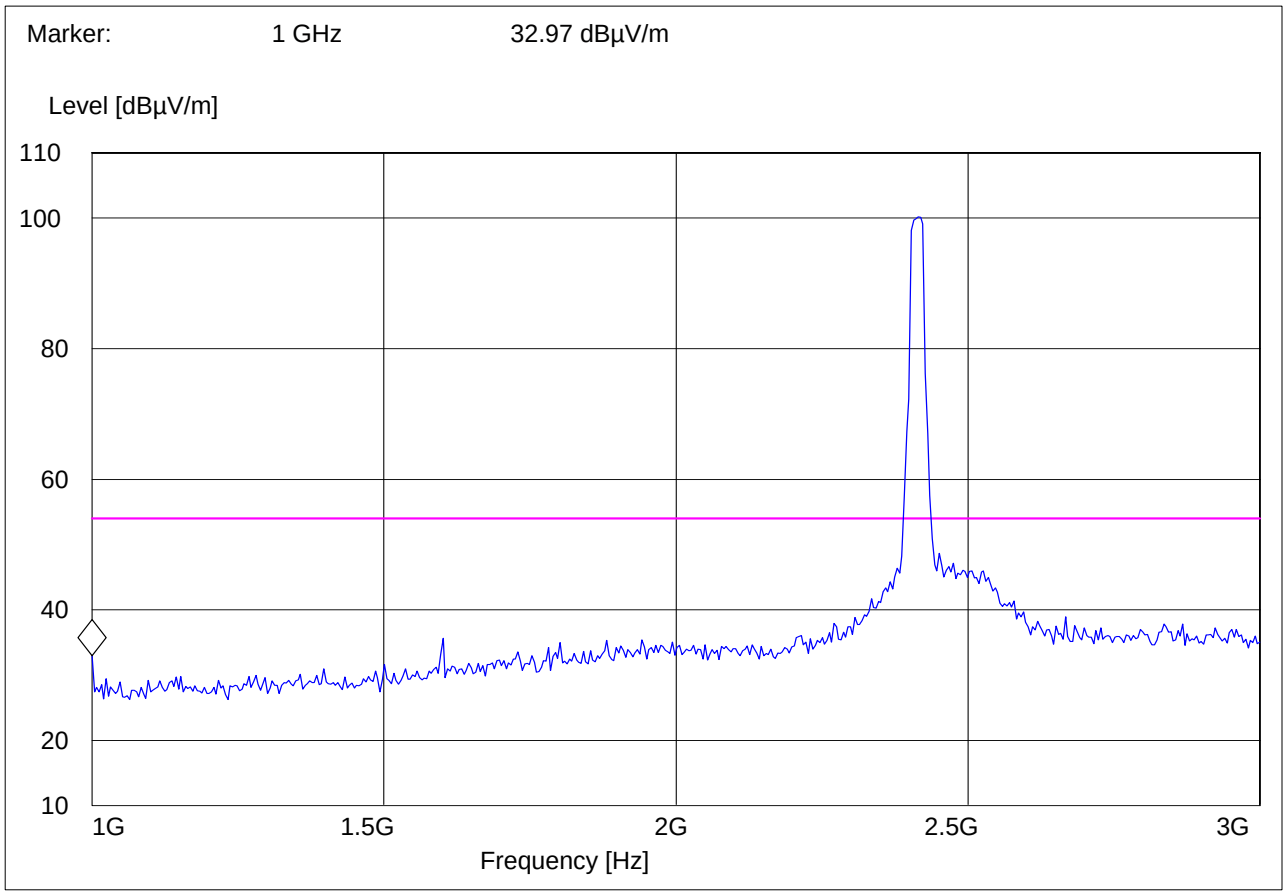
1-3GHz (2412MHz)

Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       Electrobit
Test Mode:       HT20
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Peter
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



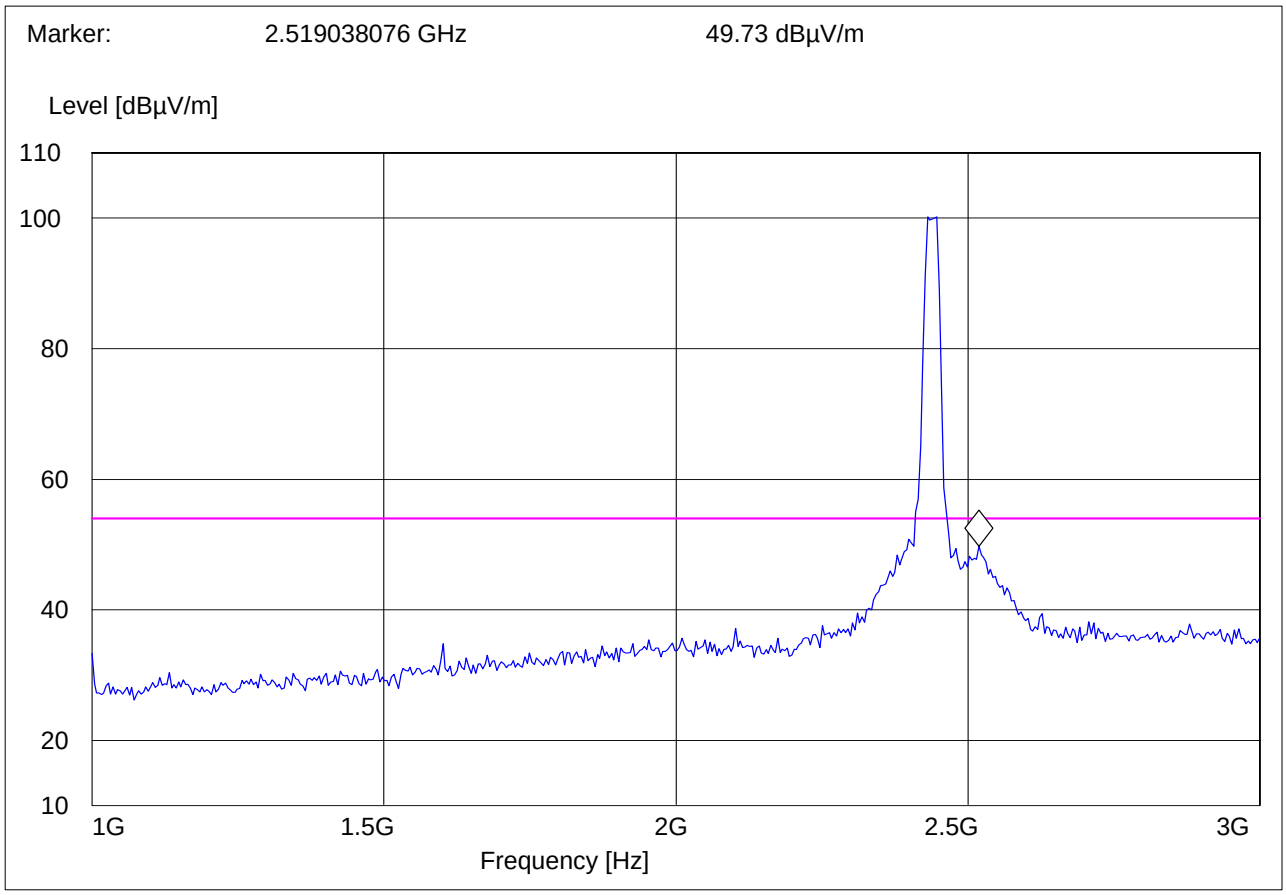
1-3GHz (2437MHz)

Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       Electrobit
Test Mode:       HT20
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Peter
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



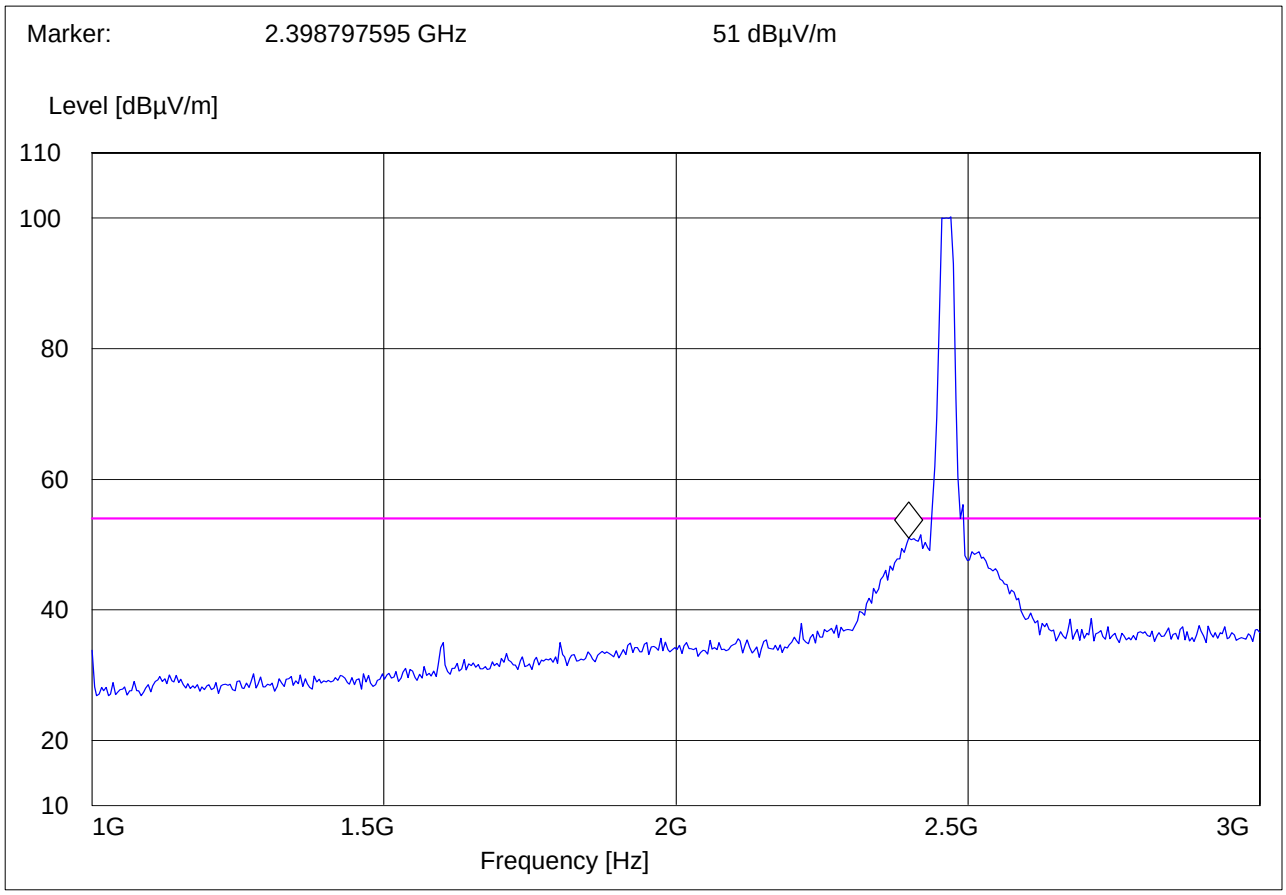
1-3GHz (2462MHz)

Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       Electrobit
Test Mode:       HT20
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Peter
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



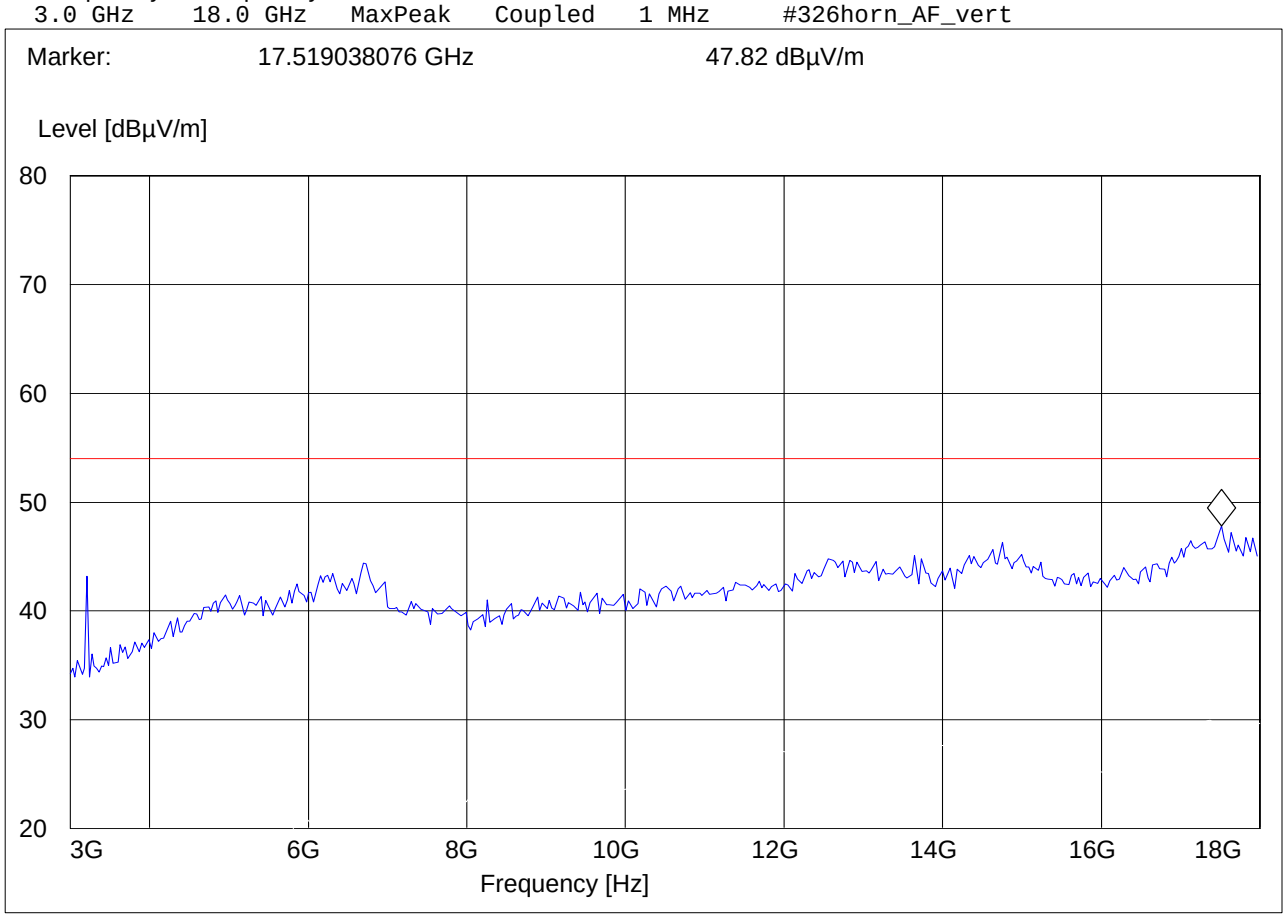
3-18GHz (2412MHz)

Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       EB
Test Mode:       Ch.1; 2412MHz; 20 MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



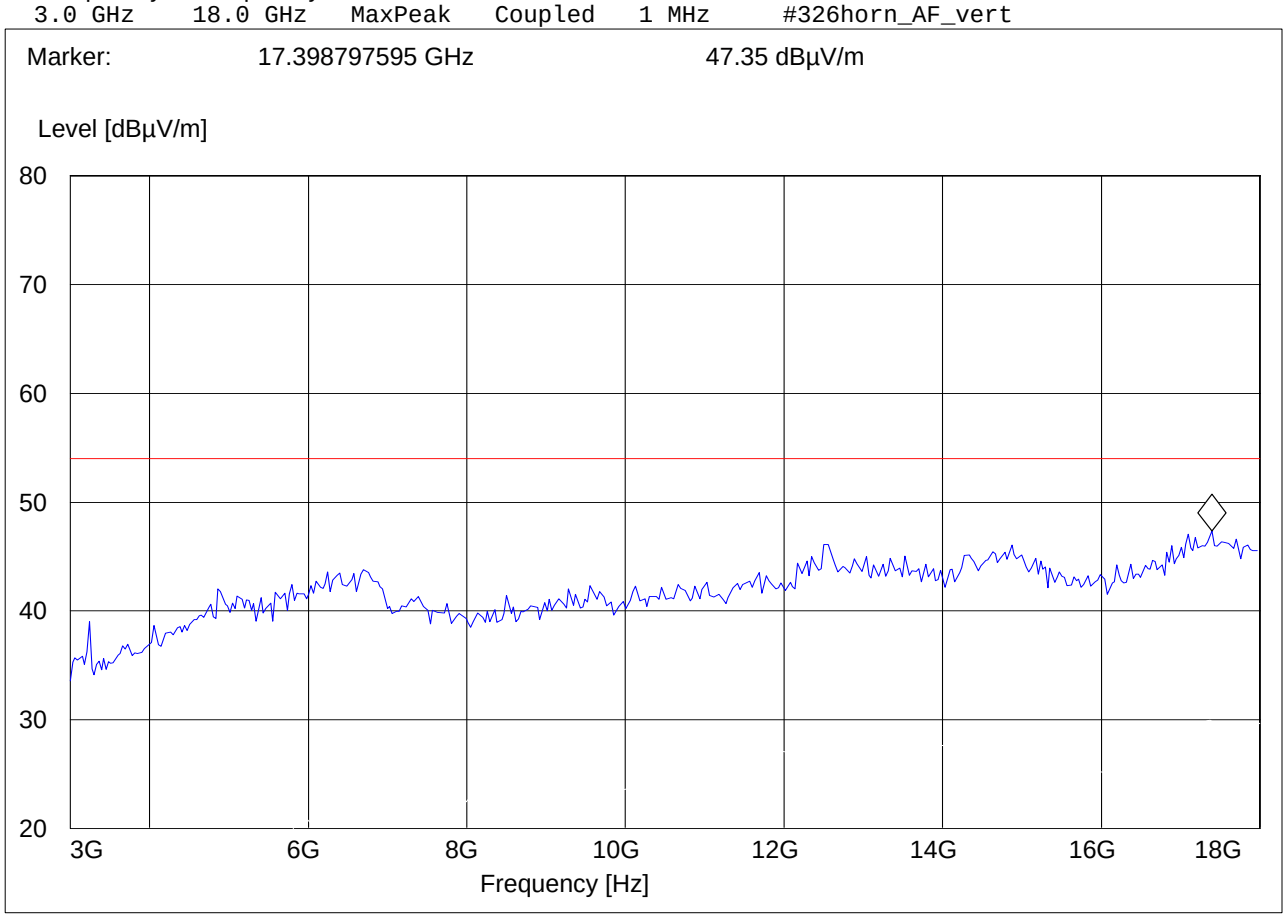
1-18GHz (2437MHz)

Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       EB
Test Mode:       Ch.6; 2437MHz; 20 MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



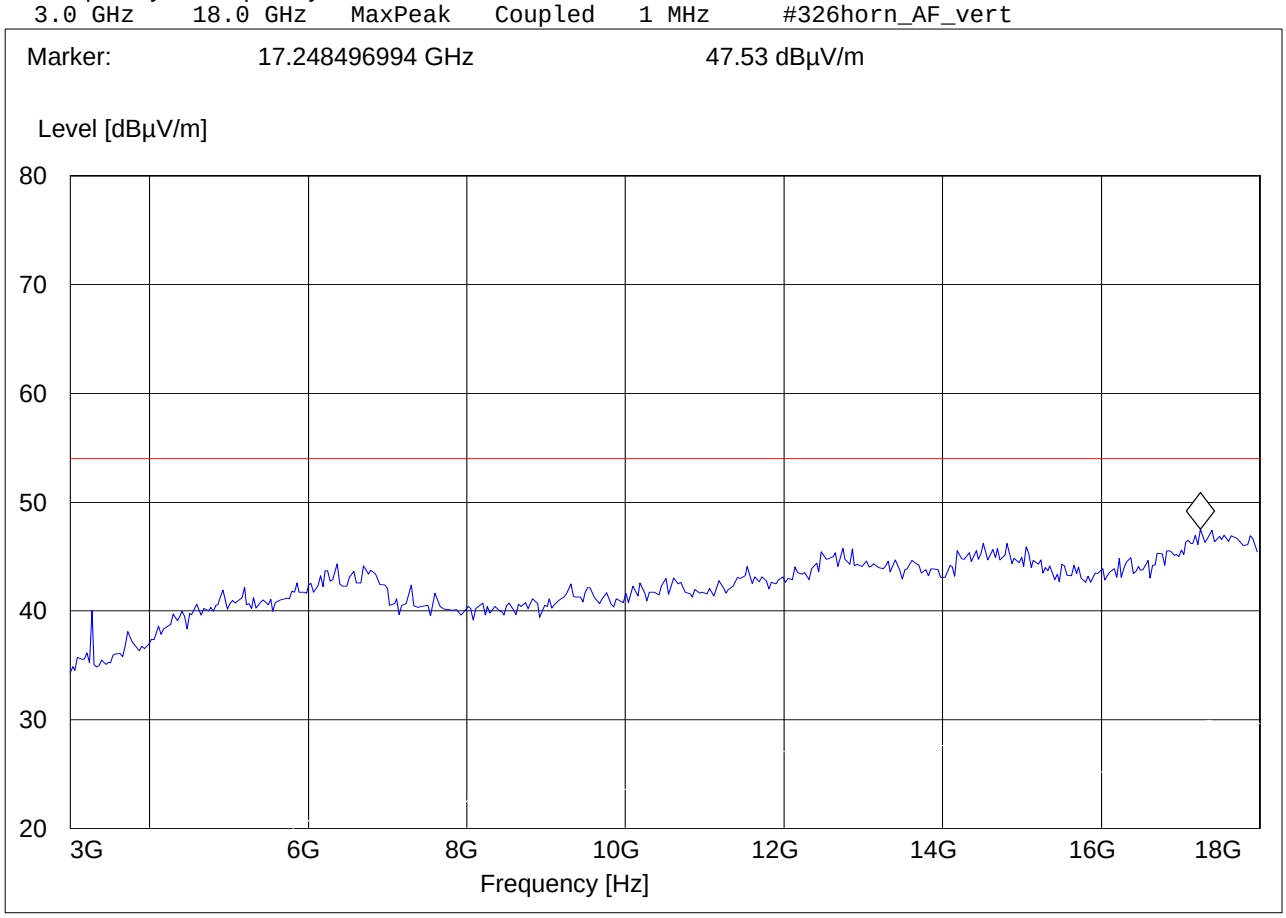
3-18GHz (2462MHz)

Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.11; 2462MHz; 20 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



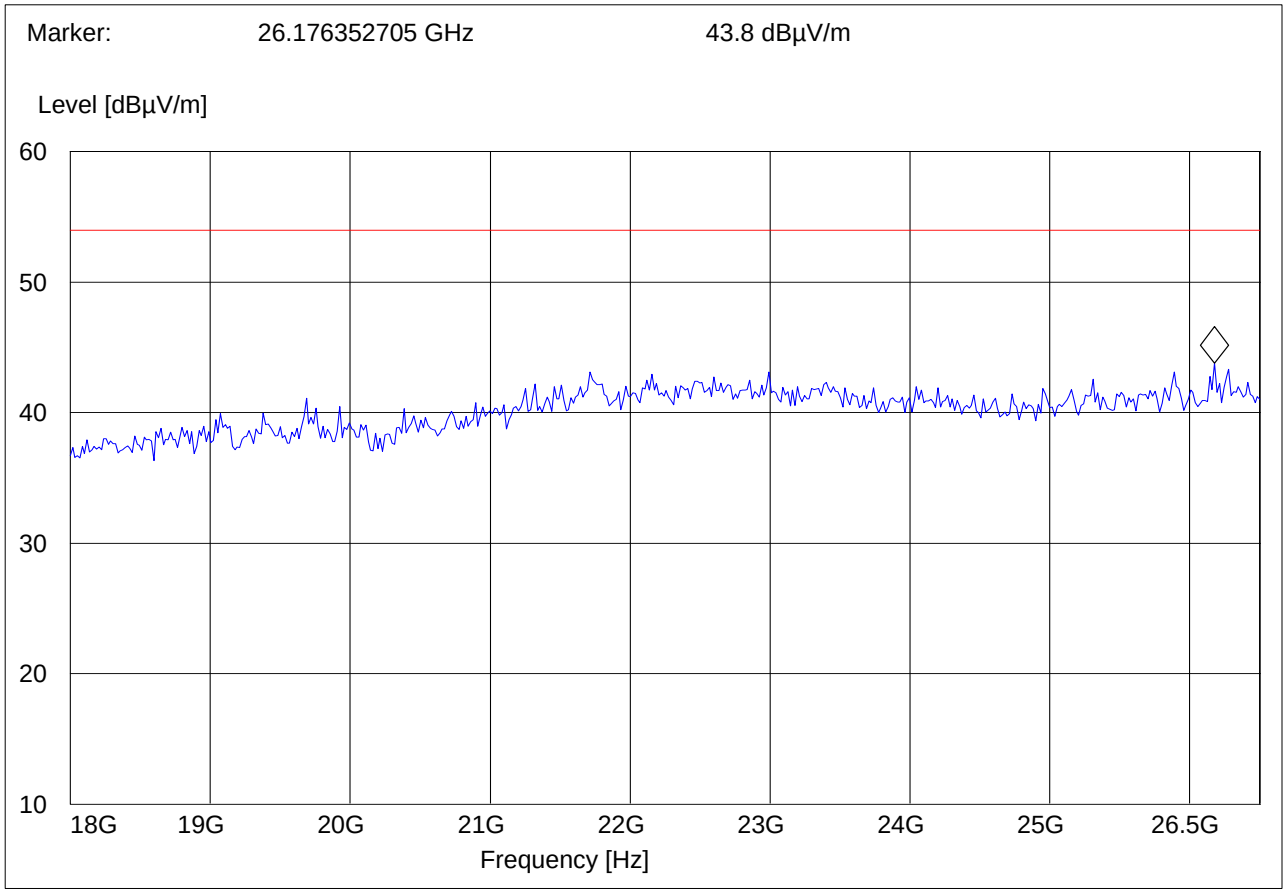
18-25GHz

Note: This plot is valid for low, mid, high channels (worst-case plot).
Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        EB
Test Mode:
ANT Orientation:  H
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_18-26.5G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
18.0 GHz	26.5 GHz	MaxPeak MaxPeak	Coupled	100 kHz	Horn # 3116_18-40G



5.3.3 RESULTS 802.11 (ng) HT40 MODE

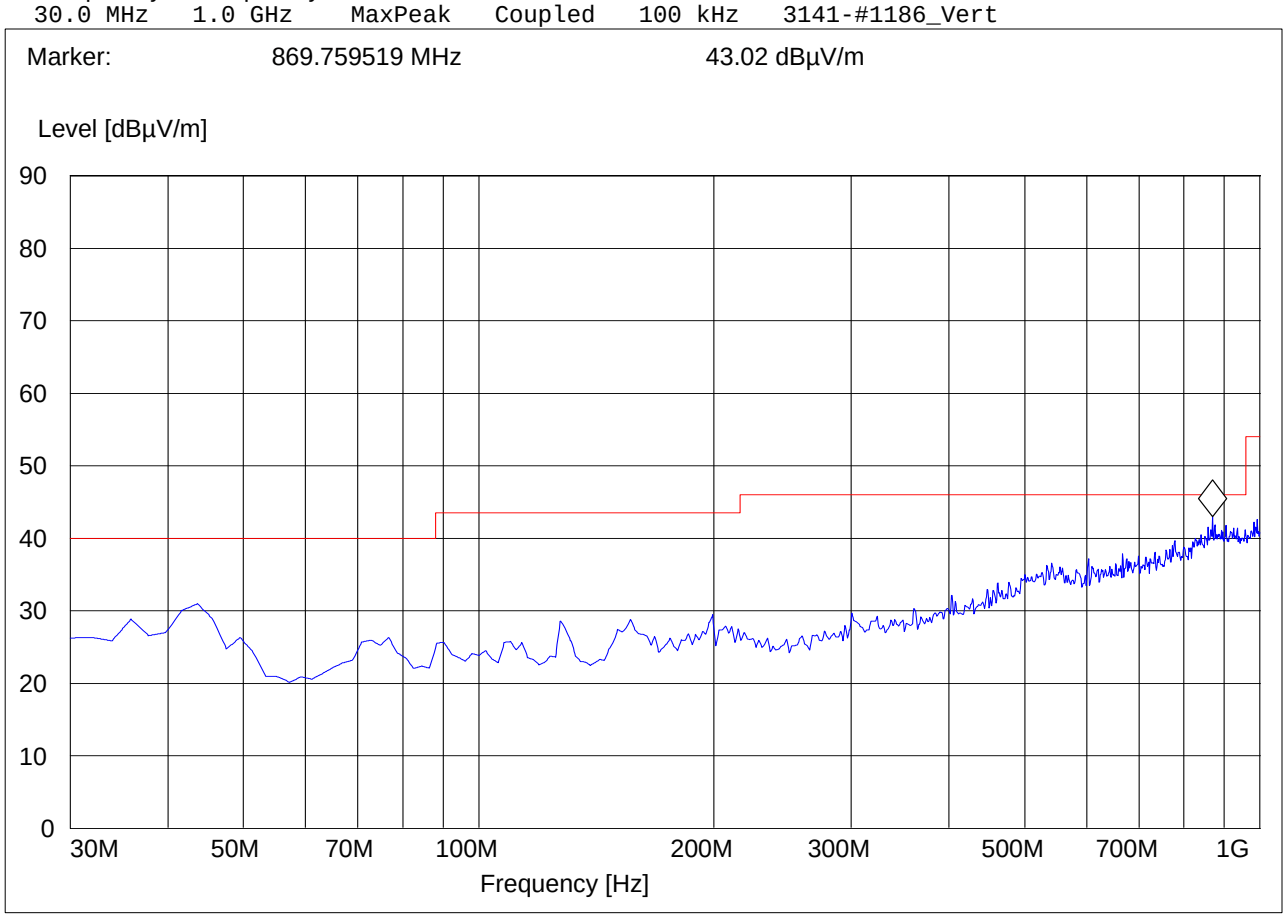
30MHz – 1GHz, Antenna: Vertical

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.6; 2437MHz; 40 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Vert



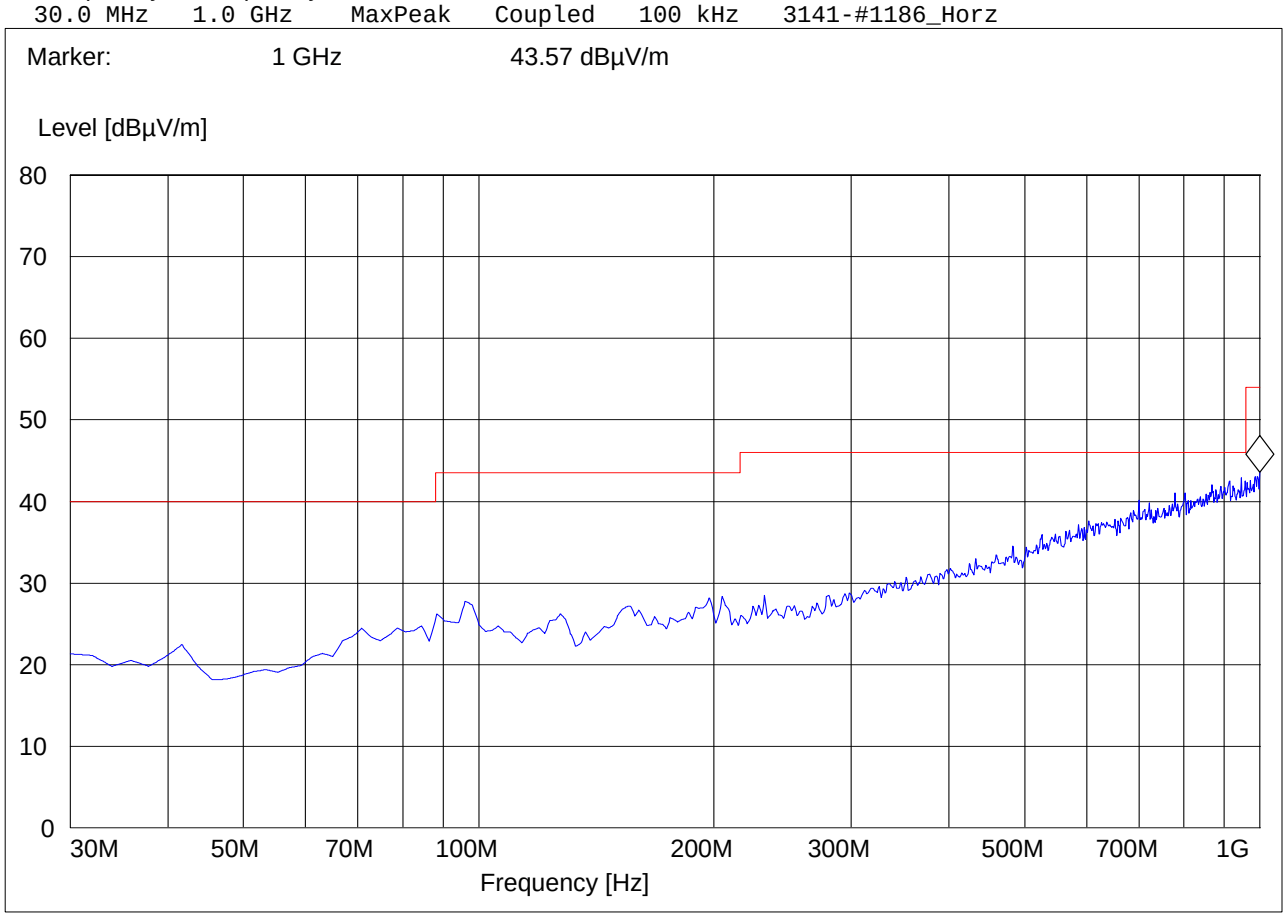
30MHz – 1GHz, Antenna: Horizontal

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.6; 2437MHz; 40 MHz
ANT Orientation:  H
EUT Orientation:  H
Test Engineer:    sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Hor"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Horz



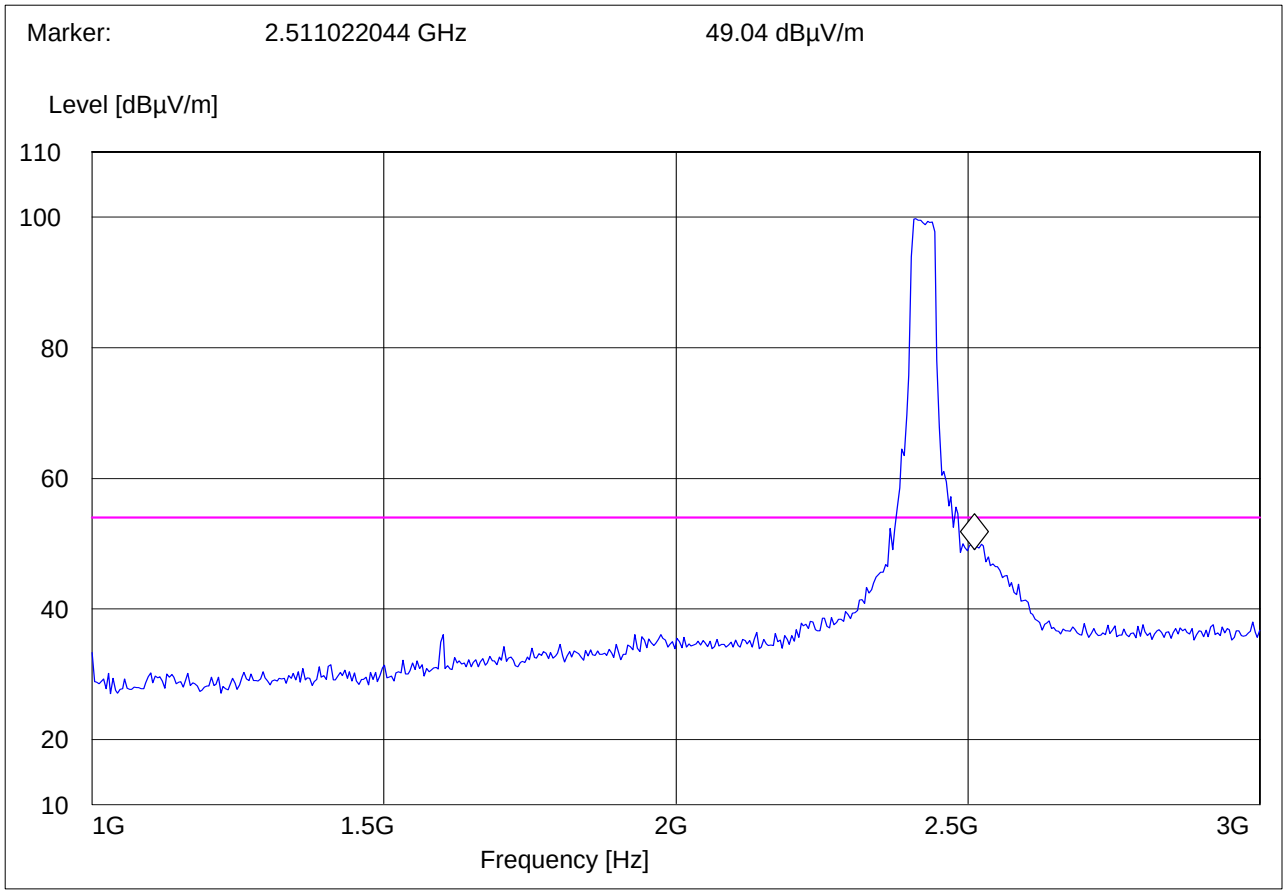
1-3GHz (2422MHz)

Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        Electrobit
Test Mode:        HT40
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Peter
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



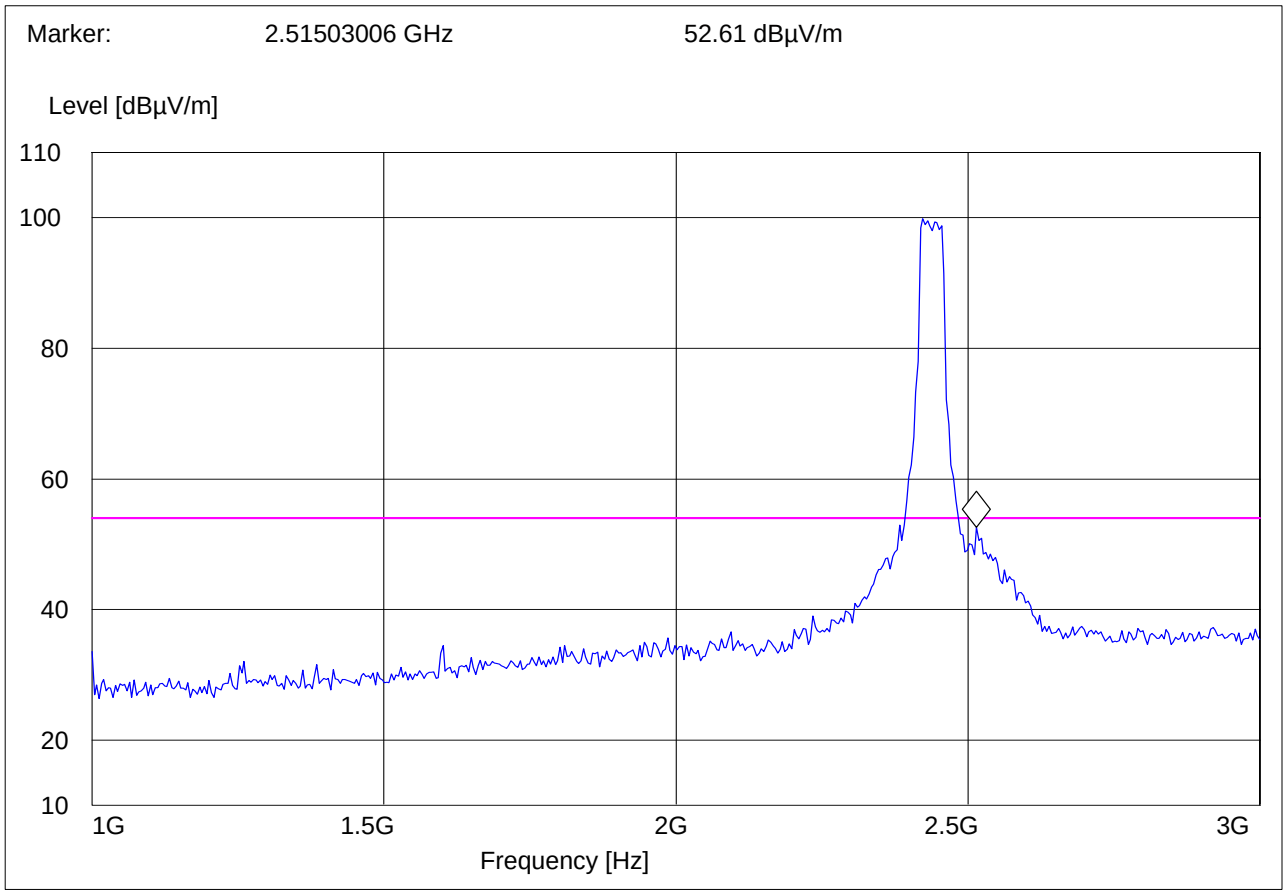
1-3GHz (2437MHz)

Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        Electrobit
Test Mode:        HT40
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Peter
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



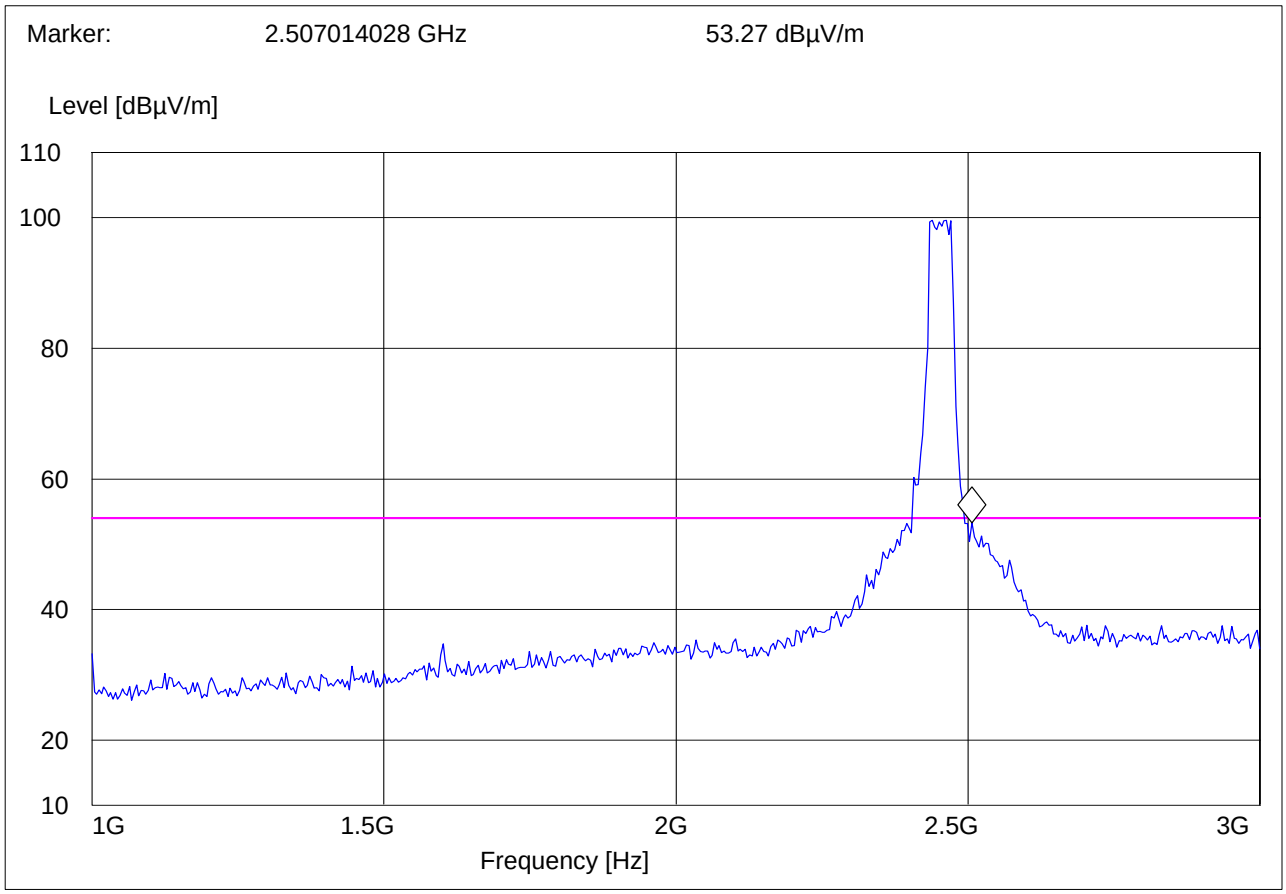
1-3GHz (2452MHz)

Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        Electrobit
Test Mode:        HT40
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Peter
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



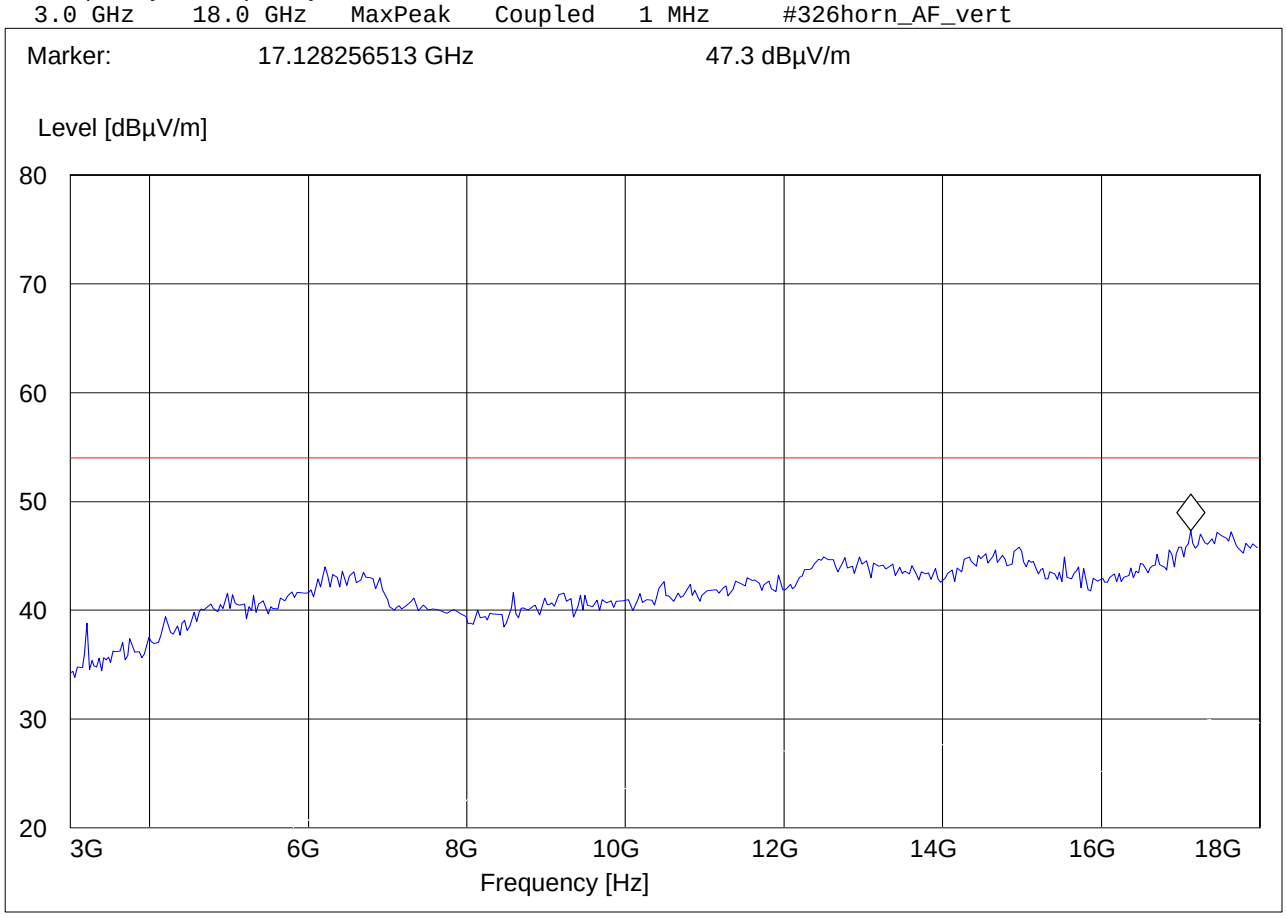
3-18GHz (2422MHz)

Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.2; 2422MHz; 40 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



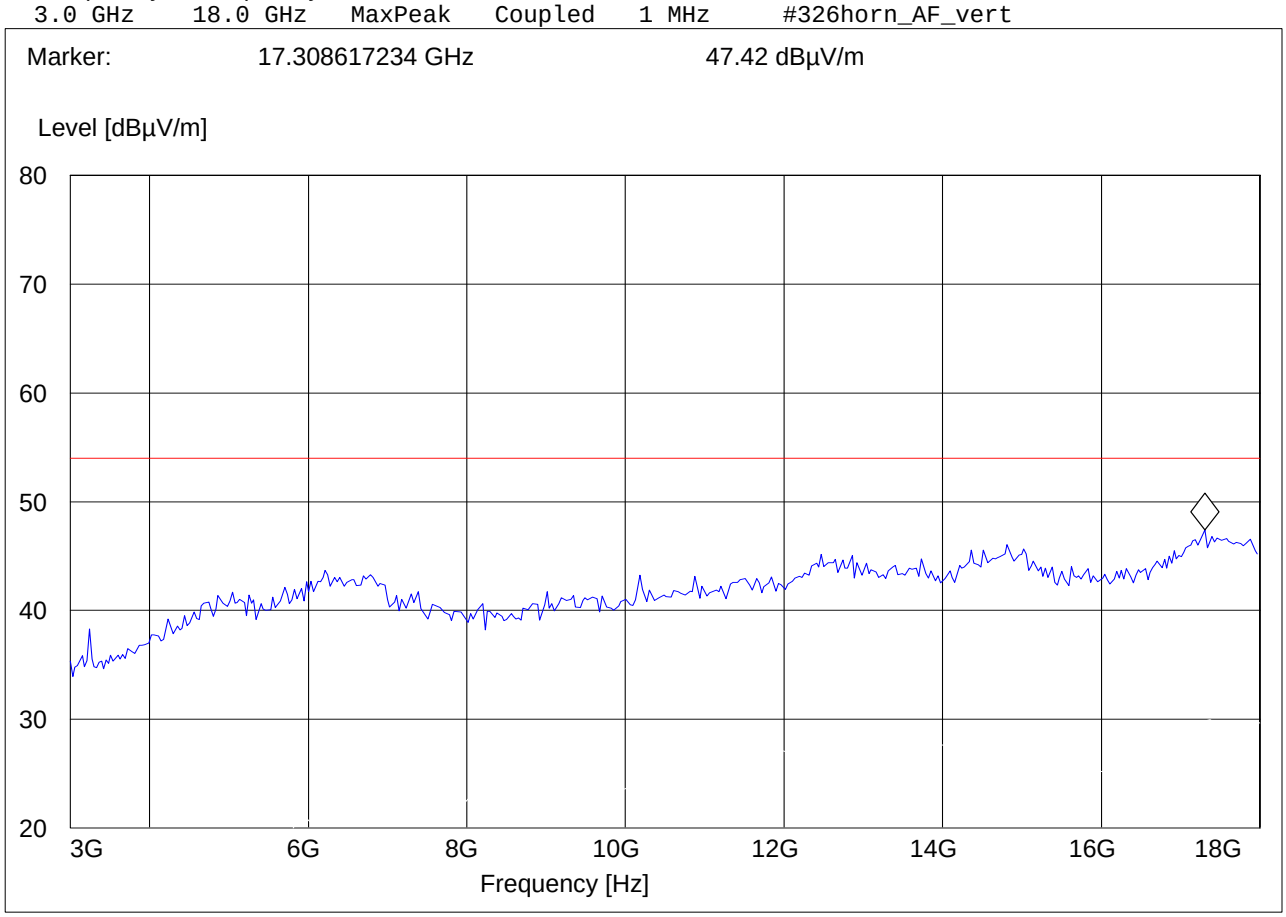
3-18GHz (2437MHz)

Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.6; 2437MHz; 40 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



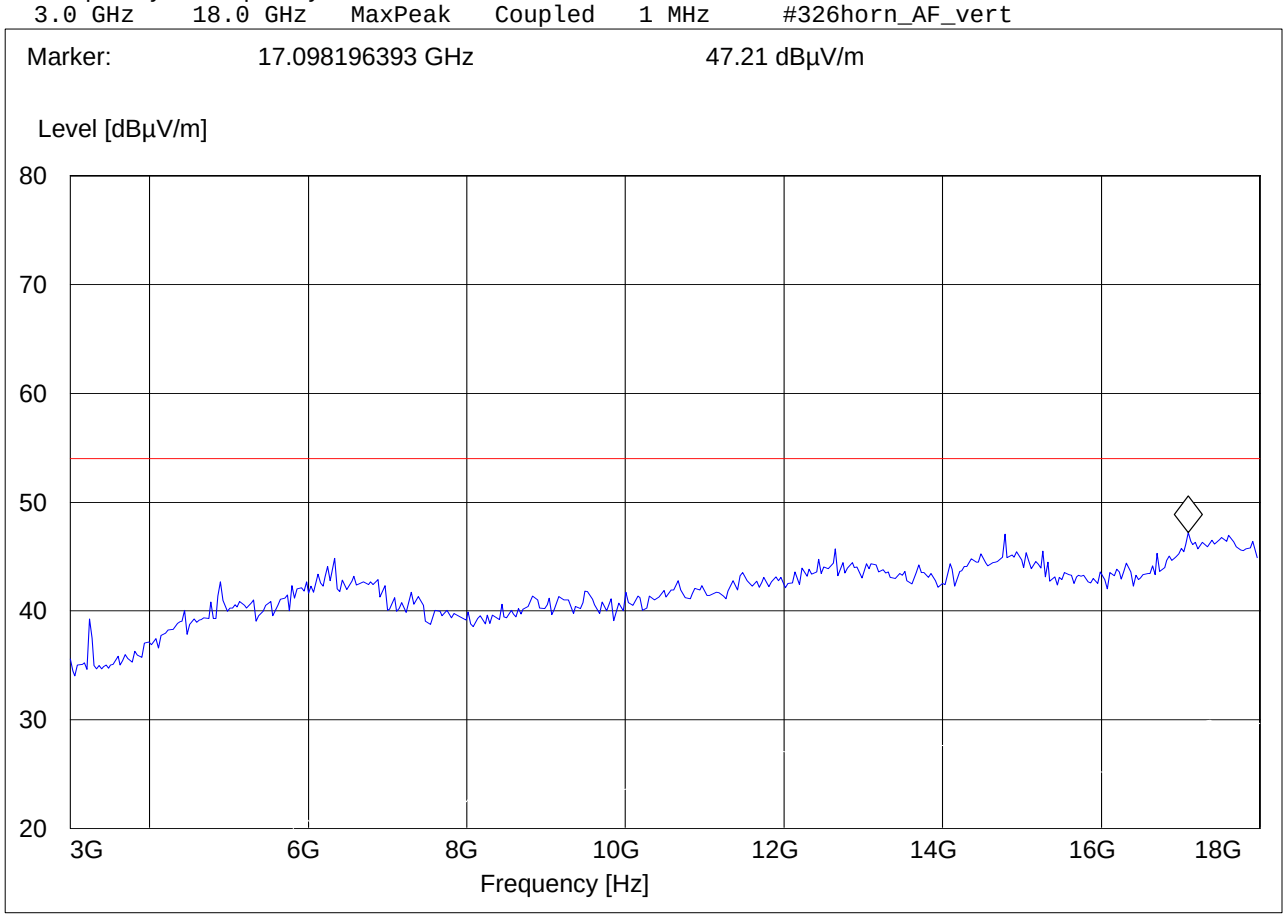
3-18GHz (2452MHz)

Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.10; 2452MHz; 40 MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



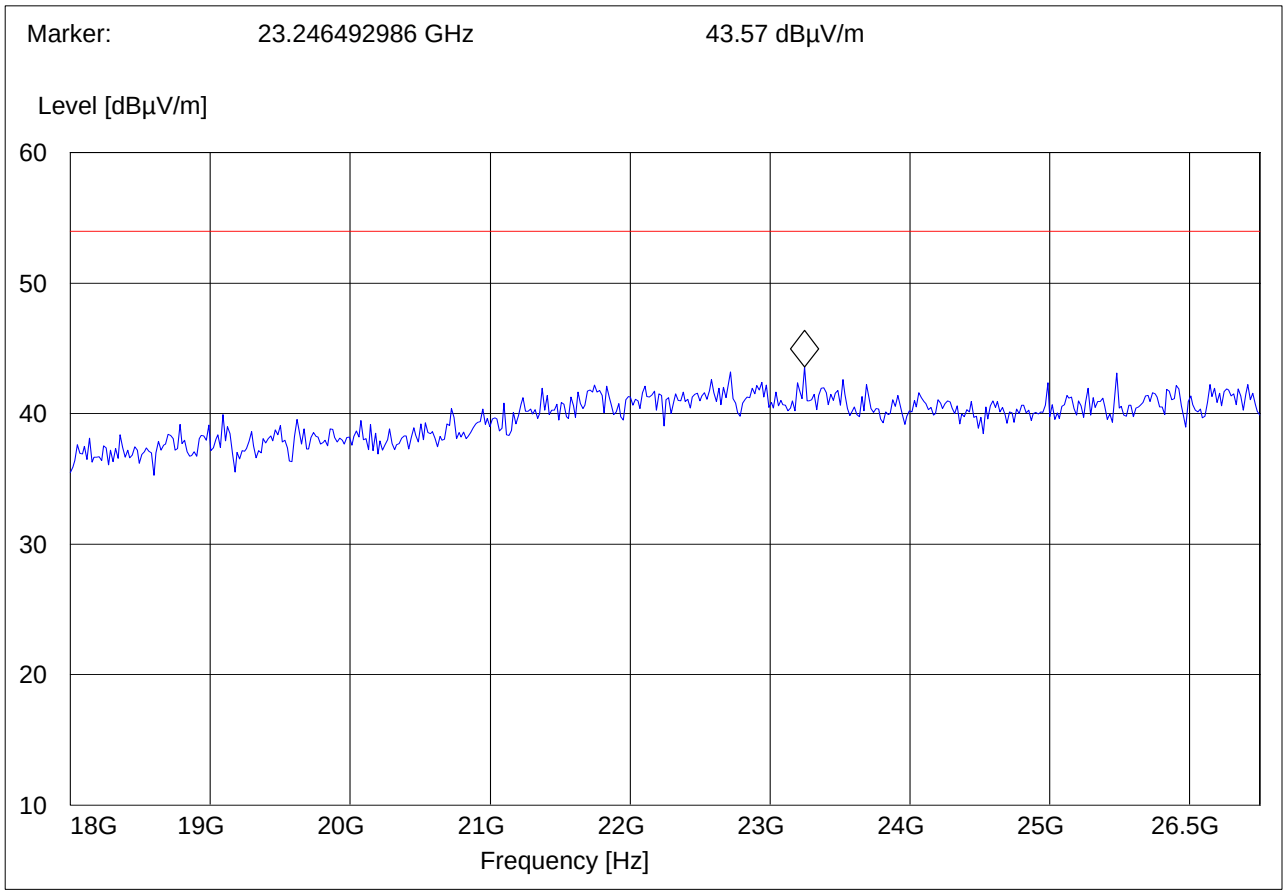
18-26.5GHz

Note: This plot is valid for low, mid, high channels (worst-case plot)
Note: Peak Reading vs. Average limit

```
EUT:              isap
Customer::        EB
Test Mode:        Ch.1; 2412MHz; 40MHz
ANT Orientation:  H
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_18-26.5G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
18.0 GHz	26.5 GHz	MaxPeak MaxPeak	Coupled	100 kHz	Horn # 3116_18-40G



5.3.4 RESULTS 802.11 (na) HT20 MODE

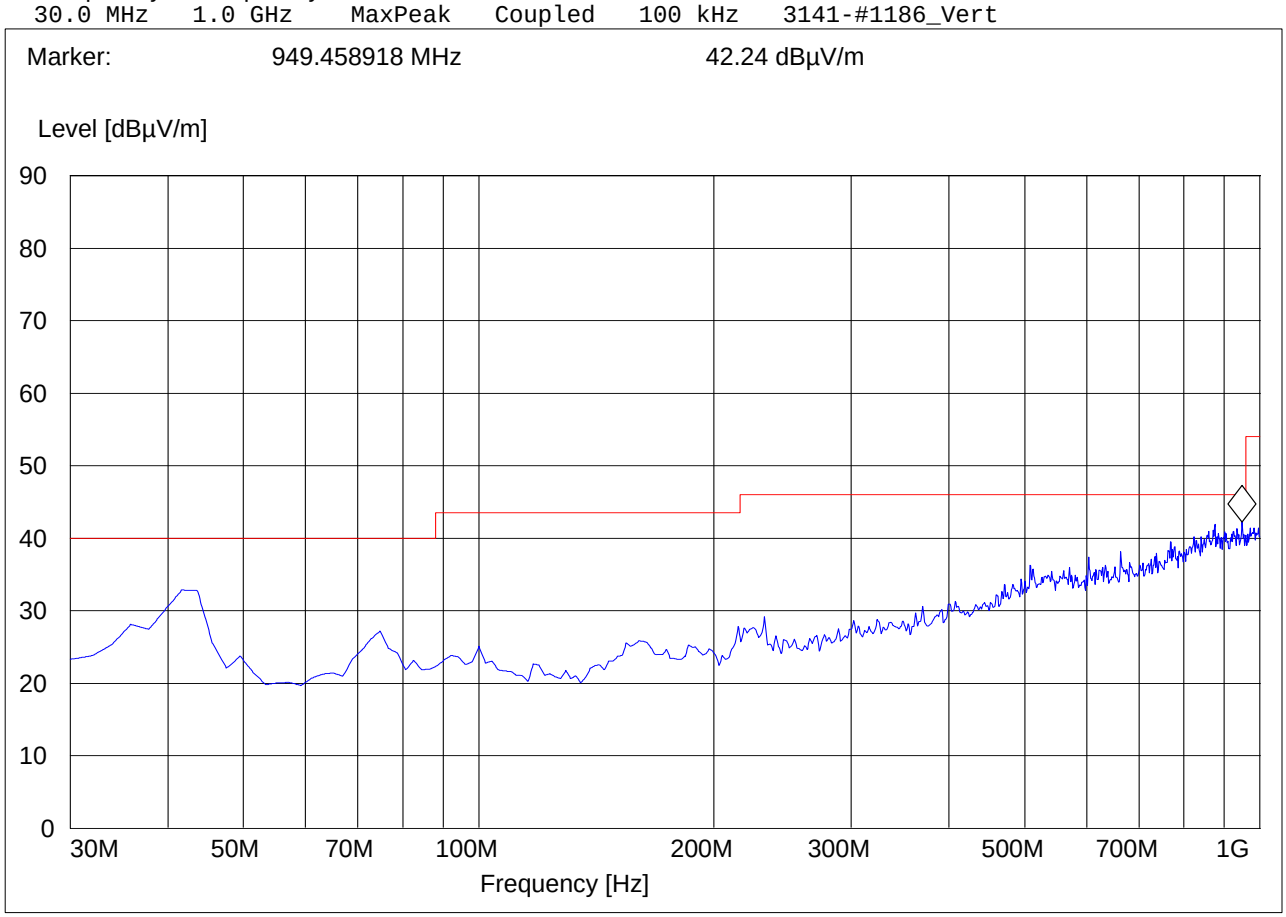
30MHz – 1GHz, Antenna: Vertical

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              isap
Customer::        EB
Test Mode:        5825MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Vert



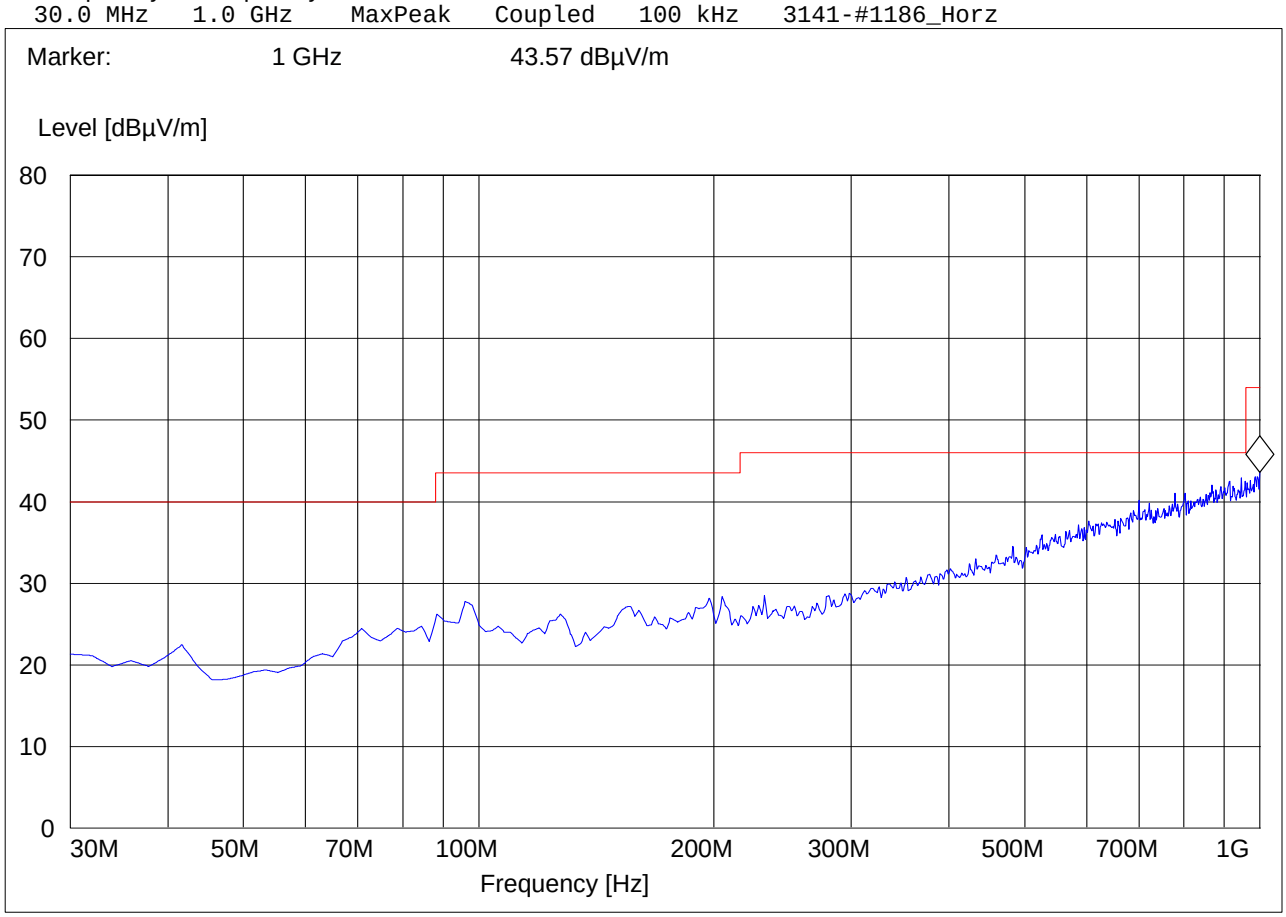
30MHz – 1GHz, Antenna: Horizontal

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              isap
Customer::        EB
Test Mode:        5825MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Hor"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Horz

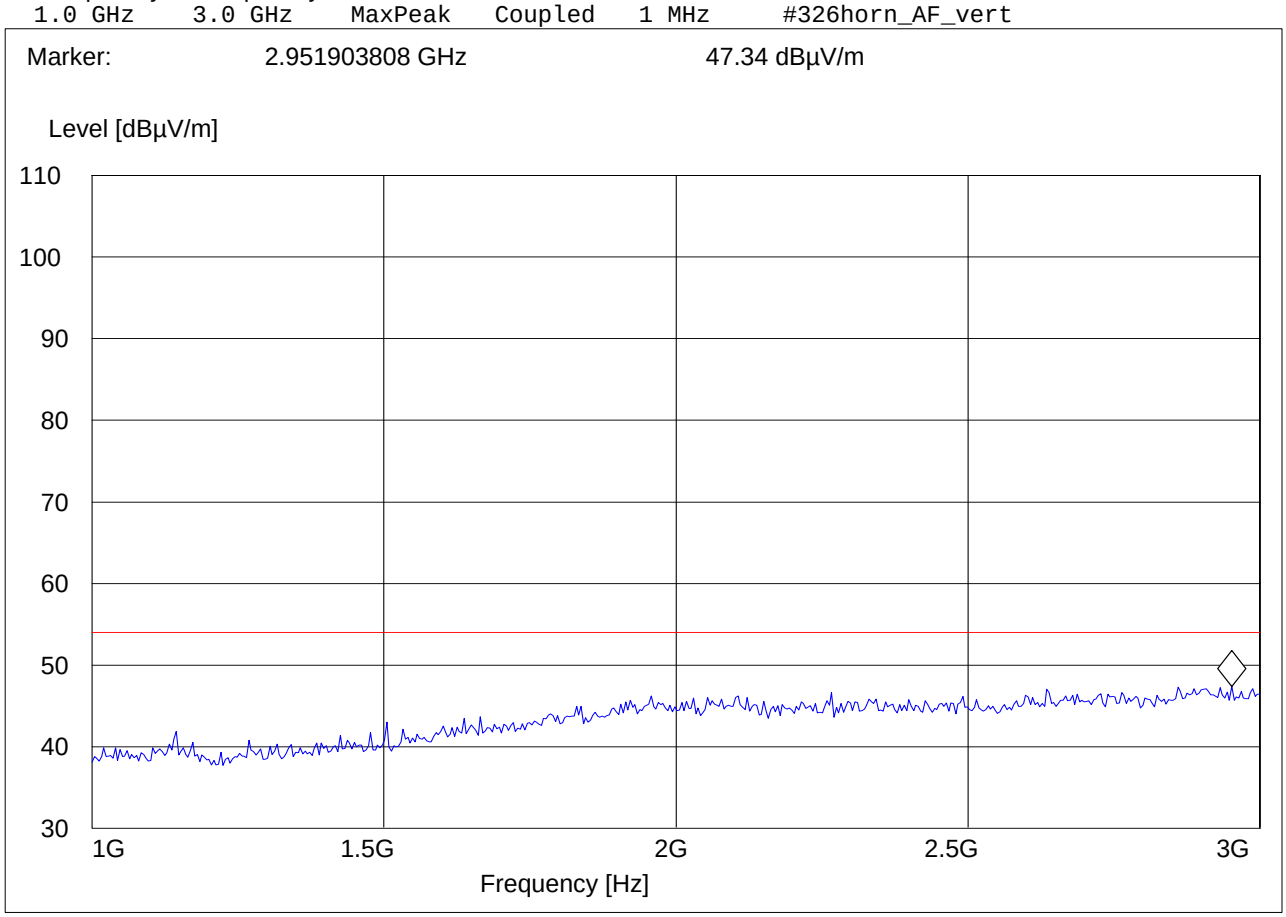


1-3GHz (5745MHz)

```
EUT:              isap
Customer::        EB
Test Mode:        5745MHz; 20MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

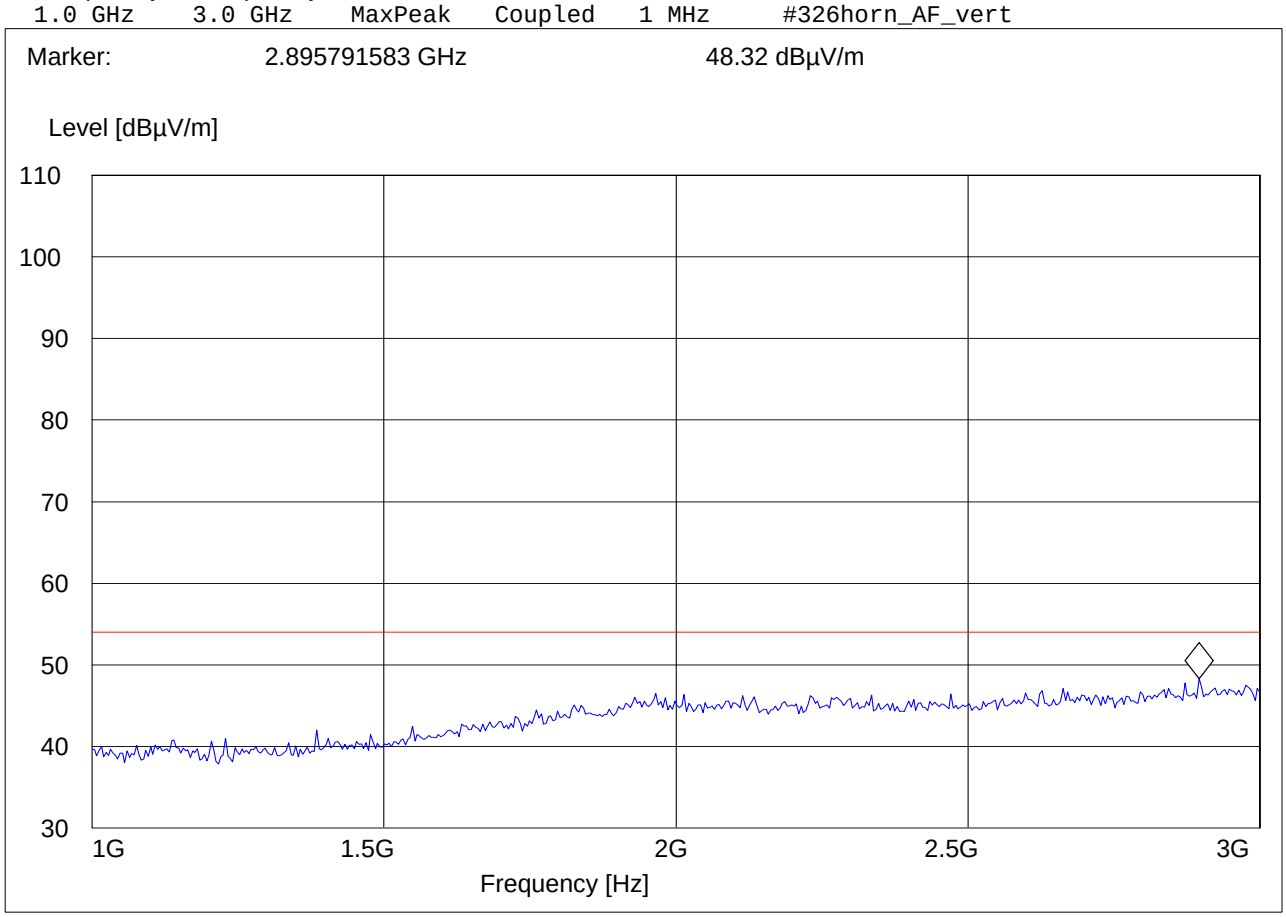


1-3GHz (5785MHz)

```
EUT:              isap
Customer::        EB
Test Mode:        5785MHz; 20MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

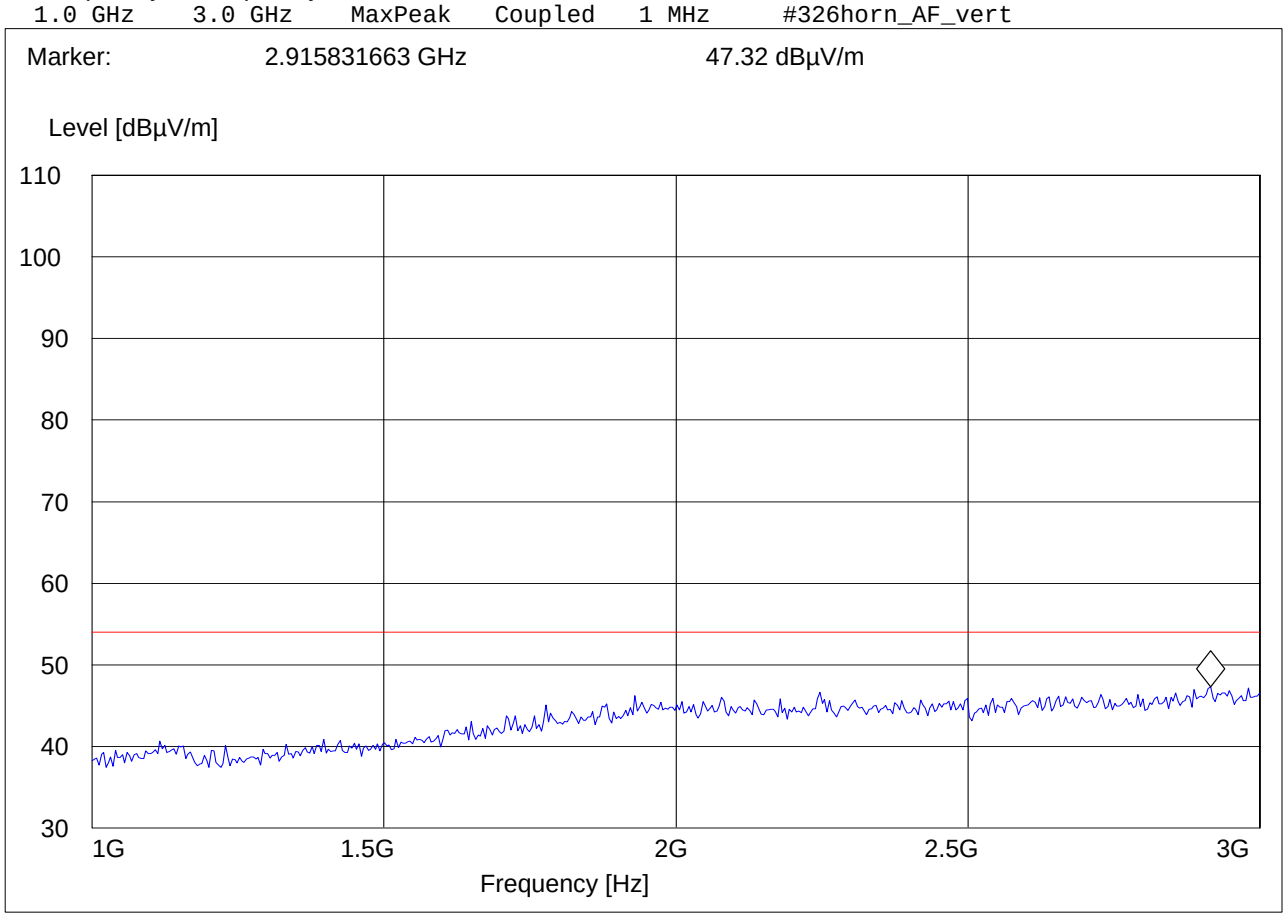


1-3GHz (5825MHz)

```
EUT:              isap
Customer::        EB
Test Mode:        5825MHz; 20MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

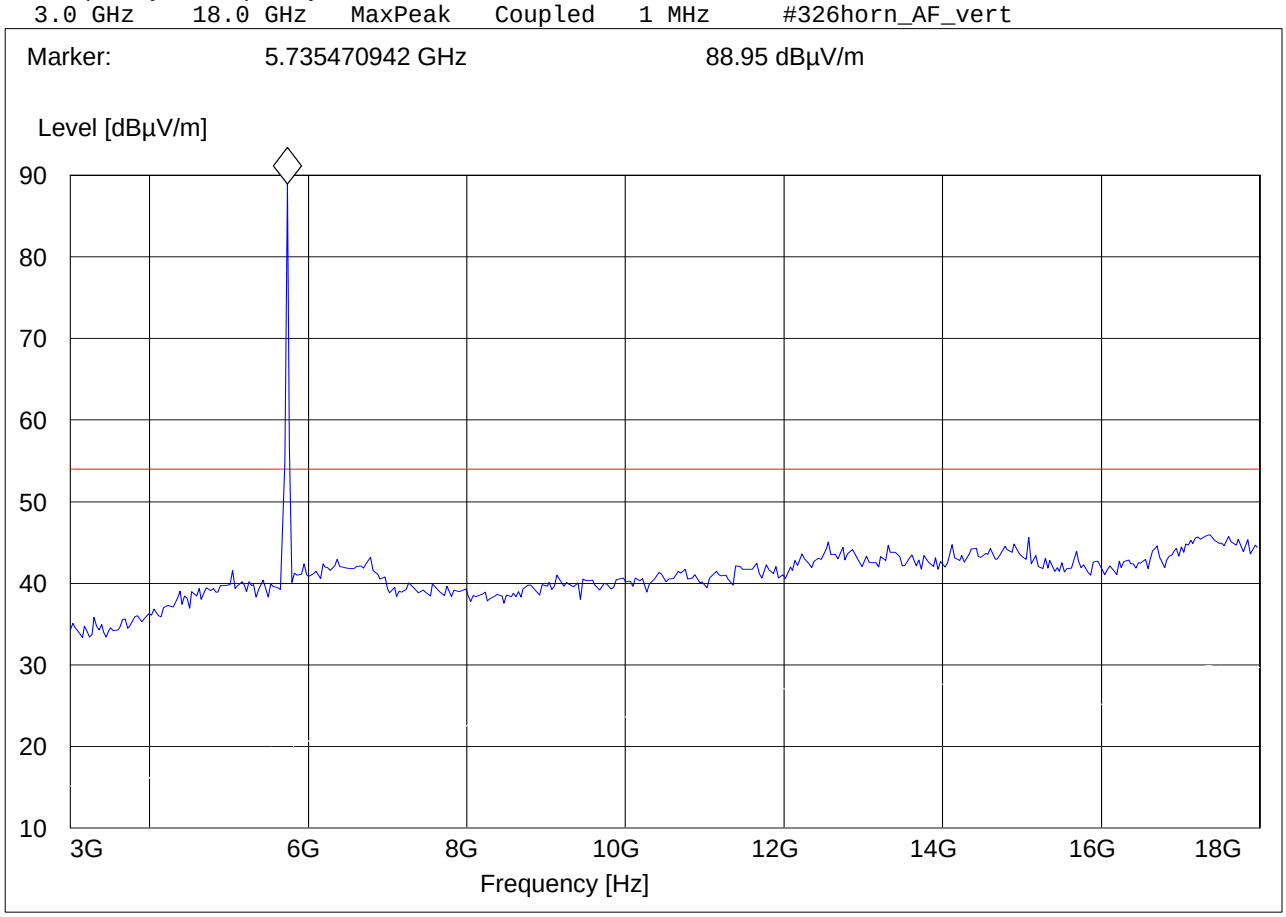


3-18GHz (5745MHz)

```
EUT:              isap
Customer::        EB
Test Mode:        5745MHz; 20MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

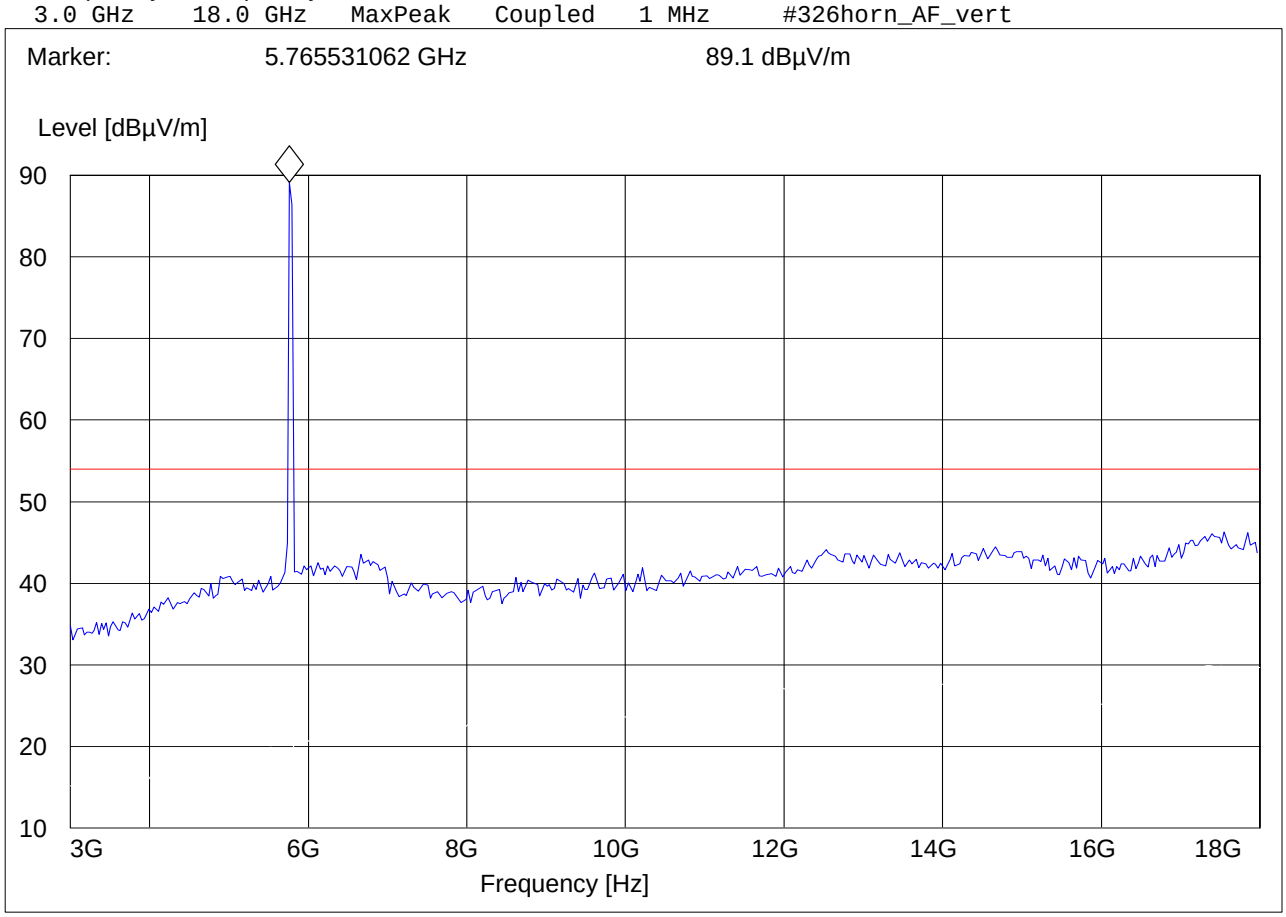


3-18GHz (5785MHz)

```
EUT:              isap
Customer::        EB
Test Mode:        5785MHz; 20MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert

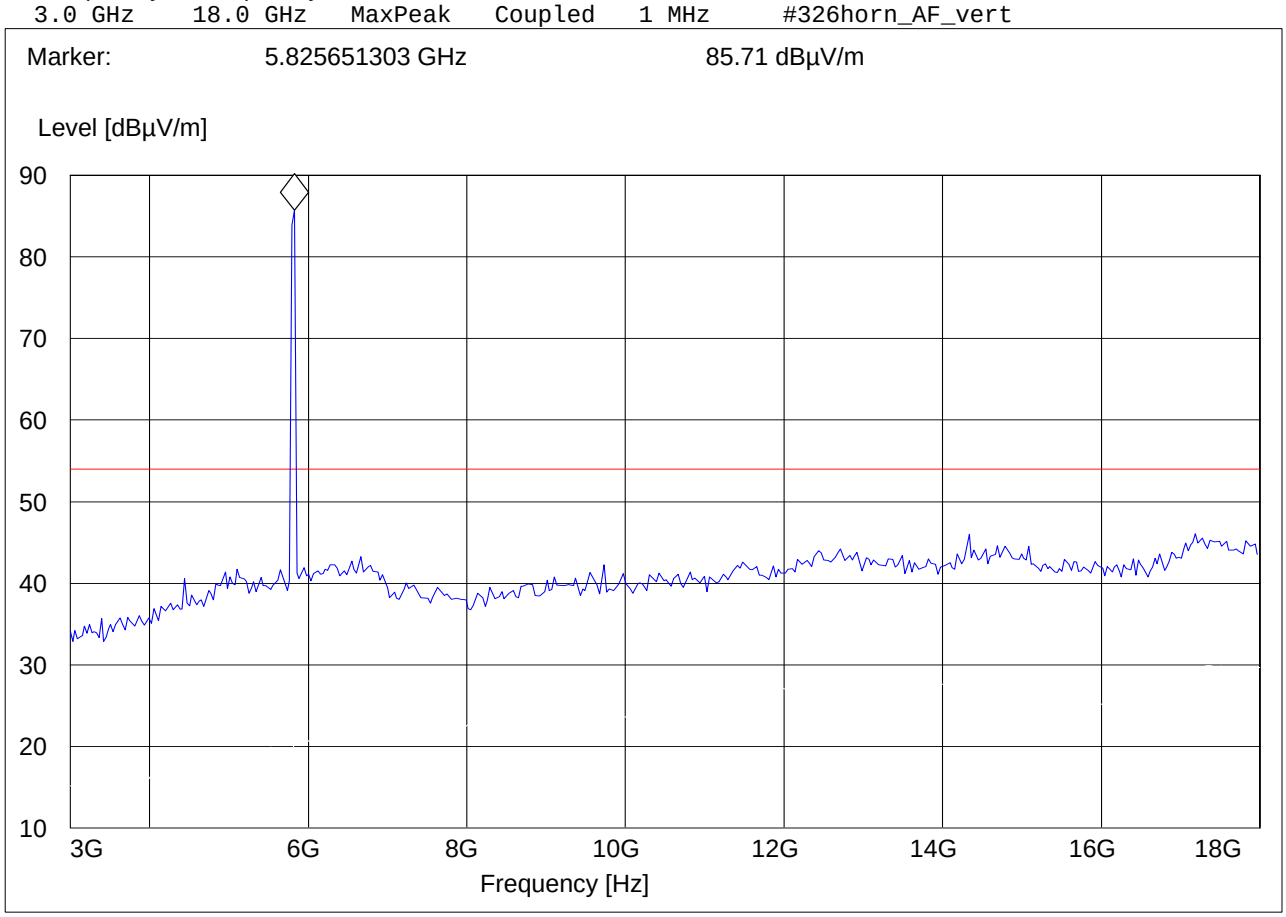


3-18GHz (5825MHz)

```
EUT:              isap
Customer::        EB
Test Mode:        5825MHz; 20MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



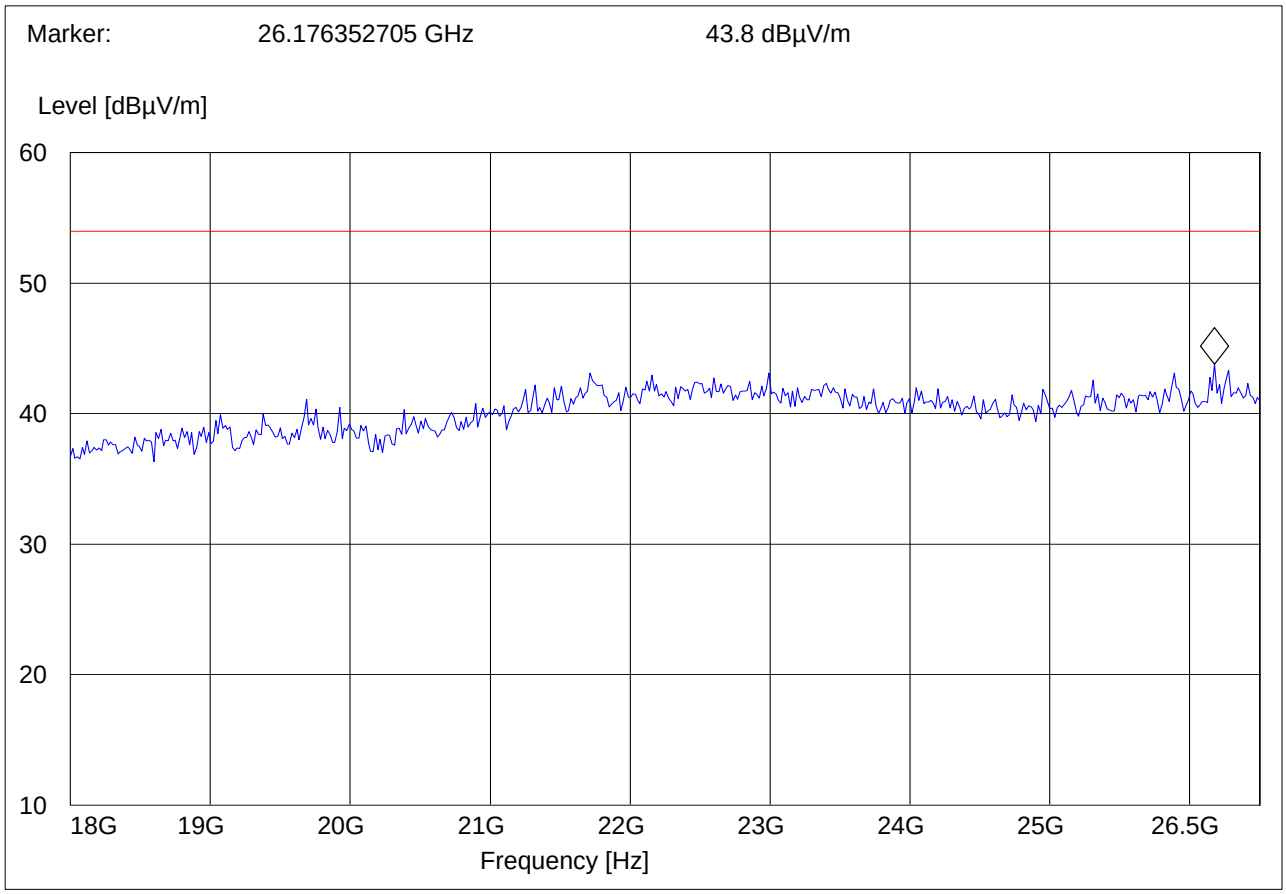
18-25GHz

Note: This plot is valid for low, mid, high channels (worst-case plot).
Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       EB
Test Mode:       5825MHz; 20MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_18-26.5G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
18.0 GHz	26.5 GHz	MaxPeak MaxPeak	Coupled	100 kHz	Horn # 3116_18-40G



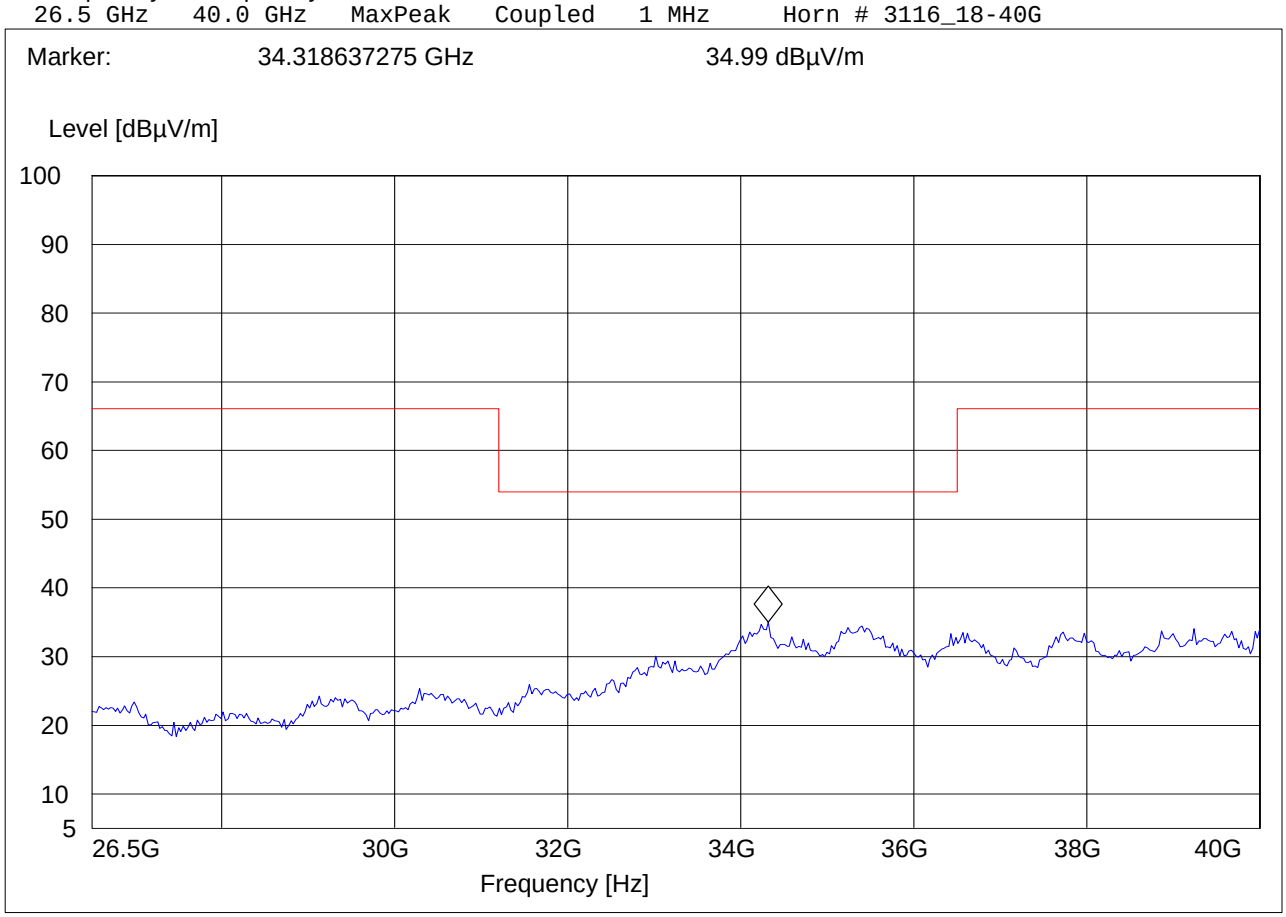
25-40GHz

Note: This plot is valid for low, mid, high channels (worst-case plot).
Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       EB
Test Mode:       5825MHz; 20MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC 15.407 26.5-40G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
26.5 GHz	40.0 GHz	MaxPeak	Coupled	1 MHz	Horn # 3116_18-40G

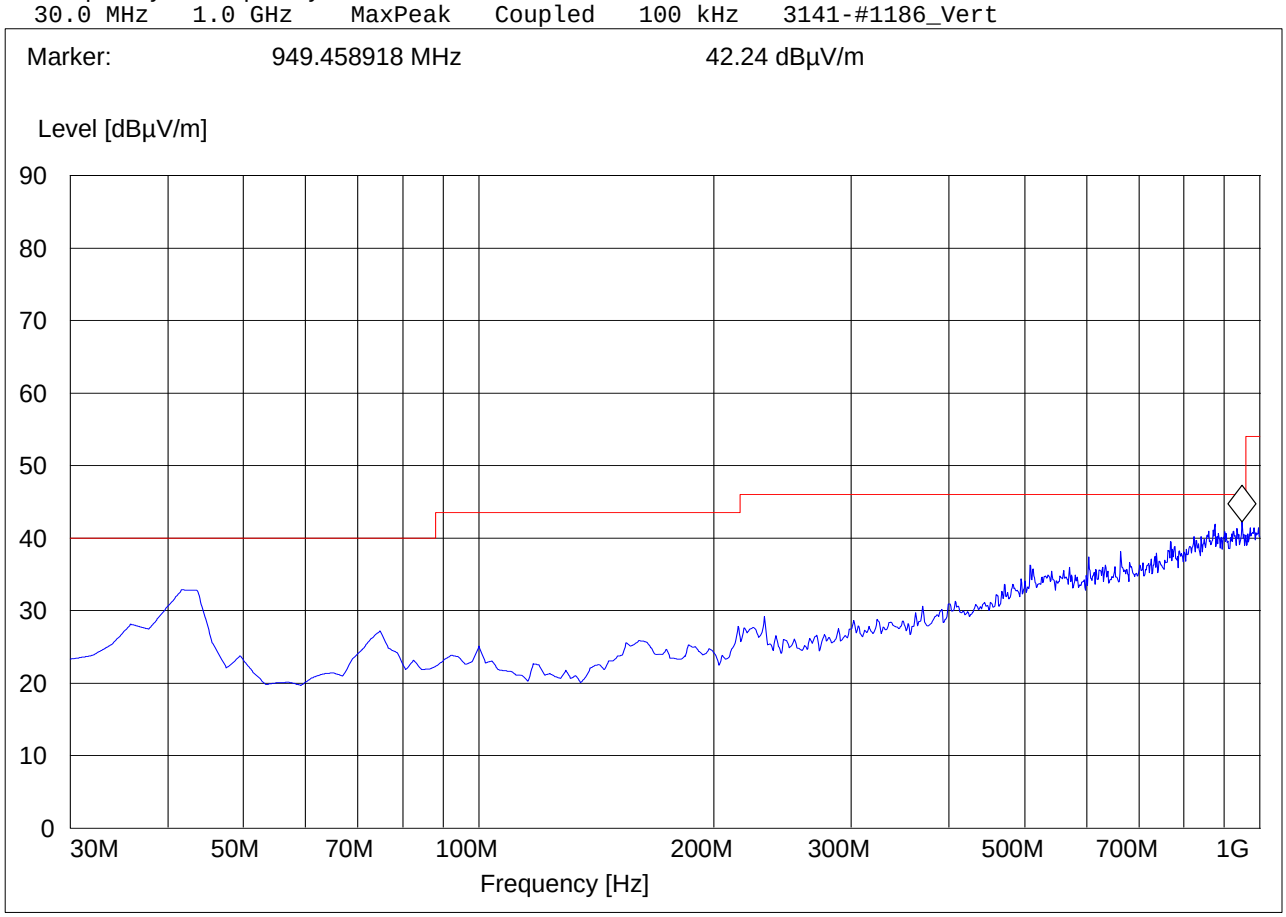


5.3.5 RESULTS 802.11 (na) HT40 MODE

```
EUT:              isap
Customer::        EB
Test Mode:        5835MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Vert



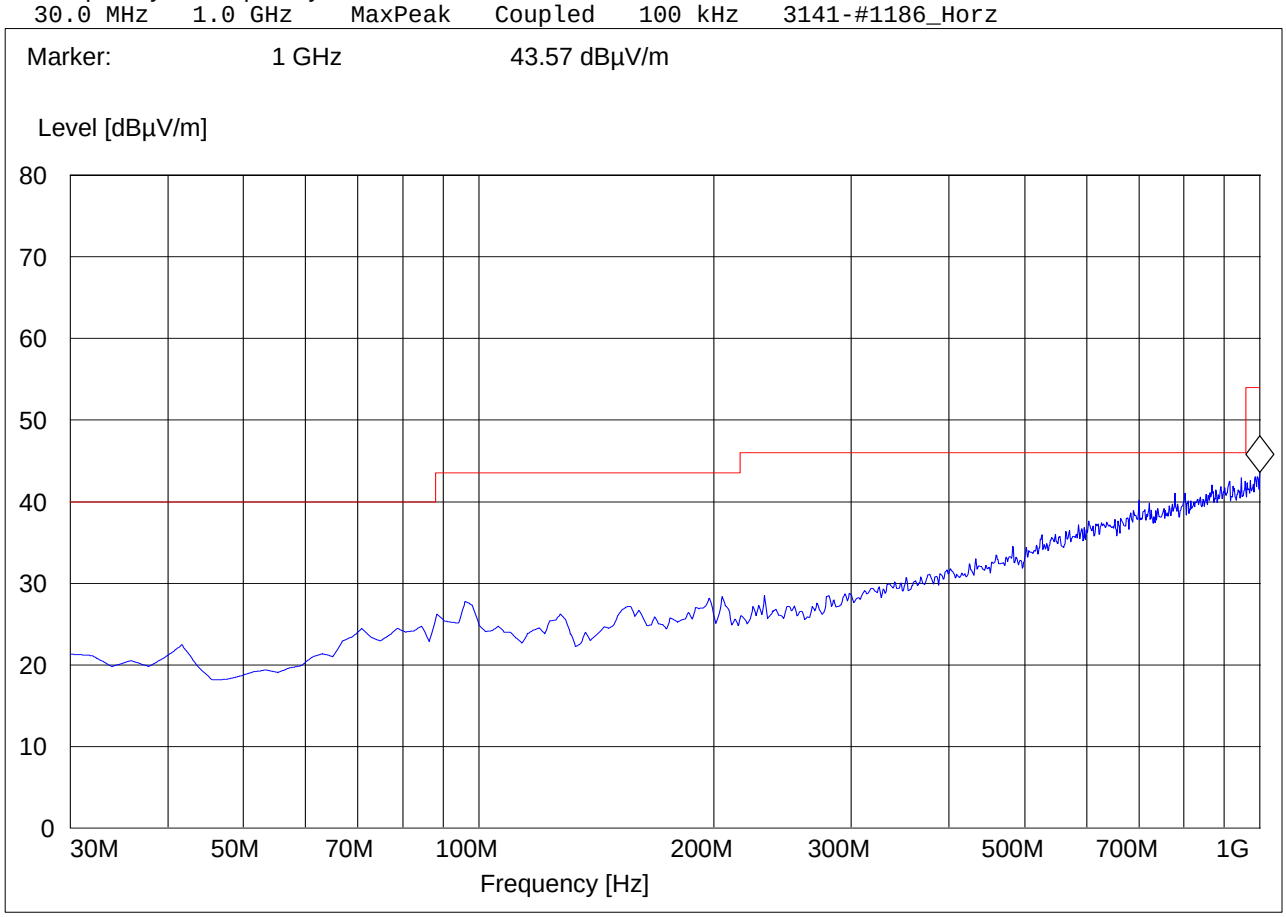
30MHz – 1GHz, Antenna: Horizontal

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              isap
Customer::        EB
Test Mode:        5835MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Chris
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Hor"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Horz



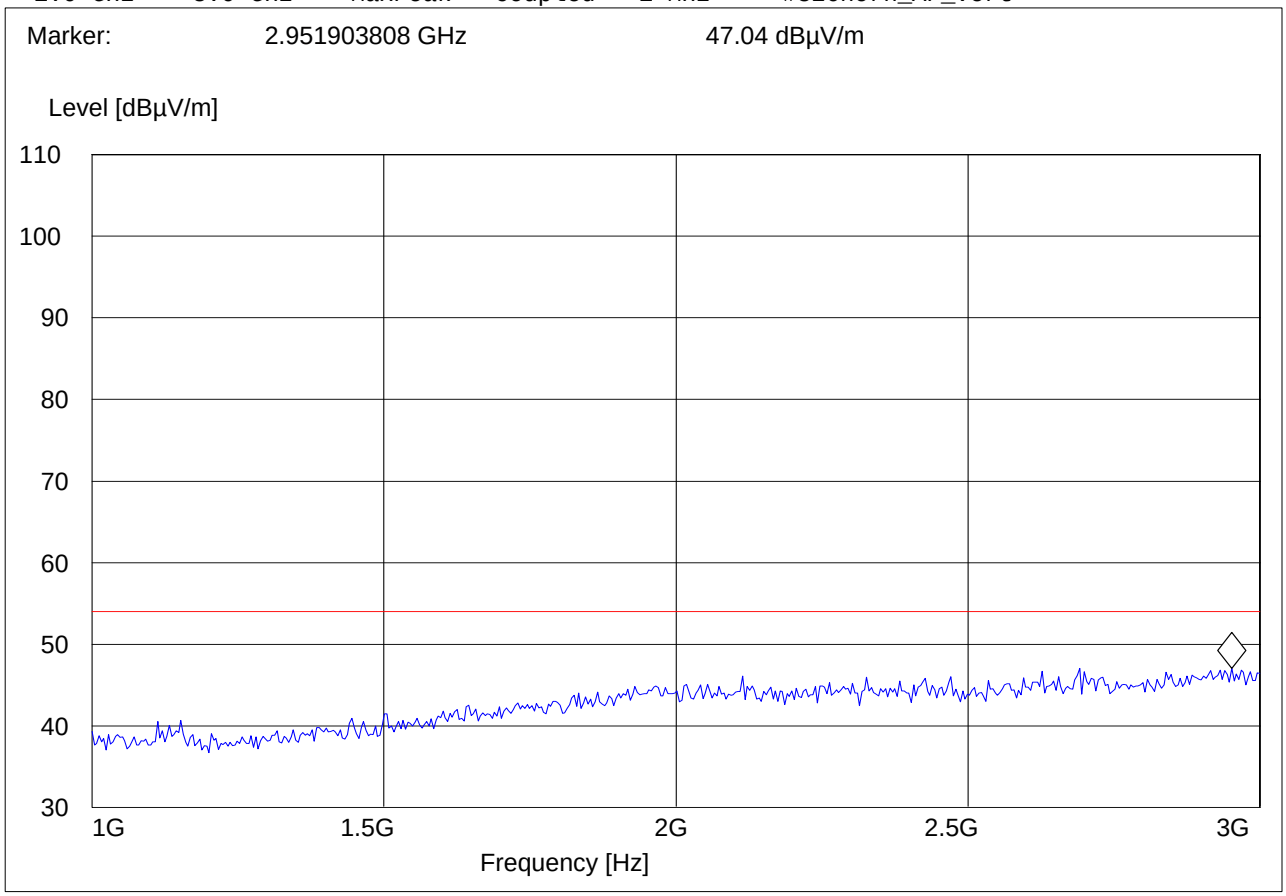
1-3GHz (5755MHZ)

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              isap
Customer::        EB
Test Mode:        5755MHz; 40MHz
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Sam
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



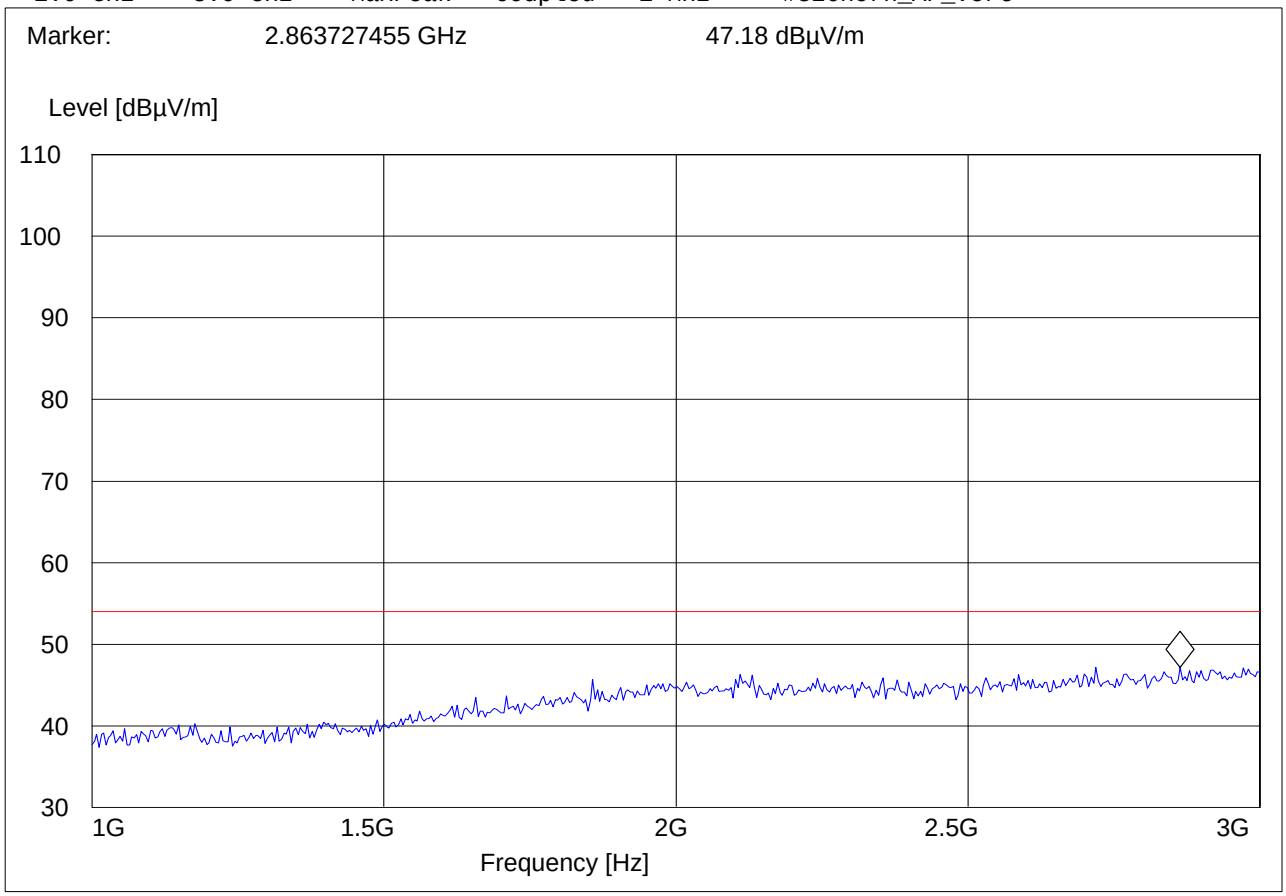
1-3GHz (5795MHZ)

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:             isap
Customer::       EB
Test Mode:       5795MHz; 40MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Sam
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



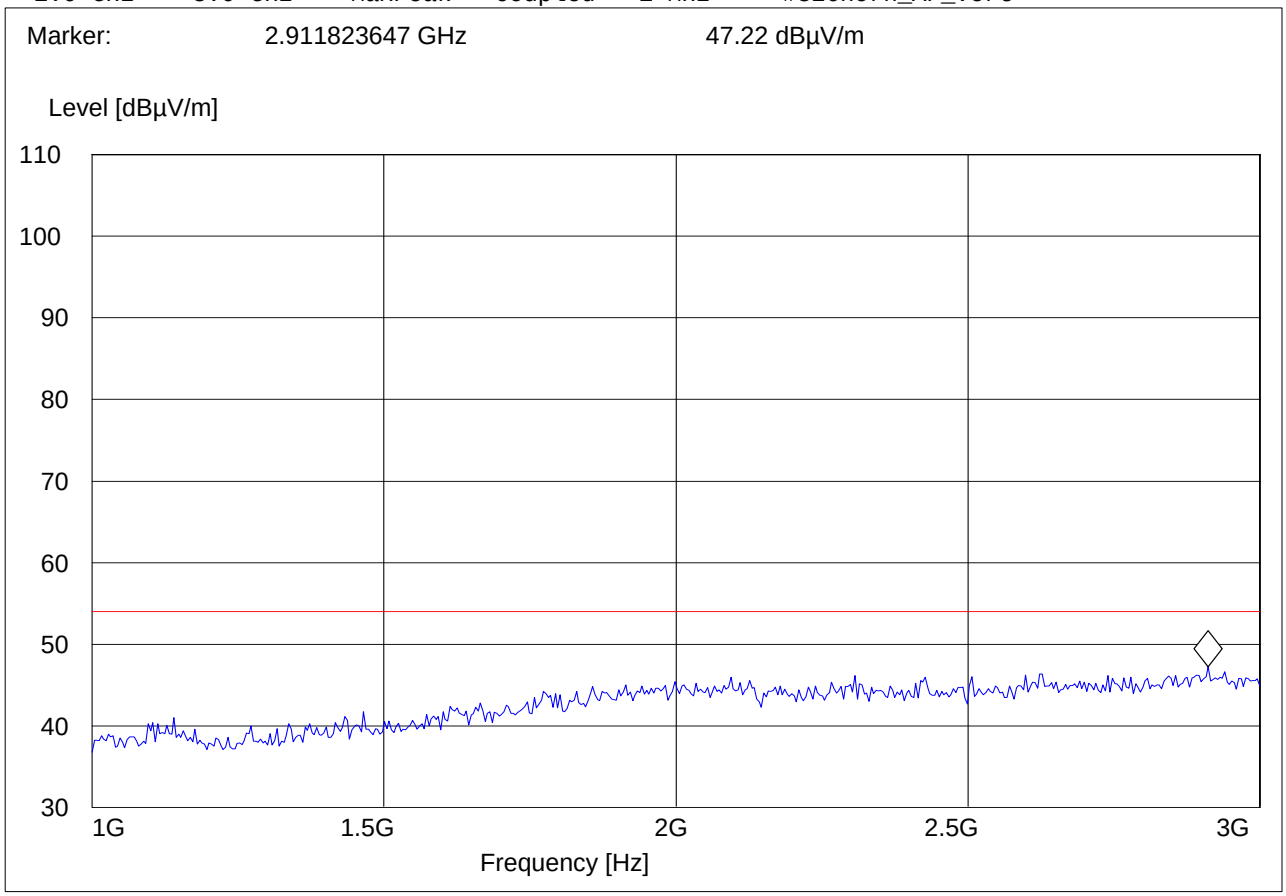
1-3GHz (5835MHZ)

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:             isap
Customer::       EB
Test Mode:       5835MHz; 40MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Sam
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_1-3G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	3.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



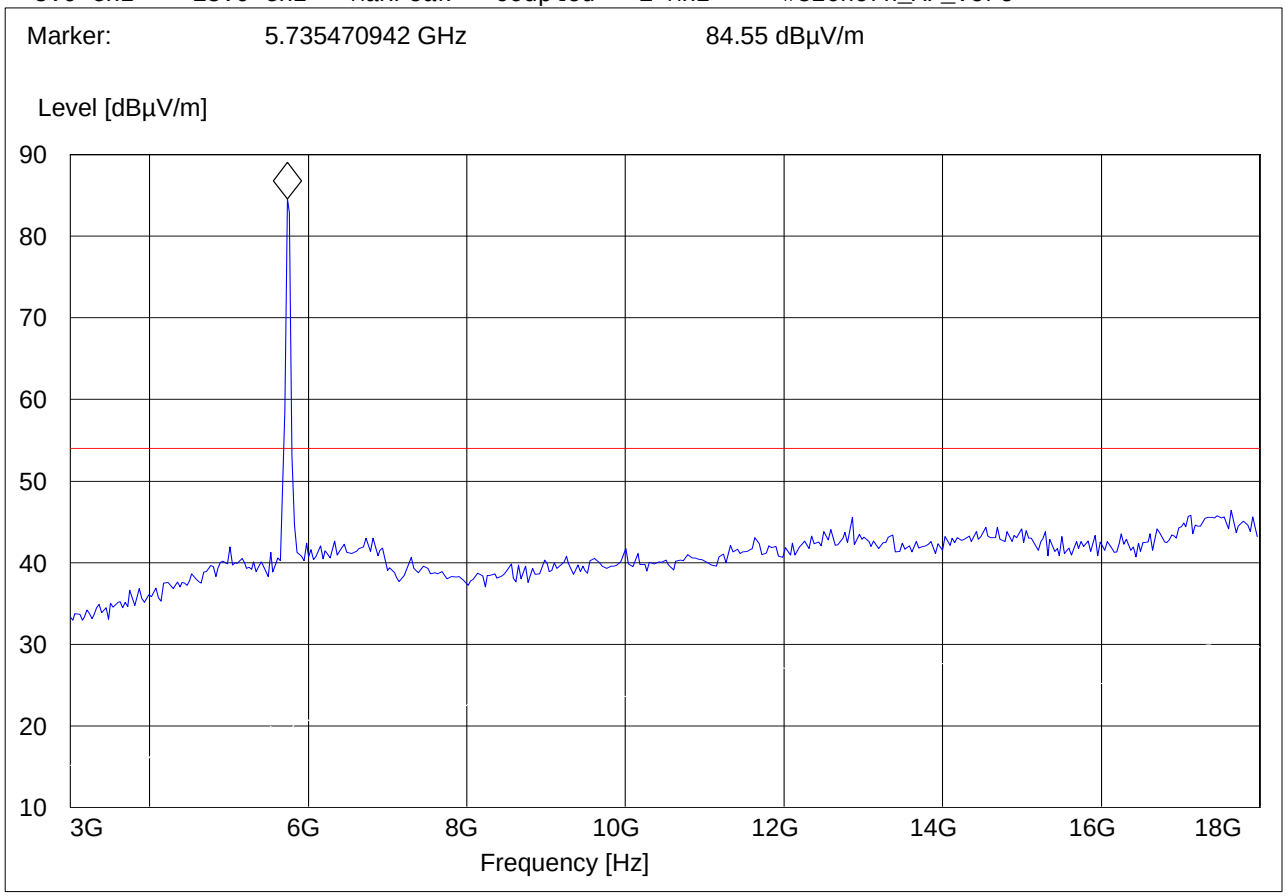
3-18GHz (5755MHZ)

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:             isap
Customer::       EB
Test Mode:       5755MHz; 40MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



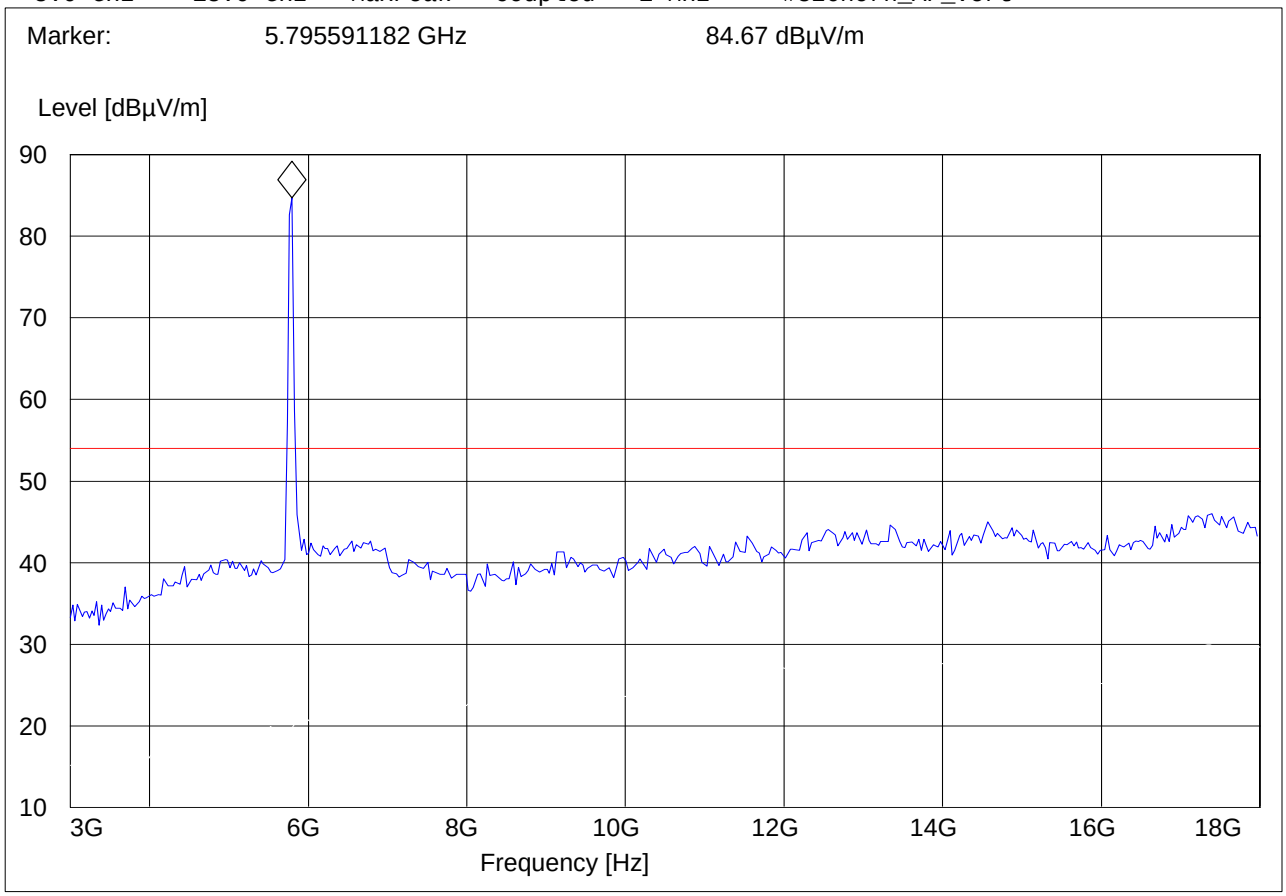
3-18GHz (5795MHZ)

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:             isap
Customer::       EB
Test Mode:       5795MHz; 40MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



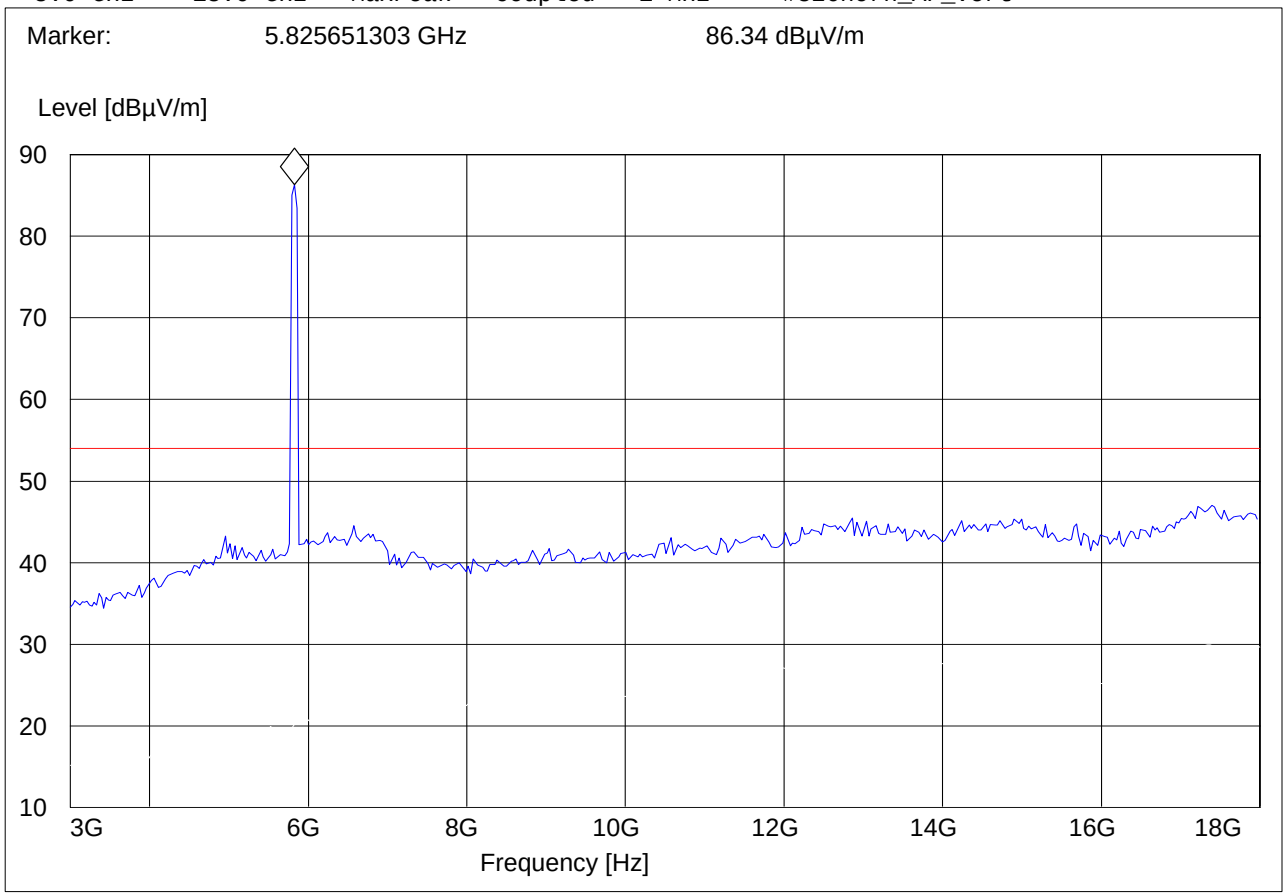
3-18GHz (5835MHZ)

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:             isap
Customer::       EB
Test Mode:       5835MHz; 40MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_3-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
3.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



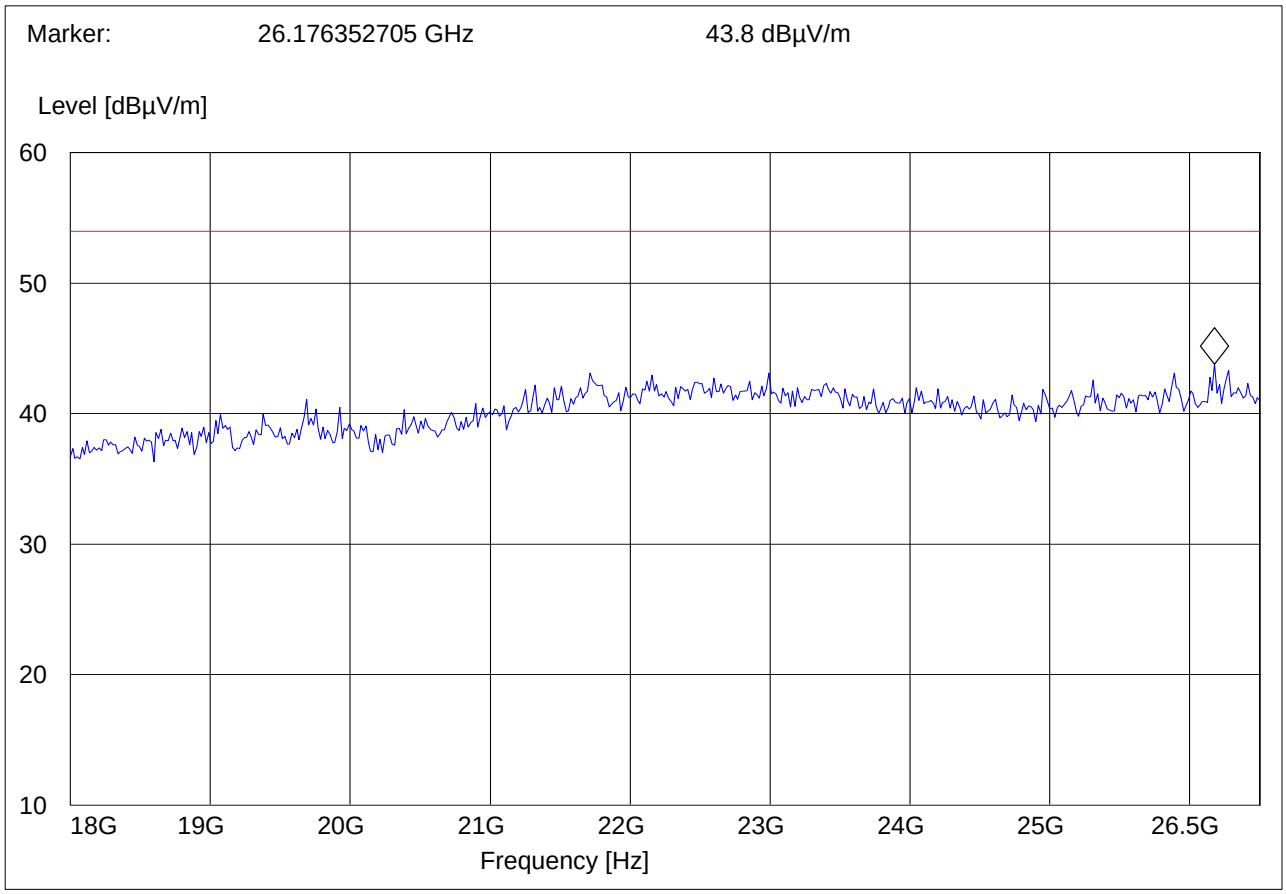
18-25GHz

Note: This plot is valid for low, mid, high channels (worst-case plot).
Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       EB
Test Mode:       5835MHz; 20MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_18-26.5G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
18.0 GHz	26.5 GHz	MaxPeak MaxPeak	Coupled	100 kHz	Horn # 3116_18-40G



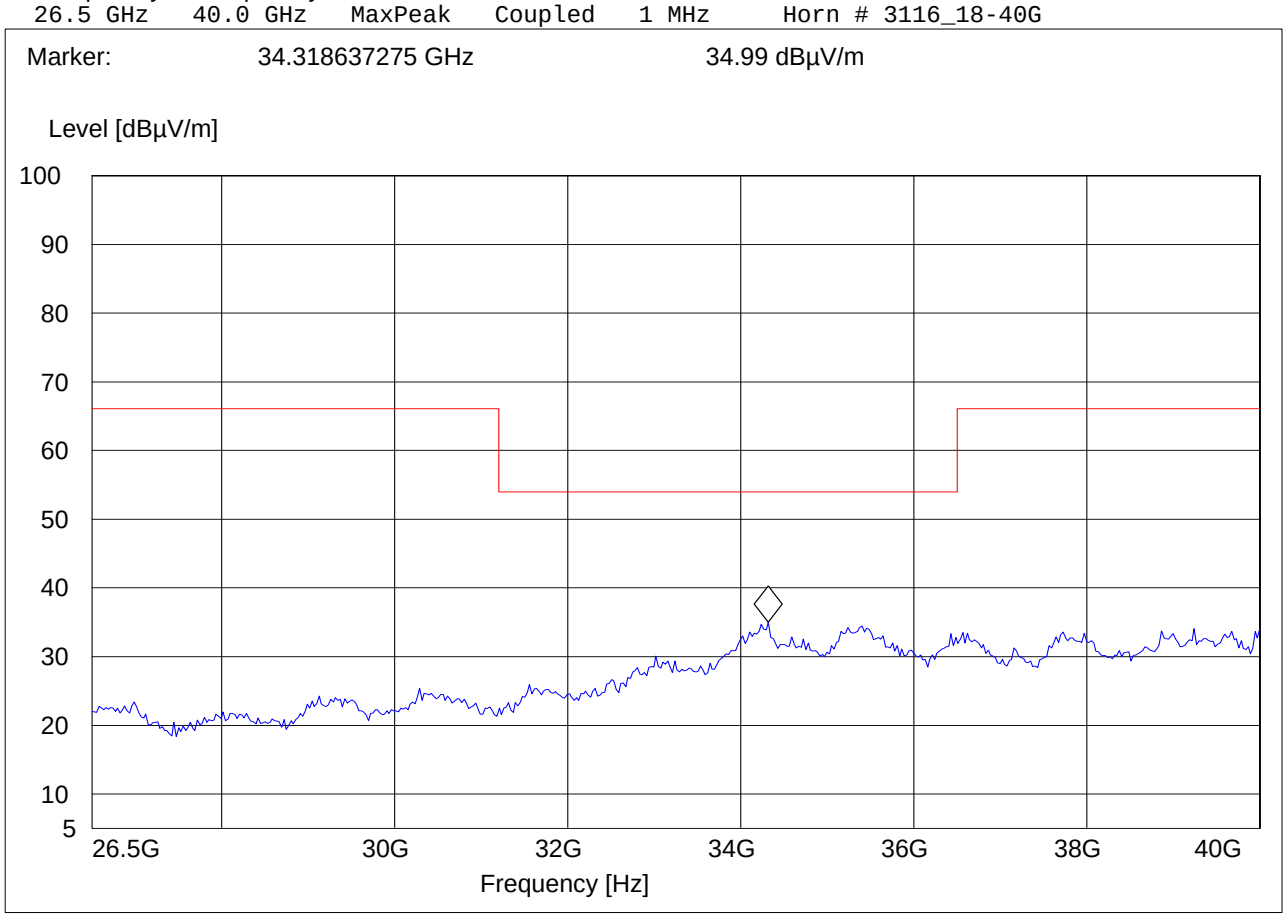
25-40GHz

Note: This plot is valid for low, mid, high channels (worst-case plot).
Note: Peak Reading vs. Average limit

```
EUT:             isap
Customer::       EB
Test Mode:       5835MHz; 20MHz
ANT Orientation: V
EUT Orientation: H
Test Engineer:   Chris
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC 15.407 26.5-40G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
26.5 GHz	40.0 GHz	MaxPeak	Coupled	1 MHz	Horn # 3116_18-40G



5.4 Receiver Spurious Emission § 15.209/RSS210

5.4.1 Limits

Frequency (MHz)	Field strength (µV/m)	Measurement distance (m)
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
above 960	500	3

NOTE:

1. The radiated emissions were done with different settings, using the relevant pre-amplifiers for the relevant frequency ranges. This is the reason that the graphs show different noise levels. In the range between 3 and 25 GHz very short cable connections to the antenna was used to minimize the noise level.

2. All measurements are done in peak mode using an average limit unless specified with the plots.

3. There are no measurable emissions up to 18GHz in Rx mode.

5.4.2 RESULTS 802.11 (ng) HT20 MODE Chain AB

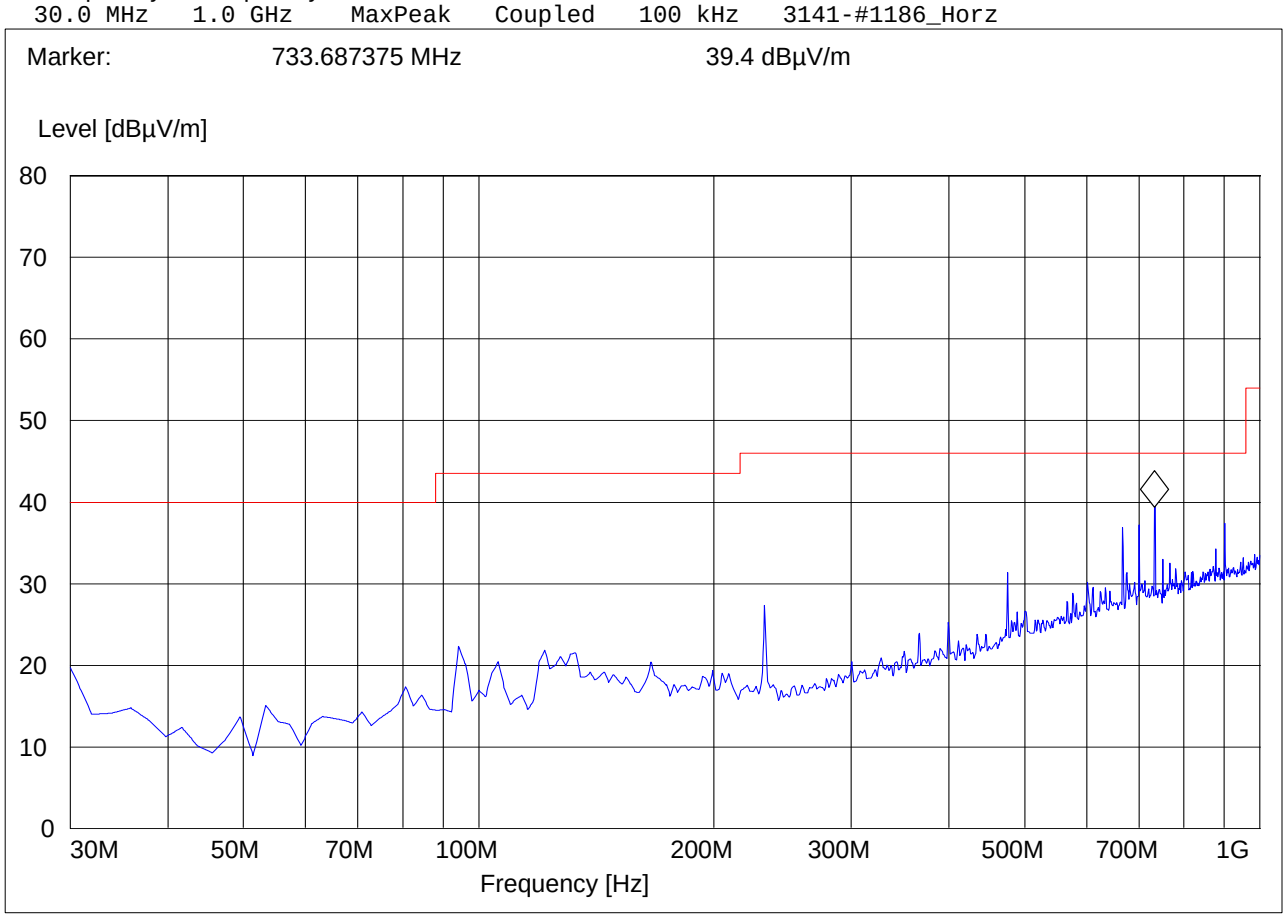
30MHz – 1GHz, Antenna: Horizontal

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              015
Customer::        Elektrobit
Test Mode:        RX mode; 20 MHz BW
ANT Orientation:  H
EUT Orientation:  H
Test Engineer:    Satya
Voltage:         AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Hor"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Horz



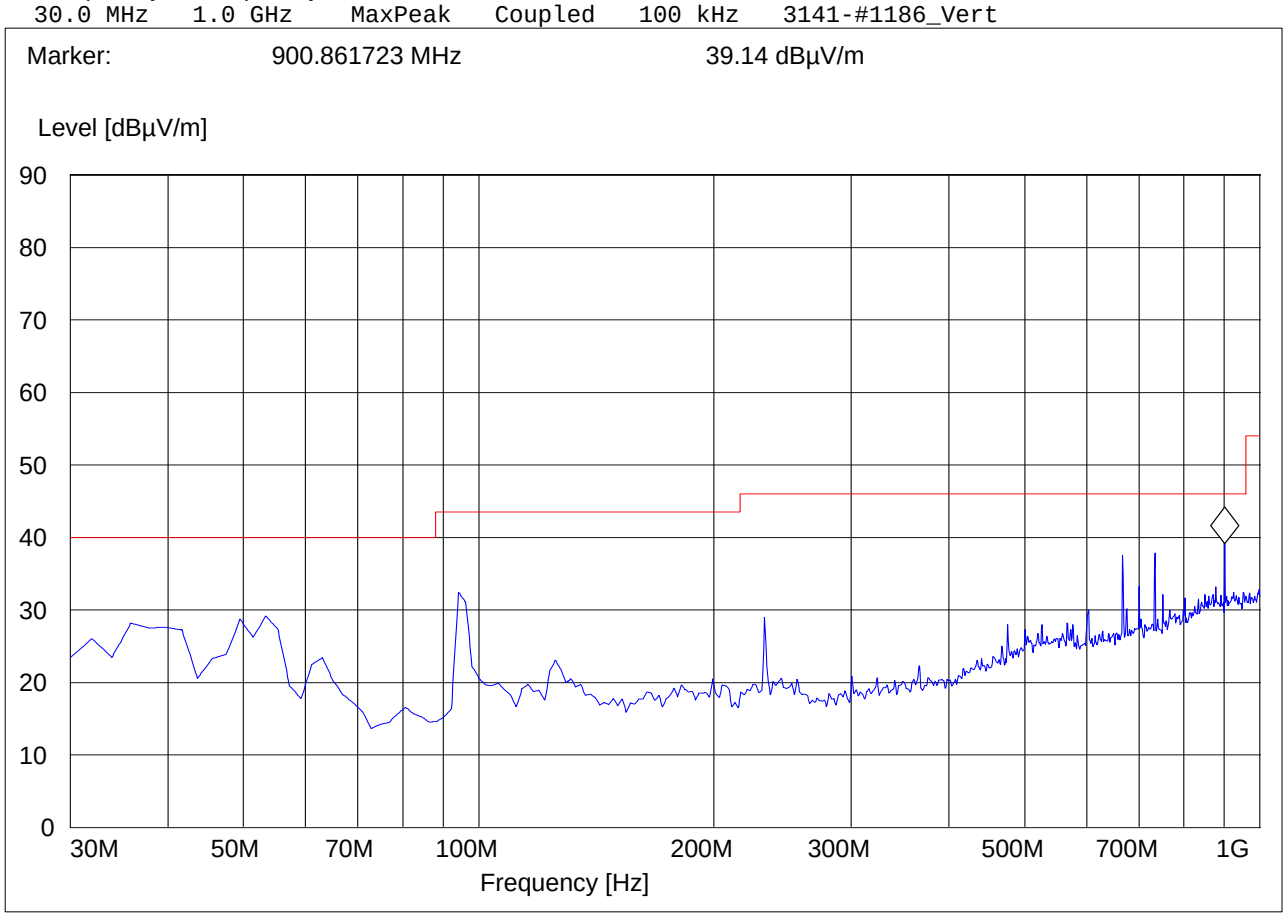
30MHz – 1GHz, Antenna: Vertical

Note: This plot is valid for low, mid, high channels (worst-case plot).

EUT: 015
Customer:: Elektrobit
Test Mode: RX mode; 20 MHz BW
ANT Orientation: V
EUT Orientation: H
Test Engineer: Satya
Voltage: AC
Comments:

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Vert



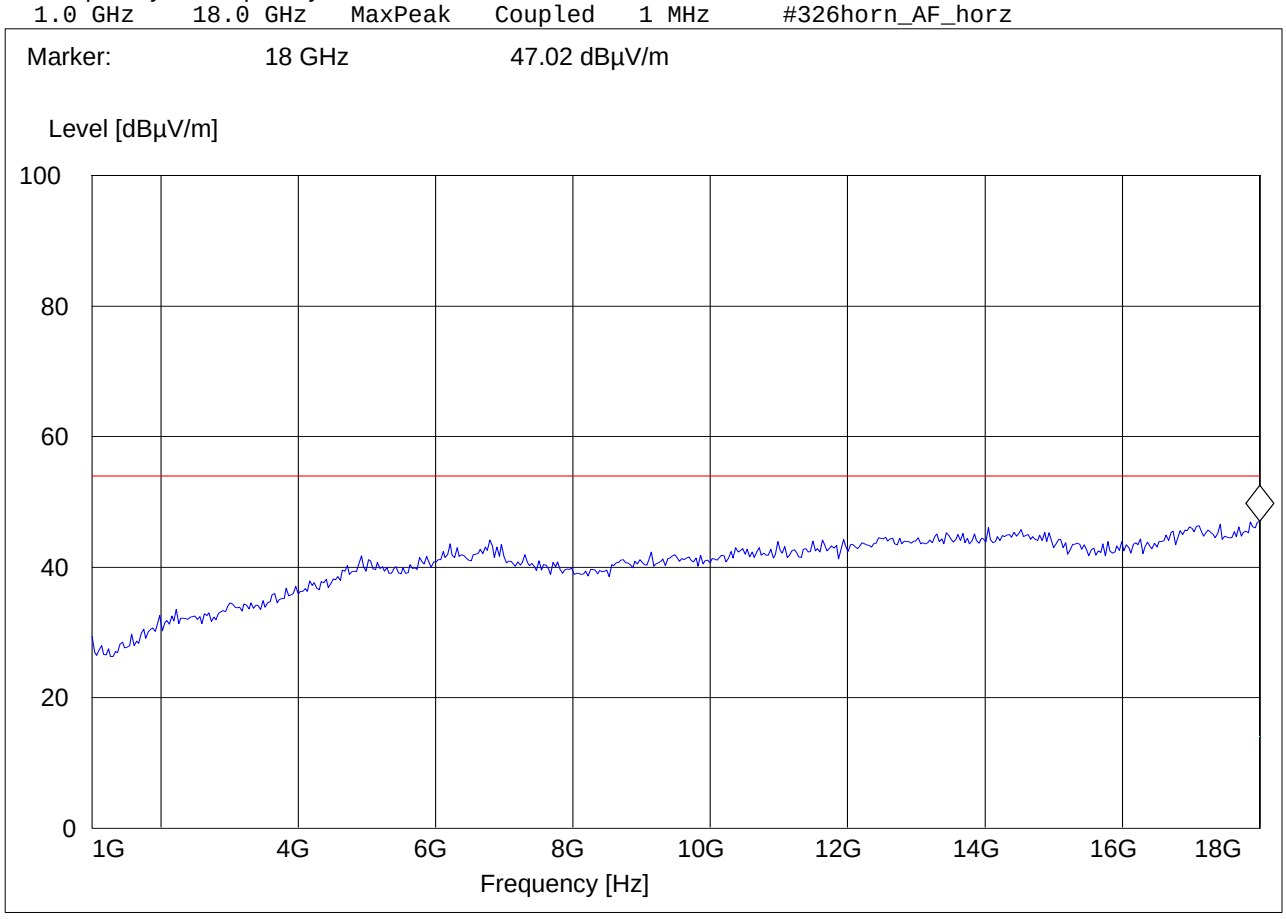
1-18GHz

Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

EUT / Description: 015
Manufacturer: Elektrobit
Operation Mode: RX mode; 20 MHz BW
ANT Orientation: : H
EUT Orientation:: H
Test Engineer: Chris
Voltage: AC
Comments::

SWEEP TABLE: "FCC 15.407 1-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



5.4.3 RESULTS 802.11 (ng) HT40 MODE

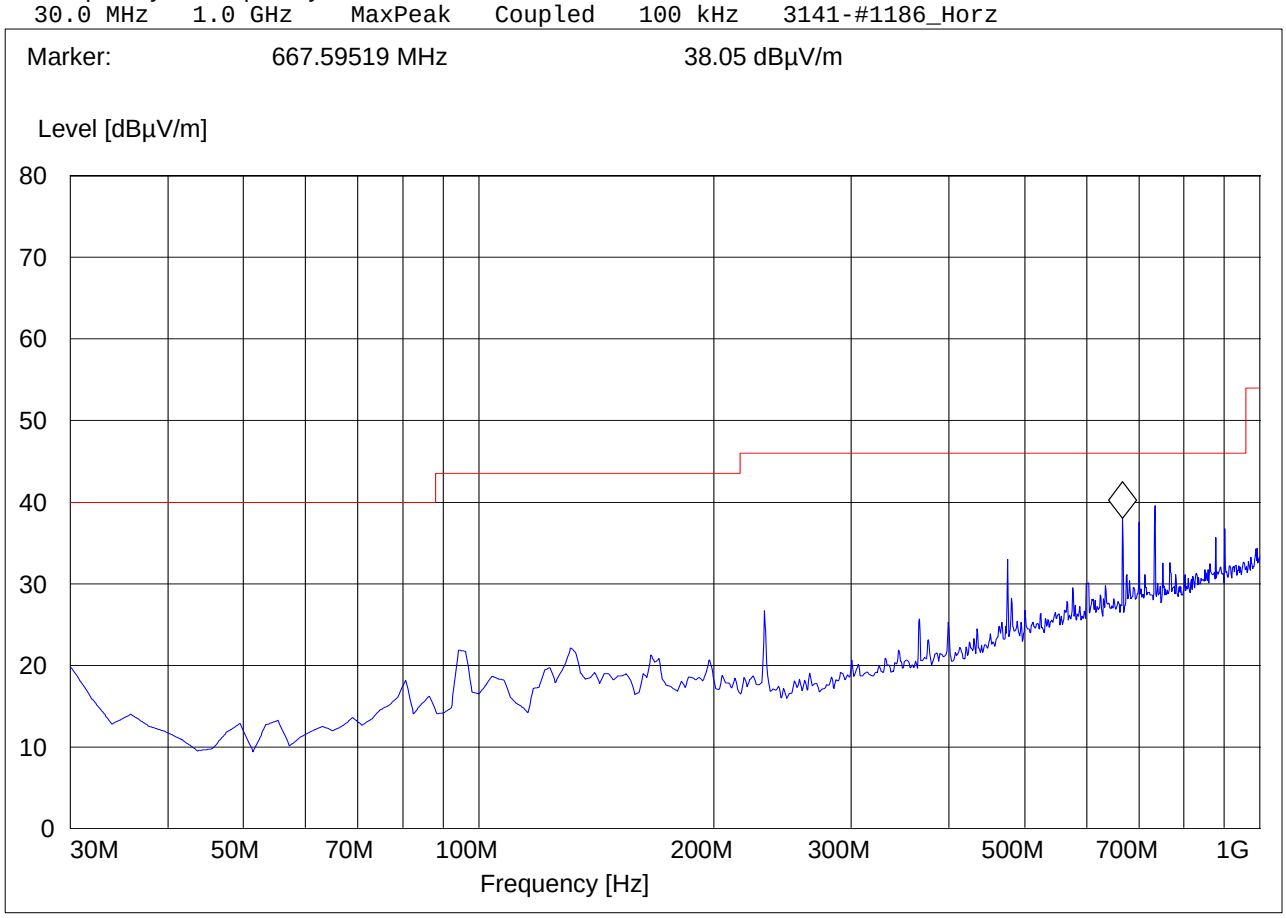
30MHz – 1GHz, Antenna: Horizontal

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              015
Customer::        Elektrobit
Test Mode:        RX mode
ANT Orientation:  H
EUT Orientation:  H
Test Engineer:    Satya
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Hor"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Horz



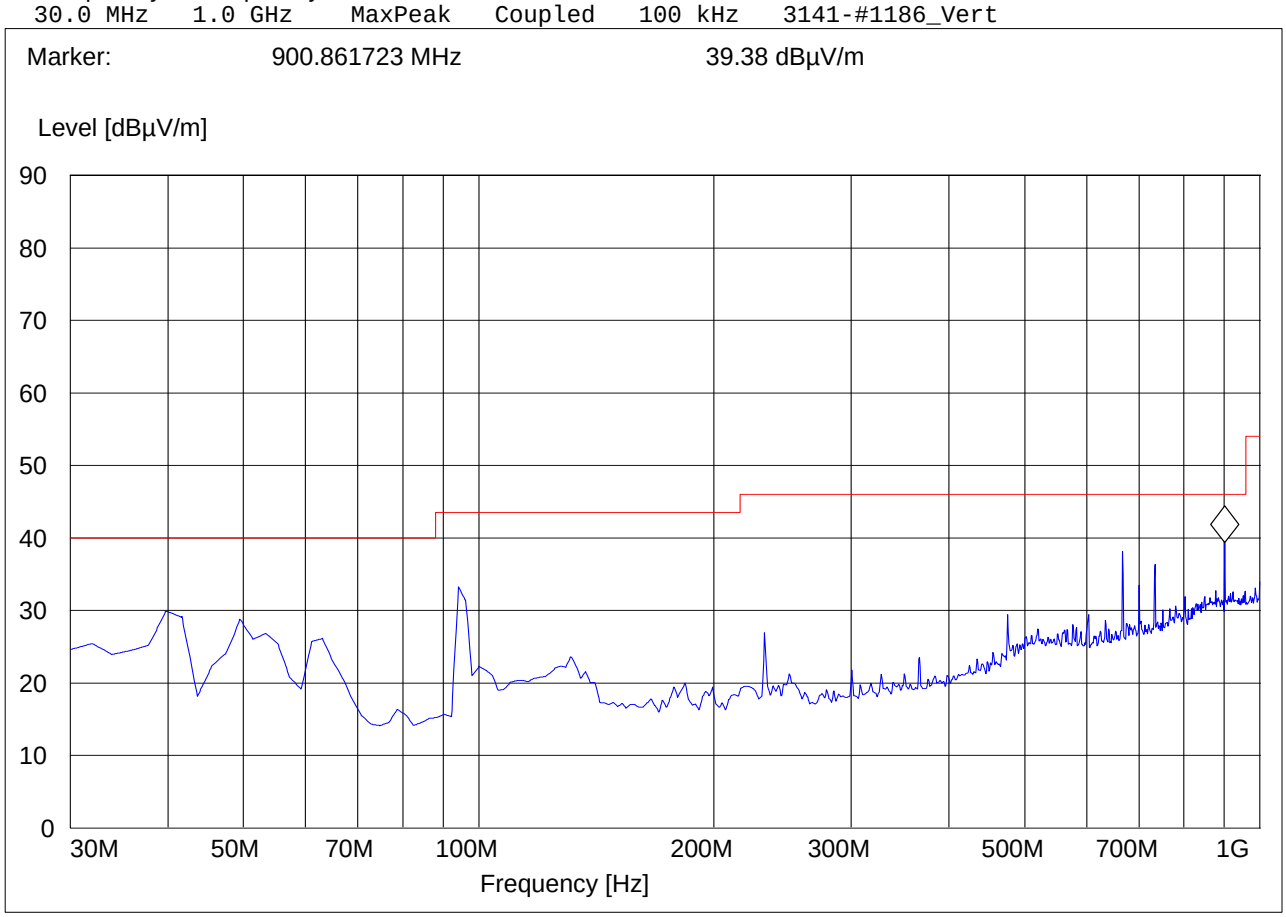
30MHz – 1GHz, Antenna: Vertical

Note: This plot is valid for low, mid, high channels (worst-case plot).

```
EUT:              015
Customer::        Elektrobit
Test Mode:        RX mode
ANT Orientation:  V
EUT Orientation:  H
Test Engineer:    Satya
Voltage:          AC
Comments:
```

SWEEP TABLE: "FCC15.247_30M-1G_Ver"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	3141-#1186_Vert



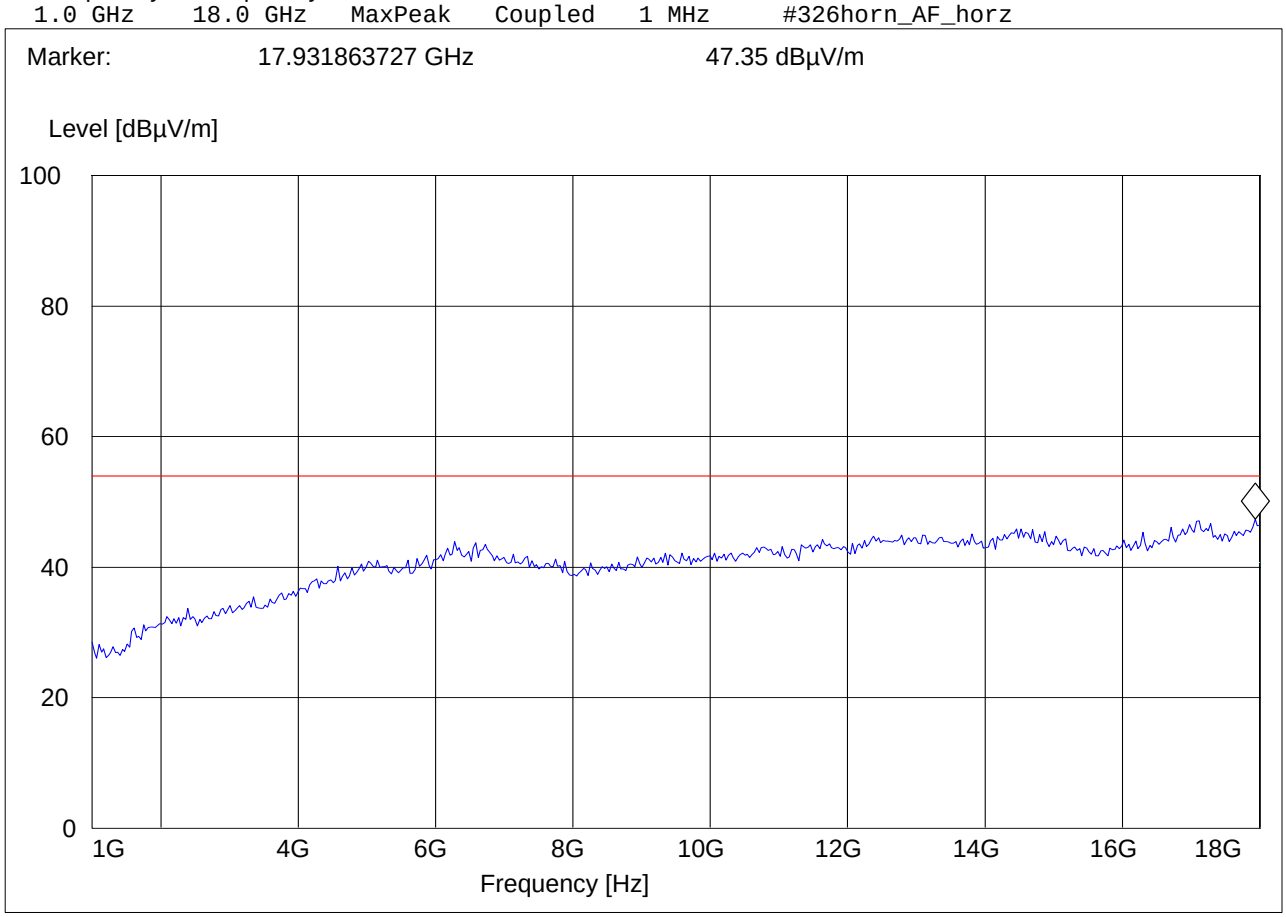
1-18GHz

Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

EUT / Description: 015
Manufacturer: Elektrobit
Operation Mode: Rx Mode
ANT Orientation: : H
EUT Orientation:: H
Test Engineer: Satya
Voltage: AC
Comments::

SWEEP TABLE: "FCC 15.407 1-18G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



6 Conducted Measurements

6.1 6dB bandwidth and 99% bandwidth.

6.1.1 Limit

FCC15.247(a)(2) Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

RSS210 A8.2 (a): The minimum 6 dB bandwidth shall be at least 500 kHz.

6.1.2 Measurement Result:

EIRP 802.11na HT20 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	6dB BW (MHz)	99%BW (MHz)
Sub-band 1: 2400-2483.5MHz	2412	**17.5**	**18.3**
	2437	**17.7**	**18.7**
	2462	**17.9**	**18.5**
Sub-band 3: 5725-5850MHz	5745	**17.6**	**18.2**
	5785	**17.8**	**18.2**
	5825	**17.5**	**18.2**

EIRP 802.11na HT40 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	6dB BW (MHz)	99%BW (MHz)
Sub-band 1: 2400-2483.5MHz	2422	**36.7**	**36.8**
	2437	**36.6**	**37.7**
	2452	**36.6**	**37.4**
Sub-band 3: 5725-5850MHz	5755	**36.4**	**36.5**
	5795	**36.5**	**36.7**
	5835	**36.0**	**36.7**

6.2 Conducted Power Measurement

6.2.1 Limit

FCC15.247 (b)(3): For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt

RSS210 A8.4(4): For systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4(5), the e.i.r.p. shall not exceed 4 W.

6.2.2 Results

The peak conducted power is measured with a power sensor with thermal detector. The EUT is set to transmit at 100% duty cycle and powers from all three transmit ports are measured. Directional gain of the two transmit port is 2.6dBi and the EUT does not support TPC.

EIRP 802.11na HT20 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	Conducted Output Power (dBm)	Conducted Output Power (mW)	Margin (mW)
Sub-band 1: 2400-2483.5MHz	2412	**14.54**	**28.47**	**971.53**
	2437	**14.37**	**27.34**	**972.66**
	2462	**14.46**	**27.92**	**972.08**
Sub-band 3: 5725-5850MHz	5745	**16.03**	**40.08**	**959.92**
	5785	**16.02**	**40.00**	**960.00**
	5825	**15.93**	**39.21**	**960.79**

EIRP 802.11na HT40 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	Conducted Output Power (dBm)	Conducted Output Power (mW)	Margin (mW)
Sub-band 1: 2400-2483.5MHz	2422	**14.04**	**25.32**	**974.68**
	2437	**14.13**	**25.89**	**974.11**
	2452	**12.98**	**19.87**	**980.13**
Sub-band 3: 5725-5850MHz	5755	**15.72**	**37.30**	**962.70**
	5795	**15.67**	**36.88**	**963.12**
	5835	**15.73**	**37.39**	**962.61**

6.3 Power Spectral Density

6.3.1 Limit

FCC 15.247 (e) For digitally modulated systems, the 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.

6.3.2 Results

The peak conducted power is measured with a combiner, spectrum analyzer and method 1 specified in FCC public knowledge DA-02-2138A1. The EUT is set to transmit at 100% duty cycle and powers from the two ports with highest transmit power are measured and reported here. The EUT does not support TPC.

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	Power Spectral Density (dBm)	Margin (dBm)
Sub-band 1: 2400-2483.5MHz	2412	**-6.8**	**14.8**
	2437	**-8.15**	**16.15**
	2462	**-5.73**	**13.73**
Sub-band 3: 5725-5850MHz	5745	**-8.41**	**16.41**
	5785	**-7.63**	**15.63**
	5825	**-7.48**	**15.48**

EIRP 802.11na HT40 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	Conducted Output Power (dBm)	Margin (dBm)
Sub-band 1: 2400-2483.5MHz	2422	**-10.58**	**18.58**
	2437	**-11.03**	**19.03**
	2452	**-10.91**	**18.91**
Sub-band 3: 5725-5850MHz	5755	**-11.58**	**19.58**
	5795	**-11.26**	**19.26**
	5835	**-10.53**	**18.53**

6.4 Conducted Spurious Emission

6.4.1 Limit

§15.247(d) & RSS-210 (A8.5): -30dBc

6.4.2 Results:

No measurable emission over the limit. See plots for details.

6.5 AC Power Line Conducted Emissions § 15.107/207

6.5.1 Limits

Technical specification: 15.107 / 15.207 (Revised as of August 20, 2002)

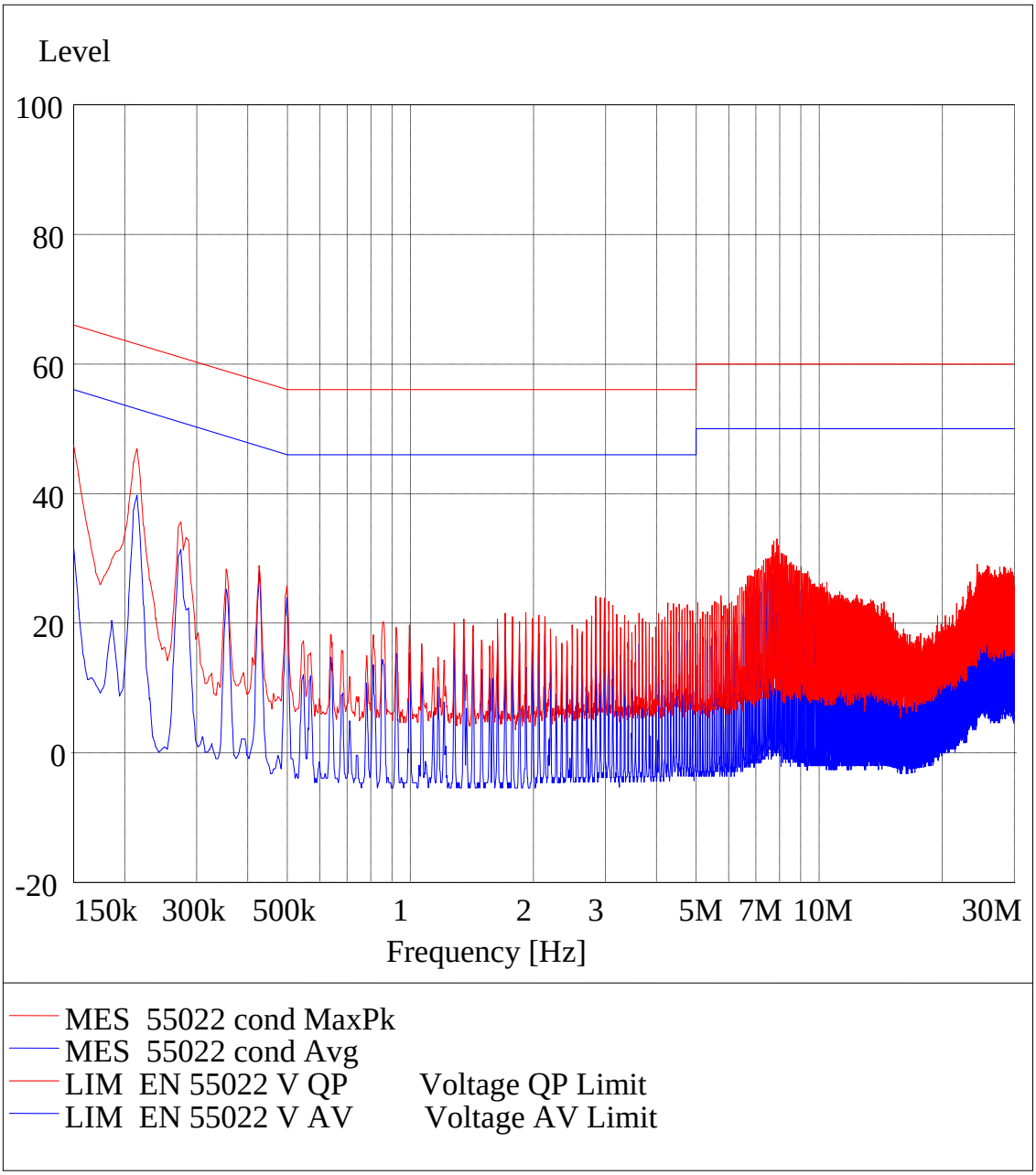
Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50
* Decreases with logarithm of the frequency		

ANALYZER SETTINGS: RBW = 10KHz VBW = 10KHz

6.5.2 RESULTS 802.11ng HT20 Mode

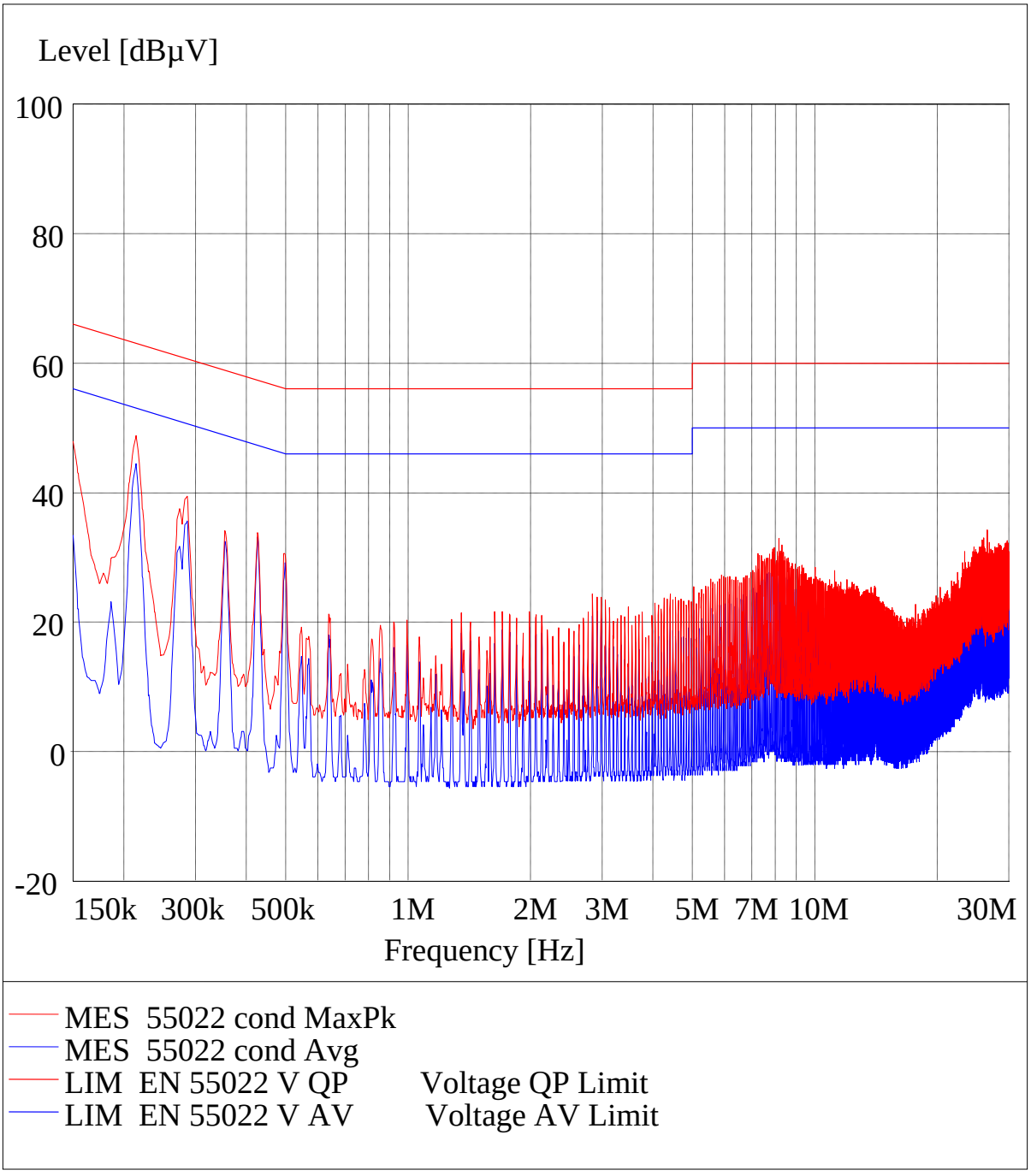
Line:

```
EUT:               015
Manufacturer:      Elektrobit
Test Mode:         HT20
ANT Orientation:: Conducted
EUT Orientation:: H
Test Engineer::    Chris
Power Supply: :    AC
Comments:  :       120V Line
```



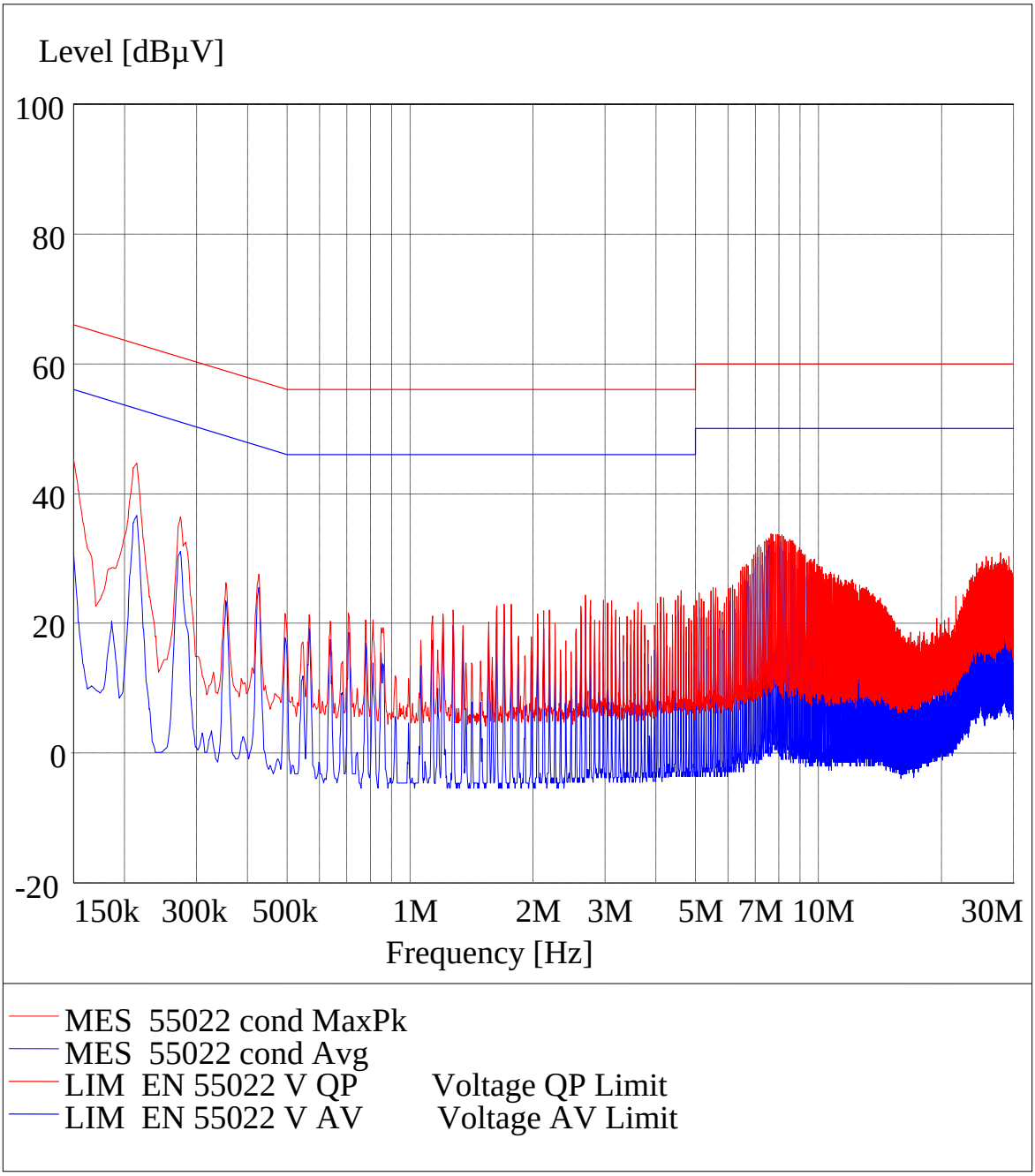
Neutral:

```
EUT:               015
Manufacturer:      HT20
ANT Orientation:: Conducted
EUT Orientation:: H
Test Engineer::    Chris
Power Supply: :    AC
Comments:  :       120V Neutral
```



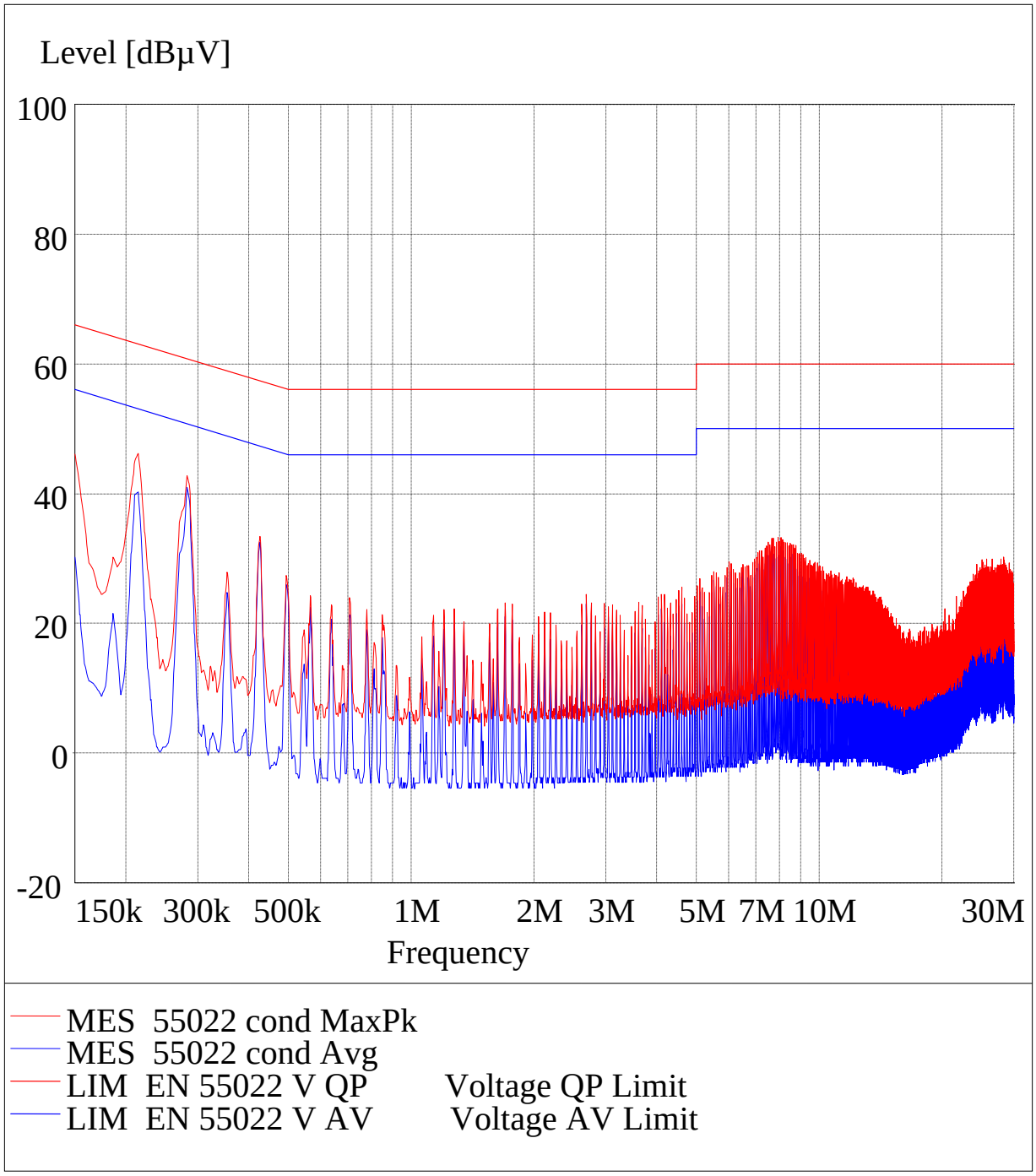
Line, Receiver mode.

EUT: 015
Manufacturer: Elektrobit
Test Mode: RX
ANT Orientation:: Conducted
EUT Orientation:: H
Test Engineer:: Chris
Power Supply: : Power Cable
Comments: : 120V



Neutral, Receiver Mode

```
EUT:               015
Manufacturer:      Elektrobit
Test Mode:         Rx
ANT Orientation:: Conducted
EUT Orientation:: H
Test Engineer::    Chris
Power Supply: :    AC
Comments:  :       120V Neutral
```

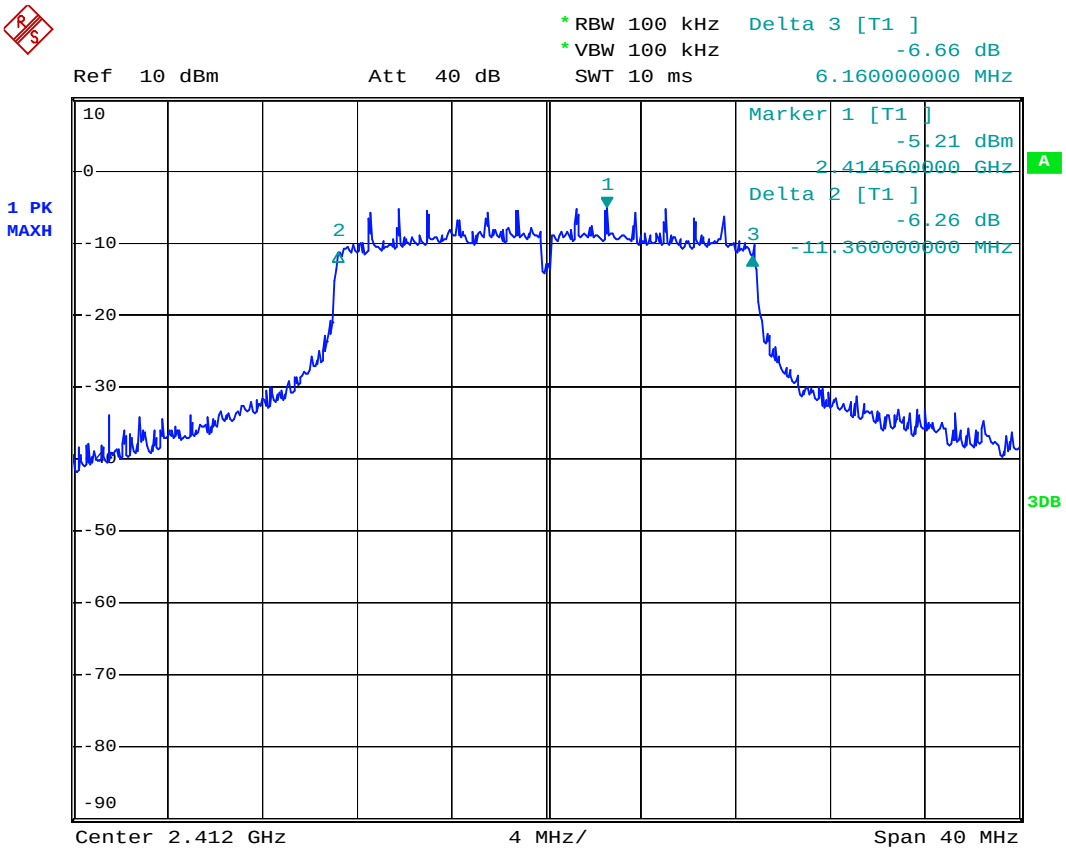


6.6 Conducted Measurement Plots

6.6.1 6dB Bandwidth

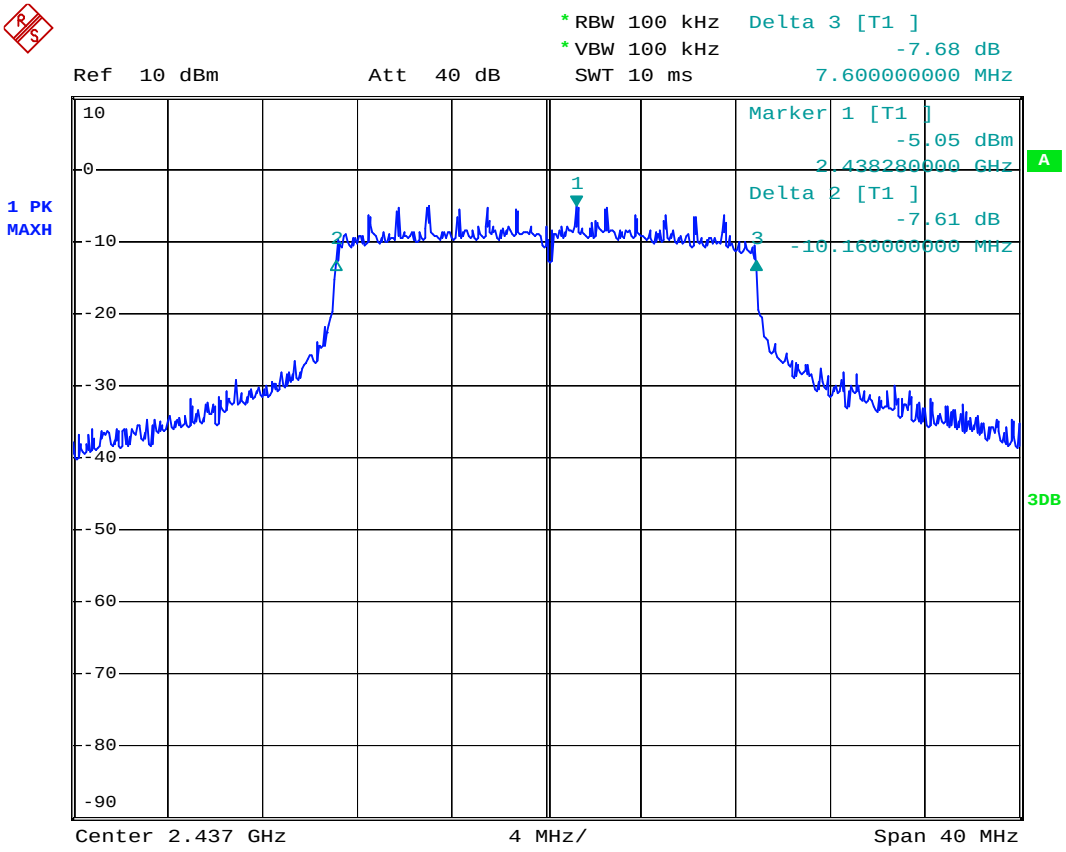
6.6.1.1 802.11ng HT20 Mode

2412MHz



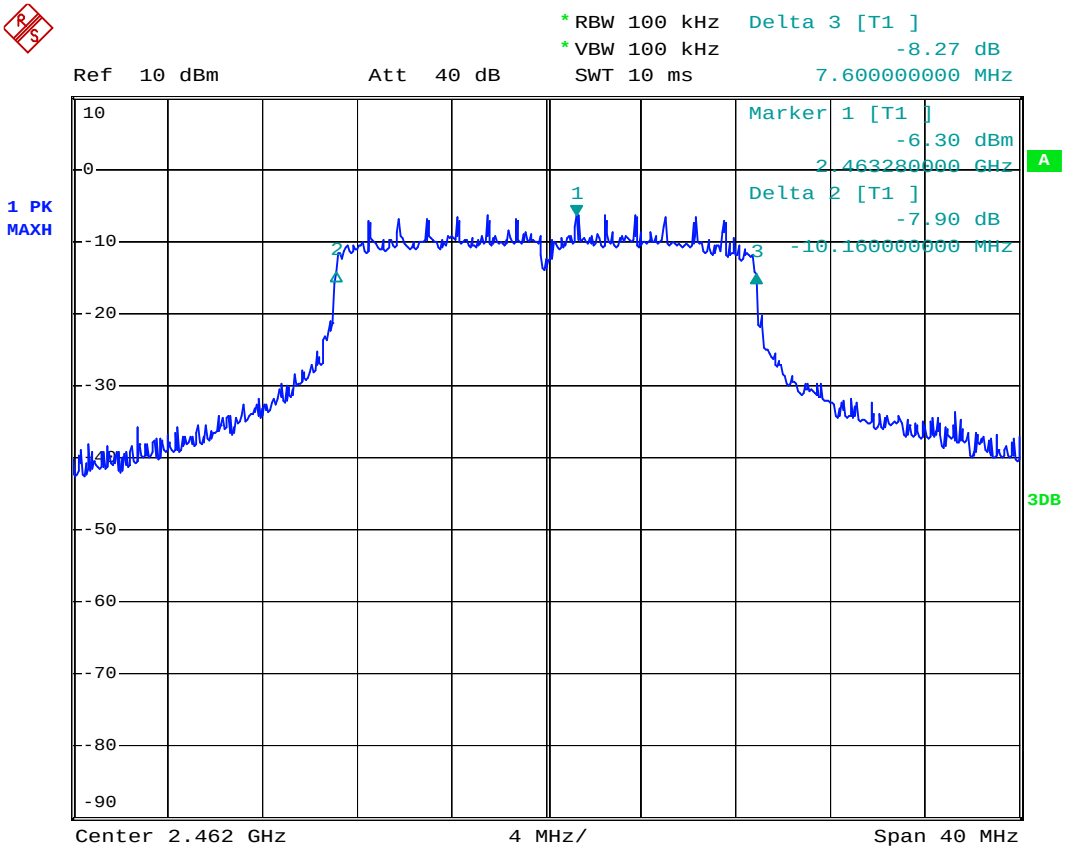
Date: 5.APR.2008 15:25:36

2437MHz



Date: 5.APR.2008 15:26:45

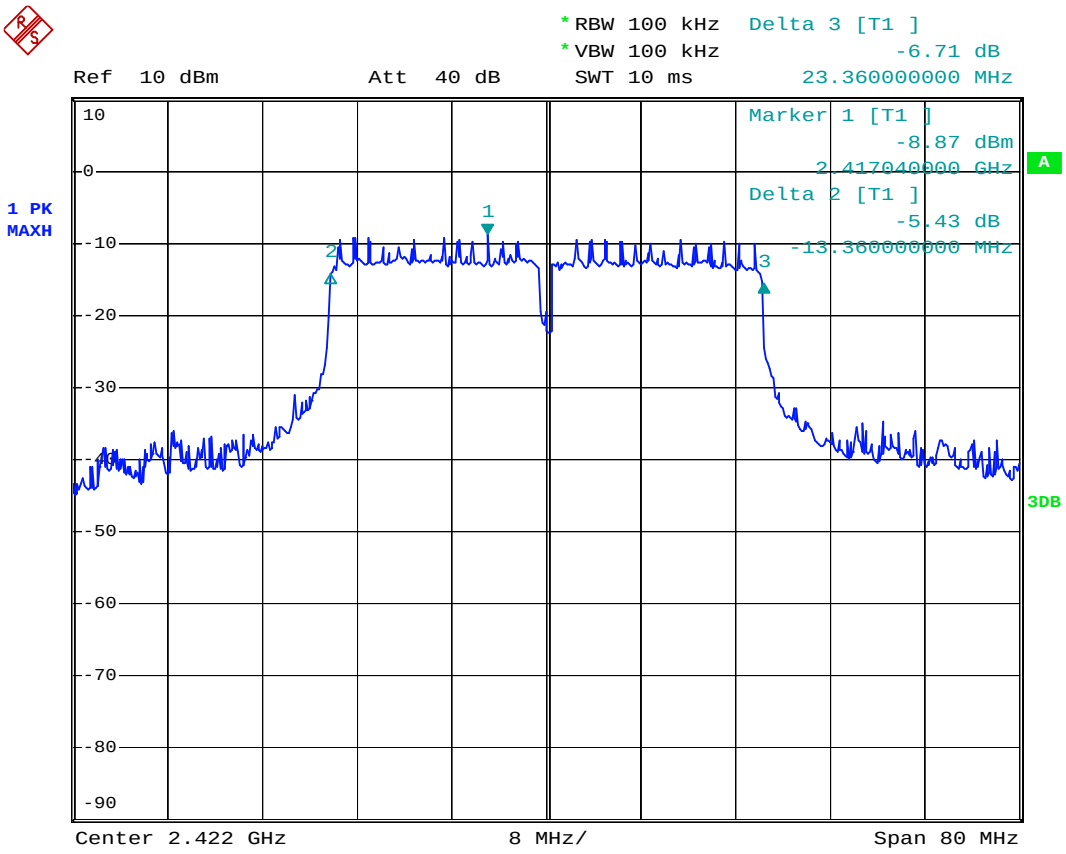
2462MHz



Date: 5.APR.2008 15:27:34

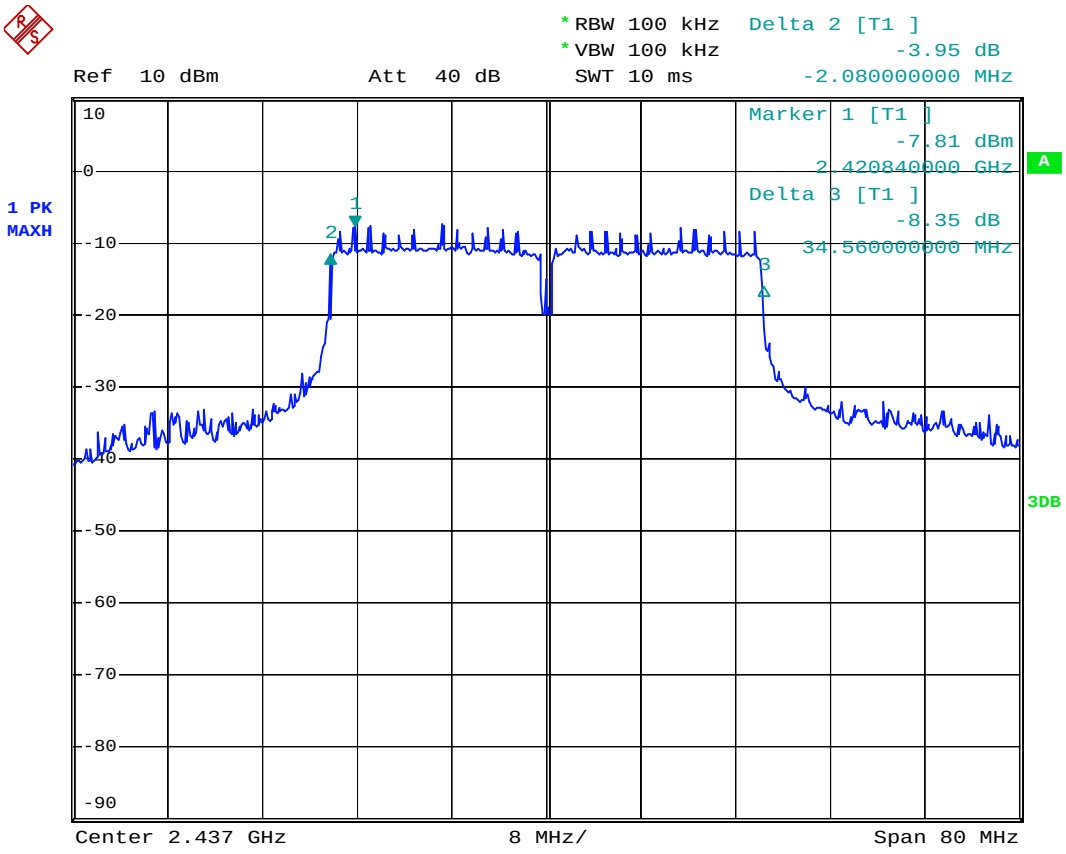
6.6.1.2 802.11ng HT40 Mode

2422MHz



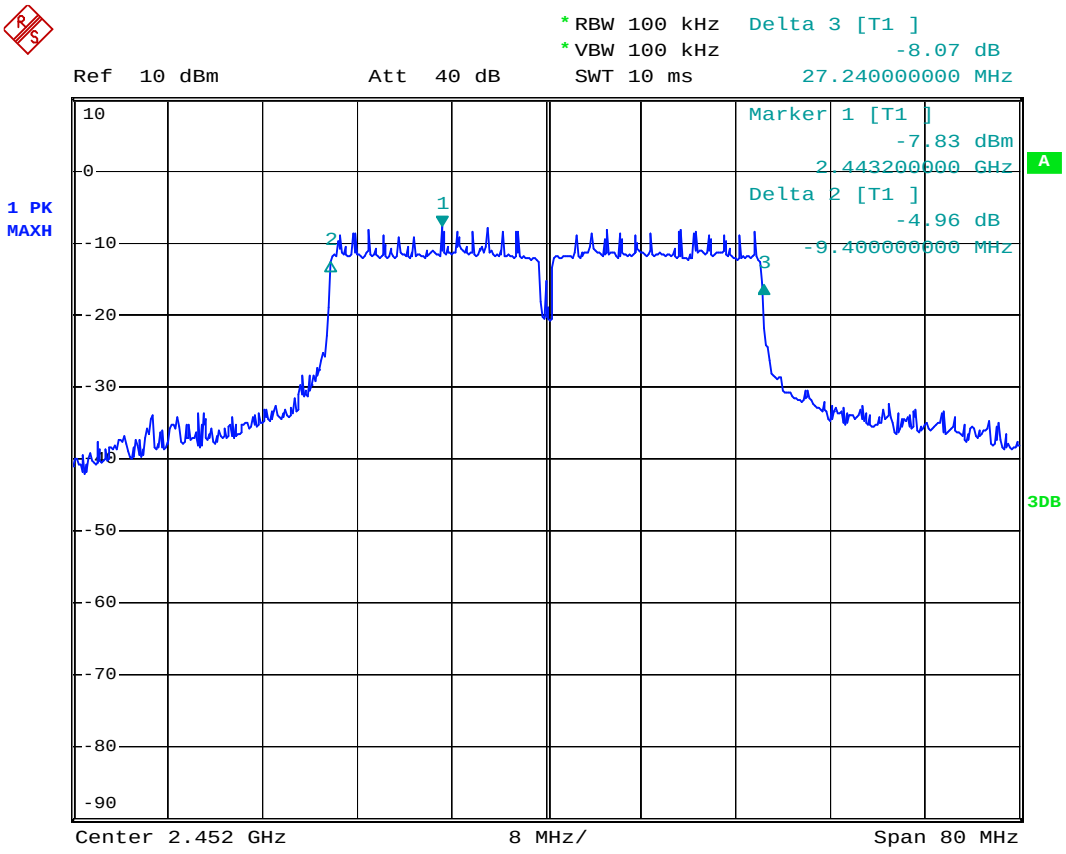
Date: 5.APR.2008 15:23:11

2437MHz



Date: 5.APR.2008 15:20:36

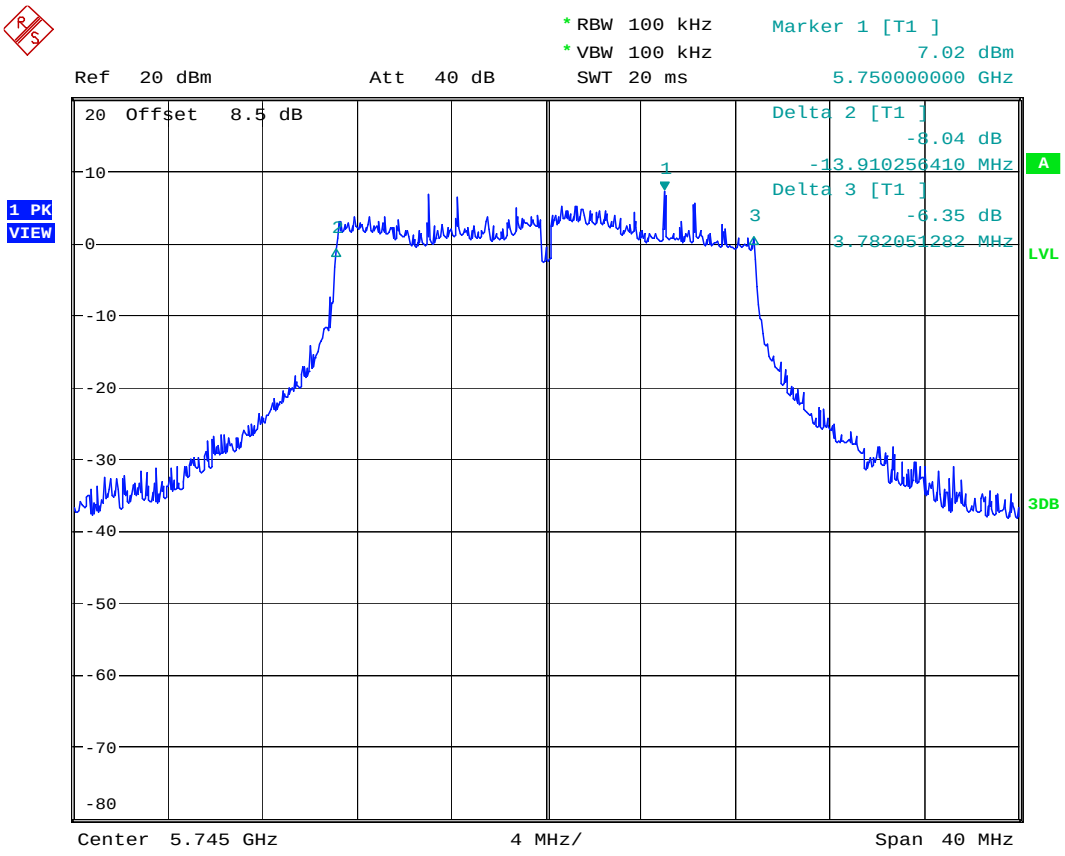
2452MHz



Date: 5.APR.2008 15:21:43

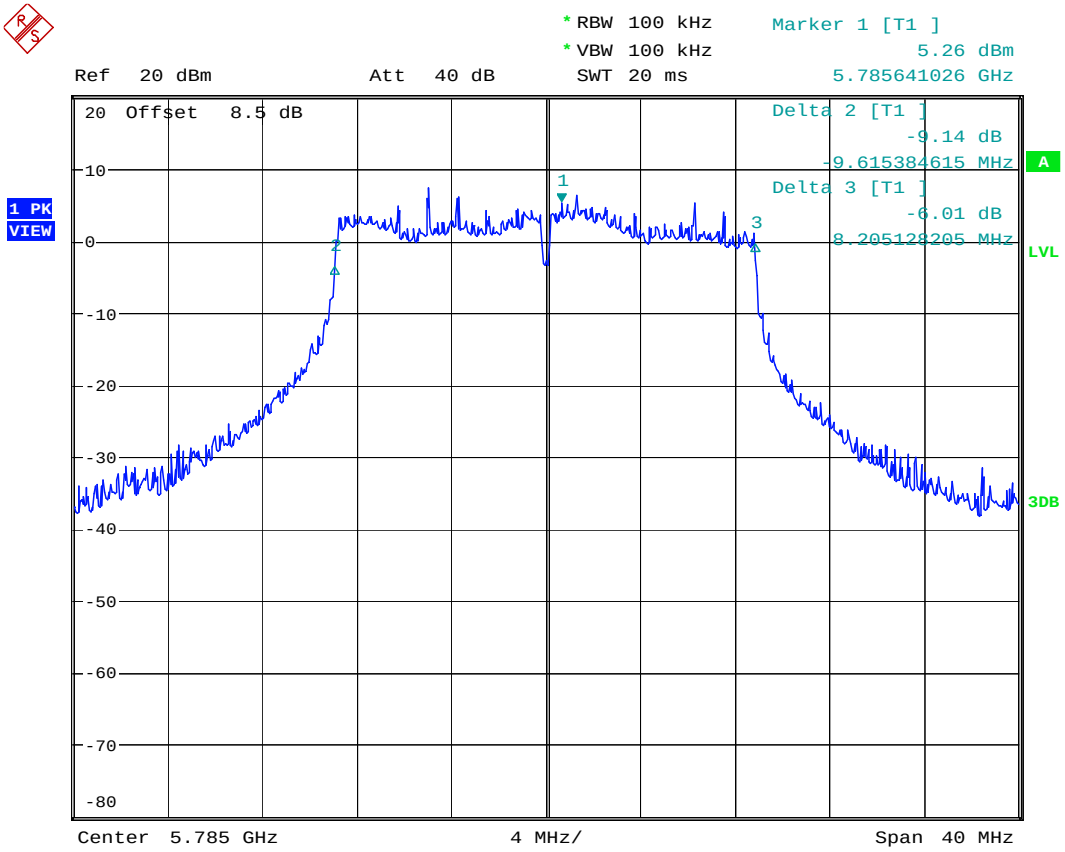
6.6.1.3 802.11na HT20 Mode

5745MHz



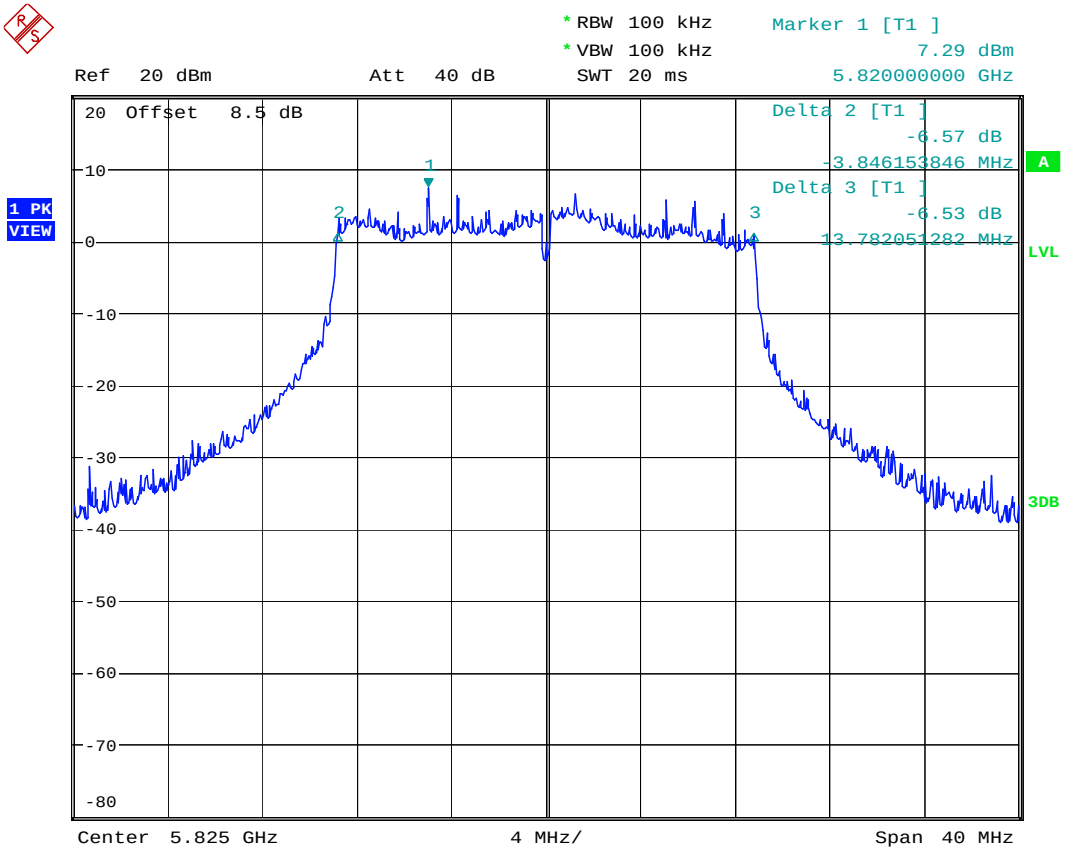
Date: 18.JUN.2008 13:07:45

5785MHz



Date: 18.JUN.2008 13:05:38

5825MHz



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6.6.1.4 802.11na HT40 Mode

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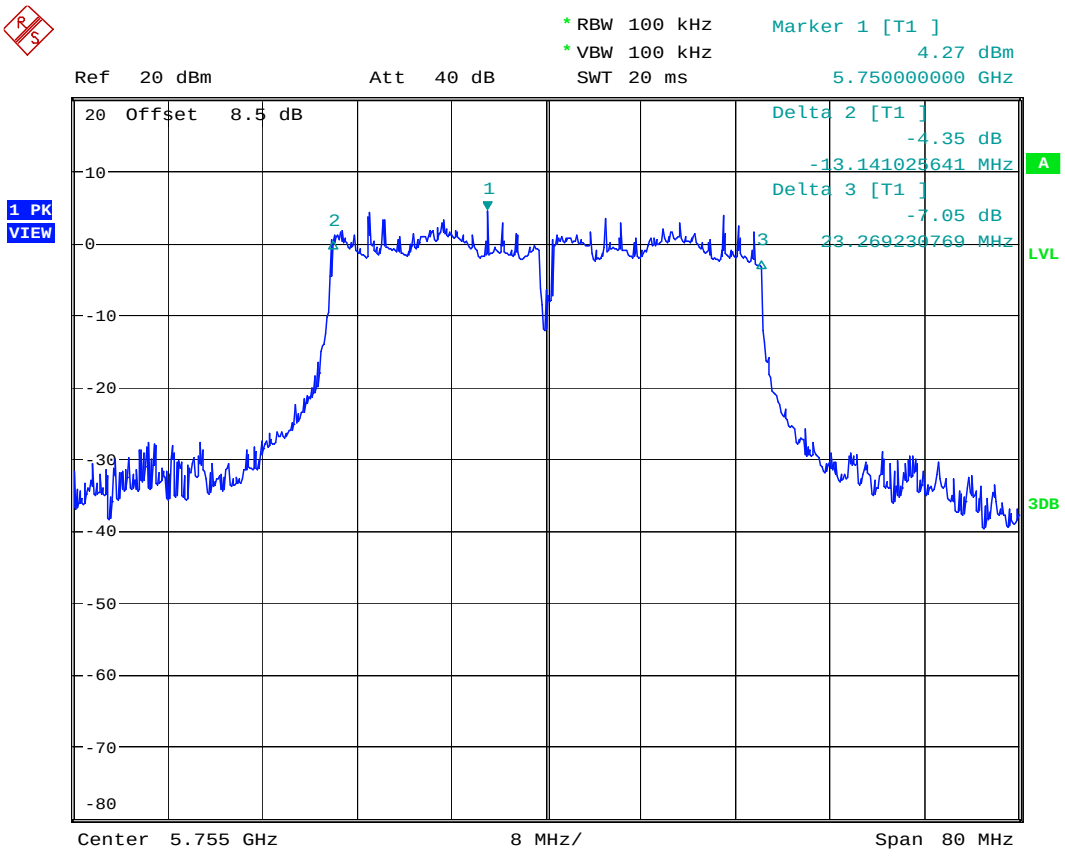

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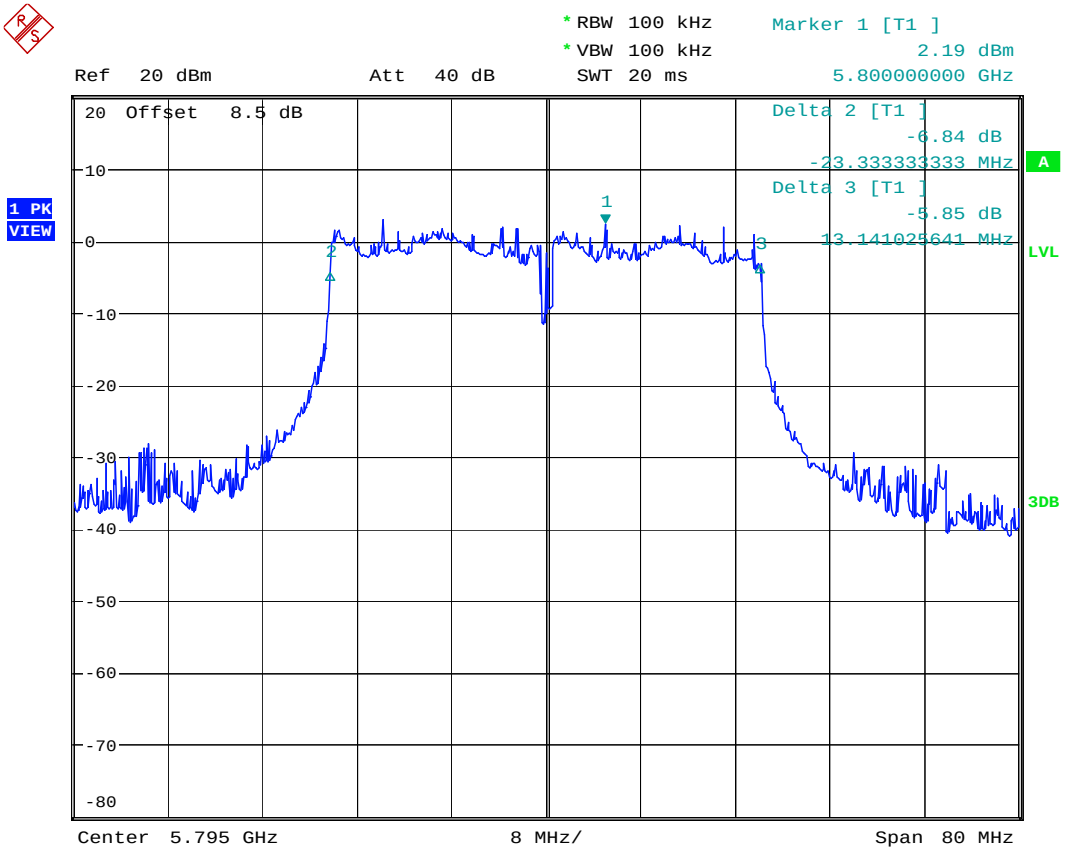

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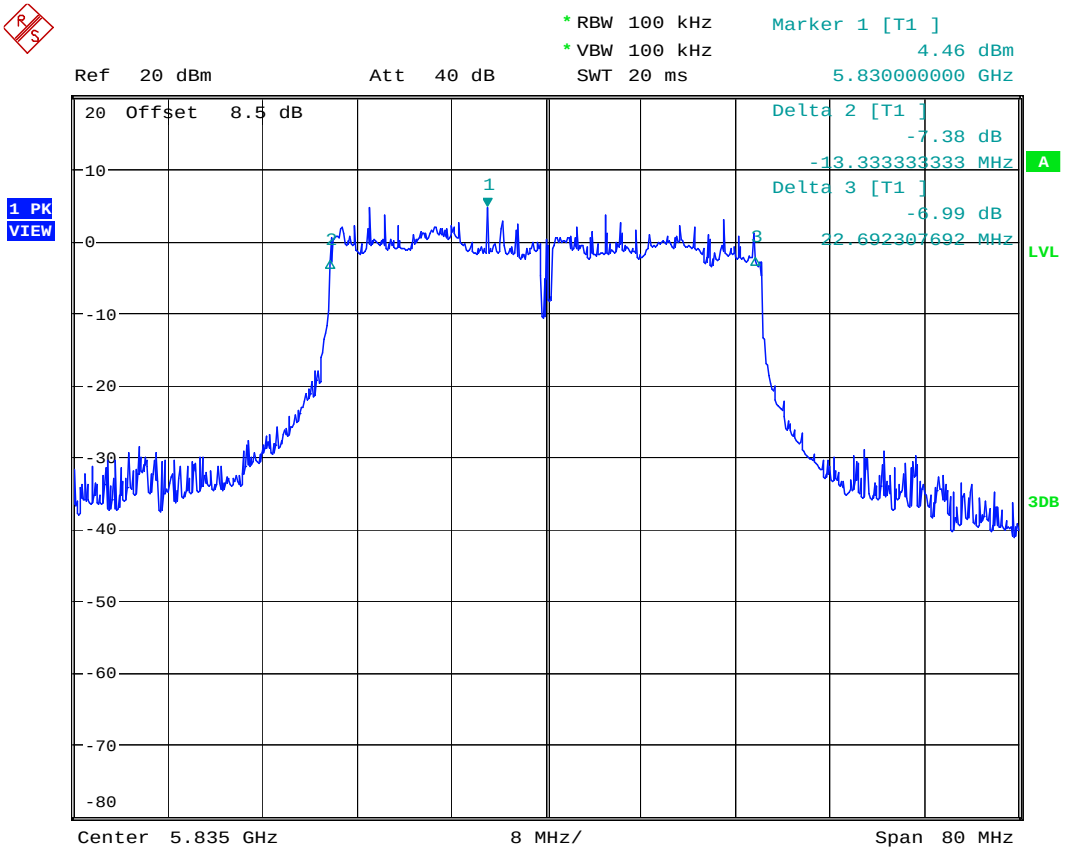

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6.6.2 99% Bandwidth

6.6.2.1 802.11 ng HT20 mode

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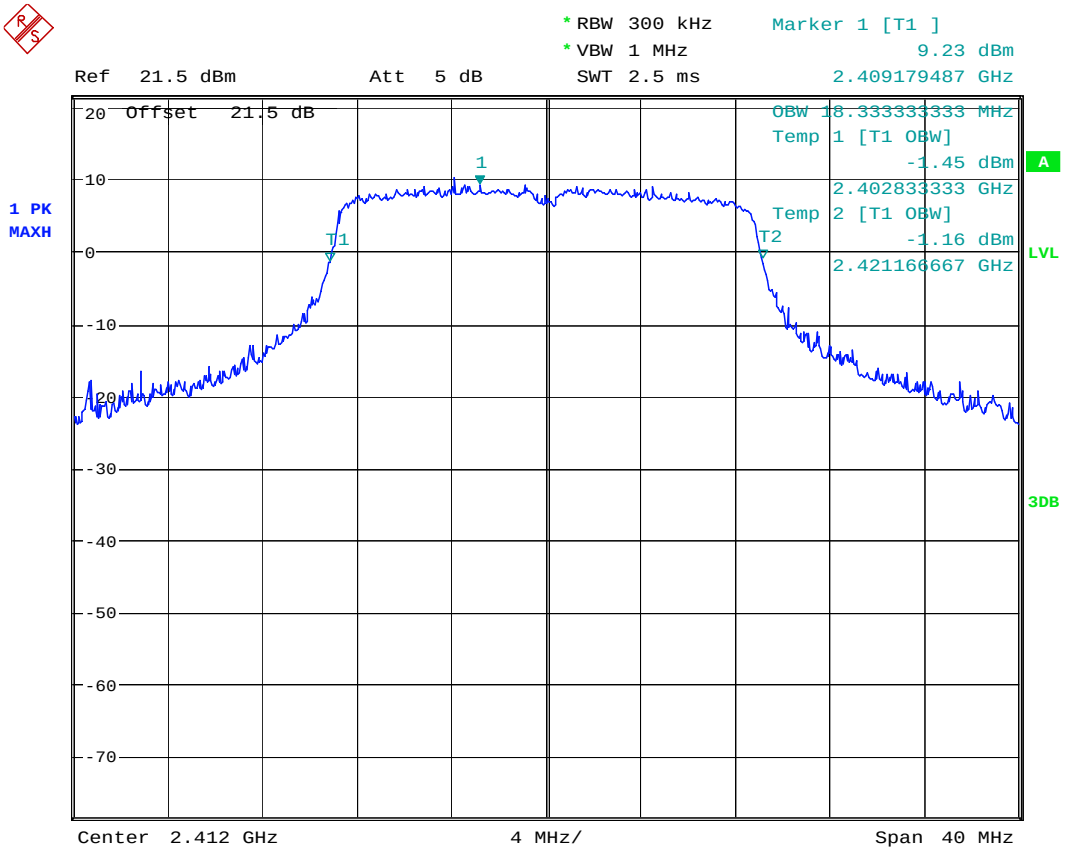

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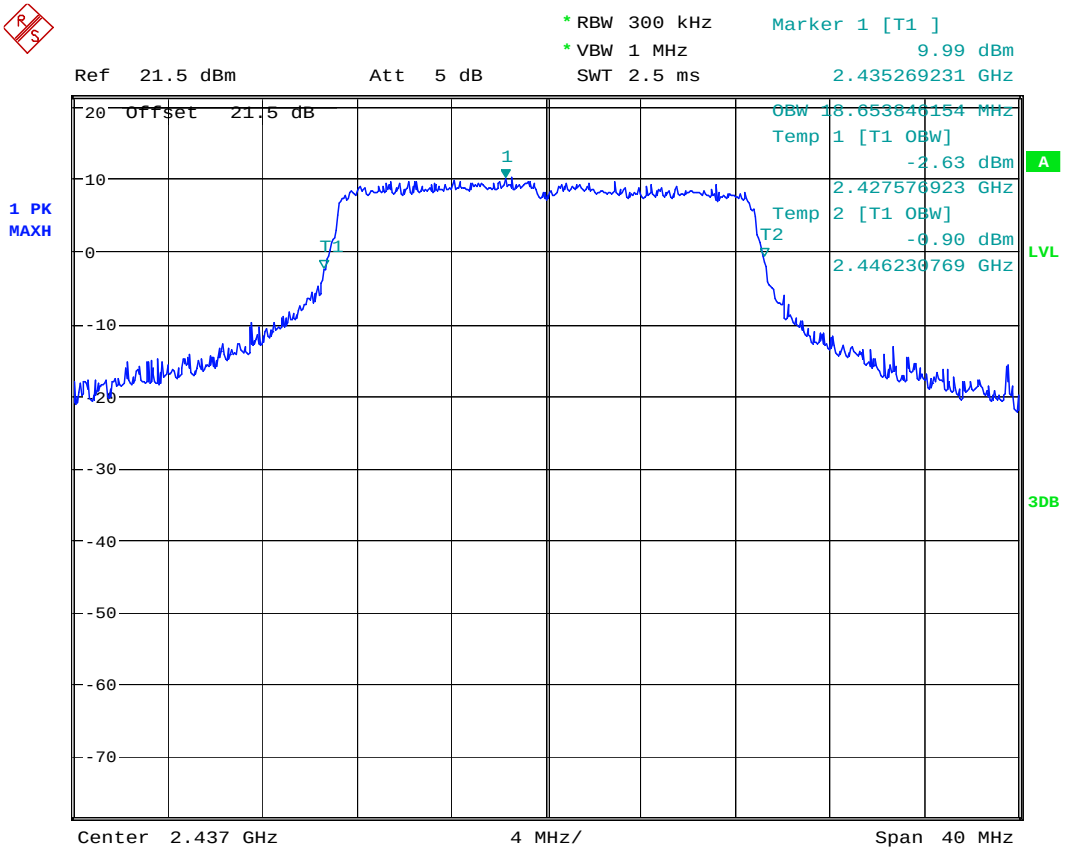

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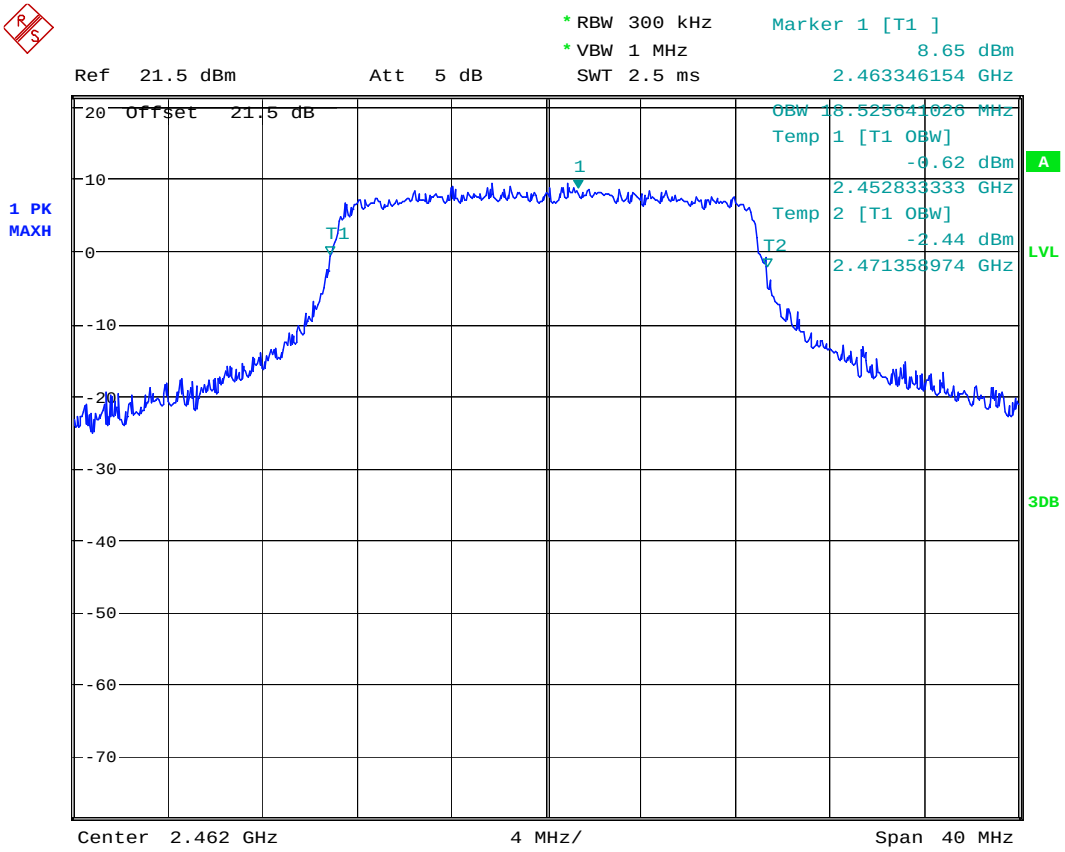

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6.6.2.2 802.11ng HT40 Mode

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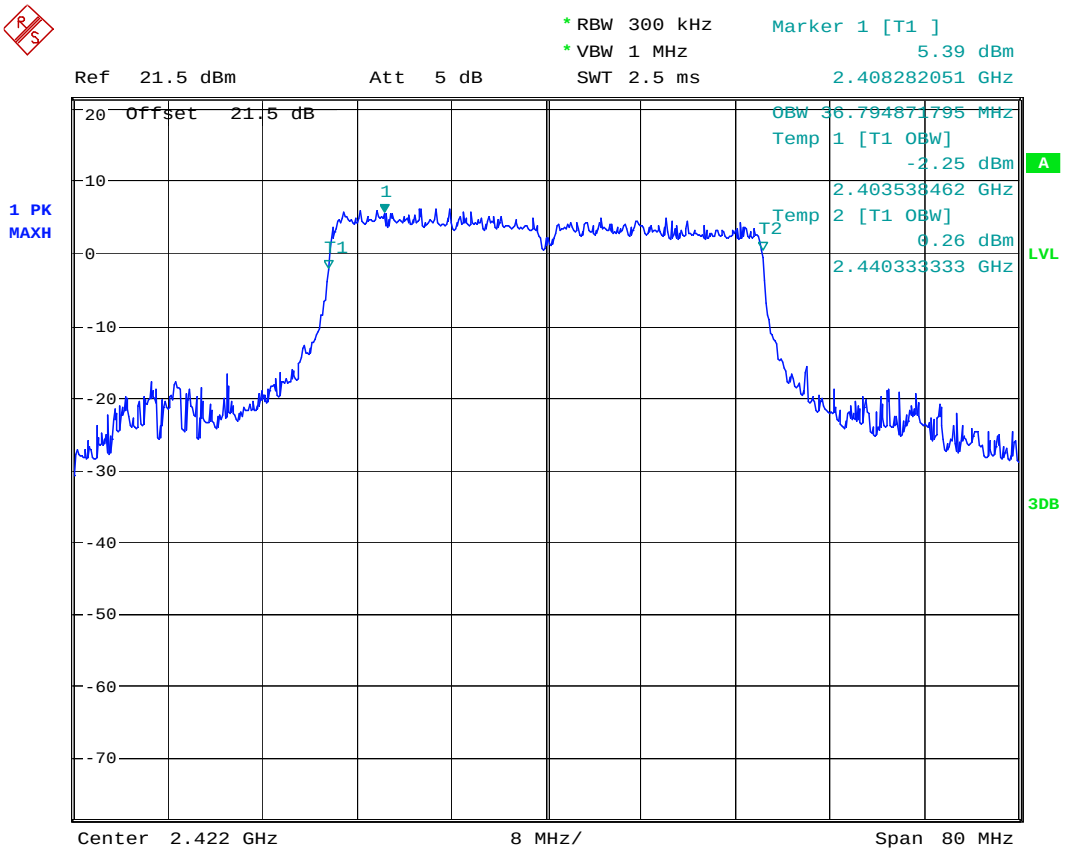

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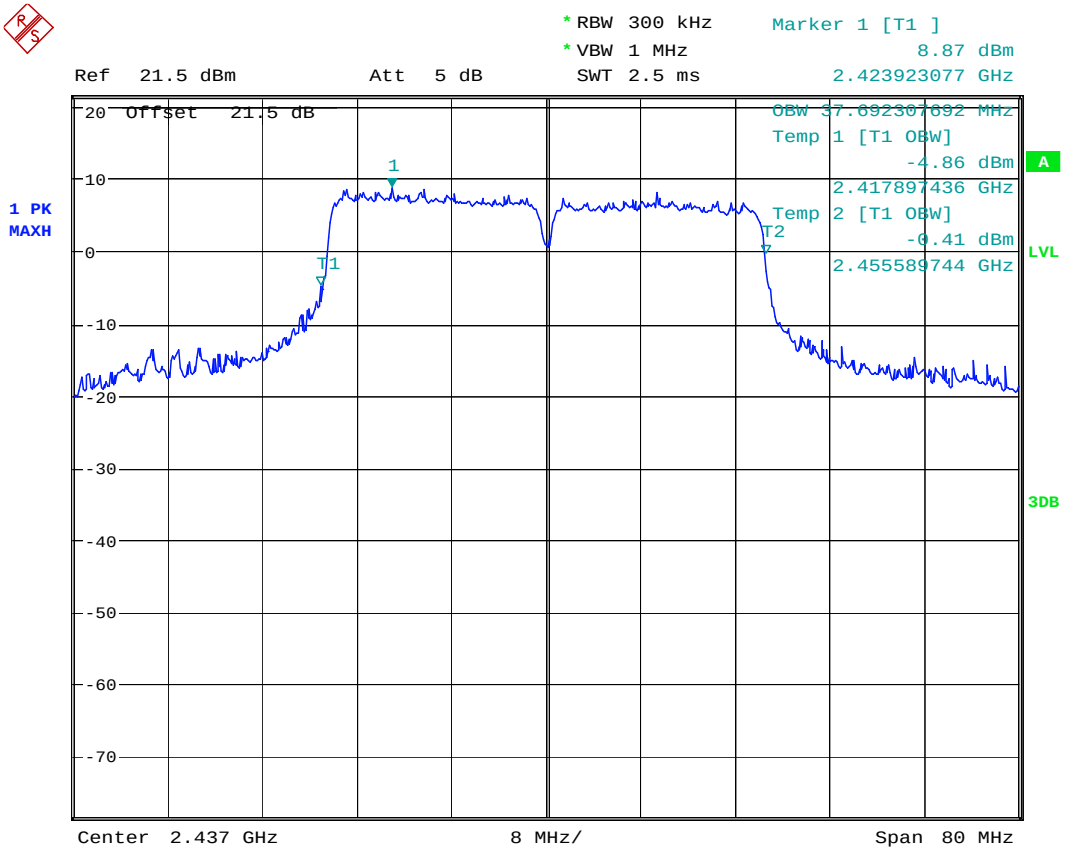

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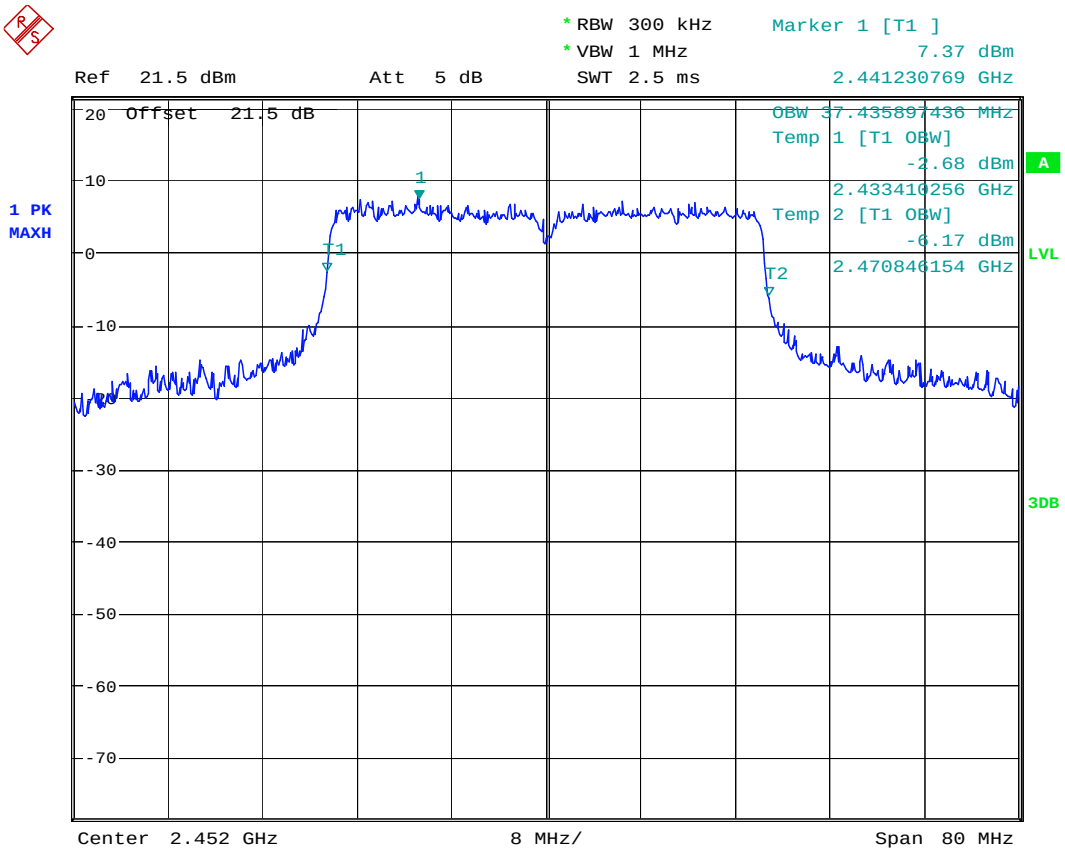

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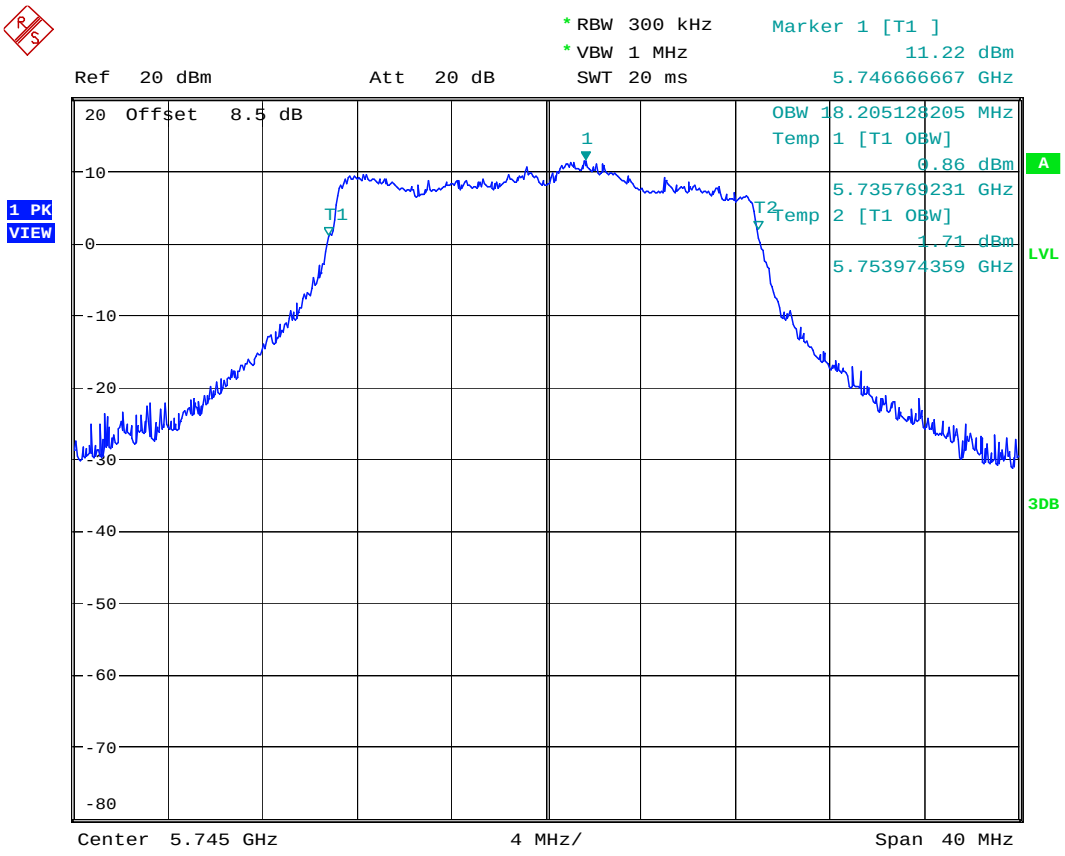

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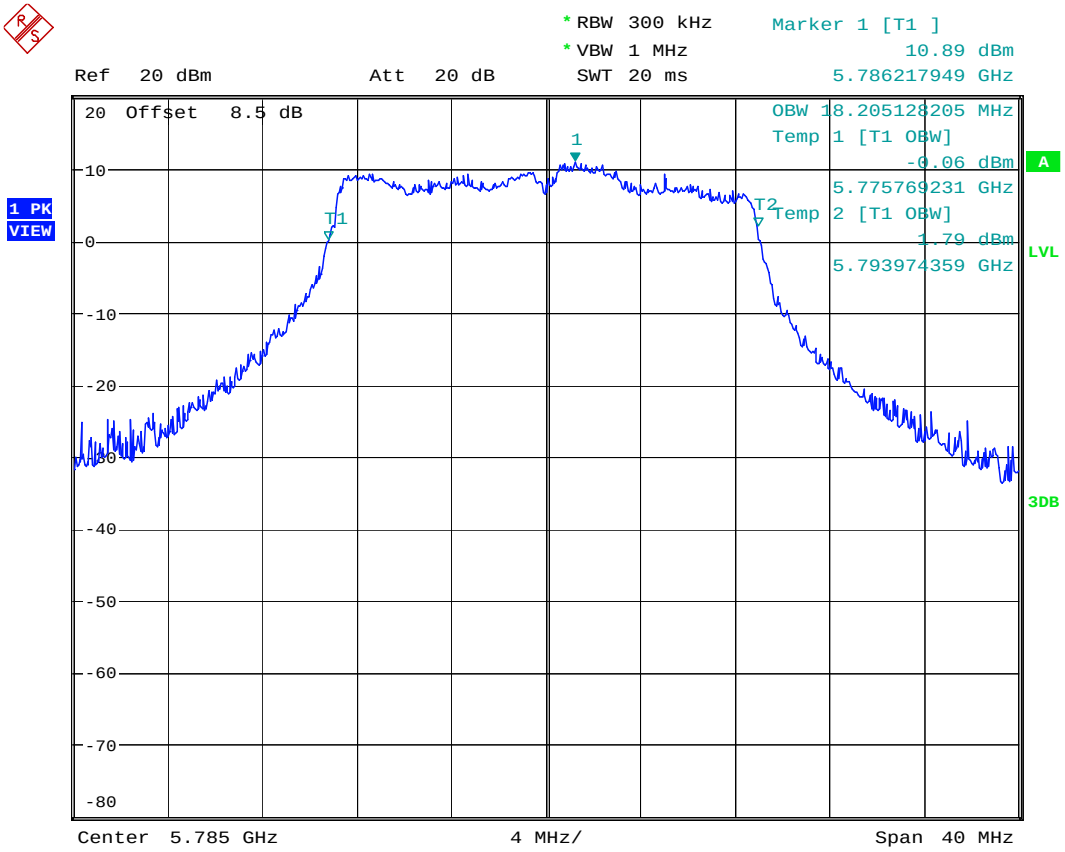

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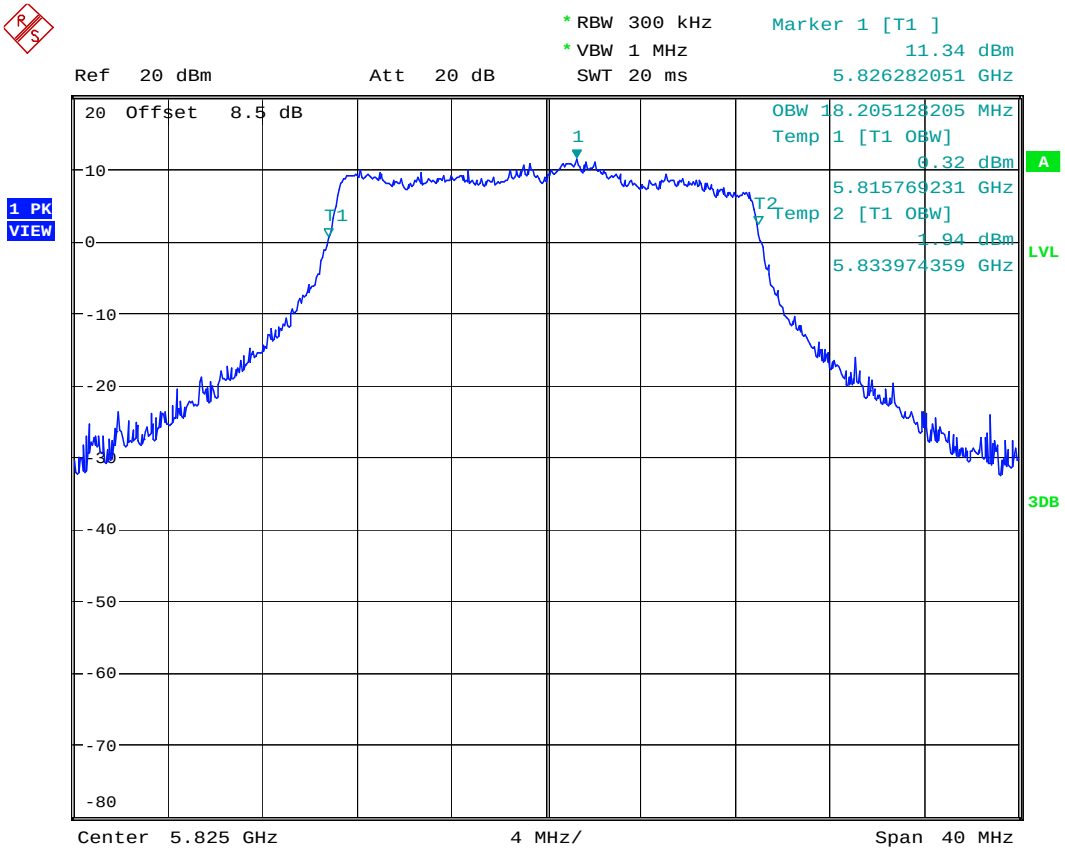
5825MHz



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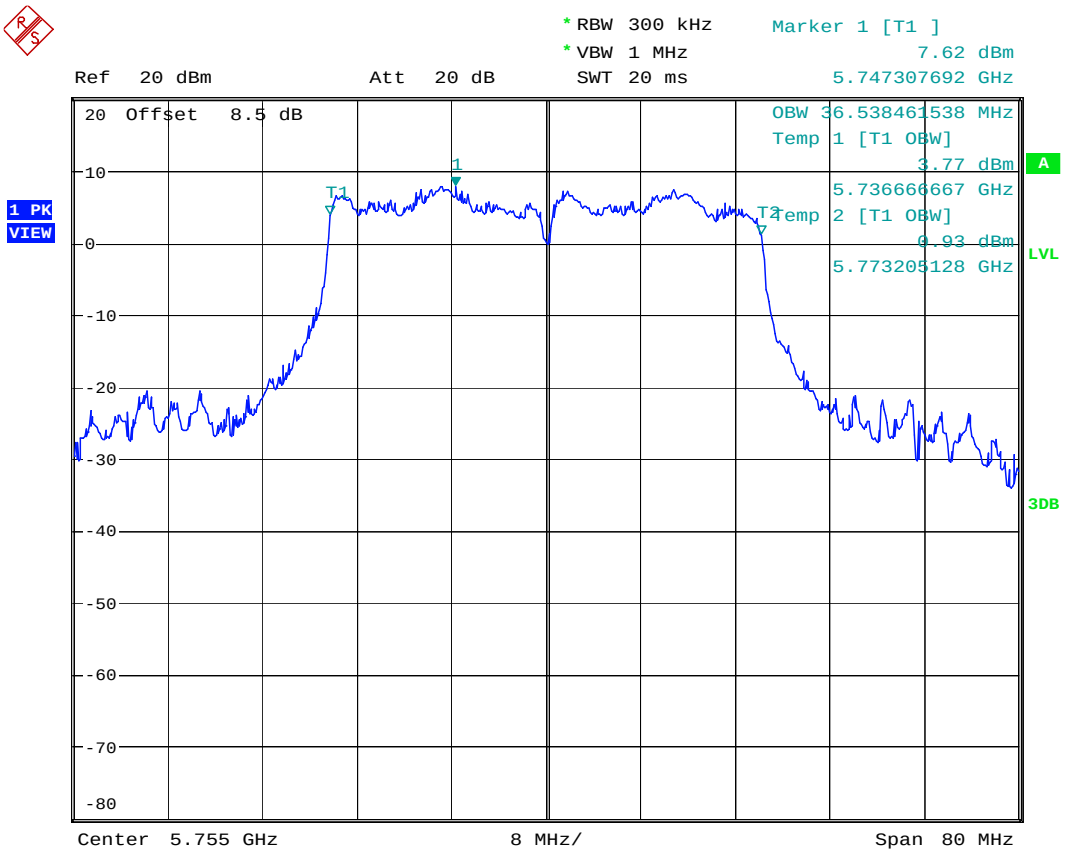

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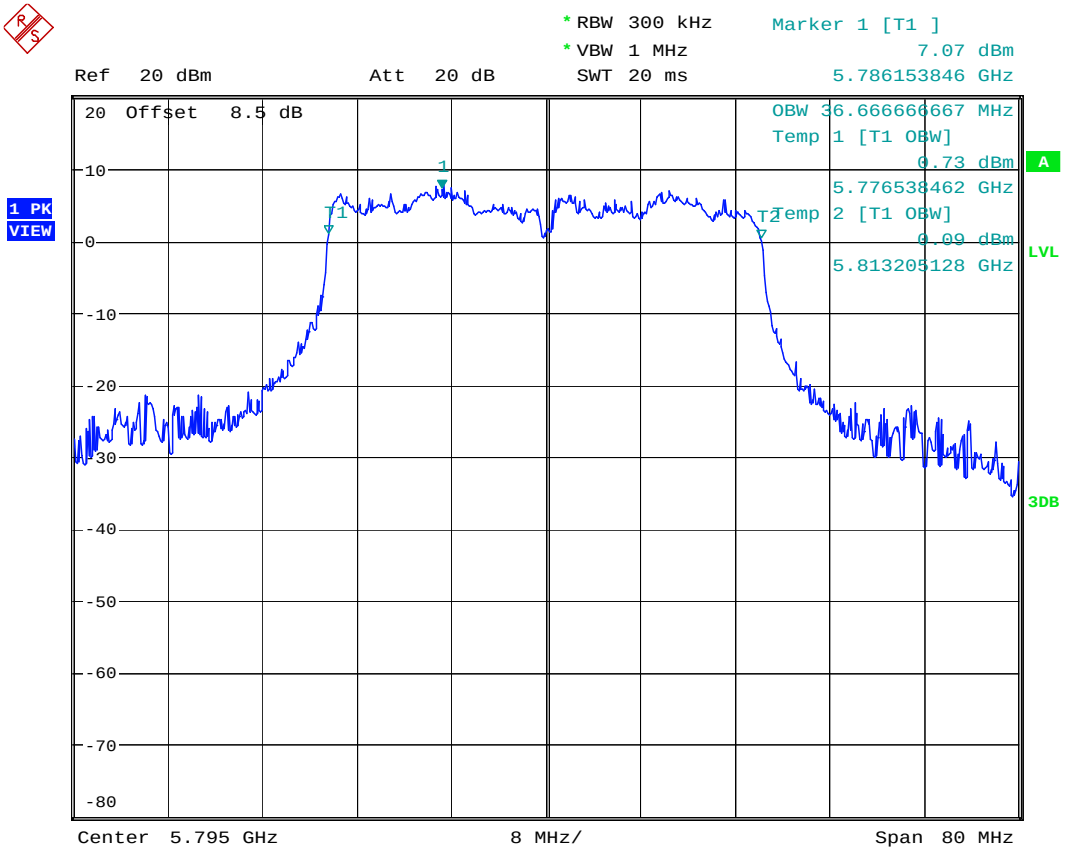

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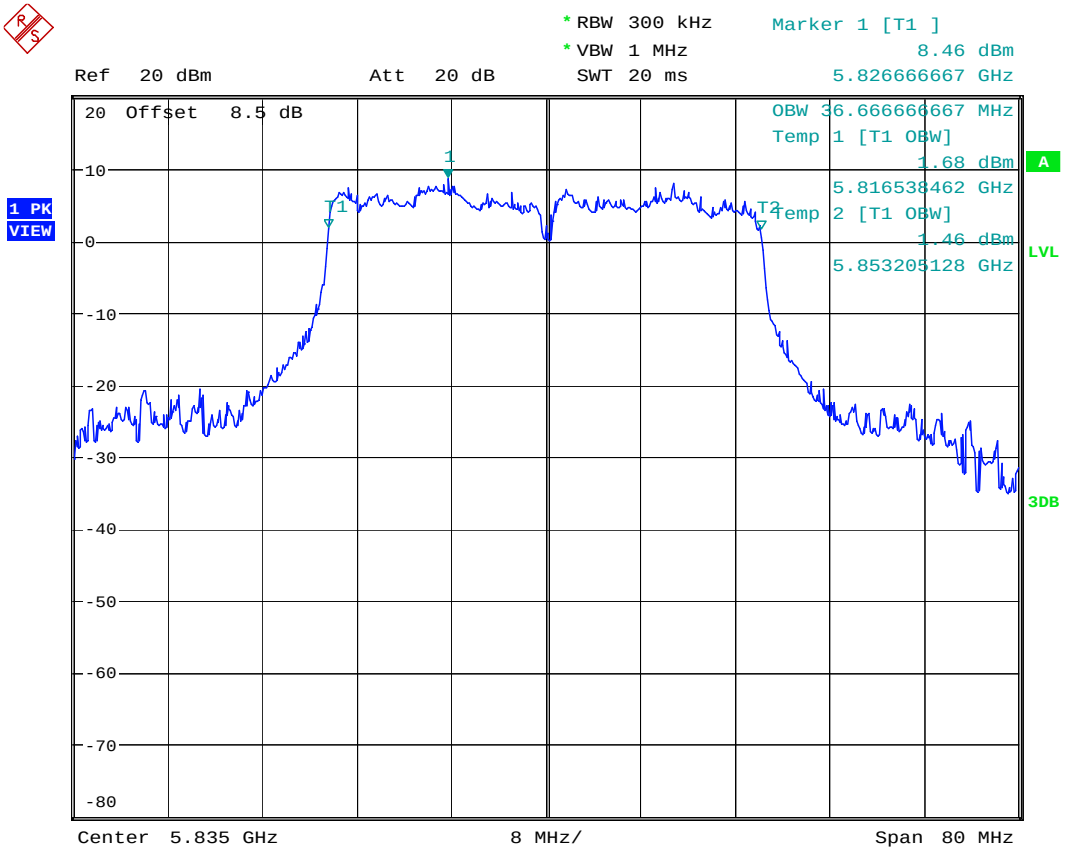

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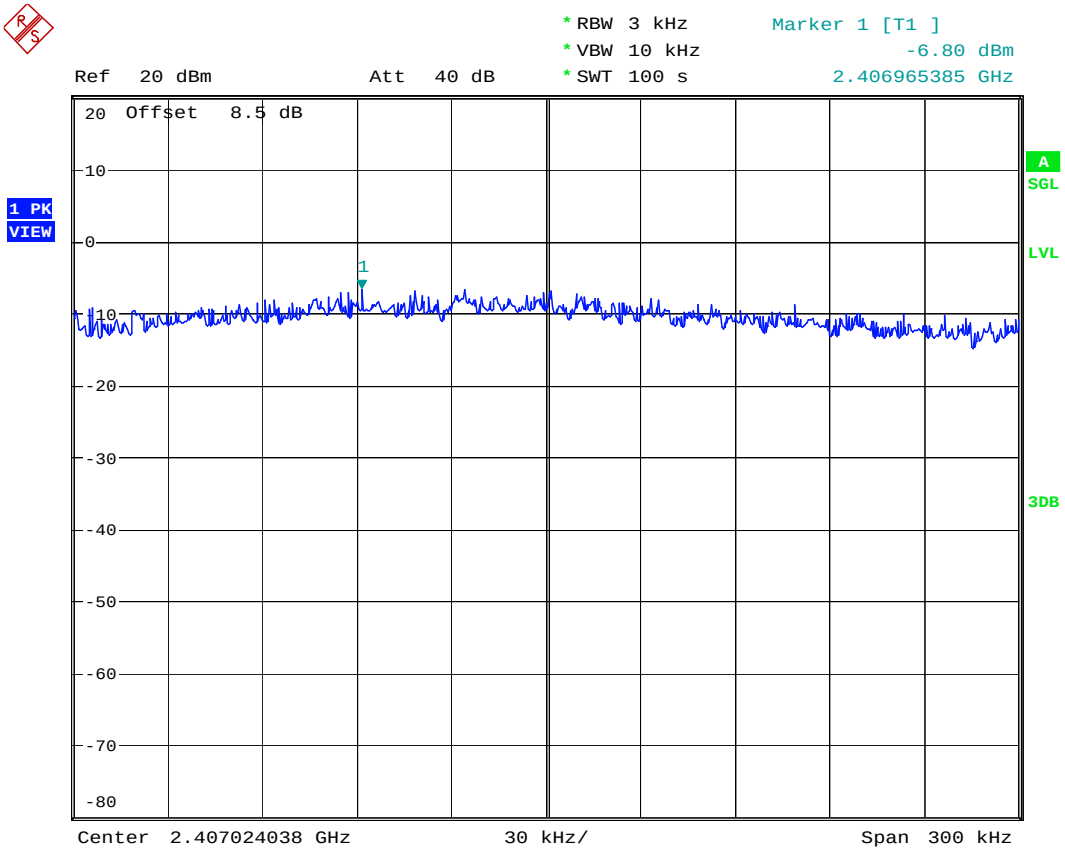
6.6.3 Power Spectral Density

6.6.3.1 802.11ng HT20 mode

2412MHz



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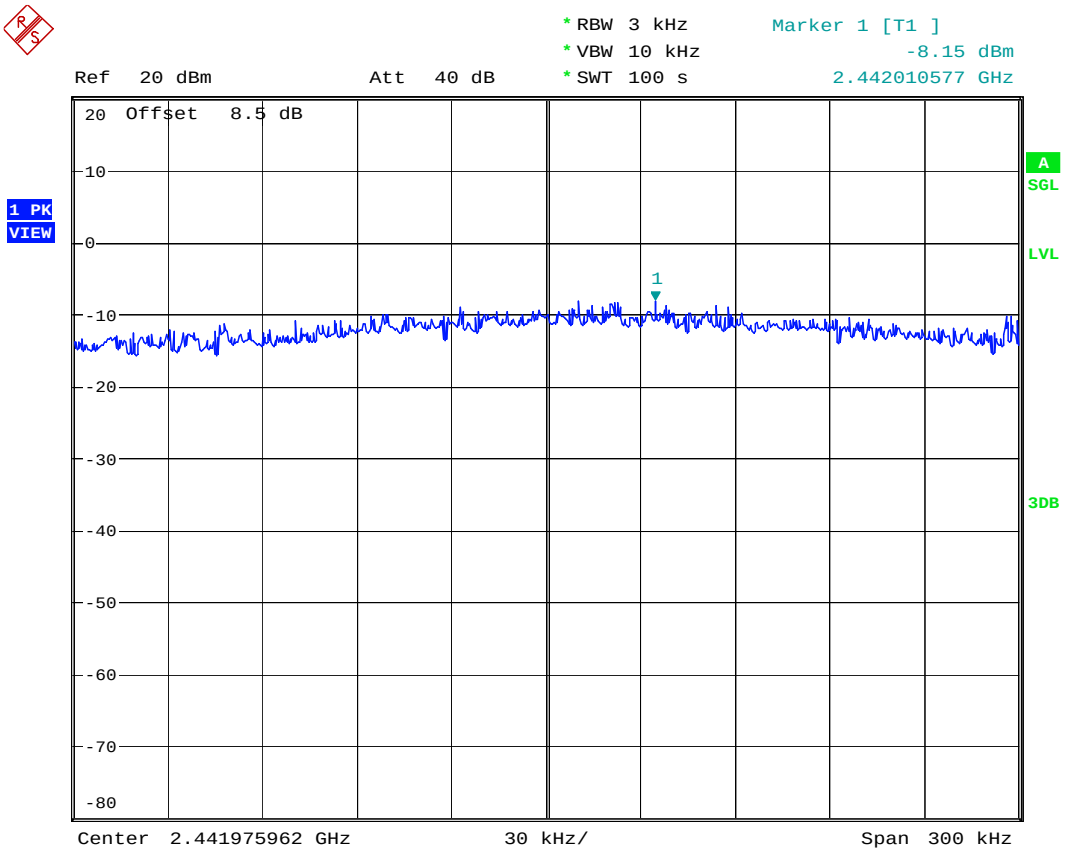
2437 MHz



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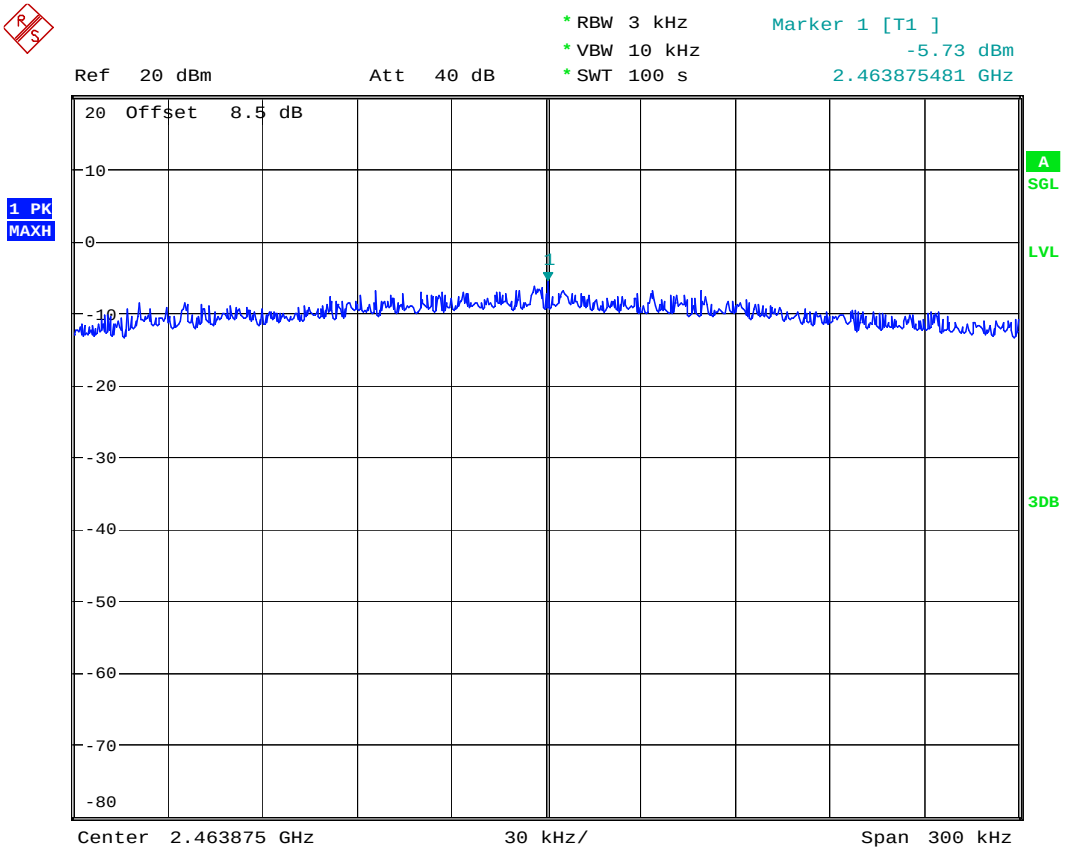
2462 MHz



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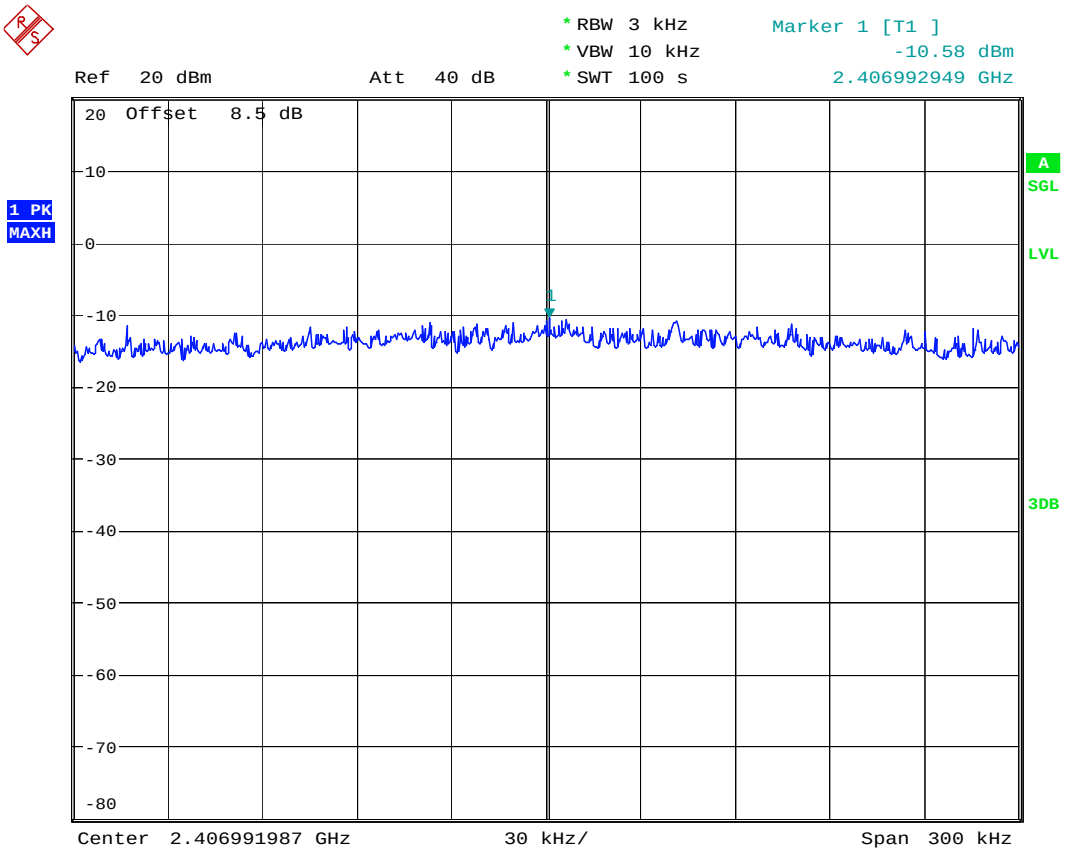
6.6.3.2 802.11ng HT40 mode

2422 MHz



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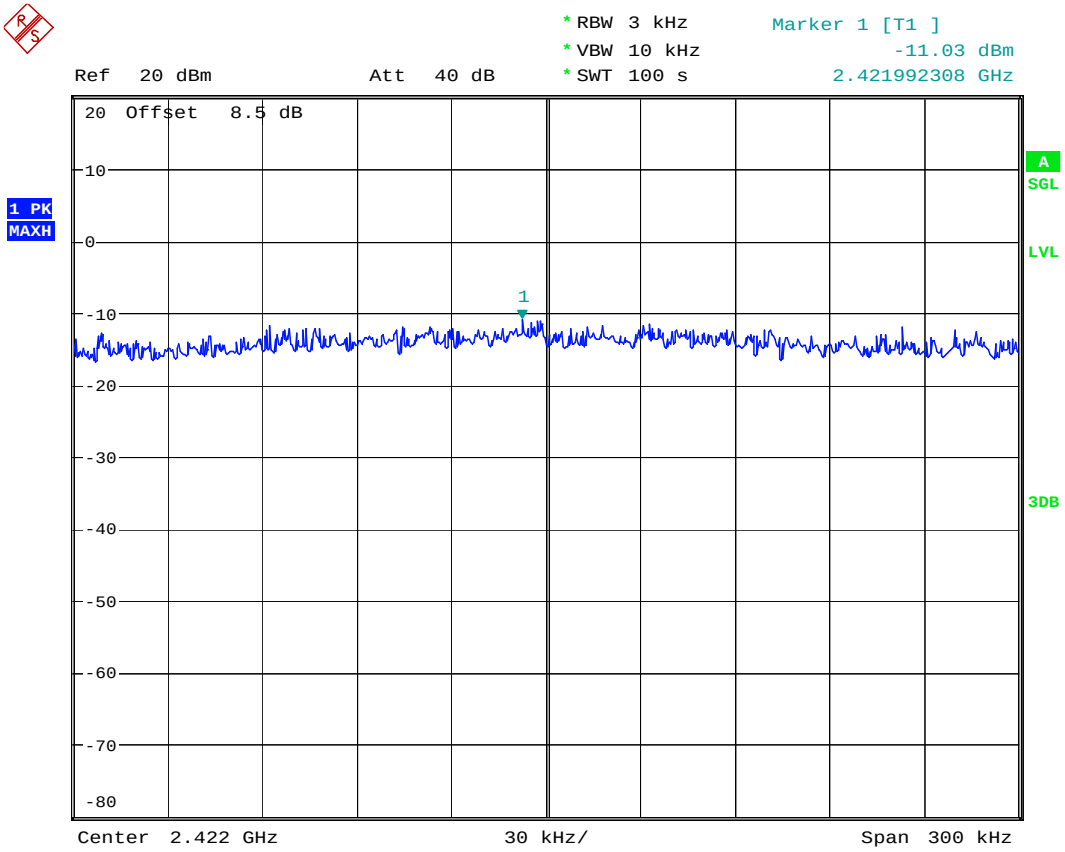
2437MHz



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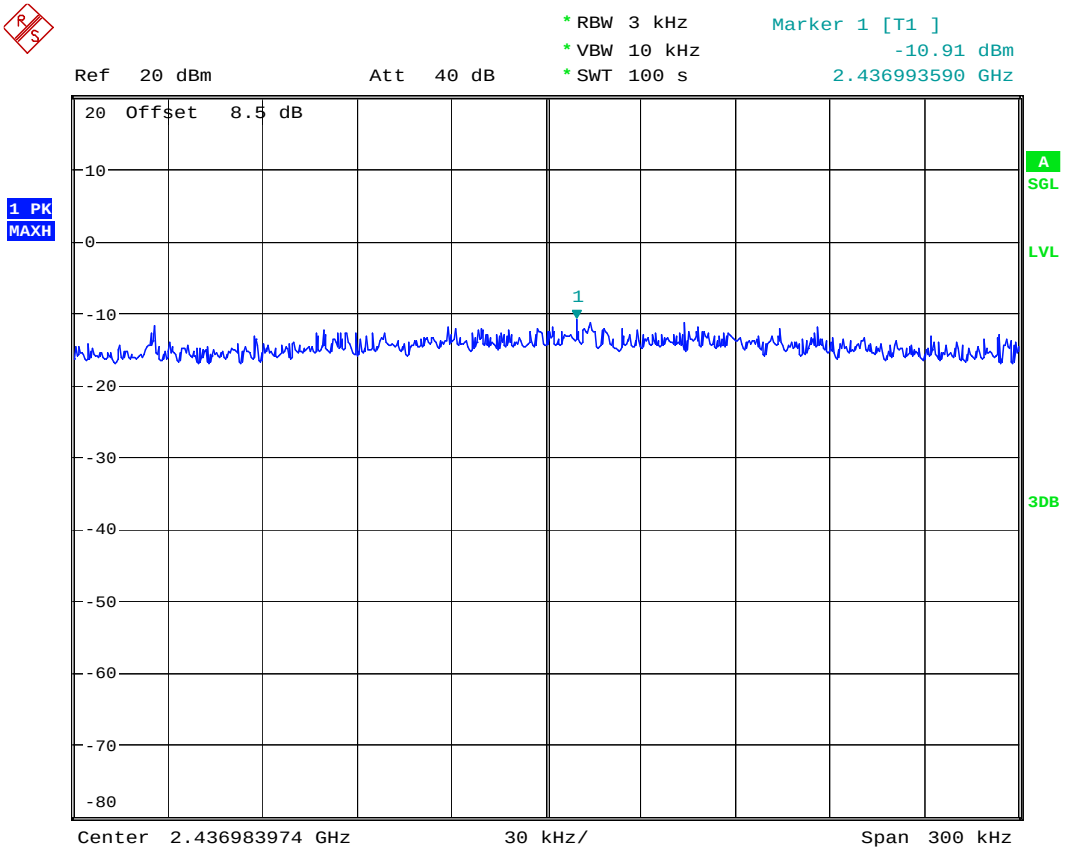
2452MHz



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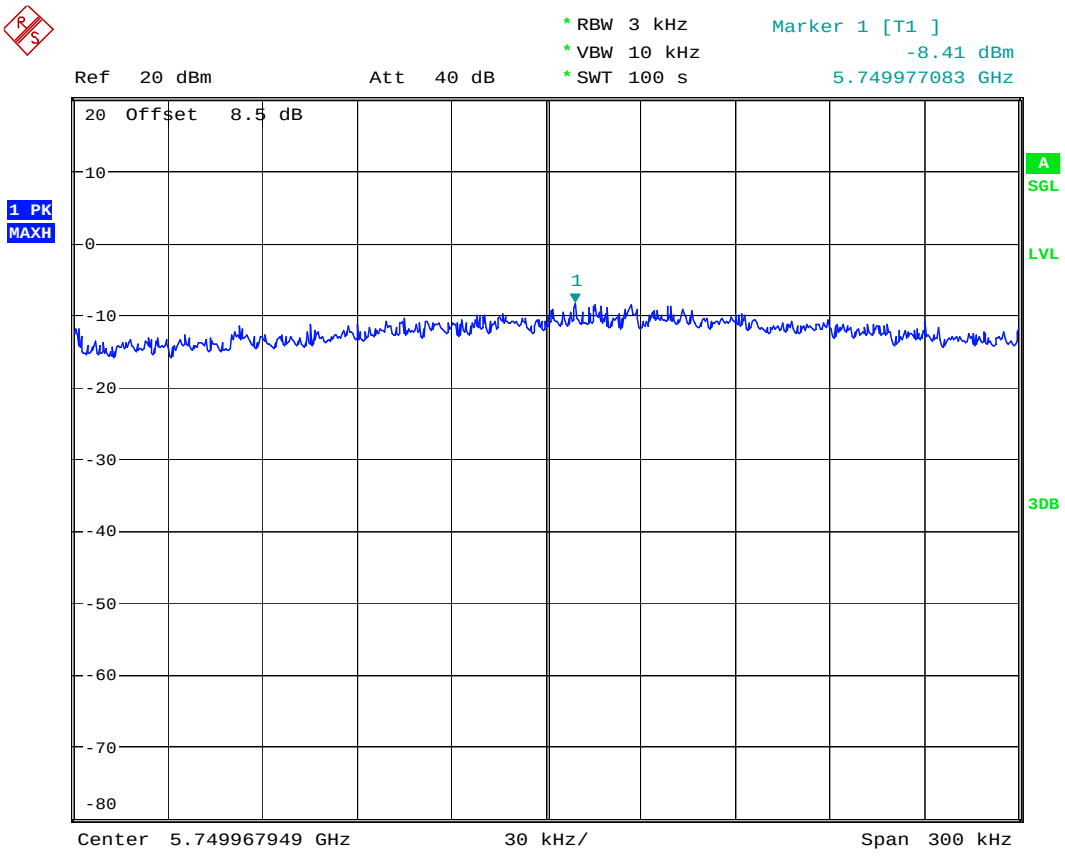
6.6.3.3 802.11na HT20 Mode

5745MHz



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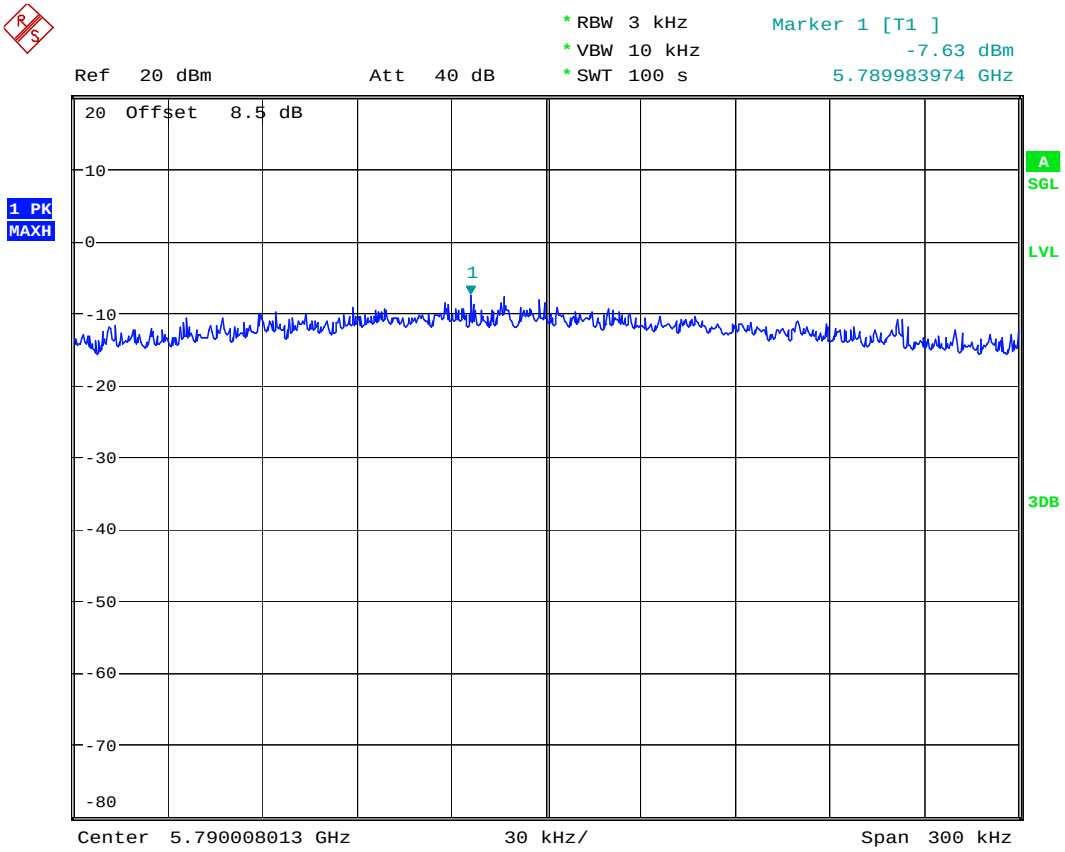

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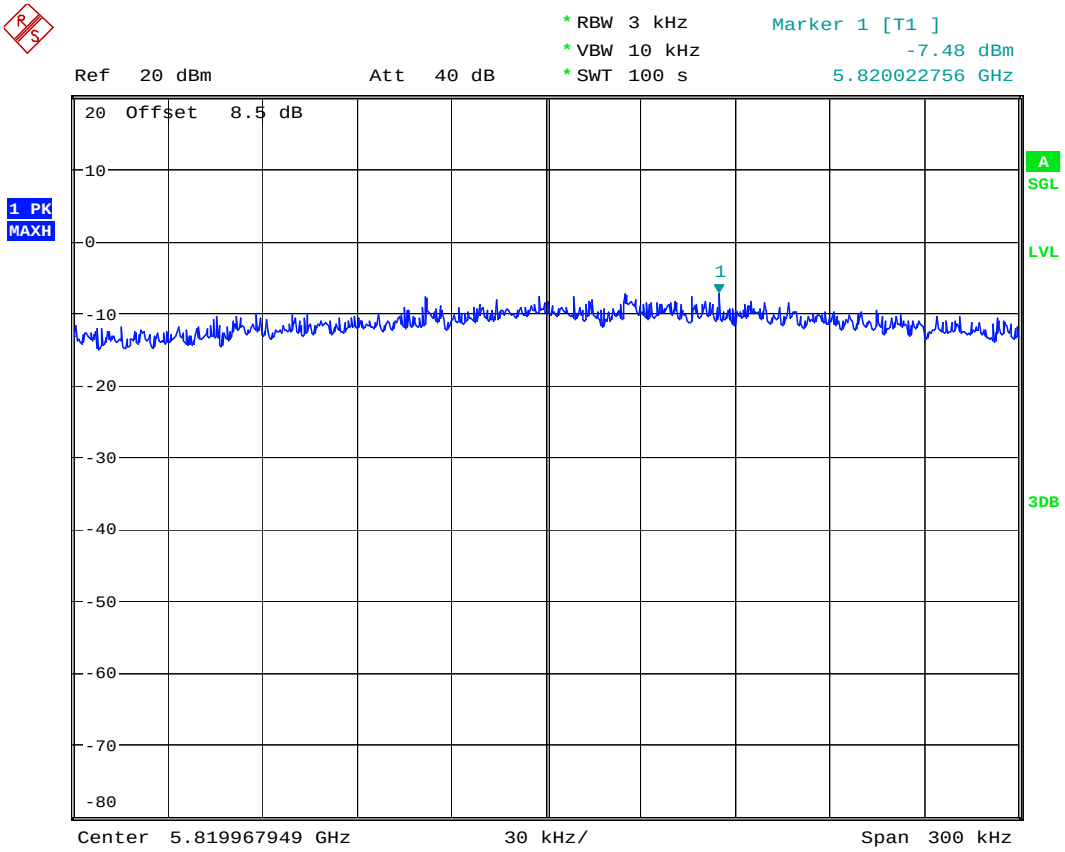

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6.6.3.4 802.11na HT40 Mode

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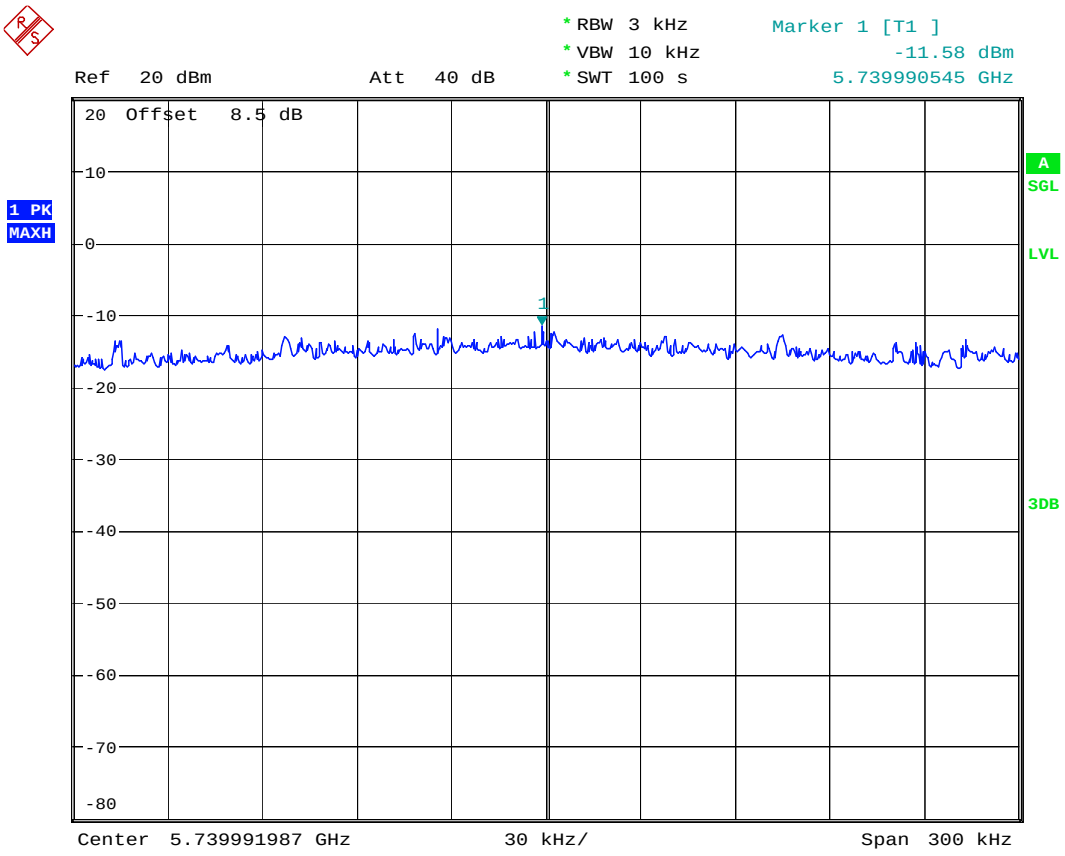

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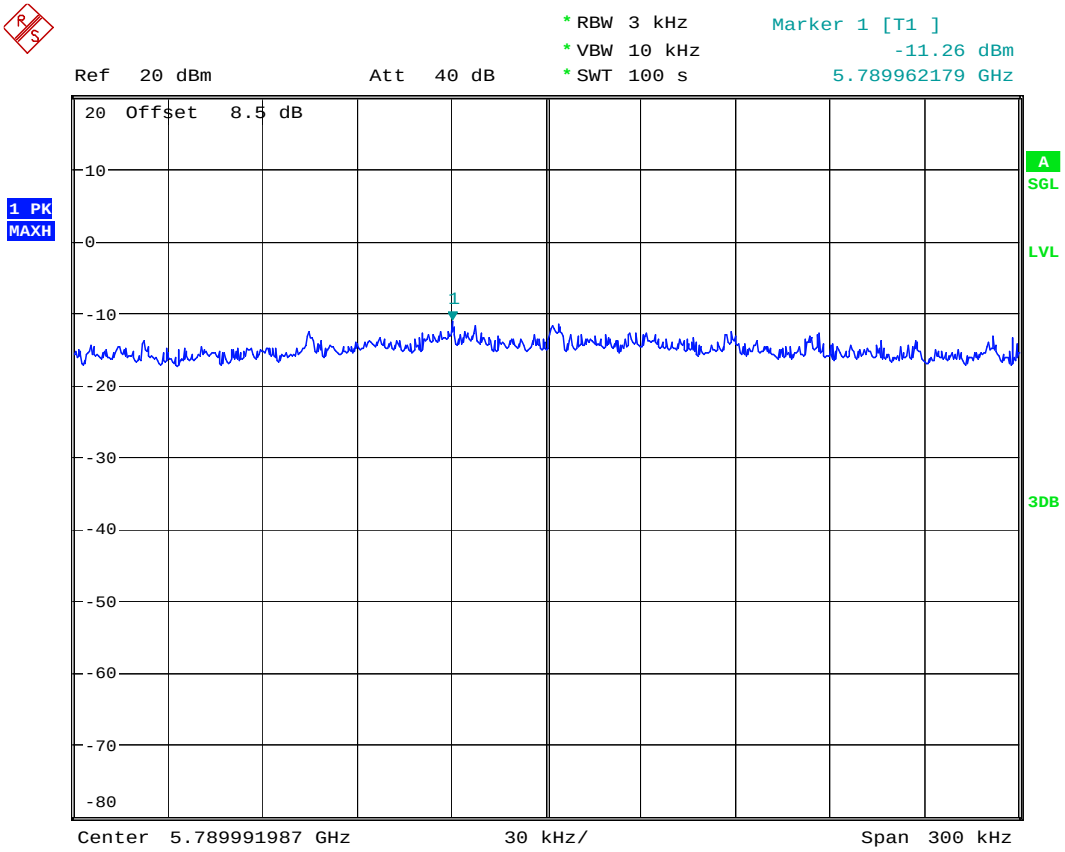

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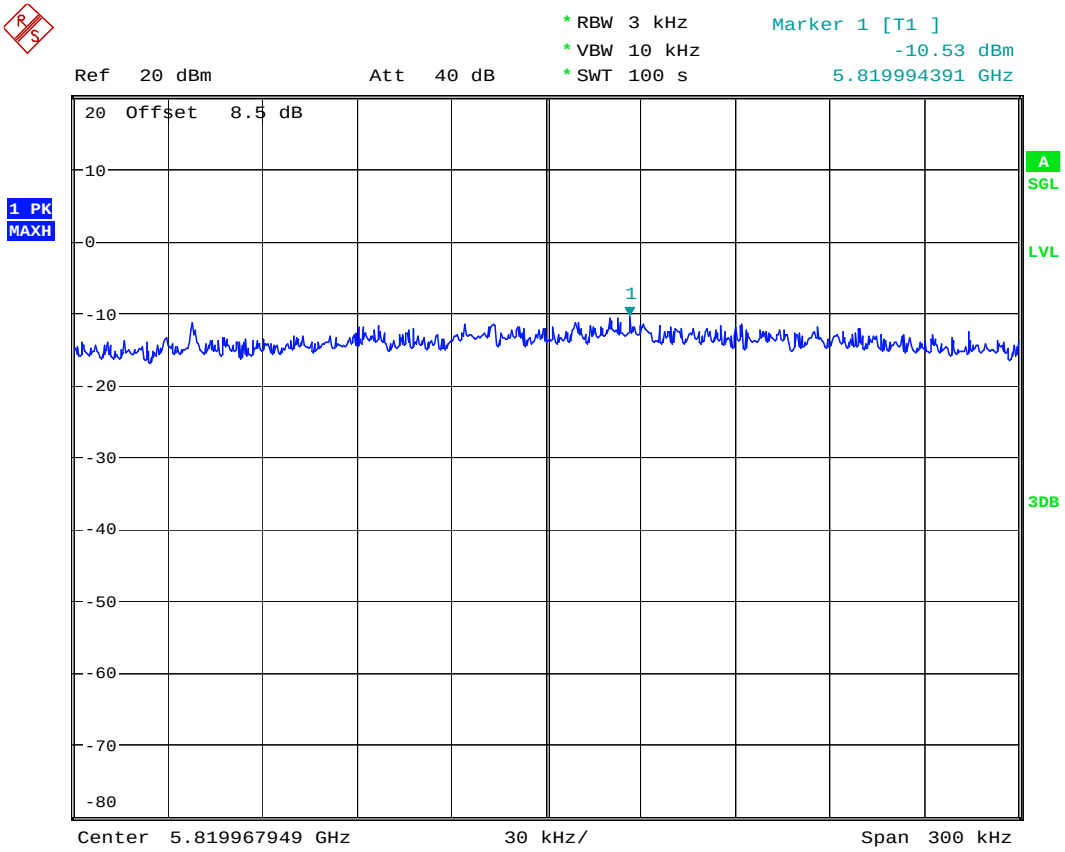

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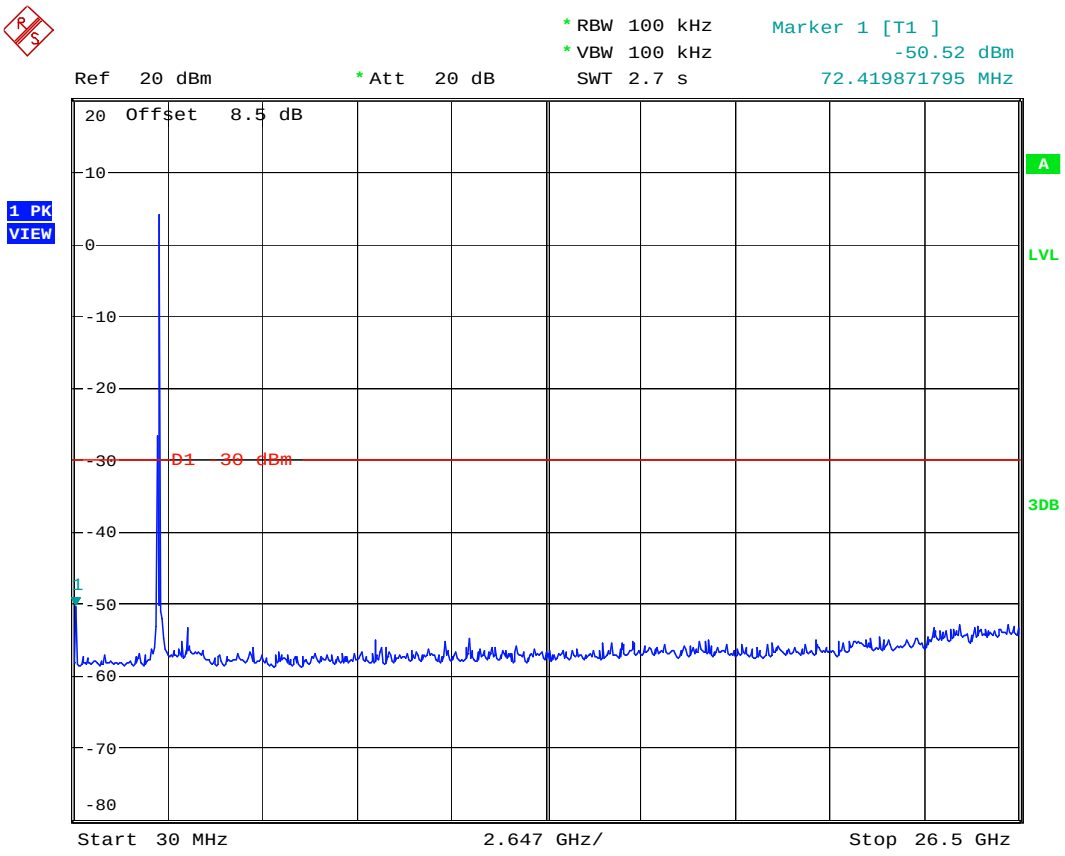
6.6.4 Conducted Spurious Emissions

6.6.4.1 802.11ng HT20 mode

2412MHz



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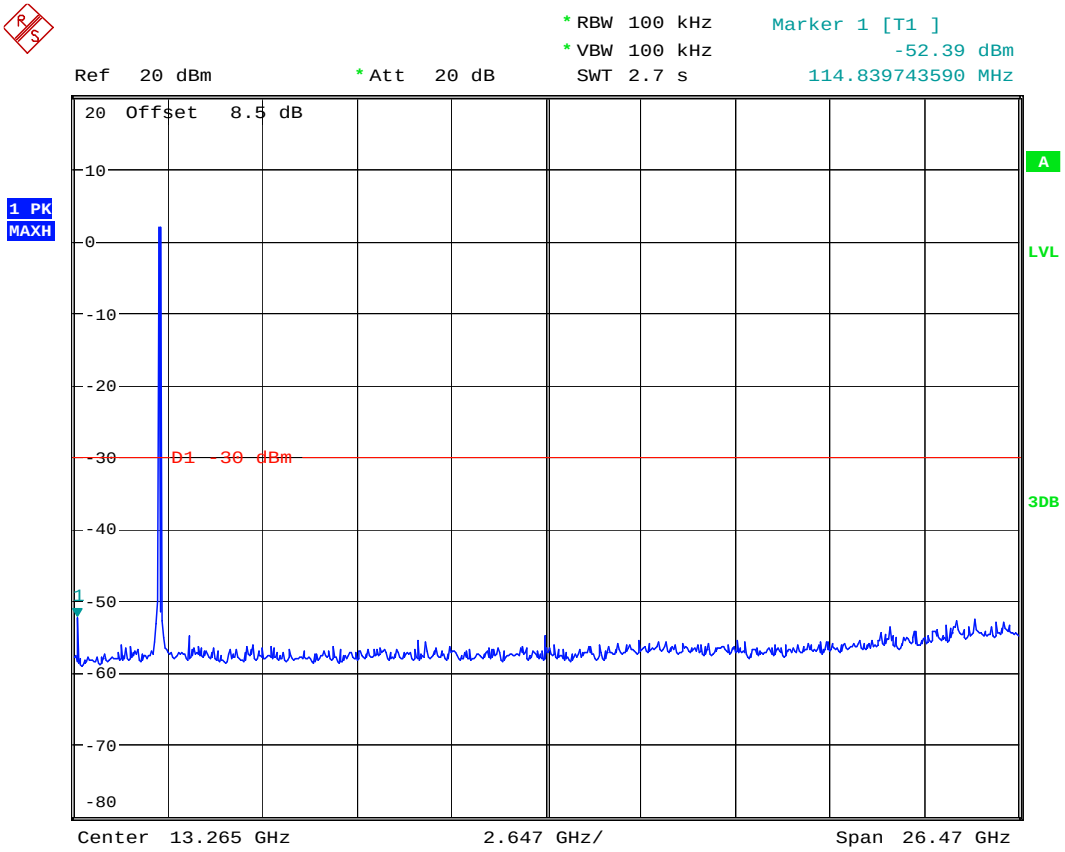
2437 MHz



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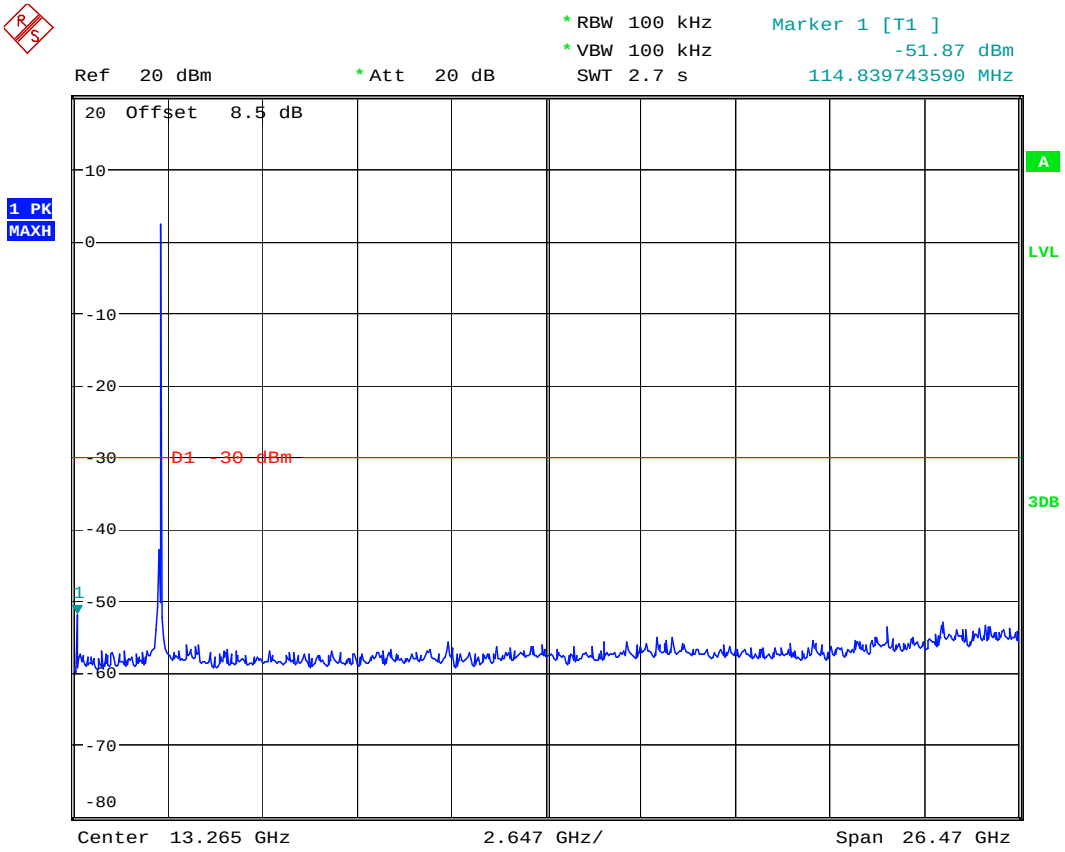
2462 MHz



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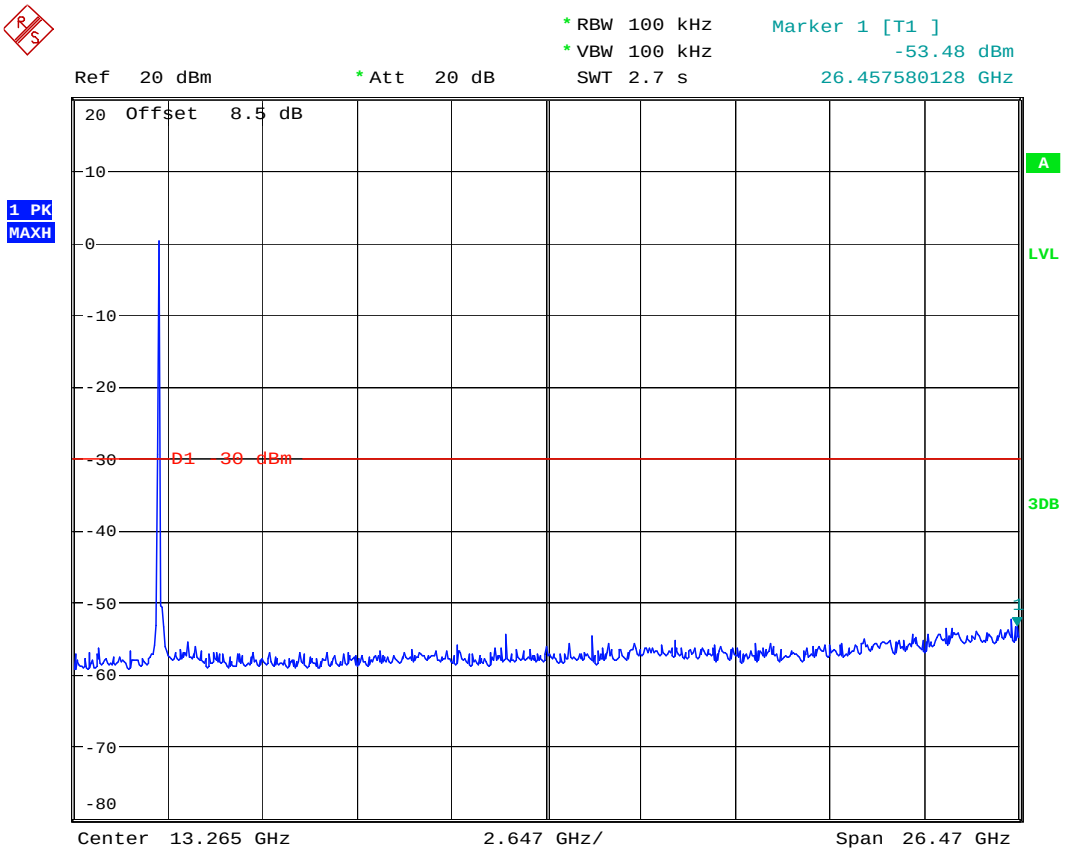

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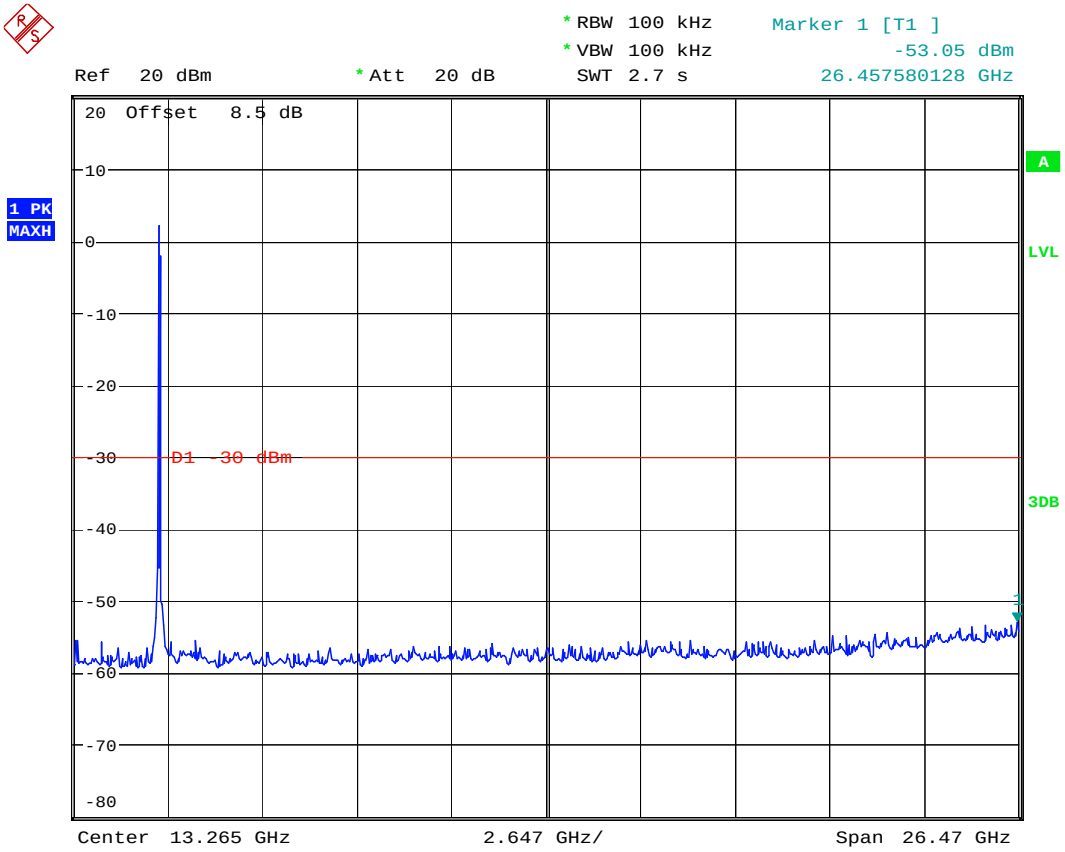

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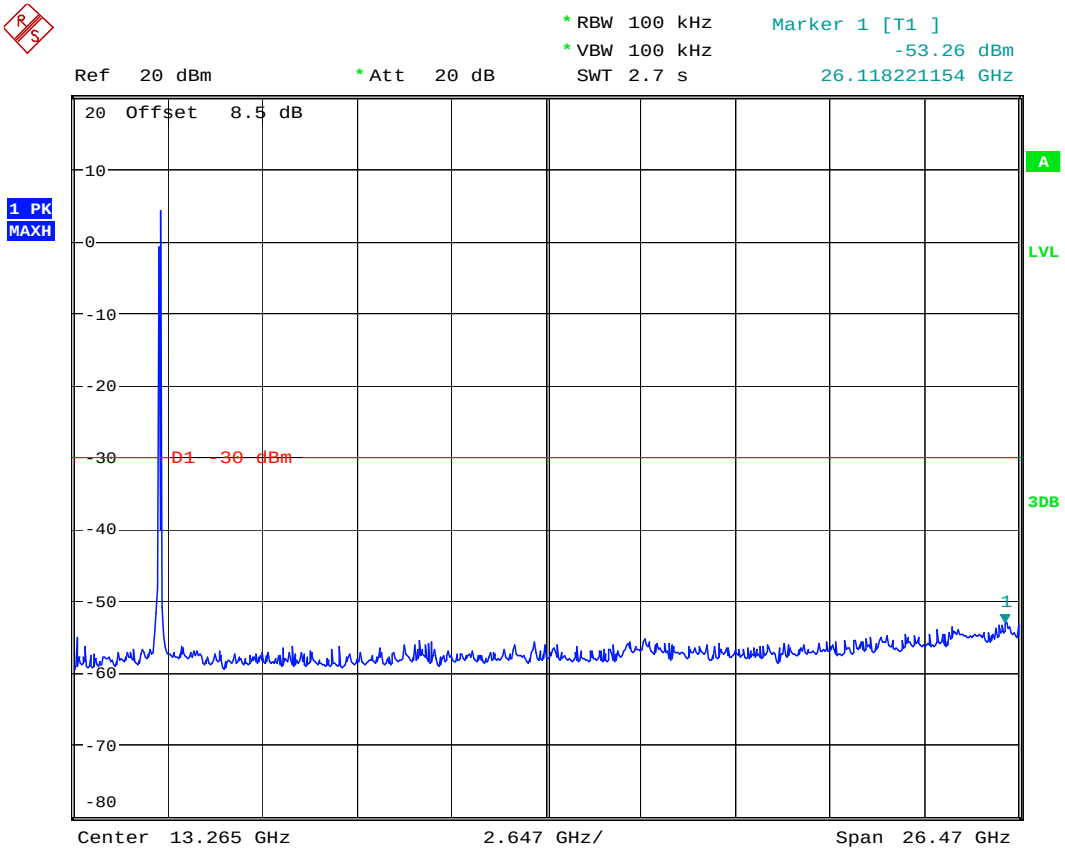

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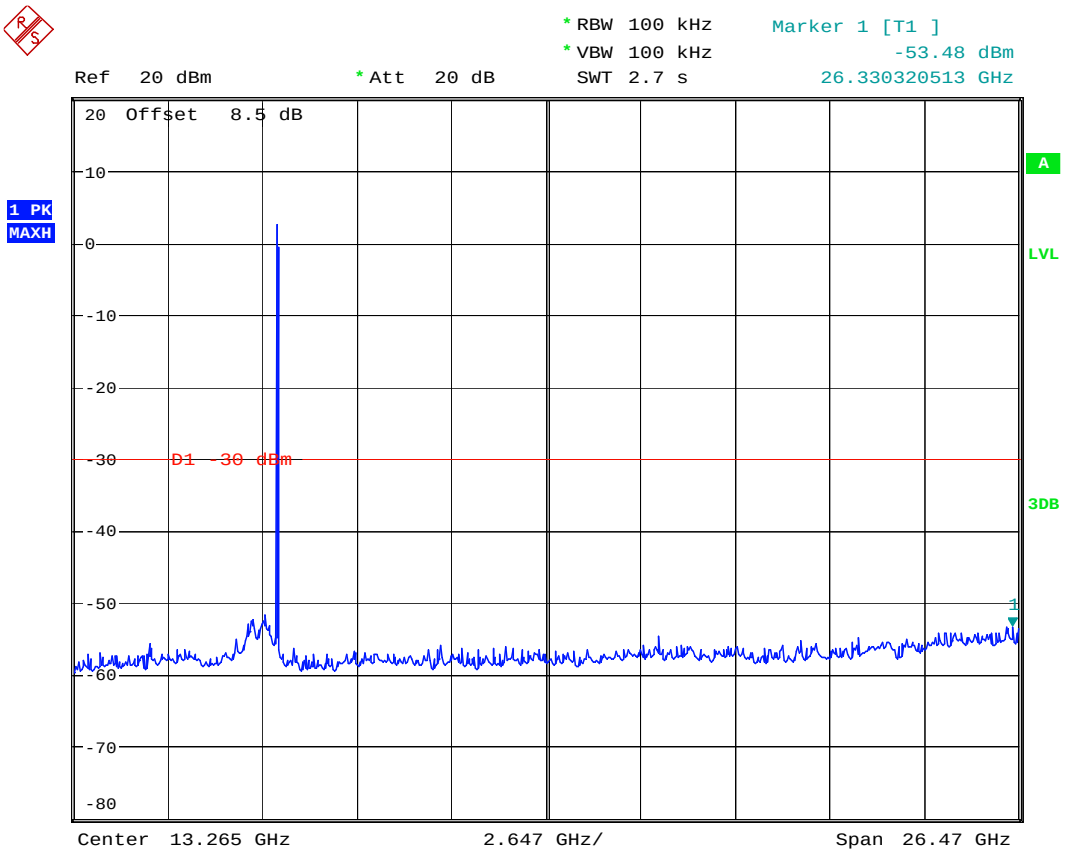
6.6.4.3 802.11na HT20 Mode

5745MHz



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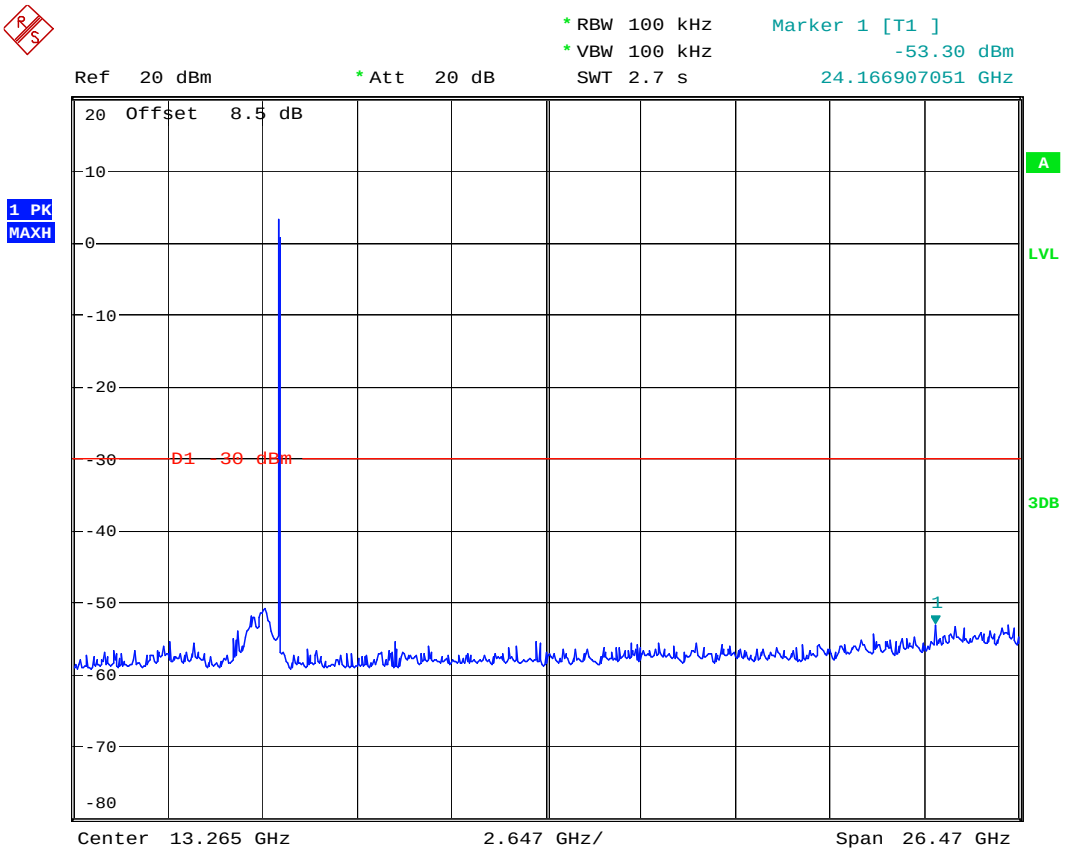

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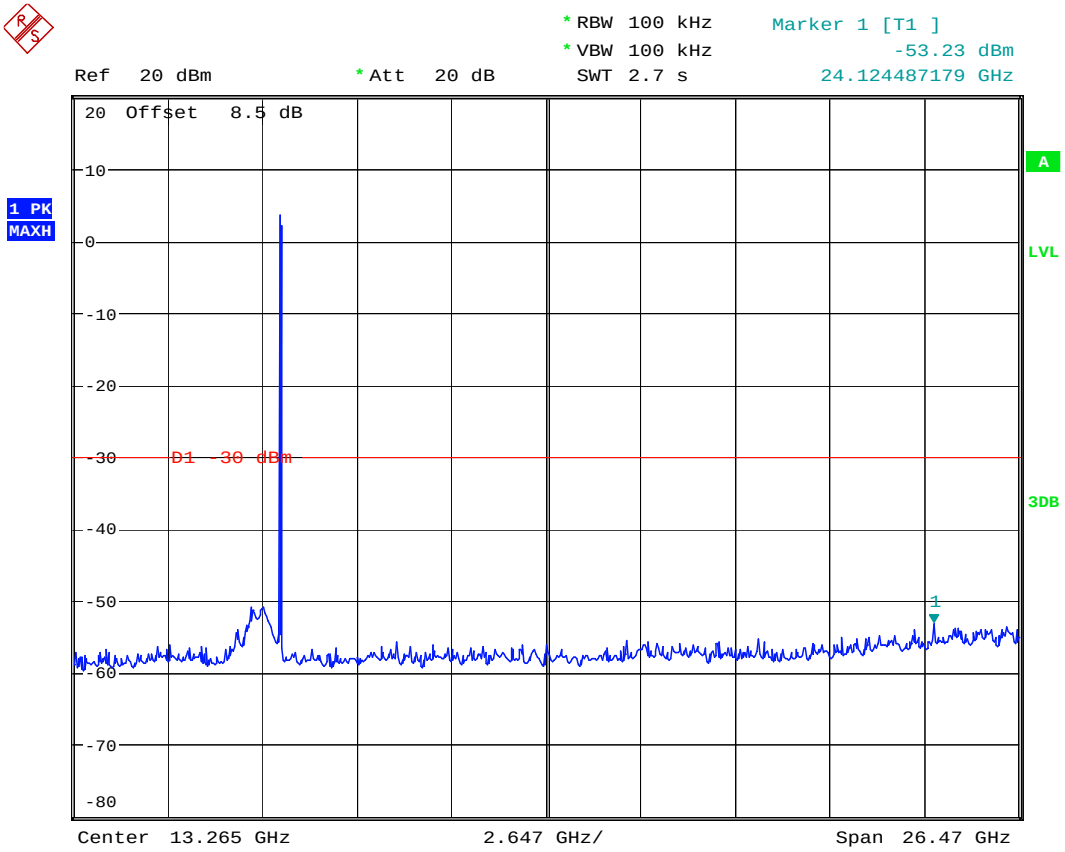

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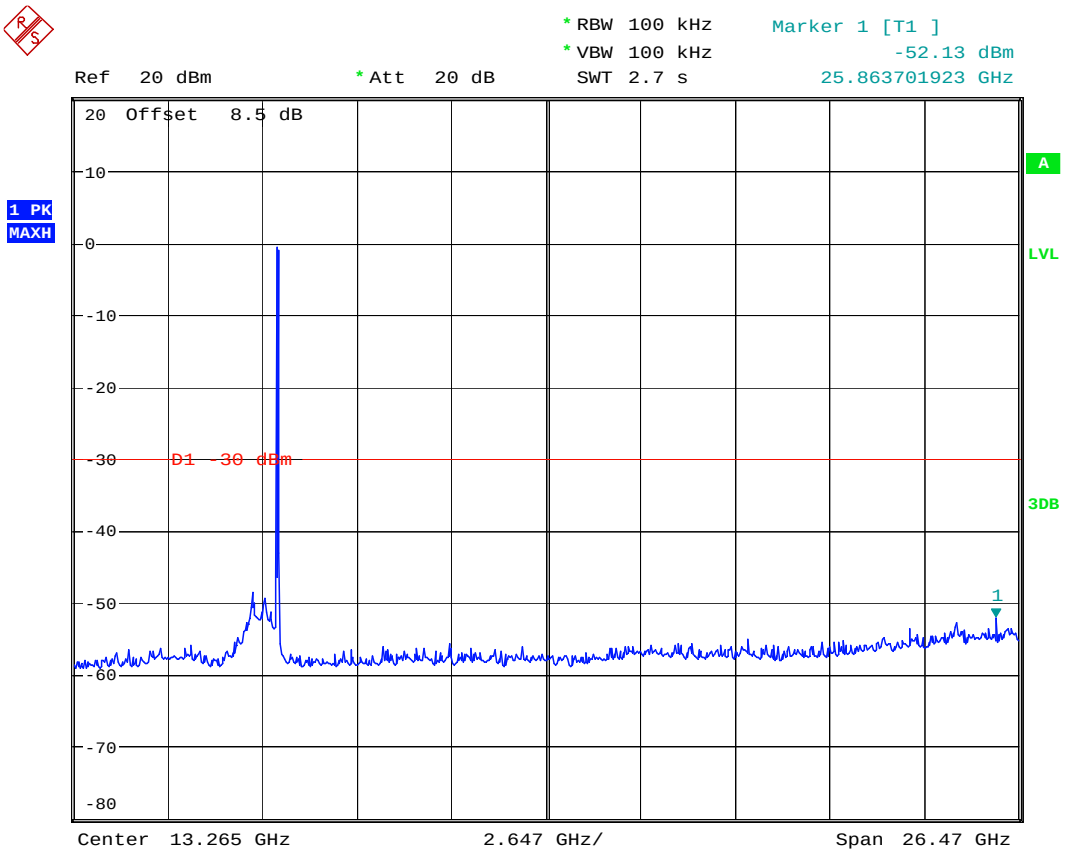
6.6.4.4 802.11na HT40 Mode

5755MHz



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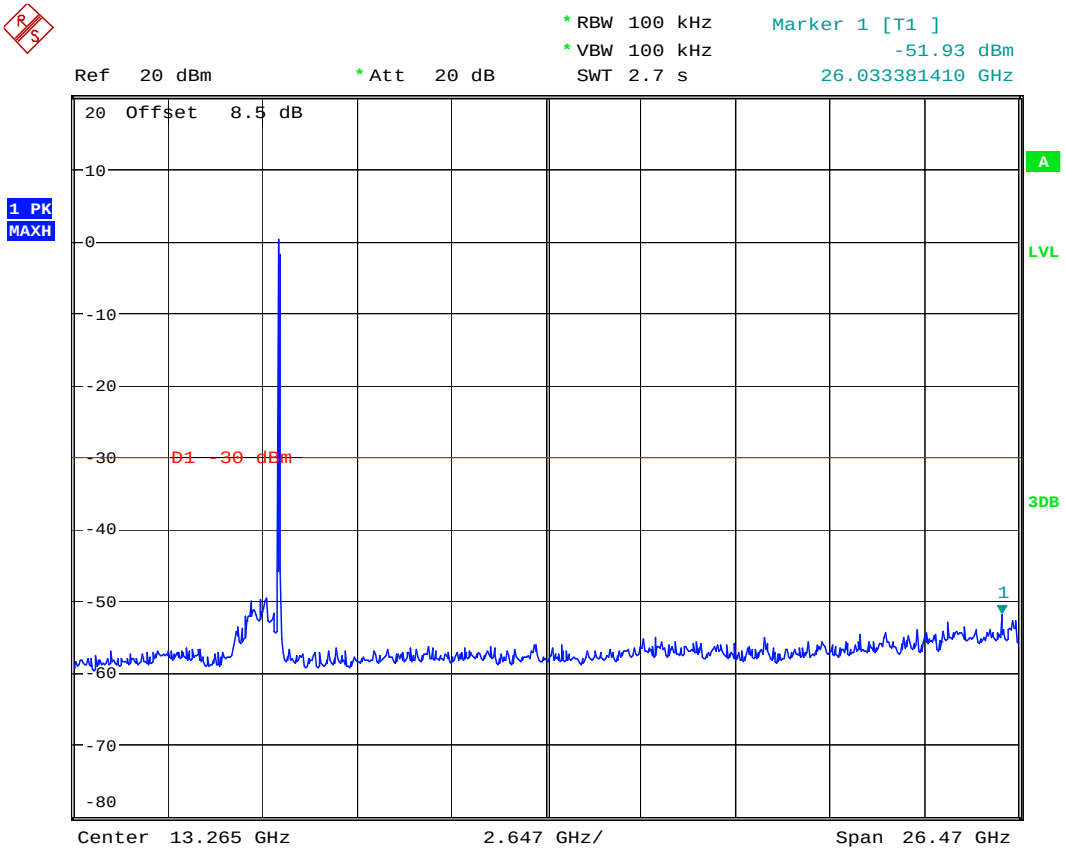

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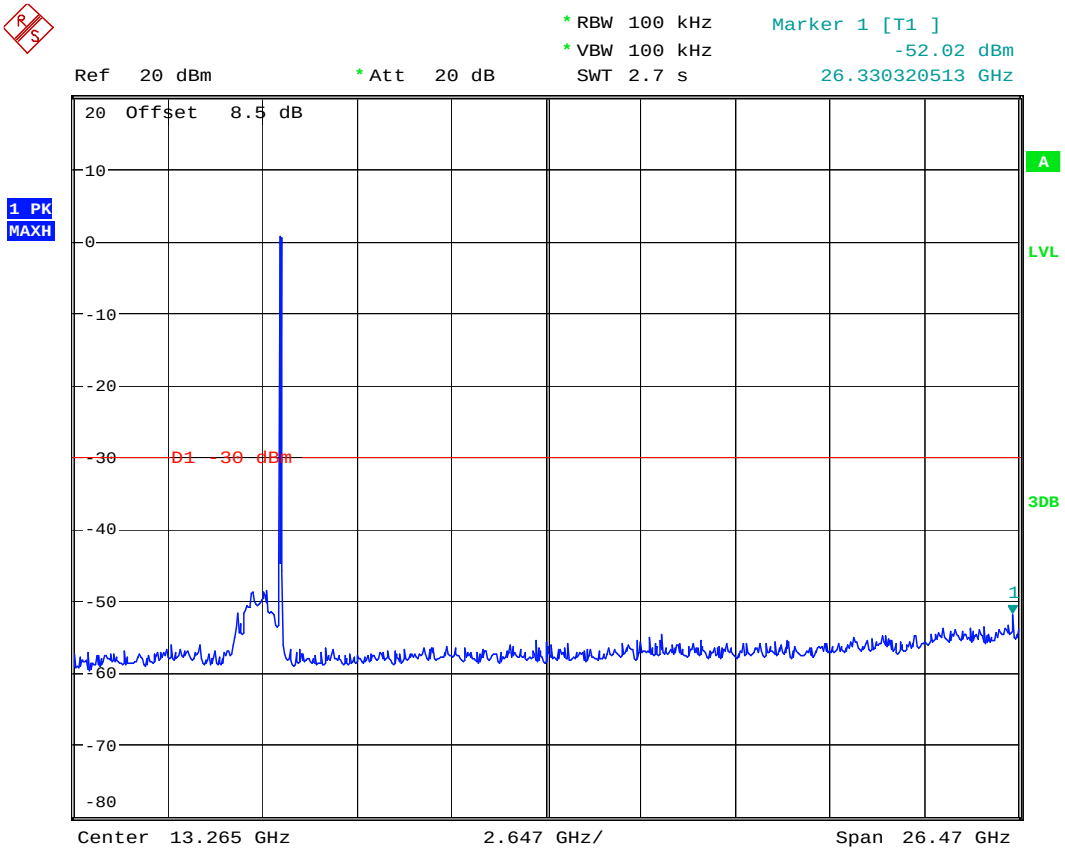

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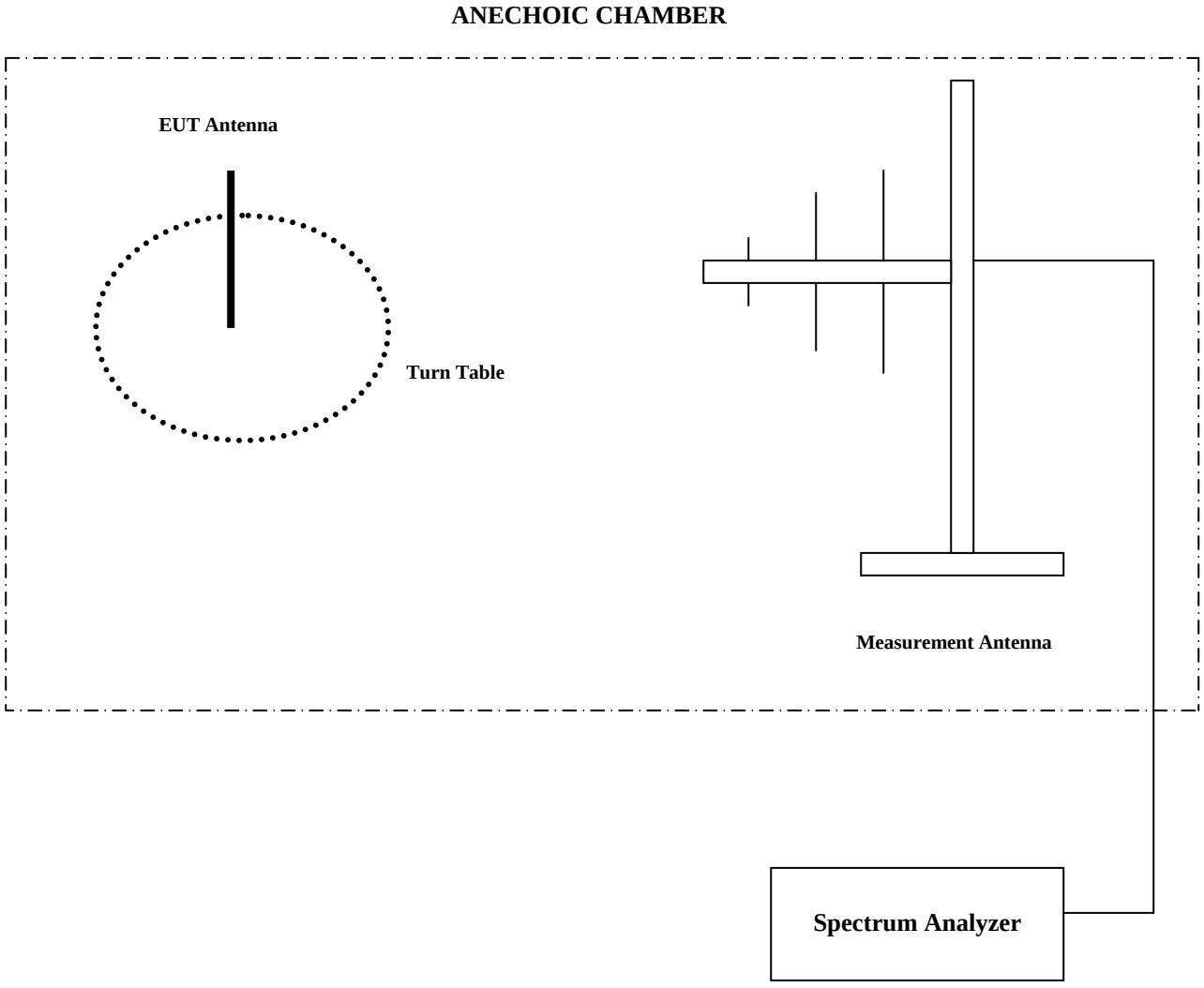
7 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Cal Due	Interval
01	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2008	1 year
02	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	100017	August 2008	1 year
03	Signal Generator	SMY02	Rohde & Schwarz	836878/011	May 2008	1 year
04	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02	May 2008	1 year
05	Biconilog Antenna	3141	EMCO	0005-1186	June 2008	1 year
06	Horn Antenna (1-18GHz)	SAS-200/571	AH Systems	325	June 2008	1 year
07	Horn Antenna (18-26.5GHz)	3160-09	EMCO	1240	June 2008	1 year
08	Power Splitter	11667B	Hewlett Packard	645348	n/a	n/a
09	Climatic Chamber	VT4004	Voltsch	G1115	May 2008	1 year
10	High Pass Filter	5HC2700	Trilithic Inc.	9926013	n/a	n/a
11	High Pass Filter	4HC1600	Trilithic Inc.	9922307	n/a	n/a
12	Pre-Amplifier	JS4-00102600	Miteq	00616	May 2008	1 year
13	Power Sensor	URV5-Z2	Rohde & Schwarz	DE30807	May 2008	1 year
14	Digital Radio Comm. Tester	CMD-55	Rohde & Schwarz	847958/008	May 2008	1 year
15	Universal Radio Comm. Tester	CMU 200	Rohde & Schwarz	832221/06	May 2008	1 year
16	LISN	ESH3-Z5	Rohde & Schwarz	836679/003	May 2008	1 year
17	Loop Antenna	6512	EMCO	00049838	July 2008	2 years

8 BLOCK DIAGRAMS

Radiated Testing



9 Revision History

2008-6-17: First Issue