Test Report

FCC Part 15.407
Industry Canada RSS210

UNII Devices

Model #: PP12S

Broadcom Corporation
190 Mathilda Place
Sunnyvale, CA 94086

FCC ID: QDS-BRCM1031
IC ID: 4324A-BRCM1031

TEST REPORT #: EMC_BROAD_062_08002_15.407_BRCM1031
DATE: 2008-12-03

Certificate # 2135.01

Bluetooth Qualification Test Facility (BQTF)

LAB CODE 20020328-00

FCC listed: A2LA accredited

IC recognized # 3462B

***CETECOM* Inc.**
411 Dixon Landing Road ◆ Milpitas, CA 95035 ◆ U.S.A.
Phone: + 1 (408) 586 6200 ◆ Fax: + 1 (408) 586 6299 ◆ E-mail: info@cetecomusa.com ◆ http://www.cetecom.com
CETECOM Inc. is a Delaware Corporation with Corporation number: 2113686
Board of Directors: Dr. Harald Ansorge, Dr. Klaus Matkey, Hans Peter May

TABLE OF CONTENTS

1 Assessment

The following is in compliance with the applicable criteria specified in FCC rules Part 15.407 of the Code of Federal Regulations.

Company	Model #
Broadcom Corp.	**PP12S**

This report is reviewed by:

Date	Section	Name	Signature
2008-12-03	**EMC & Radio**	**Lothar Schmidt (Director Regulatory and Antenna Services)**	Lothar Schmidt I am approving this document

This report is prepared by:

Date	Section	Name	Signature
2008-12-03	**EMC & Radio**	**Peter Mu (EMC Project Engineer)**	Peter Mu

The test results of this test report relate exclusively to the test item specified in Identification of the Equipment under Test. The CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM Inc USA.

2 Administrative Data

2.1 Identification of the Testing Laboratory Issuing the EMC Test Report

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:	**2008-10-30 to 2008-12-2**

2.2 Identification of the Client

APPLICANT	
Applicant (Company Name)	**Broadcom Corp.**
Street Address	**190 Mathilda Place**
City/Zip Code	**Sunnyvale, CA 94086**
Country	**U.S.A.**
Contact Person	**Dan Lawless**
Telephone	**408-922-5870**
Fax	**408-543-3399**
e-mail	**dlawless@broadcom.com**

2.3 Identification of the Manufacturer

Same as 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.):	**PP12S**
Description:	**PP12S**
FCC ID:	**QDS-BRCM1031**
IC ID:	**4324A-BRCM1031**

Frequency Range:	**5180-5250MHz, 5250-5350MHz, 5470-5725MHz**
Modulation:	**OFDM**
Antenna Type:	**Amphenol IFA Antenna** **Peak Gain 5725-5850MHz: 1.64dBi.** **Yageo IFA Antenna** **Peak Gain 5725-5850MHz: 1.63dBi.**
Max Output Power:	**Sub-band 1: 5150-5250MHz** **802.11a mode:** **EIRP: 16.34 dBm, (43.09mW). Conducted: 14.7dBm (29.51mW)** **802.11n HT20 mode:** **EIRP: 13.64dBm, (23.14mW). Conducted: 12.0dBm (15.85mW)** **802.11n HT40 mode:** **EIRP: 16.04dBm, (40.22mW). Conducted: 14.40dBm (27.54mW)** **Sub-band 2: 5250-5350MHz** **802.11a mode:** **EIRP: 19.64dBm, (92.13mW). Conducted: 18.00dBm (63.10mW)** **802.11n HT20 mode:** **EIRP: 20.34dBm, (108.24mW). Conducted: 18.7dBm (74.13mW)** **802.11n HT40 mode:** **EIRP: 20.34dBm, (108.24mW). Conducted: 18.7dBm (74.13mW)** **Sub-band 1: 5470-5725MHz** **802.11a mode:** **EIRP: 19.84dBm, (96.47mW). Conducted: 18.2dBm (66.07mW)** **802.11n HT20 mode:** **EIRP: 21.246dBm, (133.17mW). Conducted: 19.60dBm (91.20mW)** **802.11n HT40 mode:** **EIRP: 21.94dBm, (156.46mW). Conducted: 20.30dBm (107.15mW)**

3.2 Identification of the Equipment under Test (EUT)

EUT #	TYPE	MANF.	MODEL	SERIAL #
1	EUT Host Laptop	Dell	PP12S	AMG-E2-C1

3.3 Identification of Accessory equipment

AE #	TYPE	MANF.	MODEL	SERIAL #
1	AC/DC ADAPTER	Dell	FA65NE0-00	CN-0RX929-73245-87N-1806

4 Subject Of Investigation

All testing was performed on the product referred to in Section 3 as EUT. EUT operates in the band 5150-5250MHz, 5250-5350MHz, and 5470-5725MHz in 802.11a, 802.11n 20MHz (HT20) and 802.11n 40MHz (HT40) mode. The EUT has one transmit and two receive antennae.

The objective of the measurements done by Cetecom Inc. was to measure the performance of the EUT operating under all operating modes as specified by requirements listed in FCC rules Part 15.407 of Title 47 of the Code of Federal Regulations. The maximization of portable equipment is conducted in accordance with ANSI C63.4

There are two sets of antennae being implemented in the host platform with this module. They are differentiated by having the additional "bump" on top of the LCD screen.

There are two antenna manufacturers for each set of antennae, Yageo and Amphenol. Please reference the table below for a complete depiction of the antennae gains at different bands and in different modes of operation.

No	Antenna Manufacturer	Max Peak gain (5GHz)	Configuration
1	Amphenol	**TX2 1.644dBi(H)**	Bump out TA mode
2	Amphenol	TX2 (-0.083)dBi(H)	No Bump TA mode
3	Yageo	Aux 1.52dBi(V)	Bump out TA mode
4	Yageo	Aux 0.67dBi(V)	No Bump TA mode
5	Amphenol	Main 1.37dBi(V)	Bump out PC mode
6	Amphenol	Main 1.37dBi(V)	No Bump PC mode
7	Yageo	Main (-0.27)dBi(V)	Bump out PC mode
8	Yageo	**Main 1.63dBi(V)**	No Bump PC mode

Since the Amphenol "bump" antenna has the highest numeric gain in 5GHz band, all tests are conducted with this antenna in the corresponding configuration where the highest gain is obtained.

That is, in 5GHz band the EUT is tested in Tablet PC mode.

5 Radiated Measurements

5.1 Maximum Peak Output Power § 15.407 (Radiated)

5.1.1 FCC Limits:

Conducted Output Power is defined as the following (reduced if directional gain > 6dBi):

Sub-band 1: 5150-5250MHz: 15.407(a)(1): 50mW or 4dBm + 10log(B),
Sub-band 2: 5250-5350MHz: 15.407(a)(2): 250mW or 11dBm + 10log(B)
Sub-band 3: 5470-5725MHz: 15.407(a)(2): 250mW or 11dBm + 10log(B)

B is the 26–dB emission bandwidth in MHz.

Directional gain is 0.57dBi < 6dBi so EIRP limit = Conducted Limit + 6dBm.

802.11a Mode

Channel Frequency	Conducted Output Power Limit (dBm)			EIRP Limit (dBm)
	Stated	Calculated	Applicable	
5180	17.0	17.46	17.0	23.0
5220	17.0	19.48	17.0	23.0
5240	17.0	19.74	17.0	23.0
5260	24.0	26.68	24.0	30.0
5300	24.0	26.38	24.0	30.0
5320	24.0	24.46	24.0	30.0
5500	24.0	26.54	24.0	30.0
5600	24.0	27.10	24.0	30.0
5700	24.0	25.74	24.0	30.0

802.11n HT20 Mode

Channel Frequency	Conducted Output Power Limit (dBm)			EIRP Limit (dBm)
	Stated	Calculated	Applicable	
5180	17.0	18.08	17.0	23.0
5220	17.0	20.50	17.0	23.0
5240	17.0	20.52	17.0	23.0
5260	24.0	27.11	24.0	30.0
5300	24.0	27.14	24.0	30.0

5320	24.0	25.83	24.0	30.0
5500	24.0	27.51	24.0	30.0
5600	24.0	27.50	24.0	30.0
5700	24.0	27.42	24.0	30.0

802.11n HT40 Mode

Channel Frequency	Conducted Output Power Limit (dBm)			EIRP Limit (dBm)
	Stated	Calculated	Applicable	
5190	17.0	20.07	17.0	23.0
5230	17.0	22.96	17.0	23.0
5270	24.0	30.15	24.0	30.0
5310	24.0	27.10	24.0	30.0
5510	24.0	27.11	24.0	30.0
5590	24.0	27.88	24.0	30.0
5690	24.0	28.54	24.0	30.0

5.1.2 **IC Limits**

Sub-band 1: 5150-5250MHz: RSS-210 A9.2(1): 200 mW or 10 + 10 log(B)
Sub-band 2: 5250-5350MHz: RSS-210 A9.2(2): 1W or 17dBm + 10log(B)
Sub-band 3: 5470-5725MHz: RSS-210 A9.2(2): 1W or 17dBm + 10log(B)

B is the 99% emission bandwidth in MHz

802.11a Mode

Channel Frequency	EIRP Limit (mW)		
	Stated	Calculated	Applicable
5180	200.00	170.00	170.00
5220	200.00	171.00	171.00
5240	200.00	171.00	171.00
5260	1000.00	857.03	857.03
5300	1000.00	857.03	857.03
5320	1000.00	857.03	857.03
5500	1000.00	857.03	857.03
5600	1000.00	882.09	882.09
5700	1000.00	857.03	857.03

802.11n HT20 Mode

Channel Frequency	EIRP Limit (mW)		
	Stated	Calculated	Applicable
5180	200.00	181.00	181.00
5220	200.00	181.00	181.00
5240	200.00	182.00	182.00
5260	1000.00	907.15	907.15
5300	1000.00	907.15	907.15
5320	1000.00	912.16	912.16
5500	1000.00	912.16	912.16
5600	1000.00	917.17	917.17
5700	1000.00	912.16	912.16

802.11n HT40 Mode

Channel Frequency	EIRP Limit (mW)		
	Stated	Calculated	Applicable
5190	200.00	363.00	200.00
5230	200.00	366.00	200.00
5270	1000.00	1834.35	1000.00
5310	1000.00	1819.31	1000.00
5510	1000.00	1824.32	1000.00
5590	1000.00	1809.29	1000.00
5690	1000.00	1824.32	1000.00

5.1.3 **Measurement Results**

EIRP 802.11a MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	EIRP (dBm)	EIRP (mW)
Sub-band 1: 5150-5250MHz	5180	16.14	41.15
	5220	16.34	43.09
	5240	15.94	39.30
Sub-band 2: 5250-5350MHz	5260	19.34	85.98
	5300	19.64	92.13
	5320	17.84	60.87
Sub-band 3: 5470-5725MHz	5500	19.04	80.24
	5600	19.74	94.28
	5700	19.84	96.47

EIRP 802.11n HT20 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	EIRP (dBm)	EIRP (mW)
Sub-band 1: 5150-5250MHz	5180	13.44	22.10
	5220	13.44	22.10
	5240	13.64	23.14
Sub-band 2: 5250-5350MHz	5260	20.24	105.78
	5300	20.34	108.24
	5320	18.44	69.89
Sub-band 3: 5470-5725MHz	5500	20.44	110.76
	5600	21.24	133.17
	5700	21.14	130.14

EIRP 802.11n HT40 MODE:

TEST CONDITIONS T_{nom}(23)°C, V_{nom}VDC	Channel Frequency	EIRP (dBm)	EIRP (mW)
Sub-band 1: 5150-5250MHz	5190	15.64	36.68
	5230	16.04	40.22
Sub-band 2: 5250-5350MHz	5270	20.34	108.24
	5310	17.84	60.87
Sub-band 3: 5470-5725MHz	5510	21.64	146.02
	5590	21.94	156.46
	5690	21.54	142.69

5.2 Restricted Band Edge Compliance §15.407(b)/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**

Test conducted in radiated mode with all three antenna ports transmitting.

5.2.2 Sub-band 1, 802.11n20 MODE

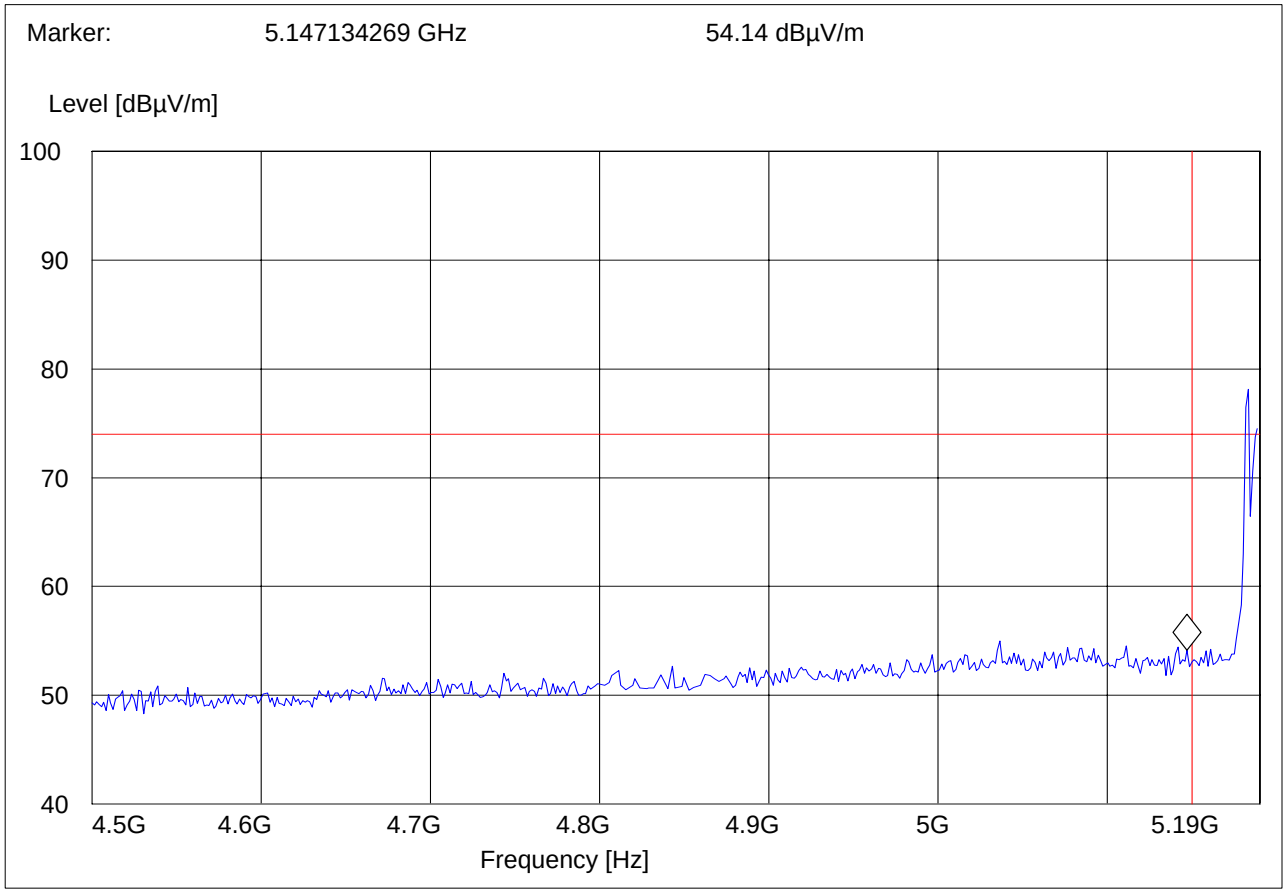
Lower band edge PEAK

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 A_LBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
4.5 GHz	5.2 GHz	MaxPeak MaxPeak	Coupled	1 MHz	#326horn_AF_horz



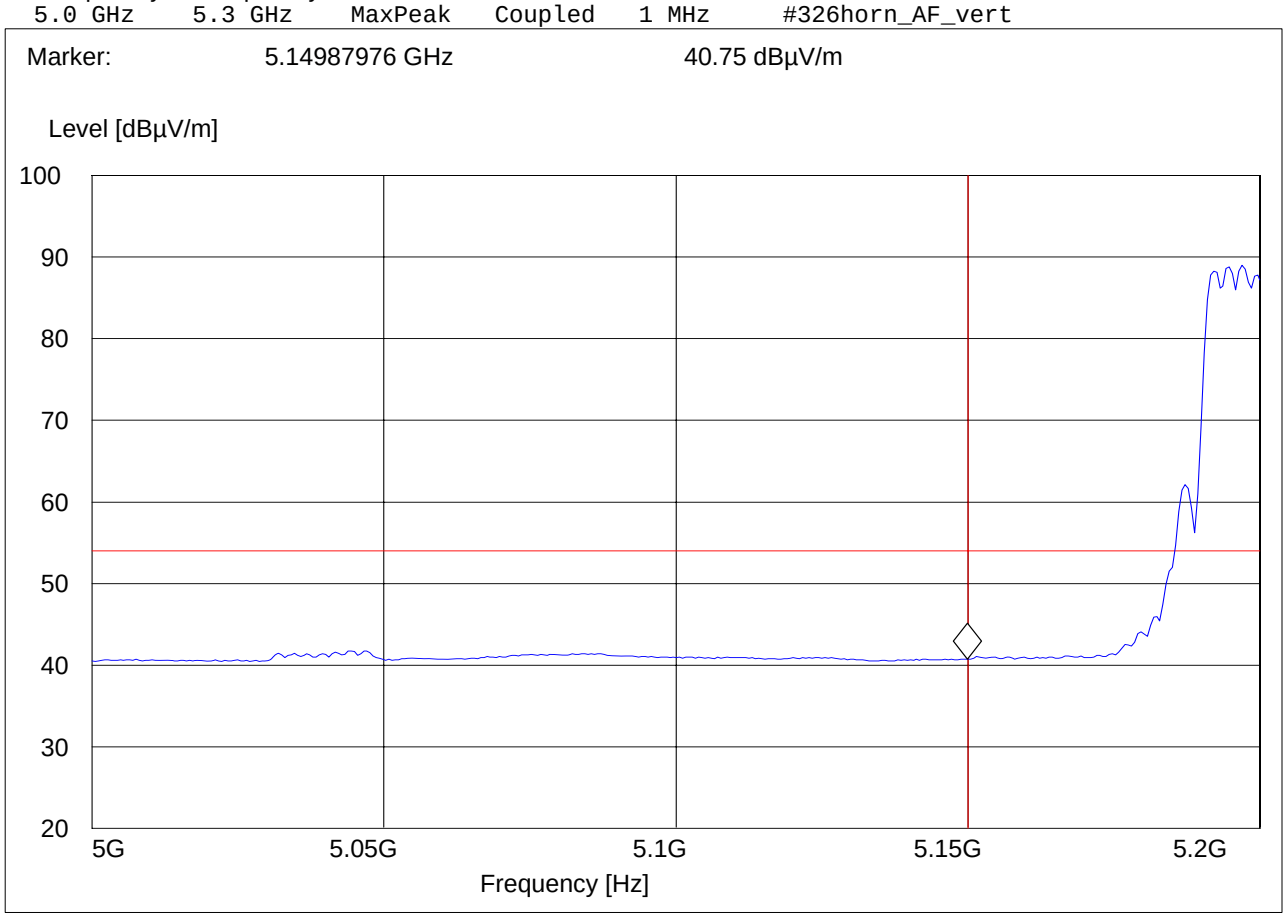
Lower band edge AVERAGE

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 A_LBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.0 GHz	5.3 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



5.2.3 Sub-band 1. 802.11n HT40 MODE

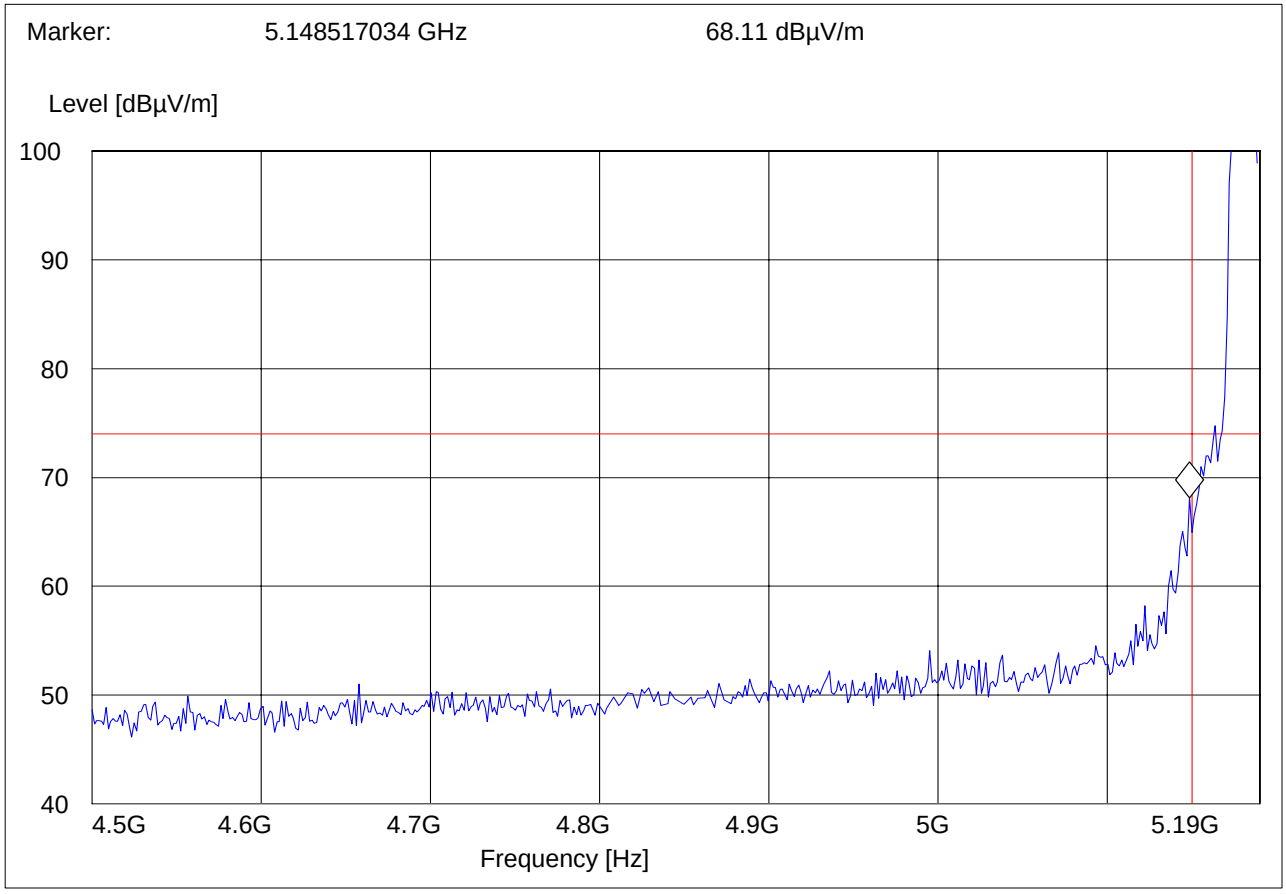
5190MHz, Lower band edge PEAK

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n40
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 A_LBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
4.5 GHz	5.2 GHz	MaxPeak MaxPeak	Coupled	1 MHz	#326horn_AF_horz



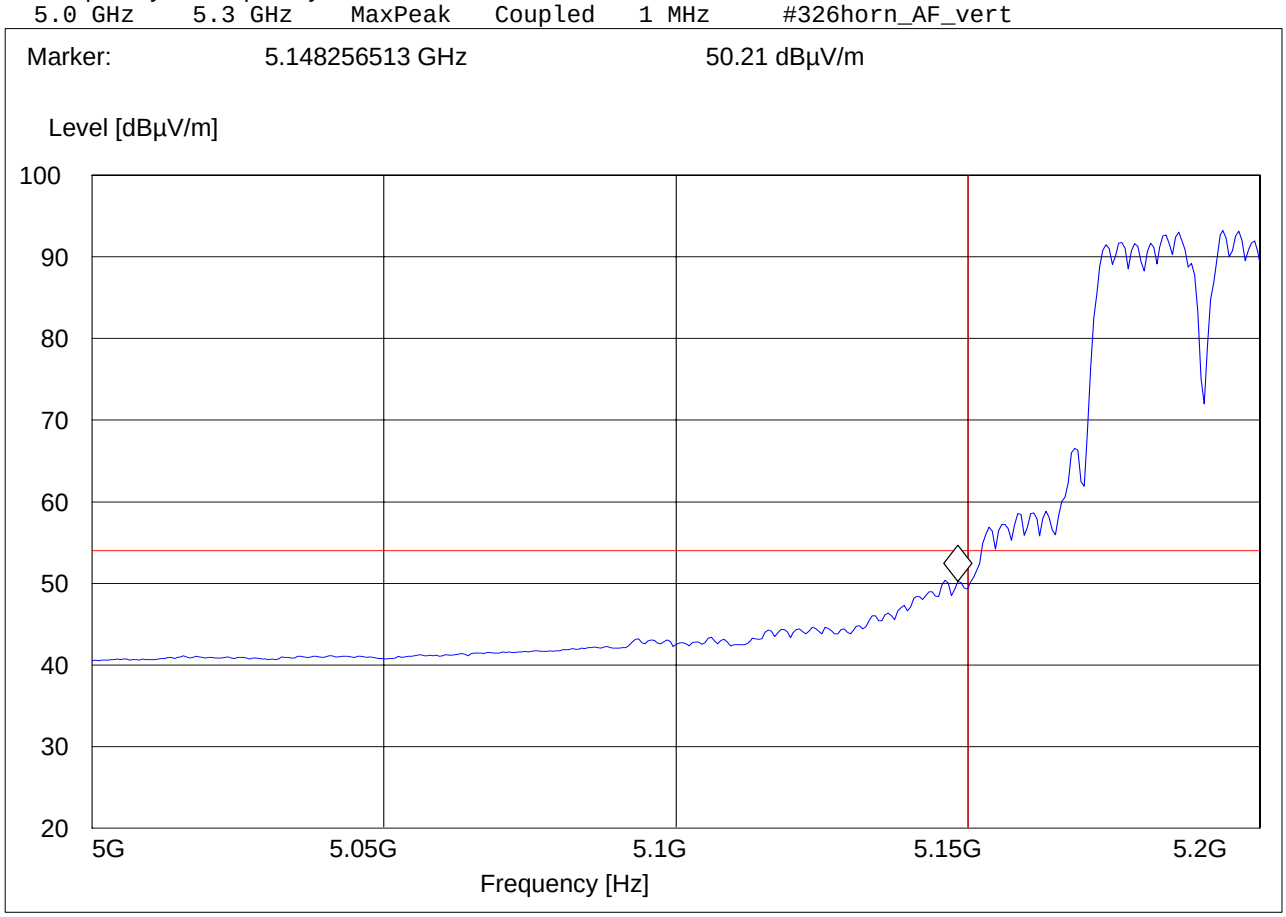
5190MHz, Lower band edge AVG

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n40
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 A_LBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.0 GHz	5.3 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_vert



5.2.4 Sub-band 2. 802.11n HT20 MODE

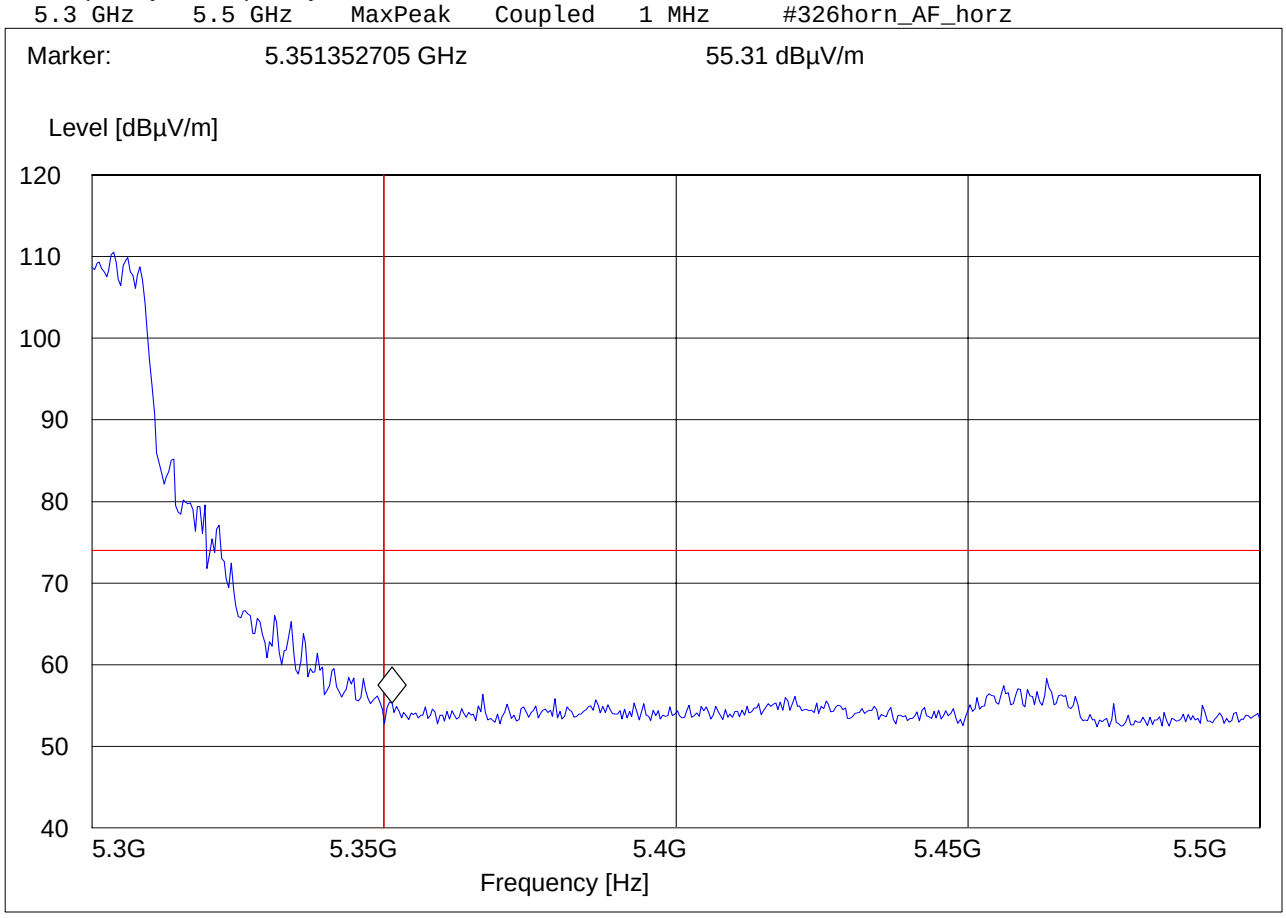
Higher band edge PEAK

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 B_HBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.3 GHz	5.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



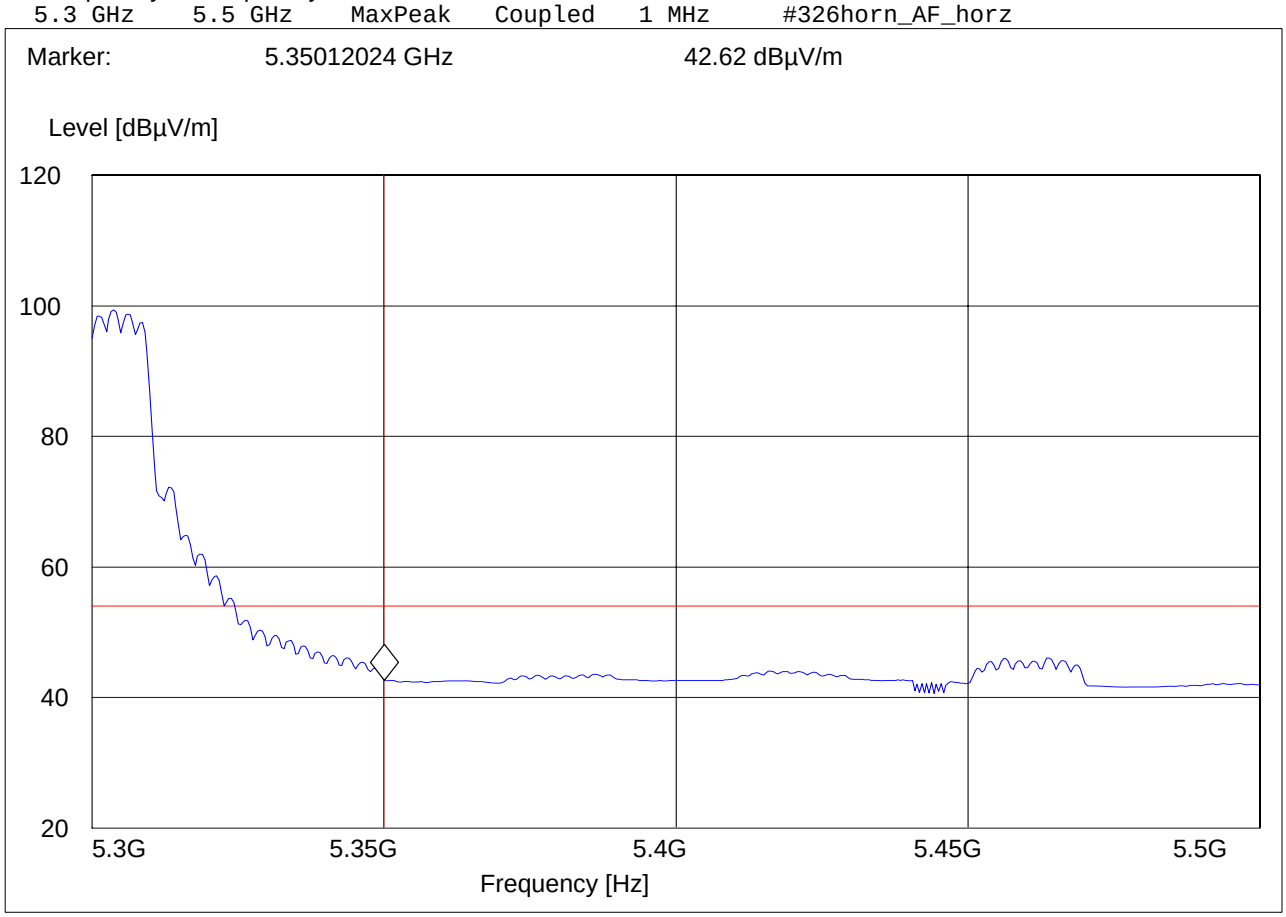
Higher band edge AVERAGE

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 B_HBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.3 GHz	5.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



5.2.5 Sub-band 2. 802.11n HT40 MODE

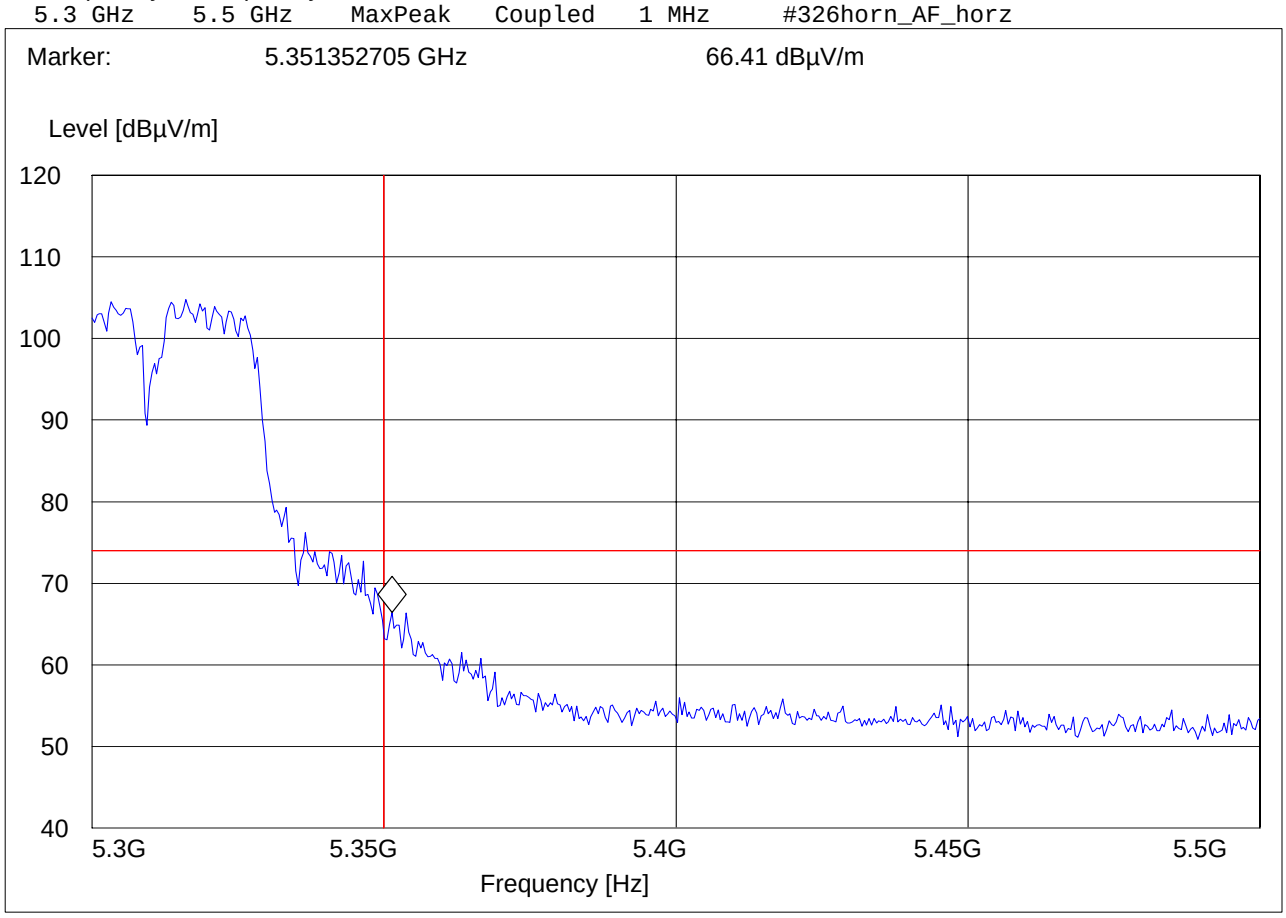
Higher band edge PEAK

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n40
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 B_HBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.3 GHz	5.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



Higher band edge AVERAGE

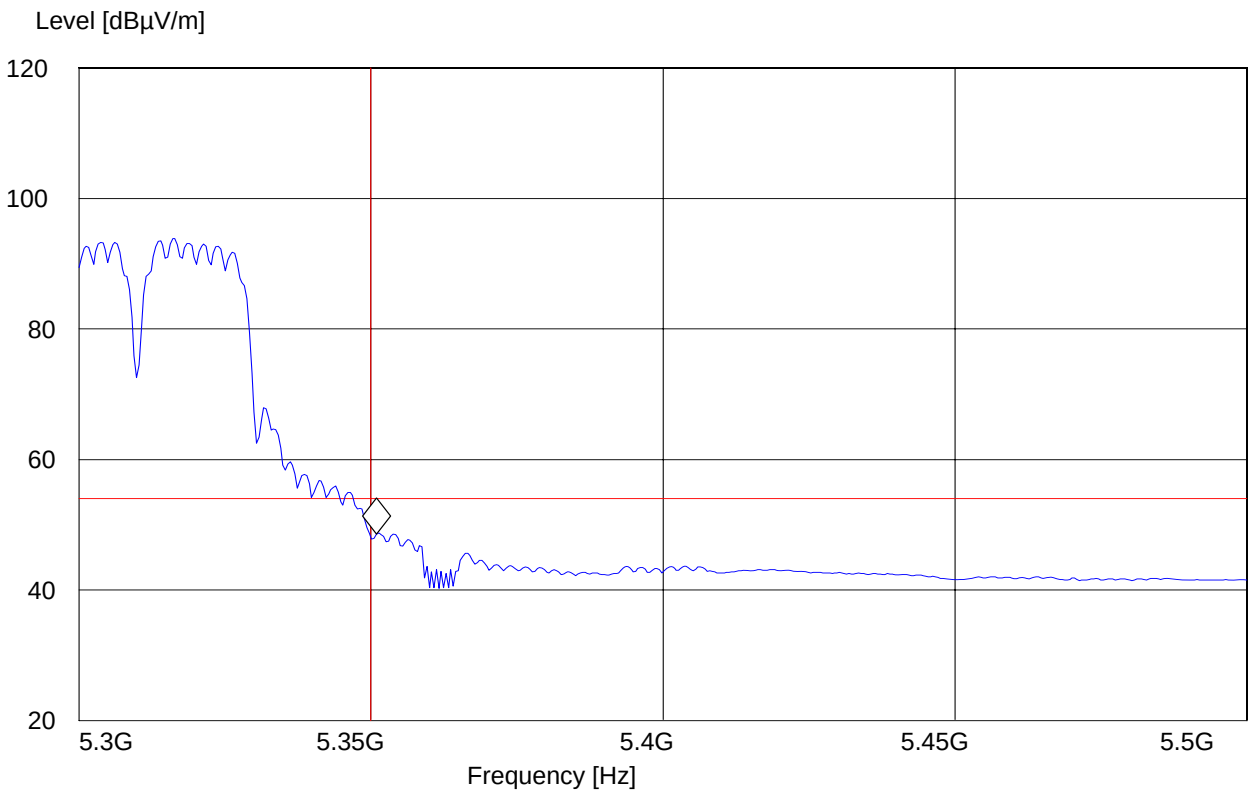
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n40
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 B_HBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.3 GHz	5.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz

Marker: 5.350941884 GHz 48.6 dBµV/m



5.2.6 Sub-band 3. 802.11n HT20 MODE

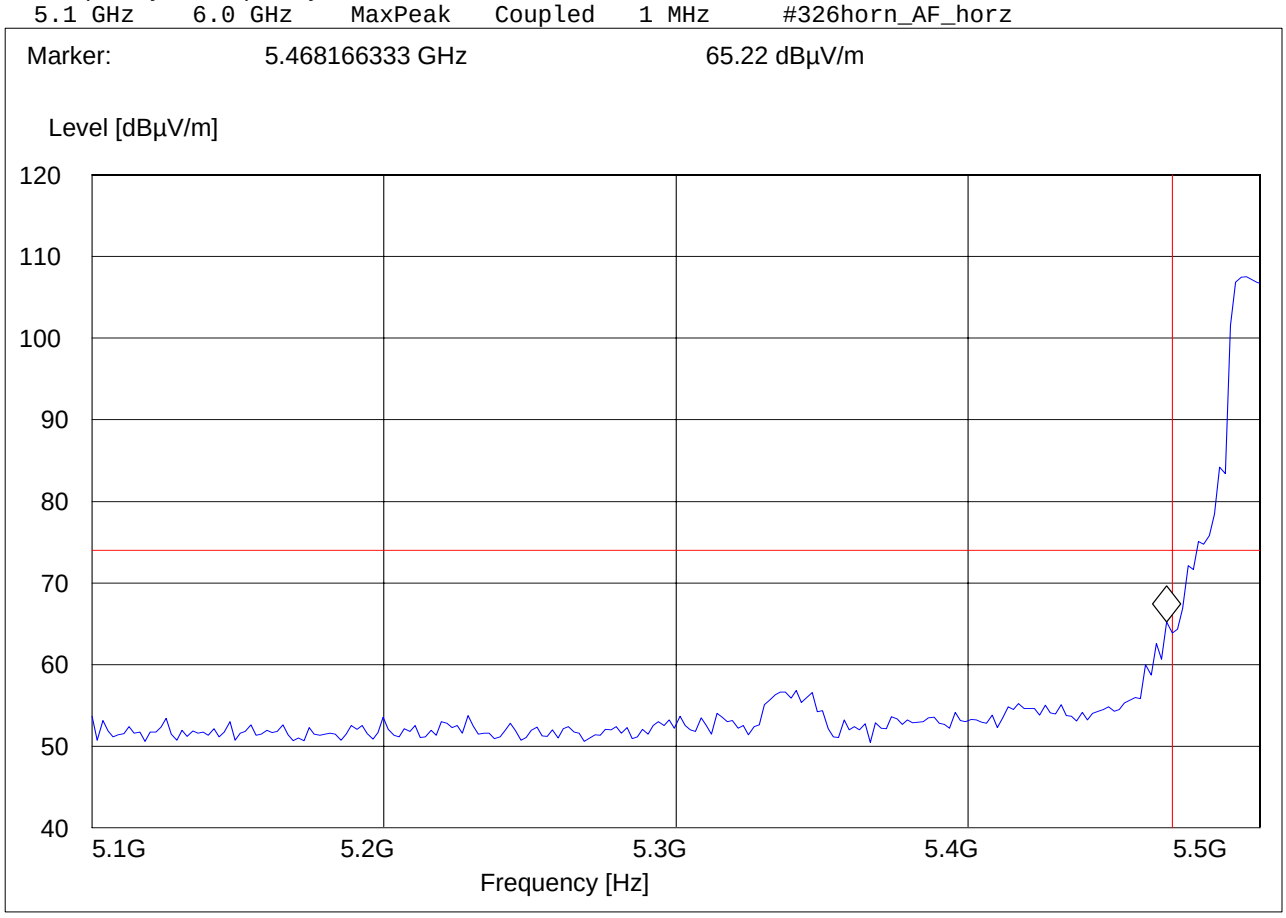
Lower band edge PEAK

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 C_LBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.1 GHz	6.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



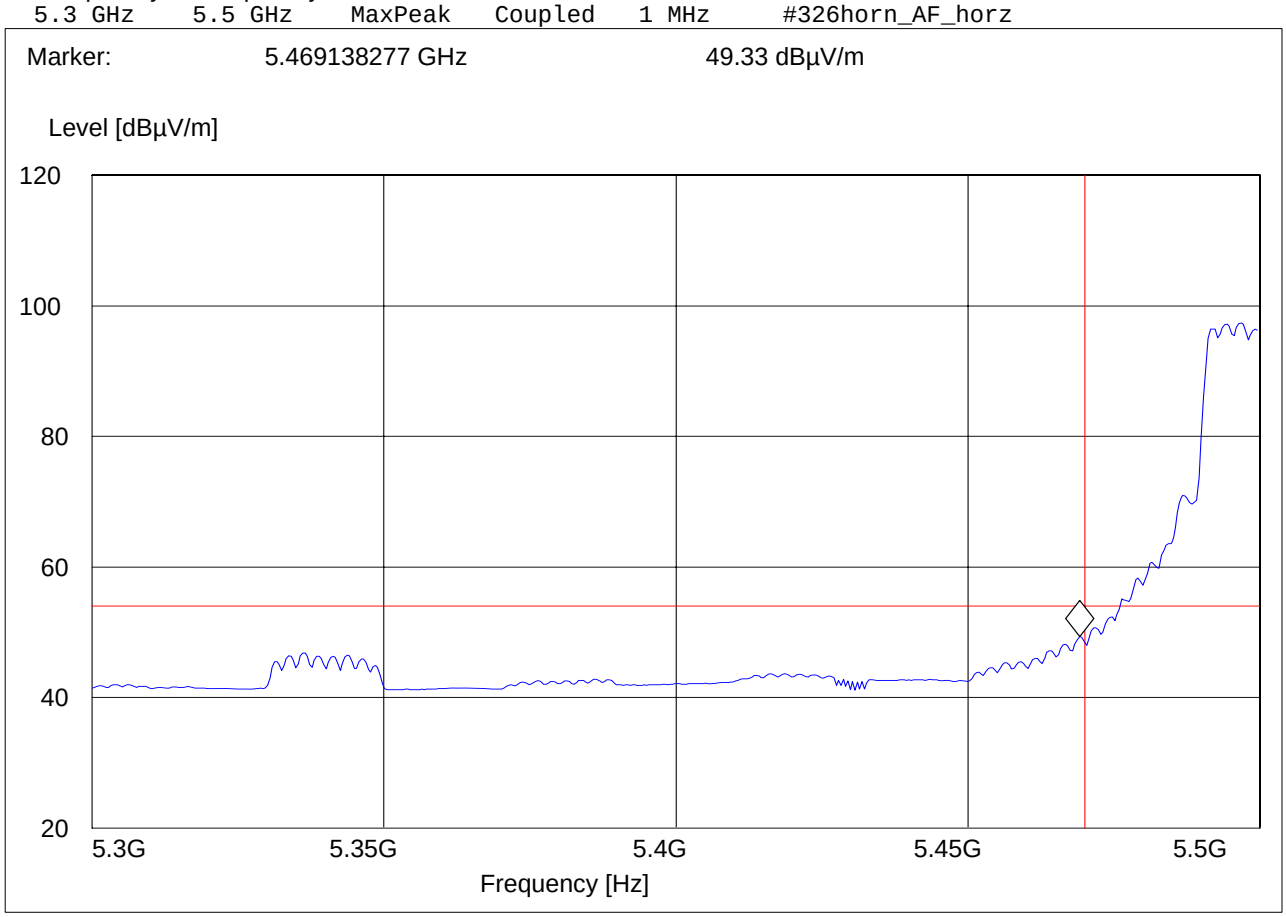
Lower band edge AVERAGE

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 C_LBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.3 GHz	5.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



5.2.7 Sub-band 3. 802.11n HT40 MODE

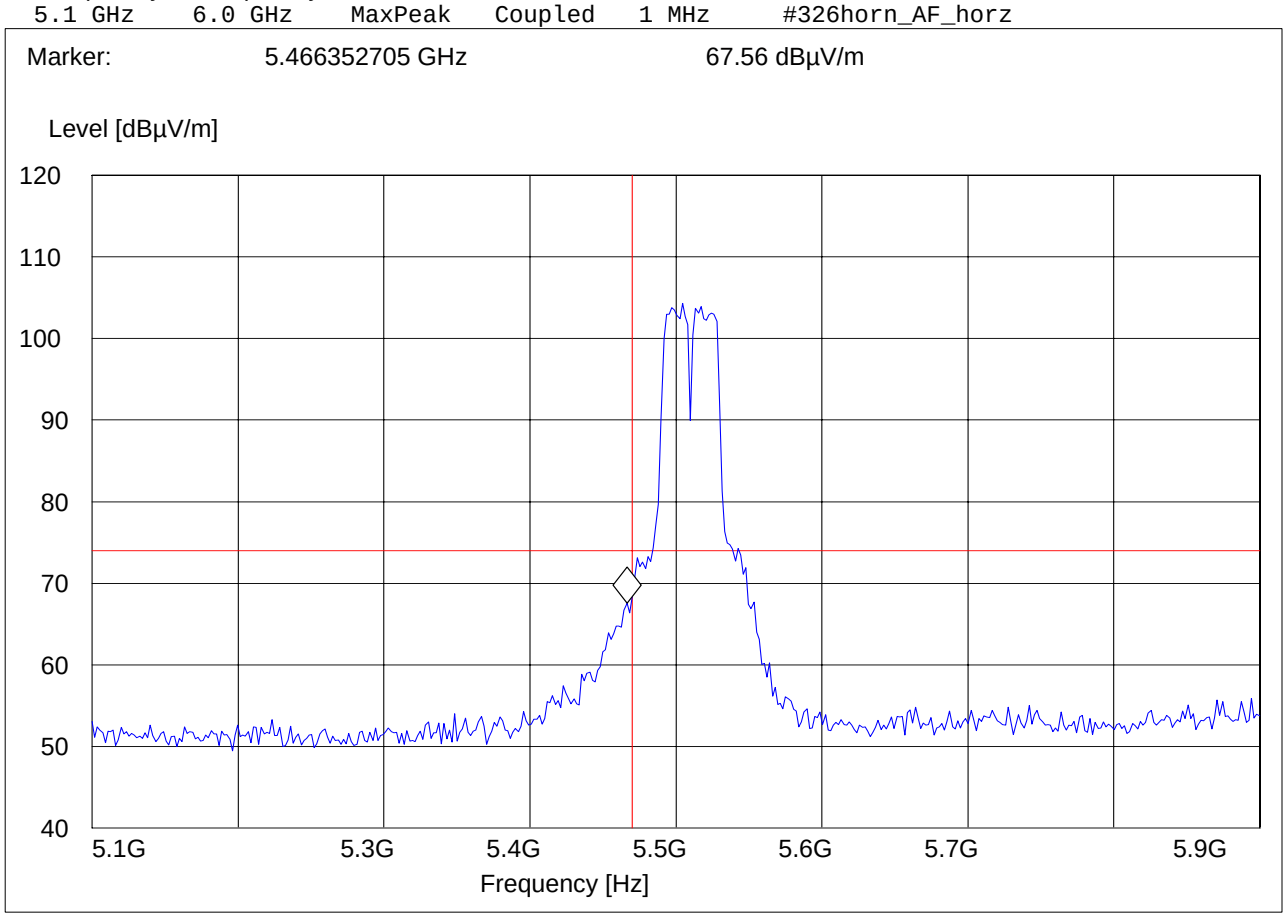
Lower band edge PEAK

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n40
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 C_LBE_PK"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.1 GHz	6.0 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



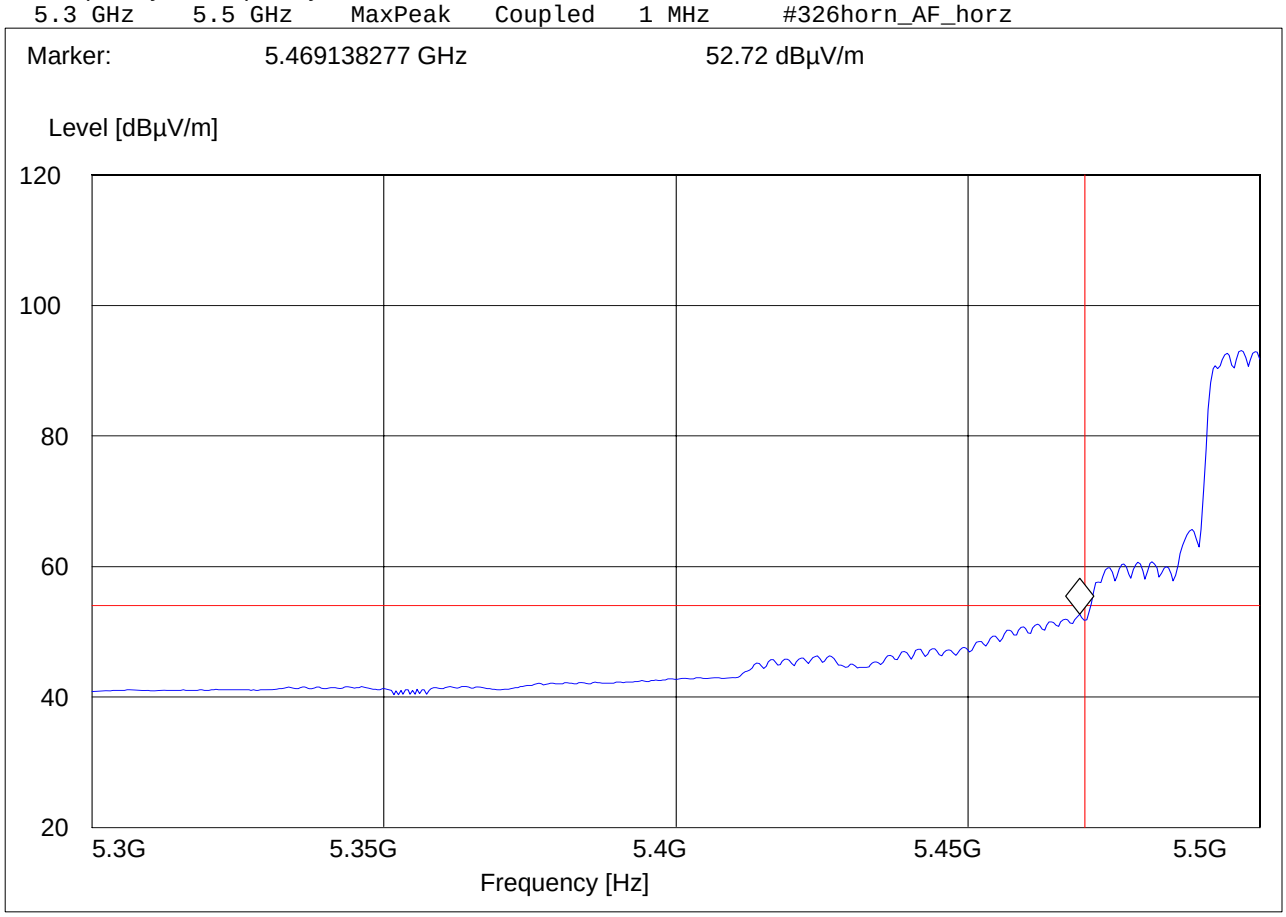
Lower band edge AVERAGE

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n40
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC15.407 C_LBE_AVG"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
5.3 GHz	5.5 GHz	MaxPeak	Coupled	1 MHz	#326horn_AF_horz



5.3 Transmiter Spurious Emission § 15.407(b)/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 for spurious in restricted bands**
***AVG. LIMIT= 54dBuV/m for spurious in restricted bands**

<u>NOTE</u>:

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.

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 Sub-band 1 802.11n20 MODE

30MHz – 1GHz, Antenna: Vertical

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

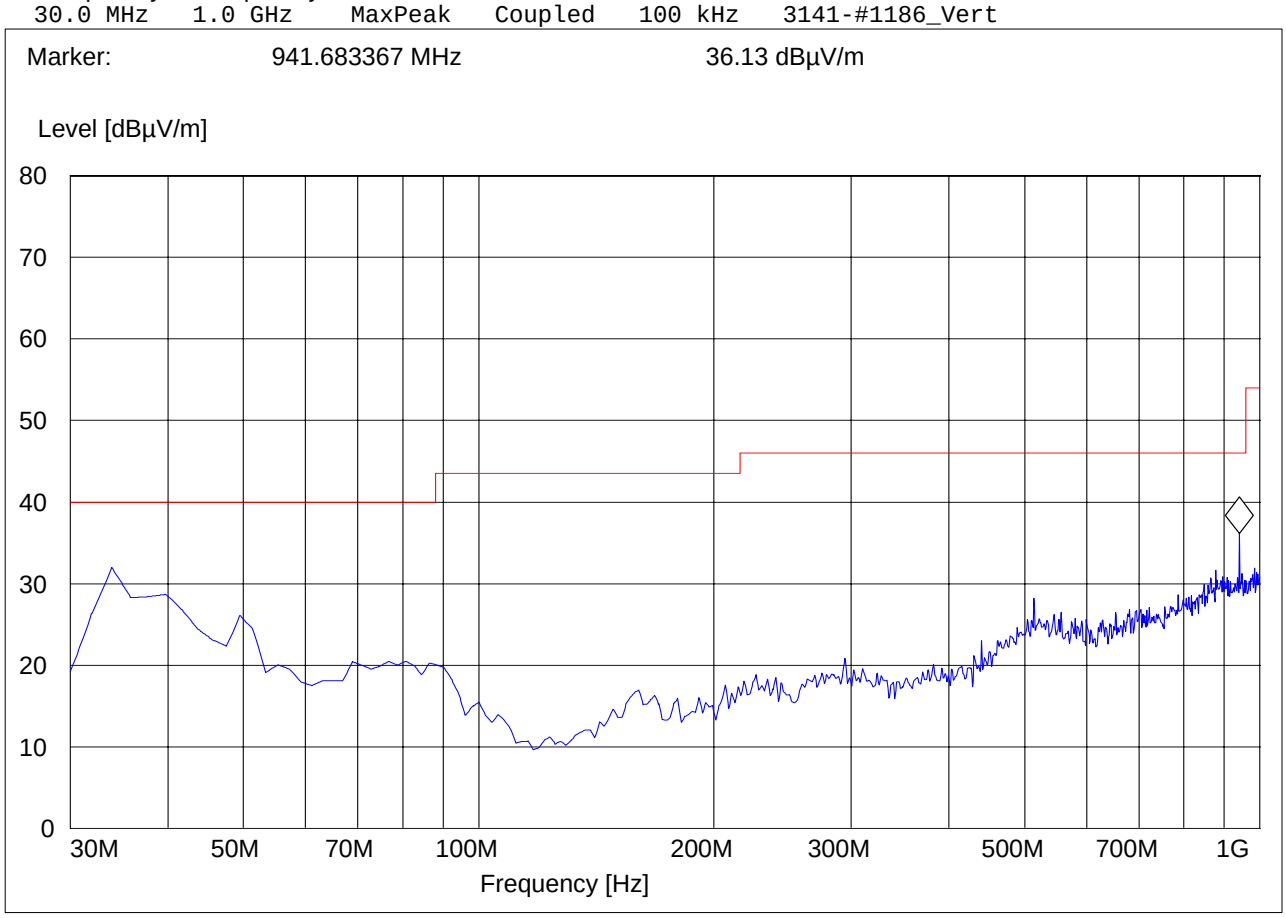
Note: Worse case emission for all operating modes.

Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  V
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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).

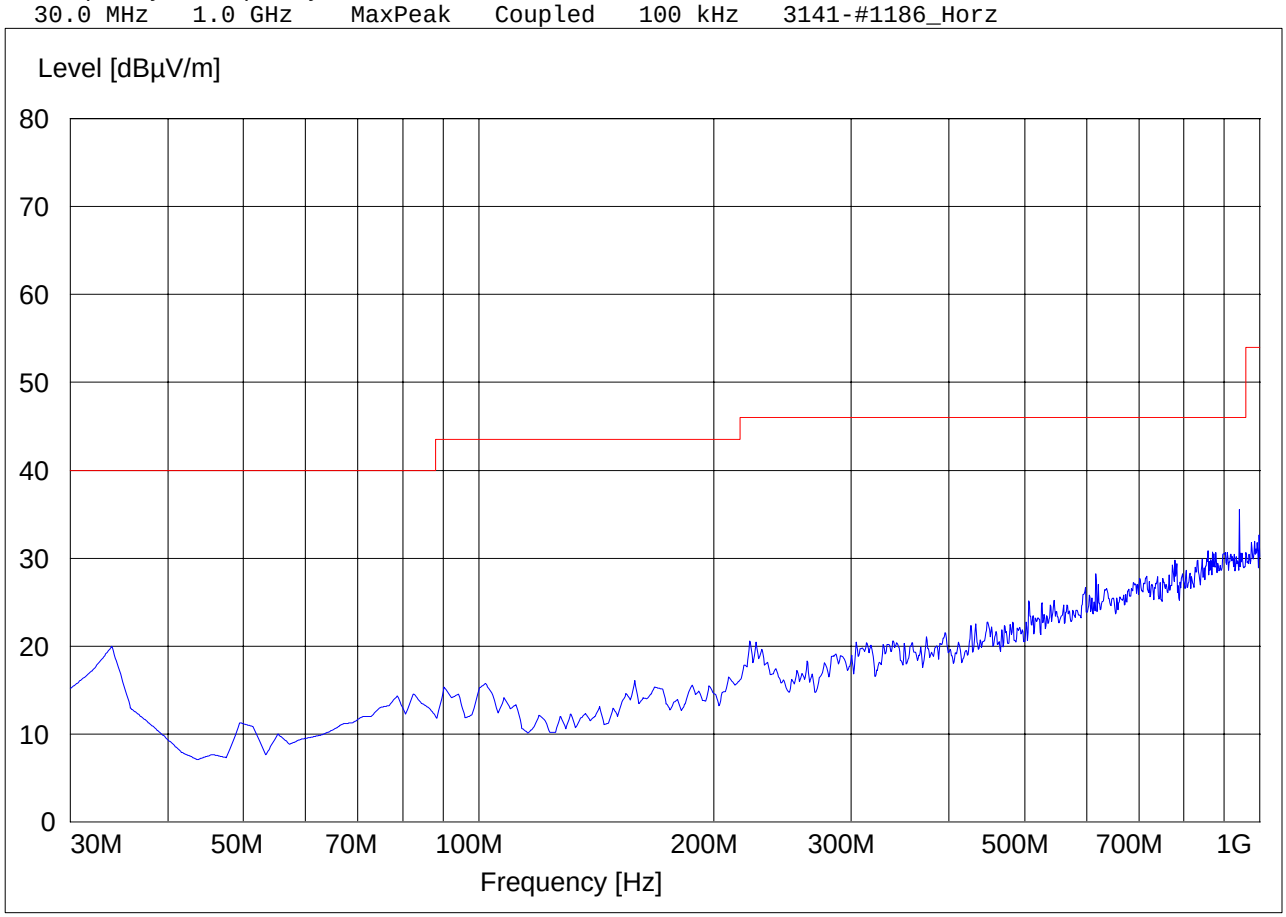
Note: Worse case emission for all operating modes.

Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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



1-7GHz (5180MHz)

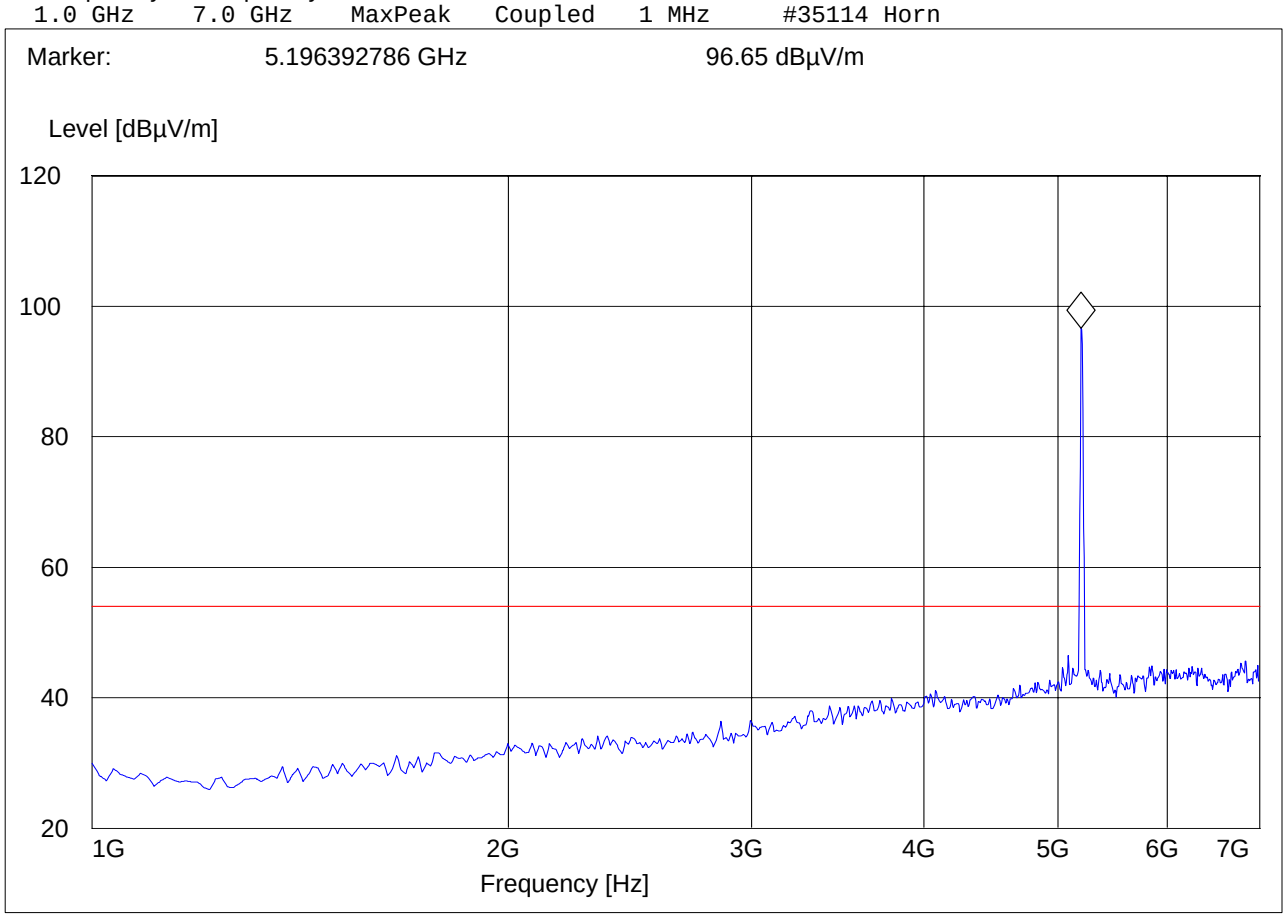
Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn



1-7GHz (5220MHz)

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

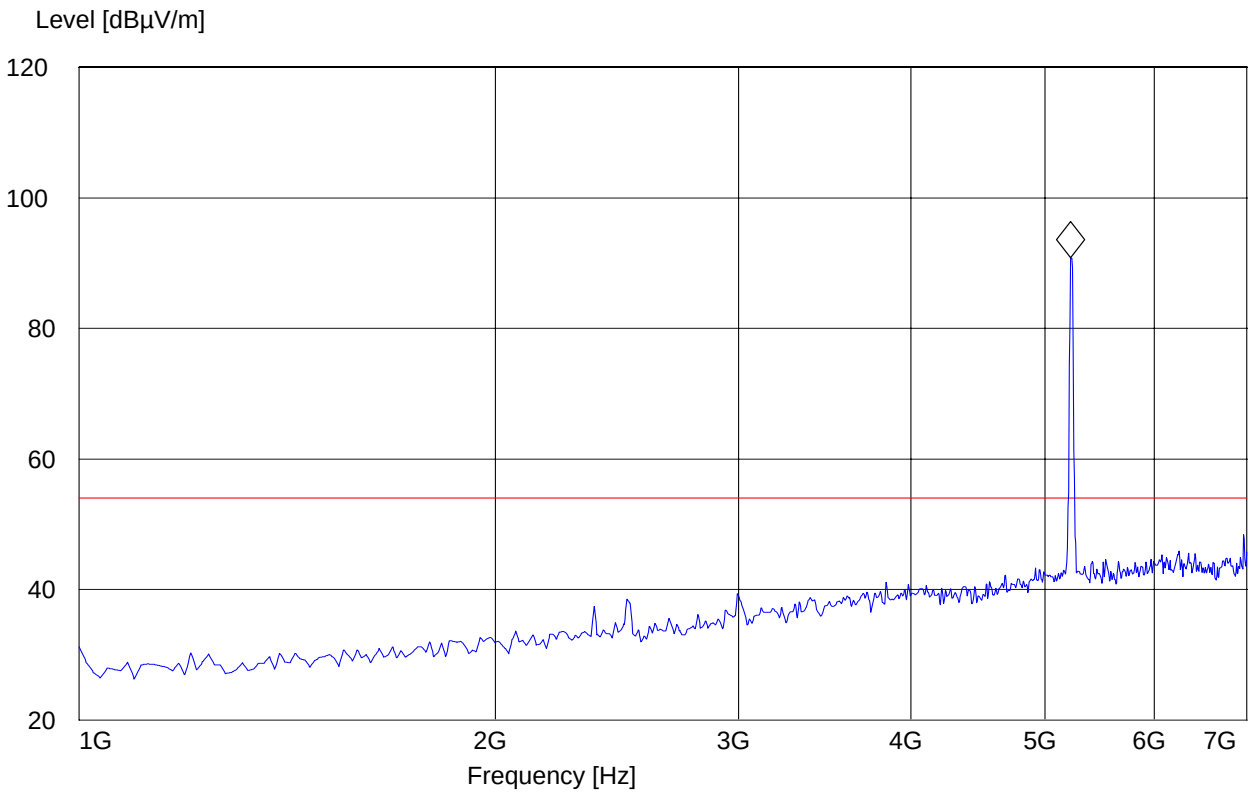
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn

Marker: 5.220440882 GHz 90.8 dBµV/m



1-7GHz (5240MHz)

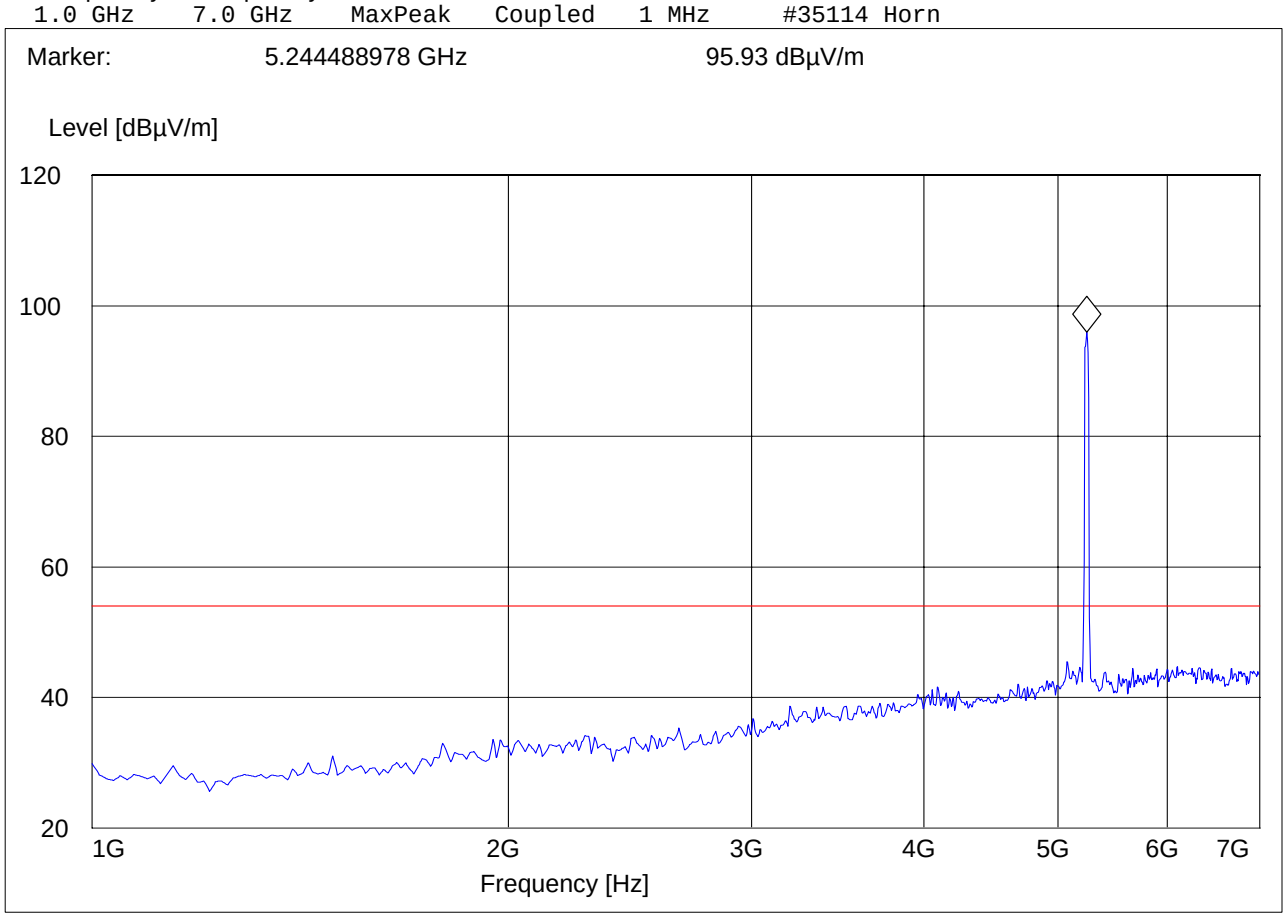
Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn



7-18GHz (5180MHz)

Note: Peak Reading vs. Average limit

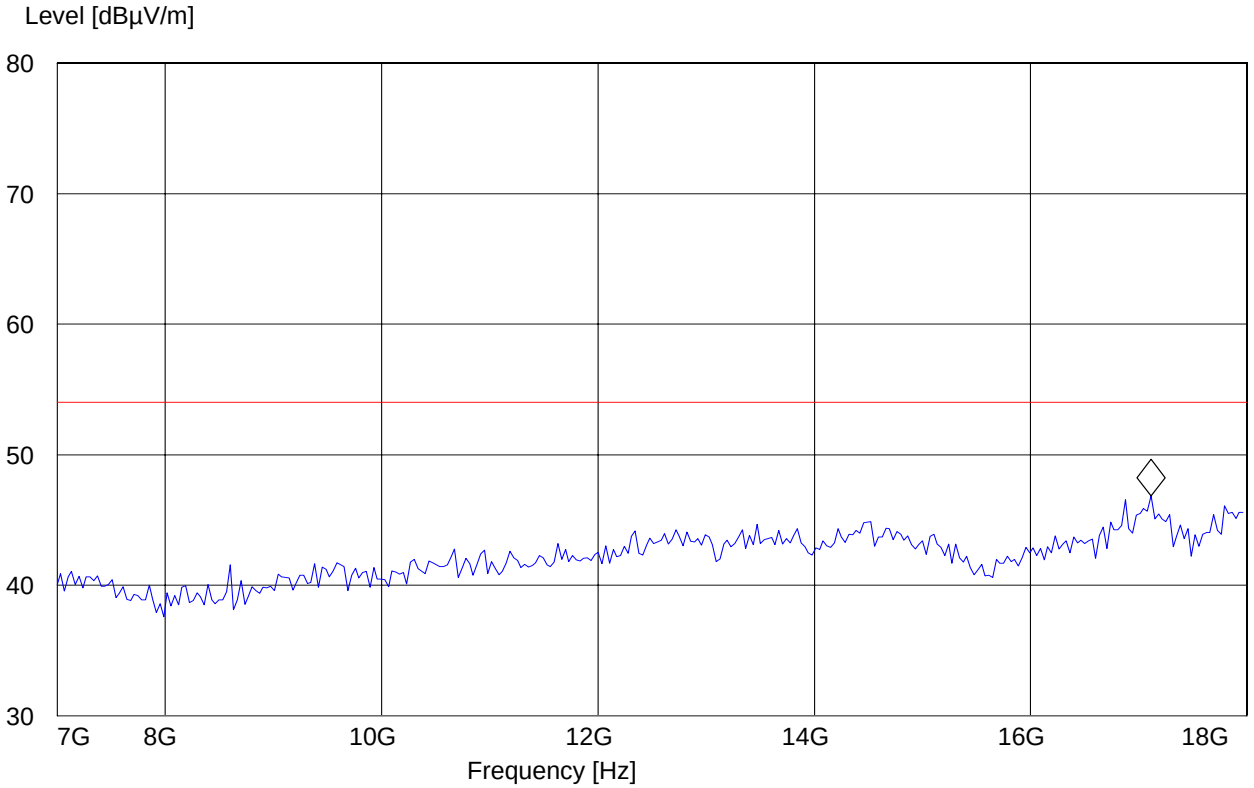
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 7-18G"

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

Marker: 17.114228457 GHz 46.83 dBµV/m



7-18GHz (5220MHz)

Note: Peak Reading vs. Average limit

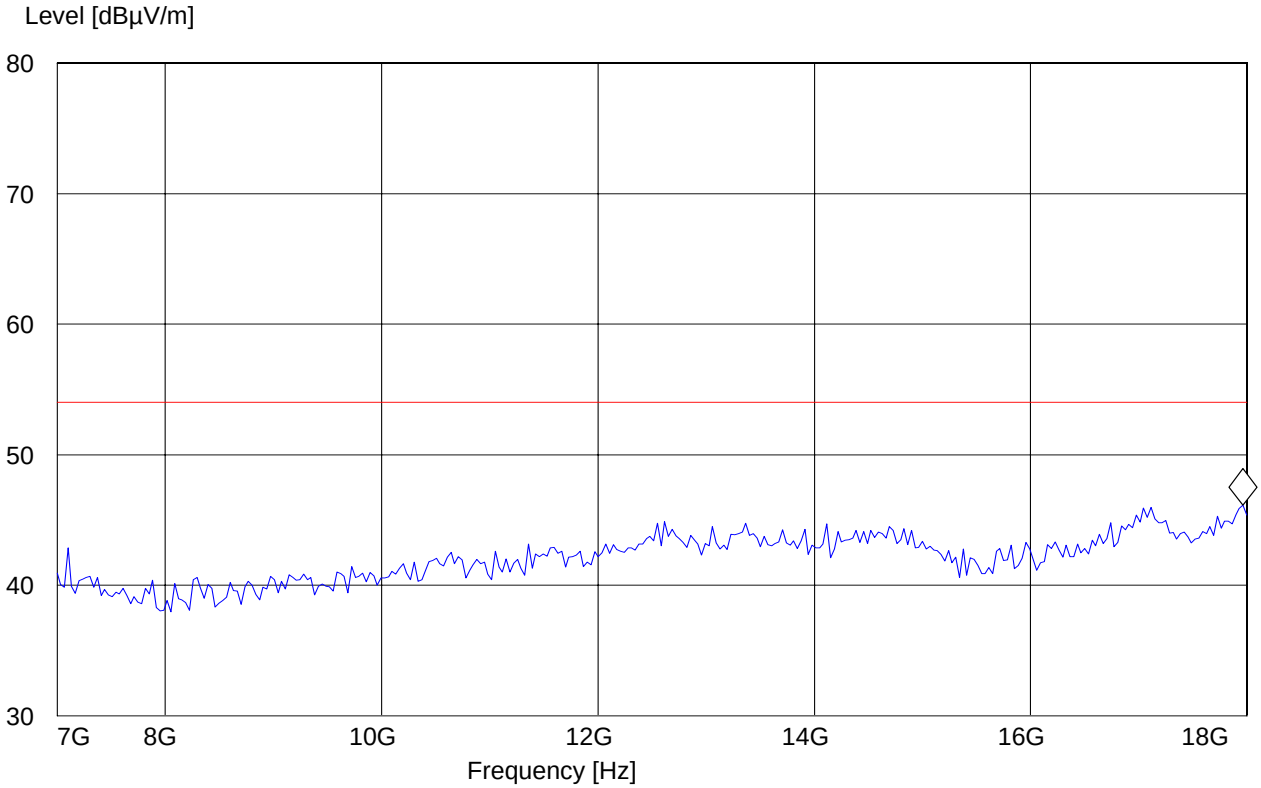
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

Customer:: Broadcom
Test Mode: 802.11n20
ANT Orientation: H
EUT Orientation: H; Tablet
Test Engineer: Chris
Voltage: AC Adapter
Comments:

SWEEP TABLE: "FCC 15.407 7-18G"

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

Marker: 17.965931864 GHz 46.12 dBµV/m



7-18GHz (5240MHz)

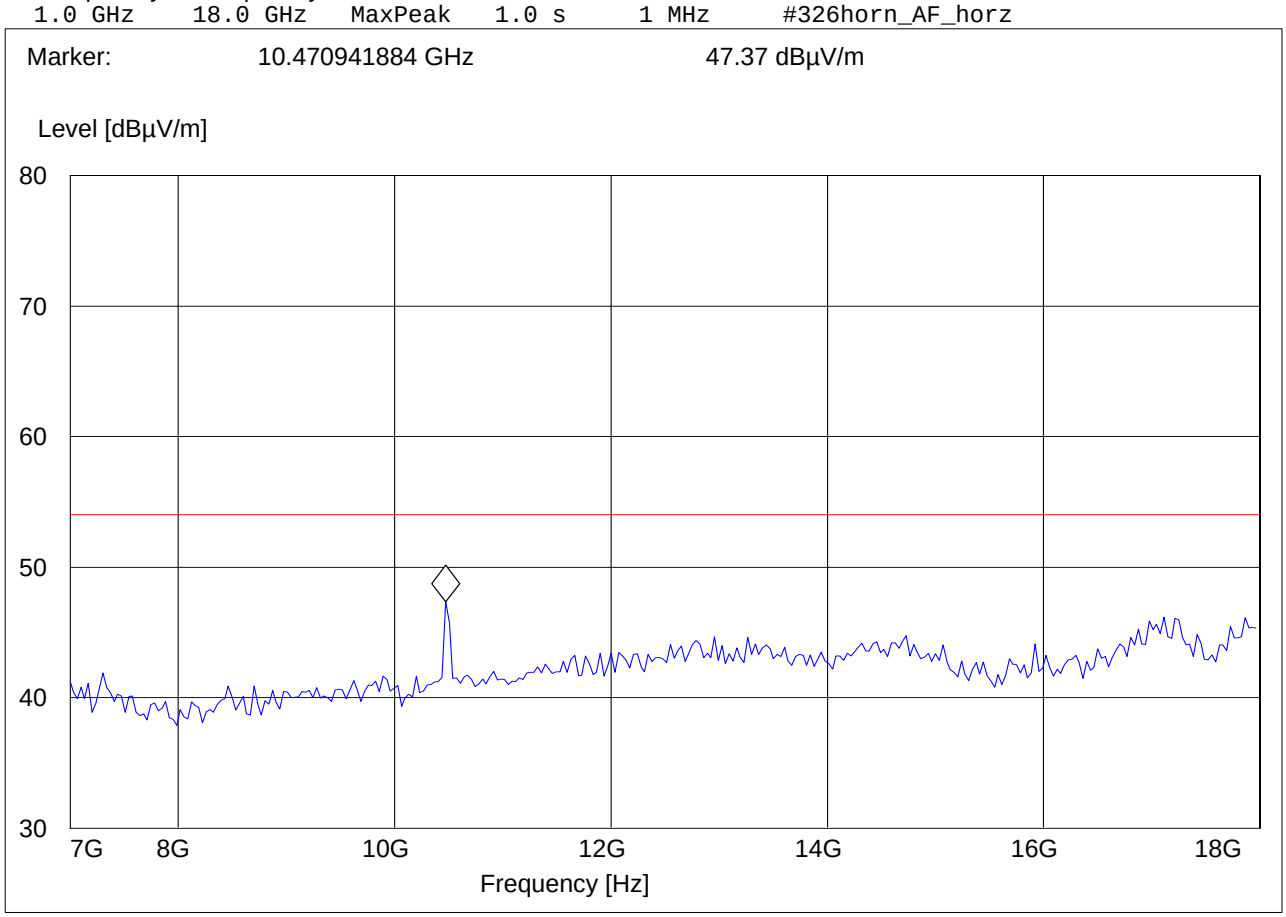
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

Customer:: Broadcom
Test Mode: 802.11n20
ANT Orientation: H
EUT Orientation: H; Tablet
Test Engineer: Chris
Voltage: AC Adapter
Comments:

SWEEP TABLE: "FCC 15.407 7-18G"

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



18-26.5GHz

Note: Peak Reading vs. Average limit

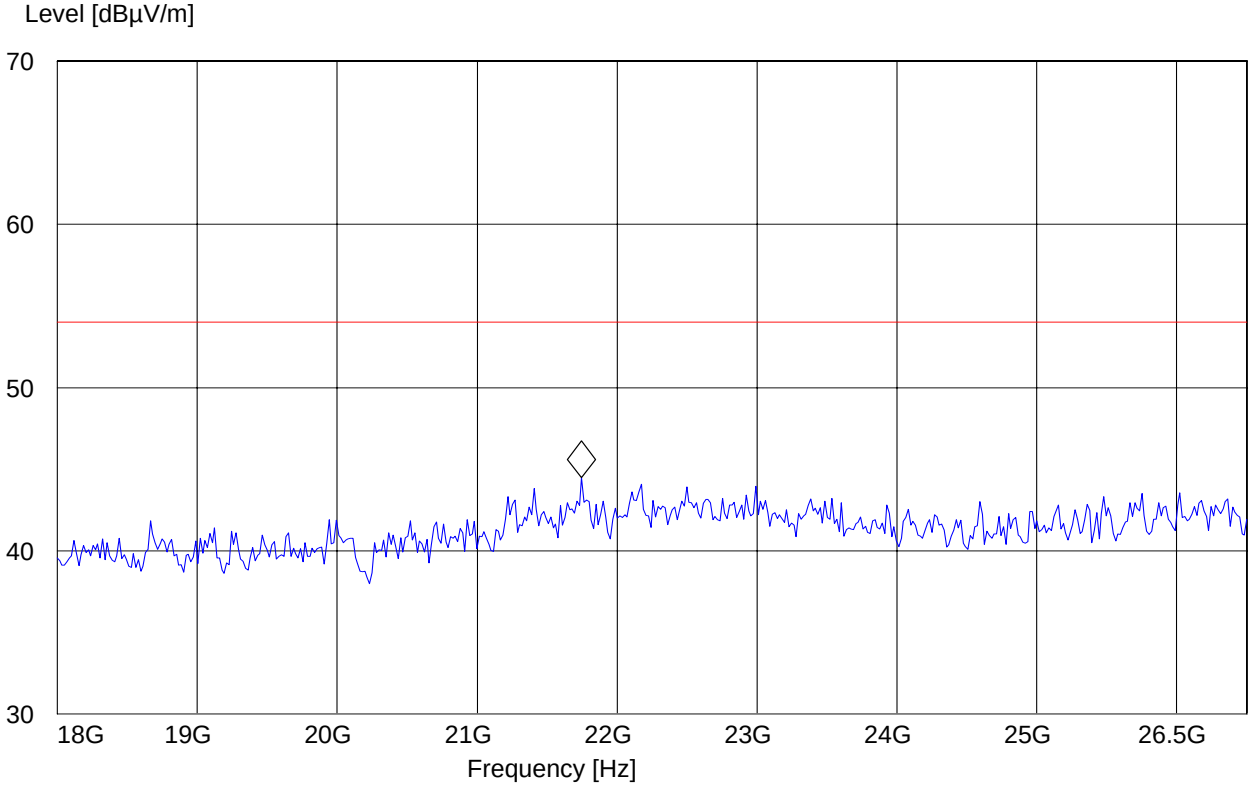
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 18-26.5G"

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

Marker: 21.74749499 GHz 44.49 dBµV/m



26.5-40GHz

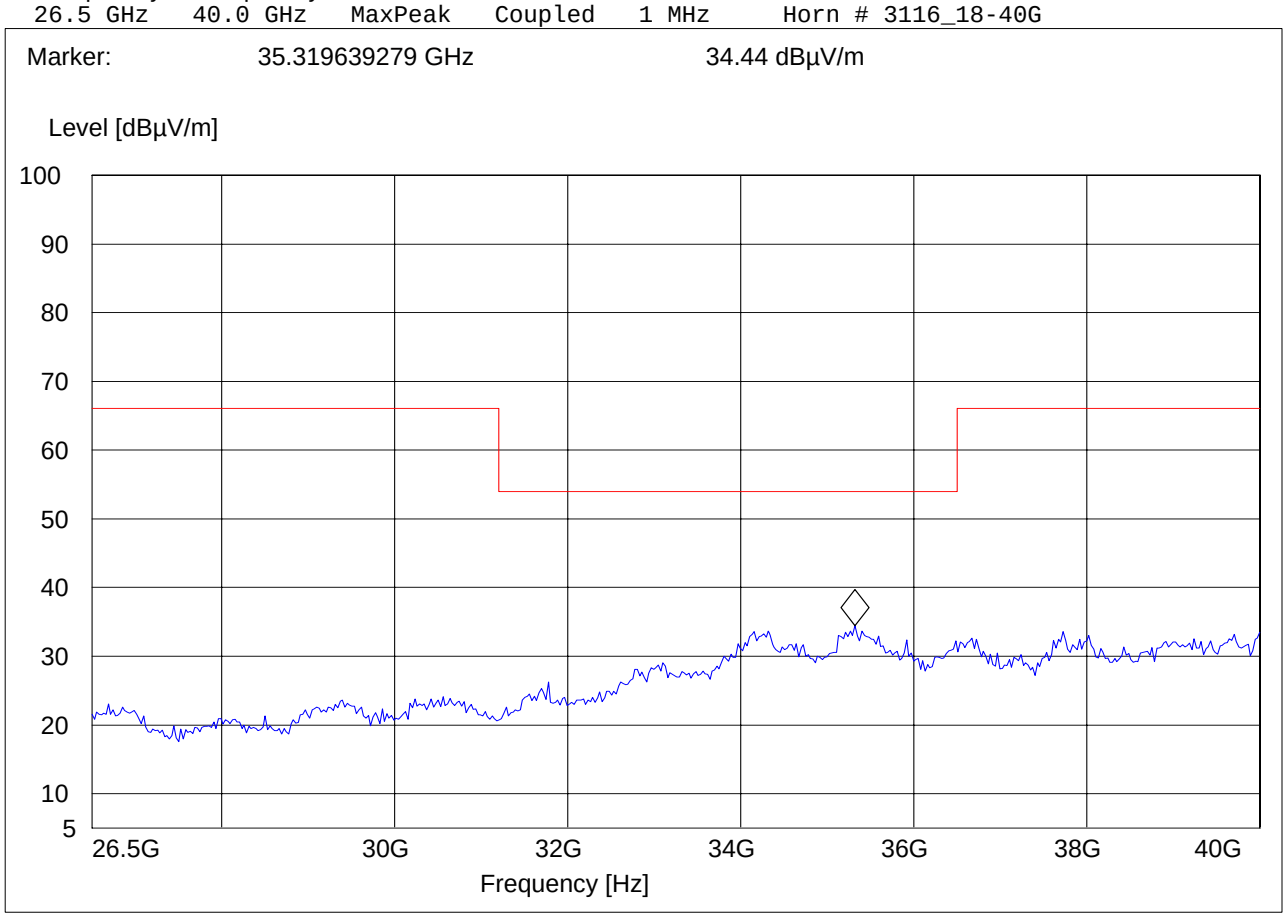
Note: This plot is valid for low, mid, high channels (worst-case plot)
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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



5.3.3 Sub-band 2 802.11n HT20 MODE

30MHz – 1GHz, Antenna: Vertical

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

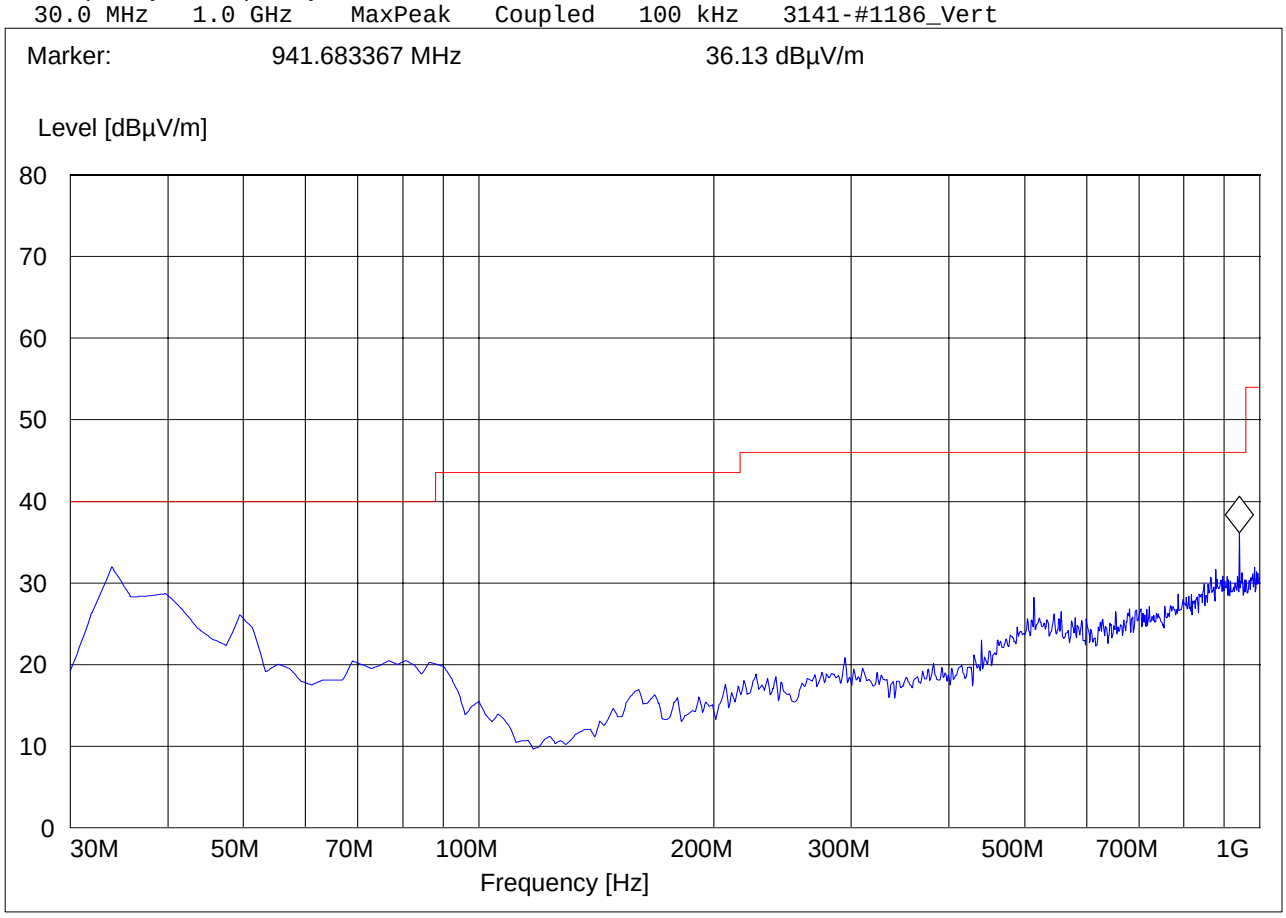
Note: Worse case emission for all operating modes.

Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  V
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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).

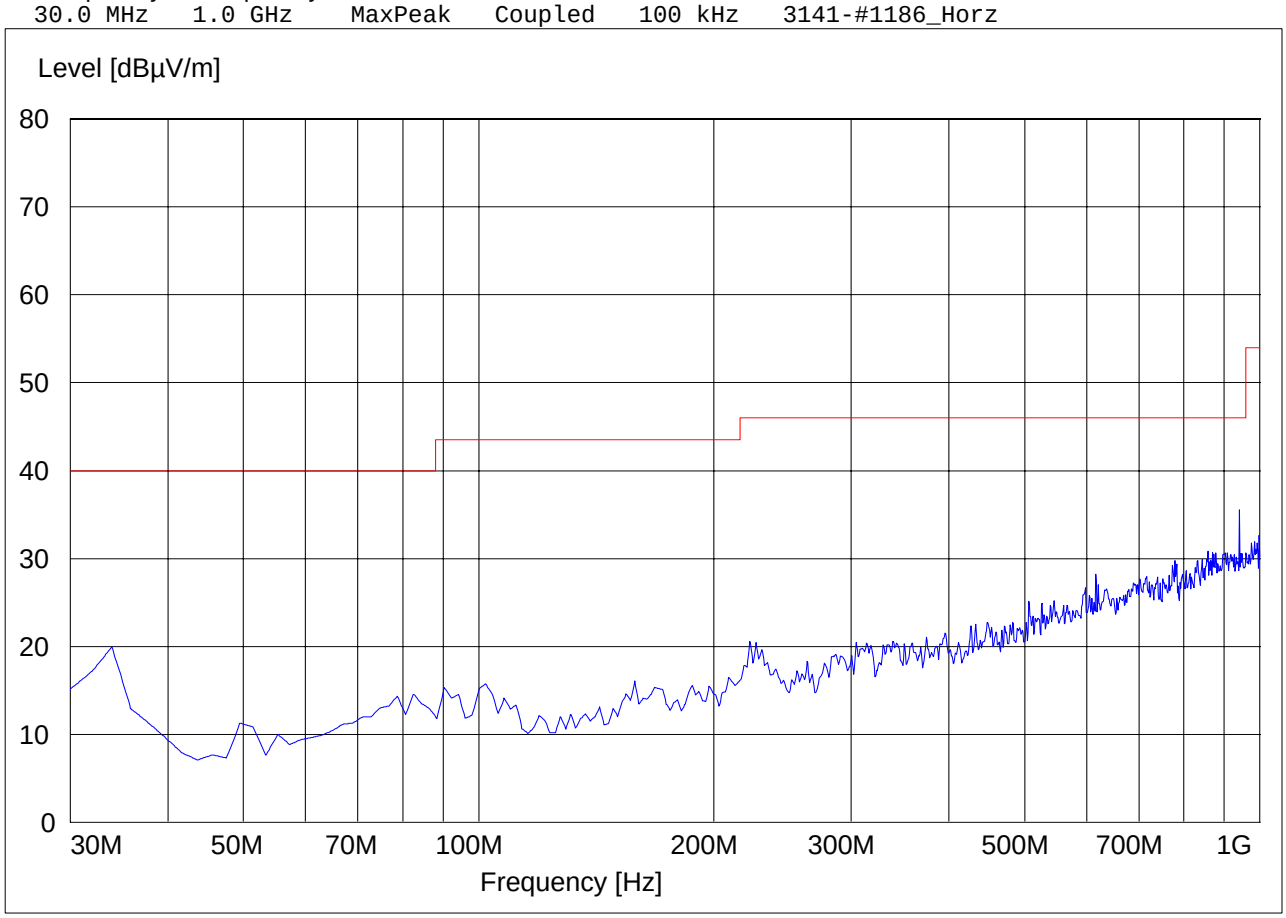
Note: Worse case emission for all operating modes.

Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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



1-7GHz (5260MHz)

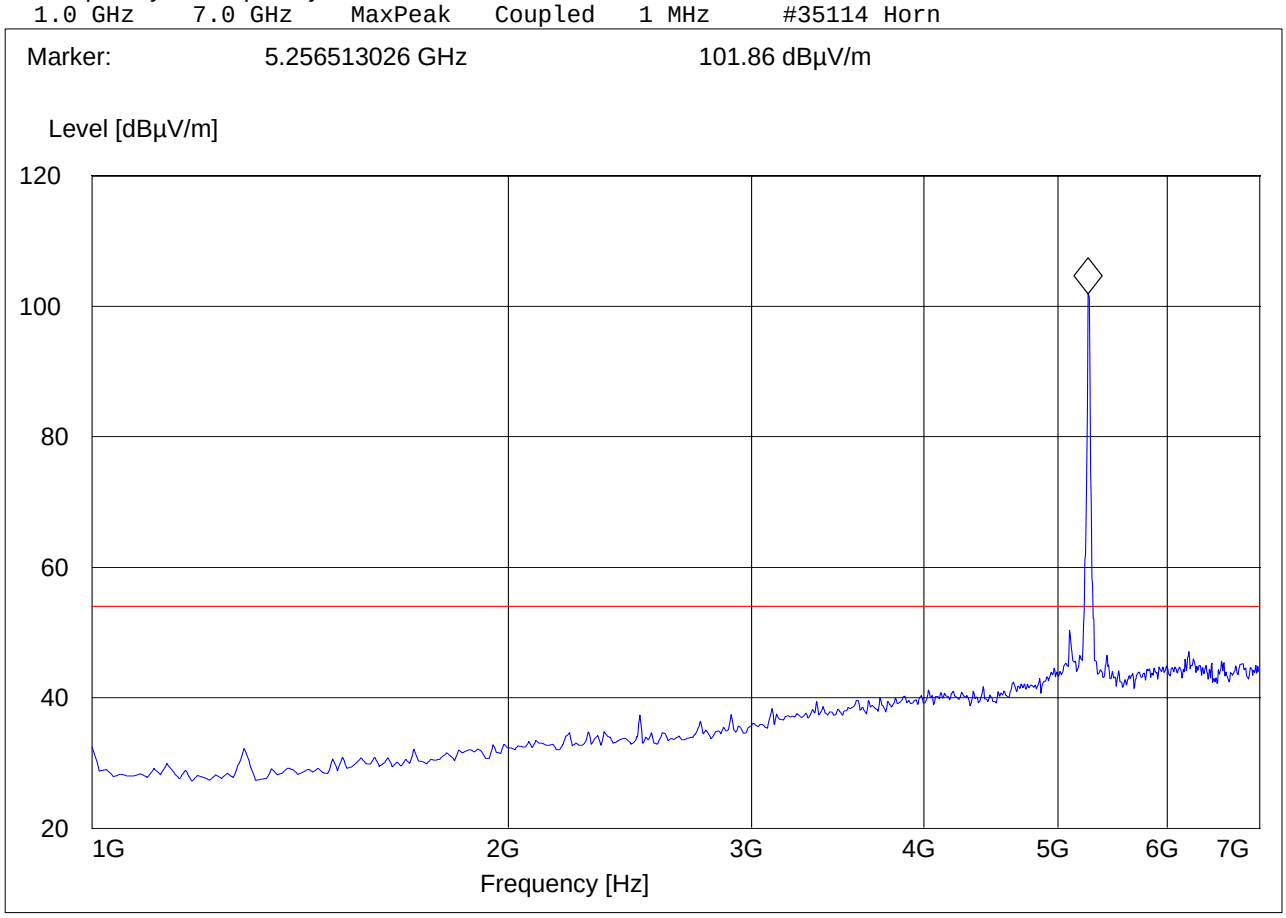
Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn



1-7GHz (5300MHz)

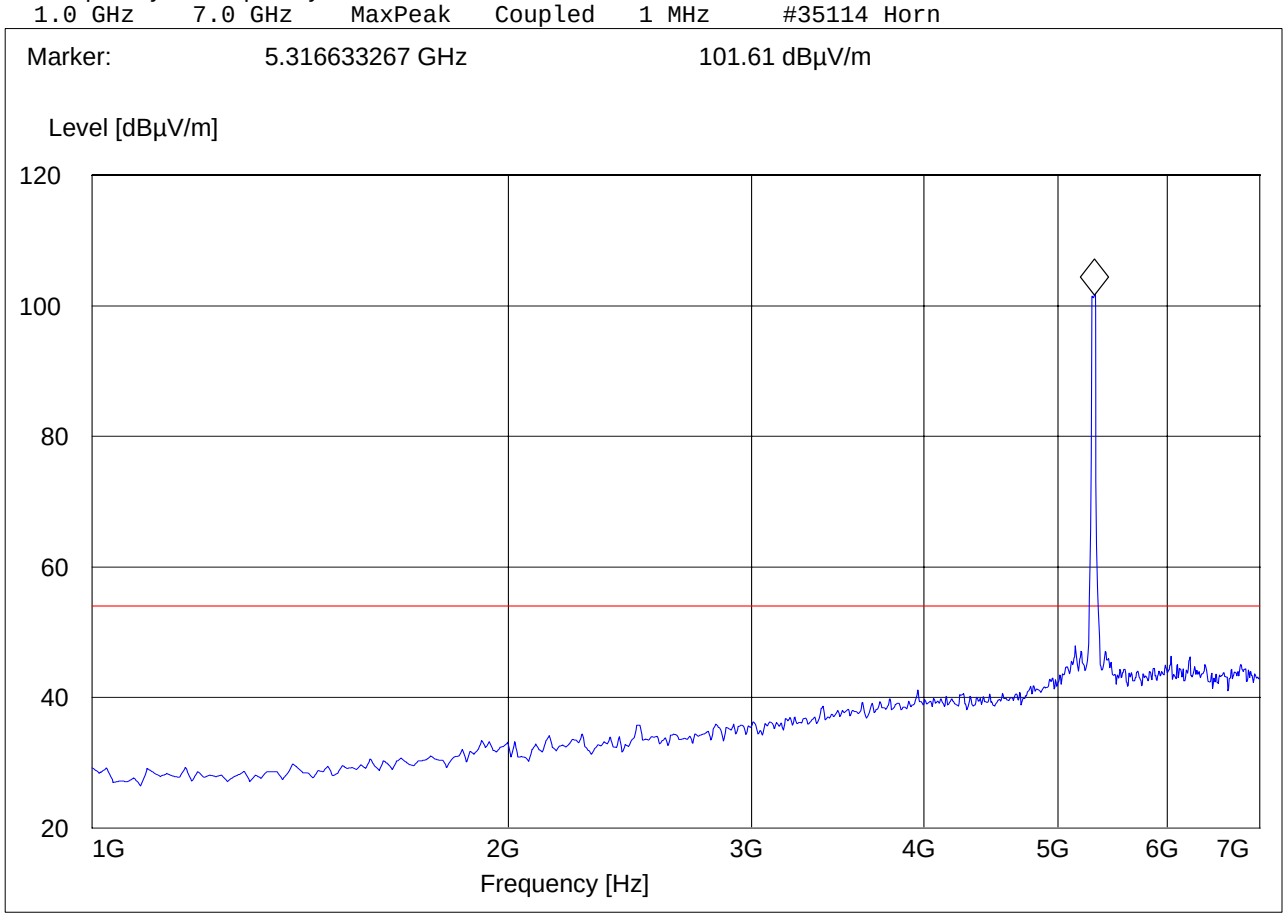
Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn



1-7GHz (5320MHz)

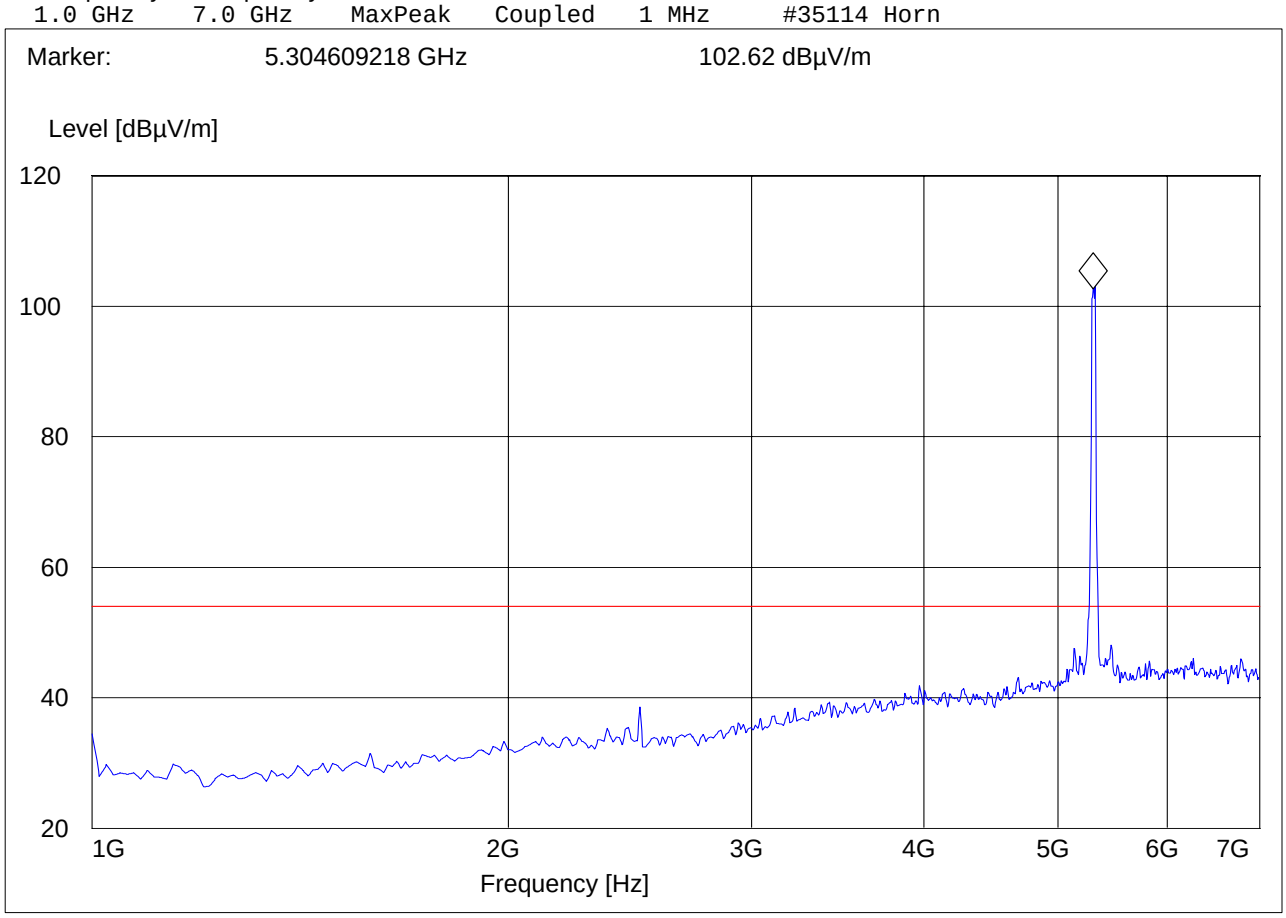
Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn



7-18GHz (5260MHz)

Note: Peak Reading vs. Average limit

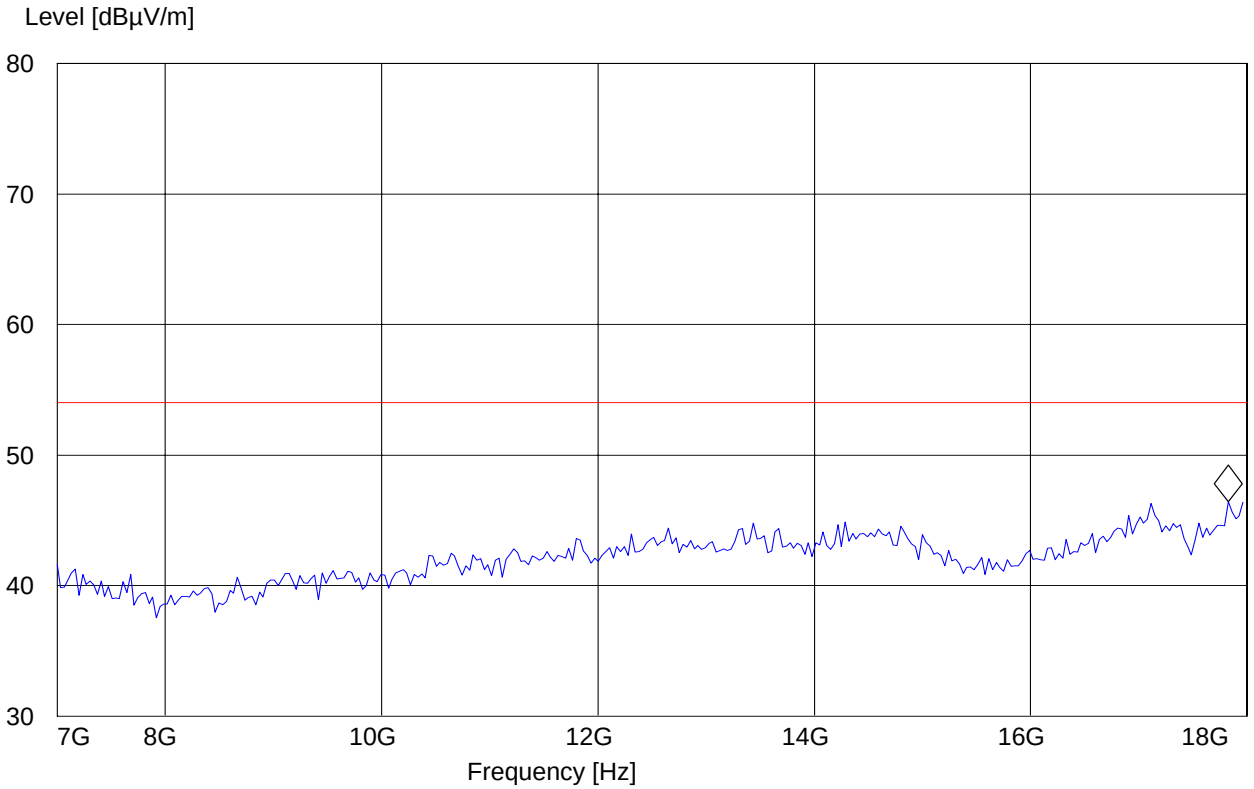
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 7-18G"

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

Marker: 17.829659319 GHz 46.43 dBµV/m



7-18GHz (5300MHz)

Note: Peak Reading vs. Average limit

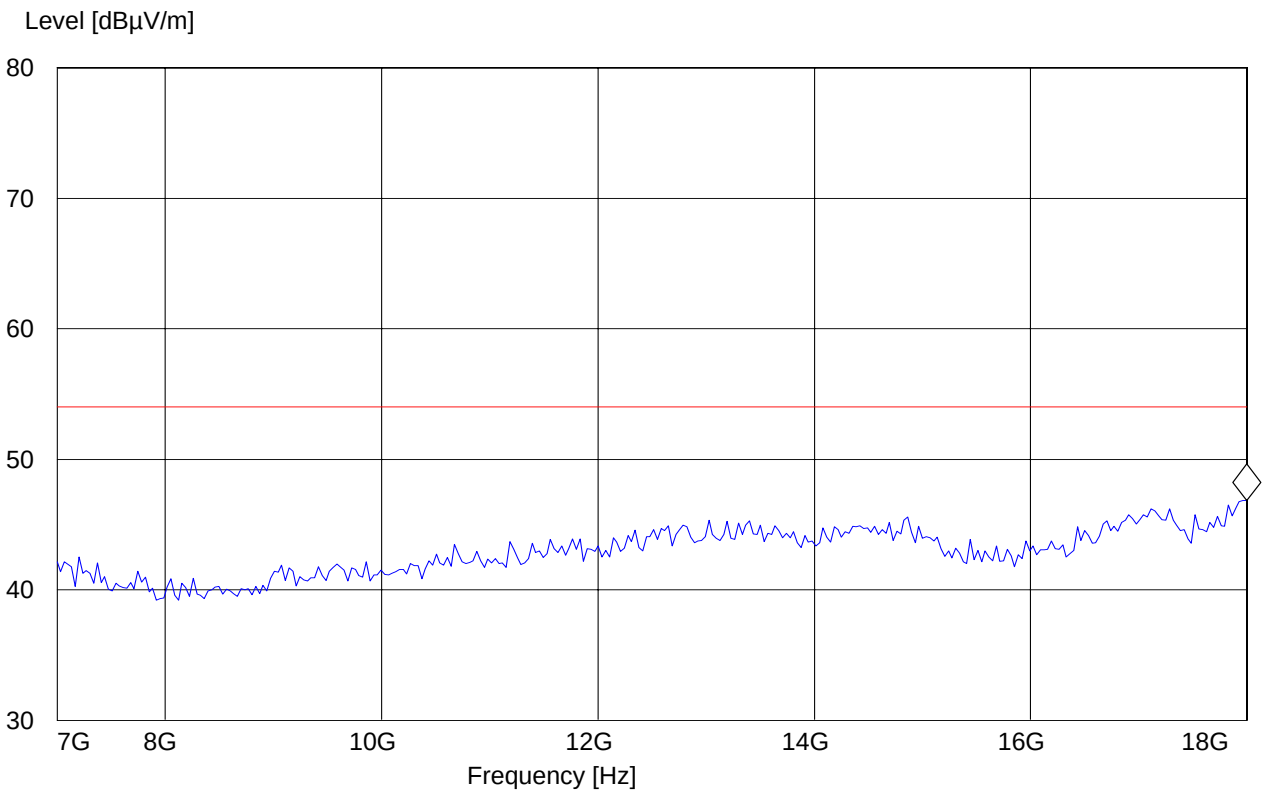
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 7-18G"

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

Marker: 18 GHz 46.85 dBµV/m



7-18GHz (5320MHz)

Note: Peak Reading vs. Average limit

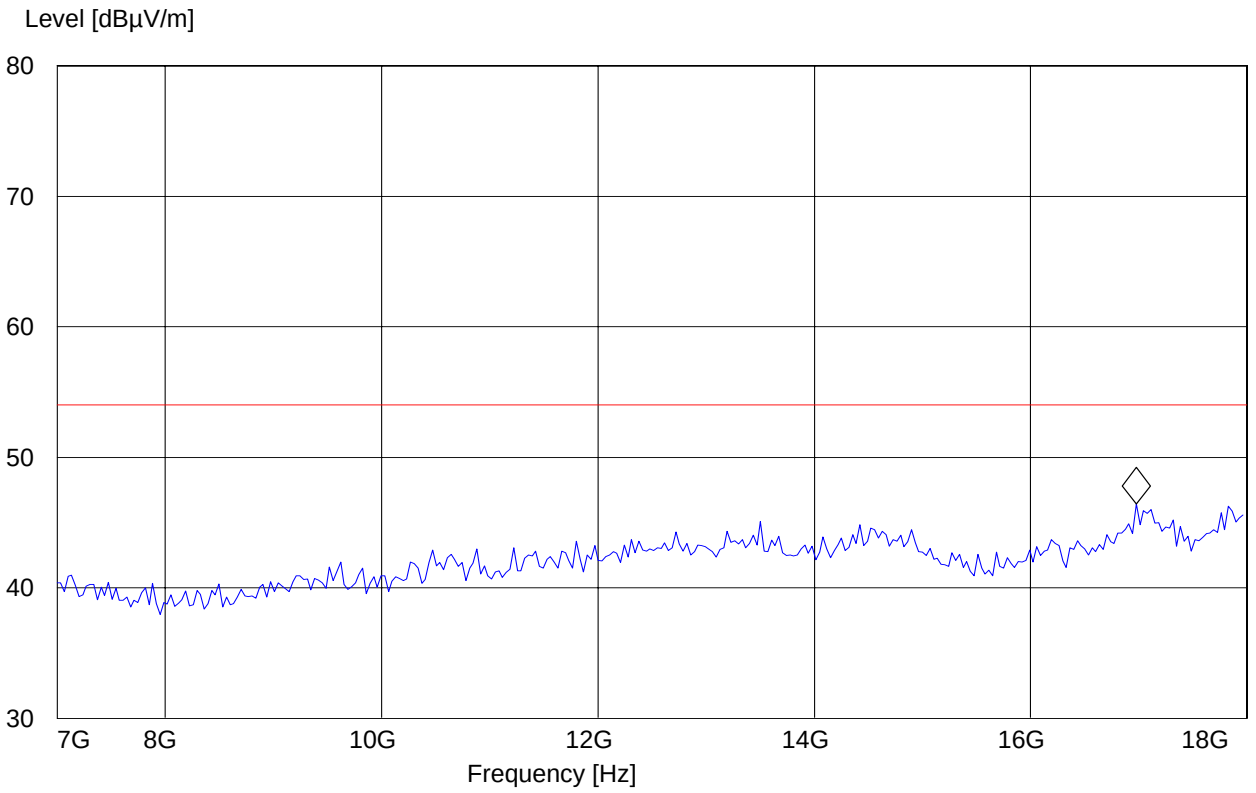
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 7-18G"

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

Marker: 16.977955912 GHz 46.44 dBµV/m



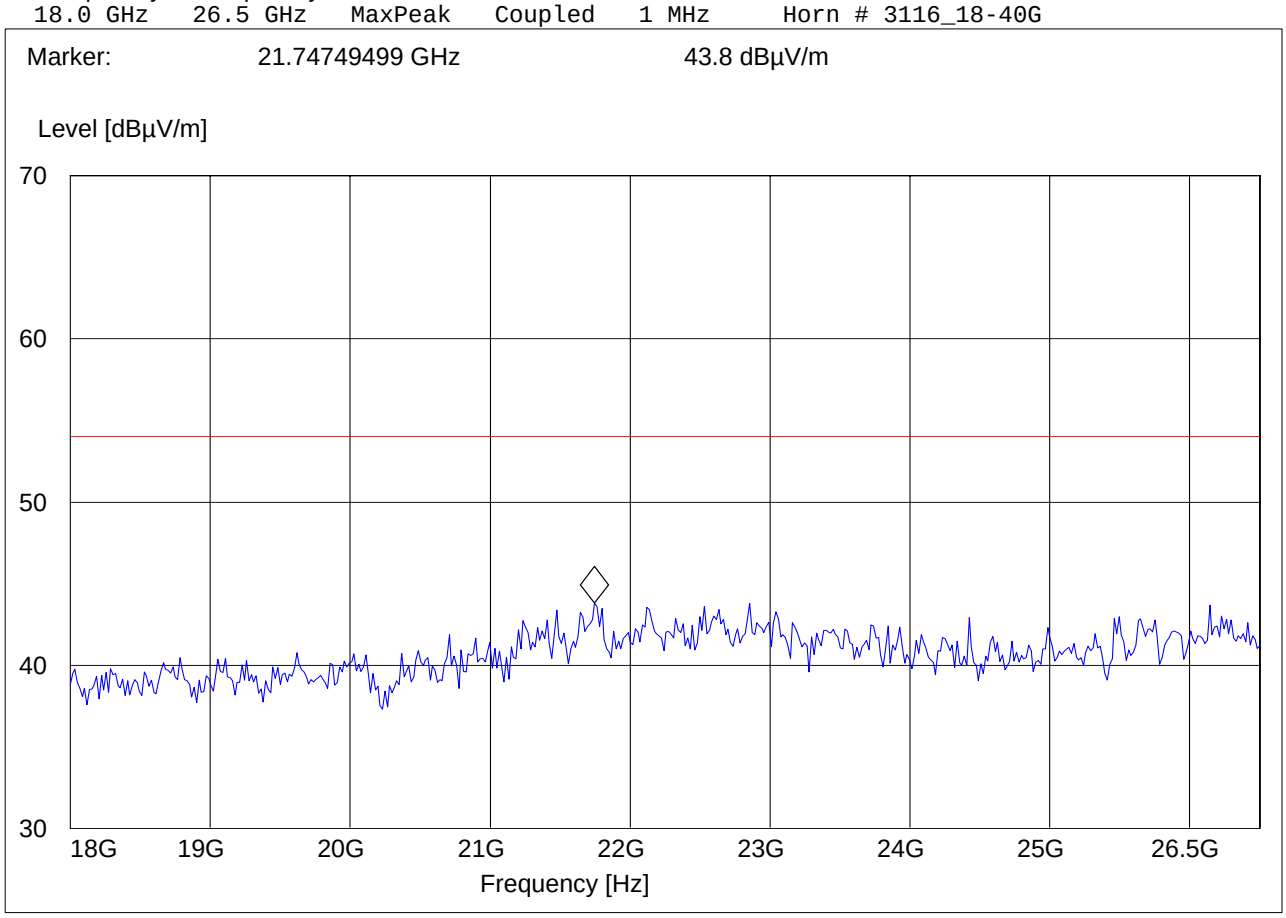
18-26.5GHz

Note: Peak Reading vs. Average limit
Note: Worse case plot for low, mid and high channels.
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 18-26.5G"

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



26.5-40GHz

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

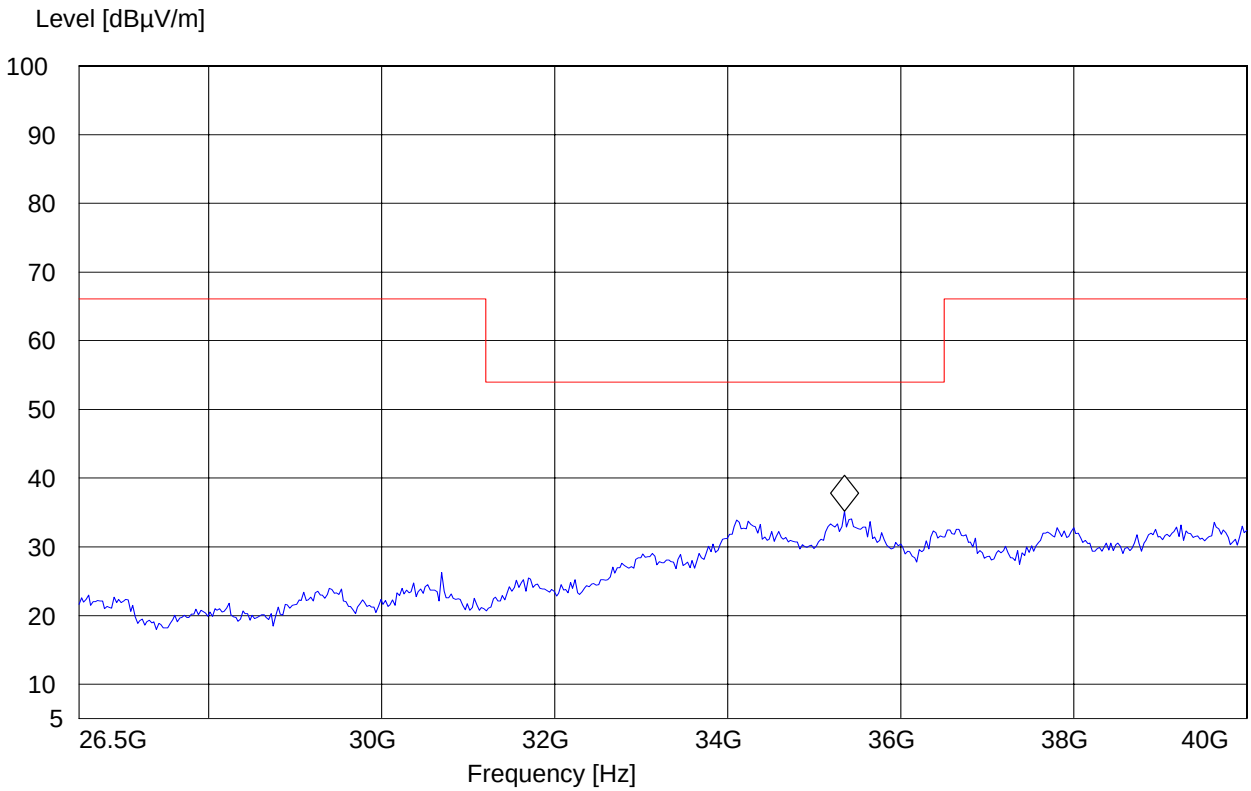
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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

Marker: 35.346693387 GHz 35.14 dBµV/m



5.3.4 Sub-band 3 802.11n HT20 MODE

30MHz – 1GHz, Antenna: Vertical

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

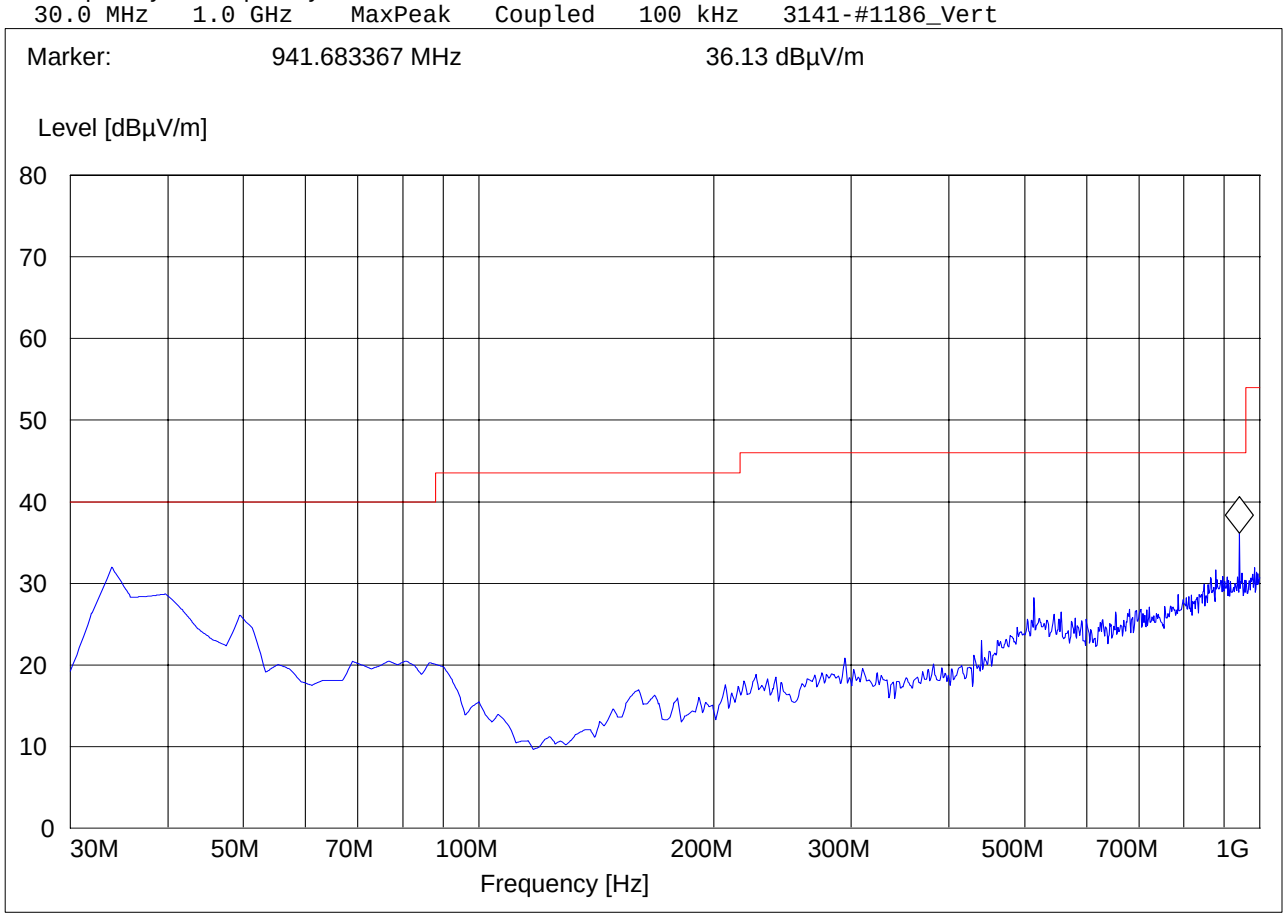
Note: Worse case emission for all operating modes.

Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  V
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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).

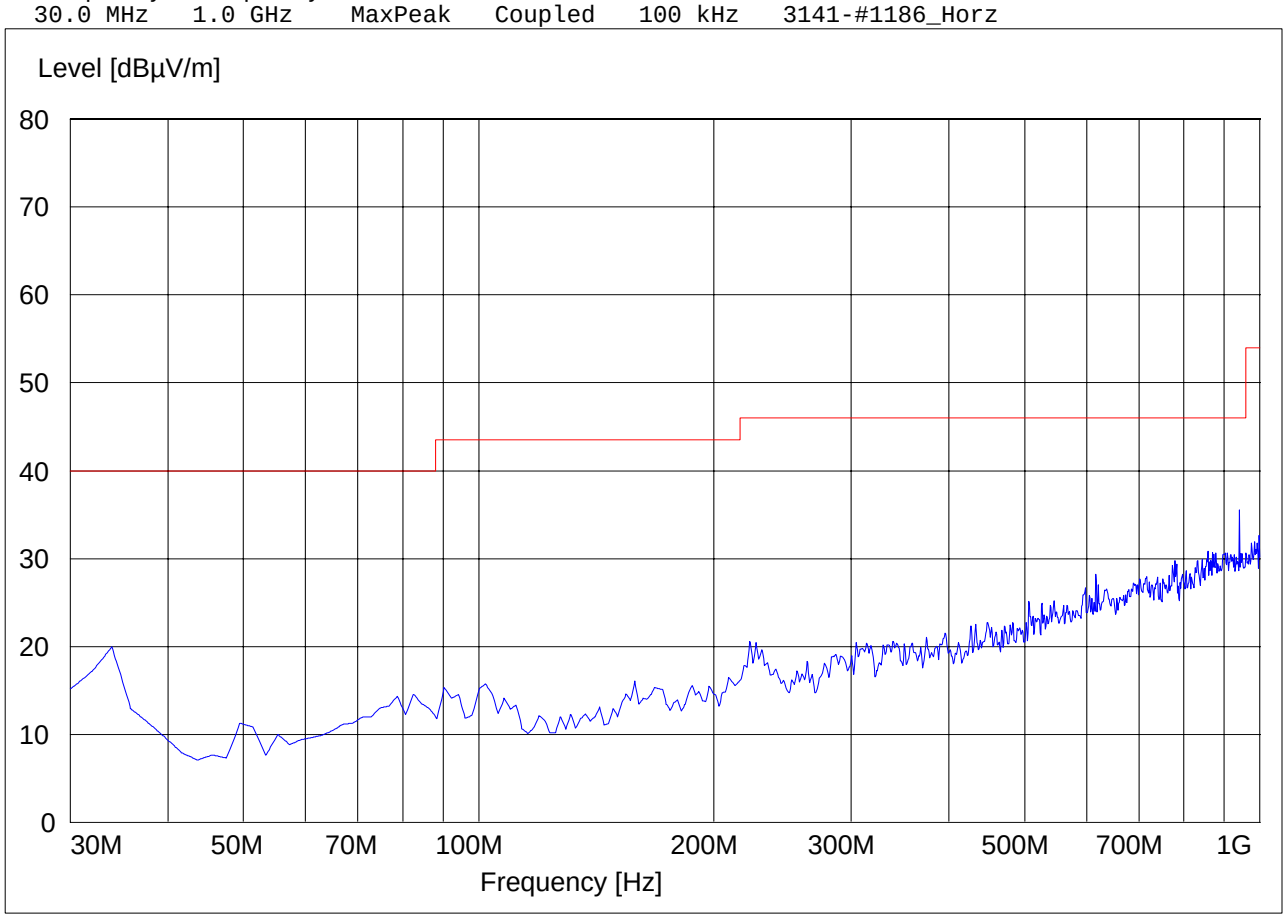
Note: Worse case emission for all operating modes.

Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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



1-7GHz (5500MHz)

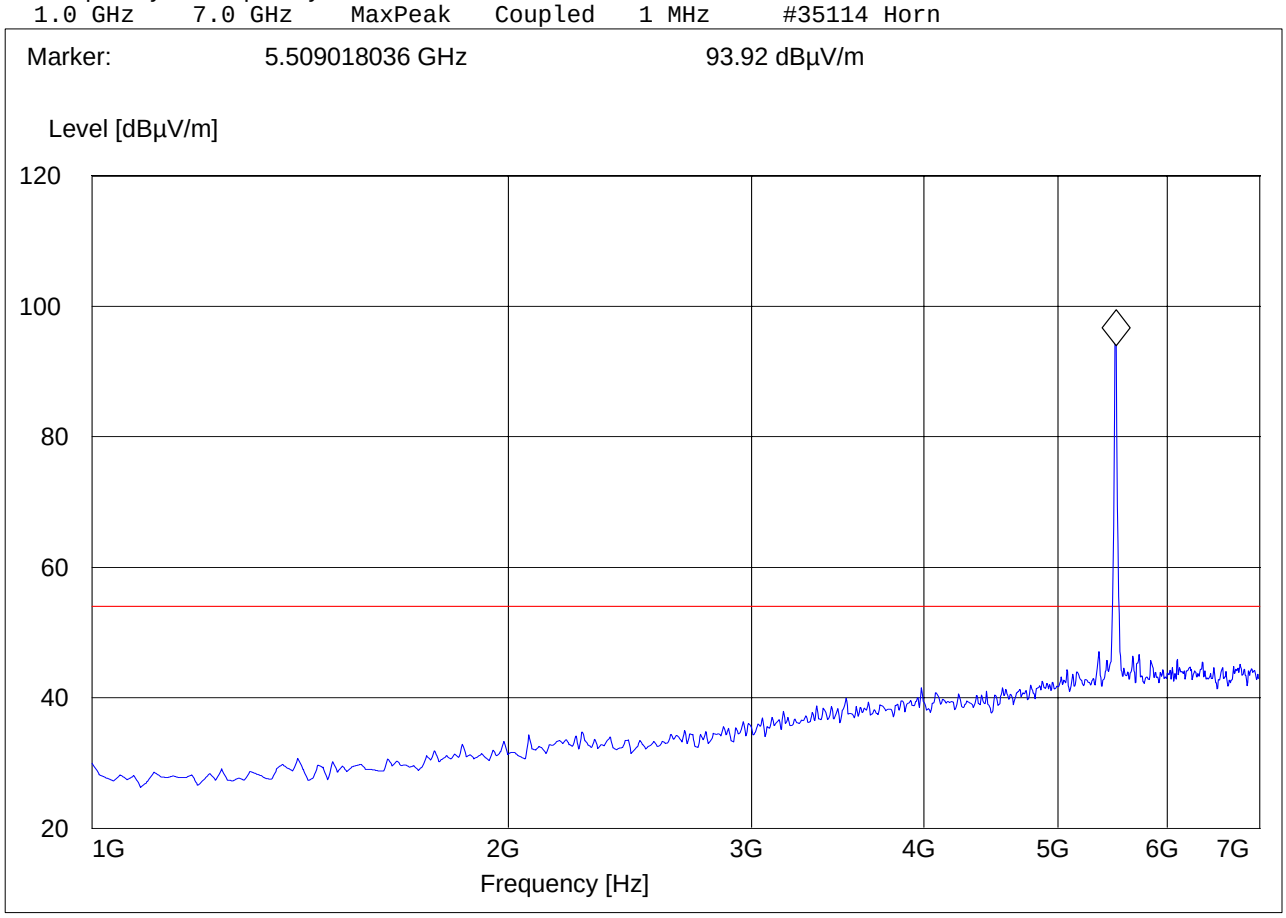
Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn



1-7GHz (5600MHz)

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

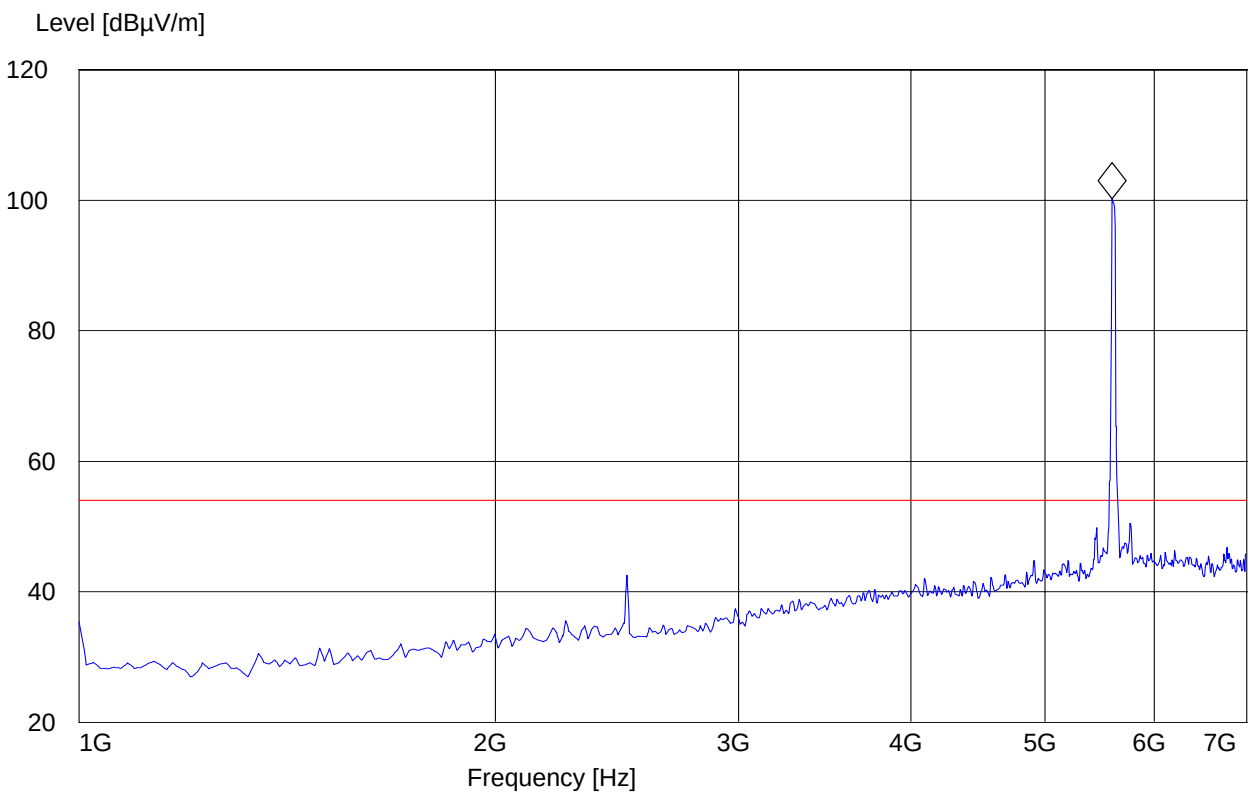
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

Customer:: Broadcom
Test Mode: 802.11n20
ANT Orientation: H
EUT Orientation: H; Tablet
Test Engineer: Chris
Voltage: AC Adapter
Comments:

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn

Marker: 5.593186373 GHz 100.18 dBµV/m



1-7GHz (5700MHz)

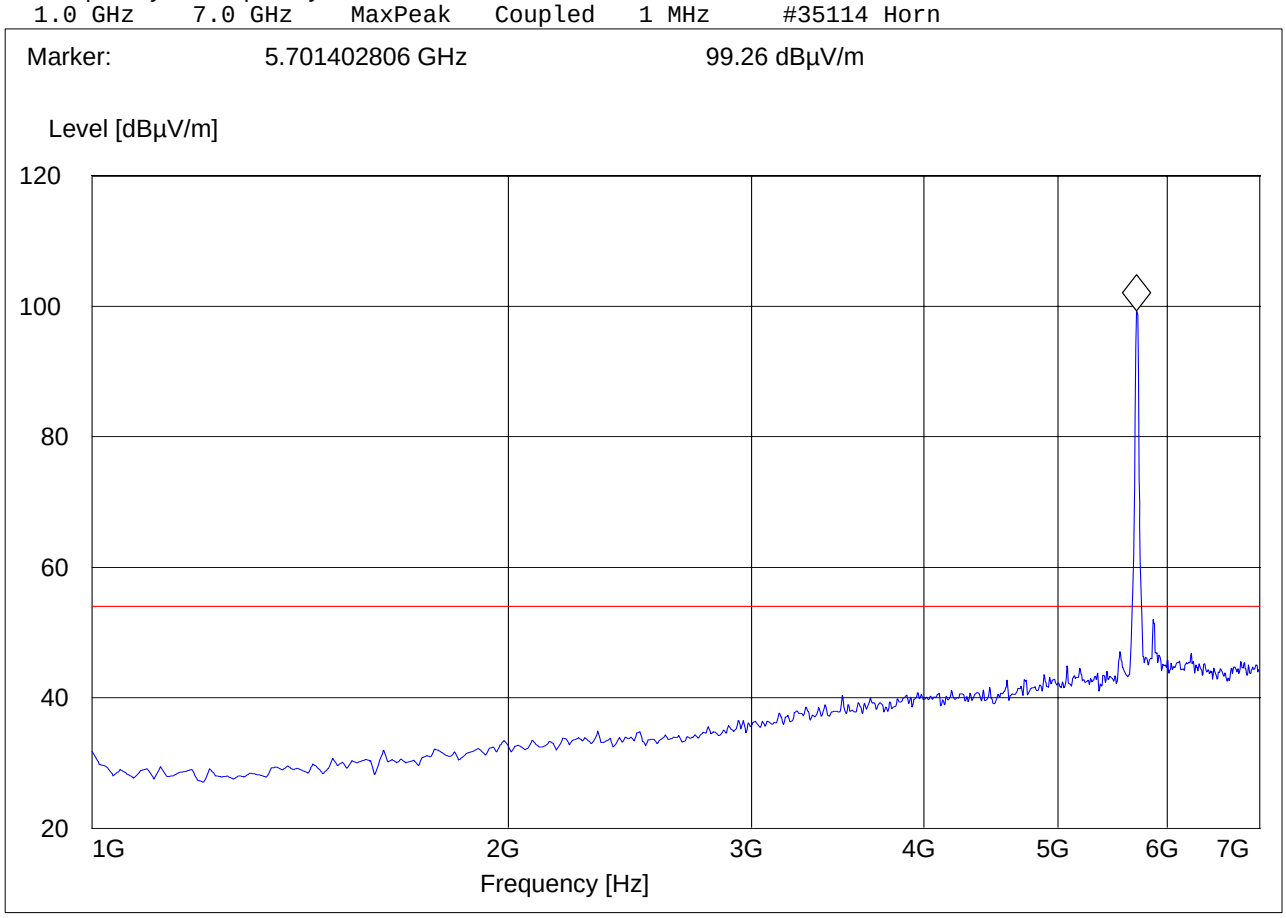
Note: The peak above the limit line is the carrier freq.
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 1-7G"

Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
1.0 GHz	7.0 GHz	MaxPeak	Coupled	1 MHz	#35114 Horn



7-18GHz (5500MHz)

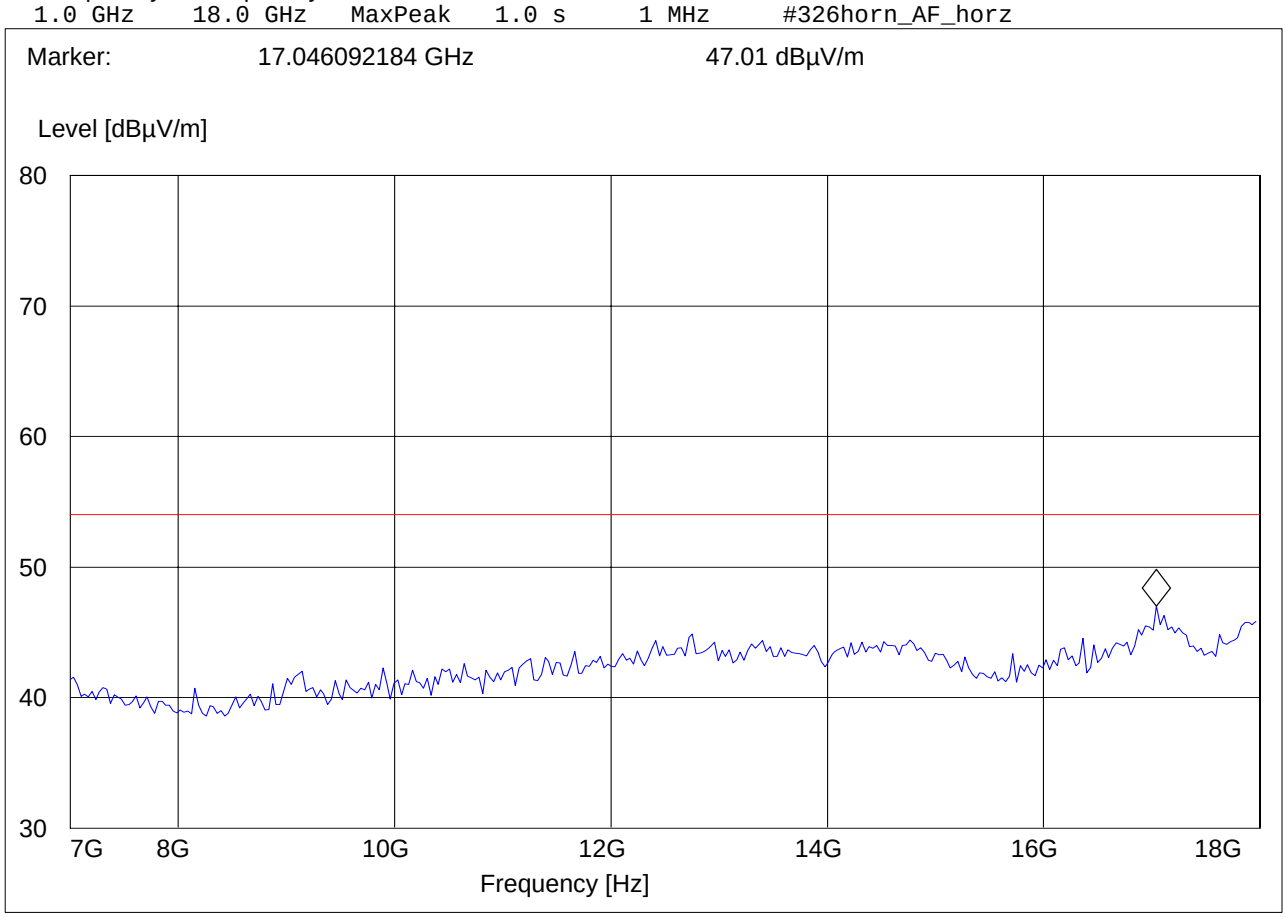
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 7-18G"

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



7-18GHz (5600MHz)

Note: Peak Reading vs. Average limit

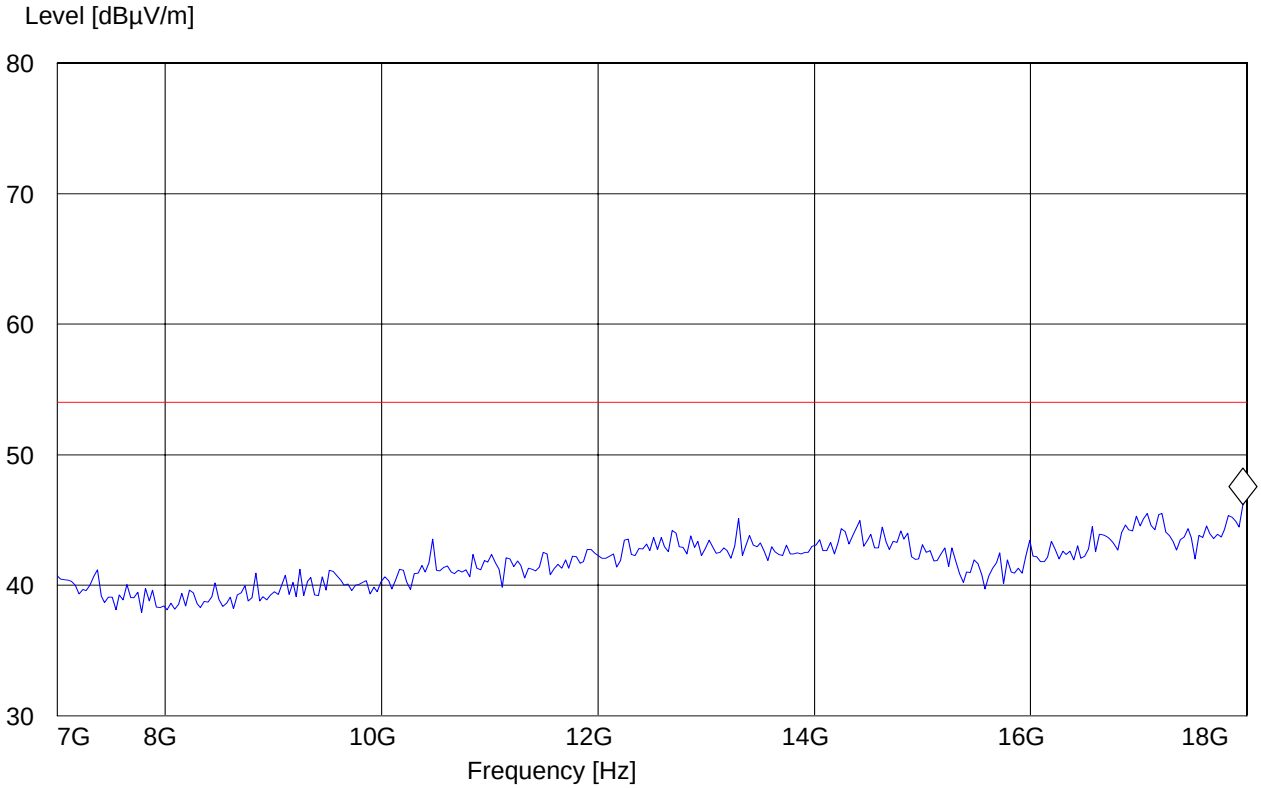
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

Customer:: Broadcom
Test Mode: 802.11n20
ANT Orientation: H
EUT Orientation: H; Tablet
Test Engineer: Chris
Voltage: AC Adapter
Comments:

SWEEP TABLE: "FCC 15.407 7-18G"

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

Marker: 17.965931864 GHz 46.16 dBµV/m



7-18GHz (5700MHz)

Note: Peak Reading vs. Average limit

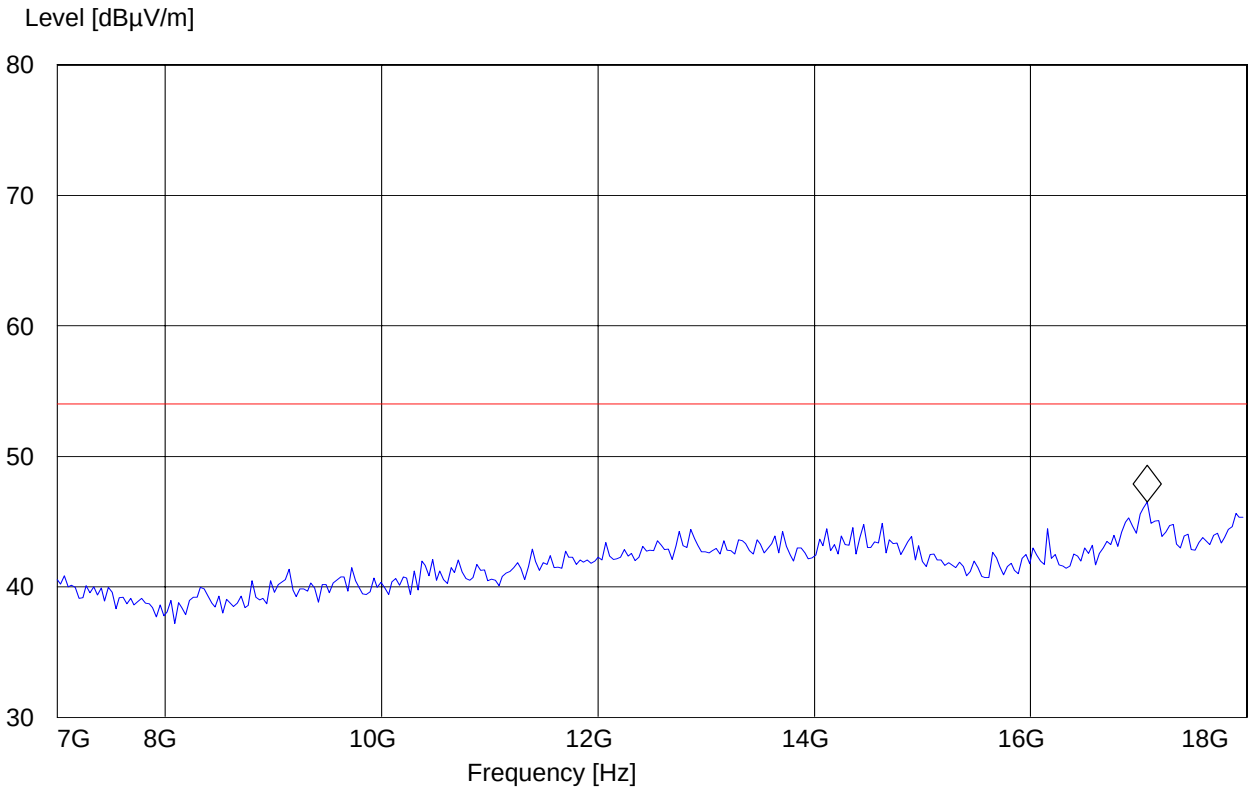
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 7-18G"

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

Marker: 17.080160321 GHz 46.52 dBµV/m



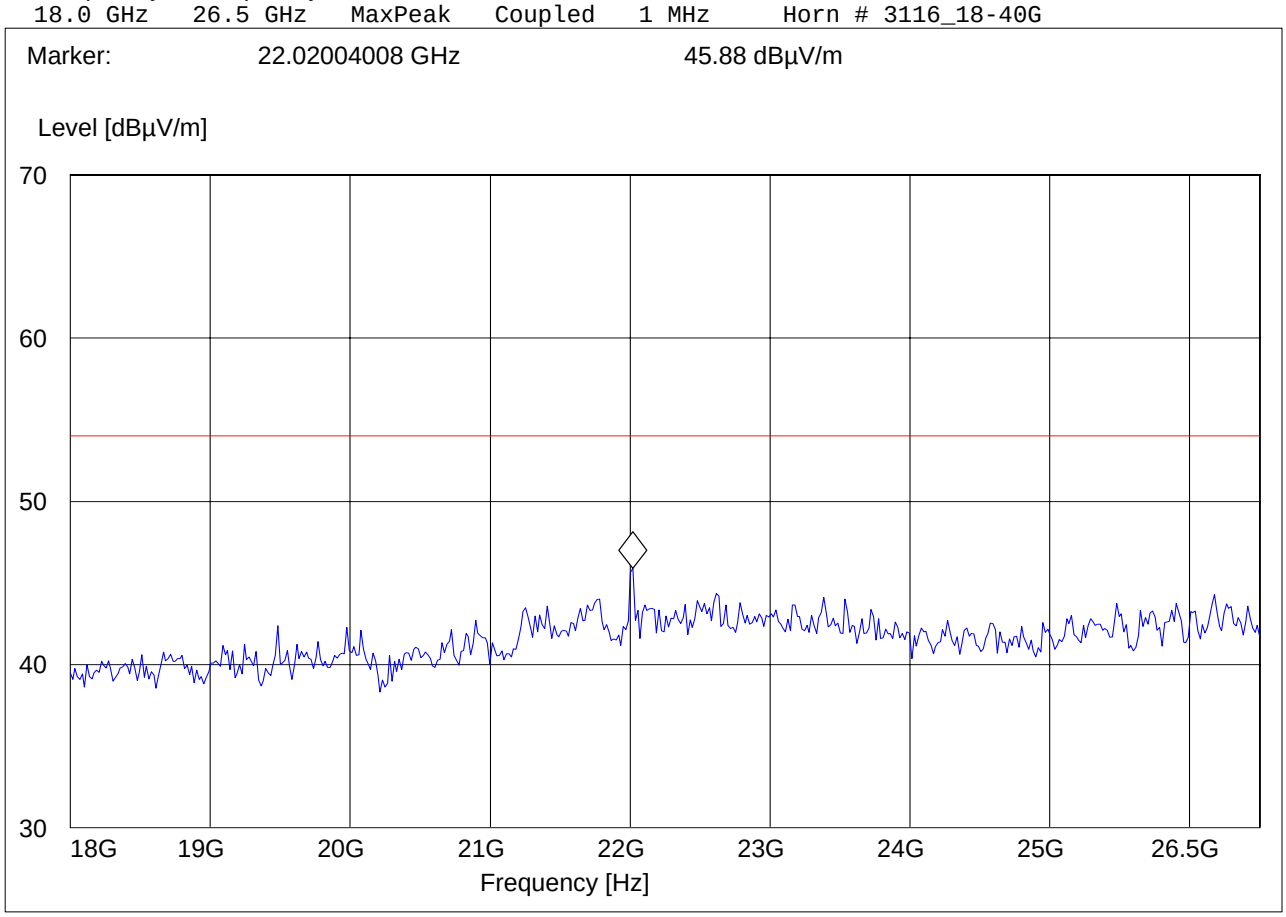
18-26.5GHz (5500MHz)

Note: Peak Reading vs. Average limit
Note: This plot is valid for low, mid, high channels (worst-case plot).
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
Comments:
```

SWEEP TABLE: "FCC 15.407 18-26.5G"

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



26.5-40GHz

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

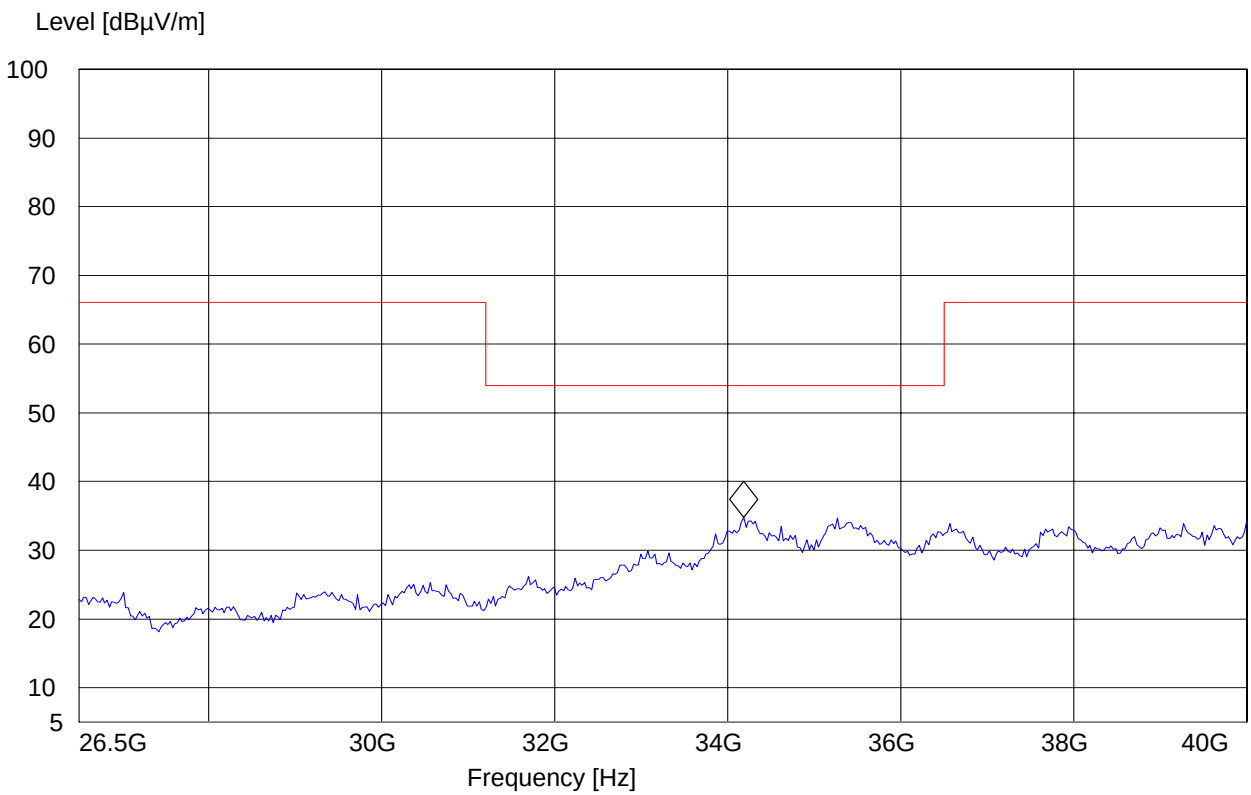
Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        802.11n20
ANT Orientation:  H
EUT Orientation:  H; Tablet
Test Engineer:    Chris
Voltage:          AC Adapter
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

Marker: 34.183366733 GHz 34.76 dBµV/m



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 above 18GHz in Rx mode.

5.4.2 Test Results

30MHz – 1GHz, Antenna: Vertical

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

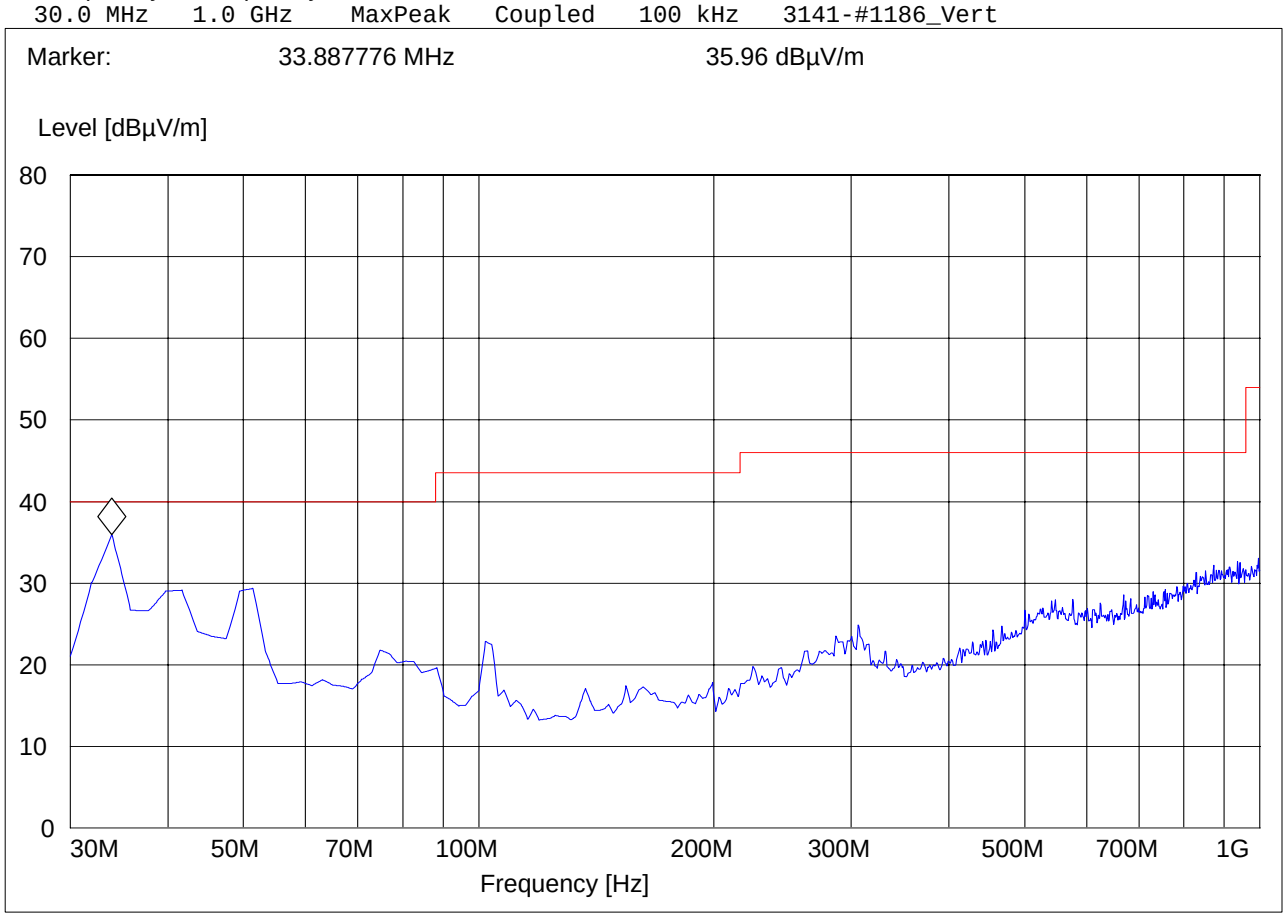
Note: Worse case emission for all operating modes.

Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        Rx
ANT Orientation:  V
EUT Orientation:  H; tablet
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).

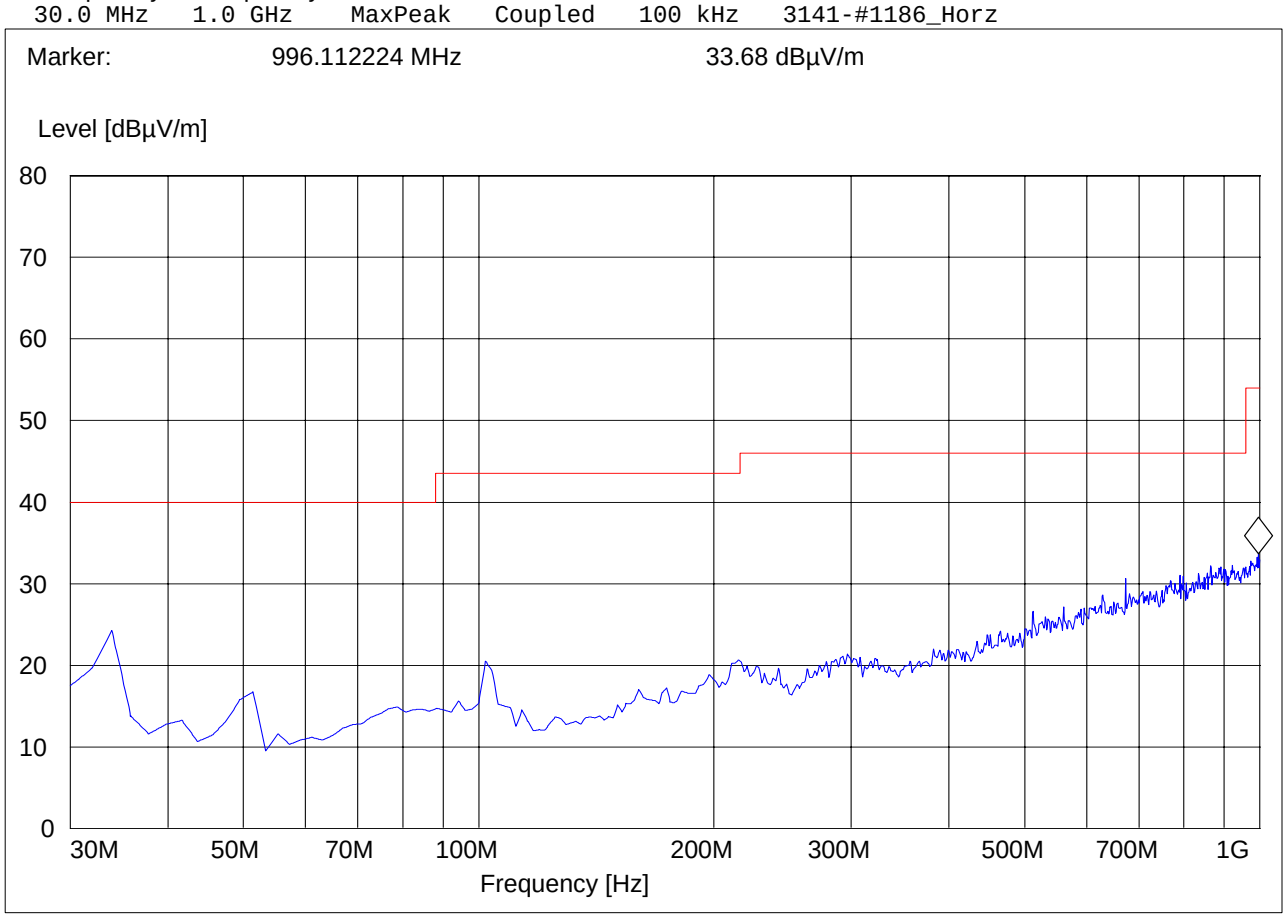
Note: Worse case emission for all operating modes.

Note: Worse case emission for both Laptop and Table configuration.

```
Customer::        Broadcom
Test Mode:        Rx
ANT Orientation:  H
EUT Orientation:  H; tablet
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



1-18GHz

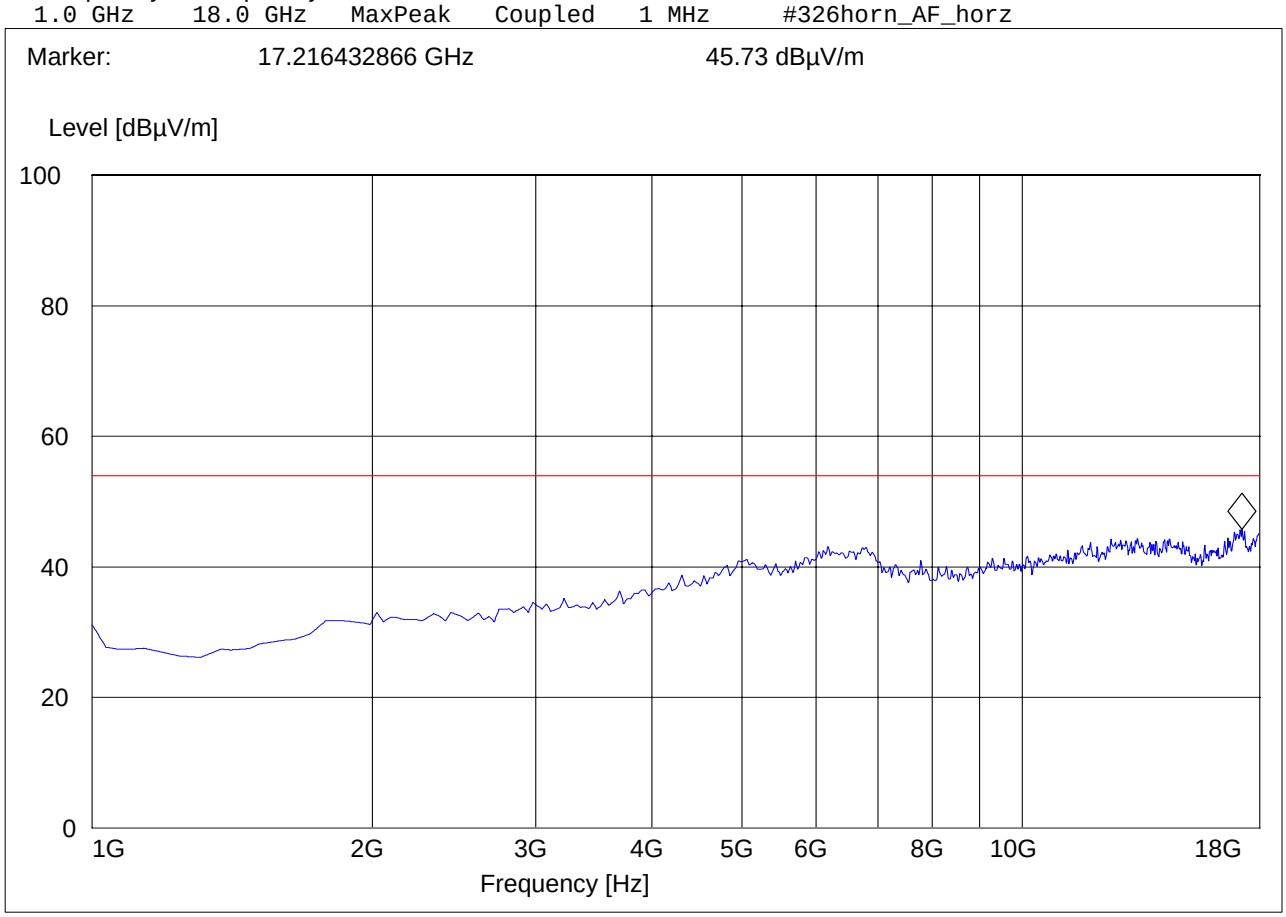
Note: Peak Reading vs. Average limit

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Customer:           Broadcom
Operation Mode:     Rx
ANT Orientation: :  H
EUT Orientation::   H; tablet mode
Test Engineer:      Chris
Voltage:            AC
Comments::
```

SWEEP TABLE: "FCC15.247_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 26dB bandwidth and 99% bandwidth.

6.1.1 Limit

None. Measurement procedure per FCC Public Notice DA02-2138.

6.1.2 Test Results

Test Not conducted. The EUT integrates an FCC approved module. All conducted measurements are referenced from the original report for the module.

6.2 Conducted Power Measurement

6.2.1 FCC Limits:

Conducted Output Power is defined as the following (reduced if directional gain > 6dBi):

Sub-band 1: 5150-5250MHz: 15.407(a)(1): 50mW or 4dBm + 10log(B),
Sub-band 2: 5250-5350MHz: 15.407(a)(2): 250mW or 11dBm + 10log(B)
Sub-band 3: 5470-5725MHz: 15.407(a)(2): 250mW or 11dBm + 10log(B)

B is the 26–dB emission bandwidth in MHz.

6.2.2 IC Limits

Sub-band 1: 5150-5250MHz: Not defined.
Sub-band 2: 5250-5350MHz: RSS-210 A9.2(2): 250mW or 11dBm + 10log(B)
Sub-band 3: 5470-5725MHz: RSS-210 A9.2(2): 250mW or 11dBm + 10log(B)

B is the 99% emission bandwidth in MHz

6.2.3 Measurement Results

Test Not conducted. The EUT integrates an FCC approved module. All conducted measurements are referenced from the original report for the module.

6.3 Power Spectral Density

6.3.1 FCC Limit

Sub-band 1: 5150-5250MHz 15.407(a) (1): 4dBm in any 1–MHz band
Sub-band 2: 5250-5350MHz 15.407(a) (2): 11dBm in any 1–MHz band
Sub-band 3: 5470-5725MHz 15.407(a) (2): 11dBm in any 1–MHz band

6.3.2 IC Limit

Sub-band 1: 5150-5250MHz RSS-210 A9.2(1): 10dBm in any 1–MHz band
Sub-band 2: 5250-5350MHz RSS-210 A9.2(2): 11dBm in any 1–MHz band
Sub-band 3: 5470-5725MHz RSS-210 A9.2(2): 11dBm in any 1–MHz band

6.3.3 Results

Test Not conducted. The EUT integrates an FCC approved module. All conducted measurements are referenced from the original report for the module.

6.4 Peak Excursion

6.4.1 Limit

FCC15.407 (A)(6): The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

6.4.2 Results

Test Not conducted. The EUT integrates an FCC approved module. All conducted measurements are referenced from the original report for the module.

6.5 Conducted Spurious Emission

6.5.1 Limit

As specified in 15.407 (b)(1)(2)(3)(4) and RSS-210 (A9.3)(1)(2)(3)(4).

6.5.2 Results:

Test Not conducted. The EUT integrates an FCC approved module. All conducted measurements are referenced from the original report for the module.

6.6 AC Power Line Conducted Emissions § 15.107/207

6.6.1 LIMITS

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

§15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

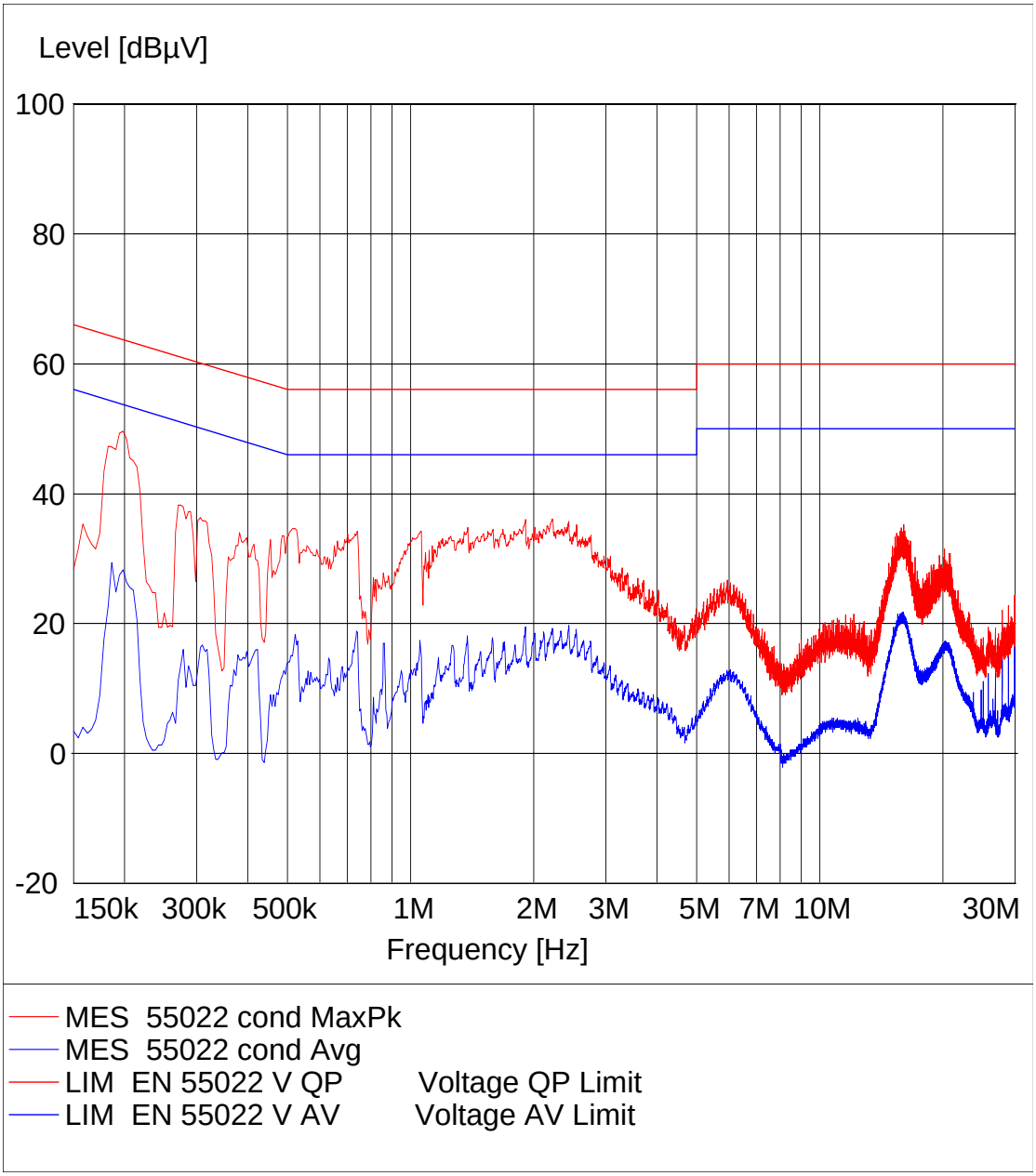
Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50
* Decreases with logarithm of the frequency		

ANALYZER SETTINGS: RBW = 10KHz VBW = 10KHz

6.6.2 RESULTS Tx Mode Line:

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

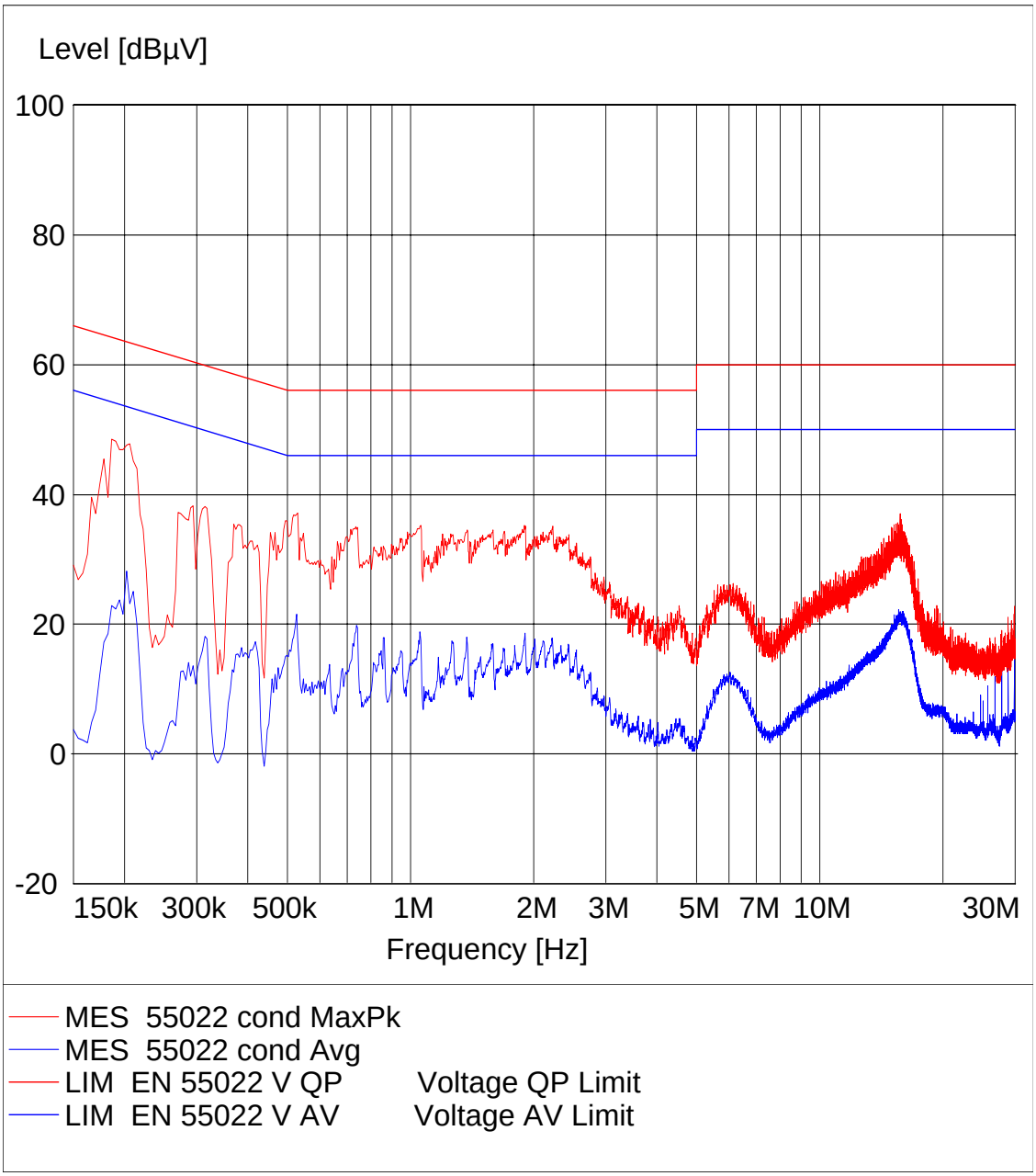
```
Manufacturer:      Broadcom
Test Mode:         802.11n20; Ch.6
ANT Orientation:: N/A
EUT Orientation:: H
Test Engineer::    Chris
Power Supply: :    AC
Comments:  :       Line
```



6.6.3 RESULTS Tx Mode Neutral:

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

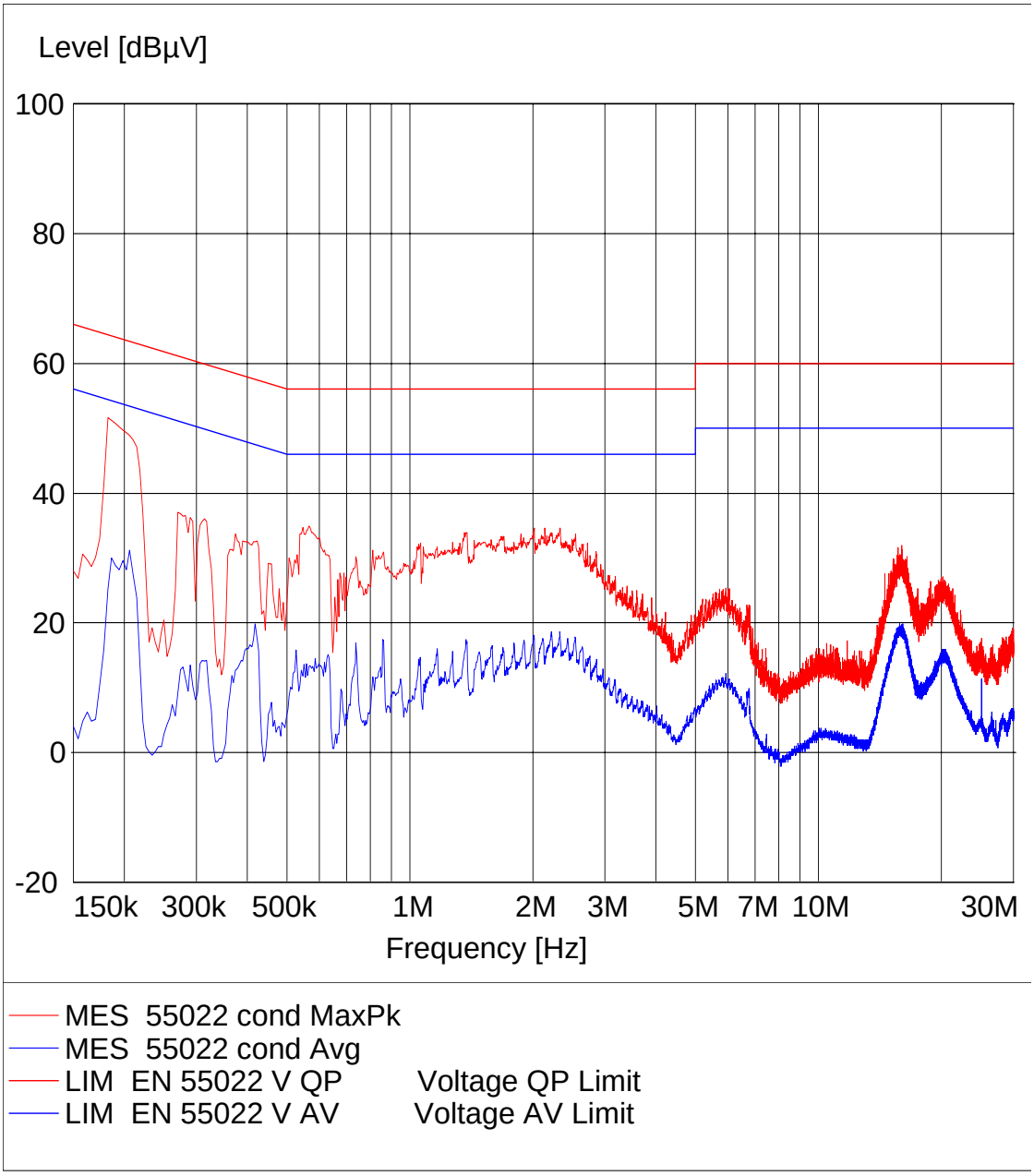
```
Manufacturer:      Broadcom
Test Mode:         802.11n20; Ch.6
ANT Orientation:: N/A
EUT Orientation:: H
Test Engineer::    Chris
Power Supply: :    AC
Comments:  :       Neutral
```



6.6.4 RESULTS Rx Mode:

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

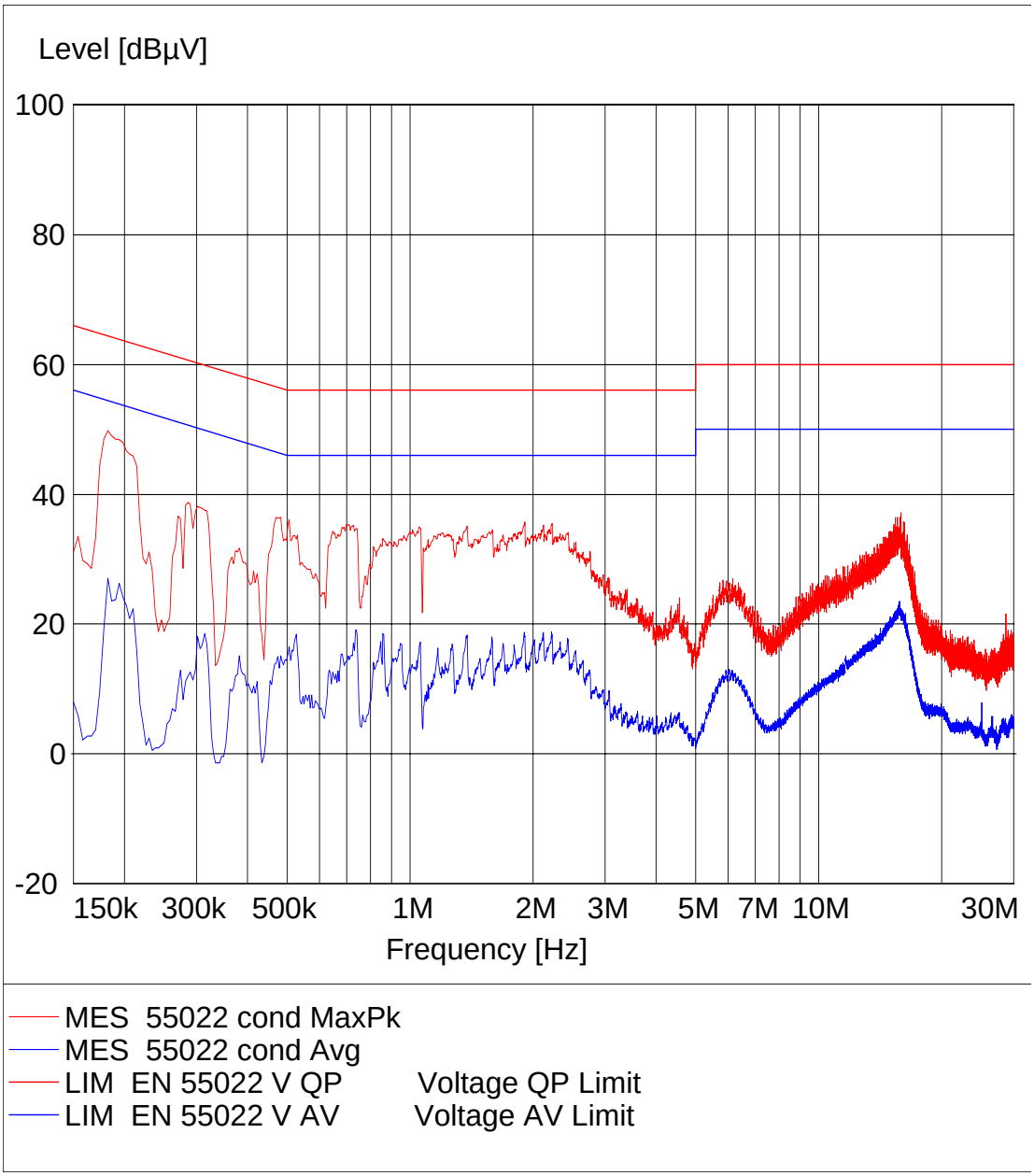
```
Manufacturer:      Broadcom
Test Mode:         RX
ANT Orientation:: N/A
EUT Orientation:: H
Test Engineer::    Chris
Power Supply: :    AC
Comments:  :       Line
```



6.6.5 RESULTS Rx Mode Neutral:

Note: Worse case emission for all operating modes.
Note: Worse case emission for both Laptop and Table configuration.

```
Manufacturer:      Broadcom
Test Mode:         RX
ANT Orientation:: N/A
EUT Orientation:: H; tablet
Test Engineer::    Chris
Power Supply: :    AC
Comments:  :       Neutral
```

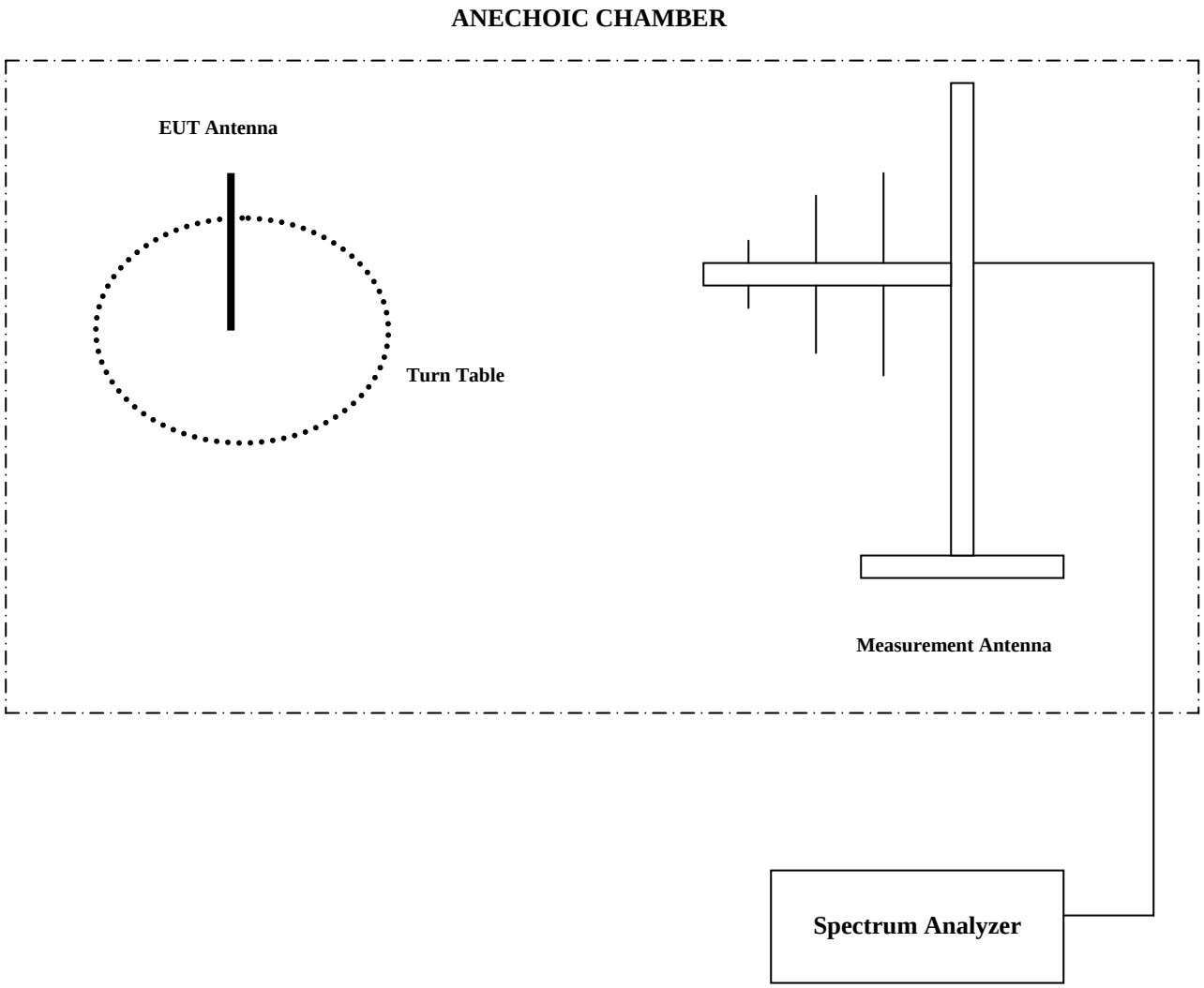


7 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

No	Instrument/Ancillary	Type	Manufacturer	Serial No.	Cal Due	Interval
01	Spectrum Analyzer	ESIB 40	Rohde & Schwarz	100107	May 2009	1 year
02	Spectrum Analyzer	FSEM 30	Rohde & Schwarz	100017	August 2009	1 year
03	Signal Generator	SMY02	Rohde & Schwarz	836878/011	May 2009	1 year
04	Power-Meter	NRVD	Rohde & Schwarz	0857.8008.02	May 2009	1 year
05	Biconilog Antenna	3141	EMCO	0005-1186	June 2009	1 year
06	Horn Antenna (1-18GHz)	SAS-200/571	AH Systems	325	June 2009	1 year
07	Horn Antenna (18-26.5GHz)	3160-09	EMCO	1240	June 2009	1 year
08	Power Splitter	11667B	Hewlett Packard	645348	n/a	n/a
09	Climatic Chamber	VT4004	Voltsch	G1115	May 2009	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	JS4-001isap00	Miteq	00616	May 2009	1 year
13	Power Sensor	URV5-Z2	Rohde & Schwarz	DE30807	May 2009	1 year
14	Digital Radio Comm. Tester	CMD-55	Rohde & Schwarz	847958/008	May 2009	1 year
15	Universal Radio Comm. Tester	CMU 200	Rohde & Schwarz	832221/06	May 2009	1 year
16	LISN	ESH3-Z5	Rohde & Schwarz	836679/003	May 2009	1 year
17	Loop Antenna	6512	EMCO	00049838	July 2009	2 years

8 BLOCK DIAGRAMS

Radiated Testing



9 Revision History

2008-12-03: First Issue