



Title: Polycom Spectralink 8450 Wi-Fi handset
with Bluetooth

To: FCC 47 CFR Part 15.407 & RSS-210 A9

Serial #: POLY21-U2b Rev A

Issue Date: 6th June 2011

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TABLE OF RESULTS – 802.11n HT-20

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51		dBi
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test Frequency	Measured Peak Power				Total Power (dBm)		Limit	Margin
	RF Port (dBm)							
MHz	a	b	c	d	Combined	Calculated	dBm	dB
5260	4.03				4.03		11.00	-6.97
5280	4.20				4.20		11.00	-6.80
5320	4.06				4.06		11.00	-6.94

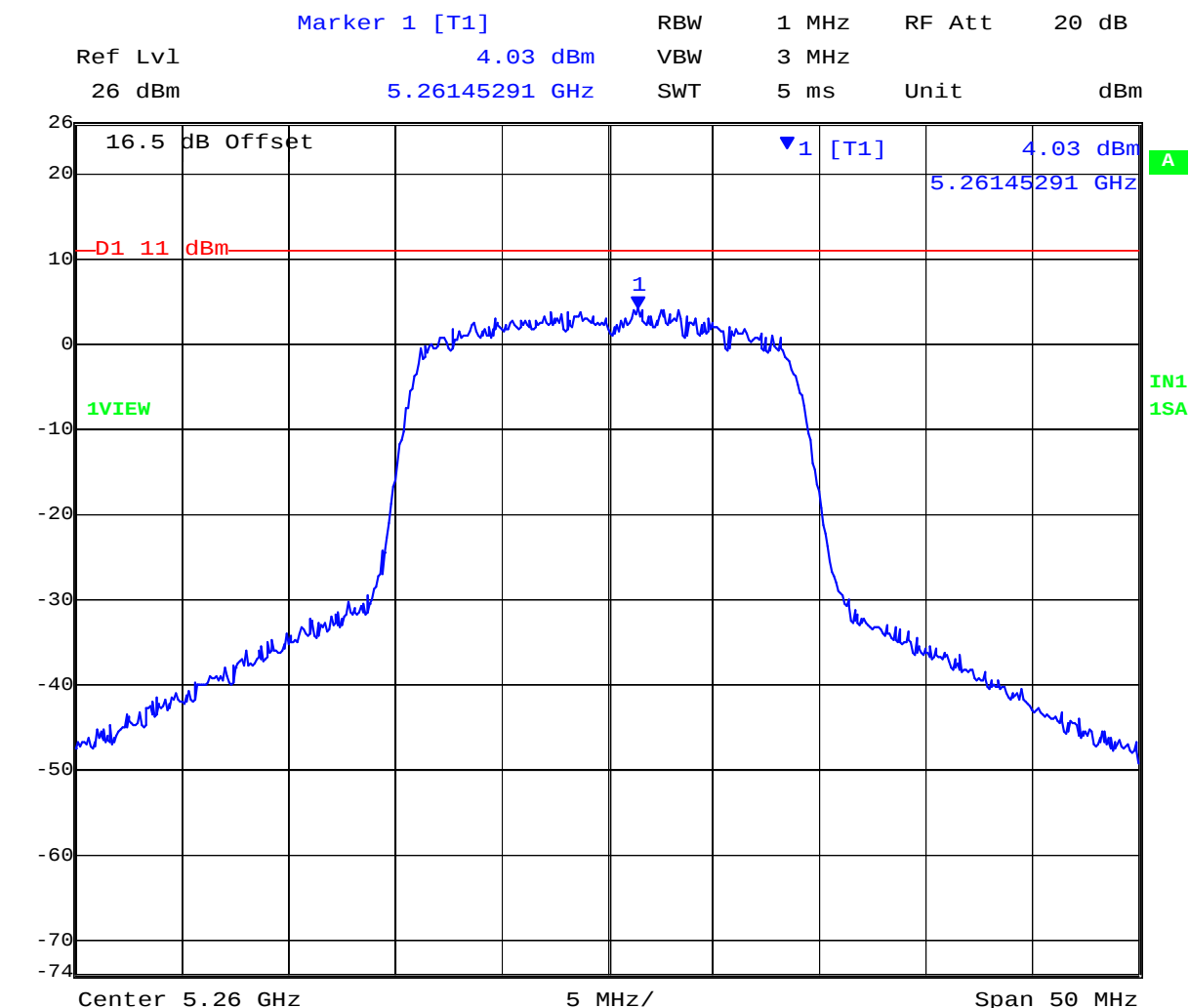
Measurement uncertainty:	±1.33 dB
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Power Density Ambient 5260MHz 4.20V 15.26dBm



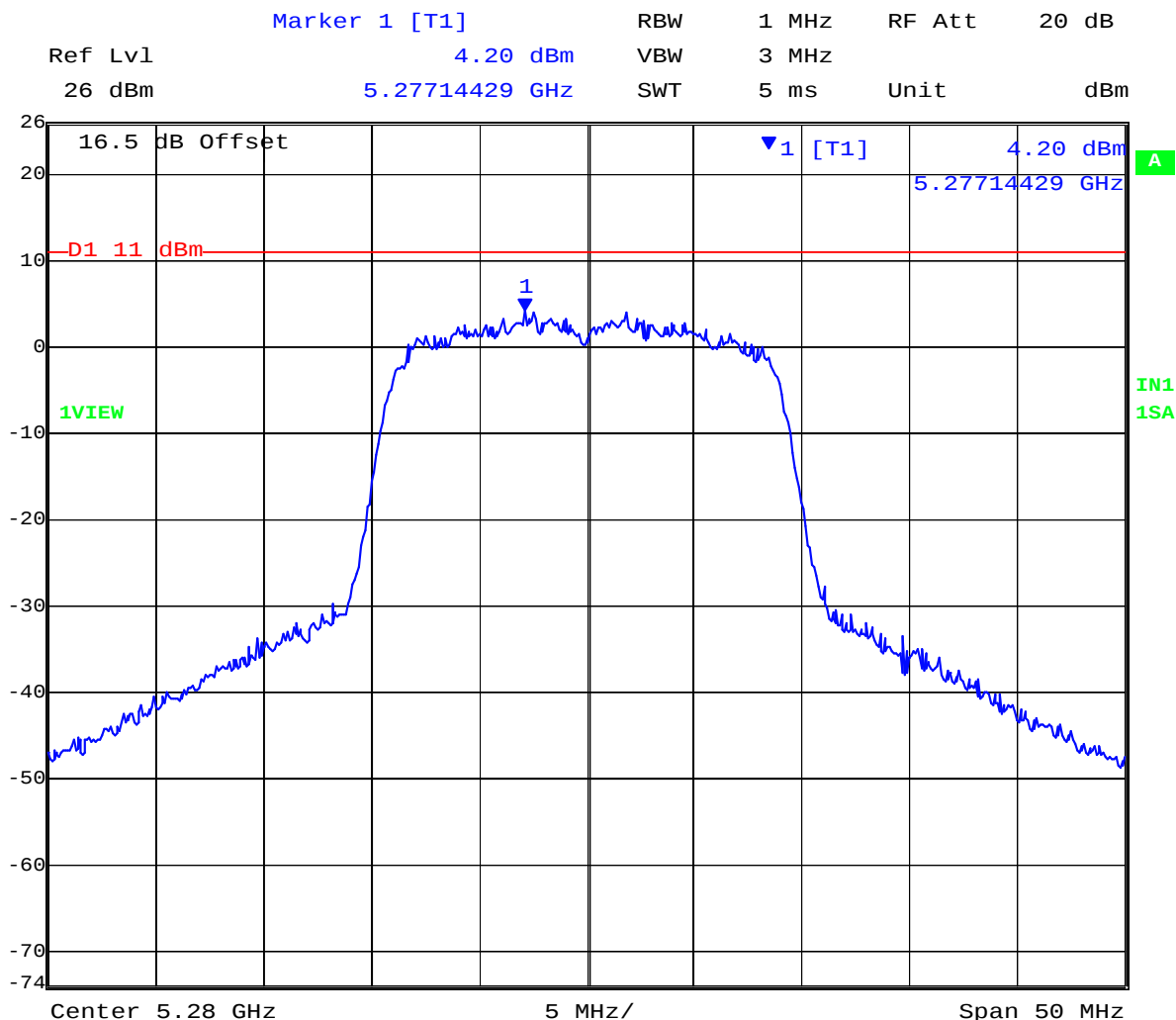
Date: 7.JAN.2011 14:39:01

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Power Density Ambient 5280MHz 4.20V 15.18dBm



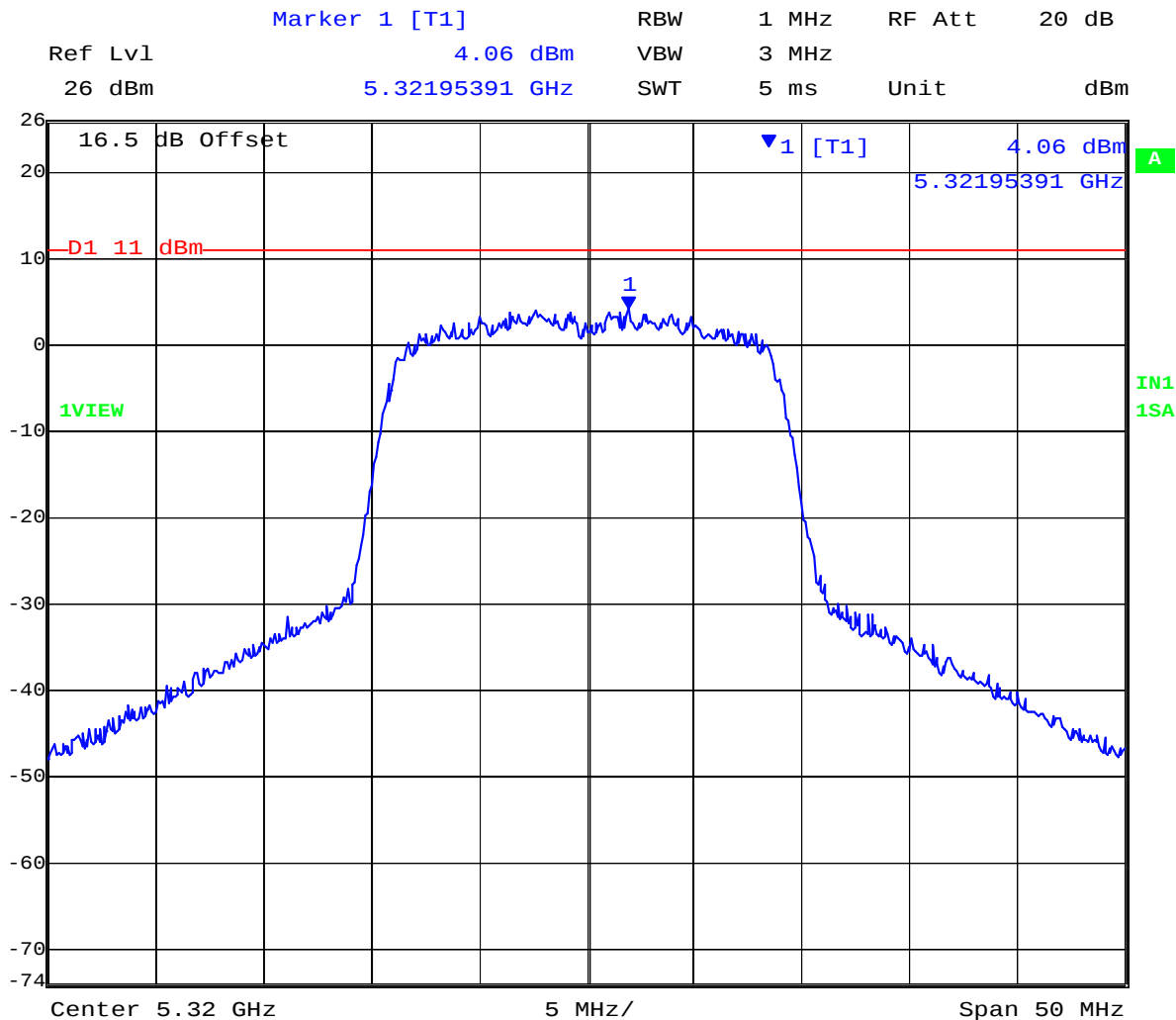
Date: 7.JAN.2011 14:56:38

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Power Density Ambient 5320MHz 4.20V 15.36dBm



Date: 7.JAN.2011 15:11:26

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7.4.3 5470 MHz - 5725 MHz; Peak Power Spectral Density

TABLE OF RESULTS – 802.11a

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11a	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51		dBi
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test Frequency	Measured Peak Power				Total Power (dBm)		Limit	Margin
	RF Port (dBm)							
MHz	a	b	c	d	Combined	Calculated	dBm	dB
5500	4.73				4.73		11.00	-6.27
5580	4.48				4.48		11.00	-6.52
5700	3.99				3.99		11.00	-7.01

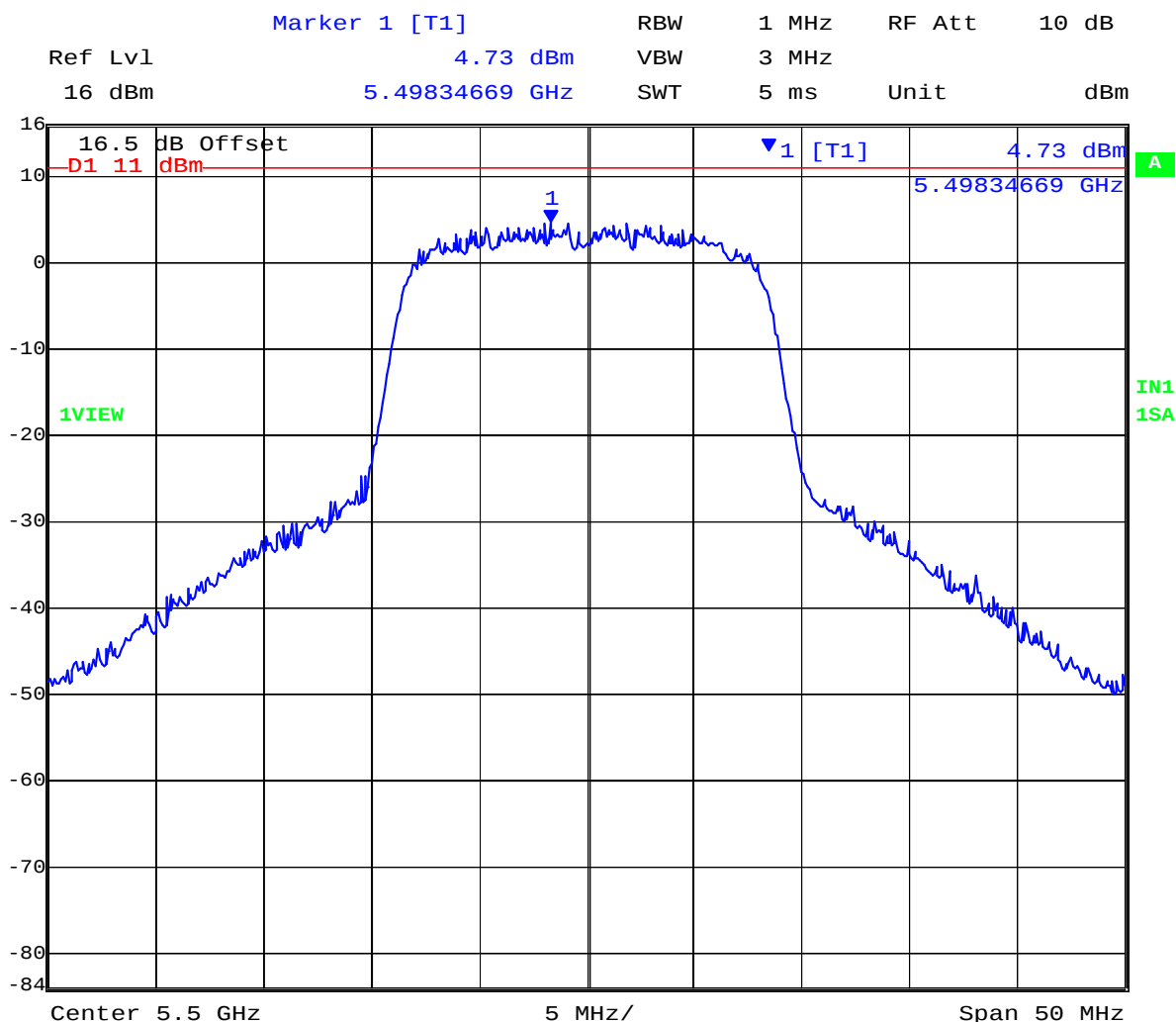
Measurement uncertainty:	±1.33 dB
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Power Density Ambient 5500MHz 4.20V 16.04dBm



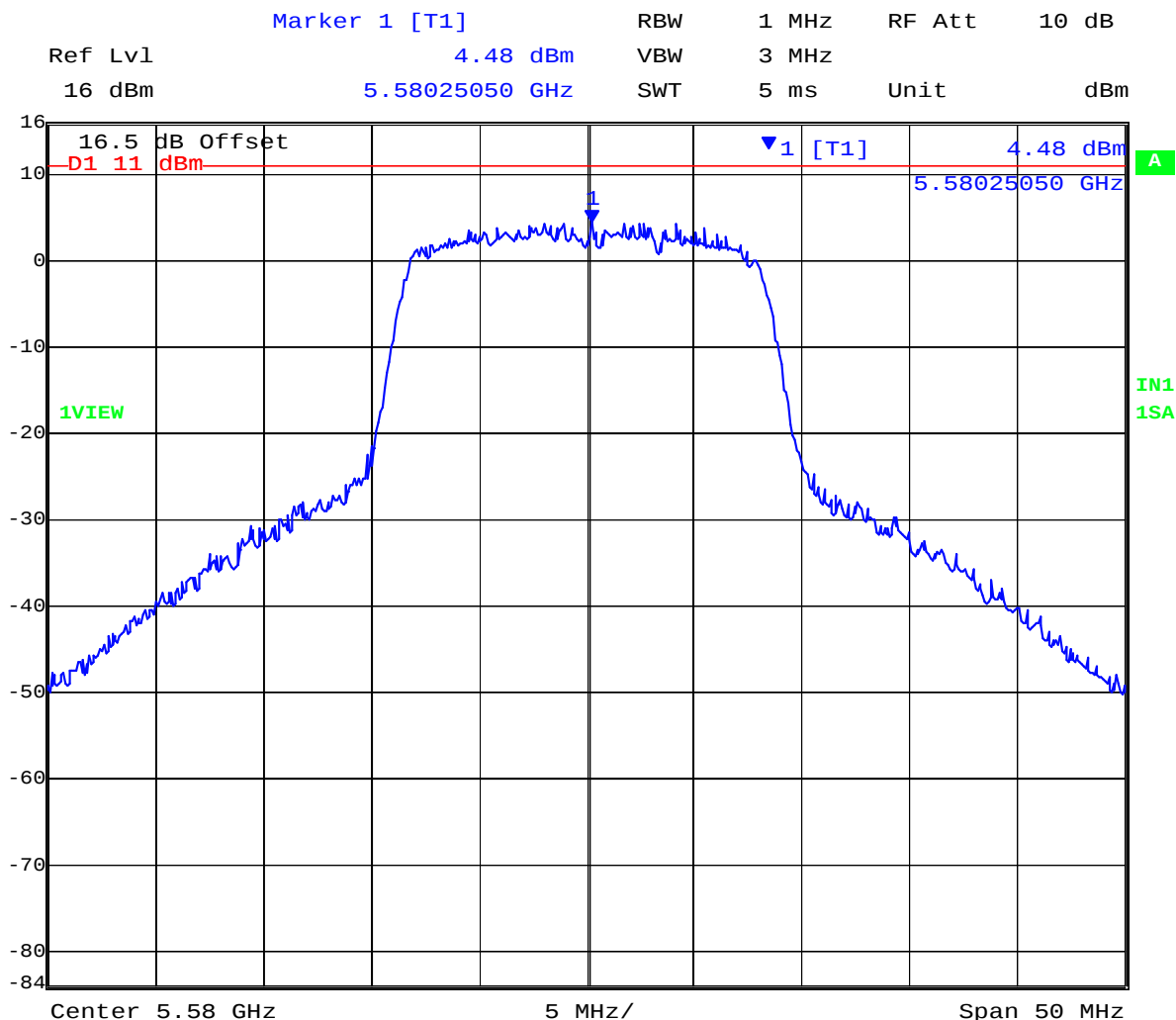
Date: 7.JAN.2011 15:31:43

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Power Density Ambient 5580MHz 4.20V 16.03dBm



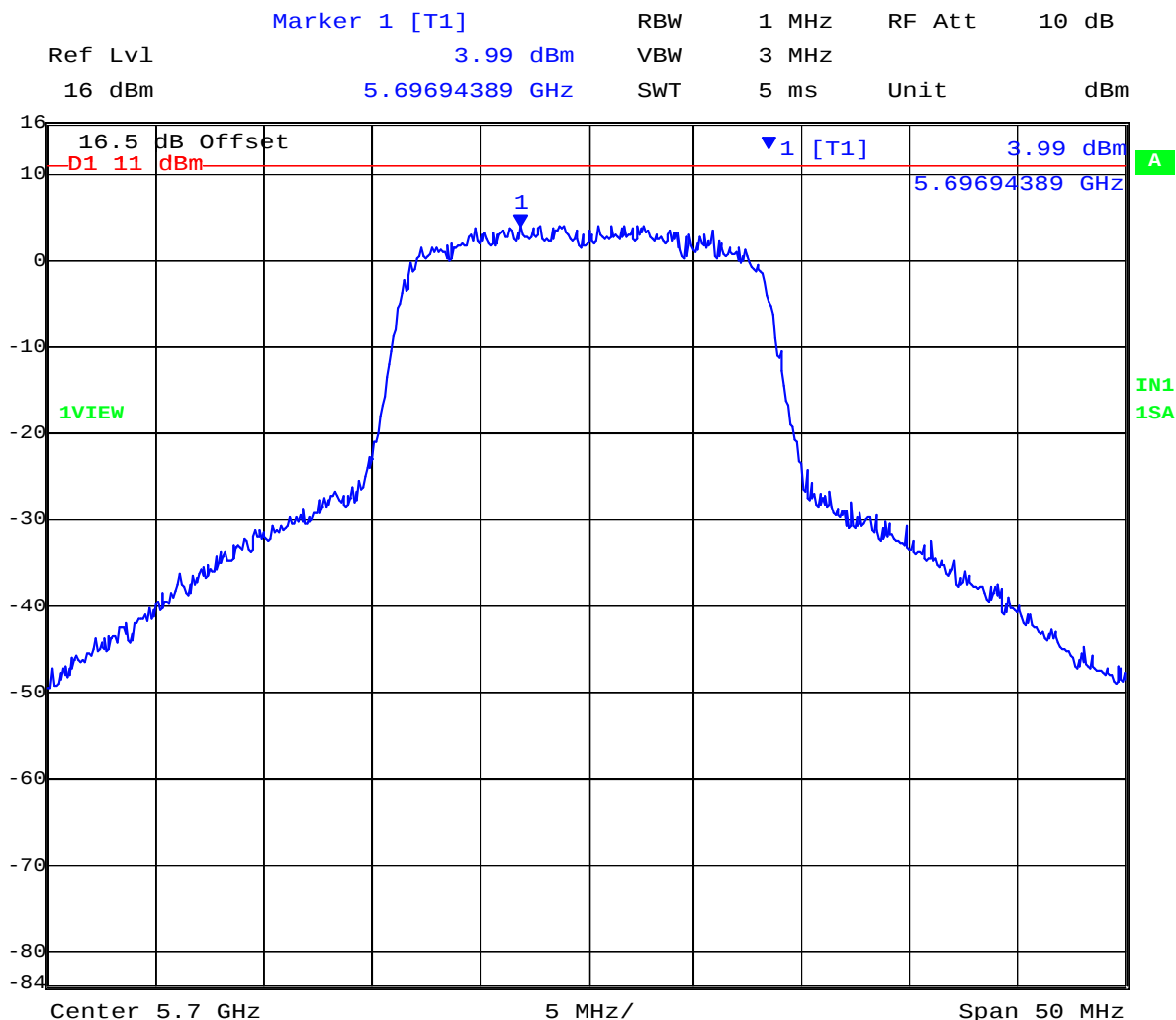
Date: 7.JAN.2011 15:44:53

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Power Density Ambient 5700MHz 4.20V 16.42dBm



Date: 7.JAN.2011 15:59:21

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TABLE OF RESULTS – 802.11n HT-20

Test Conditions:	15.407 (a)	Rel. Humidity (%):	35	to	42
Variant:	802.11n HT-20	Ambient Temp. (°C):	19	to	22
TPC:	HIGH	Pressure (mBars):	998	to	1003
Modulation:	ON	Duty Cycle (%):	100		
Beam Forming Gain (Y):	N/A dB	Antenna Gain:	5.51		dBi
Applied Voltage:	4.2 Vdc				
Notes 1:					
Notes 2:					

Test Frequency	Measured Peak Power				Total Power (dBm)		Limit	Margin
	RF Port (dBm)							
MHz	a	b	c	d	Combined	Calculated	dBm	dB
5500	4.06				4.06		11.00	-6.94
5580	4.40				4.40		11.00	-6.60
5700	4.08				4.08		11.00	-6.92

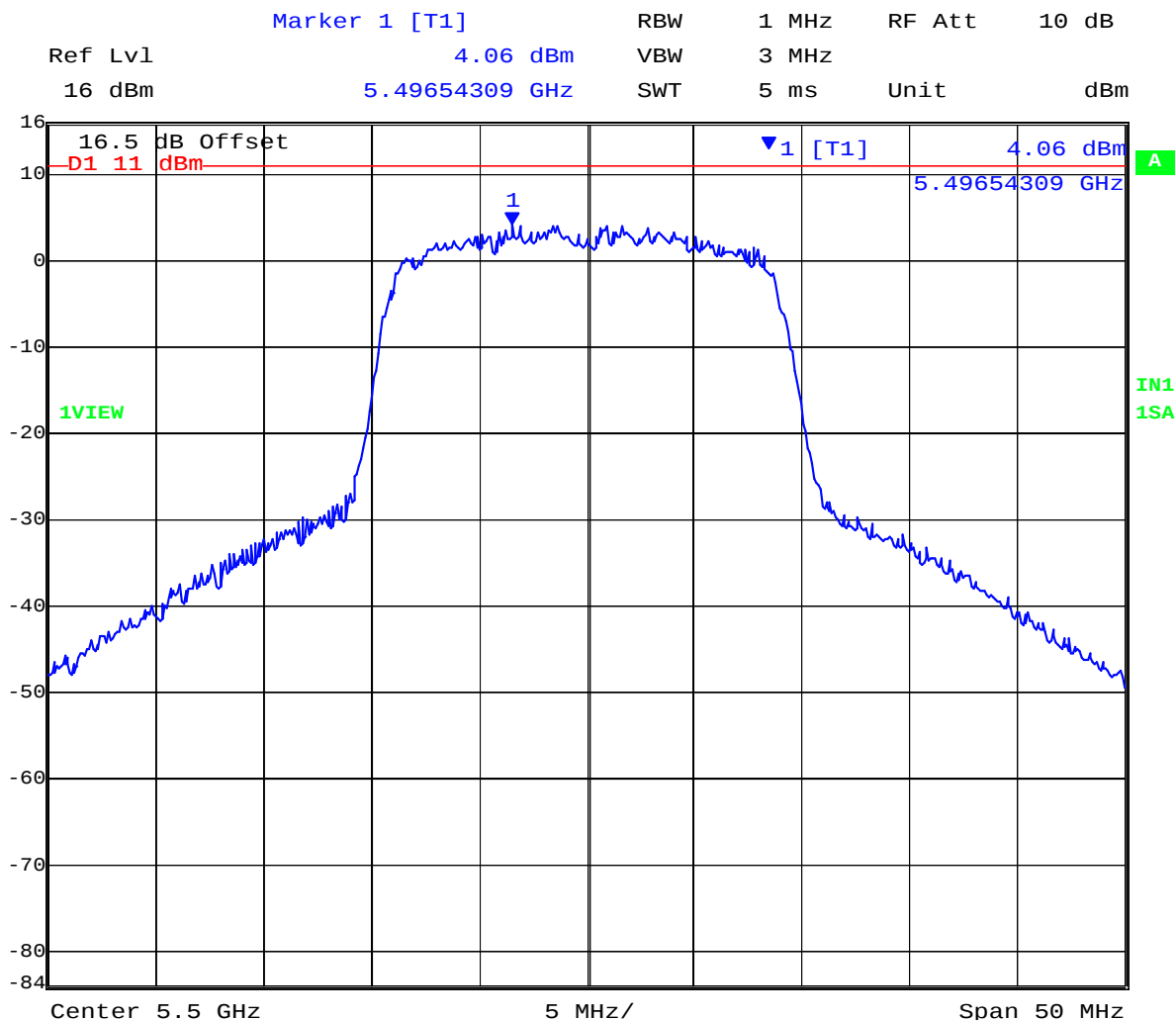
Measurement uncertainty:	±1.33 dB
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Power Density Ambient 5500MHz 4.20V 15.94dBm



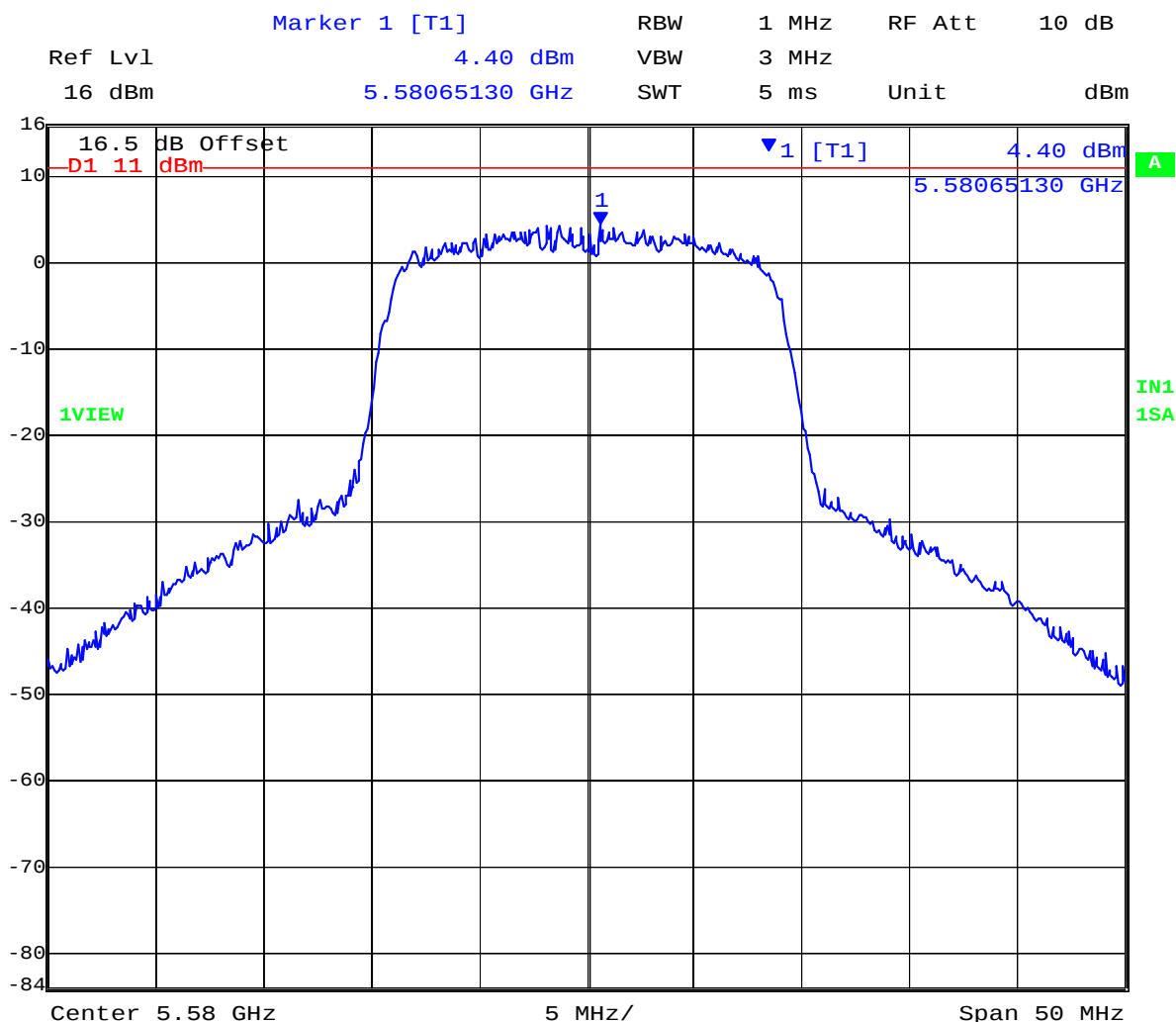
Date: 7.JAN.2011 16:16:05

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Power Density Ambient 5580MHz 4.20V 15.90dBm



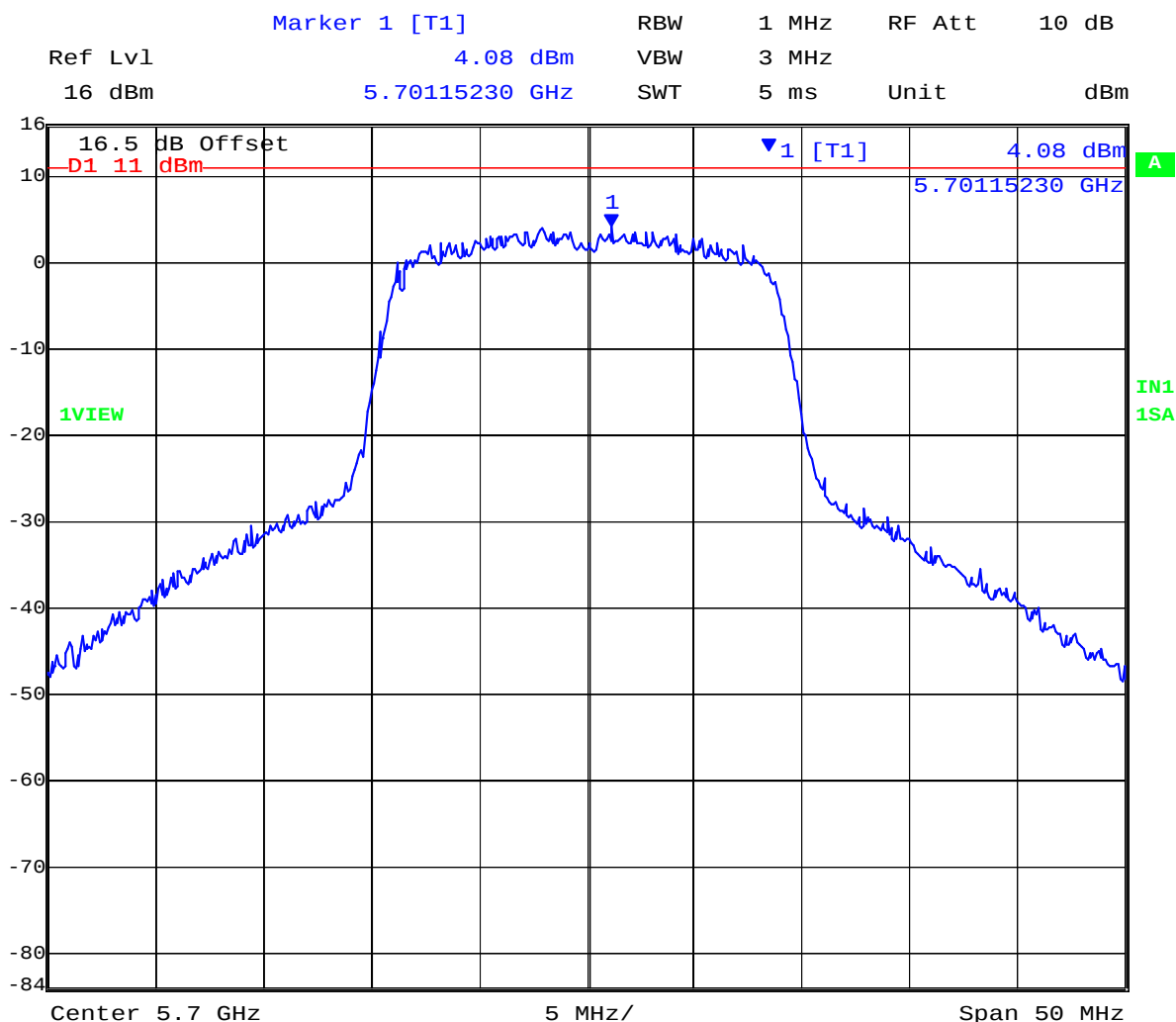
Date: 7.JAN.2011 16:31:46

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Power Density Ambient 5700MHz 4.20V 16.30dBm



Date: 7.JAN.2011 16:45:59

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7.5 Frequency Stability

FCC, Part 15 Subpart E §15.407(g)
Industry Canada RSS-Gen §7.2.6

Test Procedure

The manufacturer of the equipment is responsible for ensuring that the frequency stability is such that emissions are always maintained within the band of operation under all conditions.

Manufacturer Declaration

The frequency stability of the reference oscillator sets the frequency stability of the RF transceiver signals. Therefore all of the RF signals should have ± 20 ppm stability. This stability accounts for room temp tolerance of the crystal oscillator circuit, frequency variation across temperature, and crystal ageing.

± 20 ppm at 5.250 GHz translates to a maximum frequency shift of ± 105 KHz. As the edge of the channels is at least one MHz from either of the band edges, ± 105 KHz is more than sufficient to guarantee that the intentional emission will remain in the band over the entire operating range of the EUT.

Specification

Limits

FCC §15.407 (g)

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Industry Canada RSS-Gen §7.2.6



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7.6 Maximum Permissible Exposure

FCC §1.1310

Industry Canada RSS-Gen §5.6

Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d (\text{mW/cm}^2) = \text{EIRP} / (4\pi d^2)$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10^{(G (\text{dBi})/10)}$$

The Peak Power in mW is the highest transmitter power measured and summed across all transmitters. Because the EUT belongs to the General Population/Uncontrolled Exposure the limit of power density is 1.0 mW/cm²

Freq. Band (MHz)	Antenna Gain (dBi)	Peak Output Power (dBm)	Antenna Gain (numeric)	EIRP (mW)	Distance @ 1mW/cm ² Limit(cm)	Minimum Separation Distance (cm)
5150 - 5725	5.51	16.42	3.56	155.96	3.52	20

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

Specification

Maximum Permissible Exposure Limits

FCC §1.1310

Limit = 1mW / cm² from 1.310 Table 1

RSS-Gen §5.6

Exposure of Humans to RF Fields: Category I and Category II equipment shall comply with the applicable requirements of RSS-102.

Laboratory Measurement Uncertainty for Power Measurements

Measurement uncertainty	±1.33 dB
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7.7 Dynamic Frequency Selection (DFS)

7.7.1 Test Procedure and Setup

FCC, Part 15 Subpart C §15.407(h)
FCC 06-96 Memorandum Opinion and Order
Industry Canada RSS-210 §A9.3

7.7.1.1 Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna	

7.7.1.2 DFS Response requirement values

Parameter	Value
Non-occupancy period	Minimum 30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds See Note 1.
Channel Closing Transmission Time	200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period. See Notes 1 and 2.
U-NII Detection Bandwidth	Minimum 80% of the 99% power bandwidth See Note 3.

Note 1: The instant that the Channel Move Time and the Channel Closing Transmission Time begins is as follows:

For the Short pulse radar Test Signals this instant is the end of the Burst.

For the Frequency Hopping radar Test Signal, this instant is the end of the last radar Burst generated.

For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission.

Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate Channel changes (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.

Note 3: During the U-NII Detection Bandwidth detection test, radar type 1 is used and for each frequency step the minimum percentage of detection is 90%. Measurements are performed with no data traffic.



7.7.1.3 Radar Test Waveforms

This section provides the parameters for required test waveforms, minimum percentage of successful detections, and the minimum number of trials that must be used for determining DFS conformance. Step intervals of 0.1 microsecond for Pulse Width, 1 microsecond for PRI, 1 MHz for chirp width and 1 for the number of pulses will be utilized for the random determination of specific test waveforms.

Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (μsec)	PRI (μsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

A minimum of 30 unique waveforms are required for each of the short pulse radar types 2 through 4. For short pulse radar type 1, the same waveform is used a minimum of 30 times. If more than 30 waveforms are used for short pulse radar types 2 through 4, then each additional waveform must also be unique and not repeated from the previous waveforms. The aggregate is the average of the percentage of successful detections of short pulse radar types 1-4.

Long Pulse Radar Test Waveform

Radar Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Number of Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

The parameters for this waveform are randomly chosen. Thirty unique waveforms are required for the Long Pulse radar test signal. If more than 30 waveforms are used for the Long Pulse radar test signal, then each additional waveform must also be unique and not repeated from the previous waveforms.



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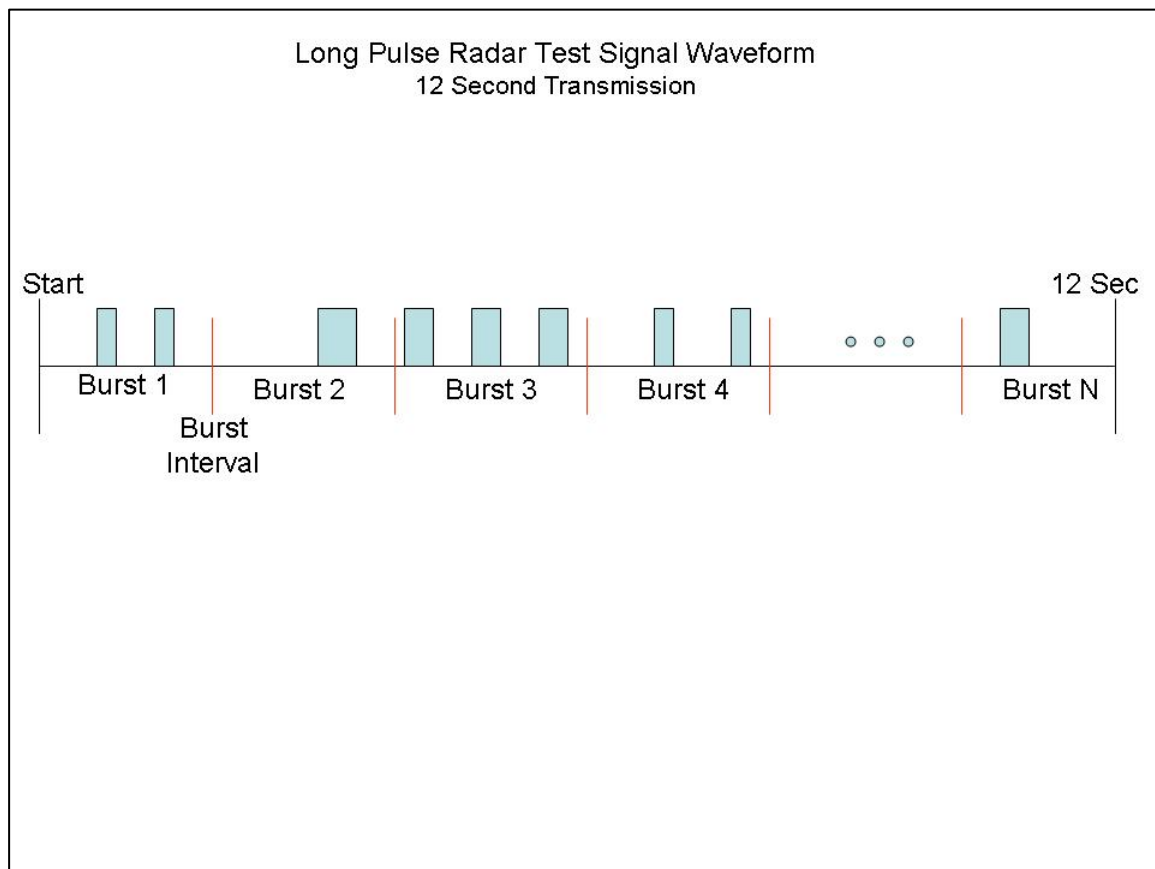
Each waveform is defined as follows:

- 1) The transmission period for the Long Pulse Radar test signal is 12 seconds.
- 2) There are a total of 8 to 20 *Bursts* in the 12 second period, with the number of *Bursts* being randomly chosen. This number is *Burst Count*.
- 3) Each *Burst* consists of 1 to 3 pulses, with the number of pulses being randomly chosen. Each *Burst* within the 12 second sequence may have a different number of pulses.
- 4) The pulse width is between 50 and 100 microseconds, with the pulse width being randomly chosen. Each pulse within a *Burst* will have the same pulse width. Pulses in different *Bursts* may have different pulse widths.
- 5) Each pulse has a linear FM chirp between 5 and 20 MHz, with the chirp width being randomly chosen. Each pulse within a *Burst* will have the same chirp width. Pulses in different *Bursts* may have different chirp widths. The chirp is centered on the pulse. For example, with a radar frequency of 5300 MHz and a 20 MHz chirped signal, the chirp starts at 5290 MHz and ends at 5310 MHz.
- 6) If more than one pulse is present in a *Burst*, the time between the pulses will be between 1000 and 2000 microseconds, with the time being randomly chosen. If three pulses are present in a *Burst*, the time between the first and second pulses is chosen independently of the time between the second and third pulses.
- 7) The 12 second transmission period is divided into even intervals. The number of intervals is equal to *Burst_Count*. Each interval is of length $(12,000,000 / \text{Burst_Count})$ microseconds. Each interval contains one *Burst*. The start time for the *Burst*, relative to the beginning of the interval, is between 1 and $[(12,000,000 / \text{Burst_Count}) - (\text{Total Burst Length}) + (\text{One Random PRI Interval})]$ microseconds, with the start time being randomly chosen. The step interval for the start time is 1 microsecond. The start time for each *Burst* is chosen independently.

A representative example of a Long Pulse radar test waveform:

- 1) The total test signal length is 12 seconds.
- 2) 8 *Bursts* are randomly generated for the *Burst_Count*.
- 3) *Burst* 1 has 2 randomly generated pulses.
- 4) The pulse width (for both pulses) is randomly selected to be 75 microseconds.
- 5) The PRI is randomly selected to be at 1213 microseconds.
- 6) *Bursts* 2 through 8 are generated using steps 3 – 5.
- 7) Each *Burst* is contained in even intervals of 1,500,000 microseconds. The starting location for Pulse 1, *Burst* 1 is randomly generated (1 to 1,500,000 minus the total *Burst* 1 length + 1 random PRI interval) at the 325,001 microsecond step. *Bursts* 2 through 8 randomly fall in successive 1,500,000 microsecond intervals (i.e. *Burst* 2 falls in the 1,500,001 – 3,000,000 microsecond range).

Graphical Representation of the Long Pulse Radar Test Waveform



7.7.1.4 Frequency Hopping Radar Test Waveform

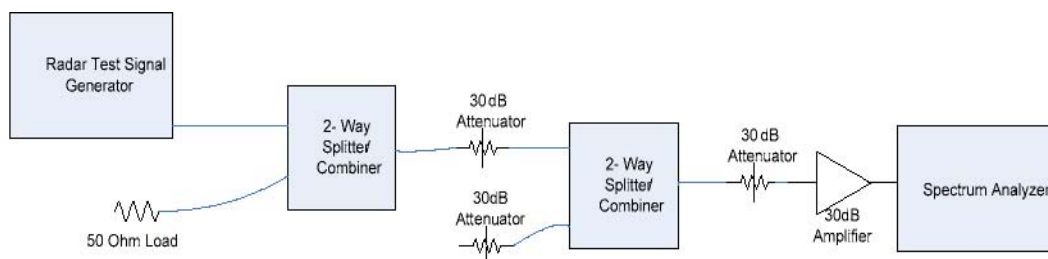
Frequency Hopping Radar Test Waveform

Radar Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	.333	300	70%	30

For the Frequency Hopping Radar Type, the same *Burst* parameters are used for each waveform. The hopping sequence is different for each waveform and a 100-length segment is selected from the hopping sequence defined by the following algorithm:

7.7.1.5 Radar Waveform Calibration

The following equipment setup was used to calibrate the conducted Radar Waveform. A spectrum analyzer was used to establish the test signal level for each radar type. During this process there were no transmissions by either the Master or Client Device. The spectrum analyzer was switched to the zero span (Time Domain) mode at the frequency of the Radar Waveform generator. Peak detection was utilized. The spectrum analyzer resolution bandwidth (RBW) and video bandwidth (VBW) were set to 3 MHz. The signal generator amplitude was set so that the power level measured at the spectrum analyzer was -61dBm (Ref Section 5.1). The 30dB amplifier gain was entered as amplitude offset on the spectrum analyzer.



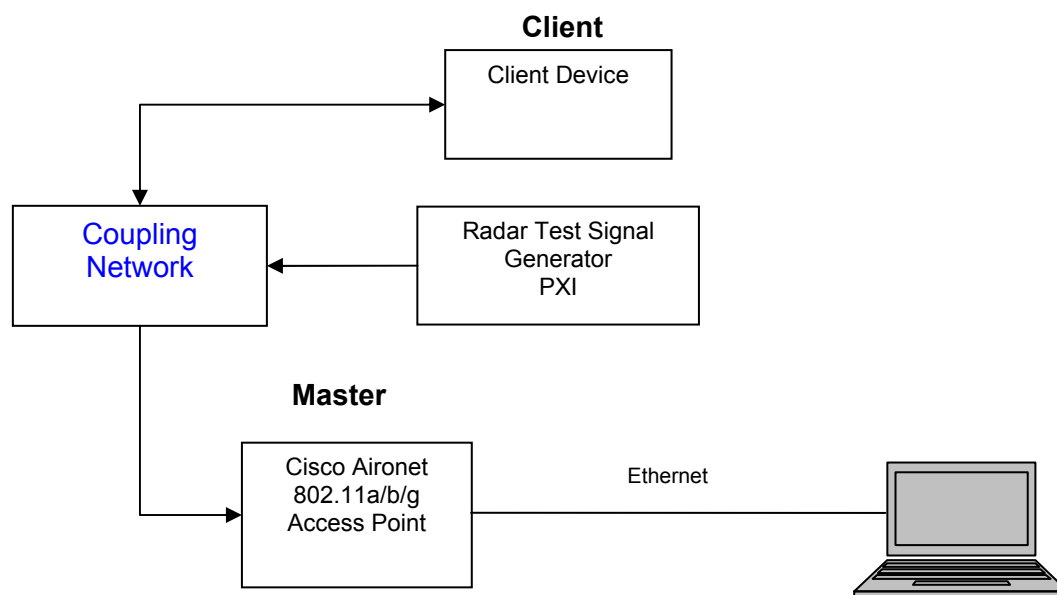
Conducted Calibration Setup

7.7.1.6 Test Setup

Block Diagram(s) of Test Setup

Setup for Conducted Measurements where the EUT is the Client with injection of Radar Test:

Support Equipment Configuration



Measurement Uncertainty Time/Power

Measurement uncertainty	Time - 4% Power - 1.33dB
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Traceability

Test Equipment Used
0072, 0083, 0098, 0116, 0132, 0158, 0313, 0314, 0193, 0223, 0252, 0253, 0251, 0256, 0328, 0329



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The EUT is a Client Device without radar detection.

Applicability of DFS Requirements Prior to Use of a Channel
(Ref Table 1 of FCC 06-96)

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Applicability of DFS requirements during normal operation
(Ref Table 2 of FCC 06-96)

Requirement	Operational Mode		
	Master	Client Without Radar Detection	Client With Radar Detection
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

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Declared minimum antenna gain 0 dBi.

Radar receive signal level = -62 dBm + minimum antenna gain + 1 dB = -61 dBm

$$= -62 + 0 + 1$$

Radar receive signal level = -61 dBm

Measurement Results - Dynamic Frequency Selection (DFS)

Radio parameters.

Test methodology: Conducted

Device Type: Client device without radar detection.

Transmit Power: Maximum



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7.7.2 In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

FCC §15.407(h)(2)(iii)

The steps below define the procedure to determine the above mentioned parameters when a radar Burst with a level equal to the DFS Detection Threshold is generated on the Operating Channel of the U-NII device.

A U-NII device operating as a Client Device will associate with the EUT (Master). The requisite MPEG video file ("TestFile.mpg" available on the NTIA website at the following link <http://ntiacsd.ntia.doc.gov/dfs/>) is streamed from the master device (AP) to the client.

Channel Closing Transmission Time - Measurement

A Type 1 waveform was introduced to the EUT, from which a 12 second transmission record was digitally captured, collecting nearly 250M samples of data, which included in excess of 600 ms of pre-trigger data. This Type 1 waveform had an integral marker built into its construction, marking the start of the radar waveform play, which directly triggered the PXI digitizer's data capture via the PXI backplane trigger bus.

The test system was set-up to capture all transmission data for access point events above a threshold level of -50 dBm. The test equipment time stamps all captured events with respect to T0 (zero time indicating the start of the measurements sequence) starting the 612.1 ms pre-trigger period followed by the radar type 1 burst period.

Radar (Type 1) Pre-trigger period =612.1 ms

Type 1 burst period =25.7 ms

Channel Closing Transmission Time starts immediately after the last radar pulse is transmitted i.e. 637.8 ms after the start of the trace capture period.



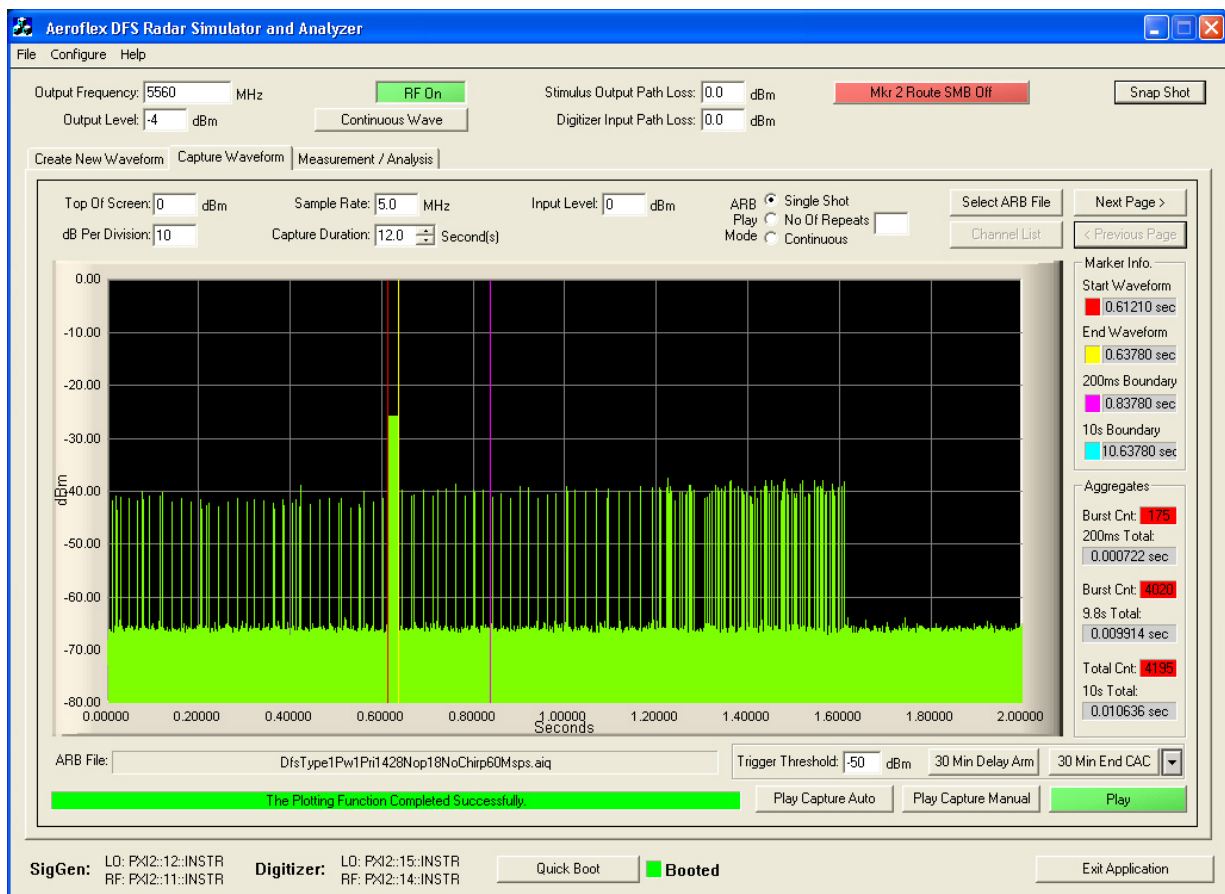
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Therefore, pulses seen after this 637.8 ms boundary are identified and totaled to provide an aggregate total of transmissions in order to determine whether the EUT is compliant with the Channel Closing Transmission Time requirements as described in MO&O FCC 06-96. In this case, it was found that an aggregate total of 10.636 ms of transmission time accrued. This value is found at the right hand side at the foot of the following plot (10s Total).

Channel Closing Transmission Time = 10.636 mSecs (limit 260 mSecs)

Channel Move Time = 0.9822 Secs (limit 10 Secs)

Channel Move Time, Channel Closing Transmission Time for Type 1 Radar
Captured by the Test System - Plot 1 of 6 (0-2 Seconds) Ch 112



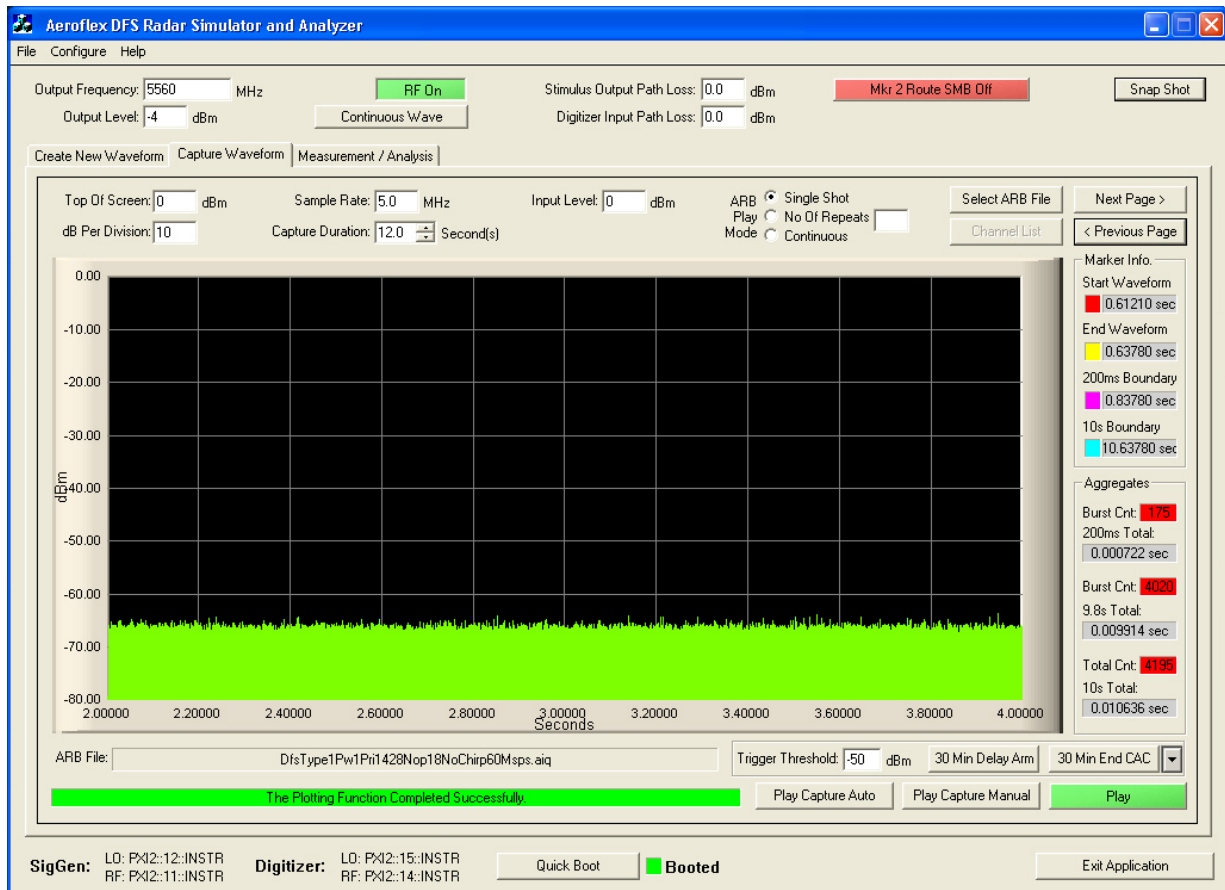
From the plot above it can be seen that the transmission activity within the 200 mS window is 0.722 mS (see 200 mS Total). From the following plots which shows all additional activity within the remained of the 10 sec measurement window it can be determined that the aggregate transmission within this period is 9.914 mS. This is less than the 60 mS limit.

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Channel Move Time, Channel Closing Transmission Time for Type 1 Radar
Captured by the Test System - Plot 2 of 6 (2-4 Seconds) Ch 112

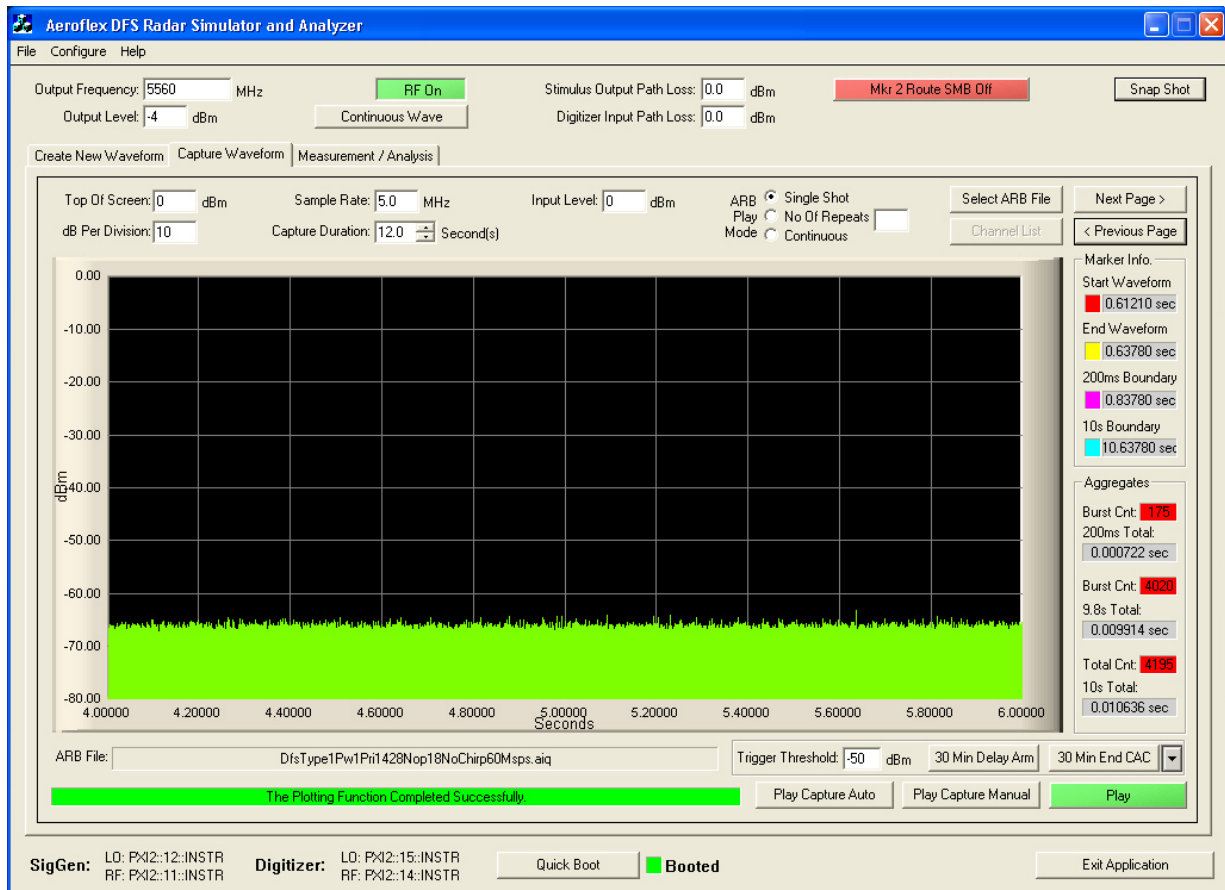


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Channel Move Time, Channel Closing Transmission Time for Type 1 Radar
Captured by the Test System - Plot 3 of 6 (4-6 Seconds) Ch 112

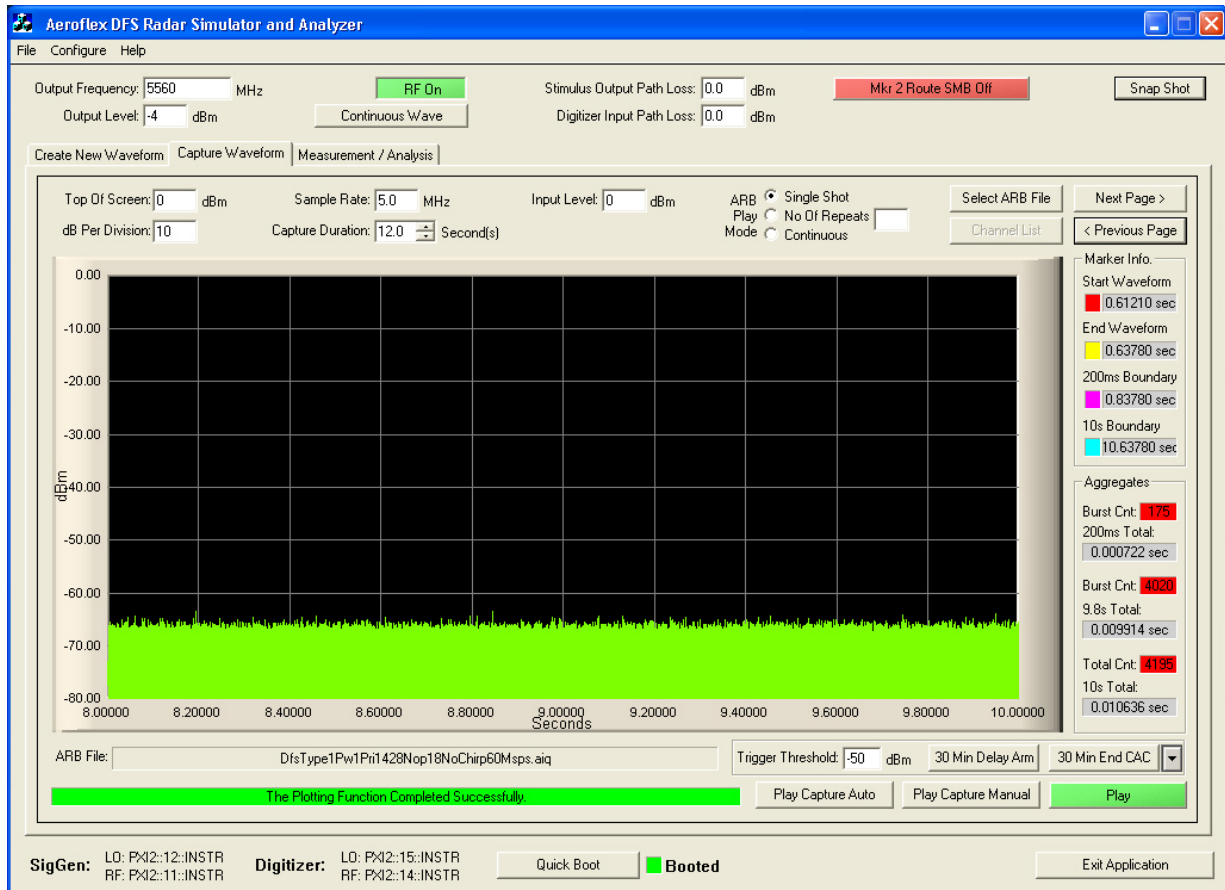


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Channel Move Time, Channel Closing Transmission Time for Type 1 Radar
Captured by the Test System - Plot 5 of 6 (8-10 Seconds) Ch 112

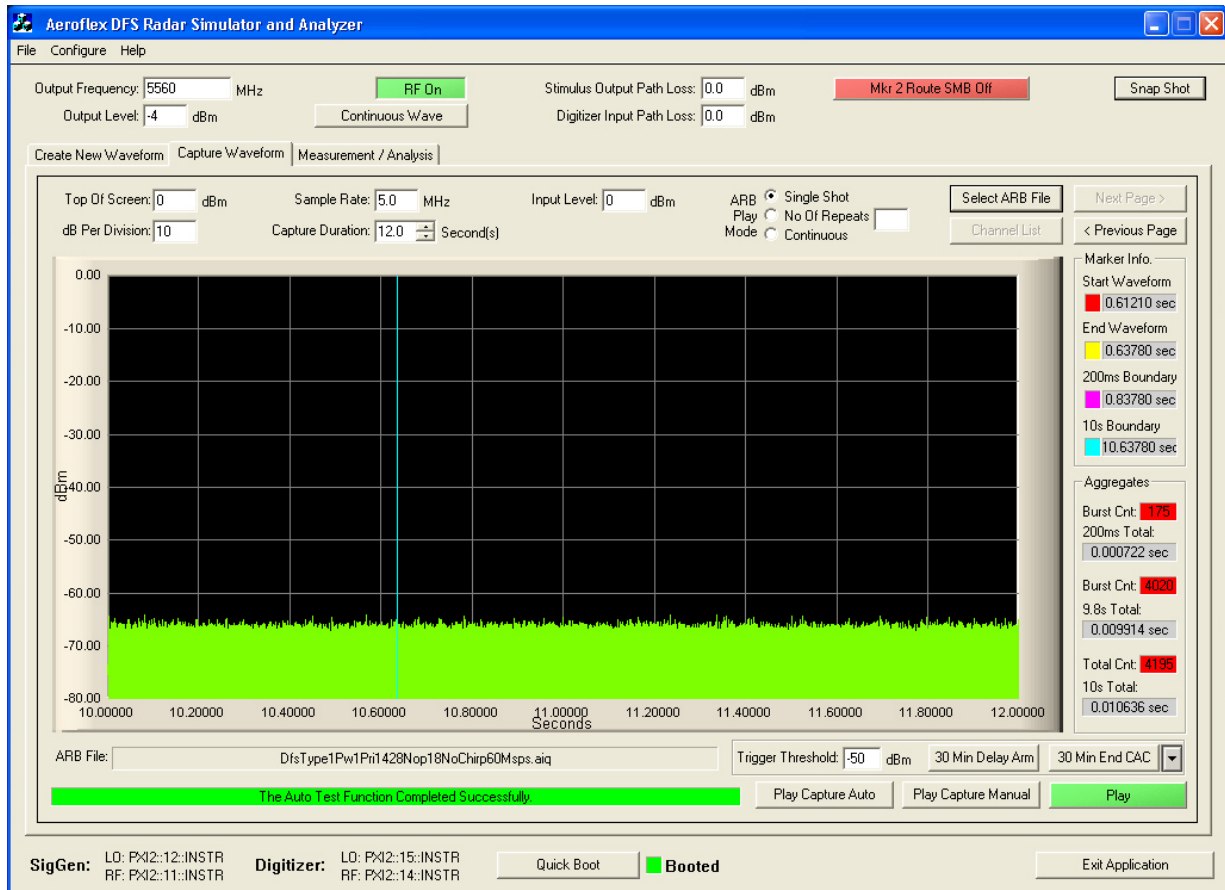


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Channel Move Time, Channel Closing Transmission Time for Type 1 Radar
Captured by the Test System - Plot 6 of 6 (10-12 Seconds) Ch 112



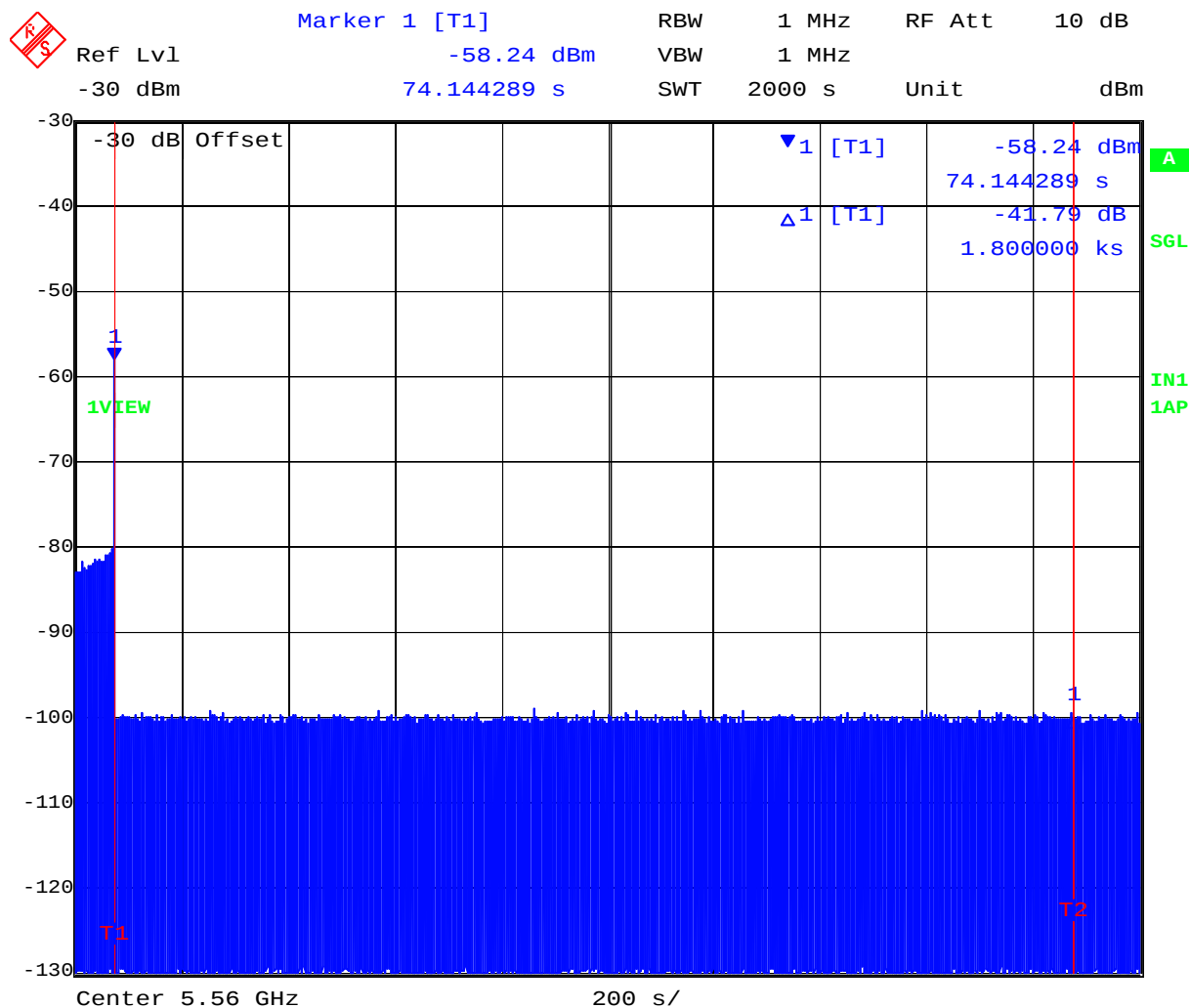
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7.7.3 30 Minute Non-Occupancy Period

The EUT is monitored for more than 30 minutes following the channel close/move time to verify no transmissions resume on this Channel.

30 Minute Non-Occupancy Period Type 1 Radar Ch 112 - 5,560 MHz



Date: 11.JAN.2011 04:00:10



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7.8 Radiated Spurious Emissions

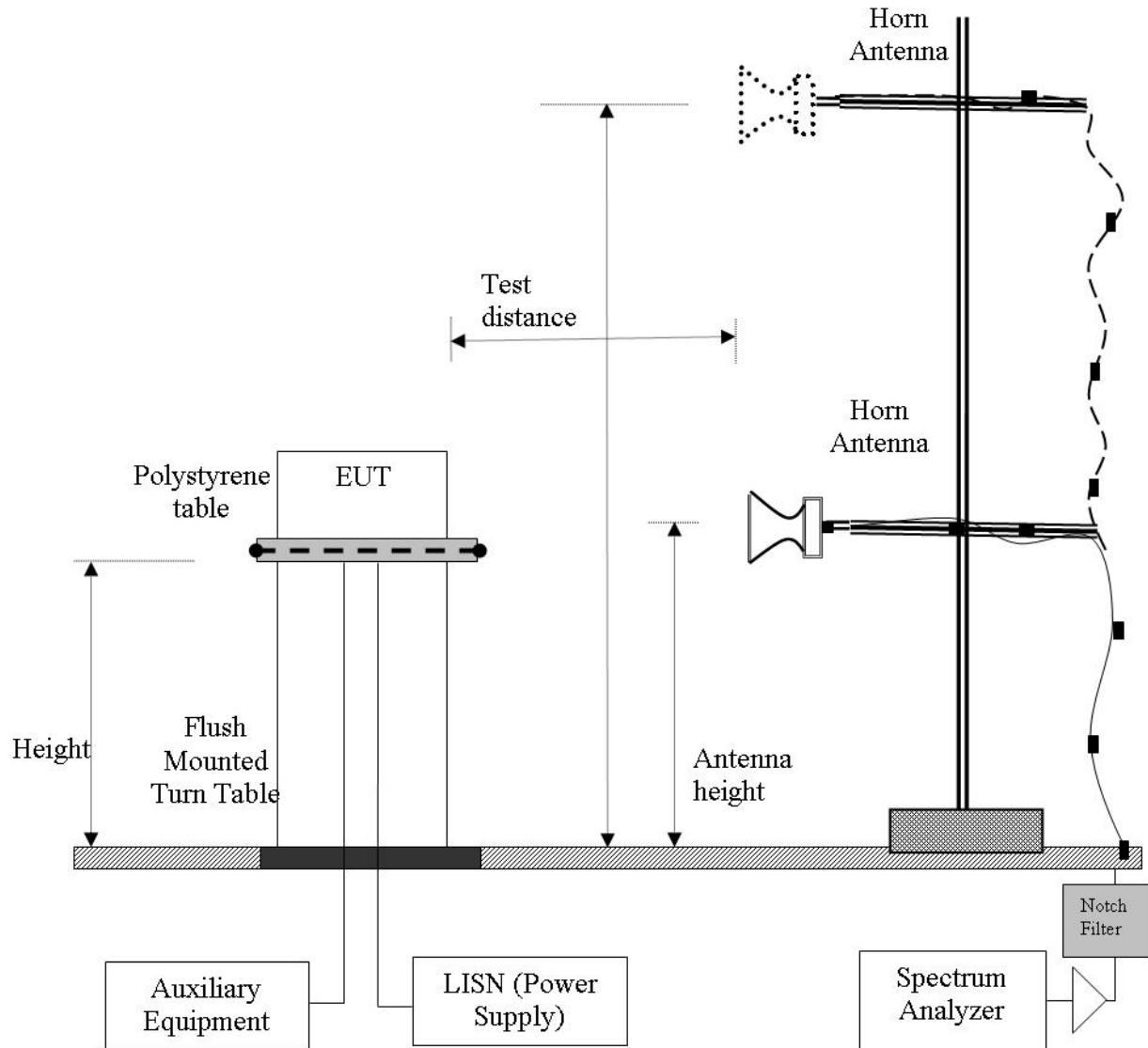
Test Procedure

Testing was performed in a 3-meter anechoic chamber. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. Preliminary emissions were recorded with in Spectrum Analyzer mode, using a maximum peak detector while in peak hold mode.

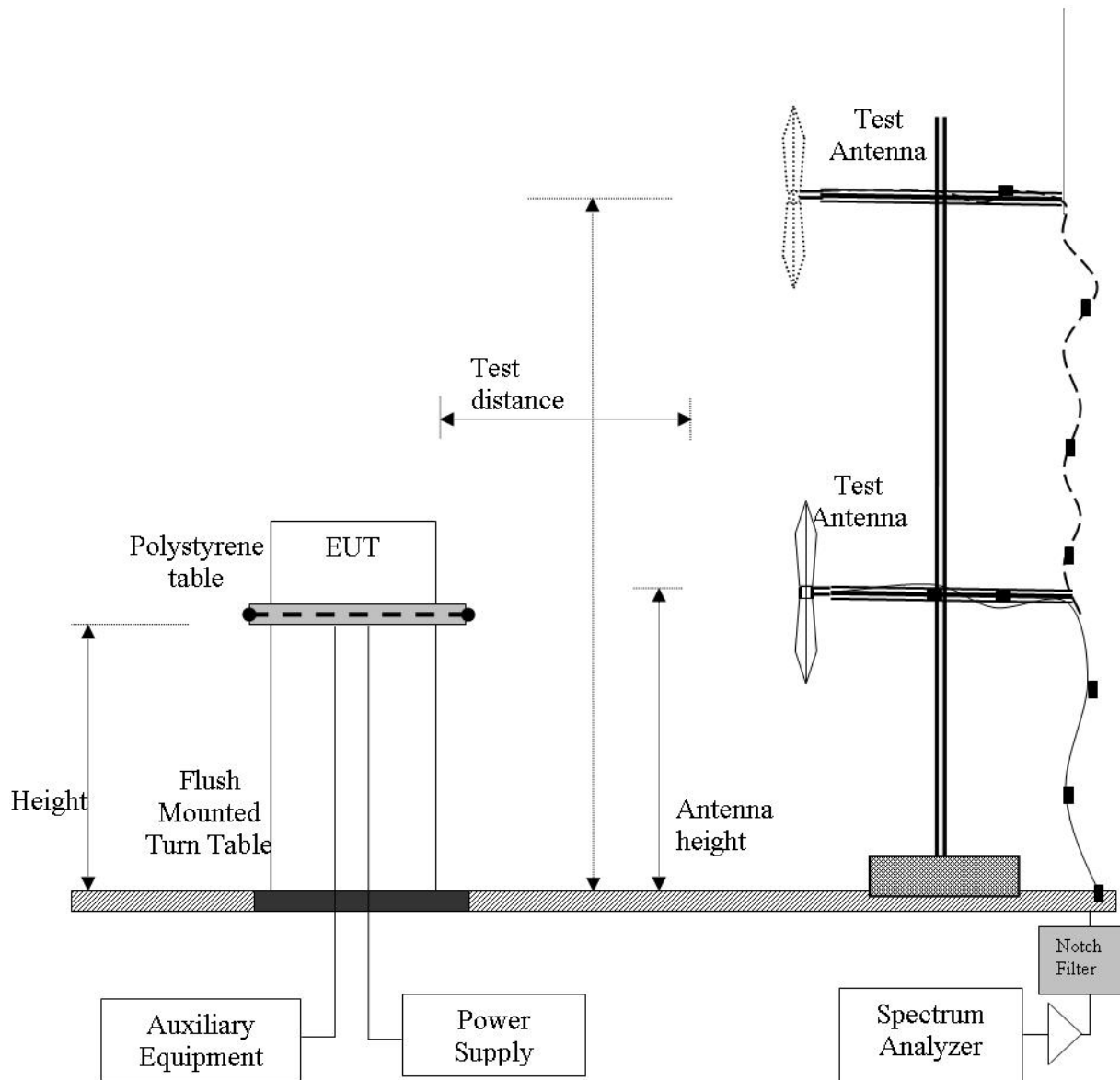
Emissions nearest the limits were chosen for maximization and formal measurement using a CISPR Compliant receiver. Emissions above 1000 MHz are measured utilizing a CISPR compliant average detector with a tuned receiver, using a bandwidth of 1 MHz. Emissions from 30 MHz – 1000 MHz are measured utilizing a CISPR compliant quasi-peak detector with a tuned receiver, using a bandwidth of 120 kHz. Only the highest emissions relative to the limit are listed.

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Radiated Emission Measurement Setup – Above 1 GHz



Radiated Emission Measurement Setup – Below 1 GHz





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Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.

$$FS = R + AF + CORR - FO$$

FS = Field Strength

R = Measured Spectrum analyzer Input Amplitude

AF = Antenna Factor

FO = Distance Falloff Factor

$$CORR = \text{Correction Factor} = CL - AG + NFL$$

CL = Cable Loss

AG = Amplifier Gain

NFL = Notch Filter Loss or Waveguide Loss

Field Strength Calculation Example:

Given receiver input reading of 51.5 dB μ V; Antenna Factor of 8.5 dB; Cable Loss of 1.3 dB; Falloff Factor of 0 dB, an Amplifier Gain of 26 dB and Notch Filter Loss of 1 dB. The Field Strength of the measured emission is:

$$FS = 51.5 + 8.5 + 1.3 - 26.0 + 1 = 36.3 \text{ dB}\mu\text{V/m}$$

Conversion between dB μ V/m (or dB μ V) and μ V/m (or μ V) are done as:

$$\text{Level (dB}\mu\text{V/m)} = 20 * \text{Log (level (\mu V/m))}$$

$$40 \text{ dB}\mu\text{V/m} = 100 \mu\text{V/m}$$

$$48 \text{ dB}\mu\text{V/m} = 250 \mu\text{V/m}$$



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Specification for FCC Part 15 Radiated Spurious Emissions

Limits

§15.407 (b)(2)

All emissions outside of the 5,150-5,350MHz band shall not exceed an EIRP of -27dBm/MHz.

§15.205 (a)

Except as shown in paragraph (d) of 15.205 (a), only spurious emissions are permitted in any of the frequency bands listed.

§15.205 (a)

Except as shown in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209 (a)

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table.

RSS-210 §A9.3(2)

For transmitters operating in the 5250-5350 MHz band, all emissions outside the 5150-5350 MHz band shall not exceed -27 dBm/MHz e.i.r.p. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band shall not exceed out of band emission limit of 27 dBm/MHz e.i.r.p. in the 5150-5250 MHz band in order to operate indoor/outdoor, or alternatively shall comply with the spectral power density for operation within the 5150-5250 MHz band and shall be labeled "for indoor use only".

RSS-Gen §4.7

The search for unwanted emissions shall be from the lowest frequency internally generated or used in the device (local oscillator, intermediate of carrier frequency), or from 30 MHz , whichever is the lowest frequency, to the 5th harmonic of the highest frequency generated without exceeding 40 GHz.

RSS-Gen §6

Receiver Spurious Emission Standard

If a radiated measurement is made, all spurious emissions shall comply with the limits of the following Table. The resolution bandwidth of the spectrum analyzer shall be 100 kHz for spurious emission measurements below 1.0 GHz and 1.0 MHz for measurements above 1.0 GHz



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§15.209 (a) Limit Matrix

Frequency(MHz)	Field Strength (μ V/m)	Field Strength (dB μ V/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

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Specification for Industry Canada Receiver Spurious Emissions

RSS-Gen §4.8,

The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

RSS-Gen §6

The following receiver spurious emission limits shall be complied with;

(a) If a radiated measurement is made, all spurious emissions shall comply with the limits of Table 1.

Frequency (MHz)	Field Strength (μ V/m)	Field Strength (dB μ V/m)	Measurement Distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Laboratory Measurement Uncertainty for Spectrum Measurement

Measurement Uncertainty	+5.6/ -4.5 dB
--------------------------------	---------------

Traceability:

Method	Test Equipment Used
Work instruction WI-03	0287, 0193, 0342, 0158, 0303, 0304, 0134, 0310, 0312

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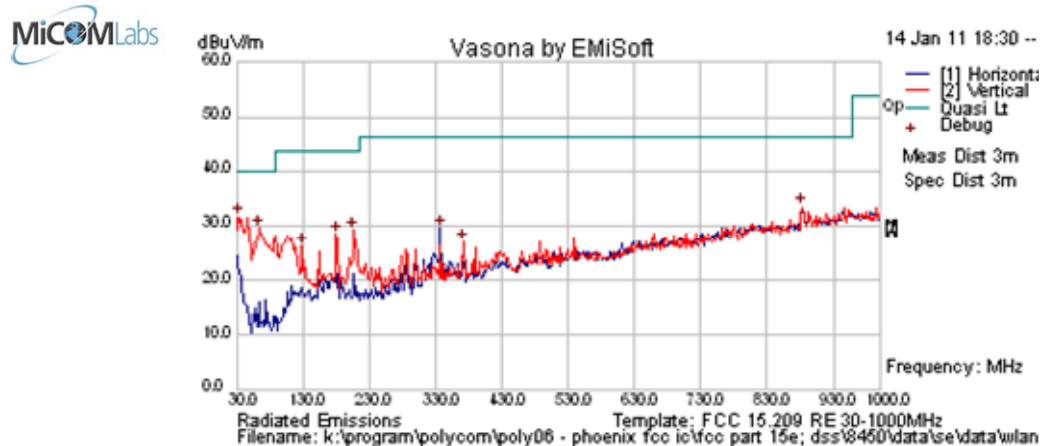


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7.8.1 Transmitter Radiated Spurious Emissions

All frequencies and modes were checked per section 15.407 for radio emissions below 1GHz.

Test Freq.	NA	Engineer	EVF
Variant	WLAN 802.11a; 6 Mbs	Temp (°C)	21
Freq. Range	1000 - 18000 MHz	Rel. Hum.(%)	44
Power Setting	Utility Setting 24 - Maximum	Press. (mBars)	1013
Antenna	Integral	Duty Cycle (%)	10
Test Notes 1	Fundamental attenuated by band-stop filter. Handset (Mdel: 8450) with battery (SN: AC1010320232) , also connected to charger (Mdel: SA106B-05)		
Test Notes 2	Mdel: WLANTx; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
33.594	40.1	3.5	-12.0	31.6	Peak [Scan]	V	100	0	40.0	-8.4	Pass	DIG
63.651	48.9	3.9	-23.3	29.5	Peak [Scan]	V	100	0	40.0	-10.5	Pass	DIG
883.367	33.5	7.3	-7.3	33.5	Peak [Scan]	H	300	0	46	-12.6	Pass	AMB
206.905	43.8	4.8	-19.5	29.1	Peak [Scan]	V	100	0	43.5	-14.4	Pass	DIG
180.000	43.5	4.7	-19.7	28.5	Peak [Scan]	V	100	0	43.5	-15.1	Pass	DIG
337.996	40.4	5.4	-16.2	29.6	Peak [Scan]	H	100	0	46	-16.4	Pass	DIG
130.006	39.1	4.4	-17.2	26.3	Peak [Scan]	V	100	0	43.5	-17.2	Pass	DIG
372.273	36.8	5.6	-15.3	27.1	Peak [Scan]	V	400	0	46	-18.9	Pass	DIG
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; AMB = Ambient NRB = Non-Restricted Band. RB = Restricted Band.												

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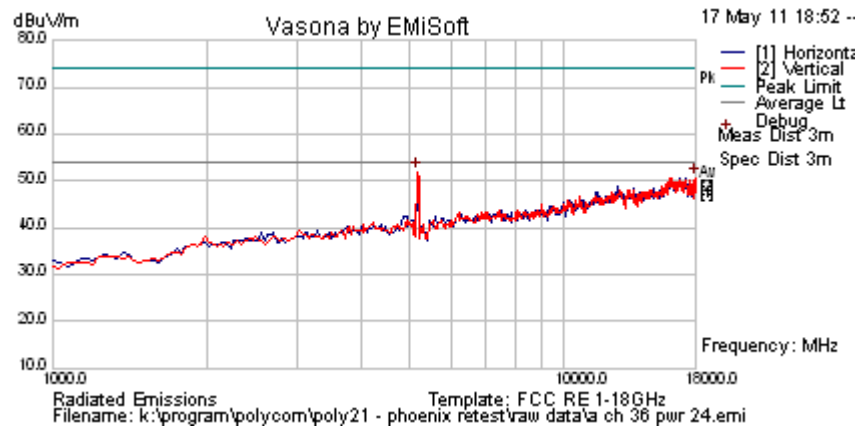
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Test Freq.	5180 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5156.313	56.3	4.6	-9.0	52.0	Peak [Scan]	V	100	0	54.0	-2.1	Pass	FUND
18000	41.1	8.8	1.0	50.9	Peak [Scan]	V	100	0	54.0	-3.1	Pass	Noise

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

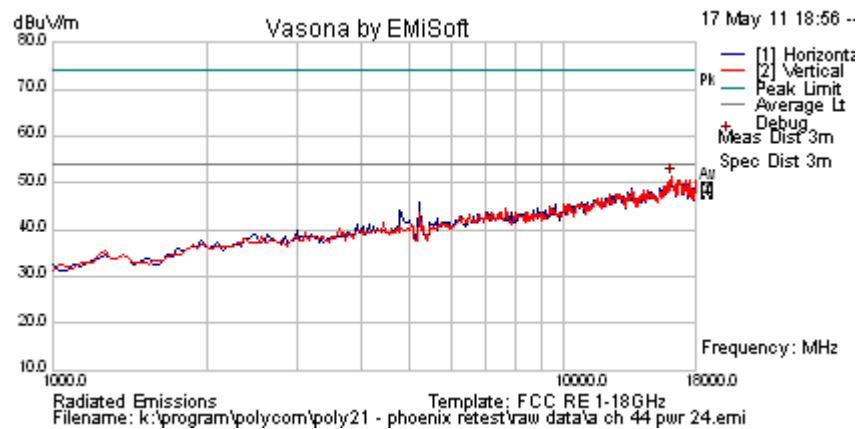
NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205

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Test Freq.	5200 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

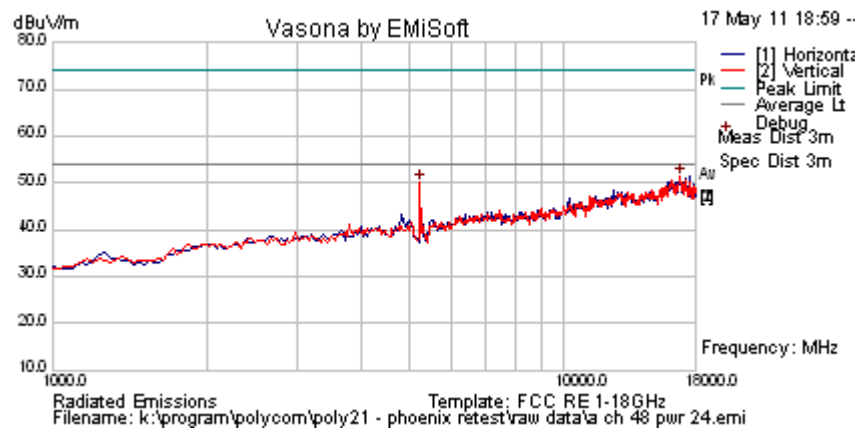
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16126.253	41.3	9.0	1.0	51.3	Peak [Scan]	V	100	0	54.0	-2.8	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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Test Freq.	5240 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16841.683	41.1	8.6	1.8	51.4	Peak [Scan]	V	100	0	54.0	-2.6	Pass	Noise
5224.4489	54.8	4.6	-9.4	50.0	Peak [Scan]	V	100	0	54.0	-4.0	Pass	FUND

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

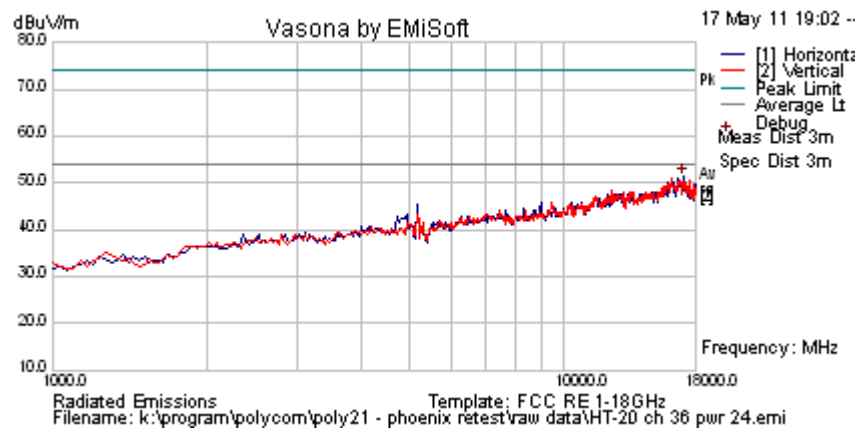
NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205

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Test Freq.	5180 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
17114.228	42.0	8.5	0.8	51.3	Peak [Scan]	H	100	0	54.0	-2.7	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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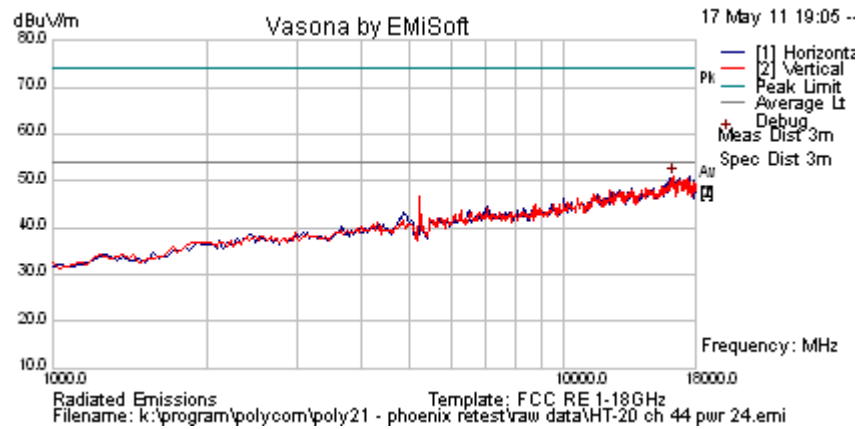
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Test Freq.	5200 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna		Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16296.593	41.3	8.9	0.7	50.9	Peak [Scan]	V	100	0	54.0	-3.1	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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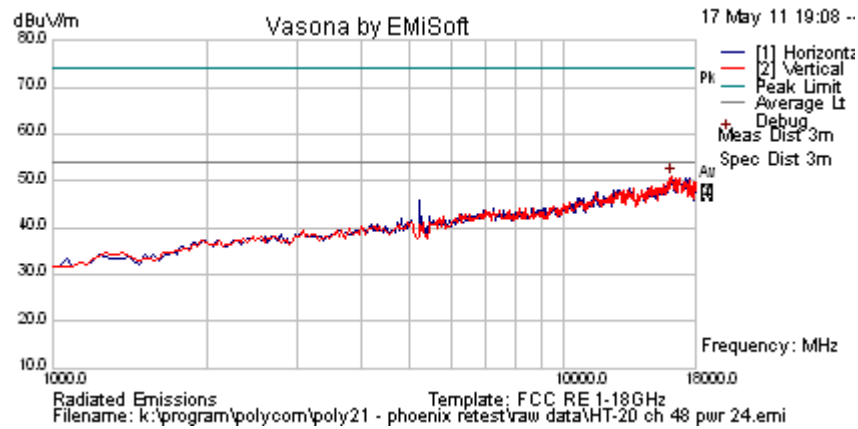
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Test Freq.	5240 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna		Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

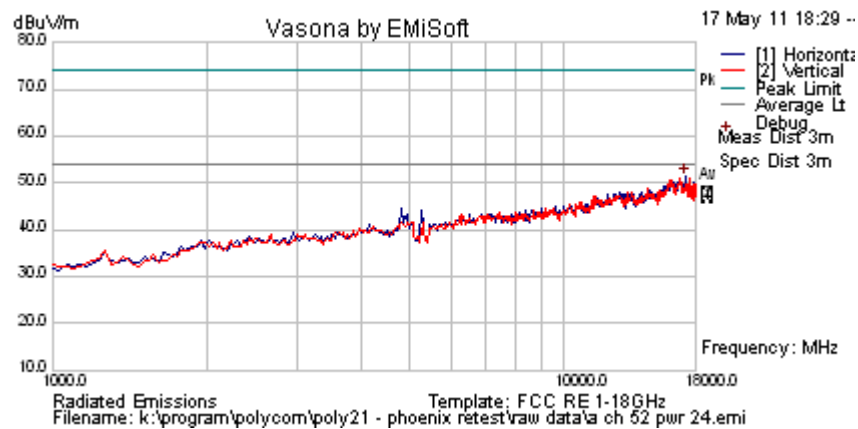
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16194.389	40.7	8.9	1.3	51.0	Peak [Scan]	V	100	0	54.0	-3.0	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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Test Freq.	5260 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
17250.501	41.0	8.6	1.6	51.2	Peak [Scan]	H	100	0	54.0	-2.8	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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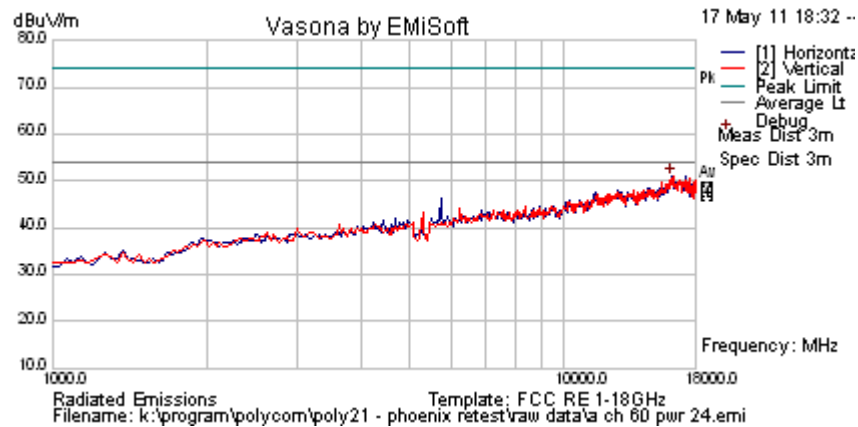
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Test Freq.	5300 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16228.457	40.9	8.9	1.1	50.9	Peak [Scan]	H	100	0	54.0	-3.1	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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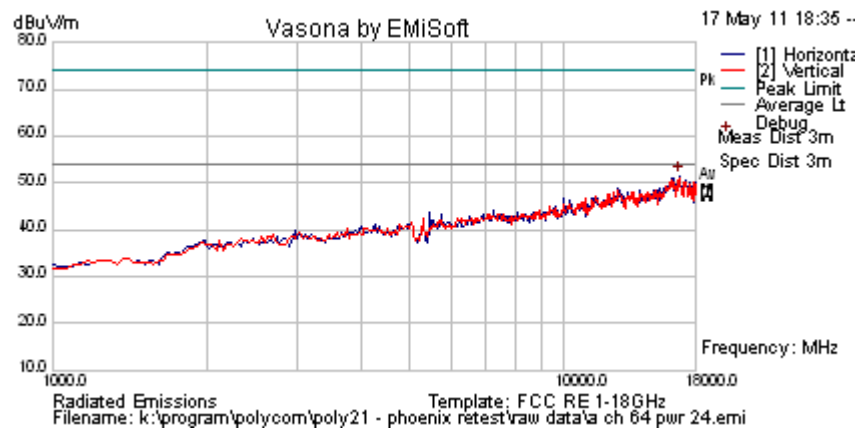
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Test Freq.	5320 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16739.479	41.4	8.7	1.5	51.5	Peak [Scan]	H	100	0	54.0	-2.5	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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Title: Polycom Spectralink 8450 Wi-Fi handset with Bluetooth

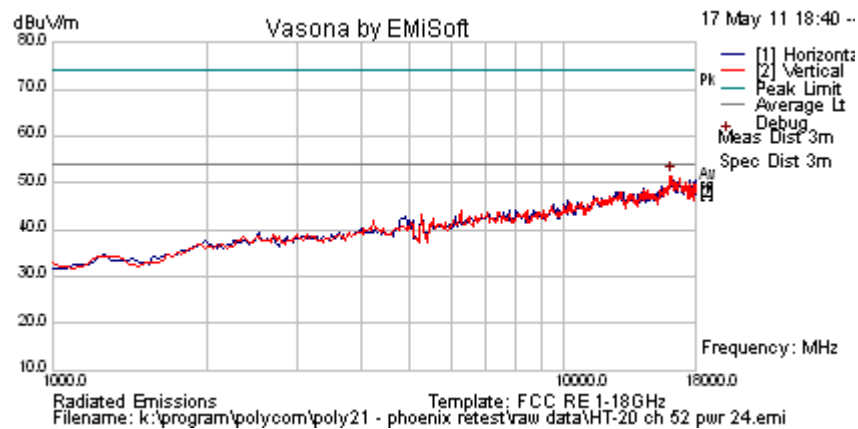
To: FCC 47 CFR Part 15.407 & RSS-210 A9

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Test Freq.	5260 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

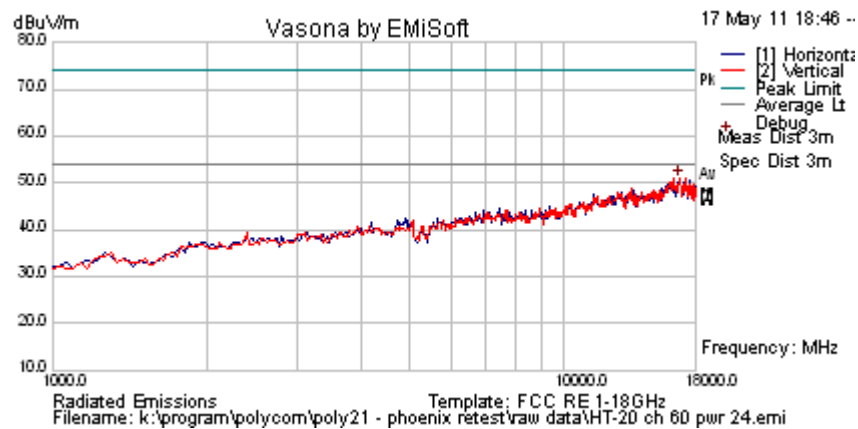
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16194.389	41.2	8.9	1.3	51.5	Peak [Scan]	V	100	0	54.0	-2.6	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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Test Freq.	5300 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna		Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16773.547	40.5	8.6	1.7	50.9	Peak [Scan]	H	100	0	54.0	-3.1	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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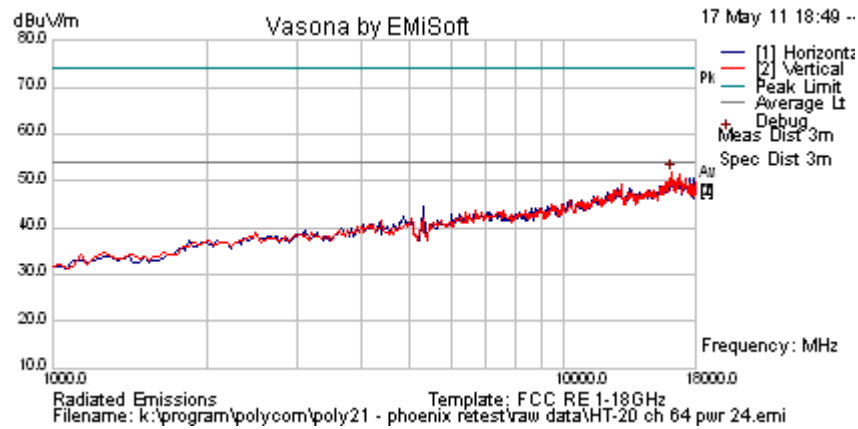
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Test Freq.	5320 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna		Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16126.253	41.7	9.0	1.0	51.6	Peak [Scan]	V	100	0	54.0	-2.4	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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Title: Polycom Spectralink 8450 Wi-Fi handset with Bluetooth

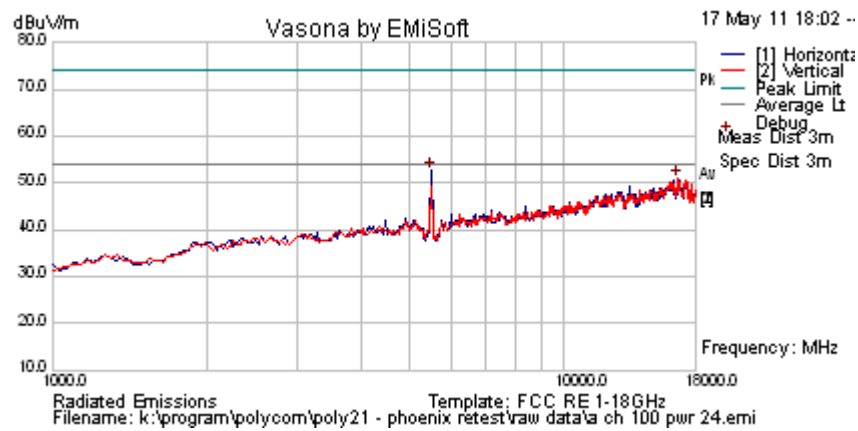
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Test Freq.	5500 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5496.994	56.7	4.6	-8.7	52.6	Peak [Scan]	H	100	0	54.0	-1.5	Pass	FUND
16671.343	40.4	8.7	1.7	50.8	Peak [Scan]	V	100	0	54.0	-3.2	Pass	Noise

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205

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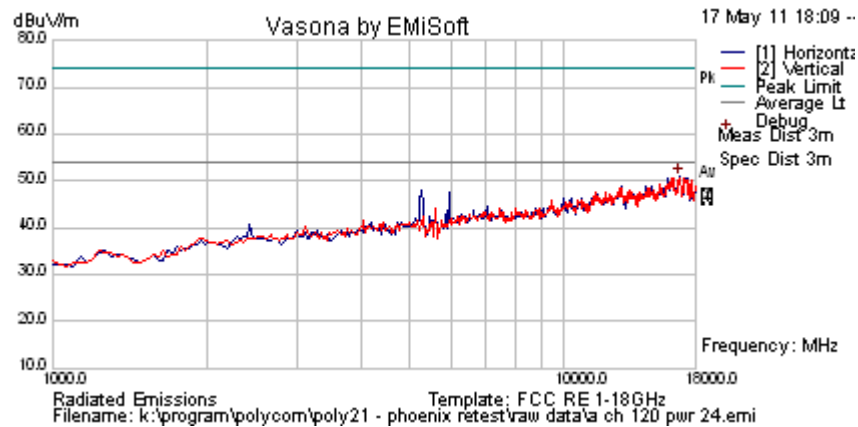
To: FCC 47 CFR Part 15.407 & RSS-210 A9

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Test Freq.	5600 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16807.615	40.6	8.6	1.6	50.9	Peak [Scan]	H	100	0	54.0	-3.1	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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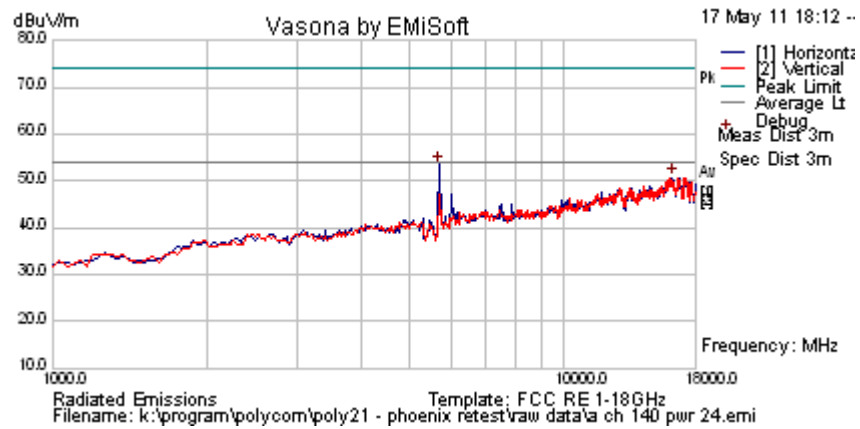
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Test Freq.	5700 MHz	Engineer	GMH
Variant	802.11a; 6 Mbs	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5701.403	56.9	4.7	-8.1	53.5	Peak [Scan]	H	100	0	54.0	-0.5	Pass	FUND
16262.525	40.8	8.9	1.0	50.7	Peak [Scan]	H	100	0	54.0	-3.3	Pass	Noise

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

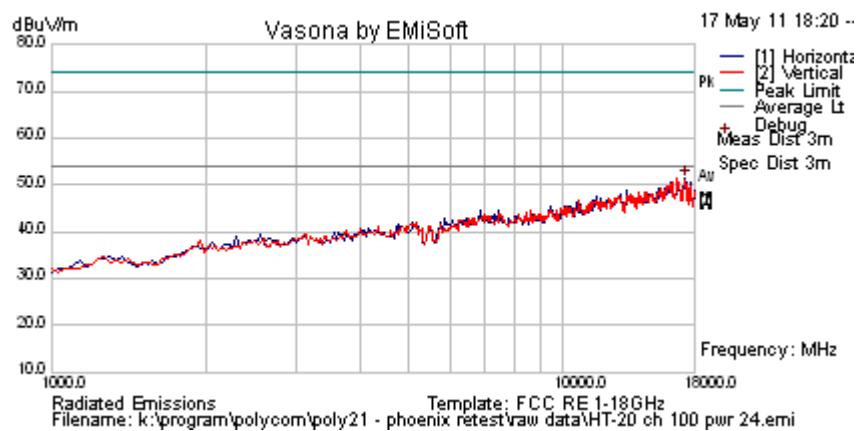
NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205

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Test Freq.	5500 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
17318.637	41.0	8.7	1.7	51.4	Peak [Scan]	H	100	0	54.0	-2.7	Pass	Noise
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205												

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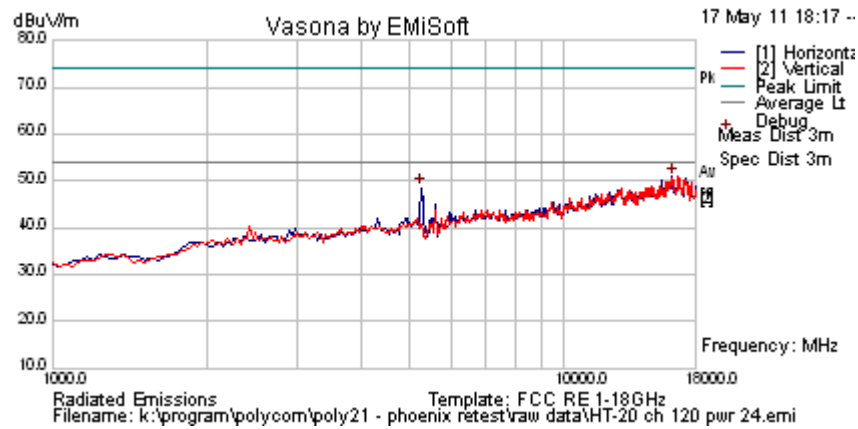
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Test Freq.	5600 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
16262.525	41.1	8.9	1.0	51.0	Peak [Scan]	H	100	0	54.0	-3.0	Pass	Noise
5258.51703	53.4	4.6	-9.5	48.5	Peak [Scan]	H	100	0	54.0	-5.5	Pass	FUND

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205

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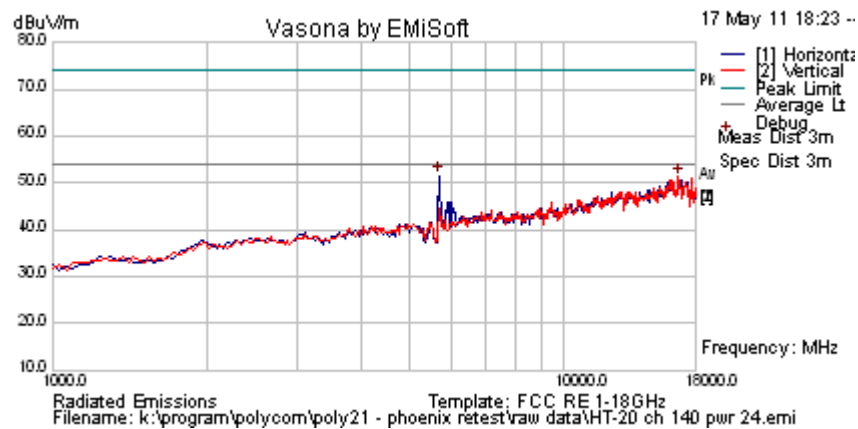
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Test Freq.	5700 MHz	Engineer	GMH
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	23
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	34
Power Setting	24	Press. (mBars)	995
Antenna	Integral	Duty Cycle (%)	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5701.403	54.9	4.7	-8.1	51.5	Peak [Scan]	H	100	0	54.0	-2.5	Pass	FUND
16705.411	41.3	8.7	1.4	51.3	Peak [Scan]	V	100	0	54.0	-2.7	Pass	Noise

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205

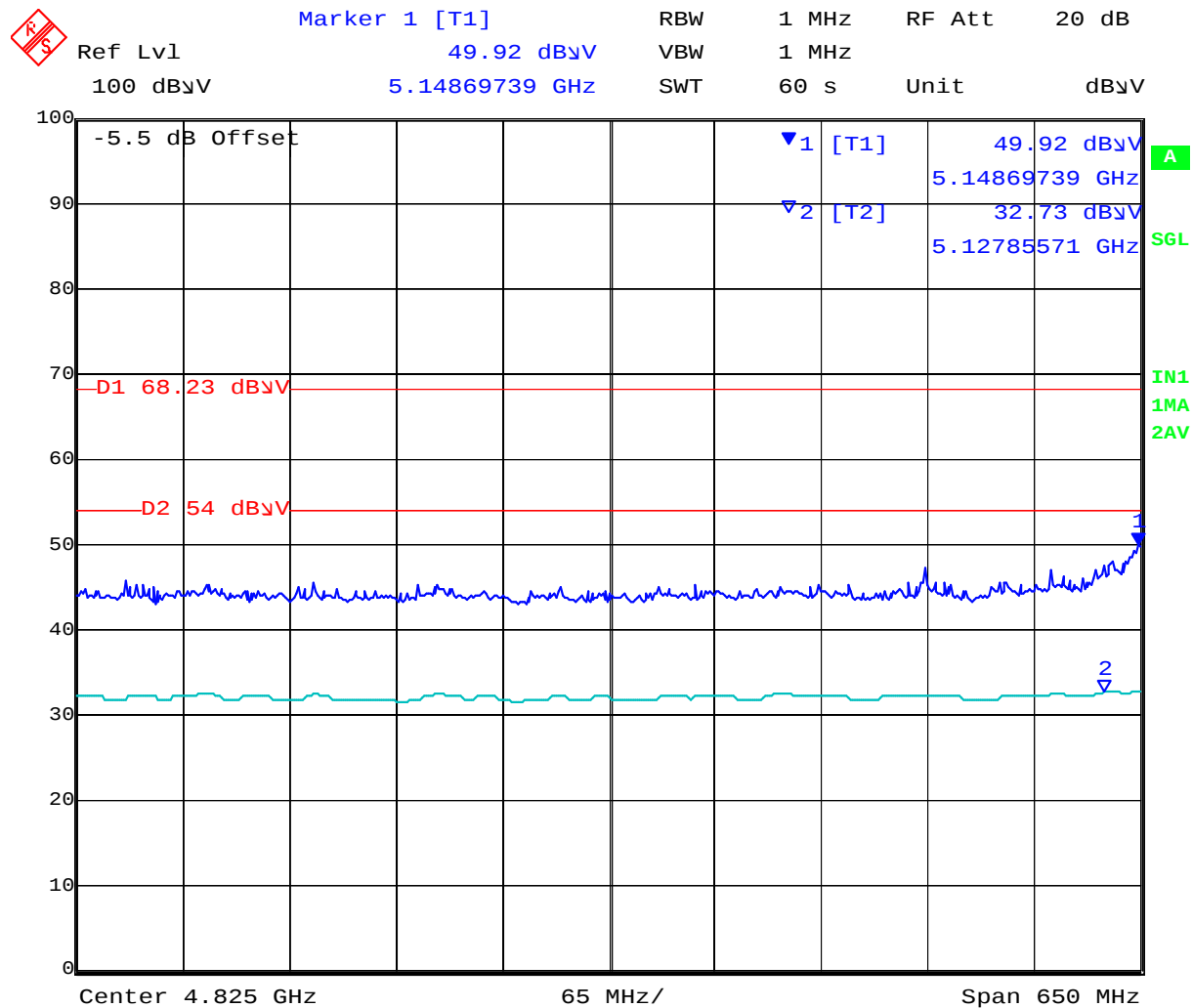
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7.8.2 Band-Edge Measurements

8450 Band Edge Channel 36 - 5180 MHz 802.11a 4500-5150 MHz Pwr=14 Hor Hght=98
Ang=-10



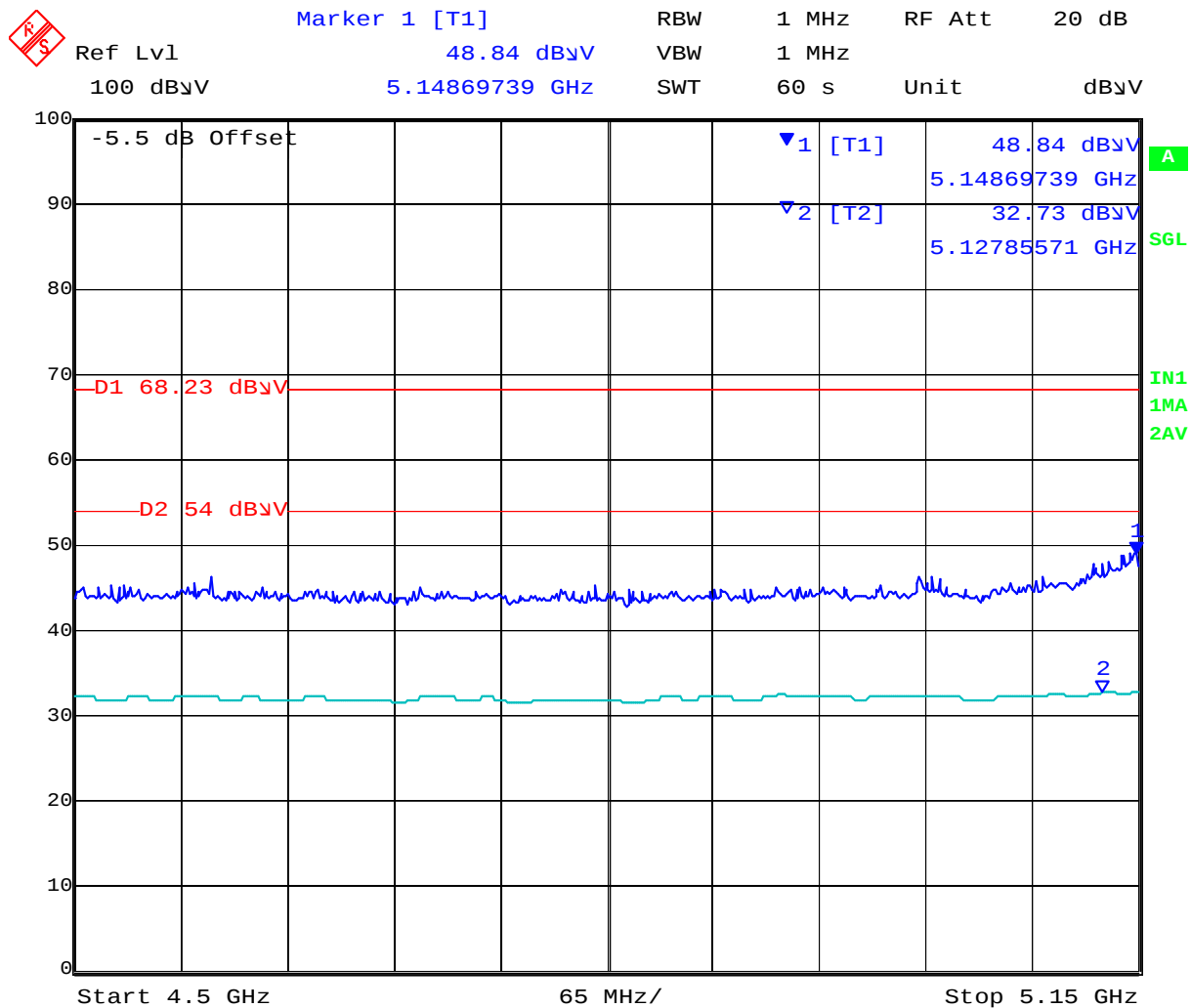
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8450 Band Edge Channel 36 - 5180 MHz 802.11n HT-20 4500-5150 MHz Pwr=14 Hor
Hght=98 Ang=-10



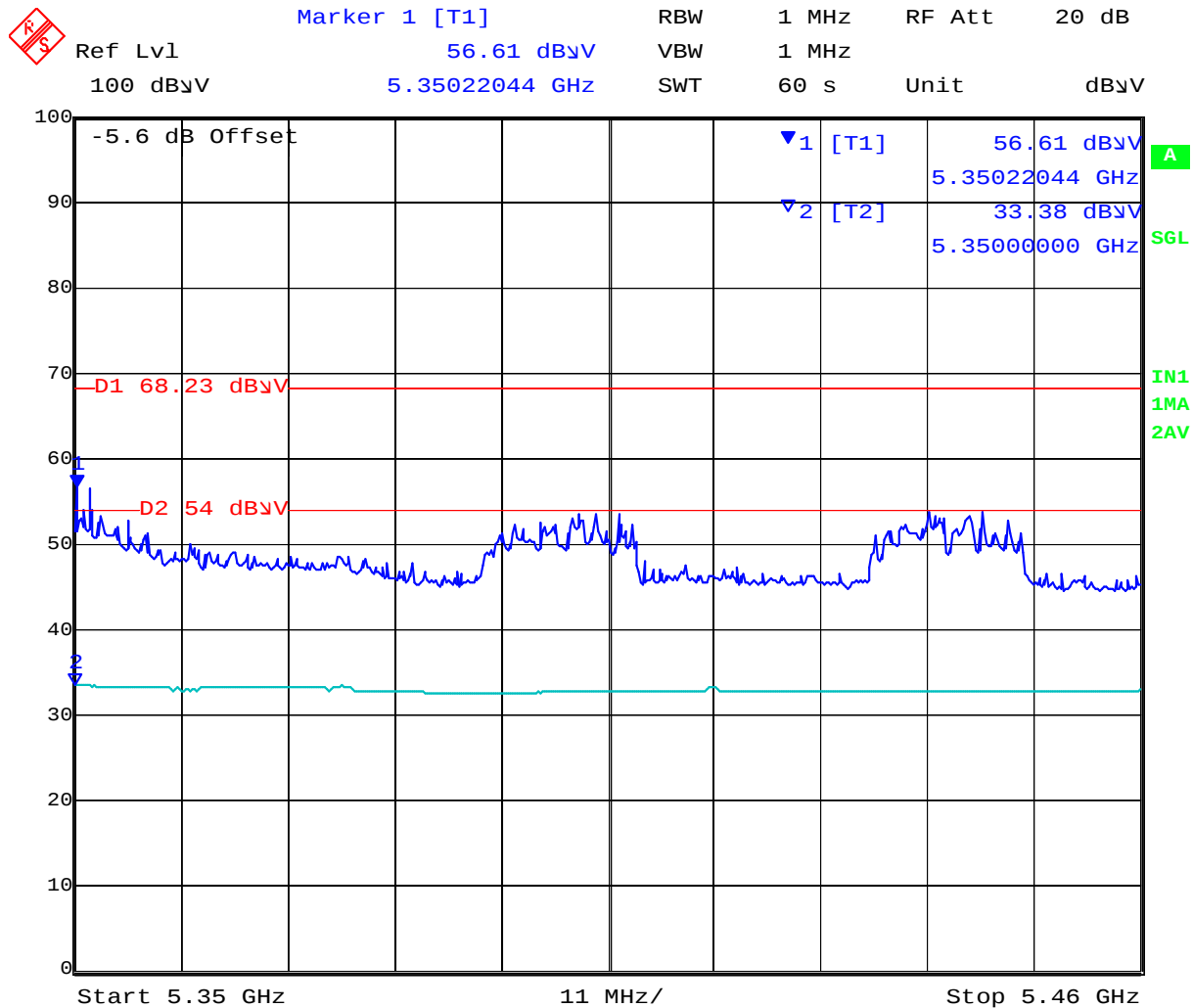
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8450 Band Edge Channel 64 - 5320 MHz 802.11a 5350-5460 MHz Pwr=16 Hor Hght=98
Ang=194



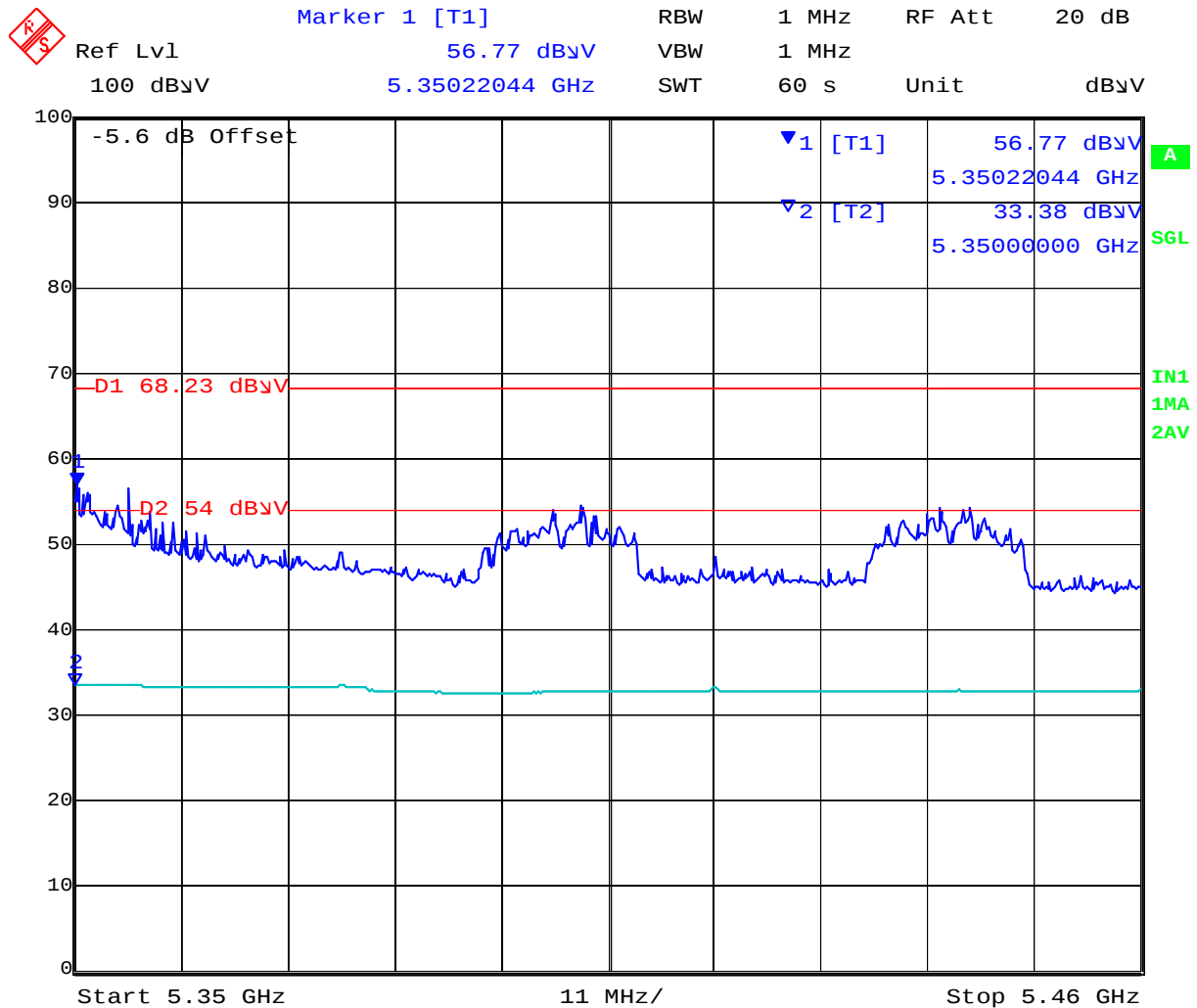
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8450 Band Edge Channel 64 - 5320 MHz 802.11n HT-20 5350-5460 MHz Pwr=16 Hor
Hght=148 Ang=325



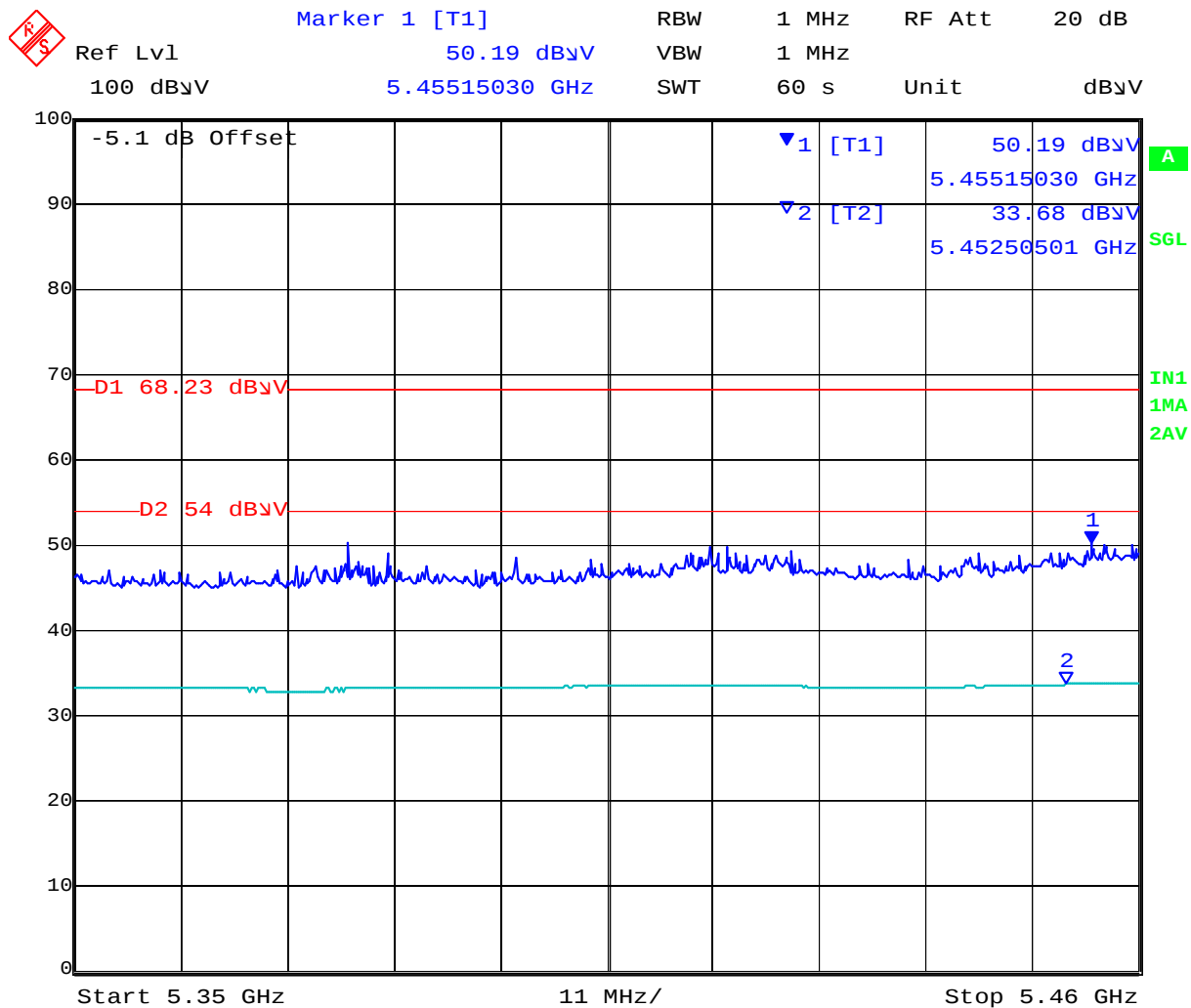
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8450 Band Edge Channel 100 - 5500 MHz 802.11a 5350-5460 MHz Pwr=16 Hor Hght=117
Ang=366



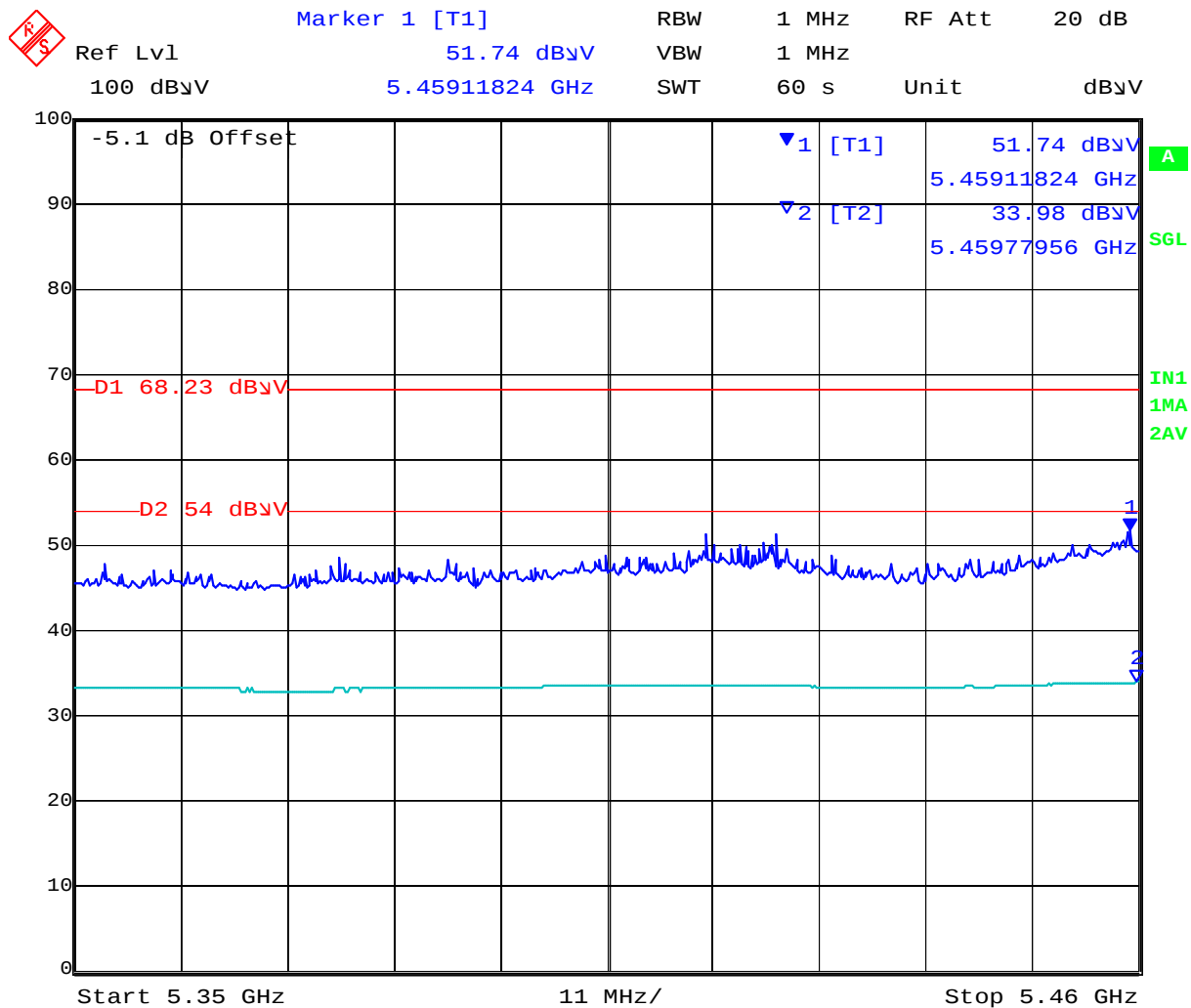
Date: 20. JAN. 2011 12:43:16

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8450 Band Edge Channel 100 - 5500 MHz 802.11n HT-20 5350-5460 MHz Pwr=16 Hor
Hght=144 Ang=346



Date: 20. JAN. 2011 12:52:45

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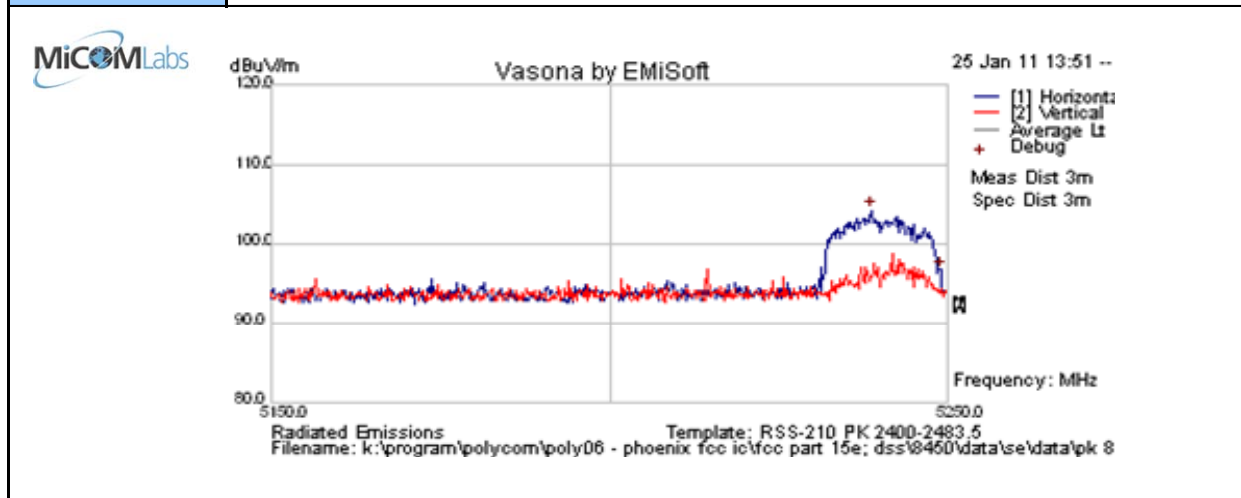


Title: Polycom Spectralink 8450 Wi-Fi handset with Bluetooth
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7.8.3 Peak Emissions

Peak Emissions are measured only on frequencies with the most output power (channel: L, M or H).

Test Freq.	5240 MHz	Engineer	EVF
Variant	802.11a; 6 Mbs	Temp (°C)	19.5
Freq. Range	5150 - 5250 MHz	Rel. Hum.(%)	35
Power Setting	14 in test utility	Press. (mBars)	1006
Antenna	integral	Duty Cycle (%)	10
Test Notes 1	Handset (Model: 8450 with battery (SN: AC1010320232) , also connected to charger (Model: SA106B-05)		
Test Notes 2	Mode: WLAN Channel 48 Tx; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5240.902	55.2	14.6	34.4	104.2	Peak [Scan]	H						FUND

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

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Title: Polycom Spectralink 8450 Wi-Fi handset with Bluetooth

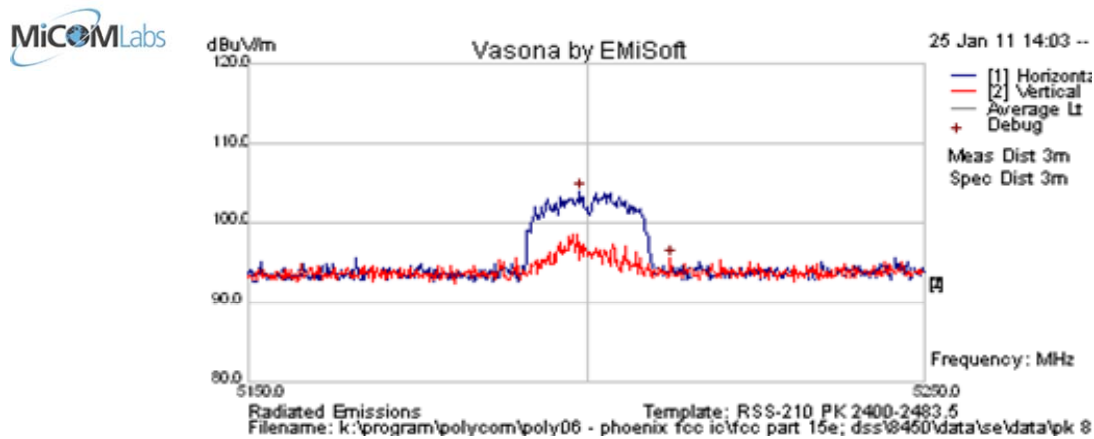
To: FCC 47 CFR Part 15.407 & RSS-210 A9

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Test Freq.	5200 MHz	Engineer	EVF
Variant	802.11n; HT-20; 6.5 MCS	Temp (°C)	18
Freq. Range	5150 - 5250 MHz	Rel. Hum.(%)	39
Power Setting	14 in test utility	Press. (mBars)	1006
Antenna	integral	Duty Cycle (%)	10
Test Notes 1	Handset (Mdel: 8450) with battery (SN: AC1010320232) , also connected to charger (Mdel: SA106B-05)		
Test Notes 2	Mdel: WLAN Channel 40 Tx; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5203.467	54.8	14.6	34.4	103.8	Peak [Scan]	H						FUND

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

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Title: Polycom Spectralink 8450 Wi-Fi handset with Bluetooth

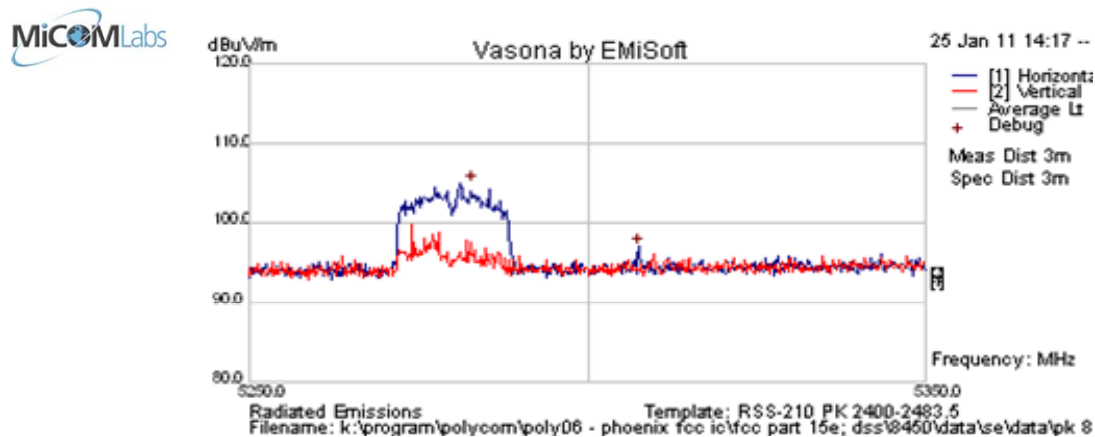
To: FCC 47 CFR Part 15.407 & RSS-210 A9

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Test Freq.	5280 MHz	Engineer	EVF
Variant	802.11a; 6.5 Mbs	Temp (°C)	18
Freq. Range	5250 - 5350 MHz	Rel. Hum.(%)	39
Power Setting	16 in test utility	Press. (mBars)	1006
Antenna	integral	Duty Cycle (%)	10
Test Notes 1	Handset (Mdel: 8450) with battery (SN: AC1010320232) , also connected to charger (Mdel: SA106B-05)		
Test Notes 2	Mdel: WLAN Channel 56 Tx; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5282.906	55.8	14.6	34.5	104.9	Peak [Scan]	H						FUND

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

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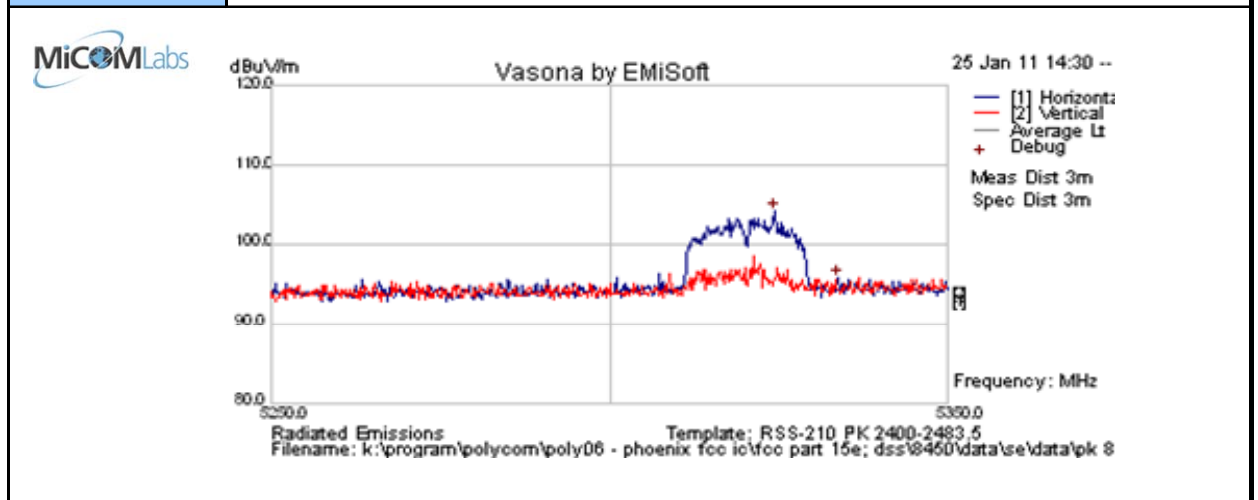
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Test Freq.	5320 MHz	Engineer	EVF
Variant	802.11n; HT-20; 6.5 MCS	Temp (°C)	18
Freq. Range	5250 - 5350 MHz	Rel. Hum.(%)	39
Power Setting	16 in test utility	Press. (mBars)	1006
Antenna	integral	Duty Cycle (%)	10
Test Notes 1	Handset (Model: 8450) with battery (SN: AC1010320232) , also connected to charger (Model: SA10		
Test Notes 2	Mode: WLAN Channel 64 Tx; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5318.136	55.0	14.6	34.5	104.1	Peak [Scan]	H	100	0	54.0	50.1	Fail	FUND

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

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Title: Polycom Spectralink 8450 Wi-Fi handset with Bluetooth

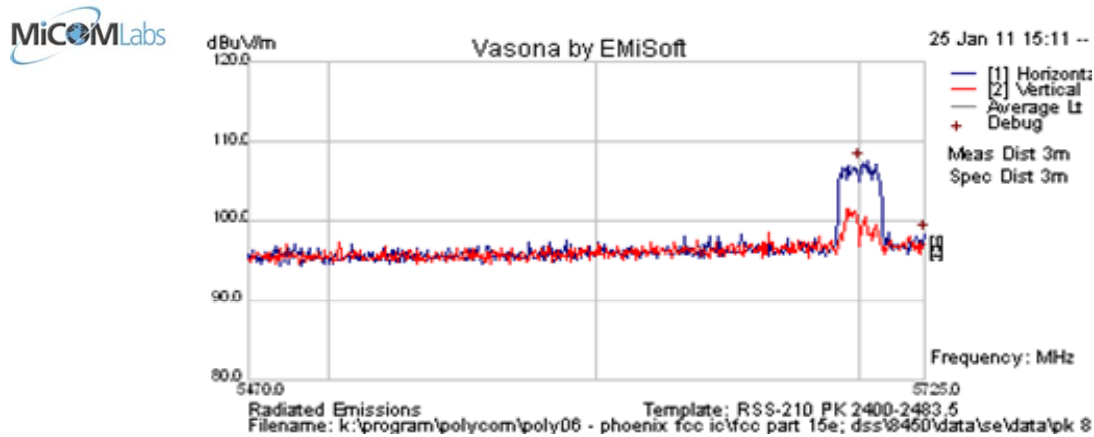
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Test Freq.	5700 MHz	Engineer	EVF
Variant	802.11a; 6 Mbs	Temp (°C)	18
Freq. Range	5470 - 5725 MHz	Rel. Hum.(%)	39
Power Setting	16 in test utility	Press. (mBars)	1006
Antenna	integral	Duty Cycle (%)	10
Test Notes 1	Handset (Mdel: 8440) with battery (SN: AC1010320232) , also connected to charger (Mdel: SA106B-05)		
Test Notes 2	Mdel: WLAN Channel 140 Tx; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5700.050	57.9	14.7	35.0	107.6	Peak [Scan]	H	100	0	54.0	53.6	Fail	FUND

Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission

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Title: Polycom Spectralink 8450 Wi-Fi handset with Bluetooth

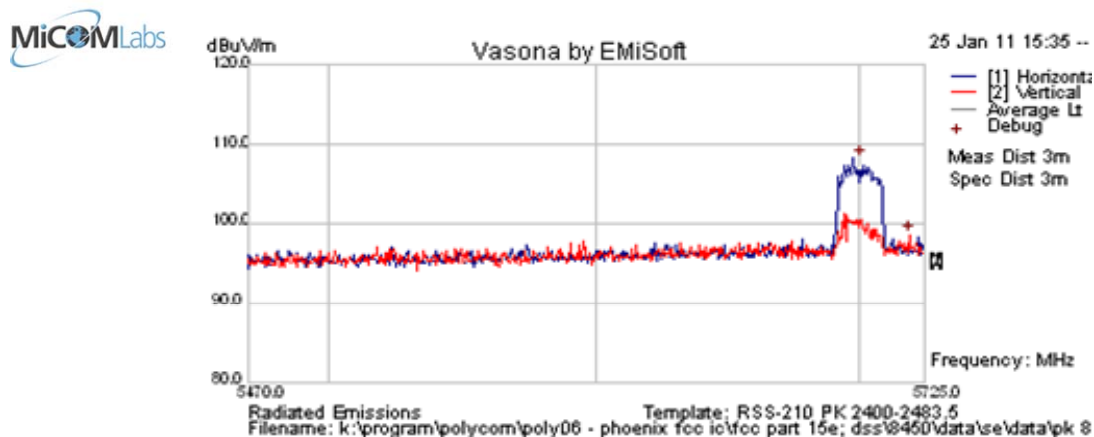
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Test Freq.	5700 MHz	Engineer	EVF
Variant	802.11n HT-20; 6.5 MCS	Temp (°C)	18
Freq. Range	5470 - 5725 MHz	Rel. Hum.(%)	39
Power Setting	16 in test utility	Press. (mBars)	1006
Antenna	integral	Duty Cycle (%)	10
Test Notes 1	Handset (Mdel: 8440) with battery (SN: AC1010320232) , also connected to charger (Mdel: SA106B-05)		
Test Notes 2	Mdel: WLAN Channel 140 Tx; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5700.962	58.5	14.7	35.0	108.2	Peak [Scan]	H	100	0	54.0	54.2	Fail	FUND
Legend: TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission												

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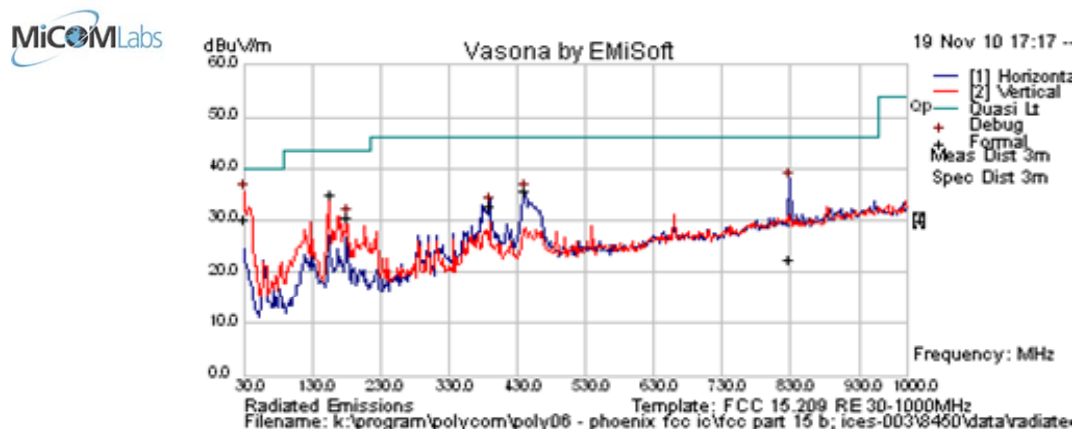


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7.8.4 Receiver Radiated Emissions

Stand alone Charger (SA106B-05) - Measurement Results for Radiated Spurious Emissions – Receiver

Test Freq.	N/A	Engineer	EVF
Variant	Digital Emissions	Temp (°C)	22.5
Freq. Range	30 MHz - 1000 MHz	Rel. Hum. (%)	34
Power Setting	Charger: 120VAC/ 60Hz	Press. (mBars)	99.7
Antenna	Integral		
Test Notes 1	Cordless telephone (Model:8450) w ith discharged battery (SN: AC1010320232) , headset connected, also connected to charger (Model: SA106B-05)/ Mode: BT Channel 39 Receive; WLAN Channel 06 Receive; WLAN=1, BT=1, BC=1, DK=1		
Test Notes 2	Preliminary testing performed. EUT tested in horizontal position		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
30.297	36.0	3.4	-9.4	30.0	Quasi Max	V	151	90	40	-10.0	Pass	
155.996	48.7	4.5	-18.4	34.9	Quasi Max	V	98	87	43.5	-8.7	Pass	
829.047	23.3	7.2	-7.9	22.6	Quasi Max	H	332	173	46	-23.4	Pass	
179.994	45.6	4.7	-19.7	30.5	Peak [Scan]	V	98	360	43.5	-13.0	Pass	
389.992	42.1	5.6	-14.9	32.8	Peak [Scan]	H	98	360	46	-13.2	Pass	
441.988	43.5	5.8	-13.8	35.5	Peak [Scan]	H	98	360	46	-10.5	Pass	
Legend: DIG = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency												
NRB = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band												

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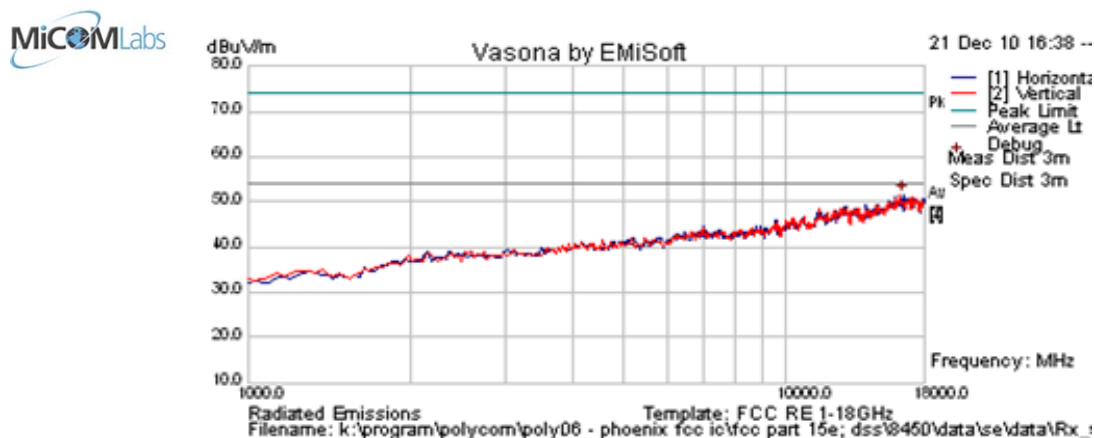
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Test Freq.	5200 MHz	Engineer	EVF
Variant	Receive in Test Utility	Temp (°C)	22
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	35
Power Setting	Not Applicable in Receive Mode	Press. (mBars)	993
Antenna	integral		
Test Notes 1	Fundamental attenuated by band-stop filter. Handset (Model: 8450) with battery (SN: AC1010320232) , also connected to charger (Model: SA106B-05)		
Test Notes 2	Mode: WLAN Channel 40 Receive; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

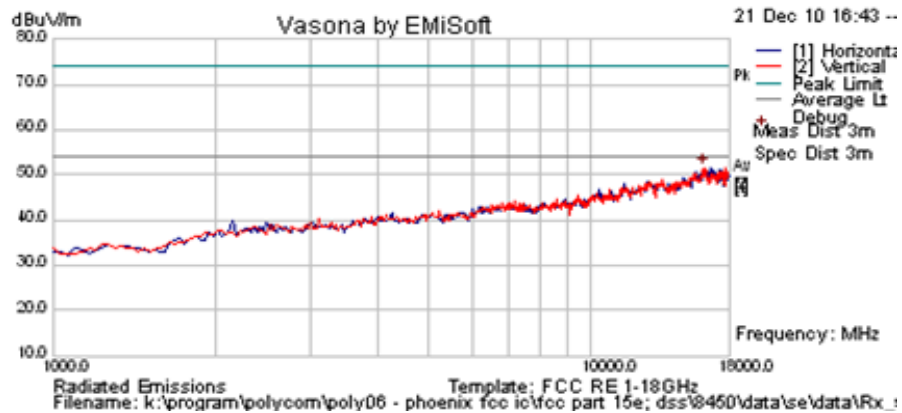
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
No Receiver Emissions Within 6dB of limit.												
Legend: RB = Restricted Band; NRB = Non-Restricted Band; FUND = Fundamental Freq.												
BE = Emission in Restricted Band Nearest Transmission Band Edge;												

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Test Freq.	5280 MHz	Engineer	EVF
Variant	Receive in Test Utility	Temp (°C)	22
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	35
Power Setting	Not Applicable in Receive Mode	Press. (mBars)	993
Antenna	integral		
Test Notes 1	Fundamental attenuated by band-stop filter. Handset (Model: 8450) with battery (SN: AC1010320232) , also connected to charger (Model: SA106B-05)		
Test Notes 2	Mode: WLAN Channel 56 Receive; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

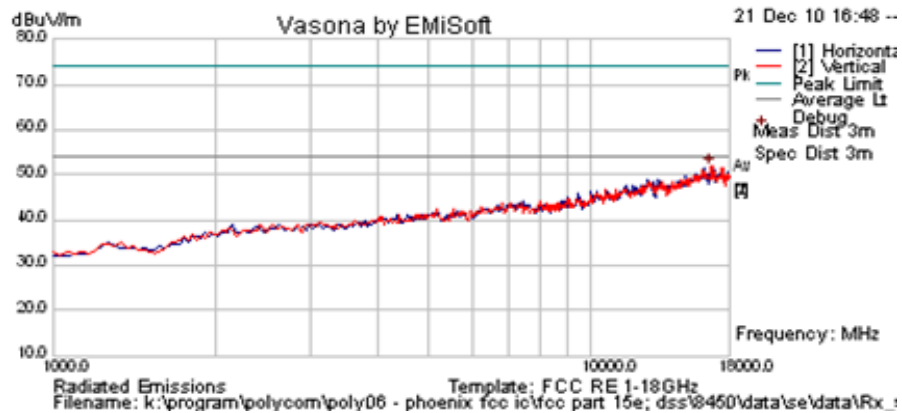
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
No Receiver Emissions Within 6dB of limit.												
Legend: RB = Restricted Band; NRB = Non-Restricted Band; FUND = Fundamental Freq.												
BE = Emission in Restricted Band Nearest Transmission Band Edge;												

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Test Freq.	5600 MHz	Engineer	EVF
Variant	Receive in Test Utility	Temp (°C)	22
Freq. Range	1000 MHz - 18000 MHz	Rel. Hum.(%)	35
Power Setting	Not Applicable in Receive Mode	Press. (mBars)	993
Antenna	integral		
Test Notes 1	Fundamental attenuated by band-stop filter. Handset (Model: 8450) with battery (SN: AC1010320232) , also connected to charger (Model: SA106B-05)		
Test Notes 2	Mode: WLAN Channel 120 Receive; WLAN=1, BT=0, BC=0, DK=0		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
No Receiver Emissions Within 6dB of limit.												
Legend: RB = Restricted Band; NRB = Non-Restricted Band; FUND = Fundamental Freq.												
BE = Emission in Restricted Band Nearest Transmission Band Edge;												

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7.9 Conducted Disturbance at Mains Terminal (150 kHz – 30 MHz)

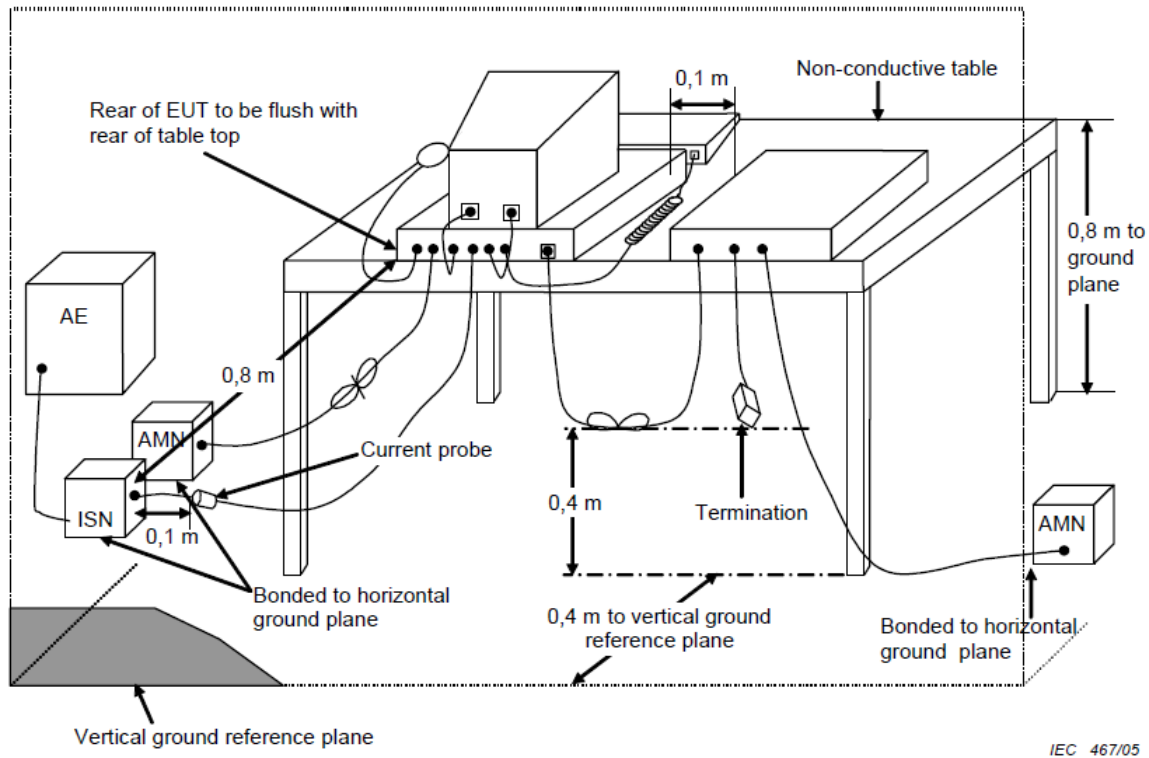
Test Procedure

The EUT is configured in accordance with ANSI C63.4. The conducted emissions are measured in a shielded room with a spectrum analyzer in peak hold in the first instance. Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation. The highest emissions relative to the limit are listed.

If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.

Test Measurement Setup



Measurement setup for Conducted Disturbance at Mains Terminals



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Specification for Conducted Disturbance at Mains Terminal

§15.407 (b)(6)

Any U-NII devices using an AC power line are required to comply also with the limits set forth in Section 15.207.

§15.207 (a)

Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 $\mu\Omega$ line impedance stabilization network (LISN), see §15.207 (a) matrix below. 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.

Limits

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency

Traceability

Laboratory Measurement Uncertainty for Conducted Emissions

Measurement uncertainty	± 2.64 dB
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Traceability

Method	Test Equipment Used
Work instruction WI-EMC-01	0158, 0184, 0193, 0190, 0293, 0307

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