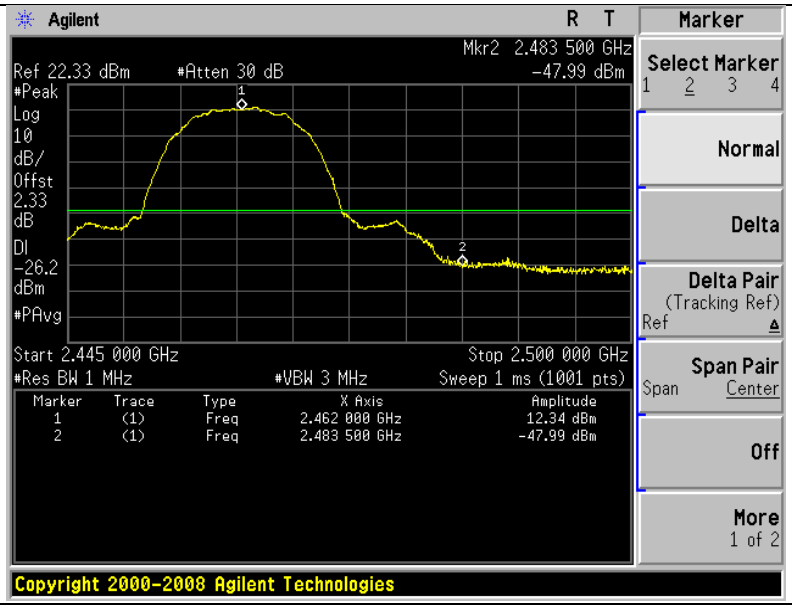
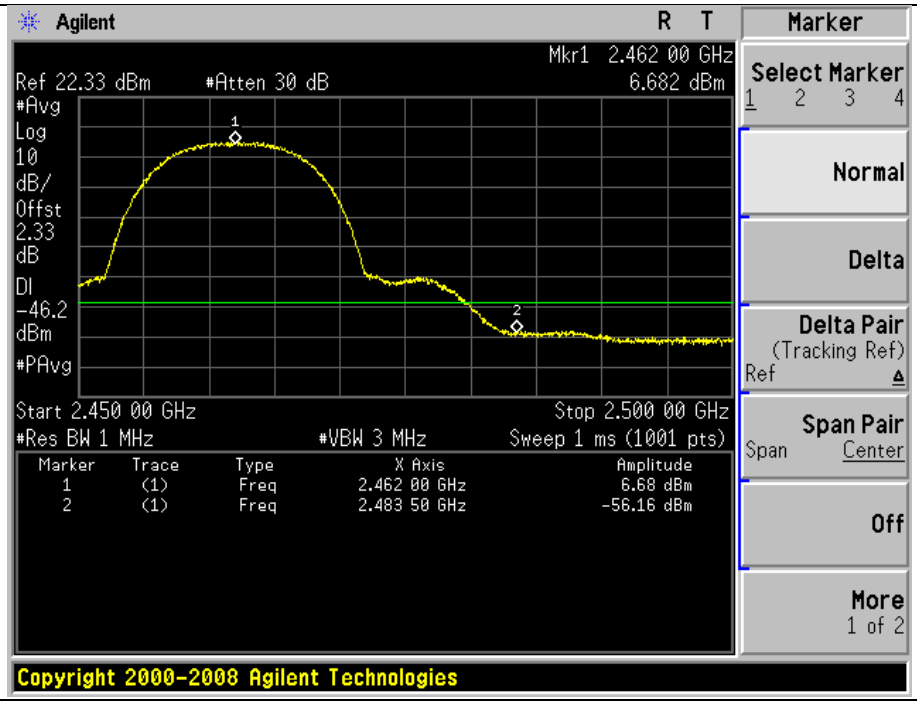


Title: Peak Band Edge Measurement for 802.11b (2462MHz at 11Mbps)



Title: Average Band Edge Measurement for 802.11b (2462MHz at 11Mbps)

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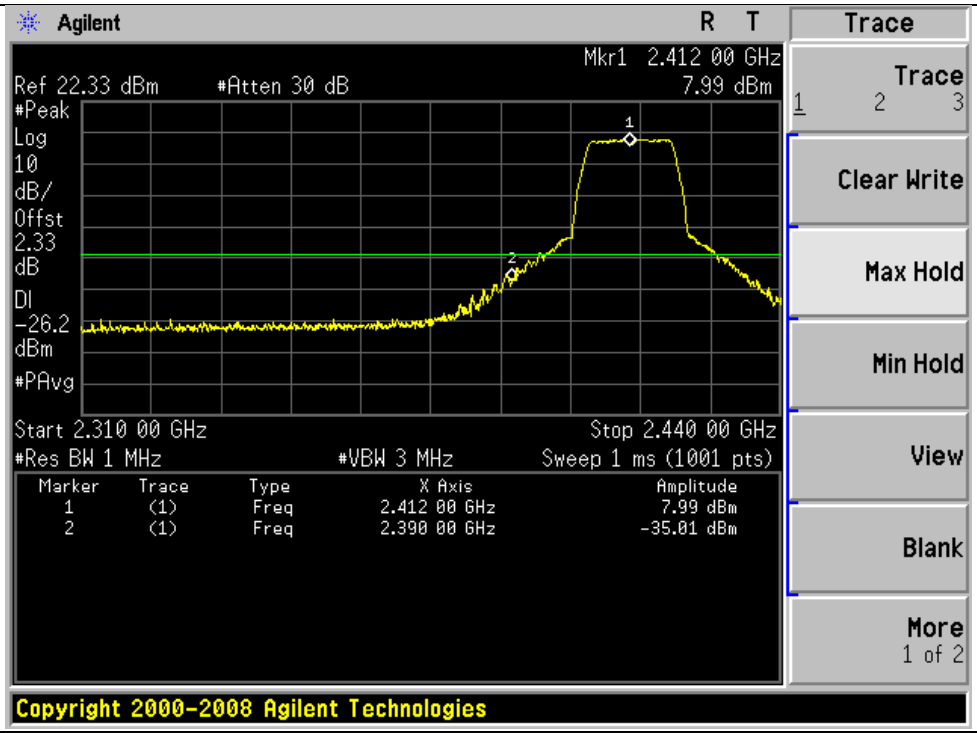
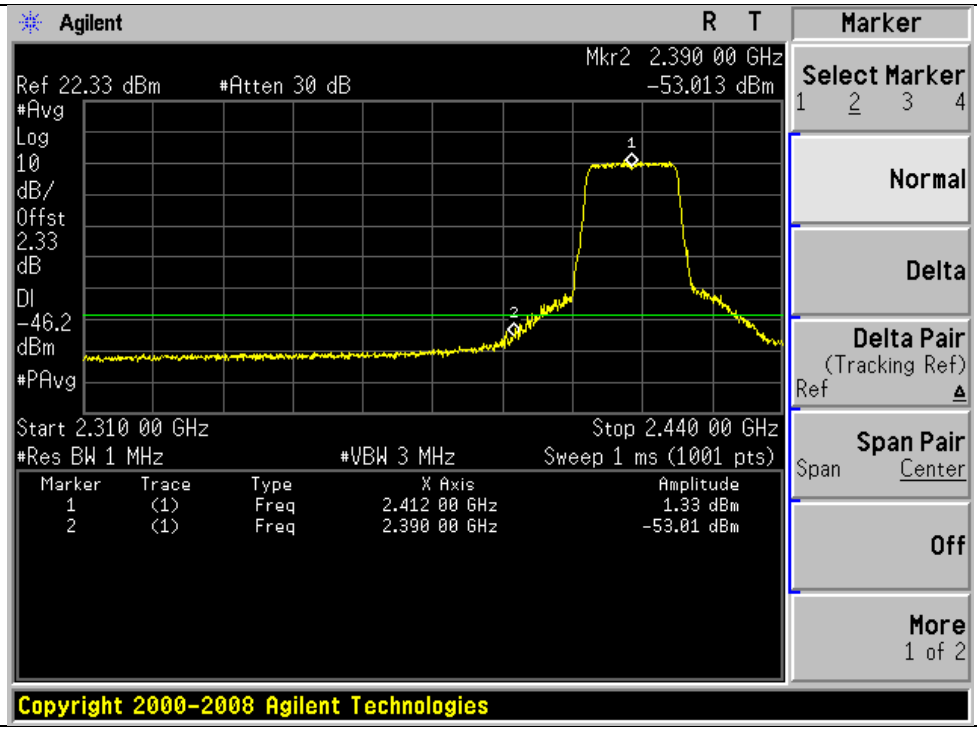


Title: Peak Band Edge Measurement for 802.11g (2412MHz at 6Mbps)



Title: Average Band Edge Measurement for 802.11g (2412MHz at 6Mbps)

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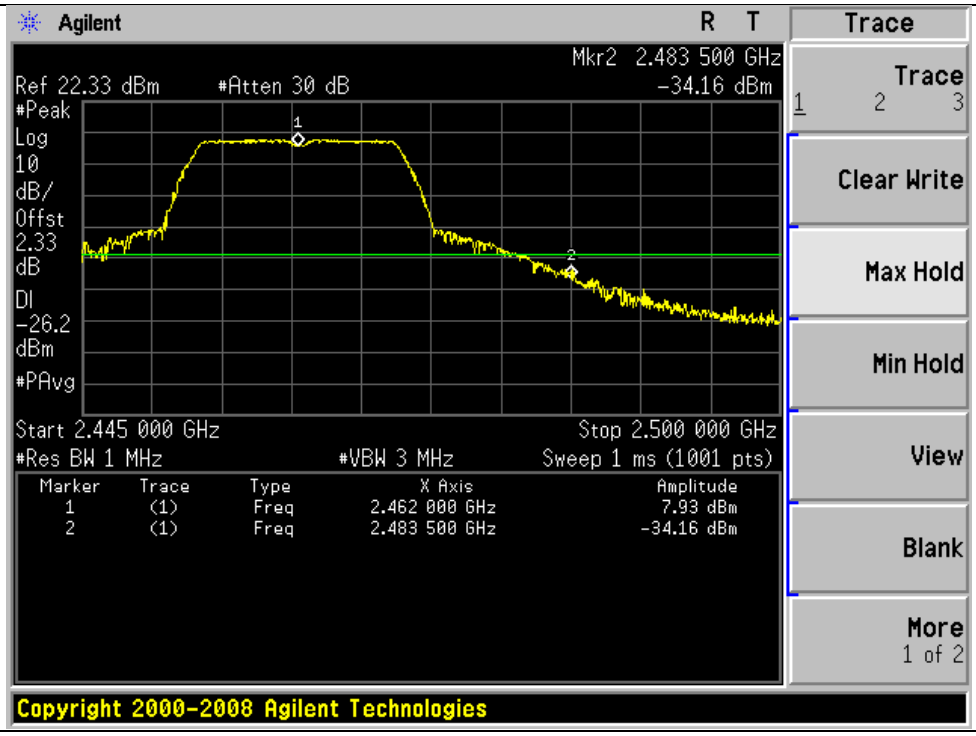
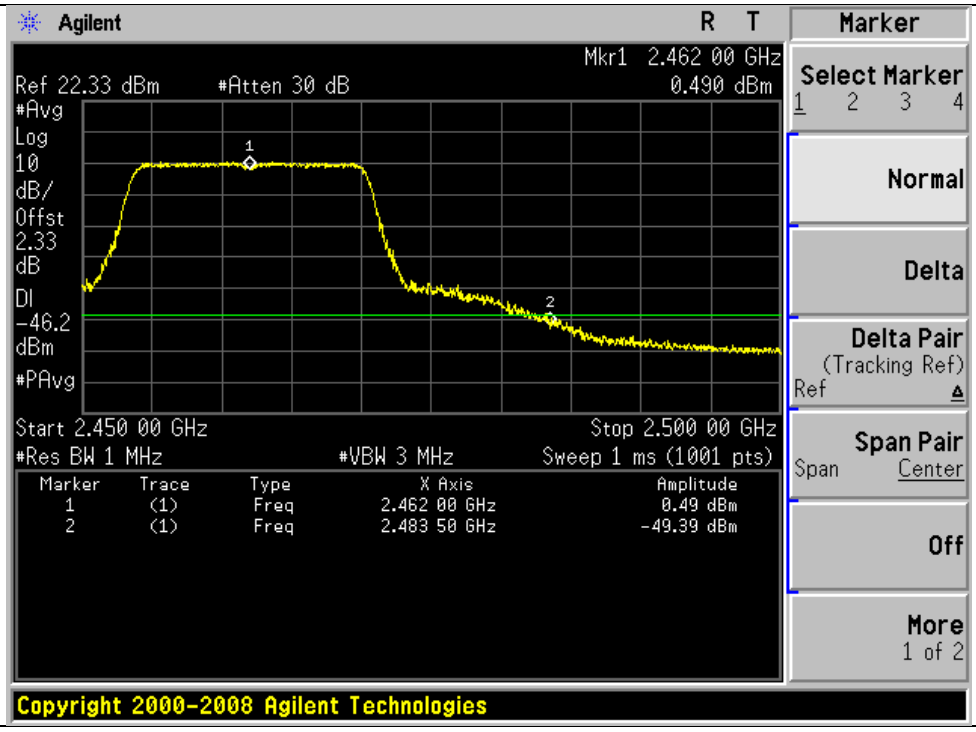


Title: Peak Band Edge Measurement for 802.11g (2462MHz at 6Mbps)



Title: Average Band Edge Measurement for 802.11g (2462MHz at 6Mbps)

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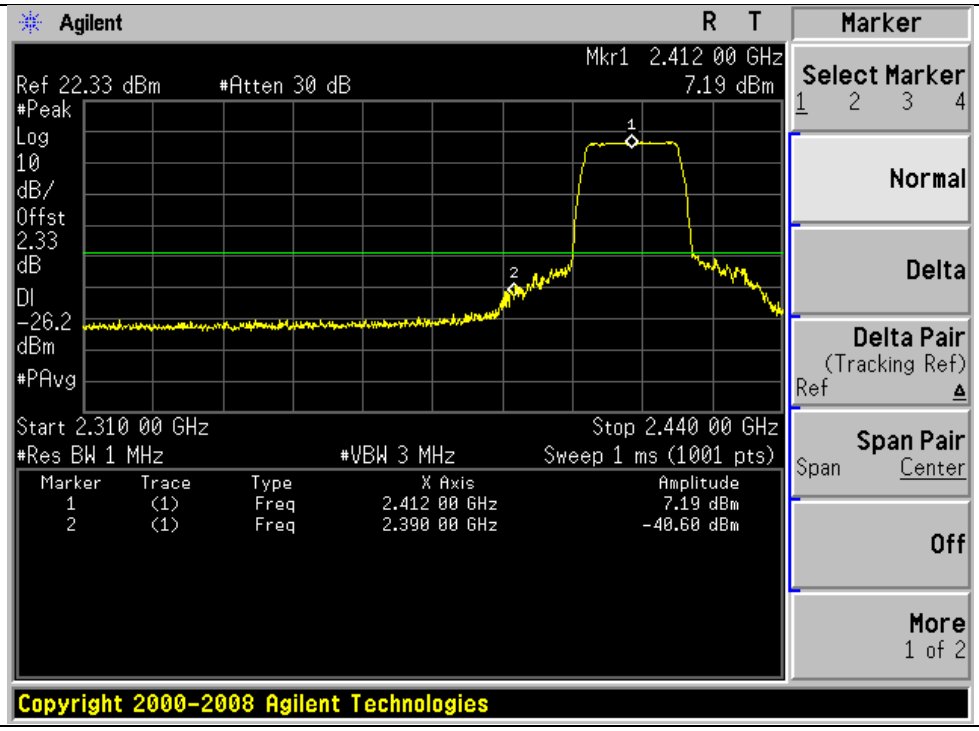
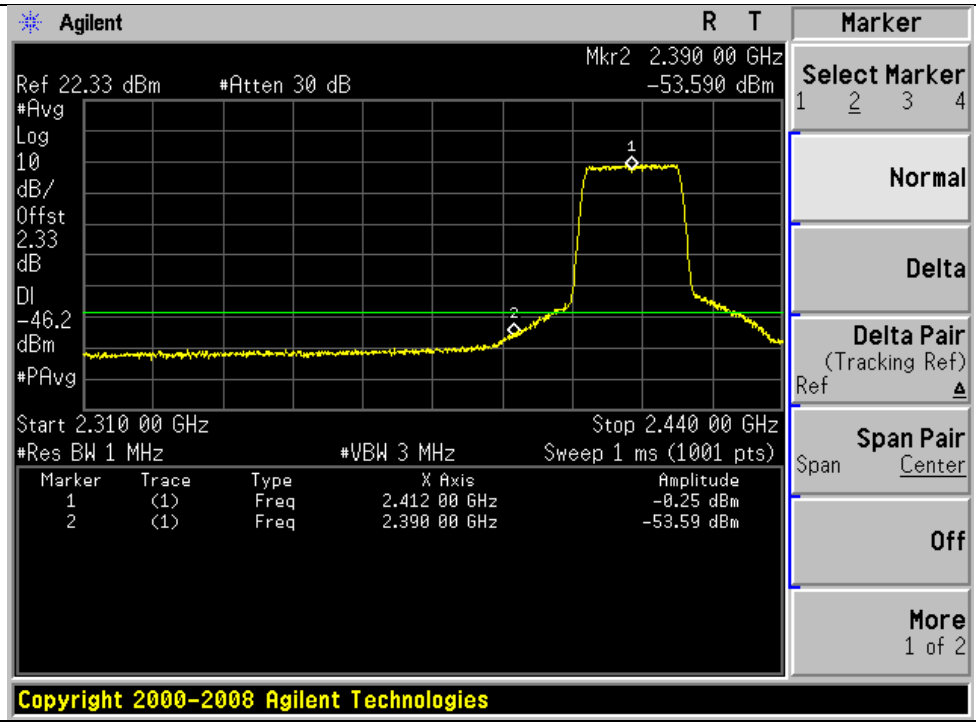


Title: Peak Band Edge Measurement for HT20 (2412MHz at M3)



Title: Average Band Edge Measurement for HT20 (2412MHz at M3)

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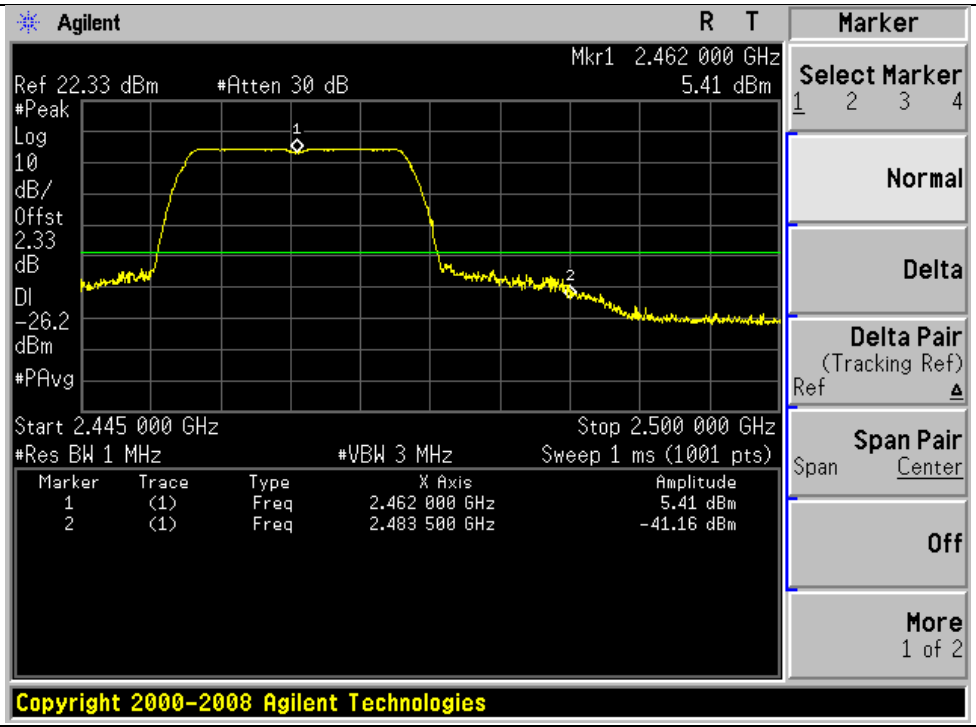
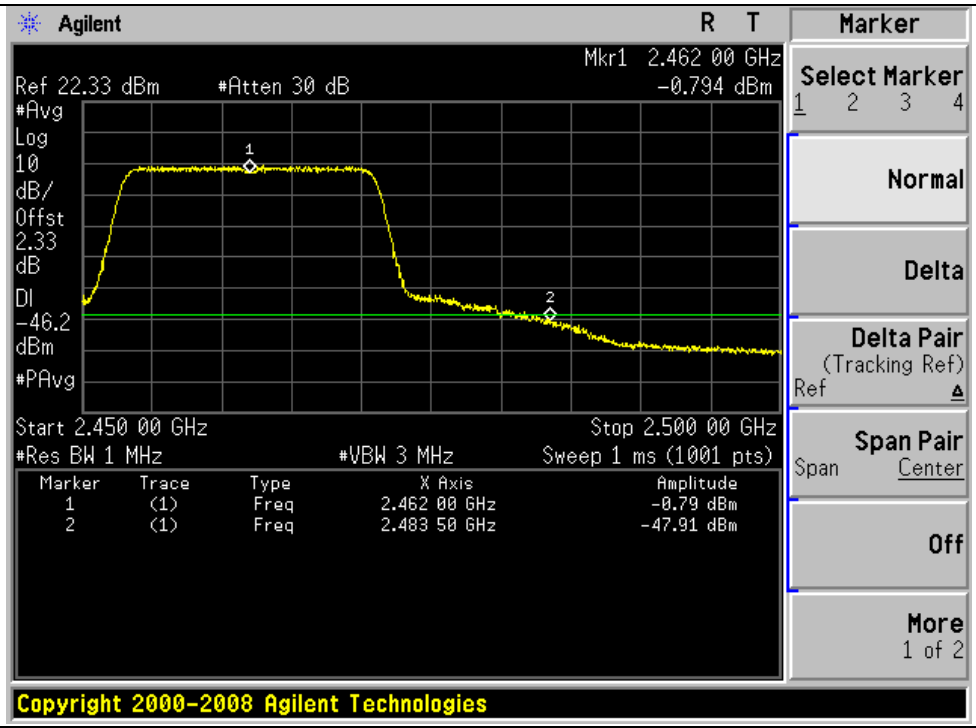


Title: Peak Band Edge Measurement for HT20 (2462MHz at M3)



Title: Average Band Edge Measurement for HT20 (2462MHz at M3)

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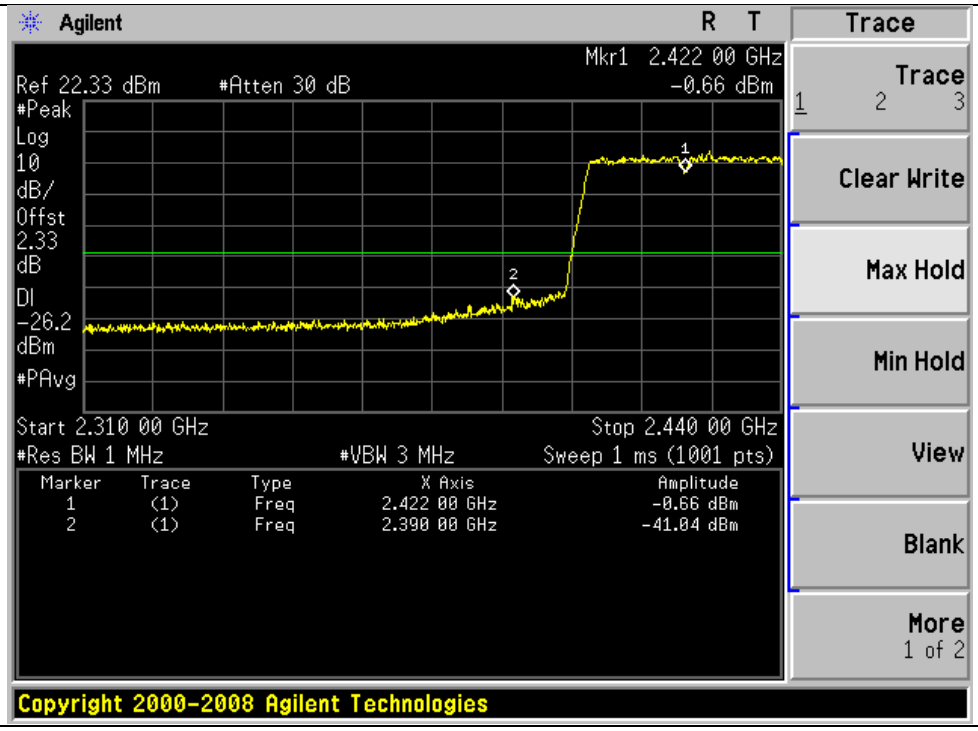
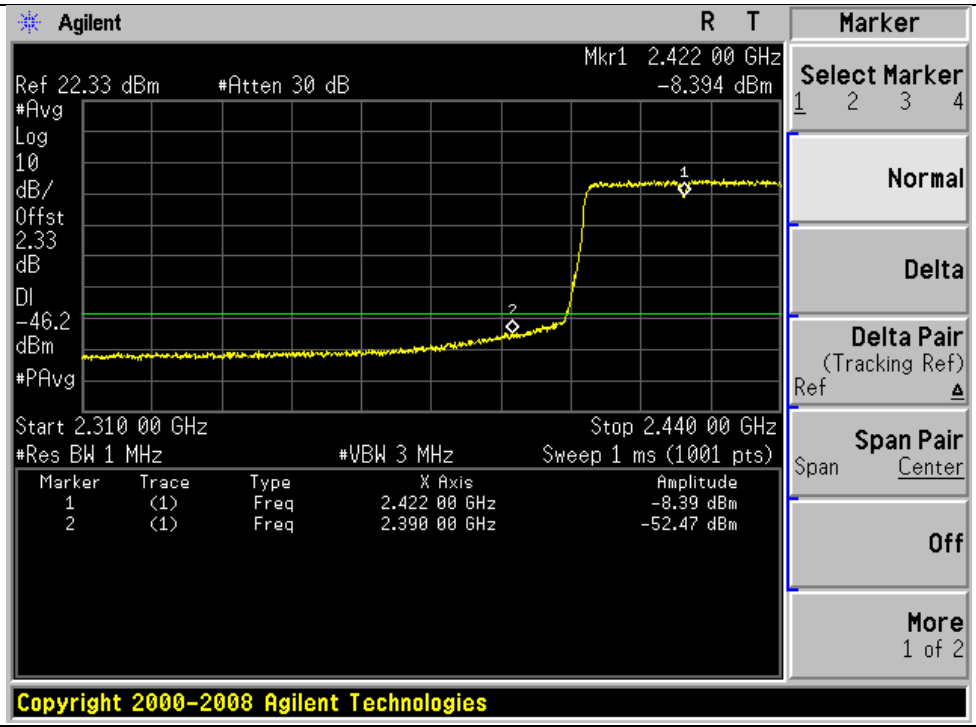


Title: Peak Band Edge Measurement for HT40 (2422MHz at M4)



Title: Average Band Edge Measurement for HT40 (2422MHz at M4)

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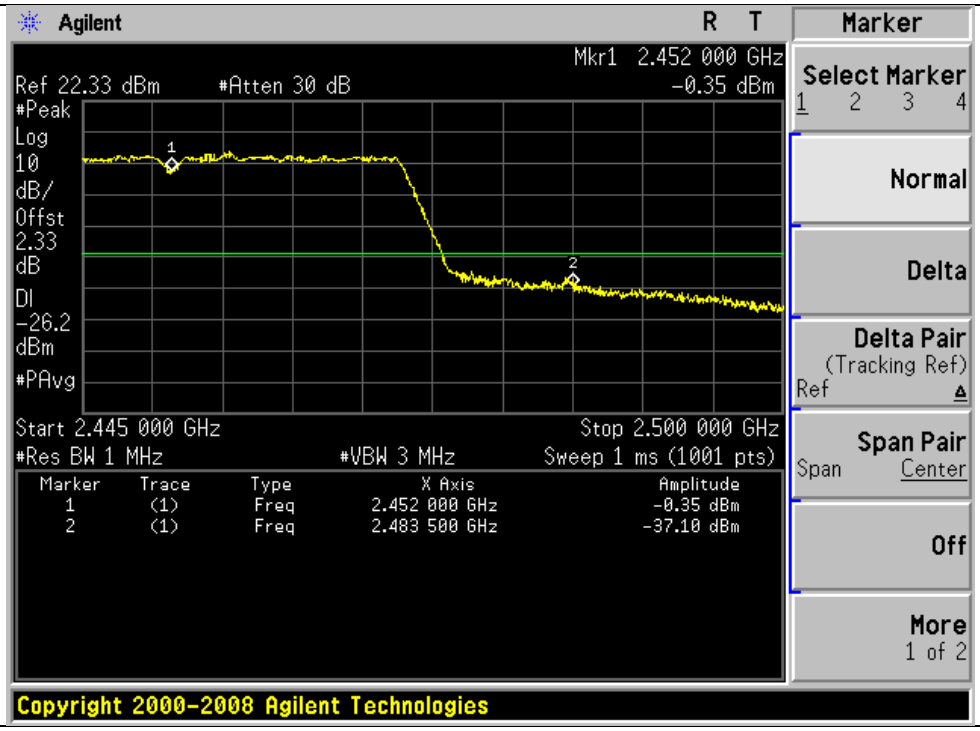
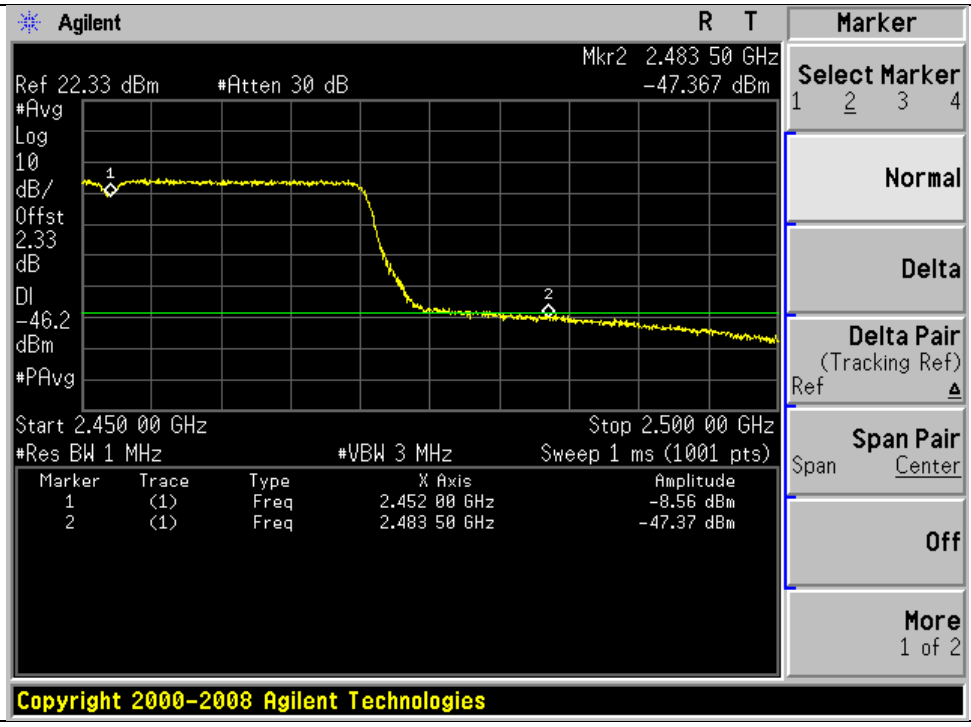


Title: Peak Band Edge Measurement for HT40 (2452MHz at M4)



Title: Average Band Edge Measurement for HT40 (2452MHz at M4)

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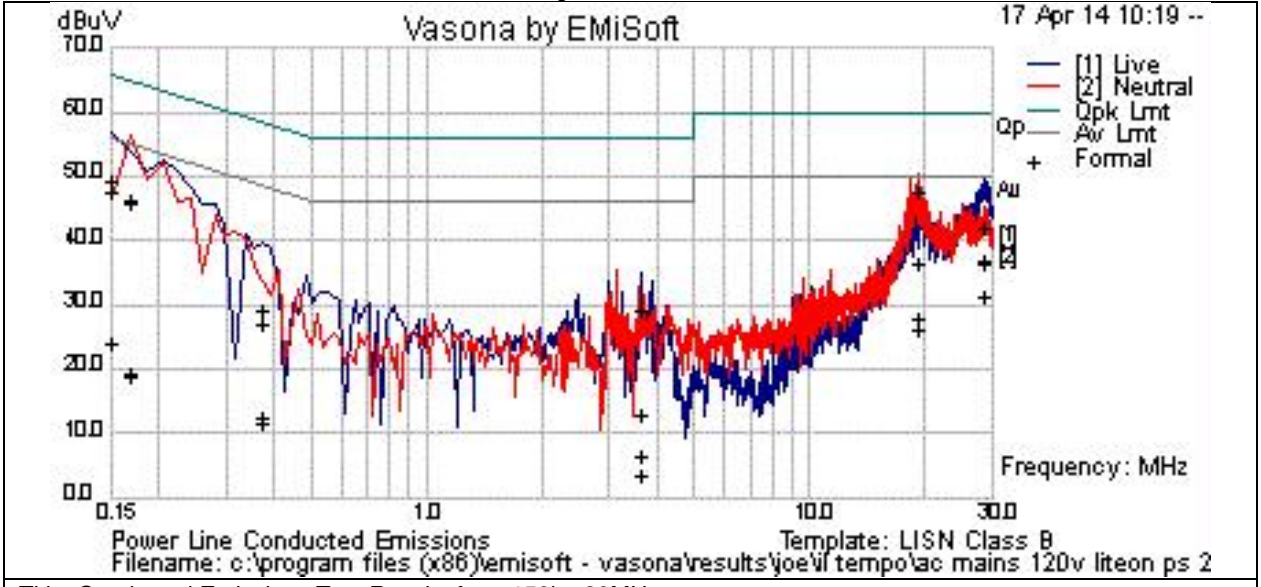
Conducted Emissions

Graphical Test Results

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Conducted Emissions Test Results from 150k - 30MHz

Test Results Table

Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
0.15	3	21.1	0.1	24.2	Av	N	56	-31.8	Pass	
0.15	28	21.1	0.1	49.2	Qp	L	66	-16.8	Pass	
0.15	26.6	21.1	0.1	47.7	Qp	N	66	-18.3	Pass	
0.15	2.9	21.1	0.1	24	Av	L	56	-32	Pass	
0.169	-2.2	21	0	18.9	Av	N	55	-36.1	Pass	
0.169	25.2	21	0	46.2	Qp	N	65	-18.8	Pass	
0.169	-1.8	21	0	19.3	Av	L	55	-35.8	Pass	
0.169	24.9	21	0	46	Qp	L	65	-19	Pass	
0.3735	-7.8	20.2	0	12.5	Av	N	48.4	-35.9	Pass	
0.3735	-8.9	20.2	0	11.4	Av	L	48.4	-37	Pass	
0.3735	9	20.2	0	29.3	Qp	N	58.4	-29.2	Pass	
0.3735	6.9	20.2	0	27.1	Qp	L	58.4	-31.3	Pass	
3.633	9.2	20	0	29.3	Qp	N	56	-26.7	Pass	
3.633	-13.7	20	0	6.4	Av	L	46	-39.6	Pass	
3.633	-16.7	20	0	3.4	Av	N	46	-42.6	Pass	
3.633	-7.3	20	0	12.8	Qp	L	56	-43.2	Pass	

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Frequency MHz	Raw dBuV	Cable Loss	Factors dB	Level dBuV	Measurement Type	Line	Limit dBuV	Margin dB	Pass /Fail	Comments
19.274	7.2	20.4	0.1	27.8	Av	L	50	-22.2	Pass	
19.274	15.9	20.4	0.1	36.5	Qp	L	60	-23.5	Pass	
19.274	27.2	20.4	0.1	47.7	Qp	N	60	-12.3	Pass	
19.274	5.5	20.4	0.1	26	Av	N	50	-24	Pass	
28.473	15.9	20.7	0.2	36.9	Qp	L	60	-23.1	Pass	
28.473	15.7	20.7	0.2	36.6	Av	N	50	-13.4	Pass	
28.473	21.2	20.7	0.2	42.1	Qp	N	60	-17.9	Pass	
28.473	10.5	20.7	0.2	31.4	Av	L	50	-18.6	Pass	

Physical Test arrangement Photograph:

Title: Conducted Emissions Test Configuration

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Radiated Spurious and Harmonics Emissions

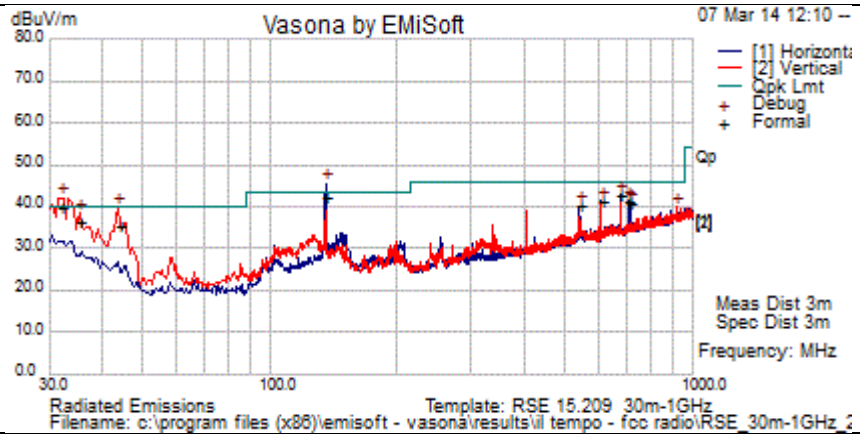
15.205 & RSS-210 sec2.7:

Radiated emissions which fall in the restricted bands, as defined in Sec. 15.205(a), must also comply with the radiated emission limits specified in Sec. 15.209(a).

Note: Notch Filter used during measurements with correction factors included.

Graphical Test Results for 30 – 1000MHz:

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Radiated Spurious Emissions 30 - 1000MHz Test Results

Test Results Table

Formal Data

No	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
1	32.123	20.2	0.5	18.8	39.5	Quasi Peak	V	100	116	40	-0.5	Pass	Digital signal
2	35.335	18.8	0.5	16.8	36.1	Quasi Peak	V	100	108	40	-3.9	Pass	Digital signal
3	43.808	23.8	0.6	11.1	35.5	Quasi Peak	V	100	59	40	-4.5	Pass	Digital signal
4	135.16	27.4	1.1	13.6	42	Quasi Peak	H	200	360	43.5	-1.5	Pass	Digital signal
5	540.705	19.6	2.1	18.3	40.1	Peak [Scan]	H	150	232	46	-6	Pass	transient
6	608.12	20.3	2.3	18.8	41.4	Peak [Scan]	H	100	148	46	-4.7	Pass	transient
7	676.02	20.4	2.4	19.9	42.7	Peak [Scan]	H	150	315	46	-3.3	Pass	transient
8	707.545	18.6	2.4	20.3	41.3	Peak [Scan]	H	100	129	46	-4.7	Pass	transient
9	711.91	18.1	2.5	20.3	40.9	Peak [Scan]	H	100	154	46	-5.1	Pass	transient

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15.205 & RSS-210 sec2.7:

Radiated emissions which fall in the restricted bands, as defined in Sec. 15.205(a), must also comply with the radiated emission limits specified in Sec. 15.209(a).

Note: Notch Filter used during measurements with correction factors included.

Using Vasona, configure the spectrum analyzer as shown below (be sure to enter all losses between the transmitter output and the spectrum analyzer). Place the radio in continuous transmit mode.

Span:	1GHz – 18 GHz
Reference Level:	80 dBuV
Attenuation:	10 dB
Sweep Time:	Coupled
Resolution Bandwidth:	1MHz
Video Bandwidth:	1 MHz for peak, 10 Hz for average
Detector:	Peak

Terminate the access Point RF ports with 50 ohm loads.

Maximize Turntable (find worst case table angle), Maximize Antenna (find worst case height)

Save 2 plots: 1) Average Plot (Vertical and Horizontal), Limit= 54dBuV/m @3m
2) Peak plot (Vertical and Horizontal), Limit = 74dBuV/m @3m

Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands.

This report represents the worst case data for all supported operating modes and antennas. System was evaluated up to 40GHz but there were no measurable emissions above 18 GHz.

Note: A Notch Filter was used during formal testing from 1 – 18GHz to help prevent the front end of the analyzer from over loading. The Notch filters used are designed to suppress Tx fundamental frequency but do not effect harmonics of the fundamental frequency from being measured

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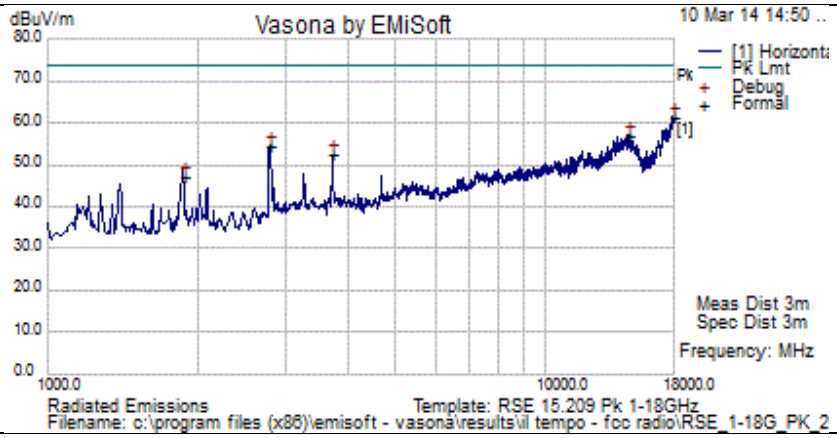
Graphical Test Results for 802.11b: 1 – 18GHz (Peak):

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Peak Results for 802.11b (2412MHz)

Test Results Table

Formal Data

No	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
1	17957.5	35.4	16.3	9.6	61.3	Peak [Scan]	H	100	294	74	-12.7	Pass	
2	14668	36.3	14.2	6.5	57.1	Peak [Scan]	H	100	101	74	-16.9	Pass	
3	2793.5	54.8	5.5	-5.8	54.5	Peak [Scan]	H	100	139	74	-19.5	Pass	
4	3728.508	49.4	6.5	-3.6	52.3	Peak [Scan]	H	100	2	74	-21.7	Pass	
5	1869.579	49.8	4.4	-7	47.3	Peak [Scan]	H	100	2	74	-26.7	Pass	

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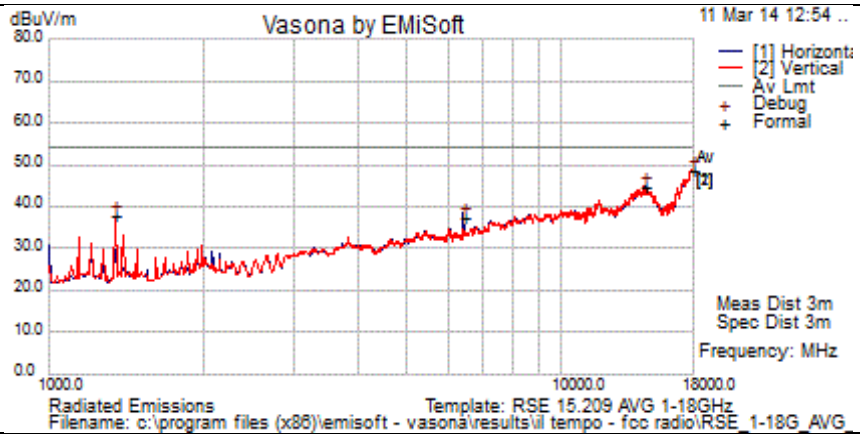
Graphical Test Results for 802.11b 2412MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Ave Results for 802.11b (2412MHz)

Test Results Table

Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB
1	1348.5	41.9	3.7	-7.9	37.7	Peak [Scan]	V	150	154	54	-16.3
2	6429.486	31.4	8.8	-3	37.1	Peak [Scan]	H	148	365	54	-16.9
3	14438.5	22.9	14.2	7.7	44.8	Peak [Scan]	V	150	258	54	-9.2
4	18000	22.8	16.3	9.7	48.8	Peak [Scan]	H	150	308	54	-5.2

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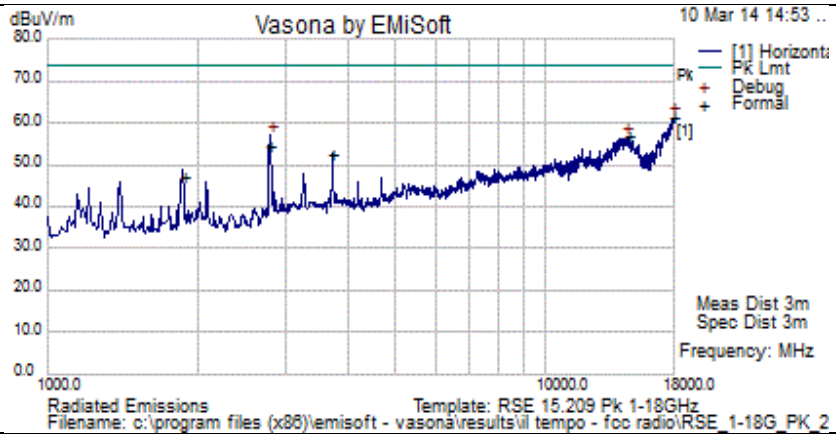
Graphical Test Results for 802.11b 2437MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Peak Results for 802.11b (2437MHz)

Test Results Table

Formal Data

No	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
1	17957.5	35.4	16.3	9.6	61.3	Peak [Scan]	H	100	294	74	-12.7	Pass	
2	14668	36.3	14.2	6.5	57.1	Peak [Scan]	H	100	101	74	-16.9	Pass	
3	2793.5	54.8	5.5	-5.8	54.5	Peak [Scan]	H	100	139	74	-19.5	Pass	
4	3728.508	49.4	6.5	-3.6	52.3	Peak [Scan]	H	100	2	74	-21.7	Pass	
5	1869.579	49.8	4.4	-7	47.3	Peak [Scan]	H	100	2	74	-26.7	Pass	

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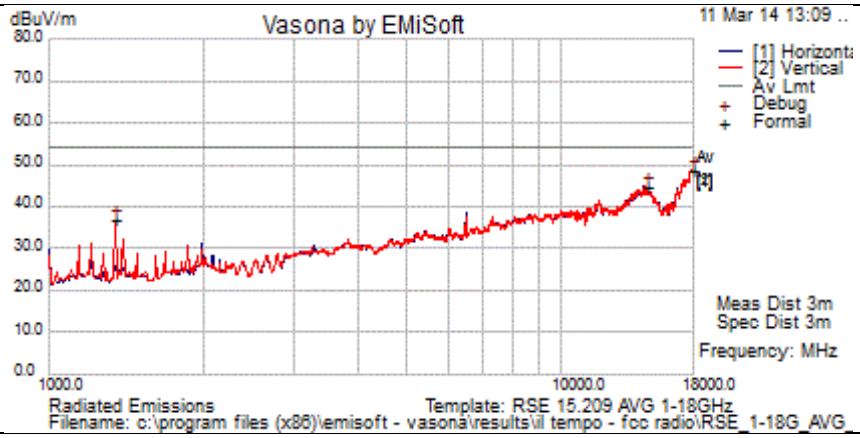
Graphical Test Results for 802.11b 2437MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Ave Results for 802.11b (2437MHz)

Test Results Table

Formal Data

No	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
1	1348.5	40.8	3.7	-7.9	36.6	Peak [Scan]	V	150	156	54	-17.4	Pass	
2	14566	23.3	14.2	7.3	44.8	Peak [Scan]	V	150	260	54	-9.3	Pass	
3	18000	22.7	16.3	9.7	48.7	Peak [Scan]	V	150	156	54	-5.3	Pass	

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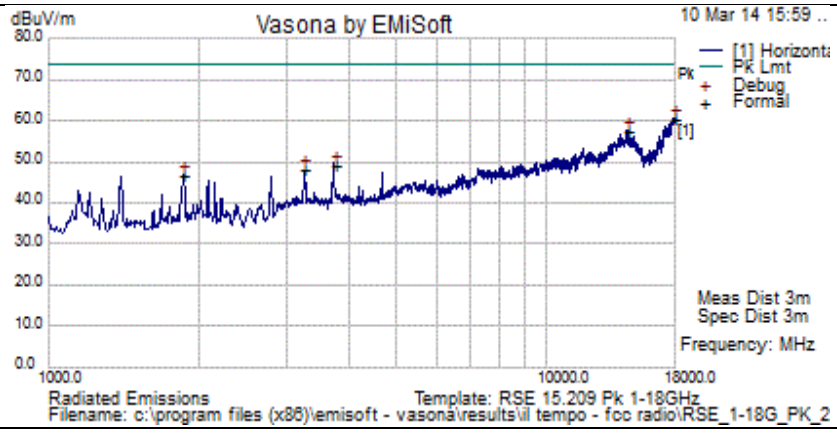
Graphical Test Results for 802.11b 2462MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Peak Results for 802.11b (2462MHz)

Test Results Table

Formal Data

No	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
1	1867.487	49.1	4.4	-7	46.6	Peak [Scan]	H	100	0	74	-27.4	Pass	
2	3262.612	46.3	6	-4.4	47.9	Peak [Scan]	H	100	0	74	-26.1	Pass	
3	3738.71	46	6.5	-3.5	49	Peak [Scan]	H	100	0	74	-25	Pass	
4	14455.5	35.4	14.3	8	57.6	Peak [Scan]	H	100	251	74	-16.4	Pass	
5	17957.5	34.6	16.3	9.6	60.5	Peak [Scan]	V	100	334	74	-13.5	Pass	

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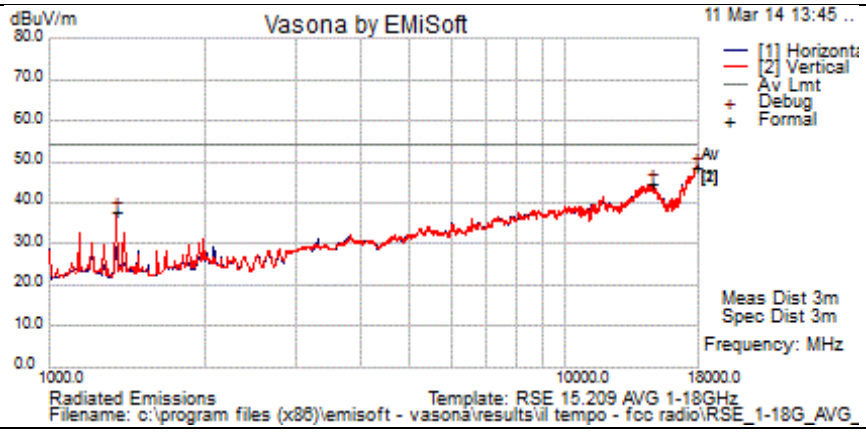
Graphical Test Results for 802.11b 2462MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Ave Results for 802.11b (2462MHz)

Test Results Table

Formal Data

No	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
1	1348.5	41.8	3.7	-7.9	37.6	Peak [Scan]	V	150	154	54	-16.4	Pass	
2	14566	23.1	14.2	7.3	44.6	Peak [Scan]	H	150	308	54	-9.4	Pass	
3	17830	22.7	16.2	9.8	48.7	Peak [Scan]	H	150	365	54	-5.3	Pass	

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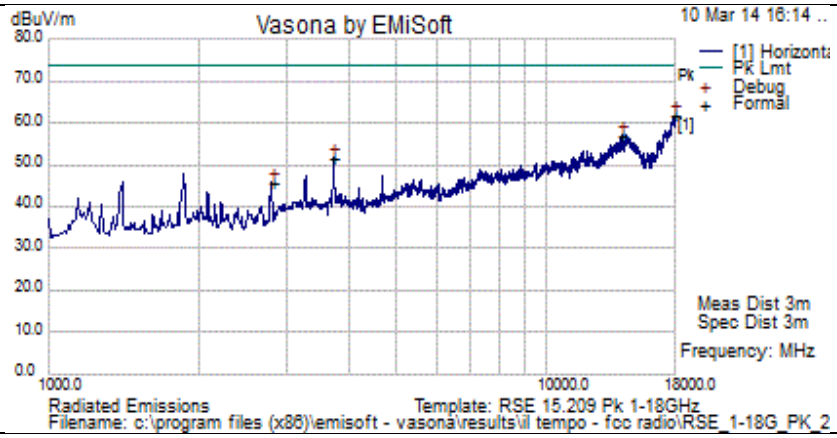
Graphical Test Results for 802.11G 2412MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Peak Results for 802.11G (2412MHz)

Test Results Table

Formal Data

No	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
1	2802.07	46	5.5	-5.9	45.7	Peak [Scan]	H	100	0	74	-28.3	Pass	
2	3729.986	48.7	6.5	-3.6	51.6	Peak [Scan]	H	100	0	74	-22.4	Pass	
3	14132.5	36.3	14.1	6.7	57	Peak [Scan]	H	100	258	74	-17	Pass	
4	18000	36	16.3	9.7	62	Peak [Scan]	H	100	220	74	-12	Pass	

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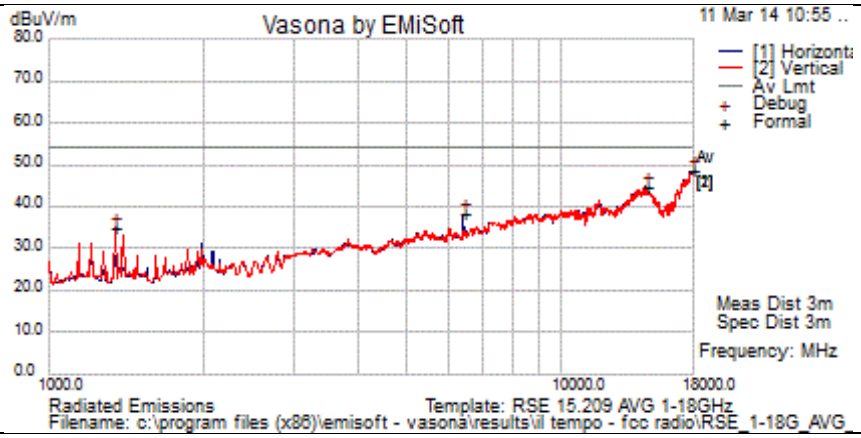
Graphical Test Results for 802.11G at 2412MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Ave Results for 802.11G (2412MHz)

Test Results Table

Formal Data

No	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
1	1348.5	39.1	3.7	-7.9	34.9	Peak [Scan]	V	150	154	54	-19.1	Pass	
2	6431.513	32.5	8.8	-3	38.2	Peak [Scan]	H	148	361	54	-15.8	Pass	
3	14566	23.3	14.2	7.3	44.7	Peak [Scan]	H	150	154	54	-9.3	Pass	
4	18000	22.5	16.3	9.7	48.6	Peak [Scan]	H	150	257	54	-5.5	Pass	

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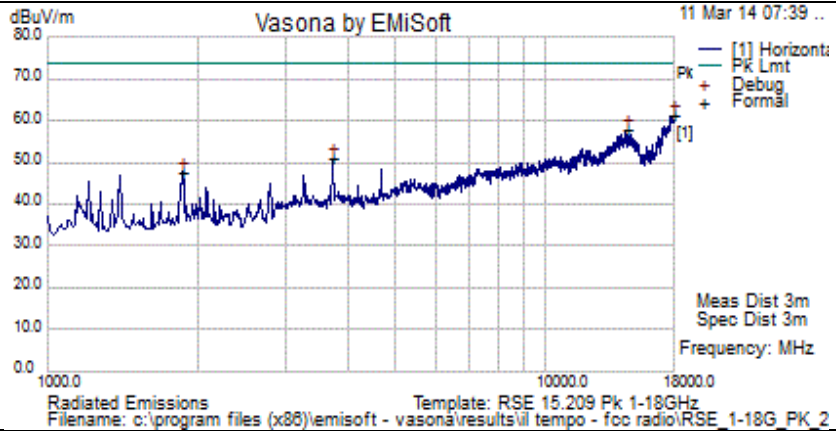
Graphical Test Results for 802.11G at 2437MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Peak Results for 802.11G (2437MHz)

Test Results Table

Formal Data

No	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
1	1867.308	50.2	4.4	-7	47.7	Peak [Scan]	H	100	0	74	-26.3	Pass	
2	3728.657	48	6.5	-3.6	50.9	Peak [Scan]	H	100	0	74	-23.1	Pass	
3	14438.5	35.9	14.2	7.7	57.8	Peak [Scan]	V	100	268	74	-16.2	Pass	
4	17906.5	35.3	16.2	9.6	61.1	Peak [Scan]	V	100	195	74	-12.9	Pass	

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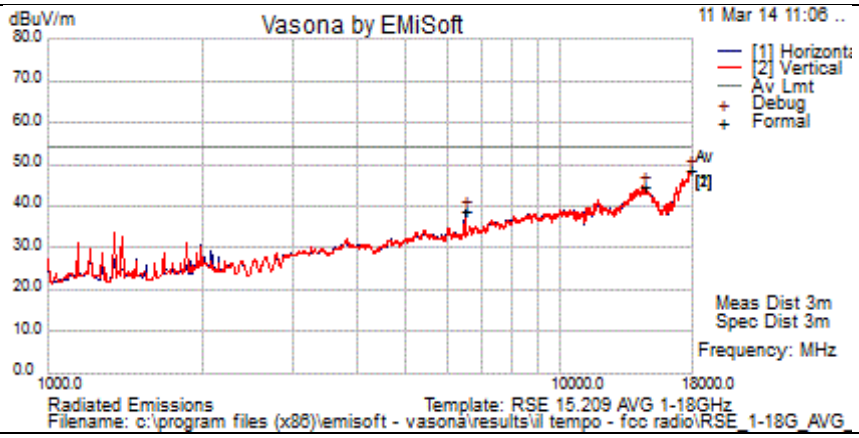
Graphical Test Results for 802.11G at 2437MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Ave Results for 802.11G (2437MHz)

Test Results Table

Formal Data

No	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
1	6499.5	33	8.8	-2.9	38.9	Peak [Scan]	H	150	205	54	-15.1	Pass	
2	14438.5	22.8	14.2	7.7	44.7	Peak [Scan]	V	150	206	54	-9.3	Pass	
3	17821.5	22.6	16.2	9.8	48.6	Peak [Scan]	V	150	0	54	-5.5	Pass	

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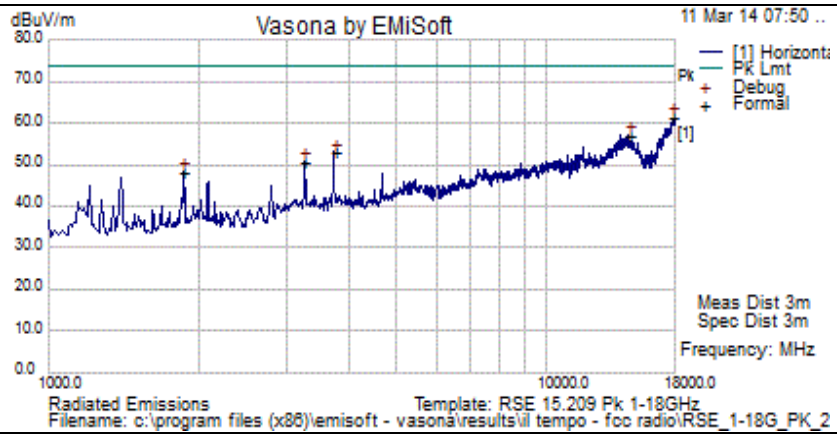
Graphical Test Results for 802.11G at 2462MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Peak Results for 802.11G (2462MHz)

Test Results Table

Formal Data

No	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
1	1867.107	50.6	4.4	-7	48	Peak [Scan]	H	100	0	74	-26	Pass	
2	3261.079	49.1	6	-4.4	50.7	Peak [Scan]	H	100	0	74	-23.3	Pass	
3	3737.297	49.8	6.5	-3.5	52.7	Peak [Scan]	H	100	0	74	-21.3	Pass	
4	14566	35.5	14.2	7.3	57	Peak [Scan]	V	100	148	74	-17.1	Pass	
5	17889.5	35.4	16.2	9.7	61.2	Peak [Scan]	H	100	48	74	-12.8	Pass	

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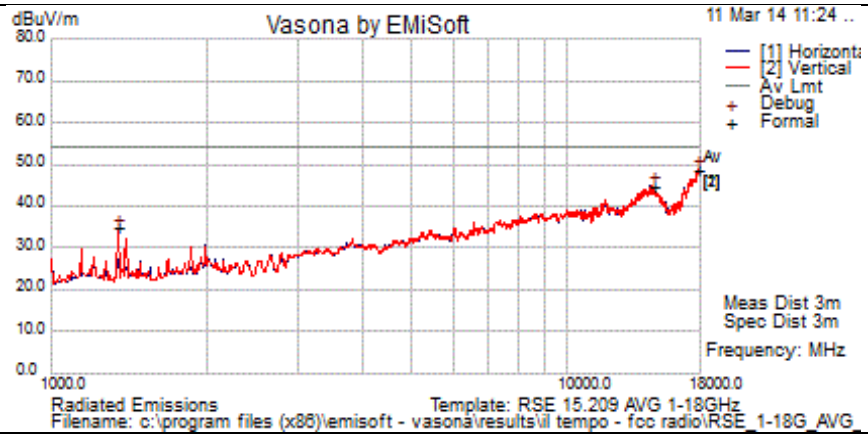
Graphical Test Results for 802.11G at 2462MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: RSE 1-18GHz Ave Results for 802.11G (2462MHz)

Test Results Table

Formal Data

No	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
1	1348.5	38.8	3.7	-7.9	34.6	Peak [Scan]	V	150	155	54	-19.4	Pass	
2	14566	23.2	14.2	7.3	44.7	Peak [Scan]	V	150	259	54	-9.3	Pass	
3	17821.5	22.7	16.2	9.8	48.7	Peak [Scan]	H	150	102	54	-5.3	Pass	

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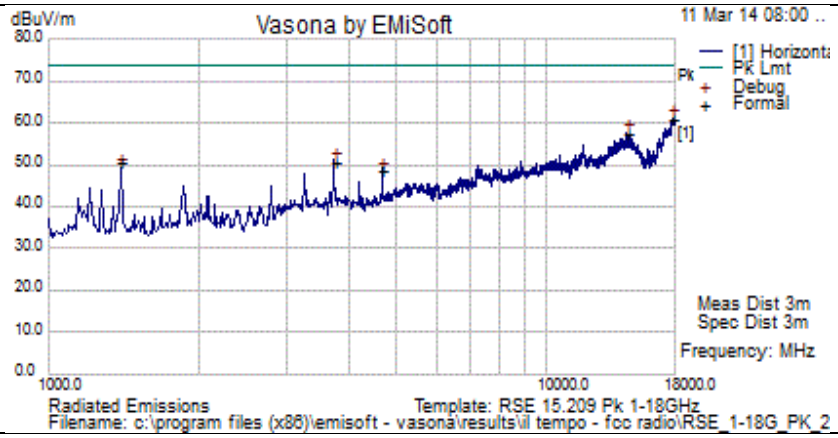
Graphical Test Results for HT20 at 2412MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT20 at 2412MHz (Peak)

Test Results Table

Formal Data

No	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
1	1399.684	54.5	3.8	-7.6	50.6	Peak	H	100	140	74	-23.4	Pass	
2	3739.114	47.6	6.5	-3.5	50.5	Peak [Scan]	H	100	0	74	-23.5	Pass	
3	4673.753	45.3	7.3	-4.3	48.3	Peak [Scan]	H	100	0	74	-25.7	Pass	
4	14464	35.4	14.2	7.8	57.4	Peak [Scan]	V	100	250	74	-16.6	Pass	
5	17838.5	35	16.2	9.7	61	Peak [Scan]	H	100	212	74	-13.1	Pass	

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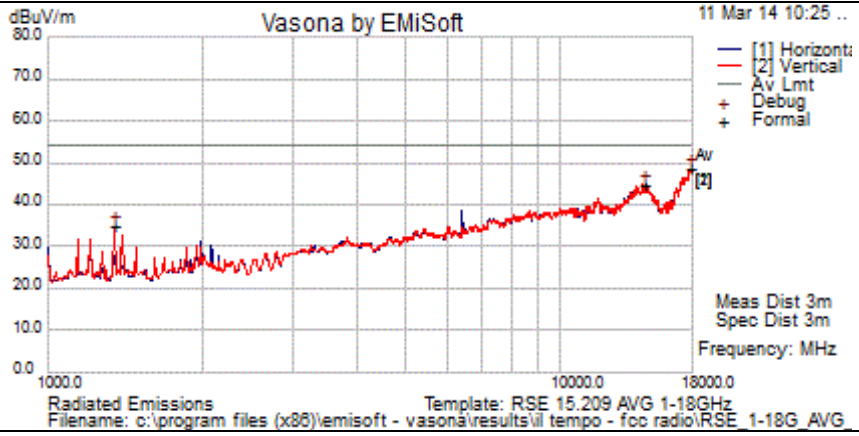
Graphical Test Results for HT20 at 2412MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1 - 15GHz Test Results for HT20 at 2412MHz (Ave)

Test Results Table

Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Ht cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail	Comments
1	1348.5	38.9	3.7	-7.9	34.7	Peak [Scan]	V	150	155	54	-19.3	Pass	
2	14447	22.5	14.2	7.9	44.7	Peak [Scan]	H	150	257	54	-9.4	Pass	
3	17821.5	22.6	16.2	9.8	48.6	Peak [Scan]	H	150	360	54	-5.5	Pass	

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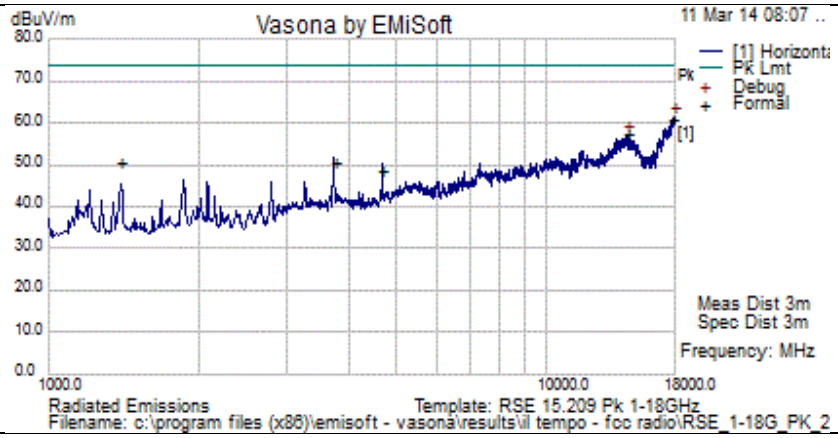
Graphical Test Results for HT20 at 2437MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT20 at 2437MHz (Peak)

Test Results Table

Formal Data

No	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
1	1399.684	54.5	3.8	-7.6	50.6	Peak	H	100	140	74	-23.4	Pass	
2	3739.114	47.6	6.5	-3.5	50.5	Peak [Scan]	H	100	0	74	-23.5	Pass	
3	4673.753	45.3	7.3	-4.3	48.3	Peak [Scan]	H	100	0	74	-25.7	Pass	
4	14464	35.4	14.2	7.8	57.4	Peak [Scan]	V	100	250	74	-16.6	Pass	
5	17838.5	35	16.2	9.7	61	Peak [Scan]	H	100	212	74	-13.1	Pass	

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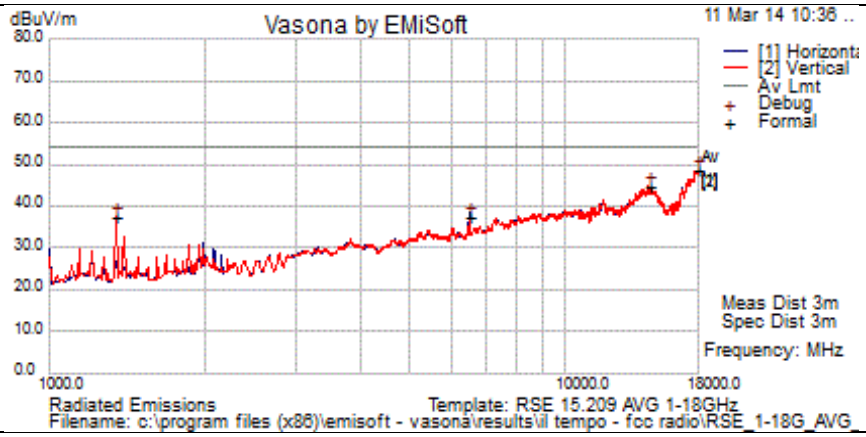
Graphical Test Results for HT20 at 2437MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT20 at 2437MHz (Ave)

Test Results Table

Formal Data

No	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
1	1348.5	41.6	3.7	-7.9	37.4	Peak [Scan]	V	150	155	54	-16.6	Pass	
2	6497.215	31.5	8.8	-2.9	37.4	Peak [Scan]	H	148	361	54	-16.6	Pass	
3	14438.5	22.8	14.2	7.7	44.7	Peak [Scan]	V	150	155	54	-9.3	Pass	
4	18000	22.6	16.3	9.7	48.6	Peak [Scan]	H	150	205	54	-5.4	Pass	

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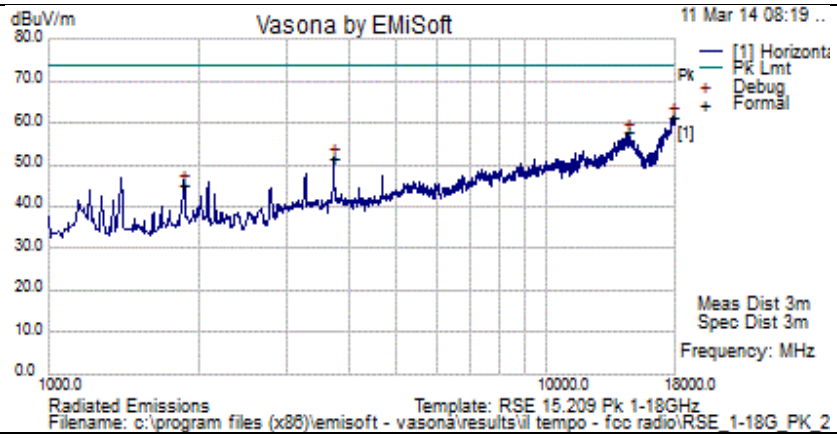
Graphical Test Results for HT20 at 2462MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT20 at 2462MHz (Peak)

Test Results Table

Formal Data

No	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
1	1864.234	47.8	4.4	-7	45.3	Peak [Scan]	H	100	0	74	-28.7	Pass	
2	3729.034	48.6	6.5	-3.6	51.5	Peak [Scan]	H	100	0	74	-22.5	Pass	
3	14455.5	35.4	14.3	8	57.6	Peak [Scan]	H	100	310	74	-16.4	Pass	
4	17872.5	35.5	16.2	9.7	61.4	Peak [Scan]	H	100	54	74	-12.6	Pass	

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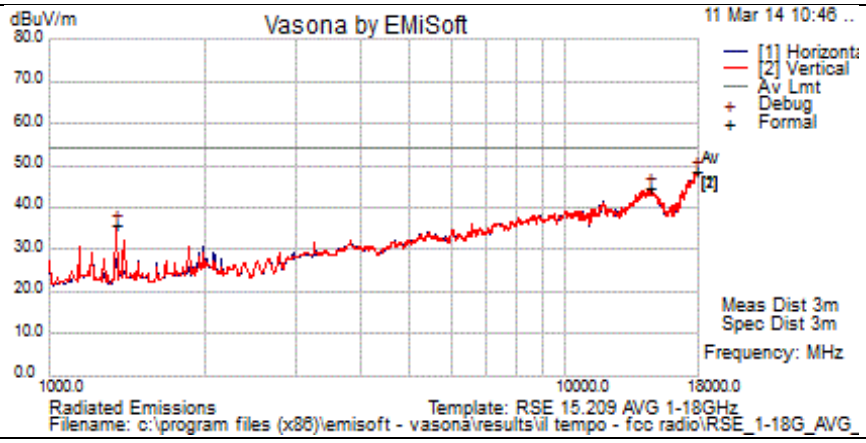
Graphical Test Results for HT20 at 2462MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1 - 18GHz Test Results for HT20 at 2462MHz (Ave)

Test Results Table

Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Ht cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail	Comments
1	1348.5	39.9	3.7	-7.9	35.7	Peak [Scan]	V	150	155	54	-18.3	Pass	
2	14438.5	22.7	14.2	7.7	44.6	Peak [Scan]	V	150	0	54	-9.4	Pass	
3	17821.5	22.6	16.2	9.8	48.5	Peak [Scan]	V	150	51	54	-5.5	Pass	

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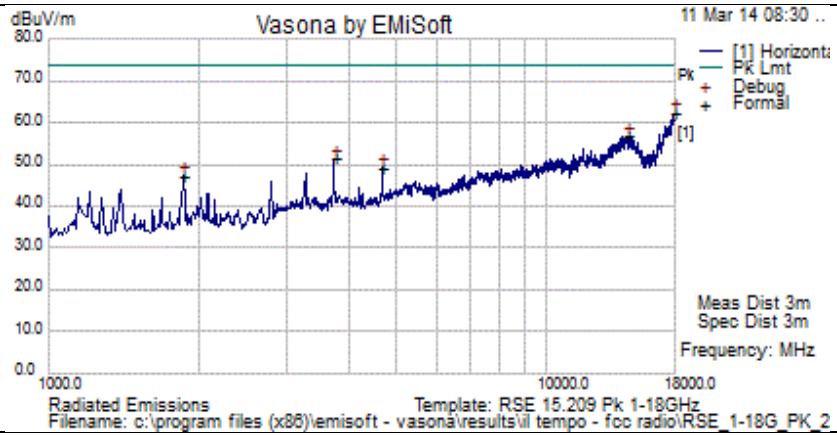
Graphical Test Results for HT40 at 2422MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1 - 18GHz Test Results for HT40 at 2422MHz (Peak)

Test Results Table

Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Ht cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail	Comments
1	1866.746	49.6	4.4	-7	47.1	Peak [Scan]	H	100	0	74	-26.9	Pass	
2	3737.042	48.3	6.5	-3.5	51.3	Peak [Scan]	H	100	0	74	-22.7	Pass	
3	4664.402	46	7.3	-4.	48.9	Peak [Scan]	H	100	0	74	-25.1	Pass	

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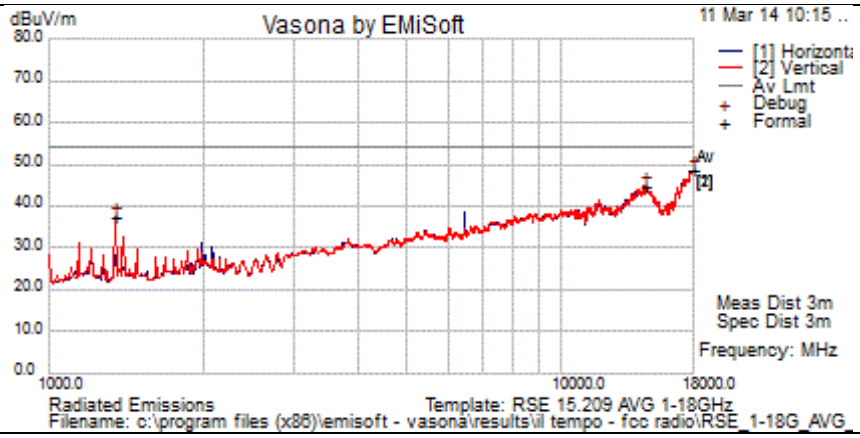
				4									
4	14464	34.6	14.2	7.8	56.7	Peak [Scan]	H	100	306	74	-17.3	Pass	
5	17940.5	36.3	16.3	9.7	62.2	Peak [Scan]	H	100	70	74	-11.8	Pass	

Graphical Test Results for HT40 at 2422MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT40 at 2422MHz (Ave)

Test Results Table

Formal Data

No	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
1	1348.5	41.6	3.7	-	37.4	Peak [Scan]	V	15	155	54	-16.6	Pass	

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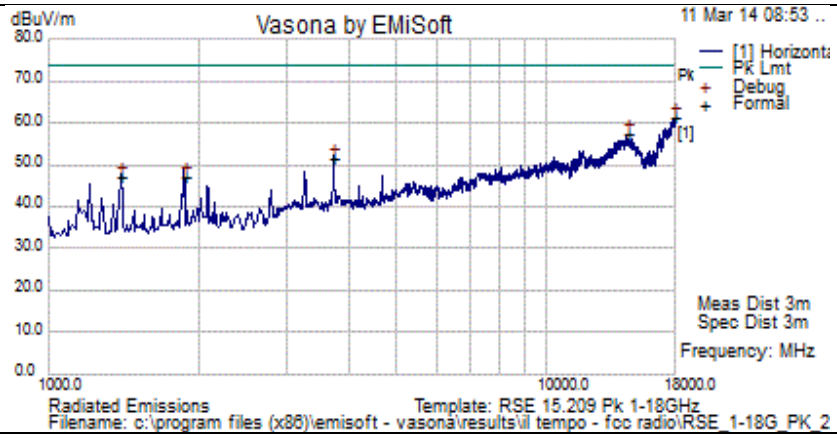
				7.9				0					
2	14438.5	22.9	14.2	7.7	44.7	Peak [Scan]	V	150	0	54	-9.3	Pass	
3	18000	22.5	16.3	9.7	48.5	Peak [Scan]	V	150	259	54	-5.5	Pass	

Graphical Test Results for HT40 at 2437MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT40 at 2437MHz (Peak)

Test Results Table

Formal Data

No	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
1	1398.966	51	3.8	-7.6	47.2	Peak [Scan]	H	100	0	74	-26.9	Pass	
2	1870.362	49.8	4.4	-7	47.2	Peak [Scan]	H	100	0	74	-26.8	Pass	

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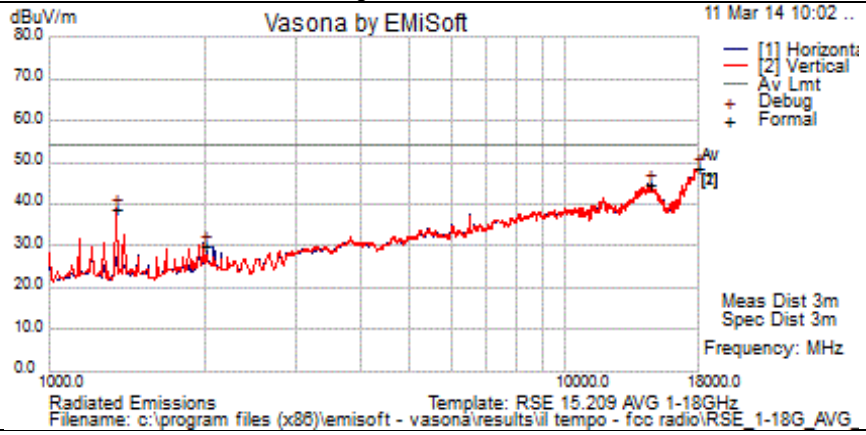
3	3727.368	48.7	6.5	-3.6	51.6	Peak [Scan]	H	100	0	74	-22.4	Pass	
4	14447	35.1	14.2	7.9	57.2	Peak [Scan]	V	100	187	74	-16.8	Pass	
5	17991.5	35.1	16.3	9.7	61.1	Peak [Scan]	H	100	249	74	-12.9	Pass	

Graphical Test Results for HT40 at 2437MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT40 at 2437MHz (Ave)

Test Results Table

Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Ht cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail	Comments

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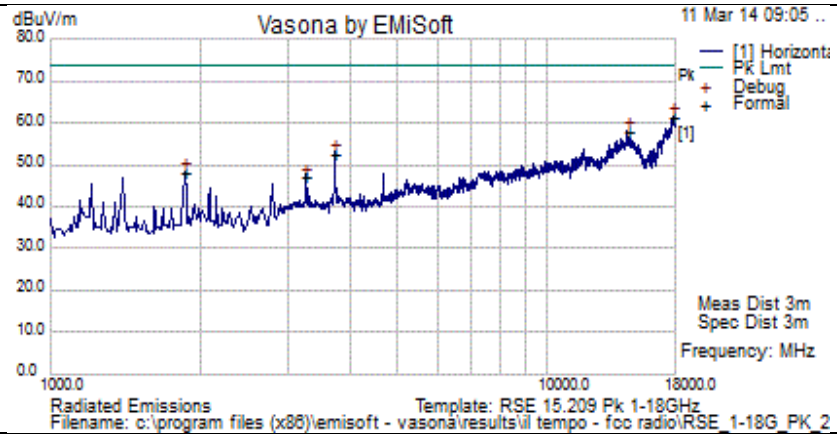
1	1348.5	43	3.7	-7.9	38.8	Peak [Scan]	V	150	155	54	-15.2	Pass	
2	1995.835	30.7	4.6	-5.3	30	Peak [Scan]	H	148	361	54	-24	Pass	
3	14438.5	22.8	14.2	7.7	44.7	Peak [Scan]	H	150	308	54	-9.3	Pass	
4	18000	22.5	16.3	9.7	48.6	Peak [Scan]	H	150	102	54	-5.4	Pass	

Graphical Test Results for HT40 at 2452MHz: 1 – 18GHz (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT40 at 2452MHz (Peak)

Test Results Table

Formal Data

No	Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Ht cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail	Comments

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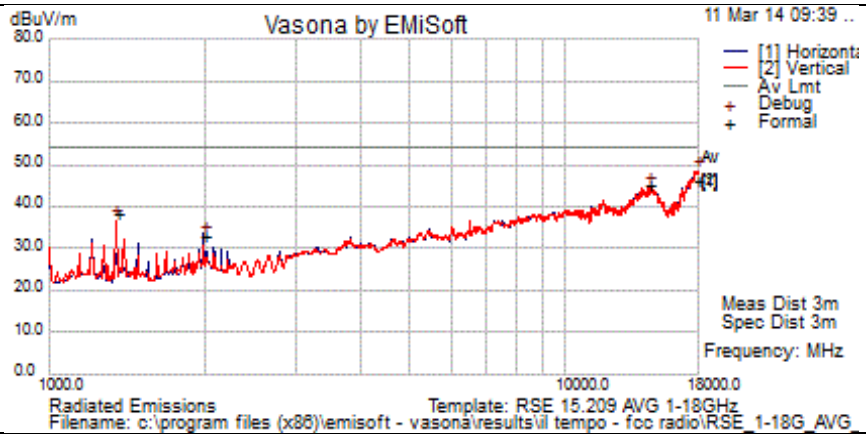
1	17804.5	35.5	16.2	9.8	61.5	Peak [Scan]	H	100	26	74	-12.5	Pass	
2	14447	35.9	14.2	7.9	58	Peak [Scan]	H	100	310	74	-16	Pass	
3	3729.046	49.5	6.5	-3.6	52.4	Peak [Scan]	H	100	0	74	-21.6	Pass	
4	1866.754	50.8	4.4	-7	48.2	Peak [Scan]	H	100	0	74	-25.8	Pass	
5	3264.404	45.2	6	-4.4	46.8	Peak [Scan]	H	100	0	74	-27.2	Pass	

Graphical Test Results for HT40 at 2452MHz: 1 – 18GHz (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: 1-18GHz Test Results for HT40 at 2452MHz (Ave)

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Test Results Table

Formal Data

No	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
1	1351.756	42.7	3.7	-7.9	38.5	Average	V	151	0	54	-15.5	Pass	
2	1995.144	33.5	4.6	-5.3	32.8	Peak [Scan]	H	102	0	54	-21.2	Pass	
3	14438.5	23	14.2	7.7	44.9	Peak [Scan]	H	150	154	54	-9.1	Pass	
4	17995.92	20.1	16.3	9.7	46.1	Average	V	100	365	54	-7.9	Pass	

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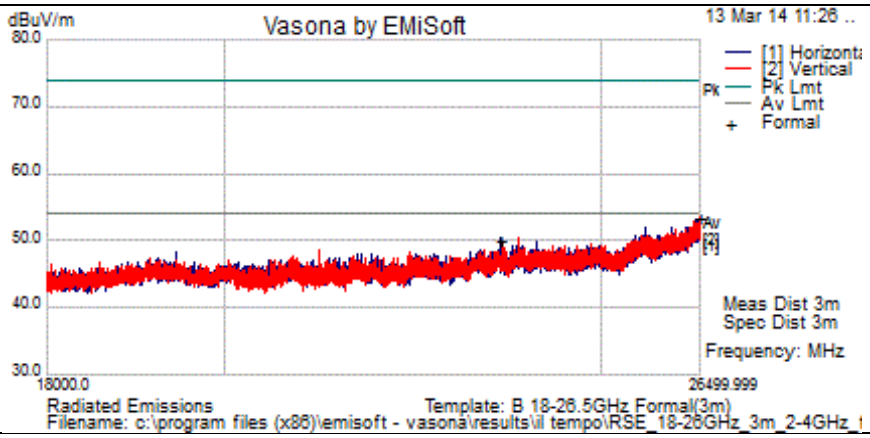
Graphical Test Results for 18-26.5GHz:

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Radiated Spurious Emissions 18-26.5Hz Test Results

Test Results Table

Formal Data

No	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
1	23539.484	32.5	0	17.5	50	Peak [Scan]	H	100	0	54	-4	Pass	Noise floor
2	26496.015	33.7	0	19.6	53.4	Peak [Scan]	V	100	207	54	-0.6	Pass	Noise floor

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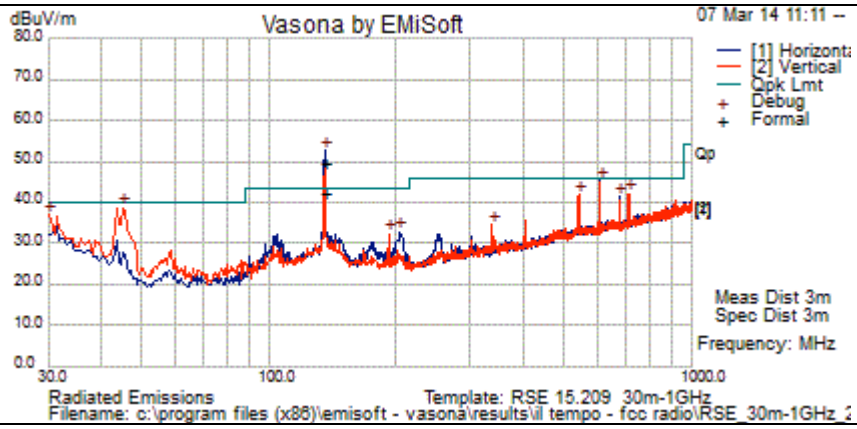
Radiated Receiver Spurious Measurements

Graphical Test Results

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Receiver Spurious 30 – 1000MHz

Test Results Table

Formal Data

No	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
1	135.168	27.3	1.1	13.6	41.9	Quasi Peak	H	200	0	43.5	-1.6	Pass	Digital Signal

Graphical Test Results

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements

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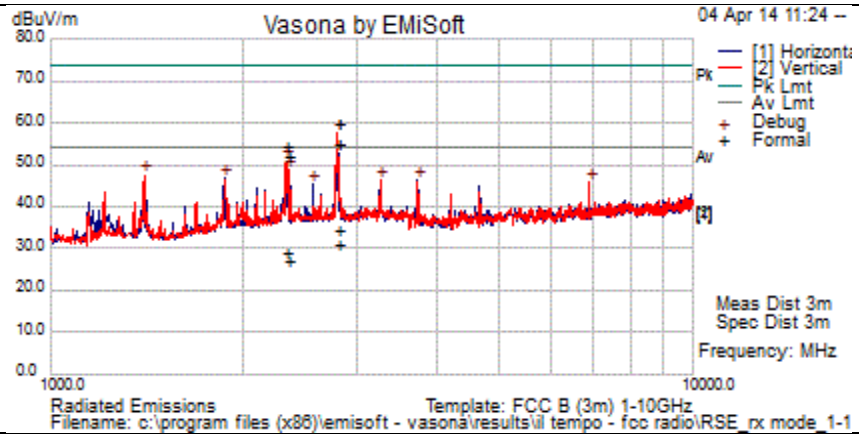

Title: Receiver Spurious 1 – 10GHz

Test Results Table

Formal Data

No	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
1	2332.002	58.9	4.6	-9.3	54.2	Peak	V	102	2	74	-19.8	Pass	
2	2345.5	56.6	4.6	-9.3	52	Peak	V	102	14	74	-22	Pass	
3	2809	58.1	5.1	-8.4	54.8	Peak	H	102	327	74	-19.2	Pass	
4	2800.002	63	5.1	-8.4	59.7	Peak	V	102	11	74	-14.3	Pass	
5	2332.001	33.7	4.6	-9.3	29	Average	V	102	2	54	-25	Pass	
6	2345.5	31.8	4.6	-9.3	27.2	Average	V	102	14	54	-26.8	Pass	
7	2809	34.2	5.1	-8.4	30.9	Average	H	102	327	54	-23.1	Pass	
8	2800.001	37.8	5.1	-8.4	34.4	Average	V	102	11	54	-19.6	Pass	

Graphical Test Results

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements

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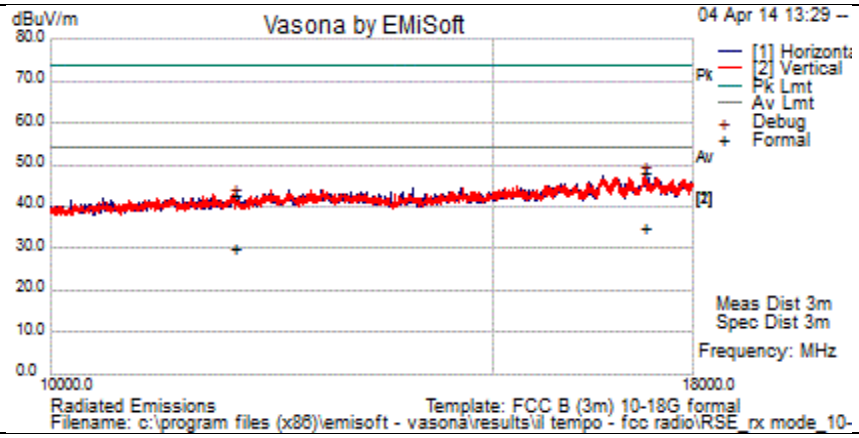

Title: Receiver Spurious 10 – 18GHz

Test Results Table

Formal Data

No	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
1	17224	44.3	14.6	-10.7	48.2	Peak	V	102	0	74	-25.8	Pass	
2	11830.911	45.8	11.6	-14.6	42.7	Peak	H	102	0	74	-31.3	Pass	
3	17224	31	14.6	-10.7	34.9	Average	V	102	0	54	-19.1	Pass	
4	11830.911	32.8	11.6	-14.6	29.7	Average	H	102	0	54	-24.3	Pass	

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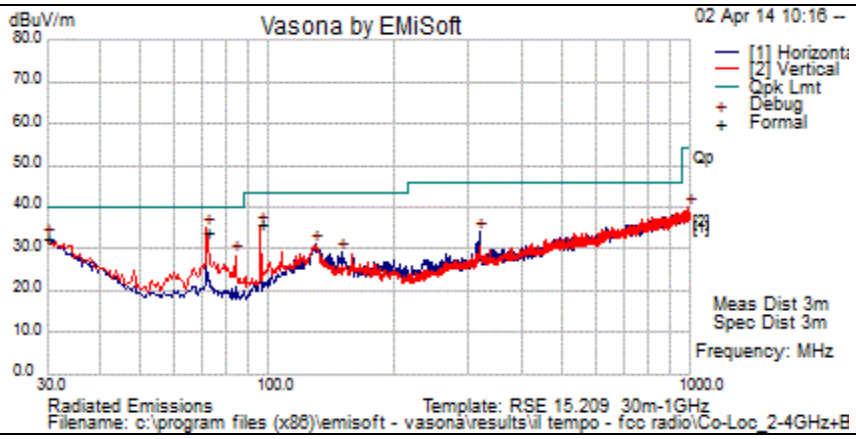
Co-Location Radiated Spurious Emissions

15.205 & RSS-210 sec2.7:

Radiated emissions which fall in the restricted bands, as defined in Sec. 15.205(a), must also comply with the radiated emission limits specified in Sec. 15.209(a).

Graphical Test Results

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Co-Location Radiated Spurious Emissions Results 30 - 1000MHz

Test Results Table

Formal Data

No	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
1	72.009	25	0.8	8.1	33.8	Quasi Peak	V	102	282	40	-6.2	Pass	
2	30	11.6	0.5	20.3	32.4	Peak [Scan]	V	100	136	40	-7.6	Pass	
3	95.96	25.5	0.9	9.2	35.6	Peak [Scan]	V	100	334	43.5	-7.9	Pass	

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15.205 / RSS-210 2.7:
Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Using Vasona, configure the spectrum analyzer as shown below (be sure to enter all losses between the transmitter output and the spectrum analyzer). Place the radio in continuous transmit mode.

Span:	1GHz – 18 GHz
Reference Level:	80 dBuV
Attenuation:	10 dB
Sweep Time:	Coupled
Resolution Bandwidth:	1MHz
Video Bandwidth:	1 MHz for peak, 10 Hz for average
Detector:	Peak

Terminate the access Point RF ports with 50 ohm loads.

Maximize Turntable (find worst case table angle), Maximize Antenna (find worst case height)

Save 2 plots: 1) Average Plot (Vertical and Horizontal), Limit= 54dBuV/m @3m
2) Peak plot (Vertical and Horizontal), Limit = 74dBuV/m @3m

Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands.

This report represents the worst case data for all supported operating modes and antennas. System was evaluated up to 40GHz but there were no measurable emissions above 18GHz.

Note: A Notch Filter was used during formal testing from 1 – 18GHz to help prevent the front end of the analyzer from over loading. The Notch filters used are designed to suppress Tx fundamental frequency but do not effect harmonics of the fundamental frequency from being measured

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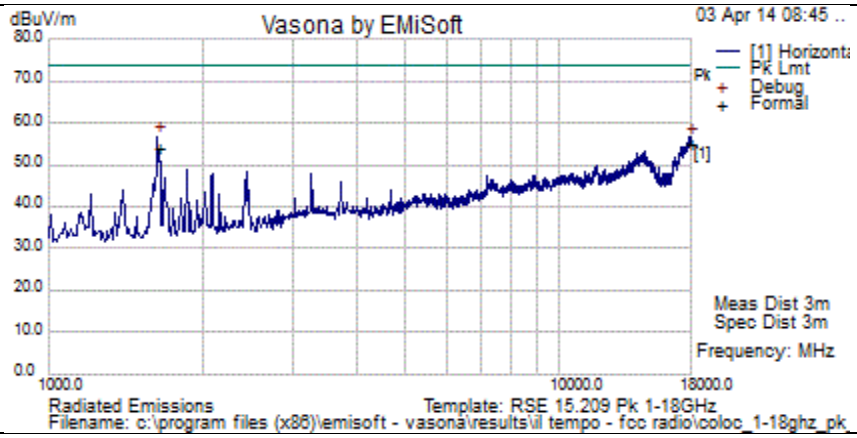
Graphical Test Results for 802.11b & Bluetooth (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Co-Location Radiated Spurious Emissions Results for 802.11b & Bluetooth: 1-18GHz (Peak)

Test Results Table

Formal Data

No	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
1	1637.501	57	4.7	-7.9	53.8	Peak	H	102	336	74	-20.2	Pass	
2	17991.5	26.5	18.9	9.7	55.1	Peak	H	102	336	74	-18.9	Pass	

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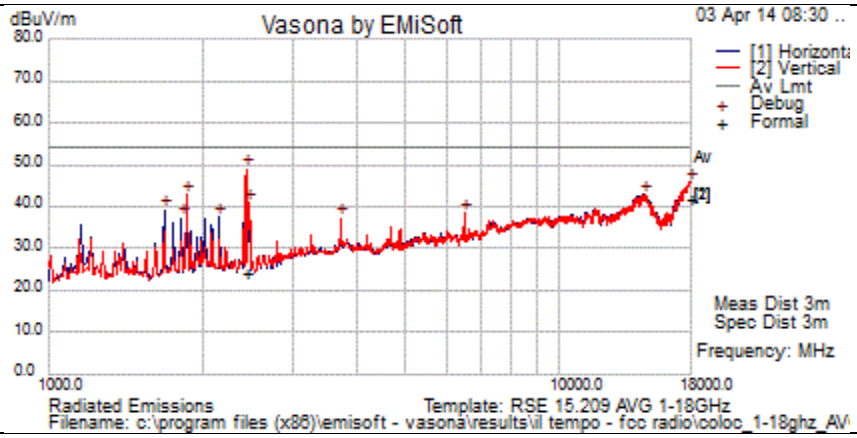
Graphical Test Results for 802.11b & Bluetooth (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Co-Location Radiated Spurious Emissions Results for 802.11b & Bluetooth: 1-18GHz (Average)

Test Results Table

Formal Data

No	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
1	2436.501	24.4	5.9	-6.2	24.1	Average	V	102	135	54	-29.9	Pass	
2	17957.5	13.3	18.9	9.6	41.8	Average	V	102	135	54	-12.2	Pass	

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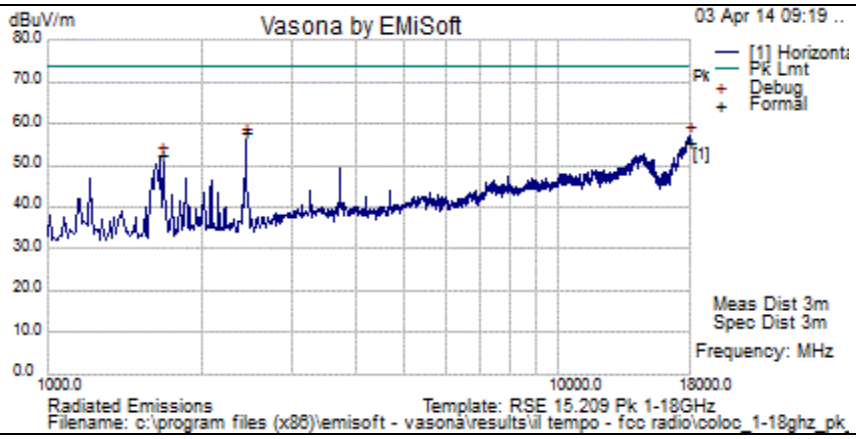
Graphical Test Results for 802.11g & Bluetooth (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Co-Location Radiated Spurious Emissions Results for 802.11g & Bluetooth: 1-18GHz (Peak)

Test Results Table

Formal Data

No	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
1	1662.992	54.9	4.7	-7.4	52.3	Peak	H	102	360	74	-21.7	Pass	
2	2445.001	58.1	5.9	-6.2	57.8	Peak	V	102	305	74	-16.2	Pass	
3	17966	26.9	18.9	9.6	55.5	Peak	V	102	305	74	-18.5	Pass	

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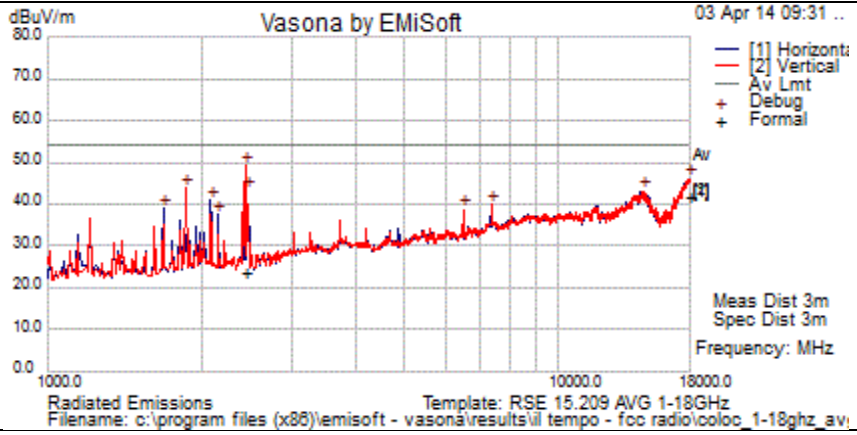
Graphical Test Results for 802.11g & Bluetooth (Average)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Co-Location Radiated Spurious Emissions Results for 802.11g & Bluetooth: 1-18GHz (Average)

Test Results Table

Formal Data

No	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
1	2436.501	24	5.9	-6.2	23.7	Average	V	102	187	54	-30.3	Pass	
2	17949	13.3	18.9	9.7	41.8	Average	V	102	187	54	-12.2	Pass	

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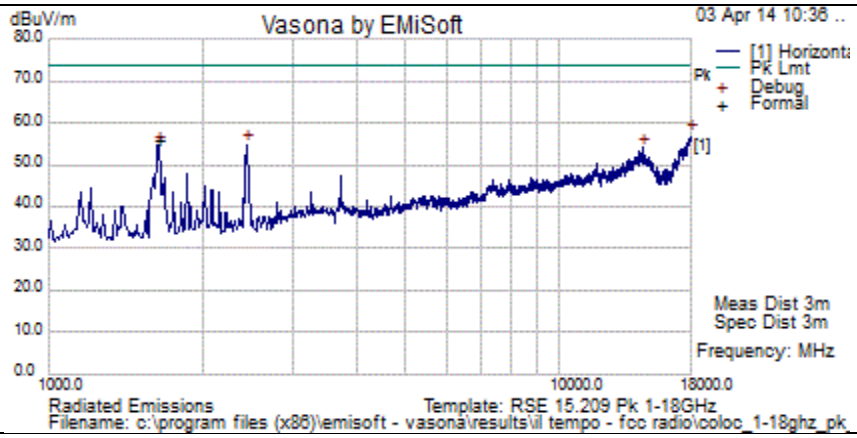
Graphical Test Results for HT20 & Bluetooth (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Co-Location Radiated Spurious Emissions Results for HT20 & Bluetooth: 1-18GHz (Peak)

Test Results Table

Formal Data

No	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
1	1637.501	59.2	4.7	-7.9	56	Peak	H	102	339	74	-18	Pass	

Graphical Test Results for HT20 & Bluetooth (Average)

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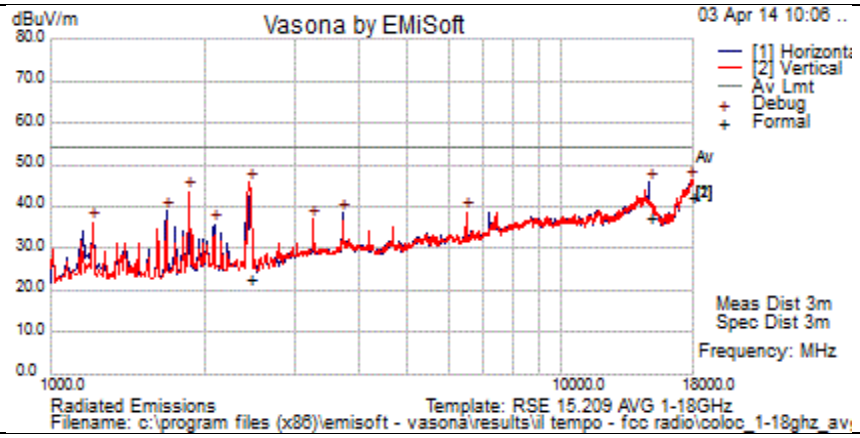
Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Co-Location Radiated Spurious Emissions Results for HT20 & Bluetooth: 1-18GHz (Average)

Test Results Table

Formal Data

No	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
1	14821	14.6	16.6	6.2	37.4	Average	H	102	30	54	-16.6	Pass	
2	2453.501	23.1	5.9	-6.2	22.8	Average	V	102	336	54	-31.2	Pass	
3	17949	13.7	18.9	9.7	42.2	Average	H	102	32	54	-11.8	Pass	

Graphical Test Results for HT40 & Bluetooth (Peak)

Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements

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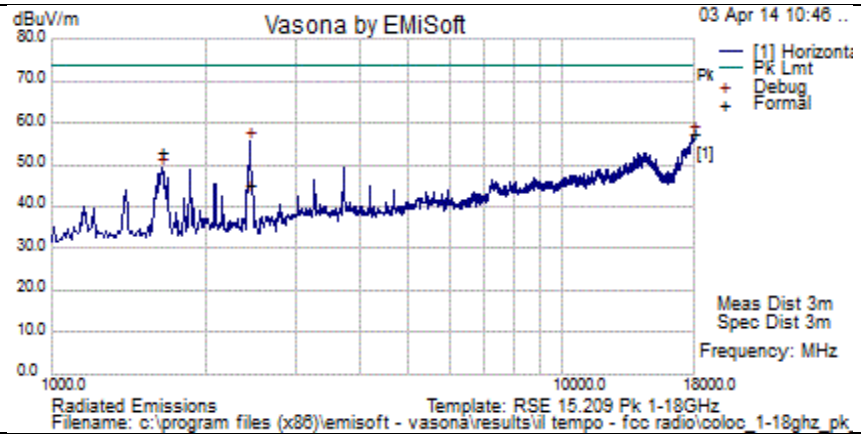

Title: Co-Location Radiated Spurious Emissions Results for HT40 & Bluetooth: 1-18GHz (Peak)

Test Results Table

Formal Data													
No	**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**
1	1645.393	56	4.7	-7.8	52.9	Peak	H	102	361	74	-21.1	Pass	
2	2445	45.5	5.9	-6.2	45.2	Peak	V	102	105	74	-28.8	Pass	
3	17906.5	27.2	18.9	9.6	55.7	Peak	V	102	105	74	-18.3	Pass	

Graphical Test Results for HT40 & Bluetooth (Average)

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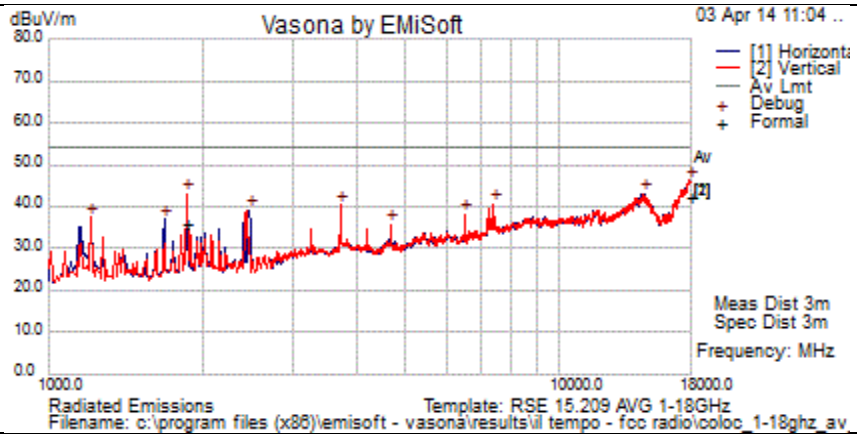
Note that the data displayed on the plots detailed in this appendix were measured using a 'Peak Detector'. Please refer to the results table for the detectors used during formal measurements



Title: Co-Location Radiated Spurious Emissions Results for HT40 & Bluetooth: 1-18GHz (Average)

Test Results Table

Formal Data													
No	**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**
1	1867.001	37.7	5.1	-7	35.8	Average	V	102	358	54	-18.2	Pass	
2	18000	13.6	18.9	9.7	42.3	Average	V	102	358	54	-11.7	Pass	

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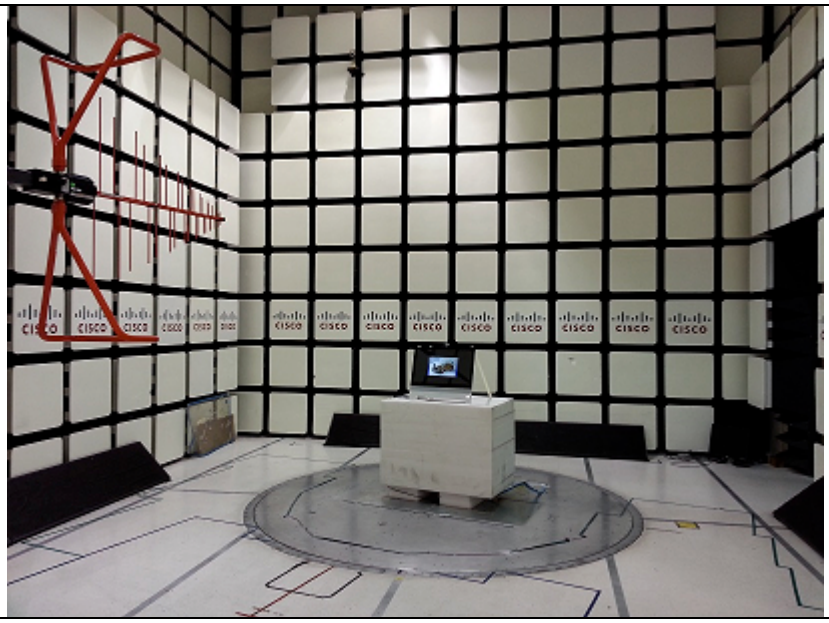
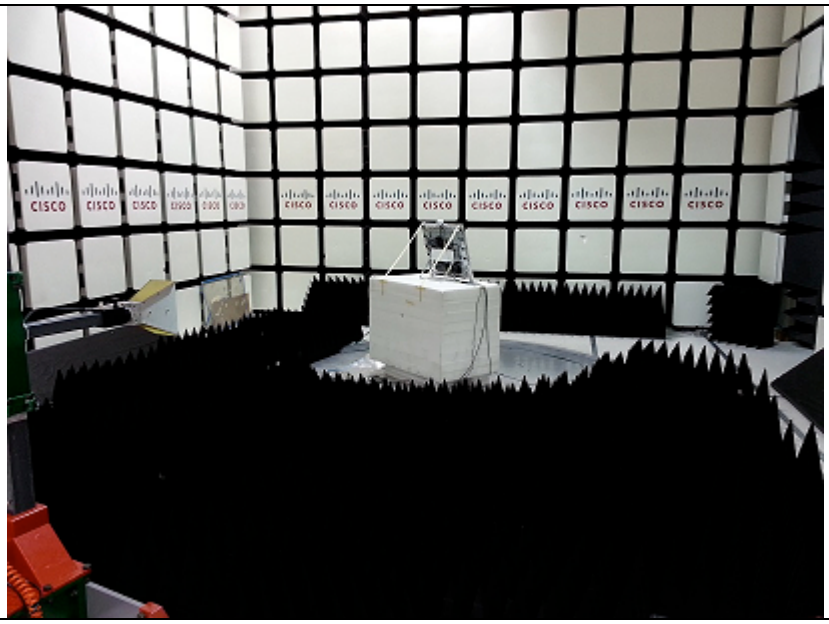
Physical Test arrangement Photograph:



Title: Radiated Spurious Emissions Test Configuration 30M - 1000MHz



Title: Radiated Spurious Emissions Test Configuration 1G - 18GHz

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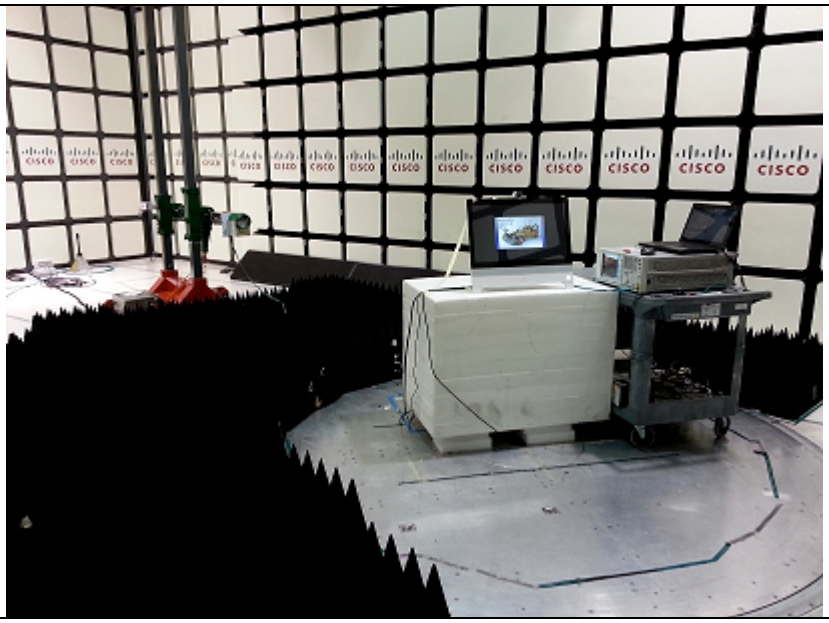

Title: Radiated Spurious Emissions Test Configuration 18 – 40GHz

Title: Co-Location Radiated Spurious Emissions 1-18GHz Test Setup

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Maximum Permissible Exposure (MPE) Calculations

15.247: U-NII devices are subject to the radio frequency radiation exposure requirements specified in Sec. 1.1307(b), Sec. 2.1091 and Sec. 2.1093 of this chapter, as appropriate. All equipment shall be considered to operate in a ``general population/uncontrolled'' environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

Given

E=√(30*P*G)/d and S=E^2/3770

where

E=Field Strength in Volts/meter
P=Power in Watts
G=Numeric Antenna Gain
d=Distance in meters
S=Power Density in mW/cm^2

Combine equations and rearrange the terms to express the distance as a function of the remaining variables:

d=√((30*P*G)/(3770*S))

Changing to units of power in mW and distance in cm, using:

P(mW)=P(W)/1000 d(cm)=100*d(m)

yields

d=100*√((30*(P/1000)*G)/(3770*S))
d=0.282*√(P*G/S)

where

d=Distance in cm
P=Power in mW
G=Numerica Antenna Gain
S=Power Density in mW/cm^2

Substituting the logarithmic form of power and gain using:

P(mW)=10^(P(dBm)/10) G(numeric)=10^(G(dBi)/10)

yields

d=0.282*10^((P+G)/20)/√S Equation (1)

and

s=((0.282*10^((P+G)/20))/d)^2 Equation (2)

where

d=MPE distance in cm
P=Power in dBm
G=Antenna Gain in dBi
S=Power Density in mW/cm^2

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Equation (1) and the measured peak power are used to calculate the MPE distance. Note that for mobile or fixed location transmitters such as an access point, the minimum separation distance is 20 cm even if the calculations indicate that the MPE distance may be less.

S=1mW/cm^2 maximum. The highest supported antenna gain is 4.61dBi. Using the peak power levels recorded in the test report along with Equation 1 above, the MPE distances are calculated as follows.

MPE Calculations:

Frequency (MHz)	Power Density (mW/cm^2)	Peak Transmit Power (dBm)	Antenna Gain (dBi)	MPE Distance (cm)	Limit (cm)	Margin (cm)
2412	1	15.89	4.61	**2.99**	20	17.01
2437	1	16.22	4.61	**3.10**	20	16.90
2462	1	15.64	4.61	**2.90**	20	17.10

To maintain compliance, installations will assure a separation distance of at least 20cm.

Using Equation 2, the MPE levels (s) at 20 cm are calculated as follows:

Frequency (MHz)	MPE Distance (cm)	Peak Transmit Power (dBm)	Antenna Gain (dBi)	Power Density (mW/cm^2)	Limit (mW/cm^2)	Margin (mW/cm^2)
2412	20	15.89	4.61	**0.02**	1	0.98
2437	20	16.22	4.61	**0.02**	1	0.98
2462	20	15.64	4.61	**0.02**	1	0.98

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Appendix B: Abbreviation Key and Definitions

The following table defines abbreviations used within this test report.

Abbreviation	Description	Abbreviation	Description
EMC	Electro Magnetic Compatibility	°F	Degrees Fahrenheit
EMI	Electro Magnetic Interference	°C	Degrees Celsius
EUT	Equipment Under Test	Temp	Temperature
ITE	Information Technology Equipment	S/N	Serial Number
TAP	Test Assessment Schedule	Qty	Quantity
ESD	Electro Static Discharge	emf	Electromotive force
EFT	Electric Fast Transient	RMS	Root mean square
EDCS	Engineering Document Control System	Qp	Quasi Peak
Config	Configuration	Av	Average
CIS#	Cisco Number (unique identification number for Cisco test equipment)	Pk	Peak
Cal	Calibration	kHz	Kilohertz ($1x10^3$)
EN	European Norm	MHz	MegaHertz ($1x10^6$)
IEC	International Electro technical Commission	GHz	Gigahertz ($1x10^9$)
CISPR	International Special Committee on Radio Interference	H	Horizontal
CDN	Coupling/Decoupling Network	V	Vertical
LISN	Line Impedance Stabilization Network	dB	decibel
PE	Protective Earth	V	Volt
GND	Ground	kV	Kilovolt ($1x10^3$)
L1	Line 1	µV	Microvolt ($1x10^{-6}$)
L2	Line2	A	Amp
L3	Line 3	µA	Micro Amp ($1x10^{-6}$)
DC	Direct Current	mS	Milli Second ($1x10^{-3}$)
RAW	Uncorrected measurement value, as indicated by the measuring device	µS	Micro Second ($1x10^{-6}$)
RF	Radio Frequency	µS	Micro Second ($1x10^{-6}$)
SLCE	Signal Line Conducted Emissions	m	Meter
Meas dist	Measurement distance	Spec dist	Specification distance
N/A or NA	Not Applicable	SL	Signal Line (or Telecom Line)
P	Power Line	L	Live Line
N	Neutral Line	R	Return
S	Supply	AC	Alternating Current

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Appendix C: Test Equipment Used to perform the test

Equip#	Manufacturer/ Model	Description	Last Cal	Next Due
40603	Agilent/HP / E4440A	Spectrum Analyzer	1-Nov-13	1-Nov-14
49517	CRISTEK/ MK-AMS-L16-AMS-A060	SMA 5ft cable	04/08/2013	8-Apr-14
41987	MURATA ELECTRONICS/ MXGS83RK3000	Special Radio Test Adaptor Cable	7/3/2013	3-Jul-14
40641	ROHDE & SCHWARZ / ESU26	EMI Test Receiver, 26GHZ	24-Jun-13	24 Jun 2014
25658	MICRO-COAX/ UFB311A-1-0840-504504	Coaxial Cable, 84.0 in. to 18GHz	2/14/2014	14-Feb-15
21117	MICRO-COAX/ UFB311A-0-2484-520520	Coaxial Cable-18Ghz	8/23/2013	23-Aug-14
49563	HUBER + SUHNER/ Sucoflex 106A	Coaxial Cable, 8m	8/23/2013	23-Aug-14
30654	SUNOL SCIENCES/ JB1	Combination Antenna, 30MHz-2GHz	7-Nov-13	31-Oct-14
27236	YORK/ CNE V	COMPARISON NOISE EMITTER	N/A	N/A
41935	NEWPORT/ iBTHP-5-DB9	5 inch Temp/RH/Press Sensor w/20ft cable	25-Mar-13	25-Mar-14
35237	STANLEY/ 33-696	TAPE RULE 5M	5/14/2013	14-May-14
21638	Rosenberger/ 32S15R-0.5E3	SMA Termination (m), 50 Ohm	10/22/2013	22-Oct-14
5971	Agilent/HP / 83712B	SYNTHESIZED CW GENERATOR	5-Jul-13	3-Jul-14
47299	Agilent/HP / N9030A	PXA Signal Analyzer	17-Sep-13	16-Sep-14
41979	Cisco / 1840	18-40GHz EMI Test Head/Verification Fixture	7/9/2013	9-Jul-14
25662	MICRO-COAX/ UFB311A-1-0840-504504	Coaxial Cable, 84.0 in. to 18GHz	2/27/2014	27-Feb-15
5691	MITEQ/ NSP1800-25-S1	PREAMPLIFIER	1/27/2014	27-Jan-15
47286	HUBER + SUHNER/ Sucoflex 102E	40GHz Cable K Connector	5/30/2013	30-May-14
49446	Micro-Tronics/ BRC50705-02	Notch Filter	3/19/2013	19-Mar-14
4882	EMCO/ 3115	HORN ANTENNA	8-Jul-13	28-Jun-14
40597	CISCO/ Above 1GHz Site Cal	1GHz Cispr Site Verification	5/30/2013	30-May-14
49443	Micro-Tronics/ BRM50702-02	Band Reject Filter	3/19/2013	19-Mar-14
49445	Micro-Tronics/ BRC50704-02	Notch Filter	3/19/2013	19-Mar-14

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49444	Micro-Tronics/ BRC50703-02	Notch Filter	03/19/2013	19-Mar-14
49447	Micro-Tronics/ BRC50705-02	Notch Filter	3/20/2014	20-Mar-15
35605	Micro-Tronics/ BRC50704-02	Notch Filter	3/20/2014	20-Mar-15
49521	CRISTEK/ MK-AMS-L16-AMS-A060	SMA 5ft cable	4/8/2013	8-Apr-14
47304	FAIRVIEW MICROWAVE/ ST6S-10	SMA Termination 6GHz	10/22/2013	22-Oct-14
4924	Rohde & Schwarz/ ESHS30	EMI Receiver (9KHz-30MHz)	28-JAN-14	28-JAN-15
8195	TTE/ H613-150K-50-21378	Hi Pass Filter - 150KHz cutoff	08-JAN-14	08-JAN-15
8471	Bird/ 5-T-MB	50 Ohm, 5W Terminator,Type BNC	12-SEP-13	12-SEP-14
7036	HP/ E7401A	Spectrum Analyzer	11-SEP-13	11-SEP-14
18981	Fischer Custom Communications/ FCC-801-M2-32A	Power Line Coupling/Decoupling Network	02-MAY-13	02-MAY-14
19337	Fischer Custom Communications/ FCC-LISN-50/250-50-2-01	LISN	06-SEP-13	06-SEP-14
23874	Fischer Custom Communications/ FCC-LISN-PA-NEMA-5-15	Power Adaptor, Polarized 120VAC	06-SEP-13	06-SEP-14
36033	York/ CNE V	Comparison Noise Emitter	Cal Not Required	N/A
37006	Extech/ 380282	Digital Multimeter	09-DEC-13	09-DEC-14
39110	Coleman/ RG-223	25 ft BNC cable	25-NOV-13	25-NOV-14
46075	Newport / iBTHP-5-DB9	5 inch Temp/RH/Press Sensor w/20ft cable	21-OCT-13	21-OCT-14

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Appendix D: Test Procedures

Measurements were made in accordance with

- ET docket 96-8, KDB Publication No. 558074
- Measurement method of spurious emission tolerance to the International Telecommunication Union (ITU) Recommendation SM329.
- ANSI C63.10
- ANSI C63.4

Test procedures are summarized below

6dB Bandwidth	EDCS # - 422115
26dB Bandwidth	EDCS # - 422115
Co-Located Transmitter	EDCS # - 422118
Conducted Spurious Test	EDCS # - 422119
Peak Transmit Power Measurement	EDCS # - 422123
Power Spectral Density	EDCS # - 422113
Radiated Band Edge	EDCS # - 422124
Radiated Spurious Test	EDCS # - 422125

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