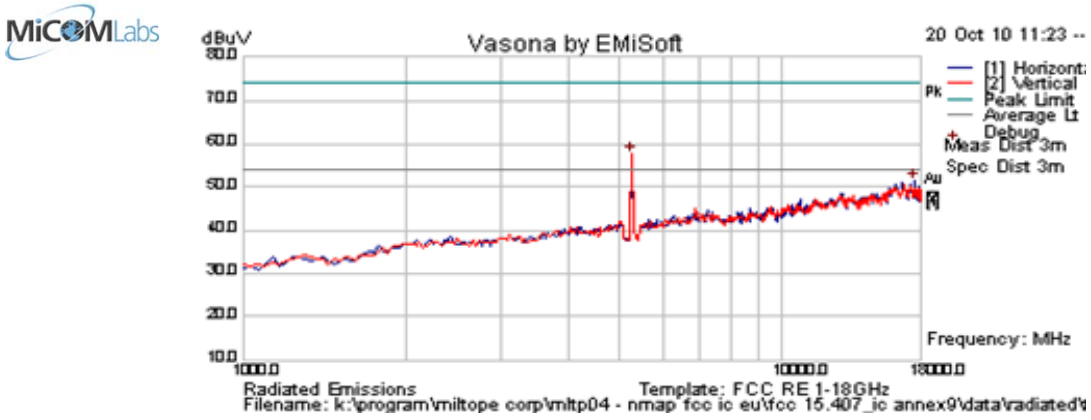
BAND: 5250 – 5350 MHz: 802.11n HT-20

Test Freq.	5260 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

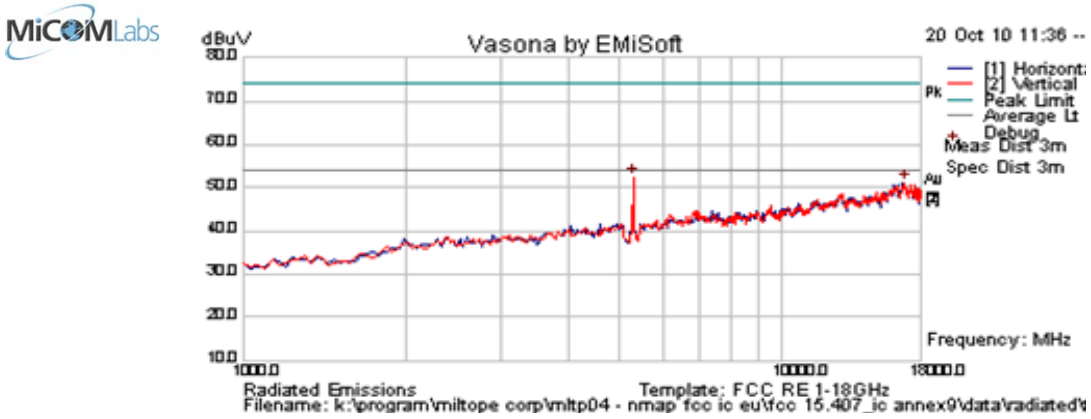


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5258.517	62.5	4.6	-9.5	57.7	Peak [Scan]	V	--	--	--	--	n/a	FUND
17591.182	41.4	8.8	1.1	51.3	Peak [Scan]	H	150	0	54.0	-2.7	Pass	NRB

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

Test Freq.	5300 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

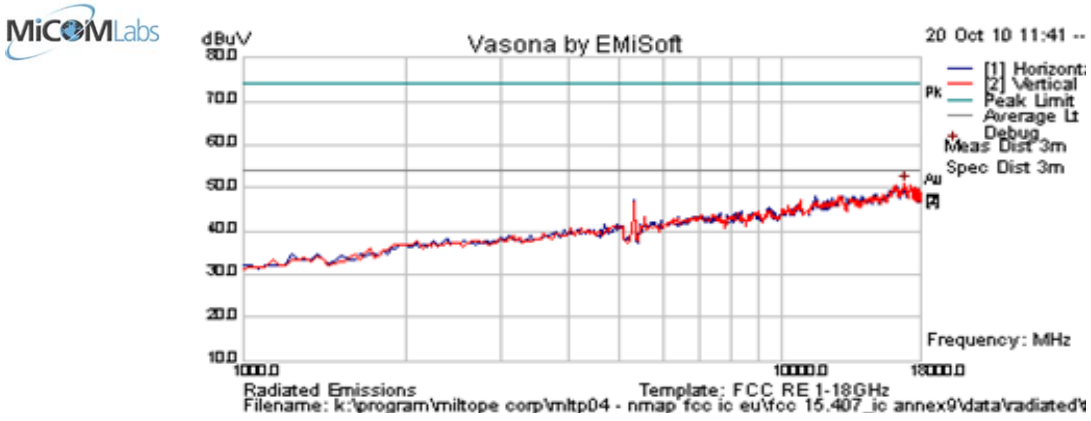


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5292.585	57.4	4.6	-9.5	52.5	Peak [Scan]	V	--	--	--	--	n/a	FUND
16841.683	40.7	8.6	1.8	51.0	Peak [Scan]	V	200	0	54.0	-3.0	Pass	NRB

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

Test Freq.	5320 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



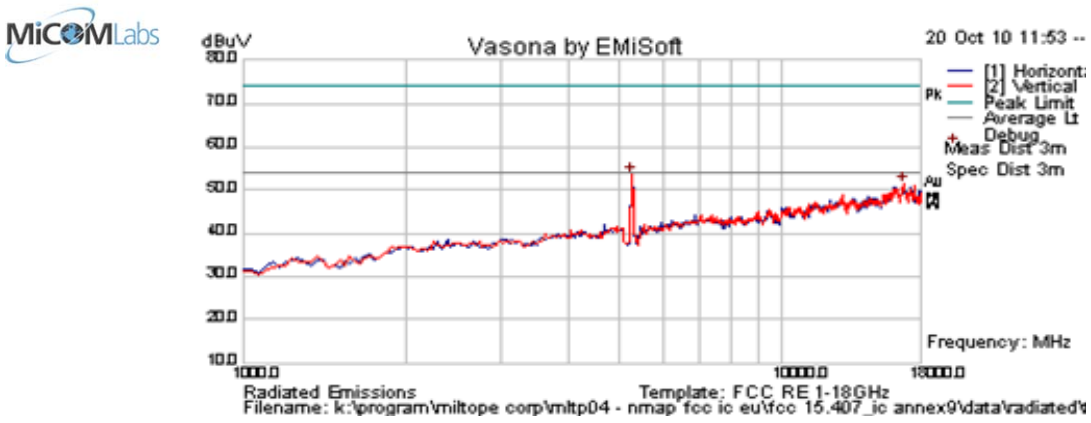
Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
16841.683	40.5	8.6	1.8	50.8	Peak [Scan]	V	150	0	54.0	-3.2	Pass	NRB

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

BAND: 5250 – 5350 MHz: 802.11n HT-40

Test Freq.	5270 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	17	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

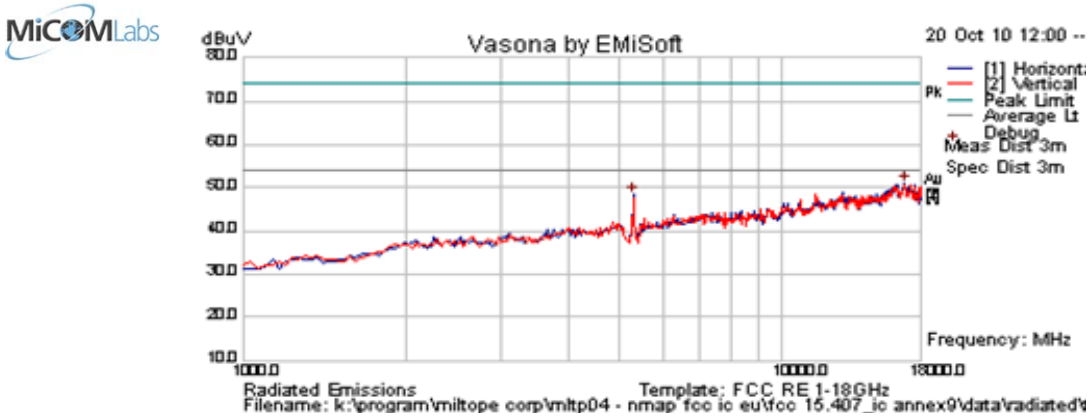


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5258.517	58.3	4.6	-9.5	53.4	Peak [Scan]	V	--	--	--	--	n/a	FUND
16739.479	41.1	8.7	1.5	51.3	Peak [Scan]	V	100	0	54.0	-2.7	Pass	NRB

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

Test Freq.	5310 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	17	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

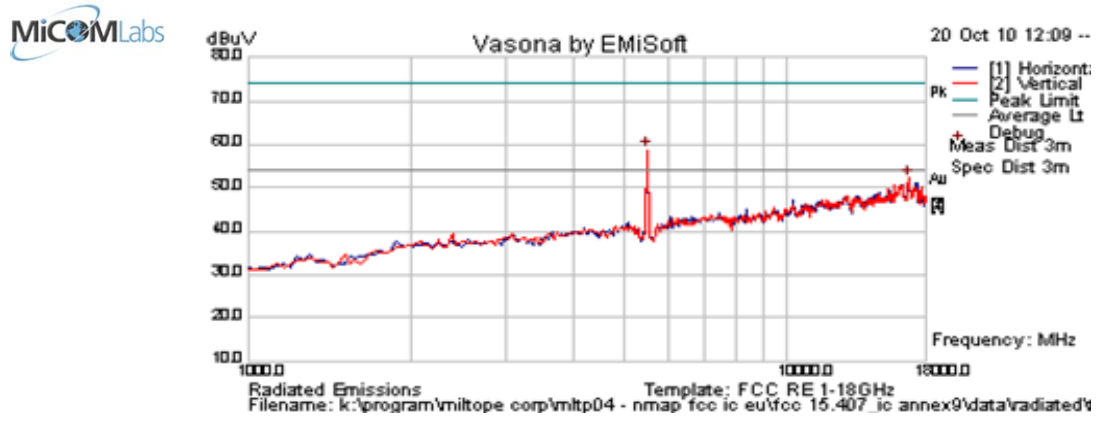
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
16841.683	40.5	8.6	1.8	50.9	Peak [Scan]	H	150	0	54.0	-3.1	Pass	NRB
5292.58517	53.3	4.6	-9.5	48.4	Peak [Scan]	H	--	--	--	--	n/a	FUND

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

901167-2 Antenna – Radiated Spurious Emissions – Above 1 GHz

BAND: 5470 – 5725 MHz: 802.11a

Test Freq.	5500 MHz	**Engineer**	SB
Variant	802.11a; 6.5 Mbs	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

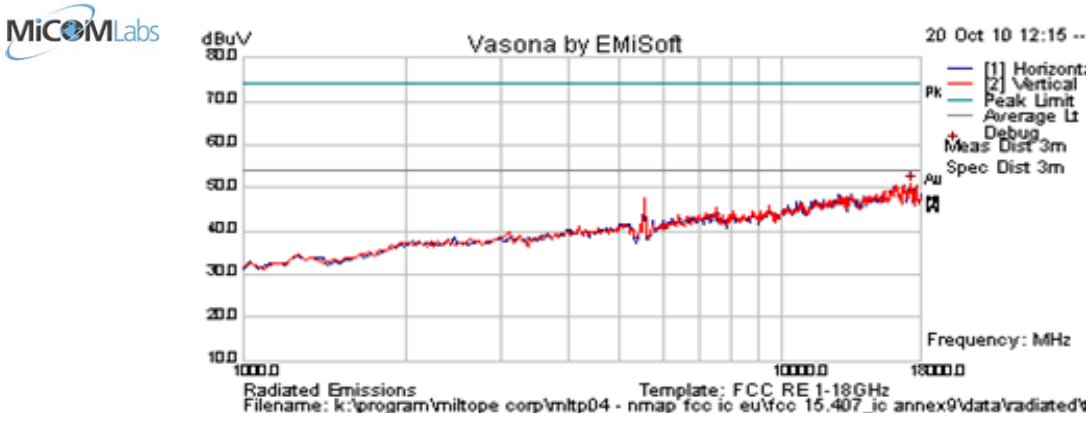


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5496.994	62.9	4.6	-8.7	58.8	Peak [Scan]	V	--	--	--	--	n/a	FUND
16739.479	41.9	8.7	1.5	52.1	Peak [Scan]	V	100	0	54.0	-1.9	Pass	NRB

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

Test Freq.	5560 MHz	**Engineer**	SB
Variant	802.11a; 6.5 Mbs	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

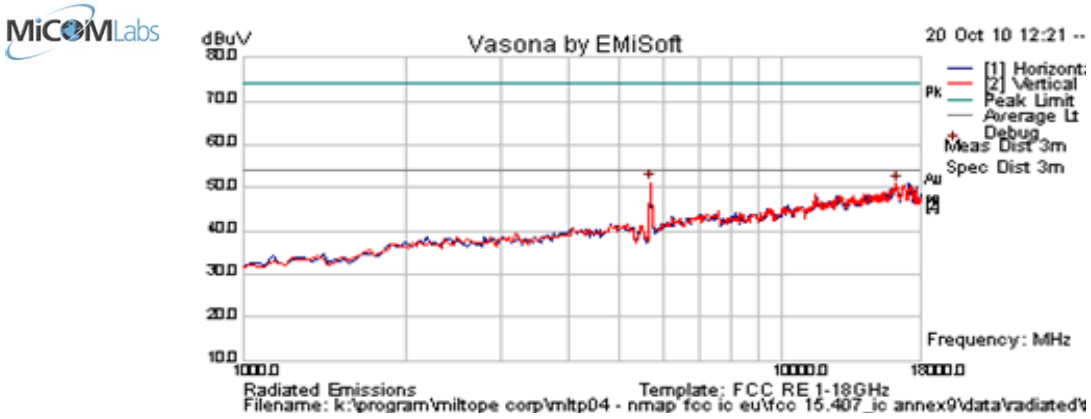


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
17318.637	40.6	8.7	1.7	51.0	Peak [Scan]	V	200	0	54.0	-3.0	Pass	NRB

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

Test Freq.	5700 MHz	**Engineer**	SB
Variant	802.11a; 6.5 Mbs	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



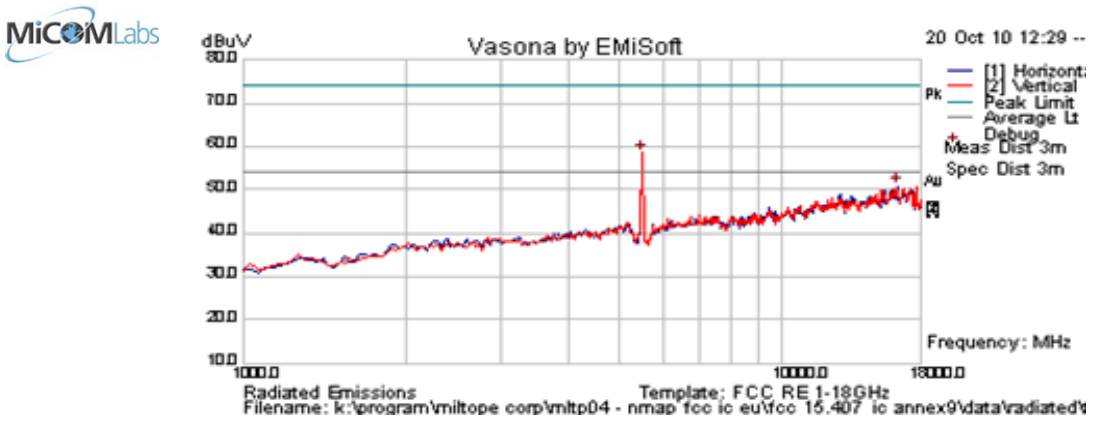
Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5701.403	54.5	4.7	-8.1	51.1	Peak [Scan]	V	--	--	--	--	n/a	FUND
16262.525	41.1	8.9	1.0	51.0	Peak [Scan]	V	150	0	54.0	-3.0	Pass	NRB

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

BAND: 5470 – 5725 MHz: 802.11n HT-20

Test Freq.	5500 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

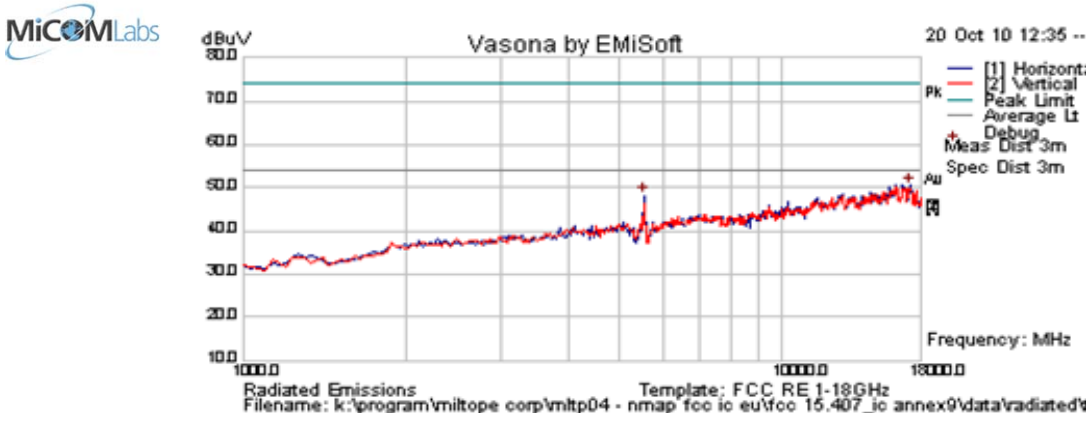


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5496.994	62.6	4.6	-8.7	58.5	Peak [Scan]	V	--	--	--	--	n/a	FUND
16296.593	41.2	8.9	0.7	50.7	Peak [Scan]	H	150	0	54.0	-3.3	Pass	NRB

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

Test Freq.	5560 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

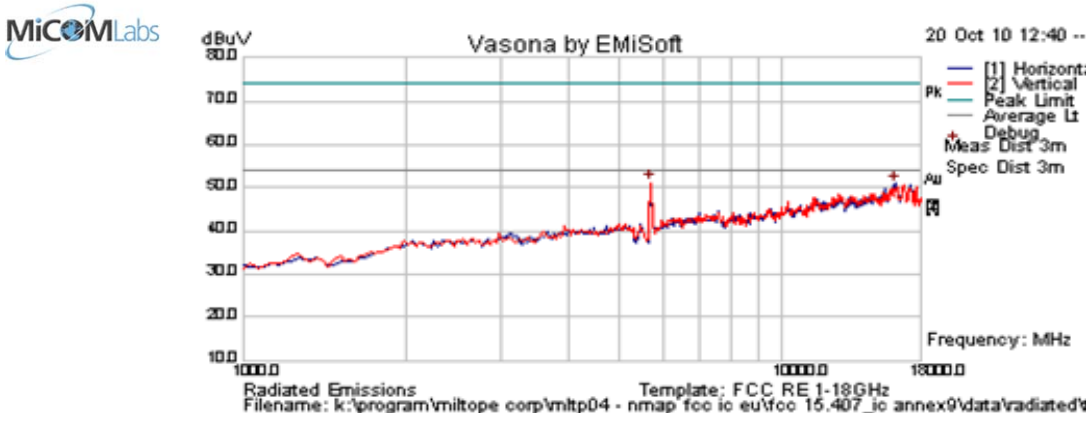


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
17250.501	40.3	8.6	1.6	50.6	Peak [Scan]	H	150	0	54.0	-3.4	Pass	NRB
5531.062124	52.2	4.6	-8.7	48.1	Peak [Scan]	H	--	--	--	--	n/a	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

Test Freq.	5700 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



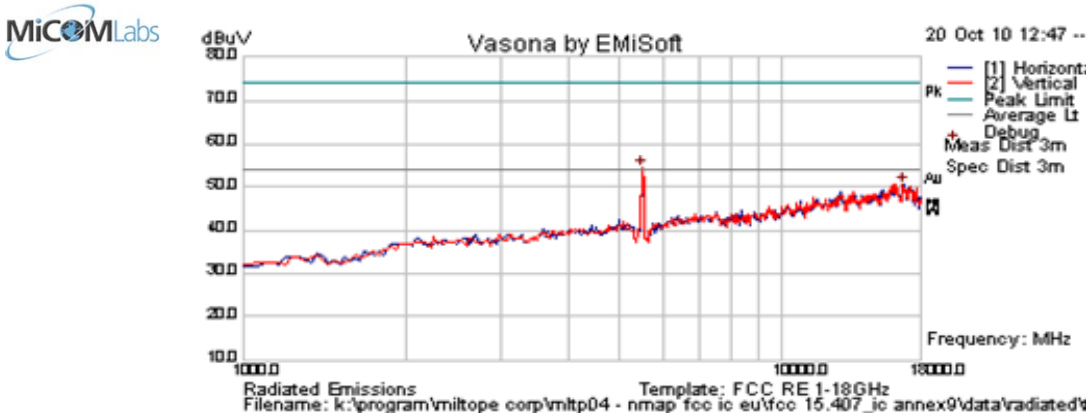
Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5701.403	54.5	4.7	-8.1	51.1	Peak [Scan]	V	--	--	--	--	n/a	FUND
16260.321	40.9	9.0	1.0	50.8	Peak [Scan]	H	200	0	54.0	-3.2	Pass	NRB

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

BAND: 5470 – 5725 MHz: 802.11n HT-40

Test Freq.	5510 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	17	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

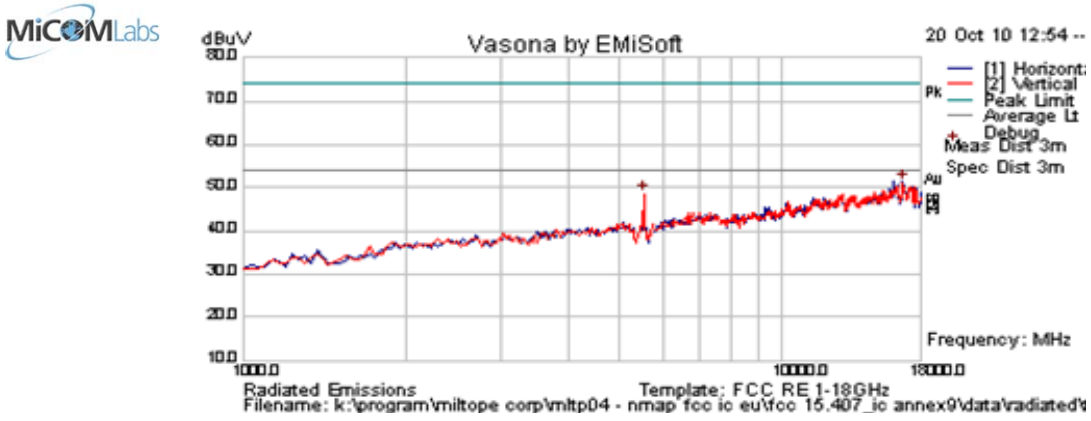


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
5496.994	58.5	4.6	-8.7	54.4	Peak [Scan]	V	--	--	--	--	n/a	FUND
16773.547	40.2	8.6	1.7	50.5	Peak [Scan]	H	150	0	54.0	-3.5	Pass	NRB

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

Test Freq.	5550 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	17	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

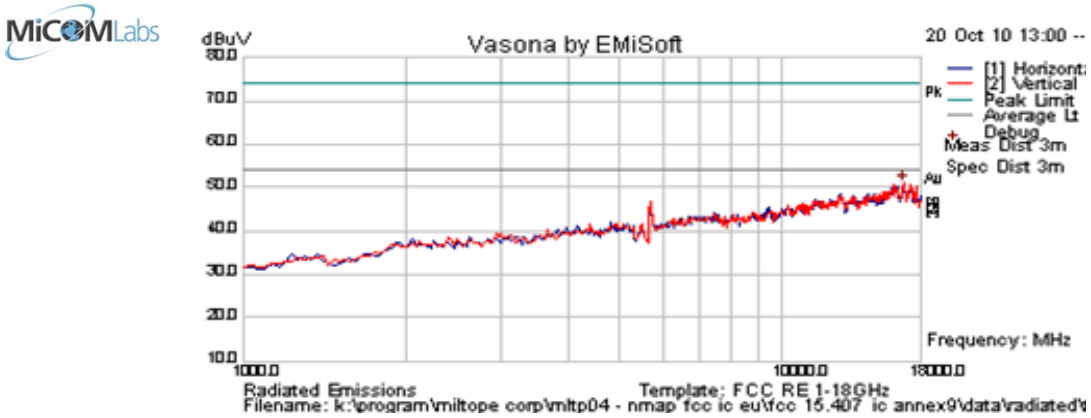


Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
16705.411	41.2	8.7	1.4	51.3	Peak [Scan]	H	150	0	54.0	-2.7	Pass	NRB
5531.062124	52.6	4.6	-8.7	48.5	Peak [Scan]	V	--	--	--	--	n/a	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

Test Freq.	5690 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	24
Freq. Range	1000 MHz - 18000 MHz	**Rel. Hum.(%)**	33
Power Setting	17	**Press. (mBars)**	998
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



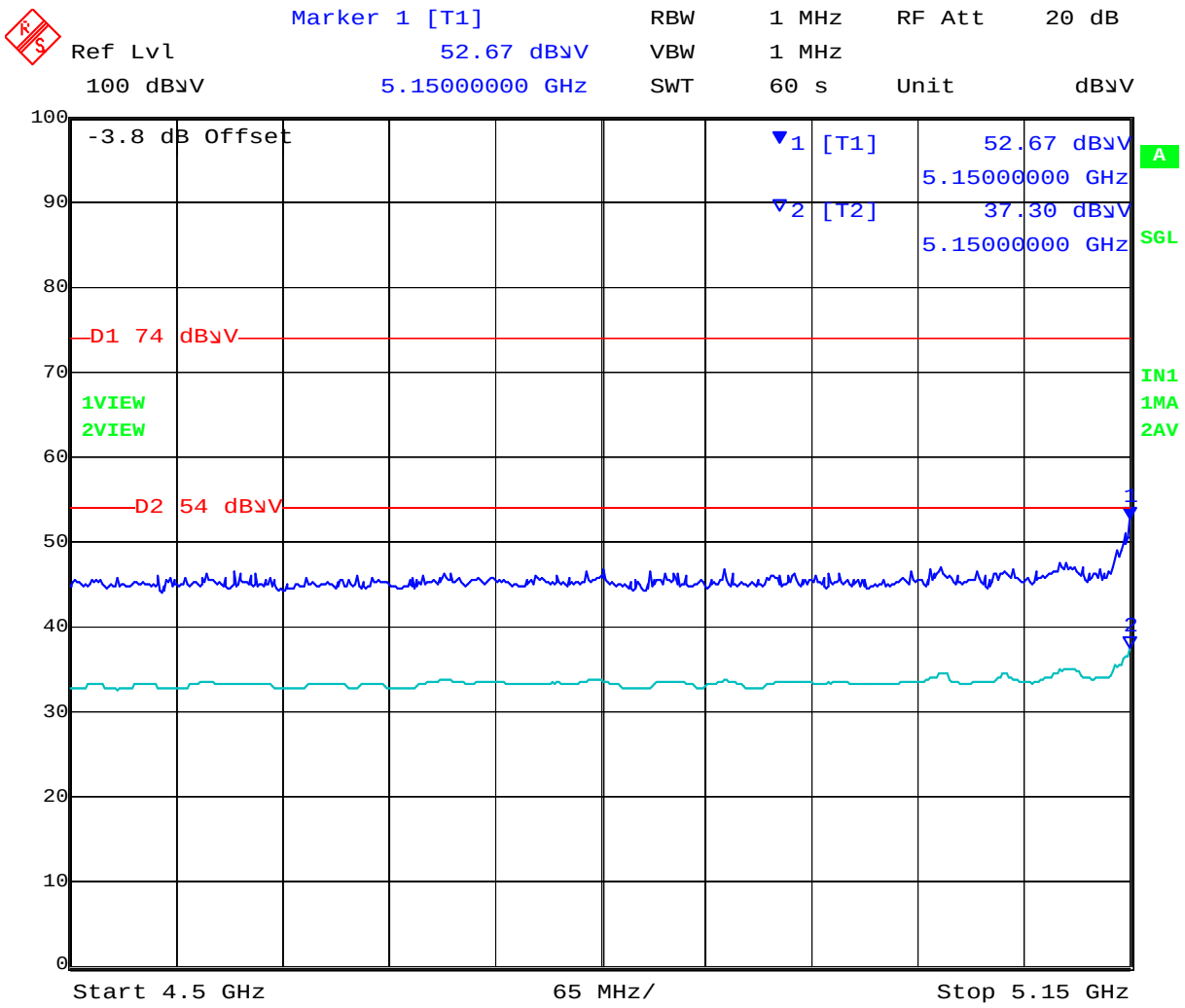
Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
16773.547	40.5	8.6	1.7	50.9	Peak [Scan]	V	150	0	54.0	-3.1	Pass	NRB

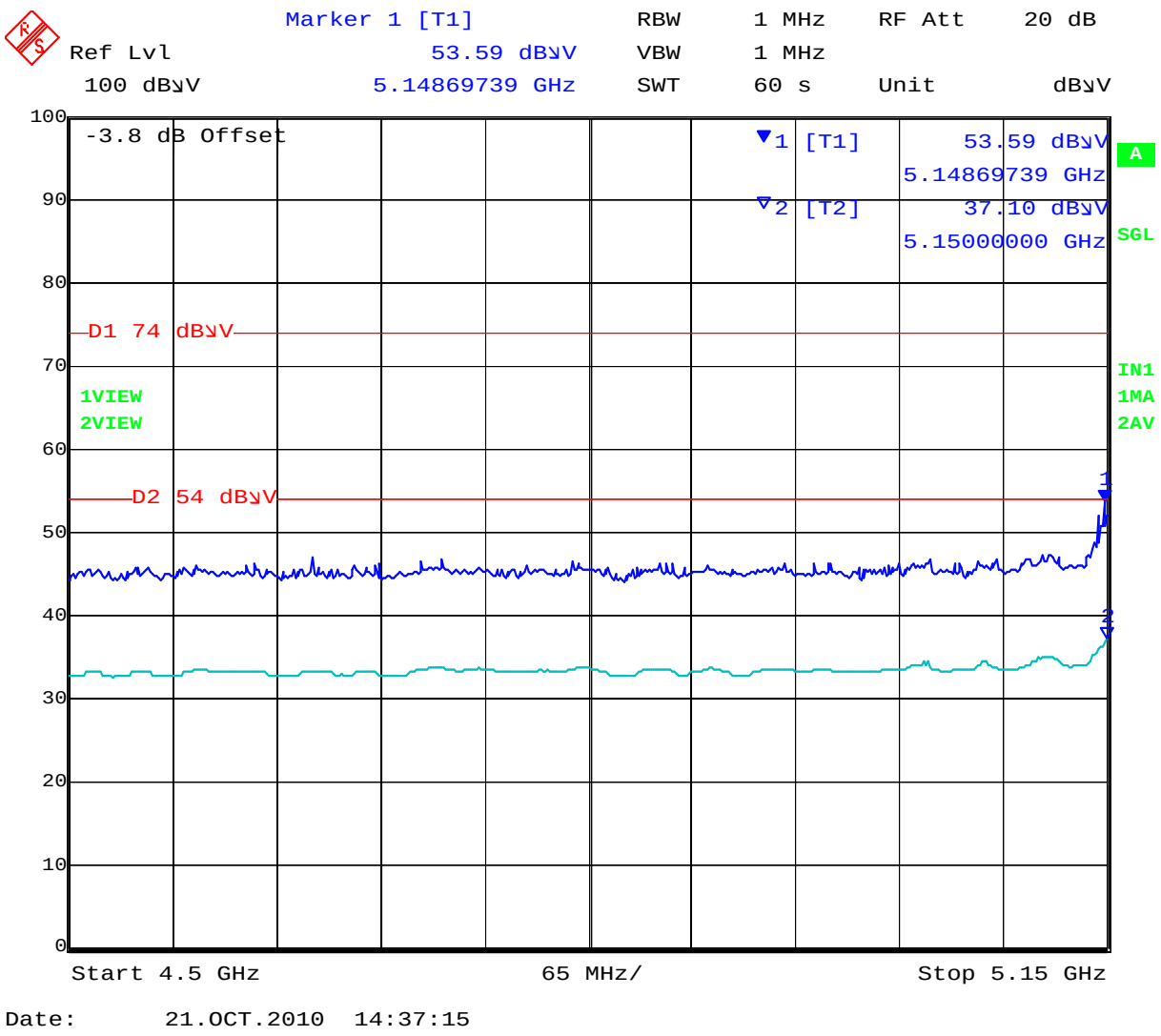
Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	NRB = Non-Restricted Band. Limit = 68.23 dBuV/m; RB = Restricted Band. Limits per 15.205

901167-2 Antenna – Band edge spurious emissions

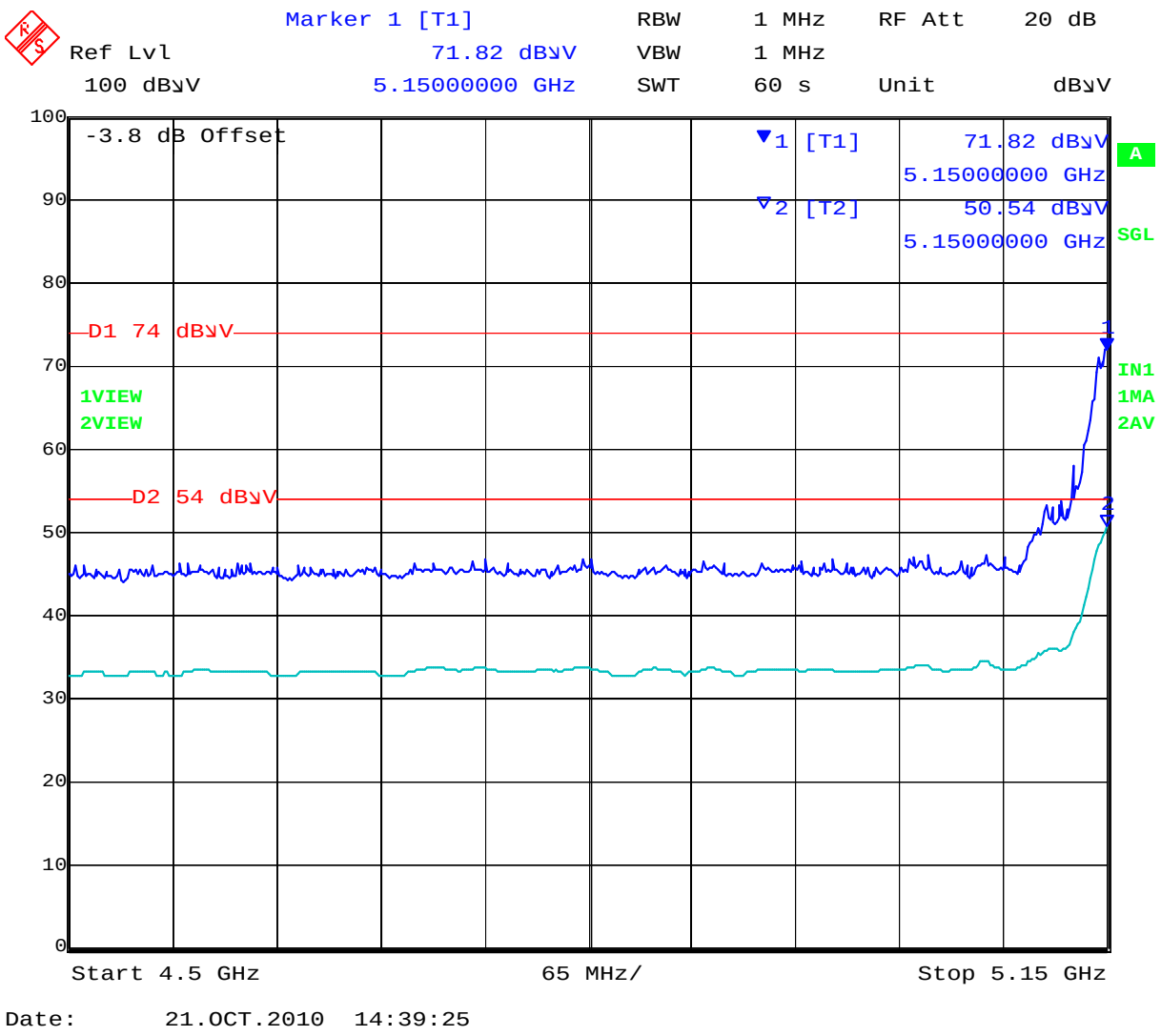
5180 MHz - 802.11a 4500-5150 MHz



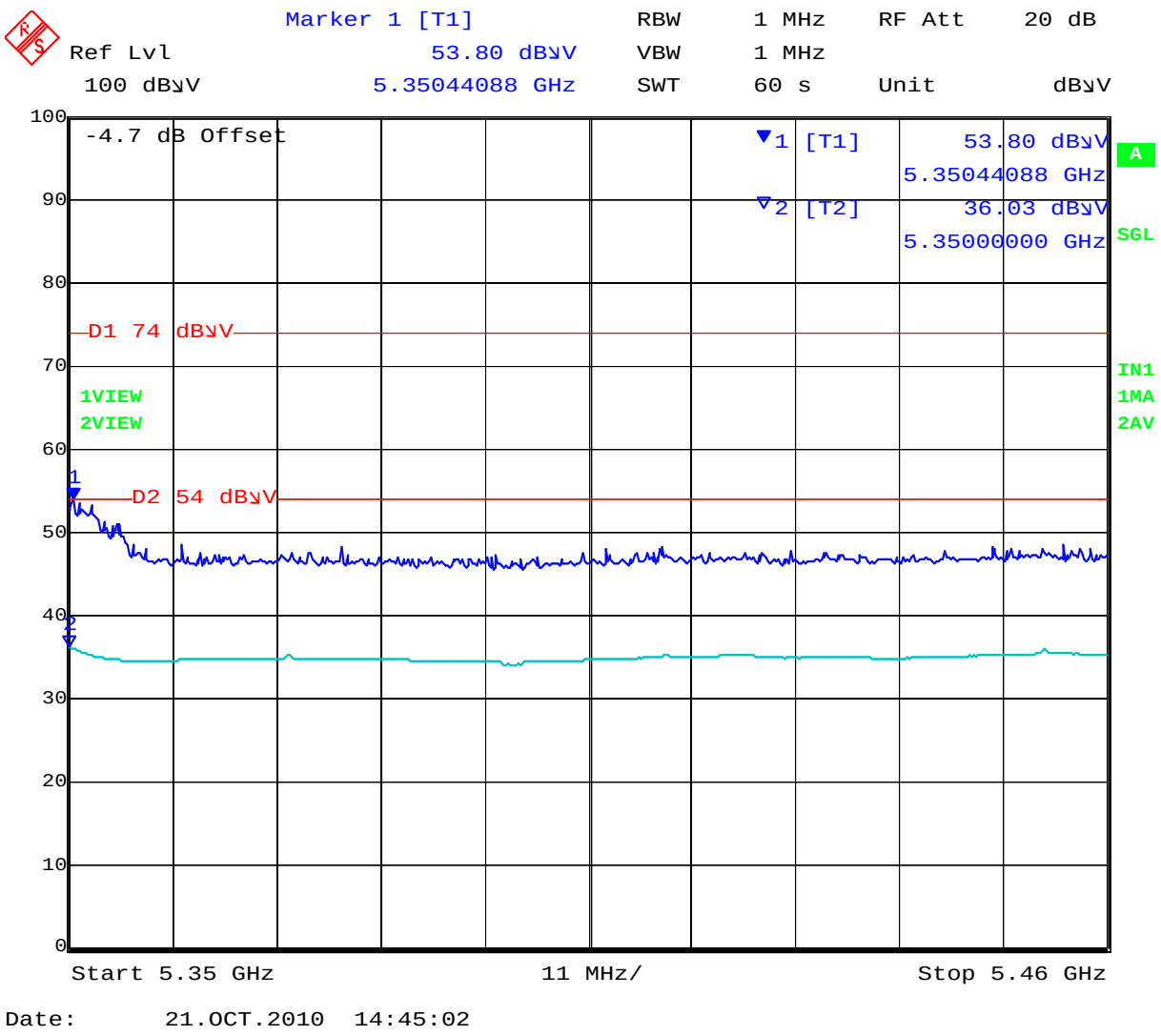
5180 MHz - 802.11n HT-20 4500-5150 MHz



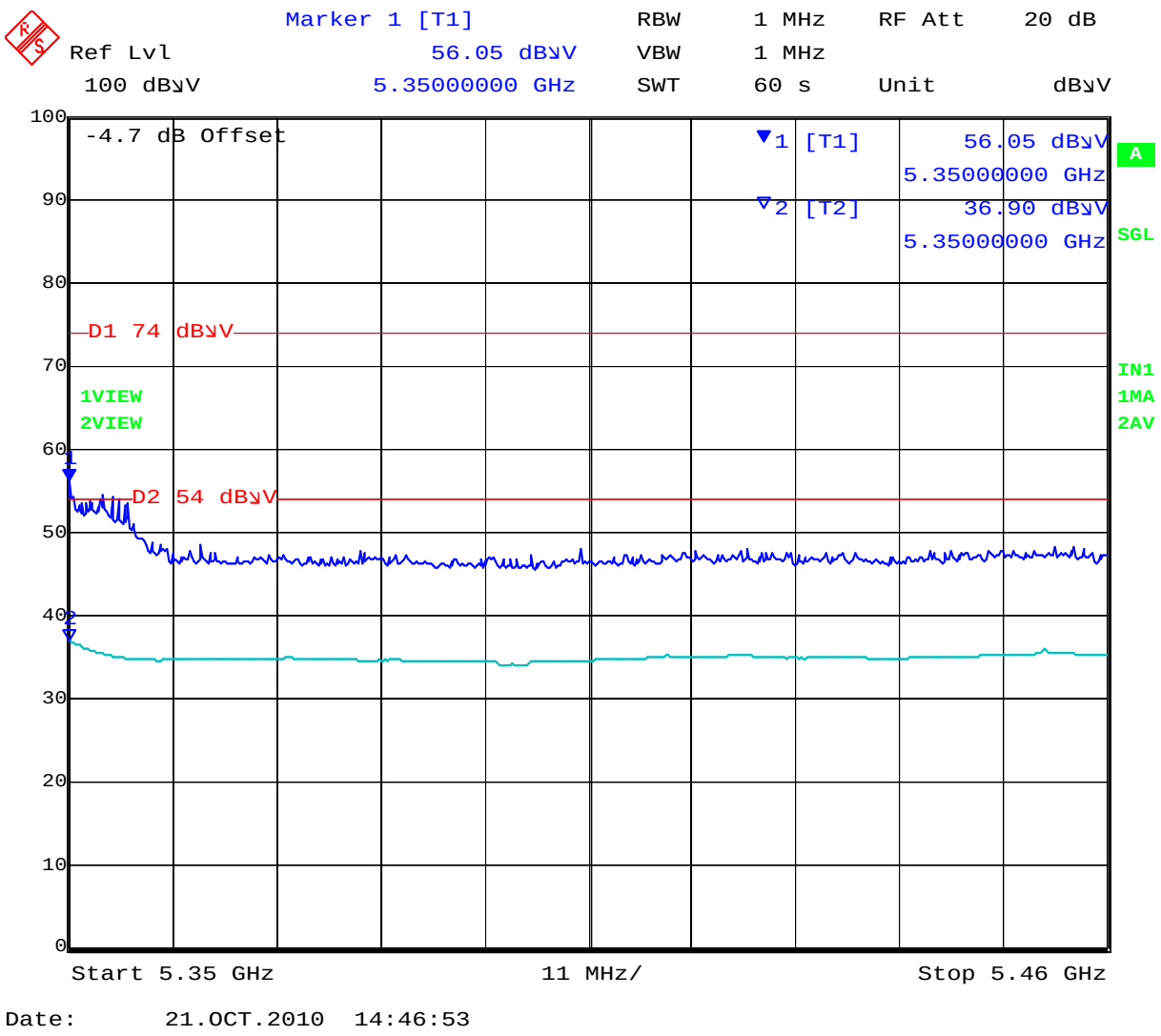
5190 MHz - 802.11n HT-40 4500-5150 MHz



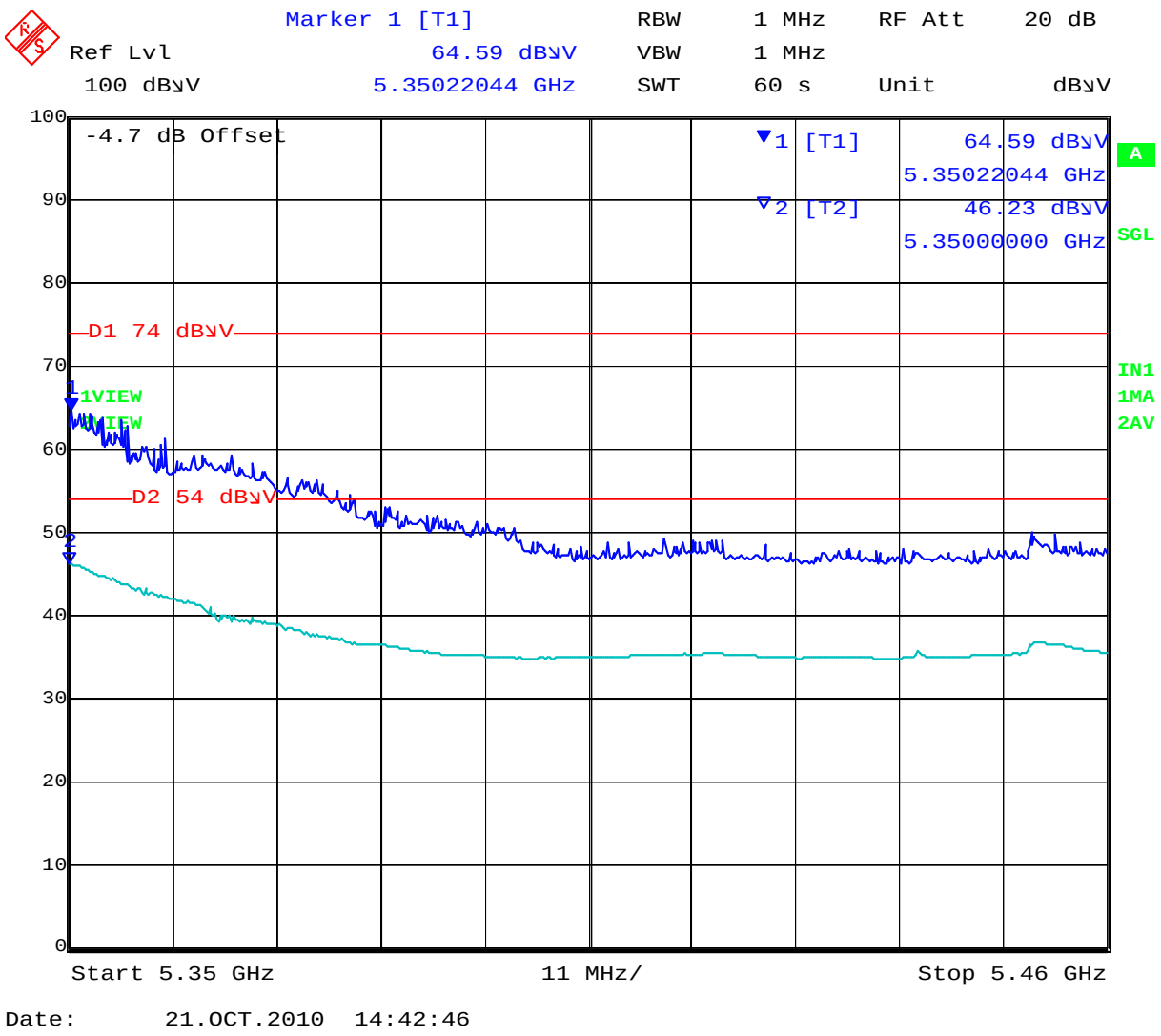
5320 MHz - 802.11a 5350 – 5460 MHz



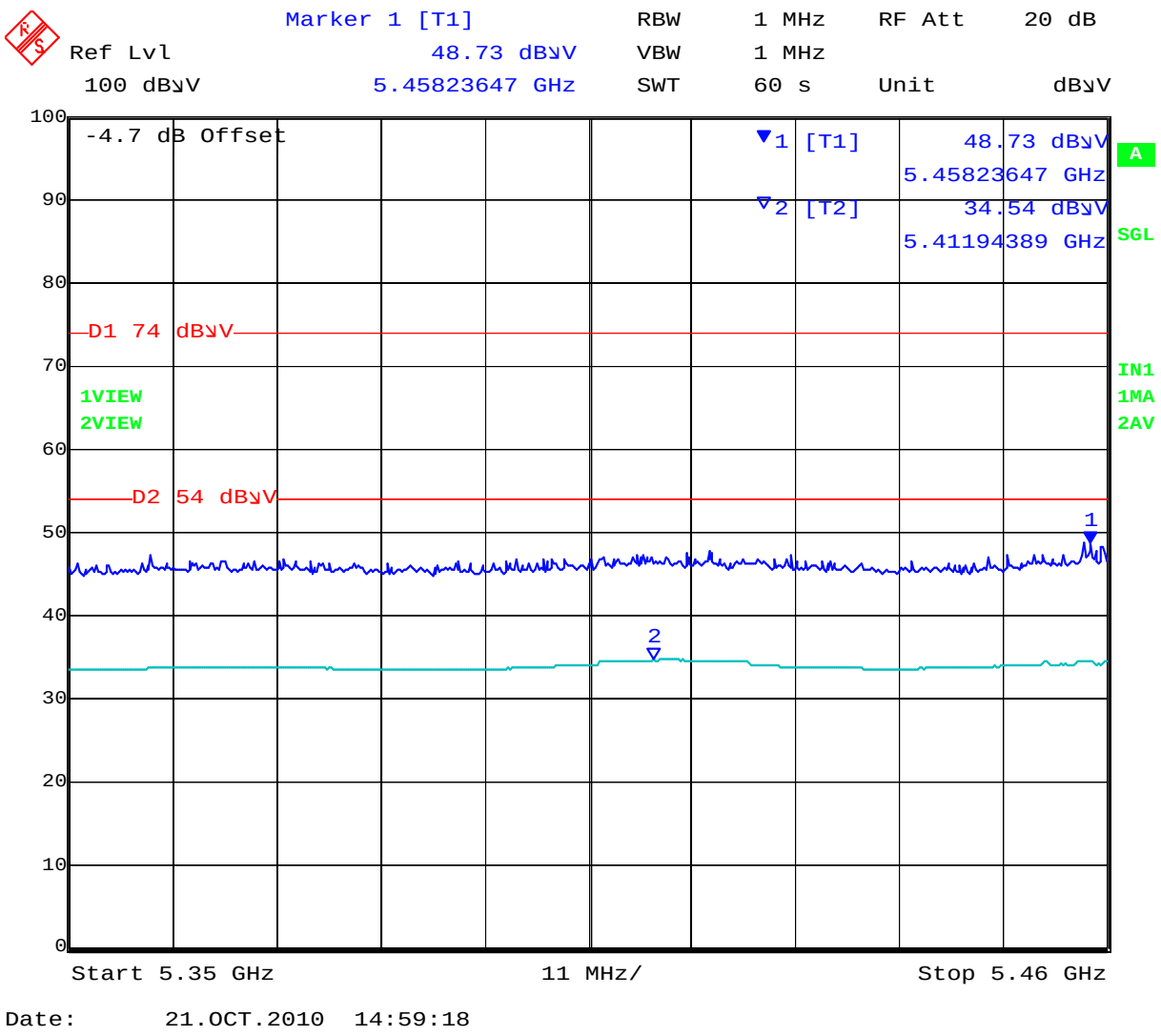
5320 MHz - 802.11n HT-20 5350 – 5460 MHz



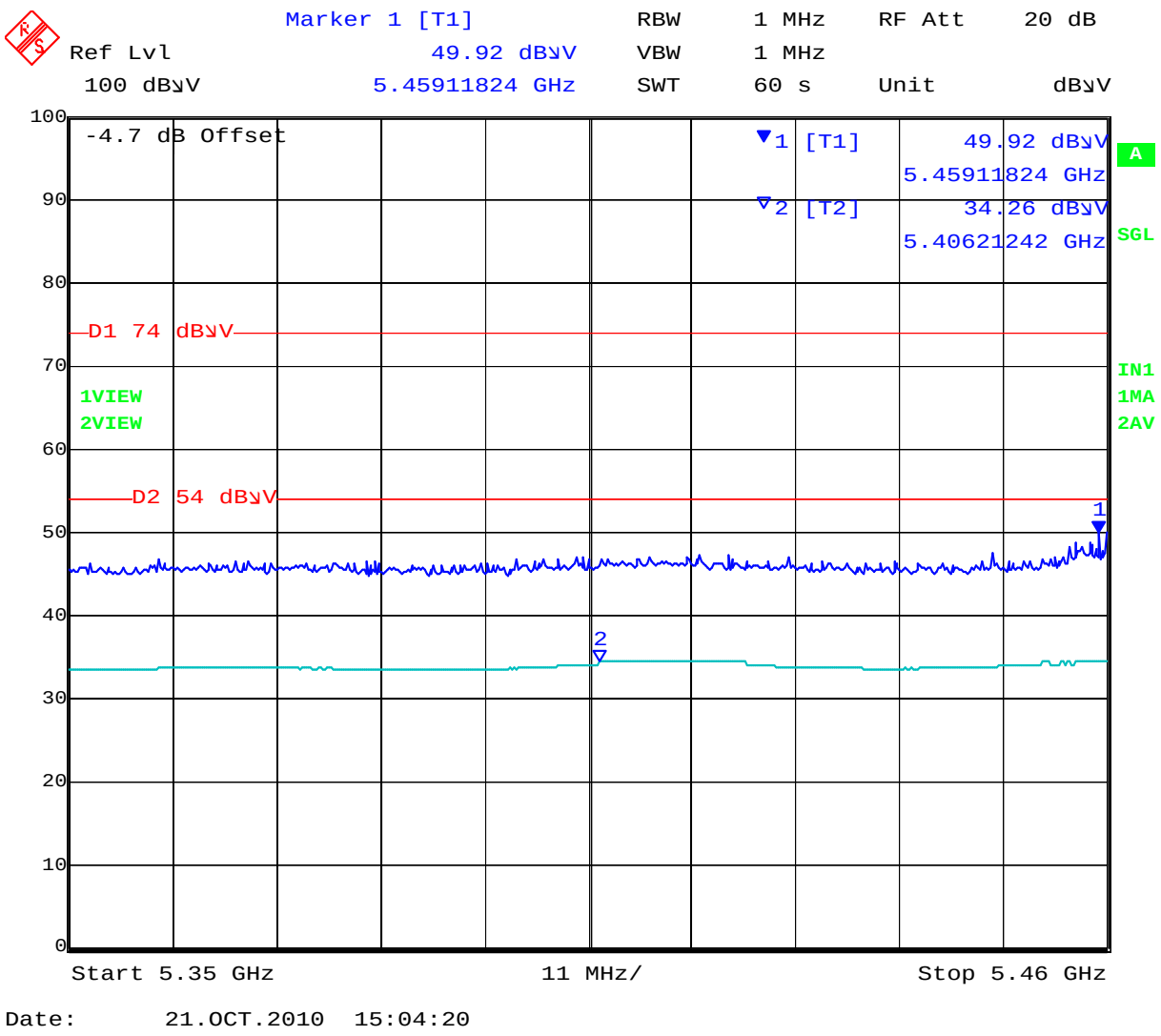
5310 MHz - 802.11n HT-40 5350 – 5460 MHz



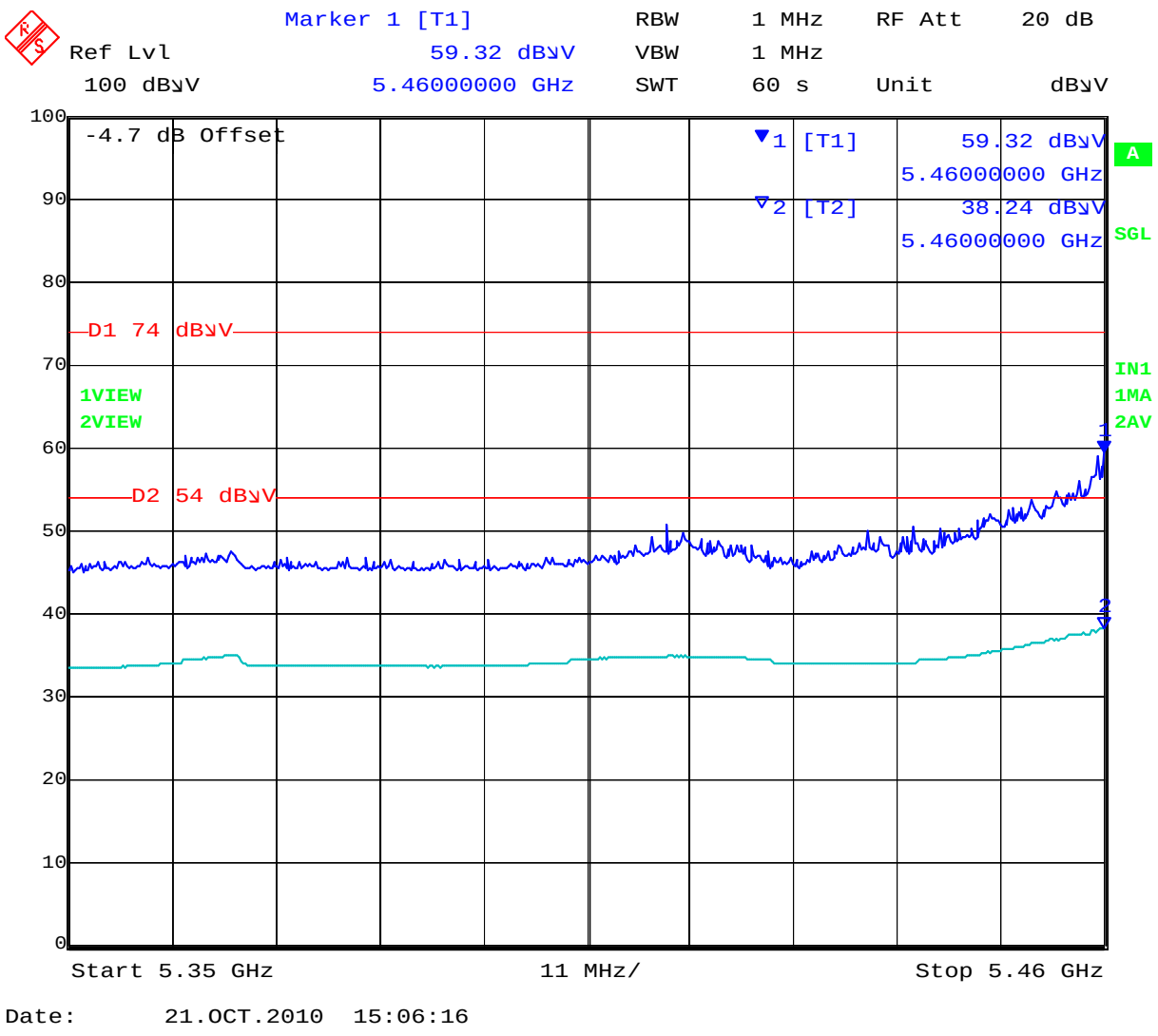
5500 MHz - 802.11a 5350 – 5460 MHz



5500 MHz - 802.11n HT-20 5350 – 5460 MHz



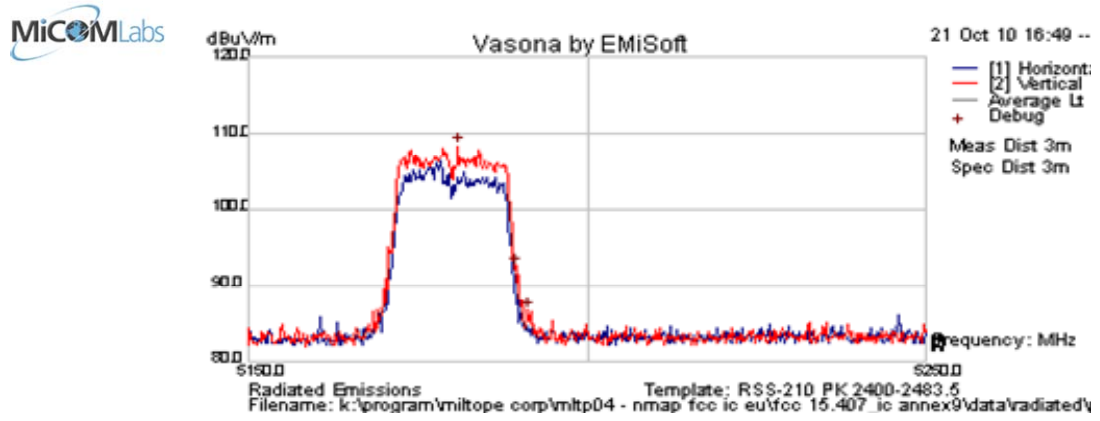
5510 MHz - 802.11n HT-40 5350 – 5460 MHz



901167-2 Antenna – Peak Emissions (RSS-210/RSS-GEN)

BAND: 5150 – 5250 MHz: 802.11a

Test Freq.	5180 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5150 - 5250 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

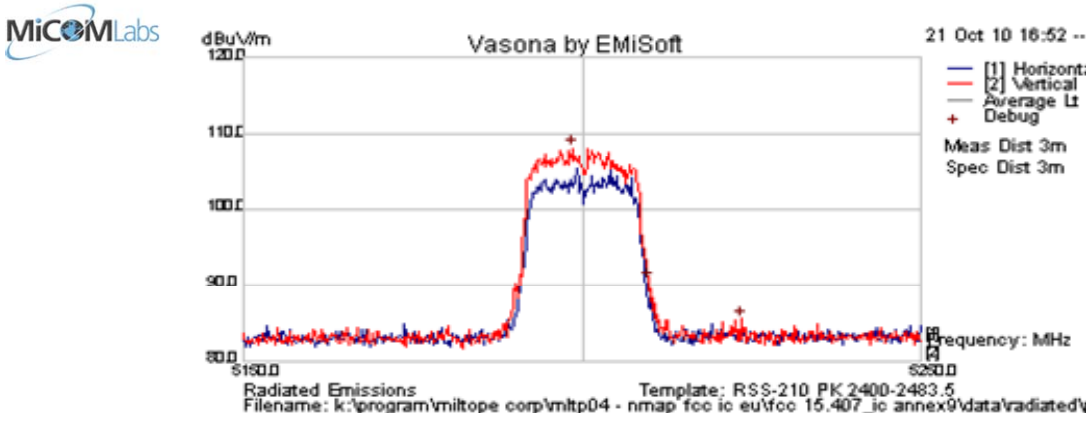


Formally measured emission peaks

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
5180.862	59.4	14.6	34.4	108.4	Peak [Scan]	V						Pk

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	PK = Peak emissions of fundamental

Test Freq.	5200 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5150 - 5250 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

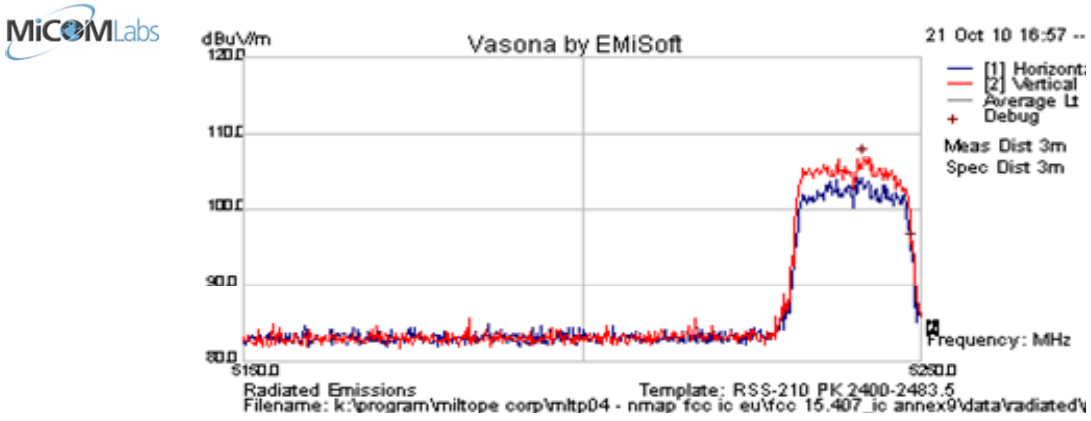


Formally measured emission peaks

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
5198.497	59.1	14.6	34.4	108.1	Peak [Scan]	V						Pk

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	PK = Peak emissions of fundamental

Test Freq.	5240 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5150 - 5250 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



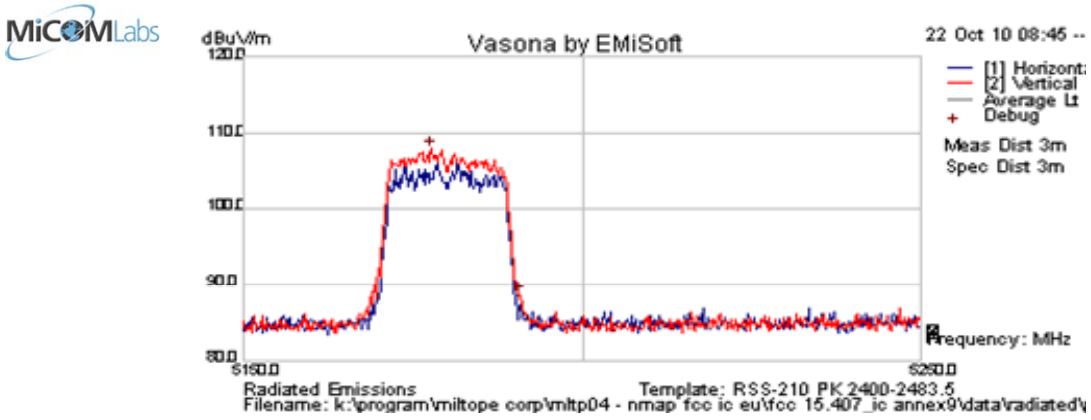
Formally measured emission peaks

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
5241.583	57.9	14.6	34.4	106.9	Peak [Scan]	V						Pk

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	PK = Peak emissions of fundamental

BAND: 5150 – 5250 MHz: 802.11n HT-20

Test Freq.	5180 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5150 - 5250 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

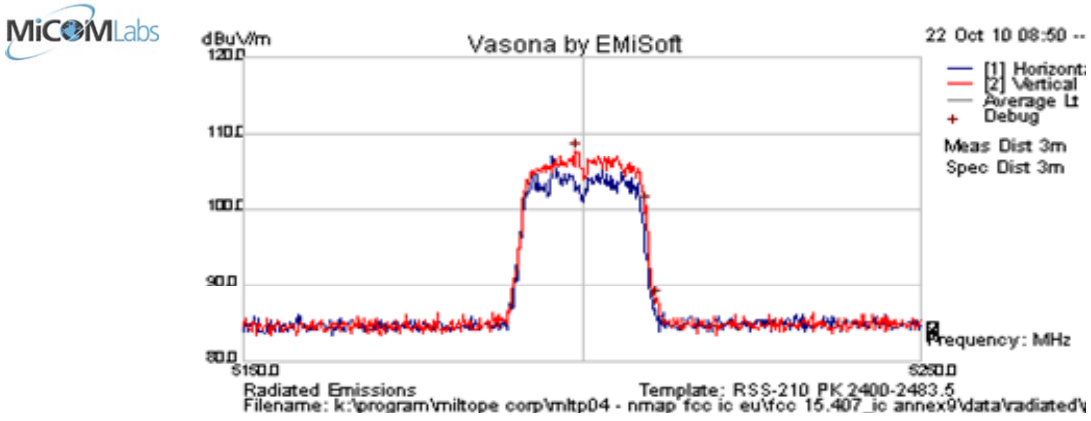


Formally measured emission peaks

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
5177.655	59.0	14.6	34.4	108.1	Peak [Scan]	V						Pk

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	PK = Peak emissions of fundamental

Test Freq.	5200 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5150 - 5250 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

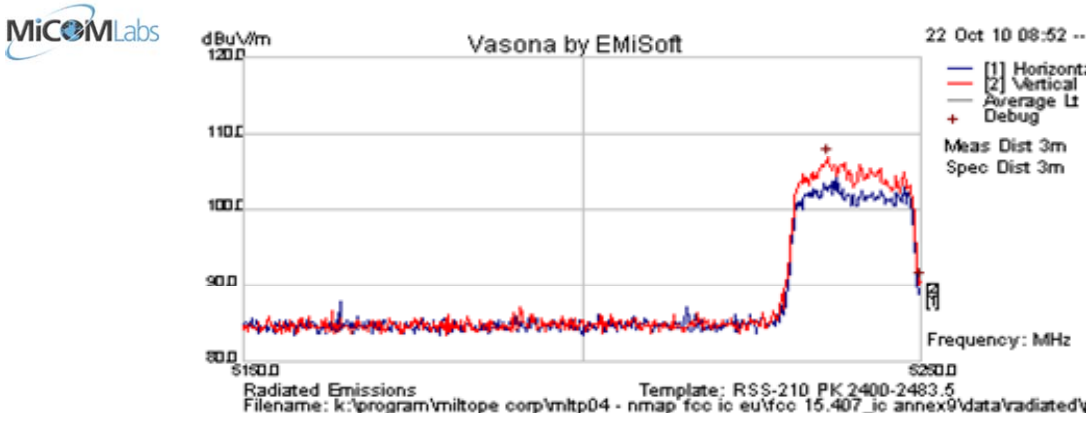


Formally measured emission peaks

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
5198.898	58.8	14.6	34.4	107.8	Peak [Scan]	V						Pk

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	PK = Peak emissions of fundamental

Test Freq.	5240 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5150 - 5250 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



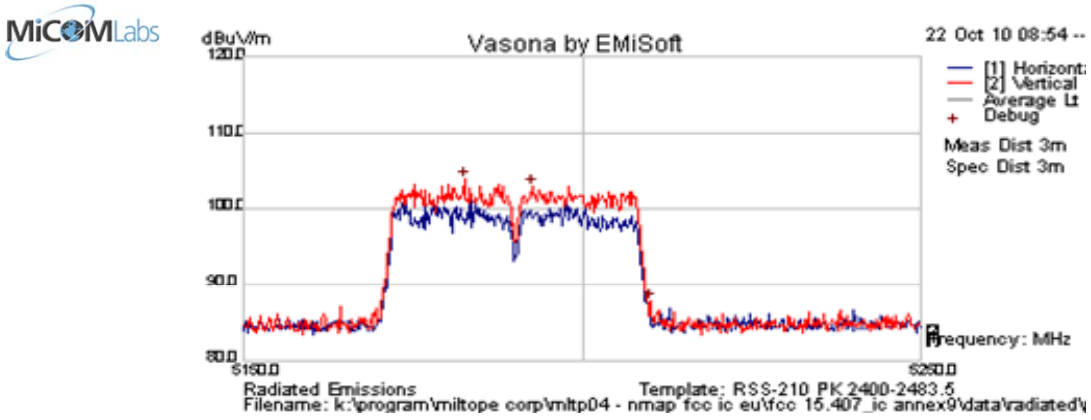
Formally measured emission peaks

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
5236.172	57.9	14.6	34.4	106.9	Peak [Scan]	V						Pk

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	PK = Peak emissions of fundamental

BAND: 5150 – 5250 MHz: 802.11n HT-40

Test Freq.	5190 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5150 - 5250 MHz	**Rel. Hum.(%)**	32
Power Setting	17	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

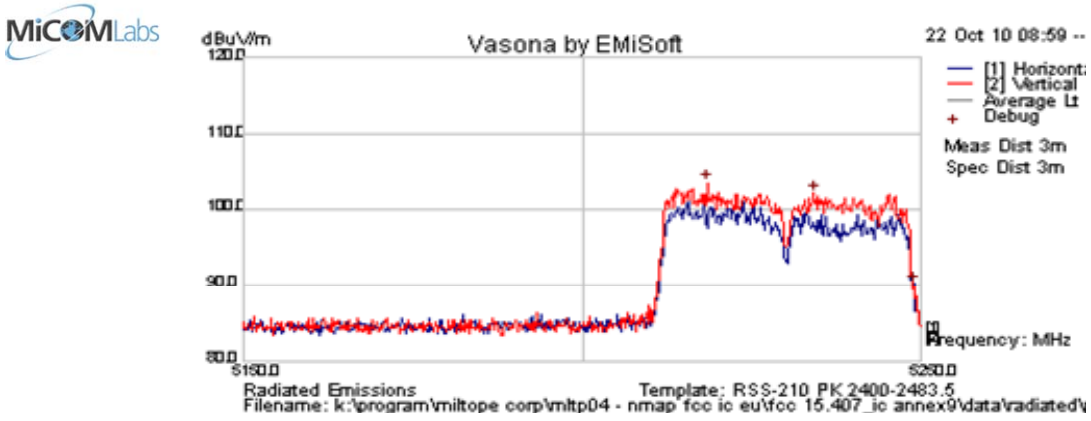


Formally measured emission peaks

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
5182.465	54.8	14.6	34.4	103.8	Peak [Scan]	V						Pk

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	PK = Peak emissions of fundamental

Test Freq.	5230 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5150 - 5250 MHz	**Rel. Hum.(%)**	32
Power Setting	17	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

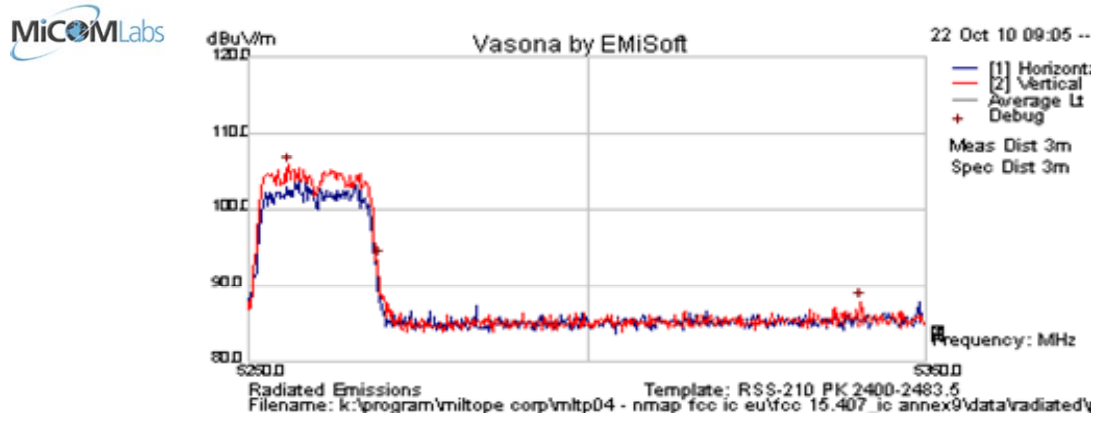
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5234.168	53.1	14.6	34.4	102.1	Peak [Scan]	V						Pk

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental; WB = Wideband Emission
	PK = Peak emissions of fundamental

901167-2 Antenna – Peak Emissions (RSS-210/RSS-GEN)

BAND: 5250 – 5350 MHz: 802.11a

Test Freq.	5260 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5250 - 5350 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

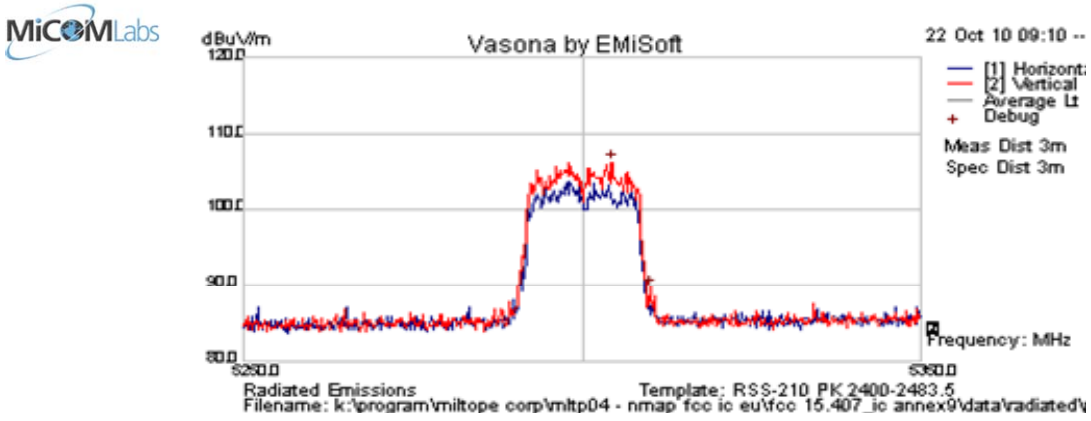


Formally measured emission peaks

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
5256.012	56.7	14.6	34.4	105.8	Peak [Scan]	V						Pk

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

Test Freq.	5300 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5250 - 5350 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

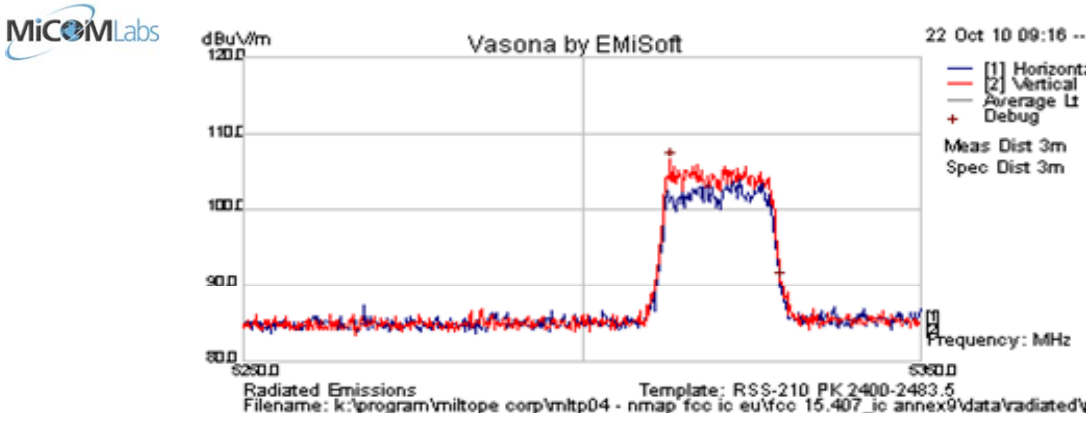


Formally measured emission peaks

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
5304.309	57.1	14.6	34.5	106.2	Peak [Scan]	V						Pk

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

Test Freq.	5320 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5250 - 5350 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



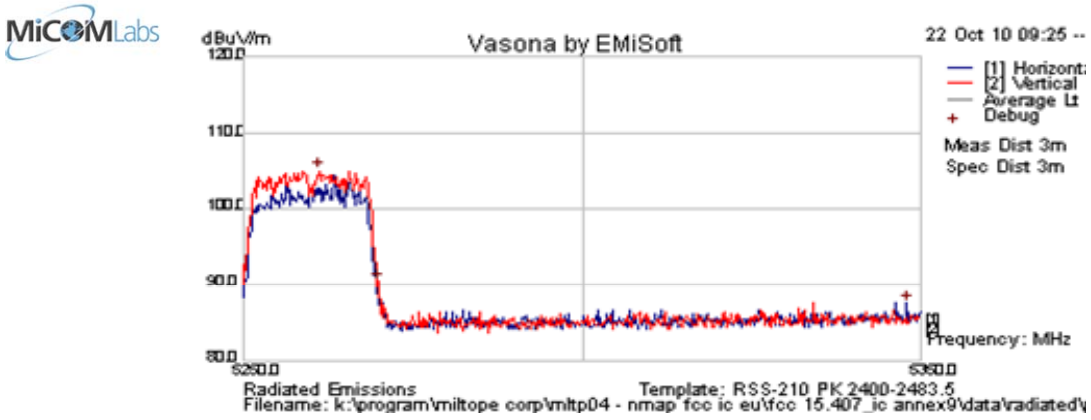
Formally measured emission peaks

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
5312.926	57.4	14.6	34.5	106.5	Peak [Scan]	V						Pk

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

BAND: 5250 – 5350 MHz: 802.11n HT-20

Test Freq.	5260 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5250 - 5350 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

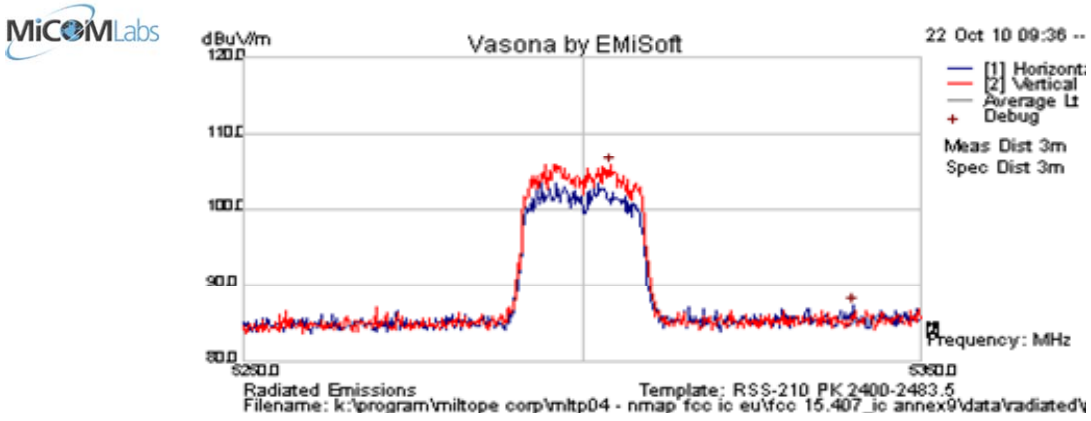


Formally measured emission peaks

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
5261.222	55.9	14.6	34.4	105.0	Peak [Scan]	V						Pk

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

Test Freq.	5300 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5250 - 5350 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

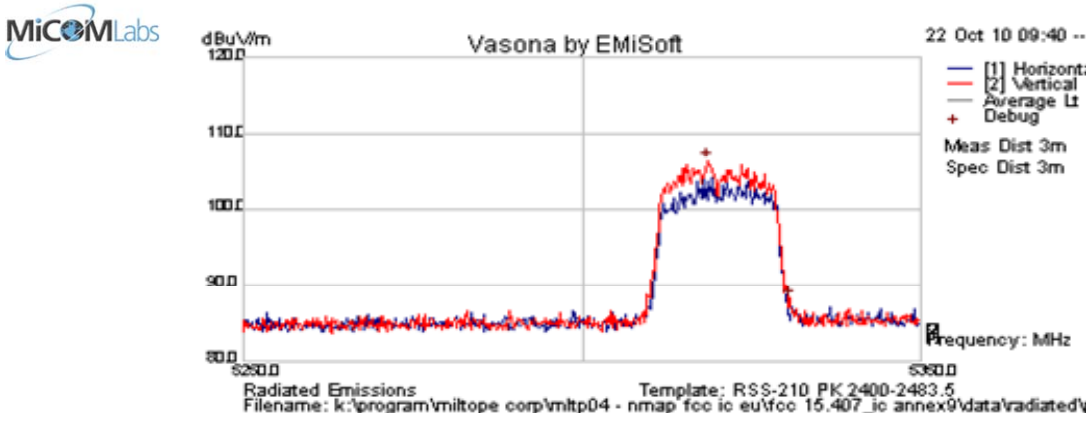


Formally measured emission peaks

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
5303.908	56.7	14.6	34.5	105.8	Peak [Scan]	V						Pk

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

Test Freq.	5320 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5250 - 5350 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



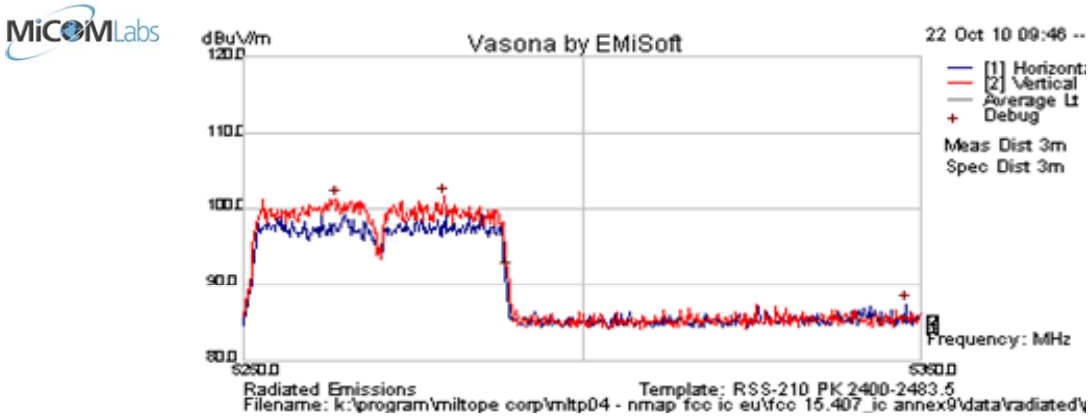
Formally measured emission peaks

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
5318.337	57.3	14.6	34.5	106.4	Peak [Scan]	V						Pk

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

BAND: 5250 – 5350 MHz: 802.11n HT-40

Test Freq.	5270 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5250 - 5350 MHz	**Rel. Hum.(%)**	32
Power Setting	17	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

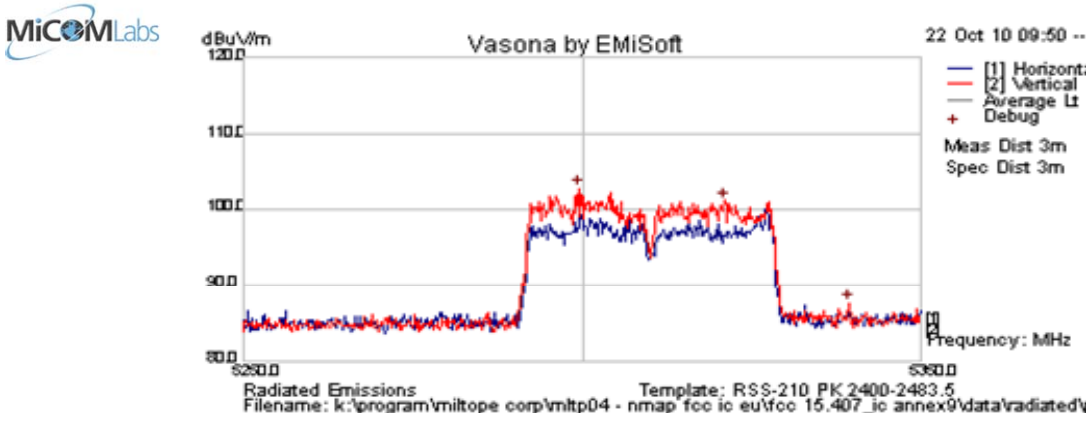


Formally measured emission peaks

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
5279.459	52.6	14.6	34.5	101.7	Peak [Scan]	V						Pk

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

Test Freq.	5310 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5250 - 5350 MHz	**Rel. Hum.(%)**	32
Power Setting	17	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



Formally measured emission peaks

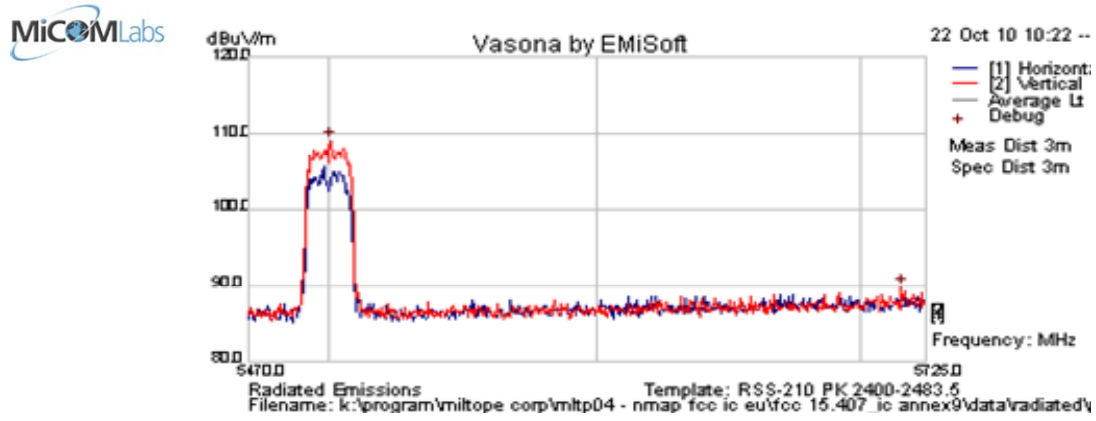
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail	Comments
5299.299	53.6	14.6	34.5	102.8	Peak [Scan]	V						Pk

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

901167-2 Antenna – Peak Emissions (RSS-210/RSS-GEN)

BAND: 5470 – 5725 MHz: 802.11a

Test Freq.	5500 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

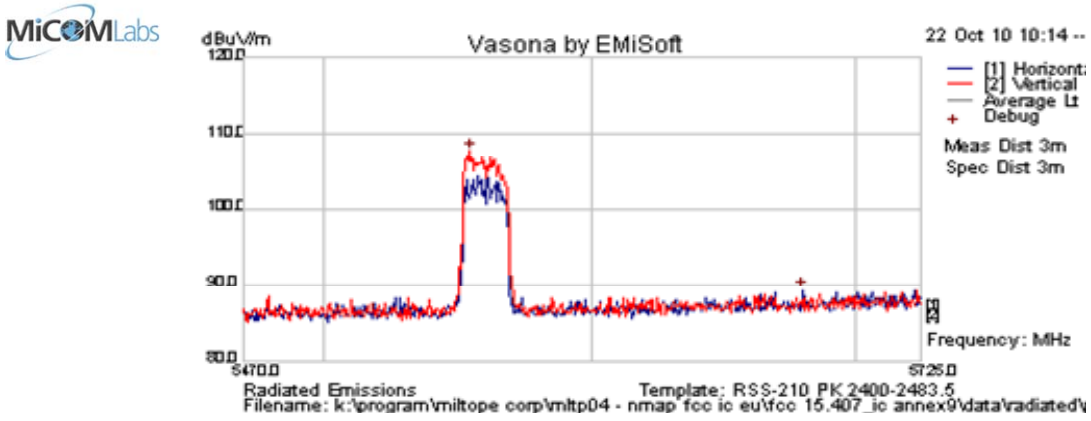


Formally measured emission peaks

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
5500.661	59.7	14.6	34.8	109.1	Peak [Scan]	V						Pk

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

Test Freq.	5560 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

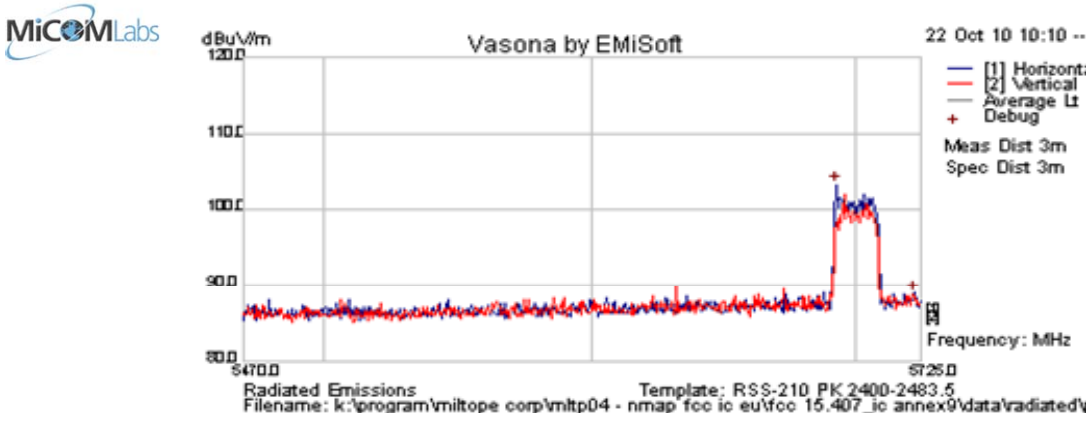


Formally measured emission peaks

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
5554.319	58.2	14.7	34.9	107.8	Peak [Scan]	V						Pk

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

Test Freq.	5700 MHz	**Engineer**	SB
Variant	802.11a; 6 Mbs	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



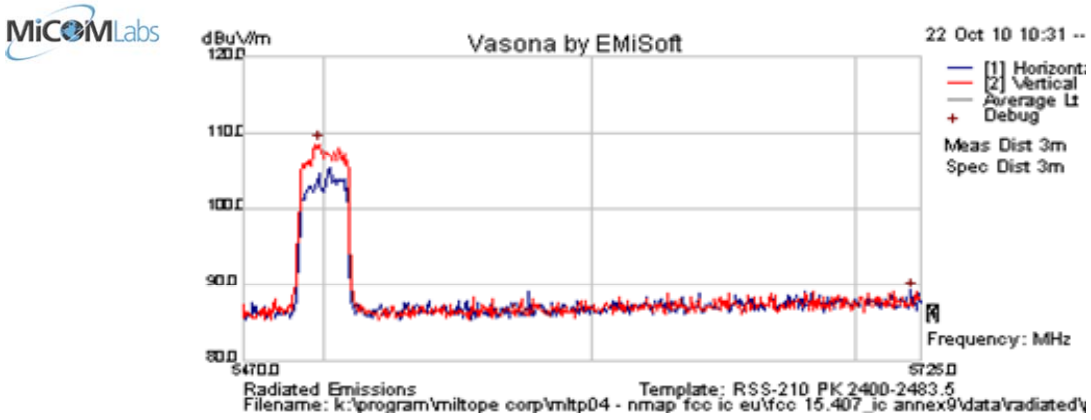
Formally measured emission peaks

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
5692.806	53.6	14.7	35.0	103.3	Peak [Scan]	H						Pk

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

BAND: 5470 – 5725 MHz: 802.11n HT-20

Test Freq.	5500 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

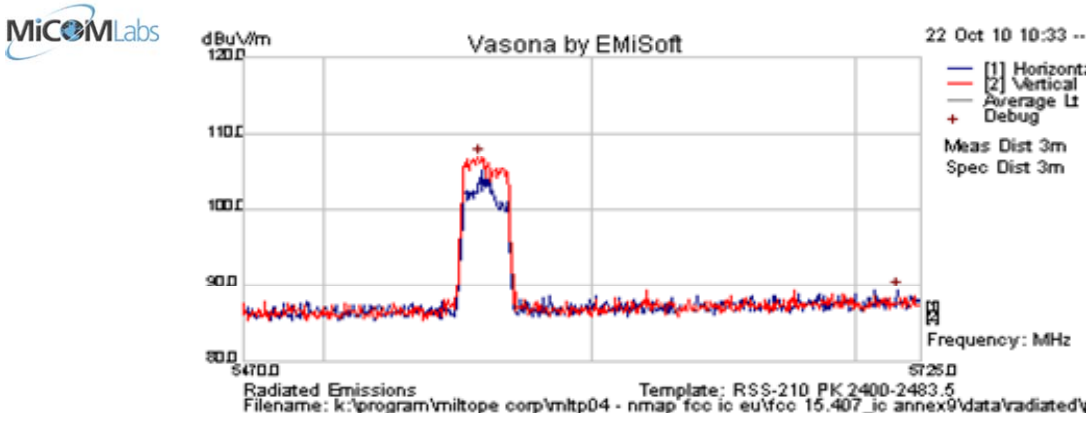


Formally measured emission peaks

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
5498.106	59.2	14.6	34.8	108.6	Peak [Scan]	V						Pk

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

Test Freq.	5590 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

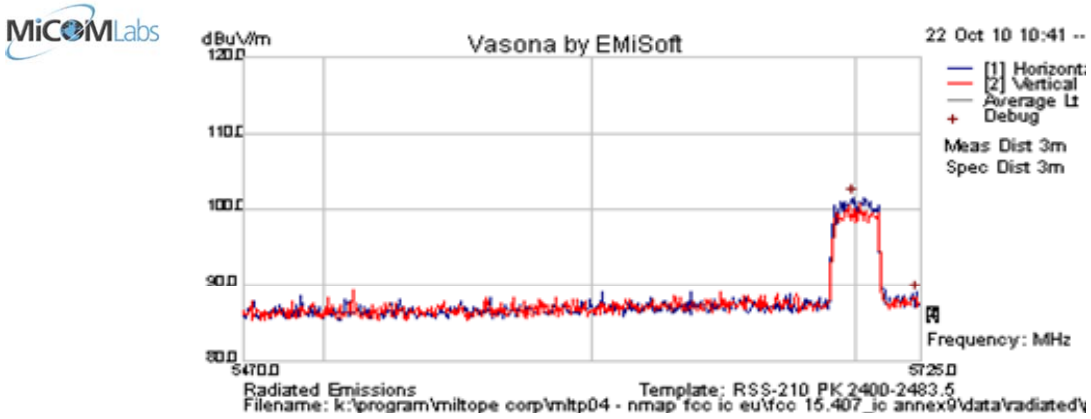


Formally measured emission peaks

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
5557.385	57.4	14.7	34.9	107.0	Peak [Scan]	V						Pk

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

Test Freq.	5700 MHz	**Engineer**	SB
Variant	802.11n; HT-20; 6.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	18	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			



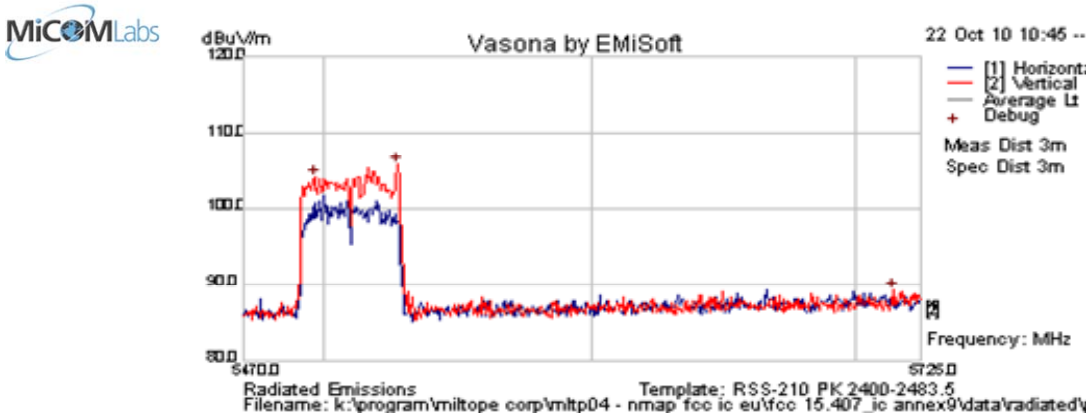
Formally measured emission peaks

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
5698.938	51.8	14.7	35.0	101.5	Peak [Scan]	V						Pk

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

BAND: 5470 – 5725 MHz: 802.11n HT-40

Test Freq.	5510 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	17	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

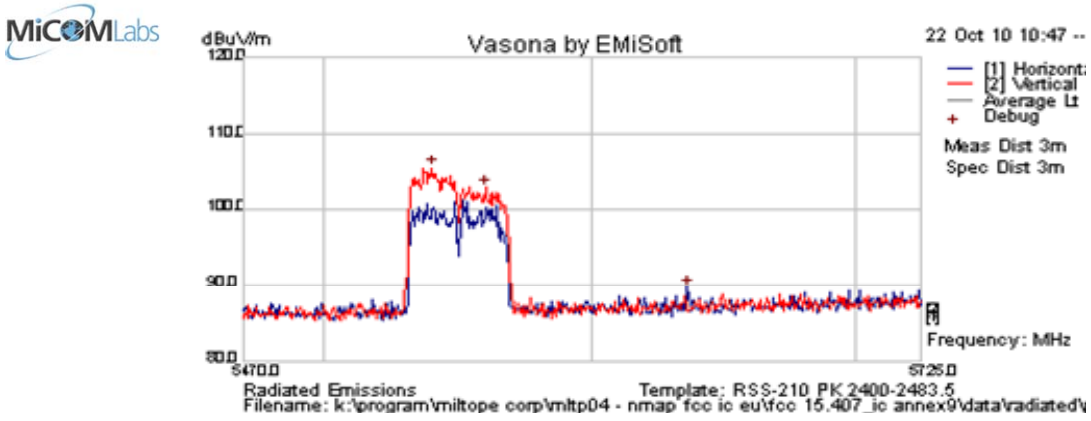


Formally measured emission peaks

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
5527.234	56.3	14.6	34.9	105.8	Peak [Scan]	V						Pk

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

Test Freq.	5550 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	17	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**Duty Cycle (%)**	100
Test Notes 1			
Test Notes 2			

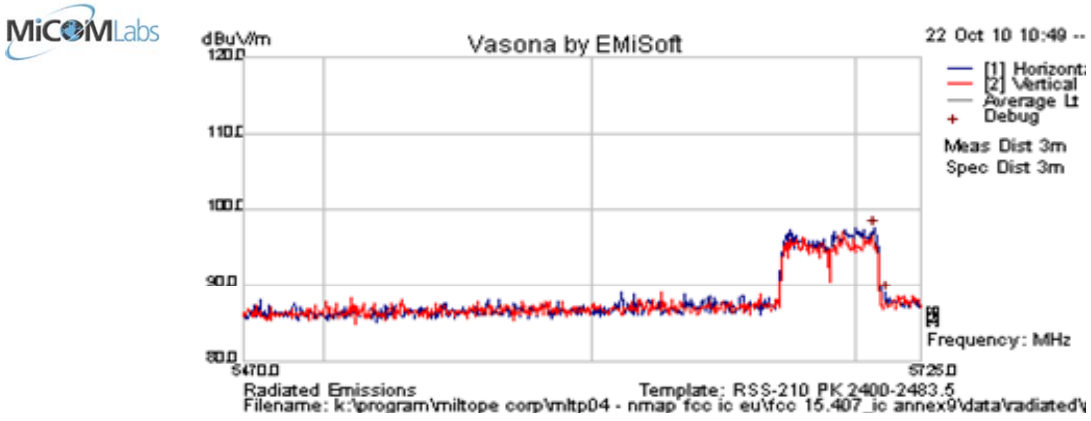


Formally measured emission peaks

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
5540.010	55.9	14.6	34.9	105.4	Peak [Scan]	V						Pk

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

Test Freq.	5690 MHz	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	26.5
Freq. Range	5470 - 5725 MHz	**Rel. Hum.(%)**	32
Power Setting	17	**Press. (mBars)**	1003
Antenna	1TLP3 / 901167-2 Rev D	**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
5707.114	47.8	14.7	35.0	97.5	Peak [Scan]	H						Pk

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

Specification

Limits

§15.407(b)(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209.

§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 §2.2 refers to Section 2.7 Table 2 below;-

Frequency(MHz)	Field Strength (μV/m)	Field Strength (dBμV/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 Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of Radiated Emissions'	0158, 0134, 0304, 0311, 0315, 0310, 0312

7.1.8. Receiver Radiated Spurious Emissions (above 1 GHz)

Industry Canada RSS-Gen §4.10, §6

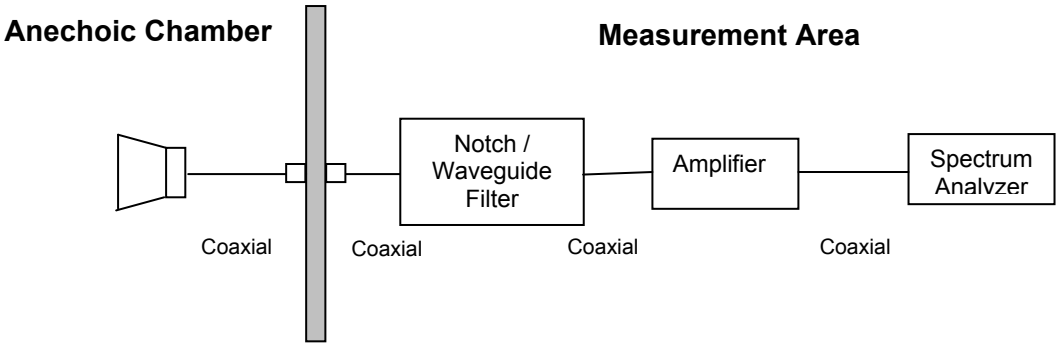
Test Procedure

Radiated emissions above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter and waveguide filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned.

All measurements on any frequency or frequencies over 1 MHz are based on the use of measurement instrumentation employing an average detector function. All measurements above 1 GHz were performed using a minimum resolution bandwidth of 1 MHz.

All Sectors of the EUT were tested simultaneously

Test Measurement Set up



Measurement set up for Radiated Emission Test

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

where: FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude
AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss or Waveguide Loss

For example:
Given receiver input reading of 51.5 dBμV; 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 dBμV/m

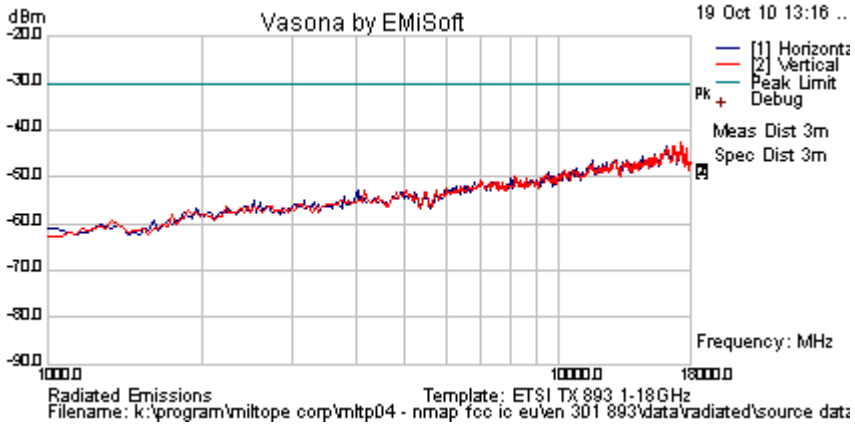
Conversion between dBμV/m (or dBμV) and μV/m (or μV) are done as:

Level (dBμV/m) = 20 * Log (level (μV/m))

40 dBμV/m = 100 μV/m
48 dBμV/m = 250 μV/m

Receiver Radiated Spurious Emissions above 1 GHz

Test Freq.	All	**Engineer**	SB
Variant	802.11n; HT-40; 13.5 MCS	**Temp (ºC)**	24.5
Freq. Range	1000 MHz - 12750 MHz	**Rel. Hum.(%)**	31
Power Setting	N/A	**Press. (mBars)**	1001
Antenna	1TLP3 / 901167-2 Rev D		
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

Legend:	TX = Transmitter Emissions; DIG = Digital Emissions; FUND = Fundamental Frequency
	ETSI Vid Avg Type = 100 kHz RBW, 100 kHz VBW, Peak Detector, Video Average, 100 Sweeps

No receiver emissions observed

Specification

Receiver Radiated Spurious Emissions

Industry Canada RSS-Gen §4.10,
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 hall comply with the limits of Table 1.

Frequency (MHz)	Field Strength (μV/m)	Field Strength (dBμV/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 Radiated Emissions

Measurement uncertainty	+5.6/ -4.5 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-03 'Measurement of Radiated Emissions'	0158, 0134, 0304, 0311, 0315, 0310, 0312

7.1.9. Radiated Spurious Emissions – Digital Apparatus

Standard Reference

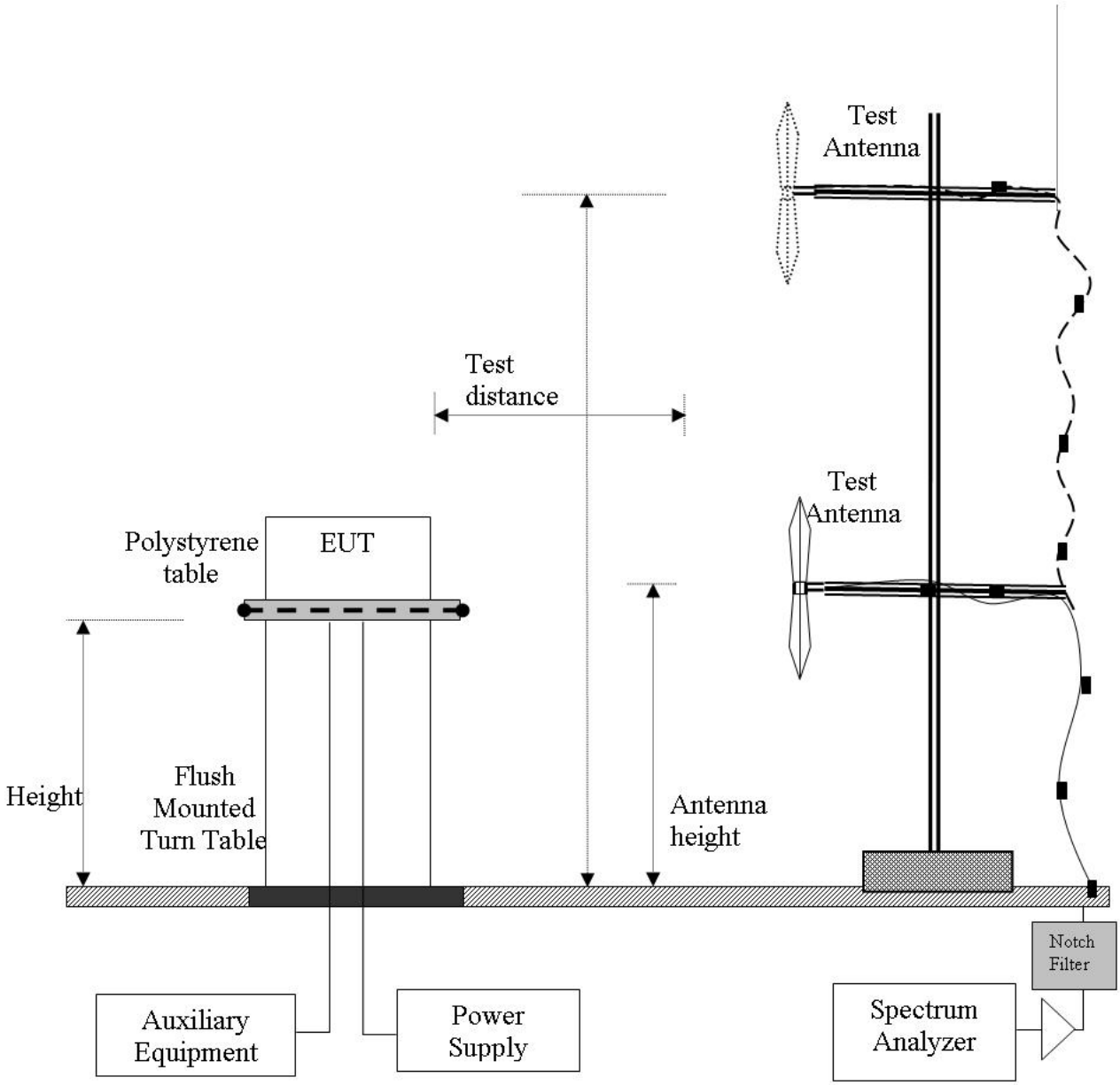
FCC, Part 15 Subpart B §15.109
Industry Canada ICES-003 §5

Test Procedure

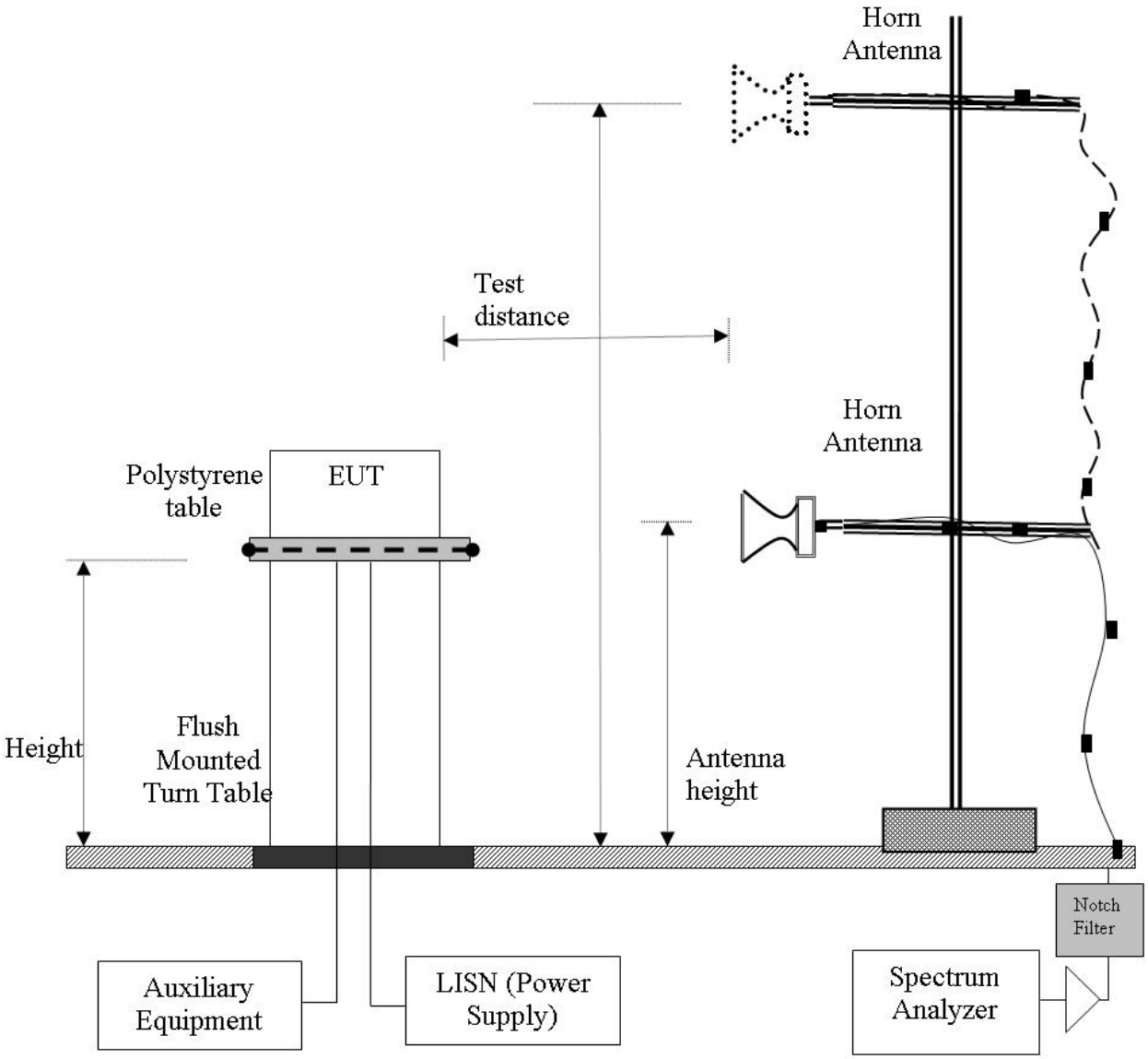
Testing was performed in a 3-meter anechoic chamber. Preliminary radiated emissions were measured on every azimuth and with the receiving antenna in both horizontal and vertical polarizations. Preliminary emissions were recorded with in Spectrum Analyzer mode, using a maximum peak detector while in peak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

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

Test Measurement Set up



Measurement set up for Radiated Emission Test < 1 GHz



Measurement set up for Radiated Emission Test > 1 GHz

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

CORR = Correction Factor = CL – AG + NFL

CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss or Waveguide Loss

Field Strength Calculation Example:

Given receiver input reading of 51.5 dBμV; 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 dBμV/m

Conversion between dBμV/m (or dBμV) and μV/m (or μV) are done as:

Level (dBμV/m) = 20 * Log (level (μV/m))

40 dBμV/m = 100 μV/m
48 dBμV/m = 250 μV/m

Specification

Radiated Spurious Emissions – Digital Apparatus

FCC, Part 15 Subpart B §15.109
A representative type or model of each digital apparatus shall be tested in accordance with the
measurement methods described in FCC Part 15; Subpart A - General and FCC Subpart B – Unintentional Radiators.

Industry Canada ICES-003
A representative type or model of each digital apparatus shall be tested in accordance with the
measurement method described in the publication referred to in Section 7.1 [Canadian Standards Association Standard CAN/CSA-CEI/IEC CISPR 22:02, "Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment."].

FCC, Part 15 Subpart B §15.109 Spurious Emissions Limits

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values.

Frequency (MHz)	Field Strength (µV/m)	Field Strength (dBµV/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

Field Strength of radiated emissions for a Class A digital device are as follows.

Frequency (MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance (meters)
30-88	100	49.5	3
88-216	150	54.0	3
216-960	200	57.0	3
Above 960	500	60.0	3

RSS-ICES §5 Spurious Emissions Limits

Class A Digital Device: The field intensity of radio noise emissions that are radiated from a Class A digital apparatus shall not exceed the limits specified in Table 5 of the publication referred to in Section 7.1, within the indicated frequency range.

Frequency range MHz	Quasi-peak limits dB(µV/m) @ 10m	Quasi-peak limits dB(µV/m) @ 3m
30 to 230	40	50.5
230 to 1 000	47	57.5
NOTE 1	The lower limit shall apply at the transition frequency.	
NOTE 2	Additional provisions may be required for cases where interference occurs	

Class B Digital Device: The field intensity of radio noise emissions that are radiated from a Class B digital apparatus shall not exceed the limits specified in Table 6 of the publication referred to in Section 7.1, within the indicated frequency range.

Frequency range MHz	Quasi-peak limits dB(µV/m) @ 10m	Quasi-peak limits dB(µV/m) @ 3m
30 to 230	30	40.5
230 to 1 000	37	47.5
NOTE 1	The lower limit shall apply at the transition frequency.	
NOTE 2	Additional provisions may be required for cases where interference occurs	

Laboratory Measurement Uncertainty for Spectrum Measurement

Measurement Uncertainty	+5.6/ -4.5 dB

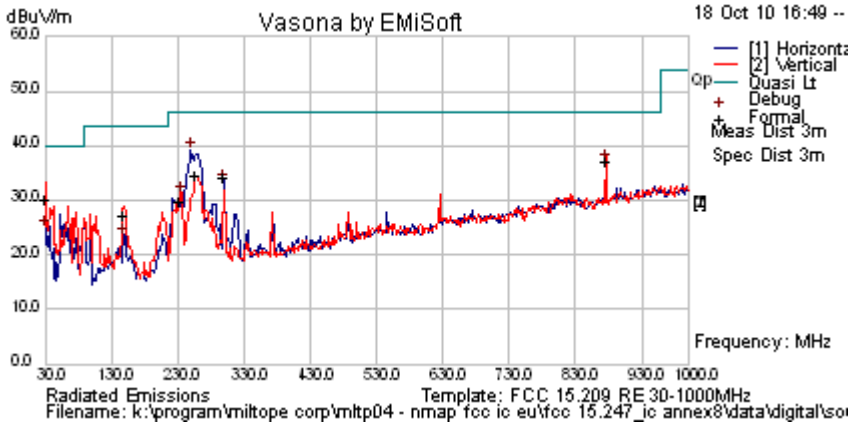
Traceability

Method	Test Equipment Used
Work instruction WI-03	0116, 0134, 0223, 0287, 0335, 0338, Automated s/w, Anechoic Chamber, EMCO Positioner, Dell Computer

Measurement Results for Radiated Digital Apparatus

28Vdc Operation

Test Freq.	2437 MHz	**Engineer**	GMH
Variant	Digital Emissions	**Temp (ºC)**	24
Freq. Range	30 MHz - 1000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	1004
Antenna	3xDipole J2, J4, J5 + 1 Leaky Coax J3		
Test Notes 1	28Vdc, 802.11g - data rate 6 Mbit/s		
Test Notes 2	2.4 GHz notch filter used to attenuate the fundamental frequency		



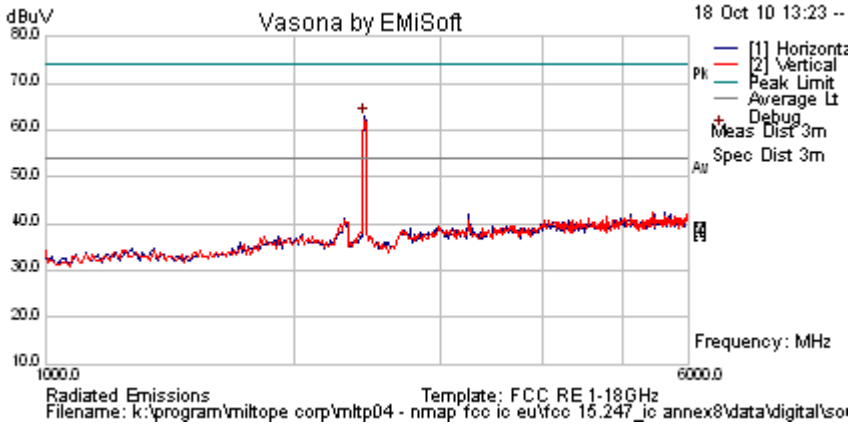
Formally measured emission peaks

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
257.124	48.2	5.0	-18.7	34.6	Quasi Max	H	147	361	46	-11.5	Pass	
875.021	37.7	7.2	-7.6	37.3	Quasi Max	V	118	205	46	-8.7	Pass	
300.001	45.7	5.2	-16.9	34.1	Quasi Max	H	101	295	46	-11.9	Pass	
233.482	43.7	4.9	-18.9	29.8	Quasi Max	V	98	118	46	-16.3	Pass	
30.656	36.8	3.4	-10.0	30.2	Quasi Max	V	98	98	40	-9.8	Pass	
148.109	41.1	4.5	-18.3	27.2	Quasi Max	V	105	352	43.5	-16.3	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

28Vdc Operation

Test Freq.	2437 MHz	**Engineer**	GMH
Variant	Digital Emissions	**Temp (ºC)**	24
Freq. Range	1000 MHz - 6000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	1004
Antenna	3xDipole J2, J4, J5 + 1 Leaky Coax J3		
Test Notes 1	28Vdc, 802.11g - data rate 6 Mbit/s		
Test Notes 2	2.4 GHz notch filter used to attenuate the fundamental frequency		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
2432.866	71.0	3.0	-11.1	62.9	Peak [Scan]	H	100	0				FUND

Legend:	DIG = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency
	NRB = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band

Emission breaking the limit line is the fundamental. No spurious emissions found within 6 dB of the limit

115 Vac Operation

Test Freq.	2437 MHz	**Engineer**	GMH
Variant	Digital Emissions	**Temp (ºC)**	24
Freq. Range	30 MHz - 1000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	1004
Antenna	3xDipole J2, J4, J5 + 1 Leaky Coax J3		
Test Notes 1	115Vac, 802.11g - data rate 6 Mbit/s		
Test Notes 2	2.4 GHz notch filter used to attenuate the fundamental frequency		

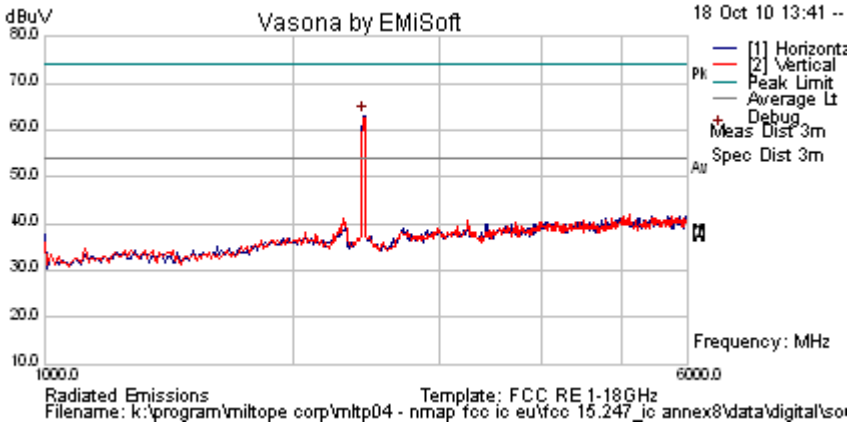
Formally measured emission peaks

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
74.559	43.5	3.9	-22.8	24.6	Quasi Max	H	354	187	40	-15.4	Pass	
30.589	37.0	3.4	-9.9	30.5	Quasi Max	V	110	343	40	-9.5	Pass	
64.783	47.5	3.9	-23.2	28.1	Quasi Max	V	262	124	40	-11.9	Pass	
149.995	41.0	4.5	-18.3	27.2	Quasi Max	V	152	167	43.5	-16.3	Pass	
874.998	39.5	7.2	-7.6	39.1	Quasi Max	V	98	178	46	-6.9	Pass	
256.885	48.9	5.0	-18.7	35.2	Quasi Max	H	142	348	46	-10.8	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

115 Vac Operation

Test Freq.	2437 MHz	**Engineer**	GMH
Variant	Digital Emissions	**Temp (ºC)**	24
Freq. Range	1000 MHz - 6000 MHz	**Rel. Hum.(%)**	33
Power Setting	18	**Press. (mBars)**	1004
Antenna	3xDipole J2, J4, J5 + 1 Leaky Coax J3		
Test Notes 1	115Vac, 802.11g - data rate 6 Mbit/s		
Test Notes 2	2.4 GHz notch filter used to attenuate the fundamental frequency		



Formally measured emission peaks

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV	Margin dB	Pass /Fail	Comments
2432.866	71.2	3.0	-11.1	63.0	Peak [Scan]	H	100	0				FUND

Legend:	DIG = Digital Device Emission; TX = Transmitter Emission; FUND = Fundamental Frequency
	NRB = Non-Restricted Band, Limit is 20 dB below Fundamental; RB = Restricted Band

Emission breaking the limit line is the fundamental. No spurious emissions found within 6 dB of the limit

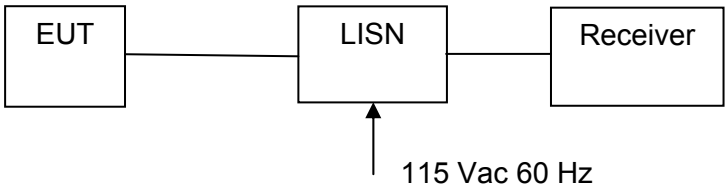
7.1.10. AC Wireline Conducted Emissions (150 kHz – 30 MHz)

FCC, Part 15 Subpart C §15.407(b)(6)/15.207
Industry Canada RSS-Gen §7.2.2

Although the nMAP can be powered from 115 Vac it does not connect to the Public Utility Network and therefore ac Wireline Emissions were untested

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.

Test Measurement Set up



Measurement set up for AC Wireline Conducted Emissions Test

Specification

Limit

§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 μΩ 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.

RSS-Gen §7.2.2
The radio frequency voltage that is conducted back into the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in the table below. The tighter limit applies at the frequency range boundaries.

§15.207 (a) and **RSS-Gen §7.2.2** Limit Matrix
The lower limit applies at the boundary between frequency ranges

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

* Decreases with the logarithm of the frequency

Laboratory Measurement Uncertainty for Conducted Emissions

Measurement uncertainty	±2.64 dB

Traceability

Method	Test Equipment Used
Measurements were made per work instruction WI-EMC-01 'Measurement of Conducted Emissions'	0158, 0184, 0287, 0190, 0293, 0307

8. Dynamic Frequency Selection (DFS)

8.1. Test Procedure and Setup

FCC, Part 15 Subpart C §15.407(h)
FCC 06-96 Memorandum Opinion and Order
Industry Canada RSS-210 A9.4

8.1.1. 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	

8.1.2. 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.

8.1.3. 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.

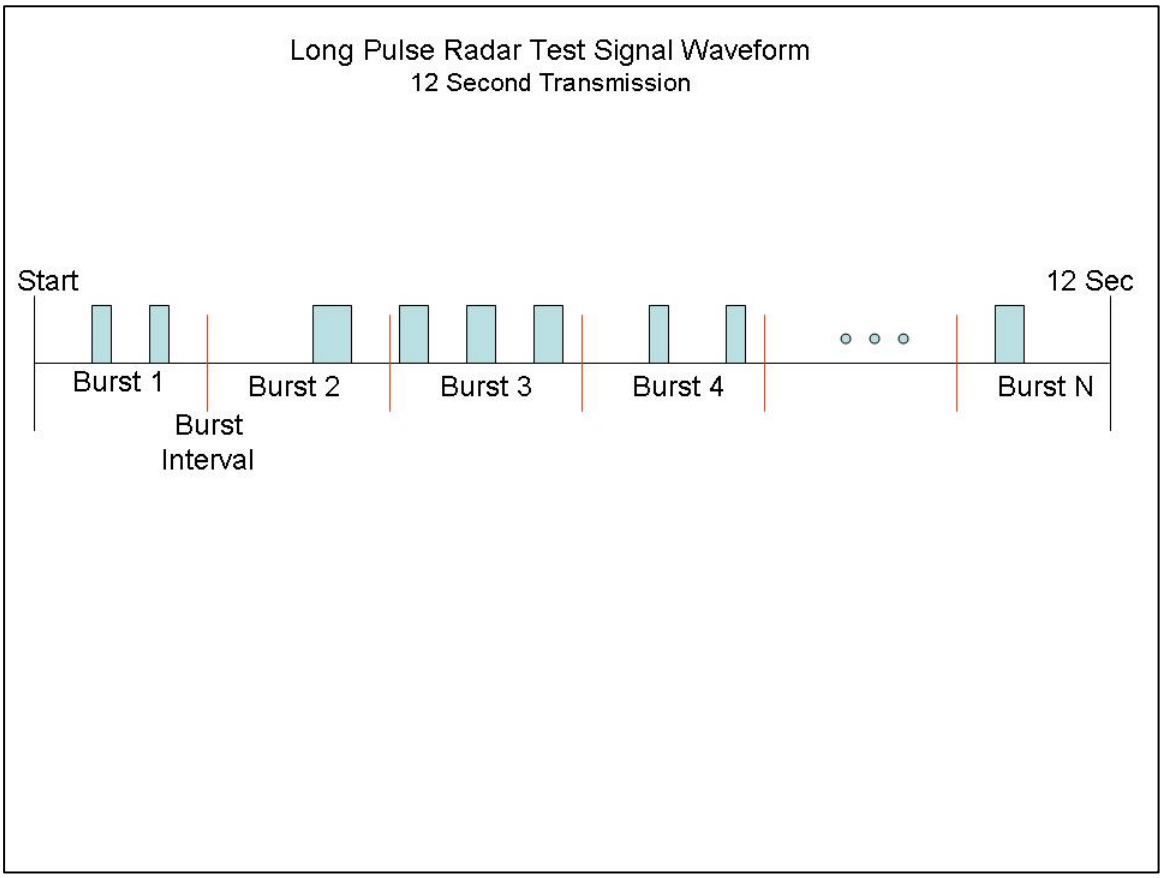
Each waveform is defined as follows:

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 / *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 / *Burst_Count*) – (Total *Burst* Length) + (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.



8.1.4. Frequency Hopping Radar Test Waveform

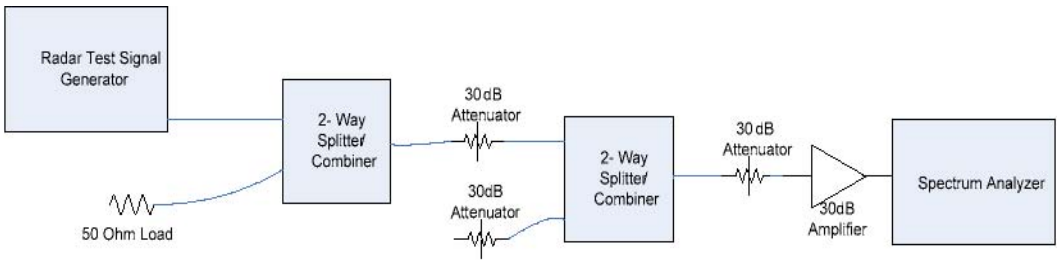
Frequency Hopping Radar Test Waveform

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:

8.1.5. 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 an amplitude offset on the spectrum analyzer.



Conducted Calibration Setup