

2.9 Average Spurious Emission in the Frequency Range 30 - 25000 MHz (FCC Section 15.247(c))

The results of average radiated spurious emissions falling within restricted bands are given in Tables 5a – 5u.

Worst Case Transmit Duty Cycle for WIT2410G

The duty cycle de-rating factor used in the calculation of average radiated limits (per 15.209) is described below. This factor was calculated by first determining the worst case scenario for system operation – worst case being defined as the scenario when the WIT2410G would be transmitting the longest period during a dwell.

The worst case operating scenario is as follows:

- 1) point to point operation
(only two units communicating with each other)
- 2) data flow is almost completely unidirectional
(that is, one radio is relaying a large amount of data to the other radio with only synchronization data being passed back the other direction)
- 3) The amount of data being fed to the radio is exactly proportioned out to fit the maximum packet size allowable (280 bytes). The radio cannot send more than 280 bytes on a single channel – additional data must be sent on the next hop.

For this example, a remote unit is transferring a large data file to a base unit.

Maximum transmit time by Remote on a single channel:

$$= 280 \text{ bytes} * 8 \text{ bits /byte} * (1/460.8\text{kbps}) = 4.86 \text{ ms}$$

The minimum hop duration for this scenario would be 6.94ms. Given that we have 86 channels in our hop set, it takes 597ms to go through the entire hop table and repeat a transmission on the same channel. Therefore, only 4.86 ms worth of data can be transmitted on a single channel in any 100ms time period.

The transmission duty cycle correction factor is then calculated as:

$$20 \log_{10} (4.86\text{ms}/100\text{ms}) = \mathbf{-26.3 \text{ dB}}$$

Table 5a. AVERAGE RADIATED SPURIOUS EMISSIONS Low Channel
Parabolic Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Parabolic Antenna-Low Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2401.55	-34.6	2hn3mh	72.4	31.6	158974.9			AVG
4803.351	-74.3	2hn3mh	32.7	5.4	80.8	500.0	15.8	AVG
7205.45	-72.5	2hn3mh	34.5	10.7	182.1	15897.4	38.8	AVG**
9607.287	-92.5	2hn3mh	14.5	13.3	24.6	15897.4	56.2	AVG**
12008.96	-93.2	2hn3mh	13.8	18.9	43.3	500.0	21.2	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-74.3 + 5.4 + 107)/20) = 80.8
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
 Signature: _____



Name: Austin Thompson

**Table 5b. AVERAGE RADIATED SPURIOUS EMISSIONS Mid Channel
Parabolic Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Parabolic Antenna-Mid Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2435.63	-34.6	2hn3mh	72.4	31.7	160013.6			AVG
4871.838	-71.9	2hn3mh	35.1	5.7	109.5	500.0	13.2	AVG
7306.638	-74.3	2hn3mh	32.7	10.9	150.7	500.0	10.4	AVG**
9743.687	-90.2	2hn3mh	16.8	13.5	32.6	16001.4	53.8	AVG**
12179.43	-94.7	2hn3mh	12.3	19.3	37.9	500.0	22.4	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-71.9 + 5.7 + 107)/20) = 109.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature: _____



Name: Austin Thompson

Table 5c. AVERAGE RADIATED SPURIOUS EMISSIONS High Channel
Parabolic Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Parabolic Antenna-High Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2469.66	-35.1	2hn3mh	71.9	31.7	152048.5			AVG
4940.1	-71.4	2hn3mh	35.6	5.9	119.2	500.0	12.5	AVG
7410.163	-75.8	2hn3mh	31.2	11.0	129.1	500.0	11.8	AVG**
9878.75	-91.3	2hn3mh	15.7	13.6	29.3	15204.9	54.3	AVG**
12350.29	-95.5	2hn3mh	11.5	19.6	36.0	500.0	22.9	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-71.4 + 5.9 + 107)/20) = 119.2
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
 Signature: _____



Name: Austin Thompson

**Table 5d. AVERAGE RADIATED SPURIOUS EMISSIONS Low Channel
Corner Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Corner Ant.-Low Channel			Client:	Cirronet		
A.T.	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2401.61	-44.0	2hn3mh	63.0	31.6	53868.4			AVG
4803.376	-71.2	2hn3mh	35.8	5.4	115.5	500.0	12.7	AVG
7205.438	-73.1	2hn3mh	33.9	10.7	170.6	5386.8	30.0	AVG**
9605.975	-89.9	2hn3mh	17.1	13.3	33.1	5386.8	44.2	AVG**
12007.46	-88.5	2hn3mh	18.5	18.9	74.1	500.0	16.6	AVG**
14409.13	-91.3	2hn3mh	15.7	22.8	84.8	5386.8	36.1	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog $((-71.2 + 5.4 + 107)/20)$ = 115.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature:



Name: Austin Thompson

**Table 5e. AVERAGE RADIATED SPURIOUS EMISSIONS Mid Channel
Corner Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Corner Ant.-Mid Channel			Client:	Cirronet		
A.T.	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range	Table	Model	S/N	Valid	Calibrated:			
	2hn3mh	Model : SAS-571		S/N 605	Yes	01 APR 05		
	preamp			S/N	Yes	June/30/2005		
	flex2ft			S/N	Yes	05/Dec/2005		
	flex17ft			S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2438.76	-42.8	2hn3mh	64.2	31.7	62289.9			AVG
4871.663	-72.1	2hn3mh	34.9	5.7	107.3	500.0	13.4	AVG
7306.588	-74.3	2hn3mh	32.8	10.9	151.5	500.0	10.4	AVG**
9742.412	-90.0	2hn3mh	17.0	13.5	33.3	6229.0	45.4	AVG**
12177.9	-86.3	2hn3mh	20.7	19.3	99.4	500.0	14.0	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-72.1 + 5.7 + 107)/20) = 107.3
CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature: _____



Name: Austin Thompson

**Table 5f. AVERAGE RADIATED SPURIOUS EMISSIONS High Channel
Corner Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Corner Ant.-Hi Channel			Client:	Cirronet		
A.T.	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2469.66	-43.0	2hn3mh	64.0	31.7	61232.5			AVG
4939.913	-73.0	2hn3mh	34.0	5.9	99.3	500.0	14.0	AVG
7408.975	-74.5	2hn3mh	32.6	11.0	150.7	500.0	10.4	AVG**
9880.125	-89.1	2hn3mh	17.9	13.6	37.8	6123.3	44.2	AVG**
12350.24	-85.3	2hn3mh	21.7	19.6	115.8	500.0	12.7	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-73.0 + 5.9 + 107)/20) = 99.3
CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature: _____



Name: Austin Thompson

**Table 5g. AVERAGE RADIATED SPURIOUS EMISSIONS Low Channel
Omni Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Omni Antenna- Low Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2401.53	-45.4	2hn3mh	61.6	31.6	45848.6			AVG
4803.48	-75.6	2hn3mh	31.4	5.4	69.5	500.0	17.1	AVG
7204.401	-68.5	2hn3mh	38.5	10.7	288.6	4584.9	24.0	AVG**
9605.889	-90.0	2hn3mh	17.0	13.3	32.8	4584.9	42.9	AVG**
12009.12	-91.3	2hn3mh	15.7	18.9	53.9	500.0	19.3	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-75.6 + 5.4 + 107)/20) = 69.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature:



Name: Austin Thompson

**Table 5h. AVERAGE RADIATED SPURIOUS EMISSIONS Mid Channel
Omni Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Omni Antenna-Mid Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2435.71	-43.0	2hn3mh	64.0	31.7	60836.5			AVG
4871.658	-74.5	2hn3mh	32.5	5.7	81.1	500.0	15.8	AVG
7307.713	-75.7	2hn3mh	31.3	10.9	128.3	500.0	11.8	AVG**
9743.625	-90.2	2hn3mh	16.8	13.5	32.6	6083.7	45.4	AVG**
12177.93	-93.8	2hn3mh	13.2	19.3	42.0	500.0	21.5	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-74.5 + 5.7 + 107)/20) = 81.1

CONVERSION FROM dBm TO dBuV = 107 dB

Tester

Signature: _____



Name: Austin Thompson

**Table 5i. AVERAGE RADIATED SPURIOUS EMISSIONS High Channel
Omni Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Omni Antenna-High Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range	Table	Model	S/N	Valid	Calibrated:			
	2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05			
	preamp		S/N	Yes	June/30/2005			
	flex2ft		S/N	Yes	05/Dec/2005			
	flex17ft		S/N	Yes	05/Dec/2005			
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2469.73	-44.0	2hn3mh	63.0	31.7	54574.2			AVG
4939.688	-74.8	2hn3mh	32.2	5.9	80.6	500.0	15.9	AVG
7409.1	-75.2	2hn3mh	31.8	11.0	138.3	500.0	11.2	AVG**
9879.962	-92.2	2hn3mh	14.8	13.6	26.4	5457.4	46.3	AVG**
12350.2	-91.6	2hn3mh	15.4	19.6	56.3	500.0	19.0	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-74.8 + 5.9 + 107)/20) = 80.6
CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature: _____



Name: Austin Thompson

Table 5j. AVERAGE RADIATED SPURIOUS EMISSIONS Low Channel
Large Patch Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Large Patch Ant.- Low Channel			Client:	Cirronet		
A.T.	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range	Table	Model	S/N	Valid	Calibrated:			
	2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05			
	preamp		S/N	Yes	June/30/2005			
	flex2ft		S/N	Yes	05/Dec/2005			
	flex17ft		S/N	Yes	05/Dec/2005			
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2401.61	-42.8	2hn3mh	64.2	31.6	61849.2			AVG
4803.575	-73.5	2hn3mh	33.5	5.4	88.6	500.0	15.0	AVG
7204.63	-75.3	2hn3mh	31.7	10.7	131.9	6184.9	33.4	AVG**
9605.75	-90.4	2hn3mh	16.6	13.3	31.3	6184.9	45.9	AVG**
12009.3	-90.6	2hn3mh	16.4	18.9	58.5	500.0	18.6	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-73.5 + 5.4 + 107)/20) = 88.6
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
 Signature: _____



Name: Austin Thompson

Table 5k. AVERAGE RADIATED SPURIOUS EMISSIONS Mid Channel
Large Patch Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Large Patch Ant.- Mid Channel				Client:	Cirronet	
AT	Project:	05-0311		Class:	Average	Model:	WIT2410G	
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
		2hn3mh	Model : SAS-571		S/N 605	Yes	01 APR 05	
		preamp			S/N	Yes	June/30/2005	
		flex2ft			S/N	Yes	05/Dec/2005	
		flex17ft			S/N	Yes	05/Dec/2005	
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2435.73	-43.0	2hn3mh	64.0	31.7	60836.6			AVG
4871.663	-71.8	2hn3mh	35.2	5.7	110.7	500.0	13.1	AVG
7307.85	-74.1	2hn3mh	32.9	10.9	154.2	6083.7	31.9	AVG**
9742.175	-93.8	2hn3mh	13.2	13.5	21.5	6083.7	49.0	AVG**
12177.85	-82.0	2hn3mh	25.0	19.3	163.6	500.0	9.7	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-71.8 + 5.7 + 107)/20) = 110.7
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
 Signature: _____



Name: Austin Thompson

Table 5I. AVERAGE RADIATED SPURIOUS EMISSIONS High Channel
Large Patch Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Large Patch Ant.-Hi Channel				Client:	Cirronet	
A.T.	Project:	05-0311		Class:	Average	Model:	WIT2410G	
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
		2hn3mh	Model : SAS-571		S/N 605	Yes	01 APR 05	
		preamp			S/N	Yes	June/30/2005	
		flex2ft			S/N	Yes	05/Dec/2005	
		flex17ft			S/N	Yes	05/Dec/2005	
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2469.81	-43.4	2hn3mh	63.6	31.7	58478.3			AVG
4939.875	-69.9	2hn3mh	37.1	5.9	141.7	500.0	11.0	AVG
7409.013	-74.5	2hn3mh	32.5	11.0	149.9	5847.8	31.8	AVG**
9878.7	-93.2	2hn3mh	13.8	13.6	23.5	5847.8	47.9	AVG**
12350.04	-88.4	2hn3mh	18.6	19.6	81.4	500.0	15.8	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-69.9 + 5.9 + 107)/20) = 141.7
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
 Signature: _____



Name: Austin Thompson

Table 5m. AVERAGE RADIATED SPURIOUS EMISSIONS Low Channel
Gold Whip Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Whip Antenna-Low Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2401.53	-49.0	2hn3mh	58.0	31.6	30291.9			AVG
4803.726	-70.5	2hn3mh	36.5	5.4	125.1	500.0	12.0	AVG
7205.389	-66.8	2hn3mh	40.2	10.7	351.1	3029.2	18.7	AVG**
9605.926	-85.8	2hn3mh	21.2	13.3	53.1	3029.2	35.1	AVG**
12007.4	-90.7	2hn3mh	16.3	18.9	57.8	500.0	18.7	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-70.5 + 5.4 + 107)/20) = 1251
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
 Signature: _____



Name: Austin Thompson

Table 5n. AVERAGE RADIATED SPURIOUS EMISSIONS Mid Channel
Gold Whip Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Whip Antenna-Mid Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range	Table	Model	S/N	Valid	Calibrated:			
	2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05			
	preamp		S/N	Yes	June/30/2005			
	flex2ft		S/N	Yes	05/Dec/2005			
	flex17ft		S/N	Yes	05/Dec/2005			
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2435.71	-52.2	2hn3mh	54.8	31.7	21094.3			AVG
4871.763	-79.1	2hn3mh	27.9	5.7	47.8	500.0	20.4	AVG
7307.788	-72.3	2hn3mh	34.7	10.9	189.7	500.0	8.4	AVG**
9743.639	-86.9	2hn3mh	20.1	13.5	47.7	2109.4	32.9	AVG**
12179.78	-87.5	2hn3mh	19.5	19.3	86.9	500.0	15.2	AVG**
14615.45	-90.7	2hn3mh	16.3	22.8	90.1	2109.4	27.4	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-79.1 + 5.7 + 107)/20) = 47.8
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature:



Name: Austin Thompson

**Table 5o. AVERAGE RADIATED SPURIOUS EMISSIONS High Channel
Gold Whip Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Whip Antenna-High Channel			Client:	Cirronet		
AT	Project:	05-0311		Class:	Average	Model:	WIT2410G	
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
		2hn3mh	Model : SAS-571		S/N 605	Yes	01 APR 05	
		preamp			S/N	Yes	June/30/2005	
		flex2ft			S/N	Yes	05/Dec/2005	
		flex17ft			S/N	Yes	05/Dec/2005	
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2469.75	-54.5	2hn3mh	52.5	31.7	16292.6			AVG
4939.713	-75.2	2hn3mh	31.8	5.9	77.0	500.0	16.3	AVG
7409.313	-73.4	2hn3mh	33.6	11.0	170.1	500.0	9.4	AVG**
9878.576	-86.9	2hn3mh	20.1	13.6	48.6	1629.3	30.5	AVG**
12350.07	-90.6	2hn3mh	16.4	19.6	63.2	500.0	18.0	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-75.2 + 5.9 + 107)/20) = 77.0
CONVERSION FROM dBm TO dBuV = 107 dB

Tester

Signature: _____



Name: Austin Thompson

Table 5p. AVERAGE RADIATED SPURIOUS EMISSIONS Low Channel
Yagi Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Yagi Antenna-Low Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
		2hn3mh	Model : SAS-571		S/N 605	Yes	01 APR 05	
		preamp			S/N	Yes	June/30/2005	
		flex2ft			S/N	Yes	05/Dec/2005	
		flex17ft			S/N	Yes	05/Dec/2005	
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2401.59	-43.2	2hn3mh	63.8	31.6	59065.2			AVG
4803.563	-70.9	2hn3mh	36.1	5.4	119.5	500.0	12.4	AVG
7204.476	-65.3	2hn3mh	41.7	10.7	417.2	5906.5	23.0	AVG**
9607.176	-90.6	2hn3mh	16.4	13.3	30.6	5906.5	45.7	AVG**
12007.5	-89.2	2hn3mh	17.8	18.9	68.7	500.0	17.2	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-70.9 + 5.4 + 107)/20) = 119.5
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
 Signature: _____



Name: Austin Thompson

**Table 5q. AVERAGE RADIATED SPURIOUS EMISSIONS Mid Channel
Yagi Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Yagi Antenna-Mid Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2435.66	-42.1	2hn3mh	64.9	31.7	67477.7			AVG
4871.65	-69.3	2hn3mh	37.7	5.7	147.7	500.0	10.6	AVG
7306.564	-81.2	2hn3mh	25.8	10.9	68.1	500.0	17.3	AVG**
9742.387	-90.2	2hn3mh	16.8	13.5	32.6	6747.8	46.3	AVG**
12177.74	-87.5	2hn3mh	19.5	19.3	86.8	500.0	15.2	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-69.3 + 5.7 + 107)/20) = 147.7
CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature: _____



Name: Austin Thompson

**Table 5r. AVERAGE RADIATED SPURIOUS EMISSIONS High Channel
Yagi Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Yagi Antenna-High Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
		2hn3mh	Model : SAS-571		S/N 605	Yes	01 APR 05	
		preamp			S/N	Yes	June/30/2005	
		flex2ft			S/N	Yes	05/Dec/2005	
		flex17ft			S/N	Yes	05/Dec/2005	
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2470.00	-43.0	2hn3mh	64.0	31.7	61236.5			AVG
4939.85	-70.1	2hn3mh	36.9	5.9	138.5	500.0	11.2	AVG
7409.075	-75.3	2hn3mh	31.7	11.0	136.7	500.0	11.3	AVG**
9879.275	-90.7	2hn3mh	16.3	13.6	31.4	6123.7	45.8	AVG**
12350.11	-91.0	2hn3mh	16.0	19.6	60.4	500.0	18.4	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-70.1 + 5.9 + 107)/20) = 138.5
CONVERSION FROM dBm TO dBuV = 107 dB

**Tester
Signature:**



Name: Austin Thompson

Table 5s. AVERAGE RADIATED SPURIOUS EMISSIONS Low Channel
Dipole Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Dipole Antenna-Low Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model	S/N	Valid	Calibrated:		
		2hn3mh	Model : SAS-571	S/N 605	Yes	01 APR 05		
		preamp		S/N	Yes	June/30/2005		
		flex2ft		S/N	Yes	05/Dec/2005		
		flex17ft		S/N	Yes	05/Dec/2005		
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2401.60	-46.4	2hn3mh	60.6	31.6	40863.2			AVG
4803.48	-78.7	2hn3mh	28.3	5.4	48.7	500.0	20.2	AVG
7205.33	-73.5	2hn3mh	33.5	10.7	162.3	4086.3	28.0	AVG**
9606.02	-92.2	2hn3mh	14.8	13.3	25.4	4086.3	44.1	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-78.7 + 5.4 + 107)/20) = 48.7
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester
 Signature: _____



Name: Austin Thompson

**Table 5t. AVERAGE RADIATED SPURIOUS EMISSIONS Mid Channel
Dipole Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Dipole Antenna-Mid Channel			Client:	Cirronet		
AT	Project:	05-0311	Class:	Average	Model:	WIT2410G		
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
		2hn3mh	Model : SAS-571		S/N 605	Yes	01 APR 05	
		preamp			S/N	Yes	June/30/2005	
		flex2ft			S/N	Yes	05/Dec/2005	
		flex17ft			S/N	Yes	05/Dec/2005	
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2435.75	-48.8	2hn3mh	58.2	31.7	31200.9			AVG
4871.88	-75.2	2hn3mh	31.8	5.7	74.9	500.0	16.5	AVG
7307.6	-74.3	2hn3mh	32.7	10.9	150.7	500.0	10.4	AVG**
9742.22	-91.3	2hn3mh	15.7	13.5	28.7	3120.1	40.7	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-75.2 + 5.7 + 107)/20) = 74.9
CONVERSION FROM dBm TO dBuV = 107 dB

Tester

Signature: _____



Name: Austin Thompson

**Table 5u. AVERAGE RADIATED SPURIOUS EMISSIONS High Channel
Dipole Antenna**

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Dipole Antenna-High Channel			Client:	Cirronet		
AT	Project:	05-0311		Class:	Average	Model:	WIT2410G	
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
		2hn3mh	Model : SAS-571		S/N 605	Yes	01 APR 05	
		preamp			S/N	Yes	June/30/2005	
		flex2ft			S/N	Yes	05/Dec/2005	
		flex17ft			S/N	Yes	05/Dec/2005	
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Margin	PK = n
(MHz)	(dBm)	Table	(dBuV)	(dB)	(uV/m)	(uV/m)	(dB)	/ QP
2469.78	-48.8	2hn3mh	58.2	31.7	31404.5			AVG
4939.83	-72.5	2hn3mh	34.5	5.9	105.0	500.0	13.6	AVG
7409.88	-73.3	2hn3mh	33.7	11.0	172.1	500.0	9.3	AVG**
9879.85	-94.9	2hn3mh	12.1	13.6	19.3	3140.5	44.2	AVG**

Data corrected by 0.1 dB for loss of high pass filter, except to fundamental

** Conversion from 1 meter to 3 meters = -9.54 dB

SAMPLE CALCULATION:RESULTS (uV/m @ 3m) = Antilog ((-72.5 + 5.9 + 107)/20) = 105.0
CONVERSION FROM dBm TO dBuV = 107 dB

Tester
Signature: _____



Name: Austin Thompson