2.8 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 Table 5a – 5u. Due to the functionality of the transmitter and the complexity of the test setup in order to measure worse case duty cycle, Cirronet Corporation provided an explanation of the worse case duty cycle of the transmitter (provided on the following pages).

Worst Case Transmit Duty Cycle for WIT 2450

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 WIT 2450 would be transmitting the longest period during a dwell.

This worst case operating scenario is as follows:

1) point-to-point operation
(only two units communicating with one another)

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 sending radio is exactly portioned 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 bytes * 8 bits/byte * (1/460.8Kbps) = 4.86ms

The minimum hop duration for this scenario would be 6.94ms. Given that we have 86 channels in our hop set, it takes 521ms to go through the entire hop table and repeat a transmission on the same channel. Therefore, only 4.86milliseconds 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:

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

Table 5a. AVERAGE RADIATED SPURIOUS EMISSIONS (Low)
Parabolic Dish Antenna

Radiated Emissions								
Test By:	Test:	Spurious Emissions-Parabolic Antenna-Low Channel				Client:	Cirronet	
	Project:	06-0003		Class:	Average	Model:	WIT2450	
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
WIT 2450		2HN3mH	Model : SAS-571		S/N 605	Yes	01 APR 05	
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
2400.56	-35.1	2HN3mH	71.9	31.6	150053.6			AVG
4801.85	-72.8	2HN3mH	34.2	5.4	95.9	500.0	**14.3**	AVG
7202.62	-78.0	2HN3mH	29.0	10.7	96.6	15005.4	**43.8**	AVG**
9604.36	-72.9	2HN3mH	34.1	13.3	234.5	15005.4	**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 ((-72.8 + 5.4 + 107)/20) = 95.9
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5b. AVERAGE RADIATED SPURIOUS EMISSIONS (Mid)
Parabolic Dish Antenna

Radiated Emissions								
Test By:	Test:	Spurious Emissions-Parabolic Antenna-Mid Channel			Client:	Cirronet		
	Project:	06-0003		Class:	Average	Model:	WIT2450	
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
WIT 2450		2HN3mH	Model : SAS-571		S/N 605	Yes	01 APR 05	
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
2432.85	-32.9	2HN3mH	74.1	31.7	194503.1			AVG
4866.07	-74.8	2HN3mH	32.2	5.7	78.2	500.0	**16.1**	AVG
7299.63	-74.7	2HN3mH	32.3	10.8	143.7	500.0	**10.8**	AVG**
9732.97	-73.6	2HN3mH	33.4	13.5	220.2	19450.3	**38.9**	AVG**
12164.12	-94.5	2HN3mH	12.5	19.2	38.7	500.0	**22.2**	AVG**
14598.9	-89.4	2HN3mH	17.6	22.8	104.9	19450.3	**45.4**	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 ((-74.8 + 5.7 + 107)/20) = 78.2
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5c. AVERAGE RADIATED SPURIOUS EMISSIONS (High)
Parabolic Antenna

Radiated Emissions								
Test By:	Test:	Spurious Emissions-Parabolic Antenna-High Channel				Client:	Cirronet	
	Project:	06-0003		Class:	Average	Model:	WIT2450	
Frequency Range		Table	Model		S/N	Valid	Calibrated:	
WIT 2450		2HN3mH	Model : SAS-571		S/N 605	Yes	01 APR 05	
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
2475.29	-33.6	2HN3mH	73.4	31.7	180904.4			AVG
4951.03	-73.9	2HN3mH	33.1	6.0	89.8	500.0	**14.9**	AVG
7426.138	-85.8	2HN3mH	21.2	11.0	40.9	500.0	**21.7**	AVG**
9901.56	-73.3	2HN3mH	33.7	13.7	233.2	18090.4	**37.8**	AVG**
12377.18	-91.6	2HN3mH	15.4	19.7	56.7	500.0	**18.9**	AVG**
14851.23	-88.2	2HN3mH	18.8	22.5	116.5	18090.4	**43.8**	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 ((-73.9 + 6.0 + 107)/20) = 89.8
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5d. AVERAGE RADIATED SPURIOUS EMISSIONS (Low)
Corner Reflector Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Corner Antenna-Low Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2400.98	-42.3	2hn3mh	64.7	31.6	65506.0			**AVG**
4801.94	-83.0	2hn3mh	24.0	5.4	29.6	500.0	**24.5**	**AVG**
7203.6	-75.4	2hn3mh	31.6	10.7	130.4	6550.6	**34.0**	**AVG****
9603.99	-74.9	2hn3mh	32.1	13.3	186.3	6550.6	**30.9**	**AVG****
12004.5	-94.3	2hn3mh	12.7	18.9	38.1	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 ((-83.0 + 5.4 + 107)/20) = 29.6
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5e. AVERAGE RADIATED SPURIOUS EMISSIONS (Mid)
Corner Reflector Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Corner Antenna-Mid Channel			**Client:**	Cirronet		
AT	**Project:**	06-0003	**Class:**	**Average**	**Model:**	WIT2450		
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**
2433.50	-45.8	2hn3mh	61.2	31.7	44053.5			**AVG**
4866.7	-75.0	2hn3mh	32.0	5.7	76.5	500.0	**16.3**	**AVG**
7300.7	-79.4	2hn3mh	27.6	10.9	83.7	500.0	**15.5**	**AVG****
9734.3	-74.6	2hn3mh	32.4	13.5	196.3	4405.4	**27.0**	**AVG****
12165.9	-87.8	2hn3mh	19.2	19.3	83.7	500.0	**15.5**	**AVG****
14599.5	-90.0	2hn3mh	17.0	22.8	97.9	4405.4	**33.1**	**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 ((-75.0 + 5.7 + 107)/20) = 76.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5f. AVERAGE RADIATED SPURIOUS EMISSIONS (High)
Corner Reflector Antenna

Radiated Spurious Emissions								
Test By:		Test:	Spurious Emissions-Corner Antenna-High Channel			Client:	Cirronet	
AT		Project:	06-0003	Class:	Average	Model:	WIT2450	
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
2475.26	-45.0	2hn3mh	62.0	31.7	48690.8			AVG
4950.663	-78.9	2hn3mh	28.1	6.0	50.5	500.0	**19.9**	AVG
7425.9	-77.6	2hn3mh	29.4	11.0	105.2	500.0	**13.5**	AVG**
9900.7	-72.2	2hn3mh	34.8	13.7	264.6	4869.1	**25.3**	AVG**
12376.4	-90.8	2hn3mh	16.2	19.7	62.2	500.0	**18.1**	AVG**
14848.9	-90.2	2hn3mh	16.8	22.5	92.6	4869.1	**34.4**	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 ((-78.9 + 6.0 + 107)/20) = 50.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5g. AVERAGE RADIATED SPURIOUS EMISSIONS (Low)
Omni Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Omni Antenna-Low Channel			**Client:**	Cirronet		
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2400.39	-43.1	2hn3mh	63.9	31.6	59735.5			**AVG**
4801.8	-80.2	2hn3mh	26.8	5.4	40.9	500.0	**21.7**	**AVG**
7202.5	-62.9	2hn3mh	44.1	10.7	549.8	5973.6	**20.7**	**AVG****
9603.4	-66.4	2hn3mh	40.6	13.3	495.6	5973.6	**21.6**	**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 ((-80.2 + 5.4 + 107)/20) = 40.9
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5h. AVERAGE RADIATED SPURIOUS EMISSIONS (Mid)
Omni Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Omni Antenna-Mid Channel				Client:	Cirronet	
AT	Project:	06-0003		Class:	Average	Model:	WIT2450	
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
2433.50	-44.5	2hn3mh	62.5	31.7	51165.9			AVG
4861.19	-73.2	2hn3mh	33.8	5.6	93.8	500.0	**14.5**	AVG
7299.53	-78.9	2hn3mh	28.1	10.8	88.6	500.0	**15.0**	AVG**
9711.5	-73.7	2hn3mh	33.3	13.4	217.0	5116.6	**27.5**	AVG**
12165.7	-90.9	2hn3mh	16.1	19.2	58.5	500.0	**18.6**	AVG**
14598.6	-91.0	2hn3mh	16.0	22.8	87.2	5116.6	**35.4**	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 ((-73.2 + 5.6 + 107)/20) = 93.8
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature: _____ **Name: Austin Thompson**

Table 5i. PEAK RADIATED SPURIOUS EMISSIONS (High)
Omni Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Omni Antenna-High Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2475.80	-47.4	2hn3mh	59.6	31.7	36939.5			**AVG**
4950.863	-76.4	2hn3mh	30.6	6.0	67.3	500.0	**17.4**	**AVG**
7425.95	-74.4	2hn3mh	32.6	11.0	152.0	500.0	**10.3**	**AVG****
9901.2	-71.9	2hn3mh	35.1	13.7	273.9	3694.0	**22.6**	**AVG****
12377.5	-89.1	2hn3mh	17.9	19.7	75.6	500.0	**16.4**	**AVG****
14851.3	-89.7	2hn3mh	17.3	22.5	98.0	3694.0	**31.5**	**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 ((-76.4 + 6.0 + 107)/20) = 67.3
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5j. AVERAGE RADIATED SPURIOUS EMISSIONS (Low)
Whip Gold Plate Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Whip Antenna-Low Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2400.30	-43.4	2hn3mh	63.6	31.6	57706.5			**AVG**
4802.2	-69.2	2hn3mh	37.8	5.4	145.2	500.0	**10.7**	**AVG**
7203.3	-70.9	2hn3mh	36.1	10.7	218.9	5770.7	**28.4**	**AVG****
9604.4	-75.0	2hn3mh	32.0	13.3	184.1	5770.7	**29.9**	**AVG****
12004.7	-95.2	2hn3mh	11.8	18.9	34.4	500.0	**23.3**	**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 ((-69.2 + 5.4 + 107)/20) = 145.2
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5k. AVERAGE RADIATED SPURIOUS EMISSIONS (Mid)
Whip Gold Plate Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Whip Antenna-Mid Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2433.50	-46.8	2hn3mh	60.2	31.7	39262.7			**AVG**
4866.6	-70.7	2hn3mh	36.3	5.7	125.4	500.0	**12.0**	**AVG**
7299.47	-81.9	2hn3mh	25.1	10.8	62.7	500.0	**18.0**	**AVG****
9732.6	-77.2	2hn3mh	29.8	13.5	145.5	3926.3	**28.6**	**AVG****
12165.5	-93.7	2hn3mh	13.3	19.2	42.4	500.0	**21.4**	**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 ((-70.7 + 5.7 + 107)/20) = 125.4
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature: _____ **Name: Austin Thompson**

Table 5l. AVERAGE RADIATED SPURIOUS EMISSIONS (High)
Whip Gold Plate Antenna

Radiated Spurious Emissions								
Test By:	Test:	Spurious Emissions-Whip Antenna-High Channel				Client:	Cirronet	
AT	Project:	06-0003		Class:	Average	Model:	WIT2450	
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
2475.50	-48.2	2hn3mh	58.8	31.7	33687.3			AVG
4950.7	-73.1	2hn3mh	33.9	6.0	98.5	500.0	14.1	AVG
7425.6	-75.7	2hn3mh	31.3	11.0	130.9	500.0	11.6	AVG**
9902.1	-77.5	2hn3mh	29.5	13.7	143.8	3368.7	27.4	AVG**
12377.6	-88.6	2hn3mh	18.4	19.7	80.1	500.0	15.9	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 ((-73.1 + 6.0 + 107)/20) = 98.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5m. AVERAGE RADIATED SPURIOUS EMISSIONS (Low)
Yagi Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Yagi Antenna-Low Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2402.55	-37.5	2hn3mh	69.5	31.6	113870.6			**AVG**
4803.46	-77.1	2hn3mh	29.9	5.4	58.5	500.0	**18.6**	**AVG**
7204.9	-76.3	2hn3mh	30.7	10.7	117.6	11387.1	**39.7**	**AVG****
9606.7	-78.3	2hn3mh	28.7	13.3	126.0	11387.1	**39.1**	**AVG****
12007.5	-94.9	2hn3mh	12.1	18.9	35.6	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 ((-77.1 + 5.4 + 107)/20) = 58.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5n. AVERAGE RADIATED SPURIOUS EMISSIONS (Mid)
Yagi Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Yagi Antenna-Mid Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2433.13	-46.5	2hn3mh	60.5	31.7	40639.6			**AVG**
4865.99	-71.4	2hn3mh	35.6	5.7	115.7	500.0	**12.7**	**AVG**
7299.4	-83.4	2hn3mh	23.6	10.8	52.8	500.0	**19.5**	**AVG****
9732.7	-71.4	2hn3mh	35.6	13.5	283.6	4064.0	**23.1**	**AVG****
12166	-91.0	2hn3mh	16.0	19.3	57.9	500.0	**18.7**	**AVG****
14598.9	-90.3	2hn3mh	16.7	22.8	94.6	4064.0	**32.7**	**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 ((-71.4 + 5.7 + 107)/20) = 115.7
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5o. AVERAGE RADIATED SPURIOUS EMISSIONS (High)
Yagi Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Yagi Antenna-High Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2475.40	-38.7	2hn3mh	68.3	31.7	100567.6			**AVG**
4950.79	-70.6	2hn3mh	36.4	6.0	131.3	500.0	**11.6**	**AVG**
7426.26	-79.9	2hn3mh	27.1	11.0	80.7	500.0	**15.8**	**AVG****
9901.3	-71.2	2hn3mh	35.8	13.7	296.9	10056.8	**30.6**	**AVG****
12375.7	-87.2	2hn3mh	19.8	19.7	94.1	500.0	**14.5**	**AVG****
14853.4	-90.1	2hn3mh	16.9	22.5	93.6	10056.8	**40.6**	**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 ((-70.6 + 6.0 + 107)/20) = 131.3
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5p. AVERAGE RADIATED SPURIOUS EMISSIONS (Low)
Large Patch Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Large Patch Antenna-Low Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2400.89	-35.7	2hn3mh	71.3	31.6	140047.0			**AVG**
4802.1	-76.8	2hn3mh	30.2	5.4	60.5	500.0	**18.3**	**AVG**
7211.06	-74.5	2hn3mh	32.5	10.7	144.8	14004.7	**39.7**	**AVG****
9614.5	-77.6	2hn3mh	29.4	13.3	136.7	14004.7	**40.2**	**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 ((-76.8 + 5.4 + 107)/20) = 60.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5q. AVERAGE RADIATED SPURIOUS EMISSIONS (Mid)
Large Patch Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Large Patch Antenna-Mid Channel			**Client:**	Cirronet		
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2433.19	-38.0	2hn3mh	69.0	31.7	108132.1			**AVG**
4867.2	-72.1	2hn3mh	34.9	5.7	106.8	500.0	**13.4**	**AVG**
7299.56	-76.2	2hn3mh	30.8	10.8	120.9	500.0	**12.3**	**AVG****
9732.76	-73.8	2hn3mh	33.2	13.5	215.1	222820.3	**60.3**	**AVG****
12164.4	-95.3	2hn3mh	11.7	19.2	35.3	222820.3	**76.0**	**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) = 106.8
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5r. AVERAGE RADIATED SPURIOUS EMISSIONS (High)
Large Patch Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Large Patch Antenna-High Channel			**Client:**	Cirronet		
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2475.66	-37.8	2hn3mh	69.2	31.7	111552.6			**AVG**
4950.75	-72.9	2hn3mh	34.1	6.0	100.8	500.0	**13.9**	**AVG**
7425.8	-78.9	2hn3mh	28.1	11.0	90.6	500.0	**14.8**	**AVG****
9902.7	-78.8	2hn3mh	28.2	13.7	123.8	11155.3	**39.1**	**AVG****
12376.4	-92.6	2hn3mh	14.4	19.7	50.5	11155.3	**46.9**	**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 ((-72.9 + 6.0 + 107)/20) = 100.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5s AVERAGE RADIATED SPURIOUS EMISSIONS (Low)
Dipole Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Dipole Antenna-Low Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2401.83	-46.4	2hn3mh	60.6	31.6	40865.0			**AVG**
4801.963	-75.0	2hn3mh	32.0	5.4	74.5	500.0	**16.5**	**AVG**
7215	-79.5	2hn3mh	27.5	10.7	81.5	4086.5	**34.0**	**AVG****
9617.275	-81.8	2hn3mh	25.2	13.3	84.3	4086.5	**33.7**	**AVG****
12018.78	-95.4	2hn3mh	11.6	19.0	33.7	500.0	**23.4**	**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 ((-75.0 + 5.4 + 107)/20) = 74.5
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5t AVERAGE RADIATED SPURIOUS EMISSIONS (Mid)
Dipole Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Dipole Antenna-Mid Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2432.98	-46.7	2hn3mh	60.3	31.7	39713.4			**AVG**
4866.213	-76.1	2hn3mh	30.9	5.7	67.3	500.0	**17.4**	**AVG**
7297.513	-83.8	2hn3mh	23.2	10.8	50.4	500.0	**19.9**	**AVG****
9727.862	-78.6	2hn3mh	28.4	13.4	123.7	3971.3	**30.1**	**AVG****
12162.78	-94.3	2hn3mh	12.7	19.2	39.6	500.0	**22.0**	**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 ((-76.1 + 5.7 + 107)/20) = 67.3
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**

Table 5u AVERAGE RADIATED SPURIOUS EMISSIONS (High)
Dipole Antenna

Radiated Spurious Emissions								
Test By:	**Test:**	Spurious Emissions-Dipole Antenna-High Channel				**Client:**	Cirronet	
AT	**Project:**	06-0003		**Class:**	**Average**	**Model:**	WIT2450	
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**
2475.21	-48.3	2hn3mh	58.7	31.7	33299.9			**AVG**
4951	-74.0	2hn3mh	33.0	6.0	88.8	500.0	**15.0**	**AVG**
7425.813	-84.7	2hn3mh	22.3	11.0	46.4	500.0	**20.6**	**AVG****
9901.437	-79.6	2hn3mh	27.4	13.7	112.9	3330.0	**29.4**	**AVG****
12378.13	-93.2	2hn3mh	13.8	19.7	47.2	500.0	**20.5**	**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 ((-74.0 + 6.0 + 107)/20) = 88.8
CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature:  **Name: Austin Thompson**