

Report Number: 07-0216

Issue Date: July 30, 2007

Customer: Cirronet

Model: WIT 934

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## **2.9 Peak Radiated Spurious Emission in the Frequency Range 30 -25000 MHz (FCC Section 15.247(c))**

The EUT was hop-stopped and when possible, placed into a continuous transmit mode of operation. A preliminary scan was performed on the EUT to determine frequencies that were caused by the transmitter portion of the product. Significant emissions that fell within restricted bands were then measured on an OAT's site. Radiated measurements below 1 GHz were tested with a RBW = 120 kHz. Radiated measurements above 1 GHz were measured using a RBW = VBW = 1 MHz. The results of peak radiated spurious emissions falling within restricted bands are given in Table 4a –4g and Figure 5a – Figure 5ai.

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**Table 4a. PEAK RADIATED SPURIOUS EMISSIONS Low Channel**

Radiated Spurious Emissions										
Test By:	Test:	Spurious Emissions- Low Channel				Client:	Cirronet			
GR	Project:	07-0216		Class:	Peak	Model:	WIT 934			
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBuV)	AF+CA-AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP	
902.45	-16.7	2lp3mv	90.3	28.6	882836.4		3m./VERT		PK	
1804.835	-17.4	1hn3mv	89.6	-4.6	17737.7	88283.6	3m./VERT	13.9	PK	
2708.075	-42.8	1hn3mv	64.3	-1.6	1350.0	5000.0	3m./VERT	11.4	PK	
3609.731	-44.4	1hn3mH	62.6	2.4	1784.6	5000.0	3m./HORZ	8.9	PK	
4512.636	-54.5	1hn3mv	52.5	4.2	686.1	5000.0	3m./VERT	17.3	PK	
5414.703	-58.2	1hn3mv	48.8	6.9	607.6	5000.0	3m./VERT	18.3	PK	
8123.1	-67.4	1hn3mH	39.6	11.2	347.3	5000.0	3m./HORZ	23.2	PK	
9028.85	-67.9	1hn3mv	39.1	12.1	365.4	88283.6	3m./VERT	47.7	PK	

Data corrected by 1 dB for loss of high pass filter except for fundamental frequency

\*\* Data conversion from 1 meter to 3 meters = -9.54

SAMPLE CALCULATION:

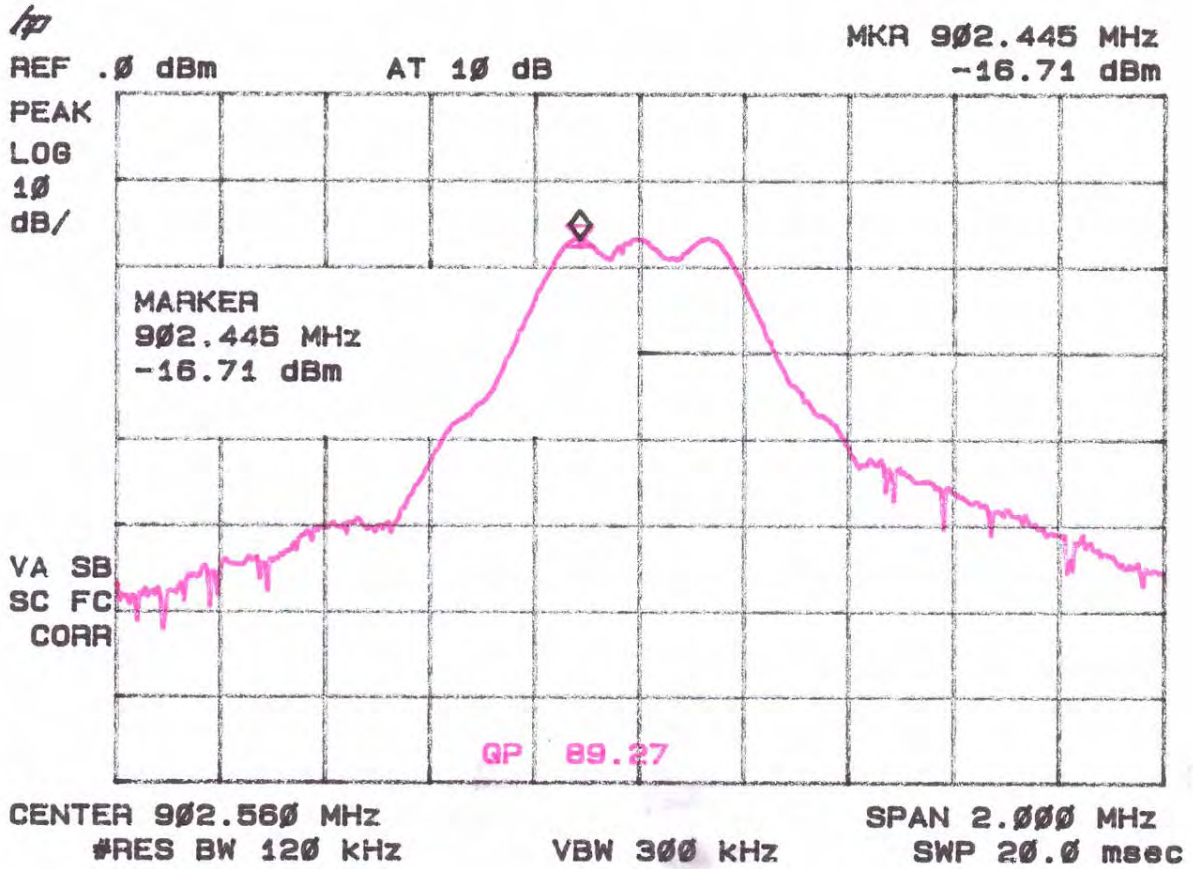
RESULTS (uV/m @ 3m) = Antilog ((-17.4 + -4.6 + 107)/20) = 17737.7

CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature: 

Name: Gersop Riera

**Figure 5a**  
**Peak Radiated Spurious Emission 15.247(c) Fundamental Low**



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**Table 4b. PEAK RADIATED SPURIOUS EMISSIONS Mid Channel**

Radiated Spurious Emissions										
Test By:	Test:	Spurious Emissions- Mid Channel				Client:	Cirronet			
GR	Project:	07-0216		Class:	Peak	Model:	WIT 934			
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBuV)	AF+CA-AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP	
914.48	-13.8	2lp3mv	93.2	28.8	1122018.5		3m./VERT		PK	
1829.2	-24.6	1hn3mv	82.4	-4.5	7854.9	112201.9	3m./VERT	23.1	PK	
2743.488	-43.1	1hn3mh	63.9	-1.4	1334.8	5000.0	3m./HORZ	11.5	PK	
3658.986	-47.9	1hn3mv	59.1	2.4	1194.9	5000.0	3m./VERT	12.4	PK	
4573.575	-51.4	1hn3mv	55.6	4.4	1007.3	5000.0	3m./VERT	13.9	PK	
5486.9	-60.1	1hn3mv	46.9	7.0	495.6	112201.9	3m./VERT	47.1	PK	
6403.3	-66.6	1hn3mv	40.5	8.1	268.2	112201.9	3m./VERT	52.4	PK	
7317.7	-66.5	1hn3mv	40.5	9.9	330.7	5000.0	3m./VERT	23.6	PK	
8232.67	-68.0	1hn3mv	39.0	11.2	322.6	5000.0	3m./VERT	23.8	PK	

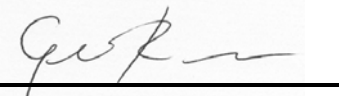
Data corrected by 1 dB for loss of high pass filter except for fundamental frequency

\*\* Data conversion from 1 meter to 3 meters = -9.54

SAMPLE CALCULATION:

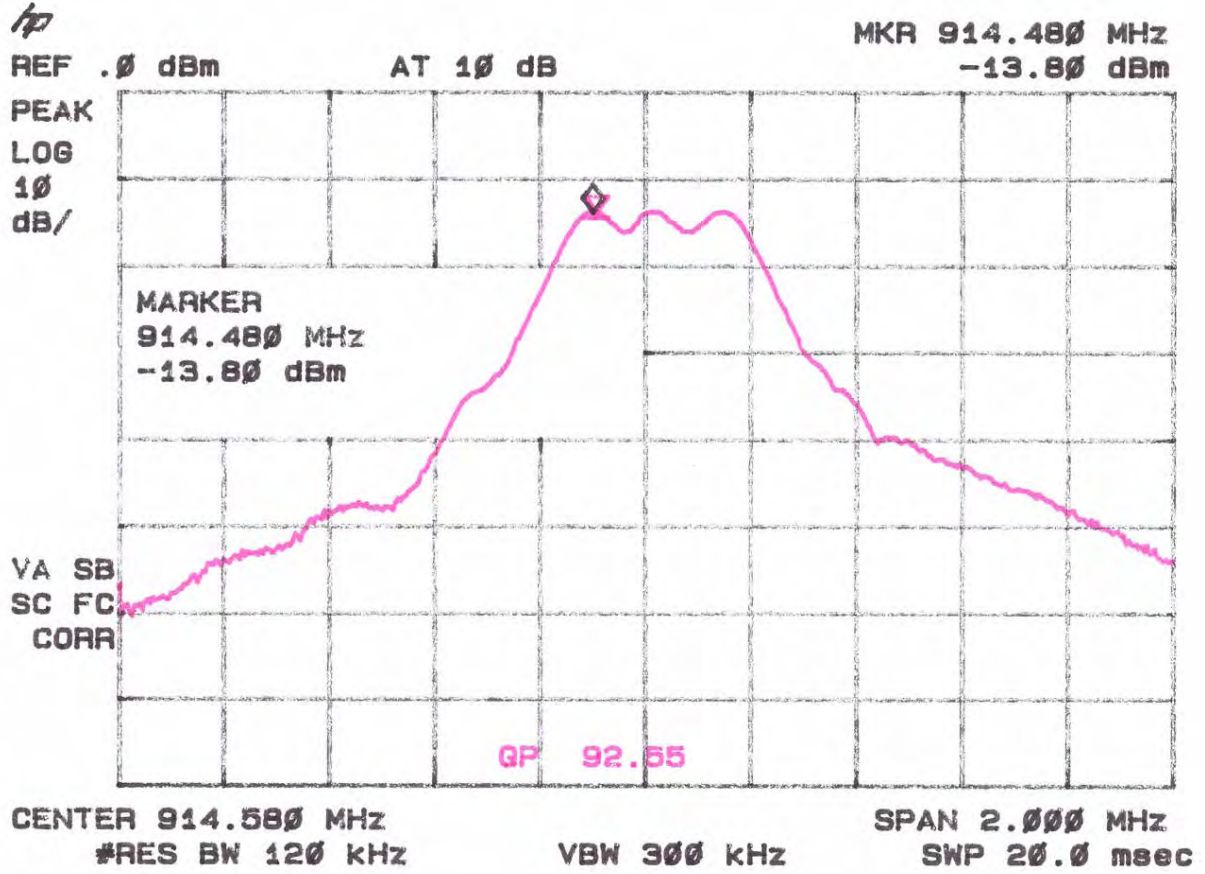
RESULTS (uV/m @ 3m) = Antilog ((-24.6 + -4.5 + 107)/20) = 7854.9

CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature: 

Name: Gersop Riera

**Figure 5b**  
**Peak Radiated Spurious Emission 15.247(c) Fundamental Mid**



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**Table 4c. PEAK RADIATED SPURIOUS EMISSIONS High Channel**

Radiated Spurious Emissions									
Test By:	Test:	Spurious Emissions- High Channel			Client:	Cirronet			
GR	Project:	07-0216	Class:	Peak	Model:	WIT 934			
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBuV)	AF+CA-AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP
926.63	-13.1	2lp3mv	93.9	28.8	1364583.1		3m./VERT		PK
1853.25	-27.3	1hn3mv	79.7	-4.3	5851.8	136458.3	3m./VERT	27.4	PK
2779.95	-40.4	1hn3mv	66.6	-1.4	1826.7	5000.0	3m./VERT	8.7	PK
3706.175	-48.2	1hn3mh	58.8	2.9	1208.2	5000.0	3m./HORZ	12.3	PK
4633.838	-45.7	1hn3mv	61.4	4.6	1994.5	5000.0	3m./VERT	8.0	PK
5559.933	-59.3	1hn3mv	47.7	7.2	553.7	136458.3	3m./VERT	47.8	PK
6486.453	-65.3	1hn3mv	41.7	8.1	310.6	136458.3	3m./VERT	52.9	PK
7412.09	-65.5	1hn3mv	41.5	10.1	378.8	5000.0	3m./VERT	22.4	PK
8340.88	-65.0	1hn3mv	42.0	11.3	465.0	5000.0	3m./VERT	20.6	PK
9267.85	-69.0	1hn3mh	38.0	12.7	343.7	136458.3	3m./HORZ	52.0	PK

Data corrected by 1 dB for loss of high pass filter except for fundamental frequency  
 \*\* Data conversion from 1 meter to 3 meters = -9.54

SAMPLE CALCULATION:

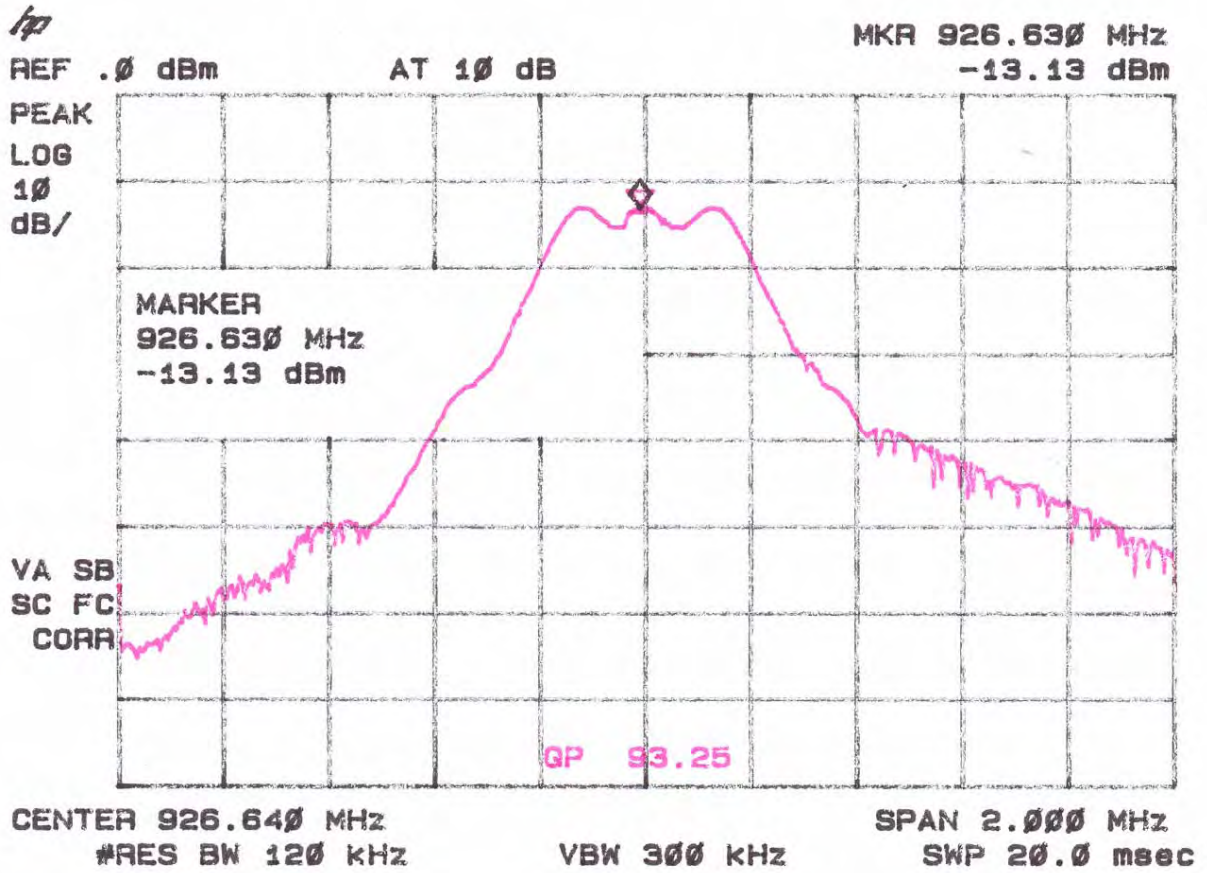
RESULTS (uV/m @ 3m) = Antilog ((-27.3 + -4.3 + 107)/20) = 5851.8

CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature: 

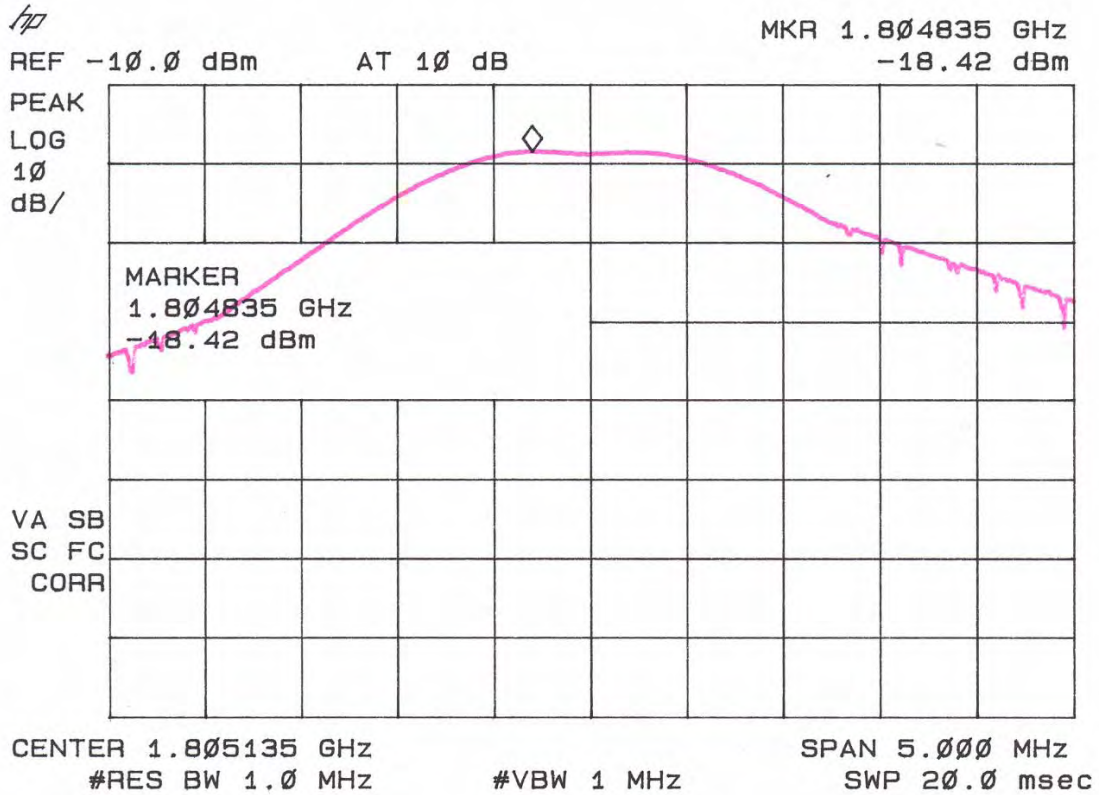
Name: Gersop Reira

**Figure 5c**  
**Peak Radiated Spurious Emission 15.247(c) Fundamental High**





**Figure 5d**  
**Worst Case Peak Radiated Spurious Emission 15.247( c )**





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## 2.10 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.

### Calculation of Maximum Transmit Duty Cycle

As outlined, each remote WIT934 can transmit only once during a dwell time. The maximum length of the transmitted packet from each remote is set by the system design and cannot be adjusted by the user. That packet length is calculated as follows:

Preamble	9 bytes
Sync and CRC	10 bytes
Data Payload	<u>13 bytes</u>
Maximum packet length	32 bytes

Bit time (1/345.6 Kbps)	2.984 us
Byte time (bit time * 8)	23.15 us
Maximum packet time (byte time * 32)	740.7 us

The maximum amount of time that the Remote transmitter can operate in any 10 millisecond period is 740.74 us. Therefore, our source-averaged transmit duty cycle becomes 0.07407 (0.7407 ms / 10 ms). Note that this duty cycle is not dependent on the use of Frequency Hopping. Cirronet does not claim to average their power over the number of hops. The above calculation is strictly based on the maximum amount of time the transmitter can transmit in any 10 ms time period – regardless of the channel the radio happens to be on at the time.

The transmission duty cycle correction factor is then calculated as:

$$20 \log_{10} (0.7407/10\text{ms}) = \mathbf{-22.6 \text{ dB}}$$

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**Table 5a. AVERAGE RADIATED SPURIOUS EMISSIONS Low Channel**

Radiated Spurious Emissions										
Test By:	Test:	Average Spurious Emissions-Low Channel				Client:	Cirronet			
GR	Project:	07-0216		Class:	Peak	Model:	WIT 934			
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBuV)	AF+CA-AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP	
902.45	-39.3	2lp3mv	67.7	28.6	65445.6		3m./VERT		AVG	
1804.835	-40.0	1hn3mv	67.0	-4.6	1314.9	6544.6	3m./VERT	13.9	AVG	
2708.075	-74.9	1hn3mv	32.1	-1.6	33.4	500.0	3m./VERT	23.5	AVG	
3609.731	-67.0	1hn3mH	40.0	2.4	132.3	500.0	3m./HORZ	11.5	AVG	
4512.636	-77.1	1hn3mv	29.9	4.2	50.9	500.0	3m./VERT	19.9	AVG	
5414.703	-80.8	1hn3mv	26.2	6.9	45.0	500.0	3m./VERT	20.9	AVG	
8123.1	-90.0	1hn3mH	17.0	11.2	25.7	500.0	3m./HORZ	25.8	AVG	
9028.85	-90.5	1hn3mv	16.5	12.1	27.1	6544.6	3m./VERT	47.7	AVG	

Data corrected by 1 dB for loss of high pass filter except for fundamental frequency  
 \*\* Data conversion from 1 meter to 3 meters = -9.54

**SAMPLE CALCULATION:**

RESULTS (uV/m @ 3m) = Antilog ((-40.0 + -4.6 + 107)/20) = 1314.9  
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature: 

Name: Gersop Reira

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

Radiated Spurious Emissions										
Test By:	Test:	Average Spurious Emissions-Mid Channel				Client:	Cirronet			
GR	Project:	07-0216		Class:	Peak	Model:	WIT 934			
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBuV)	AF+CA-AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP	
914.48	-36.4	2lp3mv	70.6	28.8	93478.7		3m./VERT		AVG	
1829.2	-47.2	1hn3mv	59.8	-4.5	582.3	9347.9	3m./VERT	24.1	AVG	
2743.488	-65.7	1hn3mh	41.3	-1.4	99.0	500.0	3m./HORZ	14.1	AVG	
3658.986	-70.5	1hn3mv	36.5	2.4	88.6	500.0	3m./VERT	15.0	AVG	
4573.575	-74.0	1hn3mv	33.0	4.4	74.7	500.0	3m./VERT	16.5	AVG	
5486.9	-82.7	1hn3mv	24.3	7.0	36.7	9347.9	3m./VERT	48.1	AVG	
6403.3	-89.2	1hn3mv	17.9	8.1	19.9	9347.9	3m./VERT	53.4	AVG	
7317.7	-89.1	1hn3mv	17.9	9.9	24.5	500.0	3m./VERT	26.2	AVG	

Data corrected by 1 dB for loss of high pass filter except for fundamental frequency  
 \*\* Data conversion from 1 meter to 3 meters = -9.54

SAMPLE CALCULATION:

RESULTS (uV/m @ 3m) = Antilog ((-47.2 + -4.5 + 107)/20) = 582.3  
 CONVERSION FROM dBm TO dBuV = 107 dB

Tester  
 Signature: 

Name: Gersop Reira

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 Model: WIT 934

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**Table 5c. AVERAGE RADIATED SPURIOUS EMISSIONS High Channel**

Radiated Spurious Emissions										
Test By:	Test:	Average Spurious Emissions-High Channel				Client:	Cirronet			
GR	Project:	07-0216		Class:	Peak	Model:	WIT 934			
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBuV)	AF+CA-AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP	
926.63	-35.7	2lp3mv	71.3	28.8	100321.1		3m./VERT		926.63	
1853.25	-49.9	1hn3mv	57.1	-4.3	433.8	10032.1	3m./VERT	27.3	1853.25	
2779.95	-63.0	1hn3mv	44.0	-1.4	135.4	500.0	3m./VERT	11.3	2779.95	
3706.175	-70.8	1hn3mh	36.2	2.9	89.6	500.0	3m./HORZ	14.9	3706.175	
4633.838	-68.3	1hn3mv	38.8	4.6	147.9	500.0	3m./VERT	10.6	4633.838	
5559.933	-81.9	1hn3mv	25.1	7.2	41.0	10032.1	3m./VERT	47.8	5559.933	
6486.453	-87.9	1hn3mv	19.1	8.1	23.0	10032.1	3m./VERT	52.8	6486.453	
7412.09	-88.1	1hn3mv	18.9	10.1	28.1	500.0	3m./VERT	25.0	7412.09	

Data corrected by 1 dB for loss of high pass filter except for fundamental frequency

\*\* Data conversion from 1 meter to 3 meters = -9.54

SAMPLE CALCULATION:

RESULTS (uV/m @ 3m) = Antilog ((-49.9 + -4.3 + 107)/20) = 433.8

CONVERSION FROM dBm TO dBuV = 107 dB

Tester Signature: 

Name: Gersop Reira

## 2.11 Band Edge Measurements

Band Edge measurements were made at a Low Channel and High Channel peak at highest EUT related emission outside the occupied bandwidth. A peak measurement was made of the fundamental, and the emission was measured using a peak setting. A Resolution Bandwidth of  $> 1\%$  of the emission bandwidth was used. This procedure was repeated for the high channel.

The plots shown were verified using a Horn Antenna. No preamp was used.

The limits were derived as follows:

High Bandedge

$$5000 \text{ uV/m} = -33.02 \text{ dBm}$$

$$-33.02 \text{ dBm} - 28.8 \text{ dB (antenna factor and cable loss)} = -61.82 \text{ dBm limit}$$

Fundamental measured at High Channel from Table 4c:  $-13.1 \text{ dBm}$

Delta from conducted measurement of band edge from fundamental peak to highest spur 10 MHz outside band edge:  $-50.12$

$$-13.1 - 50.12 = -63.22$$

Low Bandedge

$$-33.02 \text{ dBm} - 28.6 \text{ dB (antenna factor and cable loss)} = -61.62 \text{ dBm limit}$$

Fundamental measured at Low Channel from Table 4a:  $-16.7 \text{ dBm}$

Delta from conducted measurement of band edge from fundamental peak to highest spur 10 MHz outside band edge:  $-50.33$

$$-16.7 - 50.33 = -67.03$$

Figure 6a. Band Edge Compliance  
Antenna Conducted, High Channel

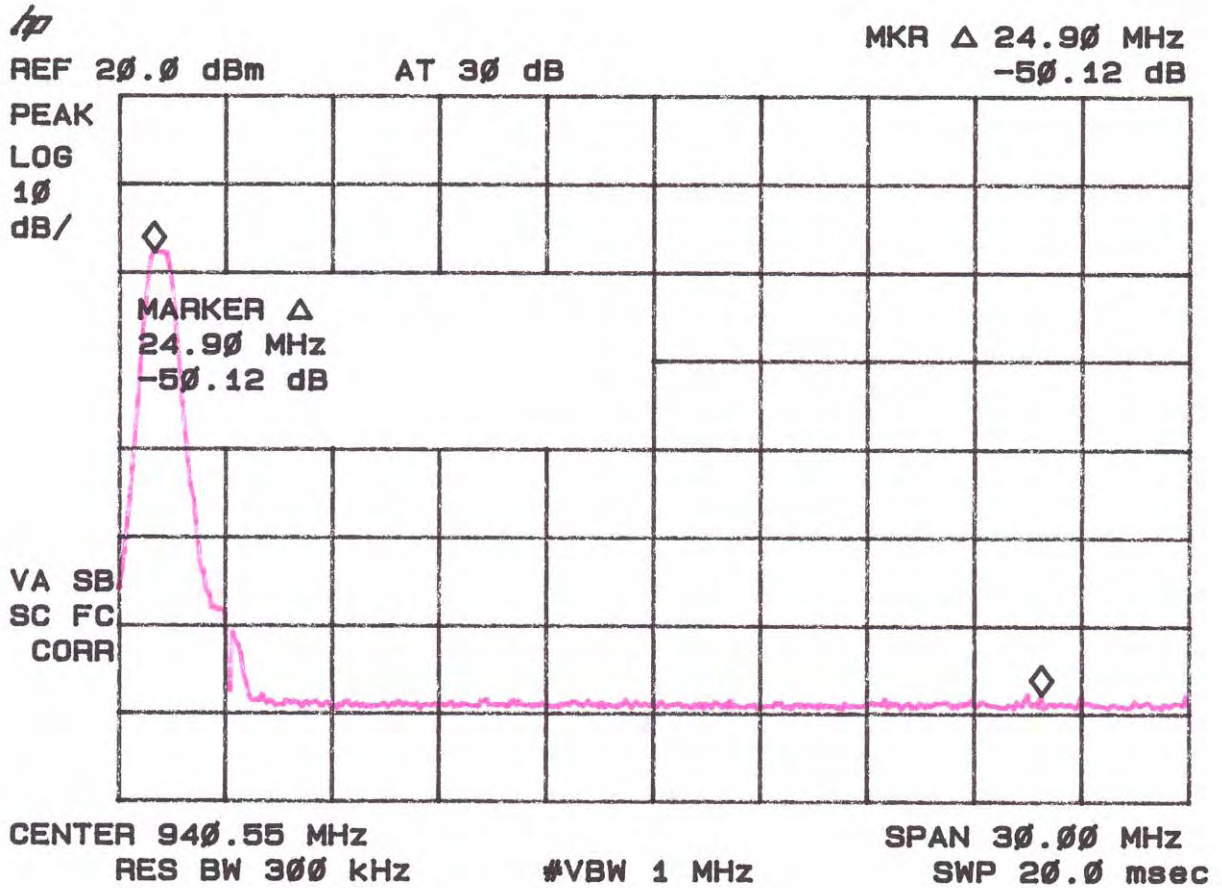
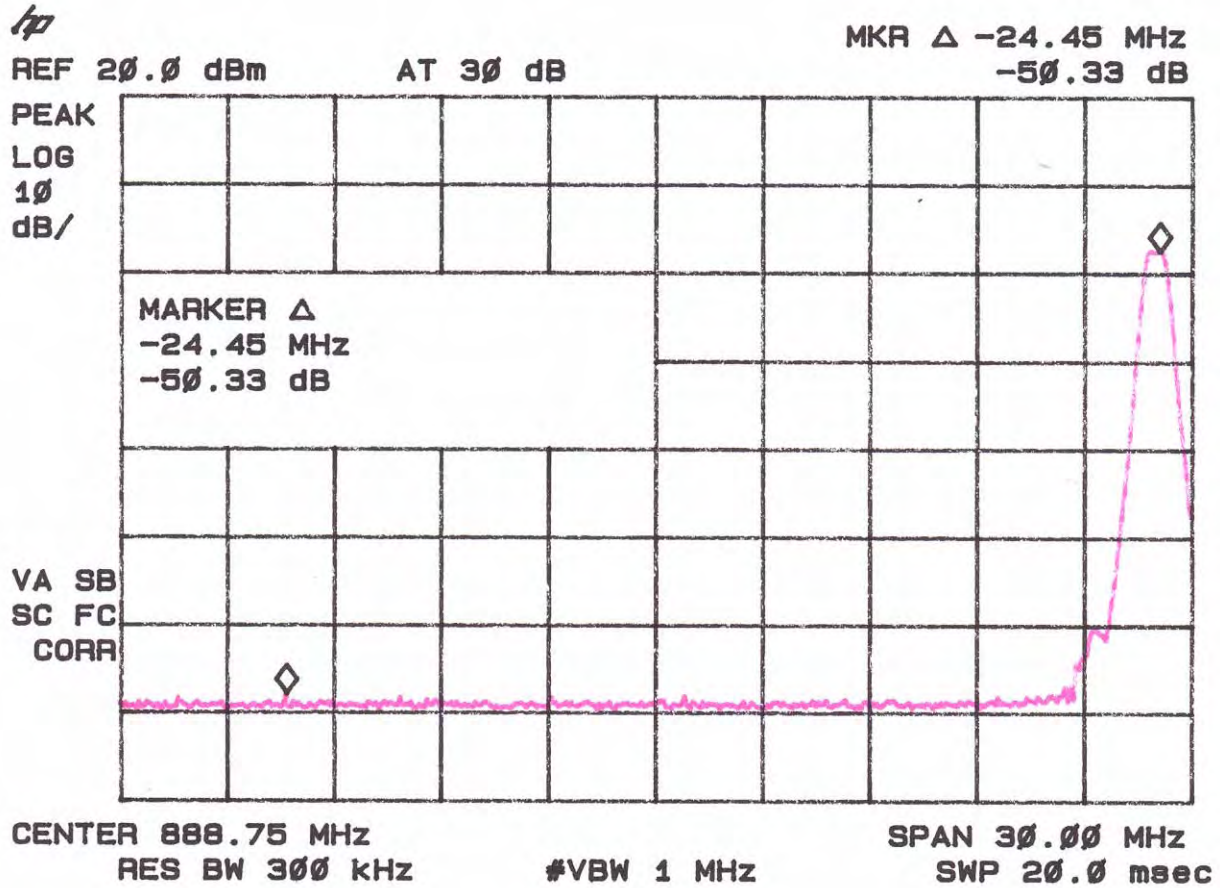




Figure 6b. Band Edge Compliance  
Antenna Conducted, Low Channel



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## **2.12 20 dB Bandwidth per FCC Section 15.247(a)(1)(ii)**

The antenna port was connected to a spectrum analyzer that was set for a 50  $\Omega$  impedance with the RBW = approximately 1/100 of the manufacturers claimed RBW & VBW > RBW. The results of this test are given in Table 6 and Figure 6a through 6c.

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**TABLE 6**  
**20 dB Bandwidth**

Frequency (MHz)	20 dB Bandwidth (MHz)	MAXIMUM FCC LIMIT (MHz)
902.675	0.625	1.0
913.800	0.625	1.0
927.425	0.6375	1.0

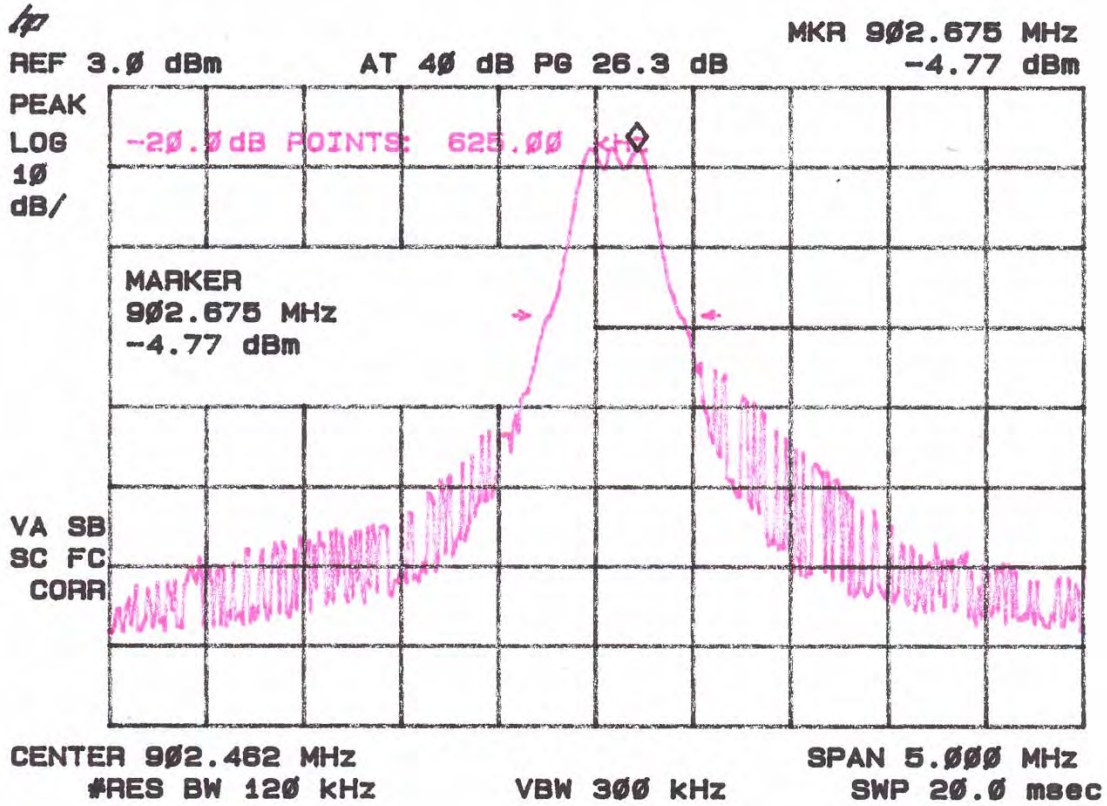
**Test Date: July 25, 2007**

**Tester**

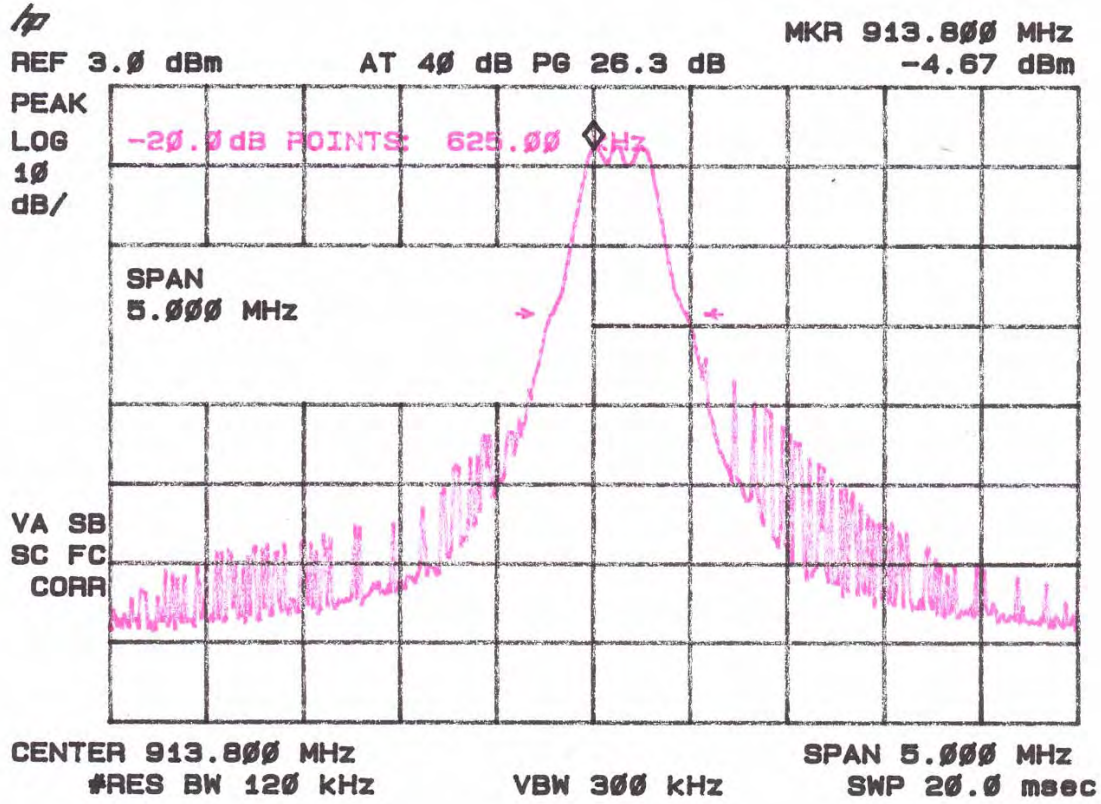
**Signature:** 

**Name: Gersop Reira**

Figure 7a.  
20 dB Bandwidth per FCC Section 15.247(a)(1)(ii) (Low Channel)

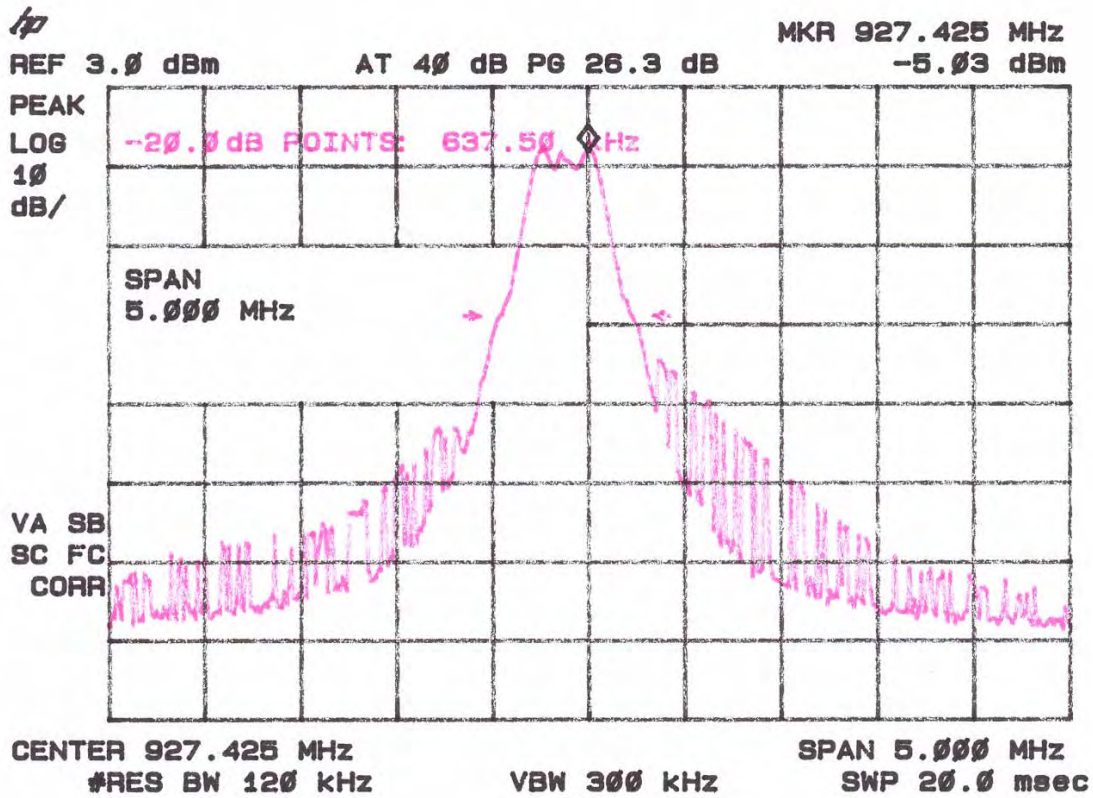


**Figure 7b.**  
**20 dB Bandwidth per FCC Section 15.247(a)(1)(ii) (Mid Channel)**





**Figure 7c.**  
**20 dB Bandwidth per FCC Section 15.247(a)(1)(ii) (High Channel)**





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Customer: Cirronet

Model: WIT 934

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### **2.13 Number of Hopping Channels FCC Section 15.247(a)(1)(ii)**

The transmitter was placed into a typical frequency hopping mode of operation. The 902-928 MHz band was centered on the screen and the RBW and VBW chosen such that the individual channels could be discerned. The trace capture time was a minimum of 5 minutes.

The results of this test are given in Table 7 and Figure 7.

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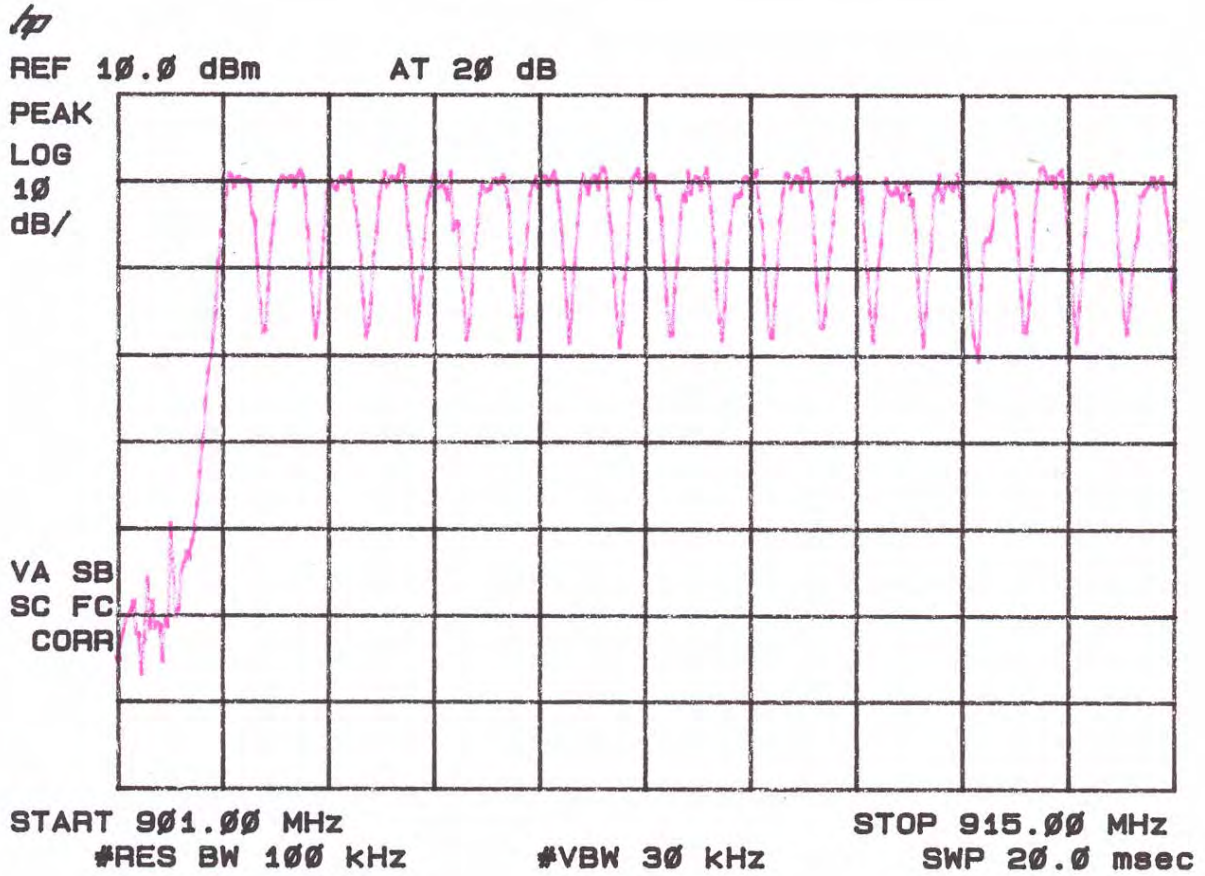
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**TABLE 7**

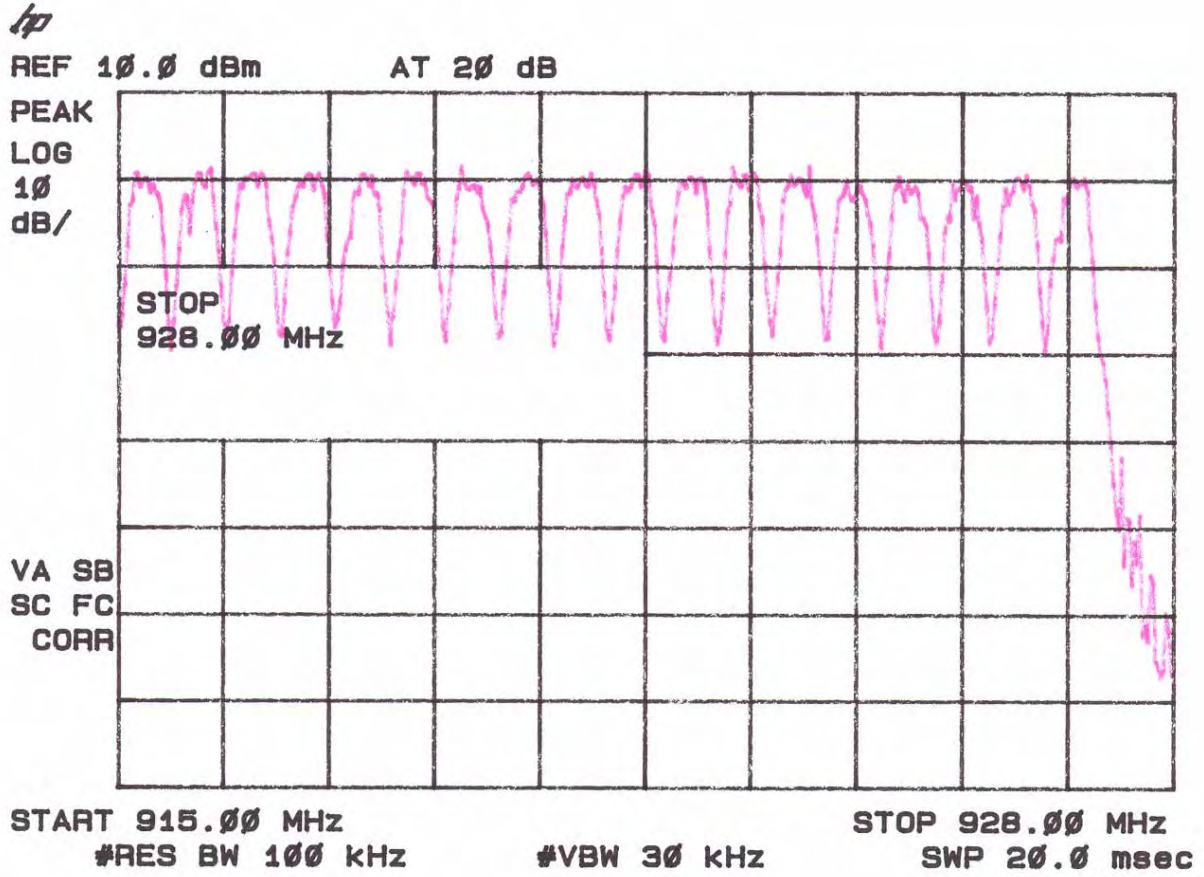
**NUMBER OF HOPPING CHANNELS**

Number of Hopping Frequencies Measured	FCC Limit (Minimum Number of Channels)
37	25

**Figure 8a**  
**Number of Hopping Channels FCC Section 15.247(a)(1)(ii)**



**Figure 8b**  
**Number of Hopping Channels FCC Section 15.247(a)(1)(ii)**



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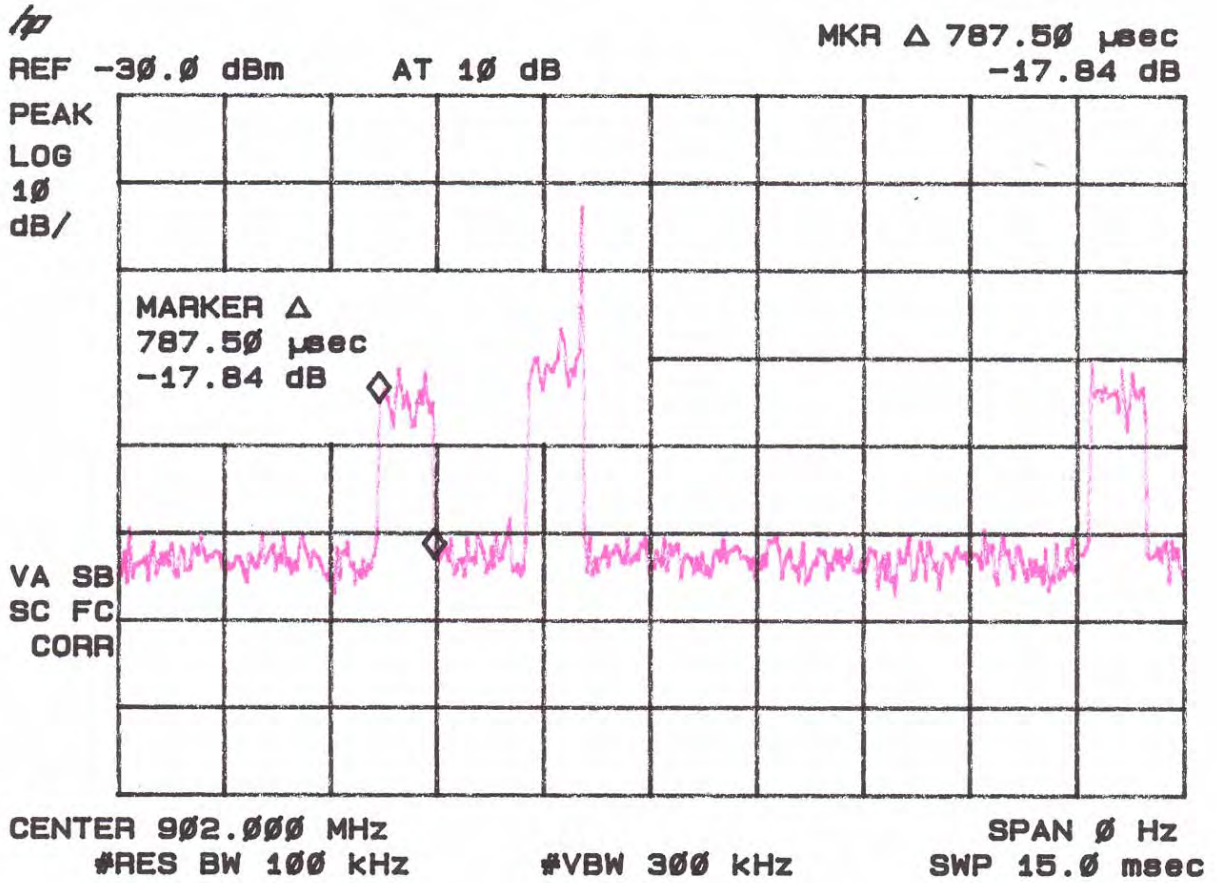
Model: WIT 934

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## **2.14 Average Time of Occupancy per Channel FCC Section 15.247(a)(1)(ii)**

The maximum transmit time of the EUT, based upon software and firmware settings, is 40 ms average time of occupancy.

**Figure 9**  
**Average Time of Occupancy per Channel FCC Section 15.247(a)(1)(ii)**





## **2.15 Power Line Conducted Emissions for Transmitter FCC Section 15.207**

The conducted voltage measurements have been carried out in accordance with FCC Section 15.207, with a spectrum analyzer connected to a LISN and the EUT placed into a continuous mode of transmit. The results are given in Tables 8a-8b and Figures 9a-9c.

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**TABLE 8a. CONDUCTED EMISSIONS DATA**

**CLASS B**

**(Peak-Quasi Peak Measurements vs Average Limits) PHASE DATA**

Conducted Emissions										
Test By:	Test:	FCC Conducted Emissions POWER LINE				Client:	Cirronet			
GR	Project:	07-0216		Class:	B	Model:	WIT 934			
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Distance/	Margin	PK	
(MHz)	(dBm)	Table	(dBuV)	(dB)	(dBuV)	(dBuV)	Polarity	(dB)	/ QP	
0.21	-62.6	LISNP	44.4	-0.1	44.3	53.6	PHASE	9.4	QP	
0.514	-75.7	LISNP	31.3	-0.1	31.2	46.0	PHASE	14.8	QP	
4.72	-66.8	LISNP	40.2	0.3	40.4	46.0	PHASE	5.6	QP	
6.06	-64.2	LISNP	42.8	0.3	43.1	50.0	PHASE	6.9	QP	
11.31	-74.2	LISNP	32.9	0.5	33.3	50.0	PHASE	16.7	QP	
20.98	-81.8	LISNP	25.3	0.7	25.9	50.0	PHASE	24.1	QP	
29.93	-80.6	LISNP	26.5	0.7	27.2	50.0	PHASE	22.8	QP	

**SAMPLE CALCULATIONS: 44.4 + -0.1 = 44.3 dBuV**

**Test Date: July 26, 2007**

**Tester Signature:** 

**Name: Gersop Reira**

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Issue Date: July 30, 2007

Customer: Cirronet

Model: WIT 934

**TABLE 8b. CONDUCTED EMISSIONS DATA**

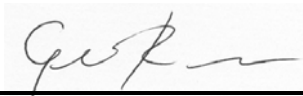
**CLASS B**

**(Peak-Quasi Peak Measurements vs Average Limits) NEUTRAL DATA**

Conducted Emissions										
Test By:	Test:	FCC Conducted Emissions POWER LINE				Client:	Cirronet			
GR	Project:	07-0216		Class:	B	Model:	WIT 934			
Frequency	Test Data	AF	Test Data	AF+CA-AMP	Results	Limits	Distance/	Margin	PK	
(MHz)	(dBm)	Table	(dBuV)	(dB)	(dBuV)	(dBuV)	Polarity	(dB)	/ QP	
0.21	-63.4	LISNN	43.6	-0.1	43.5	53.6	NEUTRAL	10.1	QP	
0.514	-78.0	LISNN	29.0	-0.1	29.0	46.0	NEUTRAL	17.0	QP	
4.72	-66.3	LISNN	40.7	0.3	41.0	46.0	NEUTRAL	5.0	QP	
6.06	-63.8	LISNN	43.2	0.3	43.5	50.0	NEUTRAL	6.5	QP	
11.31	-72.7	LISNN	34.3	0.5	34.8	50.0	NEUTRAL	15.2	QP	
20.98	-80.3	LISNN	26.7	0.7	27.4	50.0	NEUTRAL	22.6	QP	
29.93	-82.5	LISNN	24.5	0.8	25.3	50.0	NEUTRAL	24.7	QP	

**SAMPLE CALCULATIONS: 43.6 + -0.1 = 43.5 dBuV**

**Test Date: July 26, 2007**

**Tester Signature:** 

**Name: Gersop Reira**

Report Number: 07-0216

Issue Date: July 30, 2007

Customer: Cirronet

Model: WIT 934

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## **2.16 Radiated Emissions for Digital Device & Receiver (47 CFR 15.109a)**

Radiated emissions were evaluated from 30 to 14500 MHz while the EUT was placed into a Receive mode of operation. Measurements were made with the analyzer's bandwidth set to 120 kHz measurements made less than 1 GHz and 1 MHz for measurements made greater than or equal to 1 GHz. The results for less than 1 GHz are shown in Table 9.

Report Number: 07-0216  
 Customer: Cirronet  
 Model: WIT 934

Issue Date: July 30, 2007

**TABLE 9a. RADIATED EMISSIONS DATA  
 (Digital Device & Receiver)**

**CLASS B**

**Measurements 30 MHz – 1 GHz**

Radiated Emissions										
Test By:	Test:	Radiated Emissions Digital Device & Receiver				Client:	Cirronet			
GR	Project:	07-0216	Class:	Peak	Model:	WIT 934				
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBUV)	AF+CA-AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP	
413.00	-82.8	2lp3mh	24.2	20.1	163.8	200.0	3m./HORZ	1.7	PK	
413	-84.4	2lp3mh	22.6	20.1	135.9	200.0	3m./HORZ	3.4	QP	

**SAMPLE CALCULATIONS:**

**RESULTS uV/m @ 3m**

**Antilog  $((-82.8 + 20.1 + 107)/20) = 163.8$**

**CONVERSION FROM dBm TO dBUV = 107 dB**

**Margin in dB =  $20 / \log (24.2 / 200.0) = 1.7$  dB**

**Test Date: July 26, 2007**

**Tester Signature:** 

**Name: Gersop Reira**

Report Number: 07-0216

Issue Date: July 30, 2007

Customer: Cirronet

Model: WIT 934

**TABLE 9b. RADIATED EMISSIONS DATA  
(Digital Device & Receiver)**

**CLASS B**

**Measurements 1 GHz – 5 GHz (PEAK)**

Radiated Emissions									
Test By:	Test:					Client:	Cirronet		
GR	Project:	07-0216	Class:	Peak	Model:	WIT 934			
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBuV)	AF+CA- AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP
No emissions seen within 20 dB of FCC Limit									

Test Date: July 26, 2007

Tester  
Signature: 

Name: Gersop Reira

Report Number: 07-0216

Issue Date: July 30, 2007

Customer: Cirronet

Model: WIT 934

**TABLE 9c. RADIATED EMISSIONS DATA  
(Digital Device & Receiver)**

**CLASS B**

**Measurements 1 GHz – 5 GHz (AVERAGE)**

Radiated Emissions										
Test By:	Test:					Client:	Cirronet			
GR	Project:	07-0216		Class:	Peak	Model:	WIT 934			
Frequency (MHz)	Test Data (dBm)	AF Table	Test Data (dBuV)	AF+CA- AMP (dB)	Results (uV/m)	Limits (uV/m)	Distance / Polarity	Margin (dB)	PK / QP	
No emissions seen within 20 dB of FCC Limit										

Test Date: July 26, 2007

Tester  
Signature: 

Name: Gersop Reira



Report Number: 07-0216

Issue Date: July 30, 2007

Customer: Cirronet

Model: WIT 934

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## **2.17 Power Line Conducted Emissions for Digital Device and Receiver FCC Section 15.107**

The conducted voltage measurements have been carried out in accordance with FCC Section 15.107, with a spectrum analyzer connected to a LISN and the EUT placed into an idle condition or a continuous mode of receive. Similar results were seen as compared to the EUT in a transmit mode of operation. **Therefore, please refer to the results as shown in Table 8.**

U.S. Technologies, Inc.

FCC Part 15, Class B Certification

Report Number: 07-0216

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Customer: Cirronet

Model: WIT 934

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**2.18 Channel Separation**

The transmitter was placed into transmit mode on low channel. The measurement was max held on the spectrum analyzer. The transmitter was then changed to the next adjacent channel, while continuing to max hold the original measurement. Using an RBW of 120 kHz and VBW of 300 kHz, the delta between 2 peaks was measured and the distance between them was noted.

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Customer: Cirronet

Model: WIT 934

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**TABLE 10**

**CHANNEL SEPARATION**

Channel Separation	FCC Limit
680 kHz	Min 637.5 kHz (20 dB Bandwidth)

Figure 10  
Channel Separation FCC Section 15.247(a)(1)(ii)

