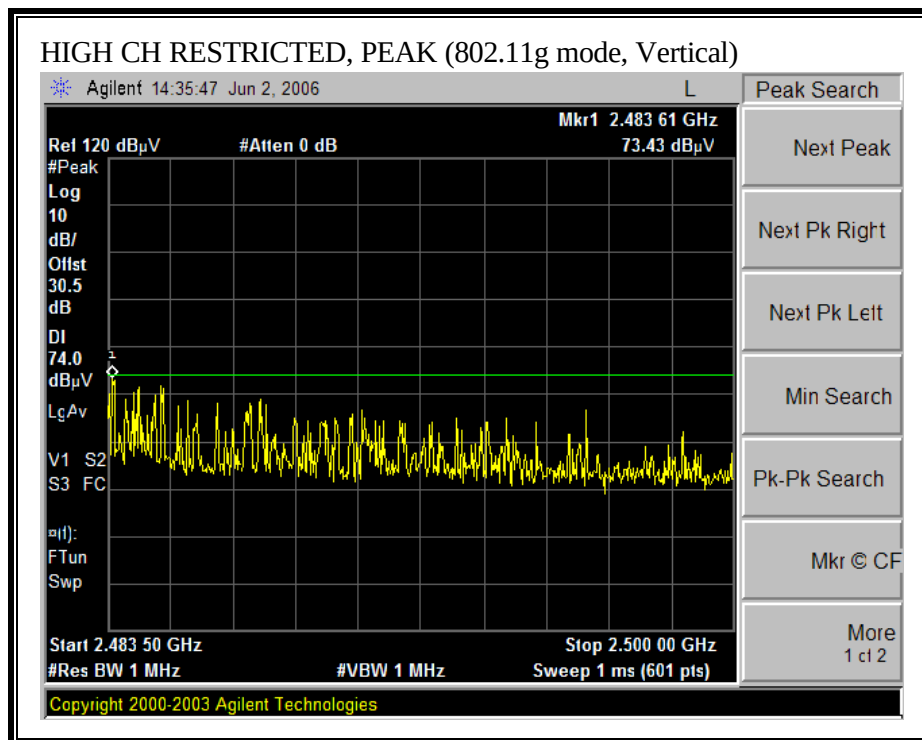
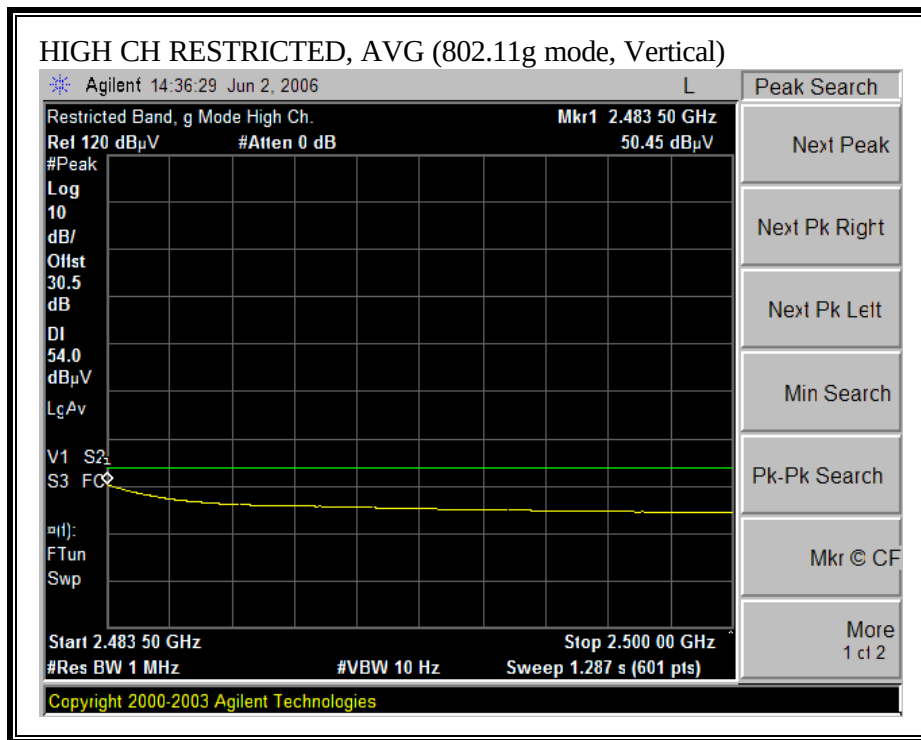


RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS (g MODE)

High Frequency Measurement																
Compliance Certification Services, Morgan Hill Open Field Site																
Company: Tropos Project #: 06U10287 Date: 06/07/2006 Test Engineer: Vien Tran Configuration: EUT with 12dBi Sector antenna Mode: Tx 11g 2.4 GHz Average Power: Low, Mid, & High channels = 24 dBm																
Test Equipment:																
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit				
T73; S/N: 6717 @3m			T144 Miteq 3008A00931									FCC 15.205				
Hi Frequency Cables																
2 foot cable			3 foot cable			12 foot cable			HPF			Reject Filter			Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz	
Vien 177079005						Vien 197209005			HPF_4.0GHz							
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
LOW CH, 2412 MHz																
4.824	3.0	44.2	32.2	33.3	3.4	-36.5	0.0	0.6	45.0	33.0	74	54	-29.0	-21.0	V	
4.824	3.0	43.0	31.9	33.3	3.4	-36.5	0.0	0.6	43.8	32.7	74	54	-30.2	-21.3	H	
MID CH, 2437 MHz																
4.874	3.0	43.6	32.6	33.4	3.4	-36.5	0.0	0.6	44.5	33.5	74	54	-29.5	-20.5	V	
7.311	3.0	44.3	32.5	35.0	3.9	-36.2	0.0	0.6	47.6	35.8	74	54	-26.4	-18.2	V	
4.874	3.0	43.0	31.6	33.4	3.4	-36.5	0.0	0.6	43.9	32.5	74	54	-30.1	-21.5	H	
7.311	3.0	43.9	32.2	35.0	3.9	-36.2	0.0	0.6	47.2	35.5	74	54	-26.8	-18.5	H	
HI CH, 2462 MHz																
4.924	3.0	44.0	31.8	33.4	3.4	-36.5	0.0	0.6	45.0	32.8	74	54	-29.0	-21.2	V	
7.386	3.0	44.3	32.5	35.0	3.9	-36.2	0.0	0.6	47.7	35.9	74	54	-26.3	-18.1	V	
4.924	3.0	43.5	31.6	33.4	3.4	-36.5	0.0	0.6	44.5	32.6	74	54	-29.5	-21.4	H	
7.386	3.0	44.5	32.3	35.0	3.9	-36.2	0.0	0.6	47.9	35.7	74	54	-26.1	-18.3	H	
No other emissions were detected above system noise floor																
f	Measurement Frequency		Amp	Preamp Gain		Avg Lim	Average Field Strength Limit									
Dist	Distance to Antenna		D Corr	Distance Correct to 3 meters		Pk Lim	Peak Field Strength Limit									
Read	Analyzer Reading		Avg	Average Field Strength @ 3 m		Avg Mar	Margin vs. Average Limit									
AF	Antenna Factor		Peak	Calculated Peak Field Strength		Pk Mar	Margin vs. Peak Limit									
CL	Cable Loss		HPF	High Pass Filter												

7.3.3. TRANSMITTER ABOVE 1 GHz FOR 5725 TO 5850 MHz BAND

HARMONICS AND SPURIOUS EMISSIONS (802.11a MODE)

9.1 dBi MONOPOLE ANTENNA

High Frequency Measurement																
Compliance Certification Services, Morgan Hill Open Field Site																
Company: Tropos Project #: 06U10287 Date: 06/01/2006 Test Engineer: Vien Tran Configuration: EUT with 9.1dBi Monopole antenna Mode: Tx 11a 5.8 GHz Average Power Meter: Low, Mid, & High = 26.9 dBm																
Test Equipment:																
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit				
T60; S/N: 2238 @3m			T145 Agilent 3008A0056									FCC 15.205				
Hi Frequency Cables																
2 foot cable			3 foot cable			12 foot cable			HPF			Reject Filter		Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz		
			Vien 187215002			Vien 197209005			HPF_7.6GHz							
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filtr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)	
LOW CH, 5745 MHz																
11.490	3.0	43.6	31.2	37.4	4.8	-33.1	0.0	0.7	53.4	41.0	74	54	-20.6	-13.0	V	
11.490	3.0	42.0	30.8	37.4	4.8	-33.1	0.0	0.7	51.8	40.6	74	54	-22.2	-13.4	H	
MID CH, 5785 MHz																
11.570	3.0	42.7	31.2	37.4	4.8	-33.0	0.0	0.7	52.6	41.1	74	54	-21.4	-12.9	V	
11.570	3.0	42.0	30.7	37.4	4.8	-33.0	0.0	0.7	51.9	40.6	74	54	-22.1	-13.4	H	
HI CH, 5825 MHz																
11.650	3.0	49.5	37.9	37.4	4.8	-32.9	0.0	0.7	59.5	47.9	74	54	-14.5	-6.1	V	
11.650	3.0	44.0	32.2	37.4	4.8	-32.9	0.0	0.7	54.0	42.2	74	54	-20.0	-11.8	H	
No other emissions were detected above system noise floor																
f	Measurement Frequency		Amp	Preamp Gain		Avg Lim	Average Field Strength Limit									
Dist	Distance to Antenna		D Corr	Distance Correct to 3 meters		Pk Lim	Peak Field Strength Limit									
Read	Analyzer Reading		Avg	Average Field Strength @ 3 m		Avg Mar	Margin vs. Average Limit									
AF	Antenna Factor		Peak	Calculated Peak Field Strength		Pk Mar	Margin vs. Peak Limit									
CL	Cable Loss		HPF	High Pass Filter												

17 dBi SECTOR ANTENNA

High Frequency Measurement															
Compliance Certification Services, Morgan Hill Open Field Site															
Company: Tropos Project #: 06U10287 Date: 06/01/2006 Test Engineer: Vien Tran Configuration: EUT with 17dBi Sector antenna Mode: Tx 11a 5.8 GHz Average Power: Low, Mid, & High = 26.9 dBm															
Test Equipment:															
Horn 1-18GHz		Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz		Horn > 18GHz		Limit							
T60; S/N: 2238 @3m		T145 Agilent 3008A0056						FCC 15.209							
Hi Frequency Cables															
2 foot cable		3 foot cable		12 foot cable		HPF		Reject Filter		Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz					
		Vien 187215002		Vien 197209005		HPF_7.6GHz									
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Ftr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
LOW CH, 5745 MHz															
11.490	3.0	43.7	32.6	37.4	4.8	-33.1	0.0	0.7	53.5	42.4	74	54	-20.5	-11.6	V
17.235	3.0	44.5	33.0	41.7	6.1	-32.0	0.0	0.6	60.9	49.4	74	54	-13.1	-4.6	V
11.490	3.0	43.5	31.4	37.4	4.8	-33.1	0.0	0.7	53.3	41.2	74	54	-20.7	-12.8	H
17.235	3.0	45.3	34.9	41.7	6.1	-32.0	0.0	0.6	61.7	51.3	74	54	-12.3	-2.7	H
MID CH, 5785 MHz															
11.570	3.0	44.7	33.6	37.4	4.8	-33.0	0.0	0.7	54.6	43.5	74	54	-19.4	-10.5	V
17.355	3.0	43.5	31.8	42.1	6.1	-32.0	0.0	0.6	60.4	48.7	74	54	-13.6	-5.3	V
11.570	3.0	45.8	34.7	37.4	4.8	-33.0	0.0	0.7	55.7	44.6	74	54	-18.3	-9.4	H
17.355	3.0	43.5	32.5	42.1	6.1	-32.0	0.0	0.6	60.4	49.4	74	54	-13.6	-4.6	H
HI CH, 5825 MHz															
11.650	3.0	50.0	39.2	37.4	4.8	-32.9	0.0	0.7	60.0	49.2	74	54	-14.0	-4.8	V
17.475	3.0	43.4	31.6	42.6	6.2	-32.0	0.0	0.6	60.7	48.9	74	54	-13.3	-5.1	V
11.650	3.0	46.8	36.8	37.4	4.8	-32.9	0.0	0.7	56.8	46.8	74	54	-17.2	-7.2	H
17.475	3.0	43.8	31.7	42.6	6.2	-32.0	0.0	0.6	61.1	49.0	74	54	-12.9	-5.0	H
No other emissions were detected above system noise floor															
f Measurement Frequency Dist Distance to Antenna Read Analyzer Reading AF Antenna Factor CL Cable Loss Amp Preamp Gain D Corr Distance Correct to 3 meters Avg Average Field Strength @ 3 m Peak Calculated Peak Field Strength HPF High Pass Filter Avg Lim Average Field Strength Limit Pk Lim Peak Field Strength Limit Avg Mar Margin vs. Average Limit Pk Mar Margin vs. Peak Limit															

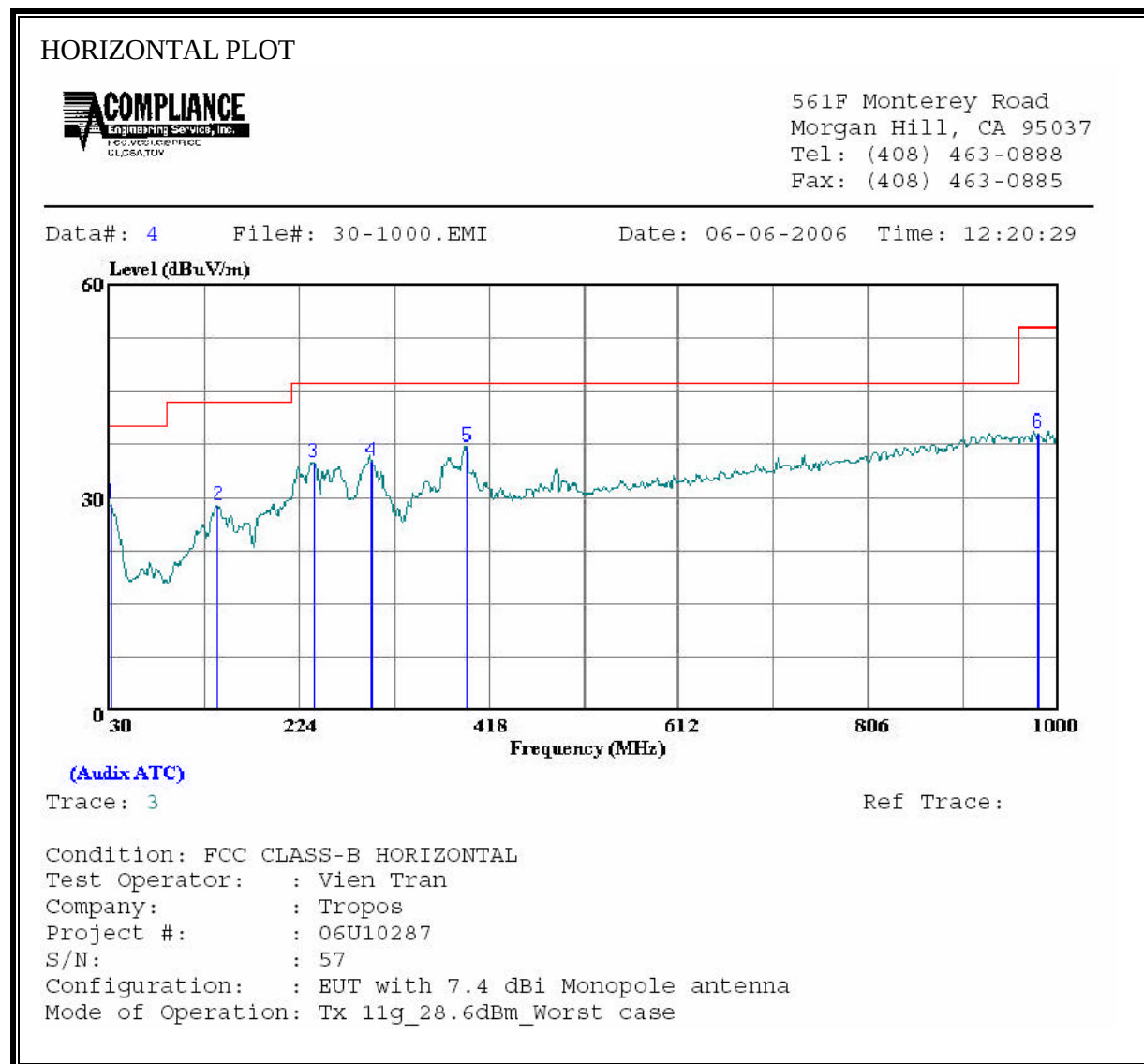
19 dBi PATCH ANTENNA

High Frequency Measurement																																														
Compliance Certification Services, Morgan Hill Open Field Site																																														
Company: Tropos Project #: 06U10287 Date: 06/01/2006 Test Engineer: Vien Tran Configuration: EUT with 19dBi Patch antenna Mode: Tx 11a 5.8 GHz Average Power: Low, Mid, & High = 26.9 dBm																																														
Test Equipment:																																														
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit																																		
T60; S/N: 2238 @3m			T145 Agilent 3008A0056									FCC 15.209																																		
Hi Frequency Cables																																														
2 foot cable			3 foot cable			12 foot cable			HPF			Reject Filter			Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz																															
			Vien 187215002			Vien 197209005			HPF_7.6GHz																																					
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Filt dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)																															
LOW CH, 5745 MHz																																														
11.490	3.0	45.0	36.1	37.4	4.8	-33.1	0.0	0.7	54.8	45.9	74	54	-19.2	-8.1	V																															
17.235	3.0	44.0	32.9	41.7	6.1	-32.0	0.0	0.6	60.4	49.3	74	54	-13.6	-4.7	V																															
11.490	3.0	47.7	36.6	37.4	4.8	-33.1	0.0	0.7	57.5	46.4	74	54	-16.5	-7.6	H																															
17.235	3.0	46.0	35.5	41.7	6.1	-32.0	0.0	0.6	62.4	51.9	74	54	-11.6	-2.1	H																															
MID CH, 5785 MHz																																														
11.570	3.0	48.5	38.7	37.4	4.8	-33.0	0.0	0.7	58.4	48.6	74	54	-15.6	-5.4	V																															
17.355	3.0	47.0	35.4	42.1	6.1	-32.0	0.0	0.6	63.9	52.3	74	54	-10.1	-1.7	V																															
11.570	3.0	48.4	39.1	37.4	4.8	-33.0	0.0	0.7	58.3	49.0	74	54	-15.7	-5.0	H																															
17.355	3.0	43.3	33.2	42.1	6.1	-32.0	0.0	0.6	60.2	50.1	74	54	-13.8	-3.9	H																															
HI CH, 5825 MHz																																														
11.650	3.0	50.8	40.4	37.4	4.8	-32.9	0.0	0.7	60.8	50.4	74	54	-13.2	-3.6	V																															
17.475	3.0	44.0	32.3	42.6	6.2	-32.0	0.0	0.6	61.3	49.6	74	54	-12.7	-4.4	V																															
11.650	3.0	50.0	41.7	37.4	4.8	-32.9	0.0	0.7	60.0	51.7	74	54	-14.0	-2.3	H																															
17.475	3.0	43.6	31.9	42.6	6.2	-32.0	0.0	0.6	60.9	49.2	74	54	-13.1	-4.8	H																															
No other emissions were detected above system noise floor																																														
<table style="width: 100%; border: none;"> <tr> <td>f</td> <td>Measurement Frequency</td> <td>Amp</td> <td>Preamp Gain</td> <td>Avg Lim</td> <td>Average Field Strength Limit</td> </tr> <tr> <td>Dist</td> <td>Distance to Antenna</td> <td>D Corr</td> <td>Distance Correct to 3 meters</td> <td>Pk Lim</td> <td>Peak Field Strength Limit</td> </tr> <tr> <td>Read</td> <td>Analyzer Reading</td> <td>Avg</td> <td>Average Field Strength @ 3 m</td> <td>Avg Mar</td> <td>Margin vs. Average Limit</td> </tr> <tr> <td>AF</td> <td>Antenna Factor</td> <td>Peak</td> <td>Calculated Peak Field Strength</td> <td>Pk Mar</td> <td>Margin vs. Peak Limit</td> </tr> <tr> <td>CL</td> <td>Cable Loss</td> <td>HPF</td> <td>High Pass Filter</td> <td></td> <td></td> </tr> </table>																	f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit	Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit	Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit	AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit	CL	Cable Loss	HPF	High Pass Filter		
f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit																																									
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit																																									
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit																																									
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit																																									
CL	Cable Loss	HPF	High Pass Filter																																											

7.3.4. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz

2.4 GHz BAND: 7.4 dBi MONOPOLE ANTENNA – WORST CASE

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.970	8.53	20.45	28.98	40.00	-11.02	Peak
2	140.580	14.14	14.77	28.91	43.50	-14.59	Peak
3	238.550	21.46	13.43	34.89	46.00	-11.11	Peak
4	297.720	19.46	15.59	35.05	46.00	-10.95	Peak
5	395.690	19.28	17.93	37.21	46.00	-8.79	Peak
6	979.630	12.39	26.74	39.13	54.00	-14.87	Peak

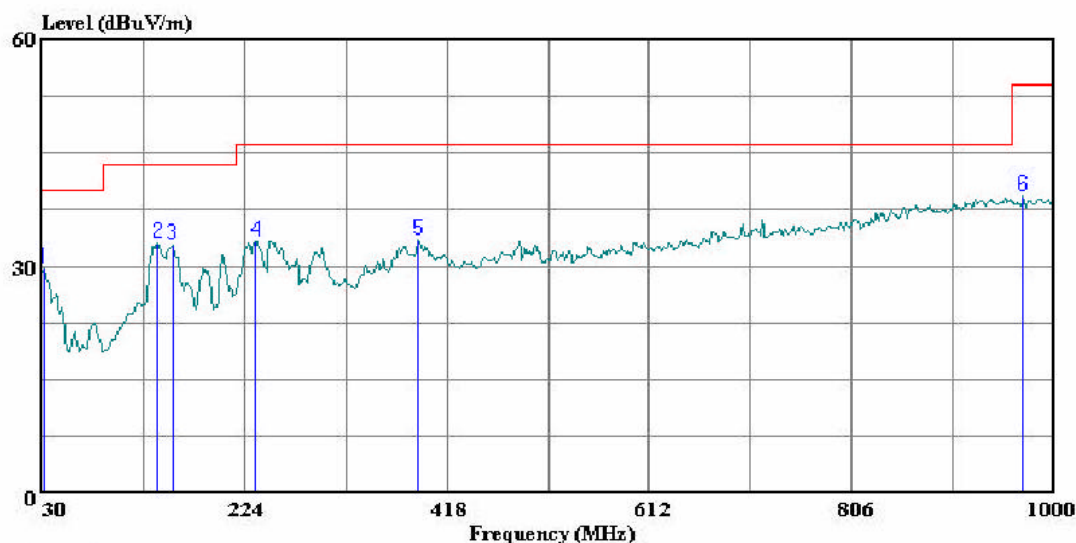
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 2 File#: 30-1000.EMI Date: 06-06-2006 Time: 12:14:38



(Auxiliary ATC)

Trace: 1

Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator: : Vien Tran
Company: : Tropos
Project #: : 06U10287
S/N: : 57
Configuration: : EUT with 7.4dBi Monopole antenna
Mode of Operation: Tx 11g_28.6dBm_Worst case

VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.970	9.18	20.45	29.63	40.00	-10.37	Peak
2	140.580	18.28	14.77	33.05	43.50	-10.45	Peak
3	155.130	18.80	13.95	32.75	43.50	-10.75	Peak
4	234.670	19.91	13.27	33.18	46.00	-12.82	Peak
5	390.840	15.65	17.83	33.48	46.00	-12.52	Peak
6	969.930	12.50	26.66	39.16	54.00	-14.84	Peak

5.8 GHz BAND: 9.1 dBi MONOPOLE ANTENNA – WORST CASE

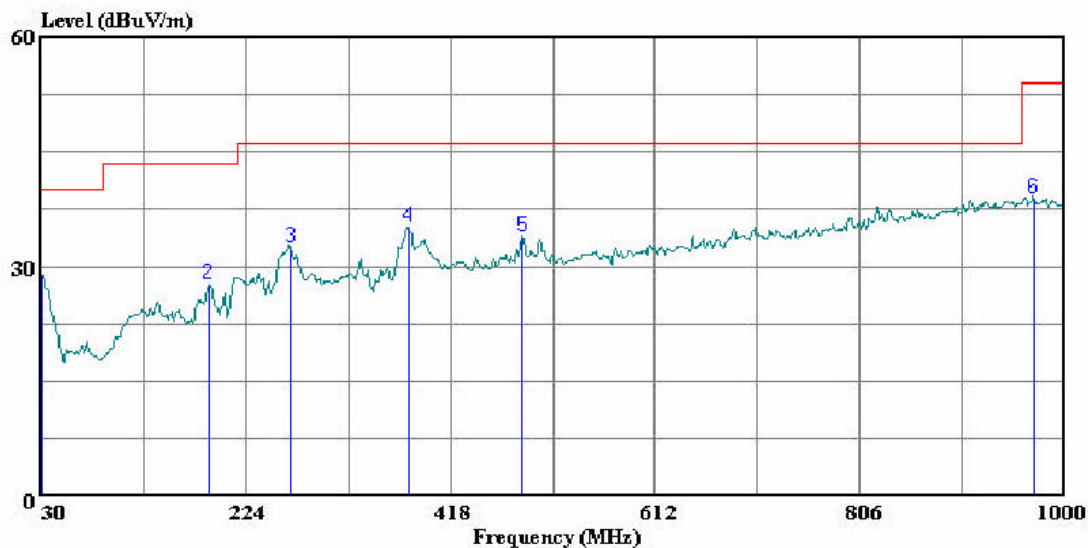
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 14 File#: 30-1000.emi Date: 06-06-2006 Time: 13:19:40



(Audix ATC)

Trace: 13

Ref Trace:

Condition: FCC CLASS-B HORIZONTAL

Test Operator: : Vien Tran

Company: : Tropos

Project #: : 06U10287

S/N: : 57

Configuration: : EUT with 9.1 Monopole antenna

Mode of Operation: Tx 11a_26.9dBm

HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.000	8.39	20.45	28.84	40.00	-11.16	Peak
2	189.080	14.68	12.93	27.61	43.50	-15.89	Peak
3	266.680	18.03	14.45	32.48	46.00	-13.52	Peak
4	378.230	17.57	17.55	35.12	46.00	-10.88	Peak
5	485.900	13.95	19.95	33.90	46.00	-12.10	Peak
6	970.900	12.25	26.67	38.92	54.00	-15.08	Peak

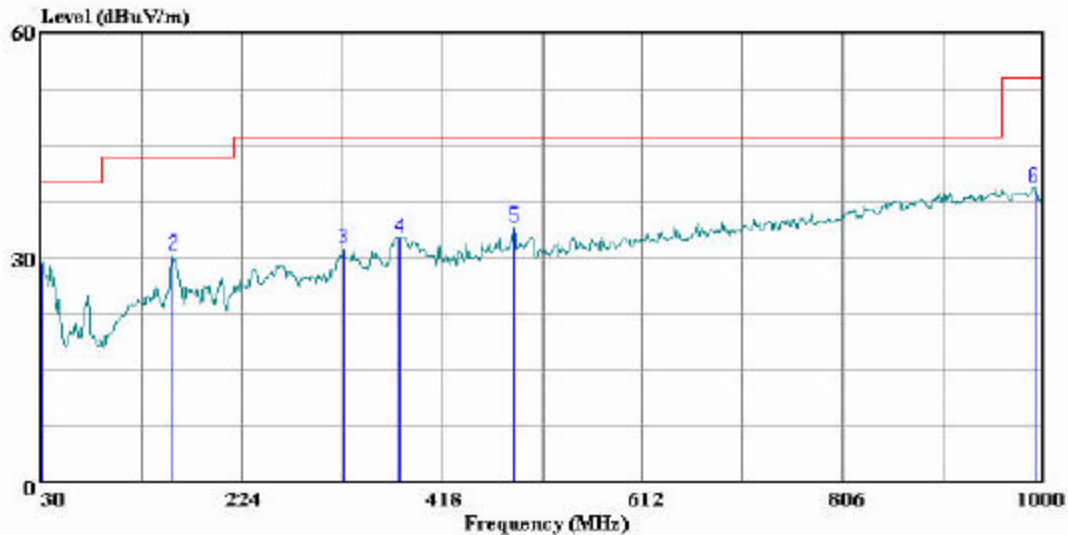
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 16 File#: 30-1000.emi Date: 06-06-2006 Time: 13:23:07



(Aux ATC)

Trace: 15

Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator: : Vien Tran
Company: : Tropos
Project #: : 06U10287
S/N: : 57
Configuration: : BUT with 9.1 Monopole antenna
Mode of Operation: Tx 11a_26.9dBm

VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	30.000	8.92	20.45	29.37	40.00	-10.63	Peak
2	158.040	16.35	13.89	30.24	43.50	-13.26	Peak
3	322.940	14.80	16.27	31.07	46.00	-14.93	Peak
4	377.260	15.16	17.53	32.69	46.00	-13.31	Peak
5	487.840	14.05	20.00	34.05	46.00	-11.95	Peak
6	991.270	12.44	26.90	39.35	54.00	-14.65	Peak

7.4. POWERLINE CONDUCTED EMISSIONS

LIMIT

§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 μ H/50 ohms line impedance stabilization network (LISN). 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.

The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	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.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The resolution bandwidth is set to 9 kHz for both peak detection and quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Line conducted data is recorded for both NEUTRAL and HOT lines.

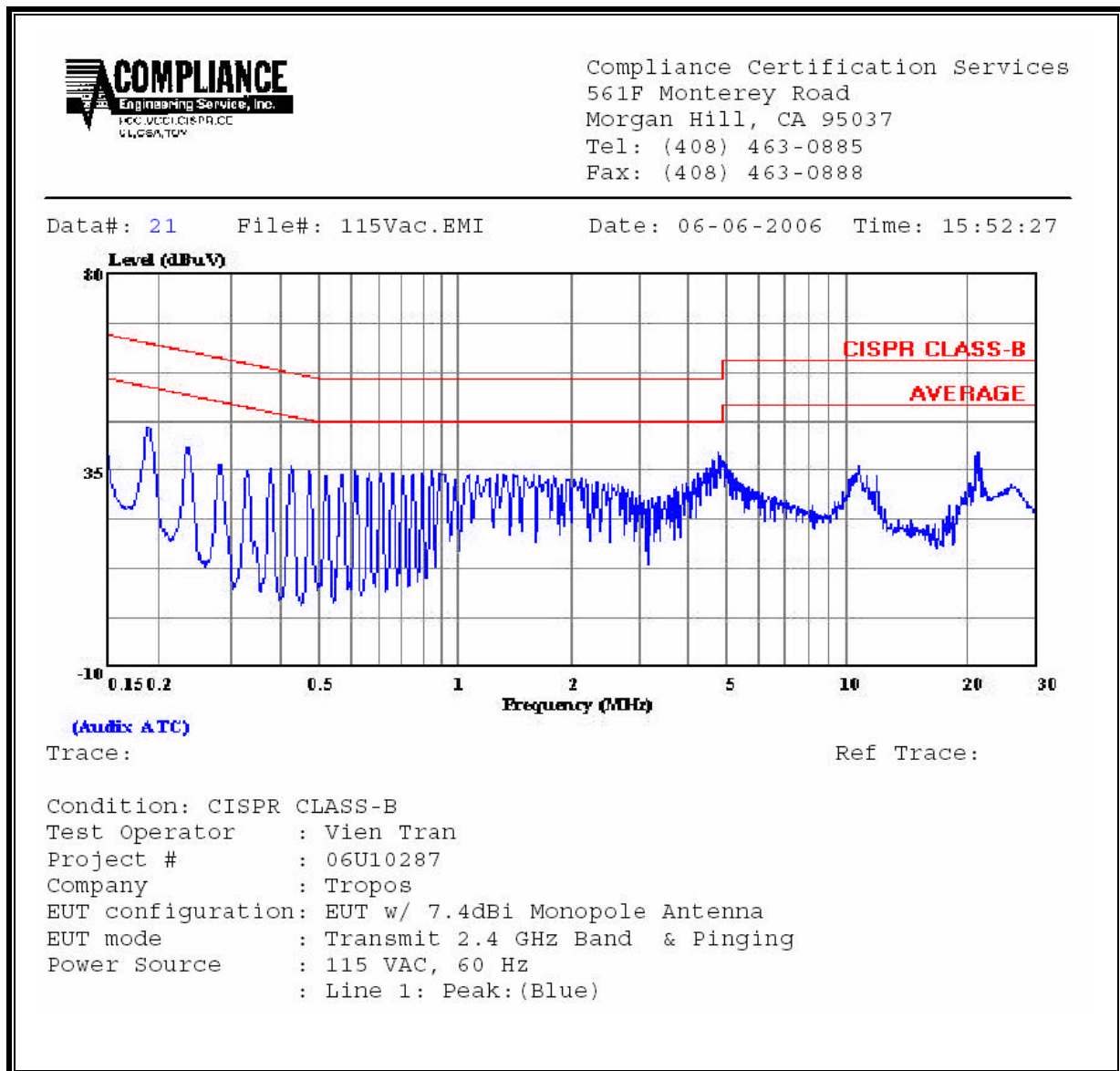
RESULTS

No non-compliance noted:

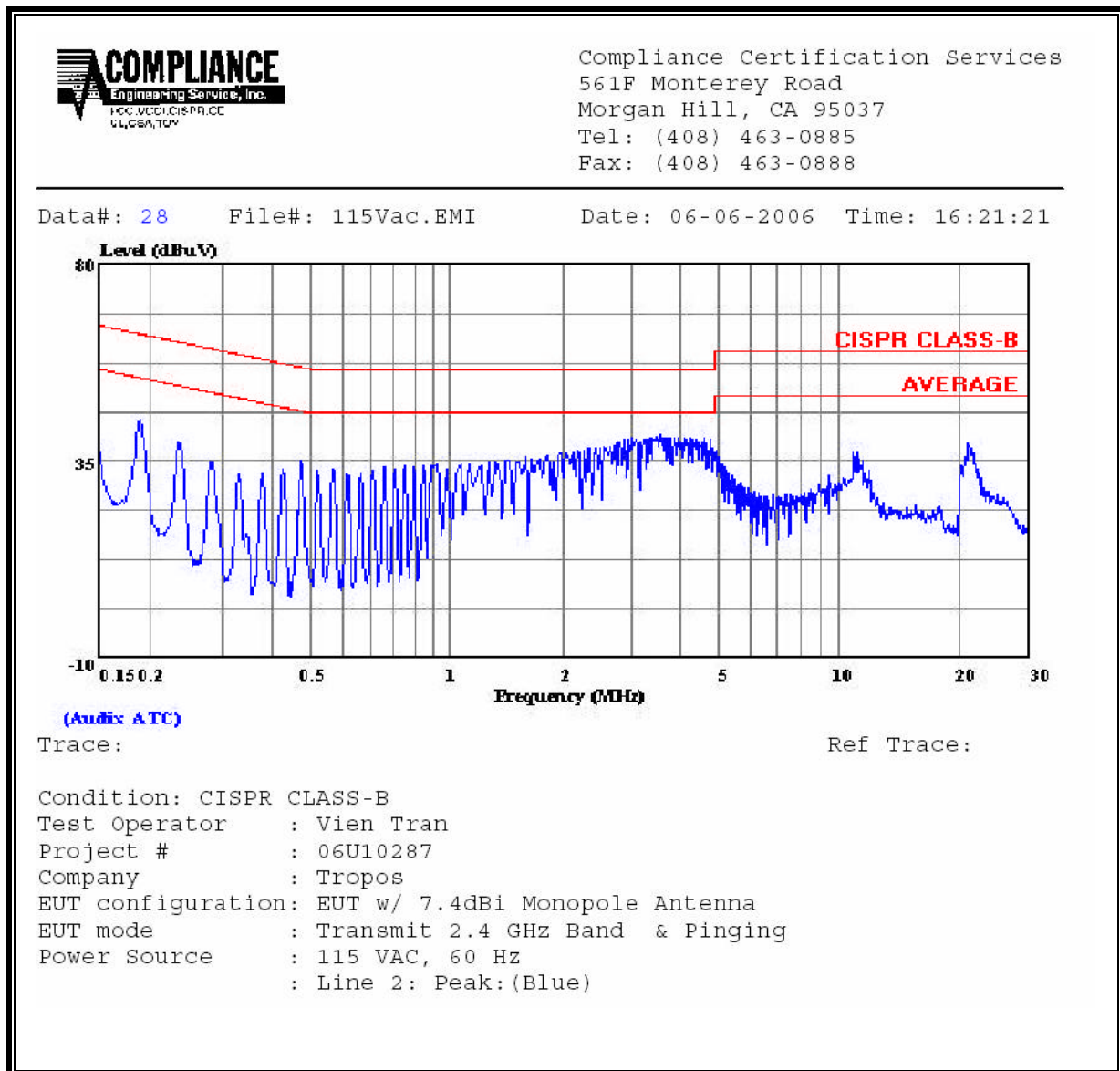
6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	FCC B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.19	48.10	--	--	0.00	64.12	54.12	-16.02	-6.02	L1
0.24	41.48	--	--	0.00	62.20	52.20	-20.72	-10.72	L1
4.93	39.04	--	--	0.00	56.00	46.00	-16.96	-6.96	L1
0.19	46.24	--	--	0.00	64.12	54.12	-17.88	-7.88	L2
0.24	39.58	--	--	0.00	62.20	52.20	-22.62	-12.62	L2
3.88	42.04	--	--	0.00	56.00	46.00	-13.96	-3.96	L2
6 Worst Data									

LINE 1 RESULTS



LINE 2 RESULTS



8. SETUP PHOTOS

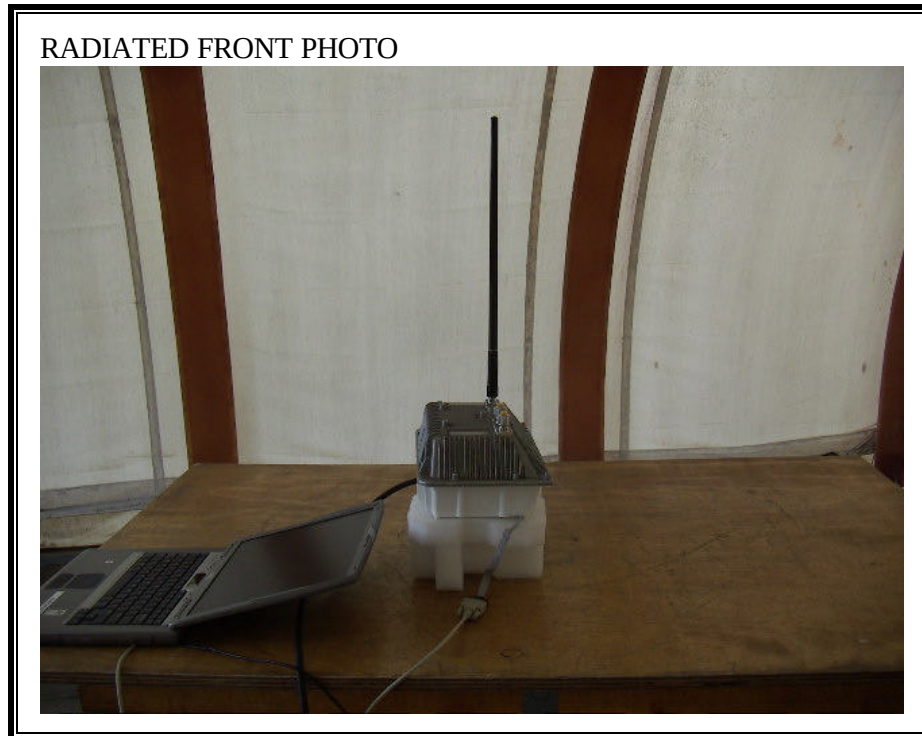
ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP



RADIATED RF MEASUREMENT SETUP

ANTENNA FOR 2.4 GHz BAND

7.4 dBi MONOPOLE ANTENNA

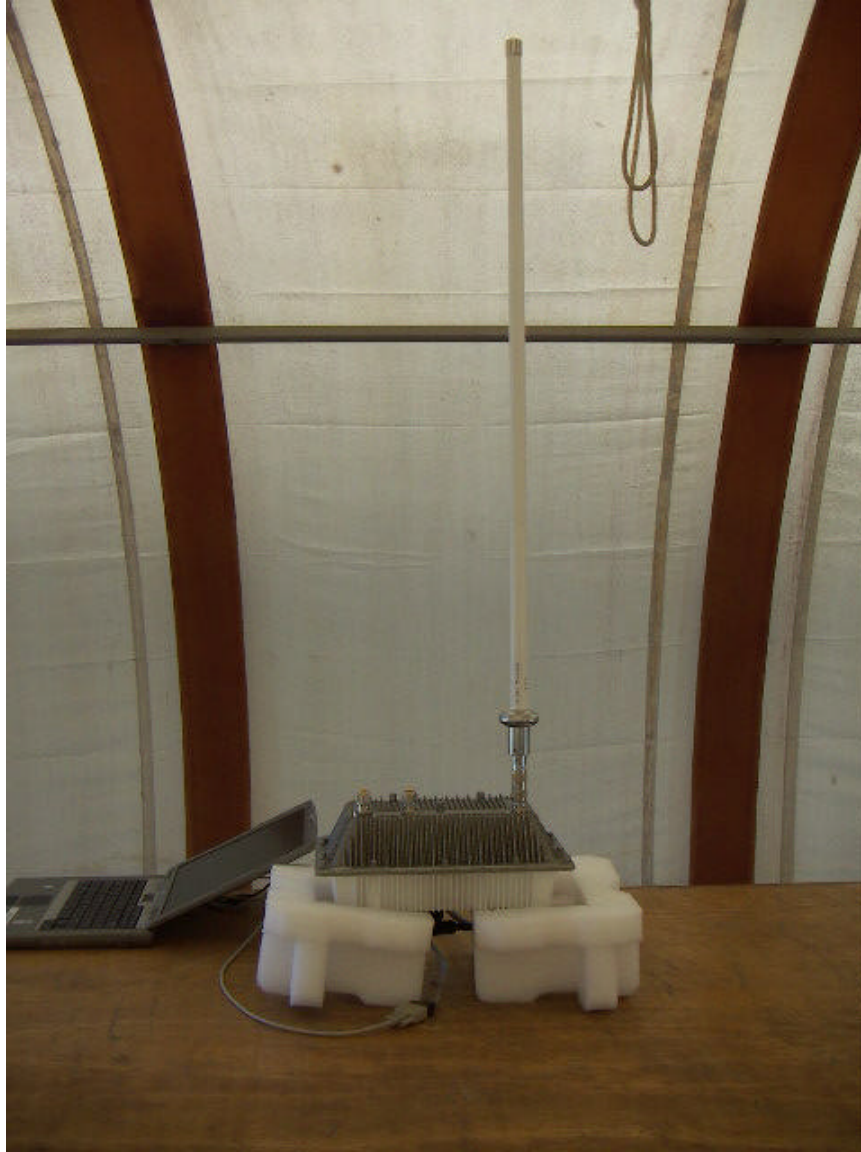


RADIATED BACK PHOTO



10 dBi MONOPOLE ANTENNA

RADIATED FRONT PHOTO

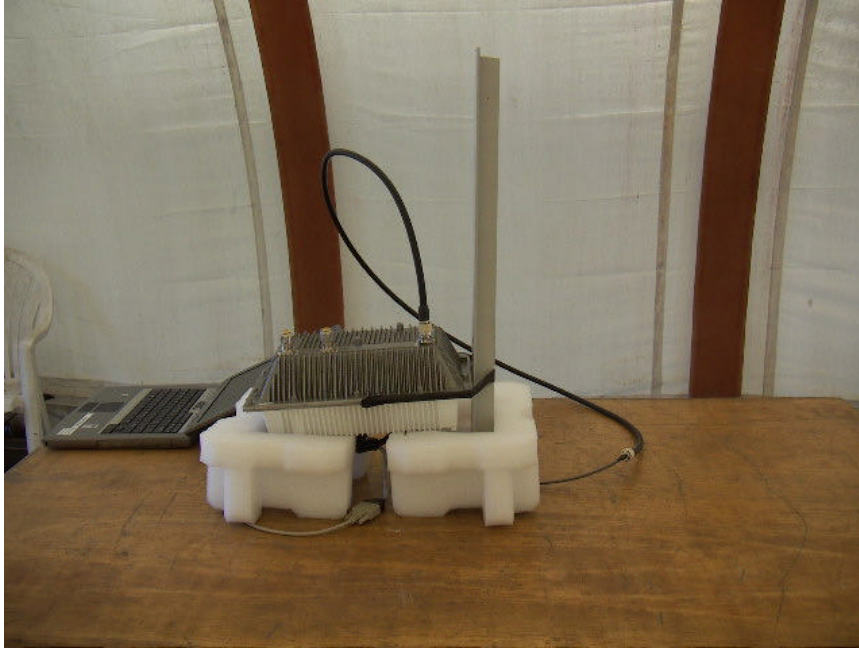


RADIATED BACK PHOTO

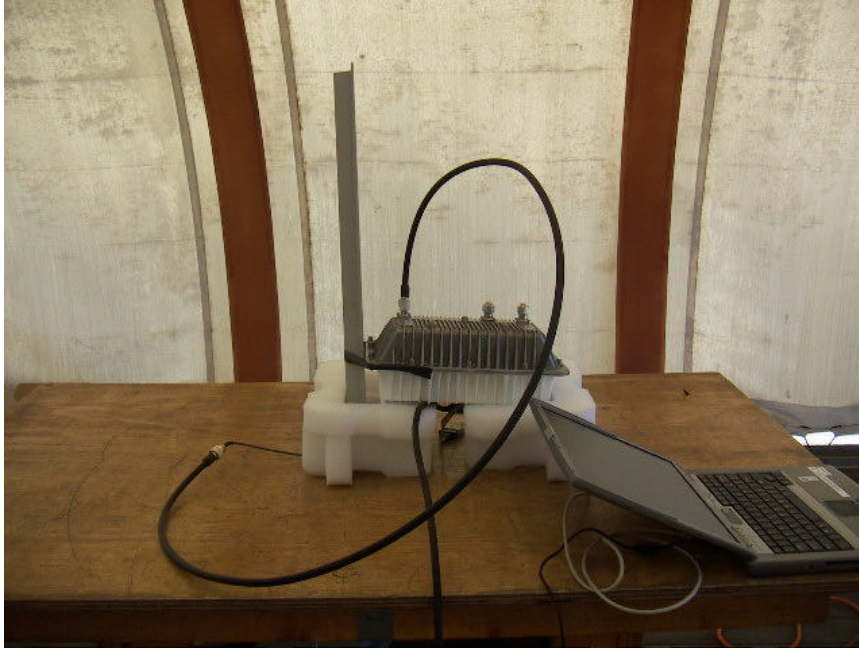


12 dBi SECTOR ANTENNA

RADIATED FRONT PHOTO



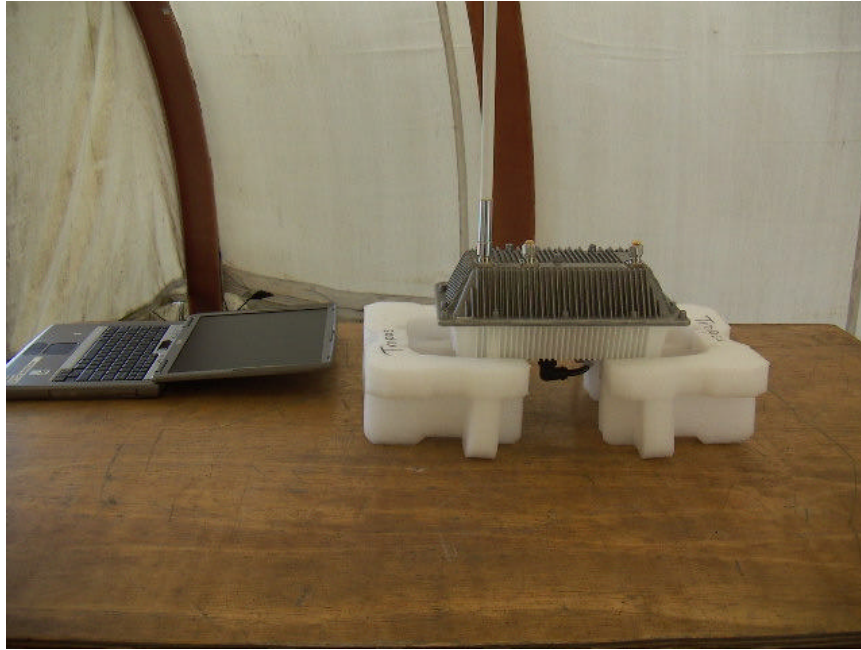
RADIATED BACK PHOTO



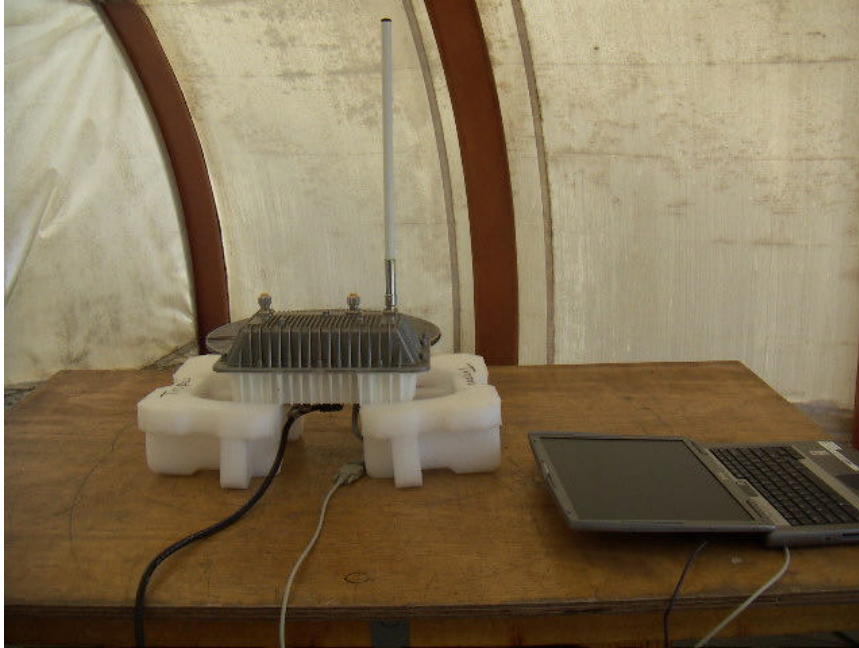
ANTENNA FOR 5.8 GHz BAND

9.1 dBi MONOPOLE ANTENNA

RADIATED FRONT PHOTO

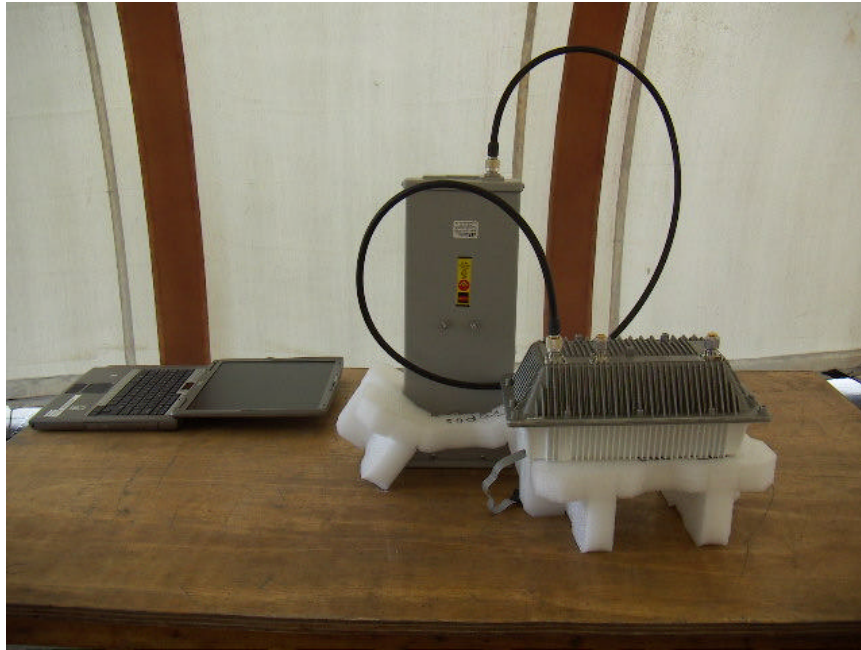


RADIATED BACK PHOTO

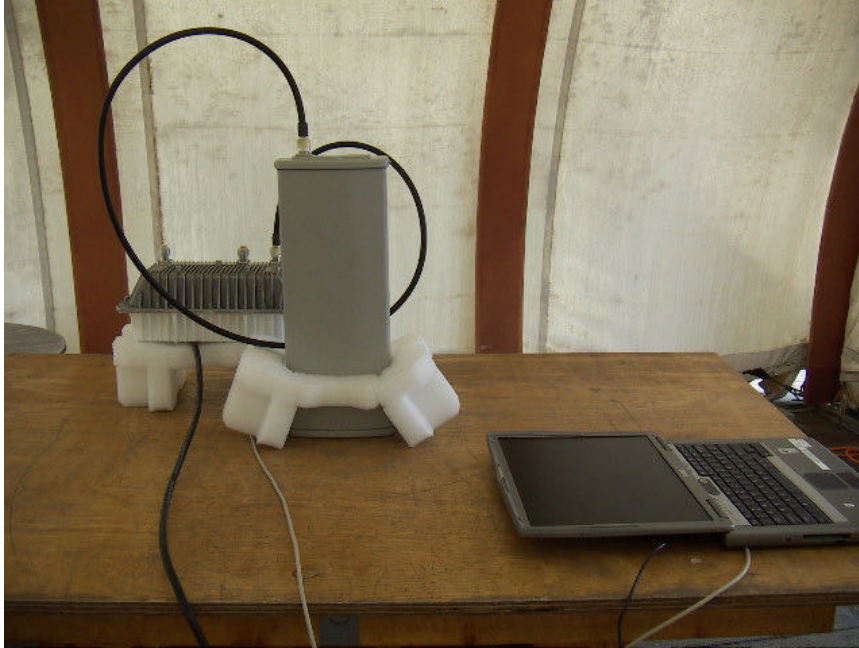


17 dBi SECTOR ANTENNA

RADIATED FRONT PHOTO

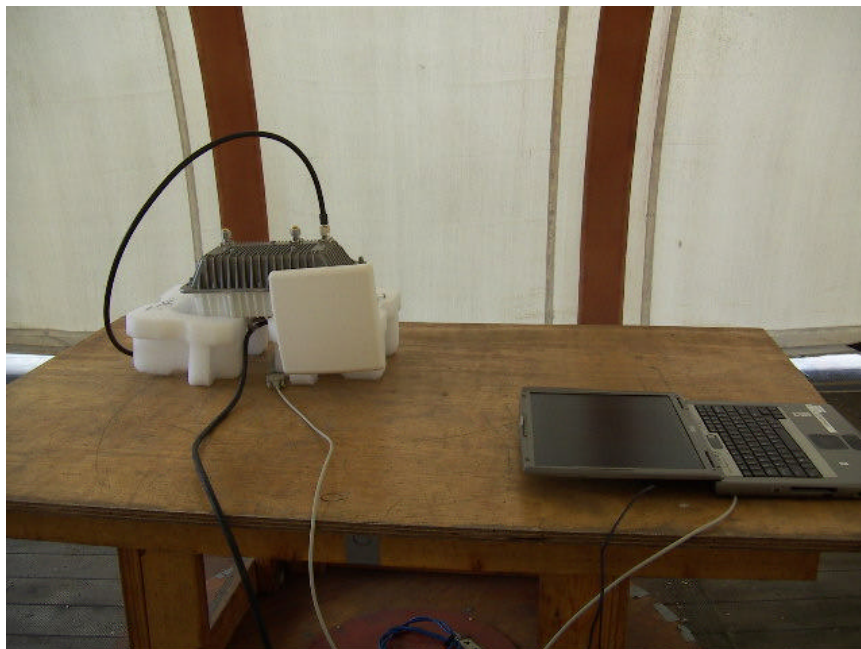


RADIATED BACK PHOTO

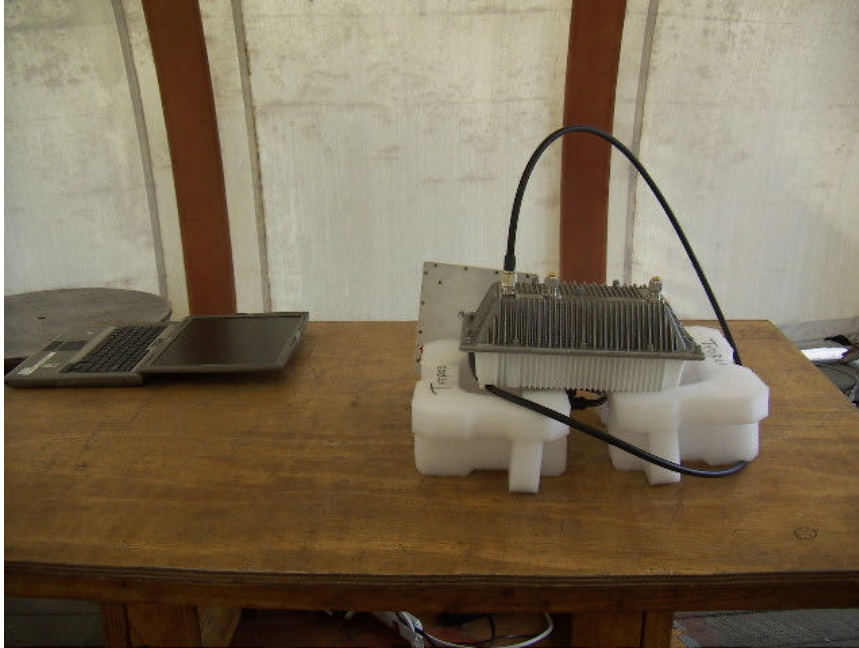


19 dBi PATCH ANTENNA

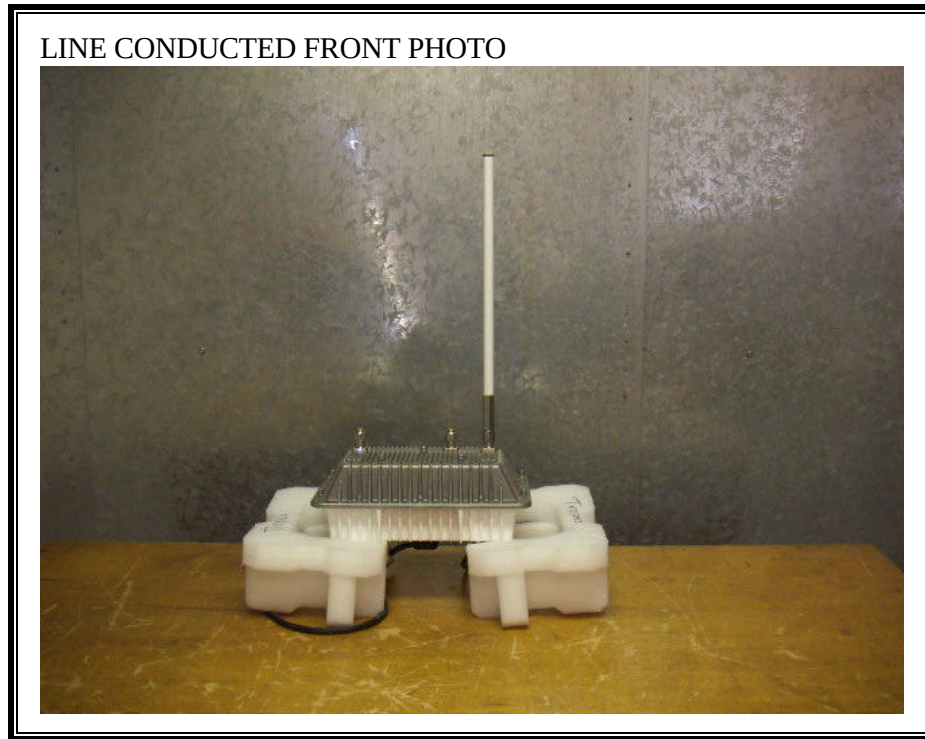
RADIATED FRONT PHOTO



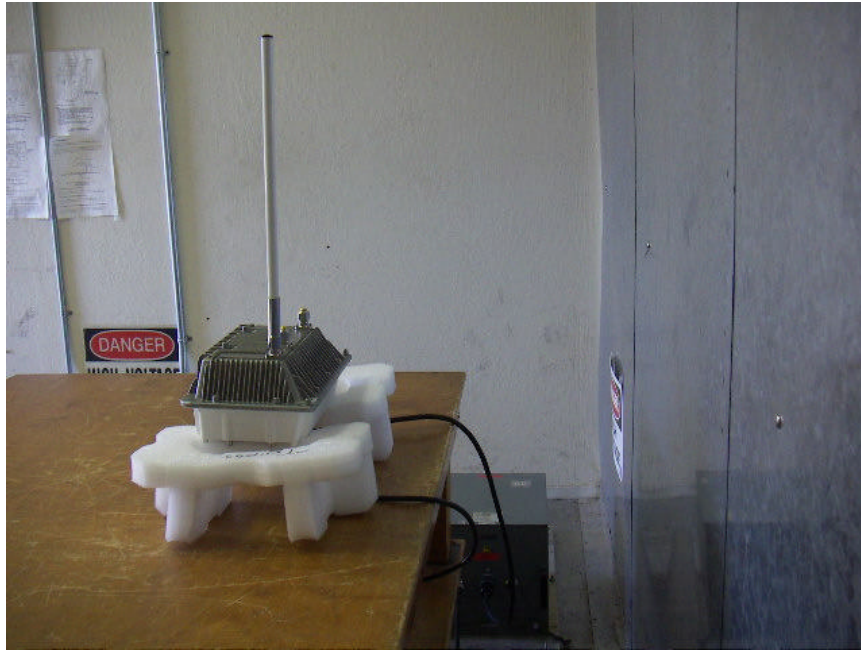
RADIATED BACK PHOTO



POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP



LINE CONDUCTED BACK PHOTO



END OF REPORT