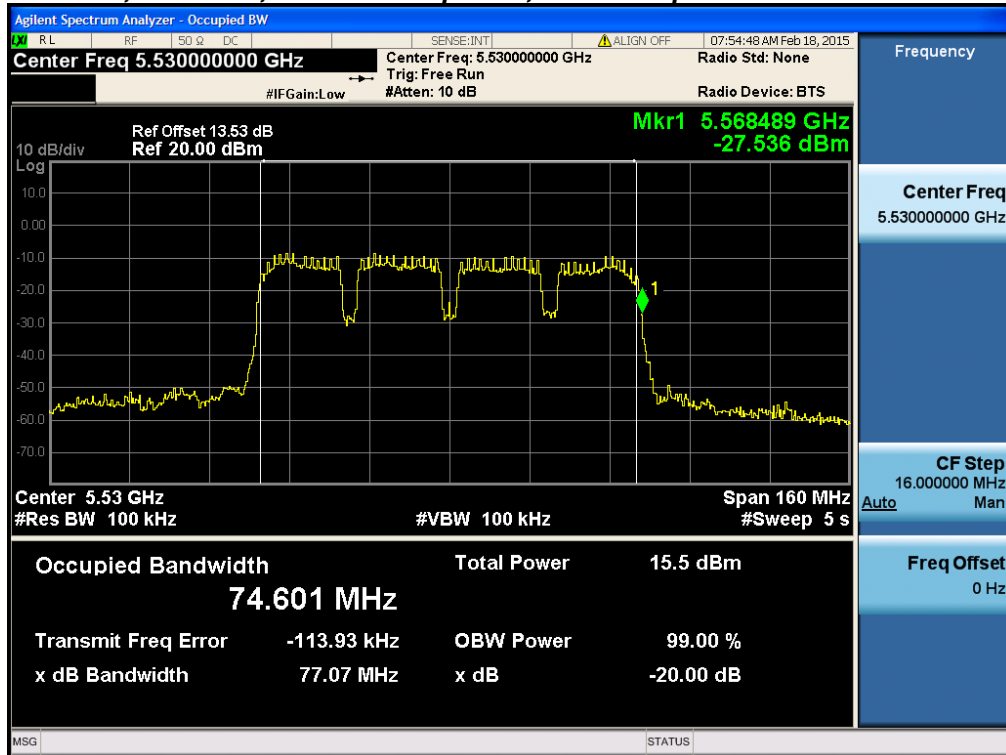
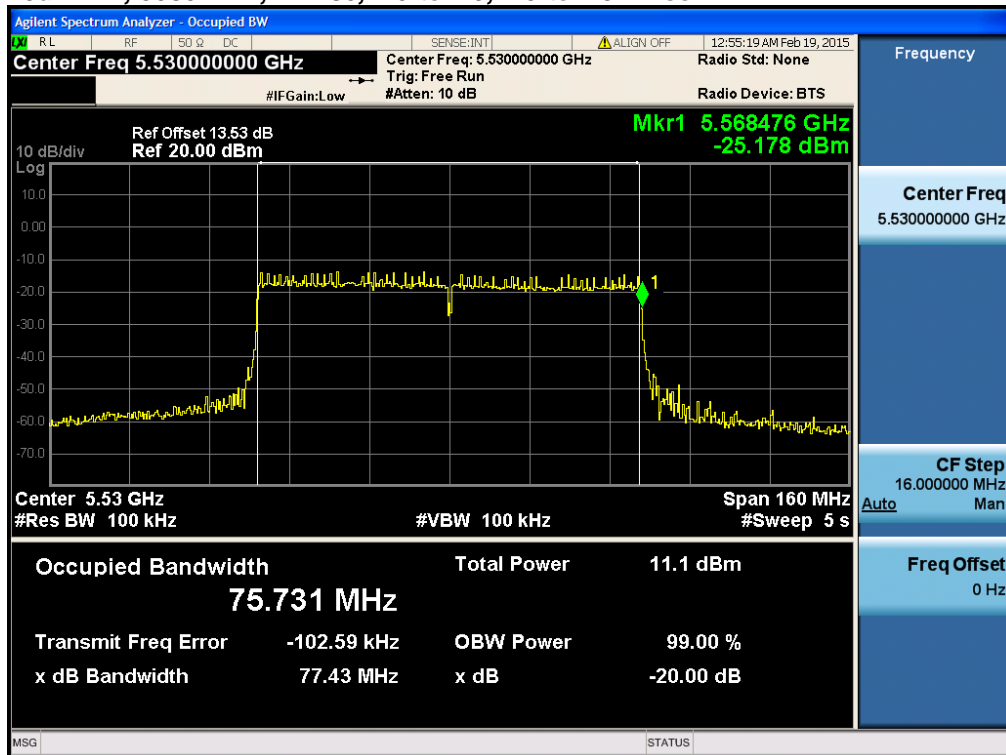
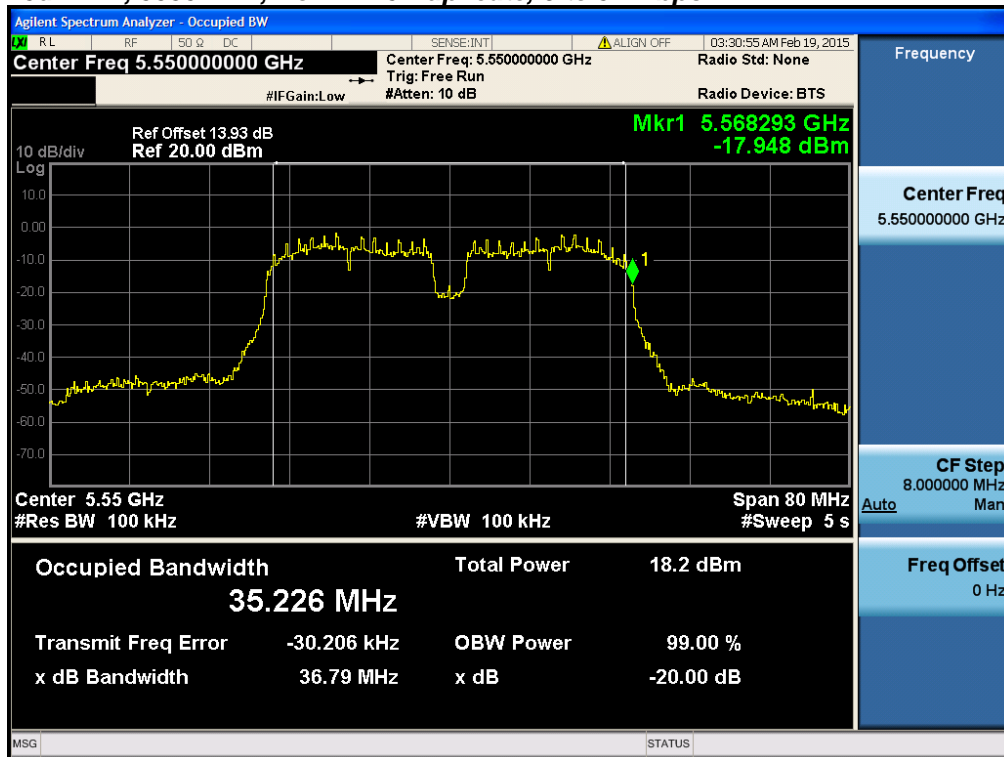
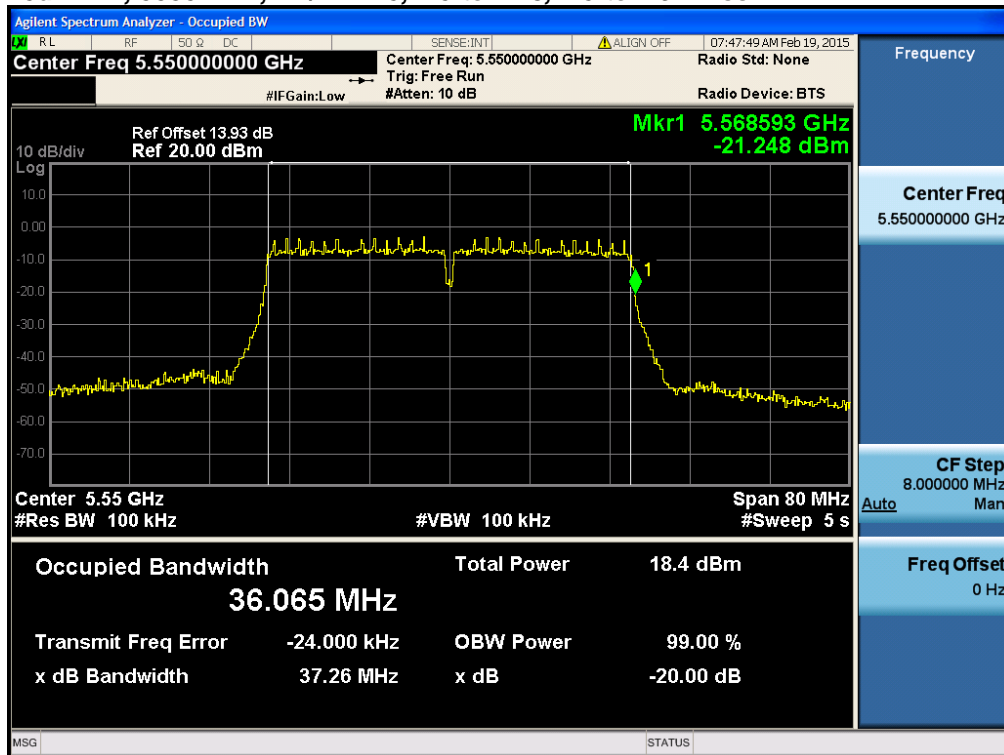
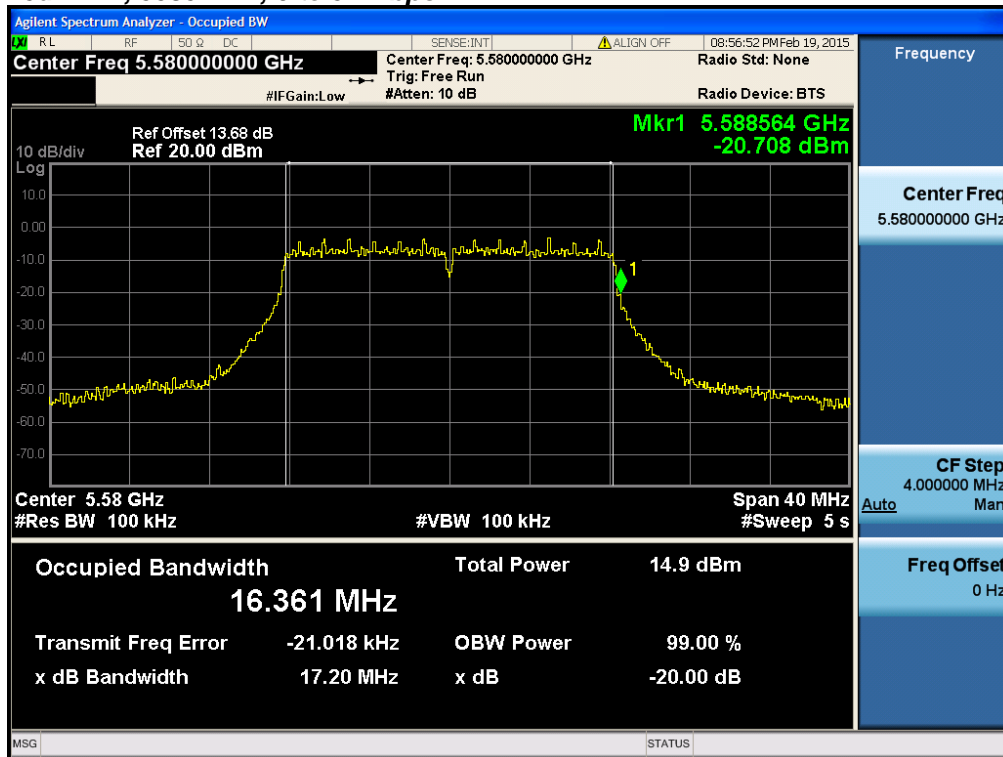
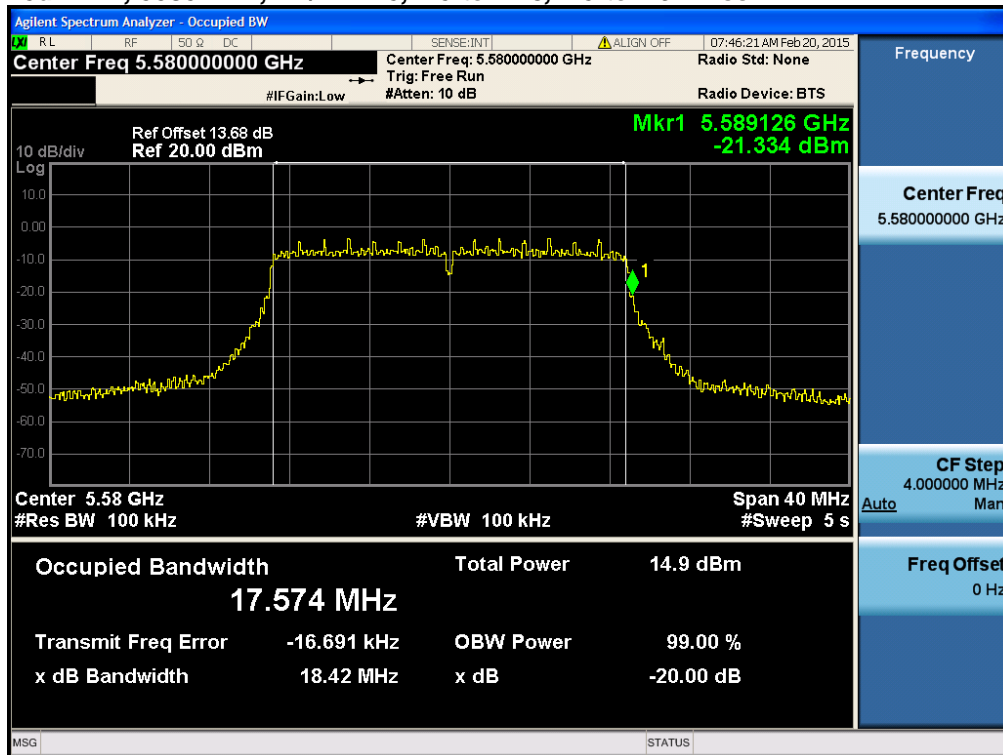
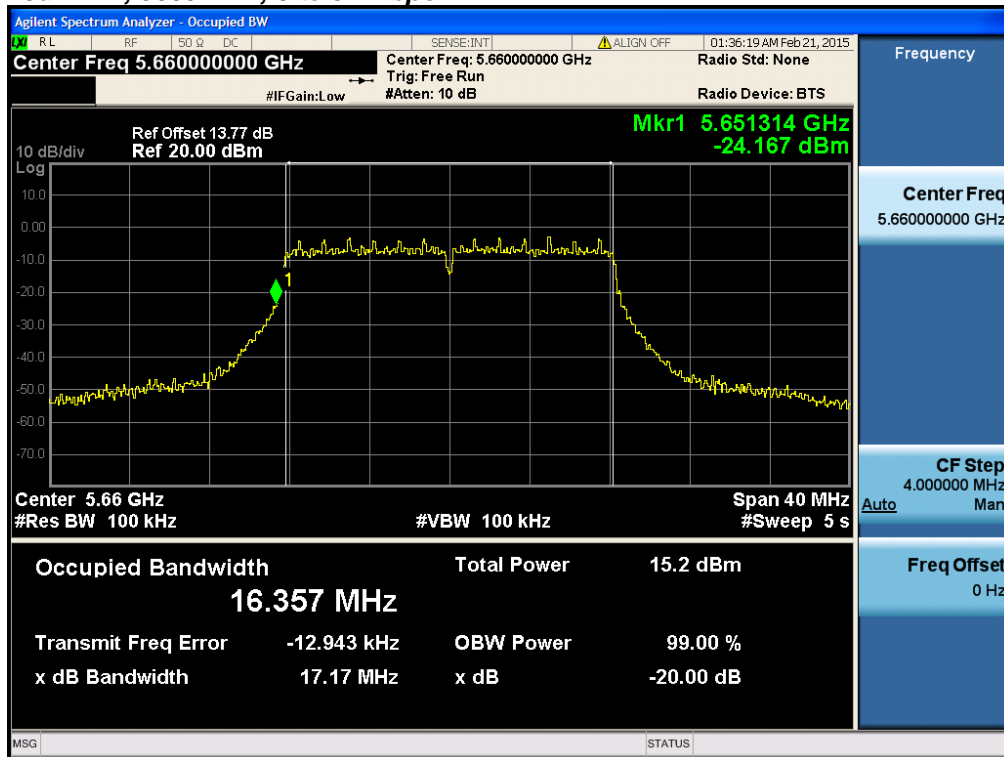
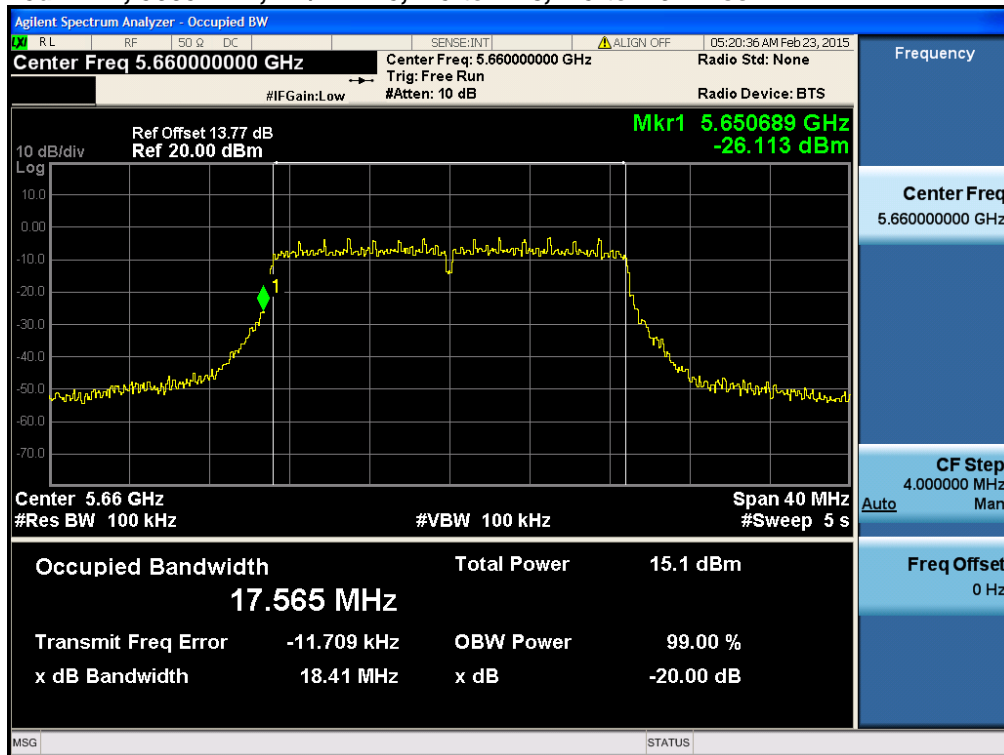
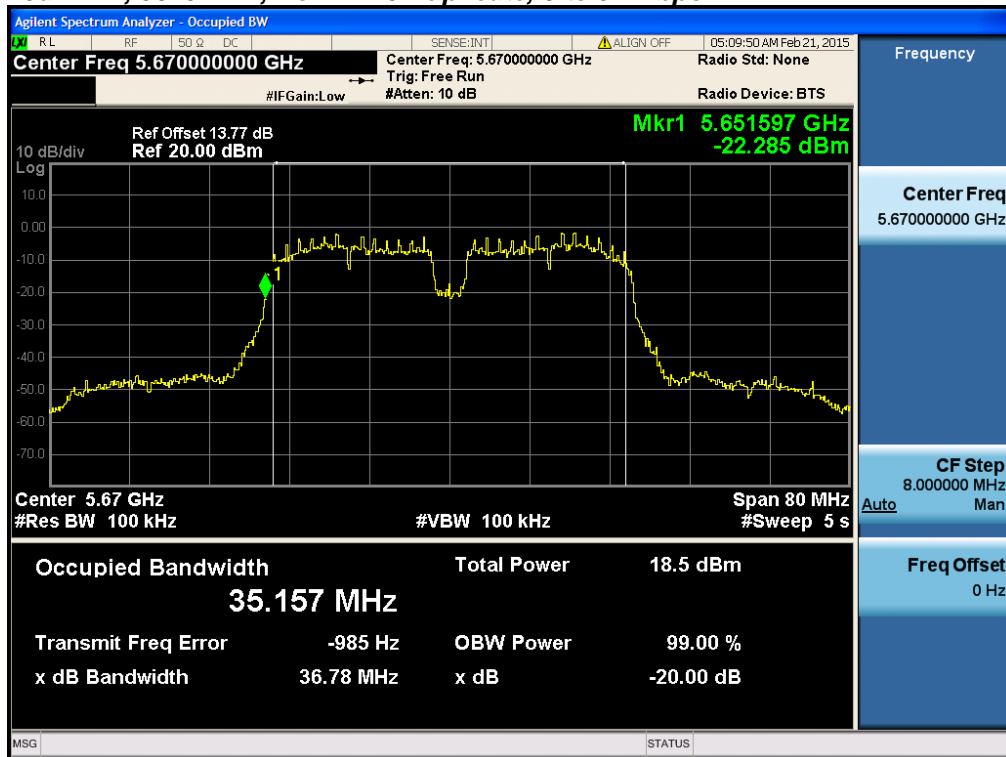
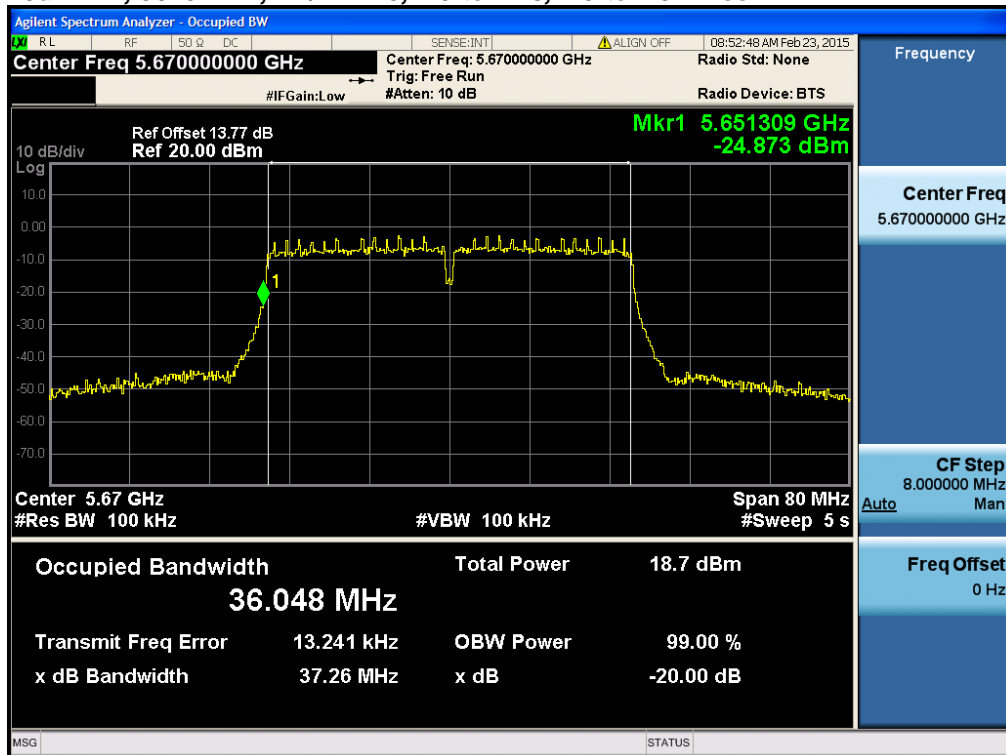


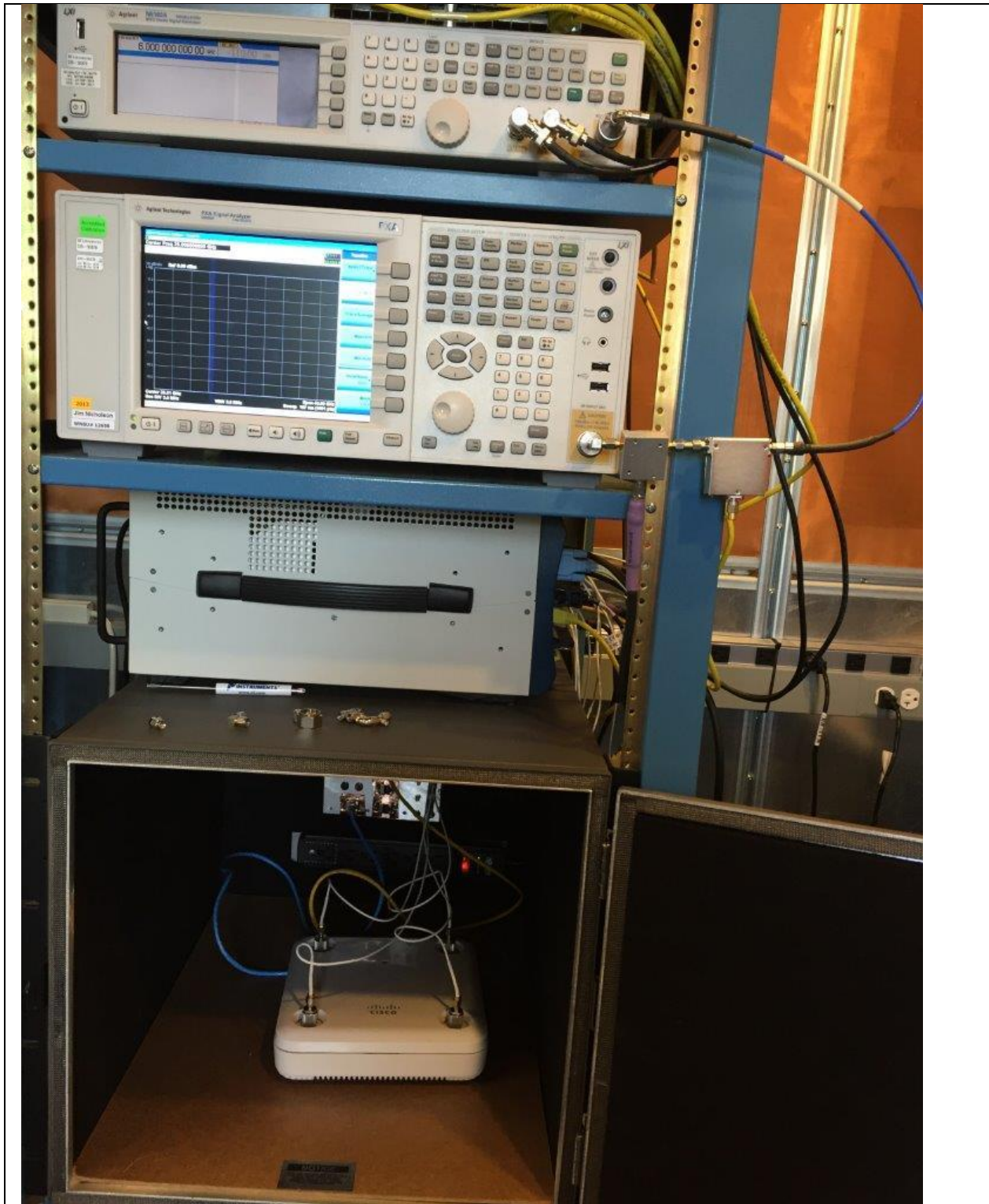
**20dB BW, 5530 MHz, Non HT80 Duplicate, 6 to 54 Mbps****20dB BW, 5530 MHz, VHT80, M0 to M9, M0 to M9 1-1ss**

**20dB BW, 5550 MHz, Non HT40 Duplicate, 6 to 54 Mbps****20dB BW, 5550 MHz, HT/VHT40, M0 to M23, M0 to M9 1-4ss**

**20dB BW, 5580 MHz, 6 to 54 Mbps****20dB BW, 5580 MHz, HT/VHT20, M0 to M23, M0 to M9 1-4ss**

**20dB BW, 5660 MHz, 6 to 54 Mbps****20dB BW, 5660 MHz, HT/VHT20, M0 to M23, M0 to M9 1-4ss**

**20dB BW, 5670 MHz, Non HT40 Duplicate, 6 to 54 Mbps****20dB BW, 5670 MHz, HT/VHT40, M0 to M23, M0 to M9 1-4ss**



Title: Conducted Test Setup



Appendix B: Emission Test Results

Testing Laboratory: Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134, USA

Radiated Spurious Emissions

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Using Vasona, configure the spectrum analyzer as shown below (be sure to enter all losses between the transmitter output and the spectrum analyzer). Place the radio in continuous transmit mode.

Span:	1GHz – 18 GHz/18GHz-26G/26GHz-40GHz/30M-1GHz
Reference Level:	80 dBuV
Attenuation:	10 dB
Sweep Time:	Coupled
Resolution Bandwidth:	1MHz
Video Bandwidth:	1 MHz for peak, 10 Hz for average
Detector:	Peak

Maximize Turntable (find worst case table angle), Maximize Antenna (find worst case height)

Save 2 plots: 1) Average Plot (Vertical and Horizontal), Limit= 54dBuV @3m
 2) Peak plot (Vertical and Horizontal), Limit = 74dBuV @3m

Place a marker at the end of the restricted band closest to the transmit frequency to show compliance.
Also measure any emissions in the restricted bands.

This report represents the worst case data for all supported operating modes and antennas.
Antenna ports are terminated in 50 ohm loads.



Transmitter Radiated Spurious Emissions-Average

Frequency (MHz)	Mode	Data Rate (Mbps)	Spurious Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5500	6 to 54 Mbps	6	51.92	54	2.08
	HT/VHT40, M0 to M23, M0.0 to M9.4	m0	51.7	54	2.3
5580	6 to 54 Mbps	6	51.5	54	2.5
5660	HT/VHT40, M0 to M23, M0.0 to M9.4	m0	51.8	54	2.2
	VHT80, M0 to M9, M0 to M9 1-1ss	m0	51.9	54	2.1

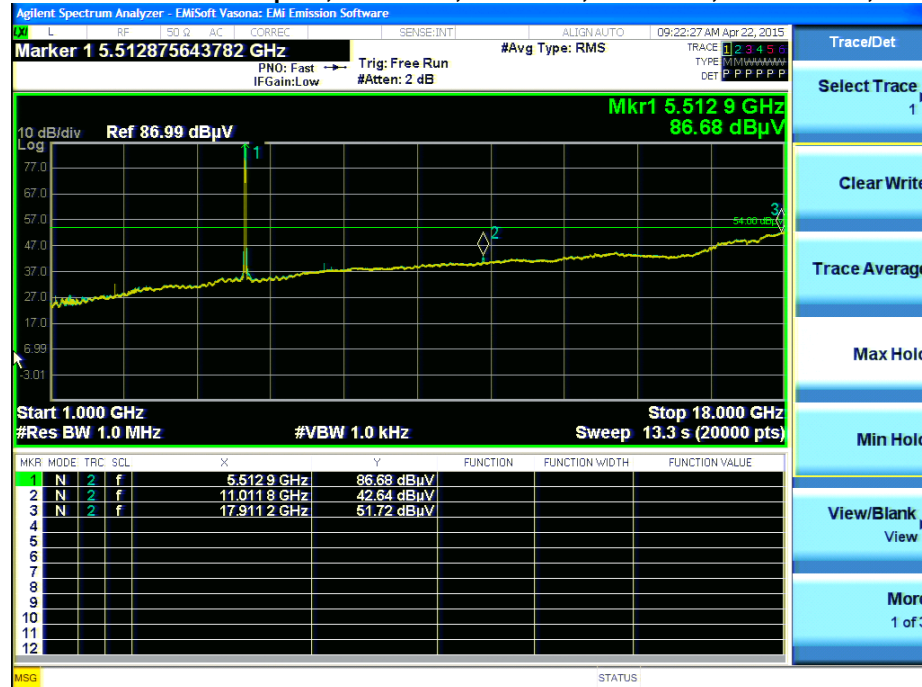


Transmitter Radiated Spurious Emissions (1GHz-18GHz)

Radiated Transmitter Spurs, 5500 MHz, 6 to 54 Mbps, Average



Radiated Transmitter Spurs, 5500 MHz, HT/VHT40, M0 to M23, M0.0 to M9.4, Average







Radiated Transmitter Spurs, 5660 MHz, VHT80, M0 to M9, M0 to M9 1.1, Average

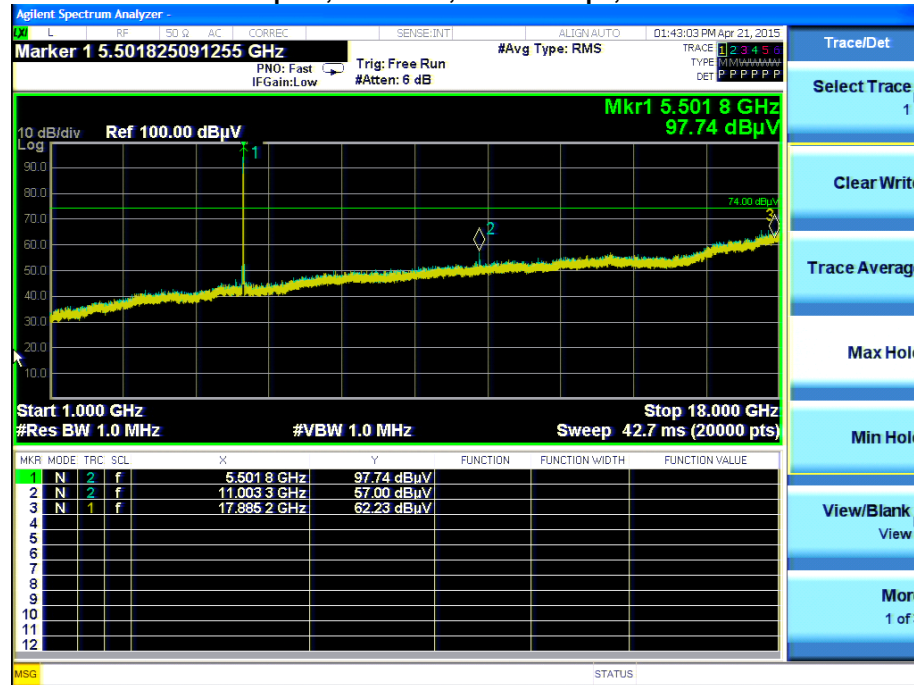


**Transmitter Radiated Spurious Emissions-Peak**

Frequency (MHz)	Mode	Data Rate (Mbps)	Spurious Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
5500	6 to 54 Mbps	6	62.2	74	11.8
	HT/VHT40, M0 to M23, M0.0 to M9.4	m0	64.3	74	9.7
5580	6 to 54 Mbps	6	62	74	12
5660	HT/VHT40, M0 to M23, M0.0 to M9.4	m0	63.6	74	10.4
	VHT80, M0 to M9, M0 to M9 1-1ss	m0	63.2	74	10.8



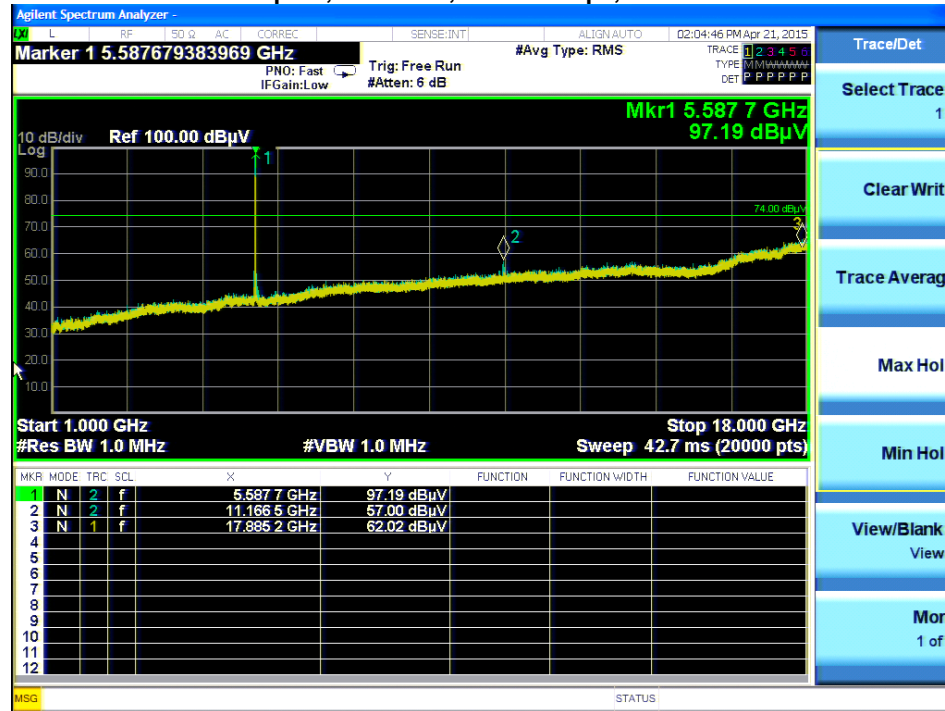
Radiated Transmitter Spurs, 5500 MHz, 6 to 54 Mbps, Peak



Radiated Transmitter Spurs, 5500 MHz, HT/VHT40, M0 to M23, M0.0 to M9.4, Peak



Radiated Transmitter Spurs, 5580 MHz, 6 to 54 Mbps, Peak



Radiated Transmitter Spurs, 5660 MHz, HT/VHT40, M0 to M23, M0.0 to M9.4, Peak





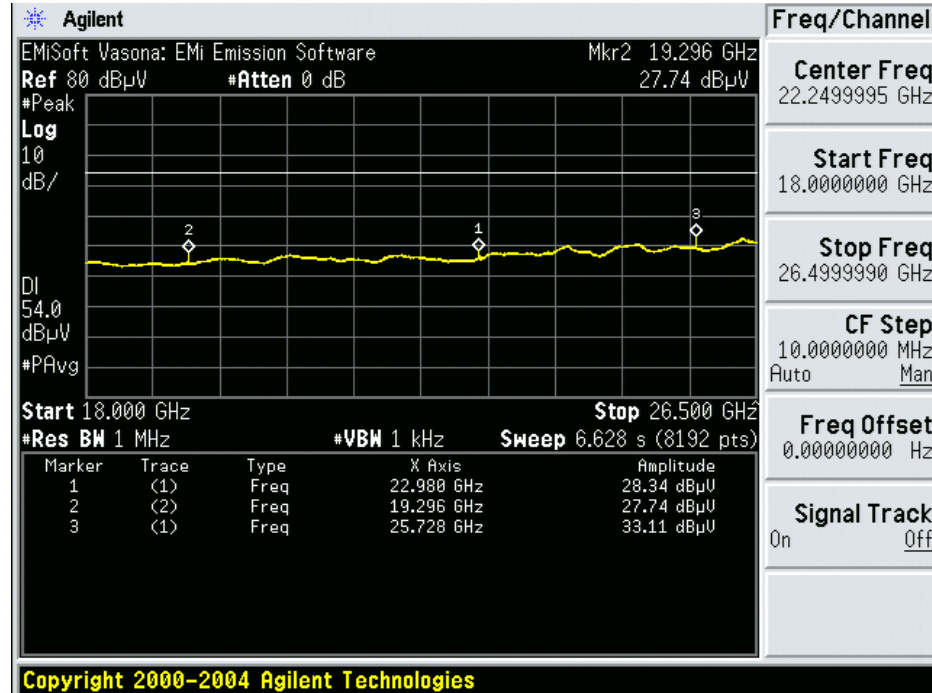
Radiated Transmitter Spurs, 5660 MHz, VHT80, M0 to M9, M0 to M9 1.1, Peak



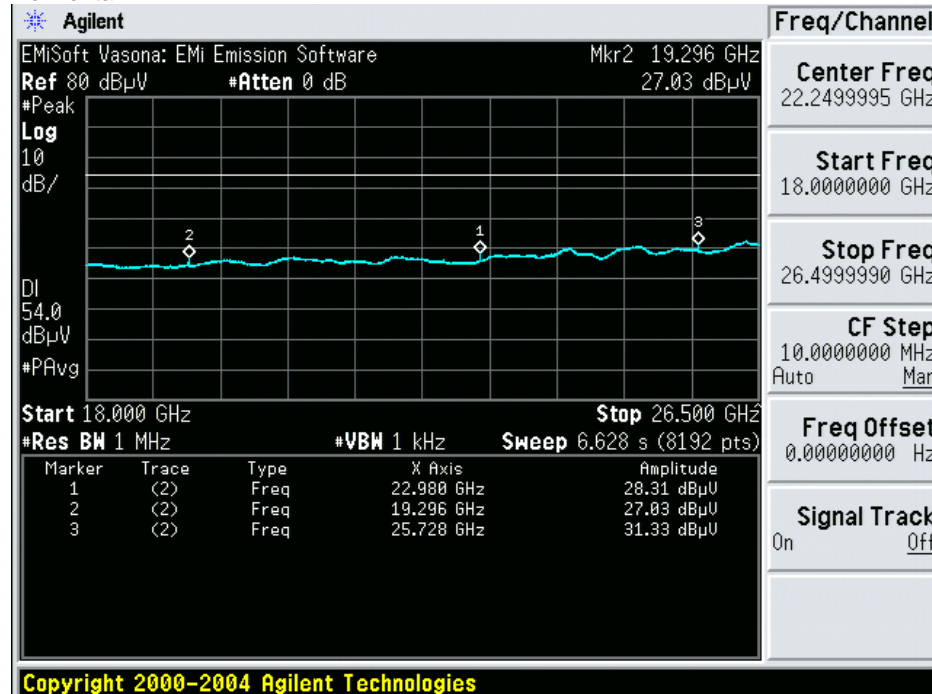
Transmitter Radiated Spurious Emissions (18GHz-26GHz)

Radiated Transmitter Spurs, All rate, All modes, Average

Vertical



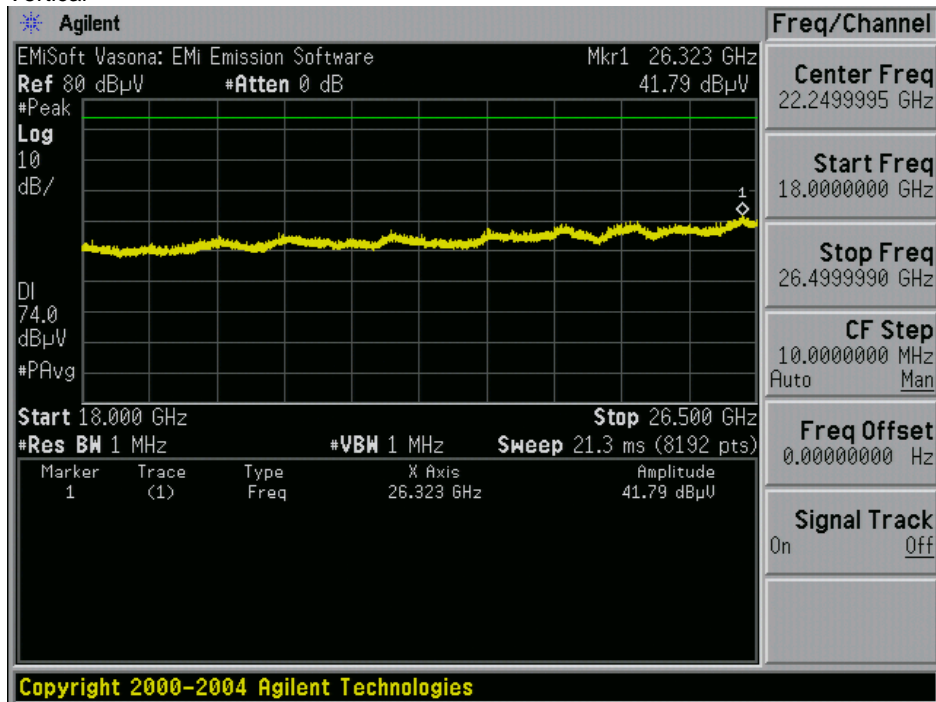
Horizontal



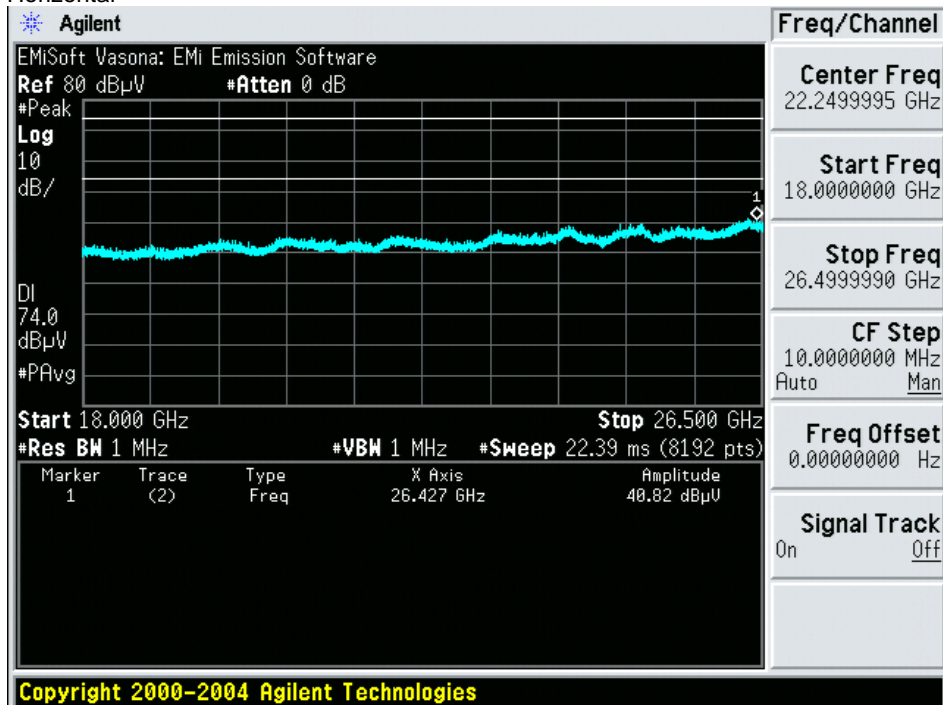


Radiated Transmitter Spurs, All rate, All modes, Peak

Vertical



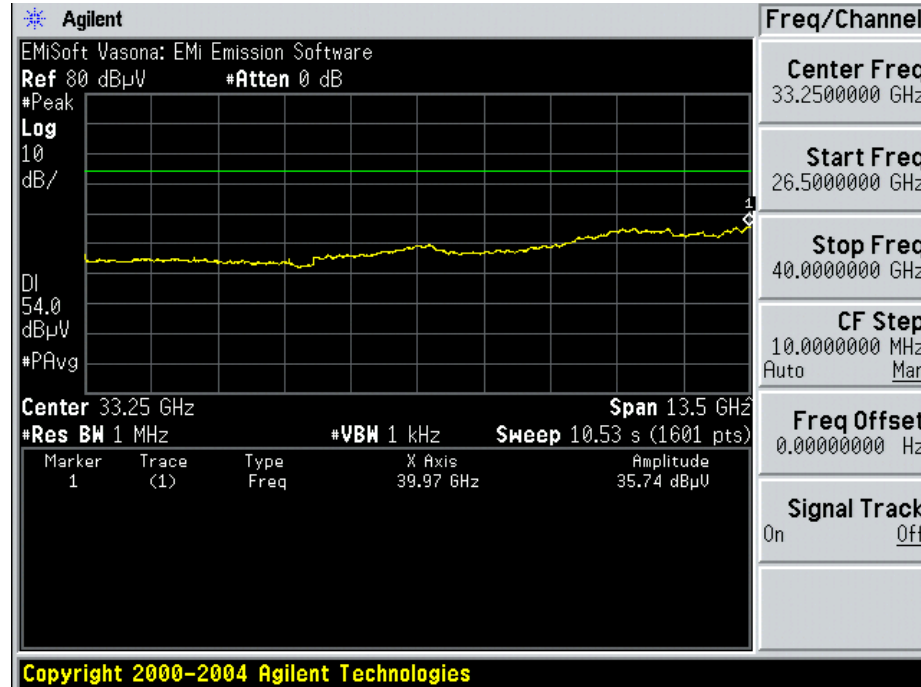
Horizontal



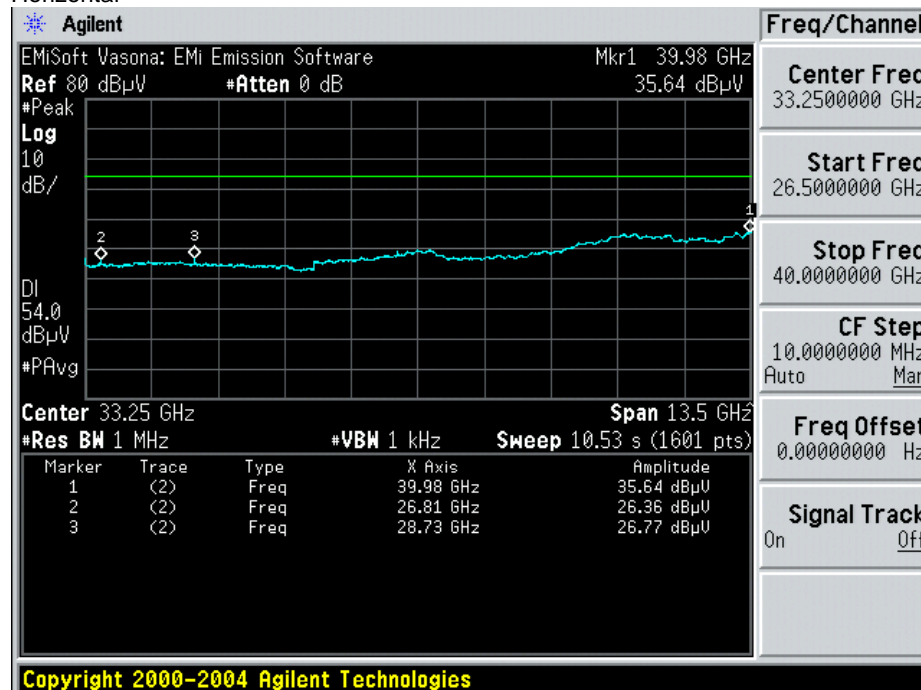
Transmitter Radiated Spurious Emissions (26GHz-40GHz)

Radiated Transmitter Spurs, All rate, All modes, Average

Vertical

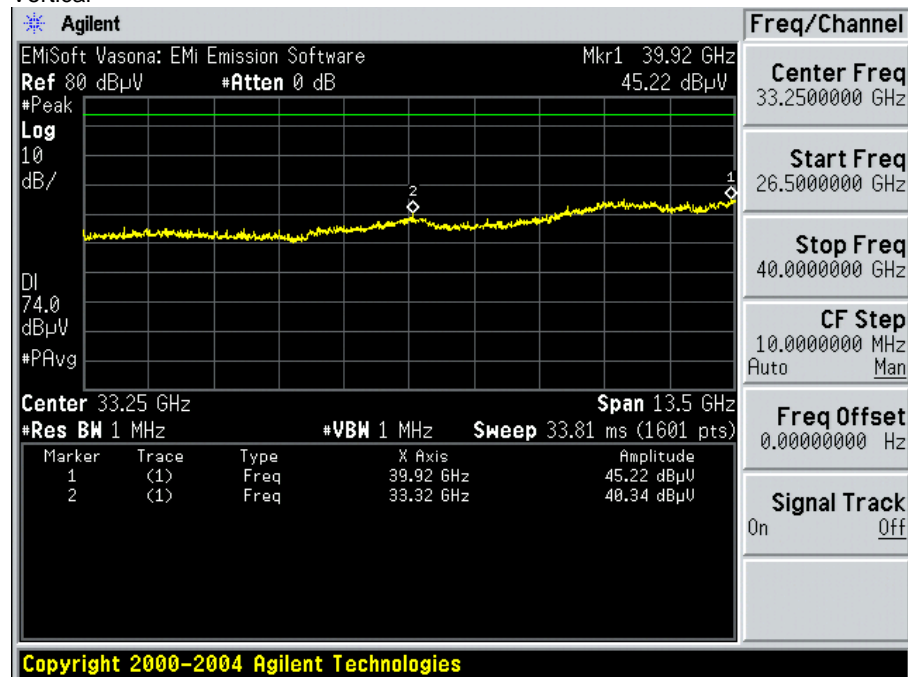


Horizontal

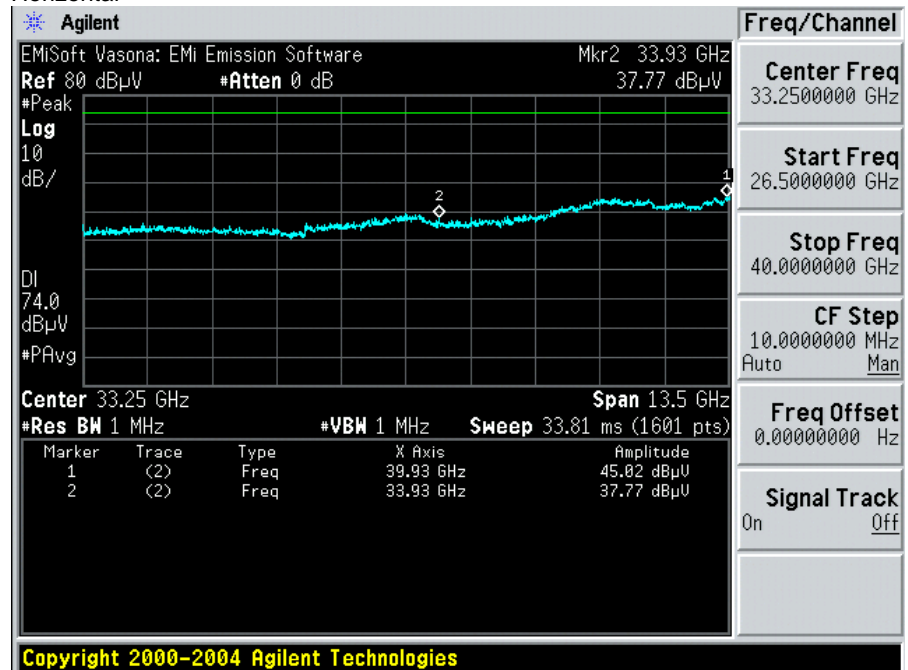


**Radiated Transmitter Spurs, All rate, All modes, Peak**

Vertical



Horizontal





Receiver Radiated Spurious Emissions (1GHz-18GHz)

Radiated Receiver Spurs, All rates, All Mode, Average



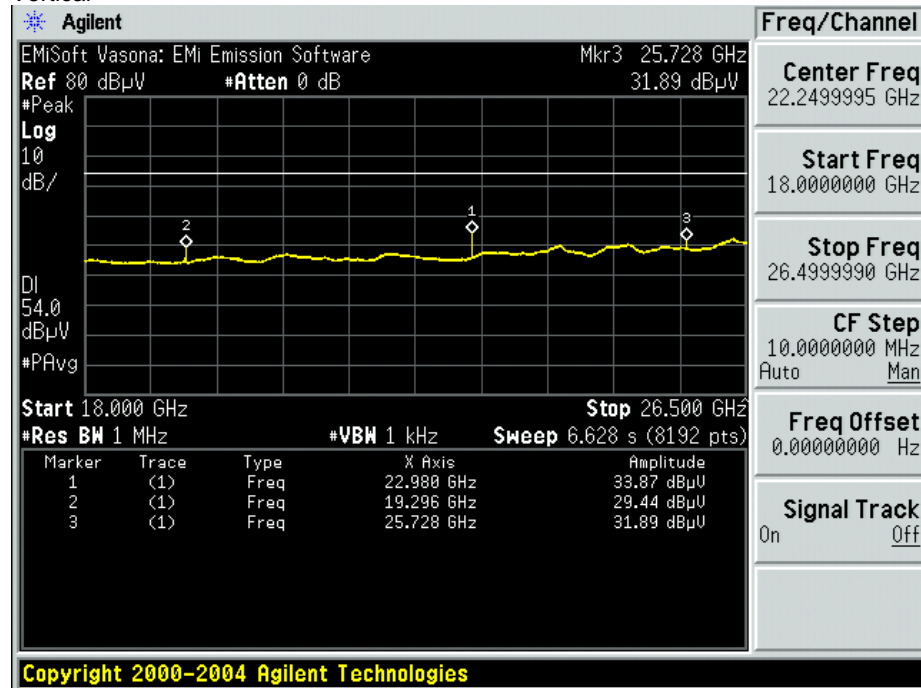
Radiated Receiver Spurs, All rates, All Mode, Peak



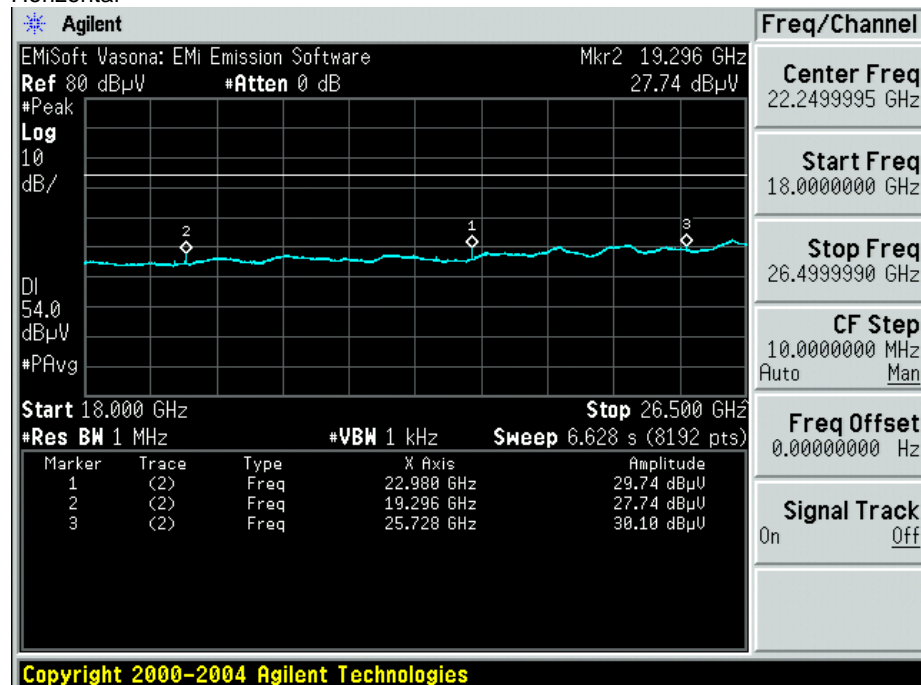
Receiver Radiated Spurious Emissions (18GHz-26GHz)

Radiated Receiver Spurs, All rates, All Mode, Average

Vertical

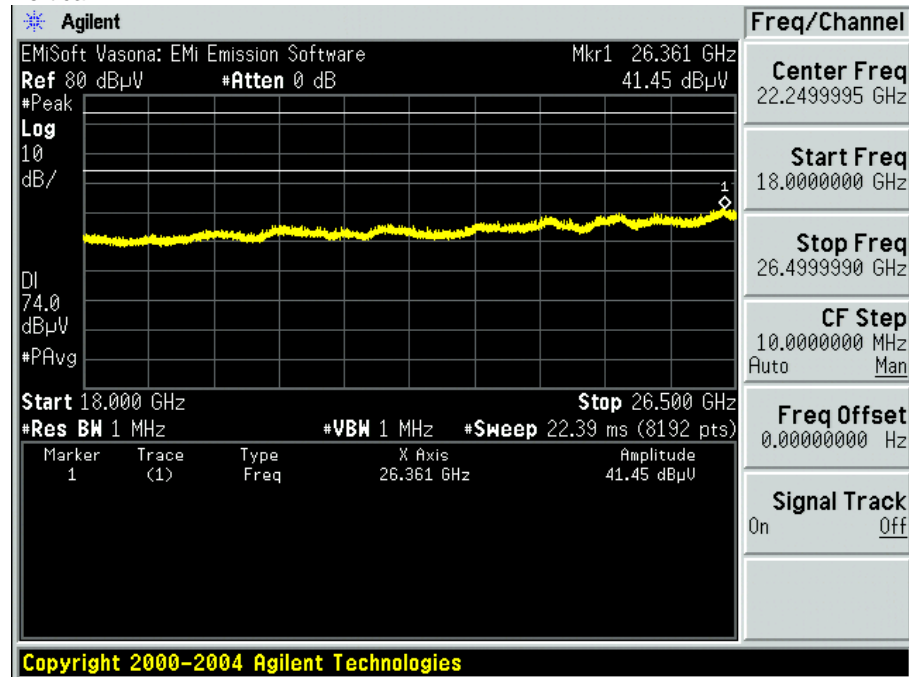


Horizontal

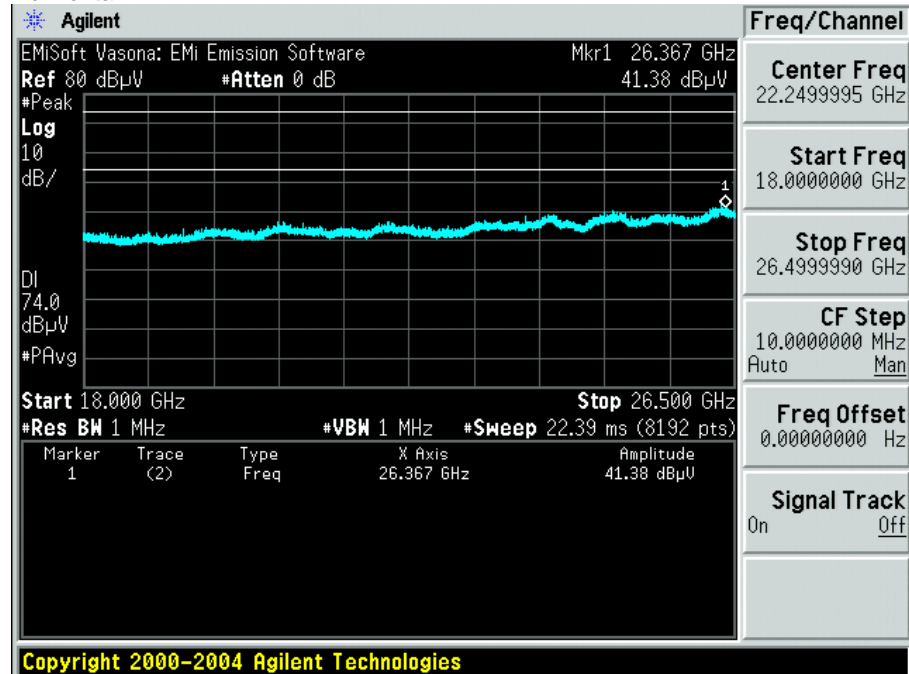


**Radiated Receiver Spurs, All rates, All Mode, Peak**

Vertical



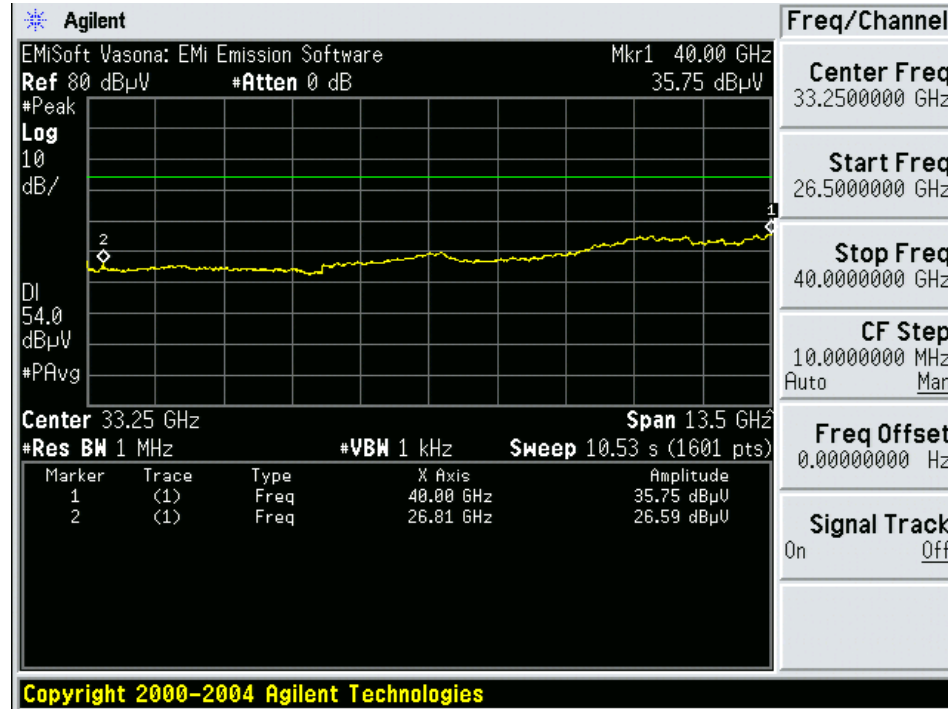
Horizontal



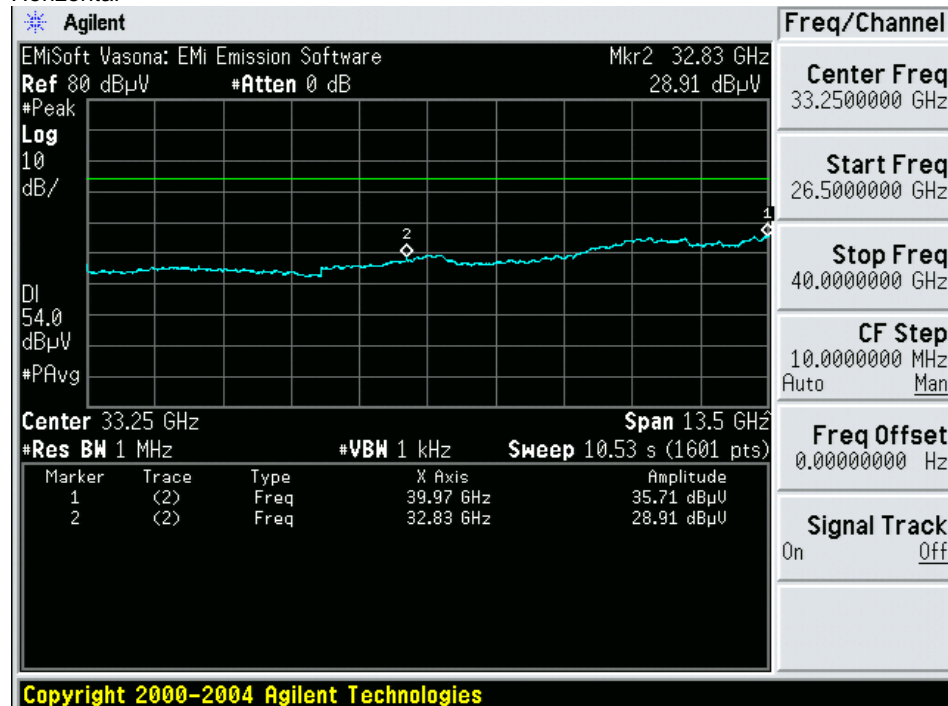
Receiver Radiated Spurious Emissions (26GHz-40GHz)

Radiated Receiver Spurs, All rates, All Mode, Average

Vertical

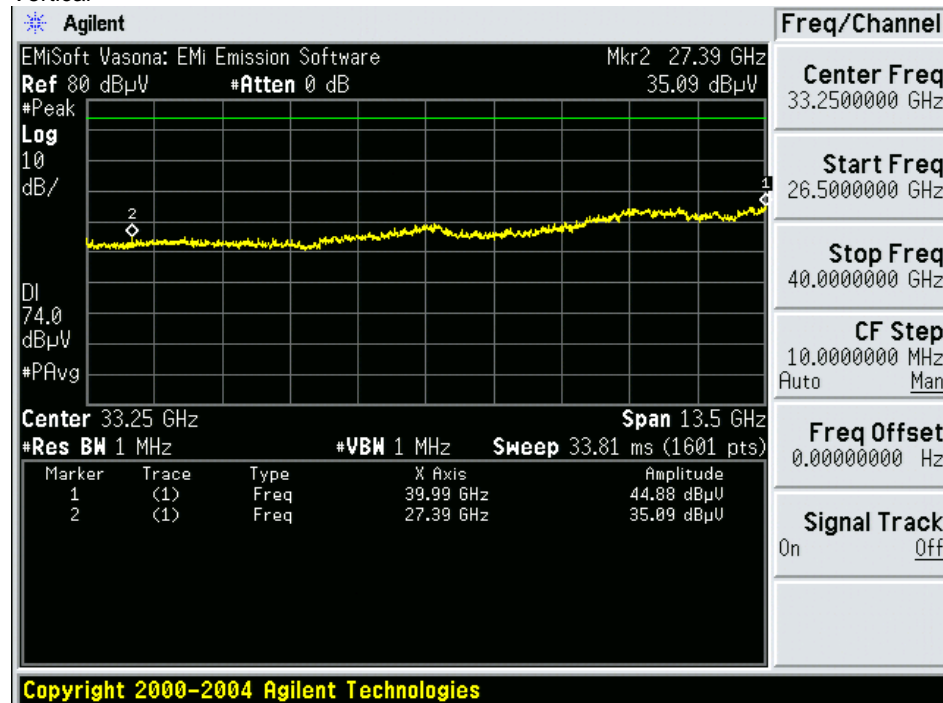


Horizontal

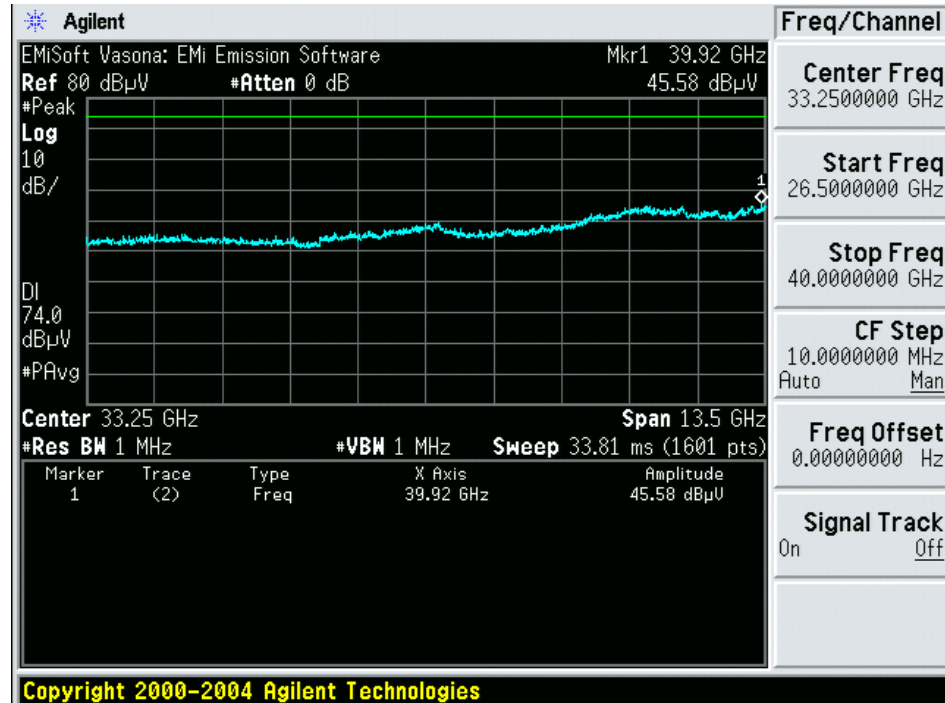


Radiated Receiver Spurs, All rates, All Mode, Peak

Vertical



Horizontal





Radiated Emissions (30M-1G)

Transmitter Radiated Emission



Receiver Radiated Emission





Title: Radiated Emissions Configuration Photograph

**Appendix C: Test Equipment/Software Used to perform the test**

Cis Number	Manufacturer	Model	Description	Calibration Due Date
3003	HP	83731B	Synthesized Signal Generator	3/13/2016
4882	EMC Test Systems	3115	Double Ridged Guide Horn Antenna	7/24/2015
5691	Miteq	NSP1800-25-S1	Broadband Preamplifier (1-18GHz)	1/29/2016
8166	HP	8491B Opt 010	10dB Attenuator	2/2/2016
20975	Micro-Coax	UFB311A-0-1344-520520	RF Coaxial Cable, to 18GHz, 134.4 in	2/18/2016
30559	Micro-Coax	UFB311A-1-0950-504504	RF Coaxial Cable, to 18GHz, 95 in	2/20/2016
30652	Sunol Sciences	JB1	Combination Antenna, 30MHz-2GHz	11/5/2015
33988	Agilent	E4446A	Spectrum Analyzer, 3Hz-44GHz	12/9/2015
41929	Newport	iBTHP-5-DB9	5 inch Temp/RH/Press Sensor w/20ft cable	12/20/2015
41979	Cisco	1840	18-40GHz EMI Test Head/Verification Fixture	7/9/2015
43124	Cisco	Above 1GHz Site Cal	Above 1GHz Cspr Site Verification	1/15/2016
CIS-50378	Agilent	N9030A	PXA Spectrum Analyzer	1/5/2016
47282	Huber + Suhner	Sucoflex 102E	40GHz Cable K Connector	5/2/2015
47410	Agilent	N9038A	EMI Receiver	1/5/2016
51642	Huber+Suhner	Sucoflex 106PA	RF N Type Cable 8.5m	2/10/2016
51684	Dynaware	5400-9810-6251	SMA 50 Ohm Termination 18GHz	5/22/2015
51690	Dynaware	5400-9810-6251	SMA 50 Ohm Termination 18GHz	5/22/2015
51692	Dynaware	5400-9810-6251	SMA 50 Ohm Termination 18GHz	5/22/2015
51695	Dynaware	5400-9810-6251	SMA 50 Ohm Termination 18GHz	5/22/2015
CIS-32307	Micro-Tronics	BRM50702-02	2.4-2.5G Notch Filter	10/3/2015
CIS-35606	Micro-Tronics	BRC50704-02	5.47-5.725G Notch Filter	10/3/2015
CIS-43988	Micro-Tronics	BRC50703-02	5.15-5.35G Notch Filter	10/3/2015
CIS-43989	Micro-Tronics	BRC50705-02	5.725-5.875G Notch Filter	10/3/2015

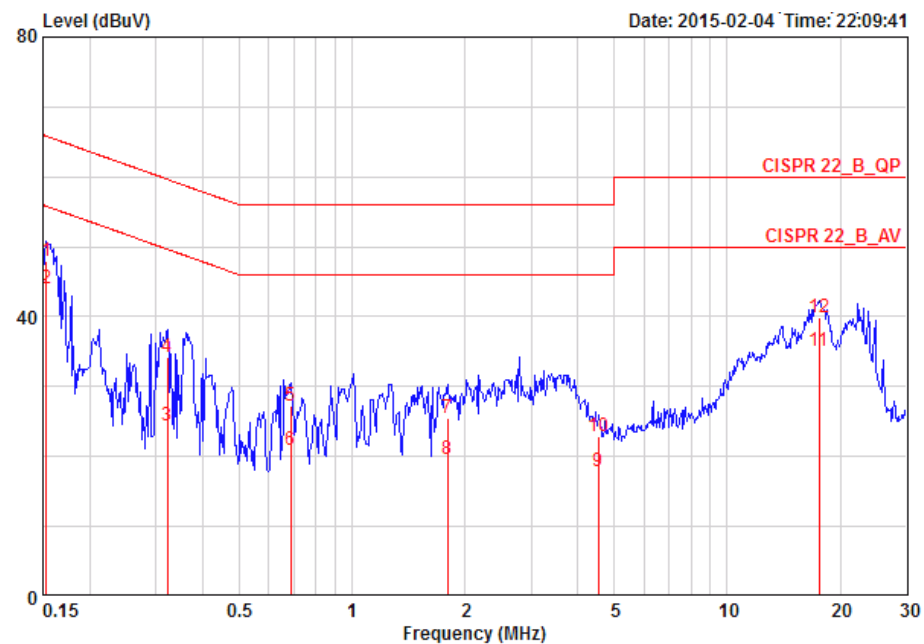


Appendix D: AC Conducted Emission

1.1. Test Result of AC Power Ports

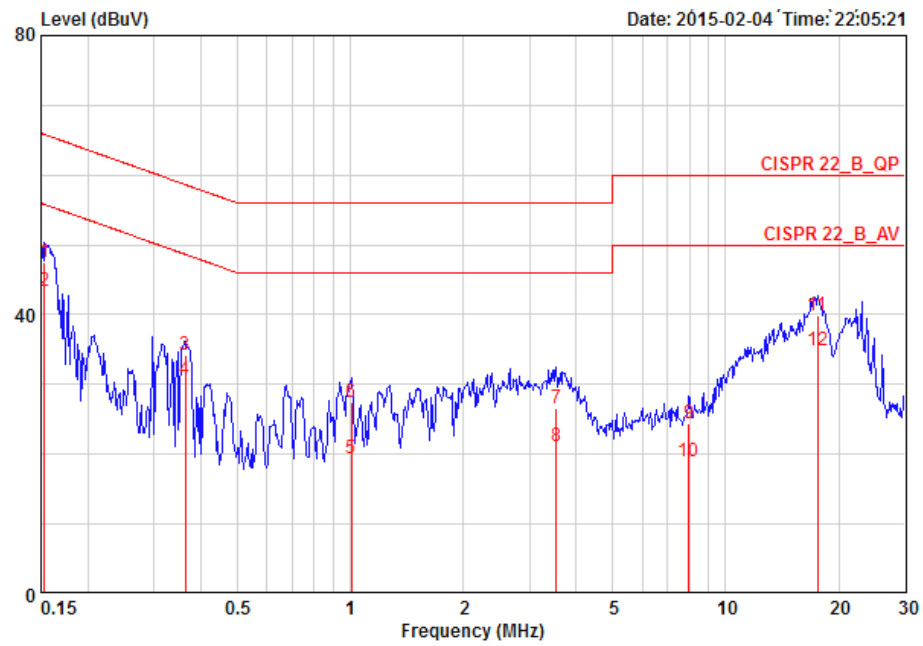
Temperature	21°C	Humidity	60%
Test Engineer	Parody Lin	Frequency Range	0.15 MHz to 30 MHz
Test Mode	Mode 1		
<div>▪ Corrected Reading (dBuV) = LISN Factor + Cable Loss + Read Level = Level</div> <div>▪ Margin = - Limit + (Read Level + LISN Factor + Cable Loss)</div> <div>▪ All emissions not reported here are more than 10 dB below the prescribed limit.</div> <div>▪ The test was passed at the minimum margin that marked by a frame in the following table</div>			

Line



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15321	47.93	-17.89	65.82	37.70	10.03	0.20	QP	LINE
2 @	0.15321	43.94	-11.88	55.82	33.71	10.03	0.20	AVERAGE	LINE
3	0.32169	24.31	-25.35	49.66	14.00	10.03	0.28	AVERAGE	LINE
4	0.32169	34.31	-25.35	59.66	24.00	10.03	0.28	QP	LINE
5	0.68626	27.17	-28.83	56.00	16.83	10.02	0.32	QP	LINE
6	0.68626	20.97	-25.03	46.00	10.63	10.02	0.32	AVERAGE	LINE
7	1.800	25.59	-30.41	56.00	15.21	10.03	0.35	QP	LINE
8	1.800	19.52	-26.48	46.00	9.14	10.03	0.35	AVERAGE	LINE
9	4.525	17.91	-28.09	46.00	7.50	10.04	0.38	AVERAGE	LINE
10	4.525	22.97	-33.03	56.00	12.56	10.04	0.38	QP	LINE
11 @	17.568	35.05	-14.95	50.00	24.38	10.20	0.47	AVERAGE	LINE
12	17.568	39.81	-20.19	60.00	29.14	10.20	0.47	QP	LINE

Neutral



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15321	47.54	-18.28	65.82	37.40	9.94	0.20	QP	NEUTRAL
2 @	0.15321	43.29	-12.53	55.82	33.15	9.94	0.20	AVERAGE	NEUTRAL
3	0.36338	34.12	-24.53	58.65	23.93	9.89	0.29	QP	NEUTRAL
4	0.36338	30.84	-17.81	48.65	20.65	9.89	0.29	AVERAGE	NEUTRAL
5	1.005	19.43	-26.57	46.00	9.21	9.89	0.33	AVERAGE	NEUTRAL
6	1.005	27.40	-28.60	56.00	17.18	9.89	0.33	QP	NEUTRAL
7	3.547	26.61	-29.39	56.00	16.35	9.89	0.37	QP	NEUTRAL
8	3.547	21.05	-24.95	46.00	10.79	9.89	0.37	AVERAGE	NEUTRAL
9	7.977	24.34	-35.66	60.00	14.04	9.90	0.40	QP	NEUTRAL
10	7.977	18.93	-31.07	50.00	8.63	9.90	0.40	AVERAGE	NEUTRAL
11	17.568	39.84	-20.16	60.00	29.34	10.02	0.47	QP	NEUTRAL
12 @	17.568	34.88	-15.12	50.00	24.38	10.02	0.47	AVERAGE	NEUTRAL