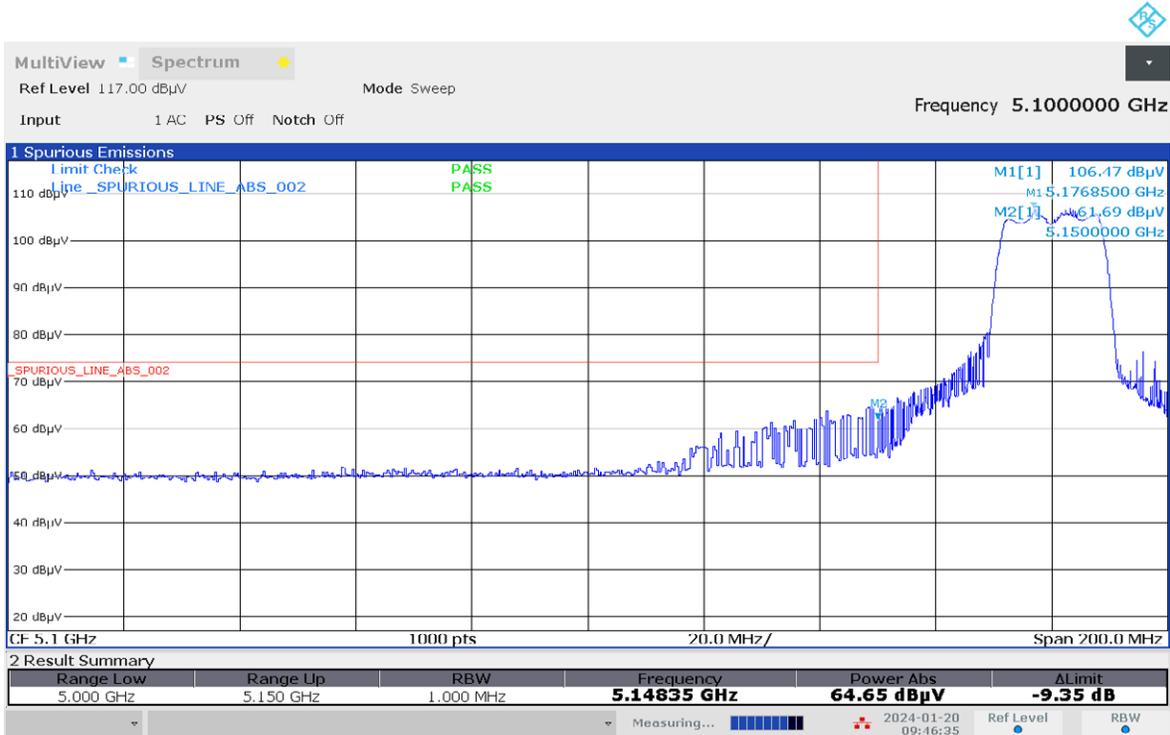
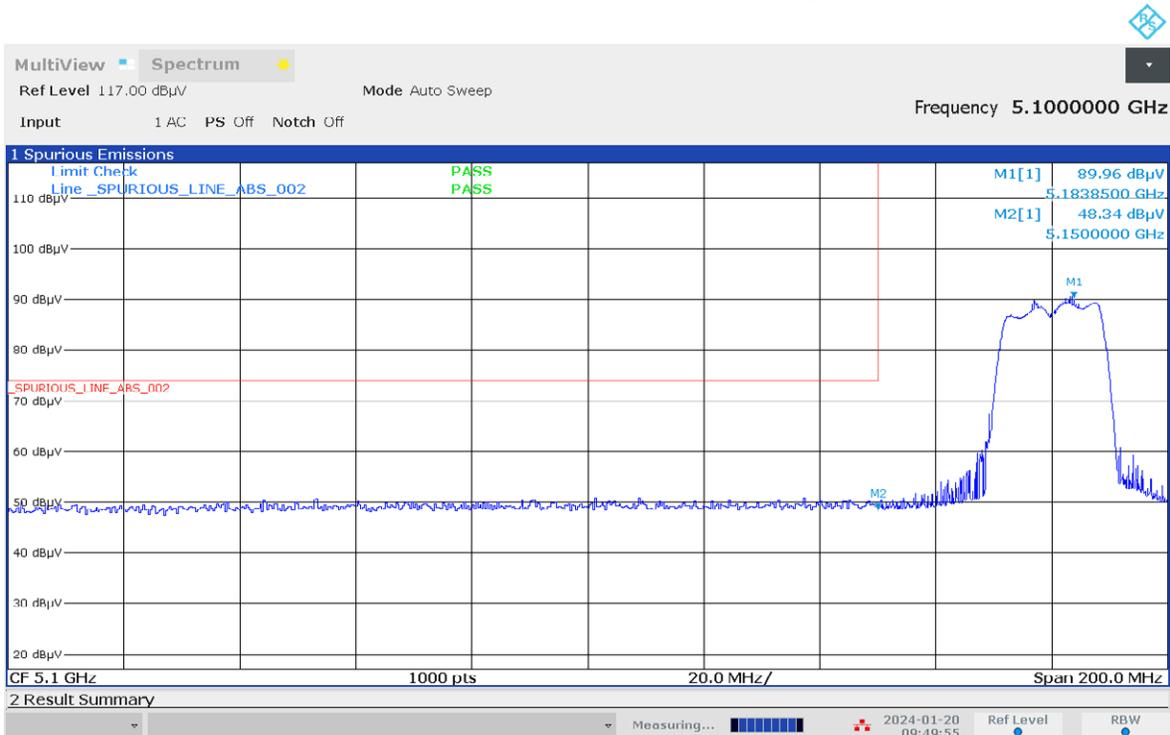


Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



09:46:36 AM 01/20/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



09:49:56 AM 01/20/2024

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



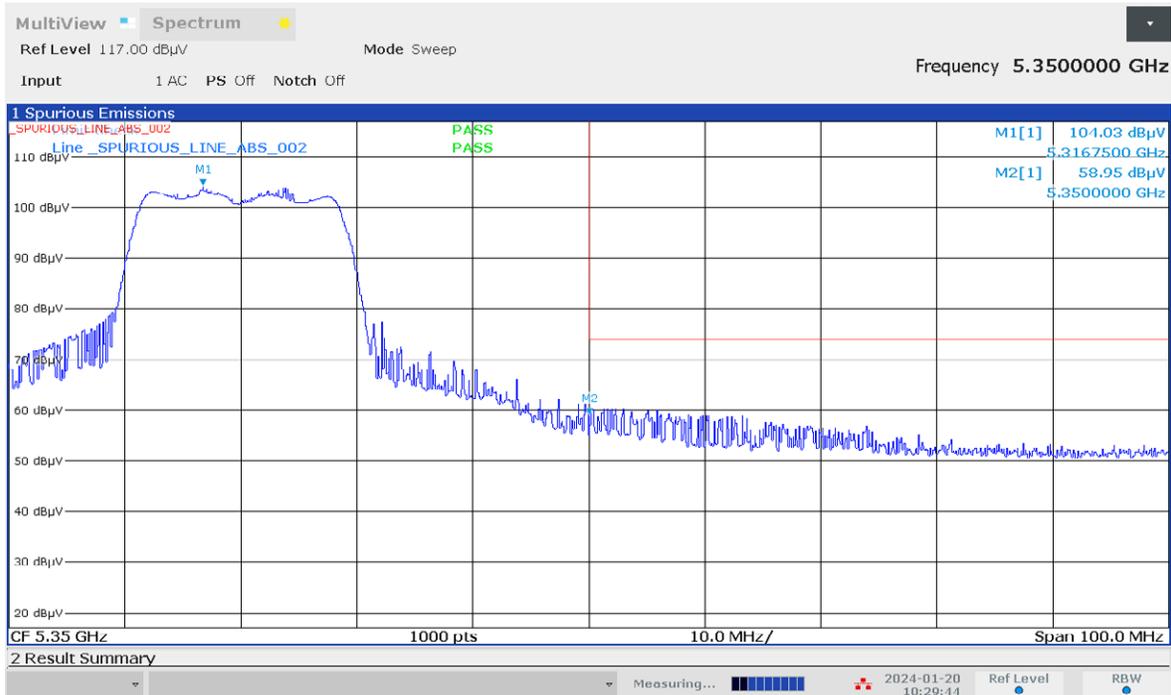
09:26:34 AM 01/20/2024

Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



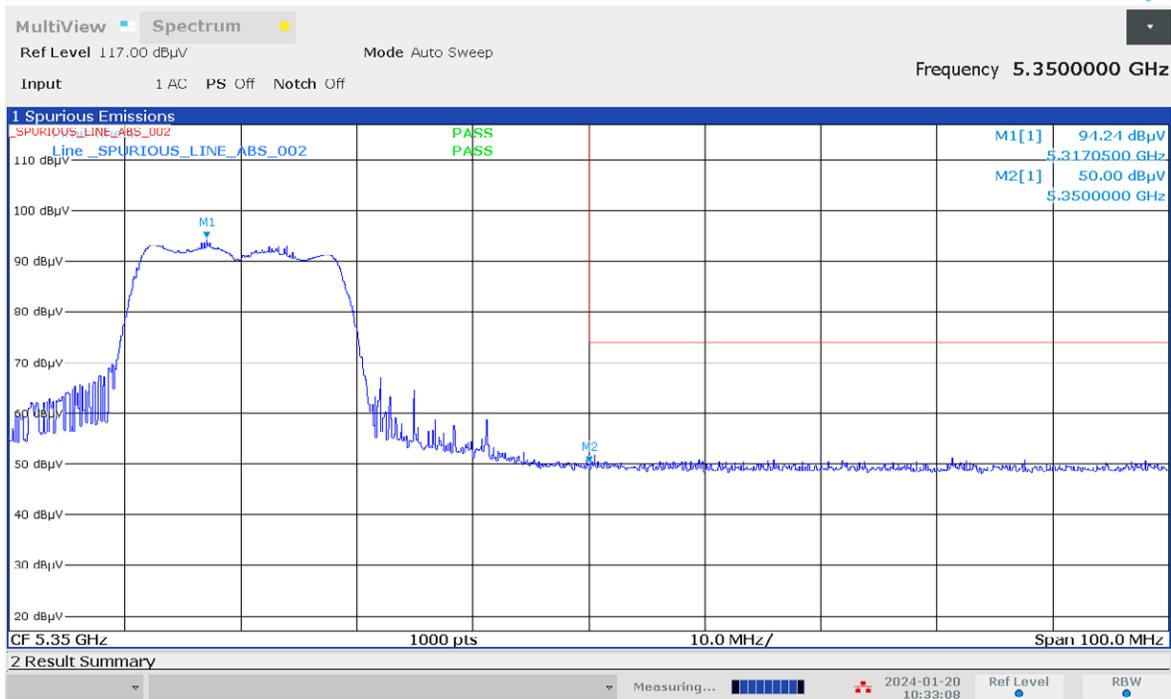
09:41:54 AM 01/20/2024

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



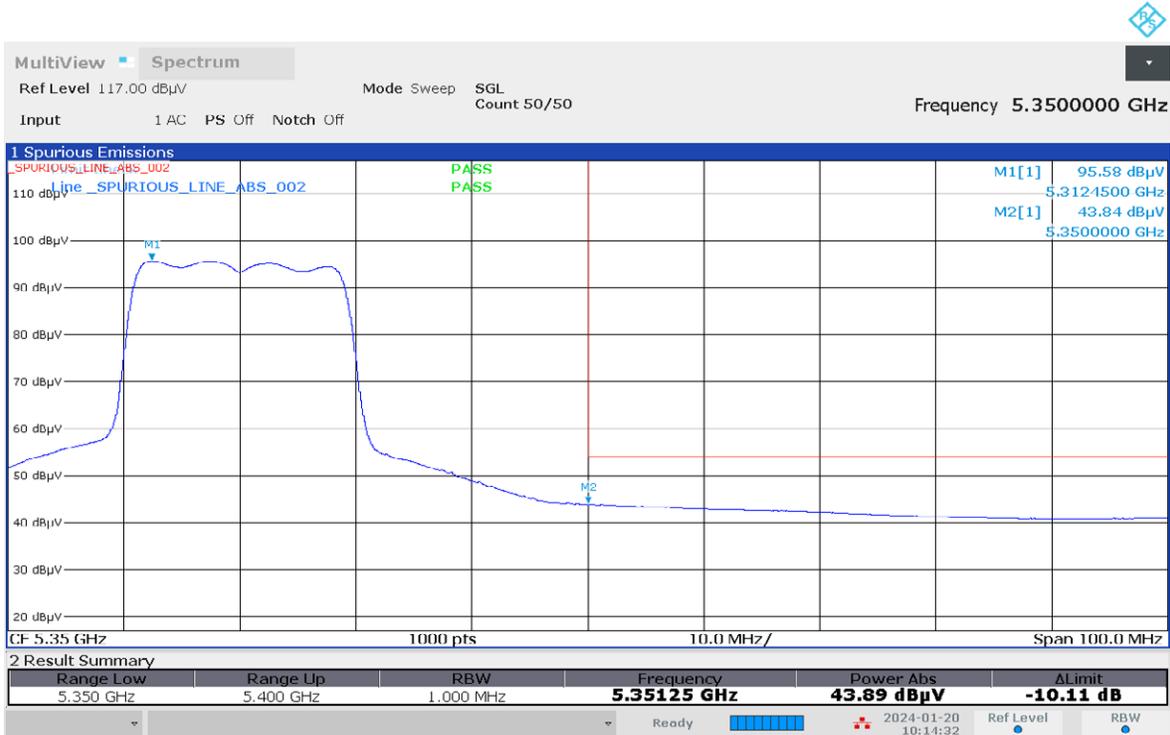
10:29:45 AM 01/20/2024

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



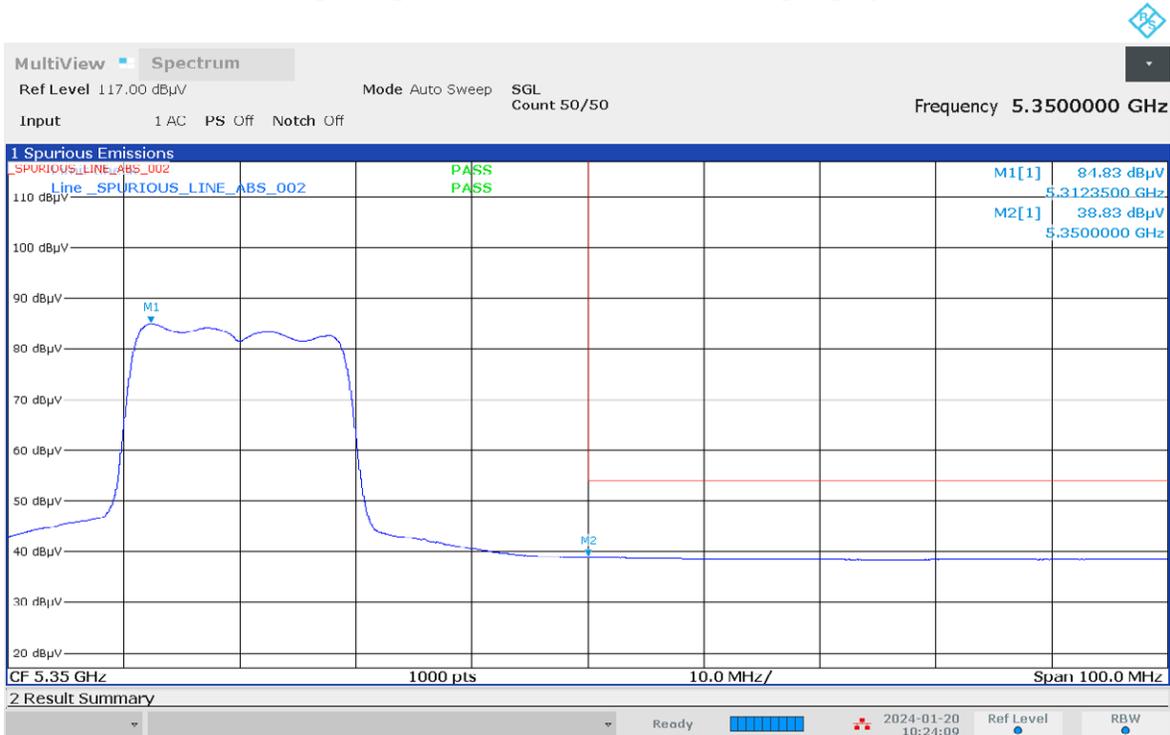
10:33:09 AM 01/20/2024

Restricted Band Edge (High Channel, Vertical, Average) graphical screen shot



10:14:32 AM 01/20/2024

Restricted Band Edge (High Channel, Horizontal, Average) graphical screen shot



10:24:09 AM 01/20/2024

Test: WIFI SAC Restricted Band Edge

Model Number: M37TSS9PW1CN S/N: 6811ZN6378 EMC SR ID#: 41528-EMC-00030
Battery: NA Softpot power (10.5dBm) Accessory: HMN4079G-CF1, HSN4031B-C3, HKN4192C-CF4, HKN6164B-C2, HKN6188B-CF3, HKN6172C-C2, PMHN4194D-CF3, 13921-PMUN1057B-1, AS000016A02-CF2, AN000163A01
Test Channel: Low Test Frequency: 5500.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Y-Plane (802.11n 20MHz)

Restricted Band Edge (Low Channel) tabular data

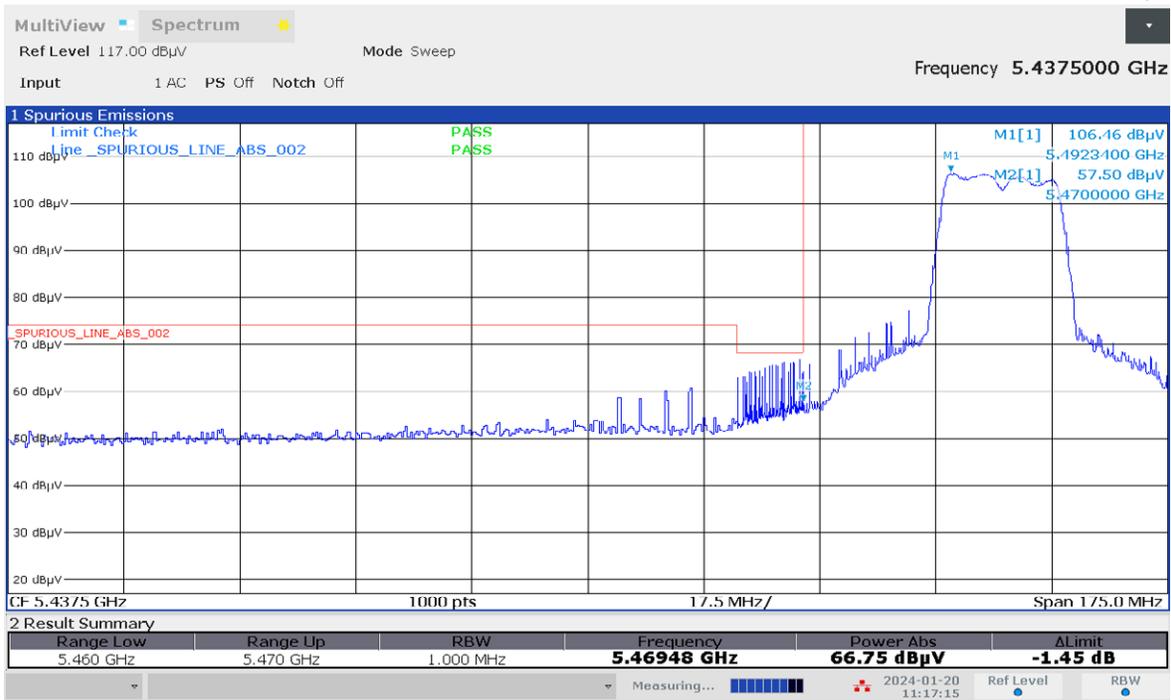
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier Power (dBµV/m)
5459.8625	-	-	42.0460	-	-	54.0000	-	-	11.9540	-
5460.0000	-	-	41.7257	-	-	54.0000	-	-	12.2743	-
5463.4750	-	64.3746	-	-	68.2000	-	-	3.8254	-	-
5464.2250	-	65.0406	-	-	68.2000	-	-	3.1594	-	-
5464.9250	-	65.3233	-	-	68.2000	-	-	2.8767	-	-
5465.3750	-	65.6073	-	-	68.2000	-	-	2.5927	-	-
5465.9250	-	65.4304	-	-	68.2000	-	-	2.7696	-	-
5466.2250	-	65.3958	-	-	68.2000	-	-	2.8042	-	-
5466.7750	-	65.9170	-	-	68.2000	-	-	2.2830	-	-
5467.1750	-	66.2165	-	-	68.2000	-	-	1.9835	-	-
5468.0750	-	65.8171	-	-	68.2000	-	-	2.3829	-	-
5468.5250	-	66.1885	-	-	68.2000	-	-	2.0115	-	-
5469.4750	-	66.7490	-	-	68.2000	-	-	1.4510	-	-
5470.0000	-	57.5018	-	-	68.2000	-	-	10.6982	-	-
Horizontal Radiated Emission Result										
5460.0000	-	-	38.4029	-	-	54.0000	-	-	15.5971	-
5470.0000	-	47.9585	-	-	68.2000	-	-	20.2415	-	-

Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.4
 Test Performed by: Nazrin & Fuad
 System MU: 5.84dB

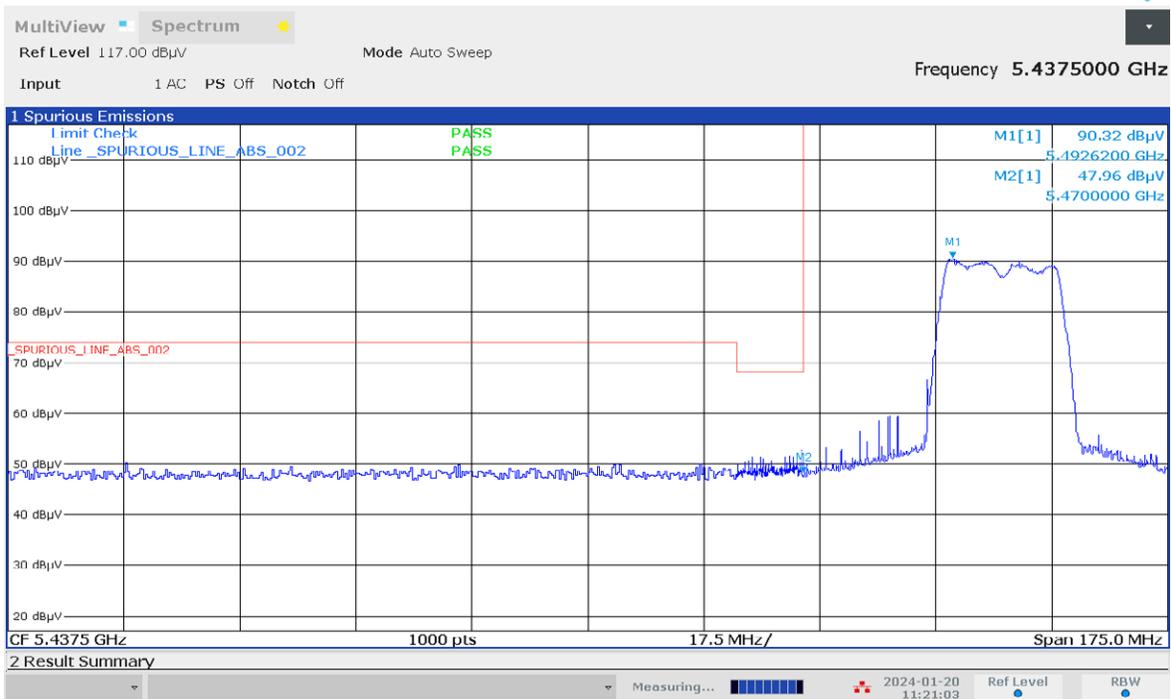
Humidity (%): 69.6
 Test Date: Sat, 20 Jan, 2024

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



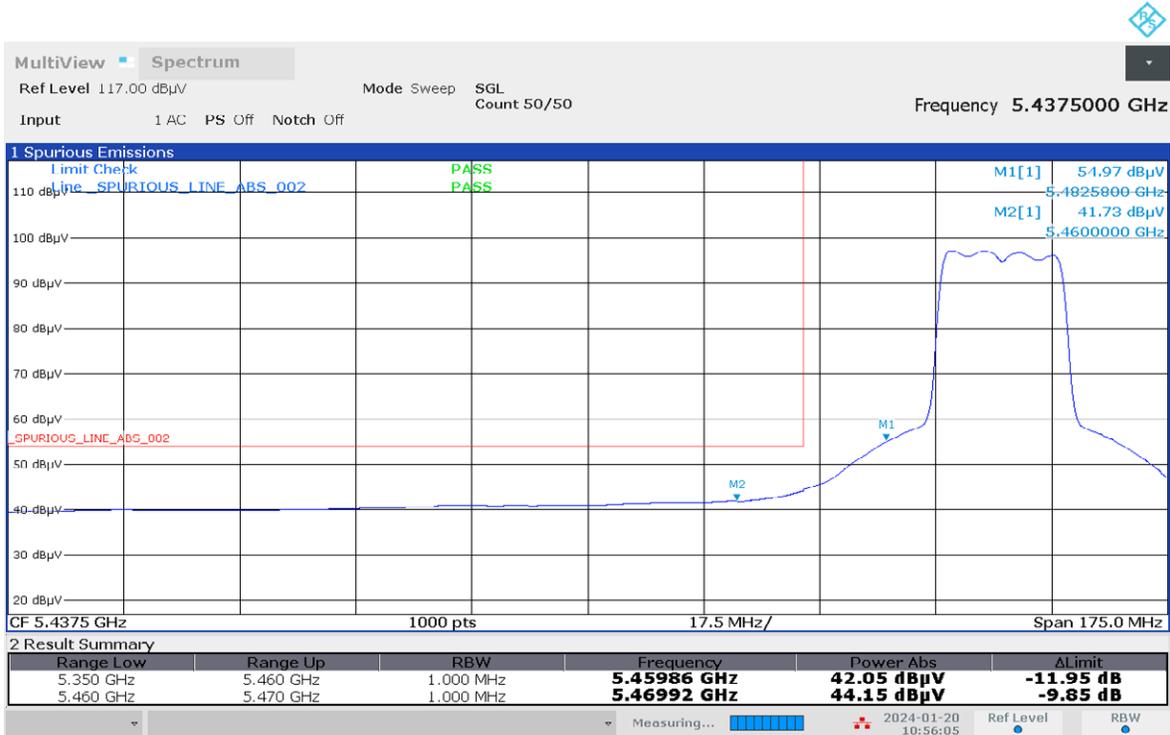
11:17:15 AM 01/20/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



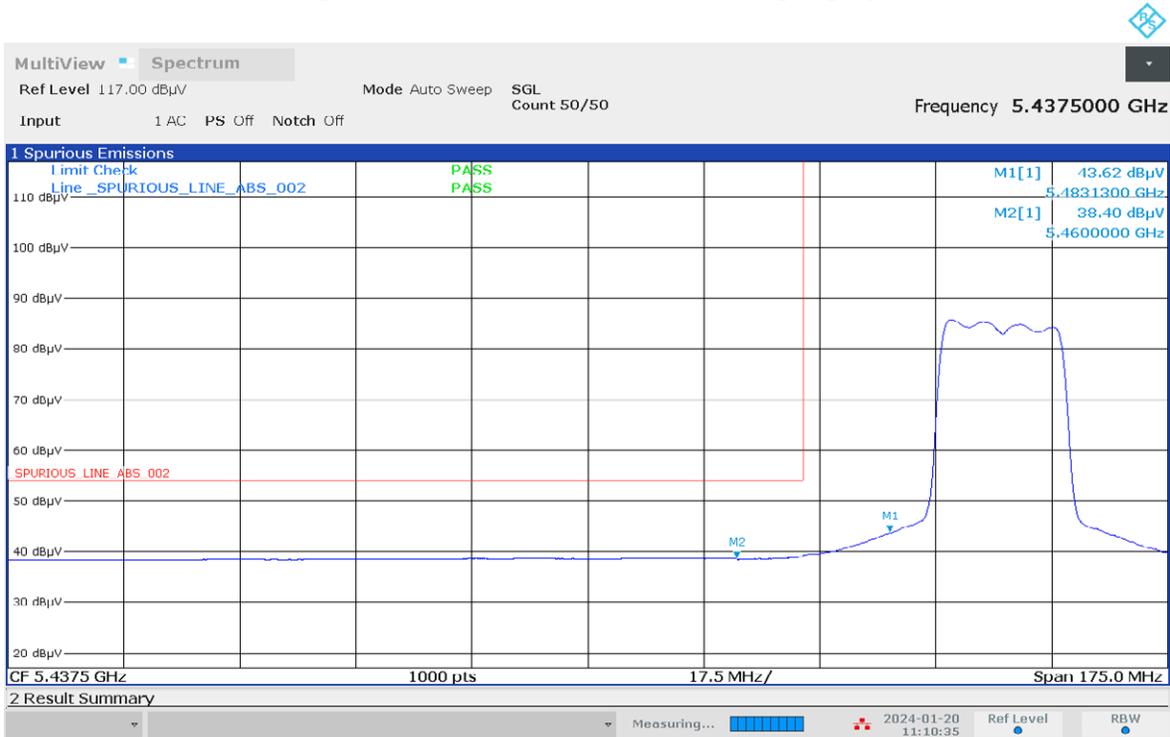
11:21:03 AM 01/20/2024

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



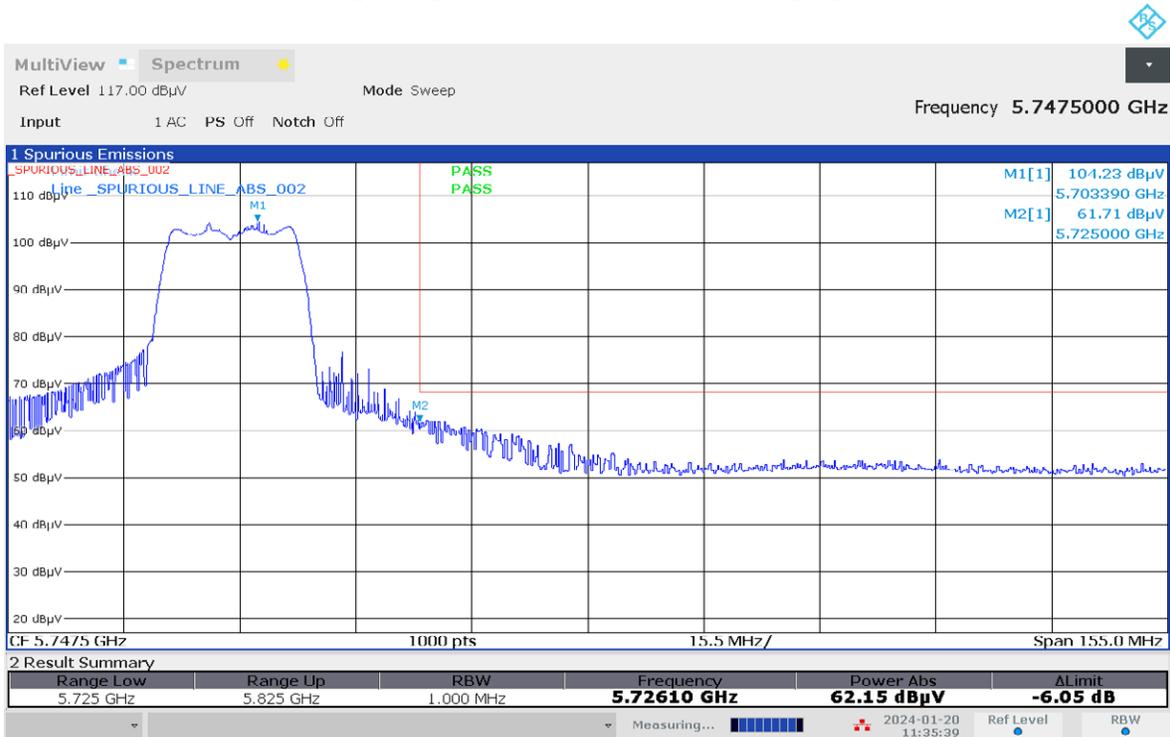
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Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



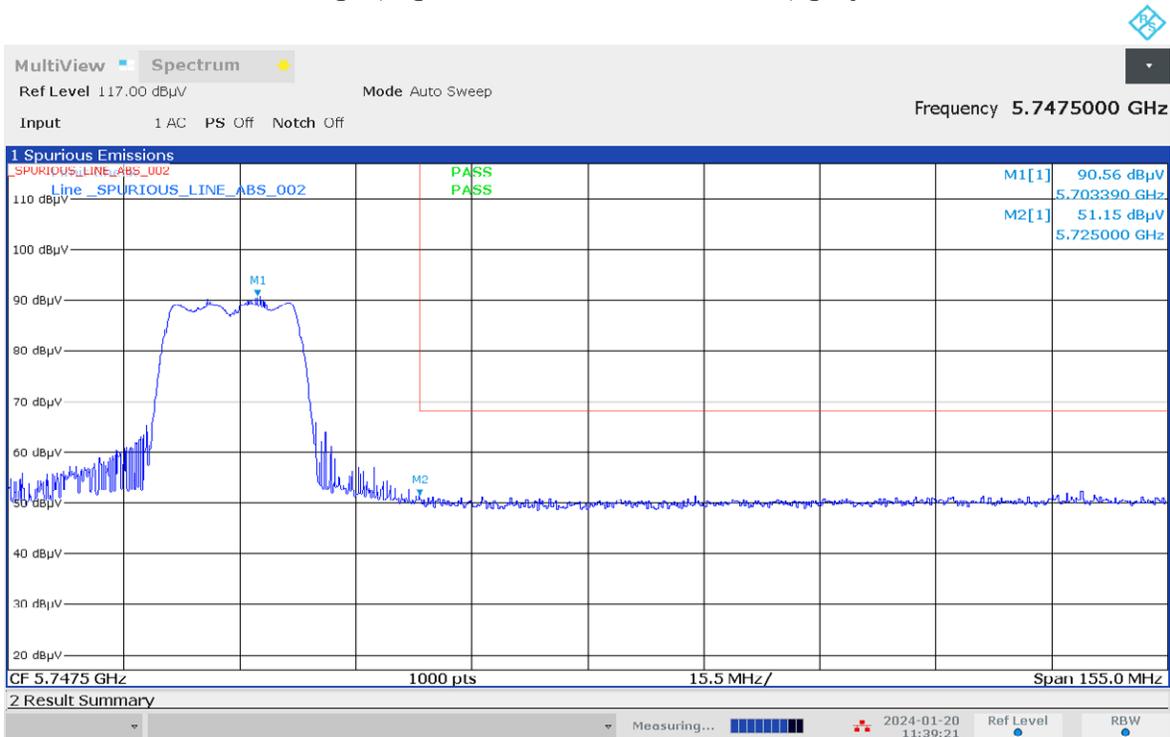
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Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



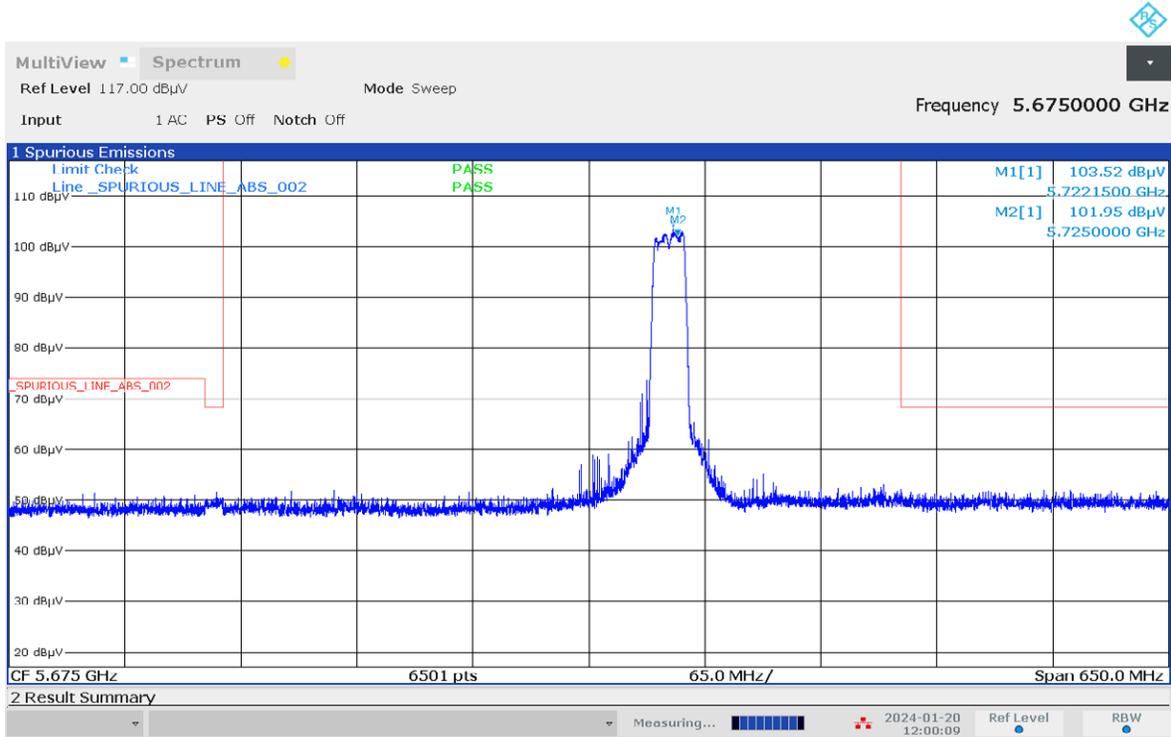
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Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



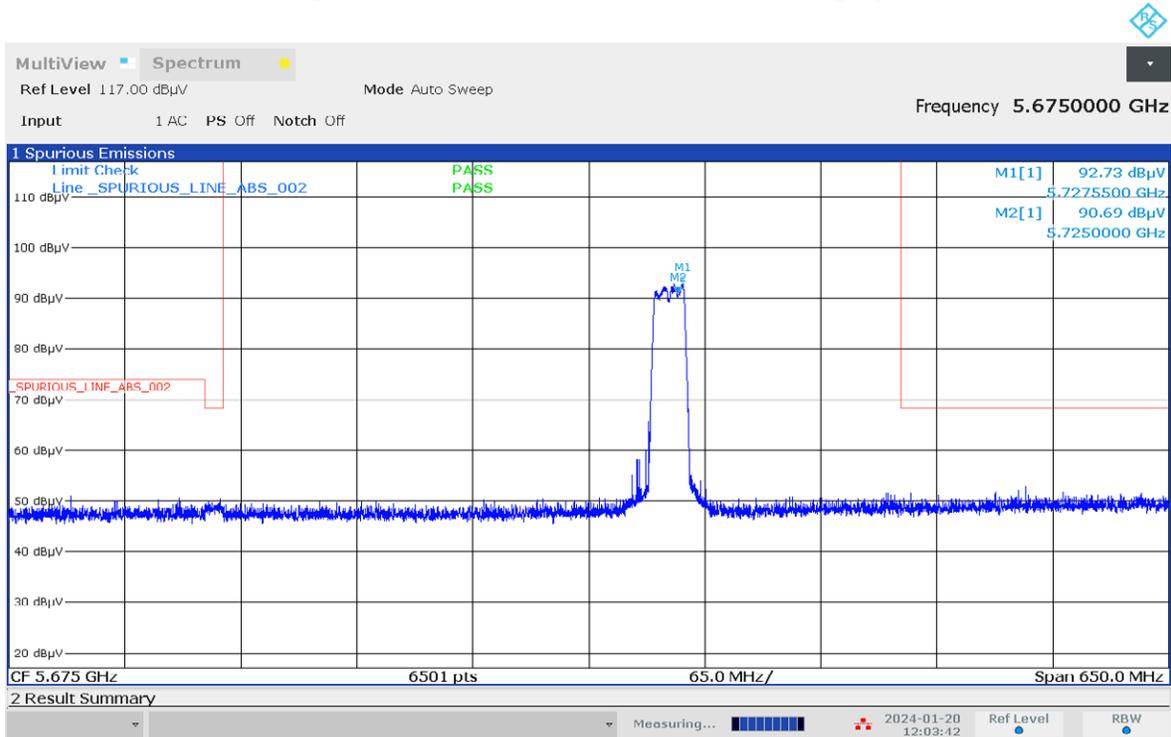
11:39:22 AM 01/20/2024

Restricted Band Edge (Straddle Channel, Vertical, Peak) graphical screen shot



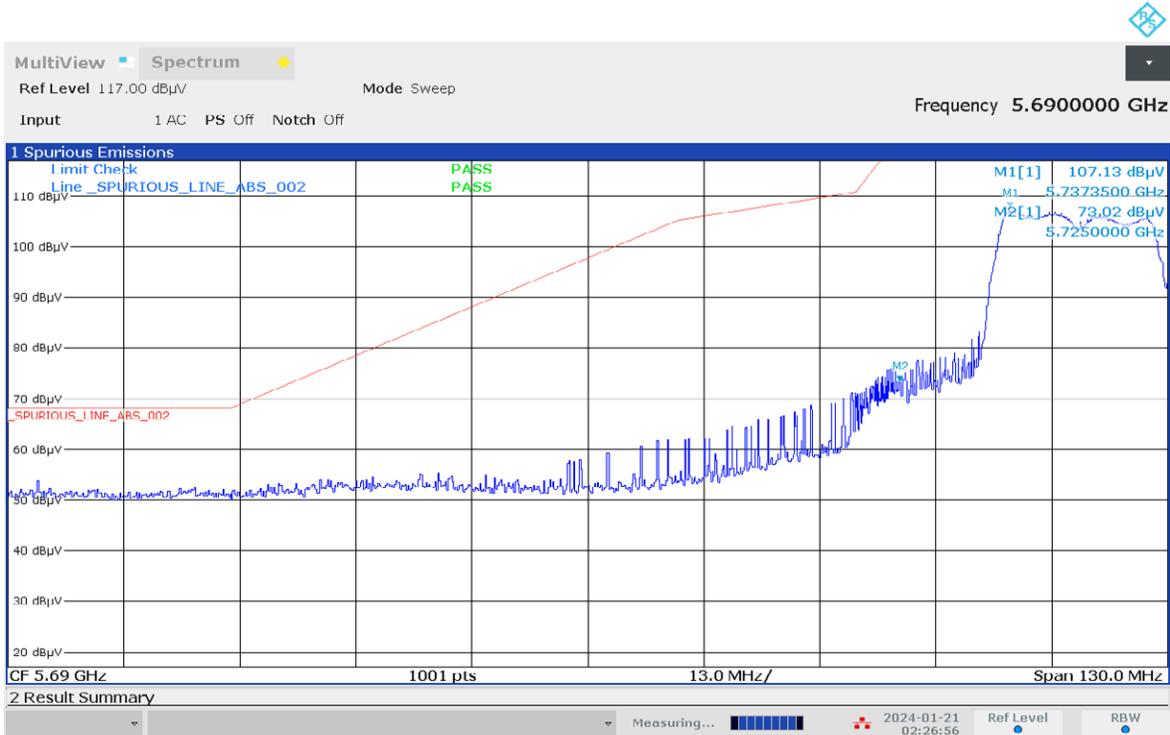
12:00:09 PM 01/20/2024

Restricted Band Edge (Straddle Channel, Horizontal, Peak) graphical screen shot



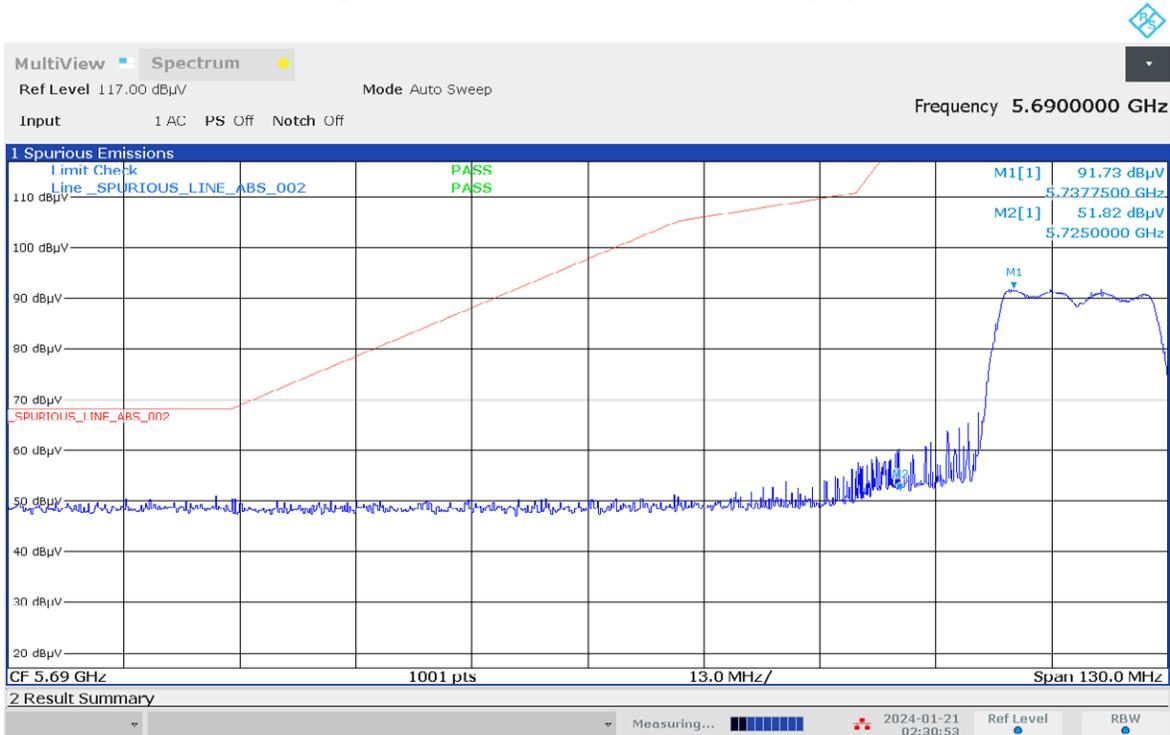
12:03:43 PM 01/20/2024

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



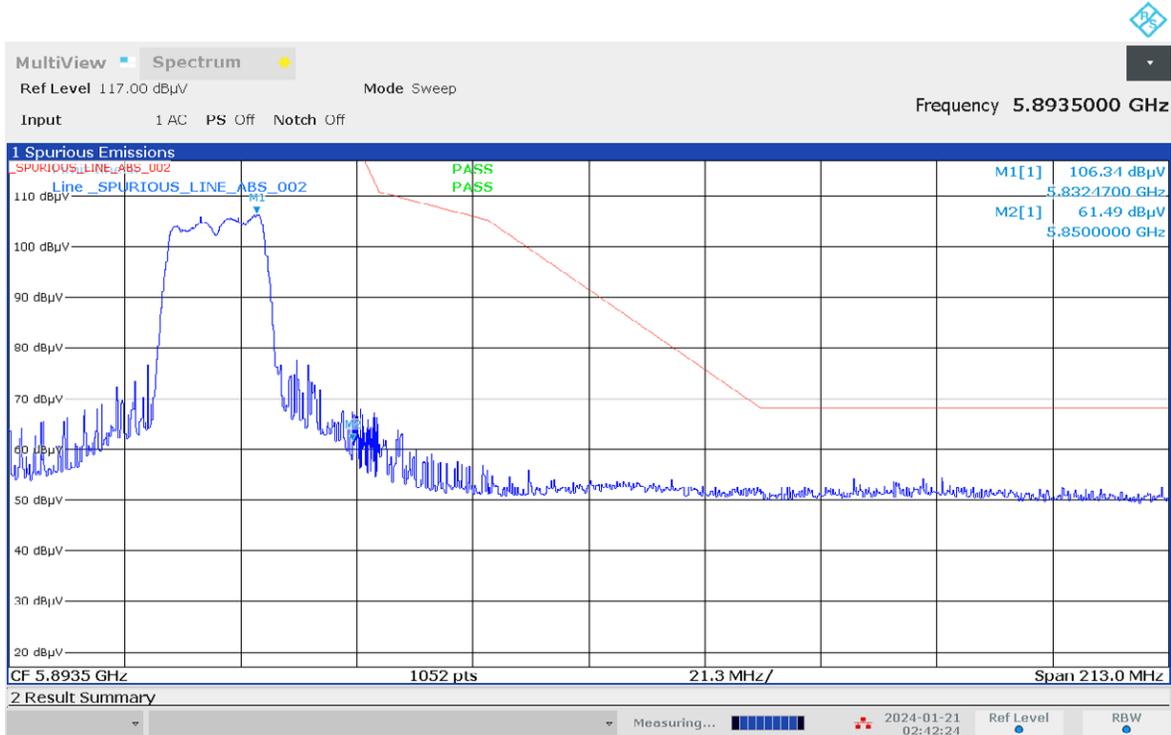
02:26:56 AM 01/21/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



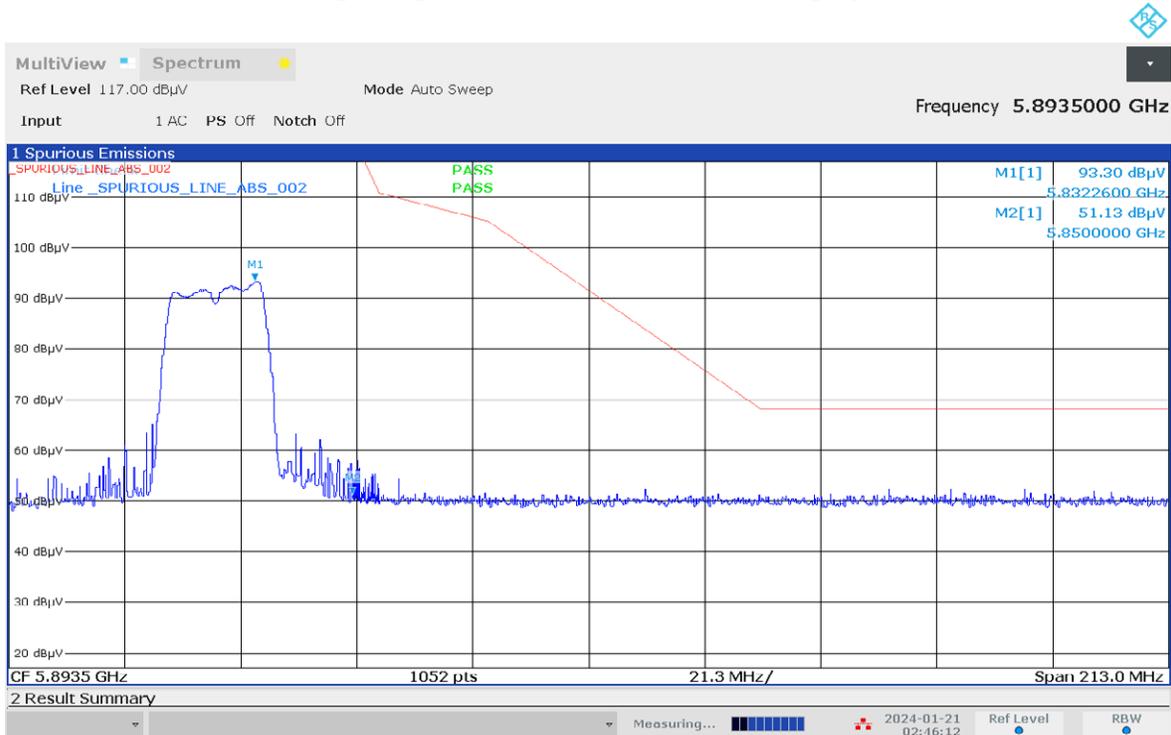
02:30:53 AM 01/21/2024

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



02:42:25 AM 01/21/2024

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot

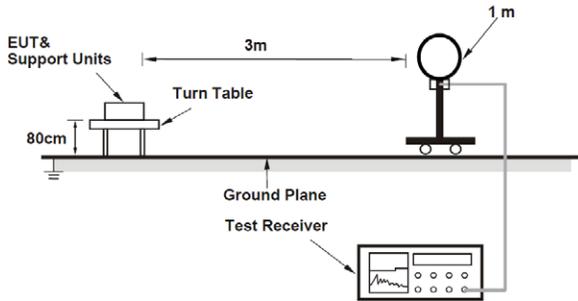


02:46:13 AM 01/21/2024

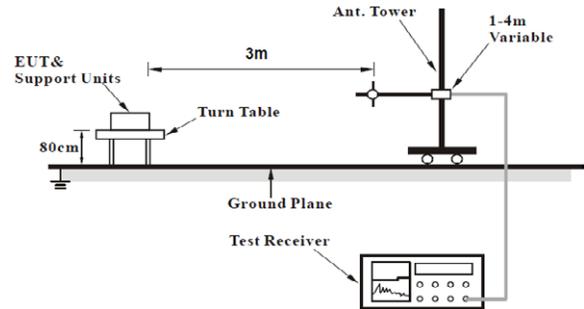
6.7. Radiated Spurious Emission Measurement

6.7.1. Test Setup

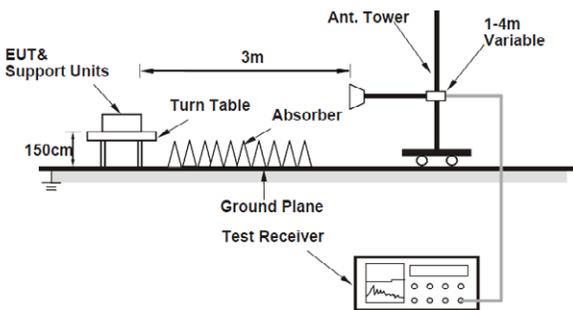
<Radiated emission below 30MHz>



<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



1. The EUT is placed on the top of a rotating table 0.8m/1.5m above the ground at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
2. The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
3. The antenna is Bilog/Horn antenna depend on which frequency range uses, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT is arranged to its worst case and then the antenna is tuned to heights from 1m to 4m and the rotatable table is turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.

NOTE:

- a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
- b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1 GHz.
- c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection using reduced video bandwidth (Duty cycle $\geq 98\%$) at frequency above 1GHz.
- d. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $1/\tau$ Hz, where τ is minimum transmitter on time (Duty cycle $< 98\%$) for Average detection using reduced video bandwidth at frequency above 1GHz.
- e. All modes of operation were investigated and the worst-case emissions are reported.

6.7.2. Test Limits

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

NOTE:

- d. The lower limit shall apply at the transition frequencies.
- e. Emission level (dBuV/m) = 20 log Emission level (uV/m).
- f. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

For Radiated emissions which fall out of the restricted bands must comply with the radiated emission limits specified as below table.

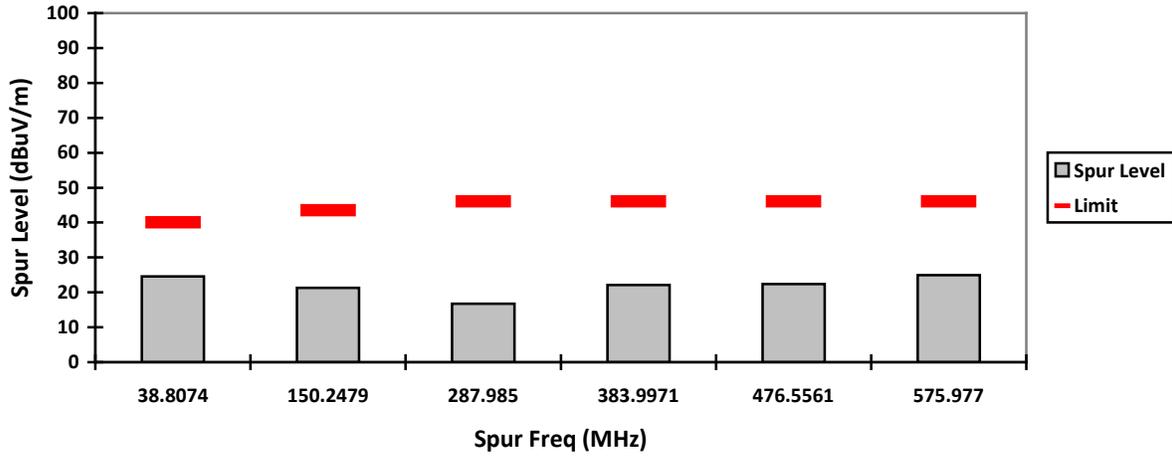
Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v01r03		Field Strength at 3 m	
		PK: 74 (dBuV/m)	AV: 54 (dBuV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBuV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) ¹¹ PK:10 (dBm/MHz) ¹² PK:15.6 (dBm/MHz) ¹³ PK:27 (dBm/MHz) ¹⁴	PK: 68.2 (dBuV/m) ¹¹ PK:105.2 (dBuV/m) ¹² PK: 110.8 (dBuV/m) ¹³ PK:122.2 (dBuV/m) ¹⁴
	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
¹¹ beyond 75 MHz or more above of the band edge.			
¹² below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.			
¹³ below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.			
¹⁴ from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.			

NOTE:

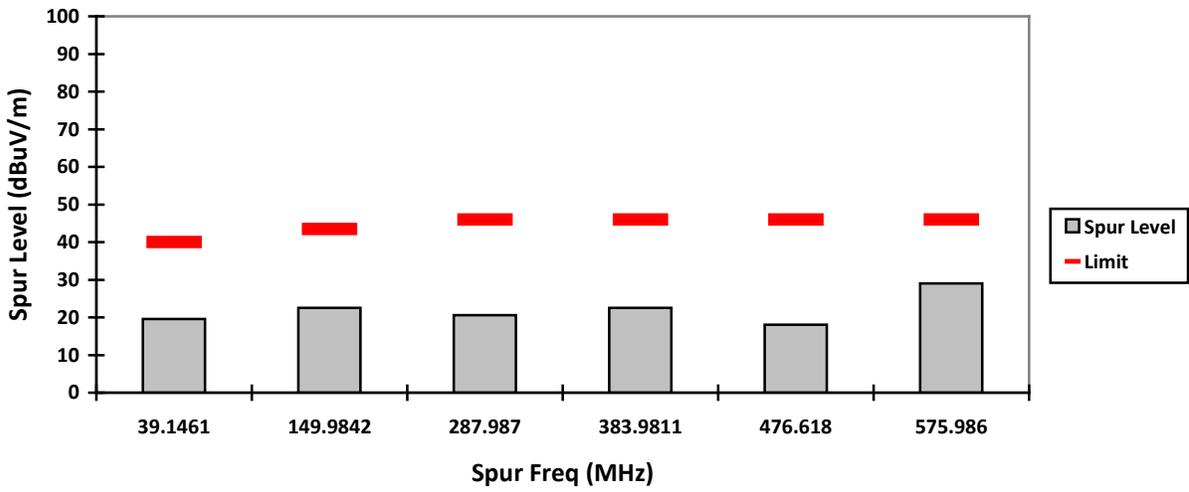
The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = ((1000000\sqrt{30P}) / 3) \mu\text{V/m, where P is the eirp (Watts)}$$

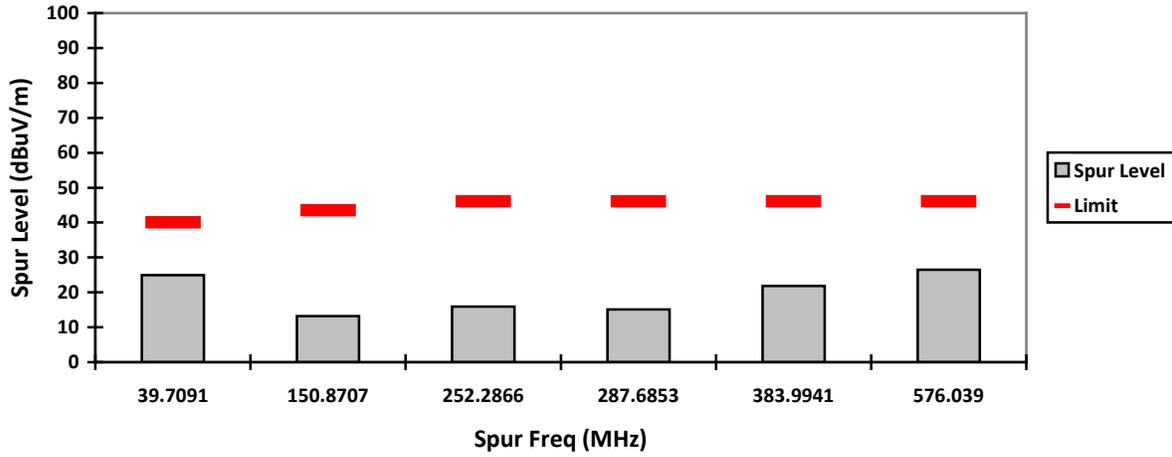
VERTICAL, QPK



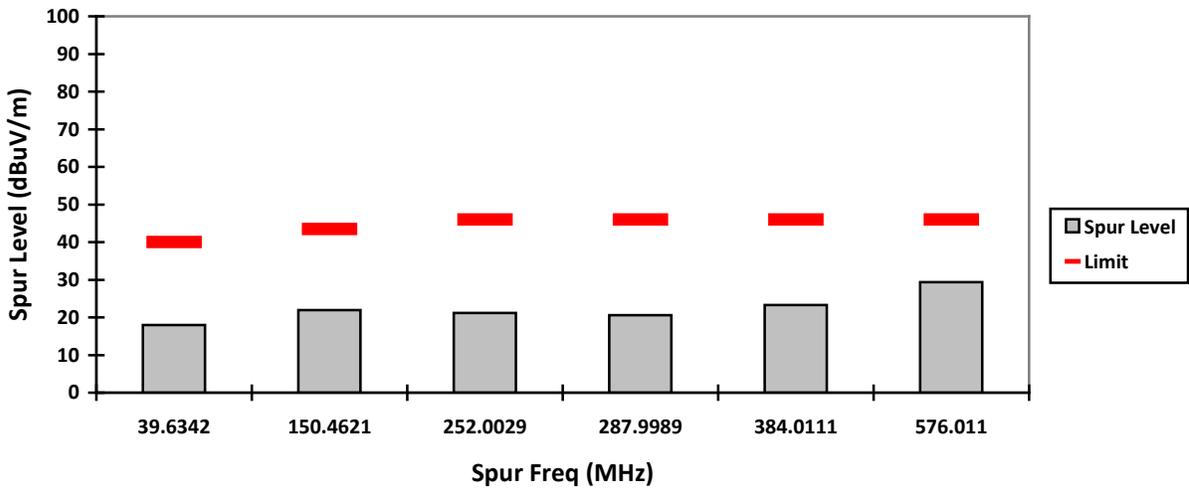
HORIZONTAL, QPK



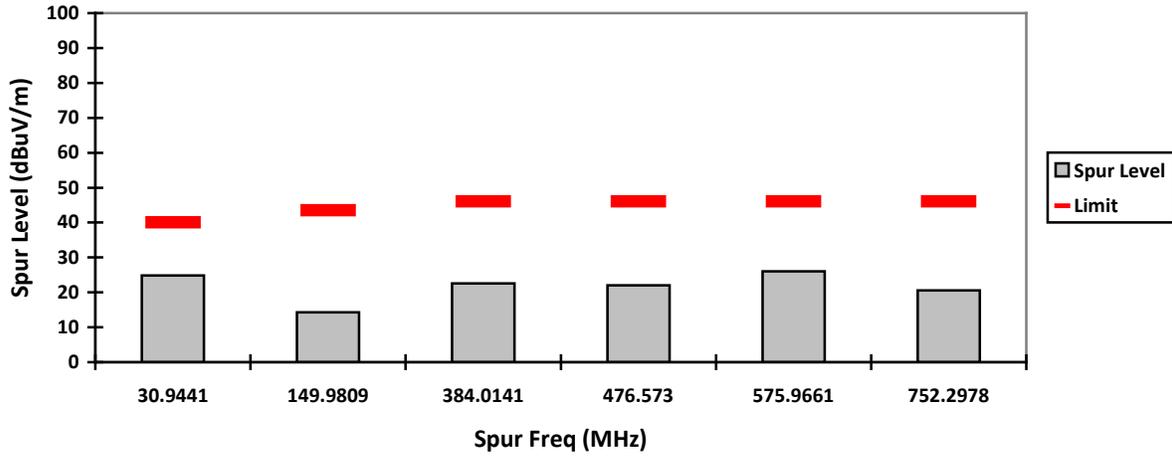
VERTICAL, QPK



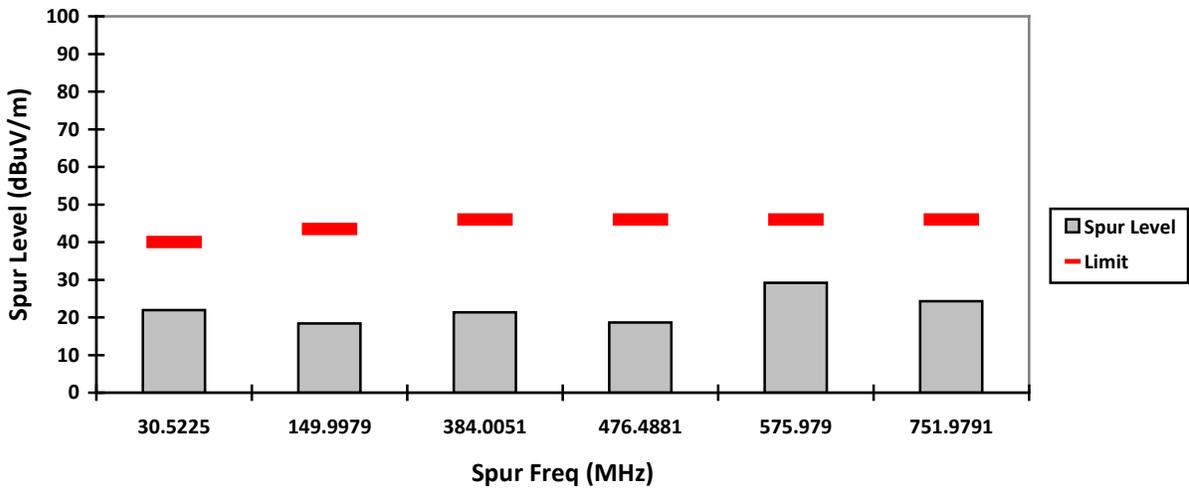
HORIZONTAL, QPK



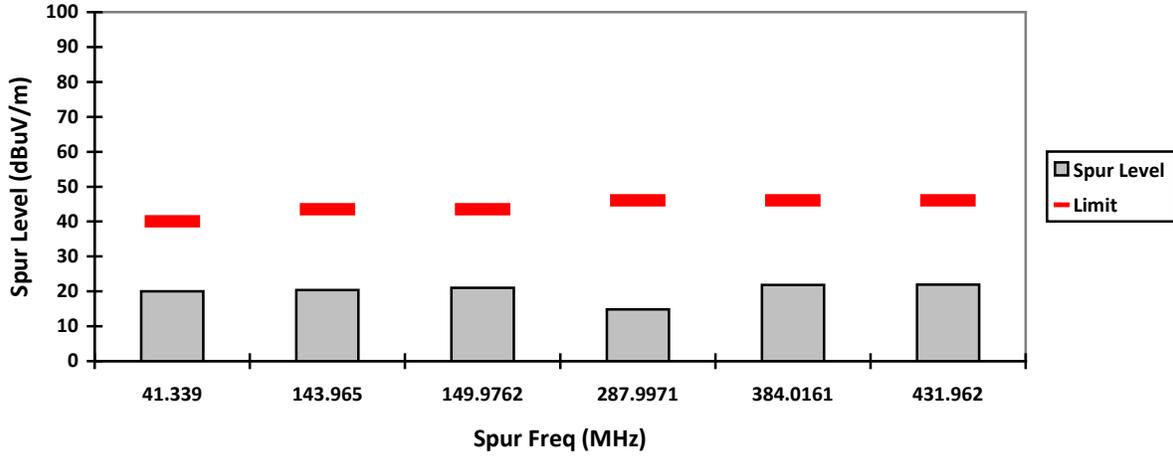
VERTICAL, QPK



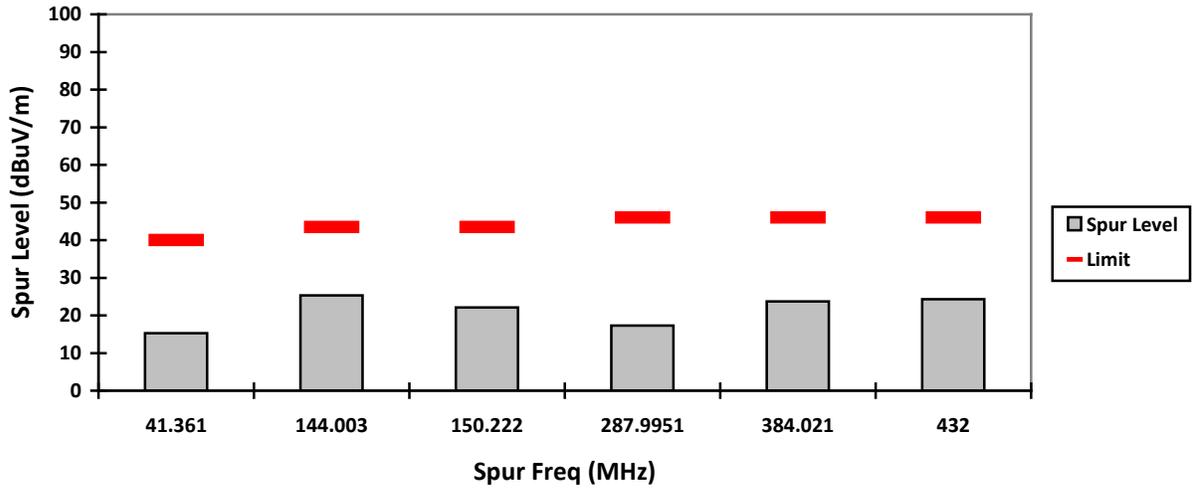
HORIZONTAL, QPK



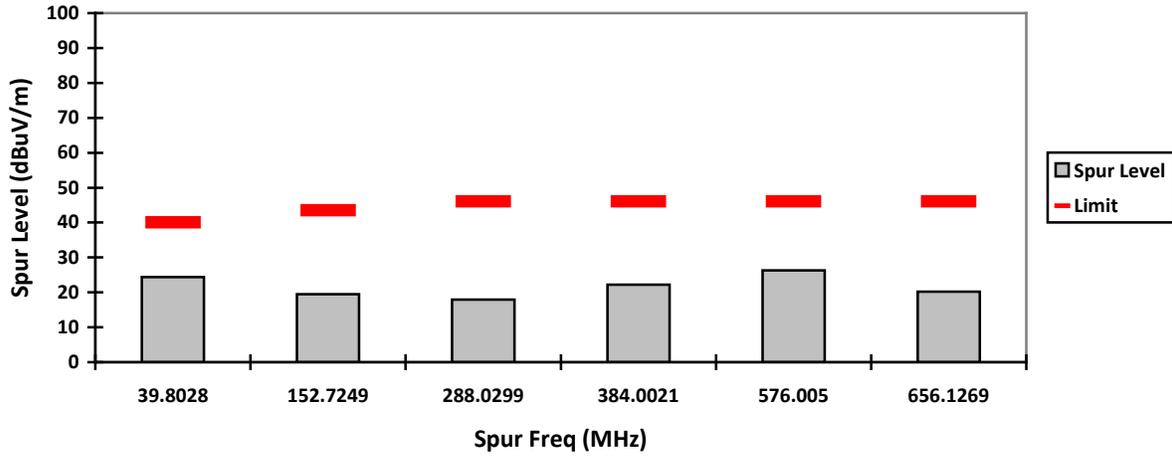
VERTICAL, QPK



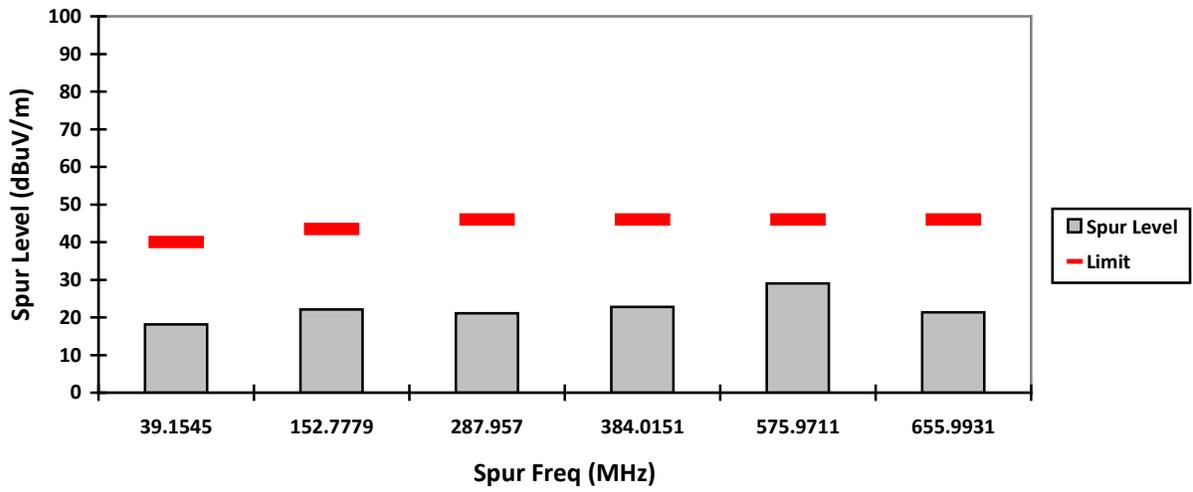
HORIZONTAL, QPK



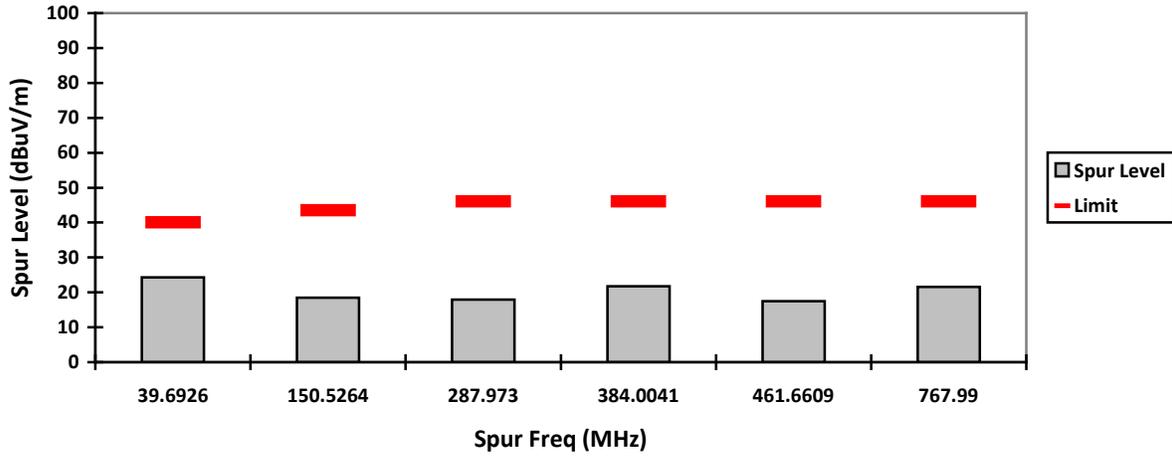
VERTICAL, QPK



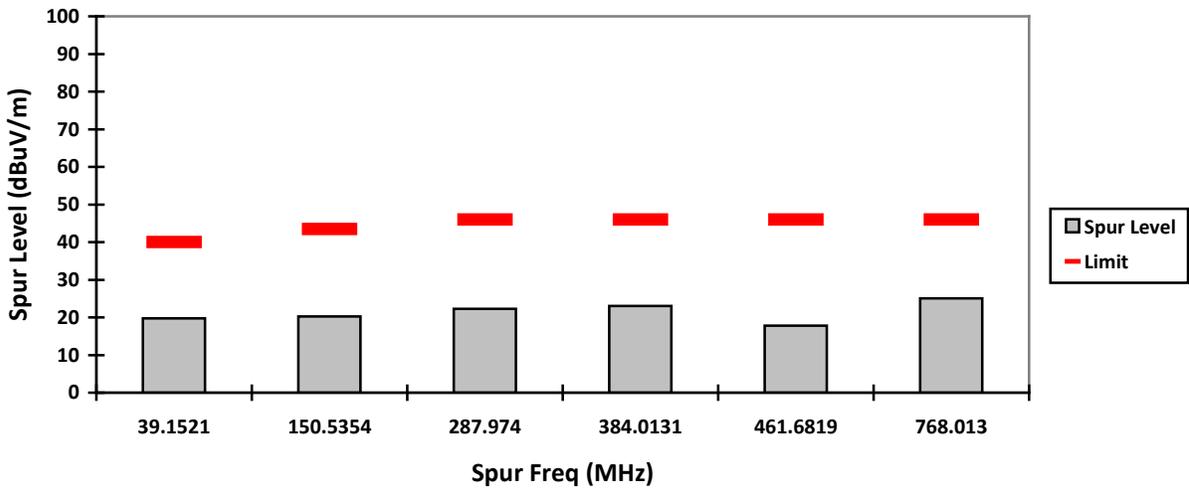
HORIZONTAL, QPK



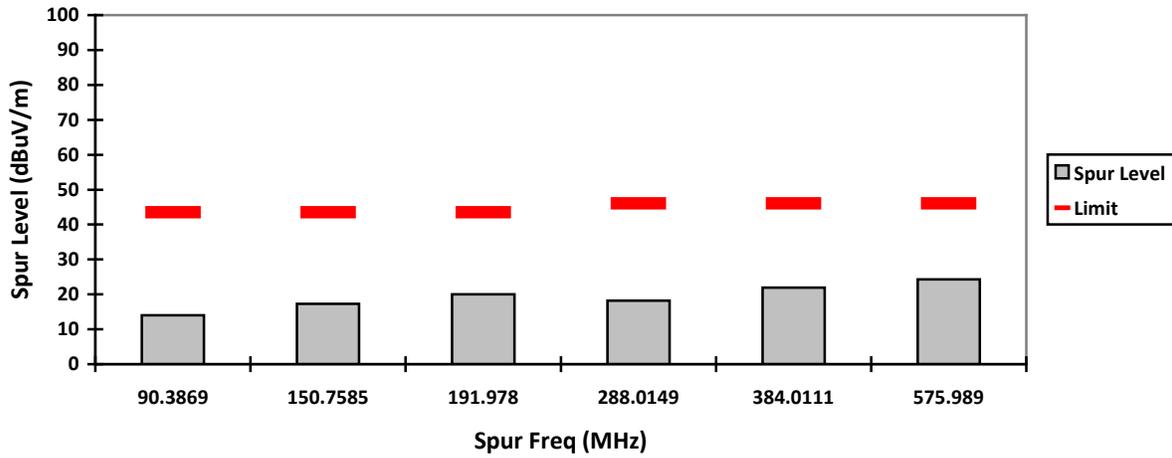
VERTICAL, QPK



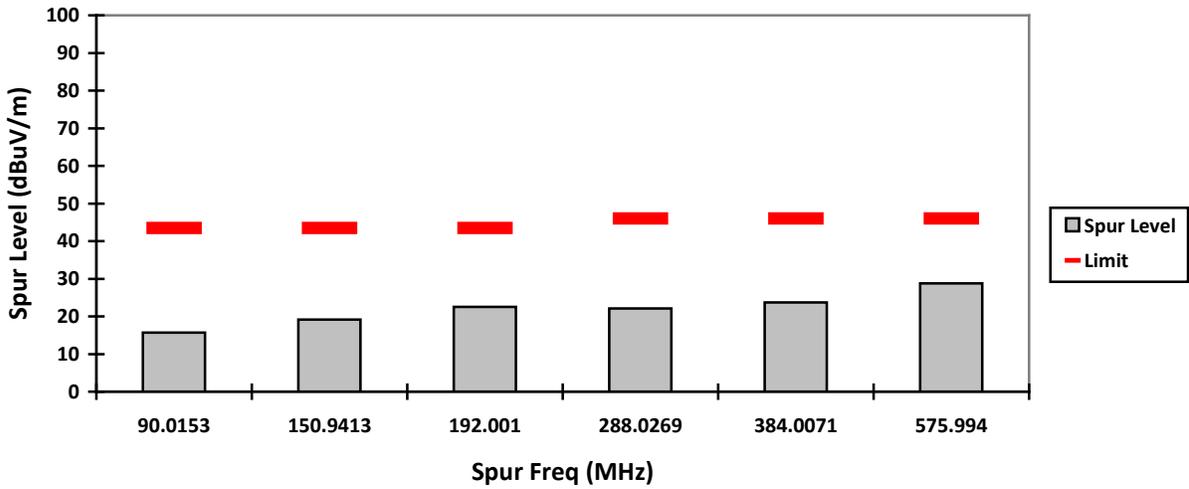
HORIZONTAL, QPK



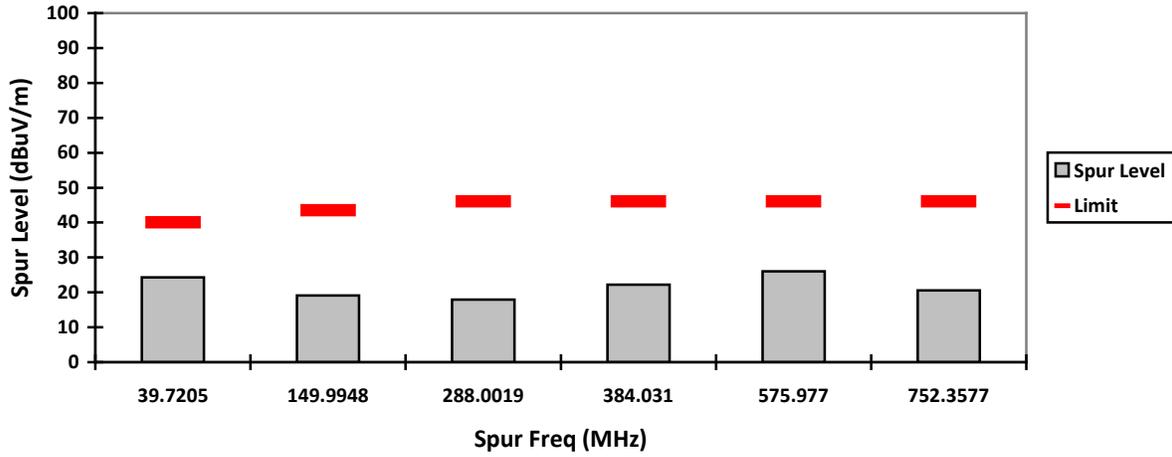
VERTICAL, QPK



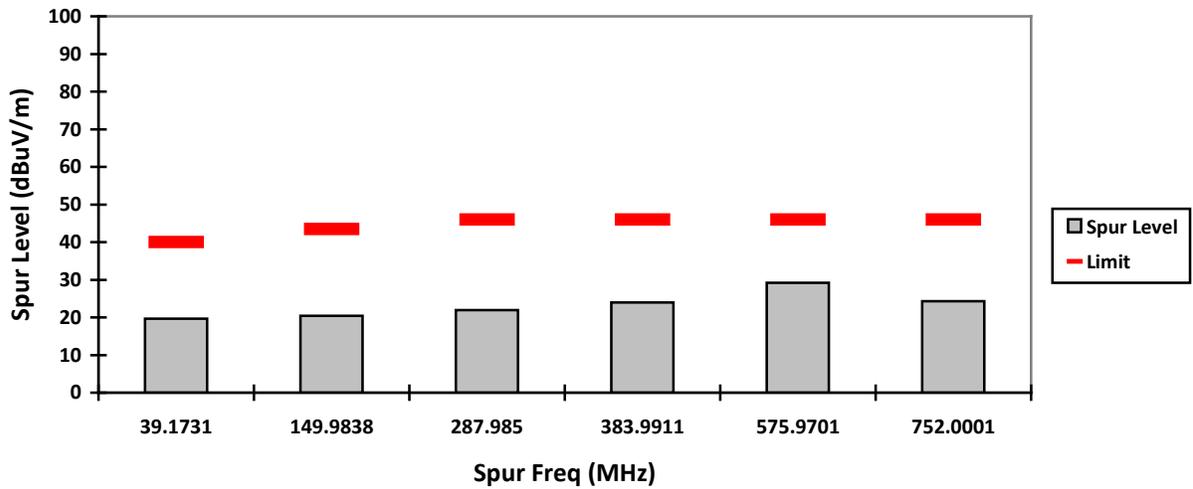
HORIZONTAL, QPK



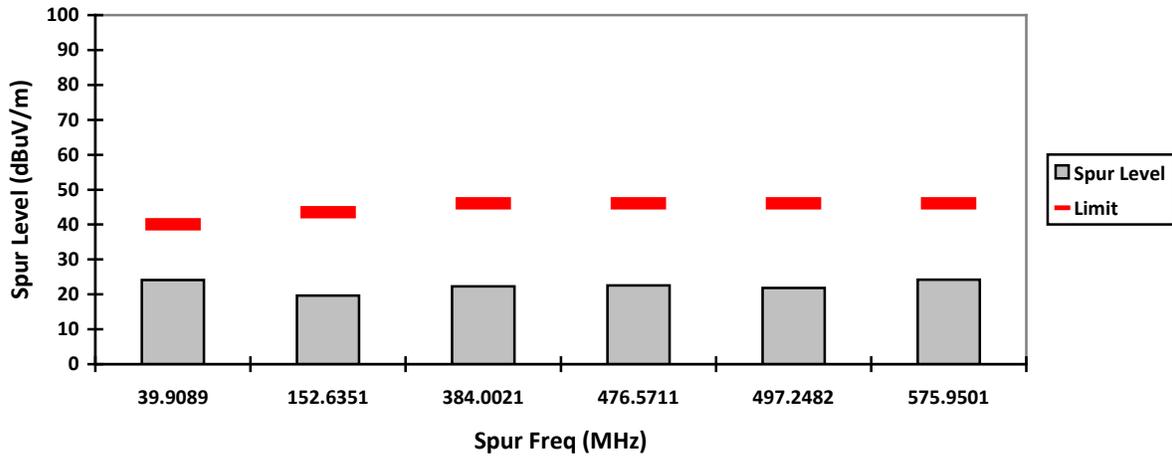
VERTICAL, QPK



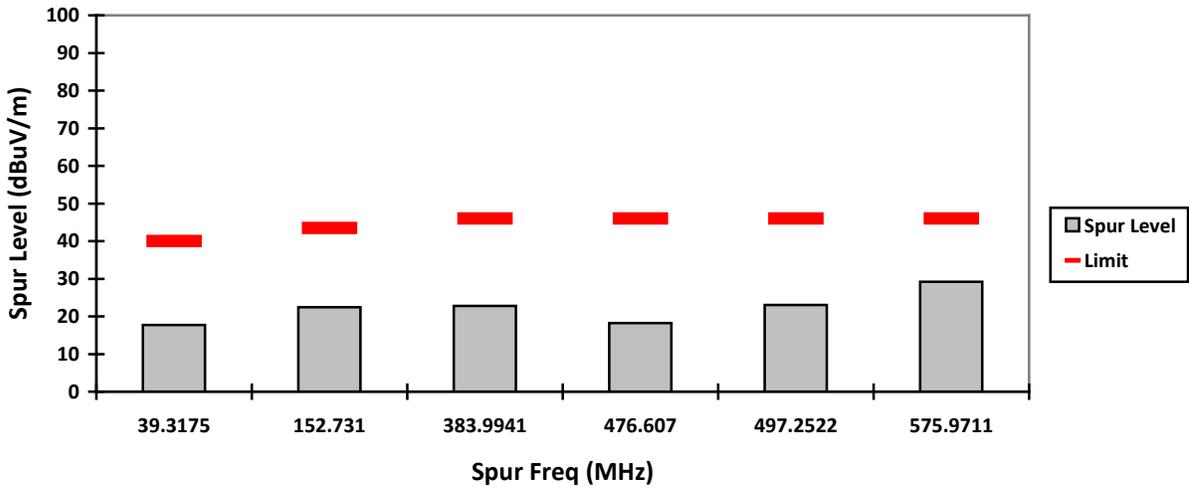
HORIZONTAL, QPK



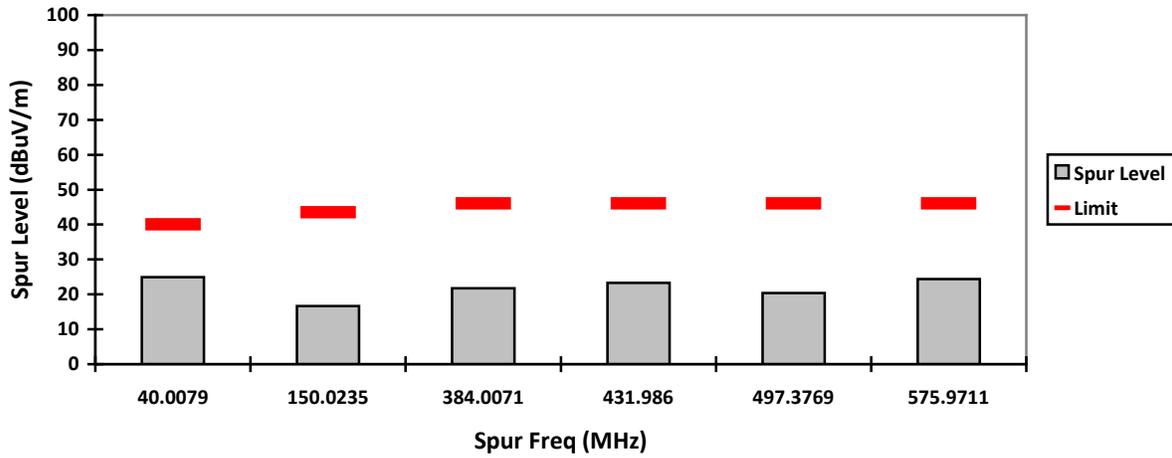
VERTICAL, QPK



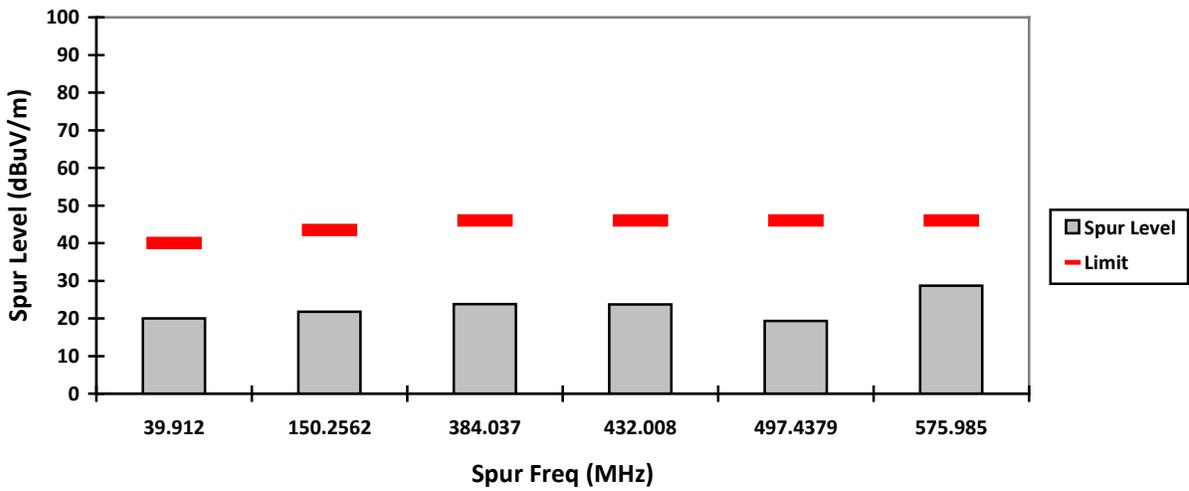
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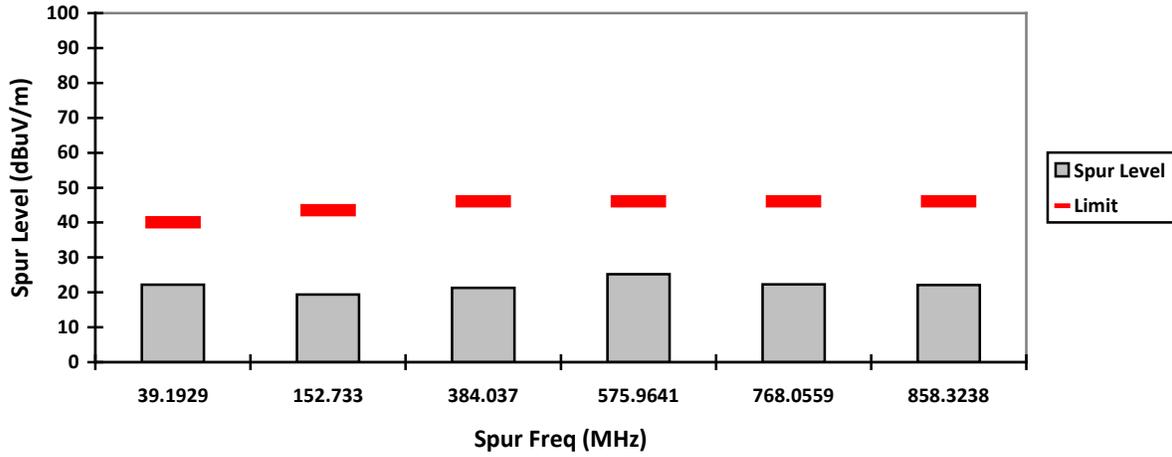
VERTICAL, QPK



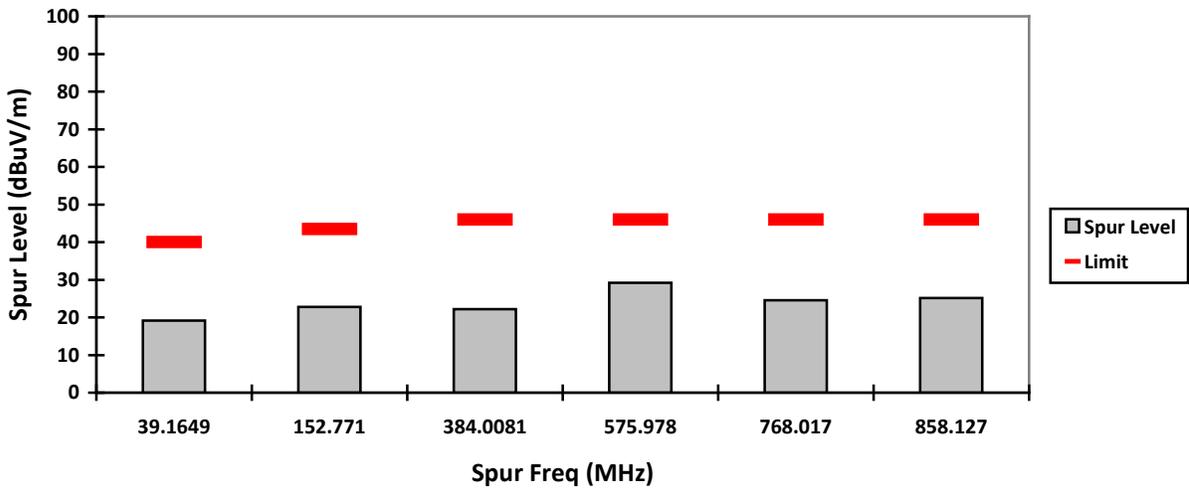
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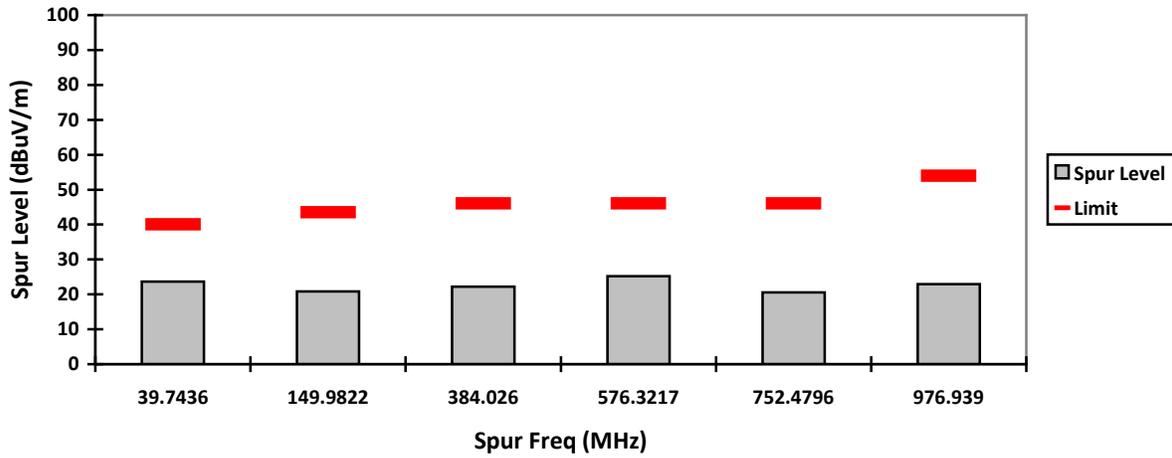
VERTICAL, QPK



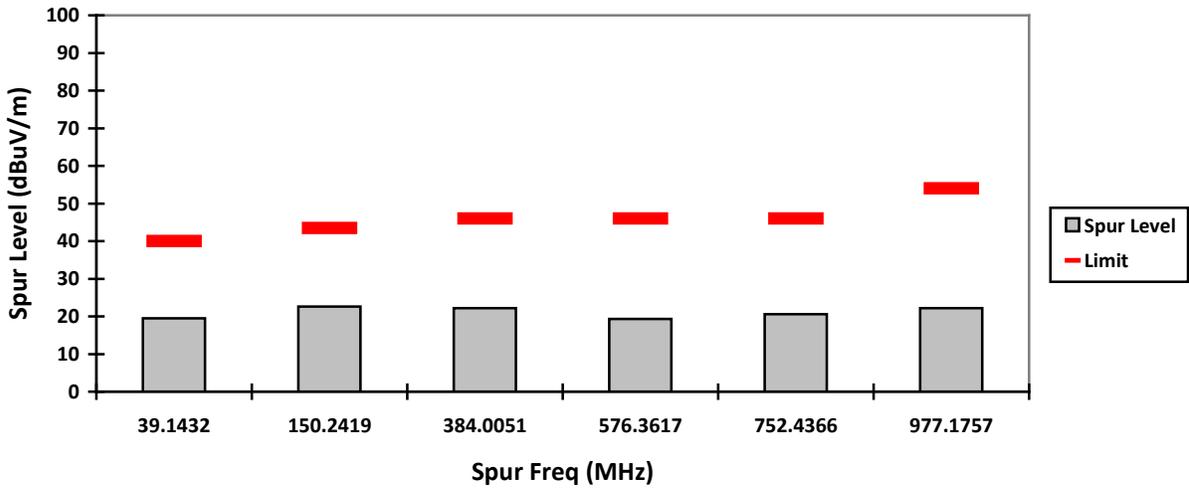
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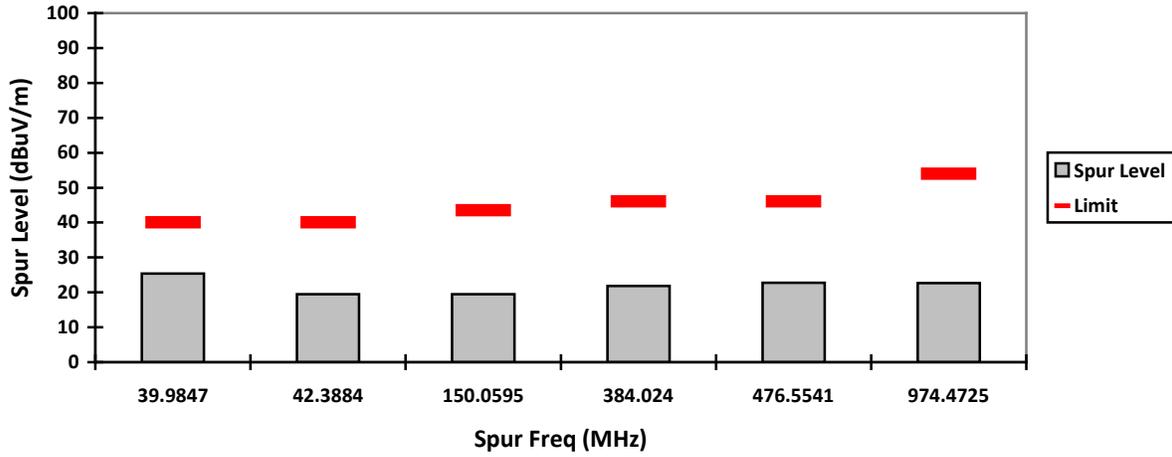
VERTICAL, QPK



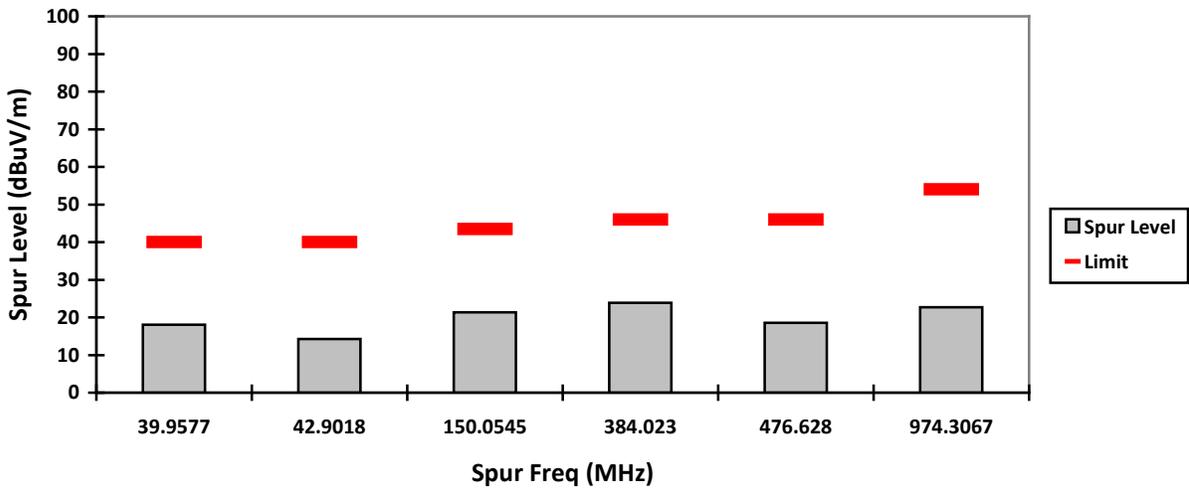
HORIZONTAL, QPK



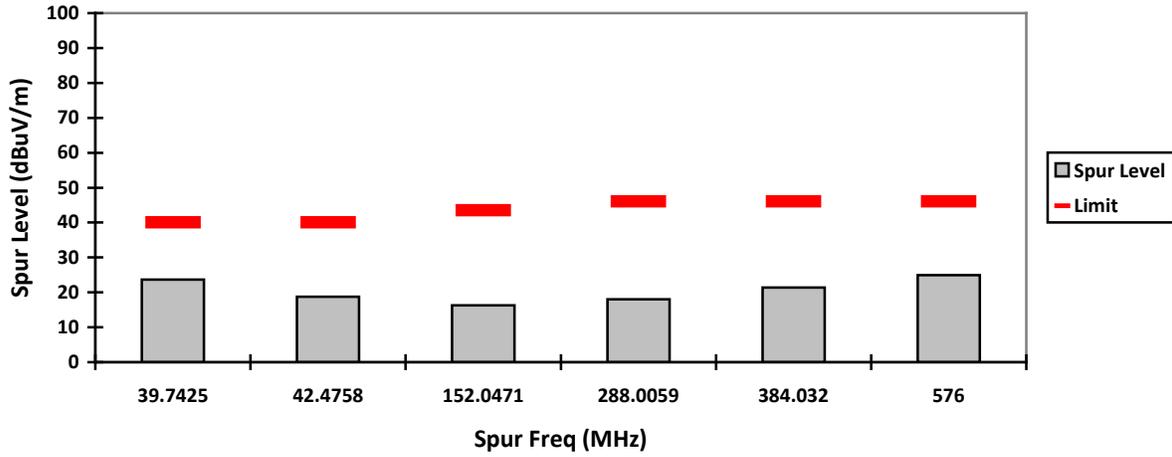
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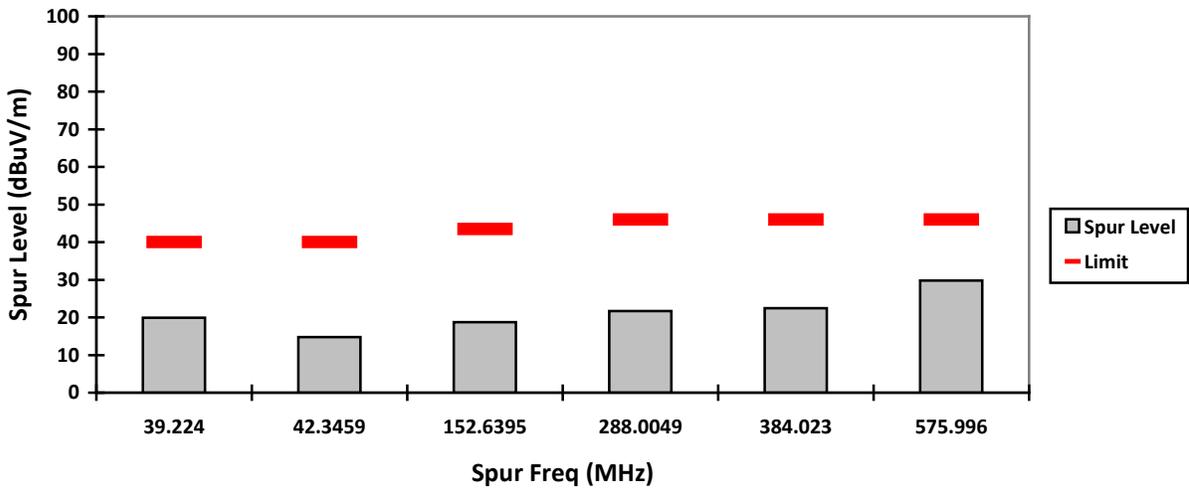
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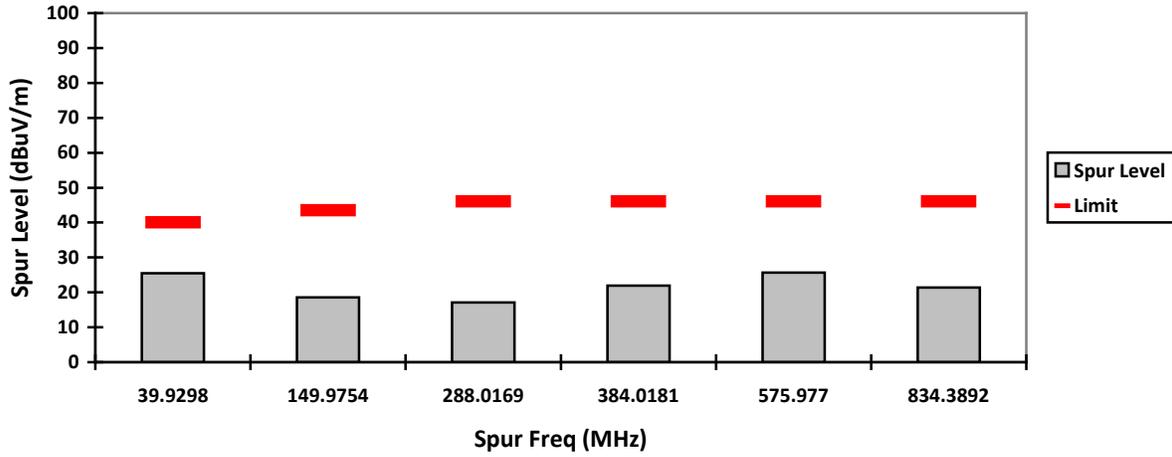
VERTICAL, QPK



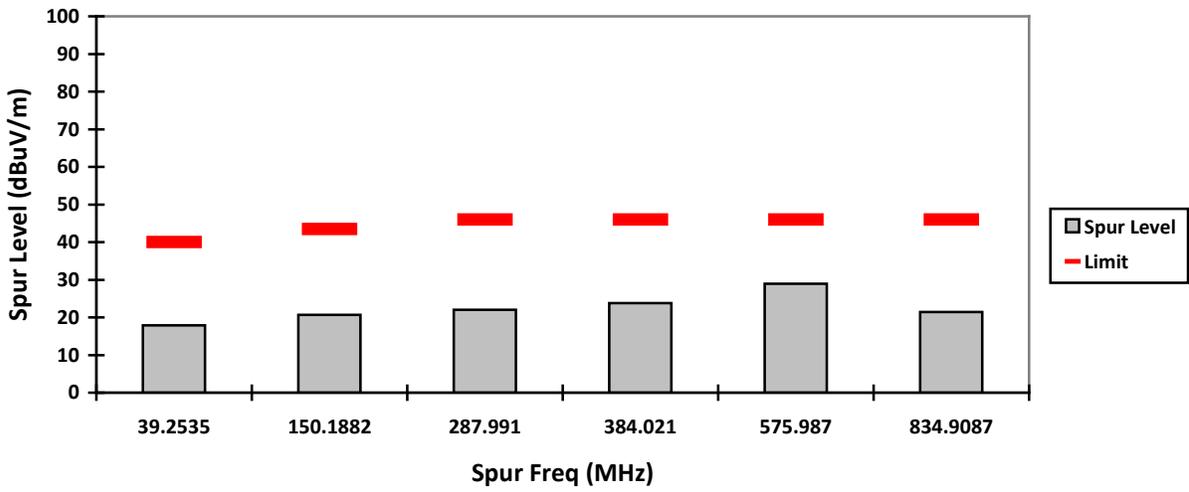
HORIZONTAL, QPK



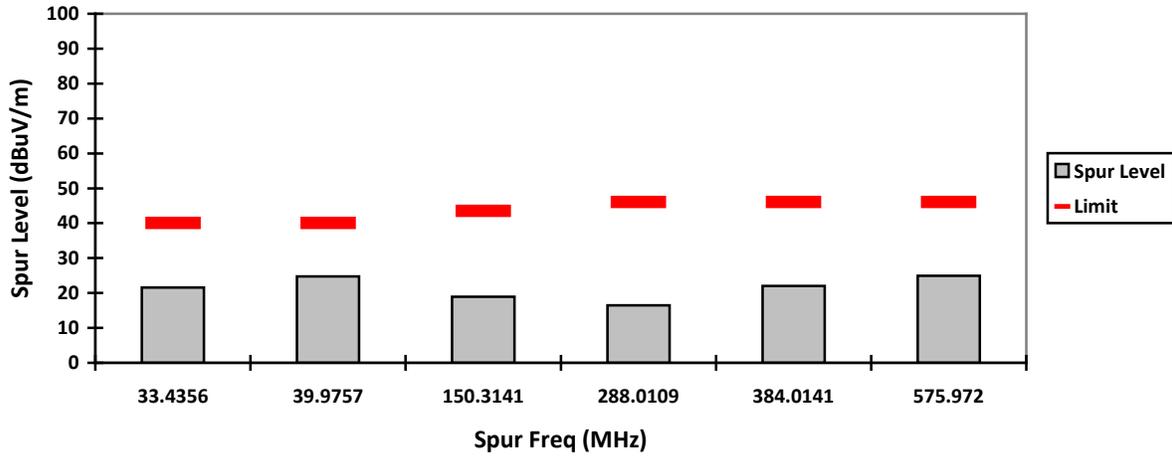
VERTICAL, QPK



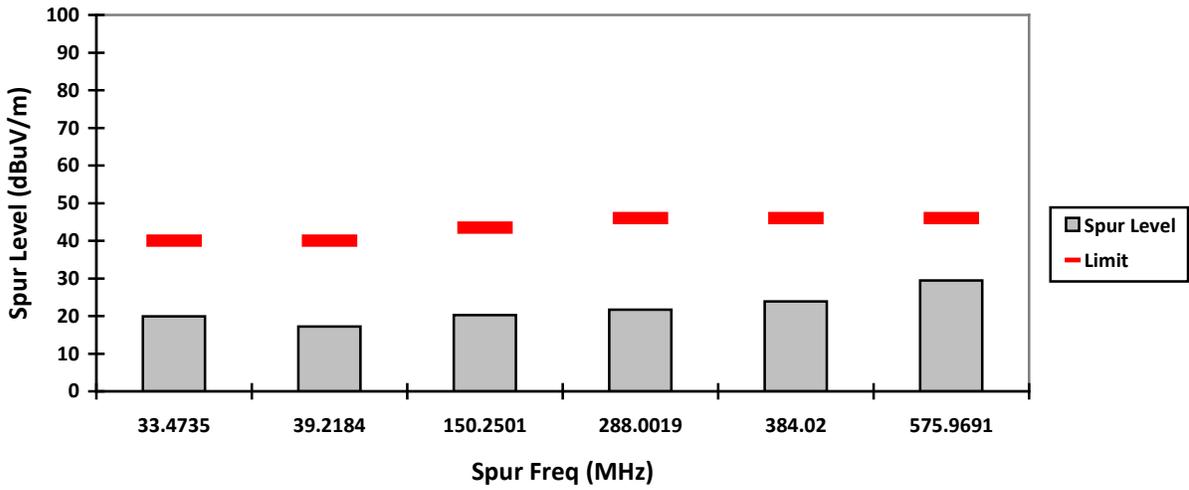
HORIZONTAL, QPK



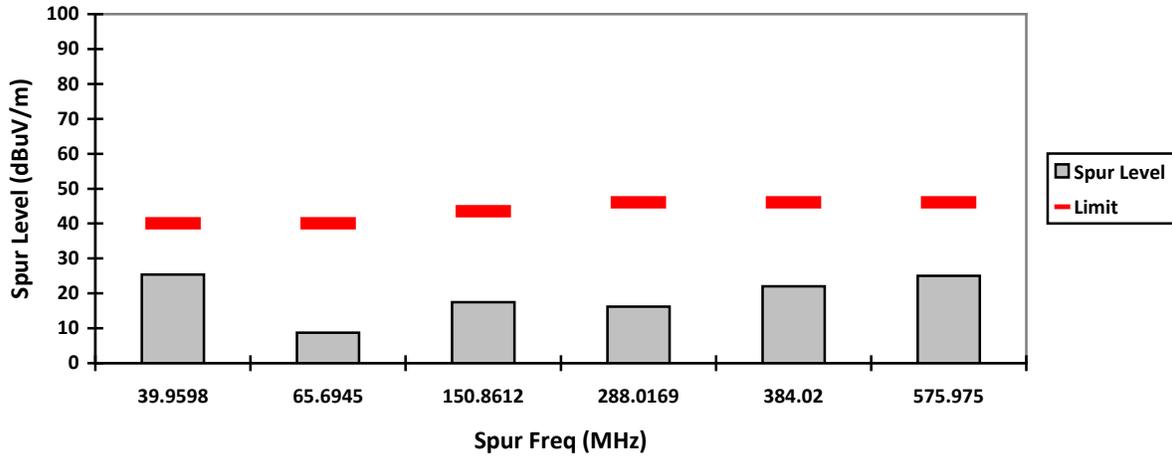
VERTICAL, QPK



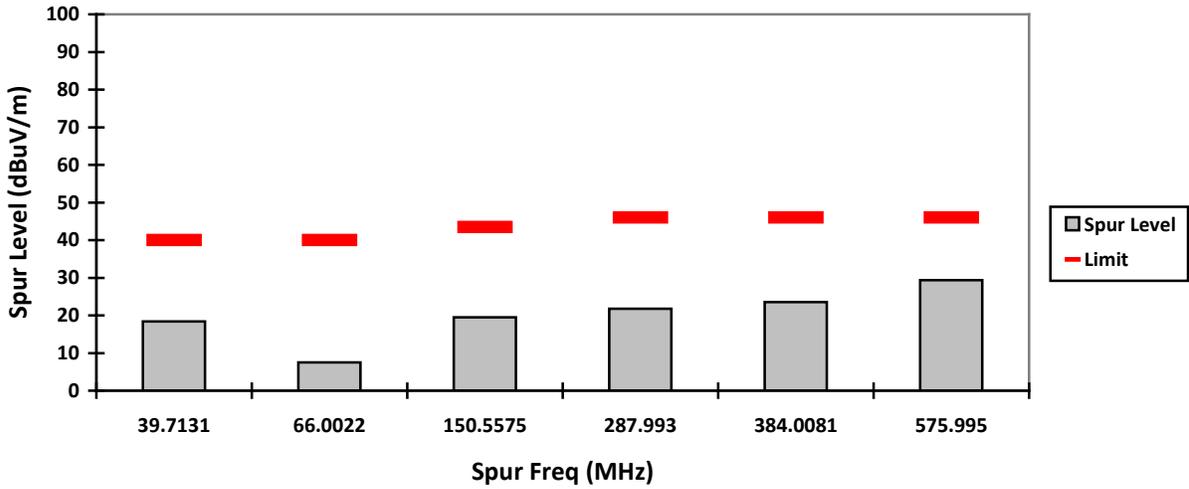
HORIZONTAL, QPK



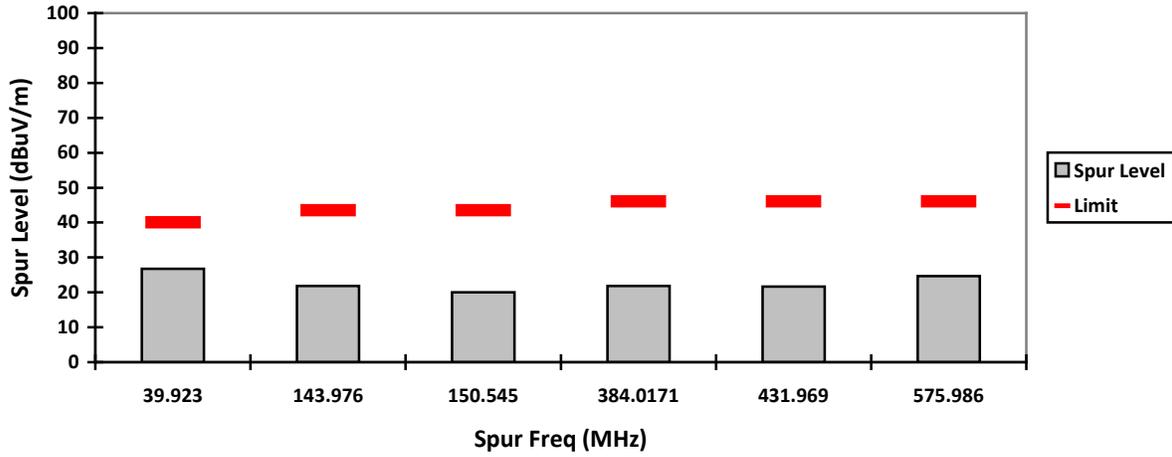
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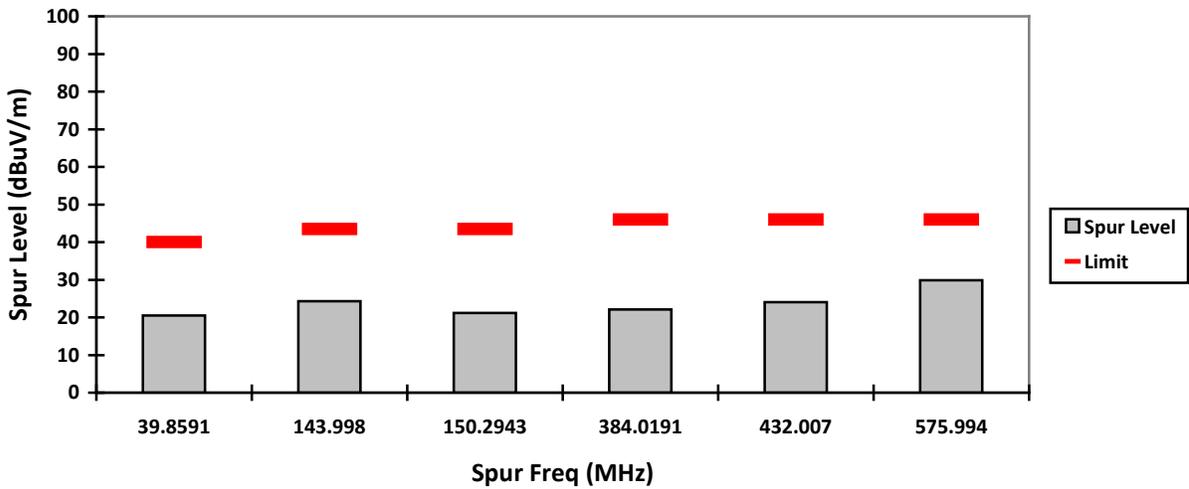
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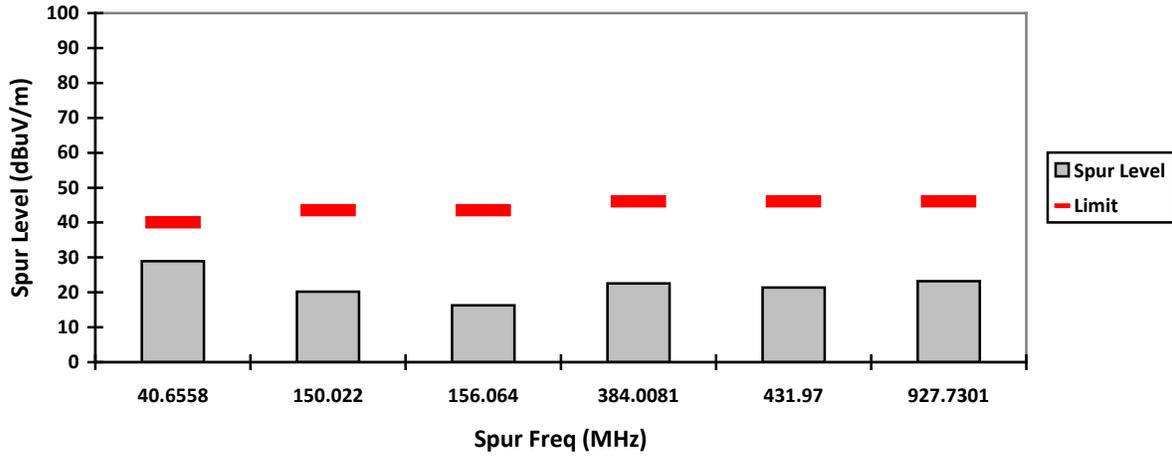
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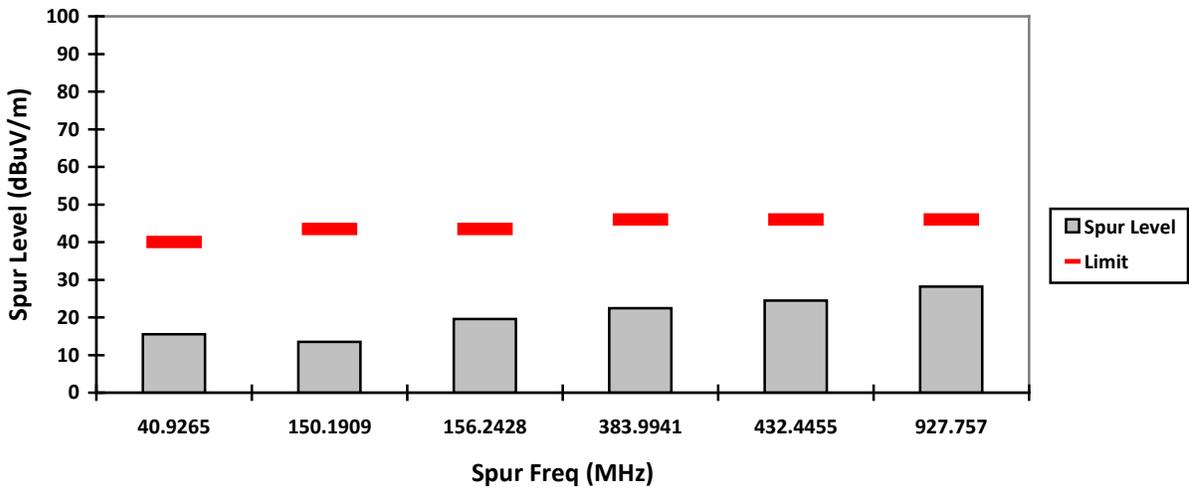
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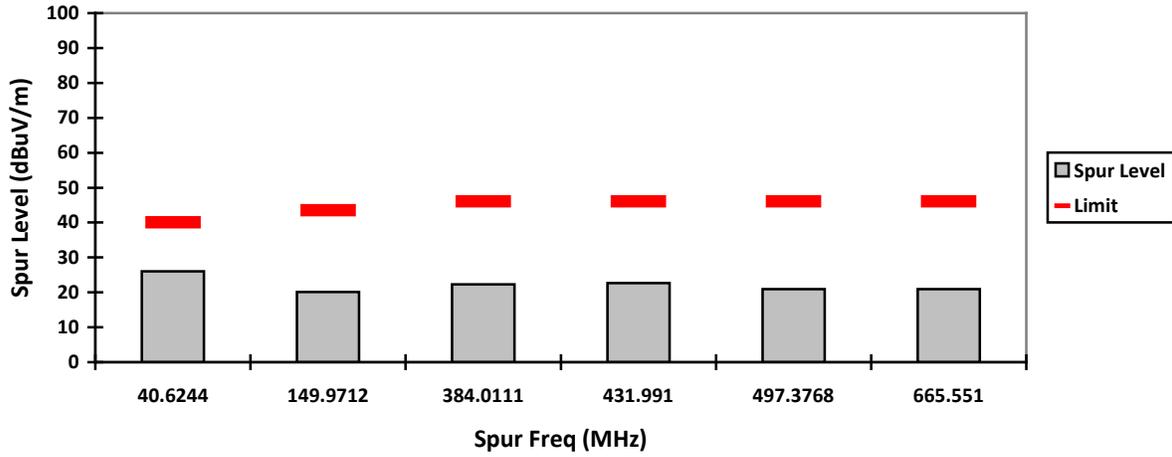
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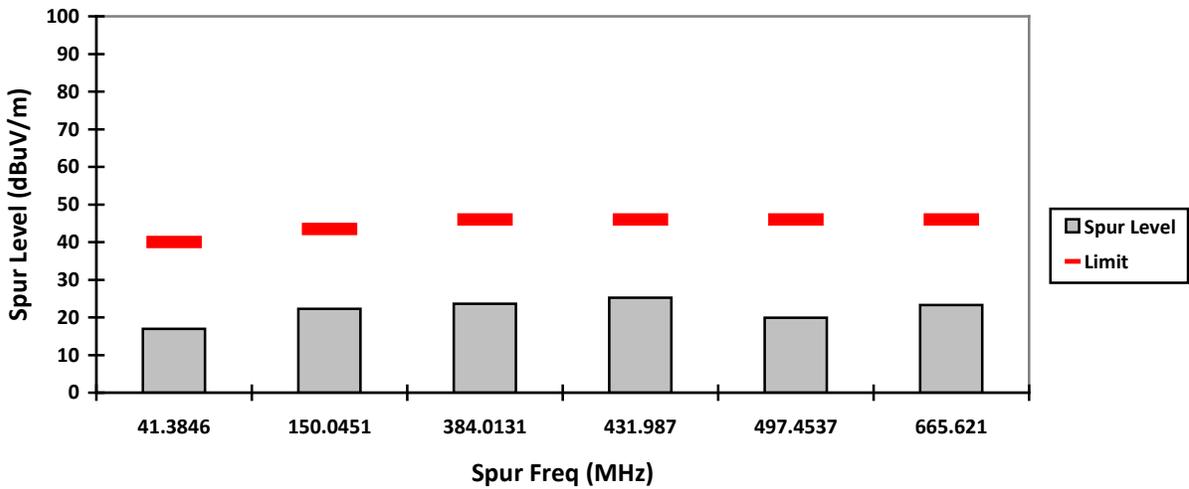
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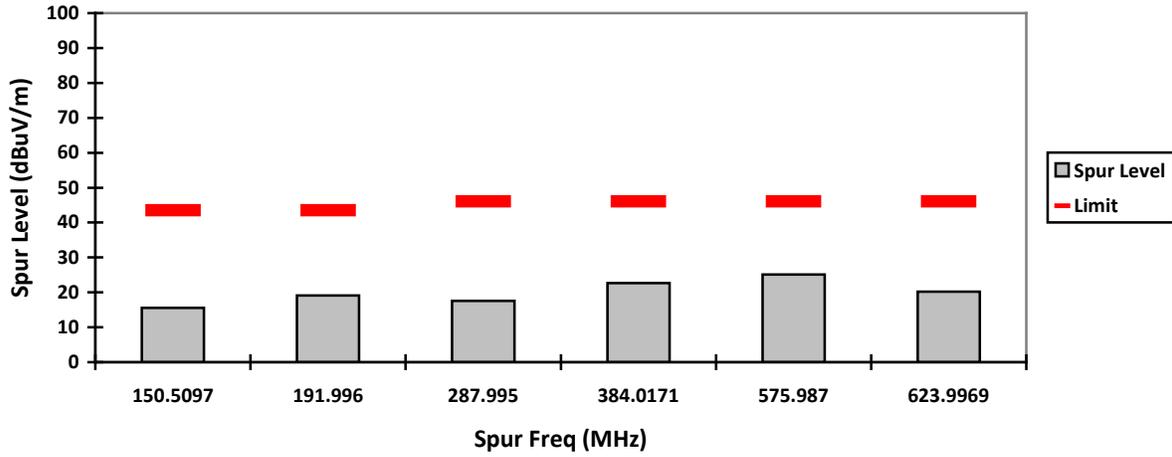
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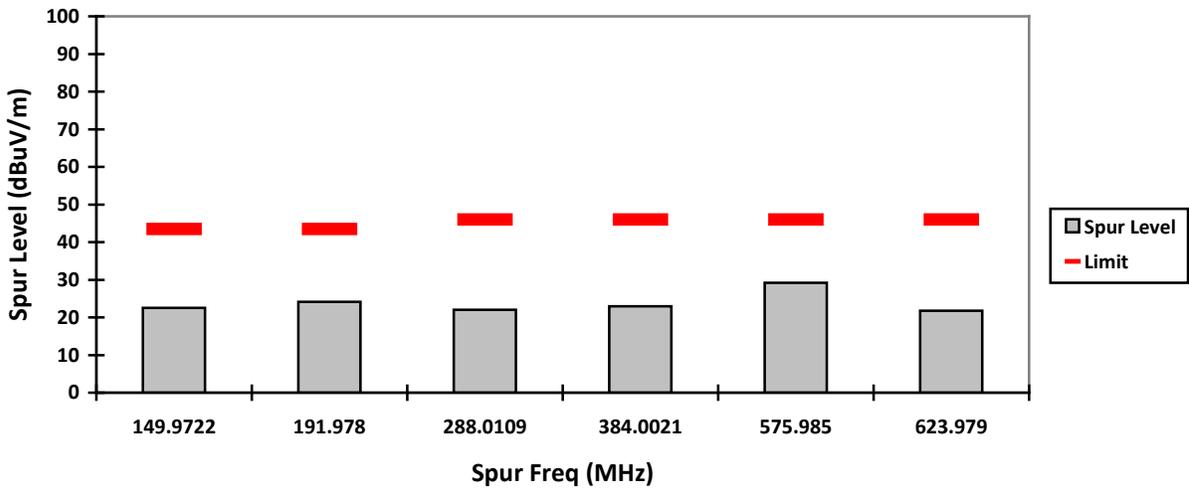
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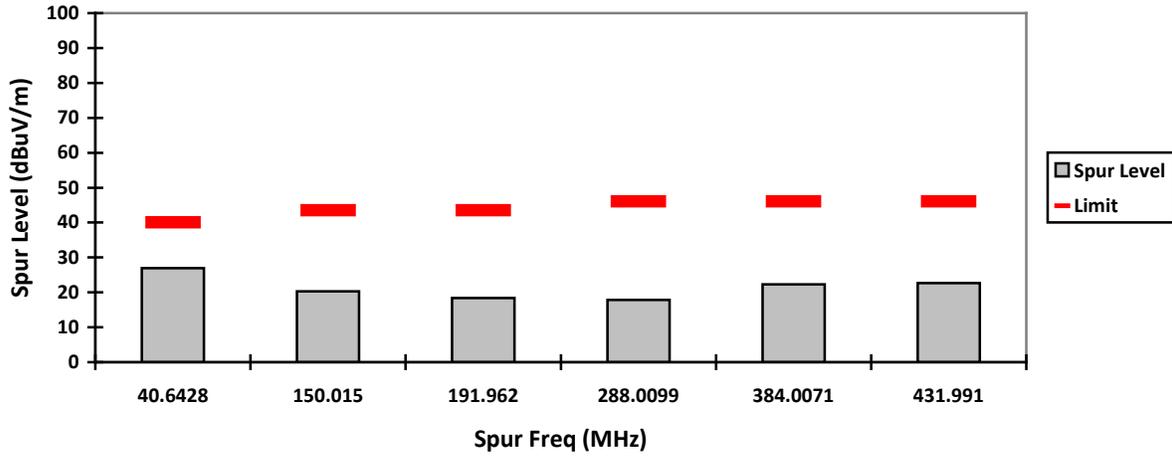
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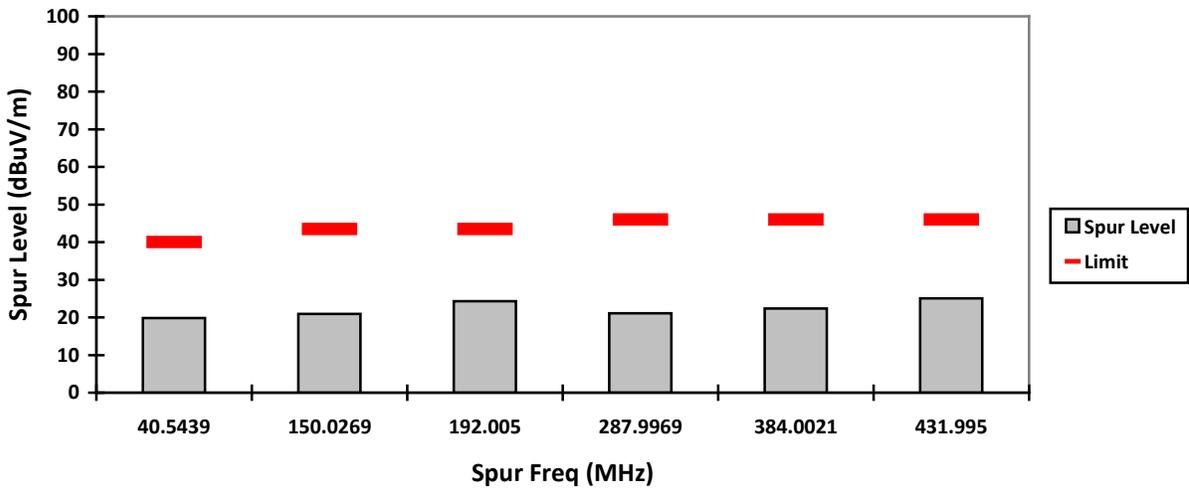
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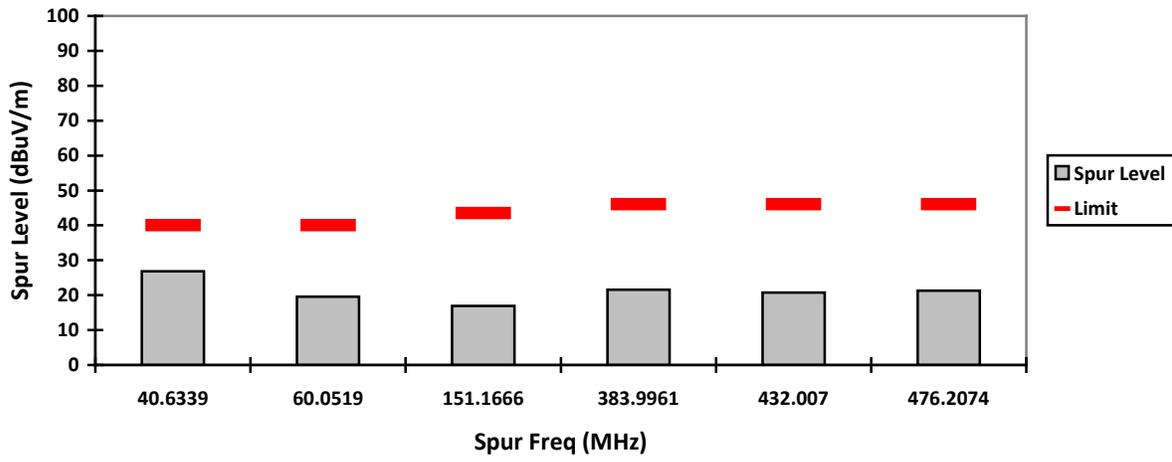
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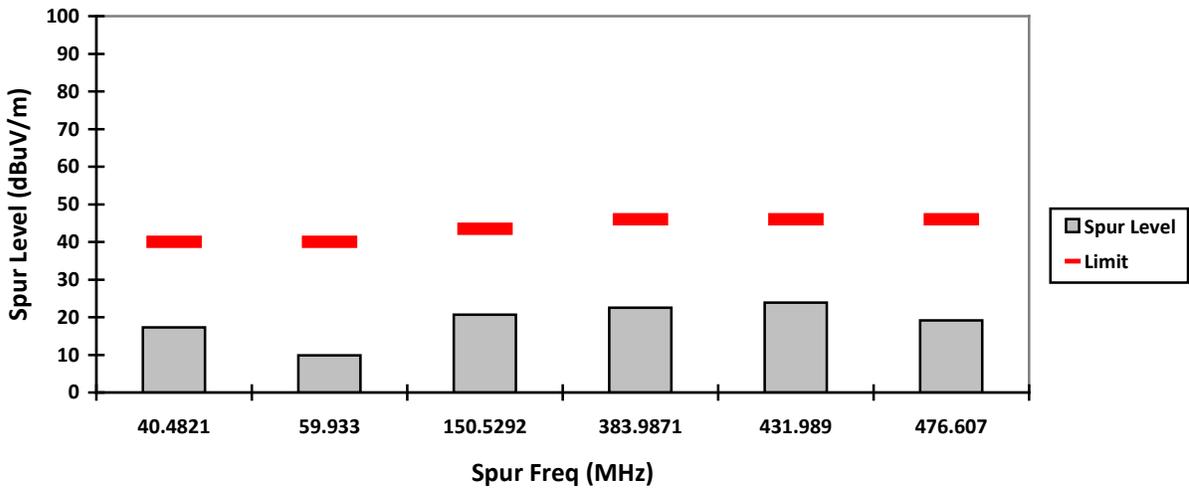
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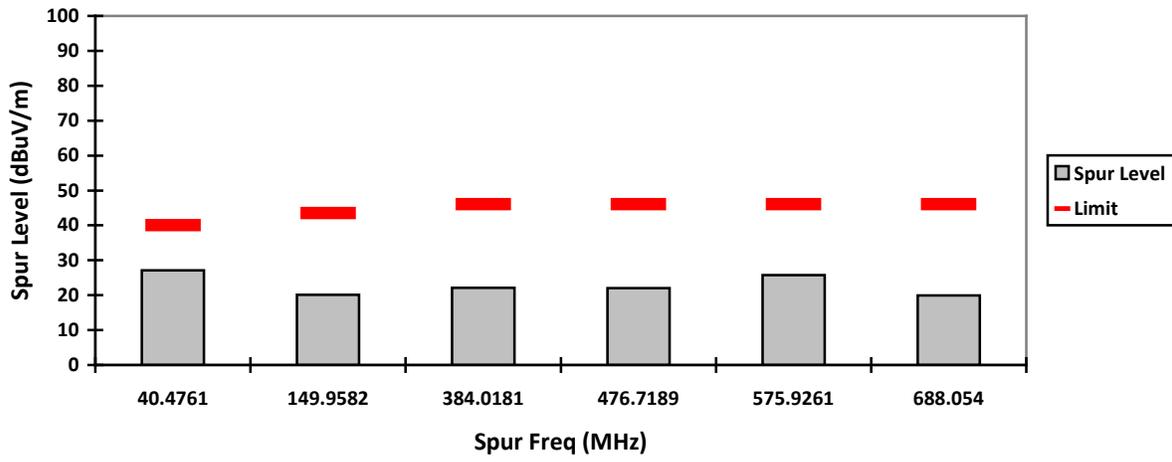
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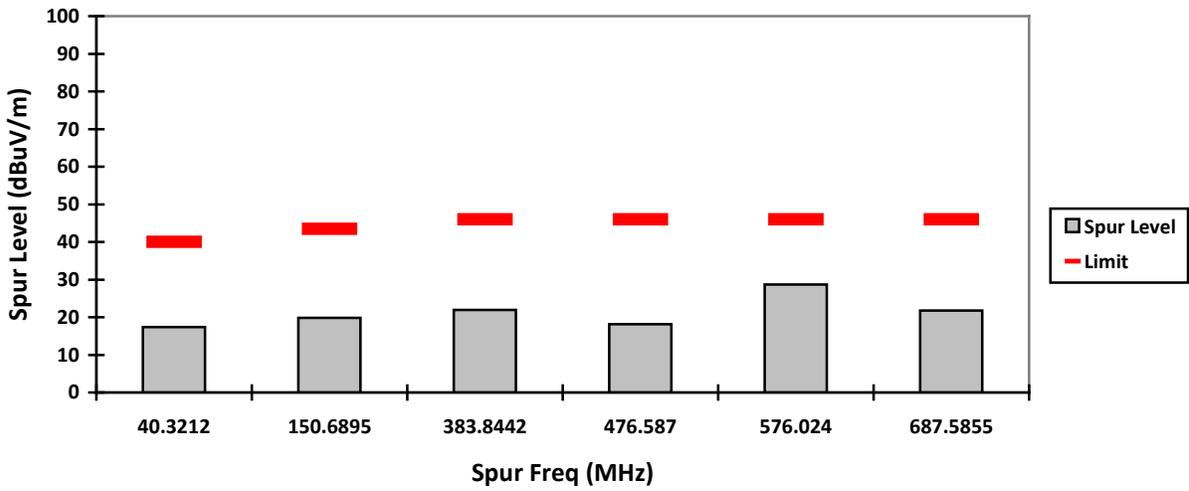
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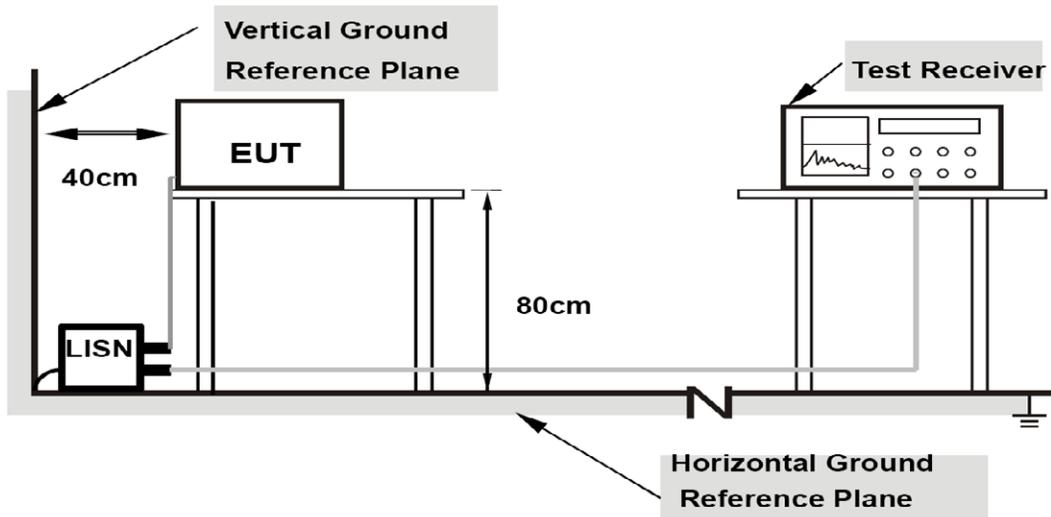


HORIZONTAL, QPK



6.8. AC Powerline Conducted Emission

6.8.1. Test Setup



- 1) Tests were conducted for both Receive and Transmit Mode of the EUT.
- 2) The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50uH of coupling impedance for the measuring instrument.
- 3) Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 4) The frequency range from 150 kHz to 30MHz was measured.

6.8.2. Test Limits

For AC Power Line Conducted Test Limit can be Class A or B depends on product classification.

Limits for conducted disturbance at the mains ports
of class A ITE

Frequency range MHz	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	79	66
0,50 to 30	73	60

NOTE The lower limit shall apply at the transition frequency.

Table 1: Limits for Conducted Disturbance at the Mains Ports of Class A ITE.

**Limits for conducted disturbance at the mains ports
of class B ITE**

Frequency range MHz	Limits dB(μ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

NOTE 1 The lower limit shall apply at the transition frequencies.
NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.

Table 2: Limits for Conducted Disturbance at the Mains Ports of Class B ITE

6.8.3. Test Data

Not Applicable. Testing is not required, radio shall turn off during charging mode.

END OF TEST REPORT