



Appendix A

RF Test Data for 2.4G (Conducted Measurement)

Product Name: Mesh Rider Radio

Test Model: RM-1700-22M3

Environmental Conditions

Temperature:	23.8°C
Relative Humidity:	52.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
Supervised by:	Ling Zhu





A.1 -6dB Bandwidth

Ant0:

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	g-20M	2412	Ant0	14.413	>=0.5	Pass
NVNT	g-20M	2437	Ant0	14.062	>=0.5	Pass
NVNT	g-20M	2462	Ant0	14.428	>=0.5	Pass
NVNT	n-20M	2412	Ant0	15.012	>=0.5	Pass
NVNT	n-20M	2437	Ant0	13.802	>=0.5	Pass
NVNT	n-20M	2462	Ant0	15.071	>=0.5	Pass
NVNT	g-10M	2412	Ant0	7.868	>=0.5	Pass
NVNT	g-10M	2437	Ant0	7.91	>=0.5	Pass
NVNT	g-10M	2467	Ant0	8.153	>=0.5	Pass
NVNT	n-10M	2412	Ant0	7.931	>=0.5	Pass
NVNT	n-10M	2437	Ant0	8.097	>=0.5	Pass
NVNT	n-10M	2467	Ant0	8.235	>=0.5	Pass

Ant1:

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	g-20M	2412	Ant1	15.093	>=0.5	Pass
NVNT	g-20M	2437	Ant1	14.699	>=0.5	Pass
NVNT	g-20M	2462	Ant1	14.163	>=0.5	Pass
NVNT	g-10M	2412	Ant1	8.004	>=0.5	Pass
NVNT	g-10M	2437	Ant1	8.015	>=0.5	Pass
NVNT	g-10M	2467	Ant1	7.943	>=0.5	Pass
NVNT	n-10M	2412	Ant1	7.958	>=0.5	Pass
NVNT	n-10M	2437	Ant1	8.344	>=0.5	Pass
NVNT	n-10M	2467	Ant1	8.251	>=0.5	Pass
NVNT	n-20M	2412	Ant1	15.057	>=0.5	Pass
NVNT	n-20M	2437	Ant1	15.065	>=0.5	Pass
NVNT	n-20M	2462	Ant1	15.01	>=0.5	Pass



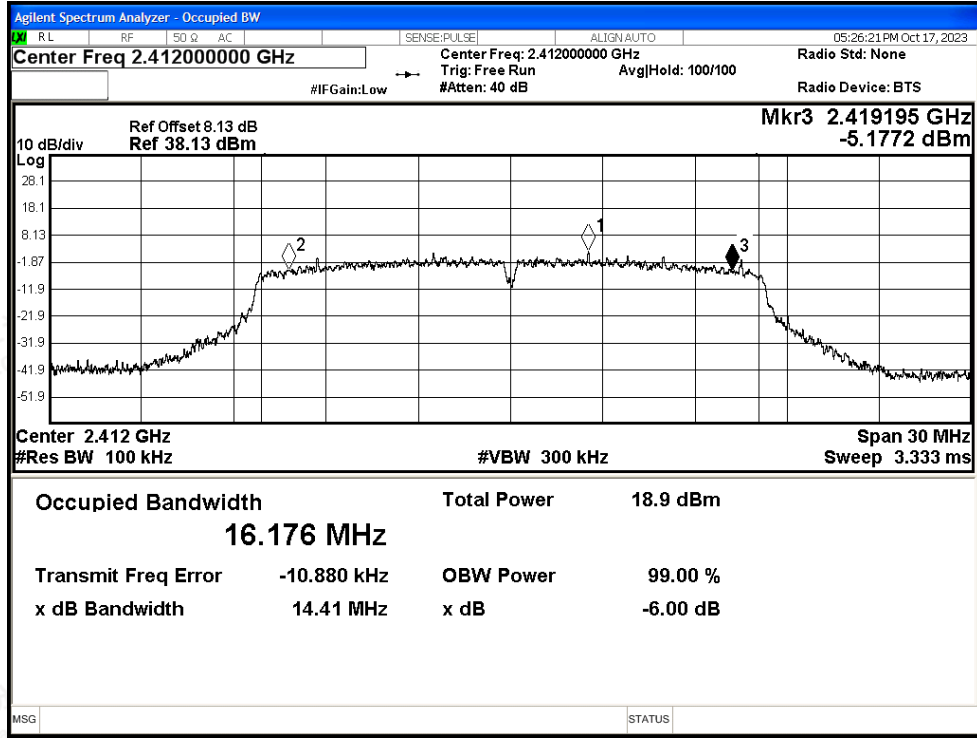
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 Scan code to check authenticity



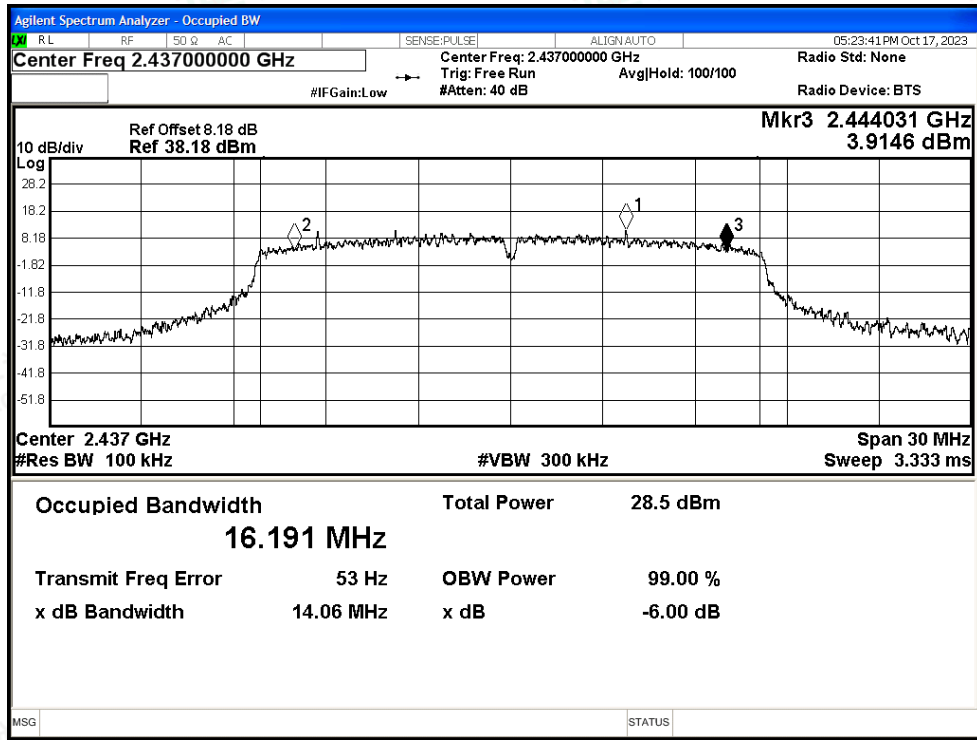
Ant0:

Test Graphs

-6dB Bandwidth NVNT g-20M 2412MHz Ant0

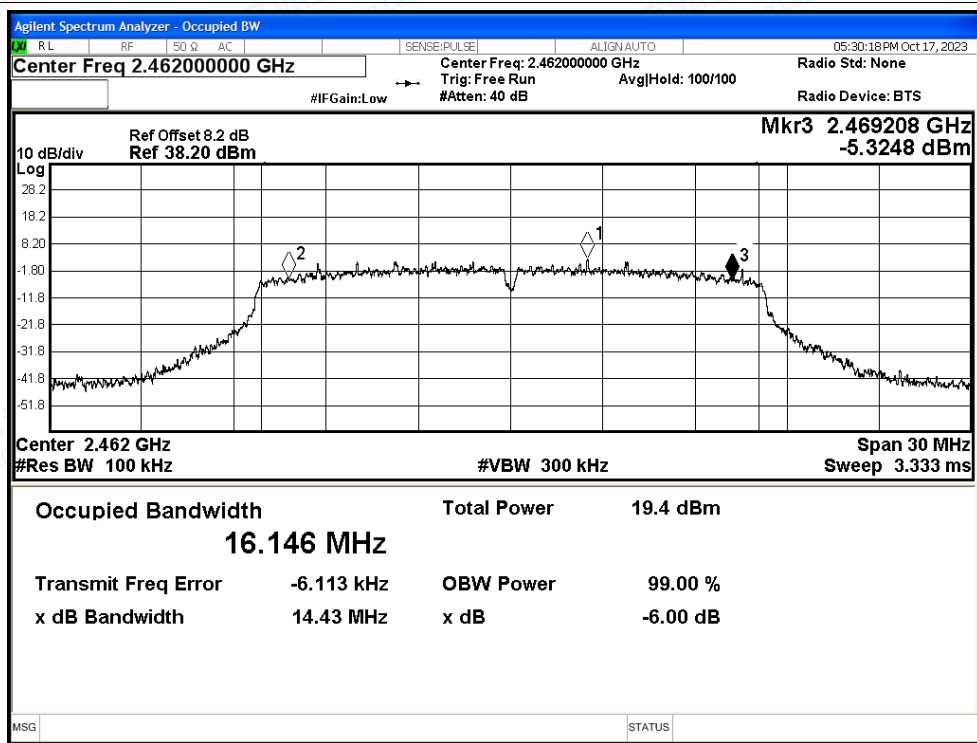


-6dB Bandwidth NVNT g-20M 2437MHz Ant0

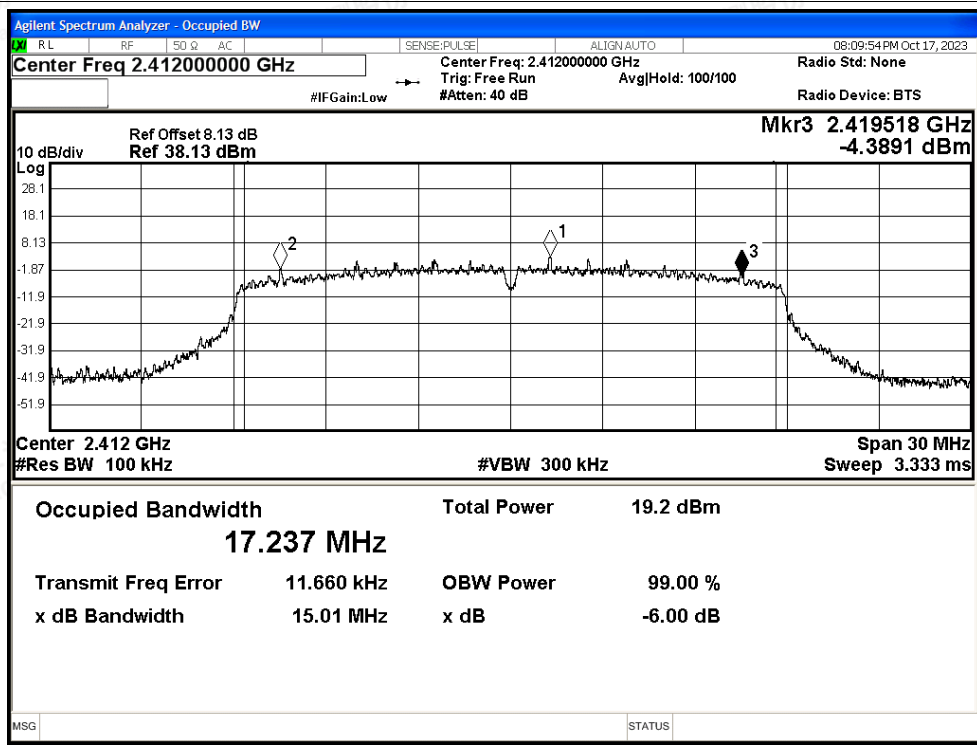




-6dB Bandwidth NVNT g-20M 2462MHz Ant0

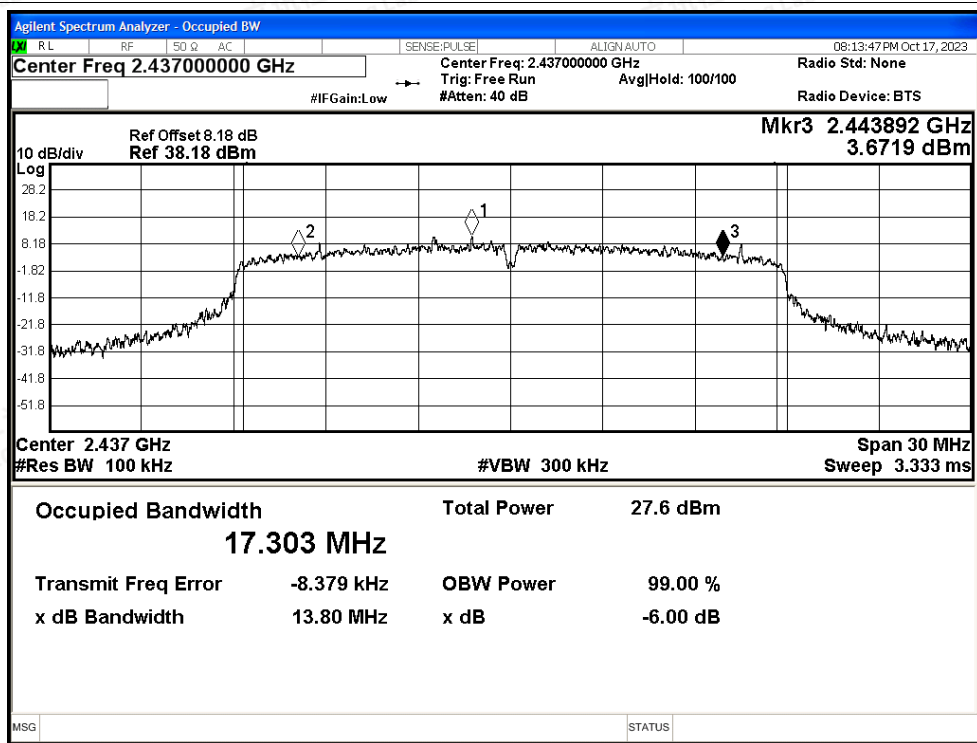


-6dB Bandwidth NVNT n-20M 2412MHz Ant0

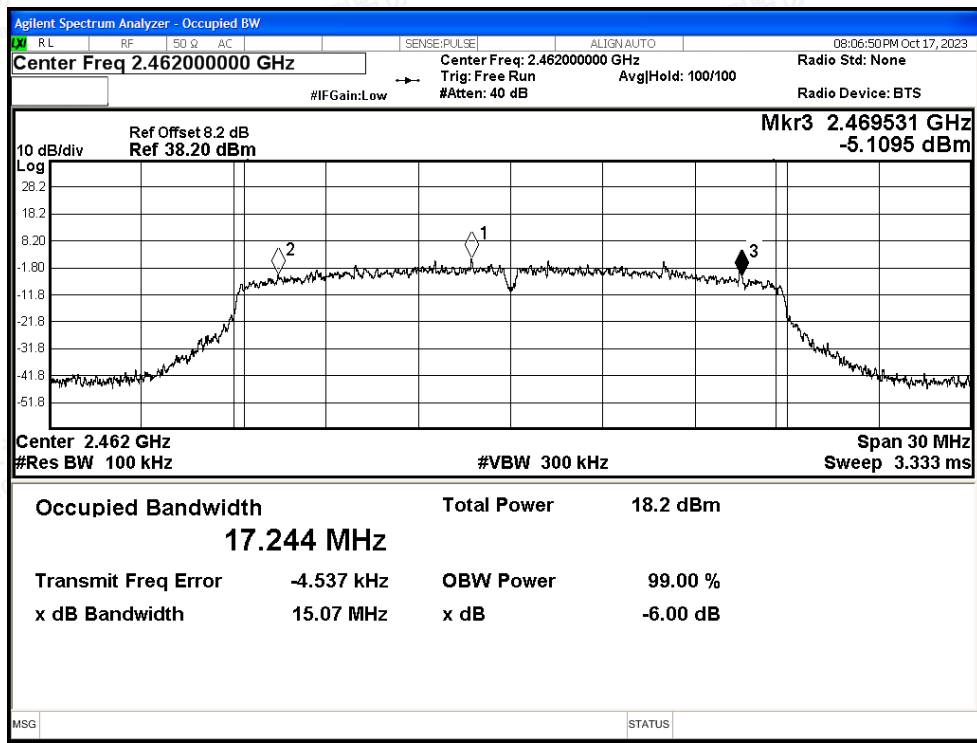




-6dB Bandwidth NVNT n-20M 2437MHz Ant0

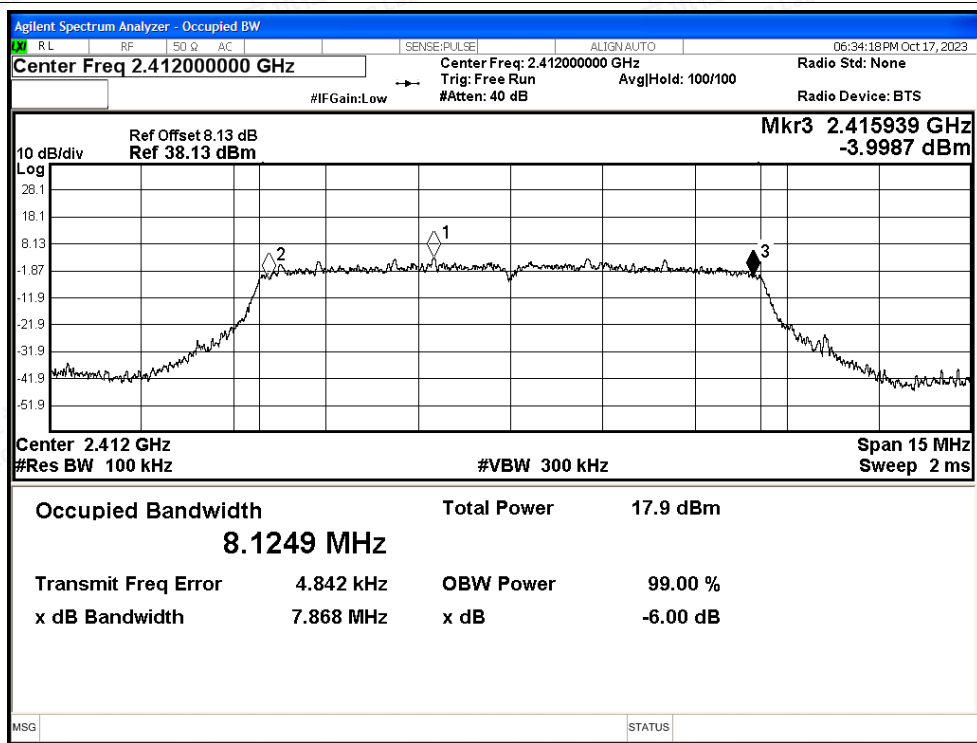


-6dB Bandwidth NVNT n-20M 2462MHz Ant0

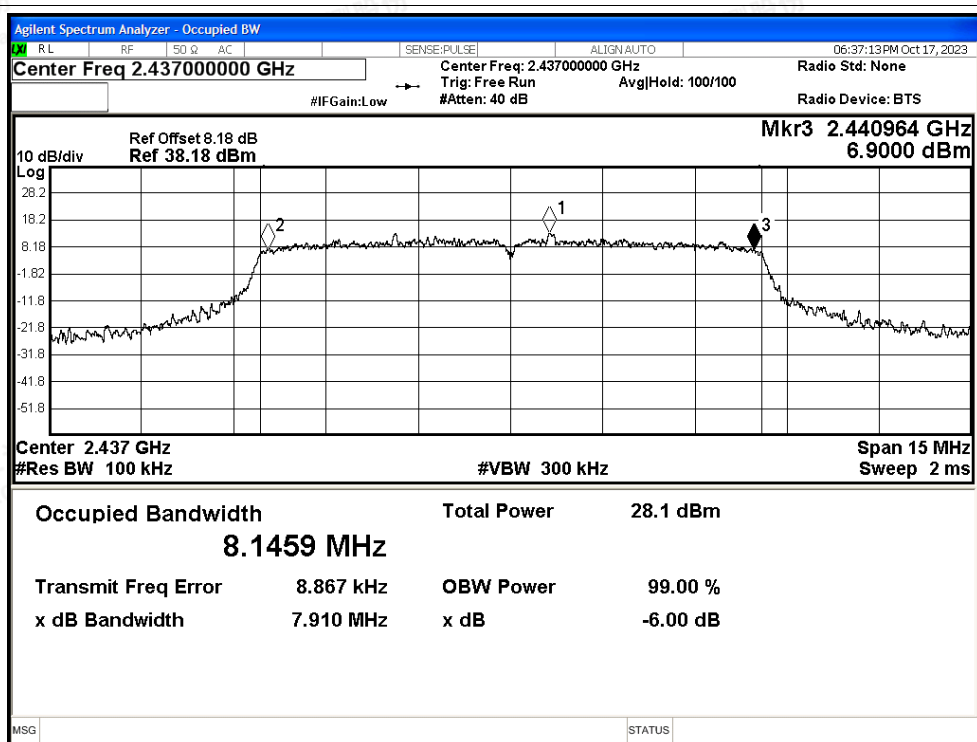




-6dB Bandwidth NVNT g-10M 2412MHz Ant0

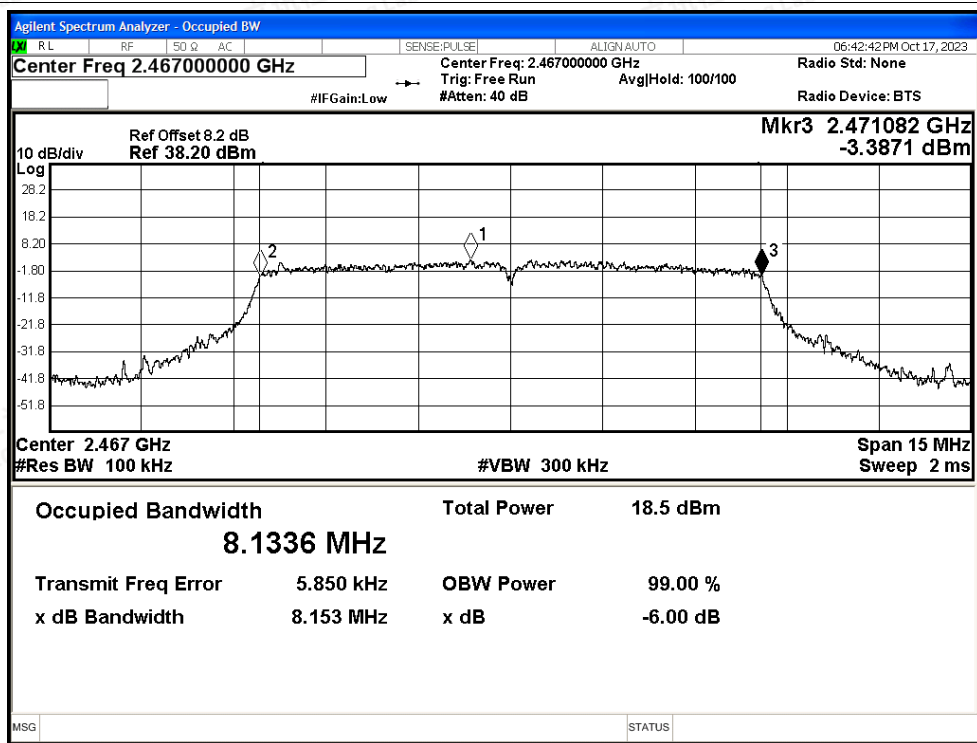


-6dB Bandwidth NVNT g-10M 2437MHz Ant0

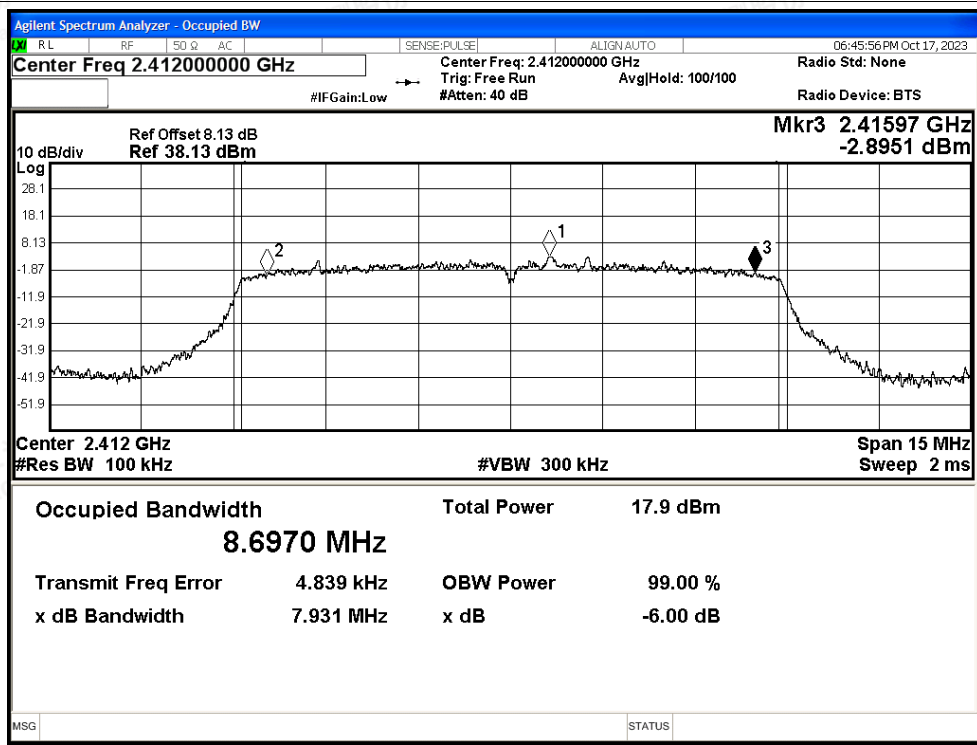




-6dB Bandwidth NVNT g-10M 2467MHz Ant0

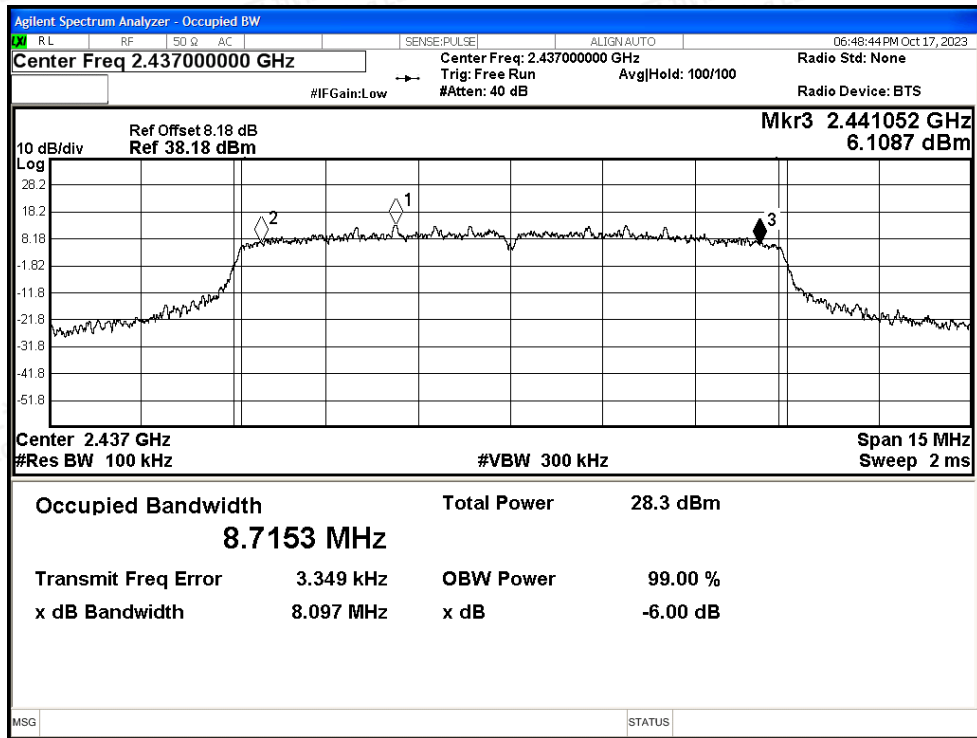


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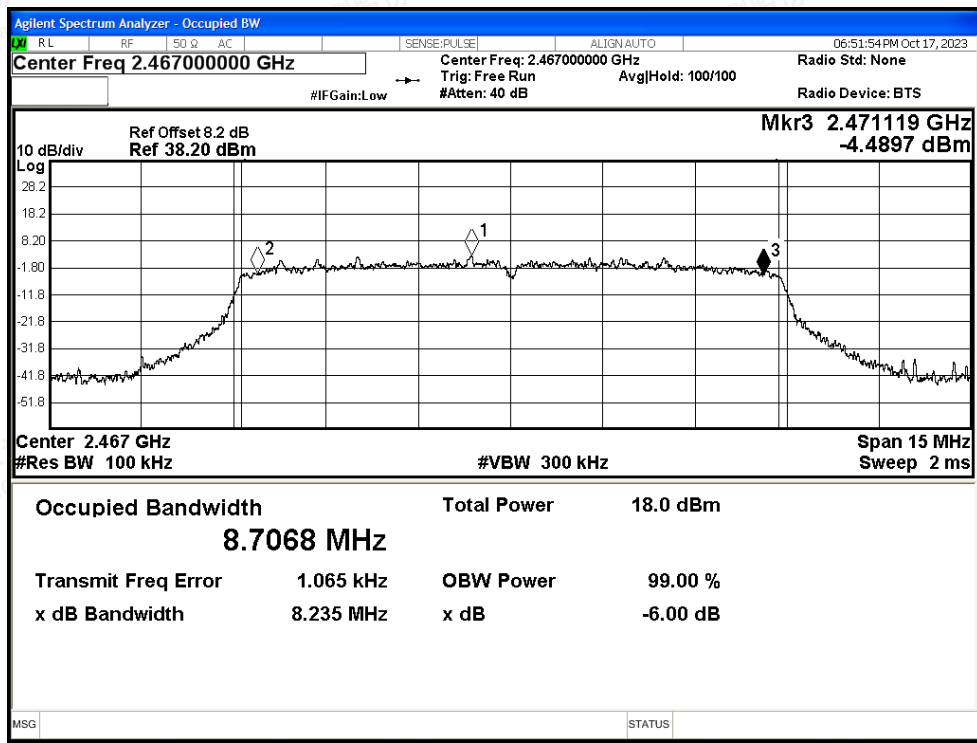




-6dB Bandwidth NVNT n-10M 2437MHz Ant0

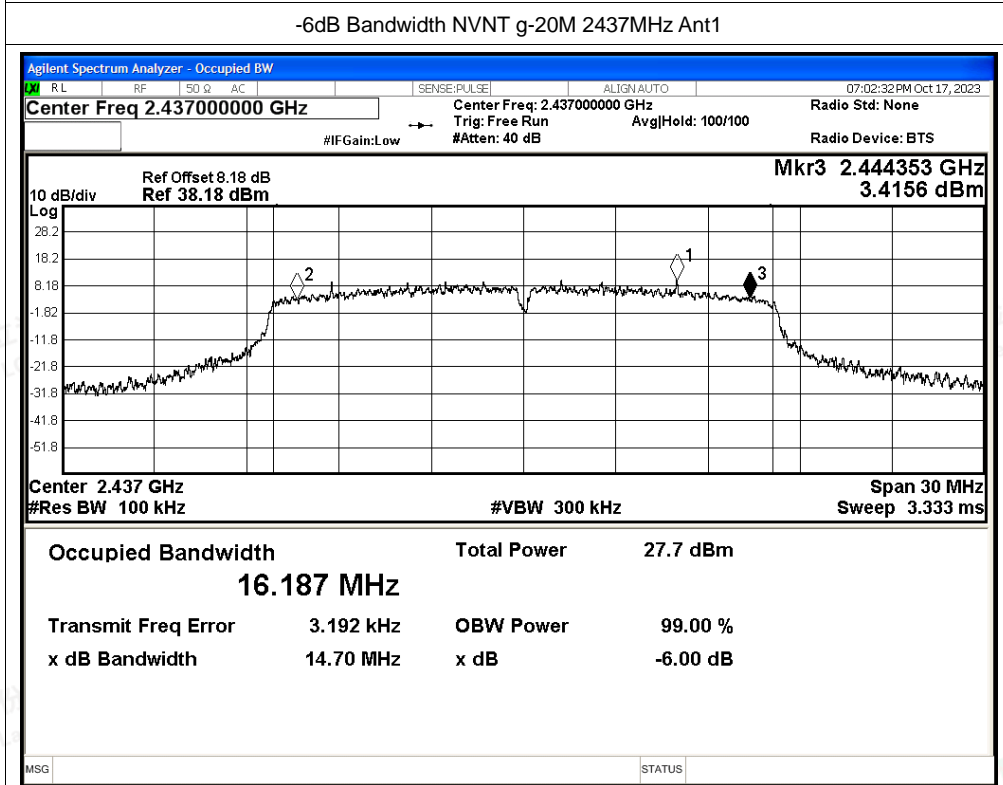
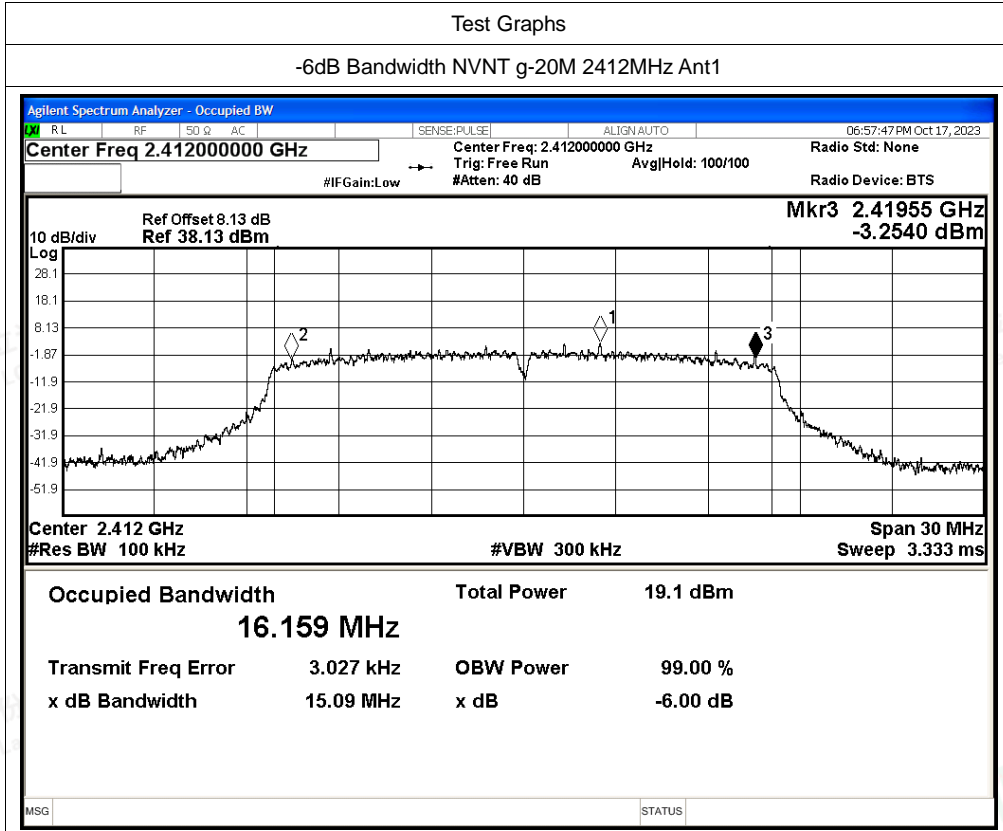


-6dB Bandwidth NVNT n-10M 2467MHz Ant0



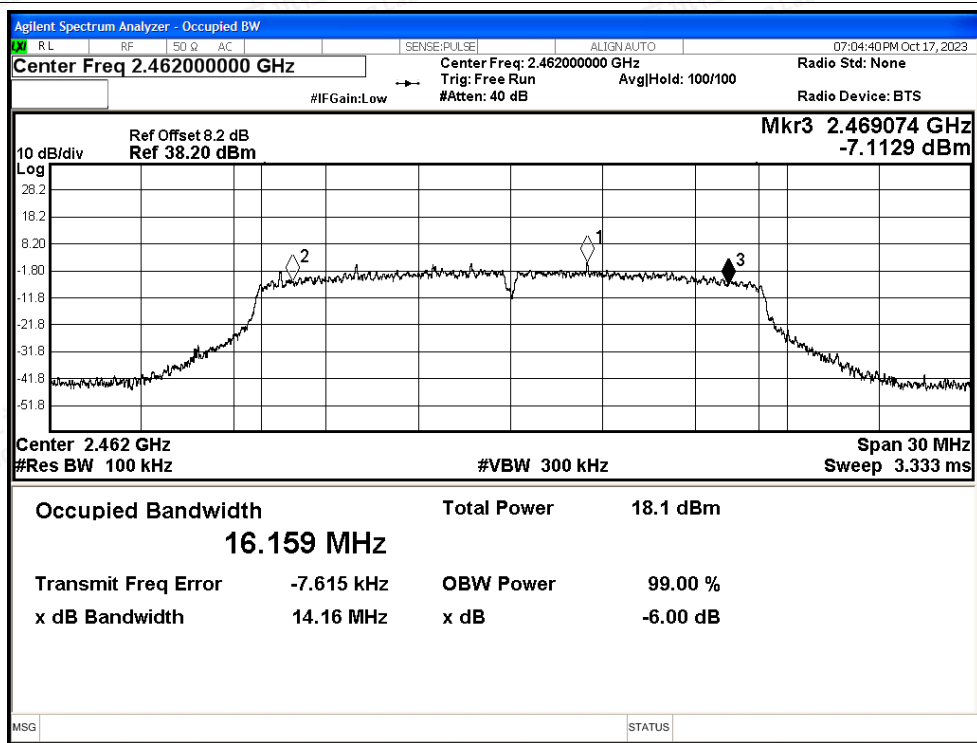


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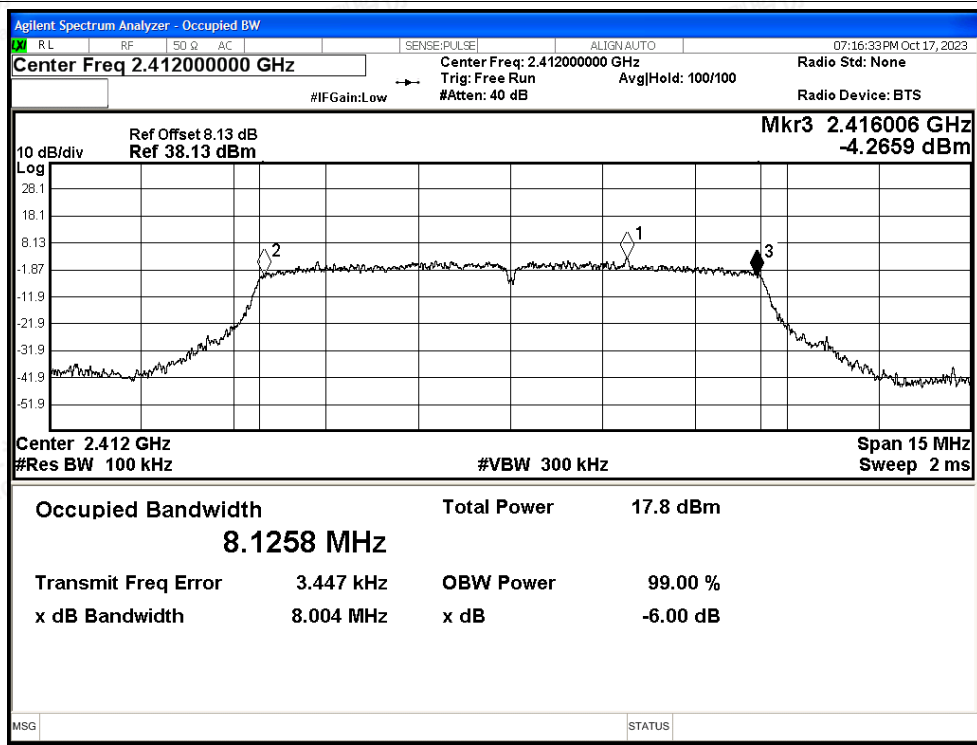




-6dB Bandwidth NVNT g-20M 2462MHz Ant1

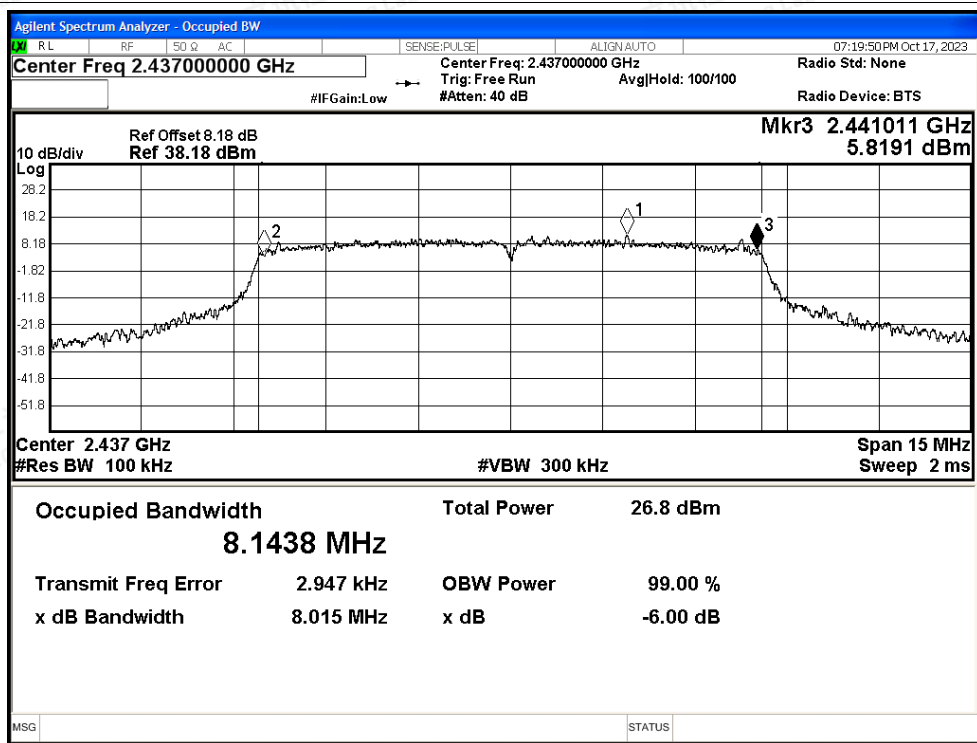


-6dB Bandwidth NVNT g-10M 2412MHz Ant1

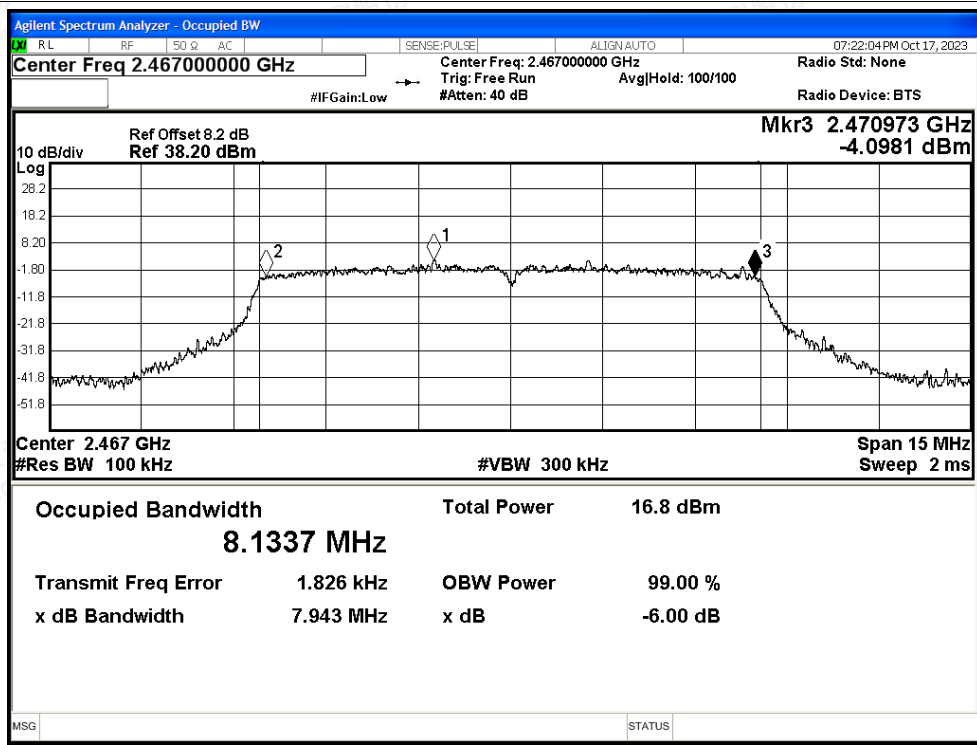




-6dB Bandwidth NVNT g-10M 2437MHz Ant1

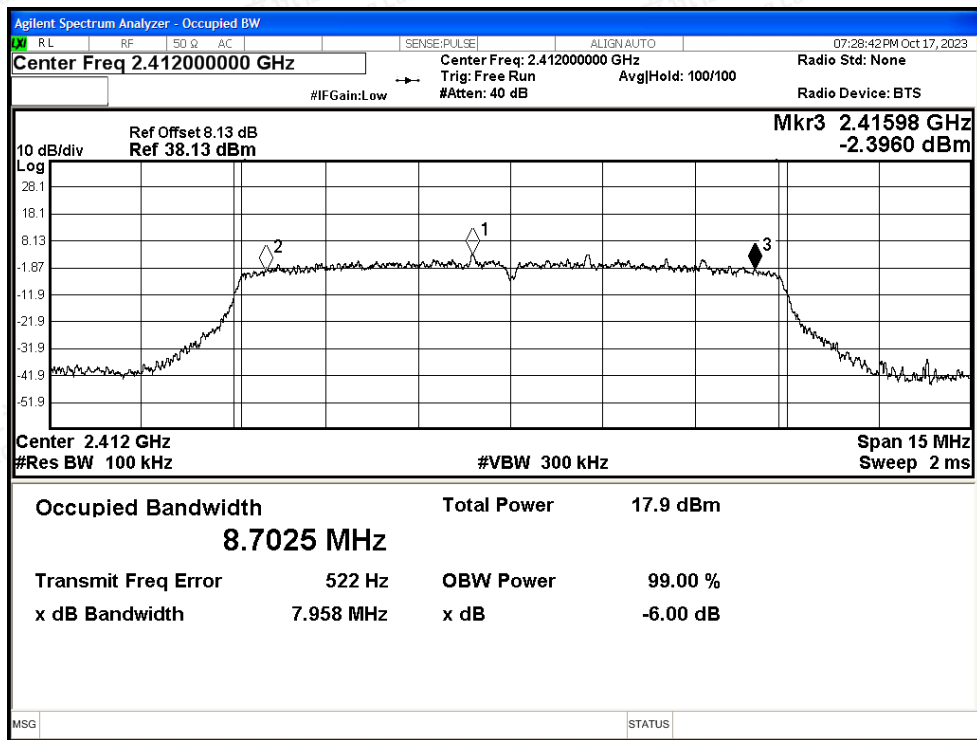


-6dB Bandwidth NVNT g-10M 2467MHz Ant1

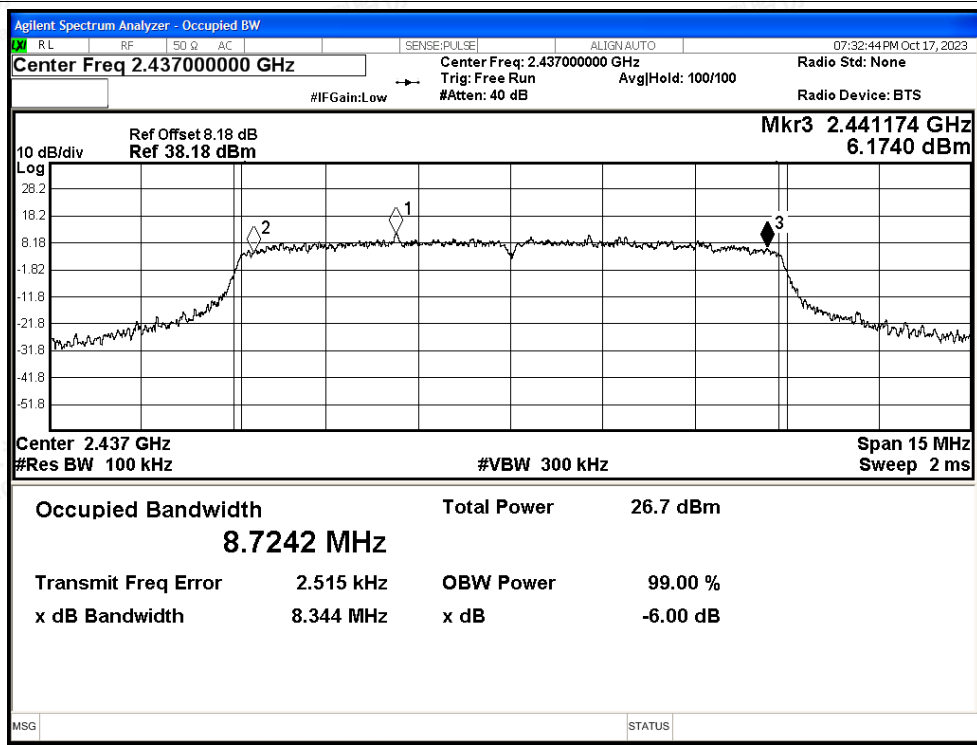




-6dB Bandwidth NVNT n-10M 2412MHz Ant1

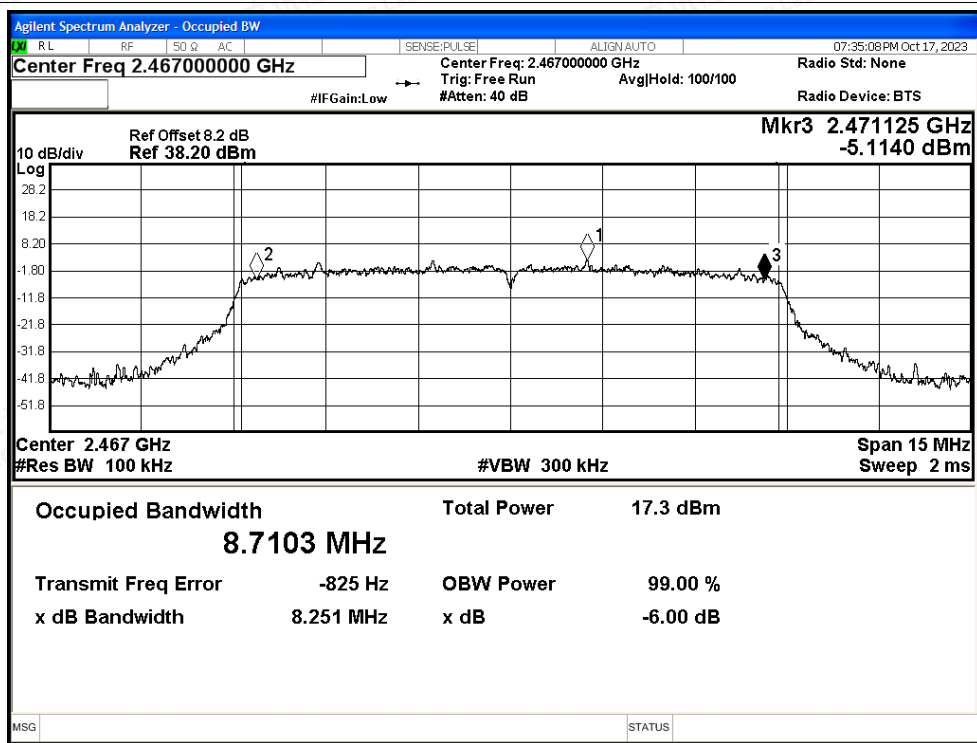


-6dB Bandwidth NVNT n-10M 2437MHz Ant1

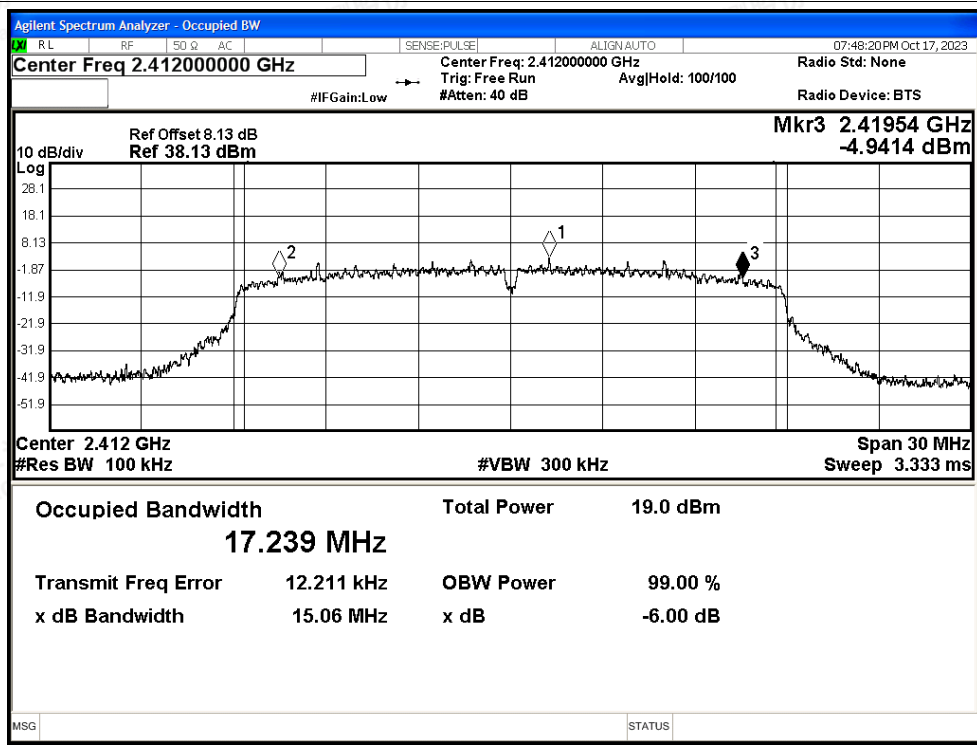




-6dB Bandwidth NVNT n-10M 2467MHz Ant1

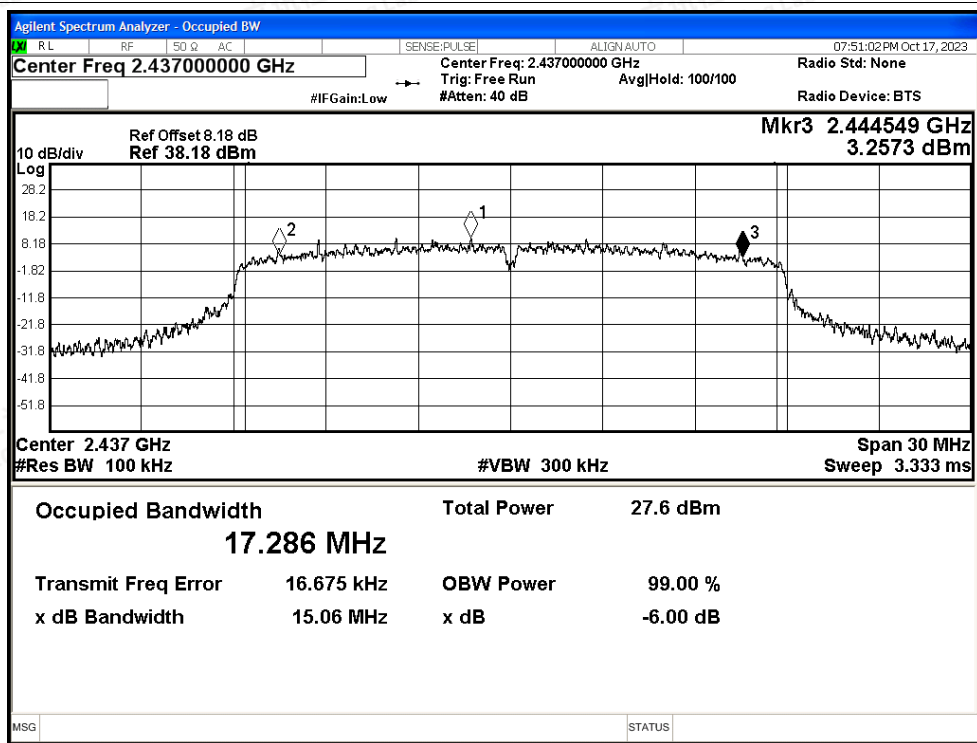


-6dB Bandwidth NVNT n-20M 2412MHz Ant1

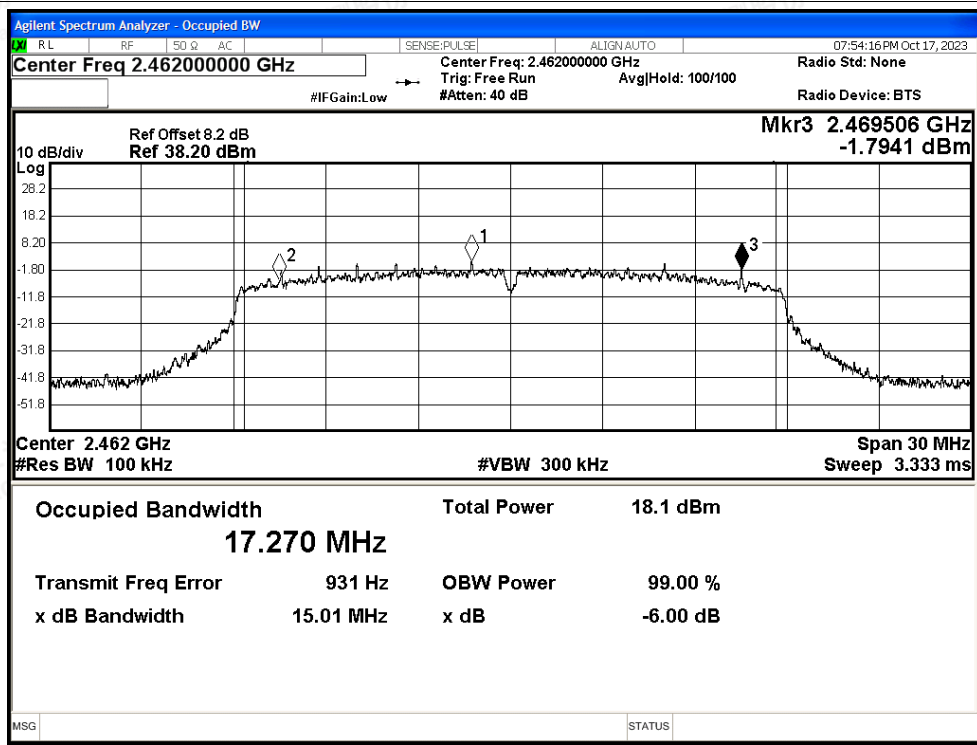




-6dB Bandwidth NVNT n-20M 2437MHz Ant1



-6dB Bandwidth NVNT n-20M 2462MHz Ant1





A.2 Occupied Channel Bandwidth

Ant0:

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	g-20M	2412	Ant0	16.119
NVNT	g-20M	2437	Ant0	16.13
NVNT	g-20M	2462	Ant0	16.132
NVNT	n-20M	2412	Ant0	17.222
NVNT	n-20M	2437	Ant0	17.241
NVNT	n-20M	2462	Ant0	17.224
NVNT	g-10M	2412	Ant0	8.13
NVNT	g-10M	2437	Ant0	8.147
NVNT	g-10M	2467	Ant0	8.124
NVNT	n-10M	2412	Ant0	8.705
NVNT	n-10M	2437	Ant0	8.727
NVNT	n-10M	2467	Ant0	8.713

Ant1:

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	g-20M	2412	Ant1	16.117
NVNT	g-20M	2437	Ant1	16.13
NVNT	g-20M	2462	Ant1	16.091
NVNT	g-10M	2412	Ant1	8.126
NVNT	g-10M	2437	Ant1	8.14
NVNT	g-10M	2467	Ant1	8.127
NVNT	n-10M	2412	Ant1	8.702
NVNT	n-10M	2437	Ant1	8.72
NVNT	n-10M	2467	Ant1	8.706
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NVNT	n-20M	2462	Ant1	17.203

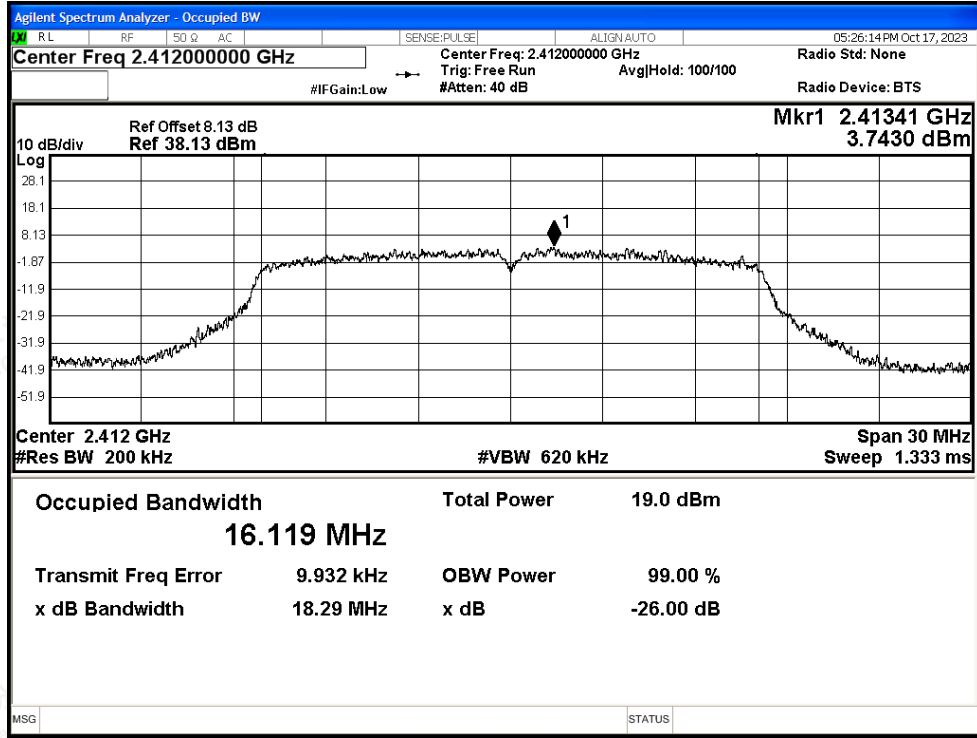




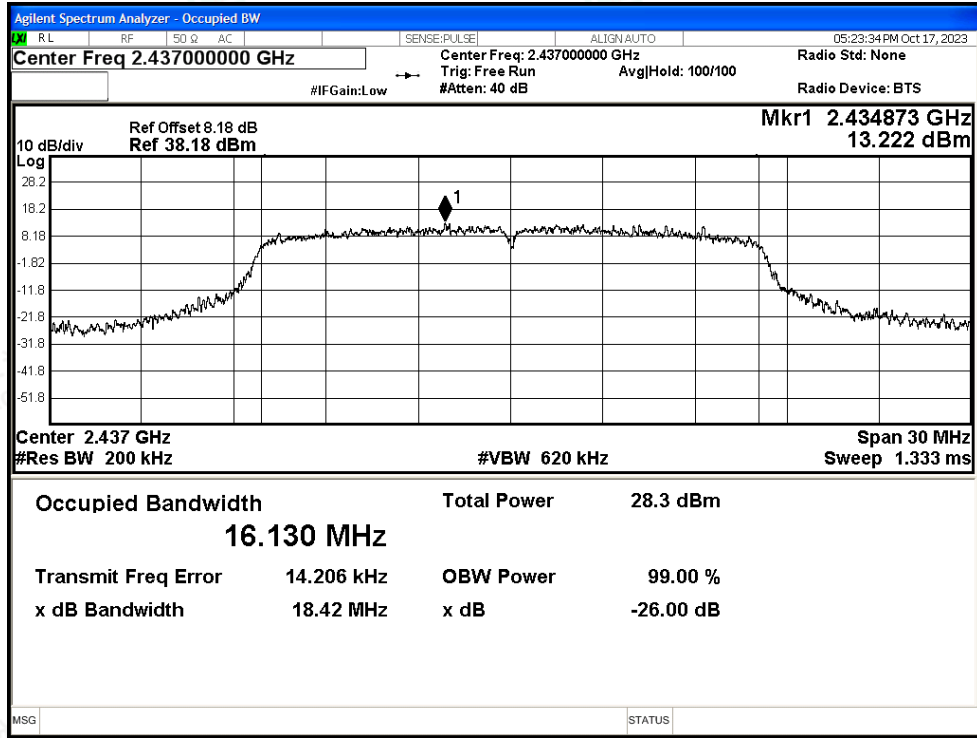
Ant0:

Test Graphs

OBW NVNT g-20M 2412MHz Ant0

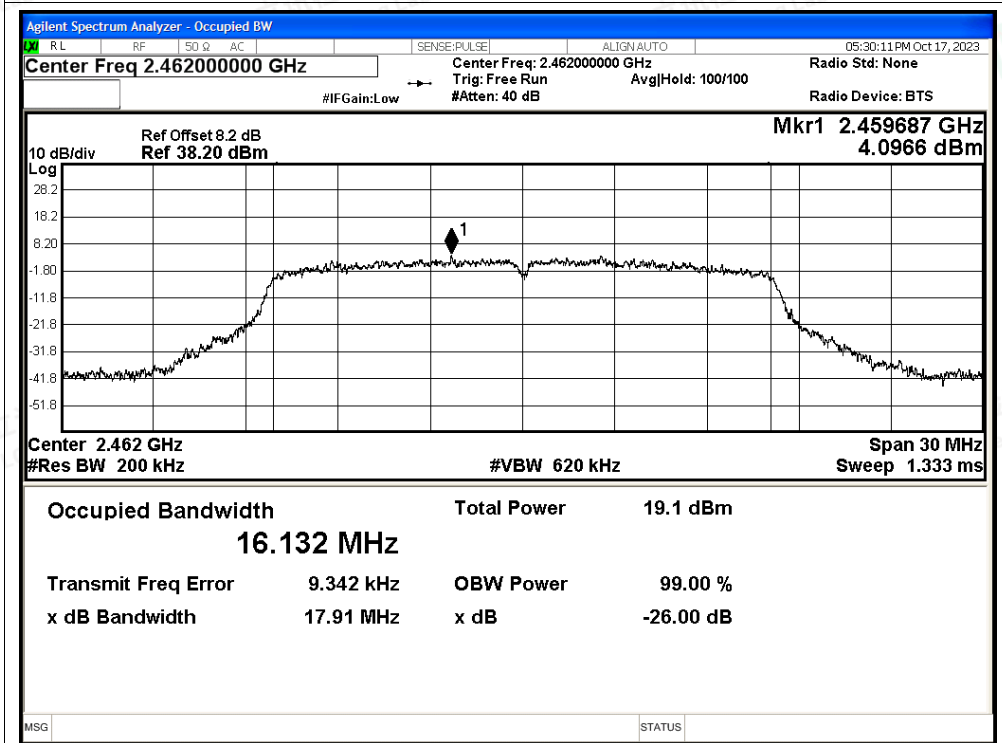


OBW NVNT g-20M 2437MHz Ant0

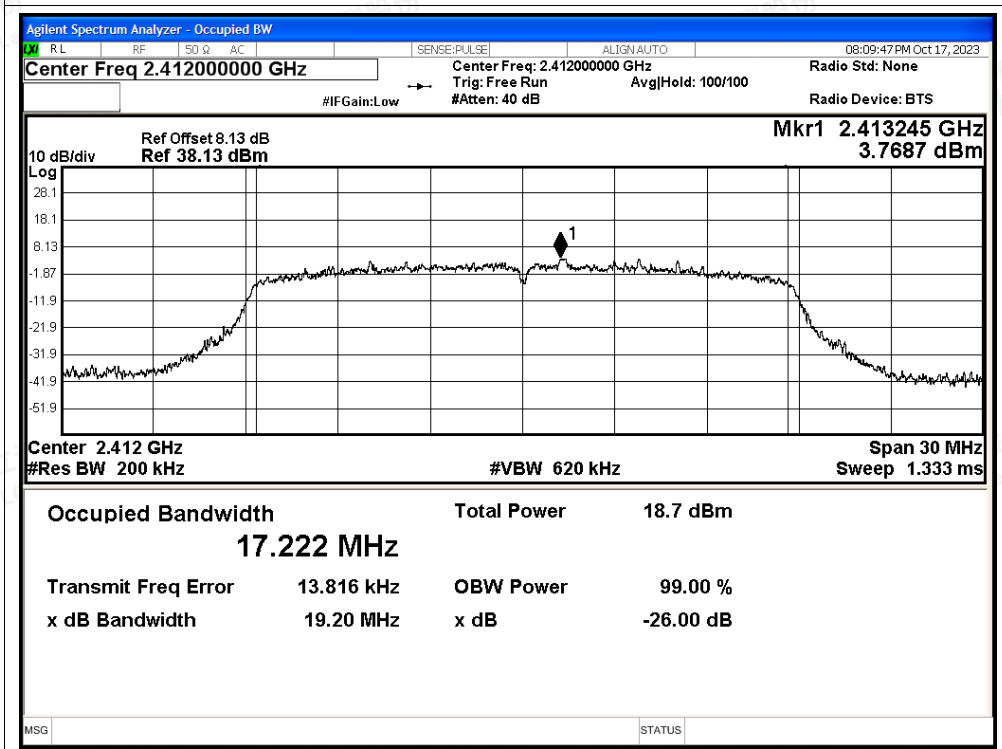




OBW NVNT g-20M 2462MHz Ant0

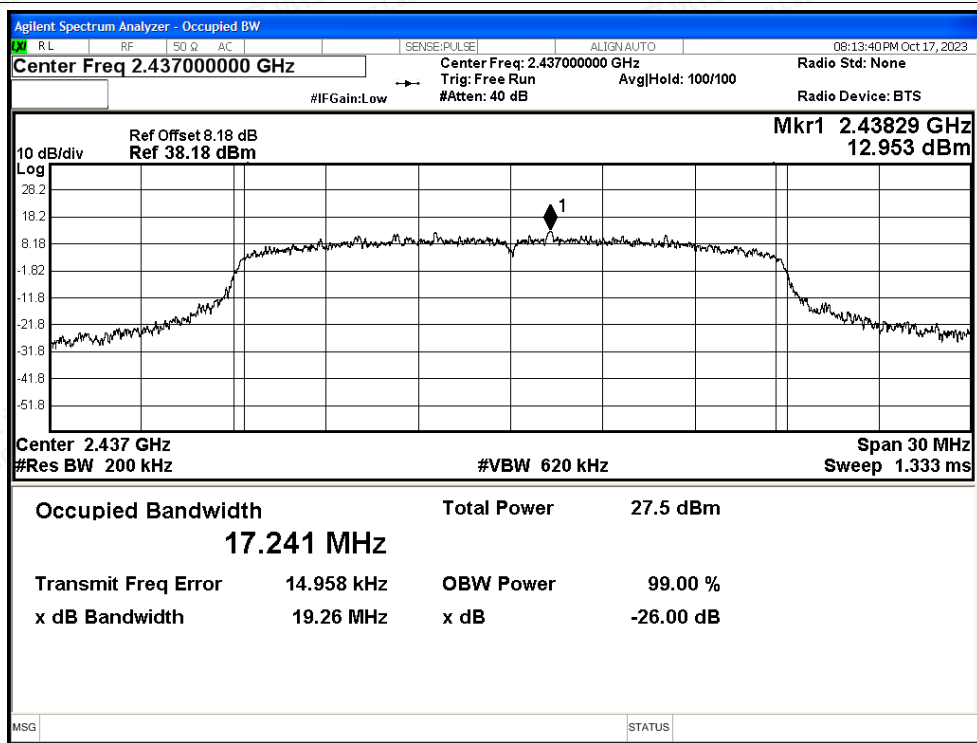


OBW NVNT n-20M 2412MHz Ant0

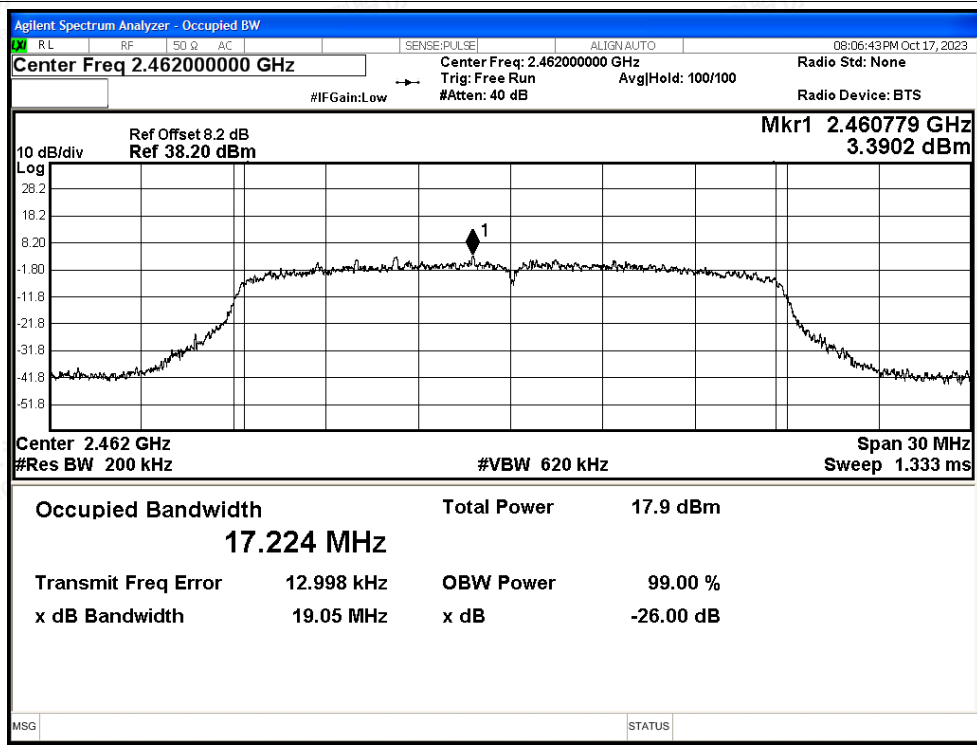




OBW NVNT n-20M 2437MHz Ant0

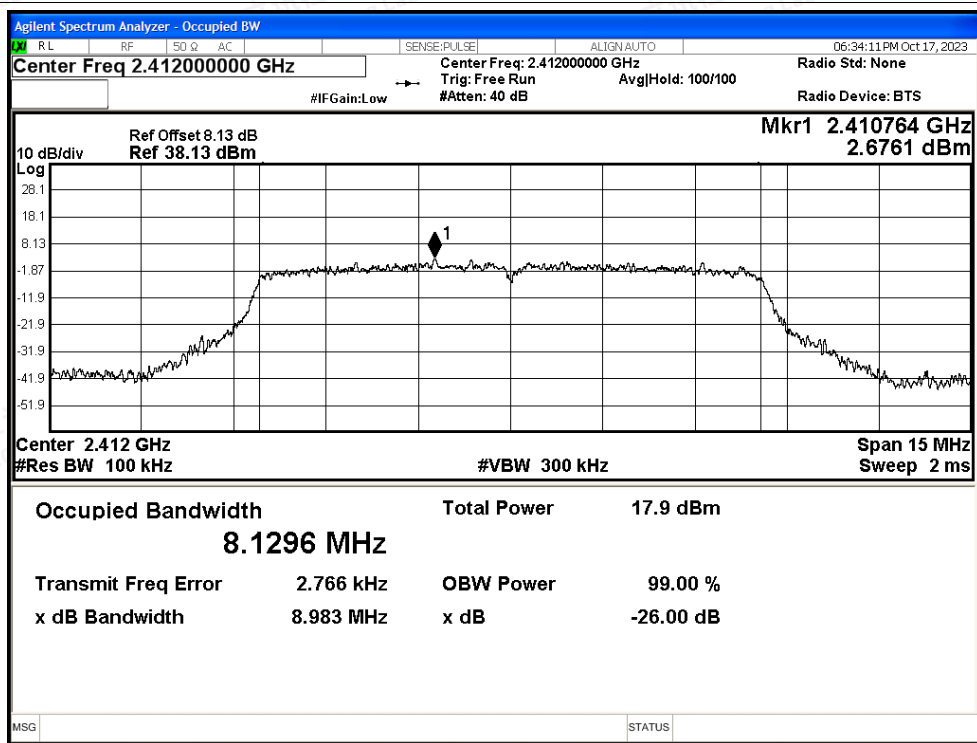


OBW NVNT n-20M 2462MHz Ant0

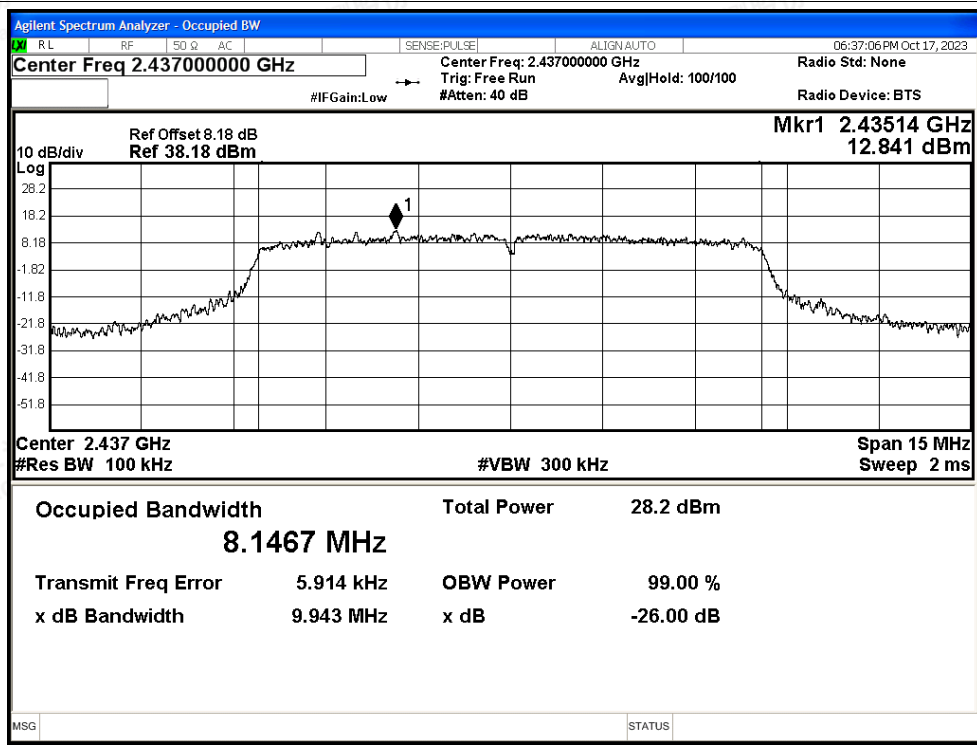




OBW NVNT g-10M 2412MHz Ant0

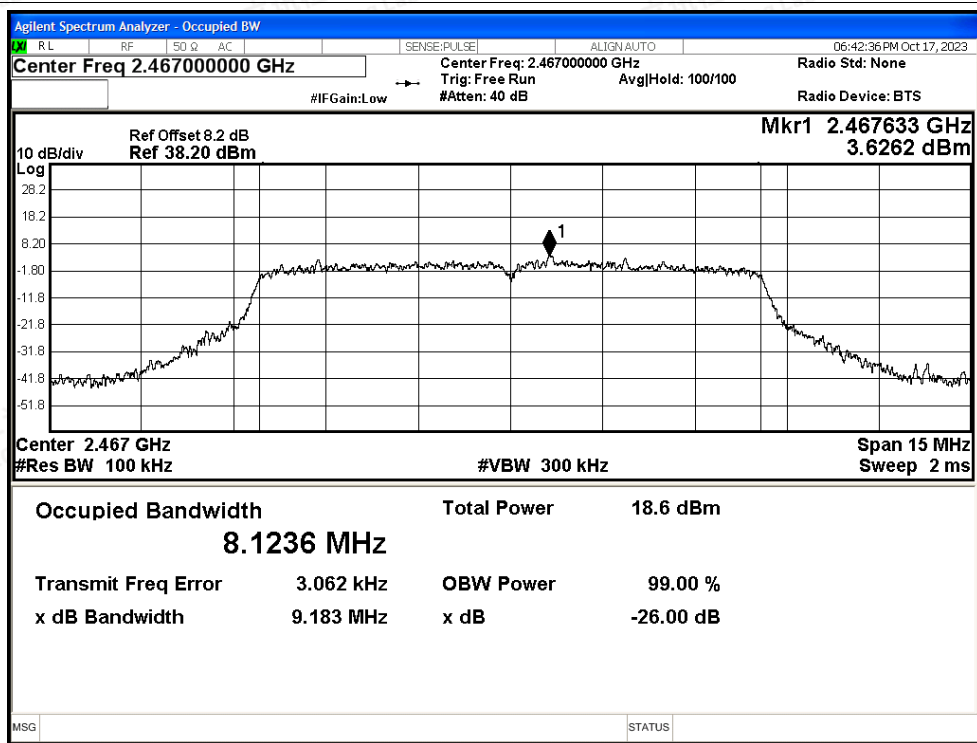


OBW NVNT g-10M 2437MHz Ant0

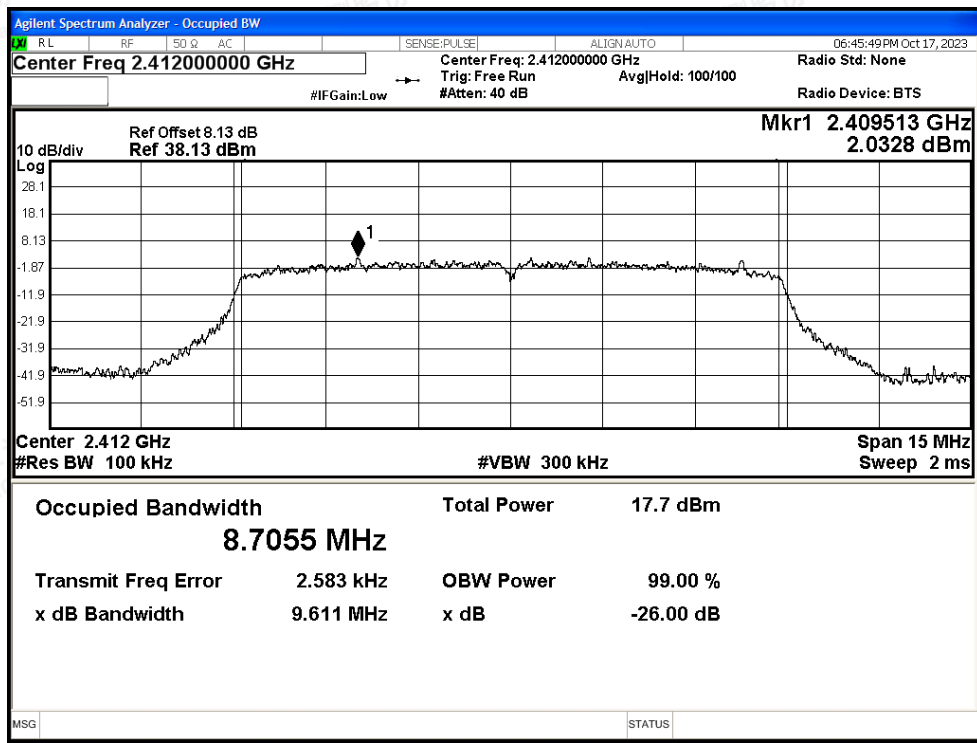




OBW NVNT g-10M 2467MHz Ant0

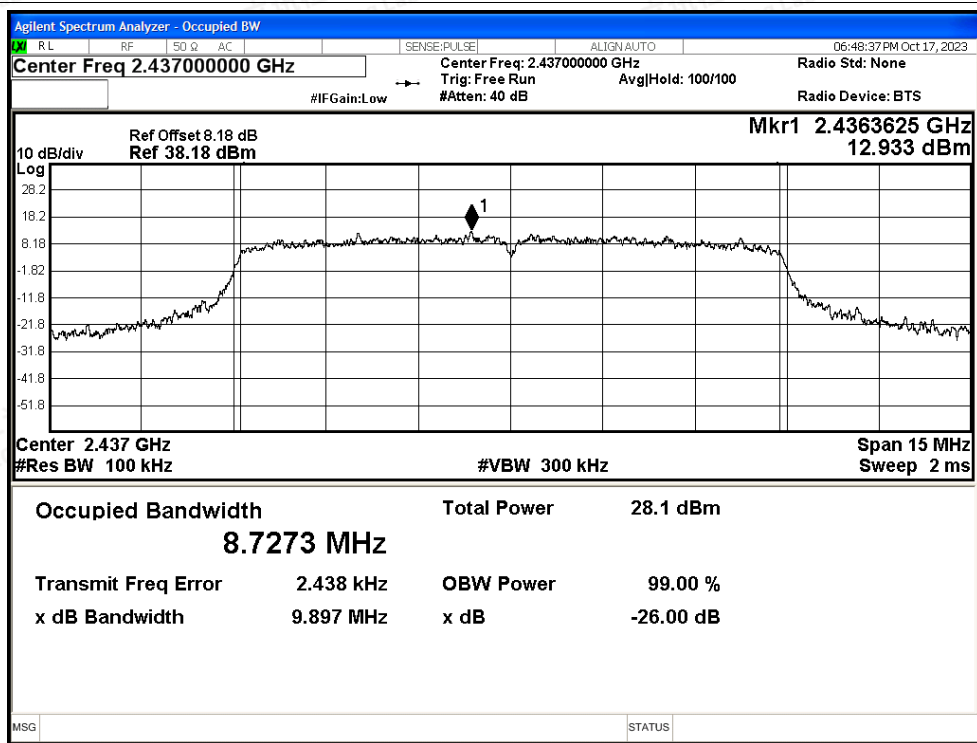


OBW NVNT n-10M 2412MHz Ant0

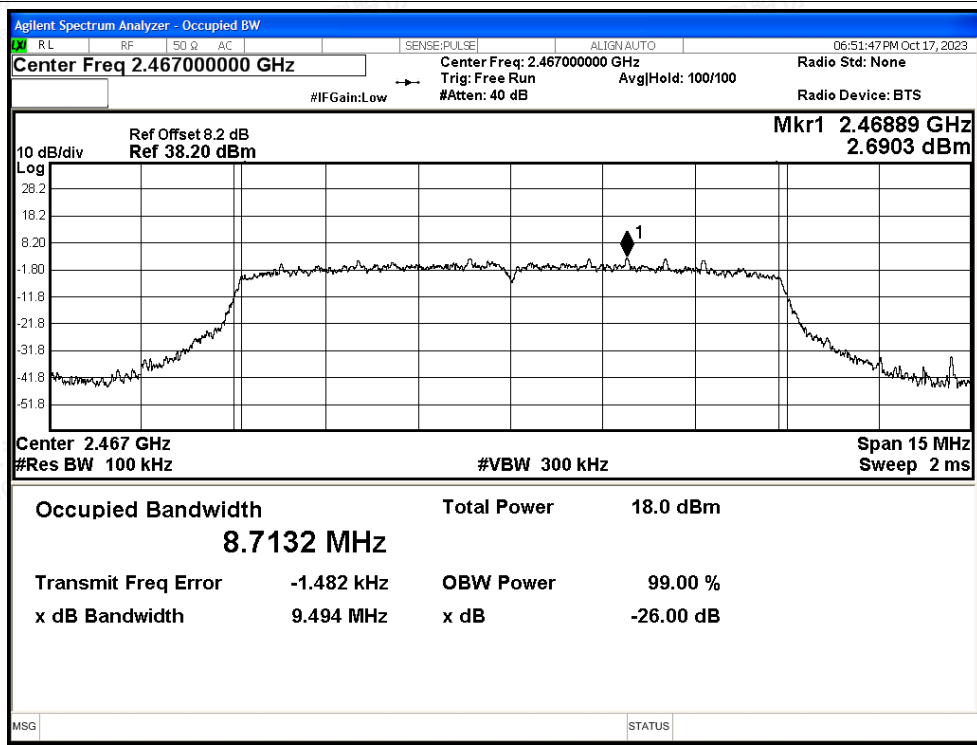




OBW NVNT n-10M 2437MHz Ant0



OBW NVNT n-10M 2467MHz Ant0

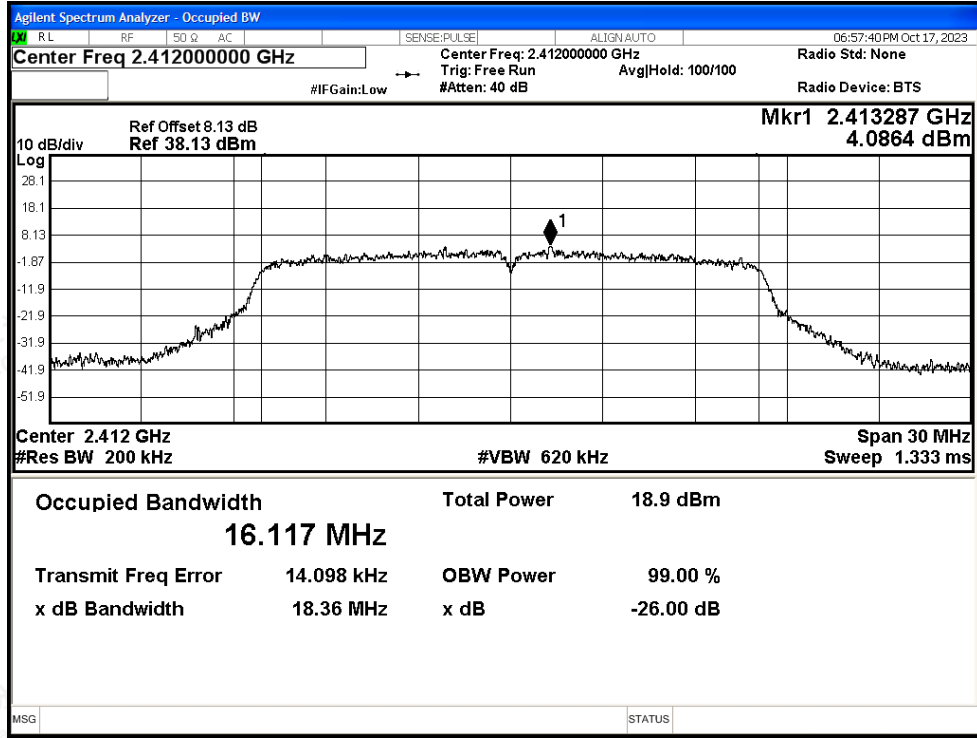




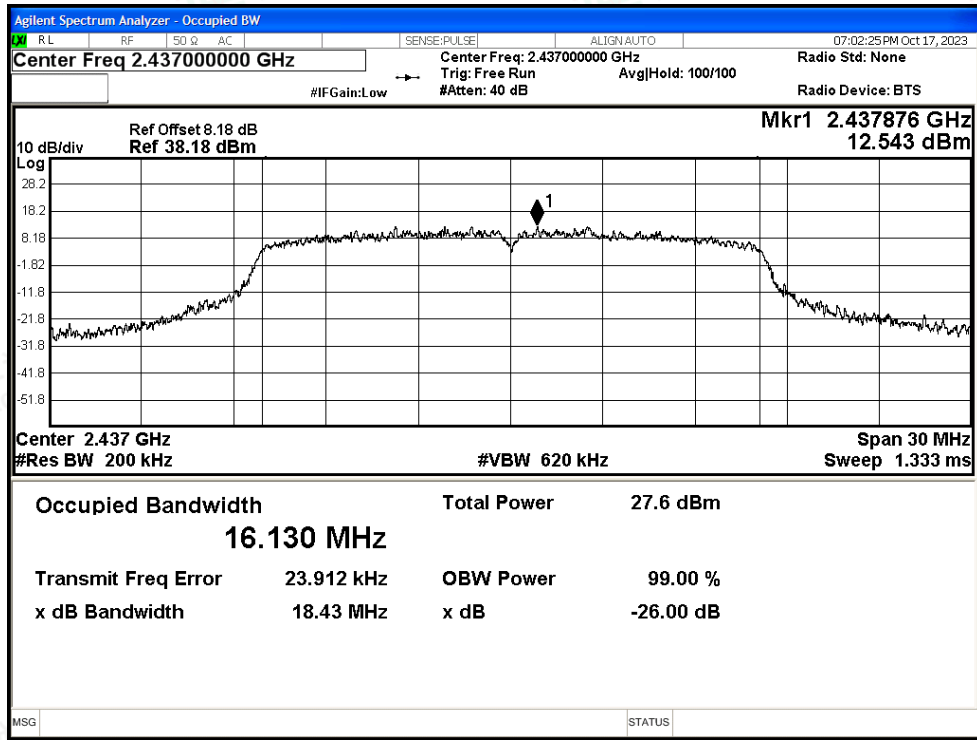
Ant1:

Test Graphs

OBW NVNT g-20M 2412MHz Ant1

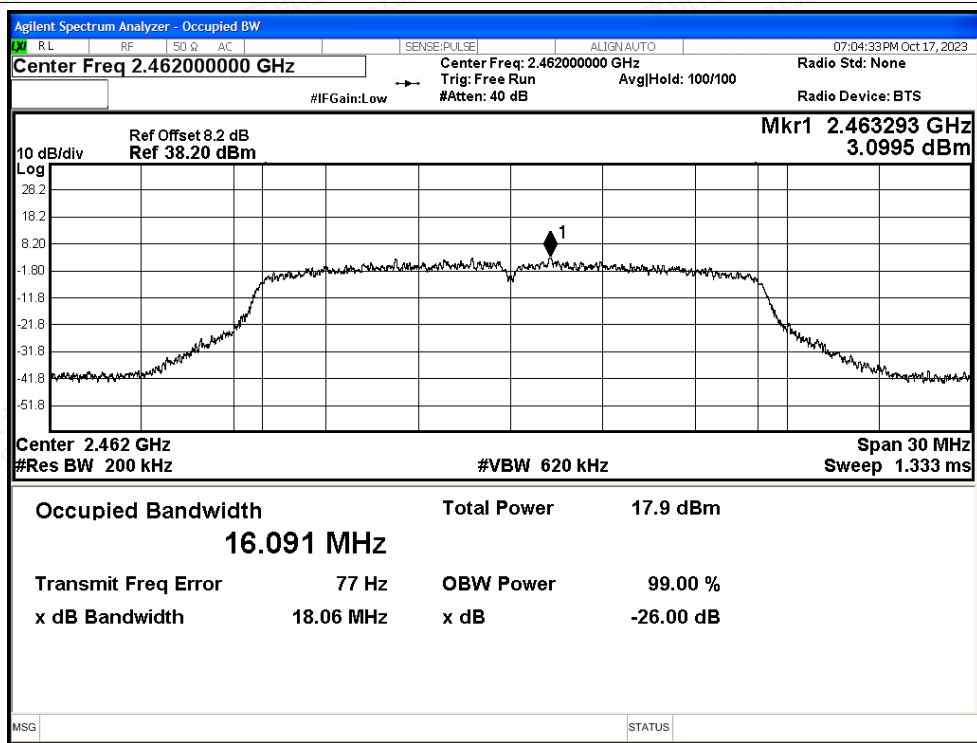


OBW NVNT g-20M 2437MHz Ant1

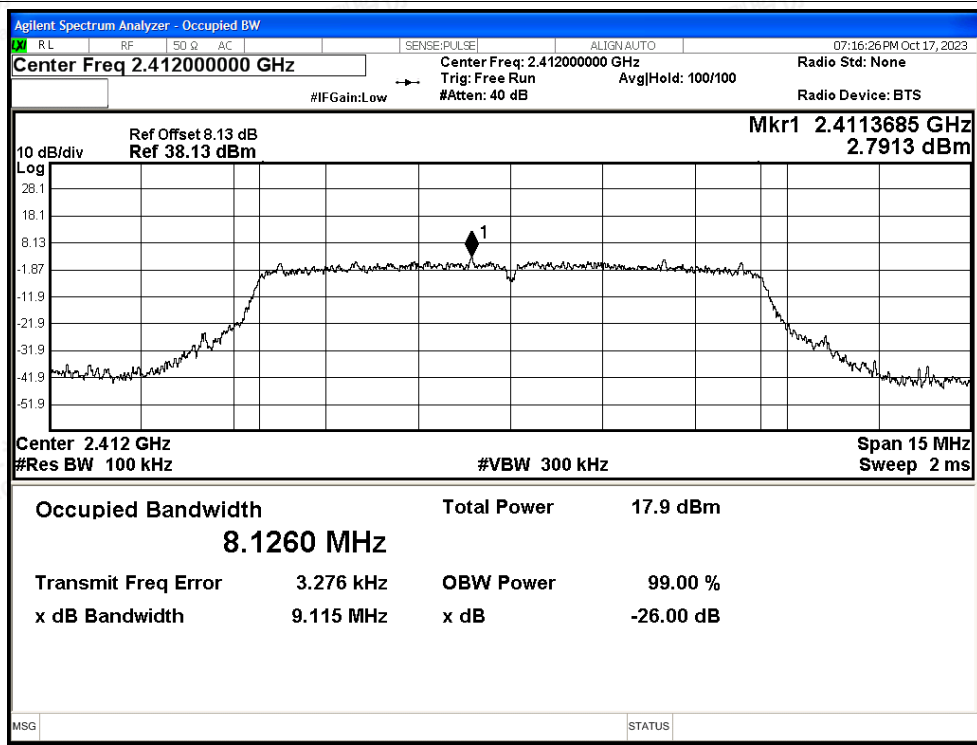




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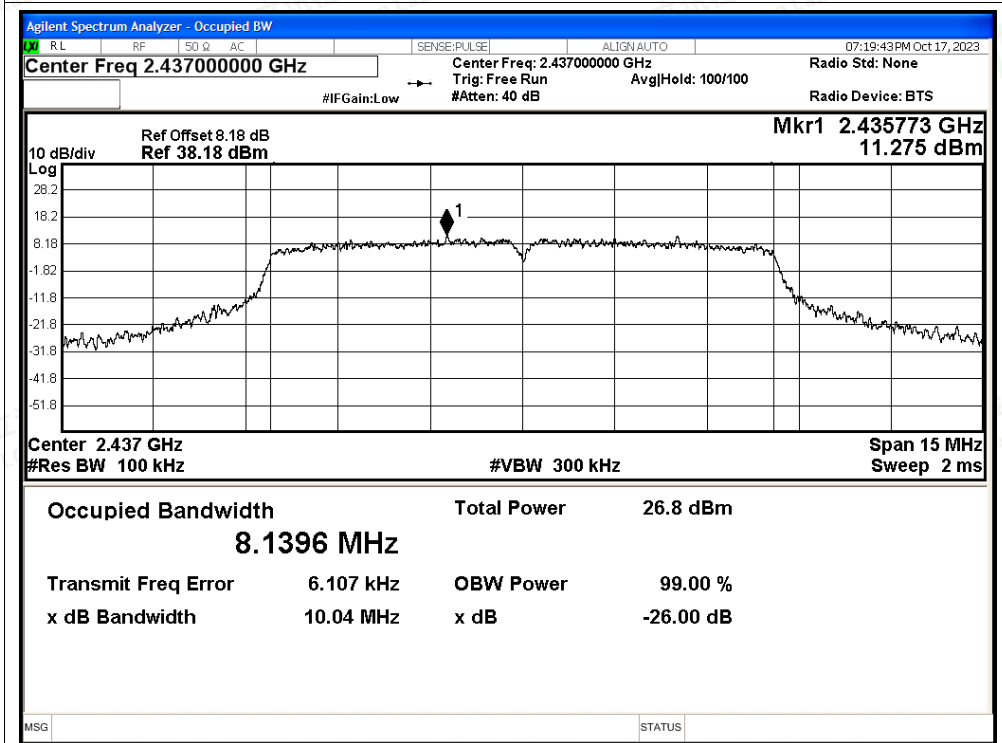


OBW NVNT g-10M 2412MHz Ant1

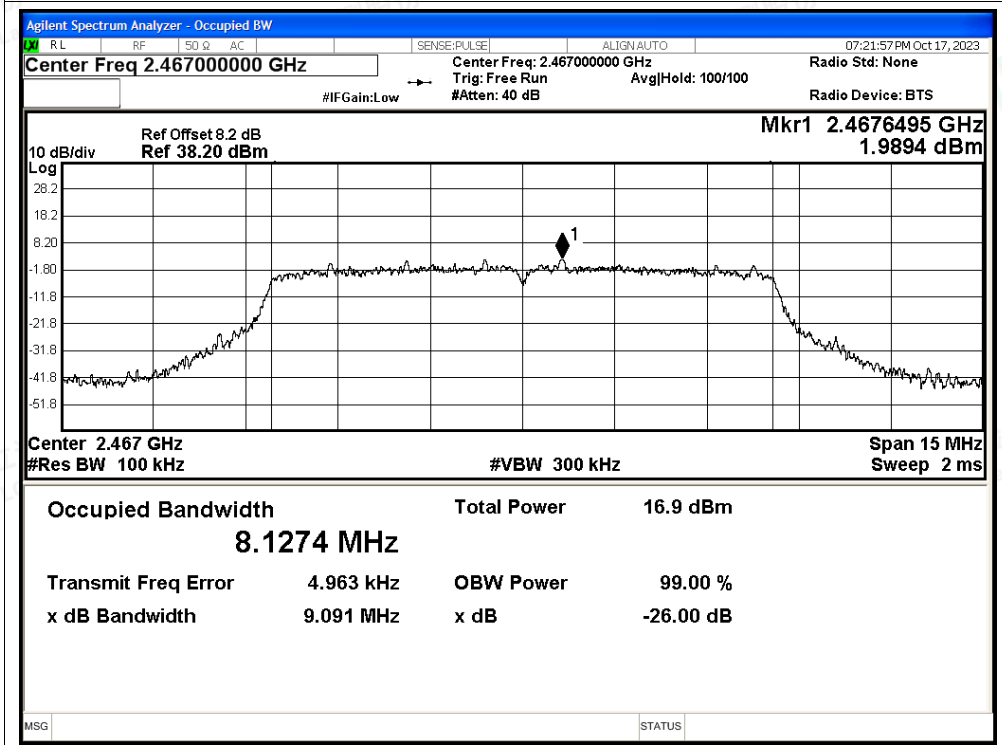




OBW NVNT g-10M 2437MHz Ant1

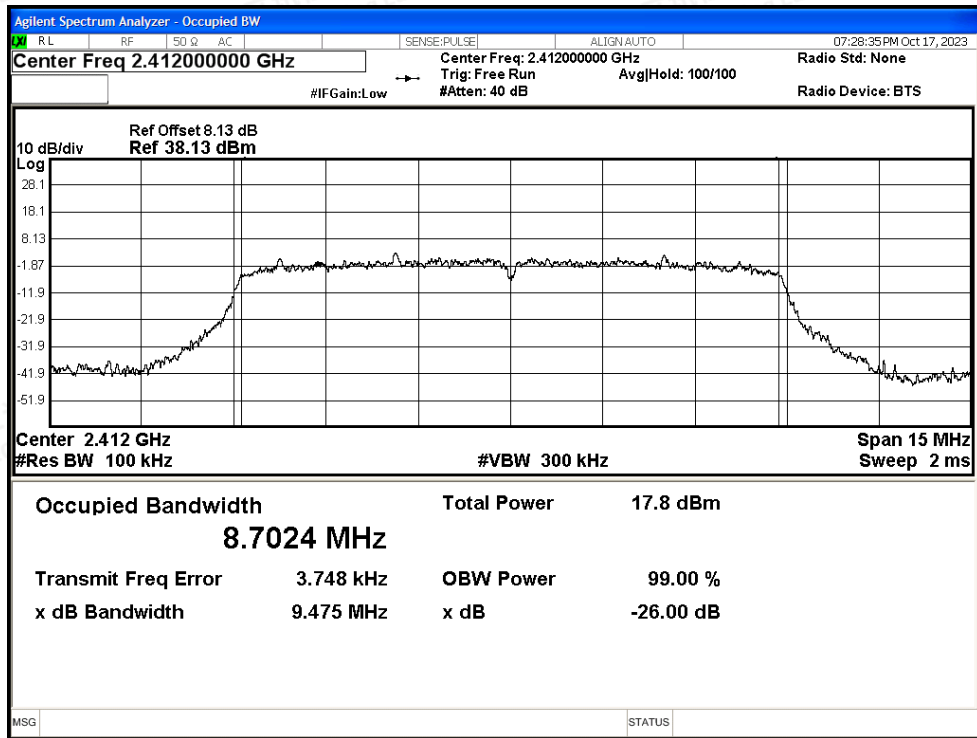


OBW NVNT g-10M 2467MHz Ant1

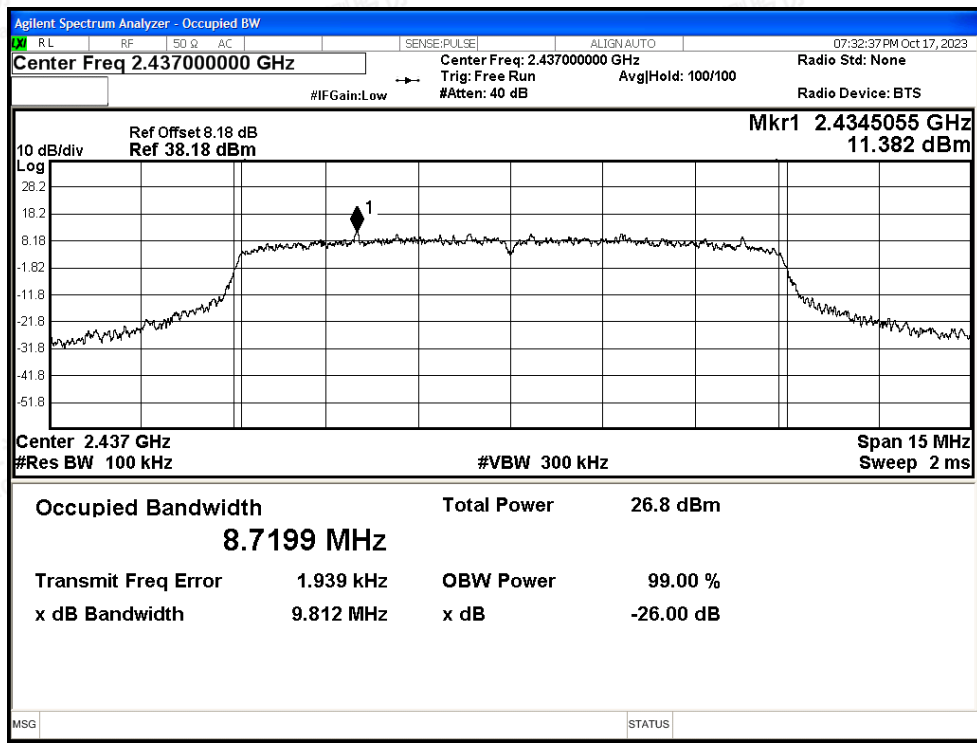




OBW NVNT n-10M 2412MHz Ant1

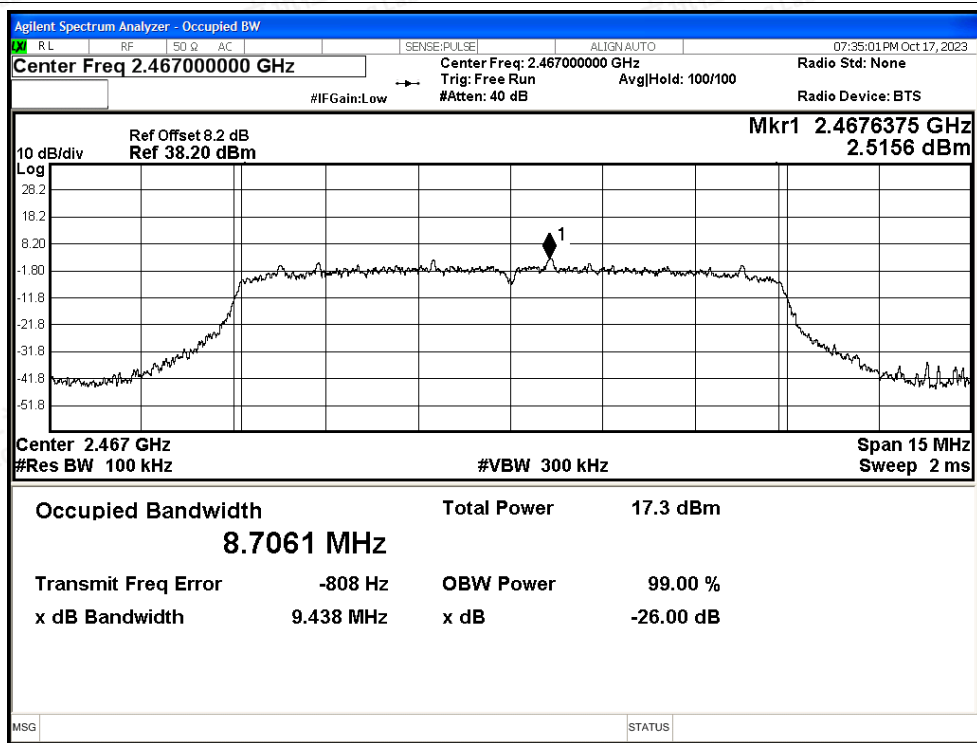


OBW NVNT n-10M 2437MHz Ant1

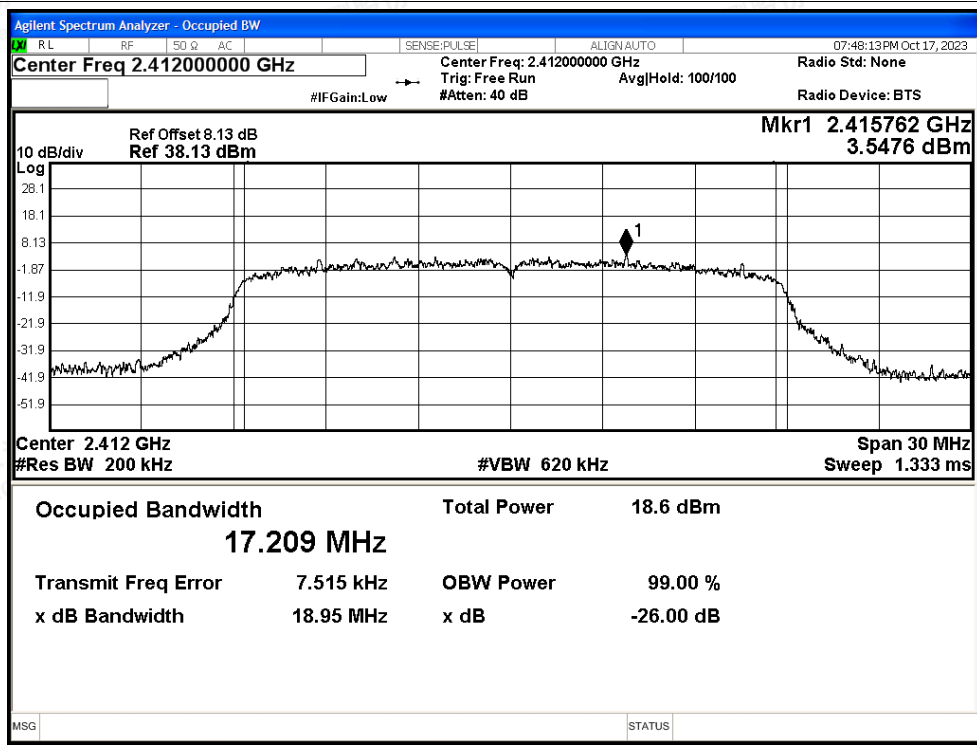




OBW NVNT n-10M 2467MHz Ant1

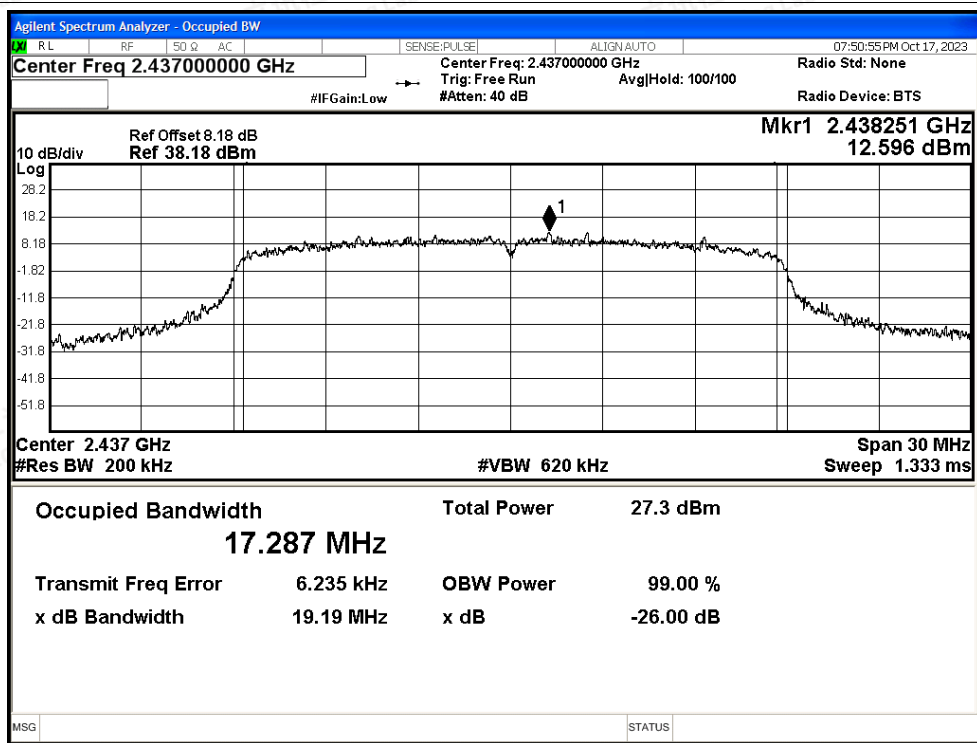


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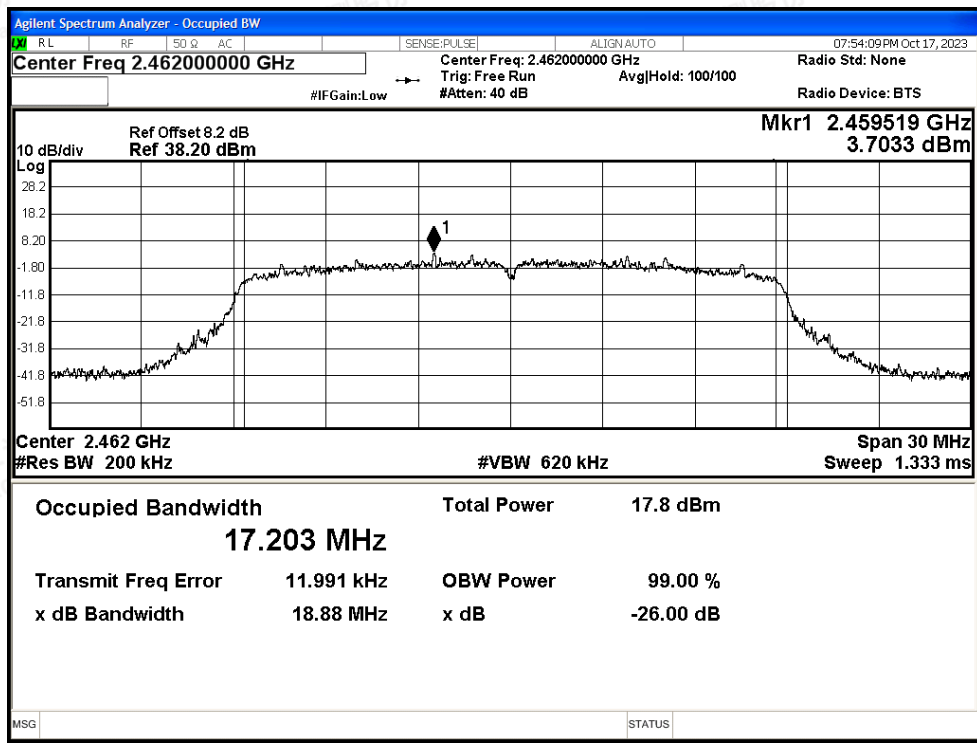




OBW NVNT n-20M 2437MHz Ant1



OBW NVNT n-20M 2462MHz Ant1





A.3 Maximum Conducted Output Power

Ant0:

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	g-20M	2412	Ant0	17.85	0	17.85	30	Pass
NVNT	g-20M	2437	Ant0	26.46	0	26.46	30	Pass
NVNT	g-20M	2462	Ant0	18.02	0	18.02	30	Pass
NVNT	n-20M	2412	Ant0	17.77	0	17.77	30	Pass
NVNT	n-20M	2437	Ant0	26.36	0	26.36	30	Pass
NVNT	n-20M	2462	Ant0	16.94	0	16.94	30	Pass
NVNT	g-10M	2412	Ant0	17.3	0	17.3	30	Pass
NVNT	g-10M	2437	Ant0	26.23	0	26.23	30	Pass
NVNT	g-10M	2467	Ant0	17.94	0	17.94	30	Pass
NVNT	n-10M	2412	Ant0	17.45	0	17.45	30	Pass
NVNT	n-10M	2437	Ant0	26.32	0	26.32	30	Pass
NVNT	n-10M	2467	Ant0	17.61	0	17.61	30	Pass

Ant1:

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	g-20M	2412	Ant1	17.85	0	17.85	30	Pass
NVNT	g-20M	2437	Ant1	26.38	0	26.38	30	Pass
NVNT	g-20M	2462	Ant1	16.77	0	16.77	30	Pass
NVNT	n-20M	2412	Ant1	17.26	0	17.26	30	Pass
NVNT	n-20M	2437	Ant1	26.32	0	26.32	30	Pass
NVNT	n-20M	2462	Ant1	17.64	0	17.64	30	Pass
NVNT	g-10M	2412	Ant1	17.53	0	17.53	30	Pass
NVNT	g-10M	2437	Ant1	26.43	0	26.43	30	Pass
NVNT	g-10M	2467	Ant1	16.9	0	16.9	30	Pass
NVNT	n-10M	2412	Ant1	17.65	0	17.65	30	Pass
NVNT	n-10M	2437	Ant1	26.34	0	26.34	30	Pass
NVNT	n-10M	2467	Ant1	16.75	0	16.75	30	Pass



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MIMO:

Condition	Mode	Frequency	Antenna0	Conducted Power	Antenna1	Conducted Power	MIMO	Limit (dBm)	Verdict
NVNT	g-20M	2412	Ant0	17.85	Ant1	17.85	20.86	30	Pass
NVNT	g-20M	2437	Ant0	26.46	Ant1	26.38	29.43	30	Pass
NVNT	g-20M	2462	Ant0	18.02	Ant1	16.77	20.45	30	Pass
NVNT	n-20M	2412	Ant0	17.77	Ant1	17.26	20.53	30	Pass
NVNT	n-20M	2437	Ant0	26.36	Ant1	26.32	29.35	30	Pass
NVNT	n-20M	2462	Ant0	16.94	Ant1	17.64	20.31	30	Pass
NVNT	g-10M	2412	Ant0	17.3	Ant1	17.53	20.43	30	Pass
NVNT	g-10M	2437	Ant0	26.23	Ant1	26.43	29.34	30	Pass
NVNT	g-10M	2467	Ant0	17.94	Ant1	16.9	20.46	30	Pass
NVNT	n-10M	2412	Ant0	17.45	Ant1	17.65	20.56	30	Pass
NVNT	n-10M	2437	Ant0	26.32	Ant1	26.34	29.34	30	Pass
NVNT	n-10M	2467	Ant0	17.61	Ant1	16.75	20.21	30	Pass



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 Scan code to check authenticity



A.4 Maximum Power Spectral Density Level

Ant0:

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	g-20M	2412	Ant0	-11.26	0	-11.26	8	Pass
NVNT	g-20M	2437	Ant0	-2.52	0	-2.52	8	Pass
NVNT	g-20M	2462	Ant0	-11.41	0	-11.41	8	Pass
NVNT	n-20M	2412	Ant0	-12.24	0	-12.24	8	Pass
NVNT	n-20M	2437	Ant0	-4.51	0	-4.51	8	Pass
NVNT	n-20M	2462	Ant0	-13.41	0	-13.41	8	Pass
NVNT	g-10M	2412	Ant0	-10.09	0	-10.09	8	Pass
NVNT	g-10M	2437	Ant0	0.29	0	0.29	8	Pass
NVNT	g-10M	2467	Ant0	-10.18	0	-10.18	8	Pass
NVNT	n-10M	2412	Ant0	-10.26	0	-10.26	8	Pass
NVNT	n-10M	2437	Ant0	0.04	0	0.04	8	Pass
NVNT	n-10M	2467	Ant0	-10.21	0	-10.21	8	Pass

Ant1:

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	g-20M	2412	Ant1	-12.68	0	-12.68	8	Pass
NVNT	g-20M	2437	Ant1	-3.43	0	-3.43	8	Pass
NVNT	g-20M	2462	Ant1	-12.7	0	-12.7	8	Pass
NVNT	g-10M	2412	Ant1	-10.55	0	-10.55	8	Pass
NVNT	g-10M	2437	Ant1	-0.79	0	-0.79	8	Pass
NVNT	g-10M	2467	Ant1	-11.84	0	-11.84	8	Pass
NVNT	n-10M	2412	Ant1	-10.17	0	-10.17	8	Pass
NVNT	n-10M	2437	Ant1	-1.67	0	-1.67	8	Pass
NVNT	n-10M	2467	Ant1	-11	0	-11	8	Pass
NVNT	n-20M	2412	Ant1	-12.54	0	-12.54	8	Pass
NVNT	n-20M	2437	Ant1	-3.8	0	-3.8	8	Pass
NVNT	n-20M	2462	Ant1	-13.36	0	-13.36	8	Pass





MIMO:

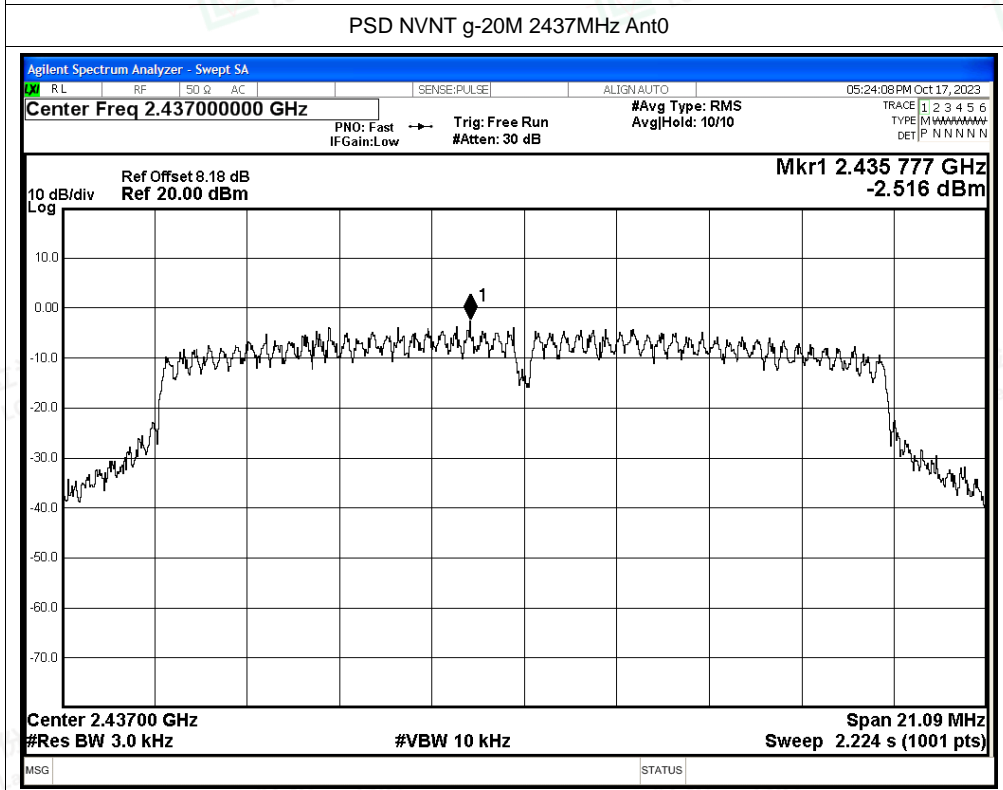
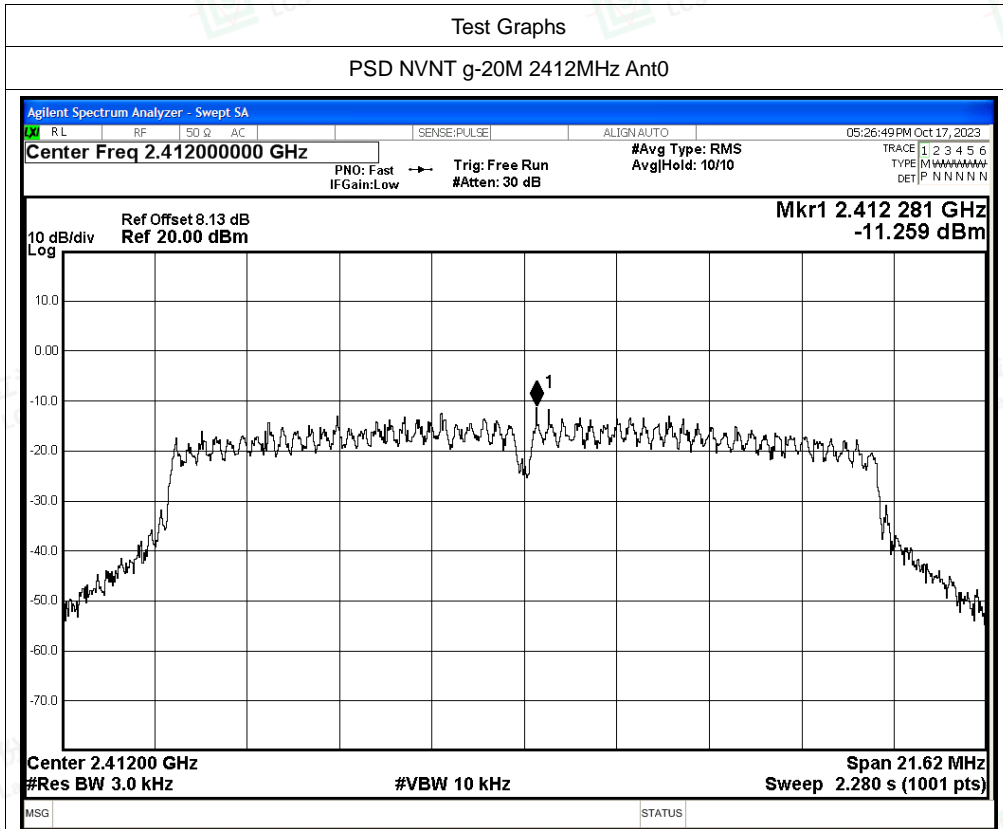
Condition	Mode	Frequency	Antenna0	Conducted PSD (dBm/3kHz)	Antenna1	Conducted PSD (dBm/3kHz)	MIMO PSD (dBm/3kHz)	Limit (dBm)	Verdict
NVNT	g-20M	2412	Ant0	-11.26	Ant1	-12.68	-8.90	8	Pass
NVNT	g-20M	2437	Ant0	-2.52	Ant1	-3.43	0.06	8	Pass
NVNT	g-20M	2462	Ant0	-11.41	Ant1	-12.7	-9.00	8	Pass
NVNT	n-20M	2412	Ant0	-12.24	Ant1	-12.54	-9.38	8	Pass
NVNT	n-20M	2437	Ant0	-4.51	Ant1	-3.8	-1.13	8	Pass
NVNT	n-20M	2462	Ant0	-13.41	Ant1	-13.36	-10.37	8	Pass
NVNT	g-10M	2412	Ant0	-10.09	Ant1	-10.55	-7.30	8	Pass
NVNT	g-10M	2437	Ant0	0.29	Ant1	-0.79	2.79	8	Pass
NVNT	g-10M	2467	Ant0	-10.18	Ant1	-11.84	-7.92	8	Pass
NVNT	n-10M	2412	Ant0	-10.26	Ant1	-10.17	-7.20	8	Pass
NVNT	n-10M	2437	Ant0	0.04	Ant1	-1.67	2.28	8	Pass
NVNT	n-10M	2467	Ant0	-10.21	Ant1	-11	-7.58	8	Pass



Shenzhen LCS Compliance Testing Laboratory Ltd.
 Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China
 Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
 Scan code to check authenticity

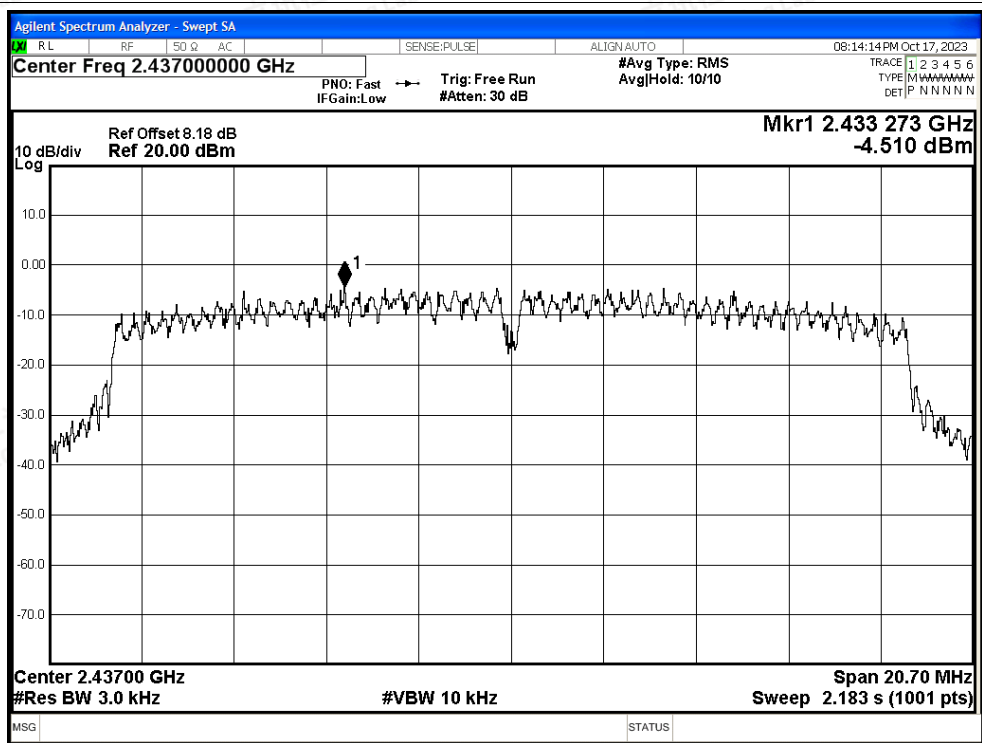


Ant0:

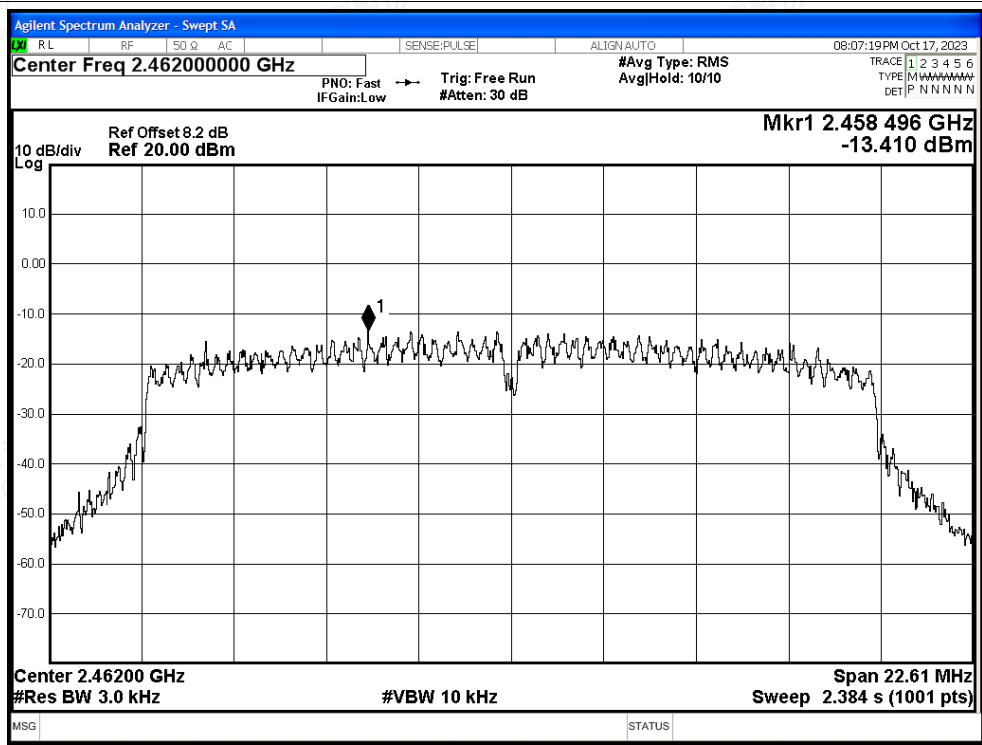




PSD NVNT n-20M 2437MHz Ant0

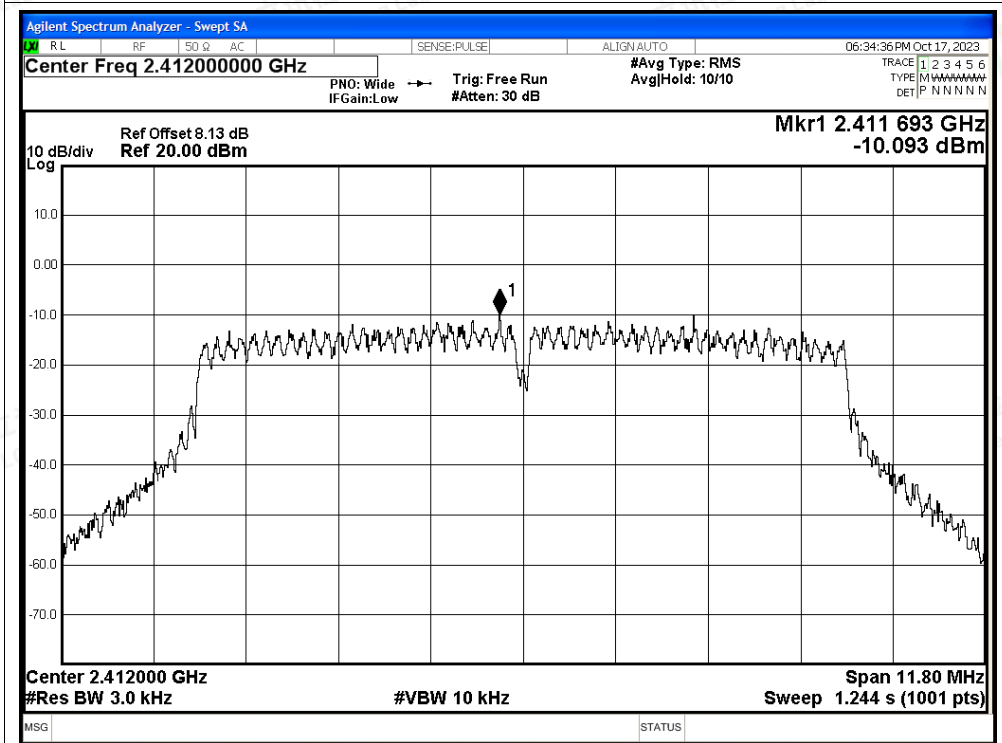


PSD NVNT n-20M 2462MHz Ant0

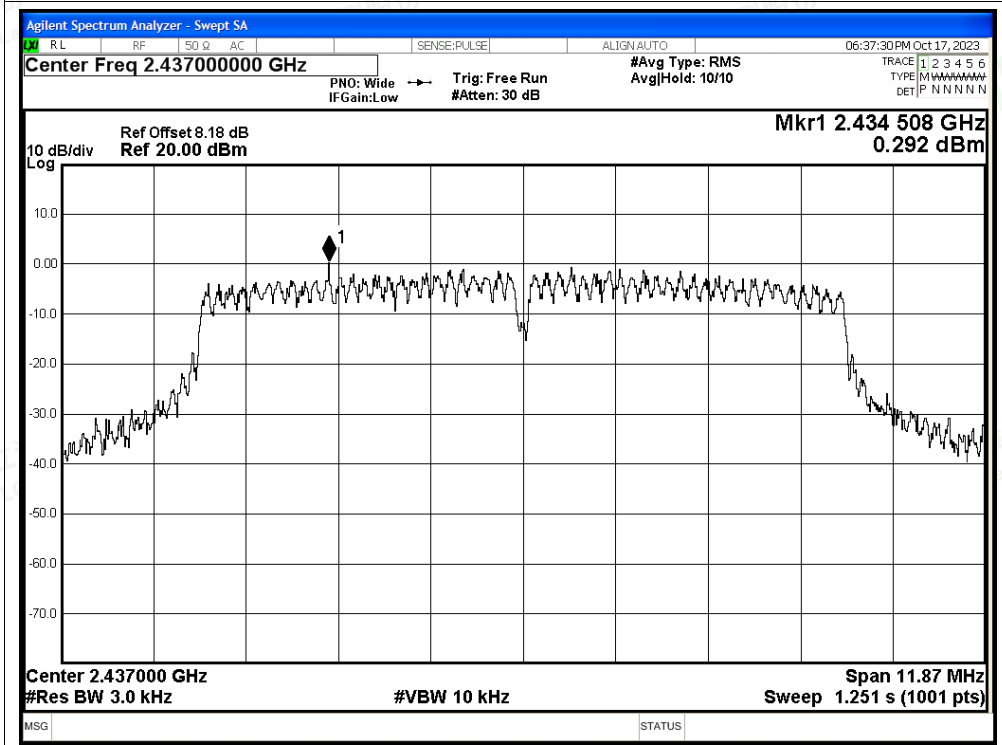




PSD NVNT g-10M 2412MHz Ant0

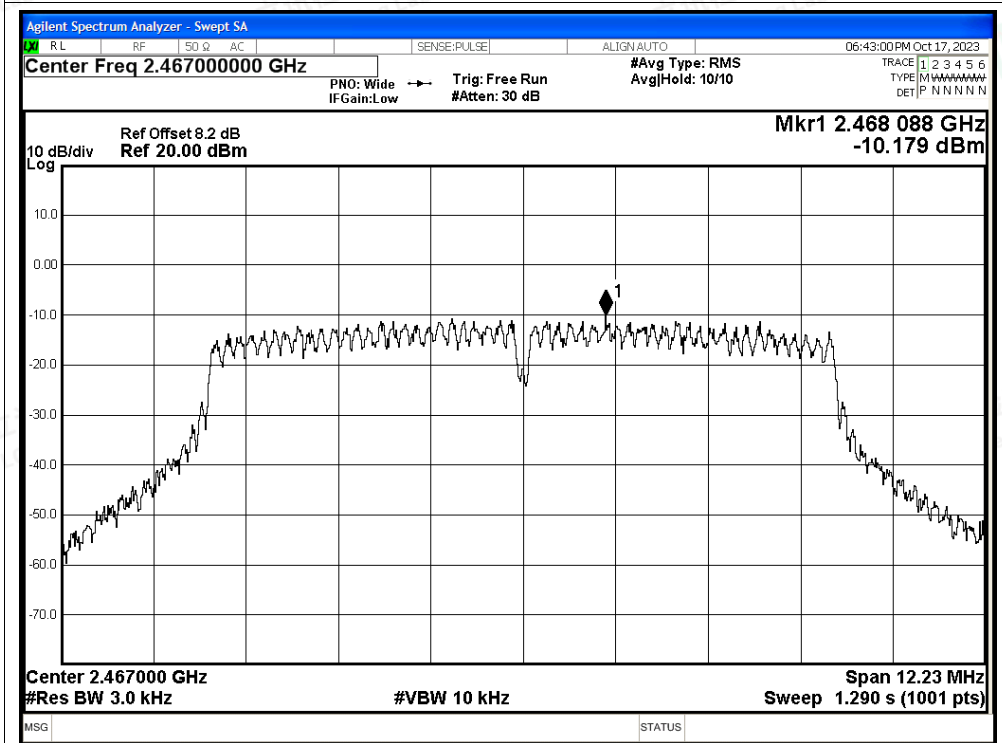


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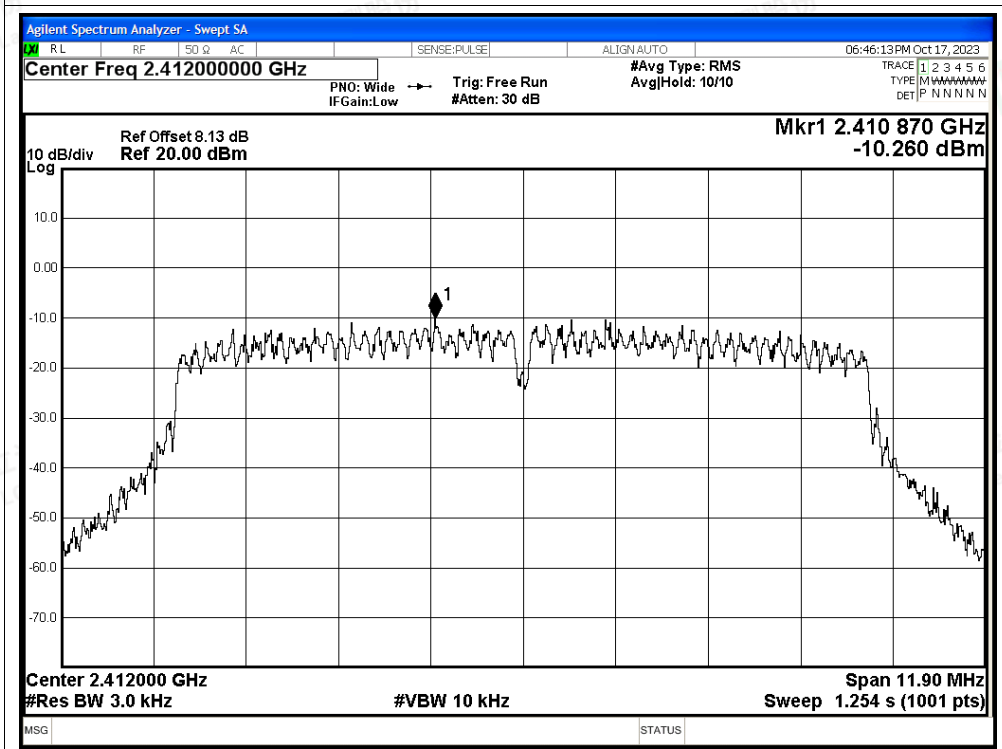




PSD NVNT g-10M 2467MHz Ant0

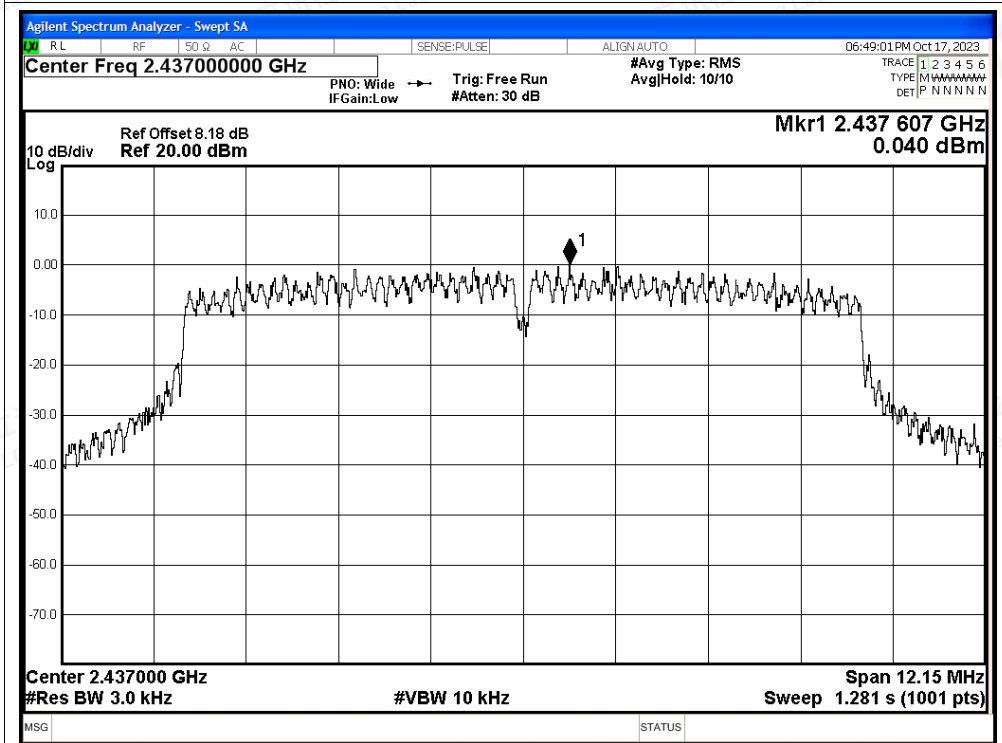


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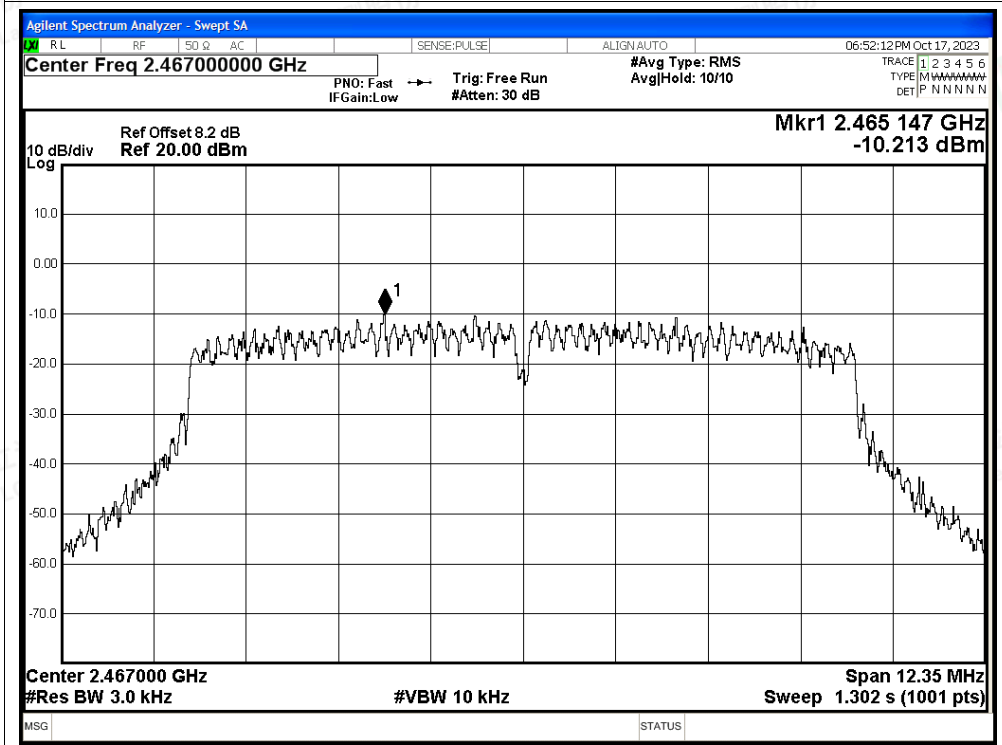




PSD NVNT n-10M 2437MHz Ant0



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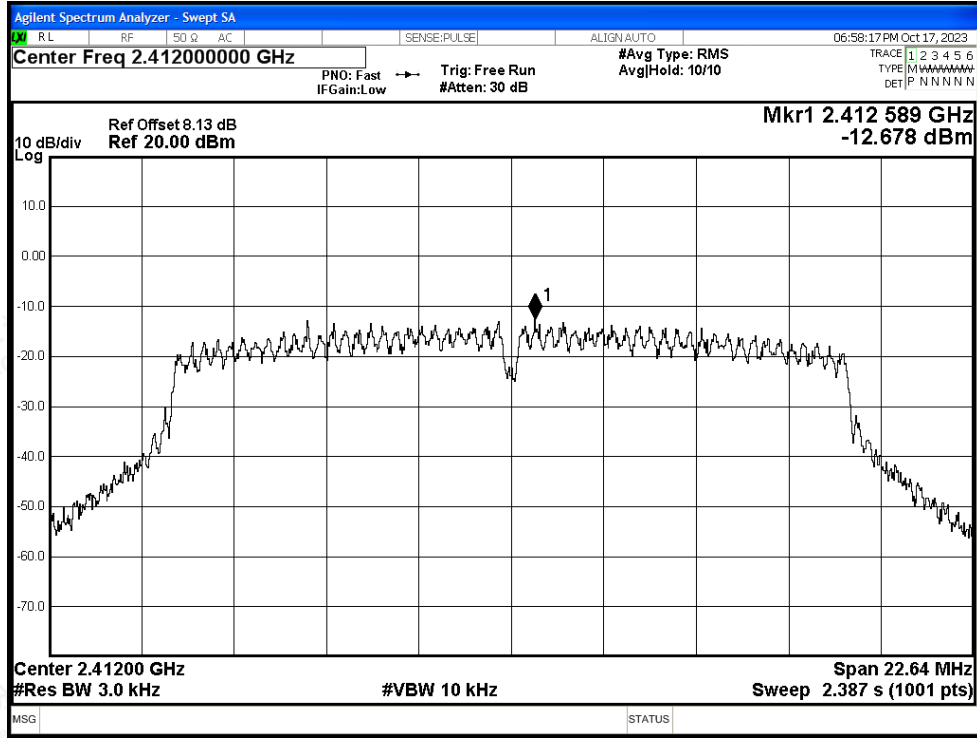




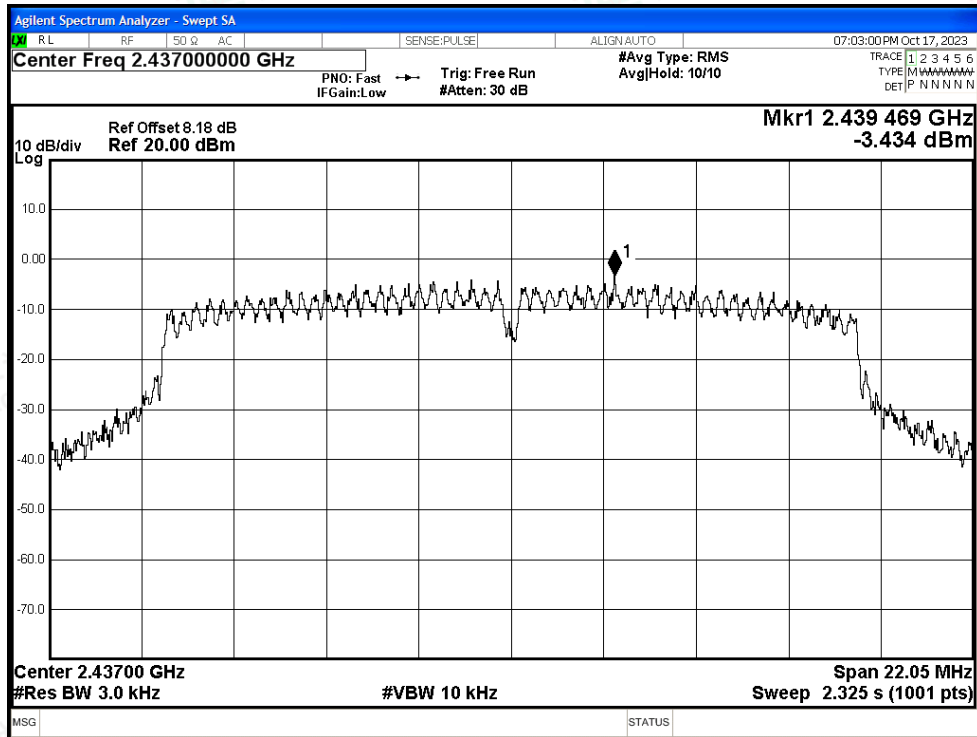
Ant1:

Test Graphs

PSD NVNT g-20M 2412MHz Ant1

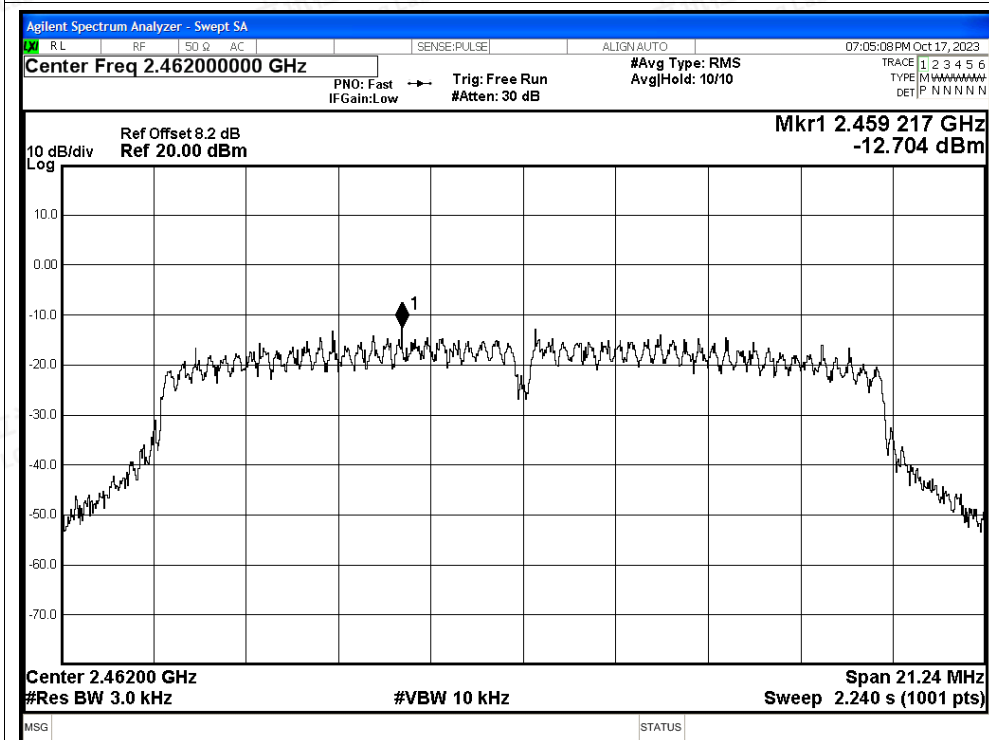


PSD NVNT g-20M 2437MHz Ant1

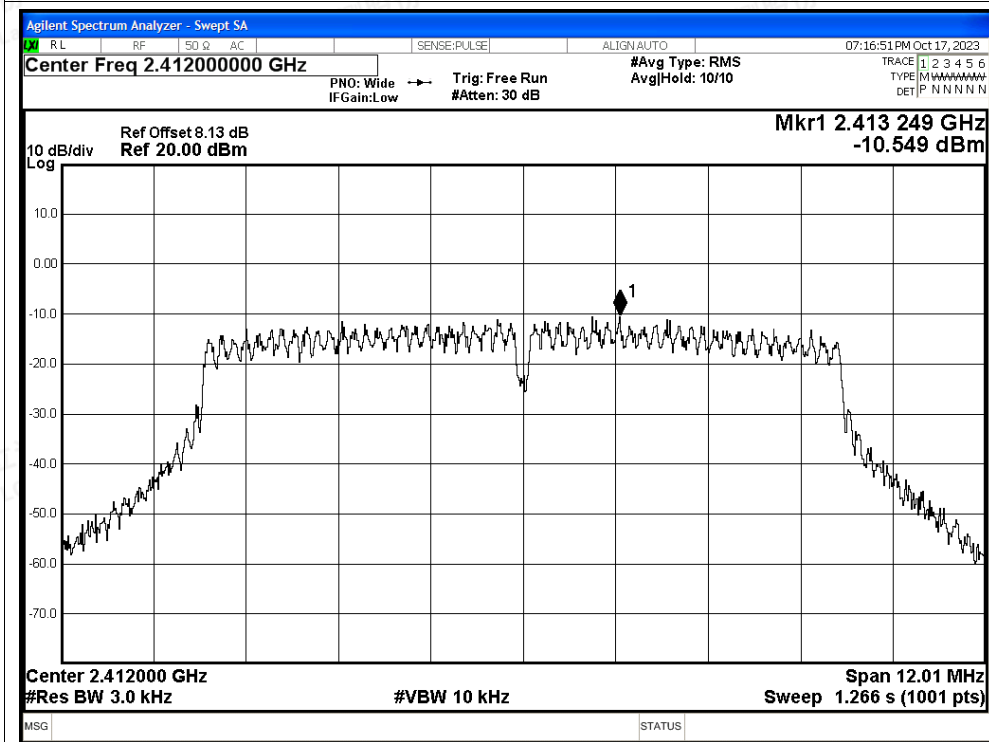




PSD NVNT g-20M 2462MHz Ant1

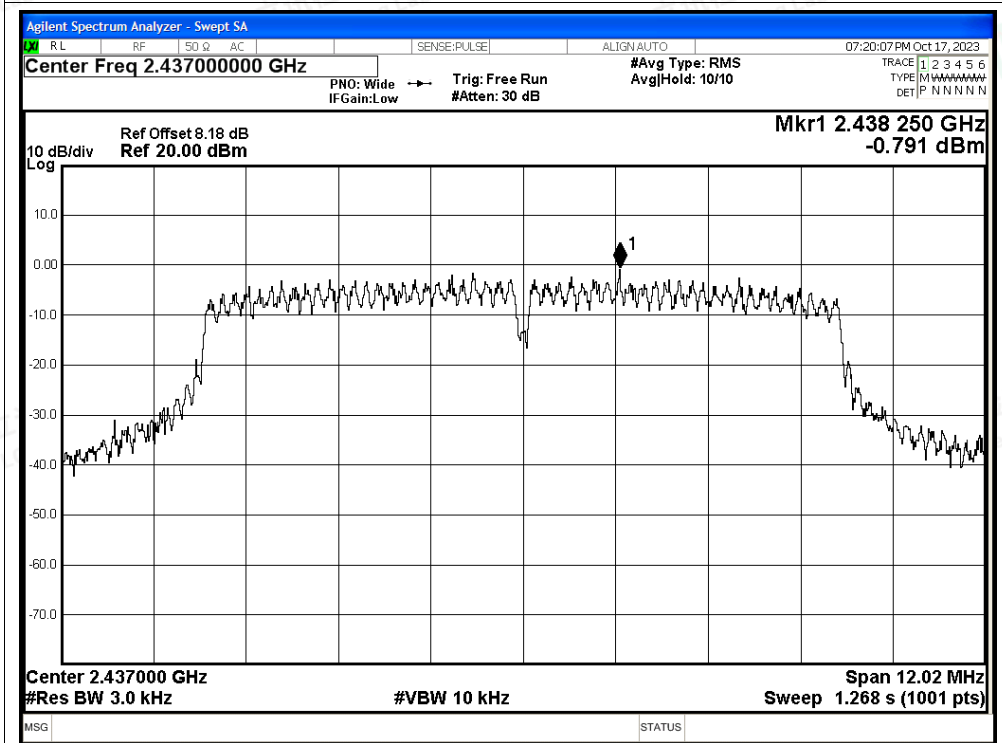


PSD NVNT g-10M 2412MHz Ant1

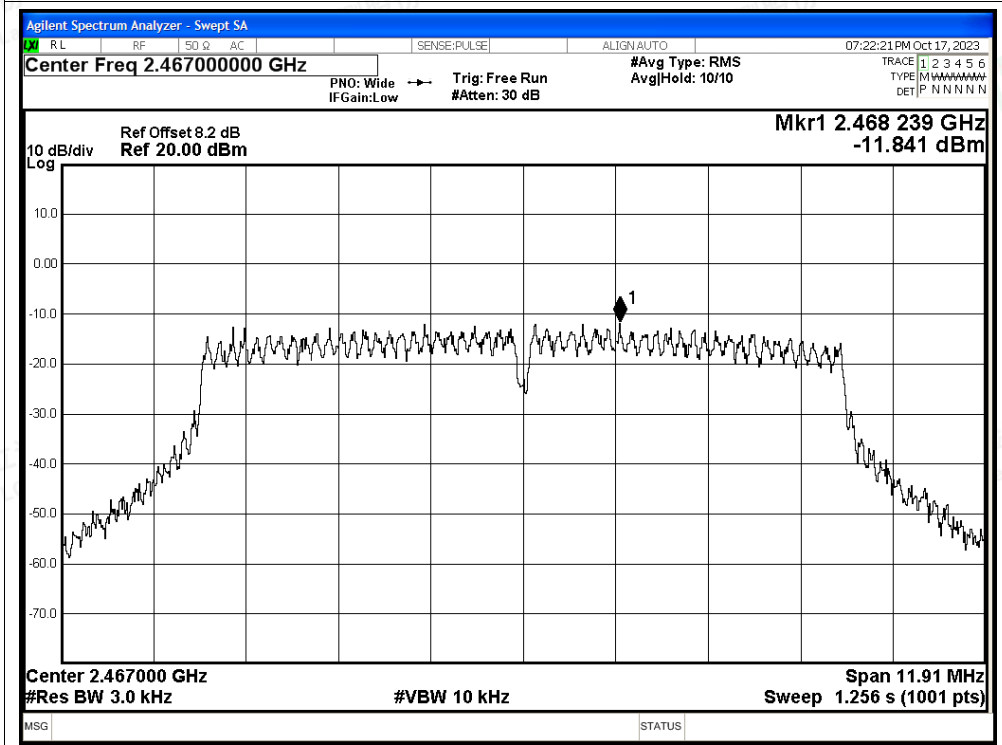




PSD NVNT g-10M 2437MHz Ant1

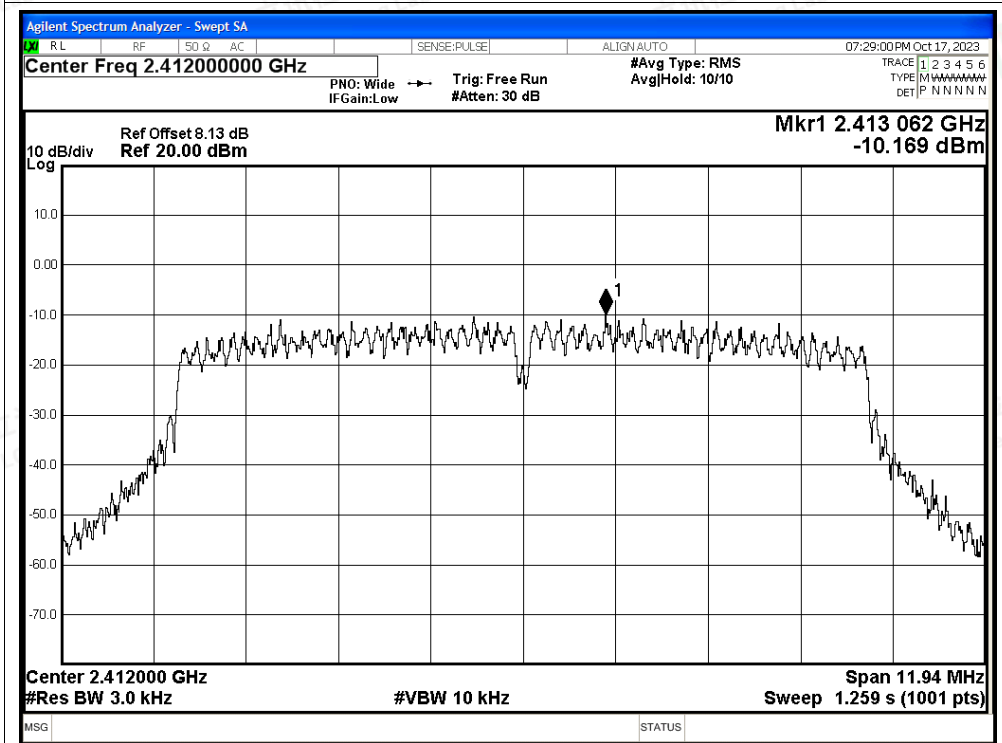


PSD NVNT g-10M 2467MHz Ant1

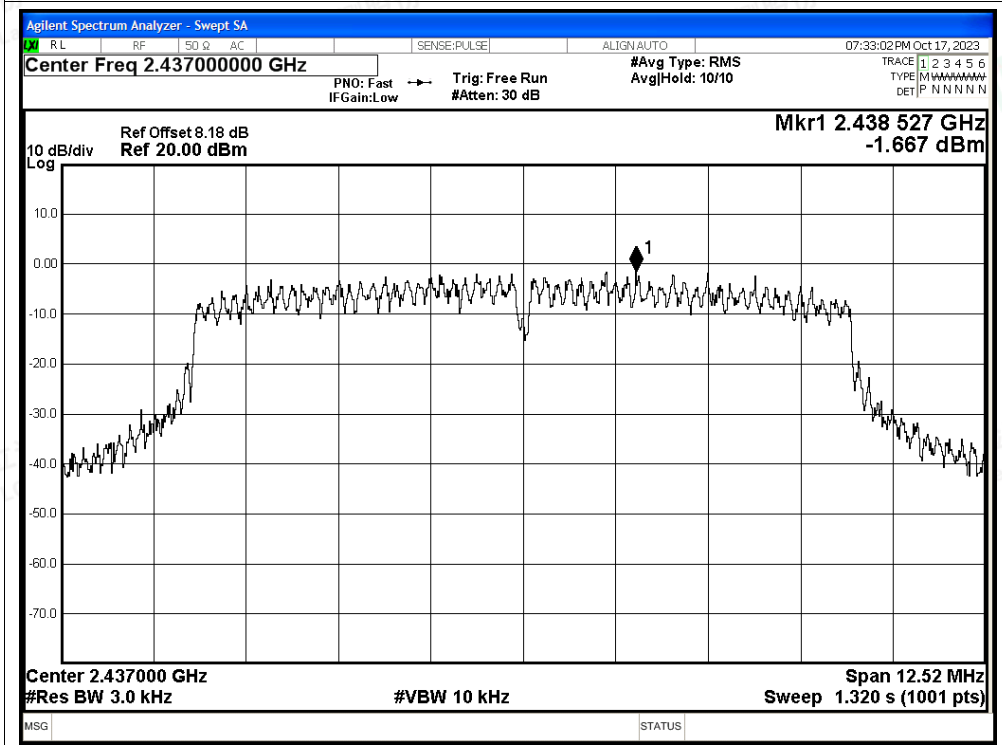




PSD NVNT n-10M 2412MHz Ant1

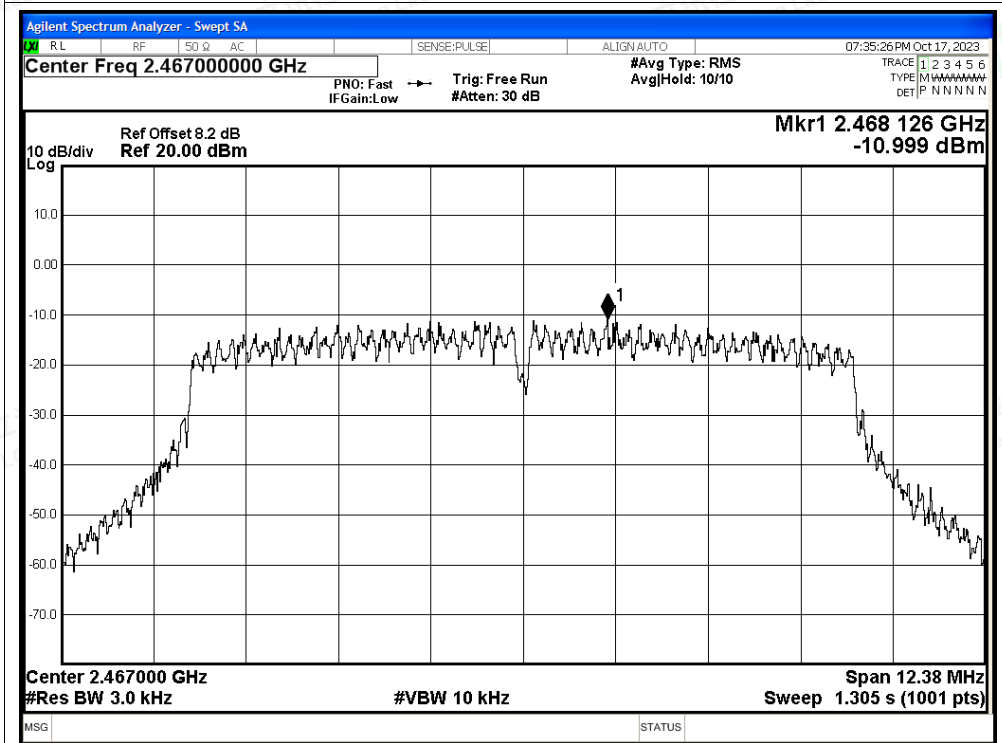


PSD NVNT n-10M 2437MHz Ant1

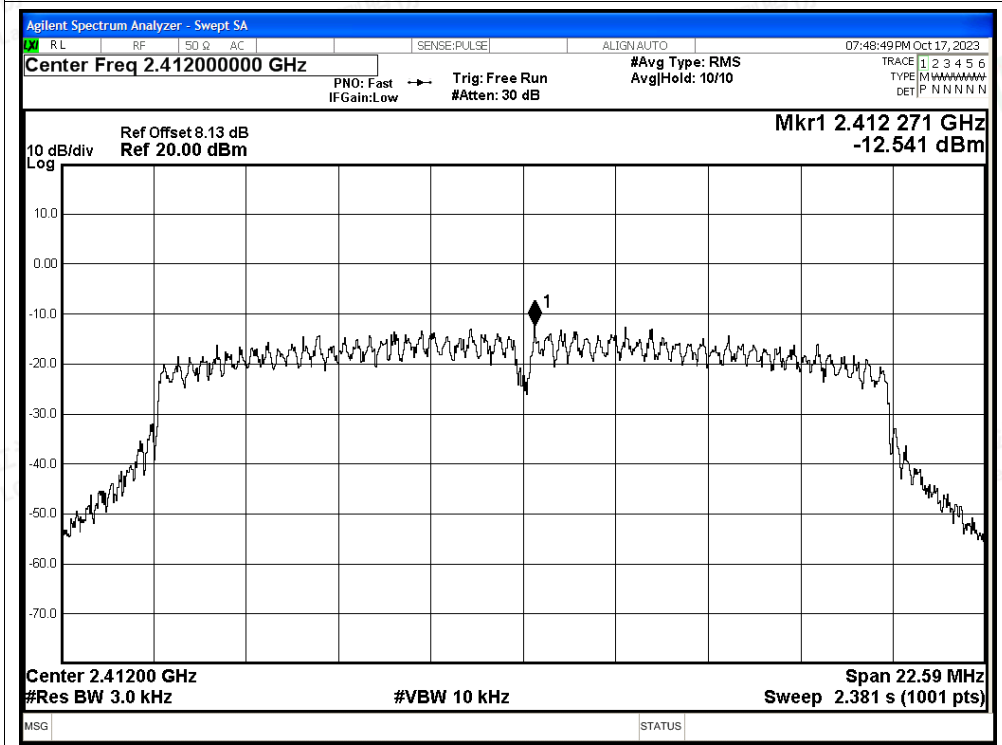




PSD NVNT n-10M 2467MHz Ant1

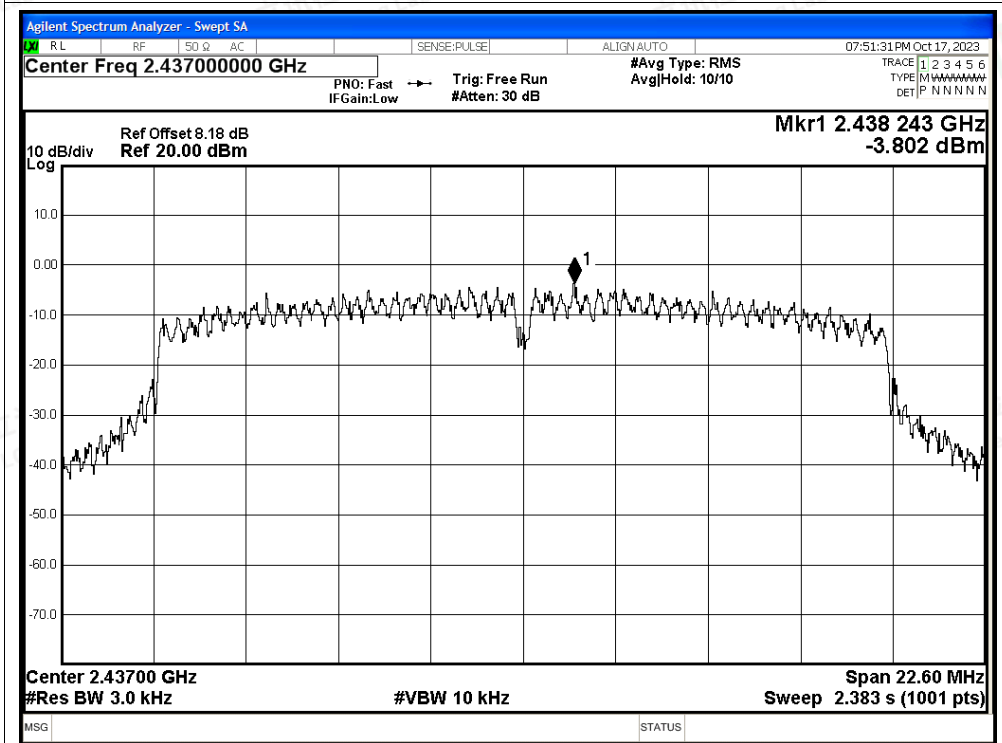


PSD NVNT n-20M 2412MHz Ant1

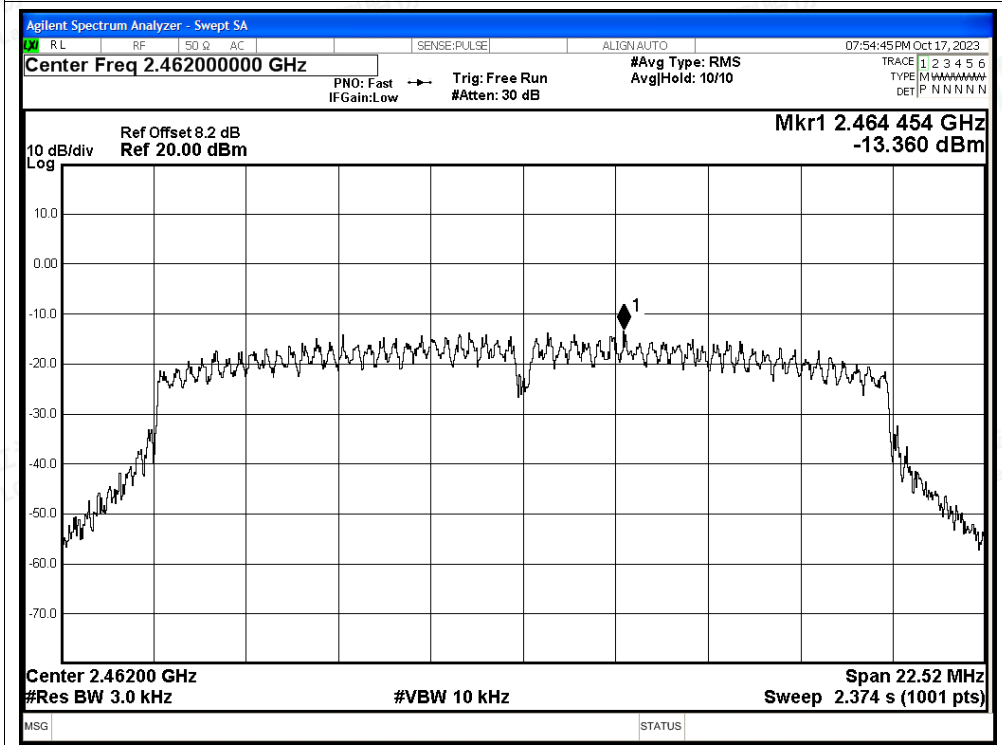




PSD NVNT n-20M 2437MHz Ant1



PSD NVNT n-20M 2462MHz Ant1





A.5 Band Edge

Ant0:

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	g-20M	2412	Ant0	-43.56	-20	Pass
NVNT	g-20M	2462	Ant0	-48.95	-20	Pass
NVNT	n-20M	2412	Ant0	-41.54	-20	Pass
NVNT	n-20M	2462	Ant0	-48.26	-20	Pass
NVNT	g-10M	2412	Ant0	-46.24	-20	Pass
NVNT	g-10M	2467	Ant0	-51.32	-20	Pass
NVNT	n-10M	2412	Ant0	-47.45	-20	Pass
NVNT	n-10M	2467	Ant0	-52.67	-20	Pass

Ant1:

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	g-20M	2412	Ant1	-40.93	-20	Pass
NVNT	g-20M	2462	Ant1	-47.28	-20	Pass
NVNT	g-10M	2412	Ant1	-46.8	-20	Pass
NVNT	g-10M	2467	Ant1	-50.52	-20	Pass
NVNT	n-10M	2412	Ant1	-47.5	-20	Pass
NVNT	n-10M	2467	Ant1	-51.43	-20	Pass
NVNT	n-20M	2412	Ant1	-42.09	-20	Pass
NVNT	n-20M	2462	Ant1	-47.47	-20	Pass

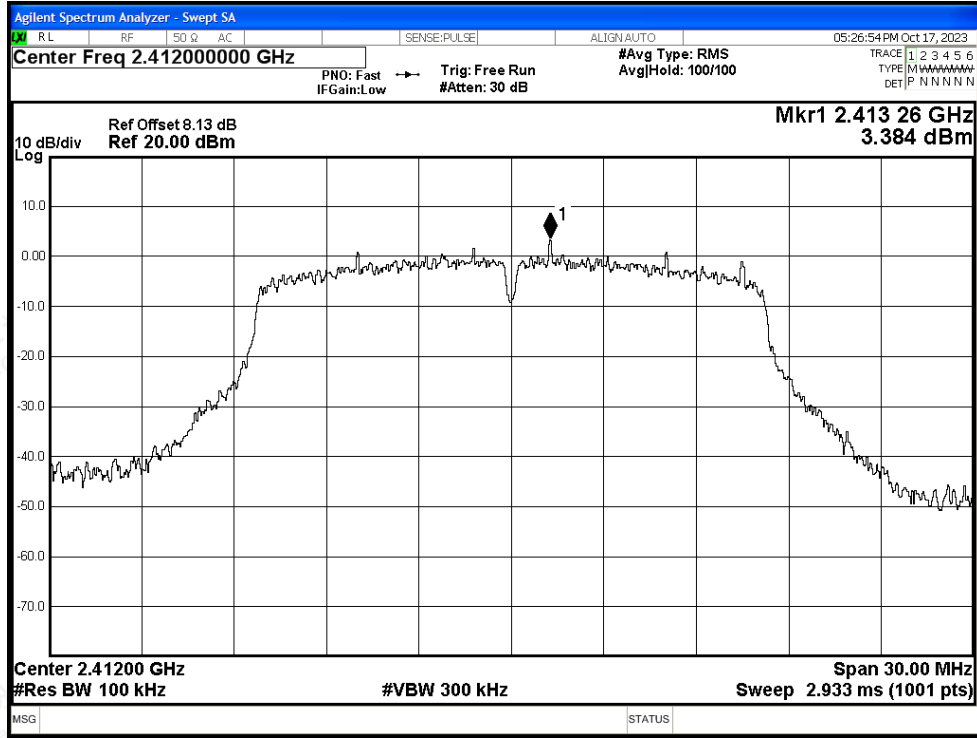




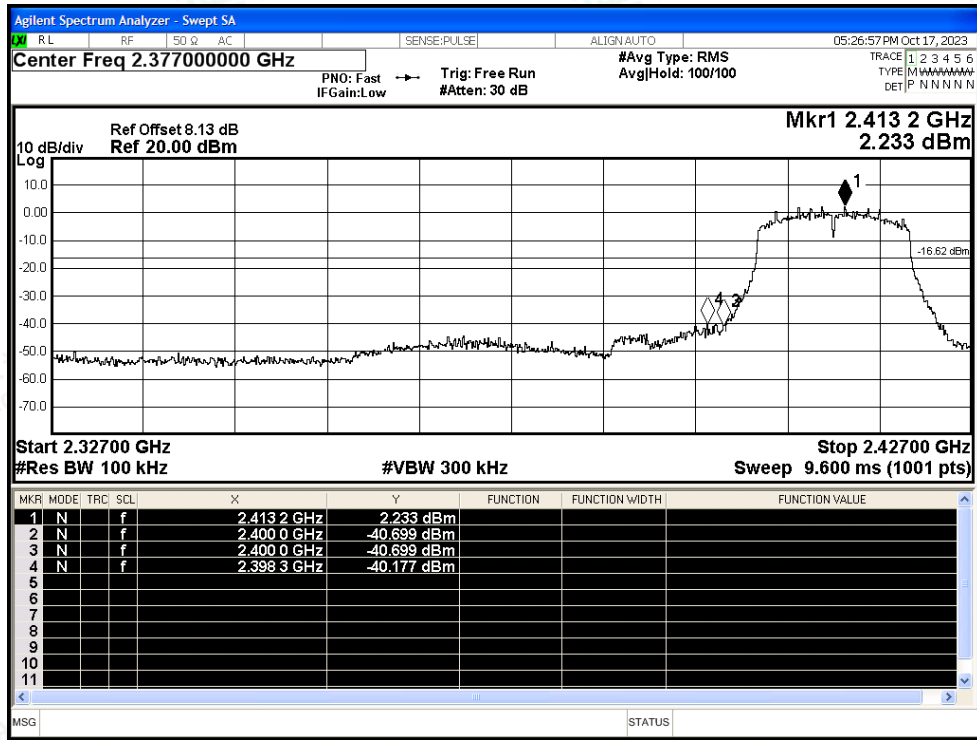
Ant0:

Test Graphs

Band Edge NVNT g-20M 2412MHz Ant0 Ref

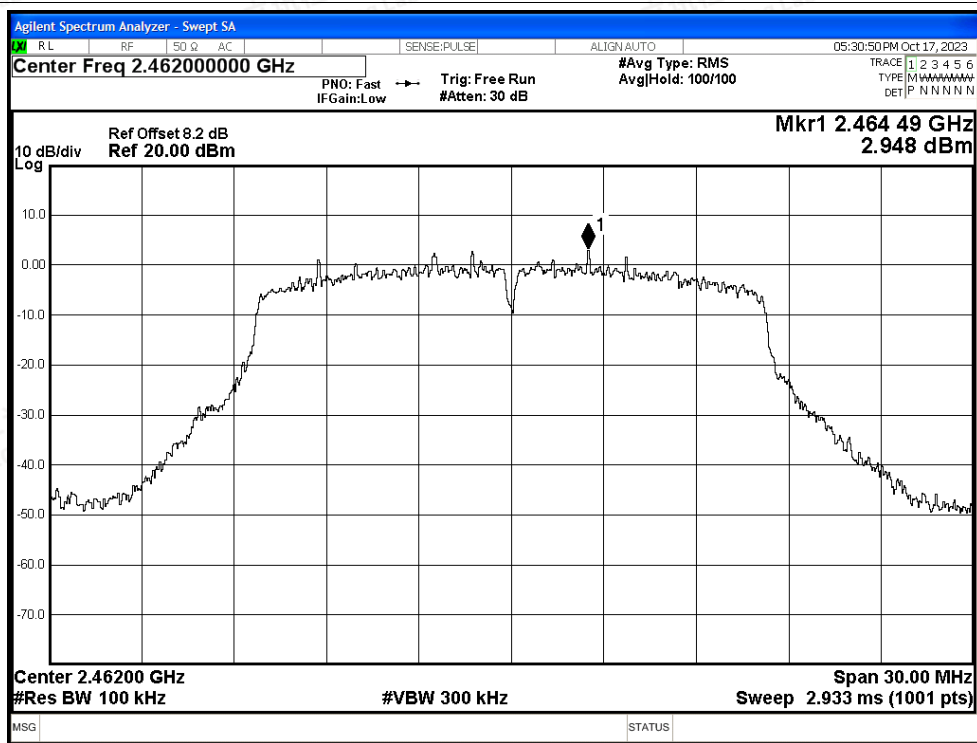


Band Edge NVNT g-20M 2412MHz Ant0 Emission

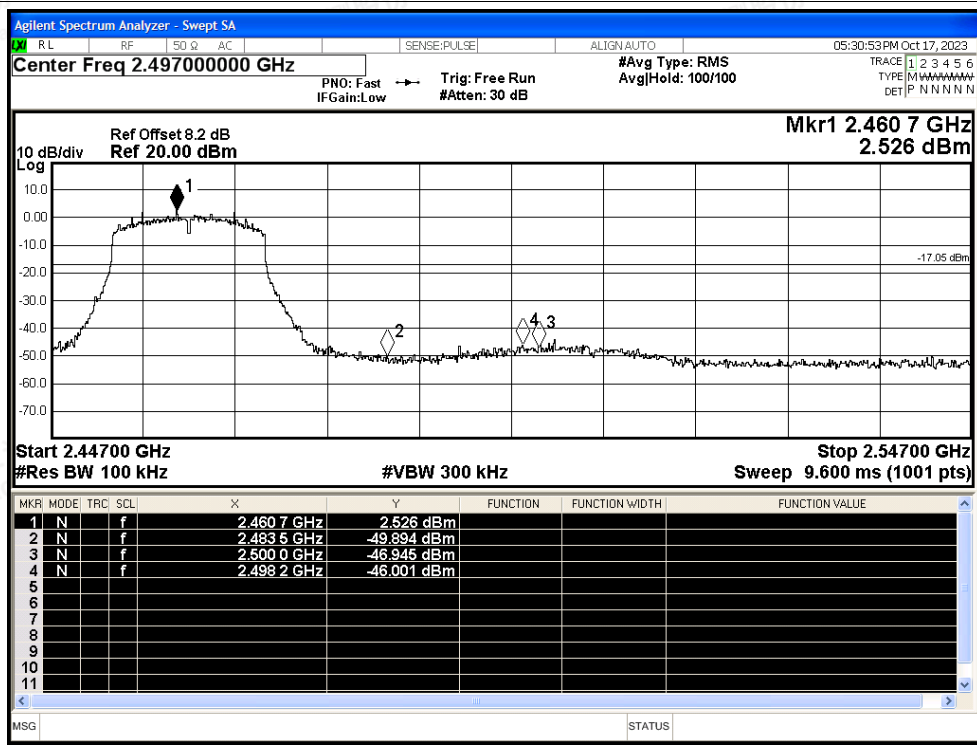




Band Edge NVNT g-20M 2462MHz Ant0 Ref

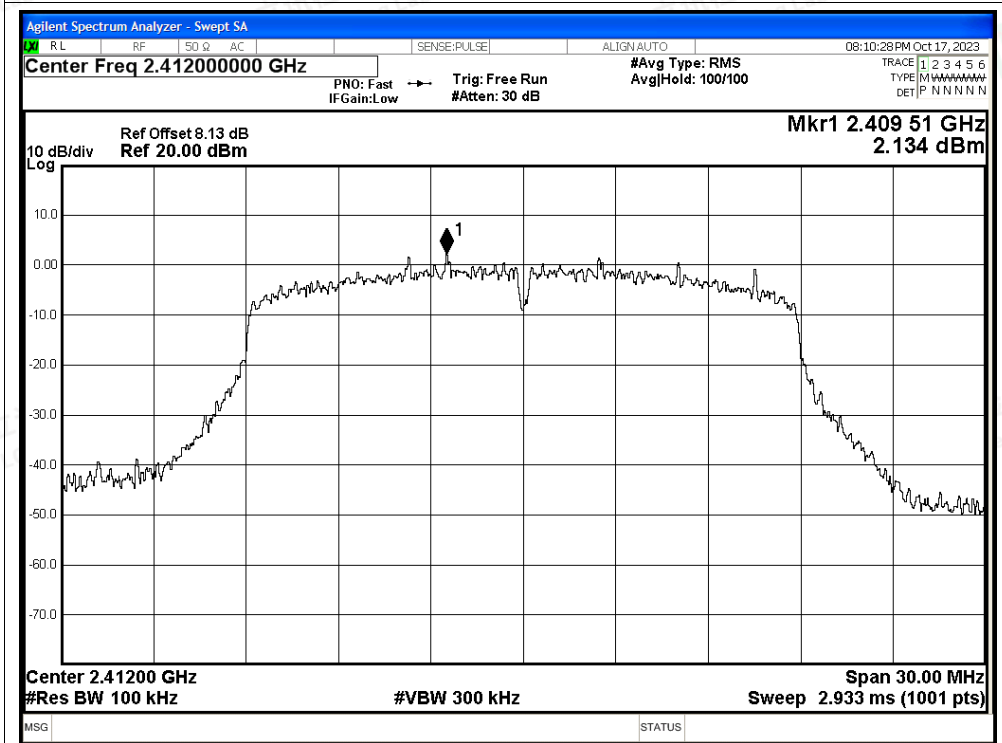


Band Edge NVNT g-20M 2462MHz Ant0 Emission

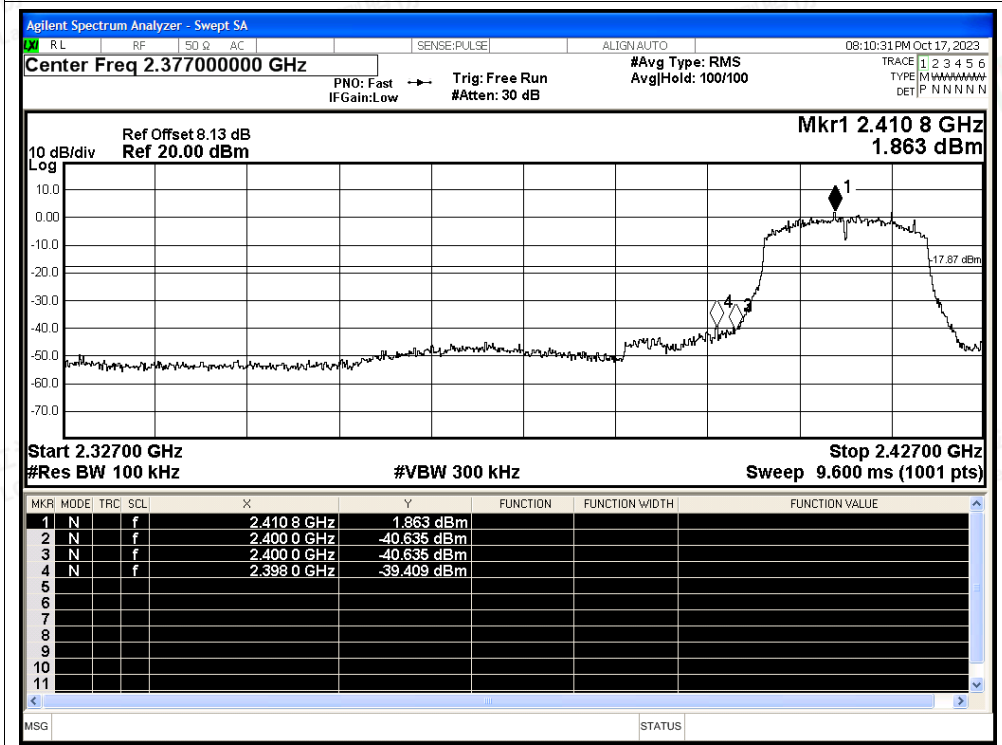




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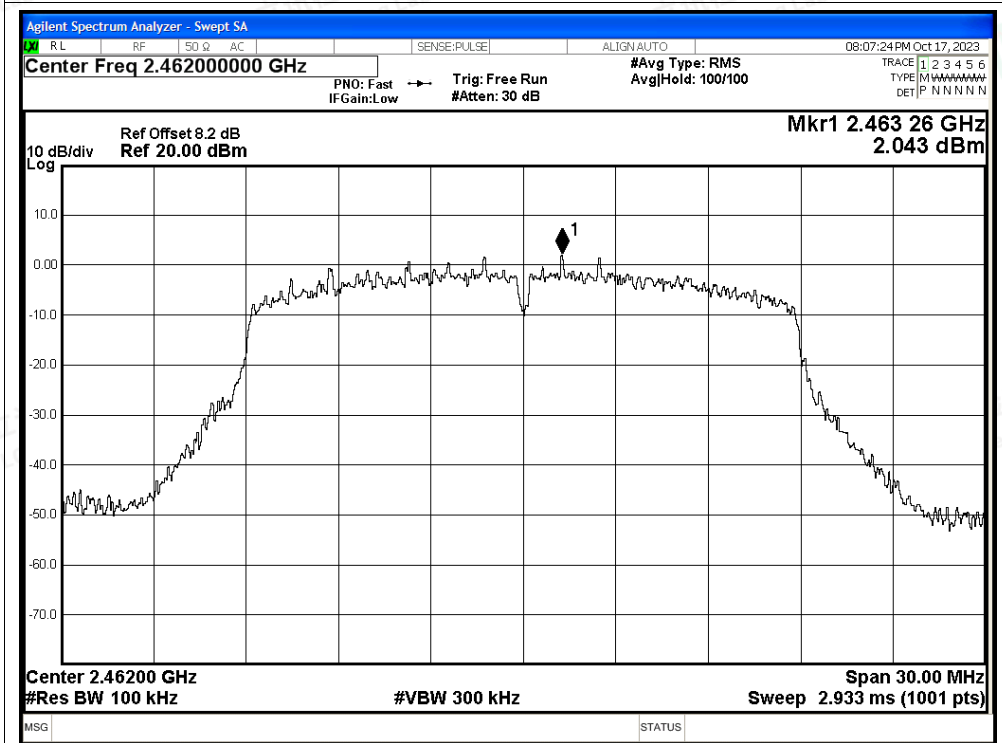


Band Edge NVNT n-20M 2412MHz Ant0 Emission

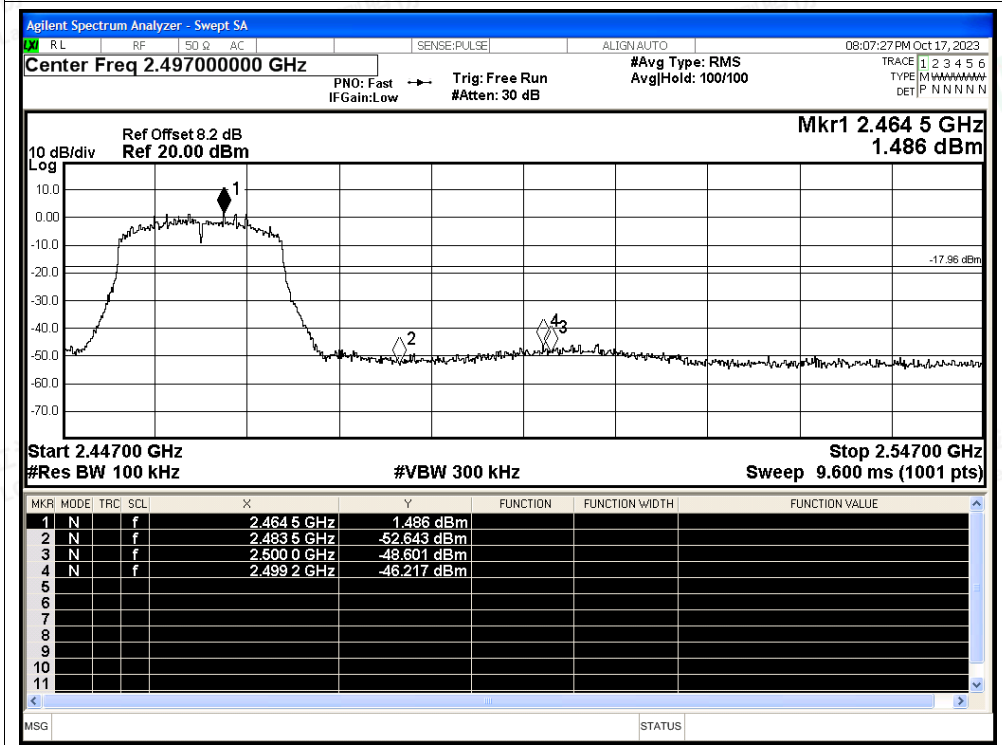




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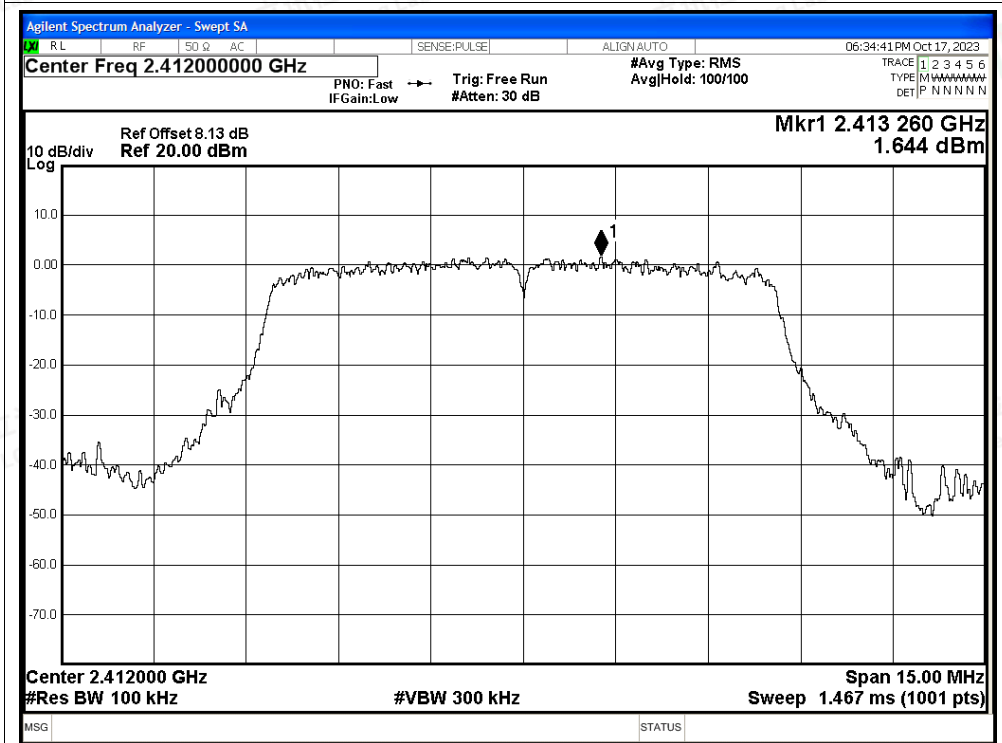


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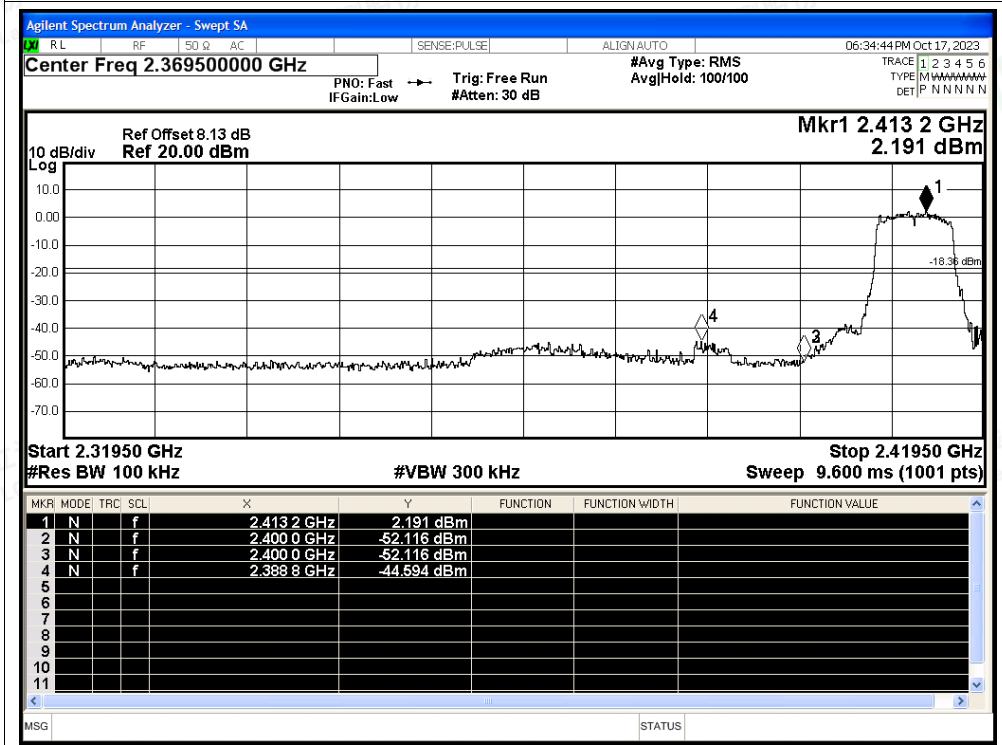




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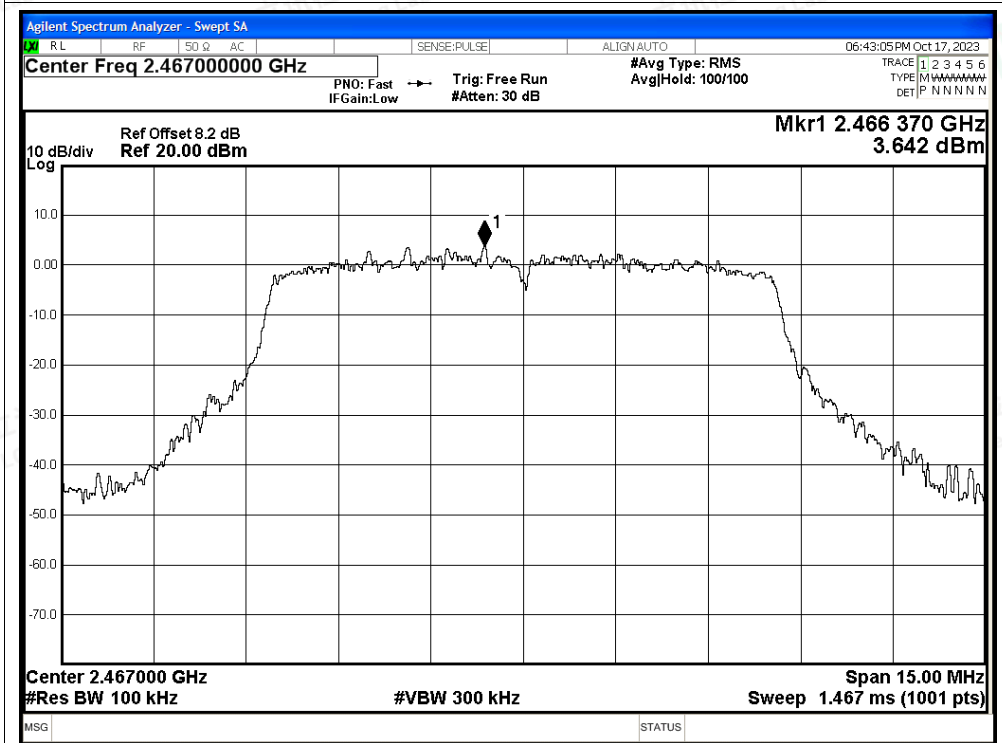


Band Edge NVNT g-10M 2412MHz Ant0 Emission





Band Edge NVNT g-10M 2467MHz Ant0 Ref



Band Edge NVNT g-10M 2467MHz Ant0 Emission

