



Appendix A

RF Test Data for 2.4G (Conducted Measurement)

Product Name: Smart Radio

Test Model: RM-2450-2J

Environmental Conditions

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





A.1 -6dB Bandwidth

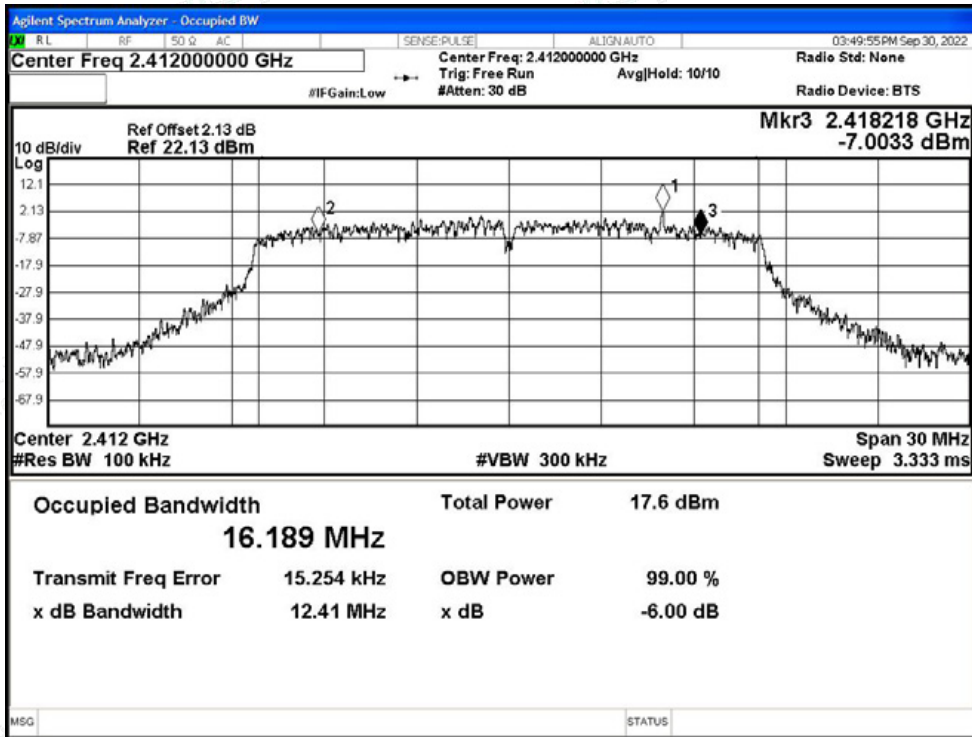
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	g	2412	Ant0	12.406	>=0.5	Pass
NVNT	g	2437	Ant0	15.424	>=0.5	Pass
NVNT	g	2462	Ant0	16.042	>=0.5	Pass
NVNT	n20	2412	Ant0	16.320	>=0.5	Pass
NVNT	n20	2437	Ant0	16.065	>=0.5	Pass
NVNT	n20	2462	Ant0	11.919	>=0.5	Pass
NVNT	n40	2422	Ant0	32.568	>=0.5	Pass
NVNT	n40	2437	Ant0	26.260	>=0.5	Pass
NVNT	n40	2452	Ant0	32.565	>=0.5	Pass



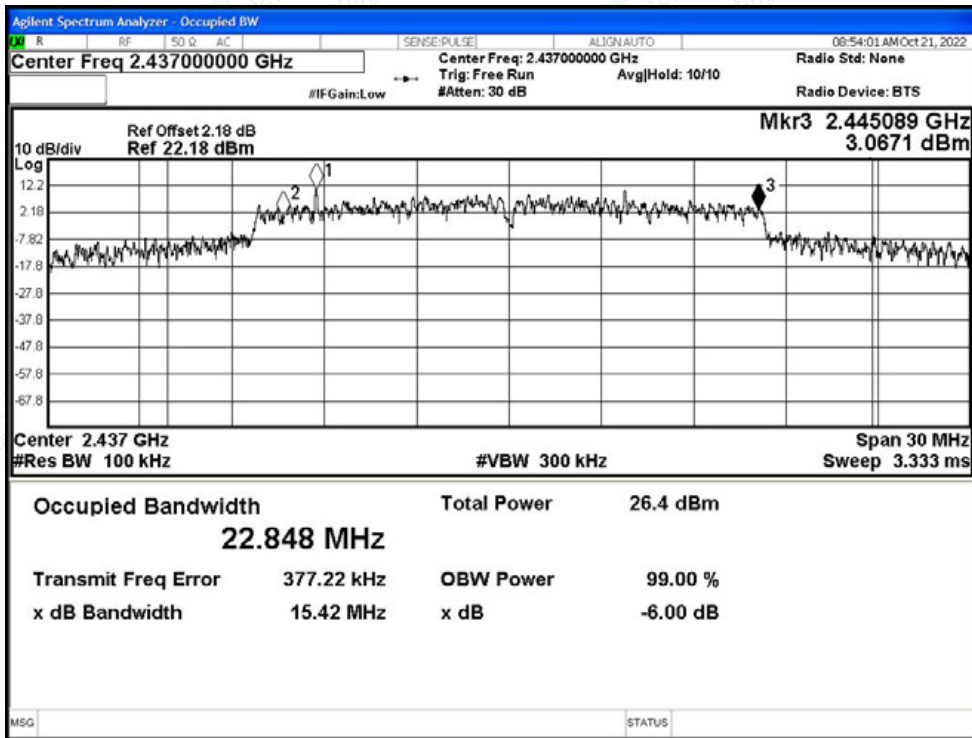


Test Graphs

-6dB Bandwidth NVNT g 2412MHz Ant0

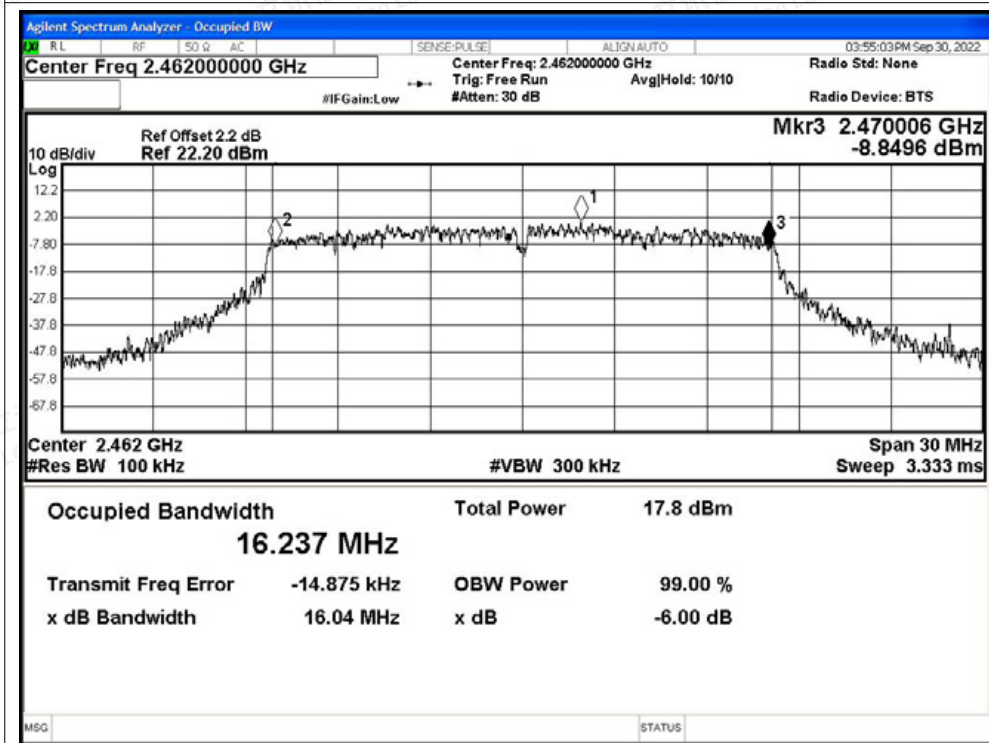


-6dB Bandwidth NVNT g 2437MHz Ant0

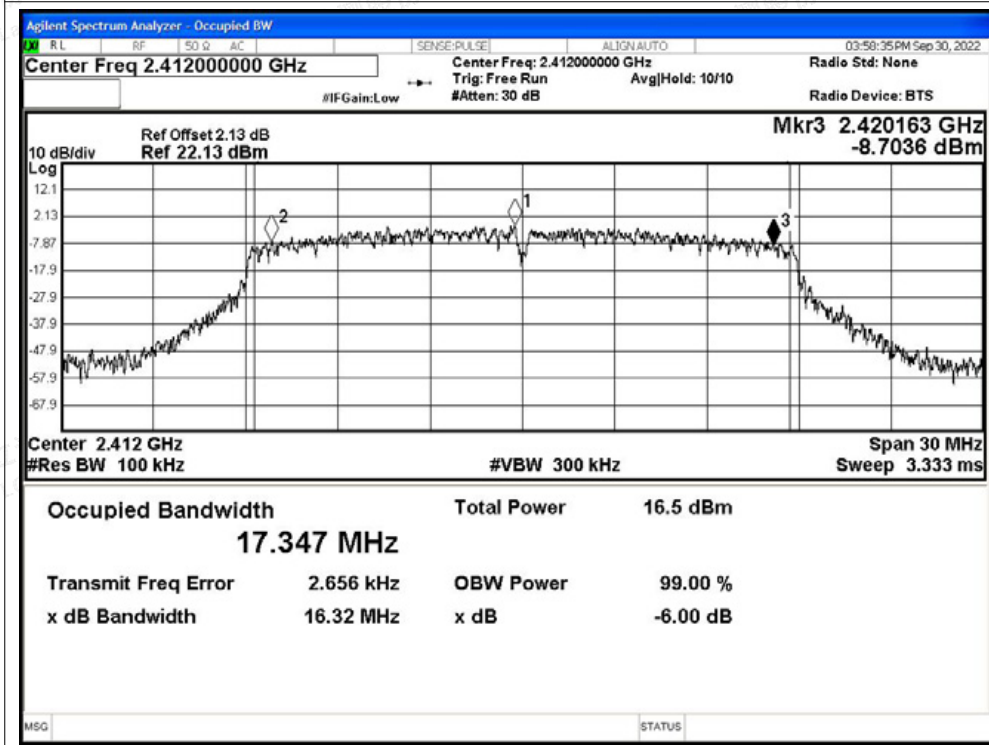




-6dB Bandwidth NVNT g 2462MHz Ant0

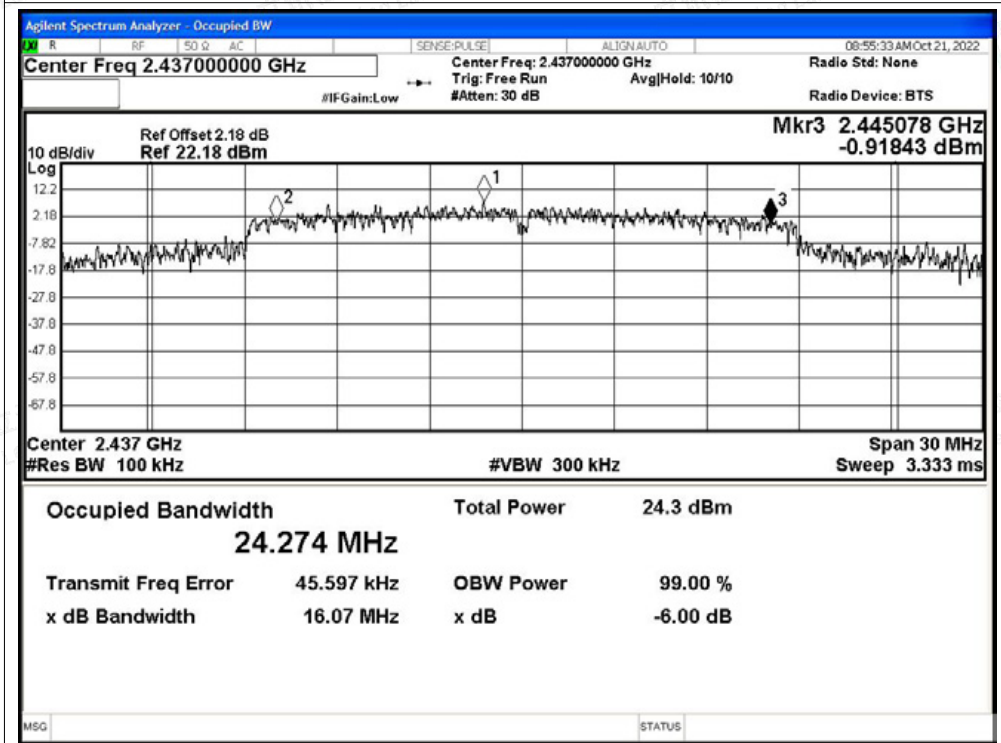


-6dB Bandwidth NVNT n20 2412MHz Ant0

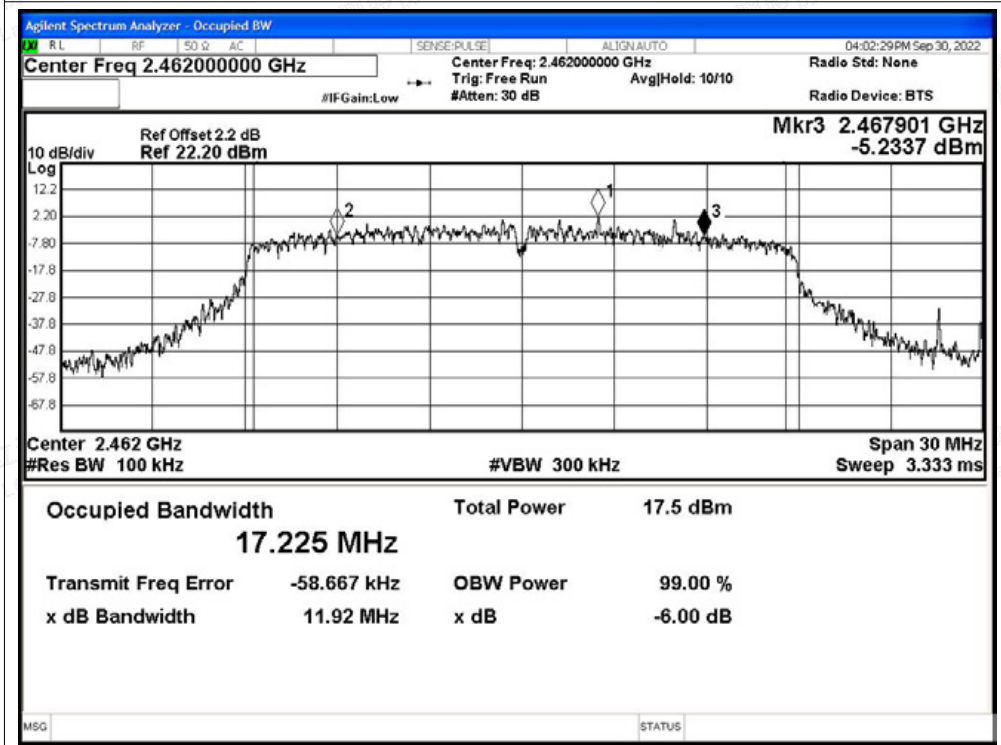




-6dB Bandwidth NVNT n20 2437MHz Ant0

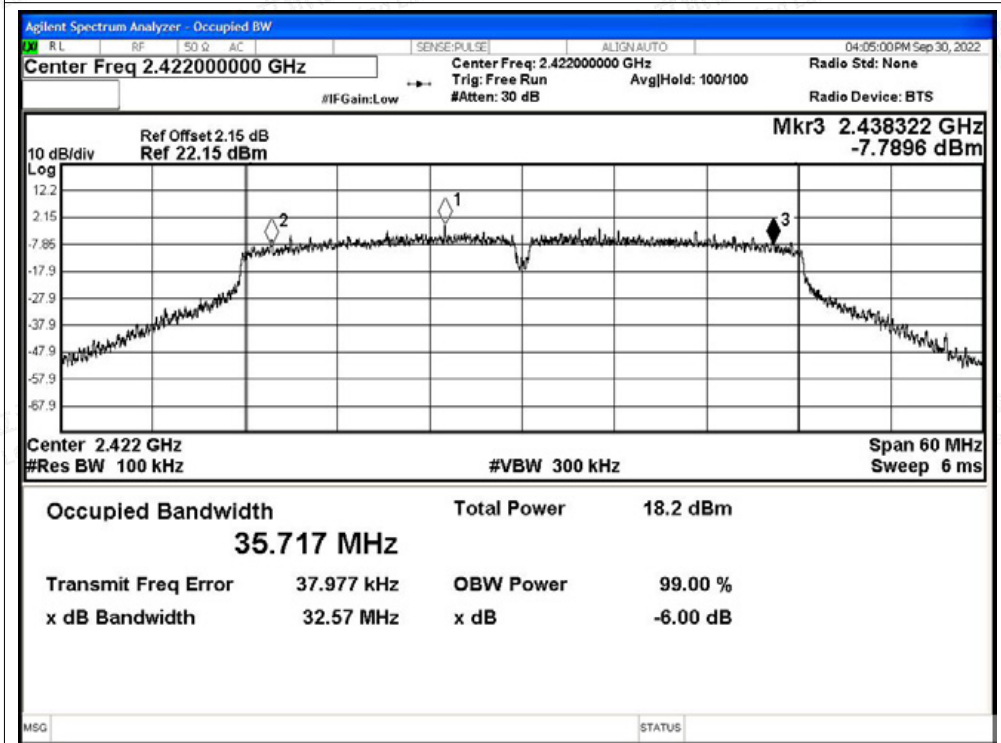


-6dB Bandwidth NVNT n20 2462MHz Ant0

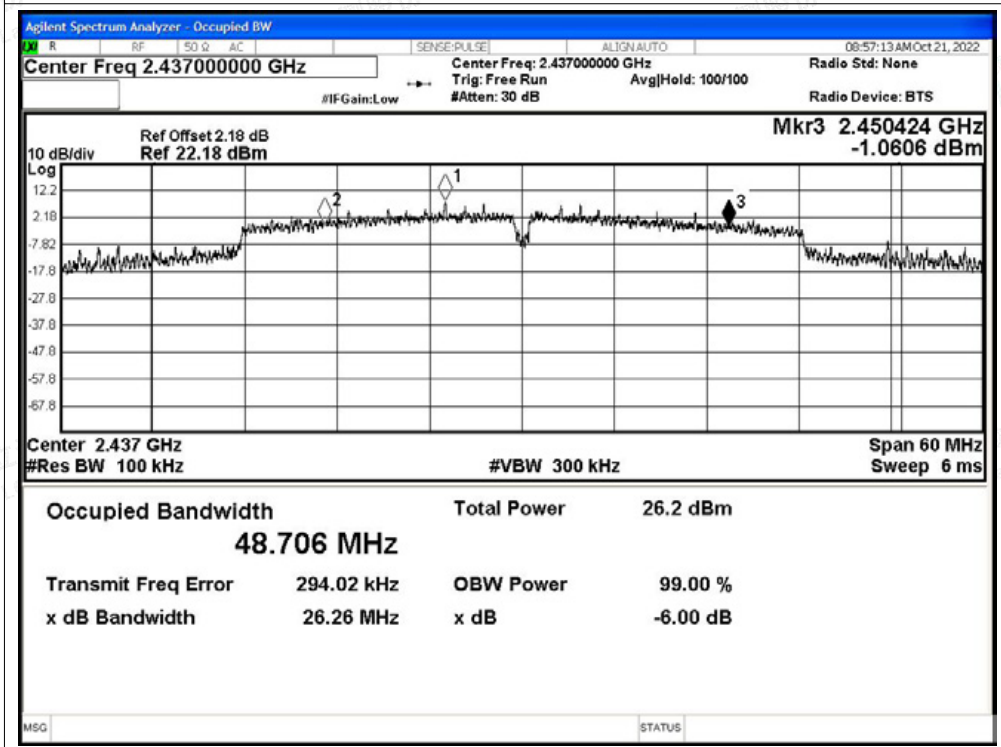


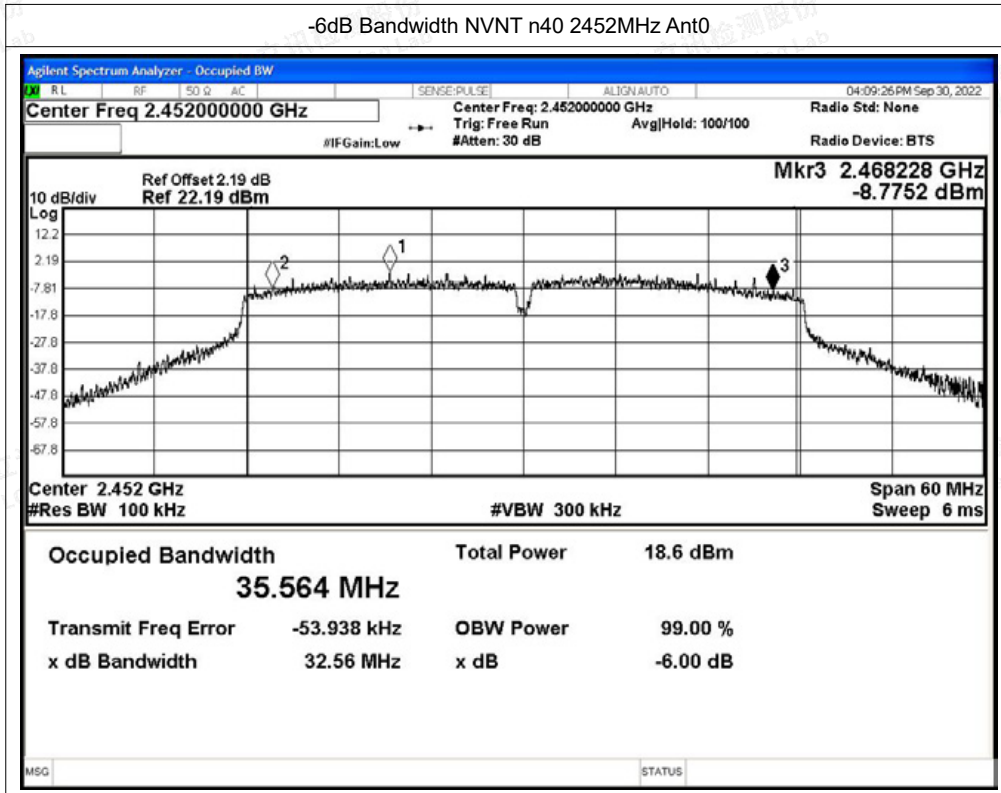


-6dB Bandwidth NVNT n40 2422MHz Ant0



-6dB Bandwidth NVNT n40 2437MHz Ant0





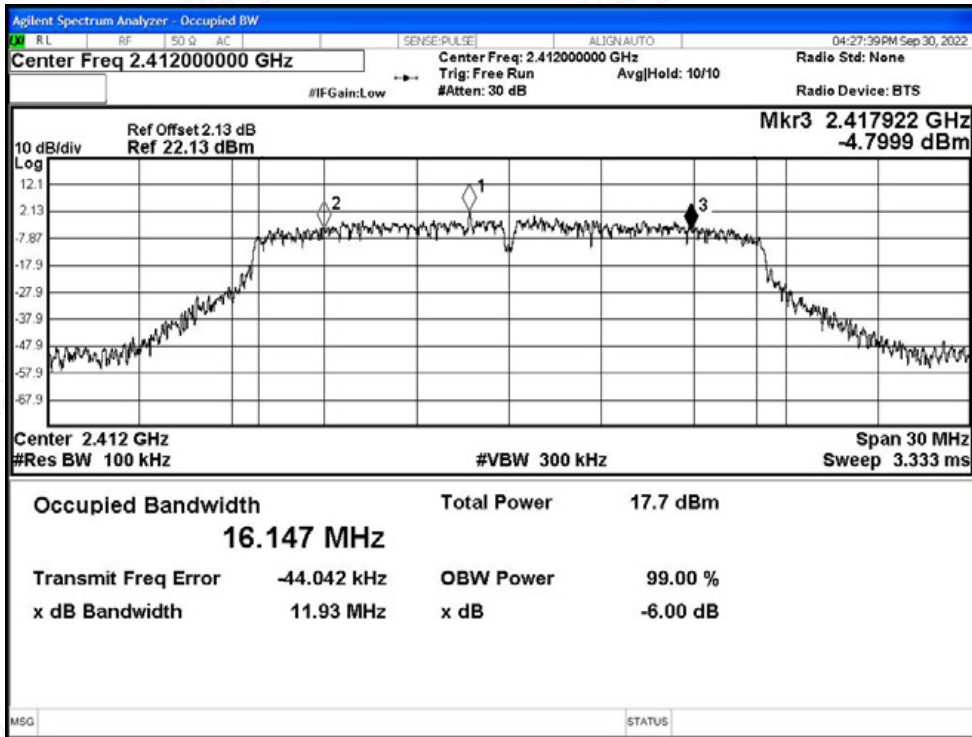
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	g	2412	Ant1	11.932	>=0.5	Pass
NVNT	g	2437	Ant1	15.879	>=0.5	Pass
NVNT	g	2462	Ant1	14.270	>=0.5	Pass
NVNT	n20	2412	Ant1	13.810	>=0.5	Pass
NVNT	n20	2437	Ant1	17.534	>=0.5	Pass
NVNT	n20	2462	Ant1	13.085	>=0.5	Pass
NVNT	n40	2422	Ant1	33.674	>=0.5	Pass
NVNT	n40	2437	Ant1	30.075	>=0.5	Pass
NVNT	n40	2452	Ant1	30.717	>=0.5	Pass



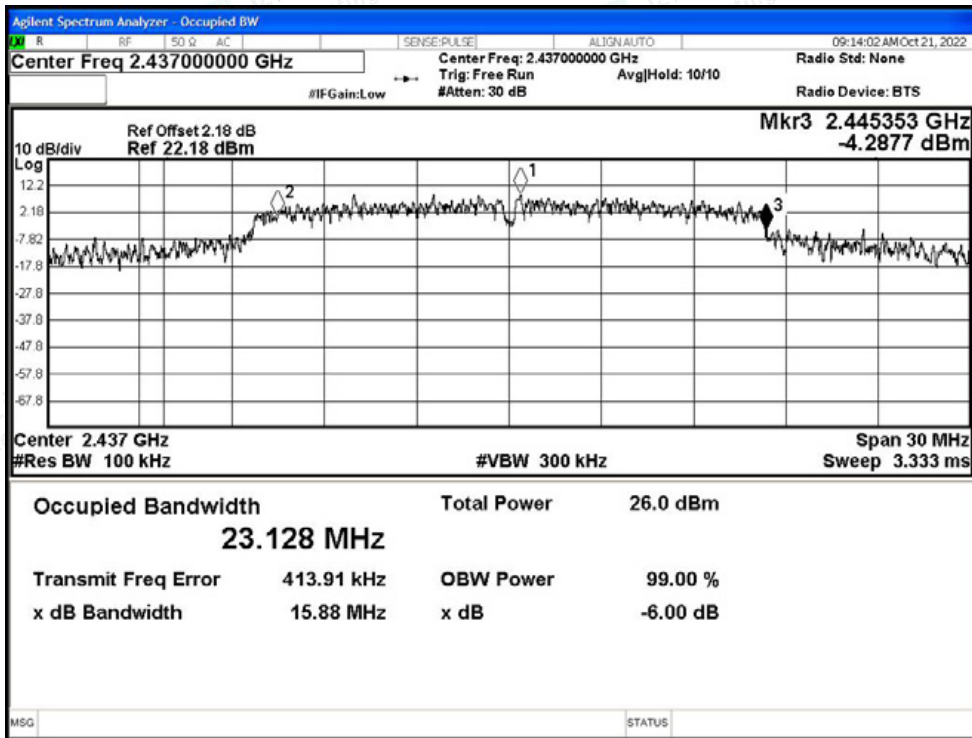


Test Graphs

-6dB Bandwidth NVNT g 2412MHz Ant1

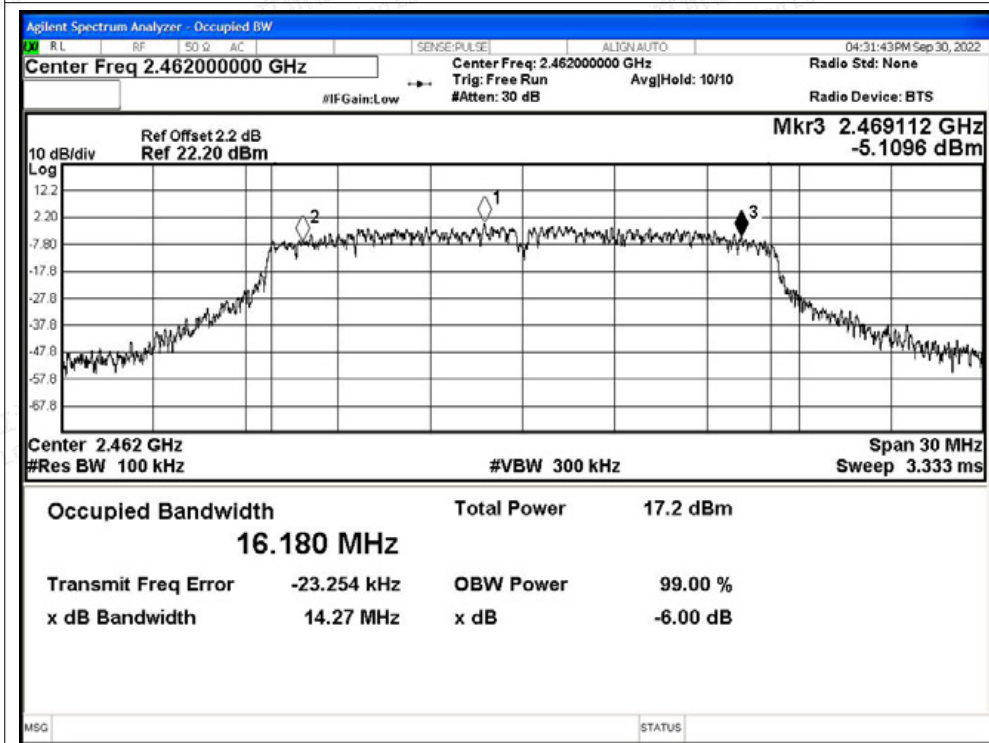


-6dB Bandwidth NVNT g 2437MHz Ant1

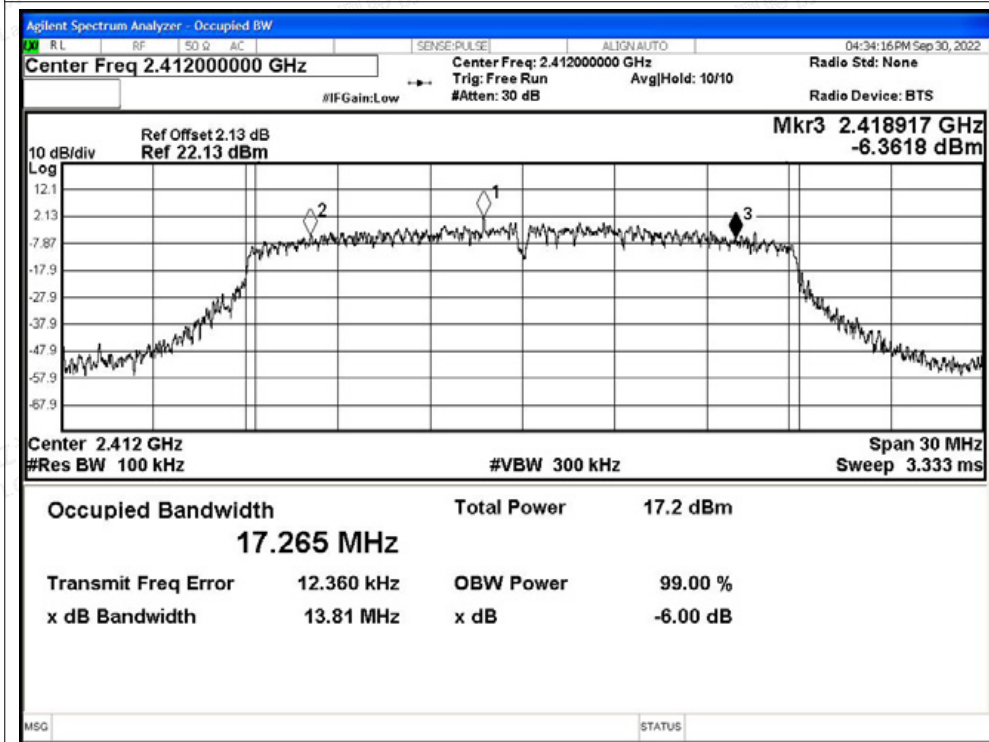




-6dB Bandwidth NVNT g 2462MHz Ant1

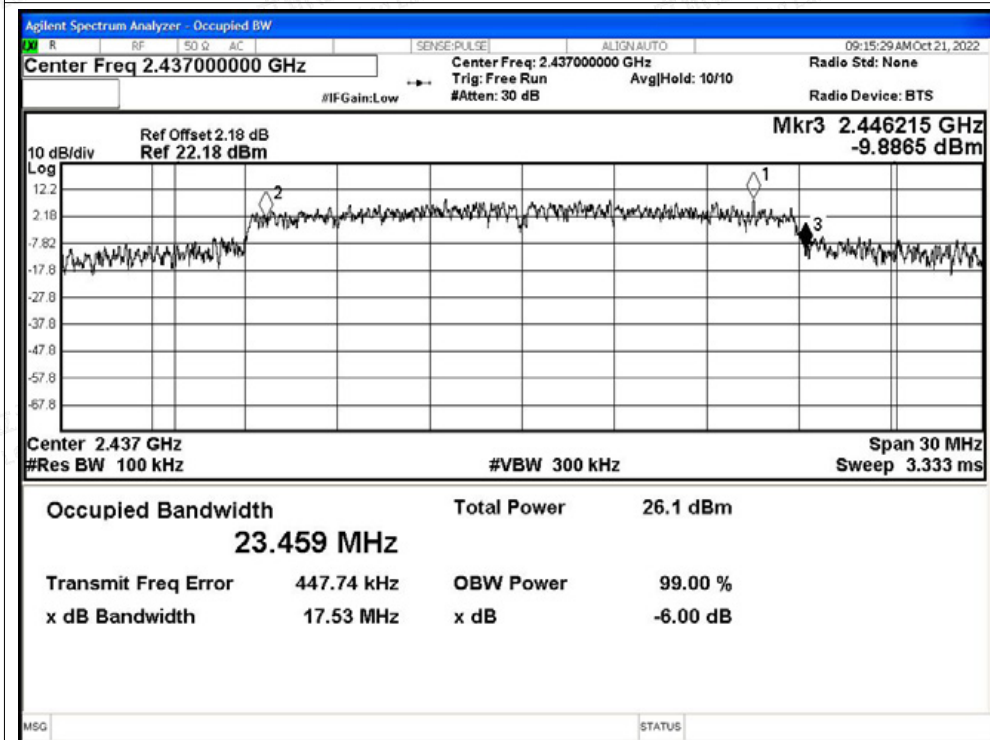


-6dB Bandwidth NVNT n20 2412MHz Ant1

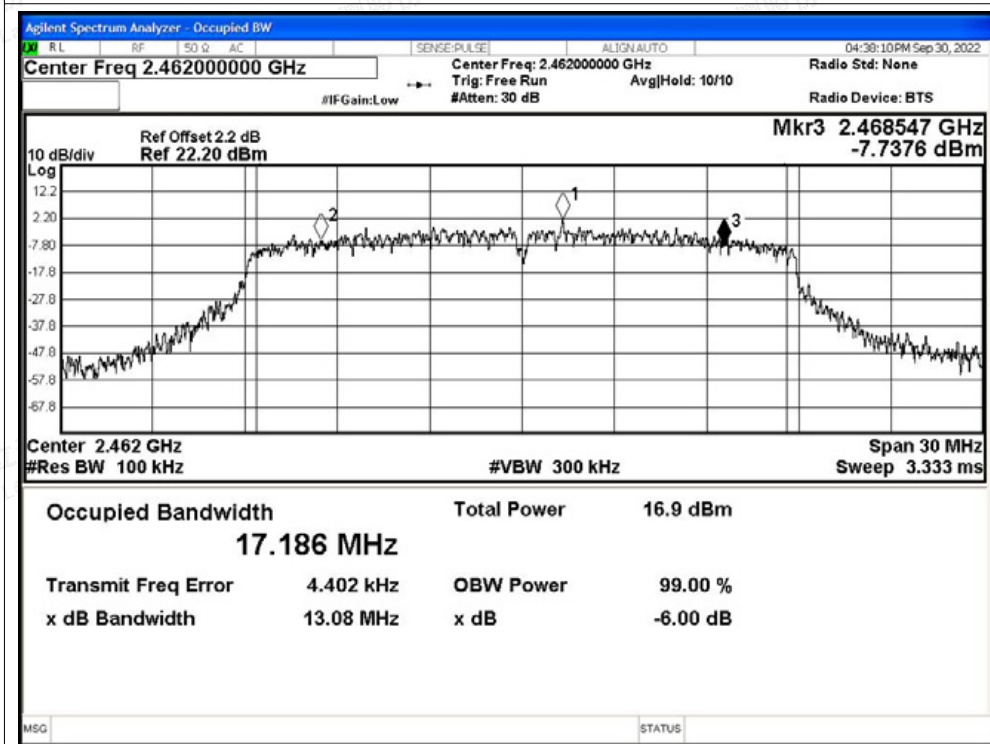




-6dB Bandwidth NVNT n20 2437MHz Ant1

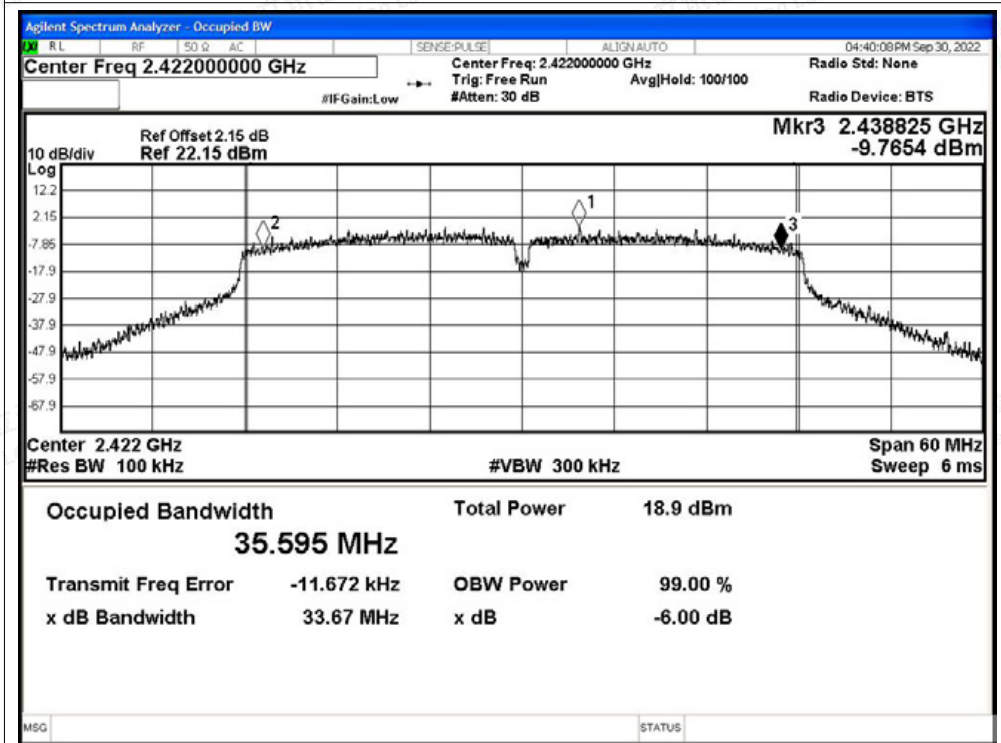


-6dB Bandwidth NVNT n20 2462MHz Ant1

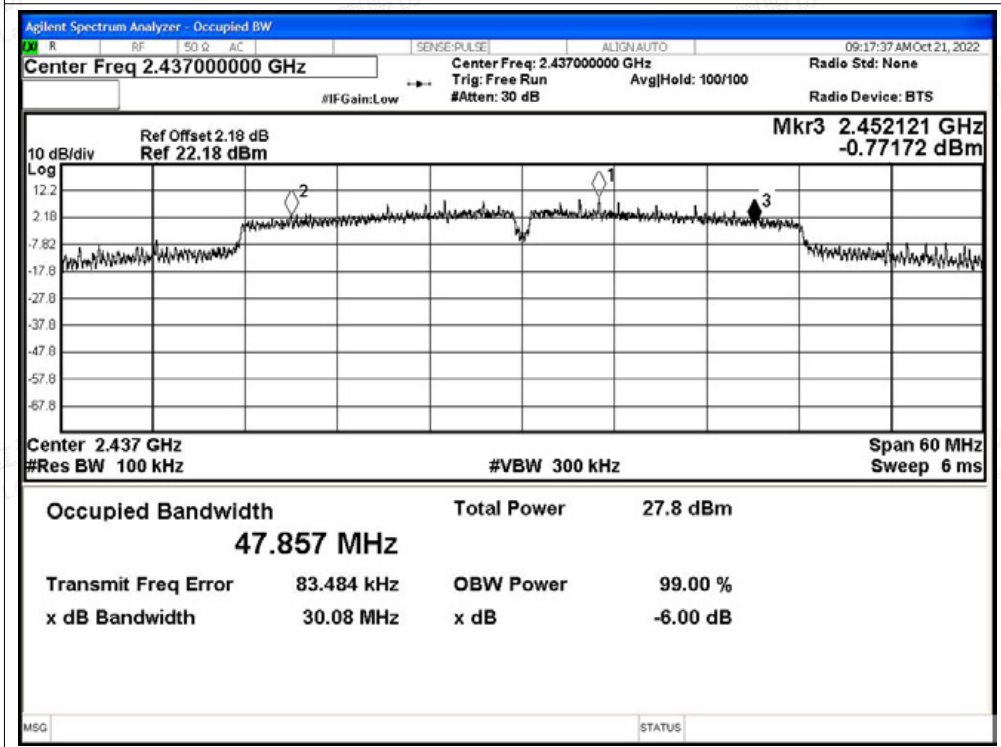




-6dB Bandwidth NVNT n40 2422MHz Ant1

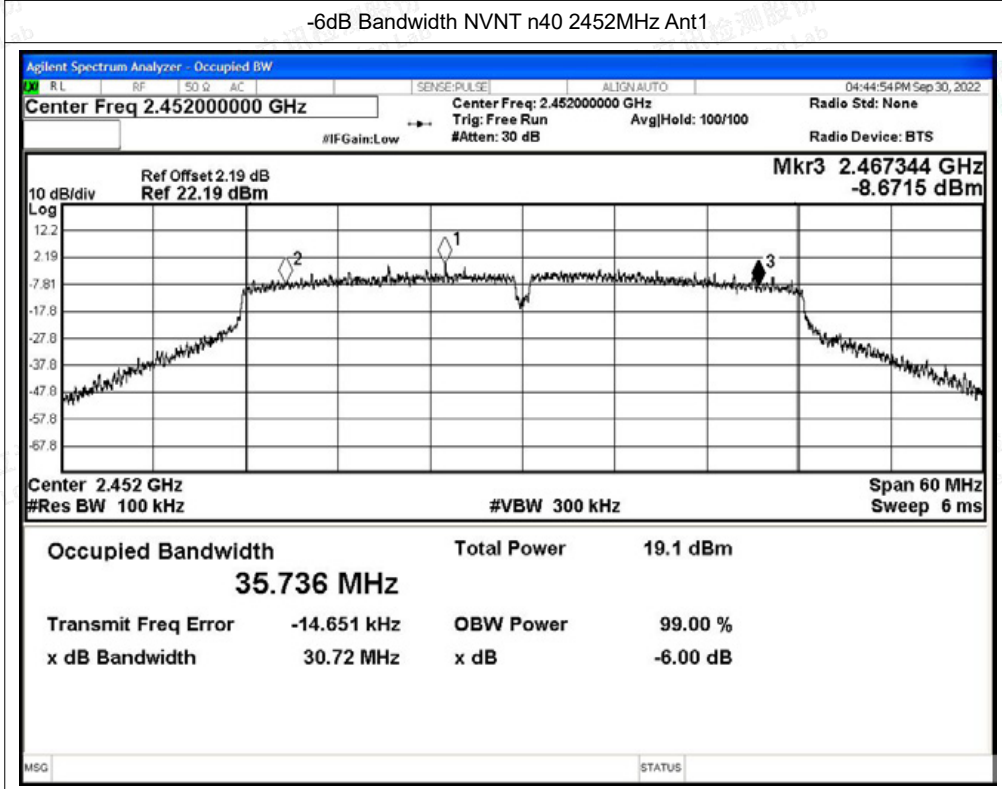


-6dB Bandwidth NVNT n40 2437MHz Ant1





-6dB Bandwidth NVNT n40 2452MHz Ant1





A.2 Occupied Channel Bandwidth

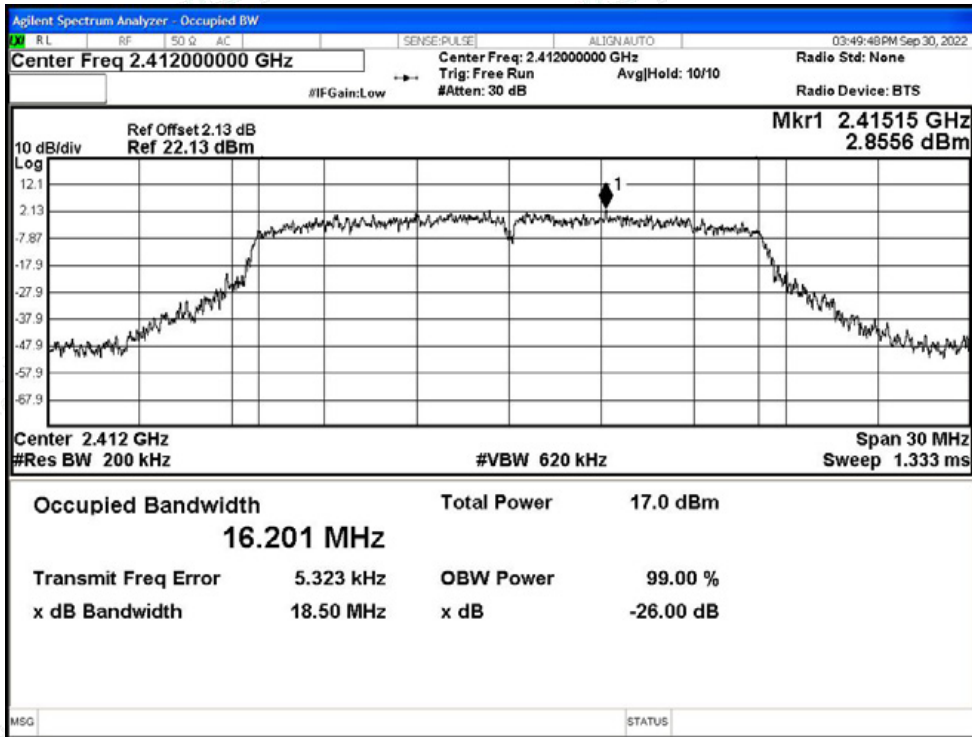
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	g	2412	Ant0	16.201
NVNT	g	2437	Ant0	23.447
NVNT	g	2462	Ant0	16.217
NVNT	n20	2412	Ant0	17.281
NVNT	n20	2437	Ant0	24.528
NVNT	n20	2462	Ant0	17.243
NVNT	n40	2422	Ant0	35.701
NVNT	n40	2437	Ant0	48.092
NVNT	n40	2452	Ant0	35.609



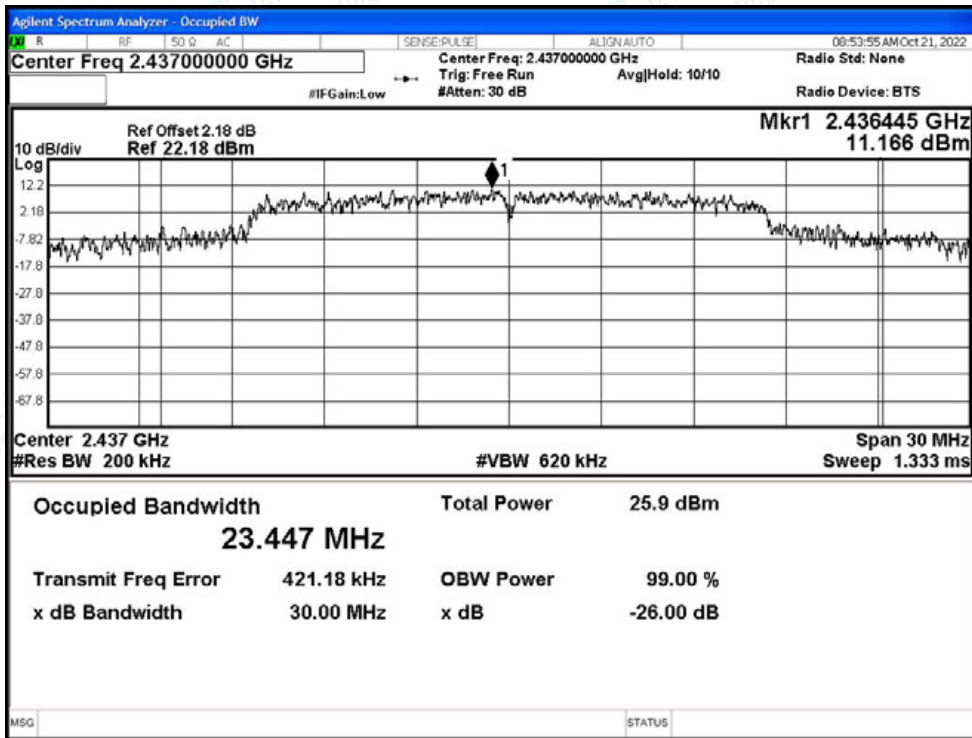


Test Graphs

OBW NVNT g 2412MHz Ant0

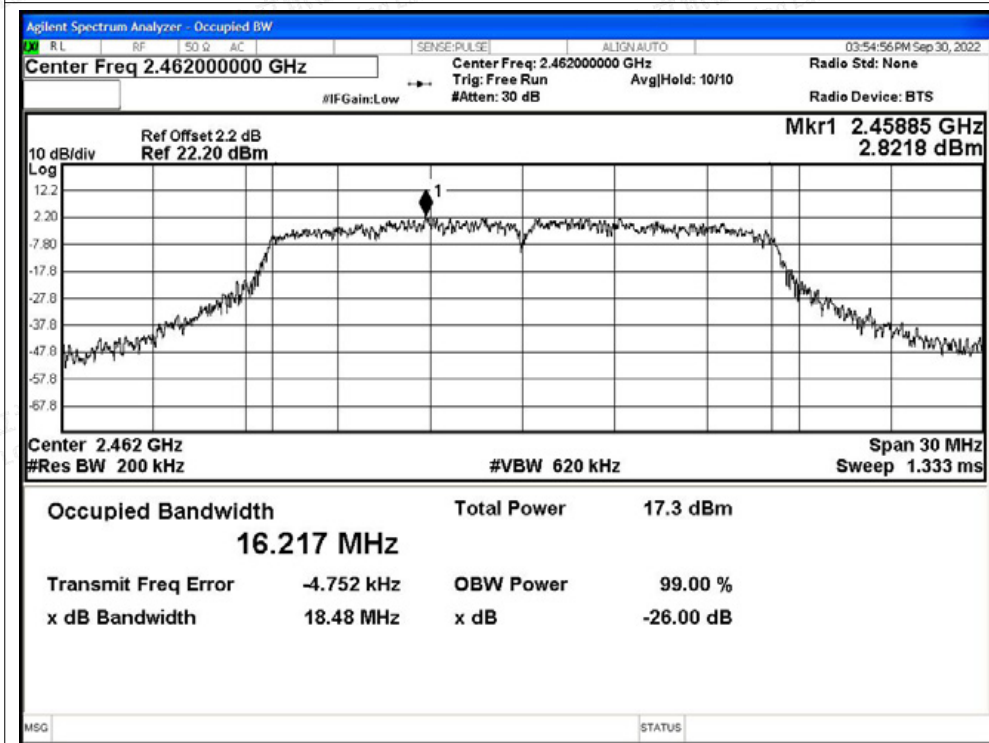


OBW NVNT g 2437MHz Ant0

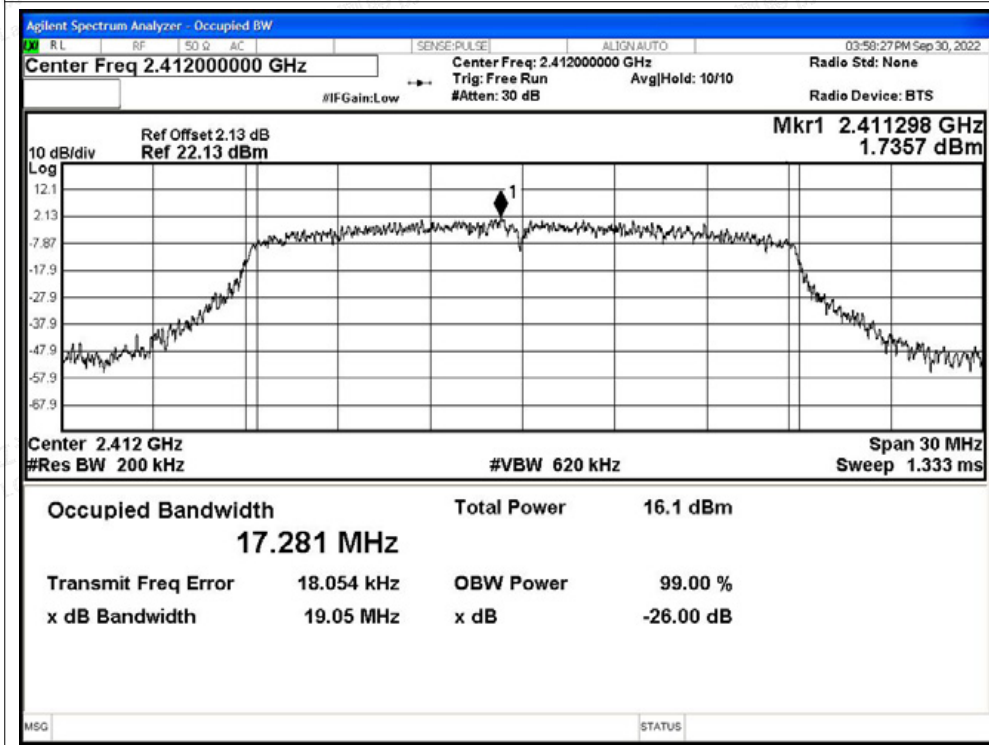




OBW NVNT g 2462MHz Ant0

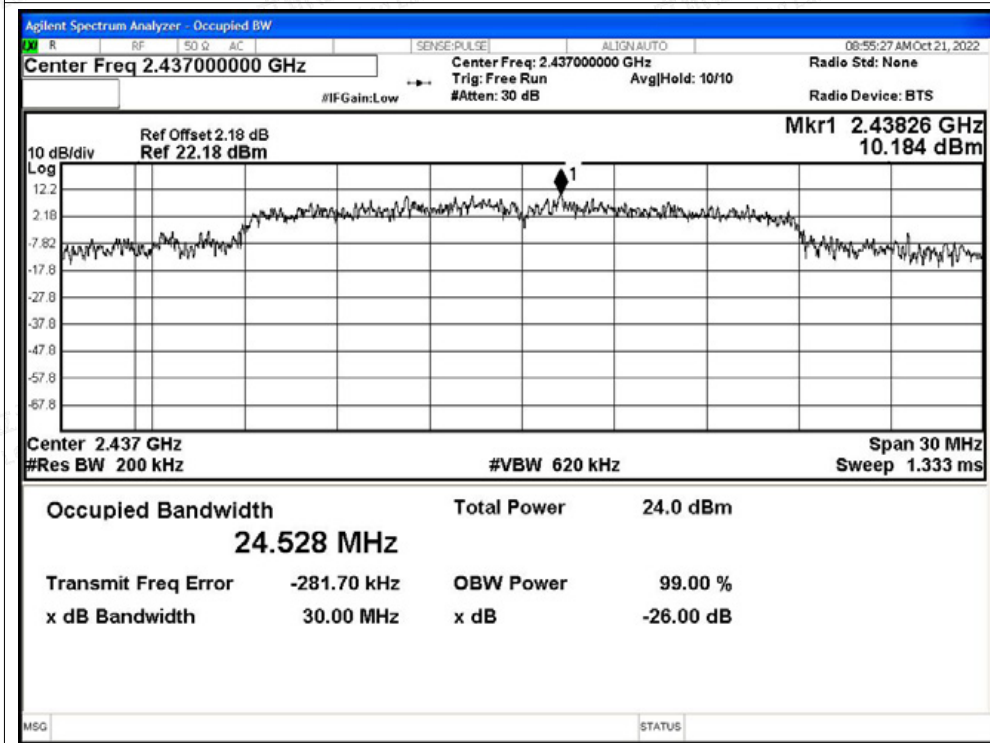


OBW NVNT n20 2412MHz Ant0

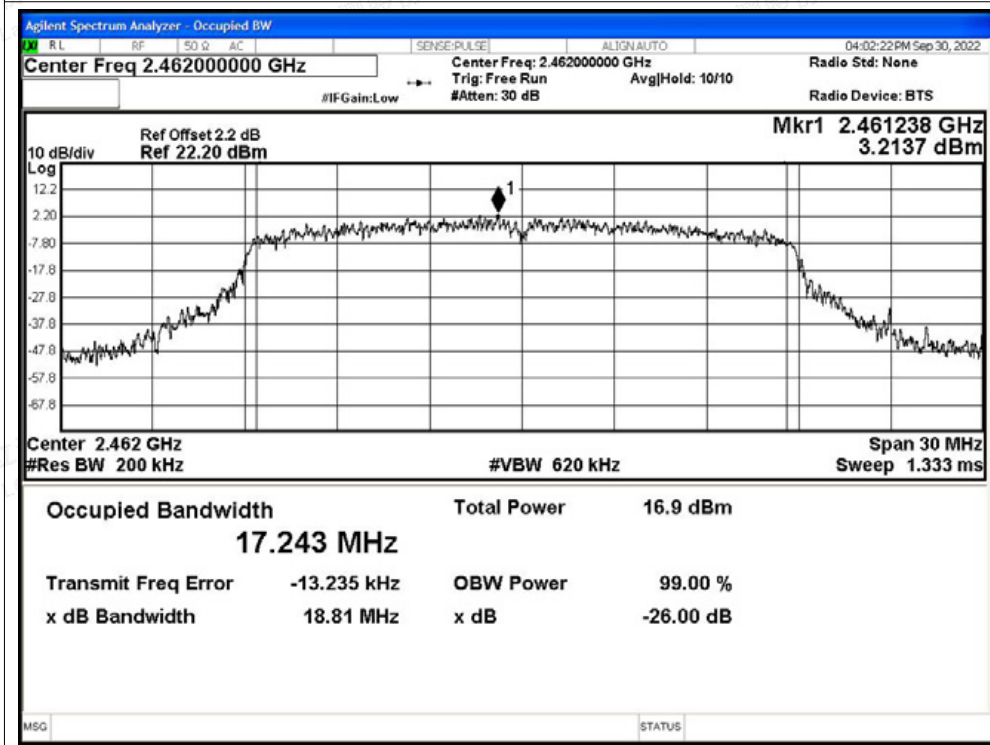




OBW NVNT n20 2437MHz Ant0

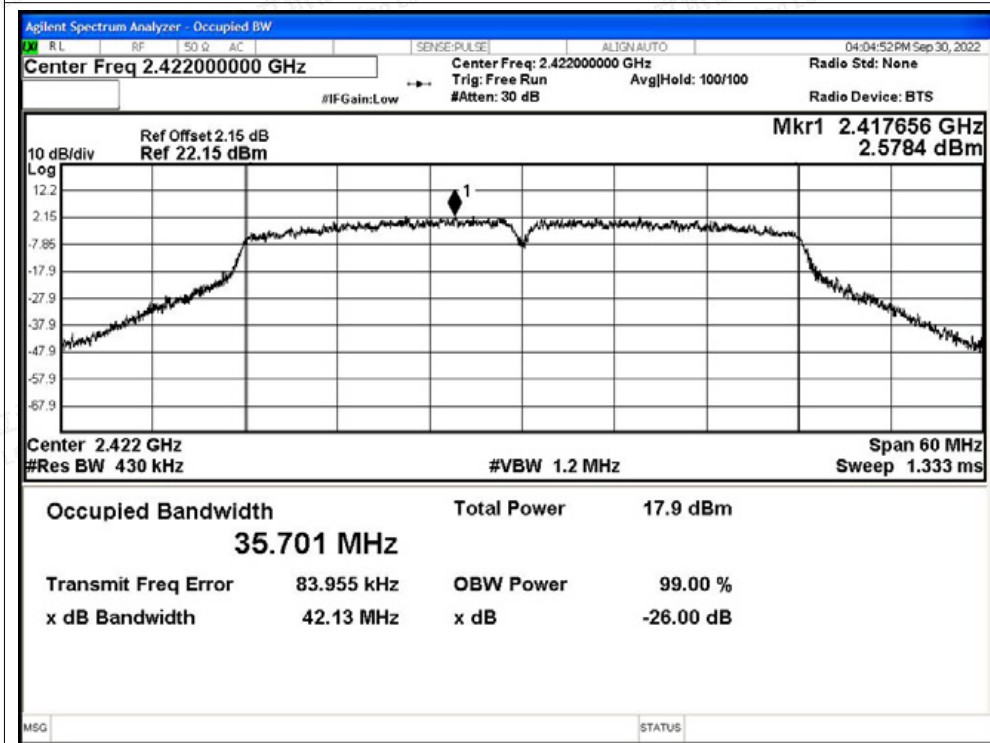


OBW NVNT n20 2462MHz Ant0

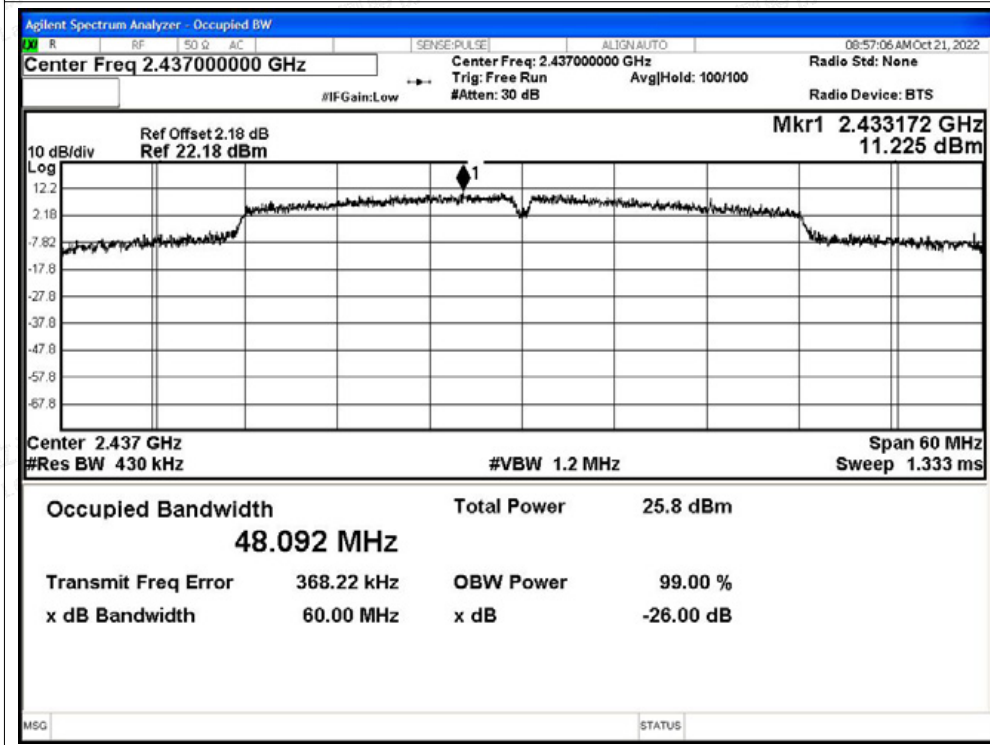


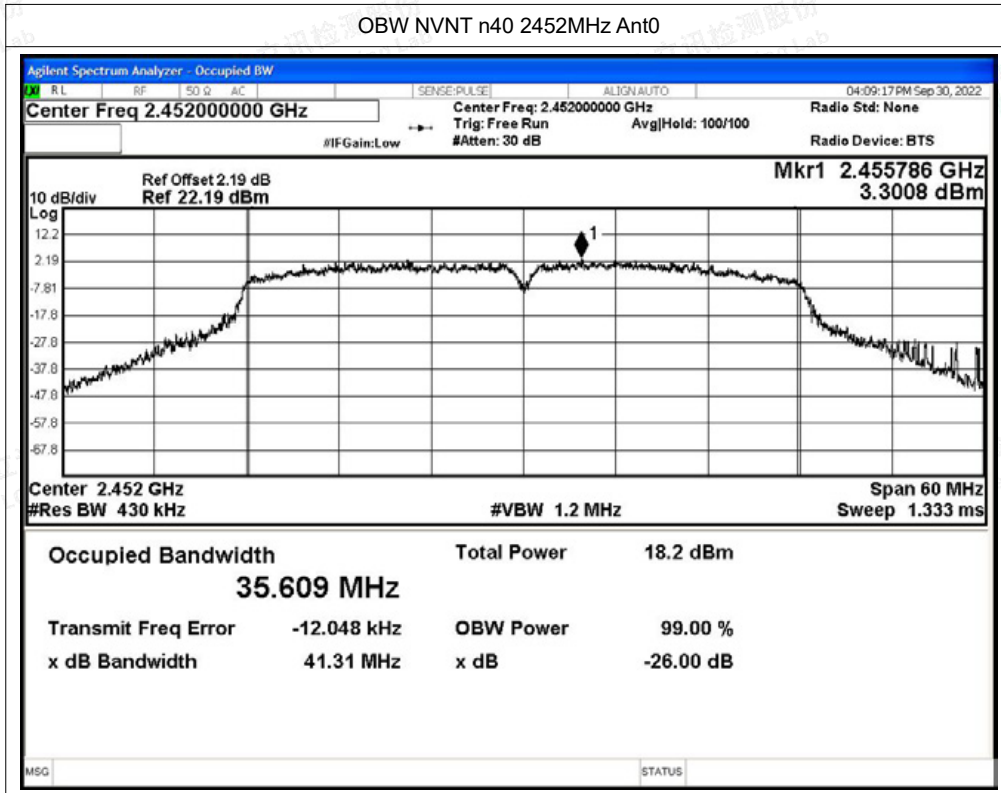


OBW NVNT n40 2422MHz Ant0



OBW NVNT n40 2437MHz Ant0





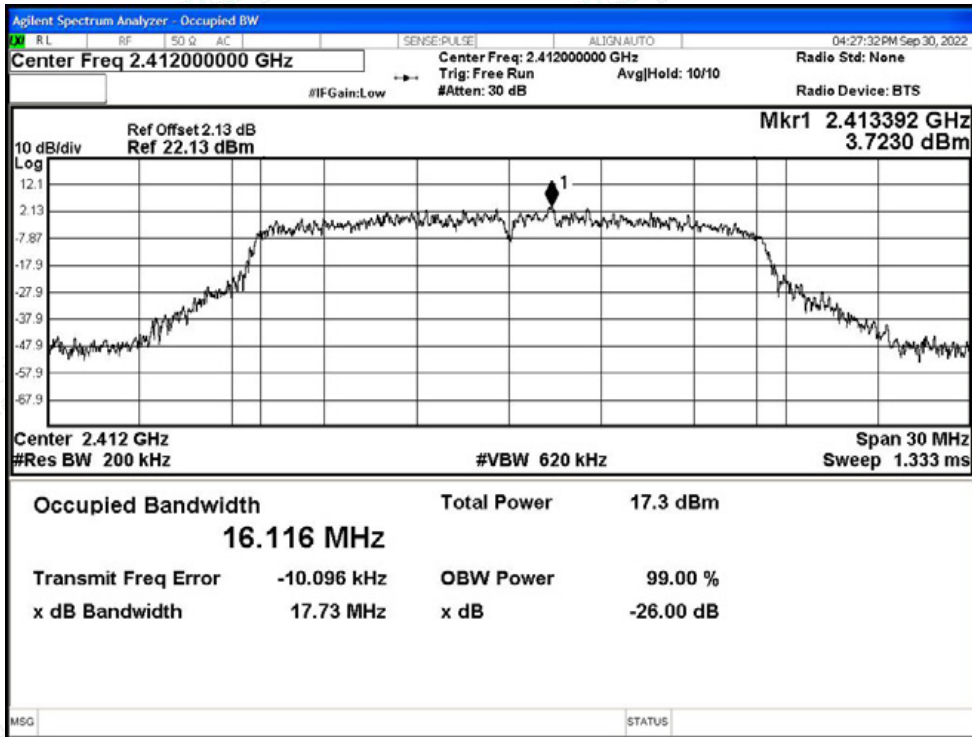
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	g	2412	Ant1	16.116
NVNT	g	2437	Ant1	23.962
NVNT	g	2462	Ant1	16.144
NVNT	n20	2412	Ant1	17.239
NVNT	n20	2437	Ant1	23.822
NVNT	n20	2462	Ant1	17.235
NVNT	n40	2422	Ant1	35.630
NVNT	n40	2437	Ant1	47.252
NVNT	n40	2452	Ant1	35.757



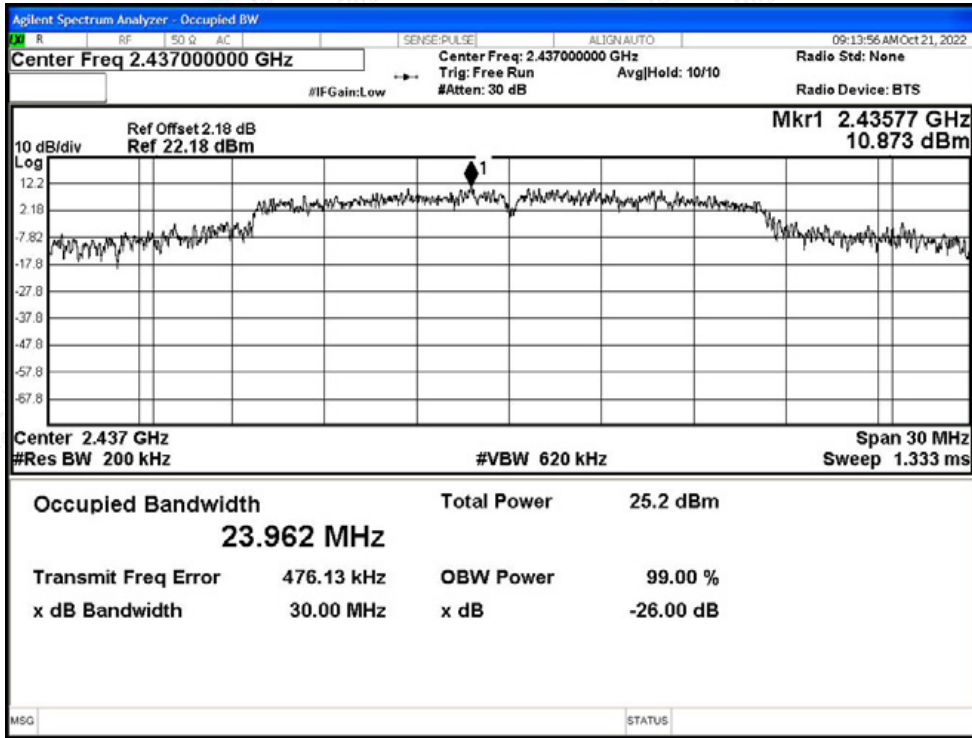


Test Graphs

OBW NVNT g 2412MHz Ant1

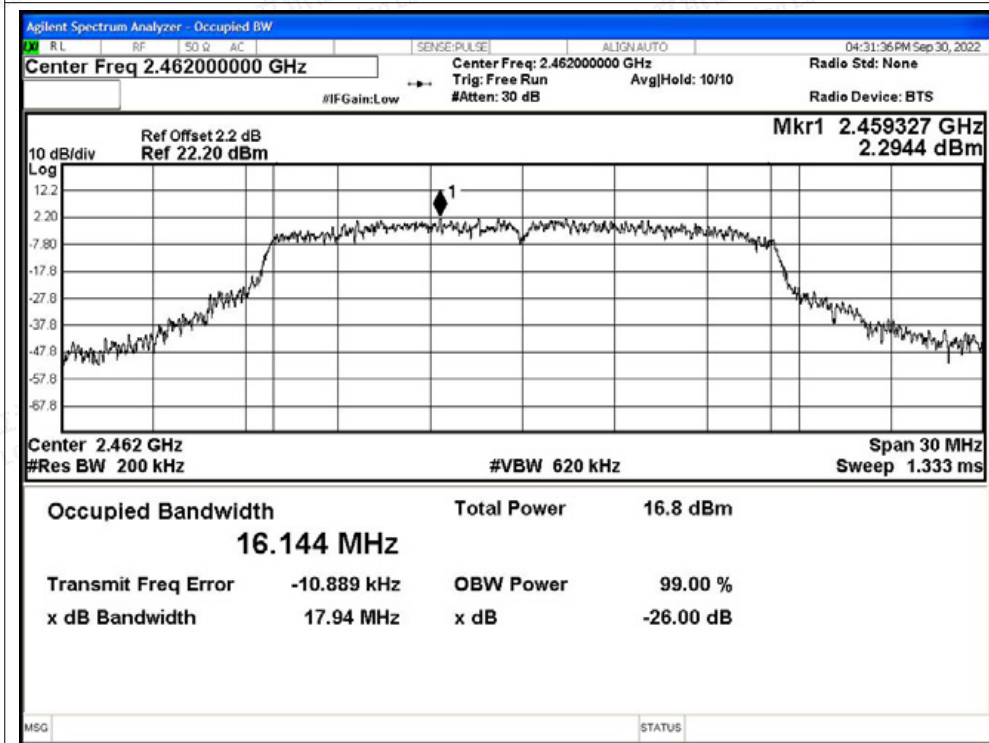


OBW NVNT g 2437MHz Ant1

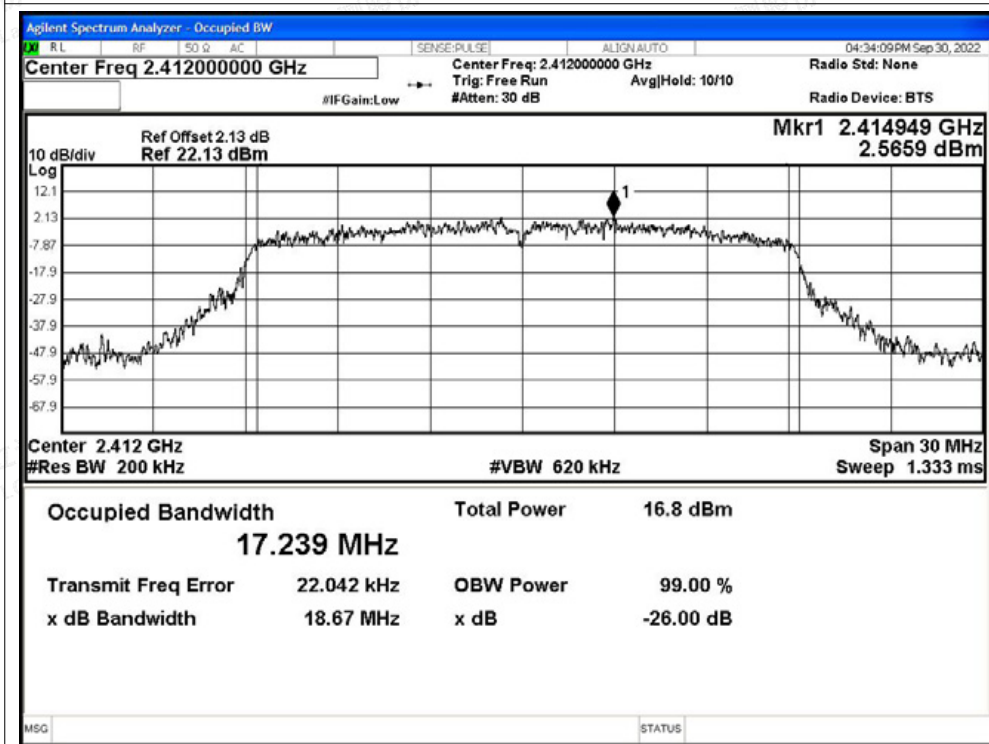




OBW NVNT g 2462MHz Ant1

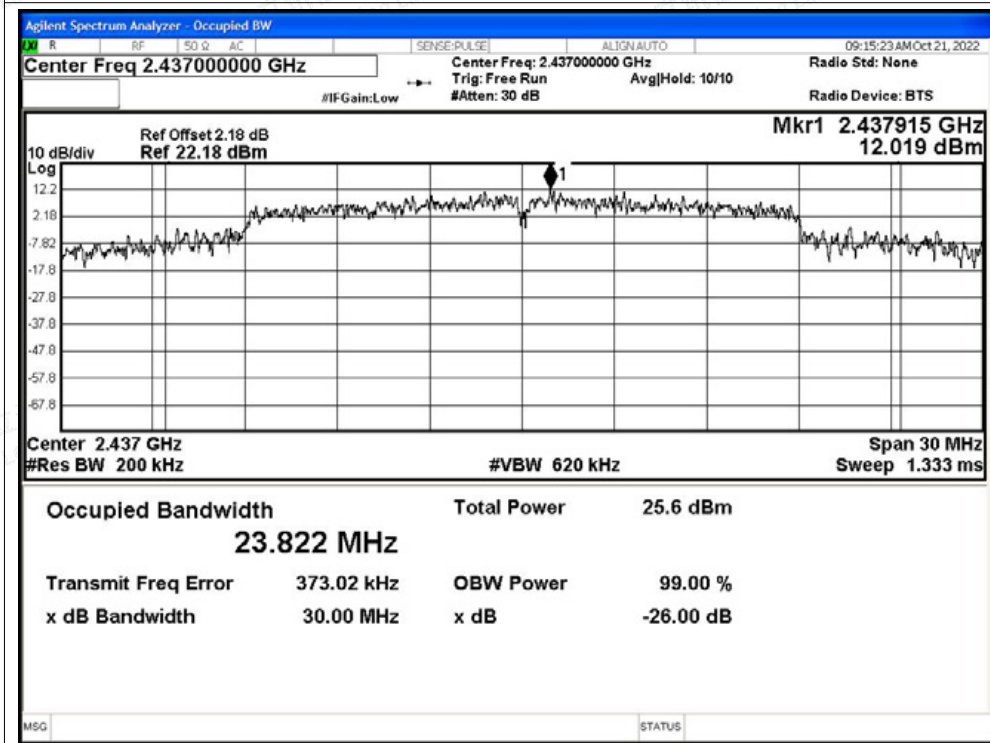


OBW NVNT n20 2412MHz Ant1

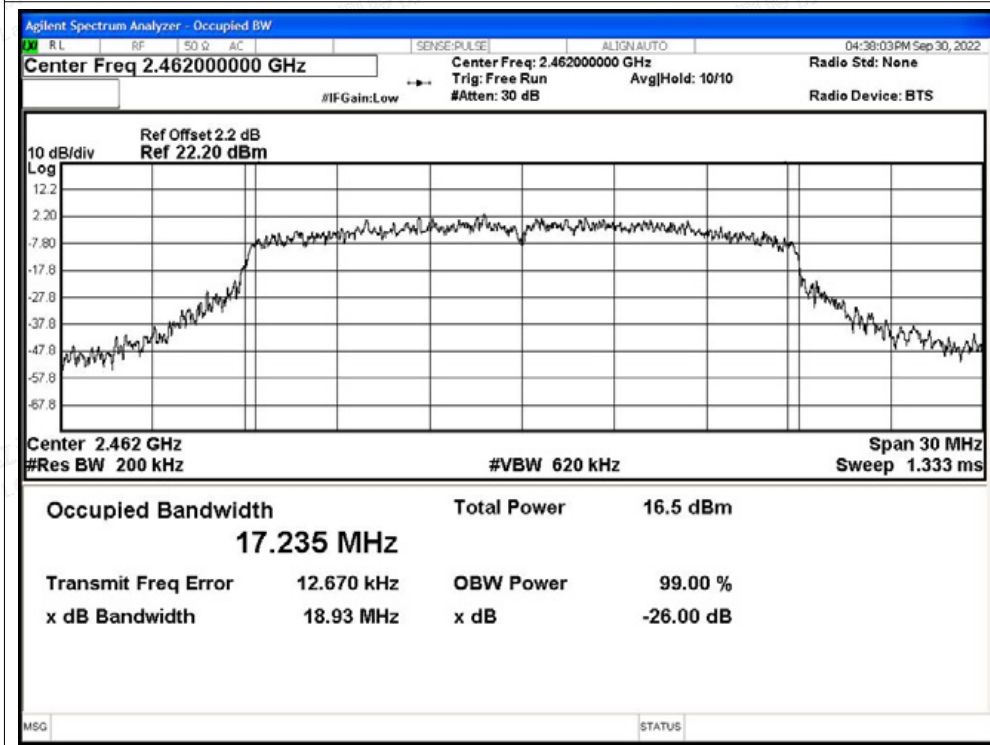




OBW NVNT n20 2437MHz Ant1

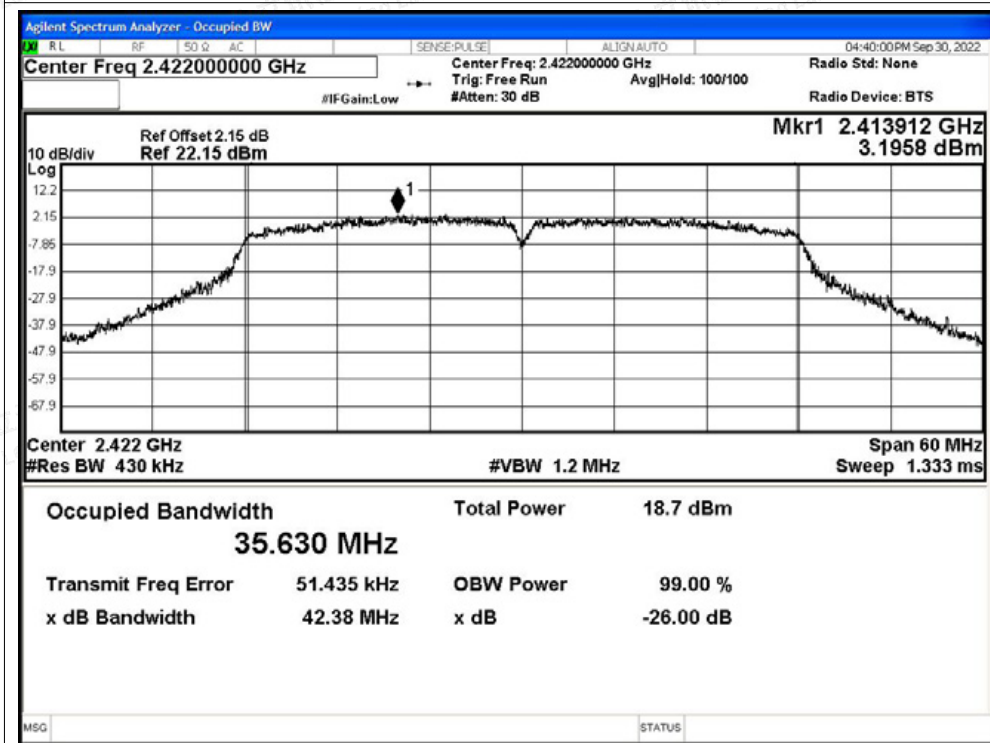


OBW NVNT n20 2462MHz Ant1

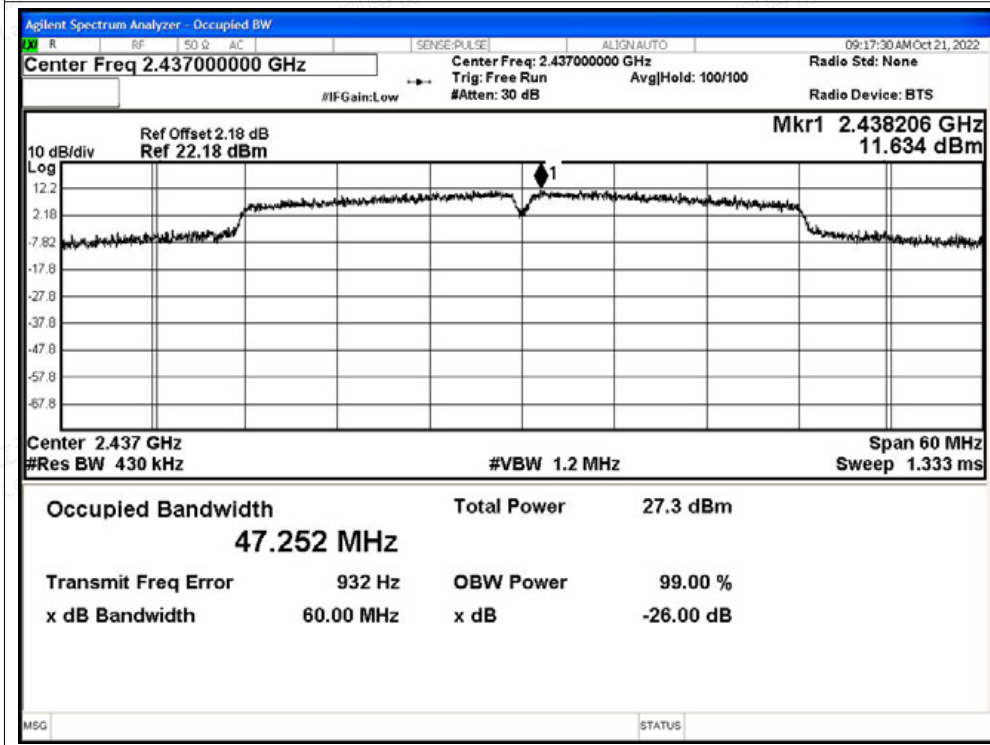


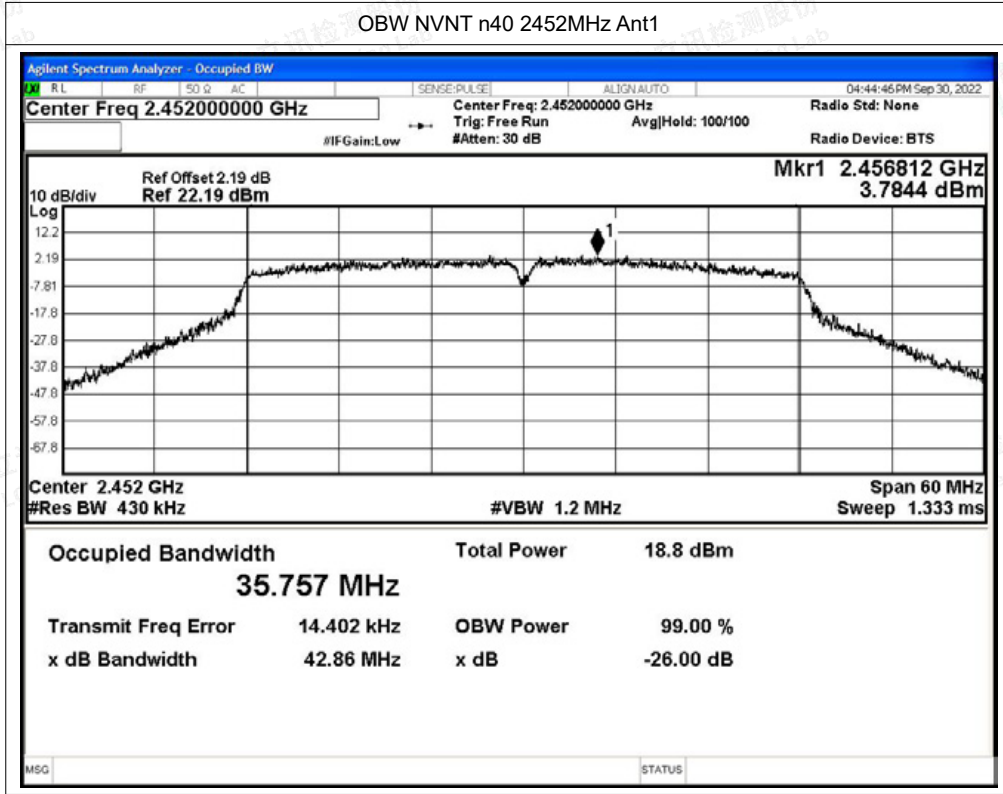


OBW NVNT n40 2422MHz Ant1



OBW NVNT n40 2437MHz Ant1







A.3 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	g	2412	Ant0	16.27	30	Pass
NVNT	g	2437	Ant0	24.81	30	Pass
NVNT	g	2462	Ant0	16.66	30	Pass
NVNT	n20	2412	Ant0	15.38	30	Pass
NVNT	n20	2437	Ant0	24.46	30	Pass
NVNT	n20	2462	Ant0	17.88	30	Pass
NVNT	n40	2422	Ant0	16.81	30	Pass
NVNT	n40	2437	Ant0	24.46	30	Pass
NVNT	n40	2452	Ant0	16.99	30	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	g	2412	Ant1	16.23	30	Pass
NVNT	g	2437	Ant1	24.40	30	Pass
NVNT	g	2462	Ant1	15.96	30	Pass
NVNT	n20	2412	Ant1	16.12	30	Pass
NVNT	n20	2437	Ant1	24.35	30	Pass
NVNT	n20	2462	Ant1	17.22	30	Pass
NVNT	n40	2422	Ant1	17.44	30	Pass
NVNT	n40	2437	Ant1	24.78	30	Pass
NVNT	n40	2452	Ant1	17.68	30	Pass

MIMO

Condition	Mode	Frequency (MHz)	Total Power (dBm)			Limit (dBm)	Verdict
			Ant0	Ant1	Ant0+Ant1		
NVNT	n20	2412	15.38	16.12	18.78	30	Pass
NVNT	n20	2437	24.46	24.35	27.42	30	Pass
NVNT	n20	2462	17.88	17.22	20.57	30	Pass
NVNT	n40	2422	16.81	17.44	20.15	30	Pass
NVNT	n40	2437	24.46	24.78	27.63	30	Pass
NVNT	n40	2452	16.99	17.68	20.36	30	Pass



Shenzhen LCS Compliance Testing Laboratory Ltd.
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 Scan code to check authenticity



A.4 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	g	2412	Ant0	-13.63	<=8	Pass
NVNT	g	2437	Ant0	-2.24	<=8	Pass
NVNT	g	2462	Ant0	-10.35	<=8	Pass
NVNT	n20	2412	Ant0	-14.06	<=8	Pass
NVNT	n20	2437	Ant0	-3.43	<=8	Pass
NVNT	n20	2462	Ant0	-13.06	<=8	Pass
NVNT	n40	2422	Ant0	-15.56	<=8	Pass
NVNT	n40	2437	Ant0	-7.75	<=8	Pass
NVNT	n40	2452	Ant0	-16.07	<=8	Pass

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	g	2412	Ant1	-13.20	<=8	Pass
NVNT	g	2437	Ant1	-2.73	<=8	Pass
NVNT	g	2462	Ant1	-11.98	<=8	Pass
NVNT	n20	2412	Ant1	-10.91	<=8	Pass
NVNT	n20	2437	Ant1	-2.88	<=8	Pass
NVNT	n20	2462	Ant1	-13.62	<=8	Pass
NVNT	n40	2422	Ant1	-15.45	<=8	Pass
NVNT	n40	2437	Ant1	-6.68	<=8	Pass
NVNT	n40	2452	Ant1	-15.86	<=8	Pass

MIMO

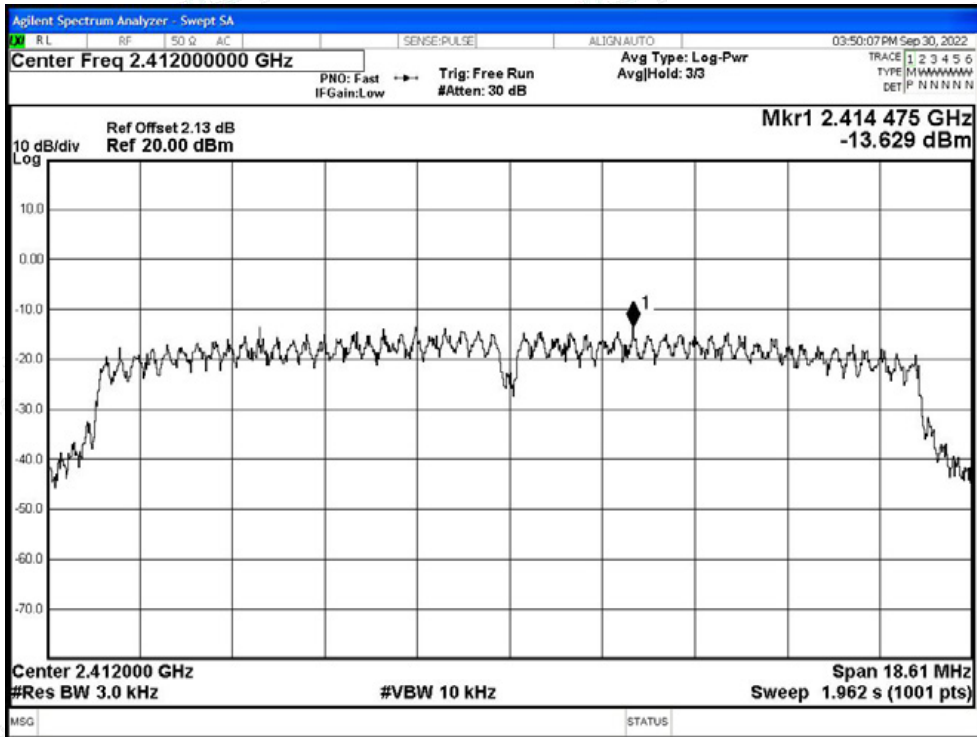
Condition	Mode	Frequency (MHz)	Total PSD (dBm/3kHz)			Limit (dBm/3kHz)	Verdict
			Ant0	Ant1	Ant0+Ant1		
NVNT	n20	2412	-14.06	-10.91	-9.20	<=8	Pass
NVNT	n20	2437	-3.43	-2.88	-0.14	<=8	Pass
NVNT	n20	2462	-13.06	-13.62	-10.32	<=8	Pass
NVNT	n40	2422	-15.56	-15.45	-12.49	<=8	Pass
NVNT	n40	2437	-7.75	-6.68	-4.17	<=8	Pass
NVNT	n40	2452	-16.07	-15.86	-12.95	<=8	Pass



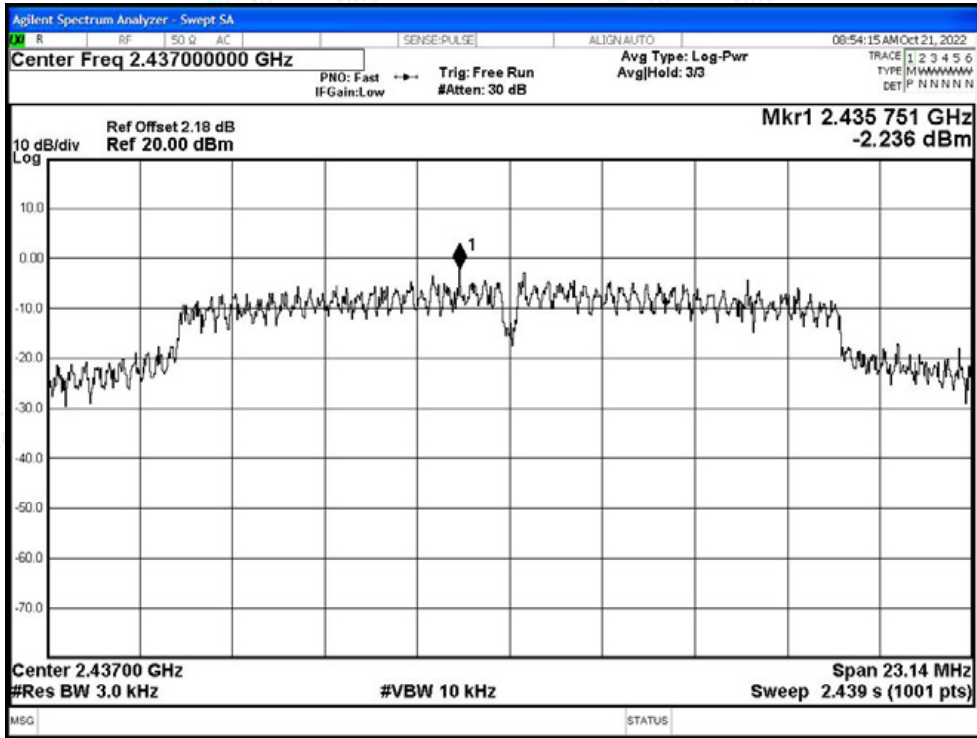


Test Graphs

PSD NVNT g 2412MHz Ant0

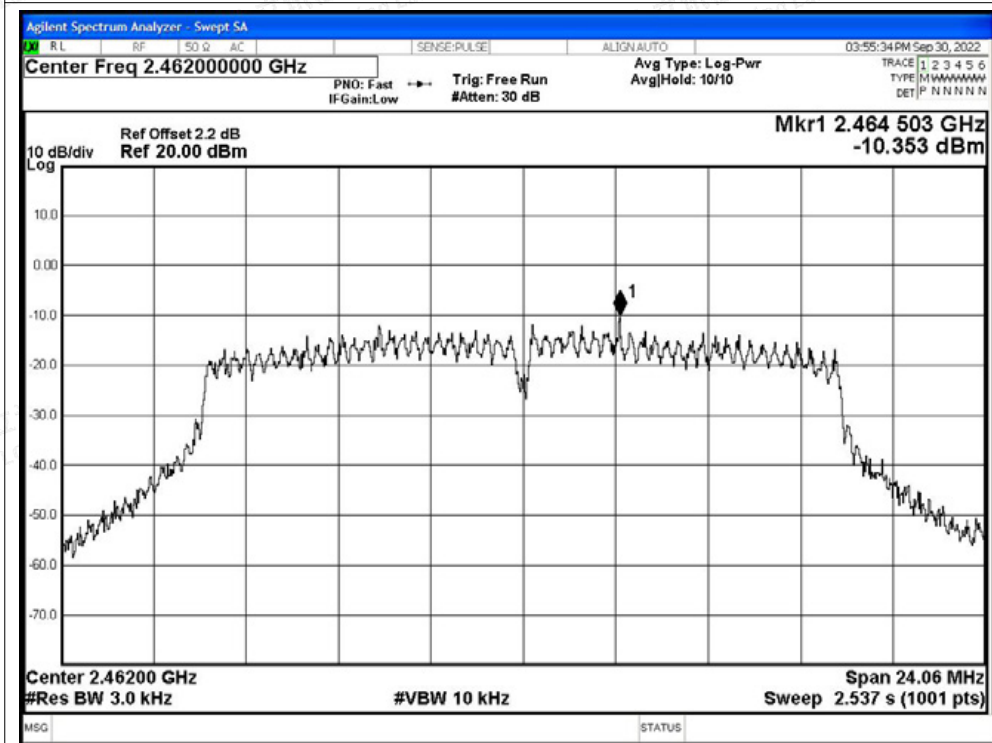


PSD NVNT g 2437MHz Ant0

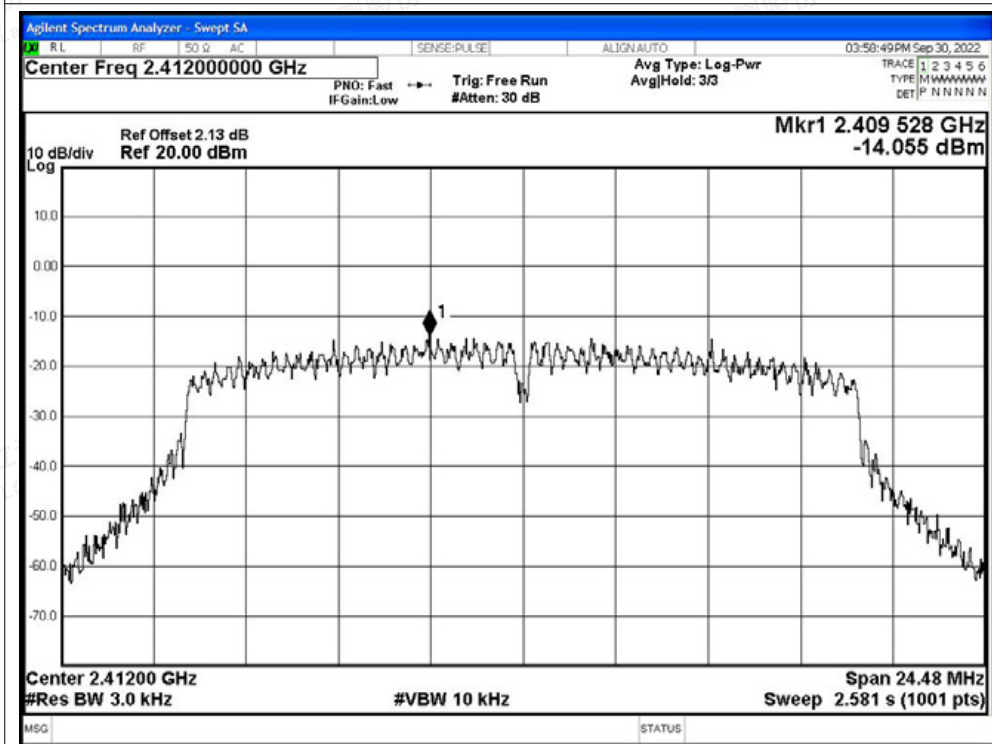




PSD NVNT g 2462MHz Ant0

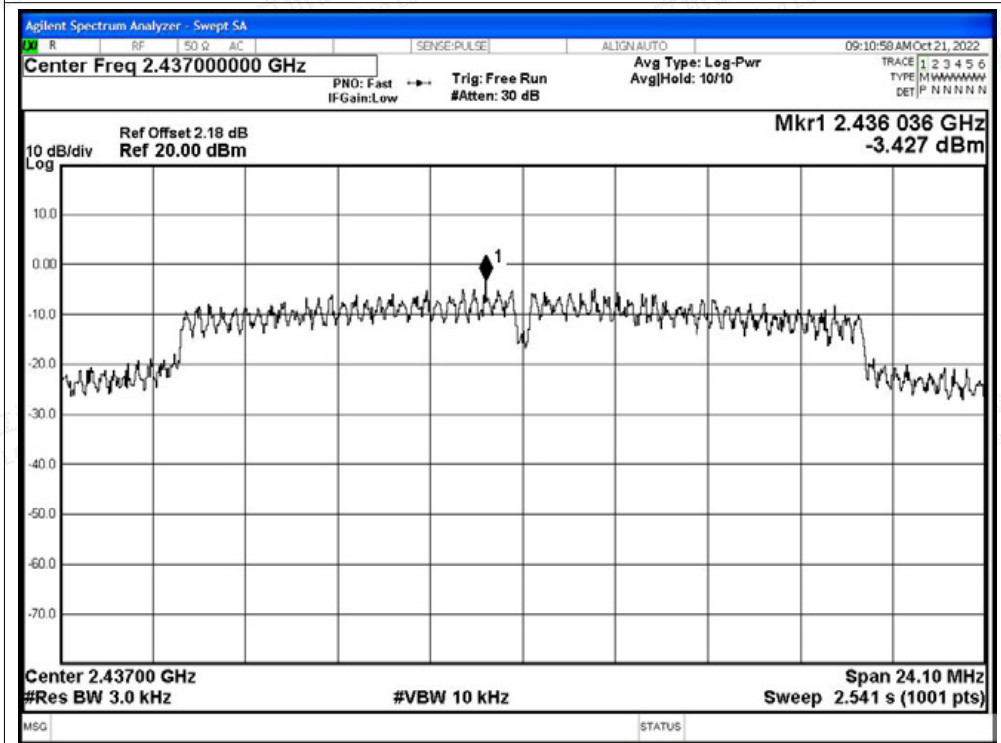


PSD NVNT n20 2412MHz Ant0

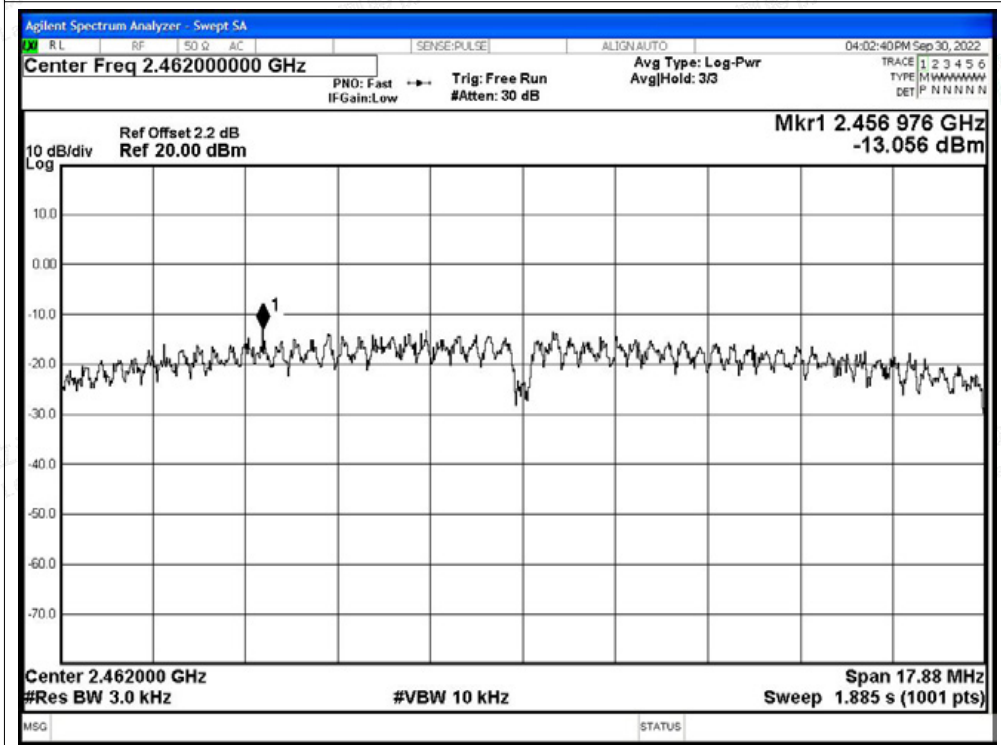




PSD NVNT n20 2437MHz Ant0

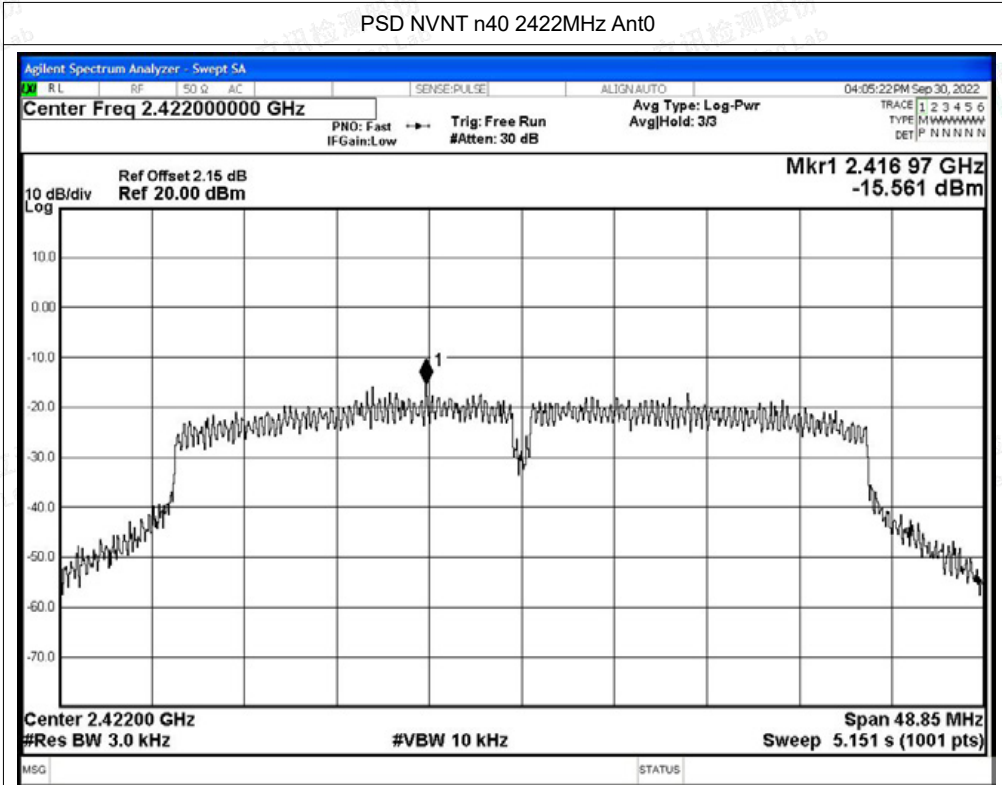


PSD NVNT n20 2462MHz Ant0

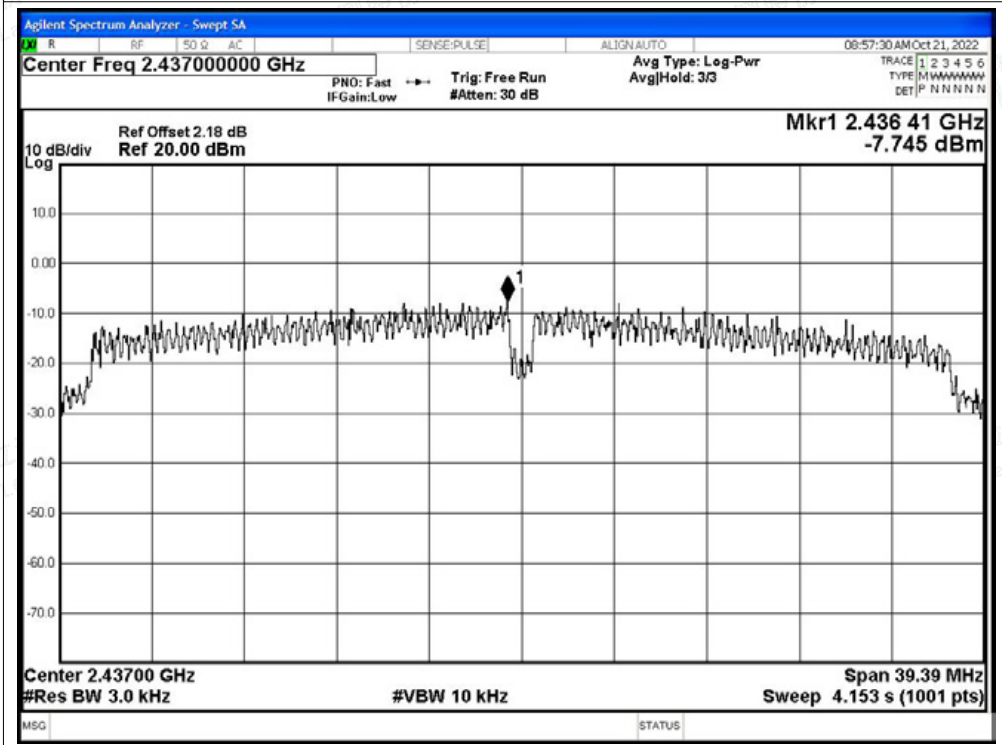


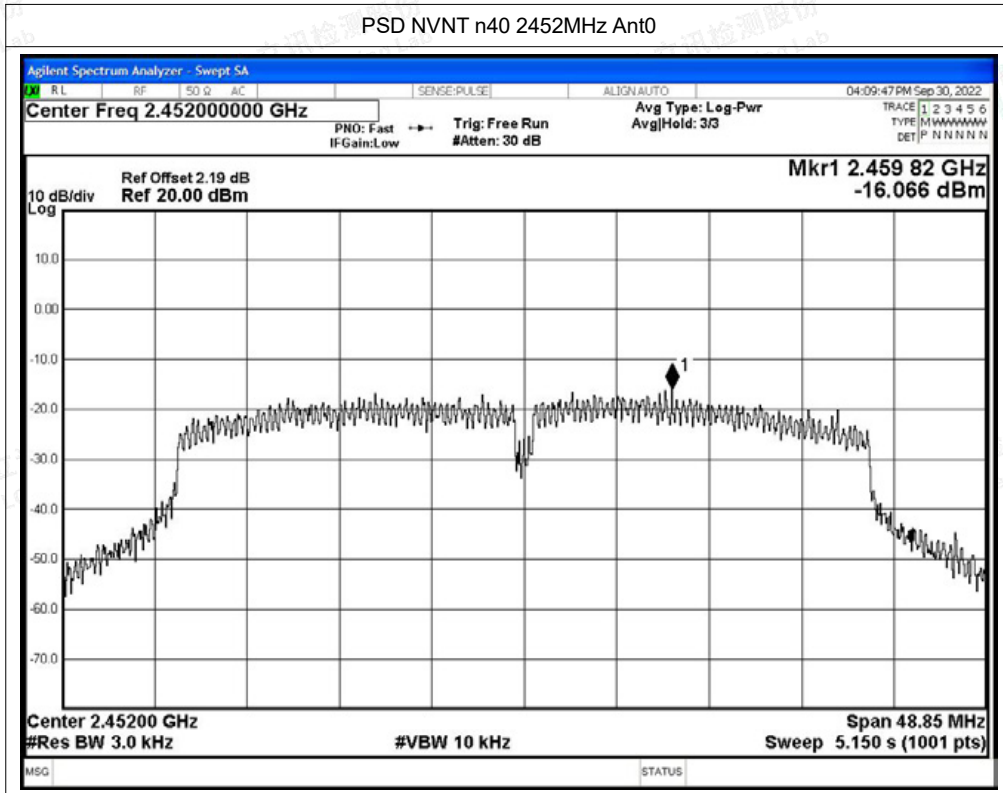


PSD NVNT n40 2422MHz Ant0



PSD NVNT n40 2437MHz Ant0

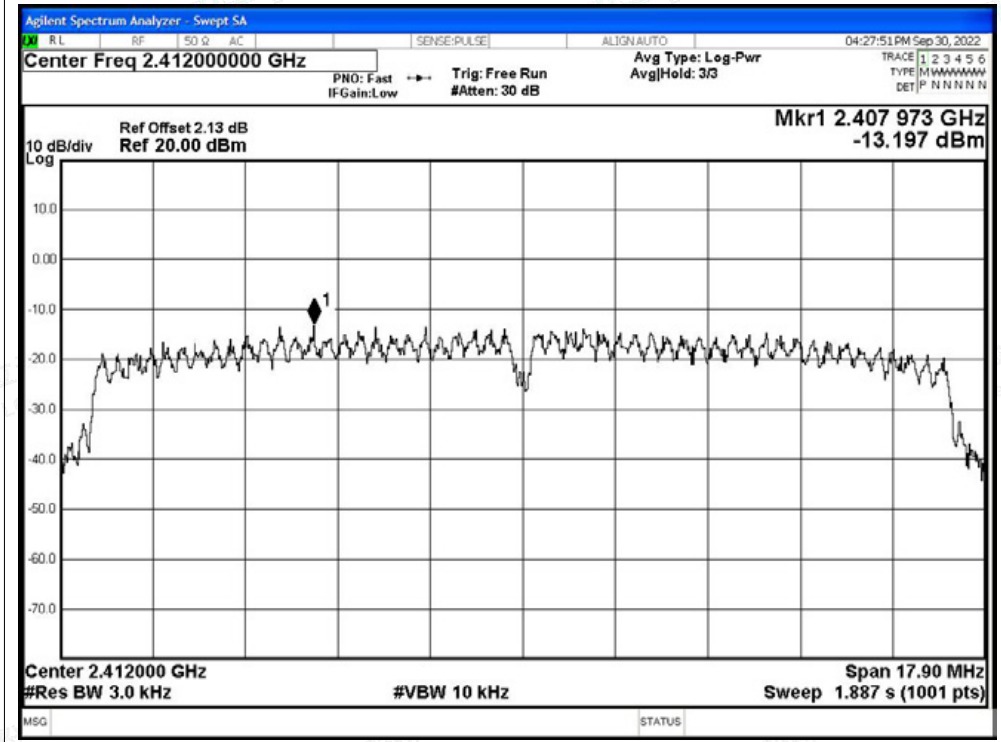




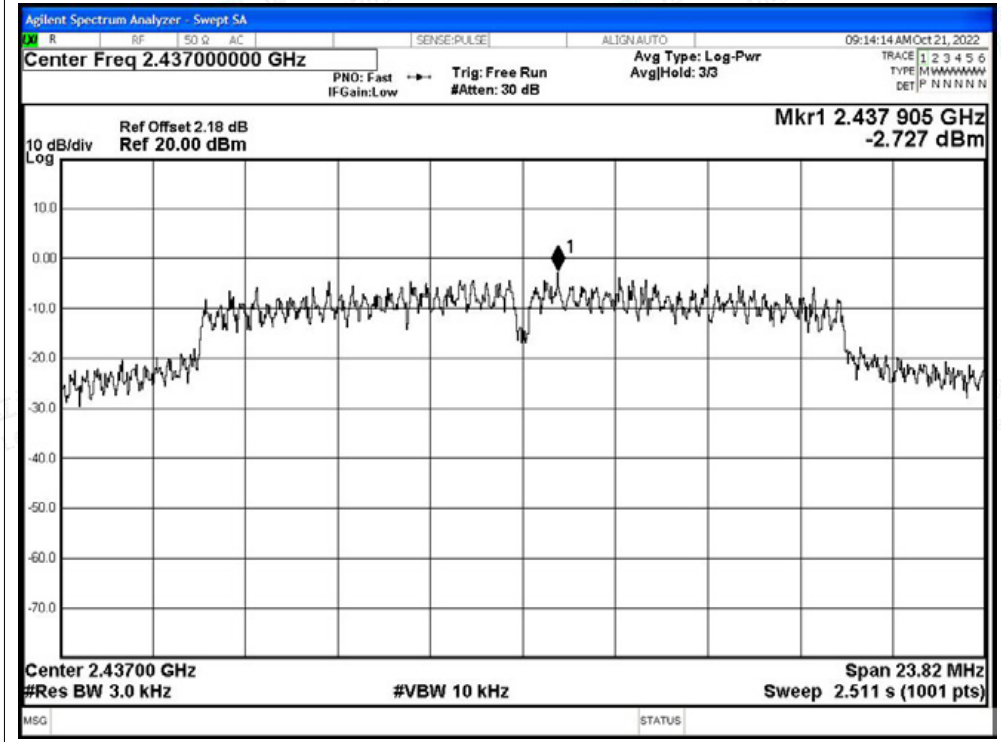


Test Graphs

PSD NVNT g 2412MHz Ant1

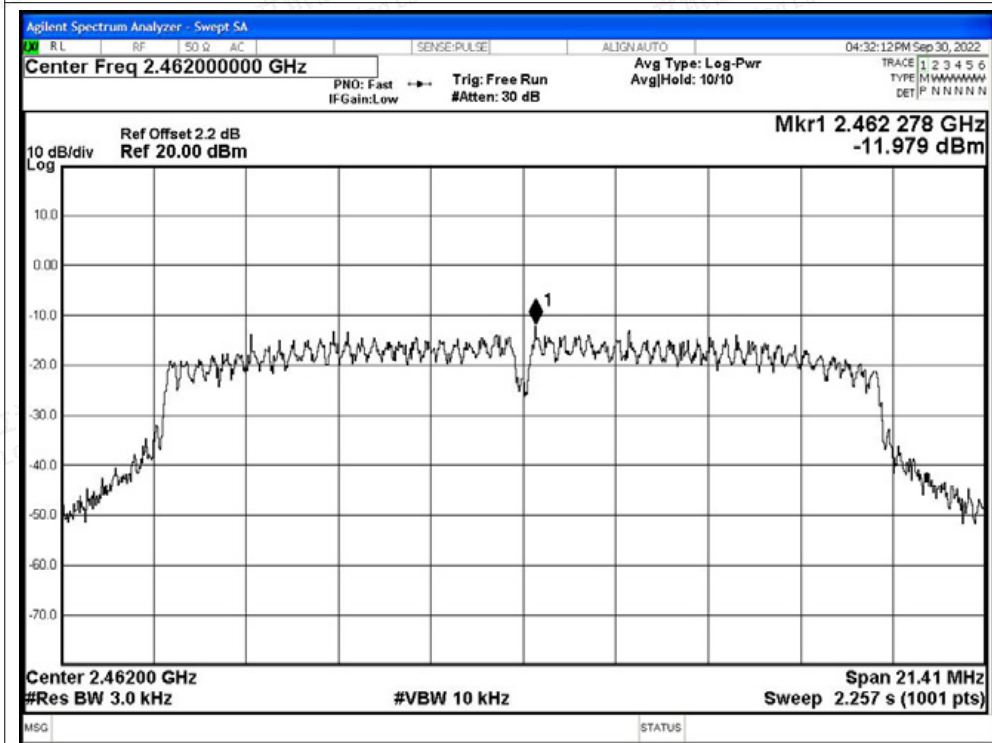


PSD NVNT g 2437MHz Ant1

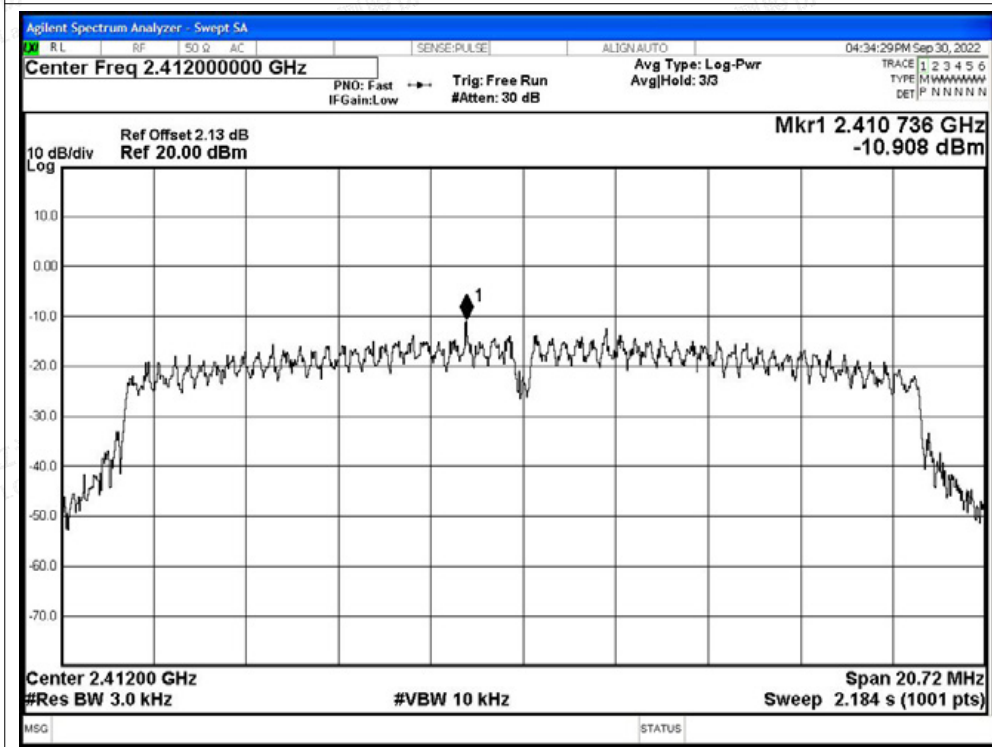




PSD NVNT g 2462MHz Ant1

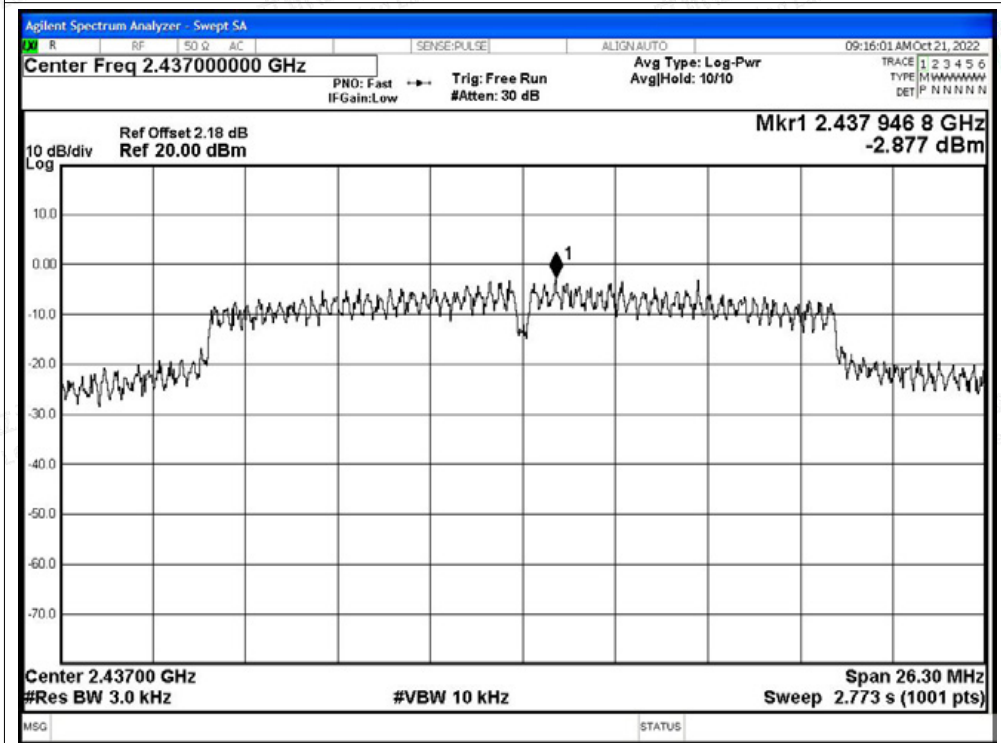


PSD NVNT n20 2412MHz Ant1

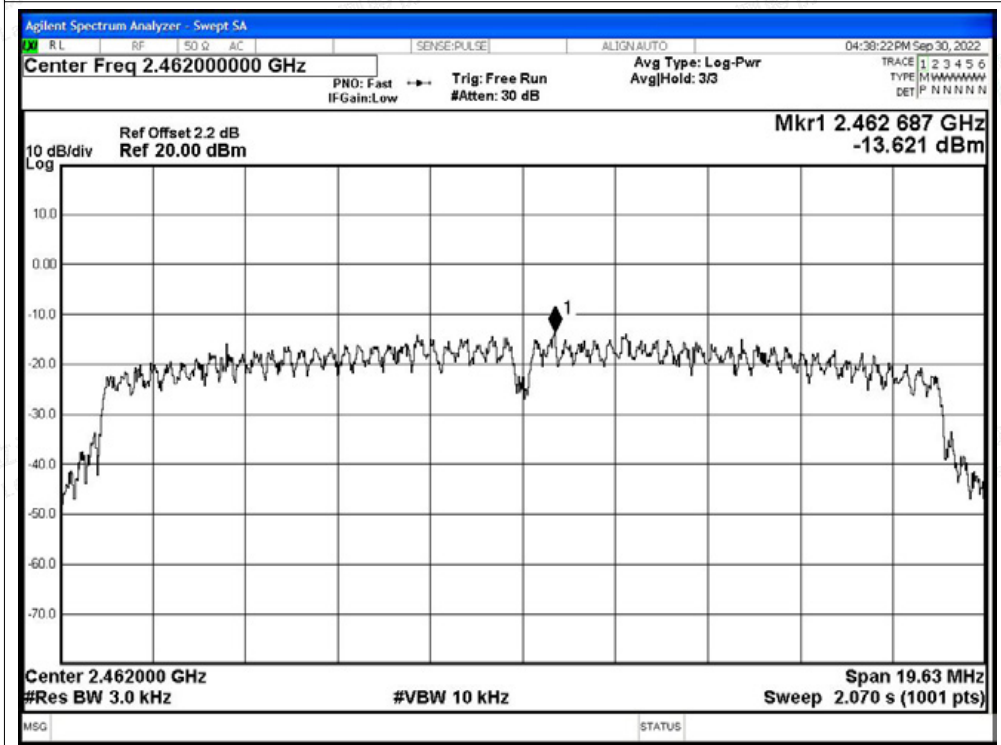




PSD NVNT n20 2437MHz Ant1

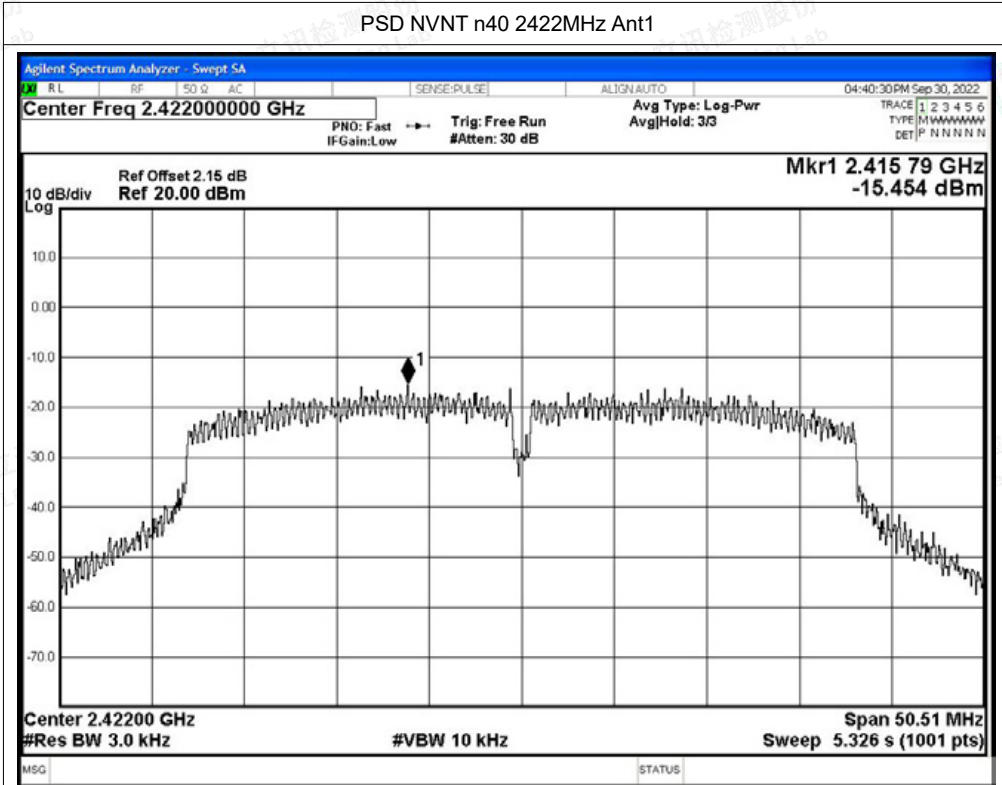


PSD NVNT n20 2462MHz Ant1





PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1

