

#### Test Data

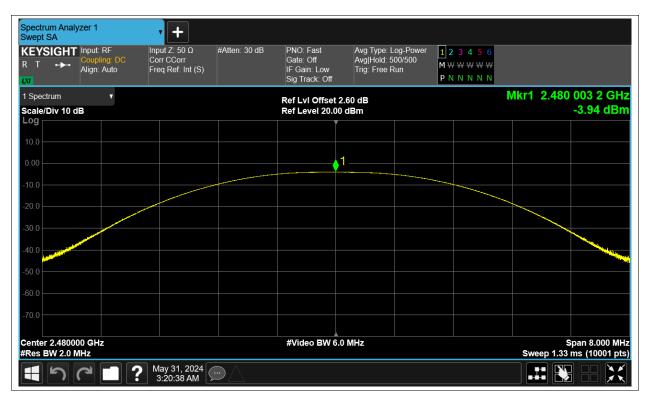
# **Maximum Conducted Output Power**

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant1	-4.48	30	Pass
NVNT	BLE	2442	Ant1	-3.212	30	Pass
NVNT	BLE	2480	Ant1	-3.944	30	Pass



			Test Grap				
		Power	· NVNT BLE 2	2402MHz Ant1			
Spectrum Analyzer 1 Swept SA	<b>•</b> +						
KEYSIGHT Input: RF R T ↔ Coupling: DC Align: Auto	Input Ζ: 50 Ω Corr CCorr Freq Ref: Int (S)	#Atten: 30 dB	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Po Avg Hold: 500/50 Trig: Free Run	ower 00 M ₩ ₩ ₩ ₩ ₩ P N N N N N		
1 Spectrum			Ref LvI Offset			Mkr1 2.401	
Scale/Div 10 dB Log			Ref Level 20.00	0 dBm			-4.48 dBm
10.0							
0.00			<b>1</b>	1			
-10.0							
-20.0							
-30.0							
-40.0							and the second s
-50.0							
-60.0							
-70.0							
Center 2.402000 GHz #Res BW 2.0 MHz			#Video BW 6.	0 MHz			oan 8.000 MHz 1s (10001 pts)
	May 31, 2024 3:15:05 AM						
		Power	r NVNT BLE 2	2442MHz Ant1			
Spectrum Analyzer 1		1 0 10 1					
Swept SA	<b>τ</b>	#Atten: 30 dB	PNO: Fast	A			
R     T     Input: RF       Coupling: DC	Corr CCorr	#Allen. 50 ub	Gate: Off IF Gain: Low	Avg Type: Log-Pe Avg Hold: 500/50 Trig: Free Run	ower 123456 00 M₩₩₩₩₩		
Align: Auto	Freq Ref: Int (S)		Sig Track: Off		PNNNN		
Align: Auto	Freq Ref: Int (S)			2.58 dB	ΡΝΝΝΝ	Mkr1 2.441	986 4 GHz -3.21 dBm
Align: Auto	Freq Ref: Int (S)		Sig Track: Off	2.58 dB	PNNNNN		
Align: Auto	Freq Ref: Int (S)		Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB	P N N N N N		
Align: Auto			Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm	P N N N N N		
Align: Auto	Freq Ref: Int (S)		Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm	P N N N N N		
Align: Auto	Freq Ref: Int (S)		Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm	P N N N N N		
Align: Auto			Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm	P N N N N N		
Align: Auto			Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm	P N N N N N		
Align: Auto			Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm	P N N N N N		
Align: Auto			Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm			
Align: Auto			Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm	P N N N N N		
Align: Auto			Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm	P N N N N N		-3.21 dBm
Align: Auto			Sig Track: Off Ref LvI Offset : Ref Level 20.00	2.58 dB 0 dBm		S	







#### -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	limit	Verdic
NVNT	BLE	2402	Ant1	0.663	0.5	Pass
NVNT	BLE	2442	Ant1	0.662	0.5	Pass
NVNT	BLE	2480	Ant1	0.66	0.5	Pass







Occup	um Analy ied BW			• +	•							
KEY: R T	SIGHT	Input: R Couplin Align: A	g: DC	Input Z: 5 Corr CCo Freq Ref:		Atten: 30 dB	Trig: Free Run Gate: Off #IF Gain: Low	Center Fre Avg Hold: Radio Std:		Z		
1 Grap	h		•				Ref LvI Offset 2	.60 dB		N	/kr3 2.48033	36000 GHz
	Div 10.0	dB					Ref Value 22.60	dBm				-9.88 dBm
Log 12.6												
2.60						2 ↓1			3			
-7.40 -17.4												
-17.4												
-37.4												
-47.4 -57.4												
-67.4												
	2.48000 3W 100.0						#Video BW 300.	00 kHz			Sweep 1.33 r	Span 2 MHz ns (10001 pts)
2 Metri	cs		v									
		000	upied Ban	dwidth								
		000		1.0510	MHz				Total Power		2.21 dBm	
		Trar	nsmit Freq	Error		5.950 kHz			% of OBW Powe	er	99.00 %	
		x dE	3 Bandwidi	th		660.2 kHz			x dB		-6.00 dB	
	5		]?	May 31, 3:21:07	2024 7 AM							



# **Occupied Channel Bandwidth**

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE	2402	Ant1	1.021
NVNT	BLE	2442	Ant1	1.022
NVNT	BLE	2480	Ant1	1.022







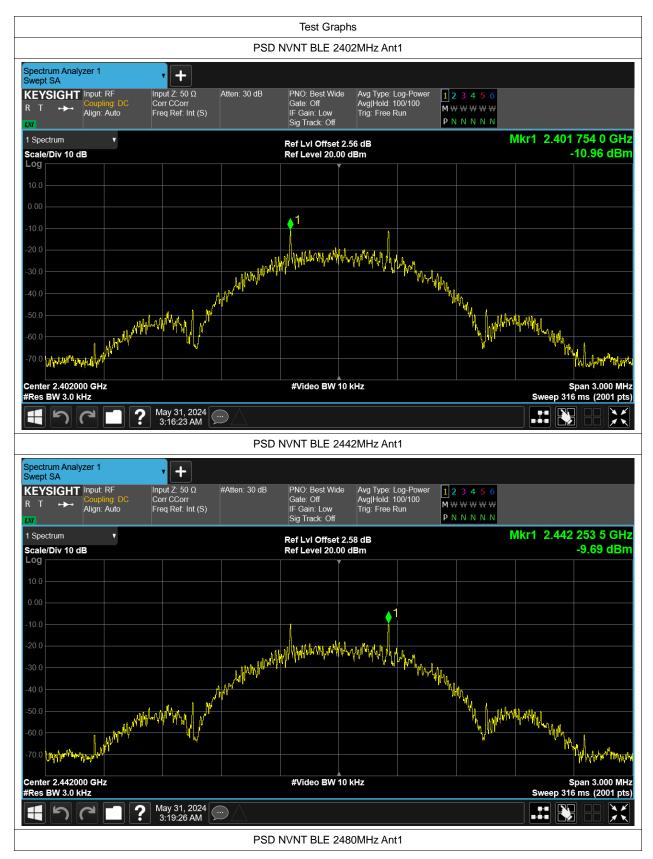
Spec Occu	trum Analy pied BW	/zer 1		• +								
KEY R T	/SIGHT ·≁·	Input: I Couplin Align: /	ng: DC	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)		: 30 dB	Trig: Free Run Gate: Off #IF Gain: Low	Center Fre Avg Hold: ' Radio Std:		GHz		
1 Gra	iph e/Div 10.0		v				Ref LvI Offset 2 Ref Value 22.6					
		ав				·	Rei value 22.0	U GBM				
Log 12.6												
2.60												
-7.40							$\sim$		~			
-17.4 -27.4						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
-37.4					$\sim$							
-47.4			- Aller - Alle									
-57.4	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	and the second	~								~	
-67.4												
	er 2.4800						#Video BW 91.0	000 kHz				Span 3 MHz
#Res	BW 30.0	00 kHz									Sweep 3.33	ms (10001 pts)
2 Me	trics		•									
		Oc	cupied Ban						7.10		0.07.10	
				1.0218 MHz					Total Power		3.07 dBm	
			insmit Freq		5.580				% of OBW Po	ower	99.00 %	
		xd	B Bandwidt	n	1.279	MHZ			x dB		-26.00 dB	
	5		<b>?</b>	May 31, 2024 3:20:52 AM	$\Box$							



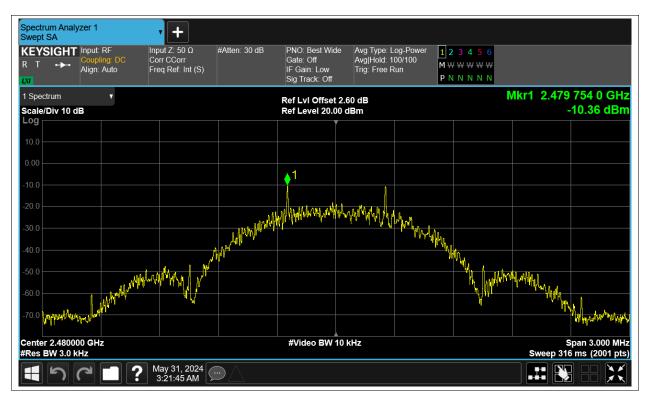
# **Maximum Power Spectral Density Level**

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2402	Ant1	-10.964	8	Pass
NVNT	BLE	2442	Ant1	-9.686	8	Pass
NVNT	BLE	2480	Ant1	-10.355	8	Pass











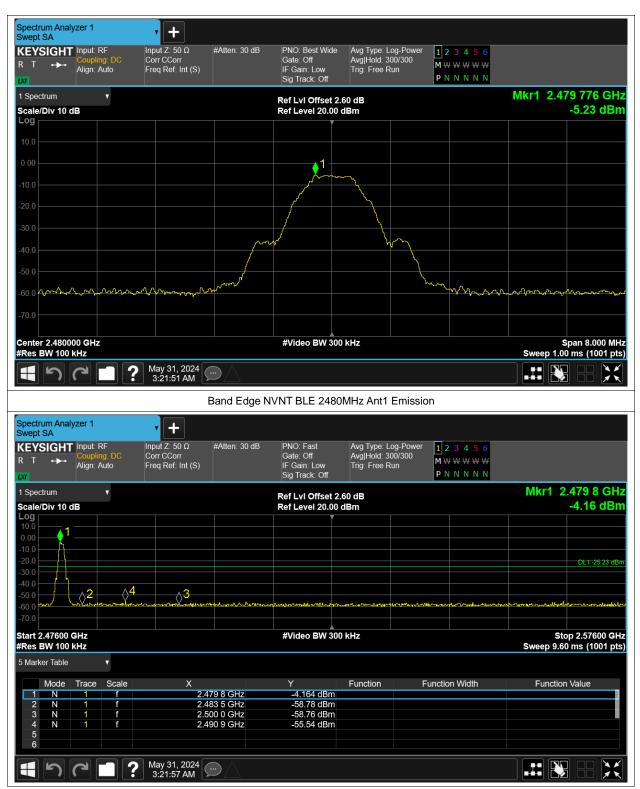
# **Band Edge**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2402	Ant1	-52.25	-20	Pass
NVNT	BLE	2480	Ant1	-50.31	-20	Pass



		Test Graphs		
	Band Ed	lge NVNT BLE 2402MHz Ant	1 Ref	
Spectrum Analyzer 1 Swept SA	<b>•</b> +			
KEYSIGHT Input: RF R T ↔ Align: Auto	Input Z: 50 Ω #Atten: 30 dB Corr CCorr Freq Ref: Int (S)	PNO: Best Wide Avg Type: Lo Gate: Off Avg Hold: 30 IF Gain: Low Trig: Free Ru Sig Track: Off	D/300 M W W W W W	
1 Spectrum V		Ref LvI Offset 2.56 dB		Mkr1 2.401 760 GHz
Scale/Div 10 dB Log		Ref Level 20.00 dBm		-4.78 dBm
10.0				
0.00		1		
-10.0		1 mm		
-20.0				
-30.0				
-40.0		m h	~	
-50.0				
-60.0 martin have the	any marked have a for the second seco		how	Langer and here and the
-70.0				····
-10.0				
Center 2.402000 GHz #Res BW 100 kHz		#Video BW 300 kHz		Span 8.000 MHz Sweep 1.00 ms (1001 pts)
<b>1</b> 5077	May 31, 2024			
	0.10.20 AW			
	Band Edge	NIVINT BLE 2402MHz Ant1 F	mission	
Canadaum Analumar d	-	NVNT BLE 2402MHz Ant1 E	Emission	
Spectrum Analyzer 1 Swept SA	• +			
Swept SA KEYSIGHT Input: RF R T Coupling: DC	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 30	g-Power 123456 0/300 MW/W/W/W/W/W/	
Swept SA KEYSIGHT Input: RF Coupling: DC		PNO: Fast Avg Type: Lo	g-Power 123456 0/300 MW/W/W/W/W/W/	
Swept SA KEYSIGHT Input: RF R T Coupling: DC Align: Auto 1 Spectrum	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 30 IF Gain: Low Trig: Free Ru Sig Track: Off Ref Lvl Offset 2.56 dB	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	Mkr1 2.401 8 GHz
Swept SA KEYSIGHT R T  Coupling: DC Align: Auto I Spectrum Scale/Div 10 dB Log	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 30 IF Gain: Low Trig: Free Ru Sig Track: Off	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	Mkr1 2.401 8 GHz -4.78 dBm
Swept SA KEYSIGHT Input: RF R T  Align: Auto I Spectrum Scale/Div 10 dB Log 1.00	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 30 IF Gain: Low Trig: Free Ru Sig Track: Off Ref Lvl Offset 2.56 dB	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	
Sivept SA           KEYSIGHT         Input: RF           R         T         Imput: RF           Align: Auto         Align: Auto           Ispectrum         V           Scale/Div 10 dB         Imput: RF           Log         Imput: RF           10.0         Imput: RF           20.0         Imput: RF	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 30 IF Gain: Low Trig: Free Ru Sig Track: Off Ref Lvl Offset 2.56 dB	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	
Swept SA KEYSIGHT Input: RF R T  I Spectrum Scale/Div 10 dB Log 10.0	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 30 IF Gain: Low Trig: Free Ru Sig Track: Off Ref Lvl Offset 2.56 dB	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	-4.78 dBm
Sivept SA           KEYSIGHT         Input: RF           R         T         →         Align: Auto           I         Spectrum         ▼           Scale/Div 10 dB         ■           Log         ■         ■           10.0         ■         ■           -10.0         ■         ■         ■           -20.0         ■         ■         ■	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 30 IF Gain: Low Trig: Free Ru Sig Track: Off Ref Lvl Offset 2.56 dB	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	
Sivept SA           KEYSIGHT         Input: RF           R         T         →         Coupling: DC Align: Auto           I         Spectrum         ▼           Scale/Div 10 dB         ▼           Log         □         □           10.0         □         □           -10.0         □         □         □           -30.0         □         □         □           -60.0         □         □         □           -70.0         □         □         □	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 300 IF Gain: Low Trig: Free Ru Sig Track: Off Ref LvI Offset 2.56 dB Ref Level 20.00 dBm	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	-4.78 dBm
Sivept SA           KEYSIGHT         Input: RF           R         T         →         Coupling: DC Align: Auto           I         Spectrum         ▼           Scale/Div 10 dB         ▼           Log 10.0         ■         ■           0.00         ■         ■           -20.0         ■         ■         ■           -30.0         ■         ■         ■           -40.0         ■         ■         ■           -60.0         ■         ■         ■	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 30 IF Gain: Low Trig: Free Ru Sig Track: Off Ref Lvl Offset 2.56 dB	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	-4.78 dBm
Sivept SA           KEYSIGHT         Input: RF           R         T         Coupling: DC           Align: Auto         V           Scale/Div 10 dB         V           Log         0         0           10.0         0         0           20.0         0         0           -30.0         -40.0         -40.0           -70.0         -70.0         -70.0           Start 2.30600 GHz         -70.0         -70.0	hput Z: 50 Ω #Atten: 30 dB Corr CCorr	PNO: Fast Avg Type: Lo Gate: Off Avg Hold: 300 IF Gain: Low Trig: Free Ru Sig Track: Off Ref LvI Offset 2.56 dB Ref Level 20.00 dBm	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	-4.78 dBm
Sivept SA           KEYSIGHT         Input: RF           R         T         Coupling: DC           Align: Auto         V           Scale/Div 10 dB         V           Log         1         0           0.00         0         0           0.00         0         0           -20.0	Linput Z: 50 Ω Corr CCorr Freq Ref: Int (S) #Atten: 30 dB	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off Ref LvI Offset 2.56 dB Ref Level 20.00 dBm	g-Power 123456 0/300 M ₩ ₩ ₩ ₩ ₩	-4.78 dBm
Swept SA           KEYSIGHT         Input: RF           R         T         →         Coupling: DC Align: Auto           I         Spectrum         ▼           Scale/Div 10 dB         ✓           Log 10.0         ✓           30.0         ✓           -20.0         ✓           -30.0         ✓           -40.0         ✓           -70.0         ✓           Start 2.30600 GHz         #Res BW 100 kHz           5 Marker Table         ▼           Mode         Trace         Scale           1         1         f	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr       #Atten: 30 dB         Input Z: 50 Ω       #Atten: 50 Ω         Input Z: 50 Ω <td>PNO: Fast Gate: Off Sig Track: Off Ref LvI Offset 2.56 dB Ref Level 20.00 dBm #Video BW 300 kHz Y Function -4.778 dBm -60.17 dBm</td> <td>g-Power N/300 n P N N N N N P N N N N N </td> <td>-4.78 dBm</td>	PNO: Fast Gate: Off Sig Track: Off Ref LvI Offset 2.56 dB Ref Level 20.00 dBm #Video BW 300 kHz Y Function -4.778 dBm -60.17 dBm	g-Power N/300 n P N N N N N P N N N N N 	-4.78 dBm
Sivept SA           KEYSIGHT         Input: RF           R         T         →         Coupling: DC Align: Auto           I Spectrum         ▼           Scale/Div 10 dB         ■           Log         ■         ■           10.0         ■         ■           -20.0         ■         ■           -30.0         ■         ■           -40.0         ■         ■           -50.0         ■         ■           -60.0         ■         ■           Start 2.30600 GHz         #           Start 2.30600 GHz         ▼           Mode         Trace         Scale           1         1         f           2         N         1         f           3         N         1         f           4         N         1         f	Linput Z: 50 Ω Corr CCorr Freq Ref: Int (S)	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off Ref LvI Offset 2.56 dB Ref Level 20.00 dBm	g-Power N/300 n P N N N N N P N N N N N 	-4.78 dBm
Swept SA           KEYSIGHT         Input: RF           R         T         Coupling: DC           Align: Auto         V           Scale/Div 10 dB         V           Log         1           100         0           20.0         0           -30.0	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Corr Corr Freq Ref: Int (S)       Input Z: 50 Ω         Input Z: 50 Ω Corr Corr Corr Corr Corr Corr Freq Ref: Int (S)       Input Z: 50 Ω	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off Ref LvI Offset 2.56 dB Ref Level 20.00 dBm #Video BW 300 kHz Y Function -4.778 dBm -60.17 dBm -58.96 dBm	g-Power N/300 n P N N N N N P N N N N N 	-4.78 dBm
Sivept SA           KEYSIGHT         Input: RF           R         T         →         Coupling: DC Align: Auto           I Spectrum         v           Scale/Div 10 dB            Log             10.0             -20.0             -30.0             -40.0             -70.0             Start 2.30600 GHz             #Res BW 100 kHz             Mode         Trace         Scale           1         1         f           4         1         1         f	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)       #Atten: 30 dB         Input Z: 50 Ω Corr CCorr Z: 300 Ω GHz       Input Z: 389 5 GHz	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off Ref LvI Offset 2.56 dB Ref Level 20.00 dBm #Video BW 300 kHz Y Function -4.778 dBm -60.17 dBm -58.96 dBm	g-Power N/300 n P N N N N N P N N N N N 	-4.78 dBm







# **Conducted RF Spurious Emission**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2402	Ant1	-43.71	-20	Pass
NVNT	BLE	2442	Ant1	-46.49	-20	Pass
NVNT	BLE	2480	Ant1	-39.51	-20	Pass



			T. O.	Test Graph			
Spectrum Analyzer	4		Tx. Spurio	US NVNT BLE 2	402MHz Ant1 Re	T	
Swept SA		Input Z: 50 Ω Corr CCorr Freq Ref: Int (S)	#Atten: 30 dB	PNO: Best Wide Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg Hold: 300/300 Trig: Free Run	1 2 3 4 5 6 M₩₩₩₩₩₩ P N N N N N	
1 Spectrum	•			Ref LvI Offset 2.			Mkr1 2.401 740 5 G
Scale/Div 10 dB				Ref Level 20.00	jBm		-5.04 dB
0.00			1		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- Jrhorna	
-10.0							www.www.www
-30.0							
-50.0							
-60.0							
Center 2.4020000 #Res BW 100 kHz				#Video BW 300	kHz		Span 1.500 N Sweep 1.00 ms (1001 p
<b>1</b> 7 6	• • •	May 31, 2024 3:16:41 AM					
		Т	<sup>-</sup> x. Spurious	NVNT BLE 2402	2MHz Ant1 Emiss	sion	
Spectrum Analyzer Swept SA		• +					
KEYSIGHT Inp R T ↔ Cou Alig	out: RF upling: DC gn: Auto	Input Ζ: 50 Ω Corr CCorr Freq Ref: Int (S)	#Atten: 30 dB	PNO: Fast Gate: Off IF Gain: Low Sig Track: Off	Avg Type: Log-Power Avg Hold: 10/10 Trig: Free Run	I 2 3 4 5 6 M₩₩₩₩₩₩ PNNNNN	
1 Spectrum Scale/Div 10 dB Log	T			Ref LvI Offset 2.	56 dB		Mkr1 2.402 G
				Ref Level 20.00	dBm		-5.85 dB
10.0 0.00 -10.0	_ <b>↓</b> 1			Ref Level 20.00	dBm		
10.0 0.00 -10.0 -20.0 -30.0 -40.0	1	A2		Ref Level 20.00			
10.0 0.00 -10.0 -20.0 -30.0		2	3	Ref Level 20.00			-5.85 dB
10.0 0.00 -10.0 -20.0 -20.0 -30.0 -40.0 -50.0 -70.0 Start 30 MHz #Res BW 100 kHz		2	3	Ref Level 20.00 (			-5.85 dB
10.0 0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 -70.0 Start 30 MHz	Acce Scale f f f f	X 2 4 7 9	2.402 GHz 9999 GHz 2.246 GHz 793 GHz .951 GHz	4	kHz	Function Width	-5.85 dB
10.0 0.00 -10.0 -20.0 -20.0 -20.0 -30.0 -40.0 -50.0 -70.0 Start 30 MHz #Res BW 100 kHz 5 Marker Table Mode Tran 1 N 1 2 N 1 3 N 1 4 N 1 5 N 1	Acce Scale	X 2 4 7 9 23	2.402 GHz .999 GHz .246 GHz .793 GHz	4 #Video BW 300 Y -53.15 dBm -55.25 dBm -55.58 dBm	kHz	Function Width	-5.85 dB



