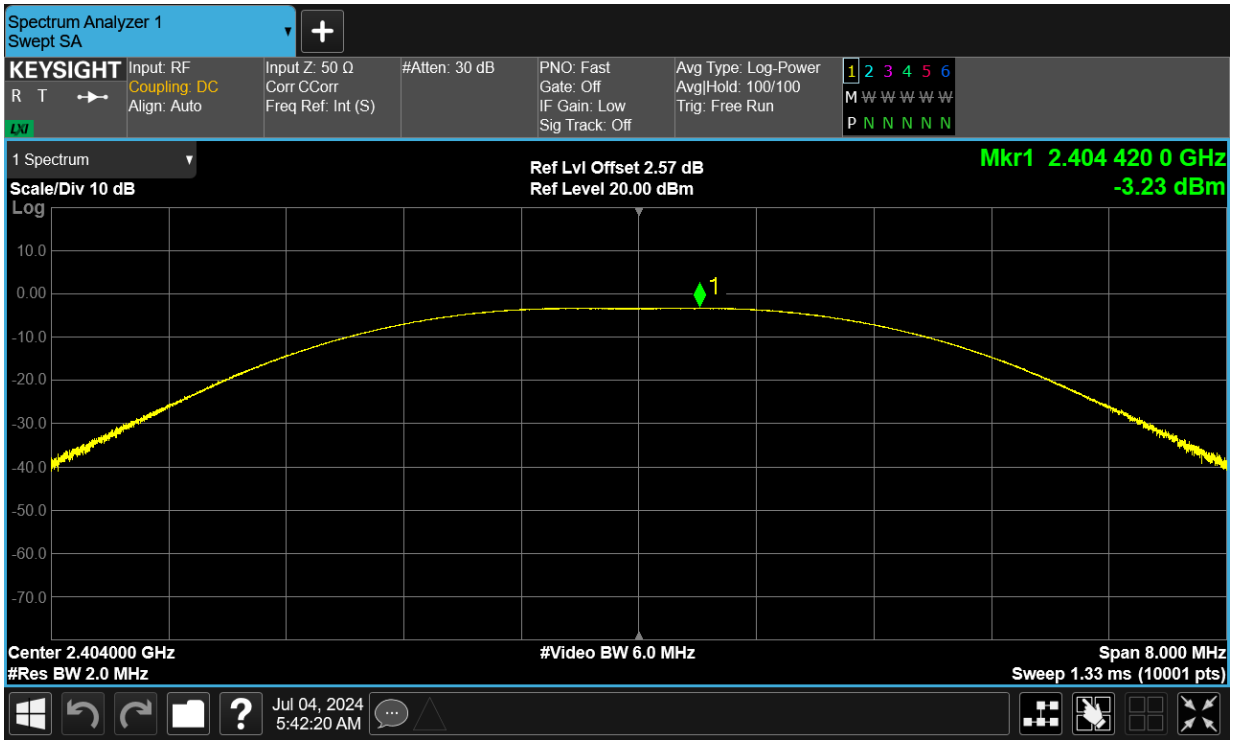
Test Data

Maximum Conducted Output Power

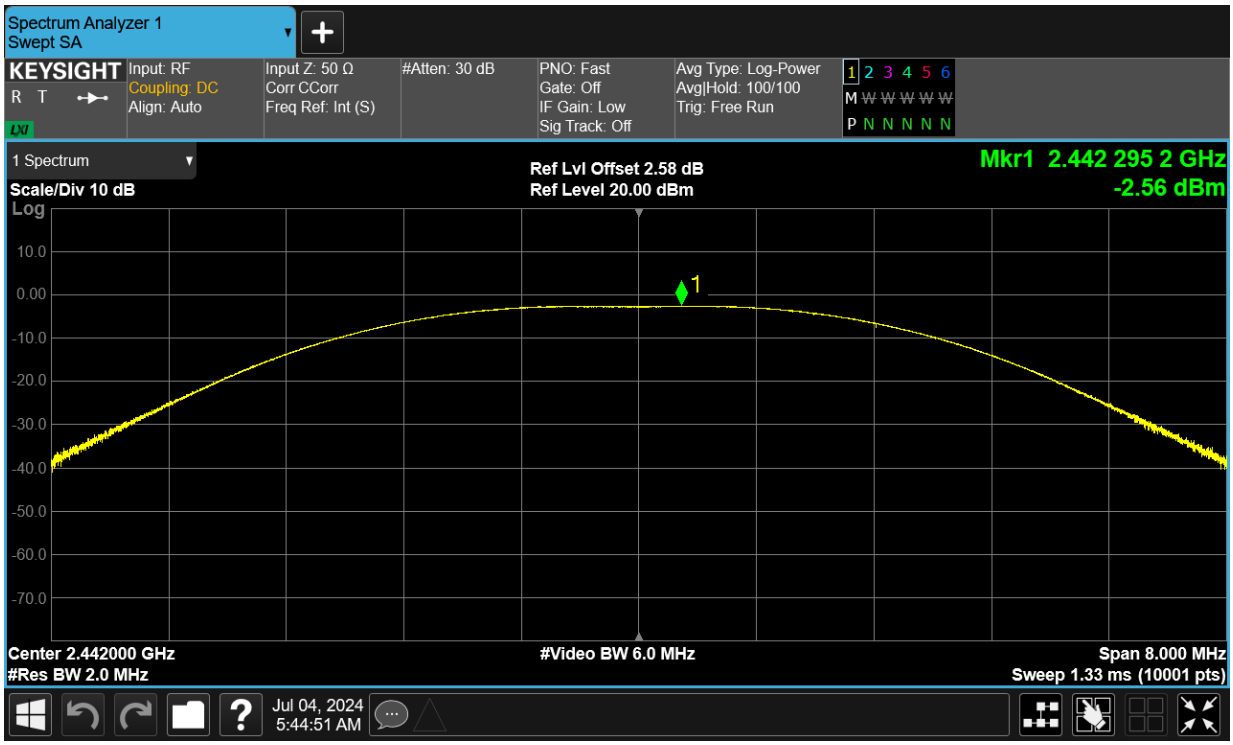
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2404	ANT13	-3.232	30	Pass
NVNT	BLE	2442	ANT13	-2.557	30	Pass
NVNT	BLE	2478	ANT13	-2.732	30	Pass

Test Graphs

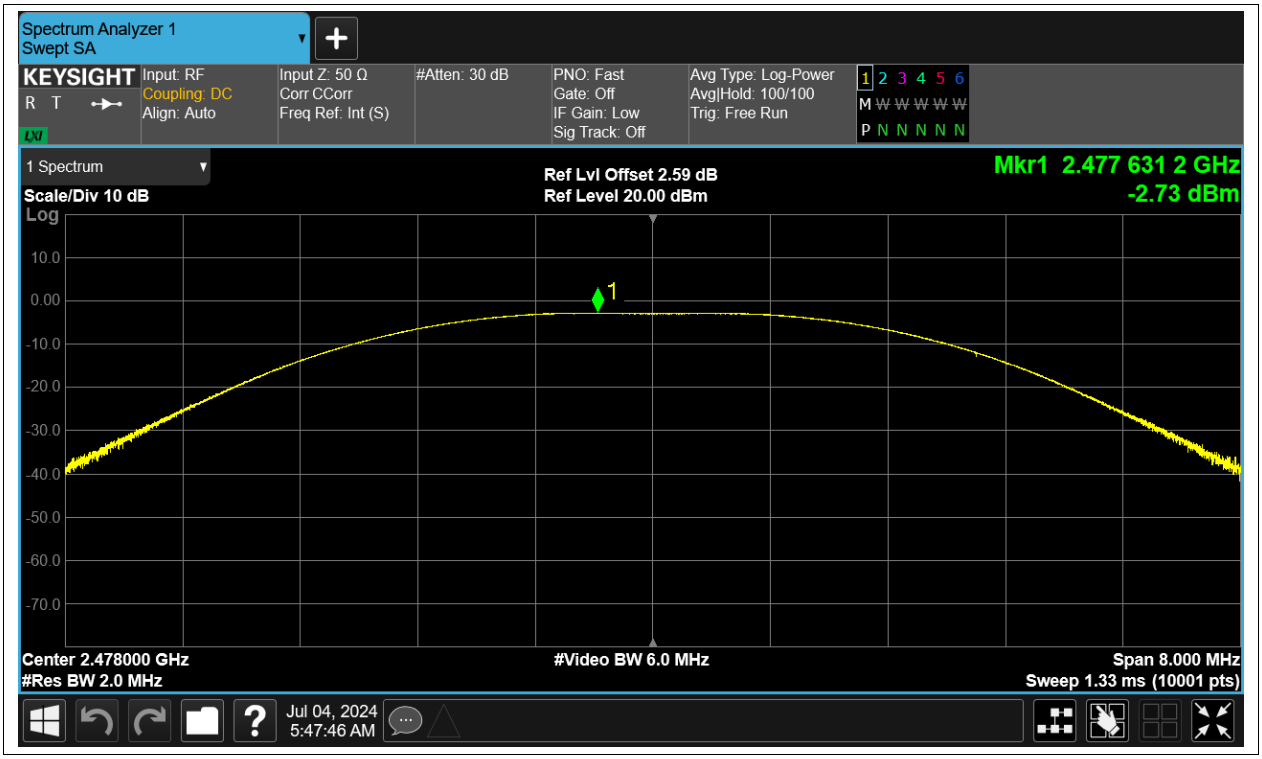
Power NVNT BLE 2404MHz ANT13



Power NVNT BLE 2442MHz ANT13



Power NVNT BLE 2478MHz ANT13

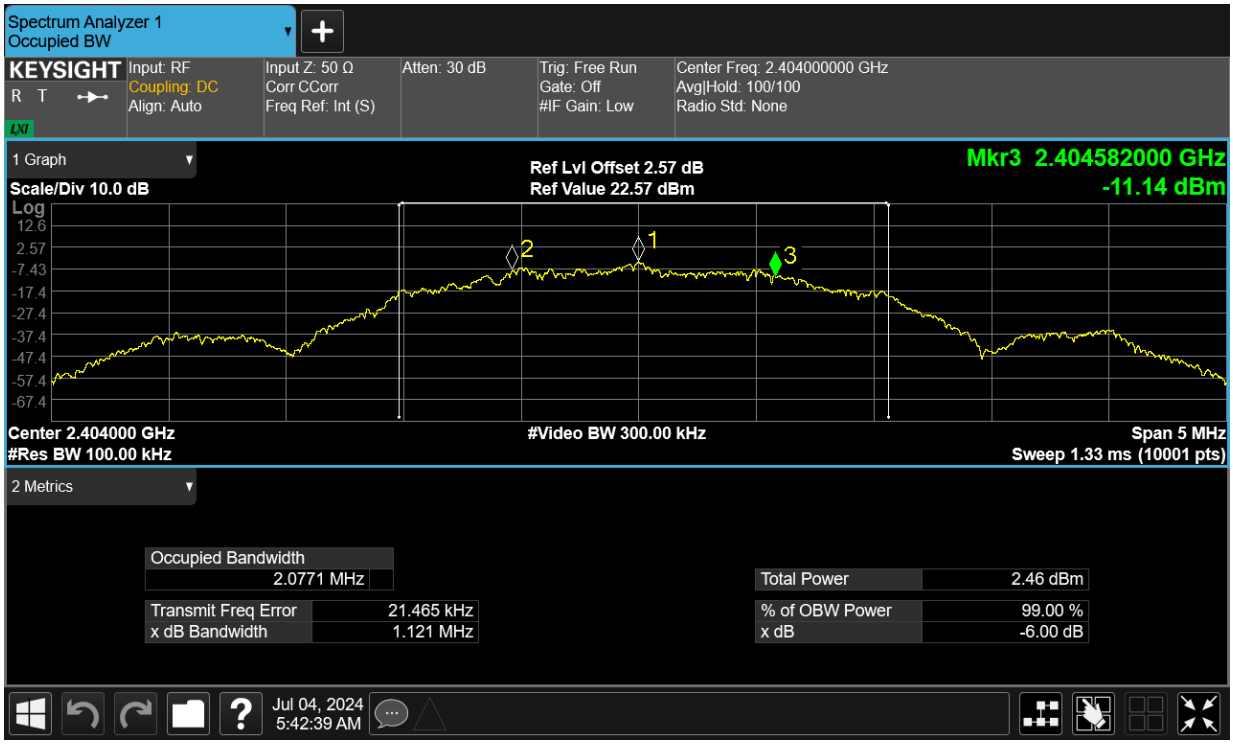

Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
#Atten: 30 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Log-Power
Avg|Hold: 100/100
Trig: Free Run
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 2.59 dB
Ref Level 20.00 dBm
Mkr1 2.477 631 2 GHz
-2.73 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.478000 GHz
#Res BW 2.0 MHz
#Video BW 6.0 MHz
Span 8.000 MHz
Sweep 1.33 ms (10001 pts)
Jul 04, 2024
5:47:46 AM

-6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	limit	Verdic
NVNT	BLE	2404	ANT13	1.121	0.5	Pass
NVNT	BLE	2442	ANT13	1.151	0.5	Pass
NVNT	BLE	2478	ANT13	1.183	0.5	Pass

Test Graphs

-6dB Bandwidth NVNT BLE 2404MHz ANT13



-6dB Bandwidth NVNT BLE 2442MHz ANT13

-6dB Bandwidth NVNT BLE 2478MHz ANT13

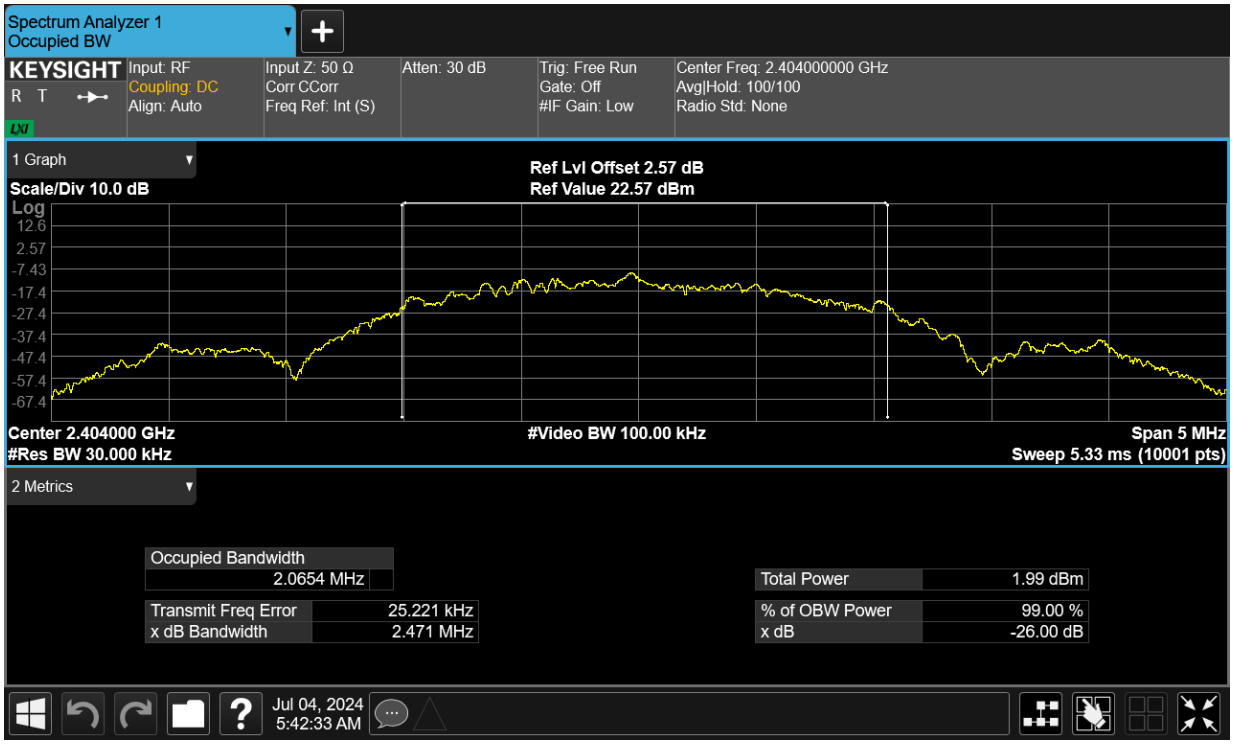

Spectrum Analyzer 1
Occupied BW
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
Atten: 30 dB
Trig: Free Run
Gate: Off
#IF Gain: Low
Center Freq: 2.478000000 GHz
Avg|Hold: 100/100
Radio Std: None
1 Graph
Ref Lvl Offset 2.59 dB
Ref Value 22.59 dBm
Mkr3 2.478606000 GHz
-11.03 dBm
Scale/Div 10.0 dB
Log
12.6
2.59
-7.41
-17.4
-27.4
-37.4
-47.4
-57.4
-67.4
Center 2.478000 GHz
#Res BW 100.00 kHz
#Video BW 300.00 kHz
Span 5 MHz
Sweep 1.33 ms (10001 pts)
2 Metrics
Occupied Bandwidth
2.0925 MHz
Transmit Freq Error
14.471 kHz
x dB Bandwidth
1.183 MHz
Total Power
2.80 dBm
% of OBW Power
99.00 %
x dB
-6.00 dB
Jul 04, 2024
5:48:00 AM

Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE	2404	ANT13	2.065
NVNT	BLE	2442	ANT13	2.071
NVNT	BLE	2478	ANT13	2.064

Test Graphs

OBW NVNT BLE 2404MHz ANT13



OBW NVNT BLE 2442MHz ANT13

OBW NVNT BLE 2478MHz ANT13

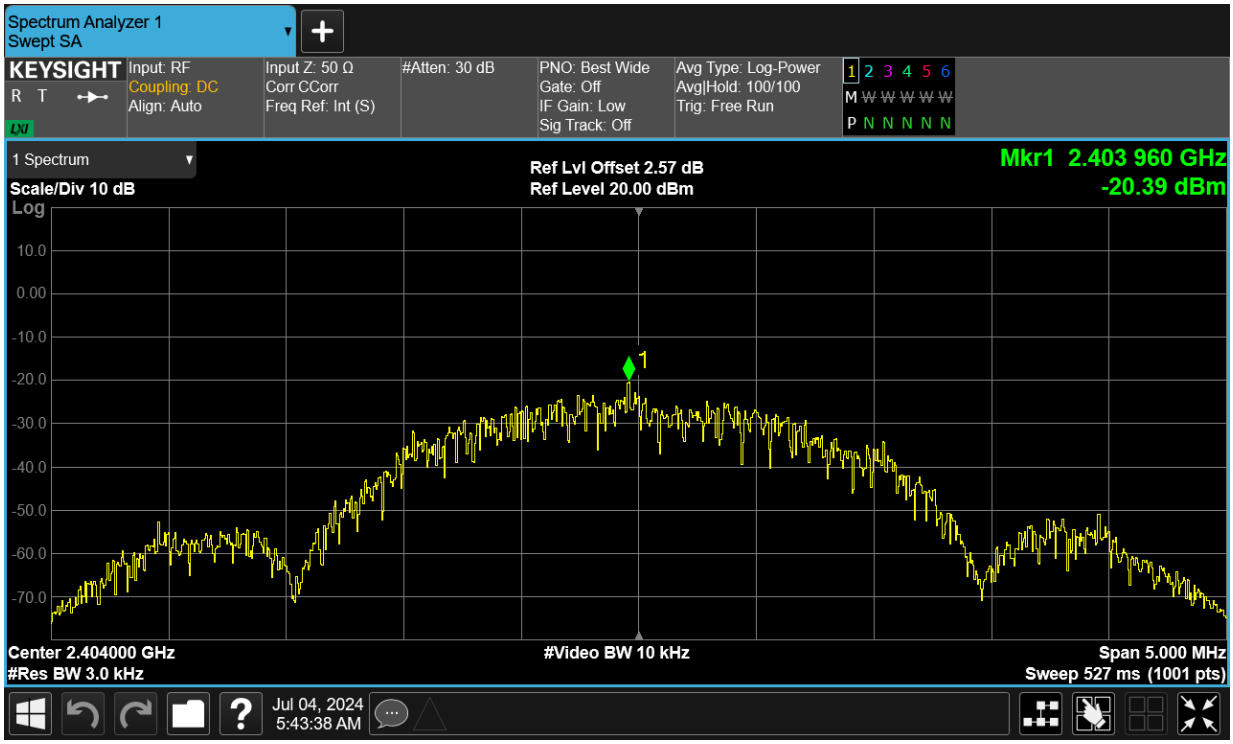

Spectrum Analyzer 1
Occupied BW
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
Atten: 30 dB
Trig: Free Run
Gate: Off
#IF Gain: Low
Center Freq: 2.478000000 GHz
Avg|Hold: 100/100
Radio Std: None
1 Graph
Ref Lvl Offset 2.59 dB
Ref Value 22.59 dBm
Scale/Div 10.0 dB
Log
12.6
2.59
-7.41
-17.4
-27.4
-37.4
-47.4
-57.4
-67.4
Center 2.478000 GHz
#Res BW 30.000 kHz
#Video BW 100.00 kHz
Span 5 MHz
Sweep 5.33 ms (10001 pts)
2 Metrics
Occupied Bandwidth
2.0643 MHz
Transmit Freq Error 23.221 kHz
x dB Bandwidth 2.485 MHz
Total Power 2.39 dBm
% of OBW Power 99.00 %
x dB -26.00 dB
Jul 04, 2024
5:47:53 AM

Maximum Power Spectral Density Level

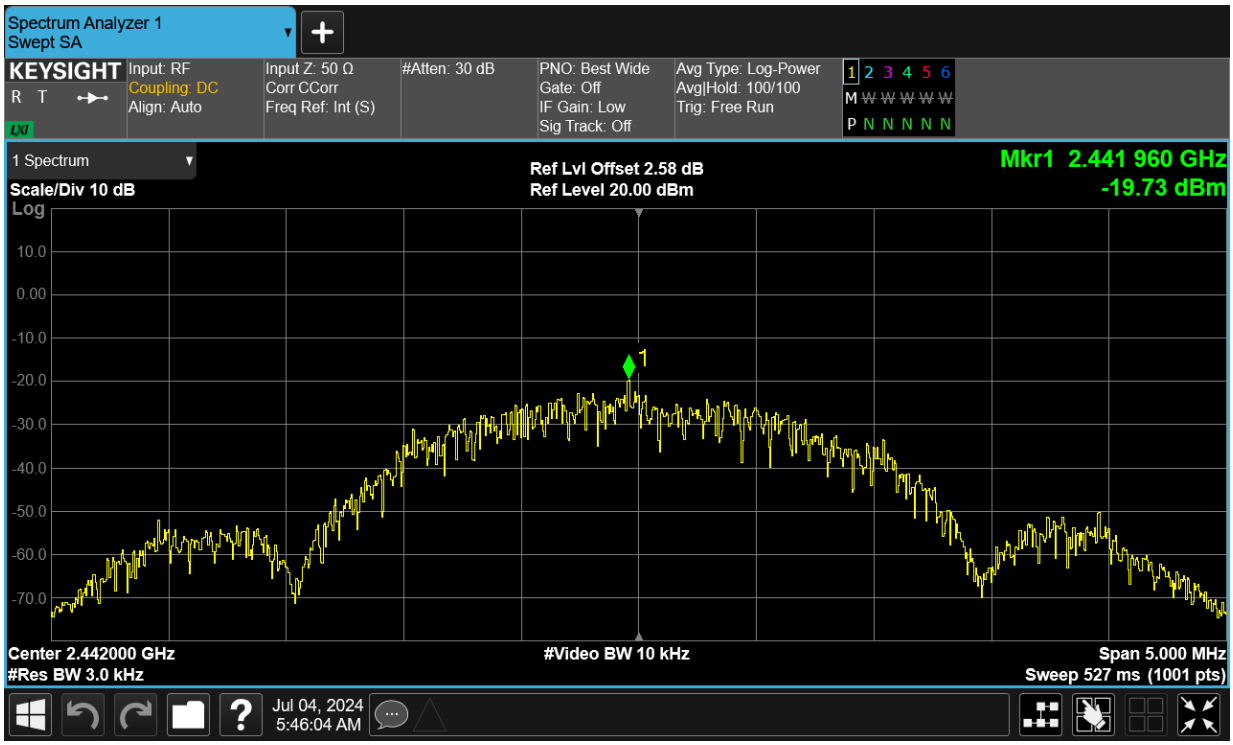
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE	2404	ANT13	-20.386	8	Pass
NVNT	BLE	2442	ANT13	-19.726	8	Pass
NVNT	BLE	2478	ANT13	-19.94	8	Pass

Test Graphs

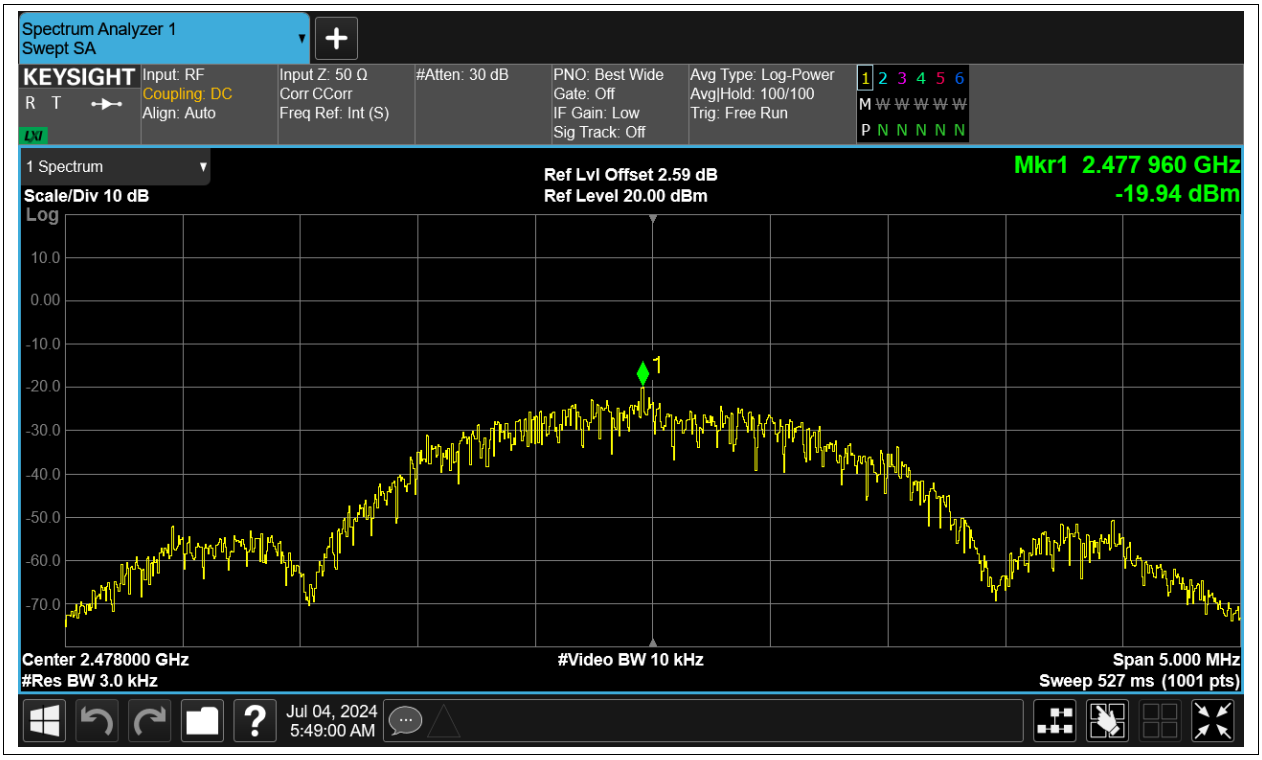
PSD NVNT BLE 2404MHz ANT13



PSD NVNT BLE 2442MHz ANT13



PSD NVNT BLE 2478MHz ANT13

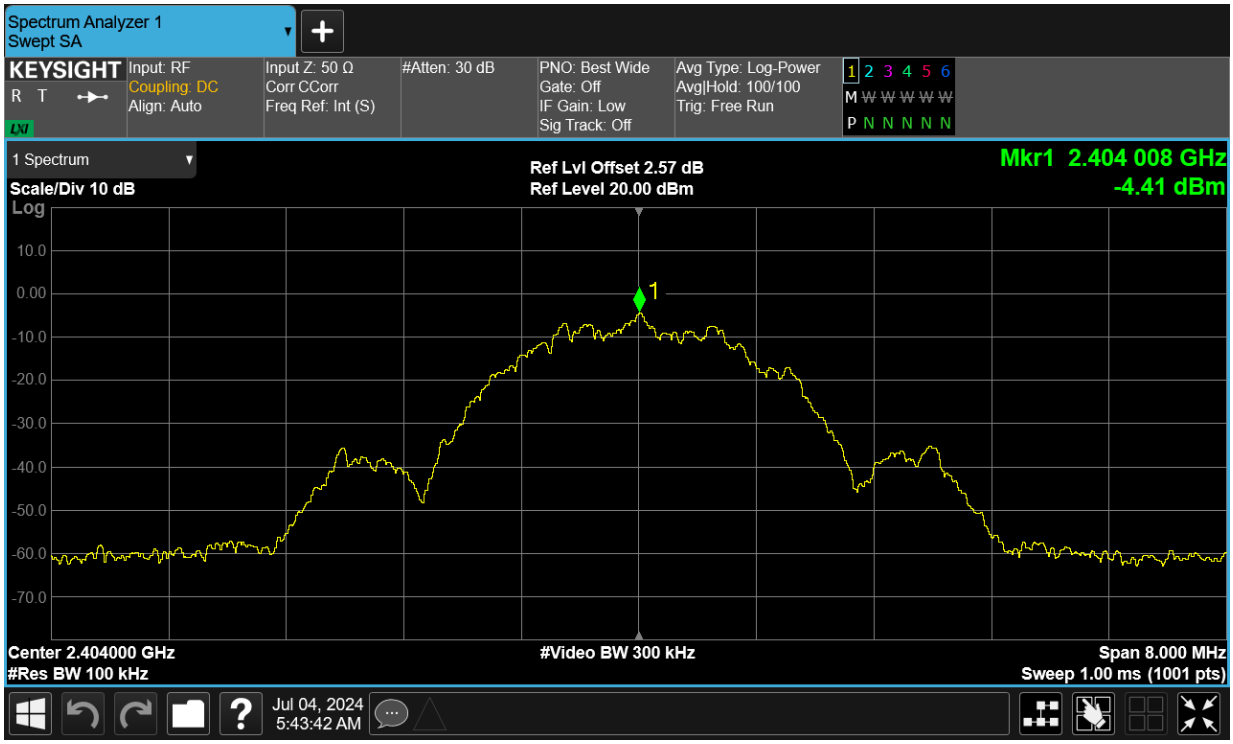

Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
#Atten: 30 dB
PNO: Best Wide
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Log-Power
Avg|Hold: 100/100
Trig: Free Run
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 2.59 dB
Ref Level 20.00 dBm
Mkr1 2.477 960 GHz
-19.94 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.478000 GHz
#Res BW 3.0 kHz
#Video BW 10 kHz
Span 5.000 MHz
Sweep 527 ms (1001 pts)
Jul 04, 2024
5:49:00 AM

Band Edge

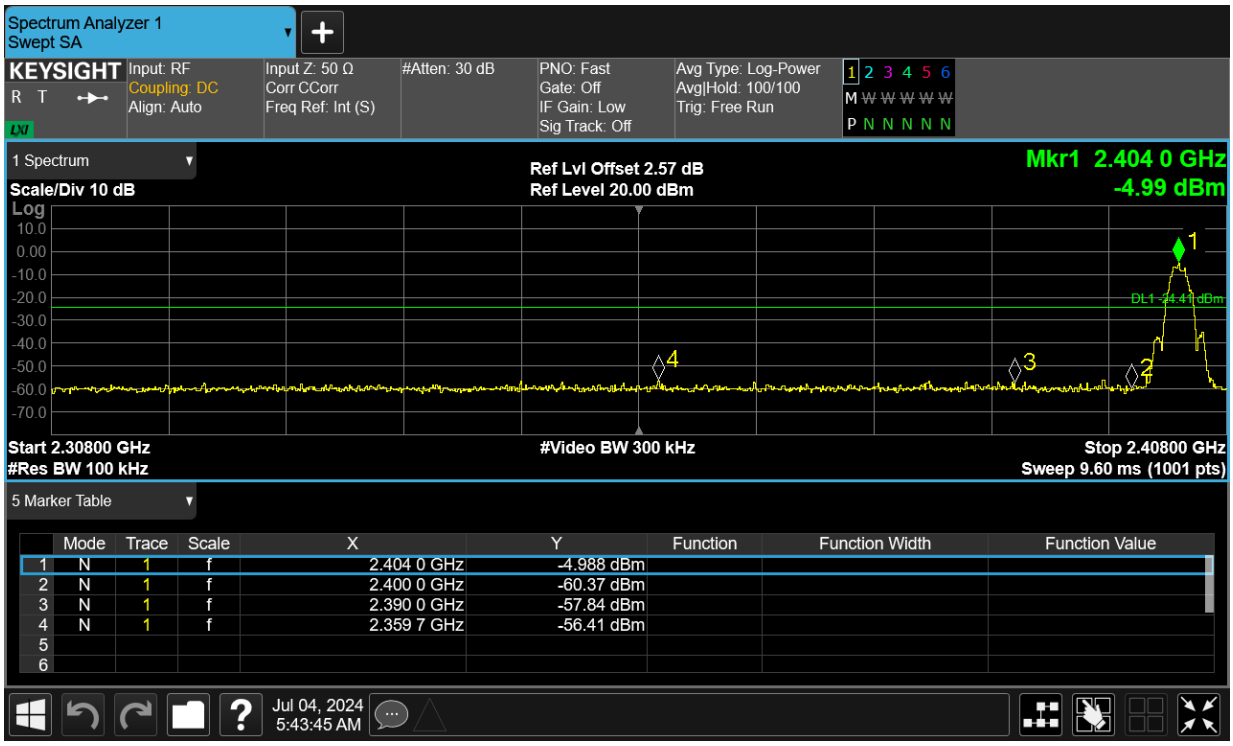
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2404	ANT13	-52	-20	Pass
NVNT	BLE	2478	ANT13	-52.32	-20	Pass

Test Graphs

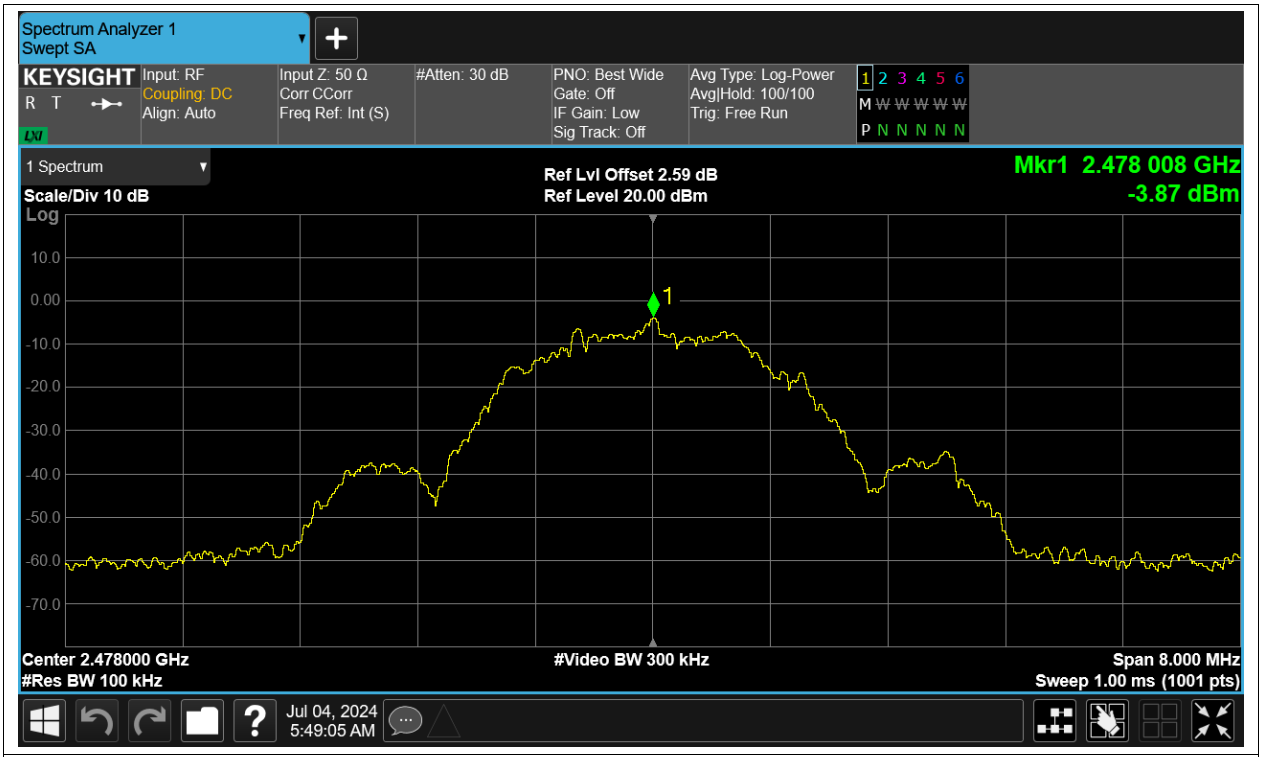
Band Edge NVNT BLE 2404MHz ANT13 Ref



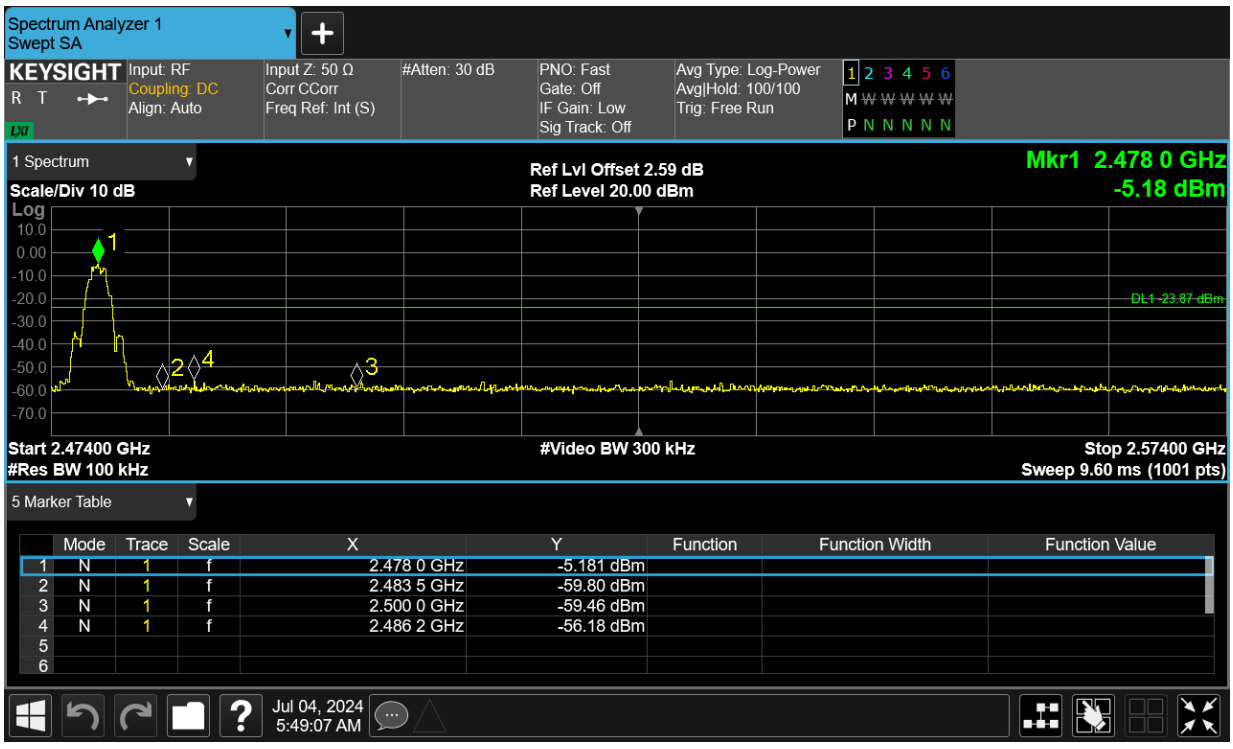
Band Edge NVNT BLE 2404MHz ANT13 Emission



Band Edge NVNT BLE 2478MHz ANT13 Ref



Band Edge NVNT BLE 2478MHz ANT13 Emission

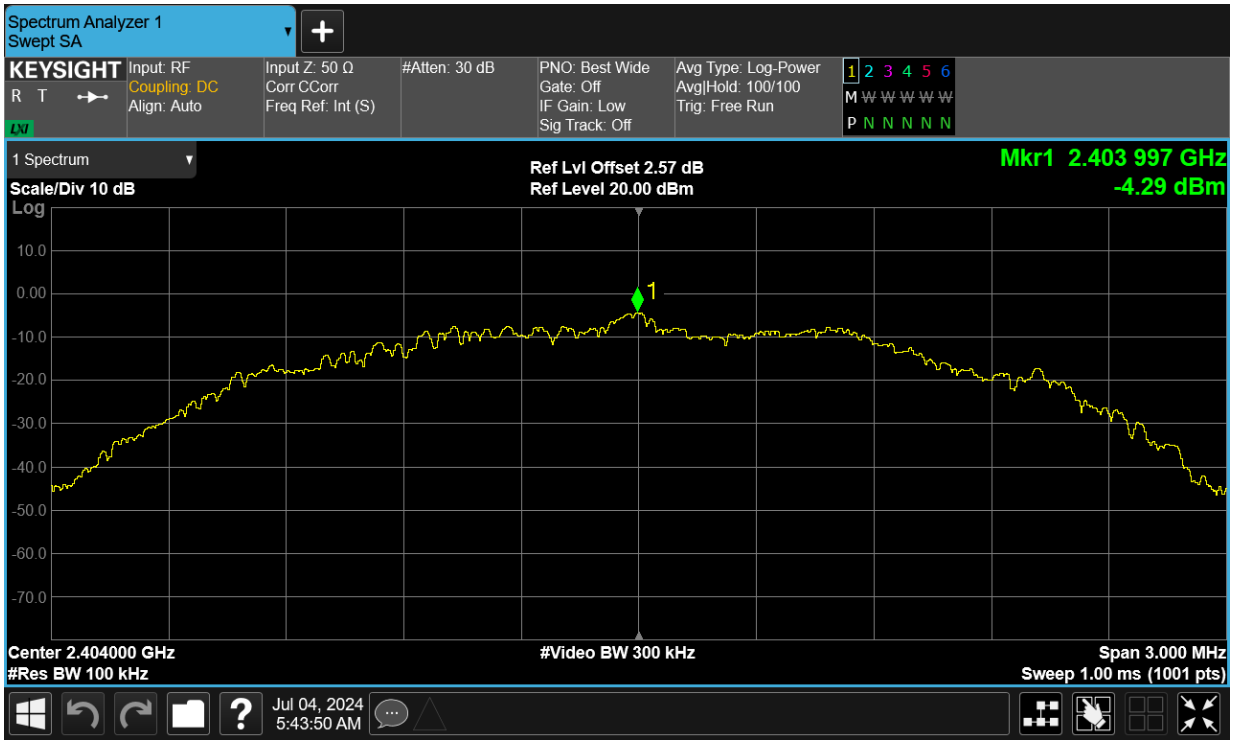


Conducted RF Spurious Emission

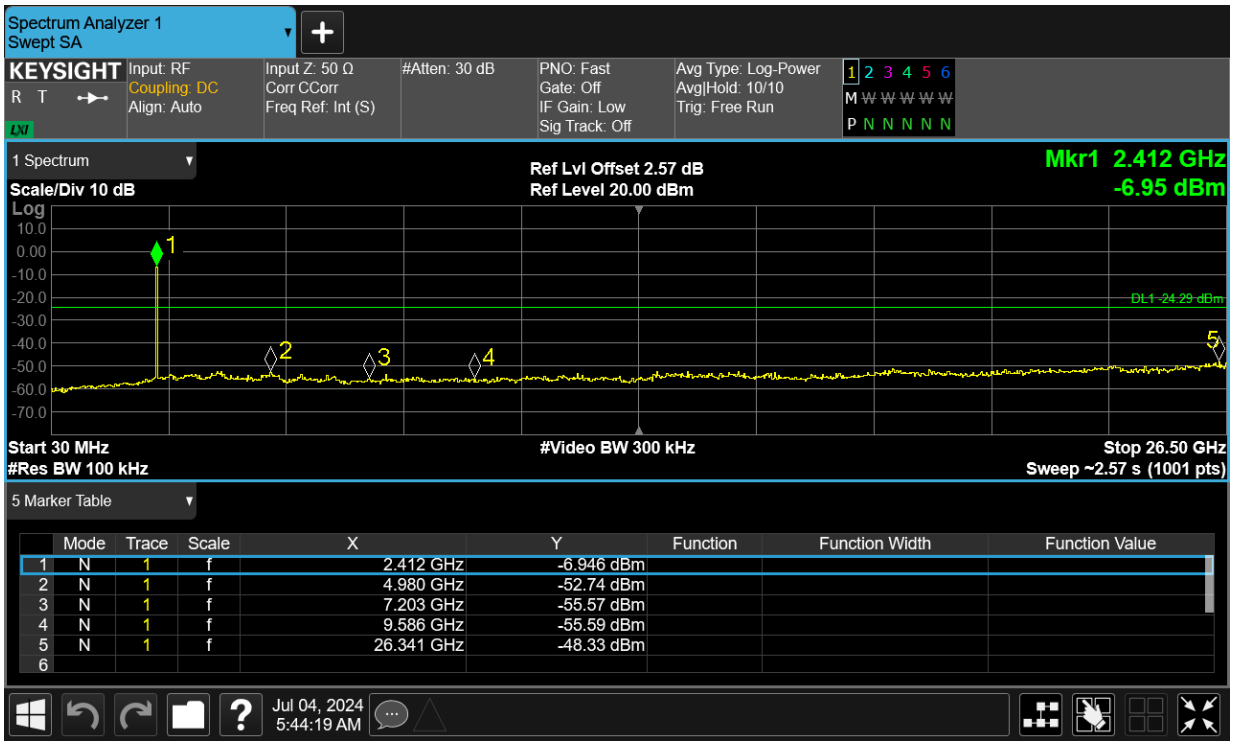
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE	2404	ANT13	-44.04	-20	Pass
NVNT	BLE	2442	ANT13	-44.95	-20	Pass
NVNT	BLE	2478	ANT13	-44.75	-20	Pass

Test Graphs

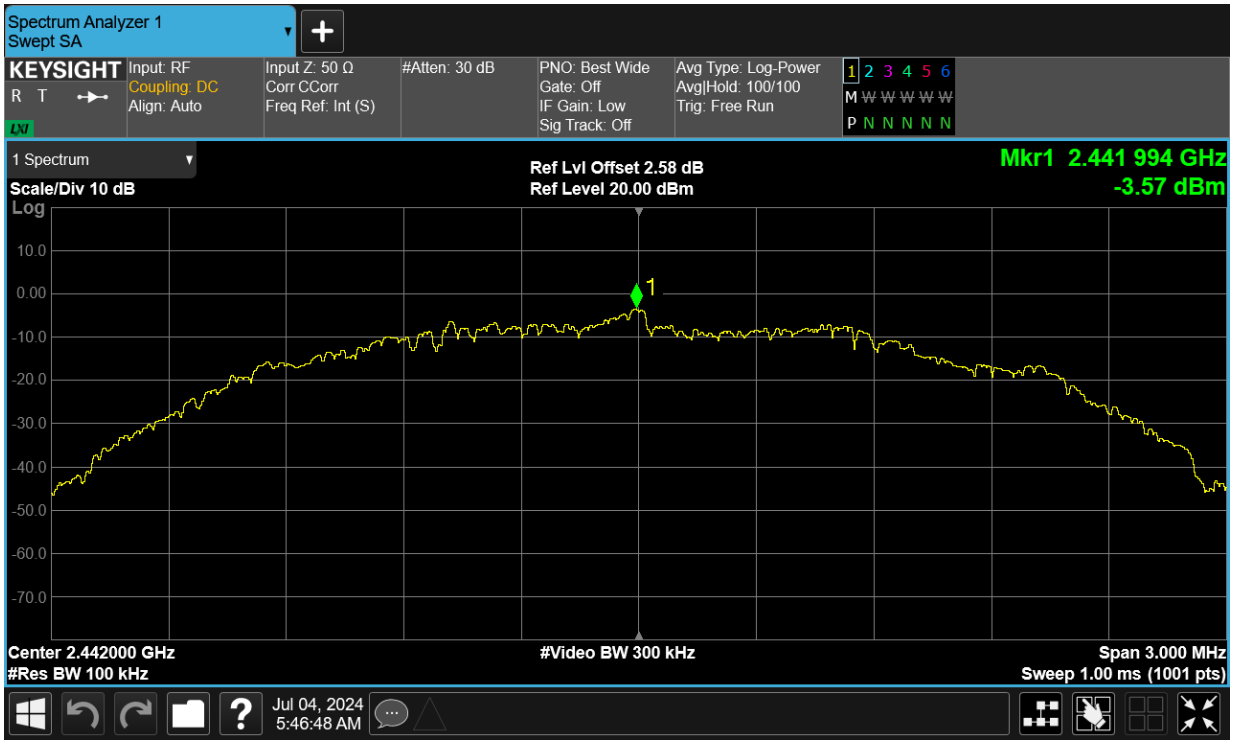
Tx. Spurious NVNT BLE 2404MHz ANT13 Ref



Tx. Spurious NVNT BLE 2404MHz ANT13 Emission

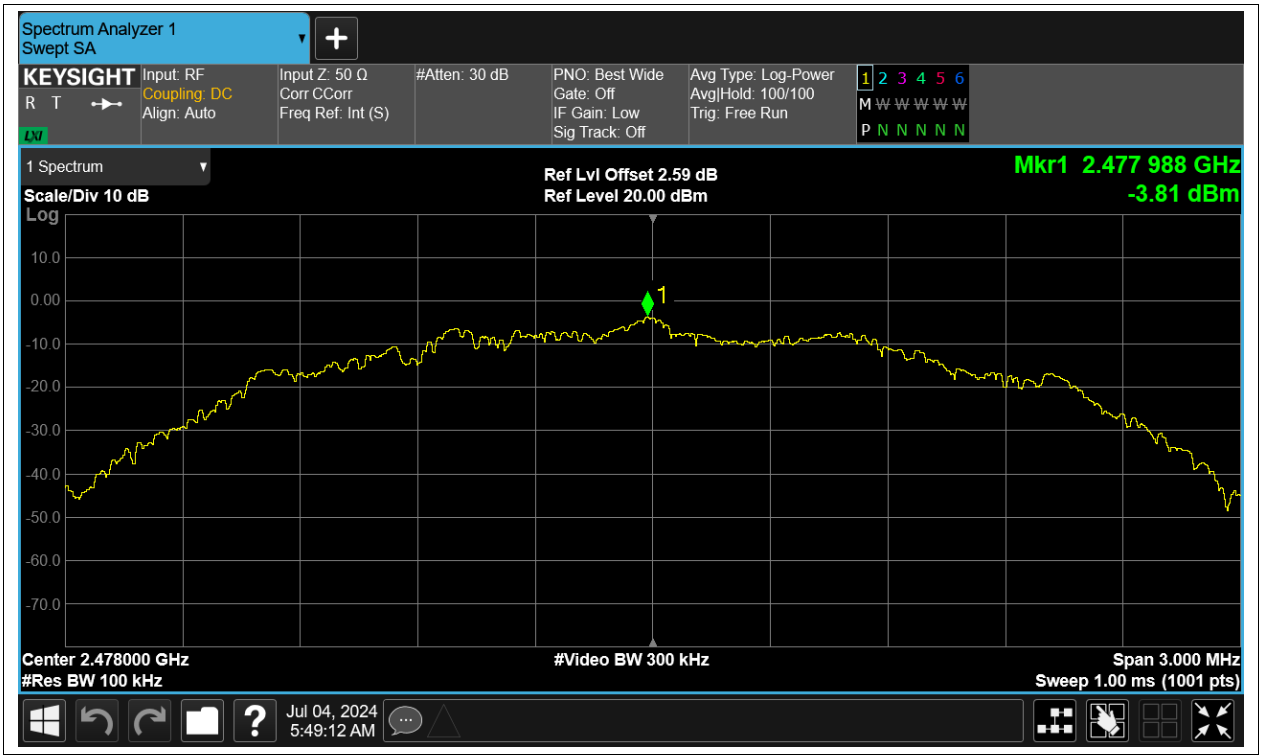


Tx. Spurious NVNT BLE 2442MHz ANT13 Ref



Tx. Spurious NVNT BLE 2442MHz ANT13 Emission

Tx. Spurious NVNT BLE 2478MHz ANT13 Ref



Tx. Spurious NVNT BLE 2478MHz ANT13 Emission