

Appendix A

RF Test Data for BT V5.0(BLE) (Conducted Measurement)

Product Name: Barcode Scanner

Trade Mark: Newland

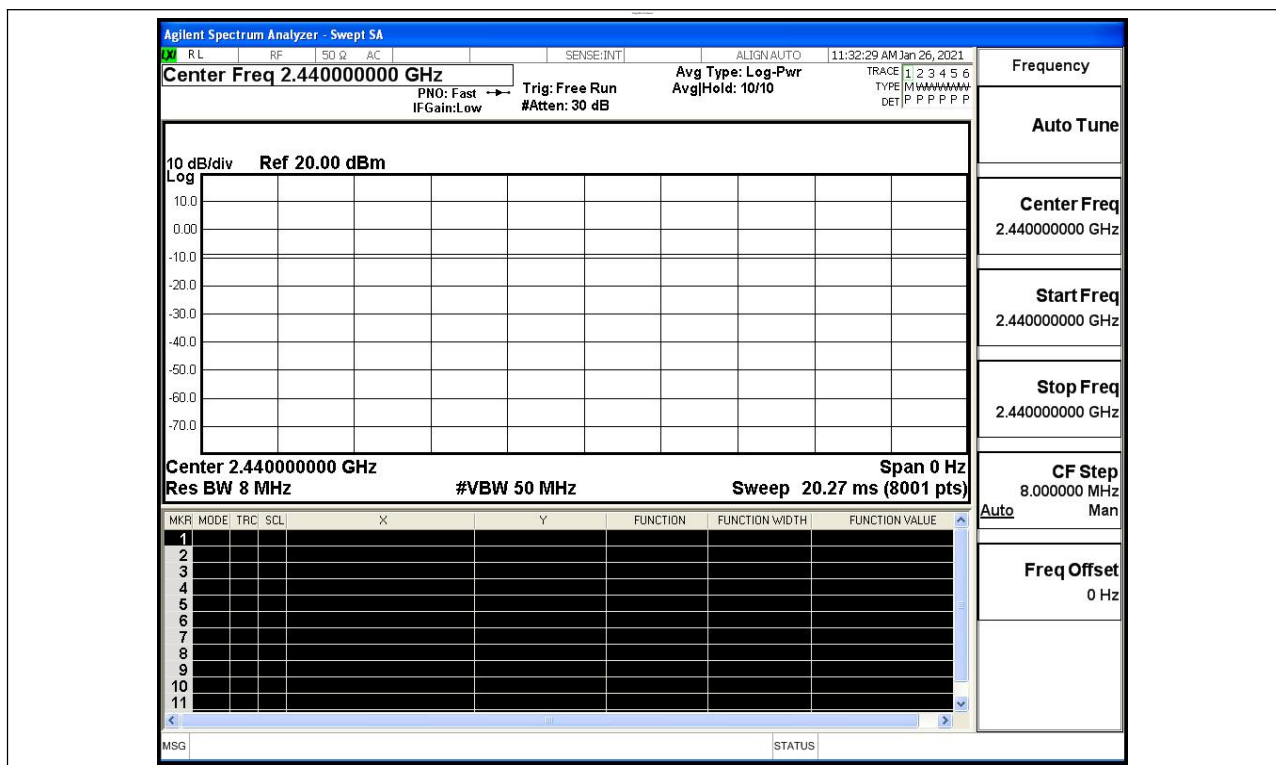
Test Model: NLS-BS30

Environmental Conditions

Temperature:	24.6 ° C
Relative Humidity:	54.1%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

A.1 Duty Cycle

Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
BT LE	2440	Ant1	100	PASS

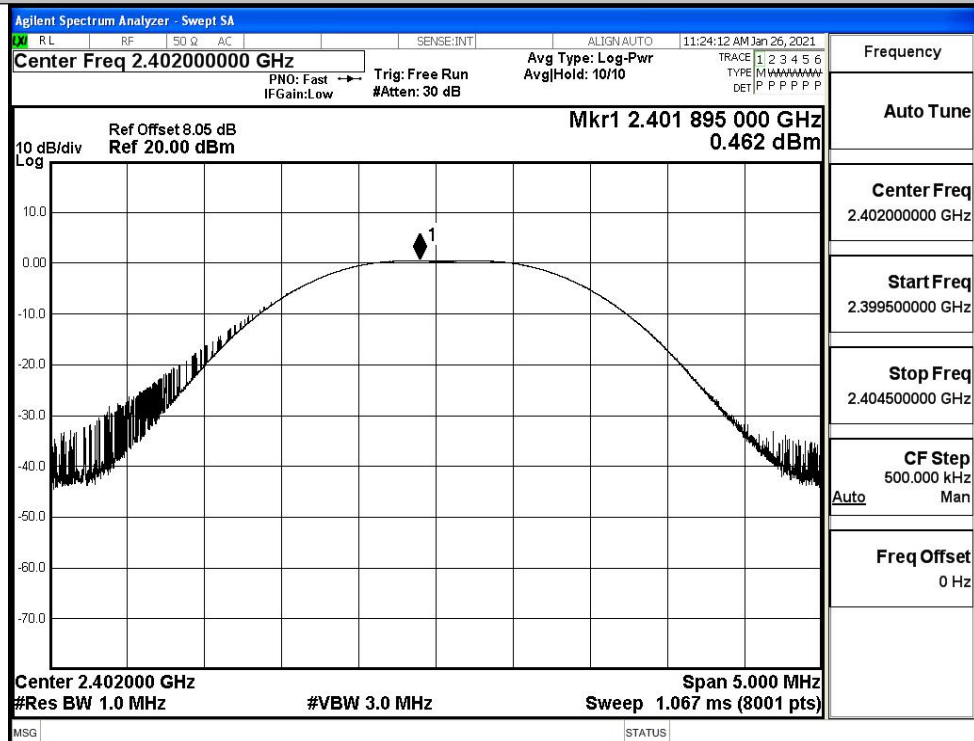


A.2 Maximum Conducted Peak Output Power

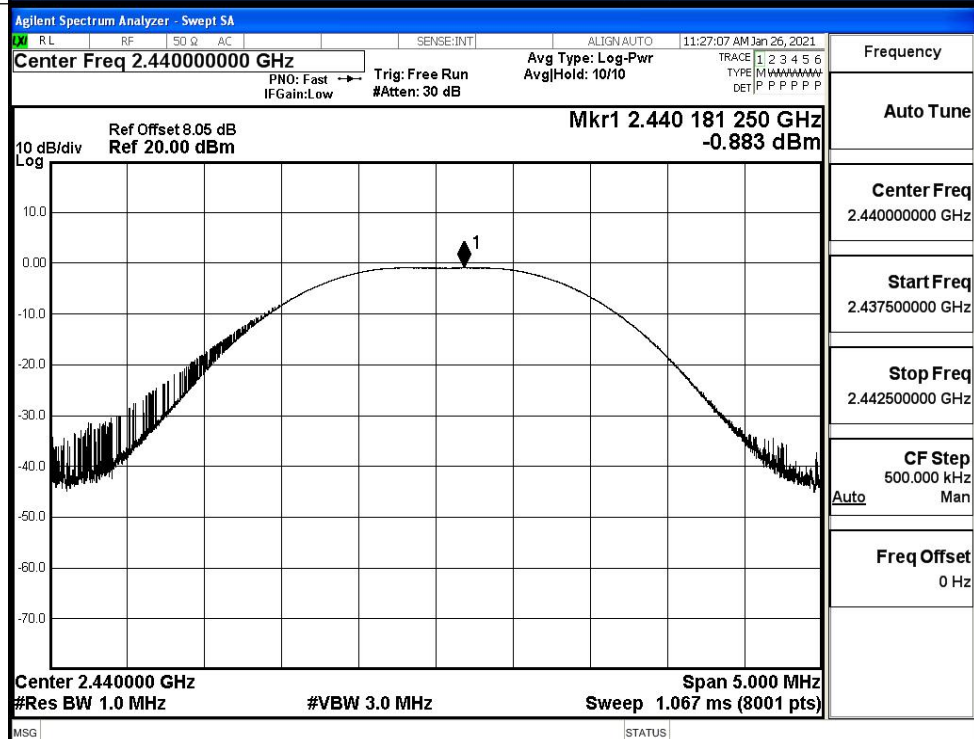
Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.462	30	PASS
BT LE	MCH	-0.883	30	PASS
BT LE	HCH	-2.247	30	PASS

Test Graphs

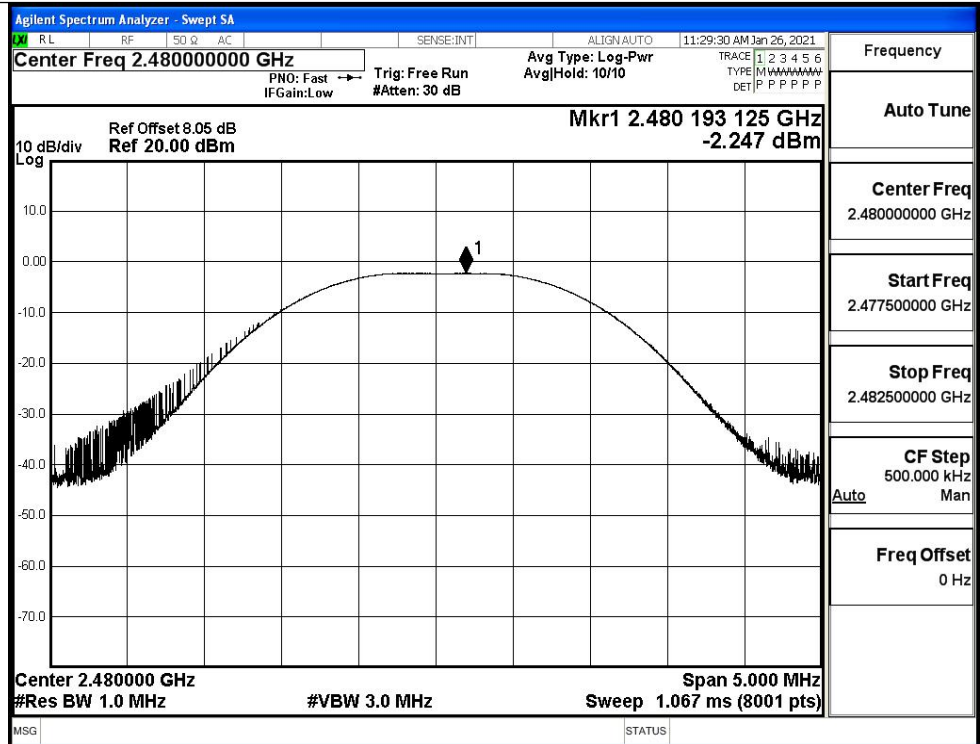
LCH



MCH



HCH

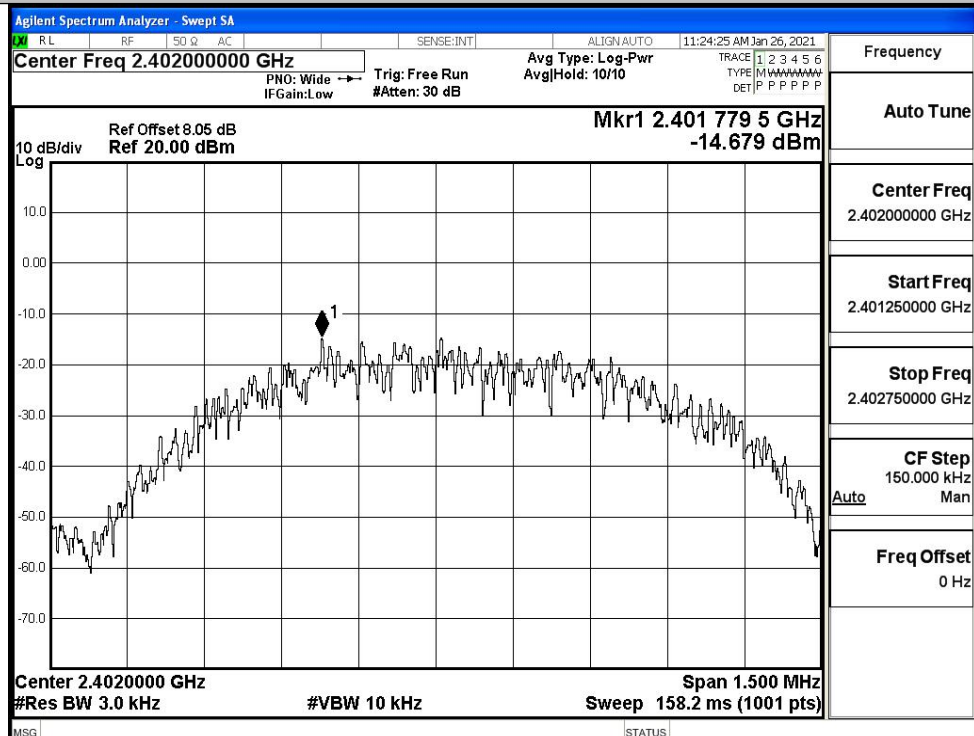


A.3 Maximum Power Spectral Density

Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
BT LE	LCH	-14.679	8	PASS
BT LE	MCH	-16.034	8	PASS
BT LE	HCH	-17.333	8	PASS

Test Graphs

LCH

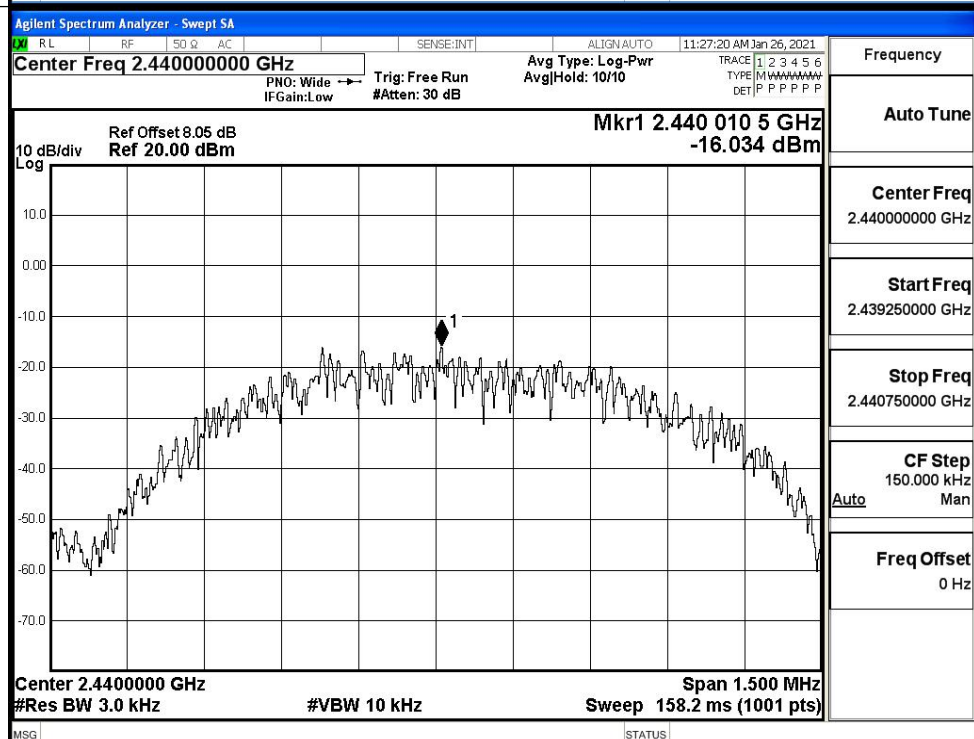


Frequency

Auto Tune

Center Freq
2.402000000 GHzStart Freq
2.401250000 GHzStop Freq
2.402750000 GHzCF Step
150.000 kHz
Auto ManFreq Offset
0 Hz

MCH

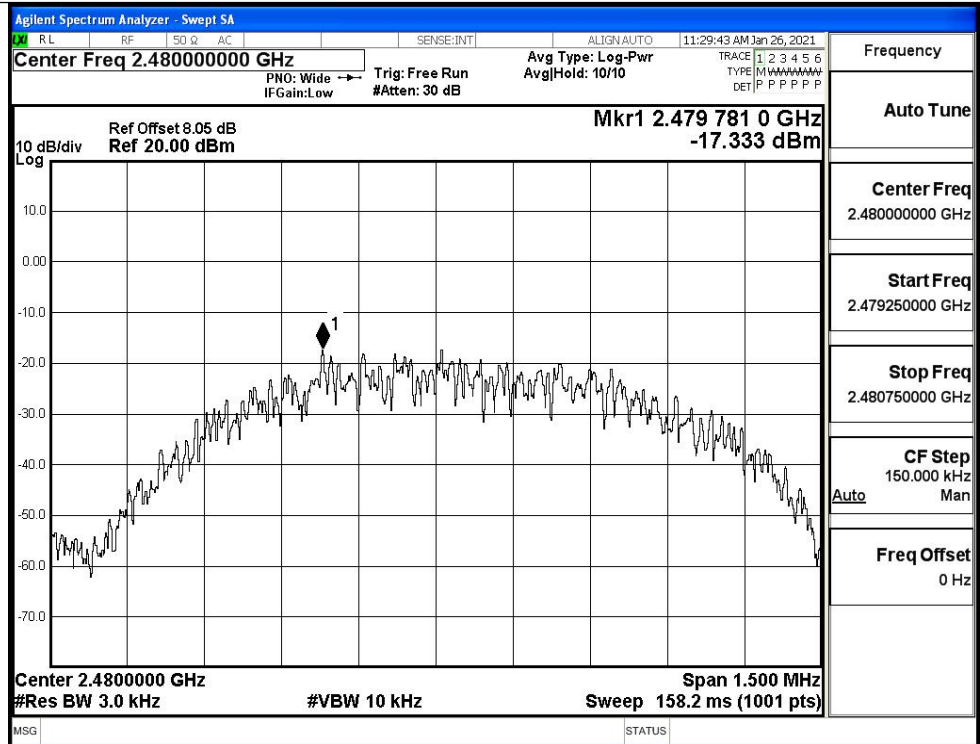


Frequency

Auto Tune

Center Freq
2.440000000 GHzStart Freq
2.439250000 GHzStop Freq
2.440750000 GHzCF Step
150.000 kHz
Auto ManFreq Offset
0 Hz

HCH

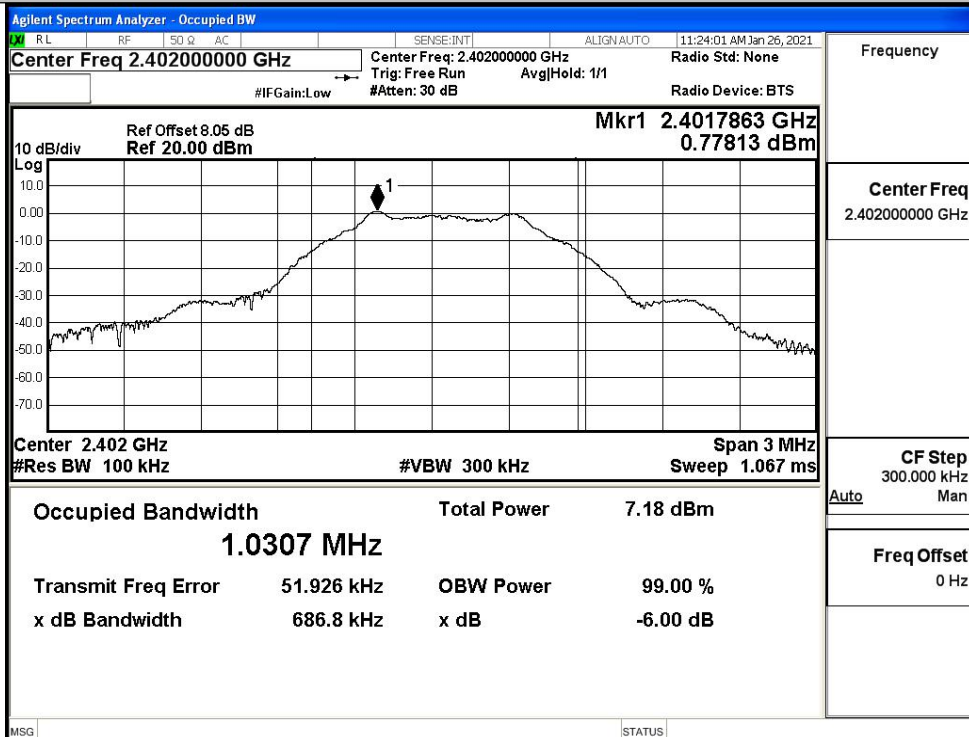


A.4 6dB Bandwidth

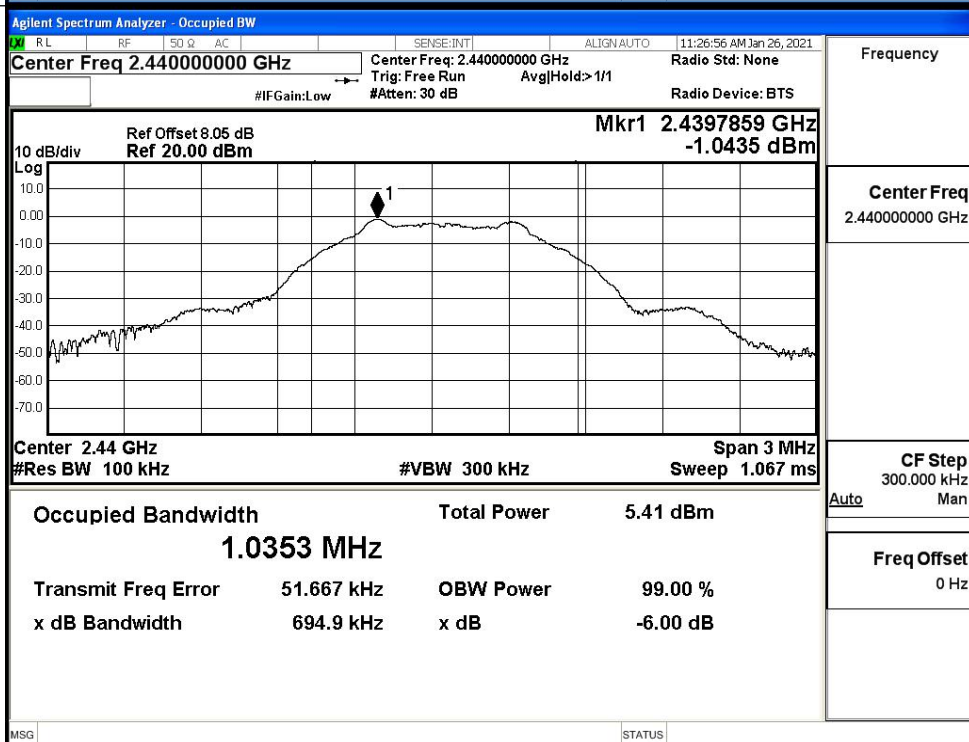
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
BT LE	LCH	0.6868	≥ 0.5	PASS
BT LE	MCH	0.6949	≥ 0.5	PASS
BT LE	HCH	0.6930	≥ 0.5	PASS

Test Graphs

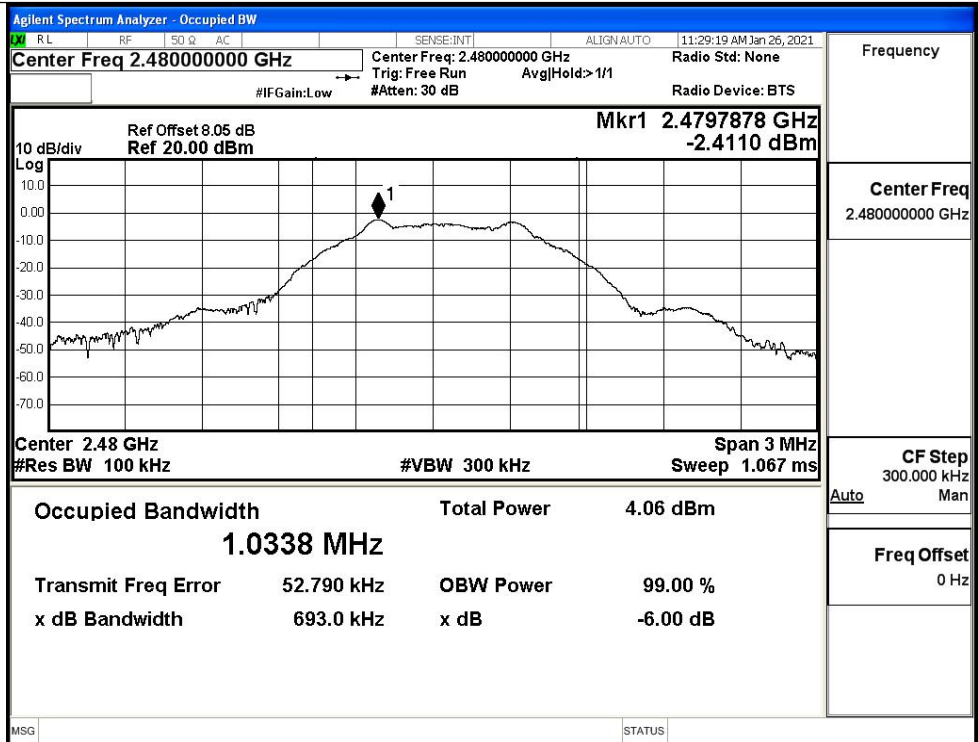
LCH



MCH



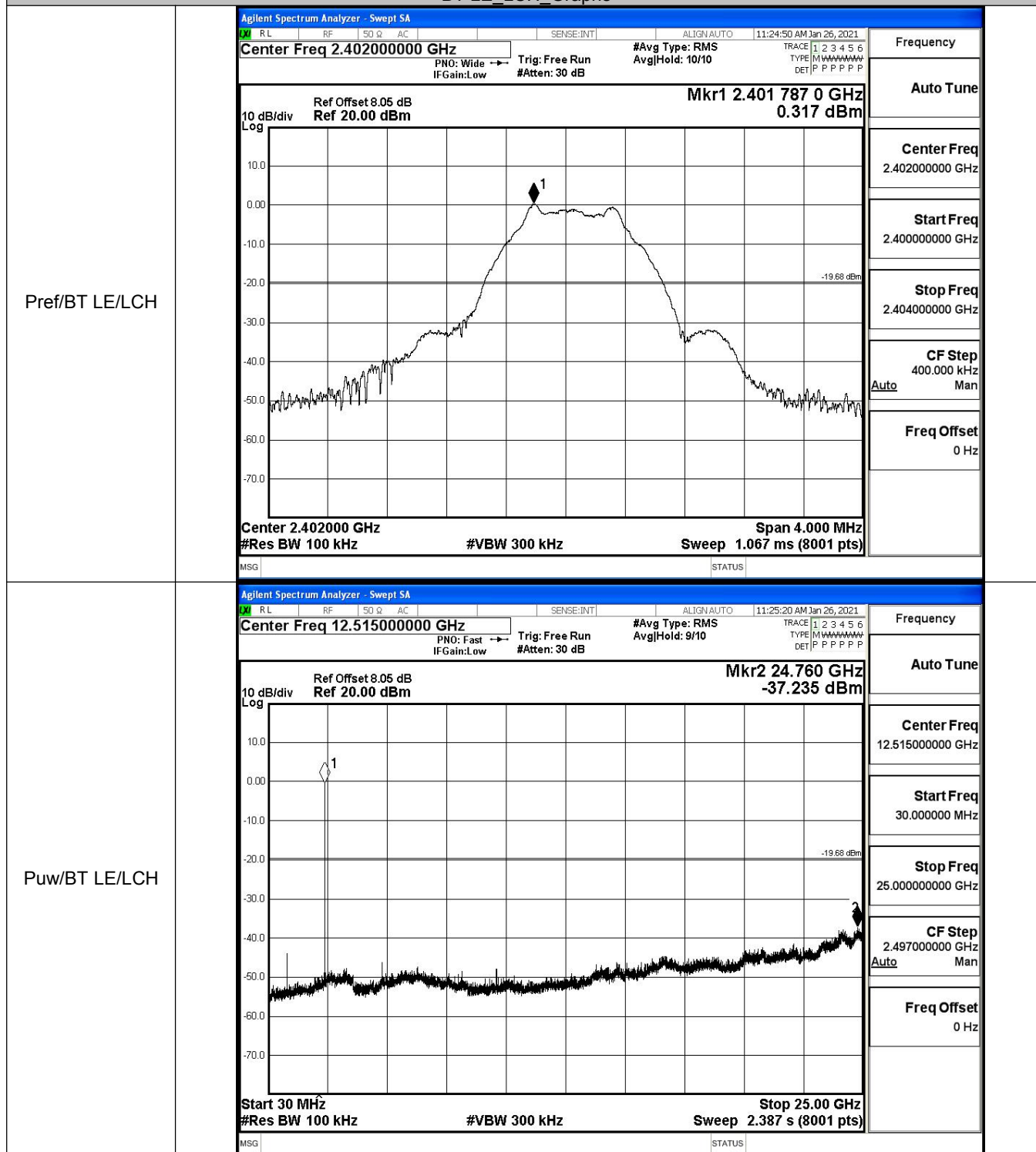
HCH



A.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.317	-37.235	-19.683	PASS
BT LE	MCH	-1.05	-37.505	-21.050	PASS
BT LE	HCH	-2.404	-36.967	-22.404	PASS

BT LE_LCH_Graphs



Center Freq 12.515000000 GHz

PNO: Fast

IFGain: Low

Trig: Free Run

#Atten: 30 dB

#Avg Type: RMS

Avg/Hold: 9/10

TRACE 1 2 3 4 5 6

TYPE M W M M M M M M

DET P P P P P P

Ref Offset 8.05 dB

Ref 20.00 dBm

Mkr2 24.760 GHz

-37.235 dBm

Start 30 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.387 s (8001 pts)

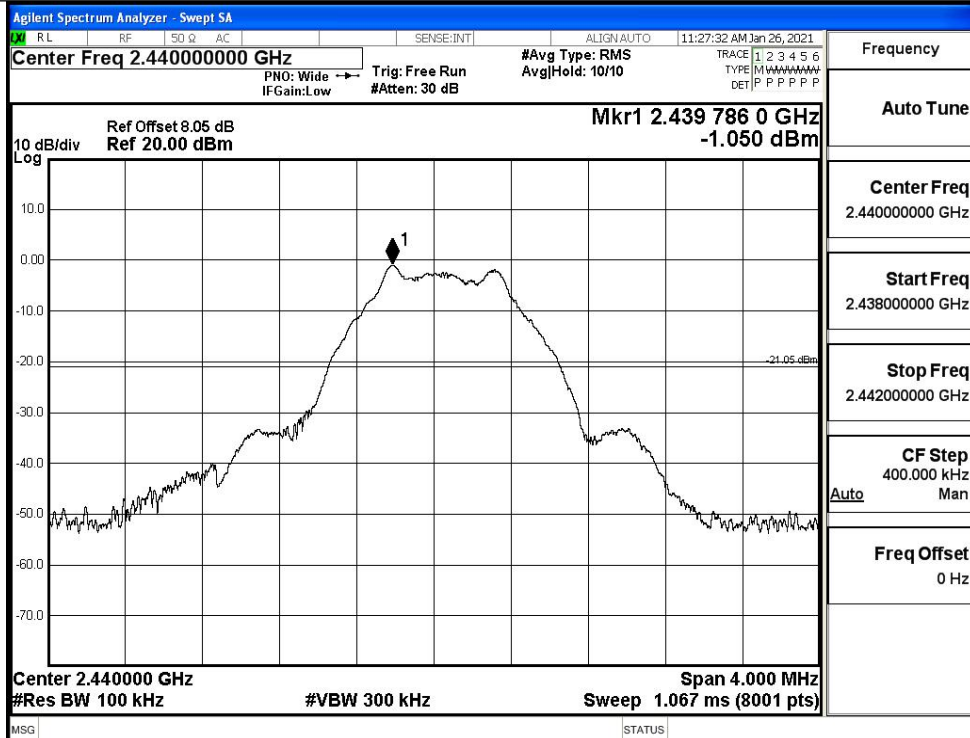
Stop 25.00 GHz

MSG

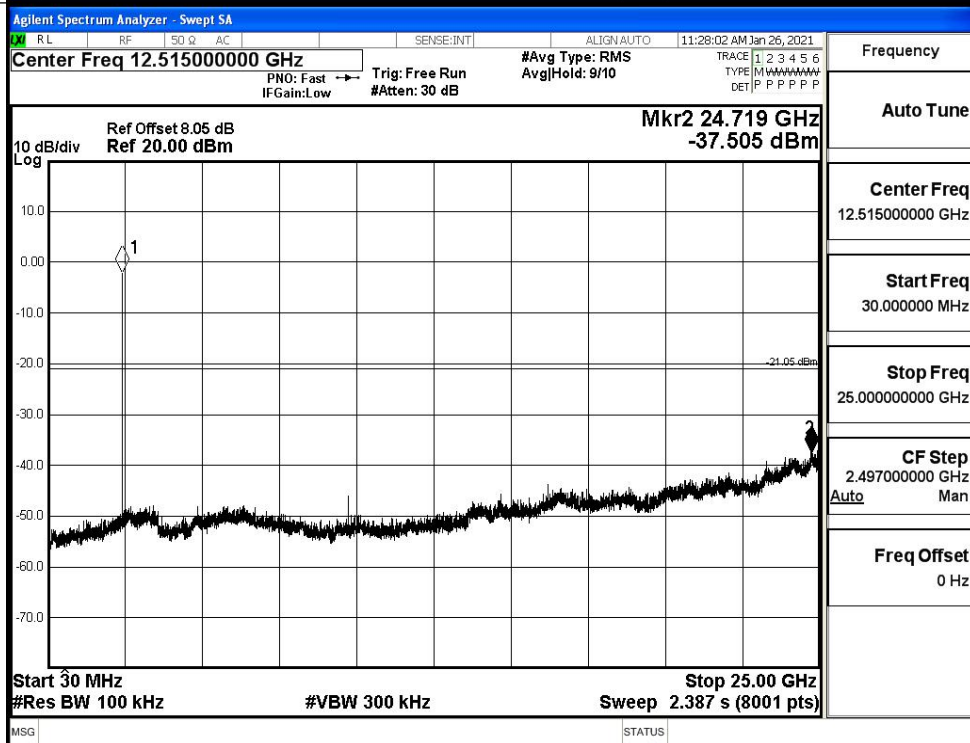
STATUS

BT LE MCH Graphs

Pref/BT LE/MCH

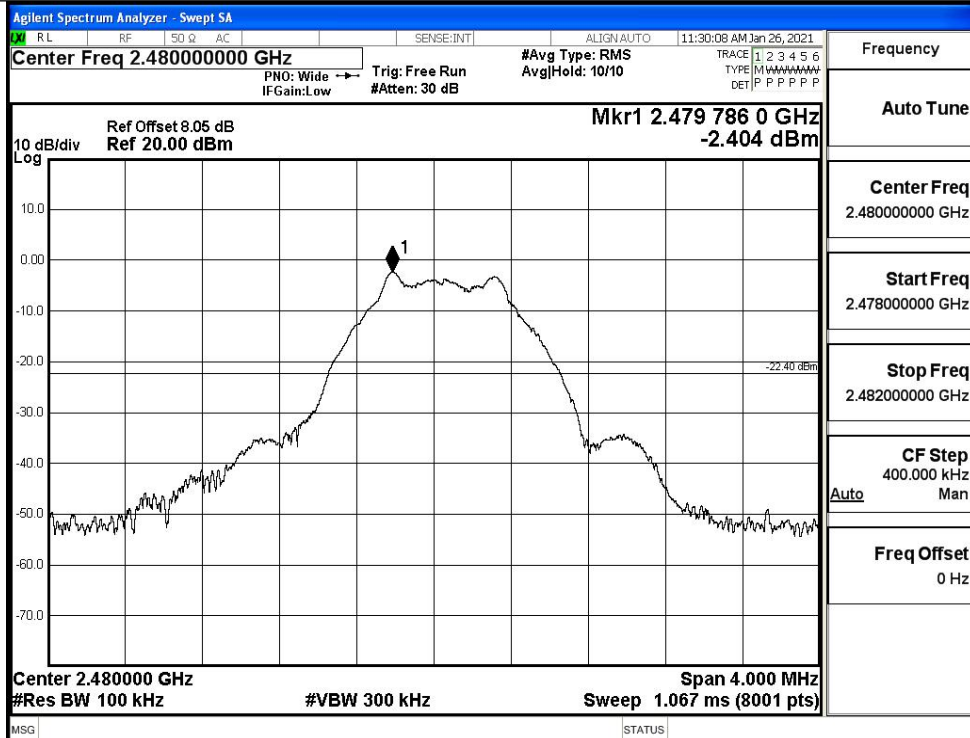


Puw/BT LE/MCH

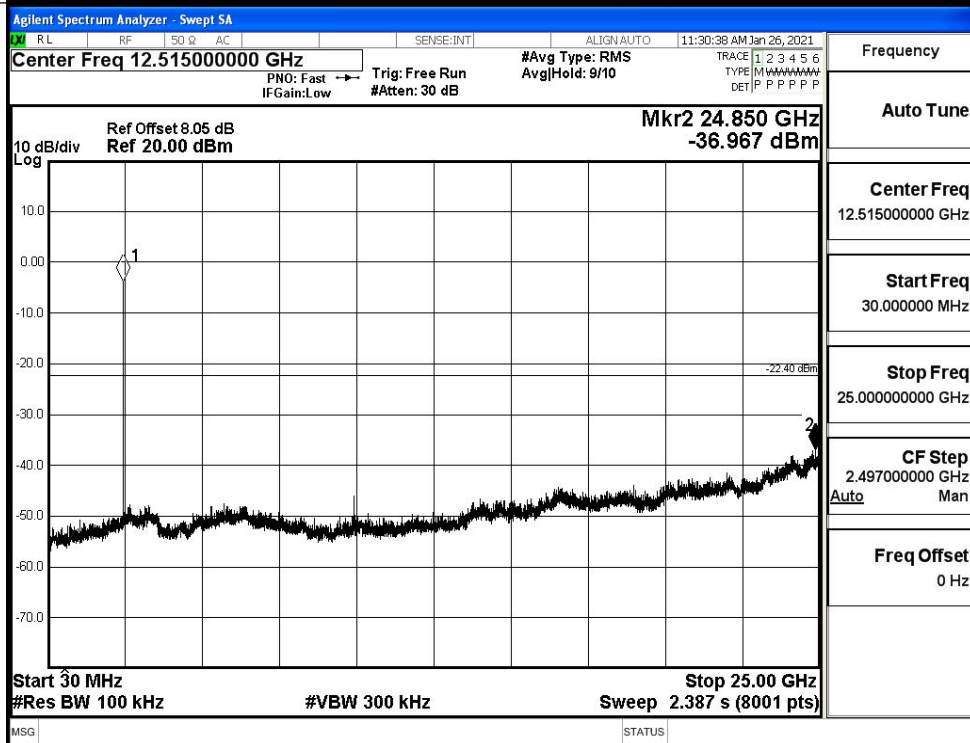


BT LE HCH Graphs

Pref/BT LE/HCH



Puw/BT LE/HCH

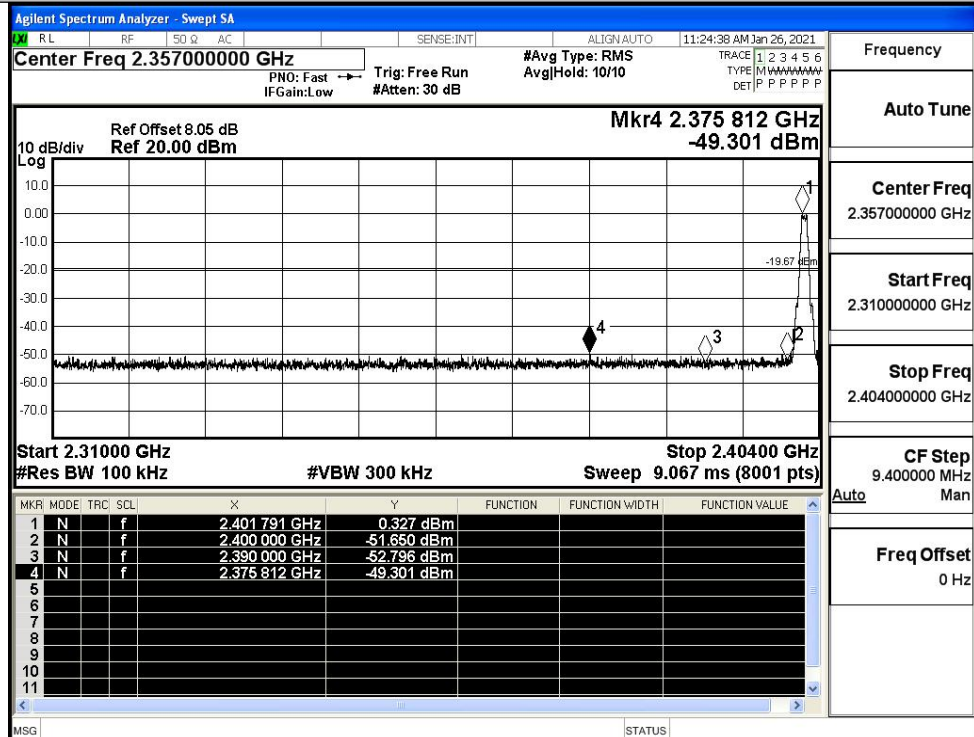


A.6 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
BT LE	LCH	0.327	-49.301	-19.67	PASS
BT LE	HCH	-2.392	-49.546	-22.39	PASS

Test Graphs

LCH



Frequency

Auto Tune

Center Freq

2.357000000 GHz

Start Freq

2.310000000 GHz

Stop Freq

2.404000000 GHz

CF Step

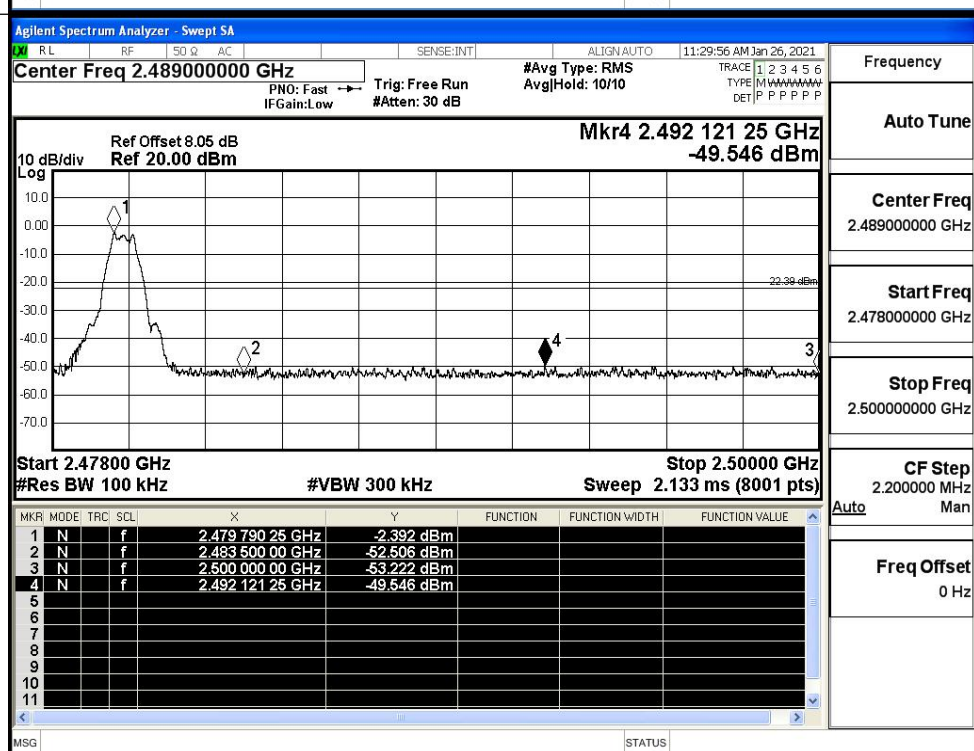
9.400000 MHz

Auto Man

Freq Offset

0 Hz

HCH



Frequency

Auto Tune

Center Freq

2.489000000 GHz

Start Freq

2.478000000 GHz

Stop Freq

2.500000000 GHz

CF Step

2.200000 MHz

Auto Man

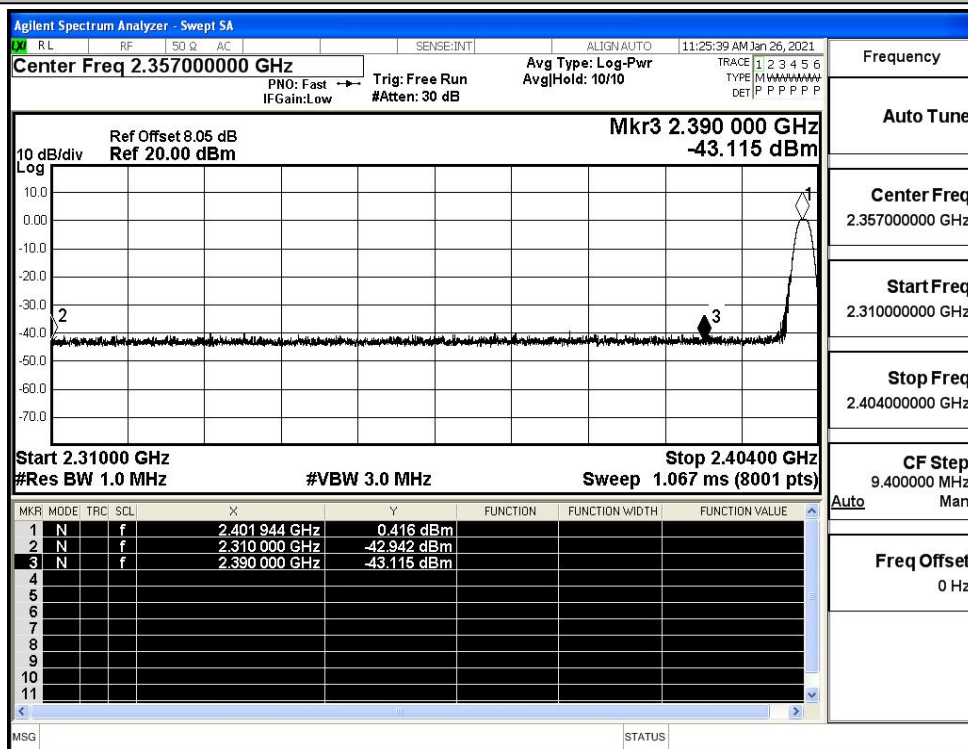
Freq Offset

0 Hz

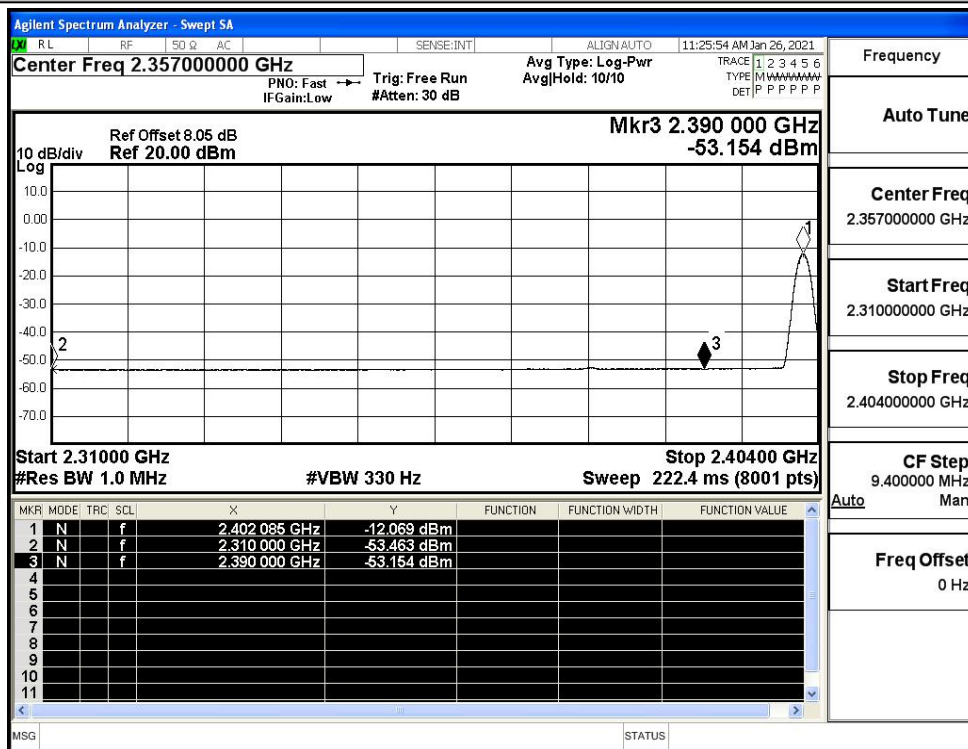
A.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
BT LE	2402	Ant1	2310.0	-42.94	2.0	0	54.29	PEAK	74	PASS
		Ant1	2310.0	-53.46	2.0	0	43.77	AV	54	PASS
		Ant1	2390.0	-43.12	2.0	0	54.11	PEAK	74	PASS
		Ant1	2390.0	-53.15	2.0	0	44.08	AV	54	PASS
	2480	Ant1	2483.5	-40.90	2.0	0	56.33	PEAK	74	PASS
		Ant1	2483.5	-52.62	2.0	0	44.61	AV	54	PASS
		Ant1	2500.0	-42.52	2.0	0	54.71	PEAK	74	PASS
		Ant1	2500.0	-52.49	2.0	0	44.74	AV	54	PASS

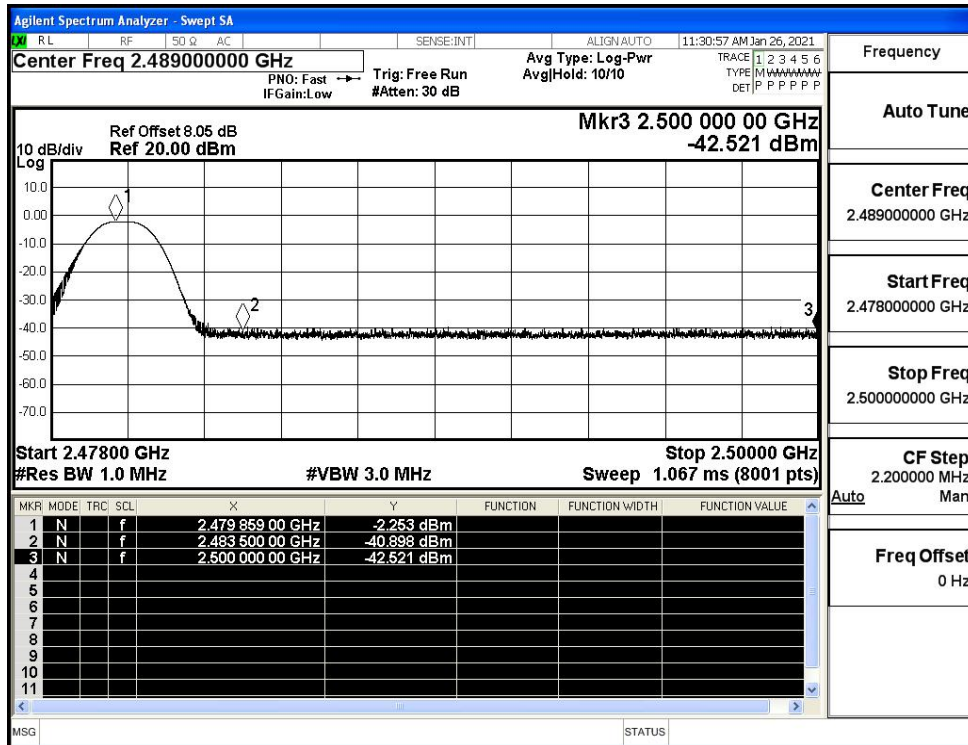
Restrict-band band-edge measurements_BT LE_2402_Ant1_PEAK



Restrict-band band-edge measurements_BT LE_2402_Ant1_AV



Restrict-band band-edge measurements_BT LE_2480_Ant1_PEAK



Restrict-band band-edge measurements_BT LE_2480_Ant1_AV

