Appendix A

RF Test Data for 2.4G (Conducted Measurement)

Product Name: RADIO TRANSMITTER

Trade Mark: NEEWER

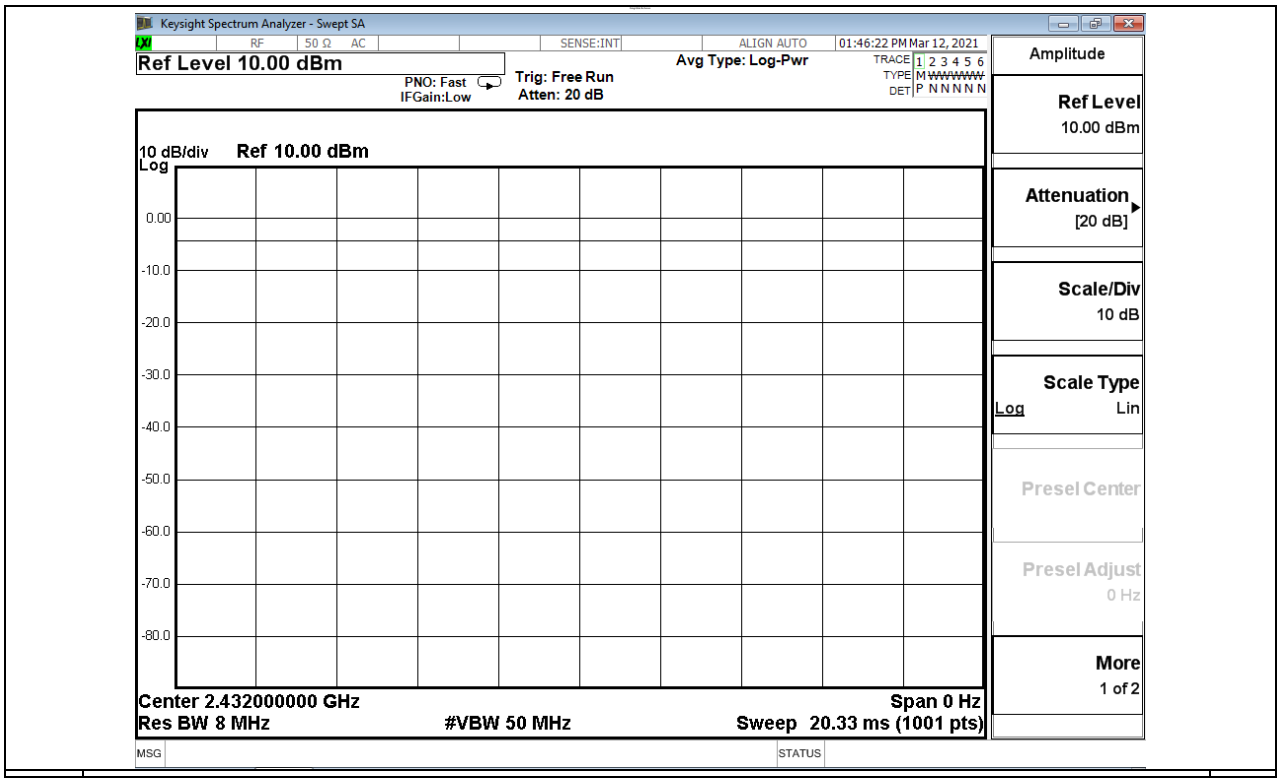
Test Model: VC-818TX

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Kay Hu
Supervised by:	Li Huan

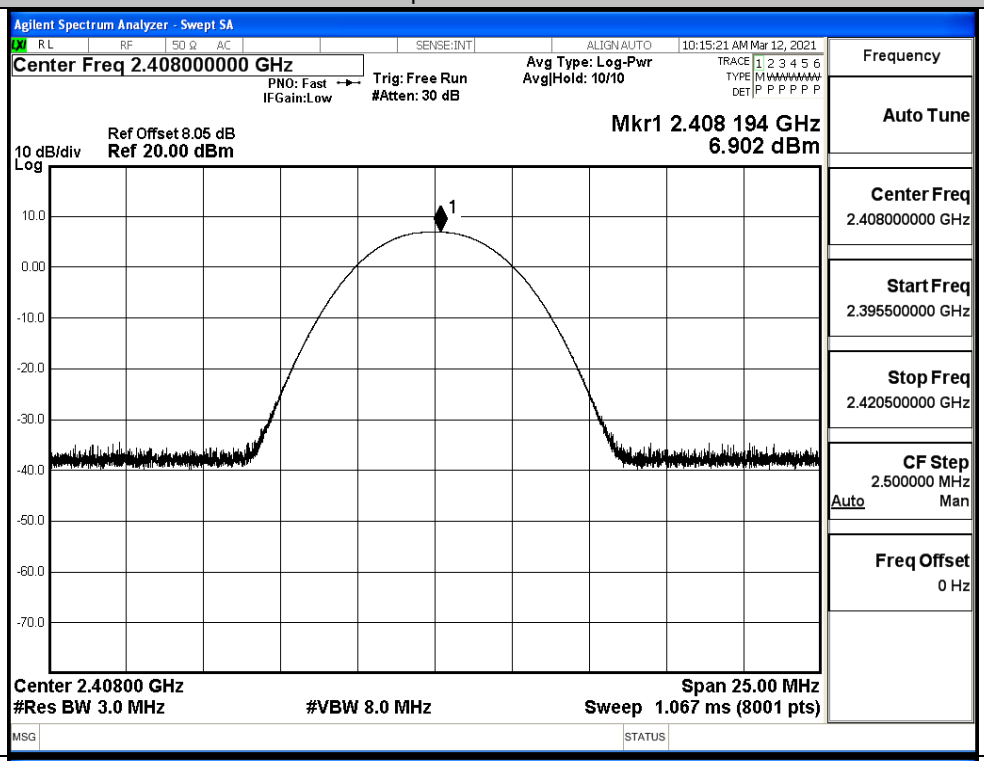
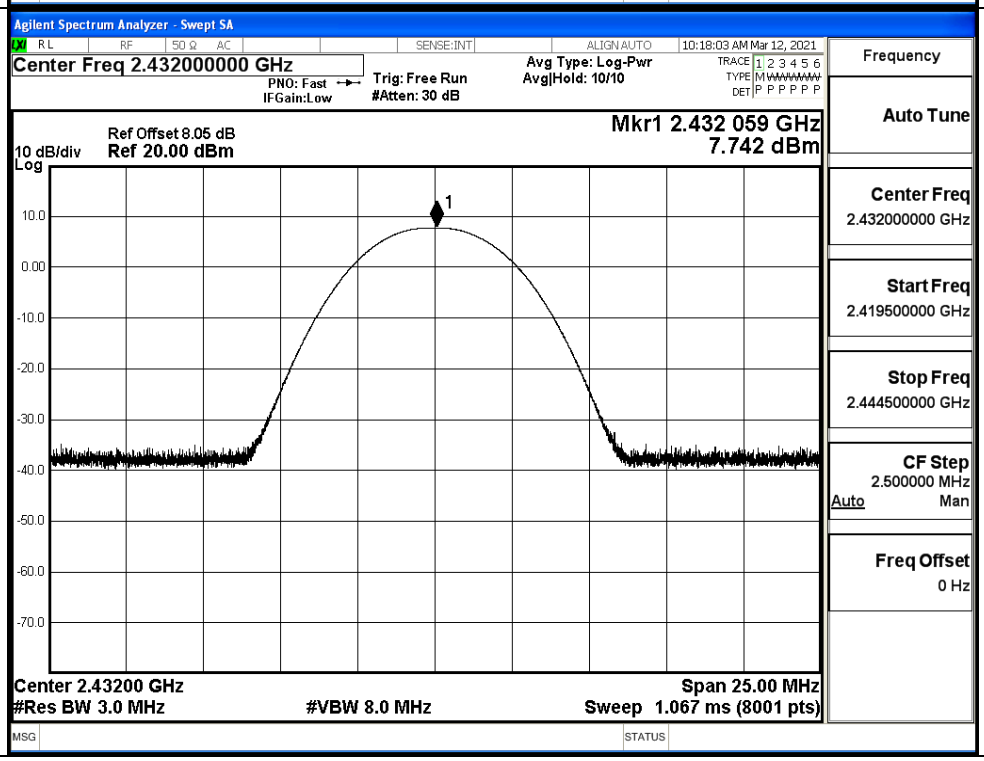
A.1 Duty Cycle

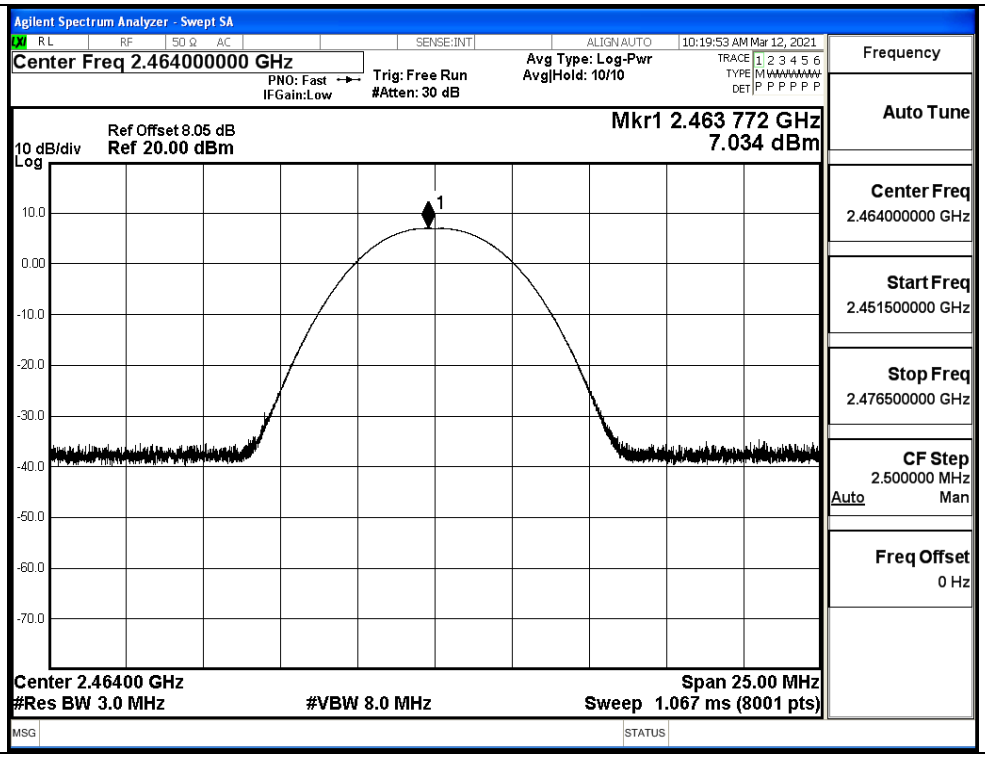
Test Mode	Test Channel	Ant	Duty Cycle[%]	Verdict
GFSK	2432	Ant1	100	PASS



A.2 Maximum Conducted Peak Output Power

Mode	Channel	Conduct Peak Power[dBm]	Limit [dBm]	Verdict
GFSK	LCH	6.902	30	PASS
GFSK	MCH	7.742	30	PASS
GFSK	HCH	7.034	30	PASS

Test Graphs		
LCH		
MCH		

HCH		

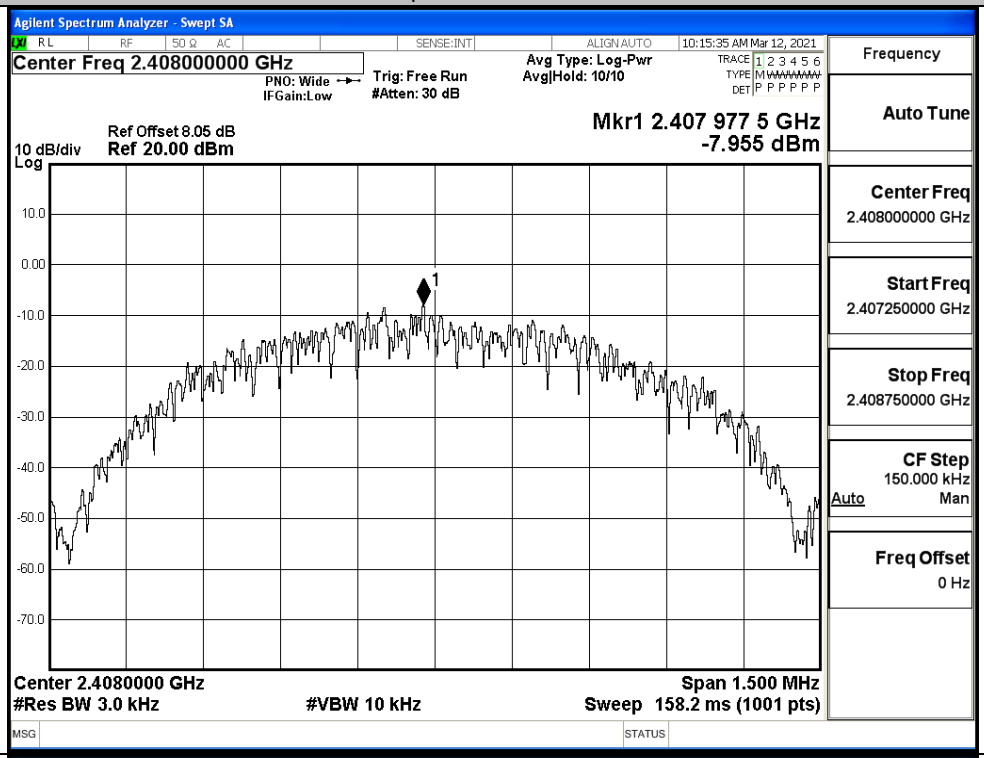
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:19:53 AM Mar 12, 2021
Center Freq 2.464000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P P P P P
Ref Offset 8.05 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.463 772 GHz
7.034 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.46400 GHz
#Res BW 3.0 MHz
#VBW 8.0 MHz
Span 25.00 MHz
Sweep 1.067 ms (8001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.464000000 GHz
Start Freq
2.451500000 GHz
Stop Freq
2.476500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

A.3 Maximum Power Spectral Density

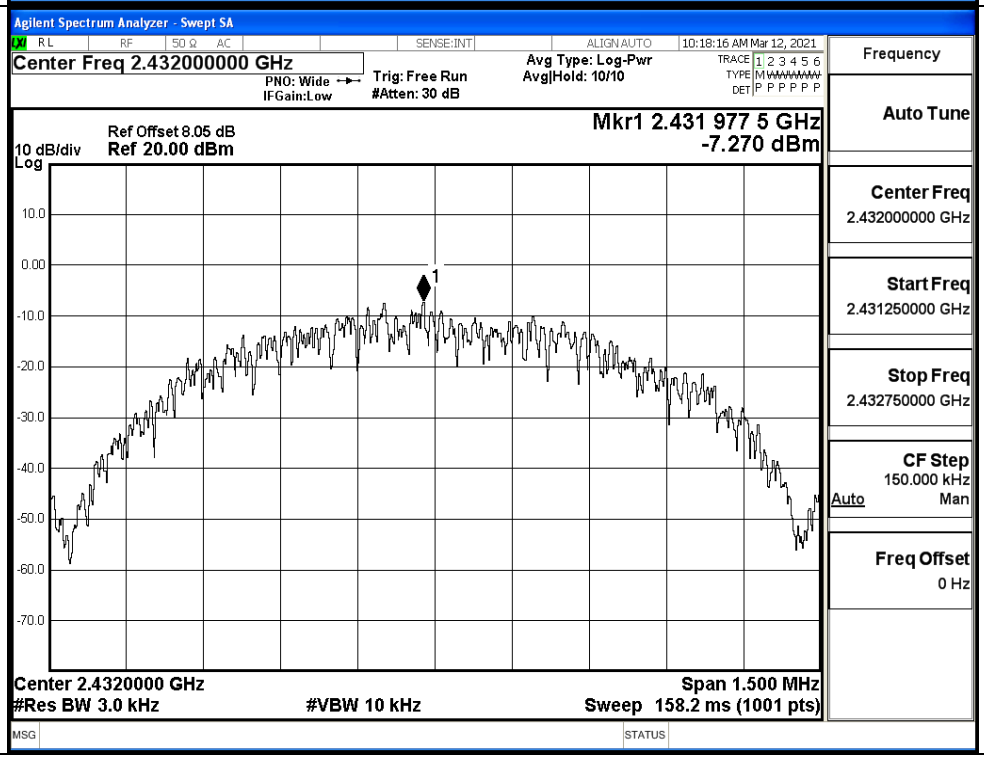
Mode	Channel	PSD [dBm/3KHz]	Limit [dBm/3KHz]	Verdict
GFSK	LCH	-7.955	8	PASS
GFSK	MCH	-7.270	8	PASS
GFSK	HCH	-7.831	8	PASS

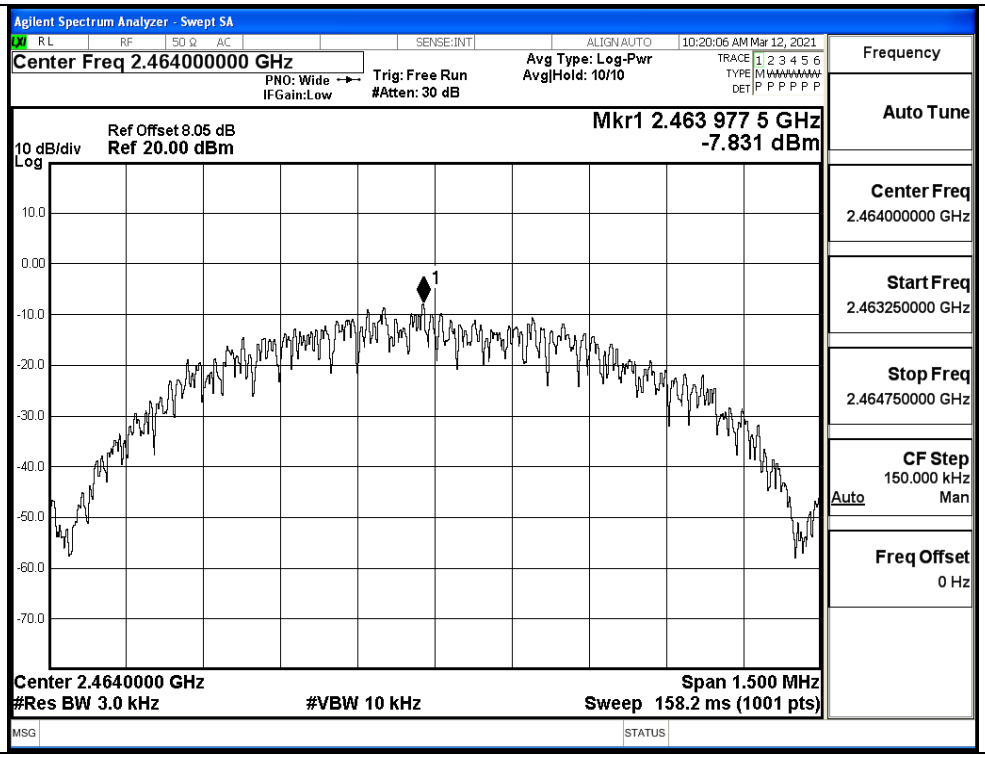
Test Graphs

LCH



MCH



HCH		

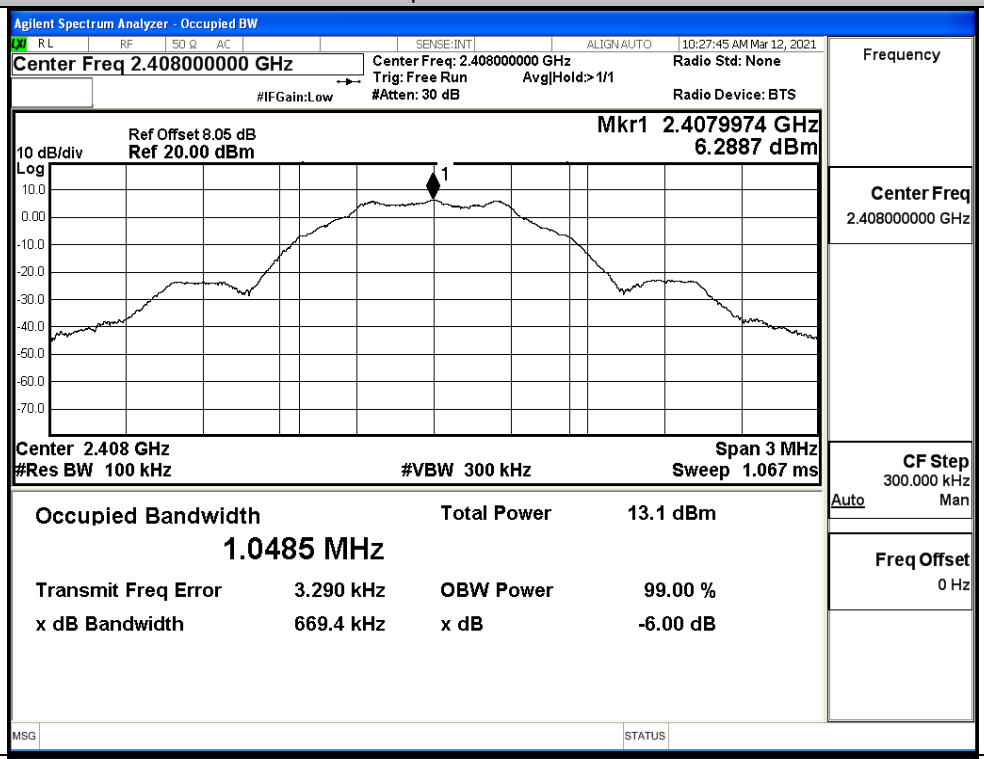
Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:20:06 AM Mar 12, 2021
Center Freq 2.464000000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 10/10
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P P P P P
Ref Offset 8.05 dB
10 dB/div
Log
Ref 20.00 dBm
Mkr1 2.463 977 5 GHz
-7.831 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.4640000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 1.500 MHz
Sweep 158.2 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.464000000 GHz
Start Freq
2.463250000 GHz
Stop Freq
2.464750000 GHz
CF Step
150.000 kHz
Auto
Man
Freq Offset
0 Hz

A.4 6dB Bandwidth

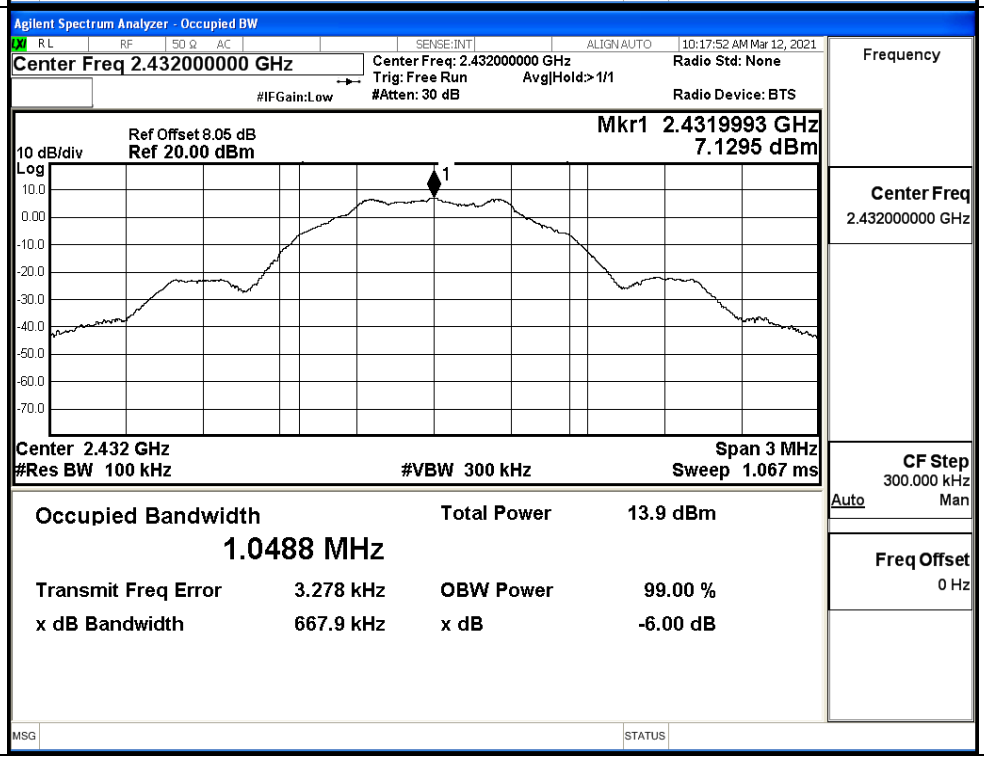
Mode	Channel	6dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.6694	⩾0.5	PASS
GFSK	MCH	0.6679	⩾0.5	PASS
GFSK	HCH	0.6690	⩾0.5	PASS

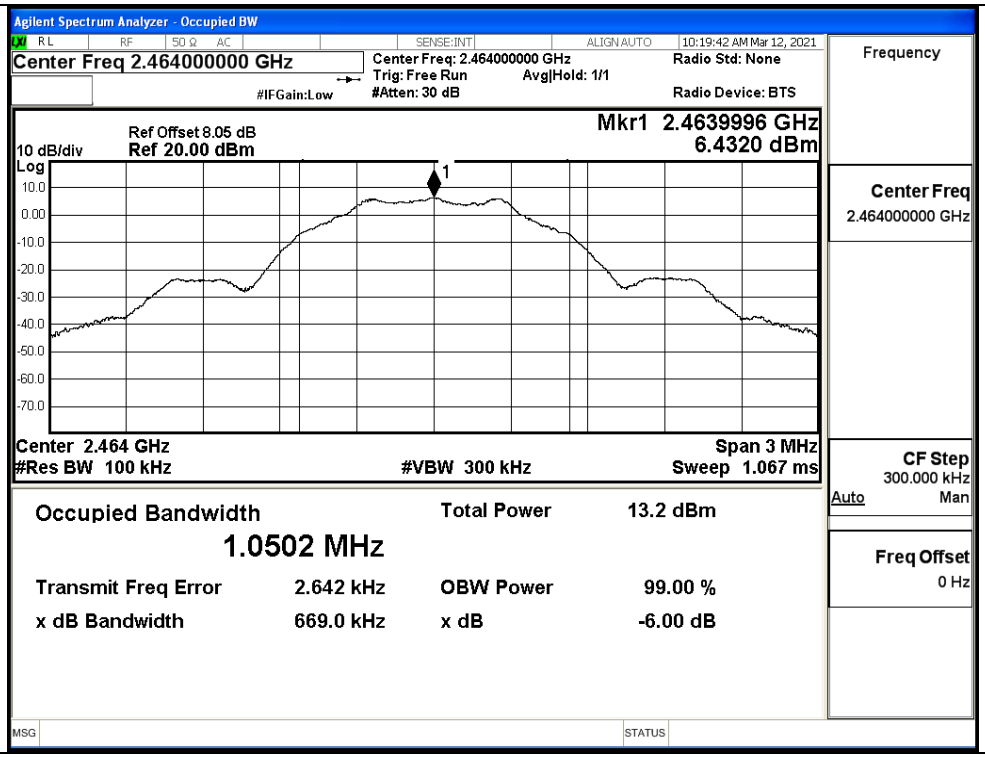
Test Graphs

LCH



MCH

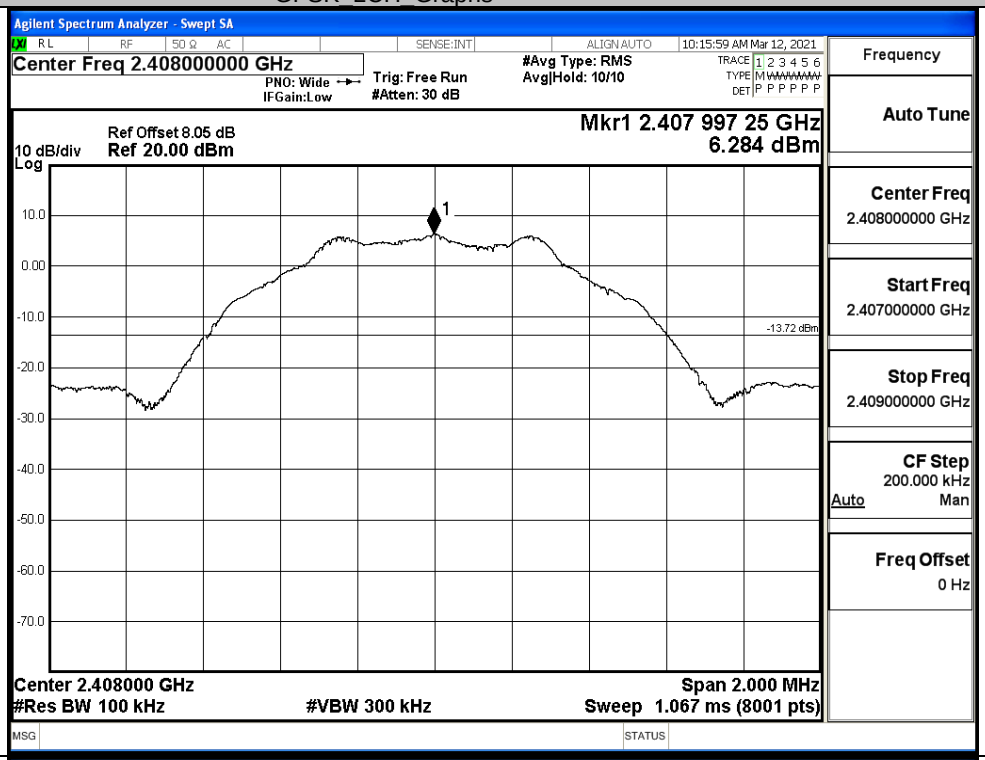
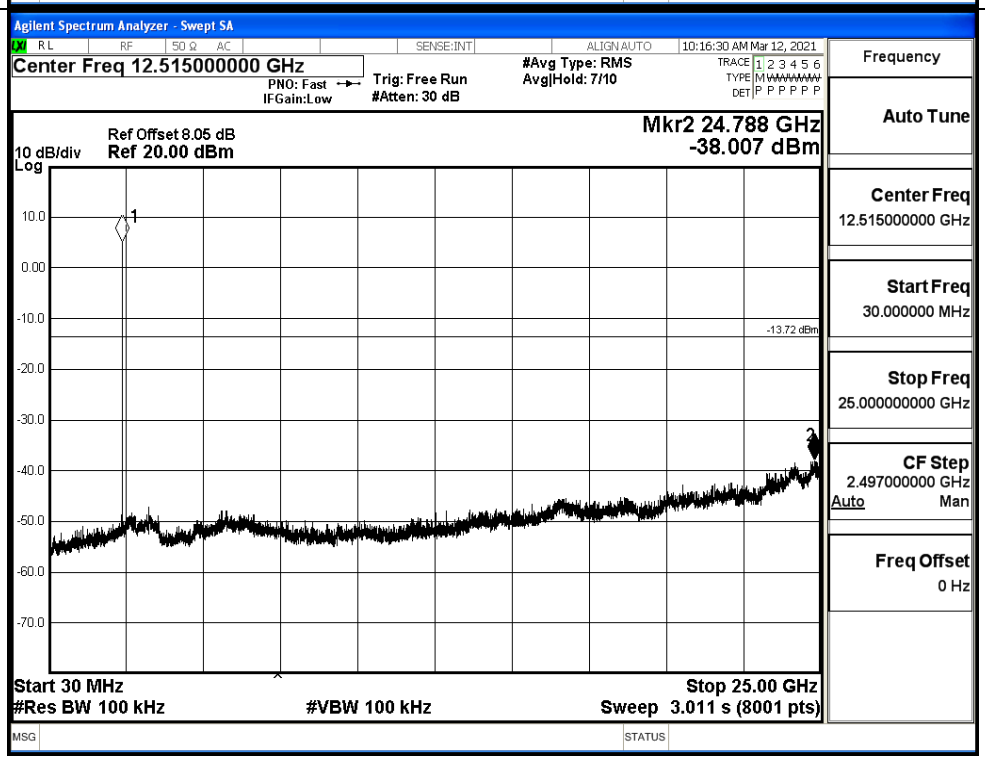


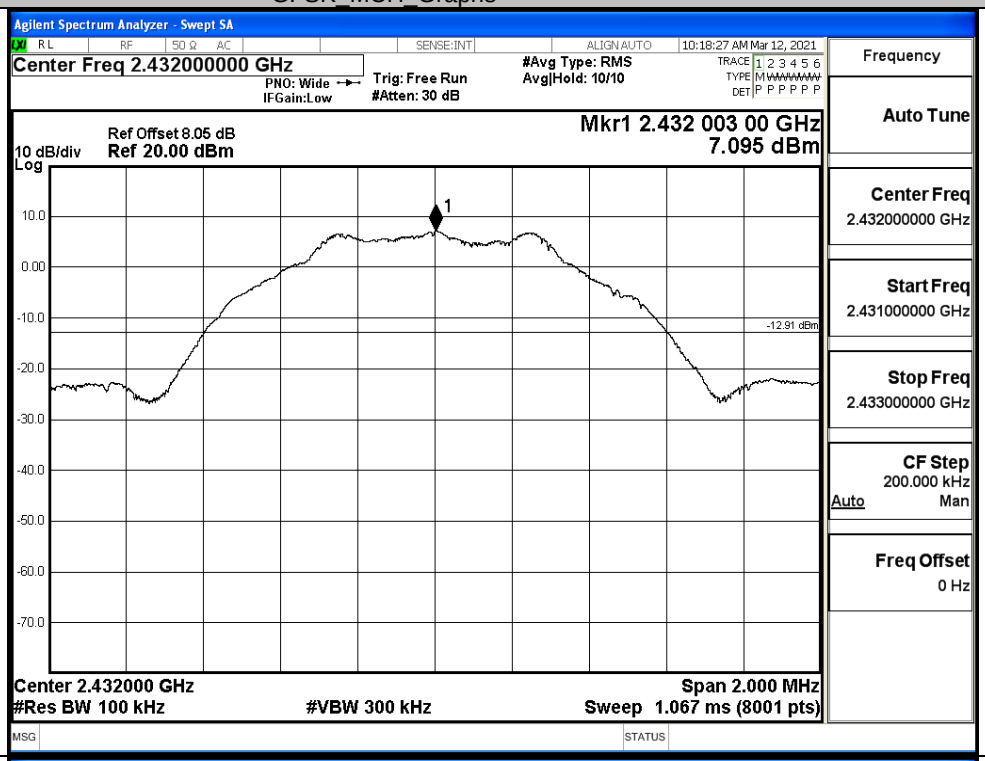
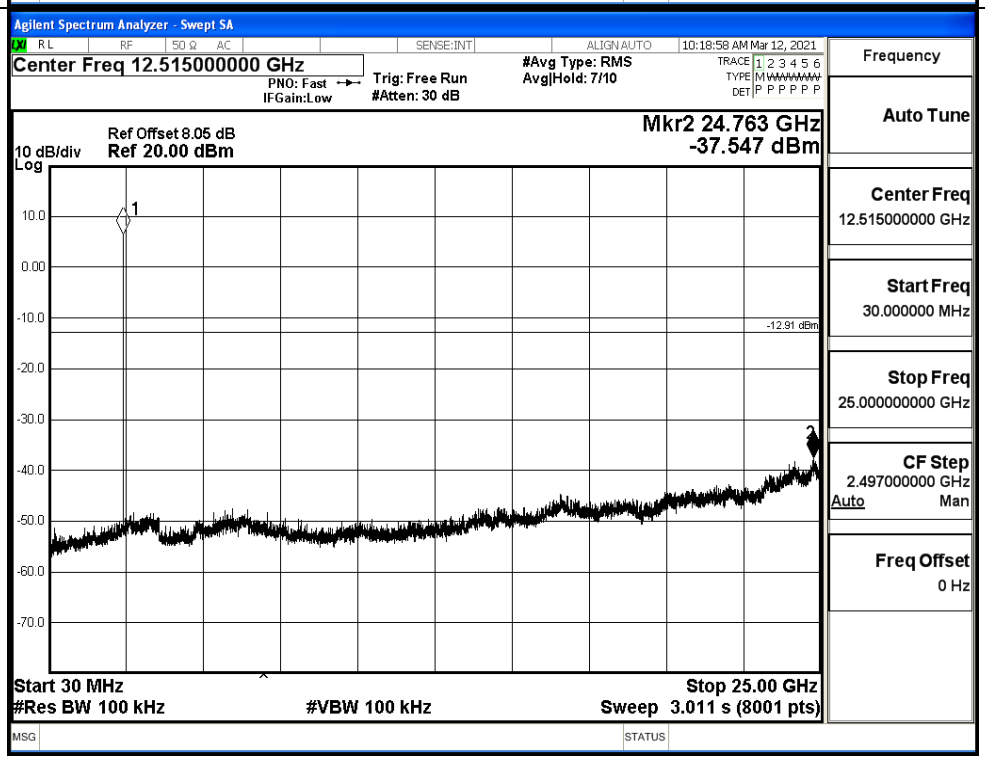
HCH		

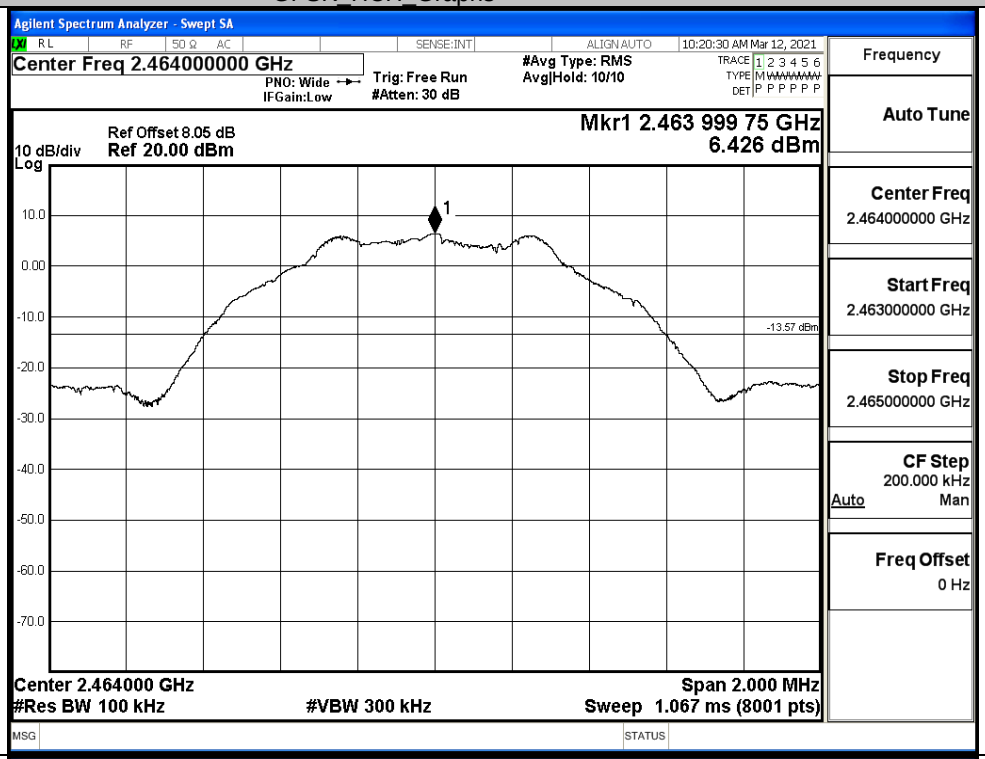
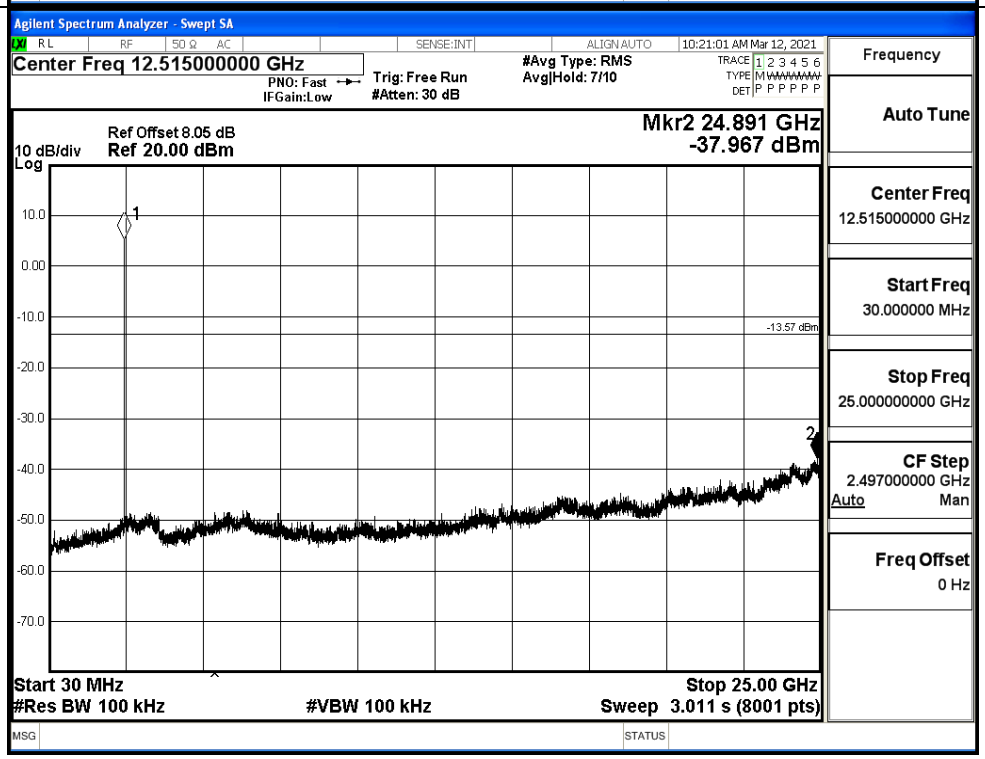
Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:19:42 AM Mar 12, 2021
Center Freq 2.464000000 GHz
Center Freq: 2.464000000 GHz
Trig: Free Run
Avg|Hold: 1/1
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.4639996 GHz
6.4320 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.464 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 3 MHz
Sweep 1.067 ms
Occupied Bandwidth
1.0502 MHz
Total Power 13.2 dBm
Transmit Freq Error 2.642 kHz
OBW Power 99.00 %
x dB Bandwidth 669.0 kHz
x dB -6.00 dB
MSG
STATUS
Frequency
Center Freq
2.464000000 GHz
CF Step
300.000 kHz
Auto
Man
Freq Offset
0 Hz

A.5 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	6.284	-38.007	-13.716	PASS
GFSK	MCH	7.095	-37.547	-12.905	PASS
GFSK	HCH	6.426	-37.967	-13.574	PASS

GFSK_LCH_Graphs	
Pref/GFSK/LCH	
Puw/GFSK/LCH	

GFSK_MCH_Graphs	
Pref/GFSK/MCH	
Puw/GFSK/MCH	

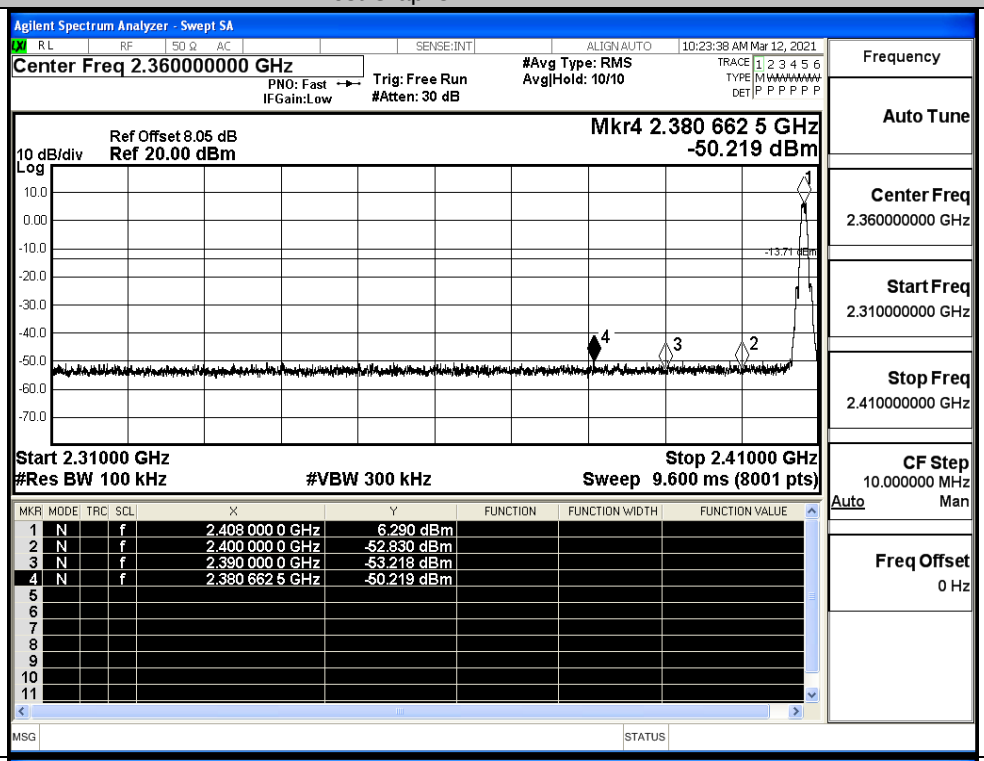
GFSK_HCH_Graphs	
Pref/GFSK/HCH	
Puw/GFSK/HCH	

A.6 Band-edge for RF Conducted Emissions

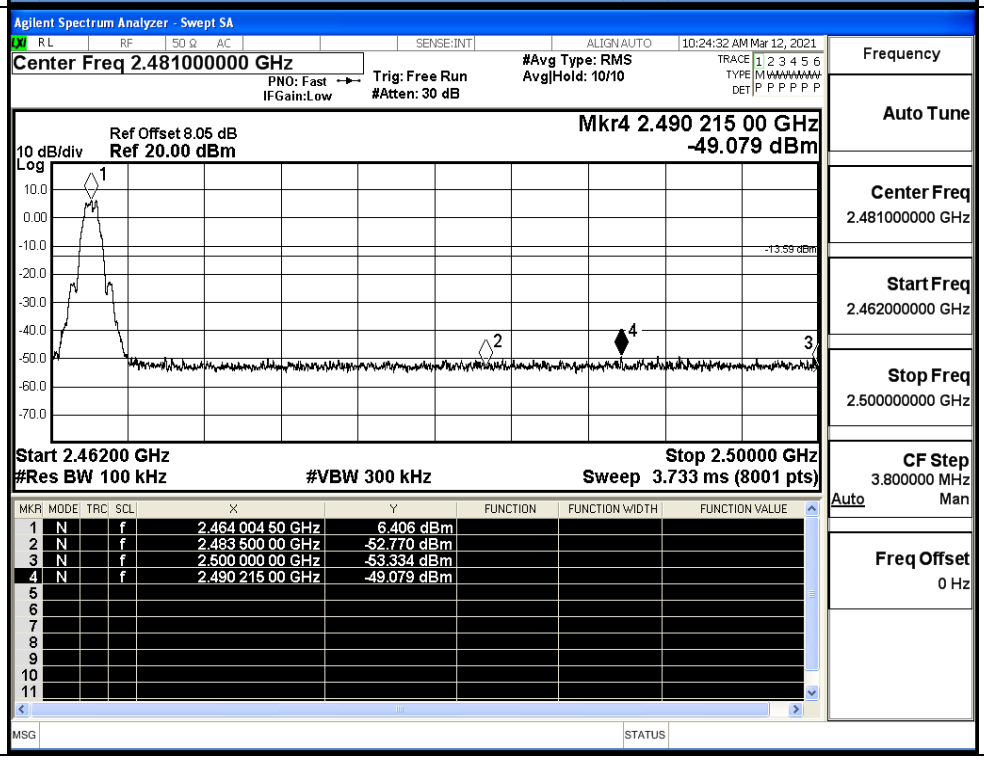
Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	6.290	-50.219	-13.71	PASS
GFSK	HCH	6.406	-49.079	-13.59	PASS

Test Graphs

LCH



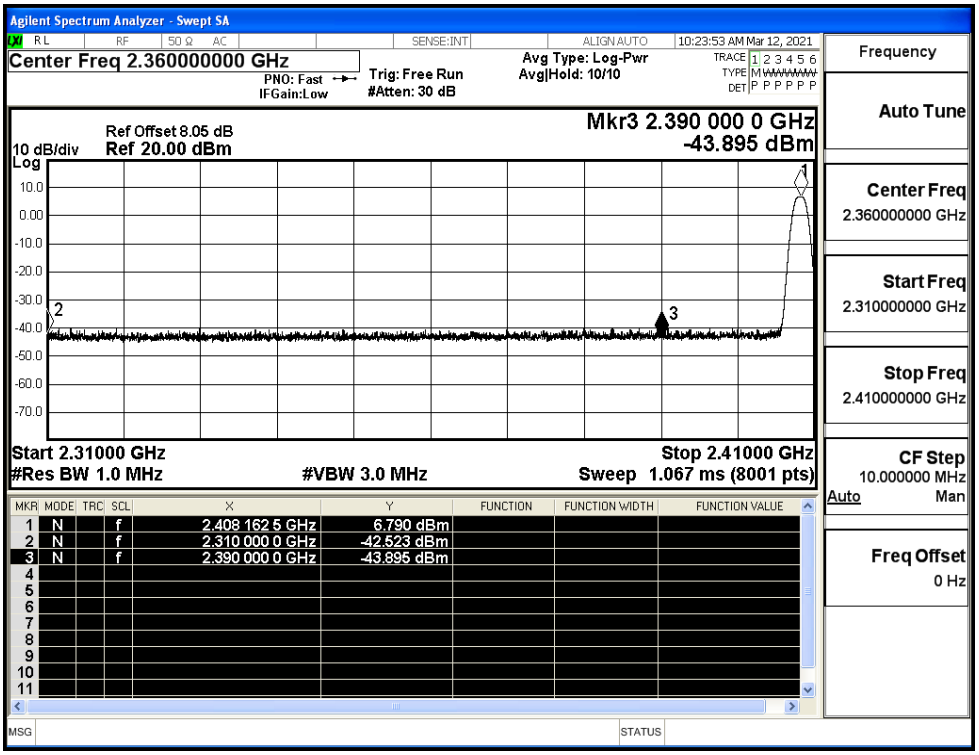
HCH



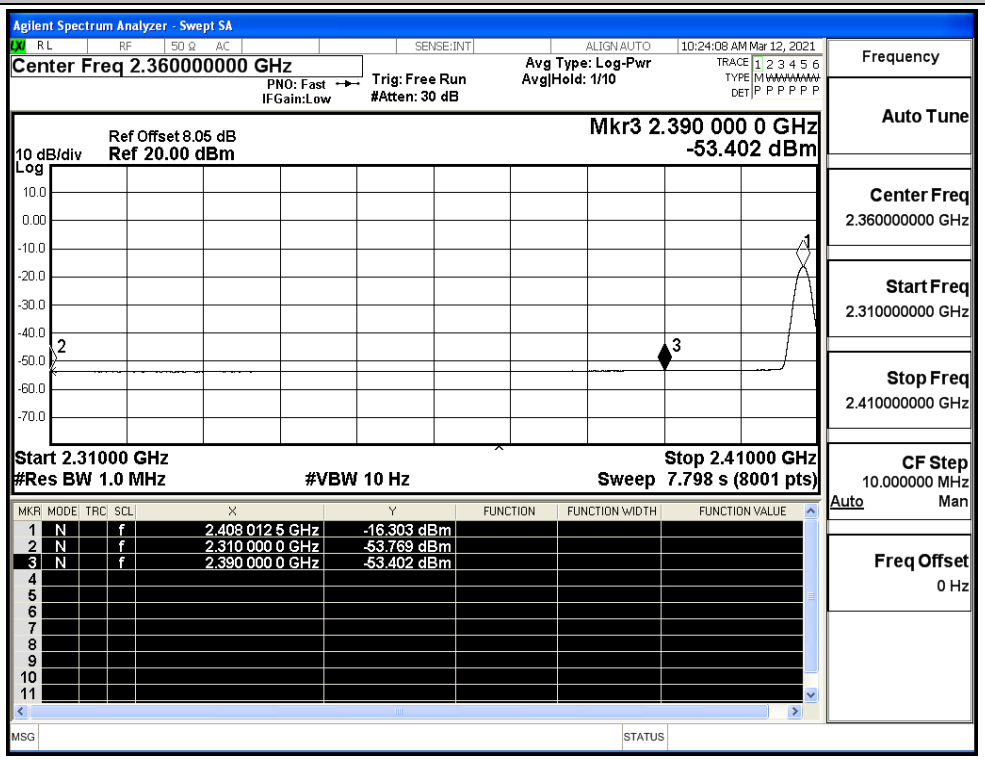
A.7 Restrict-band band-edge measurements

Test Mode	Test Channel	Ant	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdi
GFSK	2408	Ant1	2310.0	-42.52	2.0	0	54.71	PEAK	74	PASS
		Ant1	2310.0	-53.77	2.0	0	43.46	AV	54	PASS
		Ant1	2390.0	-43.90	2.0	0	53.33	PEAK	74	PASS
		Ant1	2390.0	-53.40	2.0	0	43.83	AV	54	PASS
	2464	Ant1	2483.5	-42.46	2.0	0	54.77	PEAK	74	PASS
		Ant1	2483.5	-53.02	2.0	0	44.21	AV	54	PASS
		Ant1	2500.0	-42.86	2.0	0	54.37	PEAK	74	PASS
		Ant1	2500.0	-52.82	2.0	0	44.41	AV	54	PASS

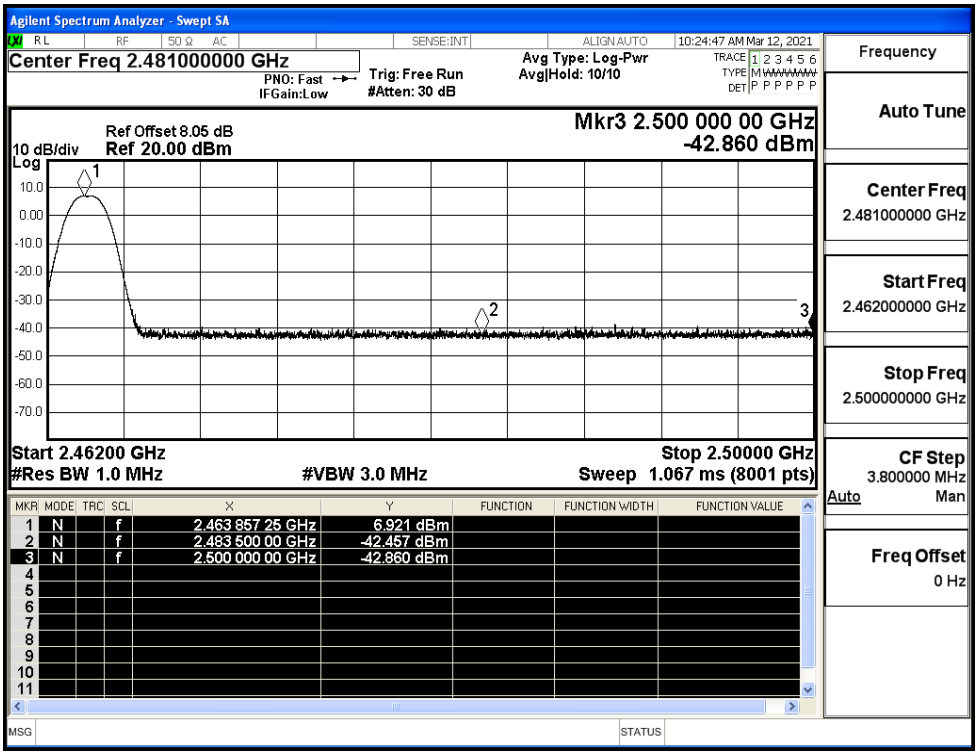
Restrict-band band-edge measurements_GFSK_2408_Ant1_PEAK



Restrict-band band-edge measurements_GFSK_2408_Ant1_AV



Restrict-band band-edge measurements_GFSK_2464_Ant1_PEAK



Restrict-band band-edge measurements_GFSK_2464_Ant1_AV