Appendix A

RF Test Data (Conducted Measurement)

Product Name: RFID radio module

Test Model: HR601M

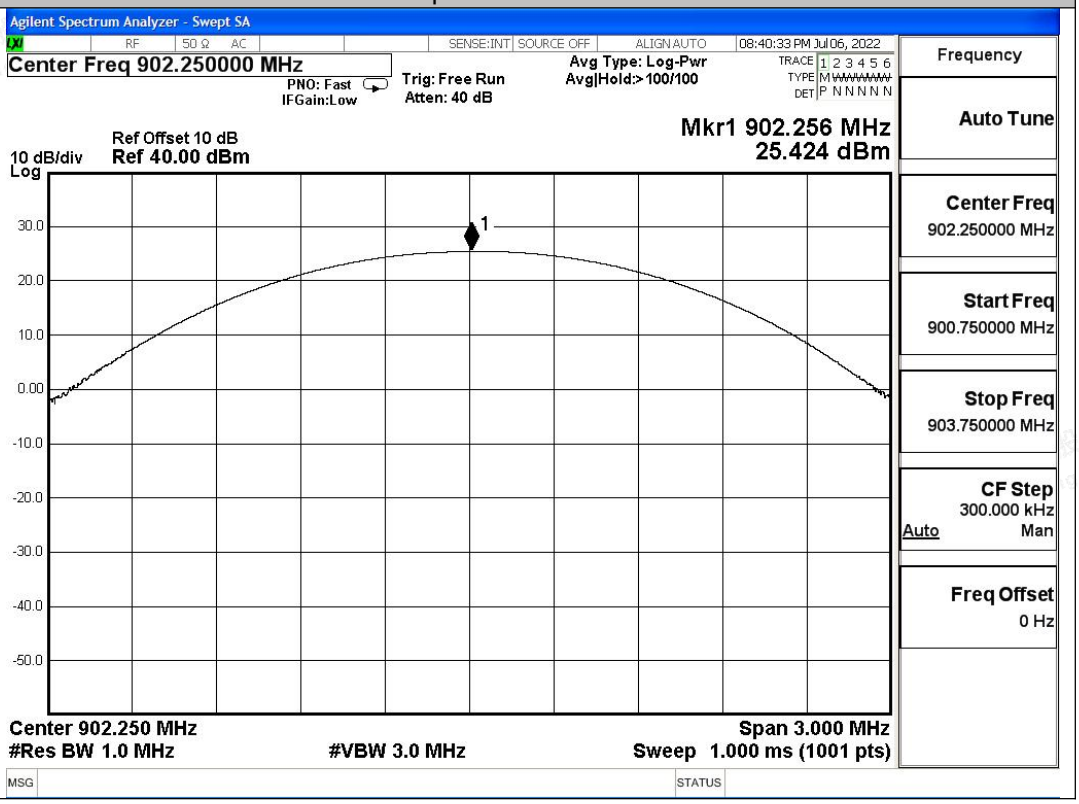
HVIN: HR601M

Environmental Conditions

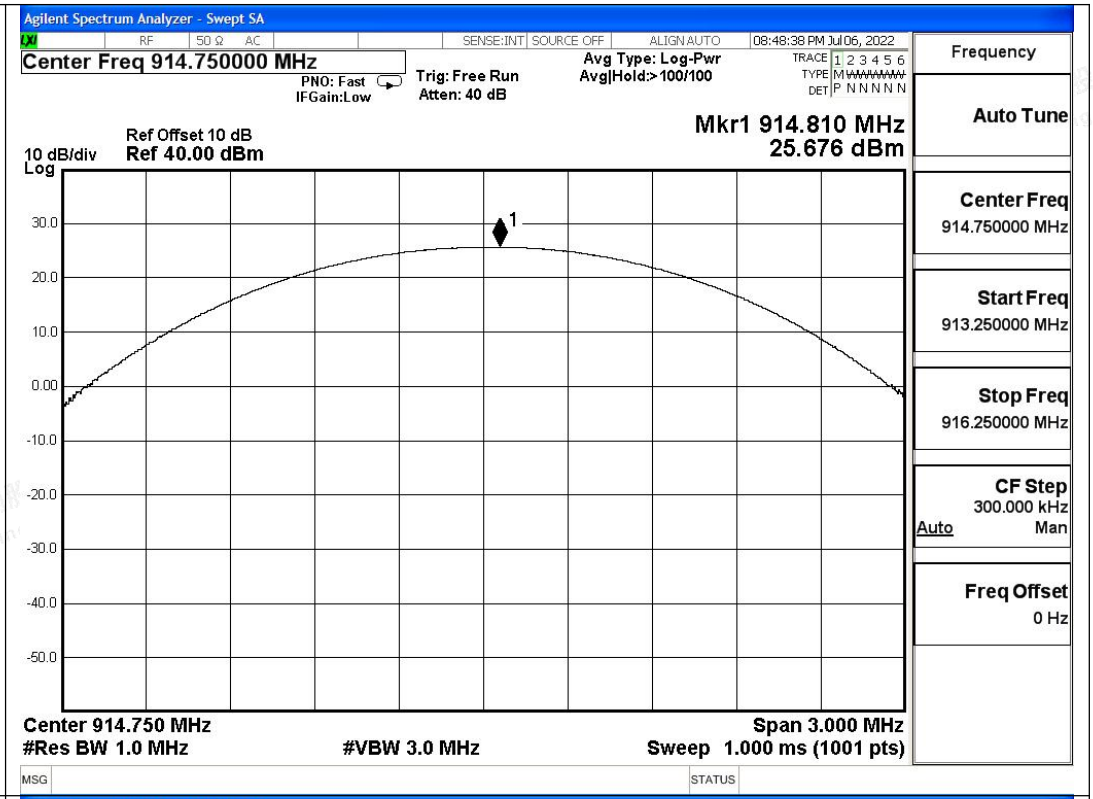
Temperature:	23.6 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Monkey Li
Supervised by:	Li Huan

A.1 Maxmum Conducted Peak Output Power

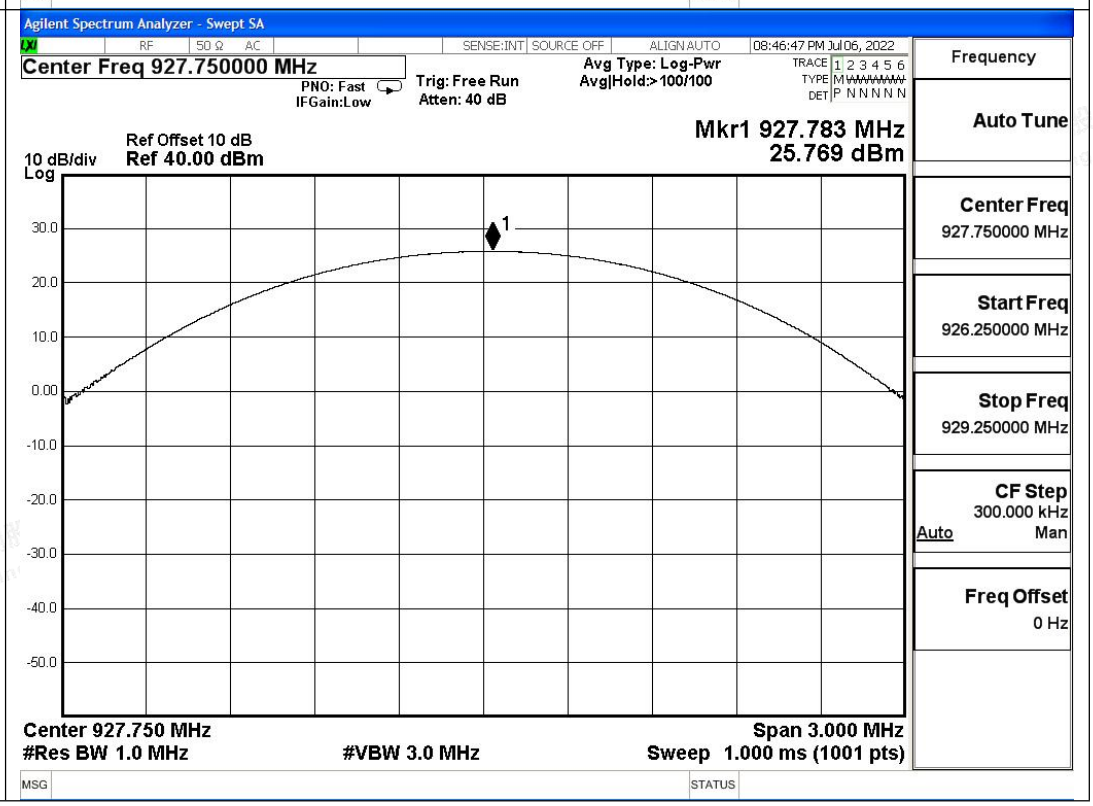
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
RF ID	LCH	25.424	30	PASS
	MCH	25.676	30	PASS
	HCH	25.769	30	PASS

Test Graphs	
RF ID/LCH	

RF ID/MCH

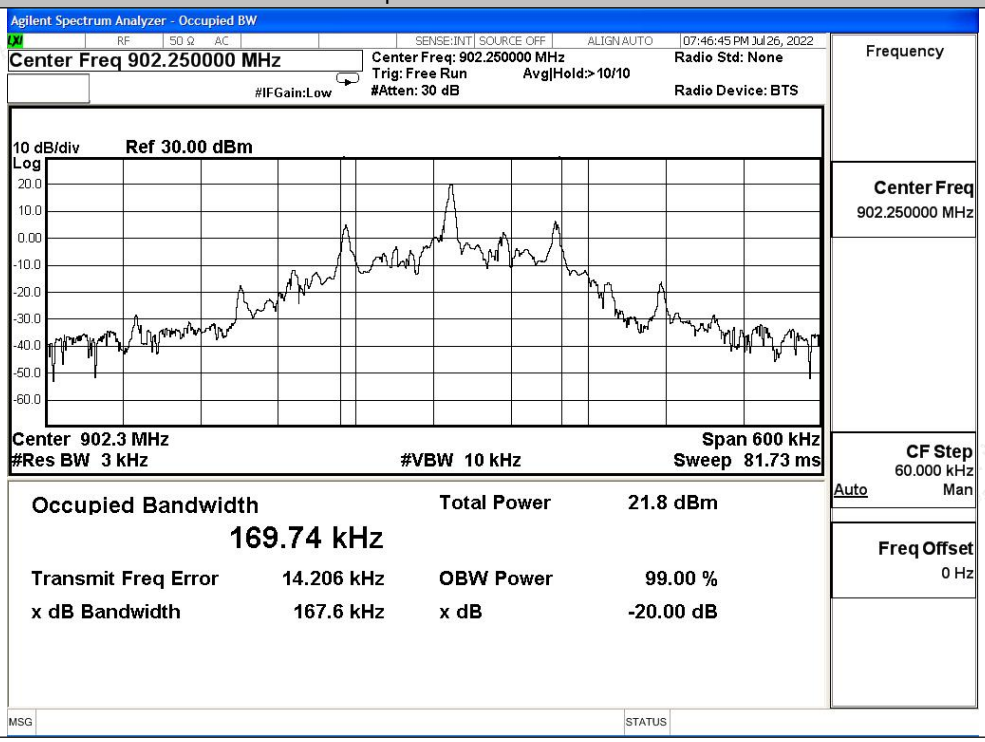


RF ID/HCH

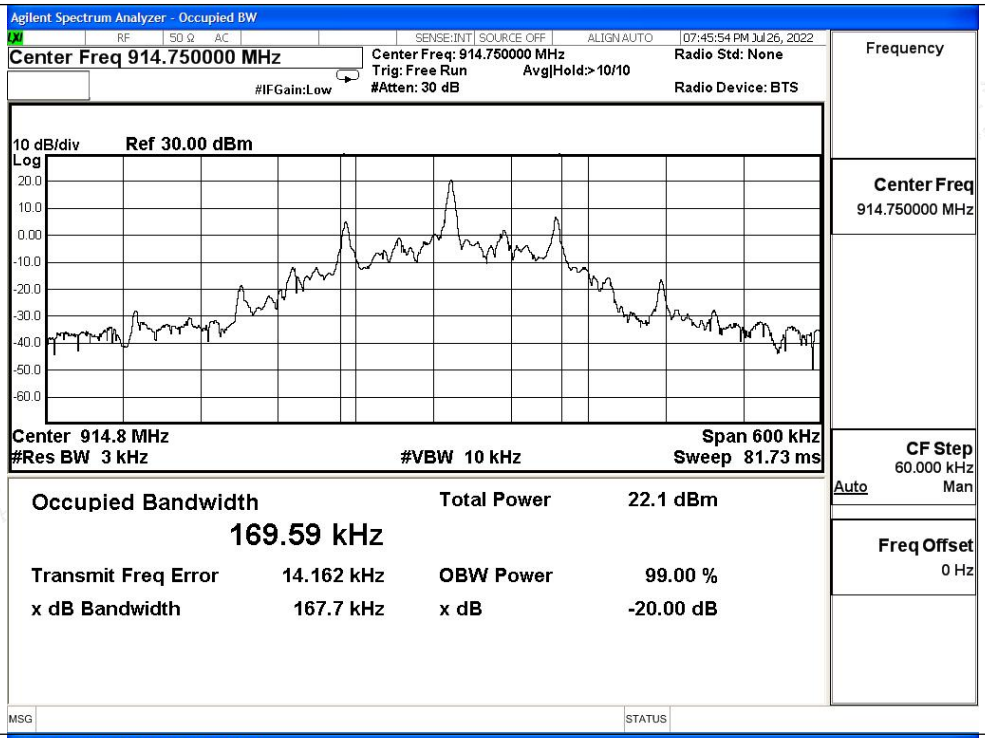


A.2 99% Bandwidth and 20dB Bandwidth

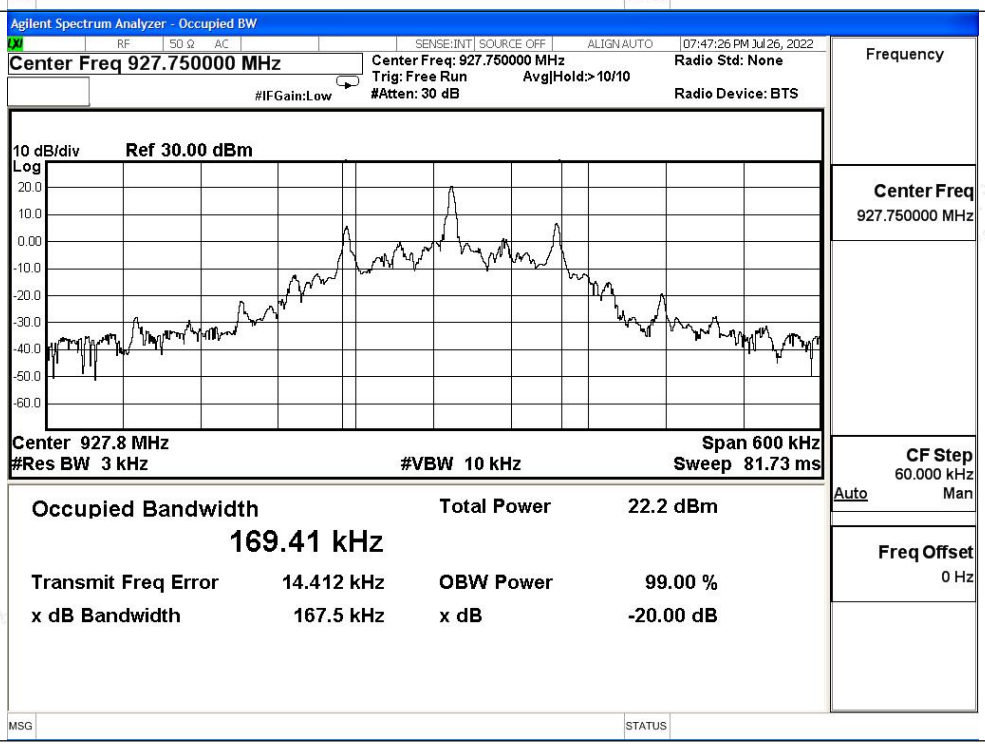
Mode	Channel.	20dB Bandwidth [kHz]	Limit [kHz]	99% Bandwidth [kHz]	Verdict
RF ID	LCH	167.6	≤500	169.74	PASS
	MCH	167.7	≤500	169.59	PASS
	HCH	167.5	≤500	169.41	PASS

Test Graphs	
RF ID/LCH	

RF ID/MCH

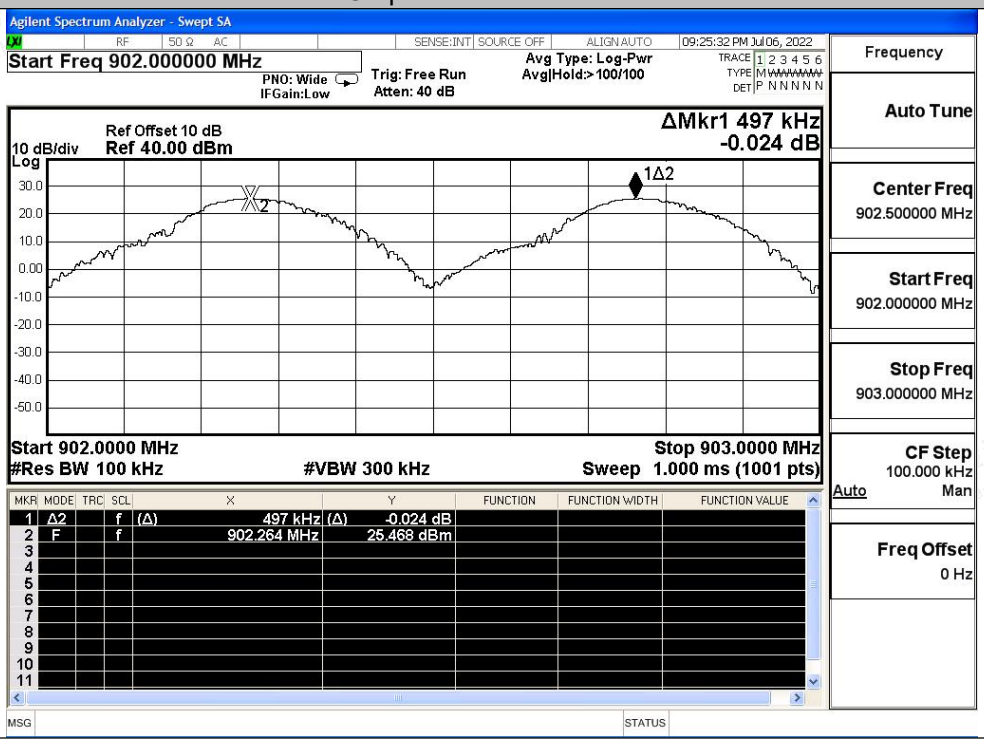


RF ID/HCH

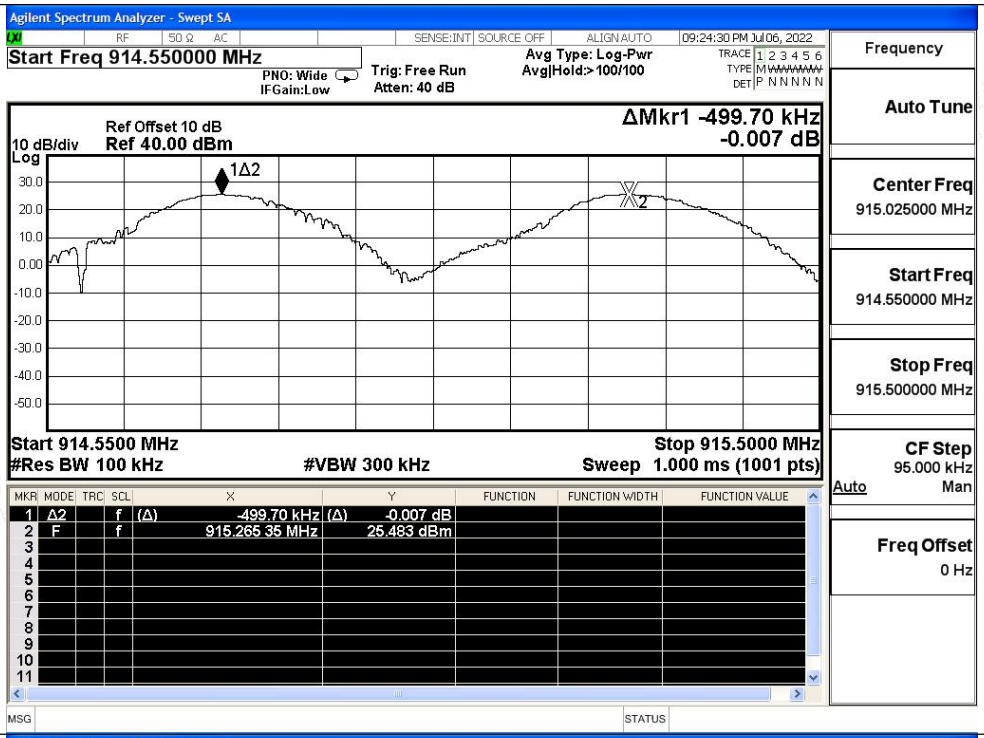


A.3 Carrier Frequency Separation

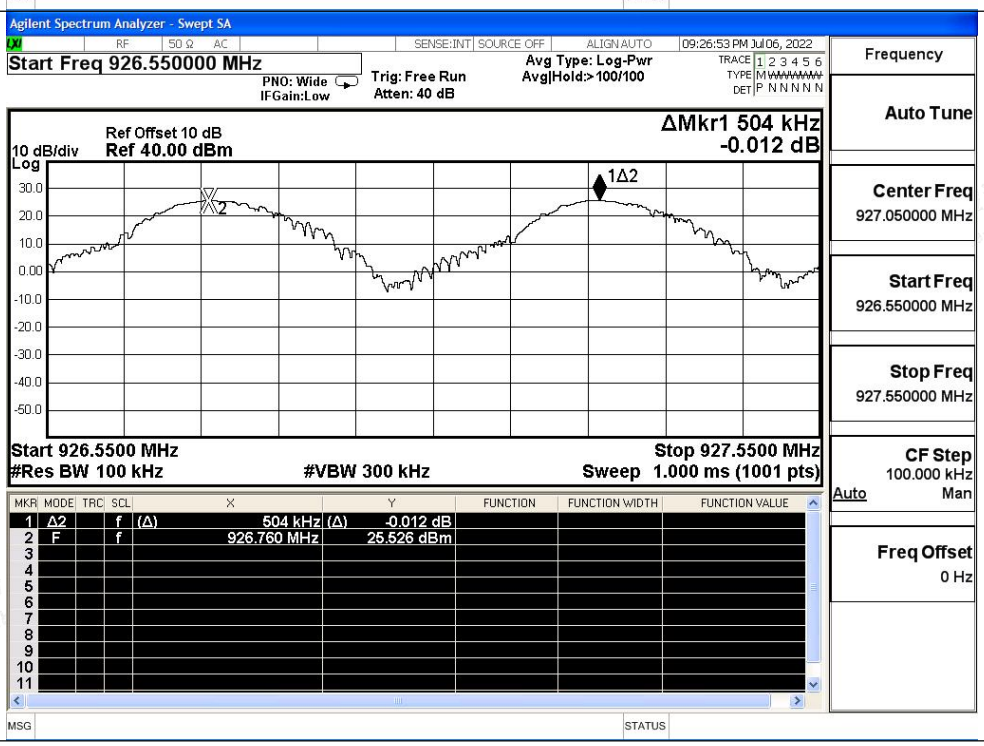
Mode	Channel.	Carrier Frequency Separation [kHz]	Limit [kHz]	Verdict
RF ID	LCH	497	⩾167.6	PASS
	MCH	500	⩾167.7	PASS
	HCH	504	⩾167.5	PASS

Test Graphs	
RF ID/LCH	

RF ID/MCH

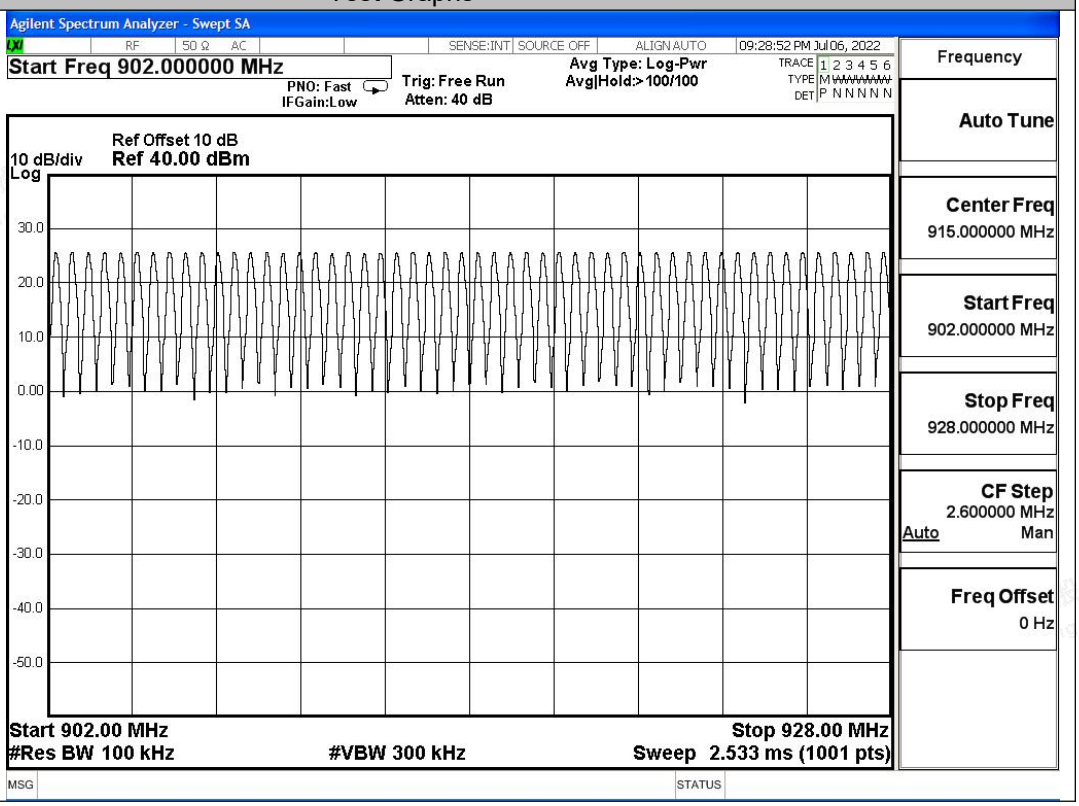


RF ID/HCH



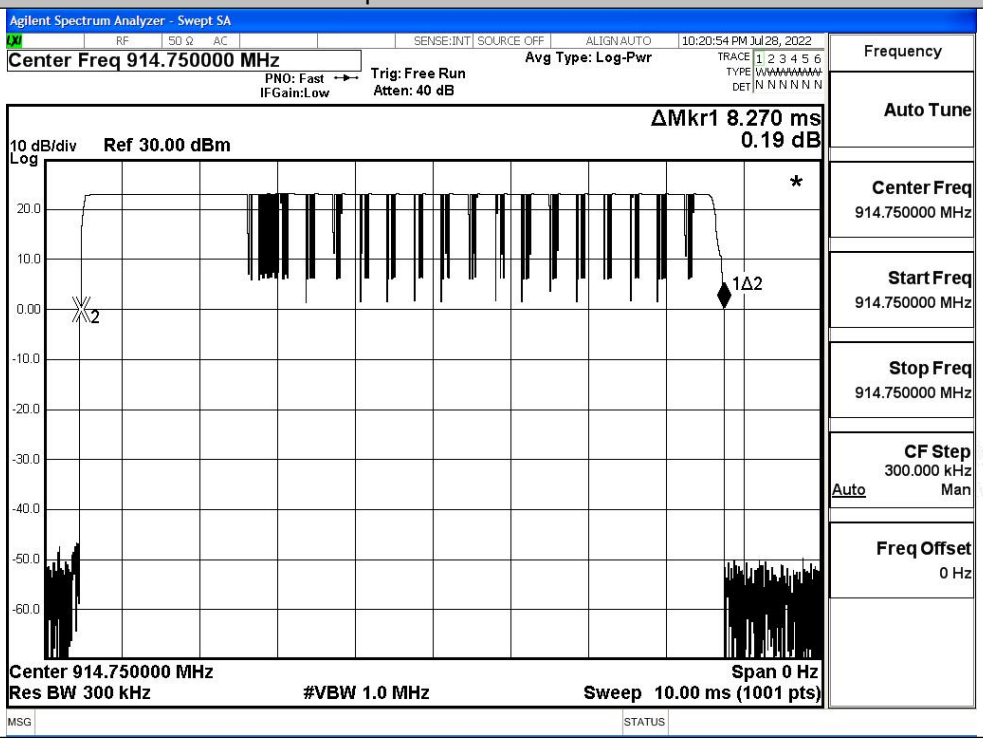
A.4 Hopping Channel Number

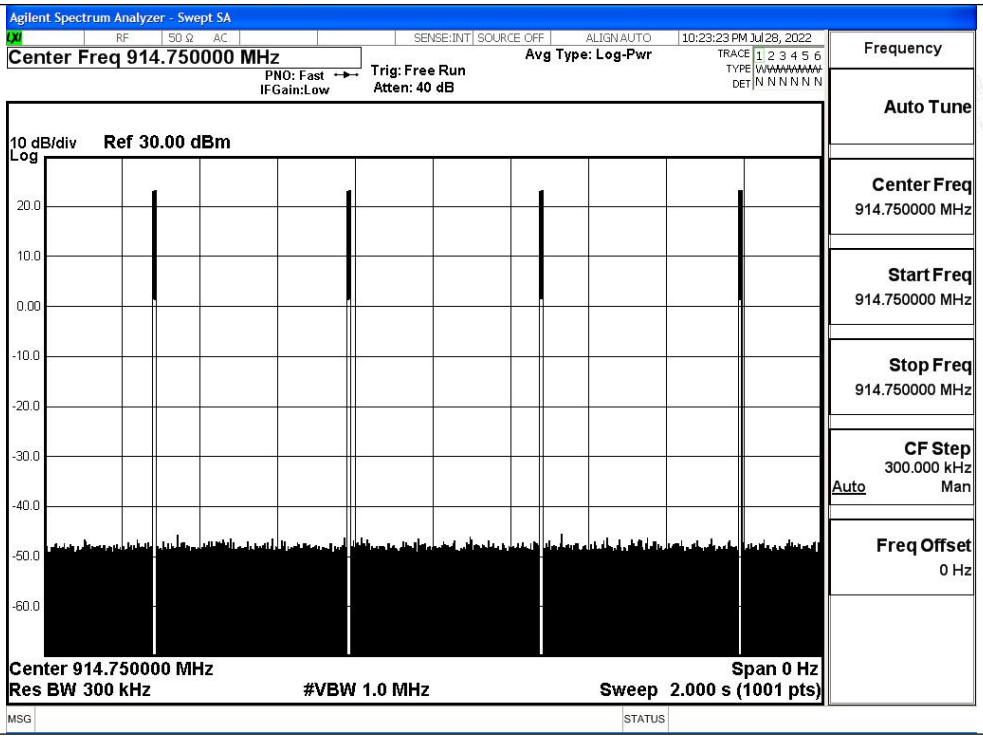
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
RF ID	Hop	52	⩾50	PASS

Test Graphs	
RF ID/Hop	

A.5 Dwell Time

Channel	Pulse width [ms]	Number pulses in 2s	The average time of occupancy in 20s [s]	Limit [s]	Verdict
914.75	8.270	4	0.331	0.4	PASS

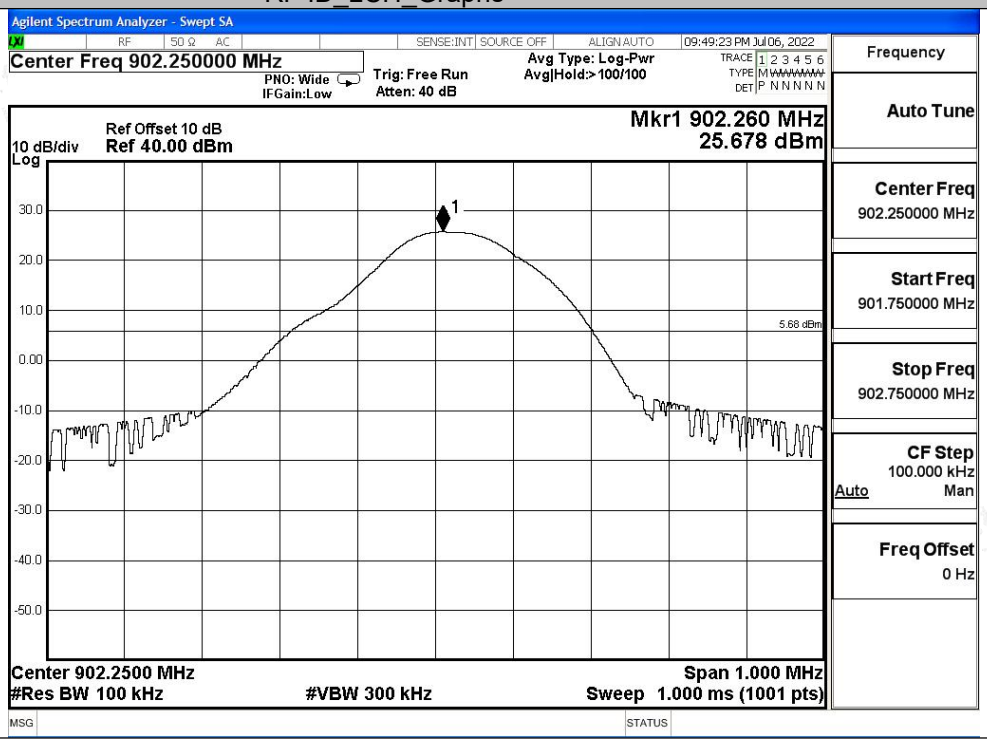
Test Graphs	
RF ID	

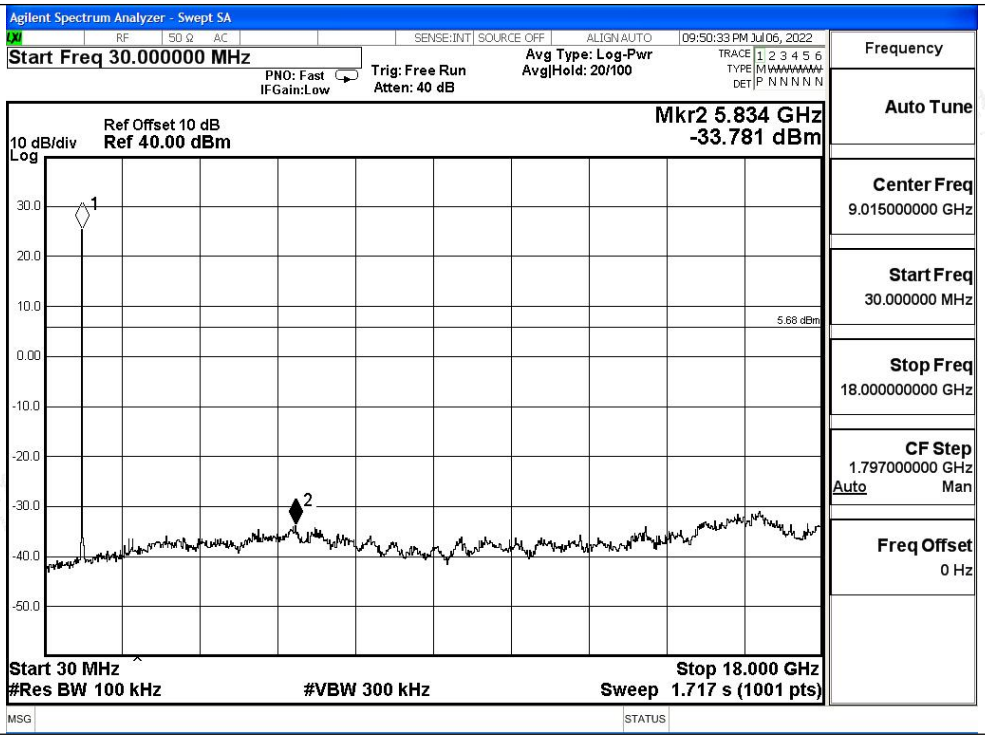
RF ID	

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT SOURCE OFF ALIGN AUTO 10:23:23 PM Jul 28, 2022
Center Freq 914.750000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 40 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE
DET N N N N N
10 dB/div Ref 30.00 dBm
Log
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
Center 914.750000 MHz
Res BW 300 kHz
#VBW 1.0 MHz
Span 0 Hz
Sweep 2.000 s (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
914.750000 MHz
Start Freq
914.750000 MHz
Stop Freq
914.750000 MHz
CF Step
300.000 kHz
Auto Man
Freq Offset
0 Hz

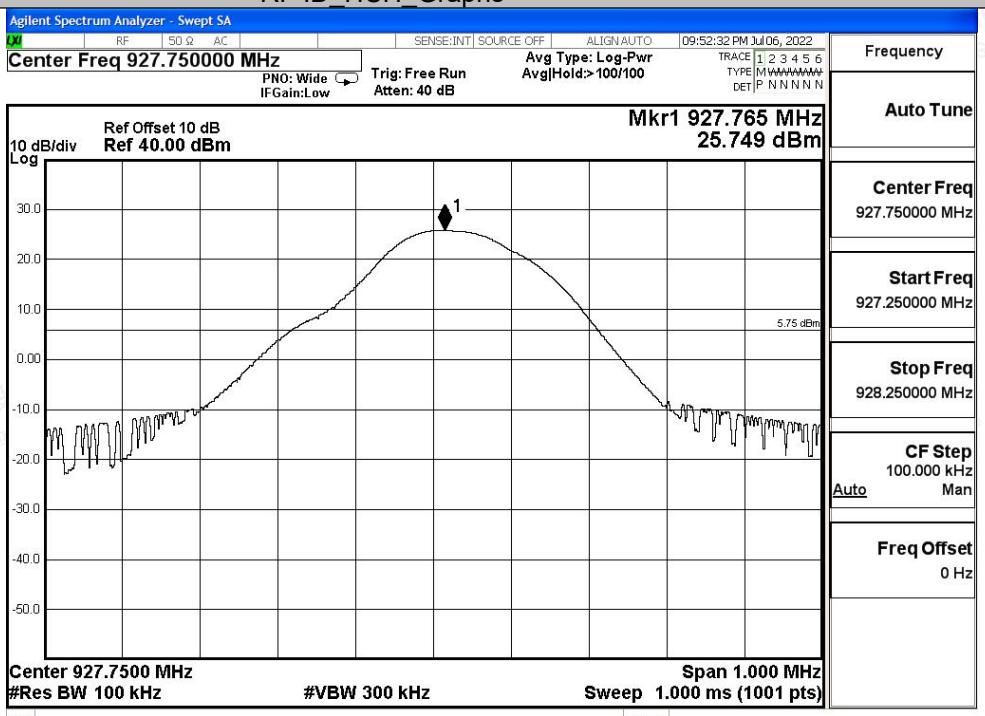
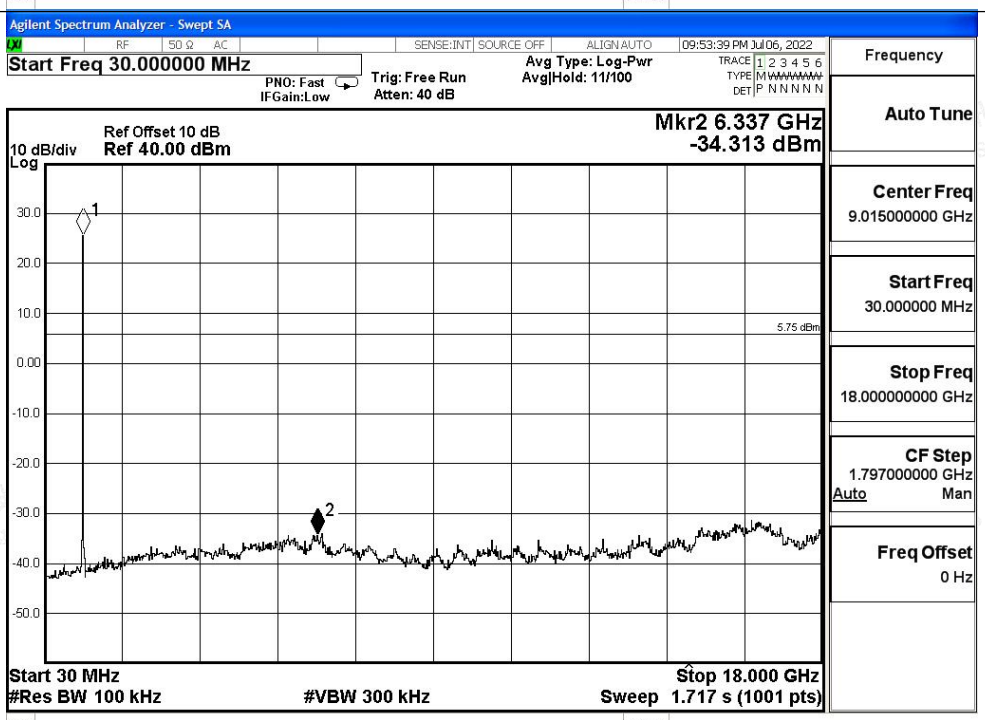
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
RF ID	LCH	27.476	-33.738	5.68	PASS
	HCH	26.920	-34.313	5.75	PASS

RF ID_LCH_Graphs	
Pref	

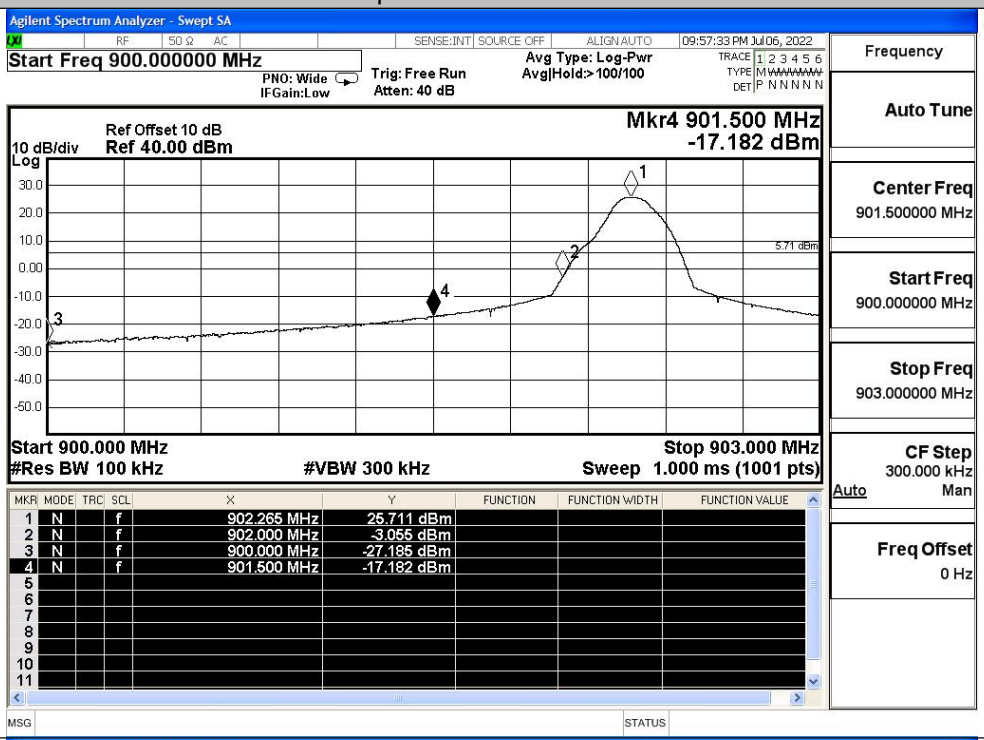
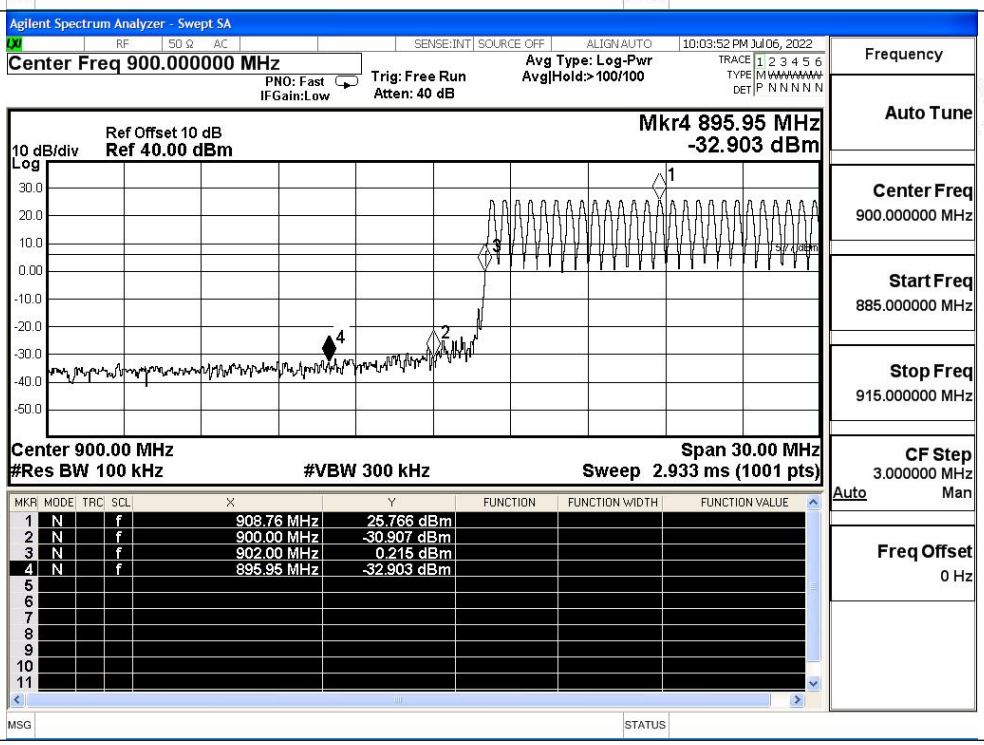
Puw	

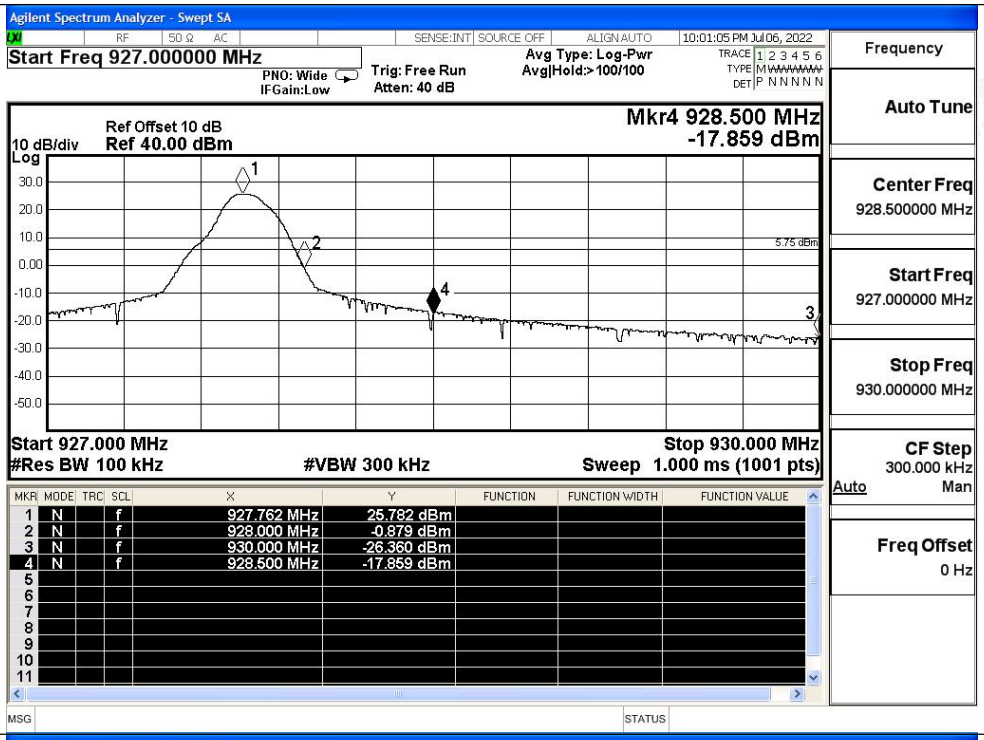
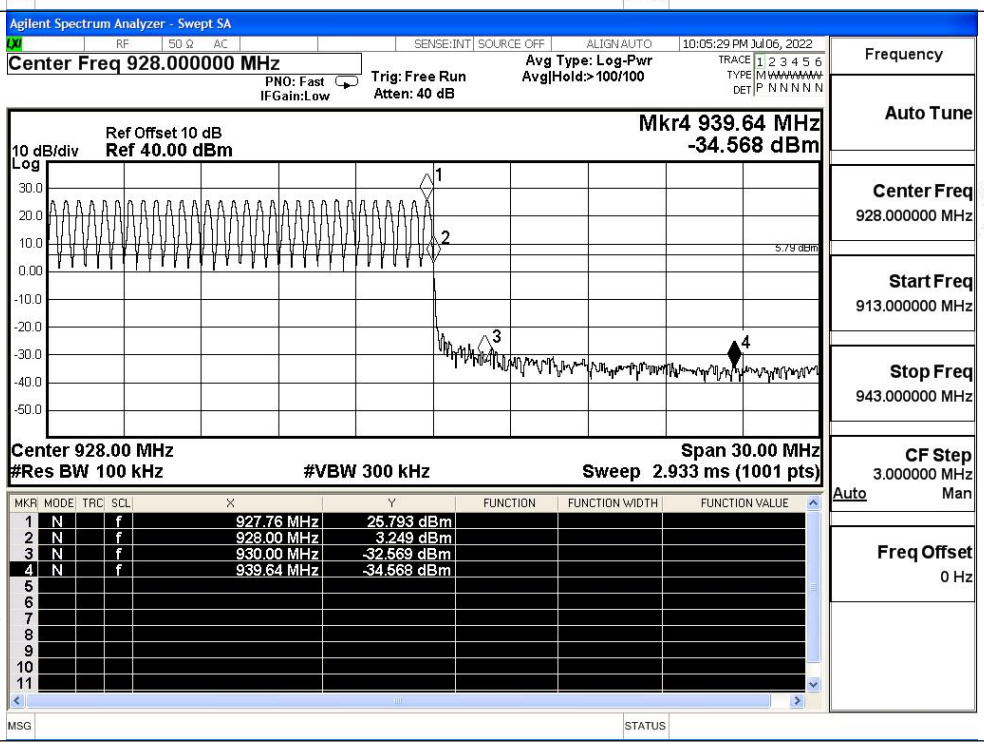
Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT SOURCE OFF ALIGN AUTO 09:50:33 PM Jul 06, 2022
Start Freq 30.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 40 dB
Avg Type: Log-Pwr
Avg|Hold: 20/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Ref Offset 10 dB
10 dB/div Ref 40.00 dBm
Log
Mkr2 5.834 GHz
-33.781 dBm
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
5.68 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 18.000 GHz
Sweep 1.717 s (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
9.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
18.000000000 GHz
CF Step
1.797000000 GHz
Auto Man
Freq Offset
0 Hz

RF ID_HCH_Graphs	
Pref	
Puw	

A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
RF ID	LCH	902.75	25.71	Off	-3.05	5.71	PASS
			25.77	On	0.22	5.77	PASS
	HCH	927.25	25.78	Off	-0.88	5.78	PASS
			25.79	On	3.25	5.79	PASS

Test Graphs	
RF ID/LCH/No Hop	
RF ID/LCH/Hop	

RF ID/HCH/No Hop	
RF ID/HCH/Hop