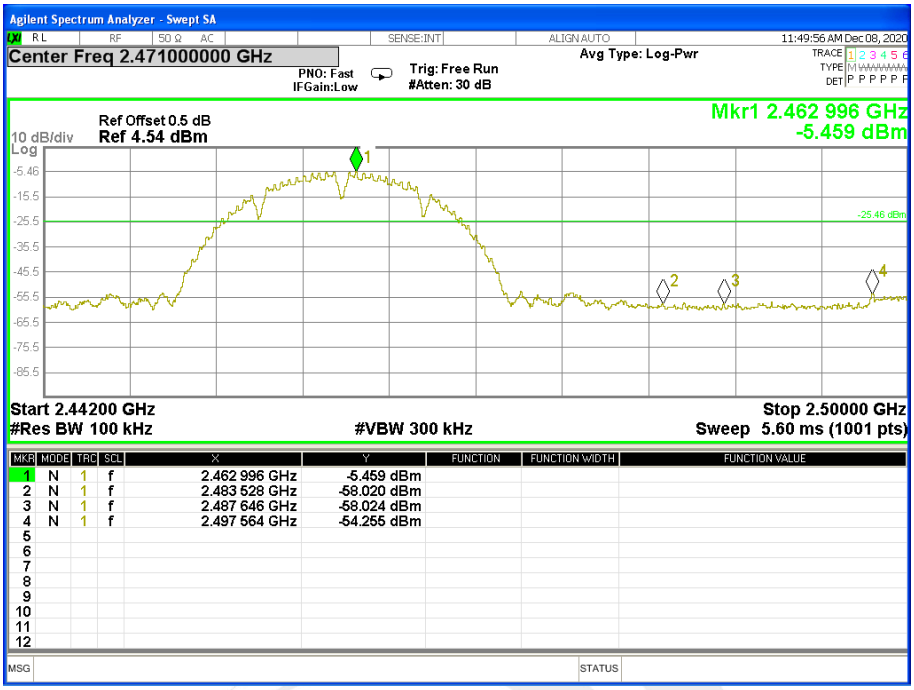
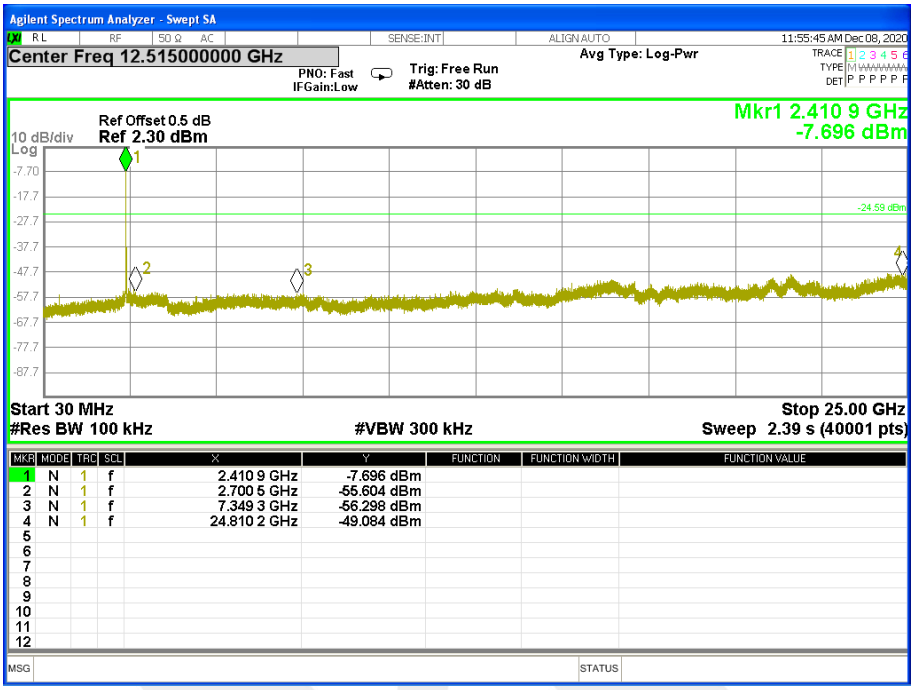
CH 11

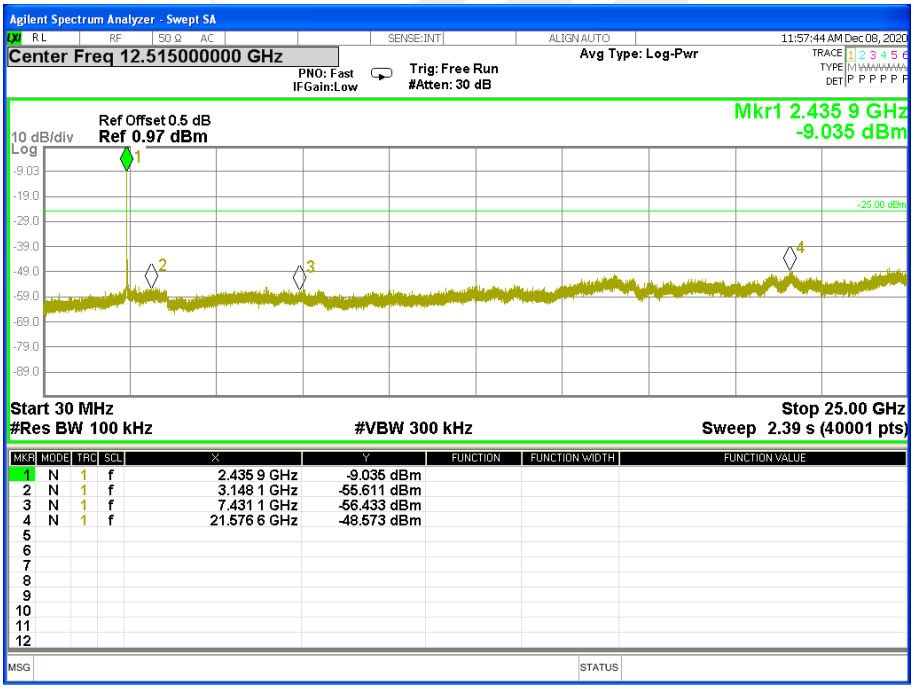

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.471000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:49:56 AM Dec 08, 2020
Mkr1 2.462 996 GHz
-5.459 dBm
Ref Offset 0.5 dB
10 dB/div
Ref 4.54 dBm
Log
-5.46
-15.5
-25.5
-35.5
-45.5
-55.5
-65.5
-75.5
-85.5
-25.46 dBm
Start 2.44200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 5.60 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.462 996 GHz -5.459 dBm
2 N 1 f 2.483 528 GHz -58.020 dBm
3 N 1 f 2.487 646 GHz -58.024 dBm
4 N 1 f 2.497 564 GHz -54.255 dBm
MSG
STATUS

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX g Mode /CH01, CH06, CH11

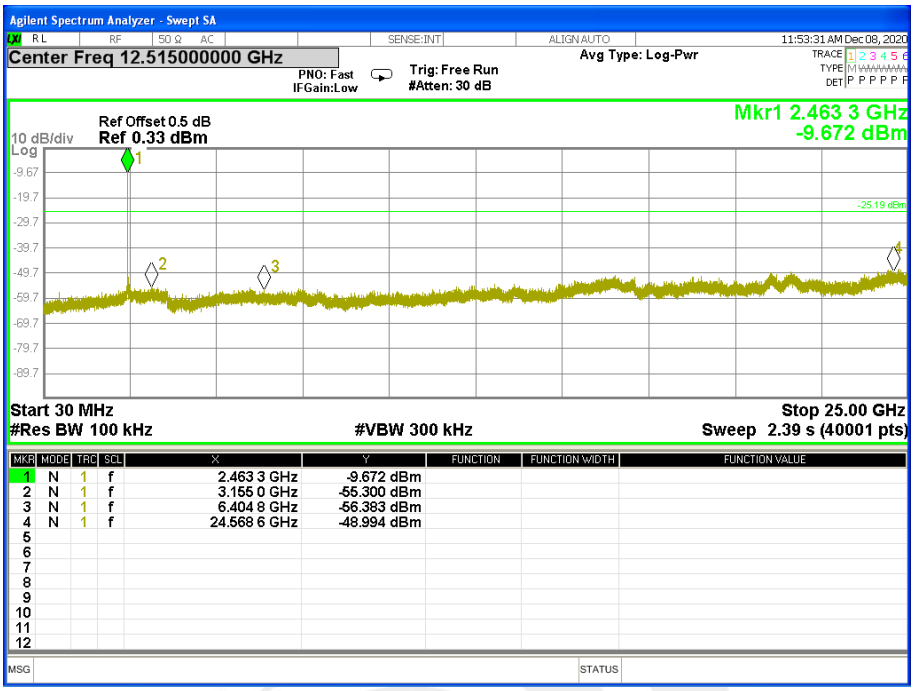
CH 01



CH06

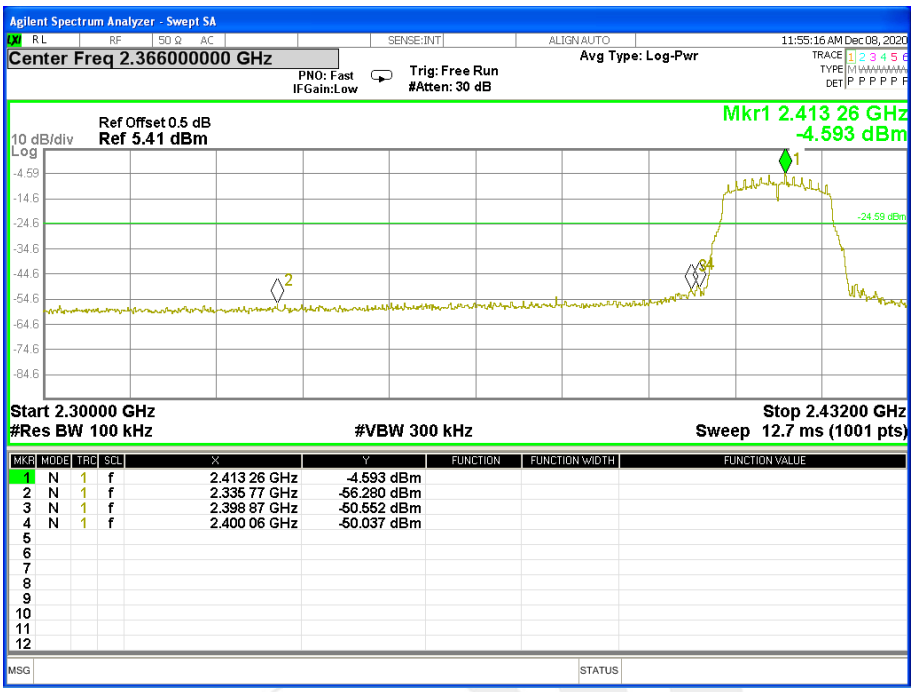


CH 11

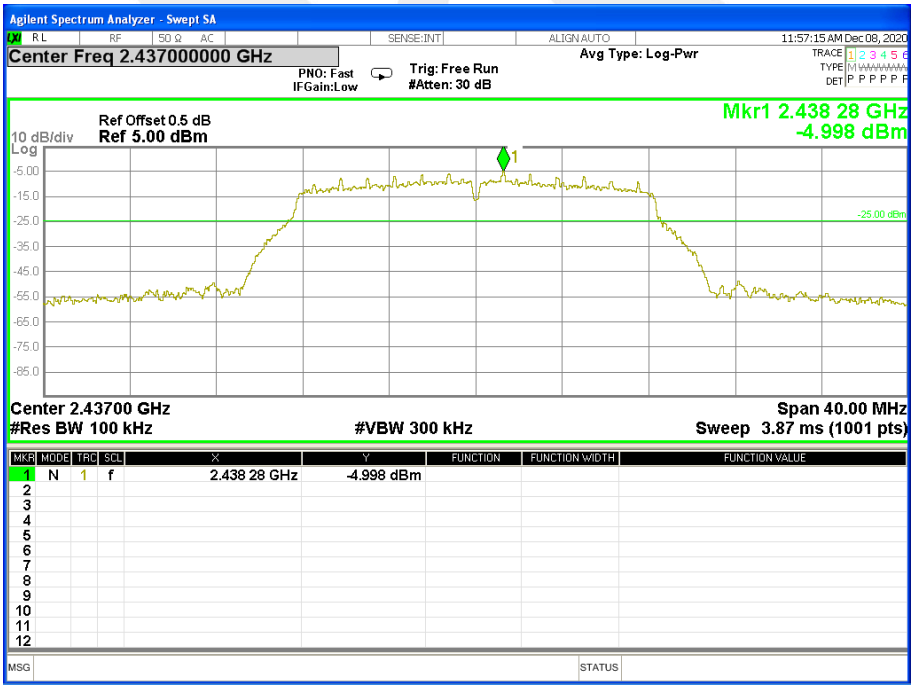

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:53:31 AM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref 0.33 dBm
Log
Mkr1 2.463 3 GHz
-9.672 dBm
-25.19 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
1 N 1 f 2.463 3 GHz -9.672 dBm
2 N 1 f 3.155 0 GHz -55.300 dBm
3 N 1 f 6.404 8 GHz -56.383 dBm
4 N 1 f 24.568 6 GHz -48.994 dBm

Band edge(it's also the reference level for conducted spurious emission)

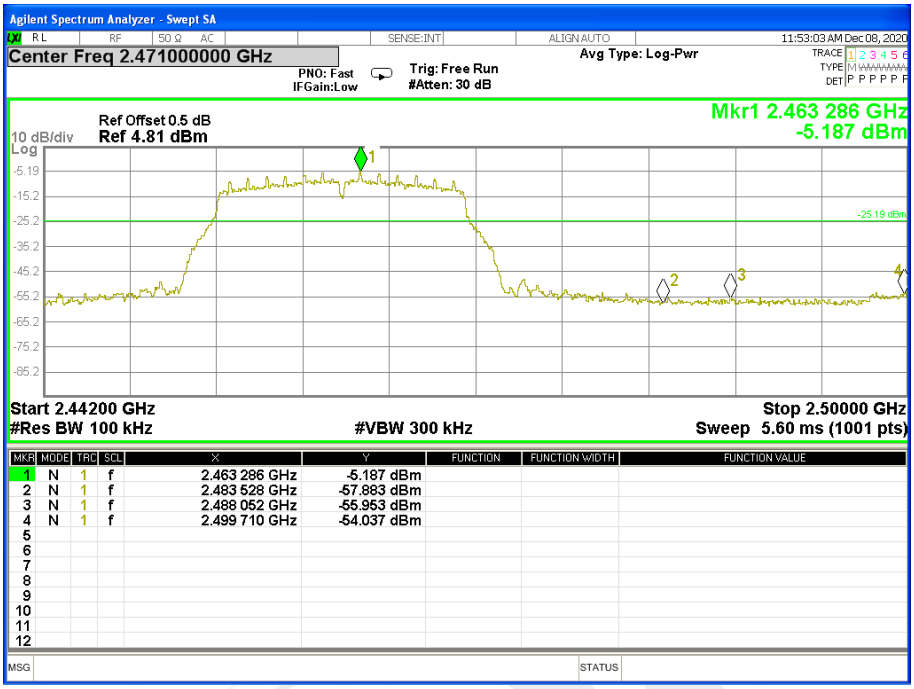
CH 01



CH06

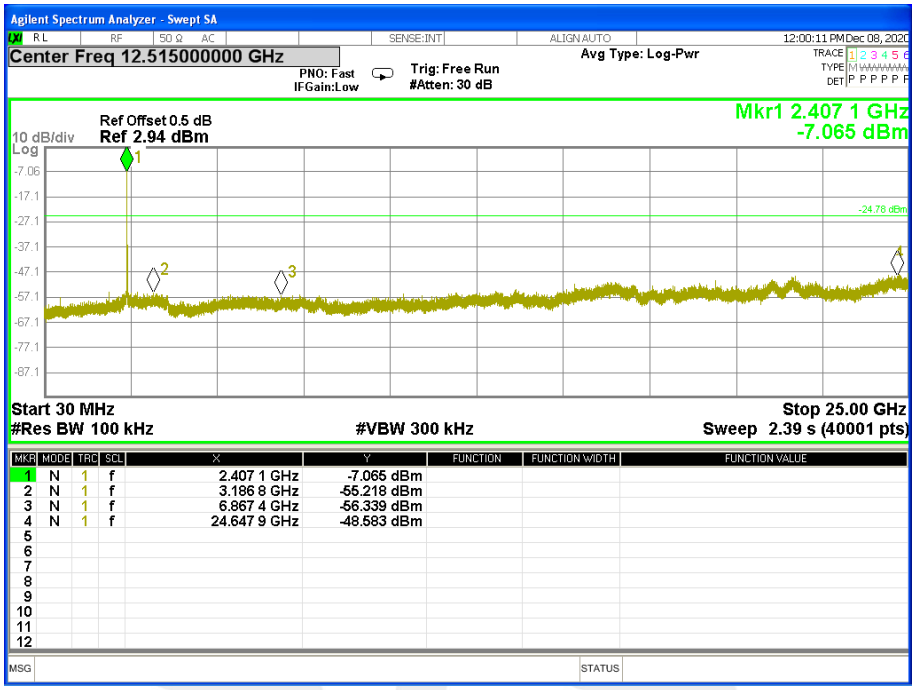


CH11

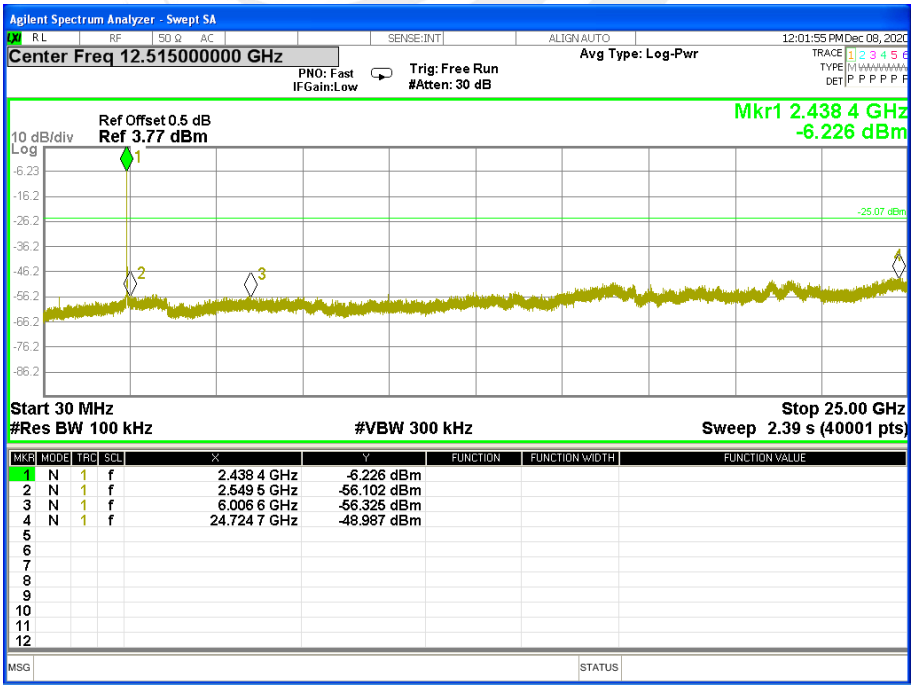

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.471000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:53:03 AM Dec 08, 2020
Mkr1 2.463 286 GHz
-5.187 dBm
Ref Offset 0.5 dB
10 dB/div
Ref 4.81 dBm
Log
-25.19 dBm
Start 2.44200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 5.60 ms (1001 pts)
1 N 1 f 2.463 286 GHz -5.187 dBm
2 N 1 f 2.483 528 GHz -57.883 dBm
3 N 1 f 2.488 052 GHz -55.953 dBm
4 N 1 f 2.499 710 GHz -54.037 dBm

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX n Mode(20M) /CH01, CH06, CH11

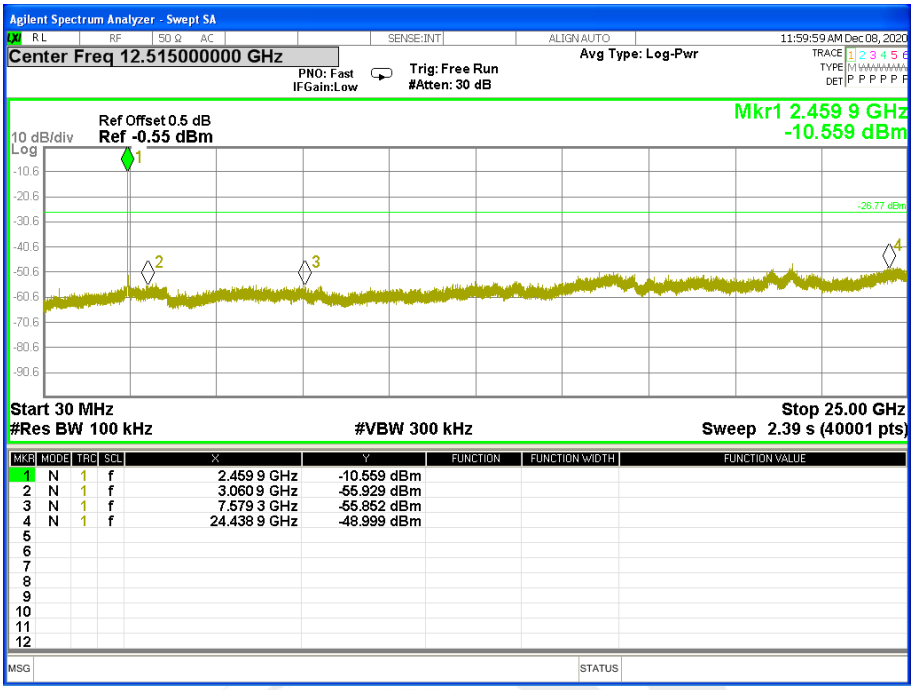
CH 01



CH 06

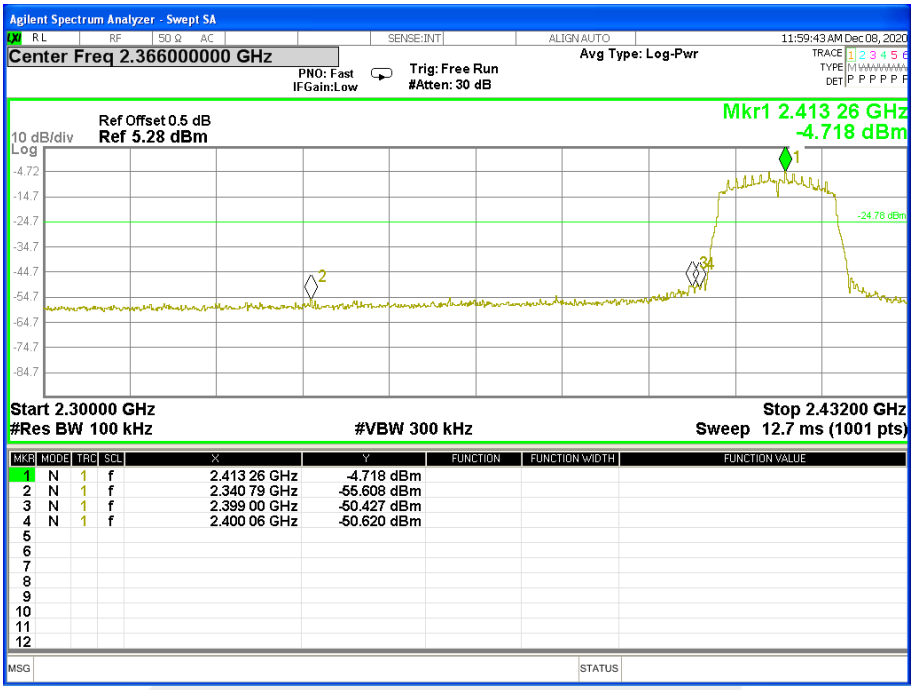


CH 11

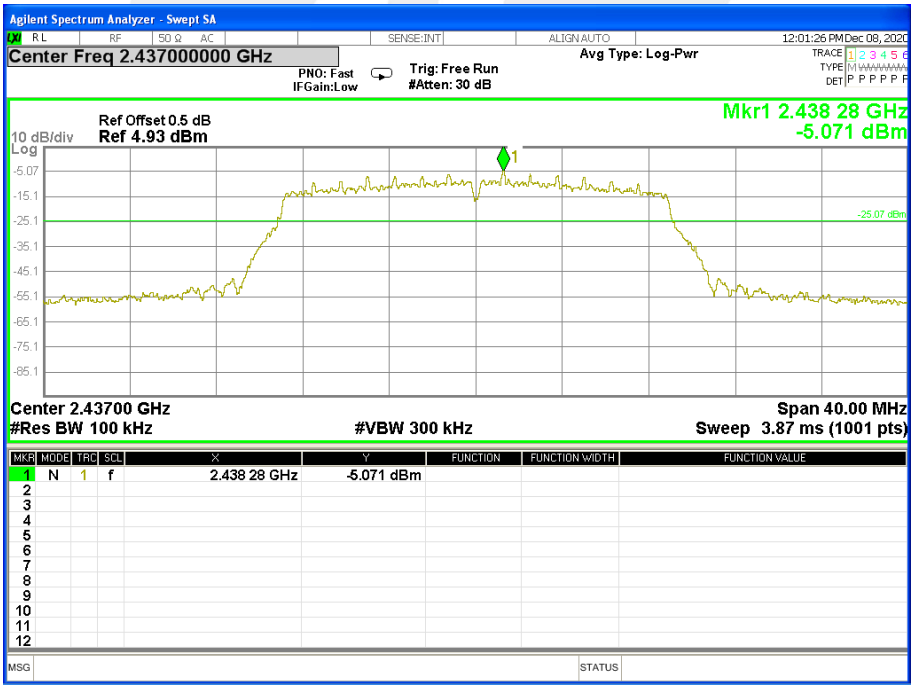

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:59:59 AM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref -0.55 dBm
Mkr1 2.459 9 GHz
-10.559 dBm
-26.77 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.459 9 GHz -10.559 dBm
2 N 1 f 3.060 9 GHz -55.929 dBm
3 N 1 f 7.579 3 GHz -55.862 dBm
4 N 1 f 24.438 9 GHz -48.999 dBm
MSG
STATUS

Band edge(it's also the reference level for conducted spurious emission)

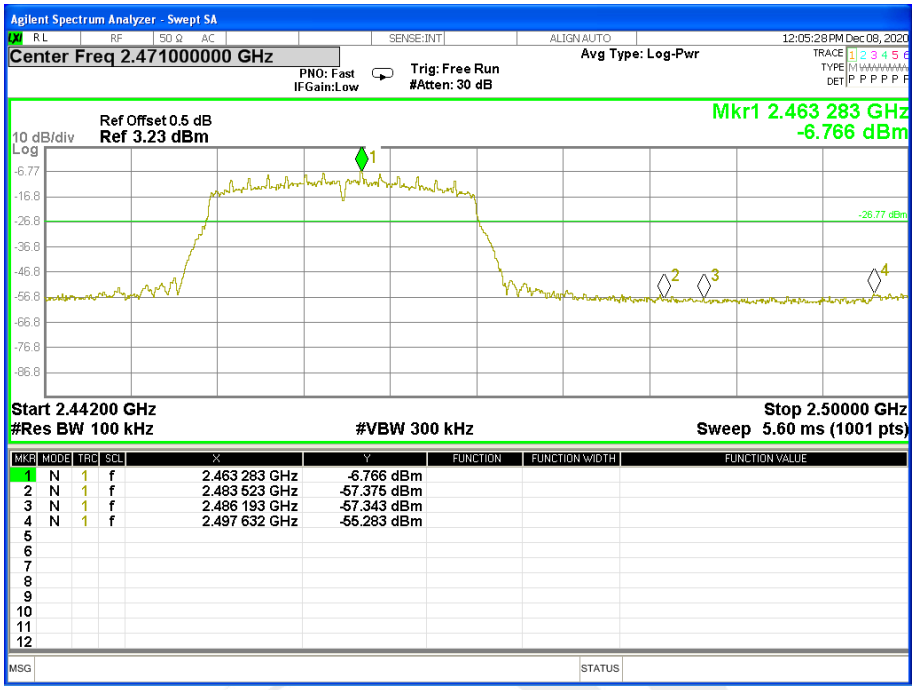
CH 01



CH 06

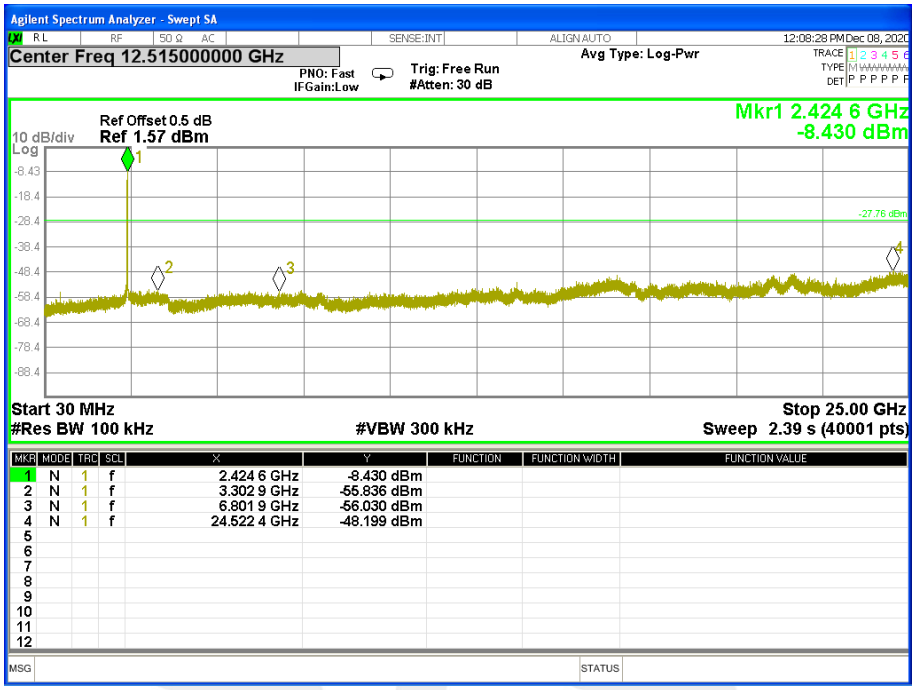


CH 11

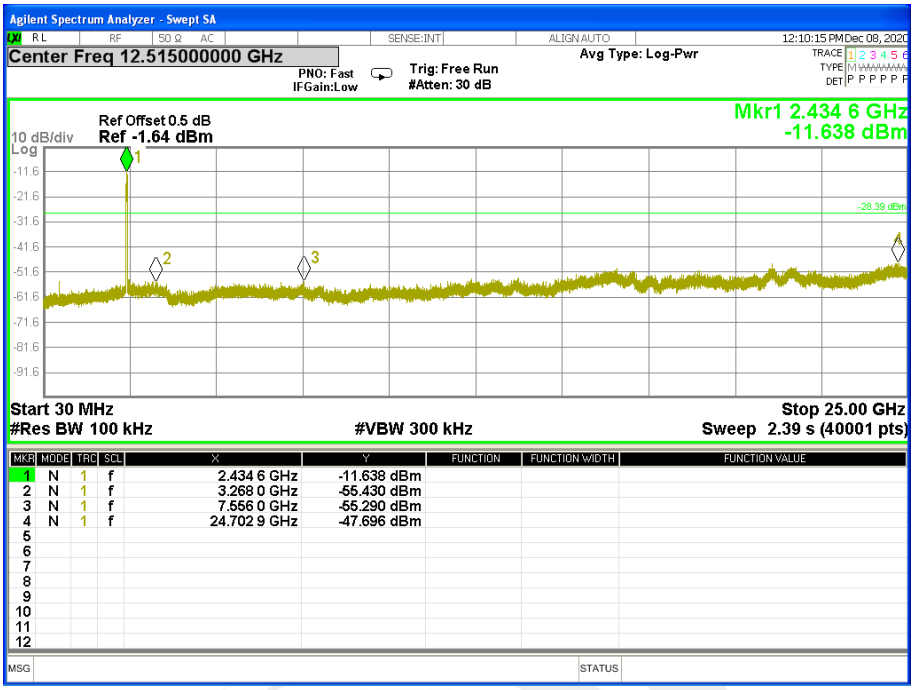

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.471000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
12:05:28 PM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref 3.23 dBm
Log
Mkr1 2.463 283 GHz
-6.766 dBm
-26.77 dBm
Start 2.44200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 5.60 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.463 283 GHz -6.766 dBm
2 N 1 f 2.483 523 GHz -57.375 dBm
3 N 1 f 2.486 193 GHz -57.343 dBm
4 N 1 f 2.497 632 GHz -55.283 dBm
MSG
STATUS

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX n Mode(40M) /CH03, CH06, CH09

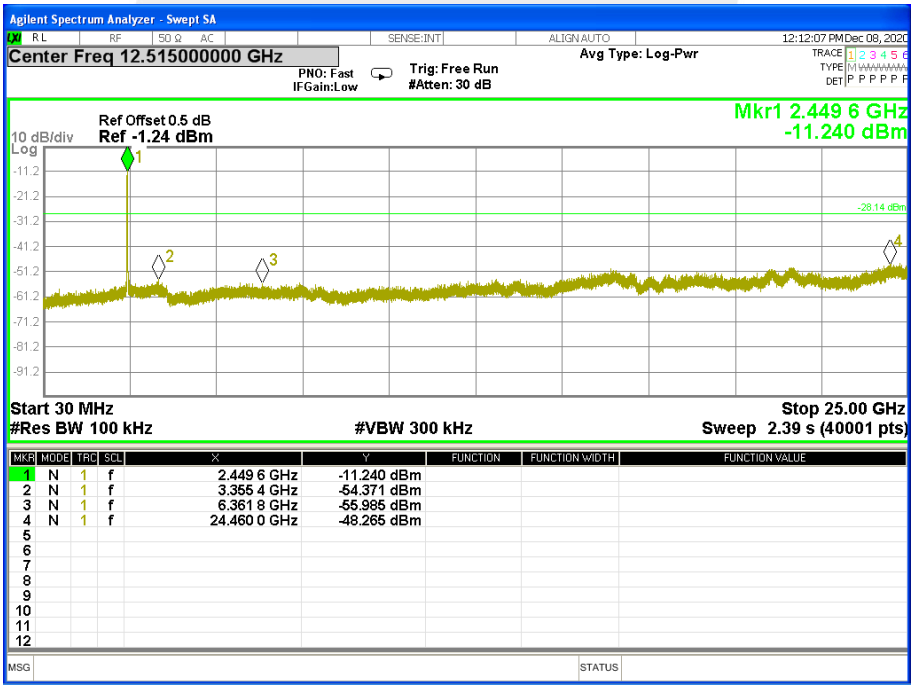
CH 03



CH06

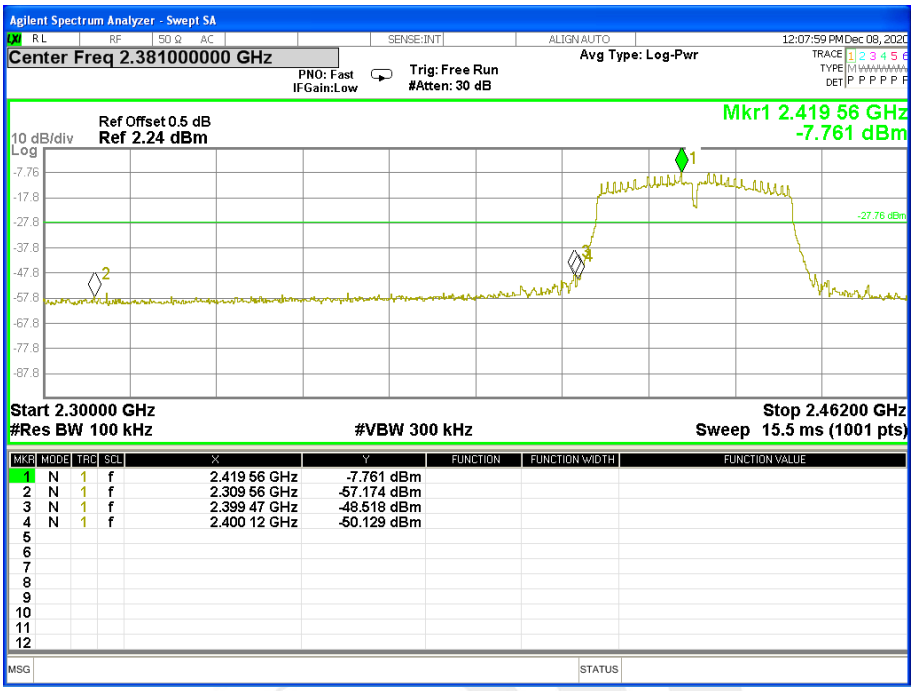

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
12:10:15 PM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref -1.64 dBm
Mkr1 2.434 6 GHz
-11.638 dBm
-28.39 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
1 N 1 f 2.434 6 GHz -11.638 dBm
2 N 1 f 3.268 0 GHz -55.430 dBm
3 N 1 f 7.556 0 GHz -55.290 dBm
4 N 1 f 24.702 9 GHz -47.696 dBm

CH09

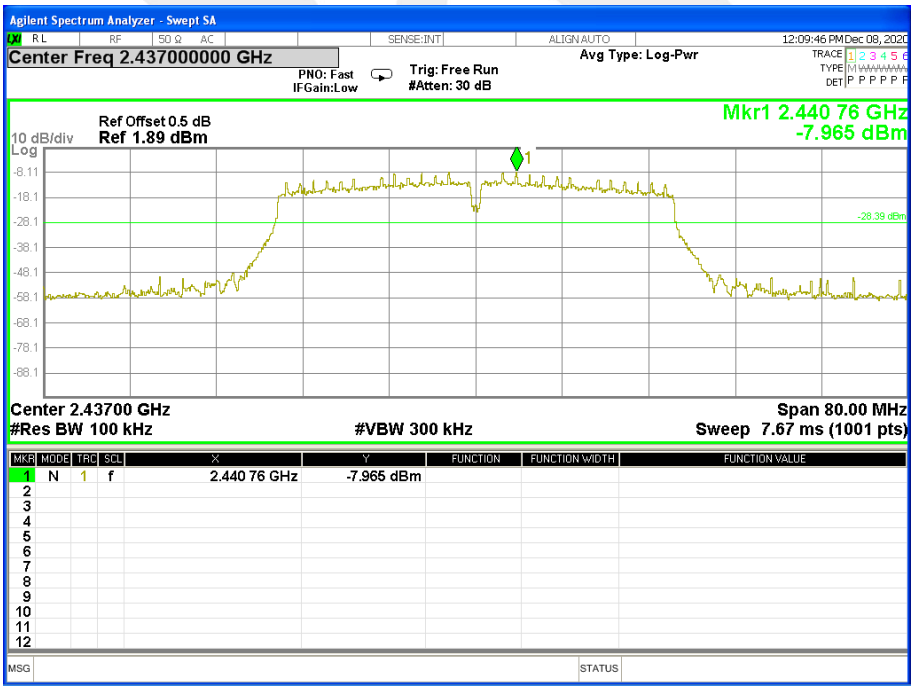

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
12:12:07 PM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref -1.24 dBm
Mkr1 2.449 6 GHz
-11.240 dBm
-28.14 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
1 N 1 f 2.449 6 GHz -11.240 dBm
2 N 1 f 3.355 4 GHz -54.371 dBm
3 N 1 f 6.361 8 GHz -55.985 dBm
4 N 1 f 24.460 0 GHz -48.265 dBm

Band edge(it's also the reference level for conducted spurious emission)

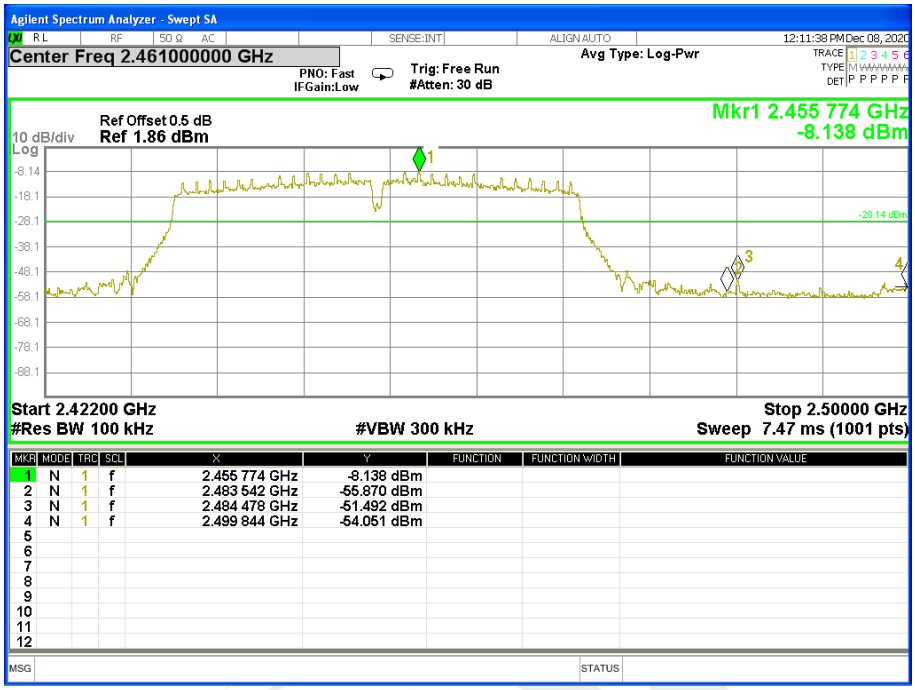
CH03



CH 06



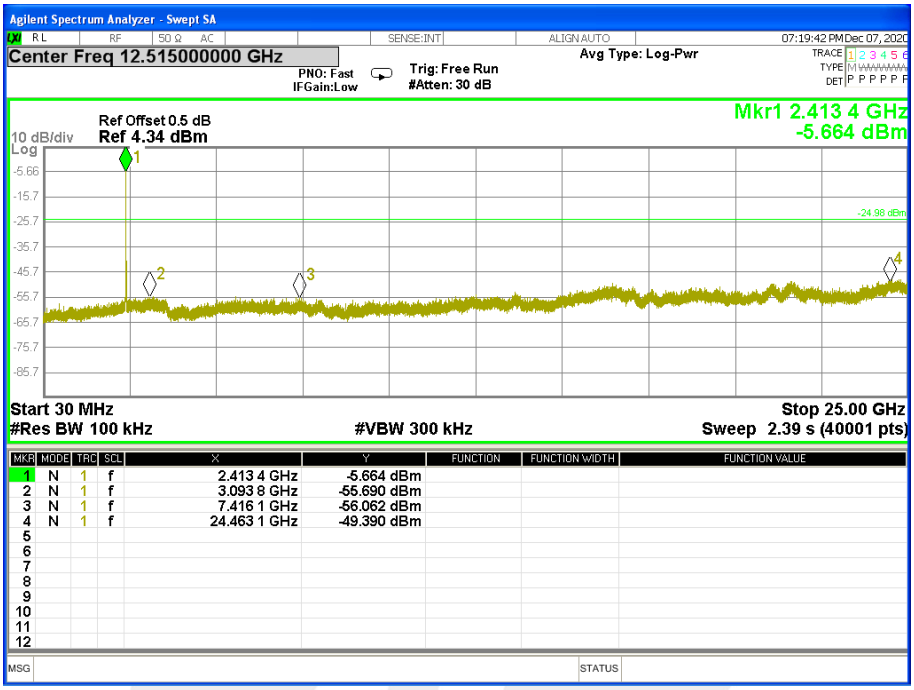
CH 09


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.461000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
12:11:38 PM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref 1.86 dBm
Mkr1 2.455 774 GHz
-8.138 dBm
-28.14 dBm
Start 2.42200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 7.47 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.455 774 GHz -8.138 dBm
2 N 1 f 2.483 542 GHz -55.870 dBm
3 N 1 f 2.484 478 GHz -51.492 dBm
4 N 1 f 2.499 844 GHz -54.051 dBm
MSG
STATUS

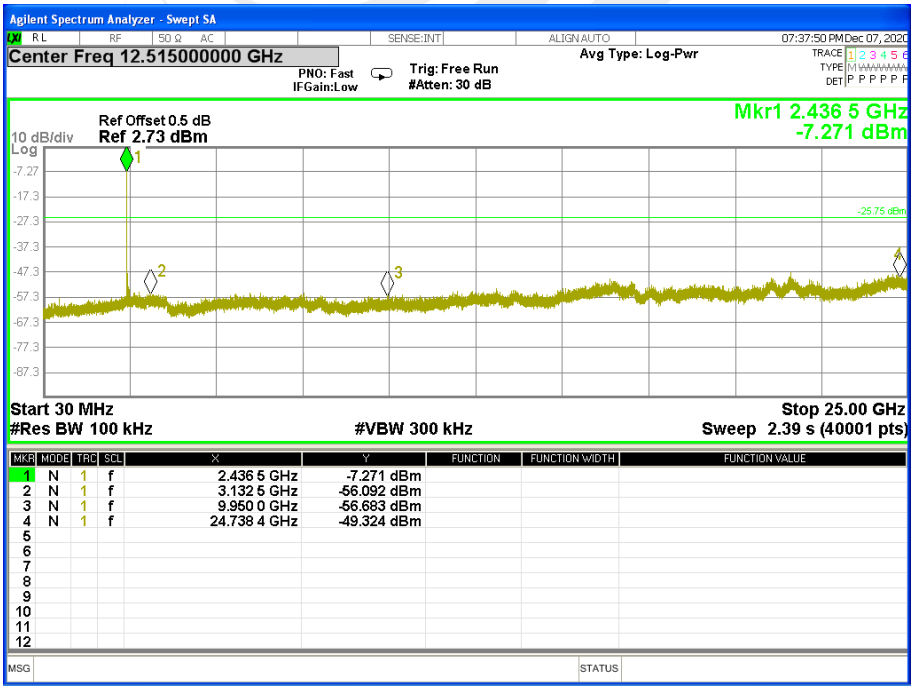
ANT 2

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX b Mode /CH01, CH06, CH11

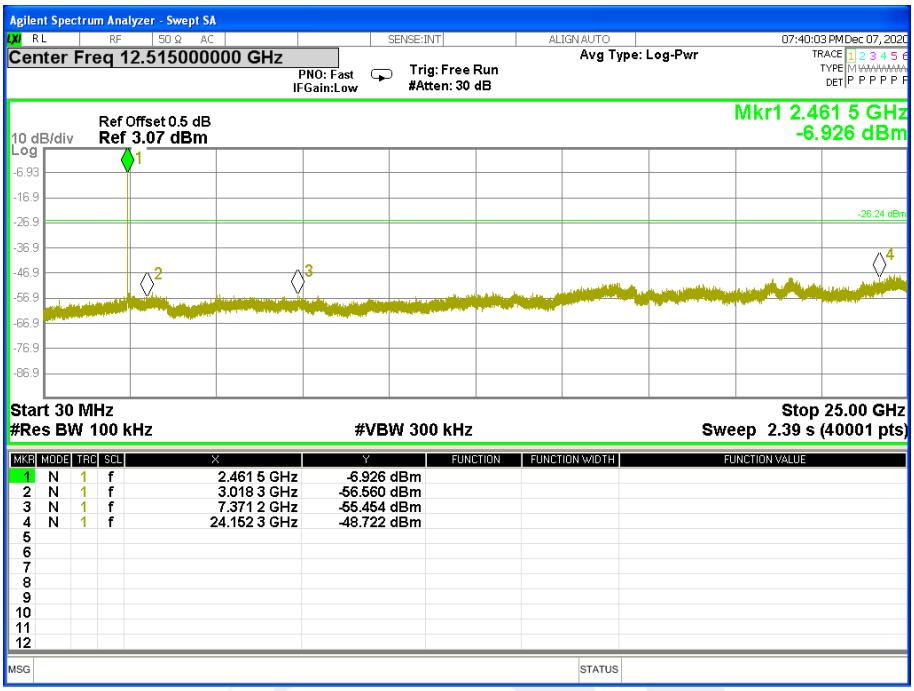
CH 01



CH 06

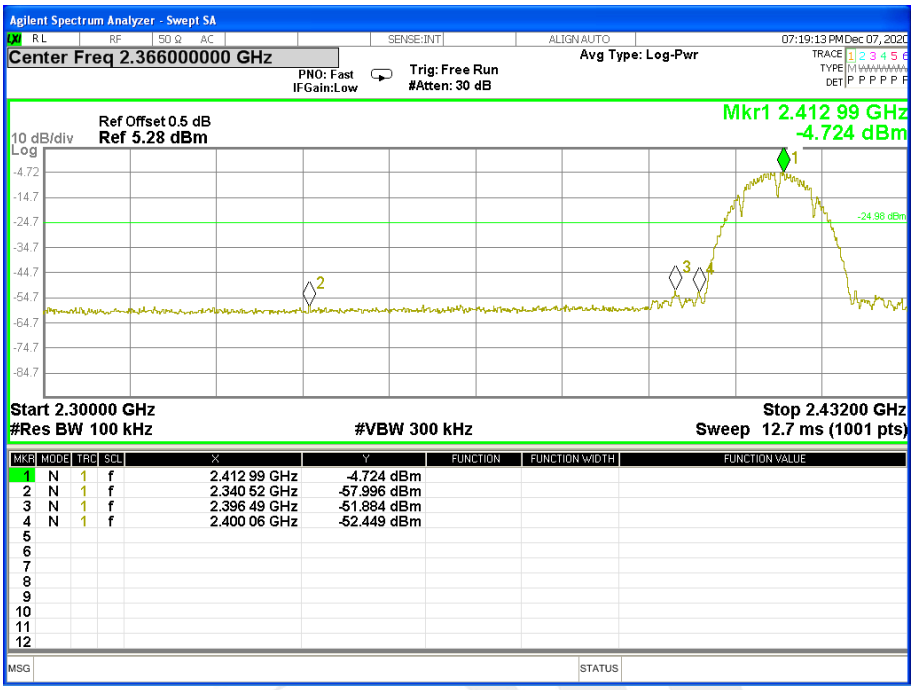


CH 11

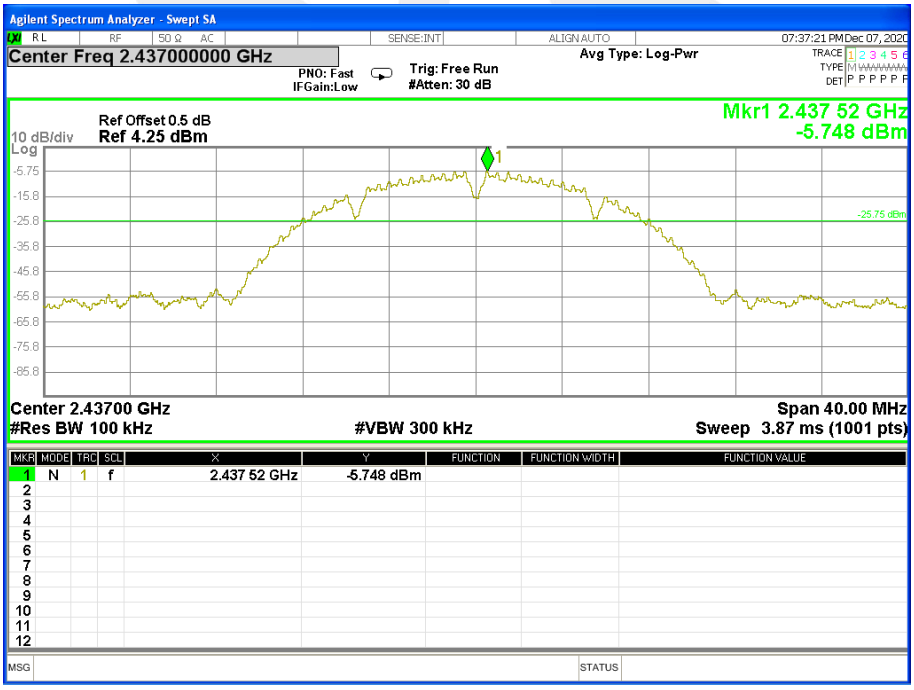

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
07:40:03 PM Dec 07, 2020
Ref Offset 0.5 dB
10 dB/div
Ref 3.07 dBm
Mkr1 2.461 5 GHz
-6.926 dBm
-26.24 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
1 N 1 f 2.461 5 GHz -6.926 dBm
2 N 1 f 3.018 3 GHz -56.560 dBm
3 N 1 f 7.371 2 GHz -55.454 dBm
4 N 1 f 24.152 3 GHz -48.722 dBm

Band edge(it's also the reference level for conducted spurious emission)

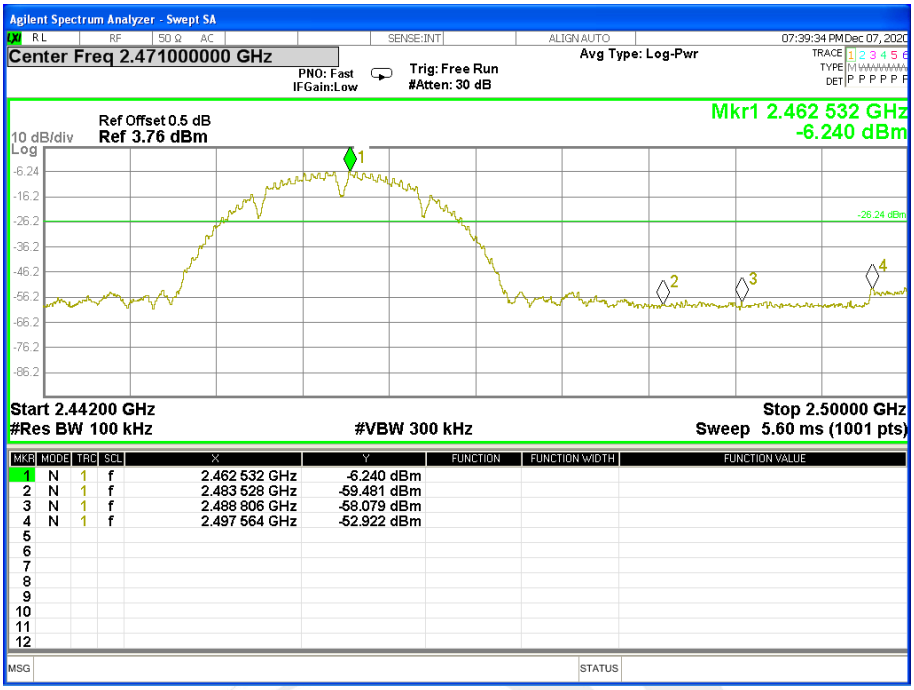
CH 01



CH 06

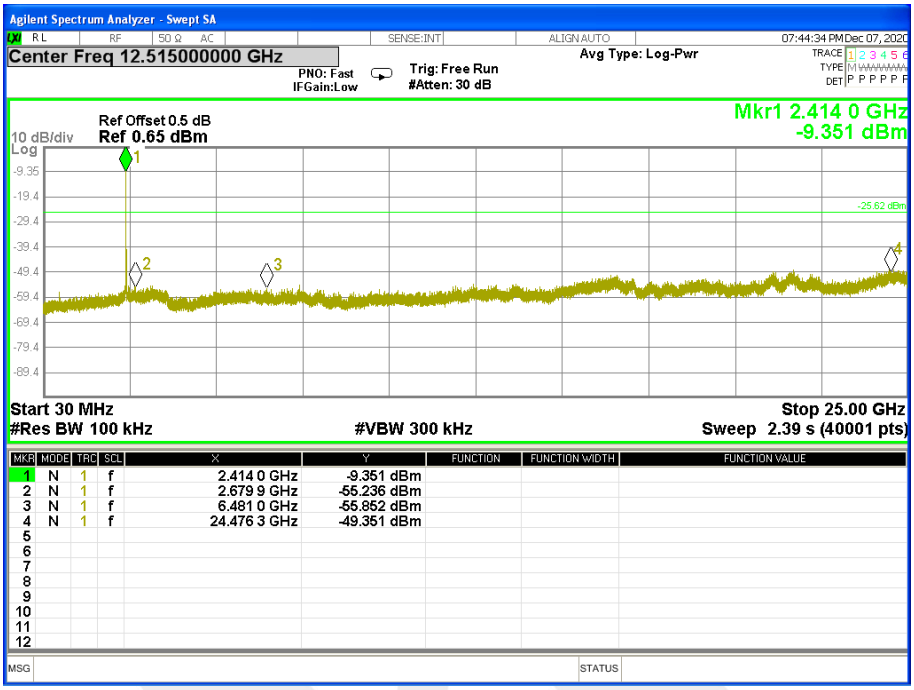


CH 11

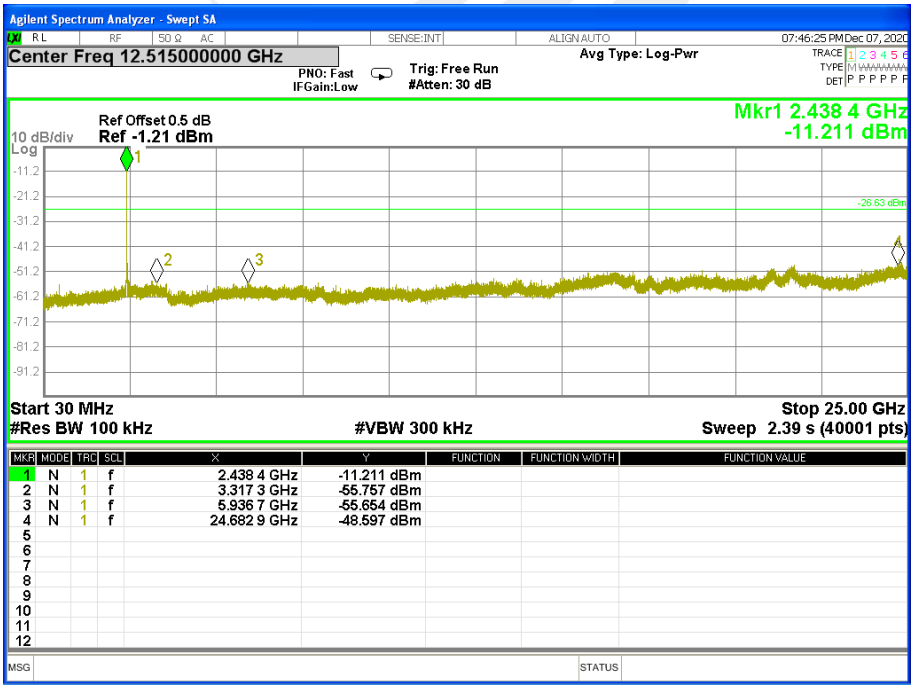

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.471000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
07:39:34 PM Dec 07, 2020
Mkr1 2.462 532 GHz
-6.240 dBm
Ref Offset 0.5 dB
10 dB/div
Ref 3.76 dBm
Log
-6.24
-16.2
-26.2
-36.2
-46.2
-56.2
-66.2
-76.2
-86.2
-26.24 dBm
Start 2.44200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 5.60 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.462 532 GHz -6.240 dBm
2 N 1 f 2.483 528 GHz -59.481 dBm
3 N 1 f 2.488 806 GHz -58.079 dBm
4 N 1 f 2.497 564 GHz -52.922 dBm
MSG
STATUS

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX g Mode /CH01, CH06, CH11

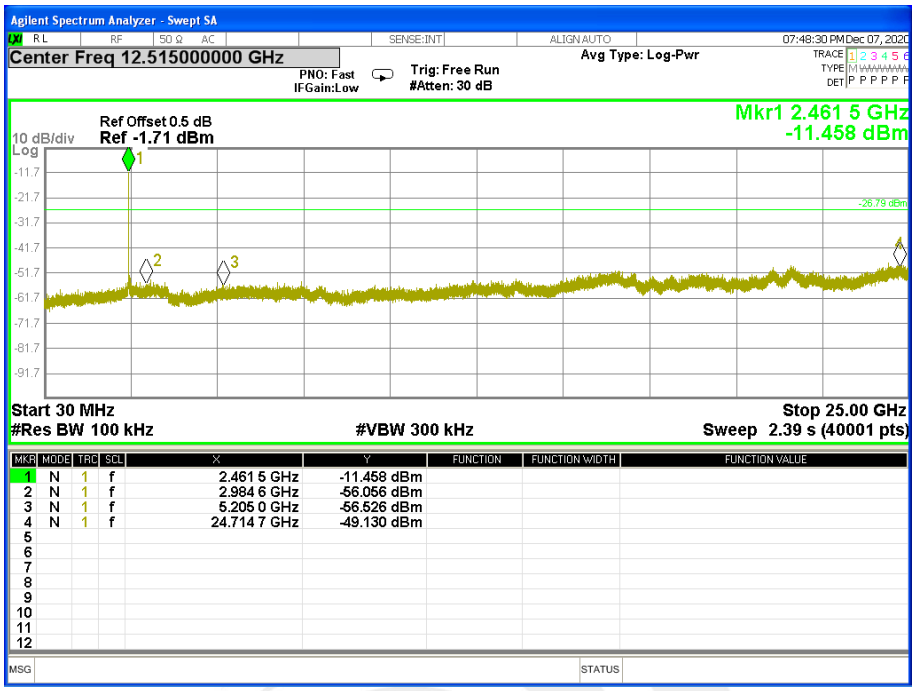
CH 01



CH06

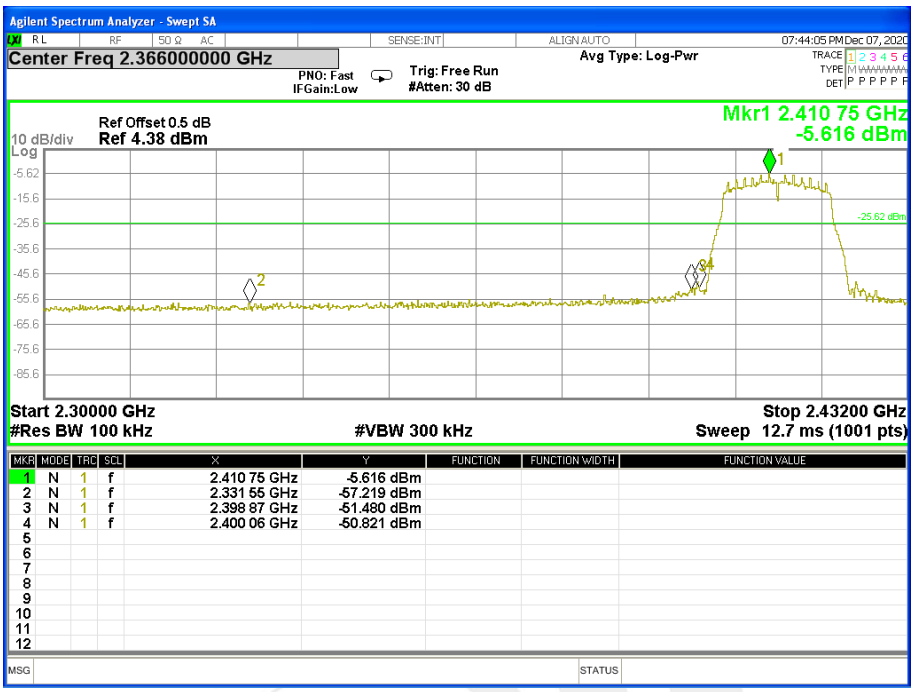


CH 11

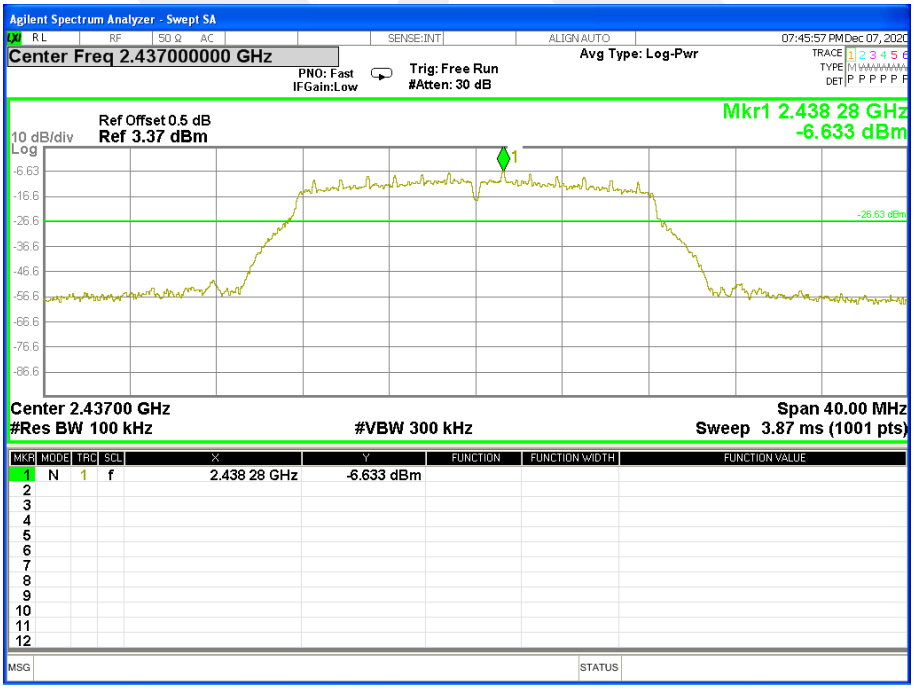

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
07:48:30 PM Dec 07, 2020
Mkr1 2.461 5 GHz
-11.458 dBm
Ref Offset 0.5 dB
10 dB/div
Ref -1.71 dBm
Log
-26.79 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.461 5 GHz -11.458 dBm
2 N 1 f 2.984 6 GHz -56.056 dBm
3 N 1 f 5.205 0 GHz -56.526 dBm
4 N 1 f 24.714 7 GHz -49.130 dBm
MSG
STATUS

Band edge(it's also the reference level for conducted spurious emission)

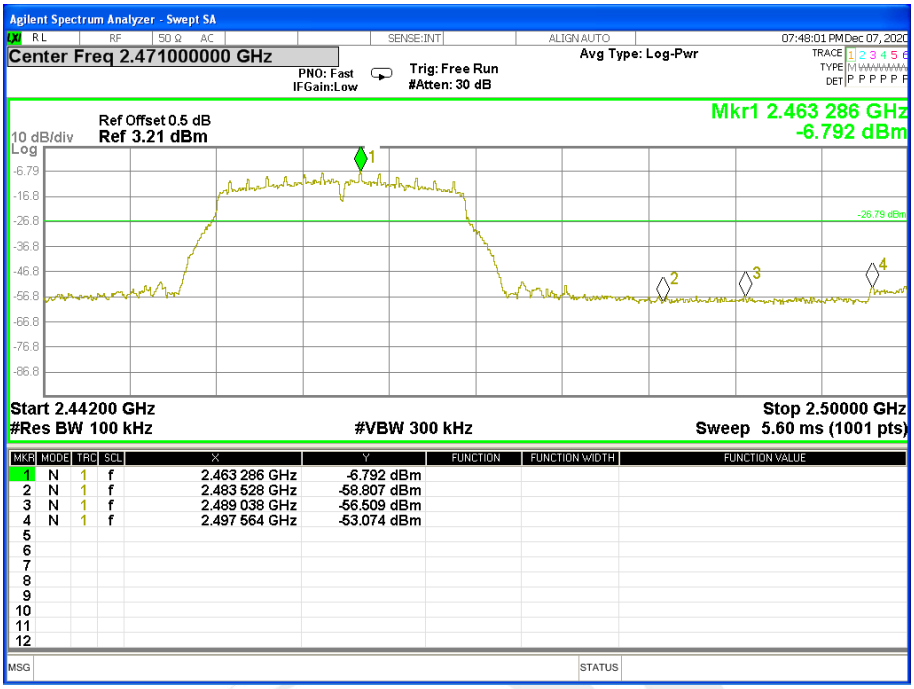
CH 01



CH06

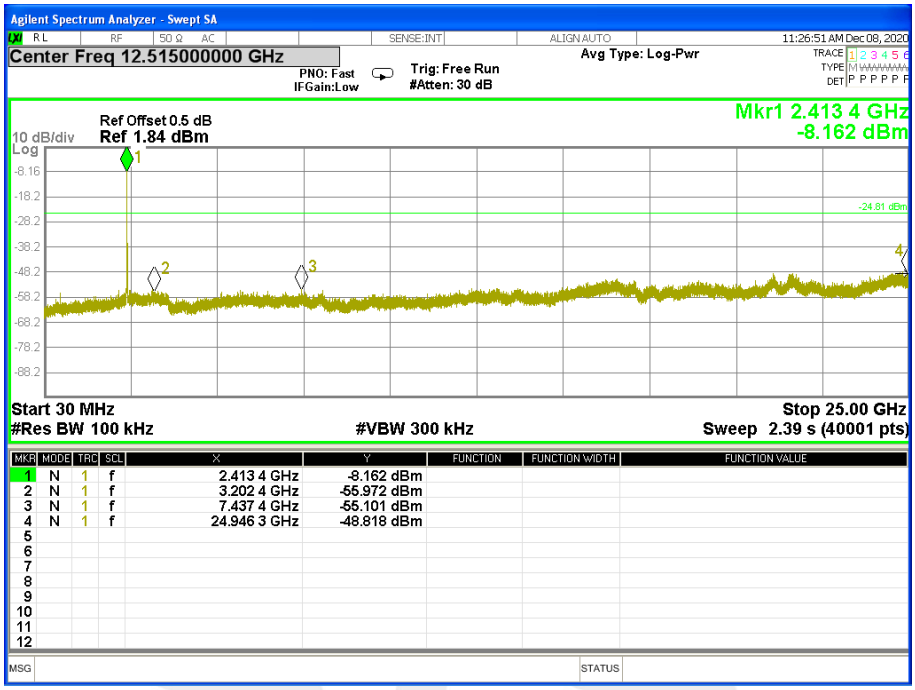


CH11

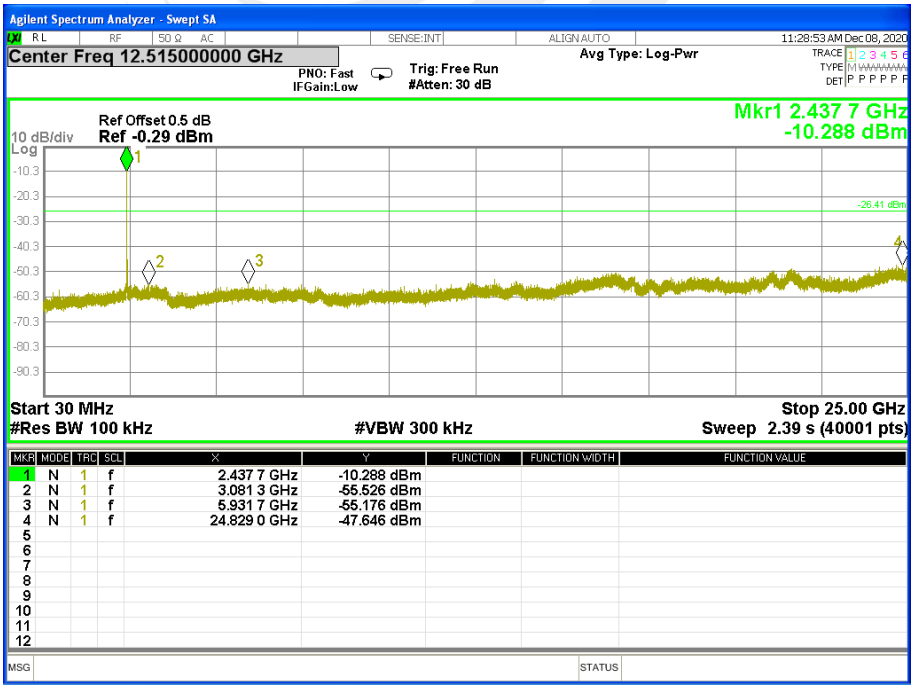

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.471000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
07:48:01 PM Dec 07, 2020
Mkr1 2.463 286 GHz
-6.792 dBm
Ref Offset 0.5 dB
10 dB/div
Ref 3.21 dBm
Log
-26.79 dBm
Start 2.44200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 5.60 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.463 286 GHz -6.792 dBm
2 N 1 f 2.483 528 GHz -58.807 dBm
3 N 1 f 2.489 038 GHz -56.509 dBm
4 N 1 f 2.497 564 GHz -53.074 dBm
MSG
STATUS

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX n Mode(20M) /CH01, CH06, CH11

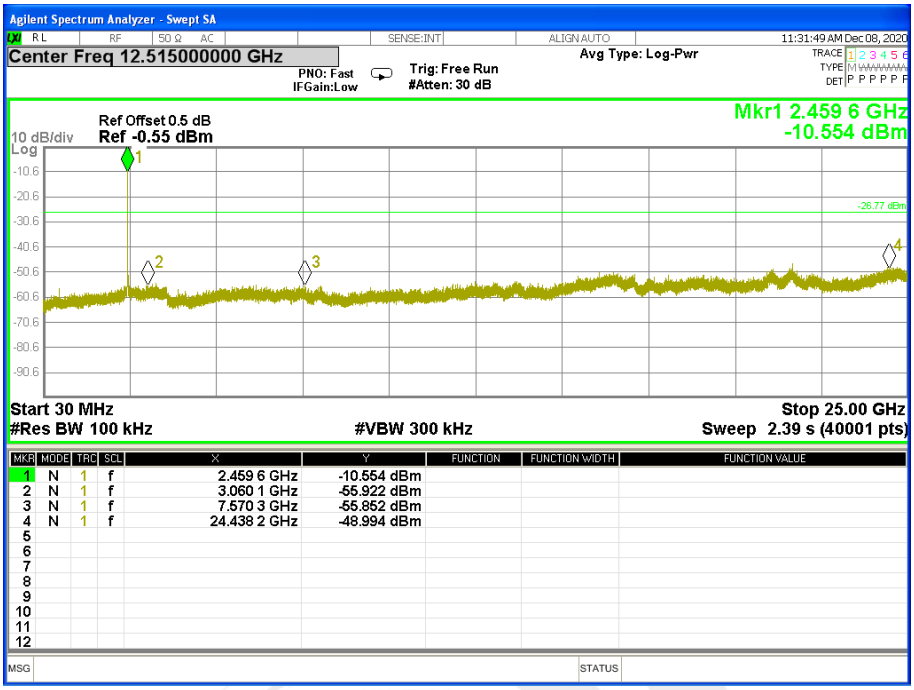
CH 01



CH 06

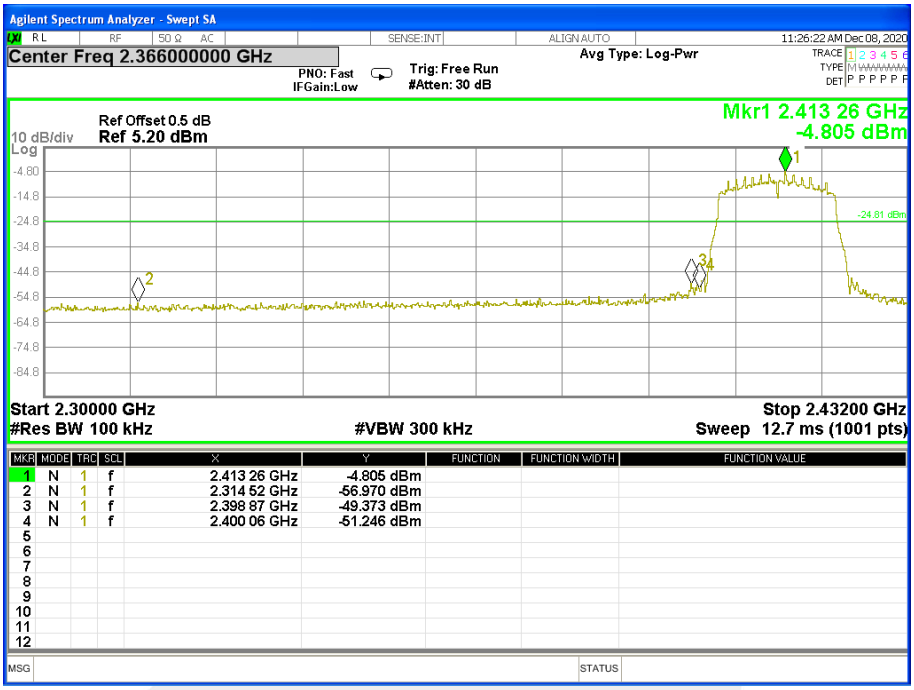


CH 11

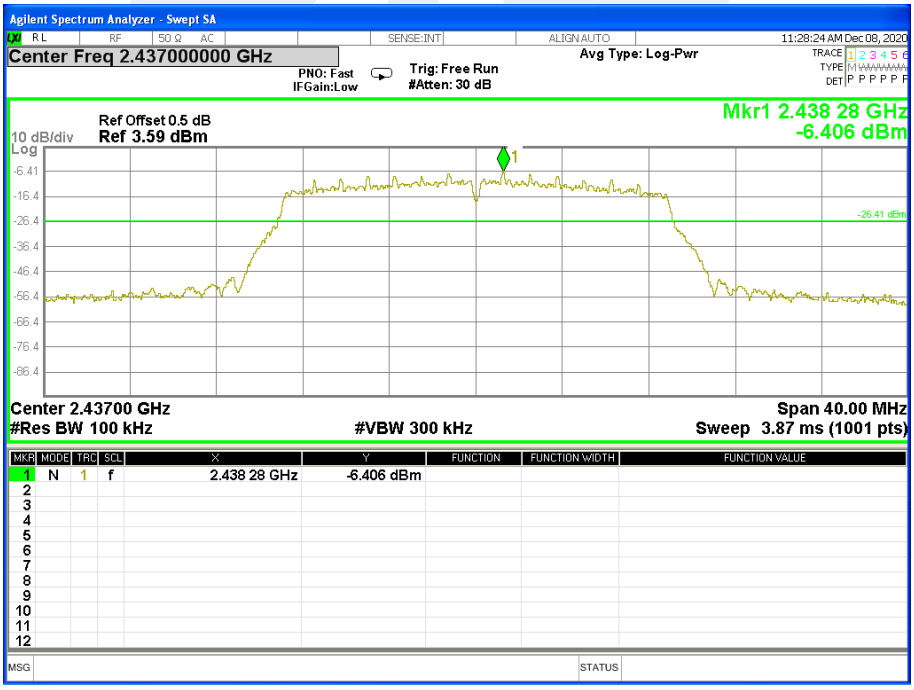

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:31:49 AM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref -0.55 dBm
Mkr1 2.459 6 GHz
-10.554 dBm
-26.77 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
1 N 1 f 2.459 6 GHz -10.554 dBm
2 N 1 f 3.060 1 GHz -55.922 dBm
3 N 1 f 7.570 3 GHz -55.862 dBm
4 N 1 f 24.438 2 GHz -48.994 dBm

Band edge(it's also the reference level for conducted spurious emission)

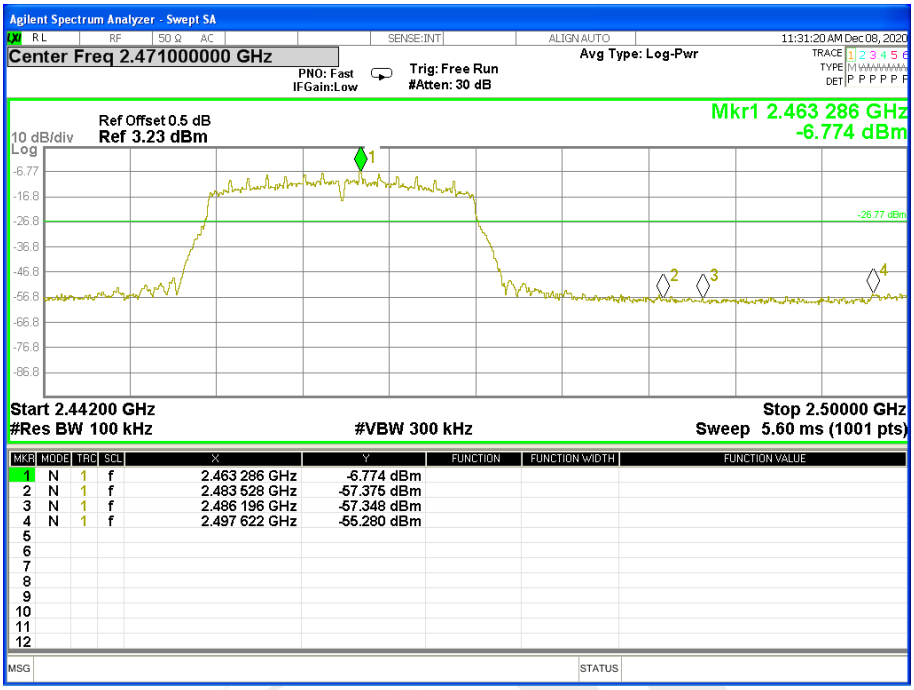
CH 01



CH 06

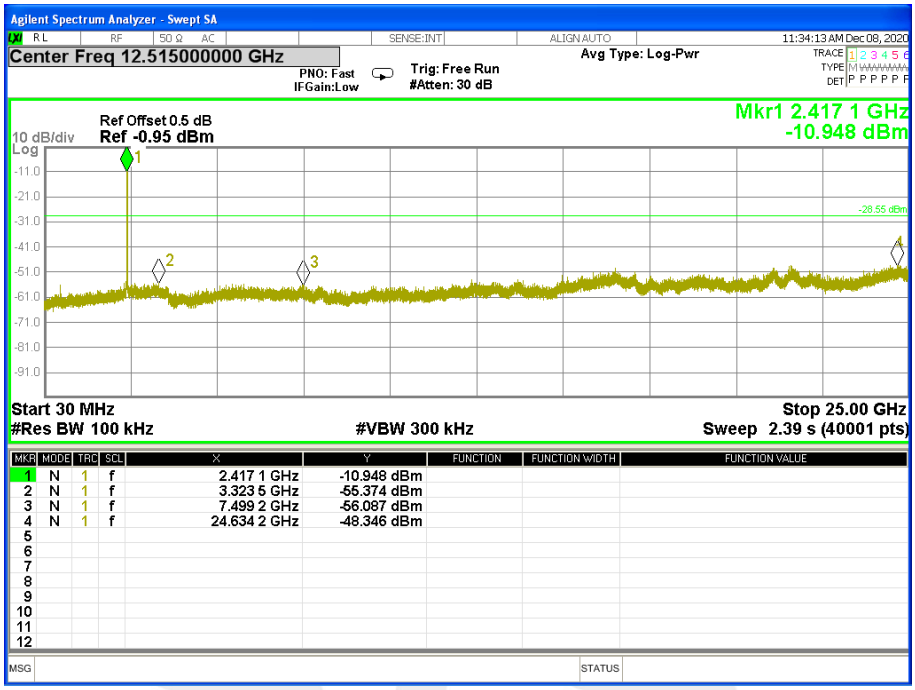


CH 11

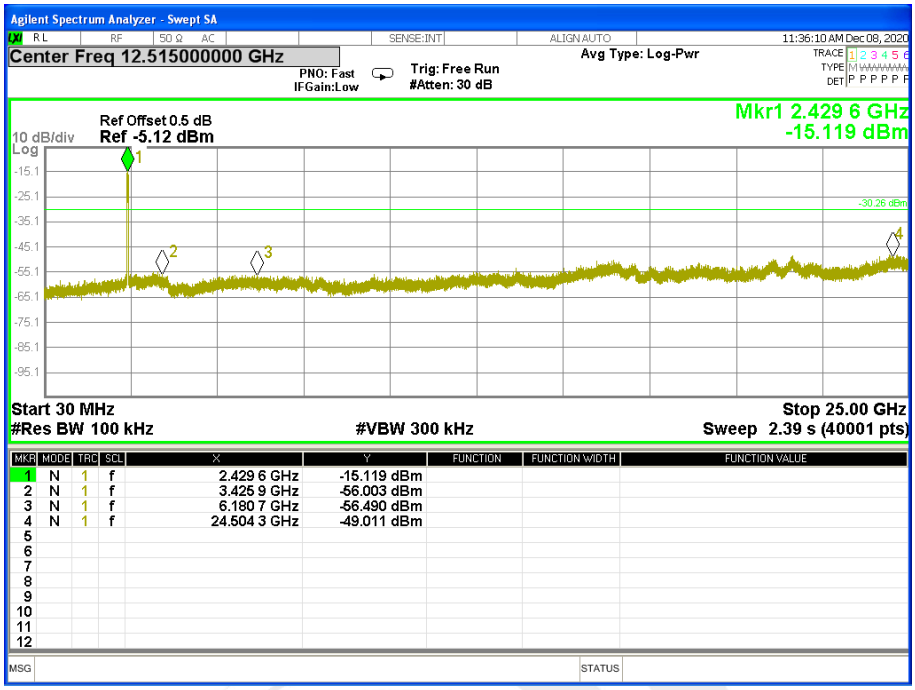

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.471000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:31:20 AM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref 3.23 dBm
Log
Mkr1 2.463 286 GHz
-6.774 dBm
-26.77 dBm
Start 2.44200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 5.60 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.463 286 GHz -6.774 dBm
2 N 1 f 2.483 528 GHz -57.375 dBm
3 N 1 f 2.486 196 GHz -57.348 dBm
4 N 1 f 2.497 622 GHz -55.280 dBm
MSG
STATUS

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX n Mode(40M) /CH03, CH06, CH09

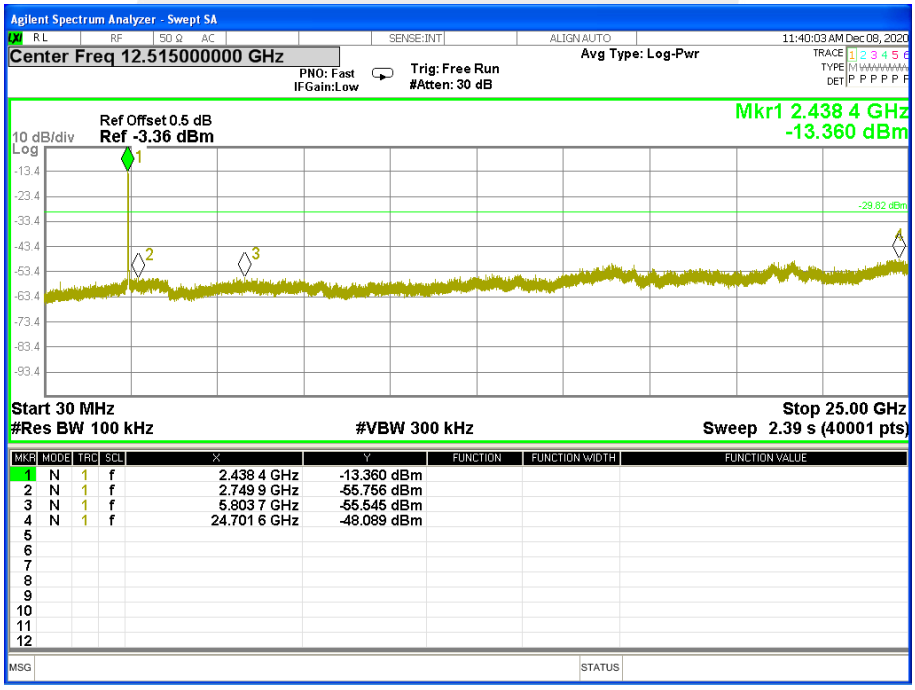
CH 03



CH06

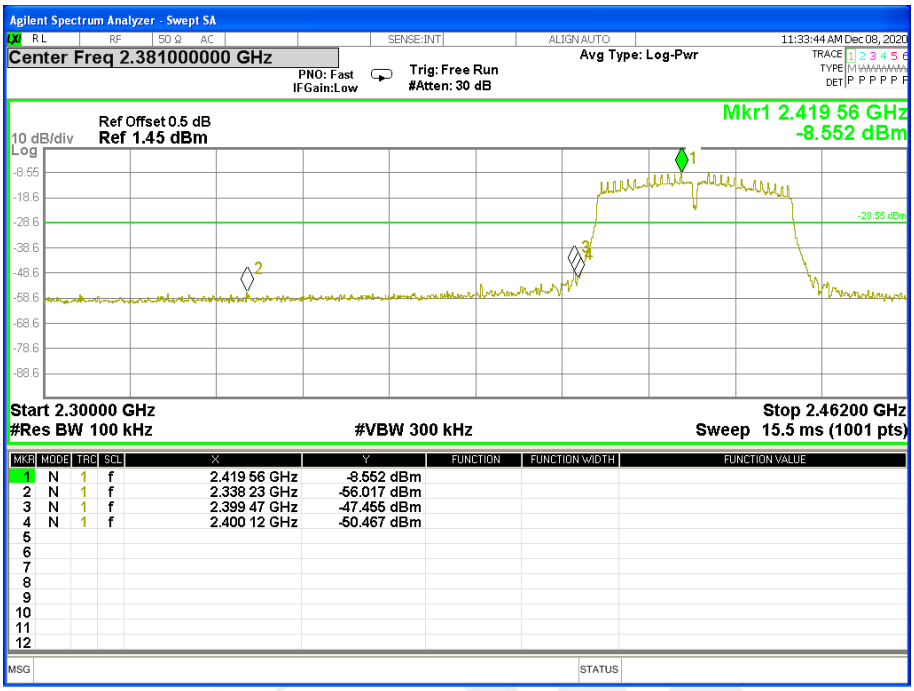

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:36:10 AM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref -5.12 dBm
Mkr1 2.429 6 GHz
-15.119 dBm
-30.26 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
1 N 1 f 2.429 6 GHz -15.119 dBm
2 N 1 f 3.425 9 GHz -56.003 dBm
3 N 1 f 6.180 7 GHz -56.490 dBm
4 N 1 f 24.504 3 GHz -49.011 dBm

CH09

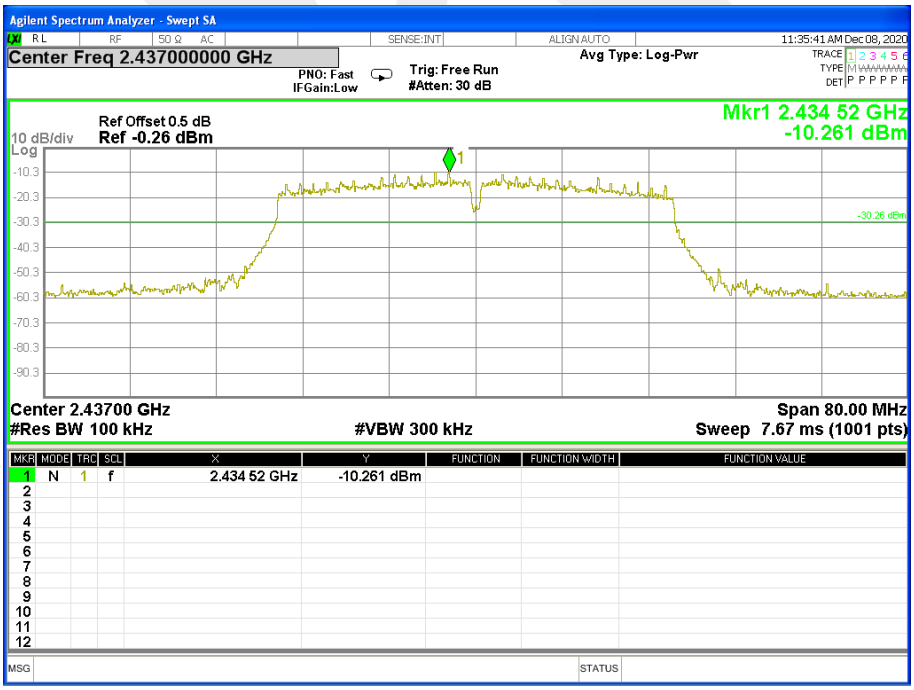

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:40:03 AM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref -3.36 dBm
Mkr1 2.438 4 GHz
-13.360 dBm
-29.82 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
1 N 1 f 2.438 4 GHz -13.360 dBm
2 N 1 f 2.749 9 GHz -55.756 dBm
3 N 1 f 5.803 7 GHz -55.545 dBm
4 N 1 f 24.701 6 GHz -48.089 dBm

Band edge(it's also the reference level for conducted spurious emission)

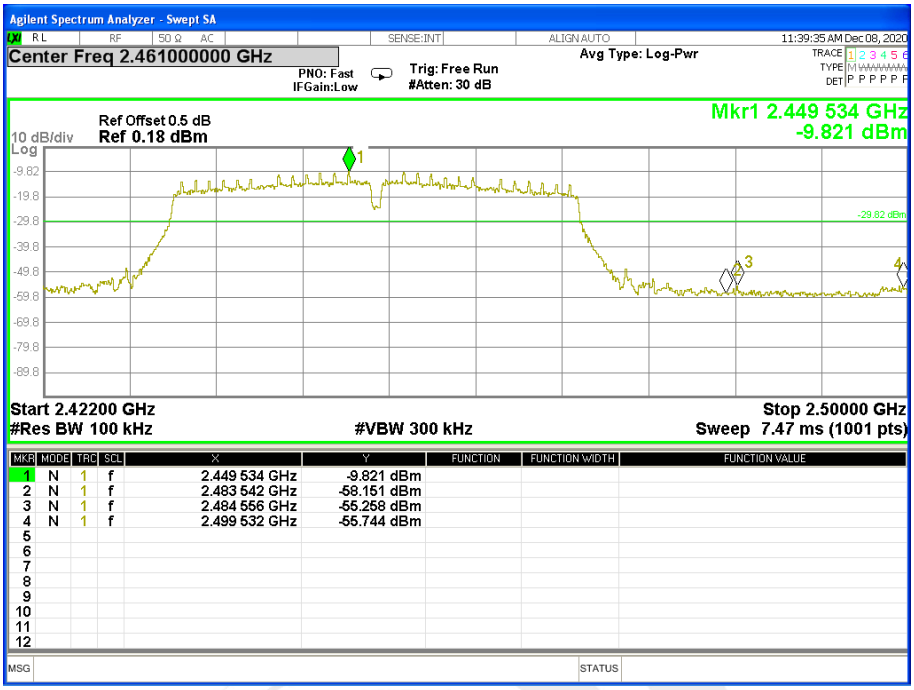
CH03



CH 06



CH 09


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.461000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:39:35 AM Dec 08, 2020
Ref Offset 0.5 dB
10 dB/div
Ref 0.18 dBm
Mkr1 2.449 534 GHz
-9.821 dBm
-29.82 dBm
Start 2.42200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.50000 GHz
Sweep 7.47 ms (1001 pts)
1 N 1 f 2.449 534 GHz -9.821 dBm
2 N 1 f 2.483 542 GHz -58.151 dBm
3 N 1 f 2.484 556 GHz -55.258 dBm
4 N 1 f 2.499 532 GHz -55.744 dBm

5. POWER SPECTRAL DENSITY TEST

5.1 LIMIT

FCC Part15.247 , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	≤8 dBm (RBW ≥3KHz)	2400-2483.5	PASS

5.2 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the 100 kHz ≥ RBW ≥3 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP

5.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

5.6 TEST RESULTS

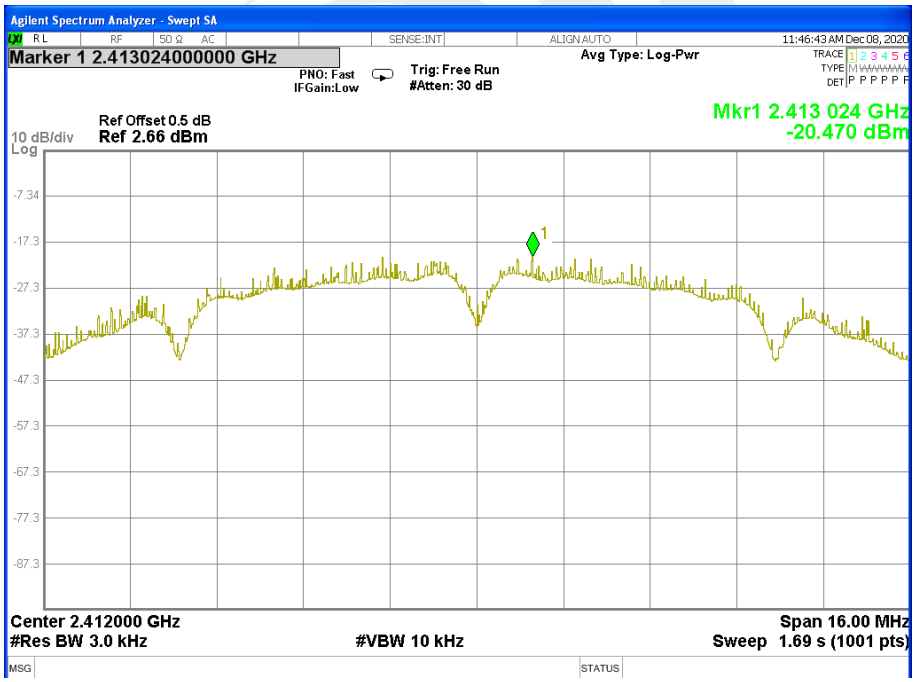
Note: The MIMO antenna gain is 8.01dBi, which is greater 6dBi, and the MIMO mode limit will be reduced by 2.01dBi.

Temperature:	25℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX b Mode /CH01, CH06, CH11

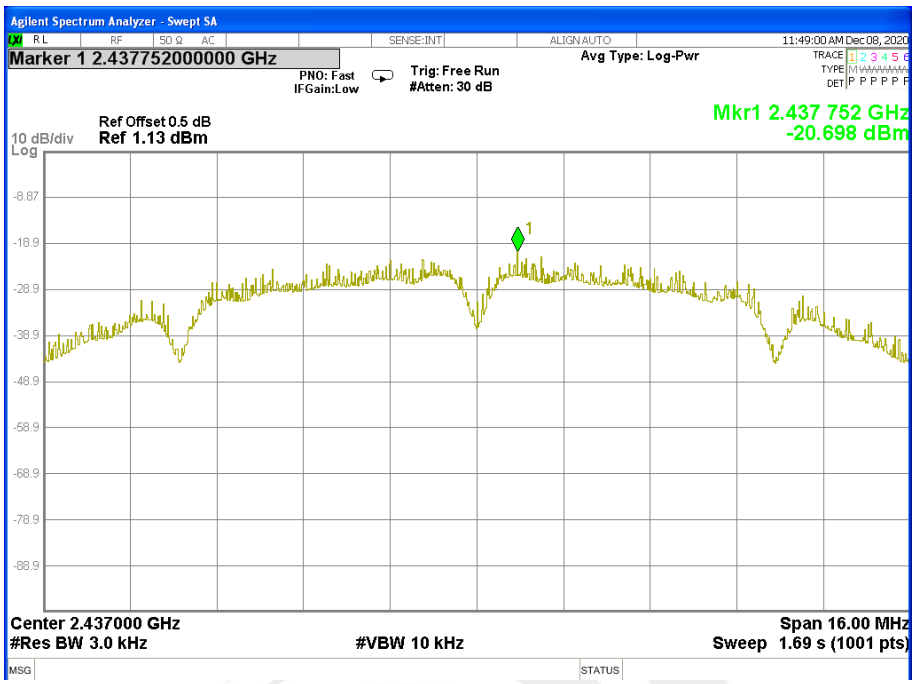
Frequency	Power Density			Limit	Result
	ANT 1 (dBm)	ANT 2 (dBm)	TOTAL (dBm)	(dBm/3KHz)	
2412	-20.47	-20.14	--	8	PASS
2437	-20.70	-22.93	--	8	PASS
2462	-21.58	-23.05	--	8	PASS

Test plots for ANT 1

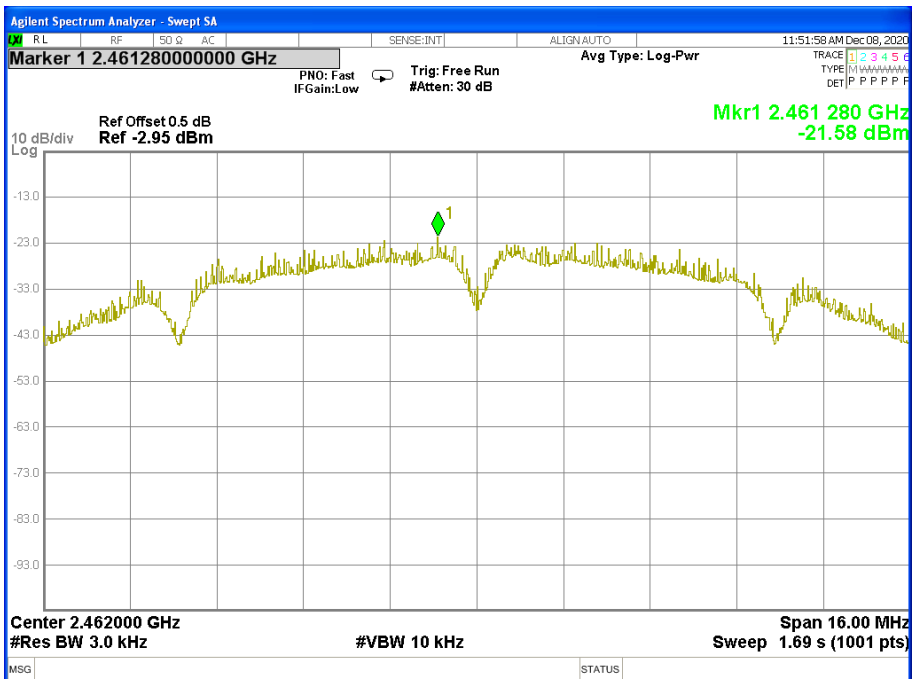
TX CH01



TX CH06

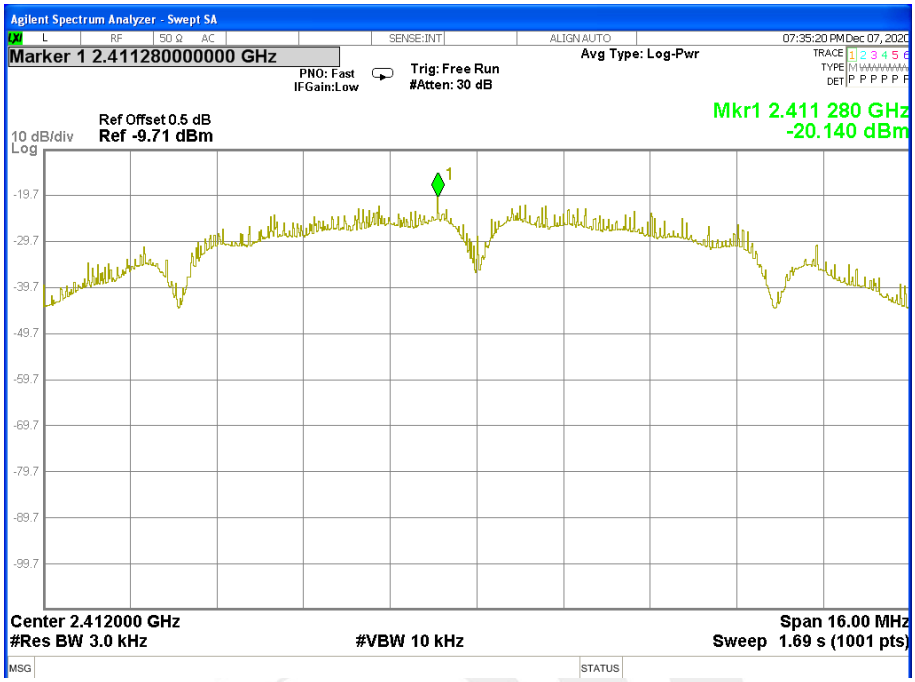


TX CH11

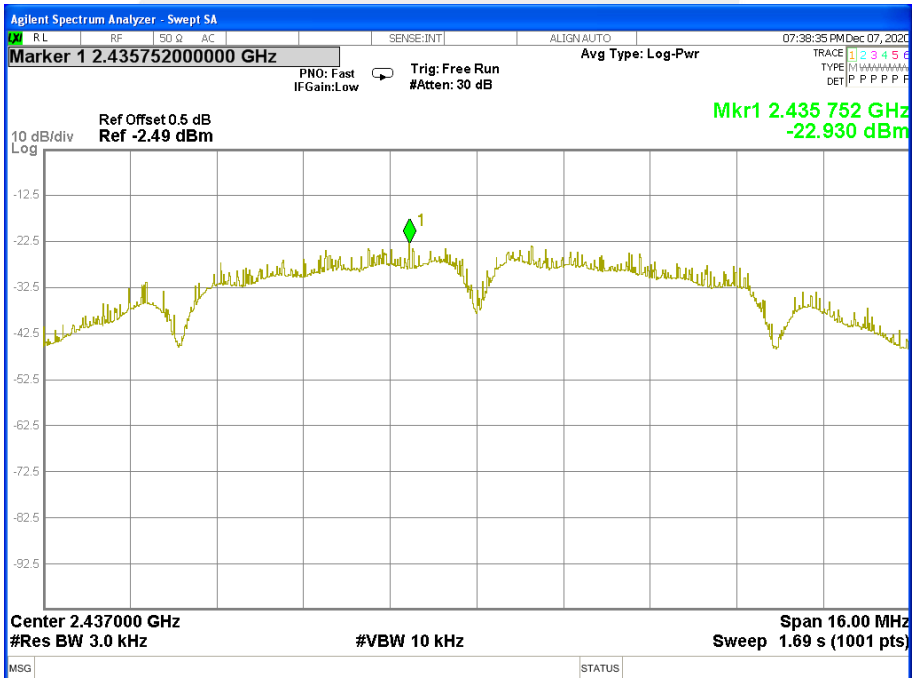


Test plots for ANT 2

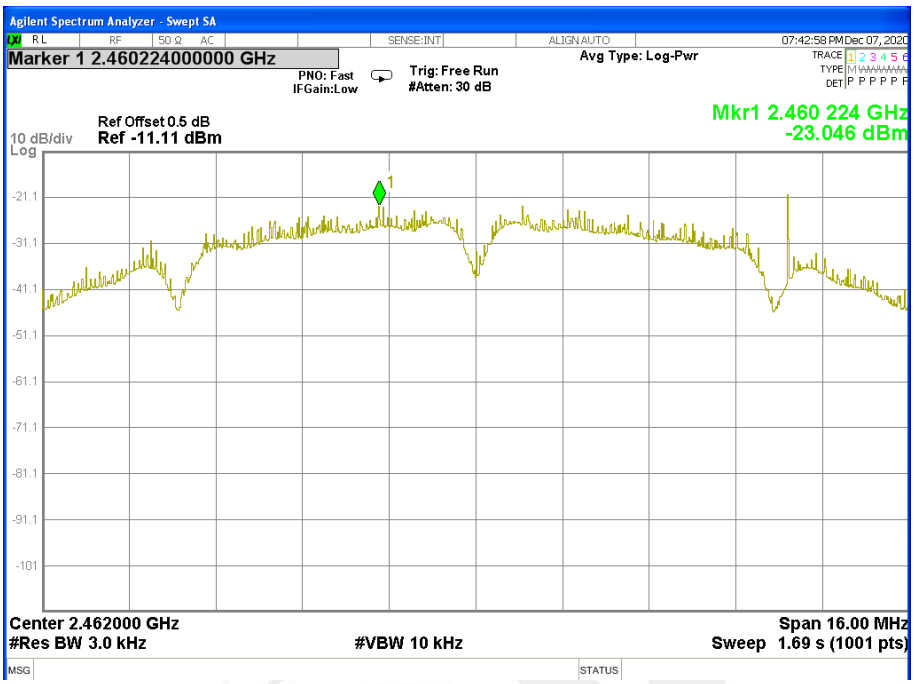
TX CH01



TX CH06



TX CH11


Agilent Spectrum Analyzer - Swept SA
Marker 1 2.460224000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Ref Offset 0.5 dB
10 dB/div
Ref -11.11 dBm
Mkr1 2.460 224 GHz
-23.046 dBm
Center 2.462000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 16.00 MHz
Sweep 1.69 s (1001 pts)