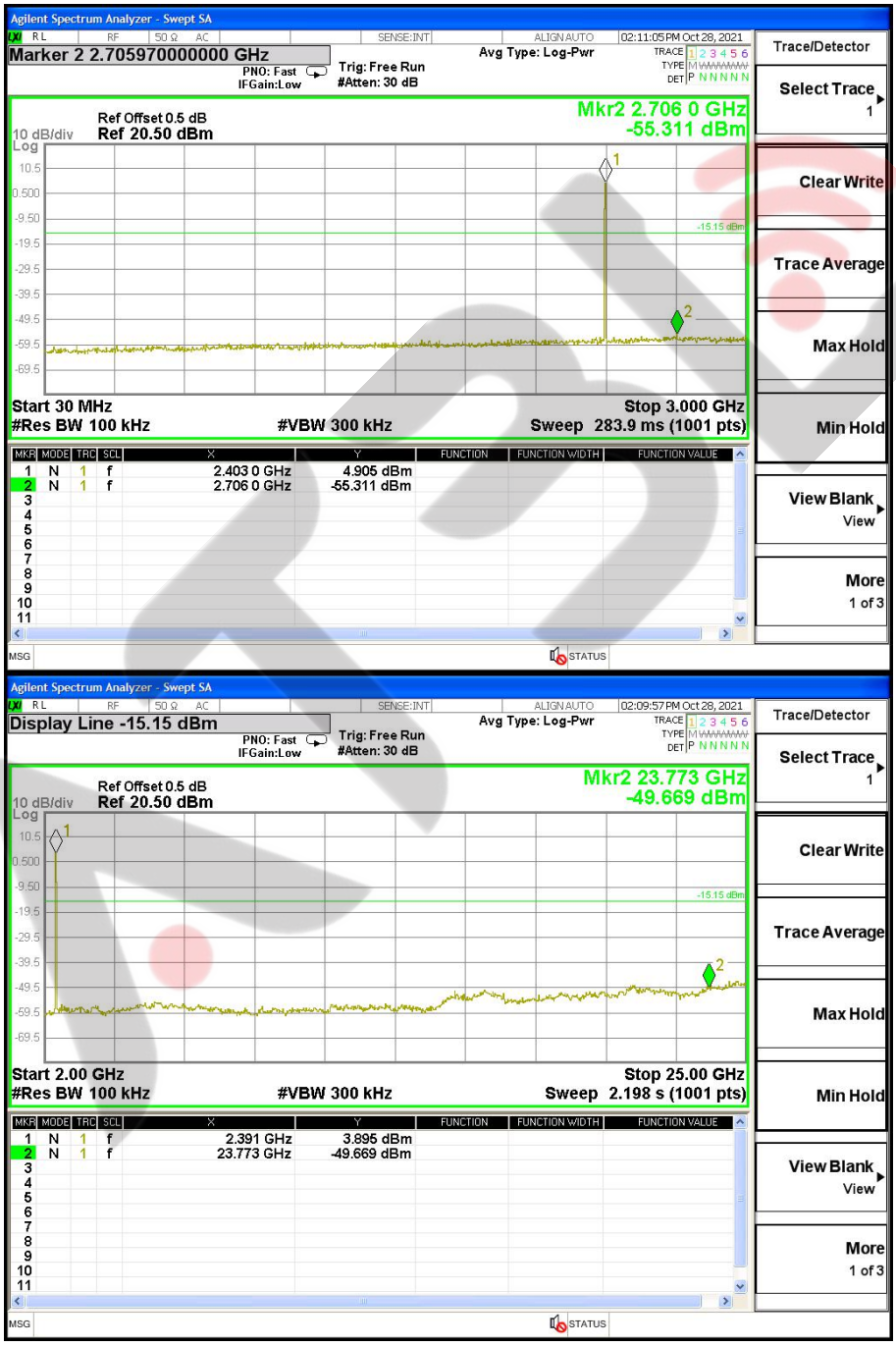
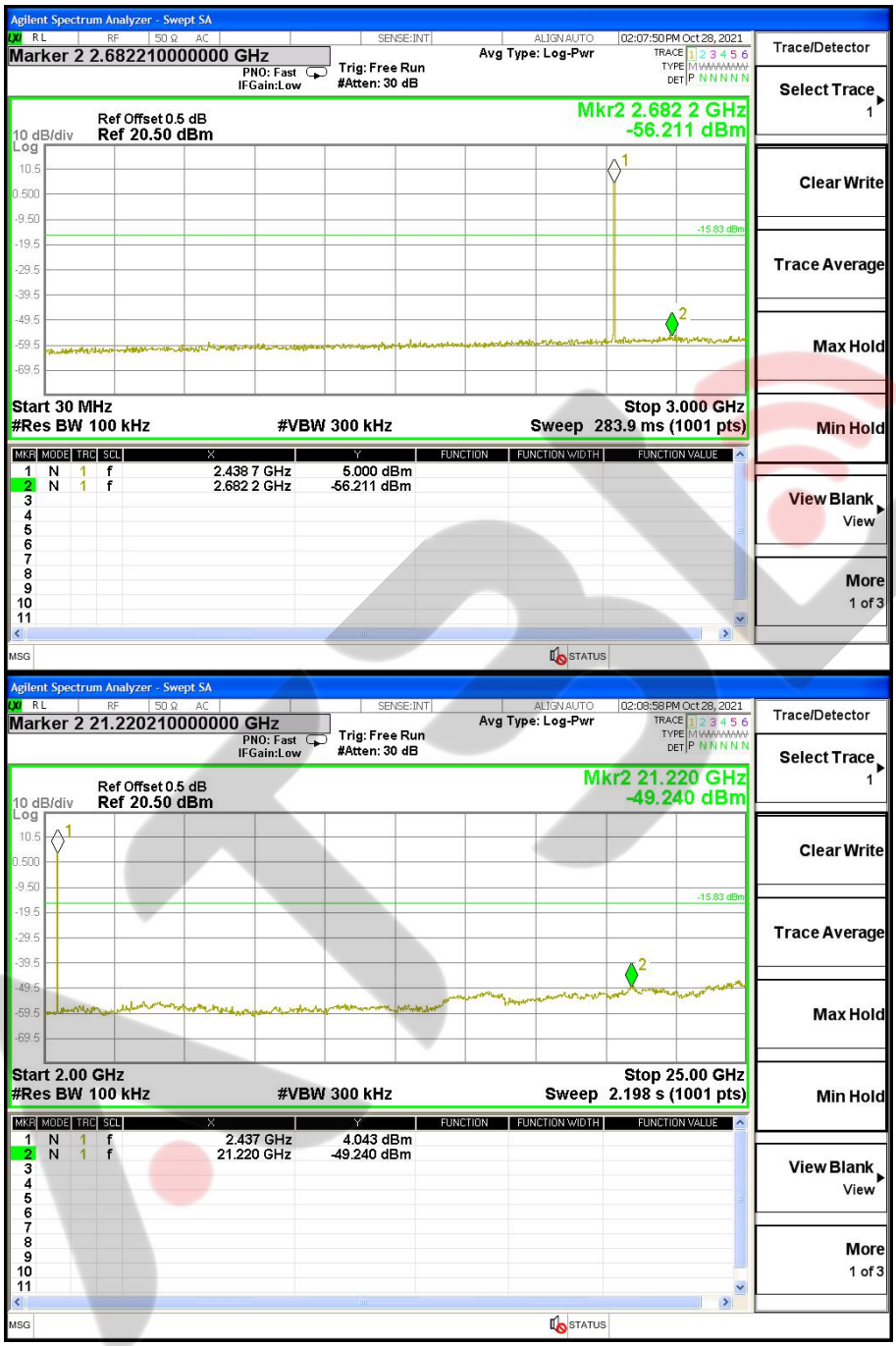
5.5 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	50%RH
Test Voltage:	AC120V	Test Mode:	TX Mode 1/2/3/4/5/6

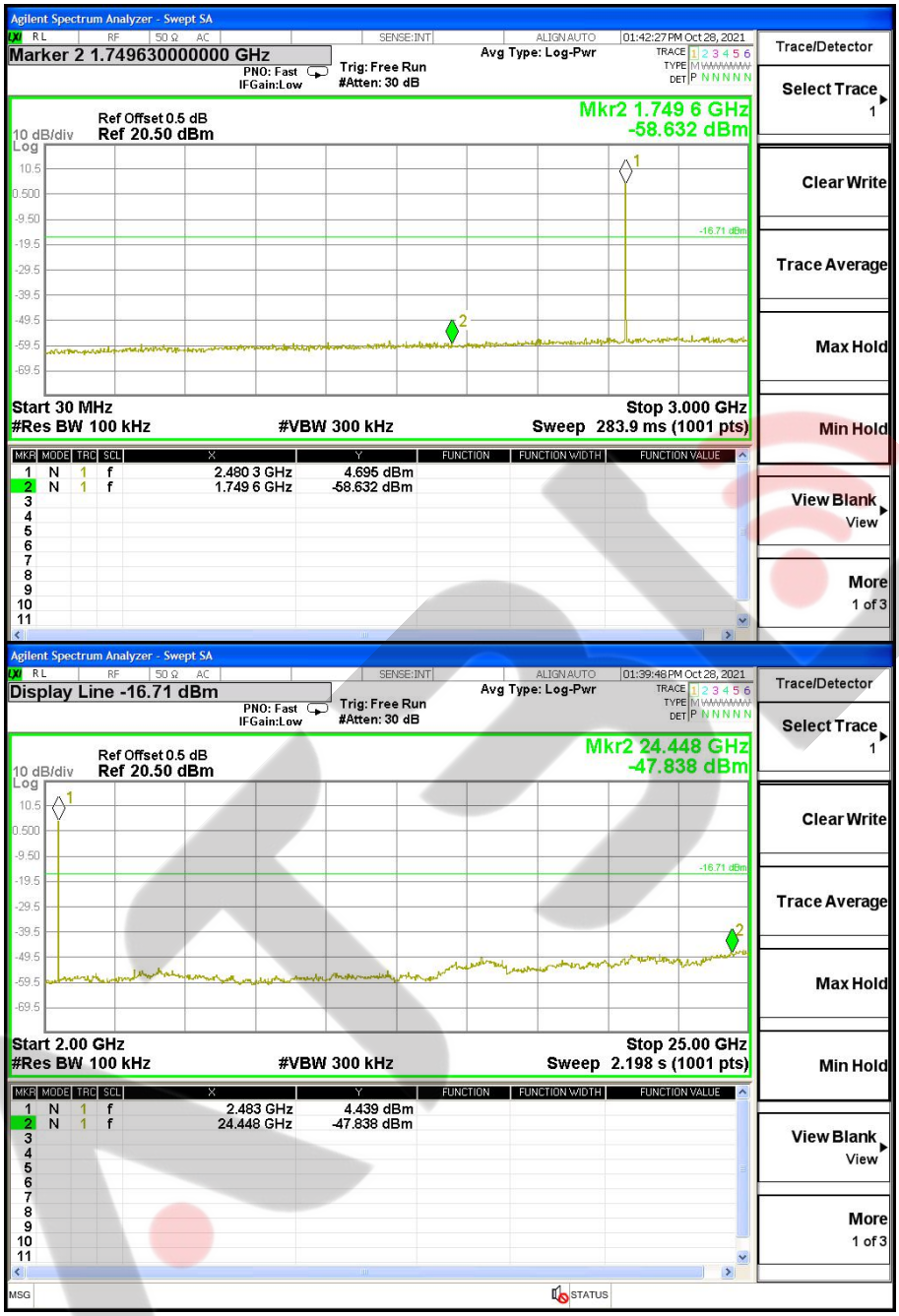
Mode1 CH00



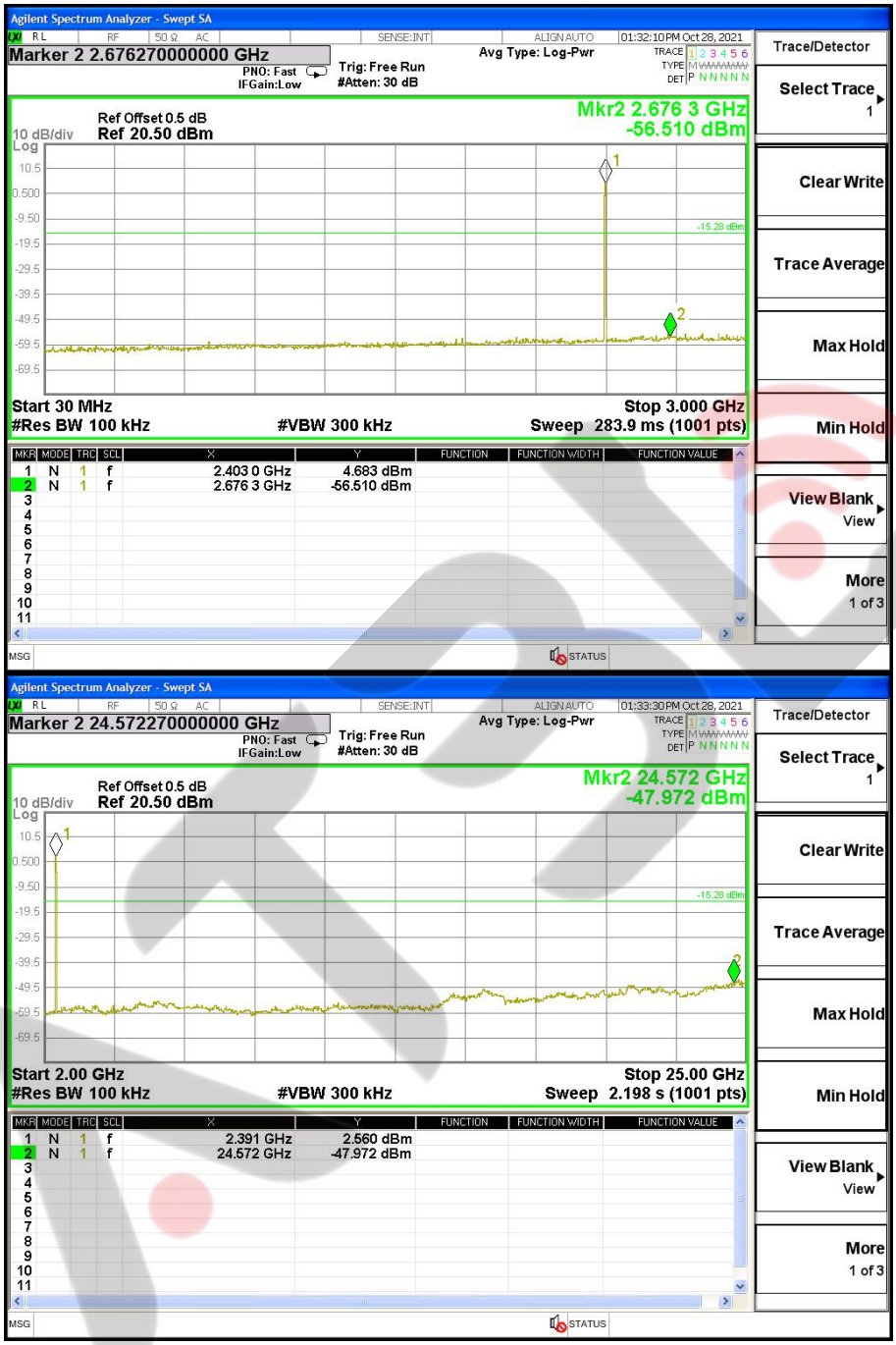
Mode2 CH19


Agilent Spectrum Analyzer - Swept SA
Marker 2 2.682210000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
02:07:50 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Mkr2 2.682 2 GHz
-56.211 dBm
-15.83 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 3.000 GHz
Sweep 283.9 ms (1001 pts)
1 N 1 f 2.438 7 GHz 5.000 dBm
2 N 1 f 2.682 2 GHz -56.211 dBm
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank View
More 1 of 3
Agilent Spectrum Analyzer - Swept SA
Marker 2 21.220210000000 GHz
02:08:58 PM Oct 28, 2021
Mkr2 21.220 GHz
-49.240 dBm
Start 2.00 GHz
#Res BW 100 kHz
Stop 25.00 GHz
Sweep 2.198 s (1001 pts)
1 N 1 f 2.437 GHz 4.043 dBm
2 N 1 f 21.220 GHz -49.240 dBm

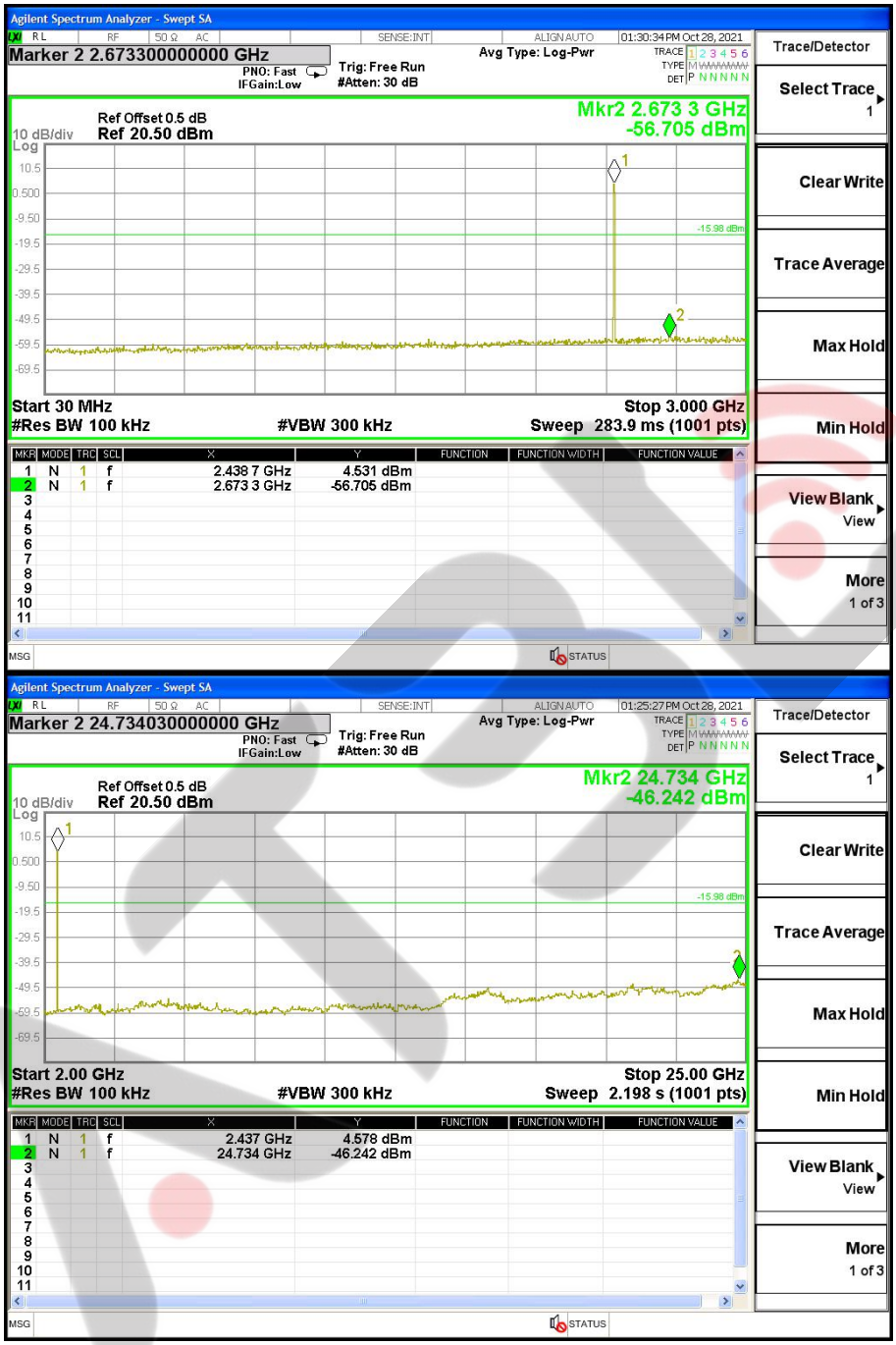
Mode3 CH39


Agilent Spectrum Analyzer - Swept SA
Marker 2 1.749630000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
01:42:27 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Mkr2 1.749 6 GHz
-58.632 dBm
-16.71 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 3.000 GHz
Sweep 283.9 ms (1001 pts)
1 N 1 f 2.480 3 GHz 4.695 dBm
2 N 1 f 1.749 6 GHz -58.632 dBm
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank View
More 1 of 3
Agilent Spectrum Analyzer - Swept SA
Display Line -16.71 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
01:39:48 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Mkr2 24.448 GHz
-47.838 dBm
-16.71 dBm
Start 2.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.198 s (1001 pts)
1 N 1 f 2.483 GHz 4.439 dBm
2 N 1 f 24.448 GHz -47.838 dBm
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank View
More 1 of 3
MSG
STATUS

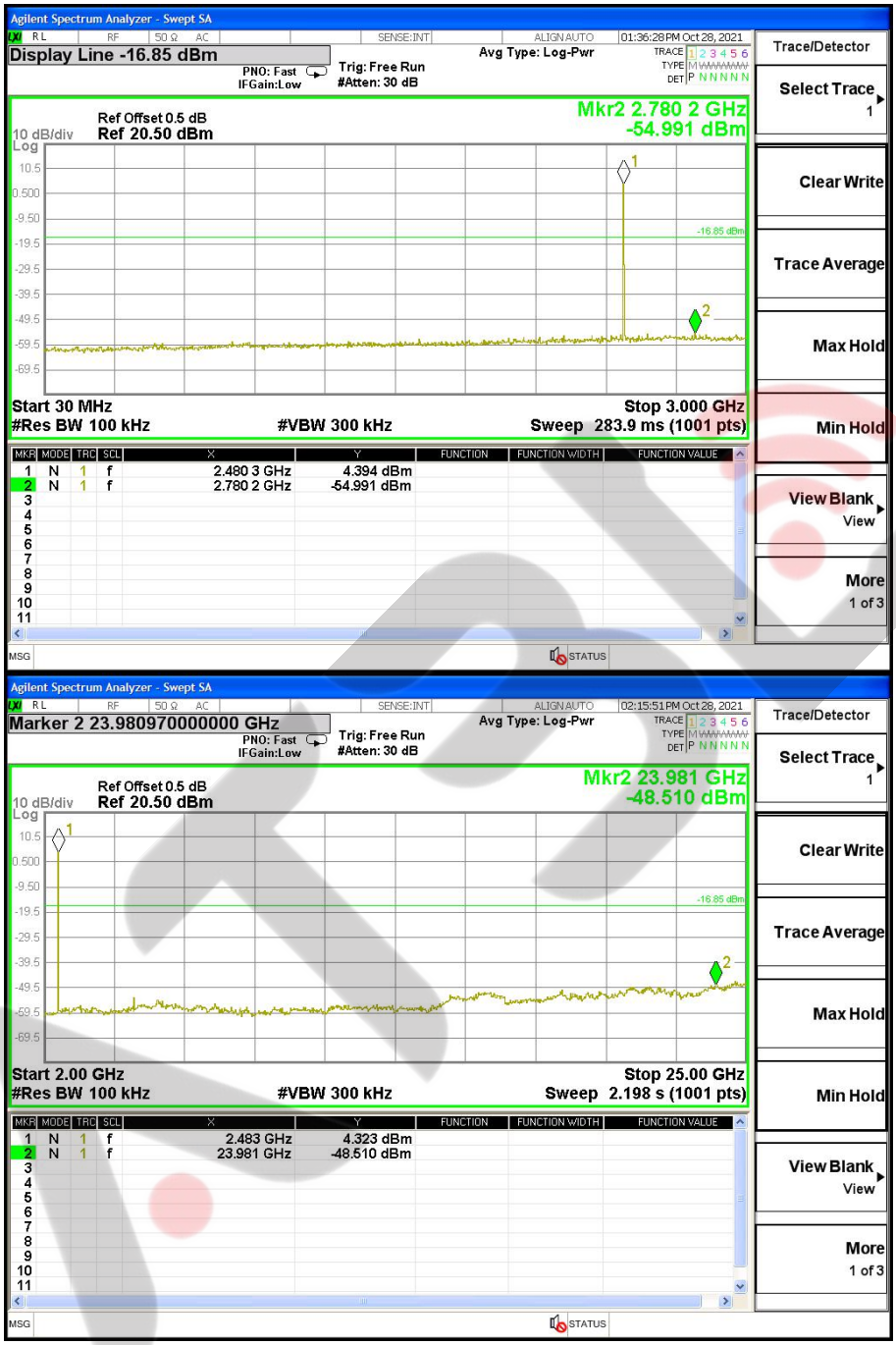
Mode4 CH00


Agilent Spectrum Analyzer - Swept SA
Marker 2 2.676270000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
01:32:10 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Log
Mkr2 2.676 3 GHz
-56.510 dBm
-15.28 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 3.000 GHz
Sweep 283.9 ms (1001 pts)
1 N 1 f 2.403 0 GHz 4.683 dBm
2 N 1 f 2.676 3 GHz -56.510 dBm
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank View
More 1 of 3
Agilent Spectrum Analyzer - Swept SA
Marker 2 24.572270000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
01:33:30 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Log
Mkr2 24.572 GHz
-47.972 dBm
-15.28 dBm
Start 2.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.198 s (1001 pts)
1 N 1 f 2.391 GHz 2.560 dBm
2 N 1 f 24.572 GHz -47.972 dBm
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank View
More 1 of 3

Mode5 CH19

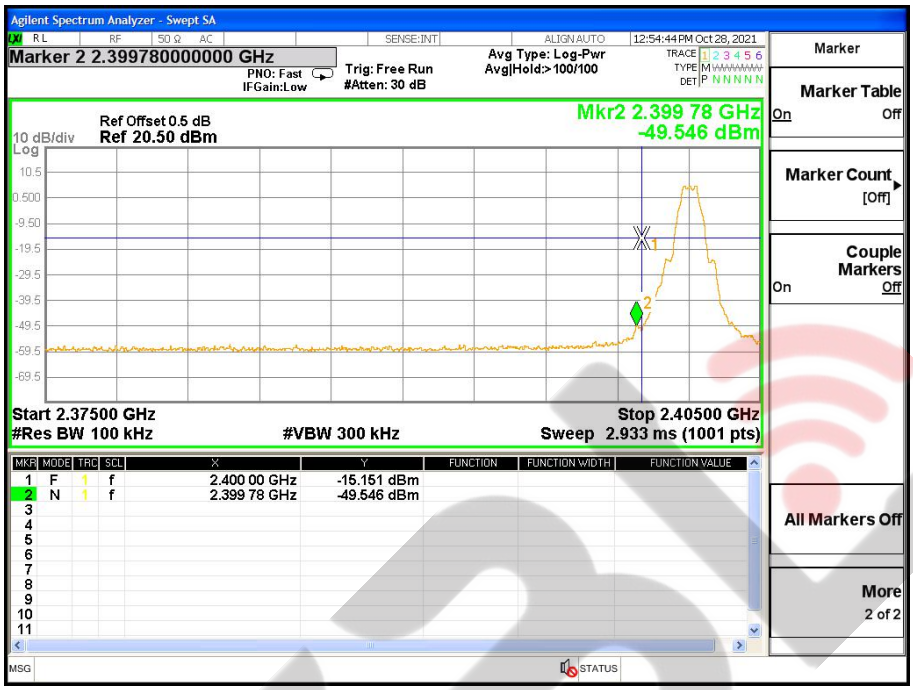

Agilent Spectrum Analyzer - Swept SA
Marker 2 2.673300000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
01:30:34 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Mkr2 2.673 3 GHz
-56.705 dBm
-15.98 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 3.000 GHz
Sweep 283.9 ms (1001 pts)
1 N 1 f 2.438 7 GHz 4.531 dBm
2 N 1 f 2.673 3 GHz -56.705 dBm
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank View
More 1 of 3
Agilent Spectrum Analyzer - Swept SA
Marker 2 24.734030000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
01:25:27 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Mkr2 24.734 GHz
-46.242 dBm
-15.98 dBm
Start 2.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.198 s (1001 pts)
1 N 1 f 2.437 GHz 4.578 dBm
2 N 1 f 24.734 GHz -46.242 dBm
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank View
More 1 of 3

Mode6 CH39

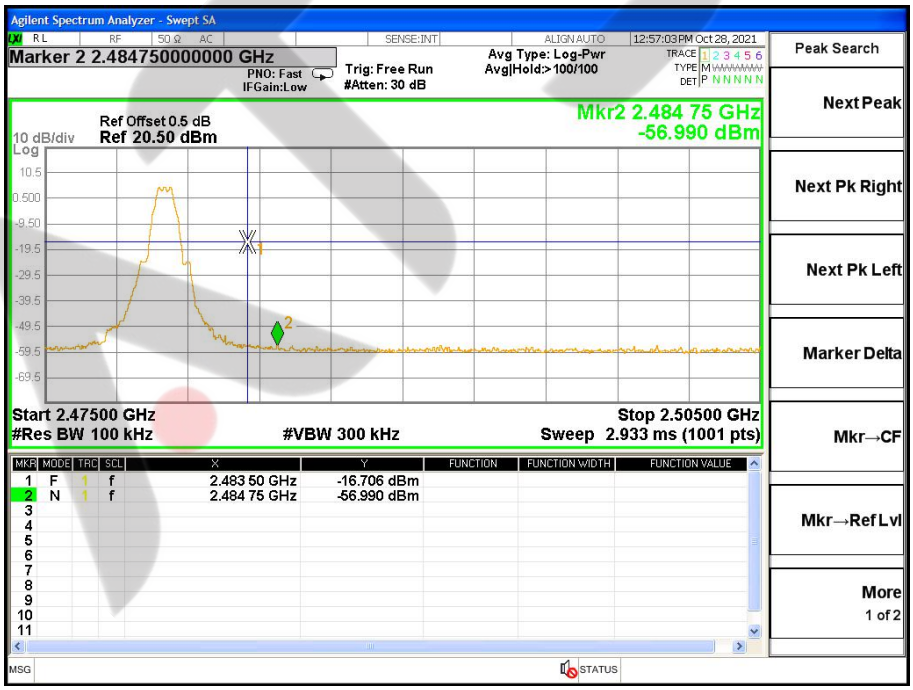

Agilent Spectrum Analyzer - Swept SA
Display Line -16.85 dBm
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
01:36:28 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Mkr2 2.780 2 GHz
-54.991 dBm
-16.85 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 3.000 GHz
Sweep 283.9 ms (1001 pts)
1 N 1 f 2.480 3 GHz 4.394 dBm
2 N 1 f 2.780 2 GHz -54.991 dBm
Trace/Detector
Select Trace
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
View
More
1 of 3
Agilent Spectrum Analyzer - Swept SA
Marker 2 23.980970000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
02:15:51 PM Oct 28, 2021
Ref Offset 0.5 dB
10 dB/div
Ref 20.50 dBm
Mkr2 23.981 GHz
-48.510 dBm
-16.85 dBm
Start 2.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.198 s (1001 pts)
1 N 1 f 2.483 GHz 4.323 dBm
2 N 1 f 23.981 GHz -48.510 dBm
Trace/Detector
Select Trace
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
View
More
1 of 3

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

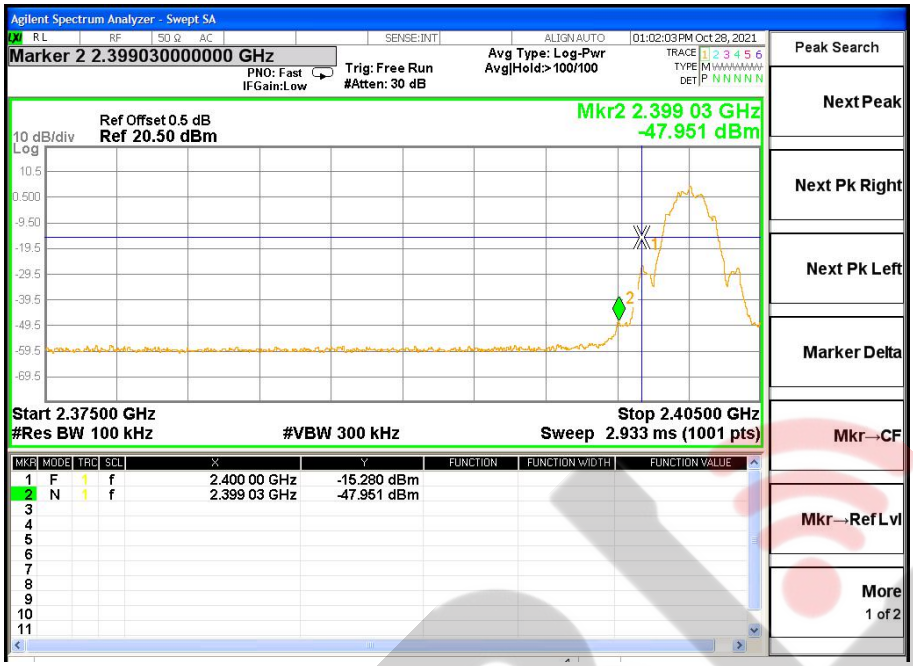
Mode1 CH00



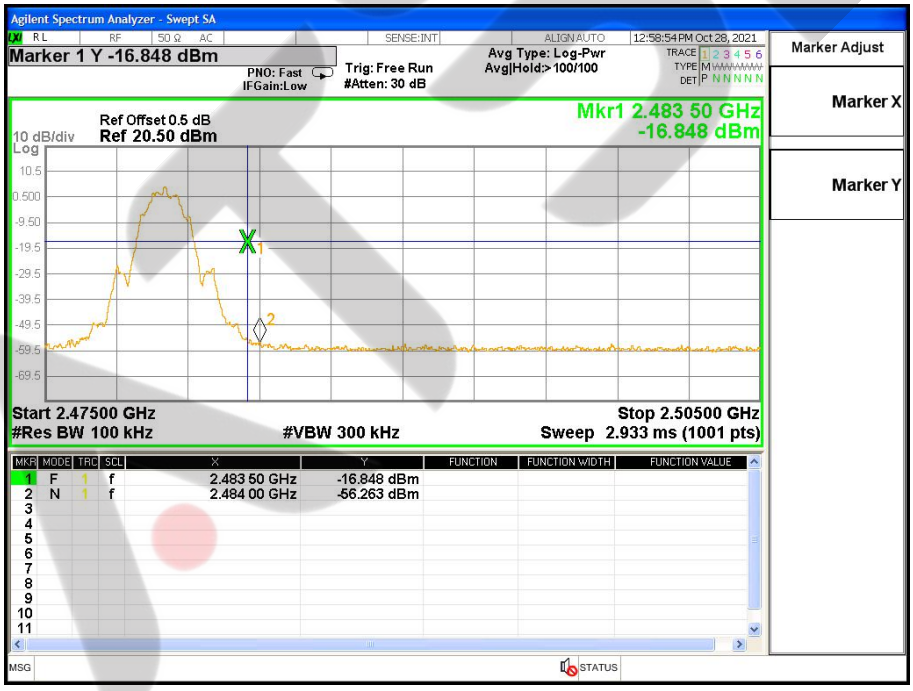
Mode3 CH39



Mode4 CH00



Mode6 CH39



6. POWER SPECTRAL DENSITY TEST

6.1 LIMIT

FCC Part 15.247,Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e) RSS-247 Clause 5.2(b)	Power Spectral Density	≤8 dBm (RBW≥3KHz)	2400-2483.5	PASS

6.2 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 RBW to: 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.

6.3 TEST SETUP

6.4 EUT OPERATION CONDITIONS

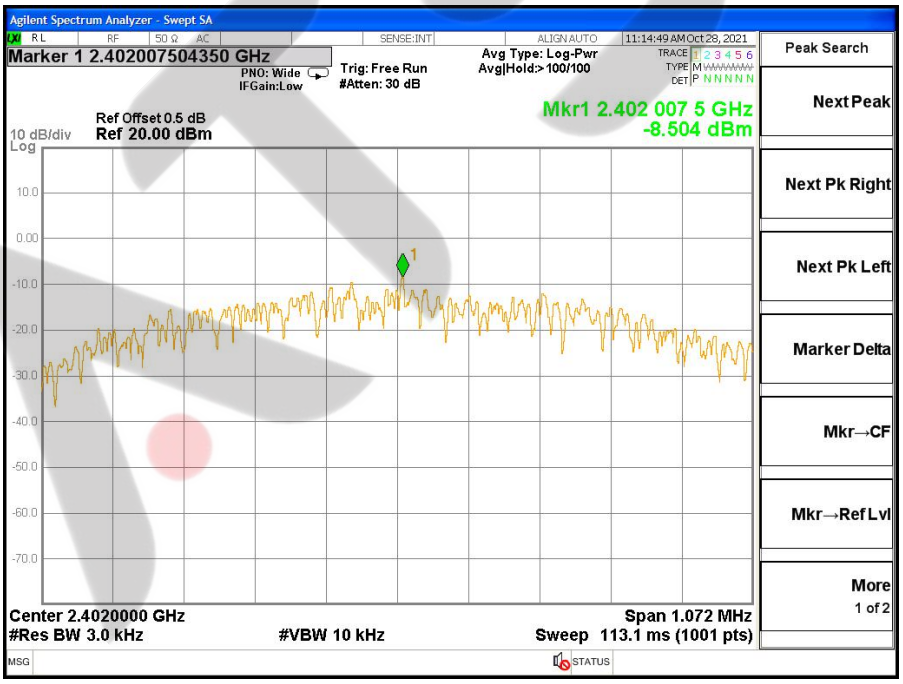
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

6.5 TEST RESULTS

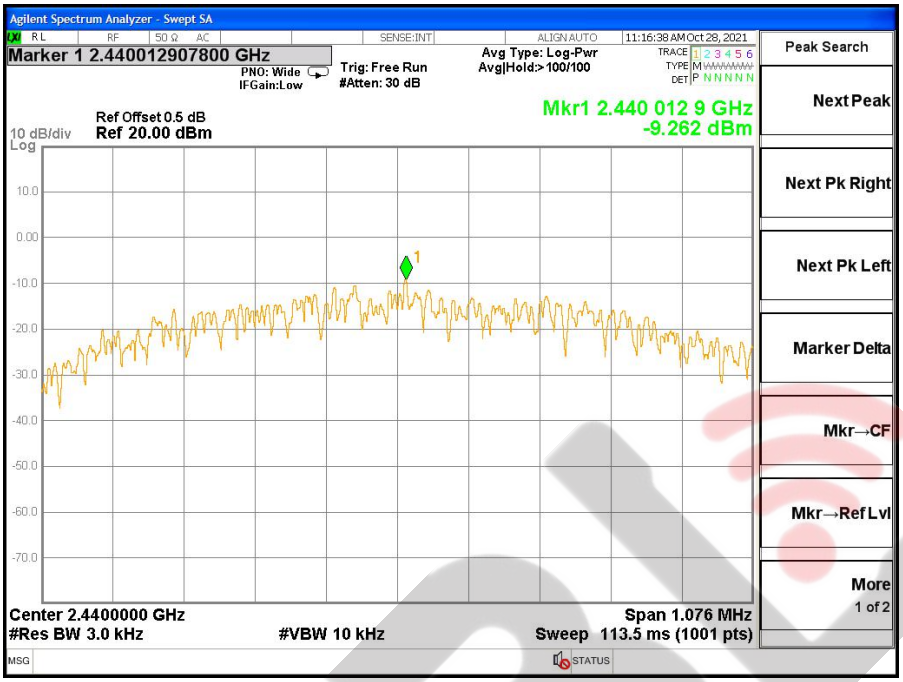
Temperature:	25 ℃	Relative Humidity:	60%RH
Test Voltage:	AC120V	Test Mode:	TX Mode1/2/3/4/5/6

Frequency	Power Density (dBm/3kHz)	Limit (3KHz/dBm)	Result
2402 MHz	-8.504	≤8	PASS
2440 MHz	-9.262	≤8	PASS
2480 MHz	-10.100	≤8	PASS
2402 MHz	-11.291	≤8	PASS
2440 MHz	-12.016	≤8	PASS
2480 MHz	-12.952	≤8	PASS

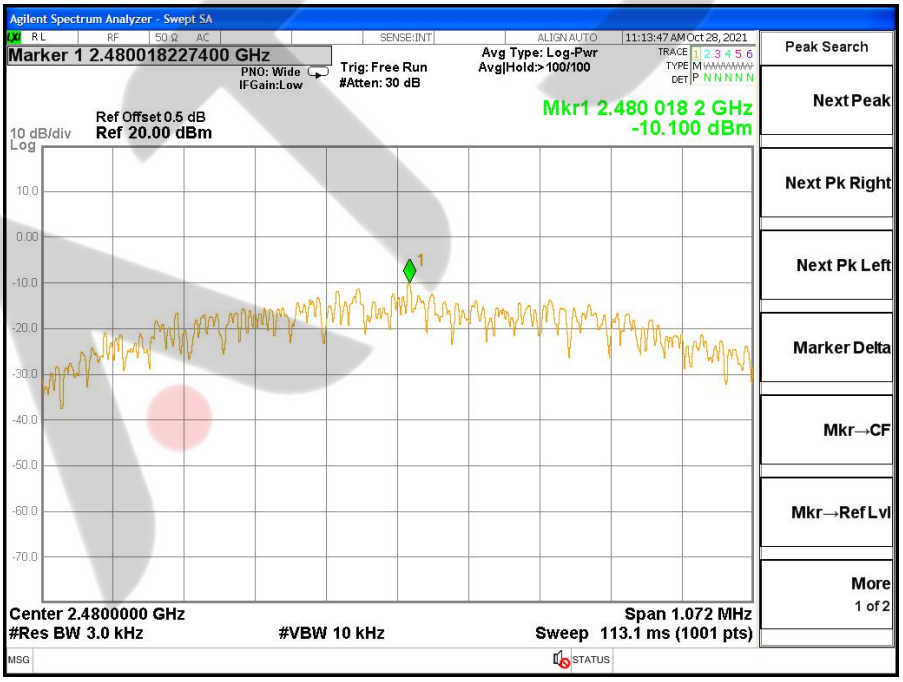
Mode1 CH00



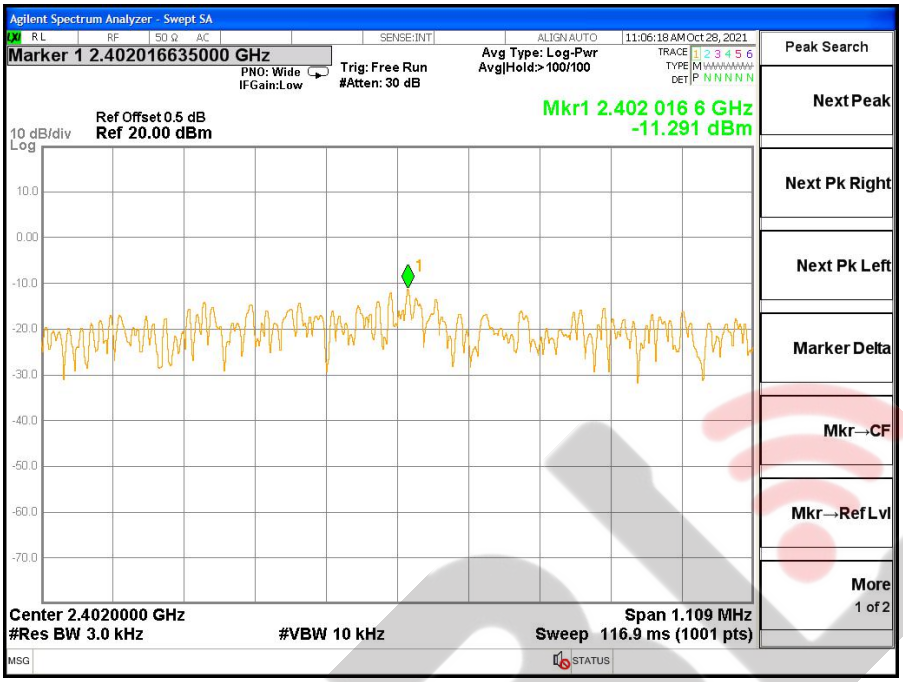
Mode2 CH19



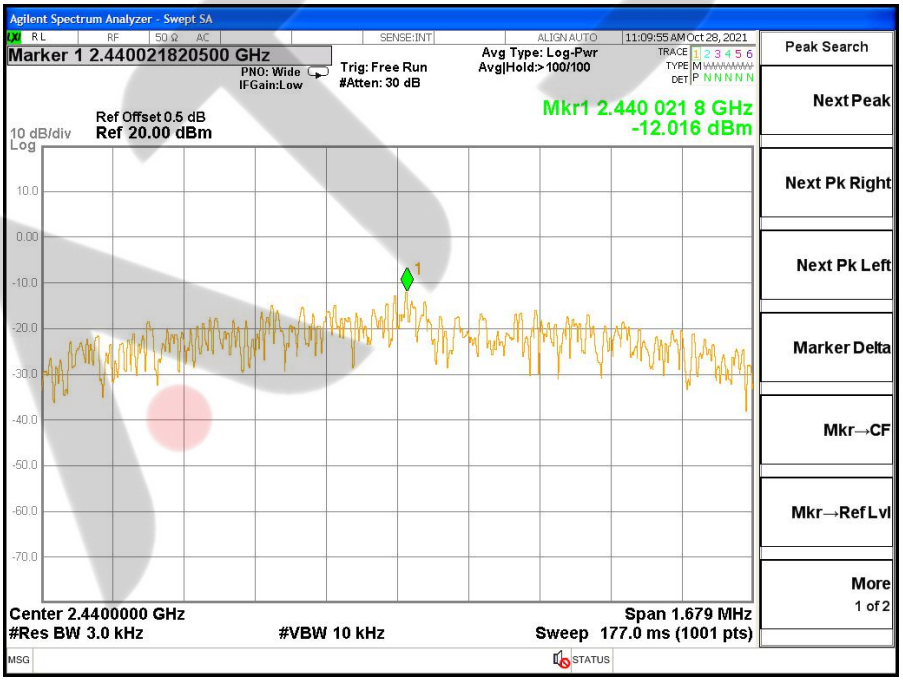
Mode3 CH39



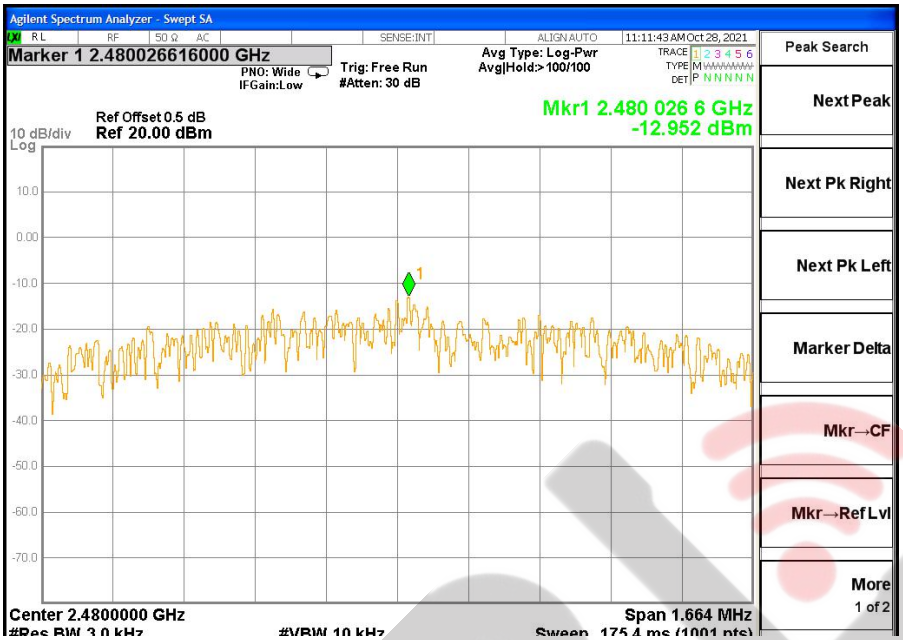
Mode4 CH00



Mode5 CH19



Mode6 CH39


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:11:43 AM Oct 28, 2021
Marker 1 2.480026616000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.480 026 6 GHz
-12.952 dBm
Ref Offset 0.5 dB
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.4800000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 1.664 MHz
Sweep 175.4 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

7. BANDWIDTH TEST

7.1 LIMIT

FCC Part 15.247,Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

7.2 TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth :100KHz For 99% Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : ≥3 × RBW For 99% Bandwidth : approximately 3×RBW
Trace	Max hold
Sweep	Auto

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB and 99% relative to the maximum level measured in the fundamental emission.

7.3 TEST SETUP

7.4 EUT OPERATION CONDITIONS

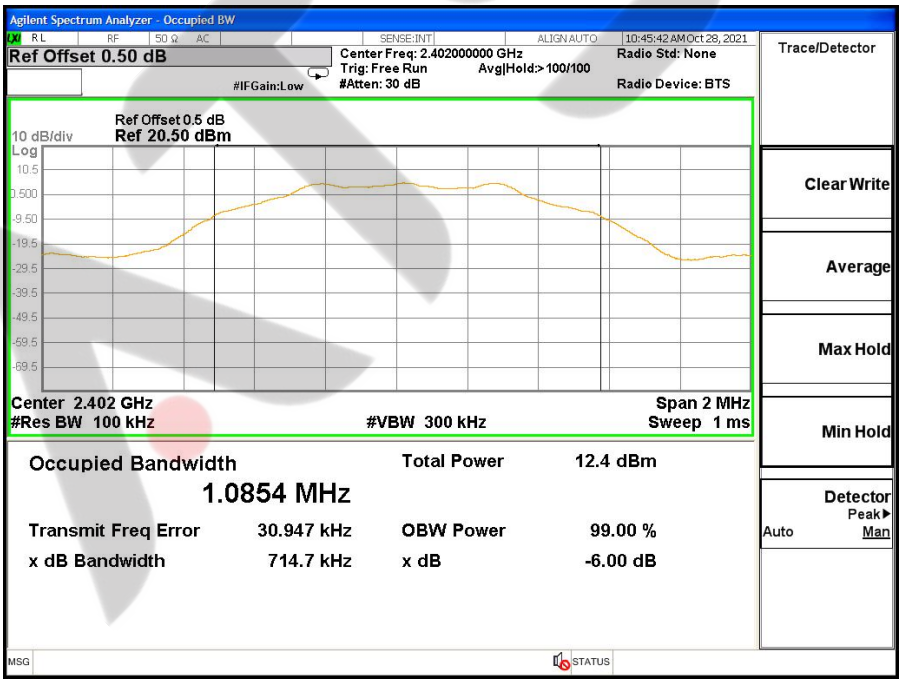
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

7.5 TEST RESULTS

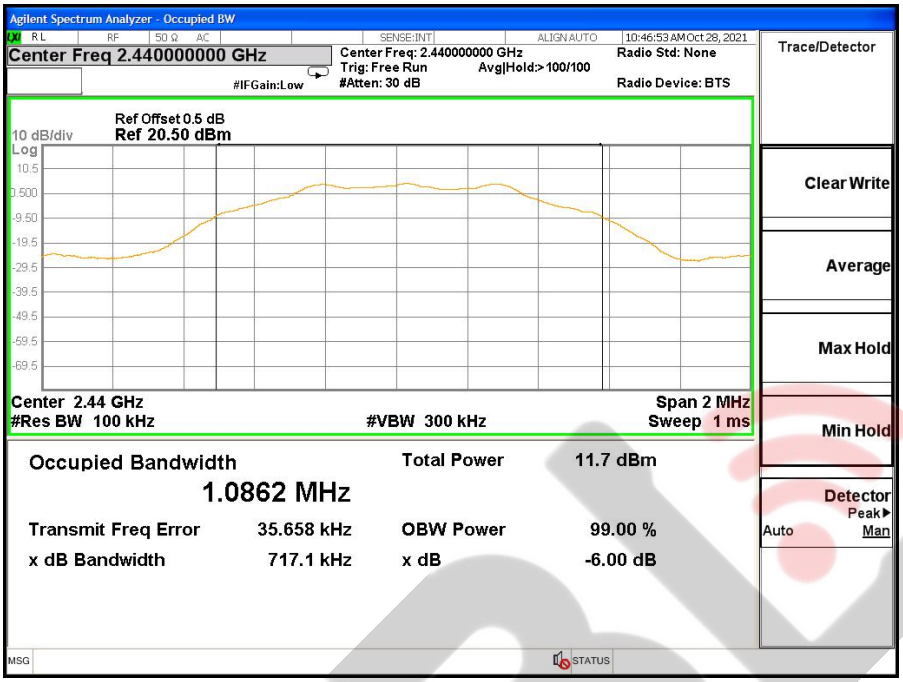
Temperature:	25 ℃	Relative Humidity:	60%RH
Test Voltage:	AC120V	Test Mode:	TX Mode1/2/3/4/5/6

Frequency	6dB Bandwidth (KHz)	99% Bandwidth (KHz)	6dB Bandwidth Limit(KHz)	Result
2402 MHz	714.7	1052.0	≥500KHz	PASS
2440 MHz	717.1	1053.1	≥500KHz	PASS
2480 MHz	714.8	1052.4	≥500KHz	PASS
2402 MHz	1109	2073.4	≥500KHz	PASS
2440 MHz	1119	2071.5	≥500KHz	PASS
2480 MHz	1116	2073.4	≥500KHz	PASS

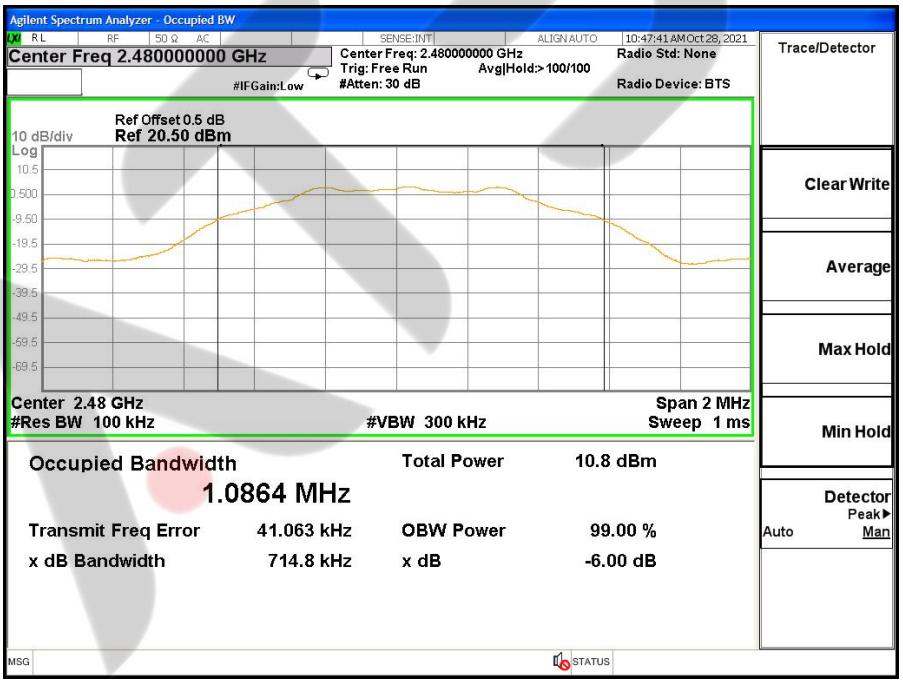
6dB Bandwidth Mode1 CH00



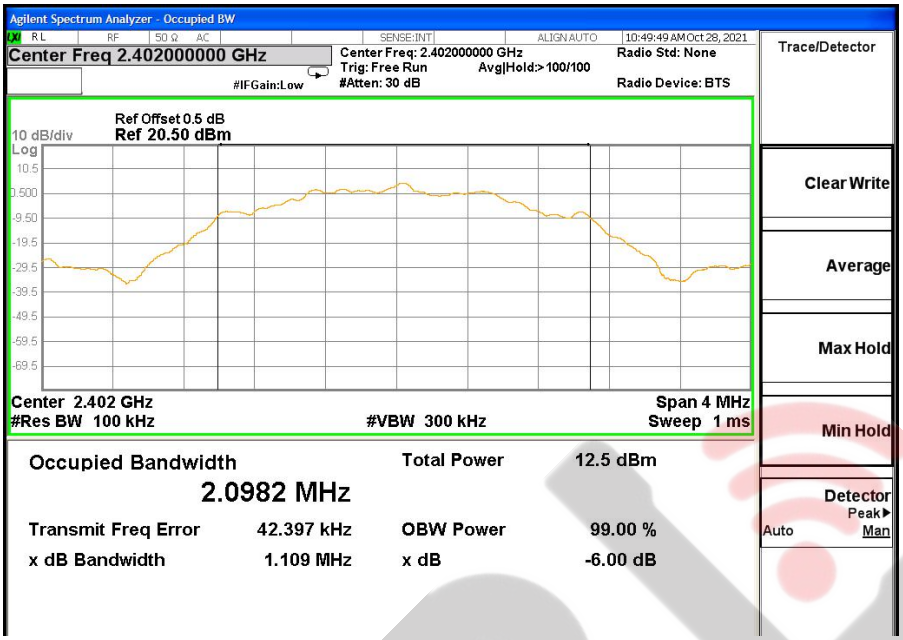
6dB Bandwidth Mode2 CH19



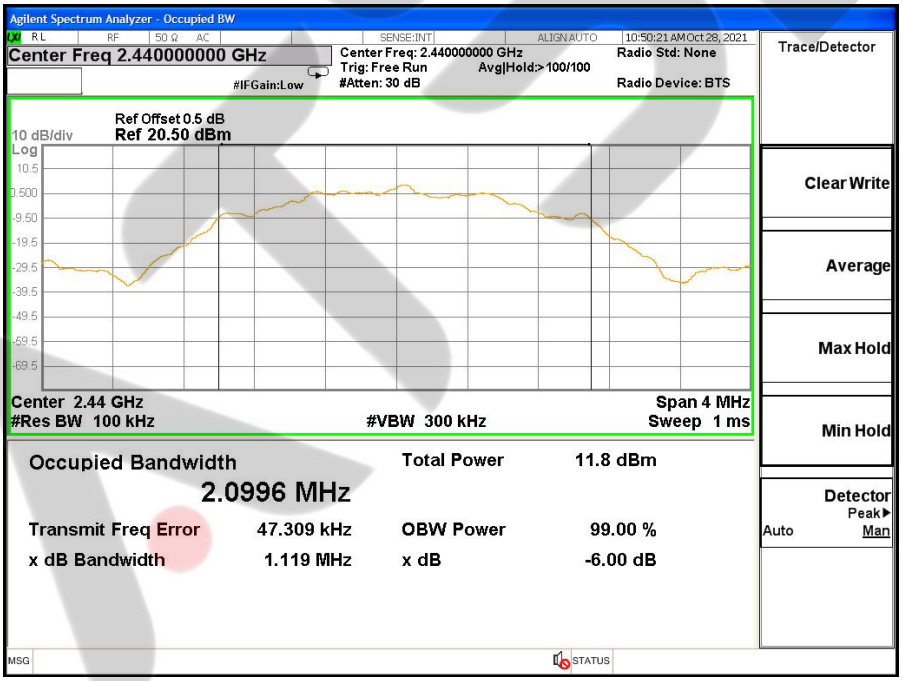
6dB Bandwidth Mode3 CH39



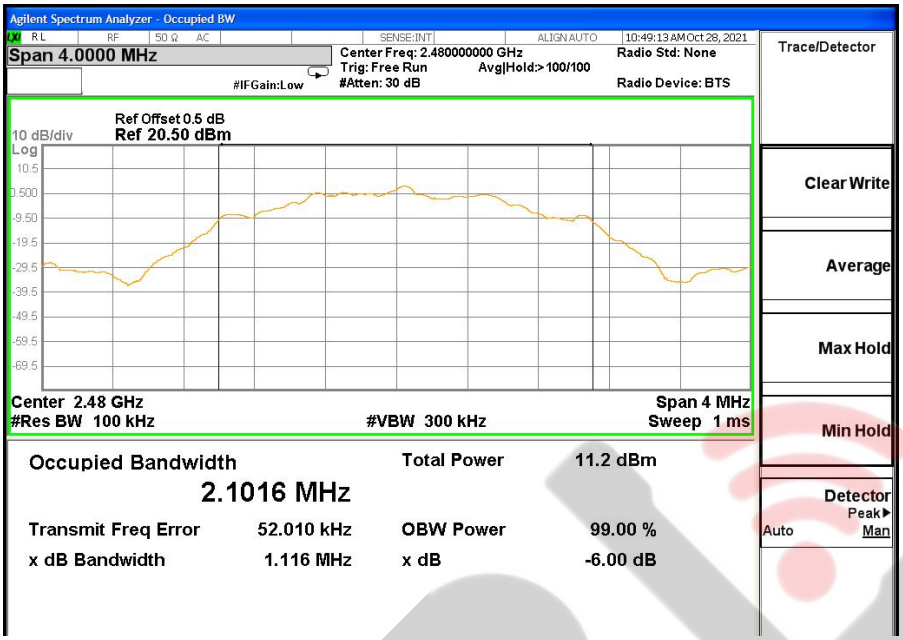
6dB Bandwidth Mode4 CH00



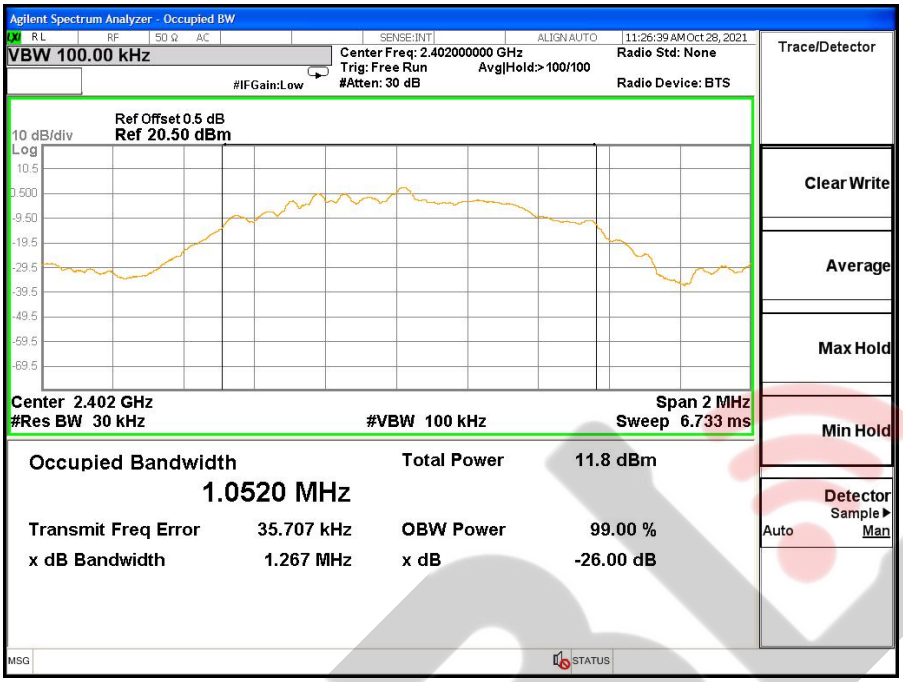
6dB Bandwidth Mode5 CH19



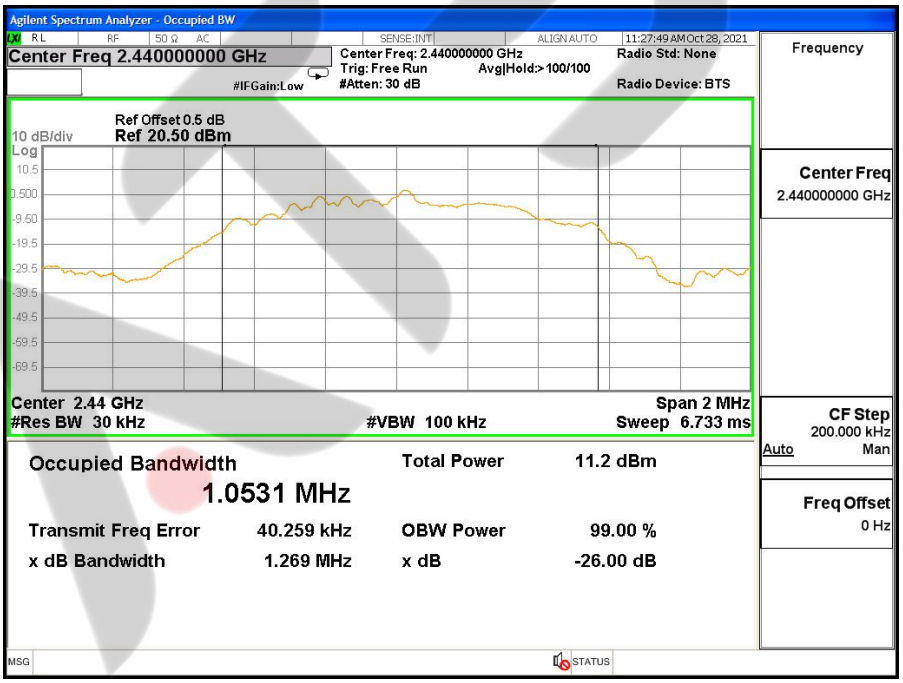
6dB Bandwidth Mode6 CH39



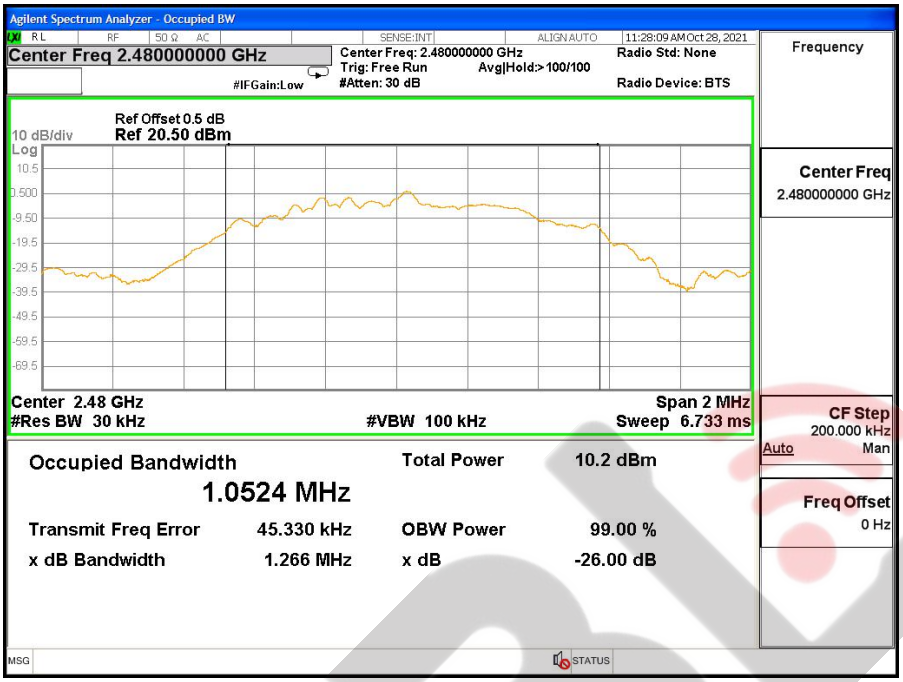
99% Bandwidth Mode1 CH00



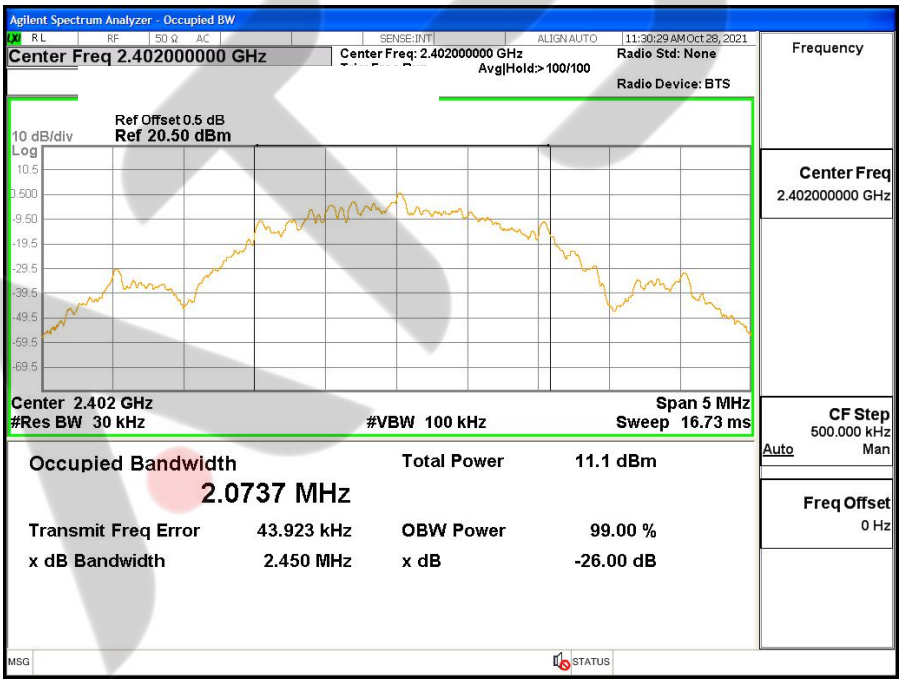
99% Bandwidth Mode2 CH19



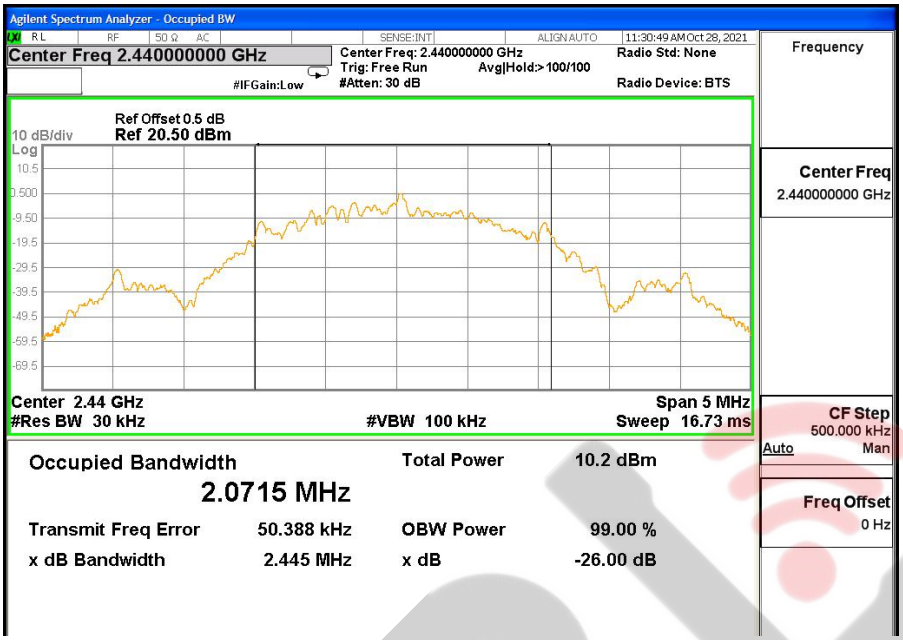
99% Bandwidth Mode3 CH39



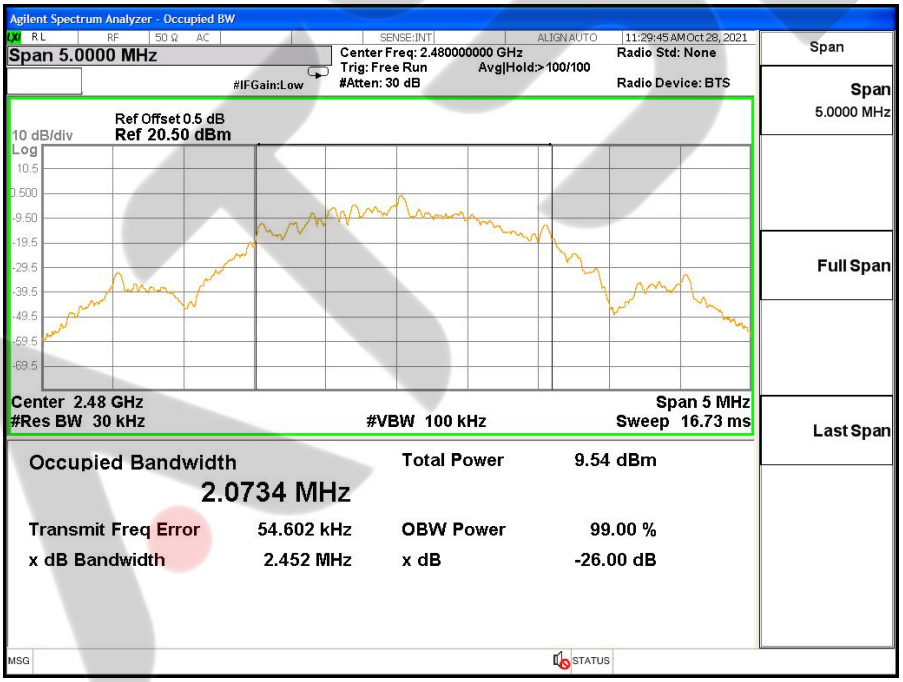
99% Bandwidth Mode4 CH00



99% Bandwidth Mode5 CH19



99% Bandwidth Mode6 CH39



8. PEAK OUTPUT POWER TEST

8.1 LIMIT

FCC Part15.247 RSS-247 Issue 2, February 2017 RSS-Gen Issue 5 ,March 2019				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Output Power	1 watt or 30dBm	2400-2483.5	PASS

8.2 TEST PROCEDURE

PKPM1 Peak power meter method:
The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

8.3 TEST SETUP

8.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

8.5 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%RH
Test Voltage:	AC120V	Test Mode:	TX Mode1/2/3/4/5/6

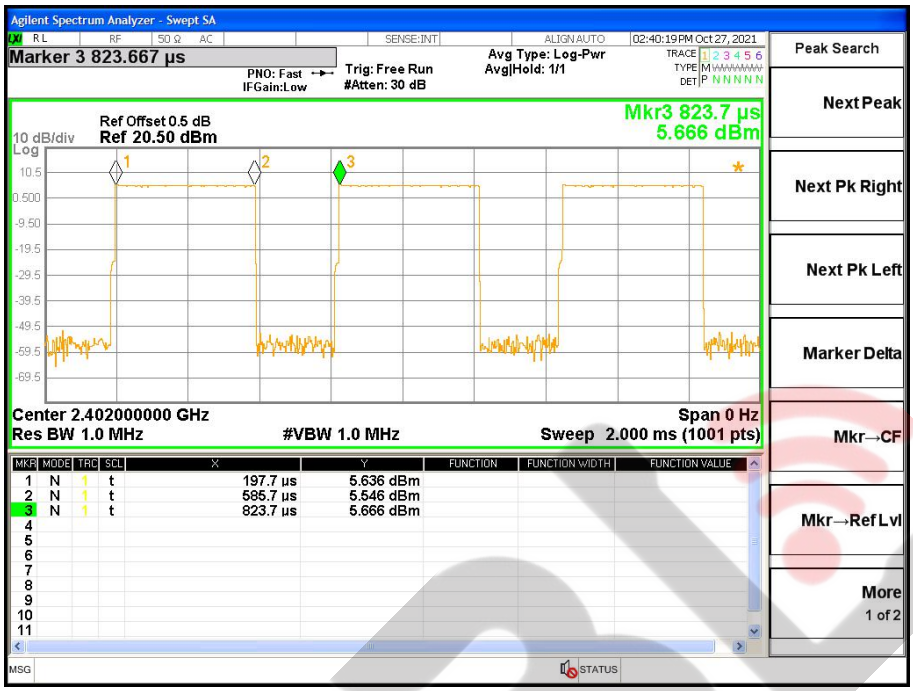
Test Channel	Frequency	Peak Conducted Output Power	Average Conducted Output Power	LIMIT
	(MHz)	(dBm)	(dBm)	dBm
Mode1 CH00	2402	5.69	5.77	30
Mode2 CH19	2440	5.63	5.61	30
Mode3 CH39	2480	5.46	5.38	30
Mode4 CH00	2402	5.72	5.74	30
Mode5 CH19	2440	5.66	5.90	30
Mode6 CH39	2480	5.51	5.80	30

EIRP Power

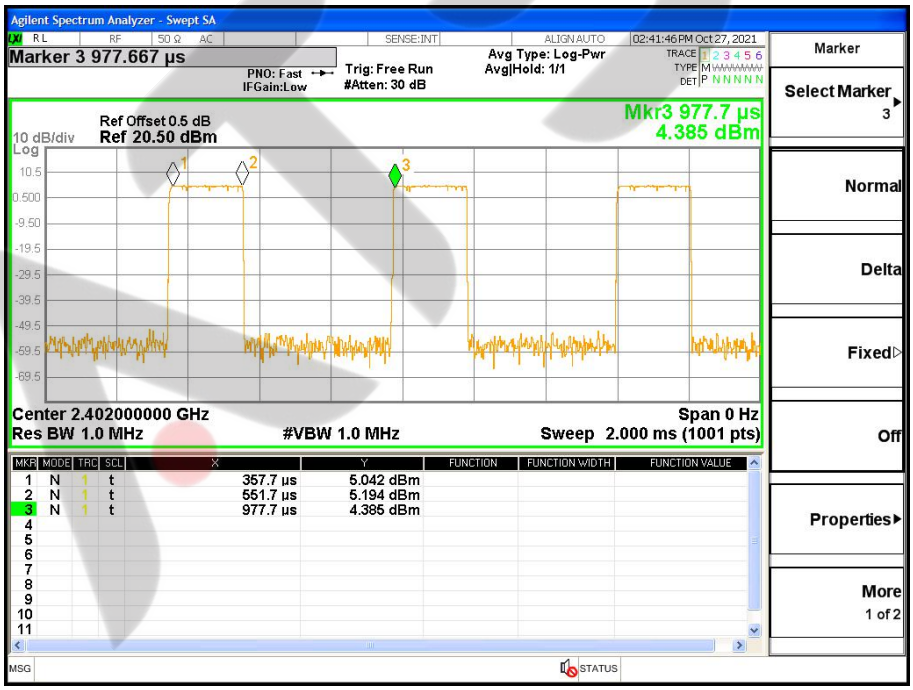
Test Channel	Frequency	Peak Conducted Output Power	Antenna Gain	EIRP Power	LIMIT
	(MHz)	(dBm)	(dBi)	(dBm)	dBm
Mode1 CH00	2402	5.69	2	7.69	36
Mode2 CH19	2440	5.63	2	7.63	36
Mode3 CH39	2480	5.46	2	7.46	36
Mode4 CH00	2402	5.72	2	7.72	36
Mode5 CH19	2440	5.66	2	7.66	36
Mode6 CH39	2480	5.51	2	7.51	36

Note: Our power sensor test AVG power has no duty cycle display. The power sensor measures AVG power is Burst power. The software has considered the factor of the duty cycle factor, so it is unnecessary to add it again.

BLE 1M Duty cycle



BLE 2M Duty cycle



Ton	Tp	Duty cycle(%)	Duty factor(dB)
388	626	61.98	2.08
194	620	31.29	5.05

9. ANTENNA REQUIREMENT

9.1 STANDARD REQUIREMENT

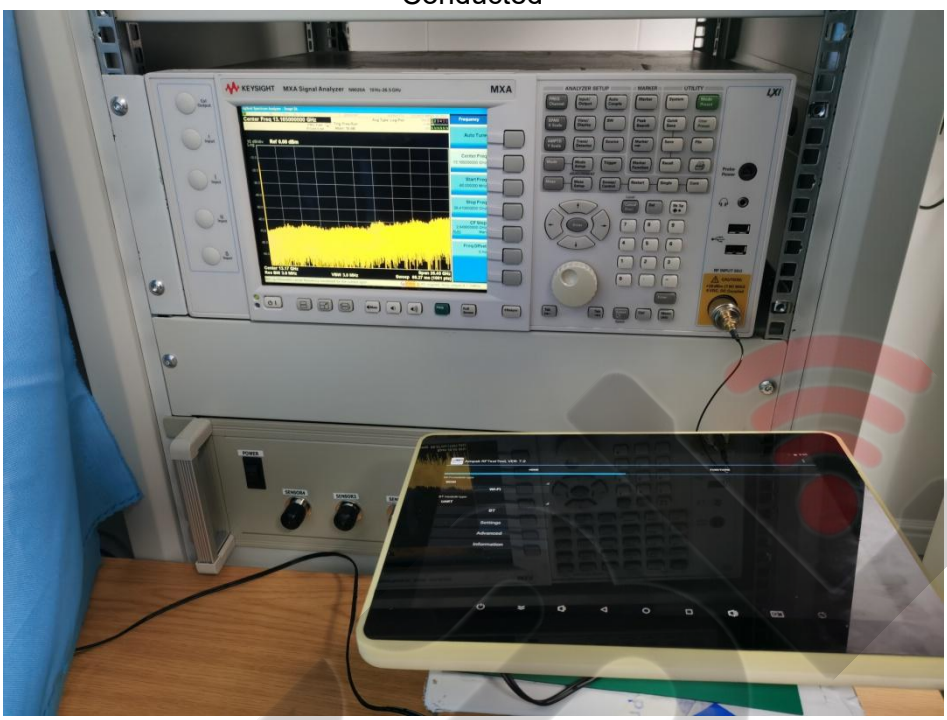
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

9.2 EUT ANTENNA

The EUT antenna is FPC Antenna. It comply with the standard requirement.

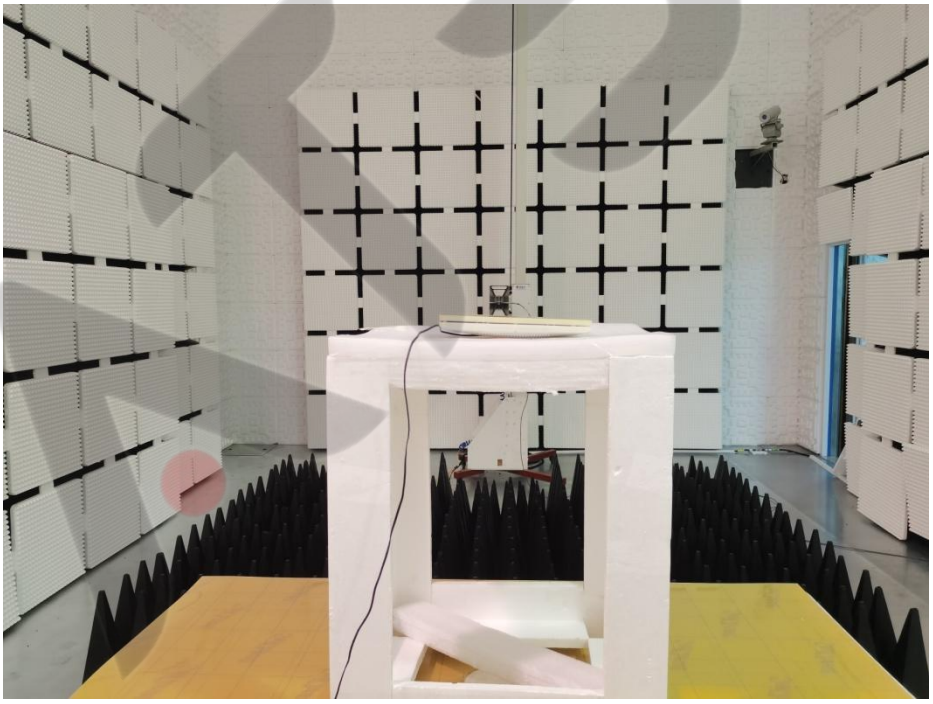
APPENDIX-PHOTOS OF TEST SETUP

Conducted



RSE 30MHz-1000MHz

RSE 1GHz-18GHz



※※※※※END OF THE REPORT※※※※※