3.3.7 TEST RESULTS (BAND EDGE REQUIREMENTS)

Frequency (MHz)	Reading (dBμV)	Amplifier （dB）	Loss （dB）	Antenna Factor （dB/m）	Corrected Factor （dB）	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11b										
2390.00	68.44	43.80	4.91	25.90	-12.99	55.45	74.00	-18.55	PK	Vertical
2390.00	53.13	43.80	4.91	25.90	-12.99	40.14	54.00	-13.86	AV	Vertical
2390.00	68.69	43.80	4.91	25.90	-12.99	55.70	74.00	-18.30	PK	Horizontal
2390.00	53.23	43.80	4.91	25.90	-12.99	40.24	54.00	-13.76	AV	Horizontal
2483.50	70.35	43.80	5.12	25.90	-12.78	57.57	74.00	-16.43	PK	Vertical
2483.50	52.30	43.80	5.12	25.90	-12.78	39.52	54.00	-14.48	AV	Vertical
2483.50	69.15	43.80	5.12	25.90	-12.78	56.37	74.00	-17.63	PK	Horizontal
2483.50	53.18	43.80	5.12	25.90	-12.78	40.40	54.00	-13.60	AV	Horizontal
802.11g										
2390.00	67.41	43.80	4.91	25.90	-12.99	54.42	74.00	-19.58	PK	Vertical
2390.00	52.16	43.80	4.91	25.90	-12.99	39.17	54.00	-14.83	AV	Vertical
2390.00	65.83	43.80	4.91	25.90	-12.99	52.84	74.00	-21.16	PK	Horizontal
2390.00	53.54	43.80	4.91	25.90	-12.99	40.55	54.00	-13.45	AV	Horizontal
2483.50	65.07	43.80	5.12	25.90	-12.78	52.29	74.00	-21.71	PK	Vertical
2483.50	53.71	43.80	5.12	25.90	-12.78	40.93	54.00	-13.07	AV	Vertical
2483.50	65.08	43.80	5.12	25.90	-12.78	52.30	74.00	-21.70	PK	Horizontal
2483.50	52.71	43.80	5.12	25.90	-12.78	39.93	54.00	-14.07	AV	Horizontal
802.11n20										
2390.00	67.40	43.80	4.91	25.90	-12.99	54.41	74.00	-19.59	PK	Vertical
2390.00	53.32	43.80	4.91	25.90	-12.99	40.33	54.00	-13.67	AV	Vertical
2390.00	65.65	43.80	4.91	25.90	-12.99	52.66	74.00	-21.34	PK	Horizontal
2390.00	53.30	43.80	4.91	25.90	-12.99	40.31	54.00	-13.69	AV	Horizontal
2483.50	66.35	43.80	5.12	25.90	-12.78	53.57	74.00	-20.43	PK	Vertical
2483.50	52.77	43.80	5.12	25.90	-12.78	39.99	54.00	-14.01	AV	Vertical
2483.50	65.87	43.80	5.12	25.90	-12.78	53.09	74.00	-20.91	PK	Horizontal
2483.50	52.17	43.80	5.12	25.90	-12.78	39.39	54.00	-14.61	AV	Horizontal

Frequency (MHz)	Reading (dBμV)	Amplifier （dB）	Loss （dB）	Antenna Factor （dB/m）	Corrected Factor （dB）	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11n40										
2390.00	66.66	43.80	4.91	25.90	-12.99	53.67	74.00	-20.33	PK	Vertical
2390.00	53.30	43.80	4.91	25.90	-12.99	40.31	54.00	-13.69	AV	Vertical
2390.00	65.50	43.80	4.91	25.90	-12.99	52.51	74.00	-21.49	PK	Horizontal
2390.00	53.88	43.80	4.91	25.90	-12.99	40.89	54.00	-13.11	AV	Horizontal
2483.50	66.02	43.80	5.12	25.90	-12.78	53.24	74.00	-20.76	PK	Vertical
2483.50	52.53	43.80	5.12	25.90	-12.78	39.75	54.00	-14.25	AV	Vertical
2483.50	65.94	43.80	5.12	25.90	-12.78	53.16	74.00	-20.84	PK	Horizontal
2483.50	52.60	43.80	5.12	25.90	-12.78	39.82	54.00	-14.18	AV	Horizontal

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Low measurement frequencies is range from 2300 to 2422 MHz, high measurement frequencies is range from 2452 to 2500 MHz.

Only show the worst point data of the emissions in the frequency 2300-2422 MHz and 2452-2500 MHz.

4 CONDUCTED SPURIOUS & BAND EDGE EMISSION

4.1 APPLIED PROCEDURES / LIMIT

According to FCC Part 15.247(d) and RSS-247 Clause 5.5, in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

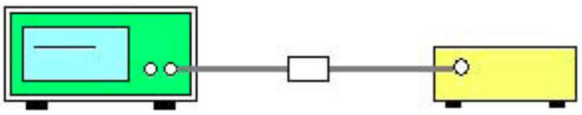
For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 to 2422 MHz Upper Band Edge: 2452 to 2500 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.
Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

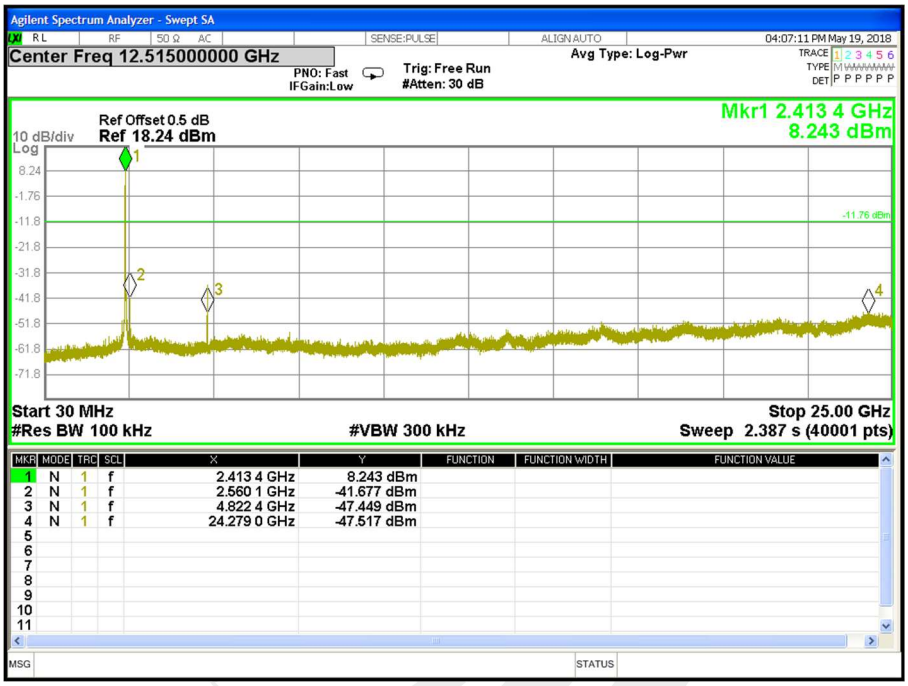
4.5 EUT OPERATION CONDITIONS

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.

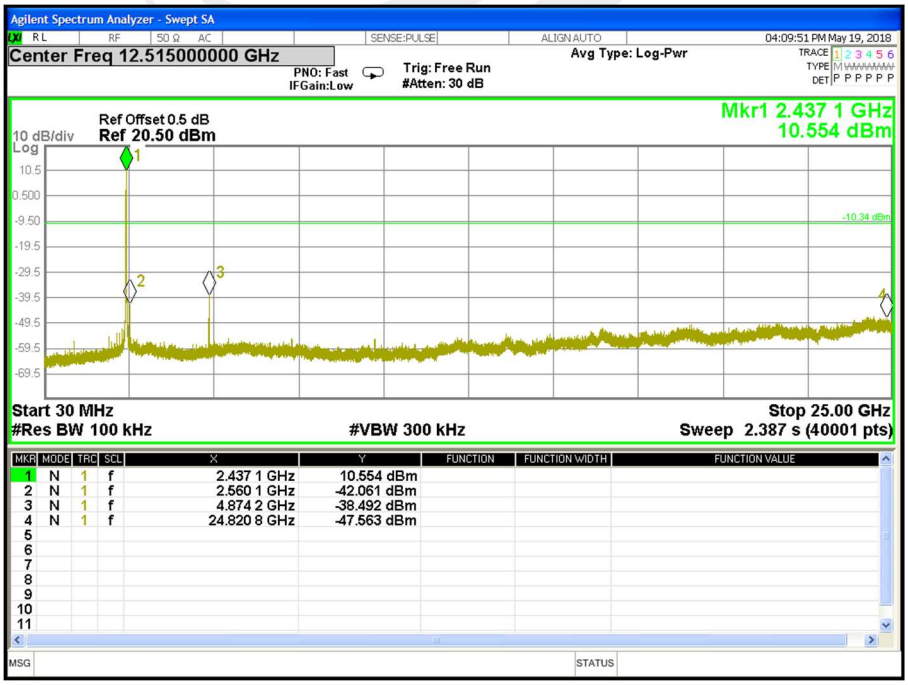
4.6 TEST RESULTS

Temperature：	25 ℃	Relative Humidity：	60%
Test Voltage ：	DC 3.8V	Test Mode ：	TX b Mode /CH01, CH06, CH11

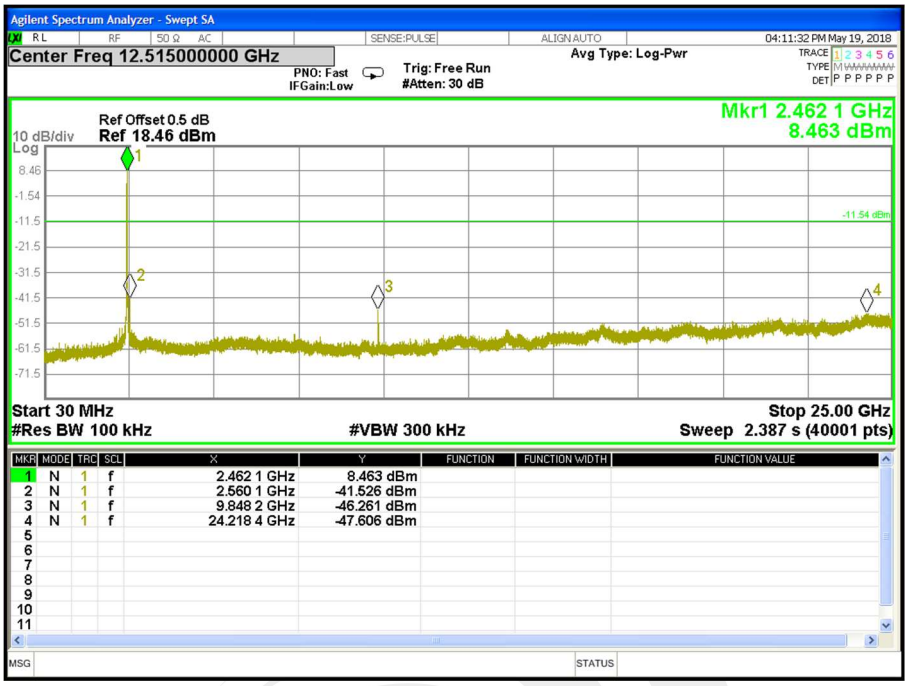
CH 01



CH 06

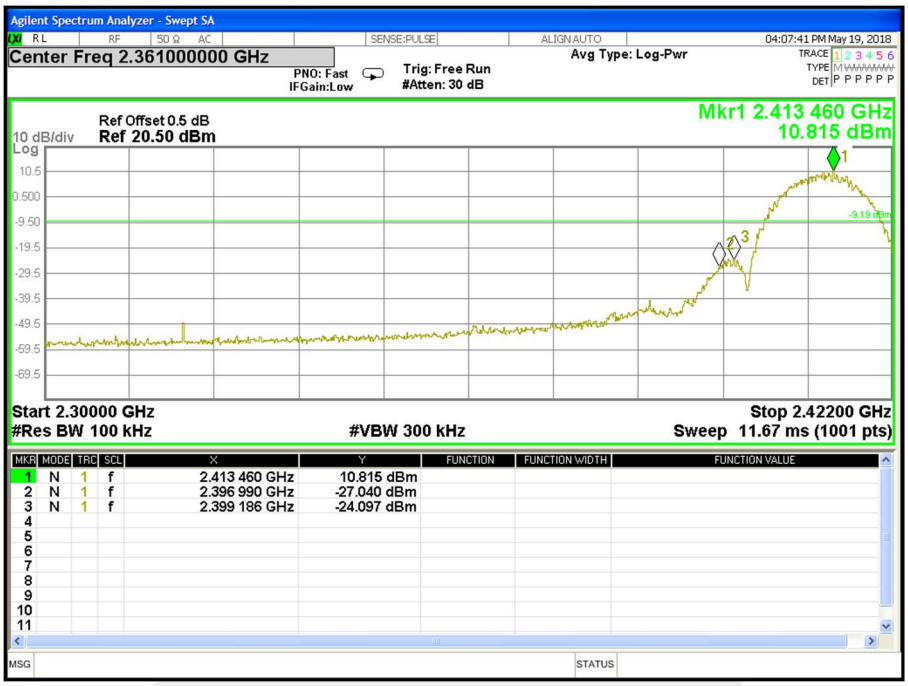


CH 11

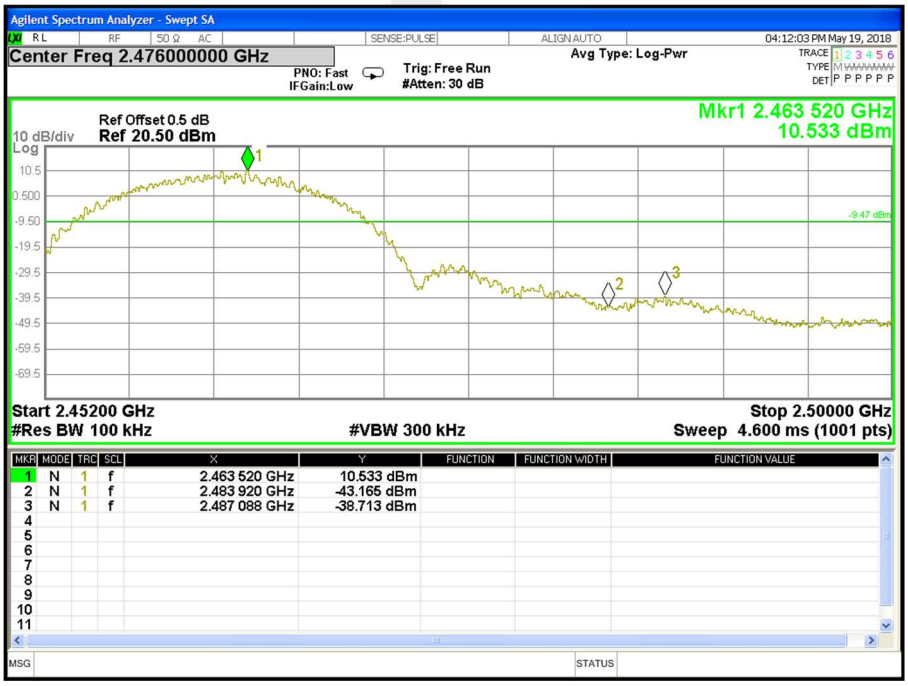

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
04:11:32 PM May 19, 2018
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P P P P P P
Ref Offset 0.5 dB
10 dB/div
Log
Ref 18.46 dBm
Mkr1 2.462 1 GHz
8.463 dBm
8.46
-1.54
-11.5
-21.5
-31.5
-41.5
-51.5
-61.5
-71.5
-11.54 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.462 1 GHz 8.463 dBm
2 N 1 f 2.560 1 GHz -41.526 dBm
3 N 1 f 9.848 2 GHz -46.261 dBm
4 N 1 f 24.218 4 GHz -47.606 dBm
5
6
7
8
9
10
11
MSG
STATUS

Band edge

CH 01

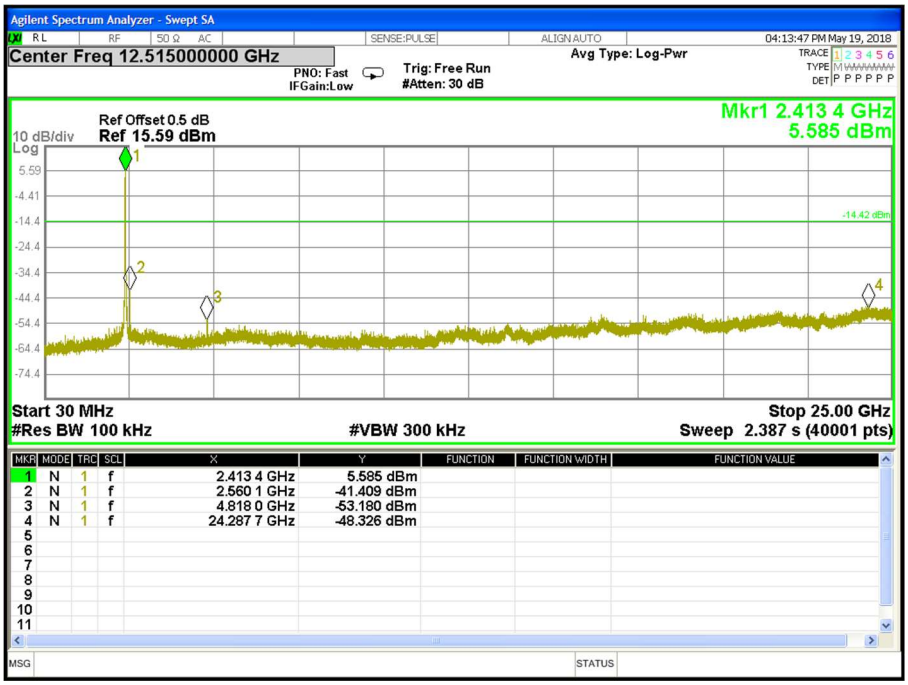


CH 11

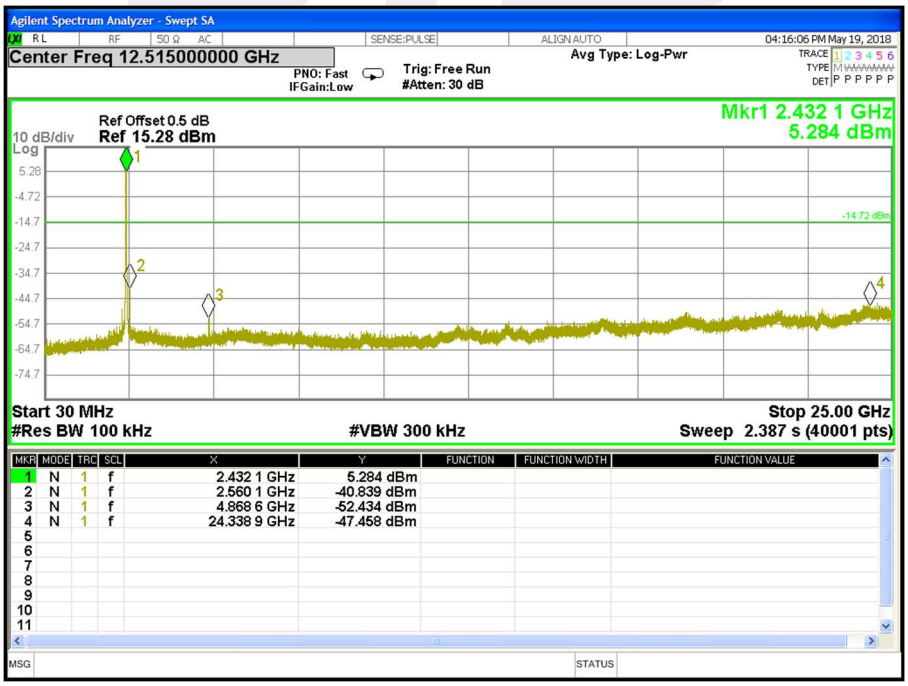


Temperature：	25 ℃	Relative Humidity：	60%
Test Voltage ：	DC 3.8V	Test Mode ：	TX g Mode /CH01, CH06, CH11

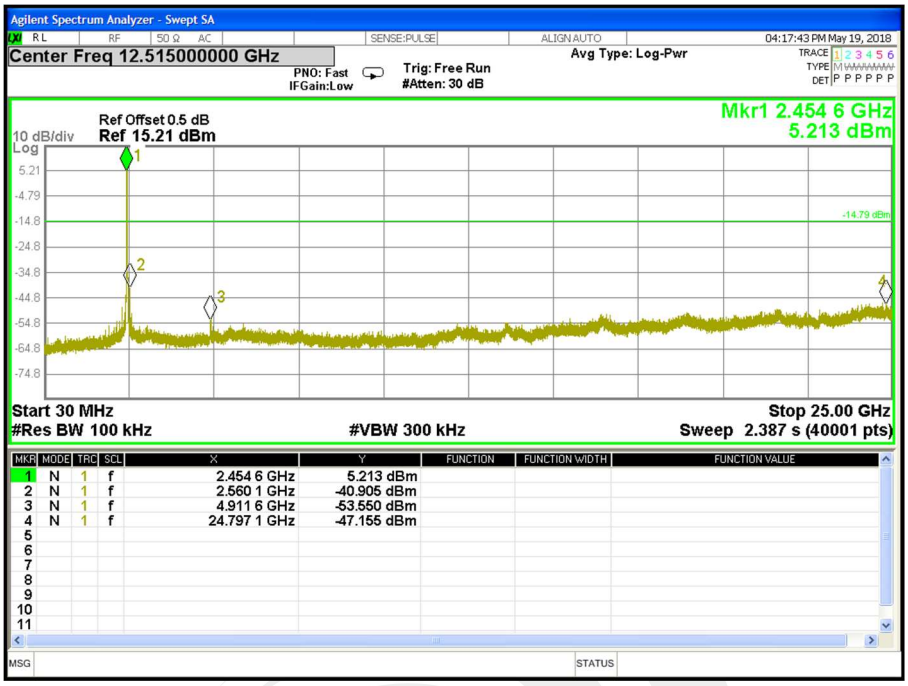
CH 01



CH06

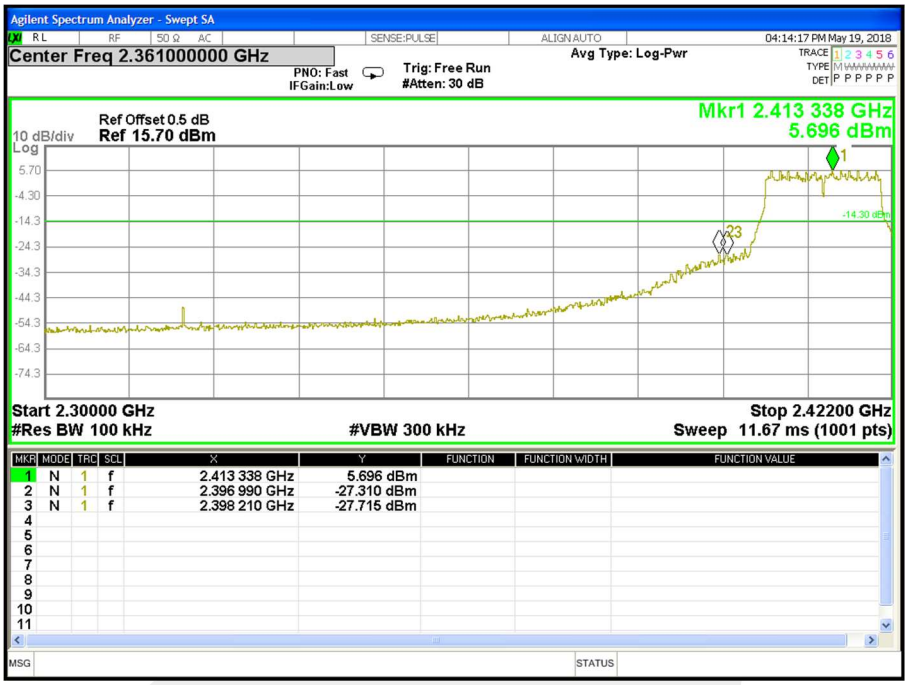


CH 11

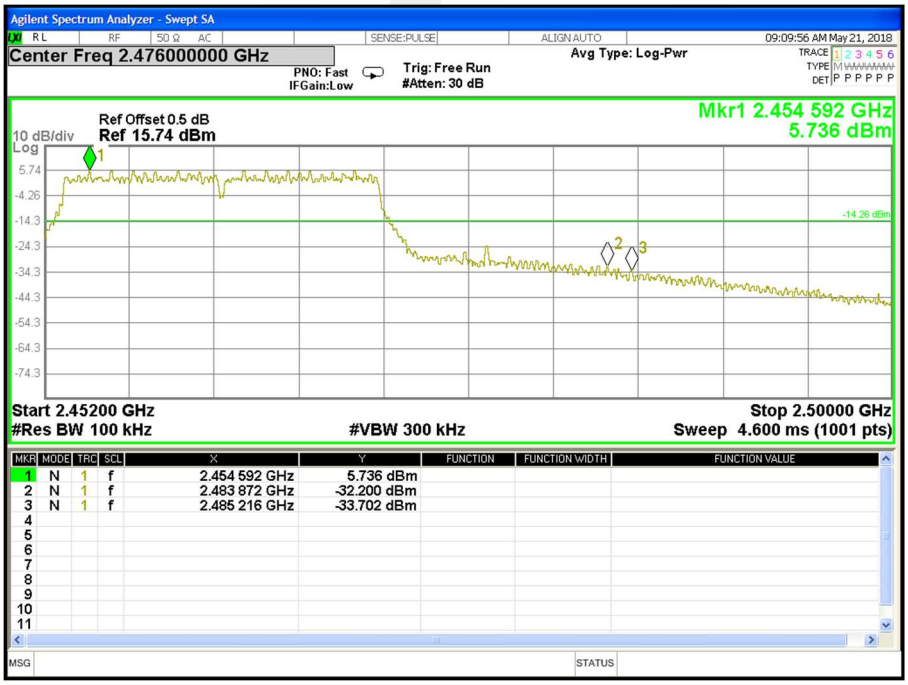

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
04:17:43 PM May 19, 2018
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P P P P P P
Ref Offset 0.5 dB
10 dB/div
Log
Ref 15.21 dBm
Mkr1 2.454 6 GHz
5.213 dBm
5.21
-4.79
-14.8
-24.8
-34.8
-44.8
-54.8
-64.8
-74.8
-14.79 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.454 6 GHz 5.213 dBm
2 N 1 f 2.560 1 GHz -40.905 dBm
3 N 1 f 4.911 6 GHz -53.550 dBm
4 N 1 f 24.797 1 GHz -47.155 dBm
5
6
7
8
9
10
11
MSG
STATUS

Band edge

CH 01

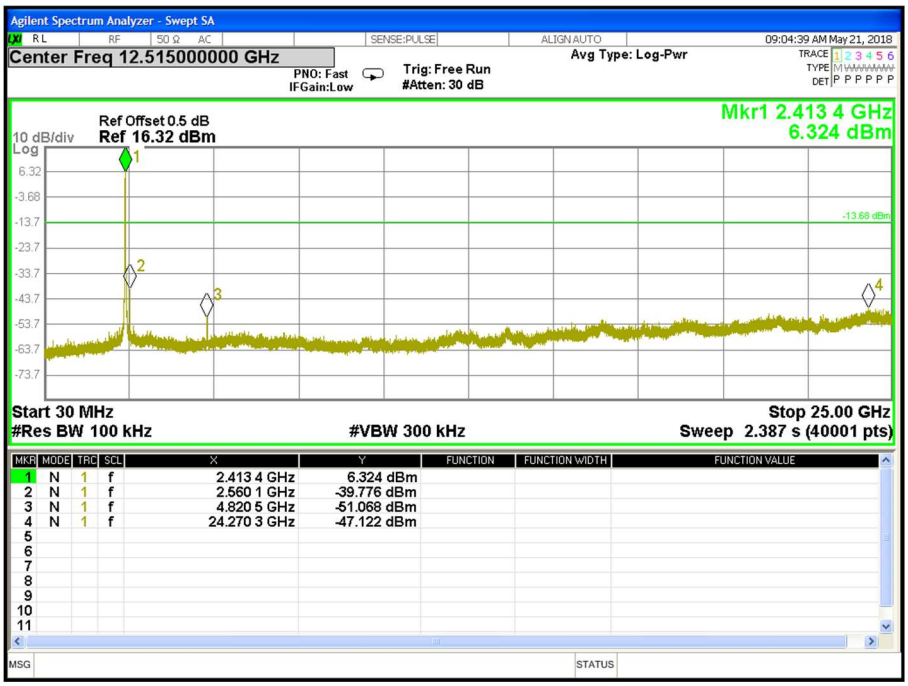


CH11



Temperature：	25 ℃	Relative Humidity：	60%
Test Voltage ：	DC 3.8V	Test Mode ：	TX n Mode(20M) /CH01, CH06, CH11

CH 01



CH 06