

5500-5700MHz Band:

ANT 0

11a

5500MHz

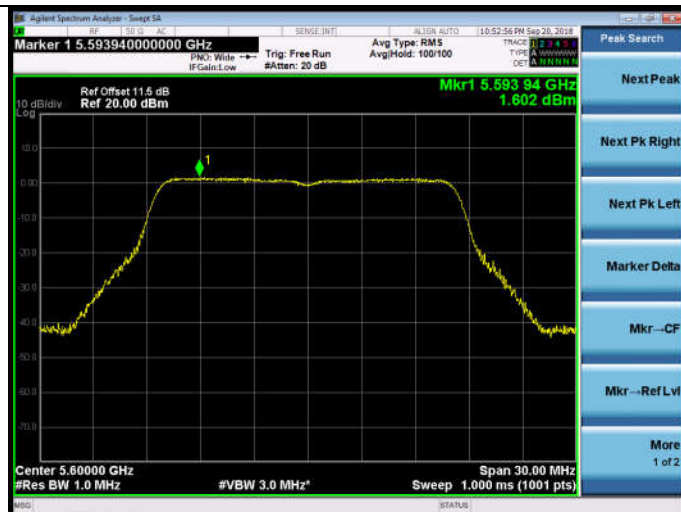


11n HT20

5500MHz



5600MHz



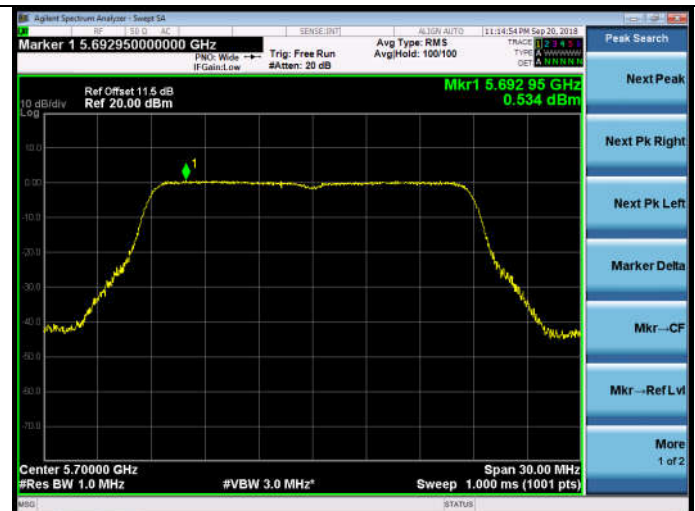
5600MHz



5700MHz

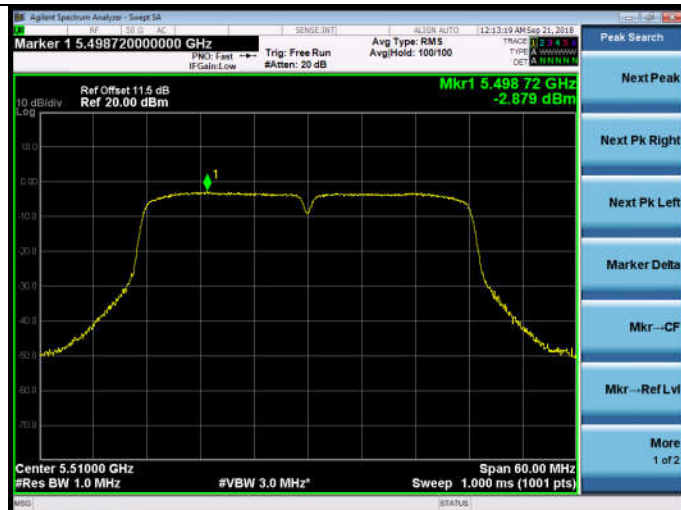


5700MHz



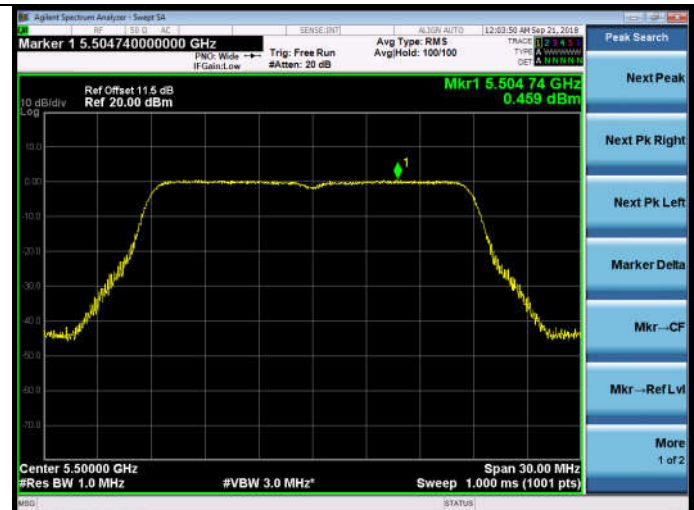
11n HT40

5510MHz

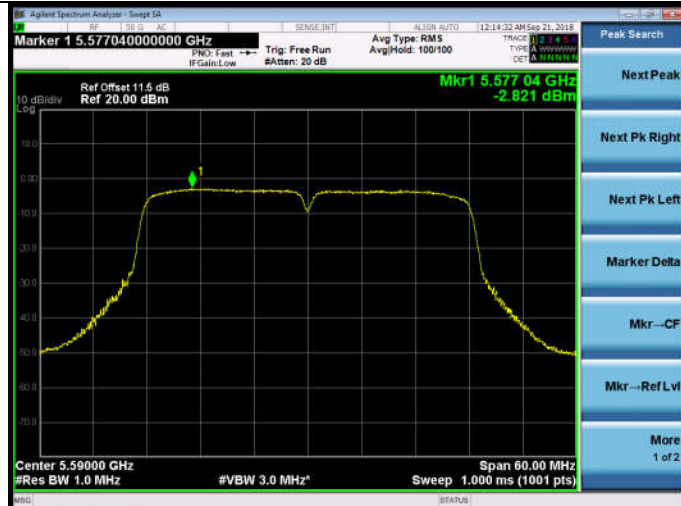


11ac VHT20

5500MHz



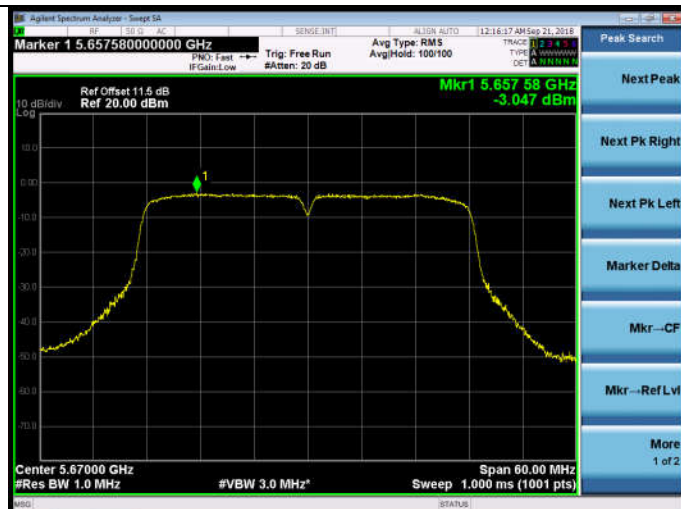
5590MHz



5600MHz



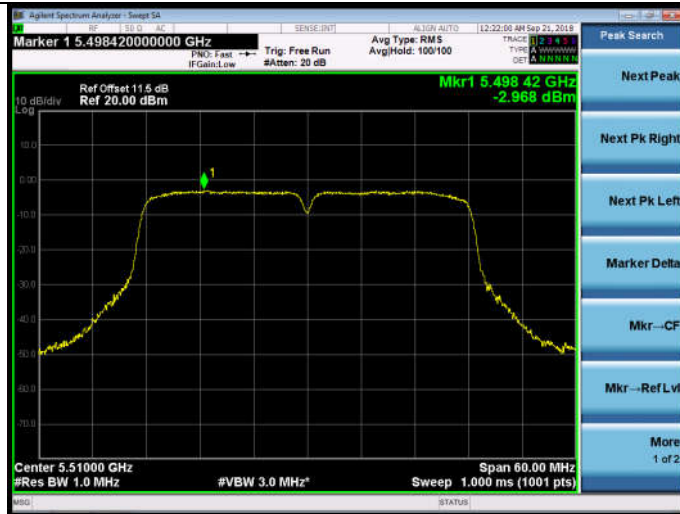
5670MHz



5700MHz



11ac VHT40 5510MHz



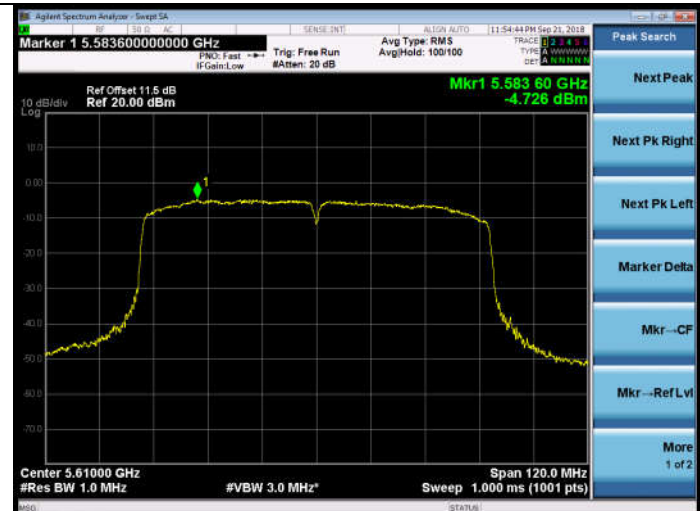
11ac VHT80 5530MHz



5590MHz



5610MHz



5670MHz

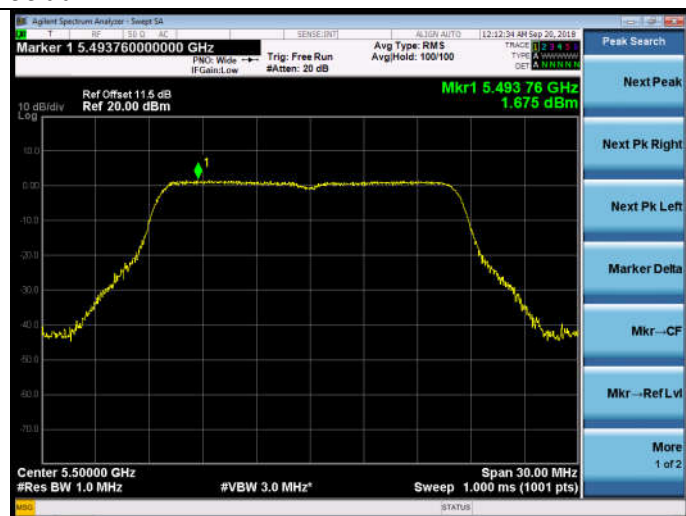


5500-5700MHz Band:

ANT 1

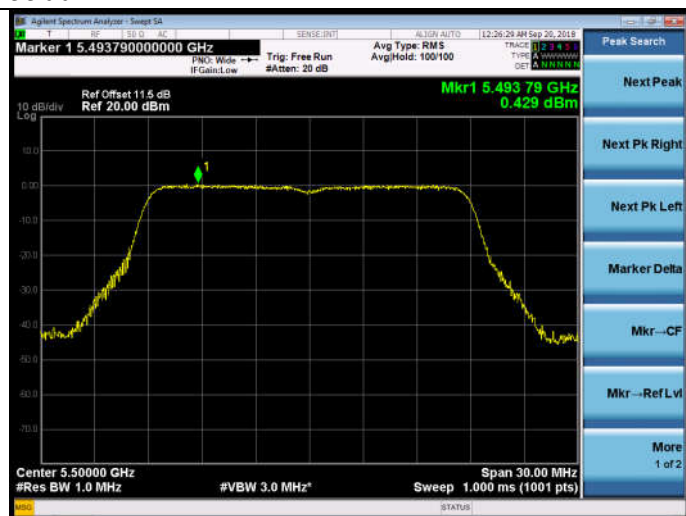
11a

5500MHz

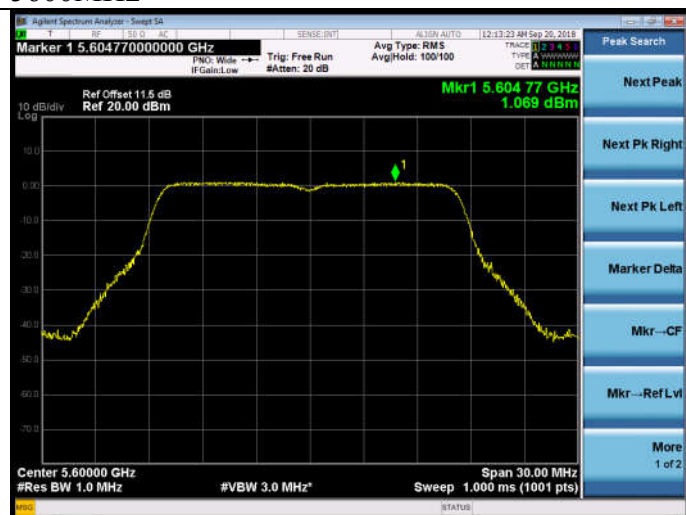


11n HT20

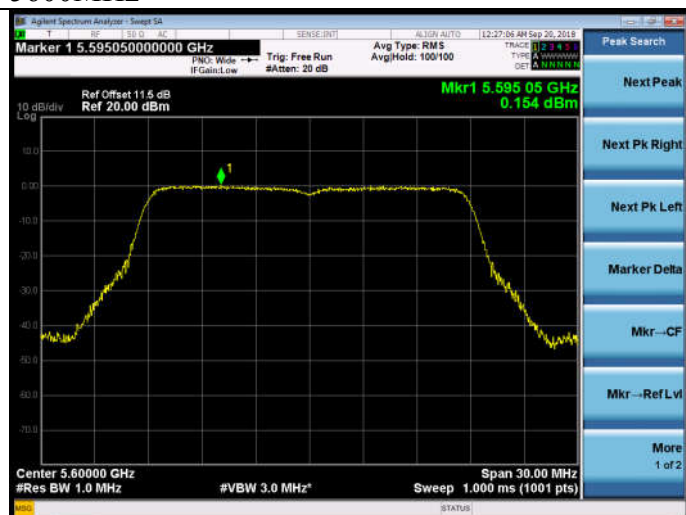
5500MHz



5600MHz



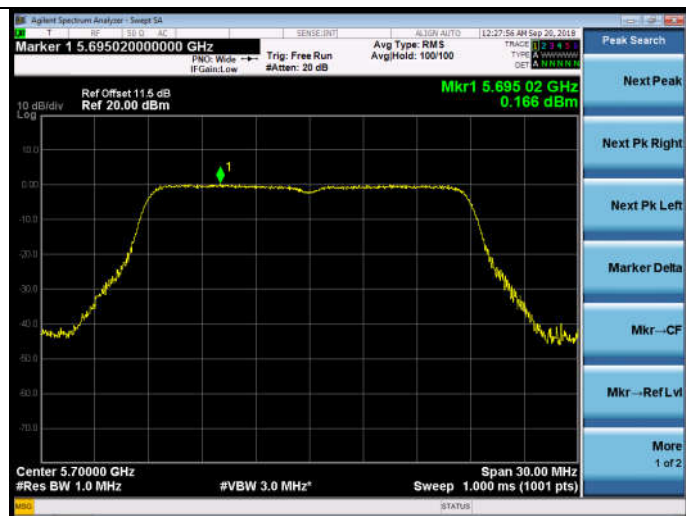
5600MHz



5700MHz

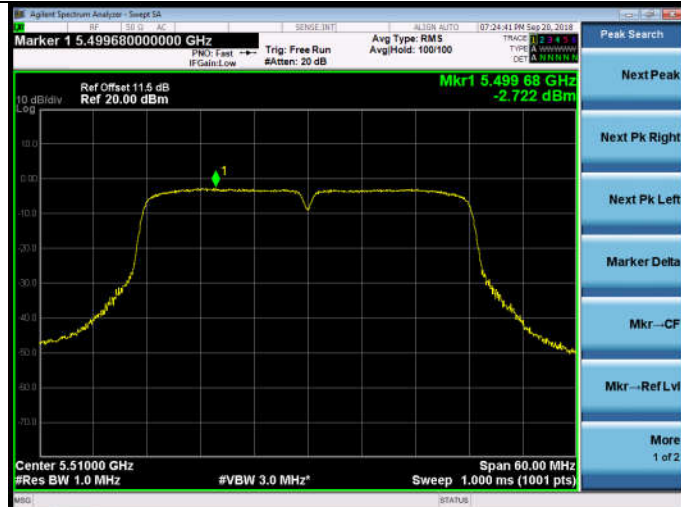


5700MHz



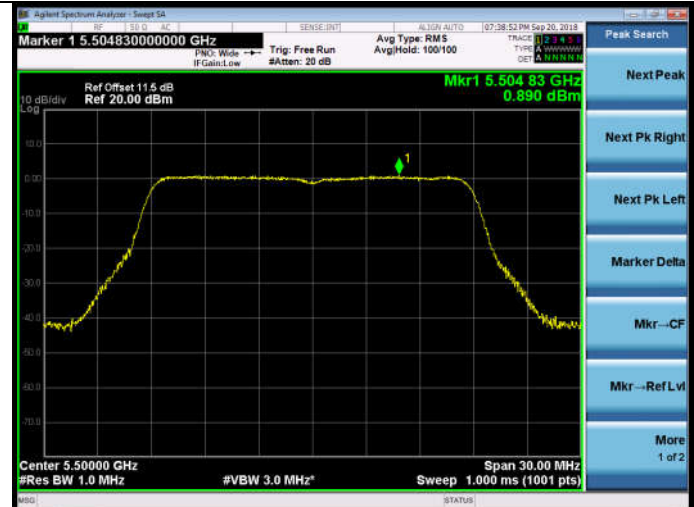
11n HT40

5510MHz



11ac VHT20

5500MHz



5590MHz



5600MHz



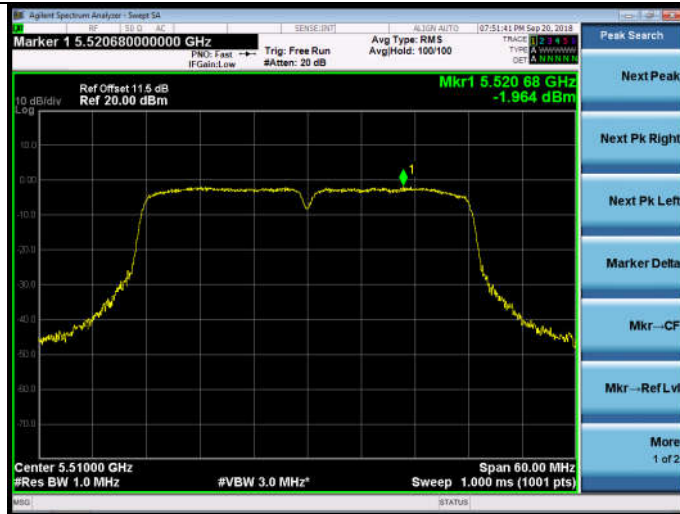
5670MHz



5700MHz



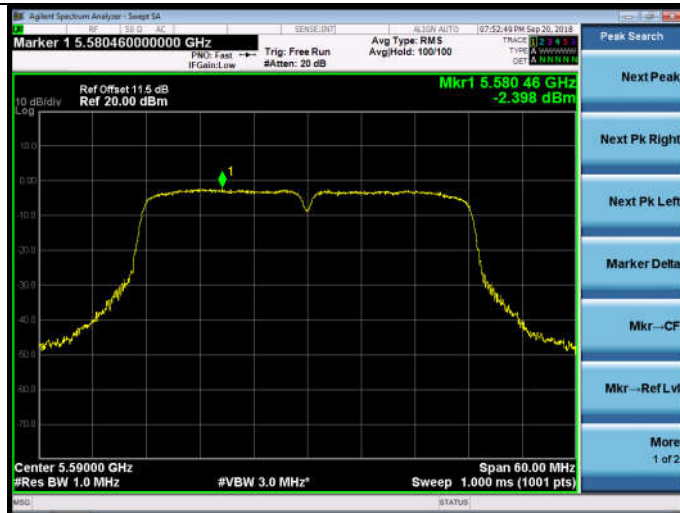
11ac VHT40 5510MHz



11ac VHT80 5530MHz



5590MHz



5610MHz



5670MHz

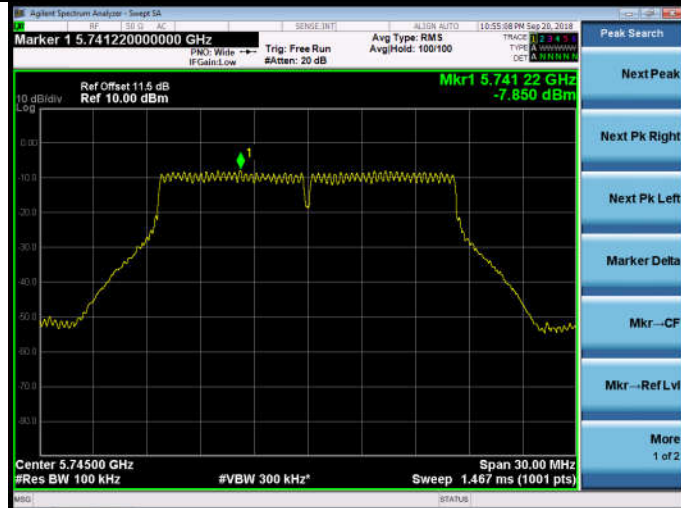


5745-5825MHz Band:

ANT 0

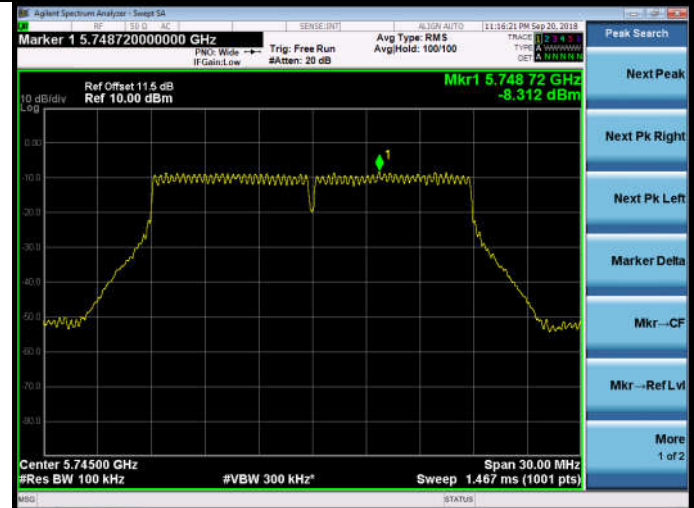
11a

5745MHz

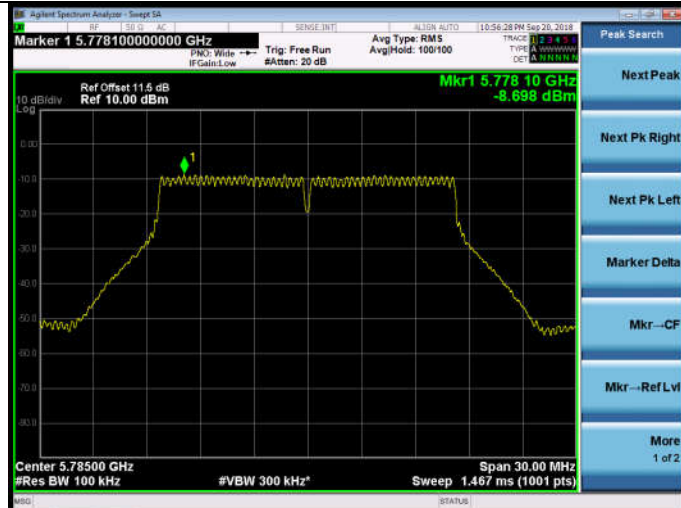


11n HT20

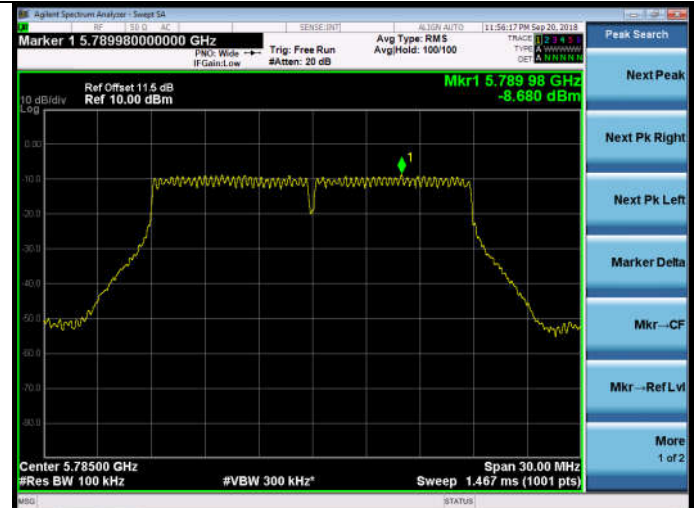
5745MHz



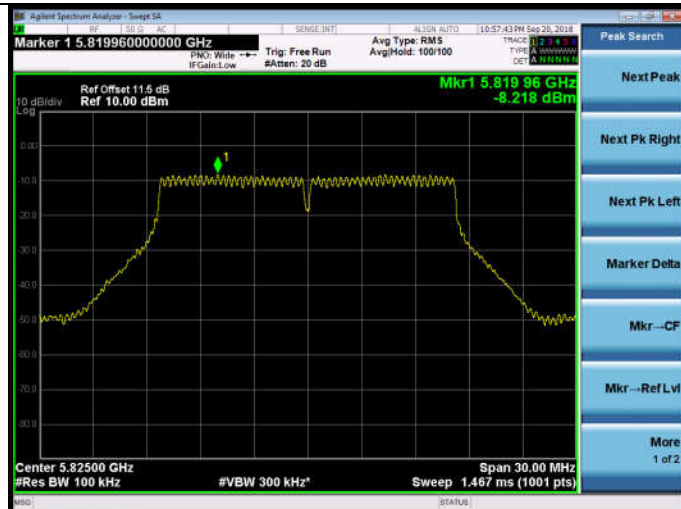
5785MHz



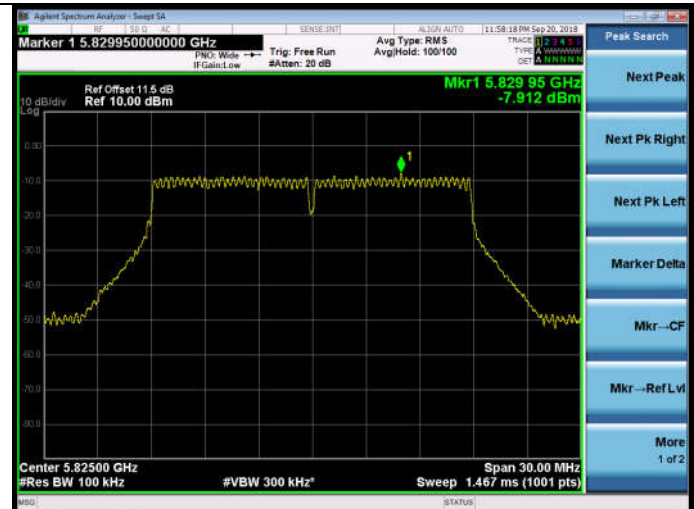
5785MHz



5825MHz

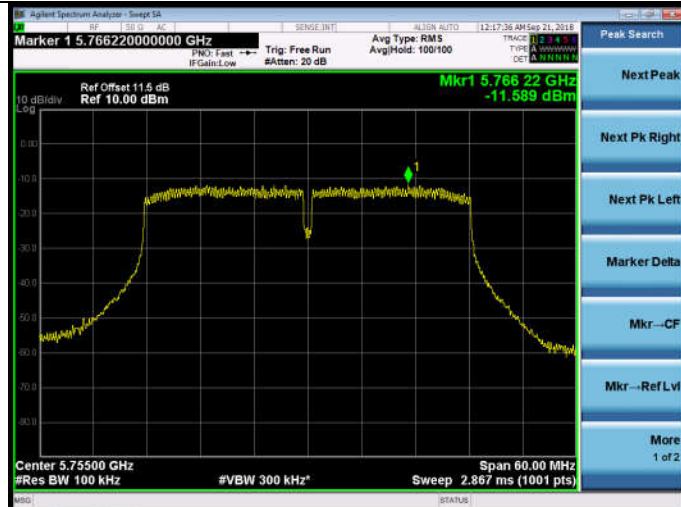


5825MHz

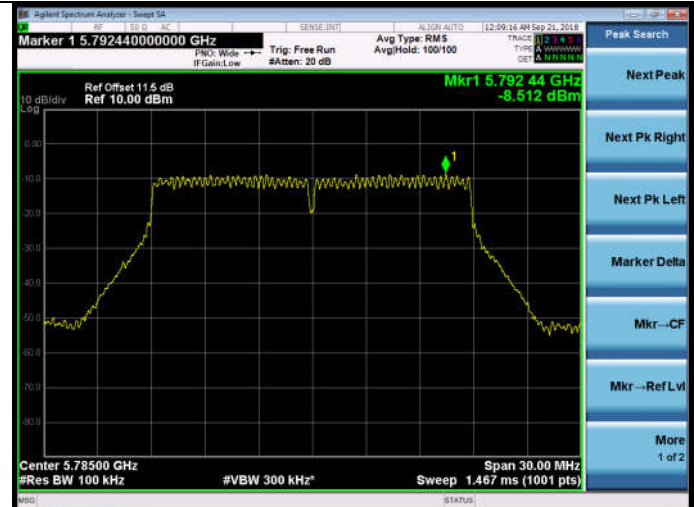


11n HT40

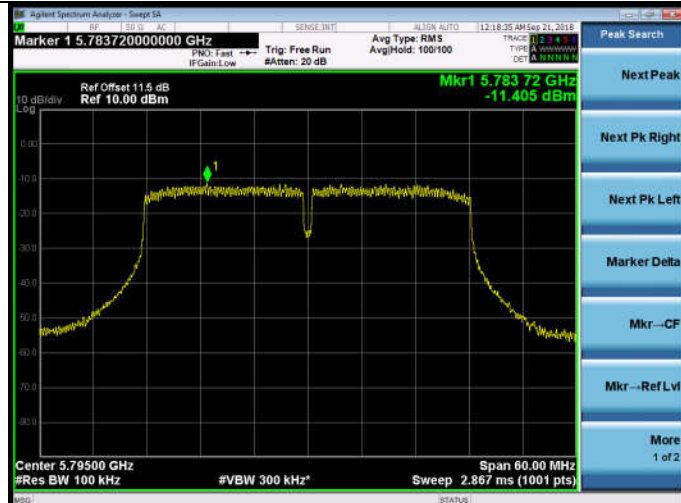
5755MHz



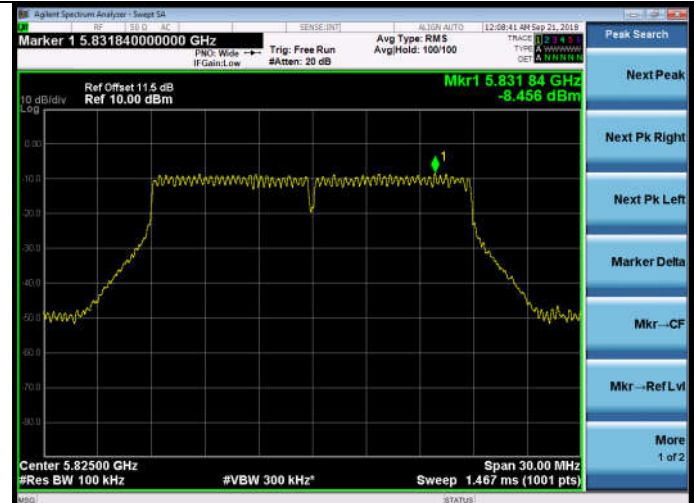
5785MHz



5795MHz

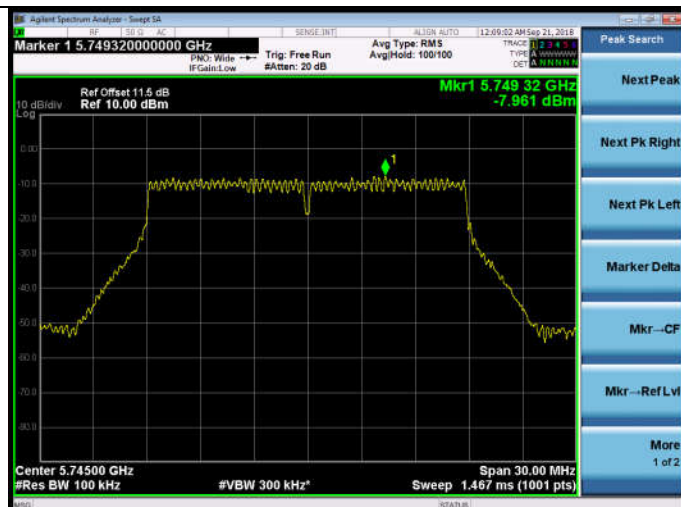


5825MHz



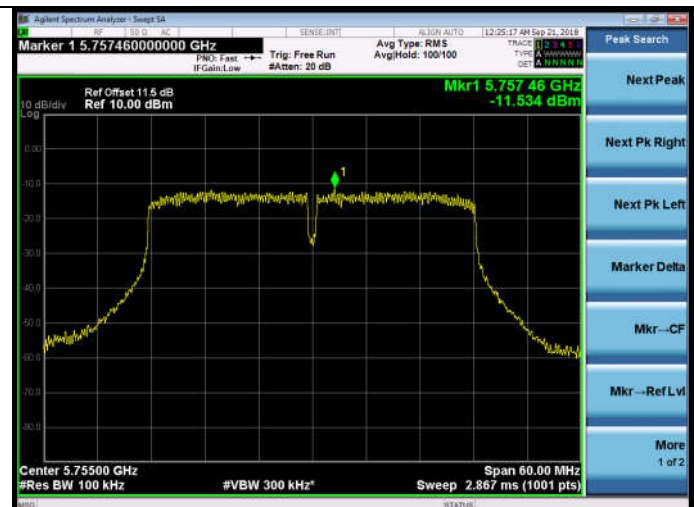
11ac VHT20

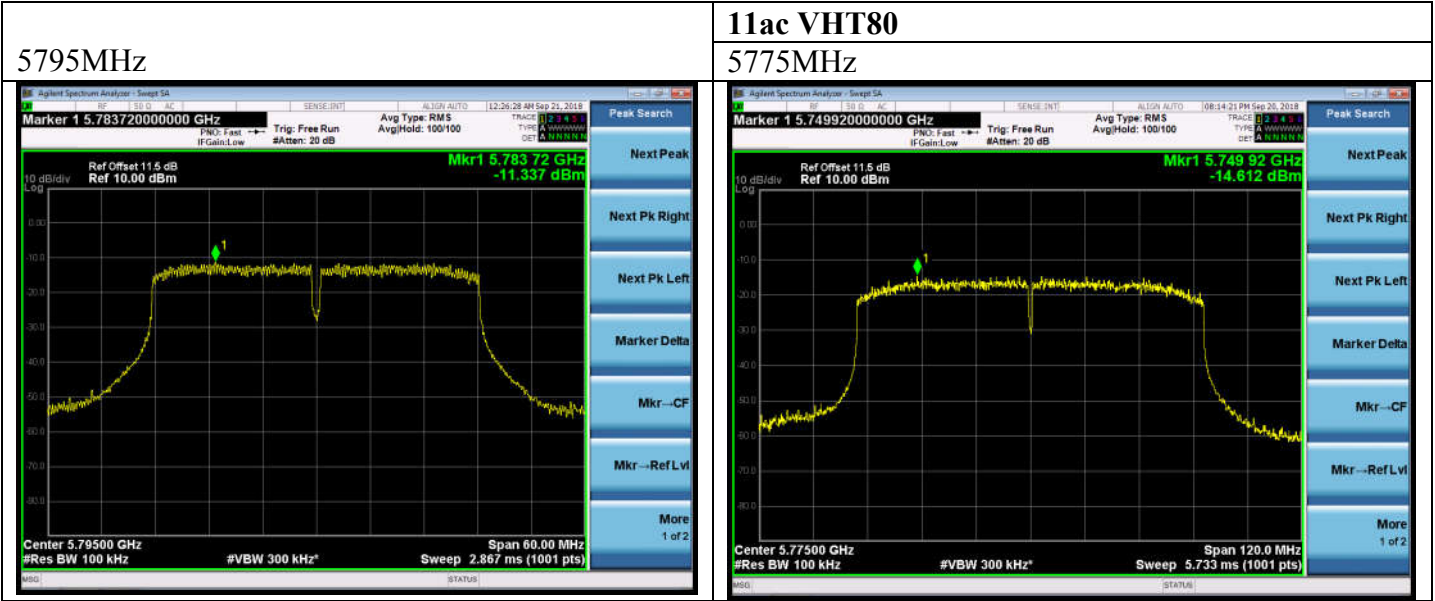
5745MHz



11ac VHT40

5755MHz



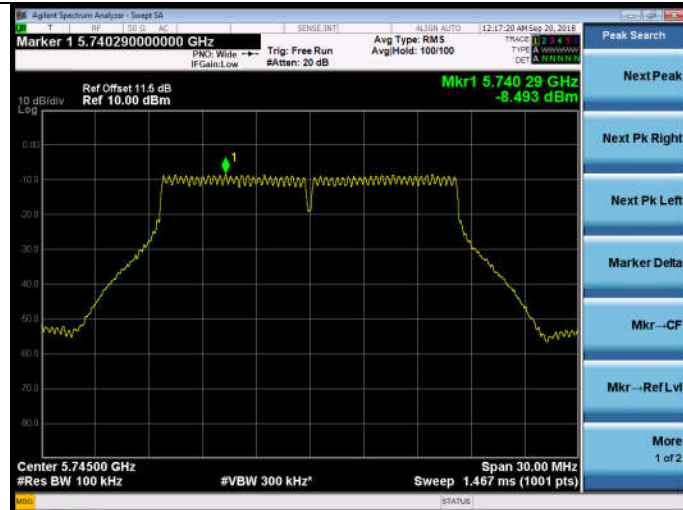


5745-5825MHz Band:

ANT 1

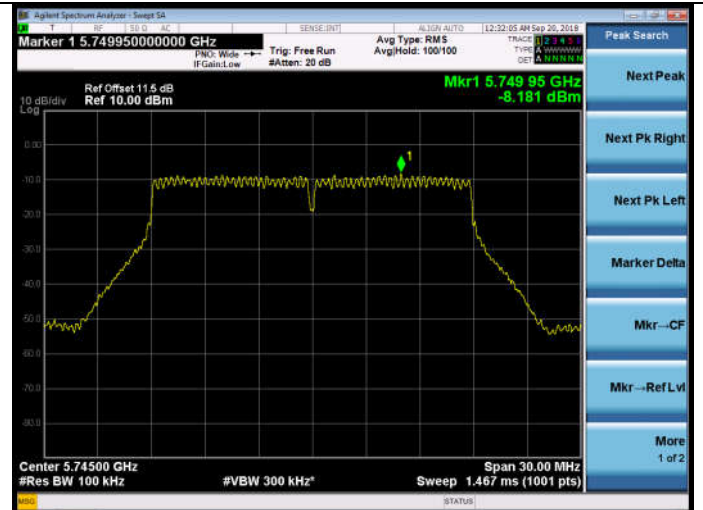
11a

5745MHz

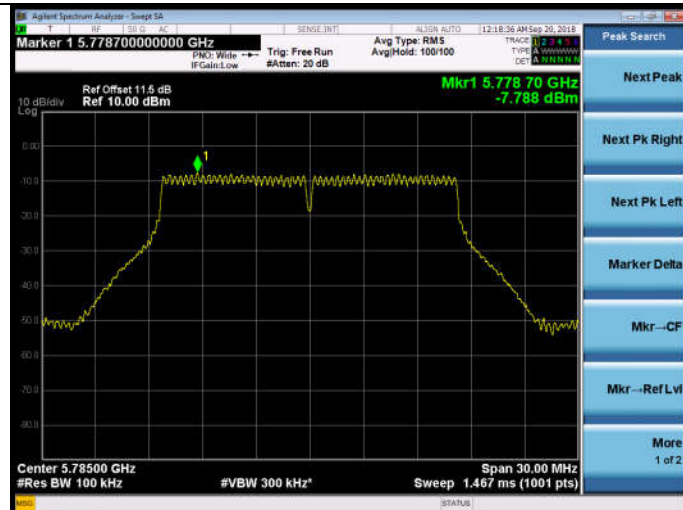


11n HT20

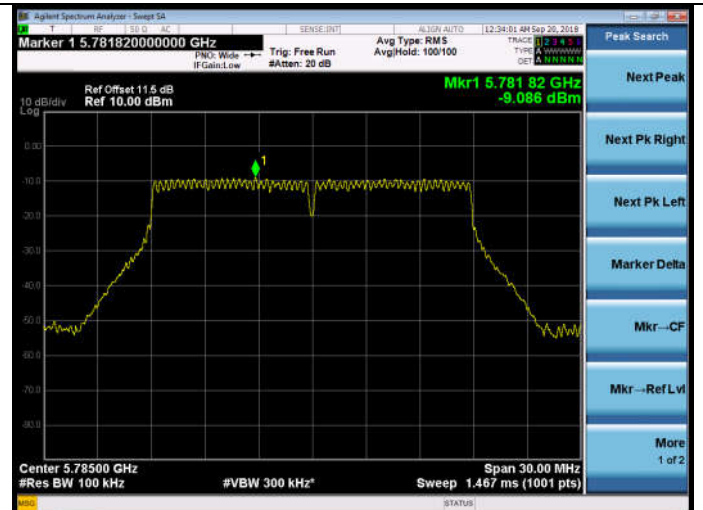
5745MHz



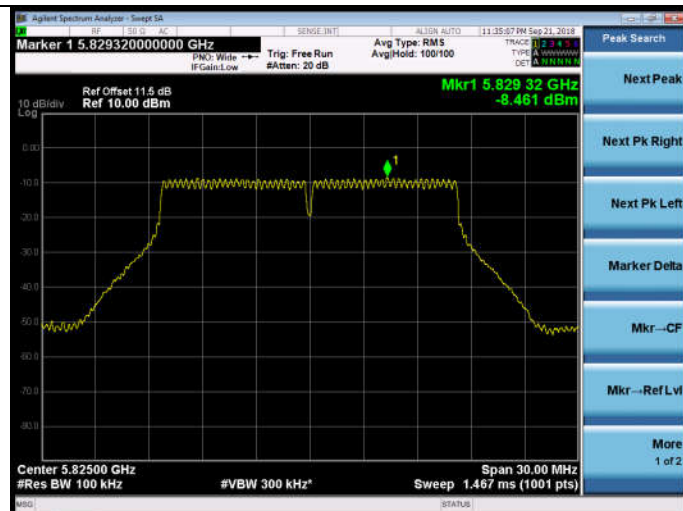
5785MHz



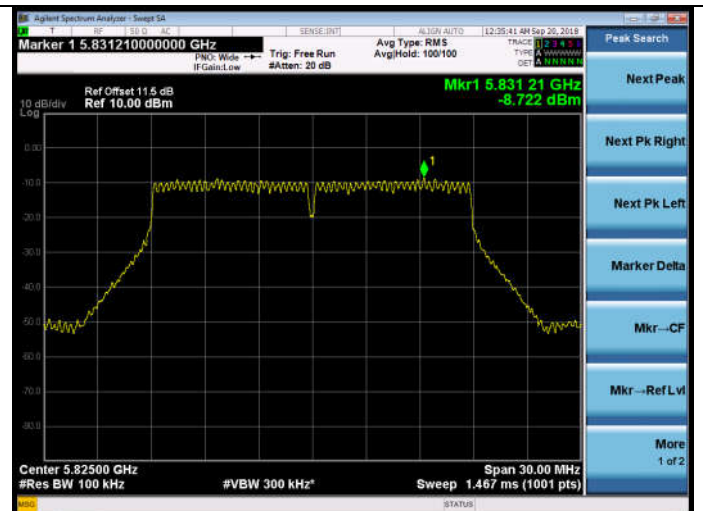
5785MHz



5825MHz

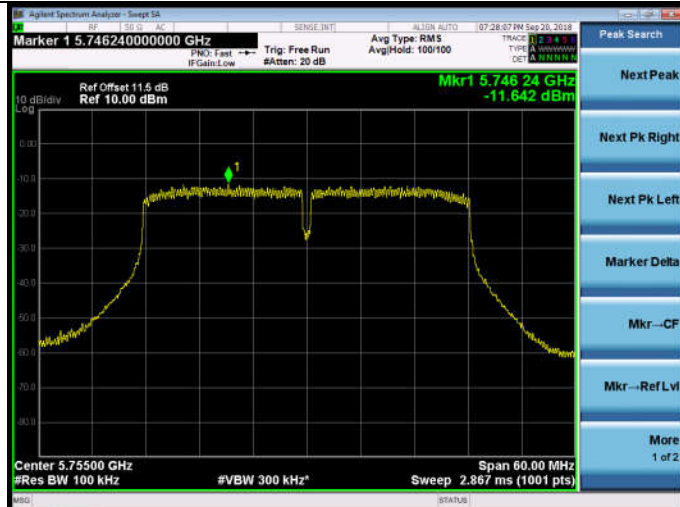


5825MHz

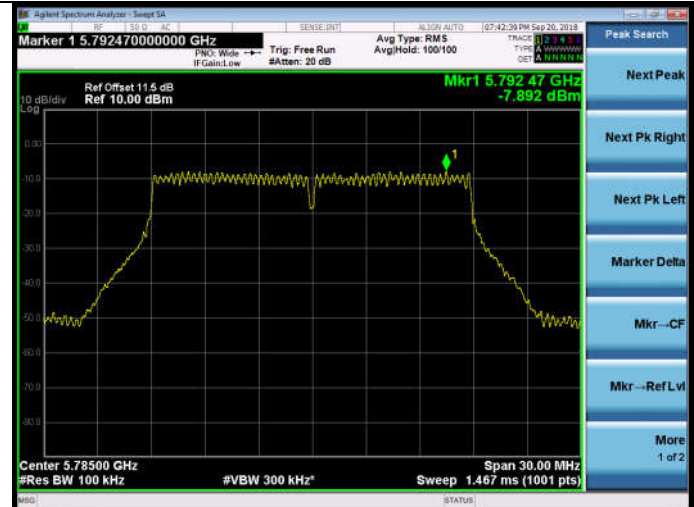


11n HT40

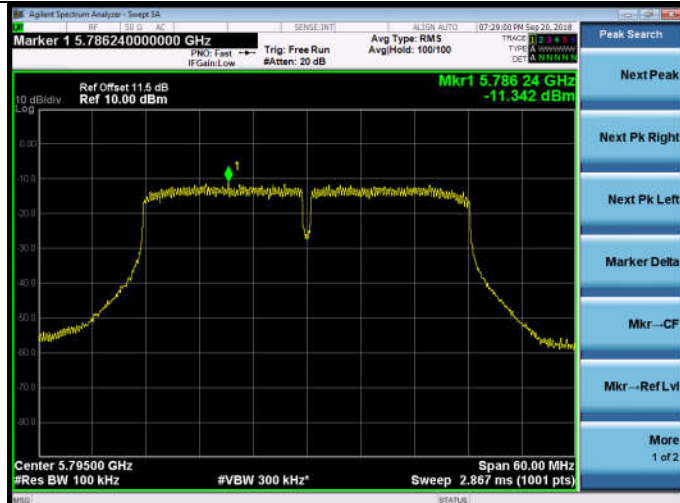
5755MHz



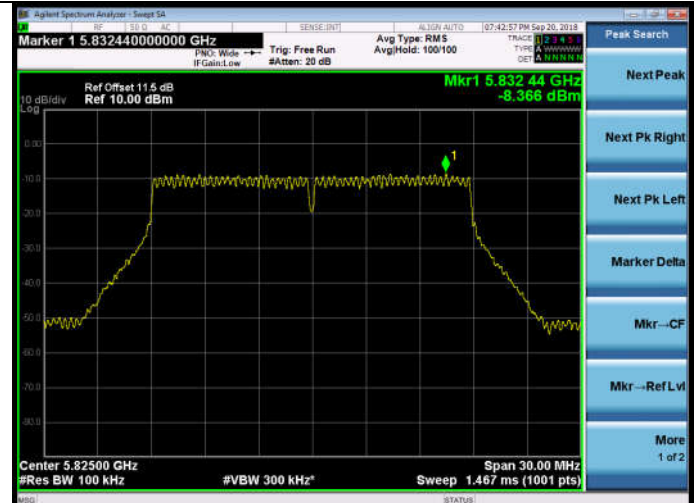
5785MHz



5795MHz

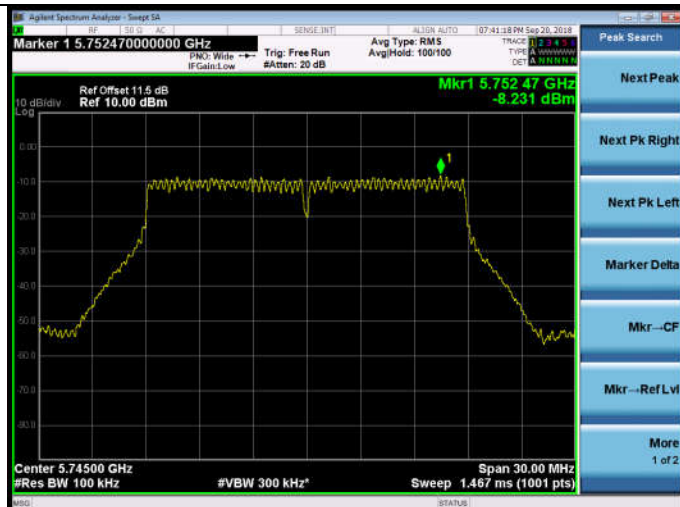


5825MHz



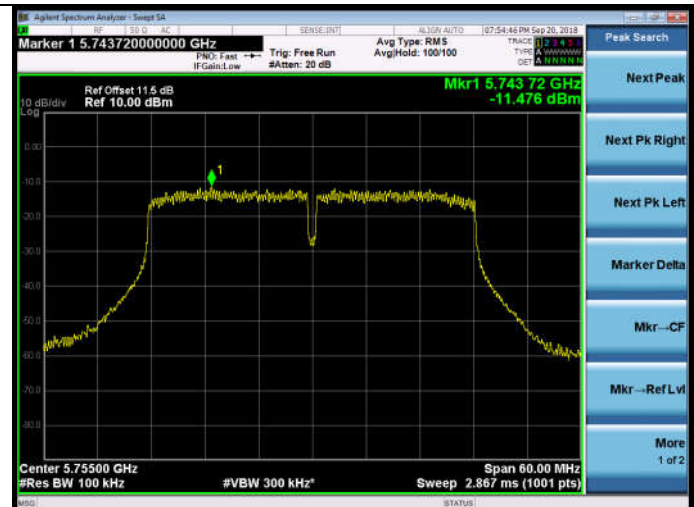
11ac VHT20

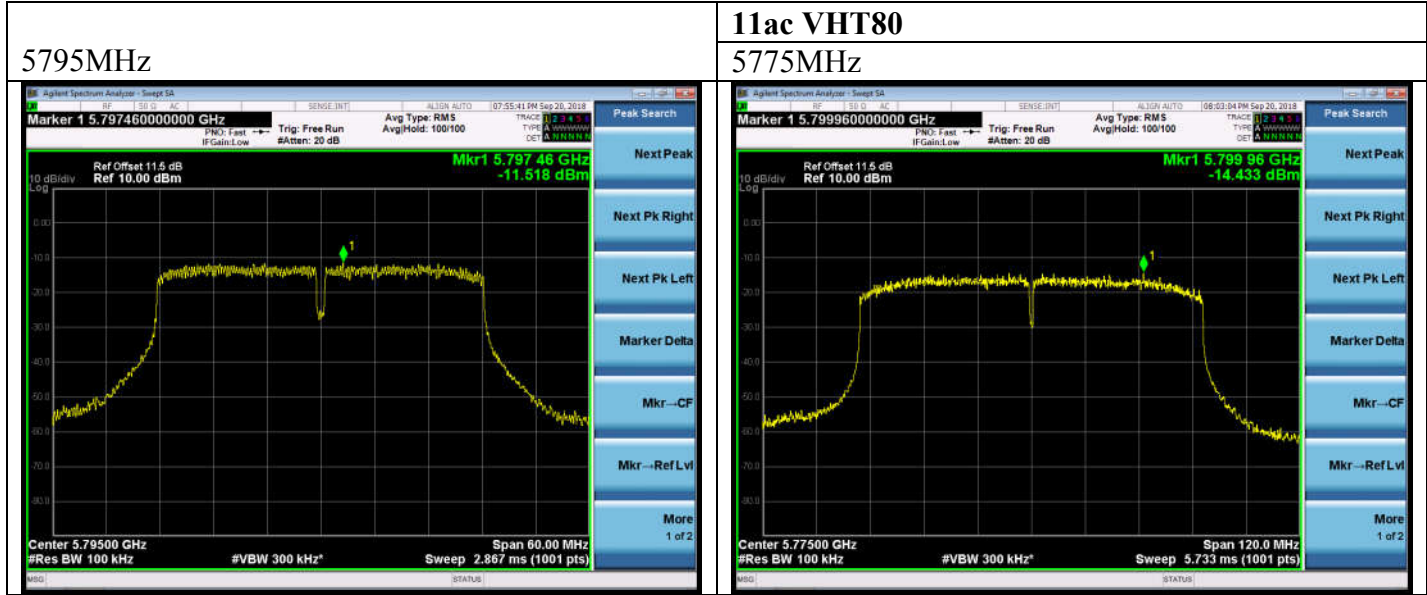
5745MHz



11ac VHT40

5755MHz





9. FREQUENCY STABILITY MEASUREMENT

9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	PXA Signal Analyzer	Agilent	N9030A	MY51380221	Sep.08,18	1 Year
2.	Amplifier	HP	8449B	3008A02495	Apr.23.18	1 Year
3.	Horn Antenna	ETS	3115	9510-4580	Dec.01,17	1 Year
4.	RF Cable	Hubersuhner	RF Cable	No.5	Oct.15,17	1 Year

9.2. Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

9.3. Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
EUT have transmitted absence of modulation signal and fixed channelise. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f \times 10^{-6}$ ppm. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
2. Extreme temperature rule is -30°C~50°C.

9.4. Test Result

EUT: POS Terminal		
M/N: SPD1-01		
Test date: 2018-09-23	Pressure: 102.7±1.0 kpa	Humidity: 52.5±3.0%
Tested by: Lynn	Test site: RF site	Temperature: 22.7±0.6 °C

Frequency Stability vs. Voltage:

Test Voltage	Temperature	CH	Max. Reading (MHz)	Target Frequency (MHz)	Result (ppm)
AC 102V	20°C	CH36	5179.9675	5180	-6.27
		CH38	5189.9705	5190	-5.68
		CH40	5199.9805	5200	-3.75
		CH42	5209.968	5210	-6.14
		CH46	5229.970	5230	-5.74
		CH48	5239.964	5240	-6.87
		CH52	5259.962	5260	-7.22
		CH54	5269.9835	5270	-3.13
		CH58	5289.975	5290	-4.73
		CH60	5299.9845	5300	-2.92
		CH62	5309.9755	5310	-4.61
		CH64	5319.9845	5320	-2.91
		CH100	5499.978	5500	-4.00
		CH102	5509.986	5510	-2.54
		CH106	5529.9725	5530	-4.97
		CH118	5589.9685	5590	-5.64
		CH120	5599.975	5600	-4.46
		CH122	5609.9615	5610	-6.86
		CH134	5669.9755	5670	-4.32
		CH140	5699.971	5700	-5.09
		CH149	5744.9715	5745	-4.96
		CH151	5754.983	5755	-2.95
		CH155	5774.9735	5775	-4.59
		CH157	5784.9655	5785	-5.96
		CH159	5794.9875	5795	-2.16
		CH165	5824.9865	5825	-2.32

Test Voltage	Temperature	CH	Max. Reading (MHz)	Target Frequency (MHz)	Result (ppm)
AC 120V	20°C	CH36	5179.951	5180	-9.46
		CH38	5189.9635	5190	-7.03
		CH40	5199.9665	5200	-6.44
		CH42	5209.966	5210	-6.53
		CH46	5229.9685	5230	-6.02
		CH48	5239.9715	5240	-5.44
		CH52	5259.971	5260	-5.51
		CH54	5269.962	5270	-7.21
		CH58	5289.964	5290	-6.81
		CH60	5299.984	5300	-3.02
		CH62	5309.9535	5310	-8.76
		CH64	5319.97	5320	-5.64
		CH100	5499.9675	5500	-5.91
		CH102	5509.976	5510	-4.36
		CH106	5529.9615	5530	-6.96
		CH118	5589.9665	5590	-5.99
		CH120	5599.975	5600	-4.46
		CH122	5609.9675	5610	-5.79
		CH134	5669.974	5670	-4.59
		CH140	5699.9705	5700	-5.18
		CH149	5744.9715	5745	-4.96
		CH151	5754.9812	5755	-3.27
		CH155	5774.962	5775	-6.58
		CH157	5784.9635	5785	-6.31
		CH159	5794.987	5795	-2.24
		CH165	5824.9965	5825	-0.60

Test Voltage	Temperature	CH	Max. Reading (MHz)	Target Frequency (MHz)	Result (ppm)
AC 138V	20°C	CH36	5179.962	5180	-7.34
		CH38	5189.9655	5190	-6.65
		CH40	5199.9765	5200	-4.52
		CH42	5209.97	5210	-5.76
		CH46	5229.9695	5230	-5.83
		CH48	5239.9615	5240	-7.35
		CH52	5259.973	5260	-5.13
		CH54	5269.9635	5270	-6.93
		CH58	5289.9655	5290	-6.52
		CH60	5299.955	5300	-8.49
		CH62	5309.9565	5310	-8.19
		CH64	5319.9745	5320	-4.79
		CH100	5499.965	5500	-6.36
		CH102	5509.9765	5510	-4.26
		CH106	5529.9625	5530	-6.78
		CH118	5589.971	5590	-5.19
		CH120	5599.9655	5600	-6.16
		CH122	5609.971	5610	-5.17
		CH134	5669.977	5670	-4.06
		CH140	5699.9615	5700	-6.75
		CH149	5744.971	5745	-5.05
		CH151	5754.964	5755	-6.26
		CH155	5774.955	5775	-7.79
		CH157	5784.967	5785	-5.70
		CH159	5794.9775	5795	-3.88
		CH165	5824.967	5825	-5.67

Frequency Stability vs. Temperature:

Test Voltage	Temperature	CH	Max. Reading (MHz)	Target Frequency (MHz)	Result (ppm)
AC 120V	0°C	CH36	5179.9515	5180	-9.36
		CH38	5189.9645	5190	-6.84
		CH40	5199.969	5200	-5.96
		CH42	5209.968	5210	-6.14
		CH46	5229.969	5230	-5.93
		CH48	5239.952	5240	-9.16
		CH52	5259.931	5260	-13.12
		CH54	5269.953	5270	-8.92
		CH58	5289.964	5290	-6.81
		CH60	5299.9645	5300	-6.70
		CH62	5309.9555	5310	-8.38
		CH64	5319.9435	5320	-10.62
		CH100	5499.9475	5500	-9.55
		CH102	5509.9365	5510	-11.52
		CH106	5529.9415	5530	-10.58
		CH118	5589.9585	5590	-7.42
		CH120	5599.9455	5600	-9.73
		CH122	5609.9605	5610	-7.04
		CH134	5669.926	5670	-13.05
		CH140	5699.961	5700	-6.84
		CH149	5744.972	5745	-4.87
		CH151	5754.952	5755	-8.34
		CH155	5774.9235	5775	-13.25
		CH157	5784.9635	5785	-6.31
		CH159	5794.937	5795	-10.87
		CH165	5824.958	5825	-7.21

Test Voltage	Temperature	CH	Max. Reading (MHz)	Target Frequency (MHz)	Result (ppm)
AC 120V	10°C	CH36	5179.9515	5180	-9.36
		CH38	5189.964	5190	-6.94
		CH40	5199.967	5200	-6.35
		CH42	5209.966	5210	-6.53
		CH46	5229.9695	5230	-5.83
		CH48	5239.9515	5240	-9.26
		CH52	5259.9515	5260	-9.22
		CH54	5269.934	5270	-12.52
		CH58	5289.964	5290	-6.81
		CH60	5299.9745	5300	-4.81
		CH62	5309.9555	5310	-8.38
		CH64	5319.953	5320	-8.83
		CH100	5499.948	5500	-9.45
		CH102	5509.938	5510	-11.25
		CH106	5529.9415	5530	-10.58
		CH118	5589.977	5590	-4.11
		CH120	5599.965	5600	-6.25
		CH122	5609.9605	5610	-7.04
		CH134	5669.946	5670	-9.52
		CH140	5699.931	5700	-12.11
		CH149	5744.9715	5745	-4.96
		CH151	5754.944	5755	-9.73
		CH155	5774.9325	5775	-11.69
		CH157	5784.9655	5785	-5.96
		CH159	5794.9375	5795	-10.79
		CH165	5824.917	5825	-14.25

Test Voltage	Temperature	CH	Max. Reading (MHz)	Target Frequency (MHz)	Result (ppm)
AC 120V	20°C	CH36	5179.951	5180	-9.46
		CH38	5189.9635	5190	-7.03
		CH40	5199.9665	5200	-6.44
		CH42	5209.966	5210	-6.53
		CH46	5229.9685	5230	-6.02
		CH48	5239.9715	5240	-5.44
		CH52	5259.971	5260	-5.51
		CH54	5269.962	5270	-7.21
		CH58	5289.964	5290	-6.81
		CH60	5299.984	5300	-3.02
		CH62	5309.9535	5310	-8.76
		CH64	5319.97	5320	-5.64
		CH100	5499.9675	5500	-5.91
		CH102	5509.976	5510	-4.36
		CH106	5529.9615	5530	-6.96
		CH118	5589.9665	5590	-5.99
		CH120	5599.975	5600	-4.46
		CH122	5609.9675	5610	-5.79
		CH134	5669.974	5670	-4.59
		CH140	5699.9705	5700	-5.18
		CH149	5744.9715	5745	-4.96
		CH151	5754.9812	5755	-3.27
		CH155	5774.962	5775	-6.58
		CH157	5784.9635	5785	-6.31
		CH159	5794.987	5795	-2.24
		CH165	5824.9965	5825	-0.60

Test Voltage	Temperature	CH	Max. Reading (MHz)	Target Frequency (MHz)	Result (ppm)
AC 120V	30°C	CH36	5179.952	5180	-9.27
		CH38	5189.964	5190	-6.94
		CH40	5199.968	5200	-6.15
		CH42	5209.9665	5210	-6.43
		CH46	5229.9715	5230	-5.45
		CH48	5239.952	5240	-9.16
		CH52	5259.9635	5260	-6.94
		CH54	5269.974	5270	-4.93
		CH58	5289.9645	5290	-6.71
		CH60	5299.945	5300	-10.38
		CH62	5309.9575	5310	-8.00
		CH64	5319.983	5320	-3.20
		CH100	5499.9485	5500	-9.36
		CH102	5509.974	5510	-4.72
		CH106	5529.9515	5530	-8.77
		CH118	5589.969	5590	-5.55
		CH120	5599.966	5600	-6.07
		CH122	5609.9505	5610	-8.82
		CH134	5669.9465	5670	-9.44
		CH140	5699.933	5700	-11.75
		CH149	5744.972	5745	-4.87
		CH151	5754.946	5755	-9.38
		CH155	5774.9625	5775	-6.49
		CH157	5784.966	5785	-5.88
		CH159	5794.9395	5795	-10.44
		CH165	5824.9595	5825	-6.95

Test Voltage	Temperature	CH	Max. Reading (MHz)	Target Frequency (MHz)	Result (ppm)
AC 120V	40°C	CH36	5179.9525	5180	-9.17
		CH38	5189.966	5190	-6.55
		CH40	5199.9685	5200	-6.06
		CH42	5209.9685	5210	-6.05
		CH46	5229.9735	5230	-5.07
		CH48	5239.9525	5240	-9.06
		CH52	5259.9355	5260	-12.26
		CH54	5269.964	5270	-6.83
		CH58	5289.965	5290	-6.62
		CH60	5299.917	5300	-15.66
		CH62	5309.9575	5310	-8.00
		CH64	5319.9535	5320	-8.74
		CH100	5499.9485	5500	-9.36
		CH102	5509.9405	5510	-10.80
		CH106	5529.942	5530	-10.49
		CH118	5589.9695	5590	-5.46
		CH120	5599.938	5600	-11.07
		CH122	5609.9105	5610	-15.95
		CH134	5669.947	5670	-9.35
		CH140	5699.935	5700	-11.40
		CH149	5744.972	5745	-4.87
		CH151	5754.9465	5755	-9.30
		CH155	5774.9245	5775	-13.07
		CH157	5784.9685	5785	-5.45
		CH159	5794.9395	5795	-10.44
		CH165	5824.921	5825	-13.56

10. ANTENNA REQUIREMENT

10.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section 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. And according to FCC 47 CFR Section 15.407 (a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

10.2. Antenna Connected Construction

The antennas used for this product are PIFA antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 6.58dBi.

11. DEVIATION TO TEST SPECIFICATIONS

[NONE]