



FCC TEST REPORT

FCC ID: WF5-ST11

Product	:	Tablet PC
Model Name	:	ST11,BPR-11,SPAD-11
Brand	:	Sewoo
Report No.	:	PTC24121305101E-FC03
Prepared for		
Aroot Co.,Ltd.		
28-6, Gajangsaneopdong-ro, Osan-si, Gyeonggi-do, Republic of Korea		
Prepared by		
Precise Testing & Certification Co., Ltd		
Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China		



1 TEST RESULT CERTIFICATION

Applicant's name : Aroot Co.,Ltd.

Address : 28-6, Gajangsaneopdong-ro, Osan-si, Gyeonggi-do, Republic of Korea

Manufacture's name : Guangzhou Shangke Information Technology Co., LTD.

Address : Room 1205-1212, No.30, Huaxia Road, Tianhe District, Guangzhou, Guangdong Province,China

Product name : Tablet PC

Model name : ST11,BPR-11,SPAD-11

Standards : FCC CFR47 Part 15 Section 15.407

Test procedure : ANSI C63.10:2013

Test Date : Dec. 24, 2024 to Mar. 3, 2025

Date of Issue : Mar. 3, 2025

Test Result : Pass

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Test Engineer:

A handwritten signature in black ink, appearing to read 'Jack Zhou'.

Jack Zhou / Engineer

Technical Manager:

A handwritten signature in black ink, appearing to read 'Simon Pu'.

Simon Pu / Manager



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2 Test Summary

Test Items	Test Requirement	Result
Conduct Emission	15.207	PASS
Radiated Spurious Emissions	15.205(a) 15.209 15.407(b)	PASS
Emission and Occupied Bandwidth	15.407(a)(e)	PASS
Maximum Conducted Output Power	15.407(a)	PASS
Power Spectral Density	15.407(a)	PASS
Frequency stability	15.407 (g)	PASS
Antenna Requirement	15.203	PASS



3 General Information

3.1 General Description of E.U.T.

Product Name	: Tablet PC
Model Name	: ST11
Additional model	: BPR-11,SPAD-11
Specification	: 802.11a/n HT20/HT40/ac20/ac40/ac80
Operation Frequency	: 5G Wi-Fi:5180-5240 MHz 5.8G Wi-Fi:5745MHz~5825MHz
Number of Channel	: 4 channels for 802.11a/n20/ac20 5180-5240 MHz 5 channels for 802.11a/n20/ac20 5745MHz~5825MHz 2 channels for 802.11n40/ac40 5190-5230 MHz 2 channels for 802.11n40/ac40 5755MHz~5795MHz 1 channels for 802.11 ac80
Type of Modulation	: OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n/a/ac
Antenna installation	: FPC Antenna
Antenna Gain	: 2.36 dBi
Power supply	: Lion-battery 3.8V 7000mAh or DC 5.0V=3.0A,9.0V=2.22A,12.0V=1.67A Adapter: Input: AC 100-240V~50/60Hz 0.6A max
Hardware Version	: V1.0
Software Version	: V1.00
Test sample No.	: PTC24121305101E-1/2, PTC24121305101E-2/2



3.2 Channel List

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (802.11a: 6 Mbps; 802.11n (HT20): MCS0; 802.11ac: MCS0) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for 802.11 a/N20/N40/AC20/AC40

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	46	5230	153	5765
38	5190	48	5240	157	5785
40	5200	149	5745	159	5795
44	5220	151	5755	161	5805
				165	5825

Frequency and Channel list for 802.11 ac80:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	155	5775	/	/



The maximum duty cycle as following table:

Test Mode	Duty Cycle(%)
802.11a	100%
802.11n/ac20	100%
802.11n/ac40	100%
802.11ac80	100%

3.3 Test Site

Precise Testing & Certification Co., Ltd

Address: Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A

FCC Designation Number: CN1219



4 Equipment During Test

4.1 Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
MXG Signal Analyzer	Agilent	N9020A	SER MY51111038	10Hz-26.5GHz	Aug.15, 2024	1 Year
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug.15, 2024	1 Year
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug.15, 2024	1 Year
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug.15, 2024	1 Year
DC power Supply	Agilent	E3642A	MY52420017	0-8V,5A/0-20 ,2.5A	Aug.15, 2024	1 Year
Humidity Chamber	AISRY	ASR-HW2-1000	20230926003	-40°C-150°C	Feb.23 ,2024	1Year
Test S/W	Tonscend	JS1120-3	/	/	/	/

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
EMI Test Receiver	Rohde&Schwarz	ESPI7	101671	9KHz-7GHz	Aug.15, 2024	1 Year
Loop Antenna	Schwarzbeck	FMZB 1519	192	9 KHz -30MHz	Aug.15, 2024	1 Year
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Sep.10, 2024	1 Year
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	1MHz-1GHz	Aug.15, 2024	1 Year
Cable	IMRO	AK-9515E(9m)	Cable-L	9KHz-3GHz	Aug.15, 2024	1 Year
Spectrum Analyzer	Rohde&Schwarz	FSV40	6625-01-588-5515	9KHz-40GHz	Aug.15, 2024	1 Year



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Horn Antenna	SCHWARZBECK	9120D	9120D-1246	1GHz-18GHz	Aug.15, 2024	1 Year
Power Amplifier	ZHINAN	ZN3380C	15002	1GHz-26.5GHz	Aug.15, 2024	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-1066	15GHz-40GHz	Jul. 19, 2024	1 Year
Amplifier	SCHWARZBECK	BBV 9721	9721-205	18GHz-40GHz	Jul. 19, 2024	1 Year
Cable	H+S	CBL-26	N/A	1GHz-26.5GHz	Aug.15, 2024	1 Year
RF Cable	R&S	R204	R21X	1GHz-40GHz	Aug.15, 2024	1 Year
Test S/W	Tonscend	TS+	/	/	/	/

Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Date	Calibration Interval
EMI Test Receiver	Rohde&Schwarz	ESCI	101417	9KHz-3GHz	Aug.15, 2024	1 Year
Artificial Mains Network	Rohde&Schwarz	ENV216	102453	9KHz-300MHz	Aug.15, 2024	1 Year
Artificial Mains Network	Rohde&Schwarz	ENV216	101342	9KHz-300MHz	Aug.15, 2024	1 Year
Limiter	R&S	ESH3-Z2	0357.8810.54-102808-NB	0Hz-30MHz	Aug.15, 2024	1 Year
RF Switch	DIAMOND ANTENNA	CX-210	/	0.09MHz-6GHz	Mar. 22,2024	1 Year
Test S/W	Tonscend	JS32-CE	/	/	/	/



4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	$\pm 1.0\text{dB}$
Power Spectral Density, conducted	$\pm 2.2\text{dB}$
Radio Frequency	$\pm 1 \times 10^{-6}$
Bandwidth	$\pm 1.5 \times 10^{-6}$
Time	$\pm 2\%$
Duty Cycle	$\pm 2\%$
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emissions (150kHz~30MHz)	$\pm 3.64\text{dB}$
Radiated Emission(9kHz~30MHz)	$\pm 3.15\text{dB}$
Radiated Emission(30MHz~1GHz)	$\pm 5.03\text{dB}$
Radiated Emission(1GHz~18GHz)	$\pm 4.74\text{dB}$
Radiated Emission(18GHz~40GHz)	$\pm 3.20\text{dB}$



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4.3 Description of Support Units

Equipment	Model No.	Series No.	Parameters
Adapter	XY-PD020E01	N/A	Input:AC 100-240V,50/60Hz Output:DC 5.0V/3.0A, 9.0V/2.22A, 12.0V/1.67A

5 Conducted Emission

Test Requirement:	: FCC CFR 47 Part 15 Section 15.207
Test Method	: ANSI C63.10: 2013
Test Result	: PASS
Frequency Range	: 150kHz to 30MHz
Class/Severity	: Class B

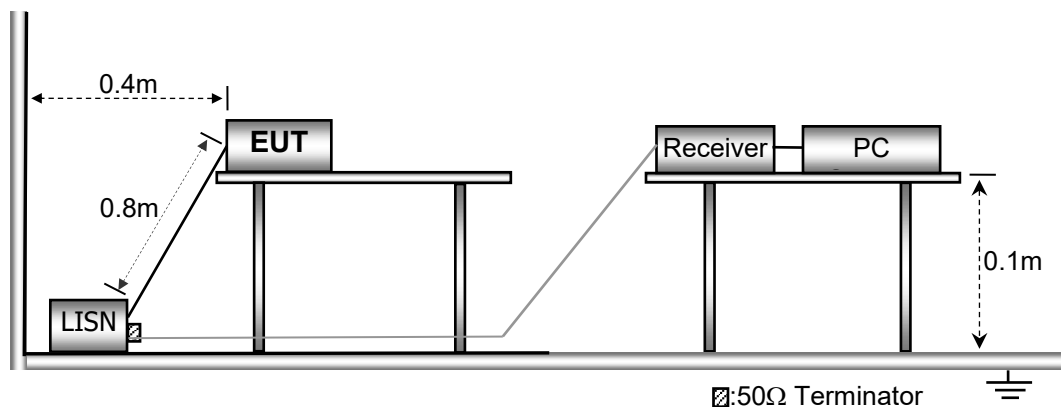
5.1 E.U.T. Operation

Operating Environment :

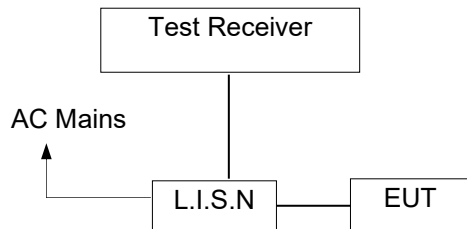
Temperature	: 23.9 °C
Humidity	: 51.4 % RH
Atmospheric Pressure	: 101.21kPa

5.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.



5.3 Test SET-UP (Block Diagram of Configuration)



5.4 Measurement Procedure

1. The EUT was placed on a table, which is 0.1m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

5.5 Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.6 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

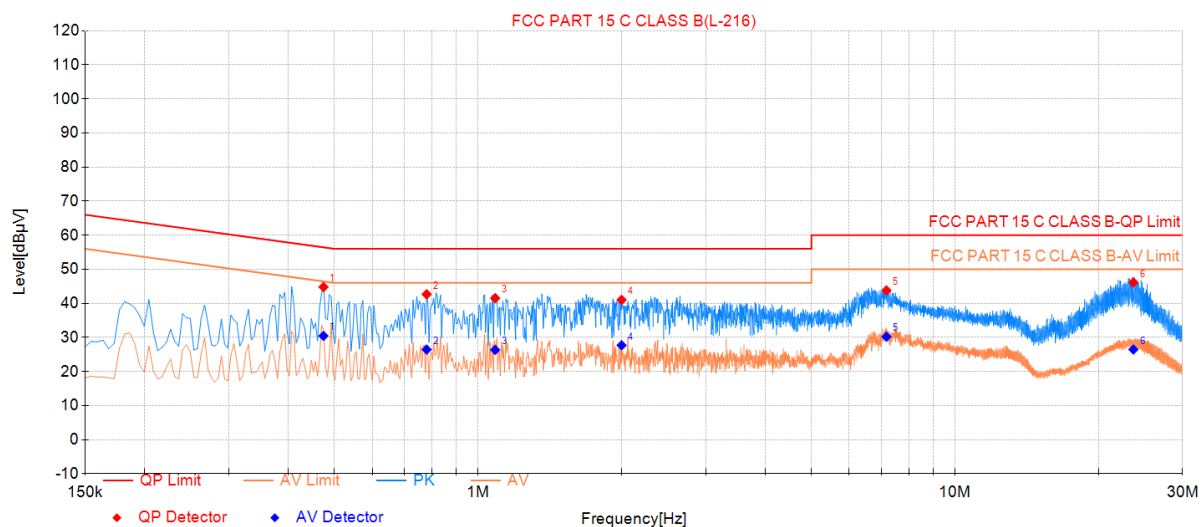
5.7 Conducted Emission Test Result

Pass.

All the modulation modes were tested the data of the worst mode (AC 120V/60Hz, TX 5180MHz) are recorded in the following pages and the others modulation methods do not exceed the limits.



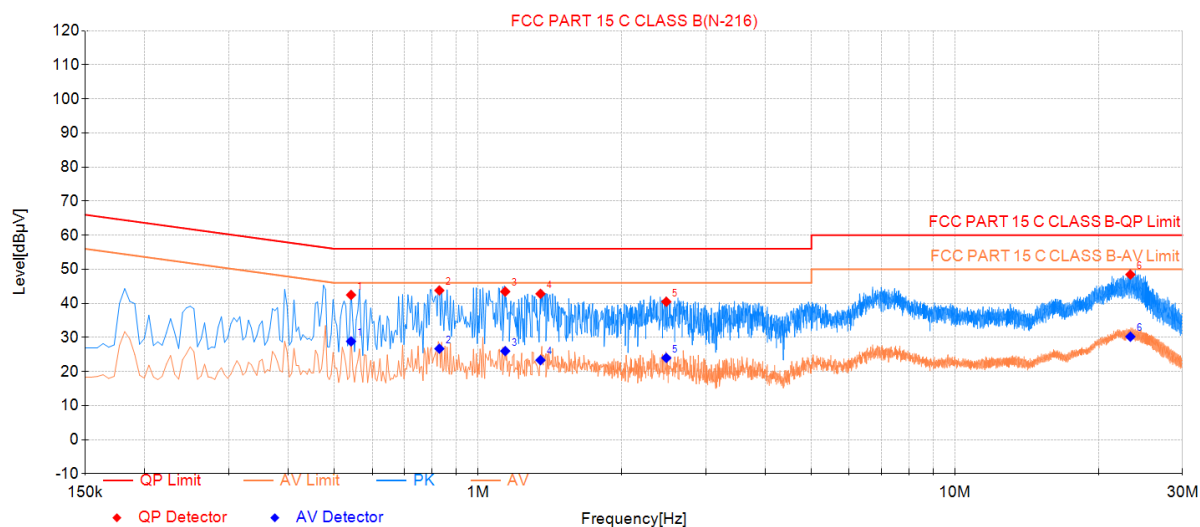
Line-AC 120V/60Hz



Final test data

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.474	44.79	56.44	11.65	30.45	46.44	15.99	PASS
2	0.780	42.66	56.00	13.34	26.45	46.00	19.55	PASS
3	1.086	41.50	56.00	14.50	26.35	46.00	19.65	PASS
4	2.000	41.02	56.00	14.98	27.69	46.00	18.31	PASS
5	7.184	43.80	60.00	16.20	30.22	50.00	19.78	PASS
6	23.672	46.14	60.00	13.86	26.46	50.00	23.54	PASS

Neutral-AC 120V/60Hz



Final test data								
NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Verdict
1	0.542	42.46	56.00	13.54	28.84	46.00	17.16	PASS
2	0.830	43.78	56.00	12.22	26.69	46.00	19.31	PASS
3	1.140	43.45	56.00	12.55	26.00	46.00	20.00	PASS
4	1.352	42.80	56.00	13.20	23.33	46.00	22.67	PASS
5	2.481	40.47	56.00	15.53	23.98	46.00	22.02	PASS
6	23.330	48.45	60.00	11.55	30.22	50.00	19.78	PASS

Note: QP Margin[dB]= QP Limit[dBμV]- QP Value[dBμV], AV Margin[dB]= AV Limit[dBμV]- AV Value[dBμV].



6 Radiated Spurious Emissions

Test Requirement	:	FCC CFR47 Part 15 Section 15.209 & 15.407(b)
Test Method	:	ANSI C63.10:2013
Test Result	:	PASS
Measurement Distance	:	3m

Limit

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

Further.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits. As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1MHz



As per FCC §15.209(a): Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1 EUT Operation

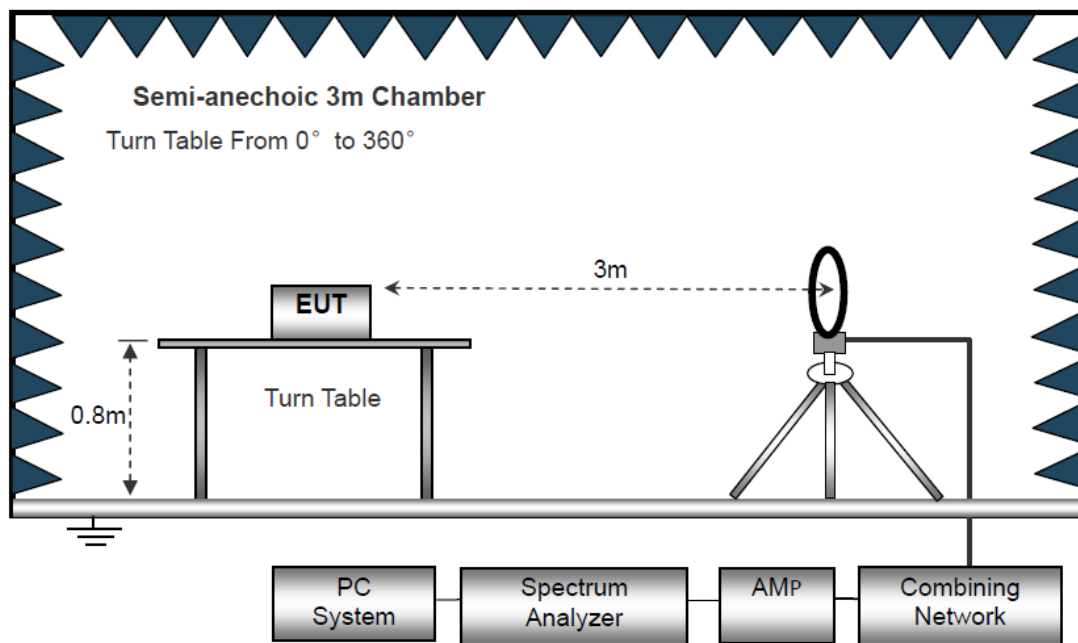
Operating Environment :

Temperature:	:	24.5 °C
Humidity:	:	52 % RH
Atmospheric Pressure:	:	101.3kPa
Test Voltage	:	AC 120V 60Hz

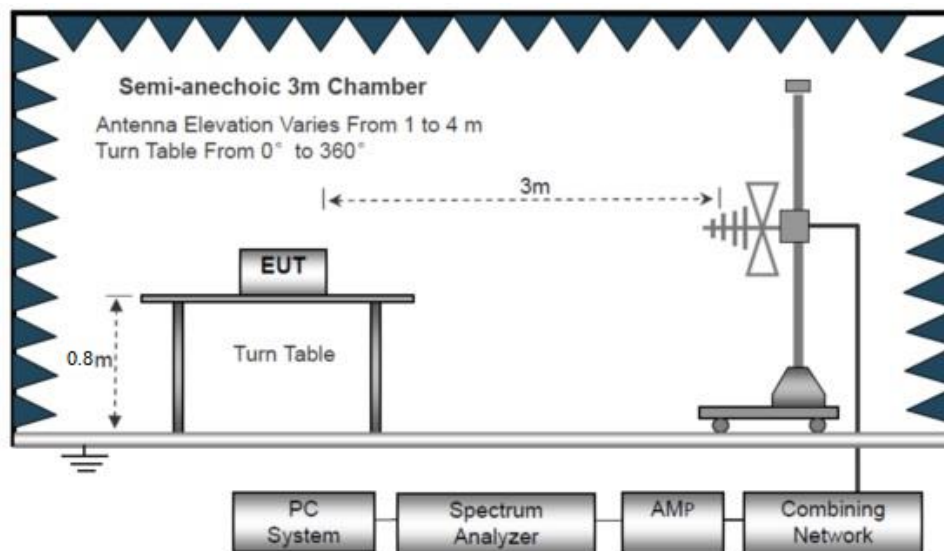
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

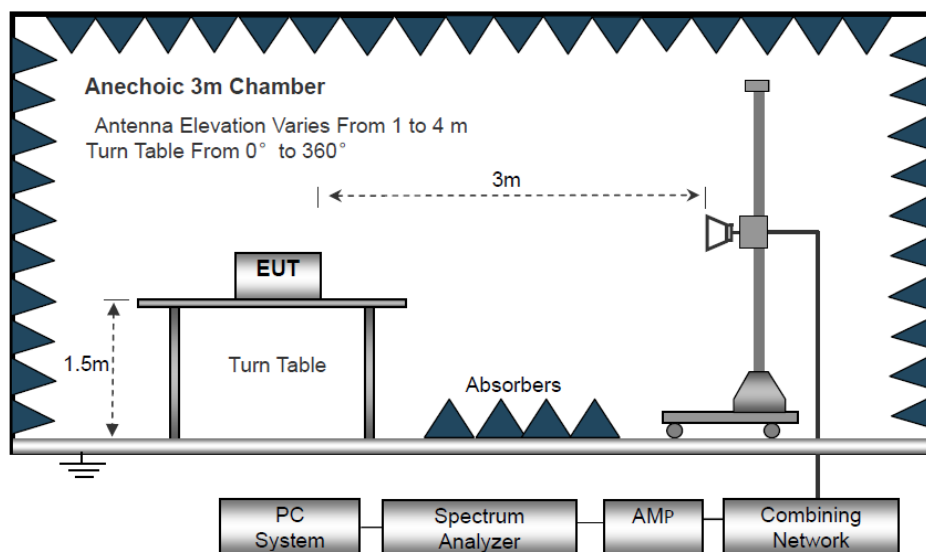
The test setup for emission measurement below 30MHz



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz



6.3 Spectrum Analyzer Setup

Receiver Setup	Frequency	Detector	RBW	VBW	Remark
	Below 30MHz	--	10kHz	10kHz	--
	30MHz ~ 1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		RMS	1MHz	3MHz	Average Value



6.4 Test Procedure

1. Below 1000MHz, The EUT was placed on a turn table which is 0.8m above ground plane, And above 1000MHz, The EUT was placed on a styrofoam table which is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.
8. The test above 1GHz must be use the fully anechoic room, and the test below 1GHz use the half anechoic room



6.5 Summary of Test Results

Test Frequency: 9KHz-30MHz

Note:

The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor = $40\log(\text{Specific distance} / \text{test distance})$ (dB);

Limit line = Specific limits (dBuV) + distance extrapolation factor.

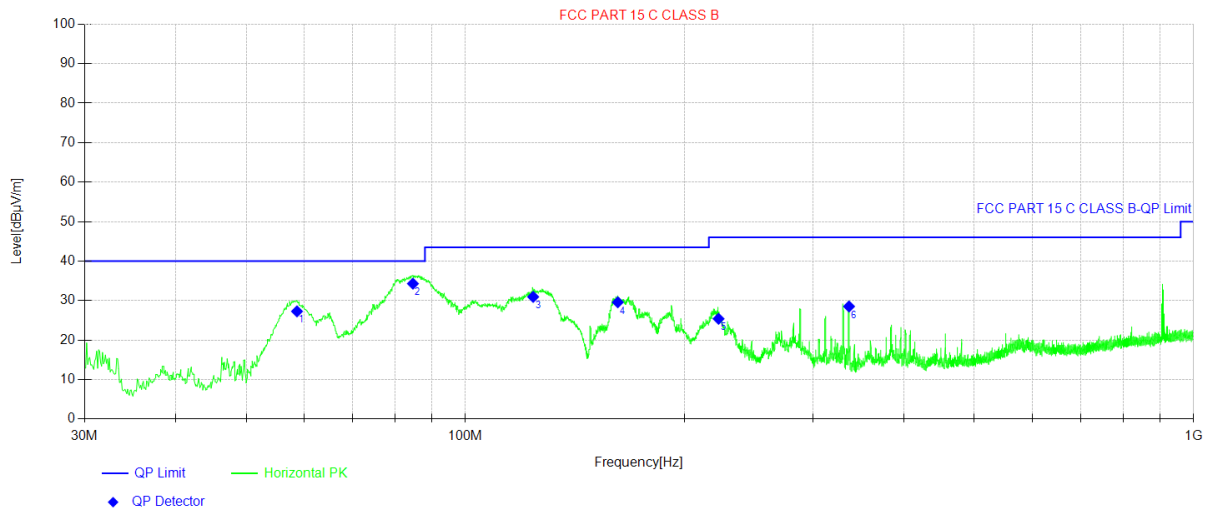
Test Frequency: 30MHz ~ 1GHz

All the modulation modes were tested the data of the worst mode (TX 802.11a Channel 36, CH149) are recorded in the following pages and the others modulation methods do not exceed the limits.

Please refer to the following test plots:



Antenna Polarization: Horizontal(CH36)

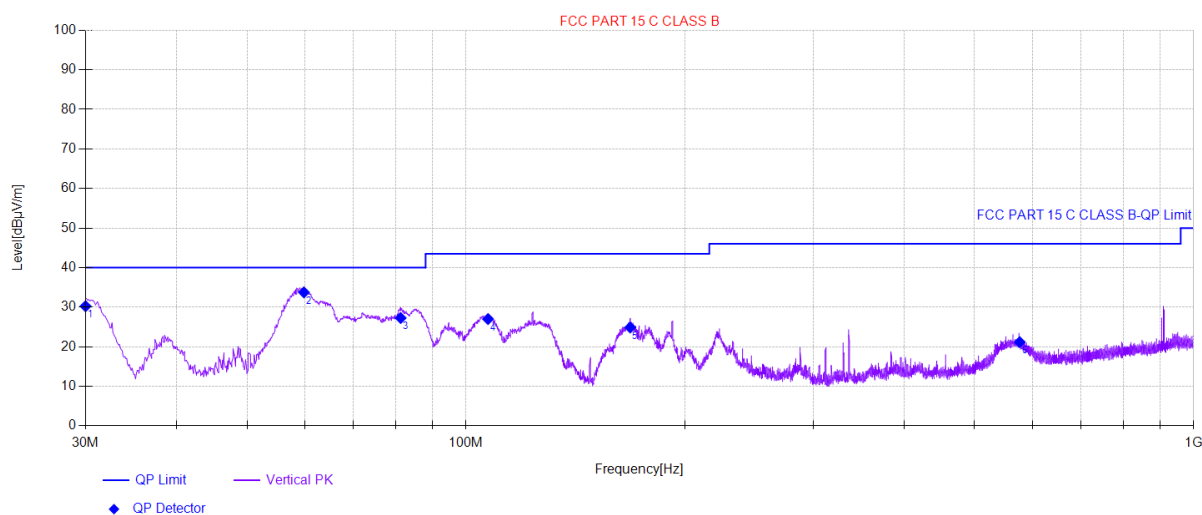


Final Test Data								
NO.	Freq. [MHz]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Result
1	58.71	27.28	40.00	12.72	200	1	Horizont	PASS
2	84.71	34.29	40.00	5.71	200	2	Horizont	PASS
3	123.91	30.95	43.50	12.55	200	183	Horizont	PASS
4	161.93	29.58	43.50	13.92	200	24	Horizont	PASS
5	222.66	25.40	46.00	20.60	100	151	Horizont	PASS
6	336.36	28.52	46.00	17.48	100	349	Horizont	PASS

Remark: Emission Level = Reading + Cable Loss + ANT Factor - AMP Factor



Antenna Polarization: Vertical (CH36)

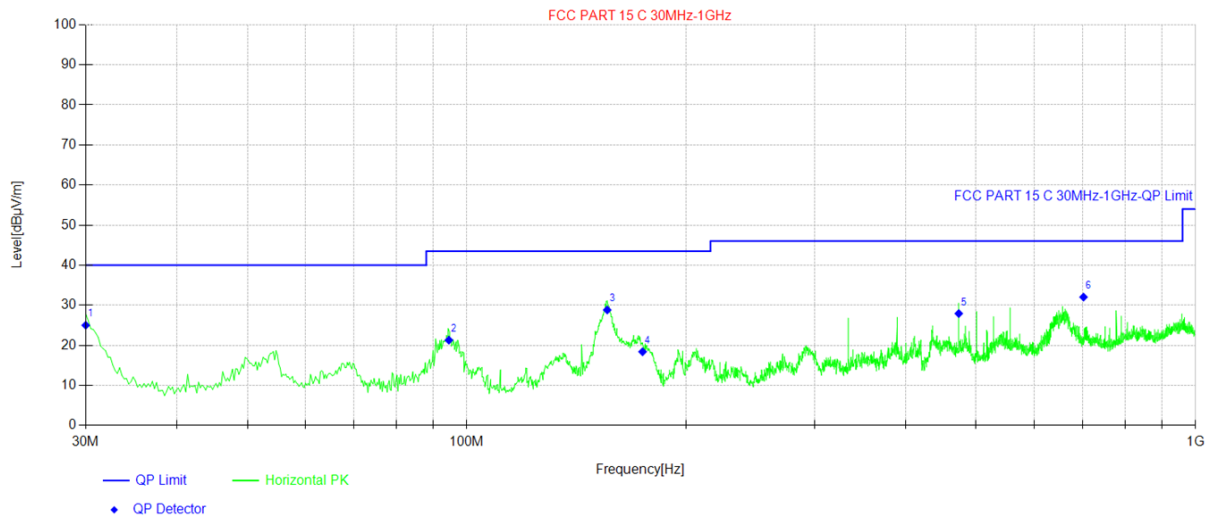


Final Test Data								
NO.	Freq. [MHz]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Result
1	30.00	30.25	40.00	9.75	100	174	Vertical	PASS
2	59.88	33.75	40.00	6.25	100	78	Vertical	PASS
3	81.32	27.27	40.00	12.73	100	121	Vertical	PASS
4	107.22	27.01	43.50	16.49	100	148	Vertical	PASS
5	168.14	24.88	43.50	18.62	100	103	Vertical	PASS
6	576.65	21.16	46.00	24.84	100	315	Vertical	PASS

Remark: Emission Level = Reading + Cable Loss + ANT Factor - AMP Factor
 Note: only the worst case recorded in the report.



Antenna Polarization: Horizontal(CH149)

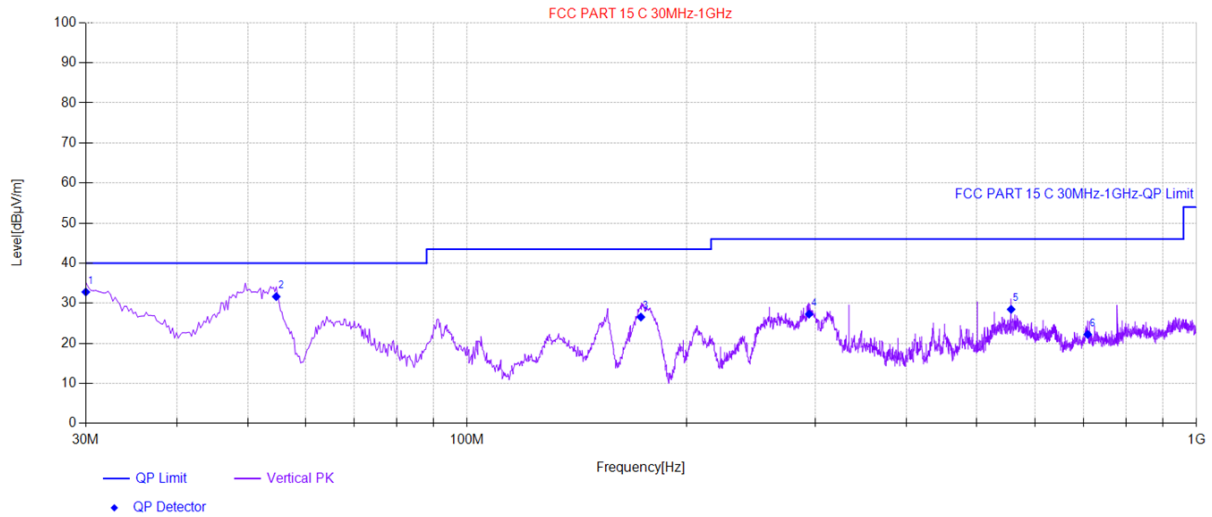


Final Data List[QP]							
NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity
1	30.00	43.36	-18.35	25.01	40.00	14.99	Horizontal
2	94.51	41.64	-20.34	21.30	43.50	22.20	Horizontal
3	155.86	44.87	-16.04	28.83	43.50	14.67	Horizontal
4	174.29	35.02	-16.62	18.40	43.50	25.10	Horizontal
5	473.29	39.46	-11.52	27.94	46.00	18.06	Horizontal
6	701.97	38.59	-6.55	32.04	46.00	13.96	Horizontal

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor



Antenna Polarization: Vertical (CH149)



Final Data List[QP]							
NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity
1	30.00	51.16	-18.35	32.81	40.00	7.19	Vertical
2	54.74	49.54	-17.88	31.66	40.00	8.34	Vertical
3	173.08	43.09	-16.53	26.56	43.50	16.94	Vertical
4	294.33	42.98	-15.69	27.29	46.00	18.71	Vertical
5	556.95	37.77	-9.29	28.48	46.00	17.52	Vertical
6	709.24	28.61	-6.38	22.23	46.00	23.77	Vertical

Remark: Emission Level = Reading + Cable Loss + ANT Factor - AMP Factor
 Note: only the worst case recorded in the report.



Test Frequency: From 1GHz to 40GHz

Pre-scan all test modes

Only the worst case Main test data.

802.11a

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	47.26	35.22	5.36	31.25	56.59	68.23	-11.64	V
15540	42.08	35.96	7.85	30.63	55.26	68.23	-12.97	V
20720	43.30	39.12	8.56	34.95	56.03	68.23	-12.20	V
10360	48.07	34.12	5.36	31.25	56.30	68.23	-11.93	H
15540	42.55	36.52	7.85	30.63	56.29	68.23	-11.94	H
20720	42.64	40.01	8.56	34.95	56.26	68.23	-11.97	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	33.13	35.22	5.36	31.25	42.46	54	-11.54	V
15540	30.10	35.96	7.85	30.63	43.28	54	-10.72	V
20720	28.15	39.12	8.56	34.95	40.88	54	-13.12	V
10360	32.45	34.12	5.36	31.25	40.68	54	-13.32	H
15540	24.56	36.52	7.85	30.63	38.30	54	-15.70	H
20720	27.02	40.01	8.56	34.95	40.64	54	-13.36	H



802.11a

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	48.05	35.63	5.36	31.25	57.79	68.23	-10.44	V
15600	43.30	35.91	7.85	30.63	56.43	68.23	-11.80	V
20800	44.12	39.67	8.56	34.95	57.40	68.23	-10.83	V
10400	46.89	34.25	5.36	31.25	55.25	68.23	-12.98	H
15600	42.20	37.02	7.85	30.63	56.44	68.23	-11.79	H
20800	43.21	38.88	8.56	34.95	55.70	68.23	-12.53	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	33.77	35.63	5.36	31.25	43.51	54	-10.49	V
15600	28.62	35.91	7.85	30.63	41.75	54	-12.25	V
20800	29.53	39.67	8.56	34.95	42.81	54	-11.19	V
10400	33.08	34.25	5.36	31.25	41.44	54	-12.56	H
15600	29.11	37.02	7.85	30.63	43.35	54	-10.65	H
20800	30.21	38.88	8.56	34.95	42.70	54	-11.30	H



802.11a

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	45.75	34.68	5.36	31.25	54.54	68.23	-13.69	V
17520	43.14	36.52	7.85	30.63	56.88	68.23	-11.35	V
20960	44.15	38.77	8.56	34.95	56.53	68.23	-11.70	V
10480	46.65	33.99	5.36	31.25	54.75	68.23	-13.48	H
17520	45.13	36.84	7.85	30.63	59.19	68.23	-9.04	H
20960	46.25	39.93	8.56	34.95	59.79	68.23	-8.44	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	33.24	34.68	5.36	31.25	42.03	54	-11.97	V
17520	29.00	36.52	7.85	30.63	42.74	54	-11.26	V
20960	29.96	38.77	8.56	34.95	42.34	54	-11.66	V
10480	32.12	33.99	5.36	31.25	40.22	54	-13.78	H
17520	27.31	36.84	7.85	30.63	41.37	54	-12.63	H
20960	29.04	39.93	8.56	34.95	42.58	54	-11.42	H



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Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	47.80	35.26	5.42	31.75	56.73	68.23	-11.50	V
17235	42.08	36.88	7.32	30.96	55.32	68.23	-12.91	V
22980	43.79	39.14	8.85	35.25	56.53	68.23	-11.70	V
11490	49.77	34.21	5.42	31.75	57.65	68.23	-10.58	H
17235	43.96	37.52	7.32	30.96	57.84	68.23	-10.39	H
22980	44.48	39.88	8.85	35.25	57.96	68.23	-10.27	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	32.44	35.26	5.42	31.75	41.37	54	-12.63	V
17235	29.82	36.88	7.32	30.96	43.06	54	-10.94	V
22980	29.67	39.14	8.85	35.25	42.41	54	-11.59	V
11490	31.80	34.21	5.42	31.75	39.68	54	-14.32	H
17235	28.98	37.52	7.32	30.96	42.86	54	-11.14	H
22980	29.35	39.88	8.85	35.25	42.83	54	-11.17	H



802.11a

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	48.34	35.26	5.42	31.75	57.27	68.23	-10.96	V
17355	44.08	36.88	7.32	30.96	57.32	68.23	-10.91	V
23140	45.32	39.14	8.85	35.25	58.06	68.23	-10.17	V
11570	48.44	34.21	5.42	31.75	56.32	68.23	-11.91	H
17355	42.19	37.52	7.32	30.96	56.07	68.23	-12.16	H
23140	43.14	39.88	8.85	35.25	56.62	68.23	-11.61	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.13	35.26	5.42	31.75	42.06	54	-11.94	V
17355	29.53	36.88	7.32	30.96	42.77	54	-11.23	V
23140	28.54	39.14	8.85	35.25	41.28	54	-12.72	V
11570	34.44	34.21	5.42	31.75	42.32	54	-11.68	H
17355	29.69	37.52	7.32	30.96	43.57	54	-10.43	H
23140	29.27	39.88	8.85	35.25	42.75	54	-11.25	H



802.11a

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	48.60	35.26	5.42	31.75	57.53	68.23	-10.70	V
17475	44.26	36.88	7.32	30.96	57.50	68.23	-10.73	V
23300	45.85	39.14	8.85	35.25	58.59	68.23	-9.64	V
11650	49.40	34.21	5.42	31.75	57.28	68.23	-10.95	H
17475	44.62	37.52	7.32	30.96	58.50	68.23	-9.73	H
23300	45.00	39.88	8.85	35.25	58.48	68.23	-9.75	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	34.69	34.96	5.42	31.75	43.32	54	-10.68	V
17475	28.79	36.74	7.32	30.96	41.89	54	-12.11	V
23300	30.08	39.14	8.85	35.25	42.82	54	-11.18	V
11650	33.42	34.02	5.42	31.75	41.11	54	-12.89	H
17475	28.75	36.57	7.32	30.96	41.68	54	-12.32	H
23300	28.28	39.88	8.85	35.25	41.76	54	-12.24	H



802.11n20

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	45.29	34.56	5.36	31.25	53.96	68.23	-14.27	V
15540	43.16	36.22	7.85	30.63	56.60	68.23	-11.63	V
20720	44.35	38.97	8.56	34.95	56.93	68.23	-11.30	V
10360	49.47	33.57	5.36	31.25	57.15	68.23	-11.08	H
15540	40.27	36.49	7.85	30.63	53.98	68.23	-14.25	H
20720	41.60	39.92	8.56	34.95	55.13	68.23	-13.10	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	32.12	34.56	5.36	31.25	40.79	54	-13.21	V
15540	29.55	36.22	7.85	30.63	42.99	54	-11.01	V
20720	28.03	38.97	8.56	34.95	40.61	54	-13.39	V
10360	31.93	33.57	5.36	31.25	39.61	54	-14.39	H
15540	27.13	36.49	7.85	30.63	40.84	54	-13.16	H
20720	28.27	39.92	8.56	34.95	41.80	54	-12.20	H



802.11n20

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	48.25	34.63	5.36	31.25	56.99	68.23	-11.24	V
15600	44.51	36.42	7.85	30.63	58.15	68.23	-10.08	V
20800	45.02	38.81	8.56	34.95	57.44	68.23	-10.79	V
10400	47.98	33.93	5.36	31.25	56.02	68.23	-12.21	H
15600	43.16	36.55	7.85	30.63	56.93	68.23	-11.30	H
20800	43.95	39.94	8.56	34.95	57.50	68.23	-10.73	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	32.67	34.63	5.36	31.25	41.41	54	-12.59	V
15600	28.44	36.42	7.85	30.63	42.08	54	-11.92	V
20800	29.18	38.81	8.56	34.95	41.60	54	-12.40	V
10400	33.41	33.93	5.36	31.25	41.45	54	-12.55	H
15600	28.70	36.55	7.85	30.63	42.47	54	-11.53	H
20800	29.86	39.94	8.56	34.95	43.41	54	-10.59	H



802.11n20

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	45.66	34.68	5.36	31.25	54.45	68.23	-13.78	V
17520	44.44	36.52	7.85	30.63	58.18	68.23	-10.05	V
20960	43.13	38.77	8.56	34.95	55.51	68.23	-12.72	V
10480	46.86	33.99	5.36	31.25	54.96	68.23	-13.27	H
17520	45.88	36.84	7.85	30.63	59.94	68.23	-8.29	H
20960	44.17	39.93	8.56	34.95	57.71	68.23	-10.52	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	31.68	34.68	5.36	31.25	40.47	54	-13.53	V
17520	27.88	36.52	7.85	30.63	41.62	54	-12.38	V
20960	28.22	38.77	8.56	34.95	40.60	54	-13.40	V
10480	30.57	33.99	5.36	31.25	38.67	54	-15.33	H
17520	27.33	36.84	7.85	30.63	41.39	54	-12.61	H
20960	29.58	39.93	8.56	34.95	43.12	54	-10.88	H



802.11n20

Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	49.56	35.26	5.42	31.75	58.49	68.23	-9.74	V
17235	42.43	36.88	7.32	30.96	55.67	68.23	-12.56	V
22980	43.25	39.14	8.85	35.25	55.99	68.23	-12.24	V
11490	49.06	34.21	5.42	31.75	56.94	68.23	-11.29	H
17235	43.88	37.52	7.32	30.96	57.76	68.23	-10.47	H
22980	44.74	39.88	8.85	35.25	58.22	68.23	-10.01	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	33.95	35.26	5.42	31.75	42.88	54	-11.12	V
17235	29.77	36.88	7.32	30.96	43.01	54	-10.99	V
22980	29.87	39.14	8.85	35.25	42.61	54	-11.39	V
11490	33.21	34.21	5.42	31.75	41.09	54	-12.91	H
17235	28.15	37.52	7.32	30.96	42.03	54	-11.97	H
22980	29.21	39.88	8.85	35.25	42.69	54	-11.31	H



802.11n20

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	45.62	35.26	5.42	31.75	54.55	68.23	-13.68	V
17355	44.32	36.88	7.32	30.96	57.56	68.23	-10.67	V
23140	45.16	39.14	8.85	35.25	57.90	68.23	-10.33	V
11570	47.96	34.21	5.42	31.75	55.84	68.23	-12.39	H
17355	42.47	37.52	7.32	30.96	56.35	68.23	-11.88	H
23140	42.01	39.88	8.85	35.25	55.49	68.23	-12.74	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.66	35.26	5.42	31.75	42.59	54	-11.41	V
17355	30.20	36.88	7.32	30.96	43.44	54	-10.56	V
23140	29.77	39.14	8.85	35.25	42.51	54	-11.49	V
11570	33.61	34.21	5.42	31.75	41.49	54	-12.51	H
17355	30.05	37.52	7.32	30.96	43.93	54	-10.07	H
23140	29.09	39.88	8.85	35.25	42.57	54	-11.43	H



802.11n20

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	47.74	35.26	5.42	31.75	56.67	68.23	-11.56	V
17475	44.71	36.88	7.32	30.96	57.95	68.23	-10.28	V
23300	45.33	39.14	8.85	35.25	58.07	68.23	-10.16	V
11650	49.05	34.21	5.42	31.75	56.93	68.23	-11.30	H
17475	44.36	37.52	7.32	30.96	58.24	68.23	-9.99	H
23300	45.62	39.88	8.85	35.25	59.10	68.23	-9.13	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	35.44	35.26	5.42	31.75	44.37	54	-9.63	V
17475	29.06	36.88	7.32	30.96	42.30	54	-11.70	V
23300	28.07	39.14	8.85	35.25	40.81	54	-13.19	V
11650	33.34	34.21	5.42	31.75	41.22	54	-12.78	H
17475	28.77	37.52	7.32	30.96	42.65	54	-11.35	H
23300	29.31	39.88	8.85	35.25	42.79	54	-11.21	H



802.11ac20

Test Mode: 5180					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	47.33	35.22	5.36	31.25	56.66	68.23	-11.57	V
15540	41.96	35.96	7.85	30.63	55.14	68.23	-13.09	V
20720	43.35	39.12	8.56	34.95	56.08	68.23	-12.15	V
10360	48.19	34.12	5.36	31.25	56.42	68.23	-11.81	H
15540	42.36	36.52	7.85	30.63	56.10	68.23	-12.13	H
20720	42.83	40.01	8.56	34.95	56.45	68.23	-11.78	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10360	33.02	35.22	5.36	31.25	42.35	54	-11.65	V
15540	30.25	35.96	7.85	30.63	43.43	54	-10.57	V
20720	27.87	39.12	8.56	34.95	40.60	54	-13.40	V
10360	32.77	34.12	5.36	31.25	41.00	54	-13.00	H
15540	24.55	36.52	7.85	30.63	38.29	54	-15.71	H
20720	27.32	40.01	8.56	34.95	40.94	54	-13.06	H



802.11ac20

Test Mode:5200					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	47.87	35.63	5.36	31.25	57.61	68.23	-10.62	V
15600	43.07	35.91	7.85	30.63	56.20	68.23	-12.03	V
20800	44.12	39.67	8.56	34.95	57.40	68.23	-10.83	V
10400	46.89	34.25	5.36	31.25	55.25	68.23	-12.98	H
15600	42.27	37.02	7.85	30.63	56.51	68.23	-11.72	H
20800	43.31	38.88	8.56	34.95	55.80	68.23	-12.43	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10400	33.87	35.63	5.36	31.25	43.61	54	-10.39	V
15600	28.94	35.91	7.85	30.63	42.07	54	-11.93	V
20800	29.78	39.67	8.56	34.95	43.06	54	-10.94	V
10400	33.05	34.25	5.36	31.25	41.41	54	-12.59	H
15600	29.25	37.02	7.85	30.63	43.49	54	-10.51	H
20800	30.10	38.88	8.56	34.95	42.59	54	-11.41	H



802.11ac20

Test Mode:5240					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	45.50	34.68	5.36	31.25	54.29	68.23	-13.94	V
17520	43.23	36.52	7.85	30.63	56.97	68.23	-11.26	V
20960	44.31	38.77	8.56	34.95	56.69	68.23	-11.54	V
10480	47.13	33.99	5.36	31.25	55.23	68.23	-13.00	H
17520	45.24	36.84	7.85	30.63	59.30	68.23	-8.93	H
20960	46.37	39.93	8.56	34.95	59.91	68.23	-8.32	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10480	33.36	34.68	5.36	31.25	42.15	54	-11.85	V
17520	28.91	36.52	7.85	30.63	42.65	54	-11.35	V
20960	29.78	38.77	8.56	34.95	42.16	54	-11.84	V
10480	31.96	33.99	5.36	31.25	40.06	54	-13.94	H
17520	27.33	36.84	7.85	30.63	41.39	54	-12.61	H
20960	29.49	39.93	8.56	34.95	43.03	54	-10.97	H



802.11ac20

Test Mode: 5745					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	47.86	35.26	5.42	31.75	56.79	68.23	-11.44	V
17235	42.46	36.88	7.32	30.96	55.70	68.23	-12.53	V
22980	43.86	39.14	8.85	35.25	56.60	68.23	-11.63	V
11490	49.68	34.21	5.42	31.75	57.56	68.23	-10.67	H
17235	44.53	37.52	7.32	30.96	58.41	68.23	-9.82	H
22980	44.14	39.88	8.85	35.25	57.62	68.23	-10.61	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11490	32.21	35.26	5.42	31.75	41.14	54	-12.86	V
17235	30.12	36.88	7.32	30.96	43.36	54	-10.64	V
22980	29.62	39.14	8.85	35.25	42.36	54	-11.64	V
11490	31.58	34.21	5.42	31.75	39.46	54	-14.54	H
17235	28.62	37.52	7.32	30.96	42.50	54	-11.50	H
22980	29.15	39.88	8.85	35.25	42.63	54	-11.37	H



802.11ac20

Test Mode:5785					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	48.35	35.26	5.42	31.75	57.28	68.23	-10.95	V
17355	44.21	36.88	7.32	30.96	57.45	68.23	-10.78	V
23140	45.55	39.14	8.85	35.25	58.29	68.23	-9.94	V
11570	48.32	34.21	5.42	31.75	56.20	68.23	-12.03	H
17355	41.97	37.52	7.32	30.96	55.85	68.23	-12.38	H
23140	43.35	39.88	8.85	35.25	56.83	68.23	-11.40	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11570	33.10	35.26	5.42	31.75	42.03	54	-11.97	V
17355	29.61	36.88	7.32	30.96	42.85	54	-11.15	V
23140	28.61	39.14	8.85	35.25	41.35	54	-12.65	V
11570	34.60	34.21	5.42	31.75	42.48	54	-11.52	H
17355	29.38	37.52	7.32	30.96	43.26	54	-10.74	H
23140	29.64	39.88	8.85	35.25	43.12	54	-10.88	H



802.11ac20

Test Mode:5825					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	48.80	35.26	5.42	31.75	57.73	68.23	-10.50	V
17475	44.57	36.88	7.32	30.96	57.81	68.23	-10.42	V
23300	45.43	39.14	8.85	35.25	58.17	68.23	-10.06	V
11650	49.60	34.21	5.42	31.75	57.48	68.23	-10.75	H
17475	44.44	37.52	7.32	30.96	58.32	68.23	-9.91	H
23300	45.23	39.88	8.85	35.25	58.71	68.23	-9.52	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11650	34.58	35.26	5.42	31.75	43.51	54	-10.49	V
17475	28.81	36.88	7.32	30.96	42.05	54	-11.95	V
23300	29.92	39.14	8.85	35.25	42.66	54	-11.34	V
11650	33.58	34.21	5.42	31.75	41.46	54	-12.54	H
17475	28.65	37.52	7.32	30.96	42.53	54	-11.47	H
23300	28.49	39.88	8.85	35.25	41.97	54	-12.03	H



802.11n40

Test Mode:5190					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	47.40	35.26	5.42	31.75	56.33	68.23	-11.90	V
15570	44.62	36.88	7.32	30.96	57.86	68.23	-10.37	V
20760	45.09	39.14	8.85	35.25	57.83	68.23	-10.40	V
10380	49.08	34.21	5.42	31.75	56.96	68.23	-11.27	H
15570	44.89	37.52	7.32	30.96	58.77	68.23	-9.46	H
20760	45.61	39.88	8.85	35.25	59.09	68.23	-9.14	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	35.87	35.26	5.42	31.75	44.80	54	-9.20	V
15570	29.15	36.88	7.32	30.96	42.39	54	-11.61	V
20760	27.86	39.14	8.85	35.25	40.60	54	-13.40	V
10380	32.86	34.21	5.42	31.75	40.74	54	-13.26	H
15570	28.31	37.52	7.32	30.96	42.19	54	-11.81	H
20760	29.15	39.88	8.85	35.25	42.63	54	-11.37	H



802.11n40

Test Mode:5230					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	47.34	35.26	5.42	31.75	56.27	68.23	-11.96	V
15690	44.77	36.88	7.32	30.96	58.01	68.23	-10.22	V
20920	44.95	39.14	8.85	35.25	57.69	68.23	-10.54	V
10460	49.38	34.21	5.42	31.75	57.26	68.23	-10.97	H
15690	44.83	37.52	7.32	30.96	58.71	68.23	-9.52	H
20920	45.52	39.88	8.85	35.25	59.00	68.23	-9.23	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	35.74	35.26	5.42	31.75	44.67	54	-9.33	V
15690	28.82	36.88	7.32	30.96	42.06	54	-11.94	V
20920	28.09	39.14	8.85	35.25	40.83	54	-13.17	V
10460	32.92	34.21	5.42	31.75	40.80	54	-13.20	H
15690	28.45	37.52	7.32	30.96	42.33	54	-11.67	H
20920	28.86	39.88	8.85	35.25	42.34	54	-11.66	H



802.11ac40

Test Mode:5190					Test channel:LOW			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	47.34	35.26	5.42	31.75	56.27	68.23	-11.96	V
15570	44.67	36.88	7.32	30.96	57.91	68.23	-10.32	V
20760	45.19	39.14	8.85	35.25	57.93	68.23	-10.30	V
10380	49.01	34.21	5.42	31.75	56.89	68.23	-11.34	H
15570	44.76	37.52	7.32	30.96	58.64	68.23	-9.59	H
20760	45.35	39.88	8.85	35.25	58.83	68.23	-9.40	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10380	35.44	35.26	5.42	31.75	44.37	54	-9.63	V
15570	29.24	36.88	7.32	30.96	42.48	54	-11.52	V
20760	27.66	39.14	8.85	35.25	40.40	54	-13.60	V
10380	33.11	34.21	5.42	31.75	40.99	54	-13.01	H
15570	28.27	37.52	7.32	30.96	42.15	54	-11.85	H
20760	28.94	39.88	8.85	35.25	42.42	54	-11.58	H



802.11ac40

Test Mode:5230					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	47.69	35.26	5.42	31.75	56.62	68.23	-11.61	V
15690	44.43	36.88	7.32	30.96	57.67	68.23	-10.56	V
20920	45.09	39.14	8.85	35.25	57.83	68.23	-10.40	V
10460	48.94	34.21	5.42	31.75	56.82	68.23	-11.41	H
15690	44.42	37.52	7.32	30.96	58.30	68.23	-9.93	H
20920	45.13	39.88	8.85	35.25	58.61	68.23	-9.62	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10460	35.39	35.26	5.42	31.75	44.32	54	-9.68	V
15690	29.23	36.88	7.32	30.96	42.47	54	-11.53	V
20920	27.78	39.14	8.85	35.25	40.52	54	-13.48	V
10460	32.92	34.21	5.42	31.75	40.80	54	-13.20	H
15690	28.83	37.52	7.32	30.96	42.71	54	-11.29	H
20920	28.91	39.88	8.85	35.25	42.39	54	-11.61	H



Band 1 802.11ac HT80

Test Mode:5210					Test channel: Middle channel			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10420	47.72	34.72	5.38	31.75	56.07	68.23	-12.16	V
10420	49.33	33.95	5.39	31.75	56.92	68.23	-11.31	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
10420	35.63	34.72	5.38	31.75	43.98	54	-10.02	V
10420	32.82	33.95	5.39	31.75	40.41	54	-13.59	H
Remark: The emission levels of other frequencies are very lower than the limit and not show in test report.								

Band 4 802.11ac HT80

Test Mode:5775					Test channel: middle channel			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11,550	48.93	35.18	5.39	31.75	57.75	68.23	-10.48	V
11,550	48.64	35.18	5.39	31.75	57.46	68.23	-10.77	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
11,550	33.08	35.18	5.39	31.75	41.90	54	-12.10	V
11,550	34.62	35.18	5.39	31.75	43.44	54	-10.56	H
Remark: The emission levels of other frequencies are very lower than the limit and not show in test report.								



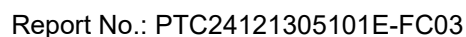
Note:

1. The testing has been conformed to 40GHz.
2. All other emissions more than 30dB below the limit.
3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Reading + Factor
Margin=Emission Level-Limit
4. X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.



Undesirable emission

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	Max. Fre [MHz]	Max. Level [dBm]	Limit [dBm]	Verdict
11A	Ant1	5180	30~5140	3272.47	-39.94	≤-27	PASS
11A	Ant1	5180	5360~27000	25133.19	-31.67	≤-27	PASS
11A	Ant1	5200	30~5140	3092.25	-38.67	≤-27	PASS
11A	Ant1	5200	5360~27000	25719.63	-32.52	≤-27	PASS
11A	Ant1	5240	30~5140	3481.98	-34.86	≤-27	PASS
11A	Ant1	5240	5360~27000	25723.24	-32	≤-27	PASS
11A	Ant1	5745	30~5650	3903.12	-41.08	≤-27	PASS
11A	Ant1	5745	5925~27000	25734.8	-29.97	≤-27	PASS
11A	Ant1	5785	30~5650	3497.91	-35.88	≤-27	PASS
11A	Ant1	5785	5925~27000	25700.38	-30.06	≤-27	PASS
11A	Ant1	5825	30~5650	3154.35	-40.57	≤-27	PASS
11A	Ant1	5825	5925~27000	25708.81	-29.11	≤-27	PASS
11N20SISO	Ant1	5180	30~5140	3305.51	-40.18	≤-27	PASS
11N20SISO	Ant1	5180	5360~27000	25729.73	-33.9	≤-27	PASS
11N20SISO	Ant1	5200	30~5140	3486.57	-37.76	≤-27	PASS
11N20SISO	Ant1	5200	5360~27000	25713.86	-32.89	≤-27	PASS
11N20SISO	Ant1	5240	30~5140	3061.93	-39.07	≤-27	PASS
11N20SISO	Ant1	5240	5360~27000	25662.65	-33.17	≤-27	PASS
11N20SISO	Ant1	5745	30~5650	3178.32	-40.62	≤-27	PASS
11N20SISO	Ant1	5745	5925~27000	25765.71	-29.1	≤-27	PASS
11N20SISO	Ant1	5785	30~5650	3406.87	-35.45	≤-27	PASS
11N20SISO	Ant1	5785	5925~27000	25731.29	-29.98	≤-27	PASS
11N20SISO	Ant1	5825	30~5650	2688.45	-40.33	≤-27	PASS
11N20SISO	Ant1	5825	5925~27000	25151.72	-31.1	≤-27	PASS
11N40SISO	Ant1	5190	30~5140	2934.35	-40.12	≤-27	PASS
11N40SISO	Ant1	5190	5360~27000	26316.9	-34.07	≤-27	PASS
11N40SISO	Ant1	5230	30~5140	3431.73	-37.02	≤-27	PASS
11N40SISO	Ant1	5230	5360~27000	25690.78	-33.44	≤-27	PASS
11N40SISO	Ant1	5755	30~5650	3179.26	-41.04	≤-27	PASS
11N40SISO	Ant1	5755	5925~27000	25660.33	-31.18	≤-27	PASS
11N40SISO	Ant1	5795	30~5650	3206.24	-40.36	≤-27	PASS
11N40SISO	Ant1	5795	5925~27000	25726.37	-30	≤-27	PASS
11AC20SISO	Ant1	5180	30~5140	3199.73	-39.57	≤-27	PASS
11AC20SISO	Ant1	5180	5360~27000	25178.63	-32.49	≤-27	PASS
11AC20SISO	Ant1	5200	30~5140	3087.14	-39.64	≤-27	PASS
11AC20SISO	Ant1	5200	5360~27000	25705.21	-33.16	≤-27	PASS
11AC20SISO	Ant1	5240	30~5140	3296.14	-39.25	≤-27	PASS
11AC20SISO	Ant1	5240	5360~27000	26239.71	-32.96	≤-27	PASS
11AC20SISO	Ant1	5745	30~5650	3035.2	-41	≤-27	PASS
11AC20SISO	Ant1	5745	5925~27000	25165.07	-30.09	≤-27	PASS
11AC20SISO	Ant1	5785	30~5650	3310.58	-40.41	≤-27	PASS
11AC20SISO	Ant1	5785	5925~27000	25709.51	-29.91	≤-27	PASS
11AC20SISO	Ant1	5825	30~5650	3368.84	-40.51	≤-27	PASS
11AC20SISO	Ant1	5825	5925~27000	25202.3	-30.38	≤-27	PASS
11AC40SISO	Ant1	5190	30~5140	3076.07	-39.46	≤-27	PASS
11AC40SISO	Ant1	5190	5360~27000	25149.78	-33.56	≤-27	PASS
11AC40SISO	Ant1	5230	30~5140	3173.16	-38.64	≤-27	PASS
11AC40SISO	Ant1	5230	5360~27000	25097.12	-32.66	≤-27	PASS
11AC40SISO	Ant1	5755	30~5650	3041.01	-40.57	≤-27	PASS
11AC40SISO	Ant1	5755	5925~27000	25623.8	-30.36	≤-27	PASS
11AC40SISO	Ant1	5795	30~5650	3169.71	-40.22	≤-27	PASS
11AC40SISO	Ant1	5795	5925~27000	25675.79	-29.11	≤-27	PASS



Note: 27~40GHz at least have 20dB margin. No recording in the test report.

Test Graphs:

Center Freq 2.585000000 GHz

PNO: Fast IFGain:Low Trig: Free Run #Avg Type: RMS Avg/Hold: 50/50 TRACE 1 2 3 4 5 6 TYPE M P P P P P P DET P P P P P P P

Ref Offset 16.75 dB Ref 10.00 dBm

10 dB/div Log

Mkr1 3.272 47 GHz -39.935 dBm

Start 30 MHz Stop 5,140 GHz

#Res BW 1.0 MHz #VBW 3.0 MHz Sweep 10.00 ms (30001 pts)

MSG STATUS

Frequency

Auto Tune

Center Freq 2.585000000 GHz

Start Freq 30.000000 MHz

Stop Freq 5.140000000 GHz

CF Step 511.000000 MHz Auto Man

Freq Offset 0 Hz

Center Freq 16.180000000 GHz

PNO: Fast IFGain:Low Trig: Free Run #Avg Type: RMS Avg/Hold: 10/10 TRACE 1 2 3 4 5 6 TYPE M P P P P P P DET P P P P P P P

Ref Offset 16.75 dB Ref 10.00 dBm

10 dB/div Log

Mkr1 25.133 2 GHz -31.666 dBm

Start 5.36 GHz Stop 27.00 GHz

#Res BW 1.0 MHz #VBW 3.0 MHz Sweep 56.00 ms (30001 pts)

MSG STATUS

Frequency

Auto Tune

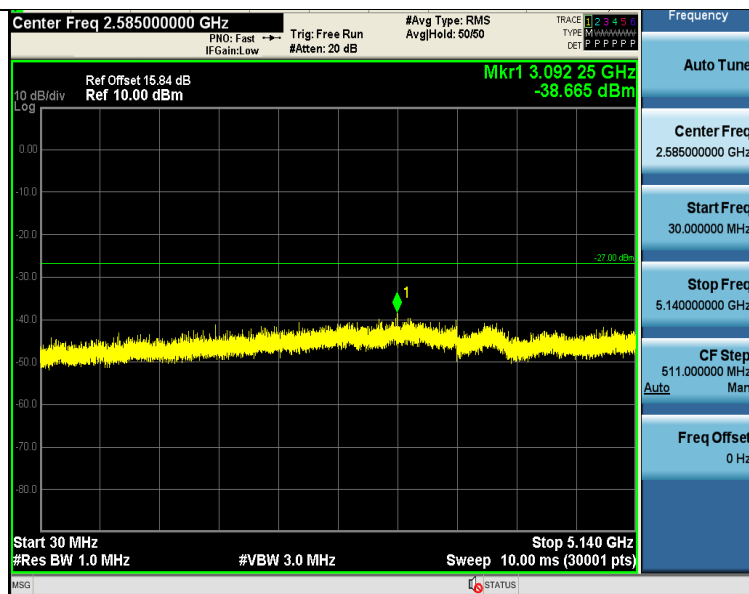
Center Freq 16.180000000 GHz

Start Freq 5.360000000 GHz

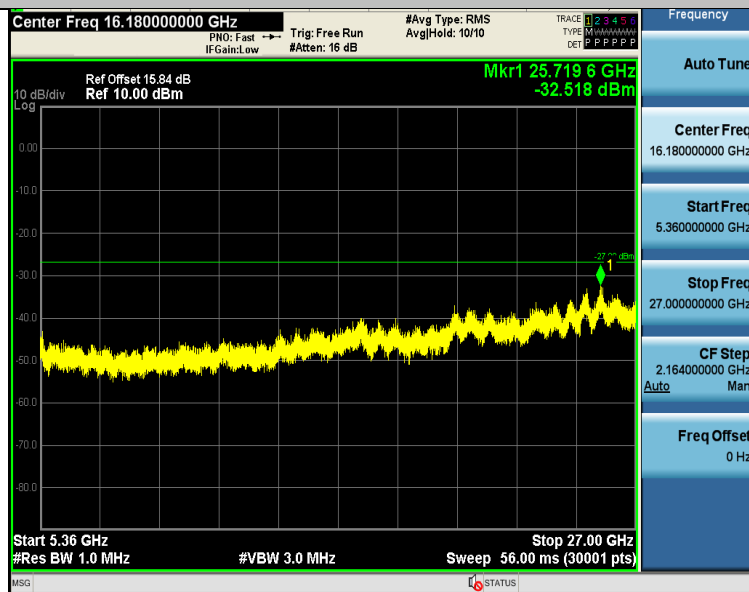
Stop Freq 27.000000000 GHz

CF Step 2.164000000 GHz Auto Man

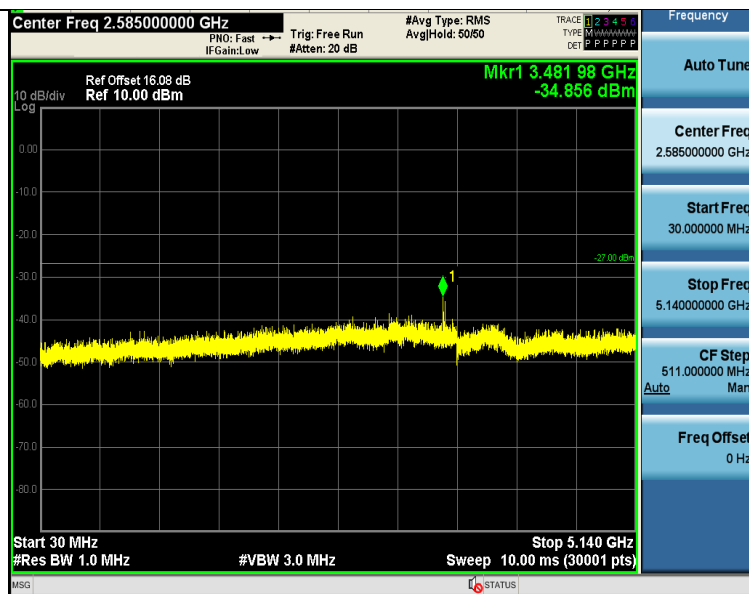
Freq Offset 0 Hz



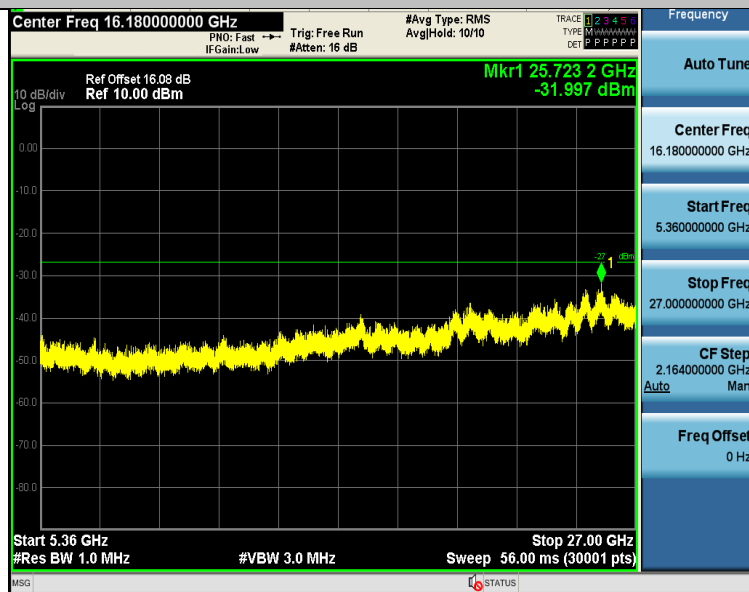
11A-Ant1-5200-30~5140-PASS



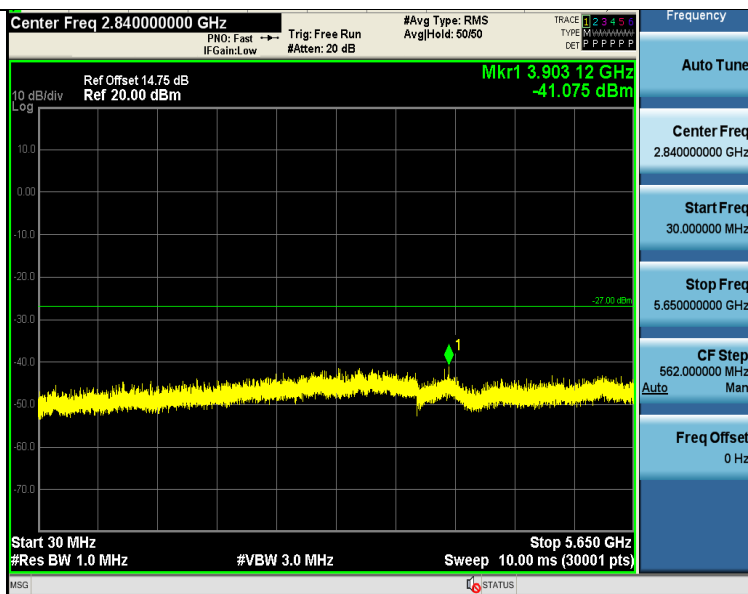
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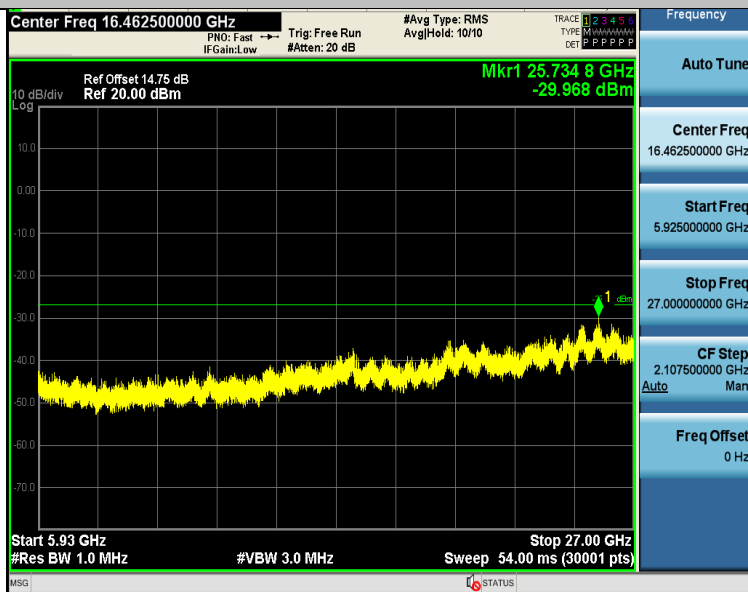
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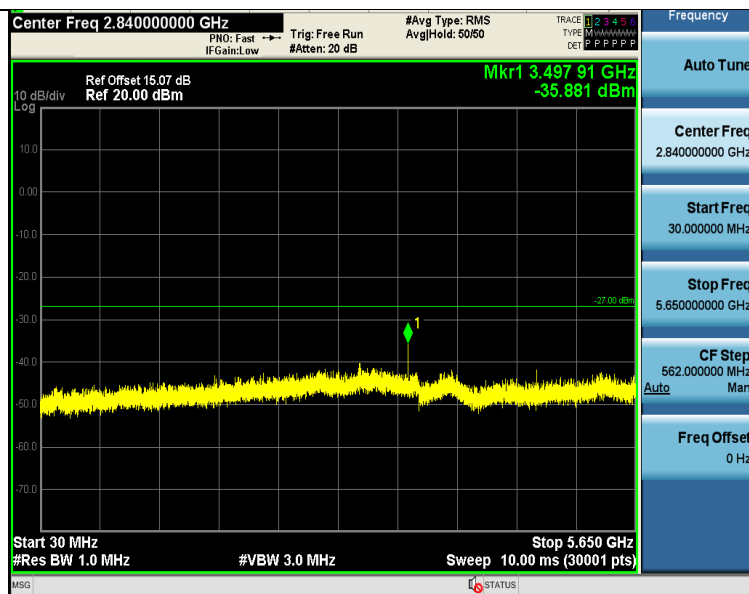
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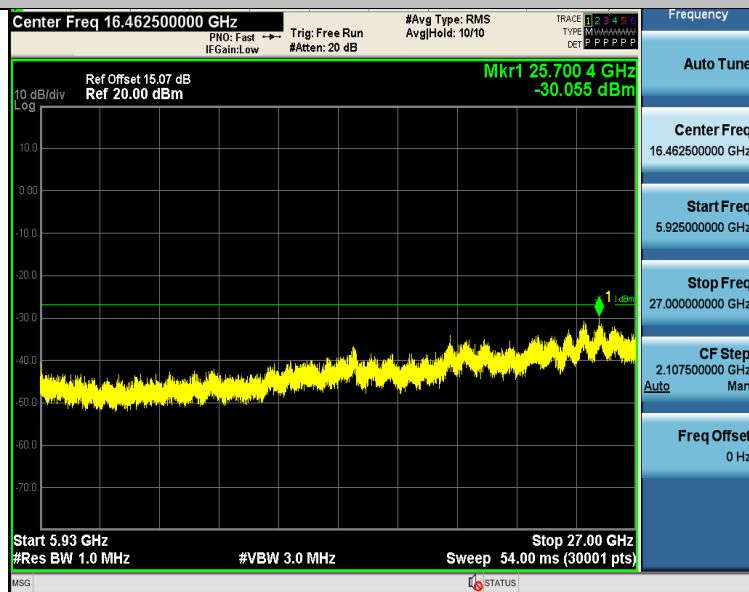
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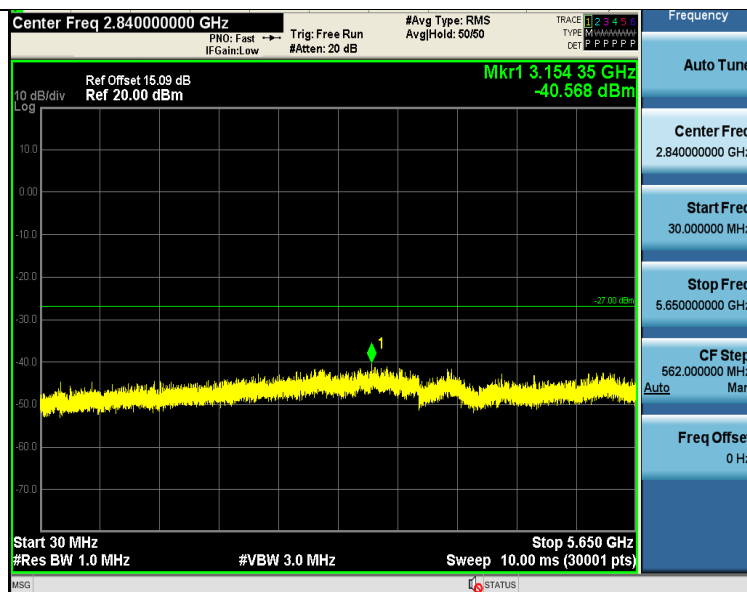
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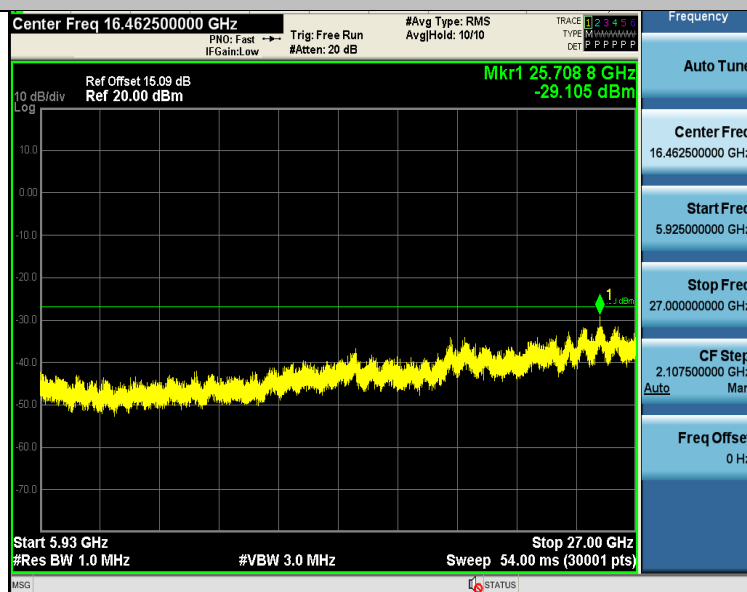
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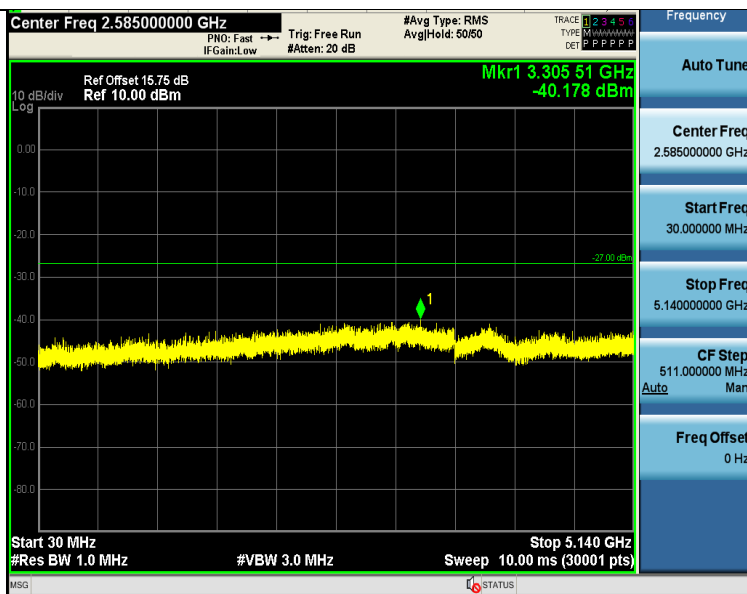
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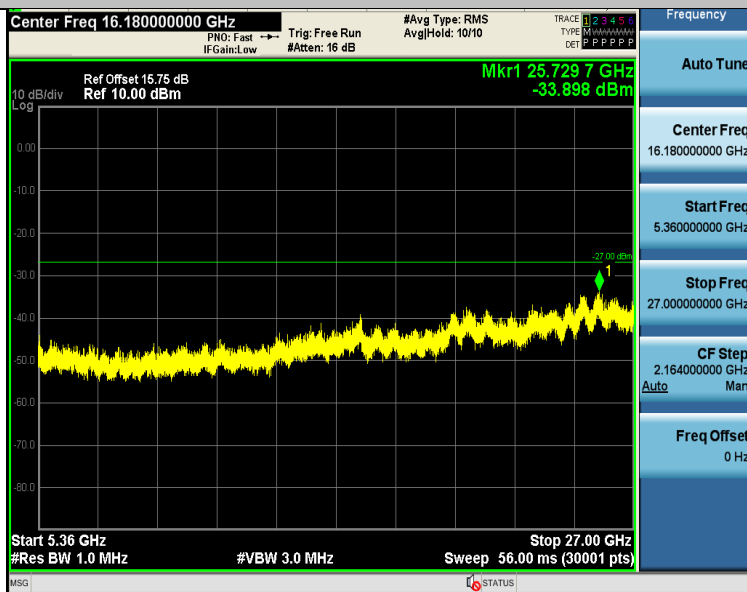
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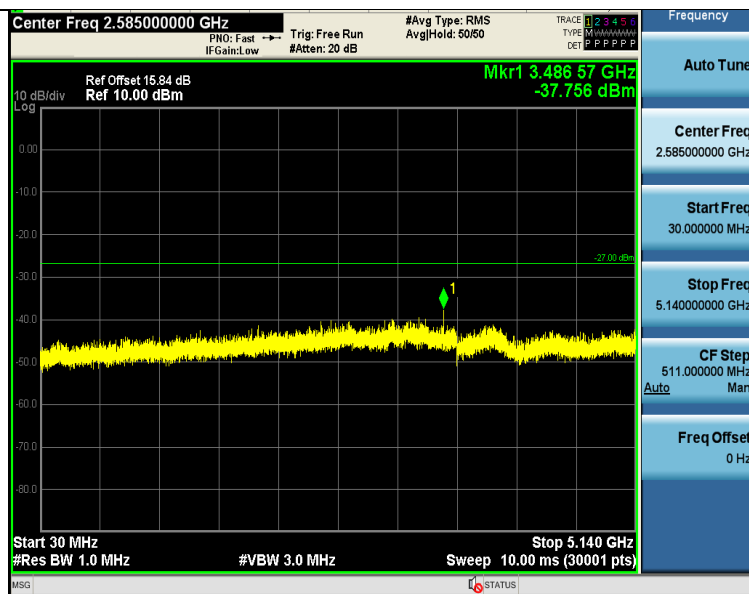
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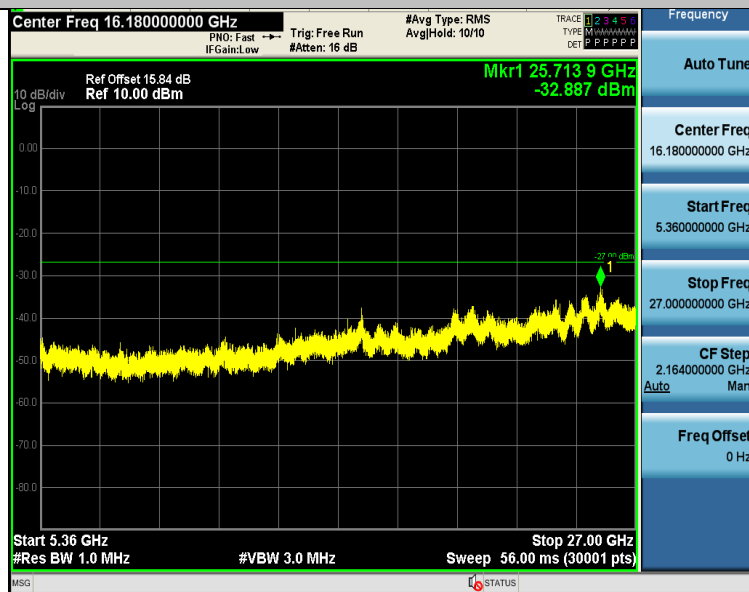
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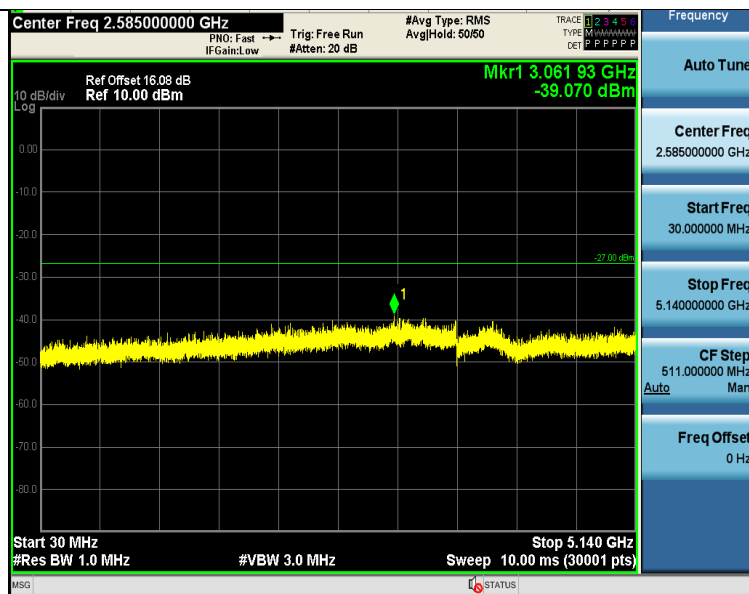
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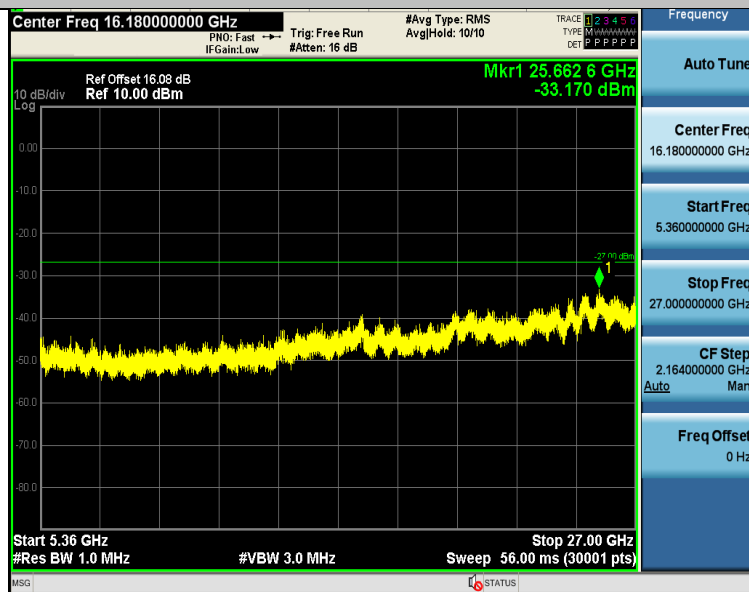
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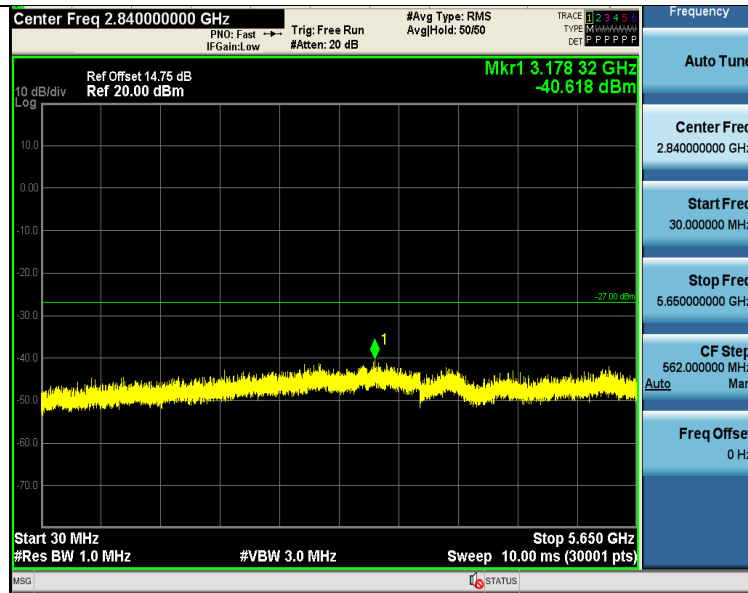
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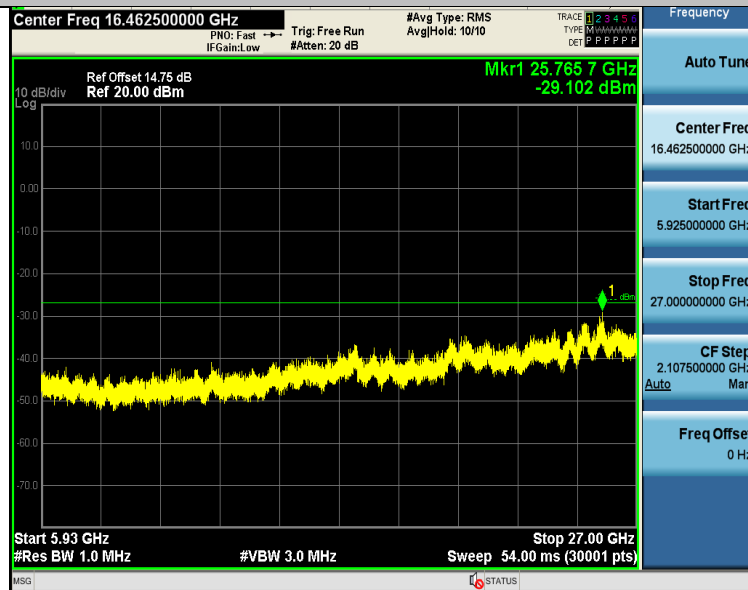
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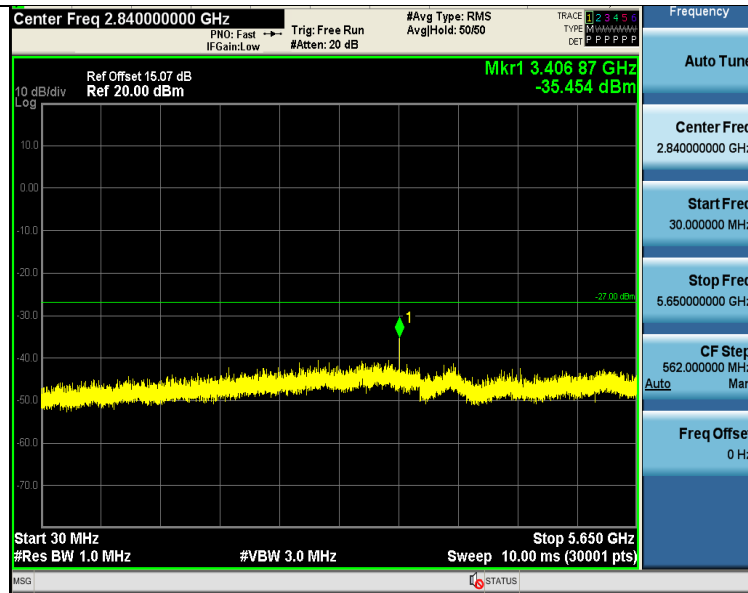
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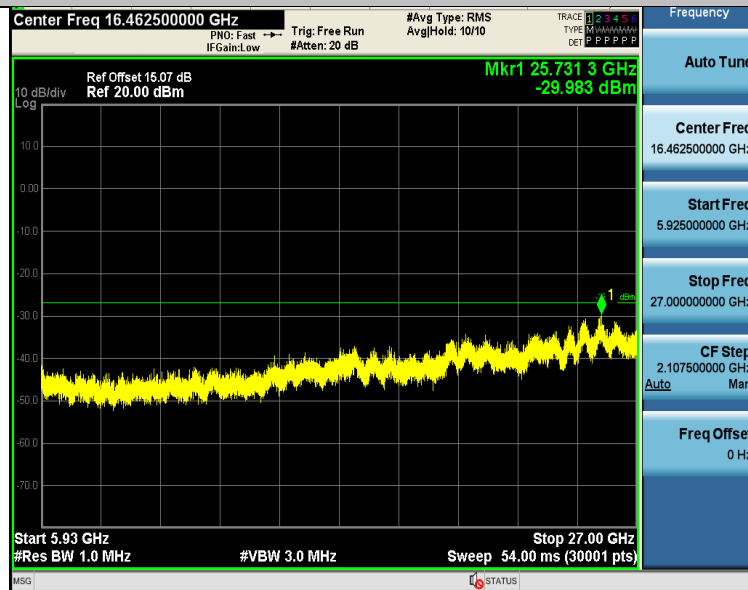
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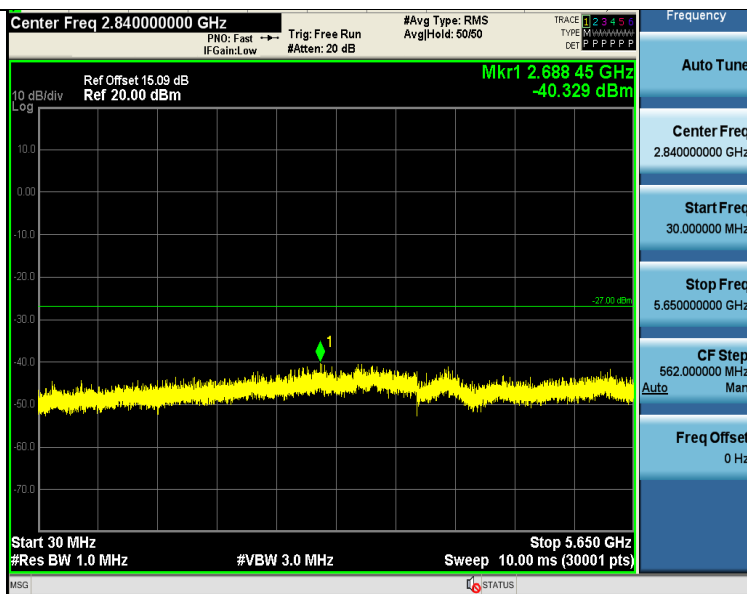
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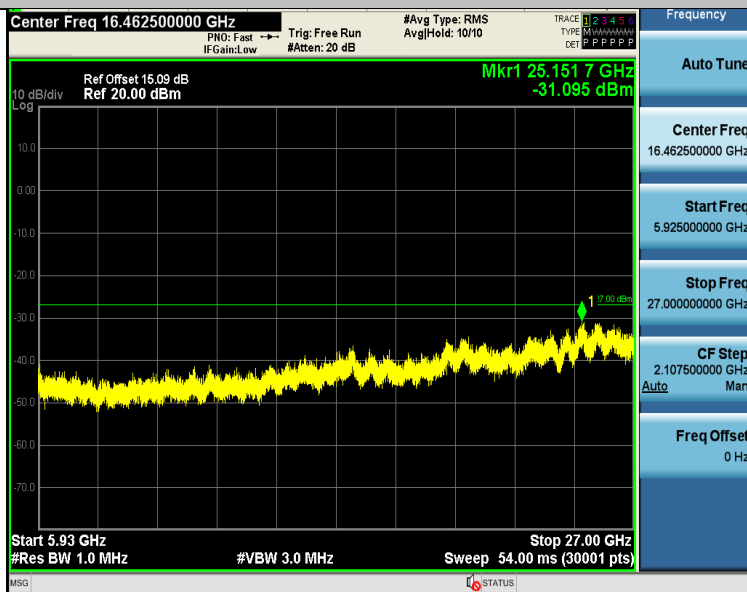
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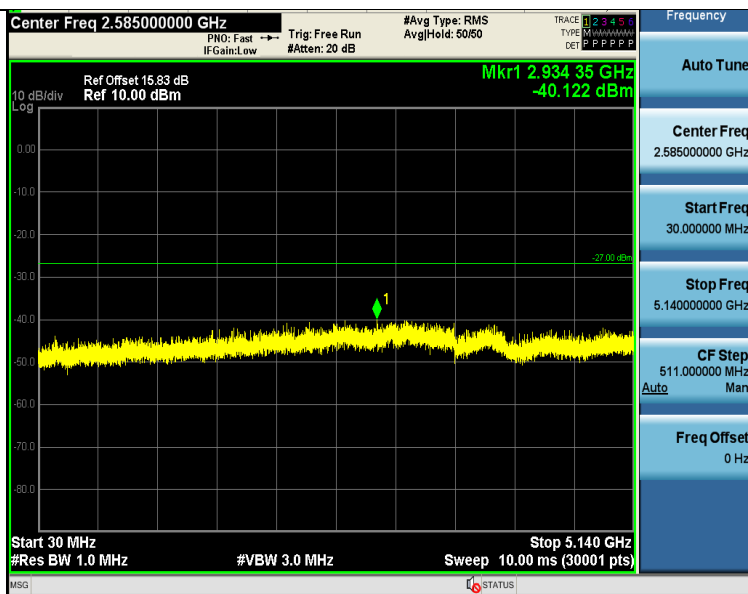
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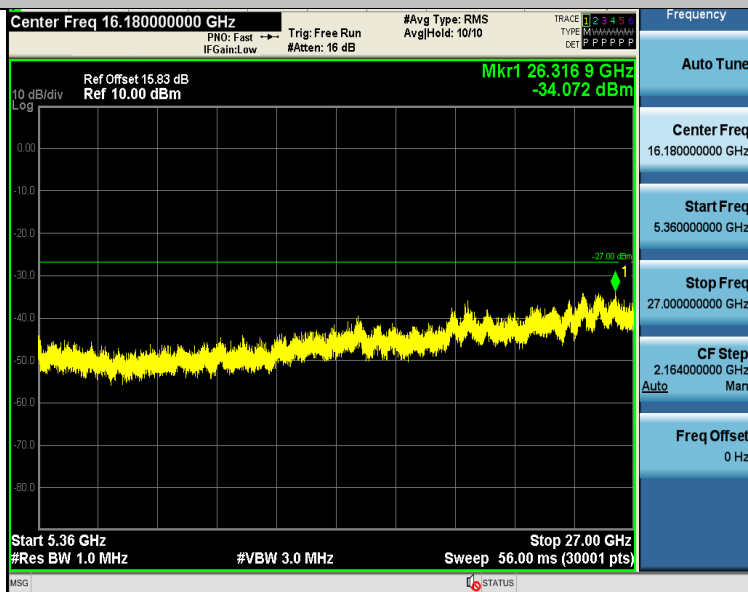
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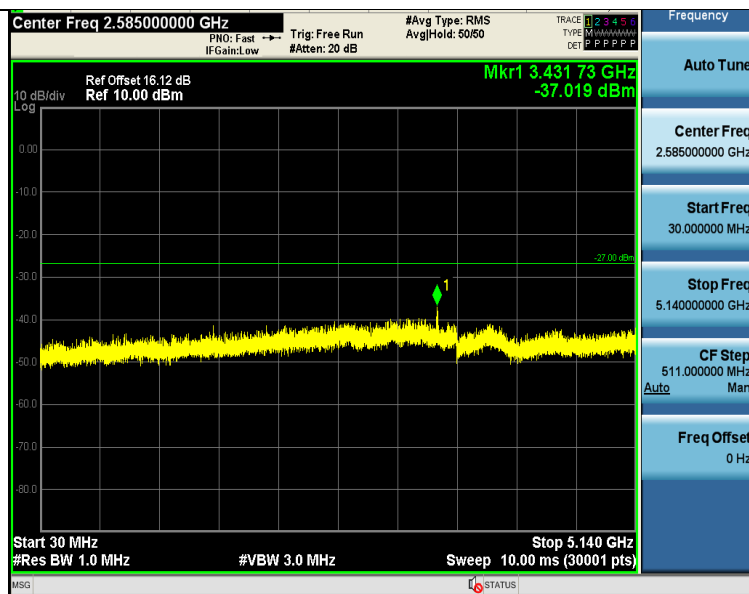
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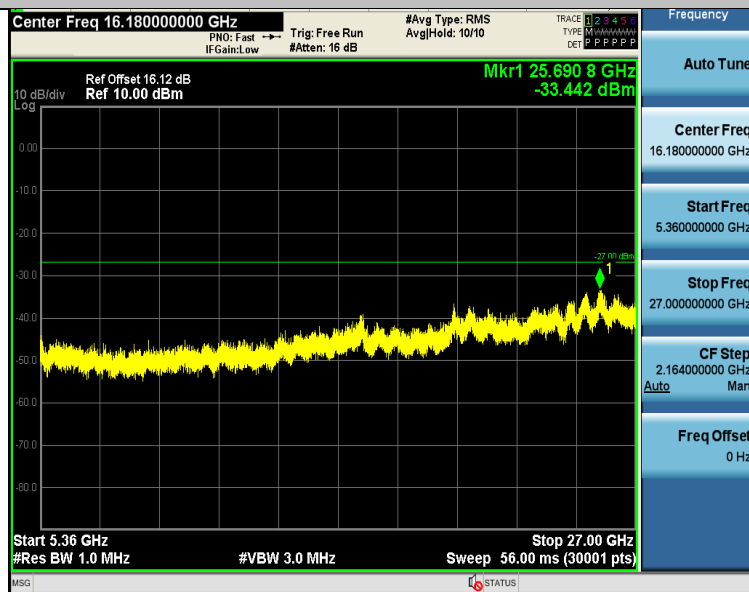
11N40SISO-Ant1-5190-30~5140-PASS



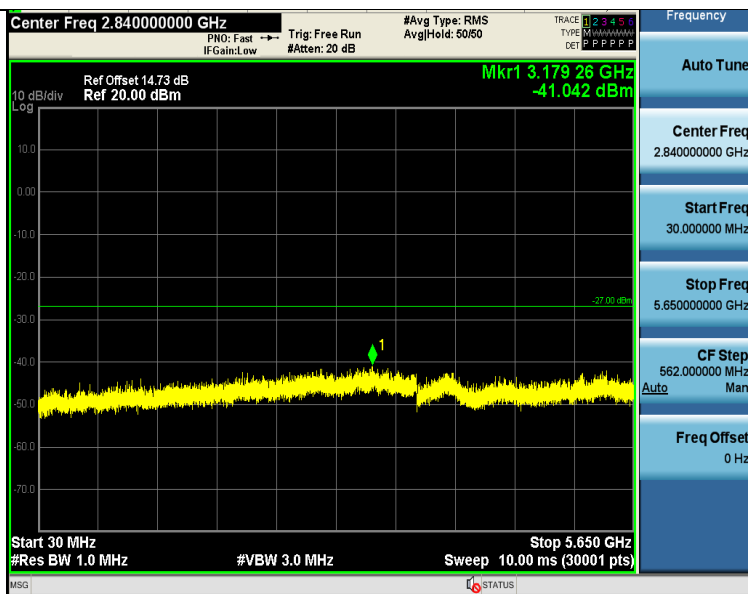
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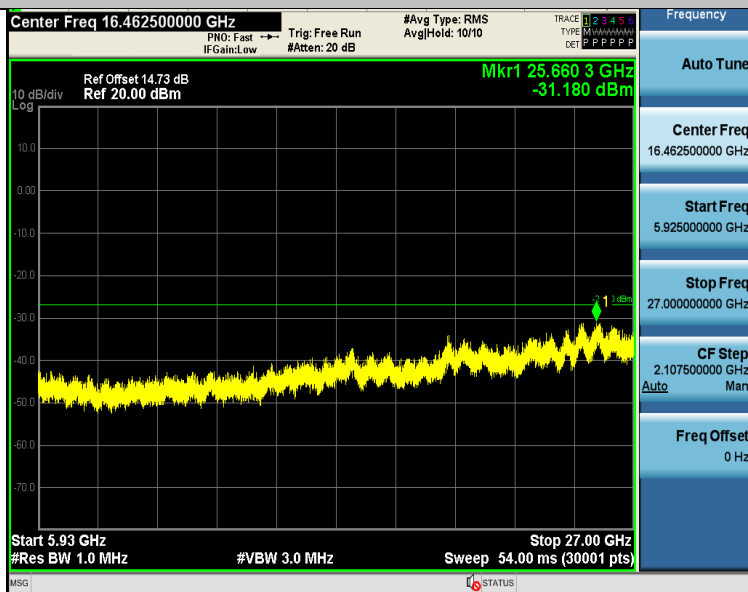
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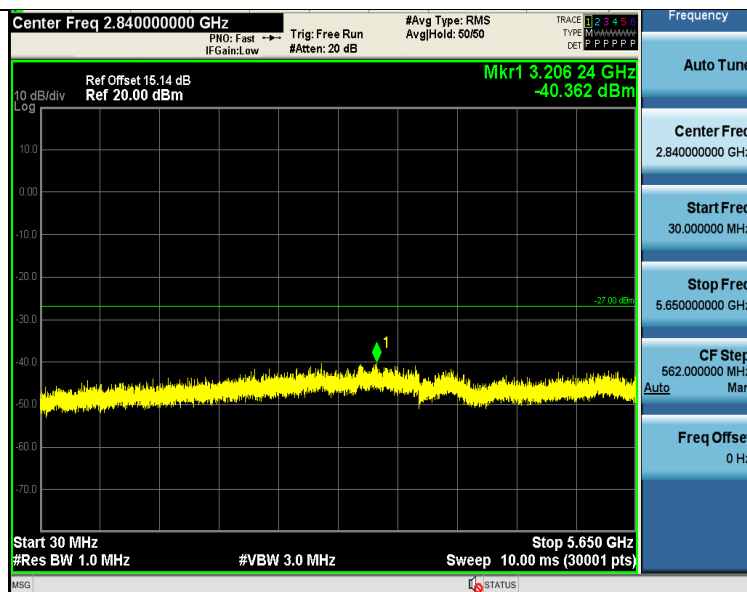
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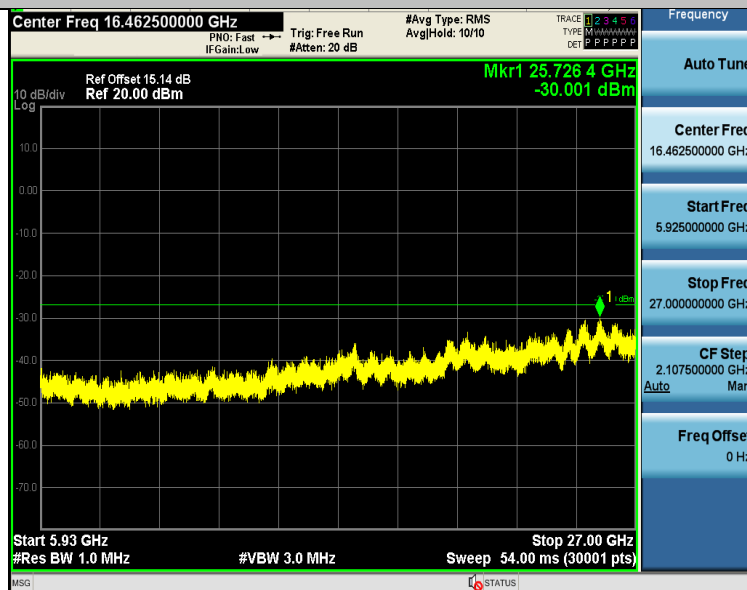
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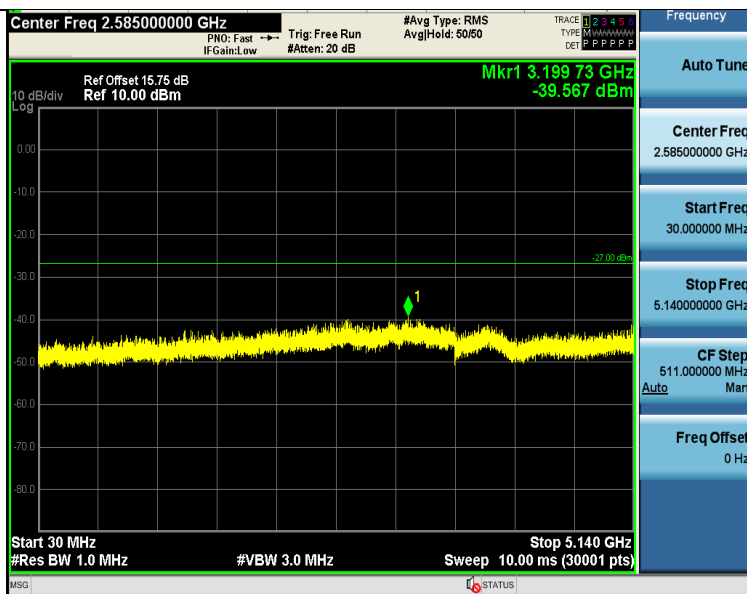
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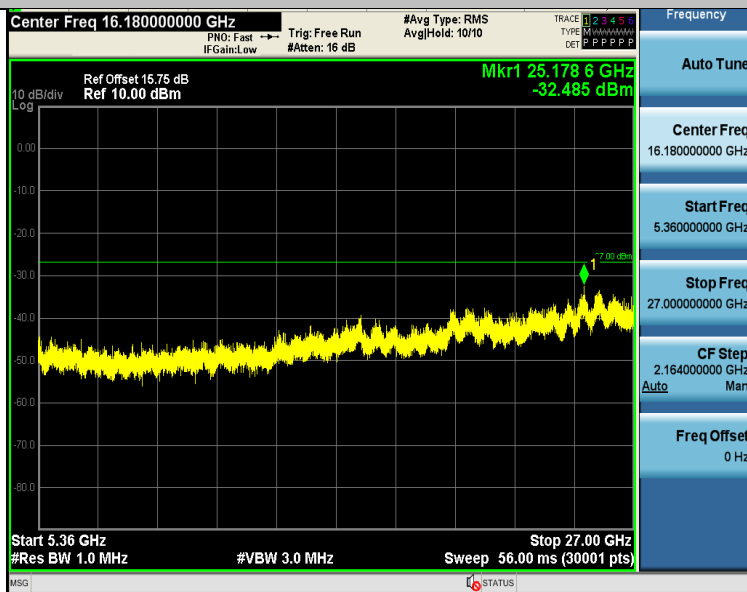
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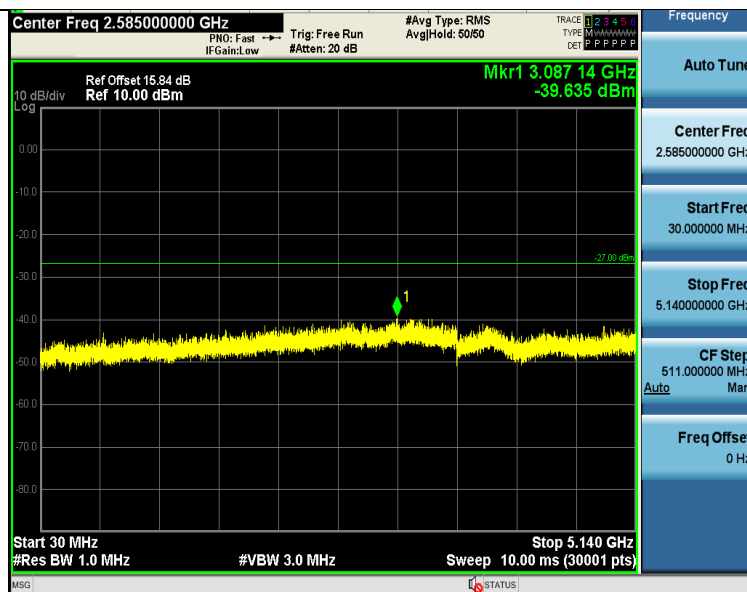
11N40SISO-Ant1-5795-5925~27000-PASS



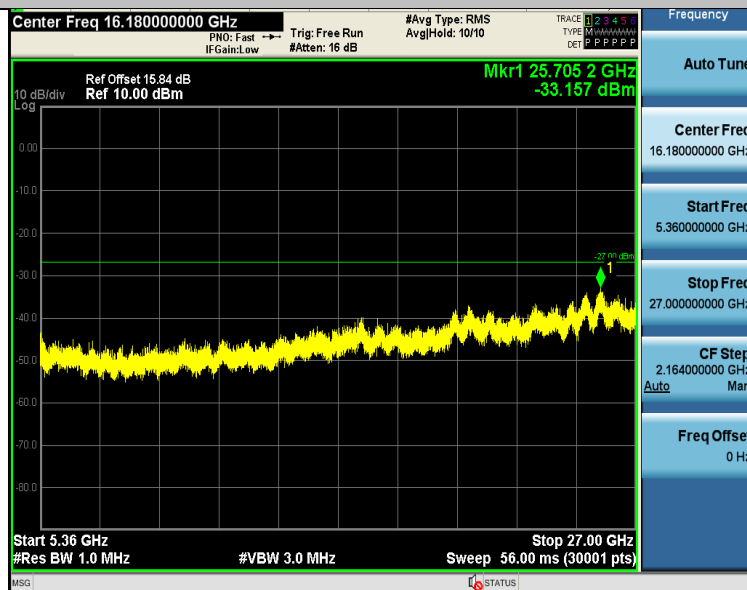
11AC20SISO-Ant1-5180-30~5140-PASS



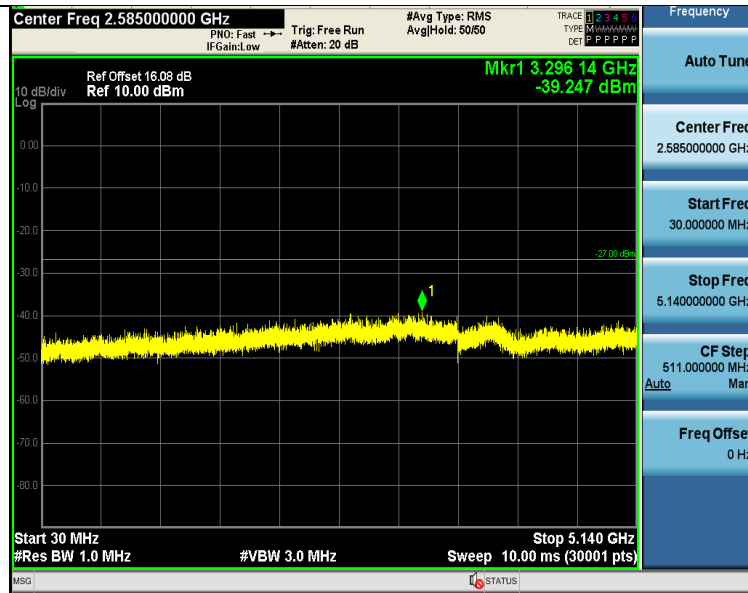
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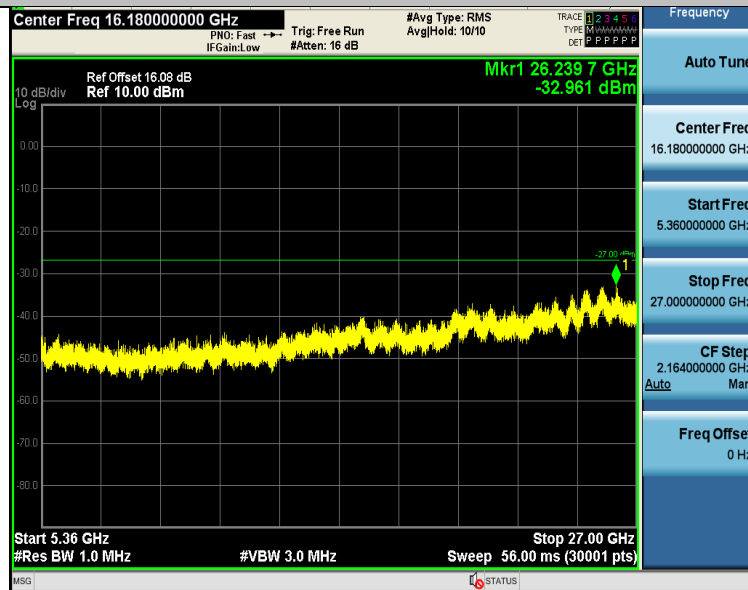
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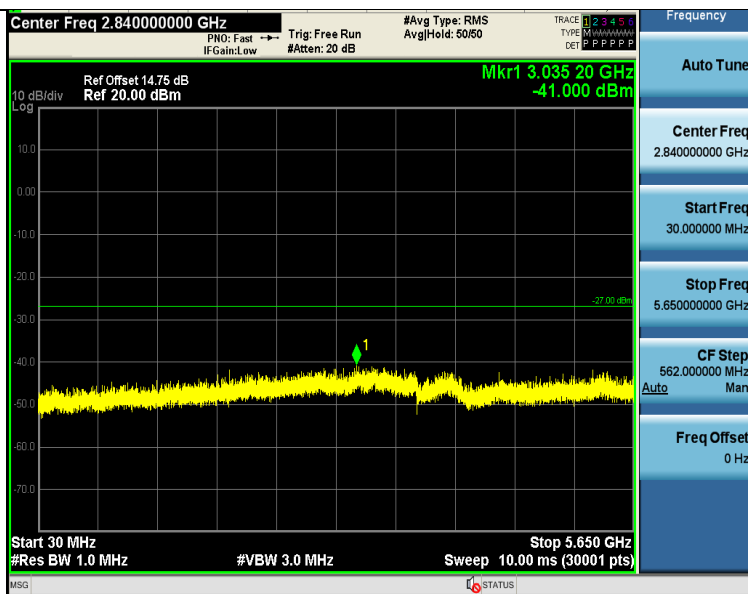
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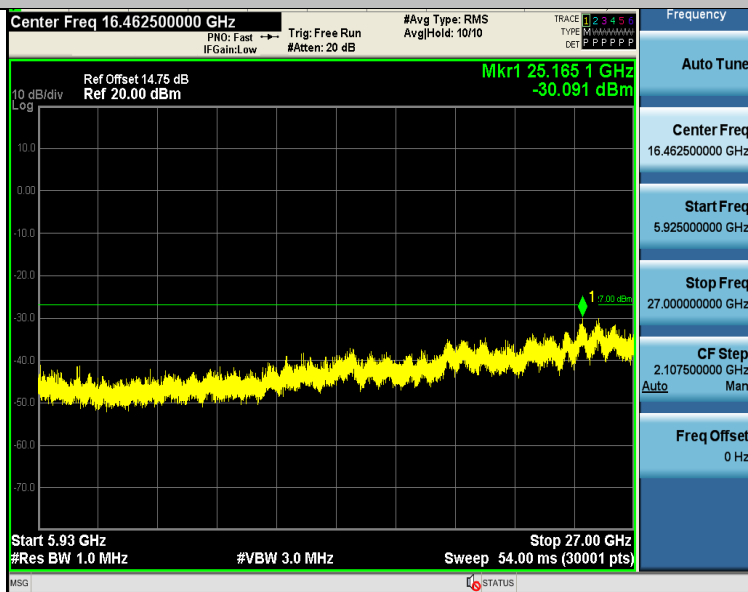
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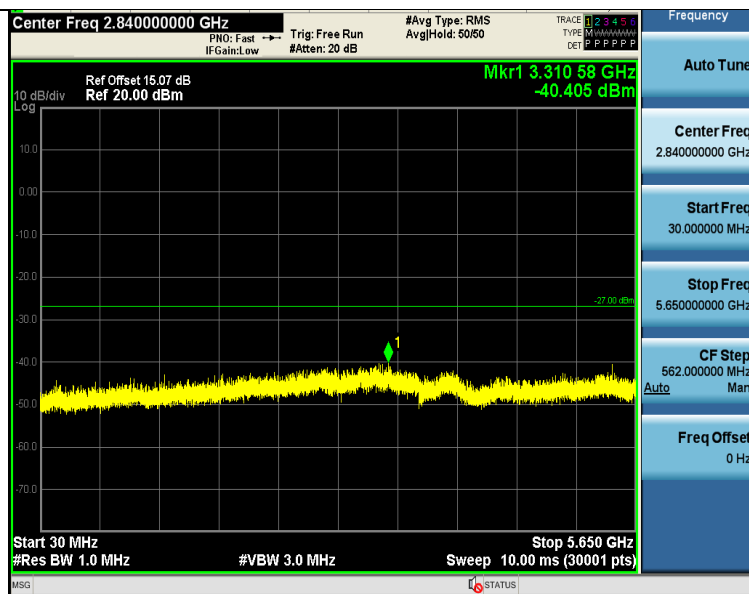
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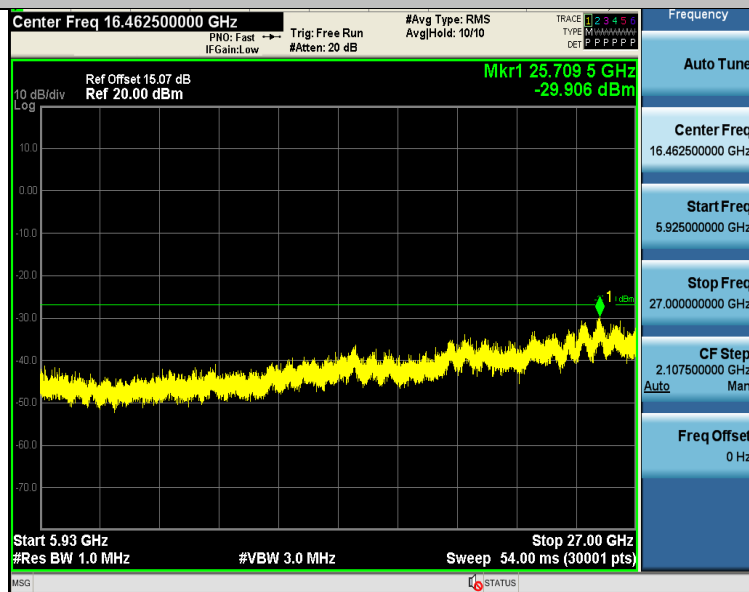
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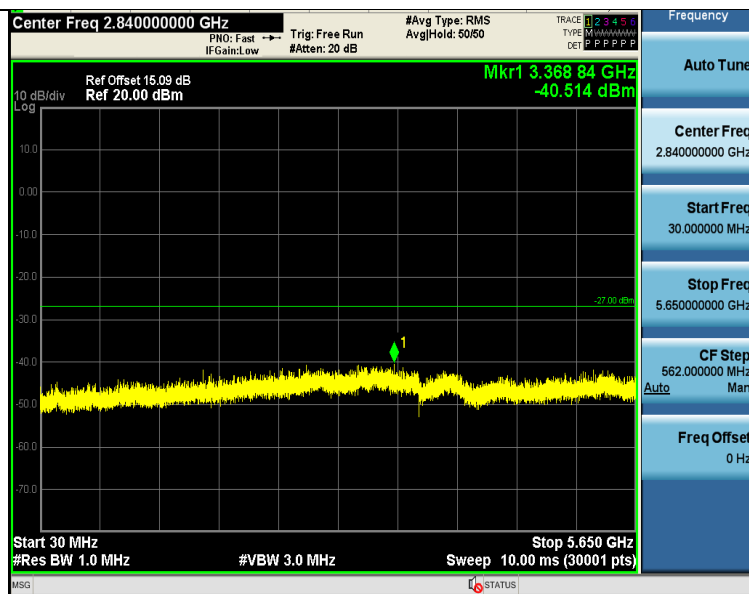
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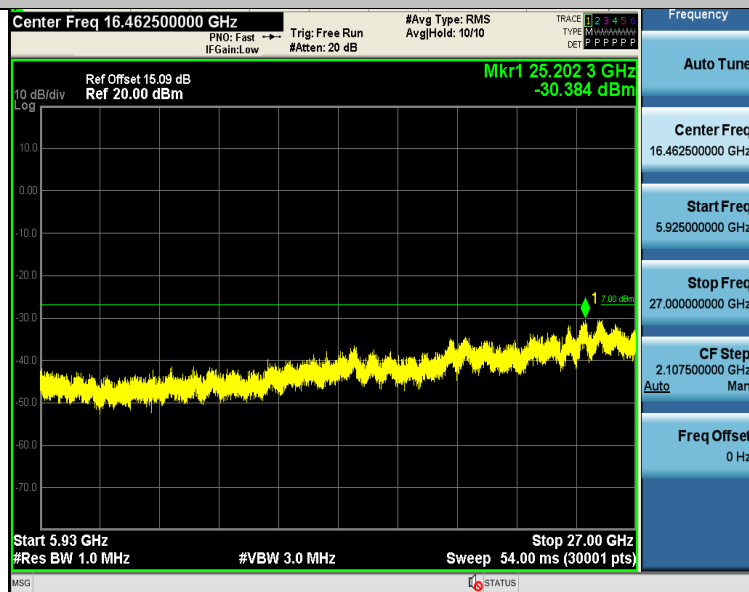
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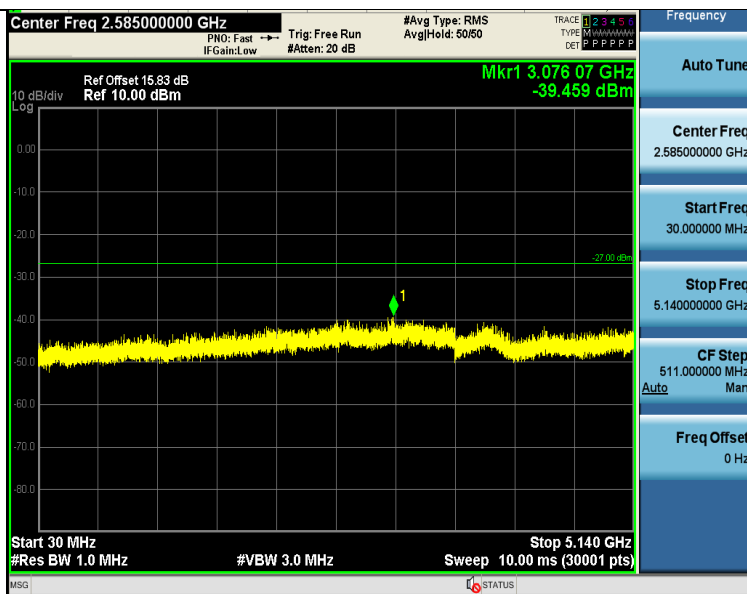
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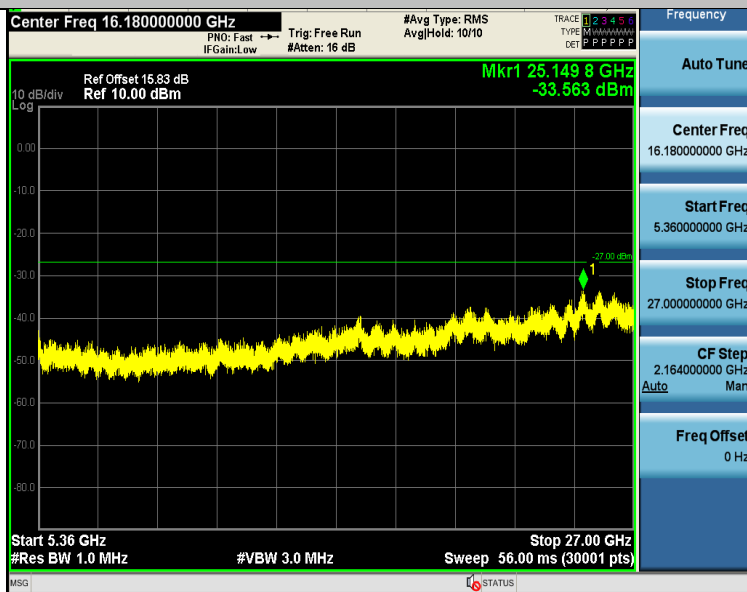
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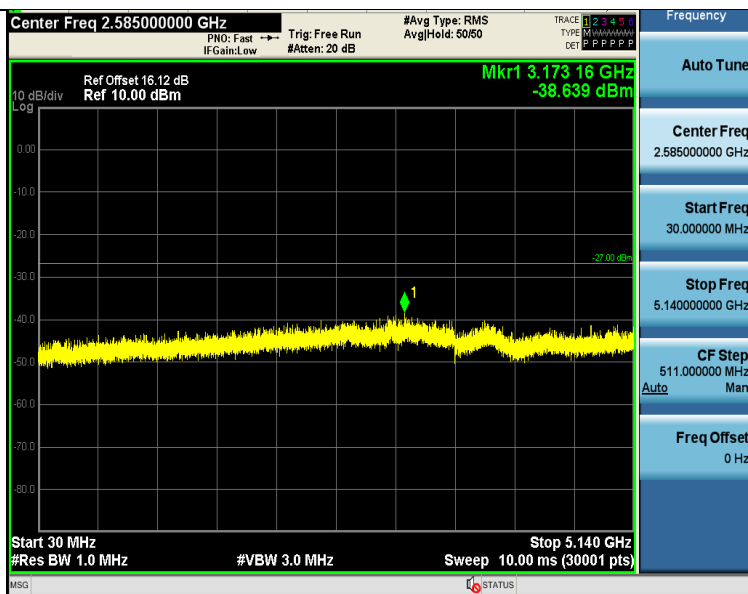
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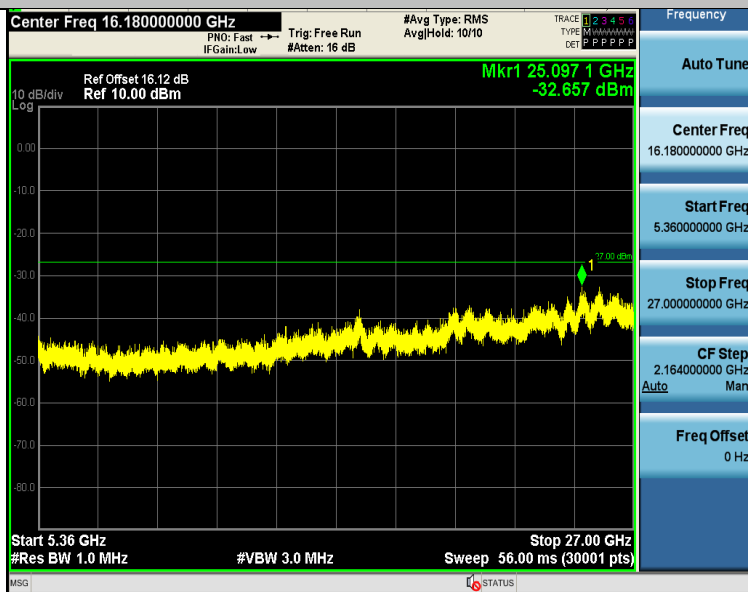
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11AC40SISO-Ant1-5190-5360~27000-PASS



11AC40SISO-Ant1-5230-30~5140-PASS



11AC40SISO-Ant1-5230-5360~27000-PASS