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TEST REPORT

Report No.: CQASZ20220901608E-02
Applicant: DP Audio Video LLC
Address of Applicant: 920 Malcolm Ave Los Angeles 90024 California United States
Equipment Under Test (EUT):
Product: 55"4K SMART LED TV
Model No.: DRPTV550SM
Test Model No.: DRPTV550SM
Brand Name: DuraPro
FCC ID: 2AVRVDRPTV550SM
Standards: 47 CFR Part 15, Subpart C
ANSI C63.10: 2013
KDB 558074 D01 15.247 Meas Guidance v05r02
KDB 662911 D01 Multiple Transmitter Output v02r01
Date of Receipt: 2022-08-31
Date of Test: 2022-08-31 to 2022-09-20
Date of Issue: 2022-10-12
Test Result : **PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By:

Lewis Zhou

(Lewis Zhou)

Reviewed By:

Timo Lei

(Timo Lei)

Approved By:

Jack Ai

(Jack Ai)



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1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20220901608E-02	Rev.01	Initial report	2022-10-12

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203/15.247 (c)	ANSI C63.10 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 2013	PASS
Conducted Peak & Average Output Power	47 CFR Part 15, Subpart C Section 15.247 (b)(3)	ANSI C63.10 2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.247 (a)(2)	ANSI C63.10 2013	PASS
Power Spectral Density	47 CFR Part 15, Subpart C Section 15.247 (e)	ANSI C63.10 2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	ANSI C63.10 2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	ANSI C63.10 2013	PASS
Radiated Spurious Emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2013	PASS

3 Contents

	Page
1 VERSION	2
2 TEST SUMMARY	3
3 CONTENTS	4
4 GENERAL INFORMATION	5
4.1 CLIENT INFORMATION	5
4.2 GENERAL DESCRIPTION OF EUT	5
4.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD	5
4.4 TEST ENVIRONMENT AND MODE	8
4.5 DESCRIPTION OF SUPPORT UNITS	9
4.6 TEST LOCATION	9
4.7 TEST FACILITY	9
4.8 STATEMENT OF THE MEASUREMENT UNCERTAINTY	10
4.9 DEVIATION FROM STANDARDS	10
4.10 ABNORMALITIES FROM STANDARD CONDITIONS	10
4.11 OTHER INFORMATION REQUESTED BY THE CUSTOMER	10
4.12 EQUIPMENTS LIST	11
5 TEST RESULTS AND MEASUREMENT DATA	12
5.1 ANTENNA REQUIREMENT	12
5.2 CONDUCTED EMISSIONS	13
5.3 CONDUCTED PEAK & AVERAGE OUTPUT POWER	17
5.4 6dB OCCUPY BANDWIDTH	45
5.5 POWER SPECTRAL DENSITY	71
5.6 BAND-EDGE FOR RF CONDUCTED EMISSIONS	86
5.7 RF CONDUCTED SPURIOUS EMISSIONS	96
5.8 RADIATED SPURIOUS EMISSIONS	133
5.8.1 Radiated emission below 1GHz	136
5.8.2 Transmitter emission above 1GHz	142
5.9 RESTRICTED BANDS AROUND FUNDAMENTAL FREQUENCY	147
6 PHOTOGRAPHS - EUT TEST SETUP	154
6.1 RADIATED EMISSION	154
6.2 CONDUCTED EMISSION	155
7 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS	156

4 General Information

4.1 Client Information

Applicant:	DP Audio Video LLC
Address of Applicant:	920 Malcolm Ave Los Angeles 90024 California United States
Manufacturer:	DP Audio Video LLC
Address of Manufacturer:	920 Malcolm Ave Los Angeles 90024 California United States
Factory:	Ganzhou City Mosws Electronics Ltd
Address of Factory:	SOUTH OF JINLINGXI ROAD, EAST OF QIFENGSHAN ROAD, GANZHOU DEVELOPMENT AREA GANZHOU CITY, JIANGXI PROVINCE, CHINA

4.2 General Description of EUT

Product Name:	55"4K SMART LED TV
Model No.:	DRPTV550SM
Test Model No.:	DRPTV550SM
Trade Mark:	DuraPro
Software Version:	23-03.10.23
Hardware Version:	LT-2874WV6.2
Power Supply:	Power by AC 120V/60Hz
EUT Supports Radios application:	BT: 2402-2480MHz 2.4GHz: Wi-Fi: 802.11b/g/n(HT20): 2412MHz~2462MHz; 802.11n(HT40): 2422MHz~2452MHz 5GHz: Wi-Fi: U-NII-1: 5.15-5.25GHz

4.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps IEEE for 802.11n(HT40) : 13.5Mbps/27Mbps/40.5Mbps/54Mbps/81Mbps/108Mbps/121.5Mbps/135Mbps
Product Type:	☒ Mobile ☐ Portable ☐ Fix Location
Test Software of EUT:	WCN Combo Tool

Antenna Type:	Metal antenna
Antenna Gain:	ANT1= 2.58 dBi,ANT2= 2.58 dBi.

Operation Frequency each of channel(802.11b/g/n HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		
Operation Frequency each of channel(802.11n HT40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	2422MHz	6	2437MHz	9	2452MHz		
4	2427MHz	7	2442MHz				
5	2432MHz	8	2447MHz				

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

For 802.11b/g/n (HT20):

Channel	Frequency
The Lowest channel	2412MHz
The Middle channel	2437MHz
The Highest channel	2462MHz

For 802.11n (HT40):

Channel	Frequency
The Lowest channel	2422MHz
The Middle channel	2437MHz
The Highest channel	2452MHz

Note:

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.4 Test Environment and Mode

Operating Environment:	
Radiated Emissions:	
Temperature:	25.3 °C
Humidity:	55 % RH
Atmospheric Pressure:	1009 mbar
Conducted Emissions:	
Temperature:	25.6 °C
Humidity:	60 % RH
Atmospheric Pressure:	1009 mbar
Radio conducted item test (RF Conducted test room):	
Temperature:	25.5 °C
Humidity:	52 % RH
Atmospheric Pressure:	1009 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

1) Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
/	/	/	/	/

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

4.6 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua New District, Shenzhen, Guangdong, China

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 4742.01)**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• **FCC Registration No.: 522263**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

4.8 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CQA laboratory is reported:

No.	Item	Uncertainty	Notes
1	Radiated Emission (Below 1GHz)	5.12dB	(1)
2	Radiated Emission (Above 1GHz)	4.60dB	(1)
3	Conducted Disturbance (0.15~30MHz)	3.34dB	(1)
4	Radio Frequency	3×10^{-8}	(1)
5	Duty cycle	0.6 %.	(1)
6	Occupied Bandwidth	1.1%	(1)
7	RF conducted power	0.86dB	(1)
8	RF power density	0.74	(1)
9	Conducted Spurious emissions	0.86dB	(1)
10	Temperature test	0.8℃	(1)
11	Humidity test	2.0%	(1)
12	Supply voltages	0.5 %.	(1)
13	Frequency Error	5.5 Hz	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

4.9 Deviation from Standards

None.

4.10 Abnormalities from Standard Conditions

None.

4.11 Other Information Requested by the Customer

None.

4.12 Equipments List

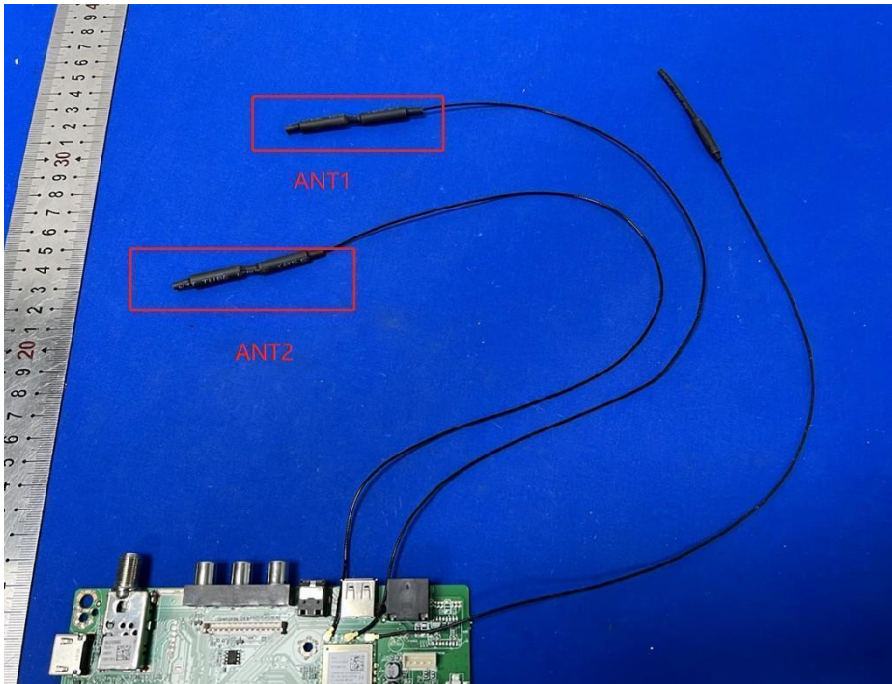
Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2022/9/9	2023/9/8
Spectrum analyzer	R&S	FSU26	CQA-038	2022/9/9	2023/9/8
Spectrum analyzer	R&S	FSU40	CQA-075	2022/9/9	2023/9/8
Preamplifier	MITEQ	AFS4-00010300-18-10P-4	CQA-035	2022/9/9	2023/9/8
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2022/9/9	2023/9/8
Preamplifier	EMCI	EMC184055SE	CQA-089	2022/9/9	2023/9/8
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2021/09/16	2024/09/15
Bilog Antenna	R&S	HL562	CQA-011	2021/09/16	2024/09/15
Horn Antenna	R&S	HF906	CQA-012	2021/09/16	2024/09/15
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2021/09/16	2024/09/15
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2022/9/9	2023/9/8
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2022/9/9	2023/9/8
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2022/9/9	2023/9/8
Antenna Connector	CQA	RFC-01	CQA-080	2022/9/9	2023/9/8
Power Sensor	KEYSIGHT	U2021XA	CQA-30	2022/9/9	2023/9/8
N1918A Power Analysis Manager Power Panel	Agilent	N1918A	CQA-074	2022/9/9	2023/9/8
Power meter	R&S	NRVD	CQA-029	2022/9/9	2023/9/8
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2022/9/9	2023/9/8
EMI Test Receiver	R&S	ESR7	CQA-005	2022/9/9	2023/9/8
LISN	R&S	ENV216	CQA-003	2022/9/9	2023/9/8
Coaxial cable	CQA	N/A	CQA-C009	2022/9/9	2023/9/8
DC power	KEYSIGHT	E3631A	CQA-028	2022/9/9	2023/9/8

Test software:

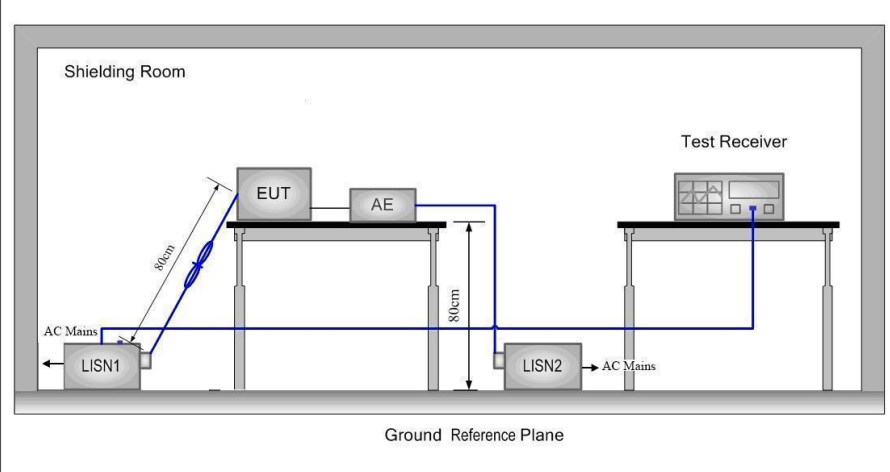
	Manufacturer	Software brand
Radiated Emissions test software	Tonscend	JS1120-3
Conducted Emissions test software	Audix	e3
RF Conducted test software	Audix	e3

5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203
15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The antenna is Metal antenna . ANT1= 2.58 dBi,ANT2= 2.58 dBi.	

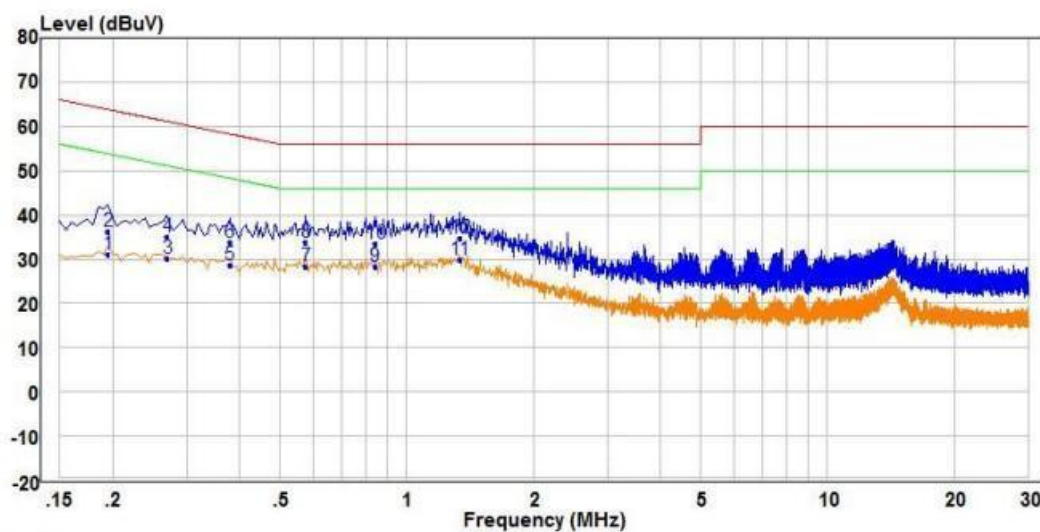
5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.		
Test Setup:			
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates at lowest, middle and		

	highest channel.
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate of 802.11b at middle channel is the worst case. Only the worst case is recorded in the report.
Test Voltage:	AC120V/60Hz
Test Results:	Pass

Measurement Data

Live Line:

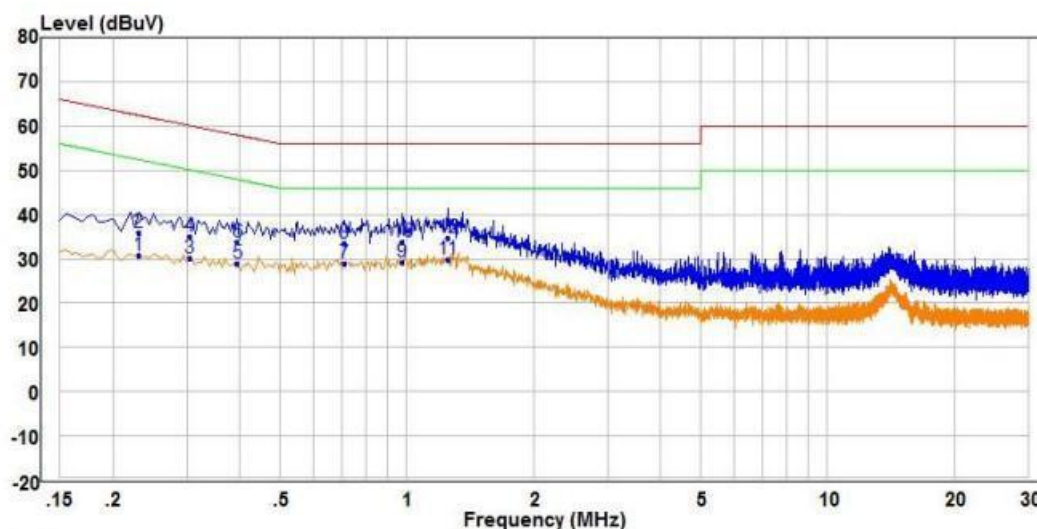


	Freq.	Read	Factor	Level	Limit	Over	Remark	Pol/Phase
	dBuV	dBuV	dBuV	dBuV	dBuV	dBuV		
1	0.20	21.62	9.39	31.11	53.82	-22.71	Average	Line
2	0.20	26.61	9.39	36.10	63.82	-27.72	QP	Line
3	0.27	20.61	9.39	30.10	51.12	-21.02	Average	Line
4	0.27	25.58	9.39	35.07	61.12	-26.05	QP	Line
5	0.38	19.23	9.40	28.73	48.28	-19.55	Average	Line
6	0.38	24.38	9.40	33.88	58.28	-24.40	QP	Line
7	0.58	18.82	9.48	28.48	46.00	-17.52	Average	Line
8	0.58	24.00	9.48	33.66	56.00	-22.34	QP	Line
9	0.84	18.69	9.50	28.40	46.00	-17.60	Average	Line
10	0.84	23.75	9.50	33.46	56.00	-22.54	QP	Line
11	1.34	20.22	9.41	29.75	46.00	-16.25	Average	Line
12	1.34	25.27	9.41	34.80	56.00	-21.20	QP	Line

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT.
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral Line:

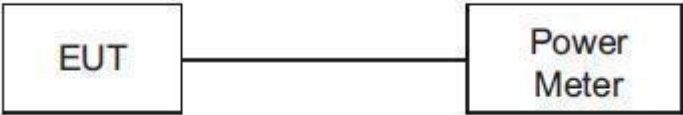


	Freq.	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	dBuV	dBuV	dBuV	dBuV	dBuV	dBuV		
1	0.23	21.13	9.46	30.69	52.45	-21.76	Average	Neutral
2	0.23	26.23	9.46	35.79	62.45	-26.66	QP	Neutral
3	0.31	20.58	9.39	30.07	50.11	-20.04	Average	Neutral
4	0.31	25.45	9.39	34.94	60.11	-25.17	QP	Neutral
5	0.40	19.32	9.50	28.92	47.96	-19.04	Average	Neutral
6	0.40	24.25	9.50	33.85	57.96	-24.11	QP	Neutral
7	0.71	18.97	9.60	28.86	46.00	-17.14	Average	Neutral
8	0.71	23.60	9.60	33.49	56.00	-22.51	QP	Neutral
9	0.98	19.42	9.60	29.14	46.00	-16.86	Average	Neutral
10	0.98	24.00	9.60	33.72	56.00	-22.28	QP	Neutral
11	1.25	20.02	9.60	29.73	46.00	-16.27	Average	Neutral
12	1.25	25.07	9.60	34.78	56.00	-21.22	QP	Neutral

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT.
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

5.3 Conducted Peak & Average Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10: 2013
Test Setup:	
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40). Only the worst case is recorded in the report.
Limit:	30dBm
Test Results:	Pass

Measurement Data

Duty cycle:

Note: During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product. Transmitting duty cycle is no less 98%.

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	12.867	2405.686	2418.553	---	PASS
		2437	12.867	2430.606	2443.474	---	PASS
		2462	12.787	2455.686	2468.474	---	PASS
11G	Ant1	2412	16.823	2403.688	2420.511	---	PASS
		2437	16.943	2428.648	2445.591	---	PASS
		2462	16.743	2453.808	2470.551	---	PASS
11N20SISO	Ant1	2412	18.102	2403.169	2421.271	---	PASS
		2437	18.022	2428.009	2446.031	---	PASS
		2462	17.702	2453.249	2470.951	---	PASS
11N40SISO	Ant1	2422	35.884	2404.258	2440.142	---	PASS
		2437	36.364	2418.938	2455.302	---	PASS
		2452	36.124	2434.098	2470.222	---	PASS

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	8.19	≤30	PASS
		2437	8.96	≤30	PASS
		2462	9.03	≤30	PASS
11G	Ant1	2412	8.02	≤30	PASS
		2437	8.83	≤30	PASS
		2462	8.68	≤30	PASS
11N20SISO	Ant1	2412	7.90	≤30	PASS
		2437	9.06	≤30	PASS
		2462	9.20	≤30	PASS
11N40SISO	Ant1	2422	8.56	≤30	PASS
		2437	8.84	≤30	PASS
		2452	8.58	≤30	PASS

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant2	2412	12.907	2405.646	2418.553	---	PASS
		2437	12.827	2430.646	2443.474	---	PASS
		2462	12.827	2455.646	2468.474	---	PASS
11G	Ant2	2412	16.623	2403.848	2420.472	---	PASS
		2437	16.863	2428.808	2445.671	---	PASS
		2462	16.863	2453.728	2470.591	---	PASS
11N20SISO	Ant2	2412	18.022	2403.049	2421.071	---	PASS
		2437	17.782	2428.169	2445.951	---	PASS
		2462	17.862	2453.209	2471.071	---	PASS
11N40SISO	Ant2	2422	35.964	2404.258	2440.222	---	PASS
		2437	36.124	2419.018	2455.142	---	PASS
		2452	36.044	2434.098	2470.142	---	PASS

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant2	2412	7.88	≤30	PASS
		2437	8.79	≤30	PASS
		2462	8.86	≤30	PASS
11G	Ant2	2412	7.85	≤30	PASS
		2437	8.67	≤30	PASS
		2462	8.74	≤30	PASS
11N20SISO	Ant2	2412	7.68	≤30	PASS
		2437	8.55	≤30	PASS
		2462	8.63	≤30	PASS
11N40SISO	Ant2	2422	8.05	≤30	PASS
		2437	8.41	≤30	PASS
		2452	8.40	≤30	PASS

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11N20MIMO	Ant1+Ant2	2412	10.80	≤30	PASS
		2437	11.82	≤30	PASS
		2462	11.93	≤30	PASS
11N40MIMO	Ant1+Ant2	2422	11.32	≤30	PASS
		2437	11.64	≤30	PASS
		2452	11.50	≤30	PASS

Note:

The antenna is Omni Directional Antenna.

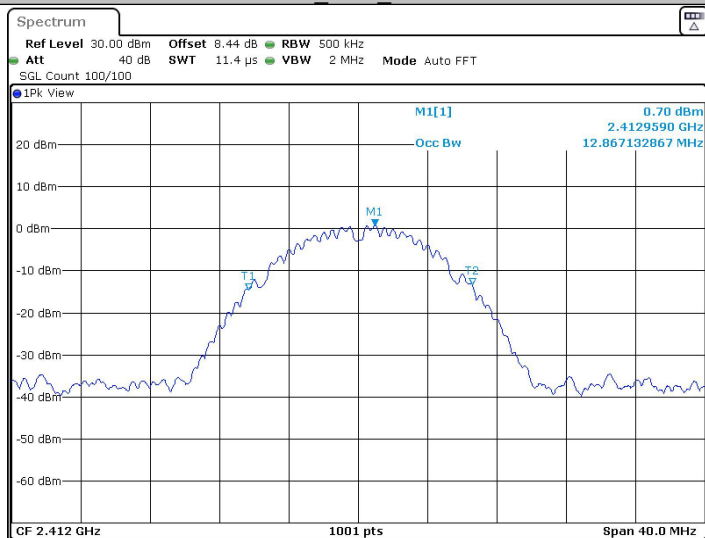
The best case gain of the ANT1 is 2.58dBi. The best case gain of the ANT2 is 2.58dBi.

MIMO mode:the antenna gain is 5.59dBi.

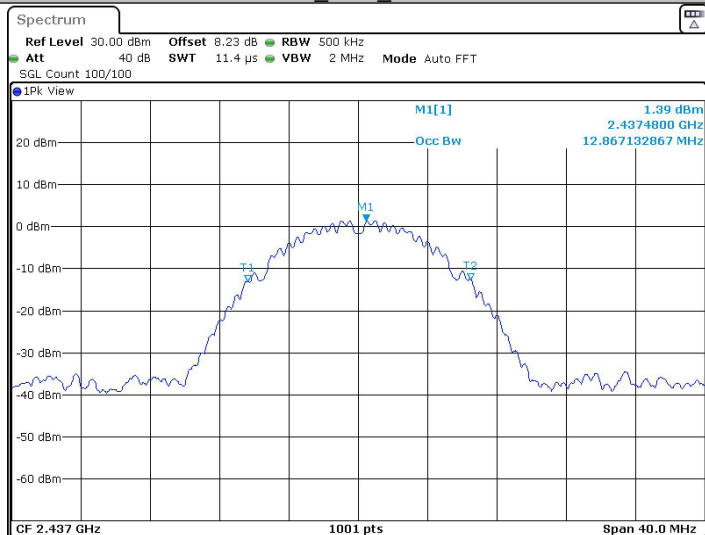
Transmit signals are correlated with each other,

Directional gain= $G_{ANT}+10\log(N_{ANT})$ dBi=2.58+10log(2)dBi=5.59dBi

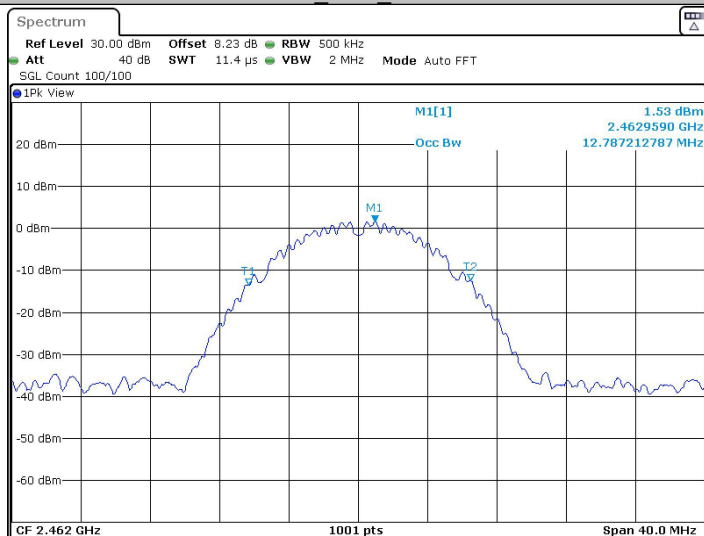
11B_Ant1_2412



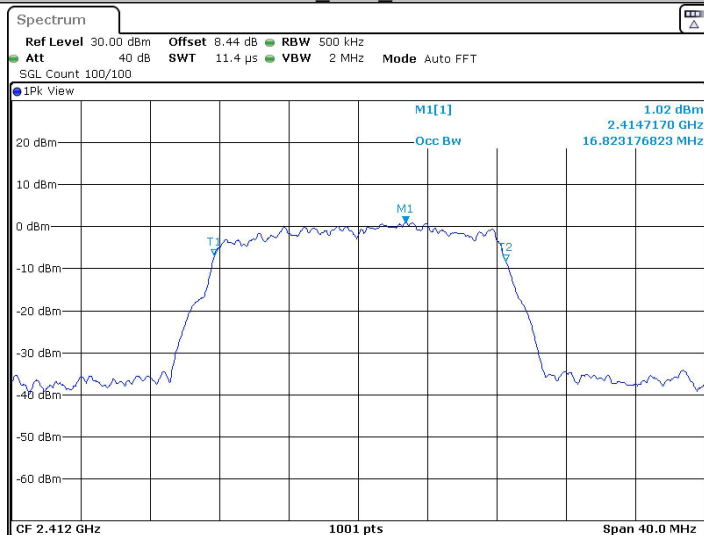
11B_Ant1_2437



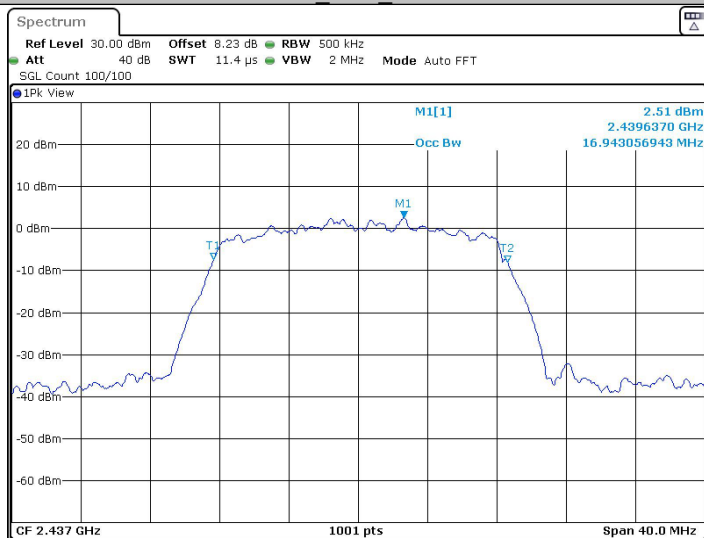
11B_Ant1_2462



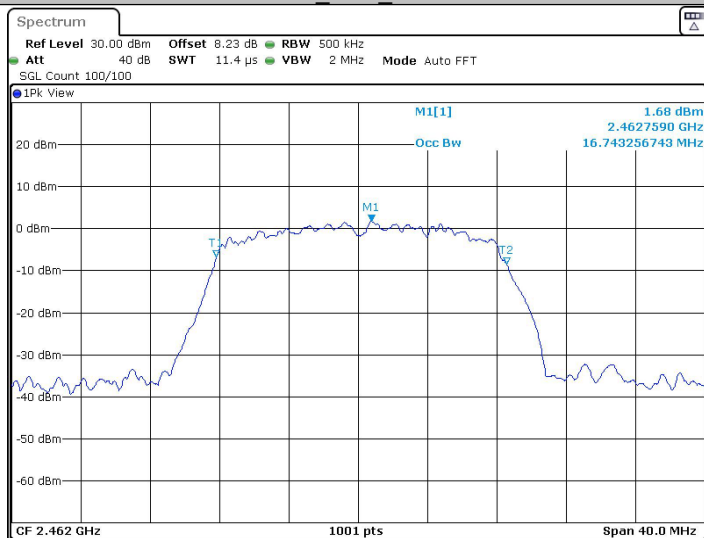
11G_Ant1_2412



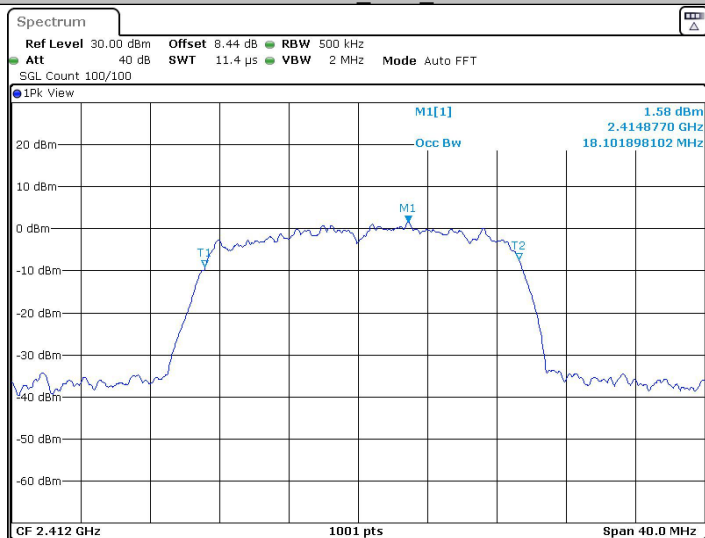
11G_Ant1_2437



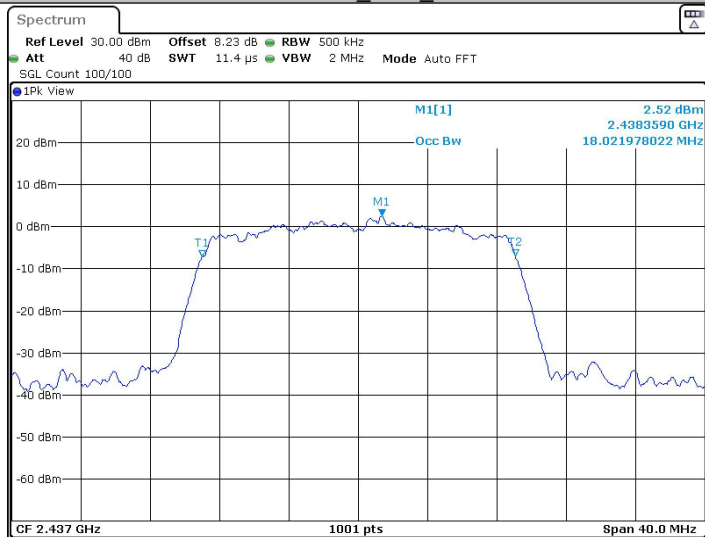
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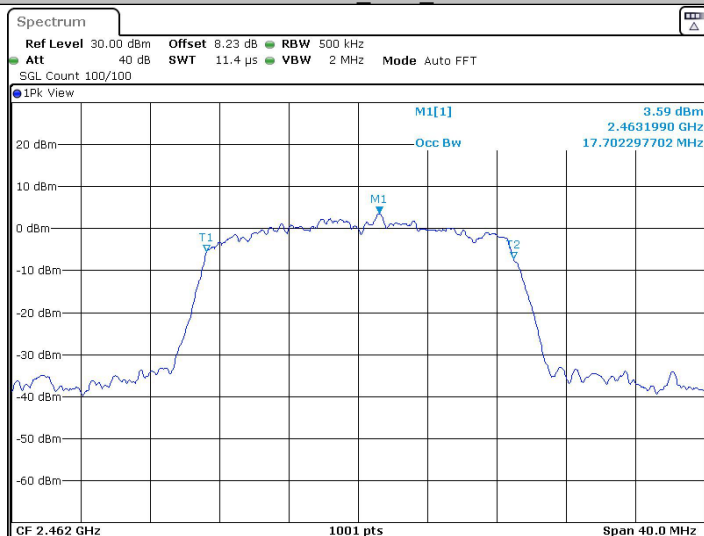
11N20SISO_Ant1_2412



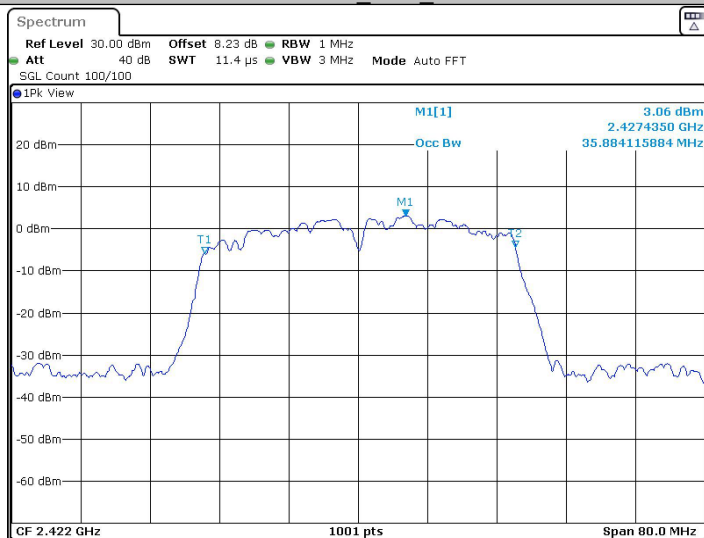
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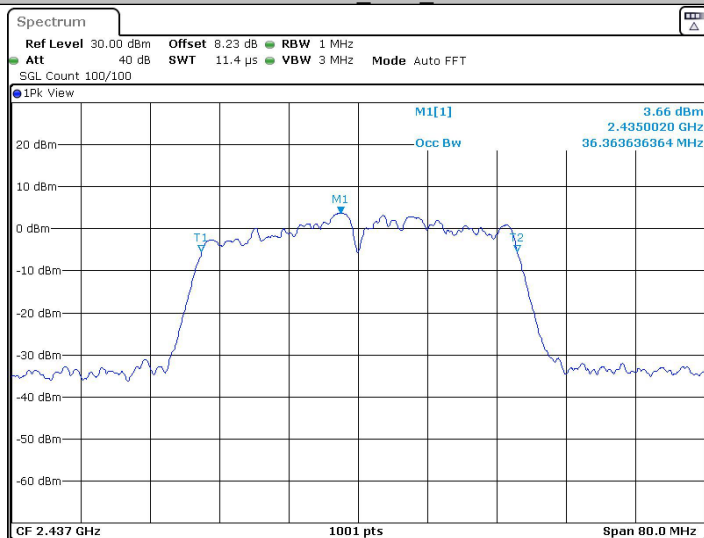
11N20SISO_Ant1_2462



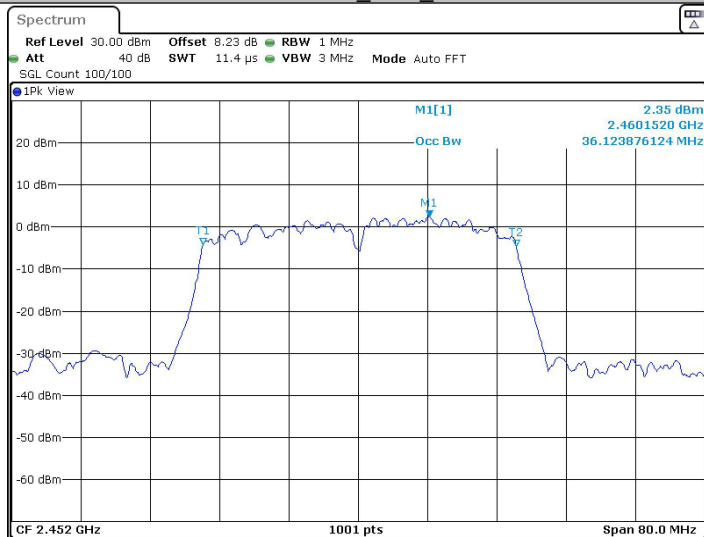
11N40SISO_Ant1_2422



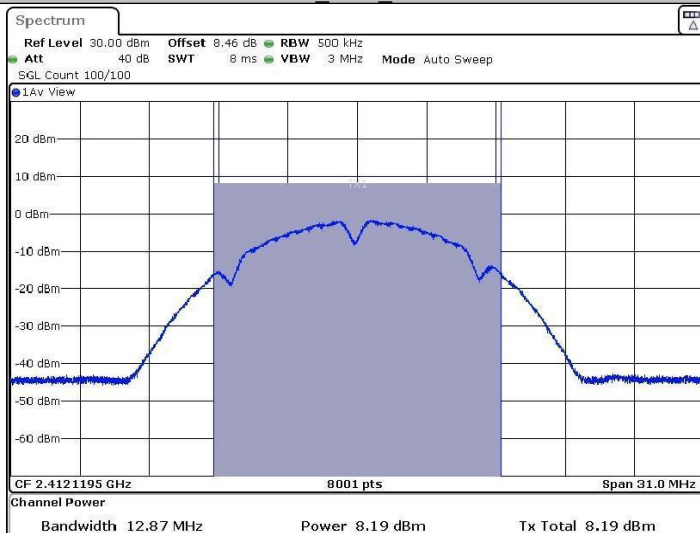
11N40SISO_Ant1_2437



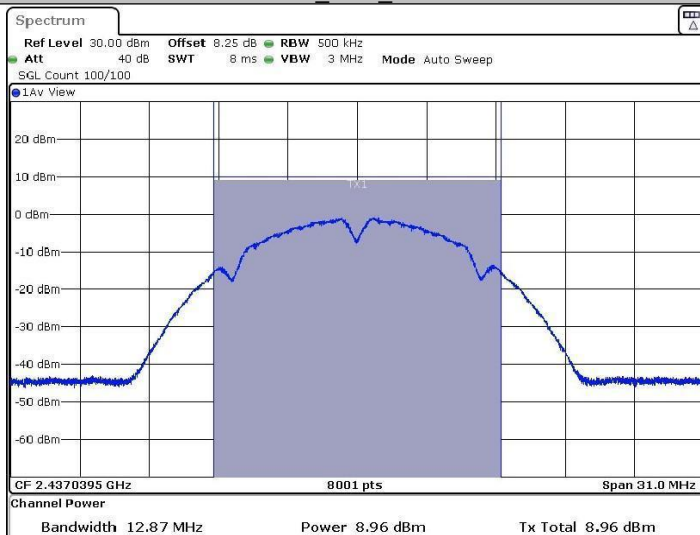
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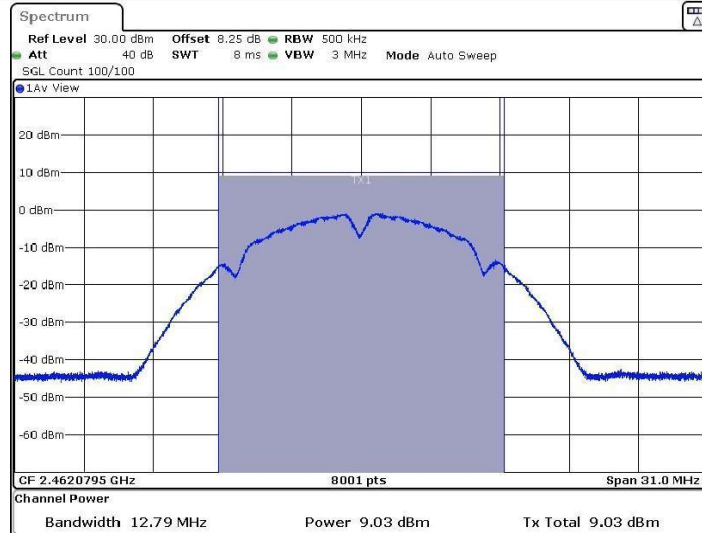
11B_Ant1_2412



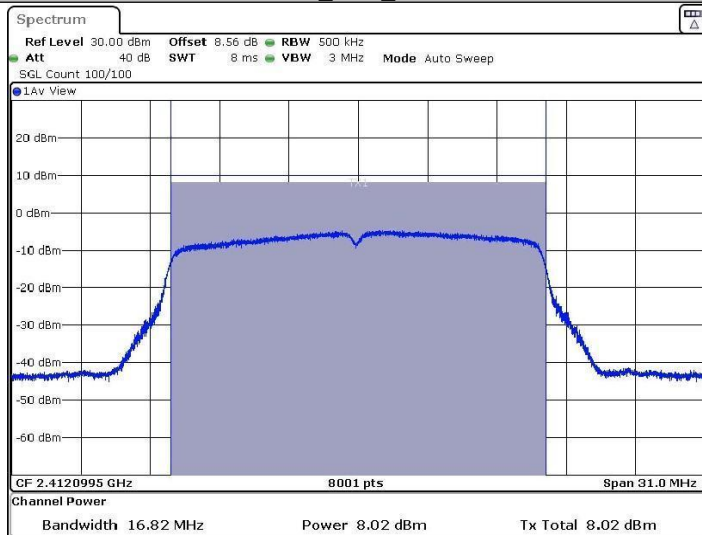
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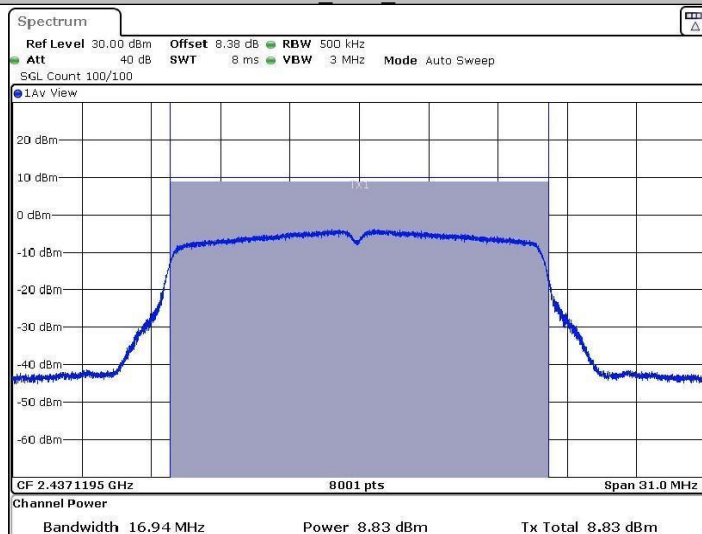
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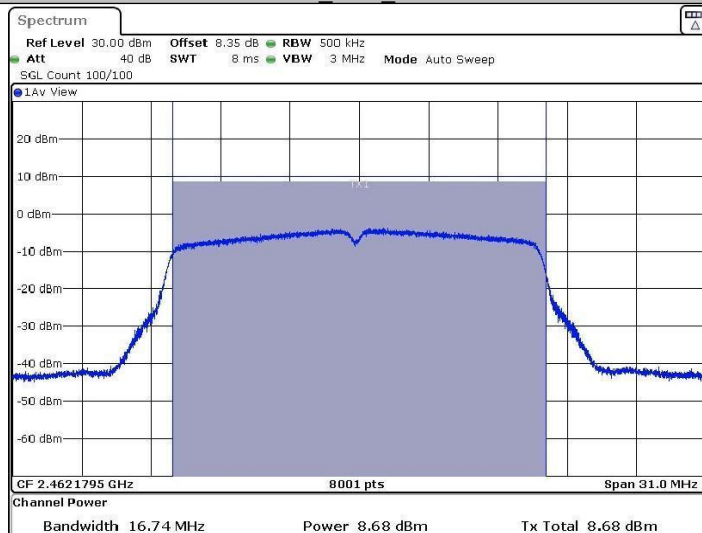
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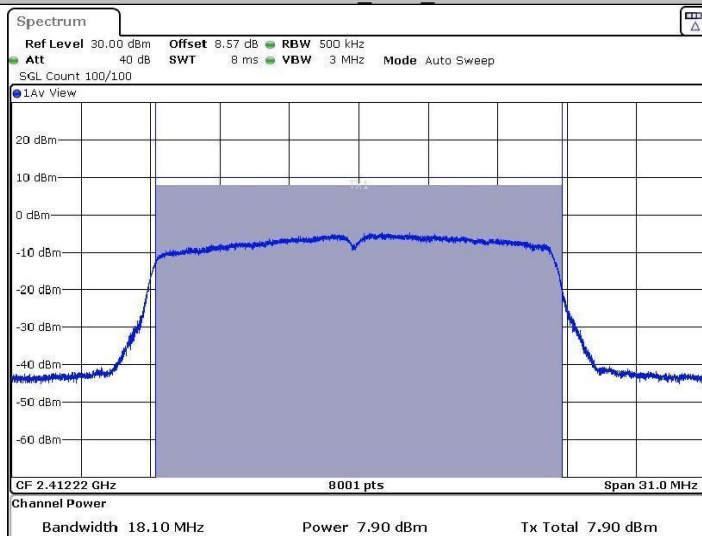
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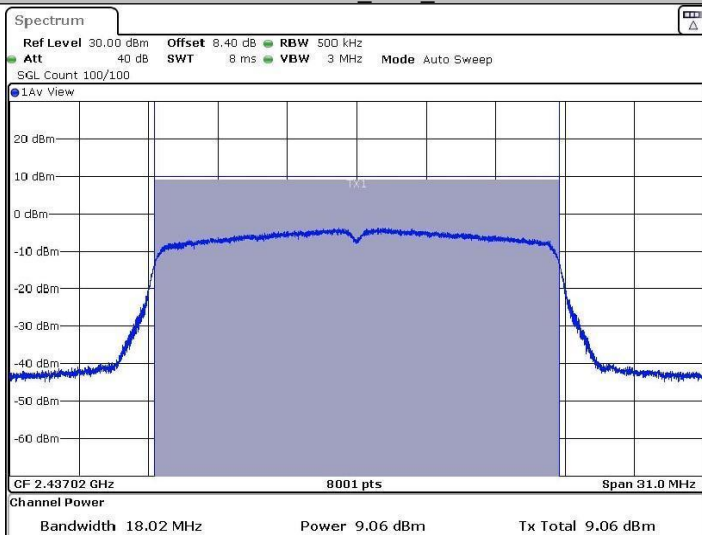
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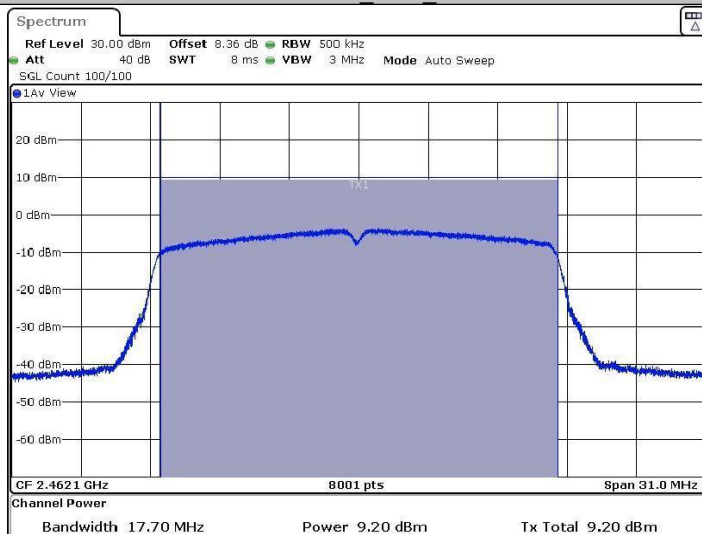
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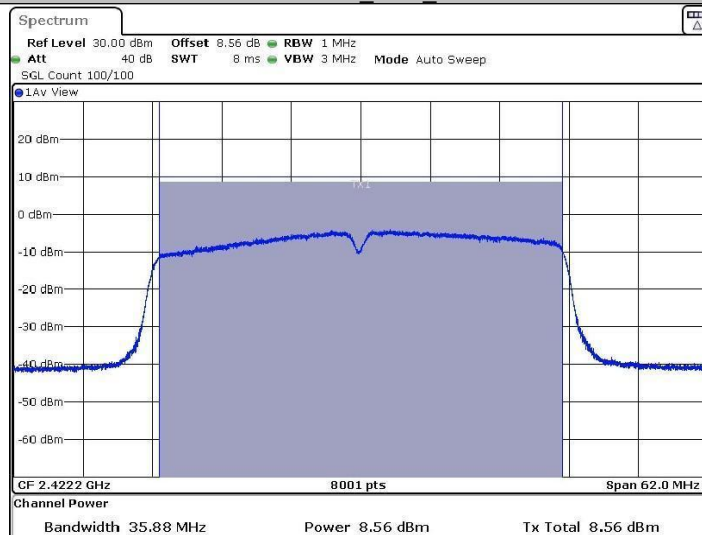
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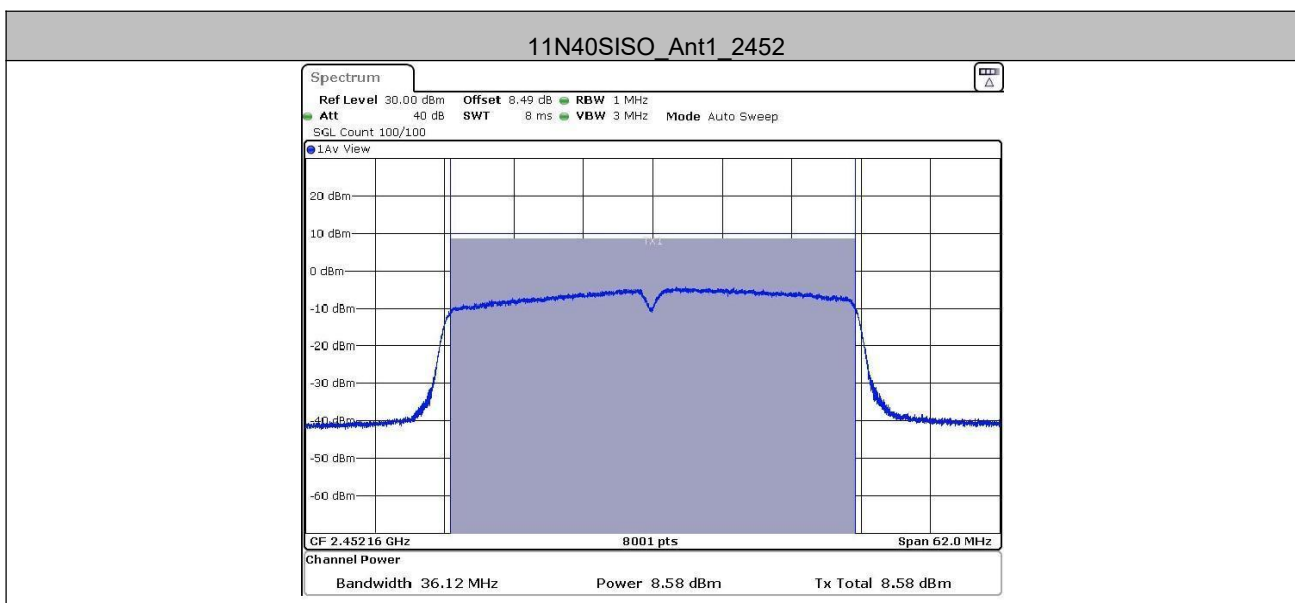
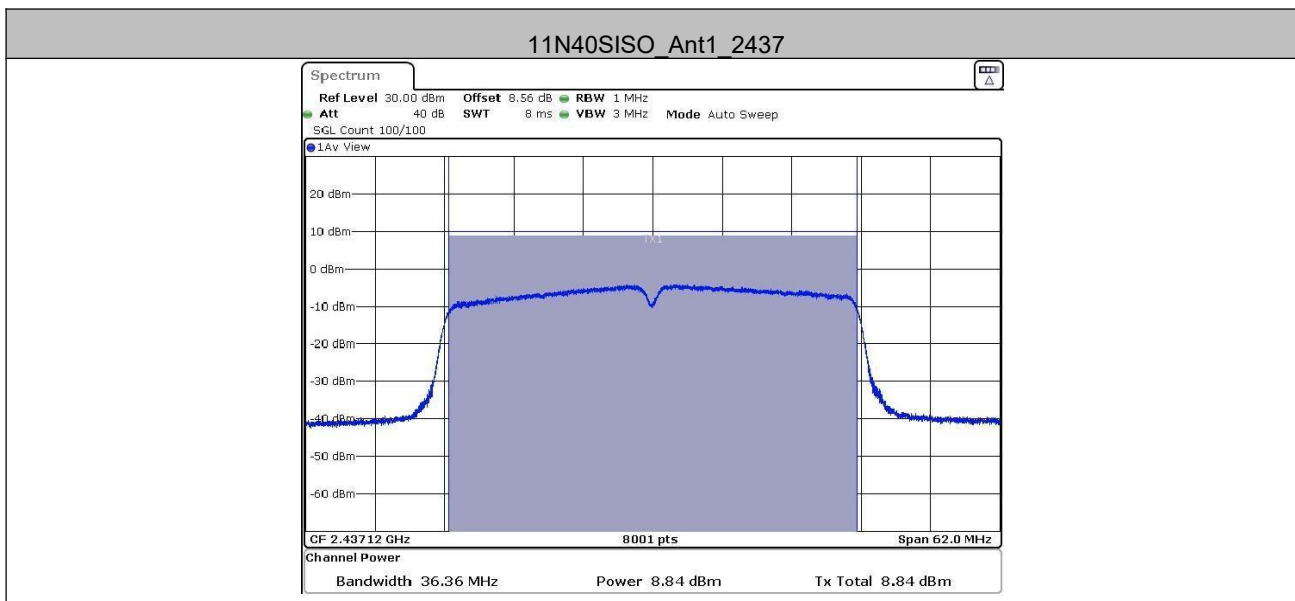


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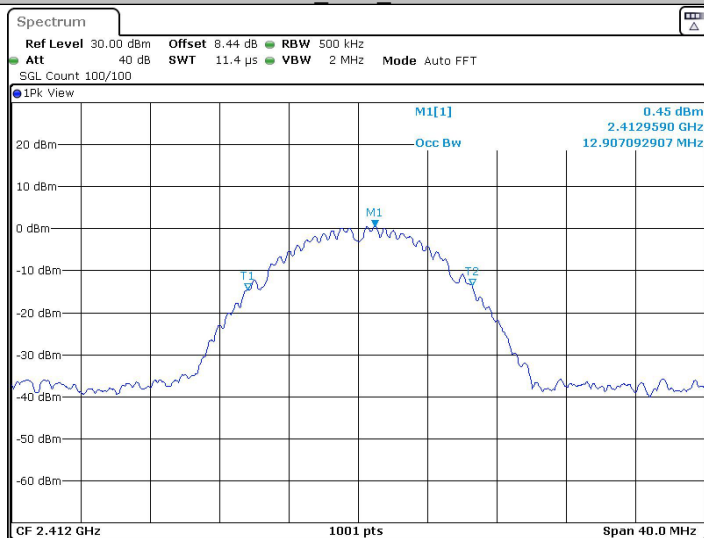


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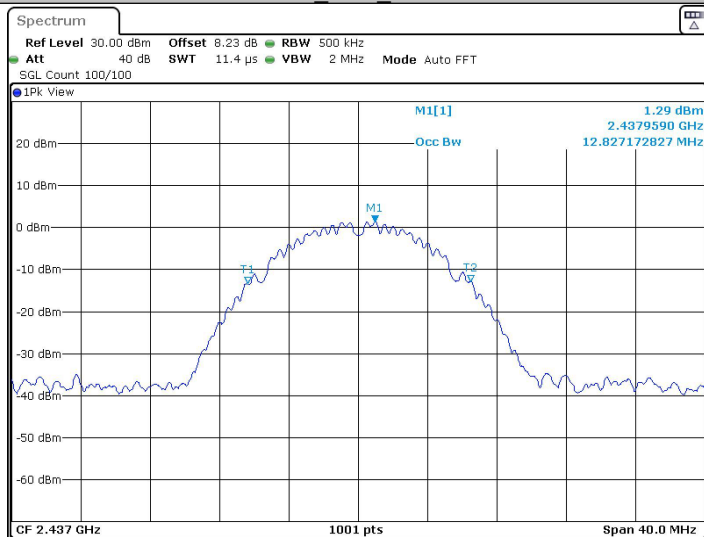




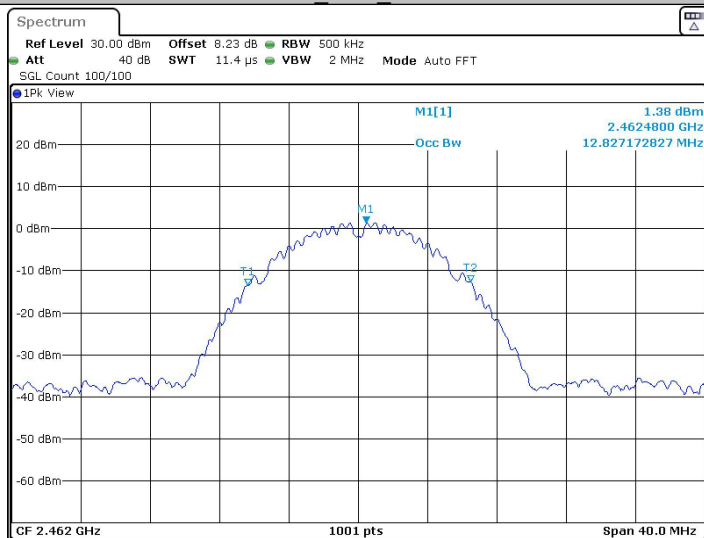
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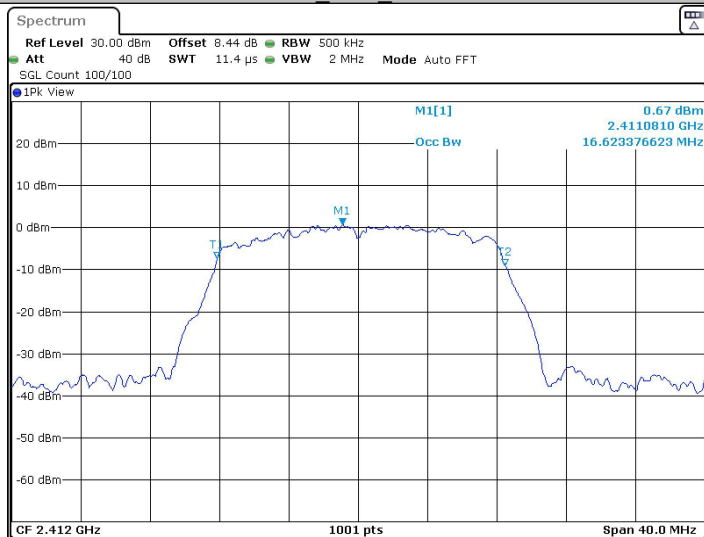
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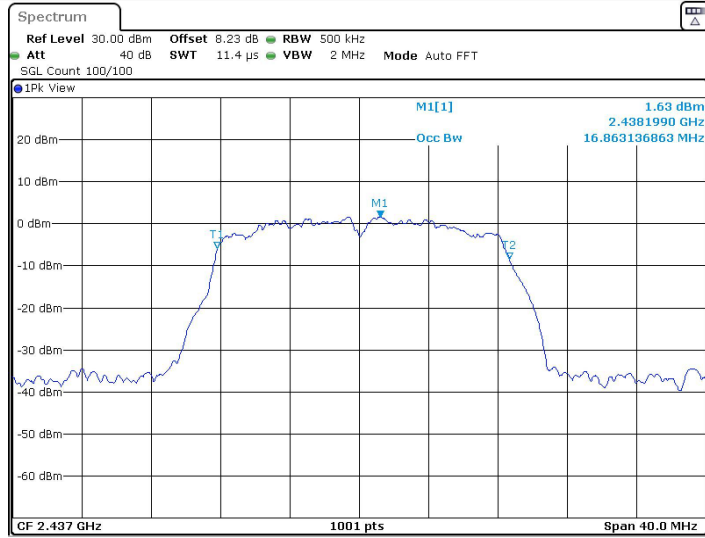
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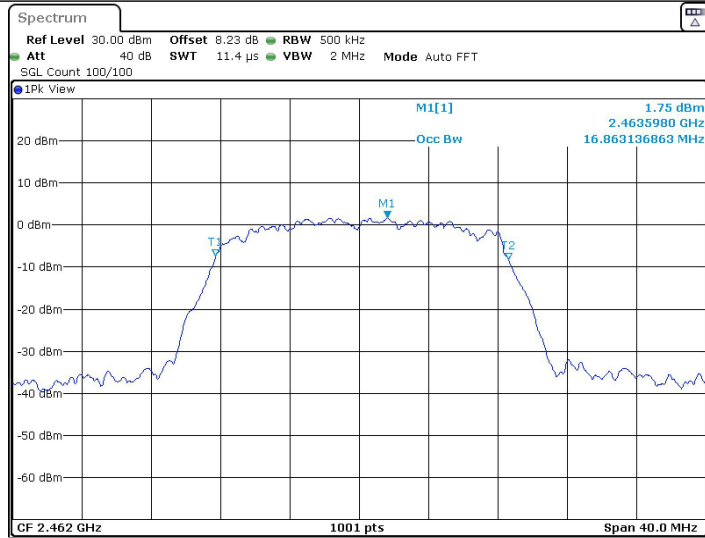
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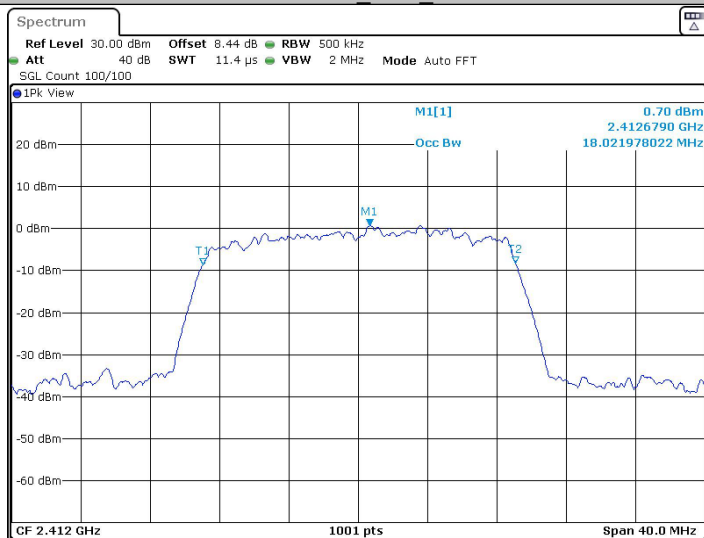
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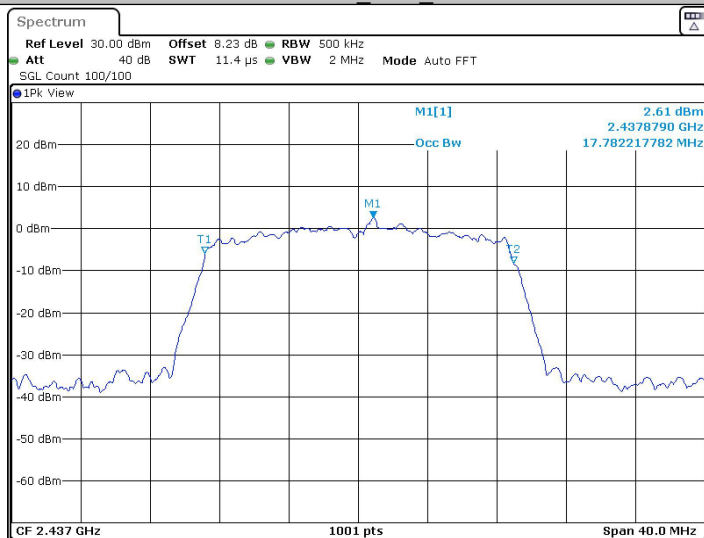
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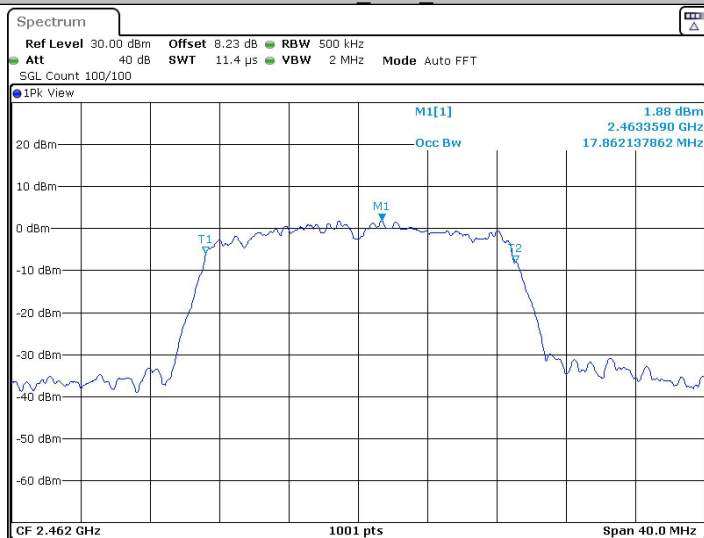
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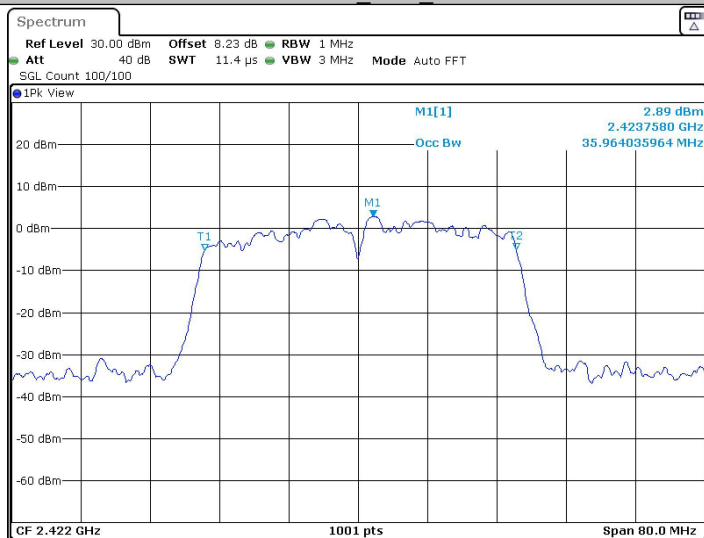
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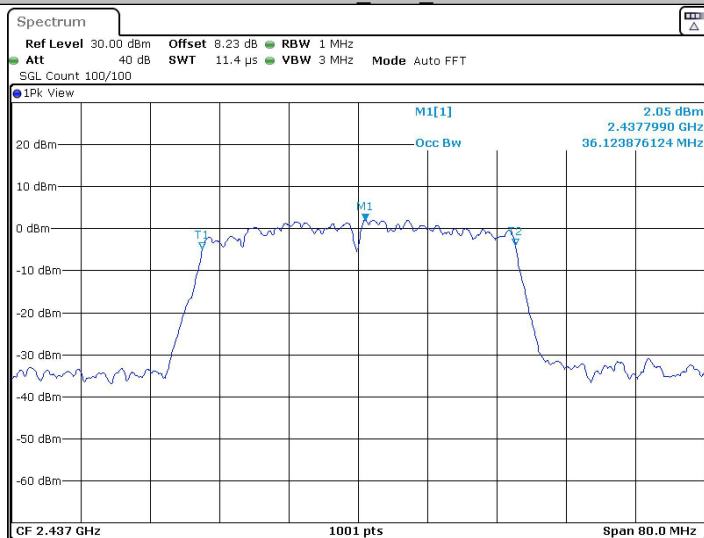
11N20SISO_Ant2_2462



11N40SISO_Ant2_2422



11N40SISO_Ant2_2437



11N40SISO_Ant2_2452

