FCC PART 15 SUBPART E TEST REPORT

for

11ac/abgn 2T2R WIFI & BT Half Mini-PCIE Module

Model No.: JWX6058

FCC ID: W23-JWX6058

of

Applicant: JJPlus Corporation
Address 13F.-3, No.120, Qiaohe Rd., Zhonghe Dist., New Taipei City 235, Taiwan

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: TW1477, TW0020, TW1072

Industry Canada filed test laboratory Reg. No. IC 5679A-1, IC 5107A-1

A2LA Accredited No.: 2732.01

Report No.: W6M21805-18110-C-54

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
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FCC ID: W23-JWX6058

1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.
The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.
Furthermore, there is no guarantee that a test sample which has passed all the relevant tests conforms to a specification.
Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.
The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.
The test report may only be reproduced or published in full.
Reproduction or publication of extracts from the report requires the prior written approval of the Worldwide Testing Services(Taiwan) Co., Ltd.

Specific Conditions:
Usage of the hereunder tested device in combination with other integrated or external antennas requires at least additional output power measurements, spurious emission measurements, conducted emission measurements (AC supply lines) and radio frequency exposure evaluations for each individual configuration performed, for certification by FCC.

Tester:

Date	WTS-Lab.	Name	Signature
July 10, 2018		Mark Cheng	Mark Cheng.

Technical responsibility for area of testing:

Date	WTS	Name	Signature
July 10, 2018		Kevin Wang	Kevin Wang

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

1.2 Testing laboratory

1.2.1 Location

OATS
No.5-1, Lishui, Shuang Sing Village,
Wanli Dist., New Taipei City 207,
Taiwan (R.O.C.)
3 meter semi-anechoic chamber
No.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)
TEL:886-2-6613-0228
FAX:886-2-2791-5046
Company
Worldwide Testing Services(Taiwan) Co., Ltd.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : 886-2-66068877
Fax : 886-2-66068879

1.2.2 Details of accreditation status

Accredited testing laboratory
A2LA accredited number: 2732.01
FCC filed test laboratory Reg. No. TW1477, TW0020, TW1072
Industry Canada filed test laboratory Reg. No. IC 5679A-1, IC 5107A-1

Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

Name:	./.
Accredited number:	./.
Street:	./.
Town:	./.
Country:	./.
Telephone:	./.
Fax:	./.

1.3 Details of approval holder

Name:	JJPlus Corporation
Street:	13F.-3, No.120, Qiaohe Rd., Zhonghe Dist.,
City:	New Taipei City 235
Country:	Taiwan
Telephone:	+886-2-2248-5700
Fax:	+886-2-2248-5977

1.4 Application details

Date of receipt of test item:	June 05, 2018
Date of test:	from June 06, 2018 to July 05, 2018

1.5 General information of Test item

Type of test item:	11ac/abgn 2T2R WIFI & BT Half Mini-PCIE Module
Model Number:	JWX6058
Brand Name:	jjPlus CORP.
Multi-listing model number:	./.
Photos:	see Appendix

Technical data

Frequency band:	Band 1: 5.150 GHz-5.250 GHz, Band 2: 5.250 GHz-5.350 GHz Band 3: 5.470 GHz-5.725 GHz, Band 4: 5.725 GHz-5.850 GHz

Band 1

802.11a:	Low Channel (CH36): 5180 MHz Middle Channel (CH40): 5200 MHz High Channel (CH48): 5240 MHz
802.11ac 20MHz:	Low Channel (CH36): 5180 MHz Middle Channel (CH40): 5200 MHz High Channel (CH48): 5240 MHz
802.11ac 40MHz:	Low Channel (CH38): 5190 MHz High Channel (CH46): 5230 MHz
802.11ac 80MHz:	CH42: 5210 MHz

Band 2

802.11a:	Low Channel (CH52): 5260 MHz Middle Channel (CH56): 5280 MHz High Channel (CH64): 5320 MHz
802.11ac 20MHz:	Low Channel (CH52): 5260 MHz Middle Channel (CH56): 5280 MHz High Channel (CH64): 5320 MHz
802.11ac 40MHz:	Low Channel (CH54): 5270 MHz High Channel (CH62): 5310 MHz
802.11ac 80MHz:	CH58: 5290 MHz

Band 3

802.11a:	Low Channel (CH100): 5500MHz Middle Channel (CH120): 5600 MHz High Channel (CH140): 5700 MHz
802.11ac 20MHz:	Low Channel (CH100): 5500 MHz Middle Channel (CH120): 5600 MHz High Channel (CH140): 5700 MHz
802.11ac 40MHz:	Low Channel (CH102): 5510 MHz Middle Channel (CH118): 5590 MHz High Channel (CH134): 5670 MHz
802.11ac 80MHz	Low Channel (CH106): 5530 MHz High Channel (CH122): 5610 MHz

Band 4

802.11a:	Low Channel (CH149): 5745 MHz Middle Channel (CH157): 5785 MHz High Channel (CH165): 5825 MHz
802.11ac 20MHz:	Low Channel (CH149): 5745 MHz Middle Channel (CH157): 5785 MHz High Channel (CH165): 5825 MHz
802.11ac 40MHz:	Low Channel (CH151): 5755 MHz High Channel (CH159): 5795 MHz
802.11ac 80MHz	CH155: 5775 MHz

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Band 1

Numbers of channel:	802.11a: 4 channels 802.11ac 20 MHz: 4 channels 802.11ac 40 MHz: 2 channels 802.11ac 80 MHz: 1 channel

Band 2

Numbers of channel:	802.11a: 4 channels 802.11ac 20 MHz: 4 channels 802.11ac 40 MHz: 2 channels 802.11ac 80 MHz: 1 channel

Band 3

Numbers of channel:	802.11a: 11 channels 802.11ac 20 MHz: 11 channels 802.11ac 40 MHz: 5 channels 802.11ac 80 MHz: 2 channel

Band 4

Numbers of channel:	802.11a: 5 channels 802.11ac 20 MHz: 5 channels 802.11ac 40 MHz: 2 channels 802.11ac 80 MHz: 1 channel
Operating modes:	Duplex
Type of modulation:	OFDM
Fixed point to point operation:	Yes / No
Antenna:	Dipole Antenna
Antenna gain:	2 dBi (for Antenna Chain1 & Chain2 & Band1~4)
Directional gain:	5.01 dBi (for Antenna Chain1 & Chain2 & Band1~4)
Power supply:	3.3 Vd.c.
Emission designator:	802.11a: 16M3D1D 802.11ac 20 MHz: 17M5D1D 802.11ac 40 MHz: 35M9D1D 802.11ac 80 MHz: 74M9D1D

Note: Tests were performed under worst case mode 802.11a 6 Mbps, 802.11ac 20MHz(MCS0), 802.11ac 40MHz(MCS0) and 802.11ac 80MHz(MCS0).

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Classification:

Fixed Device	☐
Mobile Device (Human Body distance ＞ 20cm)	☐
Portable Device (Human Body distance ＜ 20cm)	☐
Modular Radio Device	☒

Note: This device was functioned as a ☐Master ■Slave device during the DFS

Manufacturer: (if applicable)
Name: ./.
Street: ./.
Town: ./.
Country: ./.

		ANT Chain1	ANT Chain2
5.15 GHz~5.25 GHz	IEEE 802.11 a	Mode A	Mode A
	IEEE 802.11 ac(20M)	Mode B	Mode B
	IEEE 802.11 ac(40M)	Mode C	Mode C
	IEEE 802.11 ac(80M)	Mode D	Mode D
5.25 GHz~5.35 GHz	IEEE 802.11 a	Mode E	Mode E
	IEEE 802.11 ac(20M)	Mode F	Mode F
	IEEE 802.11 ac(40M)	Mode G	Mode G
	IEEE 802.11 ac(80M)	Mode H	Mode H
5.47 GHz~5.725GHz	IEEE 802.11 a	Mode I	Mode I
	IEEE 802.11 ac(20M)	Mode J	Mode J
	IEEE 802.11 ac(40M)	Mode K	Mode K
	IEEE 802.11 ac(80M)	Mode L	Mode L
5.725 GHz~5.85GHz	IEEE 802.11 a	Mode M	Mode M
	IEEE 802.11 ac(20M)	Mode N	Mode N
	IEEE 802.11 ac(40M)	Mode O	Mode O
	IEEE 802.11 ac(80M)	Mode P	Mode P

Transmitter	Unom
Antenna Chain1	
Band 1	
Mode A (OFDM)	
Power (ch 36 or A):	Conducted: 9.66 dBm
Power (ch 40 or B):	Conducted: 10.04 dBm
Power (ch 48 or C):	Conducted: 10.09 dBm
Mode B (OFDM)	
Power (ch 36 or A):	Conducted: 9.17 dBm
Power (ch 40 or B):	Conducted: 10.00 dBm
Power (ch 48 or C):	Conducted: 9.77 dBm
Mode C (OFDM)	
Power (ch 38 or A):	Conducted: 8.60 dBm
Power (ch 46 or B):	Conducted: 8.78 dBm
Mode D (OFDM)	
Power (ch 42 or A):	Conducted: 7.68 dBm
Band 2	
Mode E (OFDM)	
Power (ch 52 or A):	Conducted: 9.91 dBm
Power (ch 56 or B):	Conducted: 10.21 dBm
Power (ch 64 or C):	Conducted: 9.09 dBm
Mode F (OFDM)	
Power (ch 52 or A):	Conducted: 9.78 dBm
Power (ch 56 or B):	Conducted: 9.82 dBm
Power (ch 64 or C):	Conducted: 8.87 dBm
Mode G (OFDM)	
Power (ch 54 or A):	Conducted: 7.62 dBm
Power (ch 62 or B):	Conducted: 7.84 dBm
Mode H (OFDM)	
Power (ch 58 or A):	Conducted: 7.98 dBm
Band 3	
Mode I (OFDM)	
Power (ch 100 or A):	Conducted: 9.23 dBm
Power (ch 120 or B):	Conducted: 9.11 dBm
Power (ch 140 or C):	Conducted: 9.42 dBm
Mode J (OFDM)	
Power (ch 100 or A):	Conducted: 8.94 dBm
Power (ch 120 or B):	Conducted: 8.95 dBm
Power (ch 140 or C):	Conducted: 9.20 dBm
Mode K (OFDM)	
Power (ch 102 or A):	Conducted: 7.43 dBm
Power (ch 118 or B):	Conducted: 8.02 dBm
Power (ch 134 or C):	Conducted: 7.50 dBm
Mode L (OFDM)	
Power (ch 106 or A):	Conducted: 6.82 dBm
Power (ch 122 or B):	Conducted: 7.54 dBm

Band 4

Mode M (OFDM)

Power (ch 149 or A): Conducted: 5.92 dBm
Power (ch 157 or B): Conducted: 9.01 dBm
Power (ch 165 or C): Conducted: 8.17 dBm

Mode N (OFDM)

Power (ch 149 or A): Conducted: 9.15 dBm
Power (ch 157 or B): Conducted: 8.65 dBm
Power (ch 165 or C): Conducted: 8.02 dBm

Mode O (OFDM)

Power (ch 151 or A): Conducted: 7.64 dBm
Power (ch 159 or B): Conducted: 8.14 dBm

Mode P (OFDM)

Power (ch 155 or A): Conducted: 7.01 dBm

Antenna Chain2

Band 1

Mode A (OFDM)

Power (ch 36 or A): Conducted: 9.21 dBm
Power (ch 40 or B): Conducted: 9.93 dBm
Power (ch 48 or C): Conducted: 9.79 dBm

Mode B (OFDM)

Power (ch 36 or A): Conducted: 9.33 dBm
Power (ch 40 or B): Conducted: 9.36 dBm
Power (ch 48 or C): Conducted: 9.10 dBm

Mode C (OFDM)

Power (ch 38 or A): Conducted: 9.09 dBm
Power (ch 46 or B): Conducted: 7.86 dBm

Mode D (OFDM)

Power (ch 42 or A): Conducted: 7.56 dBm

Band 2

Mode E (OFDM)

Power (ch 52 or A): Conducted: 8.90 dBm
Power (ch 56 or B): Conducted: 9.99 dBm
Power (ch 64 or C): Conducted: 7.93 dBm

Mode F (OFDM)

Power (ch 52 or A): Conducted: 8.81 dBm
Power (ch 56 or B): Conducted: 9.66 dBm
Power (ch 64 or C): Conducted: 7.95 dBm

Mode G (OFDM)

Power (ch 54 or A): Conducted: 8.19 dBm
Power (ch 62 or B): Conducted: 7.34 dBm

Mode H (OFDM)

Power (ch 58 or A): Conducted: 7.19 dBm

Band 3

Mode I (OFDM)
Power (ch 100 or A): Conducted: 9.84 dBm
Power (ch 120 or B): Conducted: 9.27 dBm
Power (ch 140 or C): Conducted: 8.40 dBm

Mode J (OFDM)
Power (ch 100 or A): Conducted: 9.61 dBm
Power (ch 120 or B): Conducted: 9.00 dBm
Power (ch 140 or C): Conducted: 8.07 dBm

Mode K (OFDM)
Power (ch 102 or A): Conducted: 9.21 dBm
Power (ch 118 or B): Conducted: 7.91 dBm
Power (ch 134 or C): Conducted: 7.00 dBm

Mode L (OFDM)
Power (ch 106 or A): Conducted: 8.09 dBm
Power (ch 122 or B): Conducted: 7.71 dBm

Band 4

Mode M (OFDM)
Power (ch 149 or A): Conducted: 8.61 dBm
Power (ch 157 or B): Conducted: 9.02 dBm
Power (ch 165 or C): Conducted: 8.65 dBm

Mode N (OFDM)
Power (ch 149 or A): Conducted: 8.48 dBm
Power (ch 157 or B): Conducted: 8.65 dBm
Power (ch 165 or C): Conducted: 8.30 dBm

Mode O (OFDM)
Power (ch 151 or A): Conducted: 7.66 dBm
Power (ch 159 or B): Conducted: 7.27 dBm

Mode P (OFDM)
Power (ch 155 or A): Conducted: 7.08 dBm

Band 1 (5.15GHz~5.25GHz)

Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	16.83	18.63	17.61	12.26	12.7	12.46
802.11ac 40MHz	15.35	--	13.66	11.86	--	11.35
802.11ac 80MHz	11.56	--	--	10.63	--	--

Band 2 (5.25GHz~5.35GHz)

Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	17.11	18.84	13.95	12.33	12.75	11.45
802.11ac 40MHz	12.37	--	11.5	10.92	--	10.61
802.11ac 80MHz	11.52	--	--	10.61	--	--

Band 3 (5.47GHz~5.725GHz)

Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	16.97	15.79	14.73	12.3	11.98	11.68
802.11ac 40MHz	13.87	12.52	10.63	11.42	--	10.27
802.11ac 80MHz	11.25	--	11.58	10.51	--	10.64

Band 4 (5.725GHz~5.85GHz)

Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	15.27	14.66	13.1	11.84	11.66	11.17
802.11ac 40MHz	11.64	--	11.85	10.66	--	10.74
802.11ac 80MHz	10.13	--	--	10.06	--	--

1.6 Test standards

Technical standard : 47 CFR FCC Part 15 Subpart E § 15.407(2017-10)

2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed. ☒

or

The deviations as specified in 3 were ascertained in the course of the tests performed. ☐

2.2 Test environment

Relative humidity content: 20 ... 75 %

Air pressure: 86 ... 103 kPa

Details of power supply: 3.3Vd.c.

Test item Name	Uncertainty
Estimation Result of Uncertainty of Conducted Emission	Expanded Uncertainty：1.54 dB
Estimation Result of Uncertainty of Radiated Emission(3M)	Expanded Uncertainty： 0.009-30 MHz：2.17 dB 30-1000 MHz：3.57 dB 1-18 GHz：2.60 dB 18-40 GHz：2.58 dB
Estimation Result of Uncertainty of Bandwidth Measurement 20 dB Bandwidth, Occupied bandwidth, Channel bandwidth, Necessary Bandwidth	Expanded Uncertainty：0.45 kHz
Estimation Result of Uncertainty of Conducted Output Power Measurement Output power	Expanded Uncertainty：1.01 dB
Estimation Result of Uncertainty of Power Density Measurement Power density	Expanded Uncertainty：1.73 dB
Estimation Result of Uncertainty of Band Edge Measurement	Expanded Uncertainty：0.98 dBc
Estimation Result of Uncertainty of Conducted Spurious Emission Measurement Conducted spurious emission	Expanded Uncertainty：1.01 dB
Estimation Result of Uncertainty of EIRP Measurement EIRP、ERP、Output power(dBm)、Radiated spurious emission(dBm), Receiver spurious radiations (≥30 MHz)	Expanded Uncertainty： 30-200MHz：2.32 dB 200-1000MHz：2.30 dB 1-18GHz：3.25 dB 18-40GHz：2.89 dB

2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2018/5/30	2019/5/29
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2017/10/26	2018/10/25
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2018/3/23	2019/3/22
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2017/8/22	2018/8/21
ETSTW-CE 008	HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2017/7/14	2018/7/13
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2017/9/1	2018/8/31
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2017/8/31	2018/8/30
ETSTW-CE 024	IMPEDANCE STABILIZATION NETWORK	ISN T800	29454	TESEQ	2018/6/15	2019/6/14
ETSTW-CE 027	COUPLING AND DECOUPLING NETWORK	CDN ST08AS	38087	TESEQ	Function Test	
ETSTW-CE 028	MXE EMI Receiver	N9038A	MY53220110	Agilent	2018/7/2	2019/7/1
ETSTW-CE 030	CISPR Passive probe	PMM SHC-1-1000	1021X30803	Narda S.T.S/PMM	2018/3/9	2019/3/8
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	SCHAFFNER	2017/8/7	2018/8/6
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	Function Test	
ETSTW-CS 010	6 dB Attenuator	SA3N1007-06	None	AISI	Function test	
ETSTW-CS 011	ESG Analog Signal Generator	E4428C	MY45280875	AGILENT	2018/7/2	2019/7/1
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2018/5/30	2019/5/29
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2018/5/21	2019/5/20
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2017/8/25	2018/8/24
ETSTW-RE 010	ABSORBING CLAMP	MDS 21	03469	Schwarzbeck	2017/9/18	2018/9/17
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Function Test	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Function Test	
ETSTW-RE 019	MICROWAVE HORN ANTENNA	22240-25	121074	FM	2018/4/19	2019/4/18
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2018/7/2	2019/7/1
ETSTW-RE 028	Log-Periodic Dipole Array Antenna	3148	34429	ETS-Lindgren	Function Test	
ETSTW-RE 029	Biconical Antenna	3109	33524	ETS-Lindgren	Function Test	
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2018/3/26	2019/3/25
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2017/9/8	2018/9/7
ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P14508	LeCroy	2017/7/17	2018/7/16
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2017/9/8	2018/9/7

ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2018/1/23	2019/1/22
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2018/4/13	2019/4/12
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2018/4/26	2019/4/25
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2017/12/14	2018/12/13
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2018/3/6	2019/3/5
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2018/3/1	2019/2/28
ETSTW-RE 061	Amplifier Module	CHC 1	None	ETS	2018/5/14	2019/5/13
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2018/3/30	2019/3/29
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 065	Amplifier	AMF-6F-18002650-25-10P	941608	MITEQ	2018/3/30	2019/3/29
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	ETS-Lindgren	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2017/9/11	2018/9/10
ETSTW-RE 073	Power Meter	N1911A	MY45100769	Agilent	2018/1/22	2019/1/21
ETSTW-RE 074	Power Sensor	N1921A	MY45241198	Agilent	2018/1/22	2019/1/21
ETSTW-RE 091	Match Pad	MDCS1500	None	WOKEN	2018/4/16	2019/4/15
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2018/2/23	2019/2/22
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	T-0A023536	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2018/1/15	2019/1/14
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2018/5/29	2019/5/28
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2017/8/9	2018/8/8
ETSTW-RE 126	5GHz Notch filter	5NSL12-5800/E221.3-O/O	1	K&L Microwave	2017/8/9	2018/8/8
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2018/2/27	2019/2/26
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circuits	2017/8/9	2018/8/8
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2017/8/9	2018/8/8
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-RE 133	EXA Signal Analyzer	N9010A	MY53470566	Agilent	2018/4/20	2019/4/19
ETSTW-RE 134	MXG Vector Signal Generator	N5182B	MY53050664	Agilent	2018/4/19	2019/4/18
ETSTW-RE 135	EXG Analog Signal Generator	N5171B	MY53050476	Agilent	2018/4/19	2019/4/18
ETSTW-RE 136	USB Wideband Power Sensor	U2021XA	MY54070006	Agilent	2018/4/24	2019/4/23
ETSTW-RE 137	USB Wideband Power Sensor	U2021XA	MY54020004	Agilent	2018/4/24	2019/4/23
ETSTW-RE 138	USB Wideband Power Sensor	U2021XA	MY54110003	Agilent	2018/4/24	2019/4/23

ETSTW-RE 139	USB Wideband Power Sensor	U2021XA	MY54110004	Agilent	2018/4/24	2019/4/23
ETSTW-RE 140	Simultaneous sampling DAQ	U2531A	TW56143501	Agilent	Function Test	
ETSTW-RE 142	Amplifier	8447D	2805A03378	Agilent	2018/3/30	2019/3/29
ETSTW-RE 146	Preamplifier	JPA-10M1G	15090004	JPT	2018/6/9	2019/6/8
ETSTW-RE 147	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04005	ETC	2018/3/23	2019/3/22
ETSTW-RE 148	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04006	ETC	2018/6/5	2019/6/4
ETSTW-RE 149	Blocking Test System	AD211	TW5451133	Keysight	Function Test	
ETSTW-RE 150	Blocking Test System	AD211	TW5451133	Keysight	Function Test	
ETSTW-RE 151	Thermohygrometer	608-h1	45104376	TESTO	2017/8/30	2018/8/29
ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	093	EMC-PARTNER	2018/2/6	2019/2/5
ETSTW-EMI 010	AC Power Source	PS3	0219	EMC PARTNER	2018/2/7	2019/2/6
ETSTW-EMI 011	USB Compact Modulator	SFC-U	101689	R&S	2018/5/10	2019/5/9
ETSTW-EMS 001	BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	Function Test	
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014	None	Function Test	
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	2017/8/31	2018/8/30
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	Function Test	
ETSTW-EMS 010	Coupling De-coupling Network	CDN-UTP8	014	EMC-PARTNER	Function Test	
ETSTW-EMS 012	EM Injection Clamp	F-203I-23MM	476	FCC	2018/6/15	2019/6/14
ETSTW-EMS 016	EMF Tester	1390	071208732	TES	2017/8/28	2018/8/27
ETSTW-EMS 017	Multimeter	DM-1220	518614	HILA	2017/8/18	2018/8/17
ETSTW-EMS 019	Electrostatic Discharge Simulator	ESS-2002	ESS06Y6300	NoiseKen	2017/9/13	2018/9/12
ETSTW-EMS 022	Transient Test System	TRANSIENT -3000 S	1303	EMC-PARTNER	2017/8/28	2018/8/27
ETSTW-EMS 023	Electrostatic Discharge Simulator	NSG 435	6984	TESEQ	2018/6/15	2019/6/14
ETSTW-EMS 024	Humidity Temperature Meter	TES-1260	160304437	TES	2017/8/18	2018/8/17
ETSTW-EMS 025	10/700 Surge Generator	SG-728G	EC0631106	3Ctest	2017/8/30	2018/8/29
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR	Function Test	
ETSTW-RS 007	14" COLOR VIDEO MONITOR	HS-CM145A	0512011548	None	Function Test	
ETSTW-RS 009	SIGNAL GENERATOR	8648C	3642U01656	HP	2018/1/18	2019/1/17
ETSTW-RS 010	Broadband Field Meter	NBM-520	C-0195	Narda	2017/11/8	2018/11/7
ETSTW-RS 011	RF Power Amplifier	150W1000	0464490	AR	Function Test	
ETSTW-RS 012	Log-Periodic Antenna	ATL80M1G	0348244	AR	Function Test	
ETSTW-RS 013	Stacked Log Periodic Antenna	STLP9149	473	RS	Function Test	
ETSTW-RS 014	Power Amplifier	AS0860B	1078553	MILMEGA	Function Test	
ETSTW-RS 015	SIGNAL GENERATOR	ITS6006B	37669	TESEQ	2018/3/16	2019/3/15
ETSTW-RS 016	Power sensor	PMR6006	75617	TESEQ	2018/3/16	2019/3/15
ETSTW-RS 017	Power sensor	PMR6006	75618	TESEQ	2018/3/16	2019/3/15

ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2018/2/27	2019/2/26
ETSTW-GSM 003	Radio Communication Analyzer	MT8820C	6201342073	Anritsu	2018/3/2	2019/3/1
ETSTW-GSM 004	Wideband Radio Communication Tester	CMW500	128092	R&S	2017/10/16	2018/10/15
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40/12+9SS	3	WI	2018/1/15	2019/1/14
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2018/1/15	2019/1/14
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2018/1/15	2019/1/14
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2018/1/15	2019/1/14
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2017/9/13	2018/9/12
ETSTW-GSM 024	Radio Communication Analyzer	MT8821C	None	Anritsu	2018/3/7	2019/3/6
ETSTW-Cable 002	Microwave Cable	SUCOFLEX 104（S_Cable 7）	238093	HUBER+SUHNER	2018/5/14	2019/5/13
ETSTW-Cable 003	Microwave Cable	SUCOFLEX 104（S_Cable 11）	209953	HUBER+SUHNER	2018/5/14	2019/5/13
ETSTW-Cable 063	N type Cable (5m)	RG214/U	1249271	HUBER+SUHNER	Function Test	
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 020	N TYPE Cable	OATS Cable 1	N30N30-L335-15M	JYE BAO CO.,LTD.	2018/7/2	2019/7/1
ETSTW-Cable 023	BNC Cable	BNC Cable 3	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 024	BNC Cable	BNC Cable 4	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 025	BNC Cable	BNC Cable 5	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2018/2/27	2019/2/26
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2018/5/14	2019/5/13
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104（S_Cable 9）	279067	HUBER+SUHNER	2018/2/27	2019/2/26
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104（S_Cable 10）	238092	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 039	Microwave Cable	SUCOFLEX 104	316739	HUBER+SUHNER	2018/5/14	2019/5/13
ETSTW-Cable 042	Microwave Cable	SUCOFLEX 104（S_Cable 22）	279847	HUBER+SUHNER	Function Test	
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 048	Microwave Cable	SUCOFLEX 104	325519	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 051	BNC Cable	BNC Cable 6	None	JYE BAO CO.,LTD.	2018/3/7	2019/3/6
ETSTW-Cable 052	BNC Cable	Clamp Cable	None	Schwarz beck	2018/3/7	2019/3/6
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2018/6/9	2019/6/8
ETSTW-Cable 065	N type Cable (5m)	RG214	None	DRAKA	Function Test	
ETSTW-Cable 066	SMA type cable	32022	None	ASTROLAB	2017/8/31	2018/8/30
ETSTW-Cable 067	BNC Cable (1m)	RG213	None	ALLTESTEK	Function Test	

ETSTW-Cable 071	N TYPE CABLE	EMCCFD400-NM-NM-25000	170239	EMCI	2018/6/9	2019/6/8
WTSTW-SW 001	EMI TEST SOFTWARE	Harmonics-1000	None	EMC PARTNER	HARCS Version 4.20 Firmware Version 2.20	
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMC	None	Farad	Version ETS-03A1	
WTSTW-SW 003	EMS TEST SOFTWARE	i2	None	AUDIX	Version 3.2007-8-17b	
WTSTW-SW 005	GSM Fading Level Correction	GSMFadLevCor	None	R&S	Version 1.66	
WTSTW-SW 006	EMI TEST SOFTWARE	e3	None	AUDIX	Version 9.161014	
WTSTW-SW 007	Keysight.EN300328.V191.Test	Keysight	None	Keysight	Version 1.0.0.0	
WTSTW-SW 008	Signal studio	Agilent	None	AUDIX	Version 2.0.0.1	

2.4 Test Procedure

The test procedures are performed following the test stands ANSI STANDARD C63.10 and FCC 789033 D02 General UNII Test Procedures New Rules v01r04.

■ Minimum Emission Bandwidth for the band 5.150-5.250 GHz, 5.725-5.850 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

■ 99 Percent Occupied Bandwidth

The 99-percent occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5 % of the total mean power of the given emission. Measurement of the 99-percent occupied bandwidth is required only as a condition for using the optional band-edge measurement techniques described in section H)3)d). Measurements of 99-percent occupied bandwidth may also optionally be used in lieu of the 6-dB emission bandwidth to define the minimum frequency range over which the spectrum is integrated when measuring maximum conducted output power as described in section E). However, the 6-dB bandwidth must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with 15.407(a).

The following procedure shall be used for measuring (99 %) power bandwidth.

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

■ Maximum conducted output power

(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW ≥ 3 MHz.
(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
(v) Sweep time = auto.
(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".
(viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

■ Power Density

The rules requires "maximum power spectral density" measurements where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

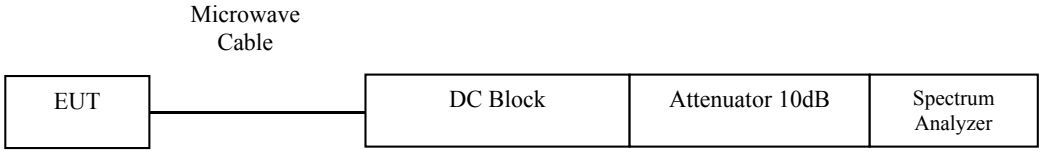
1. Create an average power spectrum for the EUT operating mode being tested by following the instructions in section II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power…". (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)
2. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
3. Make the following adjustments to the peak value of the spectrum, if applicable:
   a) If Method SA-2 or SA-2 Alternative was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.
   b) If Method SA-3 Alternative was used and the linear mode was used in step II.E.2.g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
4. The result is the Maximum PSD over 1 MHz reference bandwidth.
5. For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus

a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW ≥ 1/T, where T is defined in section II.B.l.a).
b) Set VBW ≥ 3 RBW.
c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10log(1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since RBW=100 kHz is available on nearly all spectrum analyzers.

Conducted measurement test setup



3 Test results (enclosure)

Test case	Para. Number	Required	Test passed	Test failed
Peak Transmit Power	15.407(a)	☒	☒	☐
6-dB emission bandwidth	15.407(a)	☒	☒	☐
26-dB emission bandwidth	15.407(a)	☒	☒	☐
99 % Occupied Bandwidth	789033 D02 General UNII Test Procedures New Rules v01	☒	☒	☐
Peak Power Spectral Density	15.407(a)	☒	☒	☐
Undesirable emission limits	15.407(b)	☒	☒	☐
Radio Frequency Exposure	15.407(f)	☒	☒	☐
Transmit Power Control	15.407(h)	☐	☐	☐
Dynamic Frequency Selection (DFS)	15.407(h)	☒	☒	☐
Channel Move Time, Channel Closing Transmission Time	15.407(i)	☒	☒	☐
Radiated Emission from Receiver Part	15.109	☐	☐	☐
AC Conducted Emissions	15.207	☒	☒	☐

The following is intentionally left blank.

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

3.1 Peak Transmit Power, FCC 15.407 (a)

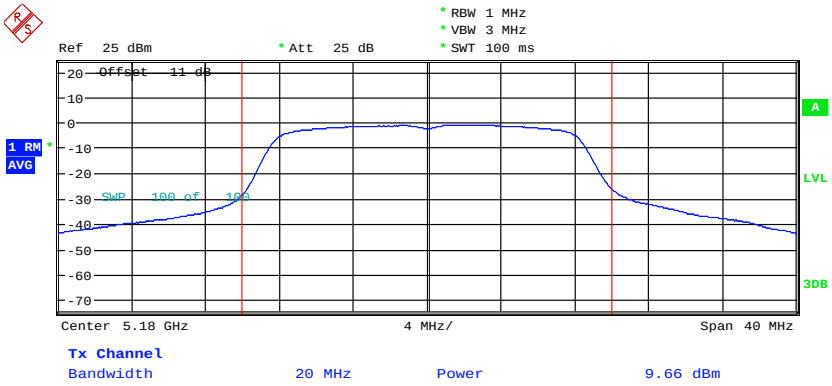
According to §15.407(a)

1. For the band 5.15-5.25 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 30 dBm (1 W) for master device and 24 dBm (250 mW) for mobile/portable client device.

2. For the band 5.25-5.35 GHz and 5.47-5.725 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 24 dBm (250 mW) or 11dBm + 10 log B, whichever is lower (B= 26-dB emission BW).

3. For the band 5.725-5.850 GHz, the maximum conducted power over the frequency of operation shall not exceed the lesser of 30 dBm (1 W).

ANT Chain1
5.15 GHz ~ 5.25 GHz



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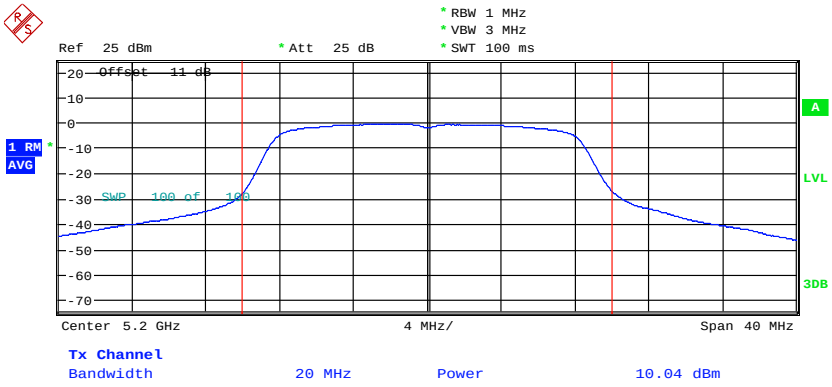

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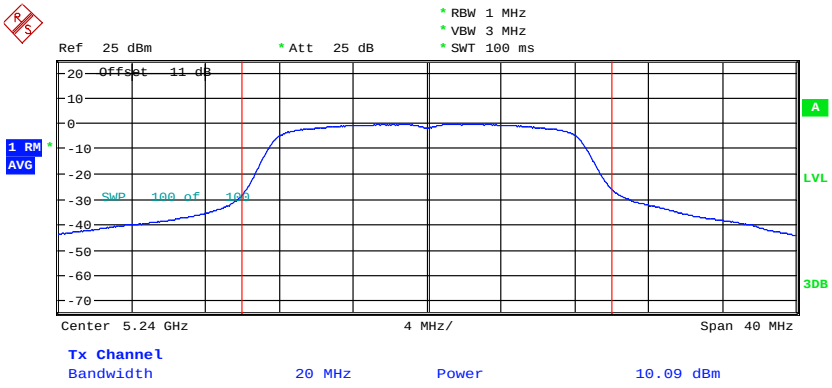

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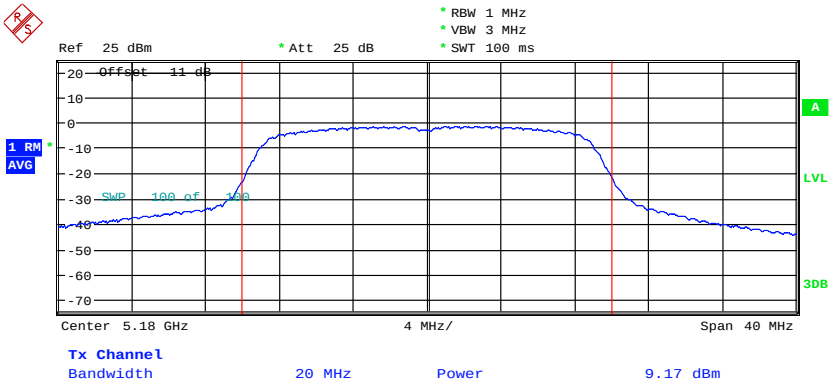

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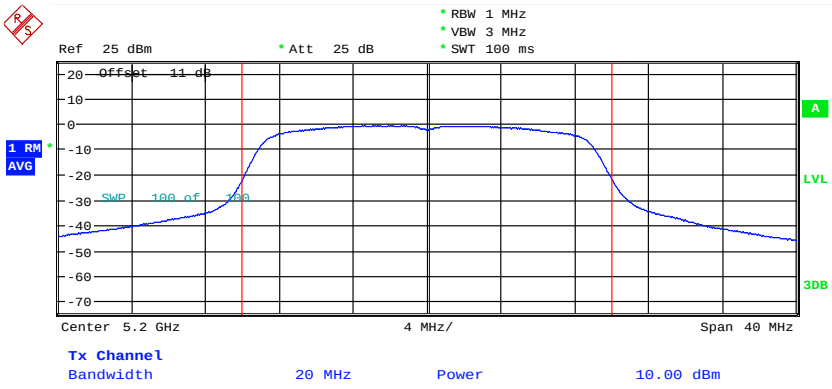

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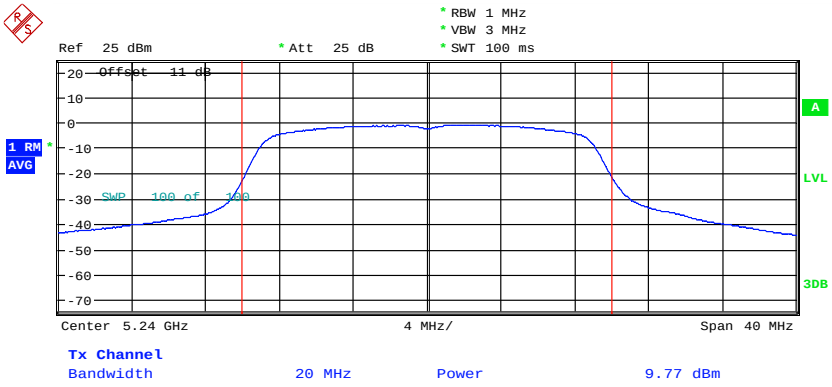

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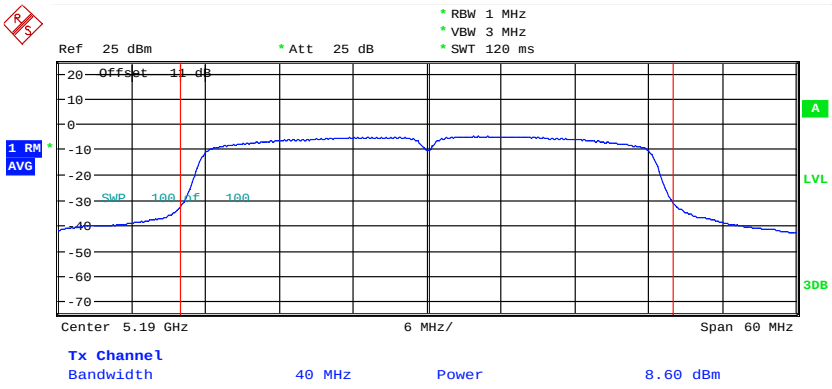

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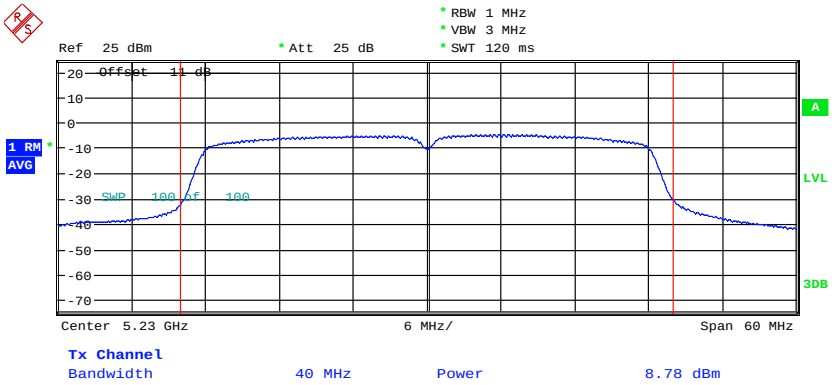

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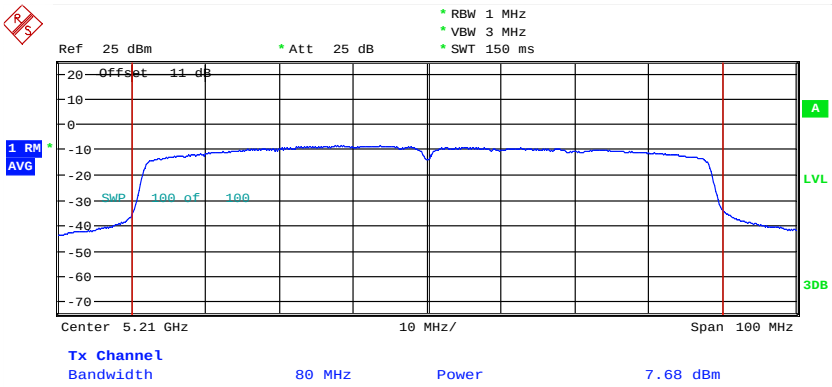

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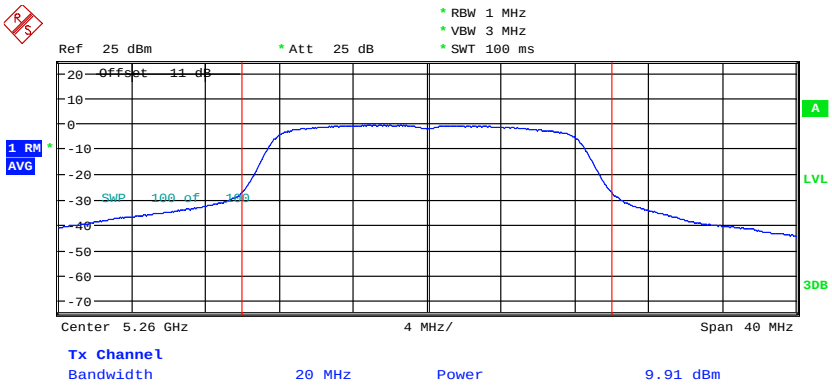
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

5.25 GHz ~ 5.35 GHz



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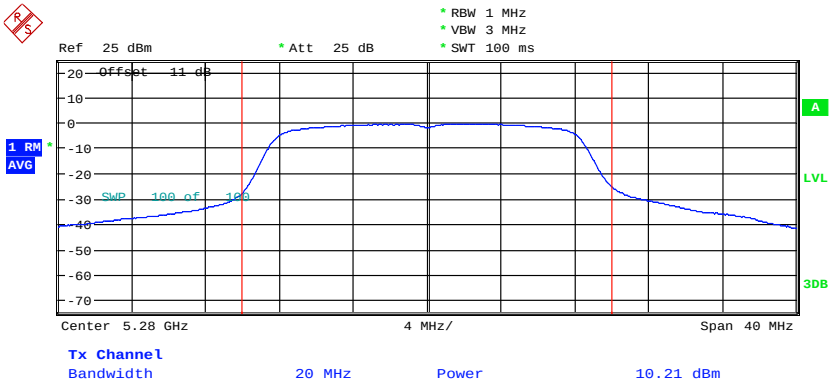

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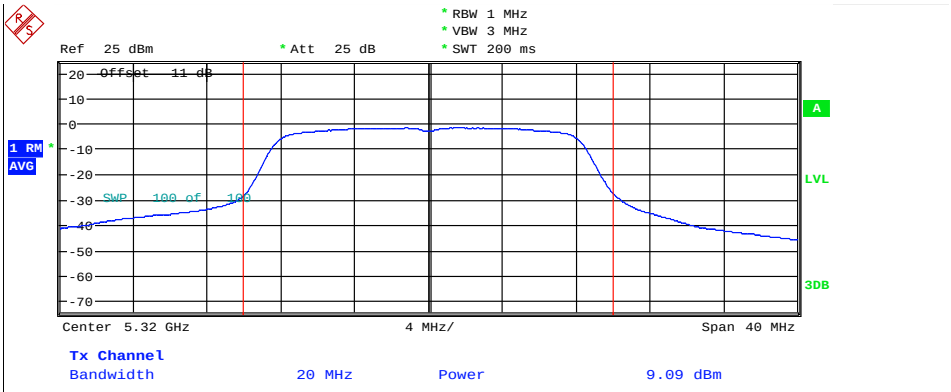

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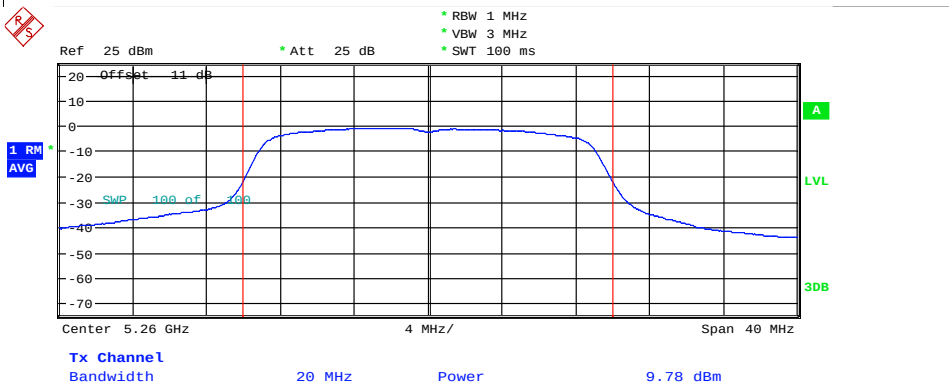

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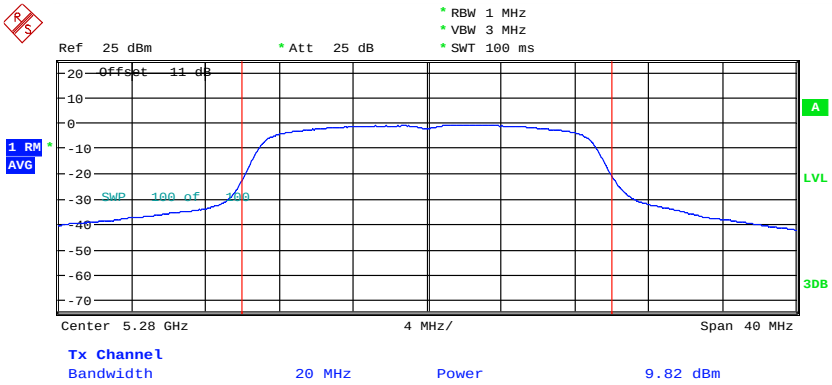

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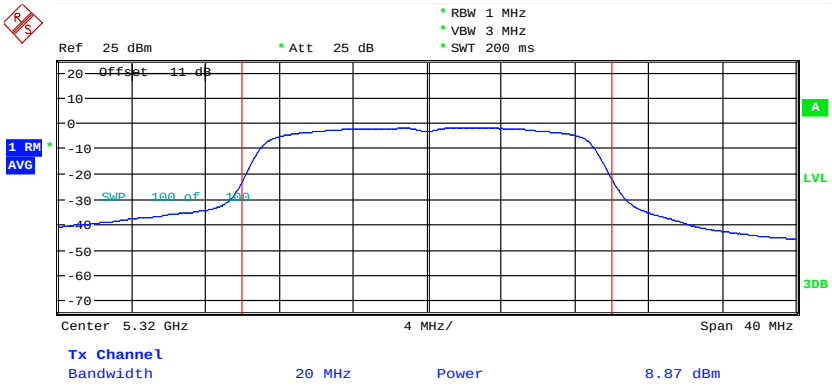
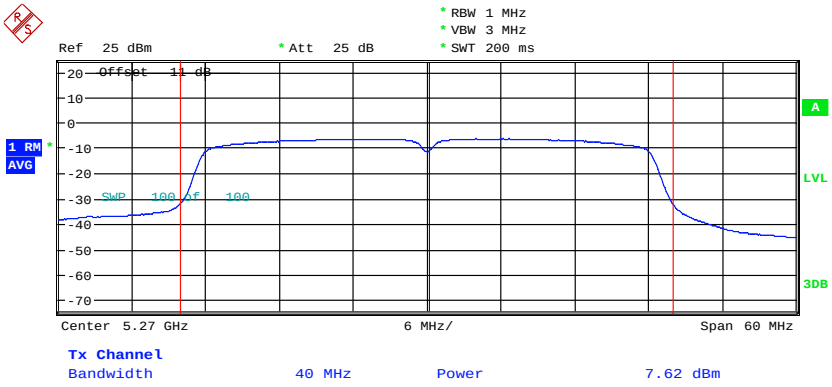


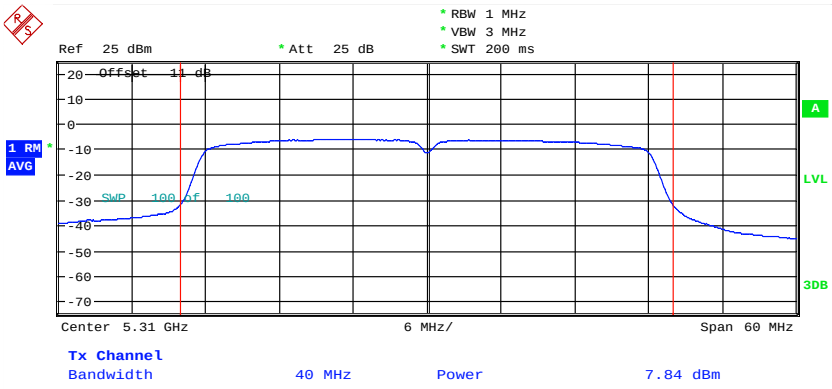
MAXIMUM CONDUCTED POWER ANT1_11ac20CH64

Date: 13.JUN.2018 10:39:18



MAXIMUM CONDUCTED POWER ANT1_11ac40CH54

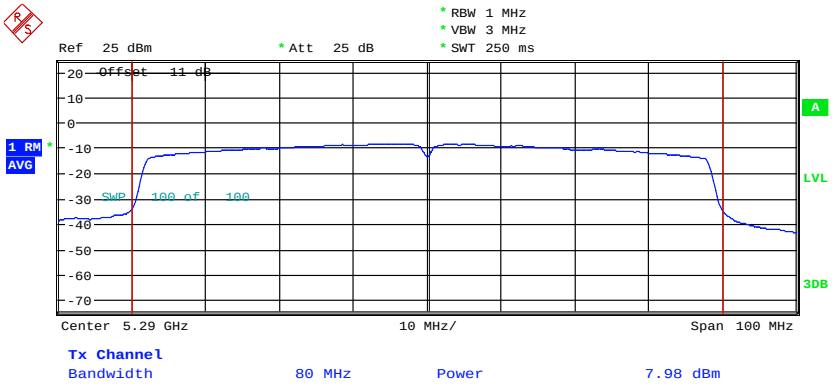
Date: 13.JUN.2018 09:06:07



MAXIMUM CONDUCTED POWER ANT1_11ac40CH62

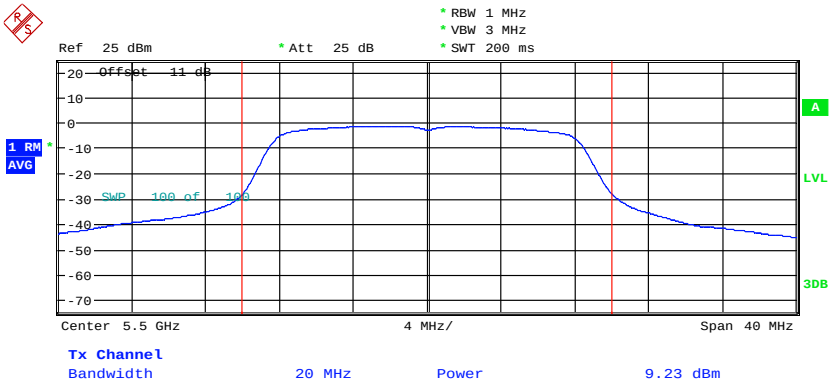
Date: 13.JUN.2018 09:10:07

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

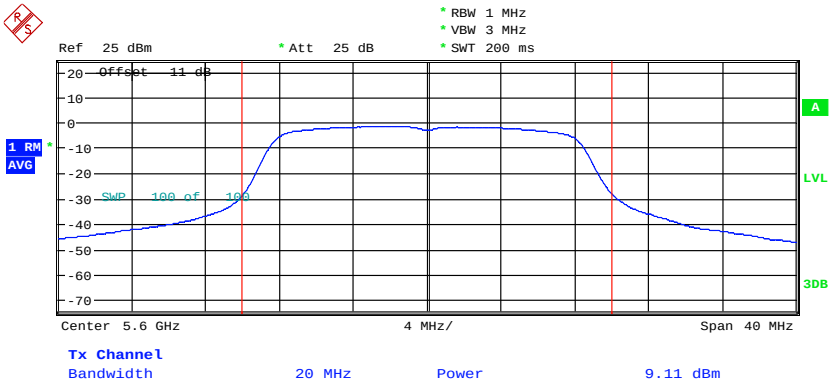


MAXIMUM CONDUCTED POWER ANT1_11ac80CH58
Date: 13.JUN.2018 09:19:37

5.47 GHz ~ 5.725 GHz

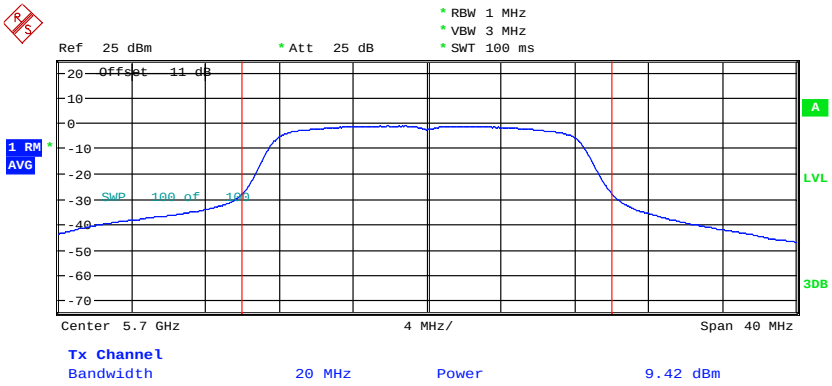


MAXIMUM CONDUCTED POWER ANT1_11aCH100
Date: 13.JUN.2018 09:46:27



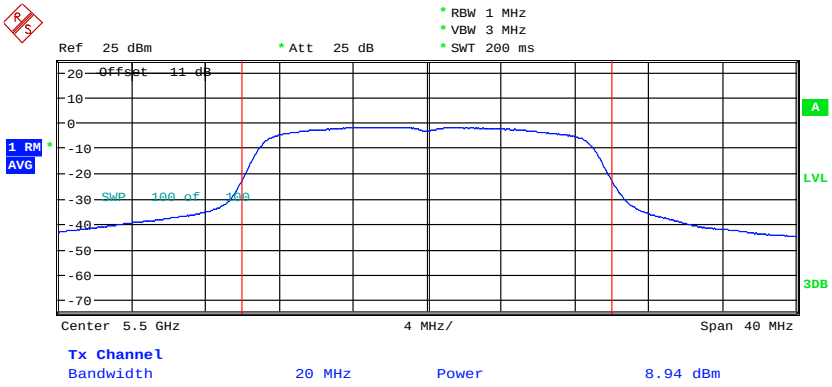
MAXIMUM CONDUCTED POWER ANT1_11aCH120

Date: 13.JUN.2018 09:49:37

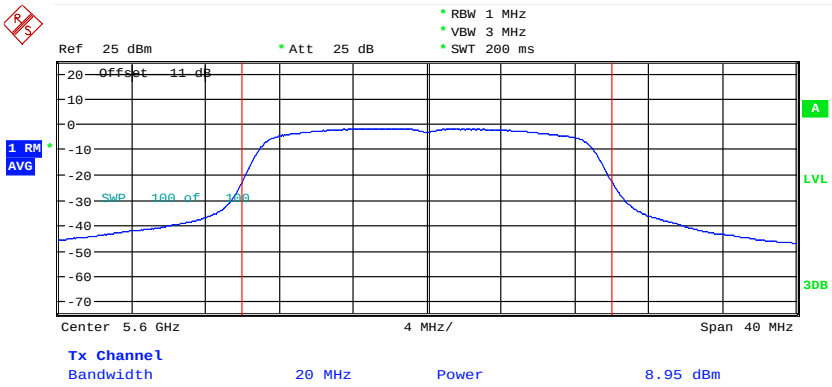


MAXIMUM CONDUCTED POWER ANT1_11aCH140

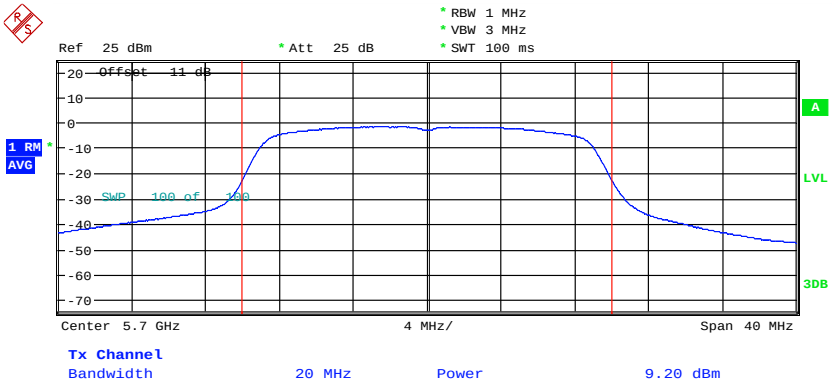
Date: 8.JUN.2018 14:06:45



MAXIMUM CONDUCTED POWER ANT1_11ac20CH100
Date: 13.JUN.2018 09:42:57

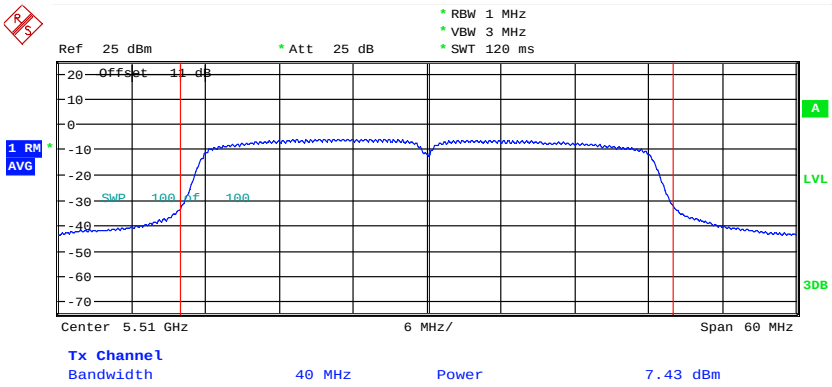


MAXIMUM CONDUCTED POWER ANT1_11ac20CH120
Date: 13.JUN.2018 09:51:27



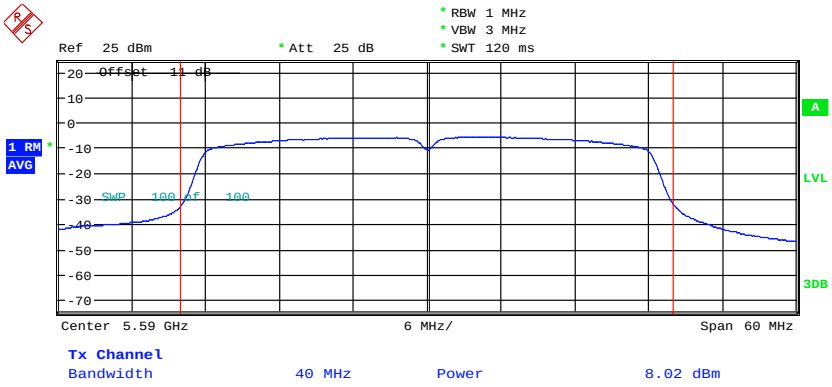
MAXIMUM CONDUCTED POWER ANT1_11ac20CH140

Date: 8.JUN.2018 14:08:09



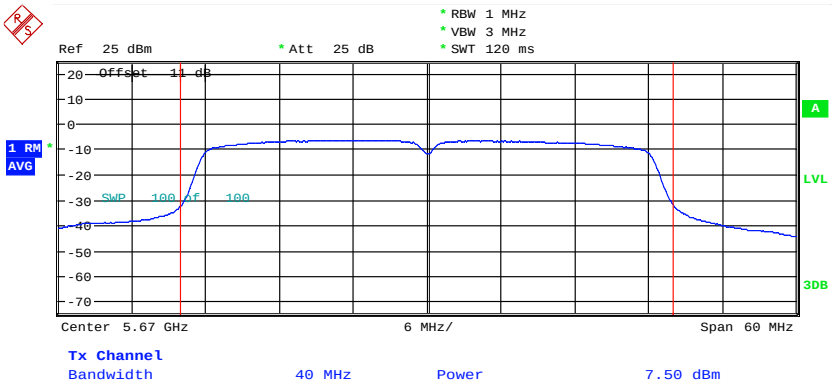
MAXIMUM CONDUCTED POWER ANT1_11ac40CH102

Date: 8.JUN.2018 14:27:38



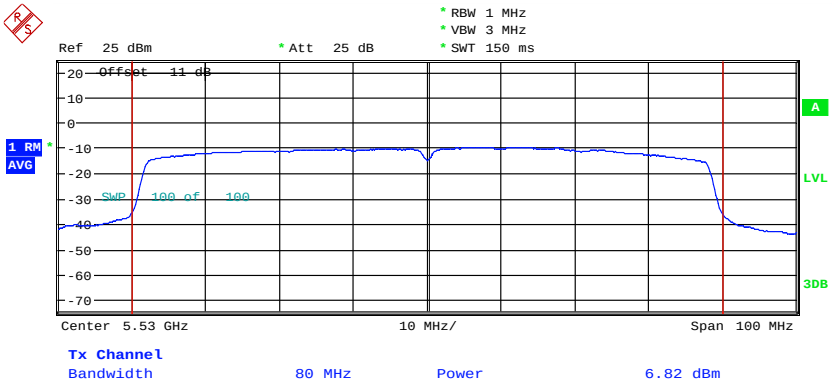
MAXIMUM CONDUCTED POWER ANT1_11ac40CH118

Date: 8.JUN.2018 14:29:16

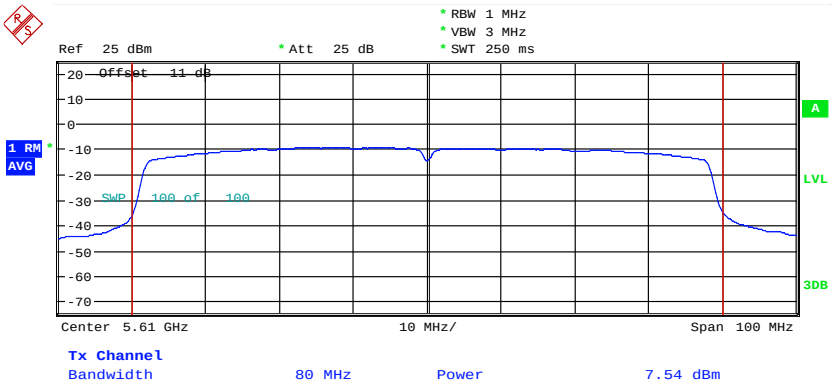


MAXIMUM CONDUCTED POWER ANT1_11ac40CH134

Date: 8.JUN.2018 14:34:24



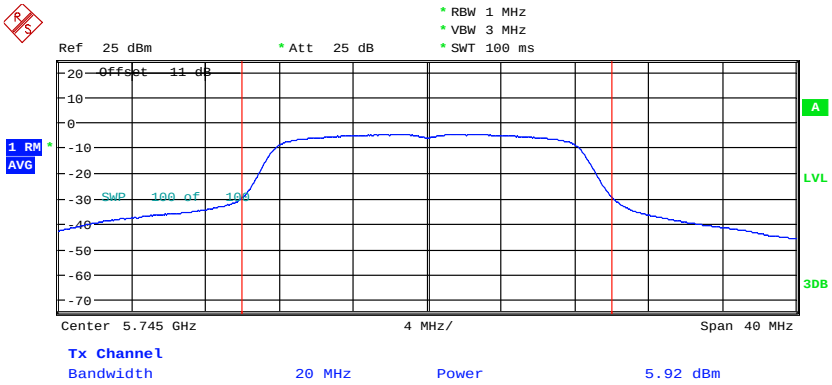
MAXIMUM CONDUCTED POWER ANT1_11ac80CH106
Date: 8.JUN.2018 14:48:24



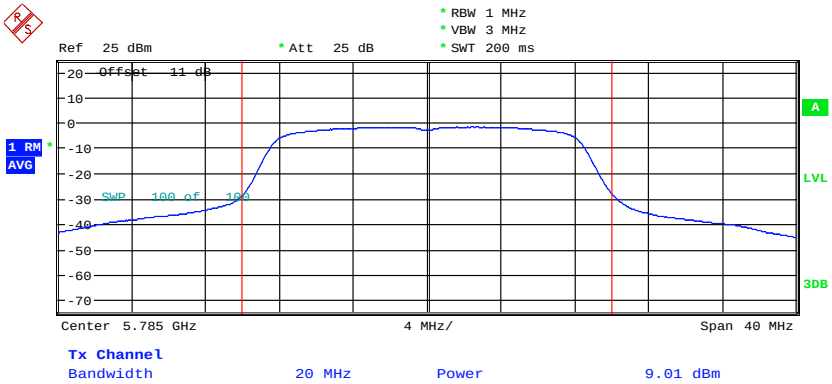
MAXIMUM CONDUCTED POWER ANT1_11ac80CH122
Date: 13.JUN.2018 09:59:56

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

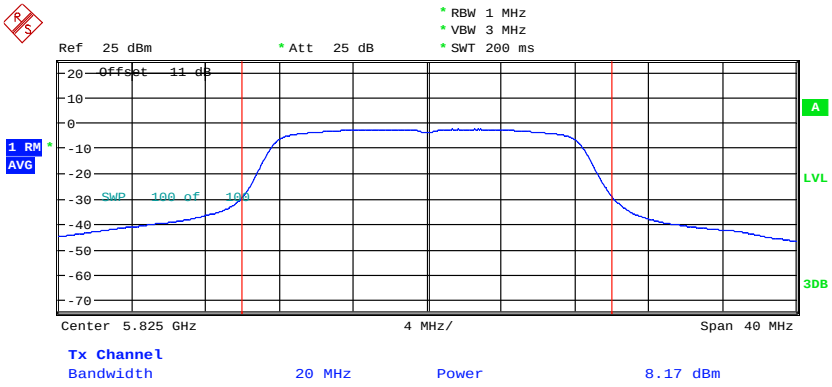
5.725 GHz ~ 5.85 GHz



MAXIMUM CONDUCTED POWER ANT1_11aCH149
Date: 8.JUN.2018 15:09:52

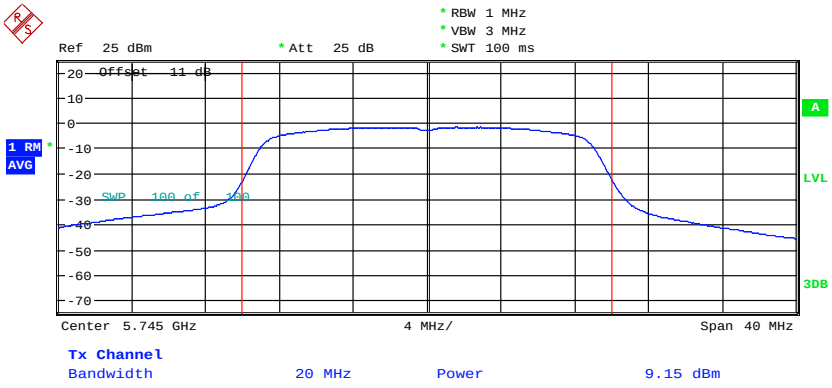


MAXIMUM CONDUCTED POWER ANT1_11aCH157
Date: 13.JUN.2018 10:05:17



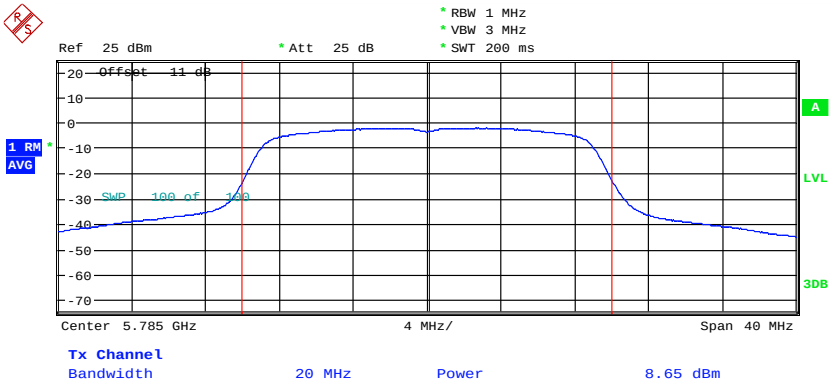
MAXIMUM CONDUCTED POWER ANT1_11aCH165

Date: 13.JUN.2018 10:10:37

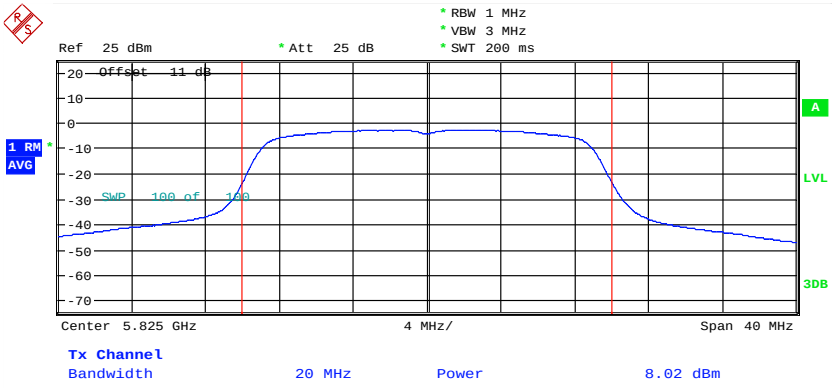


MAXIMUM CONDUCTED POWER ANT1_11ac20CH149

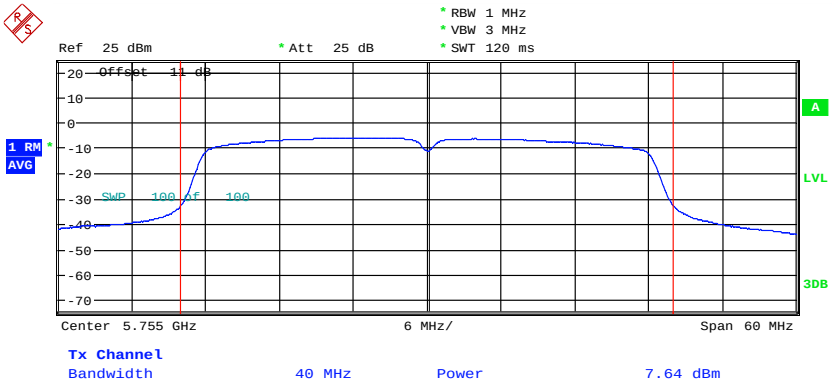
Date: 8.JUN.2018 15:11:02



MAXIMUM CONDUCTED POWER ANT1_11ac20CH157
Date: 13.JUN.2018 10:07:07

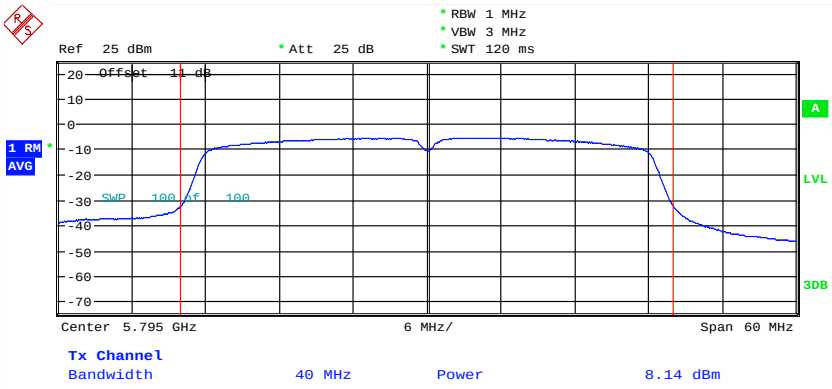


MAXIMUM CONDUCTED POWER ANT1_11ac20CH165
Date: 13.JUN.2018 10:09:07



MAXIMUM CONDUCTED POWER ANT1_11ac40CH151

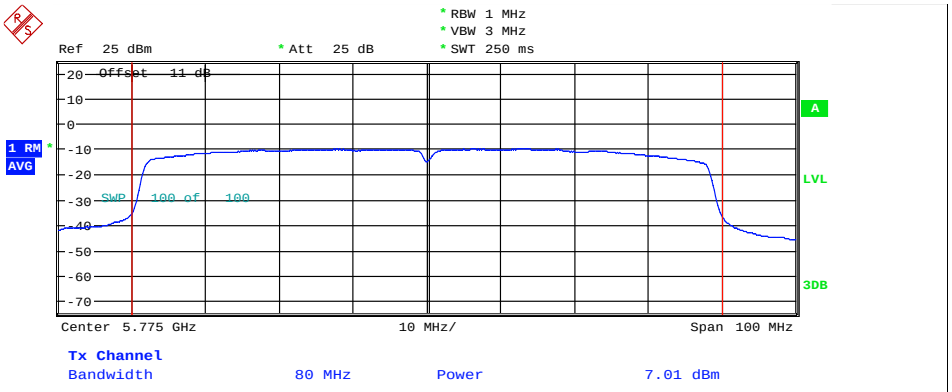
Date: 8.JUN.2018 15:29:56



MAXIMUM CONDUCTED POWER ANT1_11ac40CH159

Date: 8.JUN.2018 15:31:48

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

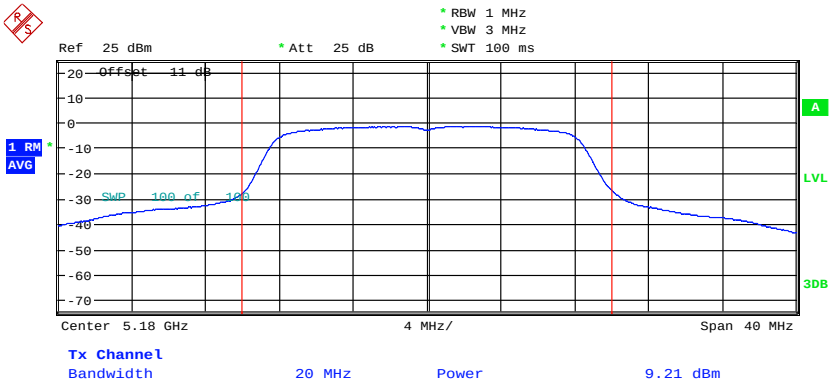


MAXIMUM CONDUCTED POWER ANT1_11ac80CH155
Date: 13.JUN.2018 10:16:35

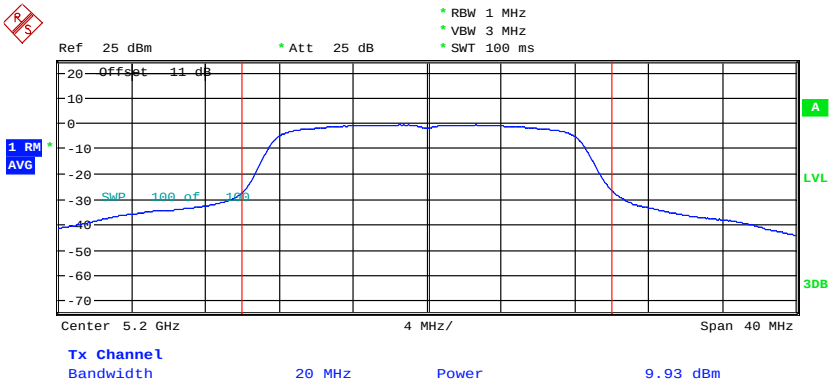
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

ANT Chain2

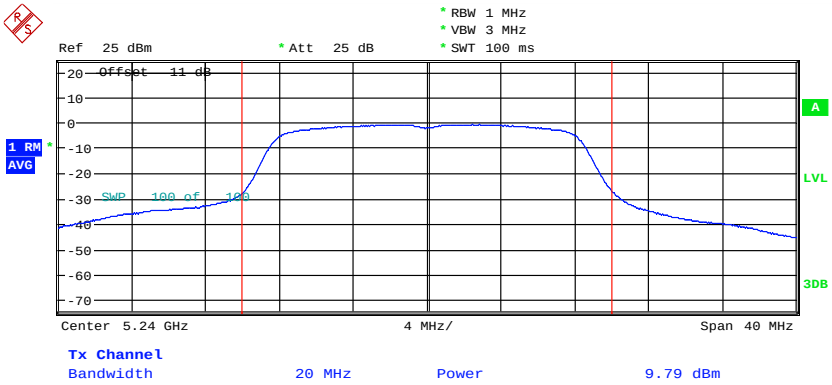
5.15 GHz ~ 5.25 GHz



MAXIMUM CONDUCTED POWER ANT2_11aCH36
Date: 8.JUN.2018 11:17:56

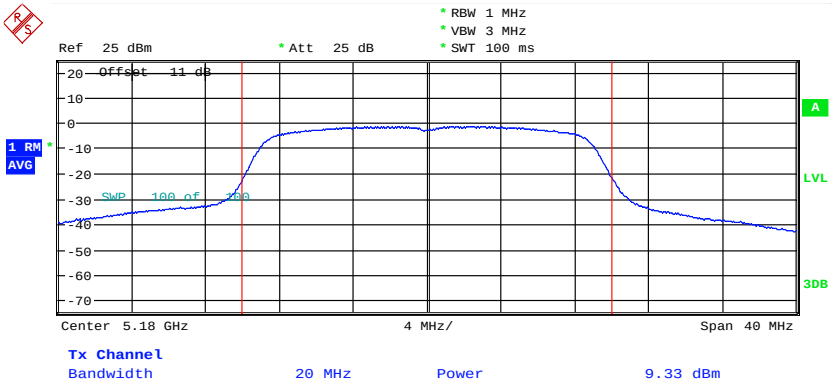


MAXIMUM CONDUCTED POWER ANT2_11aCH40
Date: 8.JUN.2018 11:16:11



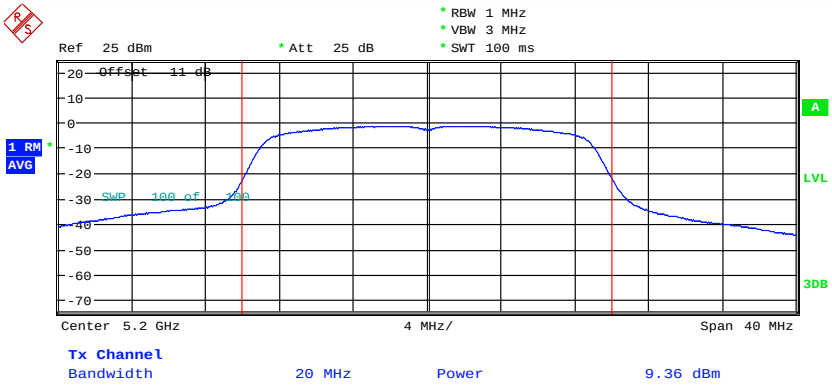
MAXIMUM CONDUCTED POWER ANT2_11aCH48

Date: 8.JUN.2018 11:04:51

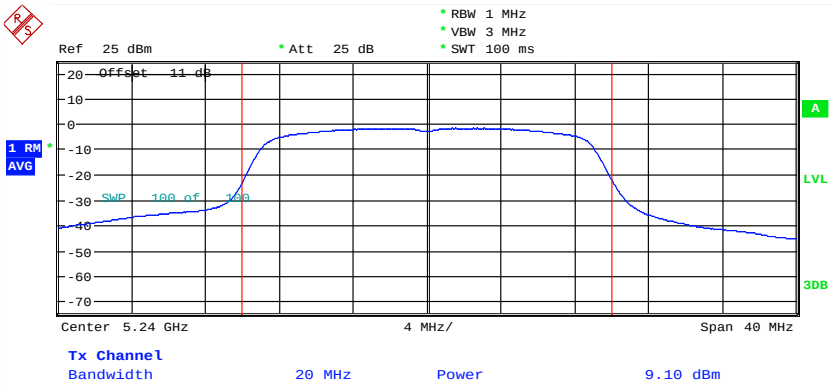


MAXIMUM CONDUCTED POWER ANT2_11ac20CH36

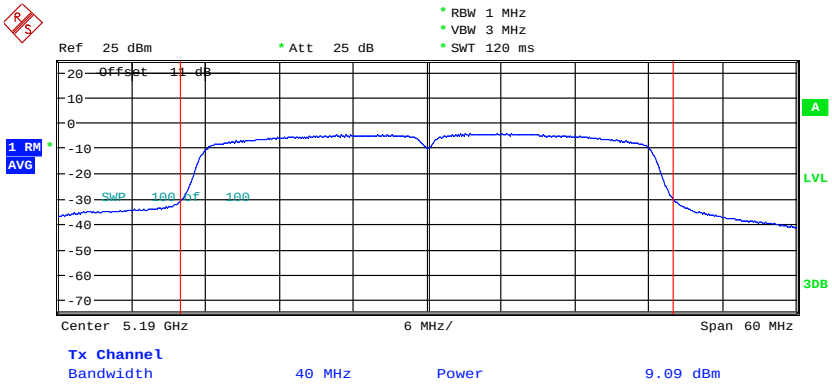
Date: 8.JUN.2018 11:19:06



MAXIMUM CONDUCTED POWER ANT2_11ac20CH40
Date: 8.JUN.2018 11:15:01

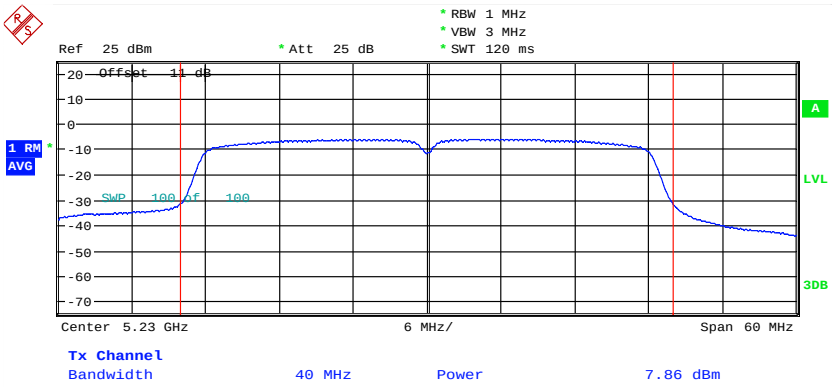


MAXIMUM CONDUCTED POWER ANT2_11ac20CH48
Date: 8.JUN.2018 11:06:23



MAXIMUM CONDUCTED POWER ANT2_11ac40CH38

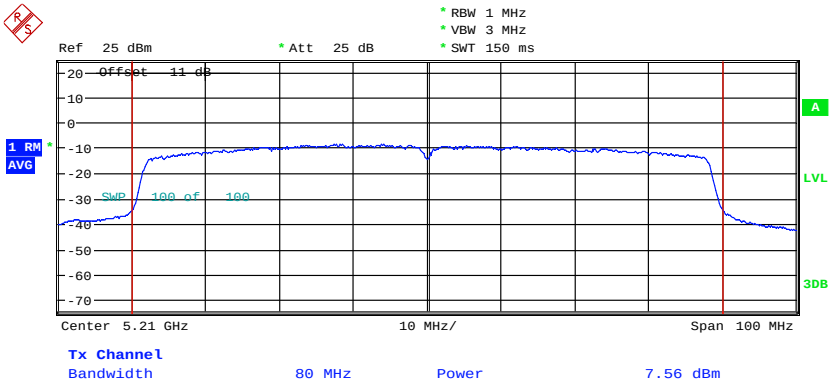
Date: 8.JUN.2018 10:24:01



MAXIMUM CONDUCTED POWER ANT2_11ac40CH46

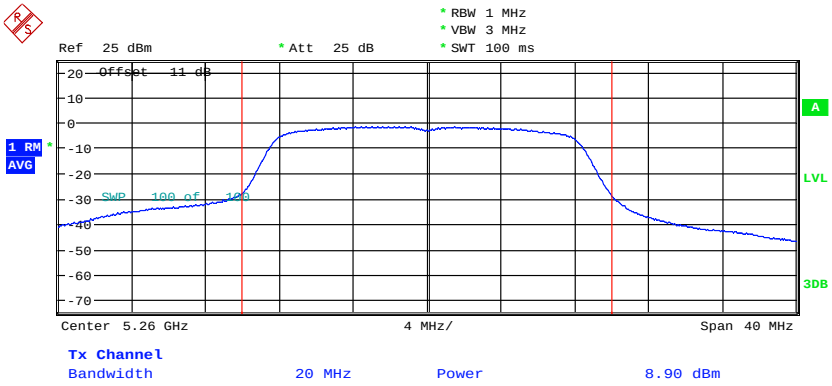
Date: 8.JUN.2018 10:29:44

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

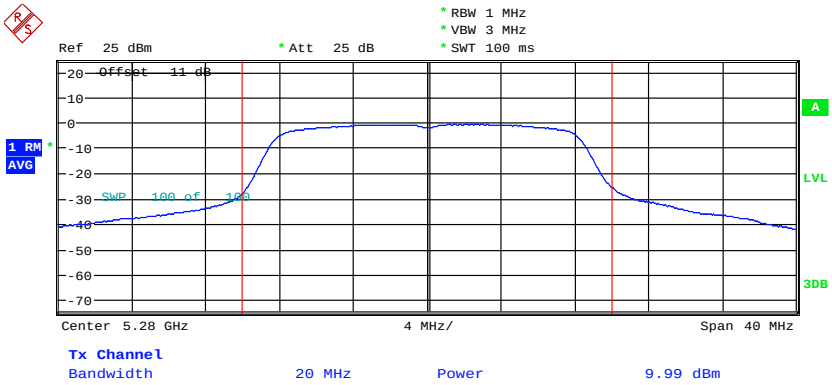


MAXIMUM CONDUCTED POWER ANT2_11ac80CH42
Date: 8.JUN.2018 10:31:43

5.25 GHz ~ 5.35 GHz

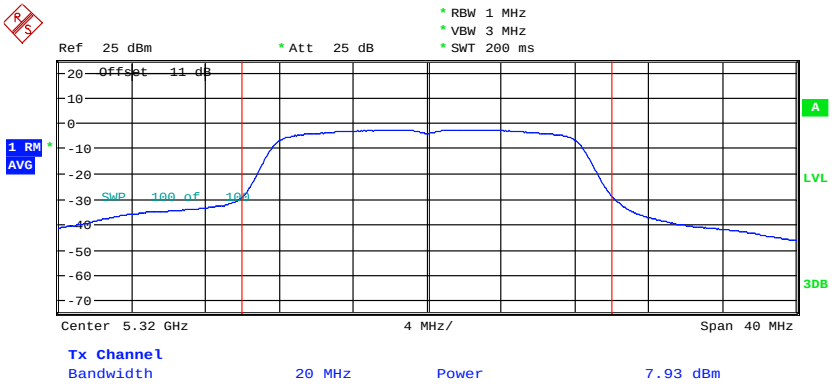


MAXIMUM CONDUCTED POWER ANT2_11aCH52
Date: 8.JUN.2018 11:32:38



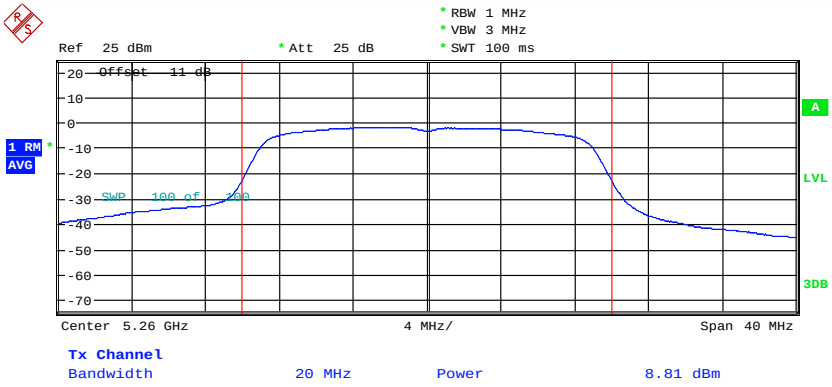
MAXIMUM CONDUCTED POWER ANT2_11aCH56

Date: 8.JUN.2018 11:42:26

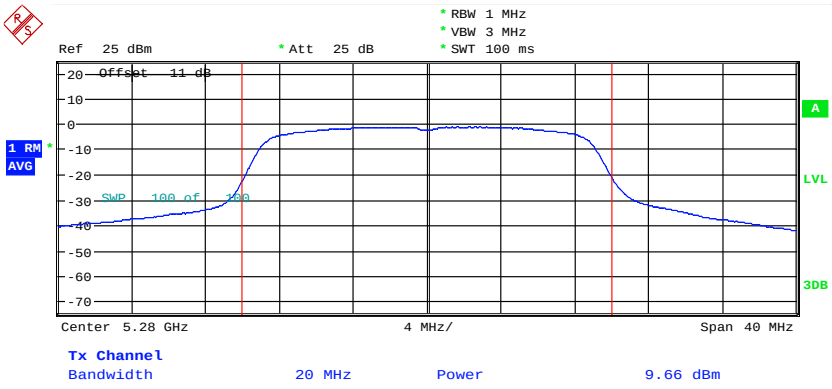


MAXIMUM CONDUCTED POWER ANT2_11aCH64

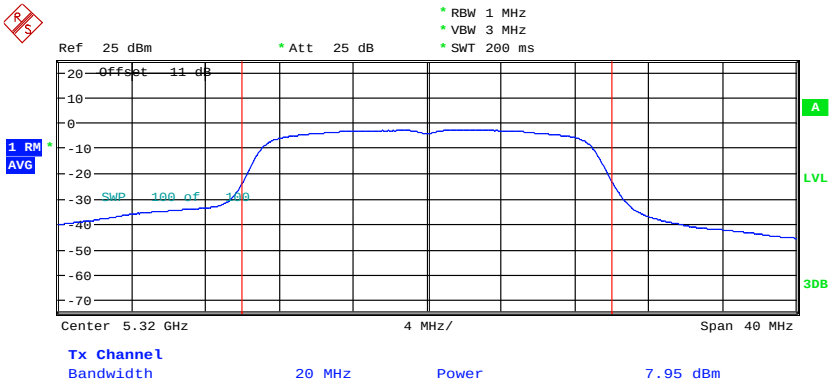
Date: 13.JUN.2018 10:47:58



MAXIMUM CONDUCTED POWER ANT2_11ac20CH52
Date: 8.JUN.2018 11:31:00

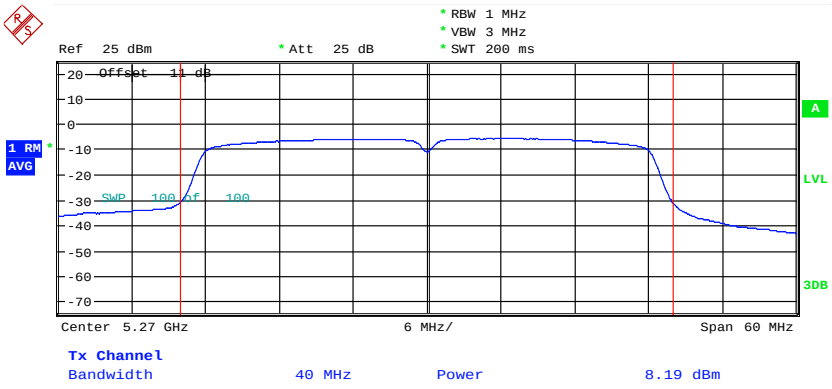


MAXIMUM CONDUCTED POWER ANT2_11ac20CH56
Date: 8.JUN.2018 11:40:48



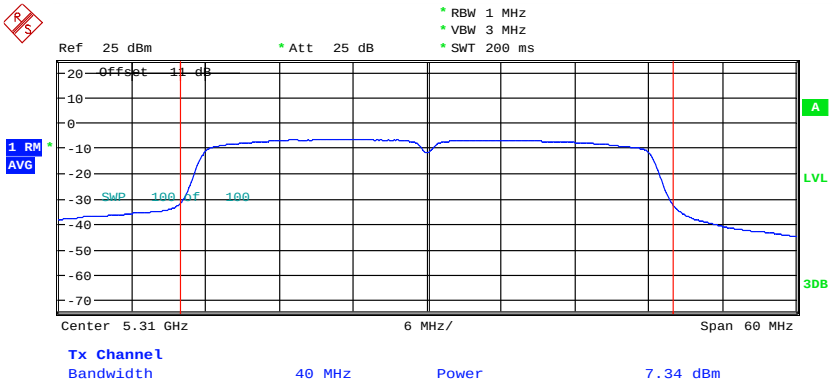
MAXIMUM CONDUCTED POWER ANT2_11ac20CH64

Date: 13.JUN.2018 10:45:18



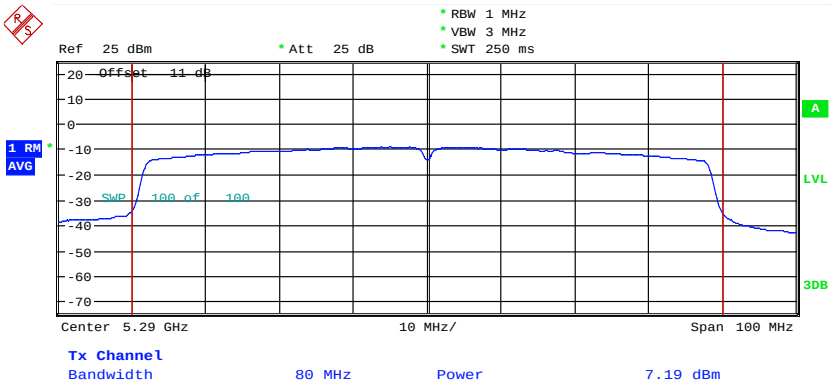
MAXIMUM CONDUCTED POWER ANT2_11ac40CH54

Date: 13.JUN.2018 11:50:18



MAXIMUM CONDUCTED POWER ANT2_11ac40CH62

Date: 13.JUN.2018 10:54:58

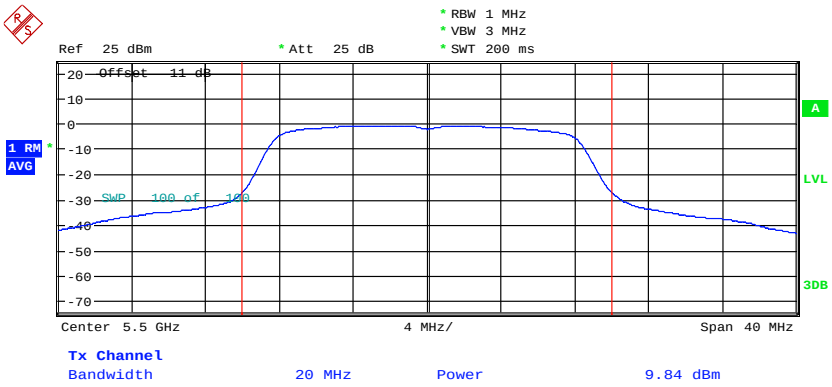


MAXIMUM CONDUCTED POWER ANT2_11ac80CH58

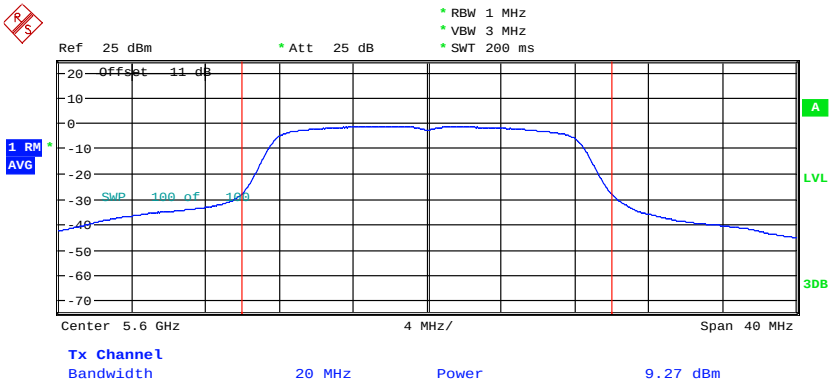
Date: 13.JUN.2018 10:58:28

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

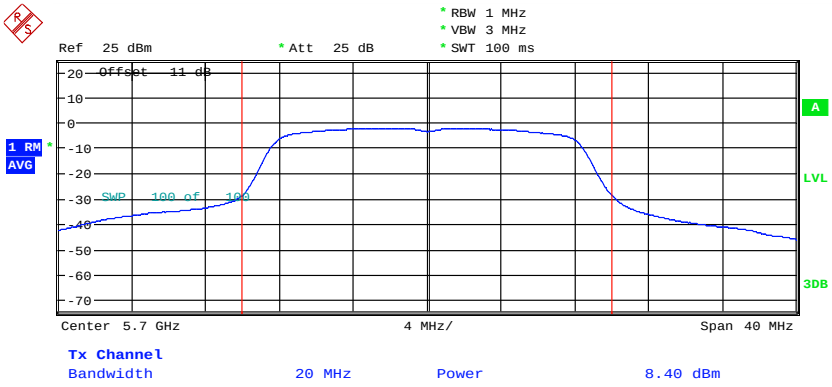
5.47 GHz ~ 5.725 GHz



MAXIMUM CONDUCTED POWER ANT2_11aCH100
Date: 13.JUN.2018 11:09:38

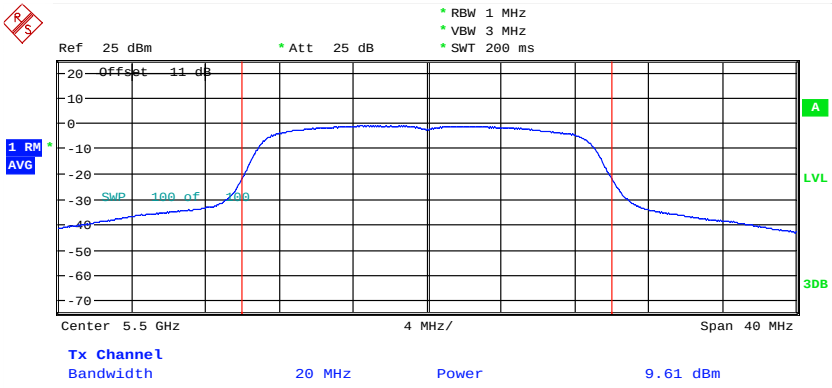


MAXIMUM CONDUCTED POWER ANT2_11aCH120
Date: 13.JUN.2018 11:17:18



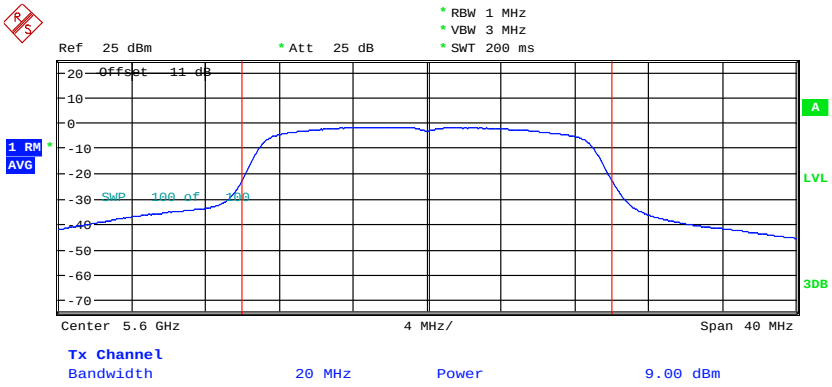
MAXIMUM CONDUCTED POWER ANT2_11aCH140

Date: 8.JUN.2018 14:12:49



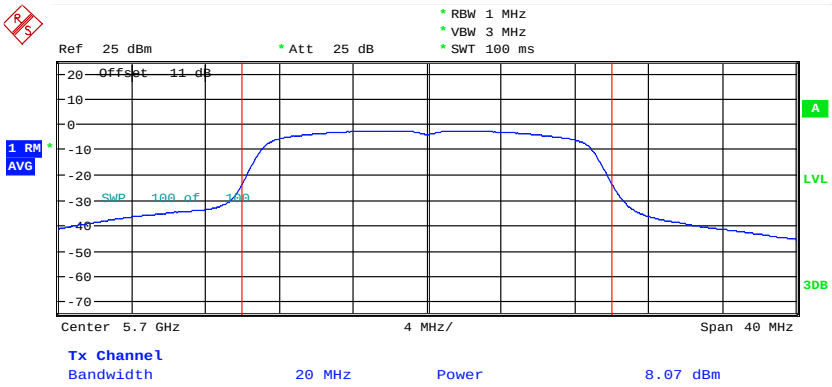
MAXIMUM CONDUCTED POWER ANT2_11ac20CH100

Date: 13.JUN.2018 11:11:28



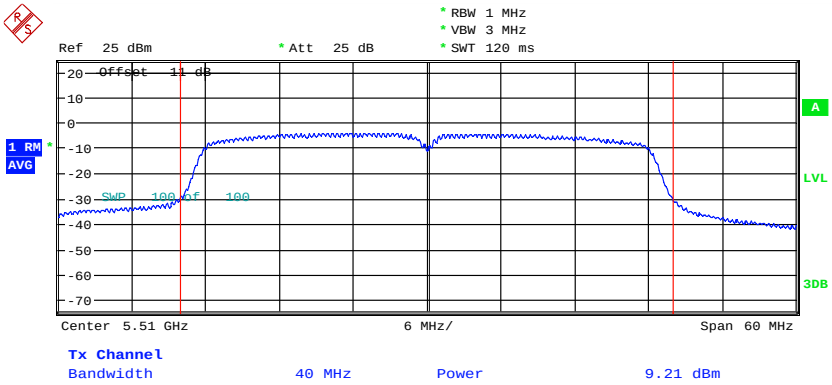
MAXIMUM CONDUCTED POWER ANT2_11ac20CH120

Date: 13.JUN.2018 11:13:48



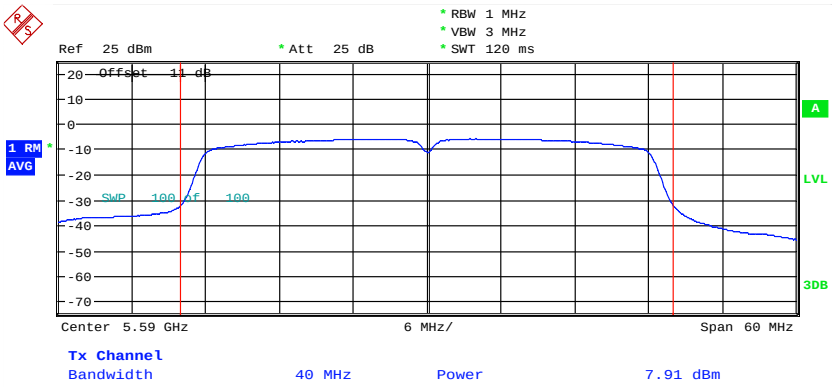
MAXIMUM CONDUCTED POWER ANT2_11ac20CH140

Date: 8.JUN.2018 14:11:04



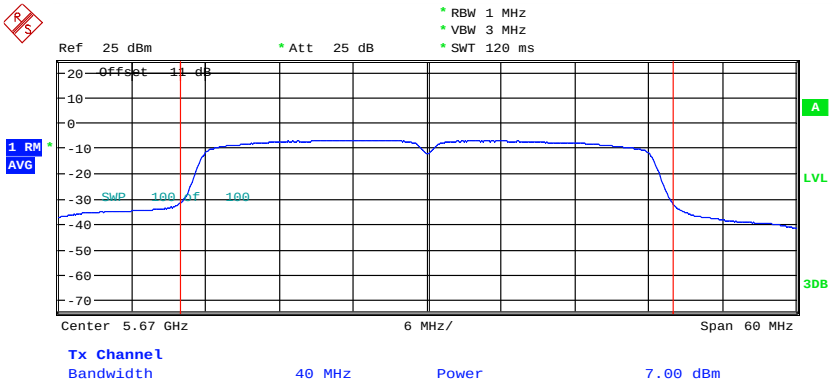
MAXIMUM CONDUCTED POWER ANT2_11ac40CH102

Date: 8.JUN.2018 14:17:43



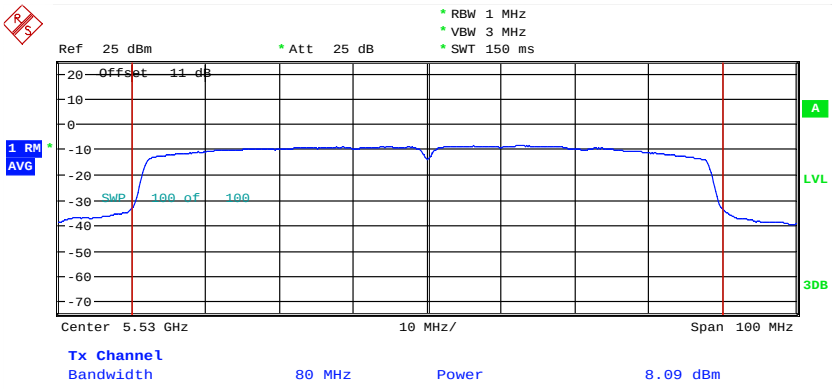
MAXIMUM CONDUCTED POWER ANT2_11ac40CH118

Date: 8.JUN.2018 14:30:54



MAXIMUM CONDUCTED POWER ANT2_11ac40CH134

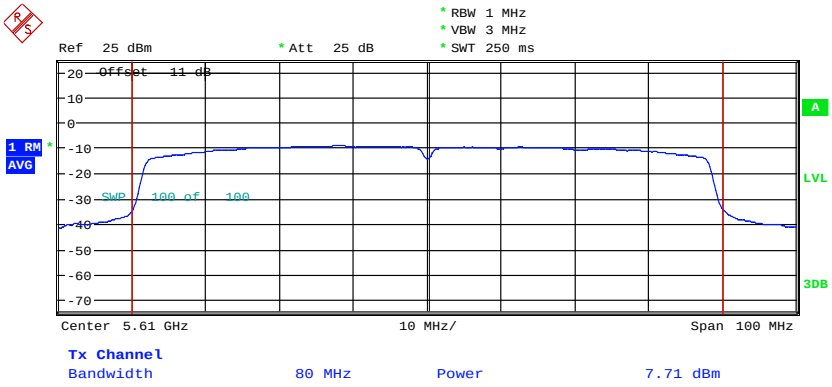
Date: 8.JUN.2018 14:35:55



MAXIMUM CONDUCTED POWER ANT2_11ac80CH106

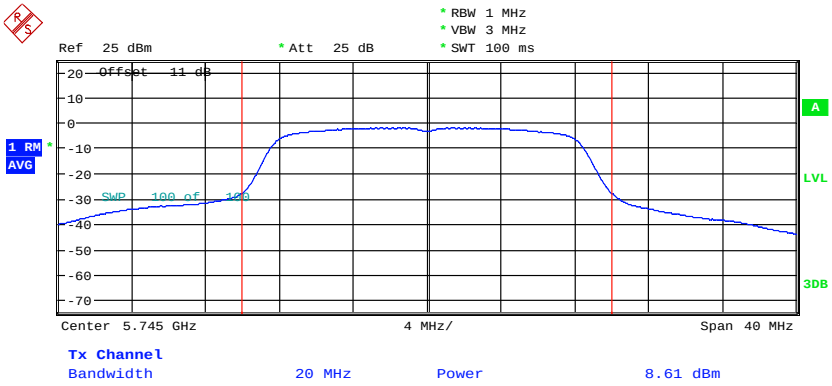
Date: 8.JUN.2018 14:47:00

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

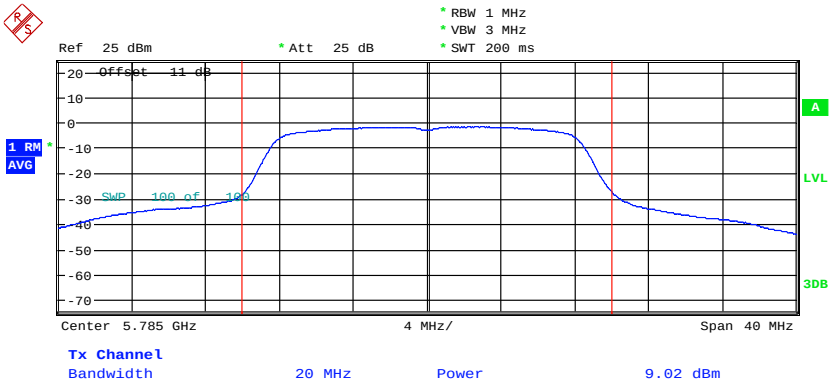


MAXIMUM CONDUCTED POWER ANT2_11ac80CH122
Date: 13.JUN.2018 11:23:58

5.725 GHz ~ 5.85 GHz

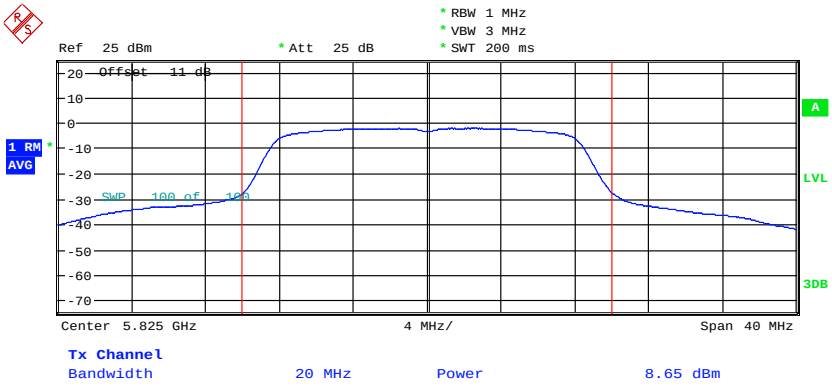


MAXIMUM CONDUCTED POWER ANT2_11aCH149
Date: 8.JUN.2018 15:05:12



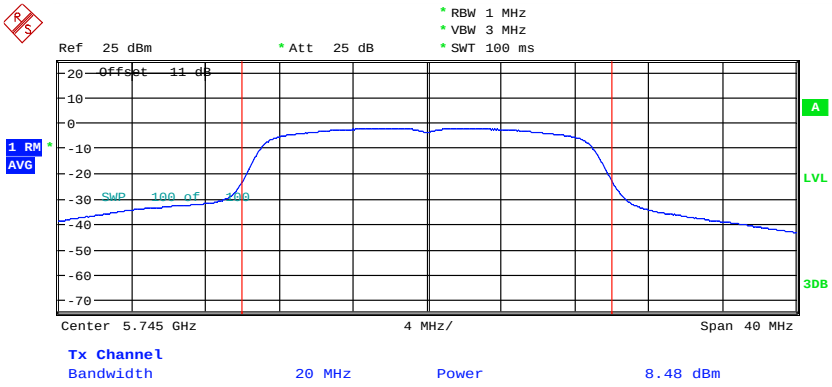
MAXIMUM CONDUCTED POWER ANT2_11aCH157

Date: 13.JUN.2018 11:30:18



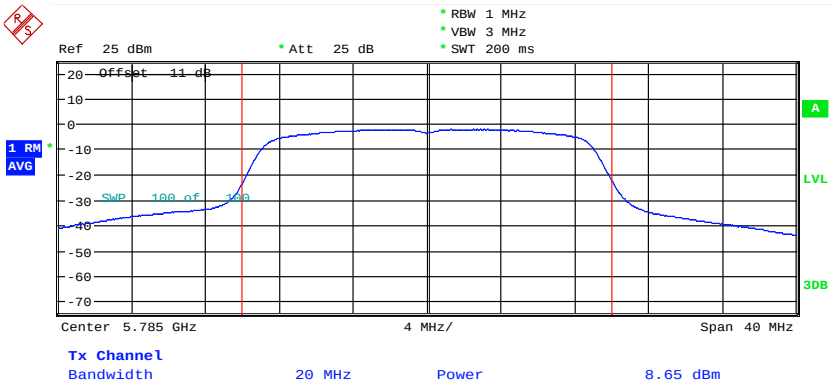
MAXIMUM CONDUCTED POWER ANT2_11aCH165

Date: 13.JUN.2018 11:42:18



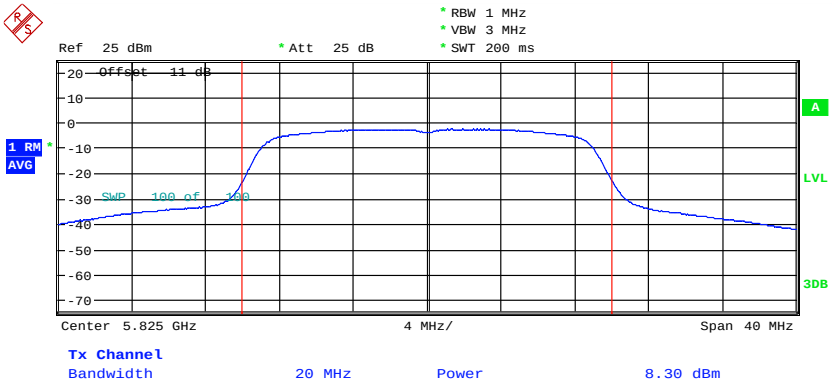
MAXIMUM CONDUCTED POWER ANT2_11ac20CH149

Date: 8.JUN.2018 15:13:01



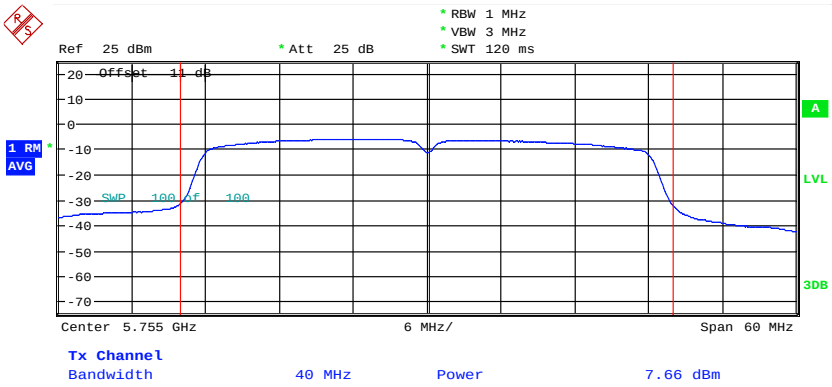
MAXIMUM CONDUCTED POWER ANT2_11ac20CH157

Date: 13.JUN.2018 11:31:58



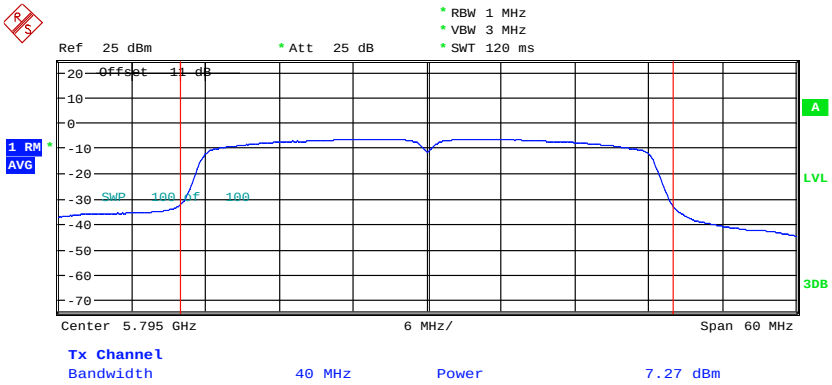
MAXIMUM CONDUCTED POWER ANT2_11ac20CH165

Date: 13.JUN.2018 11:45:28



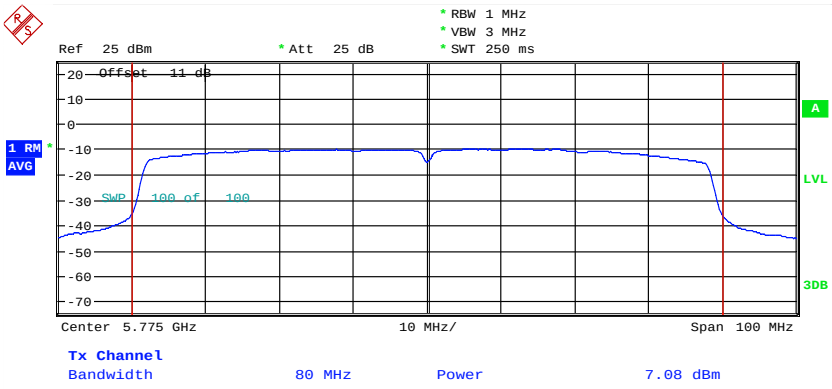
MAXIMUM CONDUCTED POWER ANT2_11ac40CH151

Date: 8.JUN.2018 15:28:32



MAXIMUM CONDUCTED POWER ANT2_11ac40CH159

Date: 8.JUN.2018 15:33:26



MAXIMUM CONDUCTED POWER ANT2_11ac80CH155

Date: 13.JUN.2018 11:39:23

5.15GHz~5.25GHz

ANT Chain1	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	8.26	10	9.48	9.17	10.00	9.77
802.11ac 40MHz	7.24	--	7.55	8.60	--	8.78
802.11ac 80MHz	5.86	--	--	7.68	--	--
ANT Chain2	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	8.57	8.63	8.13	9.33	9.36	9.10
802.11ac 40MHz	8.11	--	6.11	9.09	--	7.86
802.11ac 80MHz	5.7	--	--	7.56	--	--
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	16.83	18.63	17.61	12.26	12.7	12.46
802.11ac 40MHz	15.35	--	13.66	11.86	--	11.35
802.11ac 80MHz	11.56	--	--	10.63	--	--

5.25GHz~5.35GHz

ANT Chain1	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	9.51	9.59	7.71	9.78	9.82	8.87
802.11ac 40MHz	5.78	--	6.08	7.62	--	7.84
802.11ac 80MHz	6.28	--	--	7.98	--	--
ANT Chain2	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	7.6	9.25	6.24	8.81	9.66	7.95
802.11ac 40MHz	6.59	--	5.42	8.19	--	7.34
802.11ac 80MHz	5.24	--	--	7.19	--	--
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	17.11	18.84	13.95	12.33	12.75	11.45
802.11ac 40MHz	12.37	--	11.5	10.92	--	10.61
802.11ac 80MHz	11.52	--	--	10.61	--	--

5.47GHz~5.725GHz

ANT Chain1	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	7.83	7.85	8.32	8.94	8.95	9.20
802.11ac 40MHz	5.53	6.34	5.62	7.43	8.02	7.50
802.11ac 80MHz	4.81	--	5.68	6.82	--	7.54
ANT Chain2	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	9.14	7.94	6.41	9.61	9.00	8.07
802.11ac 40MHz	8.34	6.18	5.01	9.21	7.91	7.00
802.11ac 80MHz	6.44	--	5.9	8.09	--	7.71
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	16.97	15.79	14.73	12.3	11.98	11.68
802.11ac 40MHz	13.87	12.52	10.63	11.42	--	10.27
802.11ac 80MHz	11.25	--	11.58	10.51	--	10.64

5.725GHz~5.85GHz

ANT Chain1	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	8.22	7.33	6.34	9.15	8.65	8.02
802.11ac 40MHz	5.81	--	6.52	7.64	--	8.14
802.11ac 80MHz	5.02	--	--	7.01	--	--
ANT Chain2	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	7.05	7.33	6.76	8.48	8.65	8.30
802.11ac 40MHz	5.83	--	5.33	7.66	--	7.27
802.11ac 80MHz	5.11	--	--	7.08	--	--
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	15.27	14.66	13.1	11.84	11.66	11.17
802.11ac 40MHz	11.64	--	11.85	10.66	--	10.74
802.11ac 80MHz	10.13	--	--	10.06	--	--

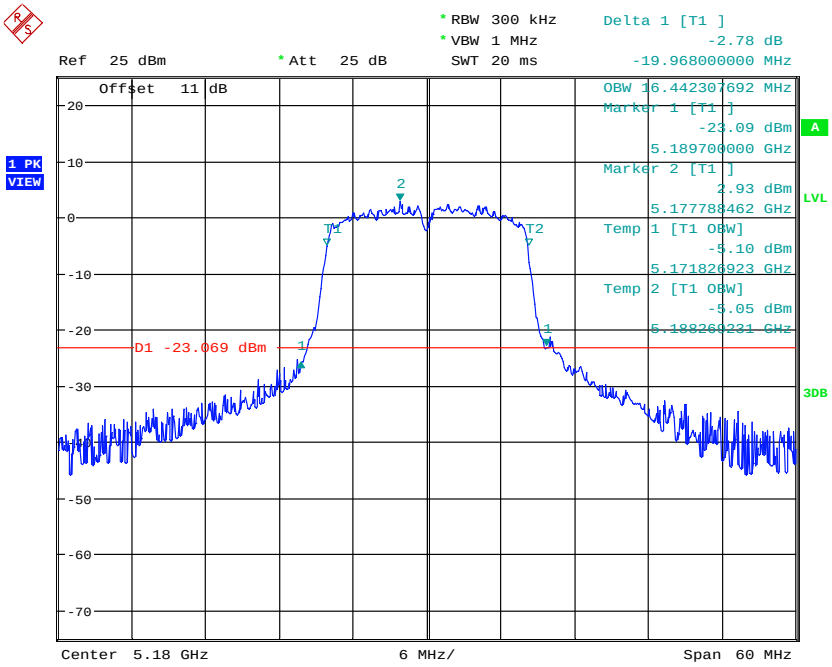
Test equipment used: ETSTW-RE 055, ETSTW-RE 050

3.2 26dB emission bandwidth, 99% Occupied Bandwidth, FCC 15.407 (a)

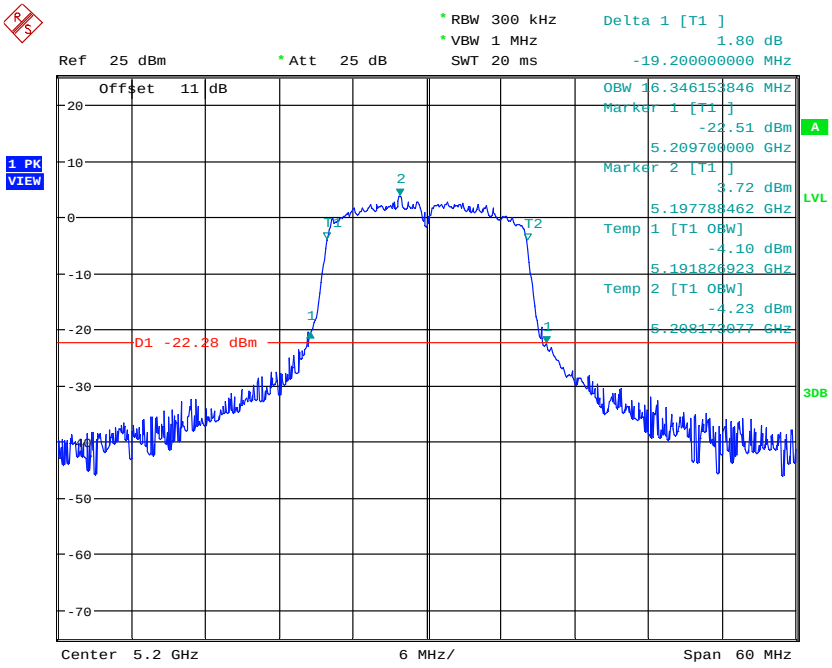
According to §15.407(a). No Limit required.

Result:

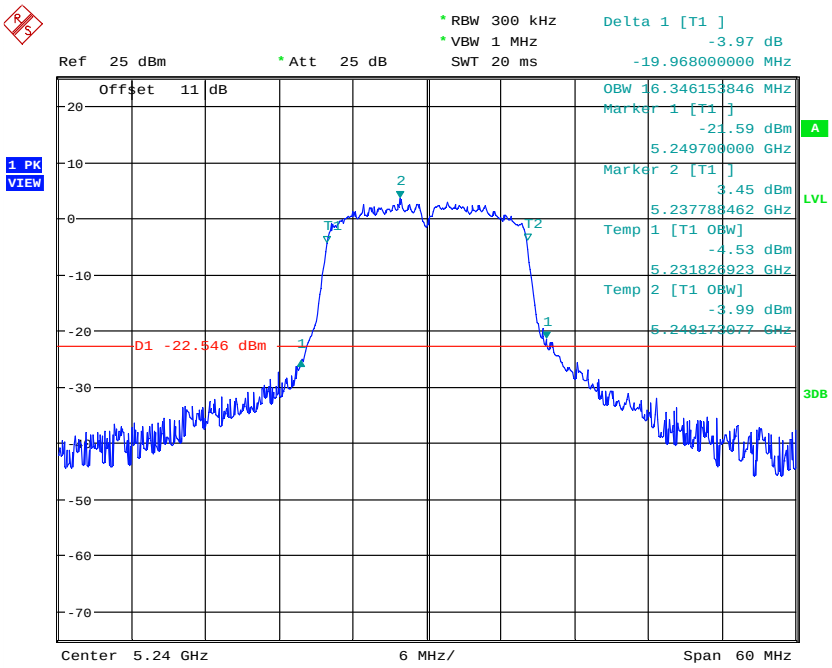
ANT Chain1
5.15 GHz ~ 5.25 GHz



99% OBW & 26DB BANDWIDTH ANT1_11a_CH36
Date: 8.JUN.2018 11:22:48

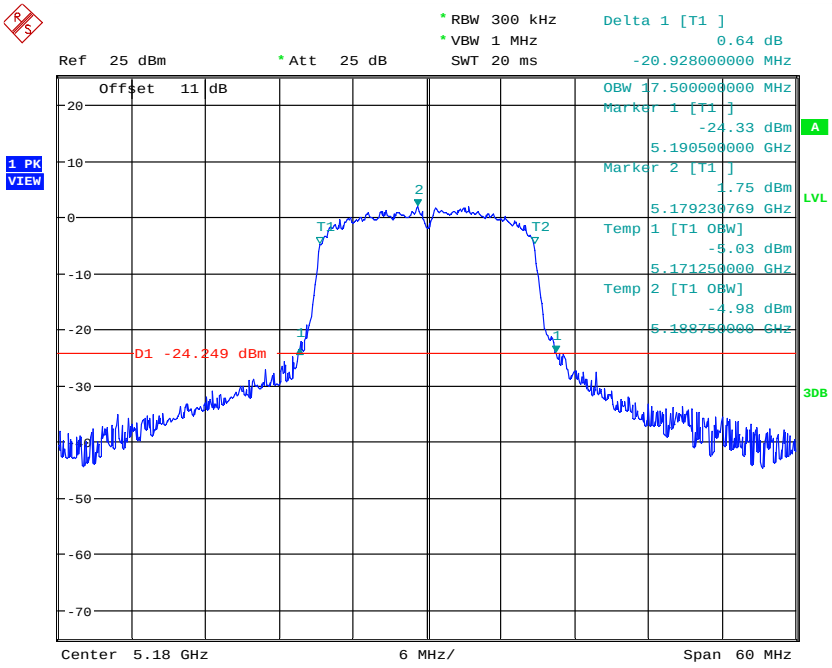


99% OBW & 26DB BANDWIDTH ANT1_11a_CH40
Date: 8.JUN.2018 11:12:21

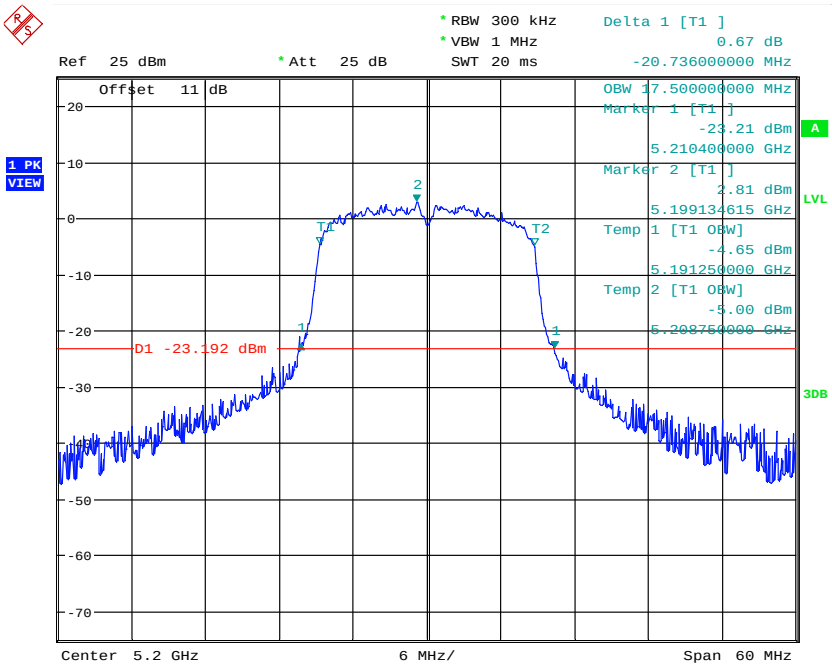


99% OBW & 26DB BANDWIDTH ANT1_11a_CH48
Date: 8.JUN.2018 11:10:08

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

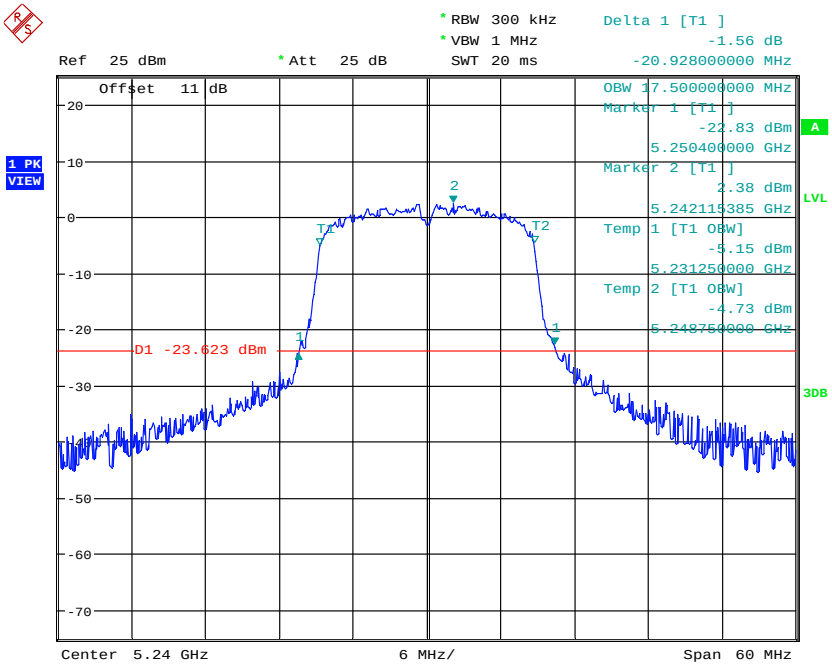


99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH36
Date: 8.JUN.2018 11:21:25

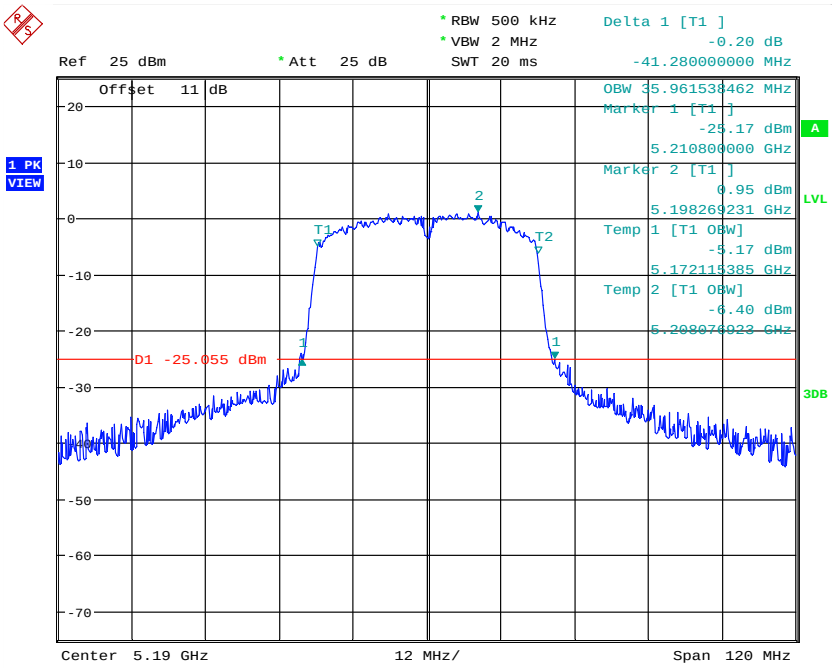


99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH40
Date: 8.JUN.2018 11:13:49

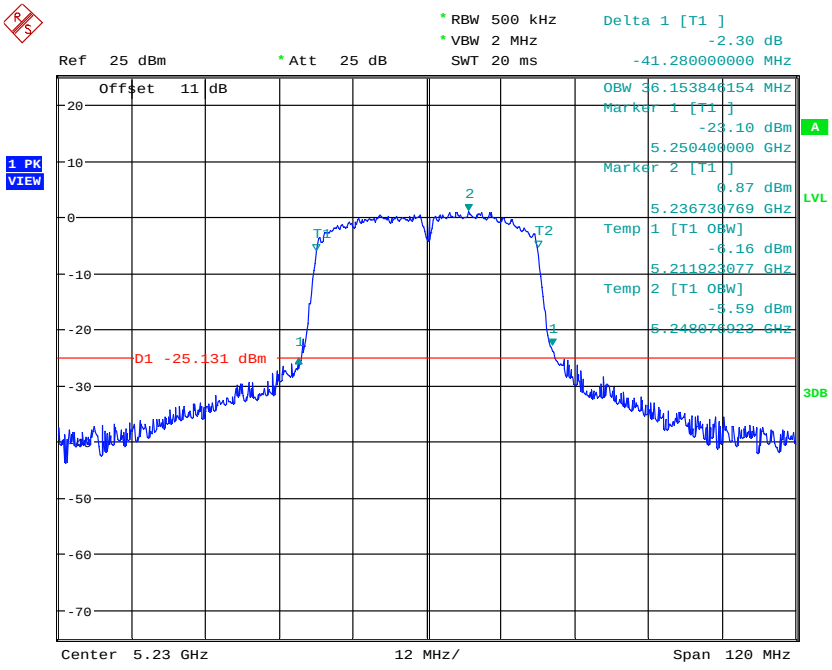
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



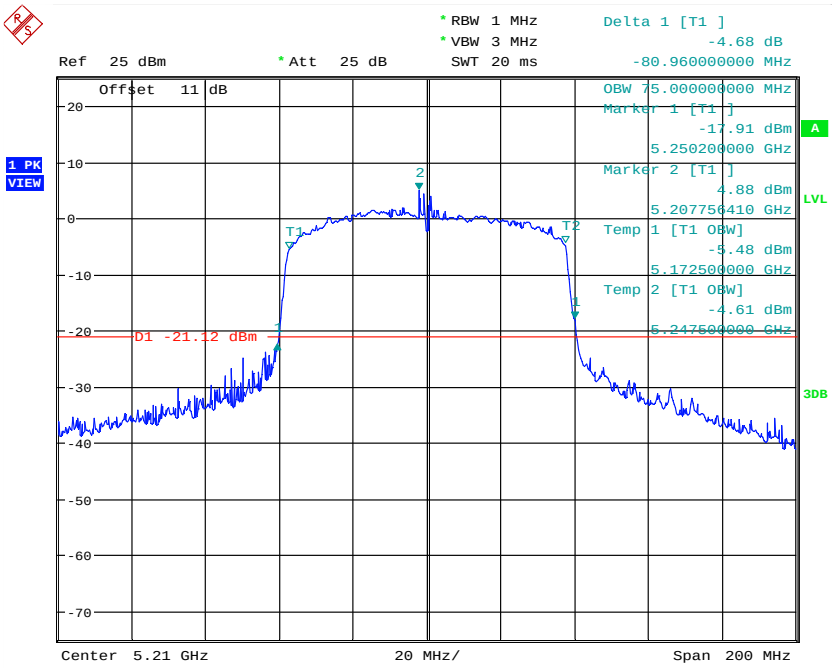
99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH48
Date: 8.JUN.2018 11:08:18



99% OBW & 26DB BANDWIDTH ANT1_11ac40_CH38
Date: 8.JUN.2018 10:26:25



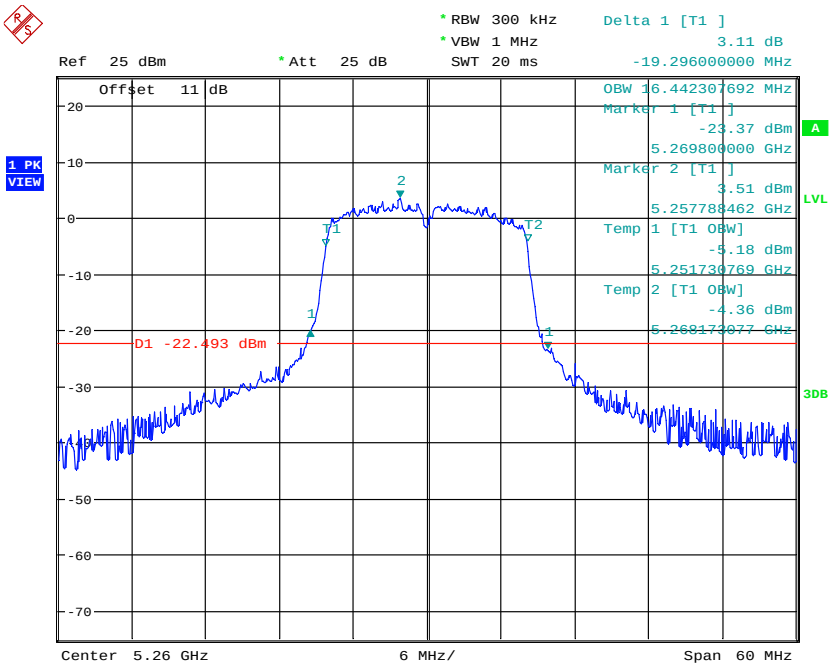
99% OBW & 26DB BANDWIDTH ANT1_11ac40_CH46
Date: 8.JUN.2018 10:28:04



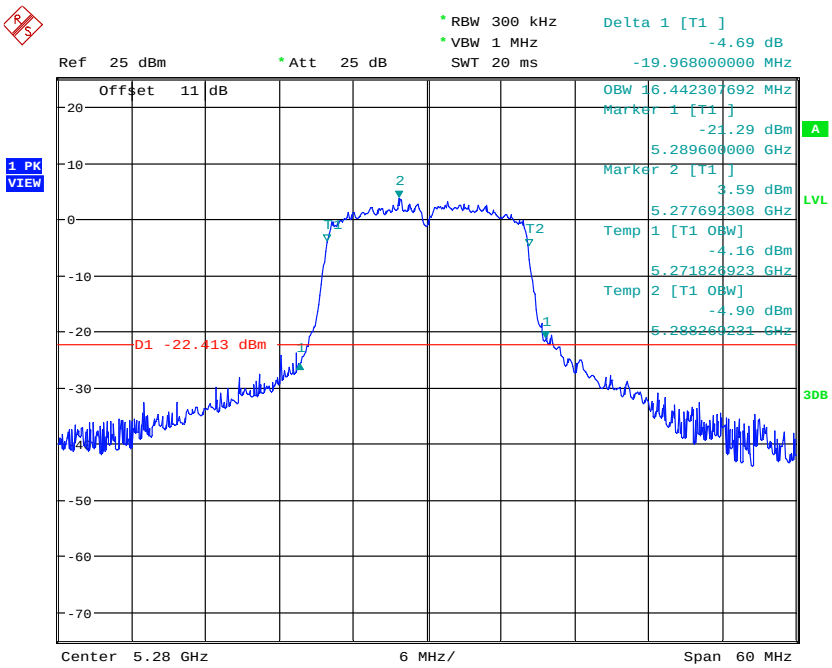
99% OBW & 26DB BANDWIDTH ANT1_11ac80_CH42
Date: 8.JUN.2018 10:34:01

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

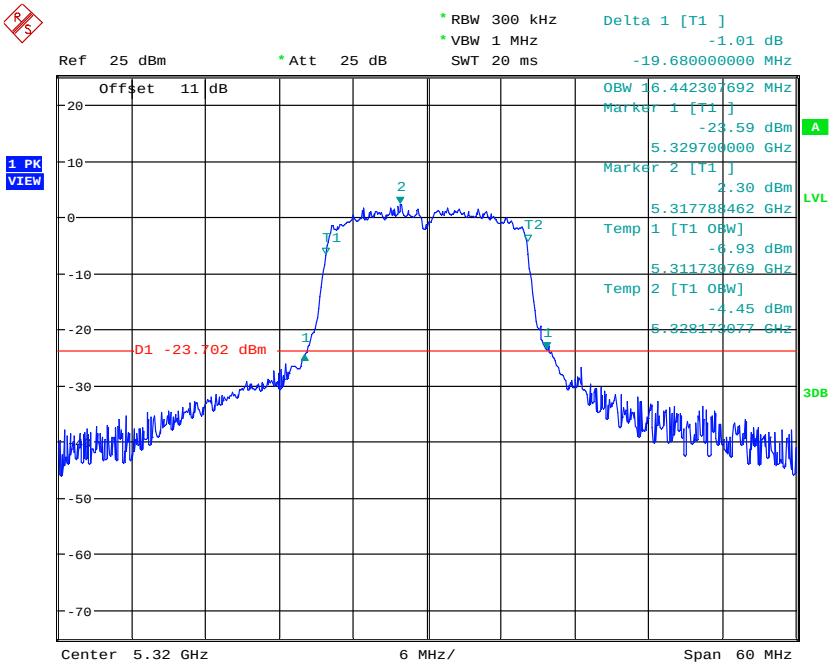
5.25 GHz ~ 5.35 GHz



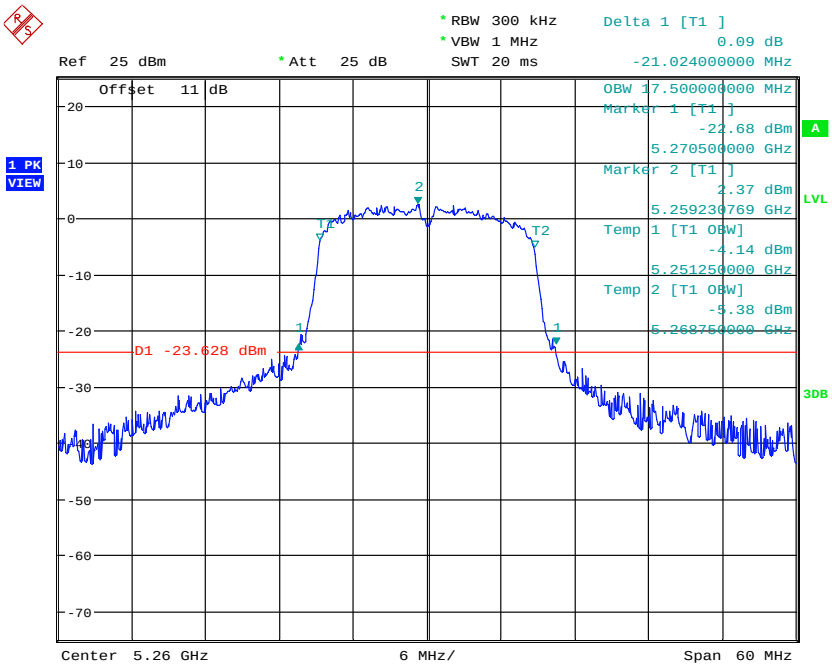
99% OBW & 26DB BANDWIDTH ANT1_11a_CH52
Date: 8.JUN.2018 11:27:28



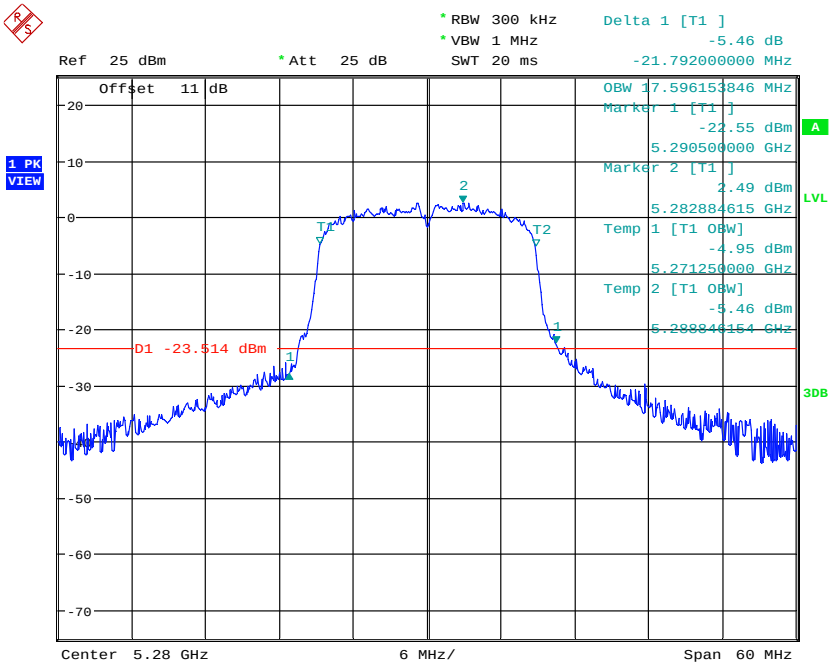
99% OBW & 26DB BANDWIDTH ANT1_11a_CH56
Date: 8.JUN.2018 11:59:38



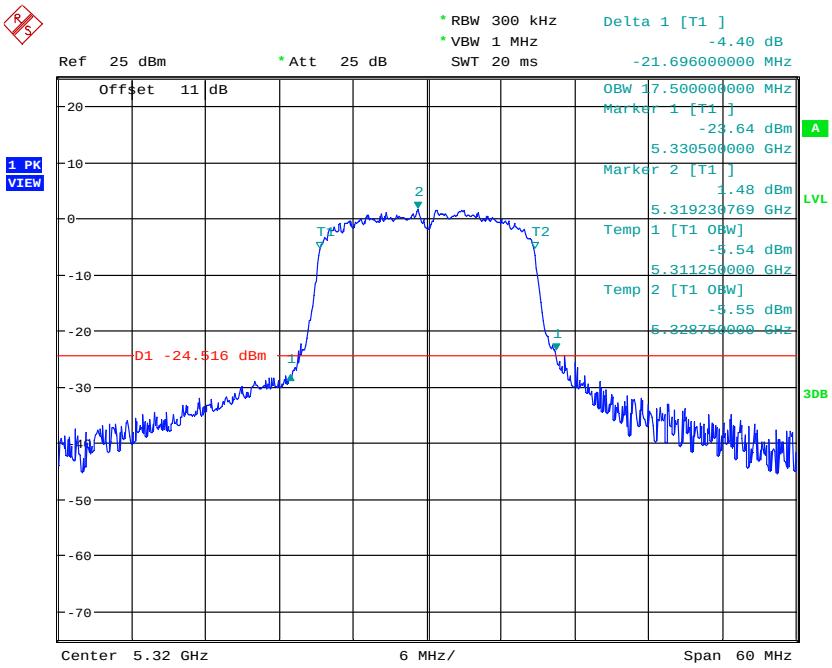
99% OBW & 26DB BANDWIDTH ANT1_11a_CH64
Date: 13.JUN.2018 10:26:08



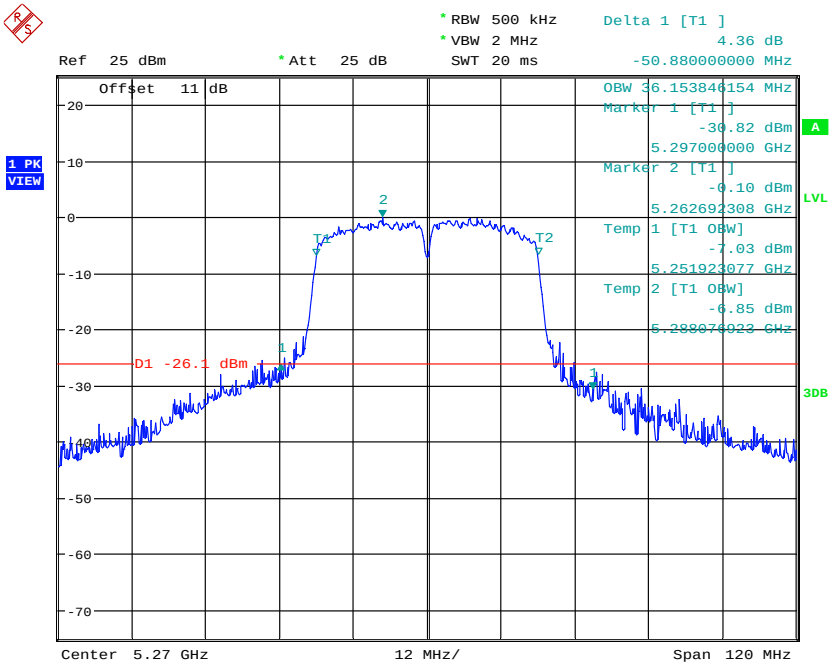
99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH52
Date: 8.JUN.2018 11:30:13



99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH56
Date: 8.JUN.2018 12:01:50

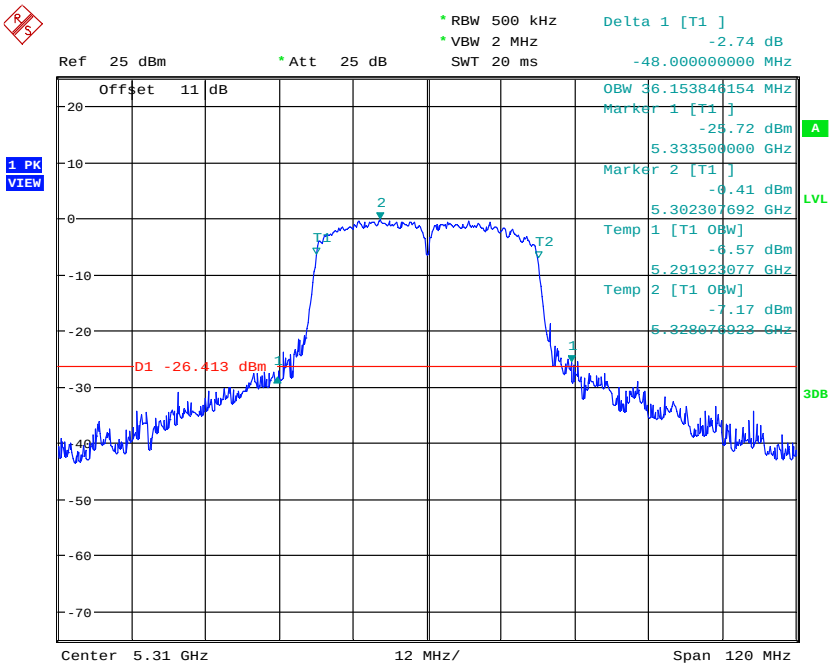


99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH64
Date: 13.JUN.2018 10:40:48



99% OBW & 26DB BANDWIDTH ANT1_11ac40_CH54

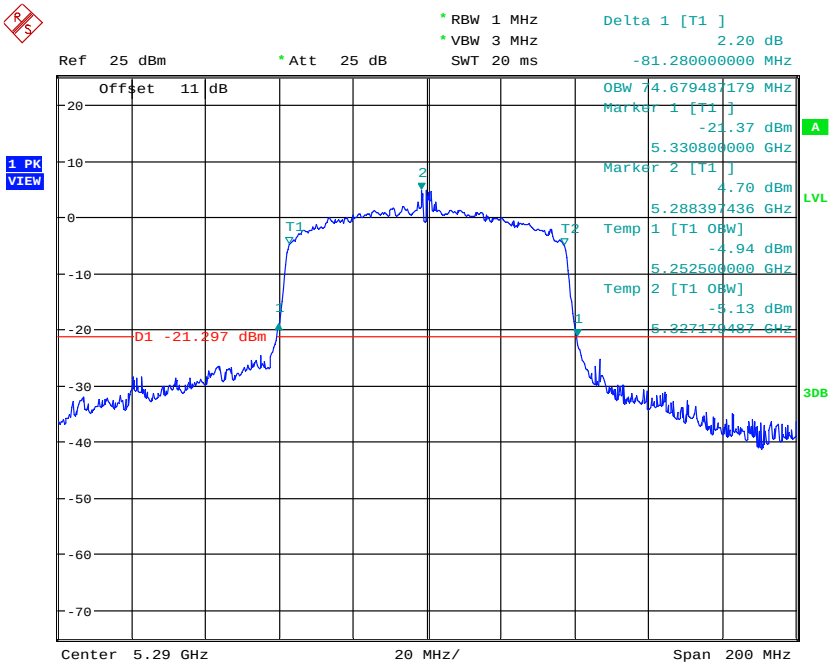
Date: 13.JUN.2018 09:06:44



99% OBW & 26DB BANDWIDTH ANT1_11ac40_CH62

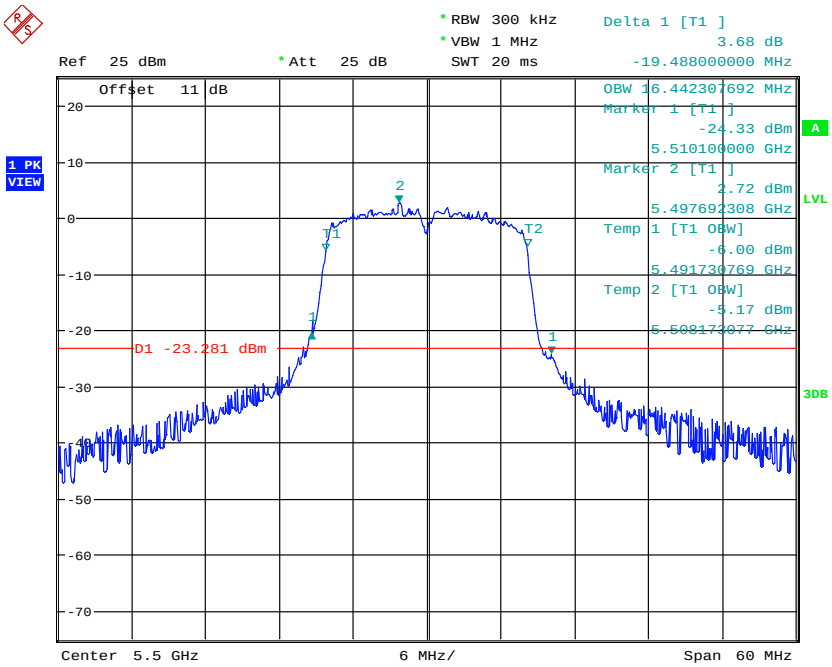
Date: 13.JUN.2018 09:11:47

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

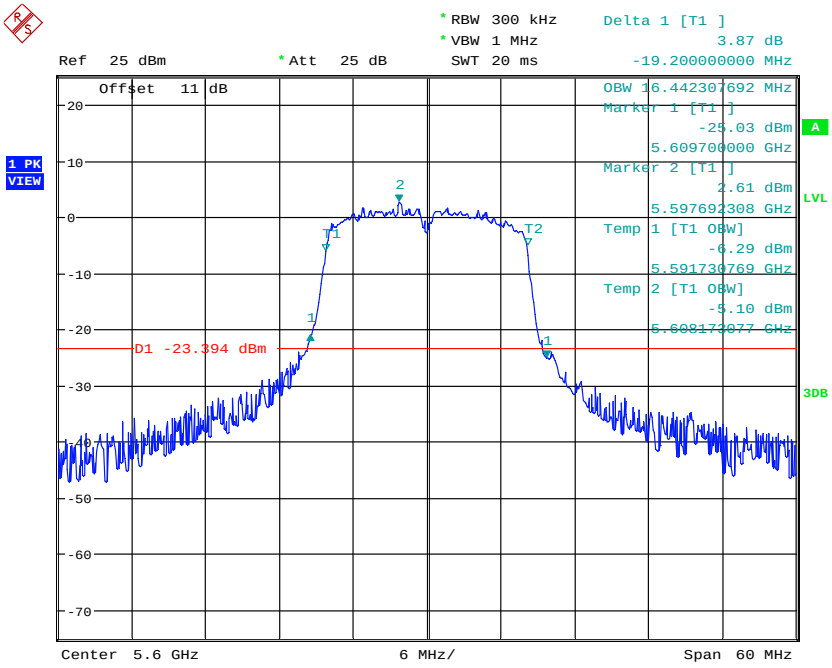


99% OBW & 26DB BANDWIDTH ANT1_11ac80_CH58
Date: 13.JUN.2018 09:20:40

5.47 GHz ~ 5.725 GHz

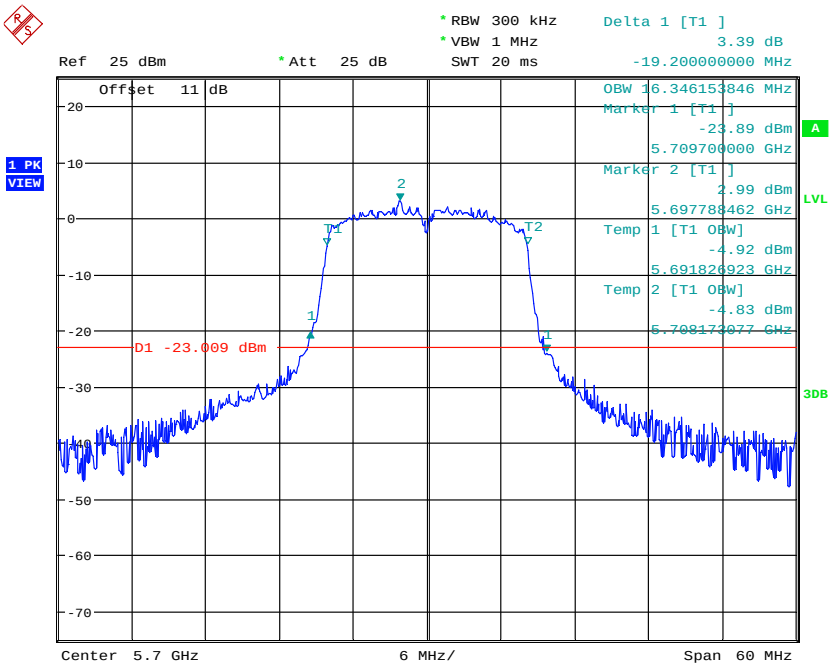


99% OBW & 26DB BANDWIDTH ANT1_11a_CH100
Date: 13.JUN.2018 09:47:54



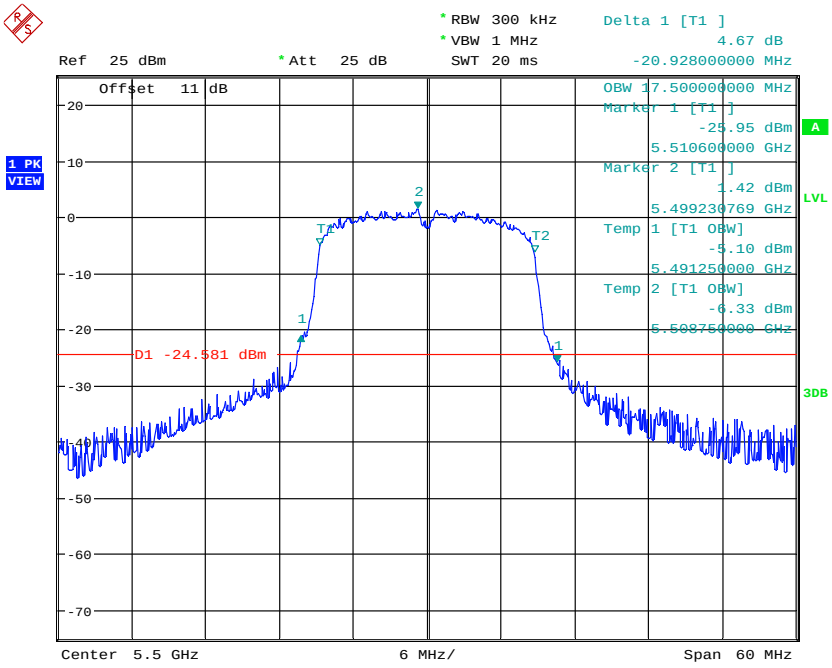
99% OBW & 26DB BANDWIDTH ANT1_11a_CH120

Date: 13.JUN.2018 09:50:22

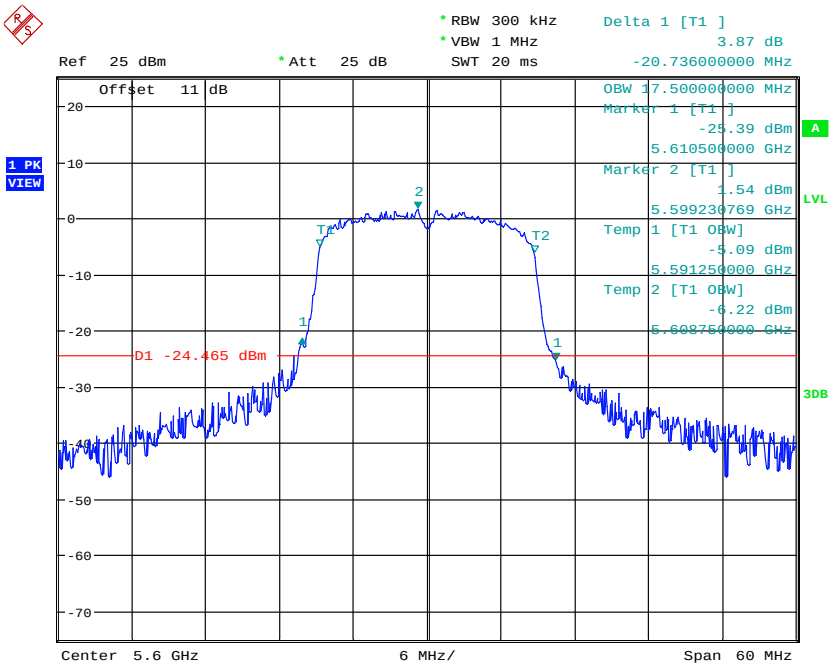


99% OBW & 26DB BANDWIDTH ANT1_11a_CH140

Date: 8.JUN.2018 14:07:15

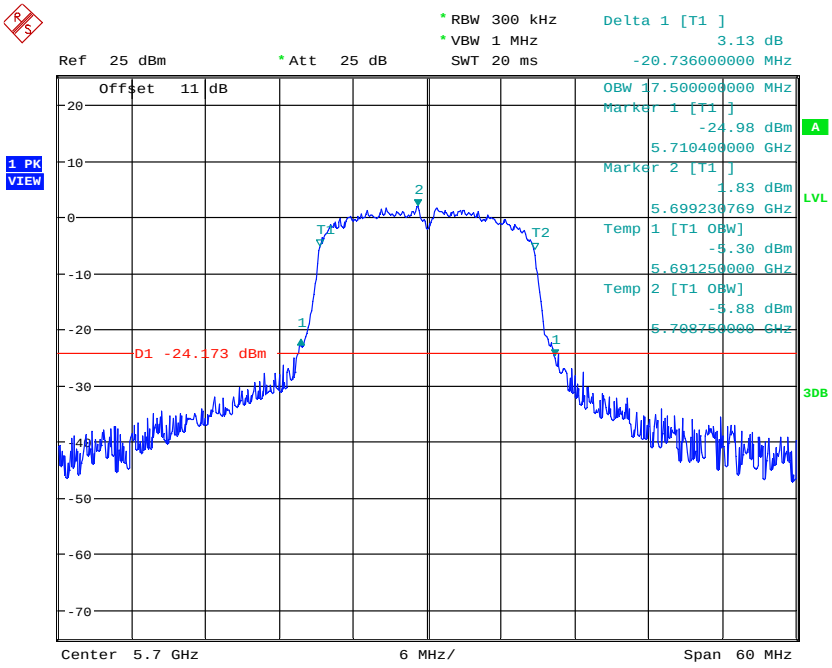


99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH100
Date: 13.JUN.2018 09:43:46

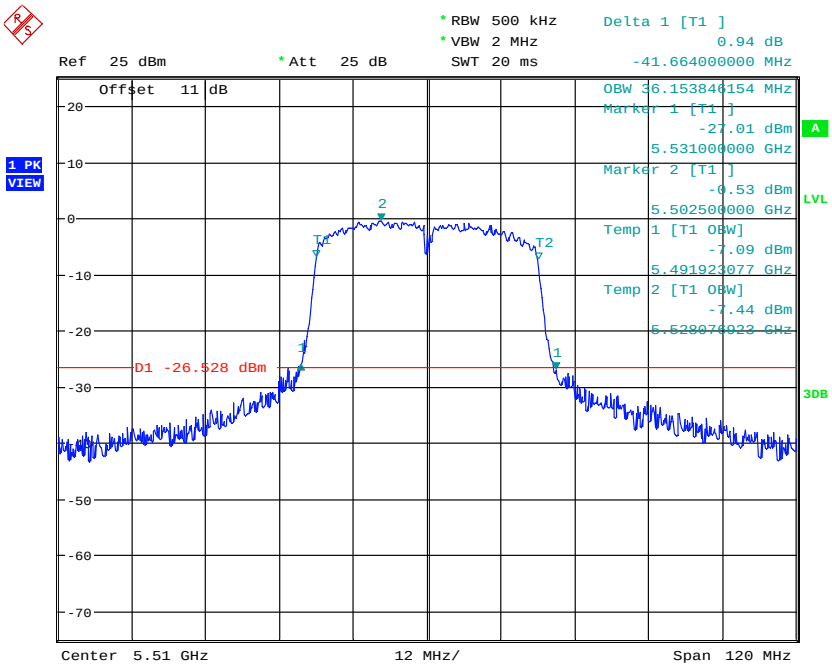


99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH120
Date: 13.JUN.2018 09:53:02

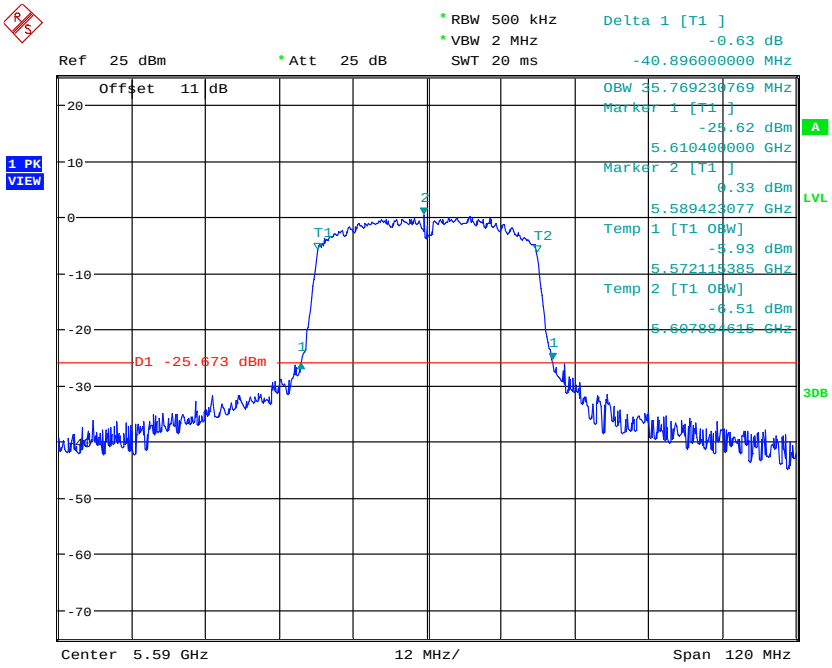
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



99% OBW & 26DB BANDWIDTH ANT1_11ac20_CH140
Date: 8.JUN.2018 14:08:59

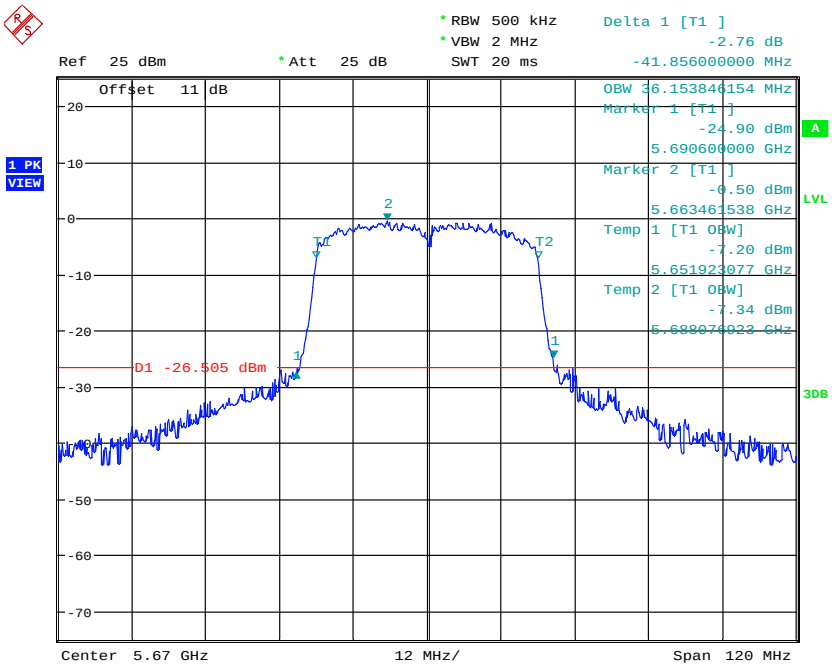


99% OBW & 26DB BANDWIDTH ANT1_11ac40_CH102
Date: 8.JUN.2018 14:28:20



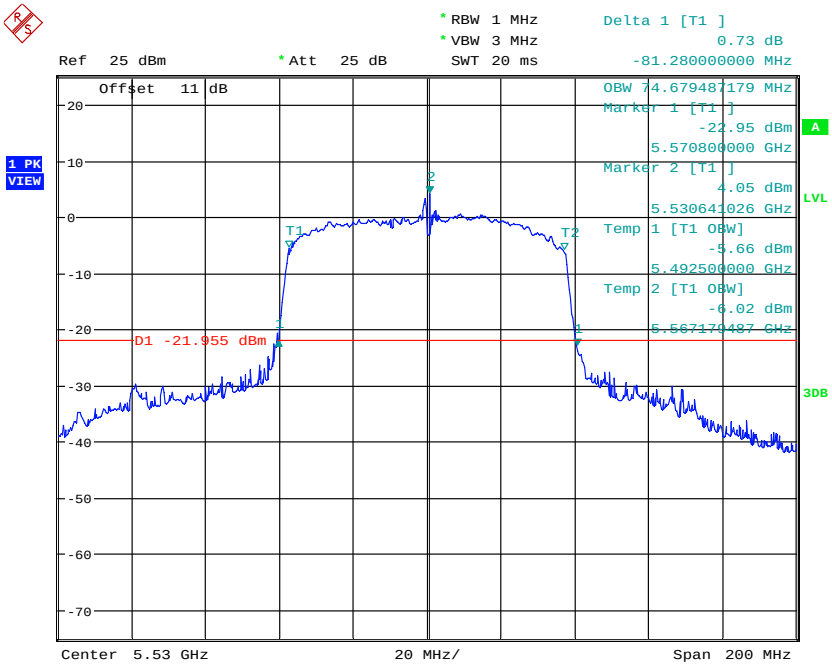
99% OBW & 26DB BANDWIDTH ANT1_11ac40_CH118

Date: 8.JUN.2018 14:30:10



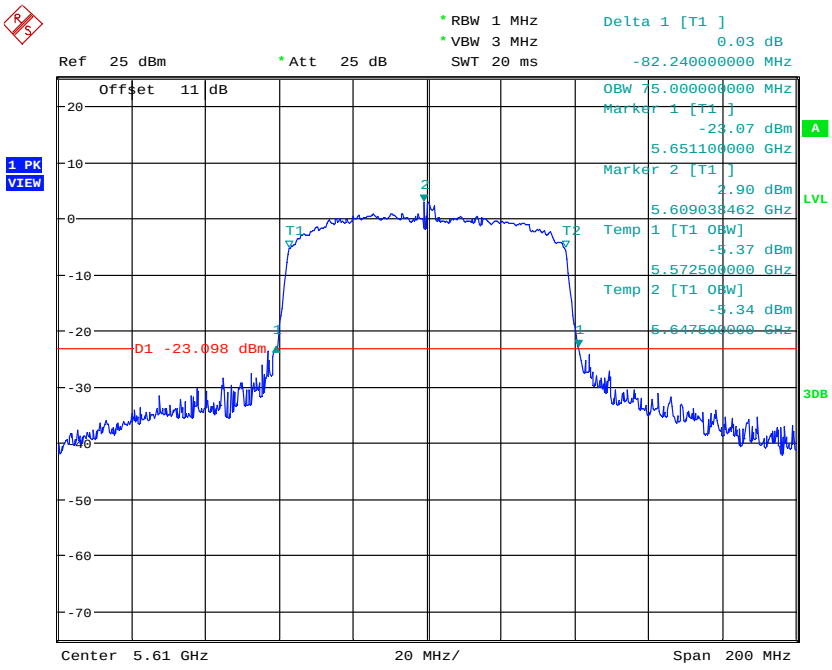
99% OBW & 26DB BANDWIDTH ANT1_11ac40_CH134

Date: 8.JUN.2018 14:35:12



99% OBW & 26DB BANDWIDTH ANT1_11ac80_CH106

Date: 8.JUN.2018 14:49:20

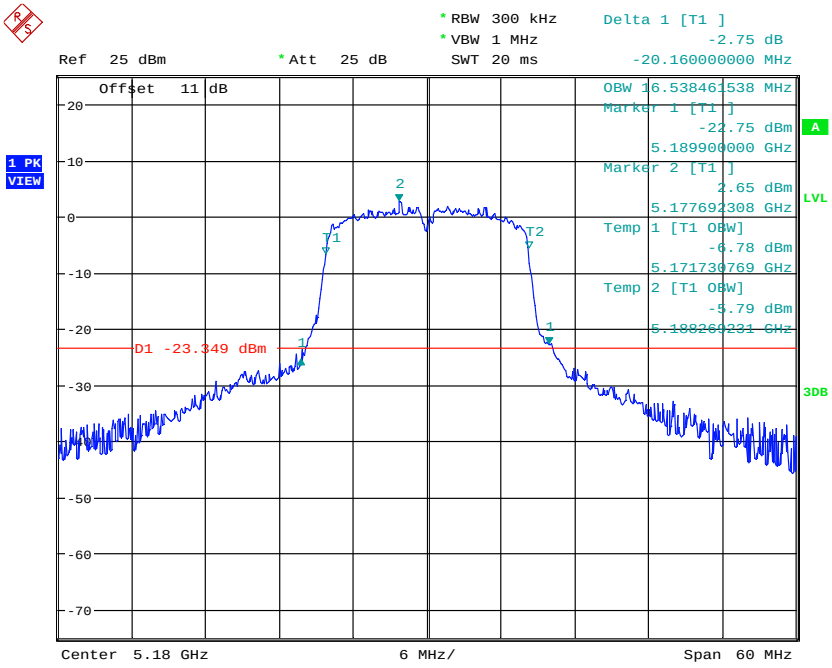


99% OBW & 26DB BANDWIDTH ANT1_11ac80_CH122

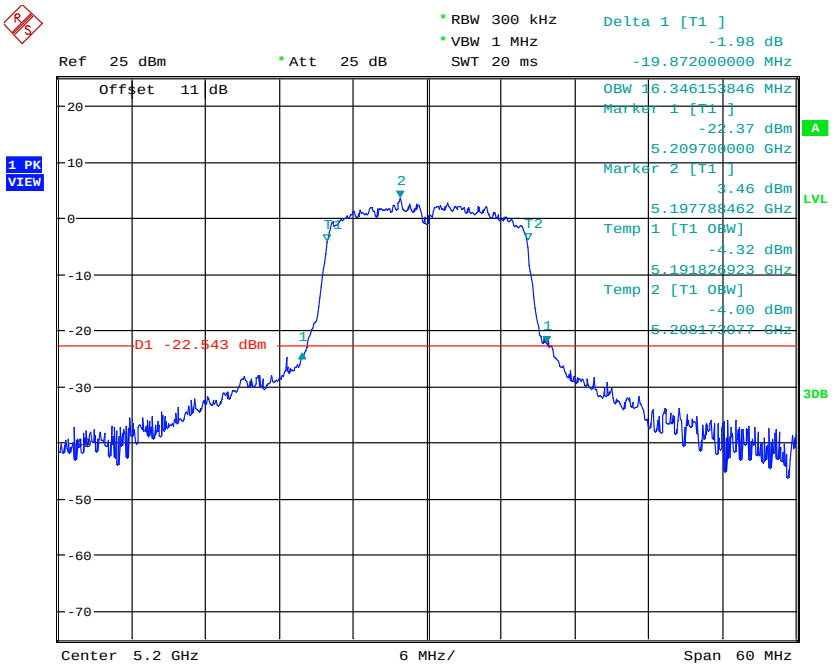
Date: 13.JUN.2018 09:56:31

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

ANT Chain2
5.15 GHz ~ 5.25 GHz

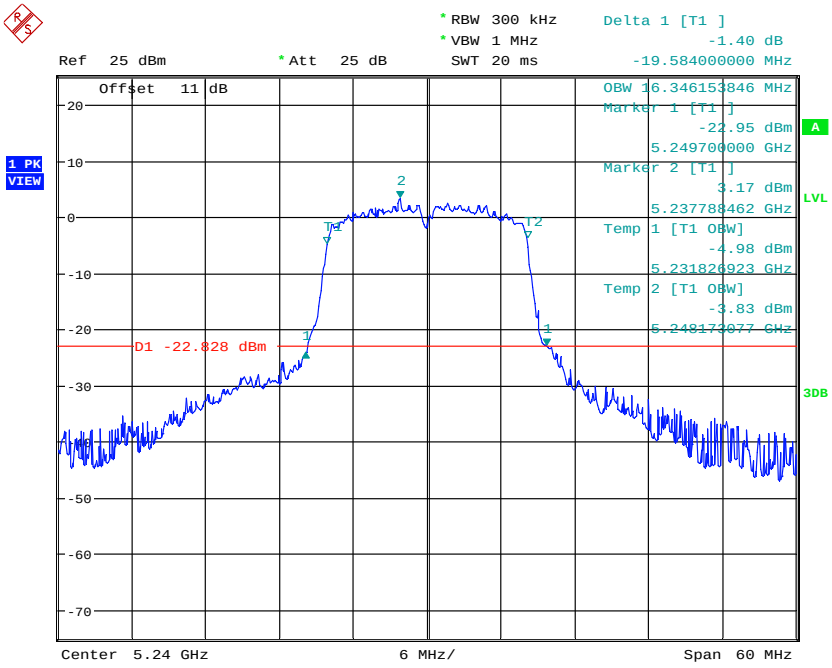


99% OBW & 26DB BANDWIDTH ANT2_11a_CH36
Date: 8.JUN.2018 11:18:29

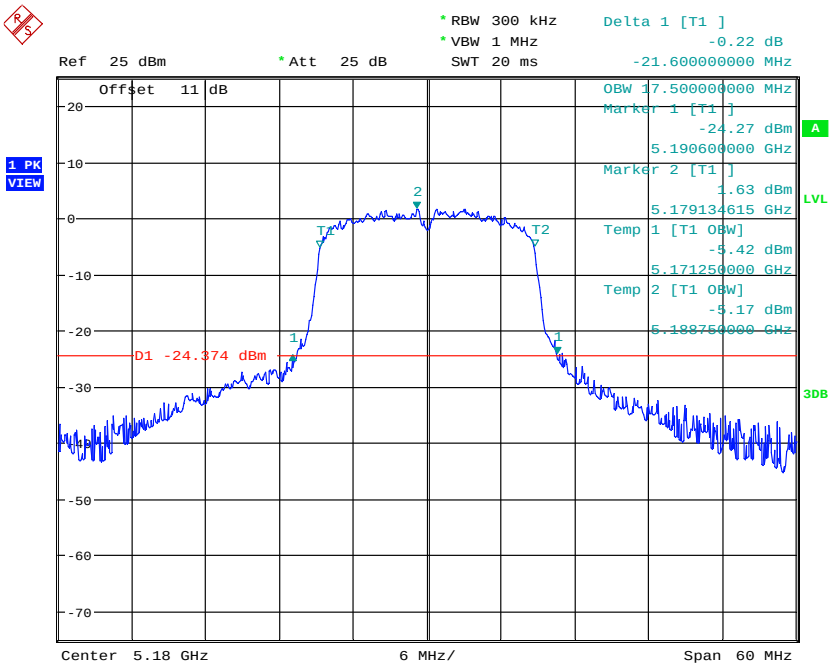


99% OBW & 26DB BANDWIDTH ANT2_11a_CH40
Date: 8.JUN.2018 11:17:07

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

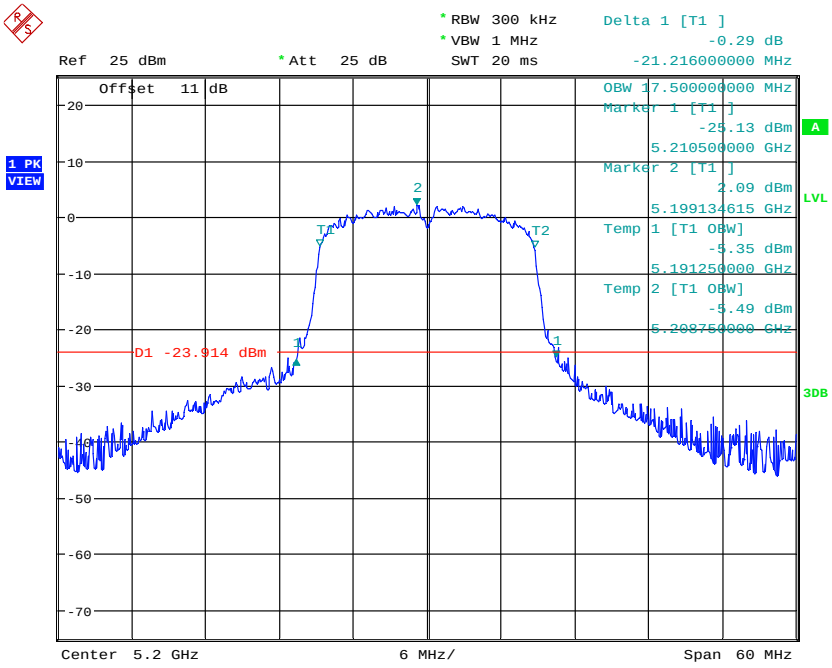


99% OBW & 26DB BANDWIDTH ANT2_11a_CH48
Date: 8.JUN.2018 11:05:28

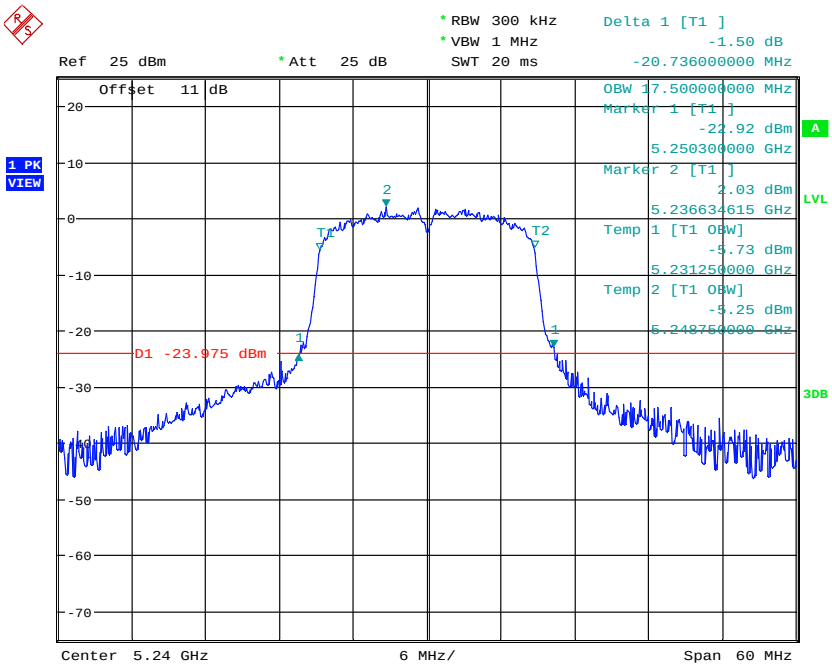


99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH36
Date: 8.JUN.2018 11:19:41

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

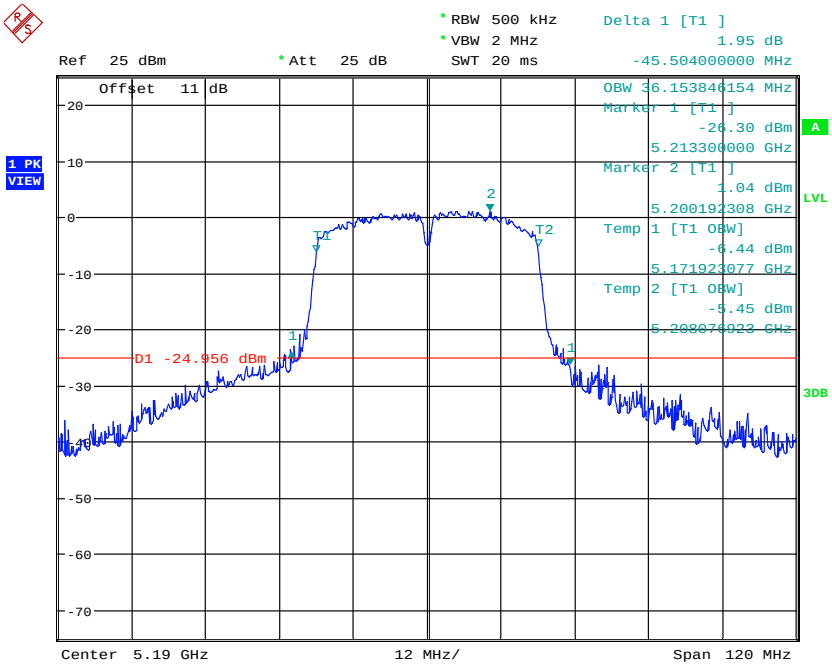


99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH40
Date: 8.JUN.2018 11:15:39

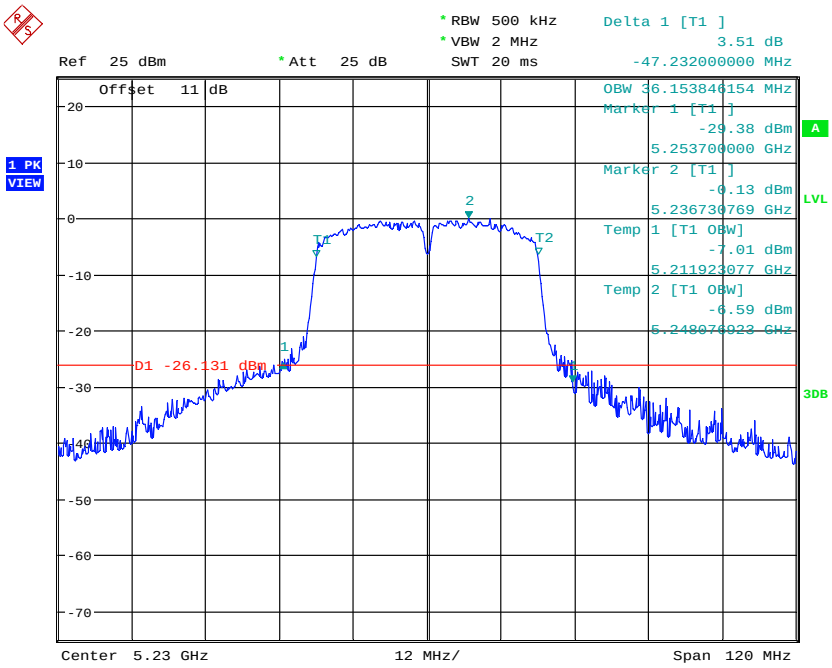


99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH48
Date: 8.JUN.2018 11:07:07

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

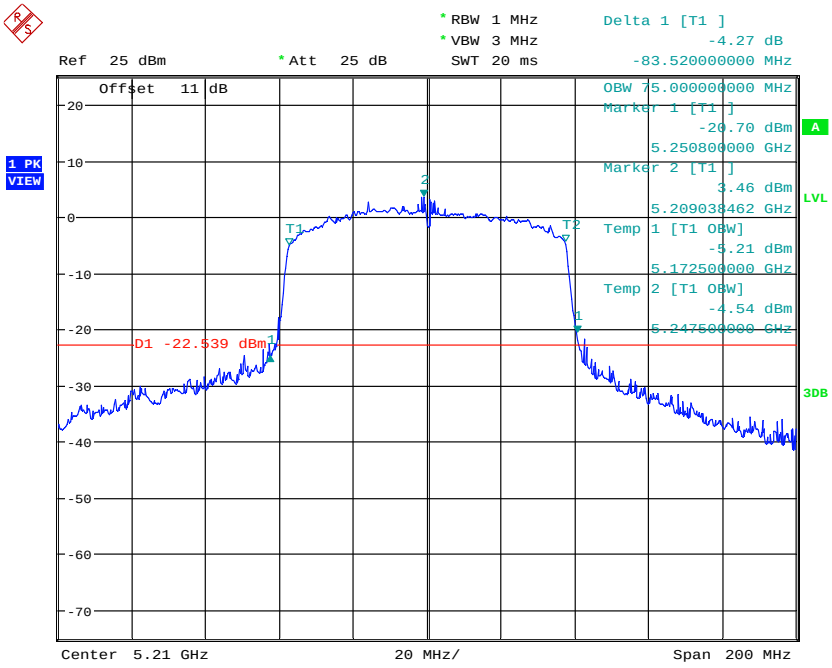


99% OBW & 26DB BANDWIDTH ANT2_11ac40_CH38
Date: 8.JUN.2018 10:25:02



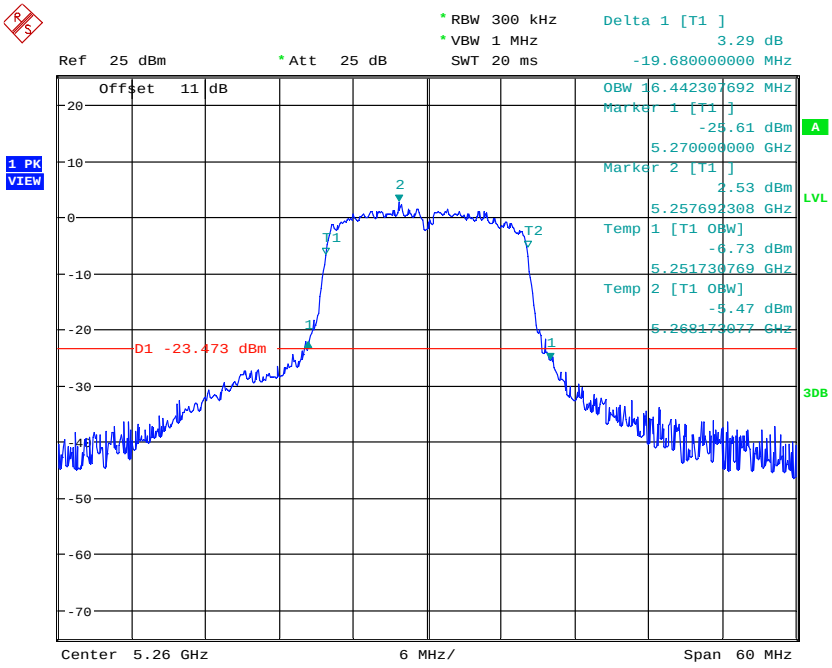
99% OBW & 26DB BANDWIDTH ANT2_11ac40_CH46
Date: 8.JUN.2018 10:30:27

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



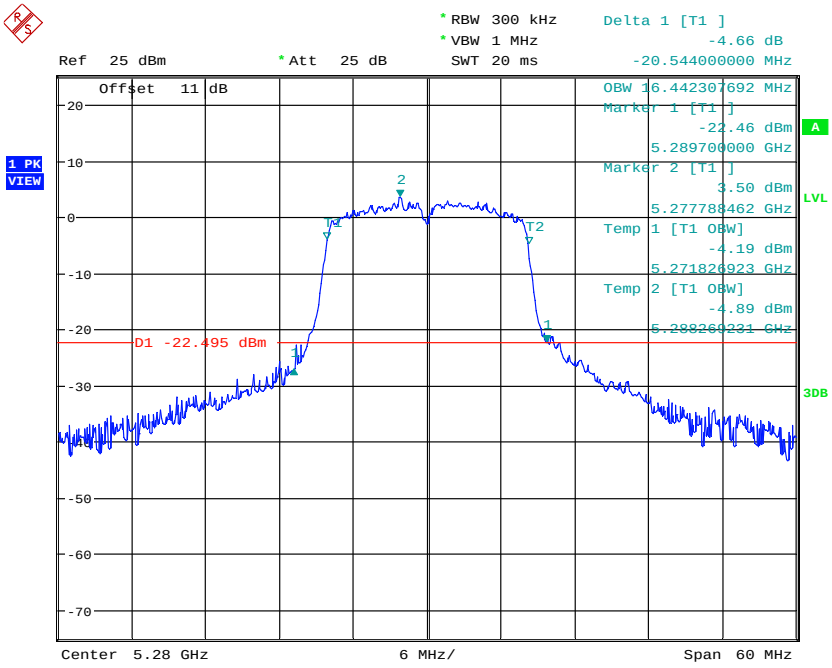
99% OBW & 26DB BANDWIDTH ANT2_11ac80_CH42
Date: 8.JUN.2018 10:32:23

5.25 GHz ~ 5.35 GHz

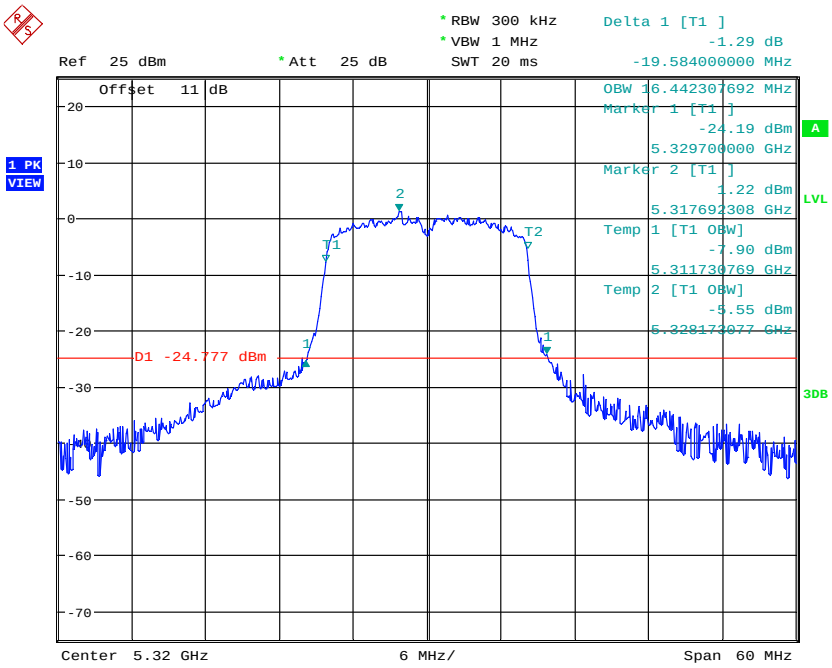


99% OBW & 26DB BANDWIDTH ANT2_11a_CH52
Date: 8.JUN.2018 11:33:31

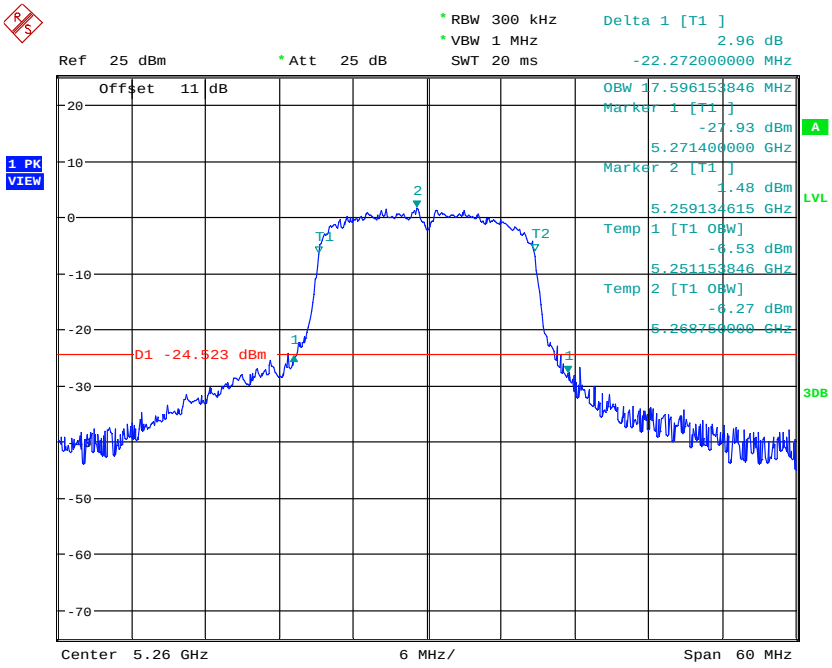
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



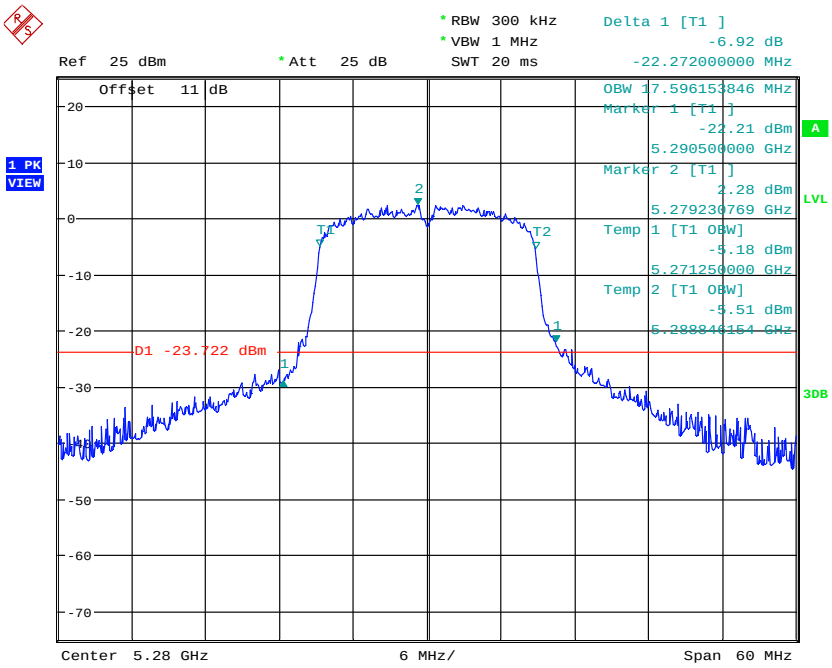
99% OBW & 26DB BANDWIDTH ANT2_11a_CH56
Date: 8.JUN.2018 11:44:31



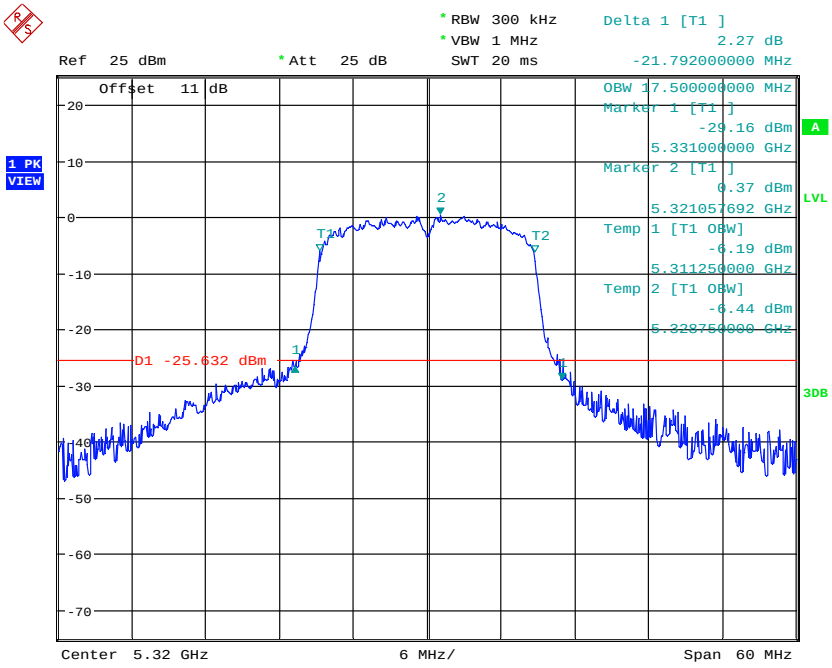
99% OBW & 26DB BANDWIDTH ANT2_11a_CH64
Date: 13.JUN.2018 10:49:08



99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH52
Date: 8.JUN.2018 11:31:52

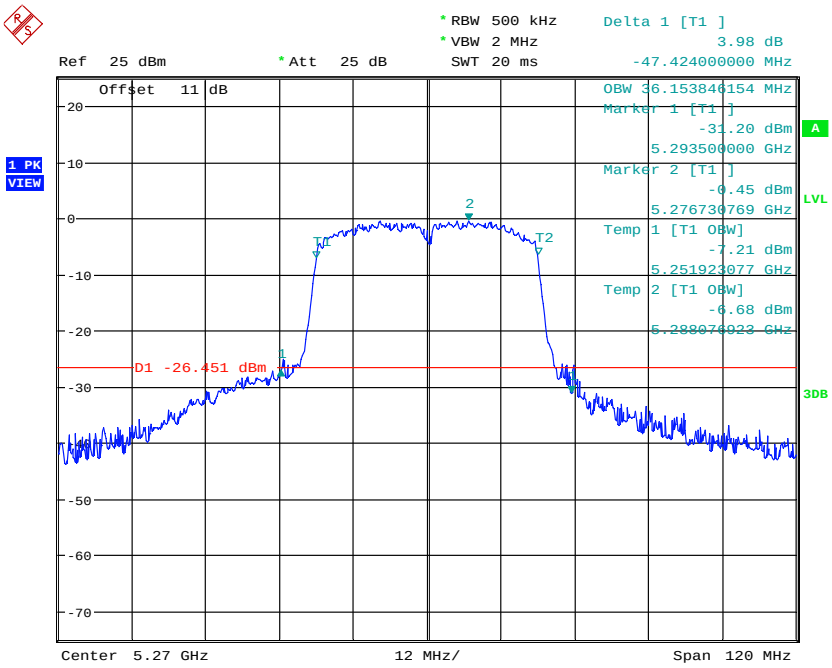


99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH56
Date: 8.JUN.2018 11:41:52



99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH64

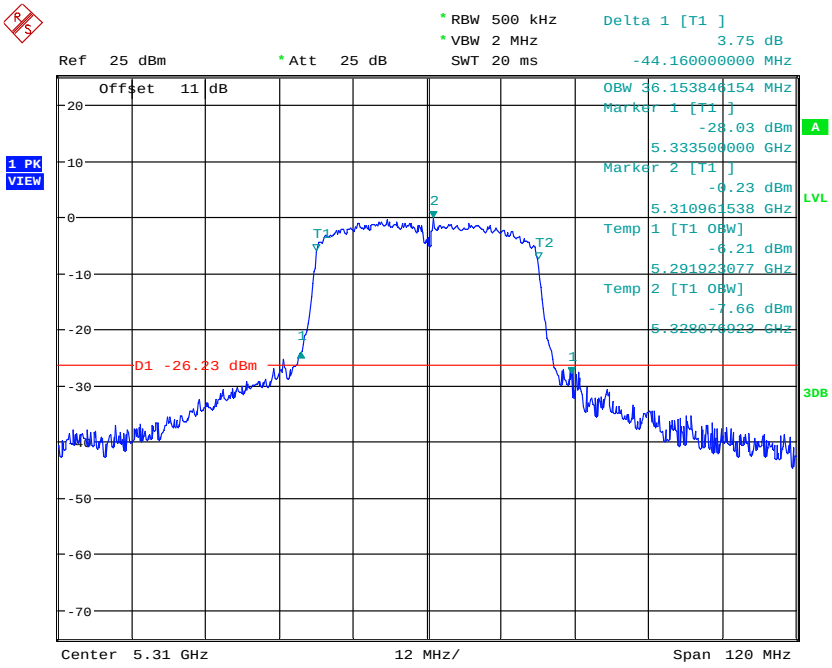
Date: 13.JUN.2018 10:46:12



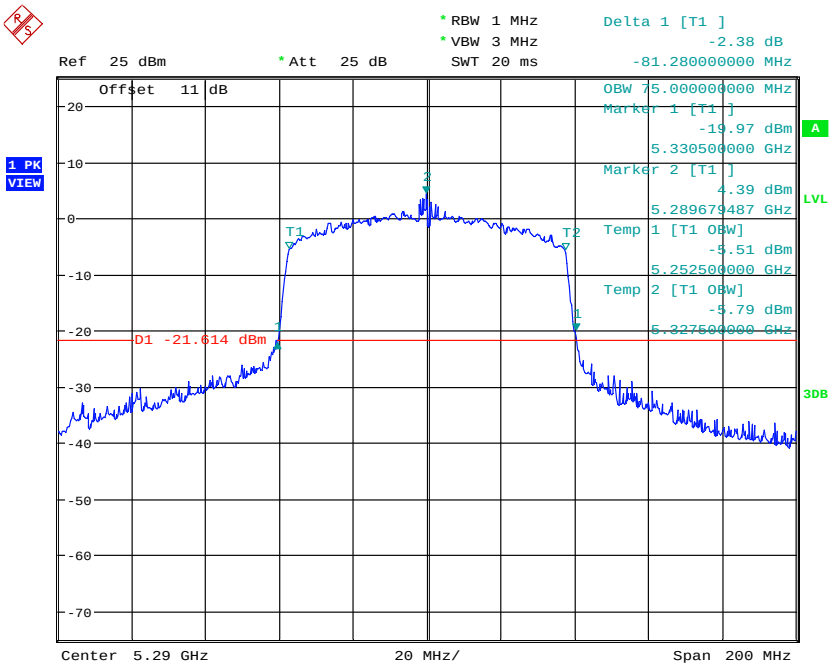
99% OBW & 26DB BANDWIDTH ANT2_11ac40_CH54

Date: 13.JUN.2018 10:53:43

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



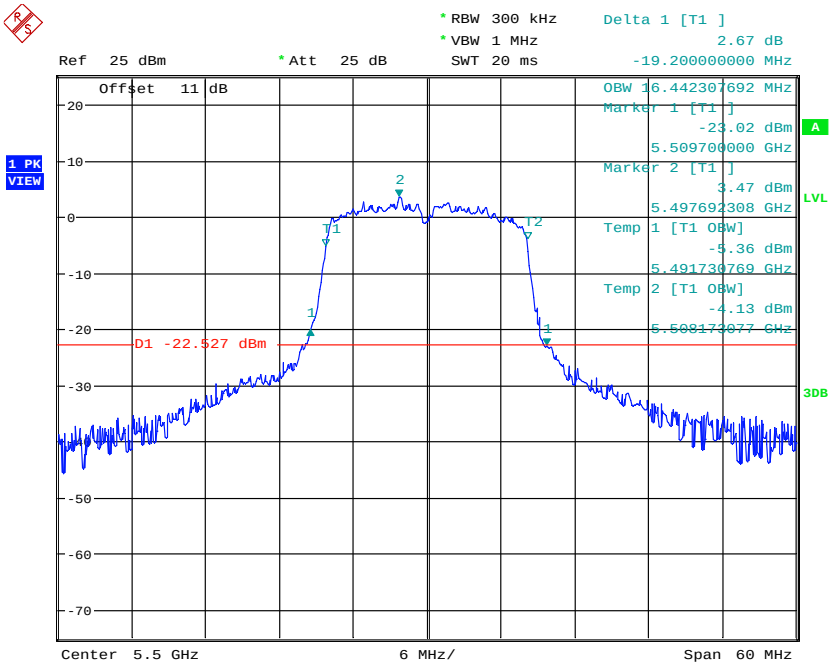
99% OBW & 26DB BANDWIDTH ANT2_11ac40_CH62
Date: 13.JUN.2018 10:56:45



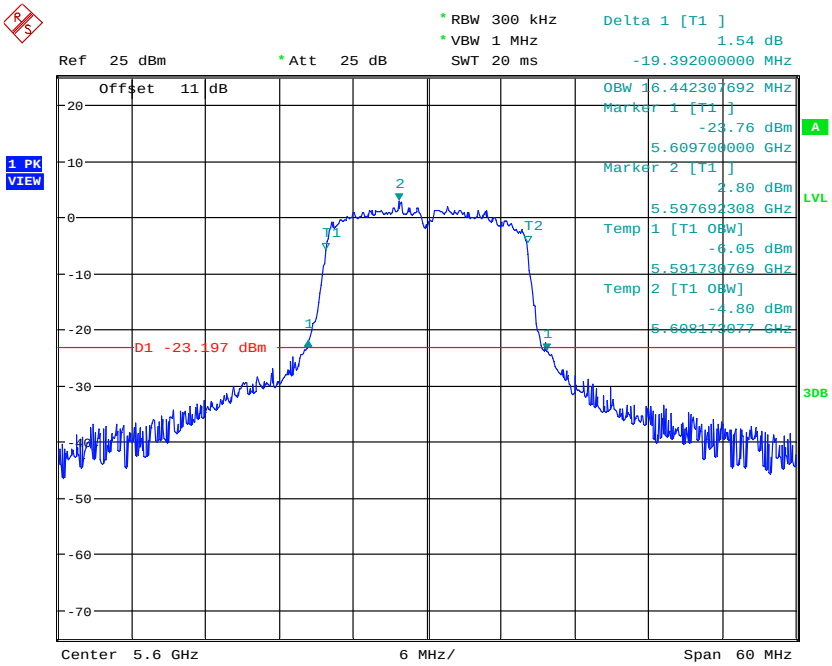
99% OBW & 26DB BANDWIDTH ANT2_11ac80_CH58
Date: 13.JUN.2018 10:59:13

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

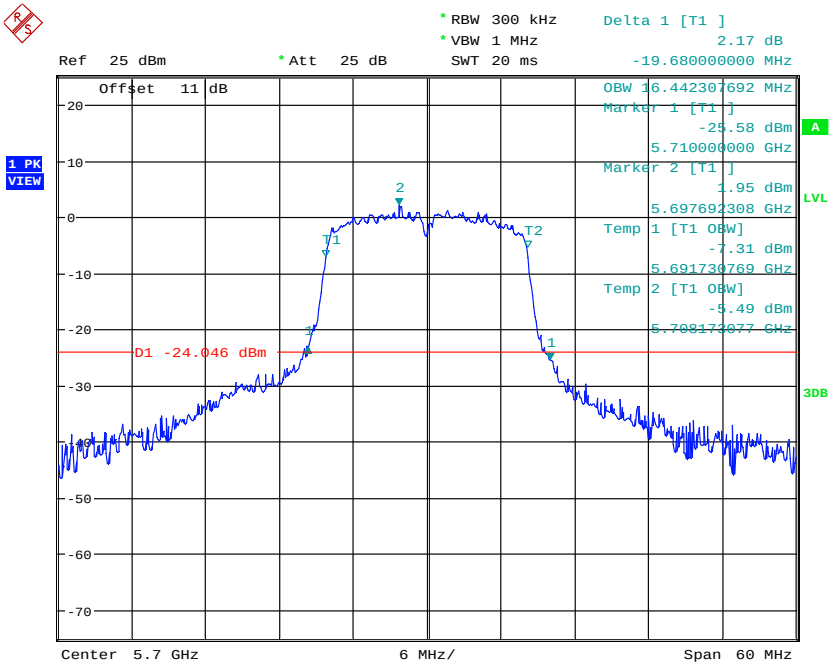
5.47 GHz ~ 5.725 GHz



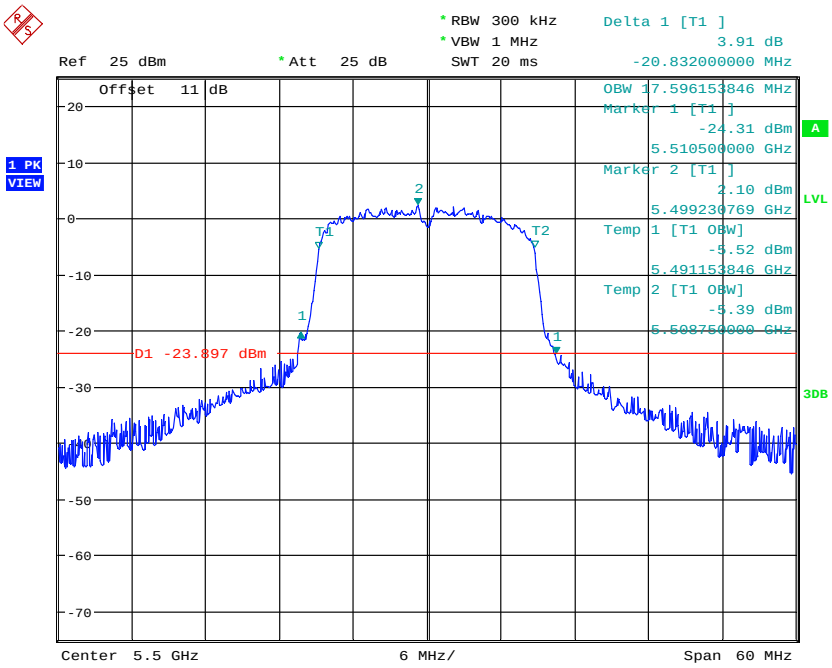
99% OBW & 26DB BANDWIDTH ANT2_11a_CH100
Date: 13.JUN.2018 11:10:24



99% OBW & 26DB BANDWIDTH ANT2_11a_CH120
Date: 13.JUN.2018 11:19:01

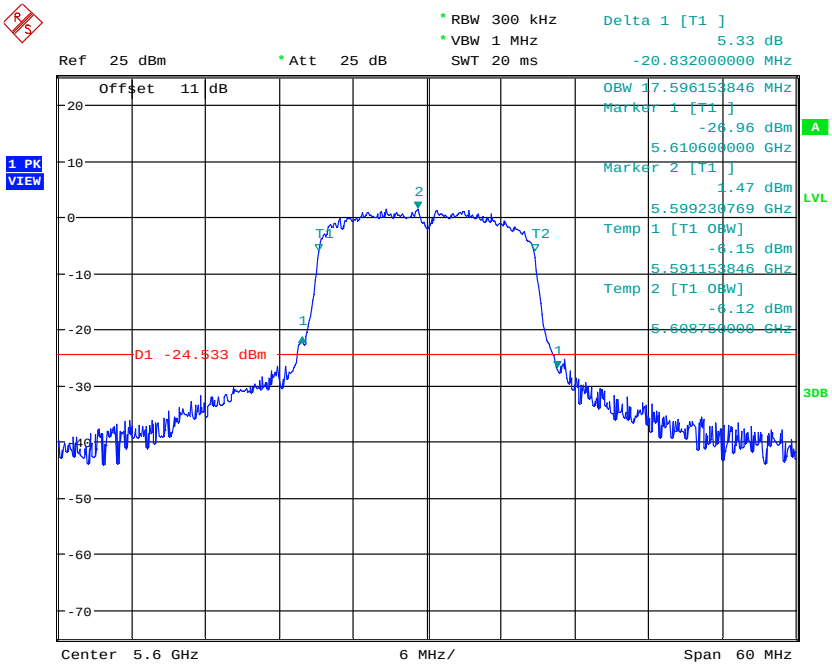


99% OBW & 26DB BANDWIDTH ANT2_11a_CH140
Date: 8.JUN.2018 14:14:02

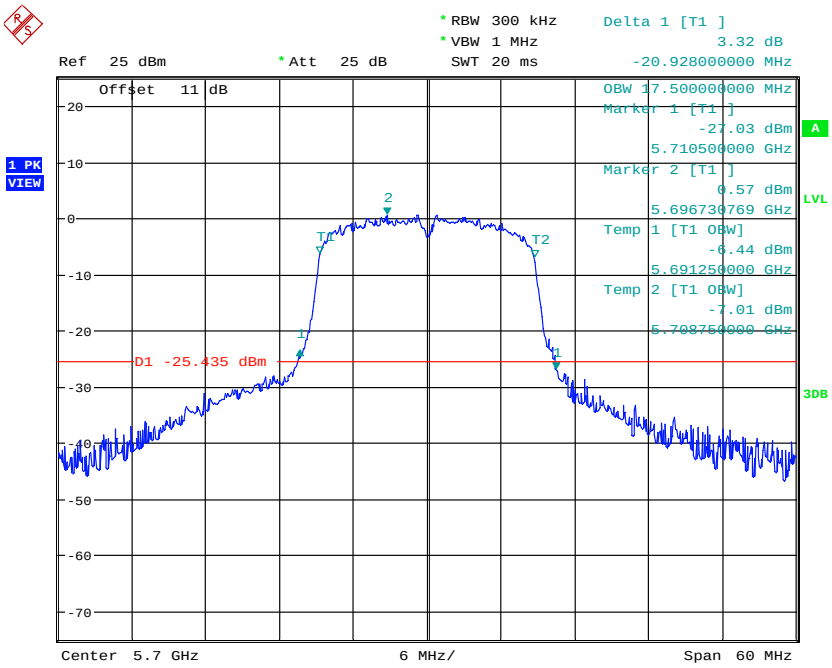


99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH100
Date: 13.JUN.2018 11:12:25

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

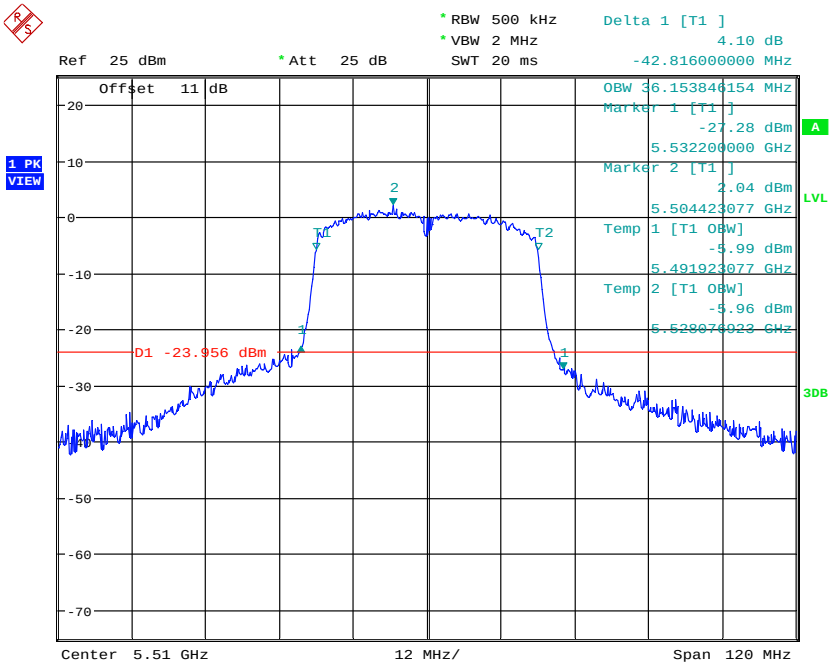


99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH120
Date: 13.JUN.2018 11:14:32

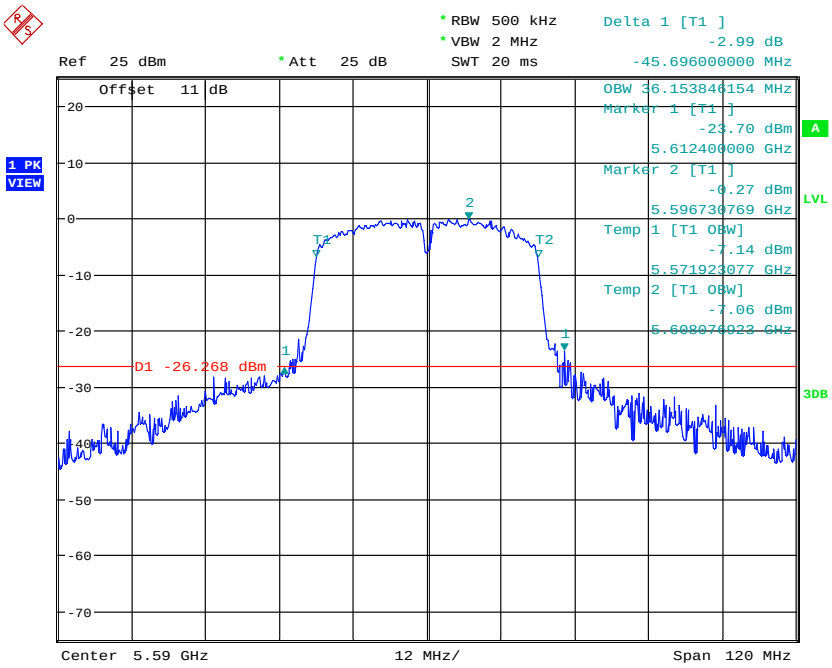


99% OBW & 26DB BANDWIDTH ANT2_11ac20_CH140
Date: 8.JUN.2018 14:11:50

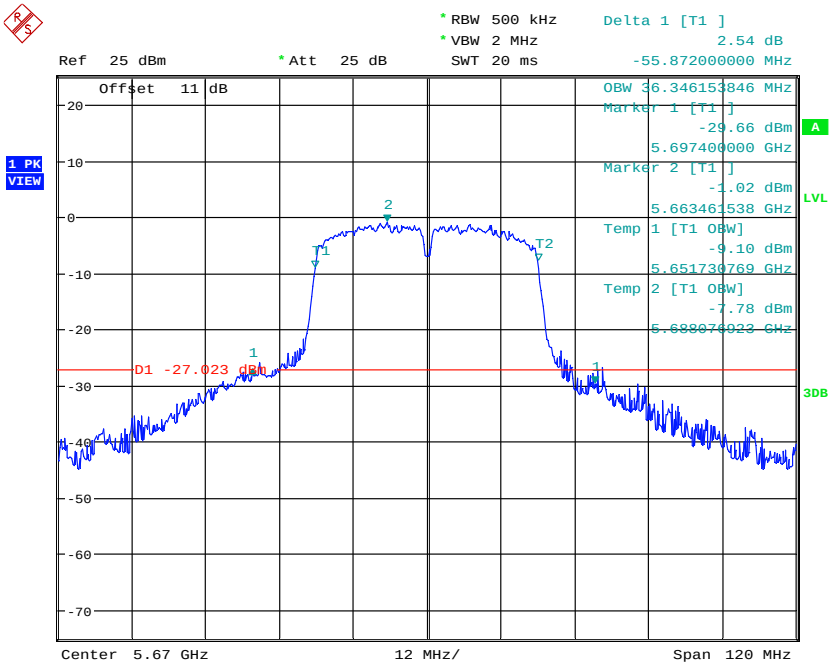
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



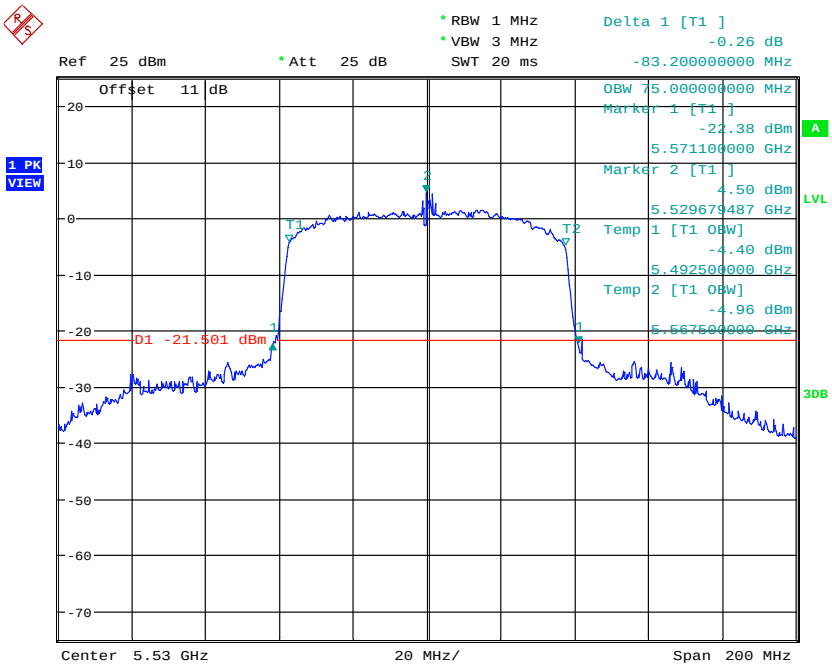
99% OBW & 26DB BANDWIDTH ANT2_11ac40_CH102
Date: 8.JUN.2018 14:18:20



99% OBW & 26DB BANDWIDTH ANT2_11ac40_CH118
Date: 8.JUN.2018 14:31:49

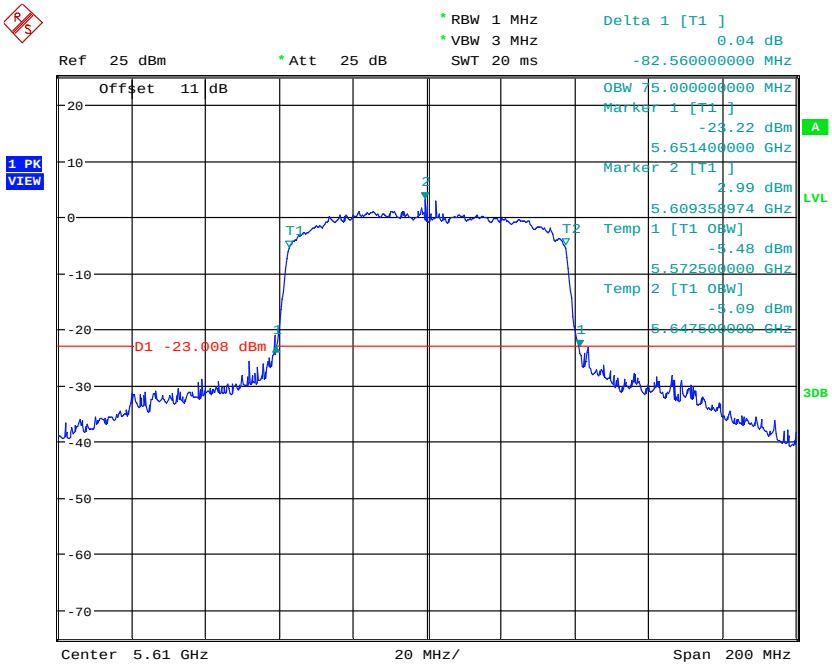


99% OBW & 26DB BANDWIDTH ANT2_11ac40_CH134
Date: 8.JUN.2018 14:36:35



99% OBW & 26DB BANDWIDTH ANT2_11ac80_CH106
Date: 8.JUN.2018 14:47:46

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



99% OBW & 26DB BANDWIDTH ANT2_11ac80_CH122
Date: 13.JUN.2018 11:24:37

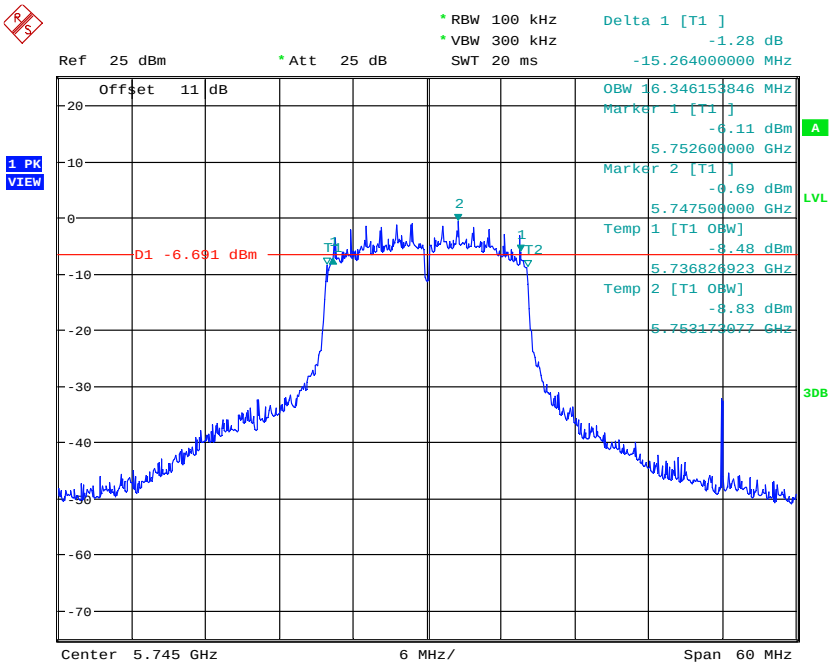
Test equipment used: ETSTW-RE 055, ETSTW-RE 050

3.3 6dB emission bandwidth, 99% Occupied Bandwidth, FCC 15.407 (a)

According to §15.407(a). No Limit required.

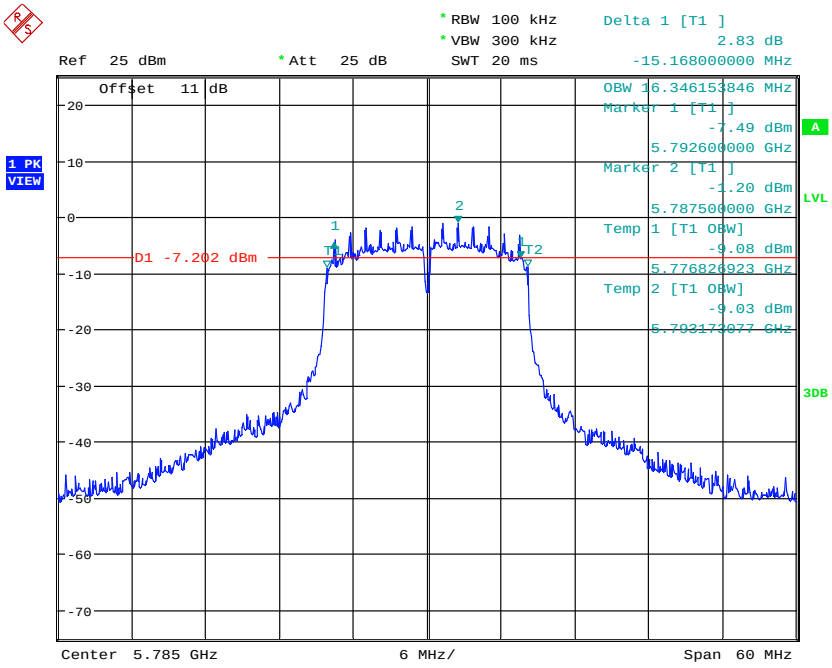
Result:

ANT Chain1

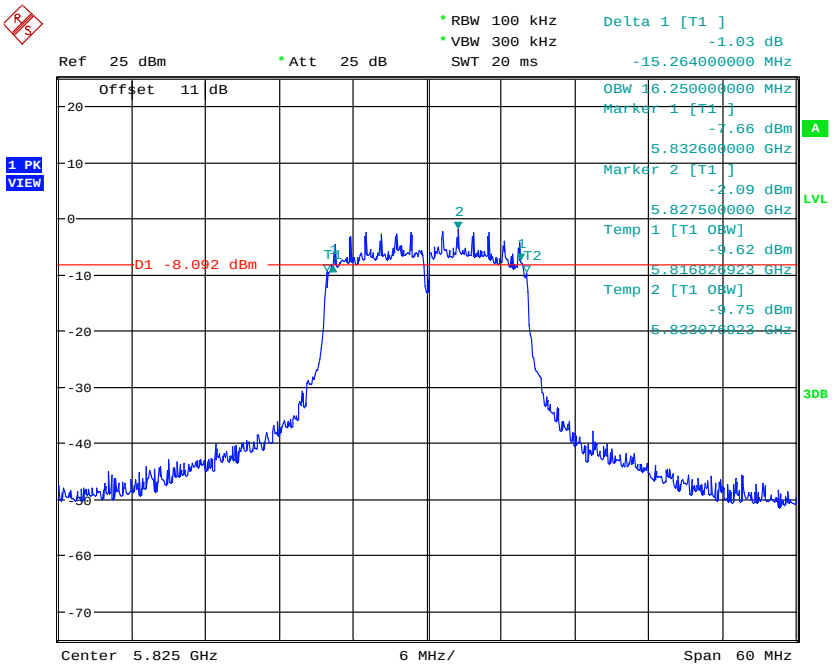


99% OBW & 6DB BANDWIDTH ANT1_11a_CH149
Date: 8.JUN.2018 15:10:25

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

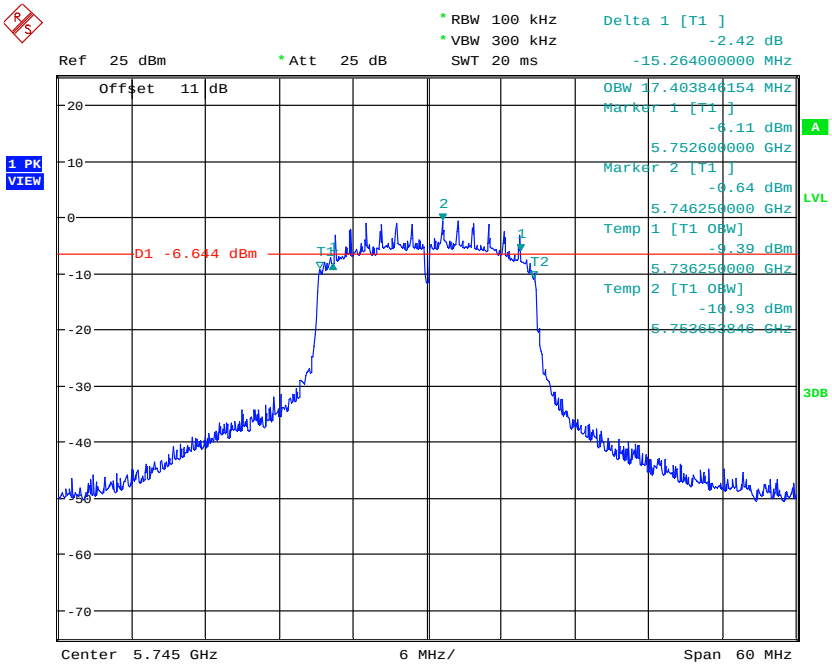


99% OBW & 6DB BANDWIDTH ANT1_11a_CH157
Date: 13.JUN.2018 10:06:08

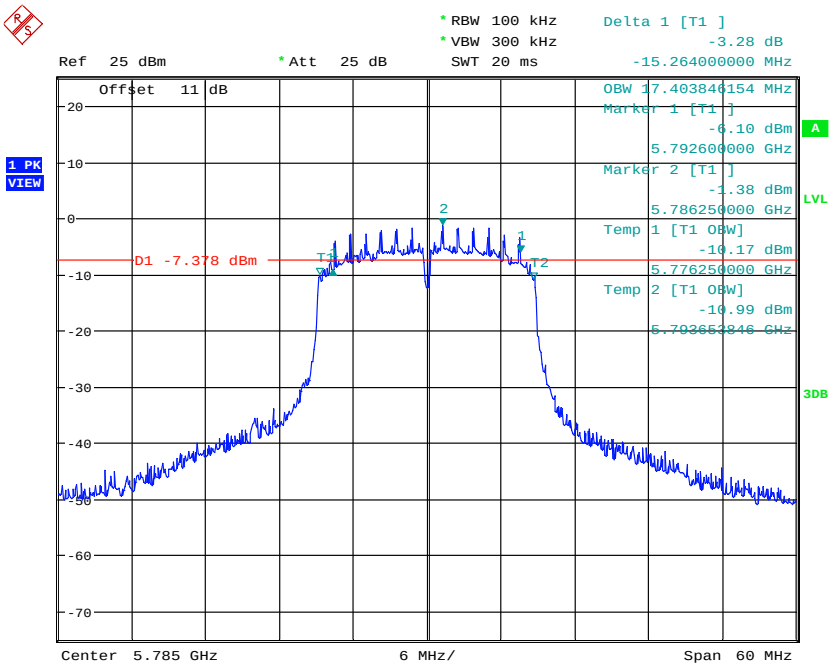


99% OBW & 6DB BANDWIDTH ANT1_11a_CH165
Date: 13.JUN.2018 10:11:11

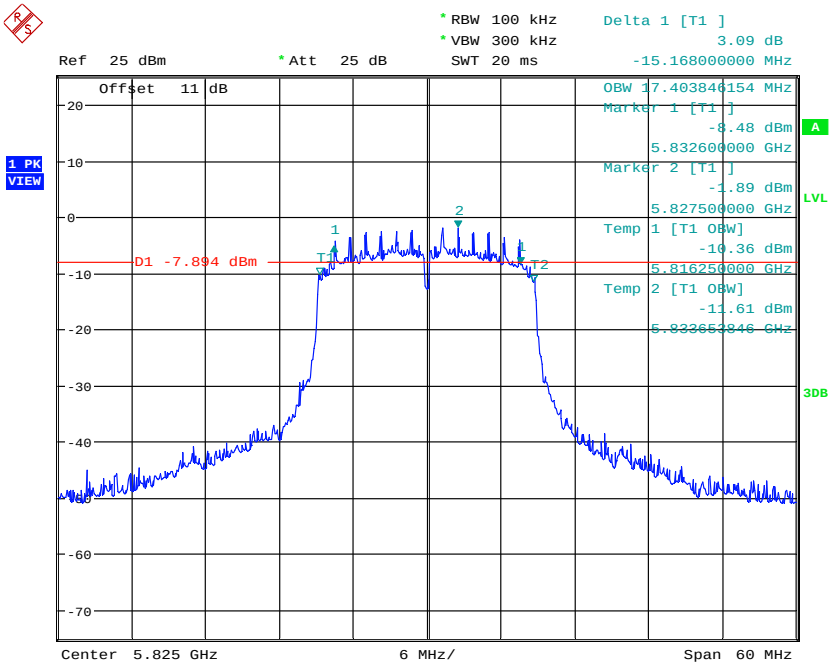
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



99% OBW & 6DB BANDWIDTH ANT1_11ac20_CH149
Date: 8.JUN.2018 15:11:58

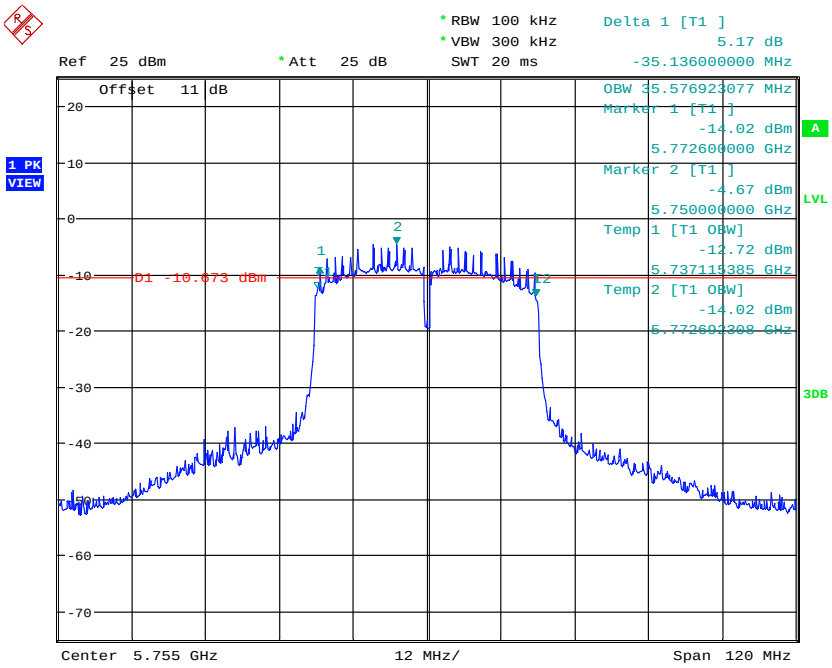


99% OBW & 6DB BANDWIDTH ANT1_11ac20_CH157
Date: 13.JUN.2018 10:07:53



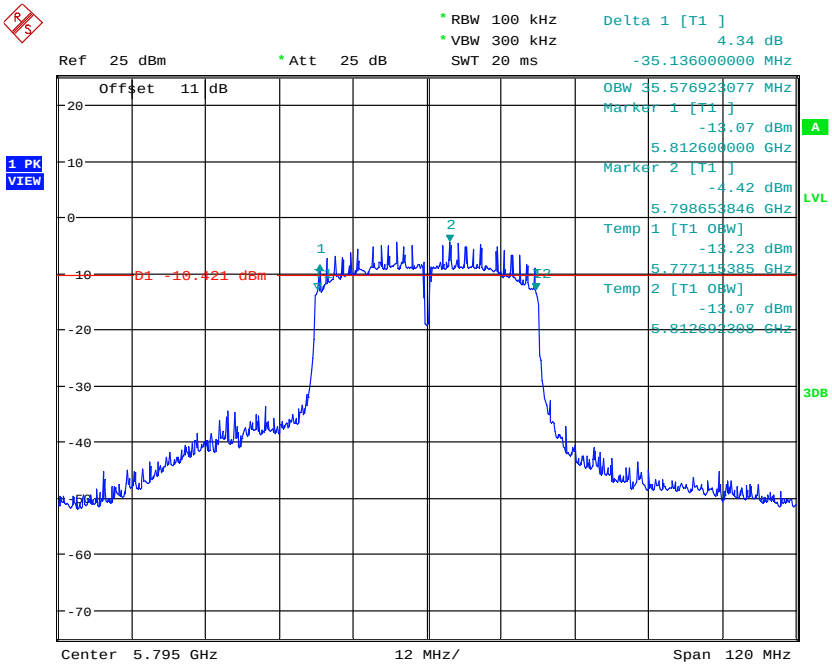
99% OBW & 6DB BANDWIDTH ANT1_11ac20_CH165

Date: 13.JUN.2018 10:09:43



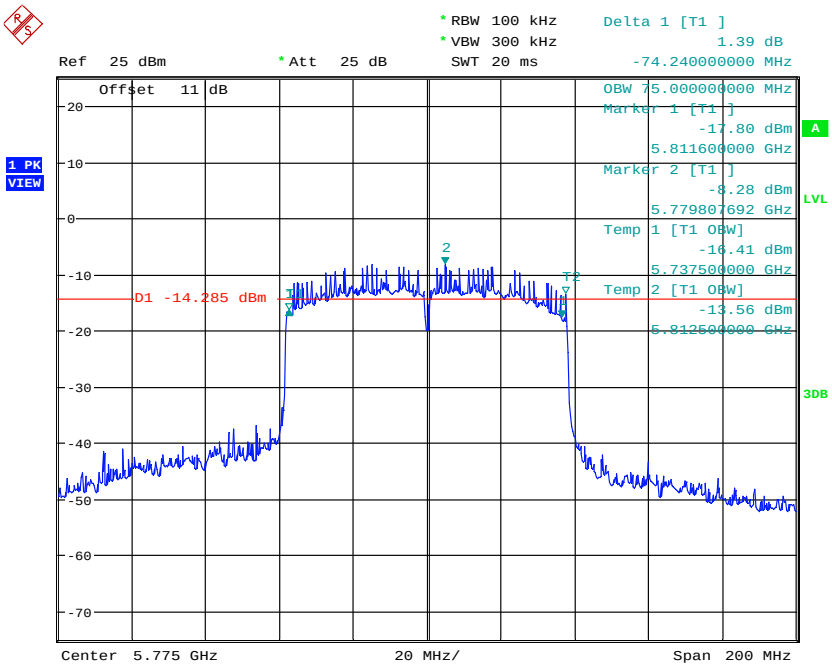
99% OBW & 6DB BANDWIDTH ANT1_11ac40_CH151

Date: 8.JUN.2018 15:30:35



99% OBW & 6DB BANDWIDTH ANT1_11ac40_CH159

Date: 8.JUN.2018 15:32:41

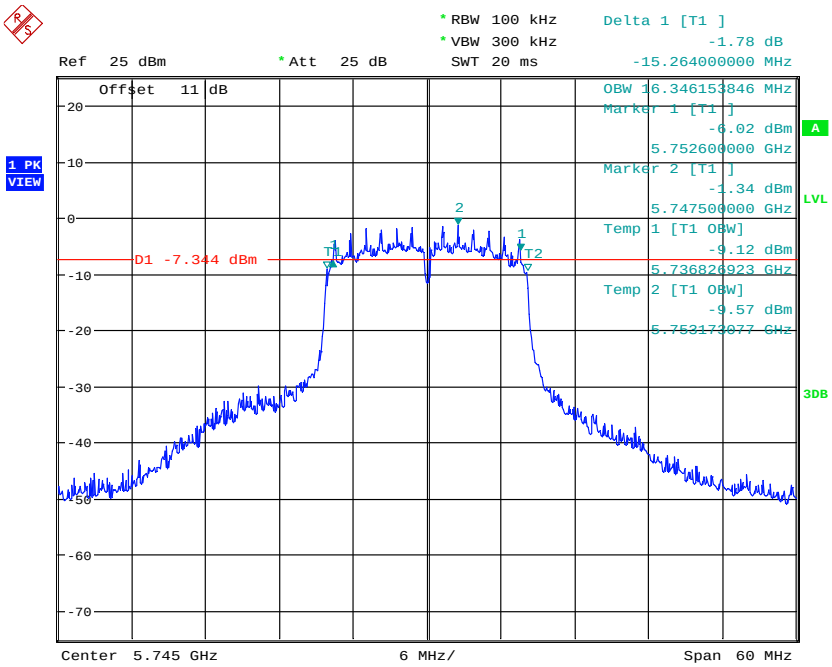


99% OBW & 6DB BANDWIDTH ANT1_11ac80_CH155

Date: 13.JUN.2018 10:17:20

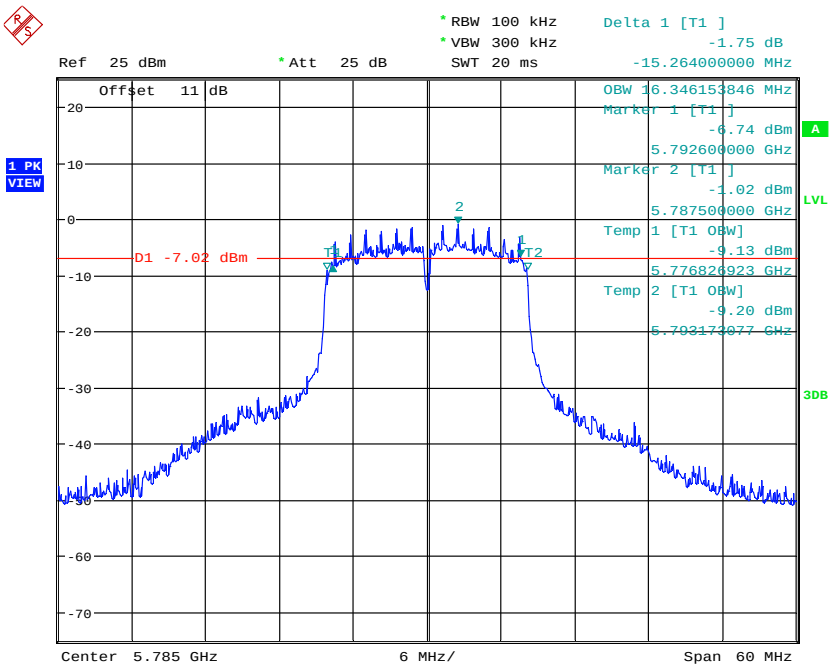
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

ANT Chain2



99% OBW & 6DB BANDWIDTH ANT2_11a_CH149

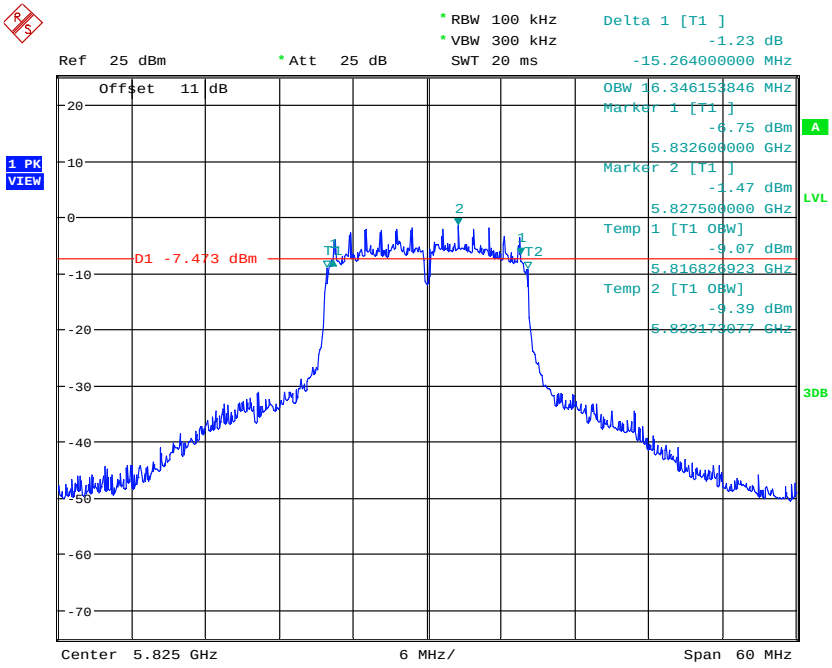
Date: 8.JUN.2018 15:05:50



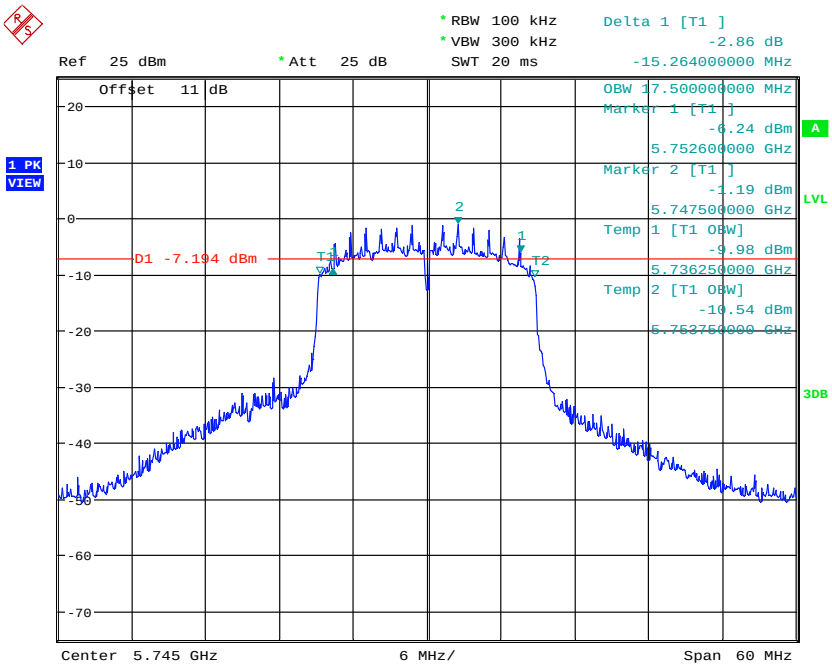
99% OBW & 6DB BANDWIDTH ANT2_11a_CH157

Date: 13.JUN.2018 11:31:13

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

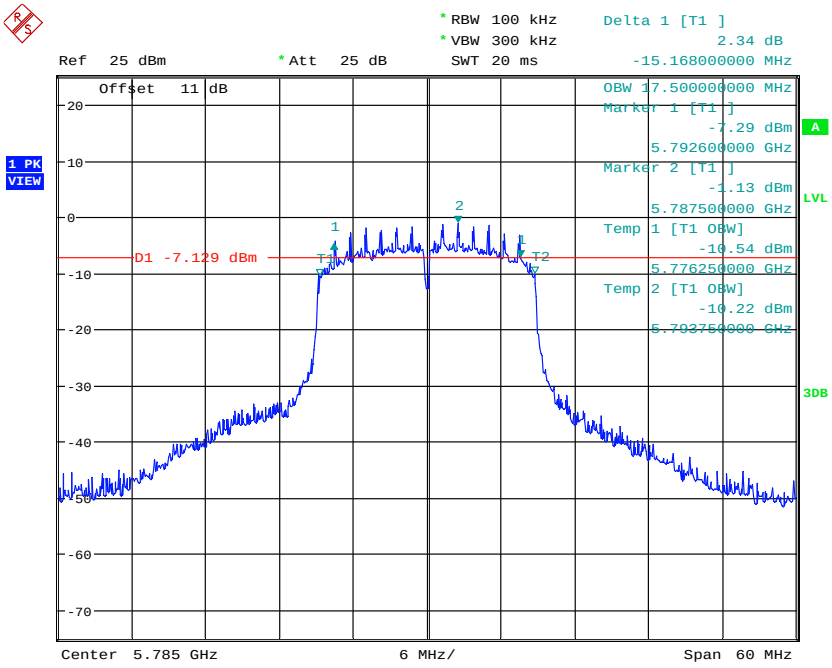


99% OBW & 6DB BANDWIDTH ANT2_11a_CH165
Date: 13.JUN.2018 11:42:51

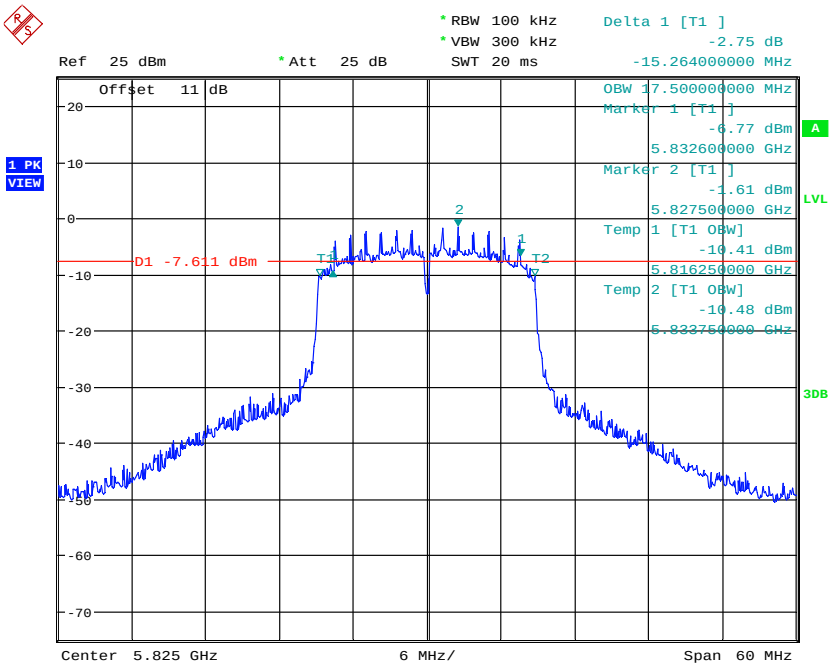


99% OBW & 6DB BANDWIDTH ANT2_11ac20_CH149
Date: 8.JUN.2018 15:13:37

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

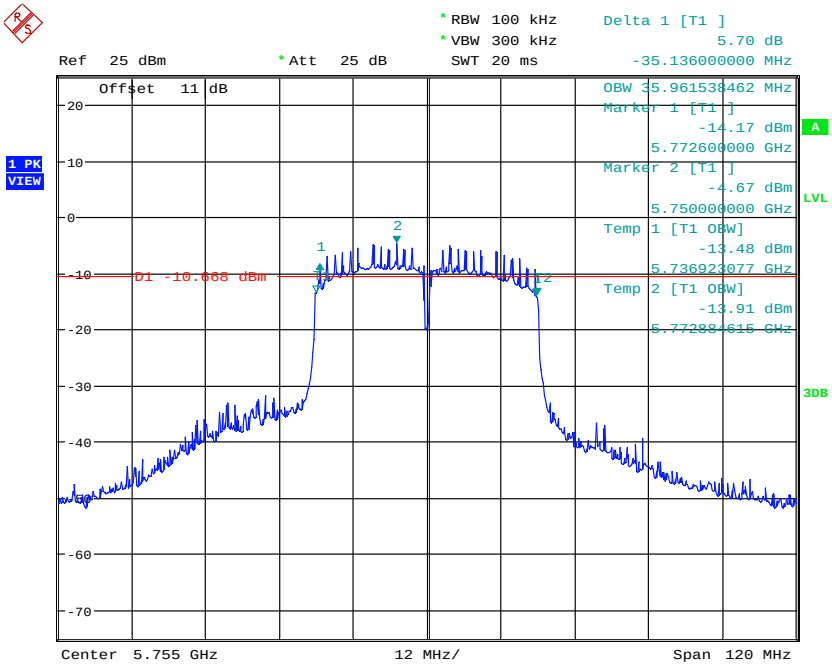


99% OBW & 6DB BANDWIDTH ANT2_11ac20_CH157
Date: 13.JUN.2018 11:33:36

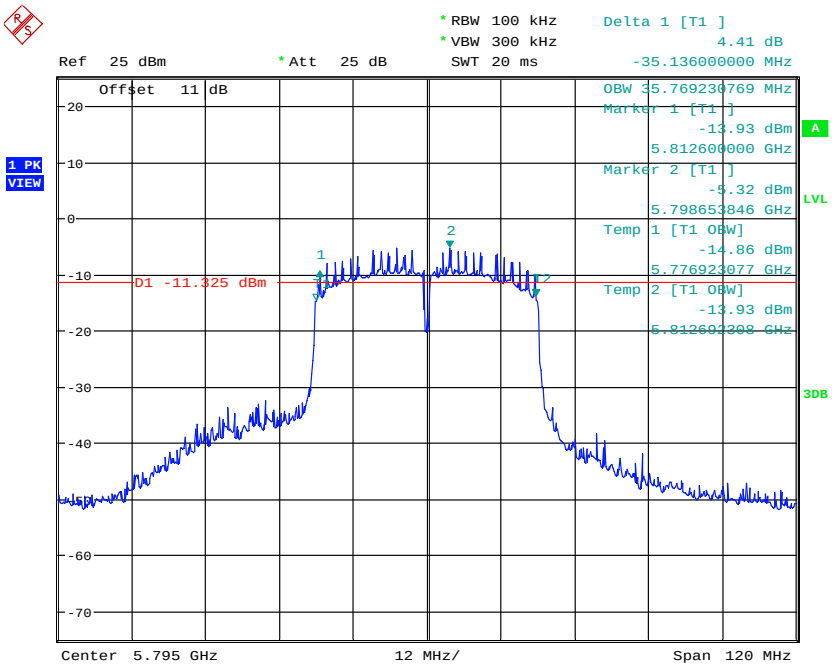


99% OBW & 6DB BANDWIDTH ANT2_11ac20_CH165
Date: 13.JUN.2018 11:36:43

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

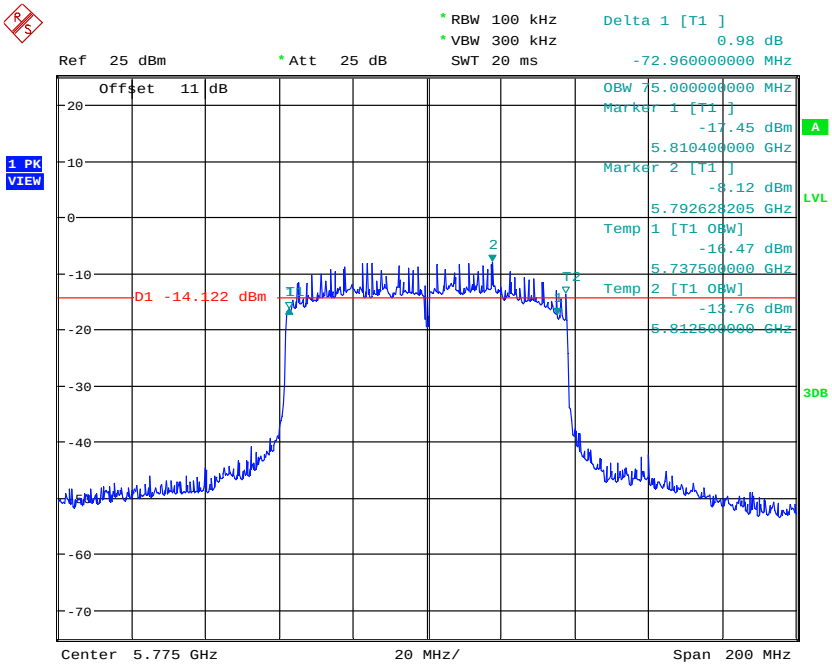


99% OBW & 6DB BANDWIDTH ANT2_11ac40_CH151
Date: 8.JUN.2018 15:29:12



99% OBW & 6DB BANDWIDTH ANT2_11ac40_CH159
Date: 8.JUN.2018 15:34:04

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



99% OBW & 6DB BANDWIDTH ANT2_11ac80_CH155
Date: 13.JUN.2018 11:40:01

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

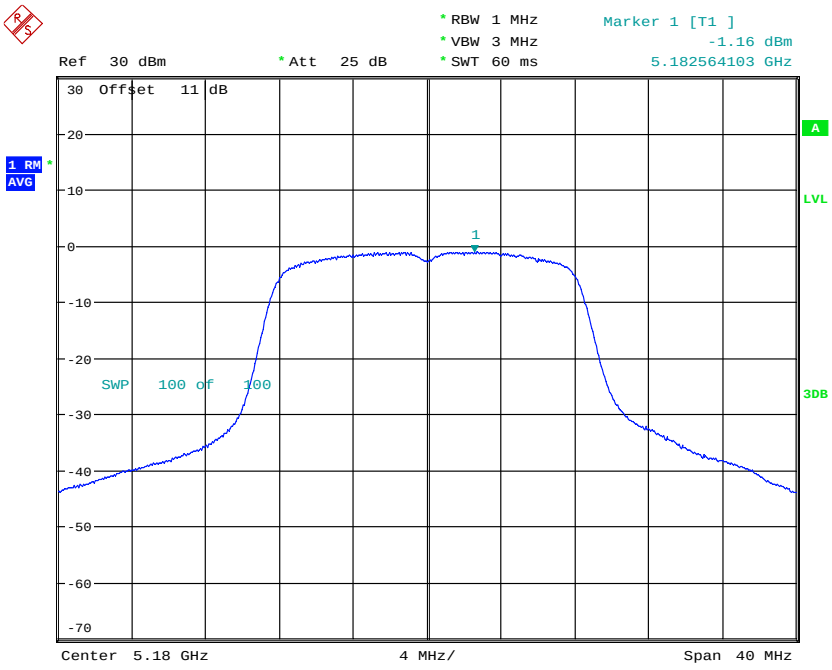
3.4 Peak Power Spectral Density, FCC 15.407 (a)

According to §15.407(a)

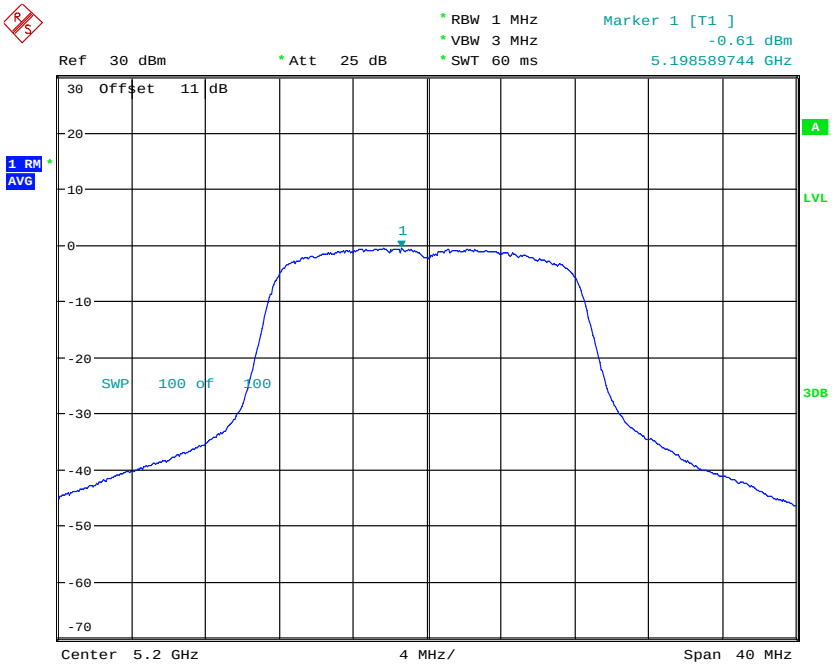
1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 17 dBm/MHz for master device and 11 dBm/MHz for mobile/portable client device.
2. For the band 5.25-5.35 GHz and 5.47-5.725 GHz, the peak power spectral density shall not exceed 11 dBm/MHz.
3. For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm/500kHz.

ANT Chain1

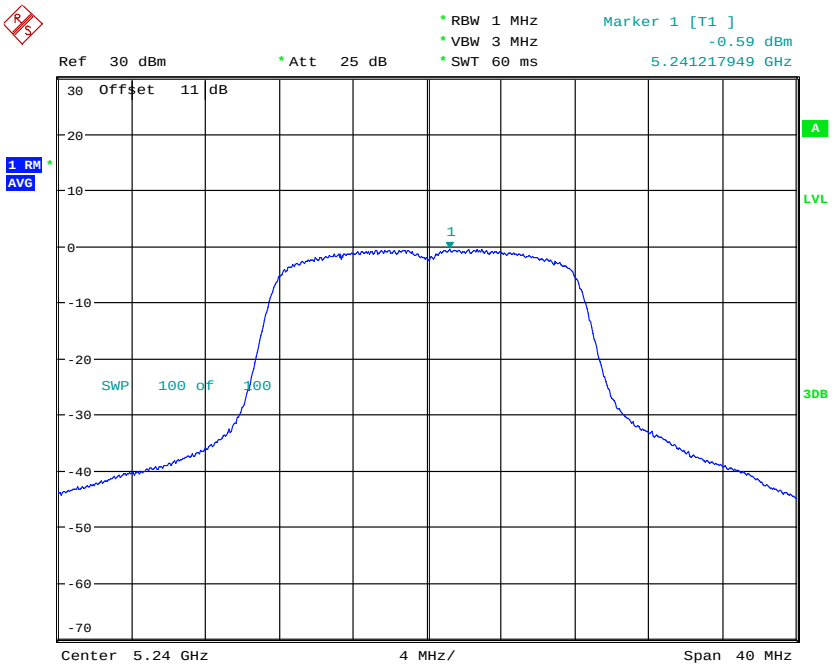
5.15 GHz ~ 5.25 GHz



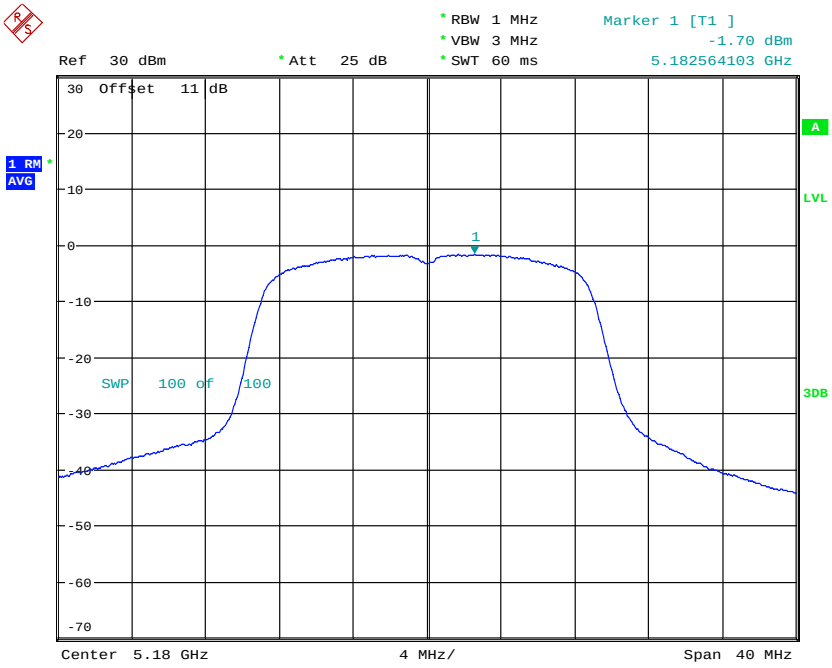
POWER DENSITY AV ANT111aCH36
Date: 8.JUN.2018 11:22:35



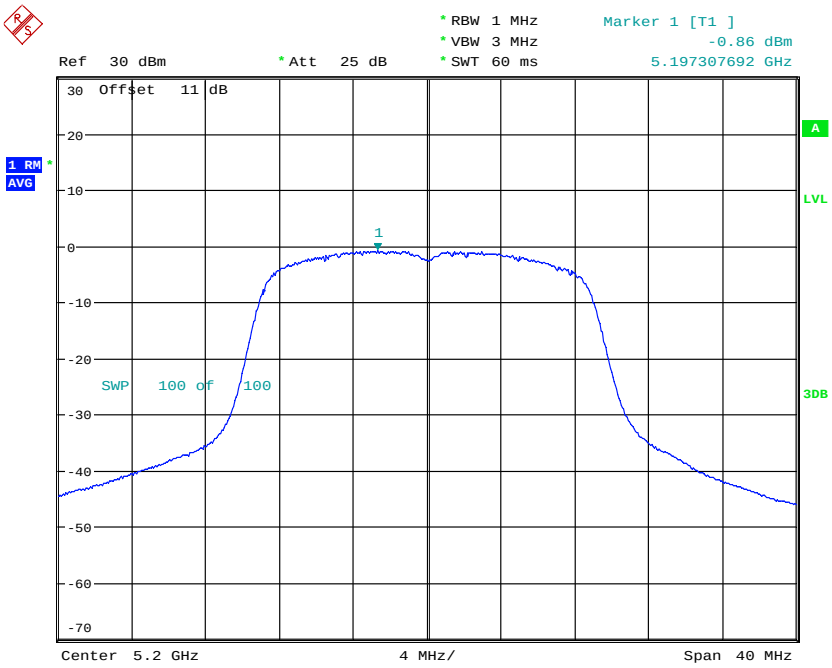
POWER DENSITY AV ANT111aCH40
Date: 8.JUN.2018 11:12:04



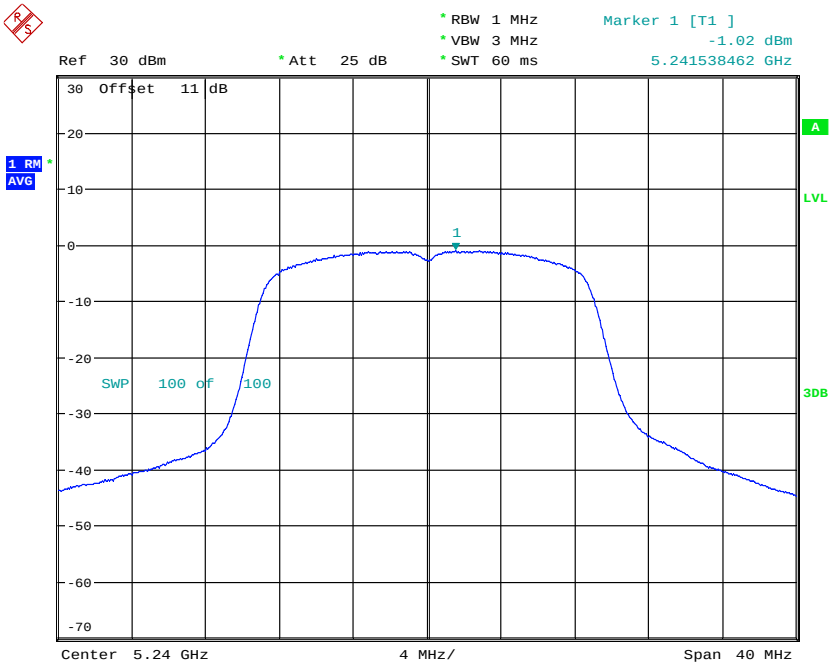
POWER DENSITY AV ANT111aCH48
Date: 8.JUN.2018 11:09:54



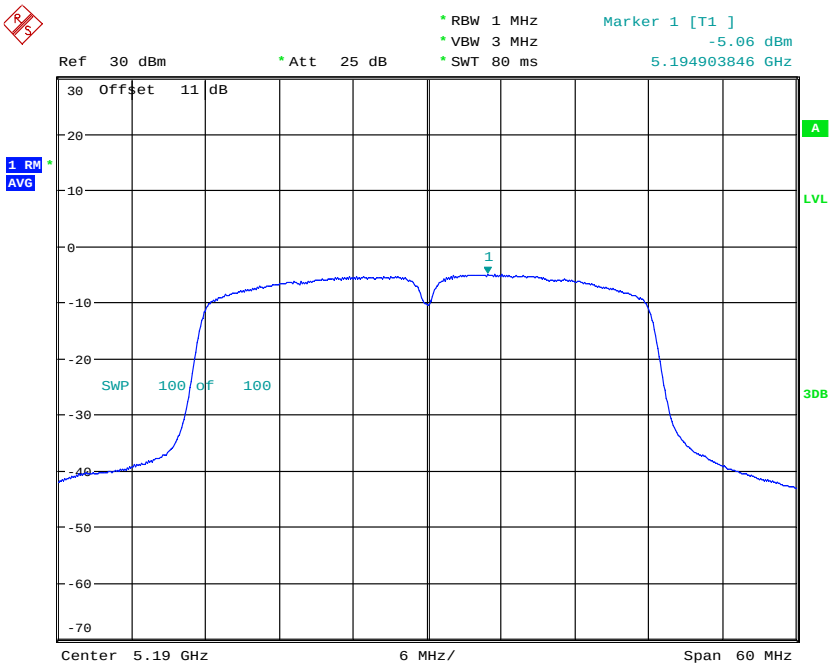
POWER DENSITY AV ANT1 11ac20CH36
Date: 8.JUN.2018 11:21:10



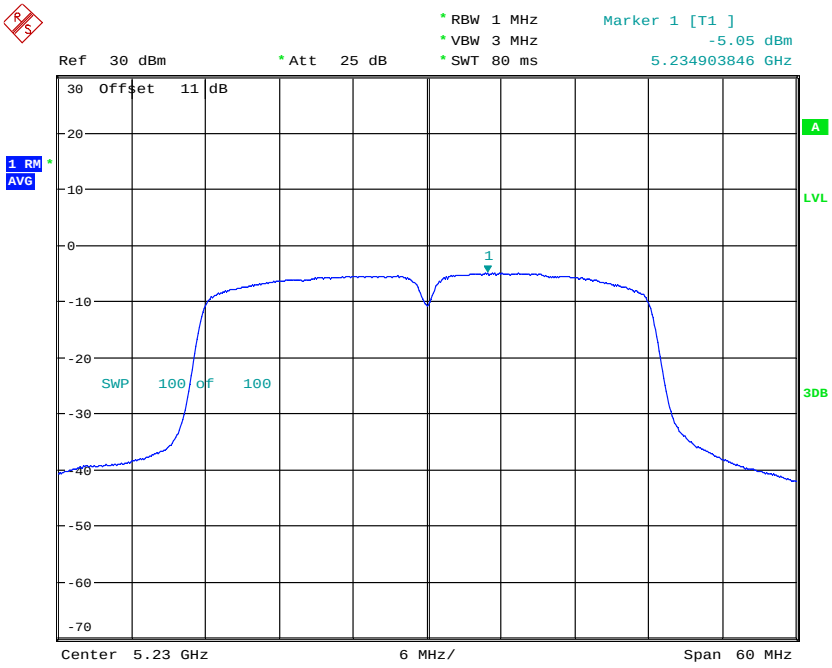
POWER DENSITY AV ANT1 11ac20CH40
Date: 8.JUN.2018 11:13:35



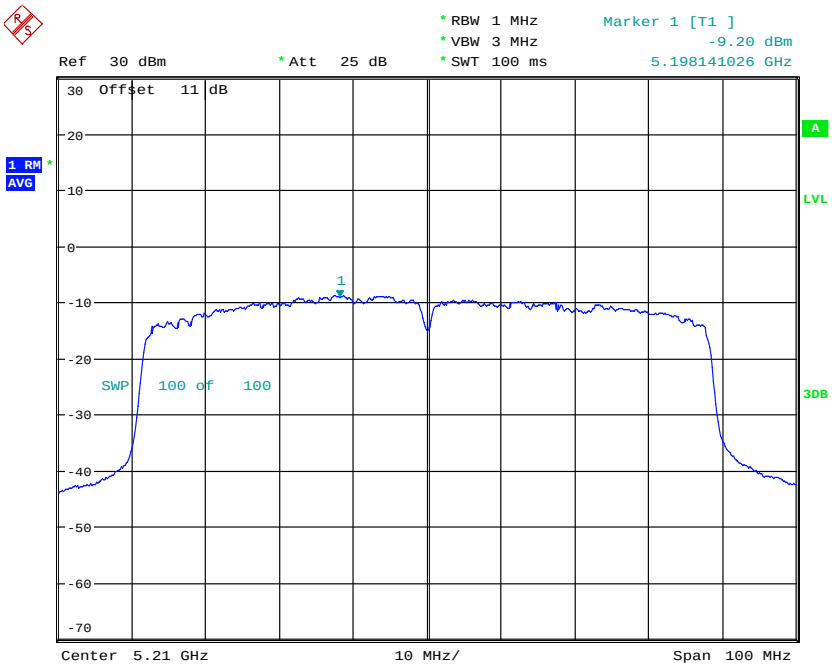
POWER DENSITY AV ANT1 11ac20CH48
Date: 8.JUN.2018 11:08:04



POWER DENSITY AV ANT111ac40CH38
Date: 8.JUN.2018 10:26:12



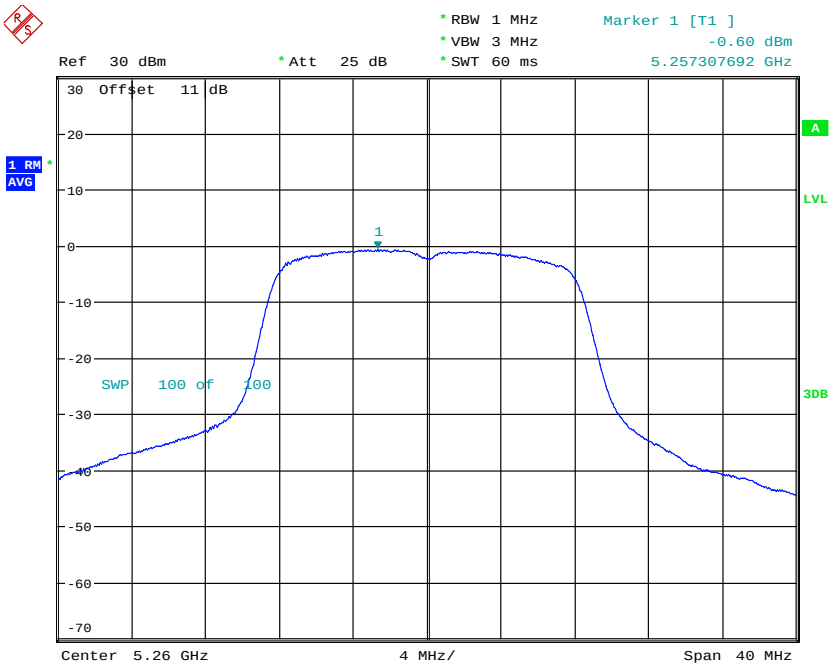
POWER DENSITY AV ANT111ac40CH46
Date: 8.JUN.2018 10:27:49



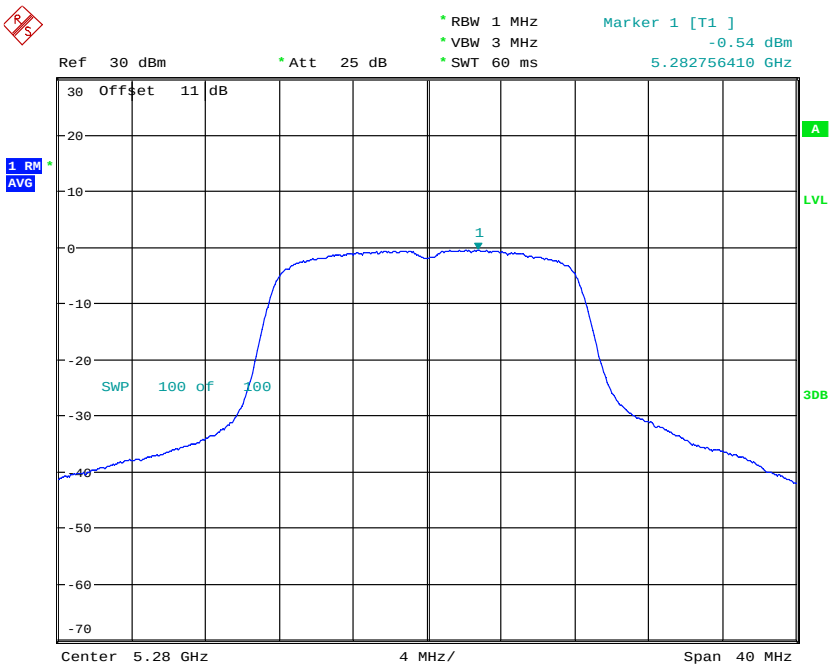
POWER DENSITY AV ANT111ac80CH42
Date: 8.JUN.2018 10:33:46

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

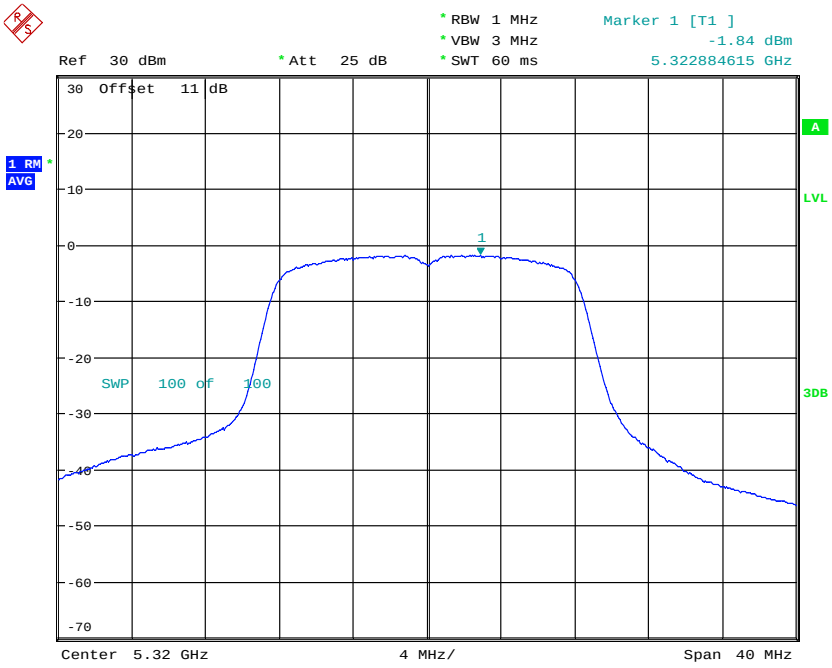
5.25 GHz ~ 5.35 GHz



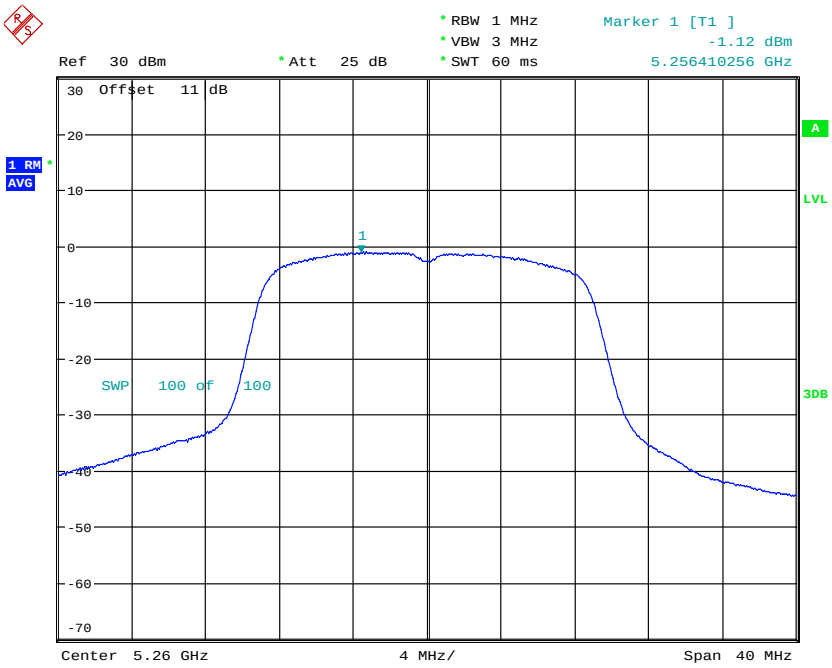
POWER DENSITY AV ANT111aCH52
Date: 8.JUN.2018 11:27:14



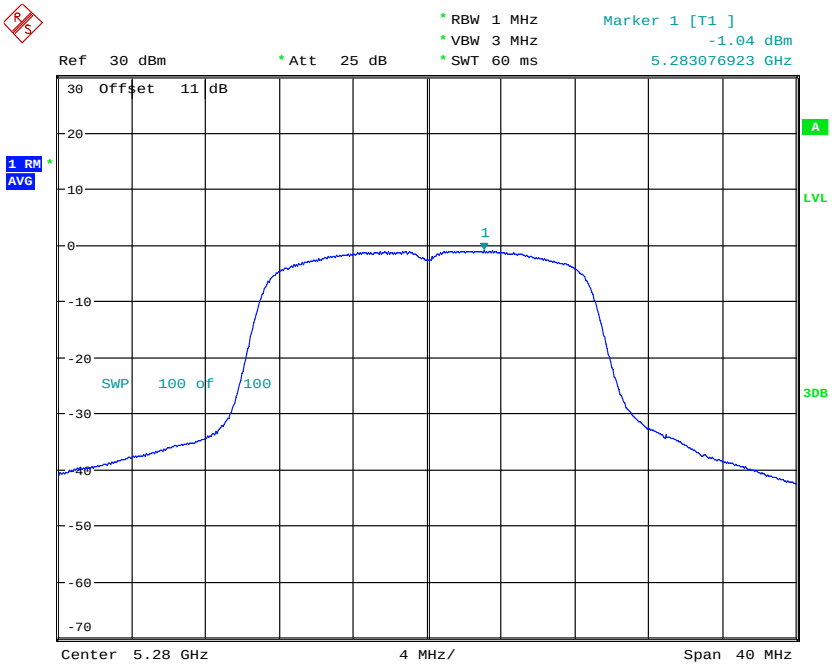
POWER DENSITY AV ANT111aCH56
Date: 8.JUN.2018 11:59:24



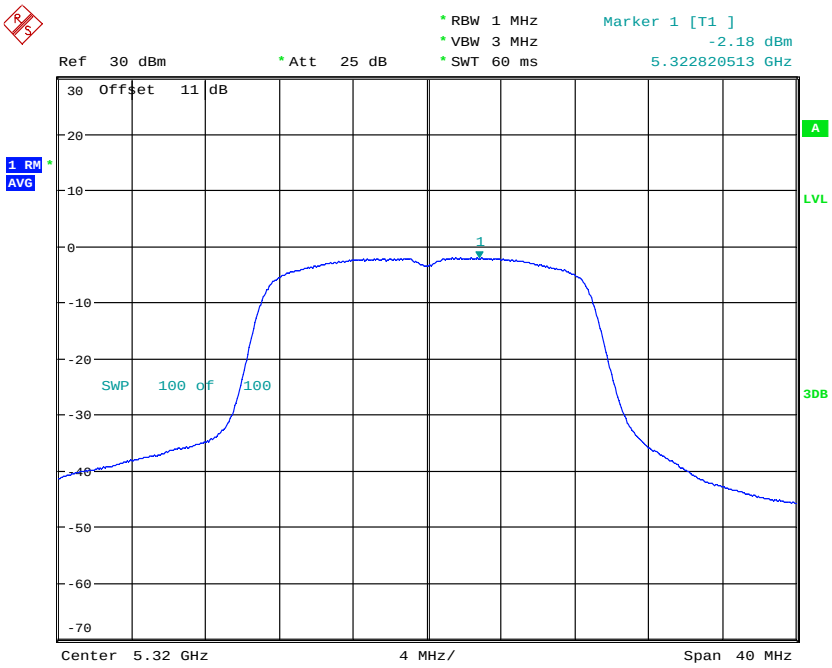
POWER DENSITY AV ANT111aCH64
Date: 13.JUN.2018 10:25:55



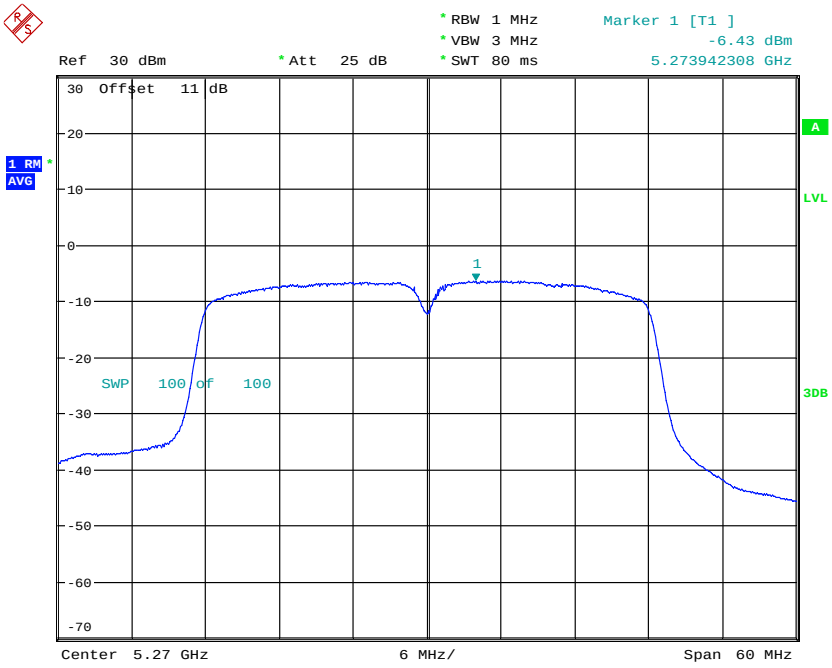
POWER DENSITY AV ANT1 11ac20CH52
Date: 8.JUN.2018 11:29:57



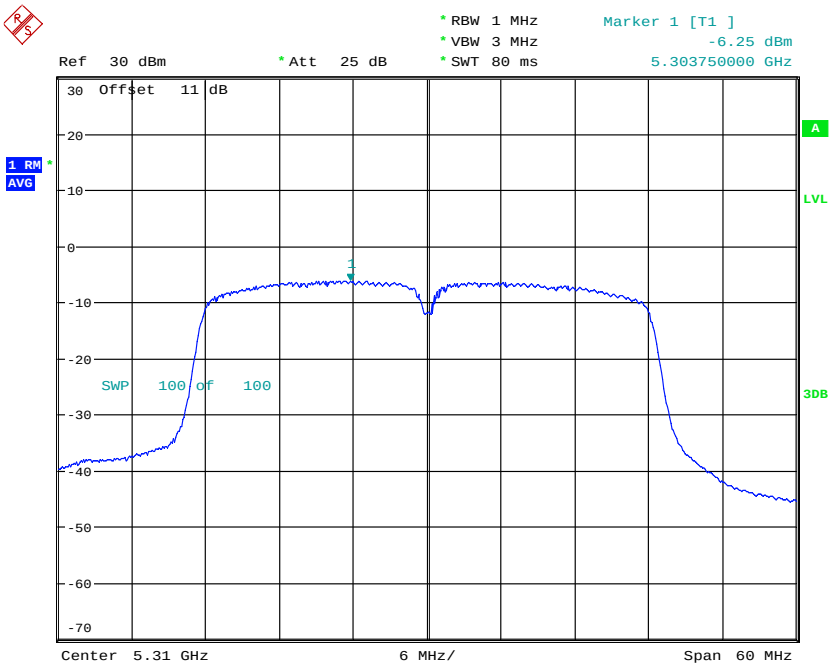
POWER DENSITY AV ANT1 11ac20CH56
Date: 8.JUN.2018 12:01:35



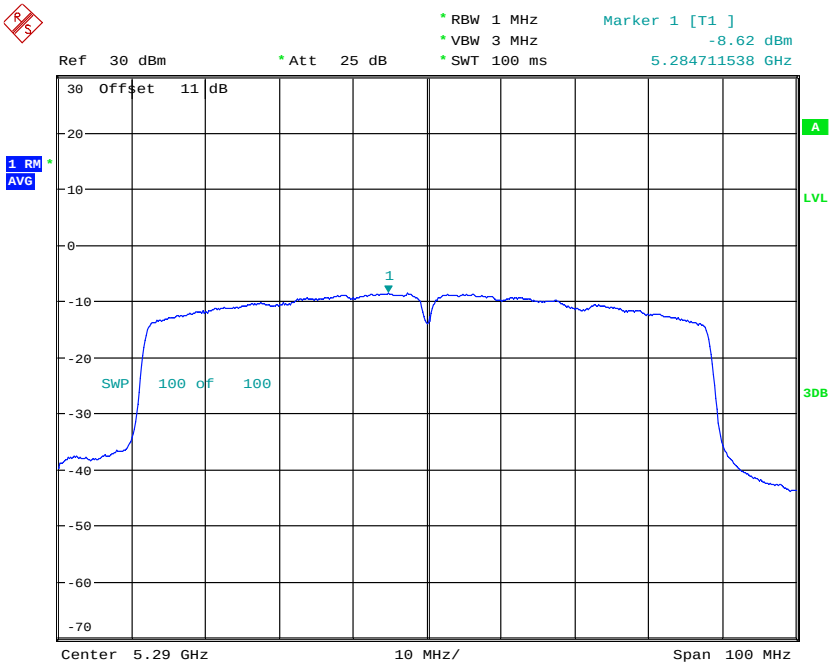
POWER DENSITY AV ANT1 11ac20CH64
Date: 13.JUN.2018 10:40:33



POWER DENSITY AV ANT111ac40CH54
Date: 13.JUN.2018 09:06:30

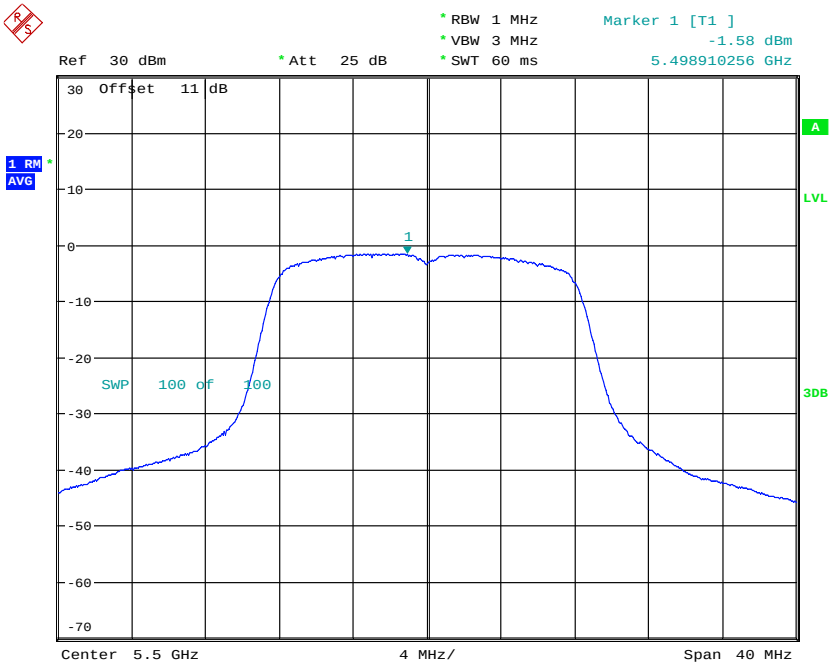


POWER DENSITY AV ANT111ac40CH62
Date: 13.JUN.2018 09:11:30

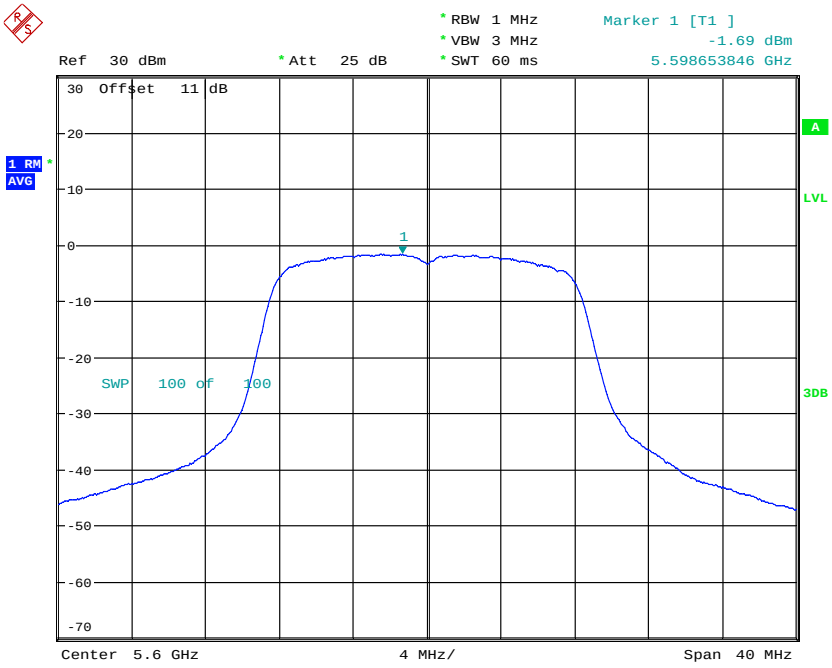


POWER DENSITY AV ANT111ac80CH58
Date: 13.JUN.2018 09:20:23

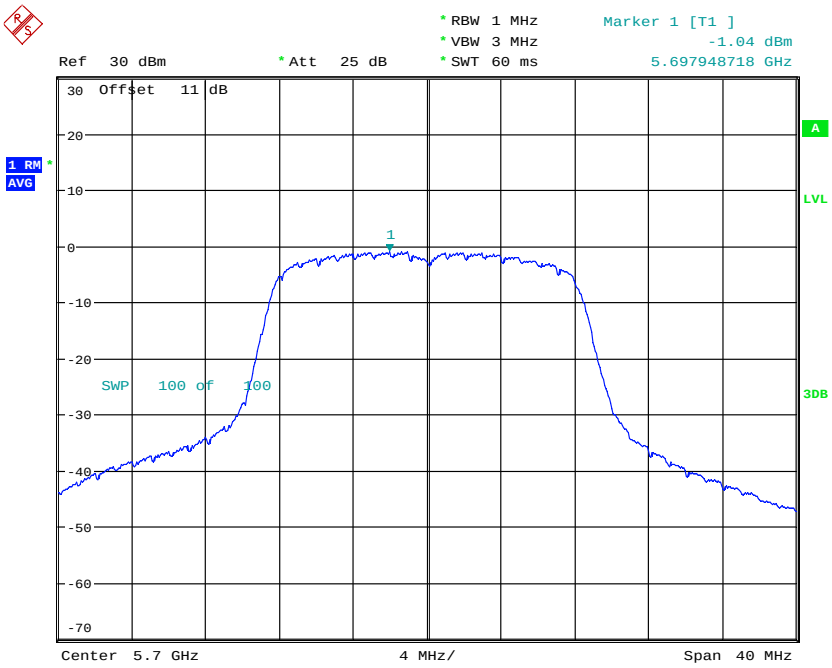
5.47 GHz ~ 5.725 GHz



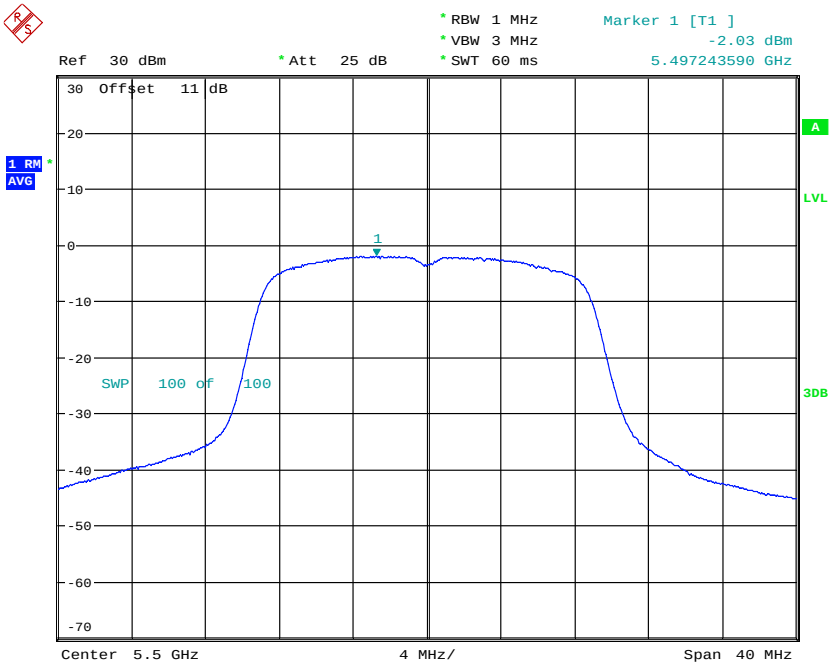
POWER DENSITY AV ANT111aCH100
Date: 13.JUN.2018 09:47:40



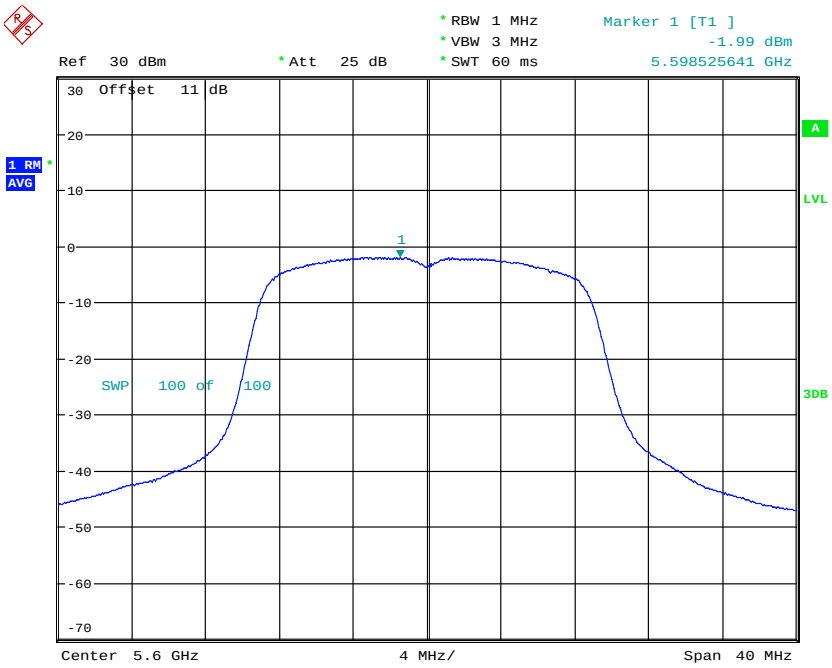
POWER DENSITY AV ANT111aCH120
Date: 13.JUN.2018 09:50:10



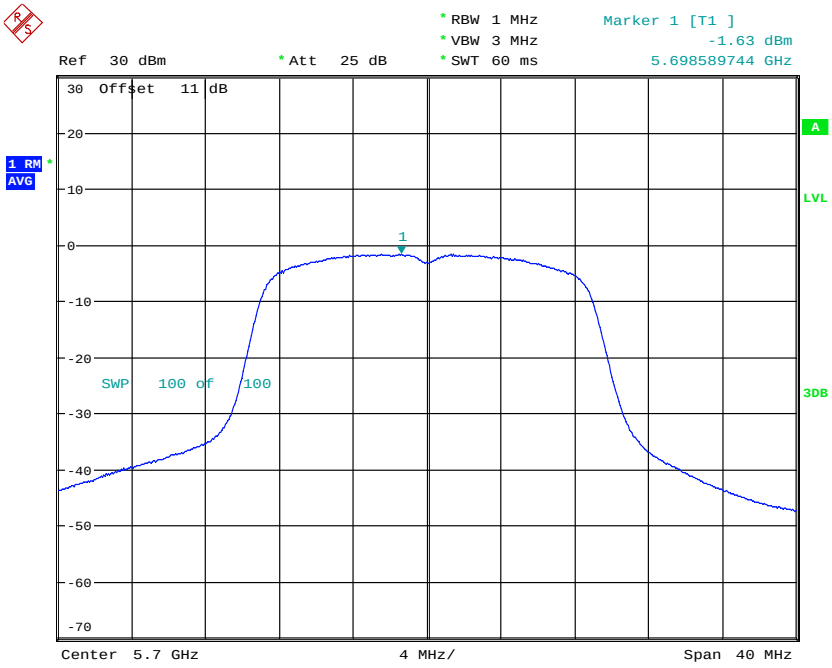
POWER DENSITY AV ANT111aCH140
Date: 8.JUN.2018 14:07:02



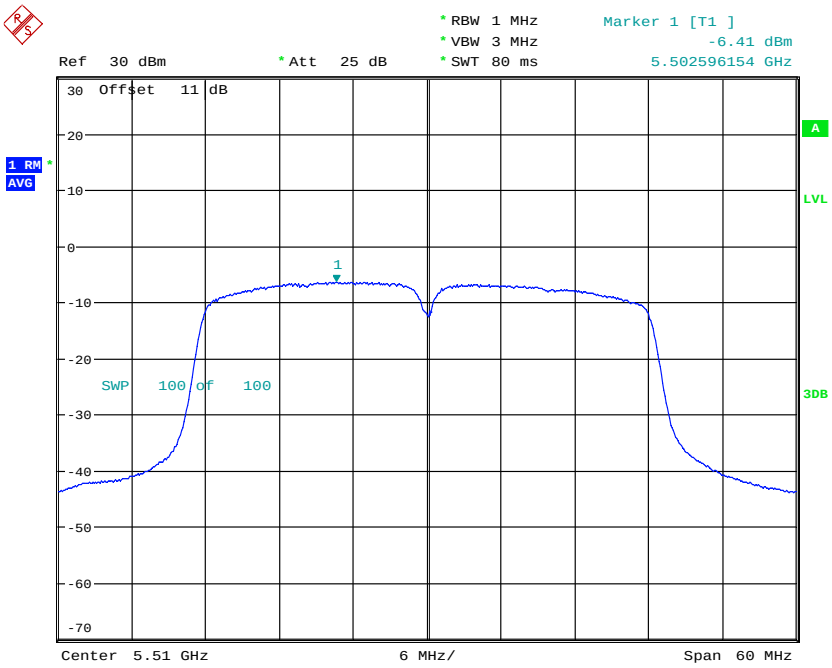
POWER DENSITY AV ANT1 11ac20CH100
Date: 13.JUN.2018 09:43:33



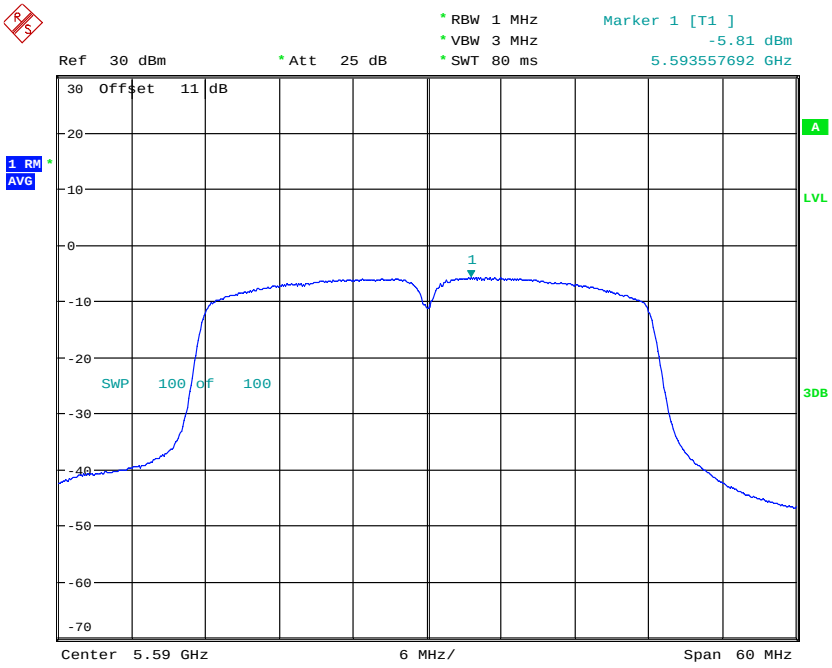
POWER DENSITY AV ANT1 11ac20CH120
Date: 13.JUN.2018 09:52:46



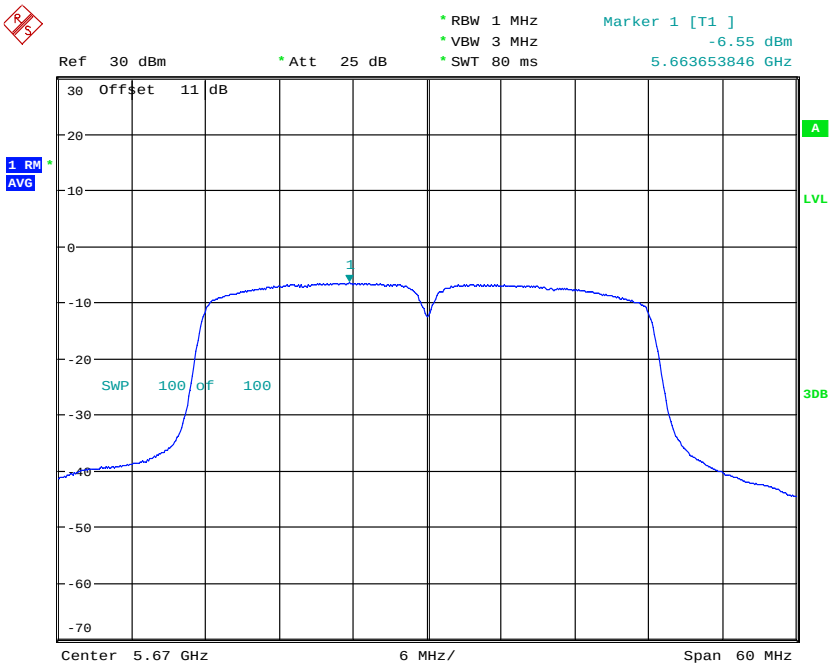
POWER DENSITY AV ANT1 11ac20CH140
Date: 8.JUN.2018 14:08:46



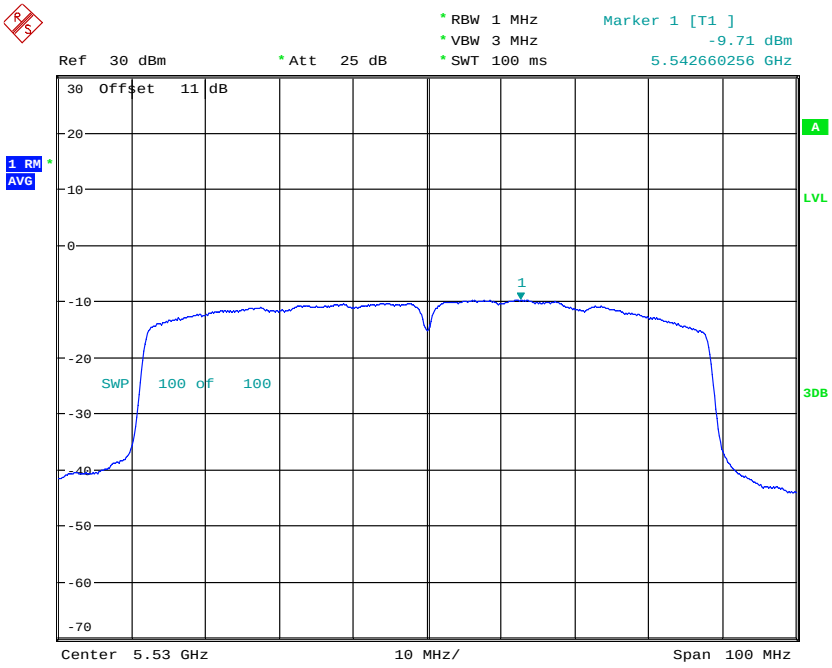
POWER DENSITY AV ANT111ac40CH102
Date: 8.JUN.2018 14:28:05



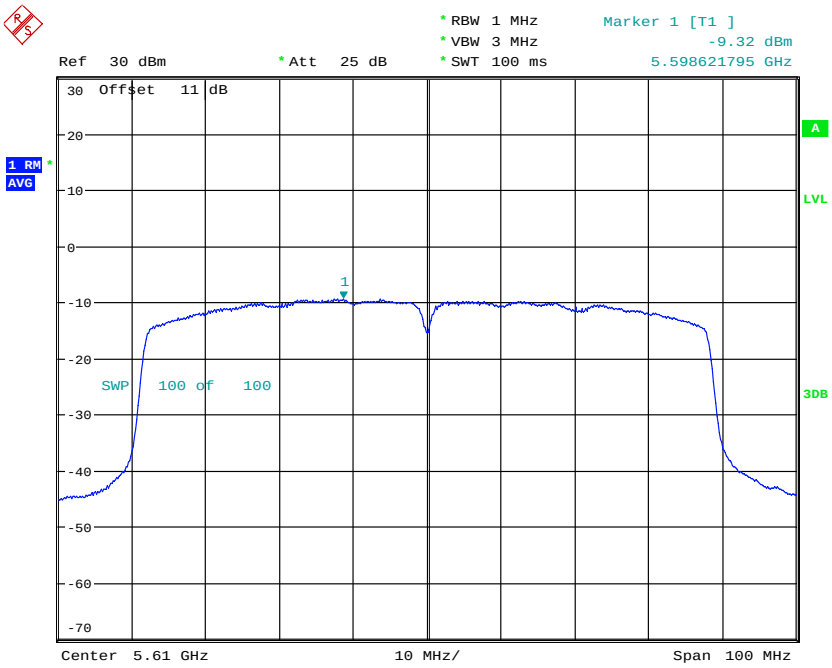
POWER DENSITY AV ANT111ac40CH118
Date: 8.JUN.2018 14:29:57



POWER DENSITY AV ANT111ac40CH134
Date: 8.JUN.2018 14:34:57



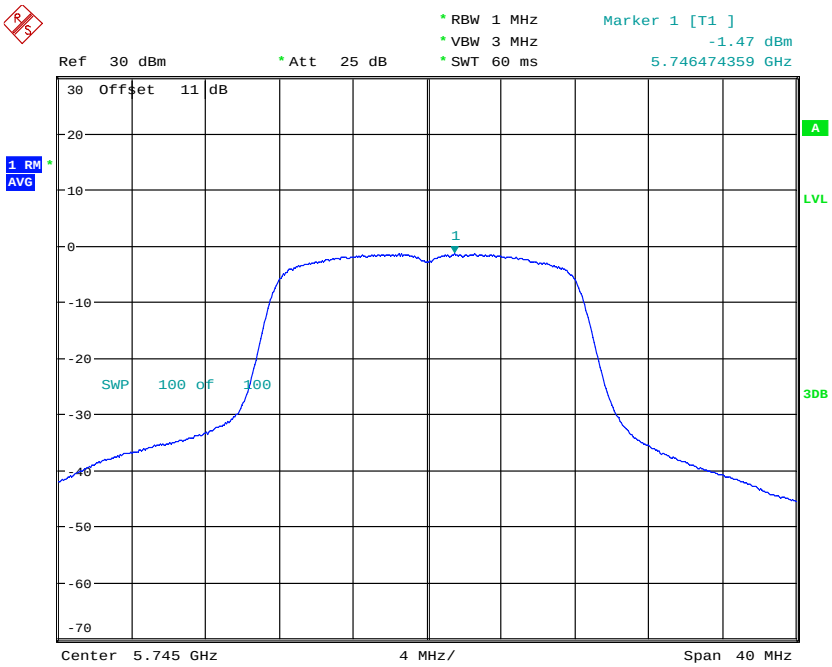
POWER DENSITY AV ANT111ac80CH106
Date: 8.JUN.2018 14:49:04



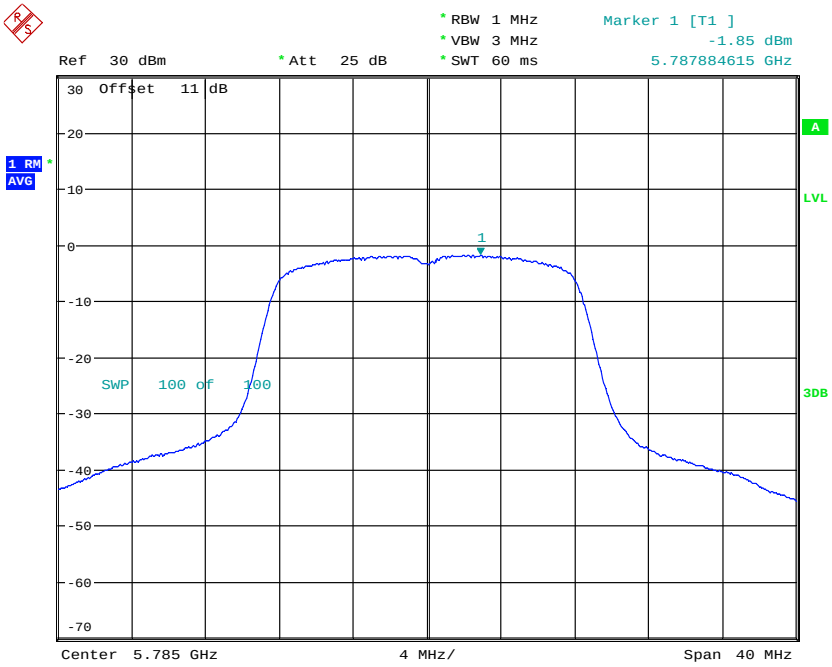
POWER DENSITY AV ANT111ac80CH122
Date: 13.JUN.2018 09:56:14

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

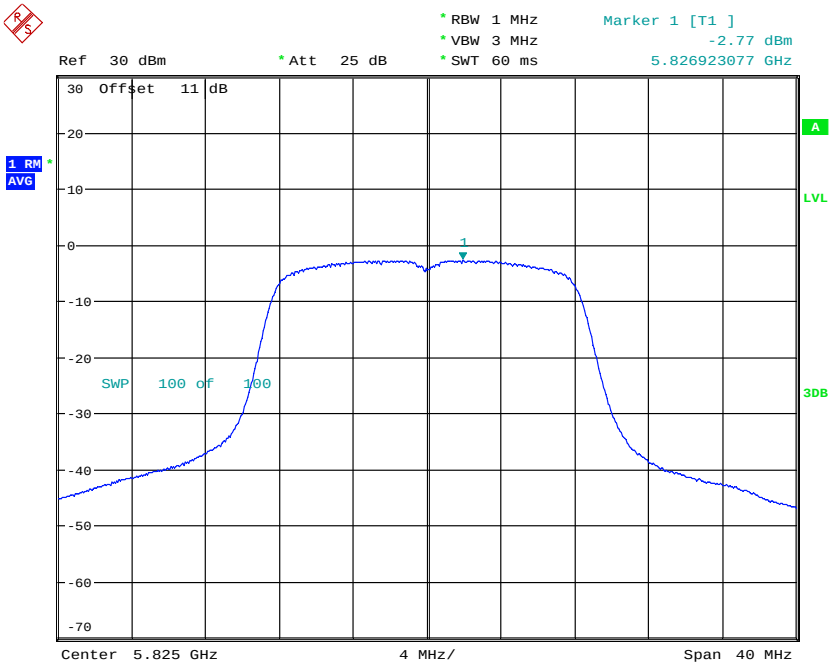
5.725 GHz ~ 5.85 GHz



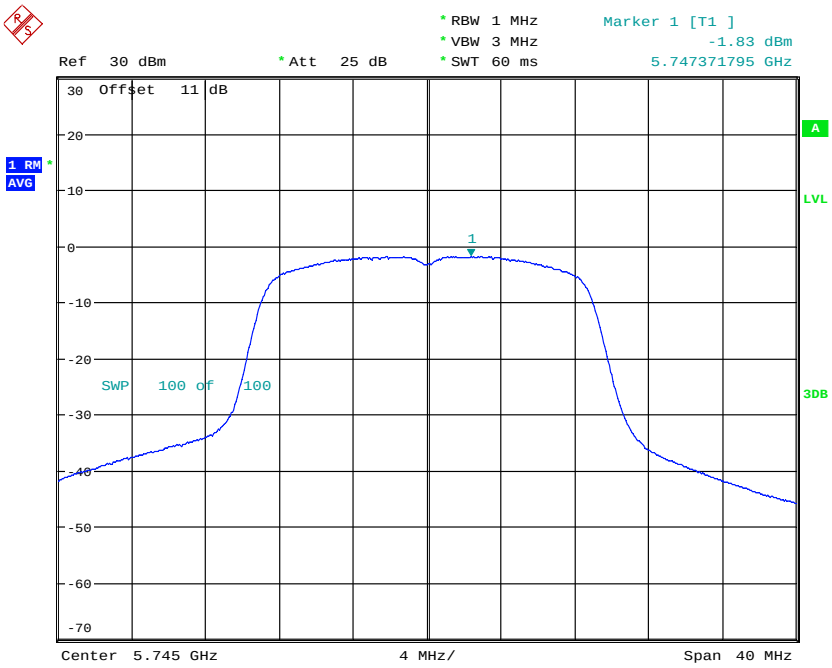
POWER DENSITY AV ANT111aCH149
Date: 8.JUN.2018 15:10:12



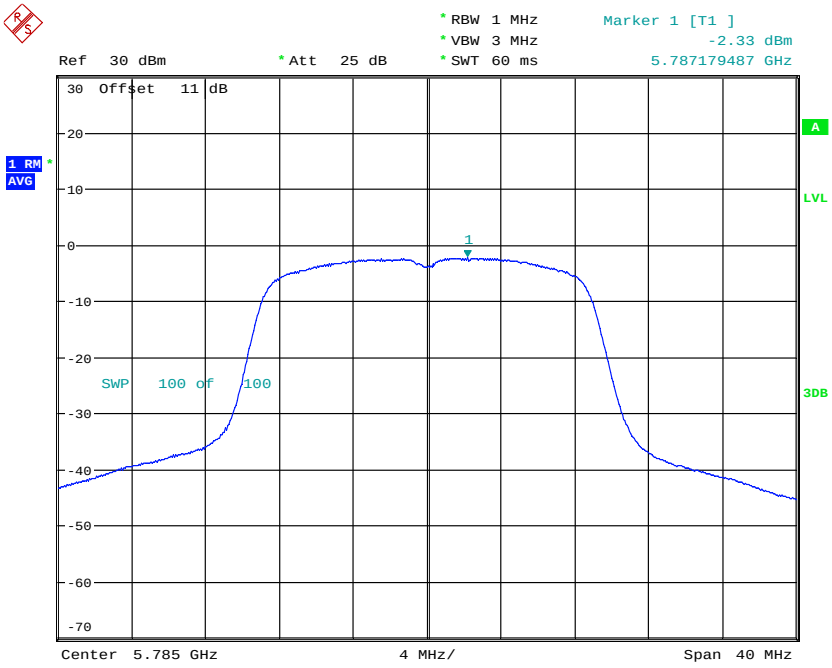
POWER DENSITY AV ANT111aCH157
Date: 13.JUN.2018 10:05:52



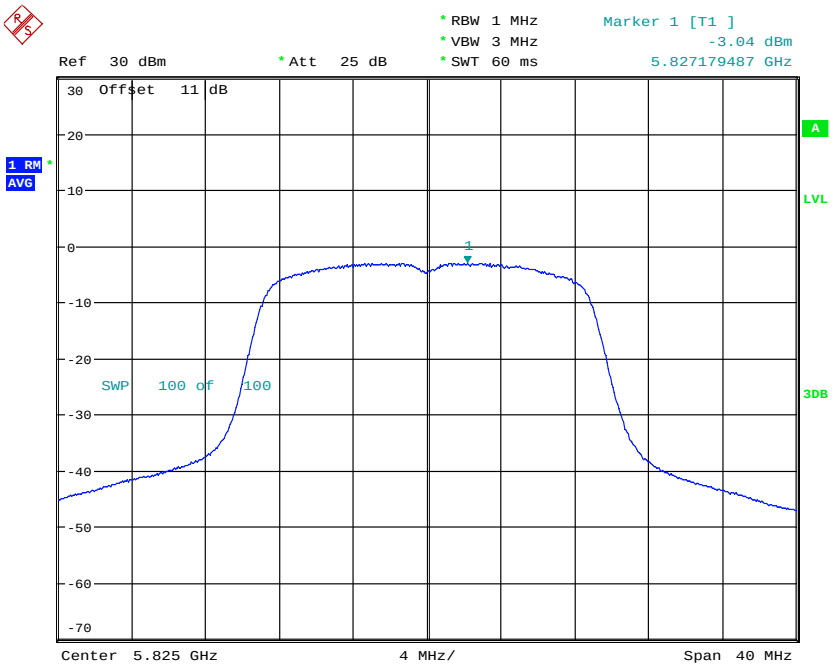
POWER DENSITY AV ANT111aCH165
Date: 13.JUN.2018 10:10:58



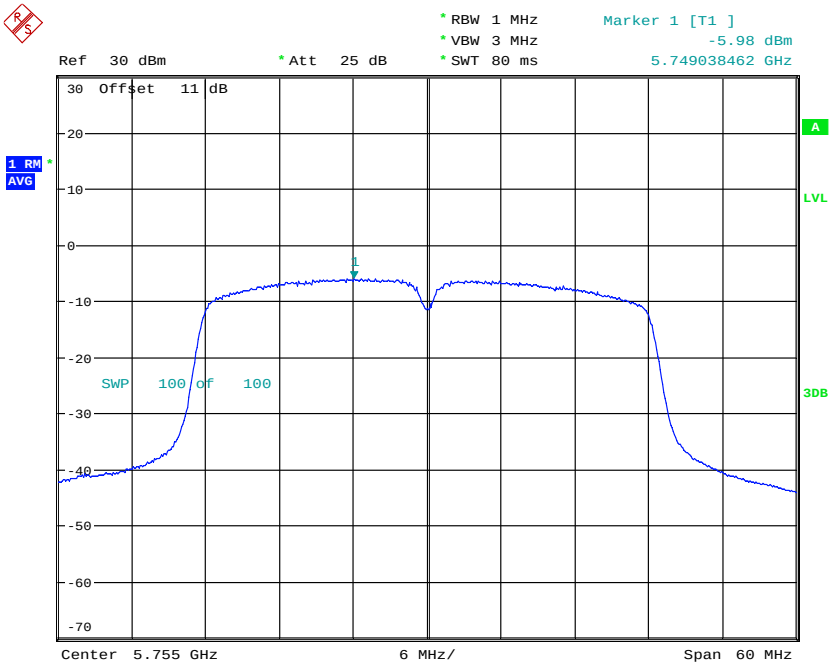
POWER DENSITY AV ANT1 11ac20CH149
Date: 8.JUN.2018 15:11:43



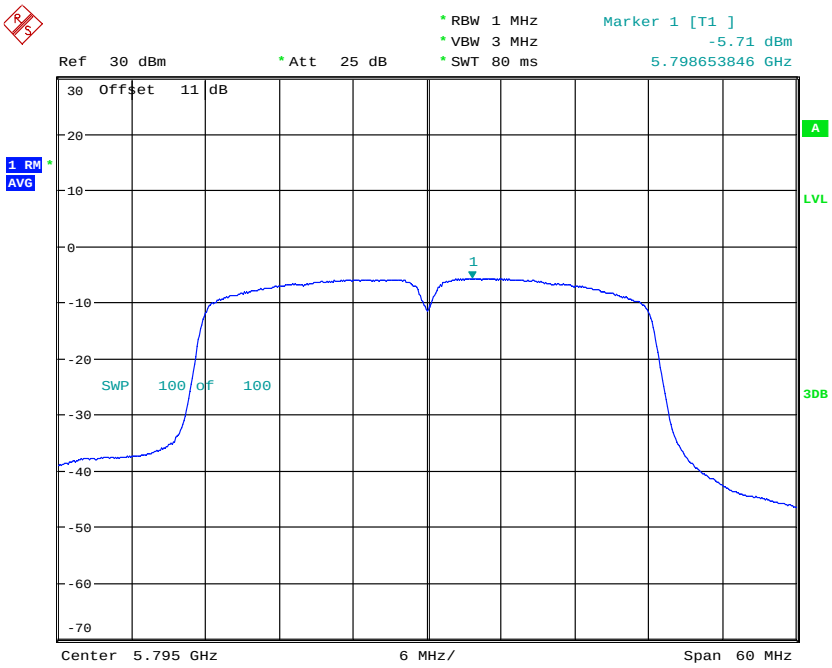
POWER DENSITY AV ANT1 11ac20CH157
Date: 13.JUN.2018 10:07:36



POWER DENSITY AV ANT1 11ac20CH165
Date: 13.JUN.2018 10:09:27

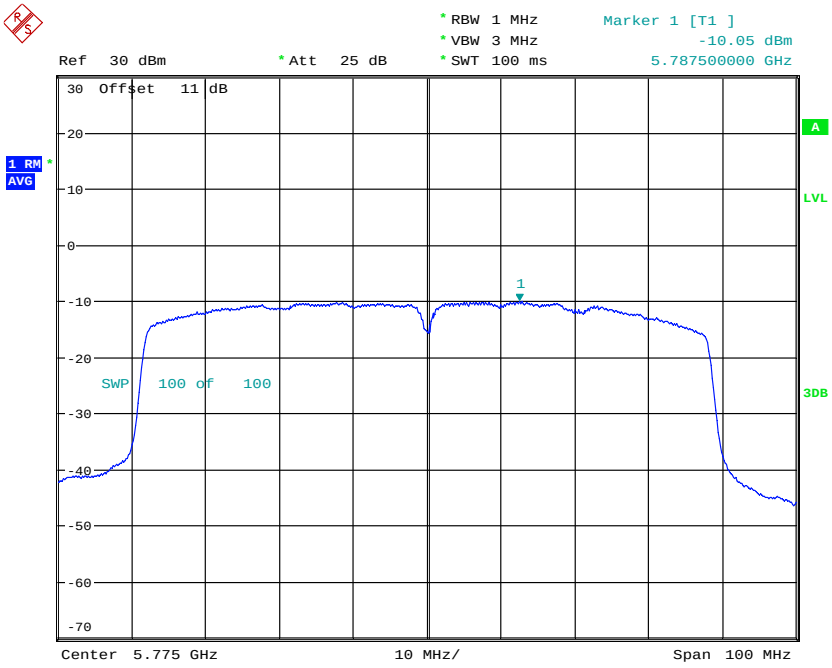


POWER DENSITY AV ANT111ac40CH151
Date: 8.JUN.2018 15:30:20



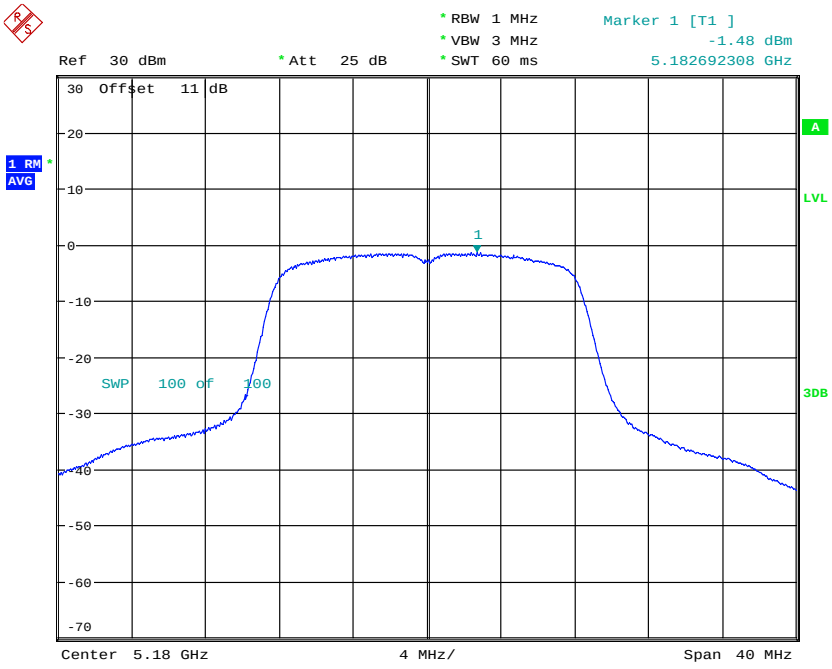
POWER DENSITY AV ANT111ac40CH159
Date: 8.JUN.2018 15:32:28

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

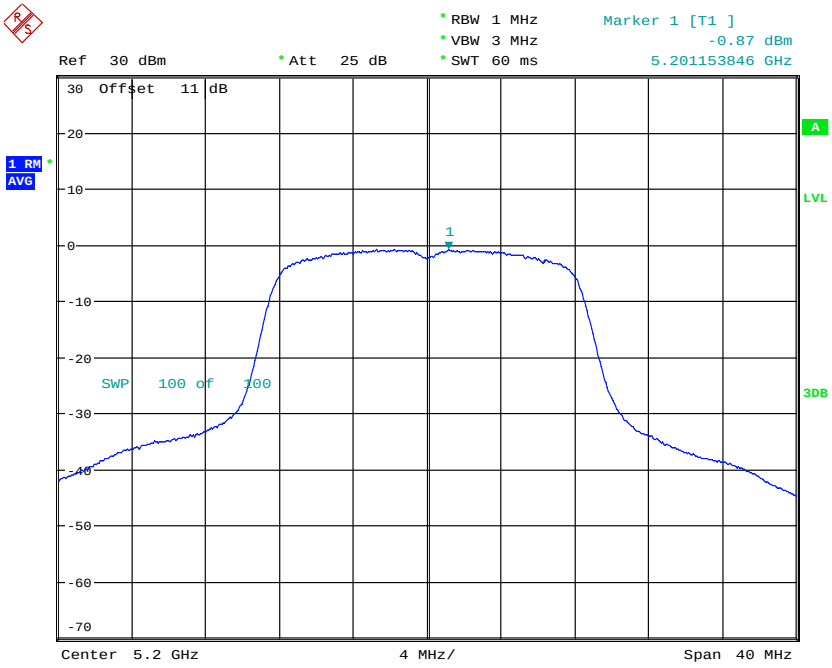


POWER DENSITY AV ANT111ac80CH155
Date: 13.JUN.2018 10:17:03

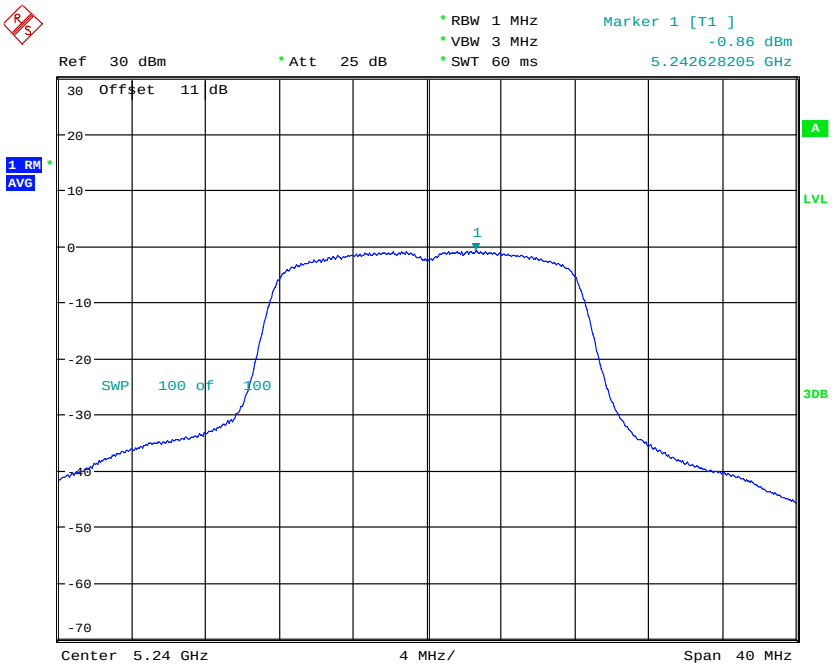
ANT Chain2
5.15 GHz ~ 5.25 GHz



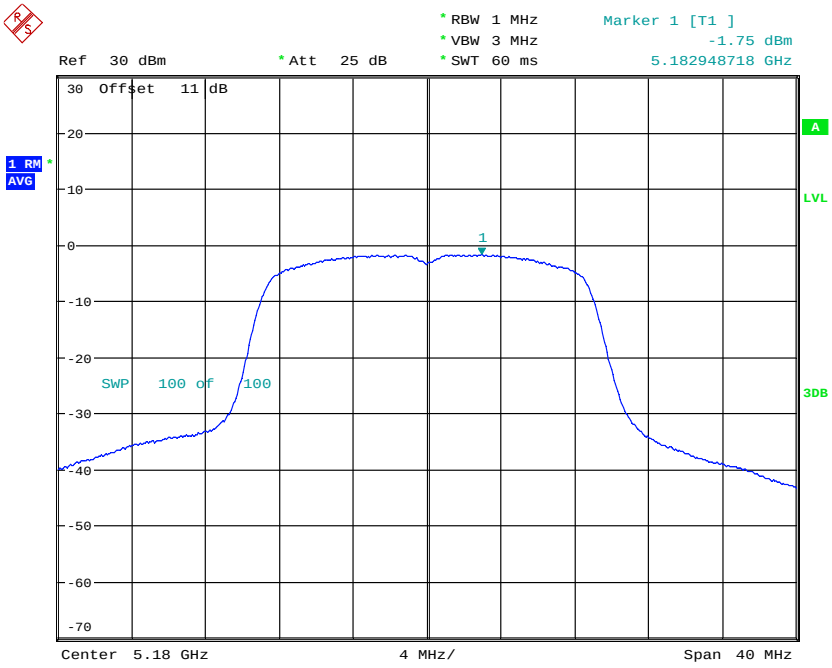
POWER DENSITY AV ANT211aCH36
Date: 8.JUN.2018 11:18:15



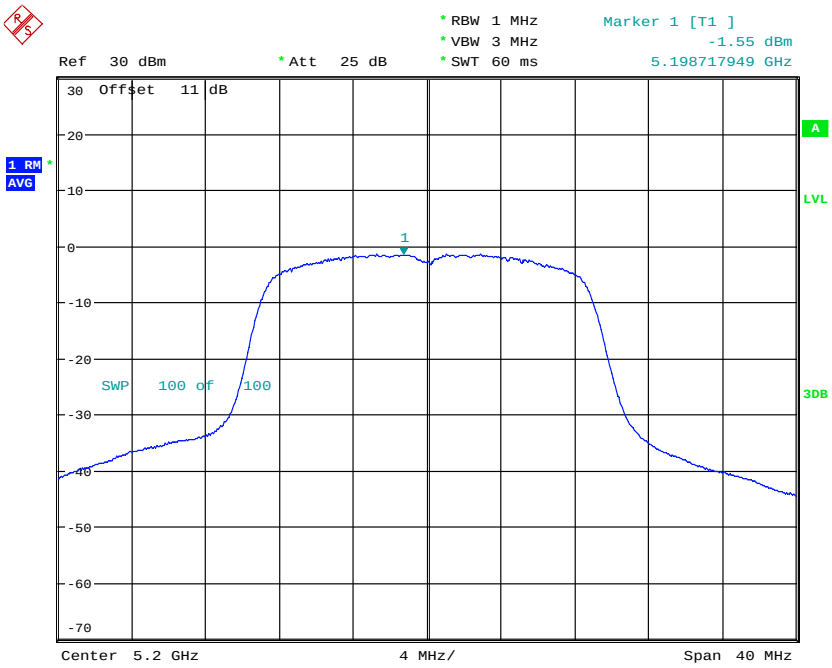
POWER DENSITY AV ANT211aCH40
Date: 8.JUN.2018 11:16:50



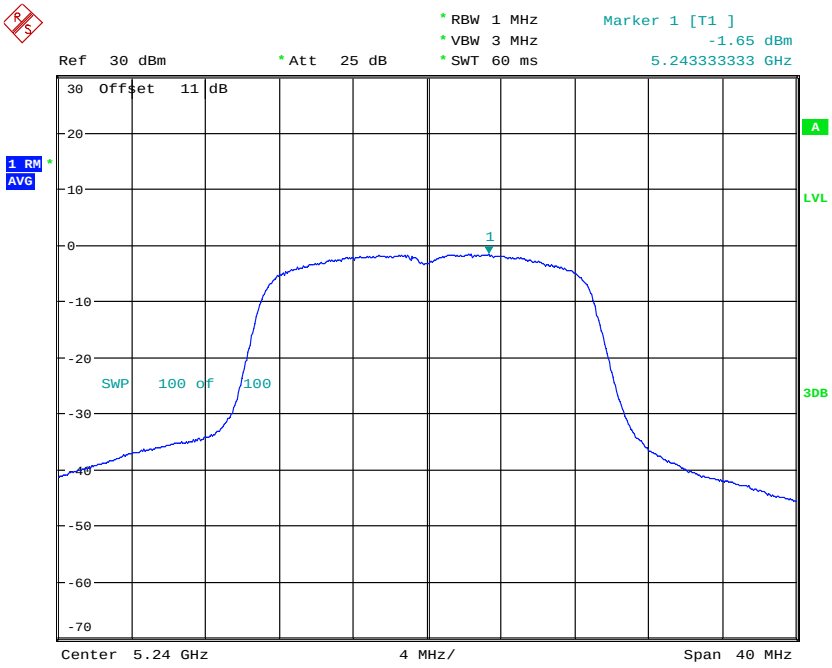
POWER DENSITY AV ANT211aCH48
Date: 8.JUN.2018 11:05:15



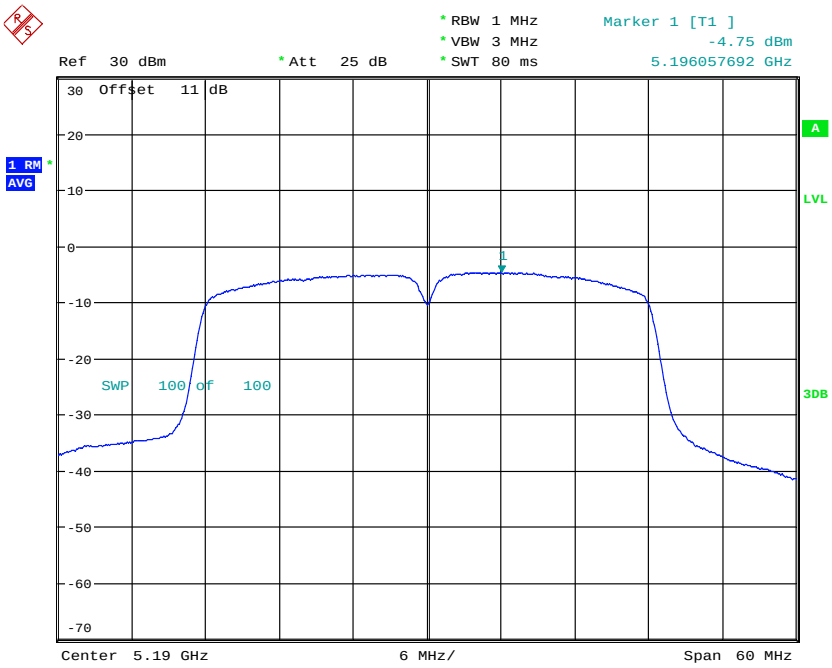
POWER DENSITY AV ANT2 11ac20CH36
Date: 8.JUN.2018 11:19:26



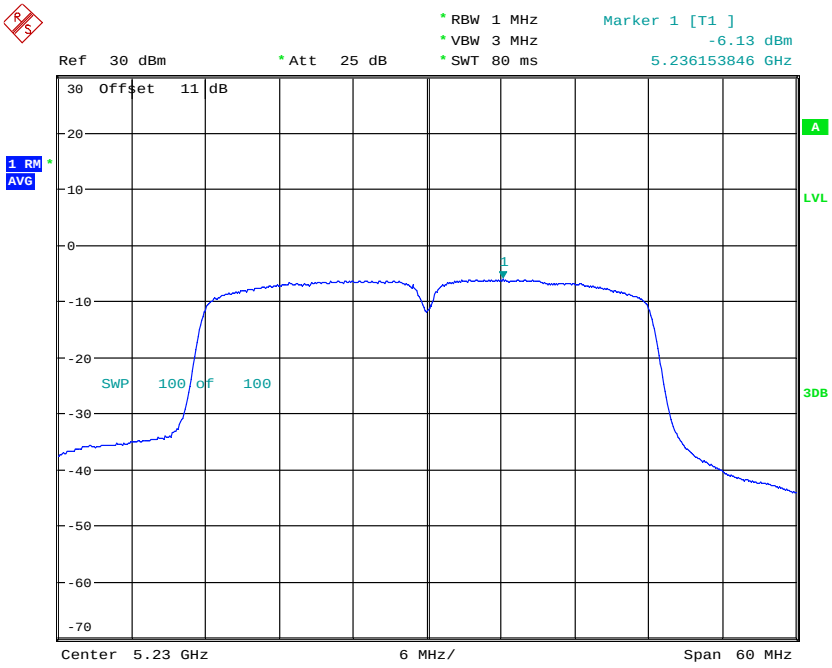
POWER DENSITY AV ANT2 11ac20CH40
Date: 8.JUN.2018 11:15:26



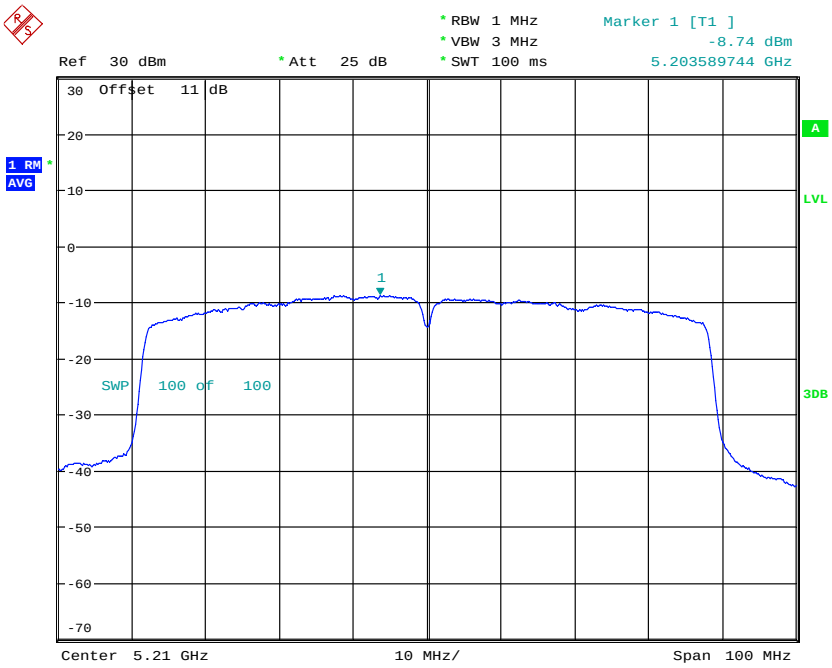
POWER DENSITY AV ANT2 11ac20CH48
Date: 8.JUN.2018 11:06:52



POWER DENSITY AV ANT211ac40CH38
Date: 8.JUN.2018 10:24:49



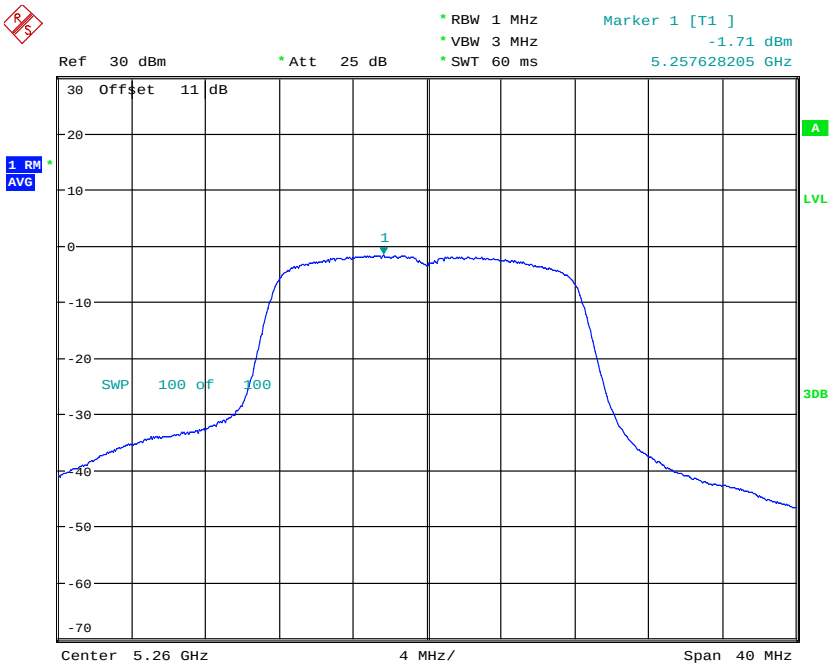
POWER DENSITY AV ANT211ac40CH46
Date: 8.JUN.2018 10:30:12



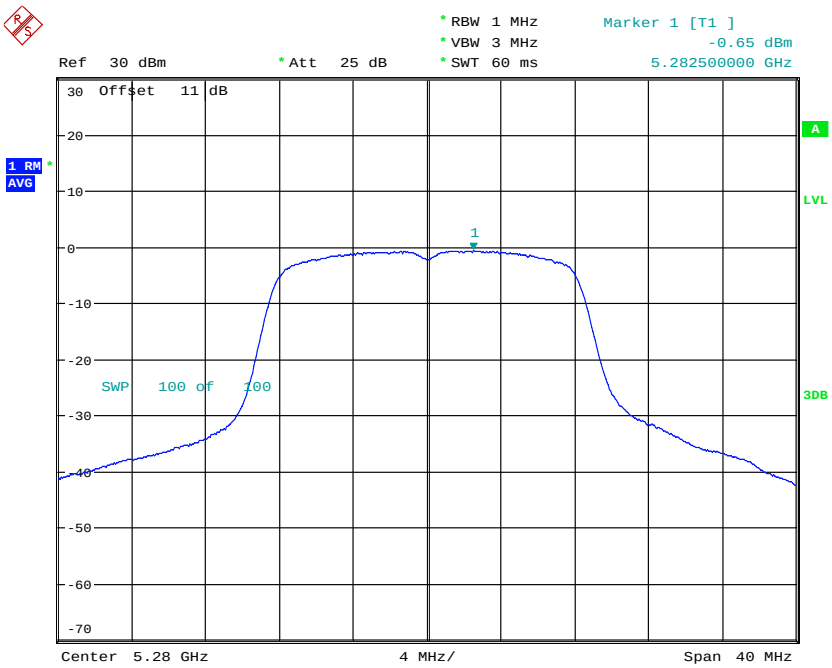
POWER DENSITY AV ANT211ac80CH42
Date: 8.JUN.2018 10:32:04

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

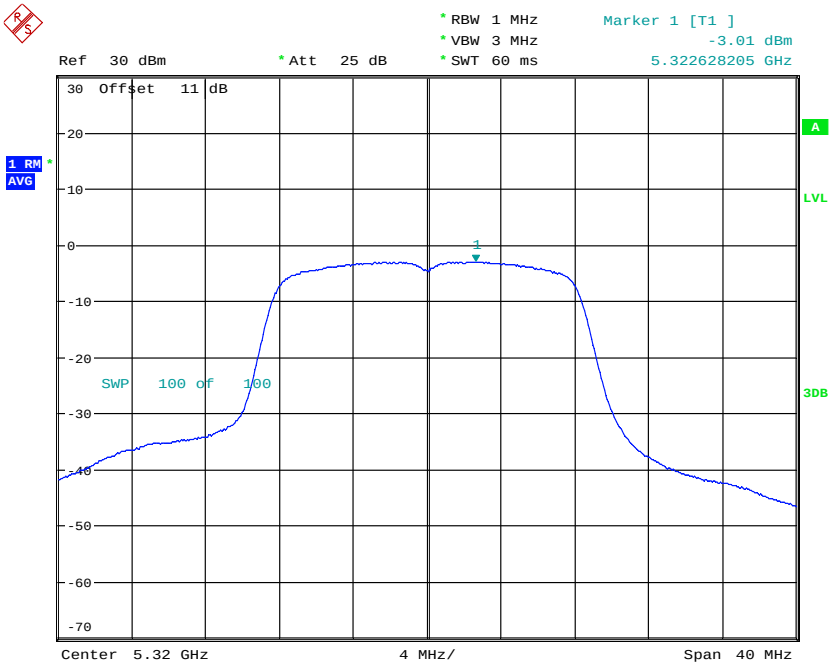
5.25 GHz ~ 5.35 GHz



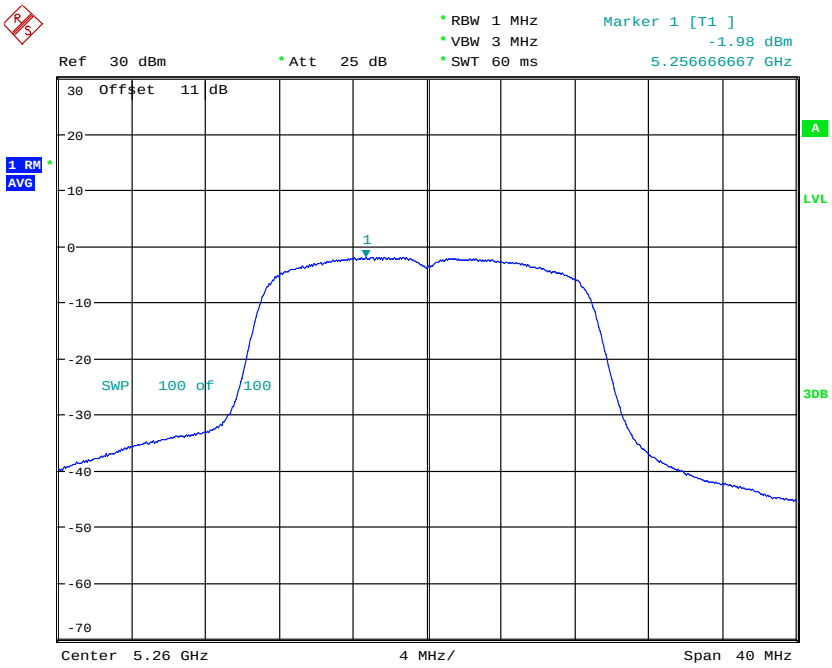
POWER DENSITY AV ANT211aCH52
Date: 8.JUN.2018 11:33:18



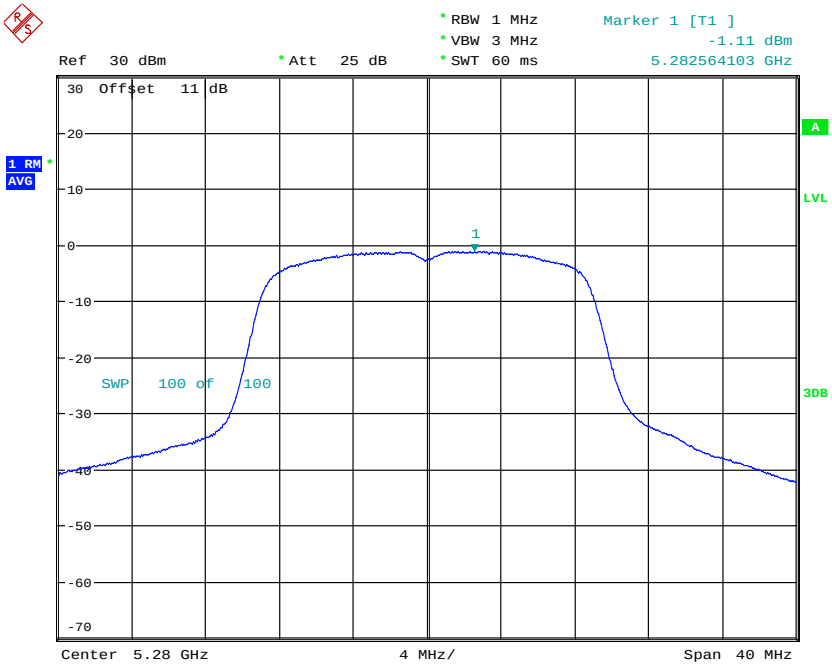
POWER DENSITY AV ANT211aCH56
Date: 8.JUN.2018 11:44:15



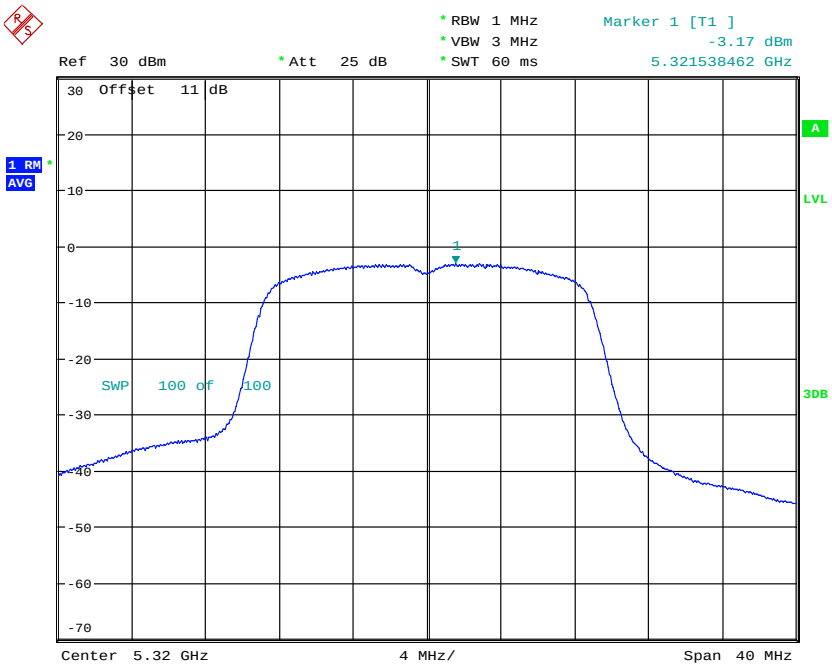
POWER DENSITY AV ANT211aCH64
Date: 13.JUN.2018 10:48:53



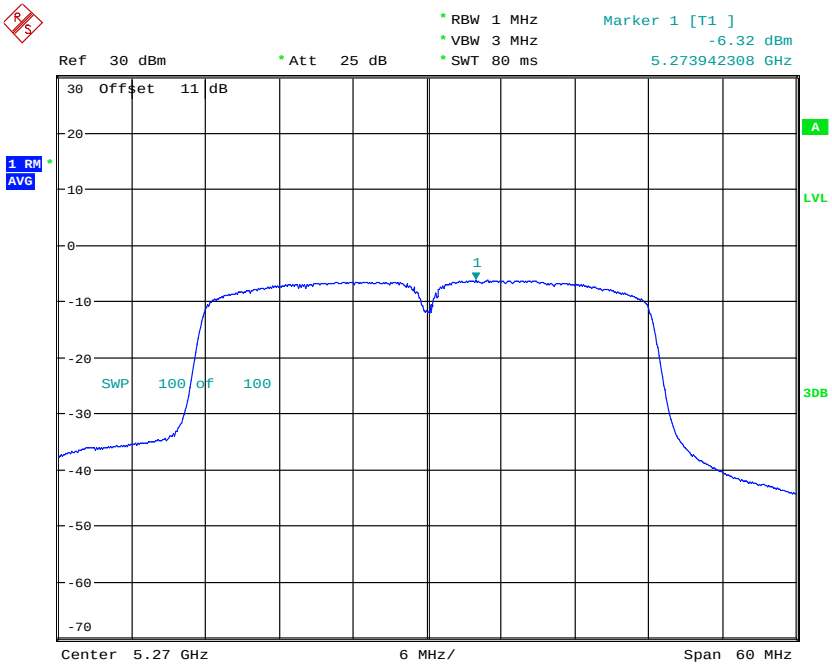
POWER DENSITY AV ANT2 11ac20CH52
Date: 8.JUN.2018 11:31:34



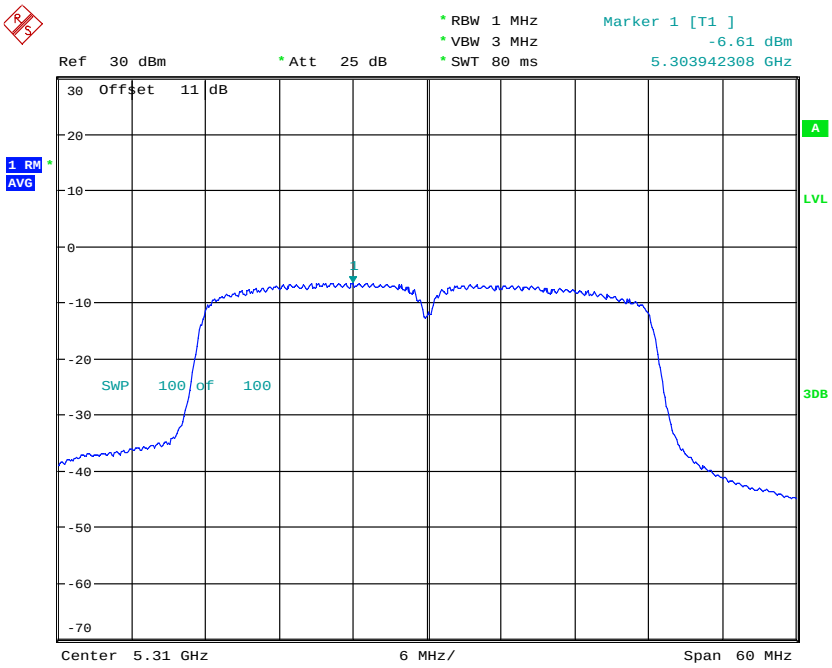
POWER DENSITY AV ANT2 11ac20CH56
Date: 8.JUN.2018 11:41:39



POWER DENSITY AV ANT2 11ac20CH64
Date: 13.JUN.2018 10:45:58

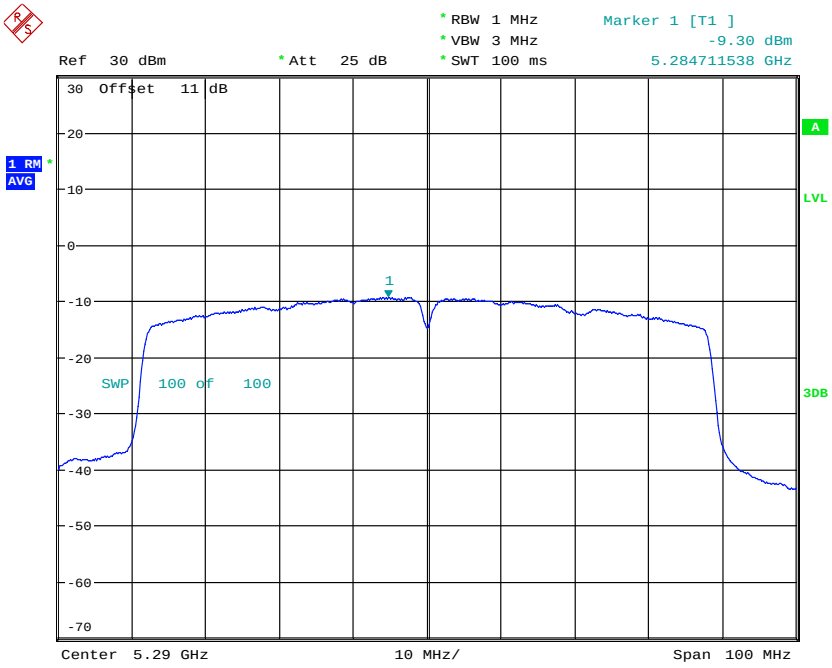


POWER DENSITY AV ANT211ac40CH54
Date: 13.JUN.2018 10:53:30



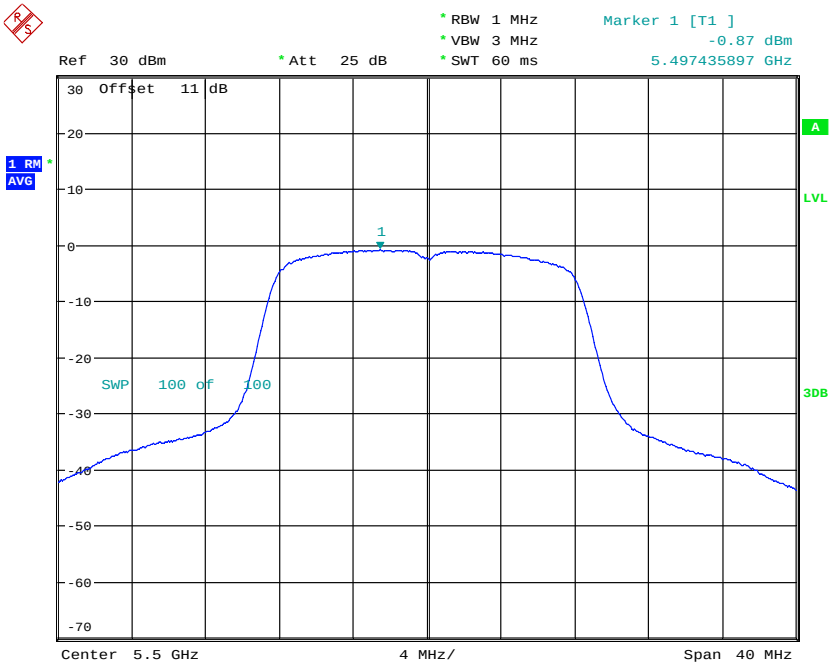
POWER DENSITY AV ANT211ac40CH62
Date: 13.JUN.2018 10:56:30

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

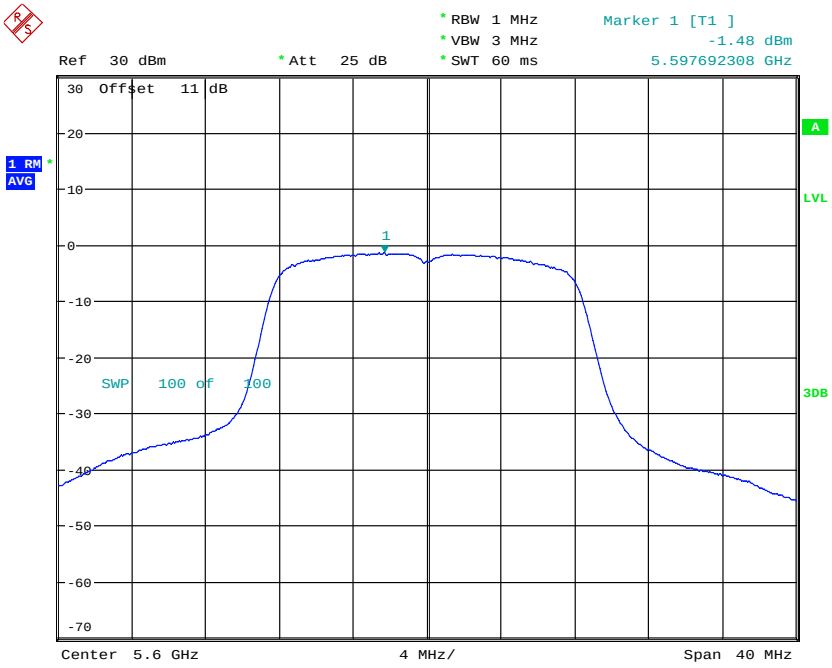


POWER DENSITY AV ANT211ac80CH58
Date: 13.JUN.2018 10:59:00

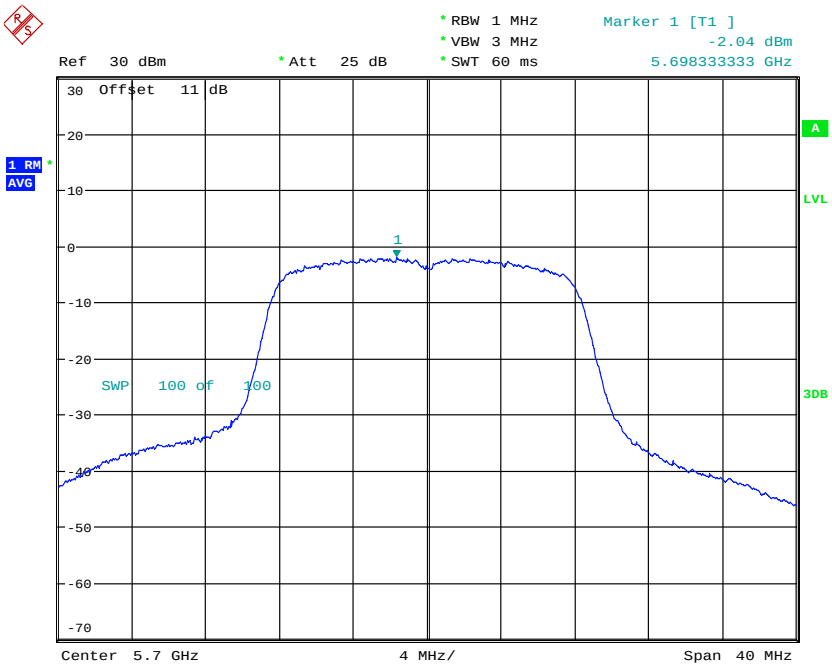
5.47 GHz ~ 5.725 GHz



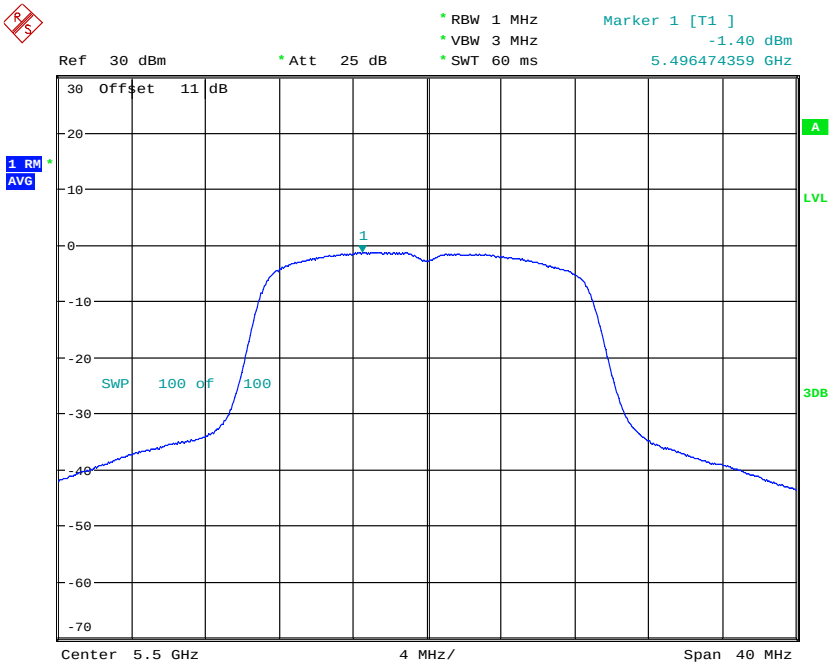
POWER DENSITY AV ANT211aCH100
Date: 13.JUN.2018 11:10:07



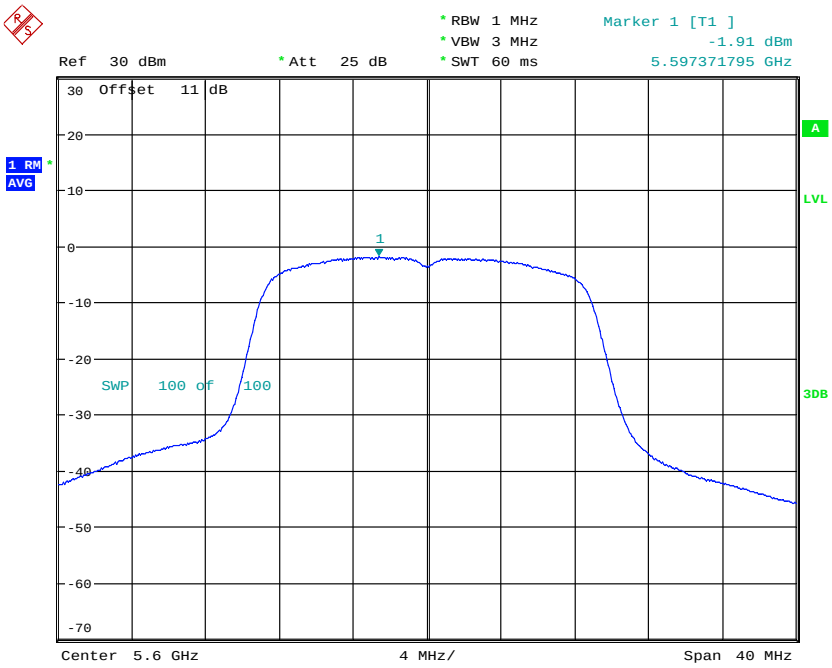
POWER DENSITY AV ANT211aCH120
Date: 13.JUN.2018 11:18:47



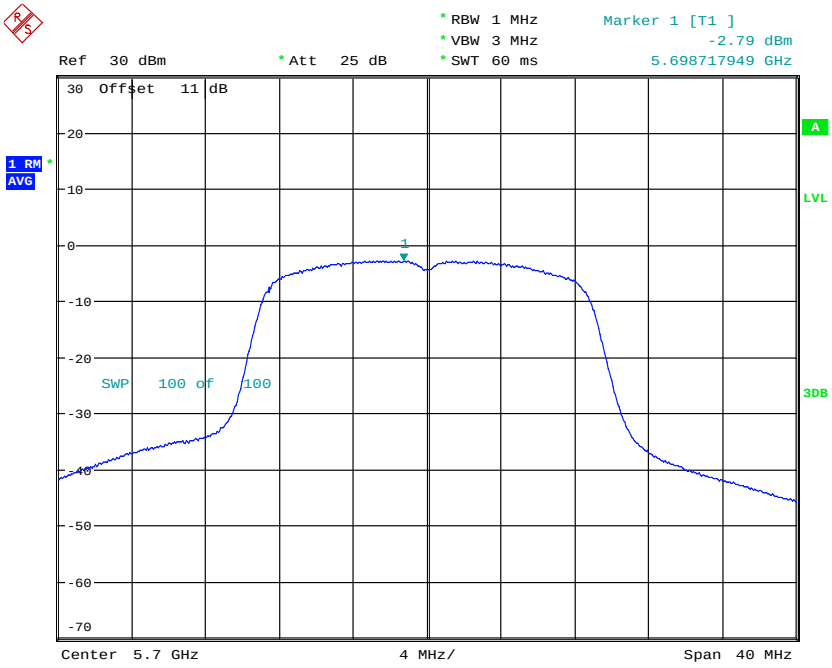
POWER DENSITY AV ANT211aCH140
Date: 8.JUN.2018 14:13:45



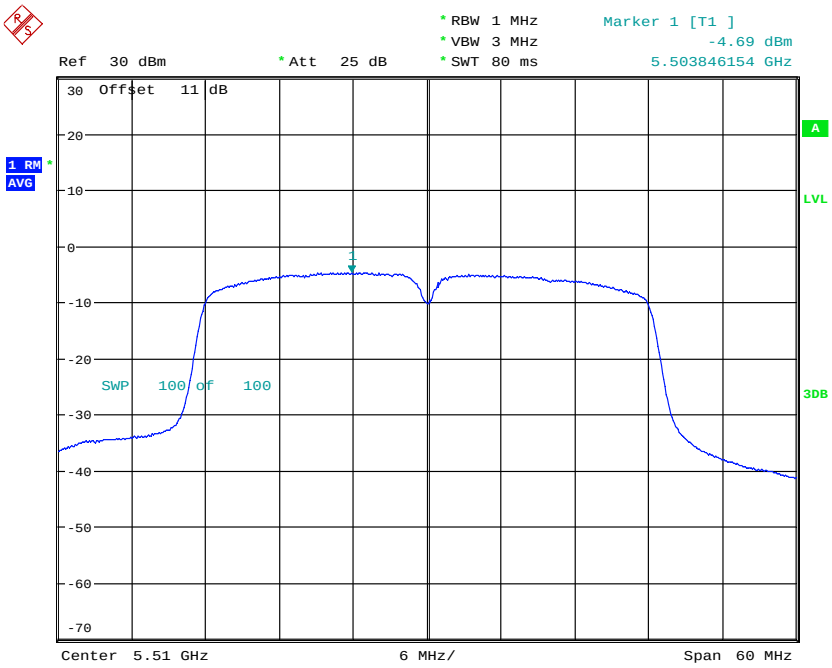
POWER DENSITY AV ANT2 11ac20CH100
Date: 13.JUN.2018 11:12:11



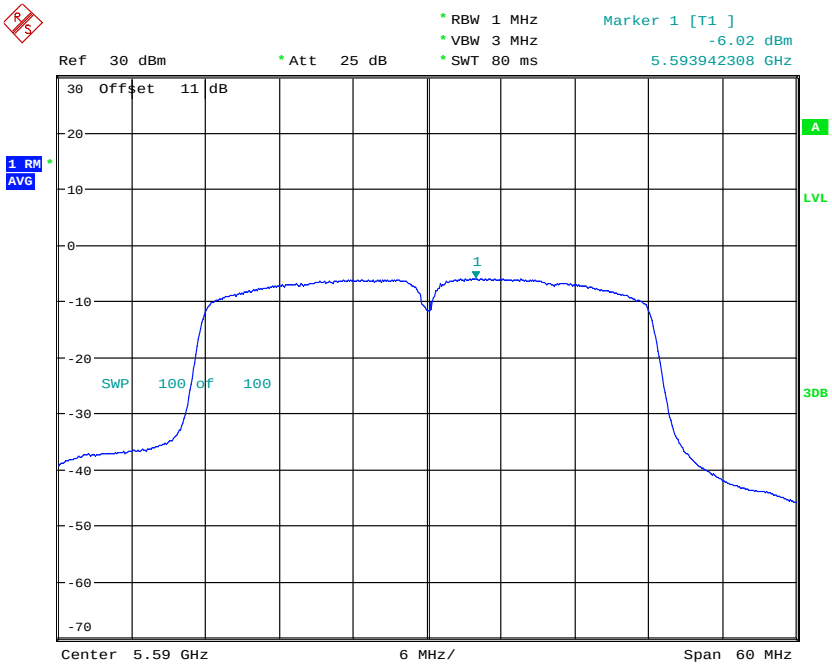
POWER DENSITY AV ANT2 11ac20CH120
Date: 13.JUN.2018 11:14:14



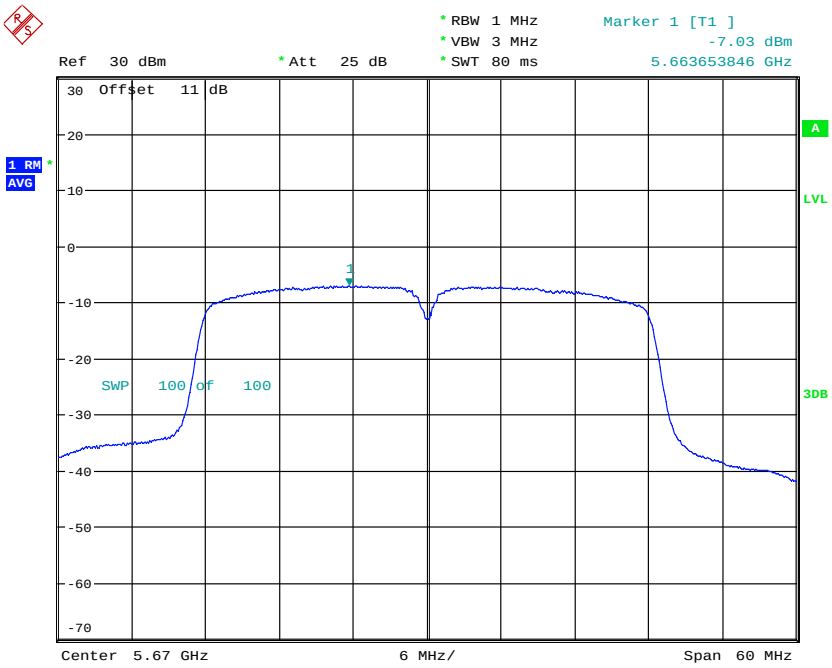
POWER DENSITY AV ANT2 11ac20CH140
Date: 8.JUN.2018 14:11:35



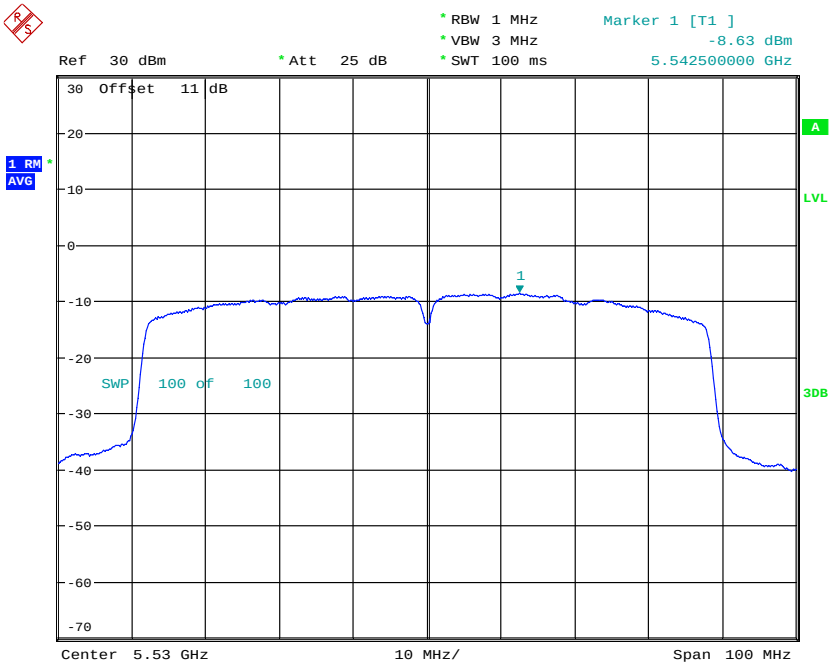
POWER DENSITY AV ANT211ac40CH102
Date: 8.JUN.2018 14:18:05



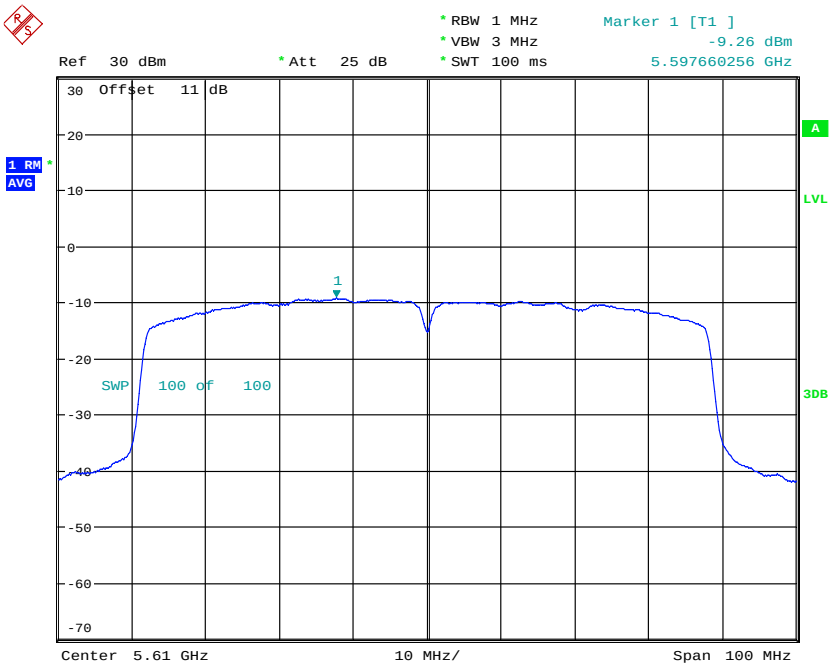
POWER DENSITY AV ANT211ac40CH118
Date: 8.JUN.2018 14:31:35



POWER DENSITY AV ANT211ac40CH134
Date: 8.JUN.2018 14:36:20



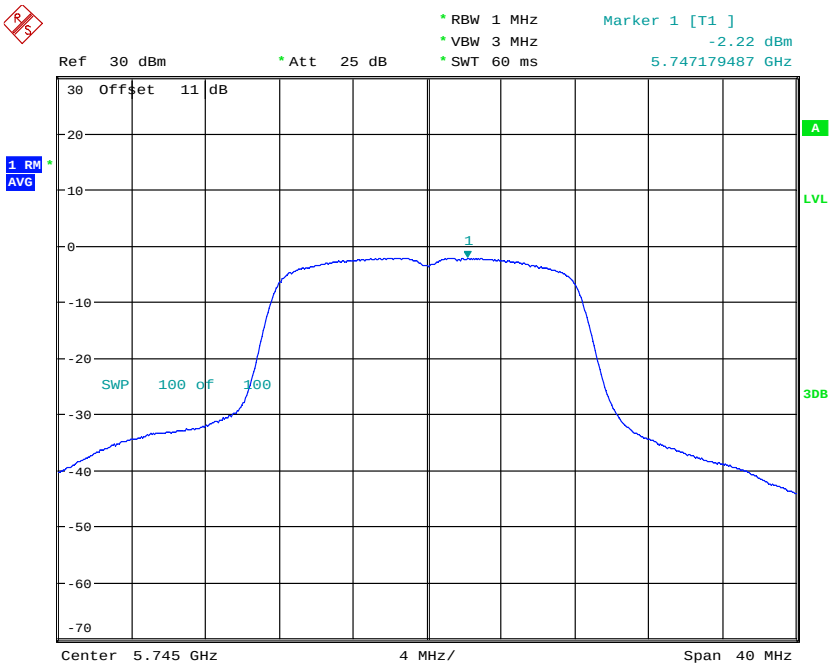
POWER DENSITY AV ANT211ac80CH106
Date: 8.JUN.2018 14:47:30



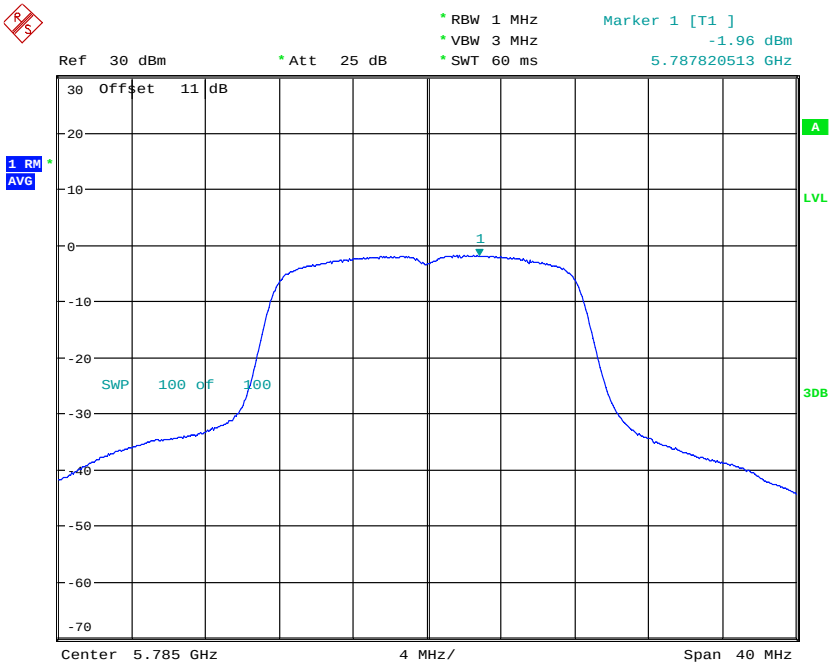
POWER DENSITY AV ANT211ac80CH122
Date: 13.JUN.2018 11:24:21

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

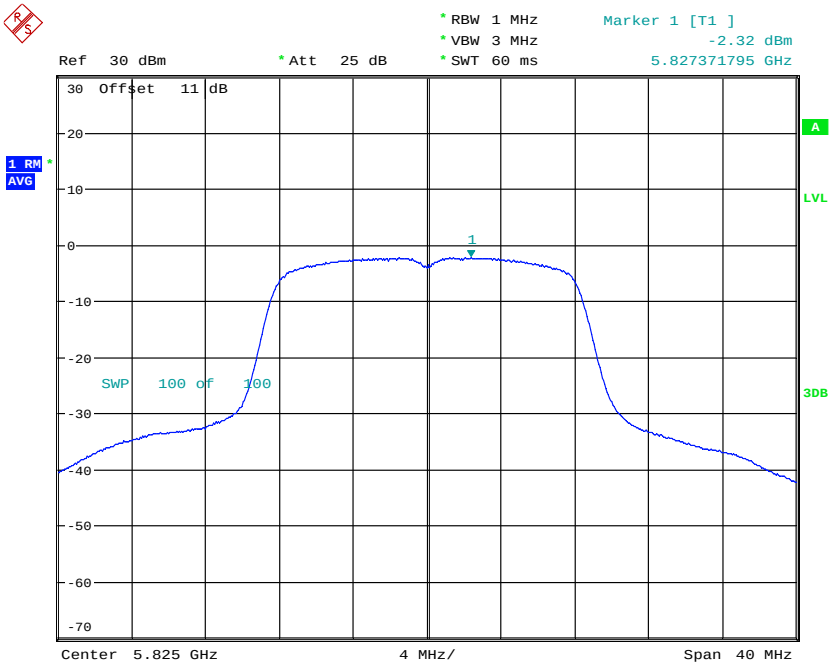
5.725 GHz ~ 5.85 GHz



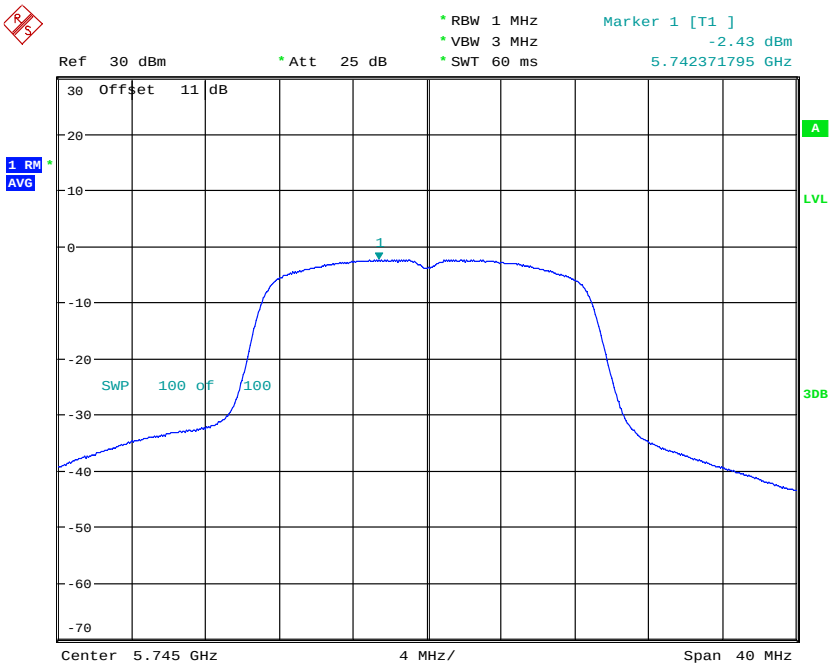
POWER DENSITY AV ANT211aCH149
Date: 8.JUN.2018 15:05:32



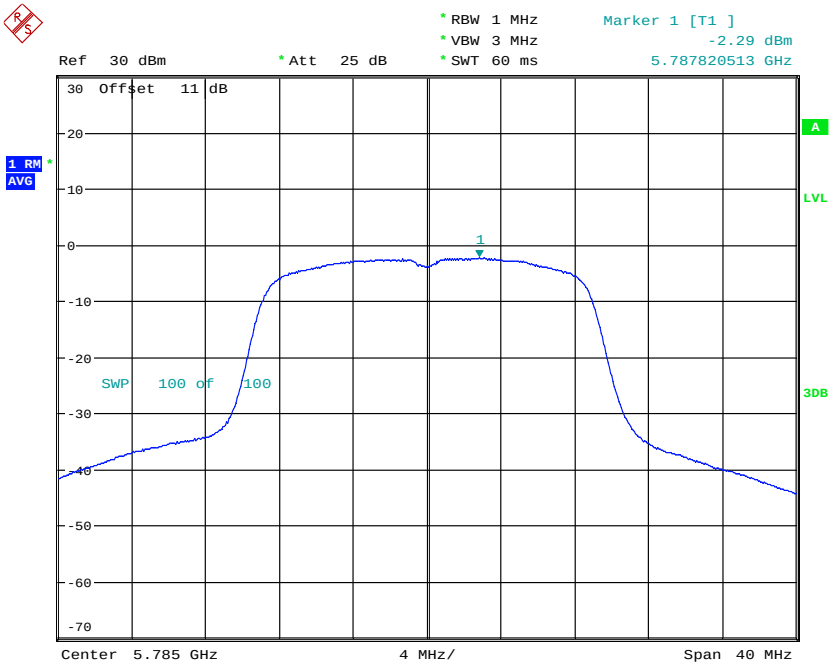
POWER DENSITY AV ANT211aCH157
Date: 13.JUN.2018 11:30:55



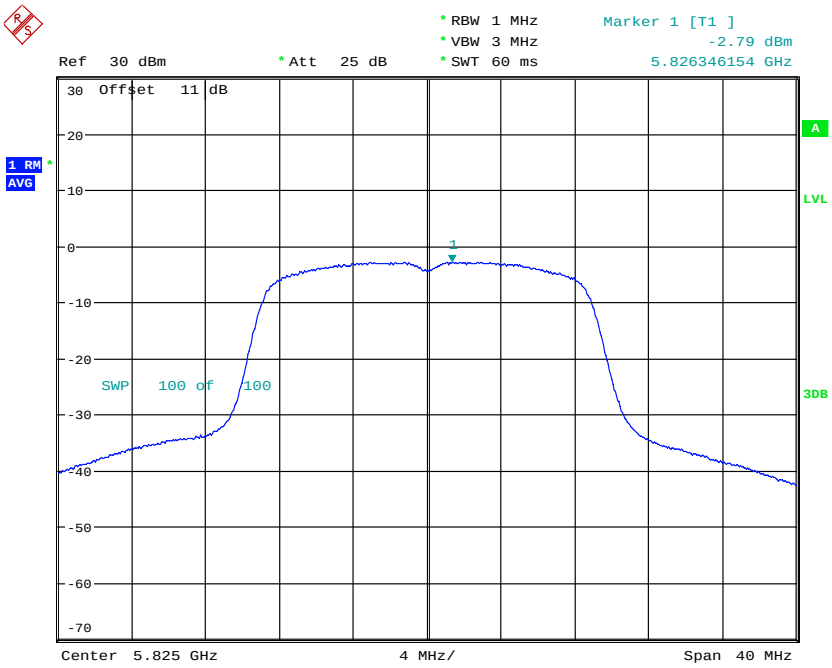
POWER DENSITY AV ANT211aCH165
Date: 13.JUN.2018 11:42:37



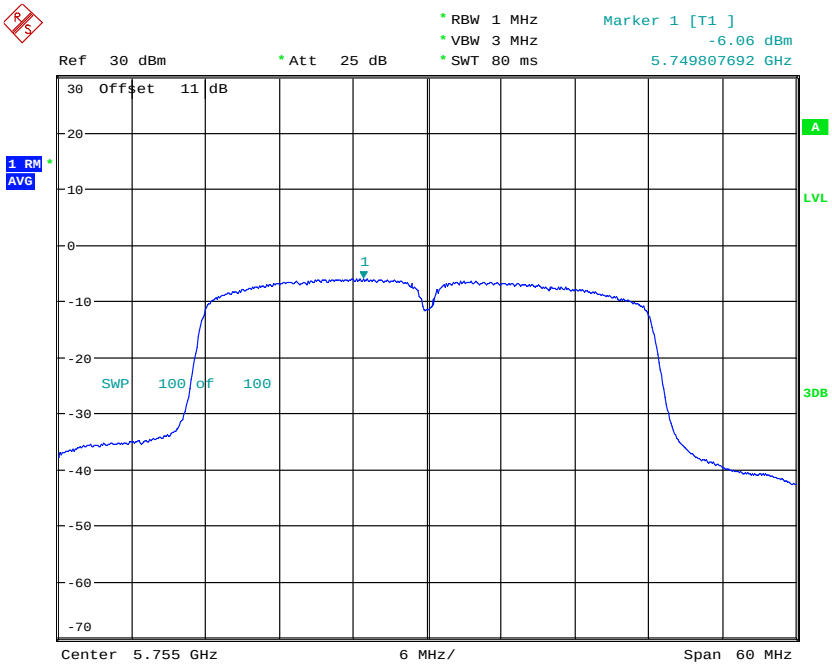
POWER DENSITY AV ANT2 11ac20CH149
Date: 8.JUN.2018 15:13:20



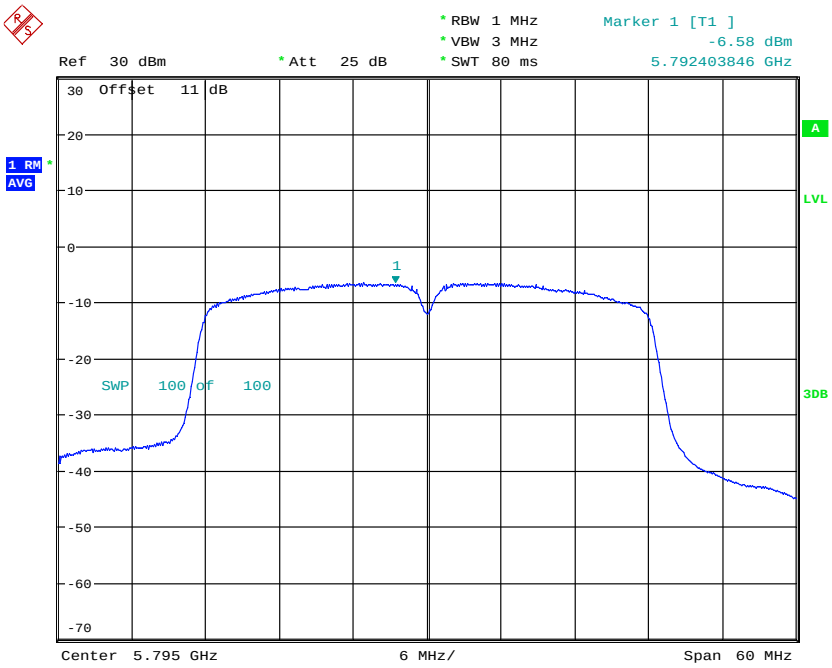
POWER DENSITY AV ANT2 11ac20CH157
Date: 13.JUN.2018 11:33:18



POWER DENSITY AV ANT2 11ac20CH165
Date: 13.JUN.2018 11:36:27

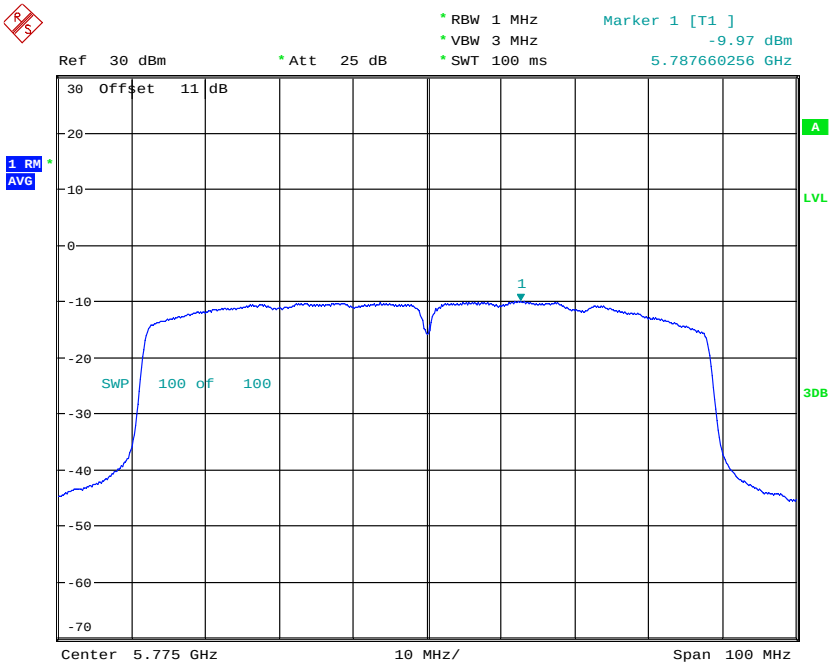


POWER DENSITY AV ANT211ac40CH151
Date: 8.JUN.2018 15:28:58



POWER DENSITY AV ANT211ac40CH159
Date: 8.JUN.2018 15:33:50

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



POWER DENSITY AV ANT211ac80CH155
Date: 13.JUN.2018 11:39:48

5.15GHz~5.25GHz

ANT Chain1	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	0.676	0.820	0.791	-1.7	-0.86	-1.02
802.11ac 40MHz	0.312	--	0.313	-5.06	--	-5.05
802.11ac 80MHz	0.120	--	--	-9.20	--	--
ANT Chain2	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	0.668	0.700	0.684	-1.75	-1.55	-1.65
802.11ac 40MHz	0.335	--	0.244	-4.75	--	-6.13
802.11ac 80MHz	0.134	--	--	-8.74	--	--
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	1.344	1.520	1.475	1.284	1.818	1.688
802.11ac 40MHz	0.647	--	0.557	-1.891	--	-2.541
802.11ac 80MHz	0.254	--	--	-5.952	--	--

5.25GHz~5.35GHz

ANT Chain1	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	0.773	0.787	0.605	-1.12	-1.04	-2.18
802.11ac 40MHz	0.228	--	0.237	-6.43	--	-6.25
802.11ac 80MHz	0.137	--	--	-8.62	--	--
ANT Chain2	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	0.634	0.774	0.482	-1.98	-1.11	-3.17
802.11ac 40MHz	0.233	--	0.218	-6.32	--	-6.61
802.11ac 80MHz	0.117	--	--	-9.30	--	--
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	1.407	1.561	1.087	1.483	1.934	0.362
802.11ac 40MHz	0.461	--	0.455	-3.363	--	-3.42
802.11ac 80MHz	0.254	--	--	-5.952	--	--

5.47GHz~5.725GHz

ANT Chain1	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	0.627	0.632	0.687	-2.03	-1.99	-1.63
802.11ac 40MHz	0.229	0.262	0.221	-6.41	-5.81	-6.55
802.11ac 80MHz	0.107	--	0.117	-9.71	--	-9.32
ANT Chain2	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	0.724	0.644	0.526	-1.40	-1.91	-2.79
802.11ac 40MHz	0.340	0.250	0.199	-4.69	-6.02	-7.02
802.11ac 80MHz	0.137	--	0.119	-8.63	--	-9.26
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	1.351	1.276	1.213	1.307	1.059	0.839
802.11ac 40MHz	0.569	0.512	0.420	-2.449	-2.907	-3.768
802.11ac 80MHz	0.244	--	0.236	-6.126	--	-6.271

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

5.725GHz~5.85GHz

ANT Chain1	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	0.656	0.585	0.497	-1.83	-2.33	-3.04
802.11ac 40MHz	0.252	--	0.269	-5.98	--	-5.71
802.11ac 80MHz	0.099	--	--	-10.05	--	--
ANT Chain2	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	0.571	0.590	0.526	-2.43	-2.29	-2.79
802.11ac 40MHz	0.248	--	0.220	-6.06	--	-6.58
802.11ac 80MHz	0.101	--	--	-9.97	--	--
Combine	mW			dBm		
	Ch Low	Ch Mid	Ch High	Ch Low	Ch Mid	Ch High
802.11ac 20MHz	1.227	1.175	1.023	0.888	0.7	0.099
802.11ac 40MHz	0.500	--	0.489	-3.01	--	-3.107
802.11ac 80MHz	0.200	--	--	-6.99	--	--

Test equipment used: ETSTW-RE 055, ETSTW-RE 050

3.5 Undesirable emission limits, FCC 15.407 (b)

1. For transmitters operating in the 5.15–5.25 GHz band: all emissions out-side of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.
2. For transmitters operating in the 5.25–5.35 GHz band: all emissions out-side of the 5.15–5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. De-vices operating in the 5.25–5.35 GHz band that generate emissions in the 5.15–5.25 GHz band must meet all appli-cable technical requirements for operation in the 5.15–5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15–5.25 GHz band.
3. For transmitters operating in the 5.47–5.725 GHz band: all emissions out-side of the 5.47–5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
4. For transmitters operating in the 5.725–5.850 GHz band: 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.
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.
7. According to According to KDB 789033 D02 General UNII Test Procedures v01, as specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.
8. If radiated measurements are performed, field strength is then converted to EIRP as follows:
   (i) EIRP = ((E*d)^2) / 30, where: E is the field strength in V/m; d is the measurement distance in meters. EIRP is the equivalent isotropically radiated power in watts.
   (ii) Working in dB units, the above equation is equivalent to: EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77.
   (iii) Or, if d is 3 meters: EIRP[dBm] = E[dBμV/m] - 95.2.

Applicable to	Limit	
☒	FIELD STRENGTH at 3m (dBμV/m)	
	PK	AV
	74	54
☐	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH at 3m (dBμV/m)
	PK	PK
	-27	68.3

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

Model:	JWX6058	Date:	--		
Mode:	--	Temperature:	--	°C	Engineer: --
Polarization:	Horizontal	Humidity:	--	%	

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--

Frequency (MHz)	Reading (dBuV) Peak	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV/m) Peak	Result (dBuV/m) Ave.	Limit (dBuV/m) Peak	Limit (dBuV/m) Ave.	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 147, ETSTW-RE 088, ETSTW-RE 018

Explanation: See attached diagrams in appendix.

3.6 Automatic Discontinuation of transmission, FCC 15.407 (c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure.
This function will be declared by manufacturer.

3.7 Reserved, FCC 15.407 (d)

3.8 Indoor Operation Restriction, FCC 15.407 (e)

Within the 5.15–5.25 GHz band, U- NII devices will be restricted to indoor operations to reduce any potential for harmful interference to co-channel MSS operations. This equipment has to be declared by manufacturer of the final product as content of the user manual.

3.9 Equivalent isotropic radiated power, FCC 15.407 (f)

FCC Rule: 15.407(b)(3)
Band 1
Test exclusion = max. conducted output power + adjusted for tune-up tolerance
Test exclusion = 12.7 dBm

Band 2
Test exclusion = max. conducted output power + adjusted for tune-up tolerance
Test exclusion = 12.75 dBm

Band 3
Test exclusion = max. conducted output power + adjusted for tune-up tolerance
Test exclusion = 12.3 dBm

Band 4
Test exclusion = max. conducted output power + adjusted for tune-up tolerance
Test exclusion = 11.84 dBm

Test equipment used: ETSTW-RE 055

3.10 RF Exposure Compliance Requirements

ystems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.25 m normally can be maintained between the user and the device.
FCC OET Bulletin 65 Edition 97.01 determines the equations for predicting RF fields and applicable limits.
The prediction for power density in the far-field but will over-predict power density in the near field, where it could be used for walking a “worst case” or conservative prediction.

$$S = \frac{PG}{4 \pi R^2}$$

S – Power Density
P – Output power ERP
R – Distance
D – Cable Loss
AG – Antenna Gain

Band 1

Item	Unit	Value	**Remarks**
P	mW	18.63	Peak value
D	dB	- -	- -
AG	dBi	5.01	- -
G	- -	3.17	Calculated Value
R	cm	20	Assumed value
S	mW/cm2	0.0117	Calculated value

Band 2

Item	Unit	Value	**Remarks**
P	mW	18.84	Peak value
D	dB	- -	- -
AG	dBi	5.01	- -
G	- -	3.17	Calculated Value
R	cm	20	Assumed value
S	mW/cm2	0.119	Calculated value

Band 3

Item	Unit	Value	**Remarks**
P	mW	16.97	Peak value
D	dB	- -	- -
AG	dBi	5.01	- -
G	- -	3.17	Calculated Value
R	cm	20	Assumed value
S	mW/cm2	0.0107	Calculated value

Band 4

Item	Unit	Value	**Remarks**
P	mW	15.27	Peak value
D	dB	- -	- -
AG	dBi	5.01	- -
G	- -	3.17	Calculated Value
R	cm	20	Assumed value
S	mW/cm2	0.0096	Calculated value

Limits:

Limit for General Population / Uncontrolled Exposure	
Frequency (MHz)	Power Density (mW/cm^2)
1500 – 100.000	1.0

3.11 Transmit Power Control (TPC)

Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

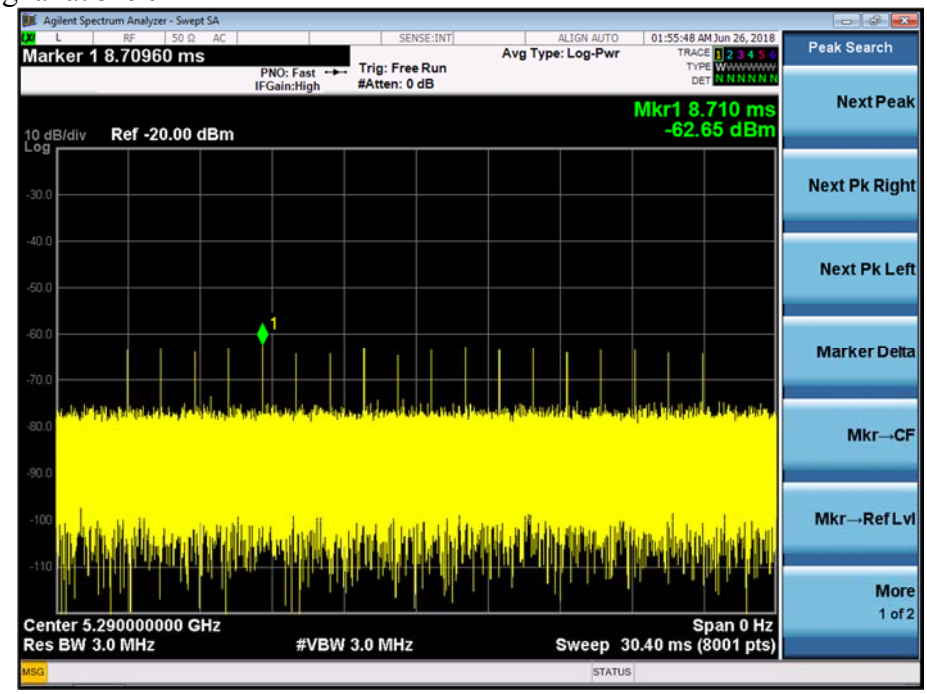
Explanation: Max put power of the EUT is less than 500 mW (27dBm) so this test item is not required.

3.12 Dynamic Frequency Selection (DFS)

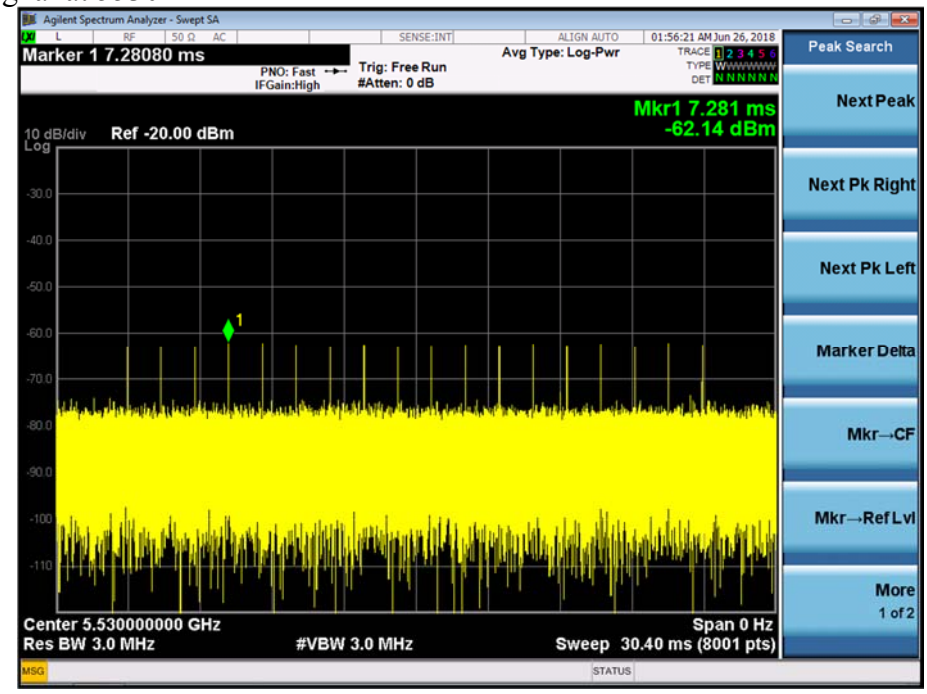
3.12.1 DFS Detection Threshold

Radar Type

Type0 Radar Signal at 5290MHz



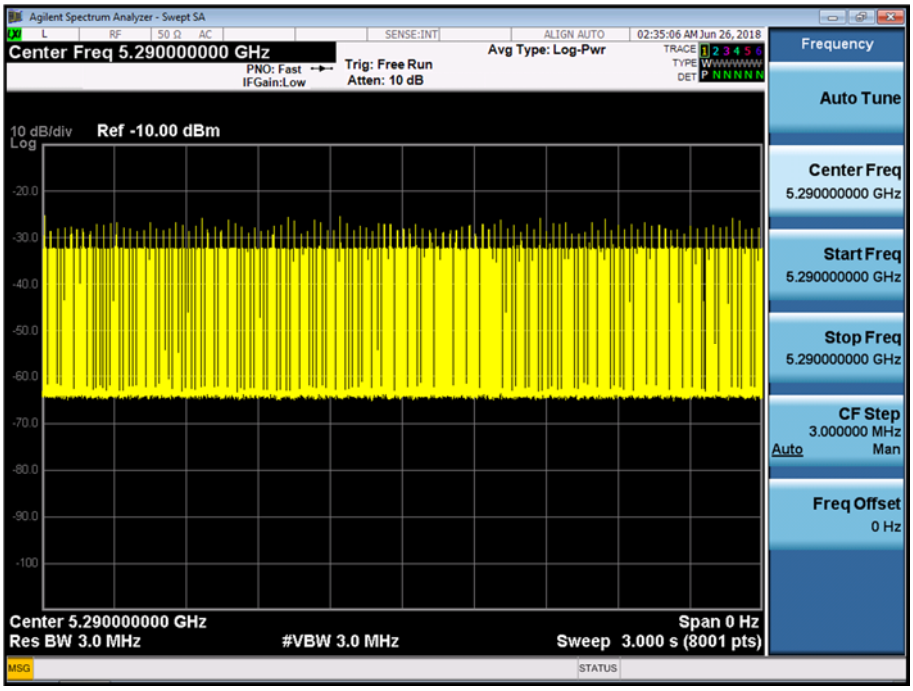
Type0 Radar Signal at 5530MHz



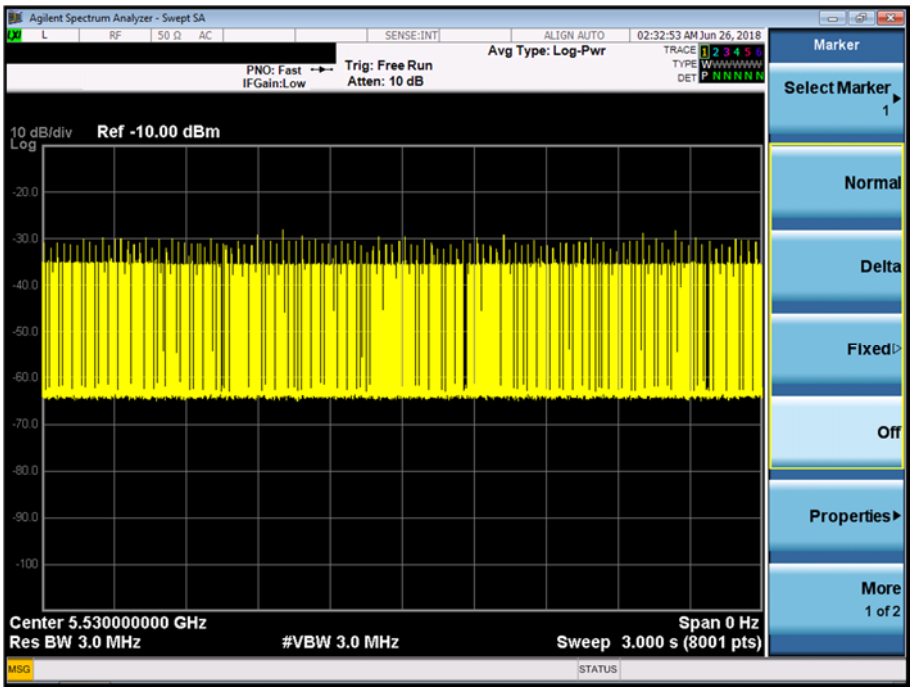
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

Traffic plot

Traffic Plot at 5290MHz



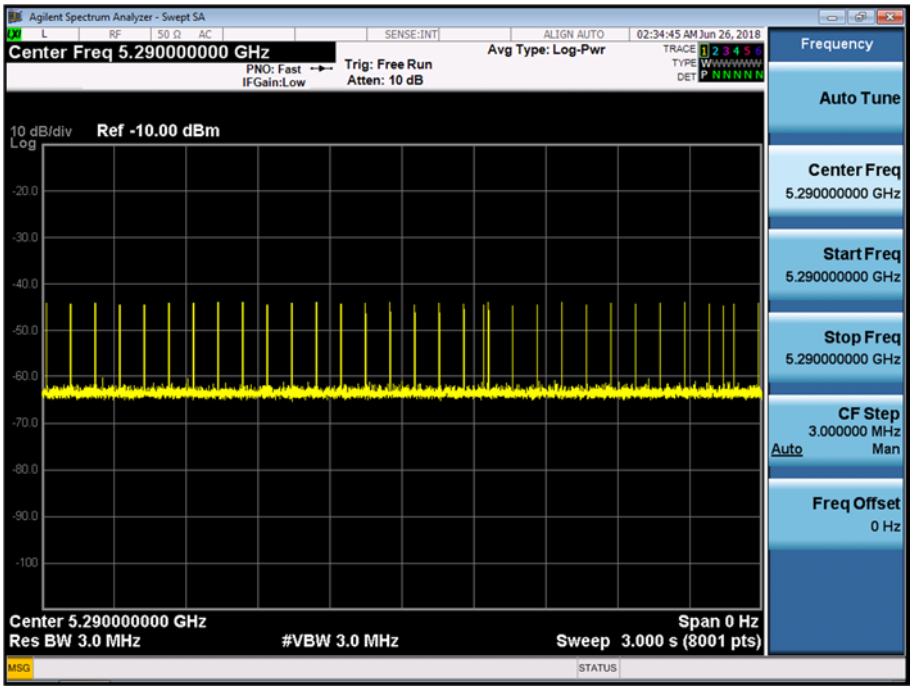
Traffic Plot at 5530MHz



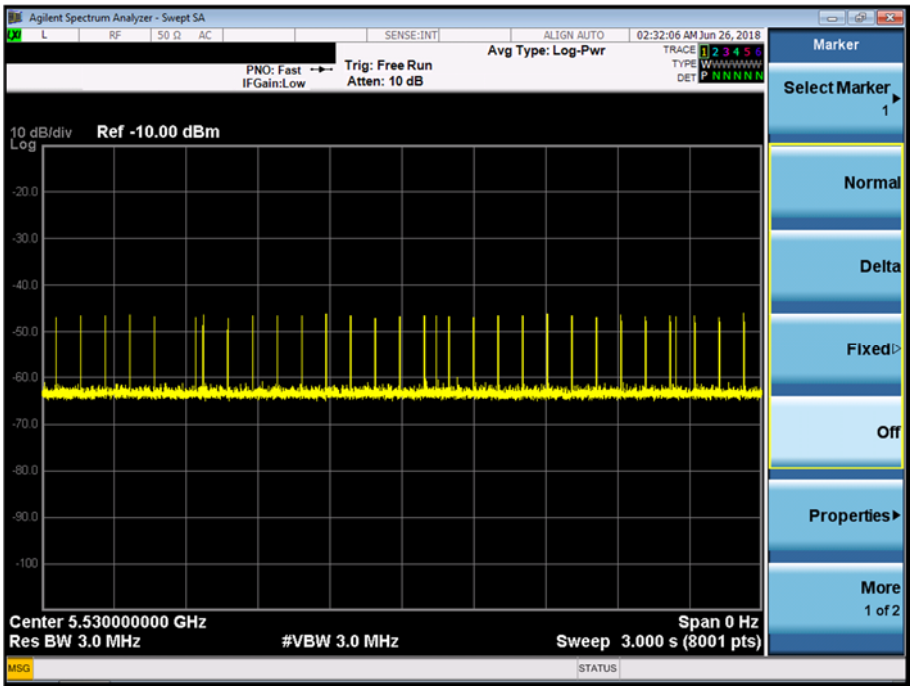
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

Non Traffic Plot

Non-Traffic Plot at 5290MHz

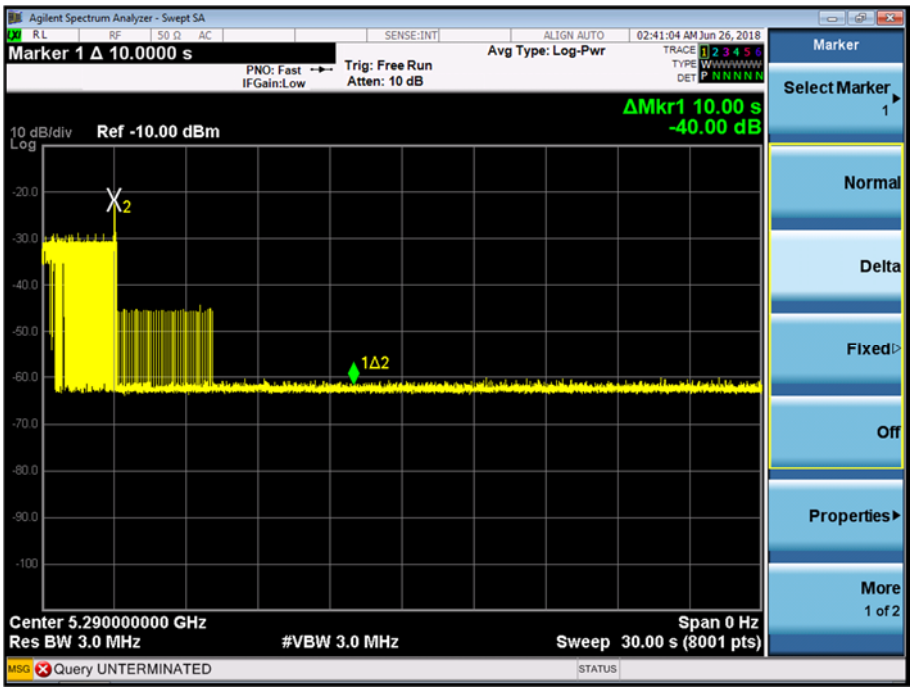


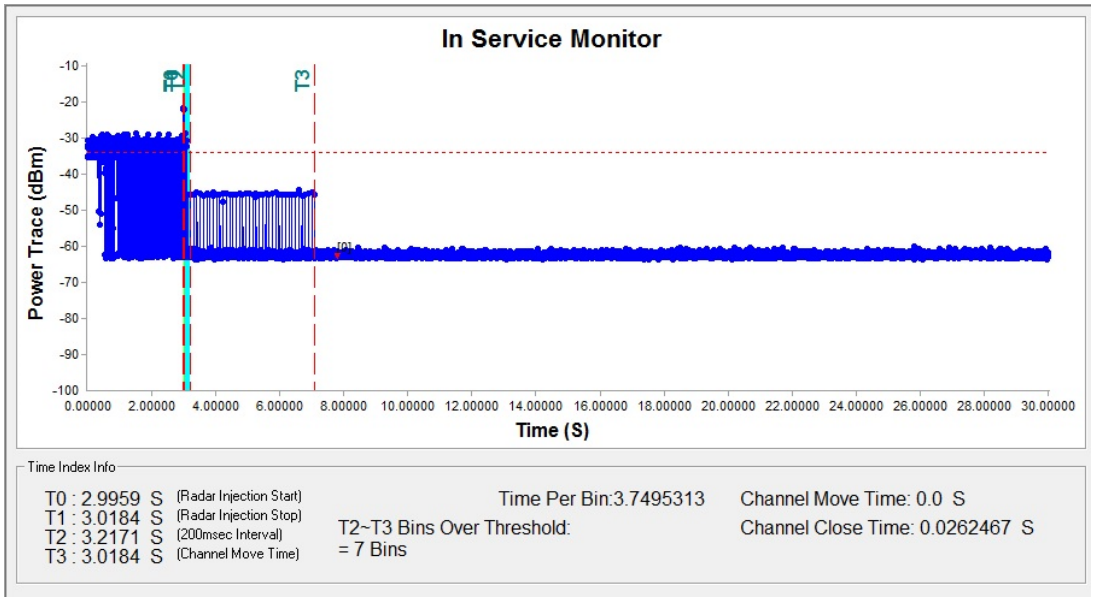
Non-Traffic Plot at 5530MHz



3.12.2 Channel move time plot of Type1 radar waveform on 5270MHz

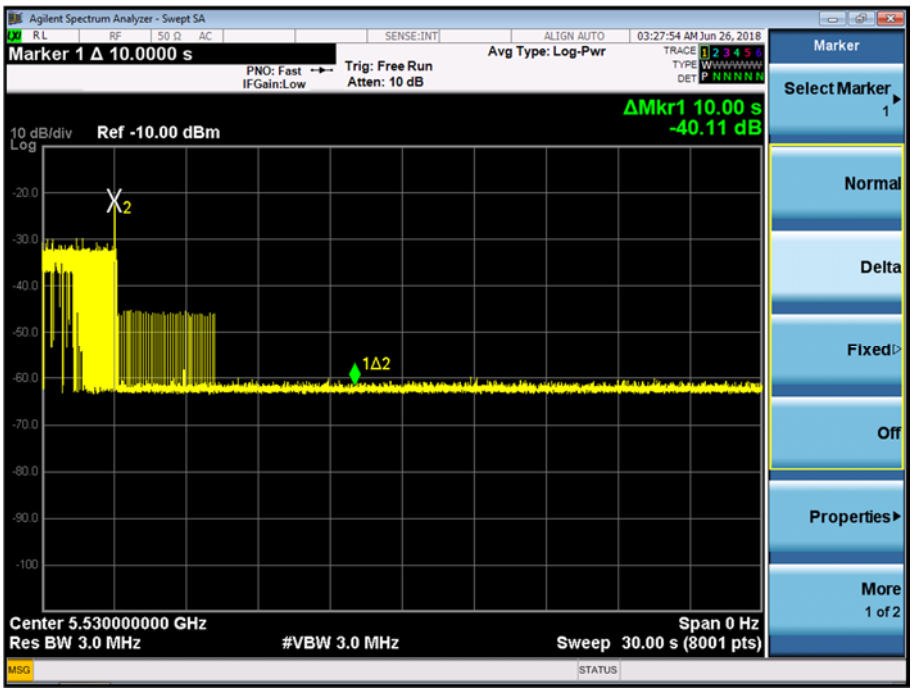
Type0 radar signal at 5290MHz

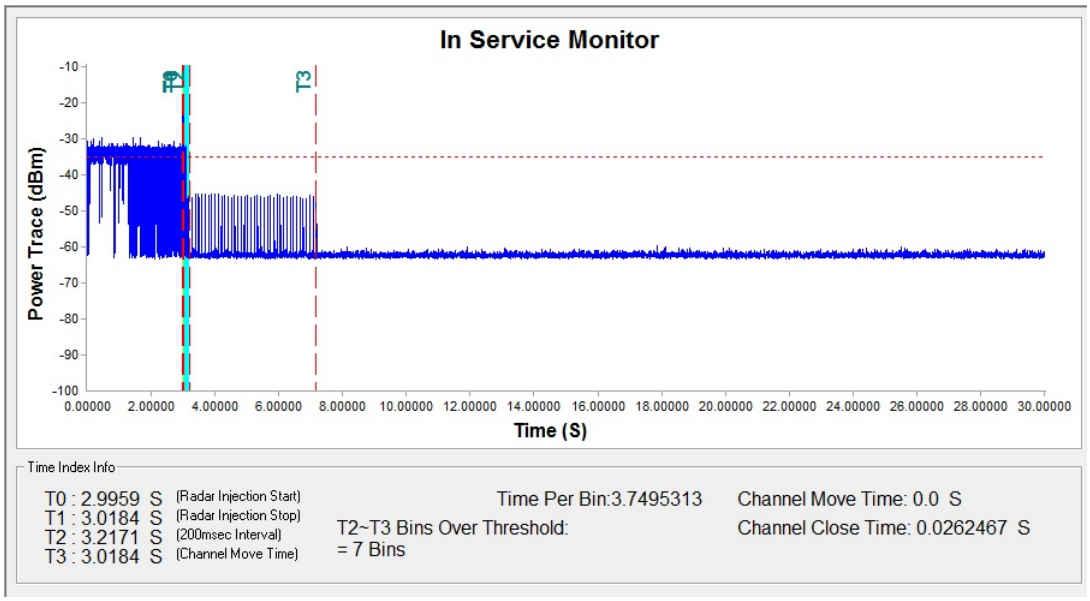




Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

Type0 radar signal at 5530MHz

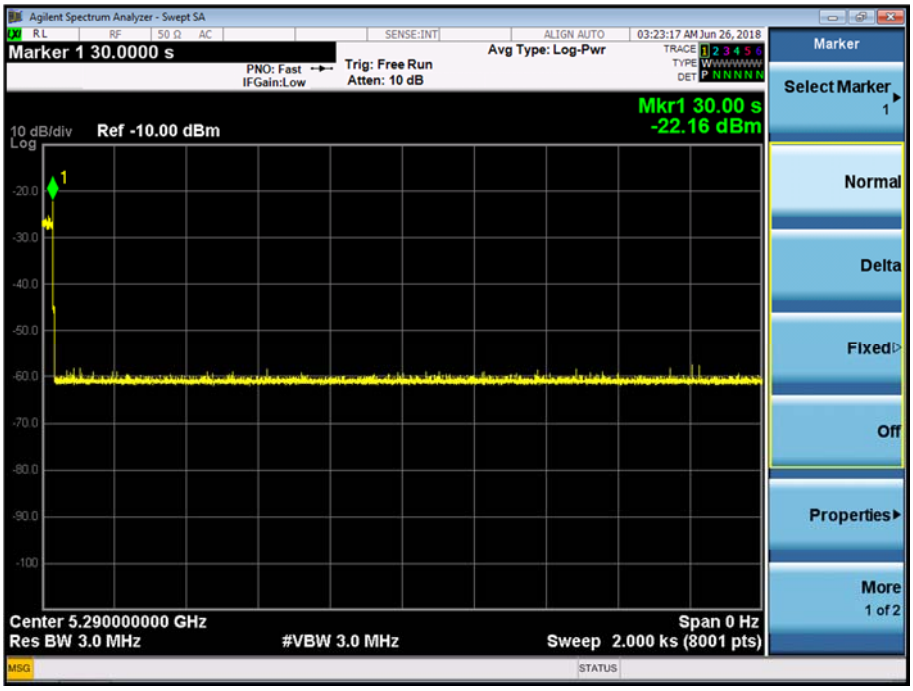




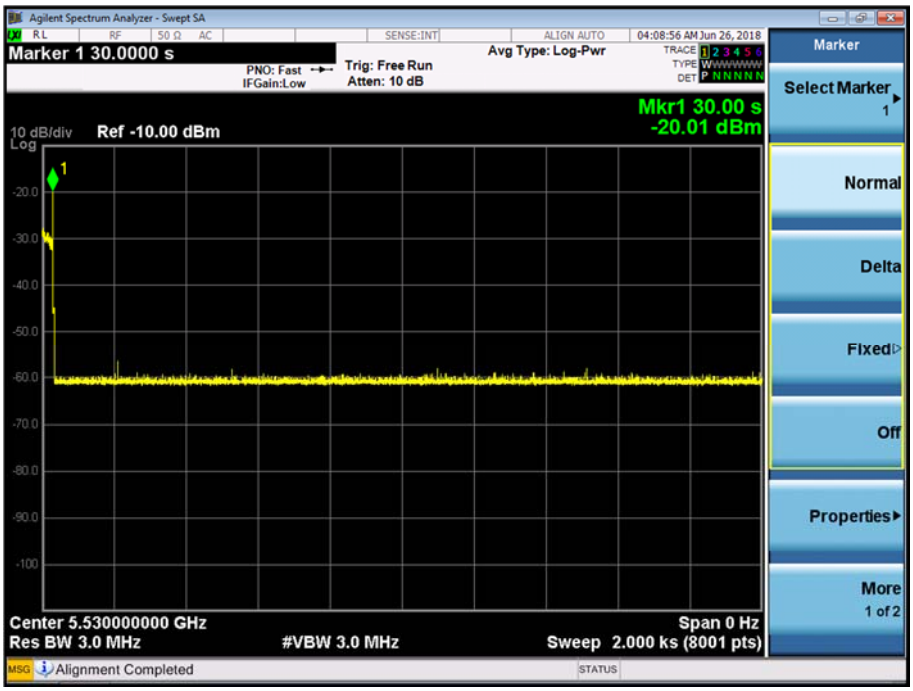
Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

3.12.3 30Minutes Non-Occupancy Time

Type0 radar signal at 5290MHz



Type0 radar signal at 5530MHz



Test equipment used: ETSTW-RE 133, ETSTW-RE 134

3.13 Channel Move Time, Channel Closing Transmission Time

FCC Rule: 15.407(i)

Result :

Parameter (at 5290MHz)	Test Result	Limit
	Type0	
Channel Move Time (ms)	0s	<10s
Channel Close Transmission Time (ms)	26.246ms	< 60ms
Non-Occupancy Time (min.)	>30min	≧30min
Parameter (at 5530MHz)	Test Result	Limit
	Type0	
Channel Move Time (ms)	0s	<10s
Channel Close Transmission Time (ms)	26.246ms	< 60ms
Non-Occupancy Time (min.)	>30min	≧30min

Note: The Channel Close Transmission Time is compromised 200 milliseconds starting at the beginning of the Channel Move Time plus the additional intermittent control signal required to facilitate channel-move operation (an aggregate of 60milliseconds) during the remainder of the 10seconds period.

Test equipment used: ETSTW-RE 133, ETSTW-RE 134

3.14 Radiated Emissions from Receiver Part

FCC Rule: 15.109

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (microvolts/meter)	Field Strength (dBmicrovolts/meter)
30 – 88	100	40.0
88 – 216	150	43.5
216 – 960	200	46.0
Above 960	500	54.0

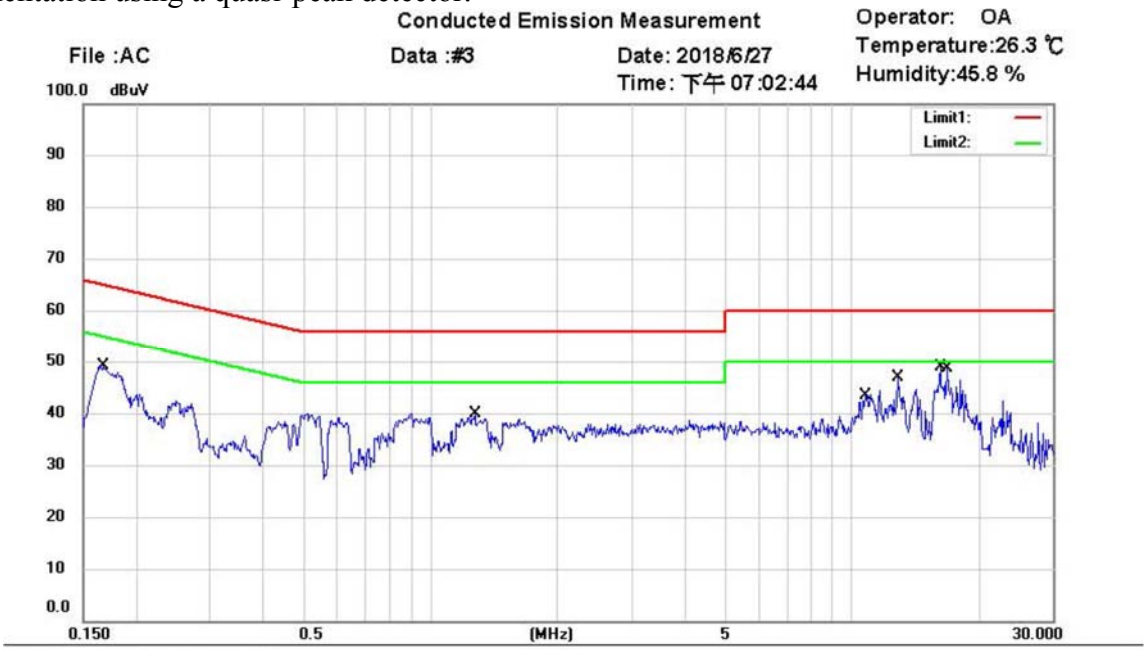
Test equipment used: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 147, ETSTW-RE 088, ETSTW-RE 018

Explanation: The test results are listed in the separated test report no.: W6M21805-18110-P-15B.

3.15 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

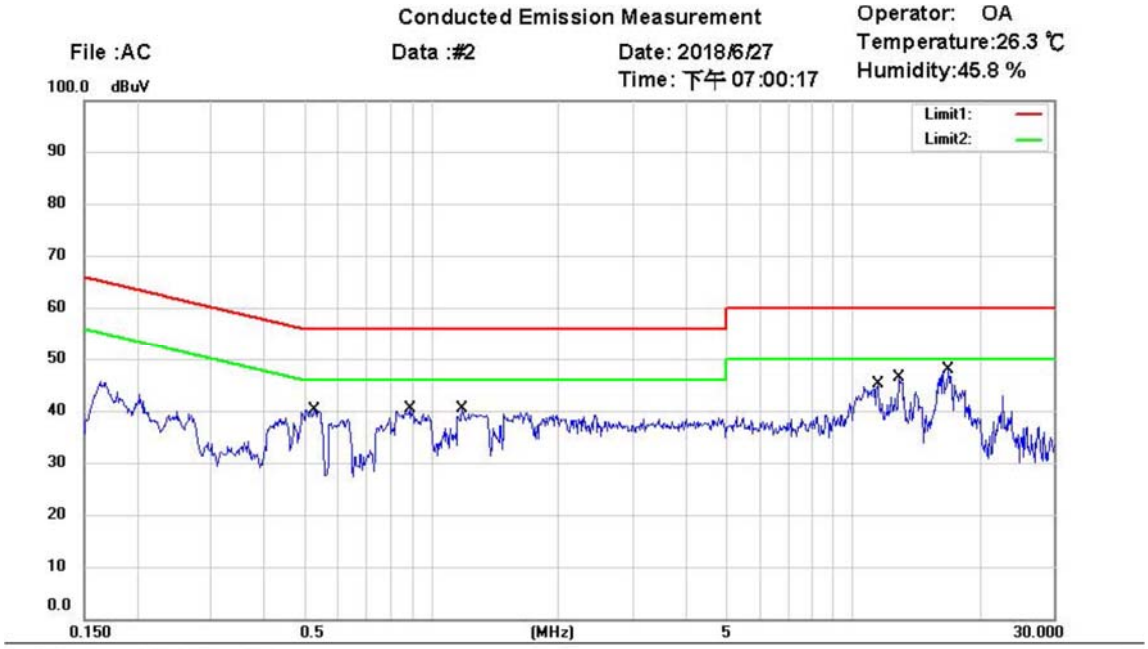
This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.



Site : Chamber_03
Condition : FCC Part 15 Class B Conduction (QP)
Phase: N
EUT : W6M21805-18110
Power : 120 Va.c.
M/N:
Test Mode :
Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.1663	36.33	QP	9.74	46.07	65.14	-19.07	
	0.1663	29.13	AVG	9.74	38.87	55.14	-16.27	
	1.2718	25.15	QP	9.77	34.92	56.00	-21.08	
	1.2718	12.58	AVG	9.77	22.35	46.00	-23.65	
	10.7875	25.39	QP	10.10	35.49	60.00	-24.51	
	10.7875	15.40	AVG	10.10	25.50	50.00	-24.50	
	12.8625	32.86	QP	10.14	43.00	60.00	-17.00	
	12.8625	29.18	AVG	10.14	39.32	50.00	-10.68	
	16.1875	33.72	QP	10.19	43.91	60.00	-16.09	
	16.1875	27.18	AVG	10.19	37.37	50.00	-12.63	
	16.8250	33.96	QP	10.21	44.17	60.00	-15.83	
*	16.8250	29.44	AVG	10.21	39.65	50.00	-10.35	

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058



Site : Chamber_03
Condition : FCC Part 15 Class B Conduction (QP) Phase: L1
EUT : W6M21805-18110 Power : 120 Va.c.
M/N:
Test Mode :
Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.5292	26.67	QP	9.73	36.40	56.00	-19.60	
	0.5292	14.74	AVG	9.73	24.47	46.00	-21.53	
	0.8892	26.00	QP	9.74	35.74	56.00	-20.26	
	0.8892	12.13	AVG	9.74	21.87	46.00	-24.13	
	1.1840	24.79	QP	9.75	34.54	56.00	-21.46	
	1.1840	14.63	AVG	9.75	24.38	46.00	-21.62	
	11.4625	23.67	QP	10.06	33.73	60.00	-26.27	
	11.4625	17.14	AVG	10.06	27.20	50.00	-22.80	
	12.8625	33.52	QP	10.07	43.59	60.00	-16.41	
*	12.8625	29.89	AVG	10.07	39.96	50.00	-10.04	
	16.8375	24.56	QP	10.10	34.66	60.00	-25.34	
	16.8375	15.85	AVG	10.10	25.95	50.00	-24.05	

Note: 1. The formula of measured value as: Test Result = Reading + Correction Factor
2. The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
3. Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average
4. All not in the table noted test results are more than 20 dB below the relevant limits.
5. Measurement uncertainty = ±1.54 dB; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.
6. Up Line: QP Limit Line, Down Line: Ave Limit Line.

Registration number: W6M21805-18110-C-54
FCC ID: W23-JWX6058

Limits:

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi Peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Test equipment used: ETSTW-CE 016, ETSTW- CE 001, ETSTW- RE 045