

FCC PART 22/24/27 TEST REPORT
for
Embedded Display System with CAN Bus
Model No.: E070W1D1-4 v.1U
FCC ID: 2AT5JE070W1D14V1U

of

Applicant: Powerview Display Corp.
Address: Rm. 5, 6F., No. 32, Taiyuan St., Zhubei City, Hsinchu County 302,
Taiwan (R.O.C.)

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: TW1477, TW0020, TW1072

Industry Canada filed test laboratory Reg. No. 20037

A2LA Accredited No.: 2732.01



Report No.: W6M21906-19141-P-247

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
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Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

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Certification of Test Report

Applicant : Powerview Display Corp.
Rm. 5, 6F., No. 32, Taiyuan St., Zhubei City,
Hsinchu County 302, Taiwan (R.O.C.)

Manufacturer : Powerview Display Corp.
Rm. 5, 6F., No. 32, Taiyuan St., Zhubei City,
Hsinchu County 302, Taiwan (R.O.C.)

Tested Equipment :

Type Description	: Embedded Display System with CAN Bus
Model Number	: E070W1D1-4 v.1U
Multi-listing Model Number:	E070W1D1-4 v.nx
Brand Name	: ./.
Operation Frequency	: Please see chapter 2.3.
RF Output Power:	: WCDMA Band II: 23.91 dBm (EIRP) Band IV 25.66 dBm (EIRP) Band V: 17.14 dBm (ERP) LTE Band II: 23.92 dBm (EIRP) Band IV 25.28 dBm (EIRP) Band XII: 11.36 dBm (ERP)
Power Supply	: 12 Vd.c., Battery 3.7 Vd.c.

Regulation Applied : 47CFR Part 22 (2018-10), Part 24 (2018-10),
Part 27 (2018-10)

Test Method : 47CFR Part 2 (2018), TIA/EIA-603E (2016) and
ANSI C63.26 (2015)

I HEREBY CERTIFY THAT: The test results written in this report were derived conscientiously in accordance with the requirements and procedures of 47CFR Part 2(2018), TIA/EIA-603E(2016), and it was found that the device described above is in compliance with the applicable limits specified in 47CFR Part 22/24/27.

Note:

1. The result of this test report is valid only in connection to the sample has been tested at the laboratory of Worldwide Testing Services (Taiwan) Co. Ltd.
2. This test report shall always be duplicated in full pages unless the written approval of the testing laboratory is obtained.

Test Engineer:

September 04, 2019

Sora Kuo

Sora

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

September 04, 2019

Kevin Wang

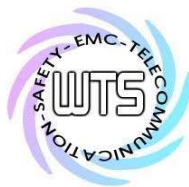
Kevin Wang

Date

WTS

Name

Signature

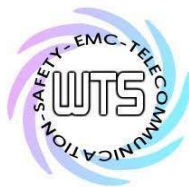


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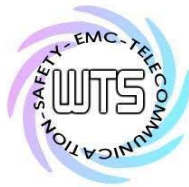
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1. Summary

1.1 Description of tested equipment

This equipment under tested, E070W1D1-4 v.1U, is an Embedded Display System with CAN Bus.

This test report only contains test requirements specified in 47CFR Part 22, Part 24 and Part 27 for WCDMA and LTE function. For other functions; please refer to separate test report with respect to the relevant test standard and specification.

1.2 Date of testing processing

Date of receipt of test item: July 22, 2019

Date of test: from July 22, 2019 to September 02, 2019

Other Information: None

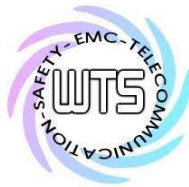
1.3 Modification Information

No modification was made during the all test items been performed.

1.4 Test standards

Technical standard: **FCC Part 2 (2018), TIA/EIA-603E (2016), ANSI C63.26 (2015)
47CFR Part 22 (2018), Part 24 (2018) and Part 27 (2018)**

Deviation from test standard: None



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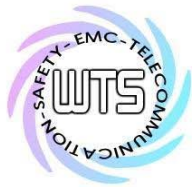
1.5 Summary of test result

WCDMA

Section in this Report	Test Item	FCC Relevant Section	Verdict
3.2	RF Power Output (Equivalent isotropically radiated power)	2.1046(a), 24.232	Pass
4.2	Modulation characteristics	2.1047	Not Required
5.2	Occupied bandwidth	2.1049(h) 24.238(b)	Pass
6.2	Spurious emissions at antenna terminals	24.238(a), 2.1051	Pass
7.2	Field strength of spurious radiation	24.238(a), 2.1053	Pass
7.5	Band Edge emissions	24.238(b)	Pass
8.2	Frequency stability	2.1055 24.235	Pass

LTE

Harmonized Standard Requirements and Conformance Test Specifications				
Item	Clause	Test Content	Limit	Test Result
3.2	§22.913 §24.232 §27.50	Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement	ERP < 7 Watts (Band 5) EIRP < 2 Watts (Band 2) ERP < 3 Watts (Band 12, Band 13) EIRP < 1 Watts (Band 4)	Pass
5.3	§24.232 §27.50	Peak-to-Average Ratio	< 13 dB	Pass
6.2	§2.1049	Occupied Bandwidth	OBW : No Limit	Pass
7.2	§22.917 §24.238 §27.53	Conducted Spurious Emission Measurement	< 43+10log10(P[Watts])	Pass
8.2	§22.917 §24.238 §27.53	Radiated Spurious Emission Measurement	< 43+10log10(P[Watts])	Pass
8.5	§22.917 §24.238 §27.53	Conducted Band Edge Measurement	< 43+10log10(P[Watts])	Pass
9.2	§2.1055 §22.355 §24.235 §27.54	Frequency stability / Temperature variation Measurement	< 2.5 ppm	Pass

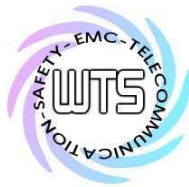


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Test item Name	Measurement Uncertainty
Estimation Result of Uncertainty of Radiated Emission(3M)	Expanded Uncertainty: 0.009-30 MHz:2.02 dB 30-1000 MHz:3.49 dB 1-18 GHz:3.01 dB 18-40 GHz:2.43 dB
Estimation Result of Uncertainty of Conducted Output Power Measurement	Expanded Uncertainty : 1.72 dB
Estimation Result of Uncertainty of Bandwidth Measurement	Expanded Uncertainty : 0.45 kHz
Estimation Result of Uncertainty of Frequency Drift Measurement	Expanded Uncertainty : 6.11 Hz
Estimation Result of Uncertainty of Band Edge Measurement	Expanded Uncertainty : 0.98 dBc

The decision rule is: Measurement uncertainty is not taken into account.



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2. General Information

2.1 Testing laboratory

2.1.1 Location

OATS
No.5-1, Shuang Sing Village,
LiShuei Rd., Wanli Township,
Taipei County 207, Taiwan (R.O.C.)
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

2.1.2 Details of accreditation status

Accredited testing laboratory
A2LA-registration number: 2732.01
FCC filed test laboratory Reg. No. TW1477, TW0020, TW1072
Industry Canada filed test laboratory Reg. No. 20037

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

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

2.2 Details of approval holder

Name: Powerview Display Corp.
Street: Rm. 5, 6F., No. 32, Taiyuan St., Zhubei City,
Town: Hsinchu County 302,
Country: Taiwan (R.O.C.)
Telephone: 03-560-0565
Fax: 03-560-0575

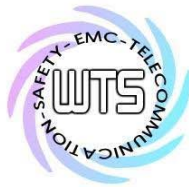
Manufacturer: (if different from applicant)

Name: ./.
Street: ./.
Town: ./.
Country: ./.

2.3 Description of Tested System

The EUT was tested alone without the Accessories or Peripherals.

Equipment	Model No.	Series No.	Software	Cable information	Note
No accessories were used with this EUT.					



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Frequencies Selected to be investigated:

WCDMA Band II

Uplink

Low Frequency (ch 9262): 1852.4 MHz

Mid Frequency (ch 9400): 1880.0 MHz

High Frequency (ch 9538): 1907.6 MHz

Downlink

Low Frequency (ch 9262): 1932.4 MHz

Mid Frequency (ch 9400): 1960 MHz

High Frequency (ch 9538): 1987.6 MHz

WCDMA Band IV

Uplink

Low Frequency (ch 1312): 1712.2 MHz

Mid Frequency (ch 1413): 1732.6 MHz

High Frequency (ch 1513): 1752.6 MHz

Downlink

Low Frequency (ch 1312): 2112.4 MHz

Mid Frequency (ch 1413): 2132.6 MHz

High Frequency (ch 1513): 2152.6 MHz

WCDMA Band V

Uplink

Low Frequency (ch 4132): 826.4 MHz

Mid Frequency (ch 4183): 836.6 MHz

High Frequency (ch 4233): 846.6 MHz

Downlink

Low Frequency (ch 4132): 871.4 MHz

Mid Frequency (ch 4183): 881.6 MHz

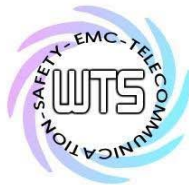
High Frequency (ch 4233): 891.6 MHz

LTE

Band II

Test Frequency ID	Bandwidth [MHz]	N _{UL}	Frequency of Uplink [MHz]	N _{DL}	Frequency of Downlink [MHz]
Low Range	1.4	18607	1850.7	607	1930.7
	3	18615	1851.5	615	1931.5
	5	18625	1852.5	625	1932.5
	10	18650	1855	650	1935
	15 ^[1]	18675	1857.5	675	1937.5
	20 ^[1]	18700	1860	700	1940
Mid Range	1.4/3/5/10 15 ^[1] /20 ^[1]	18900	1880	900	1960
High Range	1.4	19193	1909.3	1193	1989.3
	3	19185	1908.5	1185	1988.5
	5	19175	1907.5	1175	1987.5
	10	19150	1905	1150	1985
	15 ^[1]	19125	1902.5	1125	1982.5
	20 ^[1]	19100	1900	1100	1980

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.



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Band IV

Test Frequency ID	Bandwidth [MHz]	N _{UL}	Frequency of Uplink [MHz]	N _{DL}	Frequency of Downlink [MHz]
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

Band XII

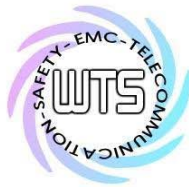
Test Frequency ID	Bandwidth [MHz]	N _{UL}	Frequency of Uplink [MHz]	N _{DL}	Frequency of Downlink [MHz]
Low Range	1.4	23017	699.7	5017	729.7
	3	23025	700.5	5025	730.5
	5 [1]	23035	701.5	5035	731.5
	10 [1]	23060	704	5060	734
Mid Range	1.4/3 5 [1]/10 [1]	23095	707.5	5095	737.5
High Range	1.4	23173	715.3	5173	745.3
	3	23165	714.5	5165	744.5
	5 [1]	23155	713.5	5155	743.5
	10 [1]	23130	711	5130	741

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

Antenna Type: PCB Antenna
 Antenna Gain: WCDMA Band II: 1.54 dBi, Band IV: 2.05 dBi, Band V: -1.81dBi
 LTE Band II: 1.69 dBi, Band IV: 2.06 dBi,
 Band XII: -6.94 dBi
 Power supply: 12 Vd.c., Battery 3.7 Vd.c.

2.4 Test environment

Temperature: 27 °C
 Relative humidity content: 54 %
 Air pressure: 86-103 Kpa



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2.5 General Test Requirement

Radiated Emission: For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100 kHz respectively with an appropriate sweep speed.

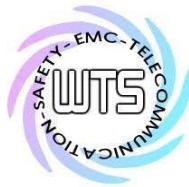
For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

- (1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
- (2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
- (3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.



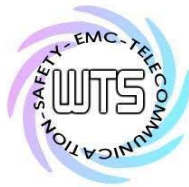
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2.6 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2019/6/4	2020/6/3
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	2018/11/1	2019/10/31
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2019/8/16	2020/8/15
ETSTW-CE 008	HF-EICHELITUNG 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	2019/7/23	2020/7/22
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2018/9/25	2019/9/24
ETSTW-CE 028	MXE EMI Receiver	N9038A	MY53220110	Agilent	2019/7/18	2020/7/17
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2019/6/4	2020/6/3
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2019/5/29	2020/5/28
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 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2019/7/25	2020/7/24
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2019/7/22	2020/7/21
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2019/4/2	2020/4/1
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2019/1/29	2020/1/28
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2019/4/23	2020/4/22
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2019/5/13	2020/5/12
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2019/2/27	2020/2/26
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2019/2/27	2020/2/26
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2019/2/27	2020/2/26
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2019/3/5	2020/3/4
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2019/2/27	2020/2/26
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2019/5/16	2020/5/15
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	ETS-Lindgren	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2018/9/17	2019/9/16
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2018/9/18	2019/9/17
ETSTW-RE 091	Match Pad	MDCS1500	None	WOKEN	2019/5/9	2020/5/8
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2019/2/22	2020/2/21
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	2019/1/14	2020/1/13

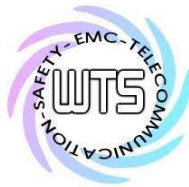


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ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2019/6/3	2020/6/2
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2019/8/7	2020/8/6
ETSTW-RE 126	5GHz Notch filter	5NSL12-5800/E221.3-O/O	1	K&L Microwave	2019/8/7	2020/8/6
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2019/2/26	2020/2/25
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circuits	2019/8/7	2020/8/6
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2019/8/7	2020/8/6
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-RE 132	Humidity Temperature Meter	TES-1260	130407634	TES	2019/8/16	2020/8/15
ETSTW-RE 142	Amplifier	8447D	2805A03378	Agilent	2019/5/16	2020/5/15
ETSTW-RE 147	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04005	ETC	2019/4/2	2020/4/1
ETSTW-RE 151	Thermohygrometer	608-h1	45104376	TESTO	2019/8/16	2020/8/15
ETSTW-RF 002	Electromagnetic field probe	LF-30	K-0007	STT	2019/5/27	2020/5/26
ETSTW-EMI 011	USB Compact Modulator	SFC-U	101689	R&S	2019/5/16	2020/5/15
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2019/3/5	2020/3/4
ETSTW-GSM 003	Radio Communication Analyzer	MT8820C	6201342073	Anritsu	2019/3/26	2020/3/25
ETSTW-GSM 004	Wideband Radio Communication Tester	CMW500	128092	R&S	2018/10/19	2019/10/18
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40/12+9SS	3	WI	2019/1/14	2020/1/13
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2019/1/14	2020/1/13
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2019/1/14	2020/1/13
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2019/1/14	2020/1/13
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2019/9/2	2020/9/1
ETSTW-GSM 024	Radio Communication Analyzer	MT8821C	None	Anritsu	2019/3/5	2020/3/4
ETSTW-GSM 025	Band Reject Filter	BRM19835	001	Micro-Tronics	2019/8/7	2020/8/6
ETSTW-Cable 011	SMA to N type Cable	RGU-400	None	THERMAX	Pre-test Use NCR	
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2019/2/21	2020/2/20
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2019/2/21	2020/2/20
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2019/2/21	2020/2/20
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2019/2/21	2020/2/20
ETSTW-Cable 020	N TYPE Cable	OATS Cable 1	N30N30-L335-15M	JYE BAO CO.,LTD.	2019/7/1	2020/6/30
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2019/2/25	2020/2/24
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2019/5/10	2020/5/9
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2018/9/18	2019/9/17
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2018/9/18	2019/9/17
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S Cable 9)	279067	HUBER+SUHNER	2019/2/25	2020/2/24
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2019/5/16	2020/5/15



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ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2019/6/6	2020/6/5
ETSTW-Cable 064	Microwave Cable	SUCOFLEX 104	MY28891	HUBER+SUHNER	2019/5/16	2020/5/15
ETSTW-Cable 066	SMA type cable	32022	None	ASTROLAB	2019/3/15	2020/3/14
ETSTW-Cable 071	N TYPE CABLE	EMCCFD400-NM- NM-25000	170239	EMCI	2019/6/6	2020/6/5
ETSTW-Cable 072	SMA type cable (8m)	SUCOFLEX 104	805800/4	HUBER+SUHNER	2019/5/16	2020/5/15
ETSTW-Cable 074	SMA type cable (2m)	SUCOFLEX 104	802563/4	HUBER+SUHNER	2019/5/16	2020/5/15
WTSTW-SW 002	EMI TEST SOFTWARE	EZ EMC	None	Farad	Version ETS-03A1	
WTSTW-SW 006	EMI TEST SOFTWARE	e3	None	AUDIX	Version 9.161014	
WTSTW-SW 008	Signal studio	Agilent	None	AUDIX	Version 2.0.0.1	

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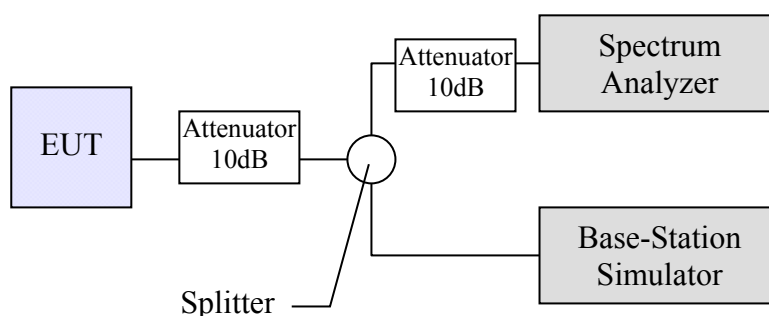
3. RF Power Output

3.1 Test procedure

3.1.1 Conducted Method

Per 47CFR Part 2.1046, the RF power output shall be measured at the RF output terminals and following procedure is employed:

The transmitter output was connected as the following figure:



The whole connection system is calibrated with a standard signal generator. Power on and make a link form simulator to EUT and then set the EUT to maximum output power.

Measure the RF power with the spectrum analyzer in accordance the following settings:

RBW: 300 kHz for Frequency below 1GHz and 1MHz for Frequency equal to and above 1GHz.

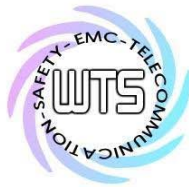
VBW: 300 kHz for Frequency below 1GHz and 1MHz for Frequency equal to and above 1GHz.

Span: 2MHz

Sweep: 3s

The power output at the transmitter antenna terminal is then determined by assign the value of the corrected factor to the spectrum analyzer reading.

Tests were performed at three frequencies (low, middle and high channels) and operation mode selected.



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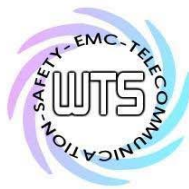
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3.2 Test Results

WCDMA

Band II & Band IV & Band V

WCDMA Band II	POWER(dBm) Low Ch9262/ 1852.4MHz	POWER(dBm) Mid Ch9400/ 1880MHz	POWER(dBm) High Ch9538/ 1907.6MHz	EIRP Low Ch9262/ 1852.4MHz	EIRP Mid Ch9400/ 1880MHz	EIRP High Ch9538/ 1907.6MHz
	22.20	22.37	22.20	23.74	23.91	23.74
WCDMA Band IV	POWER(dBm) Low Ch1312/ 1712.4MHz	POWER(dBm) Mid Ch1413/ 1732.6MHz	POWER(dBm) High Ch1513/ 1752.6MHz	EIRP Low Ch1312/ 1712.4MHz	EIRP Mid Ch1413/ 1732.6MHz	EIRP High Ch1513/ 1752.6MHz
	23.61	23.46	23.24	25.66	25.51	25.29
WCDMA Band V	POWER(dBm) Low Ch4132/ 826.4MHz	POWER(dBm) Mid Ch4183/ 836.6MHz	POWER(dBm) High Ch4233/ 846.6MHz	ERP Low Ch4132/ 826.4MHz	ERP Mid Ch4183/ 836.6MHz	ERP High Ch4233/ 846.6MHz
	20.81	20.96	21.10	16.85	17.00	17.14



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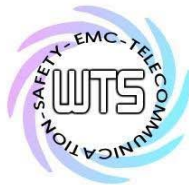
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LTE

Band II

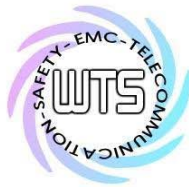
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch18607/ 1850.7MHz	POWER (dBm) Mid Ch18900/ 1880MHz	POWER (dBm) High Ch19193 /1909.3MHz	EIRP Low Ch18607/ 1850.7MHz	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19193/ 1909.3MHz
1.4	QPSK	1	0	21.92	21.81	21.48	23.61	23.50	23.17
1.4	QPSK	1	3	22.23	21.96	21.55	23.92	23.65	23.24
1.4	QPSK	1	5	21.98	21.38	21.62	23.67	23.07	23.31
1.4	QPSK	3	0	22.13	21.79	21.64	23.82	23.48	23.33
1.4	QPSK	3	1	21.84	21.86	21.72	23.53	23.55	23.41
1.4	QPSK	3	3	21.83	21.87	21.63	23.52	23.56	23.32
1.4	QPSK	6	0	20.78	21.41	20.67	22.47	23.10	22.36
1.4	16QAM	1	0	20.52	20.68	20.32	22.21	22.37	22.01
1.4	16QAM	1	3	21.17	21.03	20.35	22.86	22.72	22.04
1.4	16QAM	1	5	20.94	20.49	20.59	22.63	22.18	22.28
1.4	16QAM	3	0	21.05	20.79	20.53	22.74	22.48	22.22
1.4	16QAM	3	1	21.23	20.94	20.76	22.92	22.63	22.45
1.4	16QAM	3	3	20.94	20.77	20.53	22.63	22.46	22.22
1.4	16QAM	6	0	19.87	20.44	20.08	21.56	22.13	21.77
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch18615/ 1851.5MHz	POWER (dBm) Mid Ch18900/ 1880MHz	POWER (dBm) High Ch19185/ 1908.5MHz	EIRP Low Ch18615/ 1851.5MHz	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19185/ 1908.5MHz
3	QPSK	1	0	22.00	22.22	21.83	23.69	23.91	23.52
3	QPSK	1	7	22.09	22.07	21.77	23.78	23.76	23.46
3	QPSK	1	14	22.14	21.82	21.87	23.83	23.51	23.56
3	QPSK	8	0	21.06	20.92	20.94	22.75	22.61	22.63
3	QPSK	8	3	21.06	20.95	20.58	22.75	22.64	22.27
3	QPSK	8	7	21.01	20.90	20.65	22.70	22.59	22.34
3	QPSK	15	0	20.71	21.63	20.79	22.40	23.32	22.48
3	16QAM	1	0	20.57	20.40	20.66	22.26	22.09	22.35
3	16QAM	1	7	21.03	20.92	21.01	22.72	22.61	22.70
3	16QAM	1	14	20.81	20.75	20.40	22.50	22.44	22.09
3	16QAM	8	0	19.70	19.67	19.45	21.39	21.36	21.14
3	16QAM	8	3	19.55	19.55	19.54	21.24	21.24	21.23
3	16QAM	8	7	19.88	19.42	19.65	21.57	21.11	21.34
3	16QAM	15	0	20.16	19.91	19.67	21.85	21.60	21.36
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch18625/ 1852.5MHz	POWER (dBm) Mid Ch18900/ 1880MHz	POWER (dBm) High Ch19175/ 1907.5MHz	EIRP Low Ch18625/ 1852.5MHz	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19175/ 1907.5MHz
5	QPSK	1	0	21.23	21.55	21.38	22.92	23.24	23.07
5	QPSK	1	12	21.33	21.67	21.83	23.02	23.36	23.52
5	QPSK	1	24	21.30	21.33	21.68	22.99	23.02	23.37
5	QPSK	12	0	20.36	20.58	20.72	22.05	22.27	22.41
5	QPSK	12	6	20.38	20.65	20.63	22.07	22.34	22.32
5	QPSK	12	13	20.38	20.62	20.64	22.07	22.31	22.33
5	QPSK	25	0	20.49	20.64	20.63	22.18	22.33	22.32
5	16QAM	1	0	21.11	20.48	21.56	22.80	22.17	23.25
5	16QAM	1	12	21.15	20.78	20.99	22.84	22.47	22.68
5	16QAM	1	24	20.92	20.21	20.57	22.61	21.90	22.26



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5	16QAM	12	0	19.86	19.74	19.57	21.55	21.43	21.26
5	16QAM	12	6	20.18	19.75	19.58	21.87	21.44	21.27
5	16QAM	12	13	19.73	19.59	19.65	21.42	21.28	21.34
5	16QAM	25	0	19.92	20.18	19.75	21.61	21.87	21.44
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch18650/ 1855MHz	POWER (dBm) Mid Ch18900/ 1880MHz	POWER (dBm) High Ch19150/ 1905MHz	EIRP Low Ch18650/ 1855MHz	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19150/ 1905MHz
10	QPSK	1	0	21.42	21.48	21.59	23.11	23.17	23.28
10	QPSK	1	24	21.94	21.61	21.59	23.63	23.30	23.28
10	QPSK	1	49	21.57	21.22	21.63	23.26	22.91	23.32
10	QPSK	25	0	20.47	20.64	20.67	22.16	22.33	22.36
10	QPSK	25	12	20.38	20.71	20.79	22.07	22.40	22.48
10	QPSK	25	25	20.36	20.66	20.70	22.05	22.35	22.39
10	QPSK	50	0	20.66	20.65	20.65	22.35	22.34	22.34



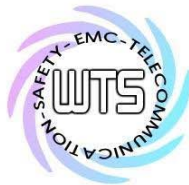
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Band IV

BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch19957/ 1710.7MHz	POWER (dBm) Mid Ch20175/ 1732.5MHz	POWER (dBm) High Ch20393/ 1754.3MHz	EIRP Low Ch19957/ 1710.7MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20393/ 1754.3MHz
1.4	QPSK	1	0	23.22	22.58	21.62	25.28	24.64	23.68
1.4	QPSK	1	3	22.51	21.95	21.97	24.57	24.01	24.03
1.4	QPSK	1	5	22.15	21.91	21.96	24.21	23.97	24.02
1.4	QPSK	3	0	22.53	22.08	21.72	24.59	24.14	23.78
1.4	QPSK	3	1	22.72	22.03	21.83	24.78	24.09	23.89
1.4	QPSK	3	3	22.91	21.94	21.68	24.97	24.00	23.74
1.4	QPSK	6	0	22.32	21.84	21.33	24.38	23.90	23.39
1.4	16QAM	1	0	20.76	20.79	20.20	22.82	22.85	22.26
1.4	16QAM	1	3	20.88	20.77	20.71	22.94	22.83	22.77
1.4	16QAM	1	5	20.82	20.58	20.08	22.88	22.64	22.14
1.4	16QAM	3	0	21.16	20.82	20.69	23.22	22.88	22.75
1.4	16QAM	3	1	21.04	21.03	20.69	23.10	23.09	22.75
1.4	16QAM	3	3	21.47	21.02	20.71	23.53	23.08	22.77
1.4	16QAM	6	0	20.22	19.94	19.84	22.28	22.00	21.90
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch19965/ 1711.5MHz	POWER (dBm) Mid Ch20175/ 1732.5MHz	POWER (dBm) High Ch20385/ 1753.5MHz	EIRP Low Ch19965/ 1711.5MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20385/ 1753.5MHz
3	QPSK	1	0	22.02	22.27	21.75	24.08	24.33	23.81
3	QPSK	1	7	22.08	22.35	21.82	24.14	24.41	23.88
3	QPSK	1	14	21.64	22.33	21.61	23.70	24.39	23.67
3	QPSK	8	0	20.93	21.17	20.59	22.99	23.23	22.65
3	QPSK	8	3	21.11	21.11	20.58	23.17	23.17	22.64
3	QPSK	8	7	21.04	21.06	20.59	23.10	23.12	22.65
3	QPSK	15	0	21.20	21.53	20.71	23.26	23.59	22.77
3	16QAM	1	0	20.51	20.85	20.62	22.57	22.91	22.68
3	16QAM	1	7	21.01	21.43	20.83	23.07	23.49	22.89
3	16QAM	1	14	20.66	20.94	20.31	22.72	23.00	22.37
3	16QAM	8	0	19.53	19.81	19.53	21.59	21.87	21.59
3	16QAM	8	3	19.67	19.97	19.58	21.73	22.03	21.64
3	16QAM	8	7	19.61	19.97	19.63	21.67	22.03	21.69
3	16QAM	15	0	19.74	19.88	19.77	21.80	21.94	21.83
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch19975/ 1712.5MHz	POWER (dBm) Mid Ch20175/ 1732.5MHz	POWER (dBm) High Ch20375/ 1752.5MHz	EIRP Low Ch19975/ 1712.5MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20375/ 1752.5MHz
5	QPSK	1	0	21.22	21.60	21.34	23.28	23.66	23.40
5	QPSK	1	12	21.42	21.63	21.66	23.48	23.69	23.72
5	QPSK	1	24	21.36	21.26	21.34	23.42	23.32	23.40
5	QPSK	12	0	20.45	20.81	20.71	22.51	22.87	22.77
5	QPSK	12	6	20.48	20.65	20.71	22.54	22.71	22.77
5	QPSK	12	13	20.57	20.57	20.66	22.63	22.63	22.72
5	QPSK	25	0	20.38	20.86	20.70	22.44	22.92	22.76
5	16QAM	1	0	20.87	20.72	20.81	22.93	22.78	22.87
5	16QAM	1	12	20.96	20.06	20.98	23.02	22.12	23.04
5	16QAM	1	24	20.34	20.63	20.67	22.40	22.69	22.73
5	16QAM	12	0	19.77	19.61	19.71	21.83	21.67	21.77

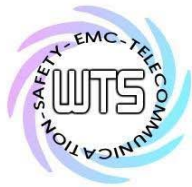


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5	16QAM	12	6	19.82	19.69	19.74	21.88	21.75	21.80
5	16QAM	12	13	19.73	19.65	19.70	21.79	21.71	21.76
5	16QAM	25	0	19.76	19.82	19.58	21.82	21.88	21.64
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20000/ 1715MHz	POWER (dBm) Mid Ch20175/ 1732.5MHz	POWER (dBm) High Ch20350/ 1750MHz	EIRP Low Ch20000/ 1715MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20350/ 1750MHz
10	QPSK	1	0	21.74	21.65	21.65	23.80	23.71	23.71
10	QPSK	1	24	21.95	22.05	22.26	24.01	24.11	24.32
10	QPSK	1	49	21.59	21.61	21.66	23.65	23.67	23.72
10	QPSK	25	0	20.88	21.02	20.88	22.94	23.08	22.94
10	QPSK	25	12	20.89	21.08	20.82	22.95	23.14	22.88
10	QPSK	25	25	20.93	20.75	20.76	22.99	22.81	22.82
10	QPSK	50	0	21.02	20.77	20.69	23.08	22.83	22.75



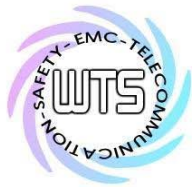
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Band XII

BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch23017/ 699.7MHz	POWER (dBm) Mid Ch23095/ 707.5MHz	POWER (dBm) High Ch23173/ 715.3MHz	ERP Low Ch23017/ 699.7MHz	ERP Mid Ch23095/ 707.5MHz	ERP High Ch23173/ 715.3MHz
1.4	QPSK	1	0	19.85	19.58	20.37	10.76	10.49	11.28
1.4	QPSK	1	3	19.89	19.63	20.45	10.80	10.54	11.36
1.4	QPSK	1	5	20.01	19.63	20.22	10.92	10.54	11.13
1.4	QPSK	3	0	19.78	19.93	20.45	10.69	10.84	11.36
1.4	QPSK	3	1	19.81	19.76	20.31	10.72	10.67	11.22
1.4	QPSK	3	3	19.86	19.69	19.98	10.77	10.60	10.89
1.4	QPSK	6	0	18.53	18.84	19.46	9.44	9.75	10.37
1.4	16QAM	1	0	17.93	17.59	18.86	8.84	8.50	9.77
1.4	16QAM	1	3	18.30	17.38	19.18	9.21	8.29	10.09
1.4	16QAM	1	5	18.23	17.98	18.50	9.14	8.89	9.41
1.4	16QAM	3	0	18.98	18.29	18.82	9.89	9.20	9.73
1.4	16QAM	3	1	19.11	18.12	18.87	10.02	9.03	9.78
1.4	16QAM	3	3	18.25	18.08	18.67	9.16	8.99	9.58
1.4	16QAM	6	0	18.08	17.80	18.14	8.99	8.71	9.05
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch23025/ 700.5MHz	POWER (dBm) Mid Ch23095/ 707.5MHz	POWER (dBm) High Ch23165/ 714.5MHz	ERP Low Ch23025/ 700.5MHz	ERP Mid Ch23095/ 707.5MHz	ERP High Ch23165/ 714.5MHz
3	QPSK	1	0	19.74	19.78	19.30	10.65	10.69	10.21
3	QPSK	1	7	19.61	19.81	20.31	10.52	10.72	11.22
3	QPSK	1	14	19.41	19.43	19.91	10.32	10.34	10.82
3	QPSK	8	0	18.69	18.91	18.97	9.60	9.82	9.88
3	QPSK	8	3	18.04	18.46	19.15	8.95	9.37	10.06
3	QPSK	8	7	18.25	18.43	19.39	9.16	9.34	10.30
3	QPSK	15	0	18.47	18.43	18.69	9.38	9.34	9.60
3	16QAM	1	0	18.81	18.45	18.55	9.72	9.36	9.46
3	16QAM	1	7	18.81	18.33	19.14	9.72	9.24	10.05
3	16QAM	1	14	18.04	17.99	18.42	8.95	8.90	9.33
3	16QAM	8	0	17.64	17.75	17.31	8.55	8.66	8.22
3	16QAM	8	3	17.23	17.35	17.97	8.14	8.26	8.88
3	16QAM	8	7	17.59	17.63	17.92	8.50	8.54	8.83
3	16QAM	15	0	17.39	17.35	17.97	8.30	8.26	8.88
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch23035/ 701.5MHz	POWER (dBm) Mid Ch23095/ 707.5MHz	POWER (dBm) High Ch23155/ 713.5MHz	ERP Low Ch23035/ 701.5MHz	ERP Mid Ch23095/ 707.5MHz	ERP High Ch23155/ 713.5MHz
5	QPSK	1	0	20.14	19.55	19.58	11.05	10.46	10.49
5	QPSK	1	12	20.04	19.14	19.62	10.95	10.05	10.53
5	QPSK	1	24	19.87	19.04	19.63	10.78	9.95	10.54
5	QPSK	12	0	18.96	18.29	18.26	9.87	9.20	9.17
5	QPSK	12	6	18.98	18.03	18.42	9.89	8.94	9.33
5	QPSK	12	13	18.81	18.03	18.79	9.72	8.94	9.70
5	QPSK	25	0	19.17	18.11	18.63	10.08	9.02	9.54
5	16QAM	1	0	18.92	18.56	18.01	9.83	9.47	8.92
5	16QAM	1	12	18.62	17.88	18.58	9.53	8.79	9.49
5	16QAM	1	24	18.69	18.10	18.77	9.60	9.01	9.68
5	16QAM	12	0	17.95	17.47	17.33	8.86	8.38	8.24



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FCC ID: 2AT5JE070W1D14V1U

5	16QAM	12	6	18.15	17.35	17.58	9.06	8.26	8.49
5	16QAM	12	13	18.06	17.05	17.73	8.97	7.96	8.64
5	16QAM	25	0	18.01	17.67	17.78	8.92	8.58	8.69
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch23060/ 704MHz	POWER (dBm) Mid Ch23095/ 707.5MHz	POWER (dBm) High Ch23130/ 711MHz	ERP Low Ch23060/ 704MHz	ERP Mid Ch23095/ 707.5MHz	ERP High Ch23130/ 711MHz
10	QPSK	1	0	19.78	19.71	19.63	10.69	10.62	10.54
10	QPSK	1	24	19.46	19.07	20.01	10.37	9.98	10.92
10	QPSK	1	49	18.39	19.72	20.28	9.30	10.63	11.19
10	QPSK	25	0	18.33	18.37	18.42	9.24	9.28	9.33
10	QPSK	25	12	18.22	18.16	18.55	9.13	9.07	9.46
10	QPSK	25	25	17.89	18.60	18.82	8.80	9.51	9.73
10	QPSK	50	0	18.13	18.59	18.23	9.04	9.50	9.14

Test equipment: ETSTW-GSM 002, ETSTW-GSM 004

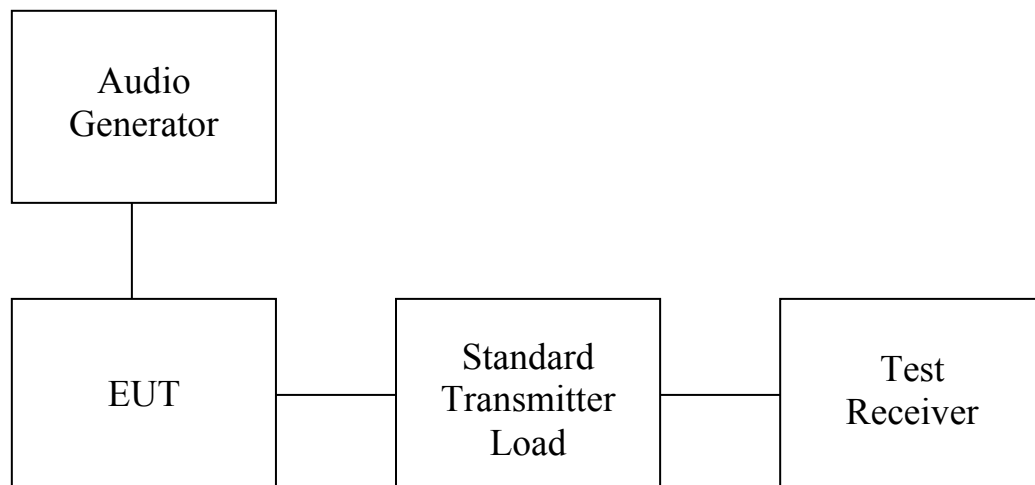
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

4. Modulation Characteristics

4.1 Test procedure

- ☐ A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted.
The audio signal generator is connected to the audio input of the EUT with its full rating. The modulation response is measured at certain modulation frequencies, related to 1000Hz reference signal. Tests are performed for positive and negative modulation.
- ☐ Equipment which employs modulation Limiting: A curve or family of curves showing the percentage of modulation versus the modulation input voltage shall be supplied. The audio signal generator is connected to the audio input of the EUT with its full rating. The modulation limiting is measured at certain modulation frequencies from 100Hz to 15kHz.



4.2 Test Results

For digital modulation employed, this test item is not applicable.

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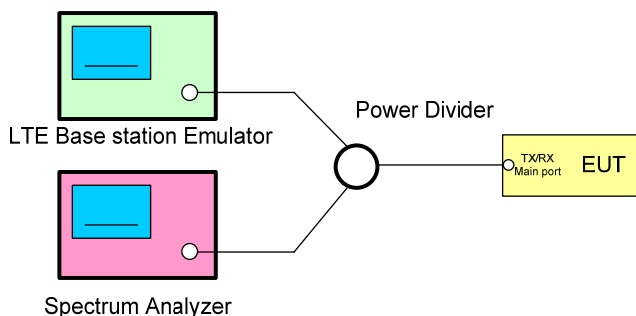
5. Peak-to-Average Ratio

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

5.1 Test procedure

1. The EUT main port was connected to the LTE emulator and spectrum analyzer via power divider
2. For Spectrum Analyzer setting :
3. Set the CCDF function in spectrum analyzer.
4. Set RBW $\geq$ signal's occupied bandwidth.
5. Set the number of counts to a value that stabilizes the measured CCDF curve.
6. Set the measurement interval (sweep time) to 1ms.
7. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%
8. Record the deviation as Peak to Average Ratio.

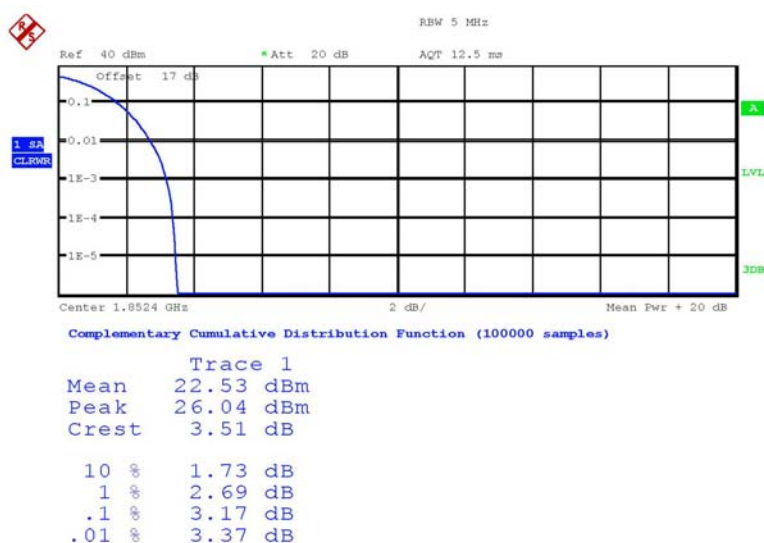
5.2 Test Set up



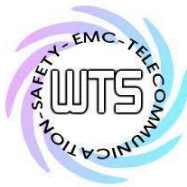
5.3 Test Results

WCDMA

Band II



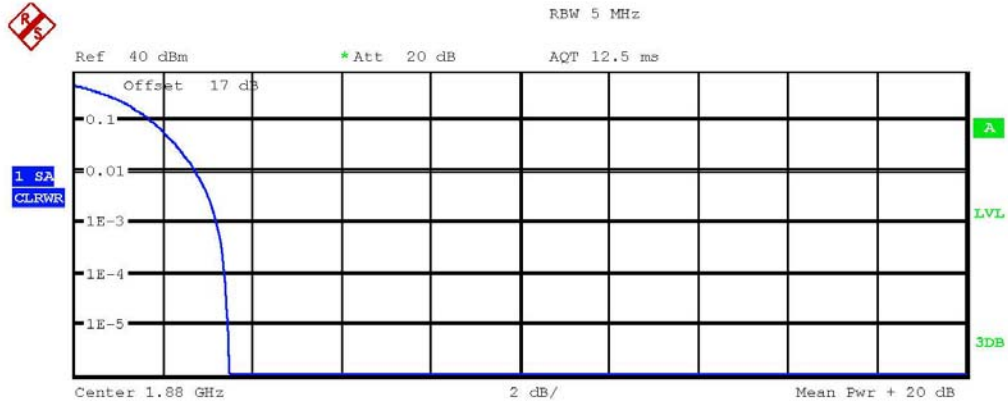
Date: 22.JUL.2019 15:06:49



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

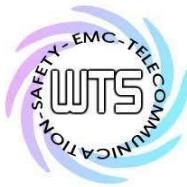
FCC ID: 2AT5JE070W1D14V1U



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	22.76 dBm
Peak	26.25 dBm
Crest	3.49 dB
10 %	1.76 dB
1 %	2.72 dB
.1 %	3.21 dB
.01 %	3.37 dB

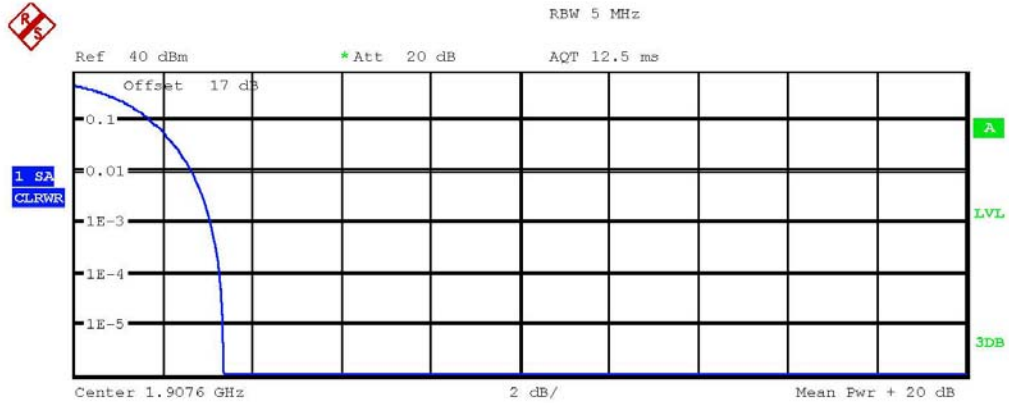
Date: 22.JUL.2019 15:05:55



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

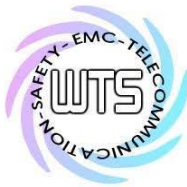
FCC ID: 2AT5JE070W1D14V1U



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	22.91 dBm
Peak	26.25 dBm
Crest	3.34 dB
10 %	1.73 dB
1 %	2.66 dB
.1 %	3.04 dB
.01 %	3.27 dB

Date: 22.JUL.2019 15:05:36

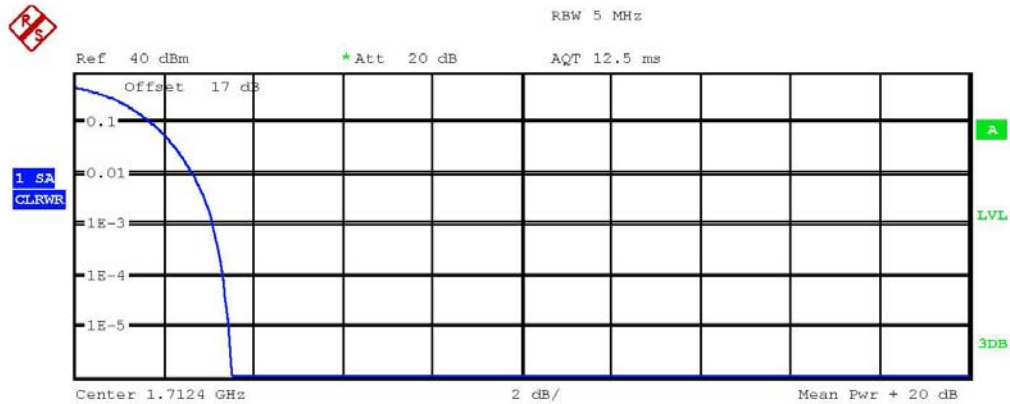


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

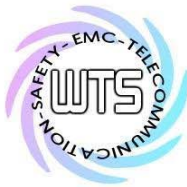
Band IV



Complementary Cumulative Distribution Function (100000 samples)

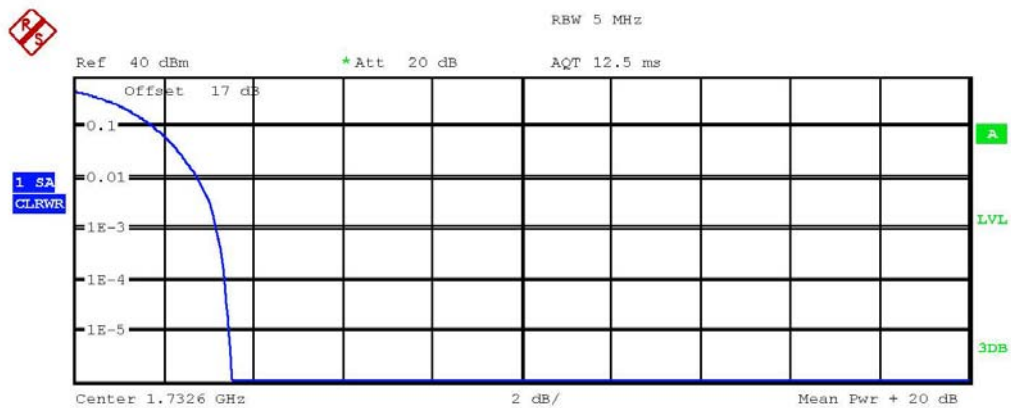
Trace 1	
Mean	22.89 dBm
Peak	26.40 dBm
Crest	3.51 dB
10 %	1.73 dB
1 %	2.63 dB
.1 %	3.08 dB
.01 %	3.30 dB

Date: 22.JUL.2019 15:05:08



Report Number: W6M21906-19141-P-247

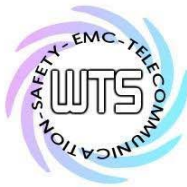
FCC ID: 2AT5JE070W1D14V1U



Complementary Cumulative Distribution Function (100000 samples)

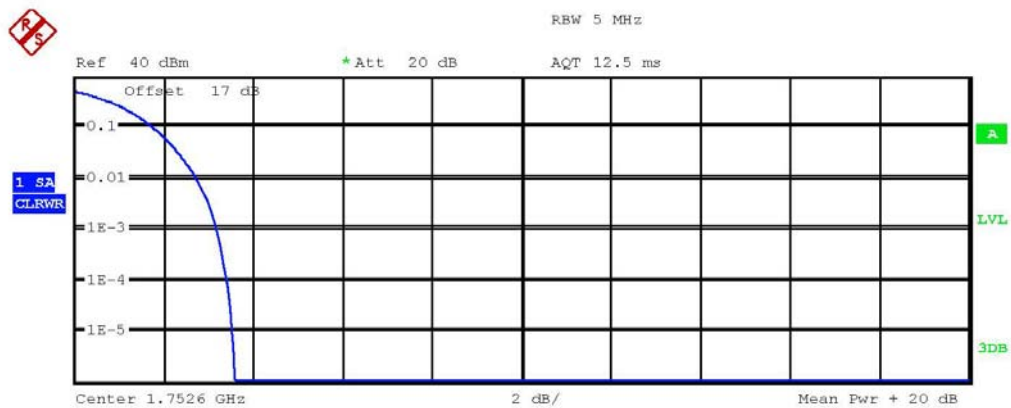
Trace 1	
Mean	23.16 dBm
Peak	26.68 dBm
Crest	3.52 dB
10 %	1.76 dB
1 %	2.76 dB
.1 %	3.17 dB
.01 %	3.37 dB

Date: 22.JUL.2019 15:04:48



Report Number: W6M21906-19141-P-247

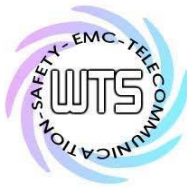
FCC ID: 2AT5JE070W1D14V1U



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	22.95 dBm
Peak	26.54 dBm
Crest	3.59 dB
10 %	1.73 dB
1 %	2.69 dB
.1 %	3.17 dB
.01 %	3.40 dB

Date: 22.JUL.2019 15:04:15

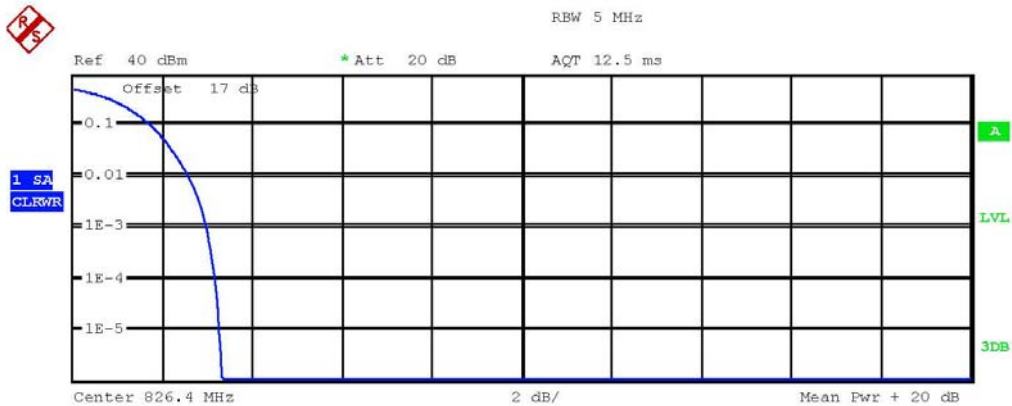


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

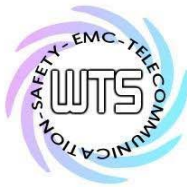
Band V



Complementary Cumulative Distribution Function (100000 samples)

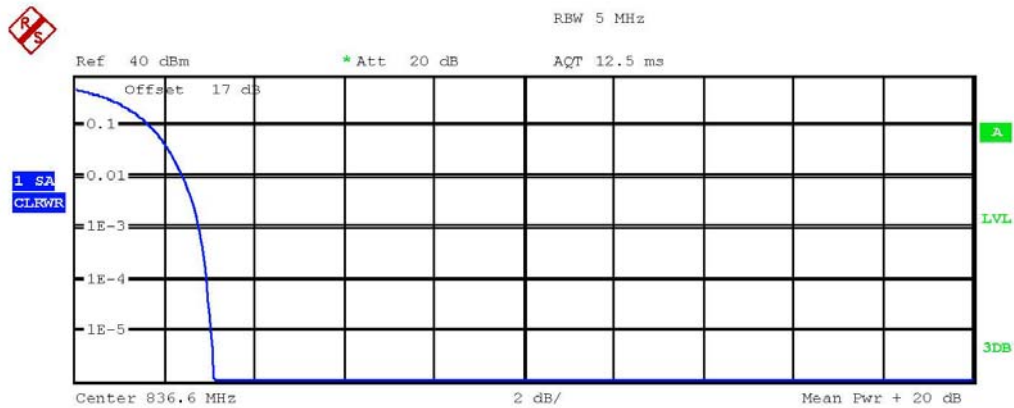
Trace 1	
Mean	22.01 dBm
Peak	25.34 dBm
Crest	3.33 dB
10 %	1.73 dB
1 %	2.56 dB
.1 %	2.98 dB
.01 %	3.17 dB

Date: 22.JUL.2019 15:02:31



Report Number: W6M21906-19141-P-247

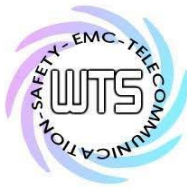
FCC ID: 2AT5JE070W1D14V1U



Complementary Cumulative Distribution Function (100000 samples)

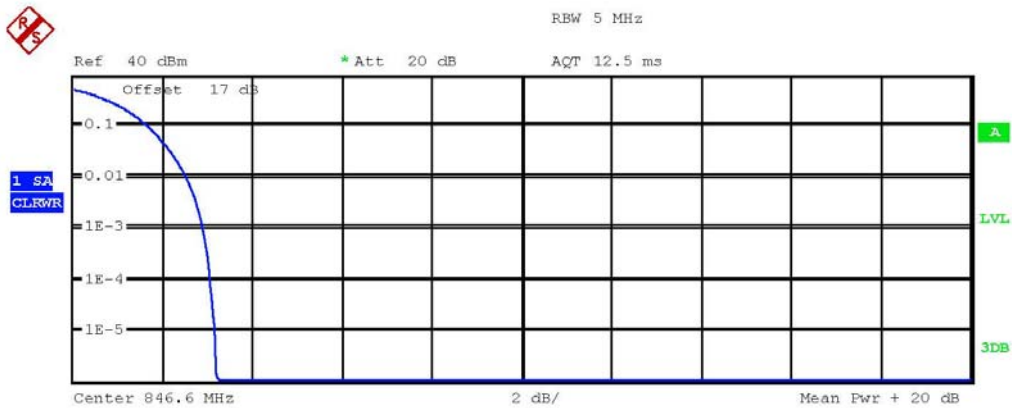
Trace 1	
Mean	21.95 dBm
Peak	25.05 dBm
Crest	3.10 dB
10 %	1.67 dB
1 %	2.40 dB
.1 %	2.79 dB
.01 %	2.95 dB

Date: 22.JUL.2019 15:03:07



Report Number: W6M21906-19141-P-247

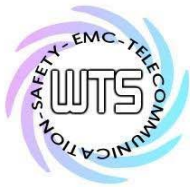
FCC ID: 2AT5JE070W1D14V1U



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	21.99 dBm
Peak	25.20 dBm
Crest	3.21 dB
10 %	1.67 dB
1 %	2.53 dB
.1 %	2.92 dB
.01 %	3.08 dB

Date: 22.JUL.2019 15:03:26



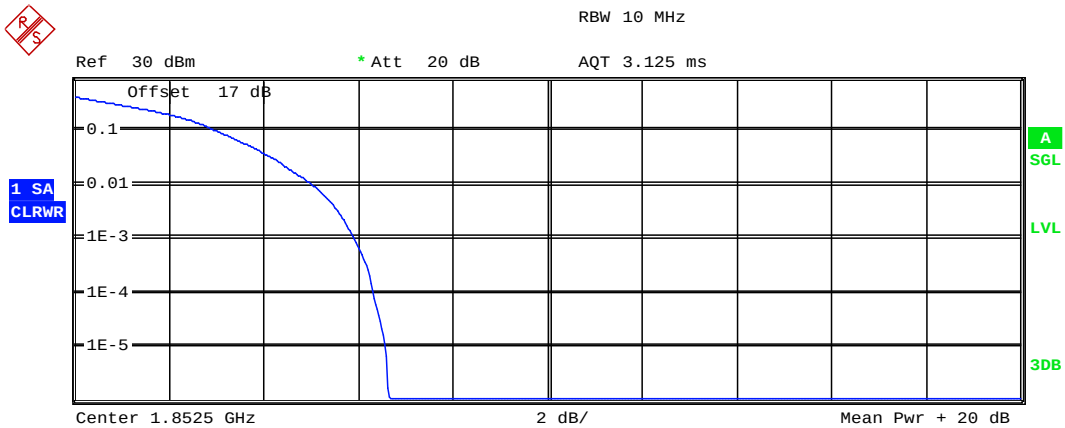
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

LTE

Band II

FRB

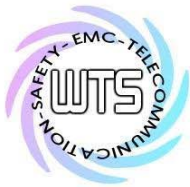


Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 18.49 dBm
Peak 25.13 dBm
Crest 6.64 dB

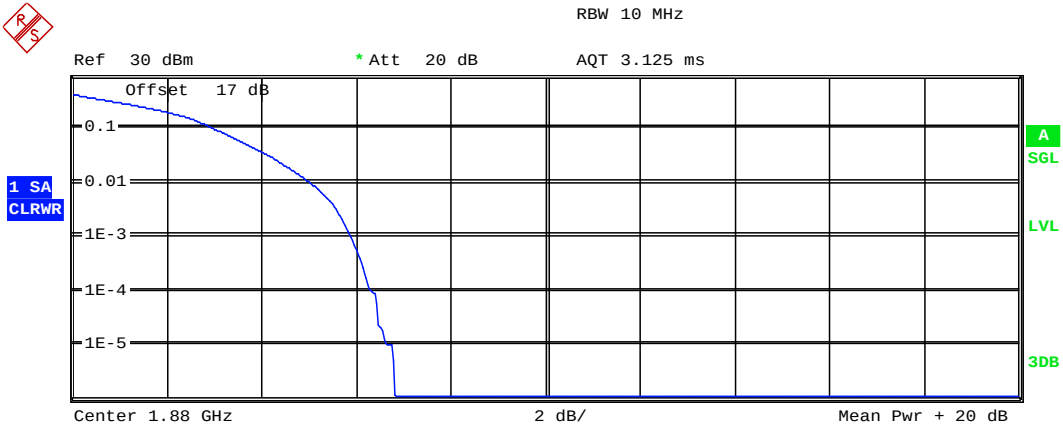
10 %	3.01 dB
1 %	5.03 dB
.1 %	5.93 dB
.01 %	6.31 dB

Date: 29.AUG.2019 13:50:40



Report Number: W6M21906-19141-P-247

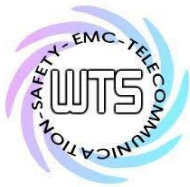
FCC ID: 2AT5JE070W1D14V1U



Complementary Cumulative Distribution Function (100000 samples)

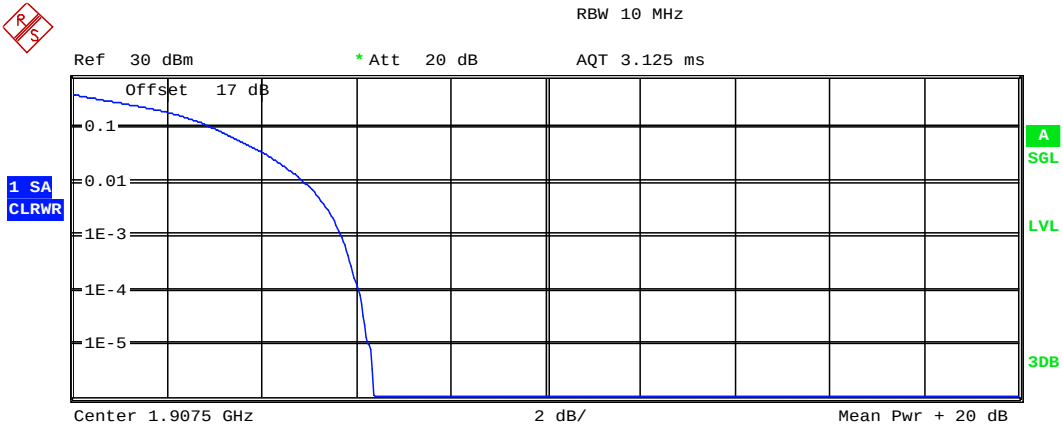
Trace 1	
Mean	19.37 dBm
Peak	26.19 dBm
Crest	6.82 dB
10 %	3.01 dB
1 %	5.00 dB
.1 %	5.87 dB
.01 %	6.31 dB

Date: 29.AUG.2019 13:49:30



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

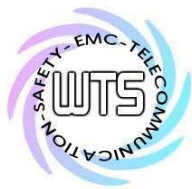


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	18.20 dBm
Peak	24.56 dBm
Crest	6.36 dB
10 %	3.01 dB
1 %	4.90 dB
.1 %	5.71 dB
.01 %	6.06 dB

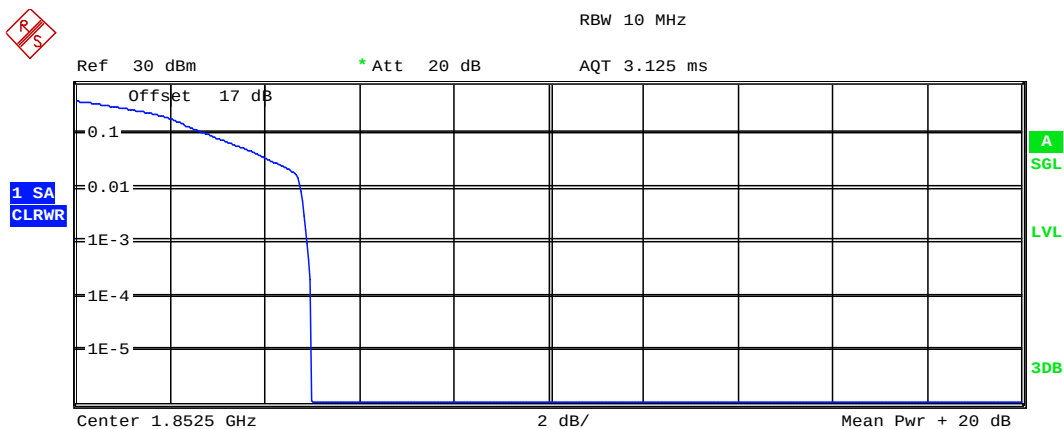
Date: 29.AUG.2019 13:52:34



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

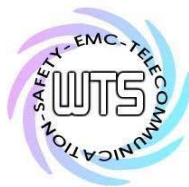
1RB



Complementary Cumulative Distribution Function (100000 samples)

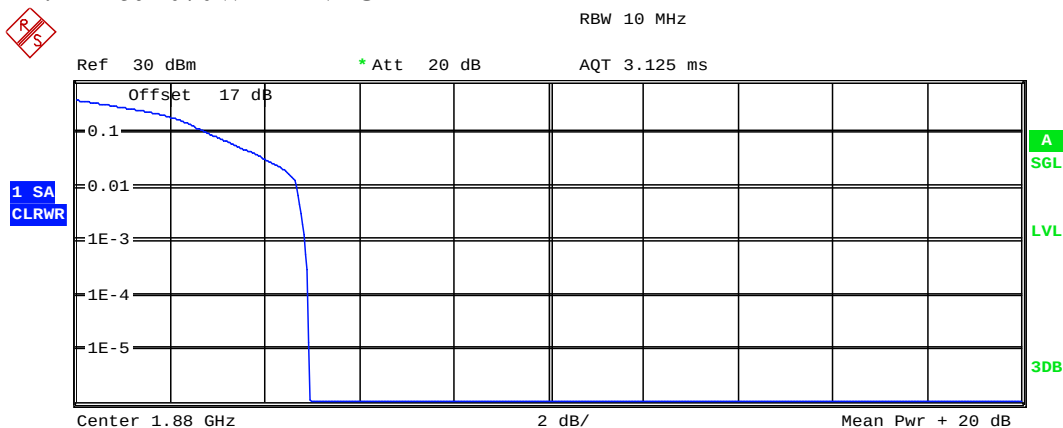
Trace 1	
Mean	19.51 dBm
Peak	24.49 dBm
Crest	4.99 dB
10 %	2.82 dB
1 %	4.78 dB
.1 %	4.90 dB
.01 %	5.00 dB

Date: 28.AUG.2019 11:57:03



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

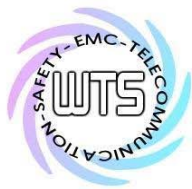


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

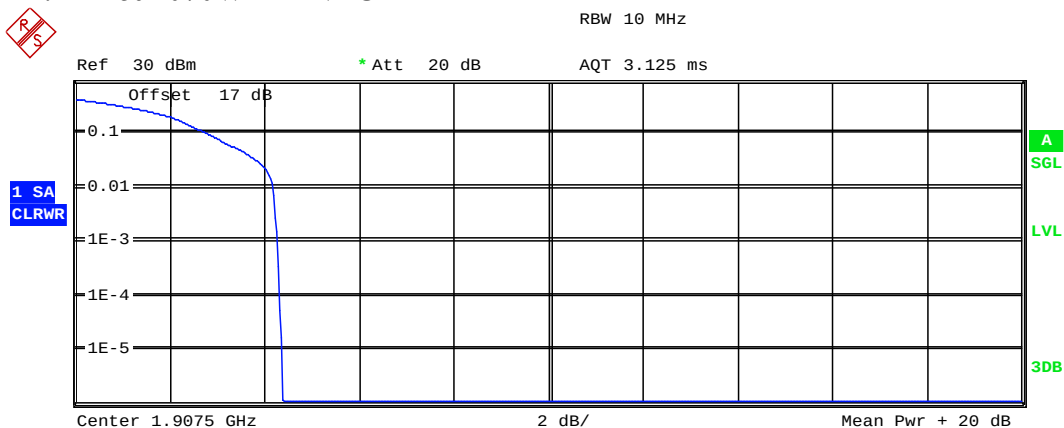
Mean	19.99 dBm
Peak	24.92 dBm
Crest	4.93 dB
10 %	2.85 dB
1 %	4.68 dB
.1 %	4.84 dB
.01 %	4.94 dB

Date: 28.AUG.2019 11:56:12



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

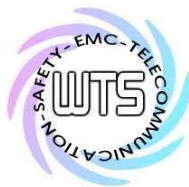


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	19.63 dBm
Peak	24.00 dBm
Crest	4.37 dB
10 %	2.79 dB
1 %	4.17 dB
.1 %	4.26 dB
.01 %	4.33 dB

Date: 28.AUG.2019 11:57:40

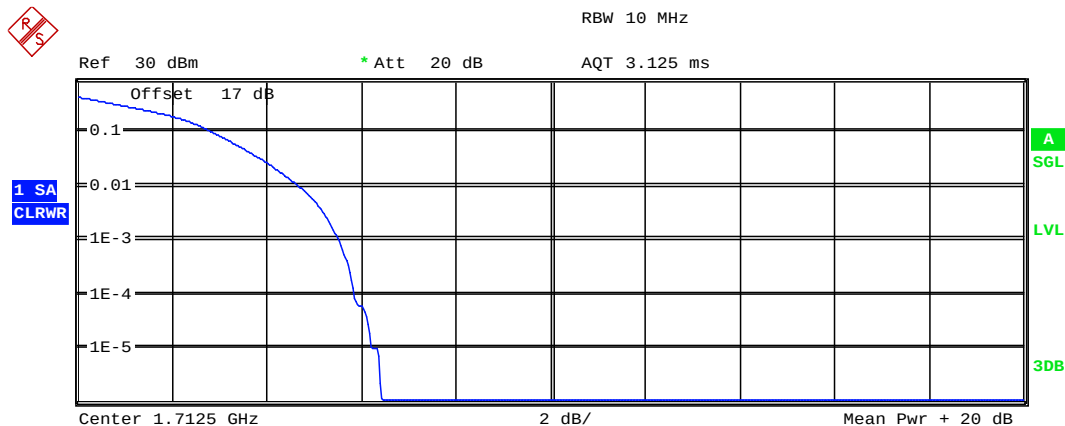


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

Band IV

FRB



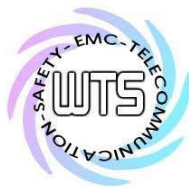
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	19.28 dBm
Peak	25.69 dBm
Crest	6.41 dB

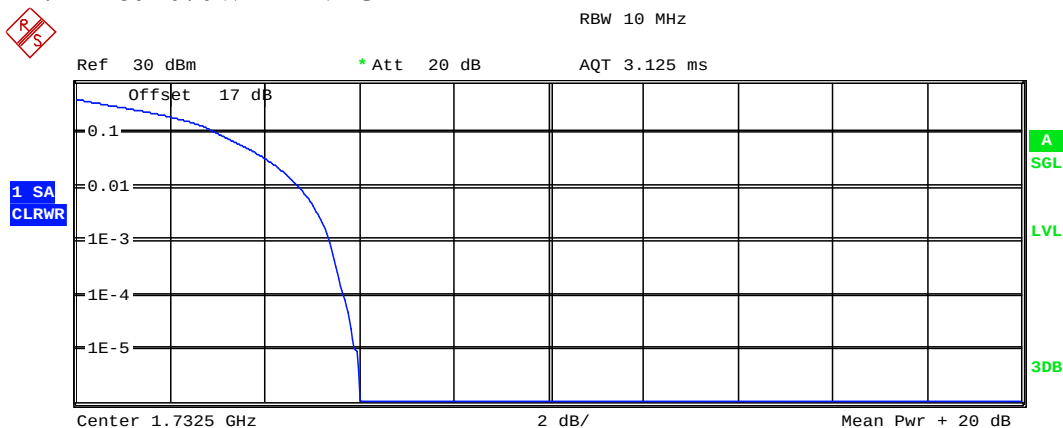
10 %	2.88 dB
1 %	4.68 dB
.1 %	5.54 dB
.01 %	5.87 dB

Date: 29.AUG.2019 13:53:34



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

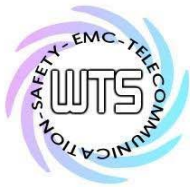


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

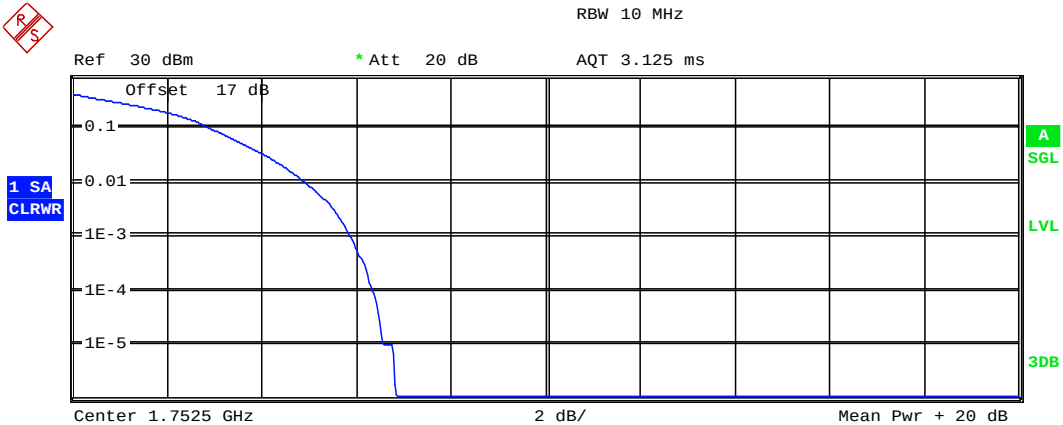
Mean	18.90 dBm
Peak	24.92 dBm
Crest	6.01 dB
10 %	3.04 dB
1 %	4.74 dB
.1 %	5.38 dB
.01 %	5.67 dB

Date: 29.AUG.2019 13:53:02



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

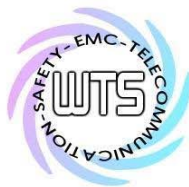


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	18.23 dBm
Peak	25.06 dBm
Crest	6.83 dB
10 %	2.95 dB
1 %	4.90 dB
.1 %	5.87 dB
.01 %	6.35 dB

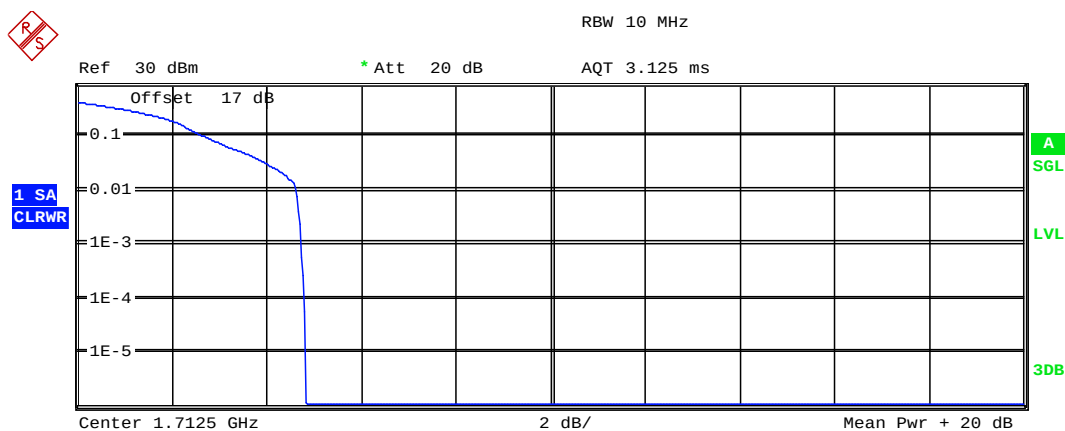
Date: 29.AUG.2019 13:54:01



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

1RB



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	19.68 dBm
Peak	24.49 dBm
Crest	4.81 dB

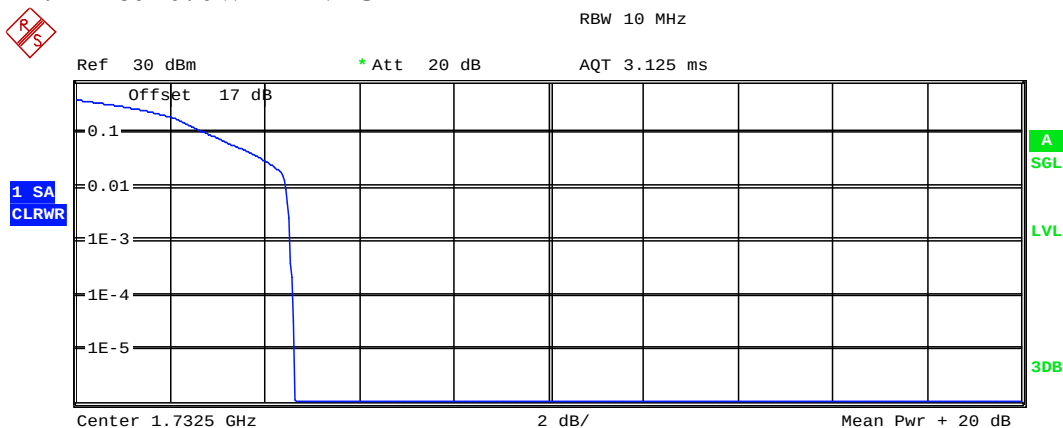
10 %	2.72 dB
1 %	4.62 dB
.1 %	4.74 dB
.01 %	4.81 dB

Date: 28.AUG.2019 11:59:14



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



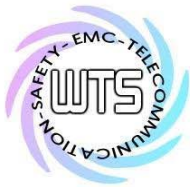
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	19.88 dBm
Peak	24.49 dBm
Crest	4.61 dB

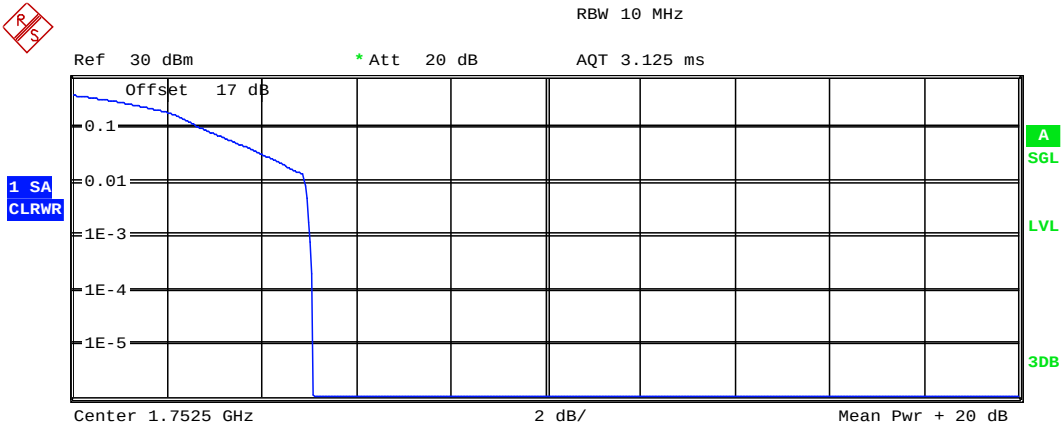
10 %	2.82 dB
1 %	4.46 dB
.1 %	4.55 dB
.01 %	4.62 dB

Date: 28.AUG.2019 11:58:37



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

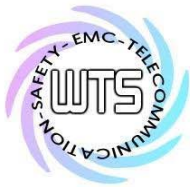


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	19.50 dBm
Peak	24.56 dBm
Crest	5.07 dB
10 %	2.76 dB
1 %	4.90 dB
.1 %	5.03 dB
.01 %	5.10 dB

Date: 28.AUG.2019 12:00:20

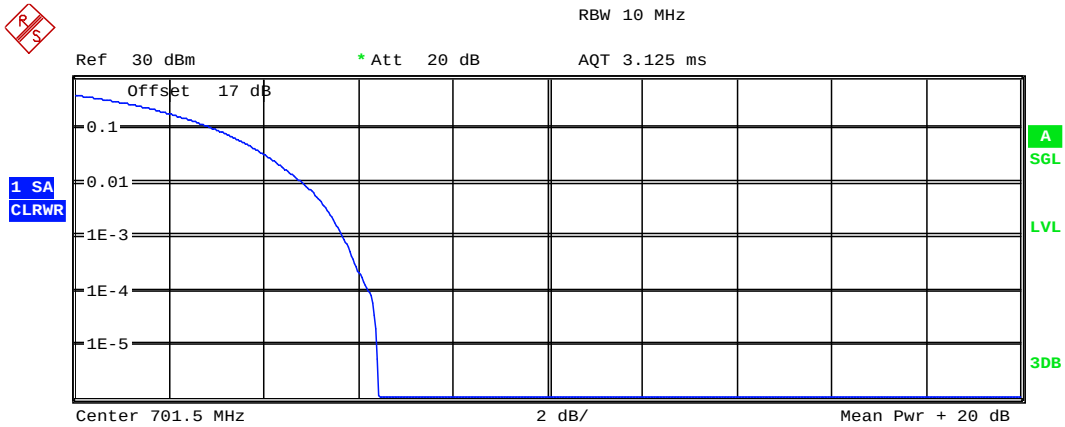


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

Band XII

FRB



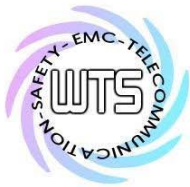
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	16.53 dBm
Peak	22.94 dBm
Crest	6.41 dB

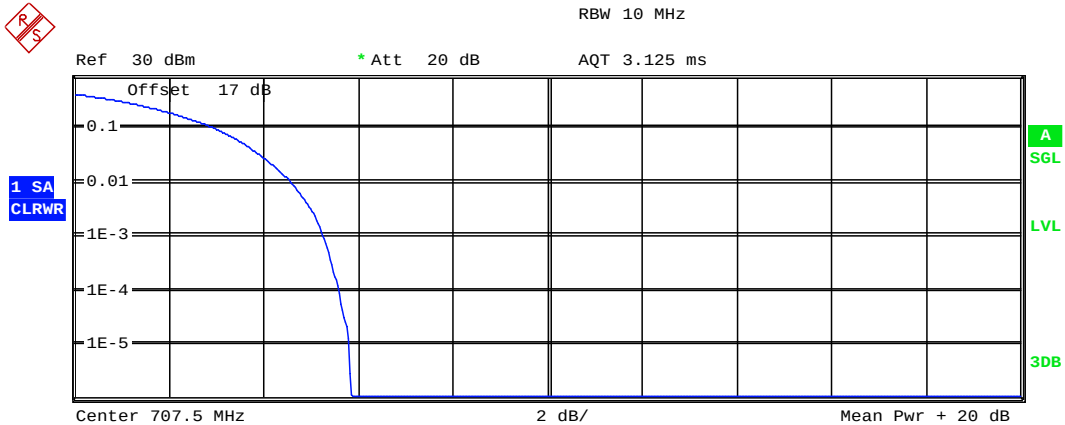
10 %	3.01 dB
1 %	4.84 dB
.1 %	5.67 dB
.01 %	6.22 dB

Date: 29.AUG.2019 13:54:59



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

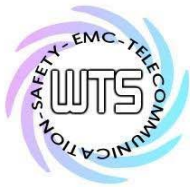


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

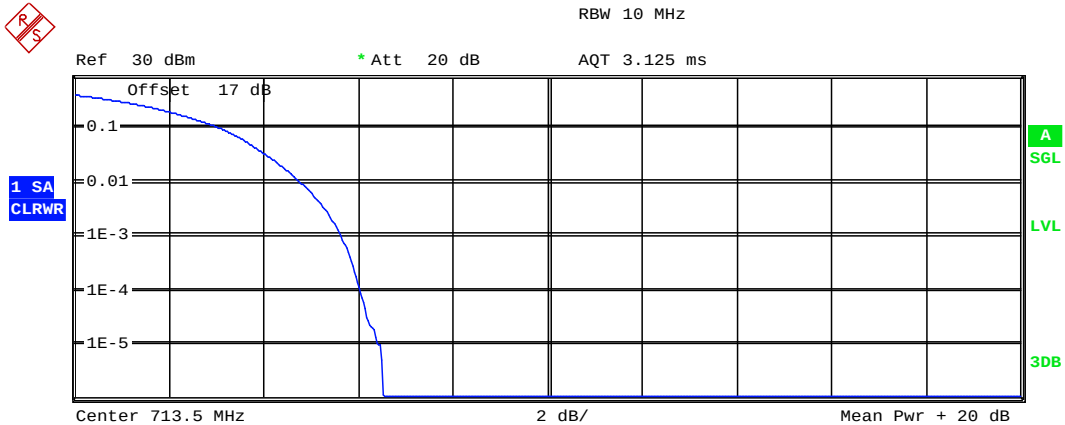
Mean	15.77 dBm
Peak	21.60 dBm
Crest	5.83 dB
10 %	2.98 dB
1 %	4.58 dB
.1 %	5.26 dB
.01 %	5.61 dB

Date: 29.AUG.2019 13:54:37



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



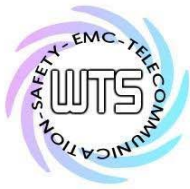
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	15.77 dBm
Peak	22.31 dBm
Crest	6.53 dB

10 %	3.11 dB
1 %	4.78 dB
.1 %	5.64 dB
.01 %	6.03 dB

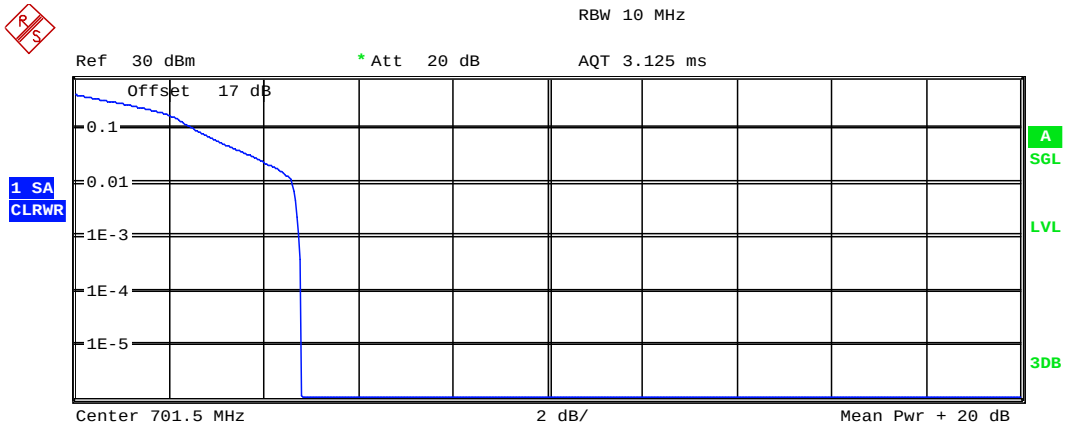
Date: 29.AUG.2019 13:55:21



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

1RB



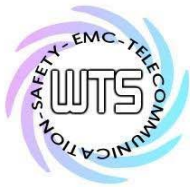
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	18.51 dBm
Peak	23.29 dBm
Crest	4.78 dB

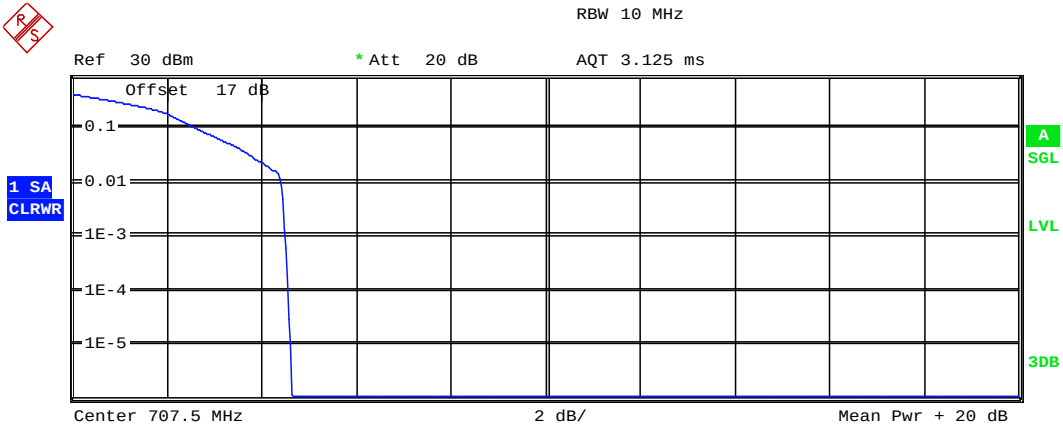
10 %	2.56 dB
1 %	4.62 dB
.1 %	4.74 dB
.01 %	4.81 dB

Date: 28.AUG.2019 11:50:23



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

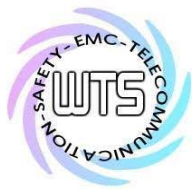


Complementary Cumulative Distribution Function (100000 samples)

Trace 1

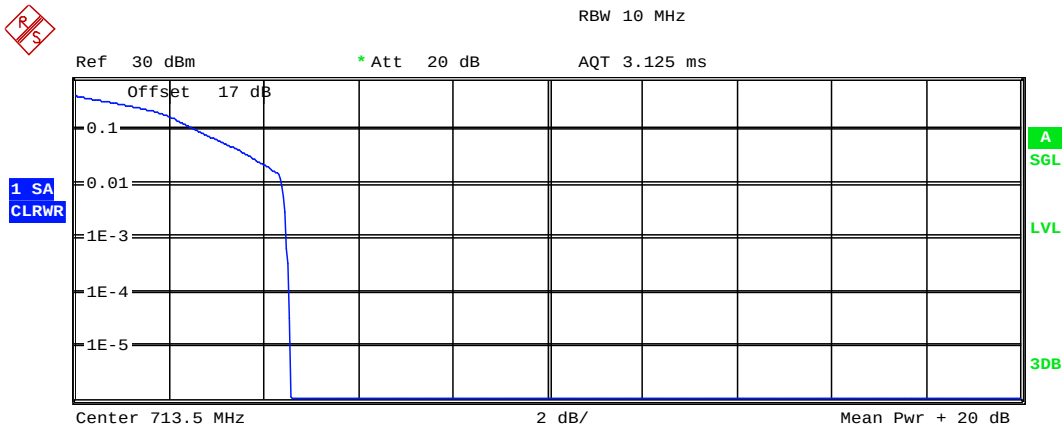
Mean	17.75 dBm
Peak	22.38 dBm
Crest	4.63 dB
10 %	2.63 dB
1 %	4.39 dB
.1 %	4.49 dB
.01 %	4.58 dB

Date: 28.AUG.2019 11:48:49



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	18.11 dBm
Peak	22.66 dBm
Crest	4.55 dB
10 %	2.60 dB
1 %	4.39 dB
.1 %	4.49 dB
.01 %	4.55 dB

Date: 28.AUG.2019 11:49:20

Limit according to FCC §24.232 and §27.50, The peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

Test equipment: ETSTW-RE 055, ETSTW-GSM 002, ETSTW-GSM 023, ETSTW-GSM 004

Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

6. Occupied Bandwidth

The occupied bandwidth (OBW) is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to a specified percentage 0.5% of the total mean transmitted power.

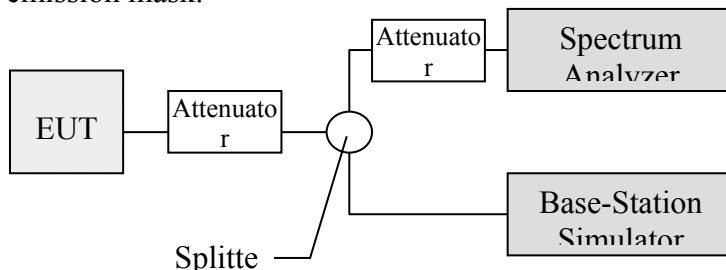
The 26 dB occupied bandwidth is the width of a frequency band such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal 26 dB.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

6.1 Test procedure

The RF output of the transceiver was connected as the following figure.

Occupied Bandwidth was measured with a occupied bandwidth function of the analyzer at 99% power was occupied. Then set the spectrum analyzer to cover the upper and lower band edges to measure emission mask.

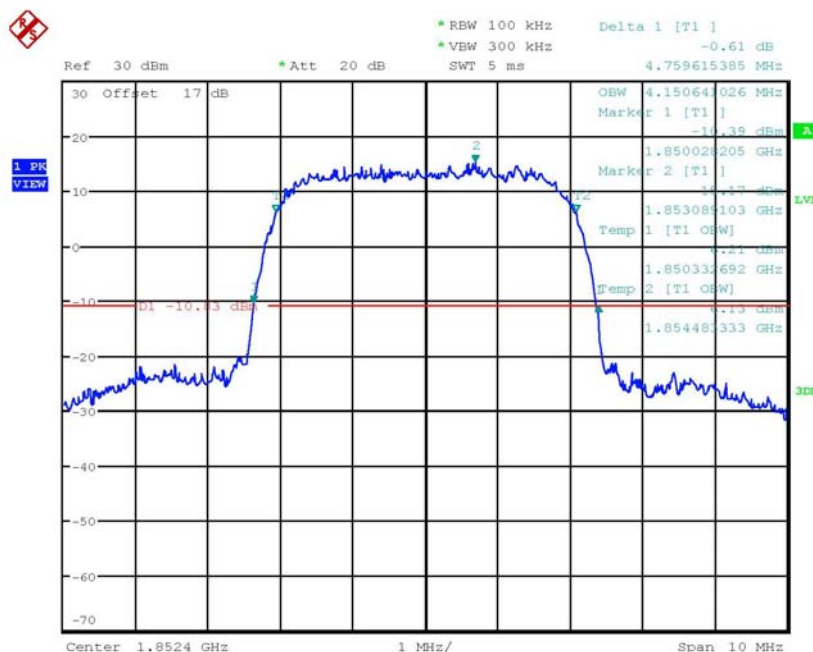


6.2 Test Results

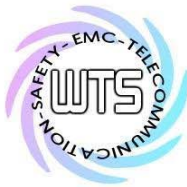
Occupied Channel Bandwidth

WCDMA

Band II

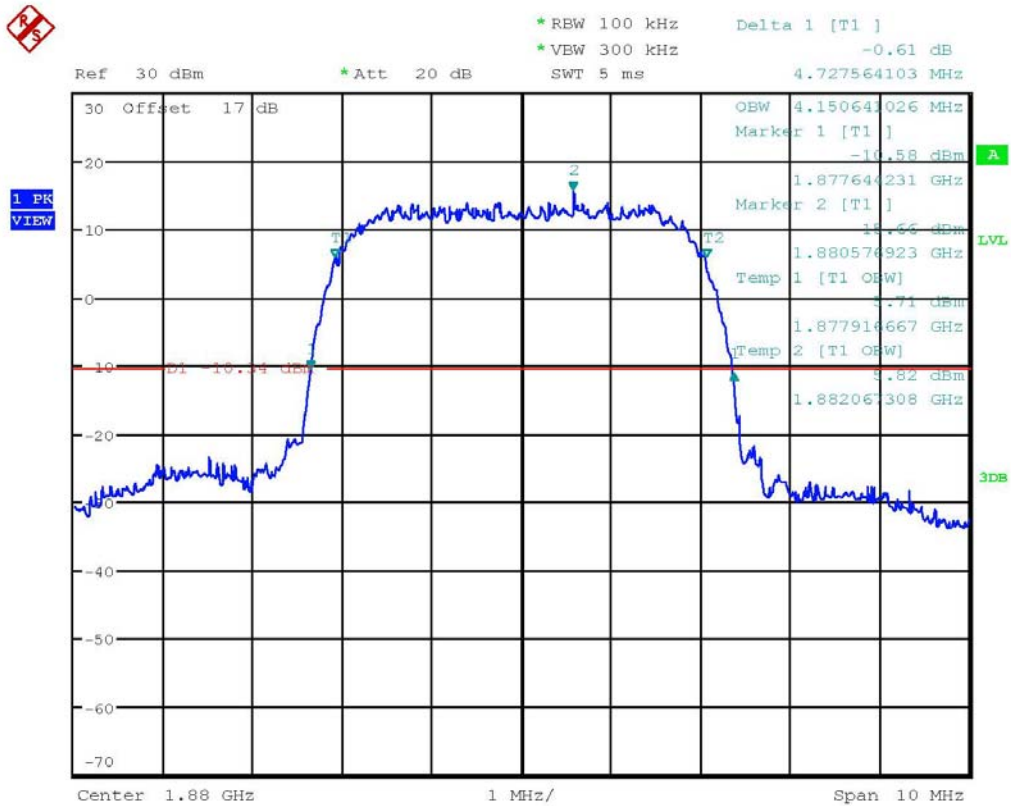


Date: 22.JUL.2019 14:36:35

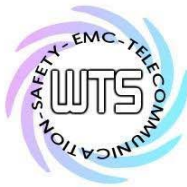


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



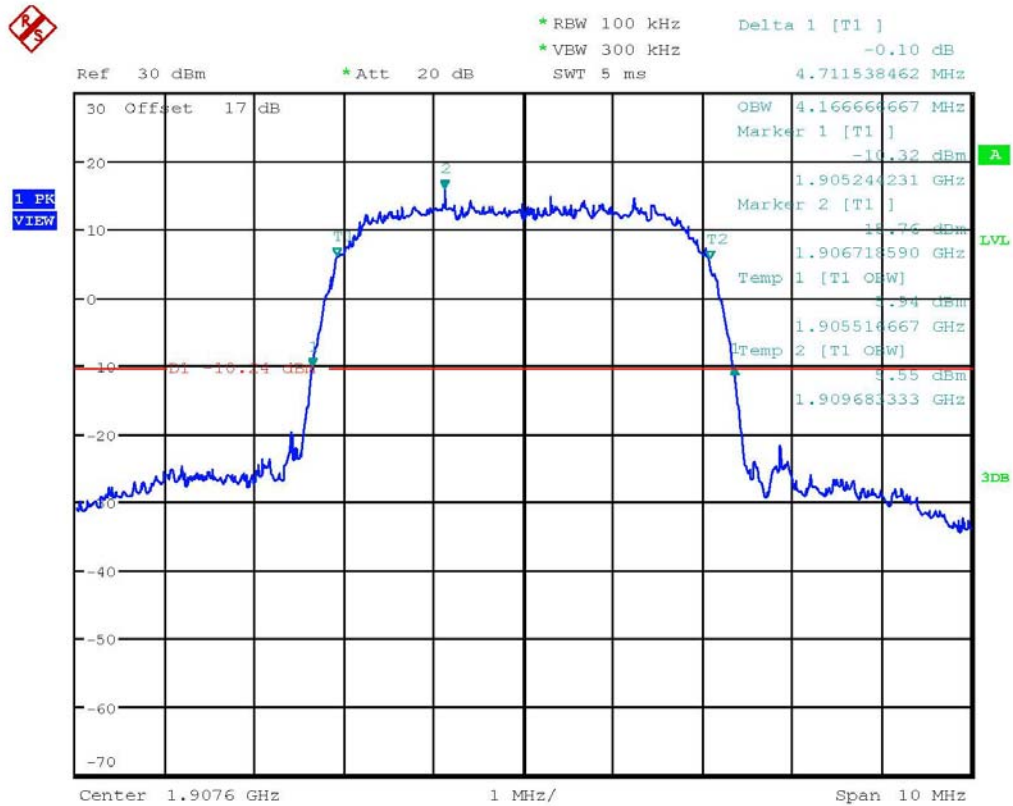
Date: 22.JUL.2019 14:37:36



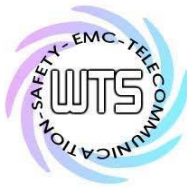
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 22.JUL.2019 14:39:02

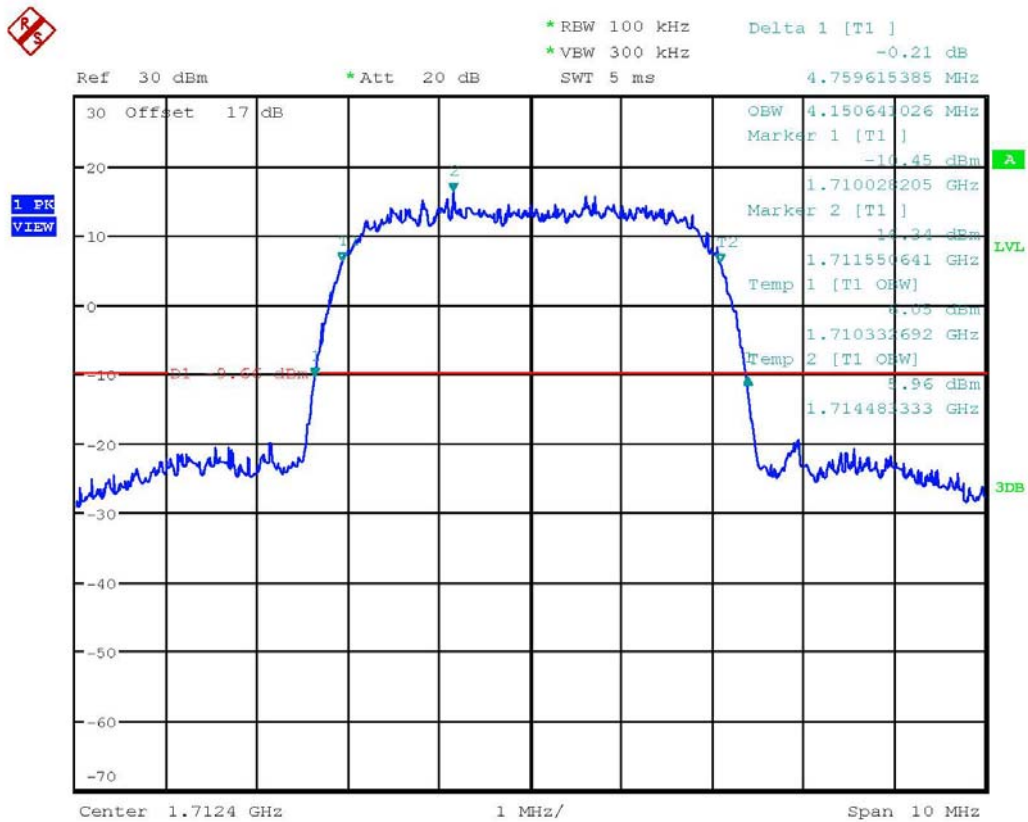


Worldwide Testing Services(Taiwan) Co., Ltd.

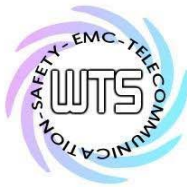
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

Band IV

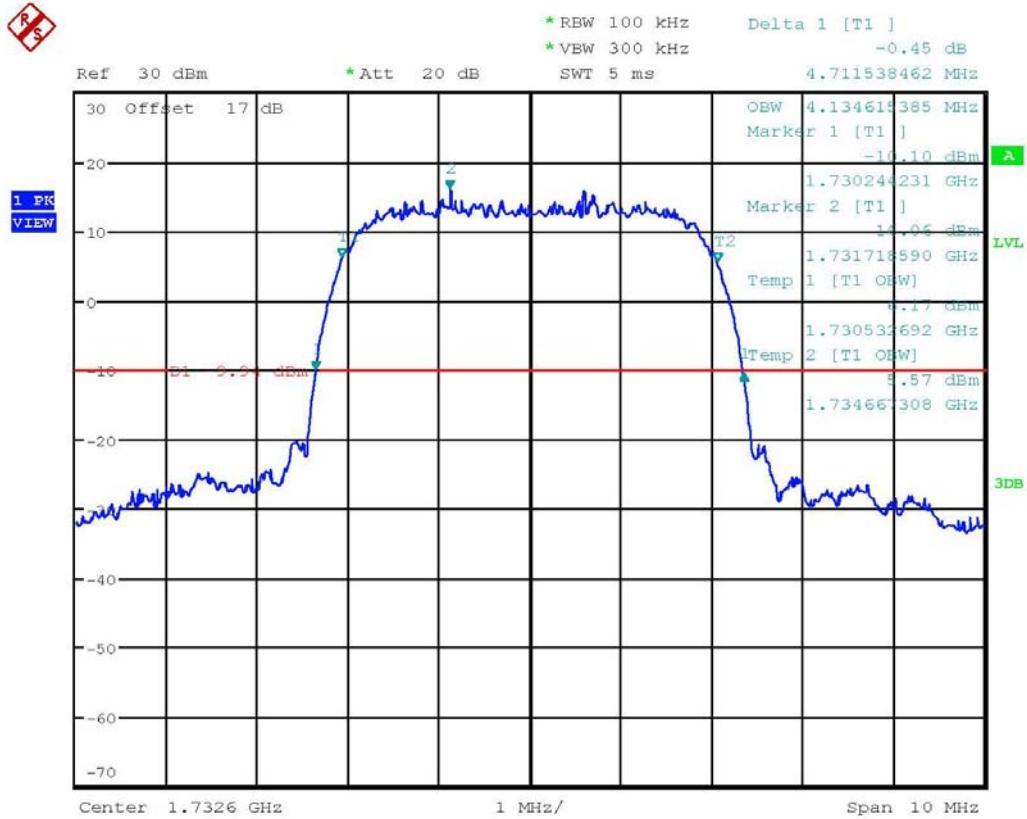


Date: 22.JUL.2019 14:20:21

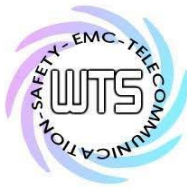


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

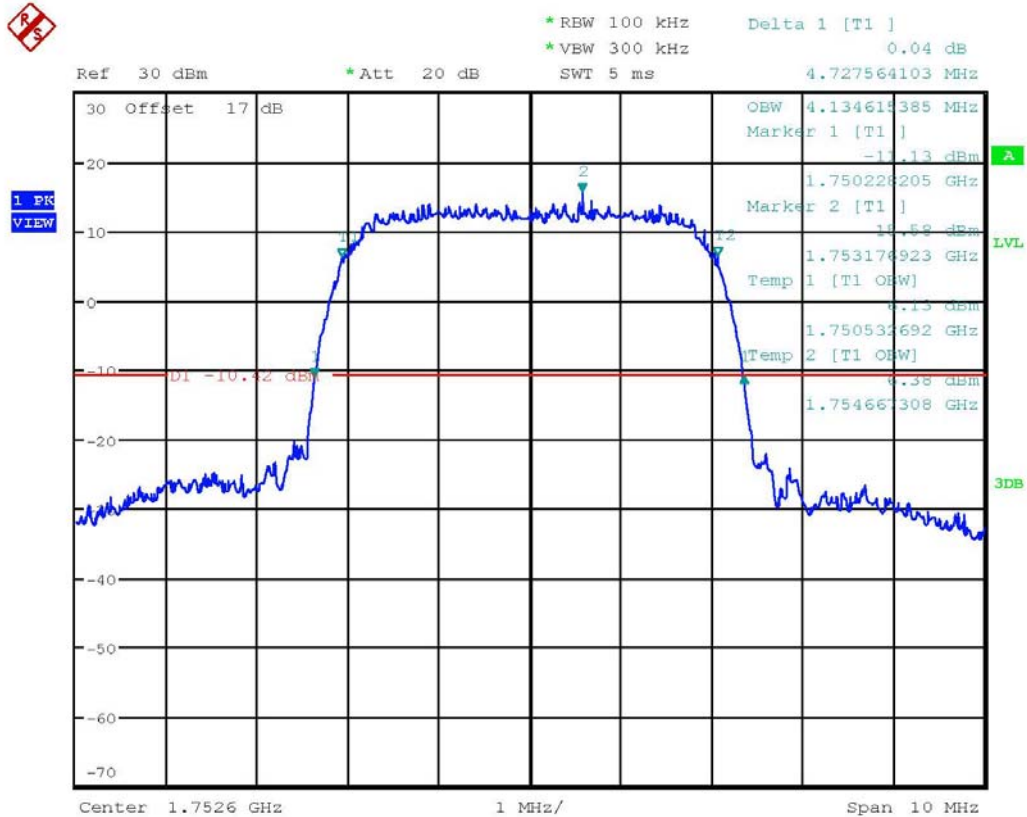


Date: 22.JUL.2019 14:22:46

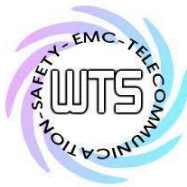


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 22.JUL.2019 14:24:24

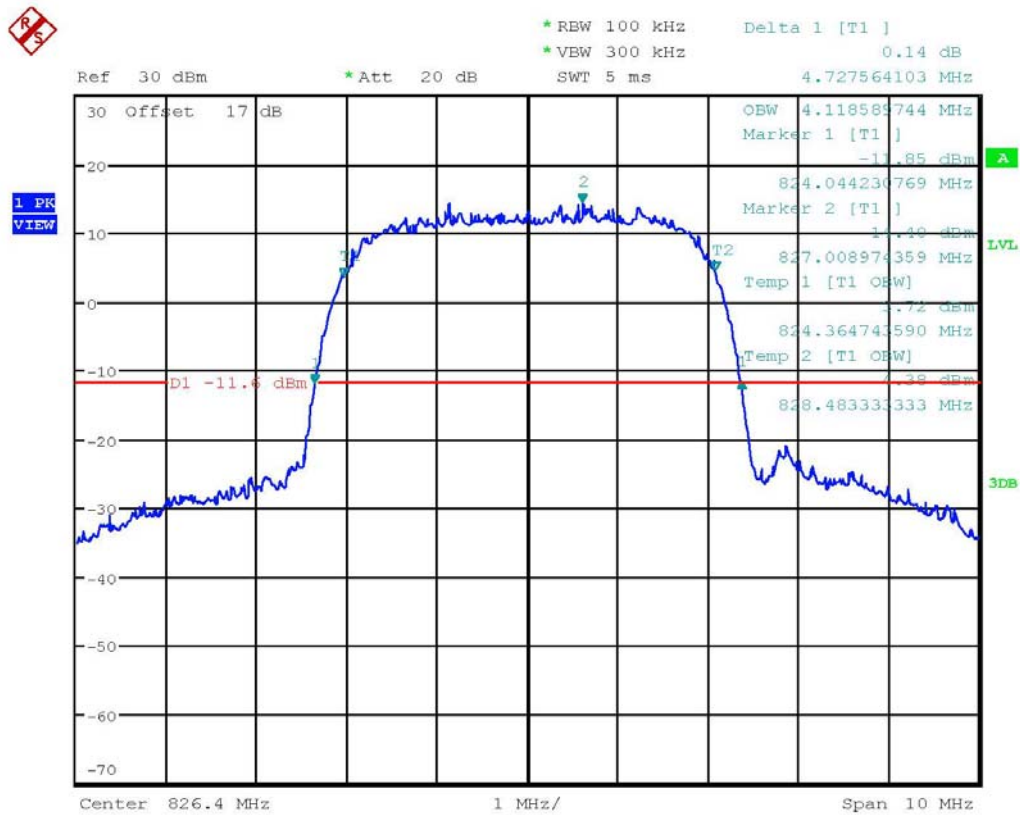


Worldwide Testing Services(Taiwan) Co., Ltd.

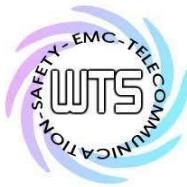
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

Band V



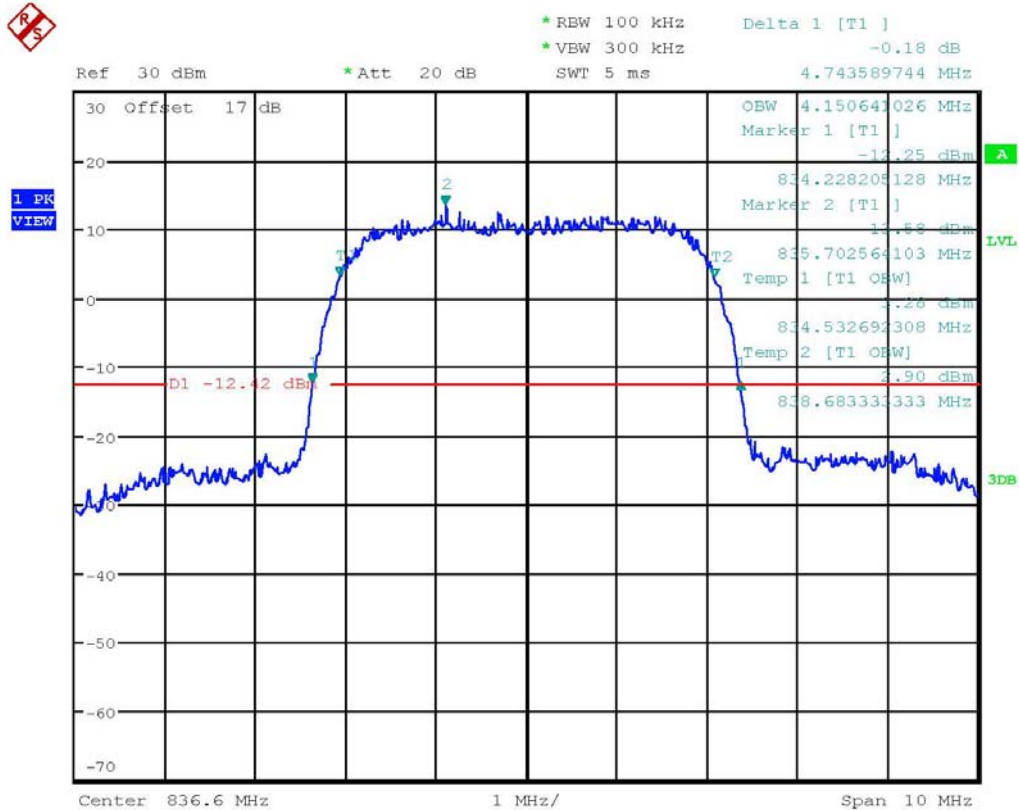
Date: 22.JUL.2019 14:45:47



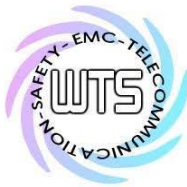
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



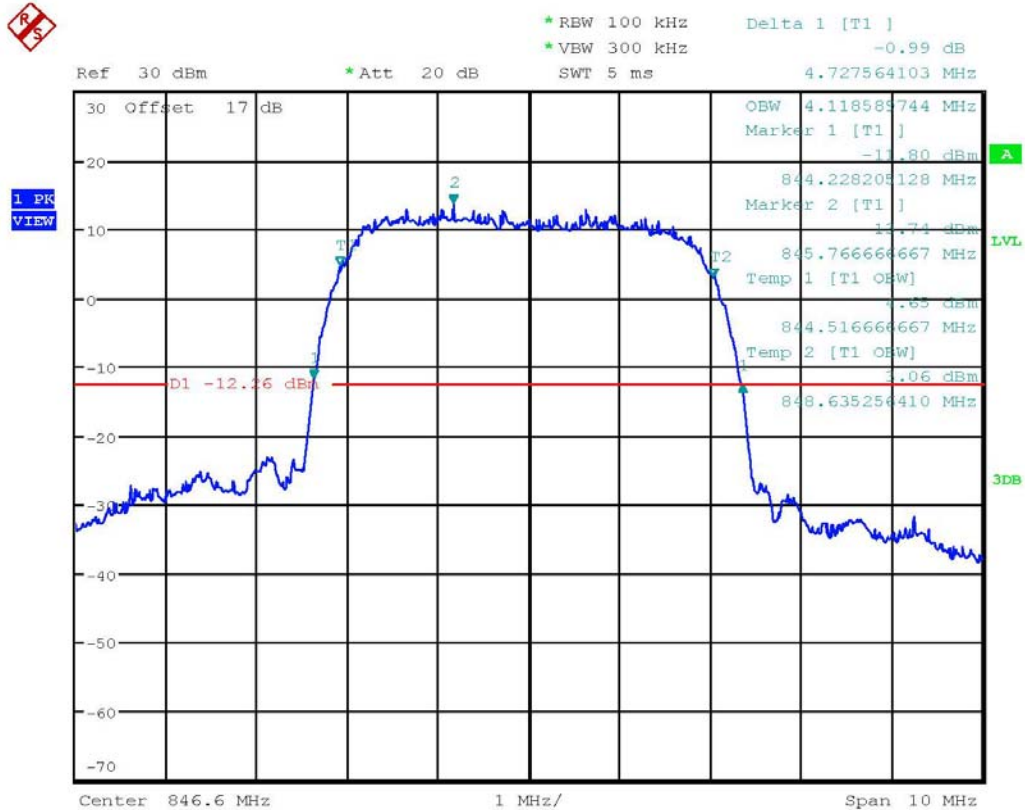
Date: 22.JUL.2019 14:47:13



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 22.JUL.2019 14:48:28



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

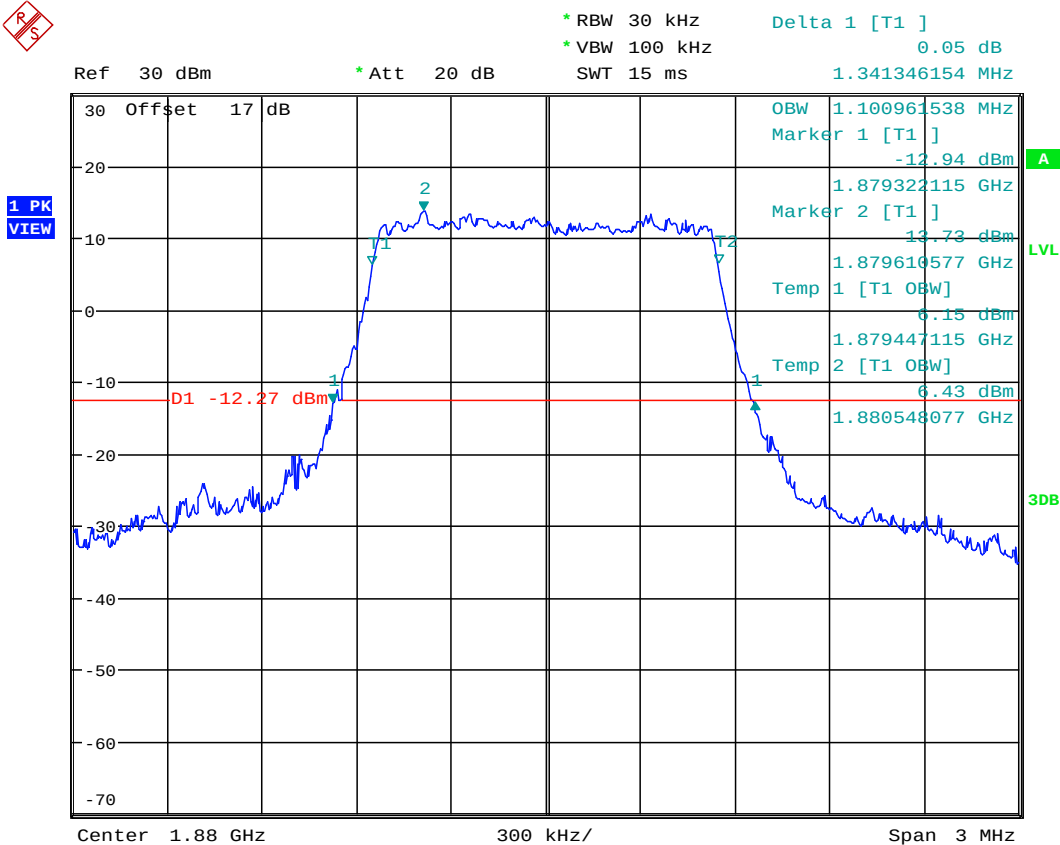
FCC ID: 2AT5JE070W1D14V1U

LTE

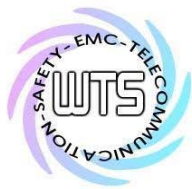
Band II

16QAM

1.4MHz



Date: 28.AUG.2019 10:06:26

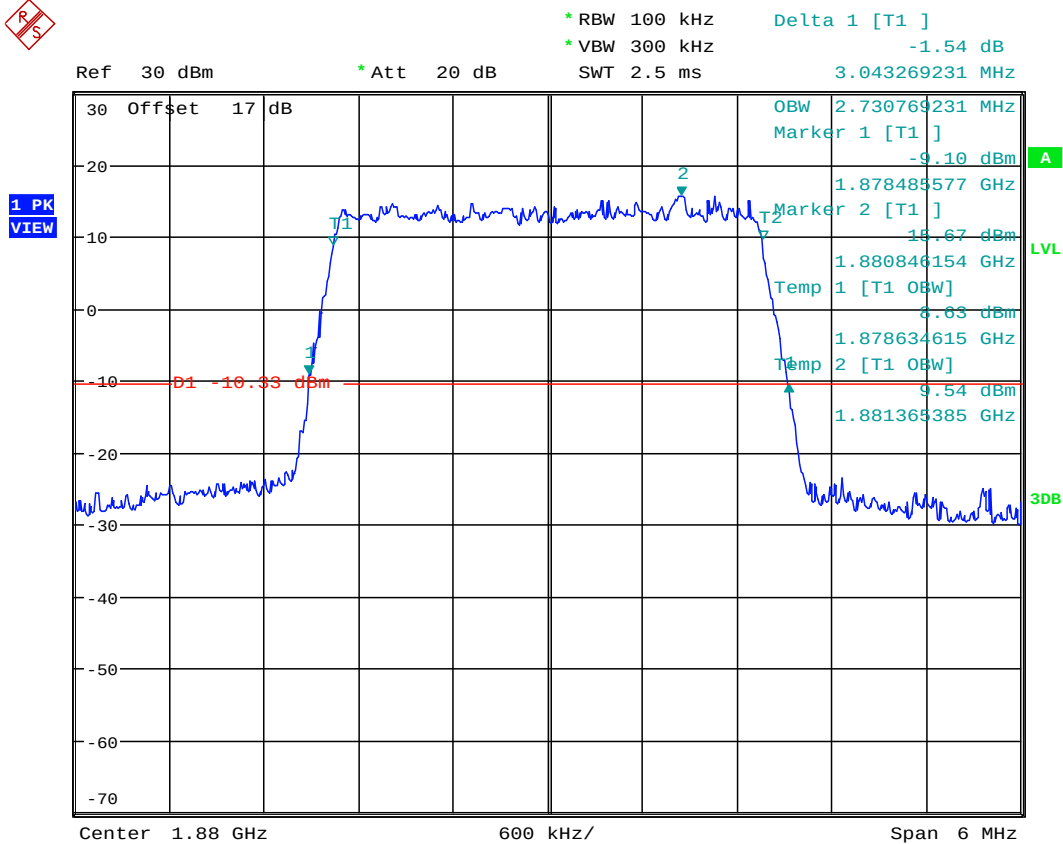


Worldwide Testing Services(Taiwan) Co., Ltd.

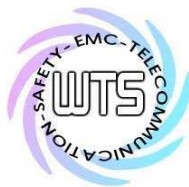
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz



Date: 28.AUG.2019 10:10:59

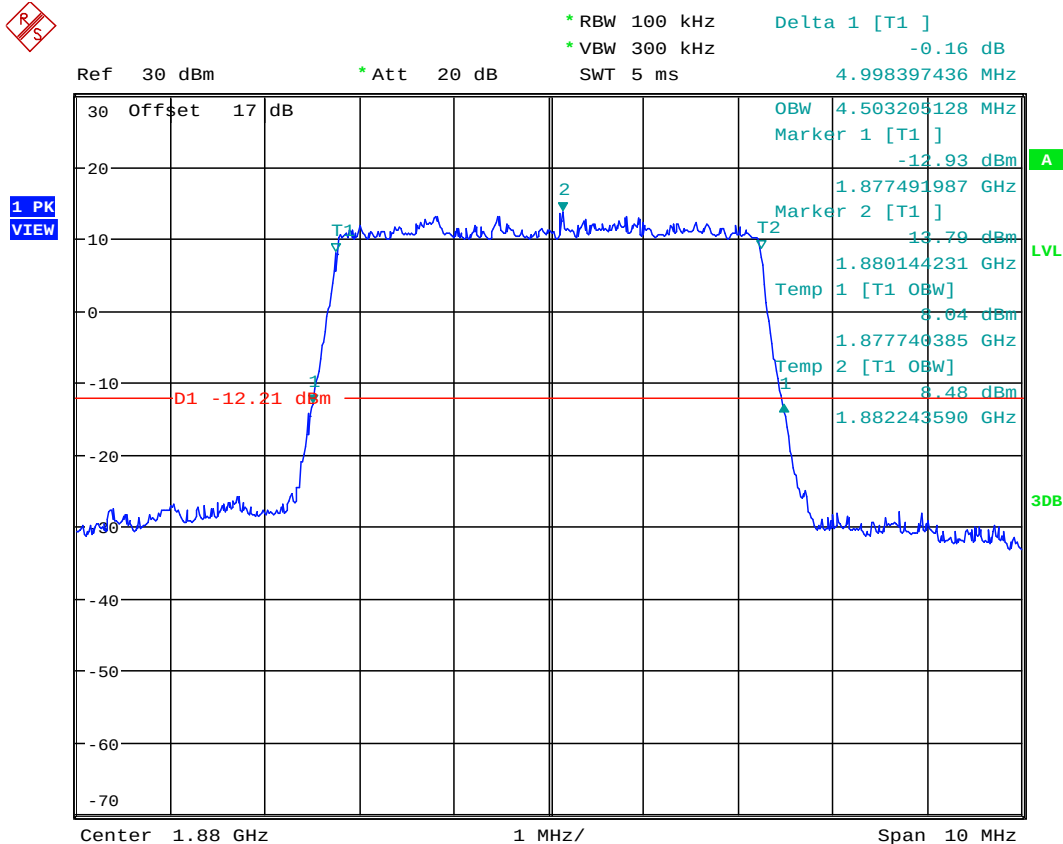


Worldwide Testing Services(Taiwan) Co., Ltd.

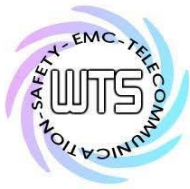
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz



Date: 28.AUG.2019 10:13:28



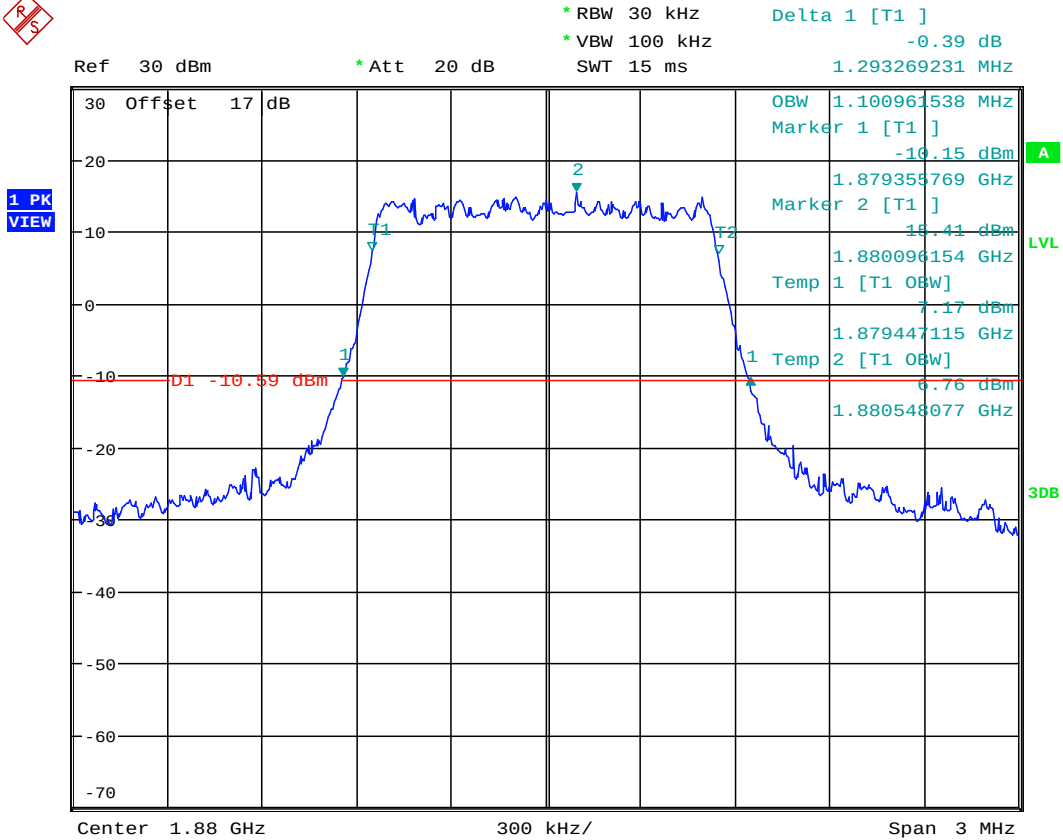
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

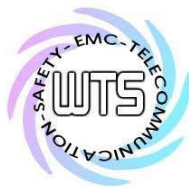
FCC ID: 2AT5JE070W1D14V1U

QPSK

1.4MHz



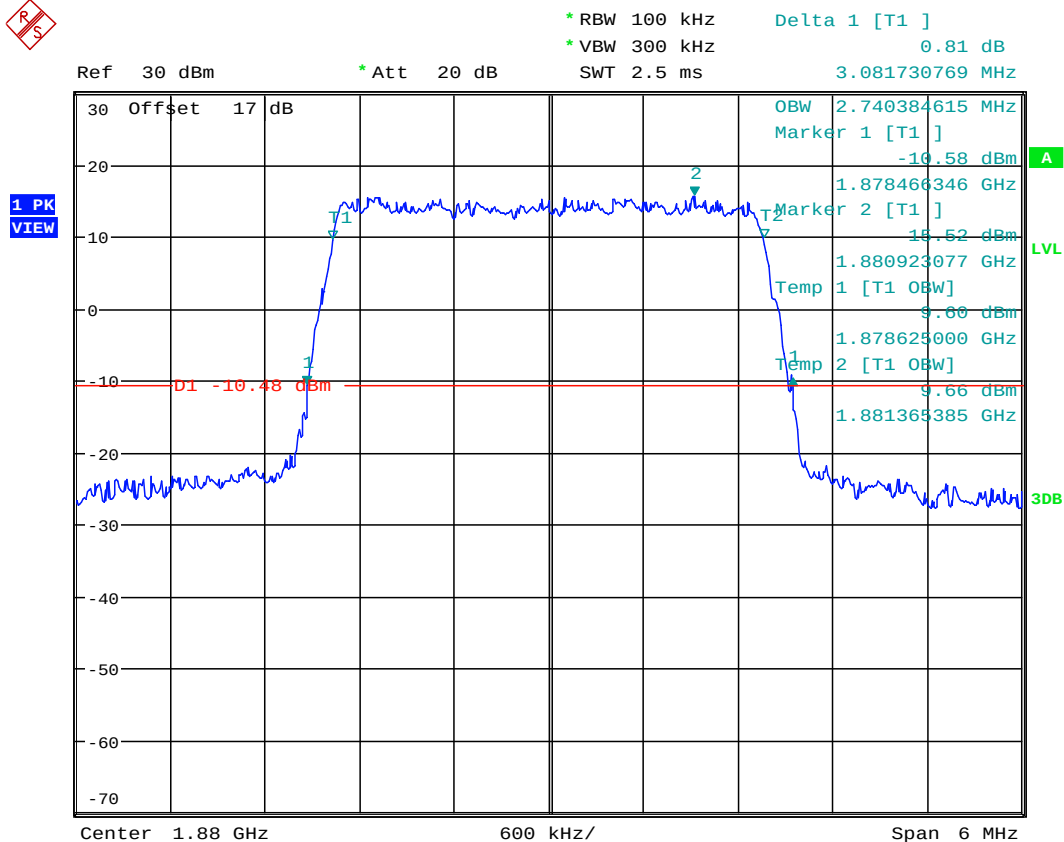
Date: 28.AUG.2019 10:05:18



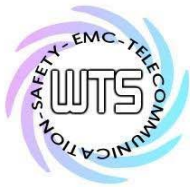
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz



Date: 28.AUG.2019 10:08:35

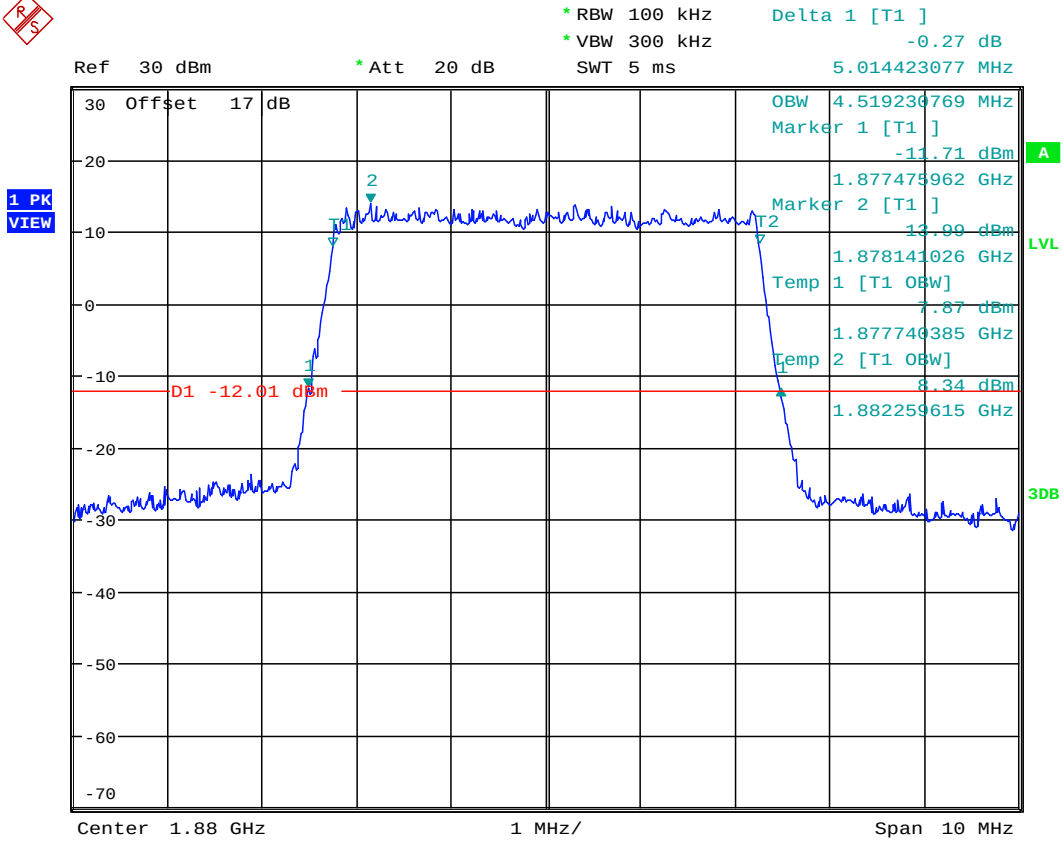


Worldwide Testing Services(Taiwan) Co., Ltd.

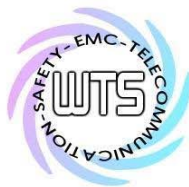
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz



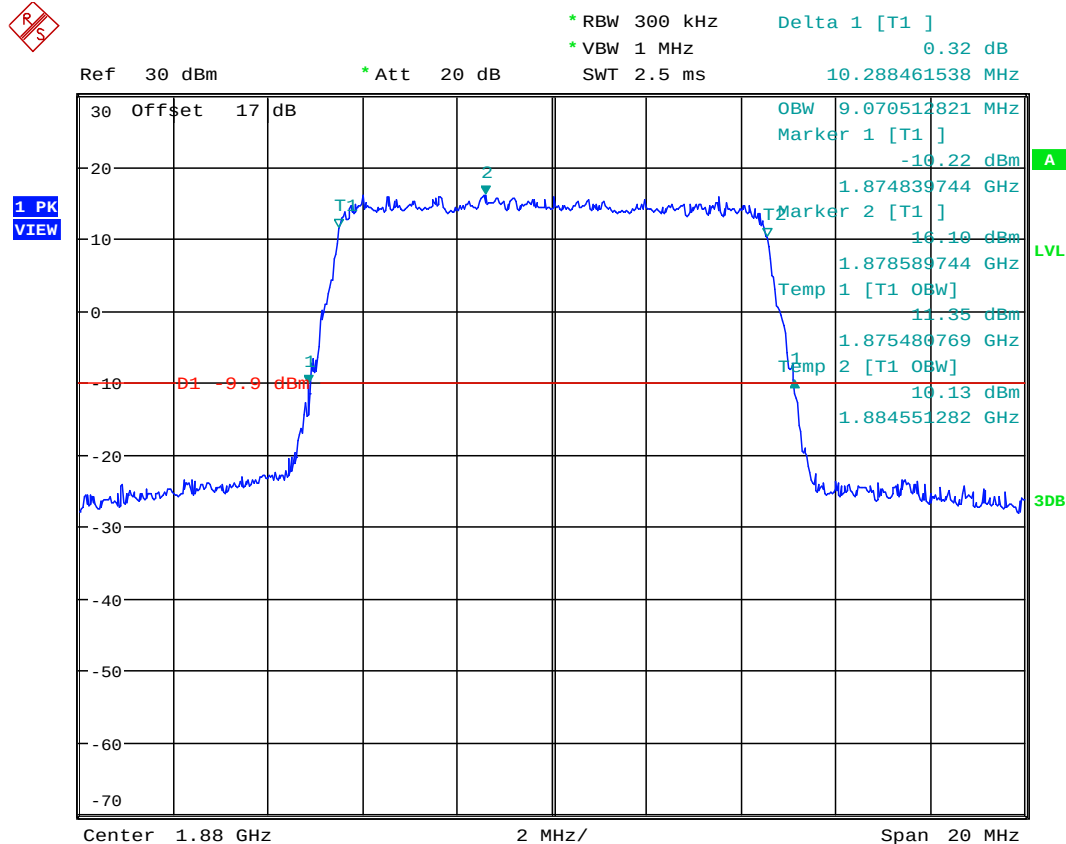
Date: 28.AUG.2019 10:12:27



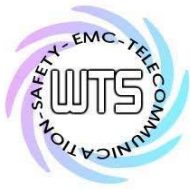
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

10MHz



Date: 24.JUL.2019 15:39:49



Worldwide Testing Services(Taiwan) Co., Ltd.

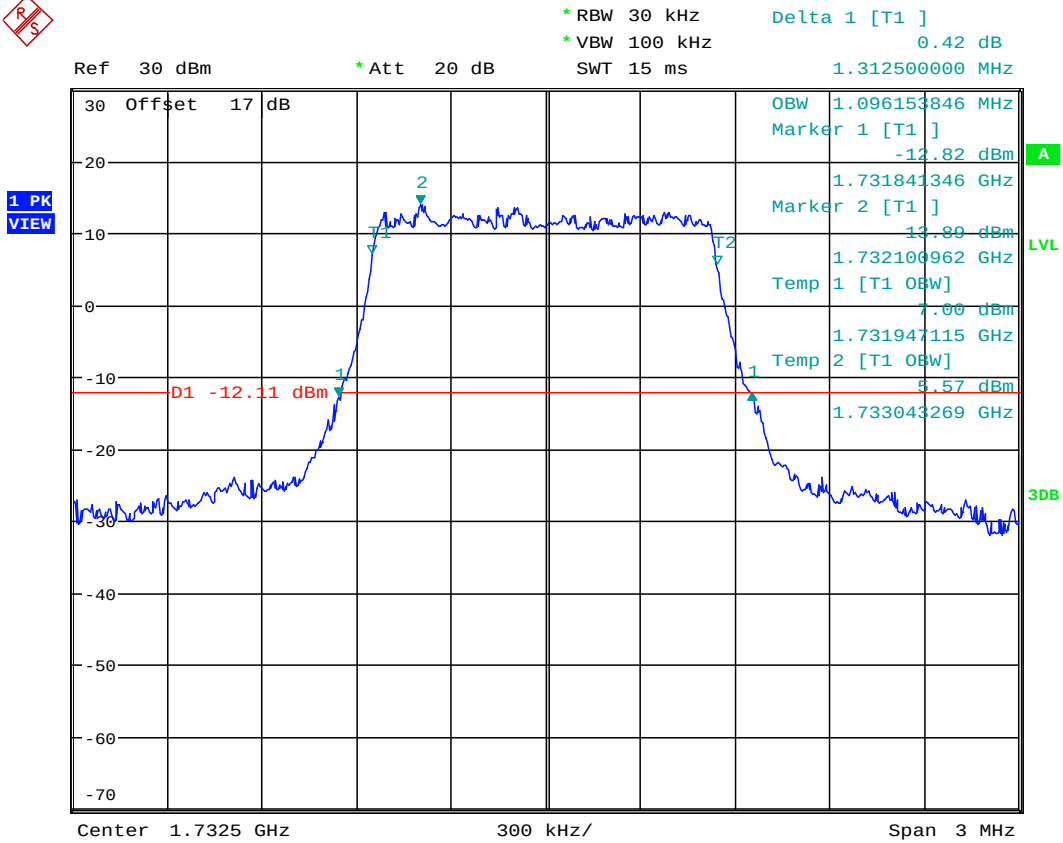
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

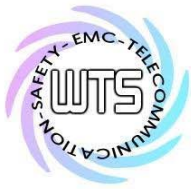
Band IV

16QAM

1.4MHz



Date: 28.AUG.2019 11:09:26

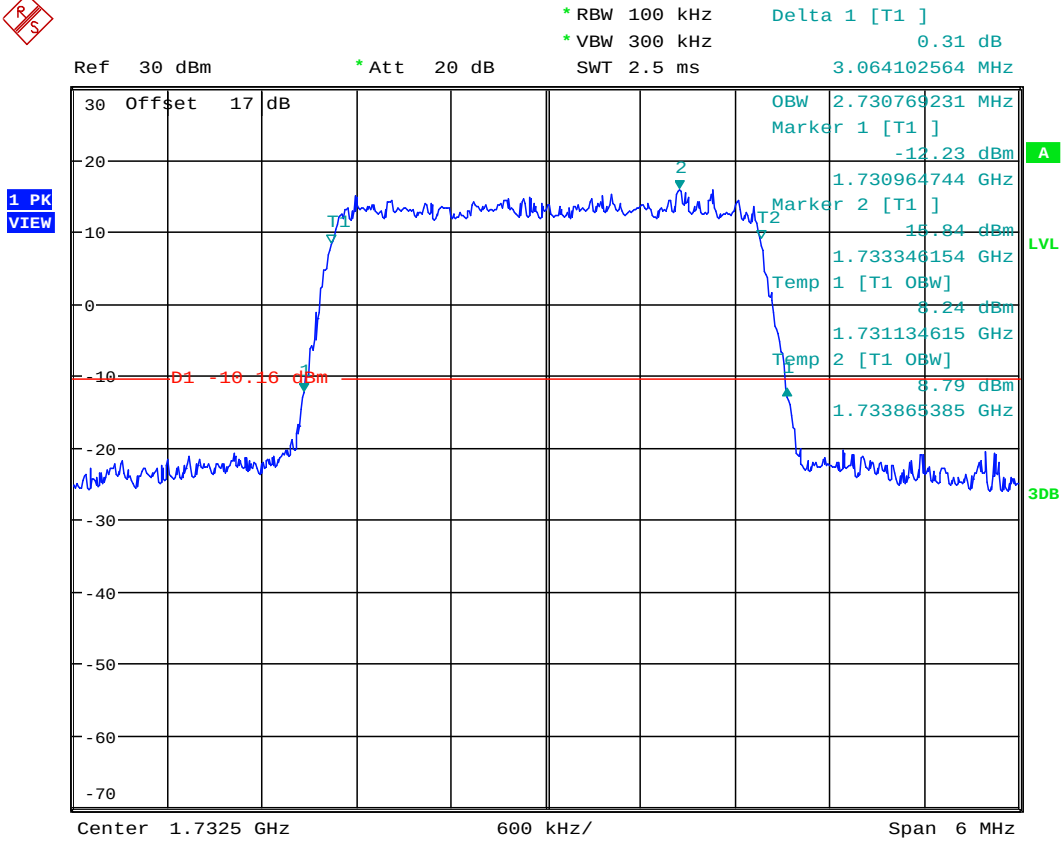


Worldwide Testing Services(Taiwan) Co., Ltd.

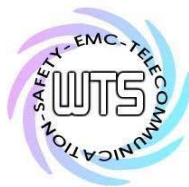
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz



Date: 28.AUG.2019 11:08:04

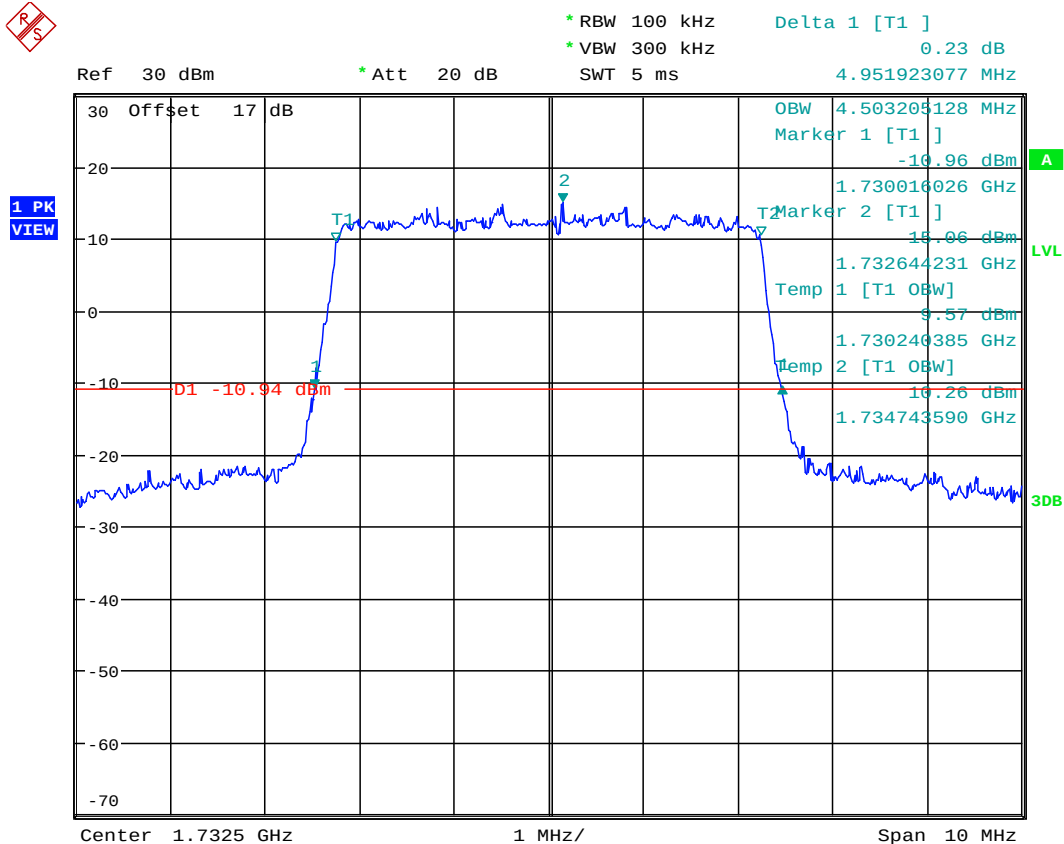


Worldwide Testing Services(Taiwan) Co., Ltd.

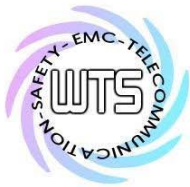
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz



Date: 28.AUG.2019 11:04:28

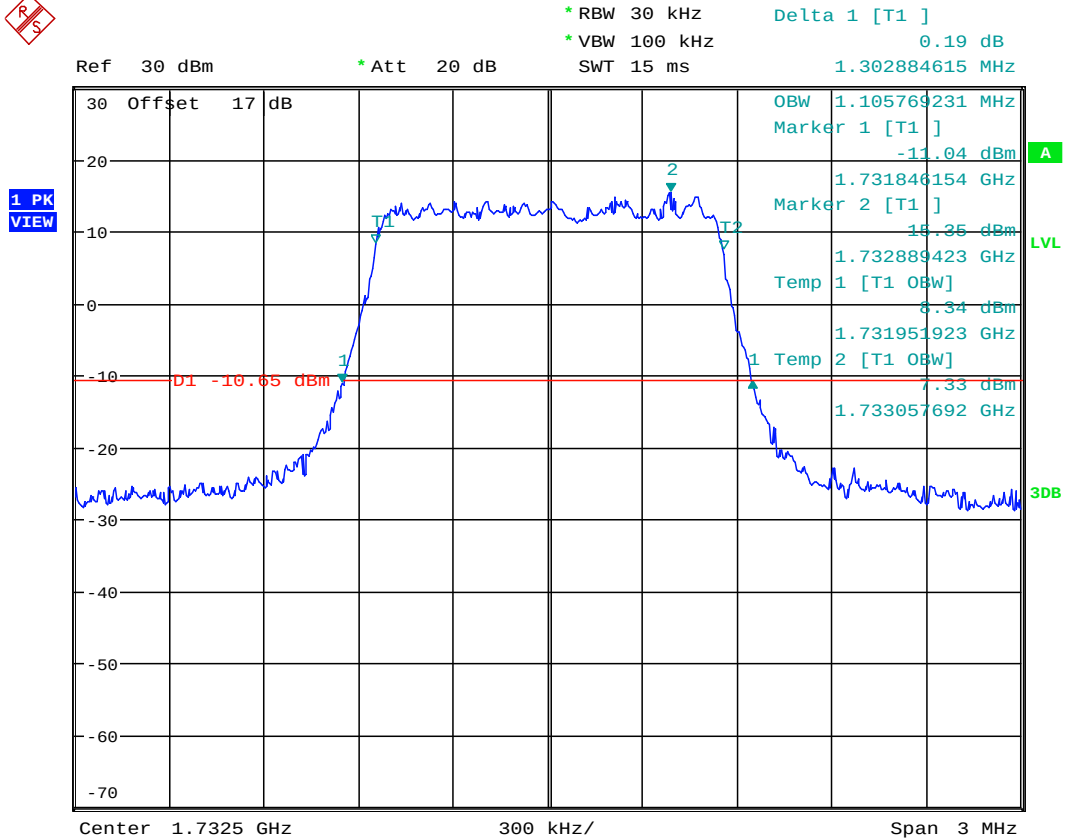


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

QPSK

1.4MHz



Date: 28.AUG.2019 11:10:30

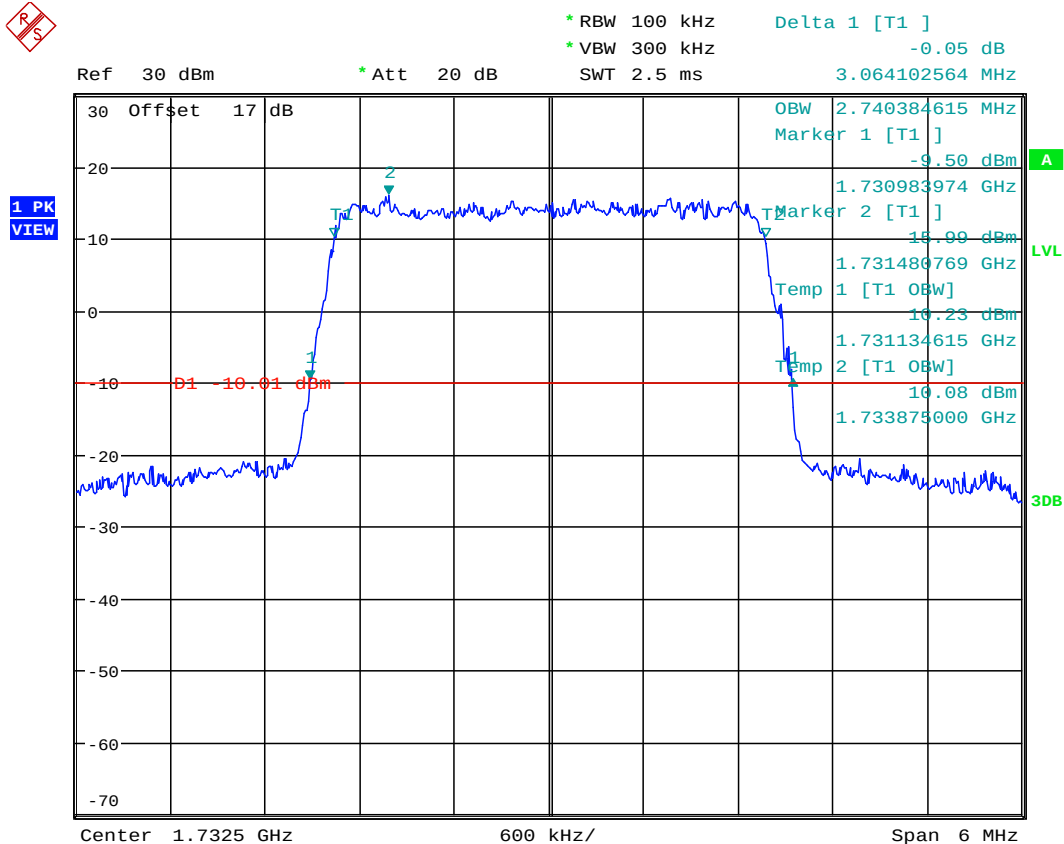


Worldwide Testing Services(Taiwan) Co., Ltd.

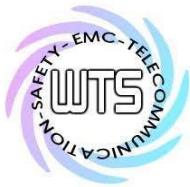
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz



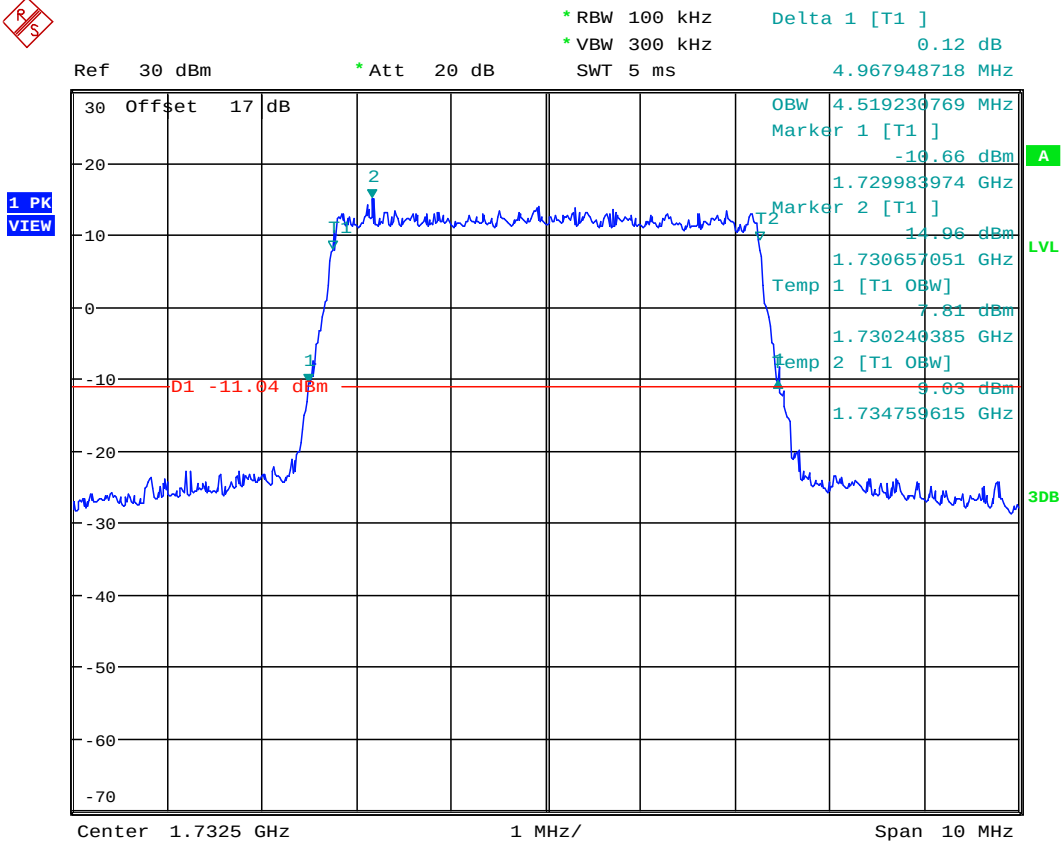
Date: 28.AUG.2019 11:06:37



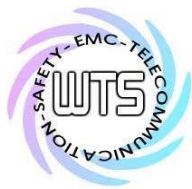
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz



Date: 28.AUG.2019 11:05:31

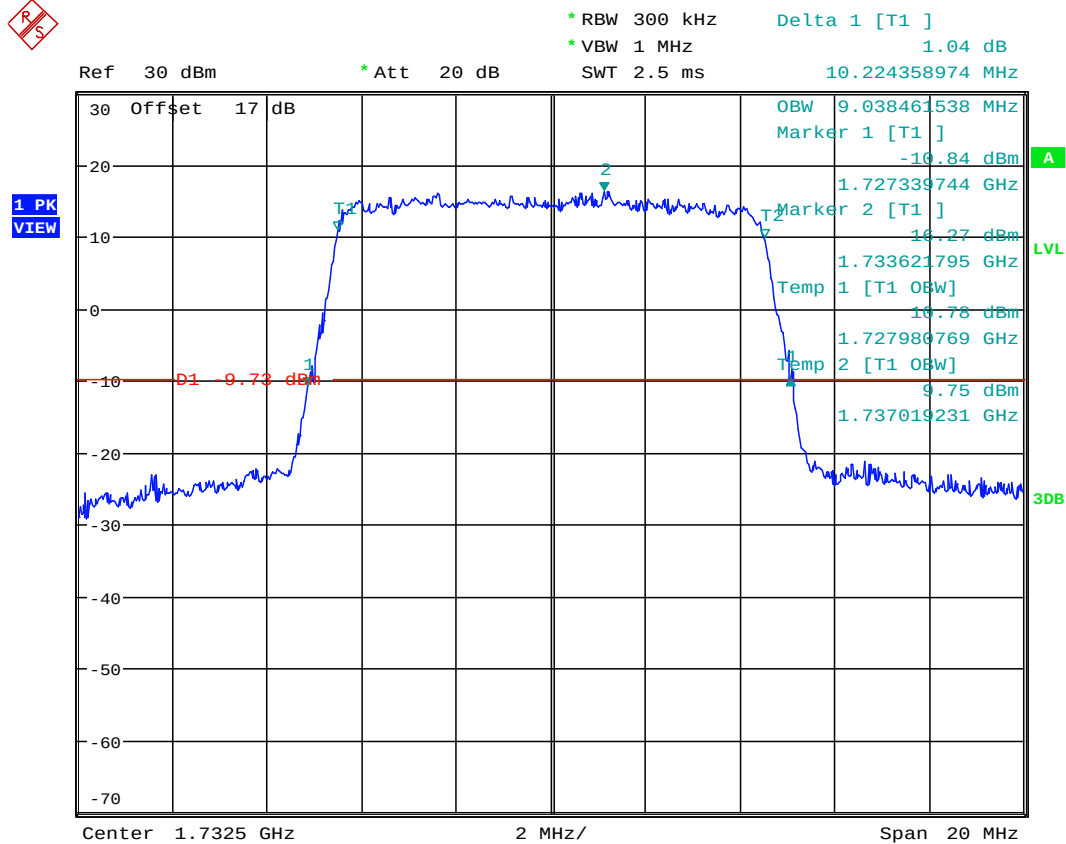


Worldwide Testing Services(Taiwan) Co., Ltd.

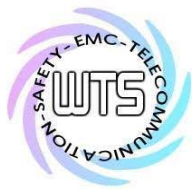
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

10MHz



Date: 24.JUL.2019 15:41:56



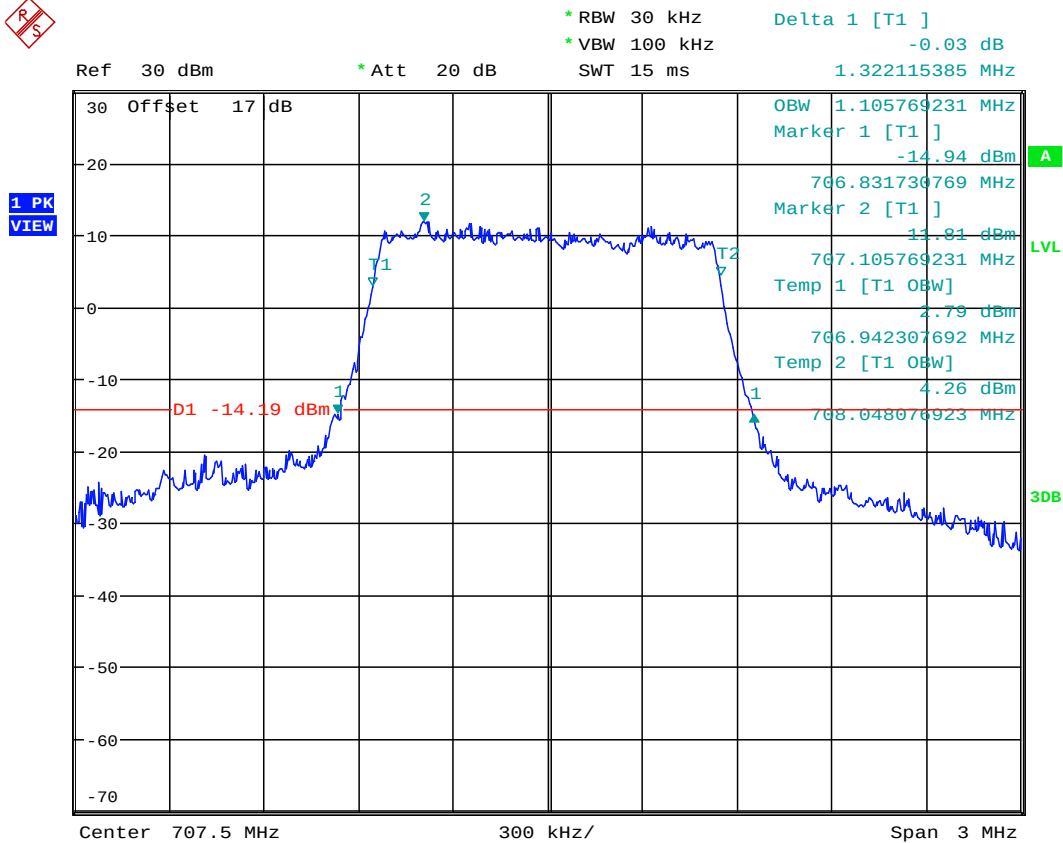
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

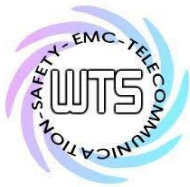
Band XII

16QAM

1.4MHz



Date: 28.AUG.2019 11:14:59

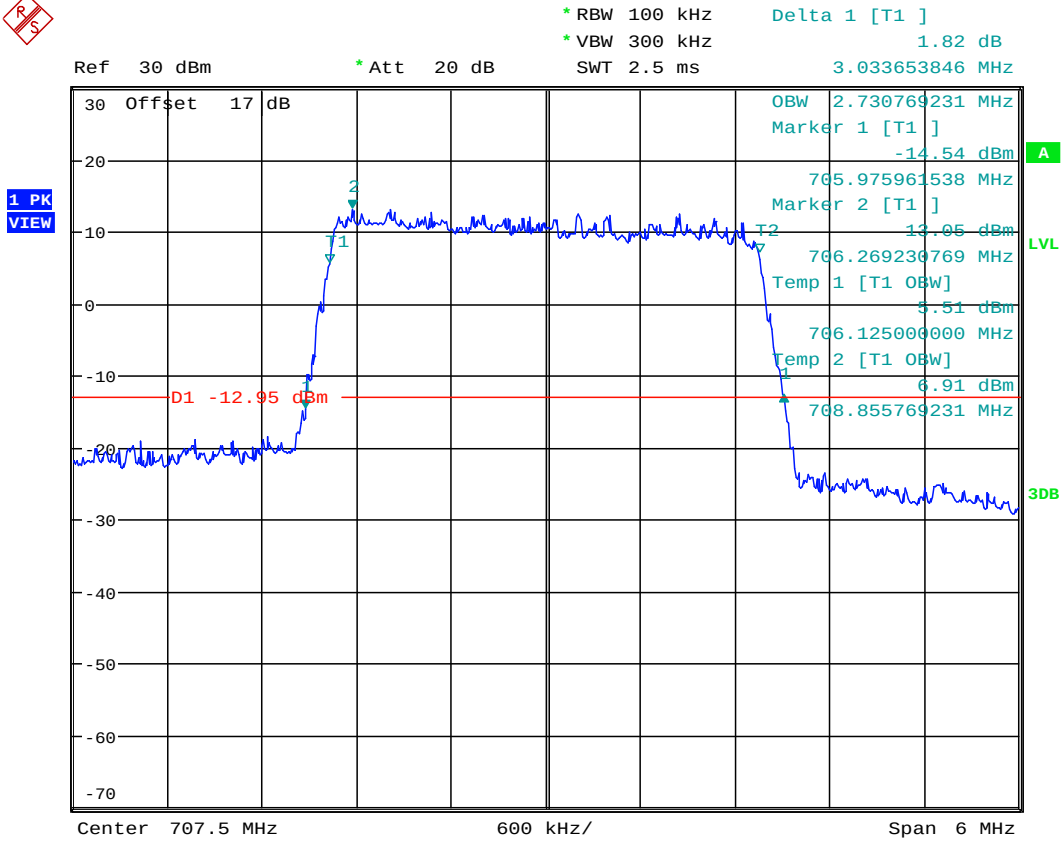


Worldwide Testing Services(Taiwan) Co., Ltd.

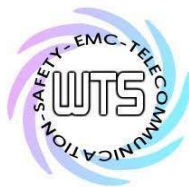
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz



Date: 28.AUG.2019 11:18:14

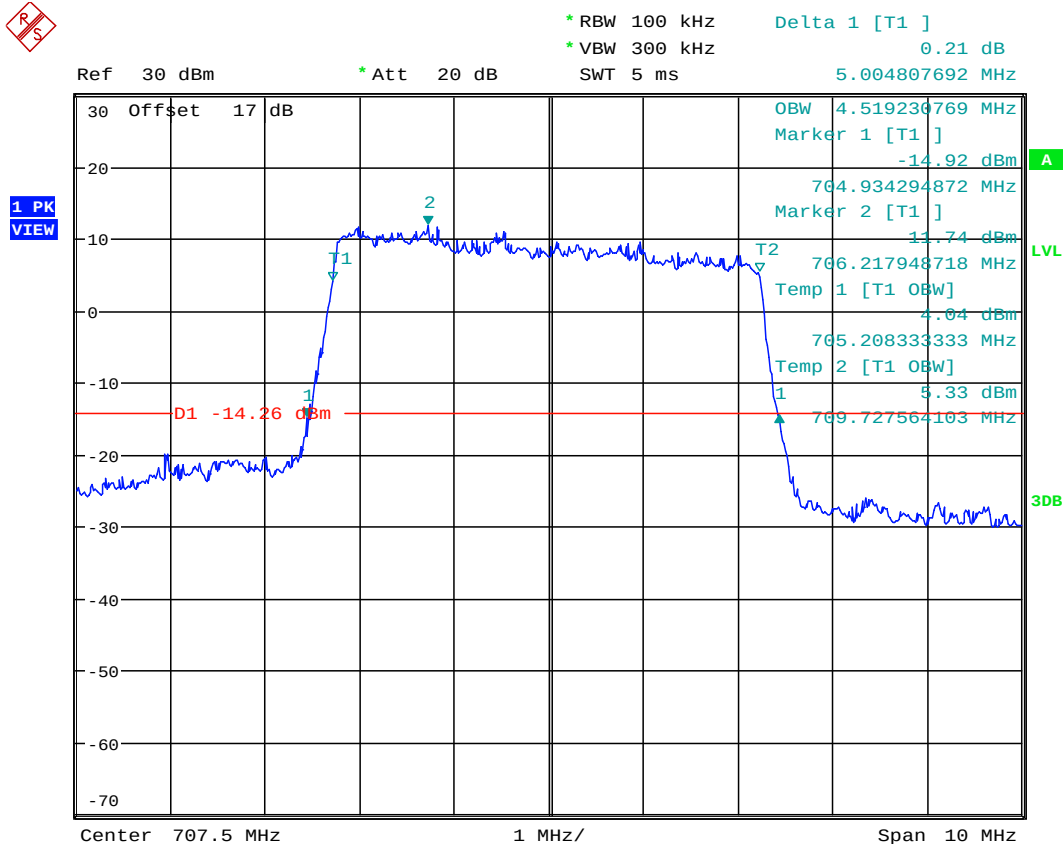


Worldwide Testing Services(Taiwan) Co., Ltd.

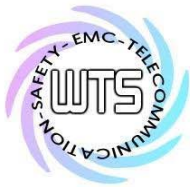
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz



Date: 28.AUG.2019 11:23:51

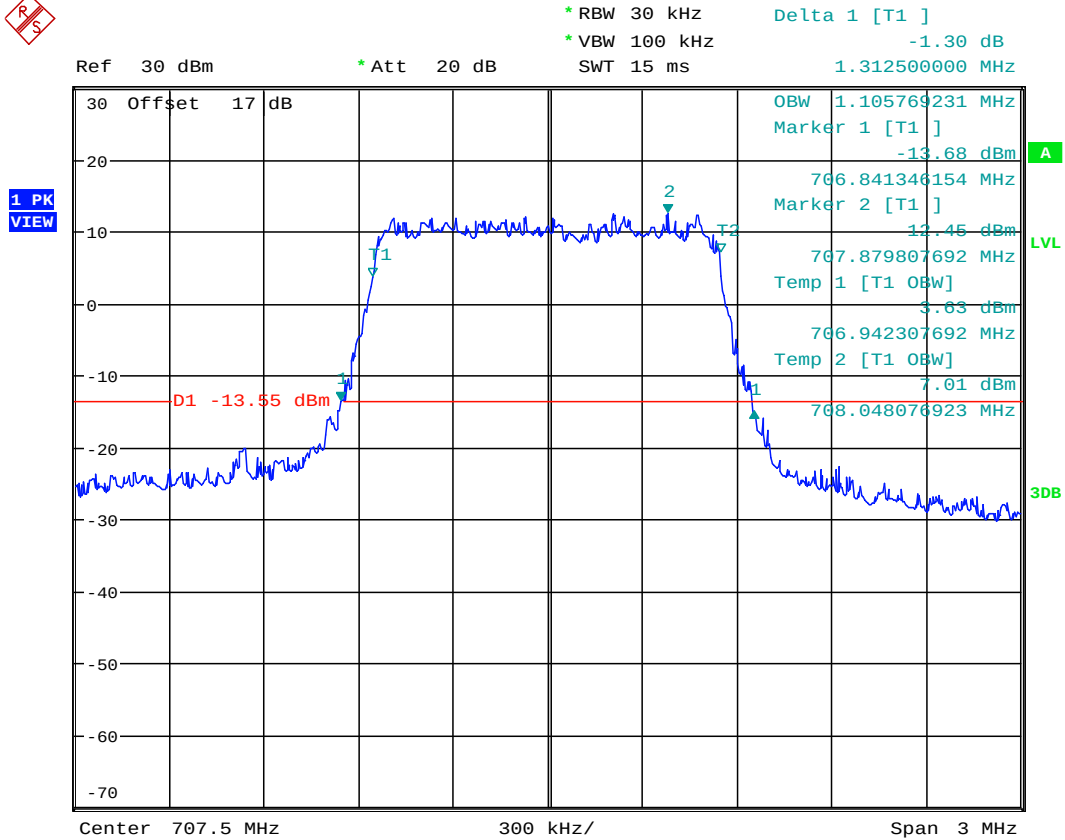


Report Number: W6M21906-19141-P-247

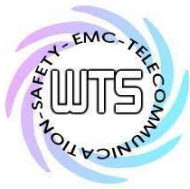
FCC ID: 2AT5JE070W1D14V1U

QPSK

1.4MHz



Date: 28.AUG.2019 11:16:00

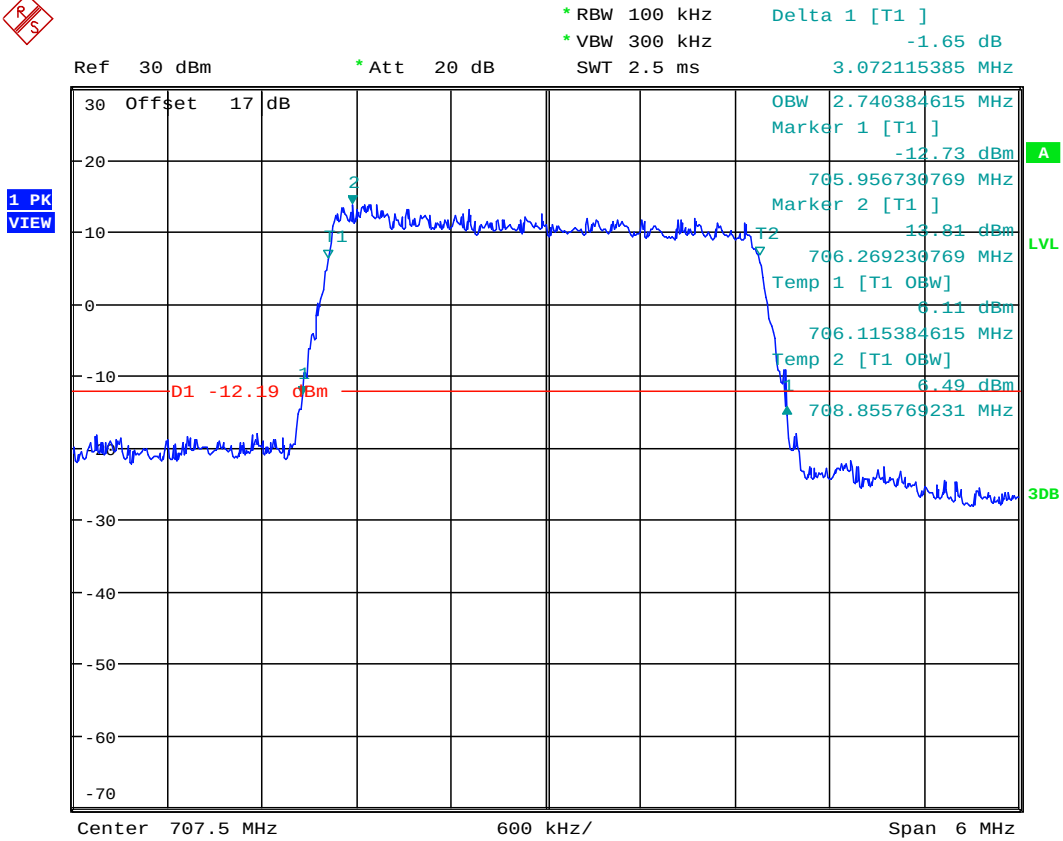


Worldwide Testing Services(Taiwan) Co., Ltd.

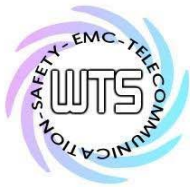
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz



Date: 28.AUG.2019 11:17:15

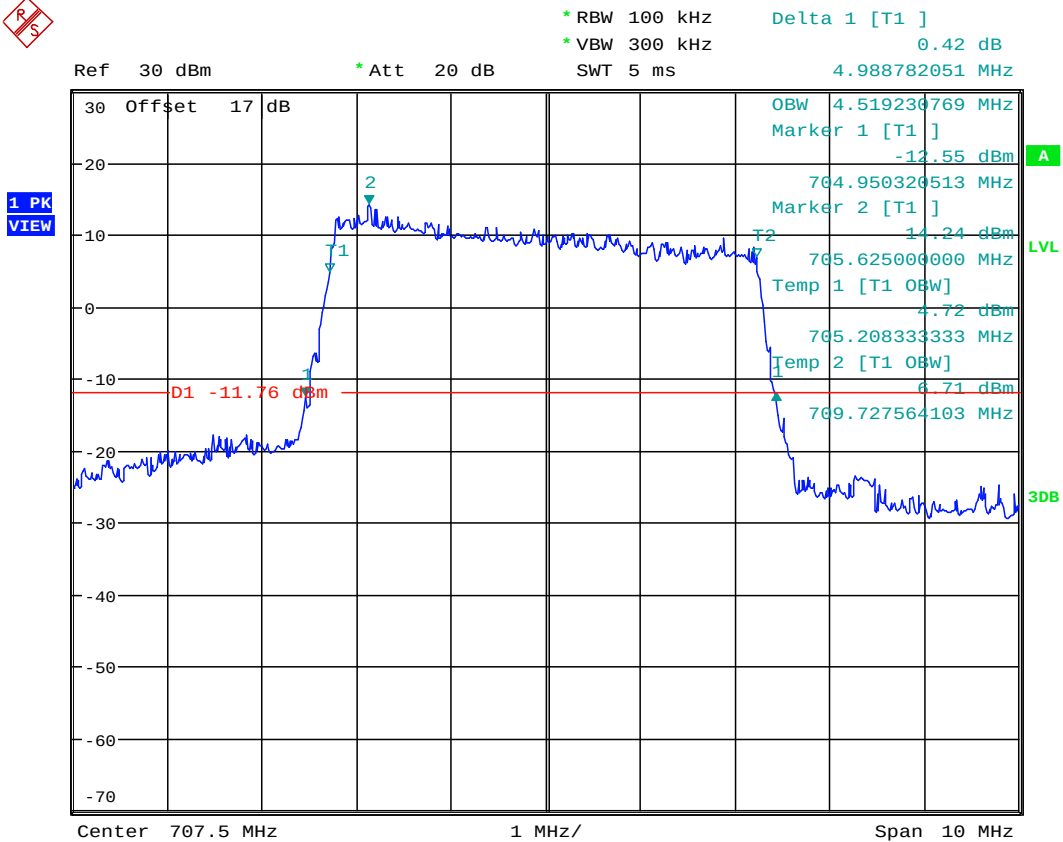


Worldwide Testing Services(Taiwan) Co., Ltd.

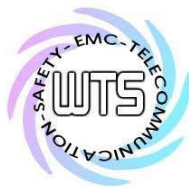
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz



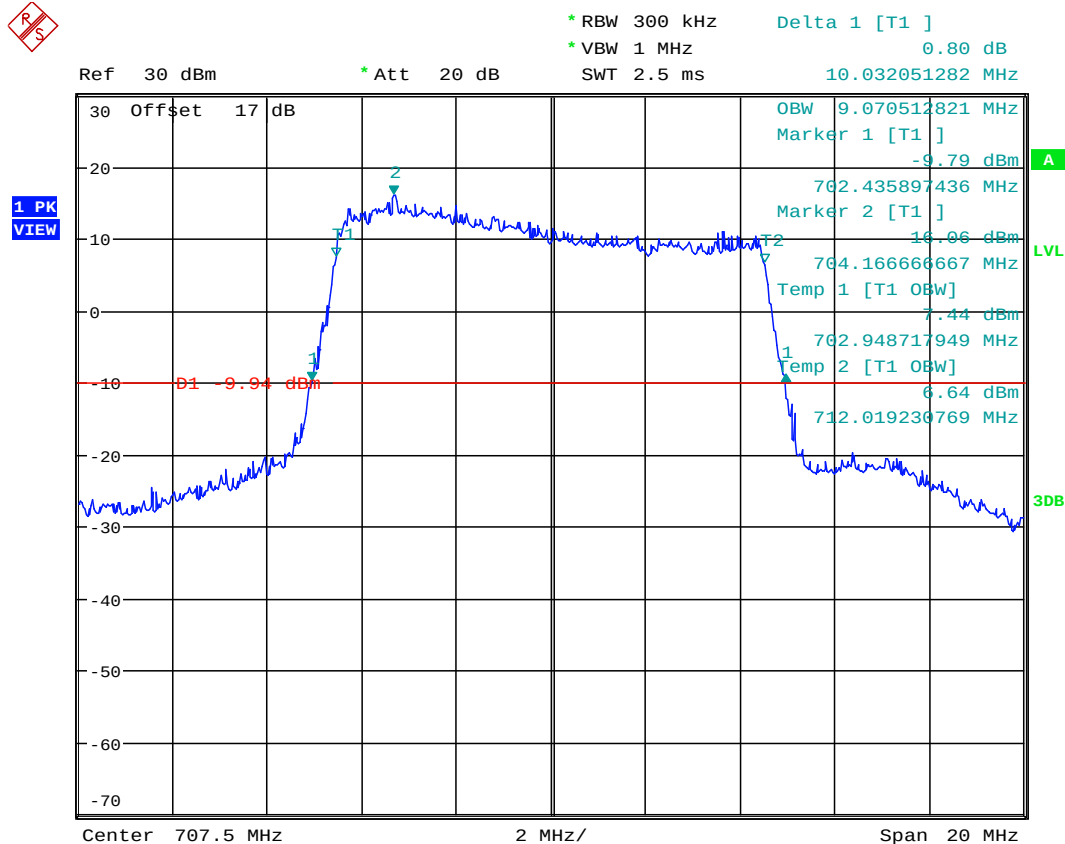
Date: 28.AUG.2019 11:22:15



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

10MHz



Date: 24.JUL.2019 15:43:41

Test equipment: ETSTW-RE 055, ETSTW-GSM 002, ETSTW-GSM 023, ETSTW-GSM 004

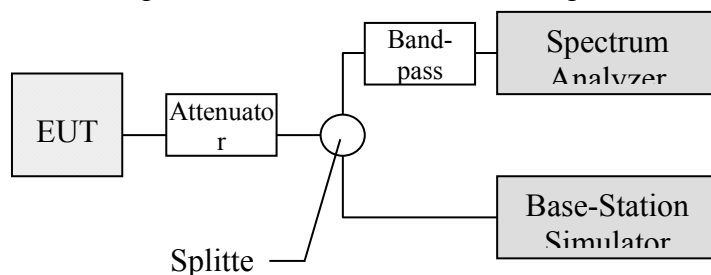
FCC ID: 2AT5JE070W1D14V1U

7. Spurious Emissions at Antenna Terminals

7.1 Test procedure

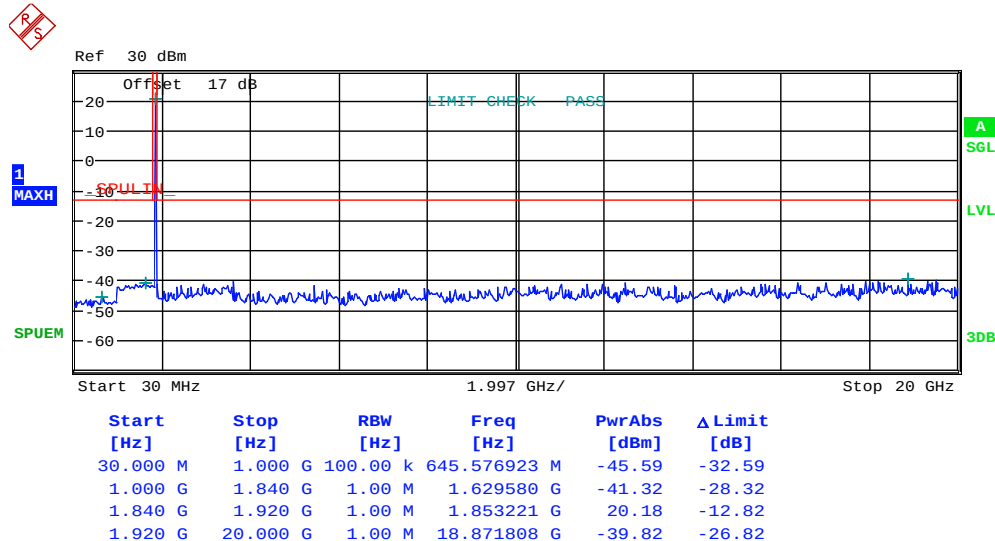
The Spurious Emissions at Antenna Terminals was measured by the spectrum analyzer with a suitable notch filter and/or Band-pass filter.

Tests were performed with an unmodulated carrier at three frequencies (low, middle and high channels) and on all power levels, which can be set-up on the transmitters.



7.2 Test Results

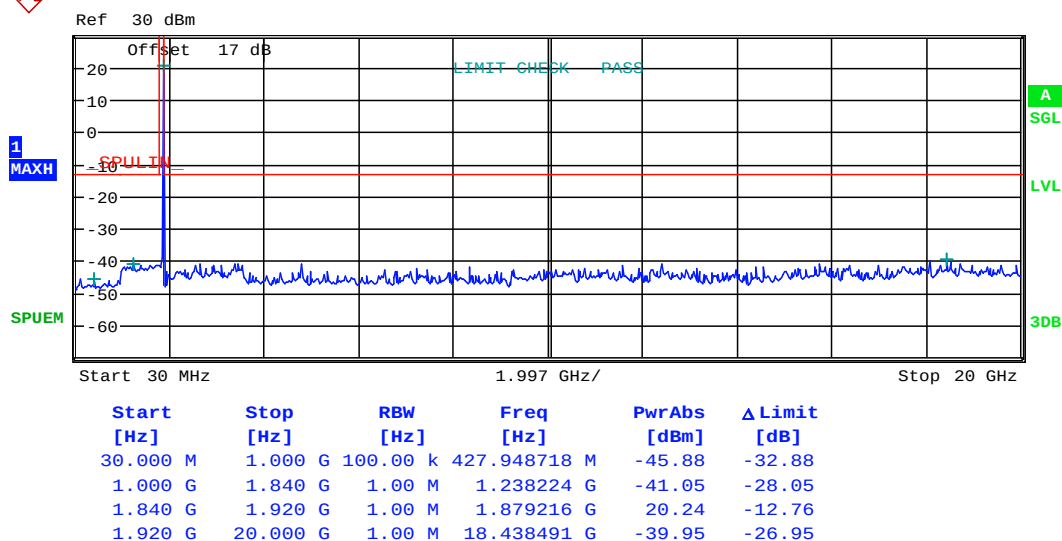
Band II



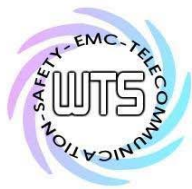
Date: 22.JUL.2019 16:21:55



FCC ID: 2AT5JE070W1D14V1U

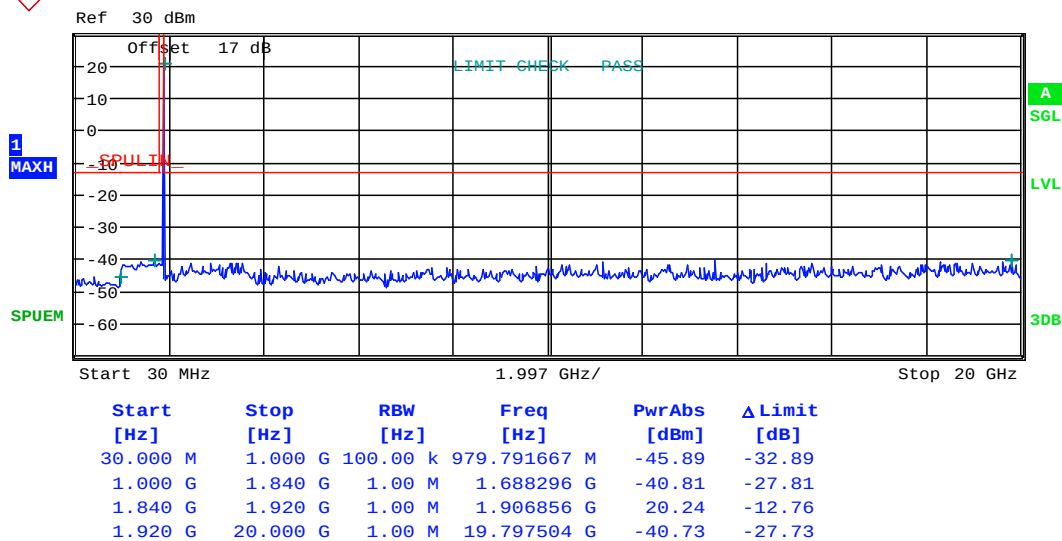


Date: 22.JUL.2019 16:22:26



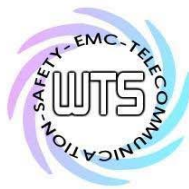
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION WCDMA BAND2 CH9538

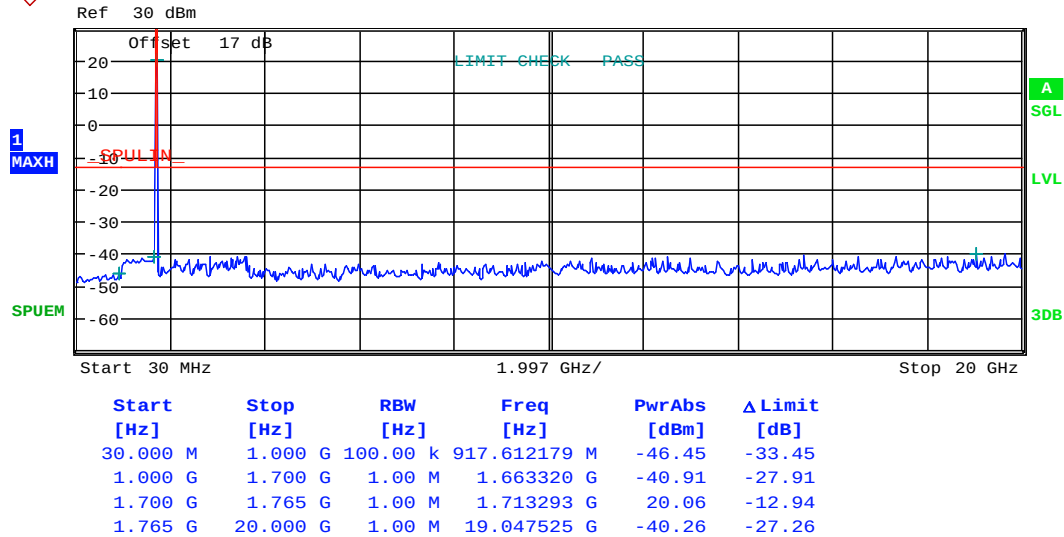
Date: 22.JUL.2019 16:22:51



Report Number: W6M21906-19141-P-247

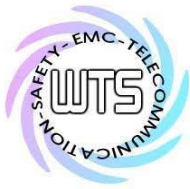
FCC ID: 2AT5JE070W1D14V1U

Band IV



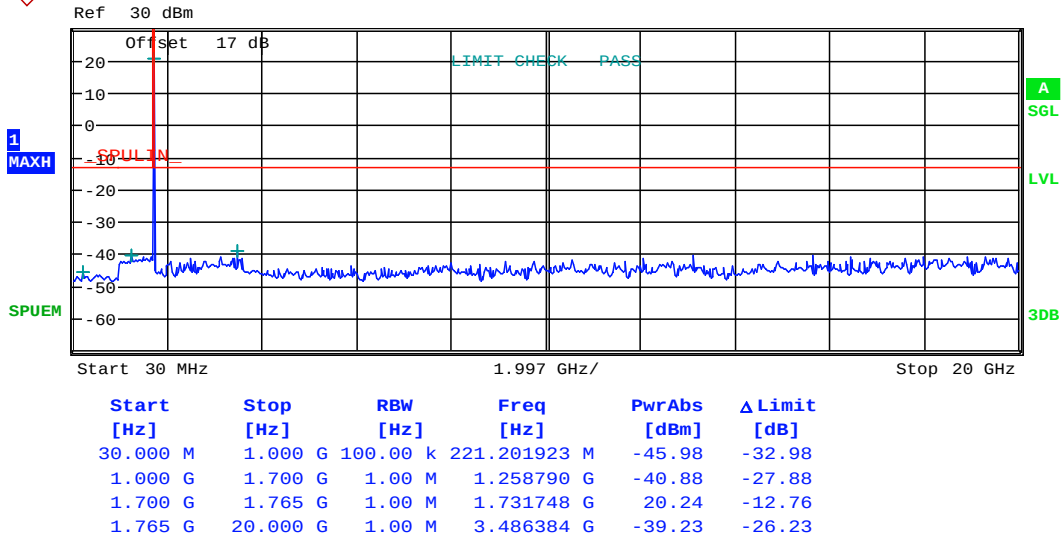
CONDUCTED SPURIOUS EMISSION WCDMA BAND4 CH1312

Date: 22.JUL.2019 16:26:04



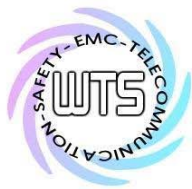
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



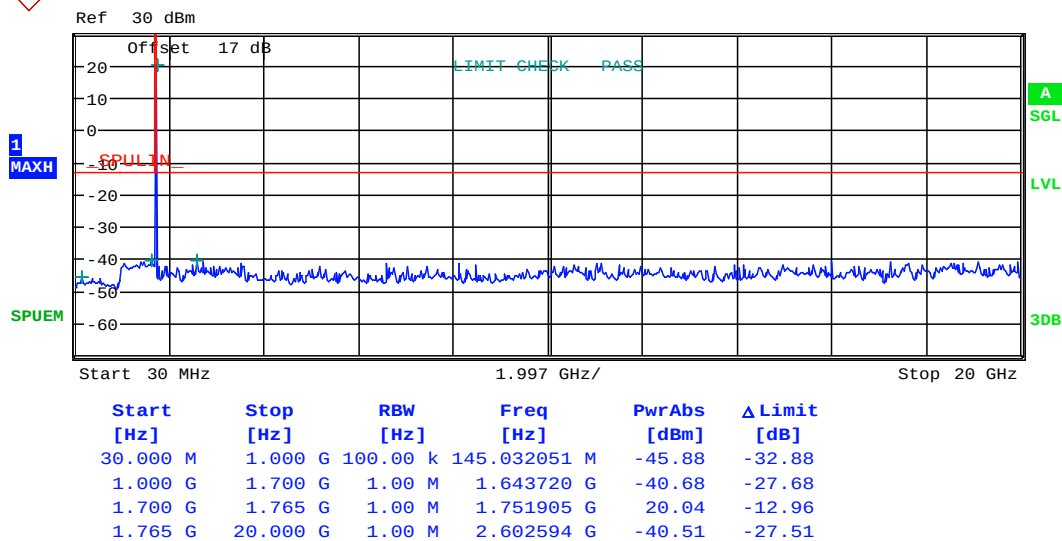
CONDUCTED SPURIOUS EMISSION WCDMA BAND4 CH1413

Date: 22.JUL.2019 16:24:05



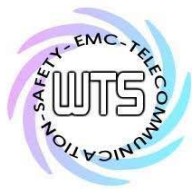
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION WCDMA BAND4 CH1513

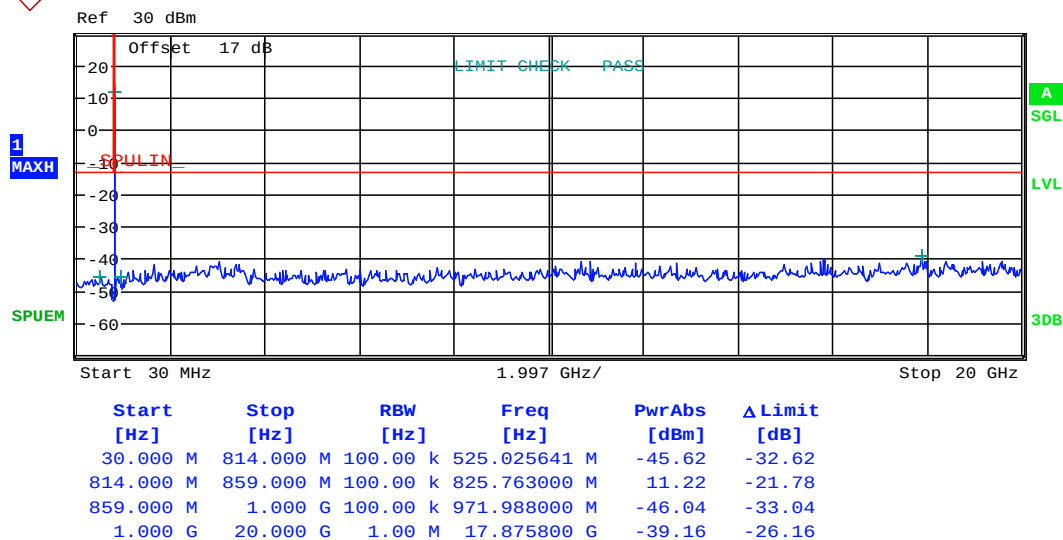
Date: 22.JUL.2019 16:25:29



Report Number: W6M21906-19141-P-247

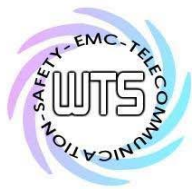
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Band V



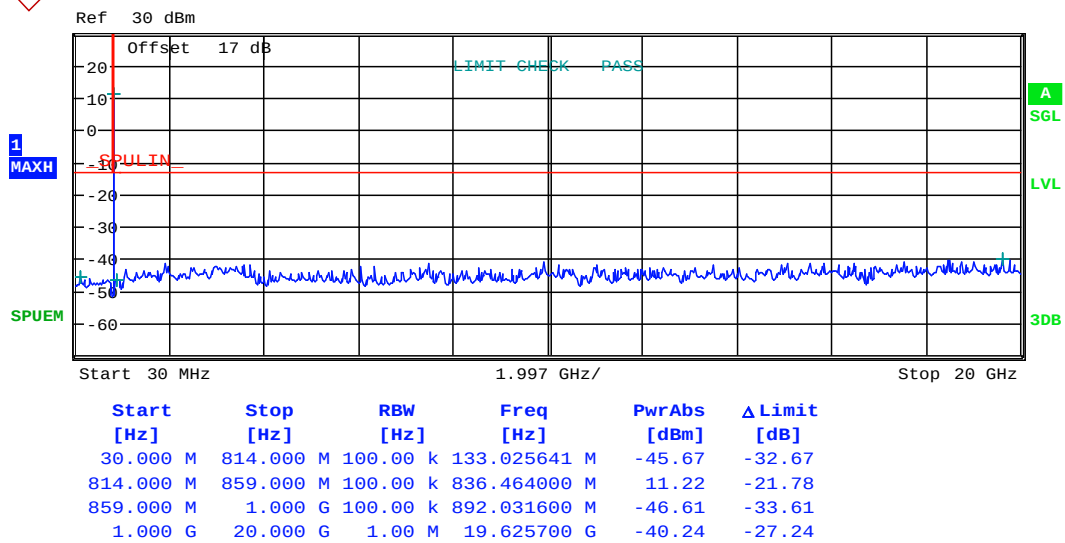
CONDUCTED SPURIOUS EMISSION WCDMA BAND5 CH4132

Date: 22.JUL.2019 16:18:01



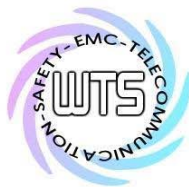
Report Number: W6M21906-19141-P-247

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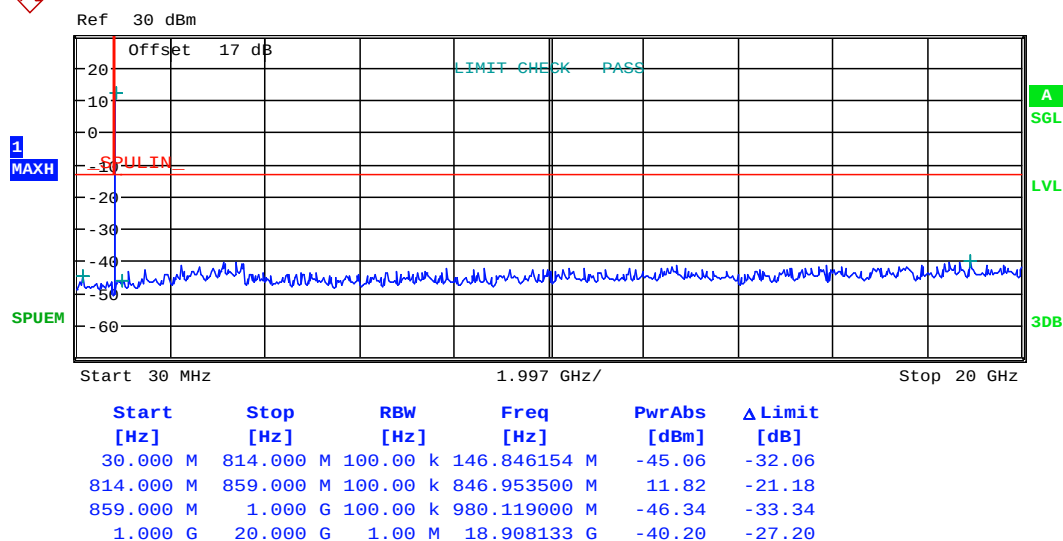
CONDUCTED SPURIOUS EMISSION WCDMA BAND5 CH4183

Date: 22.JUL.2019 16:17:32



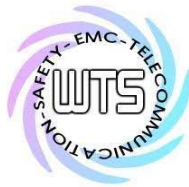
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION WCDMA BAND5 CH4233

Date: 22.JUL.2019 16:16:43



Report Number: W6M21906-19141-P-247

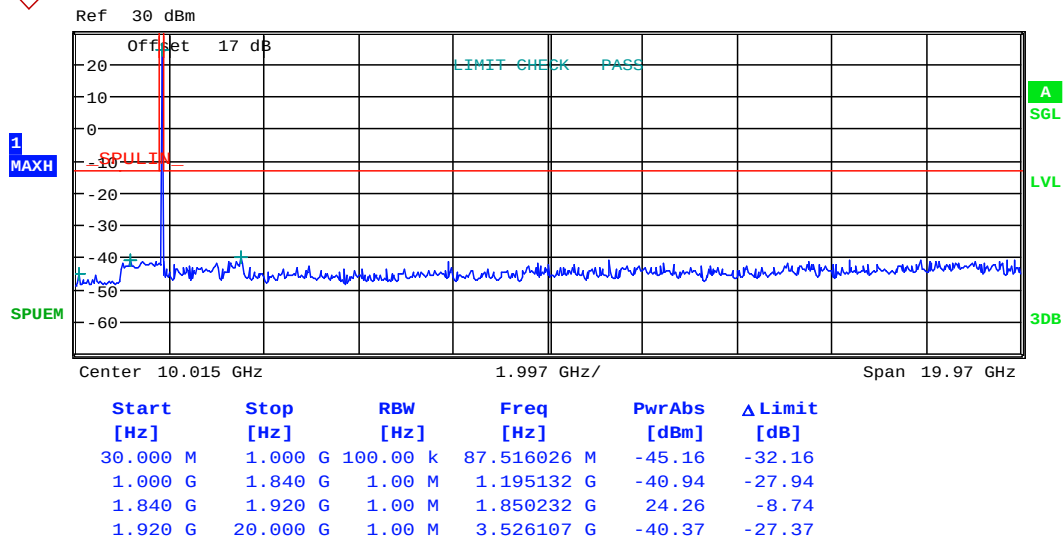
FCC ID: 2AT5JE070W1D14V1U

LTE

Band II

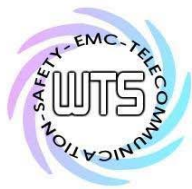
16QAM

1.4MHz



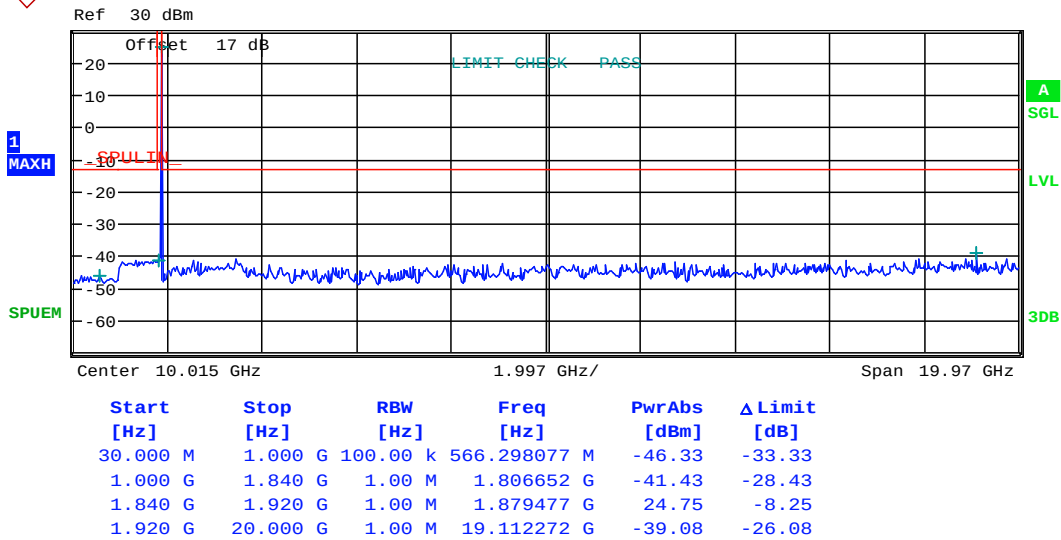
CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 1.4MHz CH18607

Date: 24.JUL.2019 17:12:51



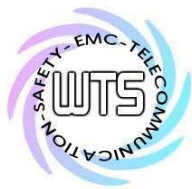
Report Number: W6M21906-19141-P-247

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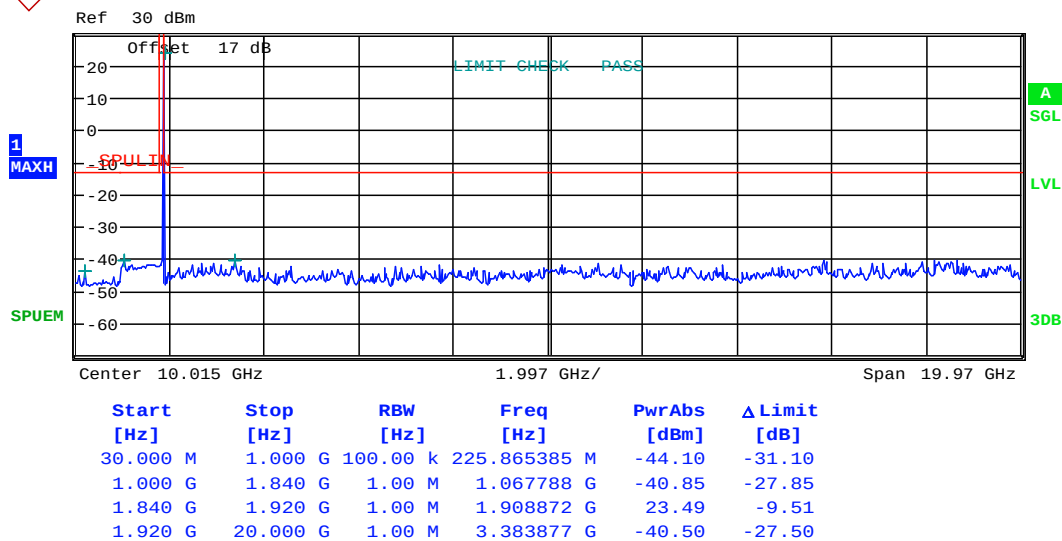
CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 1.4MHz CH18900

Date: 24.JUL.2019 17:11:42



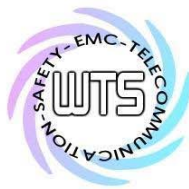
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 1.4MHz CH19193

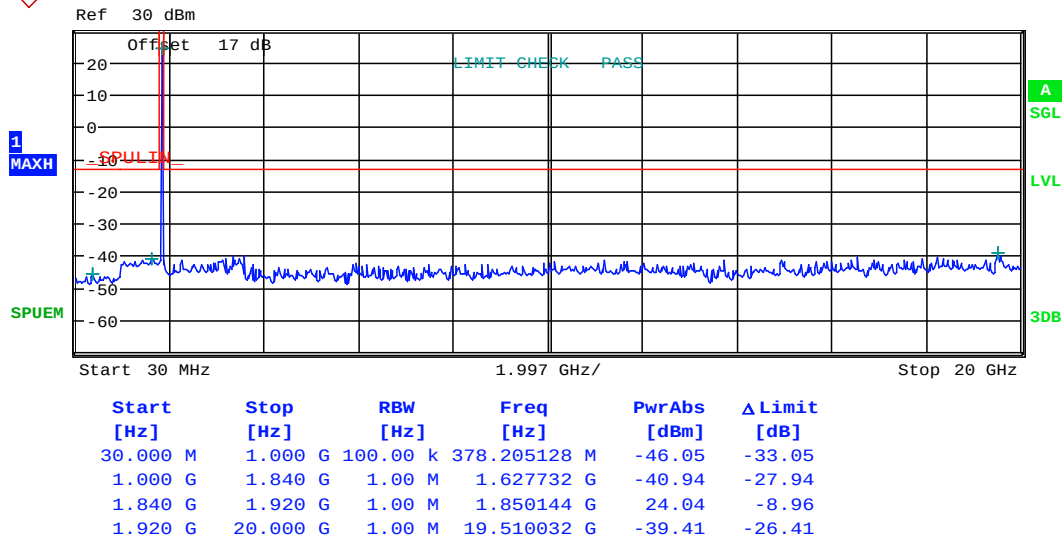
Date: 24.JUL.2019 17:13:17



Report Number: W6M21906-19141-P-247

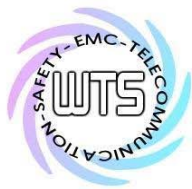
FCC ID: 2AT5JE070W1D14V1U

3MHz



CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 3MHZ CH18615

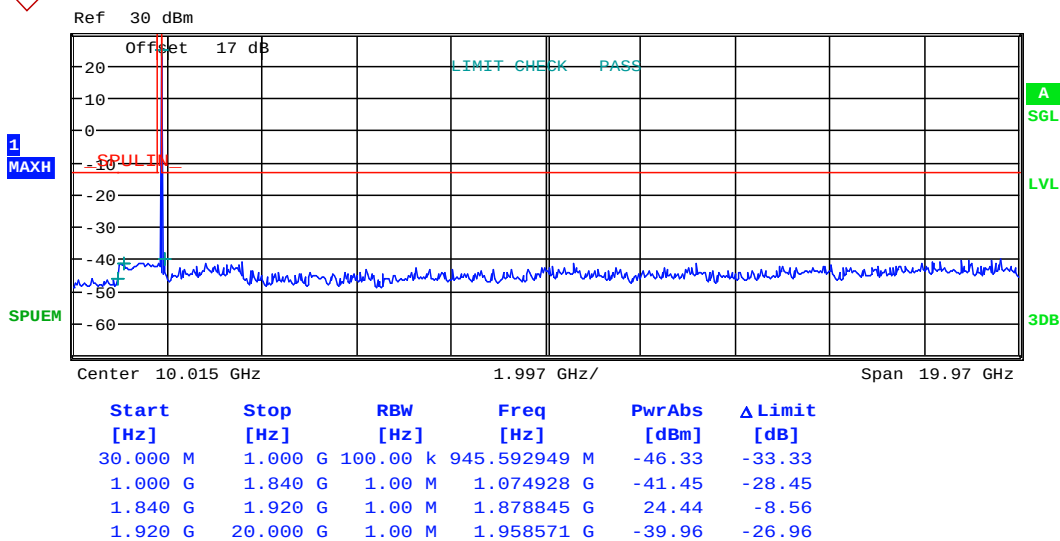
Date: 24.JUL.2019 16:44:16



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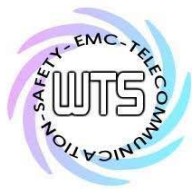
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



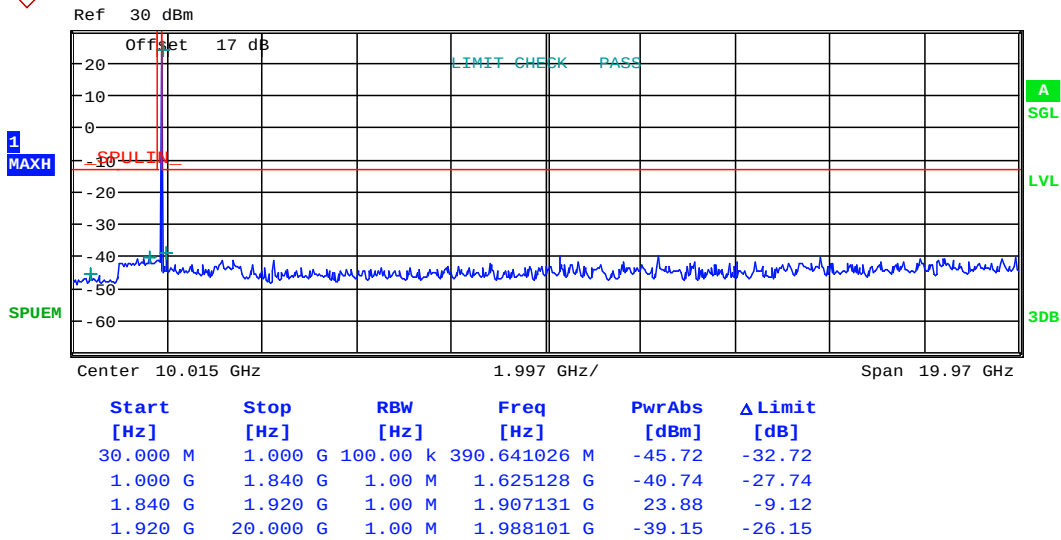
CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 3MHz CH18900

Date: 24.JUL.2019 17:17:34



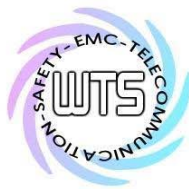
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 3MHz CH19185

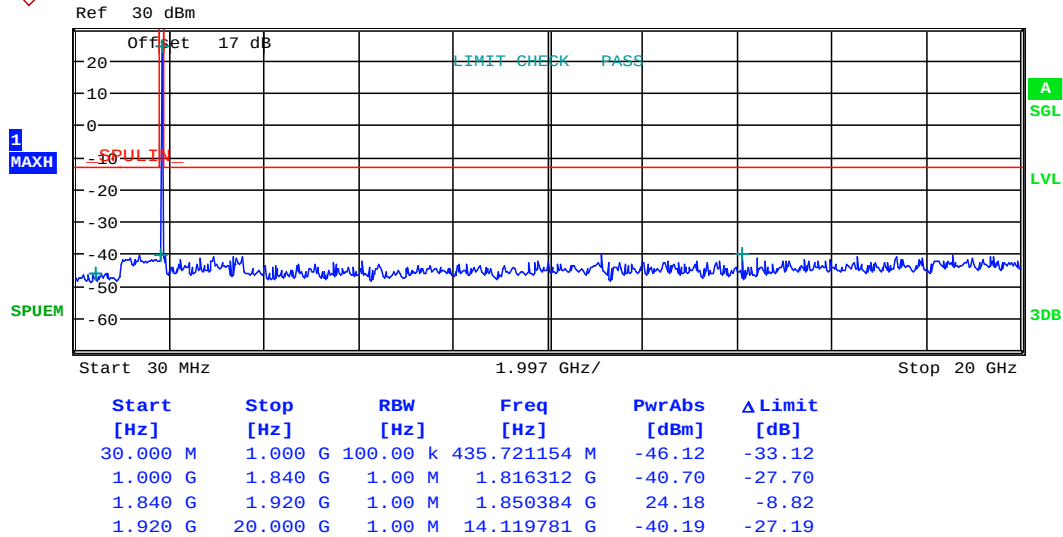
Date: 24.JUL.2019 17:18:04



Report Number: W6M21906-19141-P-247

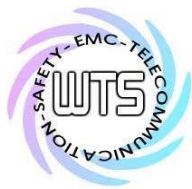
FCC ID: 2AT5JE070W1D14V1U

5MHz



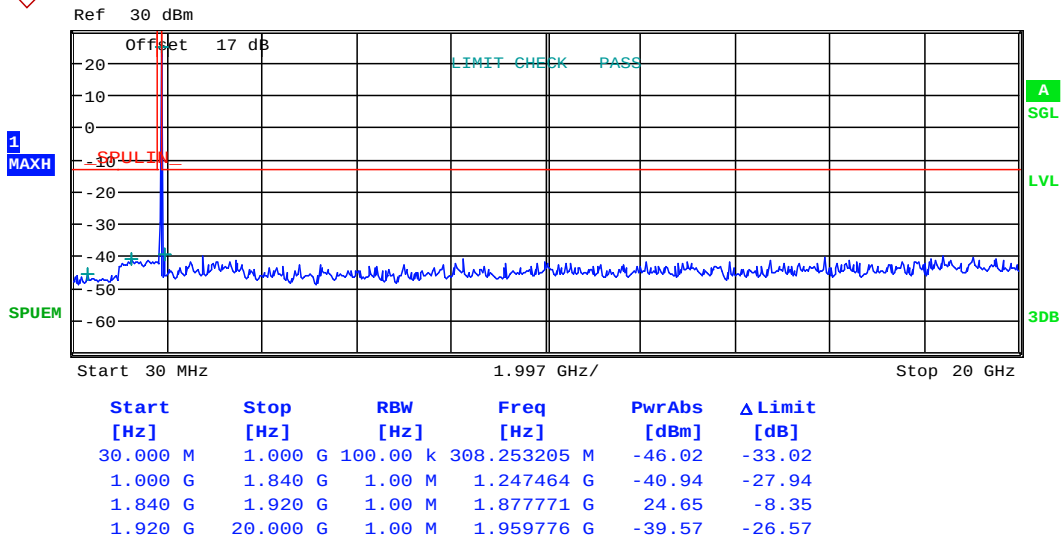
CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 5MHZ CH18625

Date: 24.JUL.2019 16:39:57



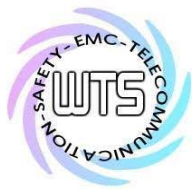
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



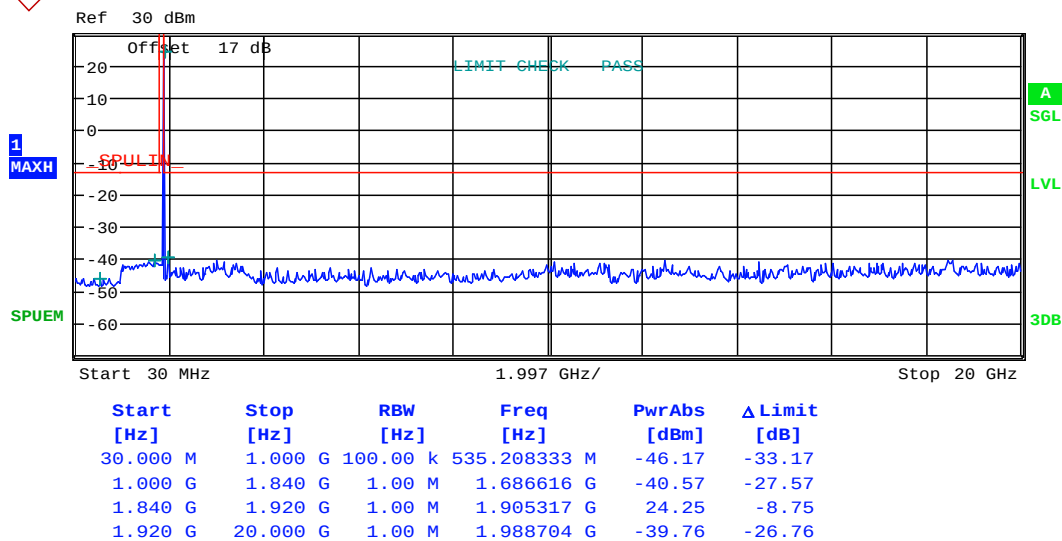
CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 5MHz CH18900

Date: 24.JUL.2019 16:38:32



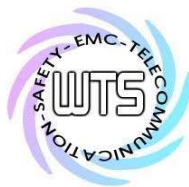
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND2 16QAM 1RB 5MHz CH19175

Date: 24.JUL.2019 16:39:15

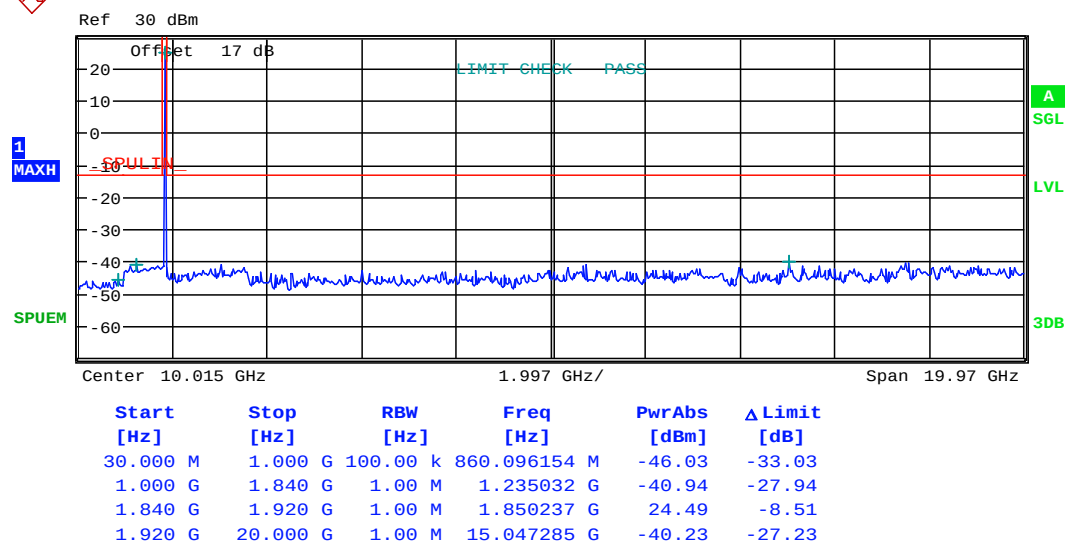


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

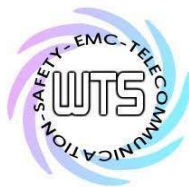
QPSK

1.4MHz



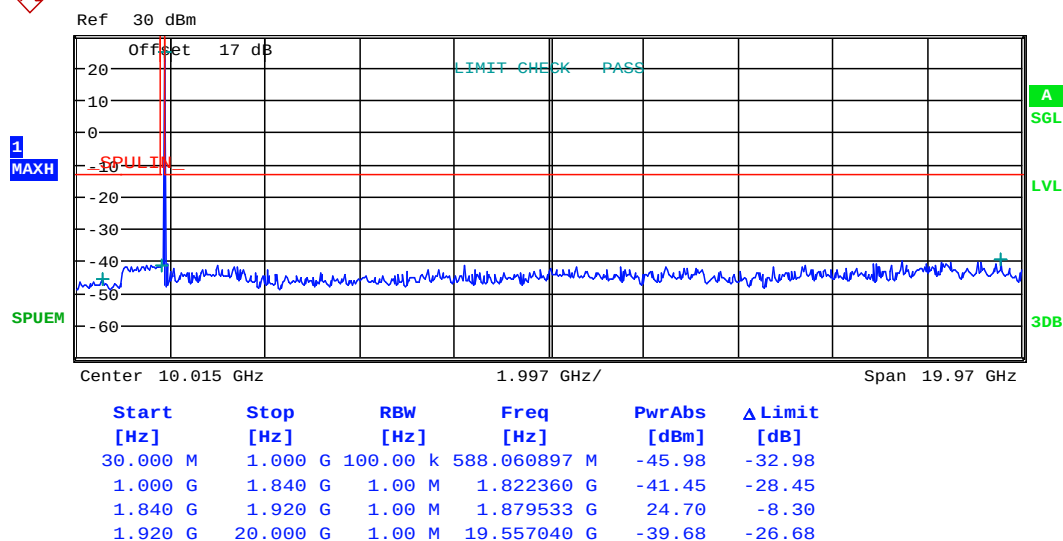
CONDUCTED SPURIOUS EMISSION BAND2 QPSK 1RB 1.4MHz CH18607

Date: 24.JUL.2019 17:14:20



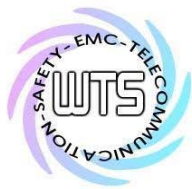
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



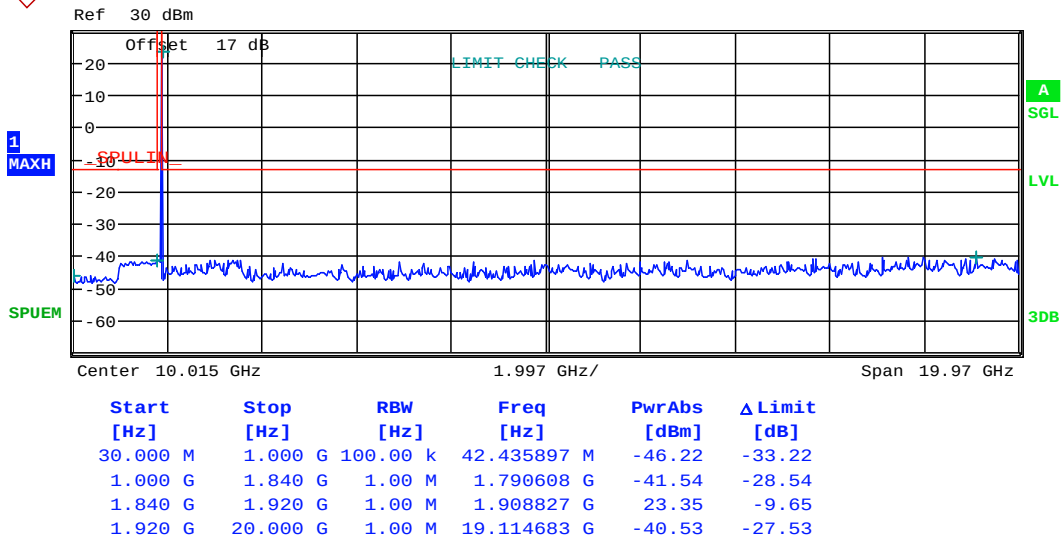
CONDUCTED SPURIOUS EMISSION BAND2 QPSK 1RB 1.4MHZ CH18900

Date: 24.JUL.2019 17:14:41



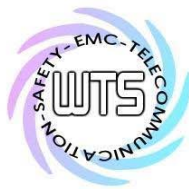
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND2 QPSK 1RB 1.4MHZ CH19193

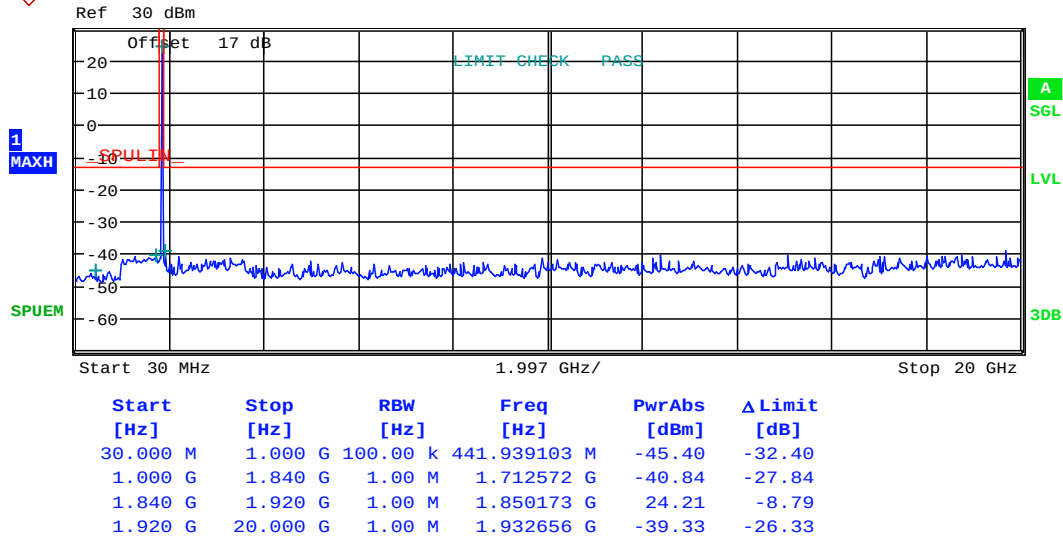
Date: 24.JUL.2019 17:13:53



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz

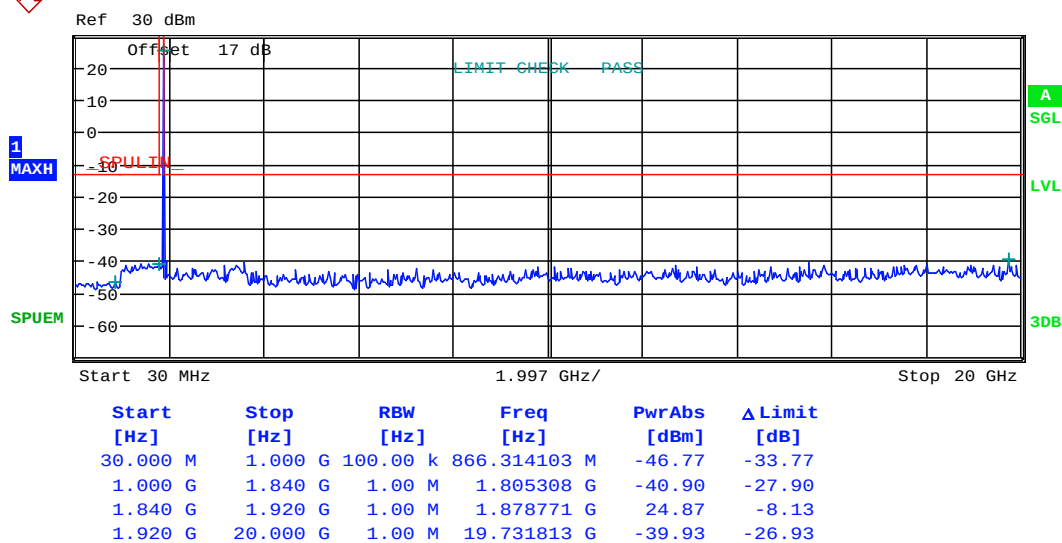


CONDUCTED SPURIOUS EMISSION BAND2 QPSK 1RB 3MHz CH18615

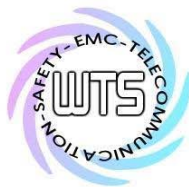
Date: 24.JUL.2019 16:43:35



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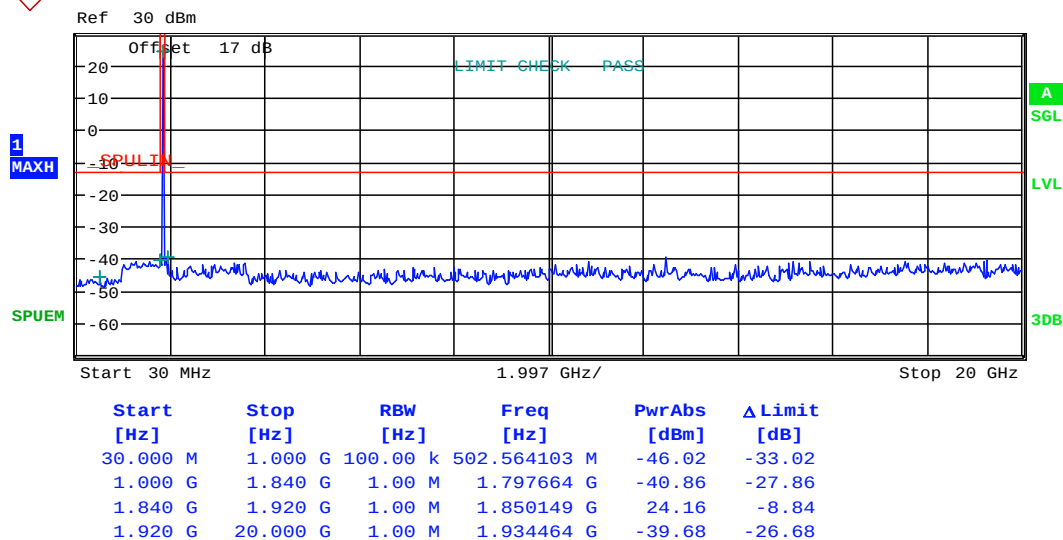
Date: 24.JUL.2019 16:42:29



Report Number: W6M21906-19141-P-247

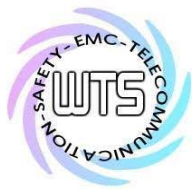
FCC ID: 2AT5JE070W1D14V1U

5MHz



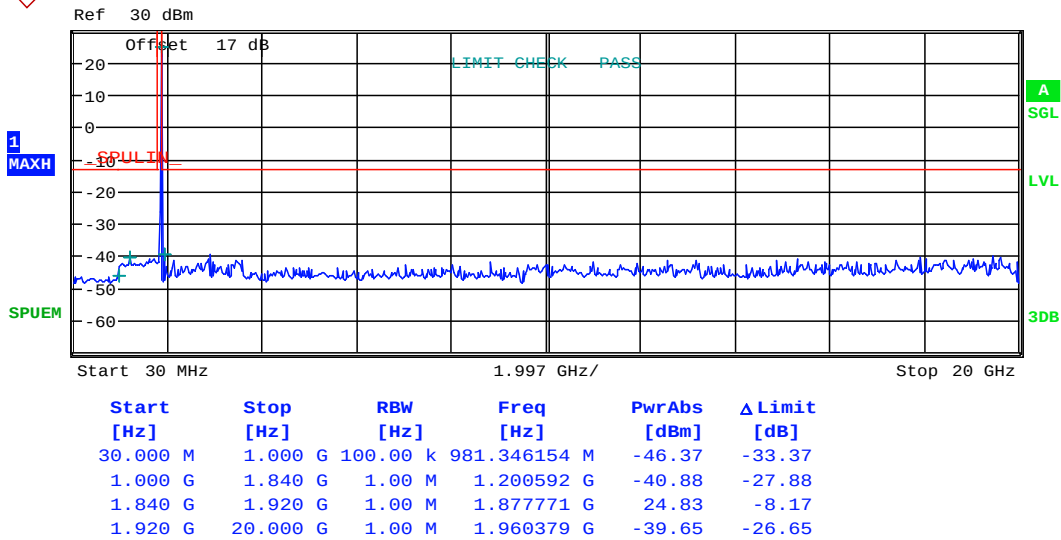
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Date: 24.JUL.2019 16:40:30



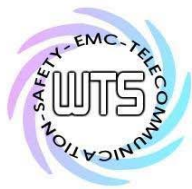
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



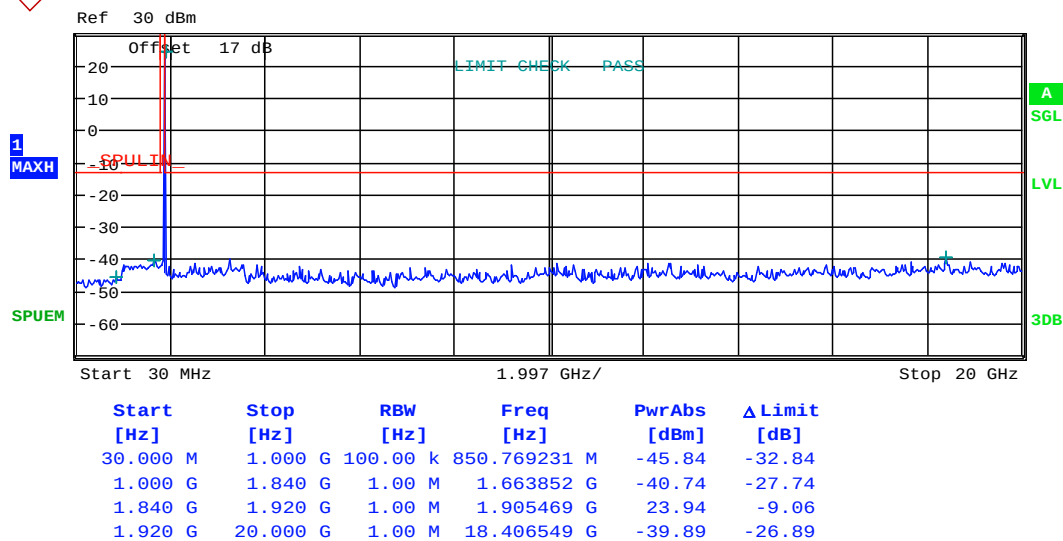
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Date: 24.JUL.2019 16:41:28



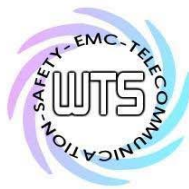
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND2 QPSK 1RB 5MHz CH19175

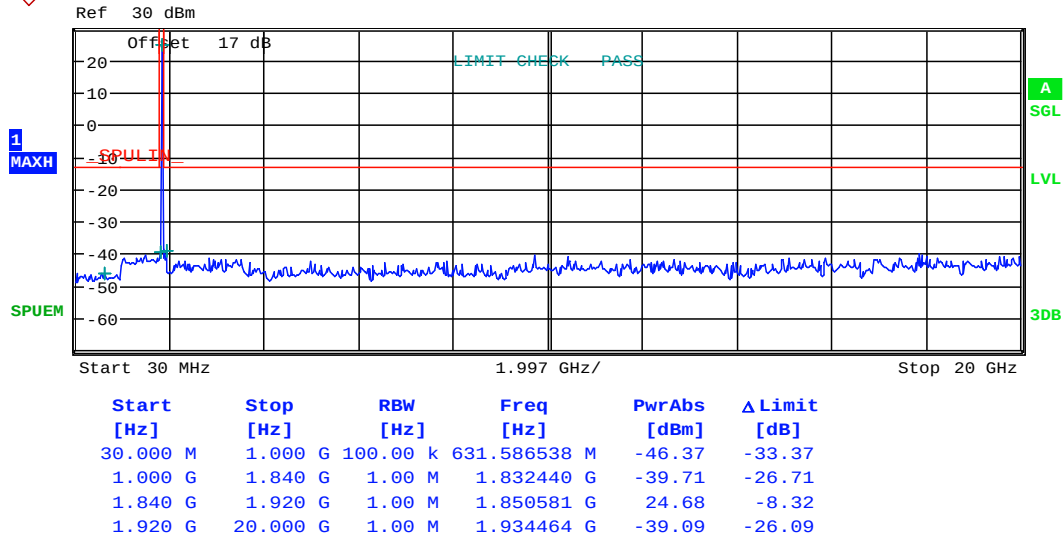
Date: 24.JUL.2019 16:41:02



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

10MHz

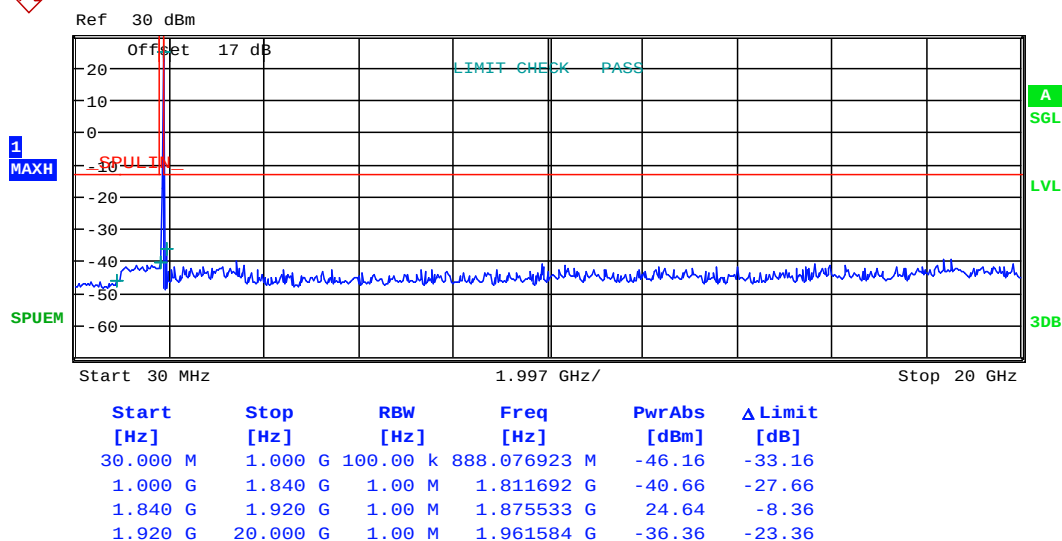


CONDUCTED SPURIOUS EMISSION BAND2 QPSK 1RB 10MHZ CH18650

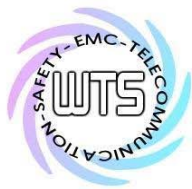
Date: 24.JUL.2019 16:34:42



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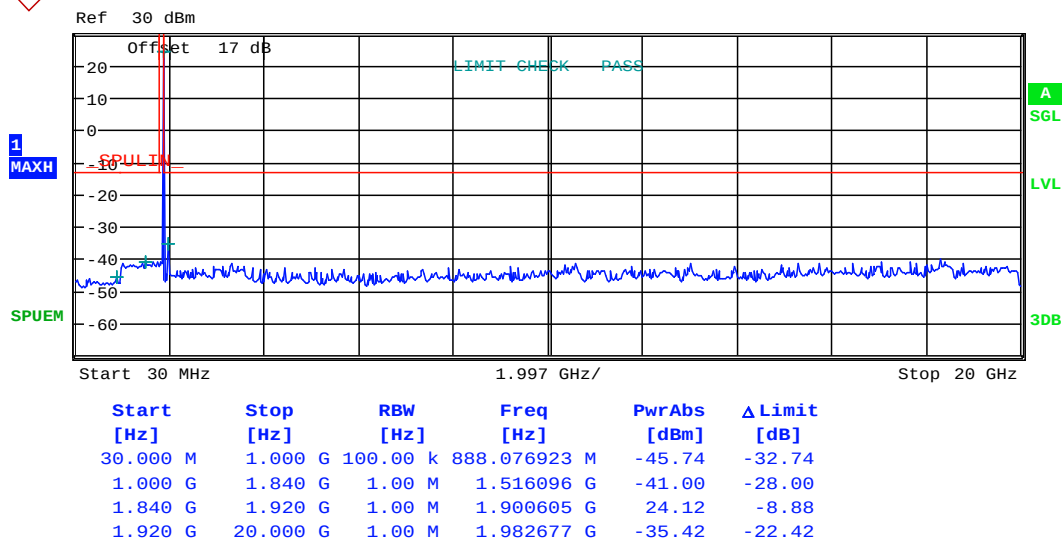


Date: 24.JUL.2019 16:33:55



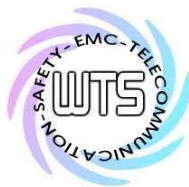
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND2 QPSK 1RB 10MHz CH19150

Date: 24.JUL.2019 16:35:16



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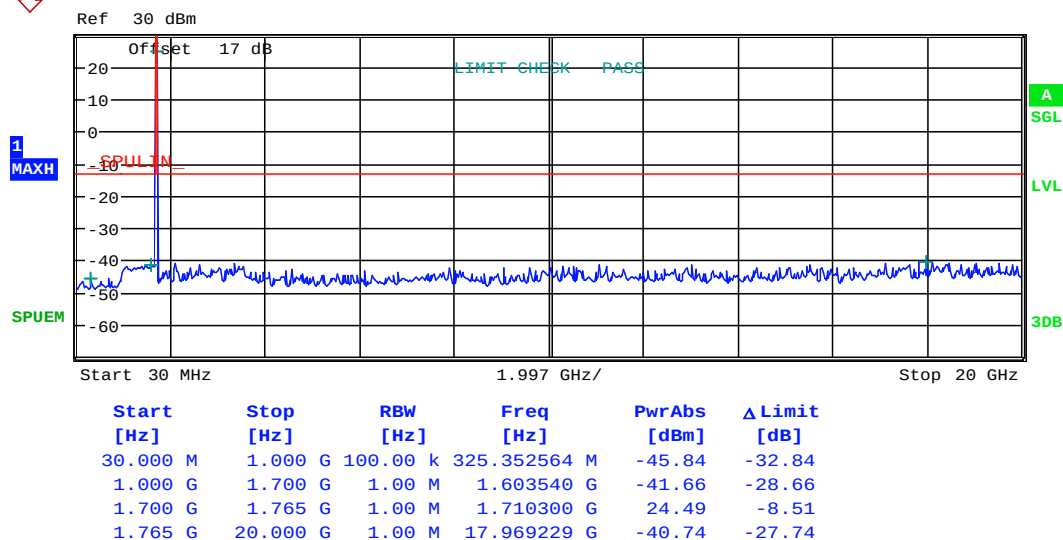
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

Band IV

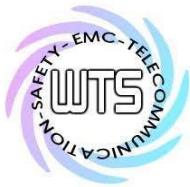
16QAM

1.4MHz



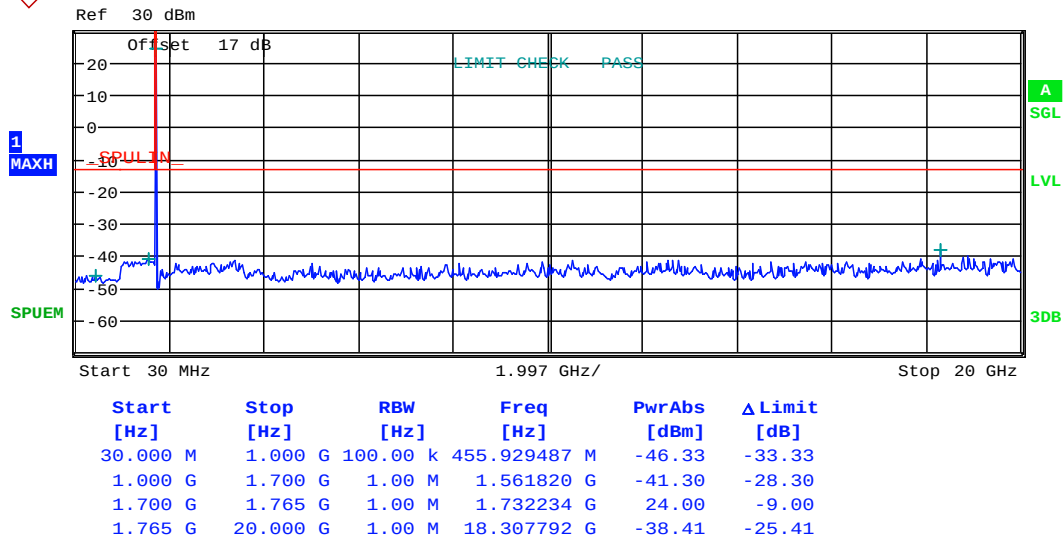
CONDUCTED SPURIOUS EMISSION BAND4 16QAM 1RB 1.4MHz CH19957

Date: 24.JUL.2019 17:28:57



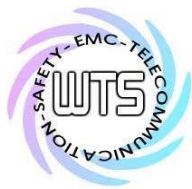
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



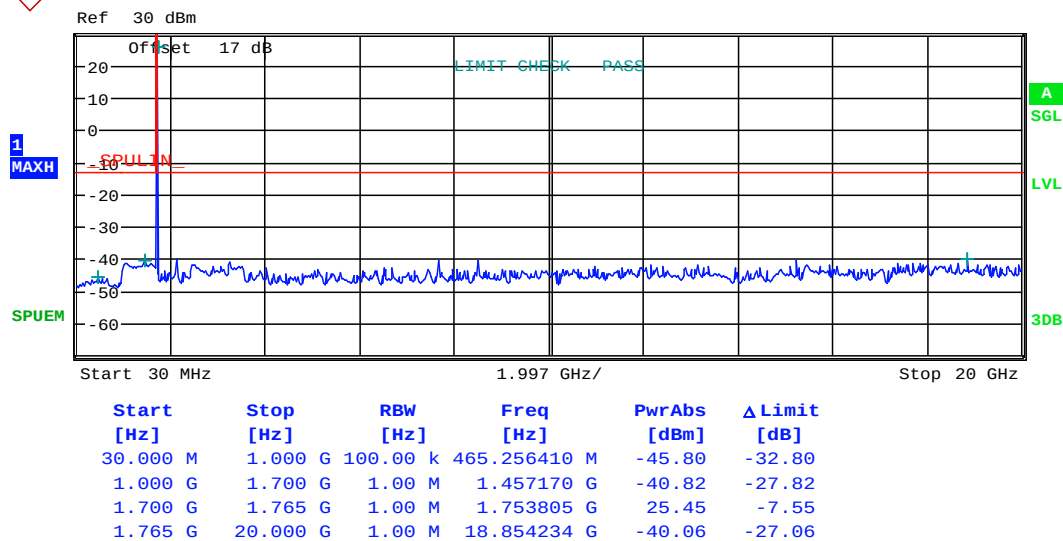
CONDUCTED SPURIOUS EMISSION BAND4 16QAM 1RB 1.4MHz CH20175

Date: 24.JUL.2019 17:28:09



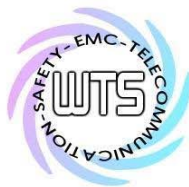
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND4 16QAM 1RB 1.4MHz CH20393

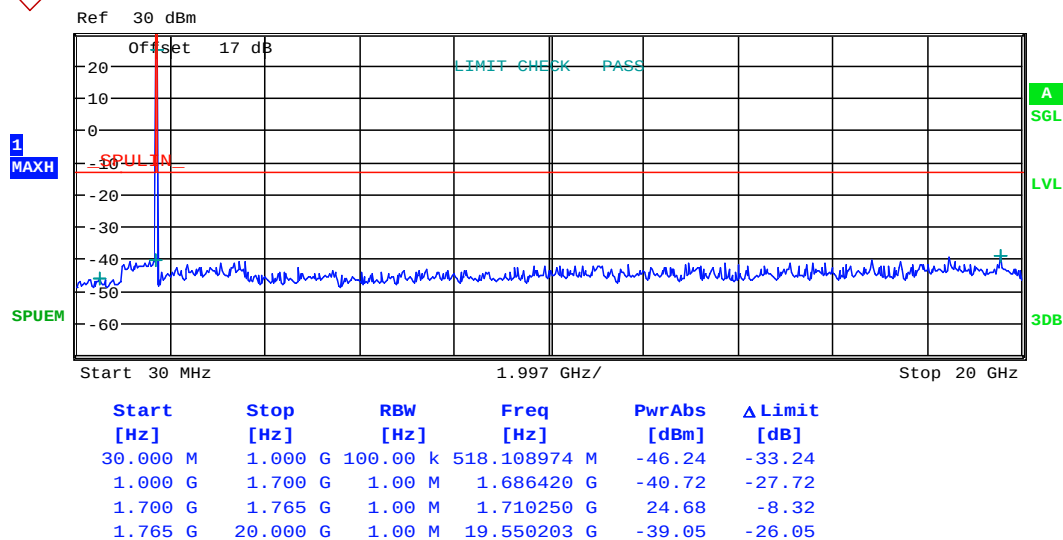
Date: 24.JUL.2019 17:29:26



Report Number: W6M21906-19141-P-247

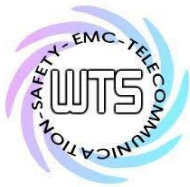
FCC ID: 2AT5JE070W1D14V1U

3MHz



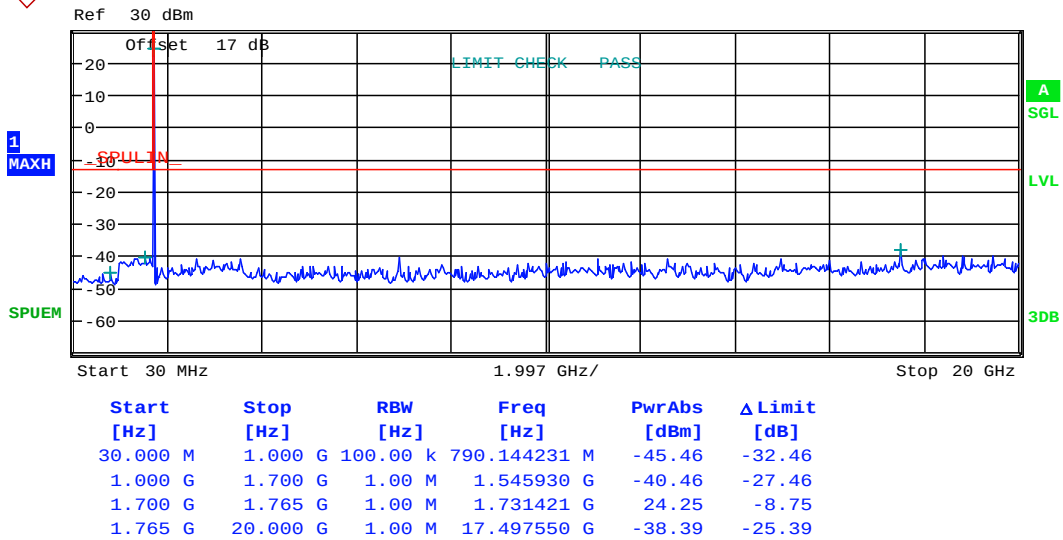
CONDUCTED SPURIOUS EMISSION BAND4 16QAM 1RB 3MHZ CH19965

Date: 24.JUL.2019 17:34:22



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

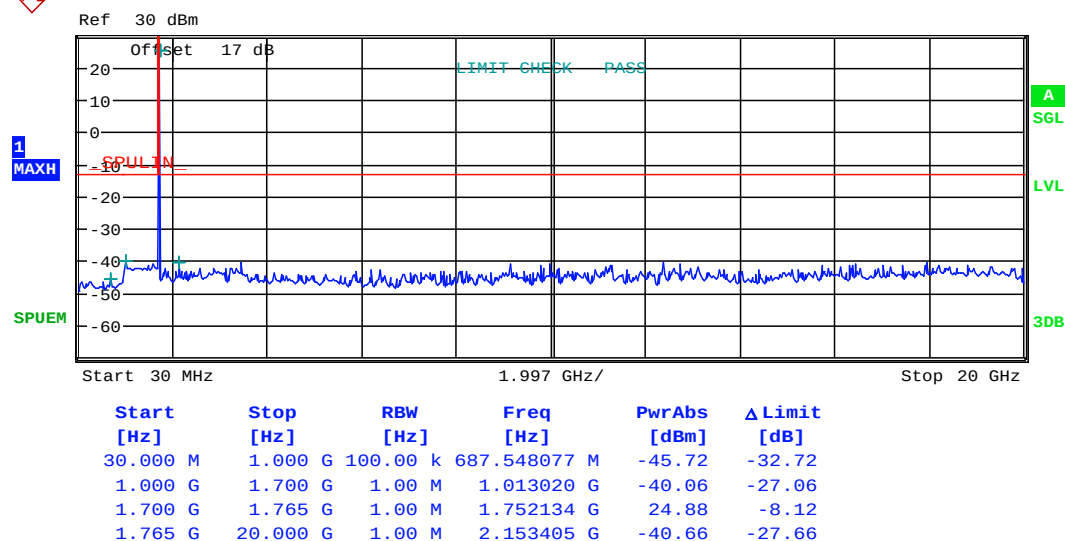


CONDUCTED SPURIOUS EMISSION BAND4 16QAM 1RB 3MHz CH20175

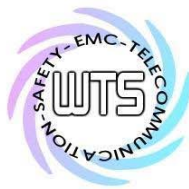
Date: 24.JUL.2019 17:32:49



FCC ID: 2AT5JE070W1D14V1U



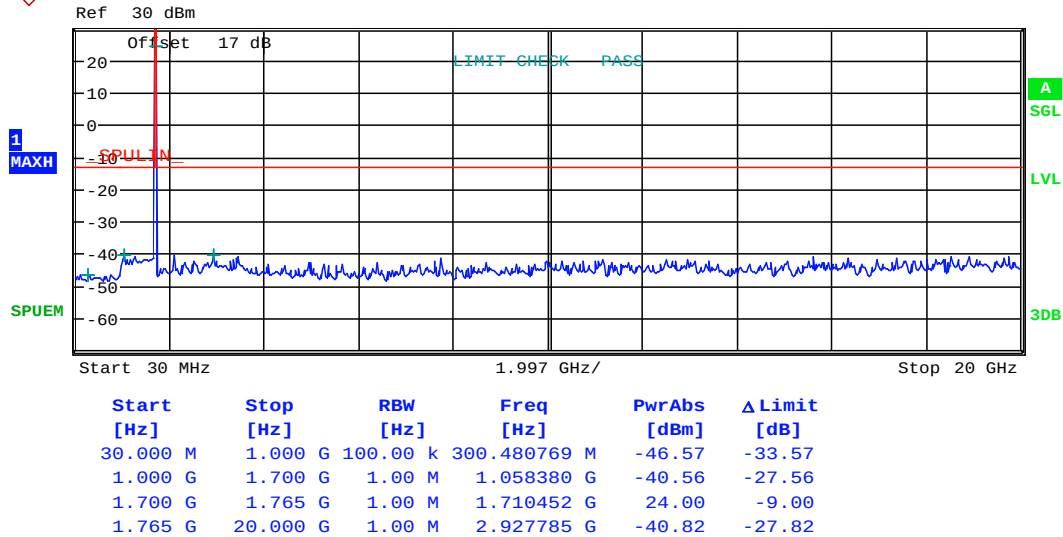
Date: 24.JUL.2019 17:34:52



Report Number: W6M21906-19141-P-247

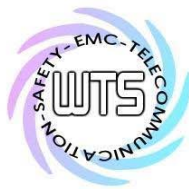
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5MHz



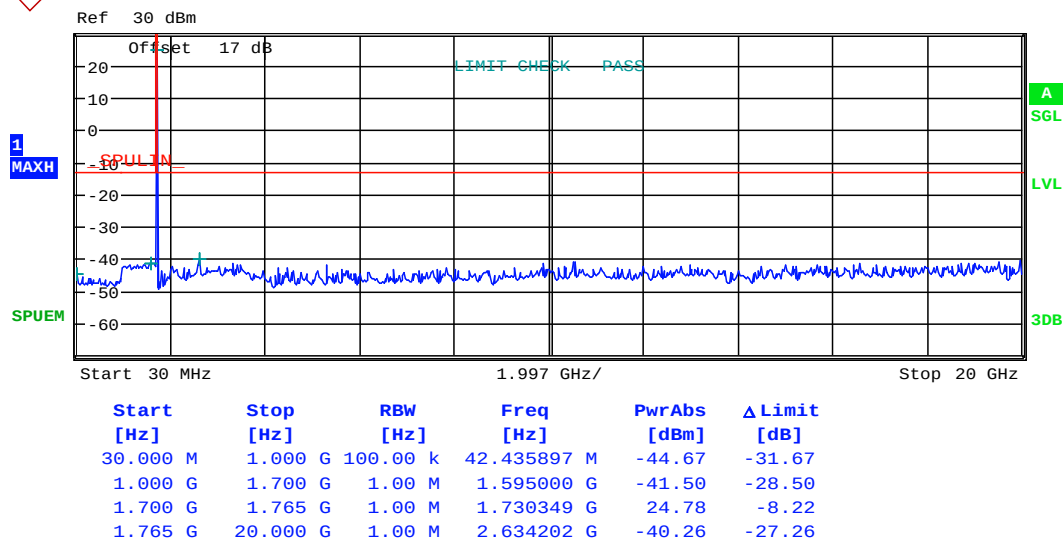
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Date: 24.JUL.2019 17:37:25



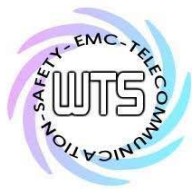
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



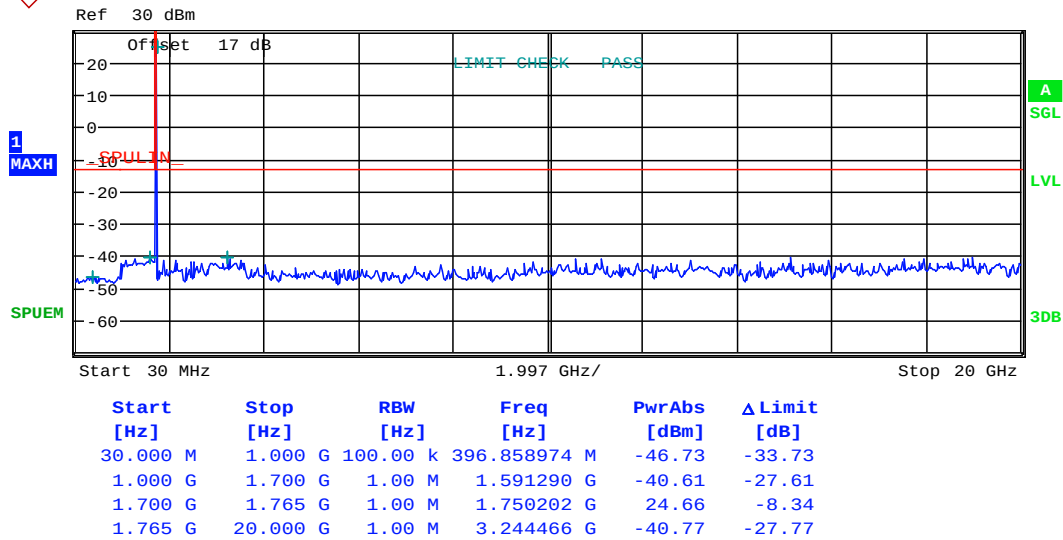
CONDUCTED SPURIOUS EMISSION BAND4 16QAM 1RB 5MHz CH20175

Date: 24.JUL.2019 17:38:20



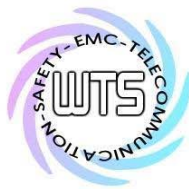
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND4 16QAM 1RB 5MHz CH20375

Date: 24.JUL.2019 17:37:59

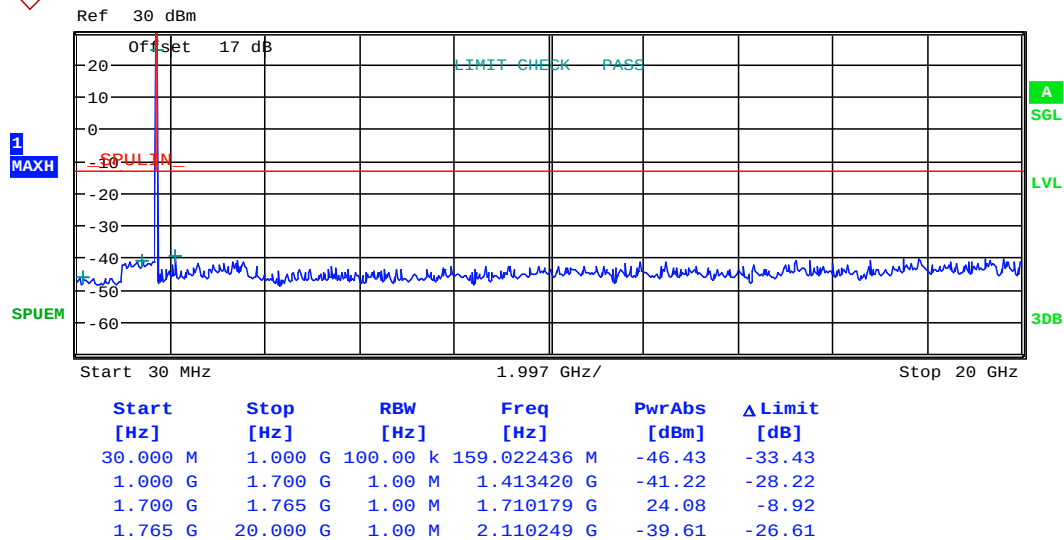


Report Number: W6M21906-19141-P-247

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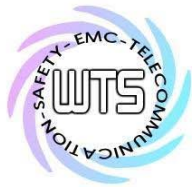
QPSK

1.4MHz



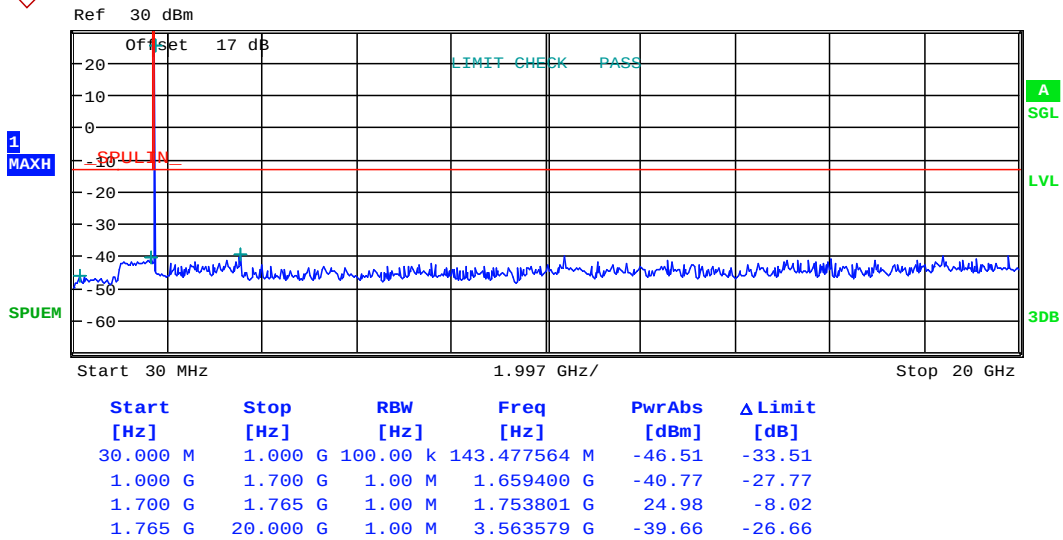
CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 1.4MHz CH19957

Date: 24.JUL.2019 17:30:21



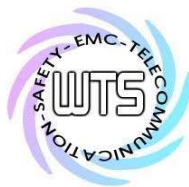
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 1.4MHZ CH20393

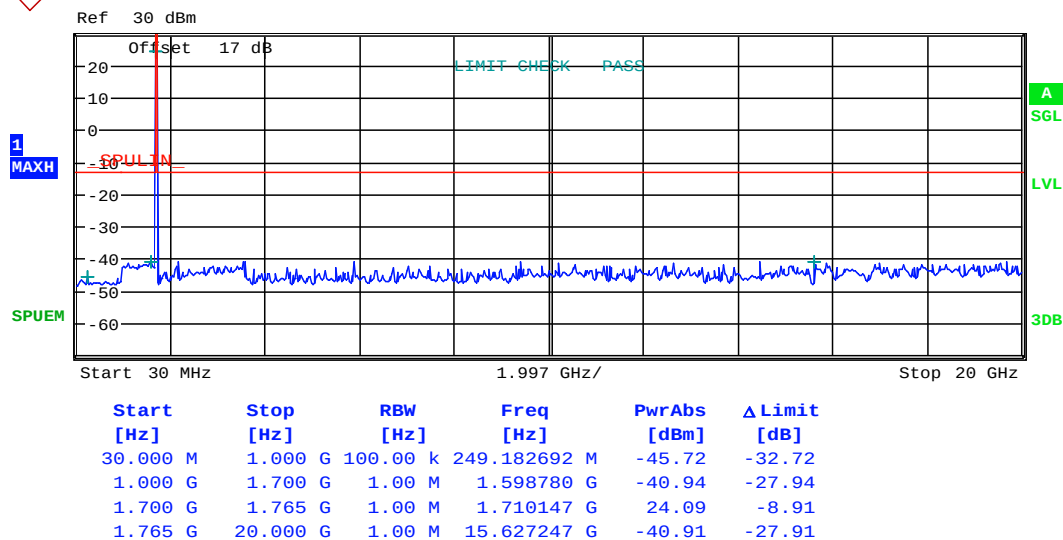
Date: 24.JUL.2019 17:29:55



Report Number: W6M21906-19141-P-247

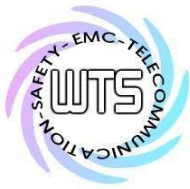
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3MHz



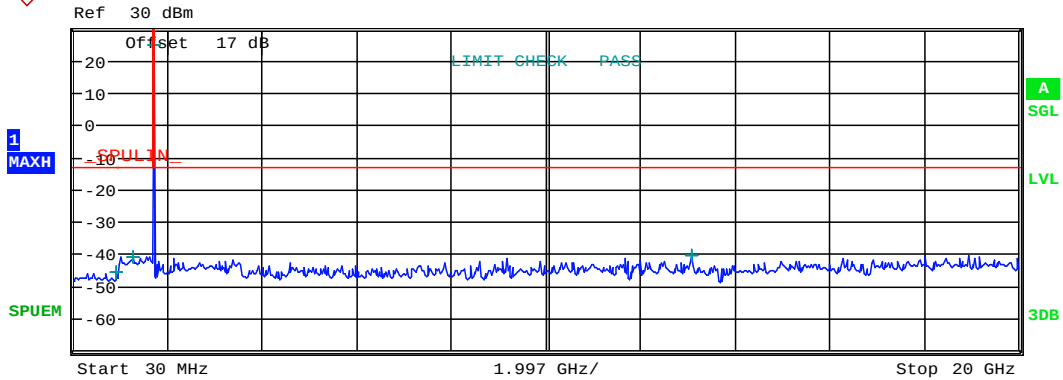
CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 3MHz CH19965

Date: 24.JUL.2019 17:33:49



Report Number: W6M21906-19141-P-247

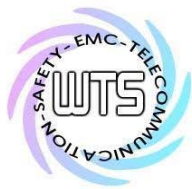
FCC ID: 2AT5JE070W1D14V1U



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	Δ Limit [dB]
30.000 M	1.000 G	100.00 k	923.830128 M	-45.96	-32.96
1.000 G	1.700 G	1.00 M	1.290990 G	-41.06	-28.06
1.700 G	1.765 G	1.00 M	1.731293 G	24.72	-8.28
1.765 G	20.000 G	1.00 M	13.077386 G	-40.69	-27.69

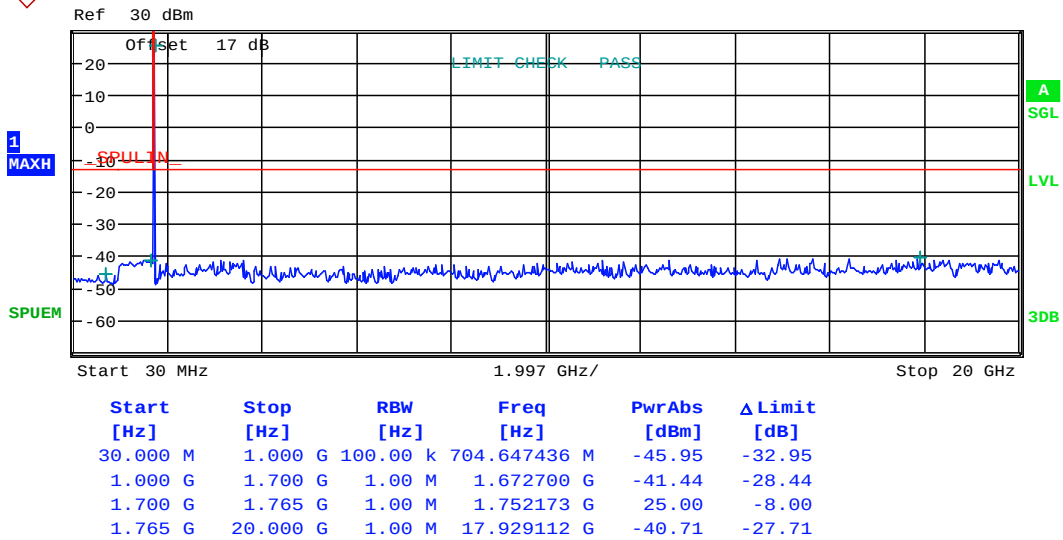
CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 3MHz CH20175

Date: 24.JUL.2019 17:33:15



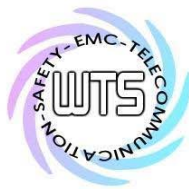
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 3MHz CH20385

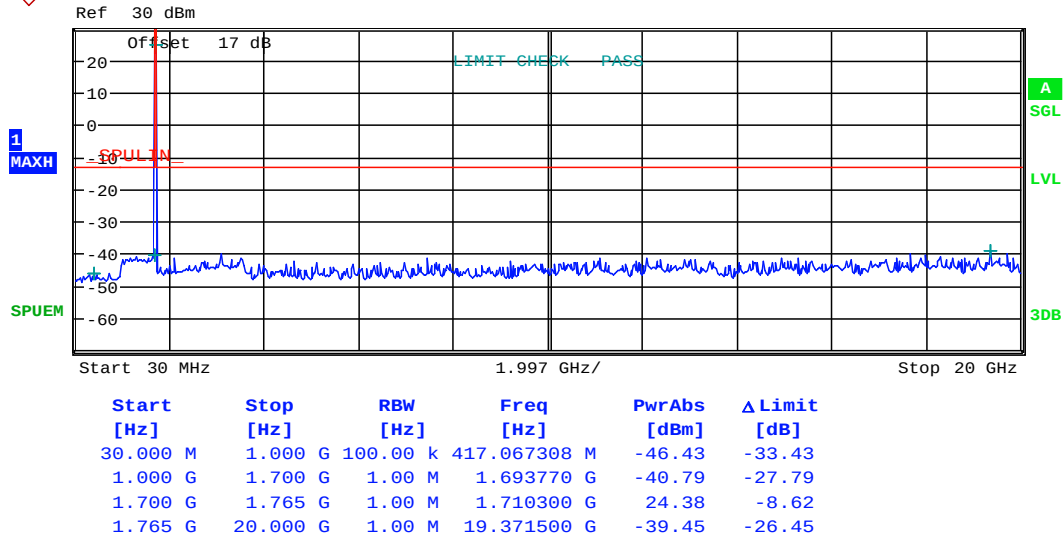
Date: 24.JUL.2019 17:35:19



Report Number: W6M21906-19141-P-247

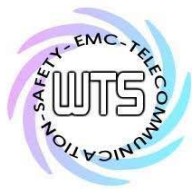
FCC ID: 2AT5JE070W1D14V1U

5MHz



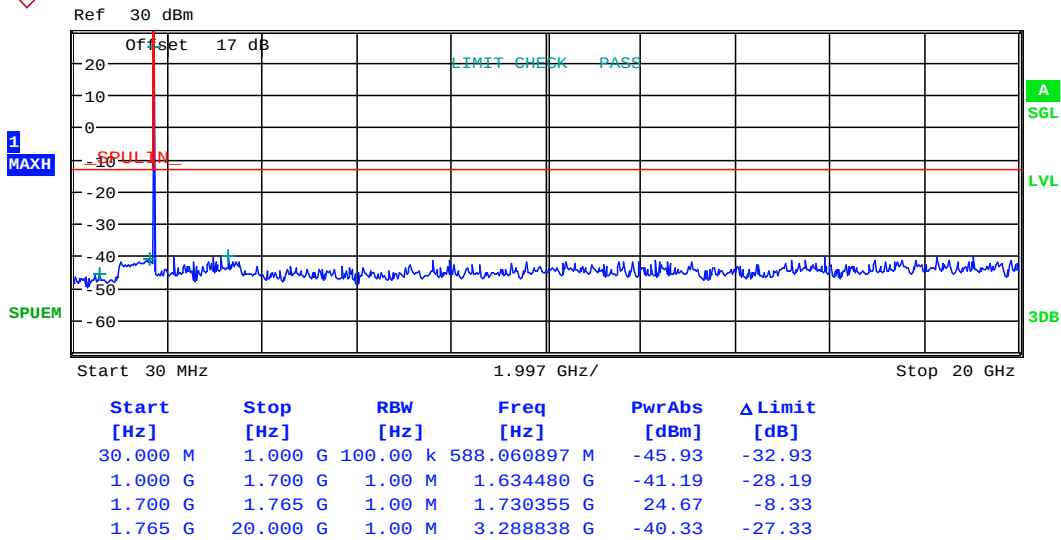
CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 5MHz CH19975

Date: 24.JUL.2019 17:36:58



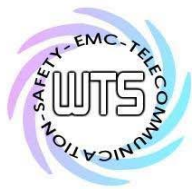
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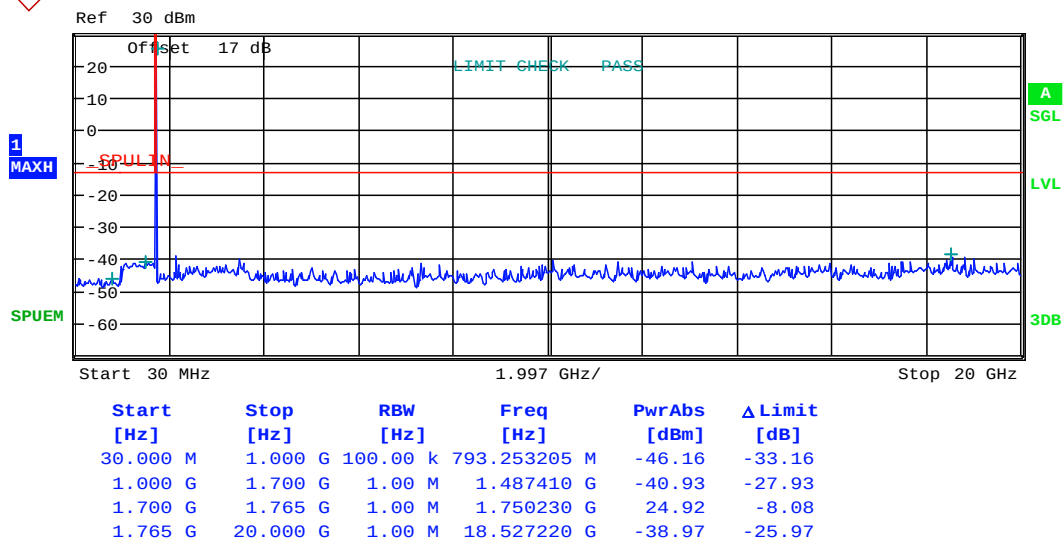
CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 5MHz CH20175

Date: 24.JUL.2019 17:36:00



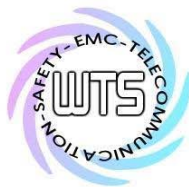
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 5MHz CH20375

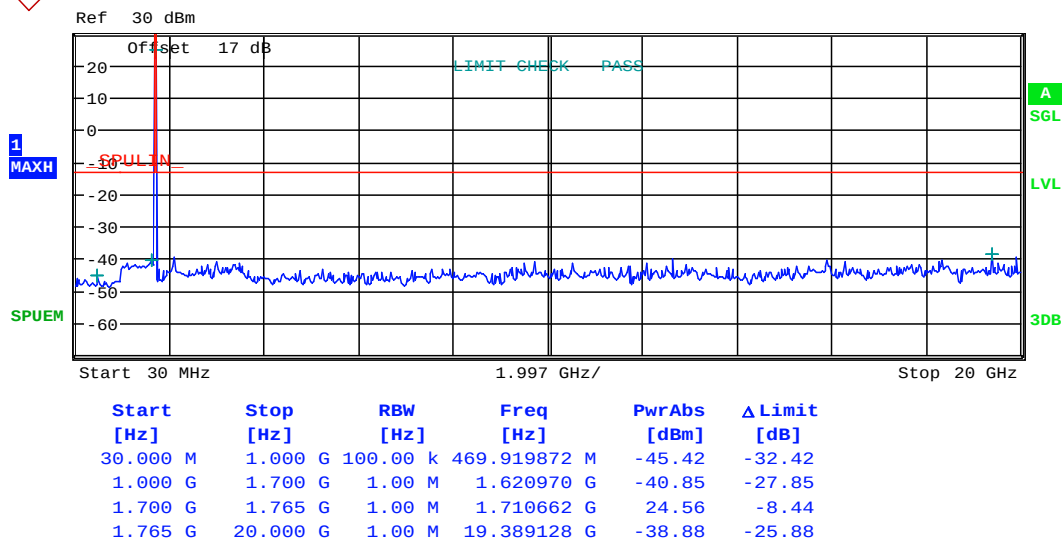
Date: 24.JUL.2019 17:36:36



Report Number: W6M21906-19141-P-247

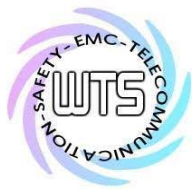
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10MHz



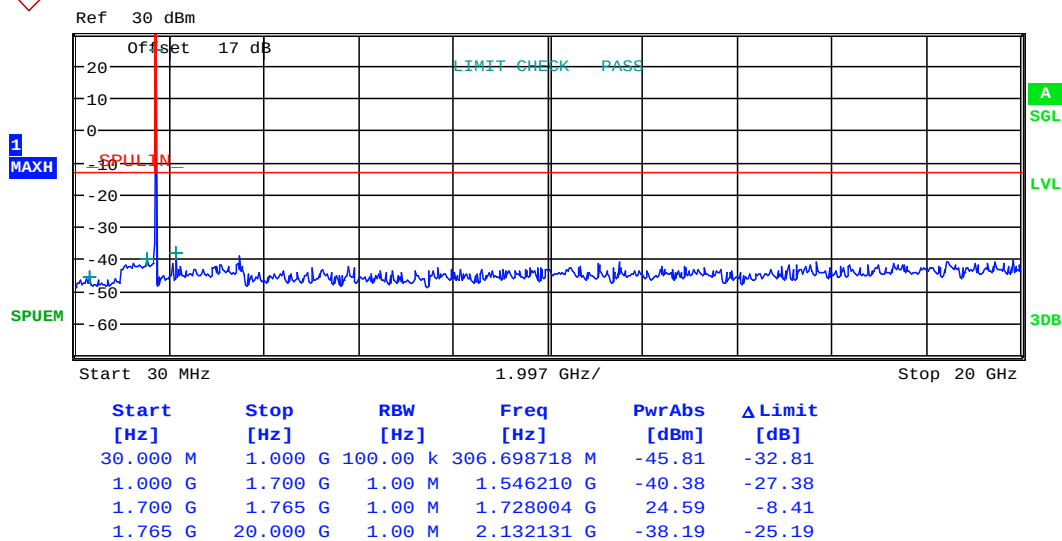
CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 10MHZ CH20000

Date: 24.JUL.2019 17:40:45



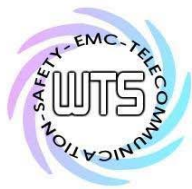
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



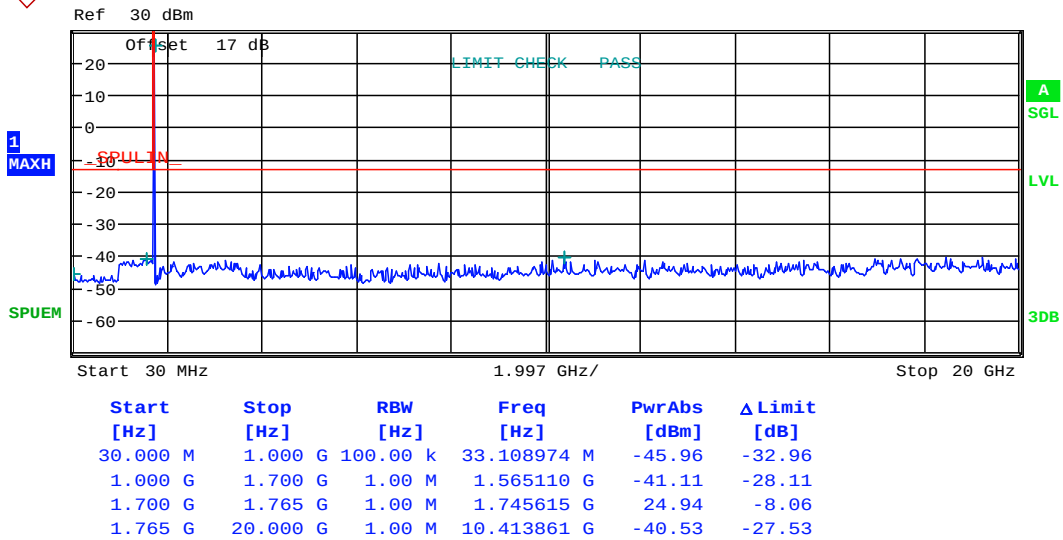
CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 10MHz CH20175

Date: 24.JUL.2019 17:41:06



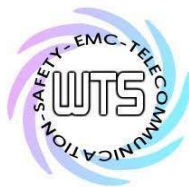
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND4 QPSK 1RB 10MHz CH20350

Date: 24.JUL.2019 17:40:19



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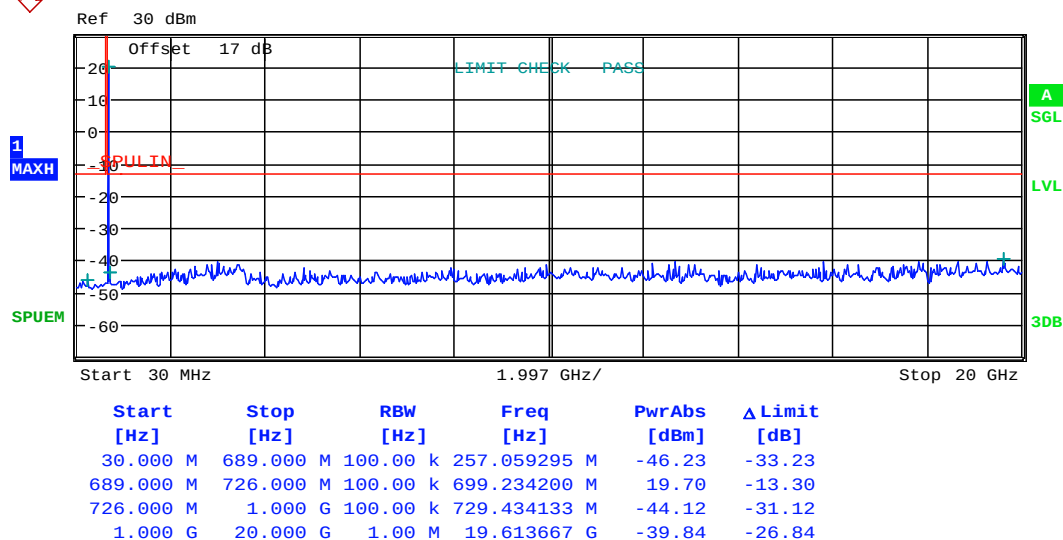
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

Band XII

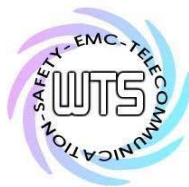
16QAM

1.4MHz



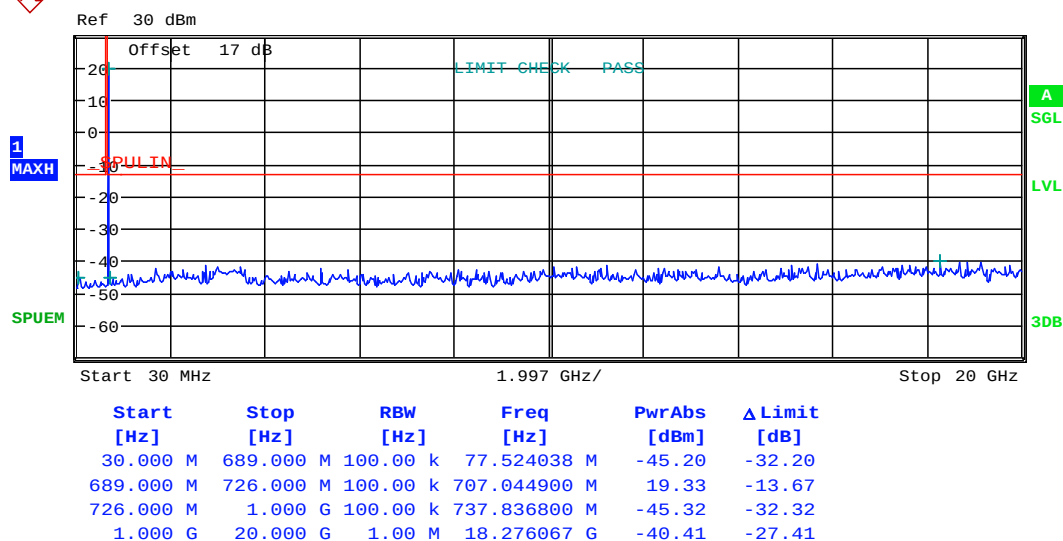
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Date: 24.JUL.2019 18:01:42



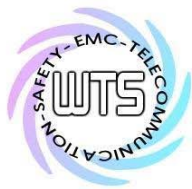
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



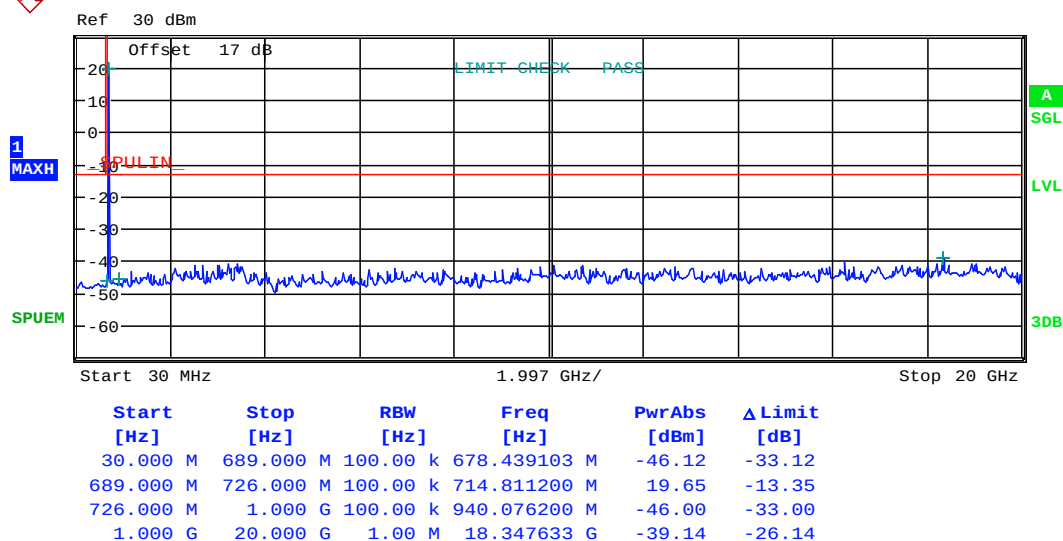
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Date: 24.JUL.2019 18:02:06



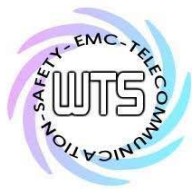
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND12 16QAM 1RB 1.4MHz CH23173

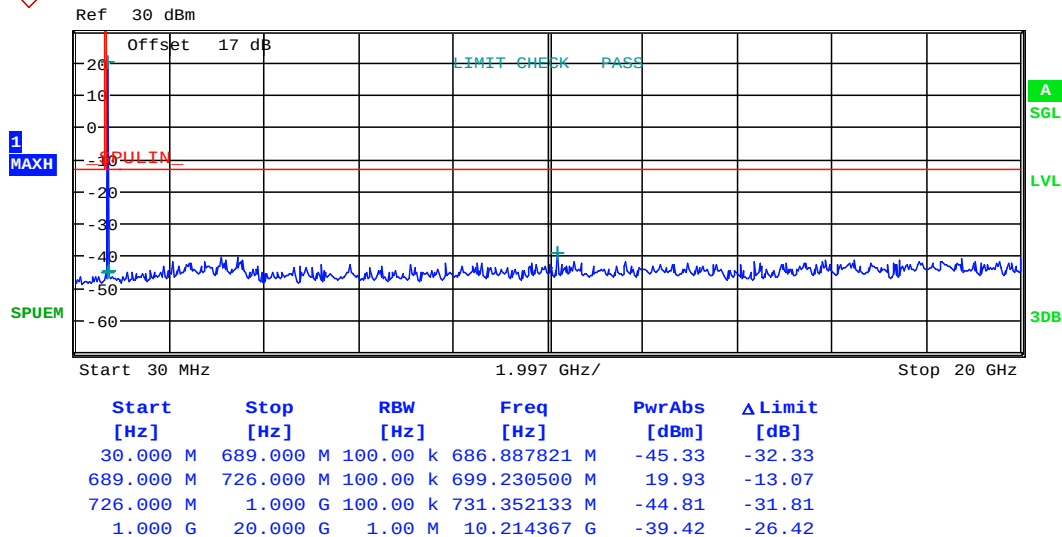
Date: 24.JUL.2019 18:01:16



Report Number: W6M21906-19141-P-247

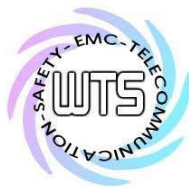
FCC ID: 2AT5JE070W1D14V1U

3MHz



CONDUCTED SPURIOUS EMISSION BAND12 16QAM 1RB 3MHZ CH23025

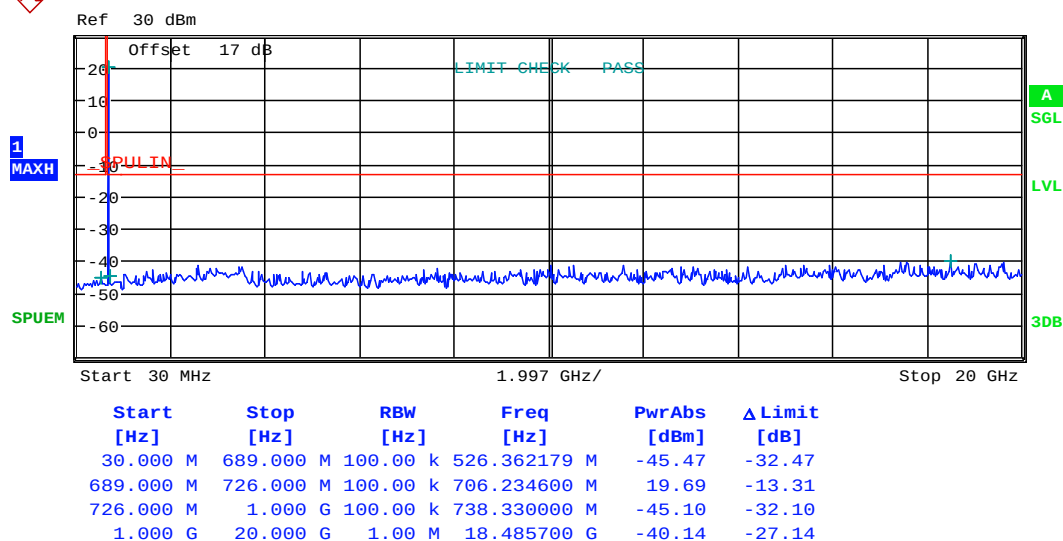
Date: 24.JUL.2019 18:04:57



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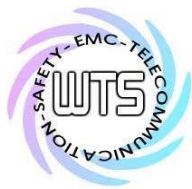
Report Number: W6M21906-19141-P-247

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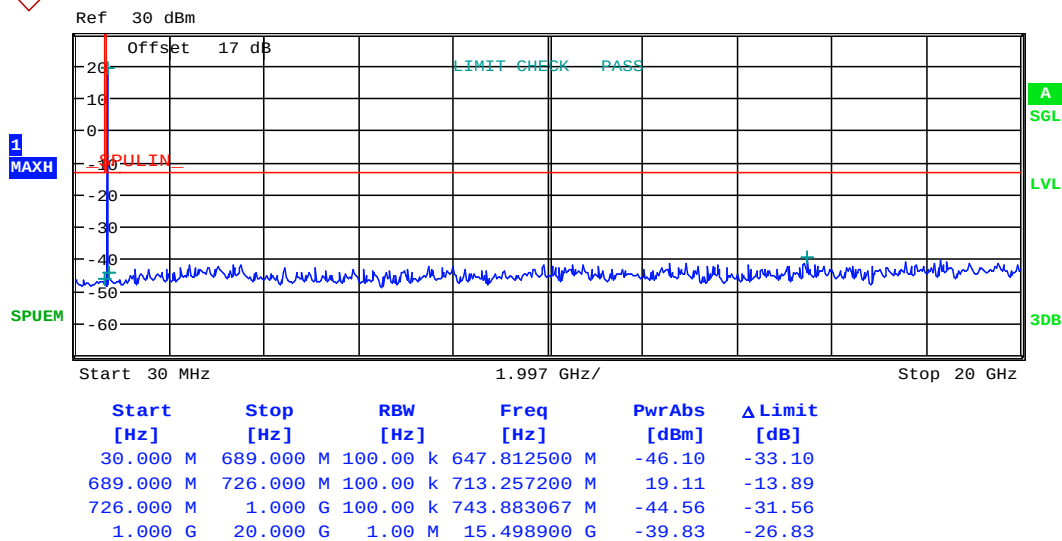
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Date: 24.JUL.2019 18:05:20



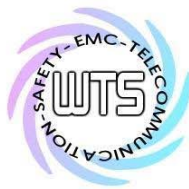
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FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND12 16QAM 1RB 3MHZ CH23165

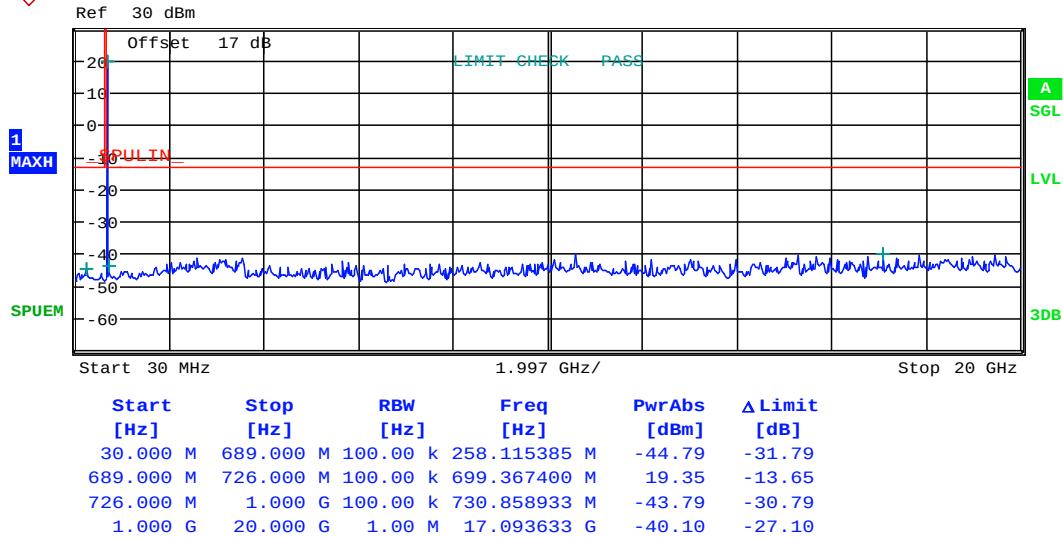
Date: 24.JUL.2019 18:04:27



Report Number: W6M21906-19141-P-247

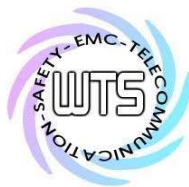
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5MHz



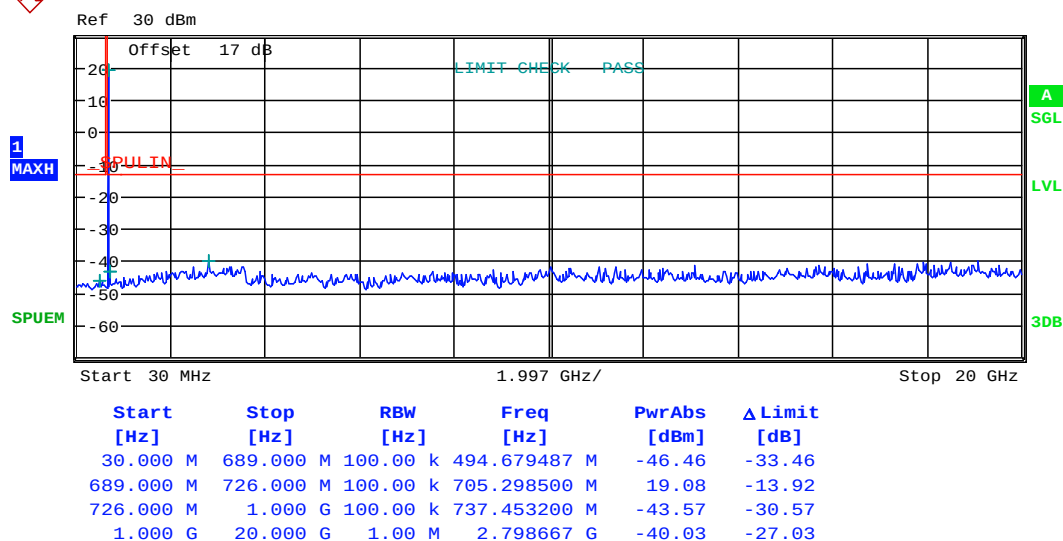
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Date: 24.JUL.2019 18:09:24



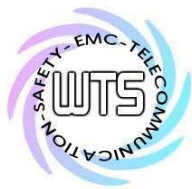
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



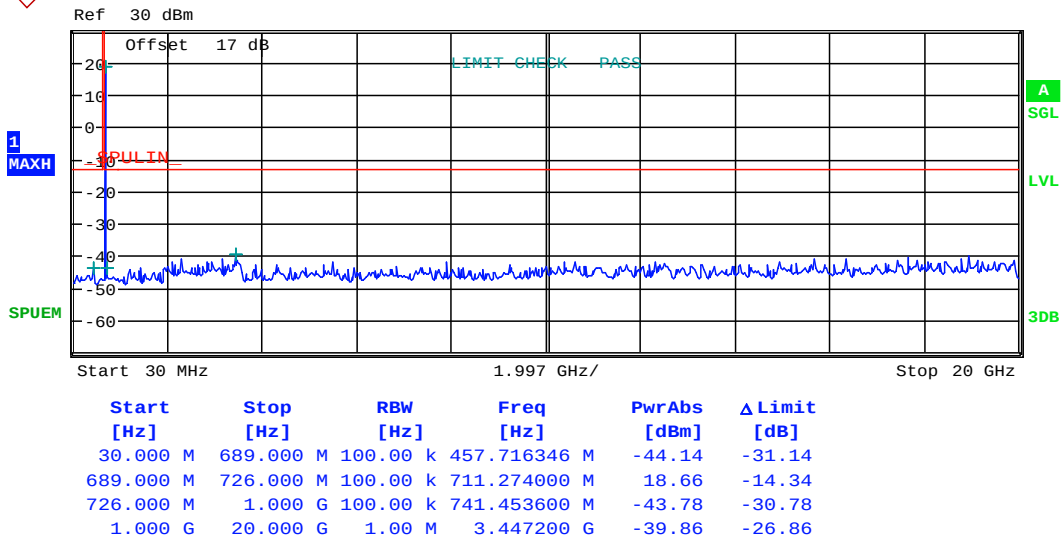
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Date: 24.JUL.2019 18:09:04



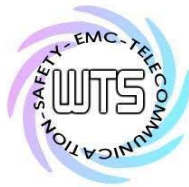
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



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Date: 24.JUL.2019 18:09:46

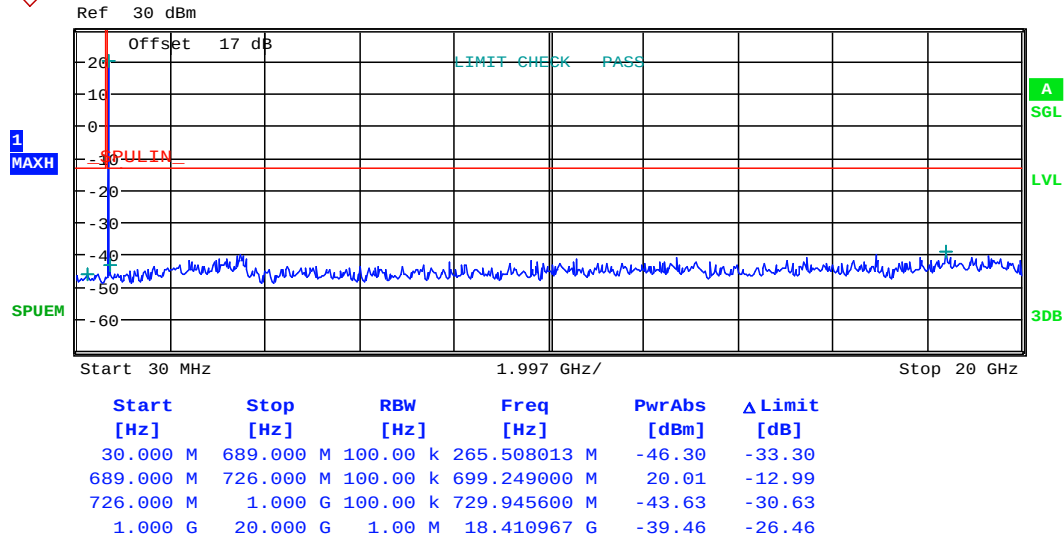


Report Number: W6M21906-19141-P-247

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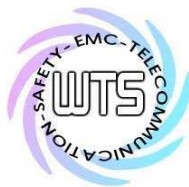
QPSK

1.4MHz



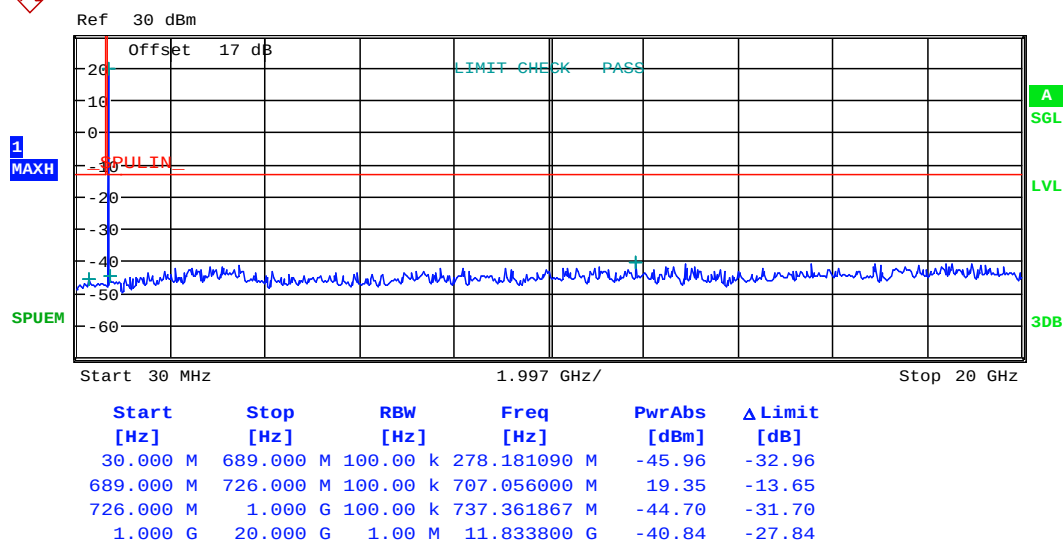
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Date: 24.JUL.2019 18:00:19



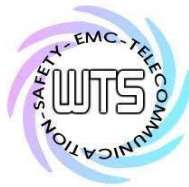
Report Number: W6M21906-19141-P-247

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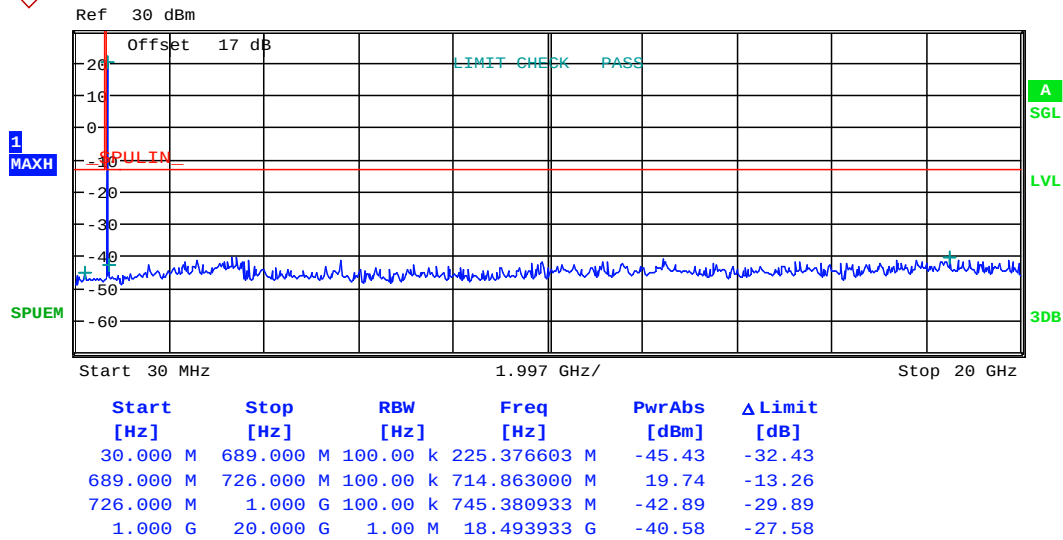
CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 1.4MHz CH23095

Date: 24.JUL.2019 17:59:56



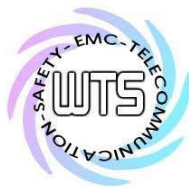
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 1.4MHz CH23173

Date: 24.JUL.2019 18:00:44

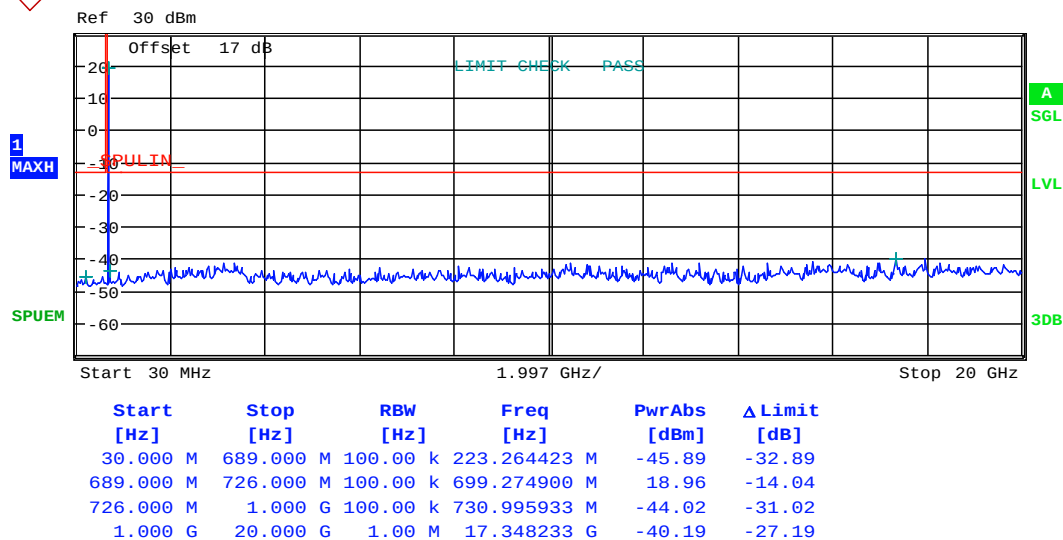


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Report Number: W6M21906-19141-P-247

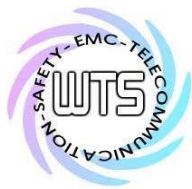
FCC ID: 2AT5JE070W1D14V1U

3MHz



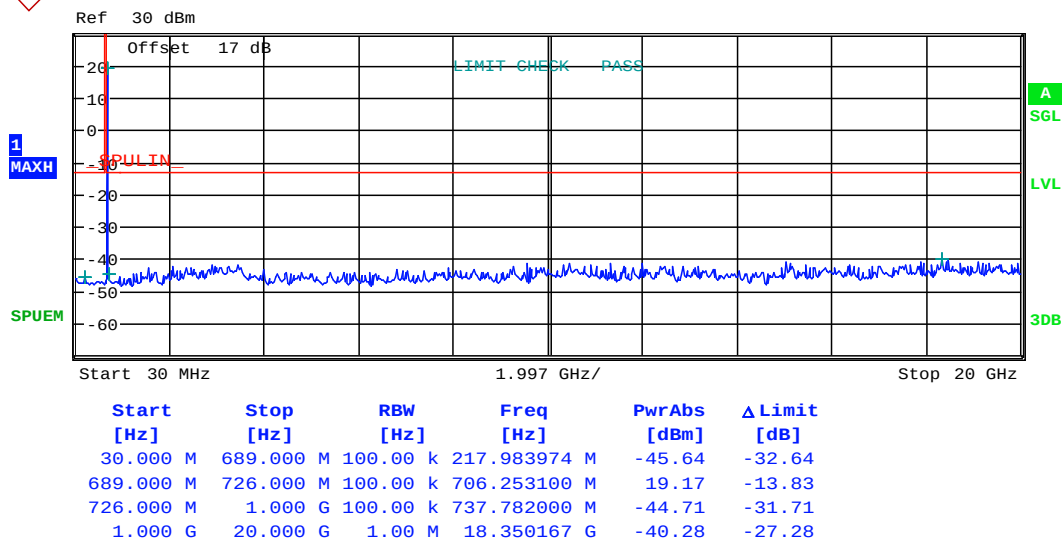
CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 3MHZ CH23025

Date: 24.JUL.2019 18:03:32



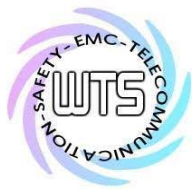
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



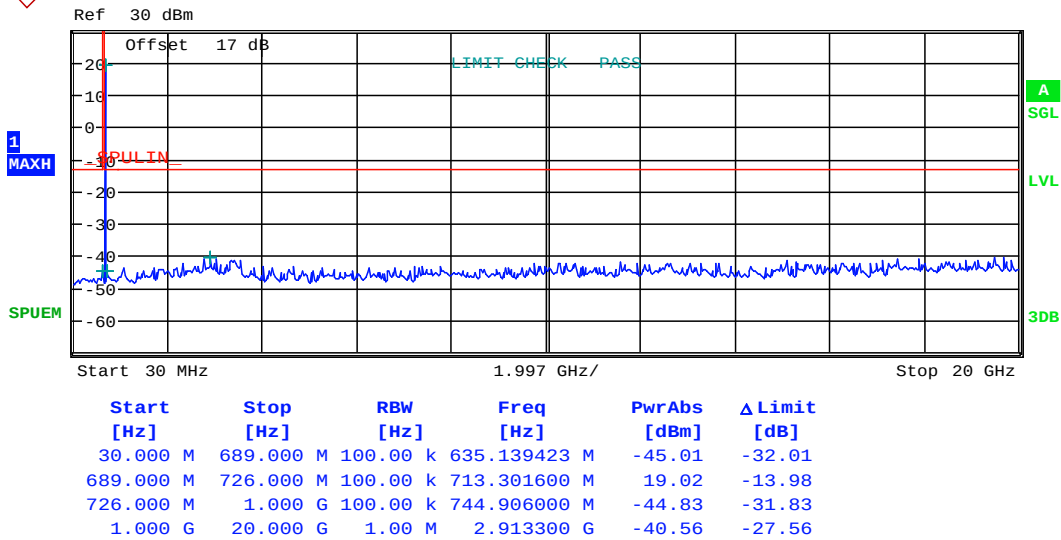
CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 3MHz CH23095

Date: 24.JUL.2019 18:03:04



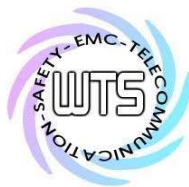
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 3MHz CH23165

Date: 24.JUL.2019 18:03:58

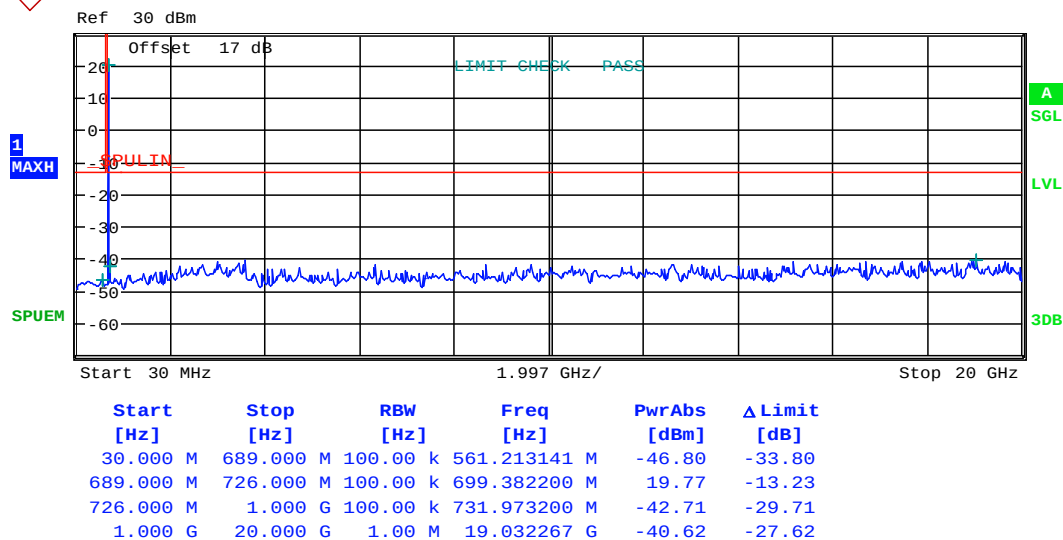


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

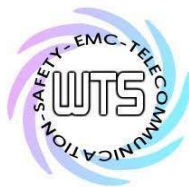
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5MHz



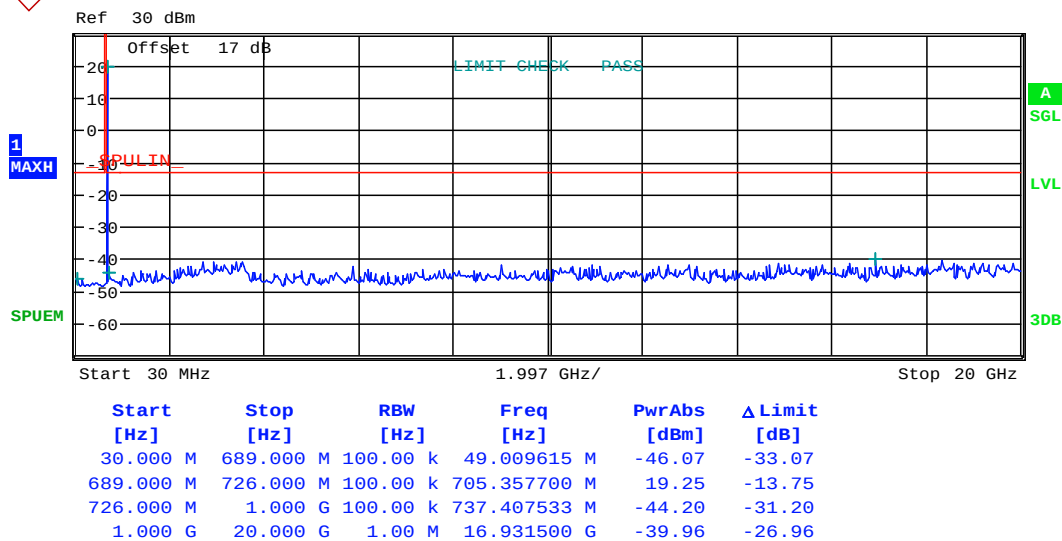
CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 5MHZ CH23035

Date: 24.JUL.2019 18:11:00



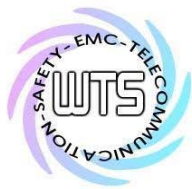
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 5MHz CH23095

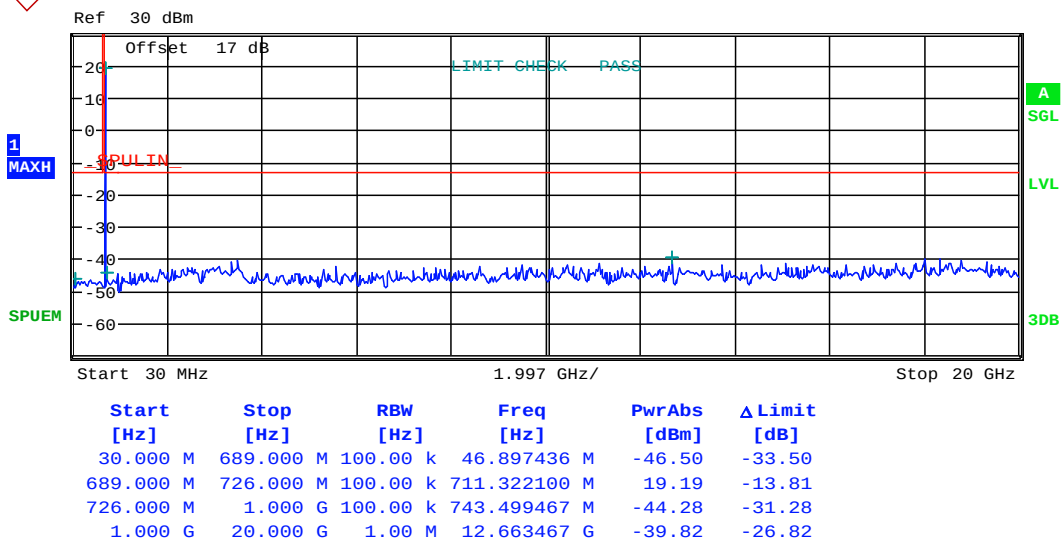
Date: 24.JUL.2019 18:11:26



Worldwide Testing Services(Taiwan) Co., Ltd.

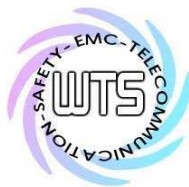
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 5MHz CH23155

Date: 24.JUL.2019 18:10:21

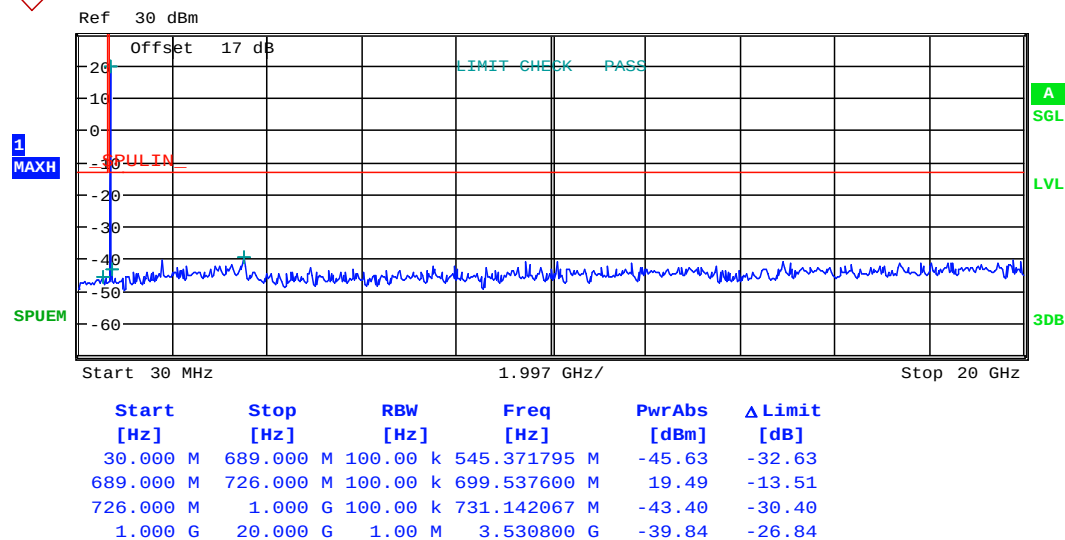


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

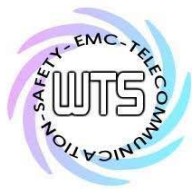
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10MHz



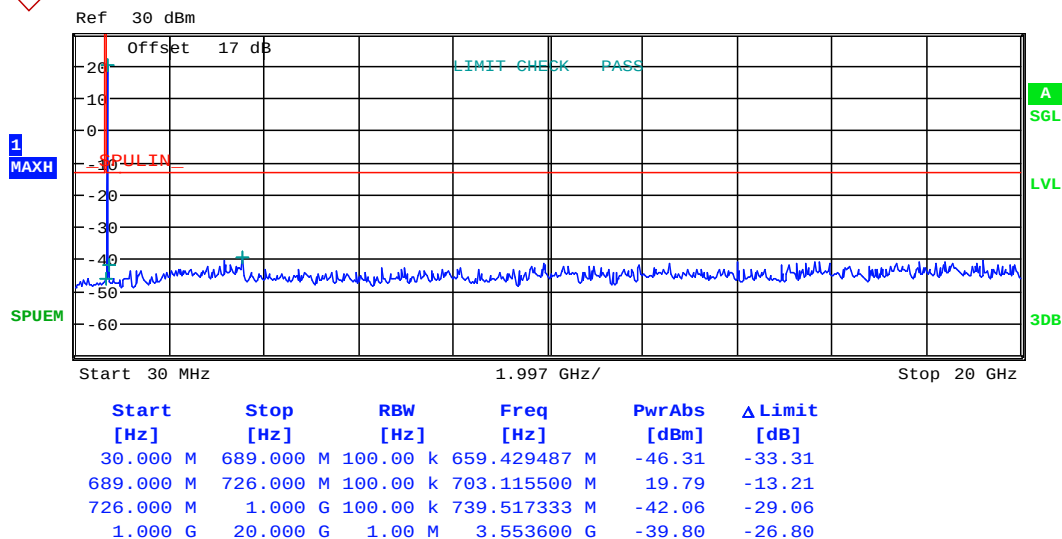
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Date: 24.JUL.2019 18:12:25



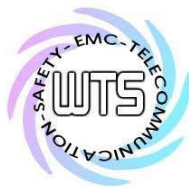
Report Number: W6M21906-19141-P-247

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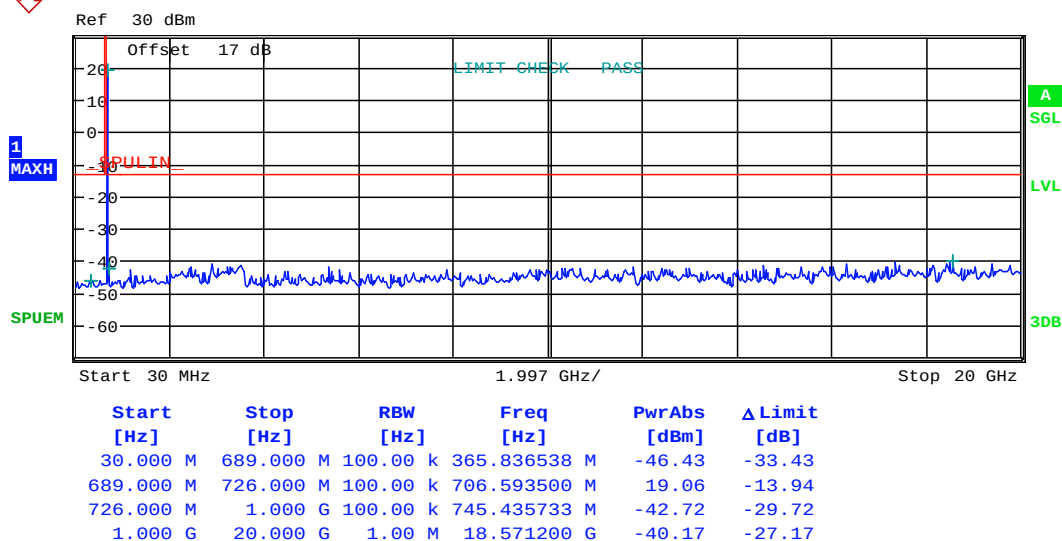
CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 10MHZ CH23095

Date: 24.JUL.2019 18:11:52



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



CONDUCTED SPURIOUS EMISSION BAND12 QPSK 1RB 10MHZ CH23130

Date: 24.JUL.2019 18:12:56

Test equipment: ETSTW-RE 055, ETSTW-GSM 002, ETSTW-GSM 023, ETSTW-GSM 004

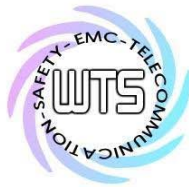
7.3 Explanation of test result

All factors like cable loss and external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

7.4 Calculation of Limit for Spurious at Antenna Terminals

Compliance with § 22.917, §24.238, §27.53 requires that any emission be attenuated below the transmitter power at least $43 + 10 \log P$ (P = transmitter power in Watts).

Limit for Spurious Emissions at Antenna Terminals: $L=P-A=-13\text{dBm}$



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

8. Field Strength of Spurious Radiation

8.1 Test procedure

The test procedure for filed strength measurement is same as radiated power except for a notch filter or band pass filter is used to avoid the influence of fundamental to the pre-amplifier.

The measurements below 1GHz were performed with a measurement bandwidth of 100kHz, above 1GHz with a bandwidth of 1 MHz.

8.2 Test Results

The measurements of the spurious emission are at the upper, center and lower channel.

Model: E070W1D1-4 v.1U Date:

Mode: -- Temperature: -- °C Engineer: --

Polarization: Horizontal Humidity: -- %

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

Polarization: Vertical

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

- Note**
1. **Correction Factor = Antenna factor + Cable loss - Preamplifier**
 2. **The formula of measured value as: Test Result = Reading + Correction Factor**
 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. **See attached diagrams in appendix.**

8.3 Explanation of test result

Result Level = Reading Level + Corrected Factor

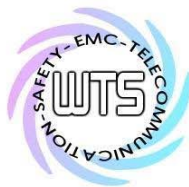
Corrected Factor = SG level – Received level-Cable loss + substitution antenna gain

8.4 Calculation of Limit for Field Strength of Spurious

Compliance with § 22.917, § 24.238, § 27.53 requires that any emission be attenuated below the transmitter power at least $43 + 10 \log P$ (P = transmitter power in Watts).

Limit for Spurious Emissions at Antenna Terminals: $L=P-A=-13\text{dBm}$

Test equipment: ETSTW-RE 004, ETSTW-RE 018, ETSTW-RE 030, ETSTW-RE 062,
ETSTW-RE 142, ETSTW-RE 147, ETSTW-GSM 004



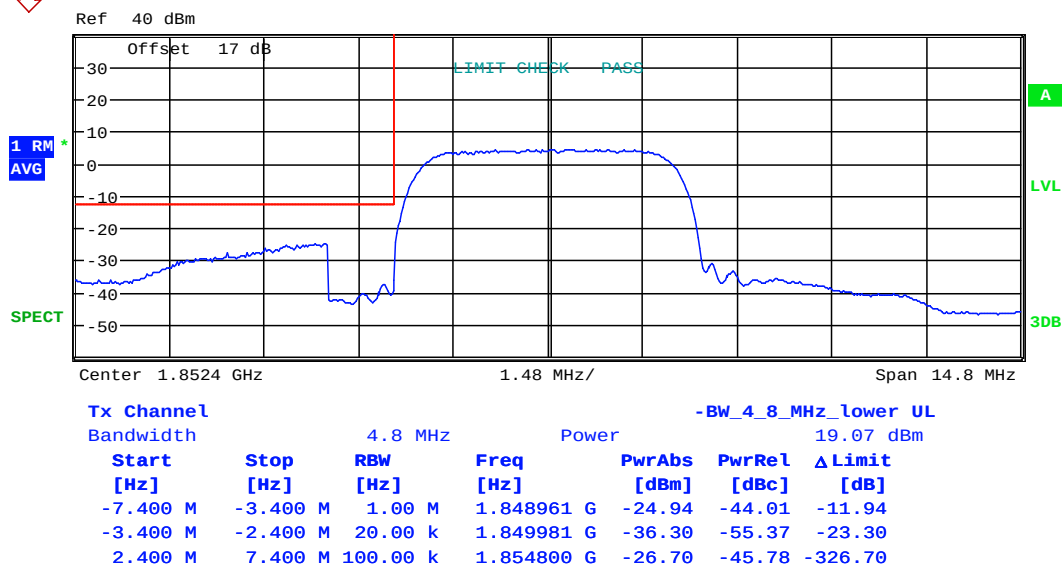
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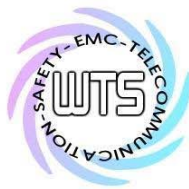
8.5 Test result of band edge emissions

WCDMA

Band II

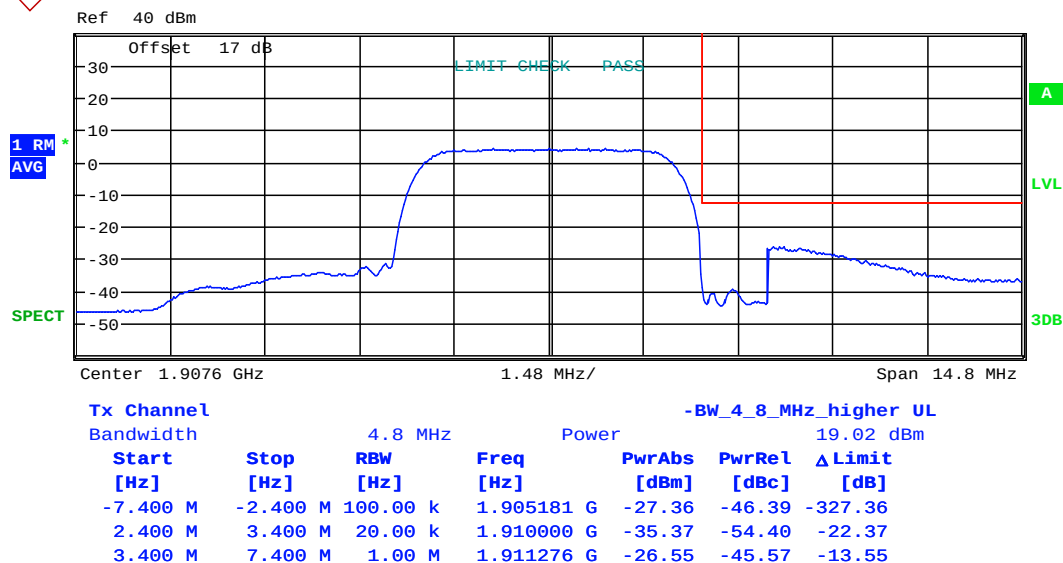


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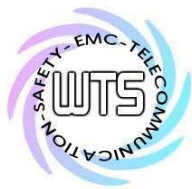


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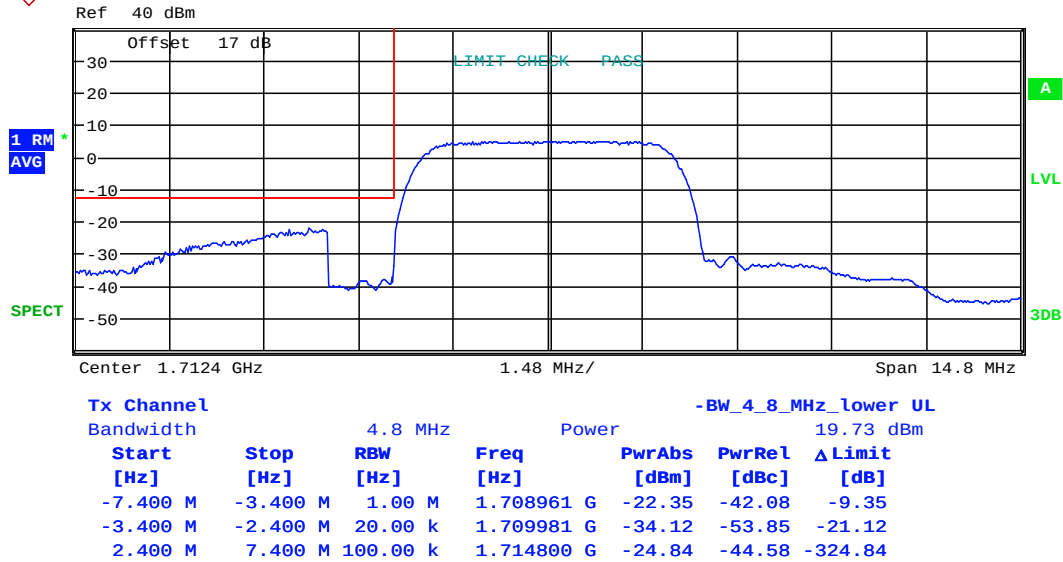
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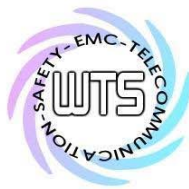
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FCC ID: 2AT5JE070W1D14V1U

Band IV

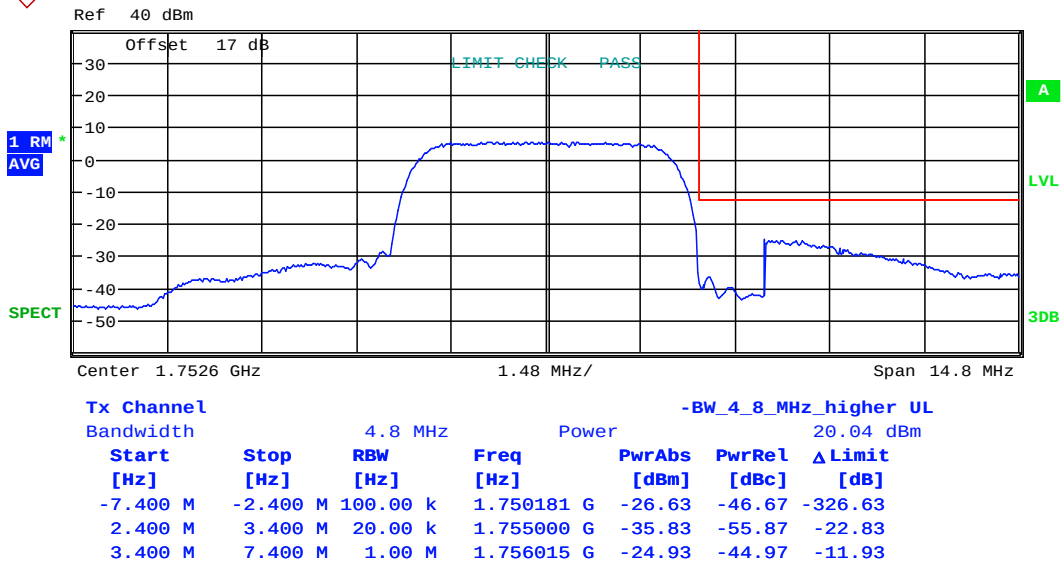


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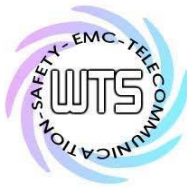


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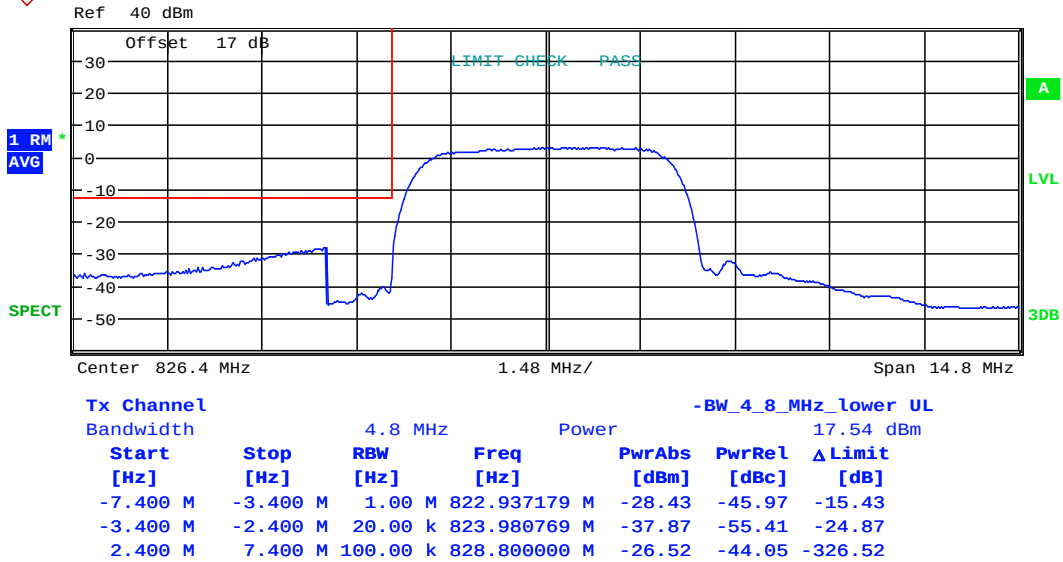
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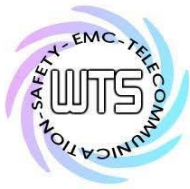
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Band V

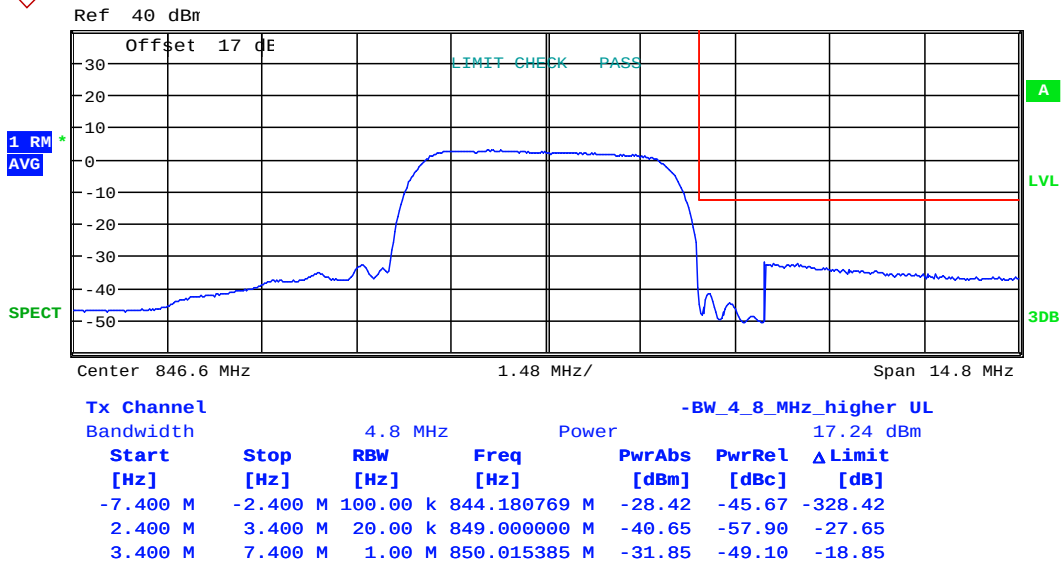


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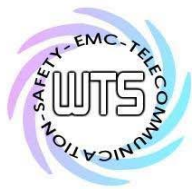


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 22.JUL.2019 13:47:20



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

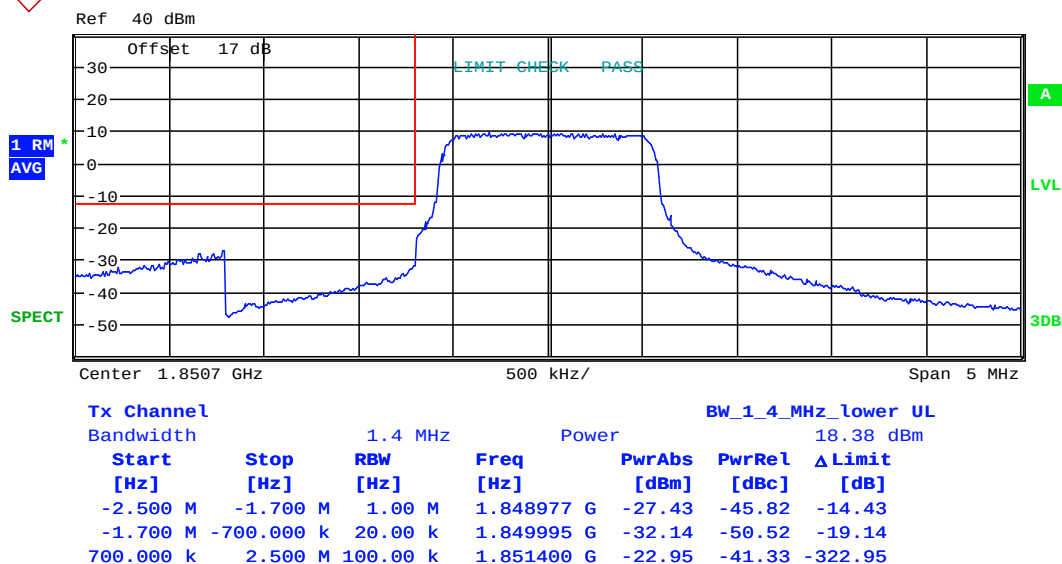
LTE

Band II

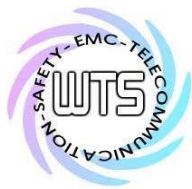
16QAM

FRB

1.4MHz

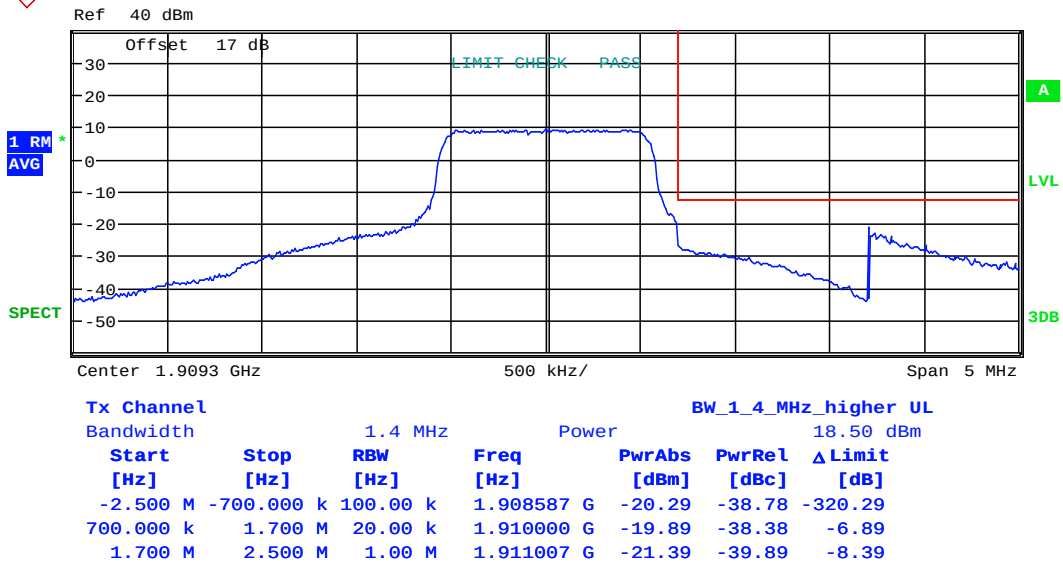


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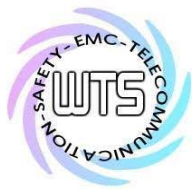


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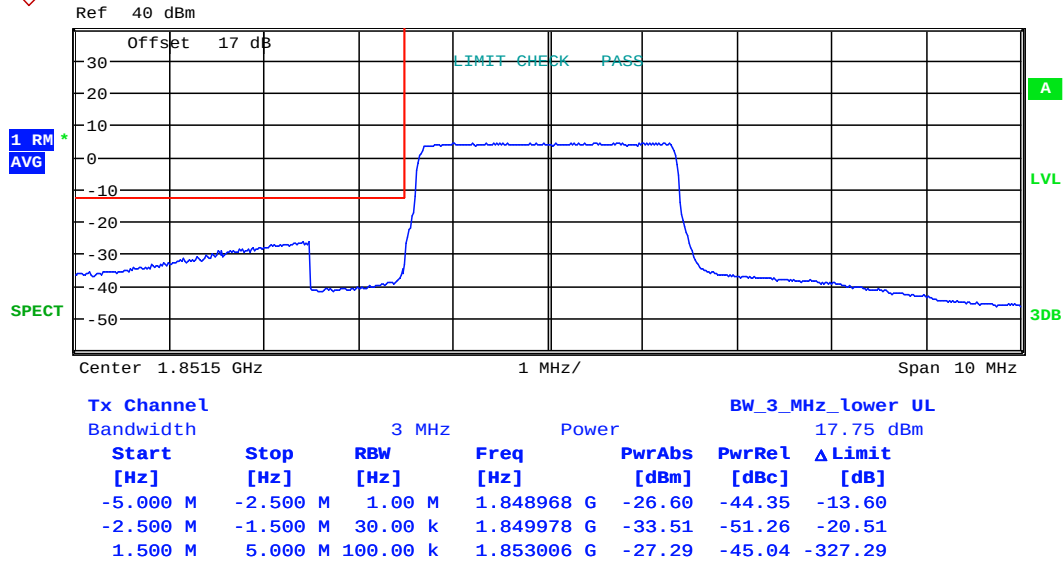
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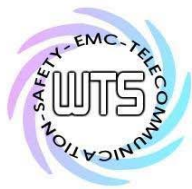
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3MHz

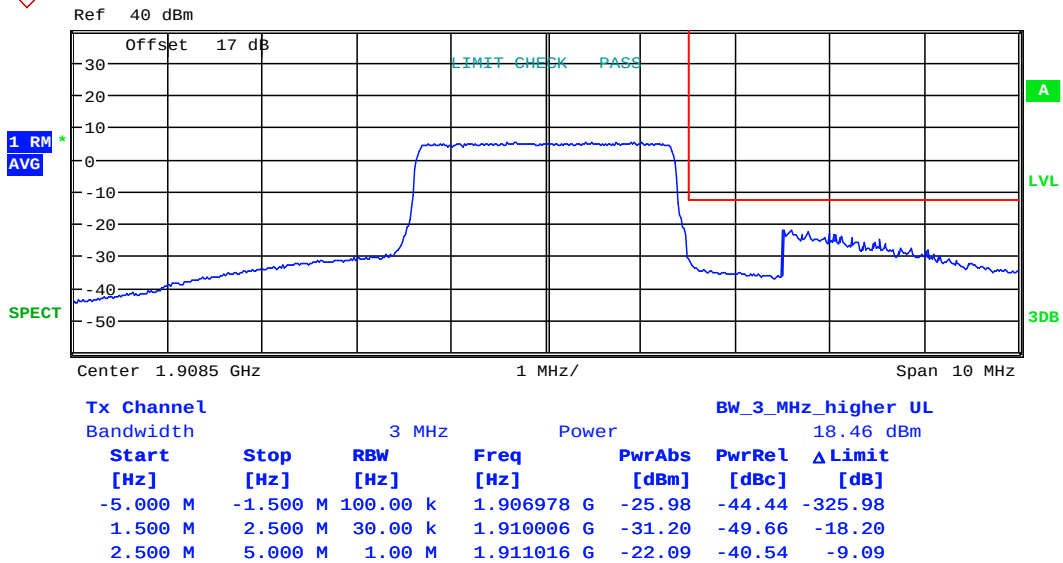


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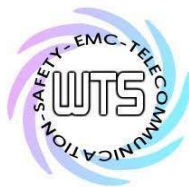


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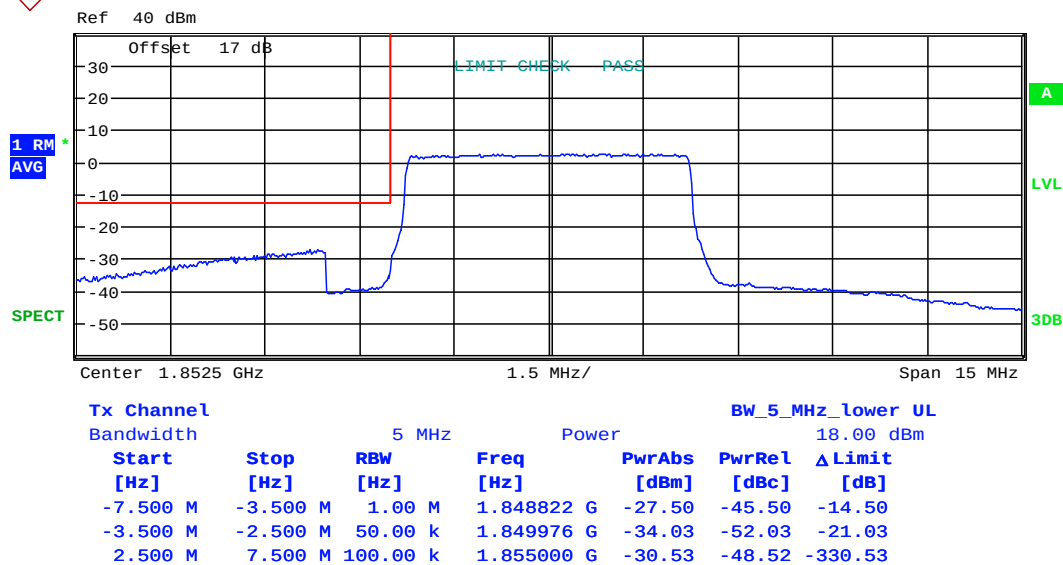
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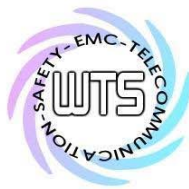
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5MHz

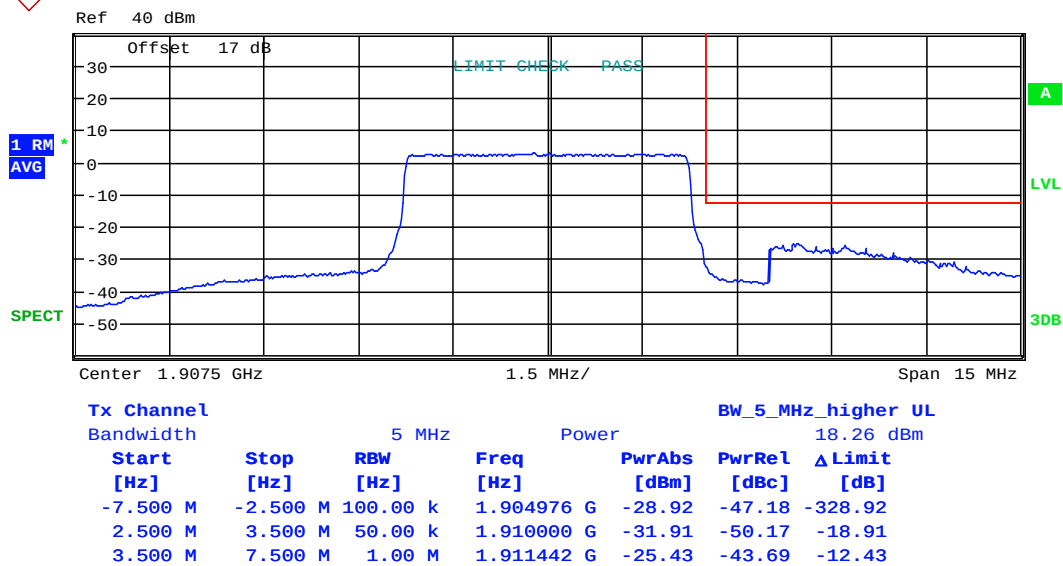


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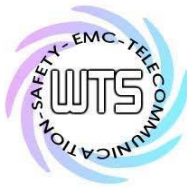


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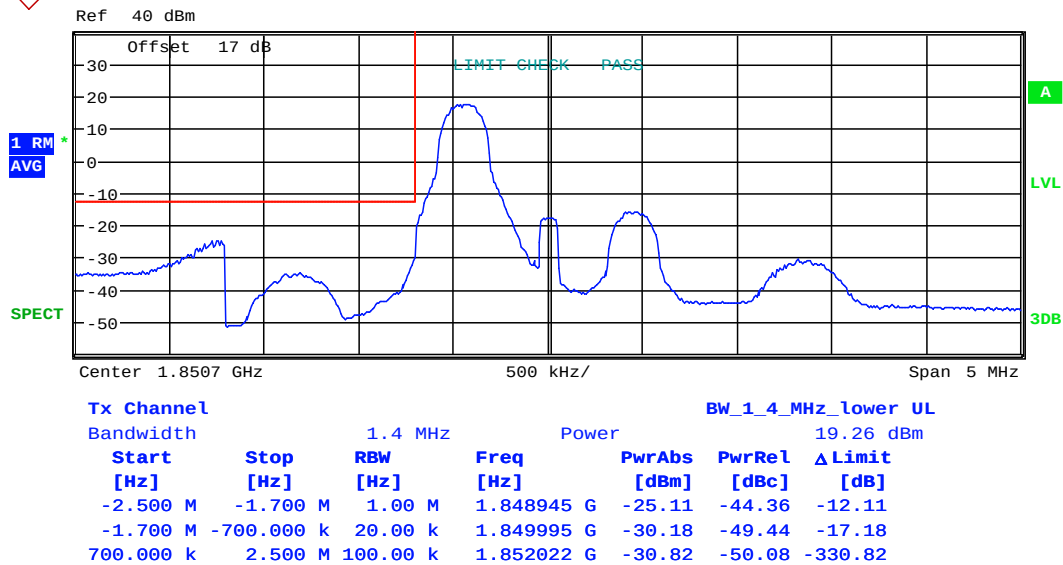
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

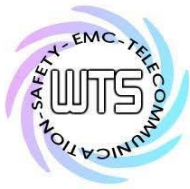
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1RB

1.4MHz

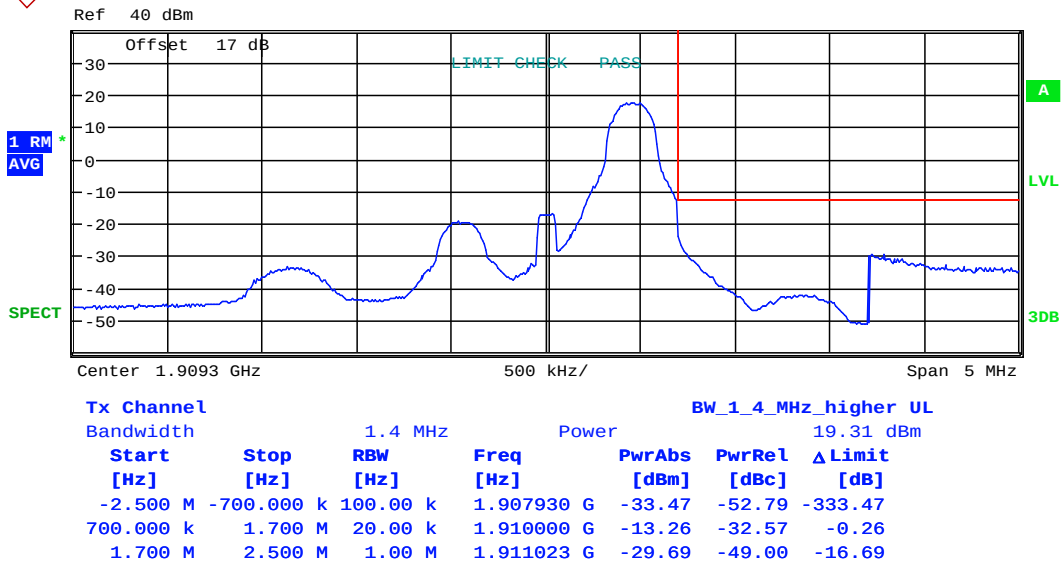


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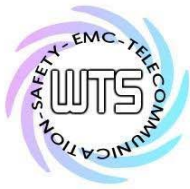


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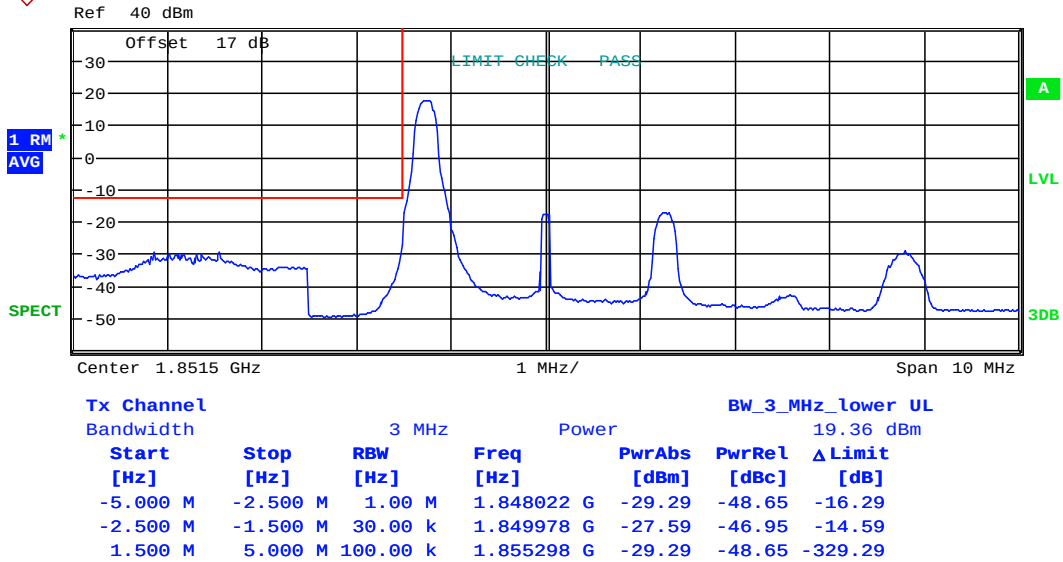
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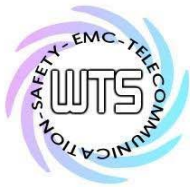
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3MHz

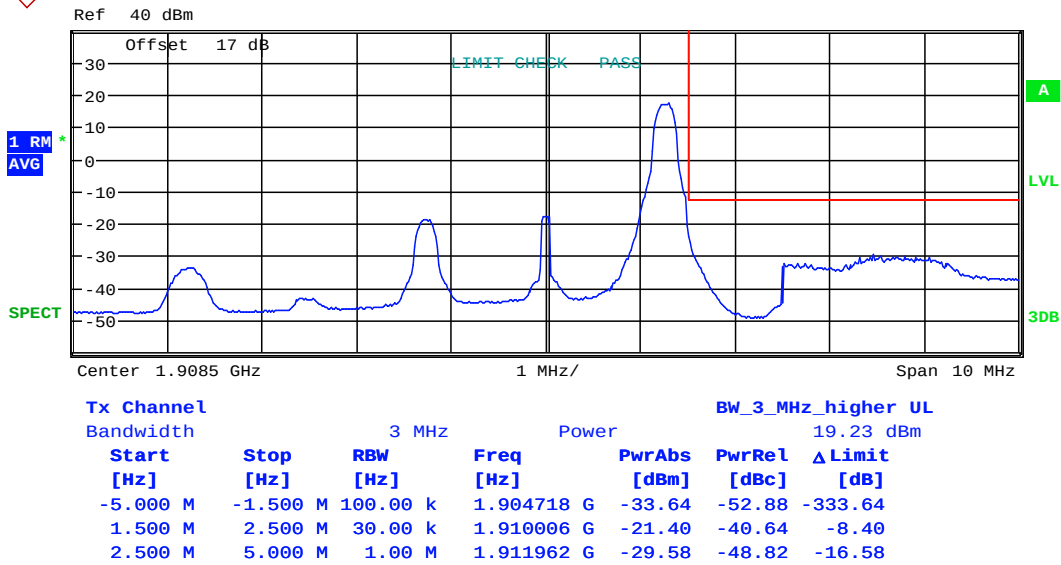


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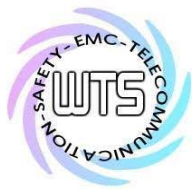


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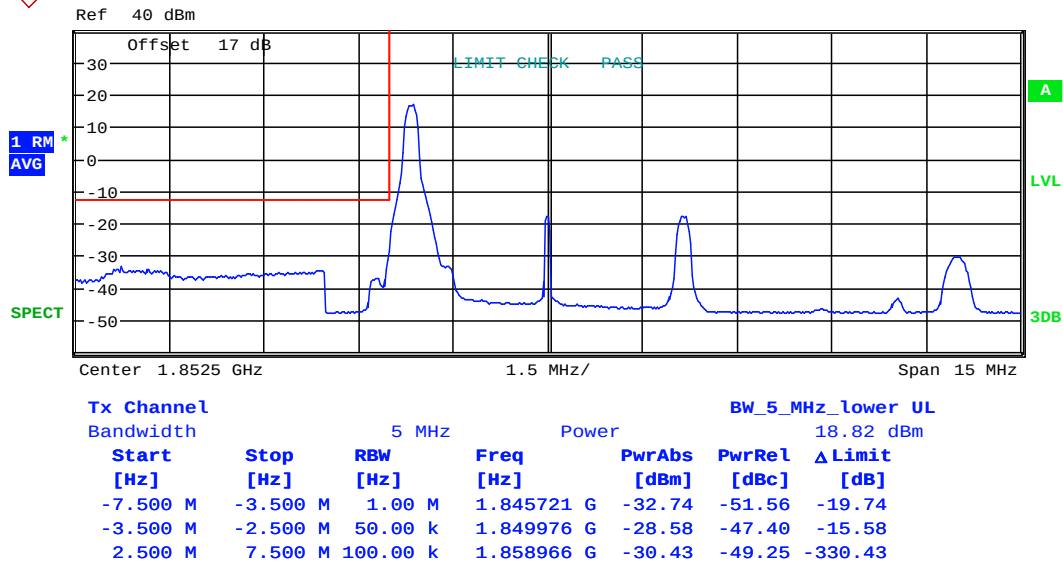
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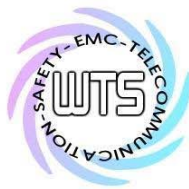
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5MHz

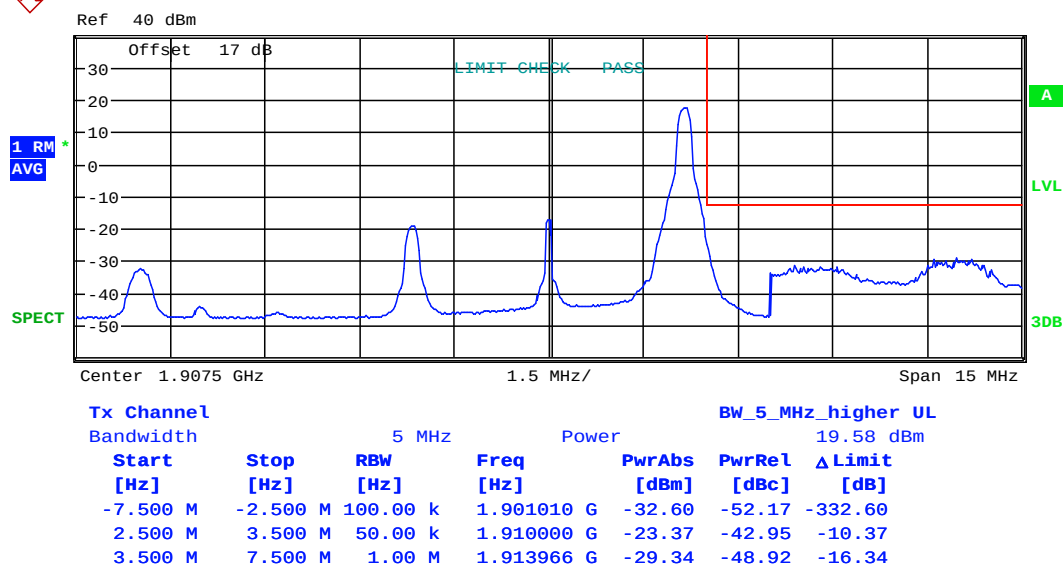


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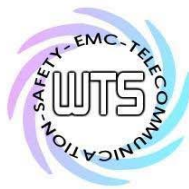


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FCC ID: 2AT5JE070W1D14V1U



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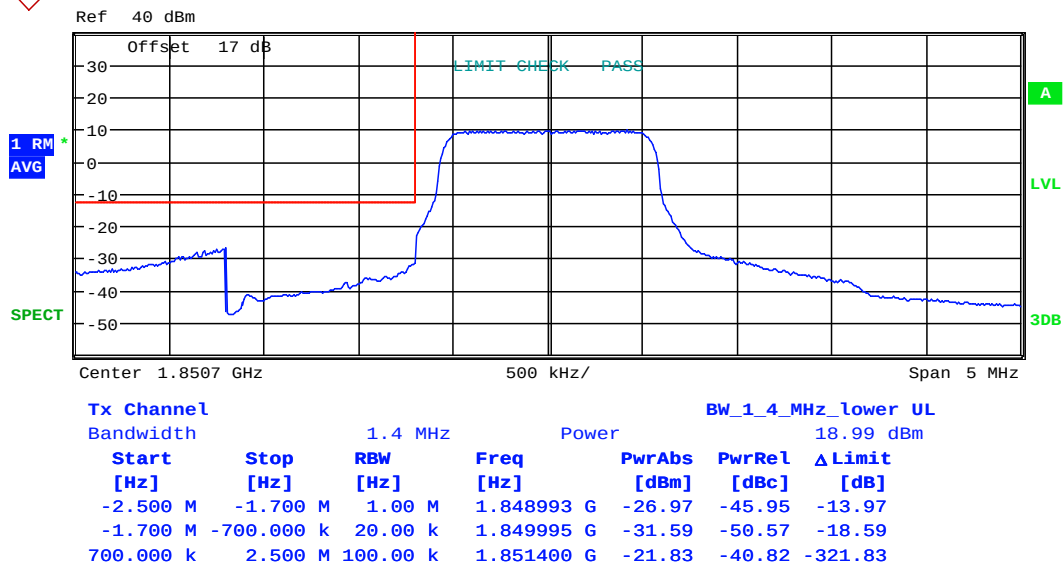
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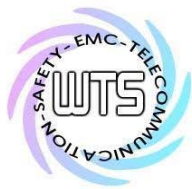
QPSK

FRB

1.4MHz

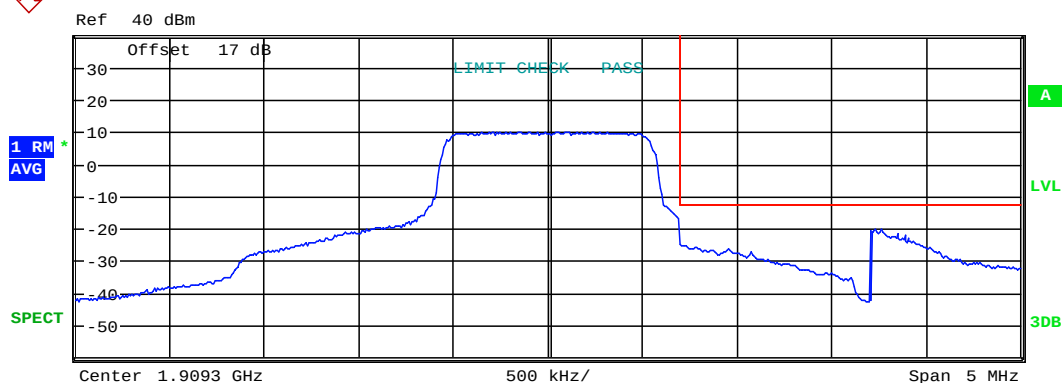


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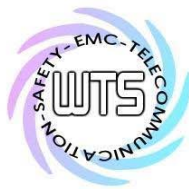
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Tx Channel				BW 1_4_MHz_higher UL			
Bandwidth		1.4 MHz	Power		19.39 dBm		
Start	Stop	RBW	Freq	PwrAbs	PwrRel	ΔLimit	
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dBc]	[dB]	
-2.500 M	-700.000 k	100.00 k	1.908595 G	-17.33	-36.72	-317.33	
700.000 k	1.700 M	20.00 k	1.910000 G	-17.41	-36.80	-4.41	
1.700 M	2.500 M	1.00 M	1.911031 G	-20.41	-39.81	-7.41	

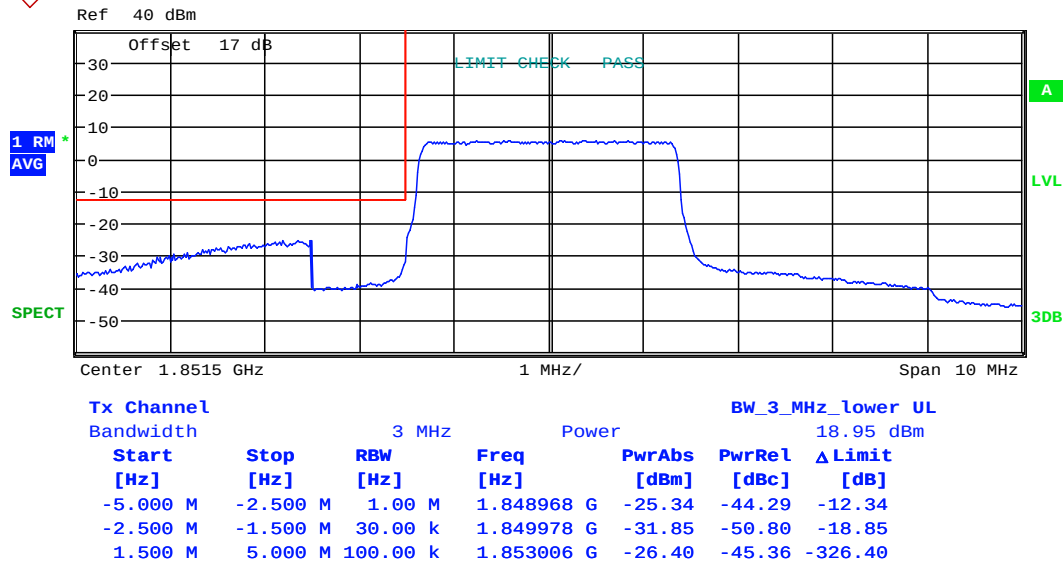
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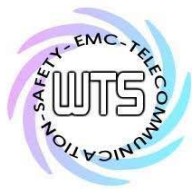
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz

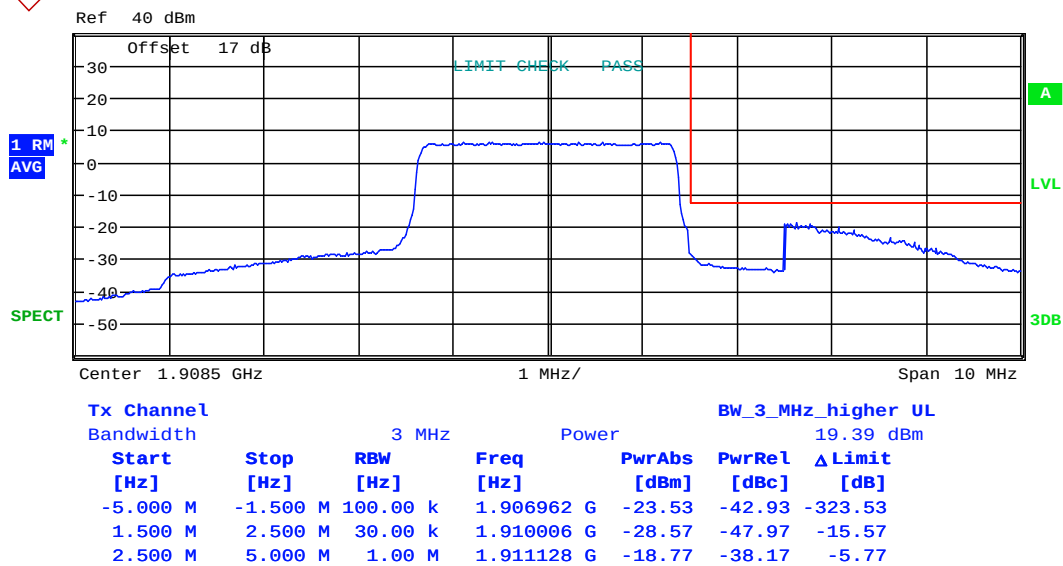


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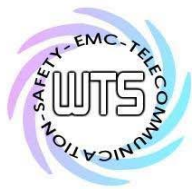


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FCC ID: 2AT5JE070W1D14V1U



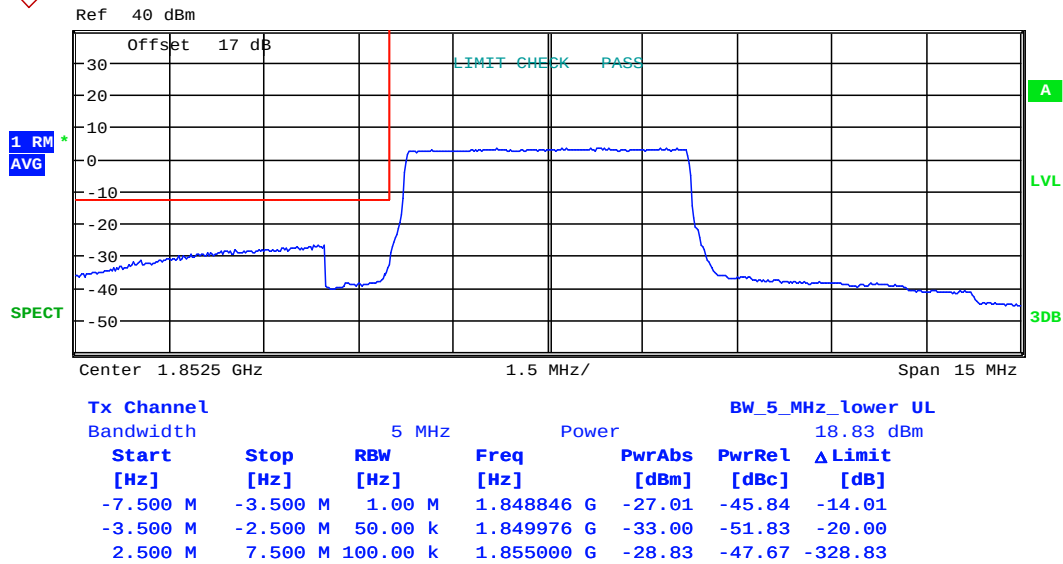
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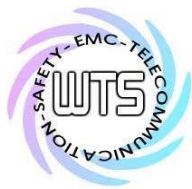
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

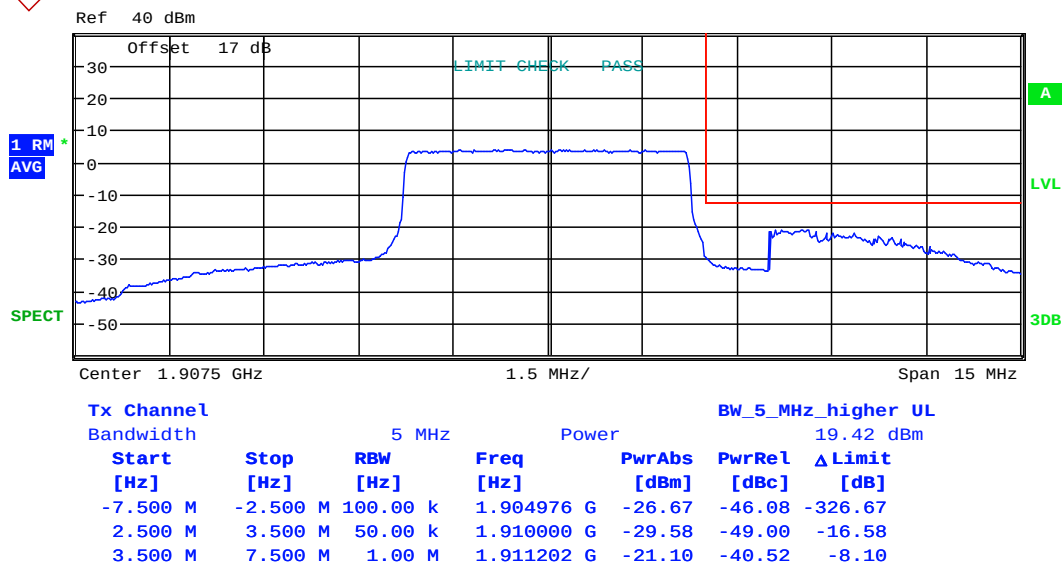


Date: 24.JUL.2019 11:49:07

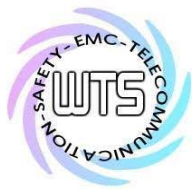


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



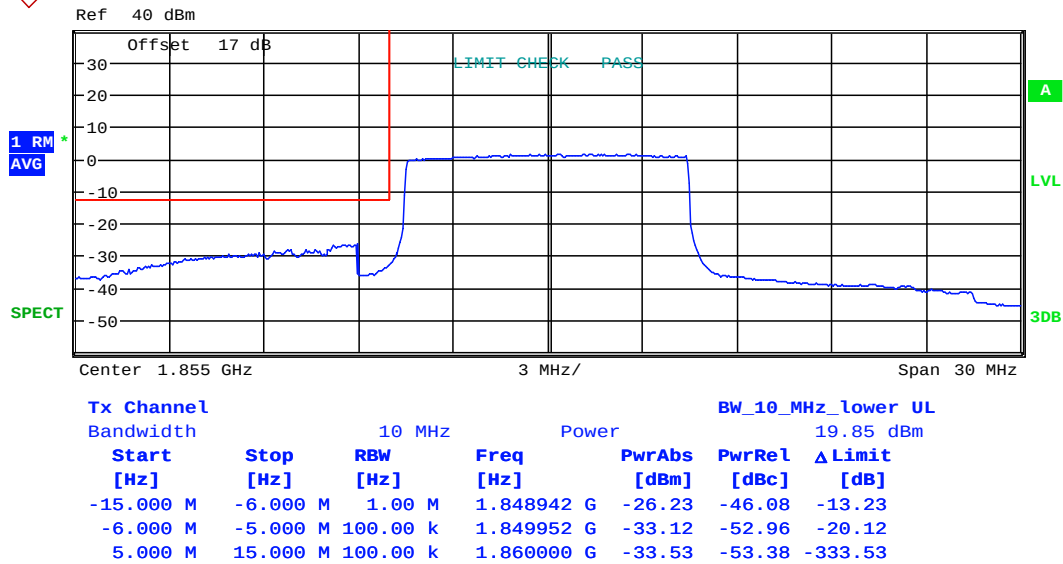
Date: 24.JUL.2019 11:51:46



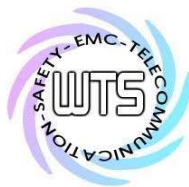
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

10MHz

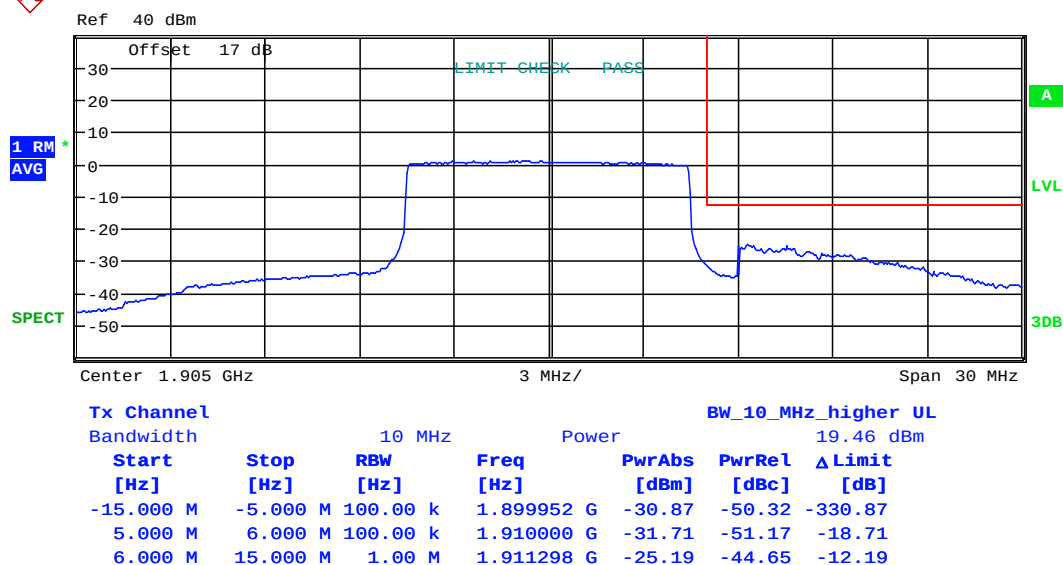


Date: 24.JUL.2019 13:06:18

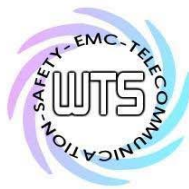


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 11:54:48



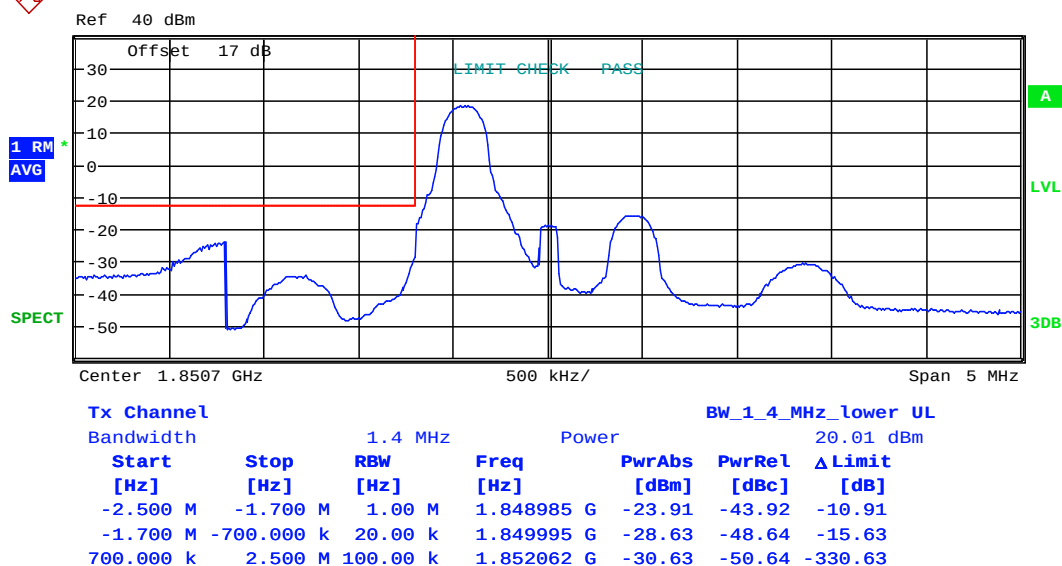
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

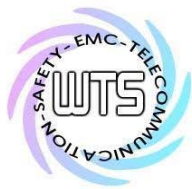
FCC ID: 2AT5JE070W1D14V1U

1RB

1.4MHz

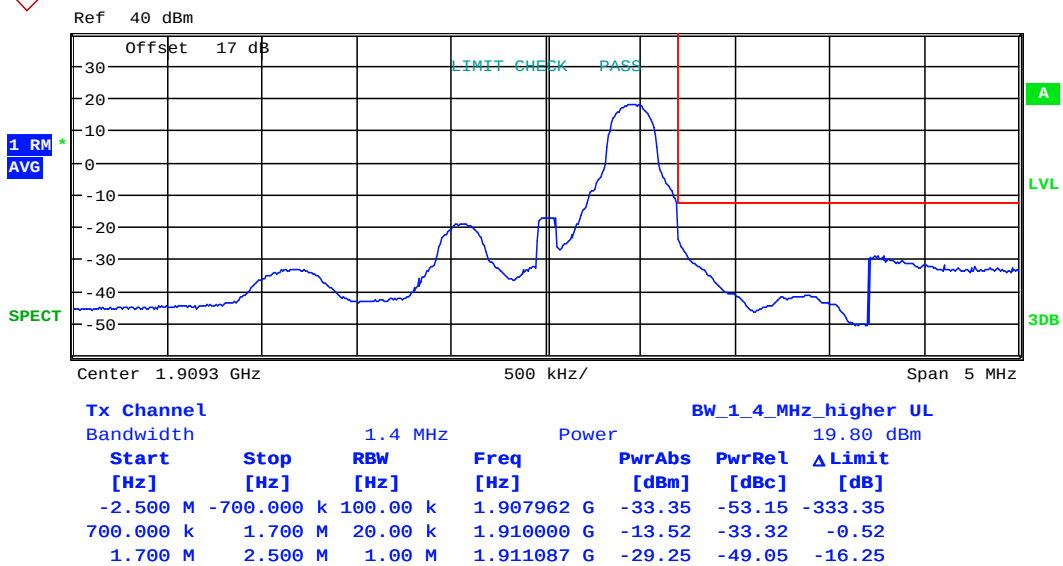


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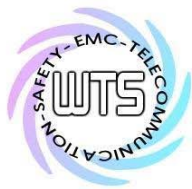


Report Number: W6M21906-19141-P-247

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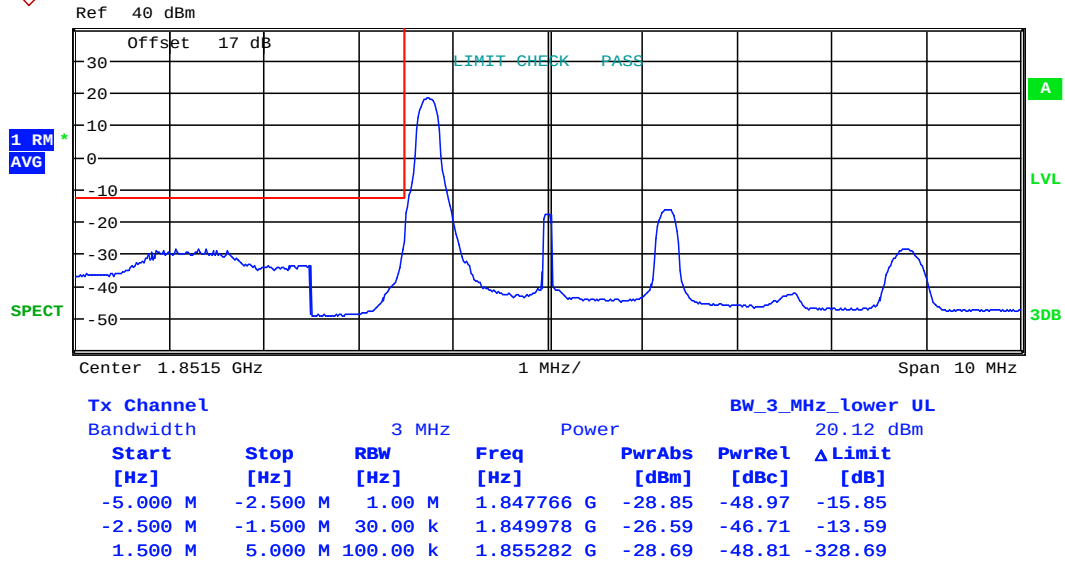
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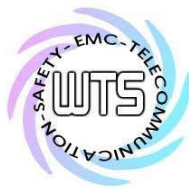
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz

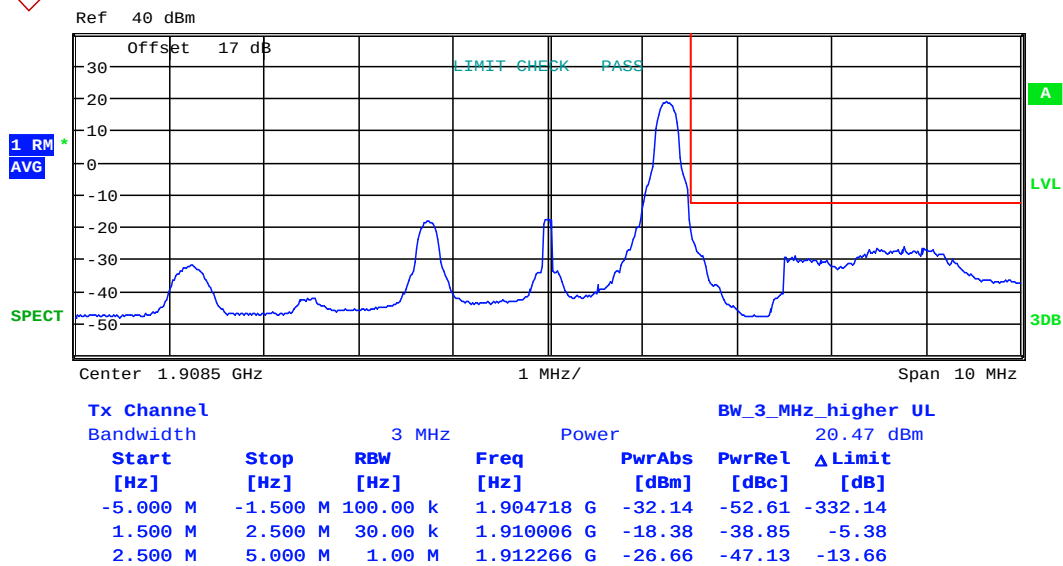


Date: 24.JUL.2019 11:44:40

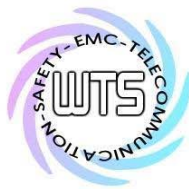


Report Number: W6M21906-19141-P-247

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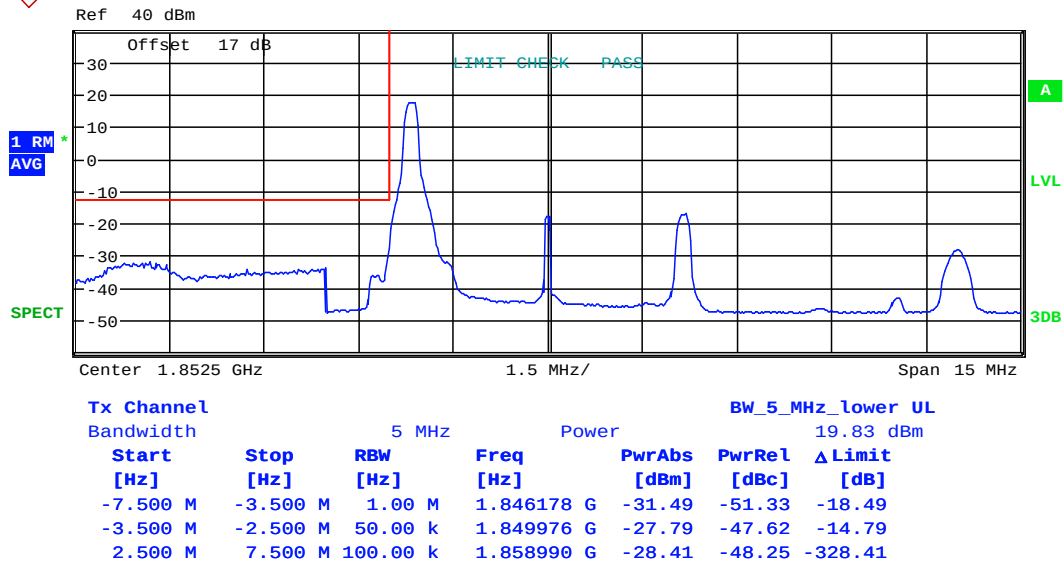
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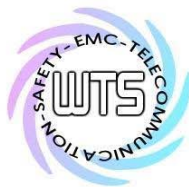
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

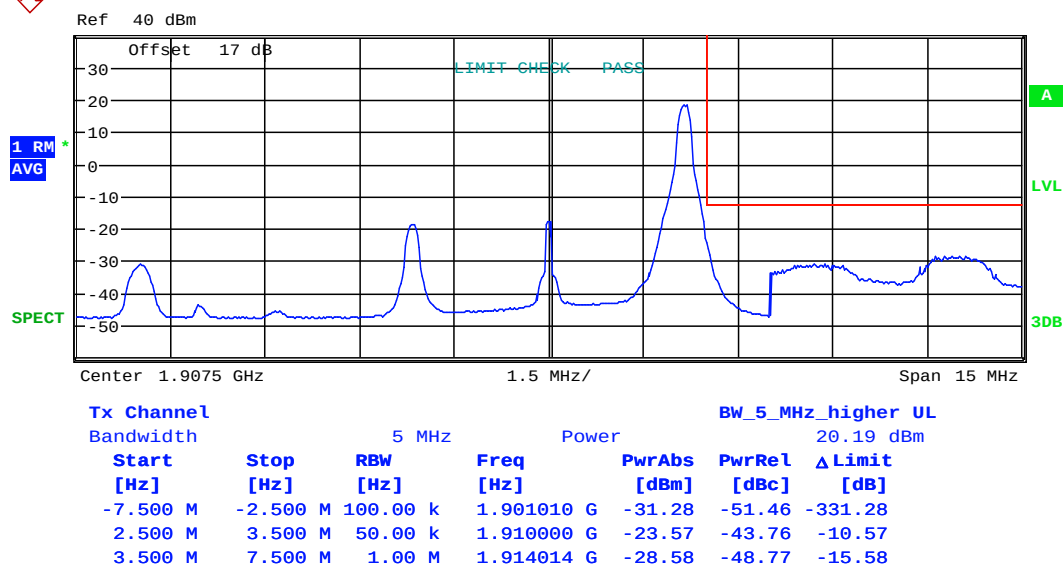


Date: 24.JUL.2019 11:49:27

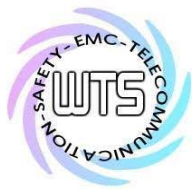


Report Number: W6M21906-19141-P-247

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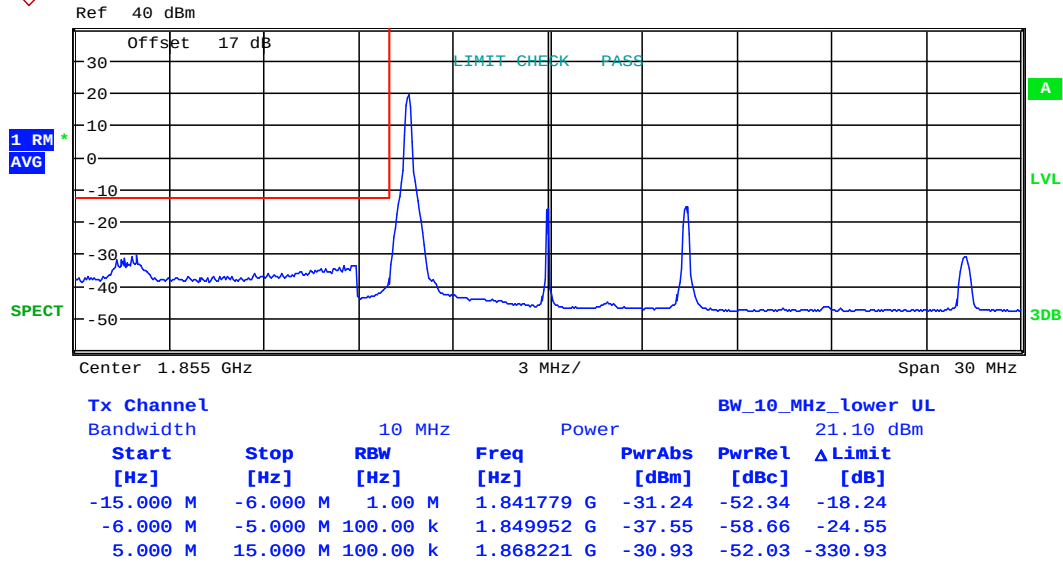
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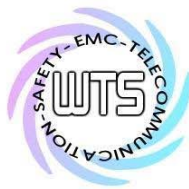
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FCC ID: 2AT5JE070W1D14V1U

10MHz

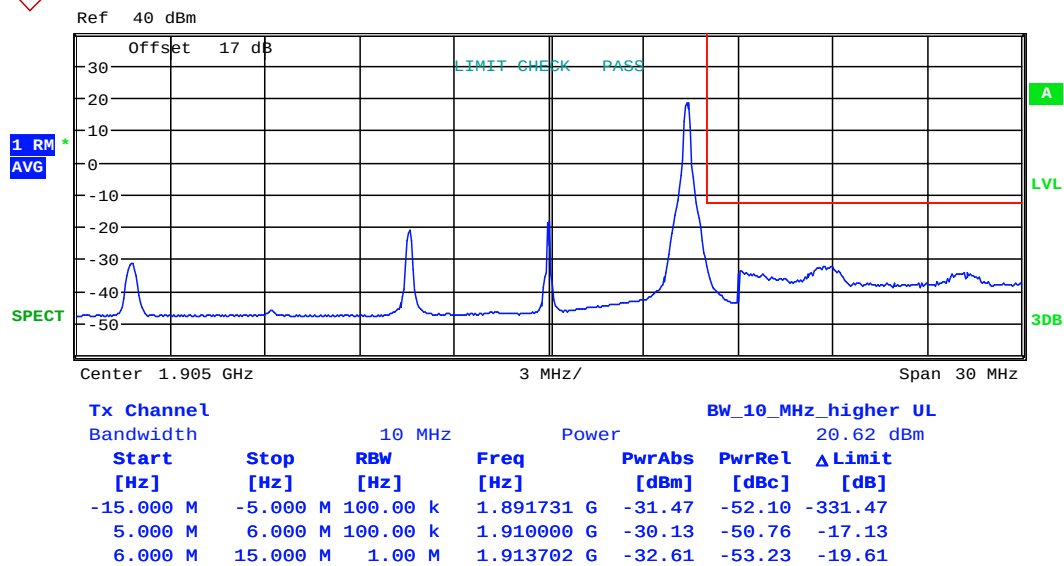


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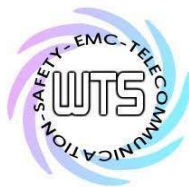


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 11:55:10



Report Number: W6M21906-19141-P-247

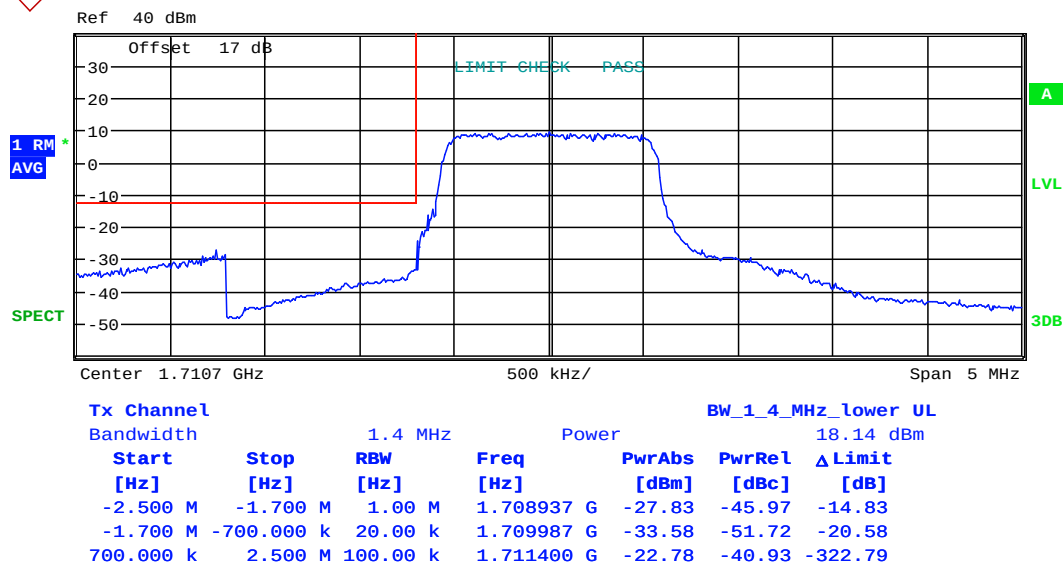
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Band IV

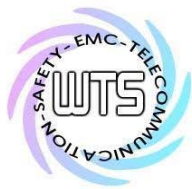
16QAM

FRB

1.4MHz

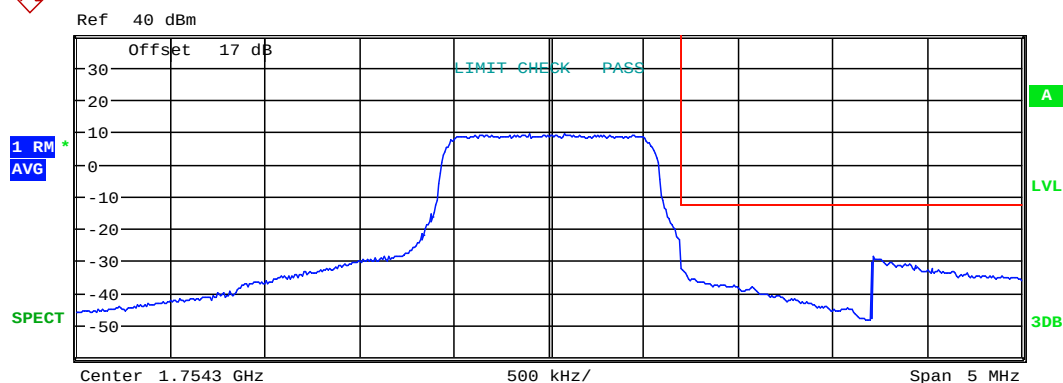


Date: 24.JUL.2019 13:57:19



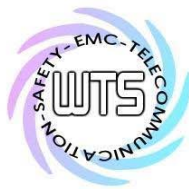
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Tx Channel				BW_1_4_MHz_higher UL			
Bandwidth				Power			
Start	Stop	1.4 MHz				18.49 dBm	
[Hz]	[Hz]	[Hz]	Freq	PwrAbs	PwrRel	ΔLimit	
-2.500 M	-700.000 k	100.00 k	1.753595 G	-25.44	-43.94	-325.44	
700.000 k	1.700 M	20.00 k	1.755000 G	-24.08	-42.58	-11.08	
1.700 M	2.500 M	1.00 M	1.756015 G	-28.74	-47.23	-15.74	

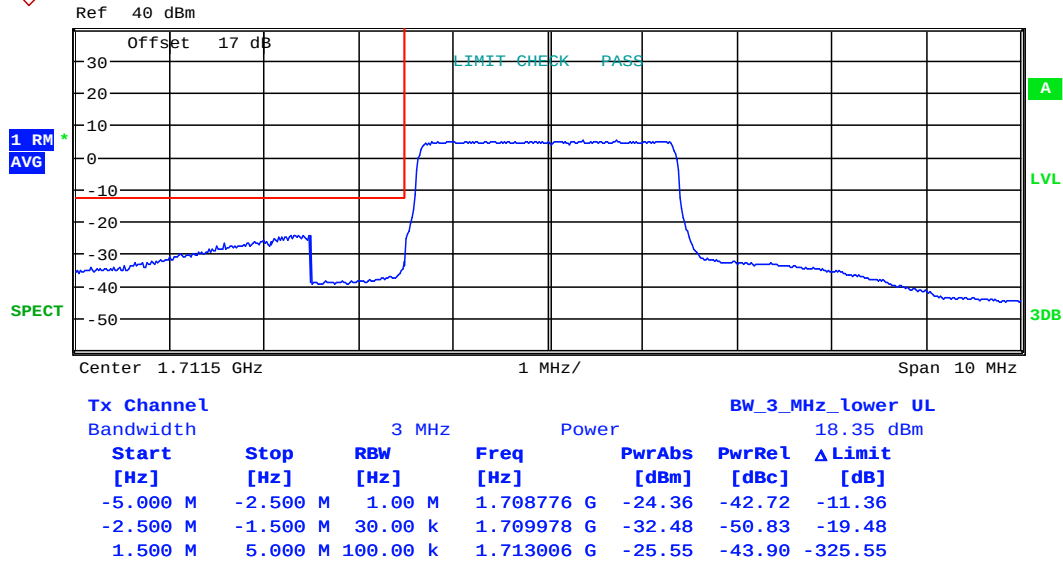
Date: 24.JUL.2019 13:55:47



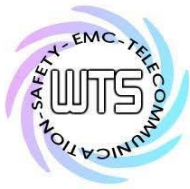
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz

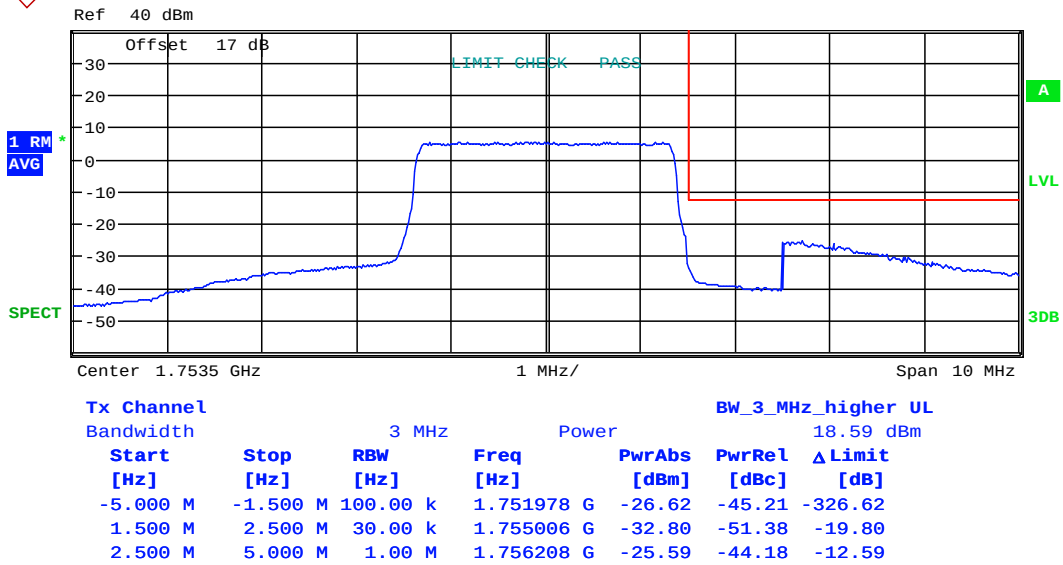


Date: 24.JUL.2019 13:50:07

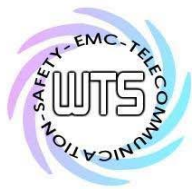


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



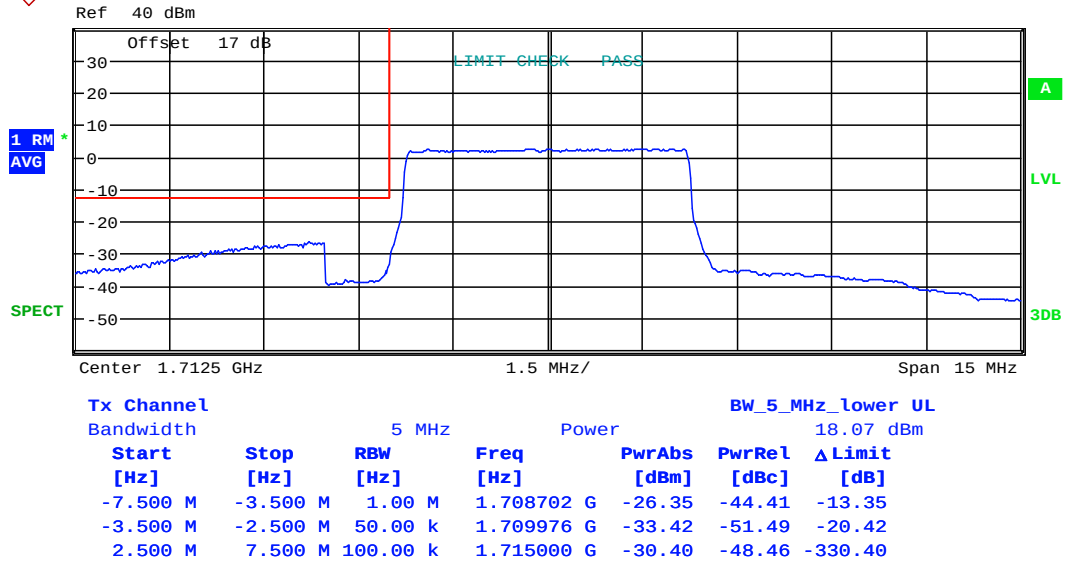
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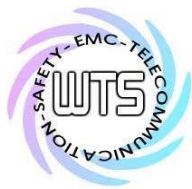
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

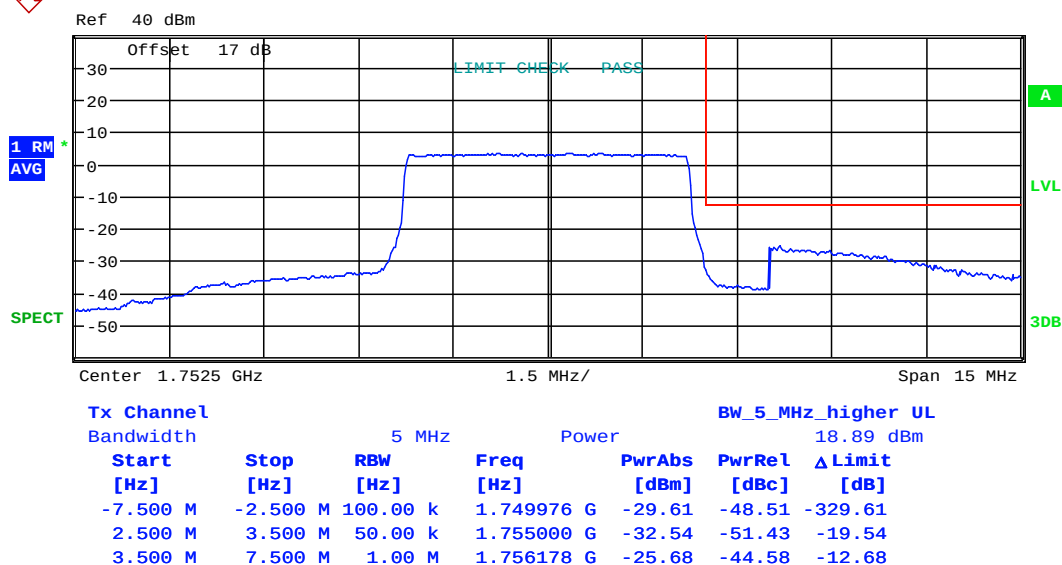


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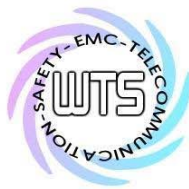


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 13:45:57



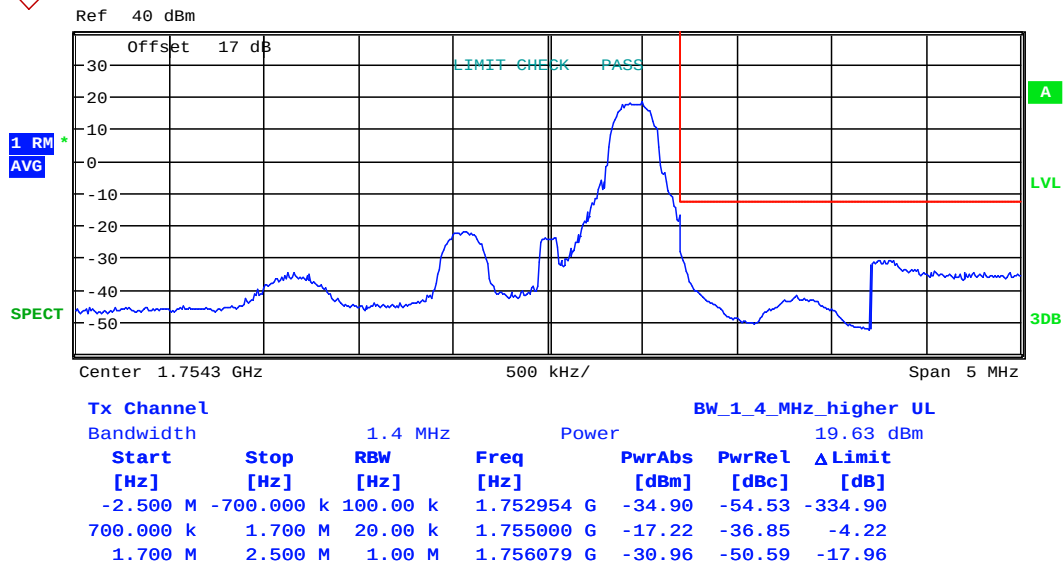
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

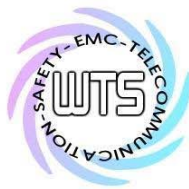
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1RB

1.4MHz



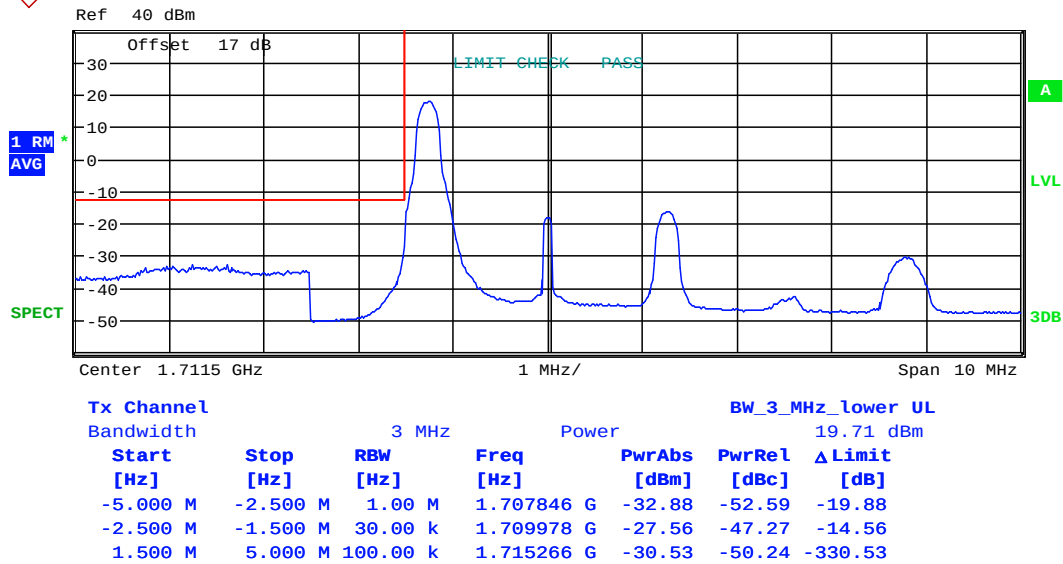
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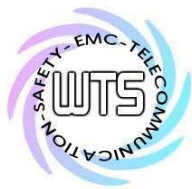
Report Number: W6M21906-19141-P-247

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3MHz

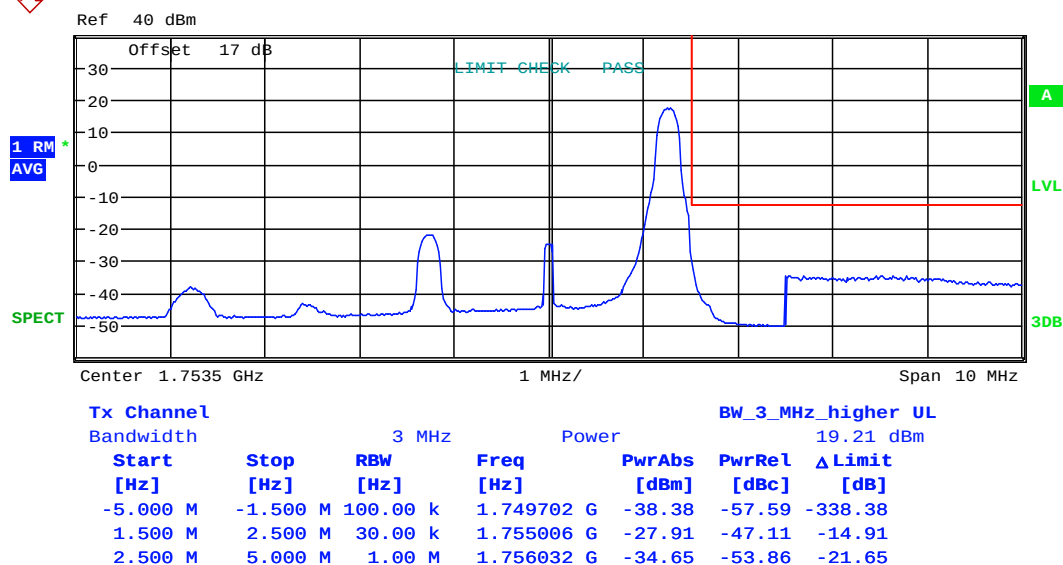


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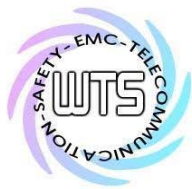


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



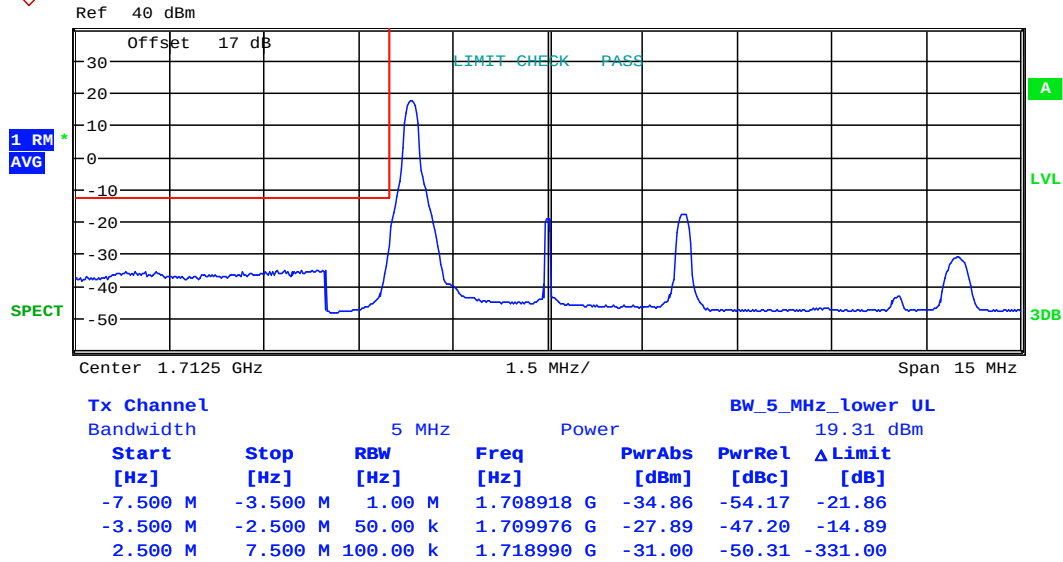
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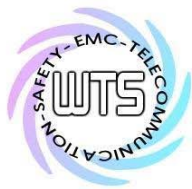
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

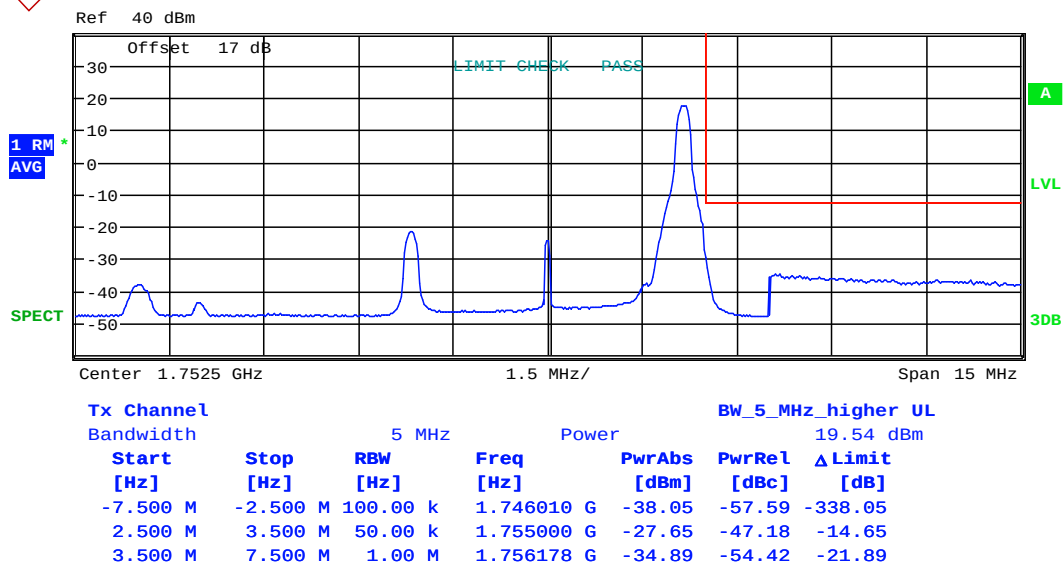


Date: 24.JUL.2019 13:47:13

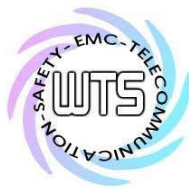


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 13:45:42



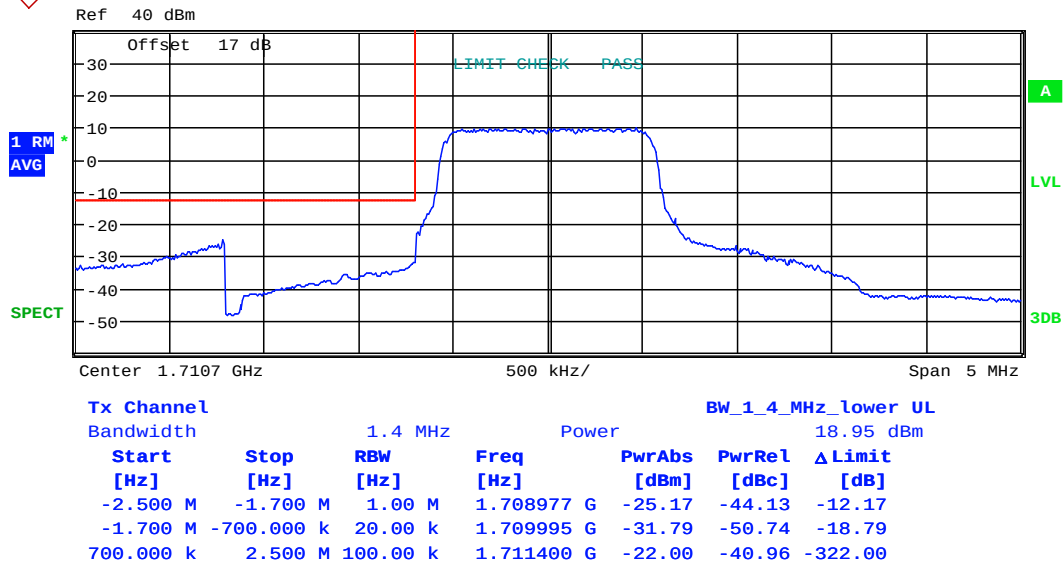
Report Number: W6M21906-19141-P-247

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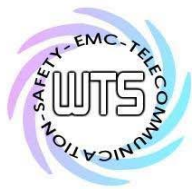
QPSK

FRB

1.4MHz

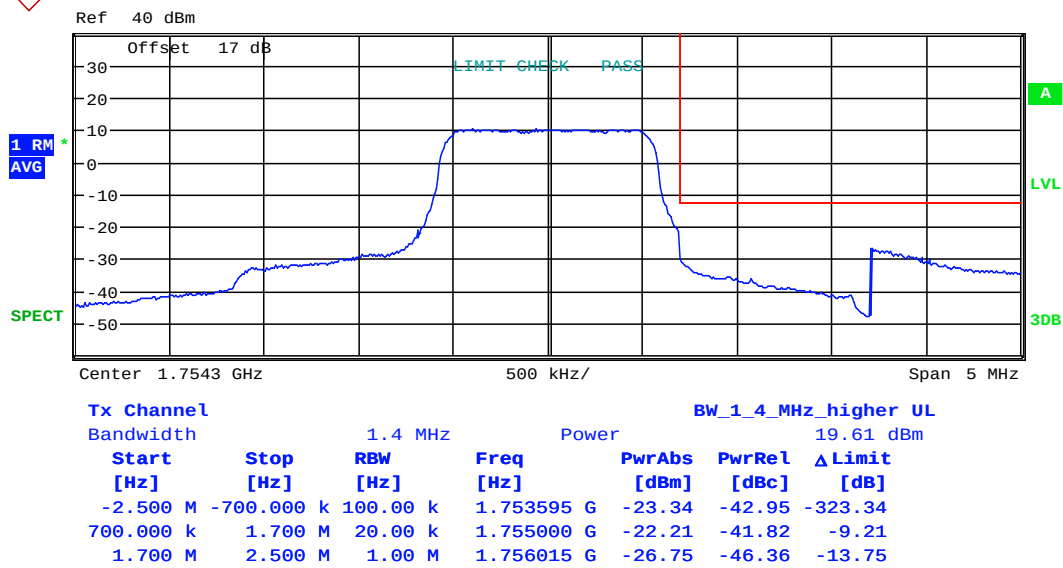


Date: 24.JUL.2019 13:57:37

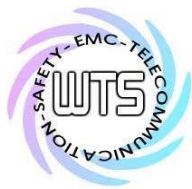


Report Number: W6M21906-19141-P-247

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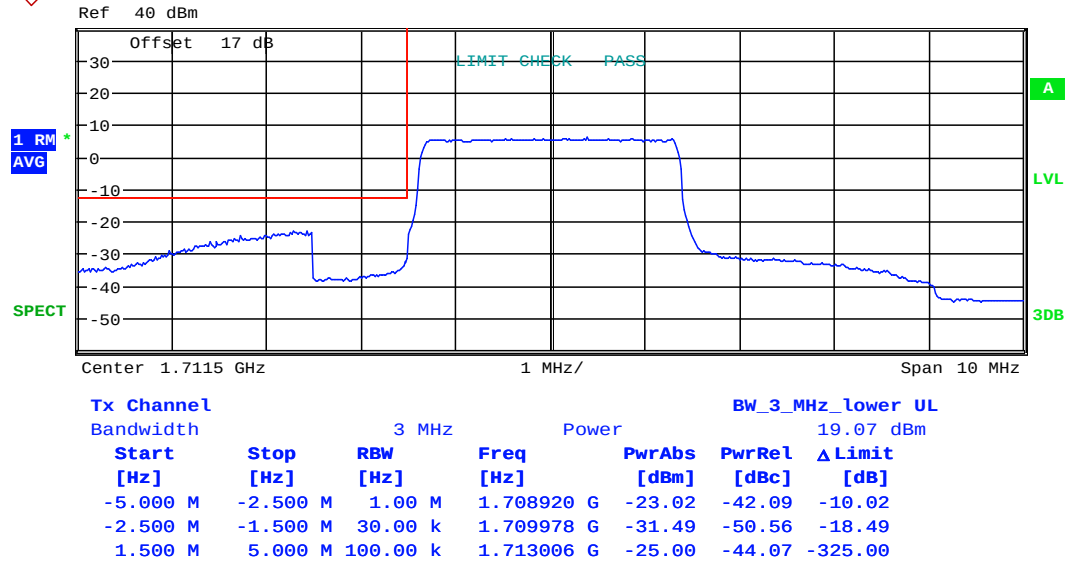
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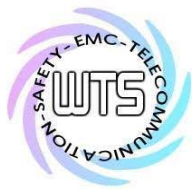
Report Number: W6M21906-19141-P-247

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3MHz

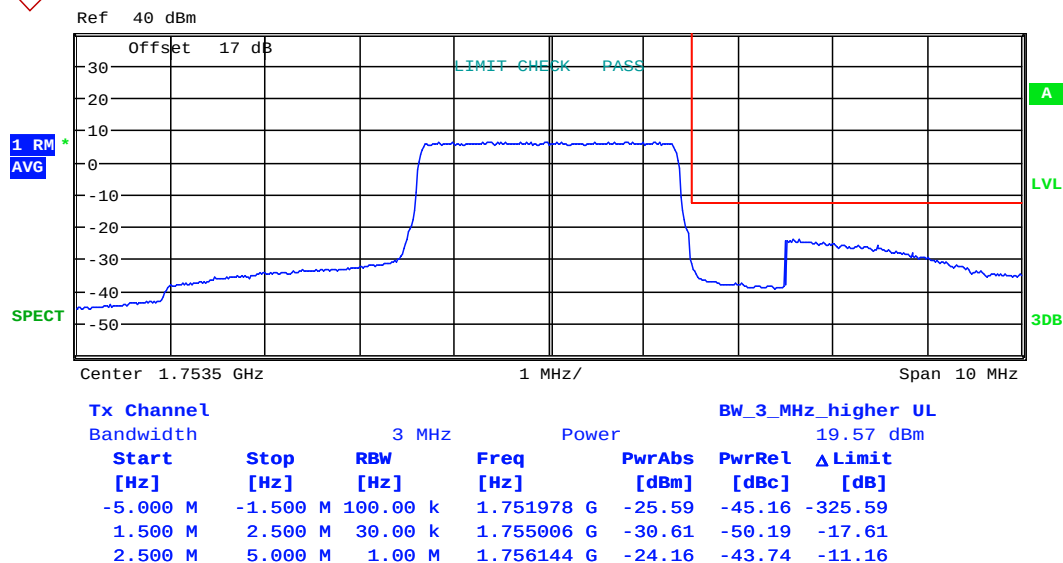


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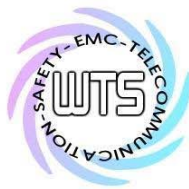


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 13:52:28

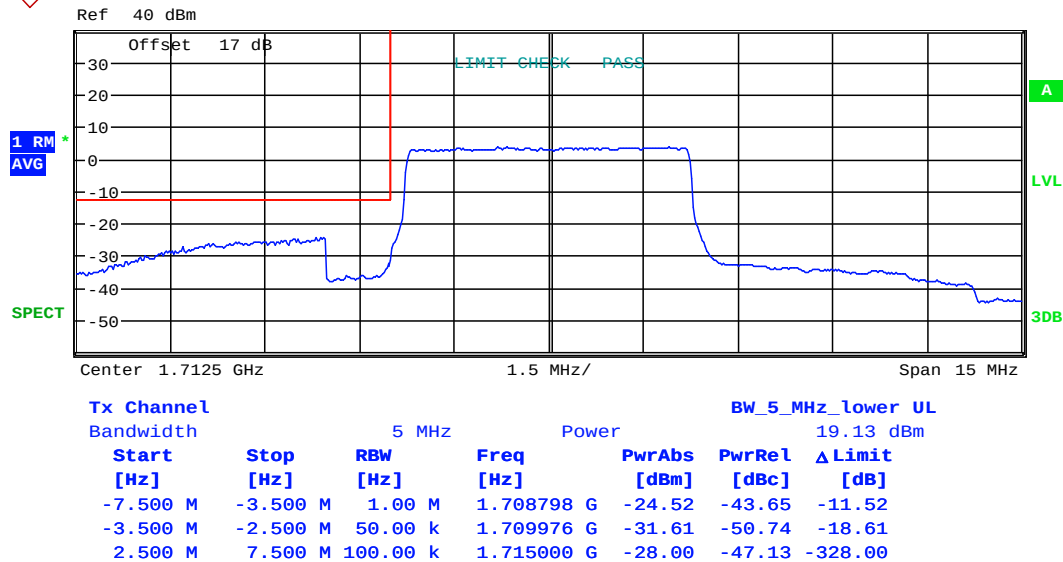


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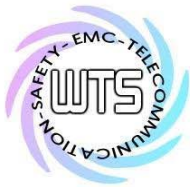
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

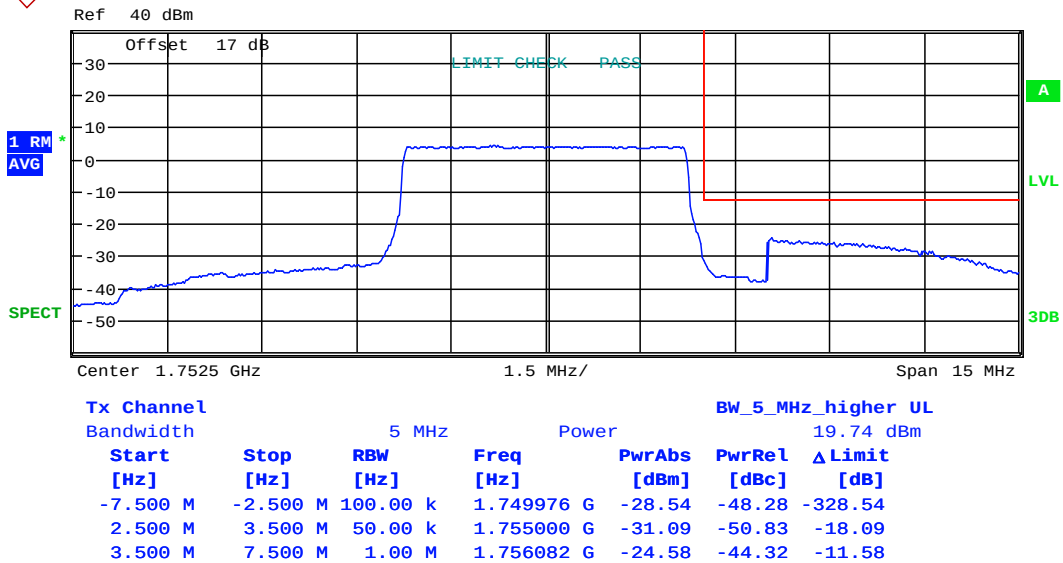


Date: 24.JUL.2019 13:47:50

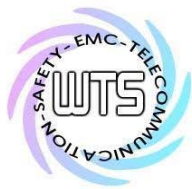


Report Number: W6M21906-19141-P-247

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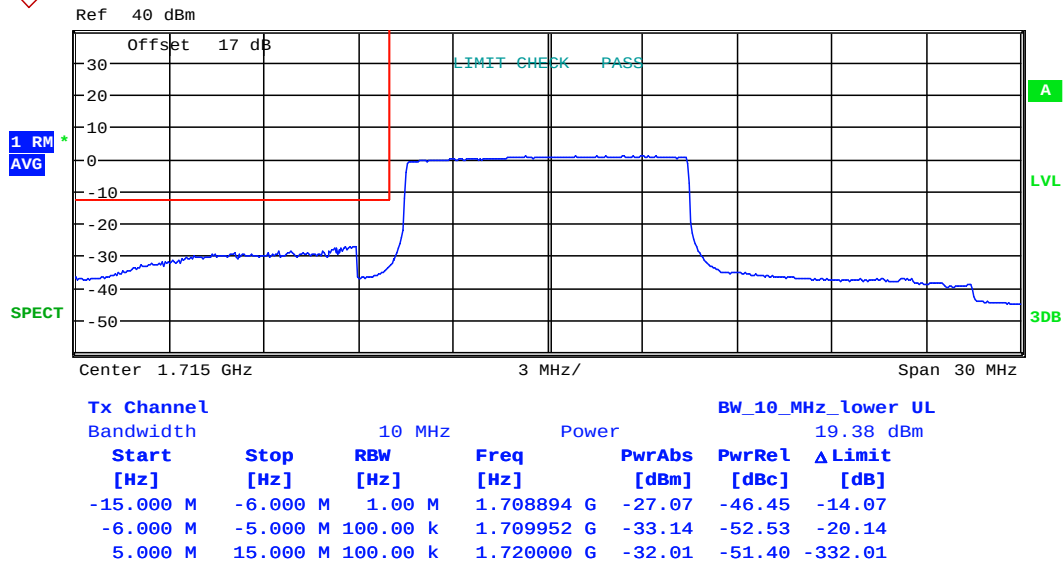
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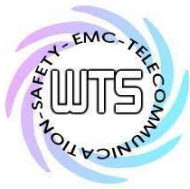
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

10MHz

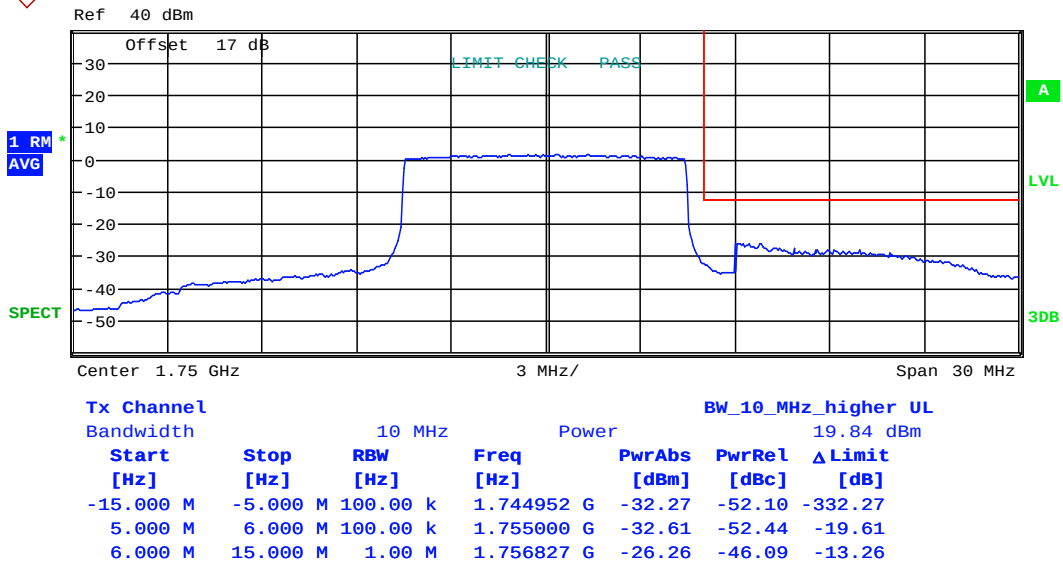


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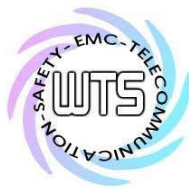


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 13:41:14

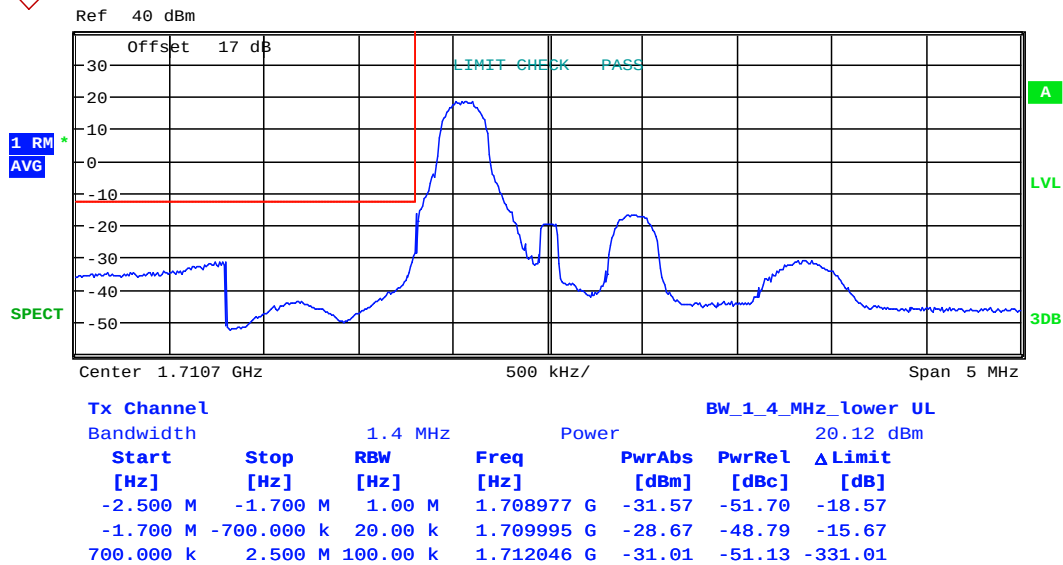


Report Number: W6M21906-19141-P-247

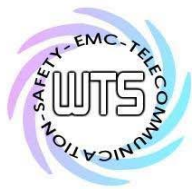
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1RB

1.4MHz

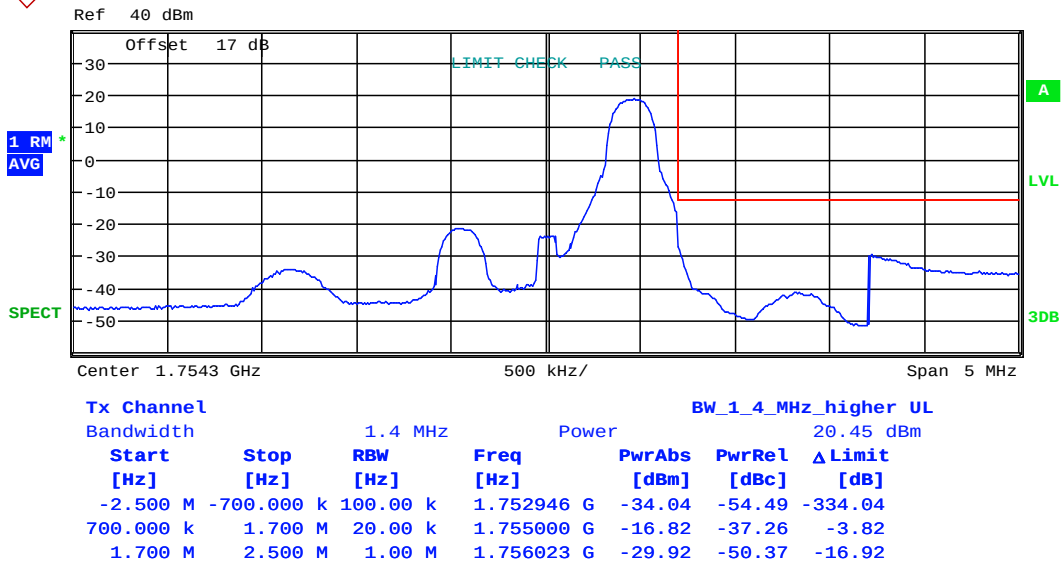


Date: 24.JUL.2019 13:58:07

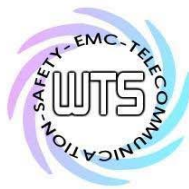


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



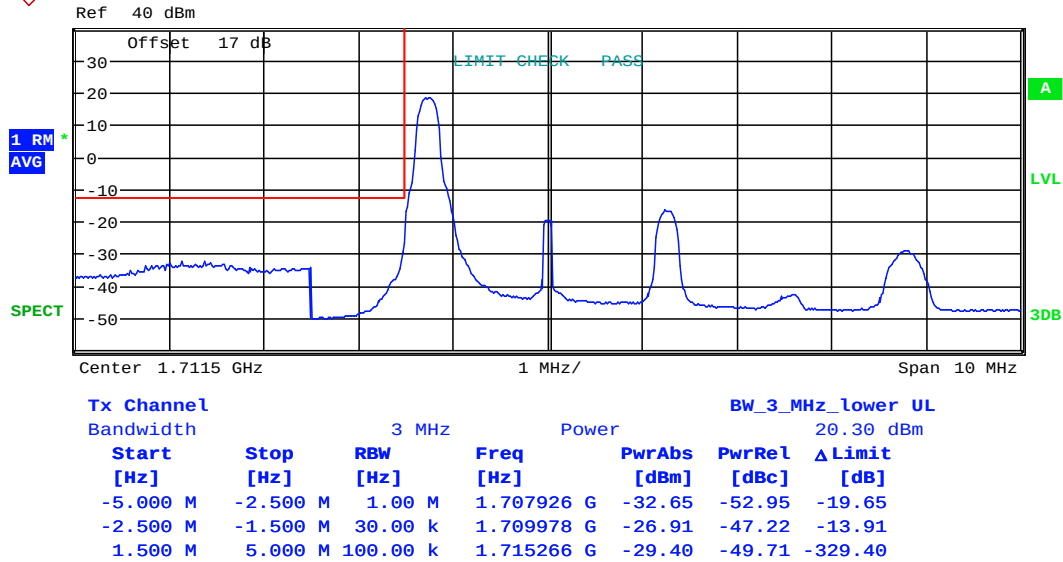
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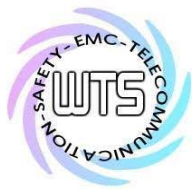
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FCC ID: 2AT5JE070W1D14V1U

3MHz

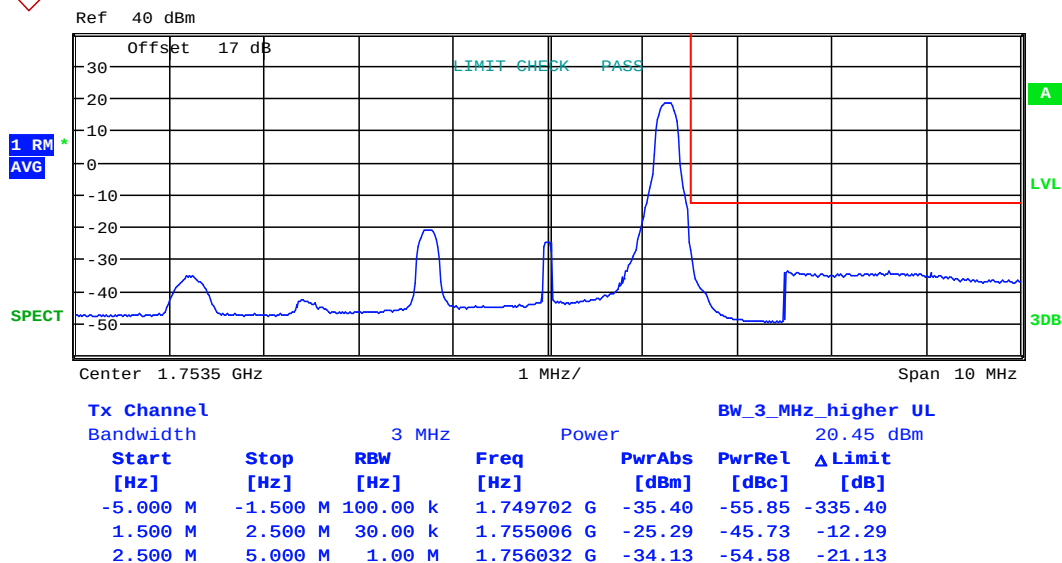


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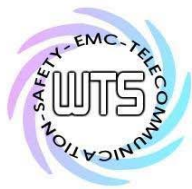


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FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 13:52:09

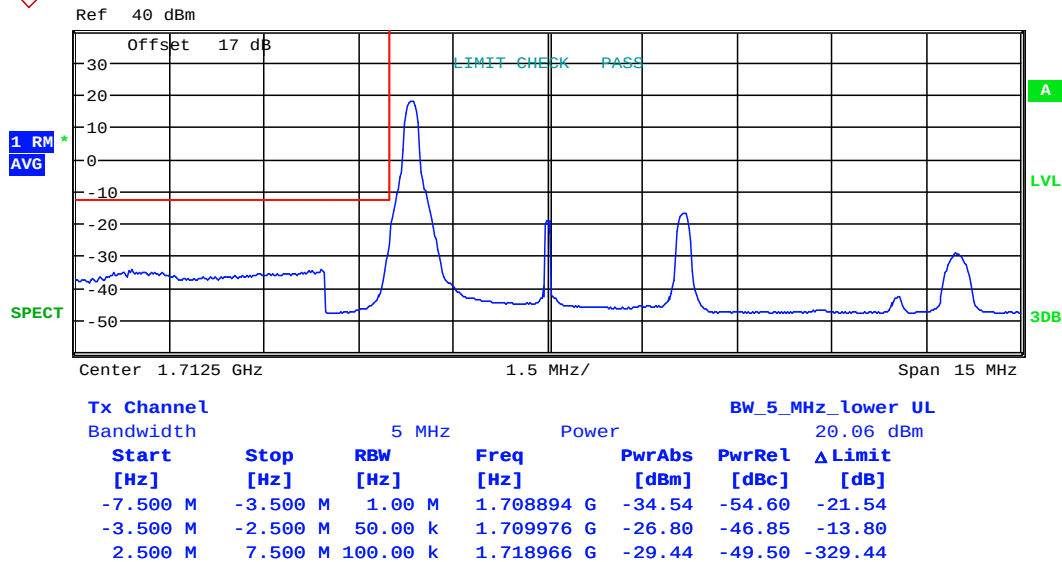


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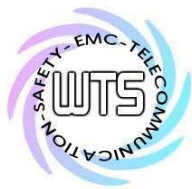
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

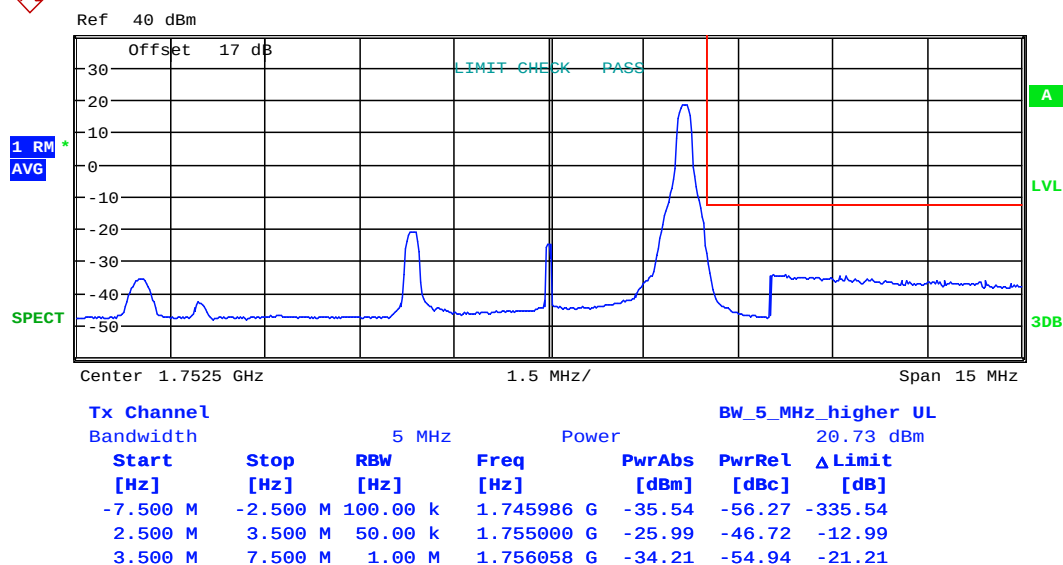


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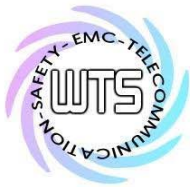


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



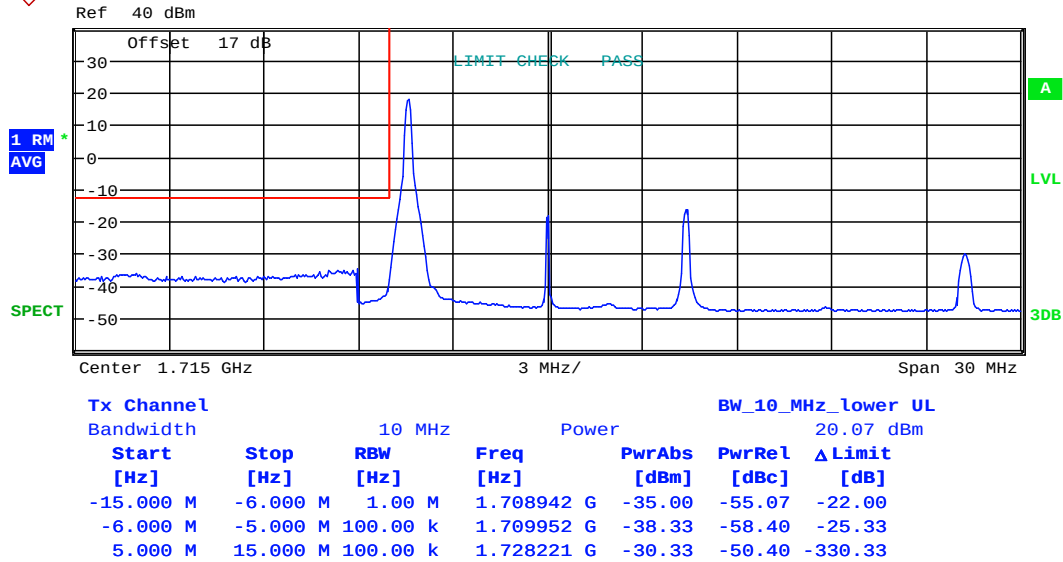
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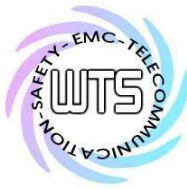
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

10MHz

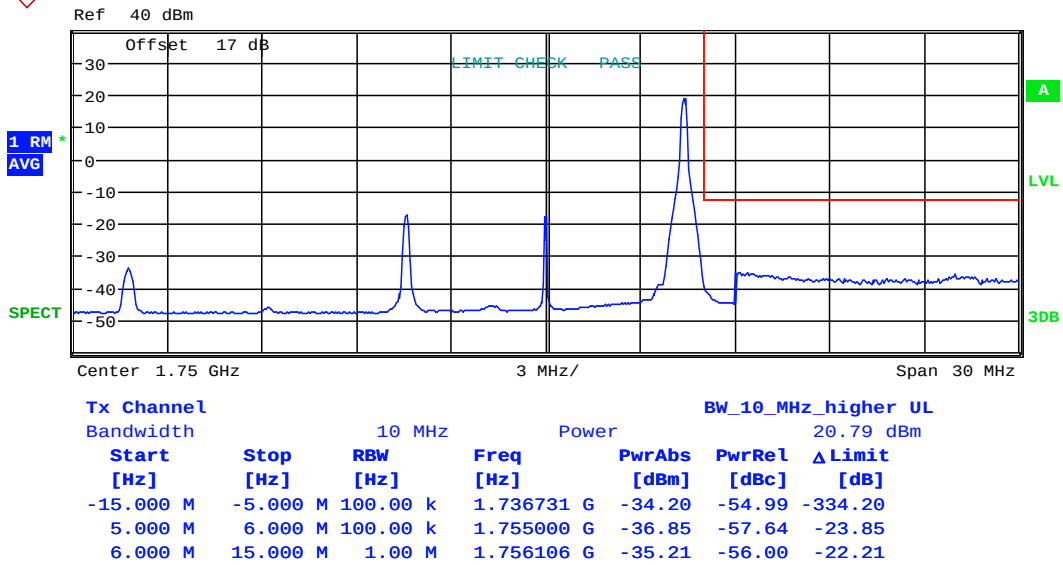


Date: 24.JUL.2019 13:38:47

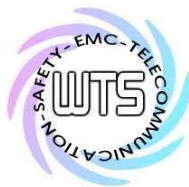


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 13:40:54



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

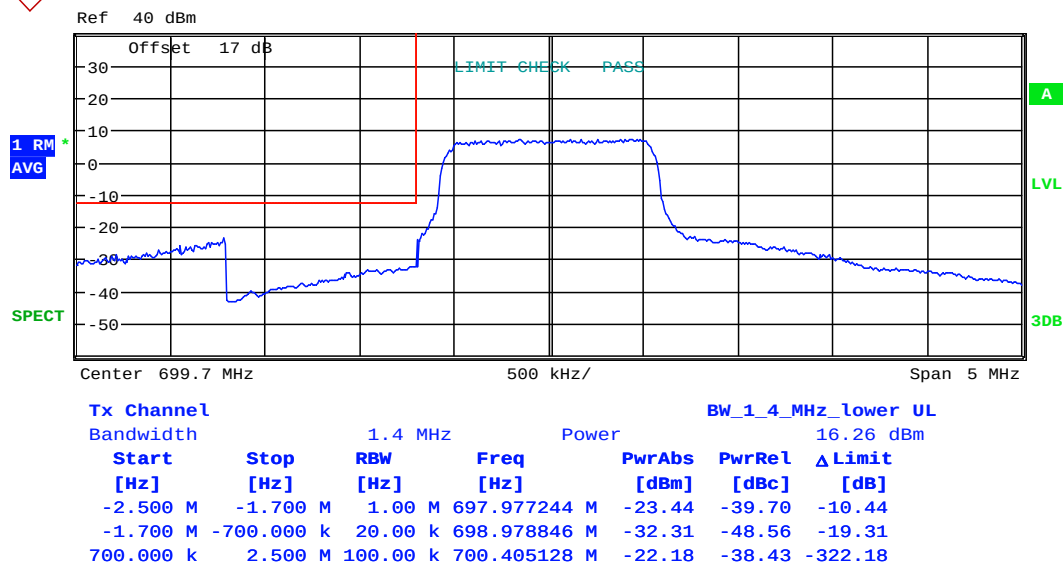
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Band XII

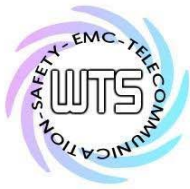
16QAM

FRB

1.4MHz

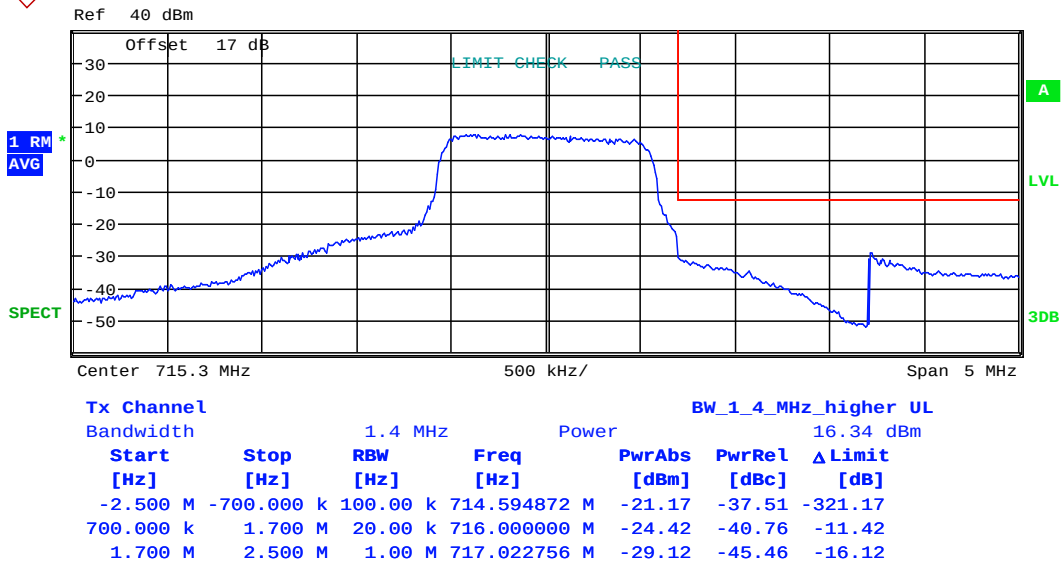


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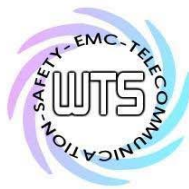


Report Number: W6M21906-19141-P-247

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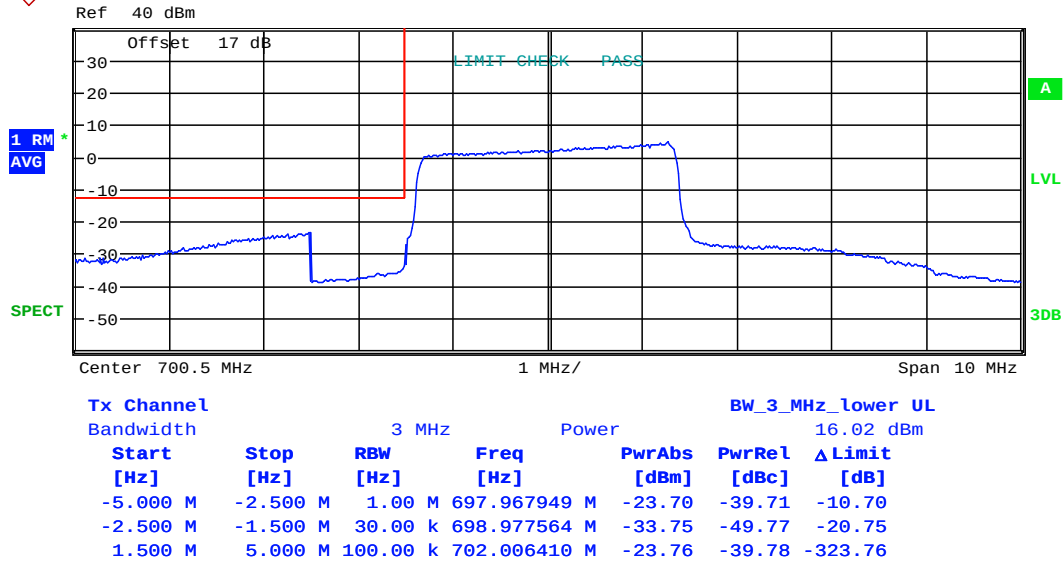
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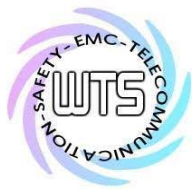
Report Number: W6M21906-19141-P-247

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3MHz

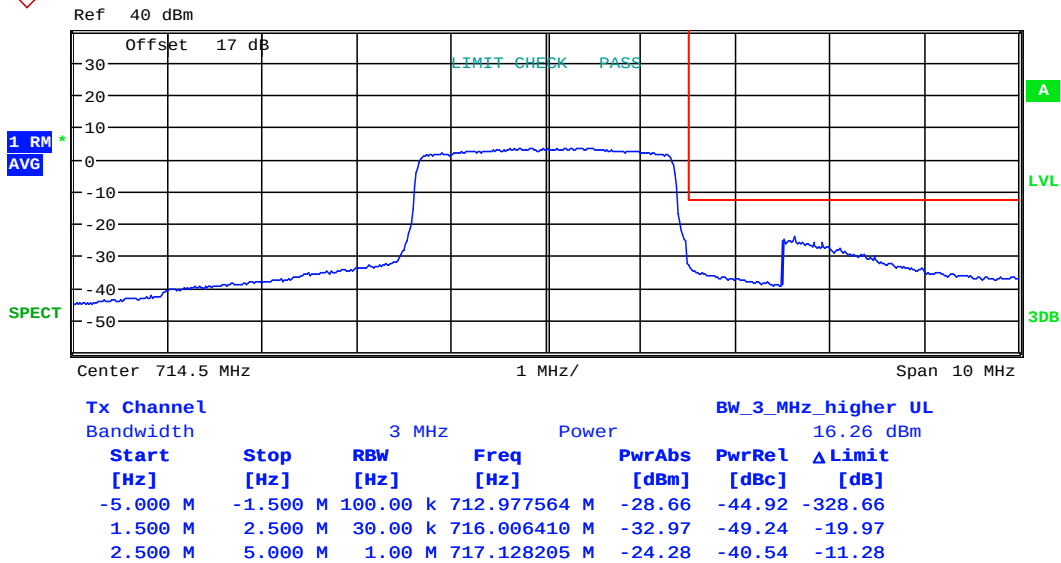


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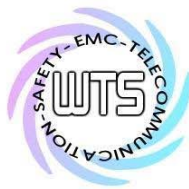


Report Number: W6M21906-19141-P-247

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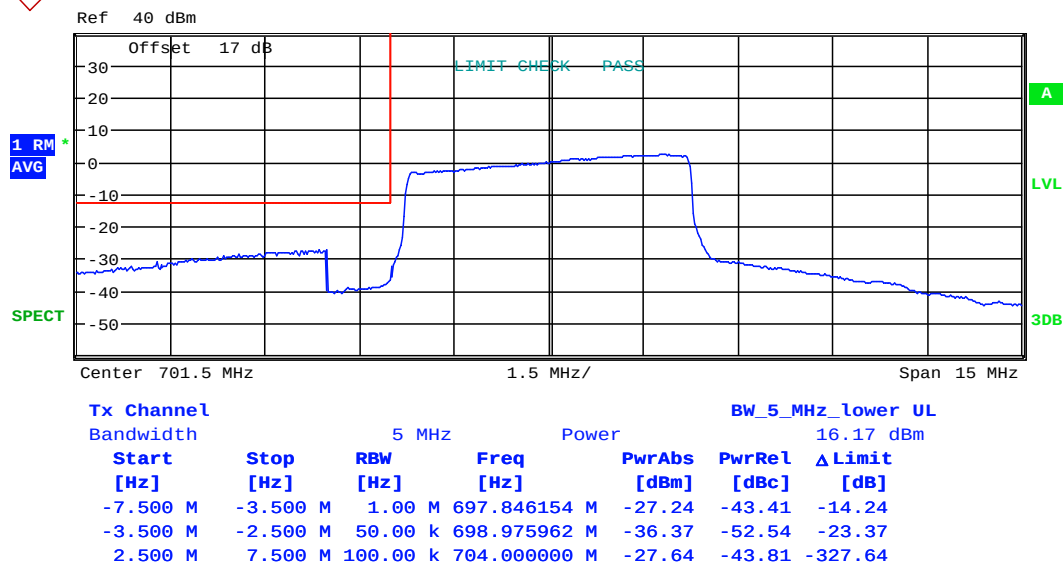
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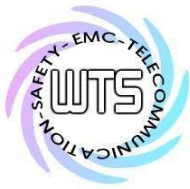
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

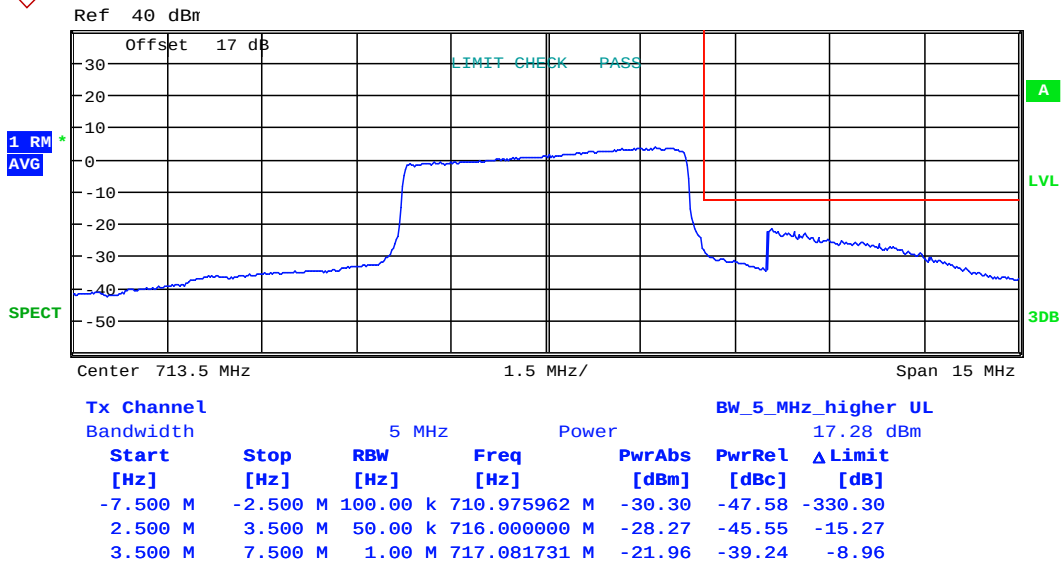


Date: 24.JUL.2019 14:36:53

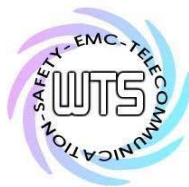


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 14:46:48



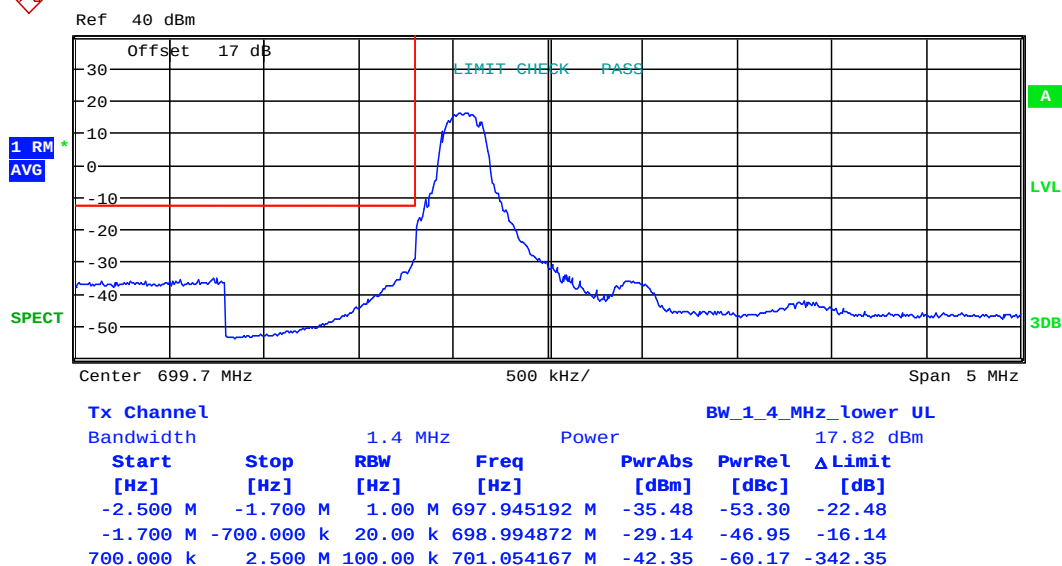
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

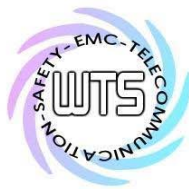
FCC ID: 2AT5JE070W1D14V1U

1RB

1.4MHz

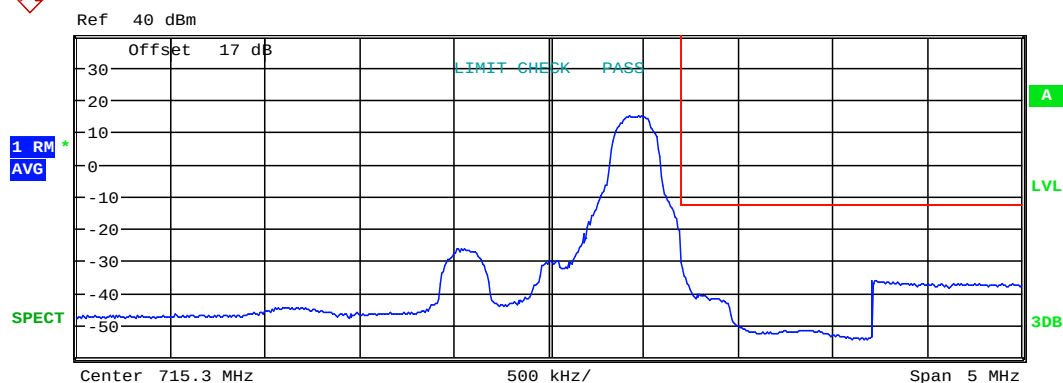


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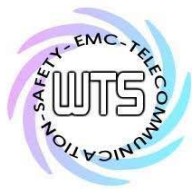
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Tx Channel				BW_1_4_MHz_higher UL			
Bandwidth		1.4 MHz		Power		16.85 dBm	
Start	Stop	RBW	Freq	PwrAbs	PwrRel	ΔLimit	
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dBc]	[dB]	
-2.500 M	-700.000 k	100.00 k	713.905769 M	-44.44	-61.28	-344.44	
700.000 k	1.700 M	20.00 k	716.000000 M	-20.83	-37.68	-7.83	
1.700 M	2.500 M	1.00 M	717.022756 M	-36.30	-53.15	-23.30	

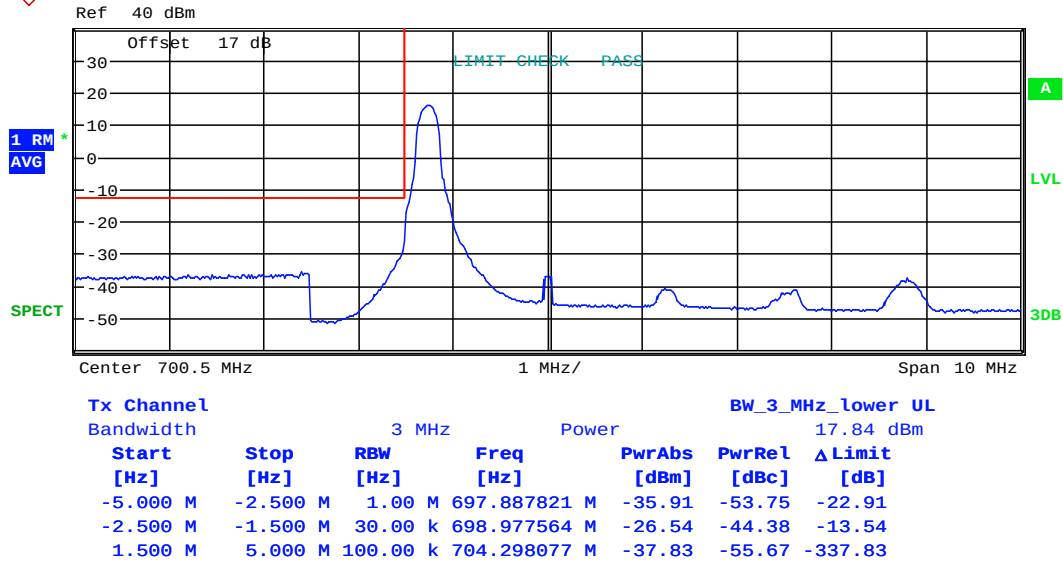
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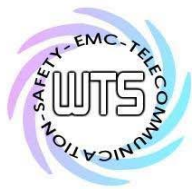
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz

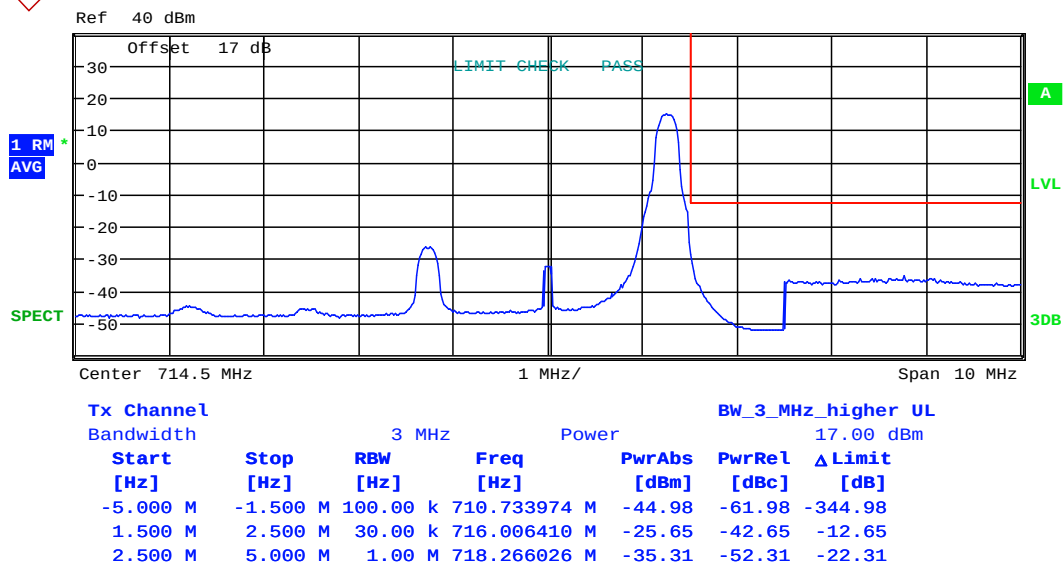


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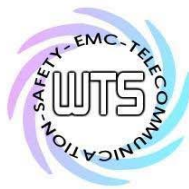


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 14:31:02

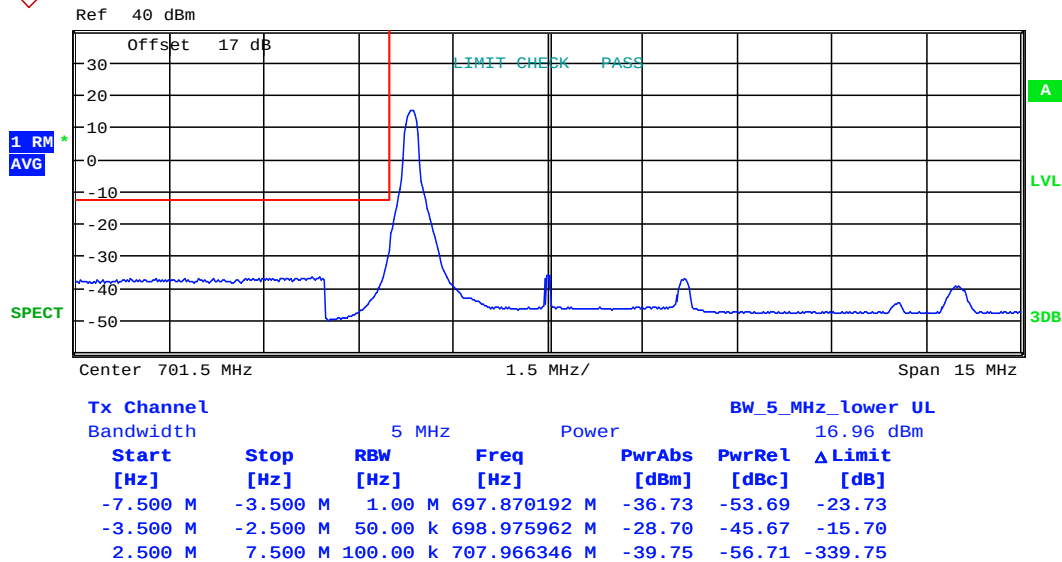


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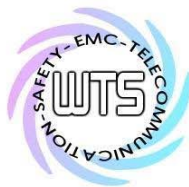
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

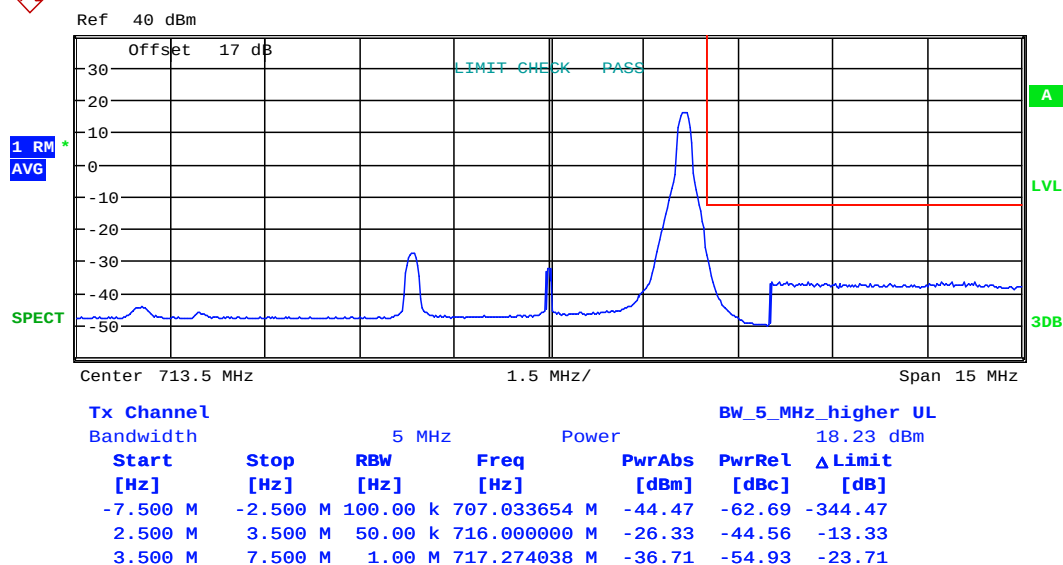


Date: 24.JUL.2019 14:36:34

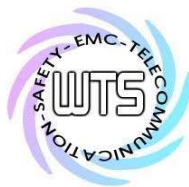


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 14:47:12



Worldwide Testing Services(Taiwan) Co., Ltd.

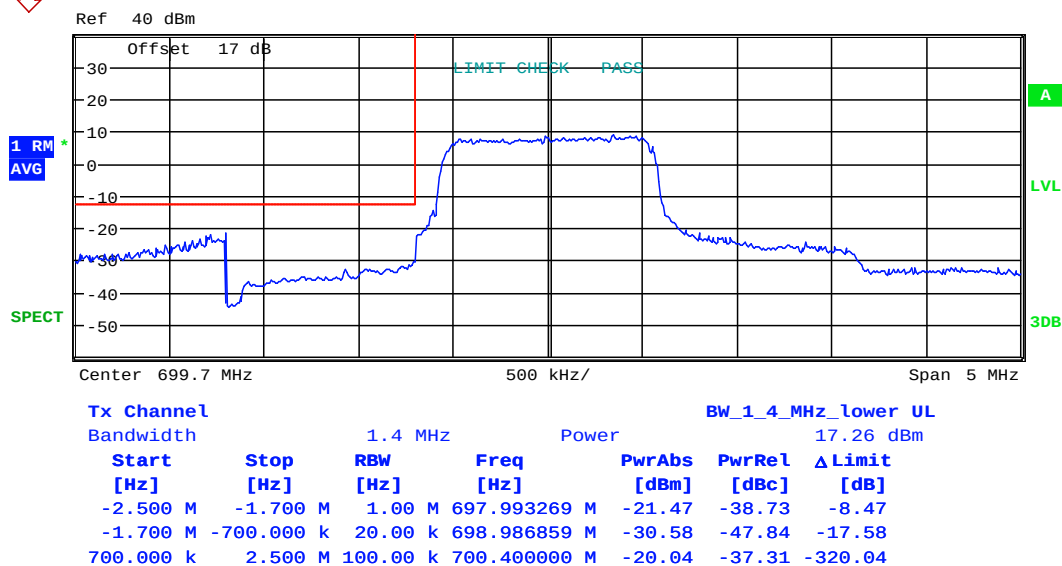
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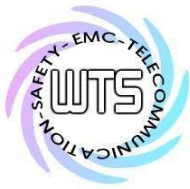
QPSK

FRB

1.4MHz



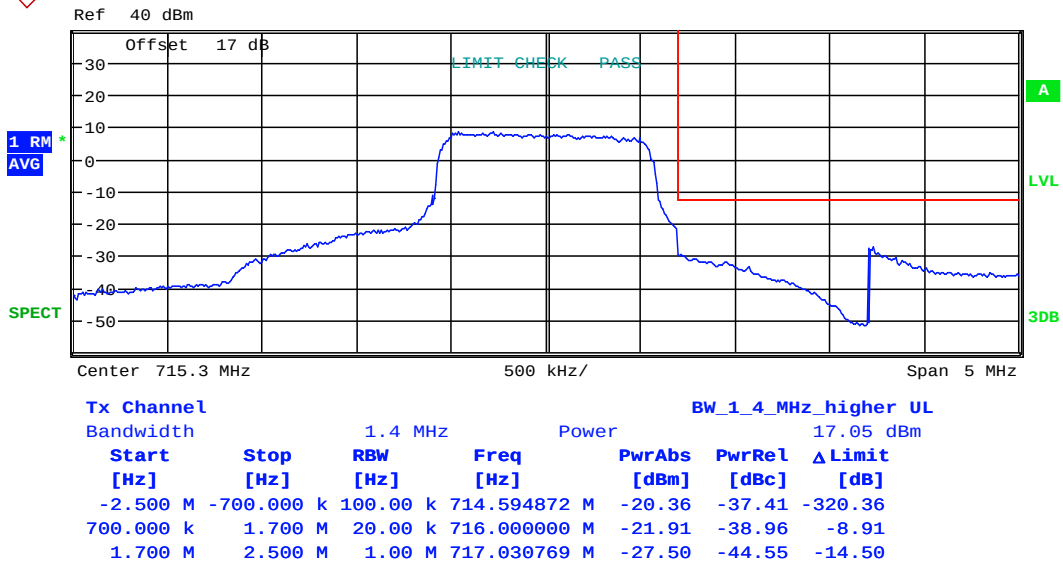
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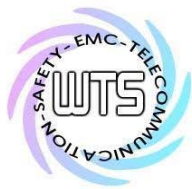
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



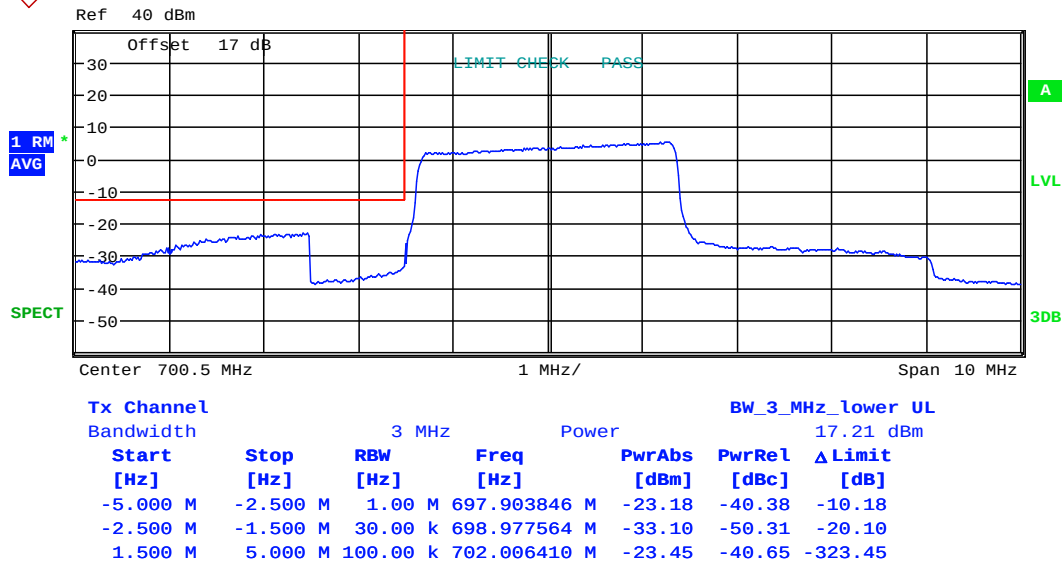
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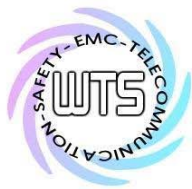
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

3MHz

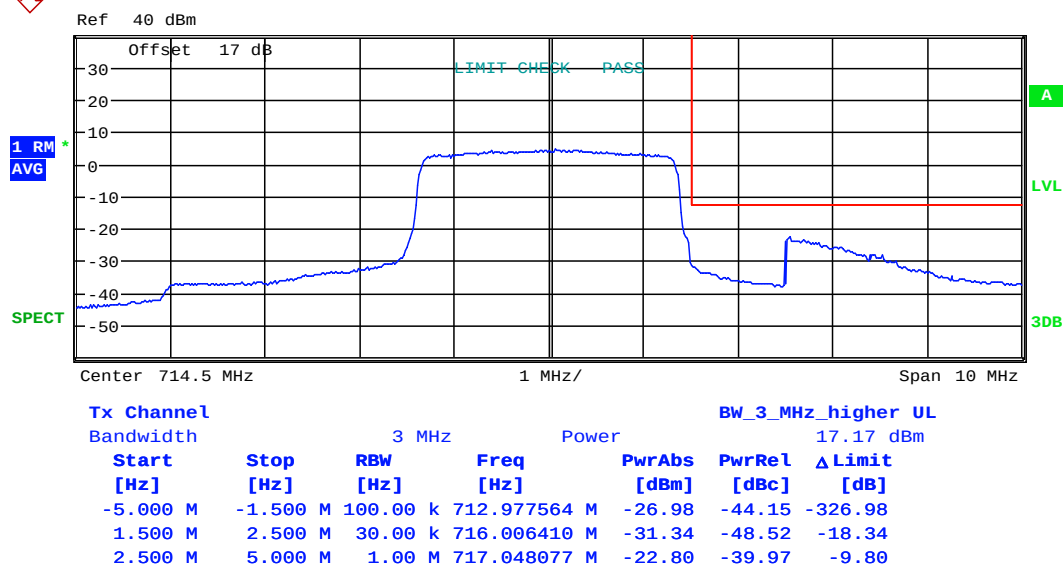


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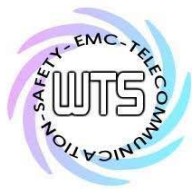


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



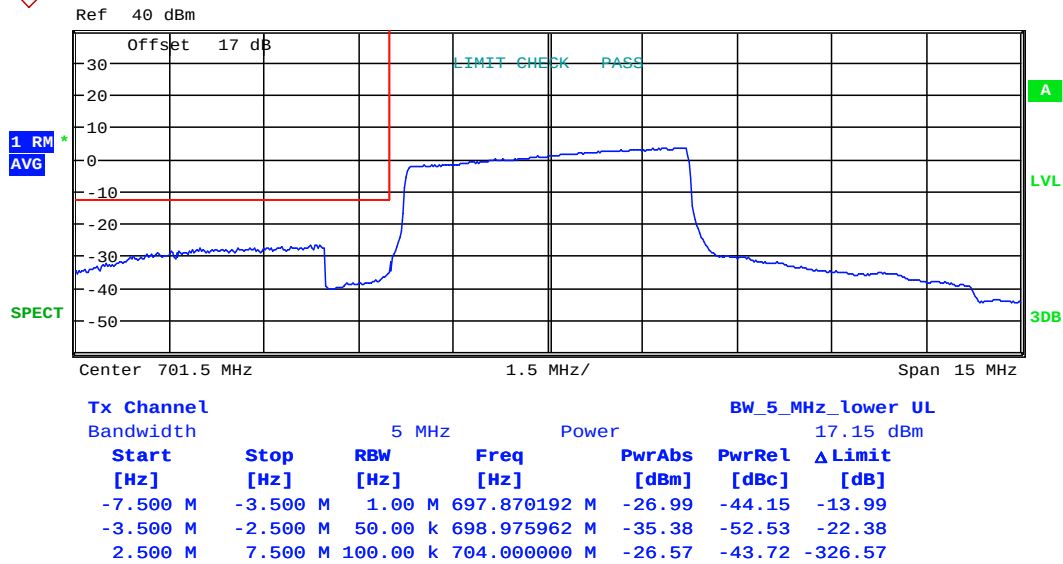
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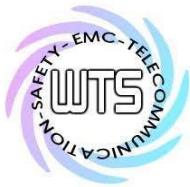
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

5MHz

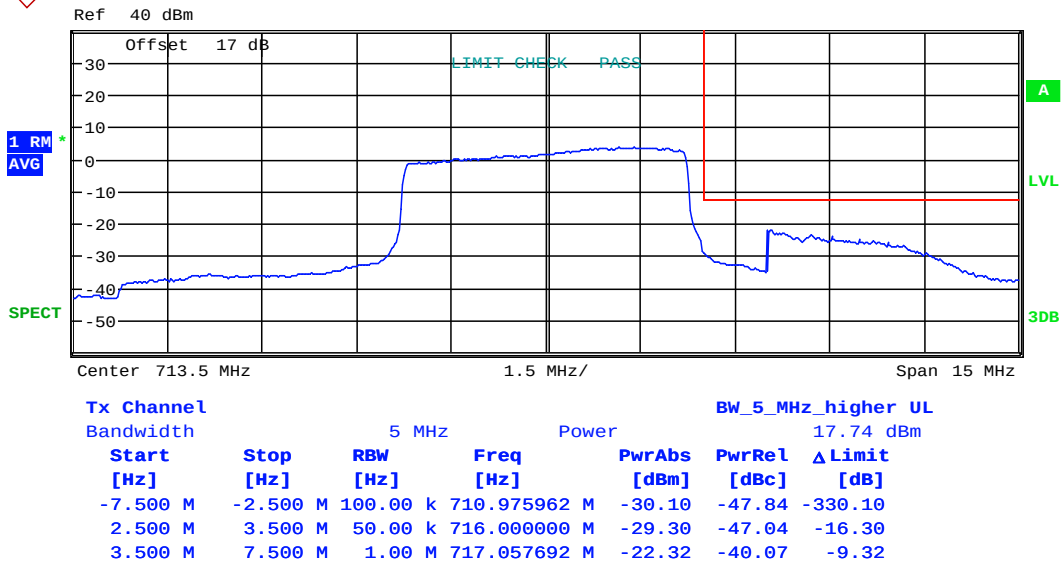


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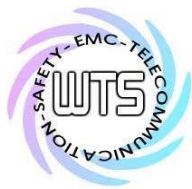


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



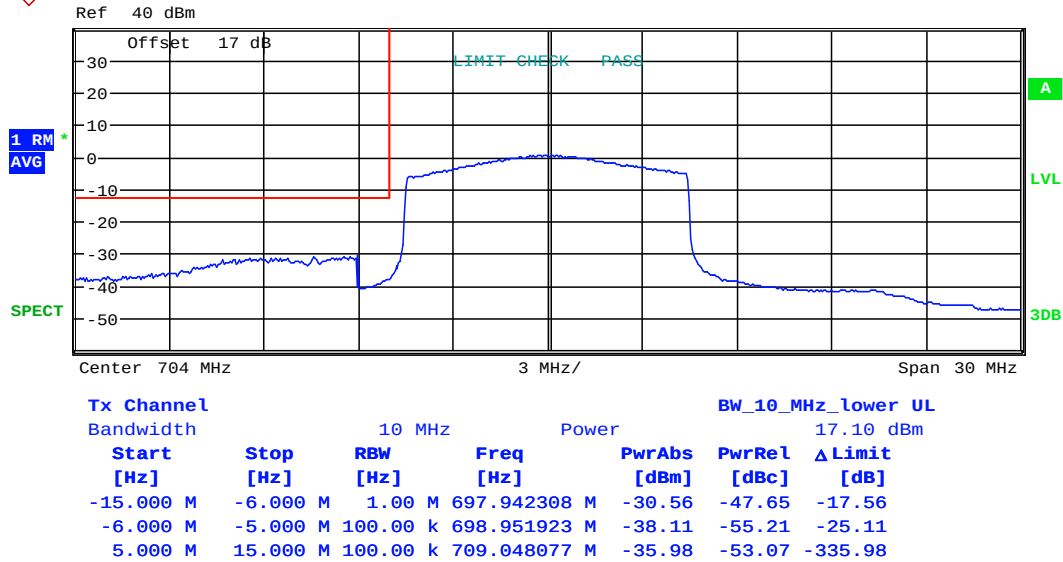
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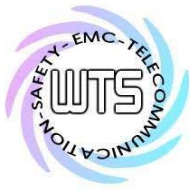
Report Number: W6M21906-19141-P-247

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10MHz

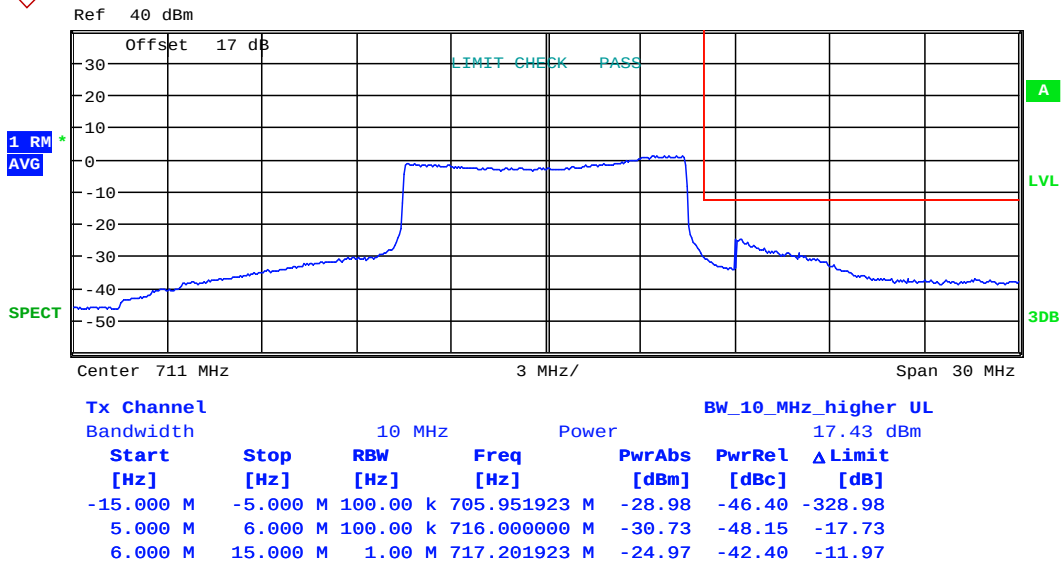


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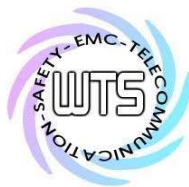


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 14:50:54

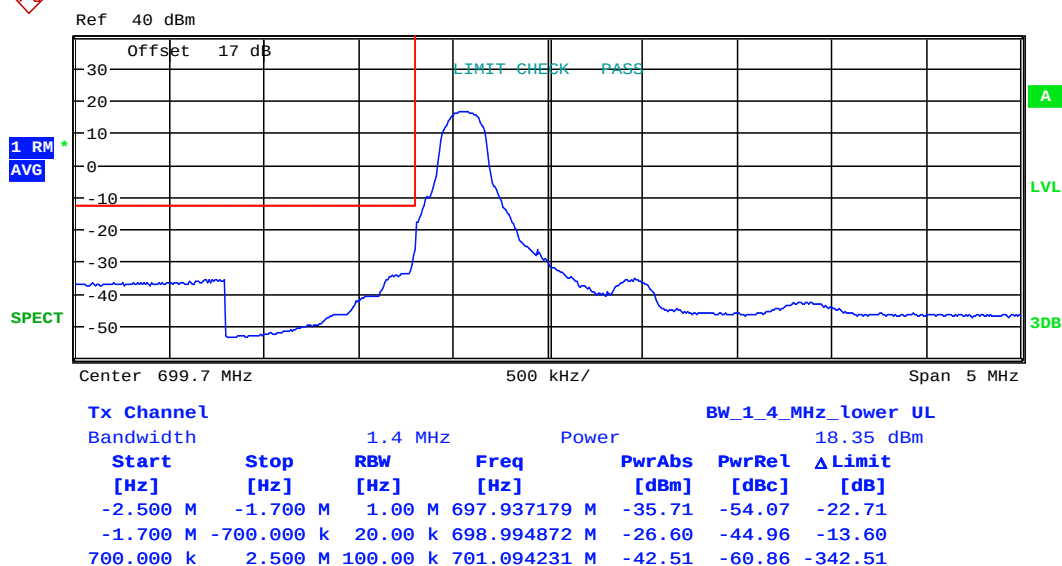


Report Number: W6M21906-19141-P-247

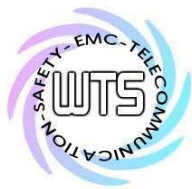
FCC ID: 2AT5JE070W1D14V1U

1RB

1.4MHz

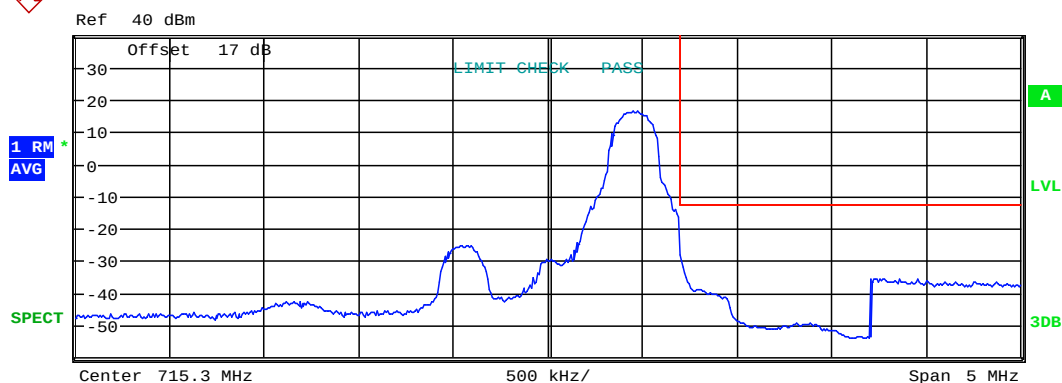


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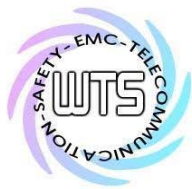
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Tx Channel				BW 1_4_MHz_higher UL			
Bandwidth		1.4 MHz		Power		18.11 dBm	
Start	Stop	RBW	Freq	PwrAbs	PwrRel	ΔLimit	
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dBc]	[dB]	
-2.500 M	-700.000 k	100.00 k	713.913782 M	-42.78	-60.89	-342.78	
700.000 k	1.700 M	20.00 k	716.000000 M	-16.54	-34.65	-3.54	
1.700 M	2.500 M	1.00 M	717.070833 M	-35.59	-53.70	-22.59	

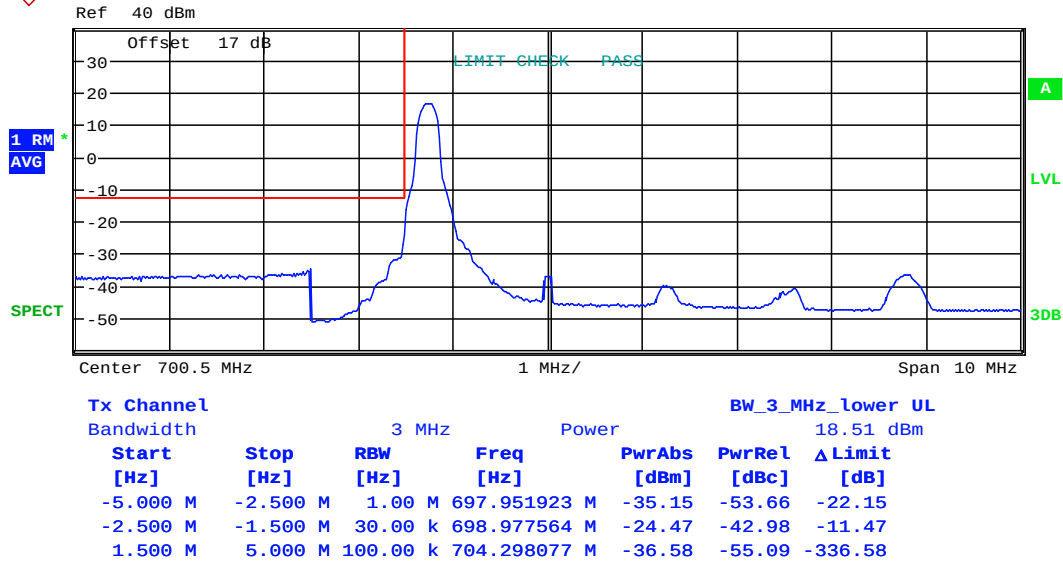
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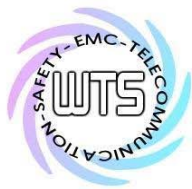
Report Number: W6M21906-19141-P-247

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3MHz

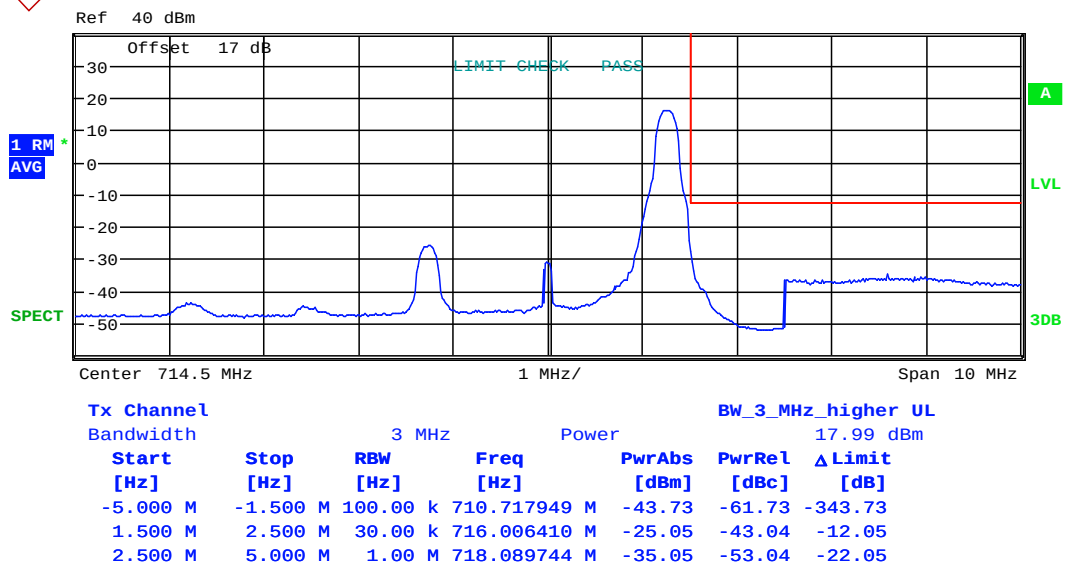


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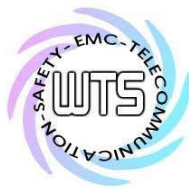


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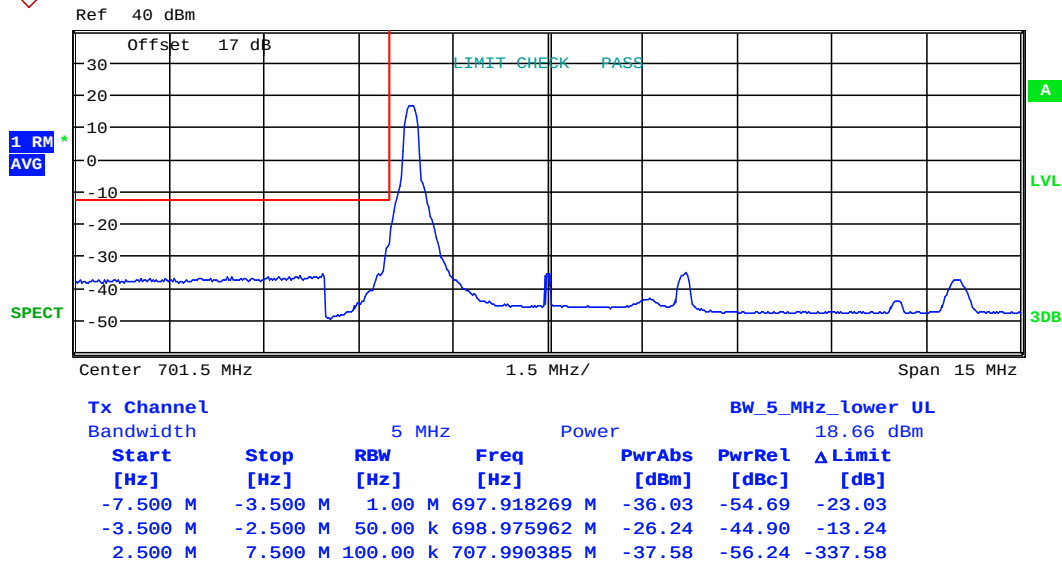
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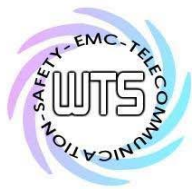
Report Number: W6M21906-19141-P-247

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5MHz

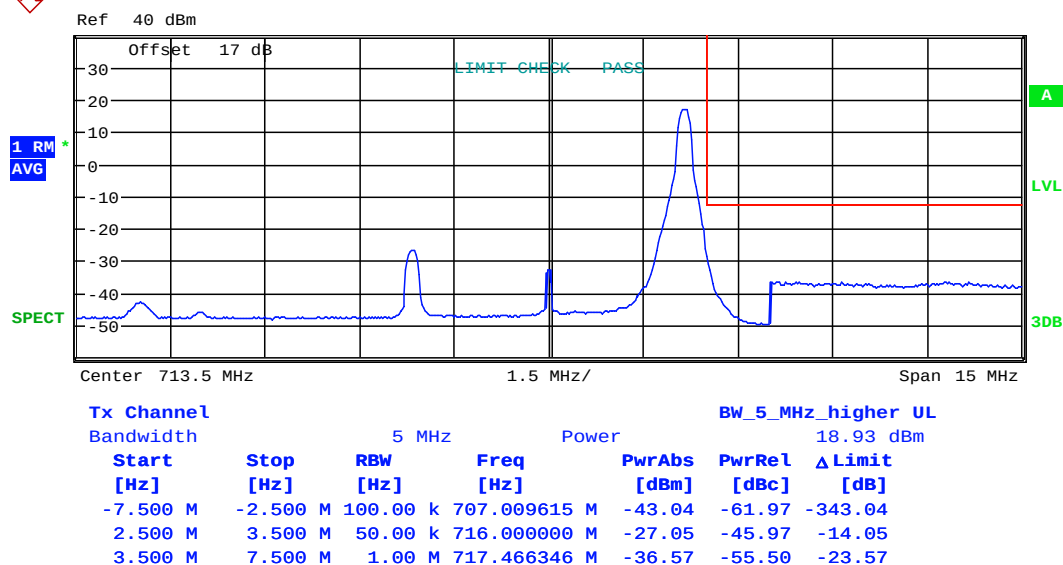


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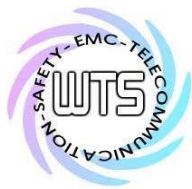


Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



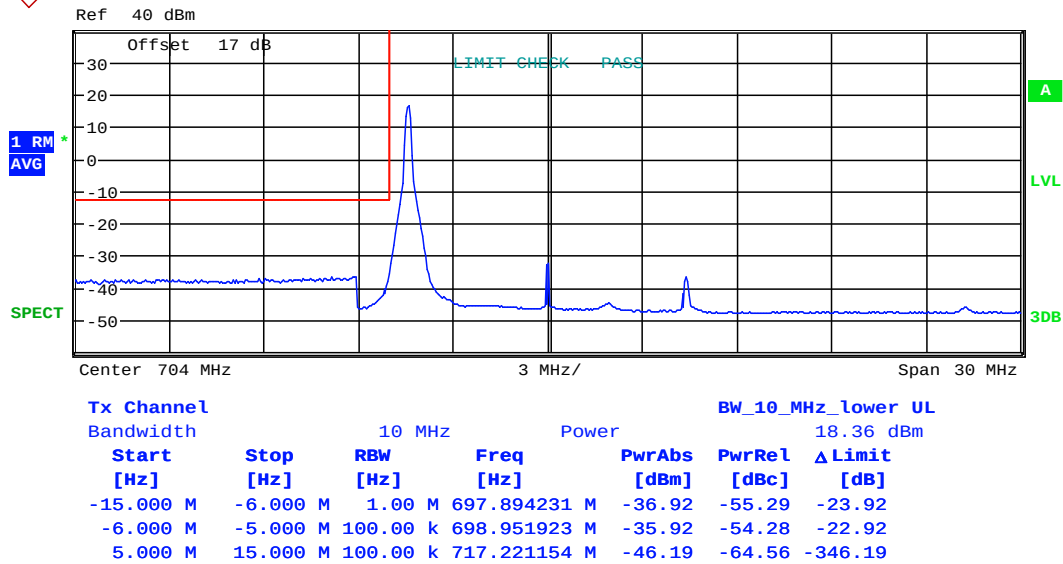
Date: 24.JUL.2019 14:47:34



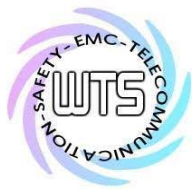
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

10MHz

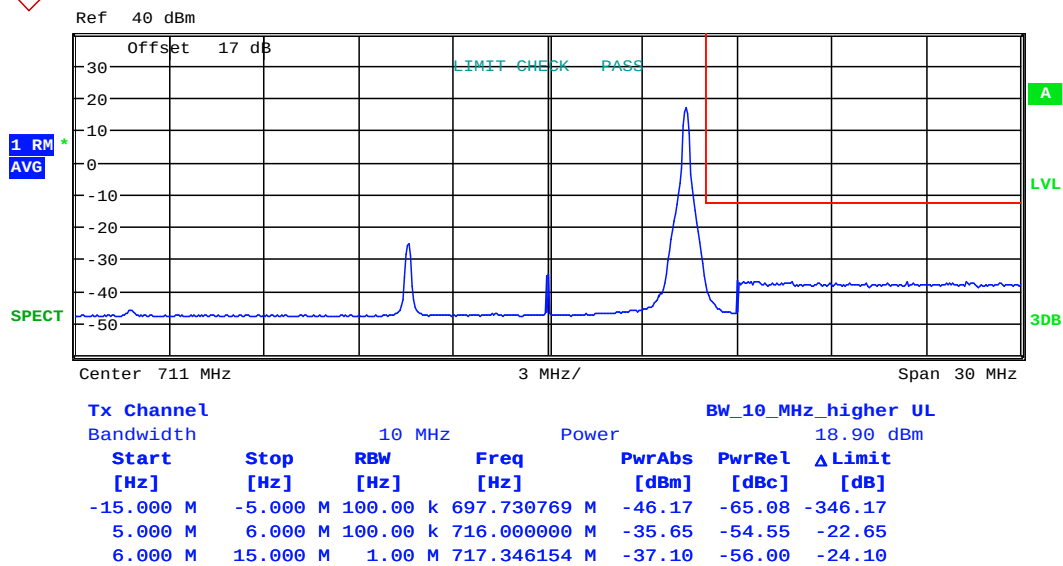


Date: 24.JUL.2019 14:52:34



Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U



Date: 24.JUL.2019 14:50:34

Test equipment: ETSTW-RE 055, ETSTW-GSM 002, ETSTW-GSM 023, ETSTW-GSM 004

Report Number: W6M21906-19141-P-247

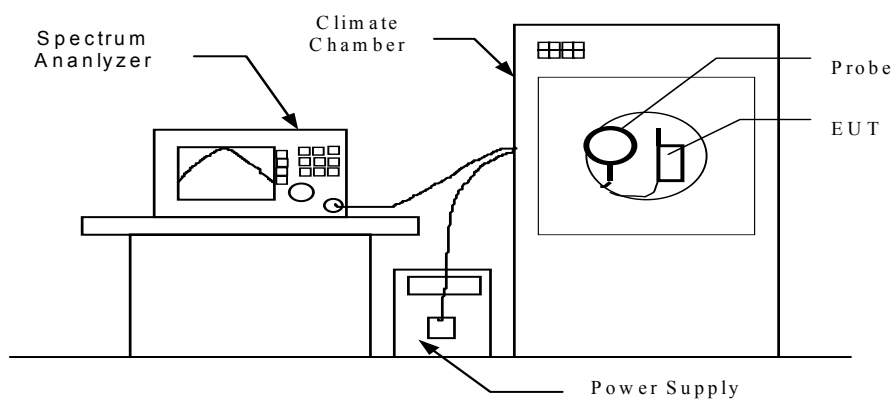
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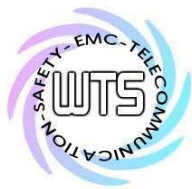
9. Frequency Stability

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintain within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency.

9.1 Test procedure

- ☒ The equipment under test was supplied with rated power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable, exited the chamber through an opening made for that purpose.
After the temperature stabilized the frequency output was recorded from the counter.
- ☐ An external variable power supply was used to supply nominal voltage and 85% to 115% of nominal voltage to the EUT under room temperature. Record the frequencies measured from the counter.
- ☒ End point voltage: For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer. Then record the frequencies measured from the counter.





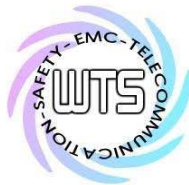
Report Number: W6M21906-19141-P-247

FCC ID: 2AT5JE070W1D14V1U

9.2 Test Results

9.2.1 Frequency Stability vs. Temperature

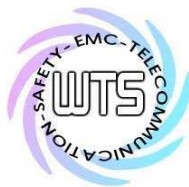
WCDMA BAND II				
CH9262	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	-11.59	-0.006	±2.5
	-10	-9.34	-0.005	
	0	-11.00	-0.006	
	10	-8.31	-0.004	
	20	9.86	0.005	
	30	8.46	0.005	
	40	9.15	0.005	
	50	10.55	0.006	
	60	11.68	0.006	
	70	12.28	0.007	
13.2Vdc	25	9.90	0.005	±2.5
10.8Vdc	25	9.14	0.005	
CH9400	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	-3.94	-0.002	±2.5
	-10	-2.70	-0.001	
	0	-7.84	-0.004	
	10	-4.71	-0.003	
	20	-3.05	-0.002	
	30	-3.84	-0.002	
	40	-4.55	-0.002	
	50	-5.82	-0.003	
	60	-4.32	-0.002	
	70	-2.84	-0.002	
13.2Vd.c.	25	-3.60	-0.002	±2.5
10.8Vd.c.	25	-3.50	-0.002	
CH9538	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	10.06	0.005	±2.5
	-10	9.97	0.005	
	0	8.58	0.004	
	10	8.59	0.005	
	20	-11.17	-0.006	
	30	10.55	0.006	
	40	11.84	0.006	
	50	-7.58	-0.004	
	60	8.67	0.005	
	70	4.28	0.002	
13.2Vd.c.	25	-9.34	-0.005	±2.5
10.8Vd.c.	25	-9.63	-0.005	



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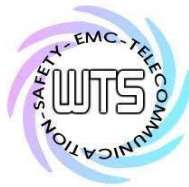
WCDMA BAND IV				
CH1312	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	-25.95	-0.015	±2.5
	-10	-25.57	-0.015	
	0	-24.16	-0.014	
	10	-3.01	-0.002	
	20	8.94	0.005	
	30	15.58	0.009	
	40	22.78	0.013	
	50	12.68	0.007	
	60	4.55	0.003	
	70	8.88	0.005	
13.2Vdc	25	7.35	0.004	±2.5
10.8Vdc	25	9.83	0.006	
CH1413	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	3.75	0.002	±2.5
	-10	3.54	0.002	
	0	-2.49	-0.001	
	10	4.15	0.002	
	20	-3.60	-0.002	
	30	-5.12	-0.003	
	40	4.80	0.003	
	50	3.34	0.002	
	60	2.84	0.002	
	70	-1.97	-0.001	
13.2Vd.c.	25	-3.36	-0.002	±2.5
10.8Vd.c.	25	3.32	0.002	
CH1513	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	18.89	0.011	±2.5
	-10	17.09	0.010	
	0	13.45	0.008	
	10	7.77	0.004	
	20	-6.82	-0.004	
	30	2.85	0.002	
	40	24.08	0.014	
	50	11.58	0.007	
	60	-9.45	-0.005	
	70	-5.85	-0.003	
13.2Vd.c.	25	-9.26	-0.005	±2.5
10.8Vd.c.	25	-6.82	-0.004	



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WCDMA BAND V				
CH4132	Temp	Frequency drift t(Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	-5.26	-0.006	±2.5
	-10	-4.92	-0.006	
	0	-5.02	-0.006	
	10	-2.92	-0.004	
	20	5.22	0.006	
	30	6.61	0.008	
	40	5.50	0.007	
	50	5.85	0.007	
	60	4.65	0.006	
	70	4.28	0.005	
13.2Vd.c.	25	4.12	0.005	
10.8Vd.c.	25	4.74	0.006	
CH4183	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	-1.87	-0.002	±2.5
	-10	-2.00	-0.002	
	0	2.55	0.003	
	10	2.11	0.003	
	20	-1.78	-0.002	
	30	2.21	0.003	
	40	-1.85	-0.002	
	50	-2.48	-0.003	
	60	-1.95	-0.002	
	70	-3.33	-0.004	
13.2Vd.c.	25	1.67	0.002	
10.8Vd.c.	25	-1.80	-0.002	
CH4233	Temp	Frequency drift t(Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	6.20	0.007	±2.5
	-10	4.89	0.006	
	0	4.69	0.006	
	10	4.53	0.005	
	20	-3.83	-0.005	
	30	-4.55	-0.005	
	40	5.48	0.006	
	50	6.48	0.008	
	60	5.84	0.007	
	70	4.68	0.006	
13.2Vdc	25	-3.61	-0.004	
10.8Vdc	25	-4.79	-0.006	



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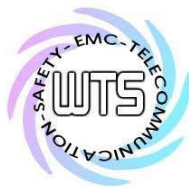
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LTE BAND II QPSK 10MHz FRB					LTE BAND IV QPSK 10MHz FRB				
CH18900	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)	CH20175	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	-6.08	-0.003	±2.5		-20	5.58	0.003	±2.5
	-10	-6.72	-0.004			-10	5.39	0.003	
	0	-9.94	-0.005			0	6.74	0.004	
	10	-7.65	-0.004			10	4.12	0.002	
	20	-11.76	-0.006			20	-5.05	-0.003	
	30	-8.28	-0.004			30	3.30	0.002	
	40	-9.97	-0.005			40	3.89	0.002	
	50	-6.25	-0.003			50	4.52	0.003	
	60	-7.58	-0.004			60	4.96	0.003	
	70	-8.65	-0.005			70	5.44	0.003	
13.2Vd.c.	25	-7.35	-0.004	±2.5	13.2Vd.c.	25	3.96	0.002	±2.5
10.8Vd.c.	25	-9.17	-0.005		10.8Vd.c.	25	5.25	0.003	

LTE BAND XII QPSK 10MHz FRB				
CH23095	Temp	Frequency drift (Hz)	Frequency drift (ppm)	Limit (ppm)
	-20	2.95	0.004	±2.5
	-10	-2.75	-0.004	
	0	-4.05	-0.006	
	10	3.40	0.005	
	20	-3.45	-0.005	
	30	-3.36	-0.005	
	40	-3.10	-0.004	
	50	-3.43	-0.005	
	60	-2.79	-0.004	
	70	-2.92	-0.004	
13.2Vd.c.	25	-2.98	-0.004	±2.5
10.8Vd.c.	25	3.36	0.005	

Test equipment: ETSTW-CE 009, ETSTW-GSM 002, ETSTW-GSM 004



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10 Maximum Permissible Exposure

10.1 RF Exposure Compliance Requirements

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

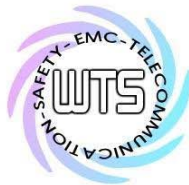
D – Cable Loss

AG – Antenna Gain

WCDMA Band II			
Item	Unit	Value	Remarks
P	dBm/mW	22.37/172.58	Peak value
D	dB		
AG	dB	1.54	
G		1.43	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.049	Calculated value

WCDMA Band IV			
Item	Unit	Value	Remarks
P	dBm/mW	23.61/229.61	Peak value
D	dB		
AG	dB	2.05	
G		1.60	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.073	Calculated value

WCDMA Band V			
Item	Unit	Value	Remarks
P	dBm/mW	21.10/128.83	Peak value
D	dB		
AG	dB	-1.81	
G		0.66	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.017	Calculated value



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LTE Band II			
Item	Unit	Value	Remarks
P	dBm/mW	22.23/167.11	Peak value
D	dB		
AG	dB _i	1.69	
G		1.48	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.049	Calculated value

LTE Band IV			
Item	Unit	Value	Remarks
P	dBm/mW	23.22/209.89	Peak value
D	dB		
AG	dB _i	2.06	
G		1.61	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.067	Calculated value

LTE Band XII			
Item	Unit	Value	Remarks
P	dBm/mW	20.45/110.917	Peak value
D	dB		
AG	dB _i	-6.94	
G		0.20	Calculated Value
R	cm	20	Assumed value
S	mW/cm ²	0.0045	Calculated value

Limits:

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