

47 CFR PART 22/24/27 TEST REPORT

for

Smart Home Alarm System

Model No.: HSGW-MAX8

FCC ID: GX9HSGWQT

of

Applicant: CLIMAX TECHNOLOGY CO., LTD.

**Address: No. 258, Sinhu 2nd Rd., Neihu District
Taipei City 114 Taiwan (R.O.C.)**

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: TW1477, TW1072

Industry Canada filed test laboratory Reg. No. 20037



Report No.: W6M22112-21430-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: W6M22112-21430-P-247
FCC ID: GX9HSGWQT

Certification of Test Report

Applicant : CLIMAX TECHNOLOGY CO., LTD.
No. 258, Sinhu 2nd Rd., Neihu District
Taipei City 114 Taiwan (R.O.C.)

Manufacturer : CLIMAX TECHNOLOGY CO., LTD.
No. 258, Sinhu 2nd Rd., Neihu District
Taipei City 114 Taiwan (R.O.C.)

Tested Equipment :

Type Description	: Smart Home Alarm System
Model Number	: HSGW-MAX8
Multi-listing Model Number	: ./.
Brand Name	: ./.
Operation Frequency	: Please see chapter 2.3.
RF Output Power:	: WCDMA Band 2: 24.47 dBm (EIRP) Band 5: 25.44 dBm (ERP) LTE Band 2: 24.35 dBm (EIRP) Band 4: 22.42 dBm (EIRP) Band 5: 25.57 dBm (ERP) Band 7: 21.99 dBm (EIRP)
Power Supply	: Adaptor (I/P: 100-240V~0.4A 50/60Hz; O/P: 12.0V, 1.0A, 12W) Battery 7.2 V

Regulation Applied : 47CFR Part 22 (2020-10), Part 24 (2020-10),
Part 27 (2020-10)

Test Method : 47CFR Part 2 (2020), 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 (2020), TIA/EIA-603E (2016), ANSI C63.26 (2015), 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:

January 10, 2022

Spencer Yang

Spencer

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

January 10, 2022

Kevin Wang

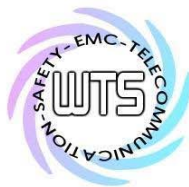
Kevin Wang

Date

WTS

Name

Signature

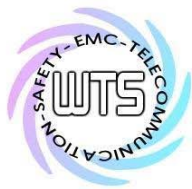


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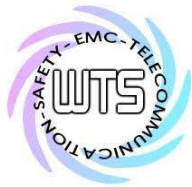
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1. Summary

1.1 Description of tested equipment

This equipment under tested, HSGW-MAX8, is a Smart Home Alarm System.

This test report only contains test requirements specified in 47CFR Part 22, Part 24 and Part27 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: December 14, 2021

Date of test : from December 15, 2021 to January 14, 2022

Other Information: None

1.3 Modification Information

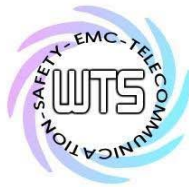
No modification was made during the all test items been performed.

1.4 Test standards

Technical standard: **47CFR Part 22 (2020), Part 24 (2020) and Part 27 (2020)**

Test method: **47 CFR Part 2 (2020), TIA/EIA-603E (2016),
ANSI C63.26 (2015)**

Deviation from test standard: None



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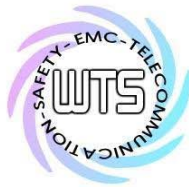
1.5 Summary of test result

WCDMA

Section in this Report	Test Item	FCC Relevant Section	Verdict
3.2	Effective Radiated Power and Equivalent Isotropic Radiated Power Measurement	2.1046(a), 24.232	Pass
4.2	Modulation characteristics	2.1047	Not Required
5.3	Peak-to-Average Ratio	24.232	Pass
6.2	Occupied bandwidth	2.1049(h) 24.238(b)	Pass
7.2	Conducted Spurious Emission Measurement	24.238(a), 2.1051	Pass
8.2	Radiated Spurious Emission Measurement	24.238(a), 2.1053	Pass
8.5	Conducted Band Edge Measurement	24.238(b)	Pass
9.2	Frequency stability / Temperature variation Measurement	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) 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

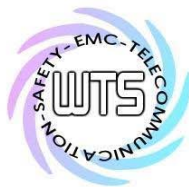


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Test item Name	Measurement Uncertainty
Estimation Result of Uncertainty of Radiated Emission(3M)	Expanded Uncertainty: 0.009-30 MHz : 3.48 dB 30-1000 MHz : 4.48 dB 1-18 GHz : 4.15 dB 18-40 GHz : 3.78 dB
Estimation Result of Uncertainty of Conducted Output Power Measurement	Expanded Uncertainty : 3.07 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 : 0.67 dBc

The decision rule is: Measurement uncertainty is not included in the calculation of test results.



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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
FCC filed test laboratory Reg. No. TW1477, TW1072
Industry Canada filed test laboratory Reg. No. 20037

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

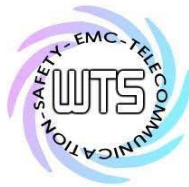
Name: ./.
Accredited number: ./.
Street: ./.
Town: ./.
Country: ./.

2.2 Details of approval holder

Name: CLIMAX TECHNOLOGY CO., LTD.
Street: No. 258, Sinhu 2nd Rd., Neihu District
Town: Taipei City 114
Country: Taiwan (R.O.C.)

Manufacturer: (if different from applicant)

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



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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.					

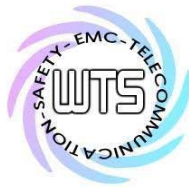
Frequencies Selected to be investigated:

WCDMA		
Band	Tx	Rx
WCDMA Band 2	MHz	MHz
CH 9262	1852.4	1932.4
CH 9400	1880	1960
CH 9538	1907.6	1987.6
WCDMA Band 5	MHz	MHz
CH 4132	826.4	871.4
CH 4183	836.6	881.6
CH 4233	846.6	891.6

LTE

Band 2

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 4

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 5

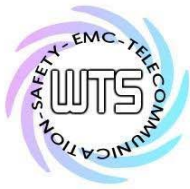
Test Frequency ID	Bandwidth [MHz]	N _{UL}	Frequency of Uplink [MHz]	N _{DL}	Frequency of Downlink [MHz]
Low Range	1.4	20407	824.7	2407	869.7
	3	20415	825.5	2415	870.5
	5	20425	826.5	2425	871.5
	10 ^[1]	20450	829	2450	874
Mid Range	1.4/3/5 10 ^[1]	20525	836.5	2525	881.5
High Range	1.4	20643	848.3	2643	893.3
	3	20635	847.5	2635	892.5
	5	20625	846.5	2625	891.5
	10 ^[1]	20600	844	2600	889

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

Band 7

Test Frequency ID	Bandwidth [MHz]	N _{UL}	Frequency of Uplink [MHz]	N _{DL}	Frequency of Downlink [MHz]
Low Range	5	20775	2502.5	2775	2622.5
	10	20800	2505	2800	2625
	15	20825	2507.5	2825	2627.5
	20 ^[1]	20850	2510	2850	2630
Mid Range	5/10/15 20 ^[1]	21100	2535	3100	2655
High Range	5	21425	2567.5	3425	2687.5
	10	21400	2565	3400	2685
	15	21375	2562.5	3375	2682.5
	20 ^[1]	21350	2560	3350	2680

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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Antenna Type:

PCB antenna

Antenna Gain:

WCDMA (Band 2: 1.59 dBi, Band 5: 2.2 dBi)

LTE (Band 2: 1.59 dBi, Band 4: -0.5 dBi, Band 5: 2.2 dBi,
Band 7: -0.47 dBi,)

(Testing laboratory assumes no responsibility for affecting any
validity of the result while the information which is provided by
clients.)

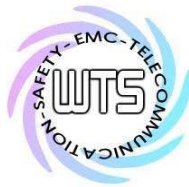
Power supply:

Adaptor (I/P: 100-240V~0.4A 50/60Hz; O/P: 12.0V, 1.0A, 12W)
Battery 7.2 V

2.4 Test environment

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.

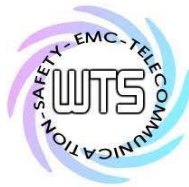
For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna.

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.

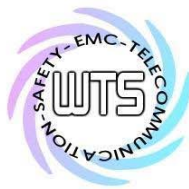


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2.6 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2021/6/17	2022/6/16
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	2021/11/9	2022/11/8
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2021/9/22	2022/9/21
ETSTW-CE 008	HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2021/7/29	2022/7/28
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2021/11/8	2022/11/7
ETSTW-CE 028	MXE EMI Receiver	N9038A	MY53220110	Agilent	2021/7/28	2022/7/27
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2021/6/17	2022/6/16
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2021/9/28	2022/9/27
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	2021/8/4	2022/8/3
ETSTW-RE 019	MICROWAVE HORN ANTENNA	22240-25	121074	FM	2021/5/31	2022/5/30
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2021/6/16	2022/6/15
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2021/5/5	2022/5/4
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2021/3/18	2022/3/17
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2021/5/21	2022/5/20
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2021/7/14	2022/7/13
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2021/2/19	2022/2/18
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2021/2/19	2022/2/18
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2021/2/19	2022/2/18
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2021/3/16	2022/3/15
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2021/2/19	2022/2/18
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2021/5/14	2022/5/13
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	2021/10/27	2022/10/26
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2021/9/17	2022/9/16
ETSTW-RE 091	Match Pad	MDCS1500	None	WOKEN	2021/5/27	2022/5/26
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2021/2/19	2022/2/18
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	T-0A023536	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE	2022/1/5	2023/1/4

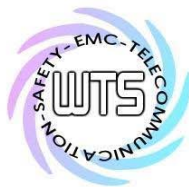


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				CIRCUITS		
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	2021/10/29	2022/10/28
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2021/6/8	2022/6/7
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2021/8/6	2022/8/5
ETSTW-RE 126	5GHz Notch filter	5NSL12-5800/E221.3-O/O	1	K&L Microwave	2021/8/6	2022/8/5
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2021/2/19	2022/2/18
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circuits	2021/8/6	2022/8/5
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2021/8/6	2022/8/5
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-RE 142	Amplifier	8447D	2805A03378	Agilent	2021/5/14	2022/5/13
ETSTW-RE 146	Preamplifier	JPA-10M1G	15090004	JPT	2021/6/4	2022/6/3
ETSTW-RE 152	Bi-log Hybrid Antenna	MCTD 2786B	BLB20J04029	ETC	2021/10/5	2022/10/4
ETSTW-RE 153	Signal Analyzer	FSV40	101929	R&S	2021/10/6	2022/10/5
ETSTW-RE 159	Bi-log Hybrid Antenna (30M~1000 MHz)	MCTD 2786B	BLB21N04035	ETC	2021/12/06	2022/12/05
ETSTW-RF 002	Electromagnetic field probe	LF-30	K-0007	STT	2021/7/19	2022/7/18
ETSTW-EMI 011	USB Compact Modulator	SFC-U	101689	R&S	2021/6/2	2022/6/1
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2021/3/16	2022/3/15
ETSTW-GSM 003	Radio Communication Analyzer	MT8820C	6201342073	Anritsu	2021/4/27	2022/4/26
ETSTW-GSM 004	Wideband Radio Communication Tester	CMW500	128092	R&S	2021/10/29	2022/10/28
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2022/1/5	2023/1/4
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2022/1/5	2023/1/4
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2022/1/5	2023/1/4
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2022/1/5	2023/1/4
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2021/9/7	2022/9/6
ETSTW-GSM 024	Radio Communication Analyzer	MT8821C	None	Anritsu	2021/4/1	2022/3/31
ETSTW-GSM 025	Band Reject Filter	BRM19835	001	Micro-Tronics	2021/8/6	2022/8/5
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	2021/2/19	2022/2/18
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2021/2/19	2022/2/18
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2021/2/19	2022/2/18
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2021/2/19	2022/2/18
ETSTW-Cable 020	N TYPE Cable	OATS Cable 1	N30N30-L335-15M	JYE BAO CO.,LTD.	2021/7/1	2022/6/30
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2021/5/7	2022/5/6
ETSTW-Cable 028	Microwave Cable	FA147A0015M2020	30064-2	UTIFLEX	2021/9/17	2022/9/16
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2021/9/17	2022/9/16
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S Cable 9)	279067	HUBER+SUHNER	2021/2/19	2022/2/18



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ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2021/5/14	2022/5/13
ETSTW-Cable 047	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2021/7/2	2022/7/1
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2021/6/4	2022/6/3
ETSTW-Cable 064	Microwave Cable	SUCOFLEX 104	MY28891	HUBER+SUHNER	2021/5/14	2022/5/13
ETSTW-Cable 071	N TYPE CABLE	EMCCFD400-NM-NM-25000	170239	EMCI	2021/6/4	2022/6/3
ETSTW-Cable 072	SMA type cable (8m)	SUCOFLEX 104	805800/4	HUBER+SUHNER	2021/5/14	2022/5/13
ETSTW-Cable 074	SMA type cable (2m)	SUCOFLEX 104	802563/4	HUBER+SUHNER	2021/5/14	2022/5/13
WTSTW-SW 002	EMI TEST SOFTWARE	EZ EMC	None	Farad	Version ETS-03A1 Version EMEC-3A1+	
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	
ETSTW-TH 002	Thermohygrometer	608-H1	45204317	Testo	2021/10/18	2022/10/17
ETSTW-TH 003	Wireless weather station	GAIA	N/A	TFA	2021/10/18	2022/10/17

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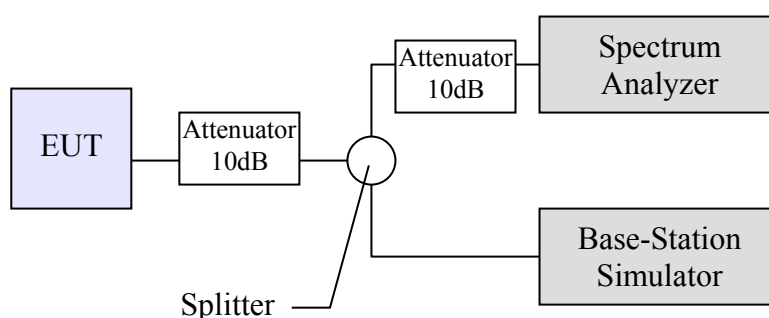
3. RF Power Output

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 from 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.

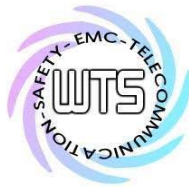
VBW: 300 kHz for Frequency below 1GHz and 1MHz for Frequency equal to and above 1GHz.

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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3.2 Test Results

Test date: December 28, 2021

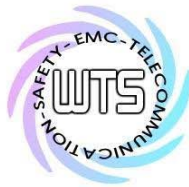
Temperature: 21.7 °C

Humidity: 58.0 %

Tester: Spencer

WCDMA

WCDMA Band 2	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
	22.47	22.10	22.88	24.06	23.69	24.47
WCDMA Band 5	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
	23.21	23.24	22.77	25.41	25.44	24.97



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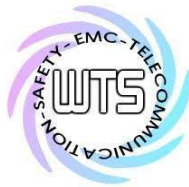
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LTE

Band 2

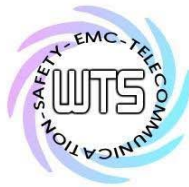
BW (MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch18607/ 1850.7MHz	POWER (dBm) Mid Ch18900/ 1880MHz	POWER (dBm) High Ch19193/ 1909.3MHz	EIRP Low Ch18607/ 1850.7MHz	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19193/ 1909.3MHz
1.4	QPSK	1	0	22.20	22.24	22.17	23.79	23.83	23.76
1.4	QPSK	1	3	22.34	22.61	22.38	23.93	24.2	23.97
1.4	QPSK	1	5	22.27	22.49	22.31	23.86	24.08	23.90
1.4	QPSK	3	0	22.41	22.29	21.95	24.00	23.88	23.54
1.4	QPSK	3	1	22.44	22.32	21.88	24.03	23.91	23.47
1.4	QPSK	3	3	22.49	22.37	21.89	24.08	23.96	23.48
1.4	QPSK	6	0	21.26	21.33	20.99	22.85	22.92	22.58
1.4	16QAM	1	0	21.63	21.08	21.09	23.22	22.67	22.68
1.4	16QAM	1	3	21.85	21.21	21.21	23.44	22.80	22.80
1.4	16QAM	1	5	21.79	21.08	21.15	23.38	22.67	22.74
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	22.56	22.76	22.07	24.15	24.35	23.66
3	QPSK	1	7	22.52	22.68	21.96	24.11	24.27	23.55
3	QPSK	1	14	22.46	22.74	21.90	24.05	24.33	23.49
3	QPSK	8	0	21.39	21.33	21.13	22.98	22.92	22.72
3	QPSK	8	3	21.40	21.35	21.10	22.99	22.94	22.69
3	QPSK	8	7	21.42	21.42	21.05	23.01	23.01	22.64
3	QPSK	15	0	21.35	21.44	21.06	22.94	23.03	22.65
3	16QAM	1	0	21.59	21.70	20.74	23.18	23.29	22.33
3	16QAM	1	7	21.62	21.90	20.58	23.21	23.49	22.17
3	16QAM	1	14	21.56	22.06	20.57	23.15	23.65	22.16
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	22.56	22.18	22.26	24.15	23.77	23.85
5	QPSK	1	12	22.50	22.36	22.14	24.09	23.95	23.73
5	QPSK	1	24	22.50	22.39	22.03	24.09	23.98	23.62
5	QPSK	12	0	21.52	21.27	21.02	23.11	22.86	22.61
5	QPSK	12	6	21.53	21.32	21.00	23.12	22.91	22.59
5	QPSK	12	13	21.57	21.39	20.96	23.16	22.98	22.55
5	QPSK	25	0	21.51	21.44	21.41	23.1	23.03	23.00
5	16QAM	1	0	20.66	21.60	21.39	22.25	23.19	22.98
5	16QAM	1	12	20.69	21.73	20.75	22.28	23.32	22.34
5	16QAM	1	24	20.90	21.81	20.51	22.49	23.40	22.10



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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	22.50	22.27	22.10	24.09	23.86	23.69
10	QPSK	1	24	22.56	22.36	22.14	24.15	23.95	23.73
10	QPSK	1	49	22.48	22.35	22.04	24.07	23.94	23.63
10	QPSK	25	0	21.41	21.06	21.01	23.00	22.65	22.60
10	QPSK	25	12	21.43	21.13	21.01	23.02	22.72	22.60
10	QPSK	25	25	21.47	21.21	21.01	23.06	22.80	22.60
10	QPSK	50	0	21.46	21.30	20.92	23.05	22.89	22.51
10	16QAM	1	0	21.64	21.80	20.94	23.23	23.39	22.53
10	16QAM	1	24	21.93	21.83	21.00	23.52	23.42	22.59
10	16QAM	1	49	21.60	22.16	20.75	23.19	23.75	22.34
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch18675/ 1857.5MHz	POWER (dBm) Mid Ch18900/ 1880MHz	POWER (dBm) High Ch19125/ 1902.5MHz	EIRP Low Ch18675/ 1857.5MHz	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19125/ 1902.5MHz
15	QPSK	1	0	21.95	22.28	21.27	23.54	23.87	22.86
15	QPSK	1	37	22.15	22.30	21.72	23.74	23.89	23.31
15	QPSK	1	74	21.19	22.15	21.90	22.78	23.74	23.49
15	QPSK	36	0	21.39	21.22	20.91	22.98	22.81	22.50
15	QPSK	36	19	21.42	21.21	20.93	23.01	22.8	22.52
15	QPSK	36	39	21.23	21.19	20.96	22.82	22.78	22.55
15	QPSK	75	0	21.28	21.26	20.86	22.87	22.85	22.45
15	16QAM	1	0	21.60	21.67	20.85	23.19	23.26	22.44
15	16QAM	1	37	21.56	21.67	20.90	23.15	23.26	22.49
15	16QAM	1	74	21.47	22.19	20.38	23.06	23.78	21.97
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch18700/ 1860MHz	POWER (dBm) Mid Ch18900/ 1880MHz	POWER (dBm) High Ch19100/ 1900MHz	EIRP Low Ch18700/ 1860MHz z	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19100/ 1900MHz
20	QPSK	1	0	22.07	22.07	21.96	23.66	23.66	23.55
20	QPSK	1	49	22.12	22.18	21.97	23.71	23.77	23.56
20	QPSK	1	99	22.09	22.03	21.88	23.68	23.62	23.47
20	QPSK	50	0	21.23	21.28	21.05	22.82	22.87	22.64
20	QPSK	50	25	21.20	21.18	21.05	22.79	22.77	22.64
20	QPSK	50	50	21.14	21.15	21.03	22.73	22.74	22.62
20	QPSK	100	0	21.13	21.15	21.06	22.72	22.74	22.65
20	16QAM	1	0	21.41	21.67	20.50	23.00	23.26	22.09
20	16QAM	1	49	22.05	21.67	20.82	23.64	23.26	22.41
20	16QAM	1	99	21.89	21.55	20.83	23.48	23.14	22.42



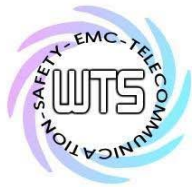
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Band 4

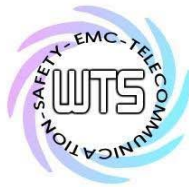
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch19957/ 1710.7MHz	POWER (dBm) Mid Ch20175/ 1732.5MHz	POWER (dBm) High Ch20393/ 1754.3MHz	EIRP Low Ch19957/ 1710.7MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20393/ 1754.3MHz
1.4	QPSK	1	0	22.59	22.27	22.02	22.09	21.77	21.52
1.4	QPSK	1	3	22.62	22.52	21.93	22.12	22.02	21.43
1.4	QPSK	1	5	22.56	22.44	21.95	22.06	21.94	21.45
1.4	QPSK	3	0	22.46	22.43	21.97	21.96	21.93	21.47
1.4	QPSK	3	1	22.39	22.45	21.92	21.89	21.95	21.42
1.4	QPSK	3	3	22.41	22.54	21.91	21.91	22.04	21.41
1.4	QPSK	6	0	21.50	21.46	21.03	21	20.96	20.53
1.4	16QAM	1	0	21.53	21.88	20.97	21.03	21.38	20.47
1.4	16QAM	1	3	21.67	22.03	20.81	21.17	21.53	20.31
1.4	16QAM	1	5	21.53	21.65	20.66	21.03	21.15	20.16
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	22.16	22.37	22.07	21.66	21.87	21.57
3	QPSK	1	7	22.41	22.17	22.35	21.91	21.67	21.85
3	QPSK	1	14	22.33	22.31	22.04	21.83	21.81	21.54
3	QPSK	8	0	21.33	21.27	21.24	20.83	20.77	20.74
3	QPSK	8	3	21.45	21.43	21.19	20.95	20.93	20.69
3	QPSK	8	7	21.42	21.24	21.19	20.92	20.74	20.69
3	QPSK	15	0	22.59	21.36	21.26	22.09	20.86	20.76
3	16QAM	1	0	21.60	22.19	20.61	21.1	21.69	20.11
3	16QAM	1	7	21.77	22.01	20.49	21.27	21.51	19.99
3	16QAM	1	14	21.57	22.05	20.76	21.07	21.55	20.26
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	22.29	21.79	22.07	21.79	21.29	21.57
5	QPSK	1	12	22.35	22.22	22.04	21.85	21.72	21.54
5	QPSK	1	24	22.40	22.23	21.92	21.9	21.73	21.42
5	QPSK	12	0	21.34	21.30	20.97	20.84	20.8	20.47
5	QPSK	12	6	21.38	21.27	20.95	20.88	20.77	20.45
5	QPSK	12	13	21.41	21.25	20.99	20.91	20.75	20.49
5	QPSK	25	0	21.36	21.34	21.05	20.86	20.84	20.55
5	16QAM	1	0	20.67	21.87	20.70	20.17	21.37	20.2
5	16QAM	1	12	20.58	21.61	20.09	20.08	21.11	19.59
5	16QAM	1	24	21.21	21.62	20.12	20.71	21.12	19.62



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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	22.15	22.26	21.99	21.65	21.76	21.49
10	QPSK	1	24	22.45	22.27	22.16	21.95	21.77	21.66
10	QPSK	1	49	22.59	22.22	22.06	22.09	21.72	21.56
10	QPSK	25	0	21.4	21.3	20.78	20.9	20.8	20.28
10	QPSK	25	12	21.42	21.5	20.83	20.92	21	20.33
10	QPSK	25	25	21.45	21.27	20.97	20.95	20.77	20.47
10	QPSK	50	0	21.47	21.23	20.91	20.97	20.73	20.41
10	16QAM	1	0	21.69	22.38	20.61	21.19	21.88	20.11
10	16QAM	1	24	21.88	22.36	20.73	21.38	21.86	20.23
10	16QAM	1	49	22.12	21.66	20.62	21.62	21.16	20.12
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20025/ 1717.5MHz	POWER (dBm) Mid Ch20175/ 1732.5MHz	POWER (dBm) High Ch20325/ 1747.5MHz	EIRP Low Ch20025/ 1717.5MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20325/ 1747.5MHz
15	QPSK	1	0	22.42	22.36	21.83	21.92	21.86	21.33
15	QPSK	1	37	22.41	22.19	21.90	21.91	21.69	21.4
15	QPSK	1	74	22.92	22.17	21.79	22.42	21.67	21.29
15	QPSK	36	0	21.46	21.18	20.94	20.96	20.68	20.44
15	QPSK	36	19	21.41	21.20	20.86	20.91	20.7	20.36
15	QPSK	36	39	21.45	21.21	20.87	20.95	20.71	20.37
15	QPSK	75	0	21.42	21.20	20.62	20.92	20.7	20.12
15	16QAM	1	0	20.75	22.45	20.92	20.25	21.95	20.42
15	16QAM	1	37	21.33	21.91	20.69	20.83	21.41	20.19
15	16QAM	1	74	21.80	21.76	20.23	21.3	21.26	19.73
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20050/ 1720MHz	POWER (dBm) Mid Ch20175/ 1732.5MHz	POWER (dBm) High Ch20300/ 1745MHz	EIRP Low Ch20050/ 1720MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20300/ 1745MHz
20	QPSK	1	0	22.15	22.41	22.23	21.65	21.91	21.73
20	QPSK	1	49	22.59	22.34	22.16	22.09	21.84	21.66
20	QPSK	1	99	22.11	22.18	22.09	21.61	21.68	21.59
20	QPSK	50	0	21.32	21.35	21.11	20.82	20.85	20.61
20	QPSK	50	25	21.25	21.32	21.94	20.75	20.82	21.44
20	QPSK	50	50	21.29	21.30	20.87	20.79	20.8	20.37
20	QPSK	100	0	21.30	21.23	20.89	20.8	20.73	20.39
20	16QAM	1	0	21.94	22.04	21.06	21.44	21.54	20.56
20	16QAM	1	49	22.45	21.87	20.94	21.95	21.37	20.44
20	16QAM	1	99	21.95	21.57	21.00	21.45	21.07	20.5



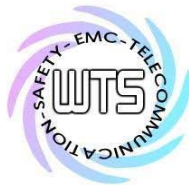
Worldwide Testing Services(Taiwan) Co., Ltd.

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Band 5

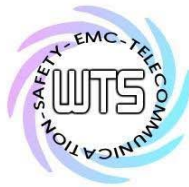
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20407/ 824.7MHz	POWER (dBm) Mid Ch20525/ 836.5MHz	POWER (dBm) High Ch20643/ 848.3MHz	ERP Low Ch20407/ 824.7MHz	ERP Mid Ch20525/ 836.5MHz	ERP High Ch20643/ 848.3MHz
1.4	QPSK	1	0	23.35	22.83	22.69	25.55	25.03	24.89
1.4	QPSK	1	3	23.37	23.08	23.03	25.57	25.28	25.23
1.4	QPSK	1	5	23.19	22.89	22.77	25.39	25.09	24.97
1.4	QPSK	3	0	23.16	22.98	22.75	25.36	25.18	24.95
1.4	QPSK	3	1	23.08	22.96	22.91	25.28	25.16	25.11
1.4	QPSK	3	3	23.06	23.05	23.21	25.26	25.25	25.41
1.4	QPSK	6	0	22.27	22.07	21.85	24.47	24.27	24.05
1.4	16QAM	1	0	21.88	22.44	21.82	24.08	24.64	24.02
1.4	16QAM	1	3	21.95	22.70	22.27	24.15	24.9	24.47
1.4	16QAM	1	5	21.69	22.53	22.13	23.89	24.73	24.33
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20415/ 825.5MHz	POWER (dBm) Mid Ch20525/ 836.5MHz	POWER (dBm) High Ch20635/ 847.5MHz	ERP Low Ch20415/ 825.5MHz	ERP Mid Ch20525/ 836.5MHz	ERP High Ch20635/ 847.5MHz
3	QPSK	1	0	22.91	23.21	22.75	25.11	25.41	24.95
3	QPSK	1	7	22.89	22.93	23.04	25.09	25.13	25.24
3	QPSK	1	14	23.06	22.95	23.12	25.26	25.15	25.32
3	QPSK	8	0	22.07	22.11	21.82	24.27	24.31	24.02
3	QPSK	8	3	22.07	22.09	21.86	24.27	24.29	24.06
3	QPSK	8	7	22.06	22.12	21.93	24.26	24.32	24.13
3	QPSK	15	0	22.14	22.09	21.79	24.34	24.29	23.99
3	16QAM	1	0	22.28	22.71	21.45	24.48	24.91	23.65
3	16QAM	1	7	22.07	22.66	21.80	24.27	24.86	24
3	16QAM	1	14	22.36	22.69	21.85	24.56	24.89	24.05
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20425/ 826.5MHz	POWER (dBm) Mid Ch20525/ 836.5MHz	POWER (dBm) High Ch20625/ 846.5MHz	ERP Low Ch20425/ 826.5MHz	ERP Mid Ch20525/ 836.5MHz	ERP High Ch20625/ 846.5MHz
5	QPSK	1	0	22.94	22.76	21.51	25.14	24.96	23.71
5	QPSK	1	12	23.11	22.85	21.73	25.31	25.05	23.93
5	QPSK	1	24	22.96	22.66	21.57	25.16	24.86	23.77
5	QPSK	12	0	22.02	22.02	21.19	24.22	24.22	23.39
5	QPSK	12	6	22.07	22.00	21.21	24.27	24.20	23.41
5	QPSK	12	13	22.09	21.96	21.21	24.29	24.16	23.41
5	QPSK	25	0	22.03	22.06	21.14	24.23	24.26	23.34
5	16QAM	1	0	21.70	22.26	21.28	23.9	24.46	23.48
5	16QAM	1	12	21.54	22.25	21.47	23.74	24.45	23.67
5	16QAM	1	24	21.62	22.05	21.64	23.82	24.25	23.84



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BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20450/ 829MHz	POWER (dBm) Mid Ch20525/ 836.5MHz	POWER (dBm) High Ch20600/ 844MHz	ERP Low Ch20450/ 829MHz	ERP Mid Ch20525/ 836.5MHz	ERP High Ch20600/ 844MHz
10	QPSK	1	0	23.13	22.63	22.77	25.33	24.83	24.97
10	QPSK	1	24	23.05	22.91	23.06	25.25	25.11	25.26
10	QPSK	1	49	23.08	22.93	23.09	25.28	25.13	25.29
10	QPSK	25	0	22.04	21.97	21.74	24.24	24.17	23.94
10	QPSK	25	12	21.99	21.90	21.31	24.19	24.10	23.51
10	QPSK	25	25	21.95	21.94	21.91	24.15	24.14	24.11
10	QPSK	50	0	22.15	22.09	21.88	24.35	24.29	24.08
10	16QAM	1	0	21.92	22.34	21.43	24.12	24.54	23.63
10	16QAM	1	24	22.13	22.60	21.58	24.33	24.80	23.78
10	16QAM	1	49	22.11	22.23	21.59	24.31	24.43	23.79



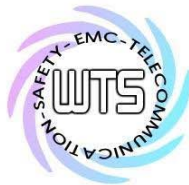
Worldwide Testing Services(Taiwan) Co., Ltd.

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FCC ID: GX9HSGWQT

Band 7

BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20775/ 2502.5MHz	POWER (dBm) Mid Ch21100/ 2535MHz	POWER (dBm) High Ch21425/ 2567.5MHz	EIRP Low Ch20775/ 2502.5MHz	EIRP Mid Ch21100/ 2535MHz	EIRP High Ch21425/ 2567.5MHz
5	QPSK	1	0	22.01	22.46	21.52	21.54	21.99	21.05
5	QPSK	1	12	22.00	22.45	21.55	21.53	21.98	21.08
5	QPSK	1	24	21.95	22.32	21.59	21.48	21.85	21.12
5	QPSK	12	0	21.07	21.56	20.57	20.6	21.09	20.1
5	QPSK	12	6	20.44	21.53	20.55	19.97	21.06	20.08
5	QPSK	12	13	21.02	21.51	20.59	20.55	21.04	20.12
5	QPSK	25	0	21.06	21.55	20.53	20.59	21.08	20.06
5	16QAM	1	0	20.53	21.60	20.42	20.06	21.13	19.95
5	16QAM	1	12	20.40	21.35	20.15	19.93	20.88	19.68
5	16QAM	1	24	20.36	21.64	20.13	19.89	21.17	19.66
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20800/ 2505MHz	POWER (dBm) Mid Ch21100/ 2535MHz	POWER (dBm) High Ch21400/ 2565MHz	EIRP Low Ch20800/ 2505MHz	EIRP Mid Ch21100/ 2535MHz	EIRP High Ch21400/ 2565MHz
10	QPSK	1	0	21.86	22.43	21.77	21.39	21.96	21.3
10	QPSK	1	24	21.92	22.31	21.81	21.45	21.84	21.34
10	QPSK	1	49	21.76	22.22	21.46	21.29	21.75	20.99
10	QPSK	25	0	20.84	21.32	20.44	20.37	20.85	19.97
10	QPSK	25	12	20.83	21.33	20.49	20.36	20.86	20.02
10	QPSK	25	25	20.83	21.33	20.48	20.36	20.86	20.01
10	QPSK	50	0	20.08	21.14	20.59	19.61	20.67	20.12
10	16QAM	1	0	21.15	20.07	20.62	20.68	19.6	20.15
10	16QAM	1	24	21.13	20.25	21.06	20.66	19.78	20.59
10	16QAM	1	49	21.01	20.11	20.21	20.54	19.64	19.74
BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20825/ 2507.5MHz	POWER (dBm) Mid Ch21100/ 2535MHz	POWER (dBm) High Ch21375/ 2562.5MHz	EIRP Low Ch20825/ 2507.5MHz	EIRP Mid Ch21100/ 2535MHz	EIRP High Ch21375/ 2562.5MHz
15	QPSK	1	0	21.65	21.95	21.03	21.18	21.48	20.56
15	QPSK	1	37	21.79	21.97	21.20	21.32	21.5	20.73
15	QPSK	1	74	21.82	21.89	21.21	21.35	21.42	20.74
15	QPSK	36	0	20.85	21.10	20.31	20.38	20.63	19.84
15	QPSK	36	19	20.83	21.05	20.33	20.36	20.58	19.86
15	QPSK	36	39	20.81	21.02	20.33	20.34	20.55	19.86
15	QPSK	75	0	20.65	21.10	20.40	20.18	20.63	19.93
15	16QAM	1	0	21.68	21.62	20.16	21.21	21.15	19.69
15	16QAM	1	37	21.10	21.32	20.13	20.63	20.85	19.66
15	16QAM	1	74	21.01	20.73	20.12	20.54	20.26	19.65



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BW(MHz)	Modulation	RB Size	RB offset	POWER (dBm) Low Ch20850/ 2510MHz	POWER(dBm)) Mid Ch21100/ 2535MHz	POWER(dBm)) High Ch21350/ 2560MHz	EIRP Low Ch20850/ 2510MHz	EIRP Mid Ch21100/ 2535MHz	EIRP High Ch21350/ 2560MHz
20	QPSK	1	0	21.53	22.17	21.06	21.06	21.7	20.59
20	QPSK	1	49	21.44	22.08	21.30	20.97	21.61	20.83
20	QPSK	1	99	21.69	21.67	21.11	21.22	21.2	20.64
20	QPSK	50	0	20.73	21.04	20.28	20.26	20.57	19.81
20	QPSK	50	25	20.67	21.00	20.24	20.2	20.53	19.77
20	QPSK	50	50	20.63	21.00	20.22	20.16	20.53	19.75
20	QPSK	100	0	20.73	20.92	20.23	20.26	20.45	19.76
20	16QAM	1	0	21.17	20.92	20.87	20.7	20.45	20.4
20	16QAM	1	49	21.20	20.98	21.32	20.73	20.51	20.85
20	16QAM	1	99	21.36	20.66	20.90	20.89	20.19	20.43

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

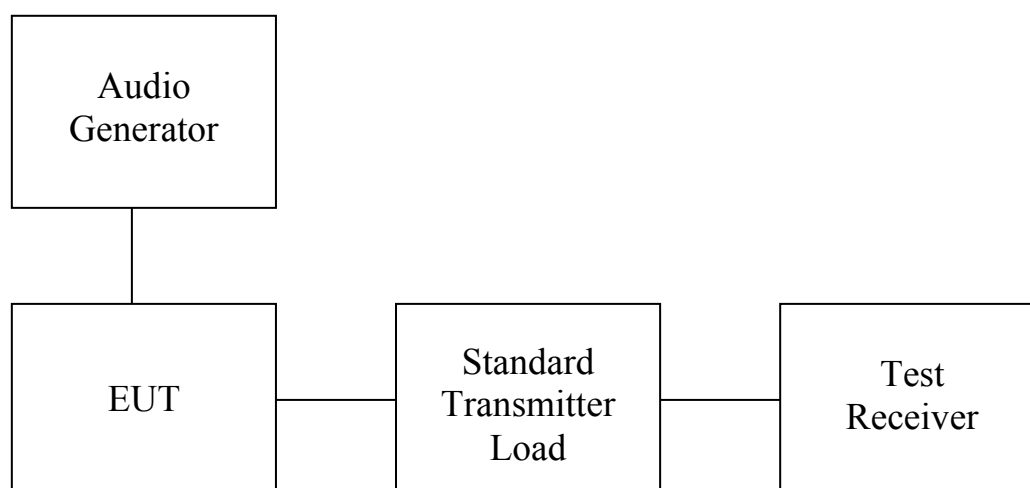
Report Number: W6M22112-21430-P-247

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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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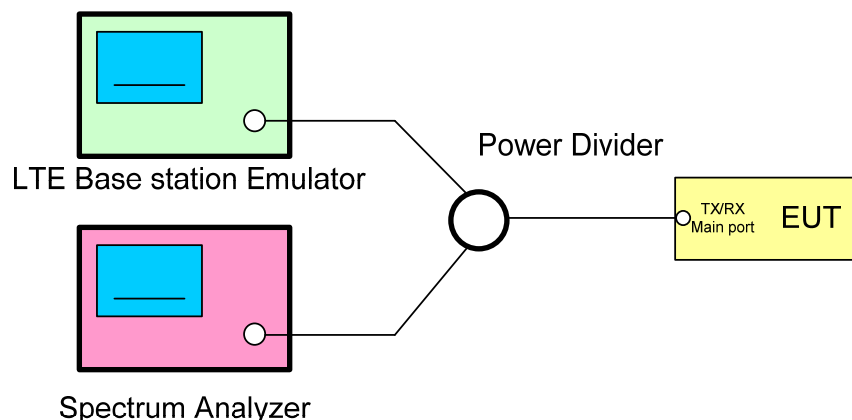
5. Peak-to-Average Ratio

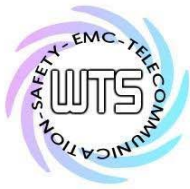
The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent 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.
- 9.

5.2 Test Set up





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5.3 Test Results

Test date: December 25, 2021- December 27, 2021

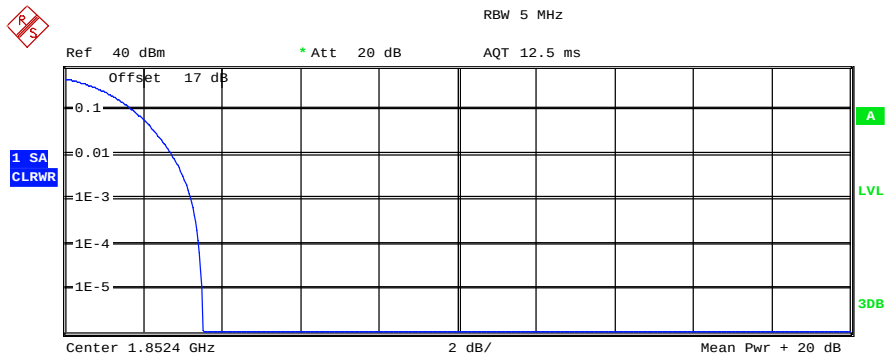
Temperature: 21.8 °C

Humidity: 56.0 %

Tester: Spencer

WCDMA

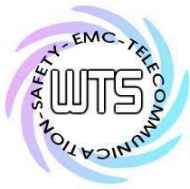
Band 2



Complementary Cumulative Distribution Function (100000 samples)

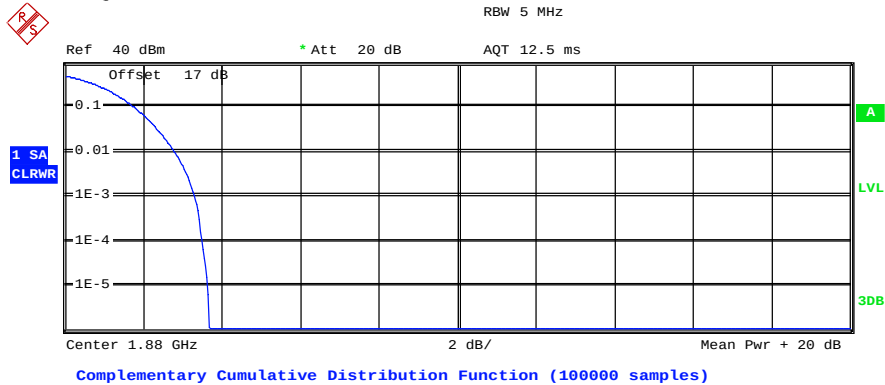
Trace 1	
Mean	21.26 dBm
Peak	24.77 dBm
Crest	3.51 dB
10 %	1.73 dB
1 %	2.72 dB
.1 %	3.21 dB
.01 %	3.40 dB

Date: 25.DEC.2021 15:49:02



Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

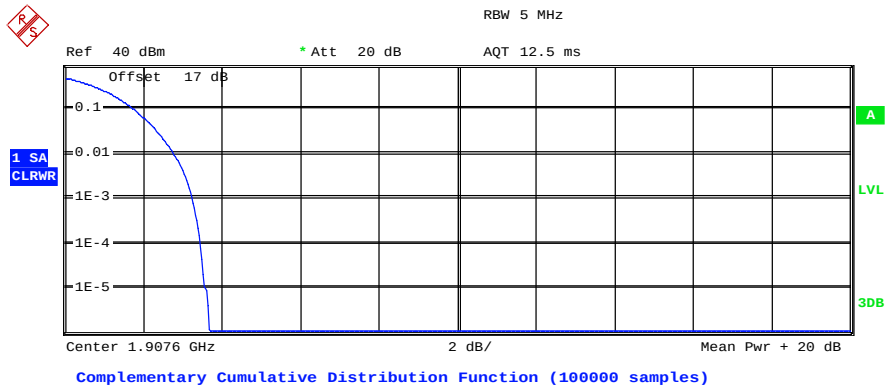


Trace 1

Mean	21.31 dBm
Peak	24.98 dBm
Crest	3.67 dB

10 %	1.76 dB
1 %	2.79 dB
.1 %	3.30 dB
.01 %	3.49 dB

Date: 25.DEC.2021 15:49:53

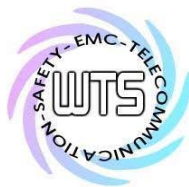


Trace 1

Mean	21.17 dBm
Peak	24.84 dBm
Crest	3.67 dB

10 %	1.76 dB
1 %	2.76 dB
.1 %	3.24 dB
.01 %	3.46 dB

Date: 25.DEC.2021 15:49:37

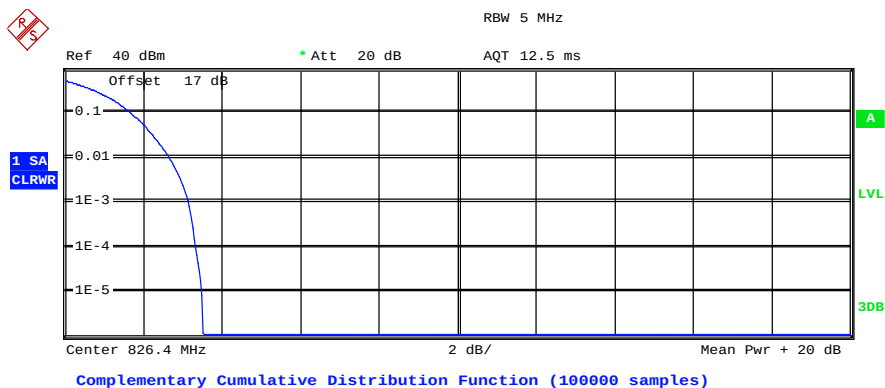


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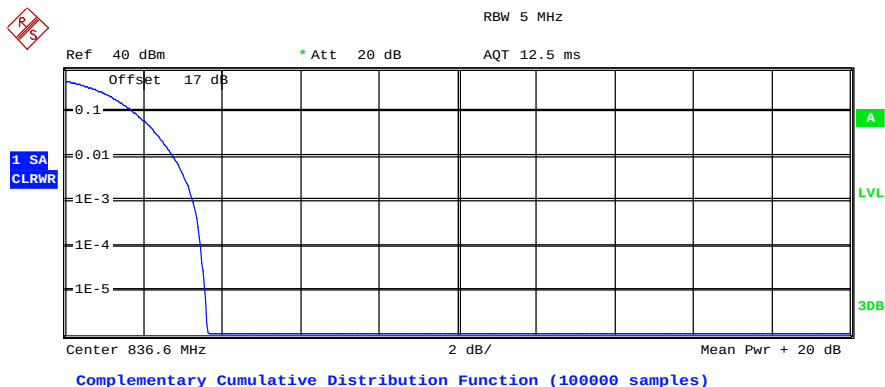
Band 5



Trace 1
Mean 21.61 dBm
Peak 25.12 dBm
Crest 3.52 dB

10 % 1.67 dB
1 % 2.66 dB
.1 % 3.14 dB
.01 % 3.33 dB

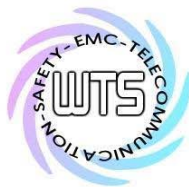
Date: 25.DEC.2021 15:47:24



Trace 1
Mean 21.71 dBm
Peak 25.33 dBm
Crest 3.63 dB

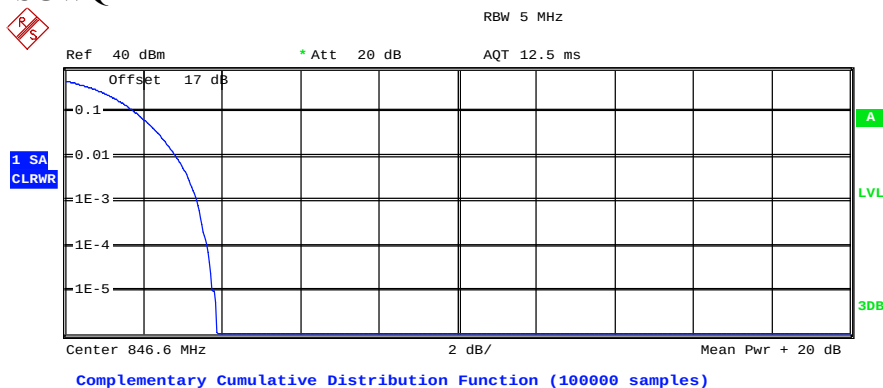
10 % 1.76 dB
1 % 2.76 dB
.1 % 3.27 dB
.01 % 3.46 dB

Date: 25.DEC.2021 15:47:00



Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



Complementary Cumulative Distribution Function (100000 samples)

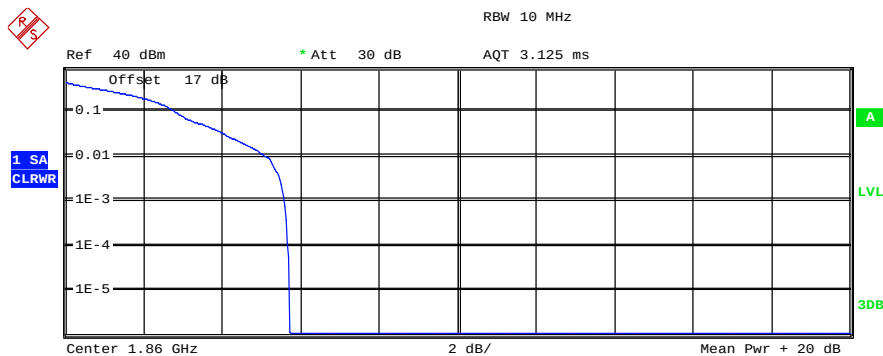
Trace 1

Mean	21.39 dBm
Peak	25.26 dBm
Crest	3.88 dB

10 %	1.79 dB
1 %	2.82 dB
.1 %	3.37 dB
.01 %	3.62 dB

Date: 25.DEC.2021 15:46:27

LTE
Band 2
16QAM



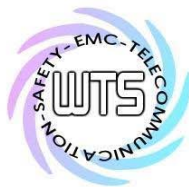
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	19.45 dBm
Peak	25.18 dBm
Crest	5.73 dB

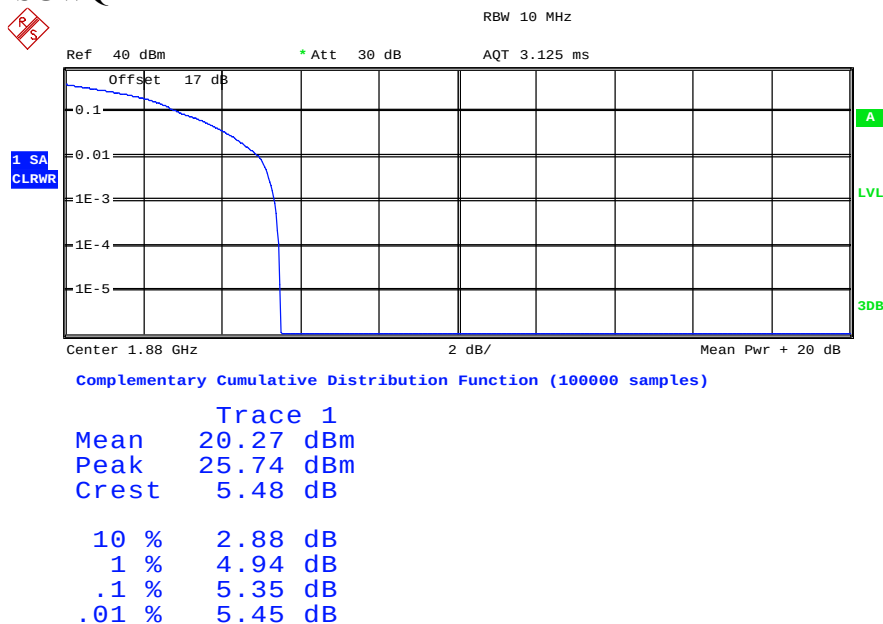
10 %	2.82 dB
1 %	5.10 dB
.1 %	5.58 dB
.01 %	5.67 dB

Date: 27.DEC.2021 13:55:51

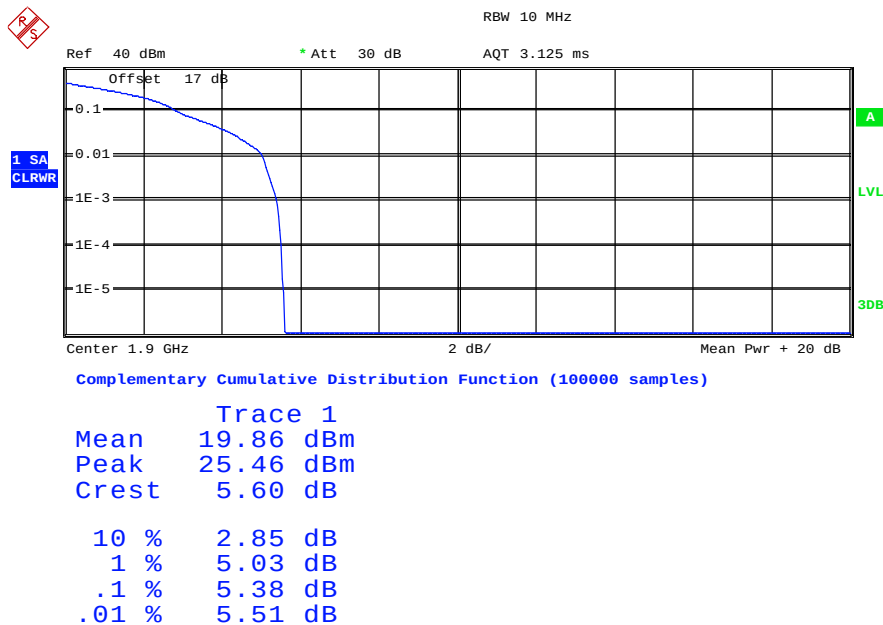


Report Number: W6M22112-21430-P-247

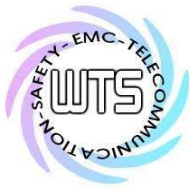
FCC ID: GX9HSGWQT



Date: 27.DEC.2021 13:55:31



Date: 27.DEC.2021 13:55:11



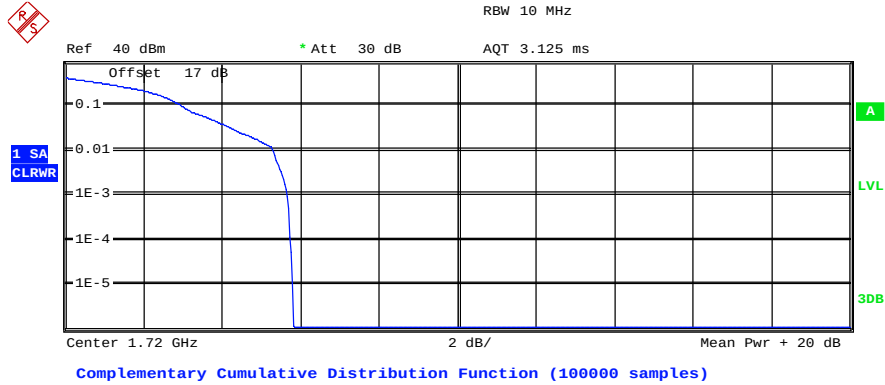
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FCC ID: GX9HSGWQT

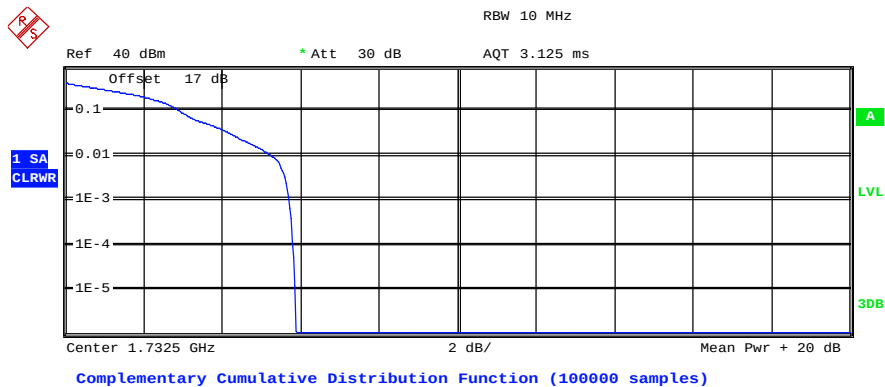
Band 4

16QAM



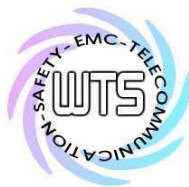
Trace 1	
Mean	21.00 dBm
Peak	26.80 dBm
Crest	5.80 dB
10 %	2.98 dB
1 %	5.29 dB
.1 %	5.67 dB
.01 %	5.74 dB

Date: 27.DEC.2021 13:53:50



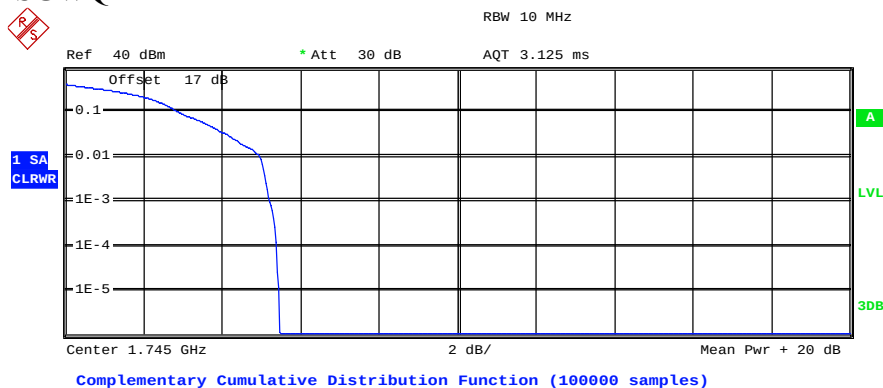
Trace 1	
Mean	19.67 dBm
Peak	25.53 dBm
Crest	5.86 dB
10 %	2.92 dB
1 %	5.26 dB
.1 %	5.71 dB
.01 %	5.80 dB

Date: 27.DEC.2021 13:54:13



Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



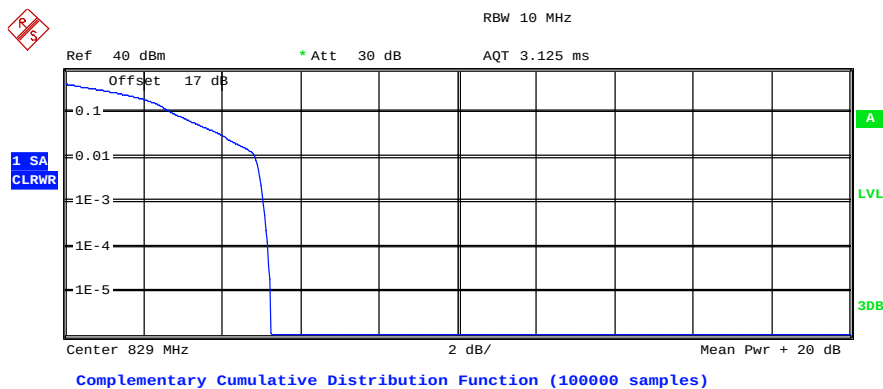
Trace 1

Mean	20.56 dBm
Peak	26.03 dBm
Crest	5.47 dB

10 %	2.88 dB
1 %	4.97 dB
.1 %	5.22 dB
.01 %	5.38 dB

Date: 27.DEC.2021 13:54:37

Band 5
16QAM

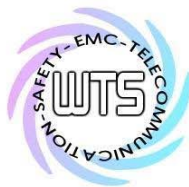


Trace 1

Mean	18.38 dBm
Peak	23.63 dBm
Crest	5.25 dB

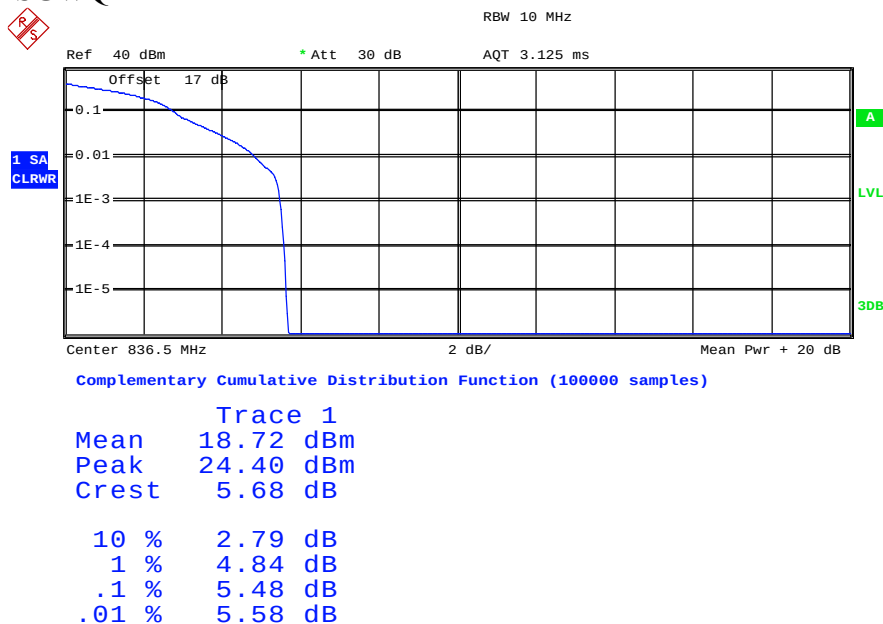
10 %	2.72 dB
1 %	4.84 dB
.1 %	5.06 dB
.01 %	5.16 dB

Date: 27.DEC.2021 13:59:04

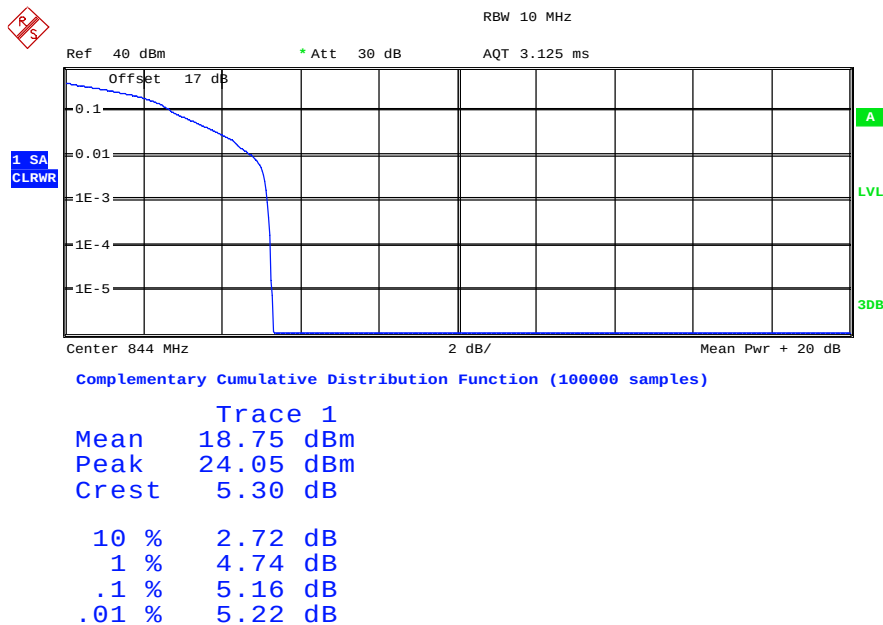


Report Number: W6M22112-21430-P-247

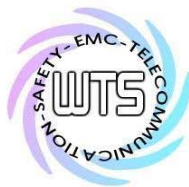
FCC ID: GX9HSGWQT



Date: 27.DEC.2021 13:59:26



Date: 27.DEC.2021 13:59:53

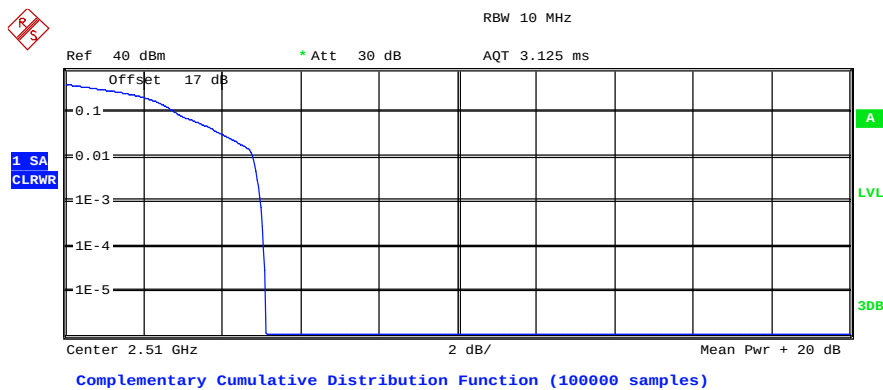


Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

Band 7

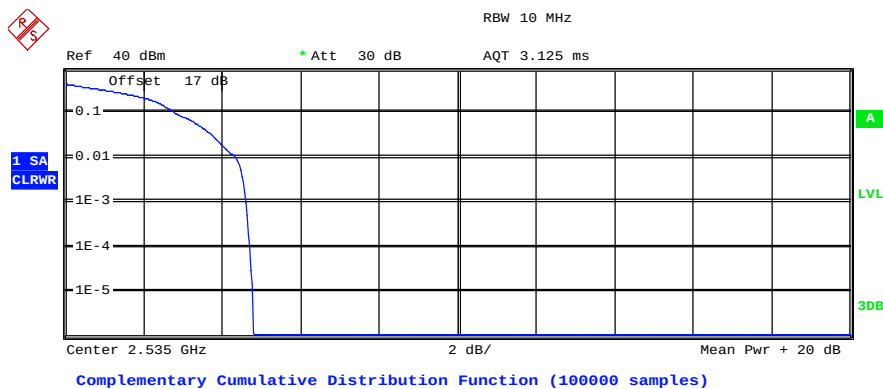
16QAM



Trace 1

Mean	17.11 dBm
Peak	22.22 dBm
Crest	5.11 dB
10 %	2.82 dB
1 %	4.78 dB
.1 %	4.97 dB
.01 %	5.06 dB

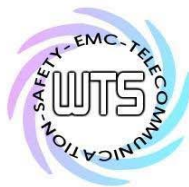
Date: 27.DEC.2021 13:57:02



Trace 1

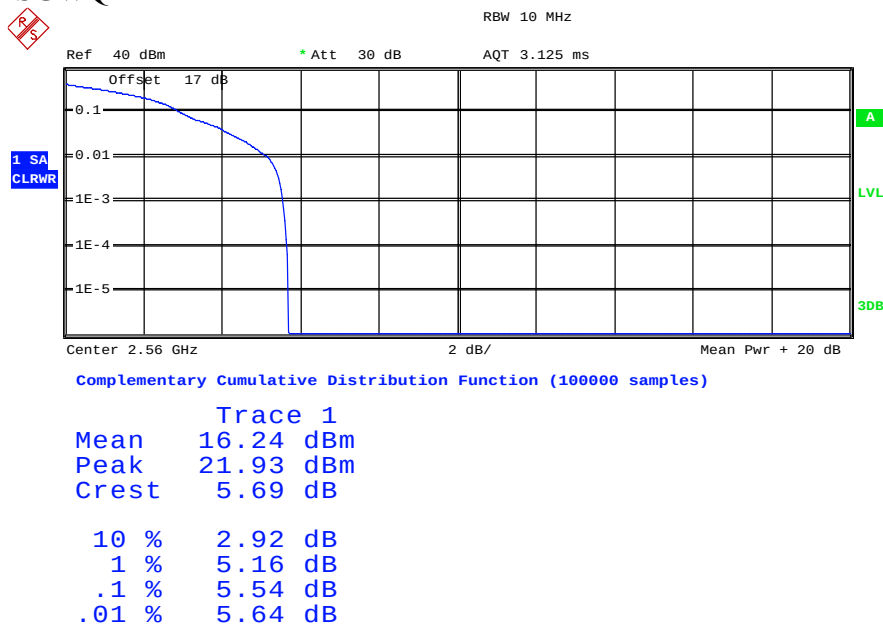
Mean	17.20 dBm
Peak	22.00 dBm
Crest	4.80 dB
10 %	2.82 dB
1 %	4.33 dB
.1 %	4.62 dB
.01 %	4.71 dB

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FCC ID: GX9HSGWQT



Date: 27.DEC.2021 13:57:45

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 004, ETSTW-GSM 023

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.

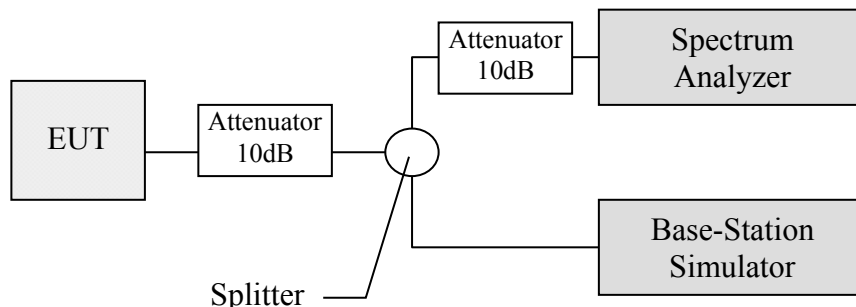
The 26 dB occupied bandwidth is the width of a frequency band such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal 26 dB.

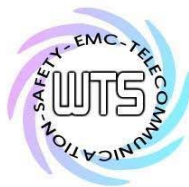
The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) 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.





Report Number: W6M22112-21430-P-247
FCC ID: GX9HSGWQT

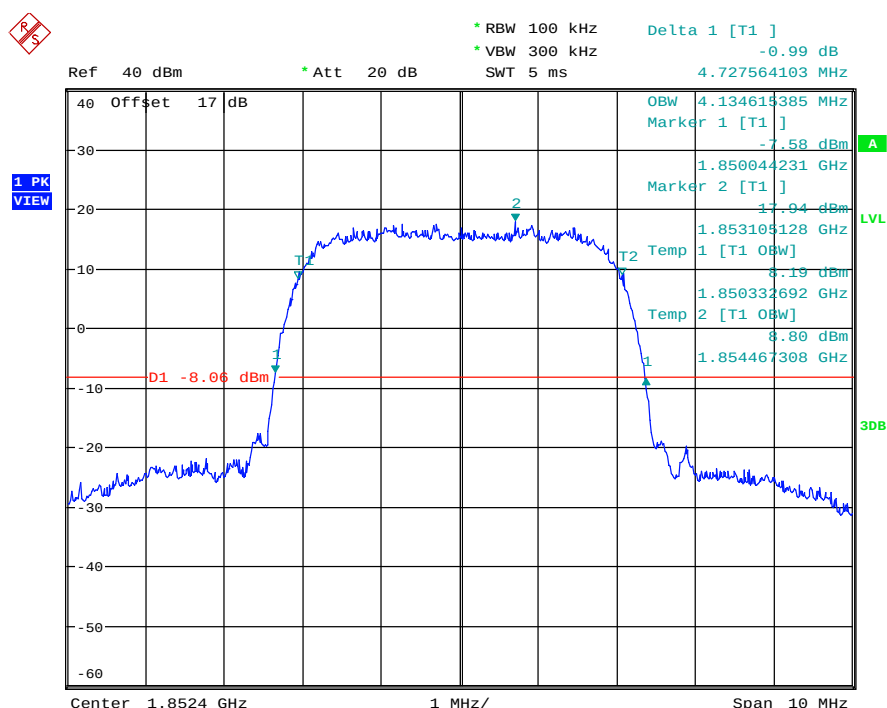
6.2 Test Results

Test date: December 25, 2021-December 27, 2021
Temperature: 21.8 °C
Humidity: 56.0 %
Tester: Spencer

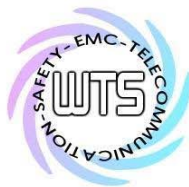
Occupied Channel Bandwidth

WCDMA

Band 2



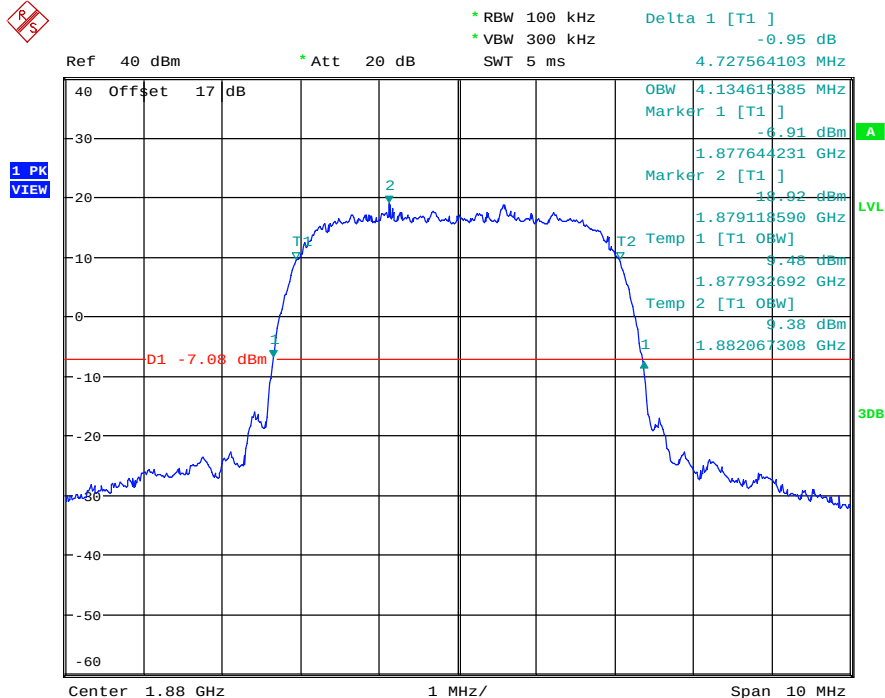
Date: 25.DEC.2021 14:58:38



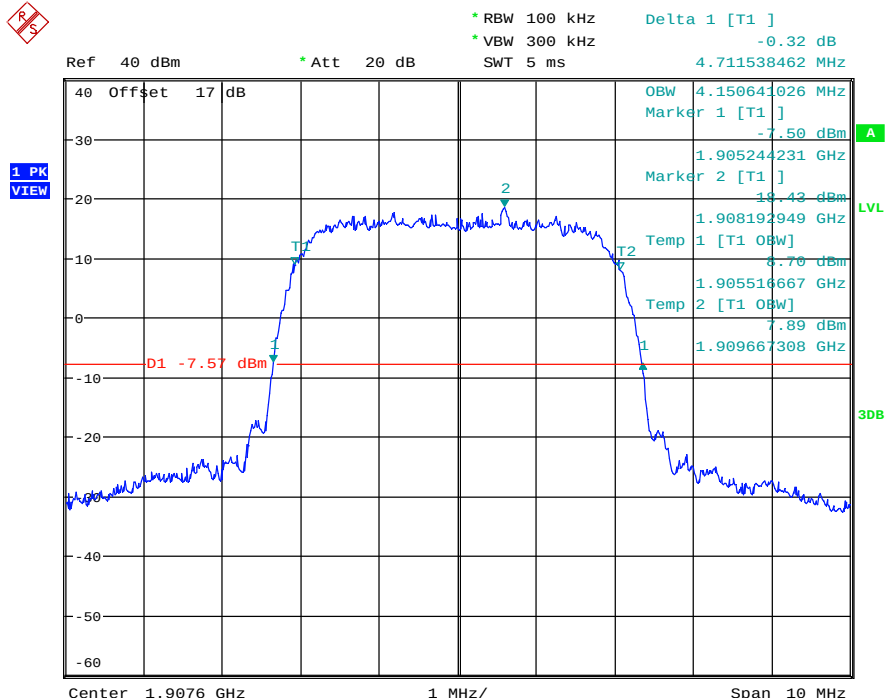
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22112-21430-P-247

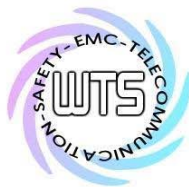
FCC ID: GX9HSGWQT



Date: 25.DEC.2021 14:57:08



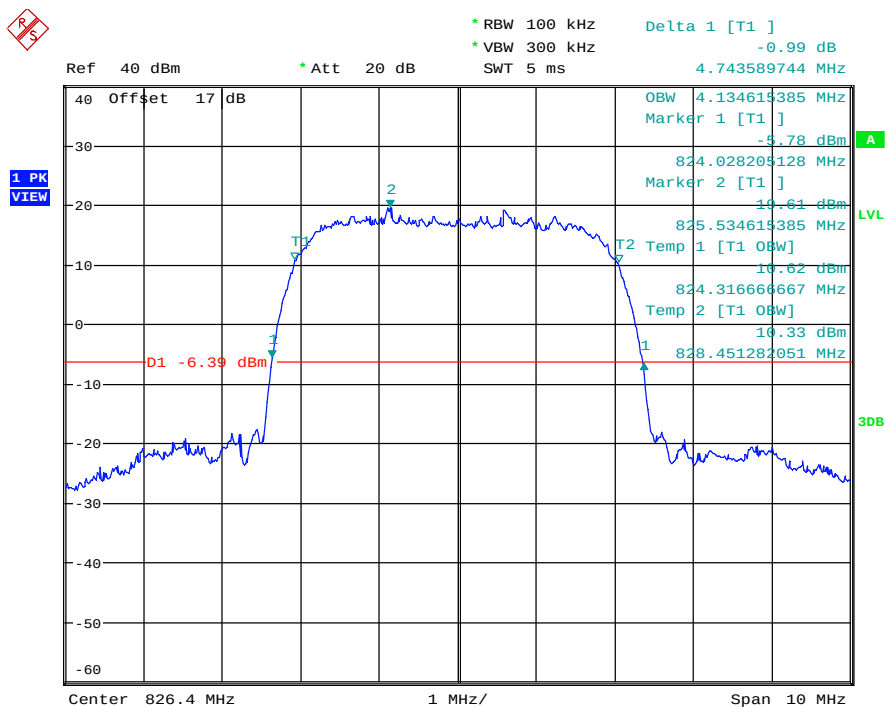
Date: 25.DEC.2021 14:55:09



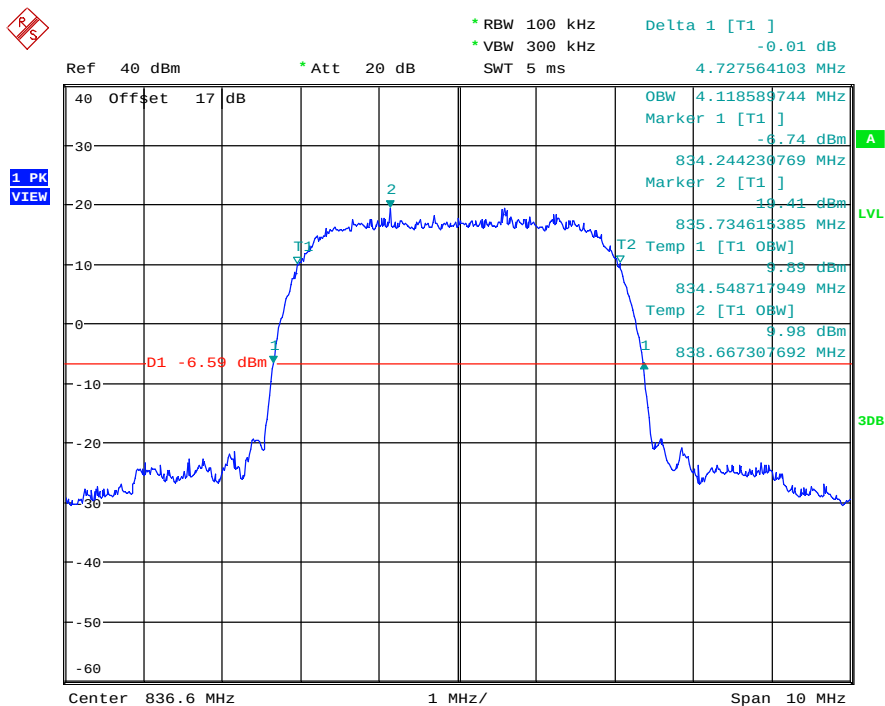
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

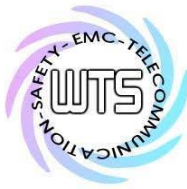
Band 5



Date: 25.DEC.2021 15:01:53

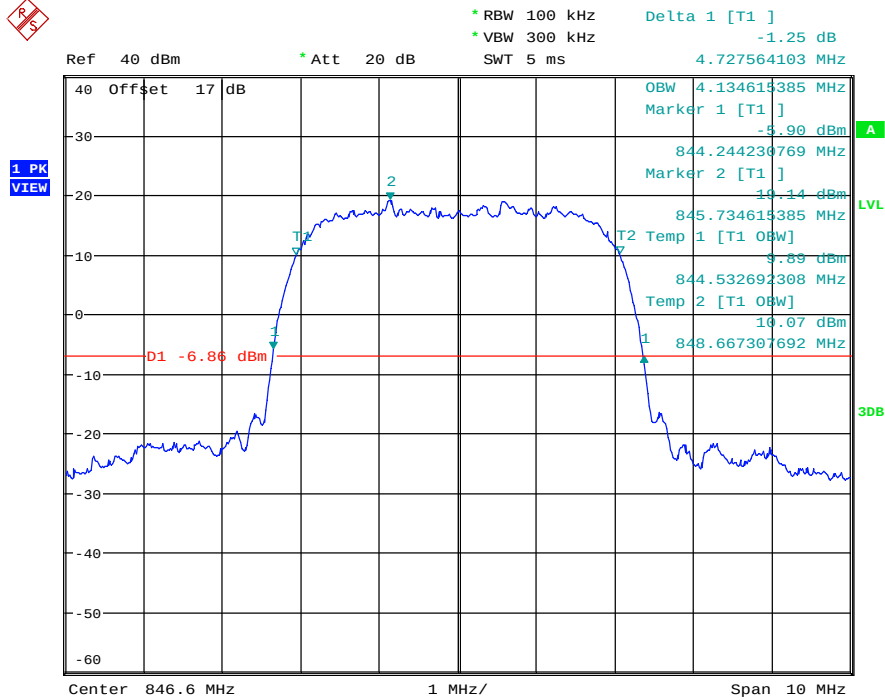


Date: 25.DEC.2021 15:03:49

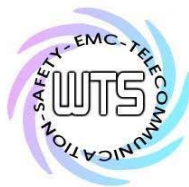


Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



Date: 25.DEC.2021 15:09:09



Report Number: W6M22112-21430-P-247

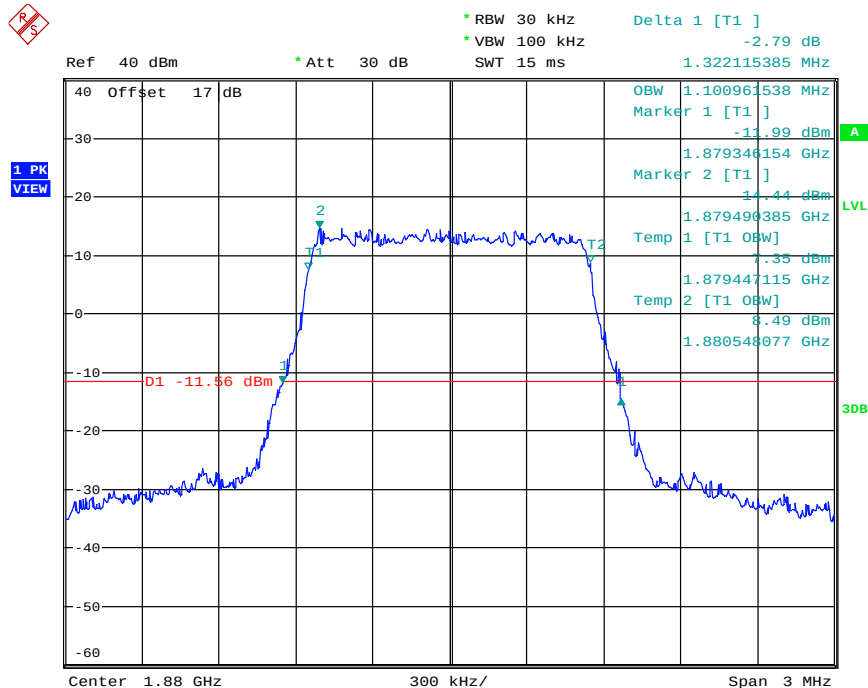
FCC ID: GX9HSGWQT

26dB Channel Bandwidth

LTE

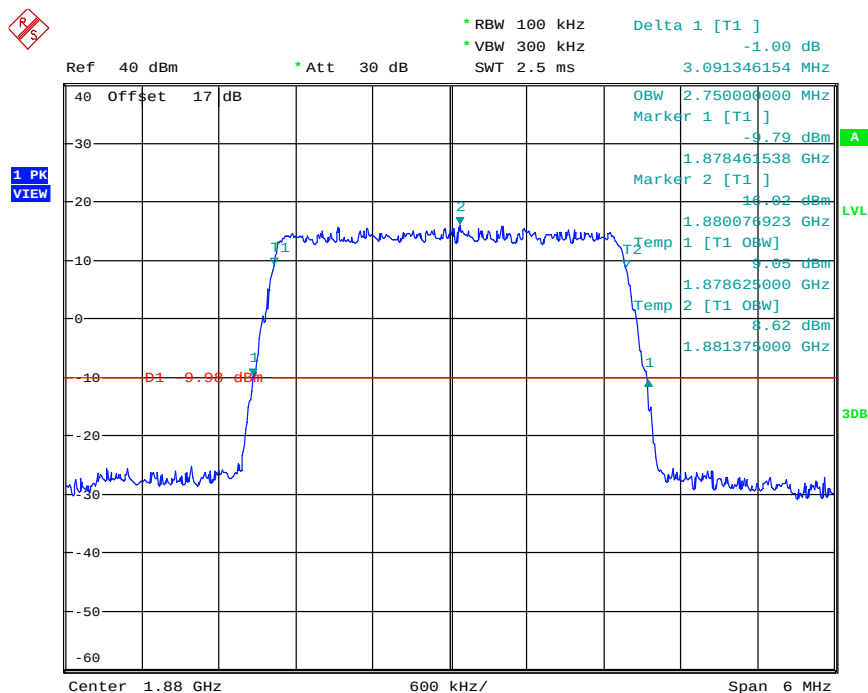
Band 2

1.4 MHz QPSK

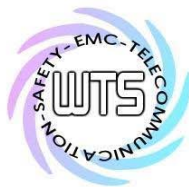


Date: 27.DEC.2021 10:30:05

3 MHz QPSK



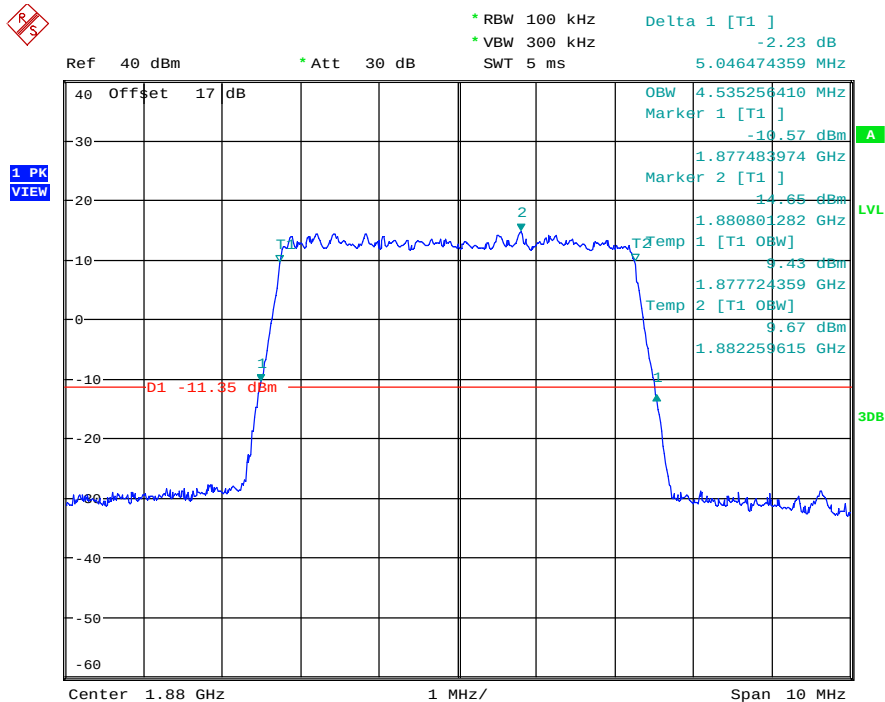
Date: 27.DEC.2021 10:31:49



Report Number: W6M22112-21430-P-247

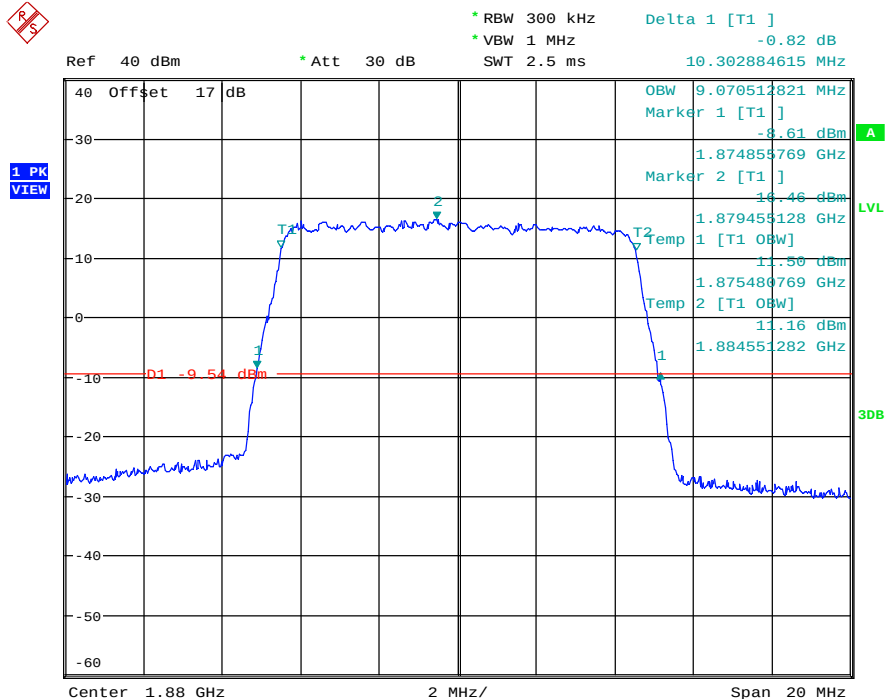
FCC ID: GX9HSGWQT

5 MHz QPSK

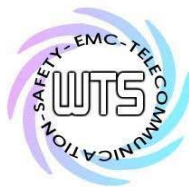


Date: 27.DEC.2021 10:33:36

10 MHz QPSK



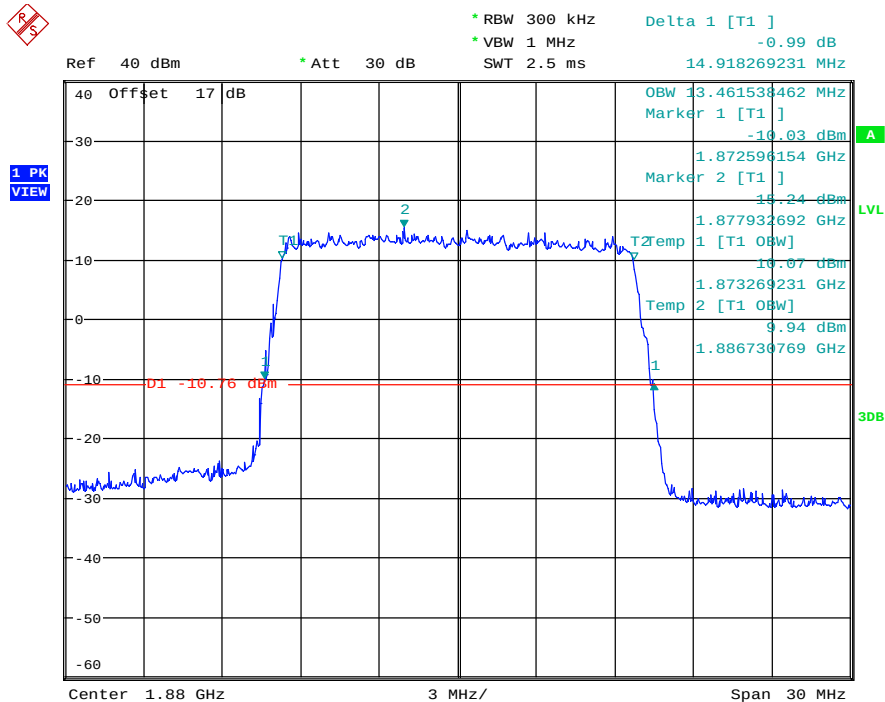
Date: 27.DEC.2021 10:35:55



Report Number: W6M22112-21430-P-247

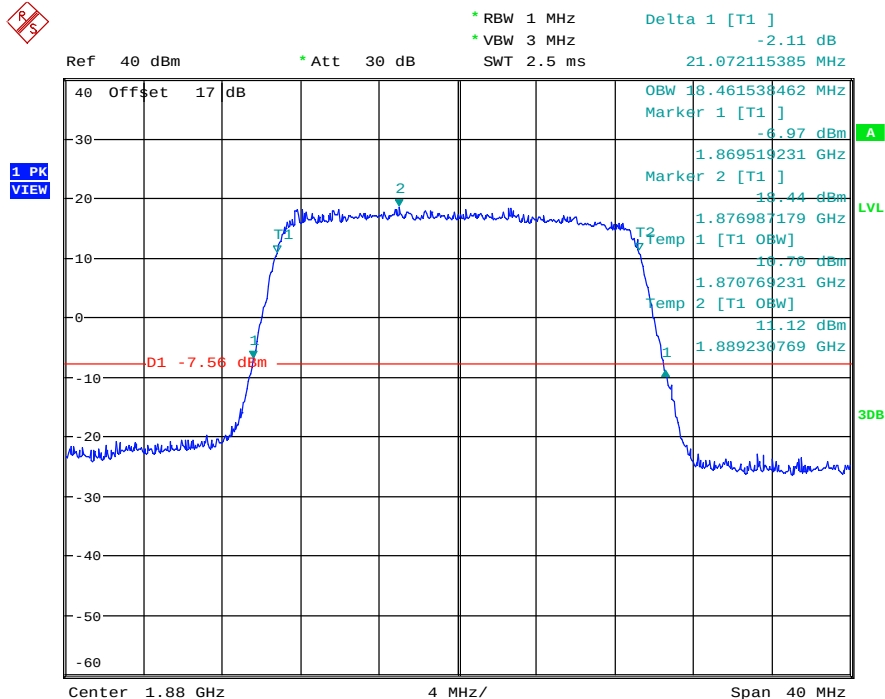
FCC ID: GX9HSGWQT

15 MHz QPSK

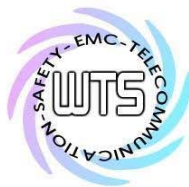


Date: 27.DEC.2021 10:36:57

20 MHz QPSK



Date: 27.DEC.2021 10:39:39

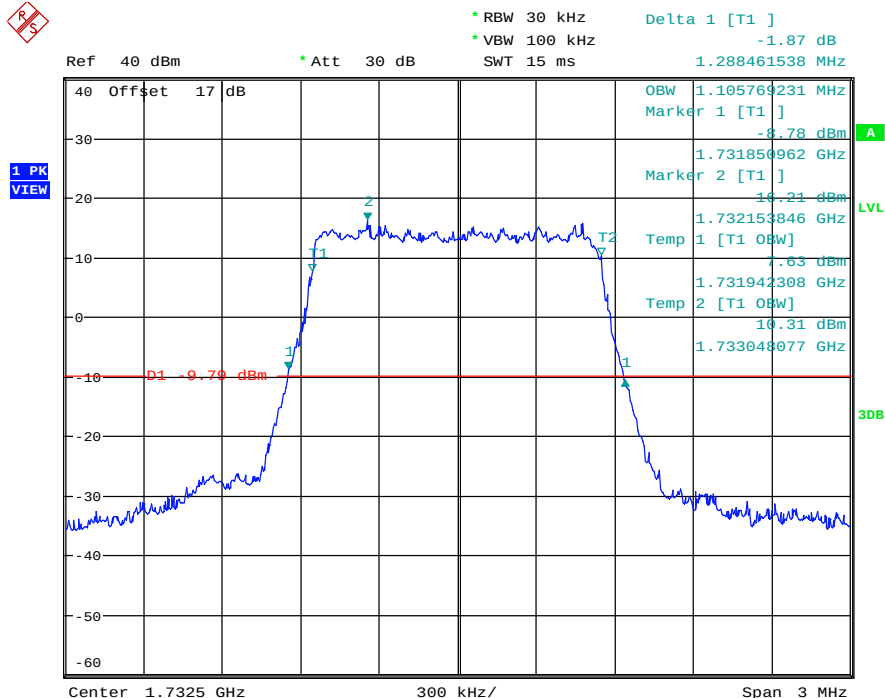


Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

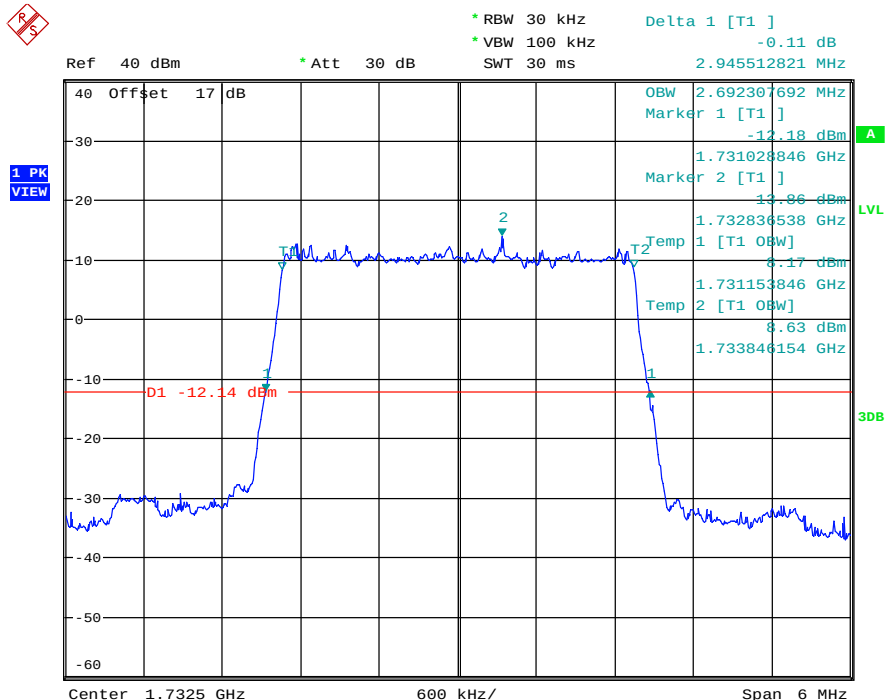
Band 4

1.4 MHz QPSK

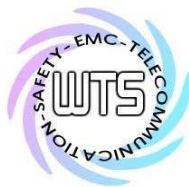


Date: 27.DEC.2021 09:44:18

3 MHz QPSK



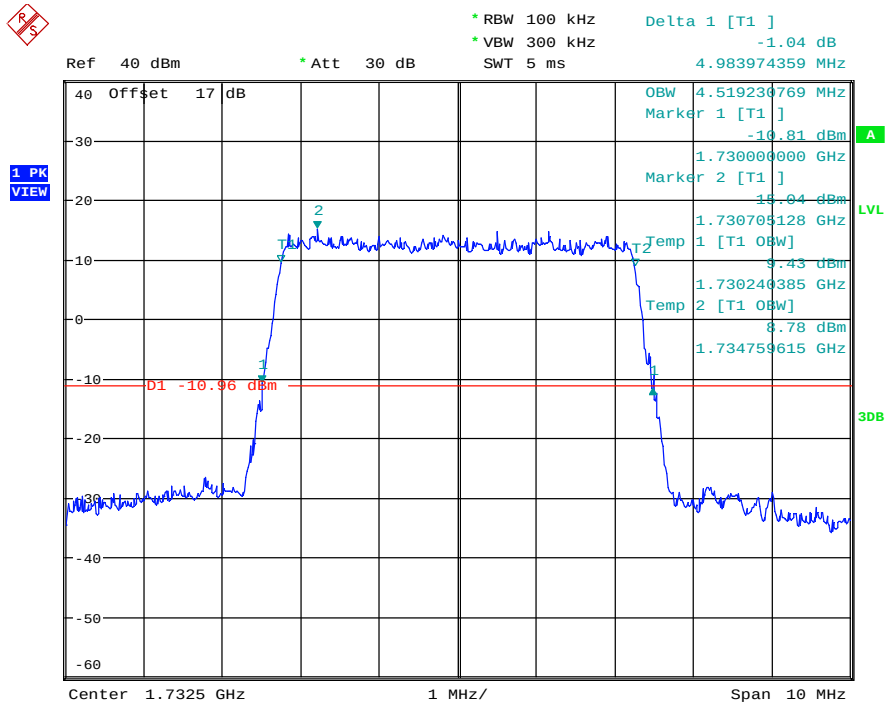
Date: 27.DEC.2021 10:24:50



Report Number: W6M22112-21430-P-247

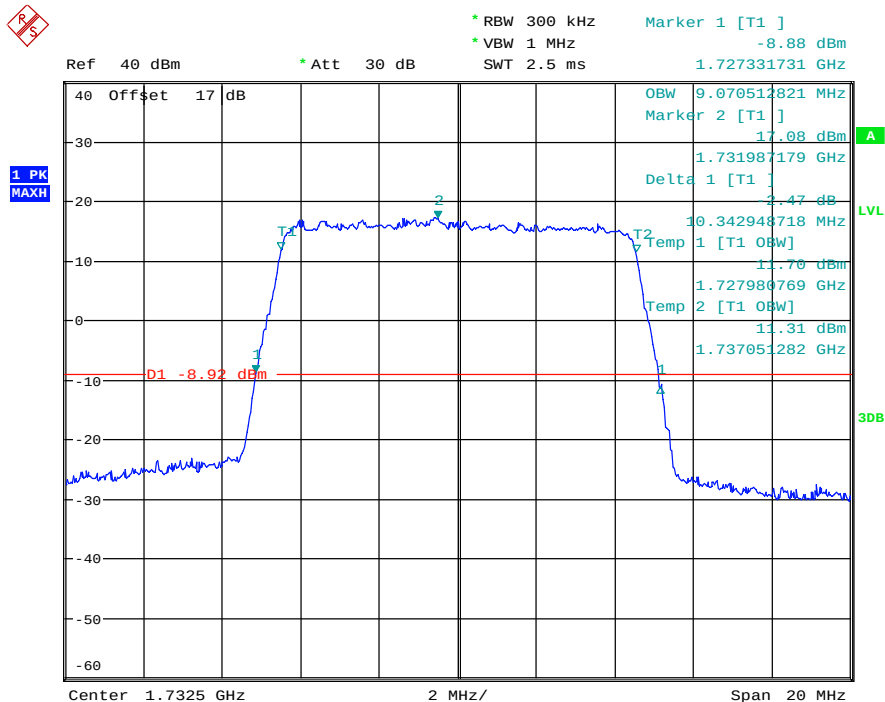
FCC ID: GX9HSGWQT

5 MHz QPSK

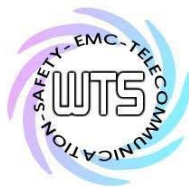


Date: 27.DEC.2021 10:21:50

10 MHz QPSK



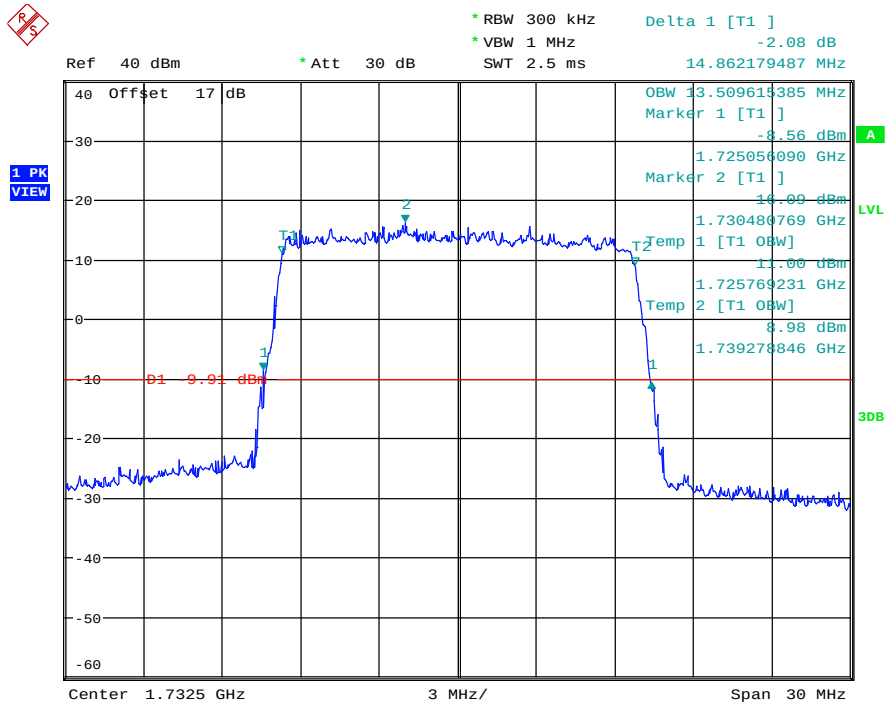
Date: 27.DEC.2021 10:20:13



Report Number: W6M22112-21430-P-247

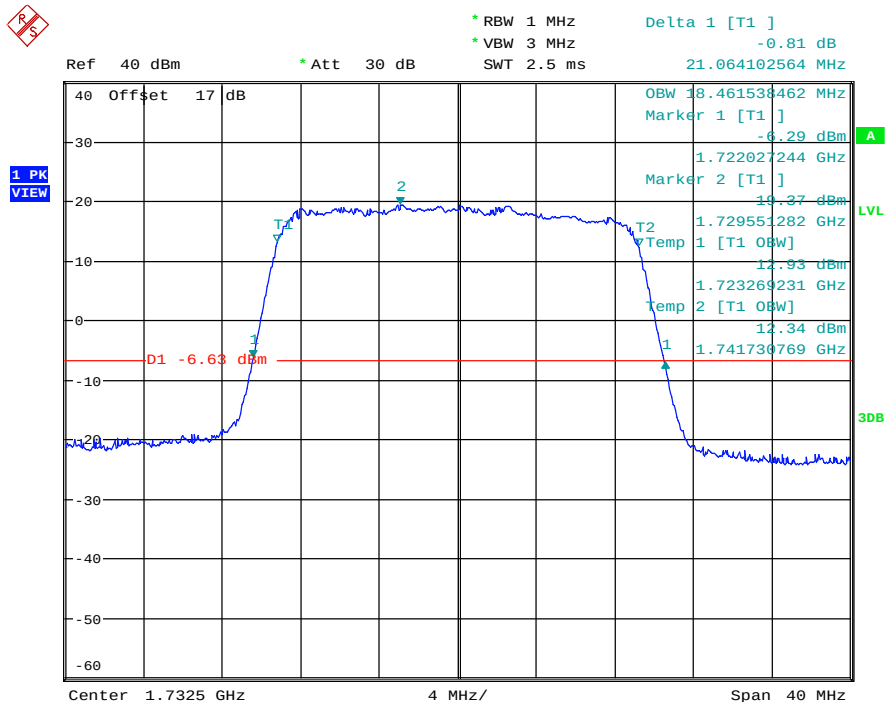
FCC ID: GX9HSGWQT

15 MHz QPSK

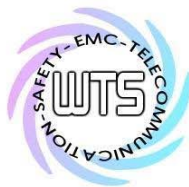


Date: 27.DEC.2021 10:18:34

20 MHz QPSK



Date: 27.DEC.2021 10:14:59

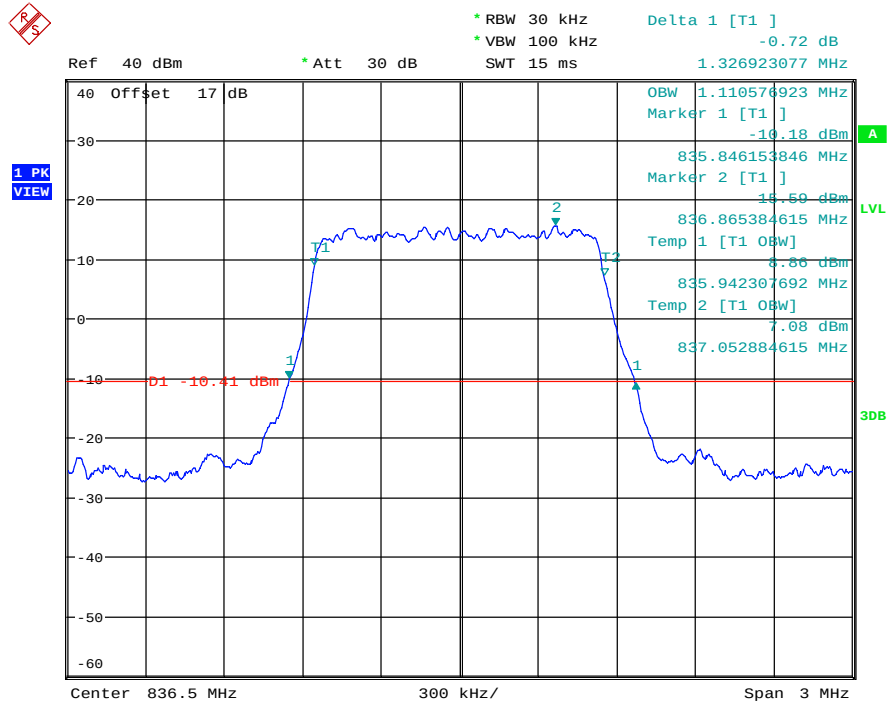


Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

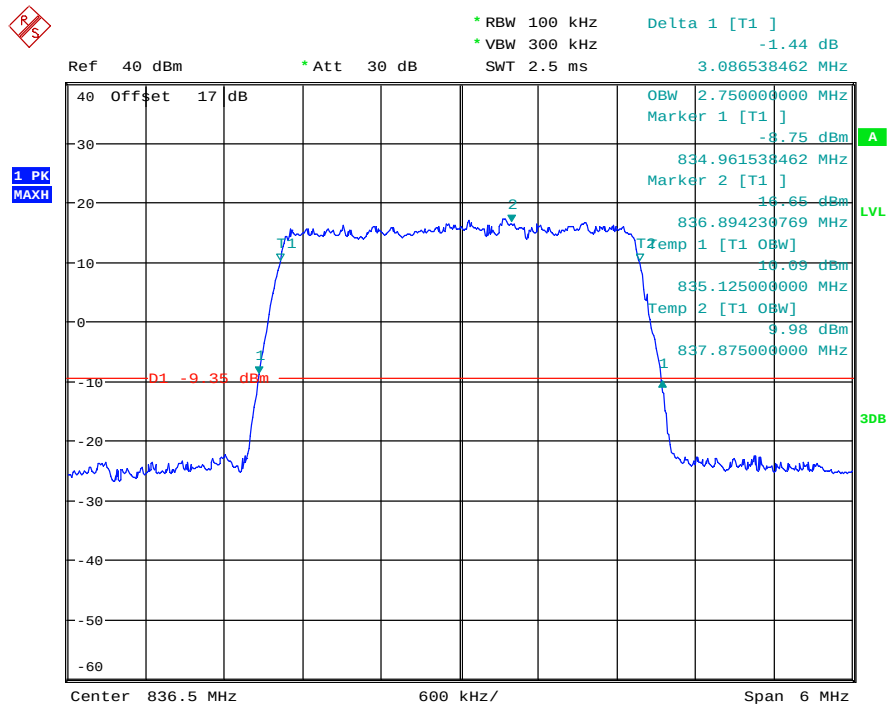
Band 5

1.4 MHz QPSK

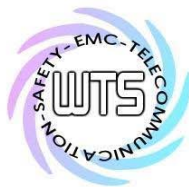


Date: 27.DEC.2021 10:54:18

3 MHz QPSK



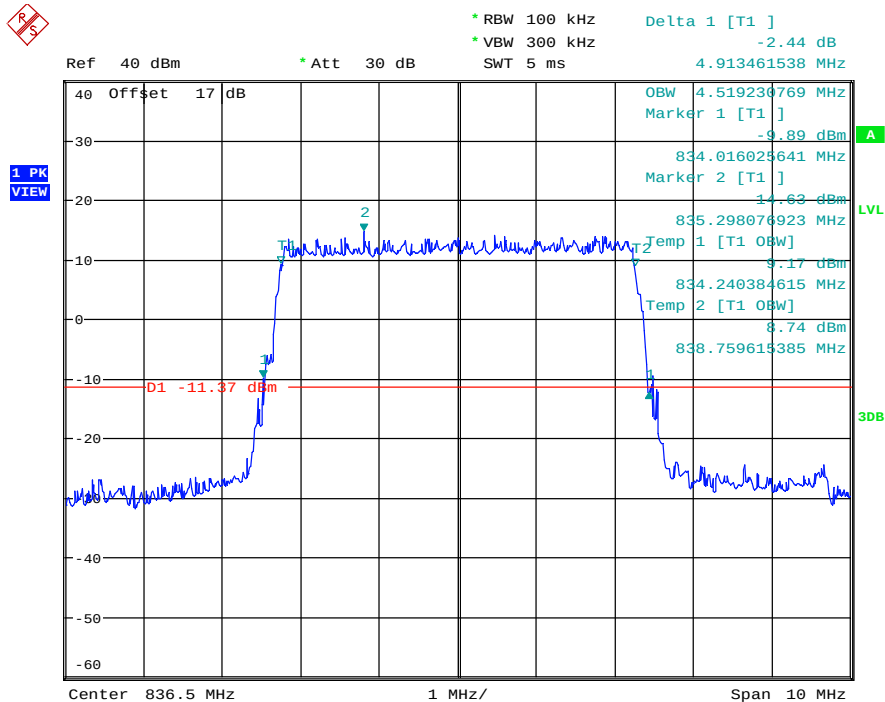
Date: 27.DEC.2021 10:56:04



Report Number: W6M22112-21430-P-247

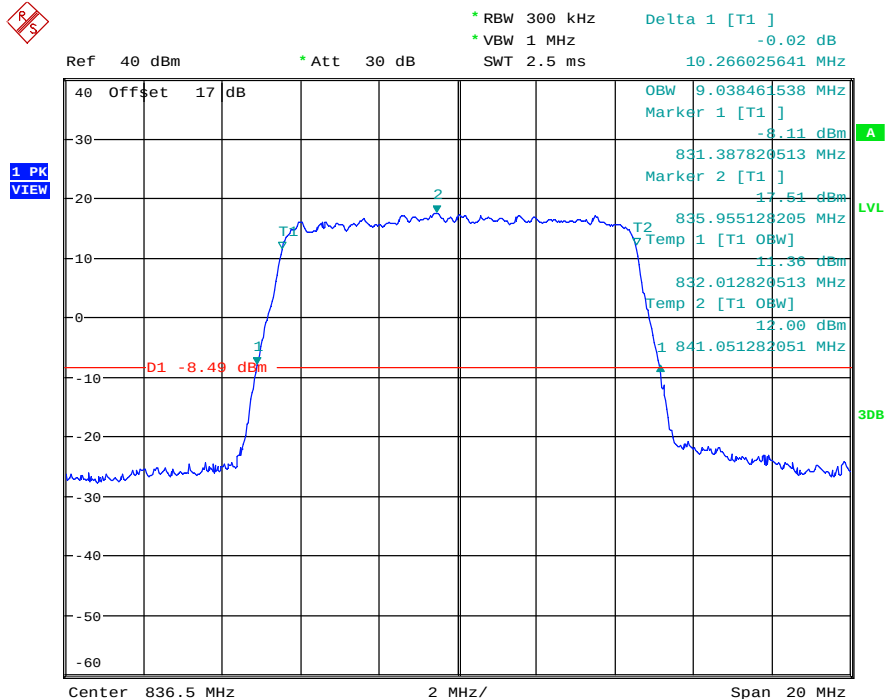
FCC ID: GX9HSGWQT

5 MHz QPSK

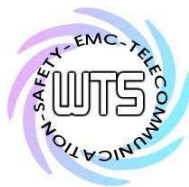


Date: 27.DEC.2021 10:57:50

10 MHz QPSK



Date: 27.DEC.2021 11:01:47

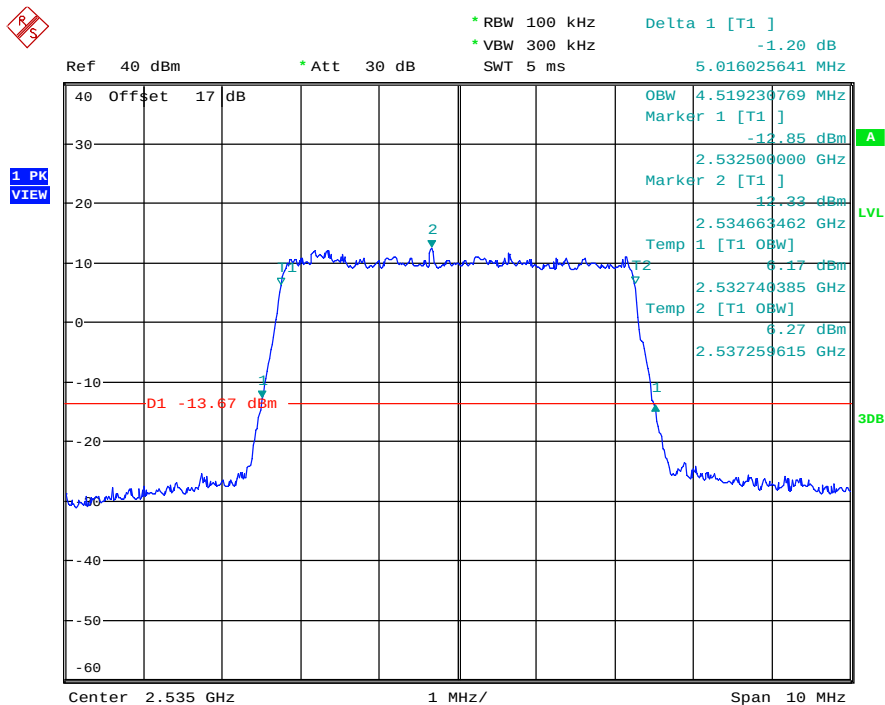


Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

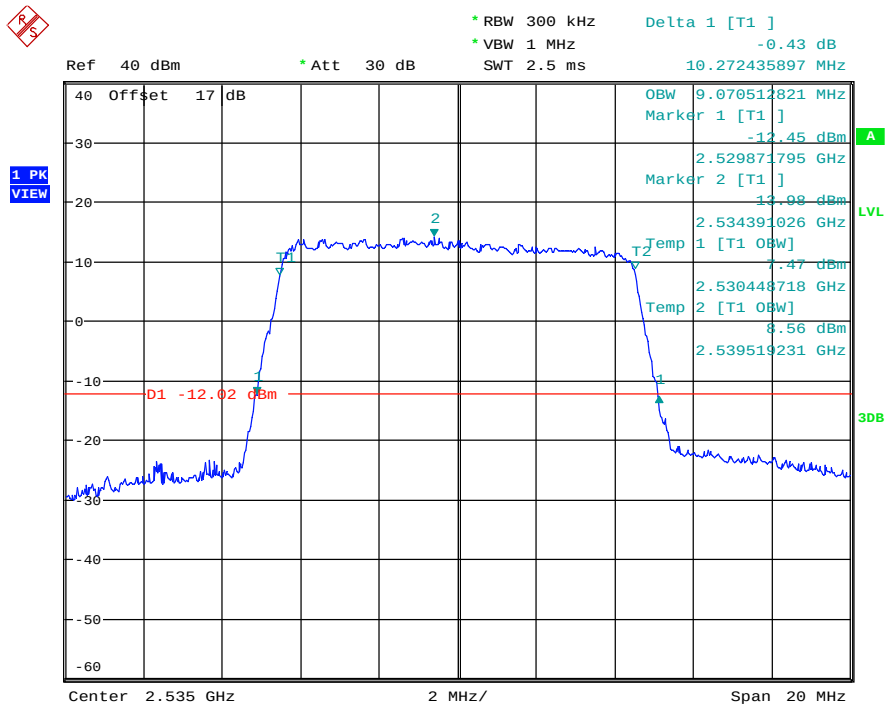
Band 7

5 MHz QPSK

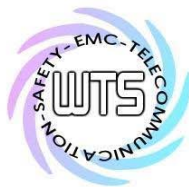


Date: 27.DEC.2021 11:06:32

10 MHz QPSK



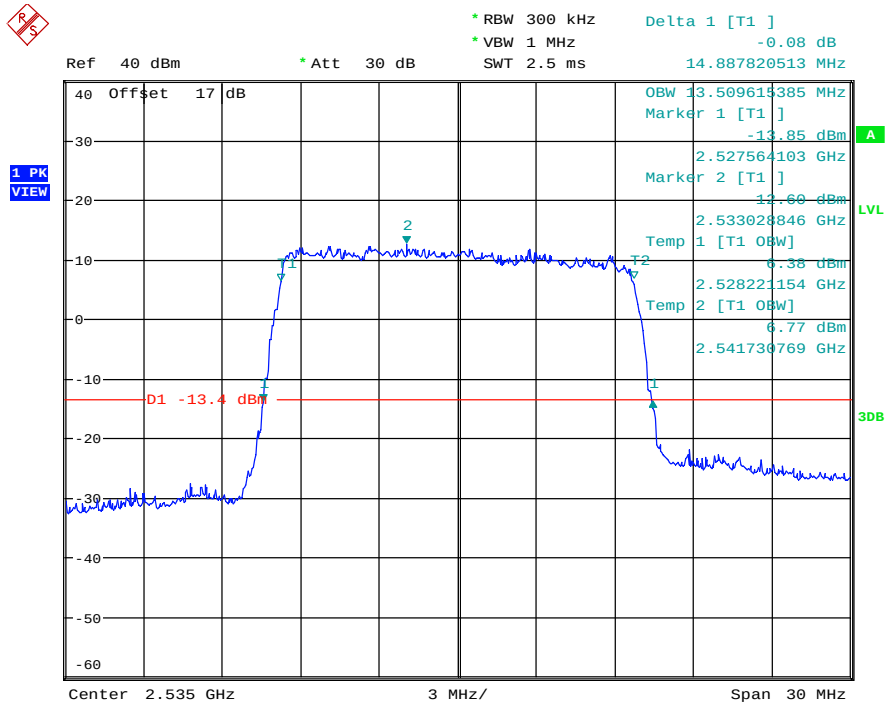
Date: 27.DEC.2021 11:08:38



Report Number: W6M22112-21430-P-247

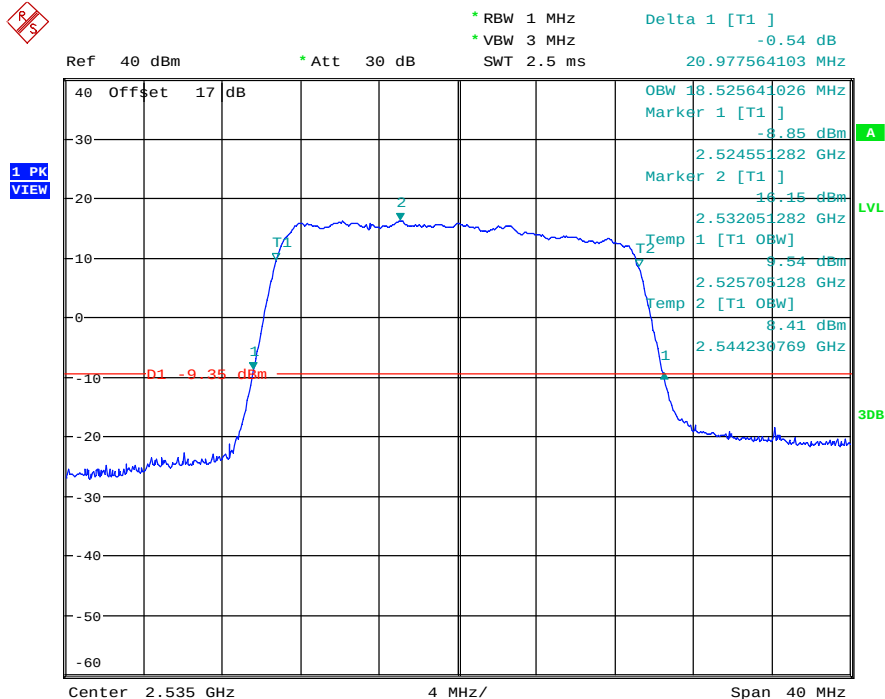
FCC ID: GX9HSGWQT

15 MHz QPSK



Date: 27.DEC.2021 11:10:18

20 MHz QPSK



Date: 27.DEC.2021 11:14:39

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

Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

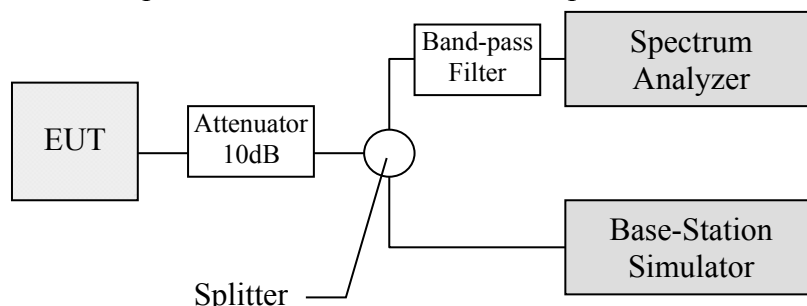
7. Spurious Emissions at Antenna Terminals

7.1 Test procedure

This transmitter output was connected to a calibrated coaxial attenuator, the other end of which was connected to a spectrum analyzer via a three-port splitter. Please refer to the following figure. Transmitter output was derived with the spectrum analyzer in dBm.

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

Test date: December 25, 2021-December 26, 2021

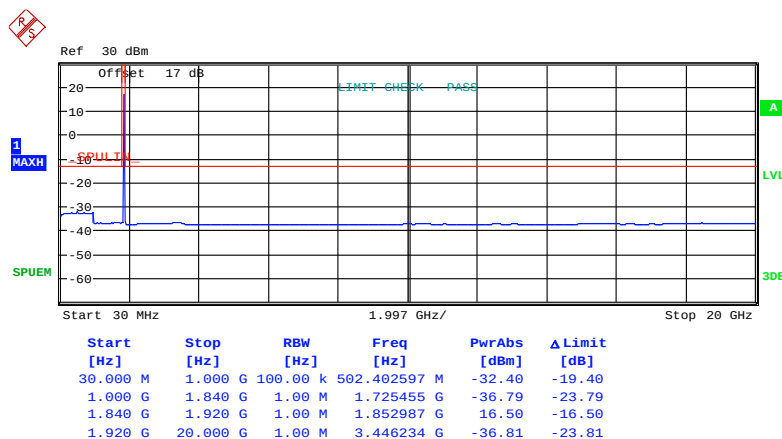
Temperature: 21.8 °C

Humidity: 53.1%

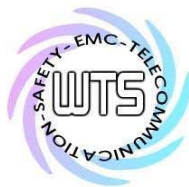
Tester: Spencer

WCDMA

Band 2

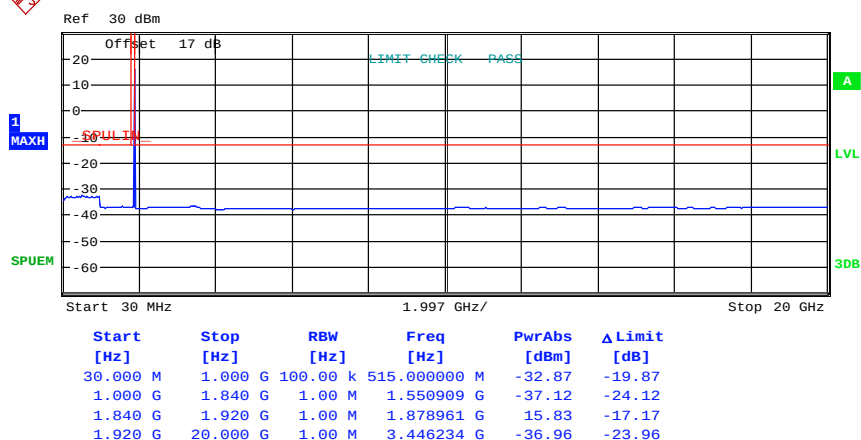


Date: 25.DEC.2021 14:18:39

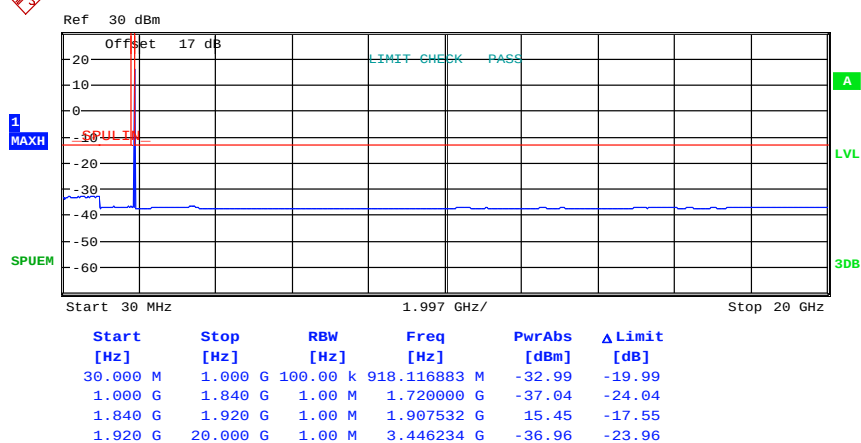


Report Number: W6M22112-21430-P-247

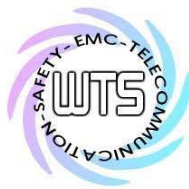
FCC ID: GX9HSGWQT



Date: 25.DEC.2021 14:19:47



Date: 25.DEC.2021 14:20:18

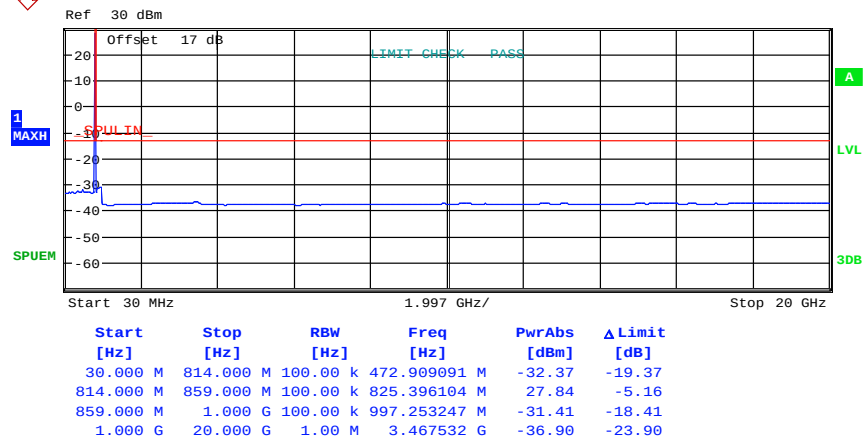


Worldwide Testing Services(Taiwan) Co., Ltd.

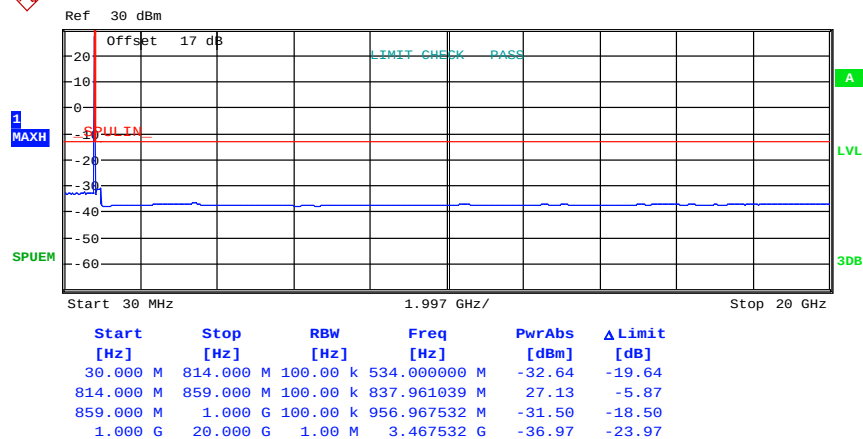
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

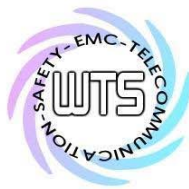
Band 5



Date: 25.DEC.2021 14:21:22

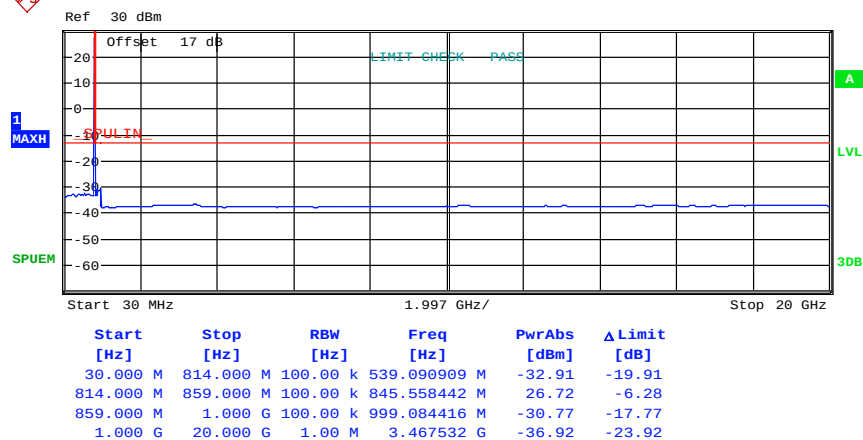


Date: 25.DEC.2021 14:21:51



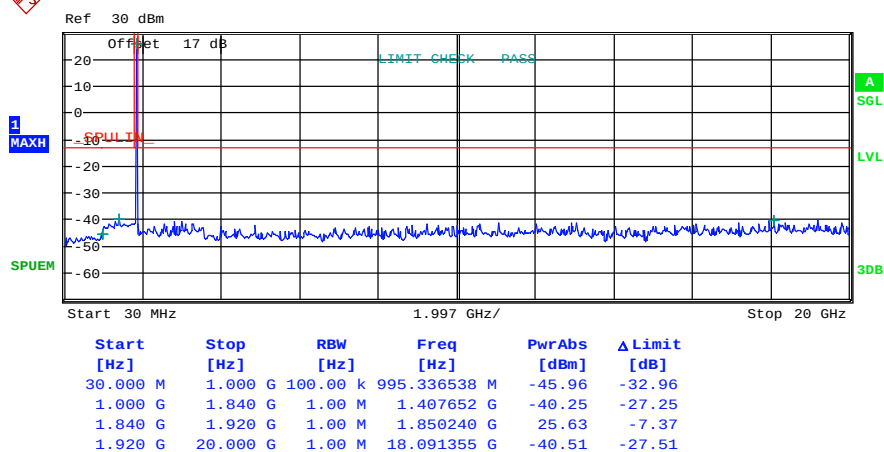
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

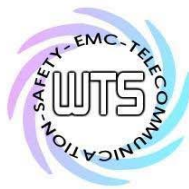


Date: 25.DEC.2021 14:22:07

LTE
Band 2
1.4 MHz QPSK



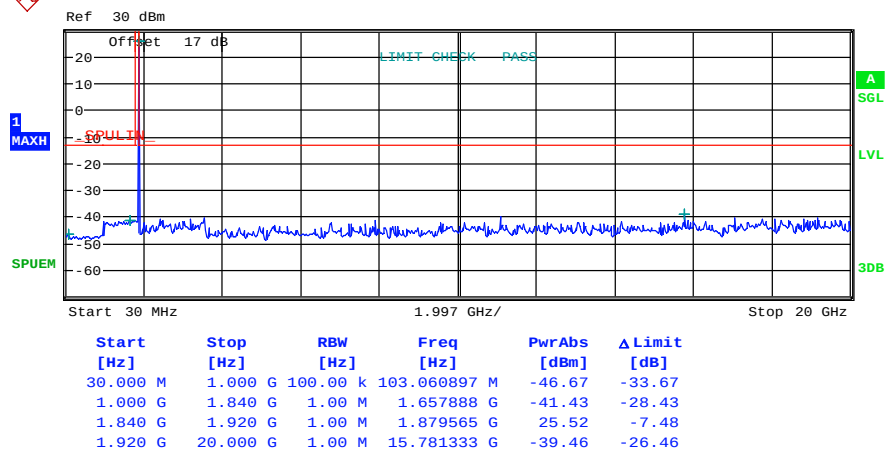
Date: 26.DEC.2021 16:08:01



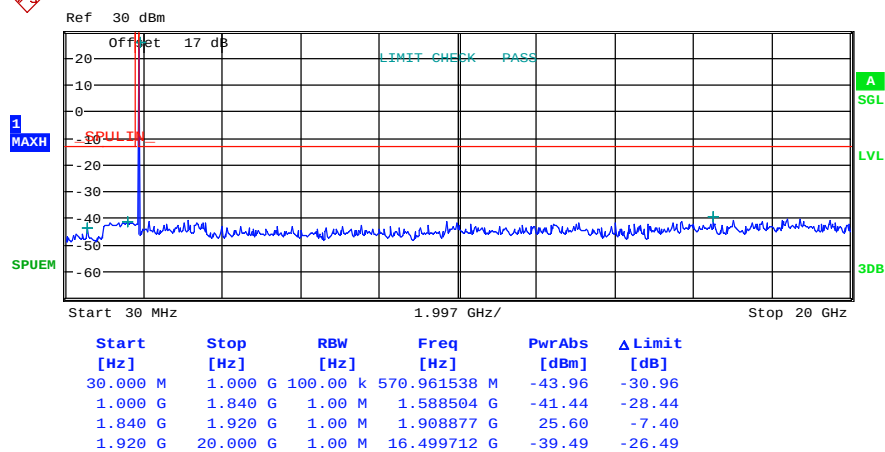
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22112-21430-P-247

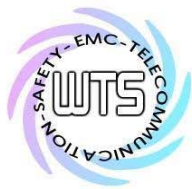
FCC ID: GX9HSGWQT



Date: 26.DEC.2021 16:07:32



Date: 26.DEC.2021 16:05:24

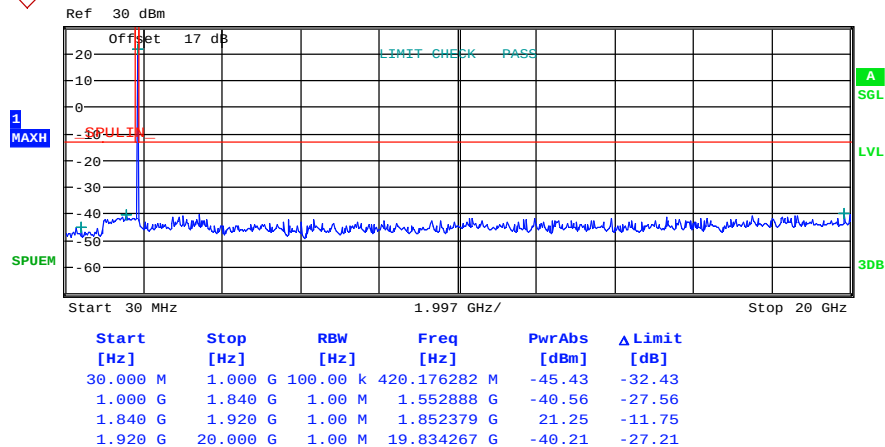


Worldwide Testing Services(Taiwan) Co., Ltd.

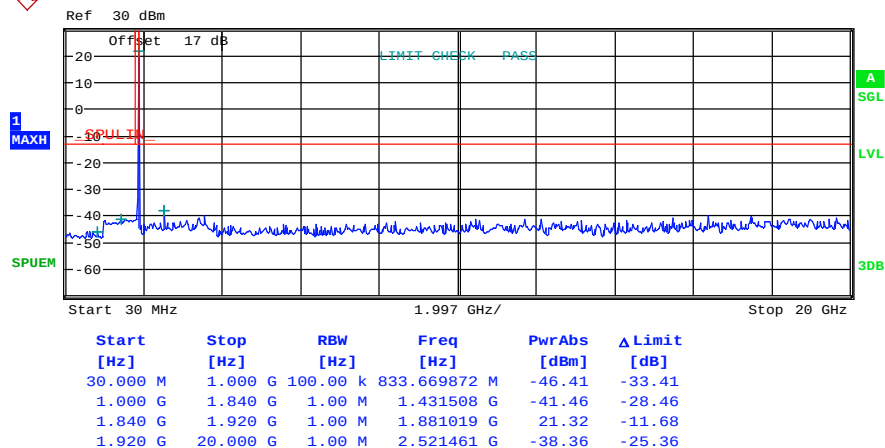
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

3 MHz QPSK



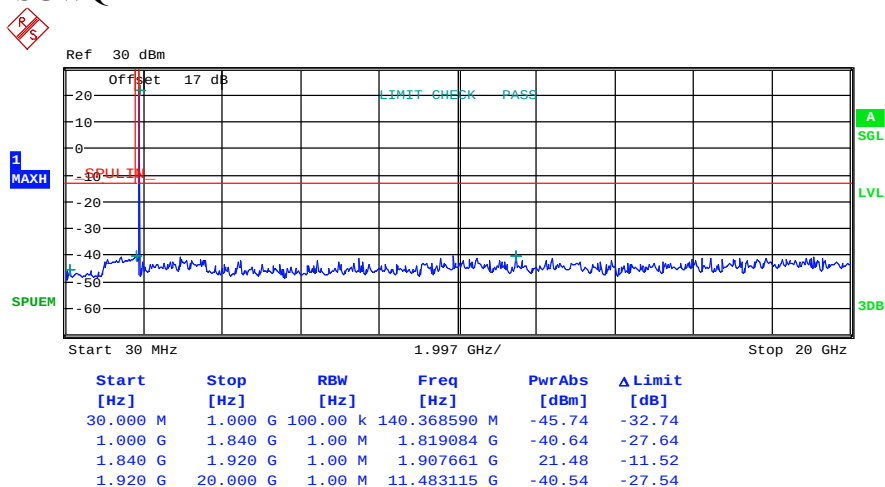
Date: 26.DEC.2021 16:16:11



Date: 26.DEC.2021 16:15:36

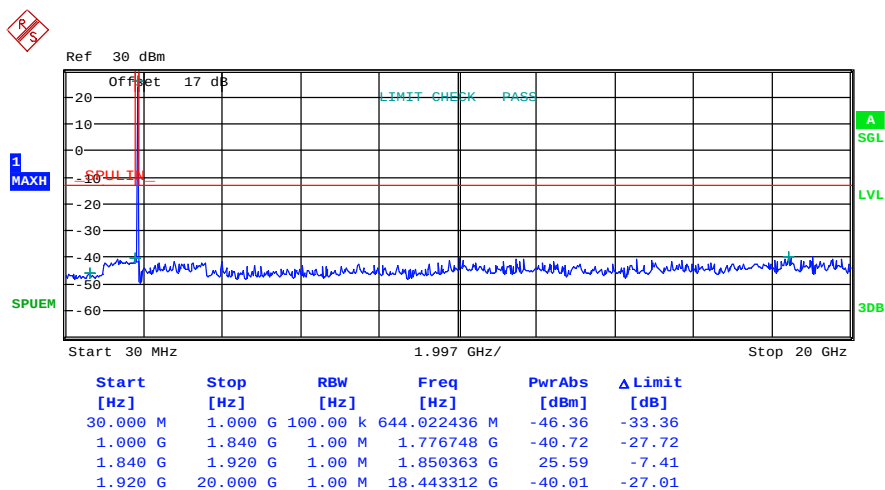


FCC ID: GX9HSGWQT

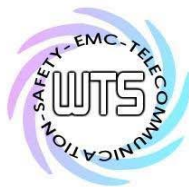


Date: 26.DEC.2021 16:16:54

5 MHz QPSK

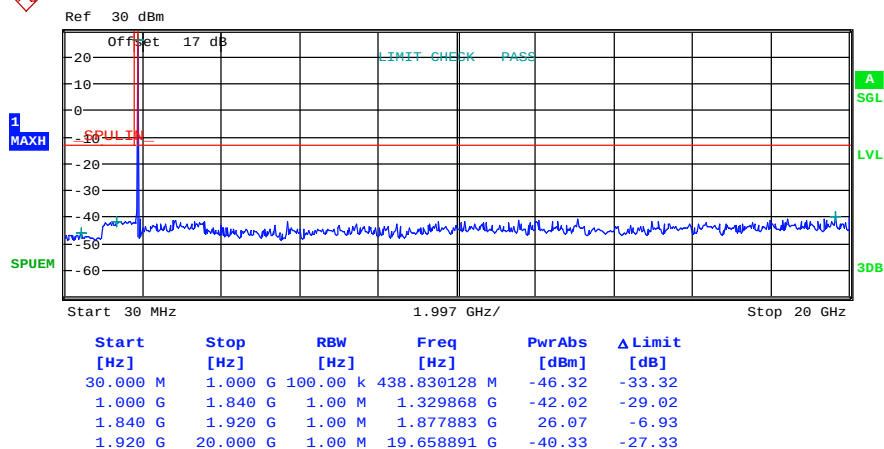


Date: 26.DEC.2021 16:17:43

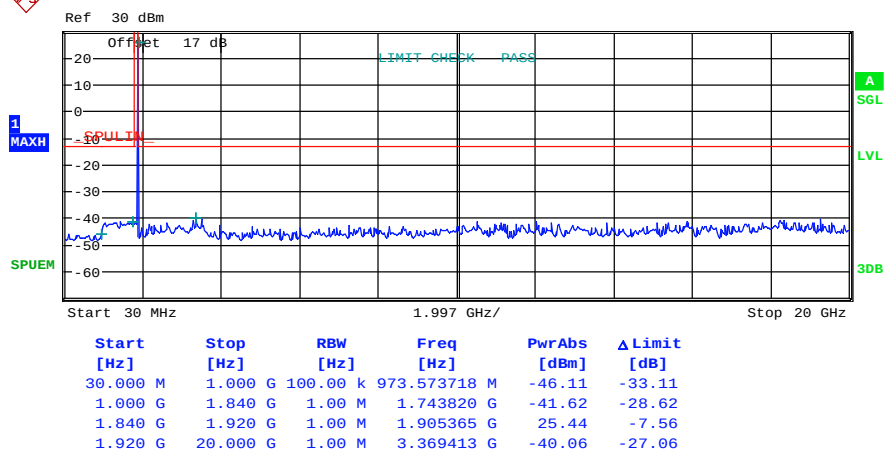


Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



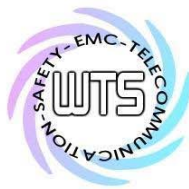
Date: 26.DEC.2021 16:18:12



Date: 26.DEC.2021 16:19:58

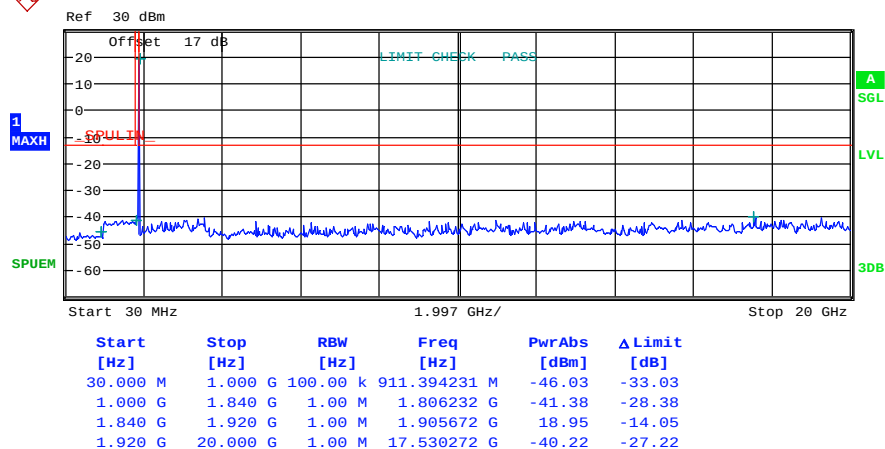


10 MHz QPSK



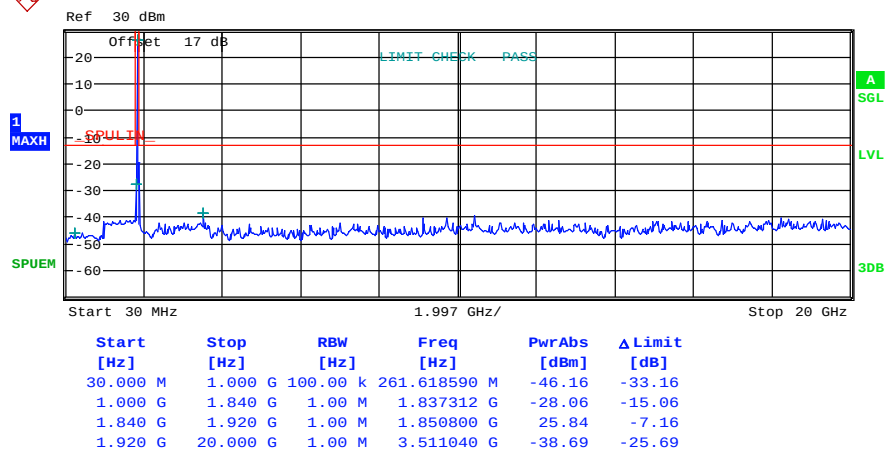
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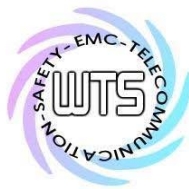


Date: 26.DEC.2021 16:29:47

15 MHz QPSK

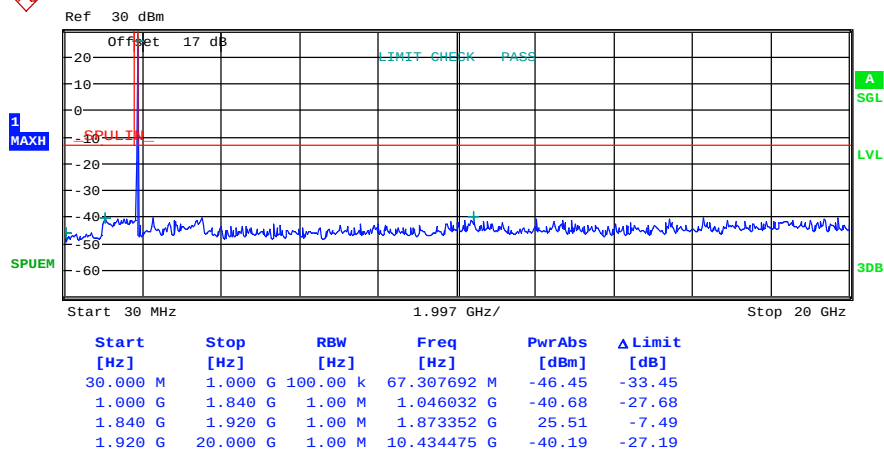


Date: 26.DEC.2021 16:37:32

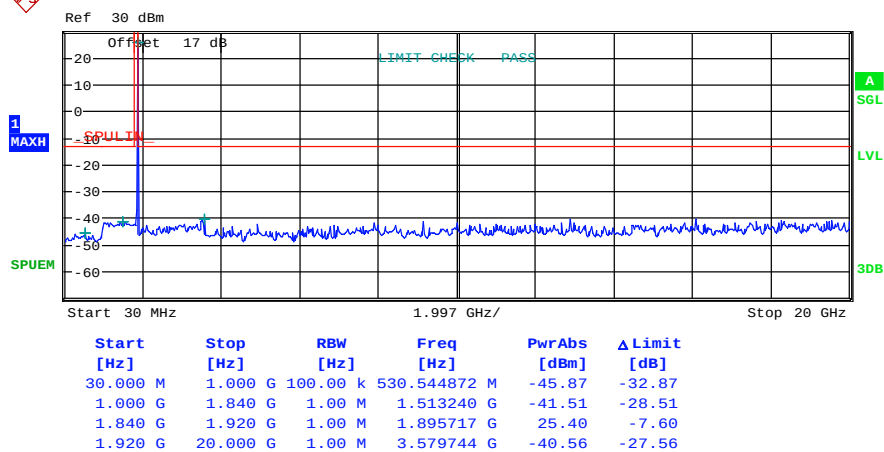


Report Number: W6M22112-21430-P-247

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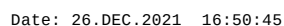
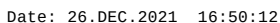
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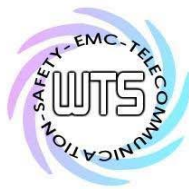


Date: 26.DEC.2021 16:38:56



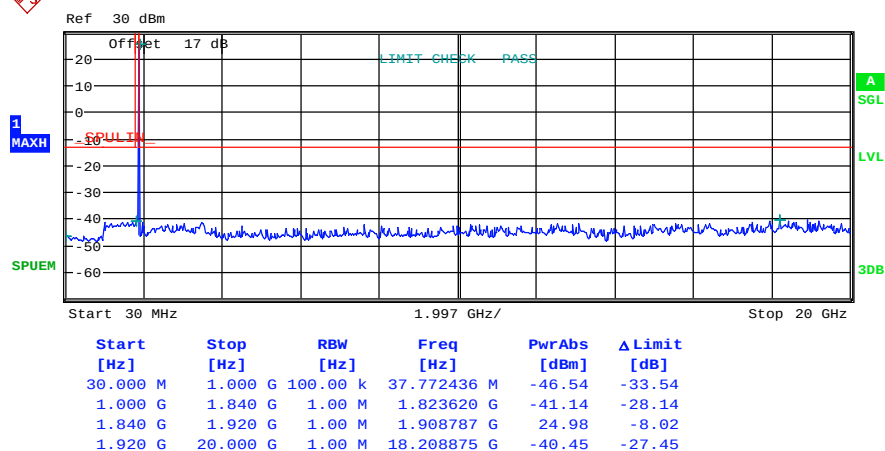
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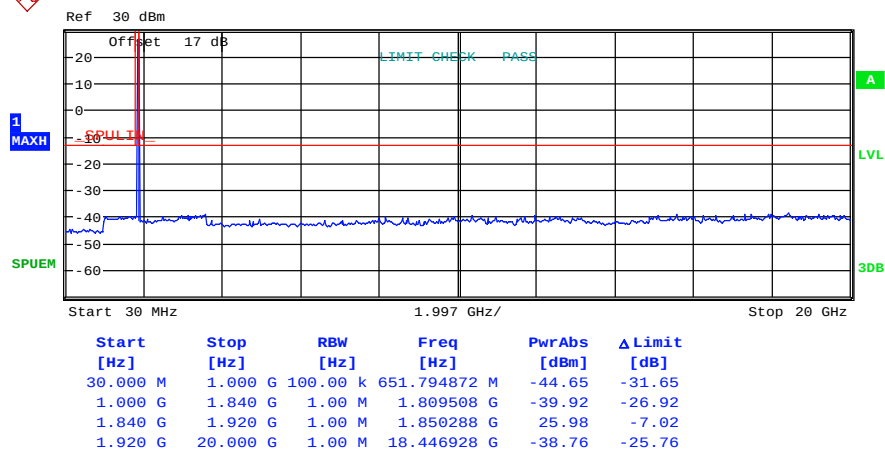
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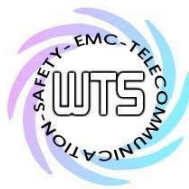


Date: 26.DEC.2021 16:51:19

1.4 MHz 16QAM

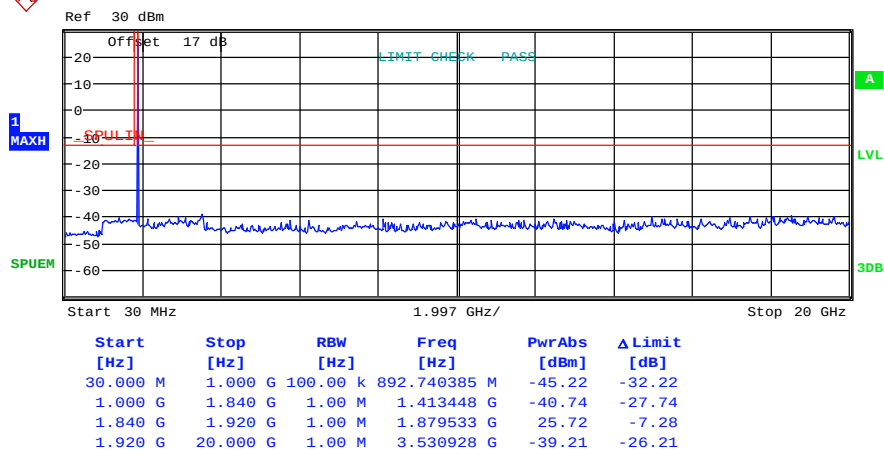


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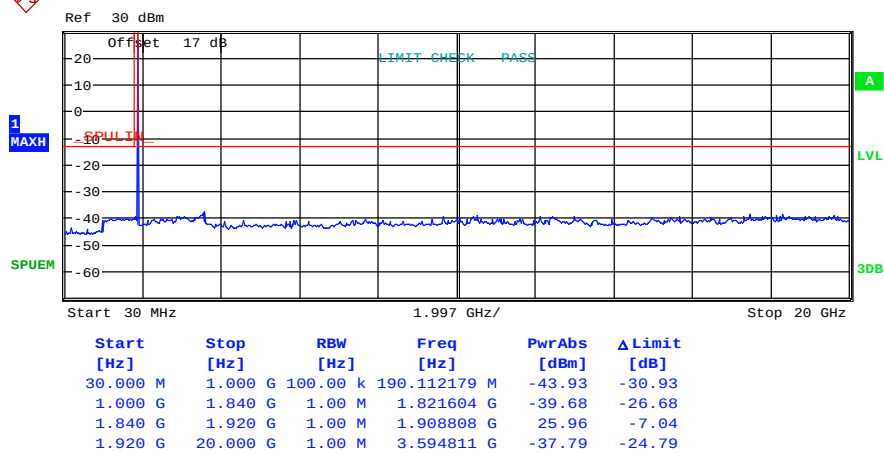


Report Number: W6M22112-21430-P-247

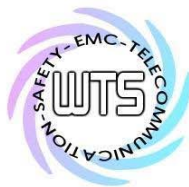
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Date: 26.DEC.2021 16:01:12



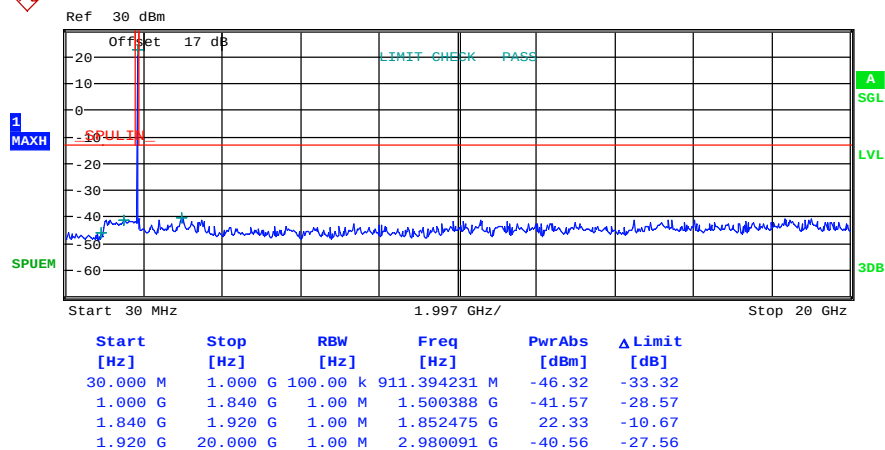
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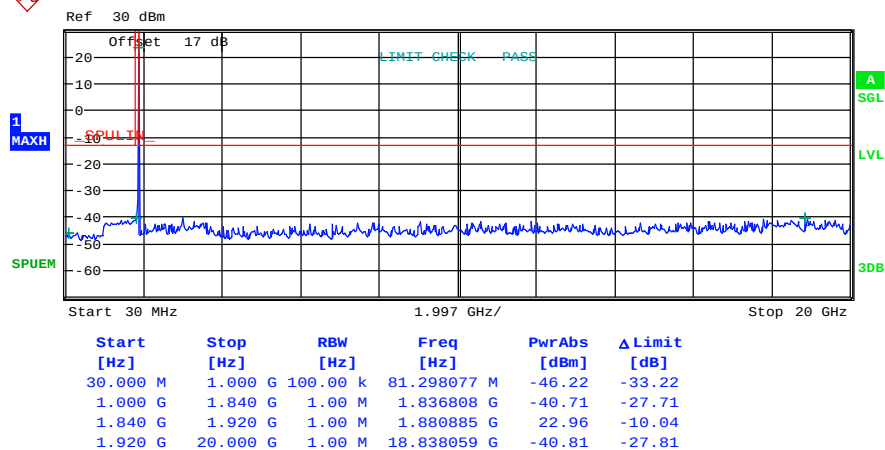
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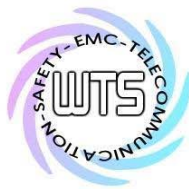
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Date: 26.DEC.2021 16:11:44

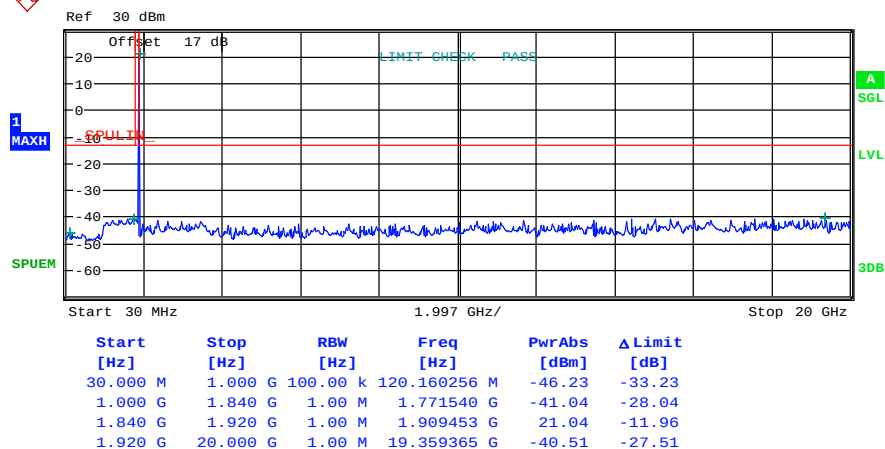


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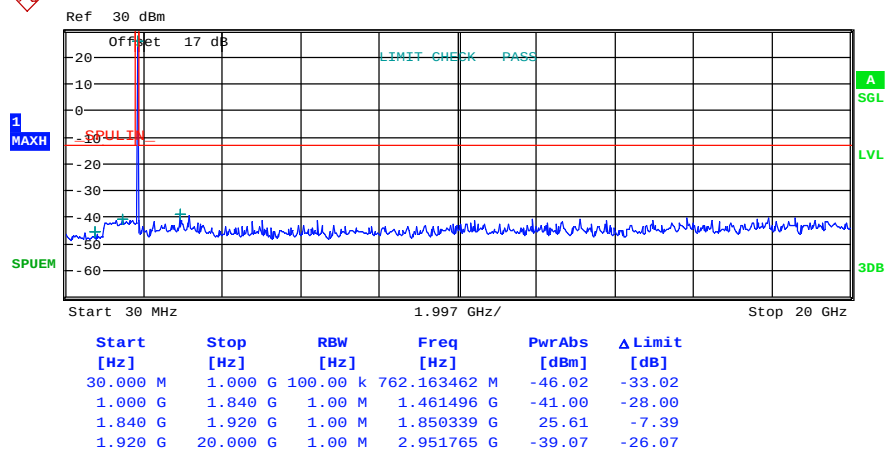
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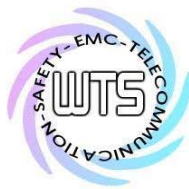


Date: 26.DEC.2021 16:13:09

5 MHz 16QAM

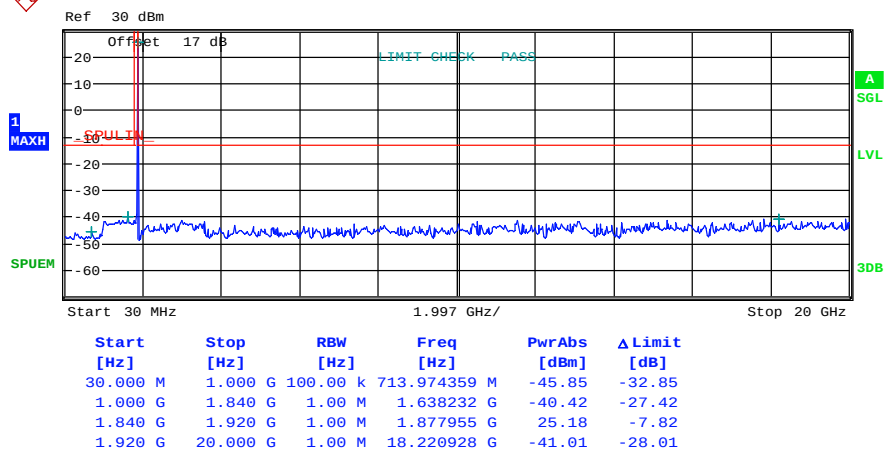


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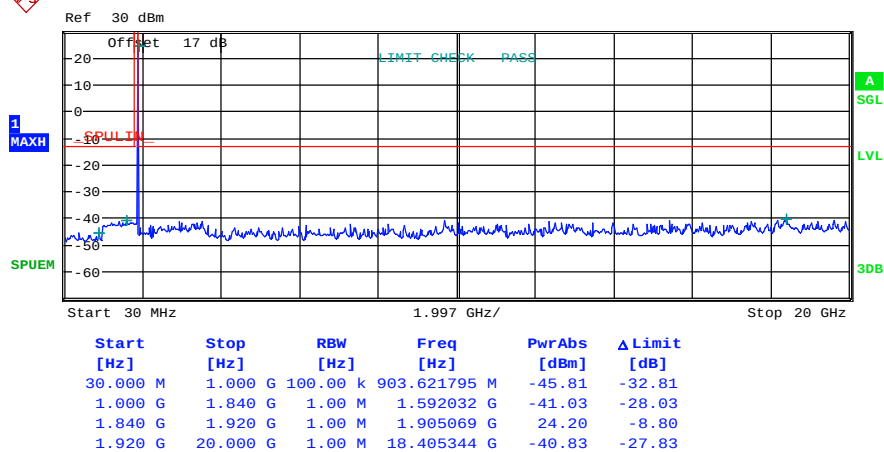


Report Number: W6M22112-21430-P-247

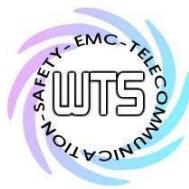
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Date: 26.DEC.2021 16:21:23



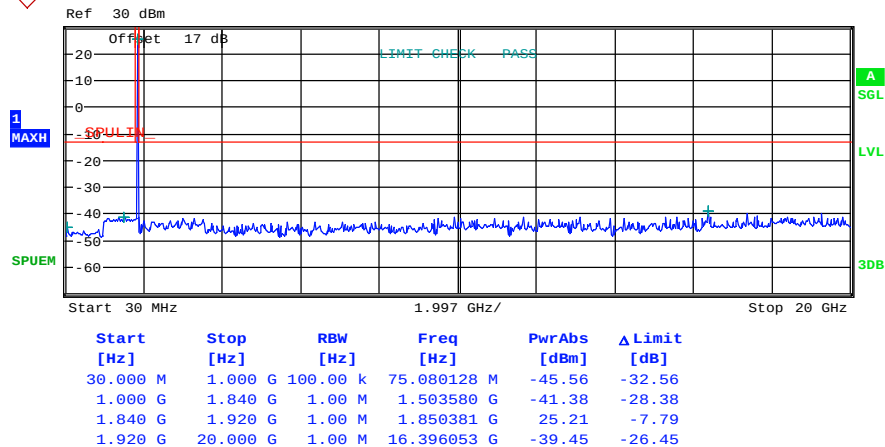
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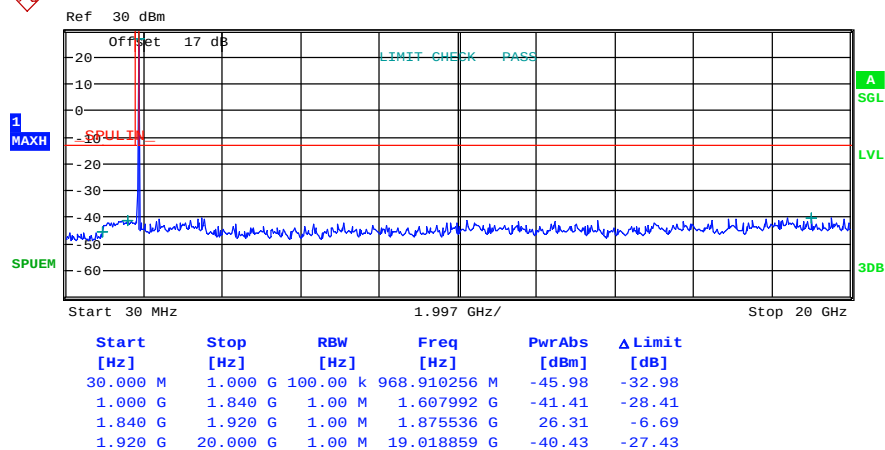
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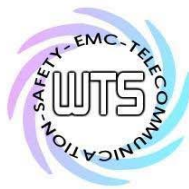
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Date: 26.DEC.2021 16:34:29

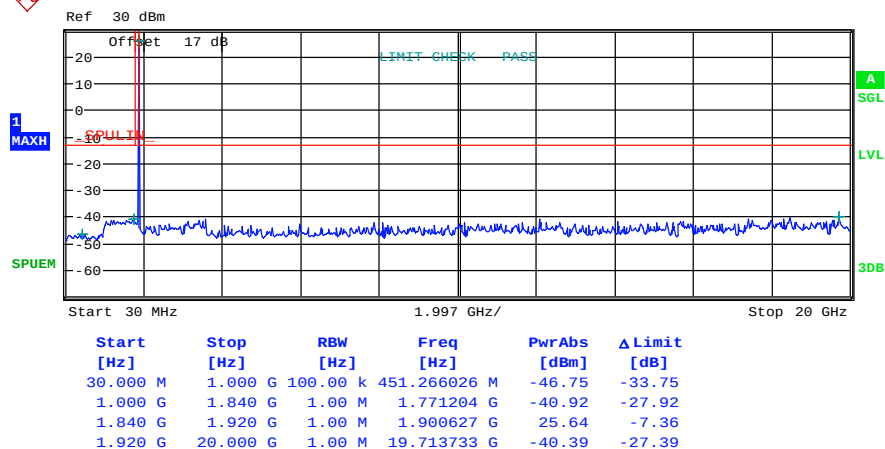


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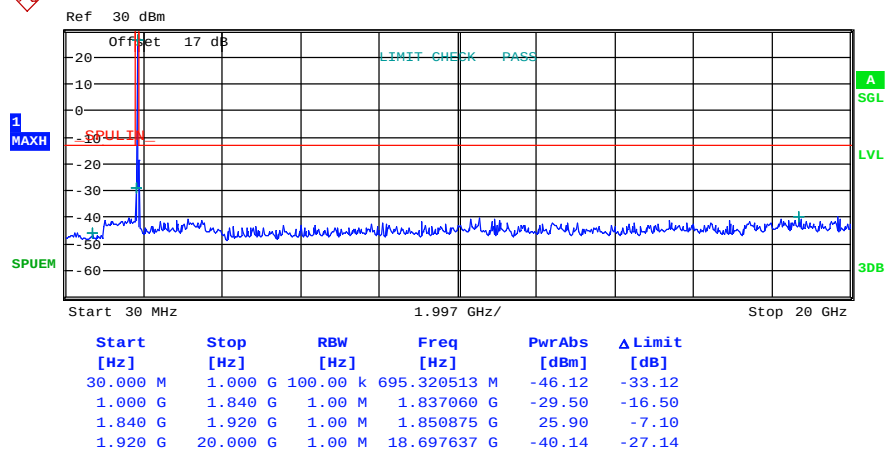
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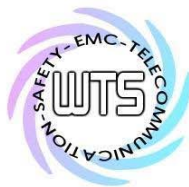


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15 MHz 16QAM

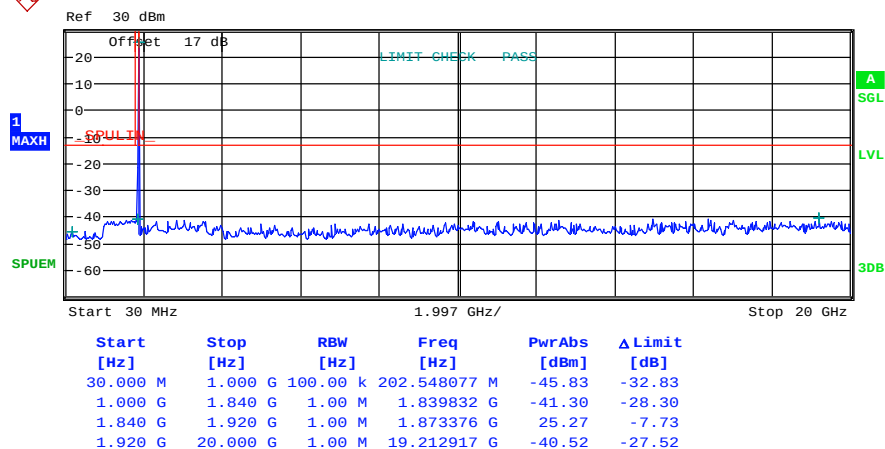


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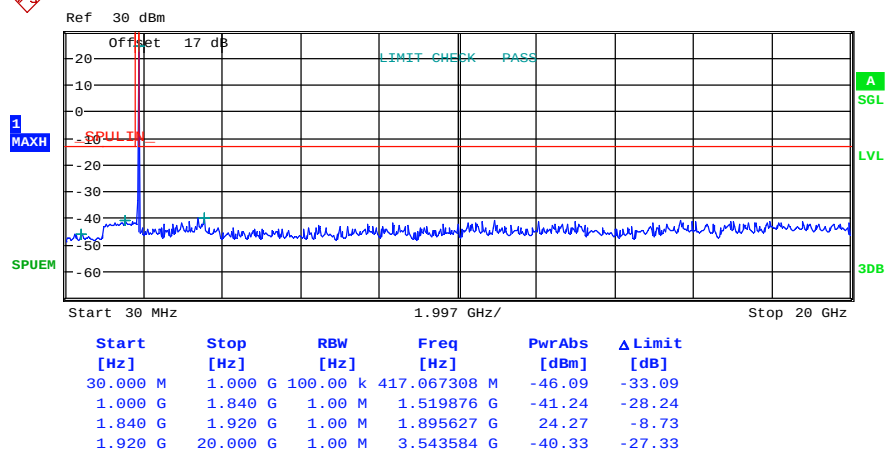


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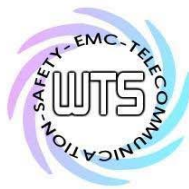


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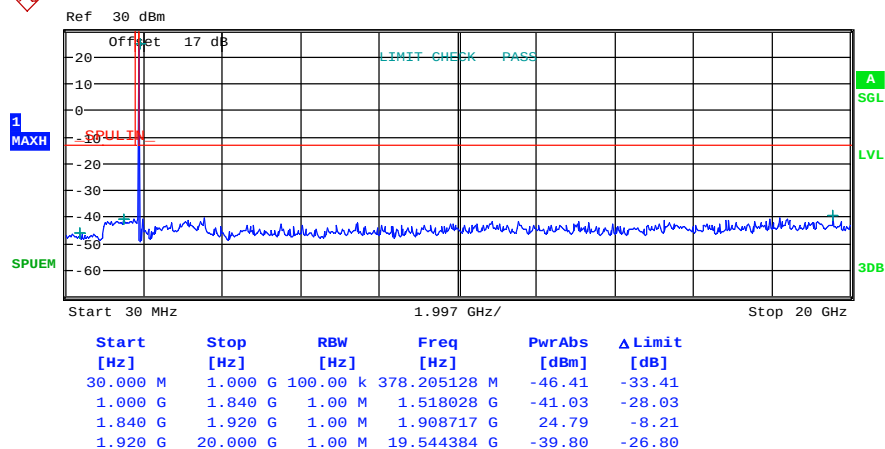
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Report Number: W6M22112-21430-P-247

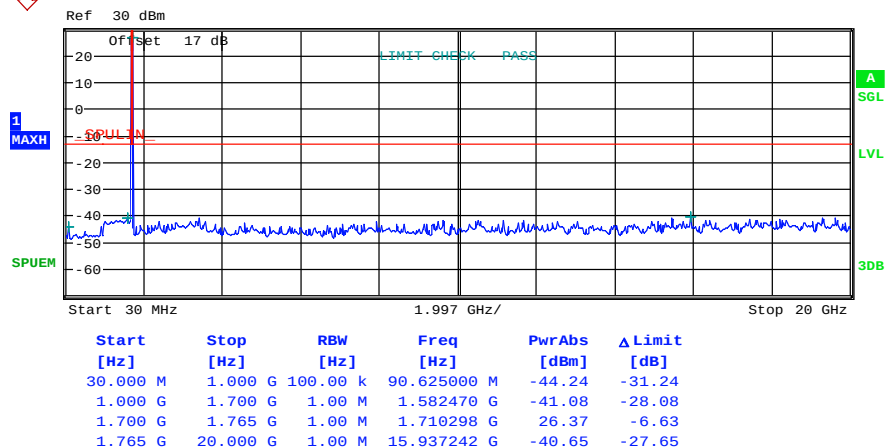
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Band 4

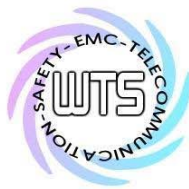
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Date: 26.DEC.2021 17:04:09



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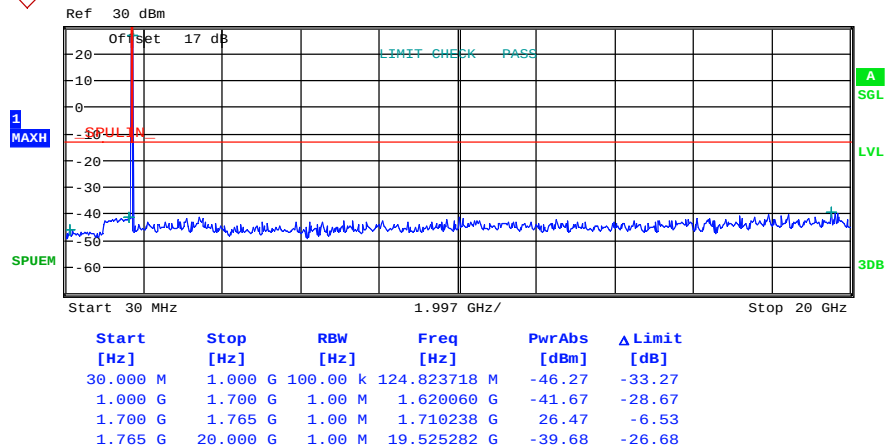


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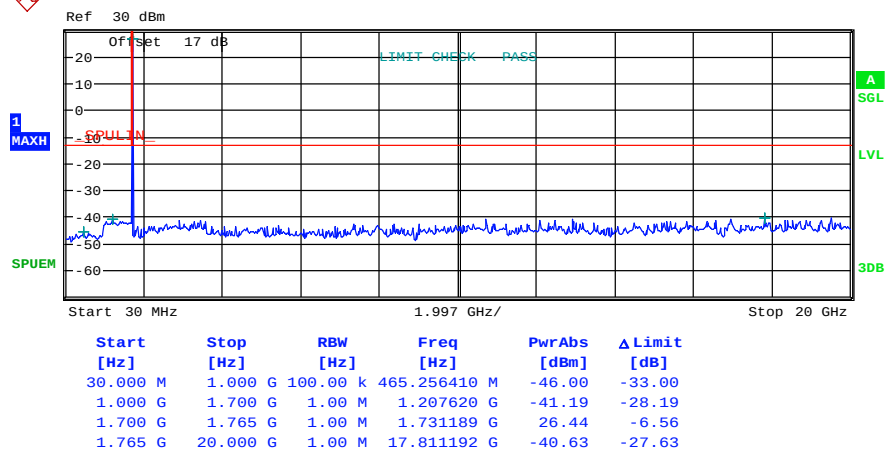
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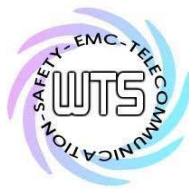
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Date: 26.DEC.2021 17:09:13

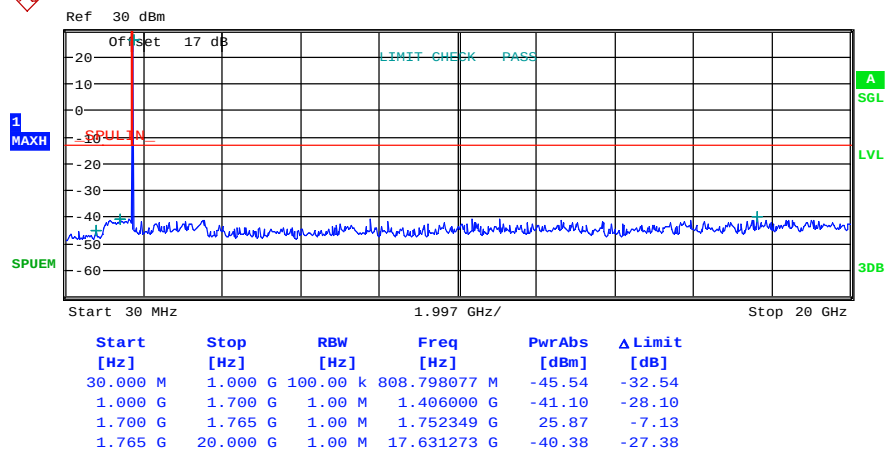


Date: 26.DEC.2021 17:11:01



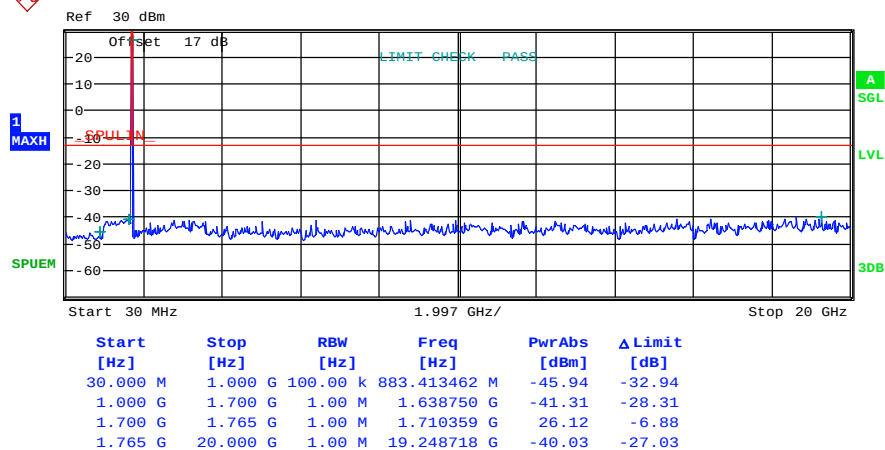
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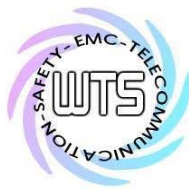


Date: 26.DEC.2021 17:15:35

5 MHz QPSK

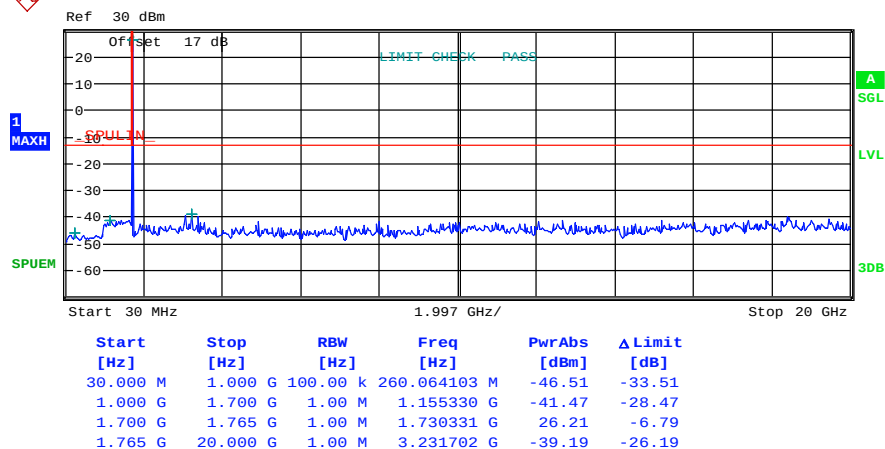


Date: 26.DEC.2021 17:29:04

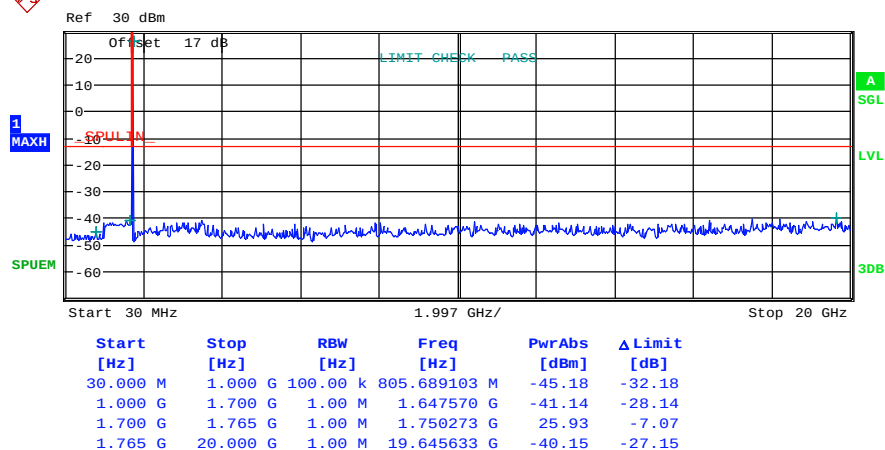


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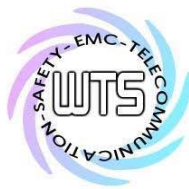
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Date: 26.DEC.2021 17:38:26



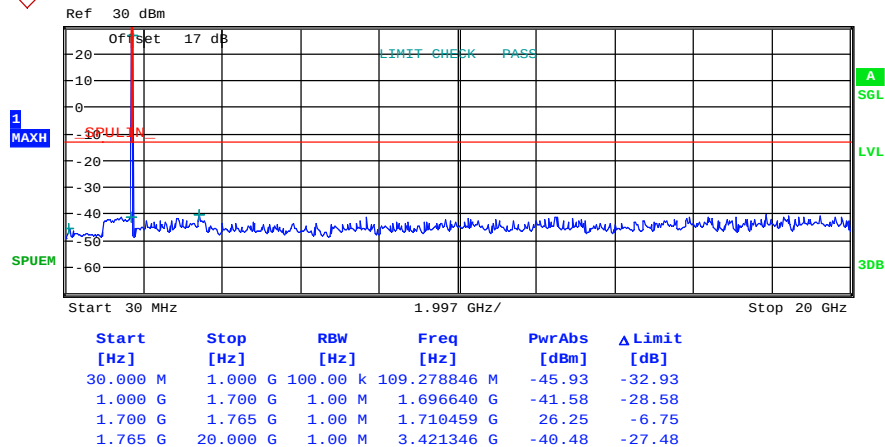
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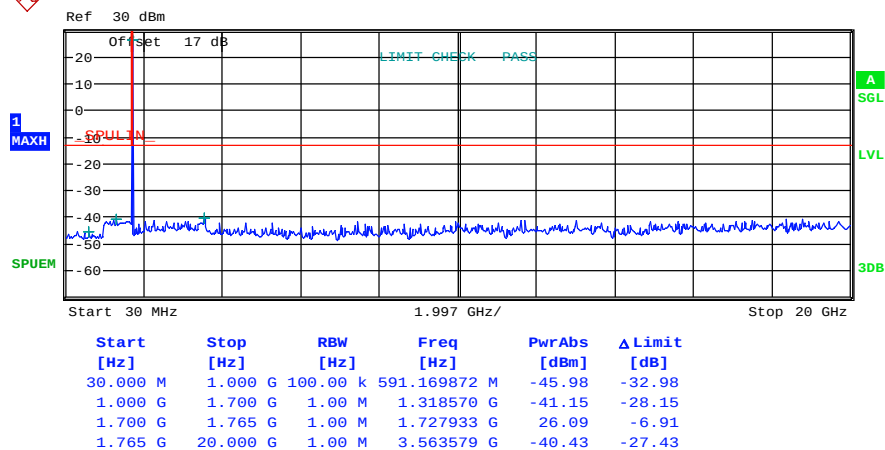
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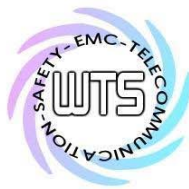
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Date: 26.DEC.2021 17:34:34

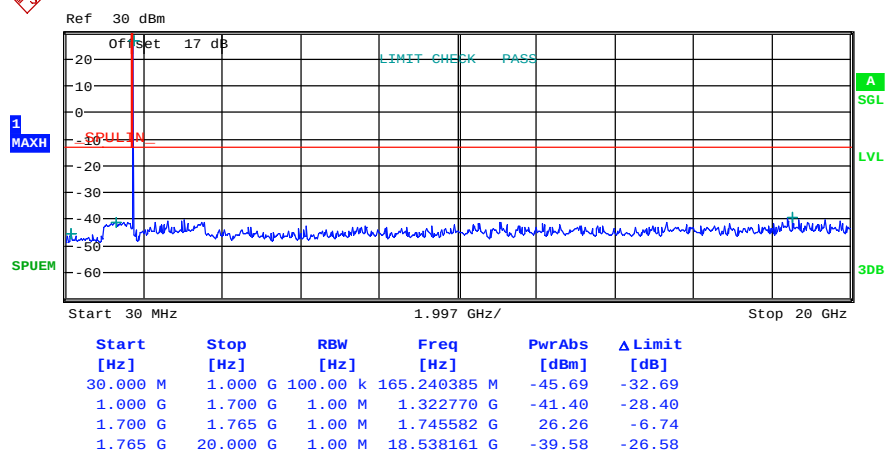


Date: 26.DEC.2021 17:34:17



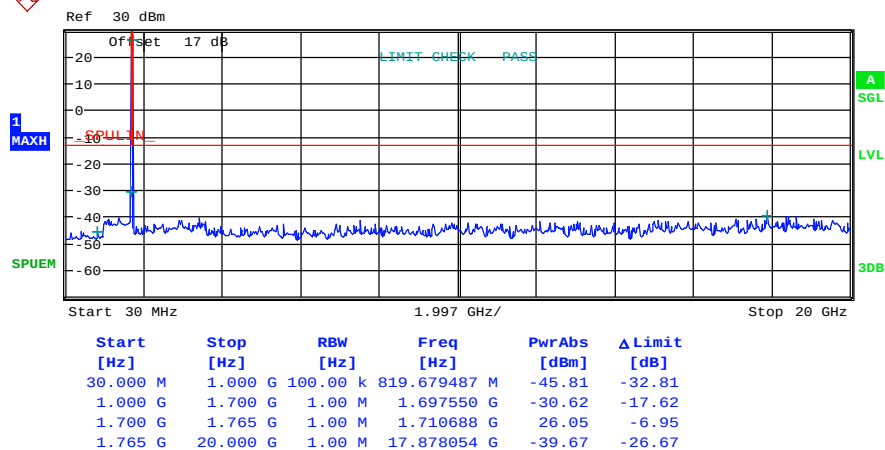
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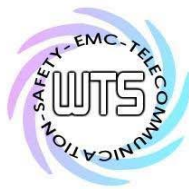


Date: 26.DEC.2021 17:33:56

15 MHz QPSK

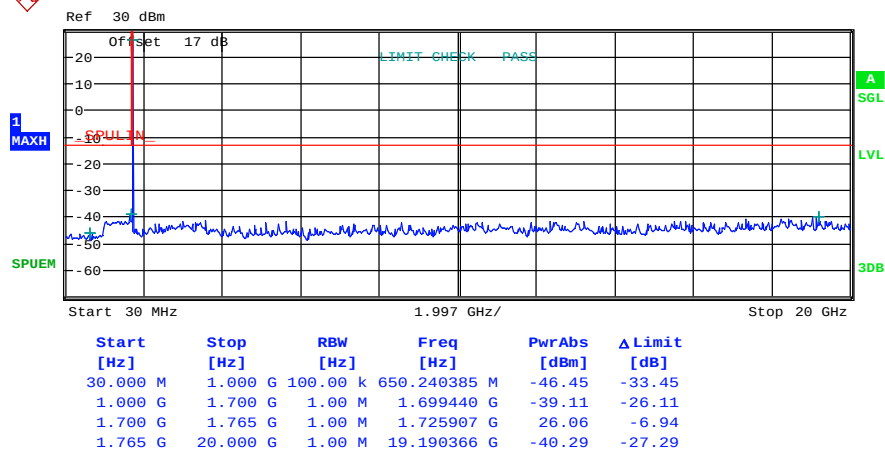


Date: 26.DEC.2021 17:43:20

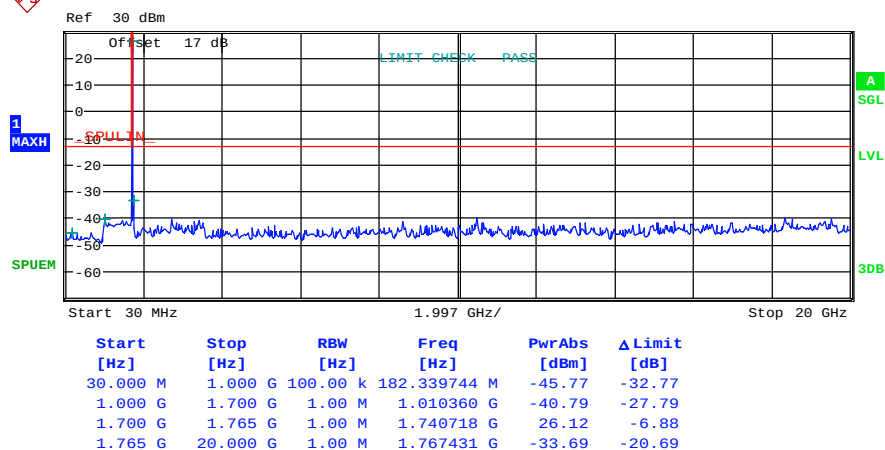


Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



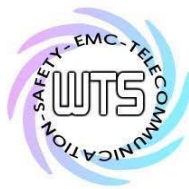
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Date: 26.DEC.2021 17:42:38

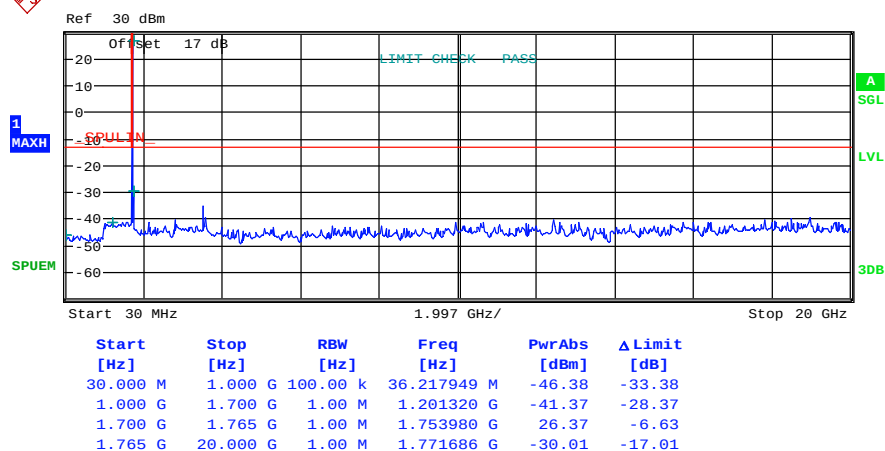


20 MHz QPSK



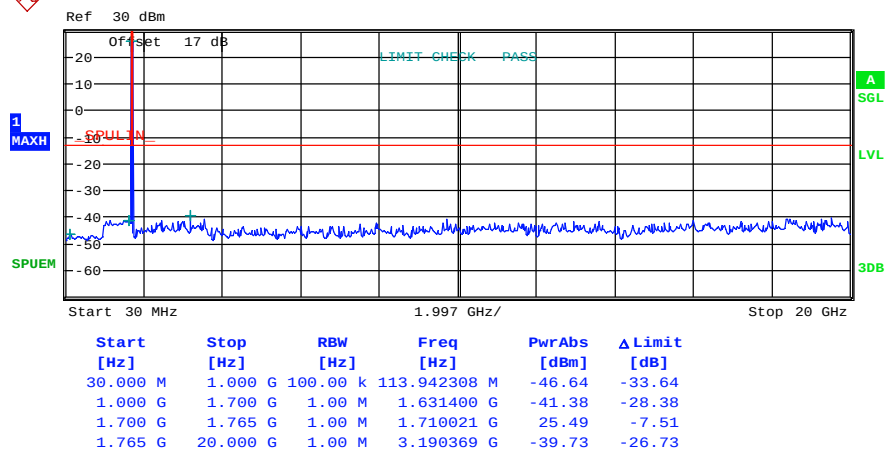
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FCC ID: GX9HSGWQT



Date: 26.DEC.2021 17:51:19

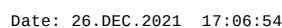
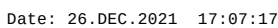
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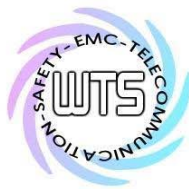


Date: 26.DEC.2021 17:08:09



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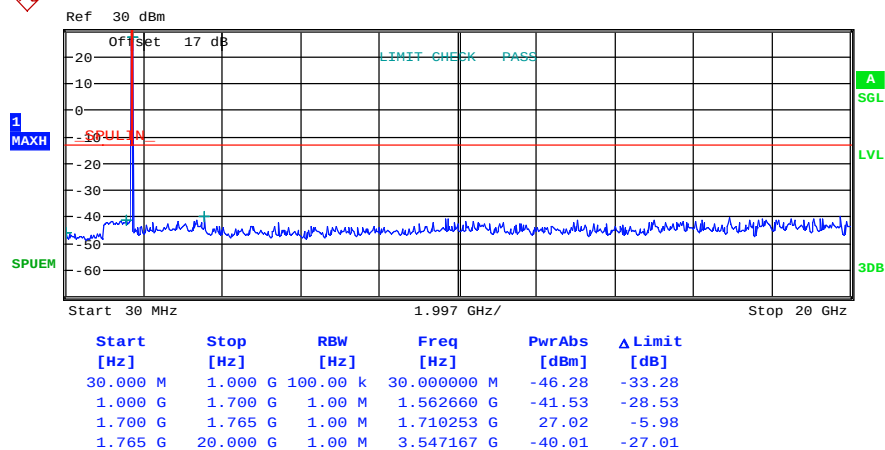


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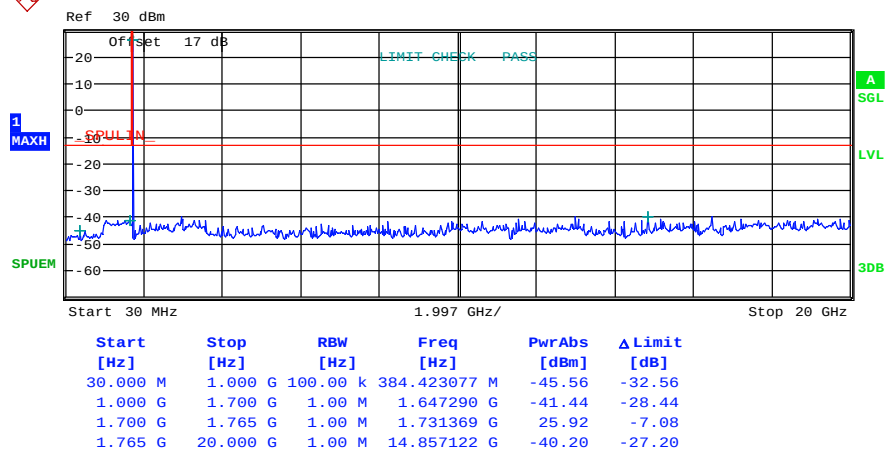
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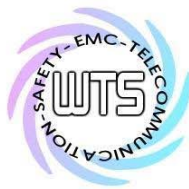
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Date: 26.DEC.2021 17:20:08

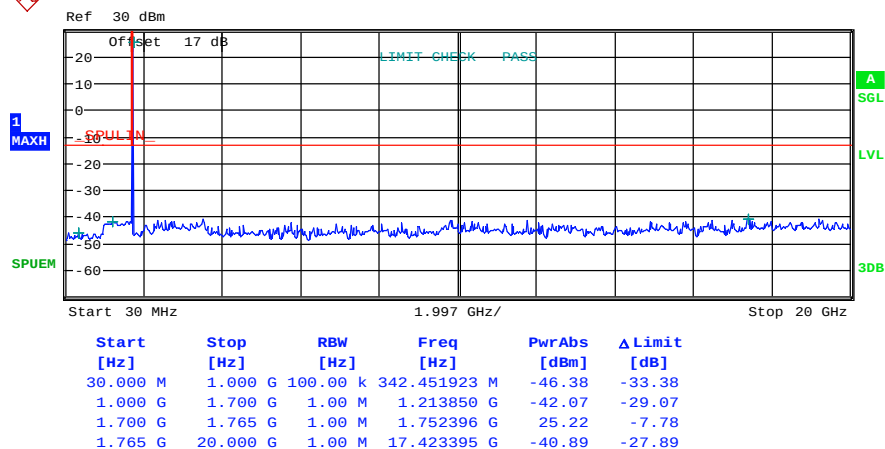


Date: 26.DEC.2021 17:18:53



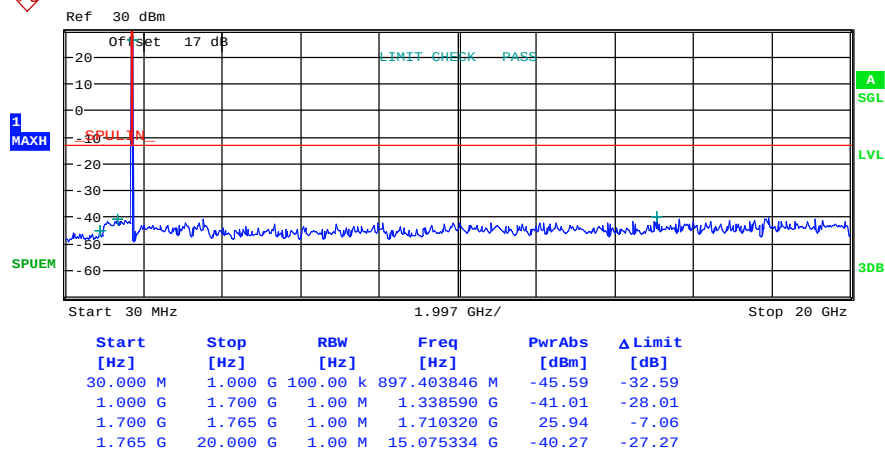
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Date: 26.DEC.2021 17:16:05

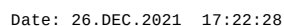
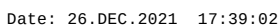
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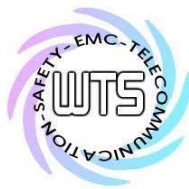


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FCC ID: GX9HSGWQT

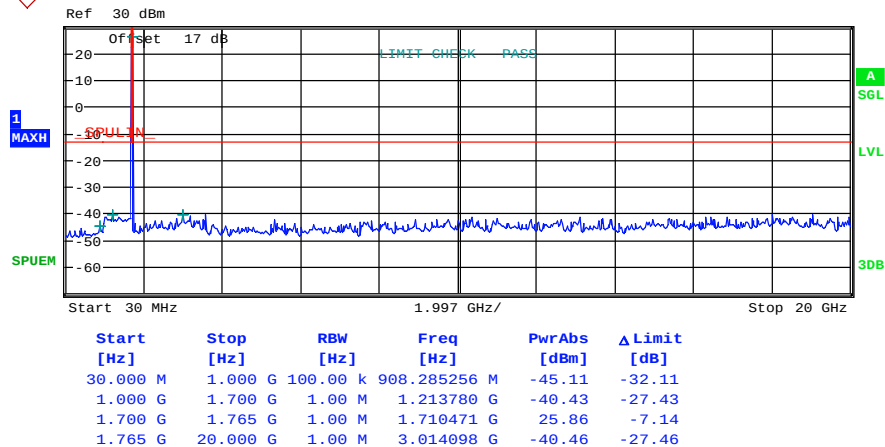




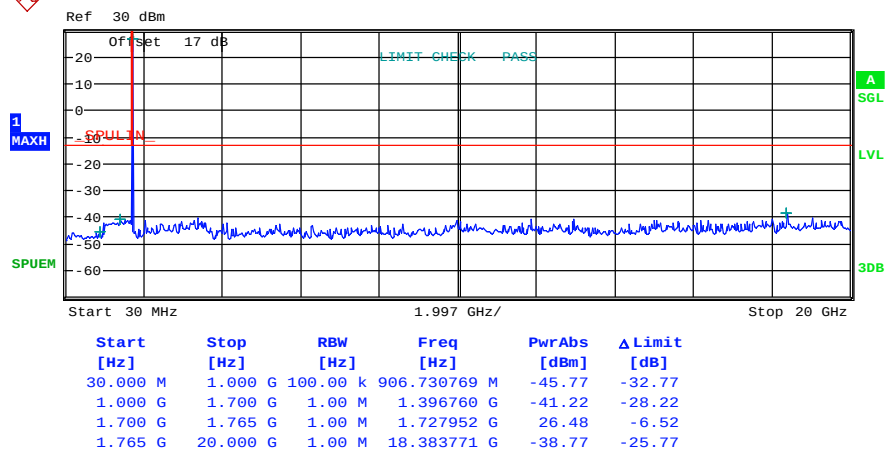
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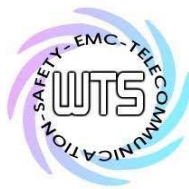
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Date: 26.DEC.2021 17:30:27

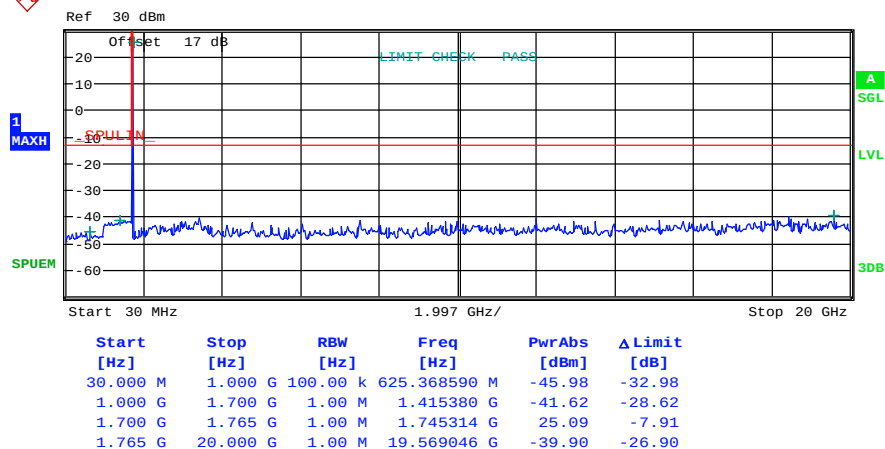


Date: 26.DEC.2021 17:31:00



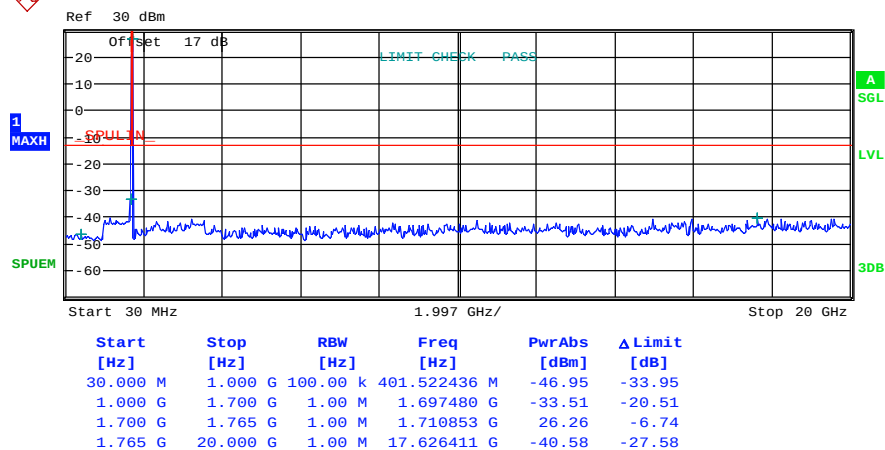
Report Number: W6M22112-21430-P-247

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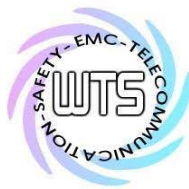


Date: 26.DEC.2021 17:31:23

15 MHz 16QAM

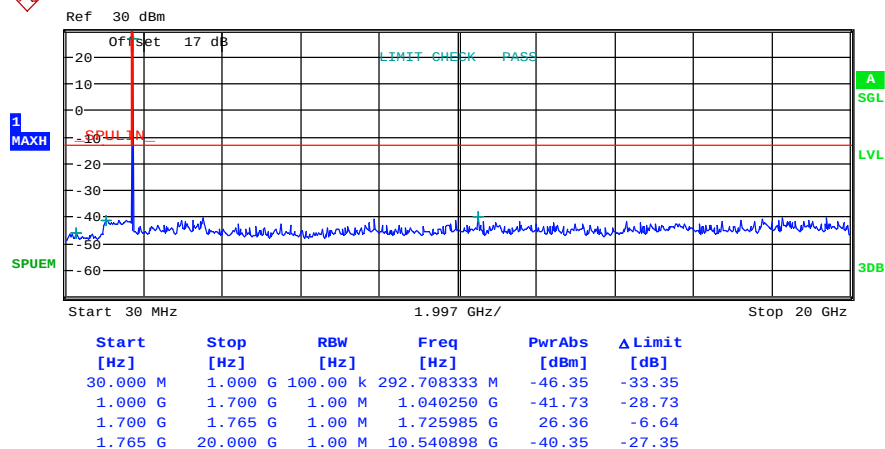


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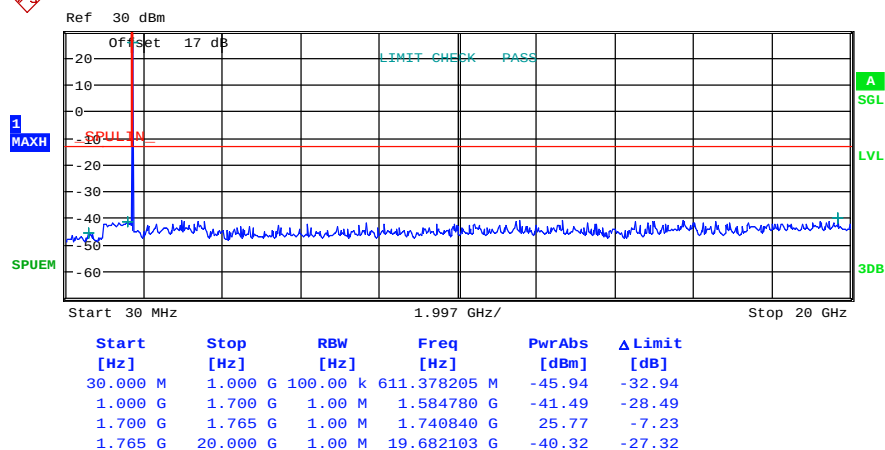


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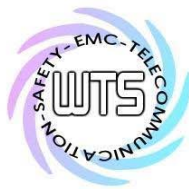
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Date: 26.DEC.2021 17:40:40



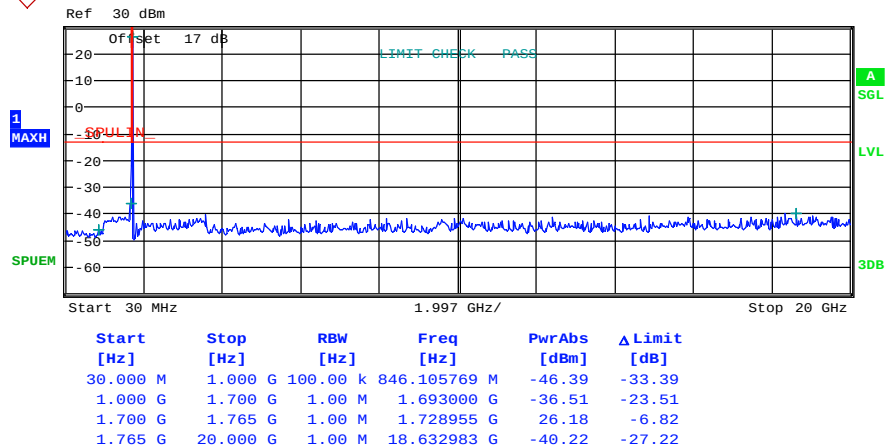
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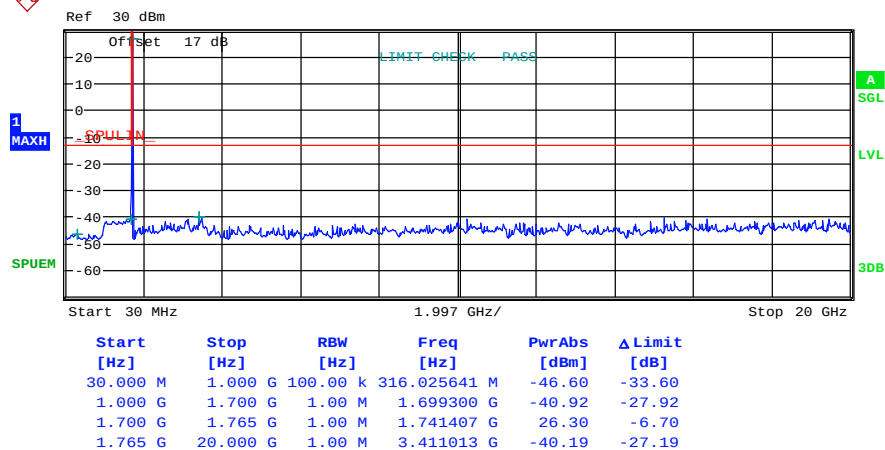
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

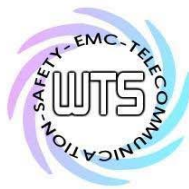
20 MHz 16QAM



Date: 26.DEC.2021 17:52:46

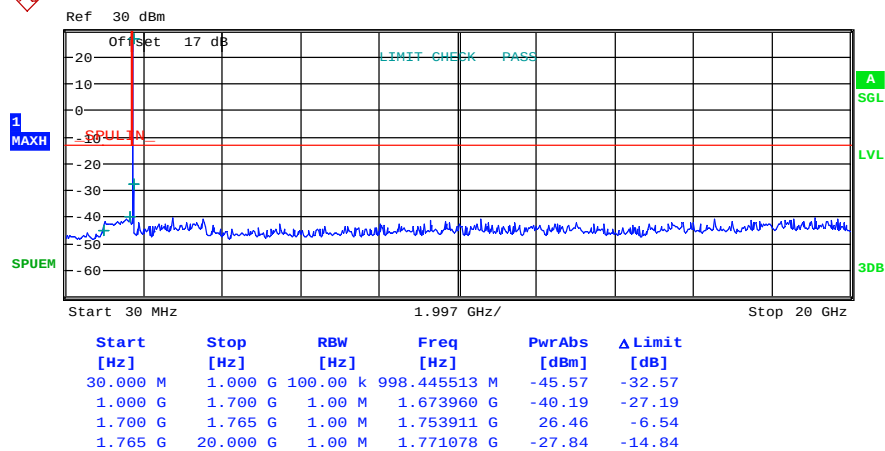


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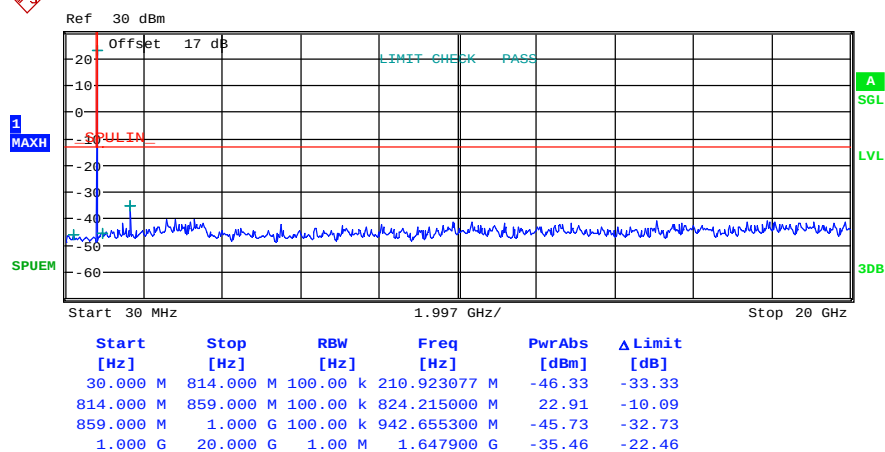
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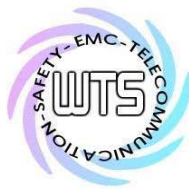
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Band 5

1.4 MHz QPSK

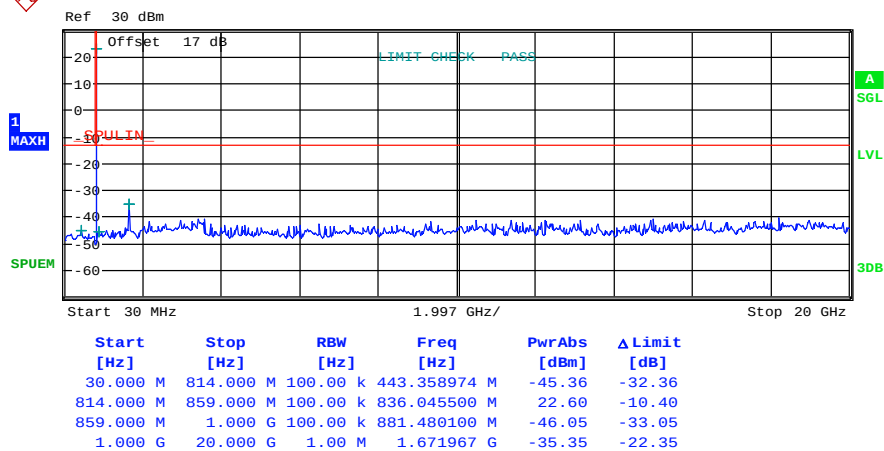


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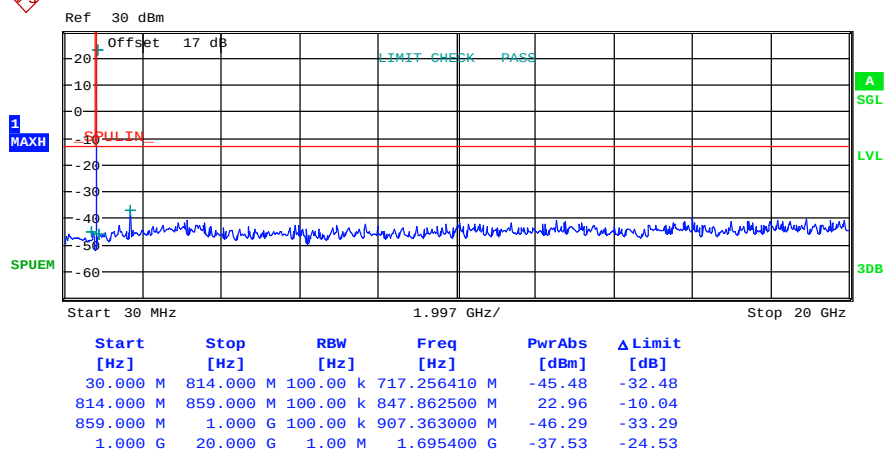


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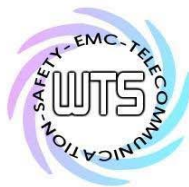
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Date: 26.DEC.2021 18:05:37

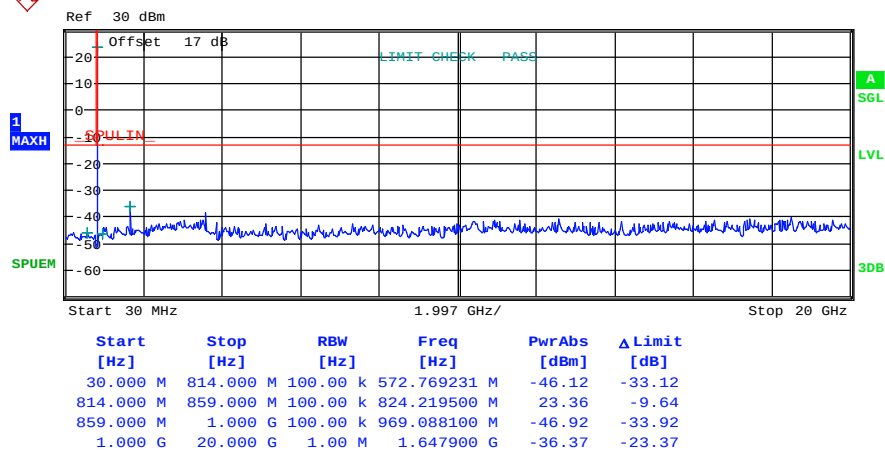


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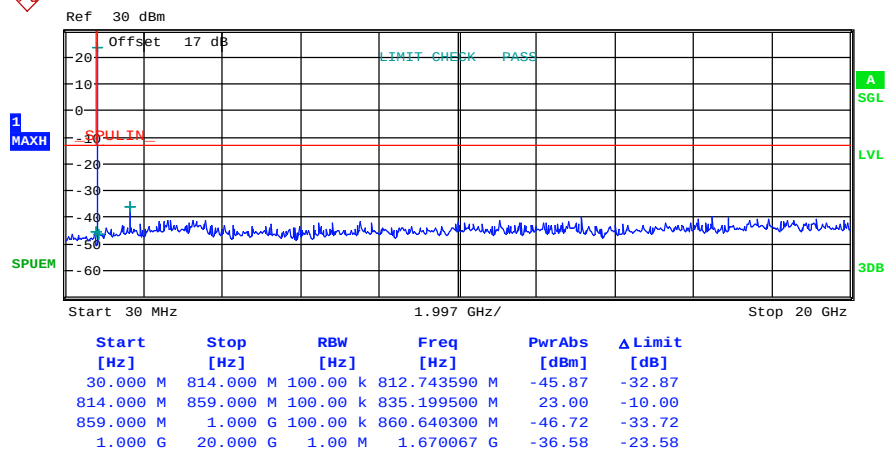
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

3 MHz QPSK



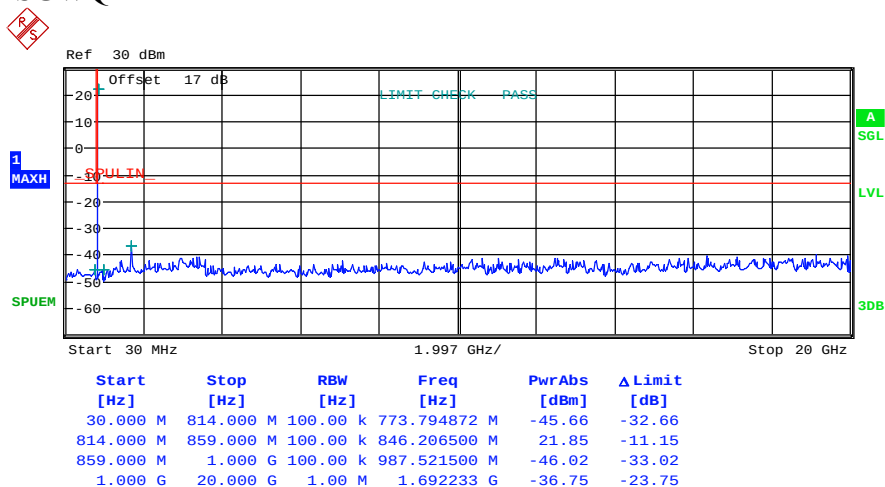
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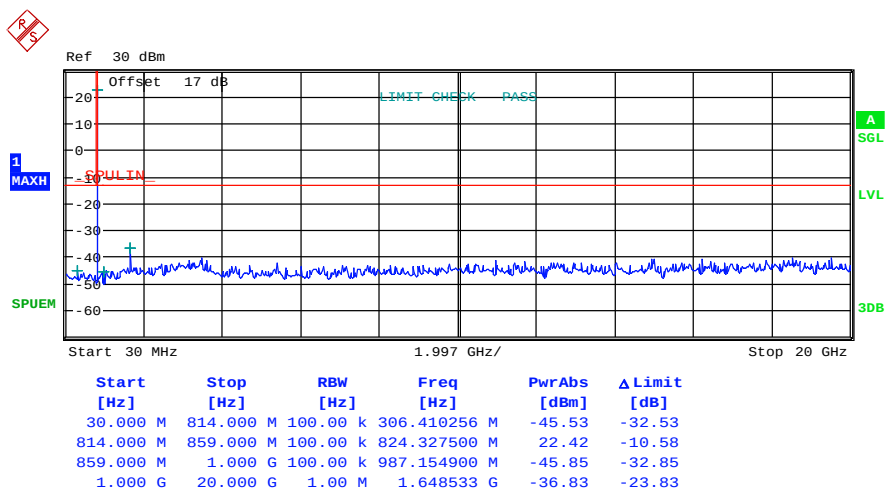


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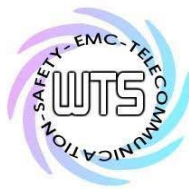


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5 MHz QPSK



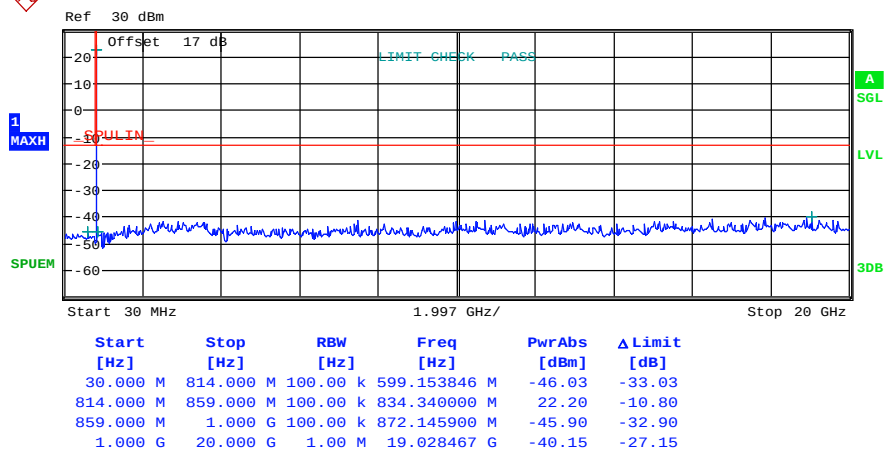
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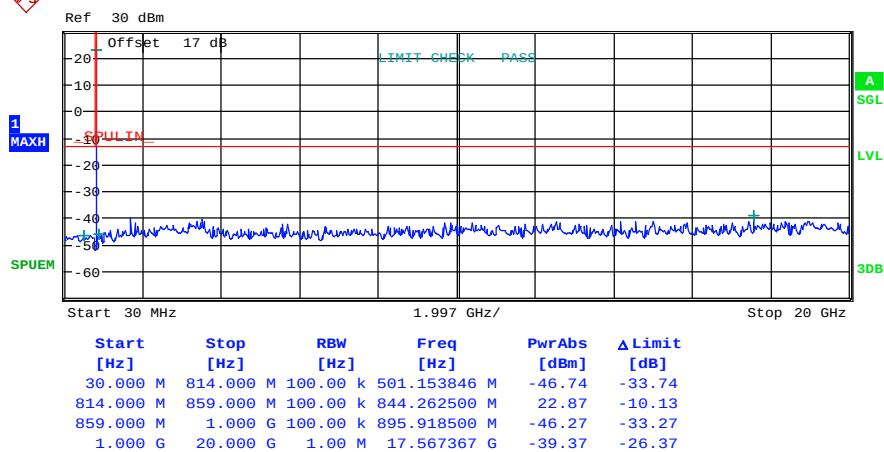
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22112-21430-P-247

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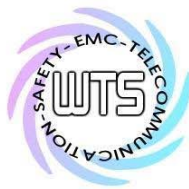
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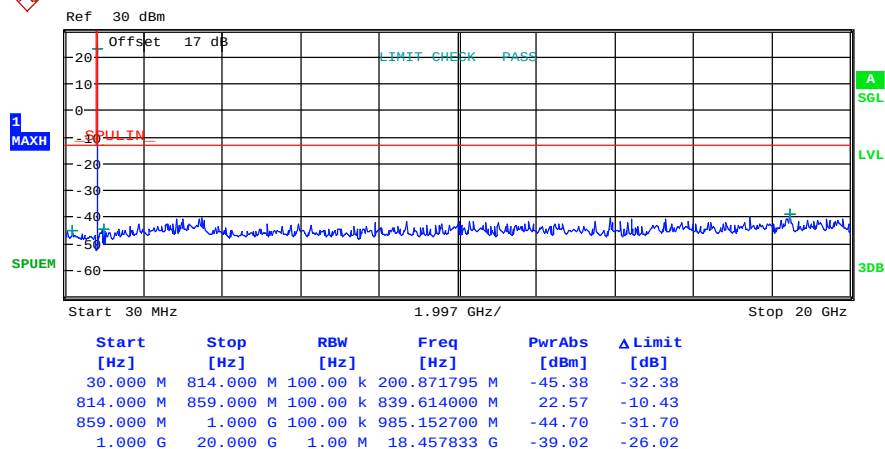


10 MHz QPSK



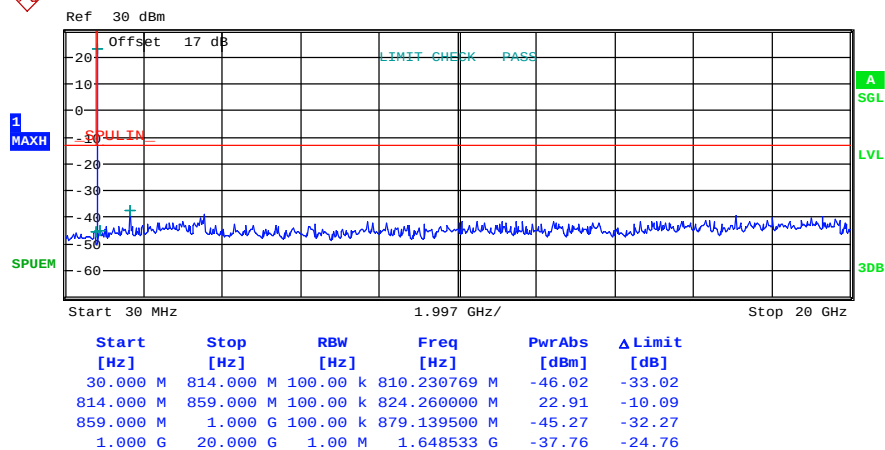
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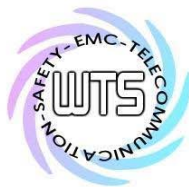


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1.4 MHz 16QAM



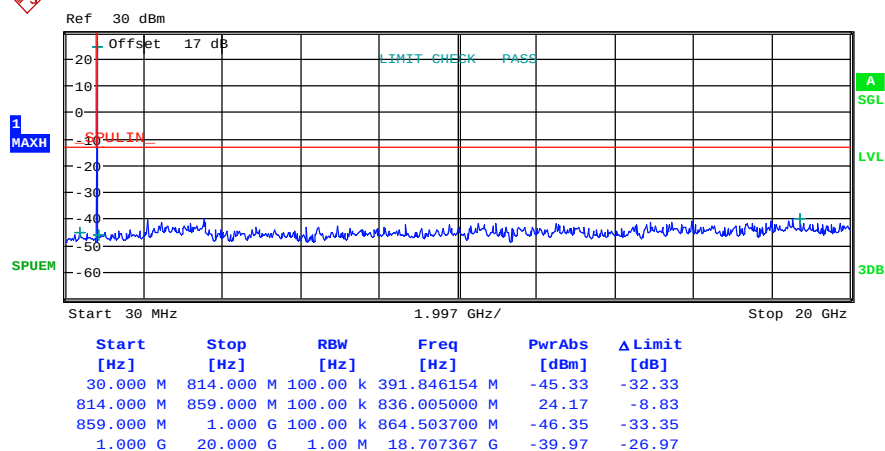
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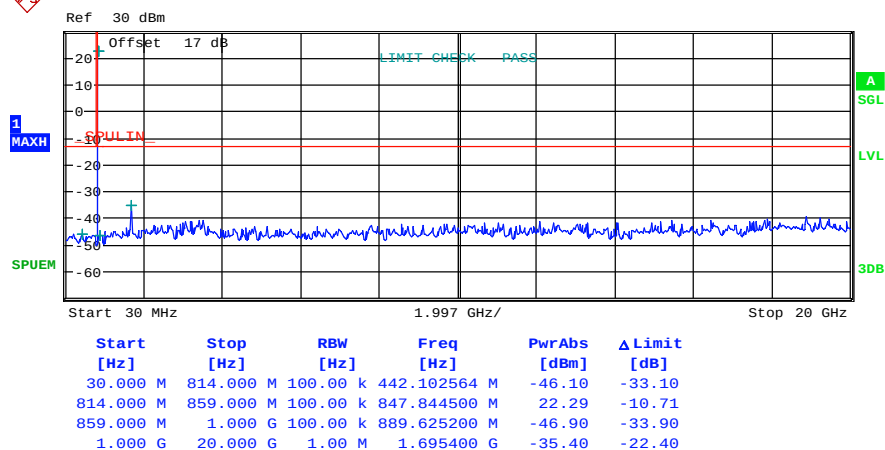
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22112-21430-P-247

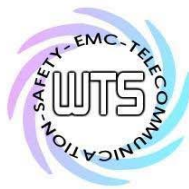
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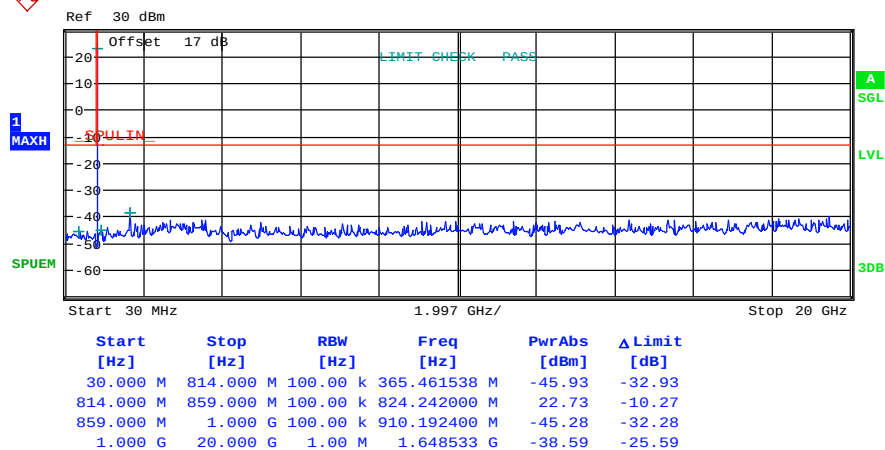


Worldwide Testing Services(Taiwan) Co., Ltd.

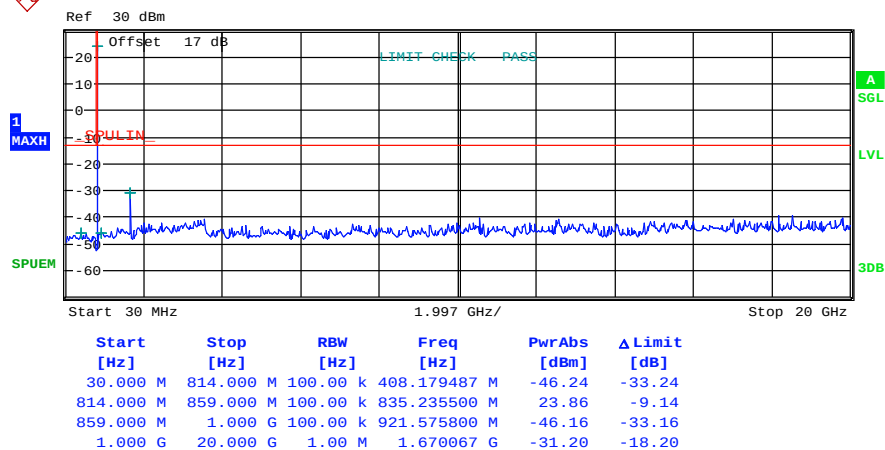
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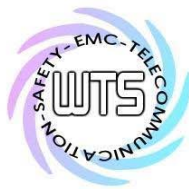
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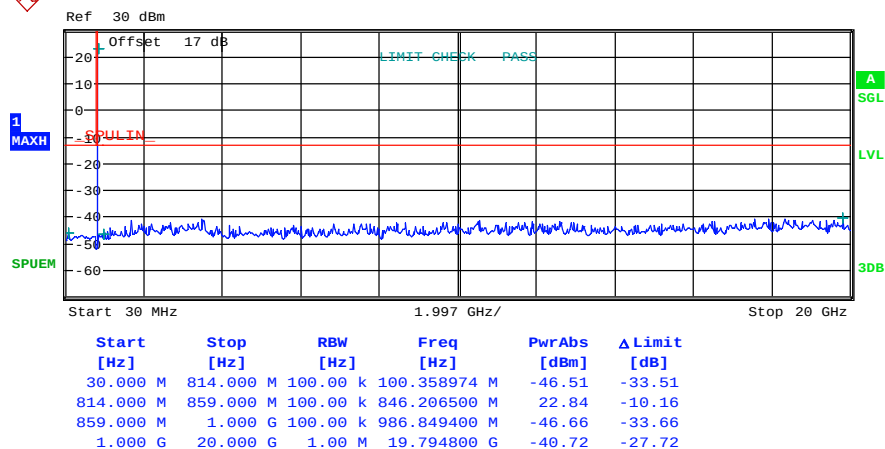


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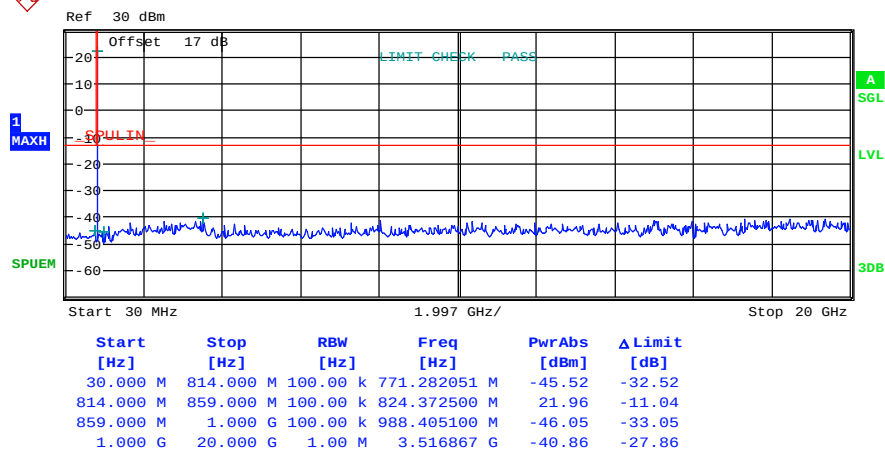
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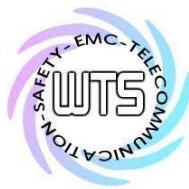


Date: 26.DEC.2021 18:09:04

5 MHz 16QAM



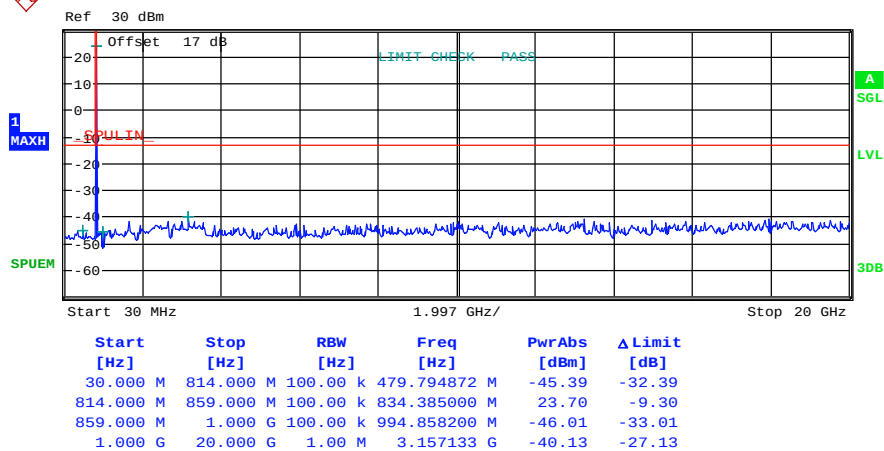
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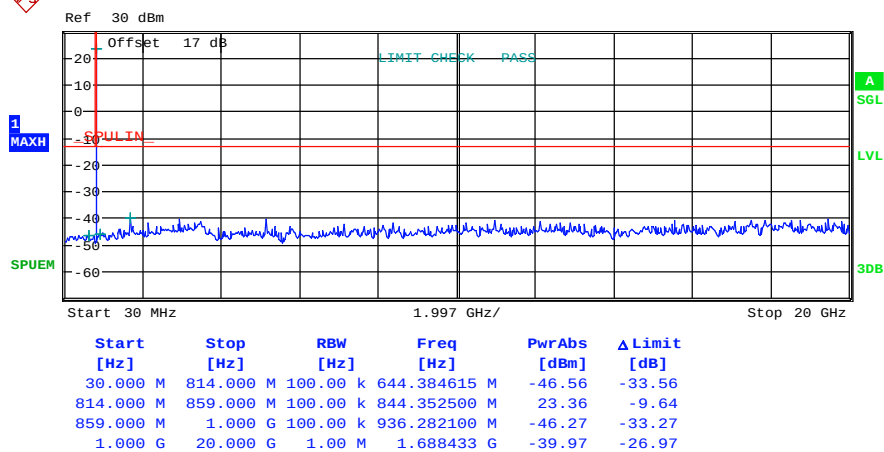
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22112-21430-P-247

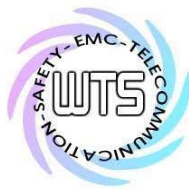
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Date: 26.DEC.2021 18:12:30

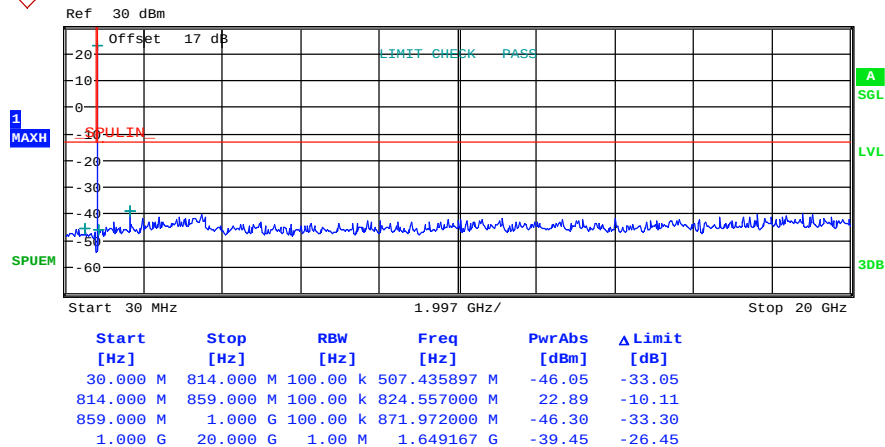


Worldwide Testing Services(Taiwan) Co., Ltd.

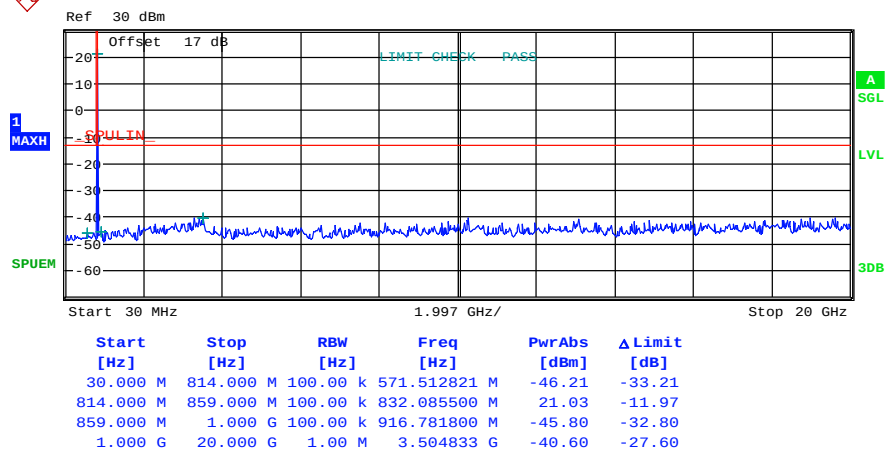
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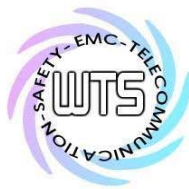
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Date: 26.DEC.2021 18:17:59



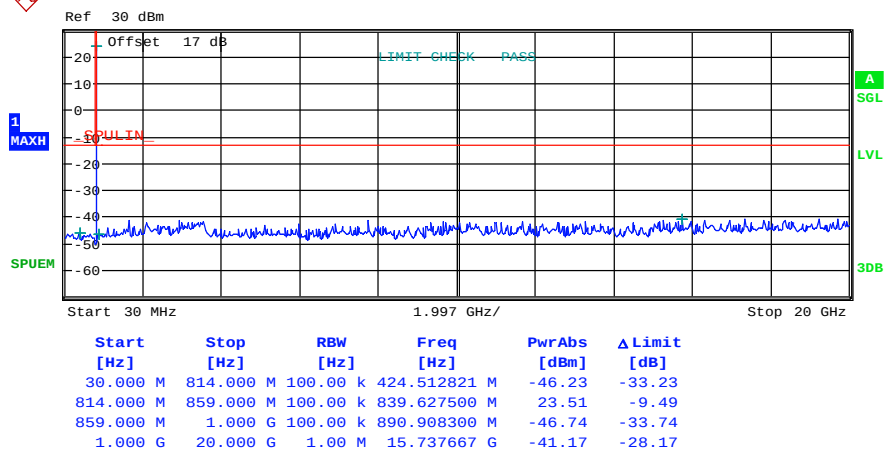
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Worldwide Testing Services(Taiwan) Co., Ltd.

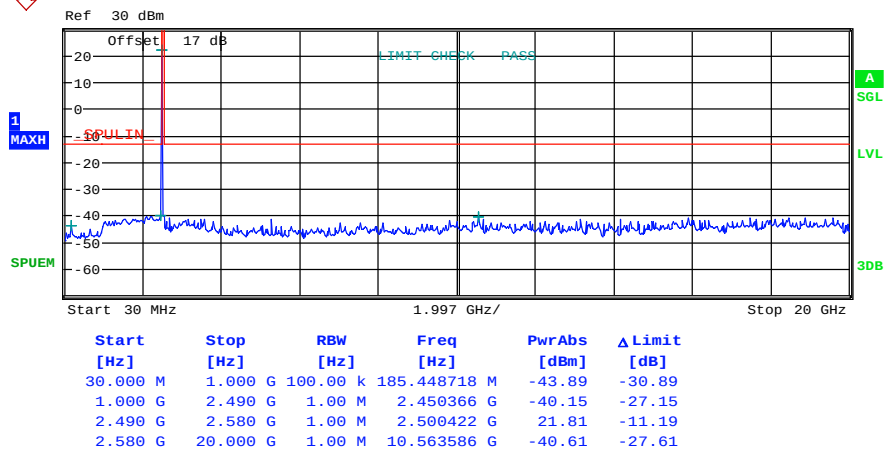
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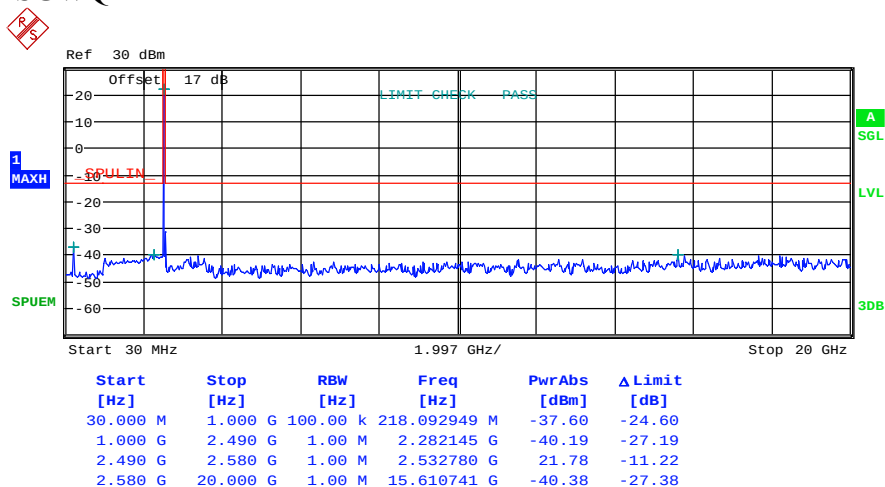
Band 7
5 MHz QPSK



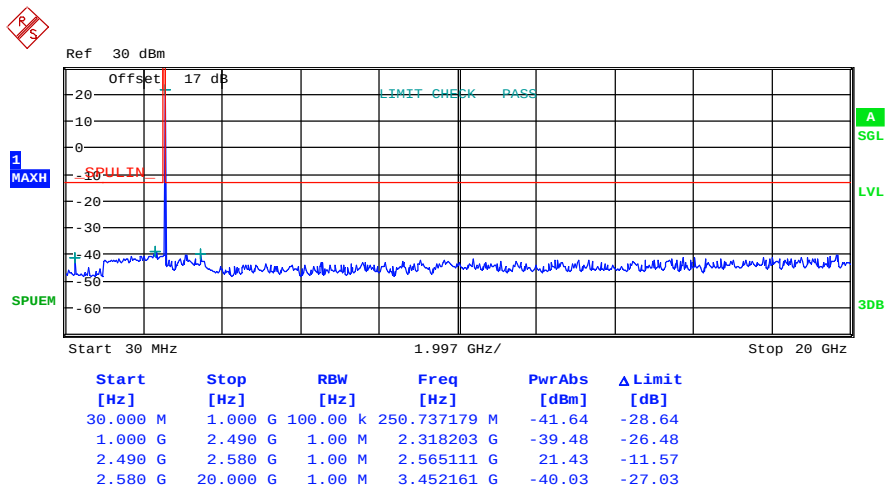
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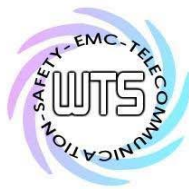
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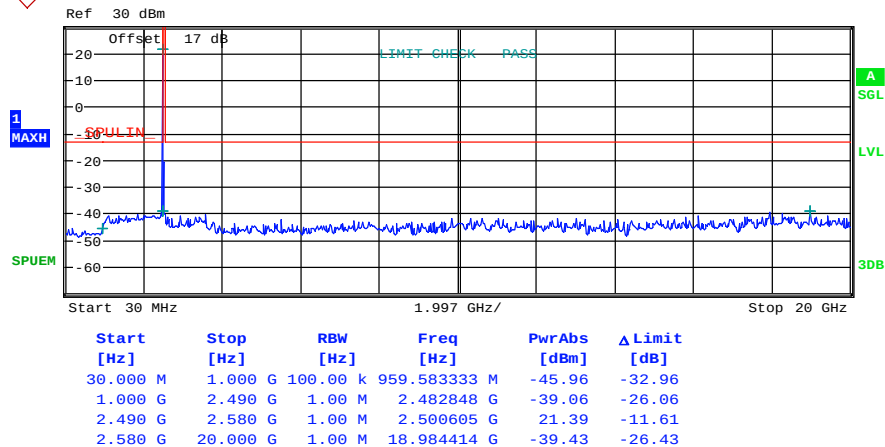


Worldwide Testing Services(Taiwan) Co., Ltd.

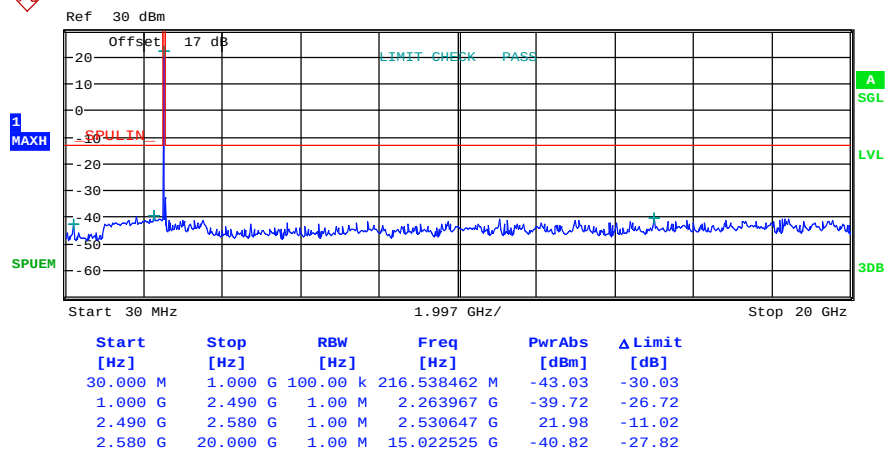
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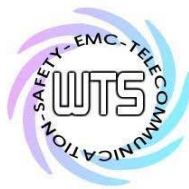
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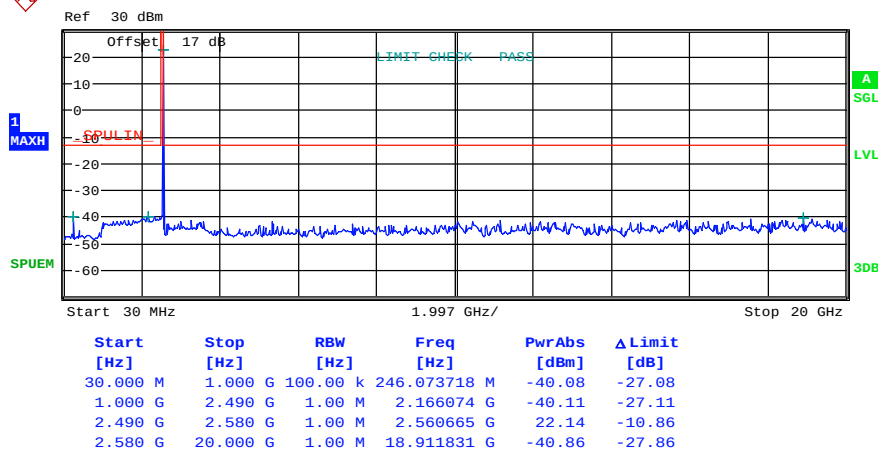


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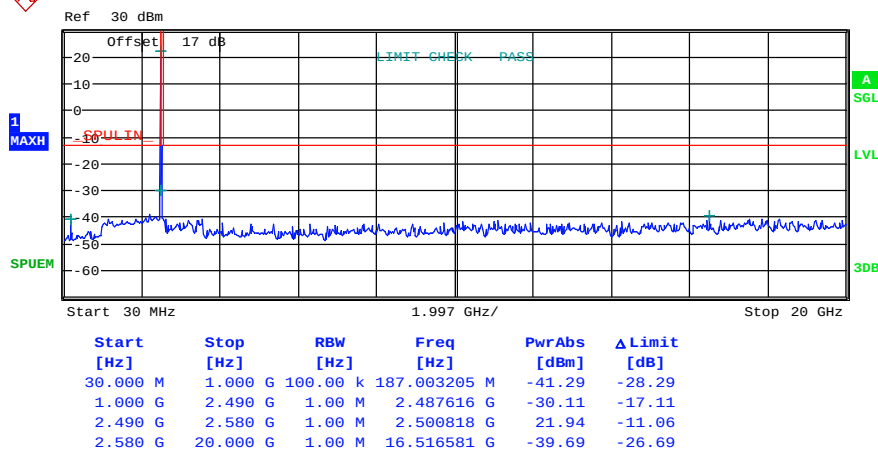
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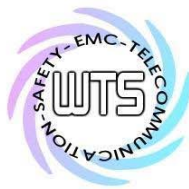


Date: 26.DEC.2021 19:24:55

15 MHz QPSK



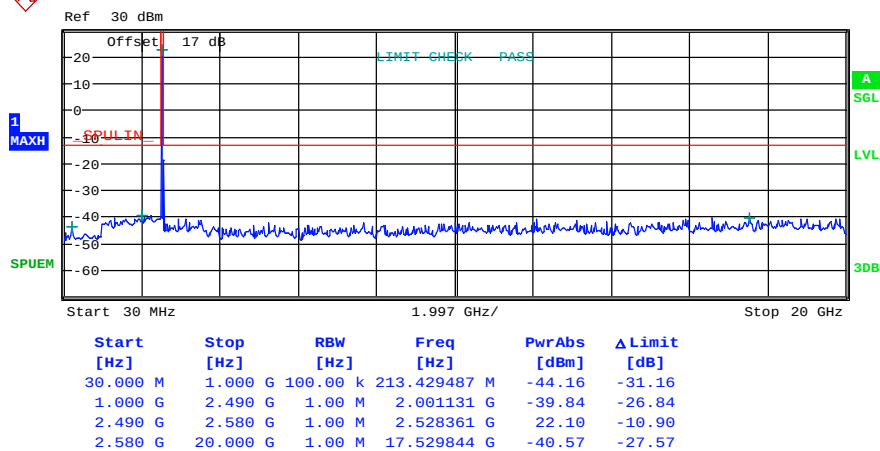
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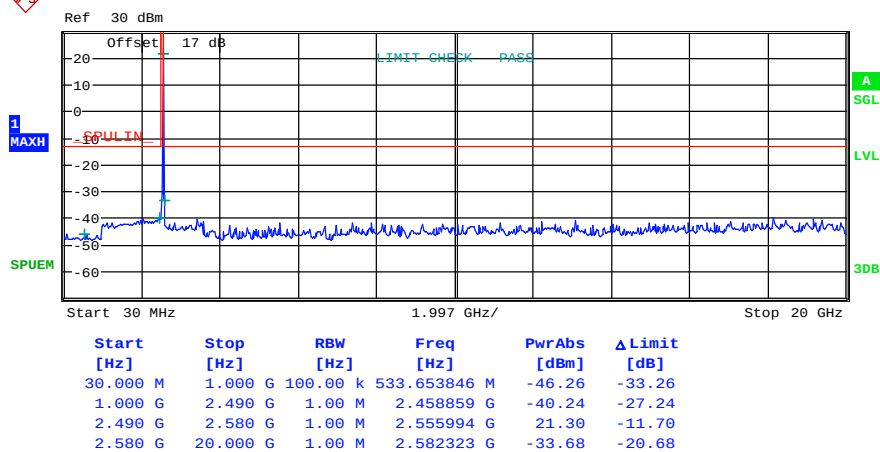
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22112-21430-P-247

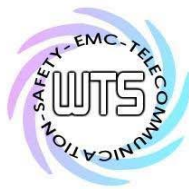
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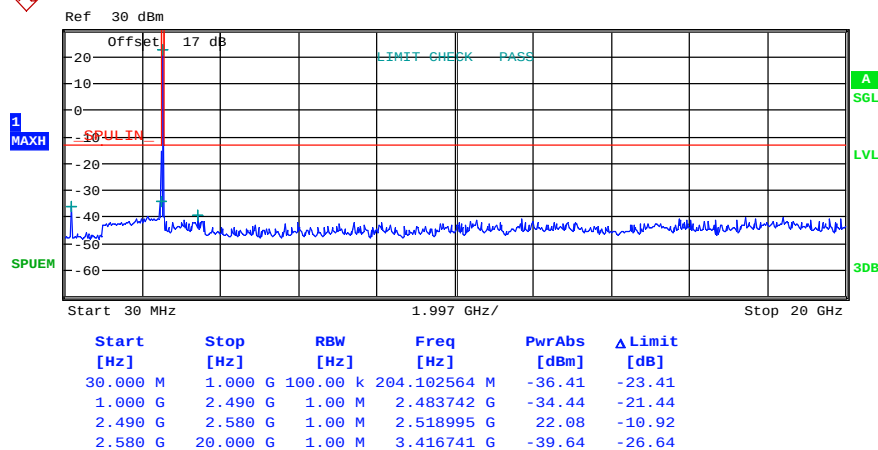
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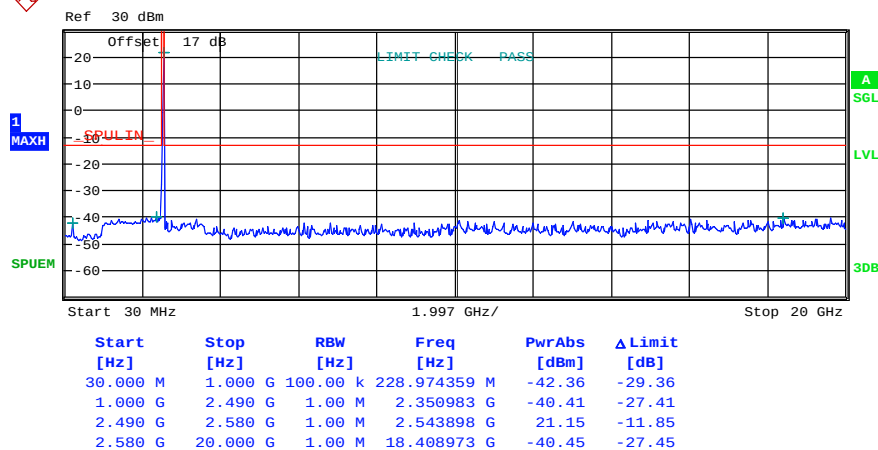
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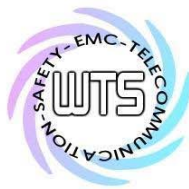
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Date: 26.DEC.2021 19:31:52

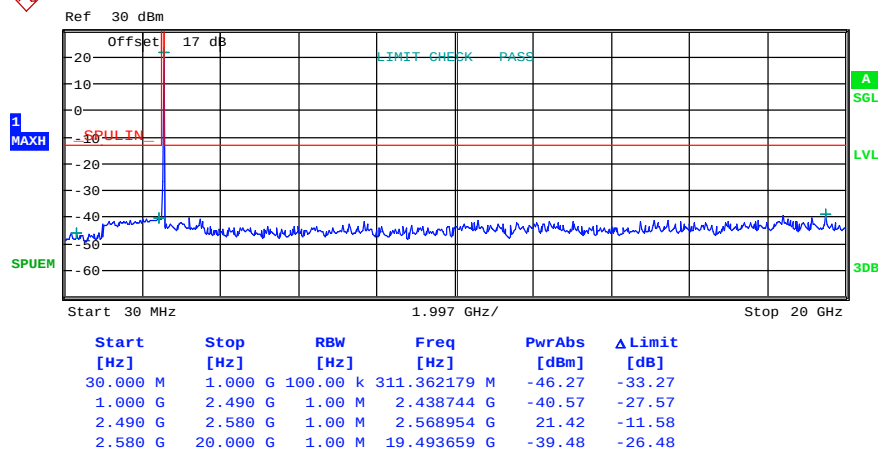


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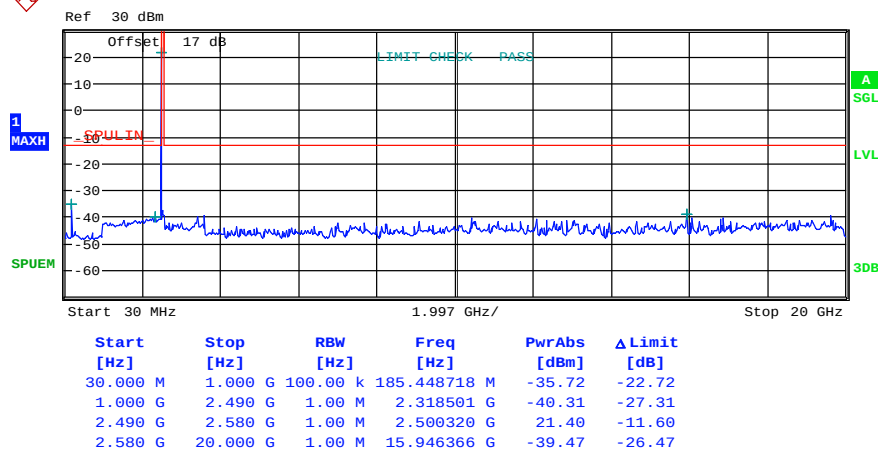
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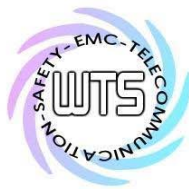


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5 MHz 16QAM

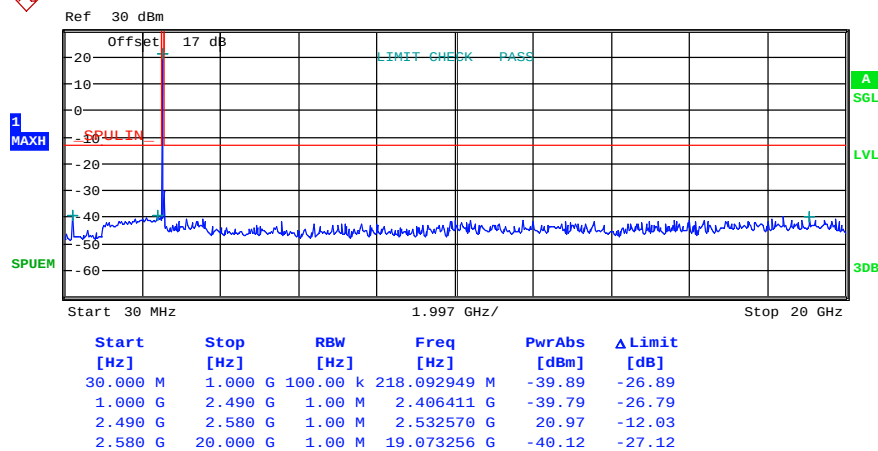


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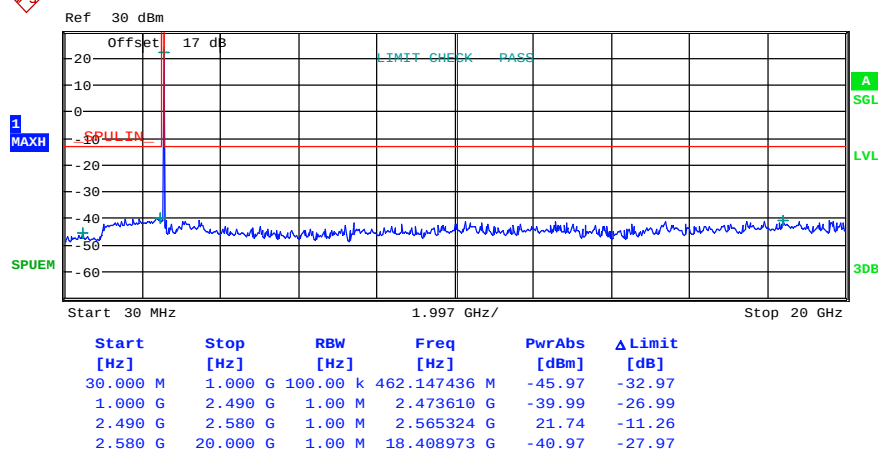


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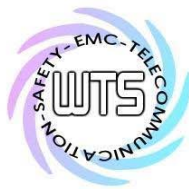
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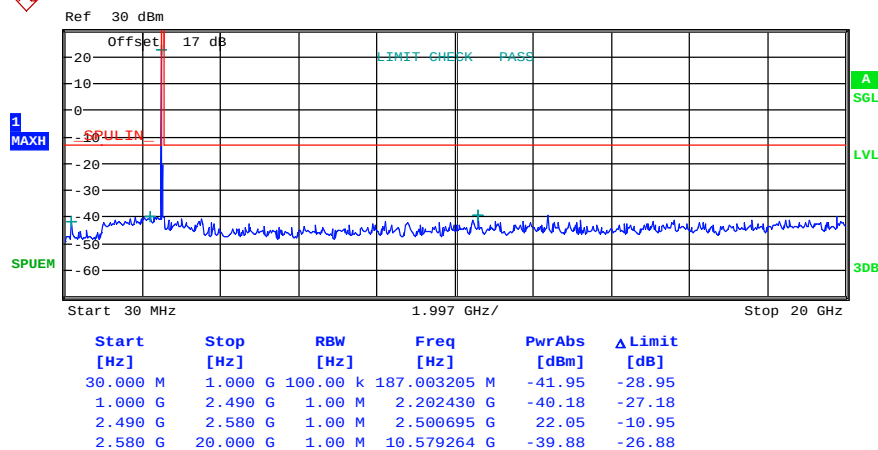
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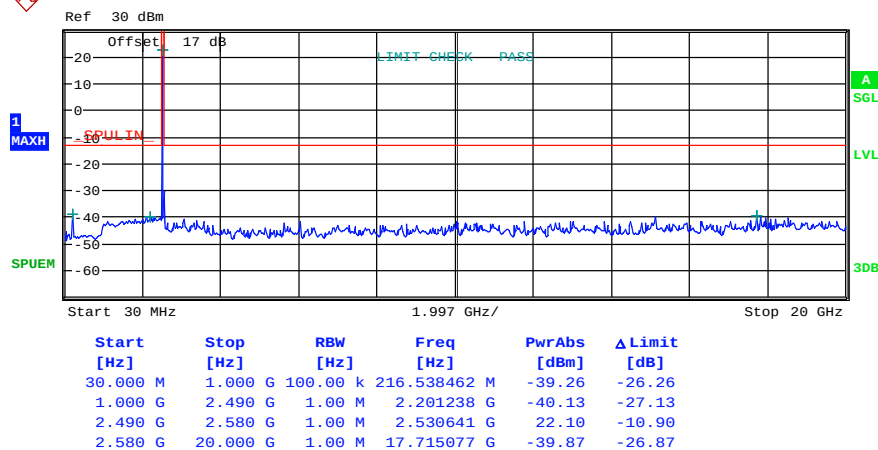
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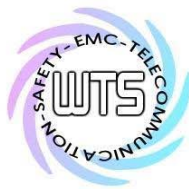
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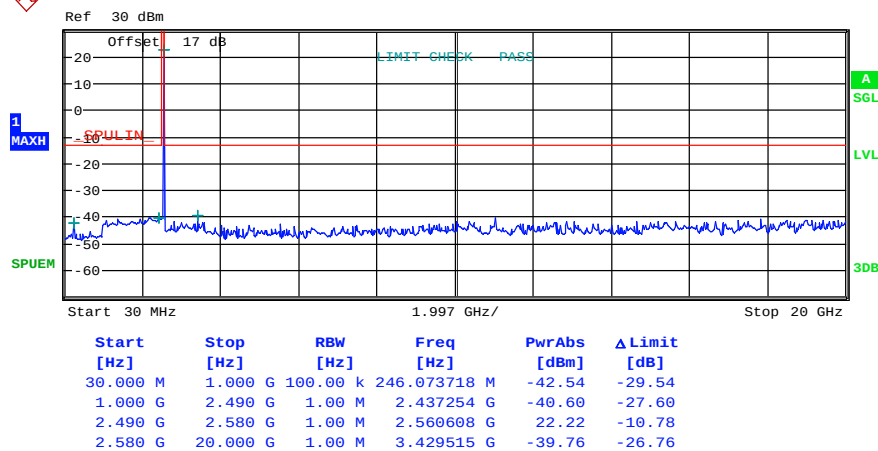


Date: 26.DEC.2021 19:24:04



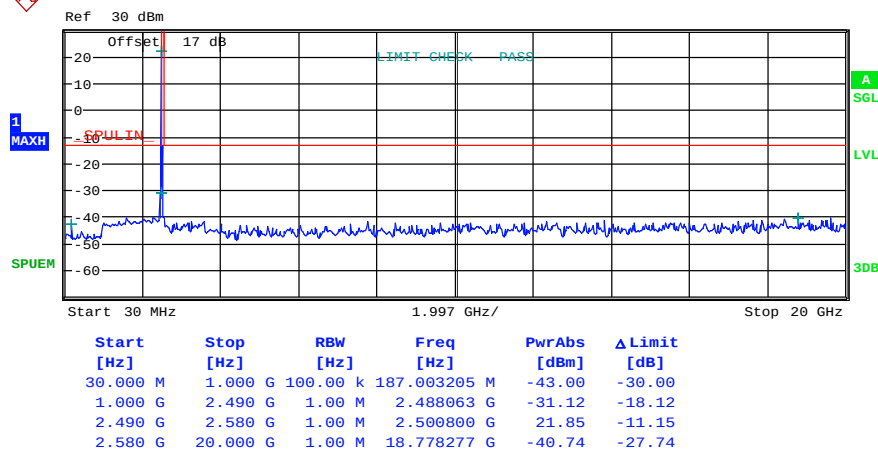
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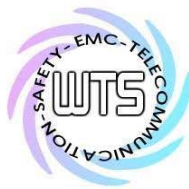


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15 MHz 16QAM



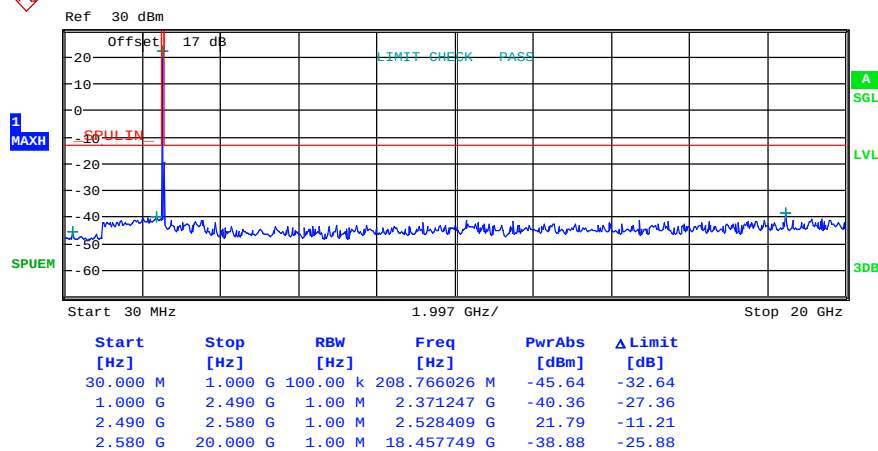
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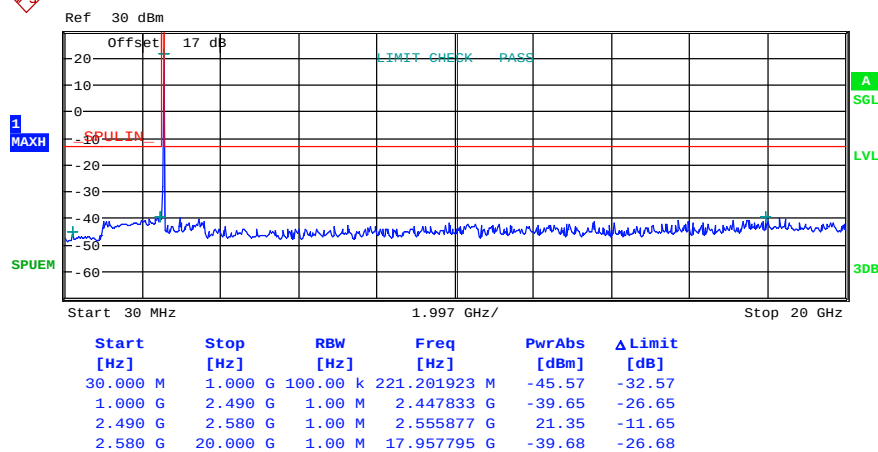
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22112-21430-P-247

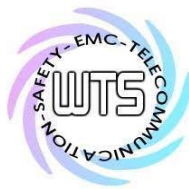
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Date: 26.DEC.2021 19:33:53



Date: 26.DEC.2021 19:28:37

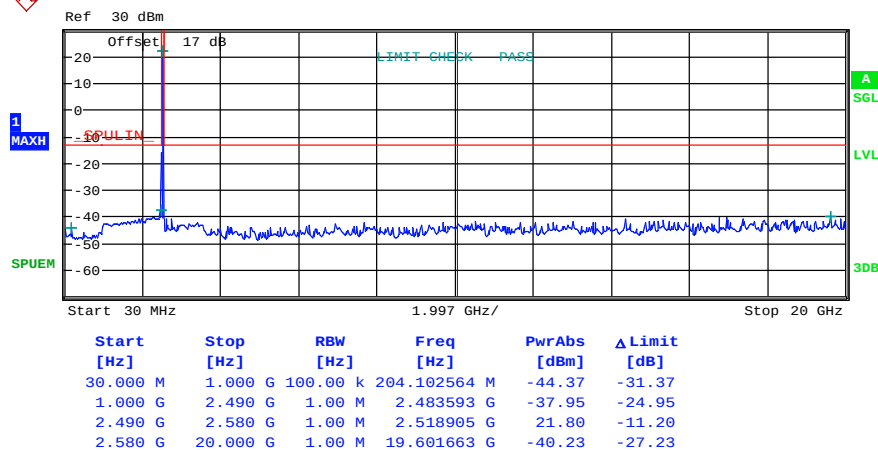


Worldwide Testing Services(Taiwan) Co., Ltd.

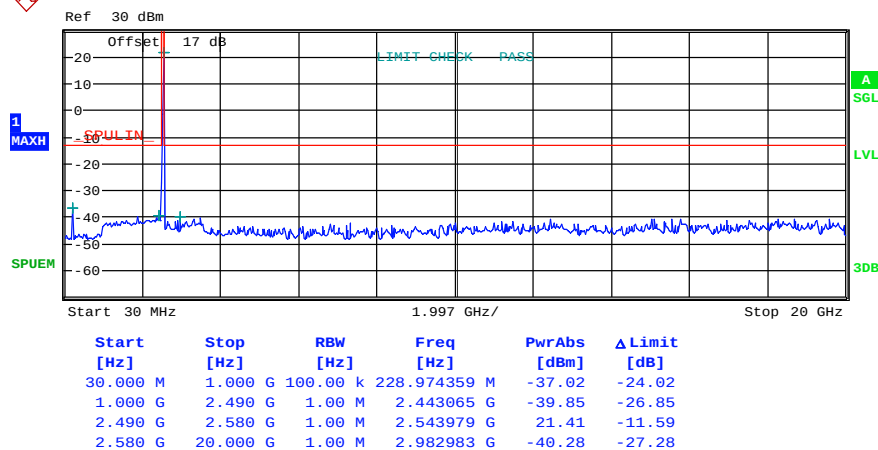
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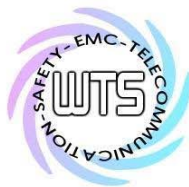
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Date: 26.DEC.2021 19:32:23

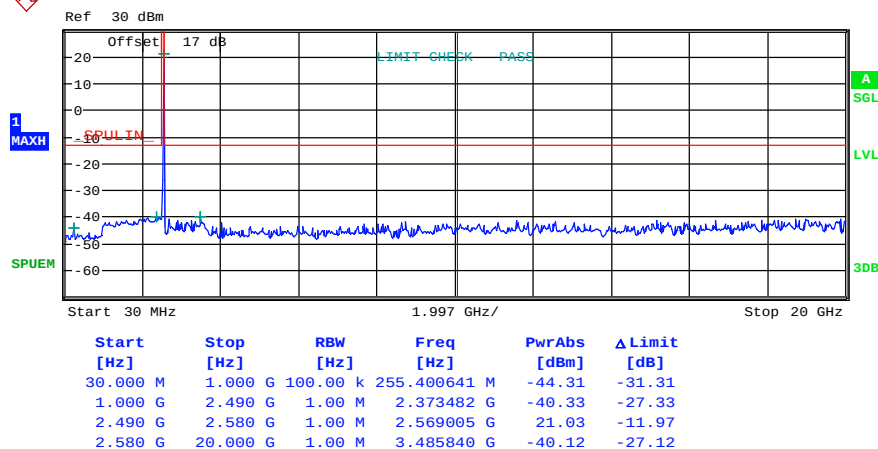


Date: 26.DEC.2021 19:32:45



Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



Date: 26.DEC.2021 19:33:11

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

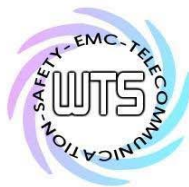
7.3 Explanation of test result

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: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

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: HSGW-MAX8

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

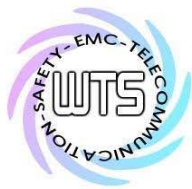
Corrected Factor = SG level – Received level-Cable loss + substitution antenna gain

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



Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

8.5 Test result of band edge emissions

Test date: December 24, 2021-January 14, 2022

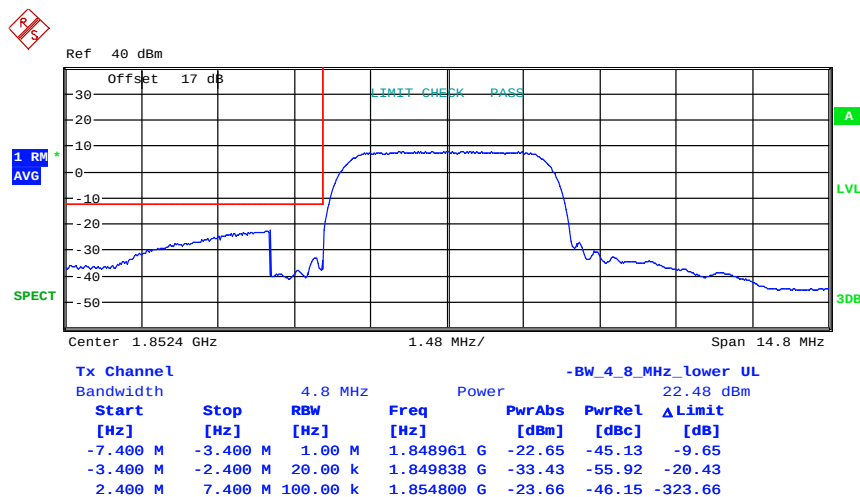
Temperature: 20.2 °C

Humidity: 56.1%

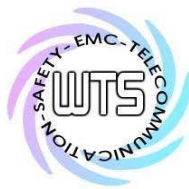
Tester: Spencer

WCDMA

Band 2

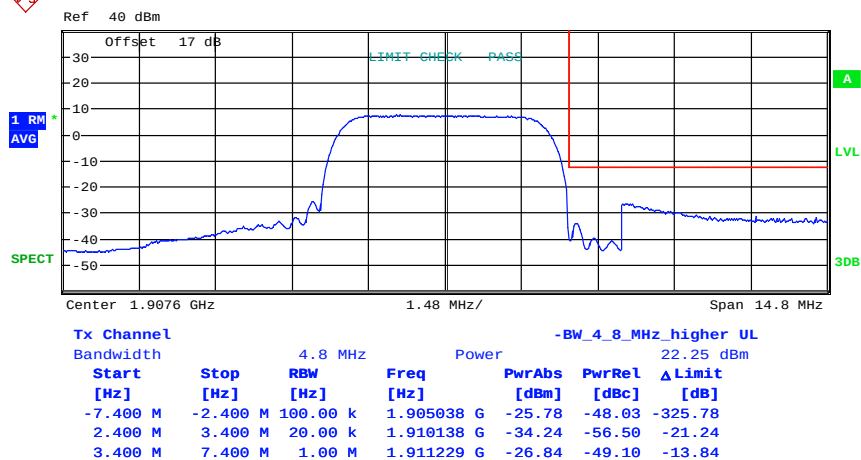


Date: 25.DEC.2021 13:47:29



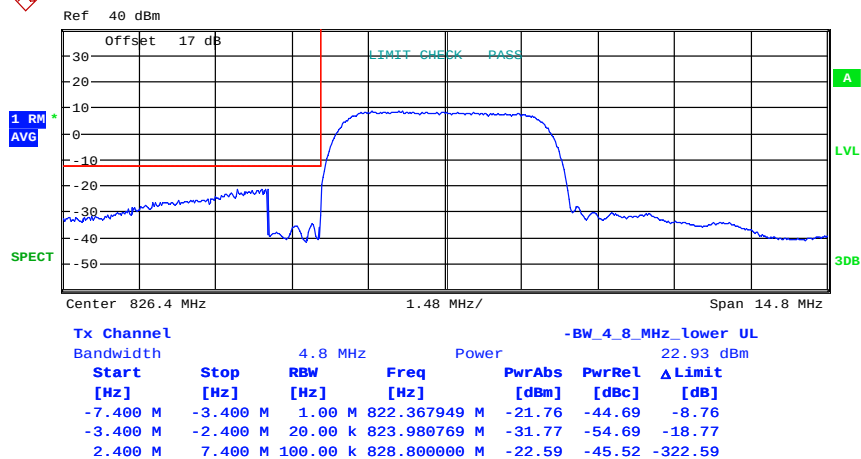
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

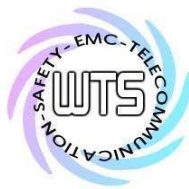


Date: 25.DEC.2021 13:48:30

Band 5



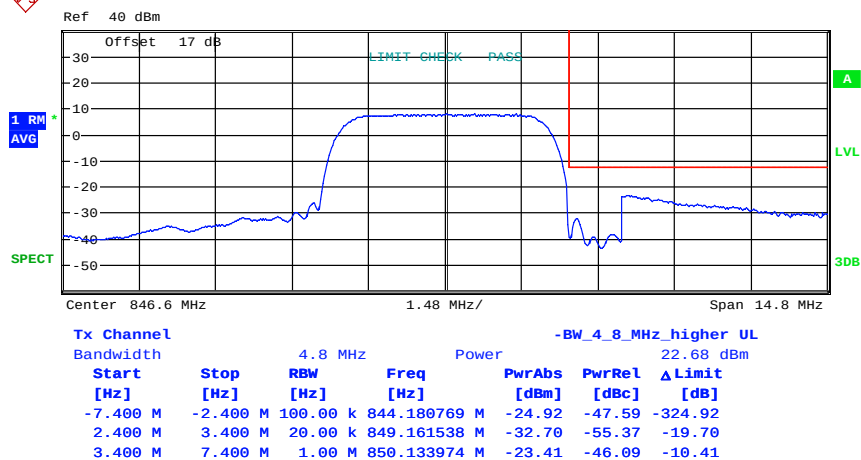
Date: 25.DEC.2021 13:50:34



Worldwide Testing Services(Taiwan) Co., Ltd.

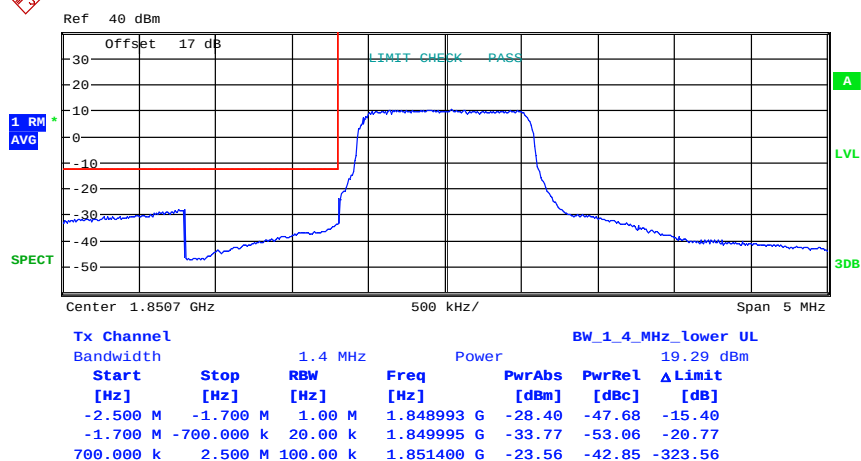
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

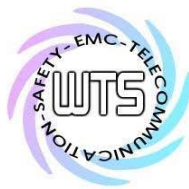


Date: 25.DEC.2021 13:49:50

LTE
Band 2
1.4 MHz QPSK
FRB



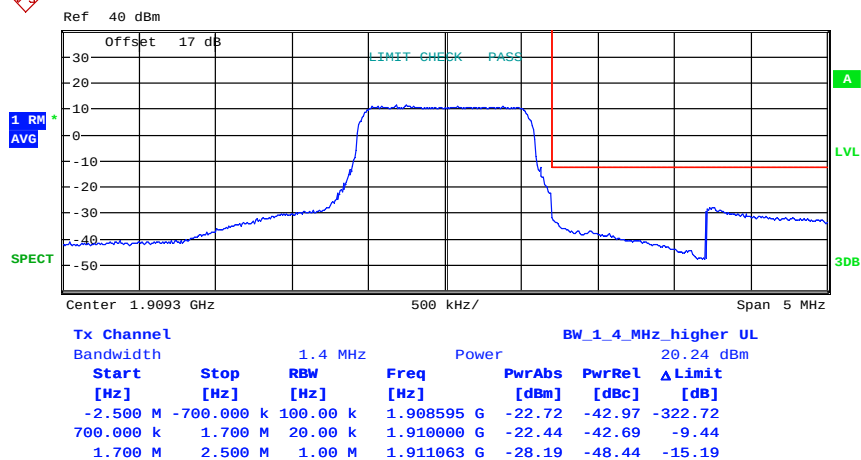
Date: 24.DEC.2021 14:34:36



Worldwide Testing Services(Taiwan) Co., Ltd.

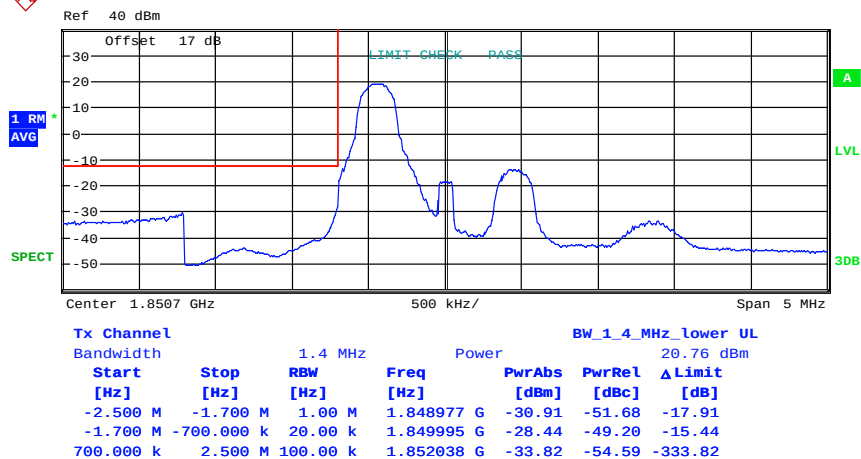
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

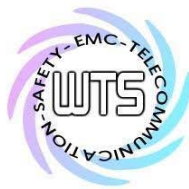


Date: 24.DEC.2021 14:35:59

1RB

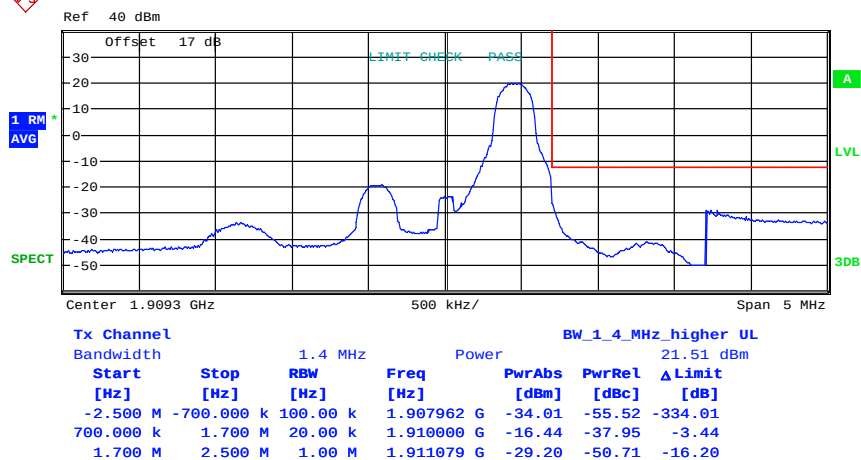


Date: 24.DEC.2021 14:34:14



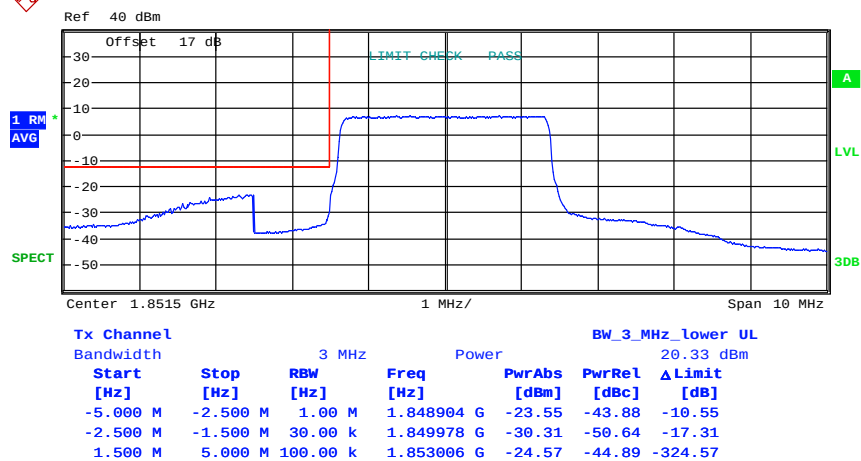
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

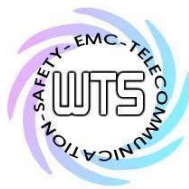


Date: 24.DEC.2021 14:36:26

3 MHz QPSK
FRB

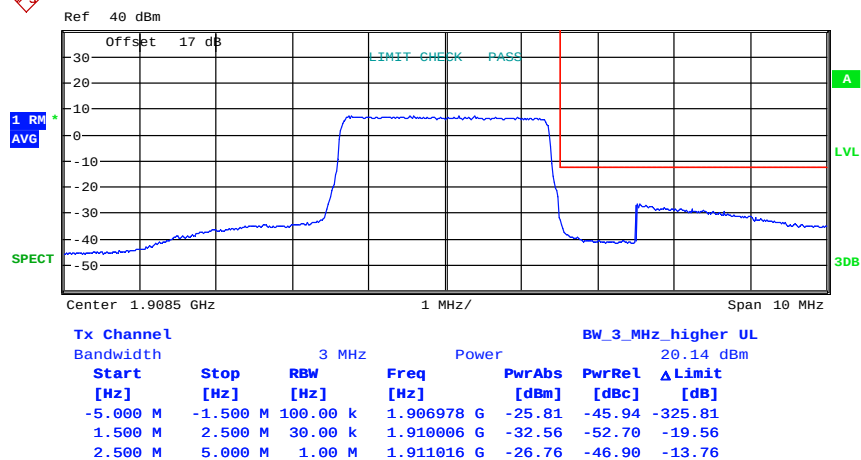


Date: 24.DEC.2021 14:31:40



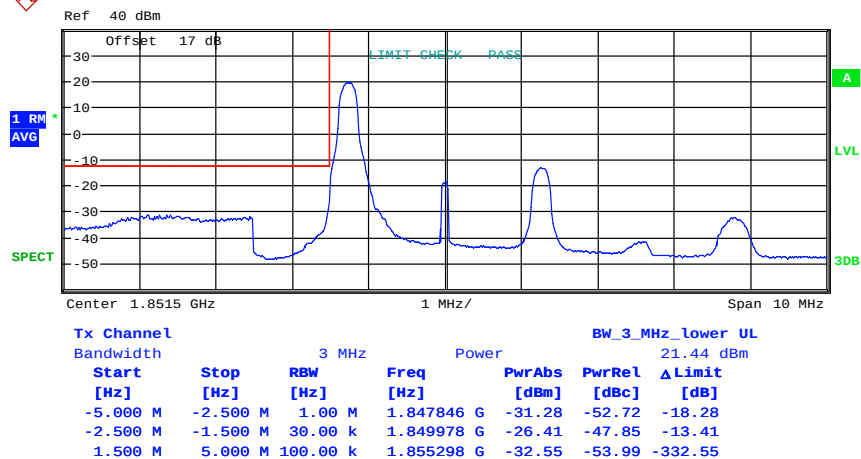
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

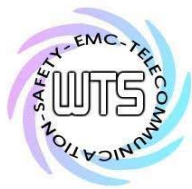


Date: 24.DEC.2021 14:30:29

1RB

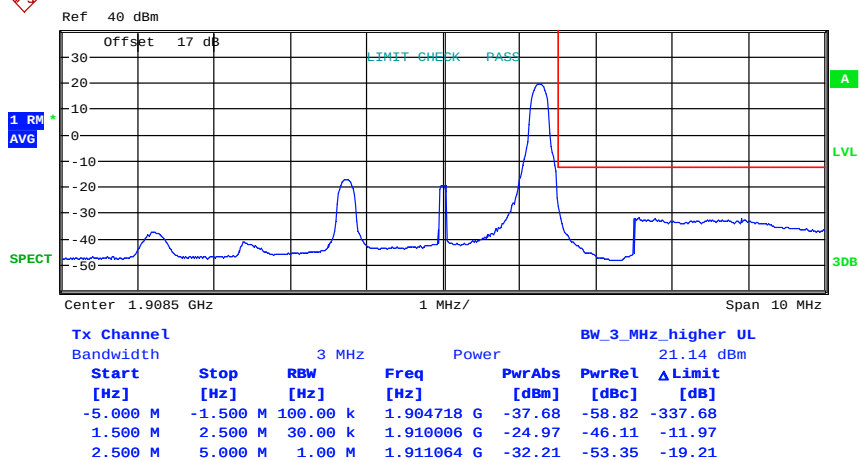


Date: 24.DEC.2021 14:32:02



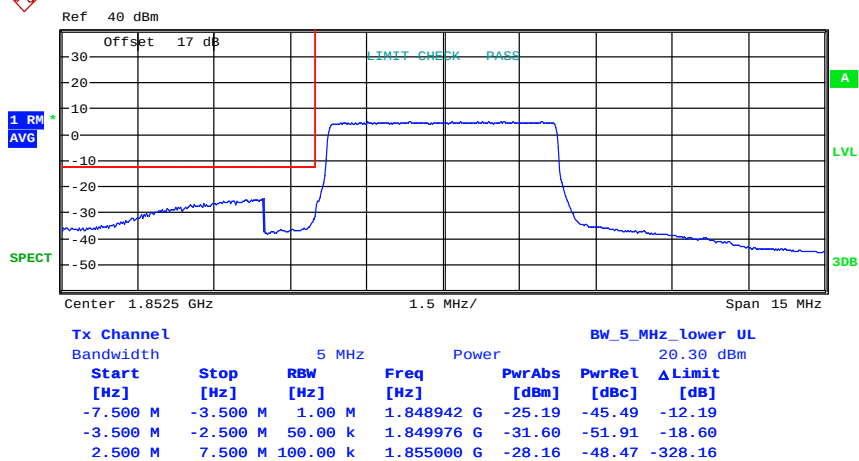
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

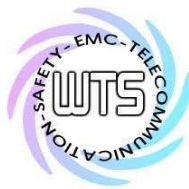


Date: 24.DEC.2021 14:30:10

5 MHz QPSK
FRB

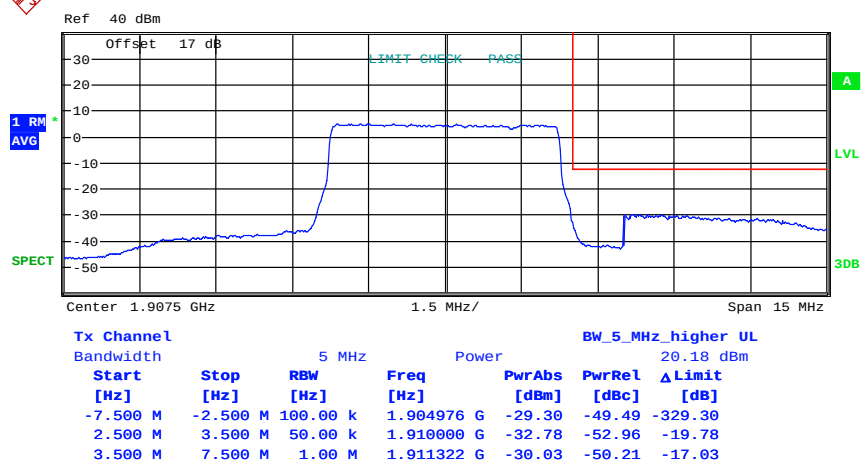


Date: 24.DEC.2021 14:19:38



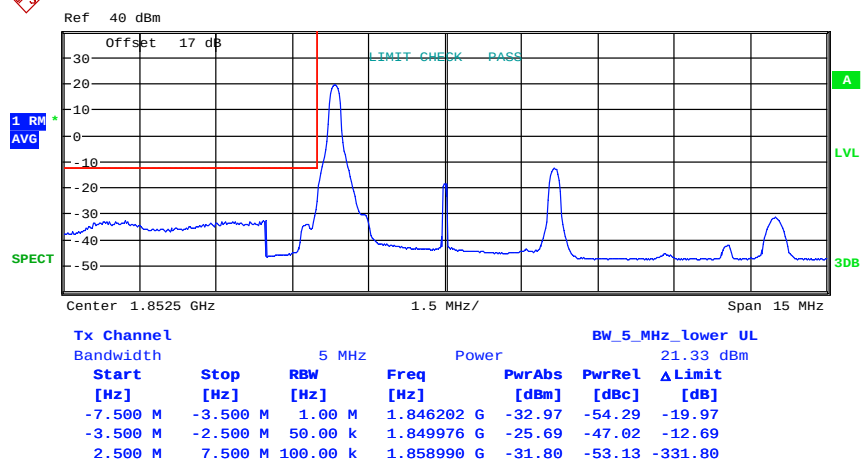
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



Date: 24.DEC.2021 14:21:06

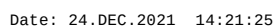
1RB



Date: 24.DEC.2021 14:19:18



FCC ID: GX9HSGWQT



Ref 40 dBm

Offset 17 dB

LIMIT CHECK PASS

1 RM
AVG

SPECT

Center 1.855 GHz 3 MHz/ Span 30 MHz

Tx Channel

Bandwidth 10 MHz

Power

BW_10_MHz_lower UL 20.35 dBm

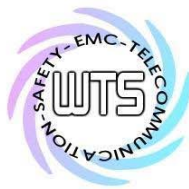
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	PwrRel [dBc]	ΔLimit [dB]
-15.000 M	-6.000 M	1.00 M	1.848846 G	-26.24	-46.60	-13.24
-6.000 M	-5.000 M	100.00 k	1.849952 G	-32.94	-53.30	-19.94
5.000 M	15.000 M	100.00 k	1.860000 G	-34.25	-54.60	-334.25

Date: 24.DEC.2021 14:16:51



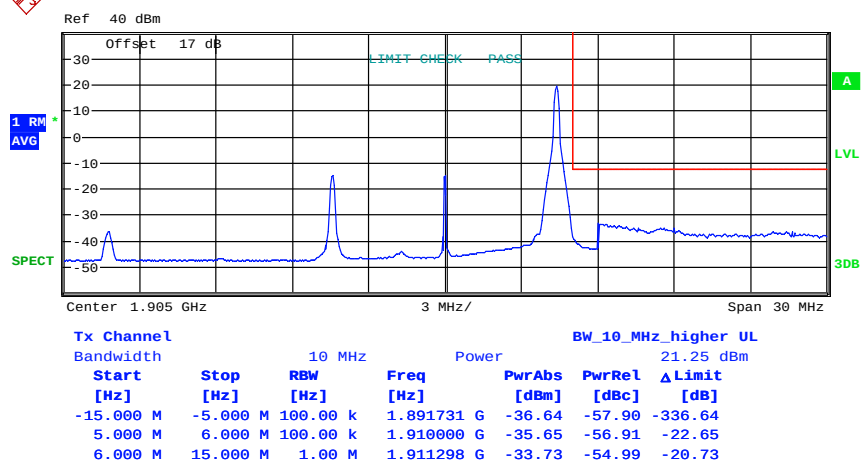
FCC ID: GX9HSGWQT

1RB



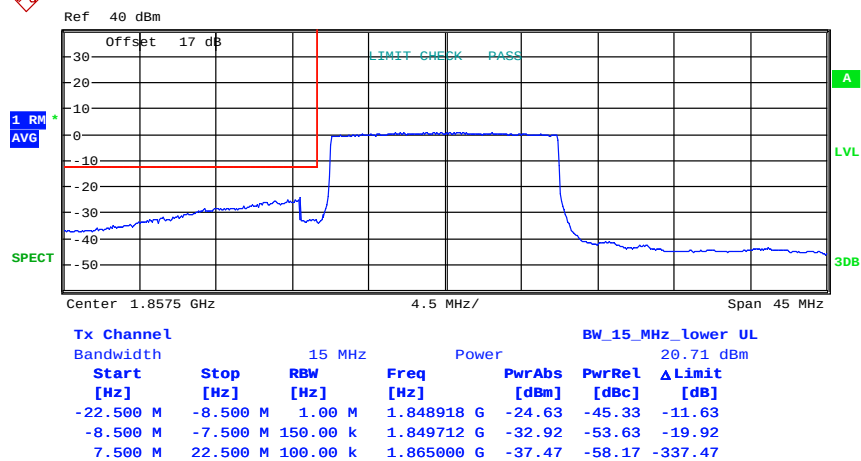
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

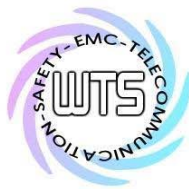


Date: 24.DEC.2021 14:15:14

15 MHz QPSK
FRB

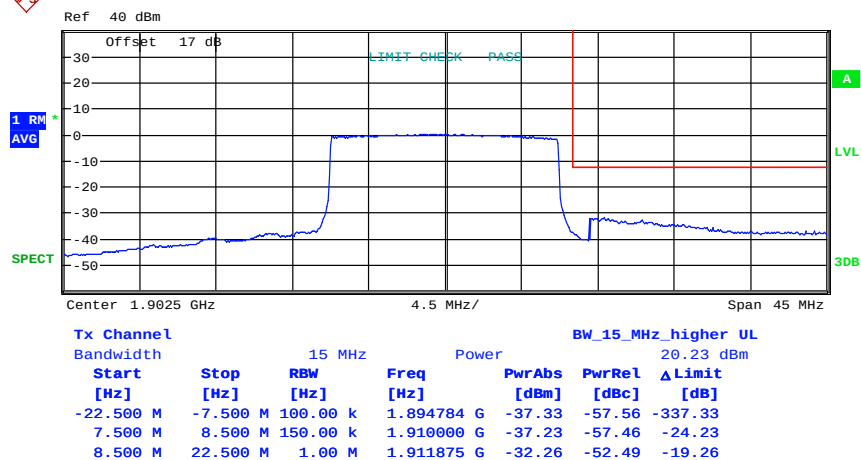


Date: 24.DEC.2021 14:11:40



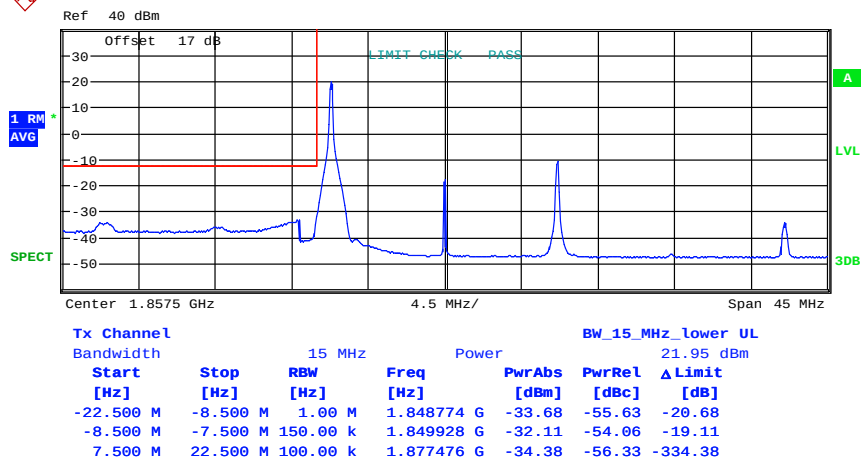
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

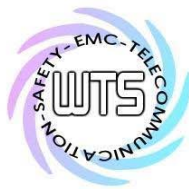


Date: 24.DEC.2021 14:13:41

1RB

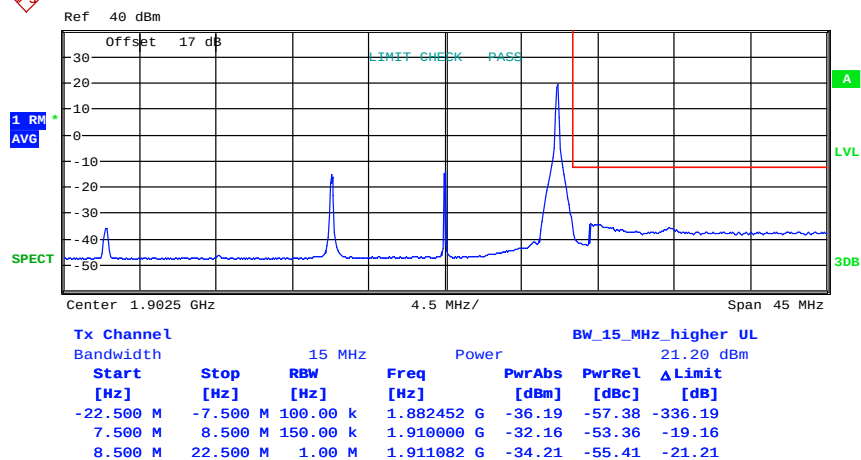


Date: 24.DEC.2021 14:11:16



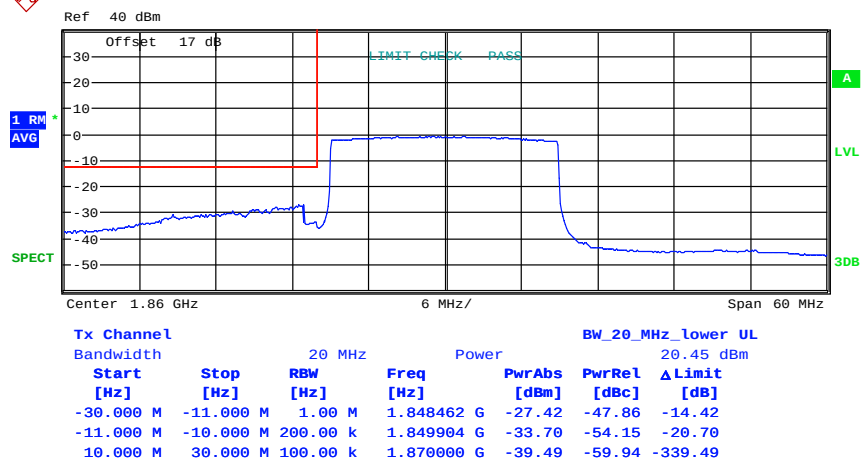
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

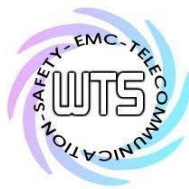


Date: 24.DEC.2021 14:13:19

20 MHz QPSK
FRB

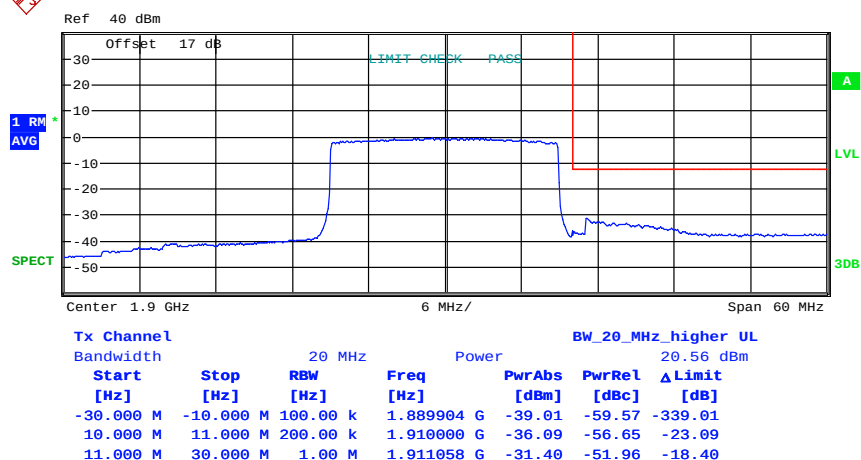


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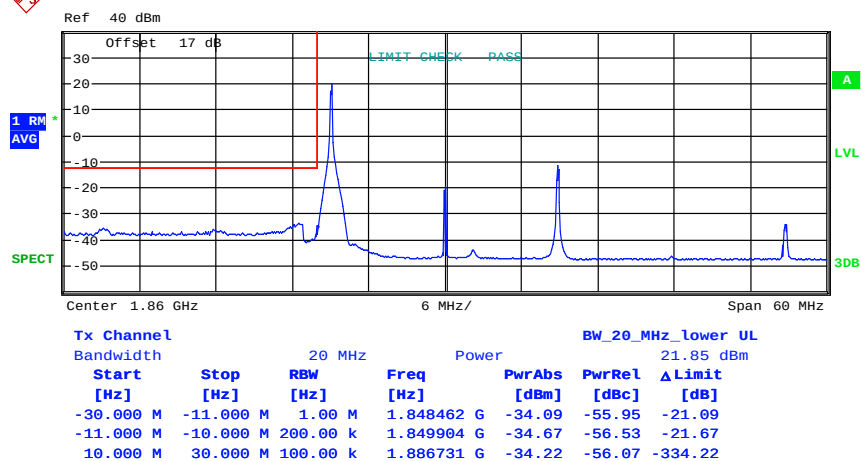
Report Number: W6M22112-21430-P-247

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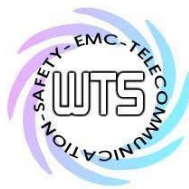


Date: 24.DEC.2021 14:05:45

1RB

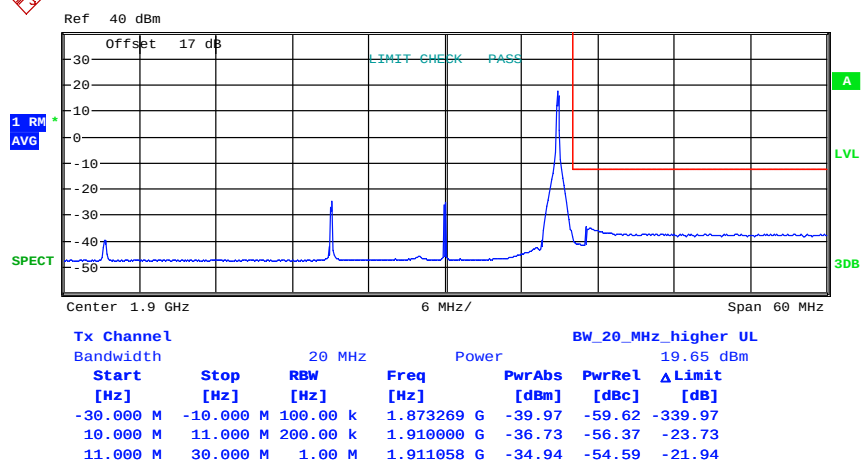


Date: 24.DEC.2021 14:08:07



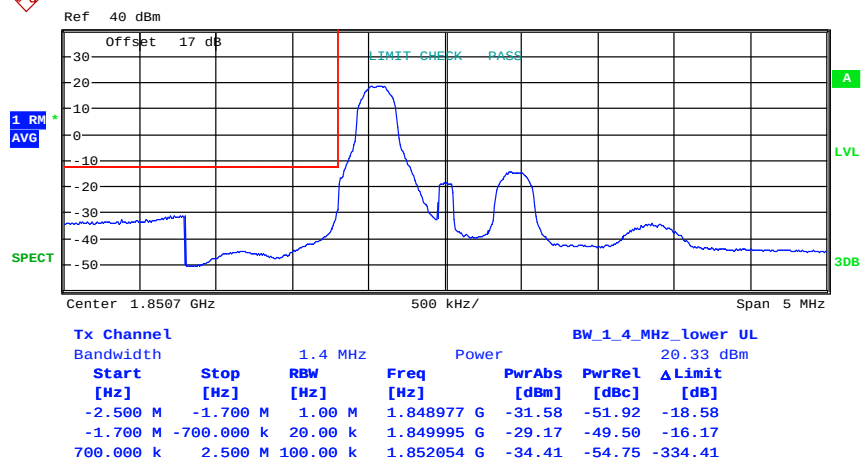
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FCC ID: GX9HSGWQT

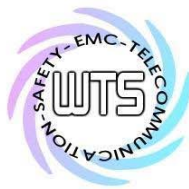


Date: 24.DEC.2021 14:02:35

1.4 MHz 16QAM
1RB

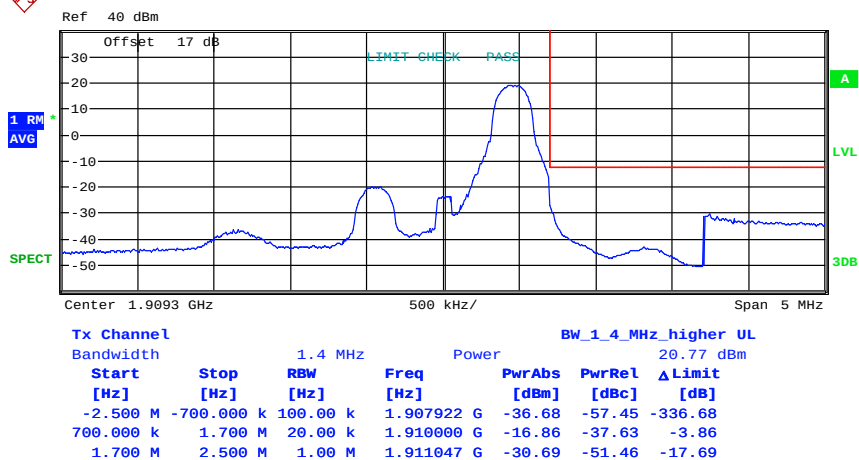


Date: 24.DEC.2021 12:01:51



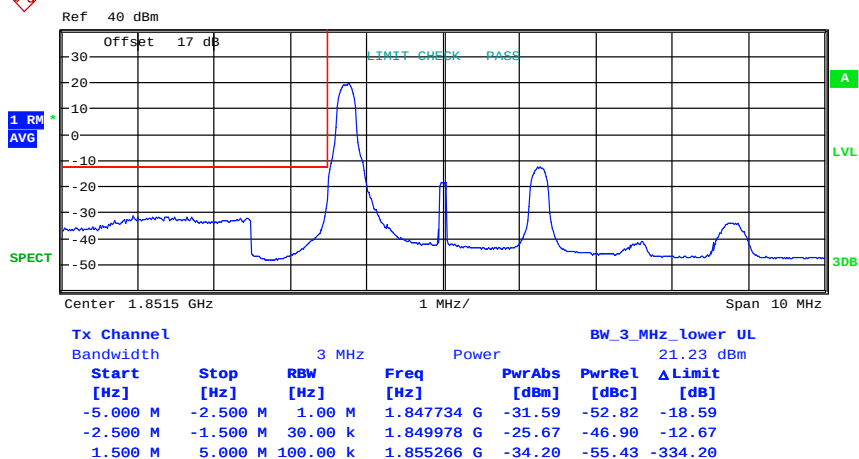
Report Number: W6M22112-21430-P-247

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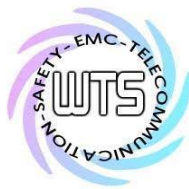


Date: 24.DEC.2021 13:39:06

3 MHz 16QAM
1RB

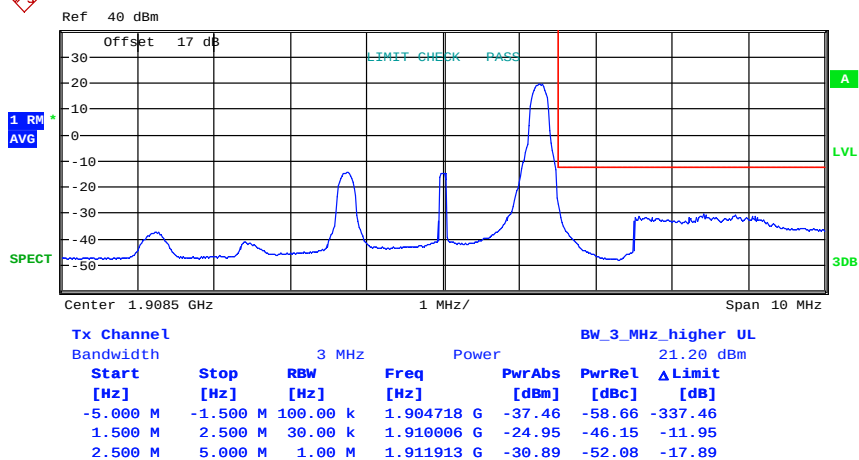


Date: 24.DEC.2021 13:41:15



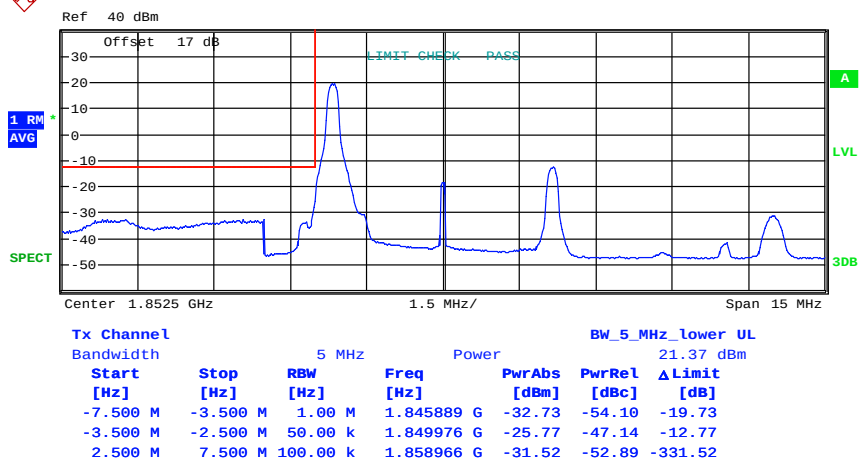
Report Number: W6M22112-21430-P-247

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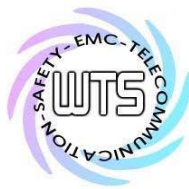


Date: 24.DEC.2021 13:43:18

5 MHz 16QAM
1RB

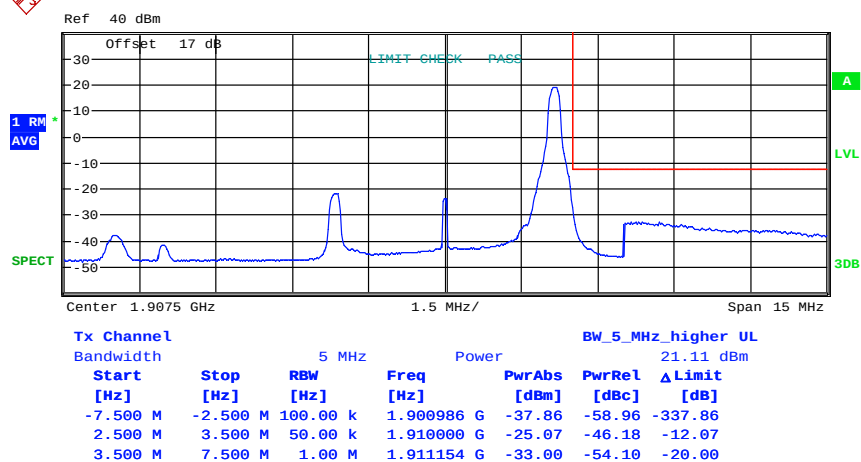


Date: 24.DEC.2021 13:47:21



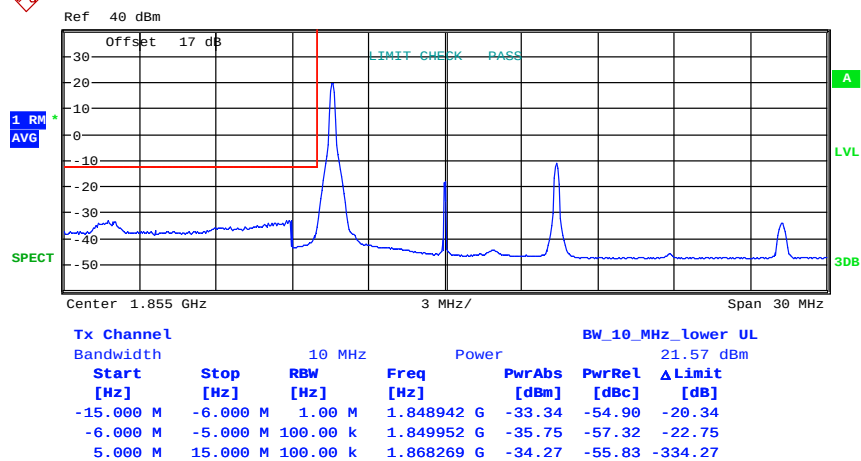
Report Number: W6M22112-21430-P-247

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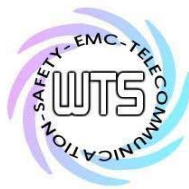


Date: 24.DEC.2021 13:46:06

10 MHz 16QAM
1RB

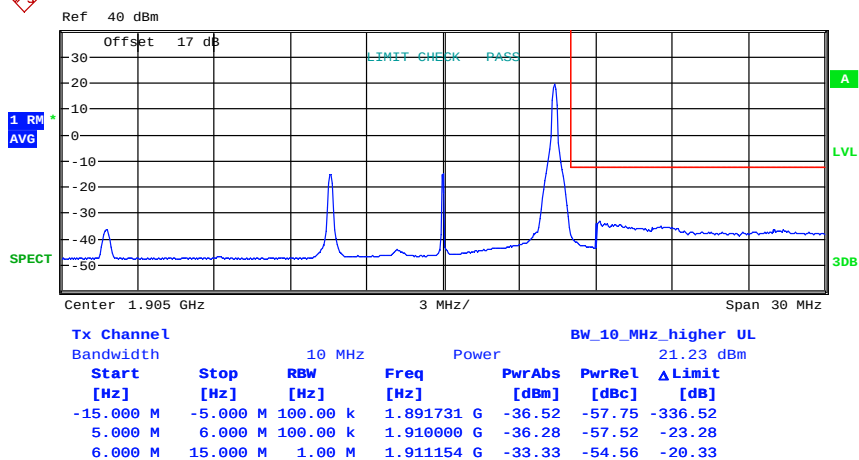


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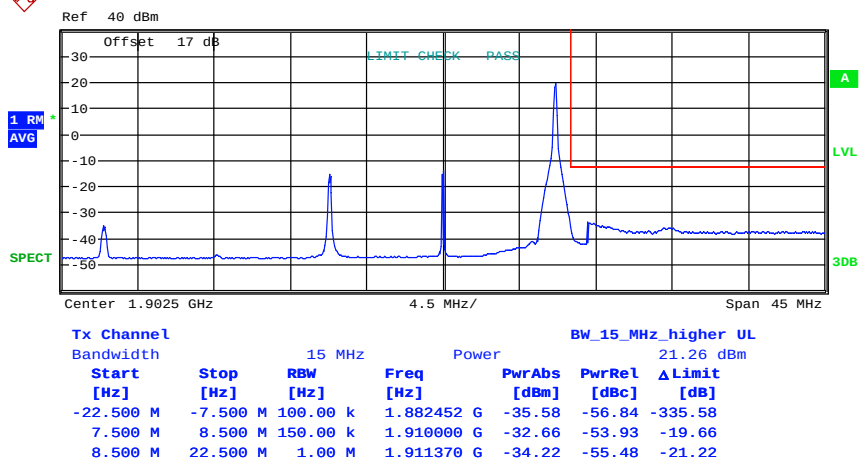
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

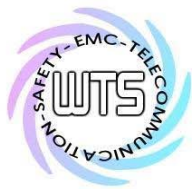


Date: 24.DEC.2021 13:52:15

15 MHz 16QAM
1RB

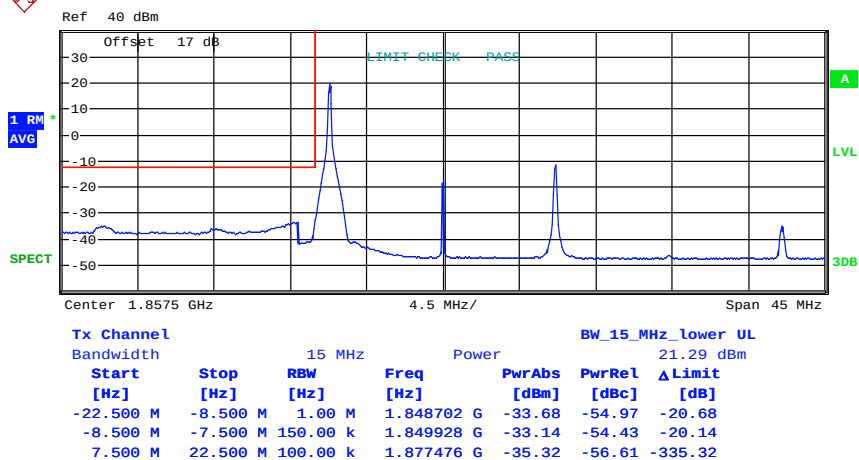


Date: 24.DEC.2021 13:55:03



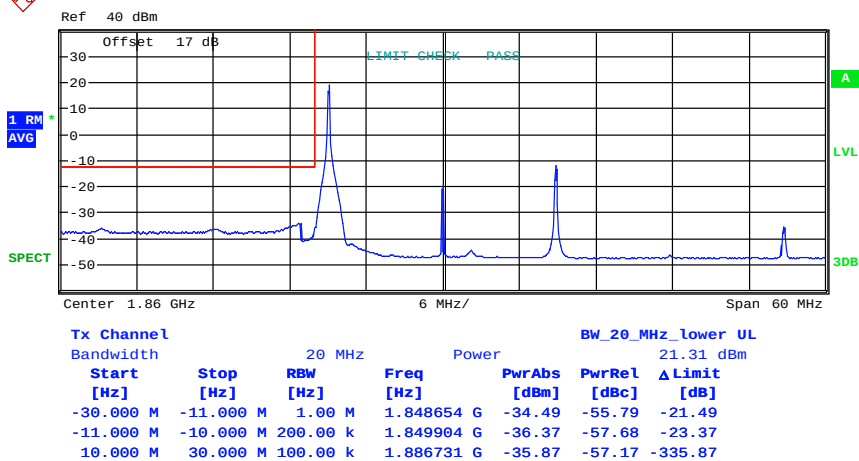
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

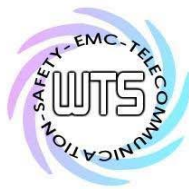


Date: 24.DEC.2021 13:56:22

20 MHz 16QAM
1RB

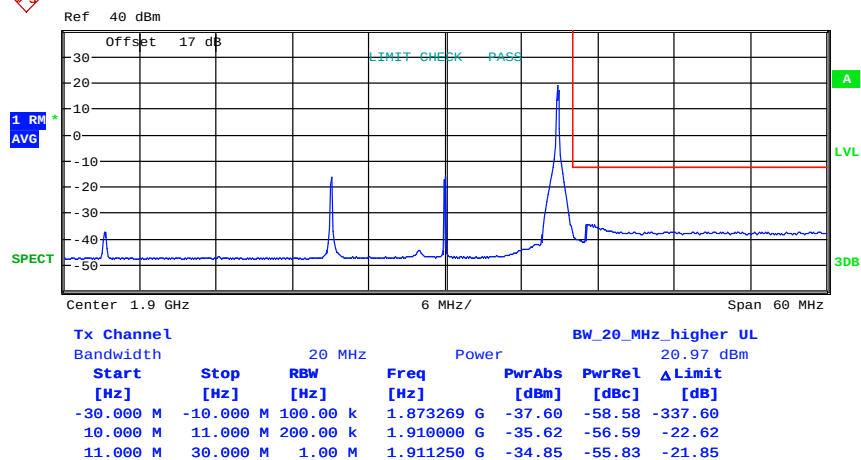


Date: 24.DEC.2021 13:57:29



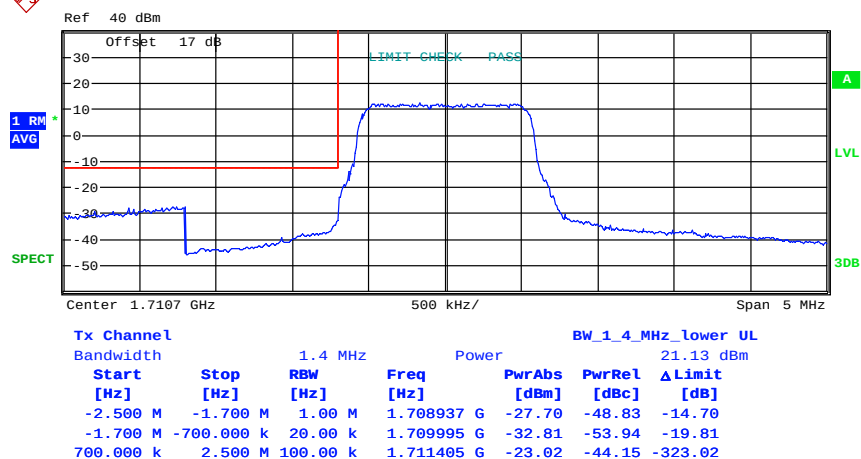
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



Date: 24.DEC.2021 13:59:23

Band 4
1.4 MHz QPSK
FRB

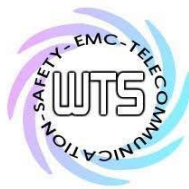


Date: 24.DEC.2021 14:51:59



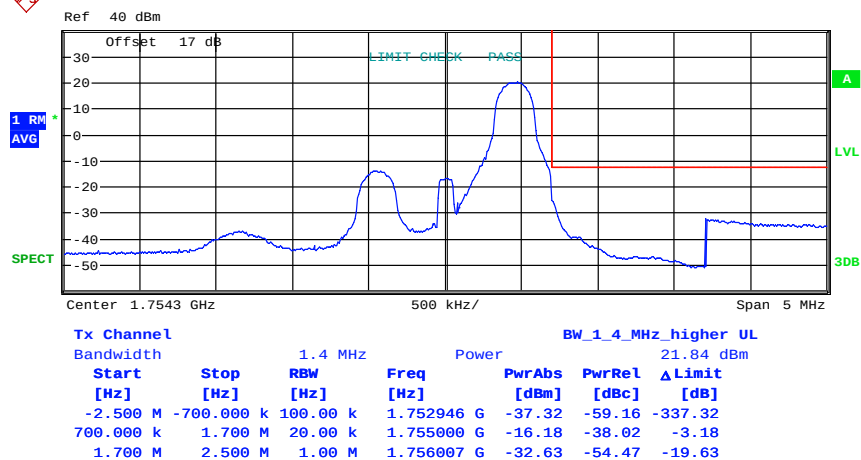
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1RB



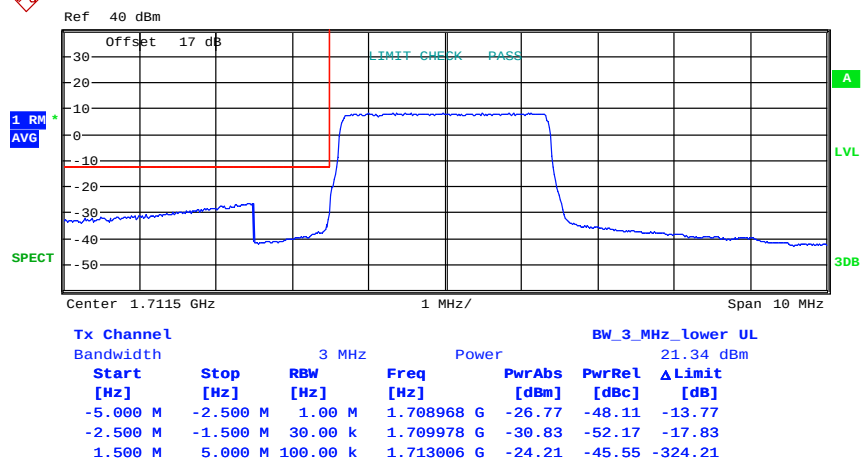
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FCC ID: GX9HSGWQT



Date: 24.DEC.2021 14:56:01

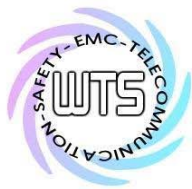
3 MHz QPSK
FRB



Date: 24.DEC.2021 15:27:44

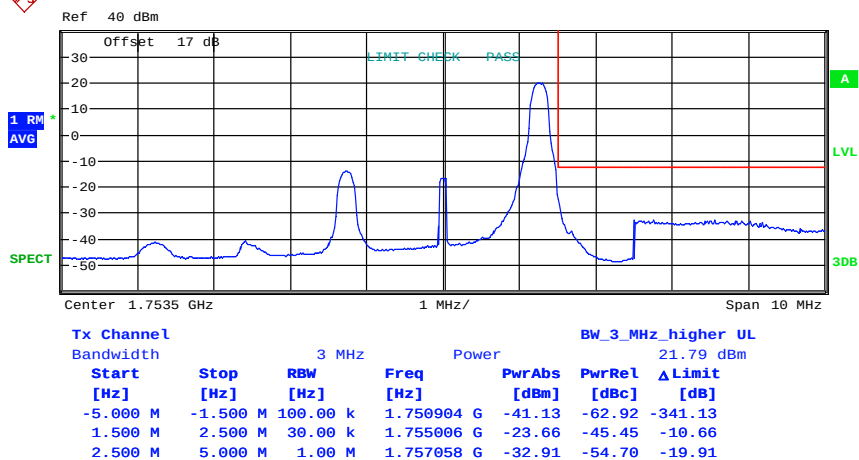


FCC ID: GX9HSGWQT



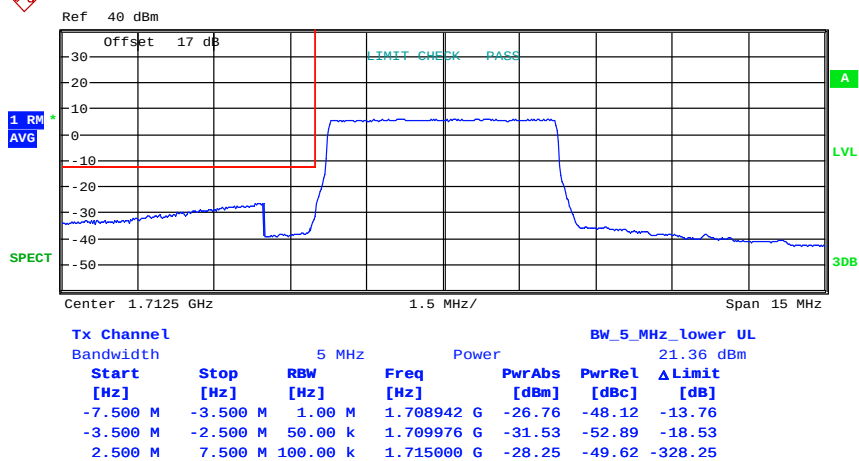
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

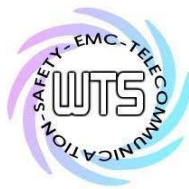


Date: 24.DEC.2021 15:25:24

5 MHz QPSK
FRB

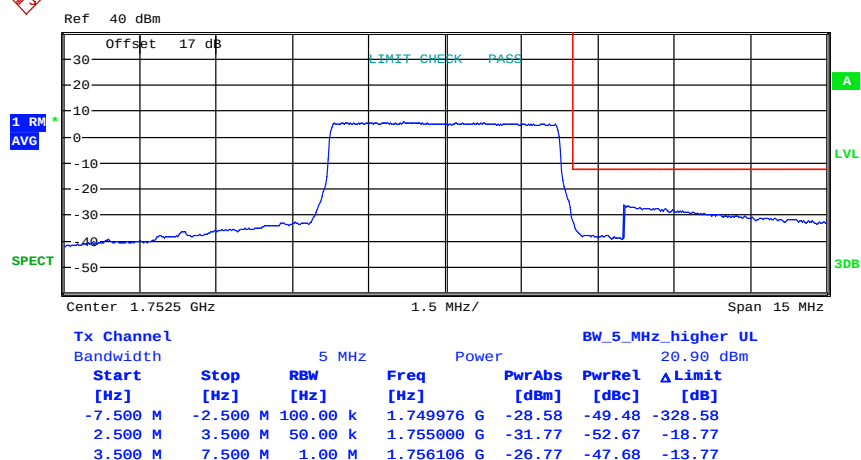


Date: 24.DEC.2021 15:29:03



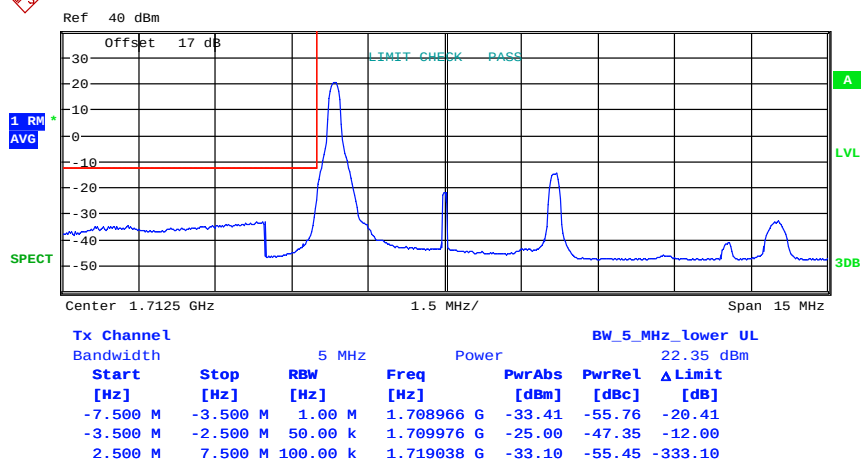
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

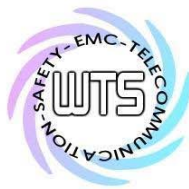


Date: 24.DEC.2021 15:32:55

1RB

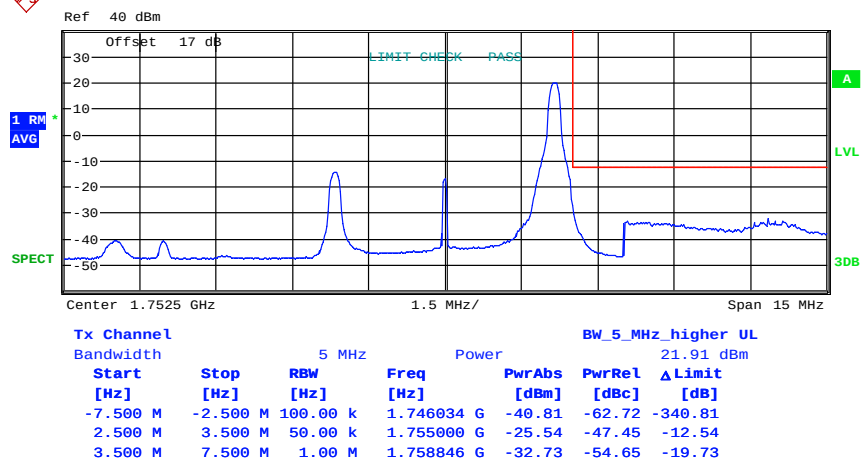


Date: 24.DEC.2021 15:29:25



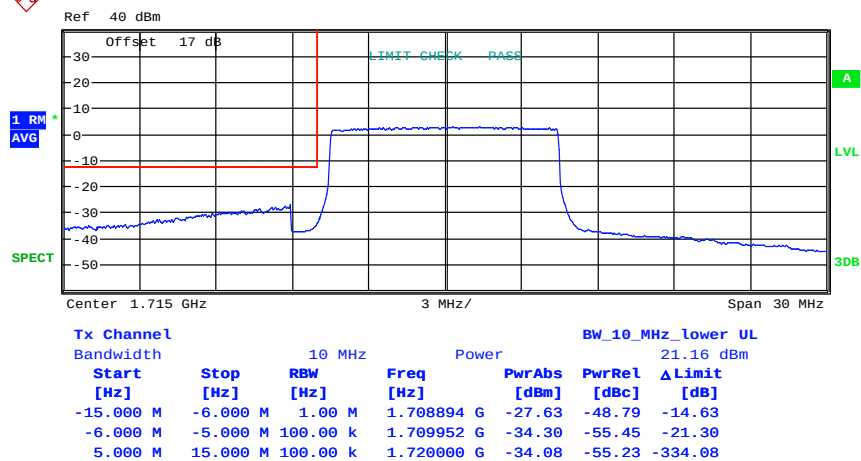
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

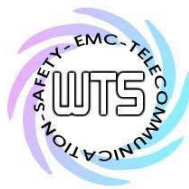


Date: 24.DEC.2021 15:31:56

10 MHz QPSK
FRB

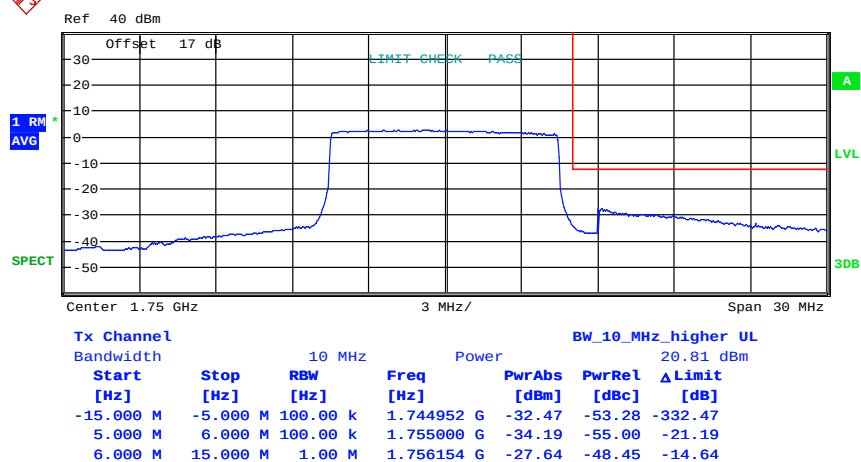


Date: 24.DEC.2021 15:39:00



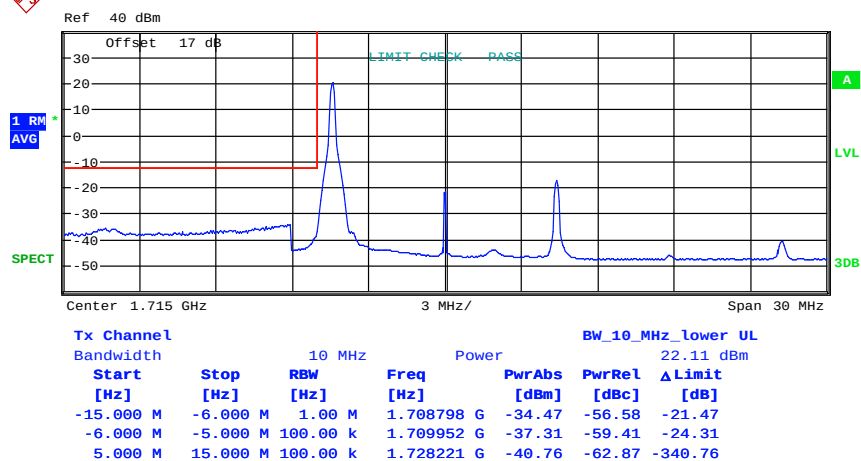
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

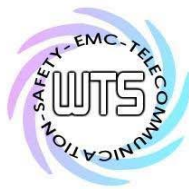


Date: 24.DEC.2021 15:34:49

1RB

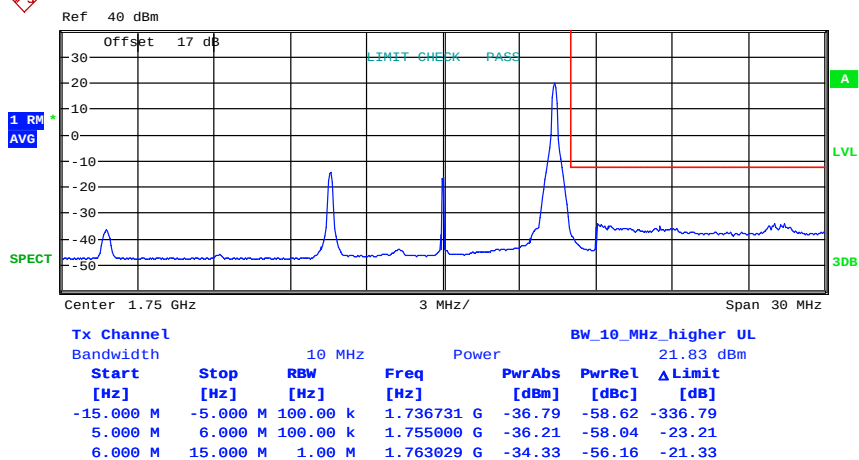


Date: 24.DEC.2021 15:38:38



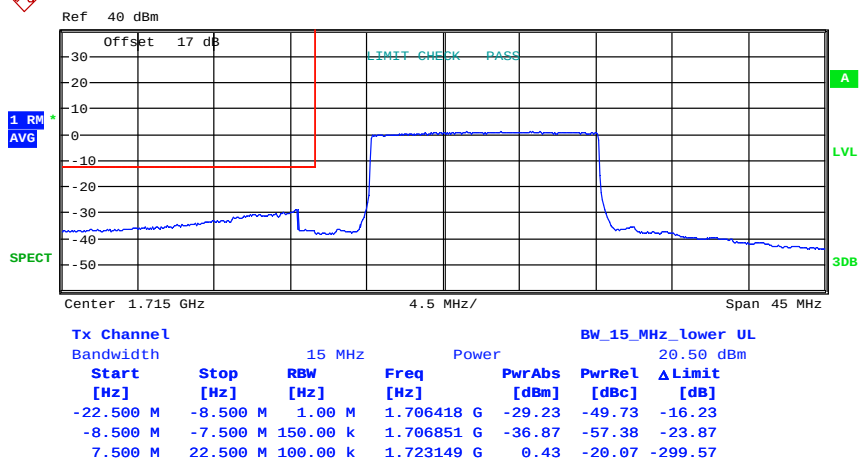
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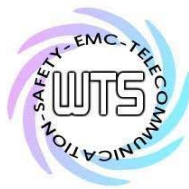


Date: 24.DEC.2021 15:35:21

15 MHz QPSK
FRB

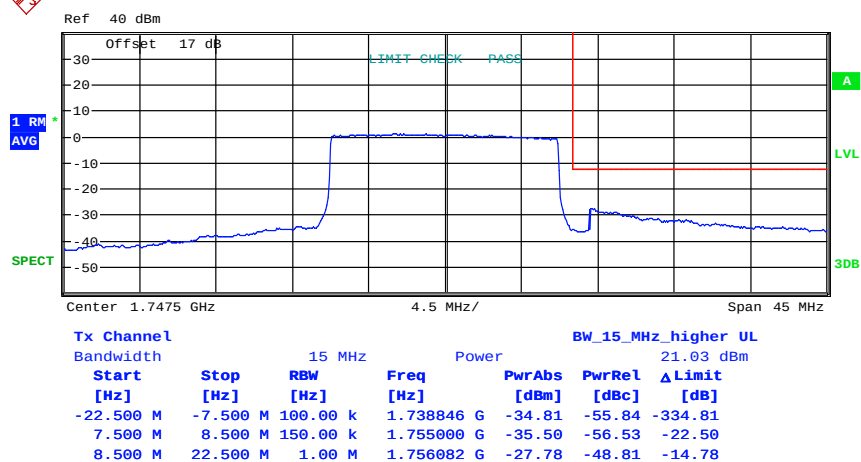


Date: 24.DEC.2021 15:41:37



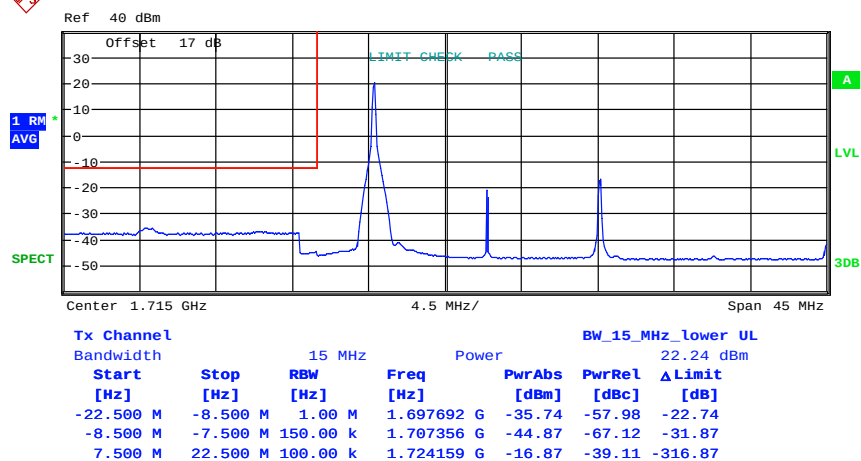
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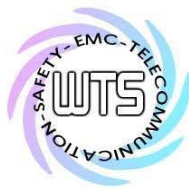


Date: 24.DEC.2021 15:52:08

1RB

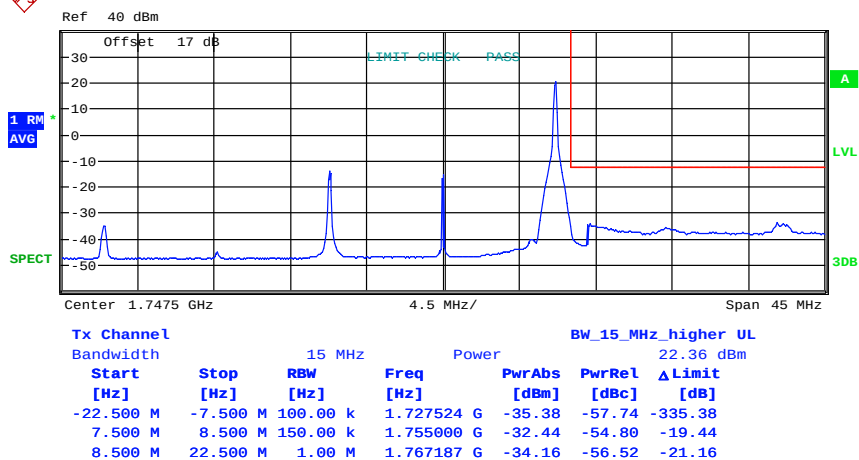


Date: 24.DEC.2021 15:42:11



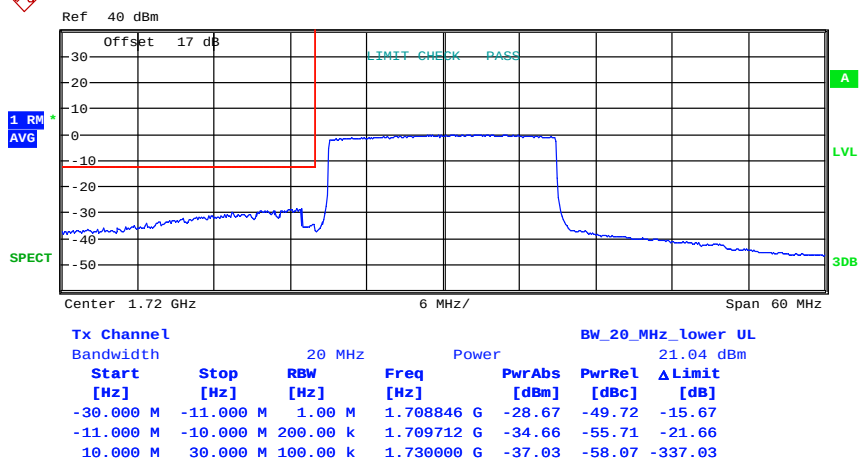
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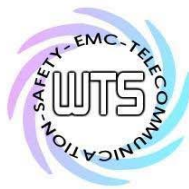


Date: 24.DEC.2021 15:51:32

20 MHz QPSK
FRB

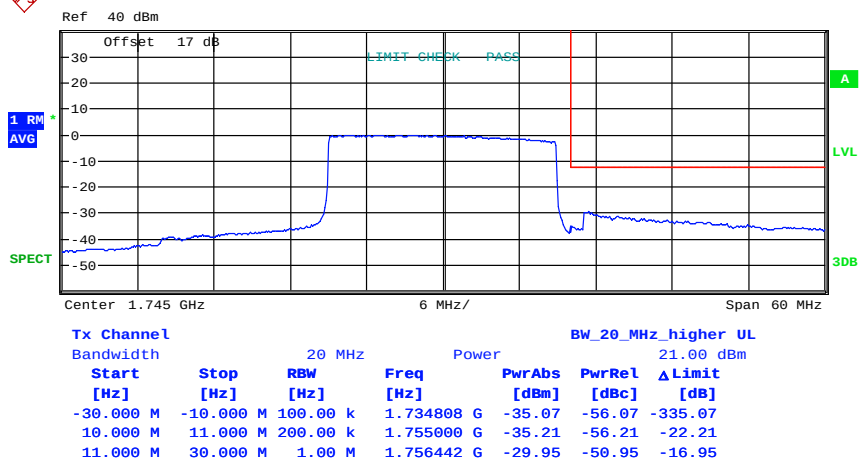


Date: 24.DEC.2021 15:57:10



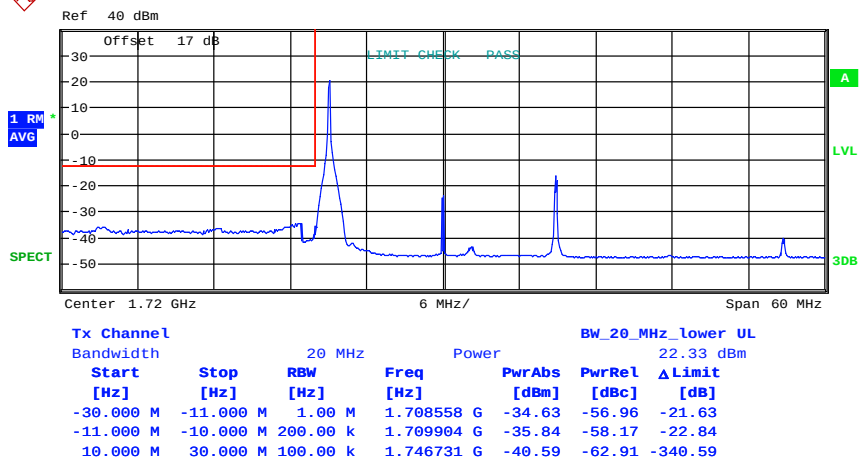
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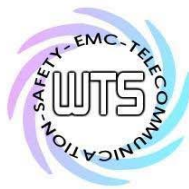


Date: 24.DEC.2021 15:54:20

1RB

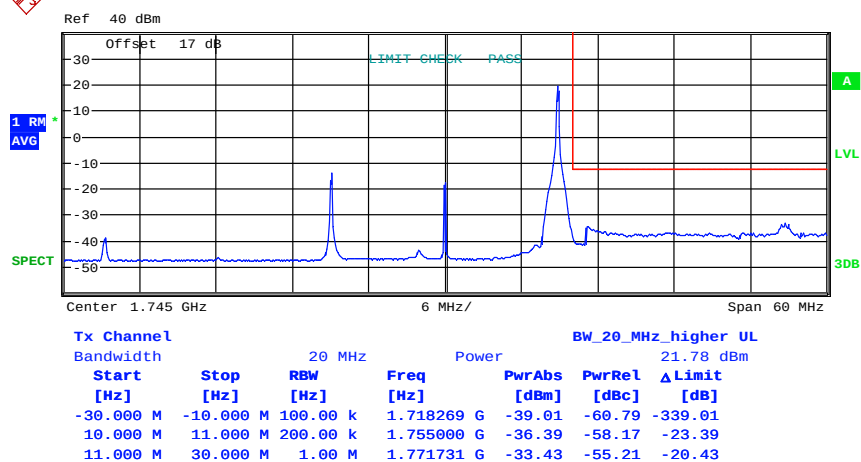


Date: 24.DEC.2021 15:56:51



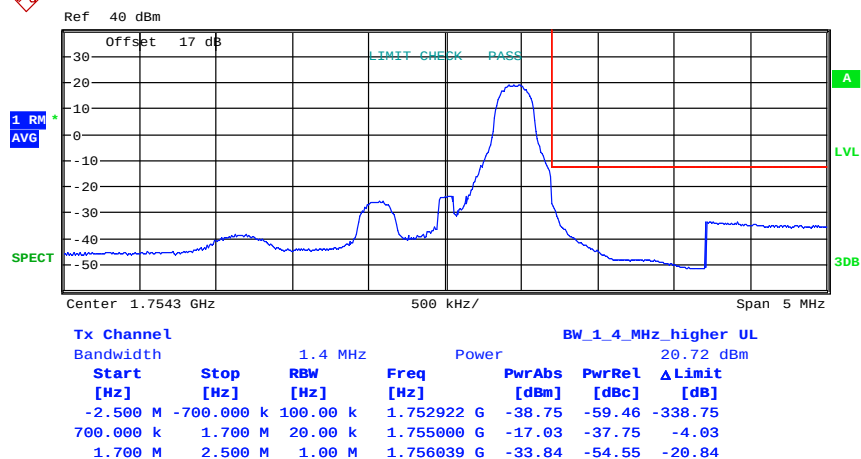
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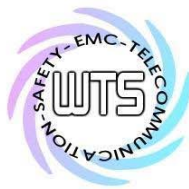


Date: 24.DEC.2021 15:54:45

1.4 MHz 16QAM
1RB

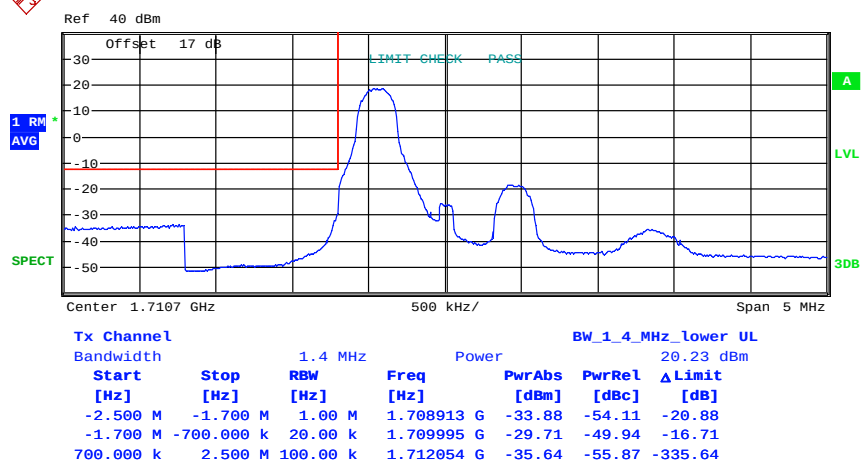


Date: 24.DEC.2021 14:55:38



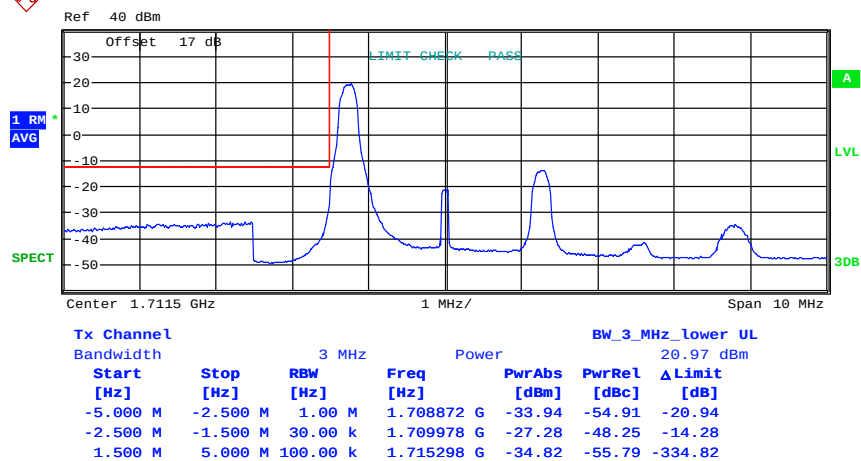
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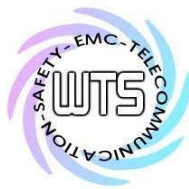


Date: 14.JAN.2022 16:50:13

3 MHz 16QAM
1RB

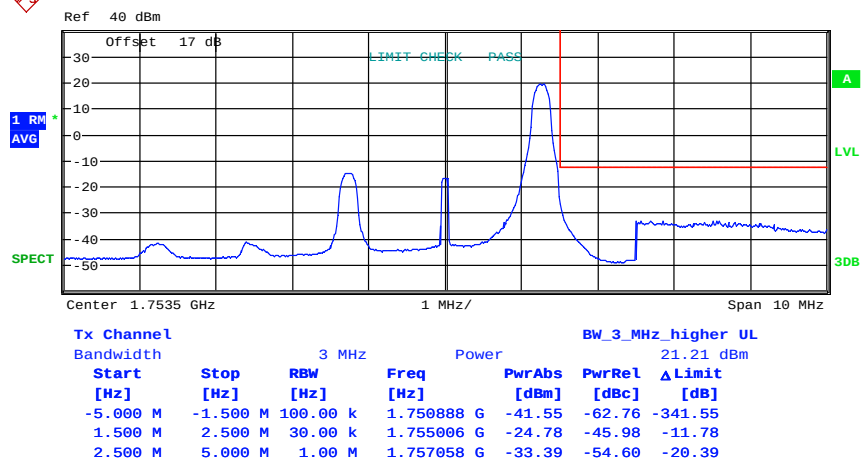


Date: 24.DEC.2021 15:26:54



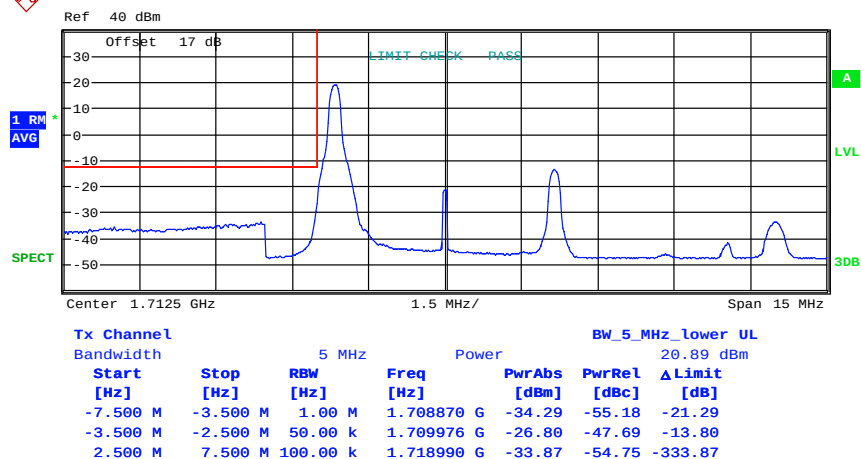
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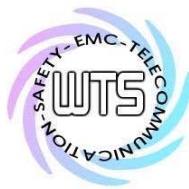


Date: 24.DEC.2021 15:25:51

5 MHz 16QAM
1RB

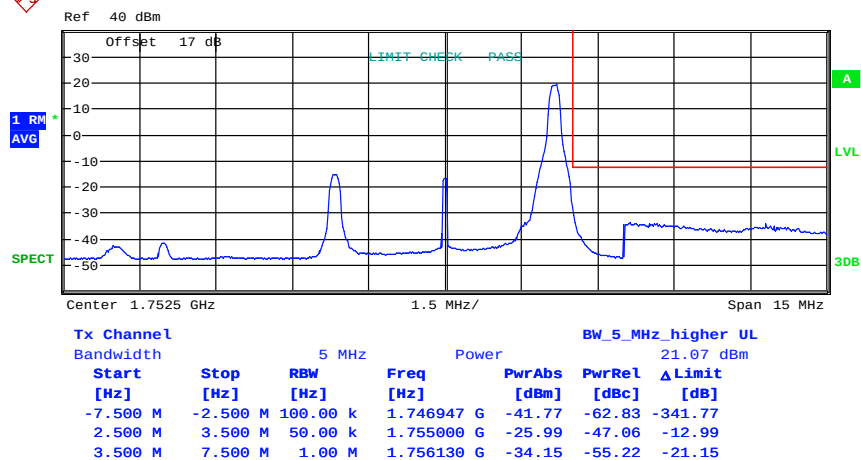


Date: 24.DEC.2021 15:29:58



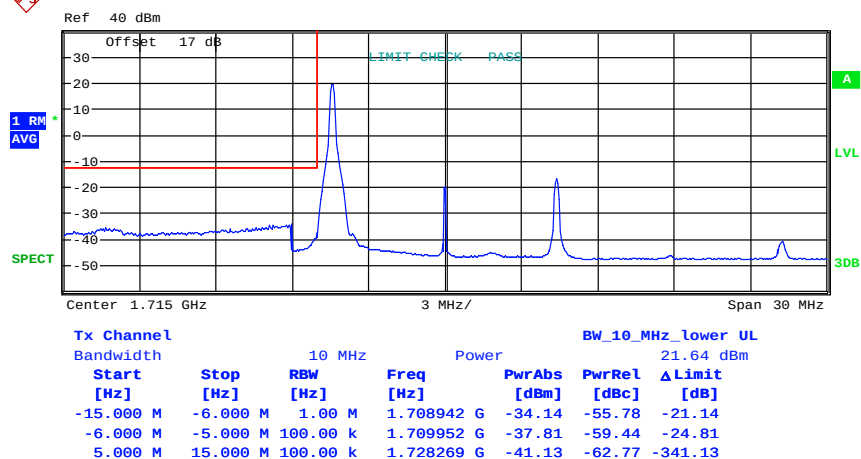
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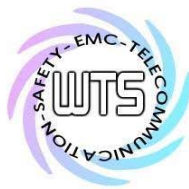


Date: 24.DEC.2021 15:31:24

10 MHz 16QAM
1RB

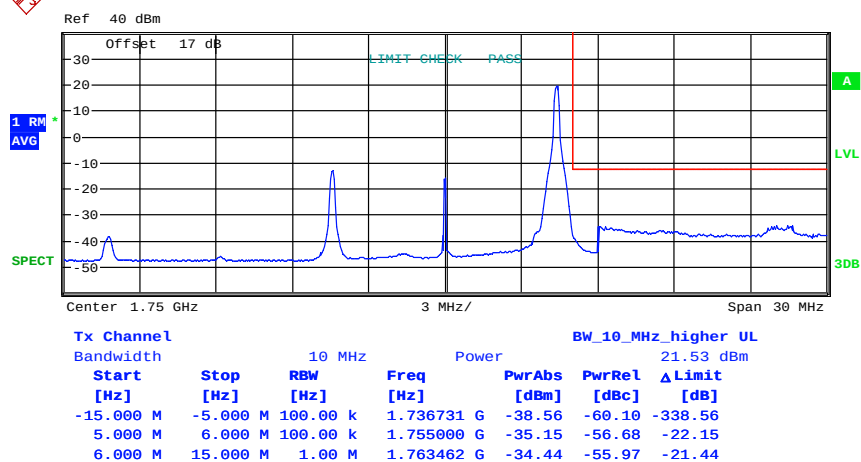


Date: 24.DEC.2021 15:38:02



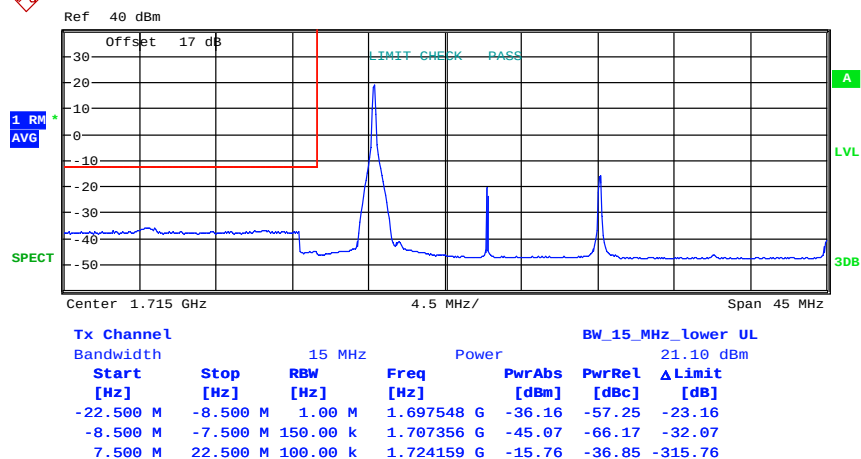
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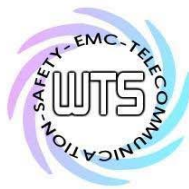


Date: 24.DEC.2021 15:35:50

15 MHz 16QAM
1RB

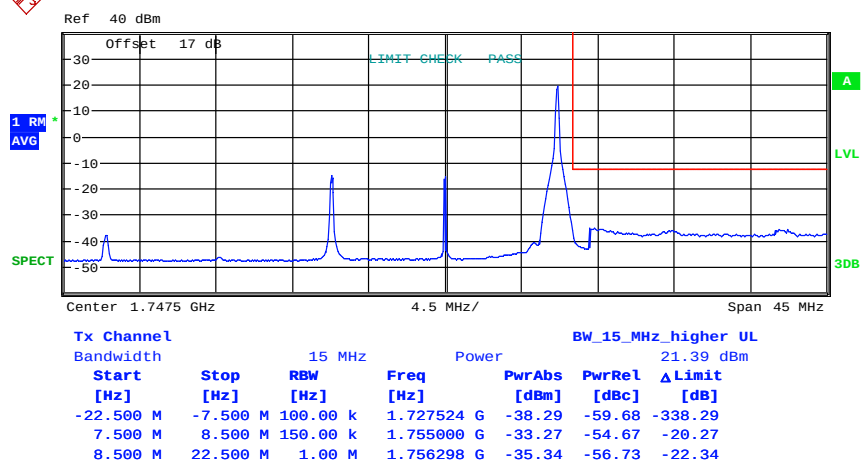


Date: 24.DEC.2021 15:42:48



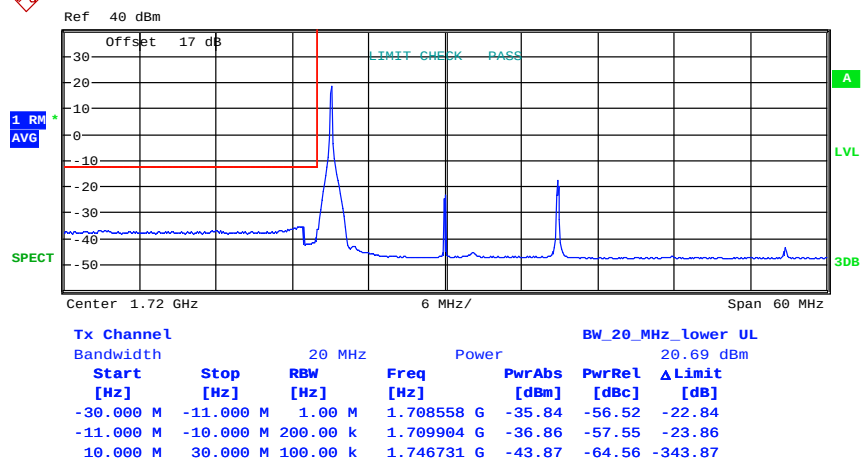
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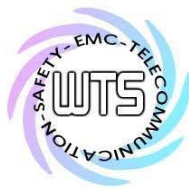


Date: 24.DEC.2021 15:50:56

20 MHz 16QAM
1RB

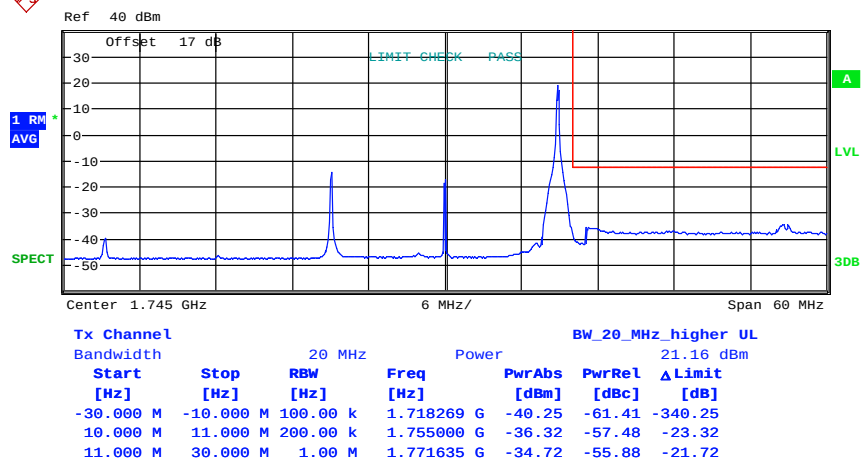


Date: 24.DEC.2021 15:56:33



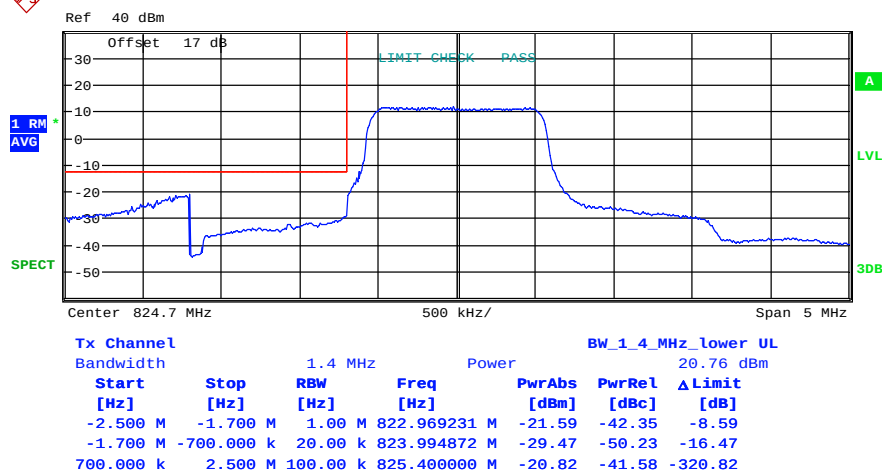
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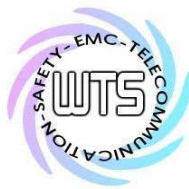


Date: 24.DEC.2021 15:55:16

Band 5
1.4 MHz QPSK
FRB

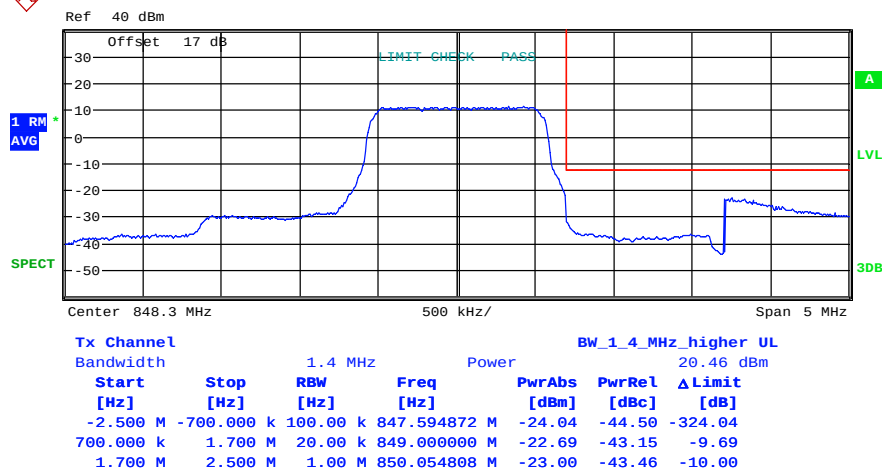


Date: 25.DEC.2021 16:38:06



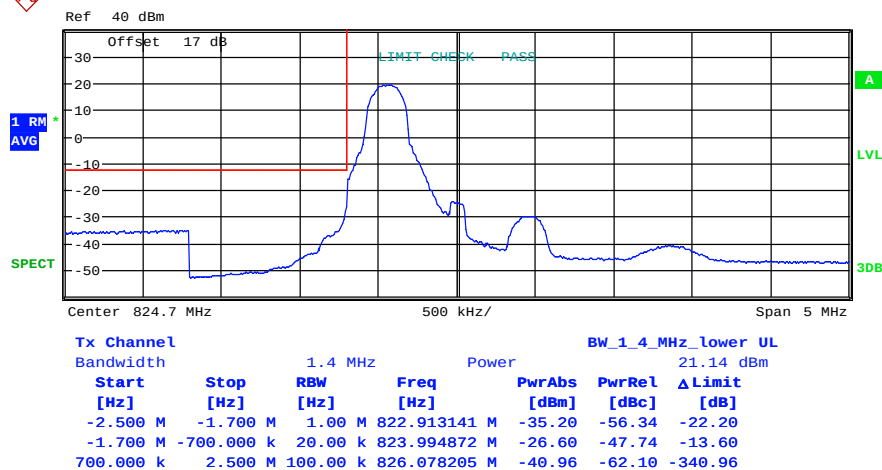
Report Number: W6M22112-21430-P-247

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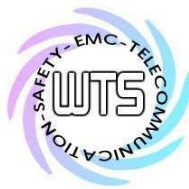


Date: 25.DEC.2021 16:42:18

1RB

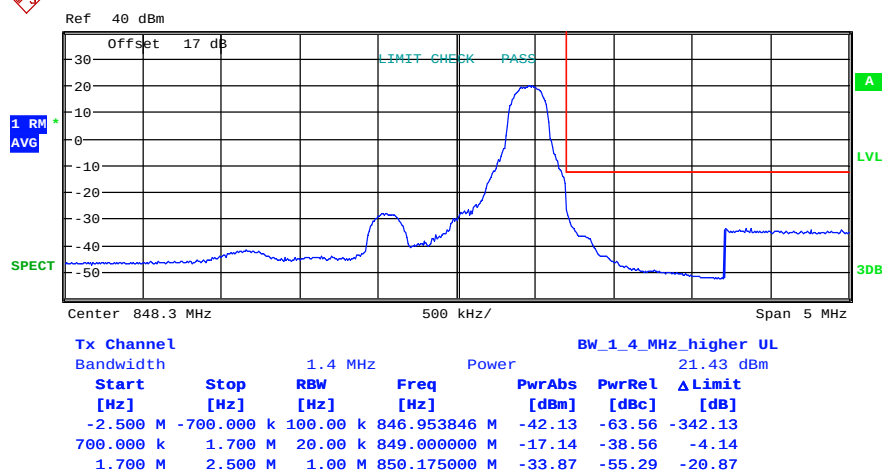


Date: 25.DEC.2021 16:37:08



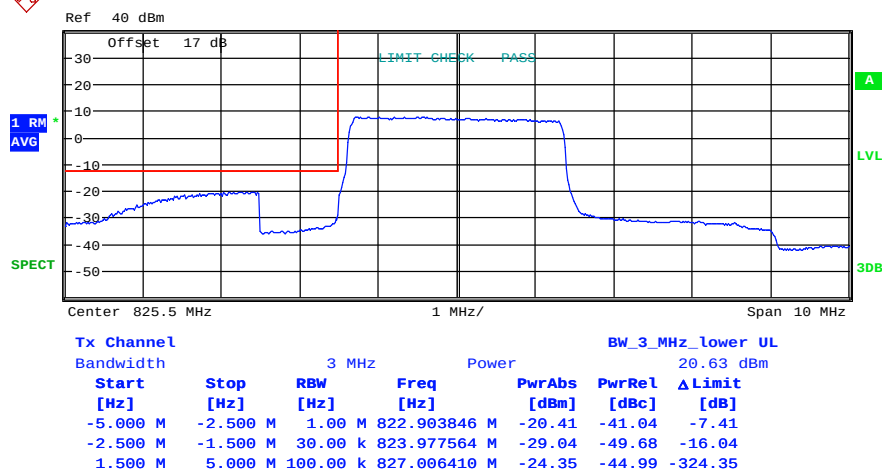
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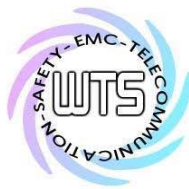


Date: 25.DEC.2021 16:41:56

3 MHz QPSK
FRB

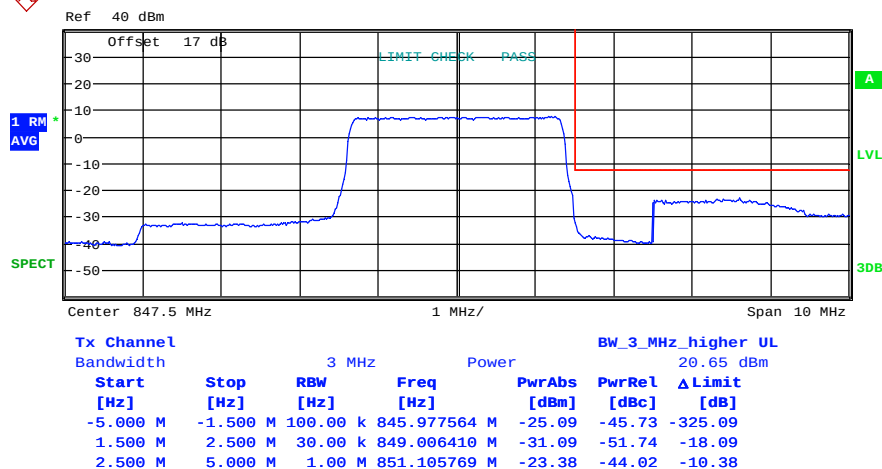


Date: 25.DEC.2021 16:46:03



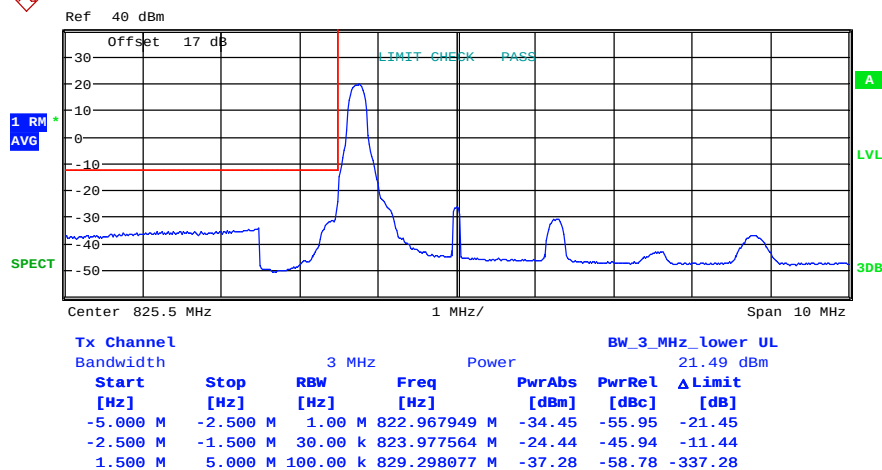
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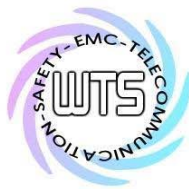


Date: 25.DEC.2021 16:43:37

1RB

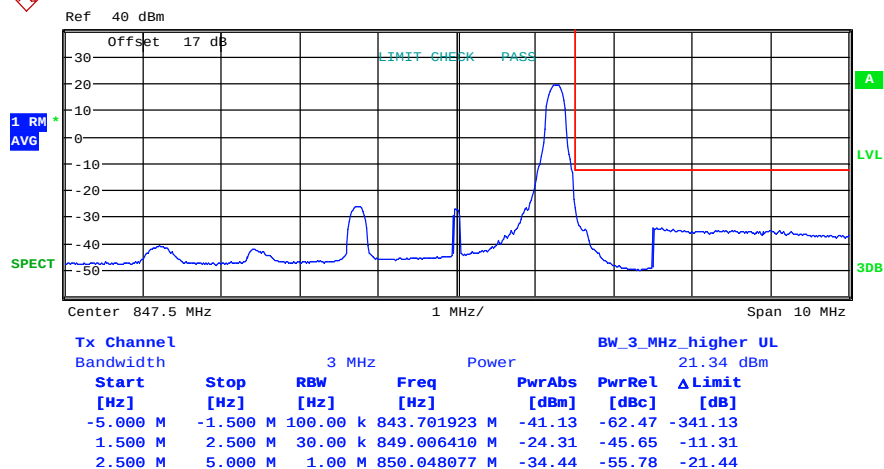


Date: 25.DEC.2021 16:45:39



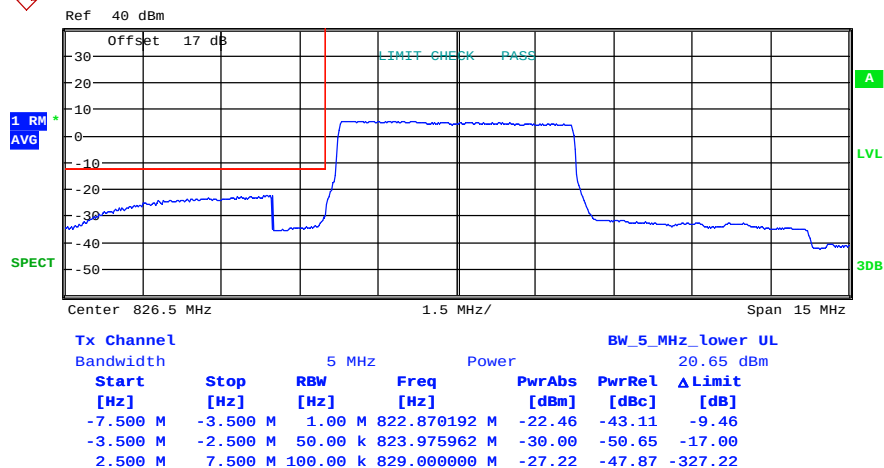
Report Number: W6M22112-21430-P-247

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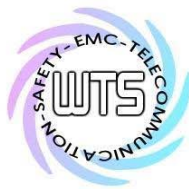


Date: 25.DEC.2021 16:44:01

5 MHz QPSK
FRB

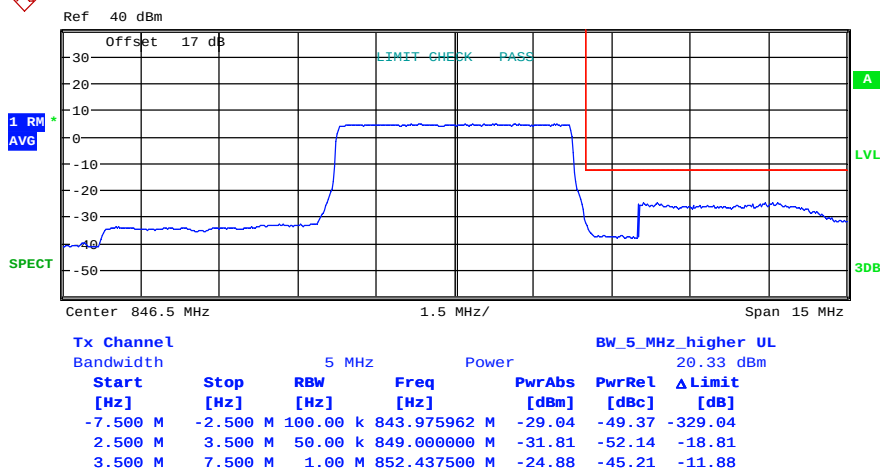


Date: 25.DEC.2021 16:46:53



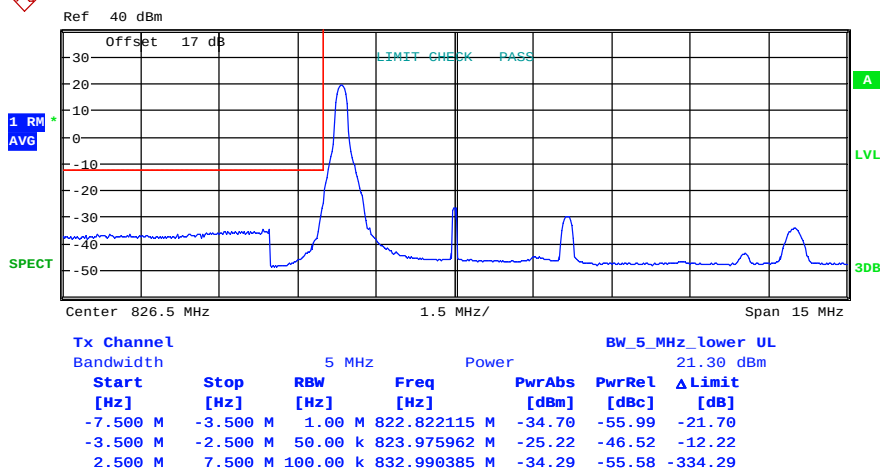
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

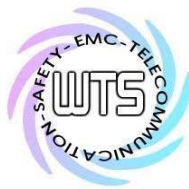


Date: 25.DEC.2021 16:49:30

1RB

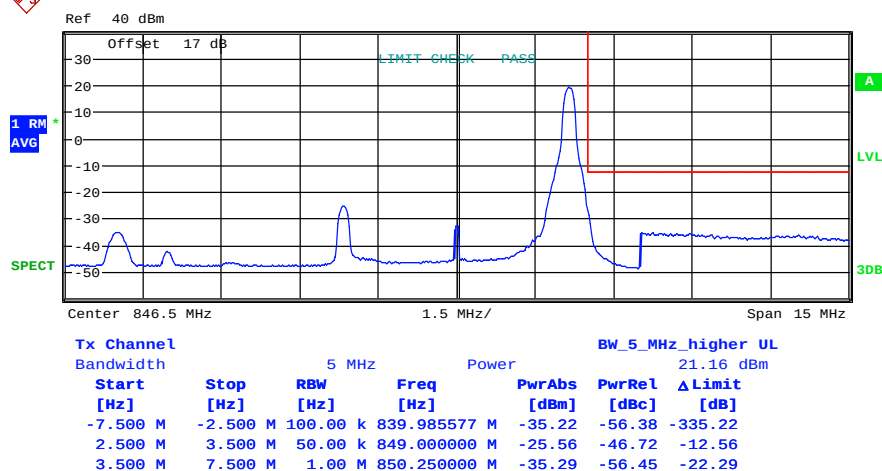


Date: 25.DEC.2021 16:47:17



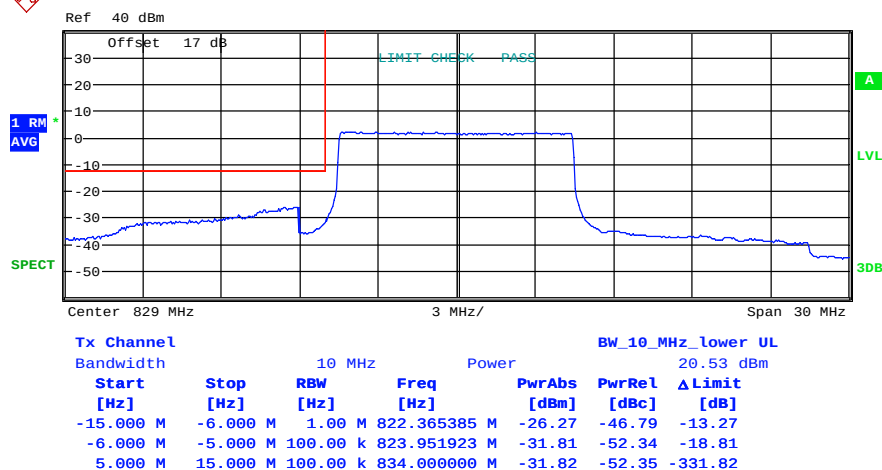
Report Number: W6M22112-21430-P-247

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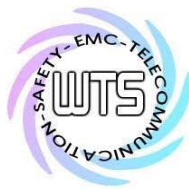


Date: 25.DEC.2021 16:49:11

10 MHz QPSK
FRB

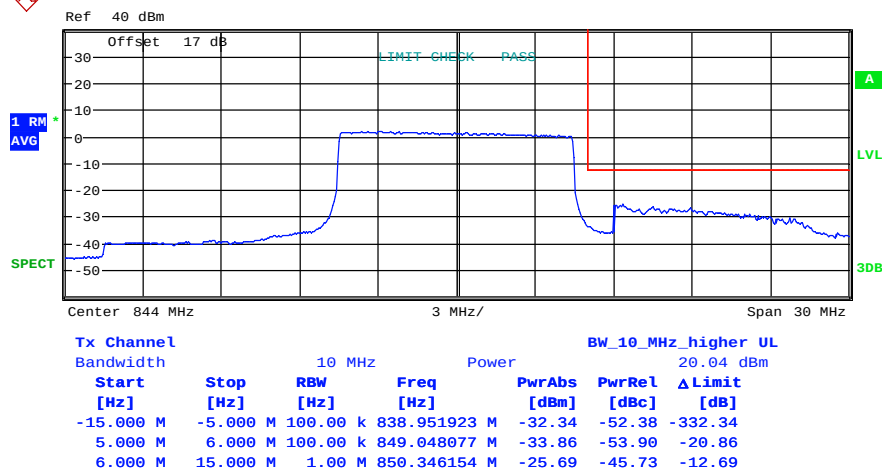


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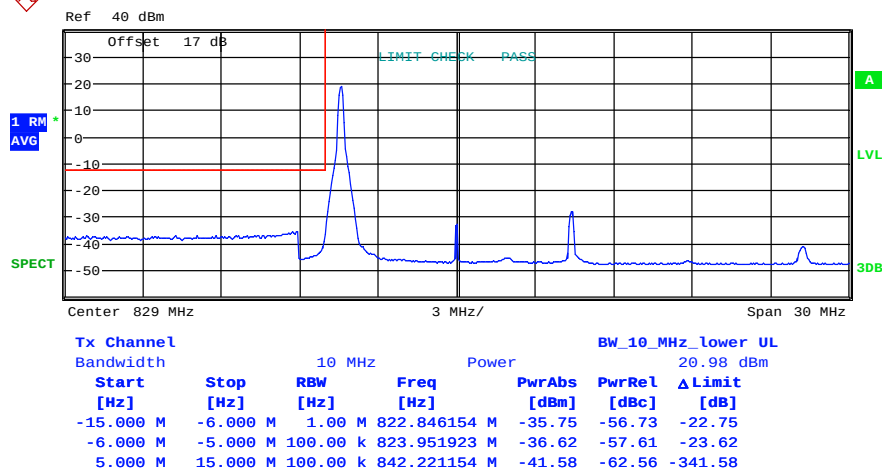
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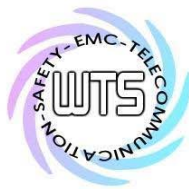


Date: 25.DEC.2021 16:56:09

1RB

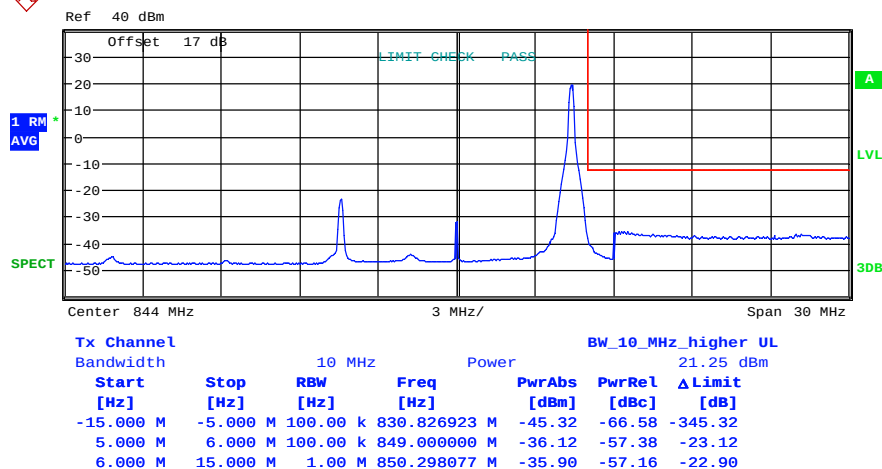


Date: 25.DEC.2021 16:53:56



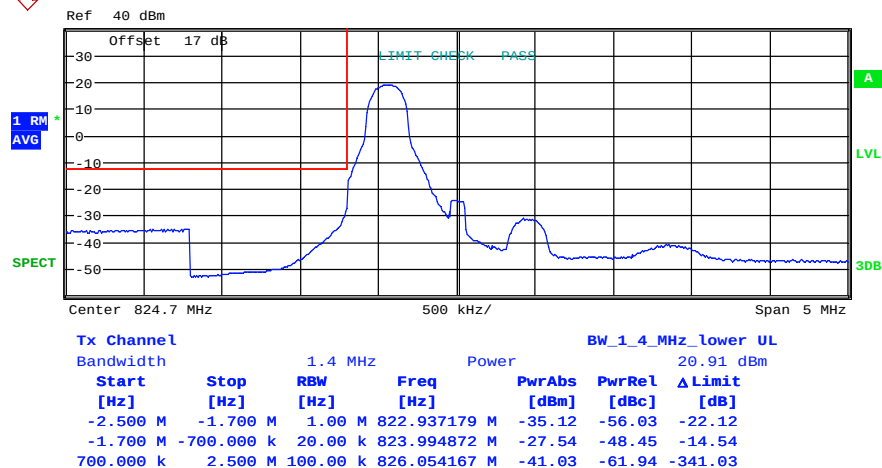
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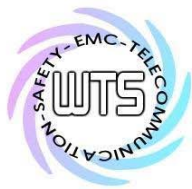


Date: 25.DEC.2021 16:55:51

1.4 MHz 16QAM
1RB

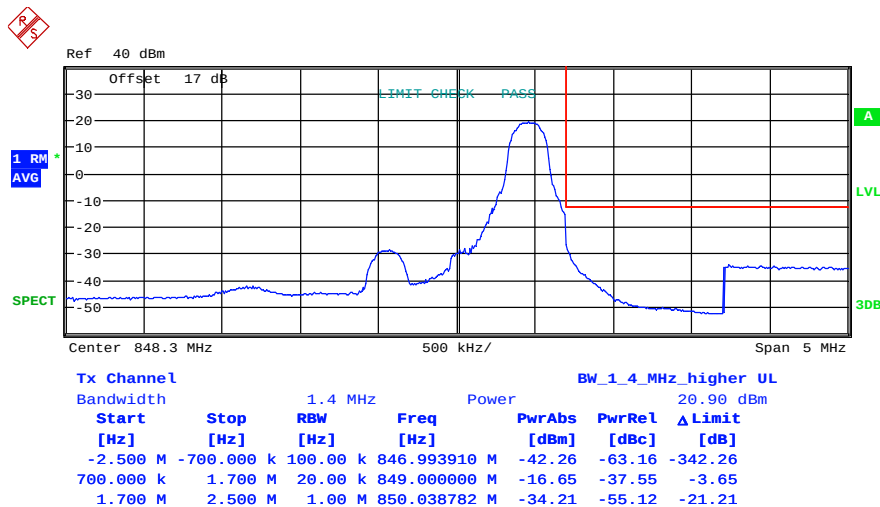


Date: 25.DEC.2021 16:38:32



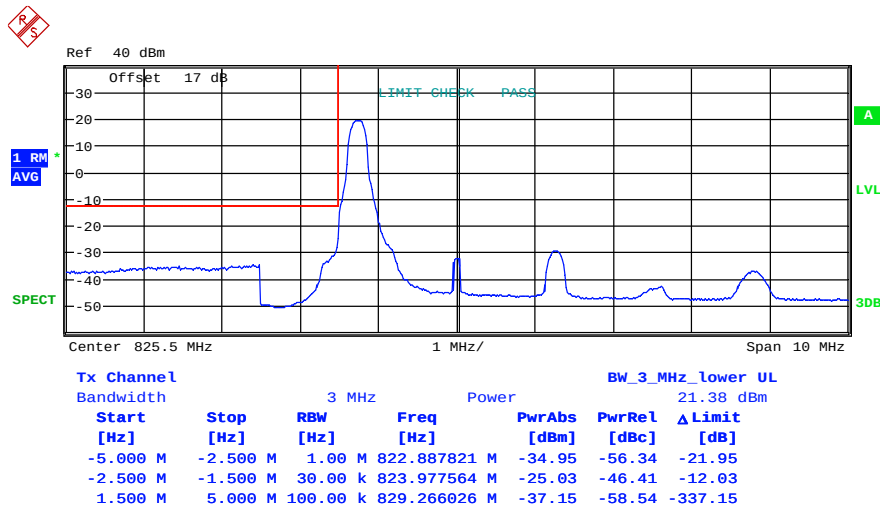
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FCC ID: GX9HSGWQT

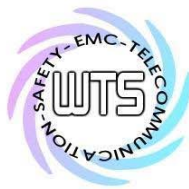


Date: 25.DEC.2021 16:41:30

3 MHz 16QAM
1RB

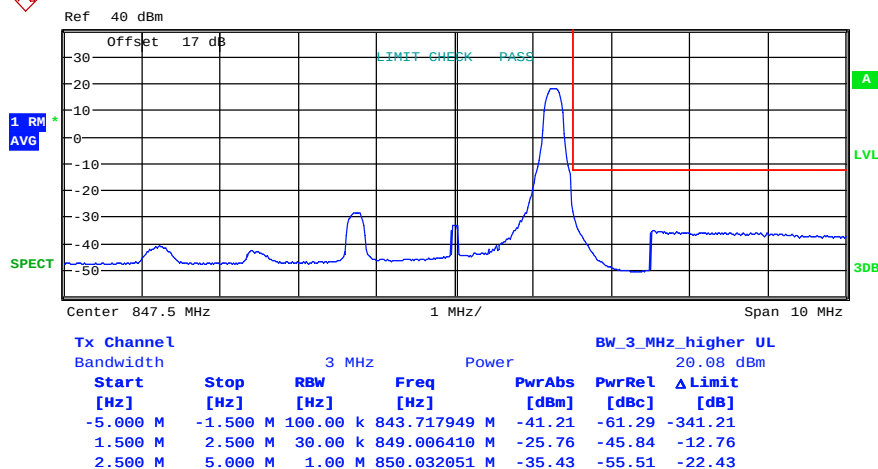


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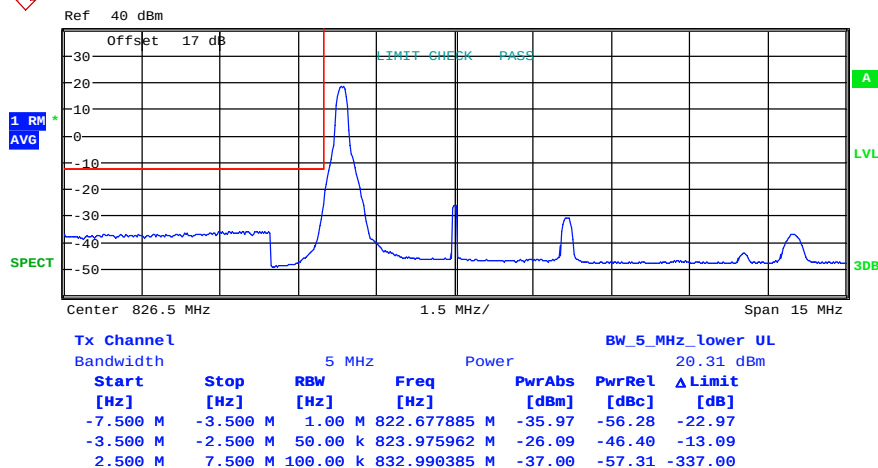
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FCC ID: GX9HSGWQT

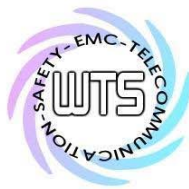


Date: 25.DEC.2021 16:44:27

5 MHz 16QAM
1RB

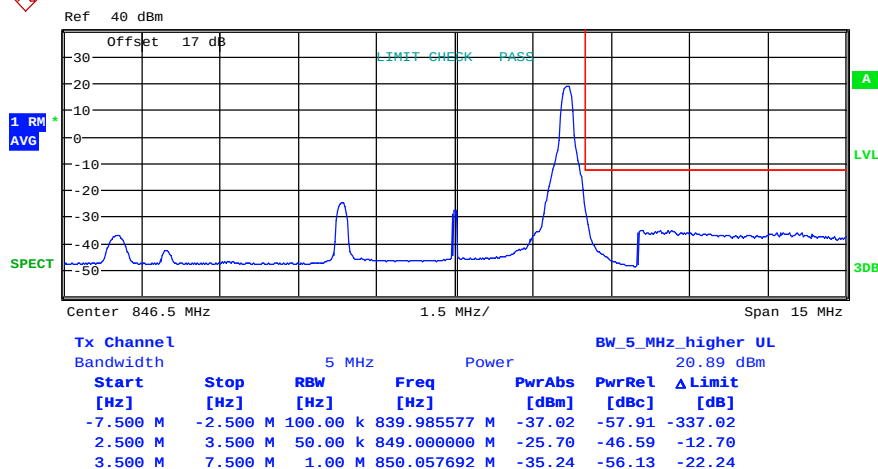


Date: 25.DEC.2021 16:47:45



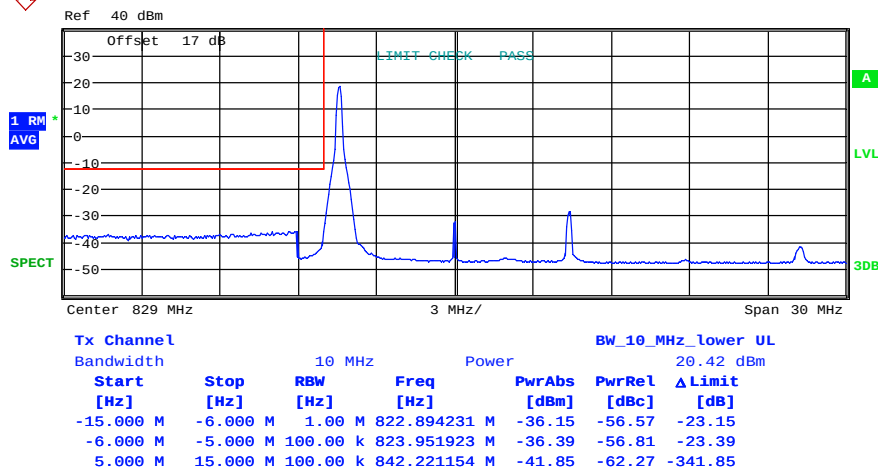
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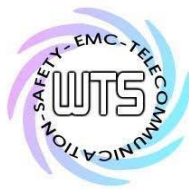


Date: 25.DEC.2021 16:48:50

10 MHz 16QAM
1RB

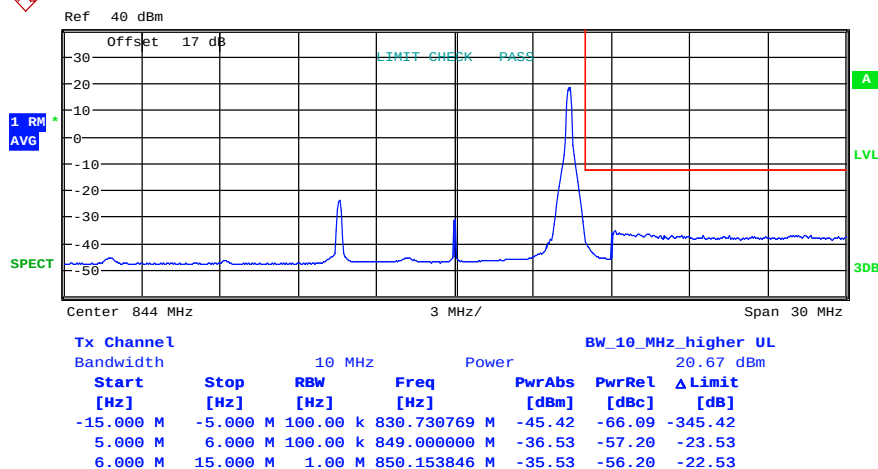


Date: 25.DEC.2021 16:54:21



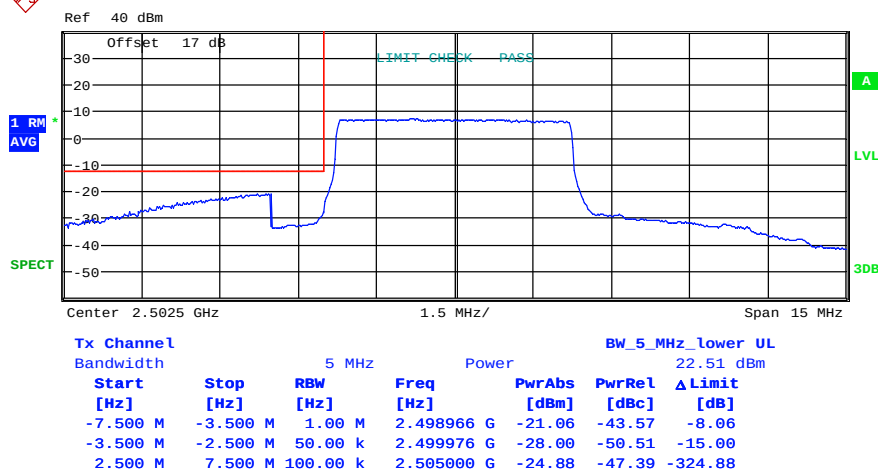
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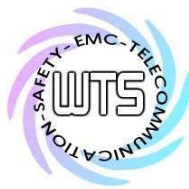


Date: 25.DEC.2021 16:55:17

Band 7
5 MHz QPSK
FRB

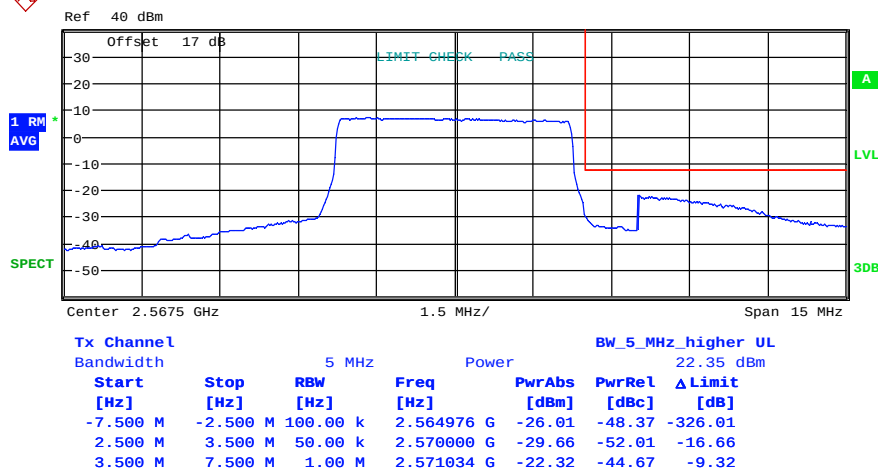


Date: 25.DEC.2021 17:56:32



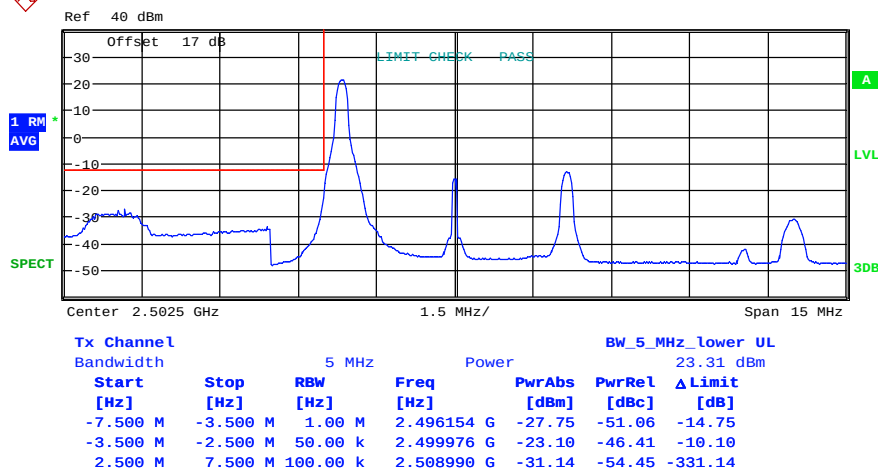
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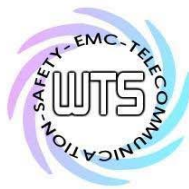


Date: 25.DEC.2021 17:55:43

1RB

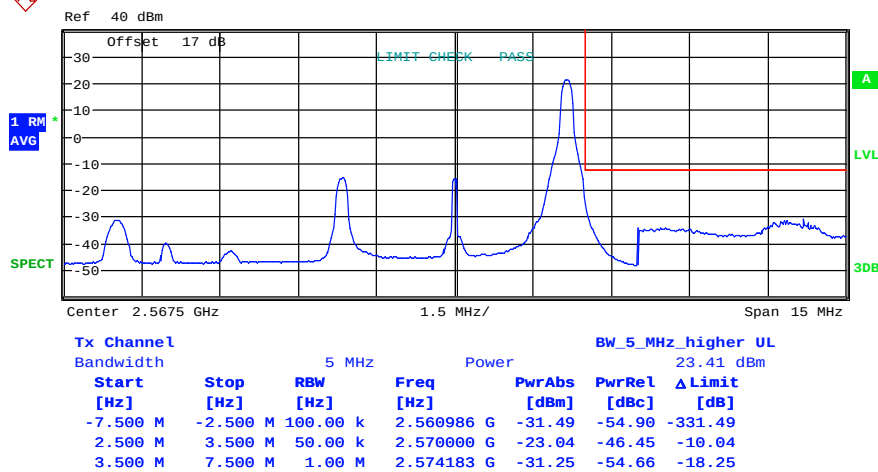


Date: 25.DEC.2021 17:52:18



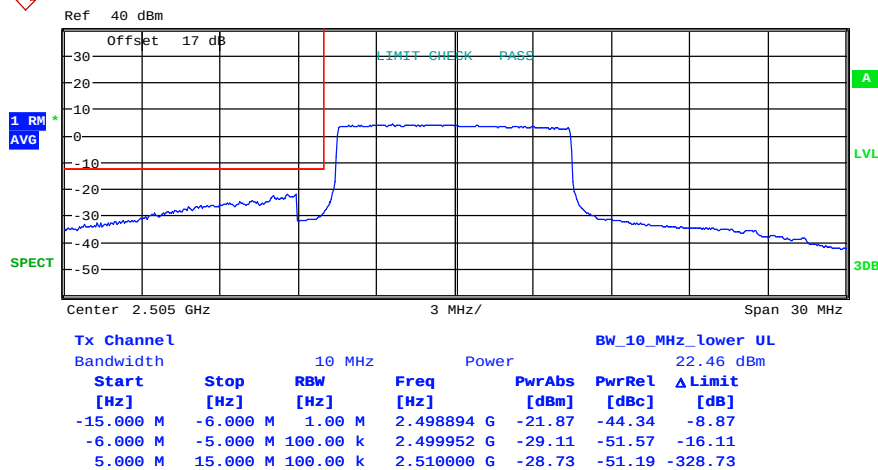
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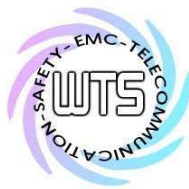


Date: 25.DEC.2021 17:53:07

10 MHz QPSK
FRB

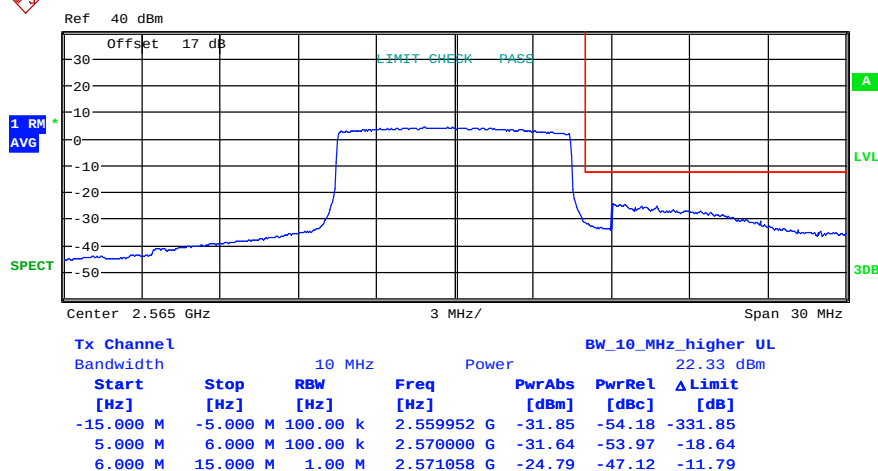


Date: 25.DEC.2021 17:32:45



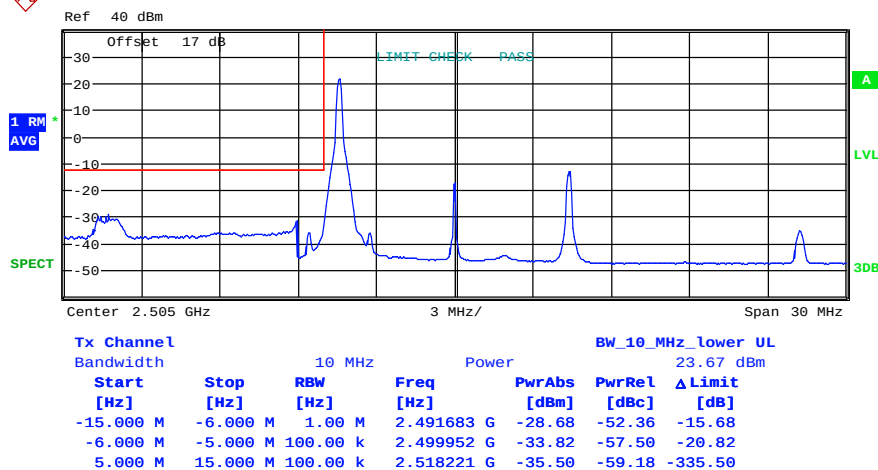
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

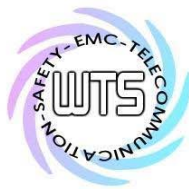


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1RB

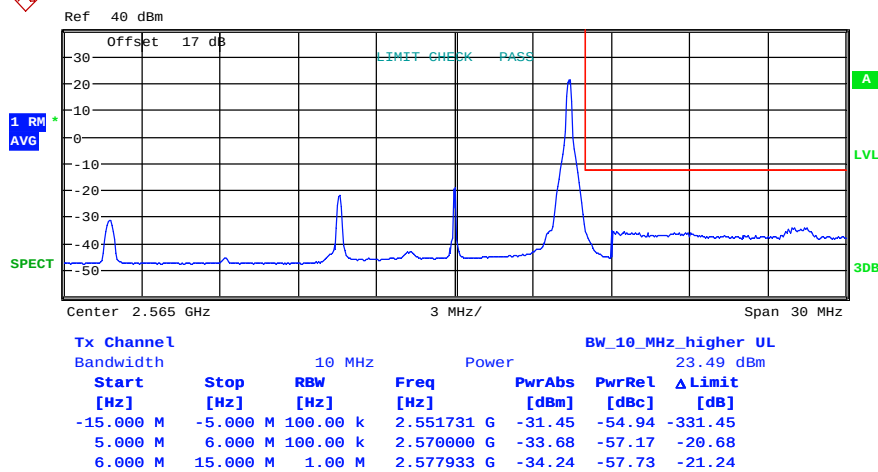


Date: 25.DEC.2021 17:33:08



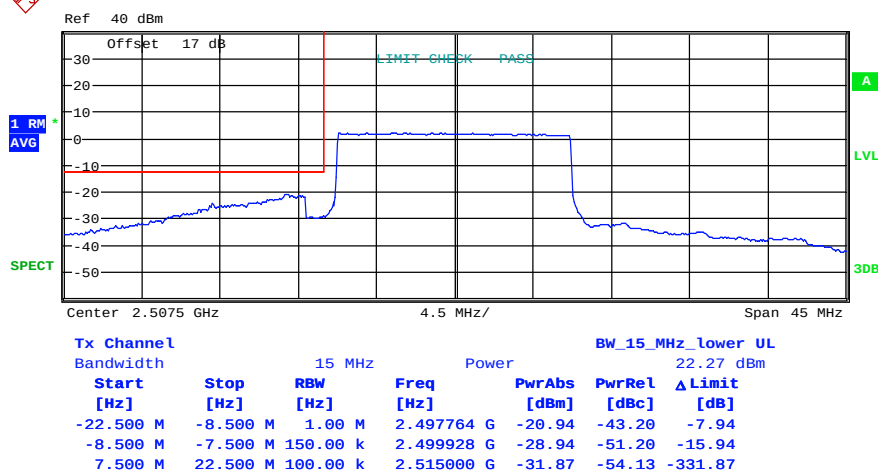
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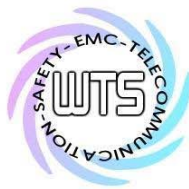


Date: 25.DEC.2021 17:34:26

15 MHz QPSK
FRB

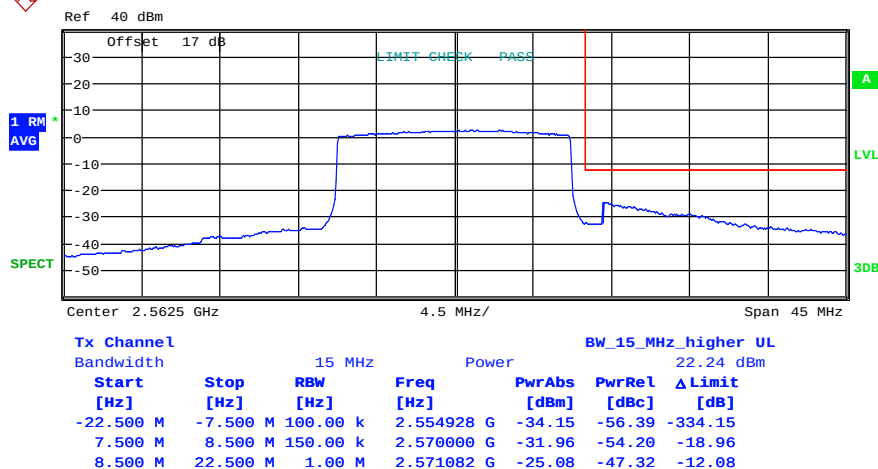


Date: 25.DEC.2021 17:42:00



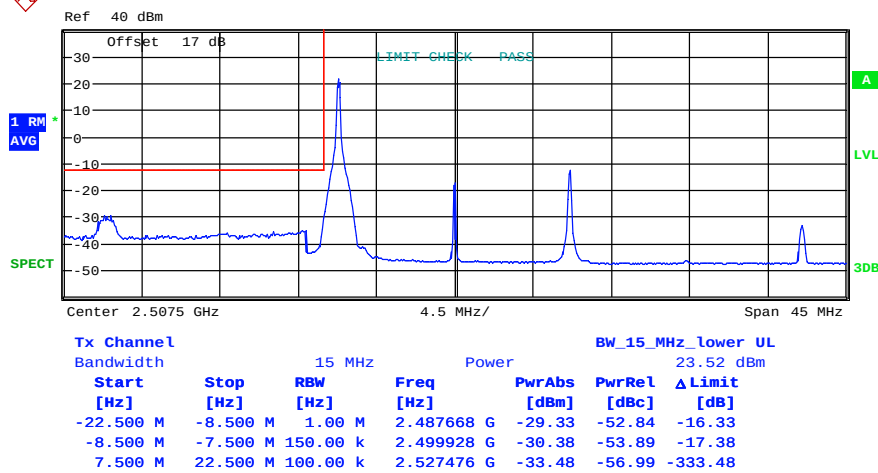
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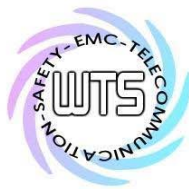


Date: 25.DEC.2021 17:36:34

1RB

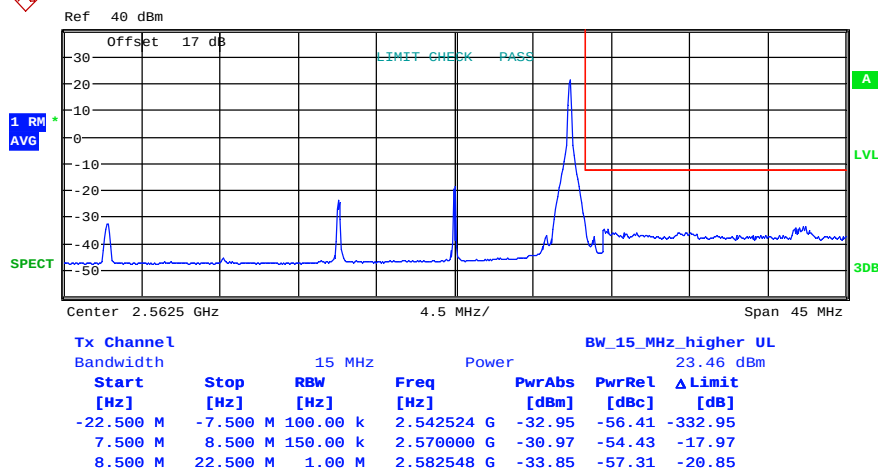


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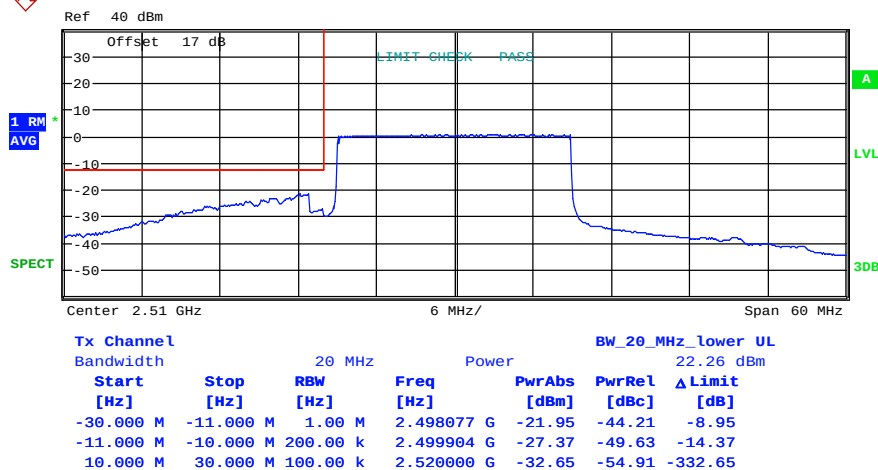
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

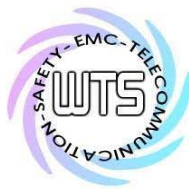


Date: 25.DEC.2021 17:36:51

20 MHz QPSK
FRB

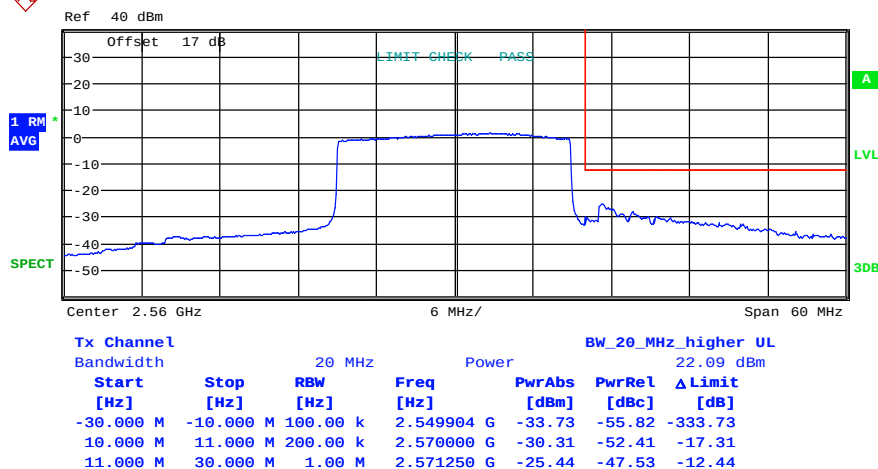


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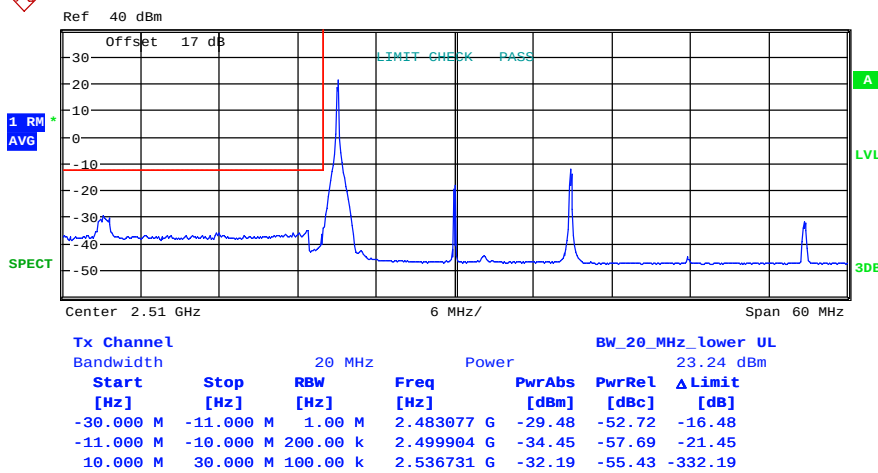
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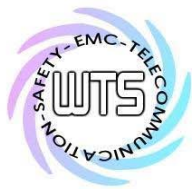


Date: 25.DEC.2021 17:46:07

1RB

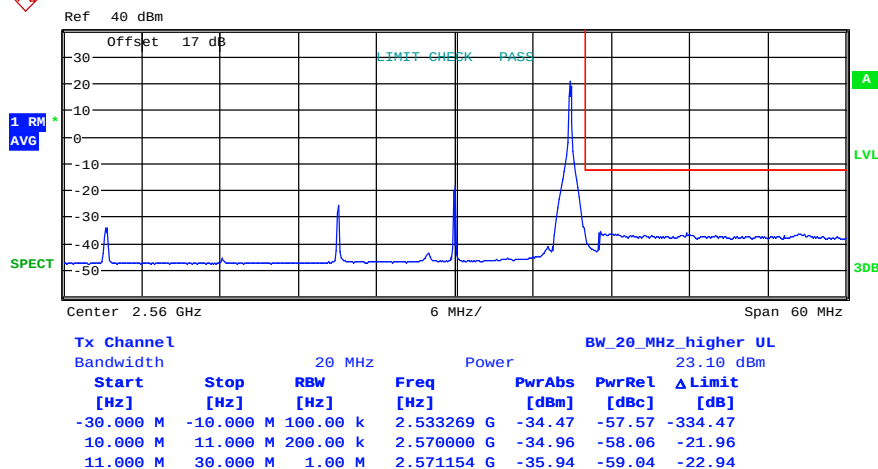


Date: 25.DEC.2021 17:44:09



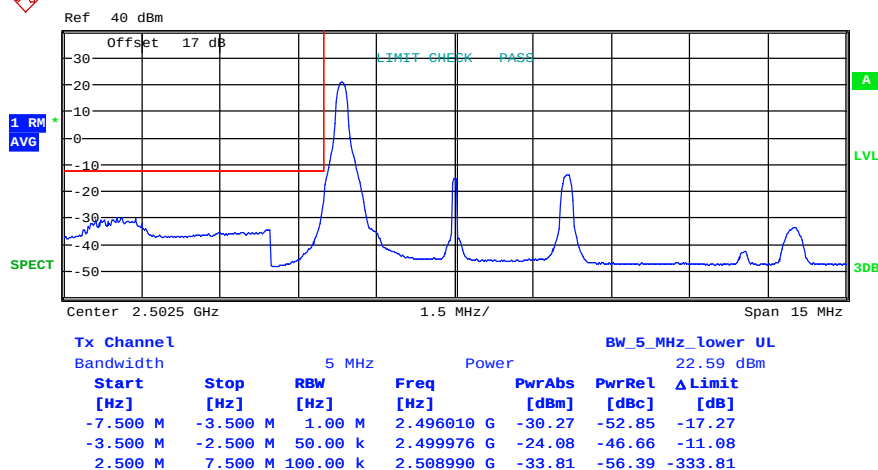
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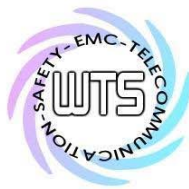


Date: 25.DEC.2021 17:45:44

5 MHz 16QAM
1RB

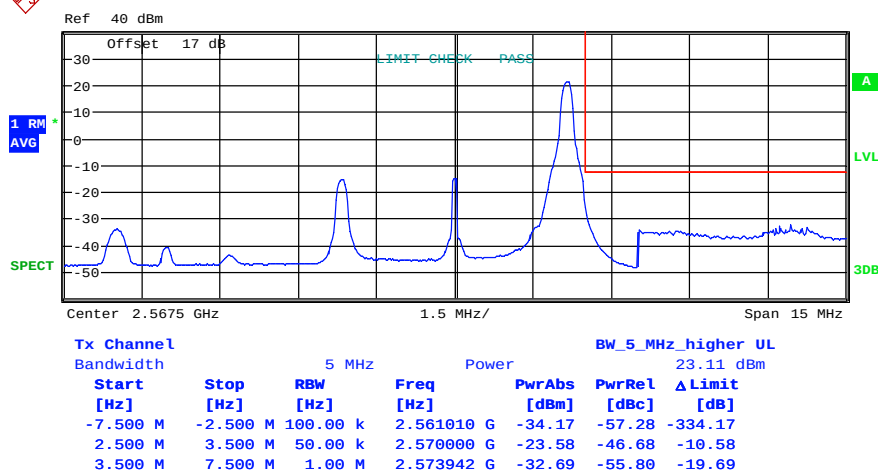


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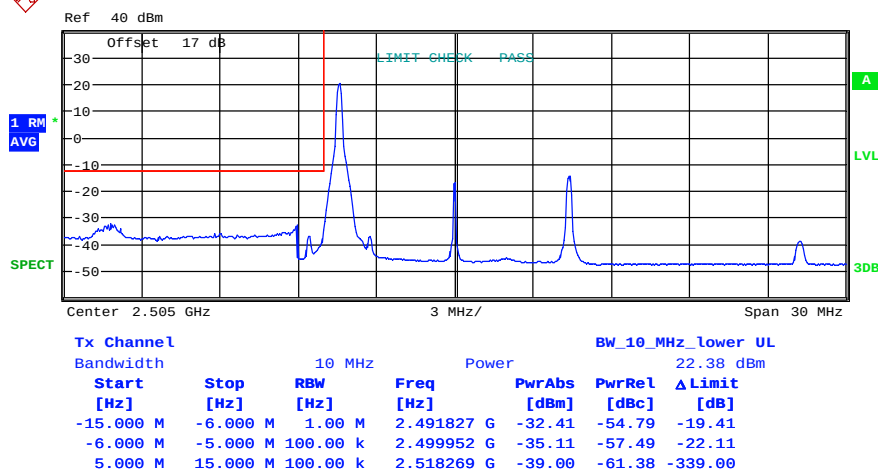
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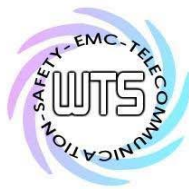


Date: 25.DEC.2021 17:27:43

10 MHz 16QAM
1RB

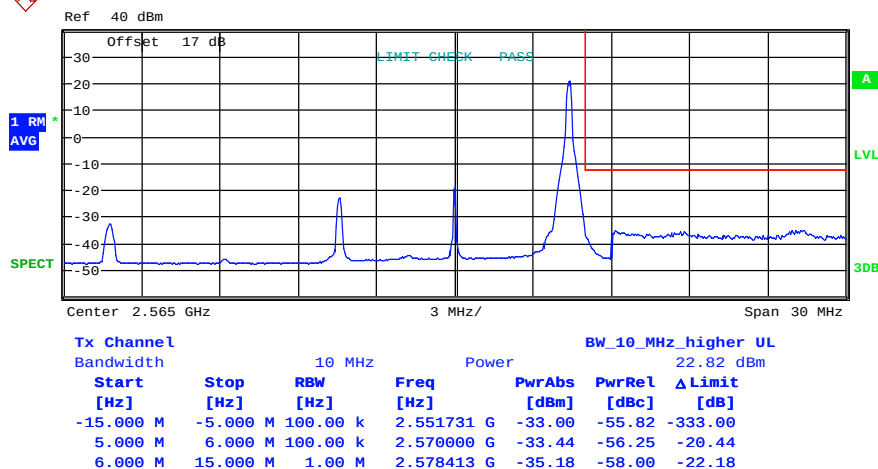


Date: 25.DEC.2021 17:33:26



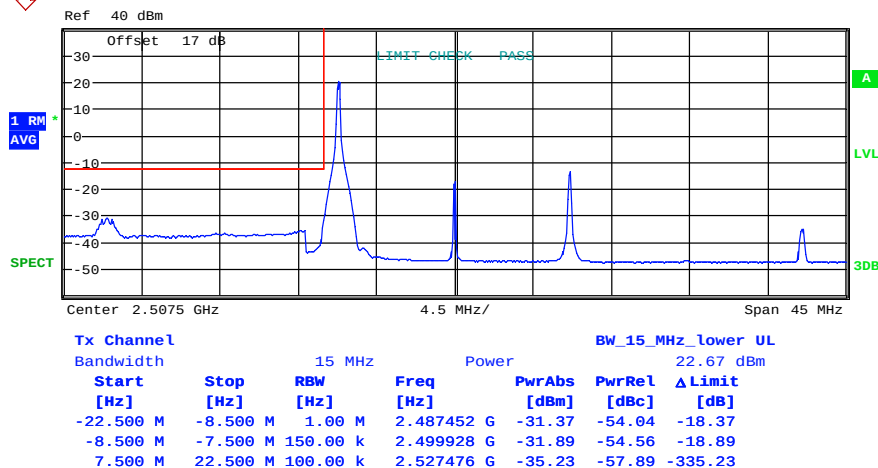
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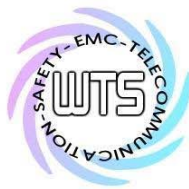


Date: 25.DEC.2021 17:34:08

15 MHz 16QAM
1RB

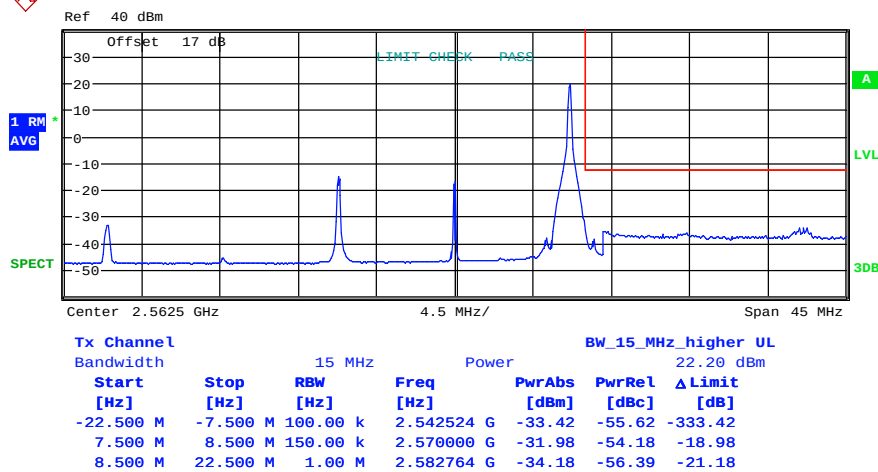


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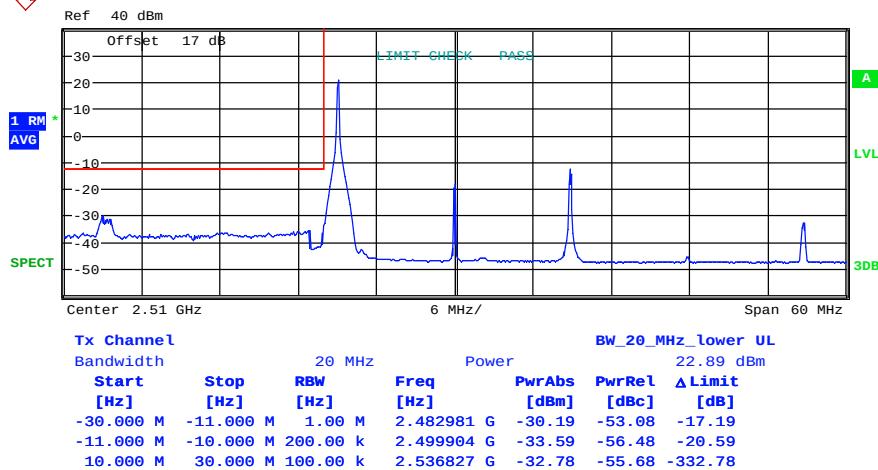
Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT

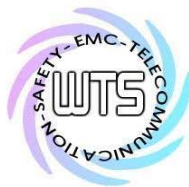


Date: 25.DEC.2021 17:37:09

20 MHz 16QAM
1RB

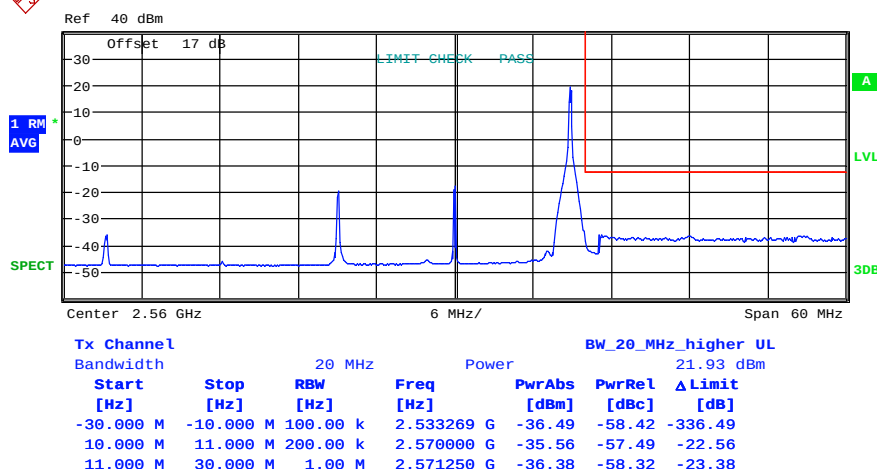


Date: 25.DEC.2021 17:44:26



Report Number: W6M22112-21430-P-247

FCC ID: GX9HSGWQT



Date: 25.DEC.2021 17:45:22

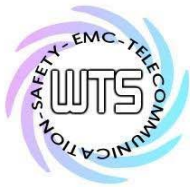
Test equipment: ETSTW-RE 004, ETSTW-RE 030, ETSTW-RE 062, ETSTW-RE 142, ETSTW-RE 147, ETSTW-GSM 002, ETSTW-GSM 003

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.

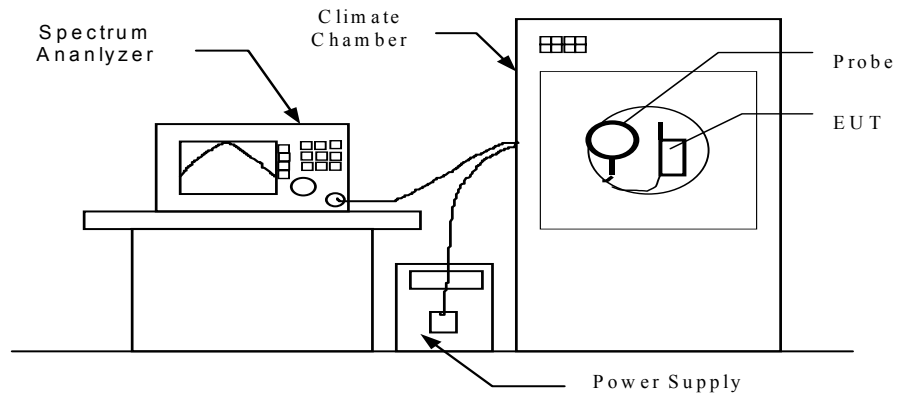
9.1 Test procedure

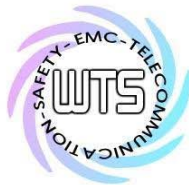
- ☒ The equipment under test was supplied with rated power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable, exited the chamber through an opening made for that purpose.
After 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.



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9.2 Test Results

9.2.1 Frequency Stability vs. Temperature

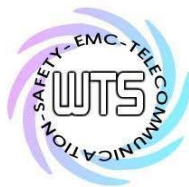
Test date: December 29, 2021

Temperature: 22.2 °C

Humidity: 57.0 %

Tester: Spencer

WCDMA Band 2					WCDMA Band 4				
CH9262	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)	CH4132	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)
120Vac	-30	-4.40	-0.002	±2.5	120Vac	-30	-3.73	-0.005	±2.5
	-20	-2.11	-0.001			-20	-3.33	-0.004	
	-10	-3.52	-0.002			-10	-3.29	-0.004	
	0	-3.15	-0.002			0	-3.61	-0.004	
	10	3.32	0.002			10	1.78	0.002	
	20	6.99	0.004			20	1.30	0.002	
	30	13.45	0.007			30	3.53	0.004	
	40	9.92	0.005			40	3.32	0.004	
	50	-9.53	-0.005			50	4.48	0.005	
132Vac	25	7.87	0.004	±2.5	132Vac	25	3.48	0.004	±2.5
108Vac	25	9.63	0.005		108Vac	25	3.64	0.004	
CH9400	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)	CH4183	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)
120Vac	-30	2.04	0.001	±2.5	120Vac	-30	-1.87	-0.002	±2.5
	-20	-3.68	-0.002			-20	-1.17	-0.001	
	-10	-5.76	-0.003			-10	1.47	0.002	
	0	-3.15	-0.002			0	-2.85	-0.003	
	10	-5.44	-0.003			10	1.10	0.001	
	20	-4.58	-0.002			20	-0.93	-0.001	
	30	-4.43	-0.002			30	-1.42	-0.002	
	40	6.95	0.004			40	-1.25	-0.001	
	50	-4.61	-0.002			50	-4.06	-0.005	
132Vac	25	5.84	0.003	±2.5	132Vac	25	1.06	0.001	±2.5
108Vac	25	-3.01	-0.002		108Vac	25	-1.24	-0.001	
CH9538	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)	CH4233	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)
120Vac	-30	6.01	0.003	±2.5	120Vac	-30	2.30	0.003	±2.5
	-20	7.40	0.004			-20	3.14	0.004	
	-10	5.66	0.003			-10	2.22	0.003	
	0	3.49	0.002			0	-2.16	-0.003	
	10	-3.45	-0.002			10	-2.12	-0.003	
	20	-6.25	-0.003			20	-1.81	-0.002	
	30	-8.88	-0.005			30	-3.31	-0.004	
	40	-10.18	-0.005			40	-3.68	-0.004	
	50	-11.46	-0.006			50	-4.72	-0.006	
132Vac	25	-5.78	-0.003	±2.5	132Vac	25	-3.45	-0.004	±2.5
108Vac	25	-6.07	-0.003		108Vac	25	-4.46	-0.005	



Worldwide Testing Services(Taiwan) Co., Ltd.

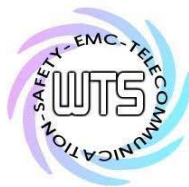
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LTE BAND2 QPSK 10MHz FRB					LTE BAND4 QPSK 10MHz FRB				
CH18900	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)	CH20175	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)
120Vac	-30	-3.85	-0.002	±2.5	120Vac	-30	-4.01	-0.002	±2.5
	-20	-6.55	-0.003			-20	3.71	0.002	
	-10	-5.82	-0.003			-10	3.69	0.002	
	0	-5.79	-0.003			0	-3.71	-0.002	
	10	-4.42	-0.002			10	-3.13	-0.002	
	20	-5.52	-0.003			20	3.18	0.002	
	30	-5.89	-0.003			30	2.90	0.002	
	40	-5.75	-0.003			40	4.33	0.002	
	50	-6.18	-0.003			50	-3.93	-0.002	
132Vac	25	-2.66	-0.001	±2.5	132Vac	25	5.15	0.003	±2.5
108Vac	25	-4.95	-0.003		108Vac	25	-28.21	-0.016	

LTE BAND5 QPSK 10MHz FRB					LTE BAND7 QPSK 10MHz FRB				
CH18900	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)	CH20175	Temp	Frequency drift(Hz)	Frequency drift(ppm)	Limit (ppm)
120Vac	-30	5.46	0.003	±2.5	120Vac	-30	-0.70	-0.001	±2.5
	-20	2.82	0.002			-20	-9.15	-0.013	
	-10	1.69	0.001			-10	-7.35	-0.010	
	0	-6.18	-0.004			0	-5.71	-0.008	
	10	3.64	0.002			10	-6.70	-0.009	
	20	1.96	0.001			20	-8.53	-0.012	
	30	-2.98	-0.002			30	5.56	0.008	
	40	3.69	0.002			40	6.51	0.009	
	50	-2.25	-0.001			50	-2.00	-0.003	
132Vac	25	-0.70	0.000	±2.5	132Vac	25	-5.22	-0.007	±2.5
108Vac	25	-2.67	-0.002		108Vac	25	-9.97	-0.014	

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



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FCC ID: GX9HSGWQT

10 Maximum Permissible Exposure

10.1 Exemption Limits for Routine Evaluation according to 47 CFR FCC Part 2 Subpart J, section 2.1091

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.

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20 cm normally can be maintained between the user and the device.

MPE Calculation Method

(A) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

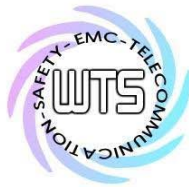
E = Electric field (V/m) P = output power (W) G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

The formula can be changed to

mW/cm².



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Frequency	Max output power		Antenna Gain	Power Density(S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
	(dBm)	(W)				
WCDMA Band 2	22.88	0.1941	1.59	0.0557	1	Complies
WCDMA Band 5	23.24	0.2109	2.2	0.0696	0.5577	Complies
LTE Band 2	22.76	0.1888	1.59	0.0542	1	Complies
LTE Band 4	22.92	0.1959	-0.5	0.0347	1	Complies
LTE Band 5	23.37	0.2173	2.2	0.0717	0.5498	Complies
LTE Band 7	22.46	0.1762	-0.47	0.0315	1	Complies

From the peak EUT RF output power, the minimum mobile separation distance, $d=0.2$ m, as well as the gain of the used antenna, the RF power density can be obtained.