

47 CFR PART 22/24/27 TEST REPORT

for

Hybrid Security System

Model No.: Hybrid Panel-1

FCC ID: GX9HYBRID

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, TW0020, TW1072

Industry Canada filed test laboratory Reg. No.: 20037



Report No.: W6M22106-21044-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: W6M22106-21044-P-247

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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 : Hybrid Security System
Model Number : Hybrid Panel-1
Brand Name : ./.
Operation Frequency : Please see chapter 2.3.
RF Output Power : WCDMA Band II: 27.02 dBm (EIRP)
Band V: 27.34 dBm (ERP)
LTE Band II: 26.72 dBm (EIRP)
Band IV 25.53 dBm (EIRP)
Band V: 27.62 dBm (ERP)
Band VII: 24.50 dBm (EIRP)
Power Supply : 120Va.c.
Battery 12V, 7.0Ah

Regulation Applied : 47CFR Part 22 (2019-10), Part 24 (2019-10),
Part 27 (2019-10)

Test Method : 47CFR Part 2 (2019), 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(2019), TIA/EIA-603E (2016), and it was found that the device described above is in compliance with the applicable limits specified in 47CFR Part 22/24/27.

Note:

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



Worldwide Testing Services(Taiwan) Co., Ltd.

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Test Engineer:

August 04, 2021

Kent Lin

Kent Lin

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

August 04, 2021

Kevin Wang

Kevin Wang

Date

WTS

Name

Signature

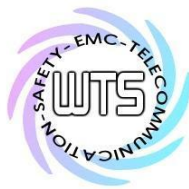


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1. Summary

1.1 Description of tested equipment

This equipment under tested, Hybrid Panel-1, is a Hybrid Security System.

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

1.2 Date of testing processing

Date of receipt of test item: June 29, 2021

Date of test: from June 30, 2021 to July 30, 2021

Other Information: None

1.3 Modification Information

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

1.4 Test standards

Technical standard: **47 CFR Part 22 (2019), Part 24 (2019) and Part 27 (2019)**

Test method: **47 CFR Part 2 (2019), 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	RF Power Output (Effective radiated power)	2.1046(a), 22.913(a)	Pass
4.2	Modulation characteristics	2.1047	Not Required
5.2	Occupied bandwidth	2.1049(h)	Pass
6.2	Spurious emissions at antenna terminals	22.917(a), 2.1051	Pass
7.2	Field strength of spurious radiation	22.917(a), 2.1053	Pass
7.5	Band Edge emissions	22.917(a)	Pass
8.2	Frequency stability	2.1055 22.355	Pass

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



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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, Band 7) 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

Test item Name	Measurement Uncertainty
Estimation Result of Uncertainty of Radiated Emission(3M)	Expanded Uncertainty: 0.009-30 MHz: 2.13 dB 30-1000 MHz: 3.53 dB 1-18 GHz: 4.19 dB 18-40 GHz: 4.09 dB
Estimation Result of Uncertainty of Conducted Output Power Measurement	Expanded Uncertainty: 1.61 dB
Estimation Result of Uncertainty of Bandwidth Measurement	Expanded Uncertainty: 0.41 kHz
Estimation Result of Uncertainty of Frequency Drift Measurement	Expanded Uncertainty: 6.11 Hz
Estimation Result of Uncertainty of Band Edge Measurement	Expanded Uncertainty: 1.33 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, TW0020, TW1072
Industry Canada filed test laboratory Reg. No. 20037

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

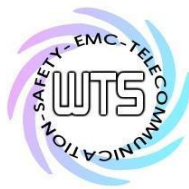
Name:	./.
Accredited number:	./.
Street:	./.
Town:	./.
Country:	./.
Telephone:	./.
Fax:	./.

2.2 Details of approval holder

Name:	CLIMAX TECHNOLOGY CO., LTD.
Street:	No. 258, Sinhu 2nd Rd., Neihu District,
Town:	Taipei City 114,
Country:	Taiwan (R.O.C.)
Telephone:	+886-2-2794-0001
Fax:	+886-2-2792-6618

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 II

Low Frequency (ch 9262): 1852.4 MHz

Mid Frequency (ch 9400): 1880.0 MHz

High Frequency (ch 9538): 1907.6 MHz

WCDMA Band V

Low Frequency (ch 4132): 826.4 MHz

Mid Frequency (ch 4183): 836.6 MHz

High Frequency (ch 4233): 846.6 MHz

LTE

Band II

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

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

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Band IV

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

Band V

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 VII

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 II: 4.11 dBi, Band V: 3.61 dBi LTE Band II: 4.11 dBi, Band IV: 1.89 dBi, Band V: 3.64 dBi, Band VII: 2.15 dBi (Testing laboratory assumes no responsibility for affecting any validity of the result while the information which is provided by clients.)
Power supply:	120Va.c. Battery 12V, 7.0Ah

2.4 Test environment

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

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	2020/11/6	2021/11/5
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2020/9/22	2021/9/21
ETSTW-CE 008	HF-EICHLITUNG 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	2021/7/21	2022/7/20
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2020/10/26	2021/10/25
ETSTW-CE 028	MXE EMI Receiver	N9038A	MY53220110	Agilent	2021/7/21	2022/7/20
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	2020/9/14	2021/9/13
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	2021/7/21	2022/7/20
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	2021/5/5	2022/5/4
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	2020/10/15	2021/10/14
ETSTW-RE 088	SOLID STATE AMPLIFIER	KMA180265A01	99057	KMIC	2020/9/17	2021/9/16
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



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ETSTW-RE 112	AC POWER SOURCE	TFC-1005	T-0A023536	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2021/1/6	2022/1/5
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	2020/12/25	2021/12/24
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	2020/8/7	2021/8/6
ETSTW-RE 126	5GHz Notch filter	5NSL12-5800/E221.3-O/O	1	K&L Microwave	2020/8/7	2021/8/6
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	2020/8/7	2021/8/6
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2020/8/7	2021/8/6
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-RE 142	Amplifier	8447D	2805A03378	Agilent	2021/5/5	2022/5/4
ETSTW-RE 146	Preamplifier	JPA-10M1G	15090004	JPT	2021/6/4	2022/6/3
ETSTW-RE 147	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04005	ETC	2021/4/7	2022/4/6
ETSTW-RE 148	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04006	ETC	2021/7/2	2022/7/1
ETSTW-RE 153	Signal Analyzer	FSV40	101929	R&S	2020/10/1	2021/9/30
ETSTW-RF 002	Electromagnetic field probe	LF-30	K-0007	STT	2021/6/4	2022/6/3
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	2020/11/10	2021/11/9
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2021/1/6	2022/1/5
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2021/1/6	2022/1/5
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2021/1/6	2022/1/5
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2021/1/6	2022/1/5
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2020/9/8	2021/9/7
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	2020/8/7	2021/8/6
ETSTW-Cable 011	SMA to N type Cable	RGU-400	None	THERMAX	Pre-test Use NCR	
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	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.	2021/6/22	2022/6/21
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	2020/9/17	2021/9/16
ETSTW-Cable 029	Microwave Cable	FA147A0015M2020	30064-3	UTIFLEX	2020/9/17	2021/9/16



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ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S_Cable 9)	279067	HUBER+SUHNER	2021/2/19	2022/2/18
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2021/5/5	2022/5/4
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	2021/5/5	2022/5/4
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	2021/5/5	2022/5/4
ETSTW-Cable 074	SMA type cable (2m)	SUCOFLEX 104	802563/4	HUBER+SUHNER	2021/5/5	2022/5/4
WTSTW-SW 002	EMI TEST SOFTWARE	EZ EMC	None	Farad	Version ETS-03A1	
WTSTW-SW 006	EMI TEST SOFTWARE	e3	None	AUDIX	Version 9.161014	
WTSTW-SW 008	Signal studio	Agilent	None	AUDIX	Version 2.0.0.1	
ETSTW-TH 002	Thermohygrometer	608-H1	45204317	Testo	2020/9/23	2021/9/22
ETSTW-TH 003	Wireless weather station	GAIA	N/A	TFA	2020/12/3	2021/12/2

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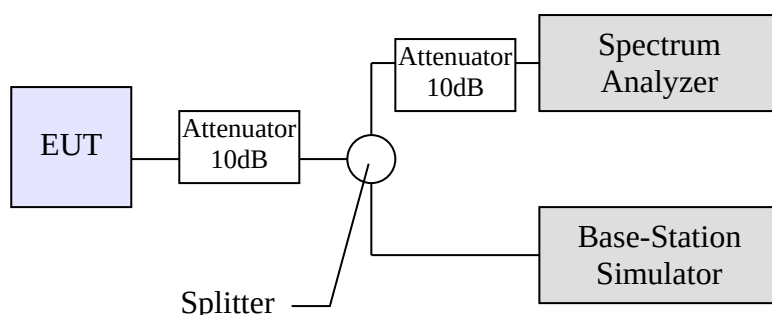
3. RF Power Output

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 with 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 assigning 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: July 02, 2021

Temperature: 24.7 °C

Humidity: 47.5 %

Tester: Kent

WCDMA

Band II & Band V

WCDMA Band II	POWER(dBm) Low Ch9262/ 1852.4MHz	POWER(dBm) Mid Ch9400/ 1880MHz	POWER(dBm) High Ch9538/ 1907.6MHz	EIRP Low Ch9262/ 1852.4MHz	EIRP Mid Ch9400/ 1880MHz	EIRP High Ch9538/ 1907.6MHz
	22.91	22.87	22.53	27.02	26.98	26.64
WCDMA Band V	POWER(dBm) Low Ch4132/ 826.4MHz	POWER(dBm) Mid Ch4183/ 836.6MHz	POWER(dBm) High Ch4233/ 846.6MHz	ERP Low Ch4132/ 826.4MHz	ERP Mid Ch4183/ 836.6MHz	ERP High Ch4233/ 846.6MHz
	23.57	23.73	23.58	27.18	27.34	27.19



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Band II

BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch18607/ 1850.7MHz	POWER(dBm) Mid Ch18900/ 1880MHz	POWER(dBm) High Ch19193/ 1909.3MHz	EIRP Low Ch18607/ 1850.7MHz	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19193/ 1909.3MHz
1.4	QPSK	1	0	22.38	22.21	21.84	26.49	26.32	25.95
1.4	QPSK	1	3	22.61	22.05	21.73	26.72	26.16	25.84
1.4	QPSK	1	5	22.23	22.07	21.72	26.34	26.18	25.83
1.4	QPSK	3	0	22.32	22.11	22.05	26.43	26.22	26.16
1.4	QPSK	3	1	22.60	22.29	22.08	26.71	26.4	26.19
1.4	QPSK	3	3	22.48	22.29	21.88	26.59	26.4	25.99
1.4	QPSK	6	0	21.31	21.31	20.78	25.42	25.42	24.89
1.4	16QAM	1	0	20.78	20.42	20.37	24.89	24.53	24.48
1.4	16QAM	1	3	21.31	20.27	21.09	25.42	24.38	25.20
1.4	16QAM	1	5	21.13	20.43	20.27	25.24	24.54	24.38
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	22.28	21.97	21.90	26.39	26.08	26.01
3	QPSK	1	7	22.58	21.99	21.92	26.69	26.1	26.03
3	QPSK	1	14	22.13	21.90	21.68	26.24	26.01	25.79
3	QPSK	8	0	21.15	20.93	20.97	25.26	25.04	25.08
3	QPSK	8	3	21.28	21.09	20.73	25.39	25.20	24.84
3	QPSK	8	7	21.28	21.03	20.82	25.39	25.14	24.93
3	QPSK	15	0	21.27	21.06	20.86	25.38	25.17	24.97
3	16QAM	1	0	20.39	20.68	20.27	24.5	24.79	24.38
3	16QAM	1	7	20.93	20.72	20.76	25.04	24.83	24.87
3	16QAM	1	14	20.52	20.80	20.75	24.63	24.91	24.86
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	22.17	22.06	21.58	26.28	26.17	25.69
5	QPSK	1	12	22.52	22.09	22.05	26.63	26.2	26.16
5	QPSK	1	24	22.18	21.89	21.66	26.29	26.00	25.77
5	QPSK	12	0	21.18	21.05	20.91	25.29	25.16	25.02
5	QPSK	12	6	21.35	20.91	20.69	25.46	25.02	24.80
5	QPSK	12	13	21.33	21.06	20.72	25.44	25.17	24.83
5	QPSK	25	0	21.24	21.07	20.84	25.35	25.18	24.95
5	16QAM	1	0	20.55	21.36	20.27	24.66	25.47	24.38
5	16QAM	1	12	21.44	20.77	20.31	25.55	24.88	24.42
5	16QAM	1	24	20.77	21.02	20.30	24.88	25.13	24.41



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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	22.16	21.88	22.17	26.27	25.99	26.28
10	QPSK	1	24	22.23	21.74	21.59	26.34	25.85	25.70
10	QPSK	1	49	22.14	21.56	21.49	26.25	25.67	25.60
10	QPSK	25	0	21.09	21.02	20.76	25.20	25.13	24.87
10	QPSK	25	12	21.20	20.86	20.74	25.31	24.97	24.85
10	QPSK	25	25	21.16	20.91	20.82	25.27	25.02	24.93
10	QPSK	50	0	20.99	21.00	20.94	25.10	25.11	25.05
10	16QAM	1	0	20.99	20.80	20.61	25.10	24.91	24.72
10	16QAM	1	24	20.55	20.66	19.99	24.66	24.77	24.1
10	16QAM	1	49	20.61	20.47	20.17	24.72	24.58	24.28
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	22.37	22.05	21.79	26.48	26.16	25.90
15	QPSK	1	37	22.61	21.97	21.98	26.72	26.08	26.09
15	QPSK	1	74	22.17	21.70	21.68	26.28	25.81	25.79
15	QPSK	36	0	21.24	21.06	20.80	25.35	25.17	24.91
15	QPSK	36	19	21.29	20.86	20.70	25.40	24.97	24.81
15	QPSK	36	39	21.34	20.84	20.89	25.45	24.95	25.00
15	16QAM	1	0	20.88	20.99	20.95	24.99	25.10	25.06
15	16QAM	1	37	21.42	20.94	21.20	25.53	25.05	25.31
15	16QAM	1	74	21.14	21.18	20.58	25.25	25.29	24.69
BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch18700/ 1860MHz	POWER(dBm) Mid Ch18900/ 1880MHz	POWER(dBm) High Ch19100/ 1900MHz	EIRP Low Ch18675/ 1857.5MHz	EIRP Mid Ch18900/ 1880MHz	EIRP High Ch19125/ 1902.5MHz
20	QPSK	1	0	22.19	21.76	21.79	26.30	25.87	25.90
20	QPSK	1	49	22.18	21.61	21.71	26.29	25.72	25.82
20	QPSK	1	99	22.01	21.36	21.39	26.12	25.47	25.5
20	QPSK	50	0	21.11	20.88	20.72	25.22	24.99	24.83
20	QPSK	50	25	21.19	20.74	20.65	25.30	24.85	24.76
20	QPSK	50	50	20.99	20.73	20.60	25.10	24.84	24.71
20	16QAM	1	0	20.91	20.72	20.57	25.02	24.83	24.68
20	16QAM	1	49	20.71	20.39	20.50	24.82	24.50	24.61
20	16QAM	1	99	20.50	20.46	19.66	24.61	24.57	23.77



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Band IV

BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch19957/ 1710.7MHz	POWER(dBm) Mid Ch20175/ 1732.5MHz	POWER(dBm) High Ch20393/ 1754.3MHz	EIRP Low Ch19957/ 1710.7MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20393/ 1754.3MHz
1.4	QPSK	1	0	22.10	22.73	22.33	23.99	24.62	24.22
1.4	QPSK	1	3	22.26	22.64	22.29	24.15	24.53	24.18
1.4	QPSK	1	5	21.95	22.55	22.29	23.84	24.44	24.18
1.4	QPSK	3	0	22.32	22.69	22.31	24.21	24.58	24.20
1.4	QPSK	3	1	22.51	22.62	22.55	24.40	24.51	24.44
1.4	QPSK	3	3	22.40	22.48	22.36	24.29	24.37	24.25
1.4	QPSK	6	0	21.39	21.60	21.30	23.28	23.49	23.19
1.4	16QAM	1	0	21.08	20.84	20.61	22.97	22.73	22.50
1.4	16QAM	1	3	21.33	20.91	21.16	23.22	22.80	23.05
1.4	16QAM	1	5	20.84	20.37	20.84	22.73	22.26	22.73
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	22.31	22.59	21.77	24.20	24.48	23.66
3	QPSK	1	7	21.90	22.22	22.07	23.79	24.11	23.96
3	QPSK	1	14	22.14	22.14	22.13	24.03	24.03	24.02
3	QPSK	8	0	21.06	21.22	21.05	22.95	23.11	22.94
3	QPSK	8	3	21.27	21.23	21.11	23.16	23.12	23.00
3	QPSK	8	7	21.29	21.30	21.21	23.18	23.19	23.10
3	QPSK	15	0	21.08	21.37	21.28	22.97	23.26	23.17
3	16QAM	1	0	21.09	21.30	20.70	22.98	23.19	22.59
3	16QAM	1	7	20.82	21.34	20.49	22.71	23.23	22.38
3	16QAM	1	14	20.77	21.38	20.94	22.66	23.27	22.83
BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch19975/ 1712.5MHz	POWER(dBm) Mid Ch20175/ 1732.5MHz	POWER(dBm) High Ch20375/ 1752.5MHz	EIRP Low Ch19975/ 1712.5MHz	EIRP Mid Ch20175/ 1732.5MHz	EIRP High Ch20375/ 1752.5MHz
5	QPSK	1	0	22.14	22.26	22.15	24.03	24.15	24.04
5	QPSK	1	12	22.43	22.33	22.37	24.32	24.22	24.26
5	QPSK	1	24	22.23	22.51	22.24	24.12	24.4	24.13
5	QPSK	12	0	21.50	21.44	21.43	23.39	23.33	23.32
5	QPSK	12	6	21.33	21.40	21.34	23.22	23.29	23.23
5	QPSK	12	13	21.44	21.44	21.43	23.33	23.33	23.32
5	QPSK	25	0	21.34	21.55	21.32	23.23	23.44	23.21
5	16QAM	1	0	20.99	20.73	21.14	22.88	22.62	23.03
5	16QAM	1	12	21.40	20.74	21.09	23.29	22.63	22.98
5	16QAM	1	24	20.96	20.75	21.24	22.85	22.64	23.13
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	23.12	23.21	22.97	25.01	25.10	24.86
10	QPSK	1	24	23.64	23.18	22.90	25.53	25.07	24.79
10	QPSK	1	49	23.08	22.90	22.89	24.97	24.79	24.78
10	QPSK	25	0	22.32	22.24	22.10	24.21	24.13	23.99
10	QPSK	25	12	22.35	22.27	21.96	24.24	24.16	23.85
10	QPSK	25	25	22.37	22.32	22.01	24.26	24.21	23.90
10	QPSK	50	0	22.43	22.31	22.16	24.32	24.20	24.05
10	16QAM	1	0	21.89	22.01	21.82	23.78	23.90	23.71
10	16QAM	1	24	21.67	21.82	21.70	23.56	23.71	23.59
10	16QAM	1	49	22.09	21.44	21.84	23.98	23.33	23.73



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BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch20025/1717.5 MHz	POWER(dBm) Mid Ch20175/1732.5 MHz	POWER(dBm) High Ch20325/1747.5 MHz	EIRP Low Ch20025/171 7.5MHz	EIRP Mid Ch20175/173 2.5MHz	EIRP High Ch20325/17 47.5MHz
15	QPSK	1	0	23.19	22.85	22.60	25.08	24.74	24.49
15	QPSK	1	37	23.18	22.80	23.02	25.07	24.69	24.91
15	QPSK	1	74	23.04	22.70	22.67	24.93	24.59	24.56
15	QPSK	36	0	21.99	21.91	21.59	23.88	23.80	23.48
15	QPSK	36	19	21.98	21.74	21.68	23.87	23.63	23.57
15	QPSK	36	39	21.92	21.84	21.81	23.81	23.73	23.70
15	16QAM	1	0	21.55	21.87	21.48	23.44	23.76	23.37
15	16QAM	1	37	22.09	21.51	21.49	23.98	23.40	23.38
15	16QAM	1	74	21.31	21.23	21.35	23.20	23.12	23.24
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
20	QPSK	1	0	22.36	22.80	22.48	24.25	24.69	24.37
20	QPSK	1	49	22.62	22.31	23.03	24.51	24.20	24.92
20	QPSK	1	99	22.79	22.24	22.40	24.68	24.13	24.29
20	QPSK	50	0	21.61	21.55	21.45	23.50	23.44	23.34
20	QPSK	50	25	21.69	21.64	21.40	23.58	23.53	23.29
20	QPSK	50	50	21.64	21.51	21.44	23.53	23.40	23.33
20	16QAM	1	0	20.95	20.69	21.50	22.84	22.58	23.39
20	16QAM	1	49	21.80	21.23	21.20	23.69	23.12	23.09
20	16QAM	1	99	21.14	21.15	21.47	23.03	23.04	23.36

Band V

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	23.75	23.48	23.56	27.39	27.12	27.20
1.4	QPSK	1	3	23.50	23.66	23.60	27.14	27.30	27.24
1.4	QPSK	1	5	23.62	23.41	23.37	27.26	27.05	27.01
1.4	QPSK	3	0	23.58	23.65	23.61	27.22	27.29	27.25
1.4	QPSK	3	1	23.96	23.98	23.63	27.60	27.62	27.27
1.4	QPSK	3	3	23.62	23.80	23.55	27.26	27.44	27.19
1.4	QPSK	6	0	22.81	22.66	22.54	26.45	26.30	26.18
1.4	16QAM	1	0	22.31	21.80	22.41	25.95	25.44	26.05
1.4	16QAM	1	3	22.63	22.37	22.68	26.27	26.01	26.32
1.4	16QAM	1	5	21.96	22.44	22.11	25.60	26.08	25.75



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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	23.50	23.46	23.65	27.14	27.10	27.29
3	QPSK	1	7	23.82	23.50	23.84	27.46	27.14	27.48
3	QPSK	1	14	23.59	23.51	23.53	27.23	27.15	27.17
3	QPSK	8	0	22.66	22.71	22.63	26.30	26.35	26.27
3	QPSK	8	3	22.69	22.66	22.70	26.33	26.30	26.34
3	QPSK	8	7	22.51	22.68	22.67	26.15	26.32	26.31
3	QPSK	15	0	22.68	22.62	22.53	26.32	26.26	26.17
3	16QAM	1	0	22.21	22.21	22.20	25.85	25.85	25.84
3	16QAM	1	7	22.29	22.28	22.29	25.93	25.92	25.93
3	16QAM	1	14	22.49	22.59	22.18	26.13	26.23	25.82
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	23.18	23.56	23.17	26.82	27.2	26.81
5	QPSK	1	12	23.64	23.67	23.44	27.28	27.31	27.08
5	QPSK	1	24	23.51	23.41	23.67	27.15	27.05	27.31
5	QPSK	12	0	22.69	22.66	22.43	26.33	26.30	26.07
5	QPSK	12	6	22.65	22.60	22.62	26.29	26.24	26.26
5	QPSK	12	13	22.61	22.60	22.56	26.25	26.24	26.20
5	QPSK	25	0	22.64	22.61	22.41	26.28	26.25	26.05
5	16QAM	1	0	22.06	22.16	22.08	25.70	25.80	25.72
5	16QAM	1	12	22.67	22.01	22.22	26.31	25.65	25.86
5	16QAM	1	24	22.04	22.26	21.94	25.68	25.90	25.58
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	23.56	23.38	23.21	27.20	27.02	26.85
10	QPSK	1	24	23.42	23.55	23.72	27.06	27.19	27.36
10	QPSK	1	49	23.69	23.72	23.6	27.33	27.36	27.24
10	QPSK	25	0	22.6	22.69	22.47	26.24	26.33	26.11
10	QPSK	25	12	22.71	22.61	22.54	26.35	26.25	26.18
10	QPSK	25	25	22.70	22.64	22.57	26.34	26.28	26.21
10	QPSK	50	0	22.61	22.67	22.51	26.25	26.31	26.15
10	16QAM	1	0	22.14	22.15	22.44	25.78	25.79	26.08
10	16QAM	1	24	22.00	21.85	22.00	25.64	25.49	25.64
10	16QAM	1	49	21.91	22.47	21.86	25.55	26.11	25.50



Worldwide Testing Services(Taiwan) Co., Ltd.

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Band VII

BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch20775/2502.5 MHz	POWER(dBm) Mid Ch21100/2535 MHz	POWER(dBm) High Ch21425/2567.5 MHz	EIRP Low Ch20775/2502.5 MHz	EIRP Mid Ch21100/2535 MHz	EIRP High Ch21425/2567.5 MHz
5	QPSK	1	0	21.98	21.48	21.56	24.13	23.63	23.71
5	QPSK	1	12	21.98	21.53	21.55	24.13	23.68	23.70
5	QPSK	1	24	21.74	21.35	21.32	23.89	23.50	23.47
5	QPSK	12	0	20.91	20.79	20.68	23.06	22.94	22.83
5	QPSK	12	6	20.95	20.63	20.57	23.10	22.78	22.72
5	QPSK	12	13	20.80	20.58	20.41	22.95	22.73	22.56
5	QPSK	25	0	20.92	20.65	20.65	23.07	22.80	22.80
5	16QAM	1	0	20.85	20.56	20.24	23.00	22.71	22.39
5	16QAM	1	12	20.62	20.18	20.31	22.77	22.33	22.46
5	16QAM	1	24	20.46	20.58	20.25	22.61	22.73	22.40
BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch20800/2505 MHz	POWER(dBm) Mid Ch21100/2535 MHz	POWER(dBm) High Ch21400/2565 MHz	EIRP Low Ch20800/2505 MHz	EIRP Mid Ch21100/2535 MHz	EIRP High Ch21400/2565 MHz
10	QPSK	1	0	21.64	21.70	21.42	23.79	23.85	23.57
10	QPSK	1	24	21.64	21.35	21.66	23.79	23.50	23.81
10	QPSK	1	49	21.43	21.77	21.32	23.58	23.92	23.47
10	QPSK	25	0	20.75	20.67	20.67	22.90	22.82	22.82
10	QPSK	25	12	20.71	20.65	20.70	22.86	22.80	22.85
10	QPSK	25	25	20.60	20.73	20.68	22.75	22.88	22.83
10	QPSK	50	0	20.68	20.70	20.75	22.83	22.85	22.90
10	16QAM	1	0	20.53	20.70	20.54	22.68	22.85	22.69
10	16QAM	1	24	20.33	20.34	20.17	22.48	22.49	22.32
10	16QAM	1	49	20.59	19.80	19.99	22.74	21.95	22.14



Worldwide Testing Services(Taiwan) Co., Ltd.

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FCC ID: GX9HYBRID

BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch20825/2507.5 MHz	POWER(dBm) Mid Ch21100/2535 MHz	POWER(dBm) High Ch21375/2562.5 MHz	EIRP Low Ch20825/2507.5 MHz	EIRP Mid Ch21100/2535 MHz	EIRP High Ch21375/2562.5 MHz
15	QPSK	1	0	22.35	21.70	21.78	24.50	23.85	23.93
15	QPSK	1	37	21.92	21.51	21.89	24.07	23.66	24.04
15	QPSK	1	74	21.81	21.76	21.36	23.96	23.91	23.51
15	QPSK	36	0	20.89	20.83	20.57	23.04	22.98	22.72
15	QPSK	36	19	20.75	20.60	20.68	22.90	22.75	22.83
15	QPSK	36	39	20.70	20.68	20.82	22.85	22.83	22.97
15	16QAM	1	0	20.92	20.51	20.13	23.07	22.66	22.28
15	16QAM	1	37	20.28	20.37	20.94	22.43	22.52	23.09
15	16QAM	1	74	20.59	20.40	20.31	22.74	22.55	22.46
BW(MHz)	Modulation	RB Size	RB offset	POWER(dBm) Low Ch20850/ 2510MHz	POWER(dBm) Mid Ch21100/ 2535MHz	POWER(dBm) High Ch21350/ 2560MHz	EIRP Low Ch20850/2510 MHz	EIRP Mid Ch21100/2535 MHz	EIRP High Ch21350/2560 MHz
20	QPSK	1	0	21.76	21.55	21.27	23.91	23.7	23.42
20	QPSK	1	49	21.50	21.19	21.42	23.65	23.34	23.57
20	QPSK	1	99	21.21	21.70	21.30	23.36	23.85	23.45
20	QPSK	50	0	20.51	20.53	20.32	22.66	22.68	22.47
20	QPSK	50	25	20.33	20.40	20.38	22.48	22.55	22.53
20	QPSK	50	50	20.35	20.51	20.63	22.5	22.66	22.78
20	16QAM	1	0	20.16	19.68	20.56	22.31	21.83	22.71
20	16QAM	1	49	19.79	19.96	19.82	21.94	22.11	21.97
20	16QAM	1	99	20.13	20.28	20.04	22.28	22.43	22.19

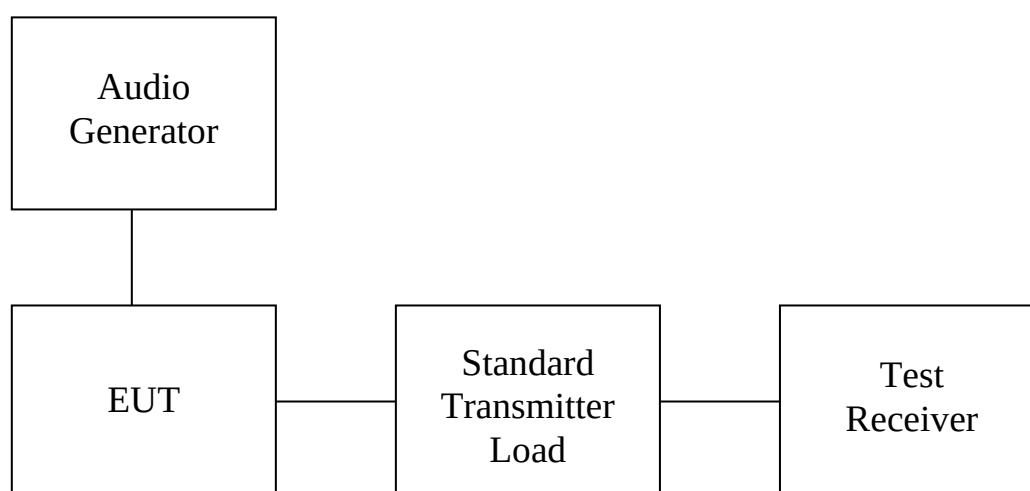
Test equipment: ETSTW-GSM 002, ETSTW-GSM 004

Report Number: W6M22106-21044-P-247
FCC ID: GX9HYBRID

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

Test date: --
Temperature:--°C
Humidity: -- %
Tester: --

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

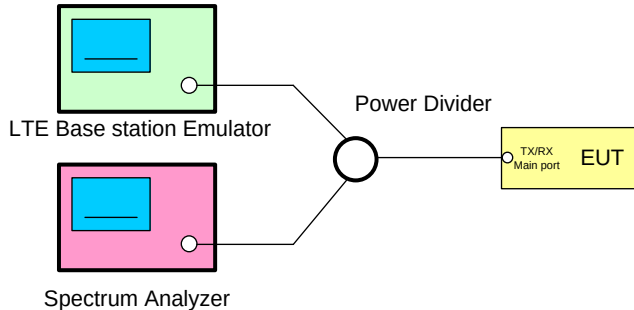
5. Peak-to-Average Ratio

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

5.1 Test procedure

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

5.2 Test Set up



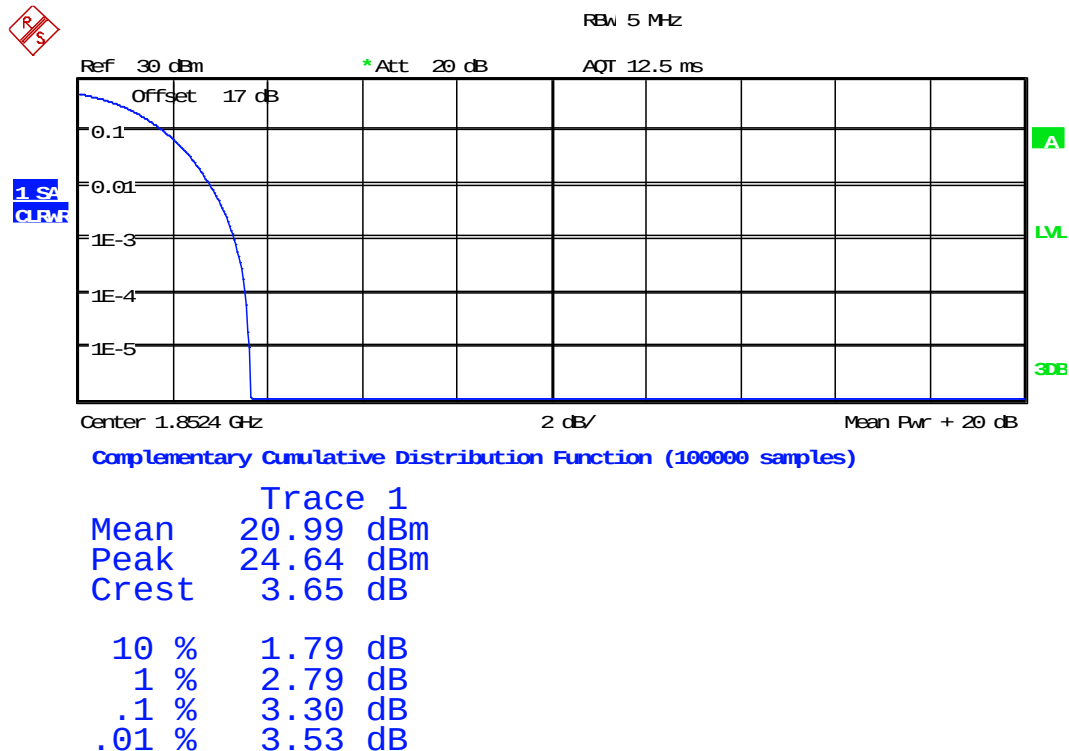


Report Number: W6M22106-21044-P-247
FCC ID: GX9HYBRID

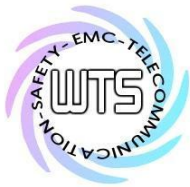
5.3 Test Results

Test date: July 02, 2021
Temperature: 24.7 °C
Humidity: 47.5 %
Tester: Kent

WCDMA
Band II



Date: 2.JUL.2021 19:37:06

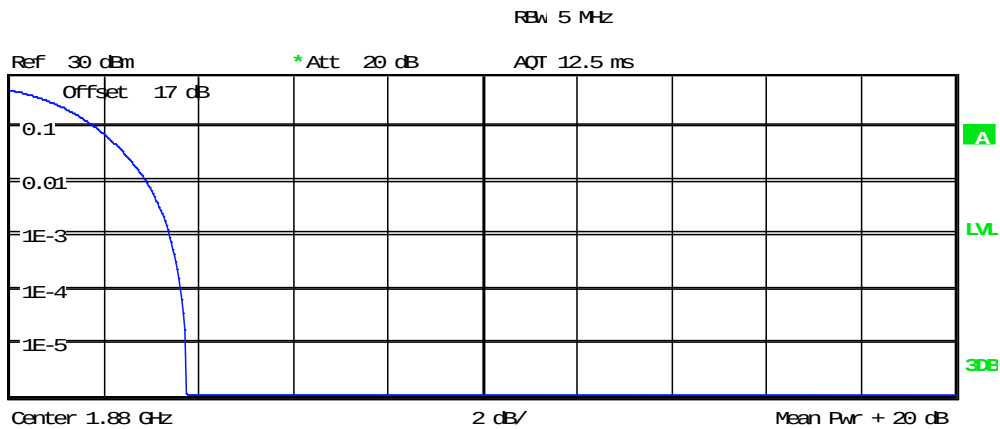


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



1 SA
CLR

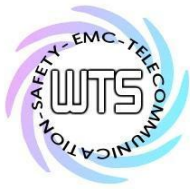


Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.04 dBm
Peak 24.78 dBm
Crest 3.74 dB

10 %	1.83 dB
1 %	2.88 dB
.1 %	3.40 dB
.01 %	3.62 dB

Date: 2.JUL.2021 19:37:29



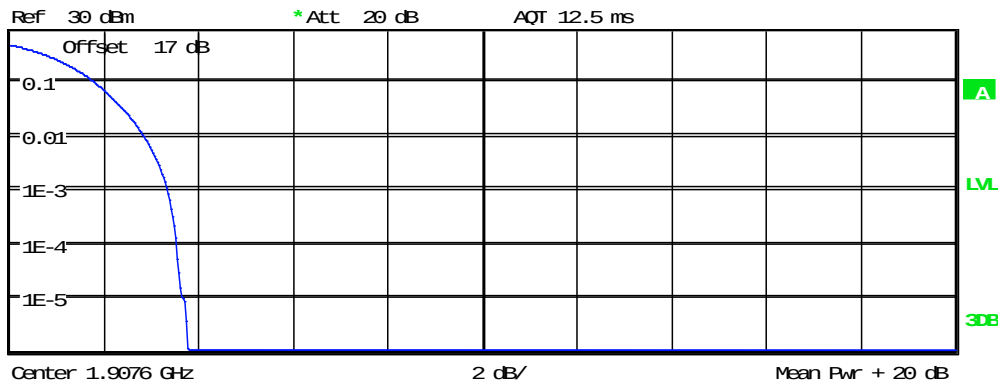
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



RBW 5 MHz

1 SA
CLR

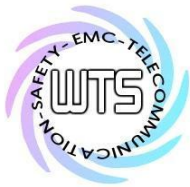


Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.22 dBm
Peak 24.99 dBm
Crest 3.77 dB

10 %	1.79 dB
1 %	2.85 dB
.1 %	3.33 dB
.01 %	3.53 dB

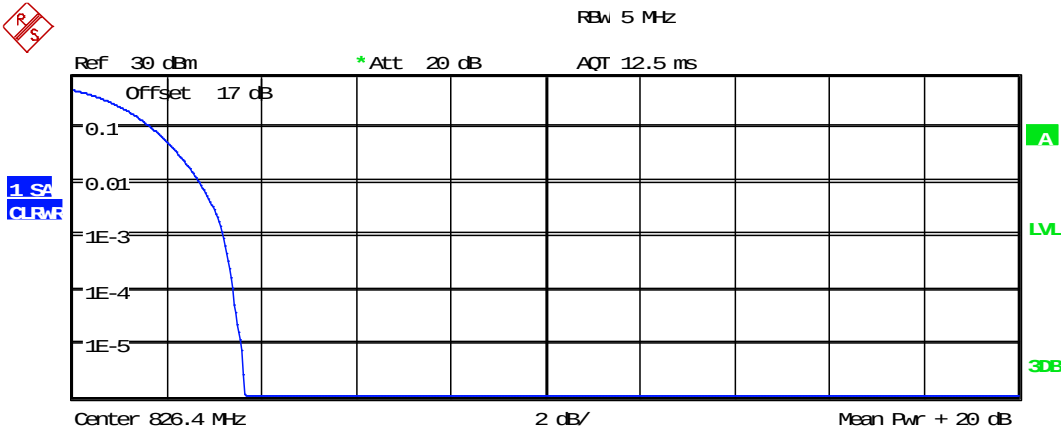
Date: 2.JUL.2021 19:37:55



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

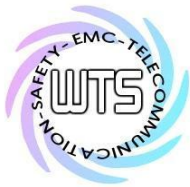
Band V



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	22.28 dBm
Peak	25.91 dBm
Crest	3.63 dB
10 %	1.67 dB
1 %	2.69 dB
.1 %	3.21 dB
.01 %	3.40 dB

Date: 2.JUL.2021 19:35:26

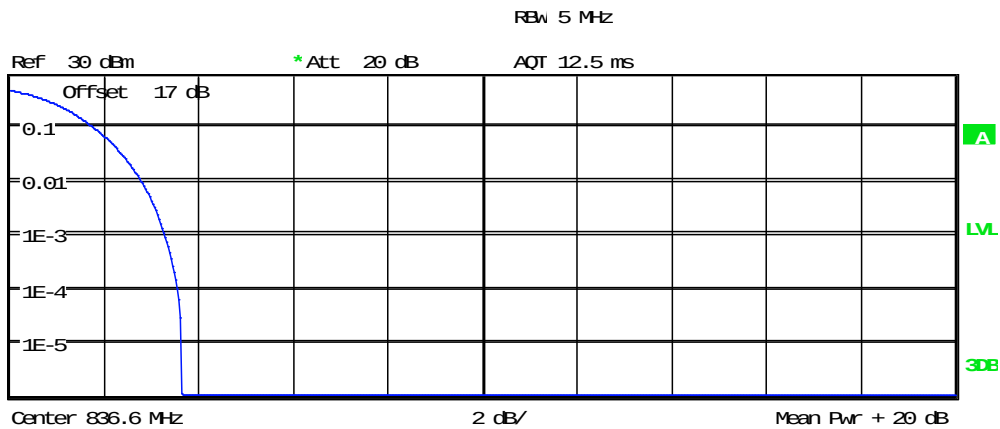


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



1 SA
CLR



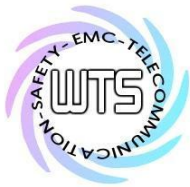
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	22.41 dBm
Peak	26.05 dBm
Crest	3.64 dB

10 %	1.76 dB
1 %	2.79 dB
.1 %	3.27 dB
.01 %	3.56 dB

Date: 2.JUL.2021 19:35:58



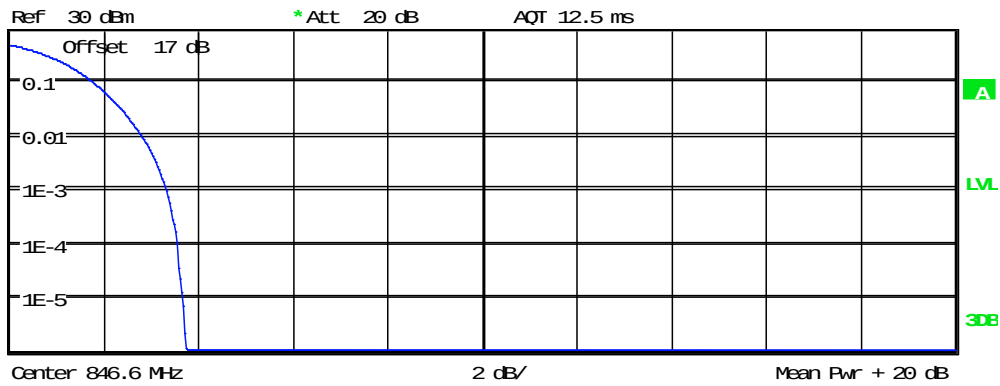
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



RBW 5 MHz

1 SA
CLR



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 22.25 dBm
Peak 25.98 dBm
Crest 3.73 dB

10 %	1.76 dB
1 %	2.79 dB
.1 %	3.33 dB
.01 %	3.56 dB

Date: 2.JUL.2021 19:36:22



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

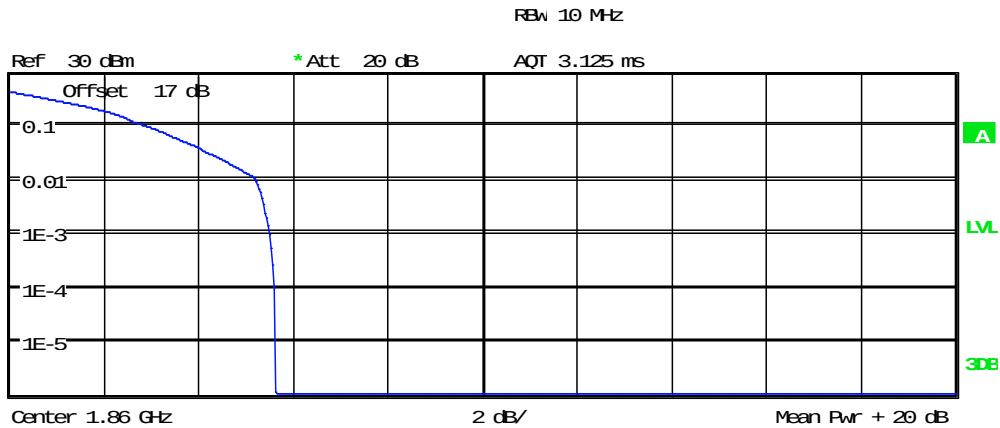
FCC ID: GX9HYBRID

LTE

Band II



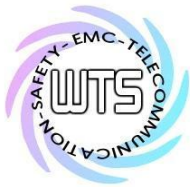
1 SA
CURR



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	19.80 dBm
Peak	25.41 dBm
Crest	5.62 dB
10 %	2.92 dB
1 %	5.19 dB
.1 %	5.51 dB
.01 %	5.61 dB

Date: 2.JUL.2021 19:23:21

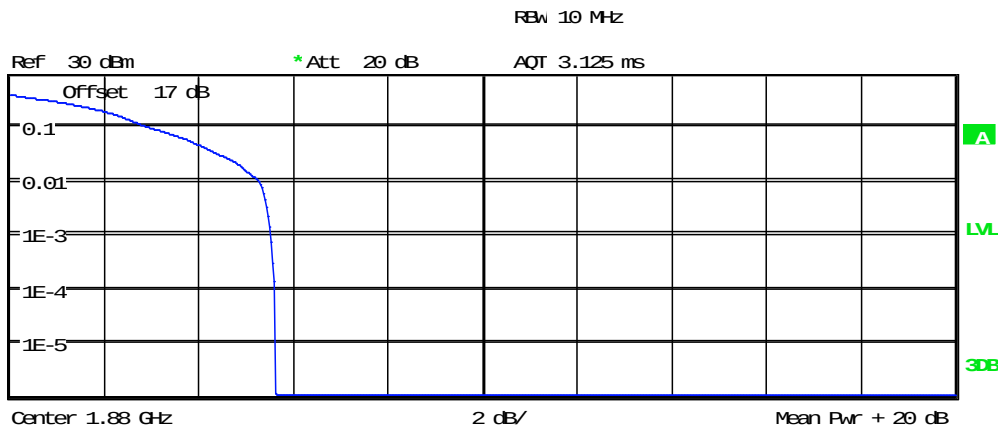


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



1 SA
CLR



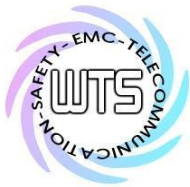
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	19.72 dBm
Peak	25.34 dBm
Crest	5.63 dB

10 %	2.98 dB
1 %	5.29 dB
.1 %	5.54 dB
.01 %	5.61 dB

Date: 2.JUL.2021 19:24:00

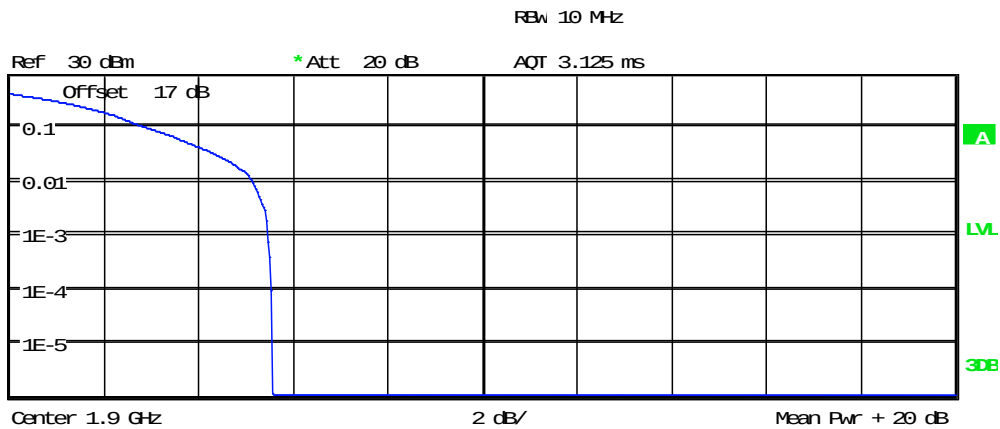


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



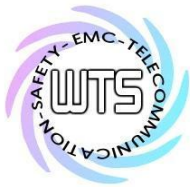
1 SA
CLR



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	19.87 dBm
Peak	25.41 dBm
Crest	5.55 dB
10 %	2.92 dB
1 %	5.13 dB
.1 %	5.48 dB
.01 %	5.54 dB

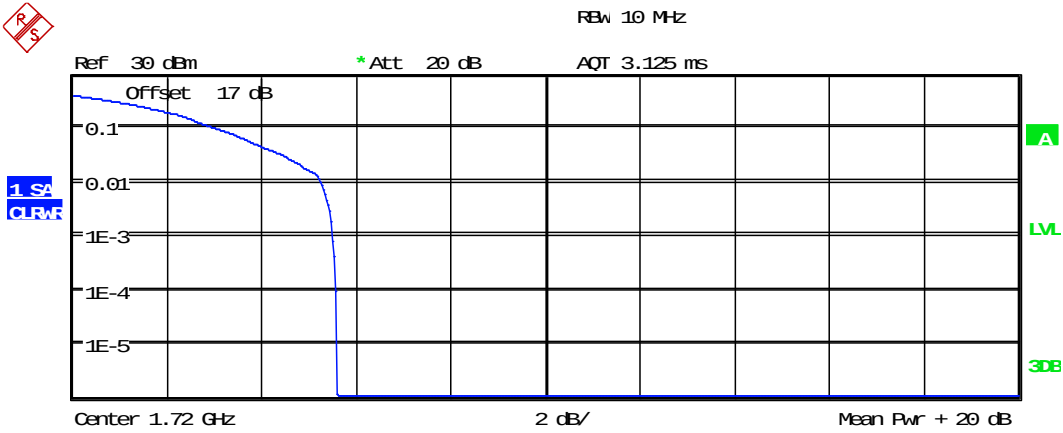
Date: 2.JUL.2021 19:24:25



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

Band IV



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	20.05 dBm
Peak	25.63 dBm
Crest	5.58 dB

10 %	3.04 dB
1 %	5.26 dB
.1 %	5.51 dB
.01 %	5.58 dB

Date: 2.JUL.2021 19:25:32

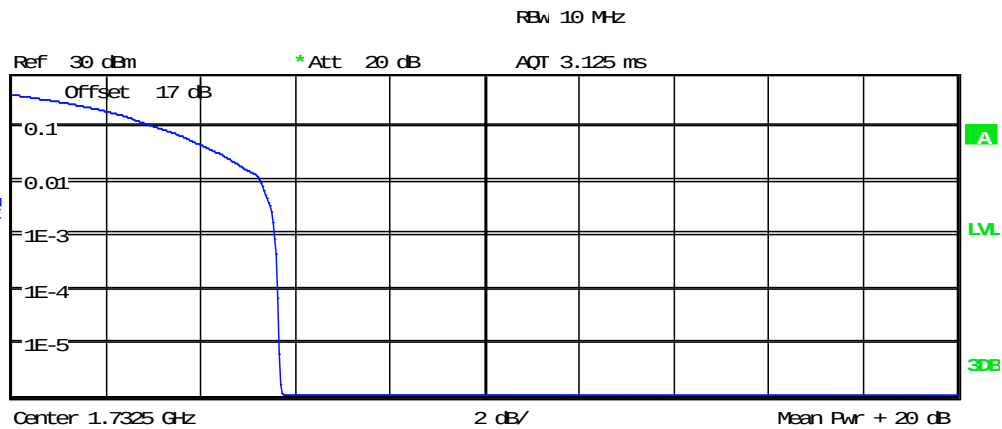


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



1 SA
CLR

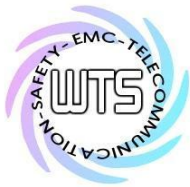


Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 19.99 dBm
Peak 25.70 dBm
Crest 5.71 dB

10 %	3.11 dB
1 %	5.26 dB
.1 %	5.58 dB
.01 %	5.64 dB

Date: 2.JUL.2021 19:26:04

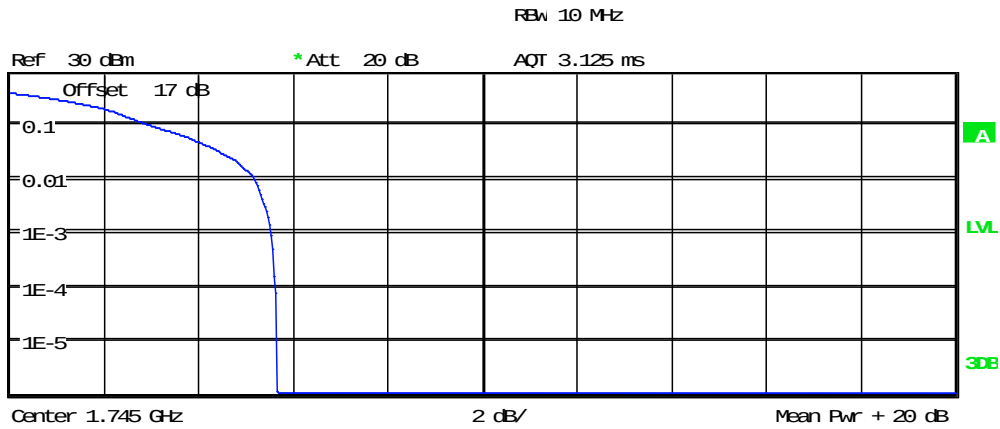


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



1 SA
CLR



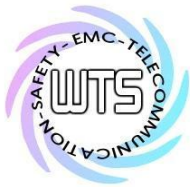
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	20.32 dBm
Peak	25.98 dBm
Crest	5.66 dB

10 %	3.01 dB
1 %	5.19 dB
.1 %	5.54 dB
.01 %	5.64 dB

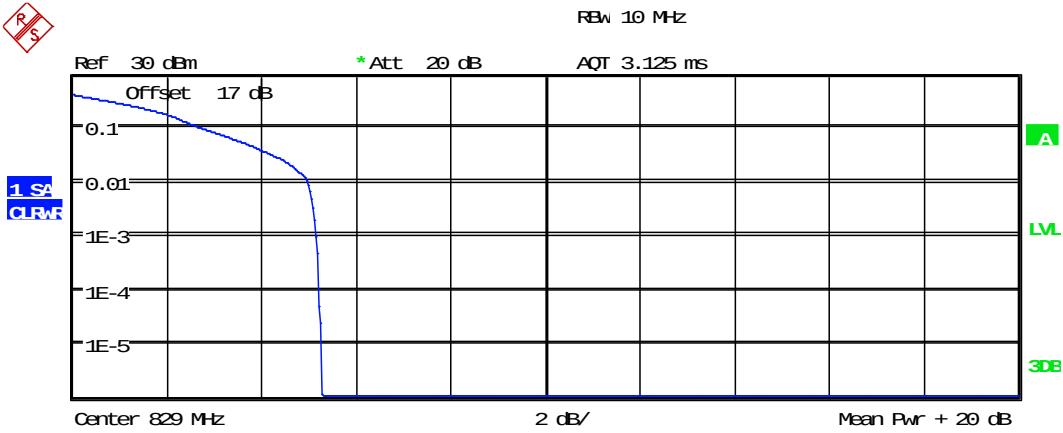
Date: 2.JUL.2021 19:26:41



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

Band V



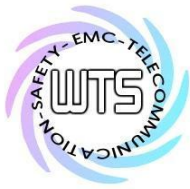
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	21.62 dBm
Peak	26.90 dBm
Crest	5.28 dB

10 %	2.76 dB
1 %	4.97 dB
.1 %	5.16 dB
.01 %	5.22 dB

Date: 2.JUL.2021 19:28:02

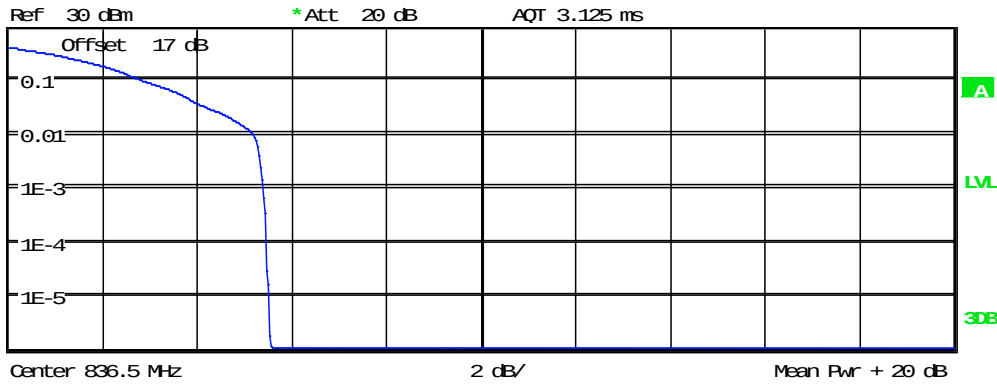


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



RBW 10 MHz



Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.50 dBm
Peak 27.04 dBm
Crest 5.54 dB

10 % 2.85 dB
1 % 5.19 dB
.1 % 5.42 dB
.01 % 5.48 dB

Date: 2.JUL.2021 19:28:30

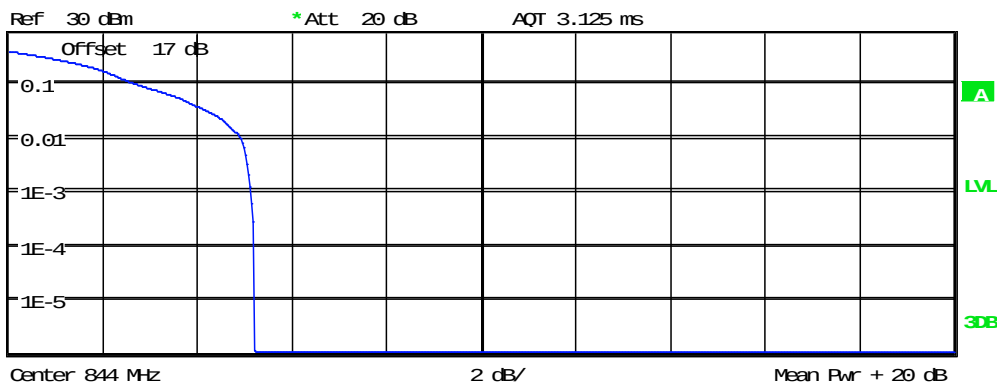


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



RBW 10 MHz

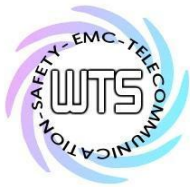


Complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 21.76 dBm
Peak 26.97 dBm
Crest 5.21 dB

10 % 2.76 dB
1 % 4.90 dB
.1 % 5.13 dB
.01 % 5.22 dB

Date: 2.JUL.2021 19:28:56



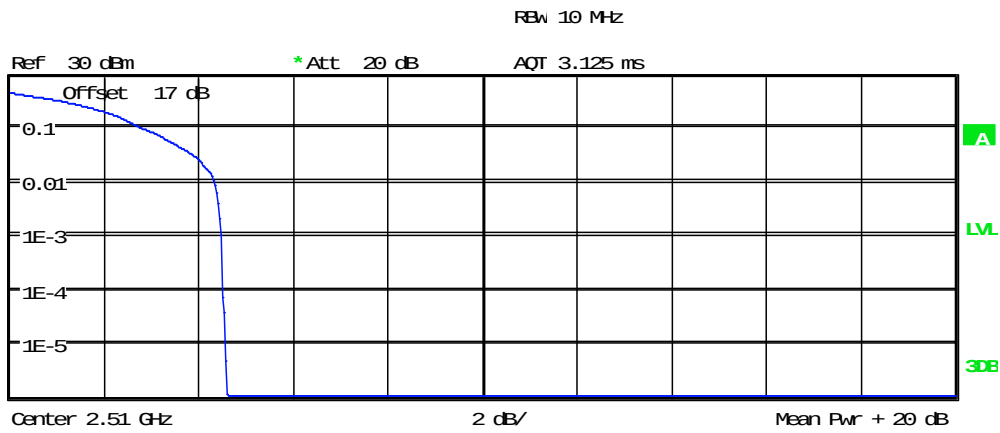
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

Band VII



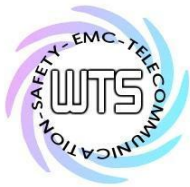
1 SA
CURR



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	19.56 dBm
Peak	24.15 dBm
Crest	4.58 dB
10 %	2.82 dB
1 %	4.33 dB
.1 %	4.49 dB
.01 %	4.52 dB

Date: 2.JUL.2021 19:30:10

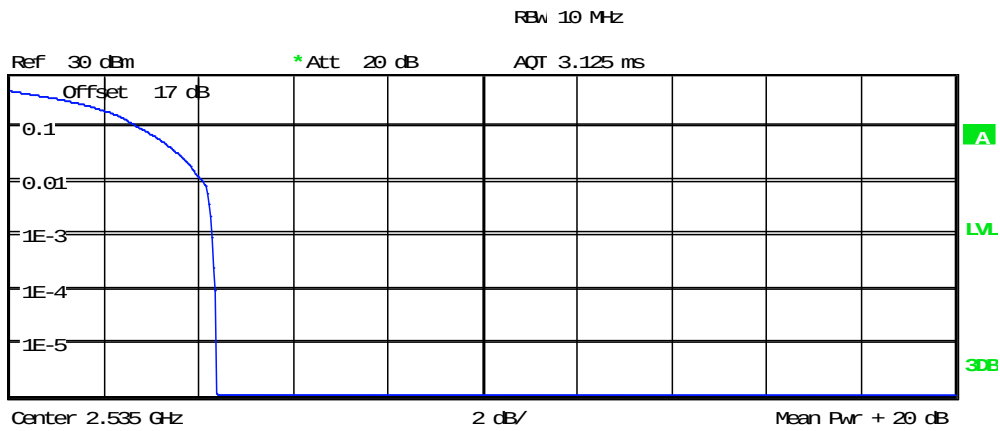


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



1 SA
CLR



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean	19.77 dBm
Peak	24.15 dBm
Crest	4.37 dB

10 %	2.76 dB
1 %	4.10 dB
.1 %	4.29 dB
.01 %	4.36 dB

Date: 2.JUL.2021 19:30:33

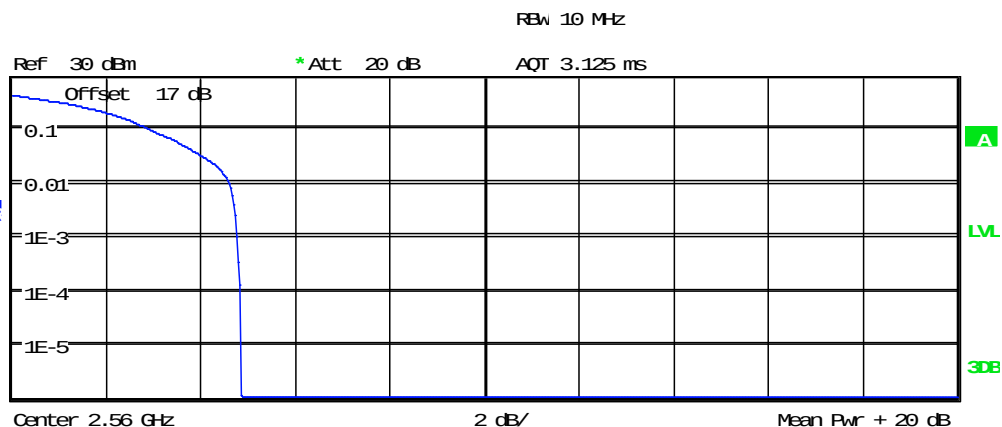


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



1 SA
CLR



Complementary Cumulative Distribution Function (100000 samples)

Trace 1	
Mean	19.43 dBm
Peak	24.29 dBm
Crest	4.85 dB
10 %	2.92 dB
1 %	4.62 dB
.1 %	4.78 dB
.01 %	4.84 dB

Date: 2.JUL.2021 19:30:57

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

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

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.

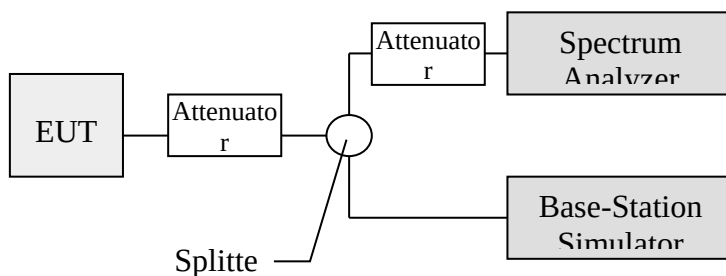
The 26 dB occupied bandwidth is the width of a frequency band such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal 26 dB.

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.





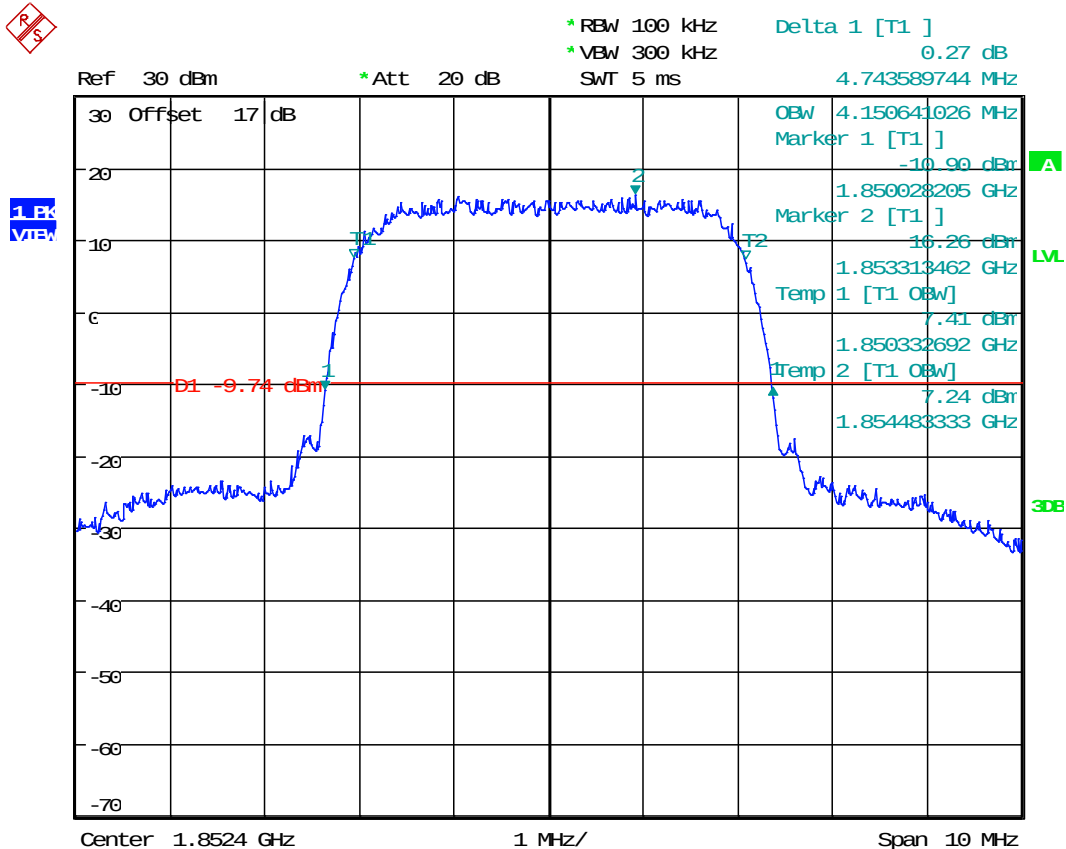
Report Number: W6M22106-21044-P-247
FCC ID: GX9HYBRID

6.2 Test Results

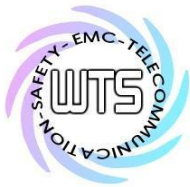
Occupied Channel Bandwidth

Test date: July 02, 2021
Temperature: 24.7 °C
Humidity: 47.5 %
Tester: Kent

WCDMA
Band II

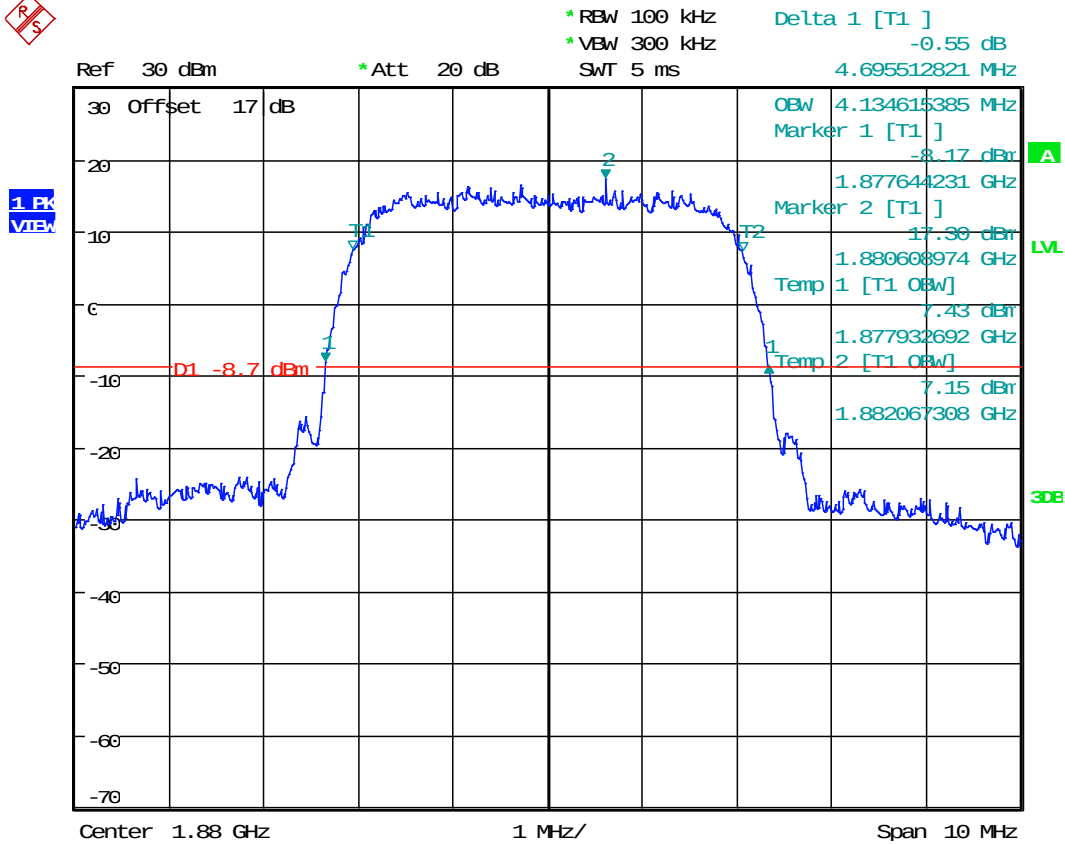


Date: 2.JUL.2021 16:21:57

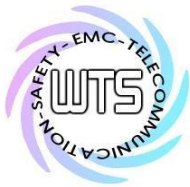


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

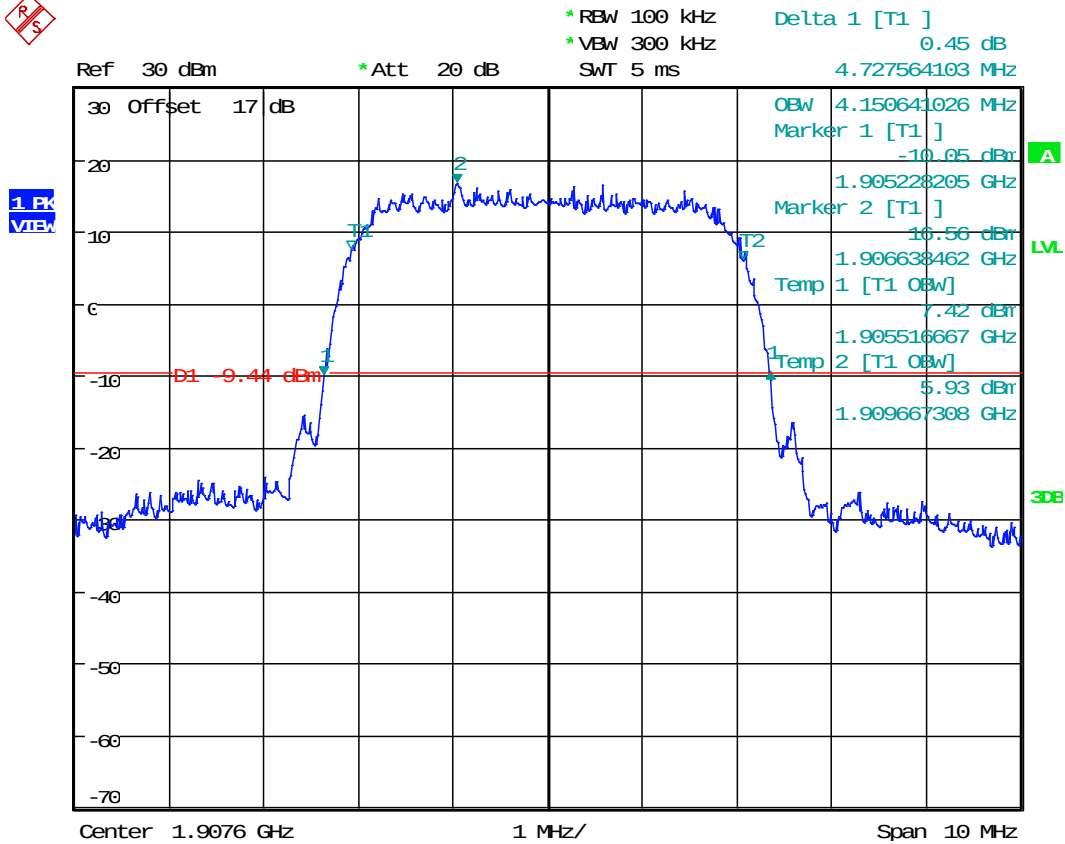


Date: 2.JUL.2021 16:23:06



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 2.JUL.2021 16:24:17



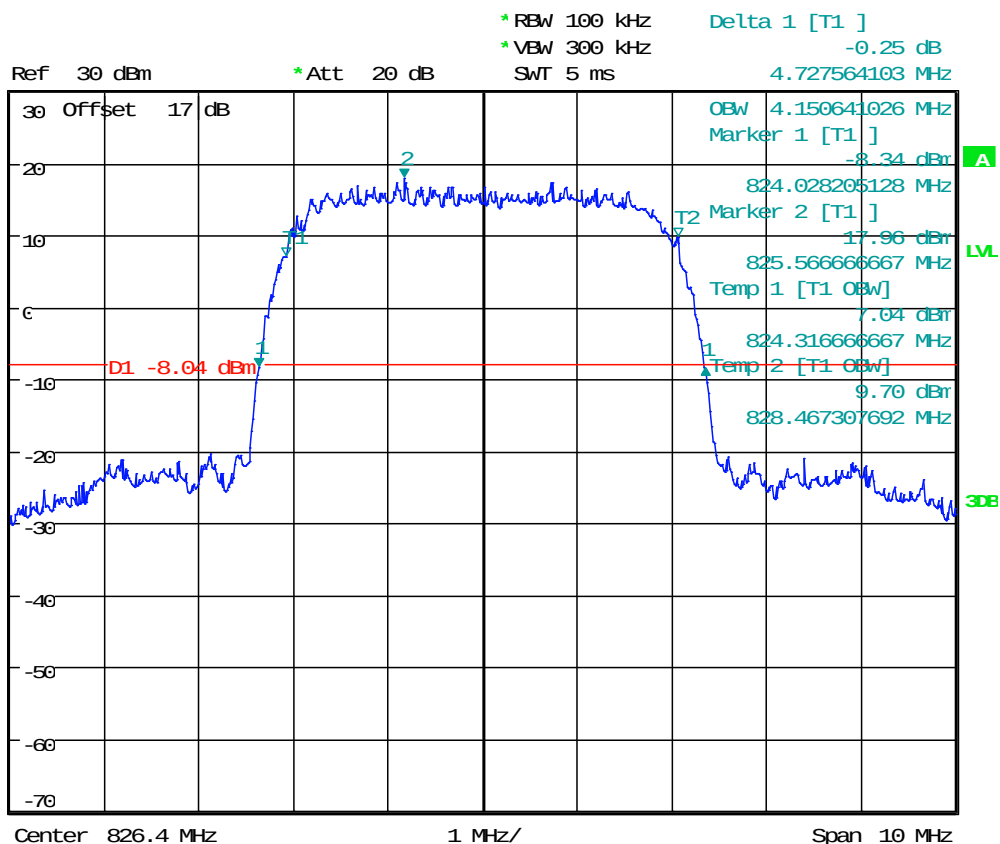
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

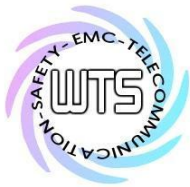
Band V



1 Fk
VIB

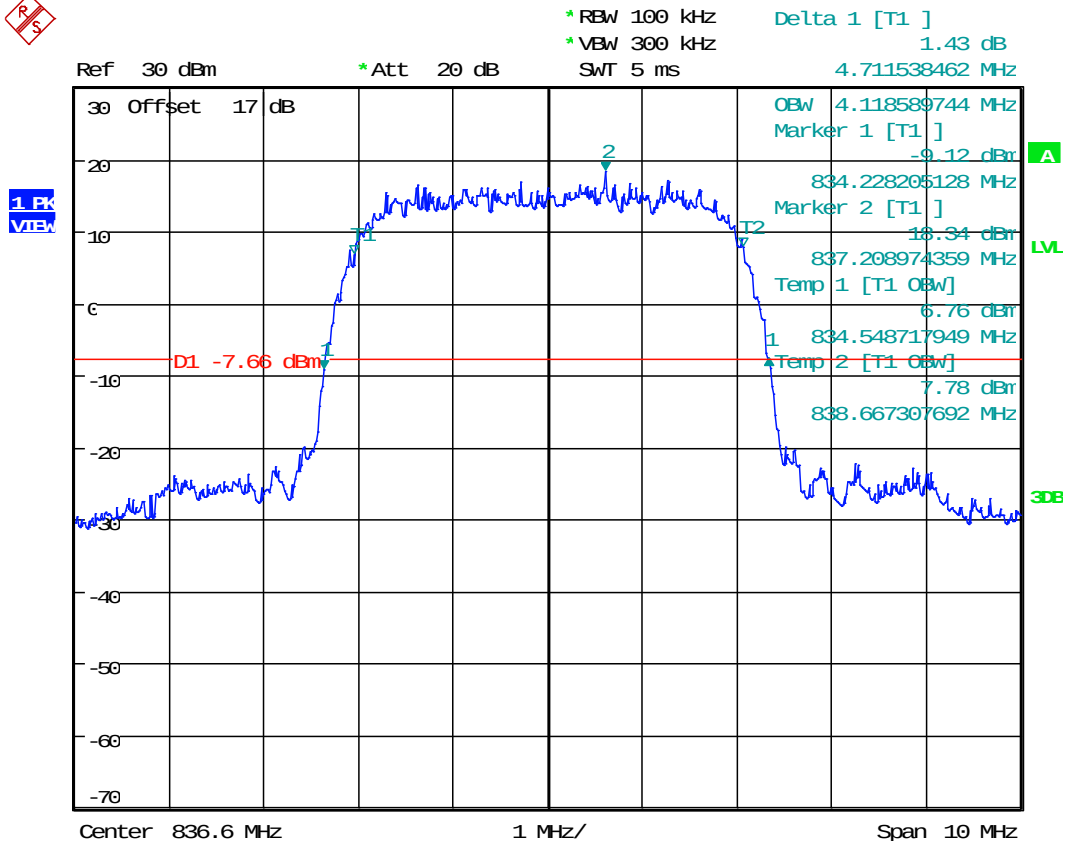


Date: 2.JUL.2021 16:27:04

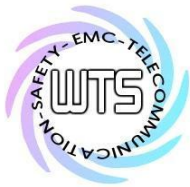


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

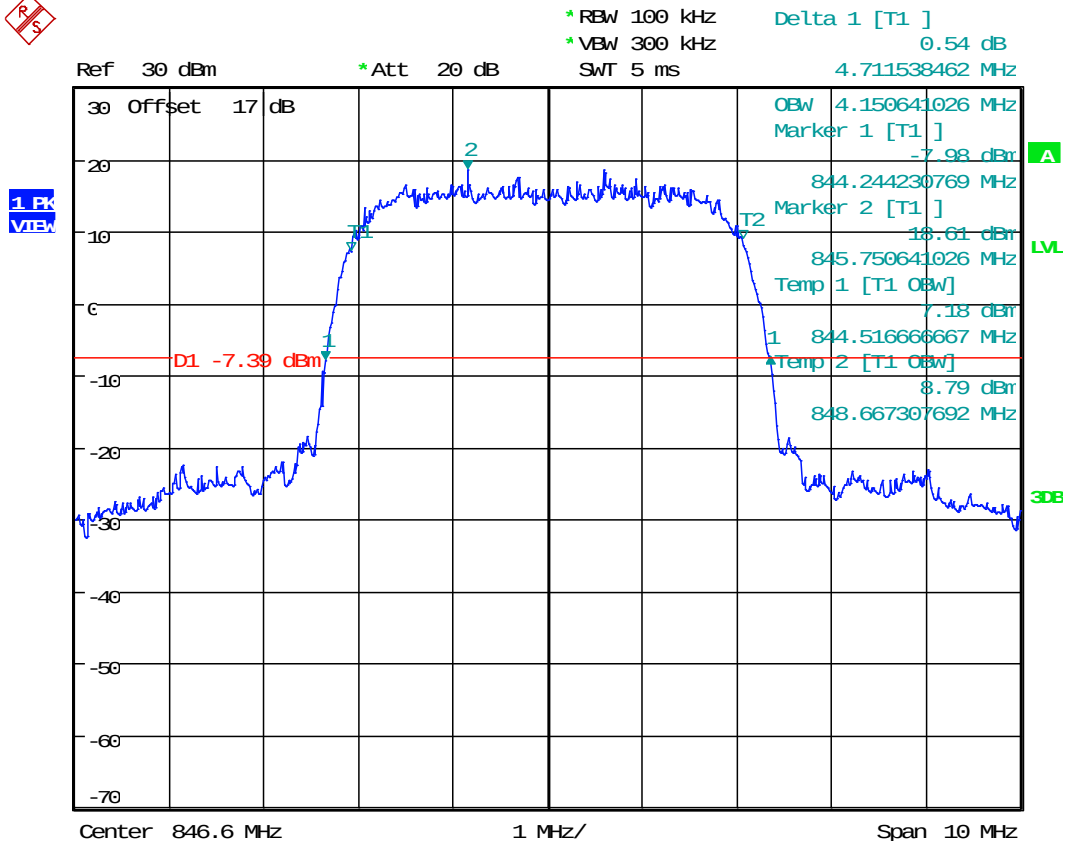


Date: 2.JUL.2021 16:28:25

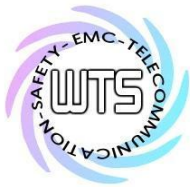


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 2.JUL.2021 16:29:39



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

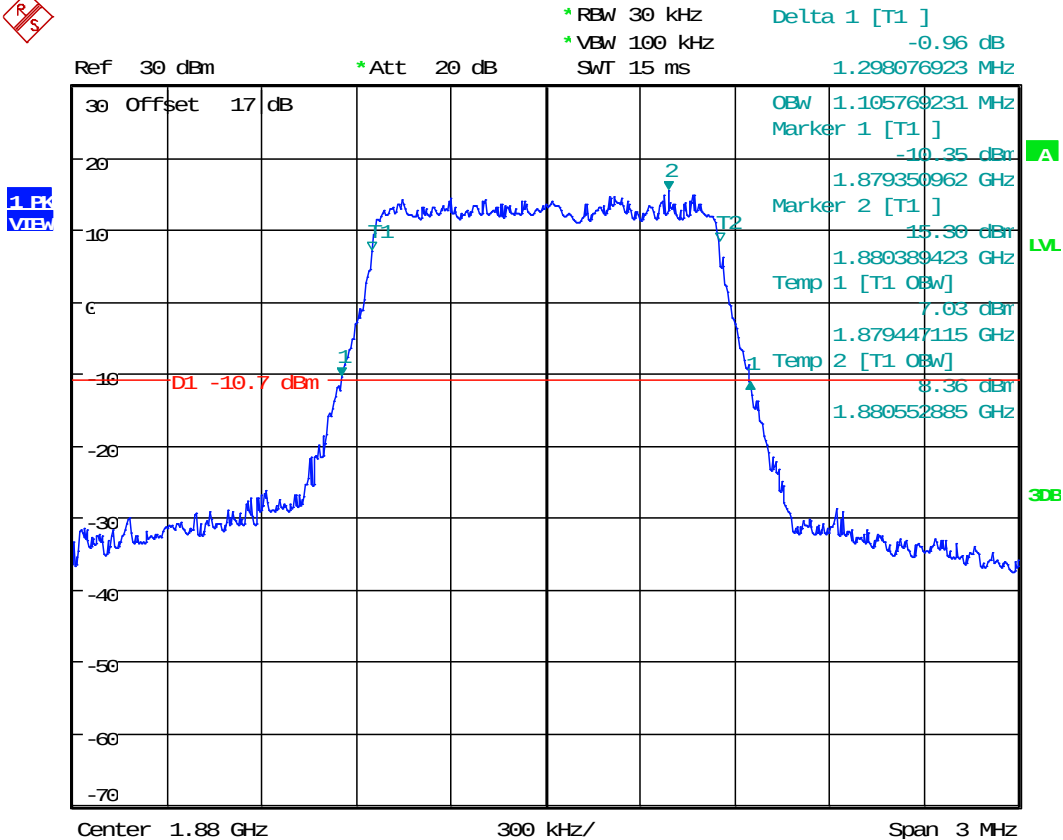
FCC ID: GX9HYBRID

LTE

Band II

16QAM

1.4MHz



Date: 2.JUL.2021 16:41:12



Worldwide Testing Services(Taiwan) Co., Ltd.

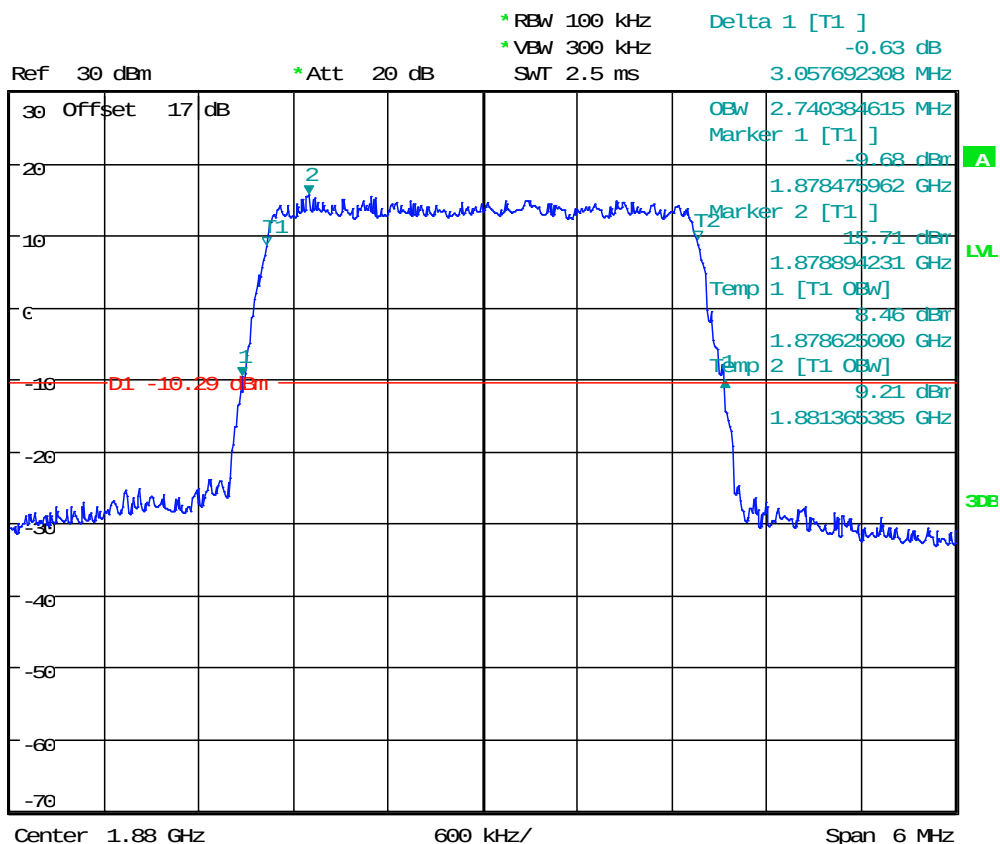
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

3MHz



1 Fk
VIB



Date: 2.JUL.2021 16:43:06



Worldwide Testing Services(Taiwan) Co., Ltd.

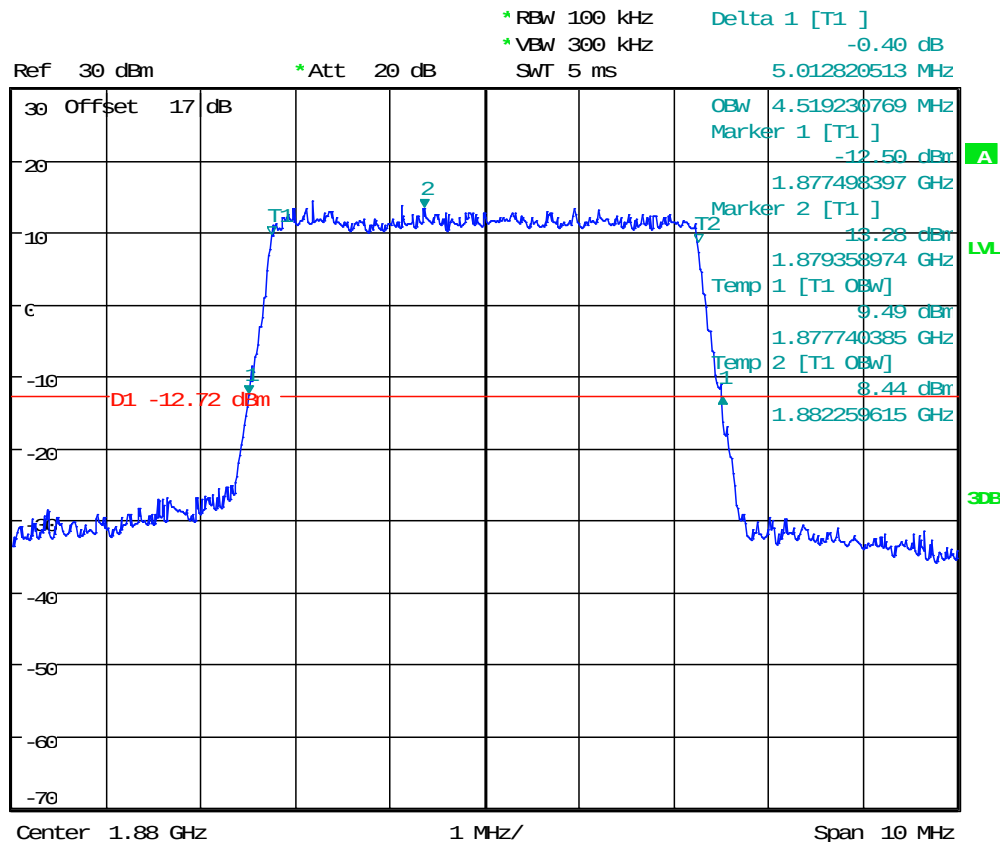
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz



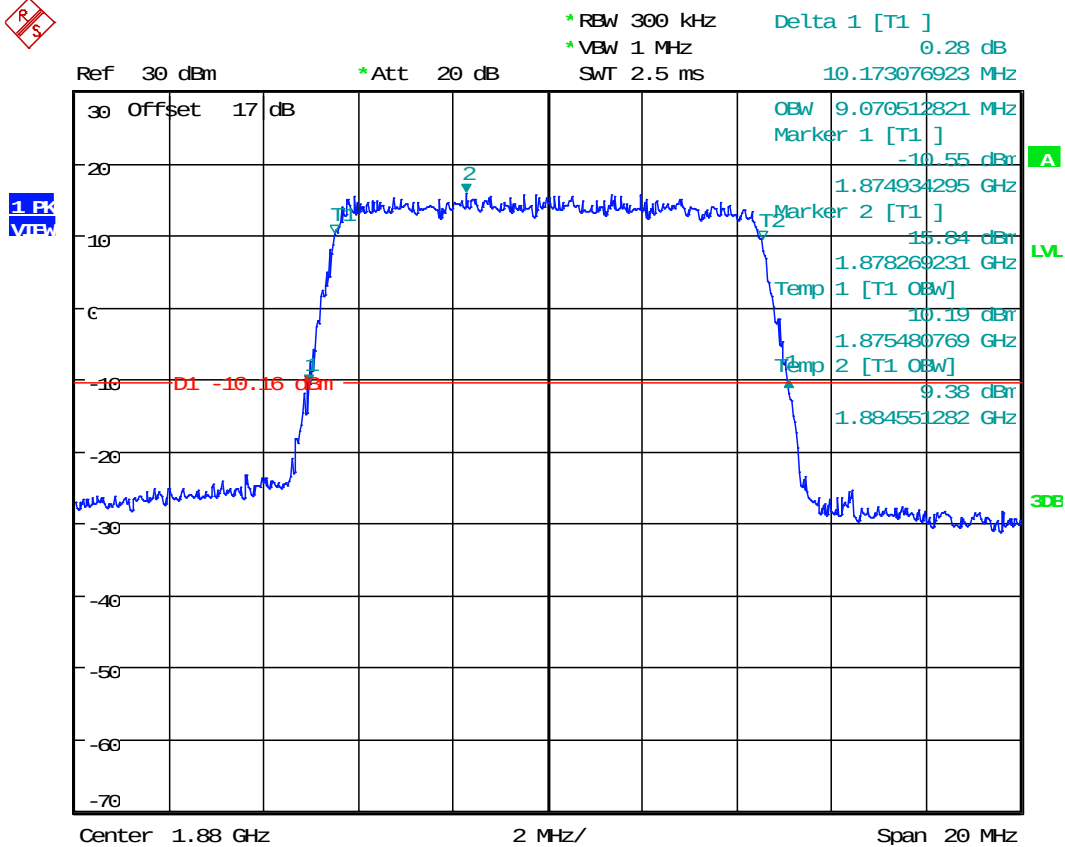
1 Fk
VIB



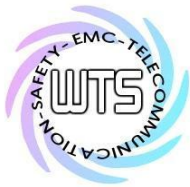
Date: 2.JUL.2021 16:44:23



FCC ID: GX9HYBRID



Date: 2.JUL.2021 16:45:43

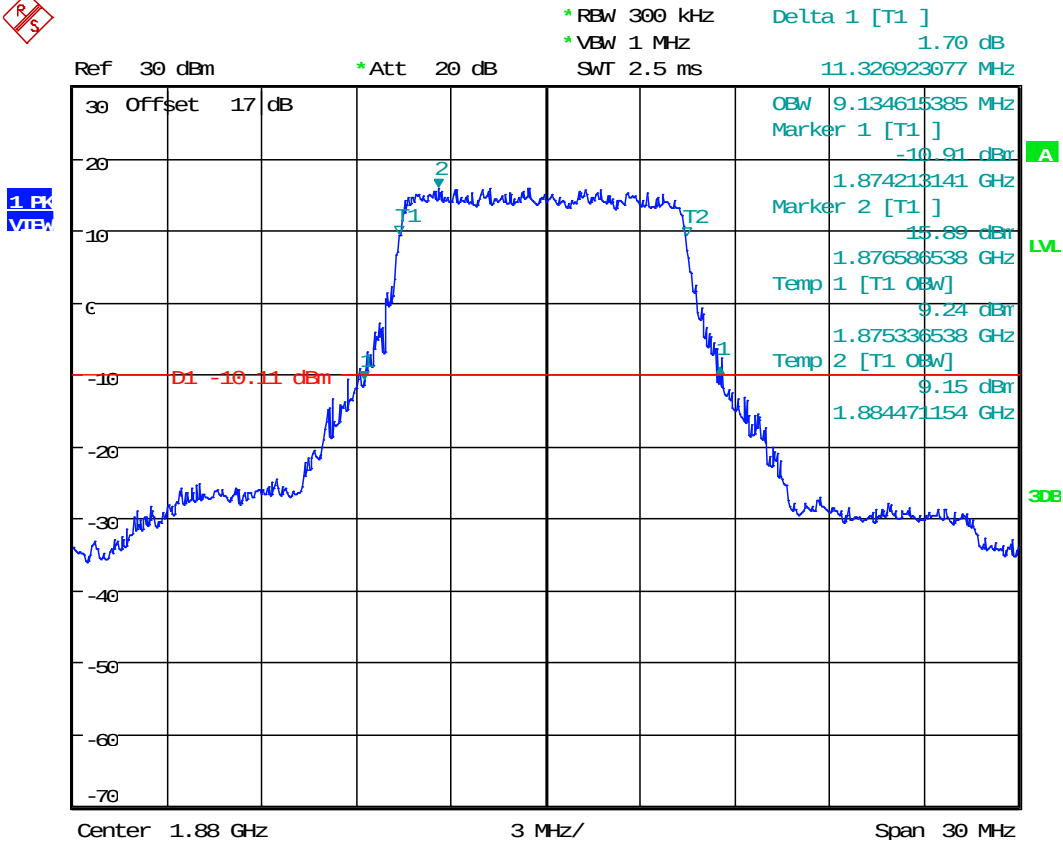


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz



Date: 2.JUL.2021 16:48:25



Worldwide Testing Services(Taiwan) Co., Ltd.

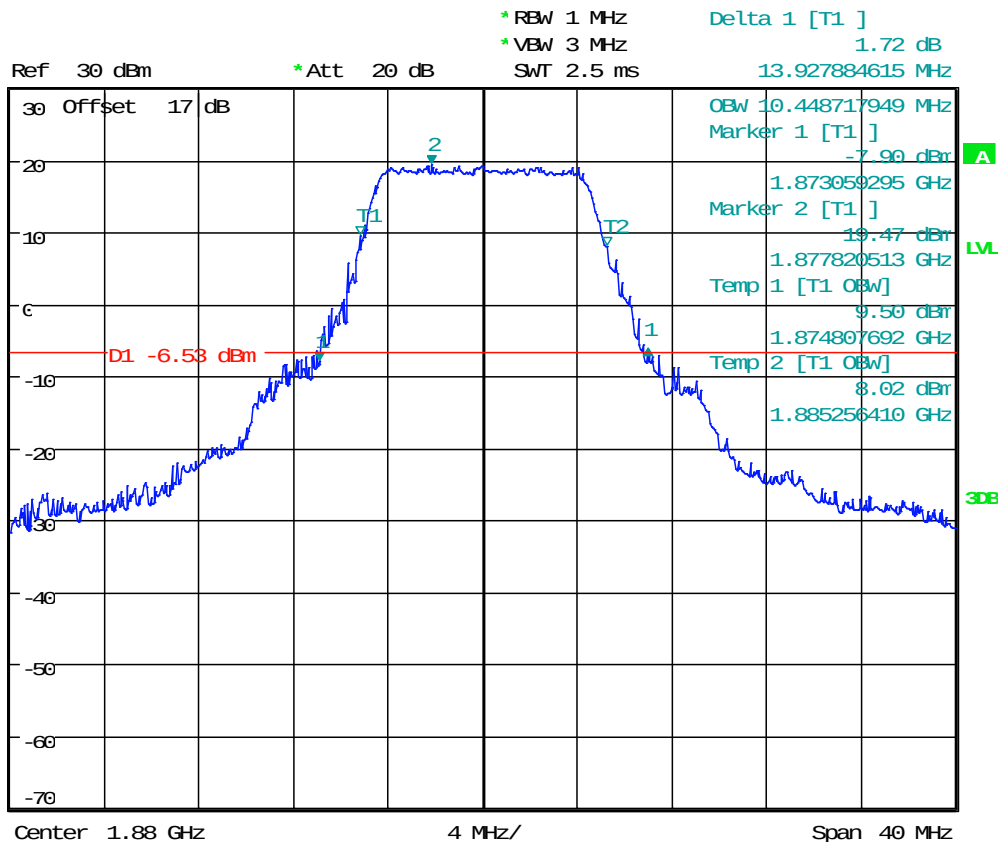
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

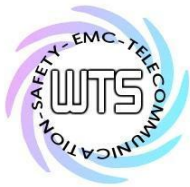
20MHz



1 PK
VIB



Date: 2.JUL.2021 16:50:16



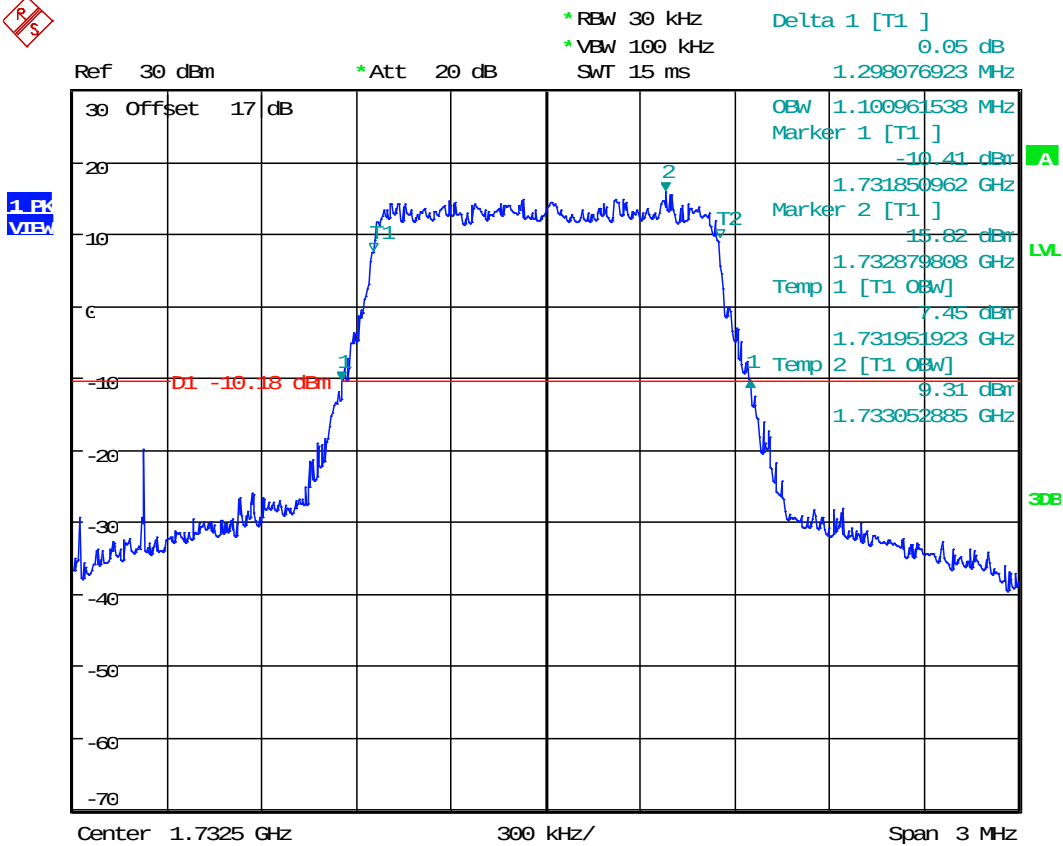
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

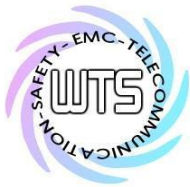
Band IV

QPSK

1.4MHz



Date: 2.JUL.2021 17:16:01



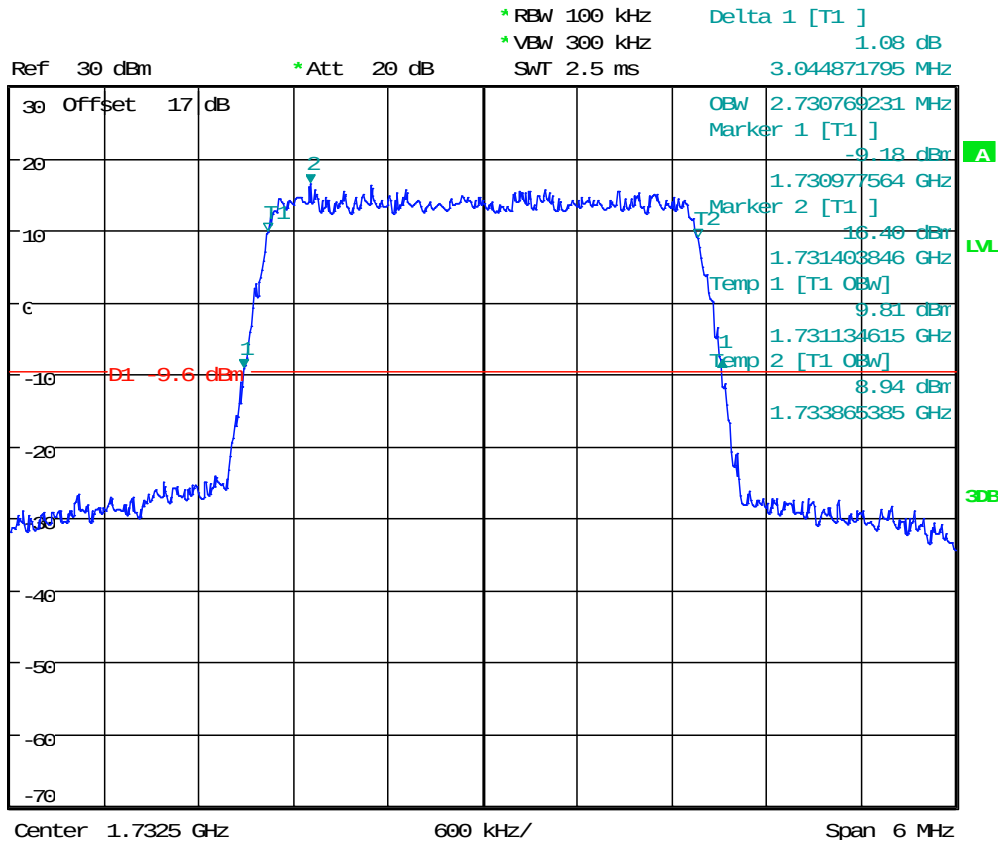
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

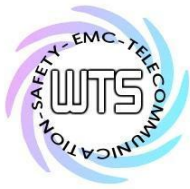
3MHz



1. Fk
VIB



Date: 2.JUL.2021 17:14:55



Worldwide Testing Services(Taiwan) Co., Ltd.

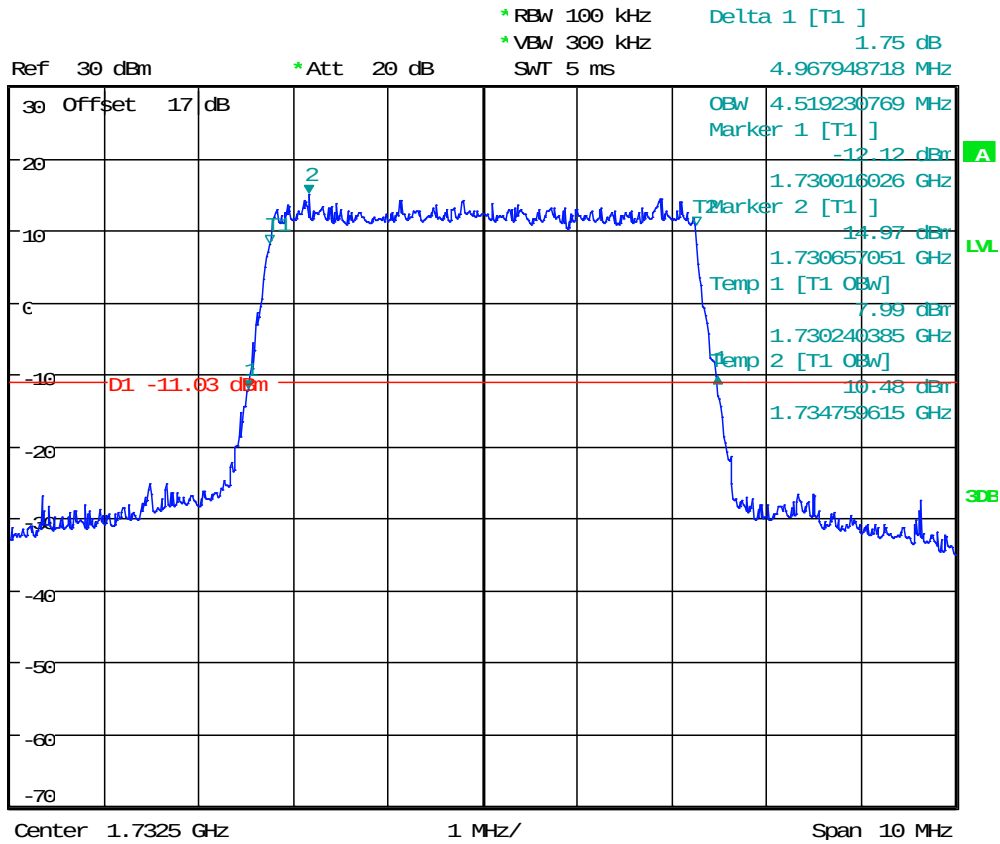
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz



1. PK
VIB



Date: 2.JUL.2021 17:13:57

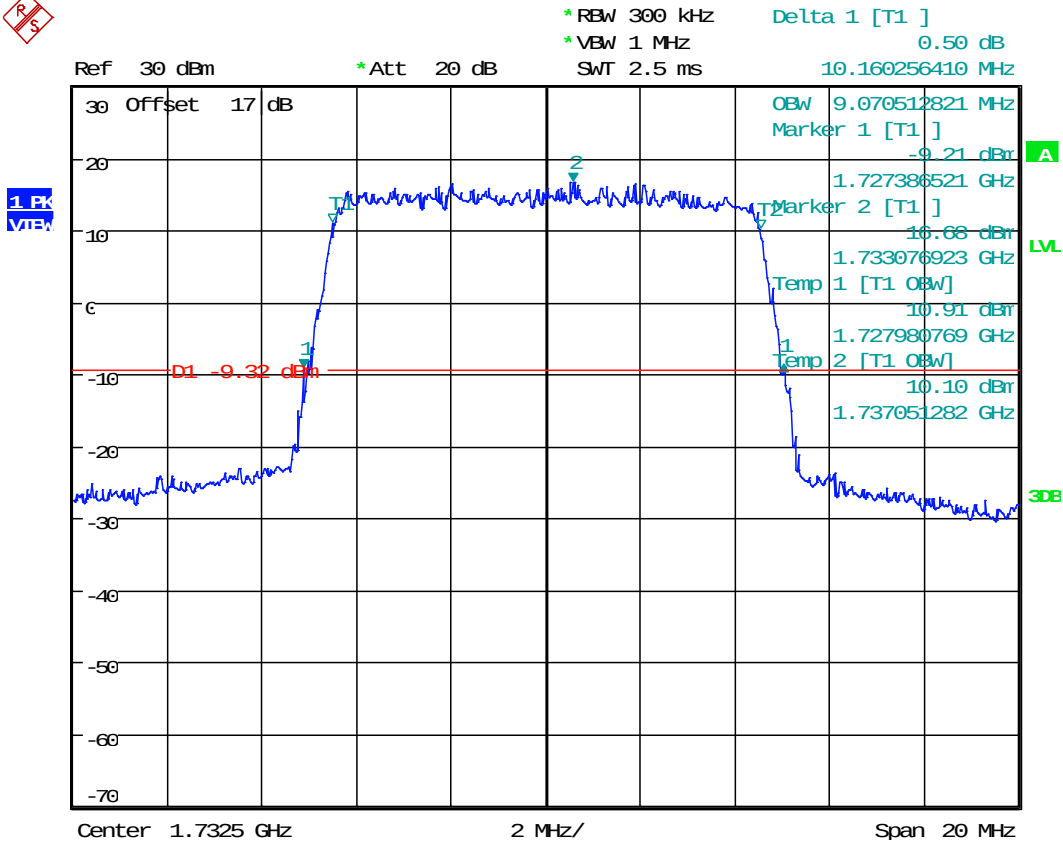


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

10MHz



Date: 2.JUL.2021 17:12:39



Worldwide Testing Services(Taiwan) Co., Ltd.

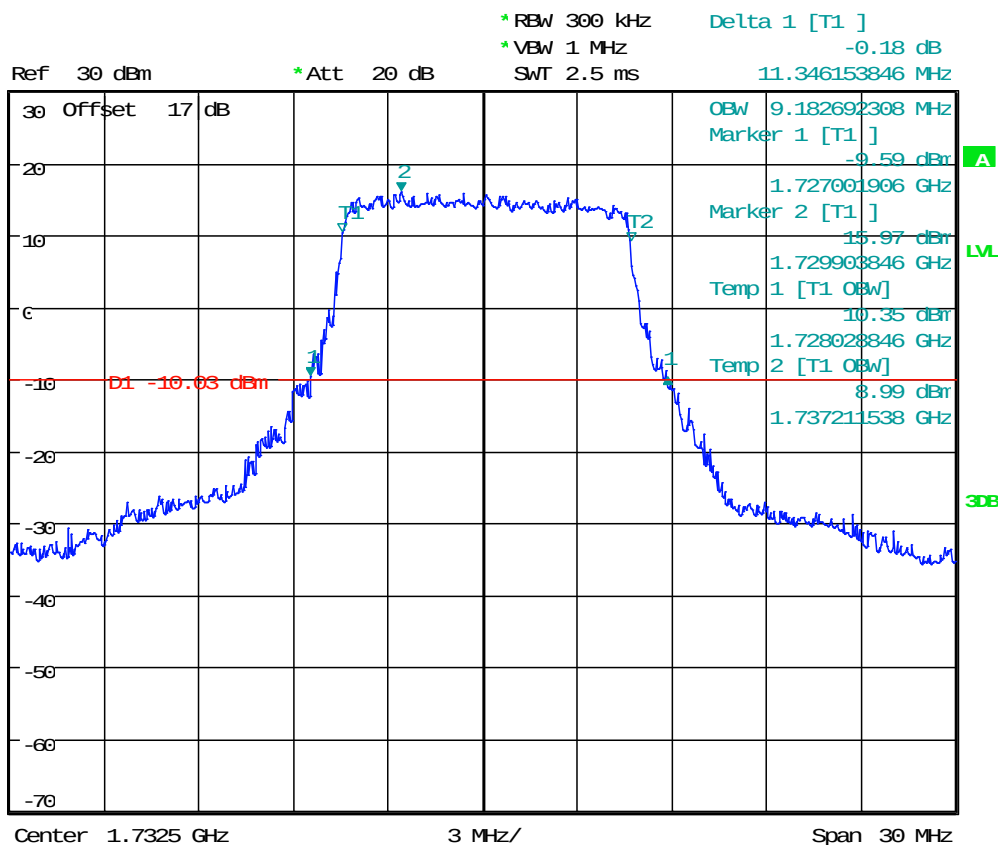
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz



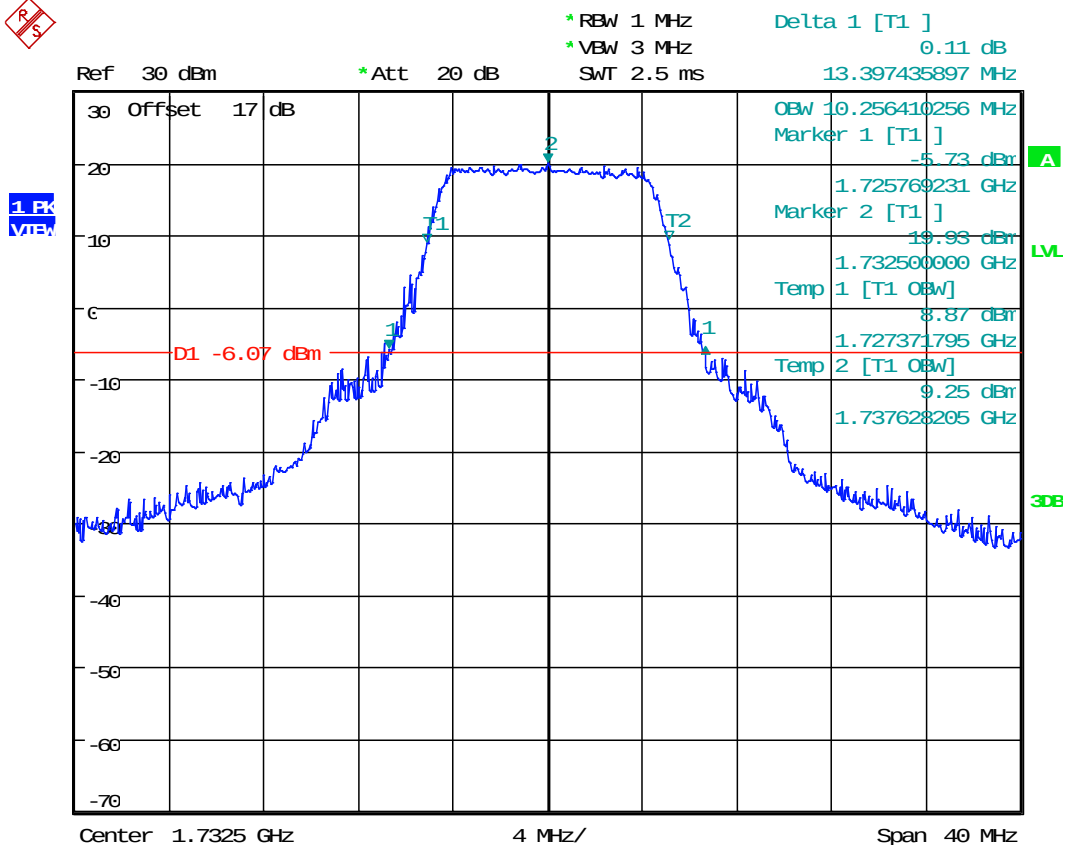
1. Fk
VIB



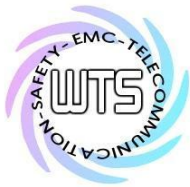
Date: 2.JUL.2021 16:56:24



FCC ID: GX9HYBRID



Date: 2.JUL.2021 17:37:43



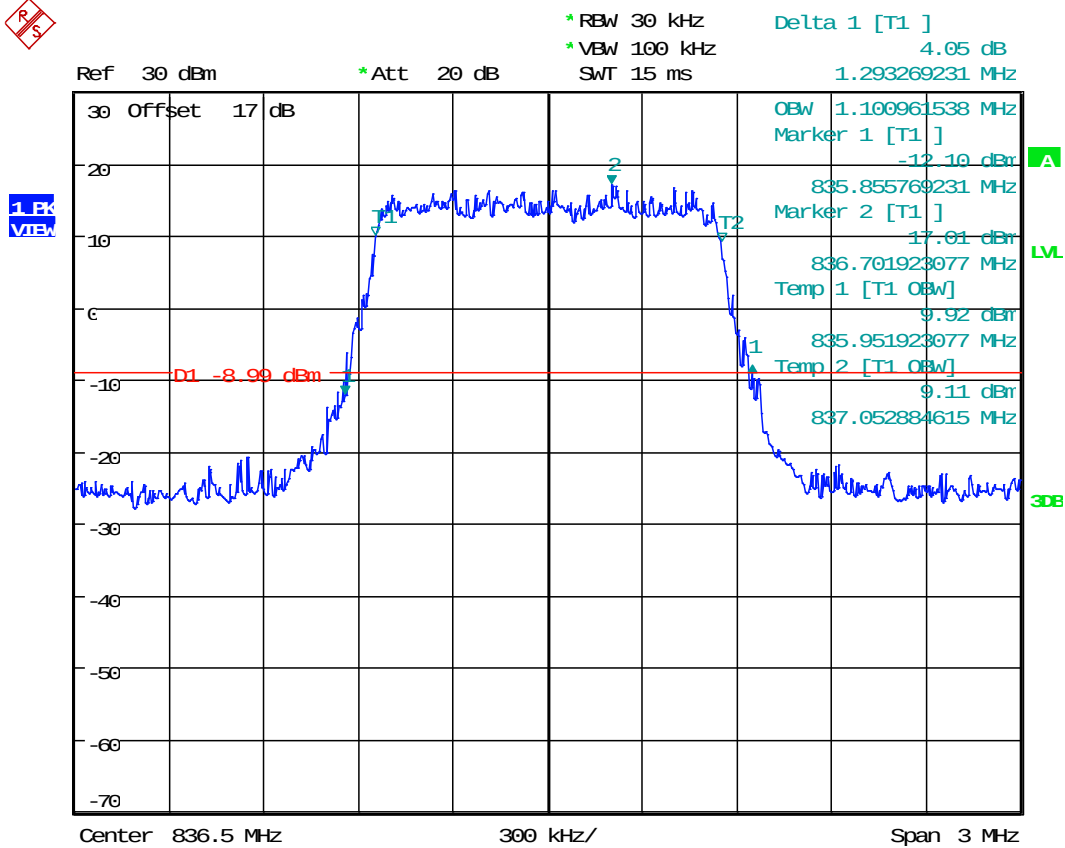
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

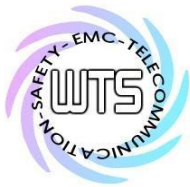
Band V

QPSK

1.4MHz



Date: 2.JUL.2021 17:17:57



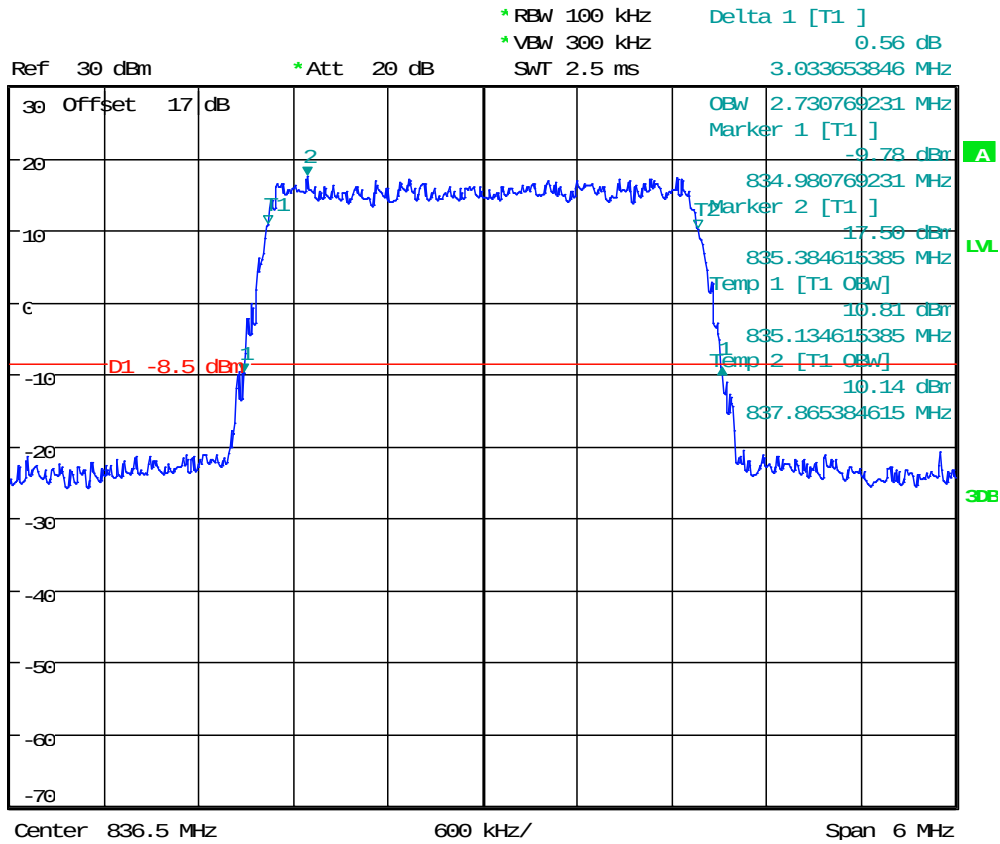
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

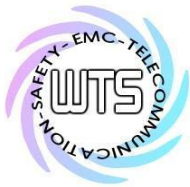
3MHz



1. Fk
VIB



Date: 2.JUL.2021 17:19:08



Worldwide Testing Services(Taiwan) Co., Ltd.

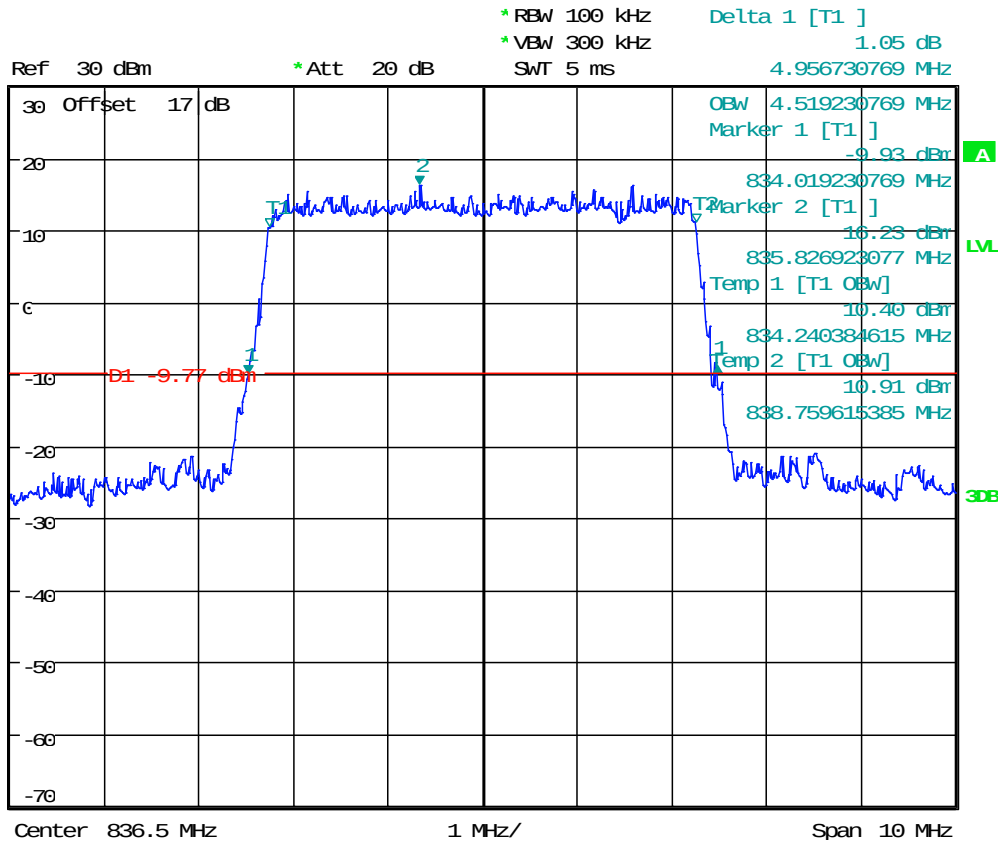
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz



1 PK
VIB



Date: 2.JUL.2021 17:20:23



Worldwide Testing Services(Taiwan) Co., Ltd.

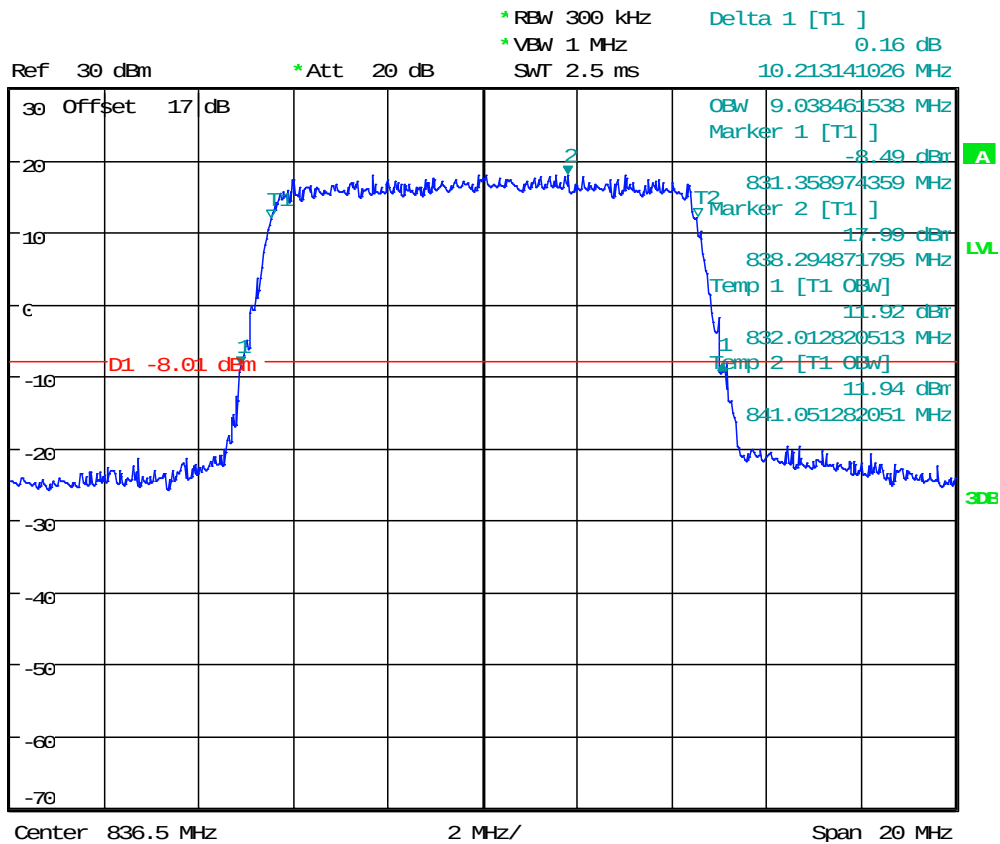
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

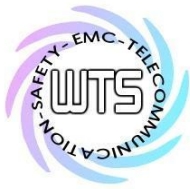
10MHz



1 Fk
VIB



Date: 2.JUL.2021 17:21:38



Worldwide Testing Services(Taiwan) Co., Ltd.

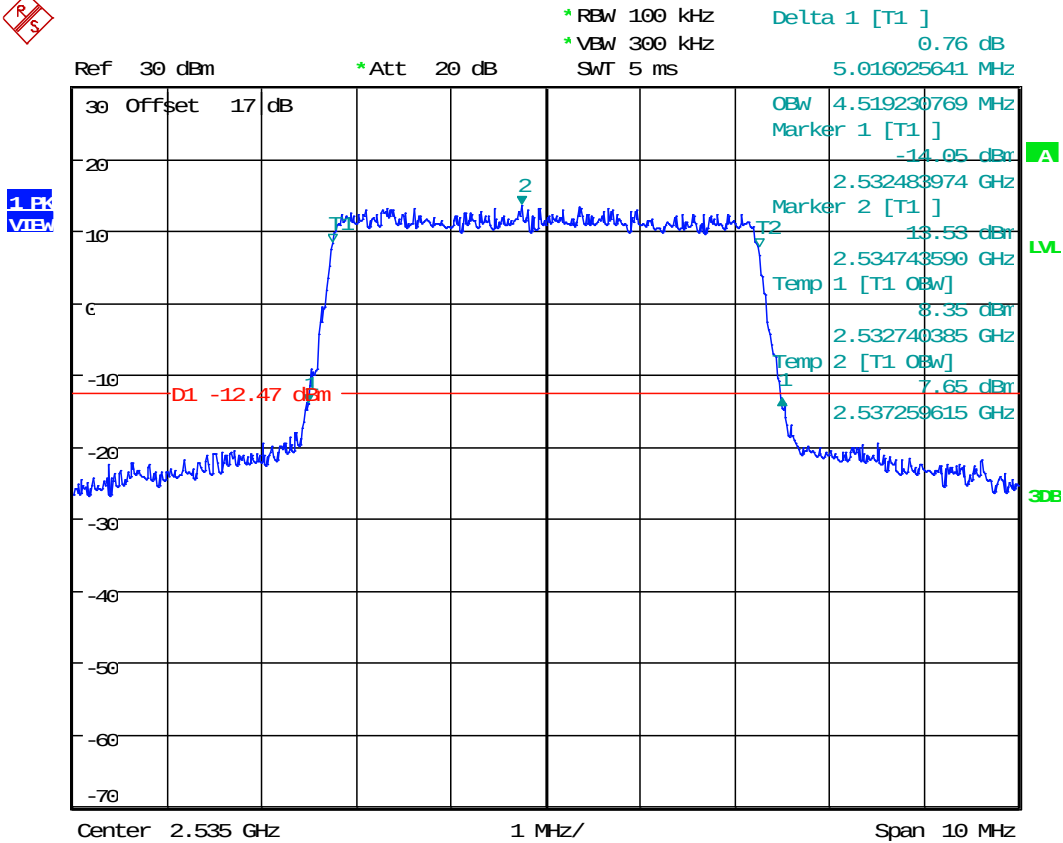
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

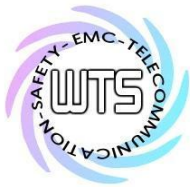
Band VII

QPSK

5MHz



Date: 2.JUL.2021 17:23:39



Worldwide Testing Services(Taiwan) Co., Ltd.

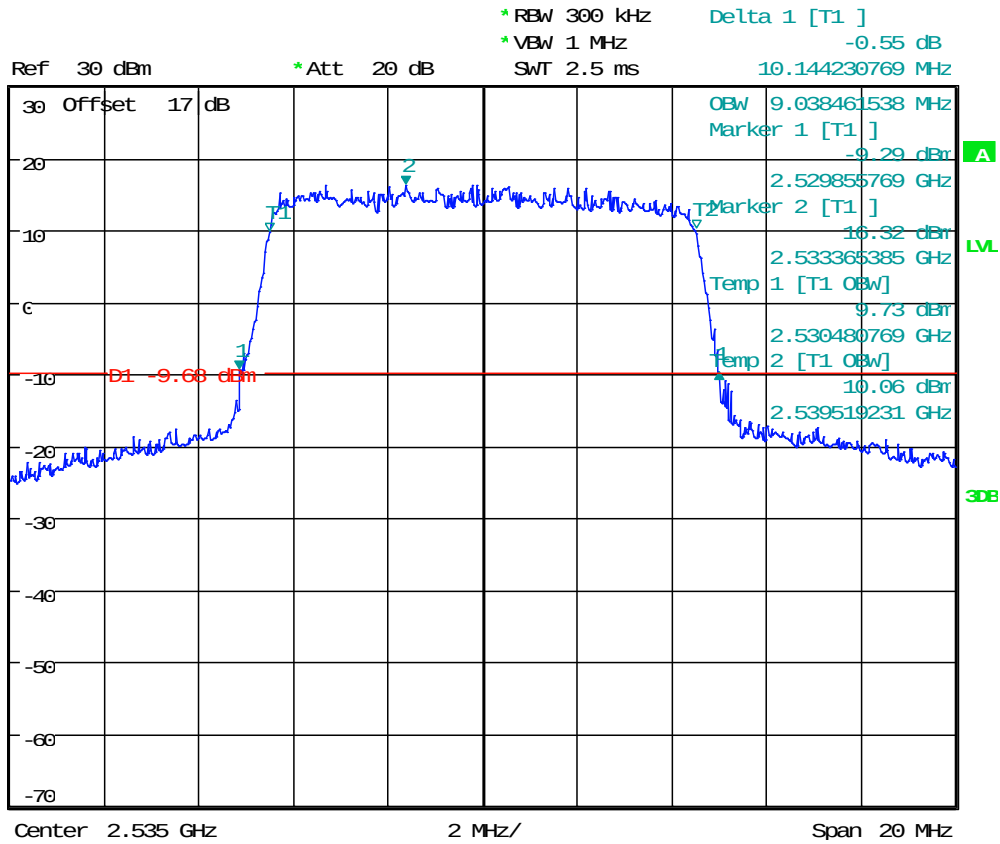
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

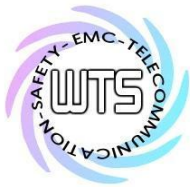
10MHz



1 Fk
VIB



Date: 2.JUL.2021 17:24:54



Worldwide Testing Services(Taiwan) Co., Ltd.

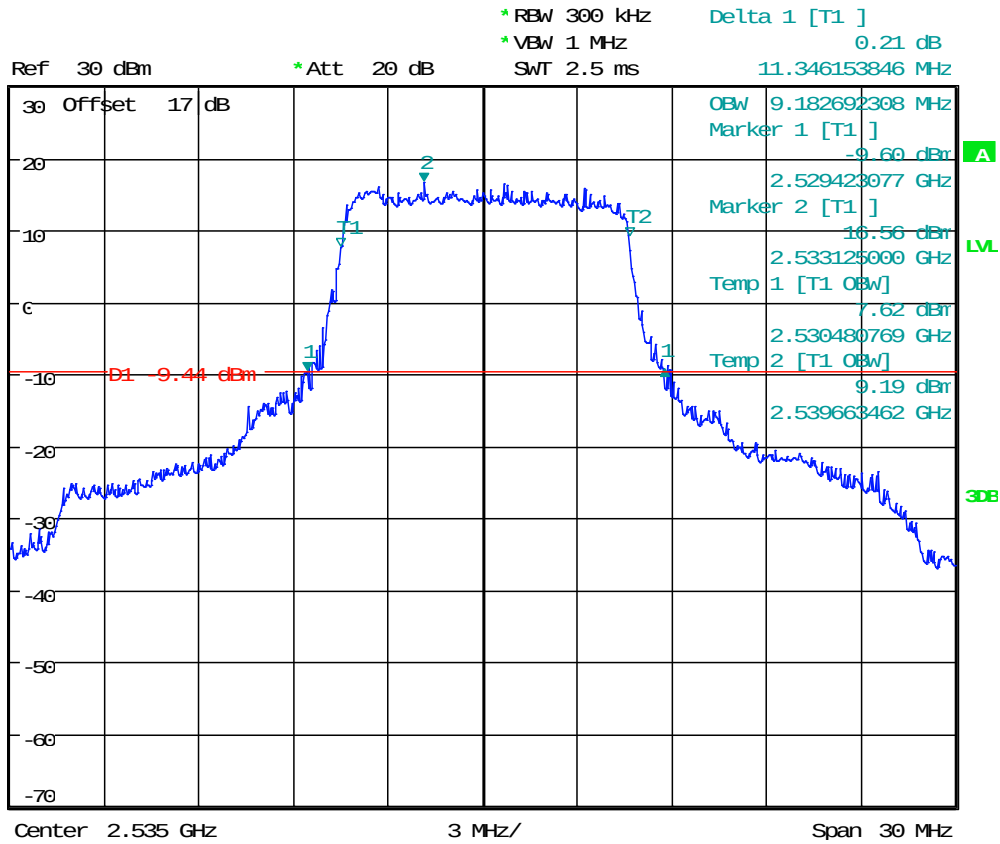
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz



1 PK
VIB



Date: 2.JUL.2021 17:27:07



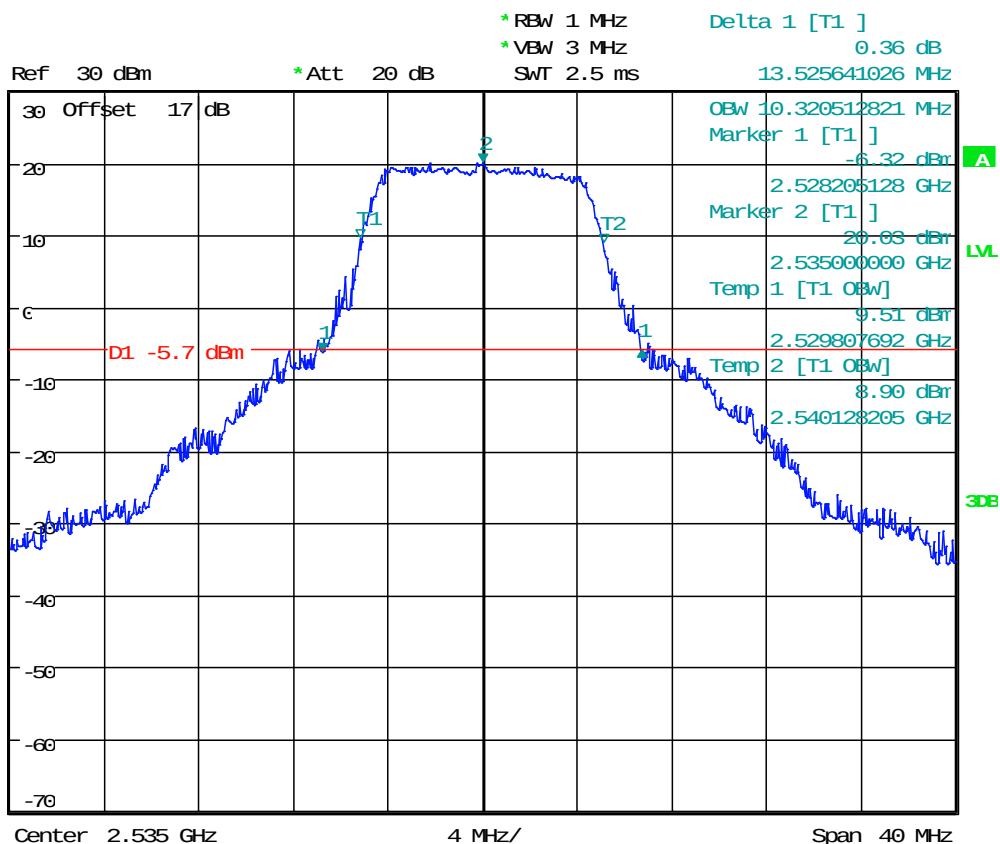
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

20MHz



1 PK
VIB



Date: 2.JUL.2021 17:31:55

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

Report Number: W6M22106-21044-P-247
FCC ID: GX9HYBRID

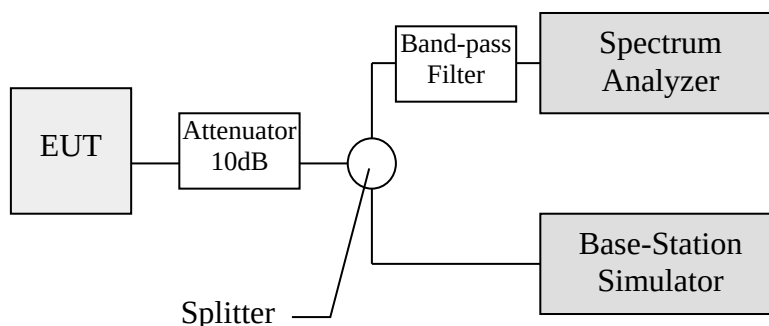
7. Spurious Emissions at Antenna Terminals

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.



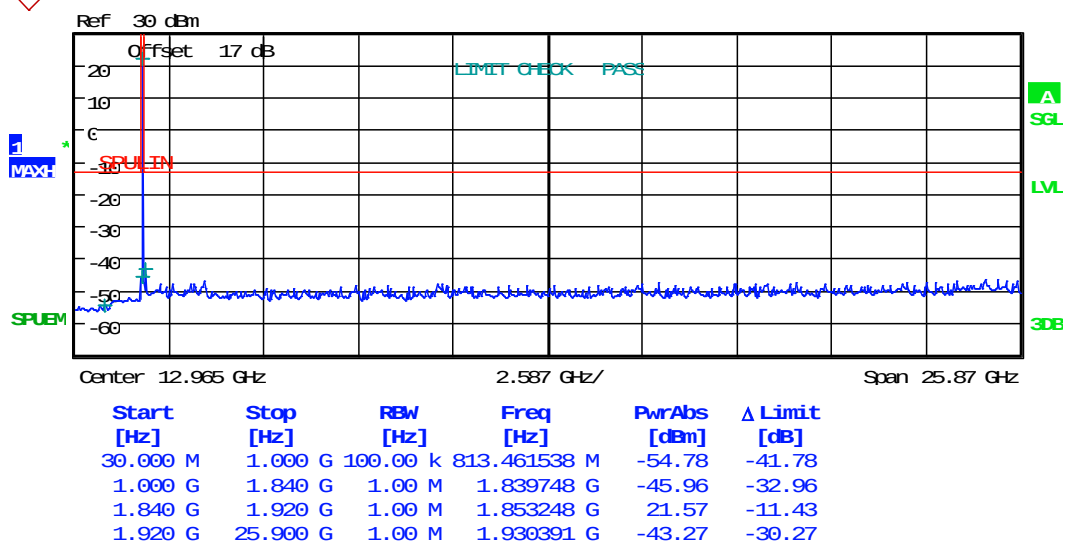


Report Number: W6M22106-21044-P-247
FCC ID: GX9HYBRID

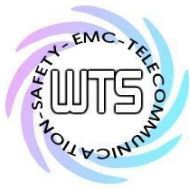
7.2 Test Results

Test date: July 05, 2021~July 06, 2021
Temperature: 24.6 °C
Humidity: 51.3 %
Tester: Kent

WCDMA
Band II

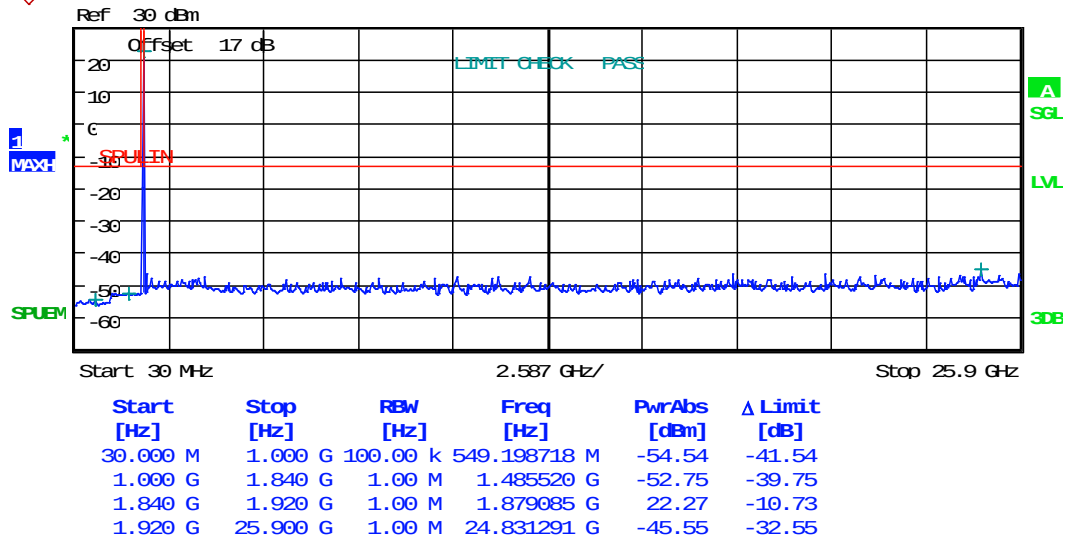


Date: 6.JUL.2021 13:33:46



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

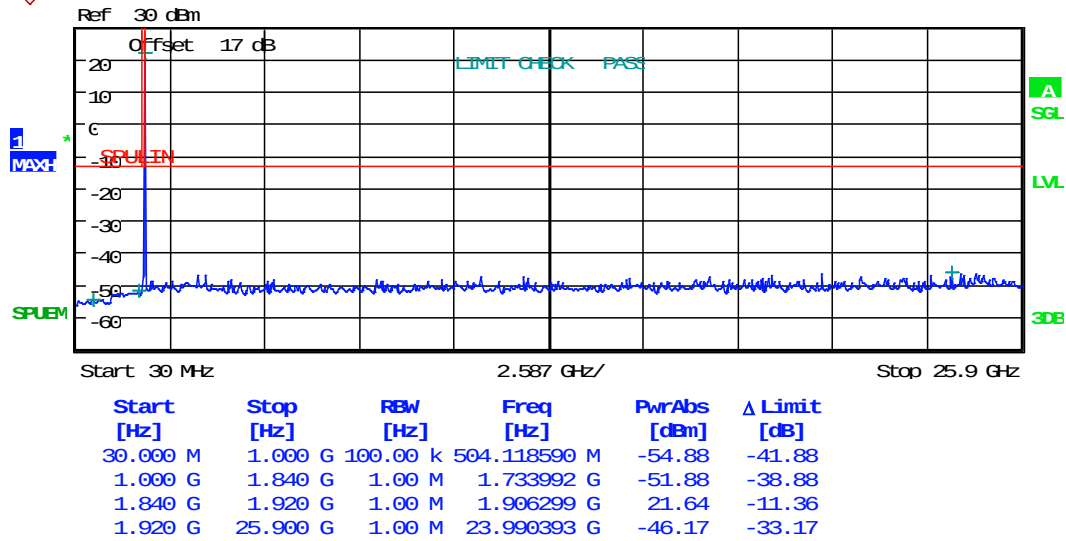


Date: 6.JUL.2021 13:34:19



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 6.JUL.2021 13:34:43

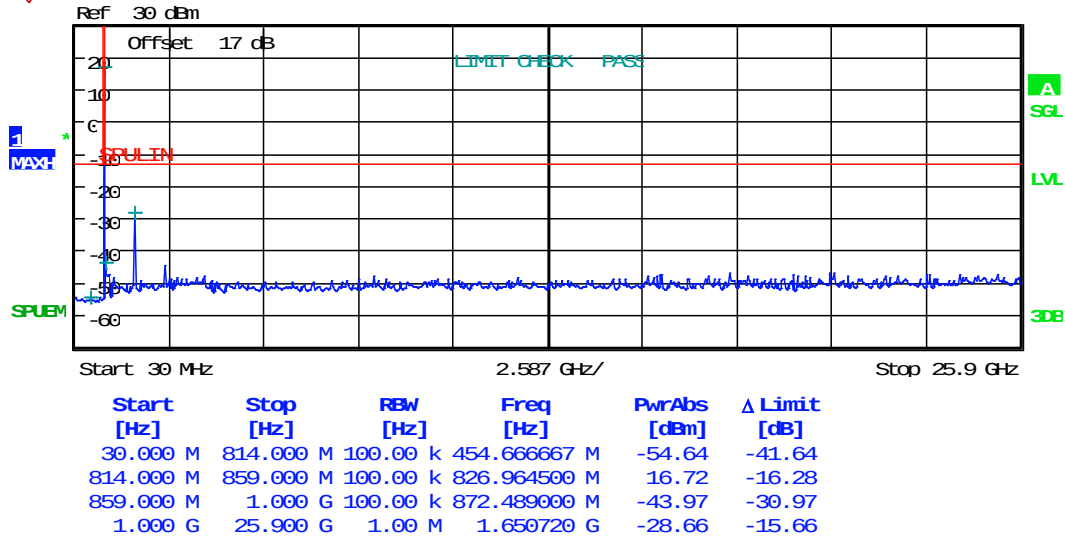


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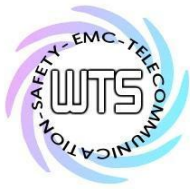
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

Band V

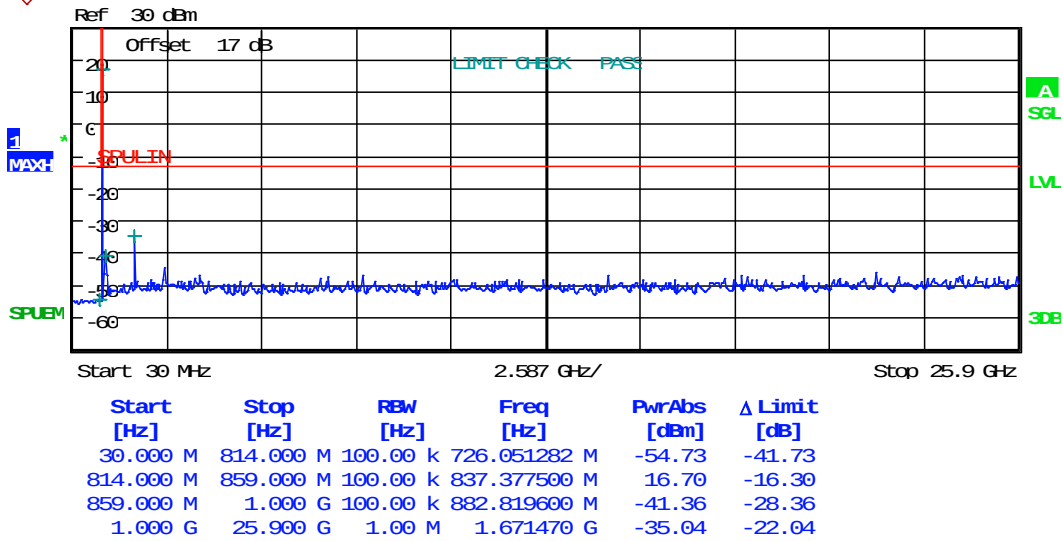


Date: 6.JUL.2021 13:36:46

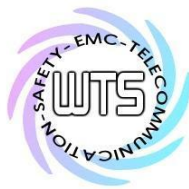


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

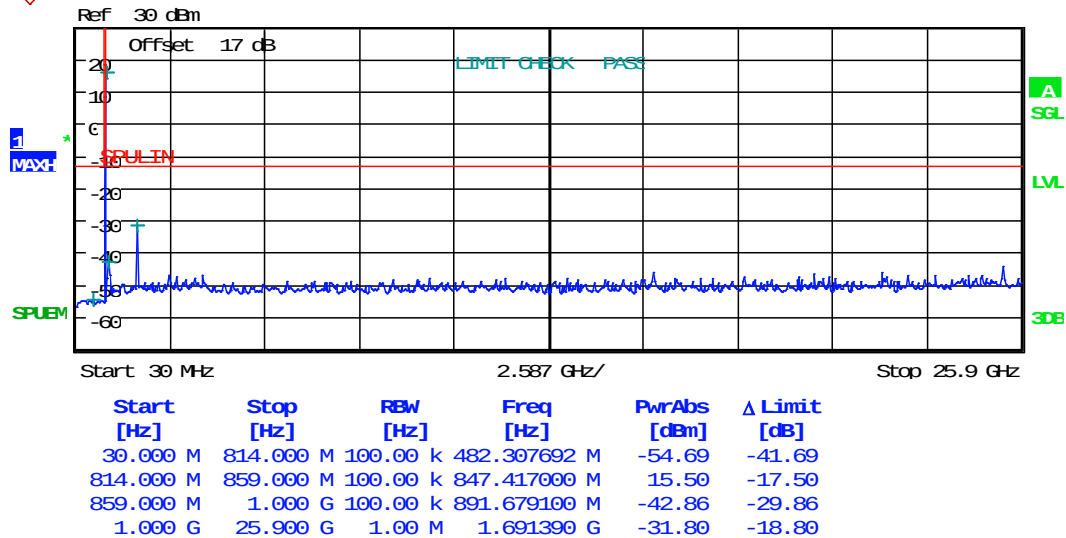


Date: 6.JUL.2021 13:37:10



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 6.JUL.2021 13:37:36



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

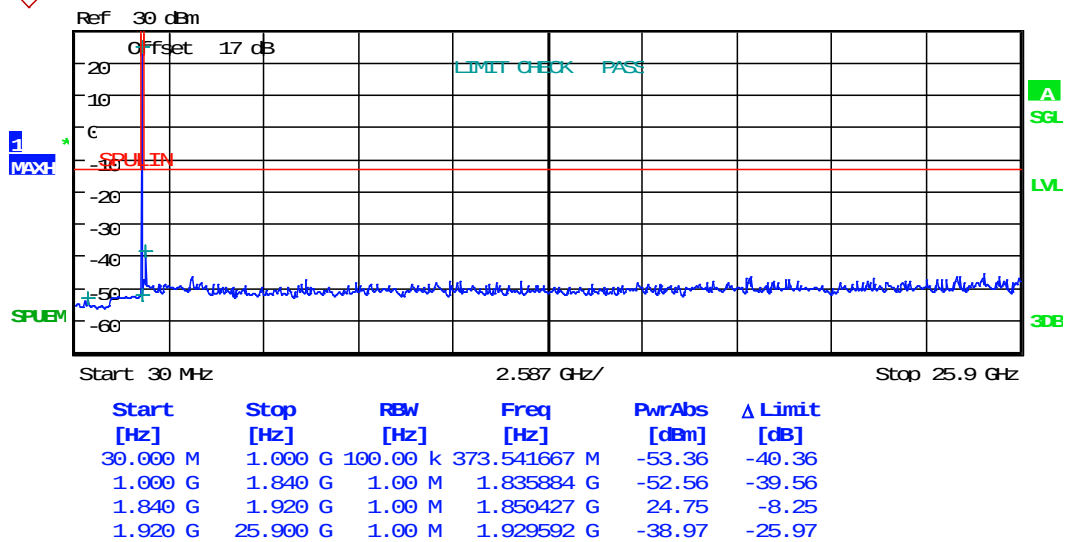
FCC ID: GX9HYBRID

LTE

Band II

16QAM

1.4MHz

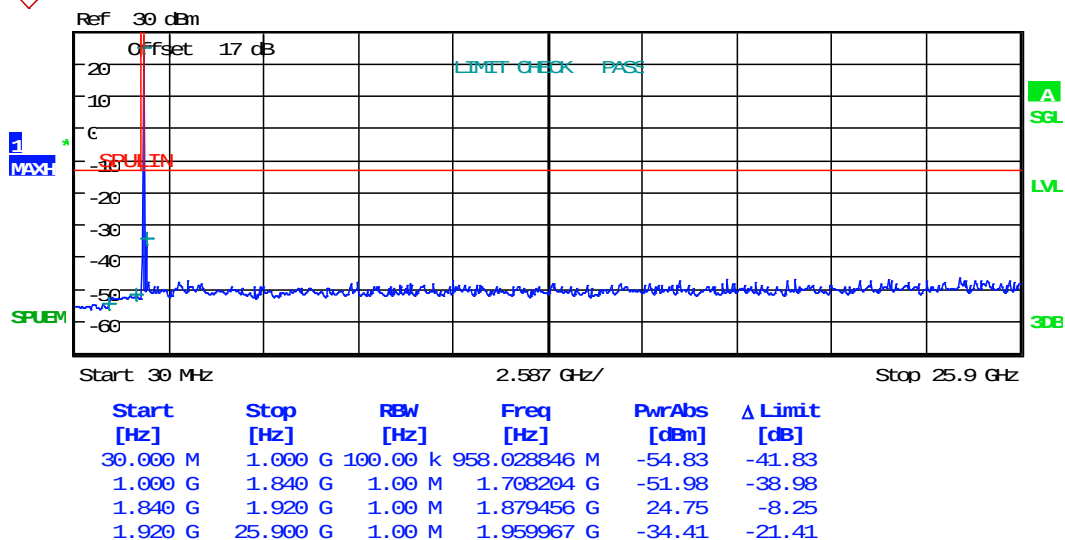


Date: 5.JUL.2021 17:09:32



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

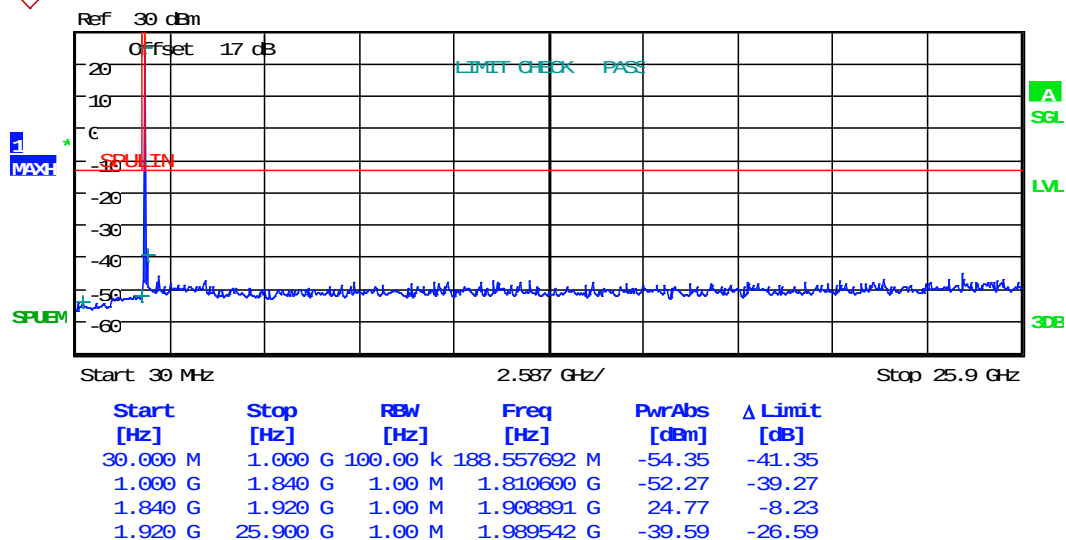


Date: 5.JUL.2021 17:10:07



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



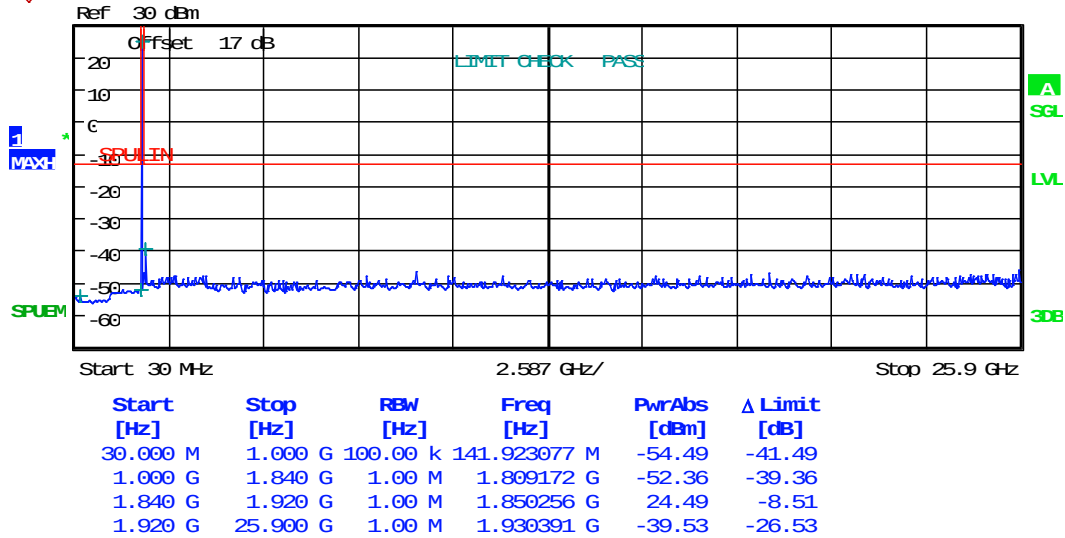
Date: 5.JUL.2021 17:10:37



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

3MHz

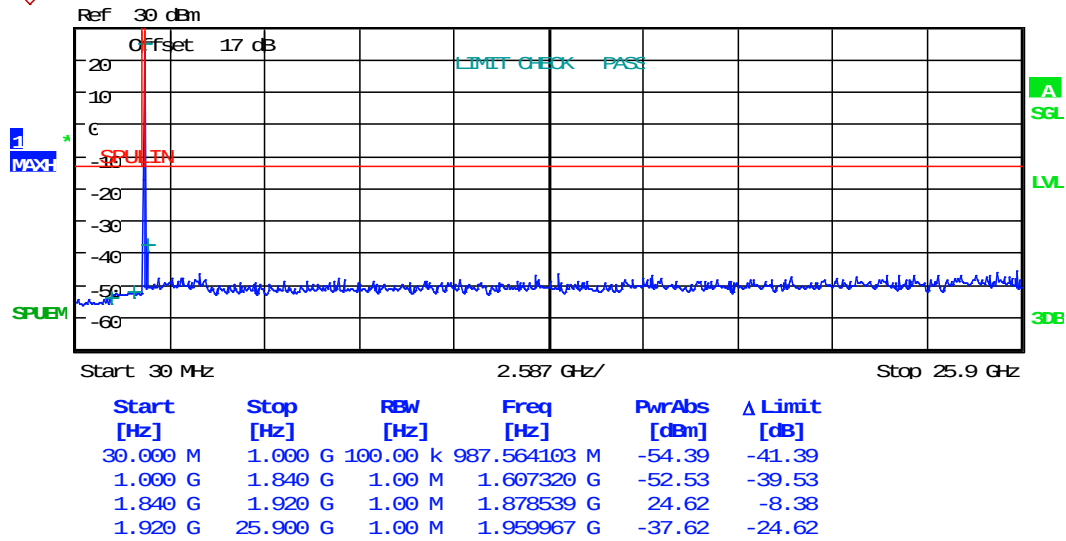


Date: 5.JUL.2021 17:14:19



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

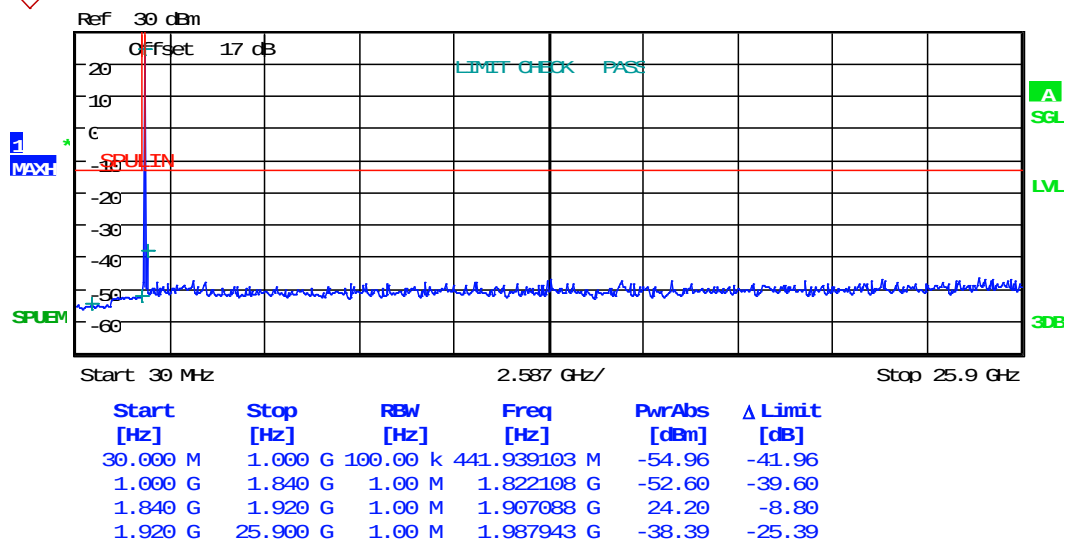


Date: 5.JUL.2021 17:14:44

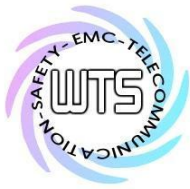


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



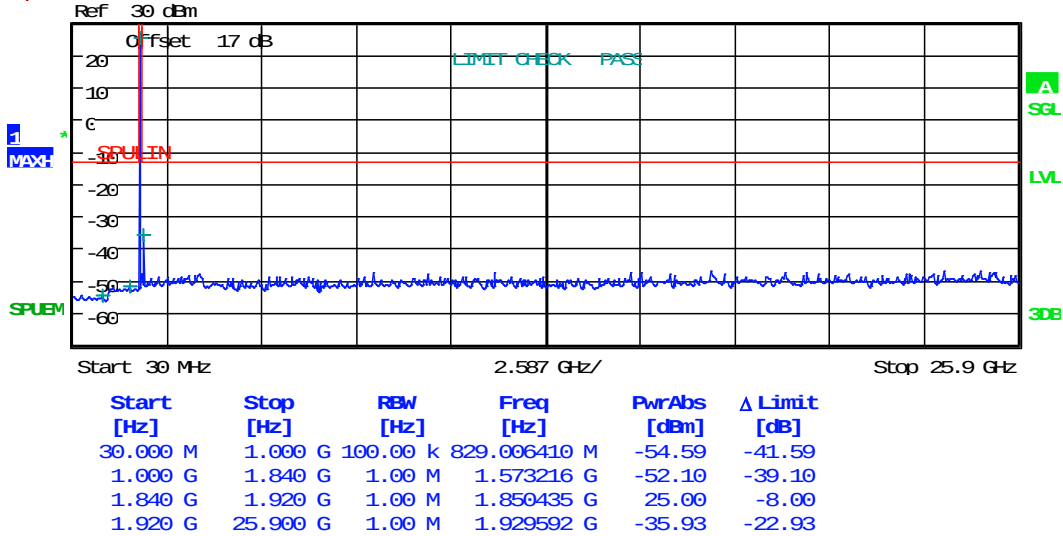
Date: 5.JUL.2021 17:15:06



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz

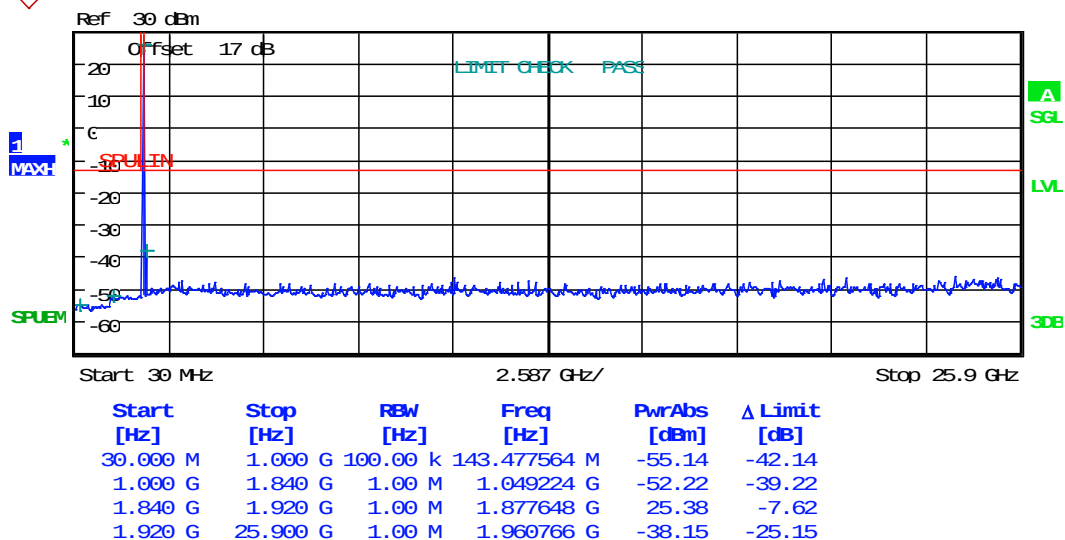


Date: 5.JUL.2021 17:31:17



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

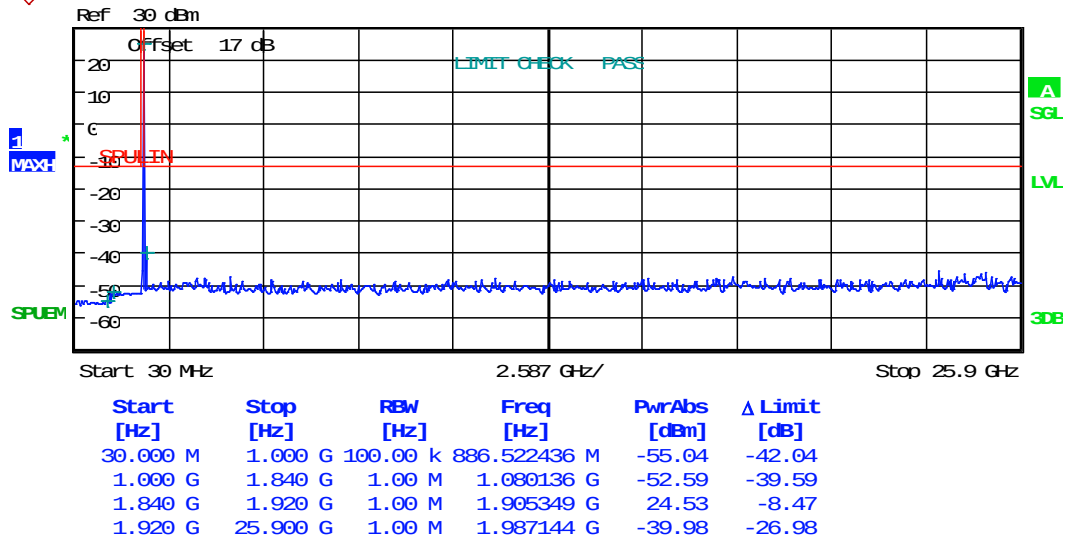


Date: 5.JUL.2021 17:33:07

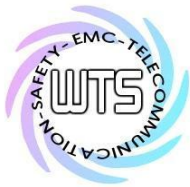


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 17:33:30

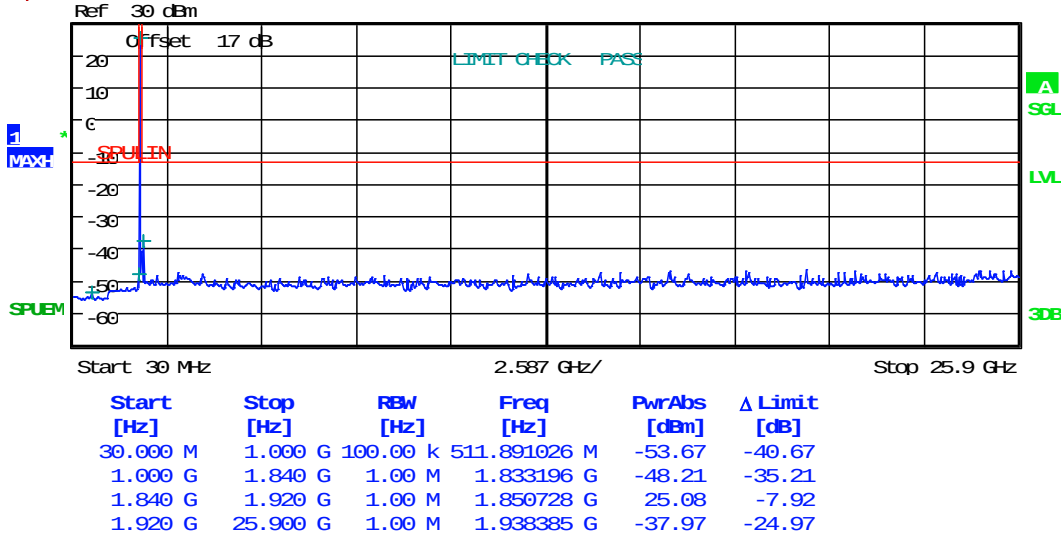


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

10MHz

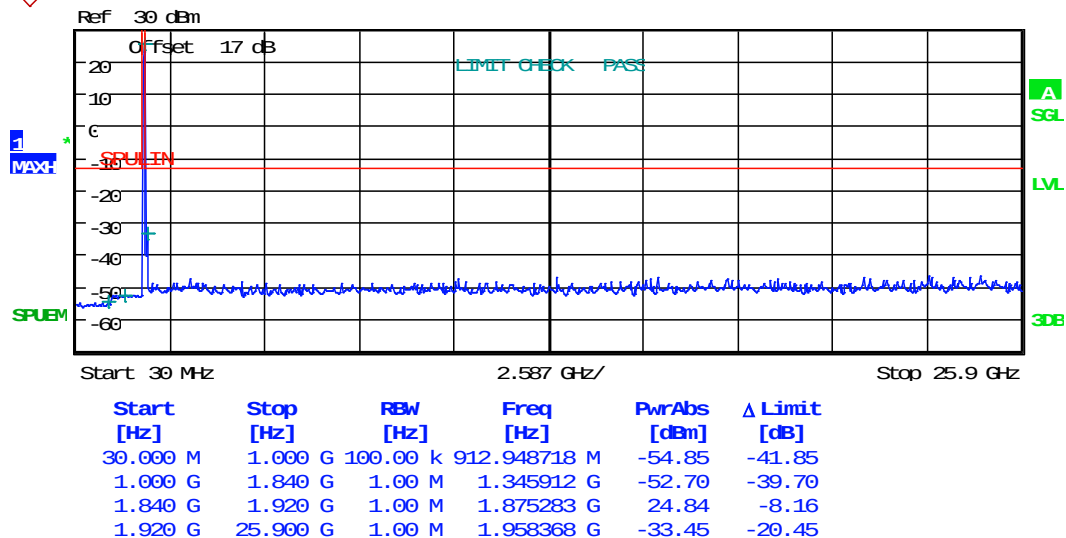


Date: 5.JUL.2021 17:37:15



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

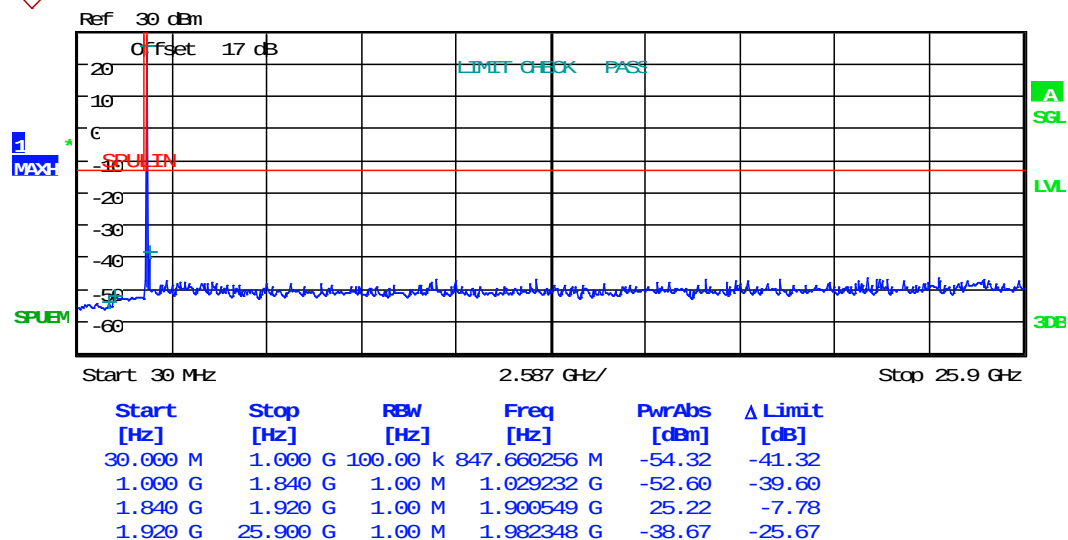


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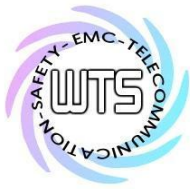


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



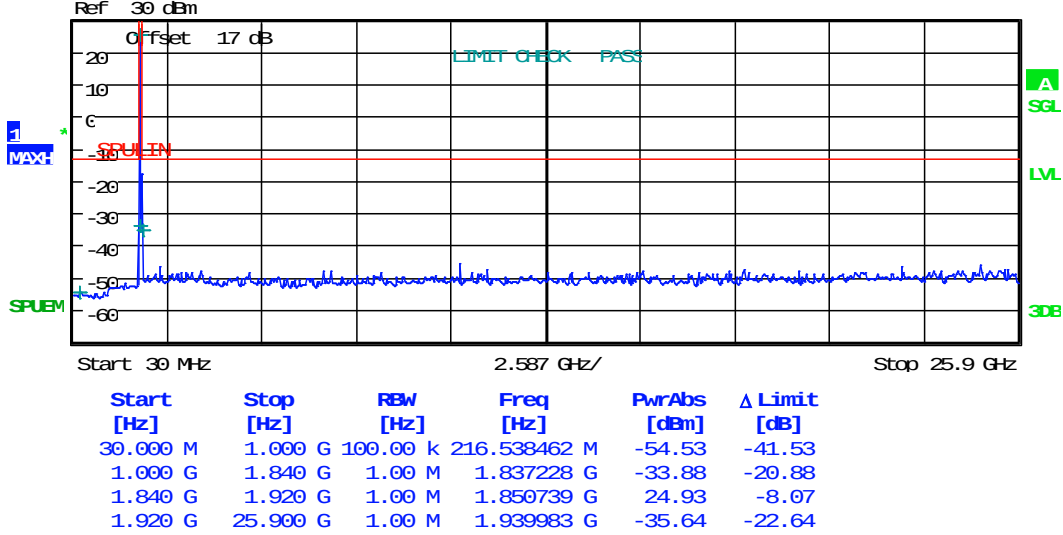
Date: 5.JUL.2021 17:40:35



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz

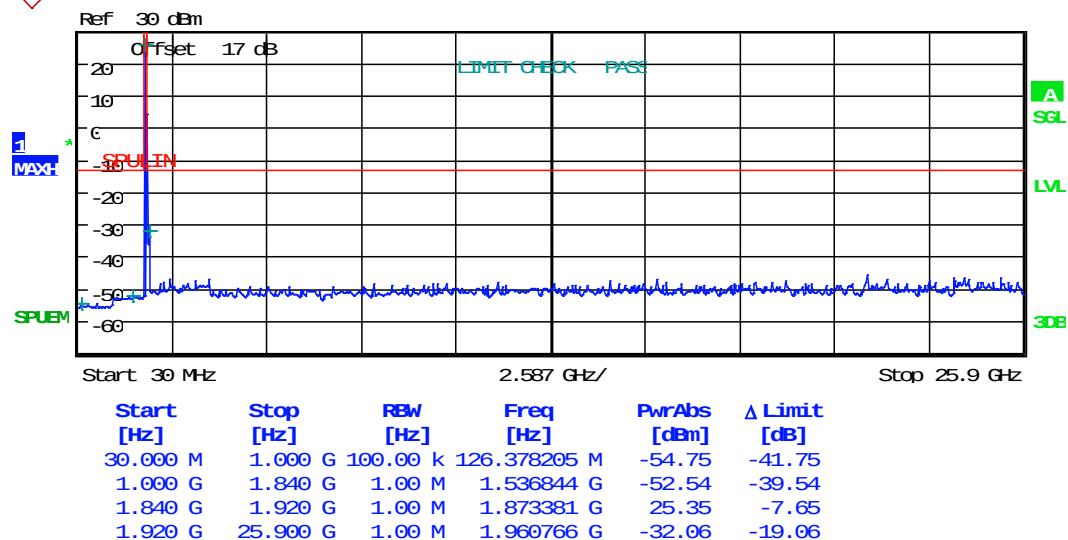


Date: 5.JUL.2021 17:45:58



Report Number: W6M22106-21044-P-247

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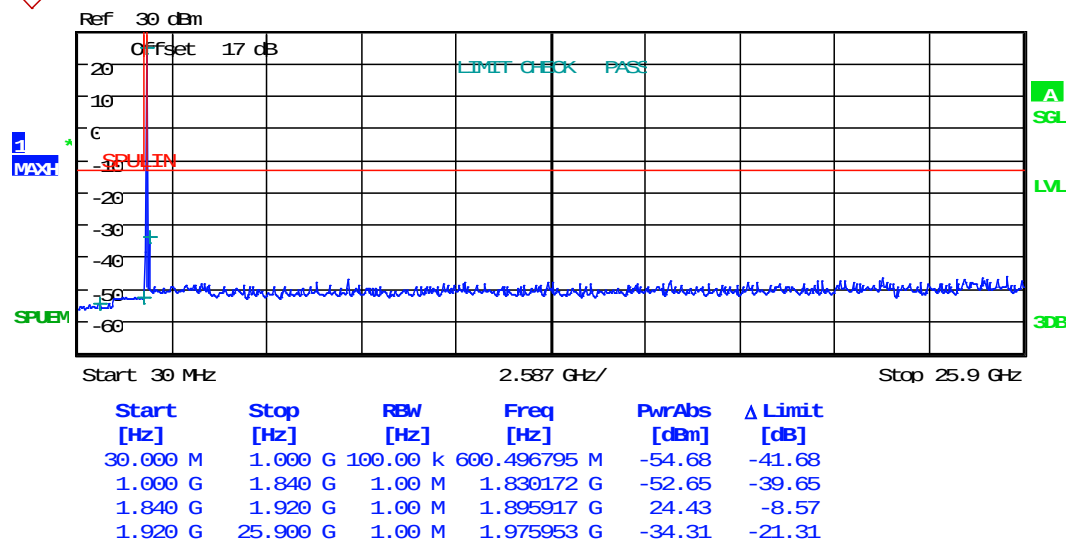


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Report Number: W6M22106-21044-P-247

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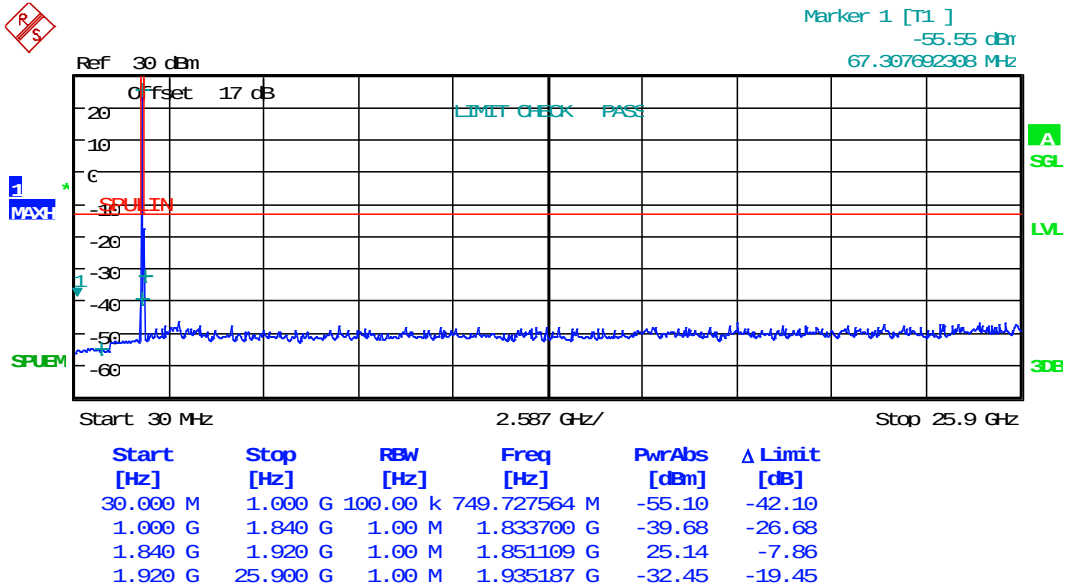
Date: 5.JUL.2021 17:47:04



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

20MHz

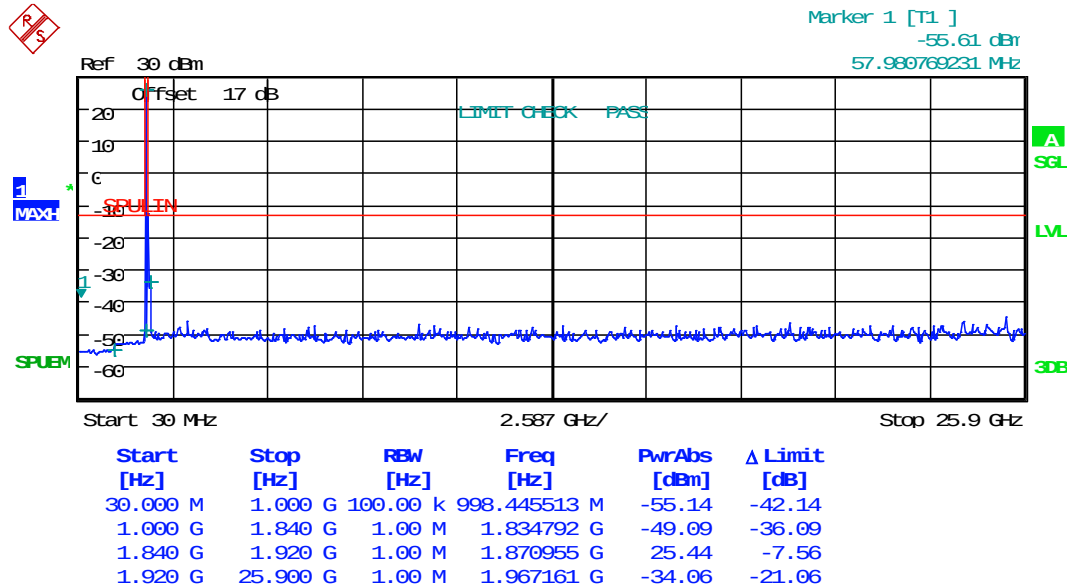


Date: 5.JUL.2021 19:52:15



Report Number: W6M22106-21044-P-247

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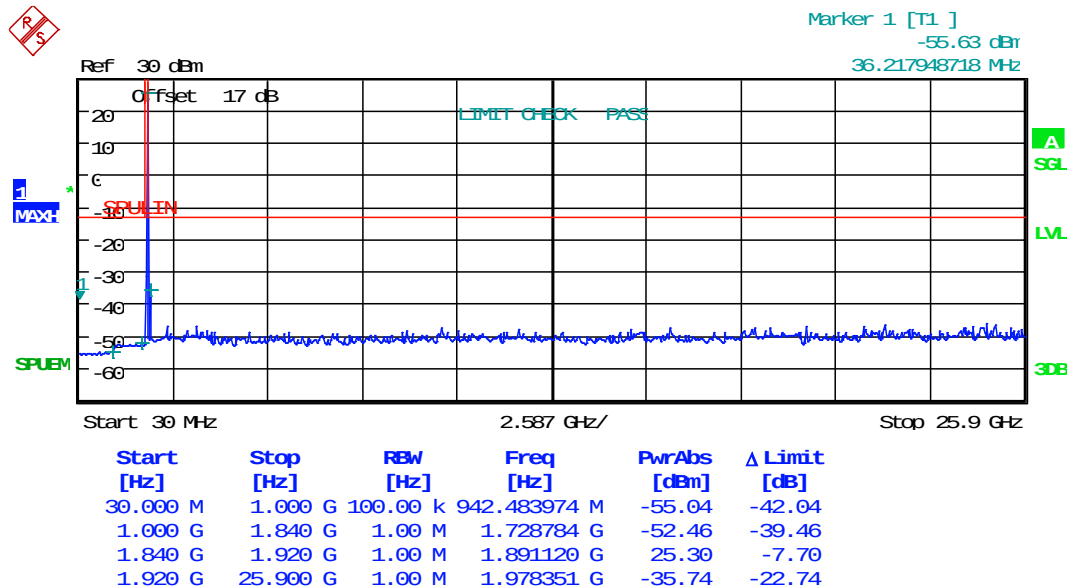


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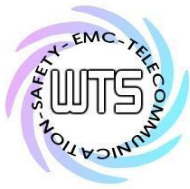


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



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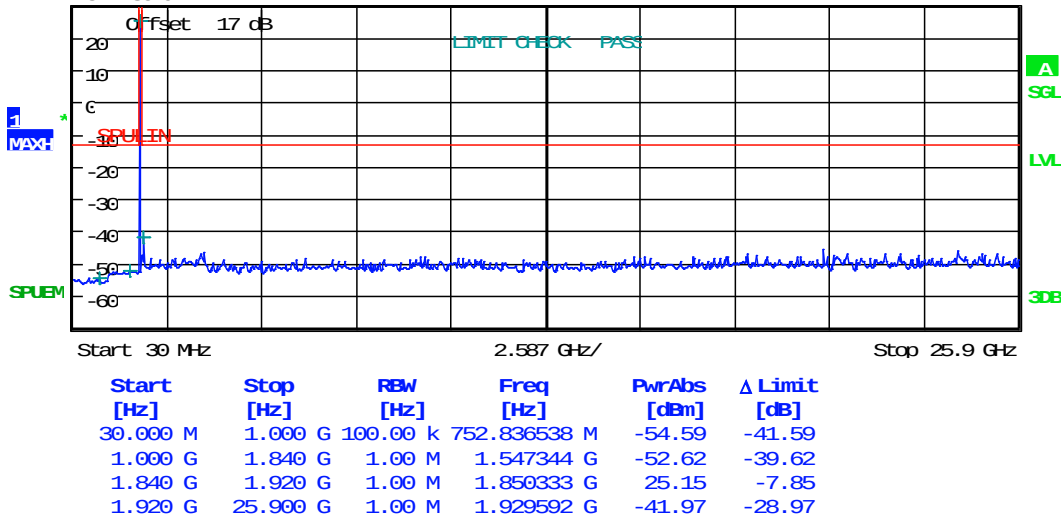
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

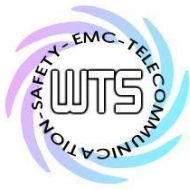
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QPSK

1.4MHz

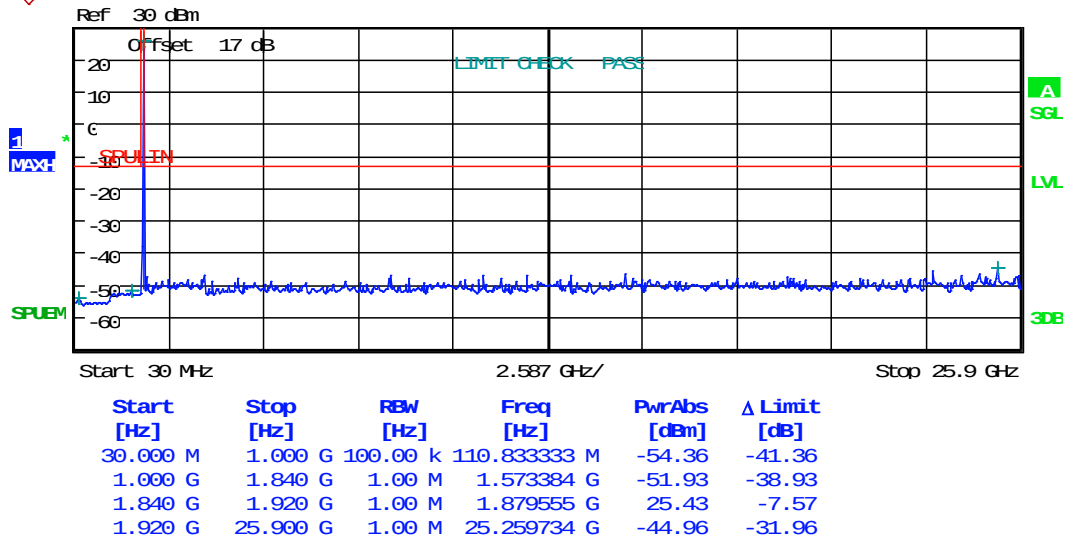


Date: 5.JUL.2021 17:11:18



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

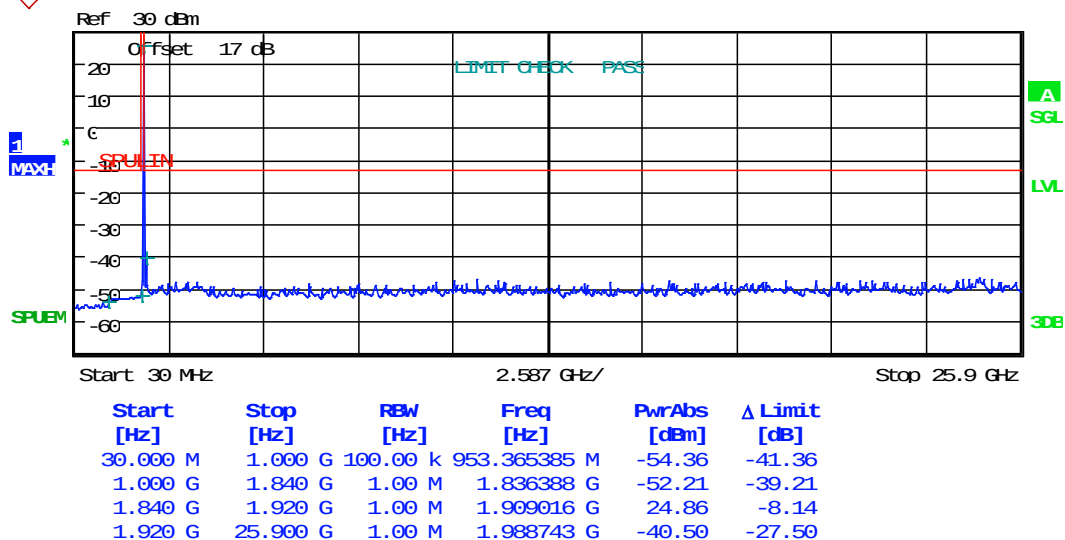


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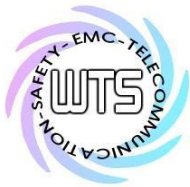


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



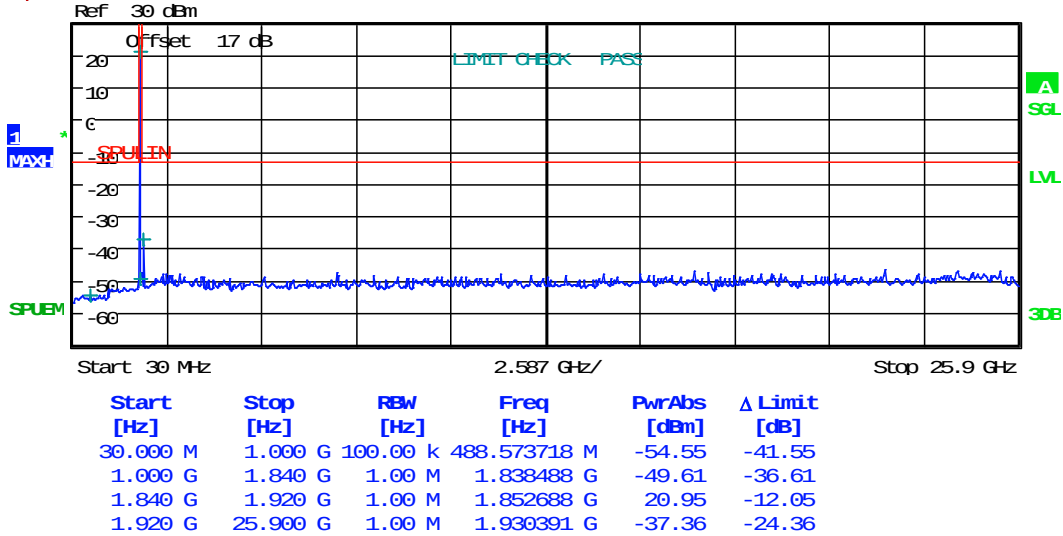
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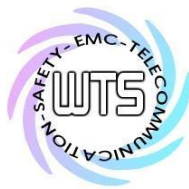
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

3MHz

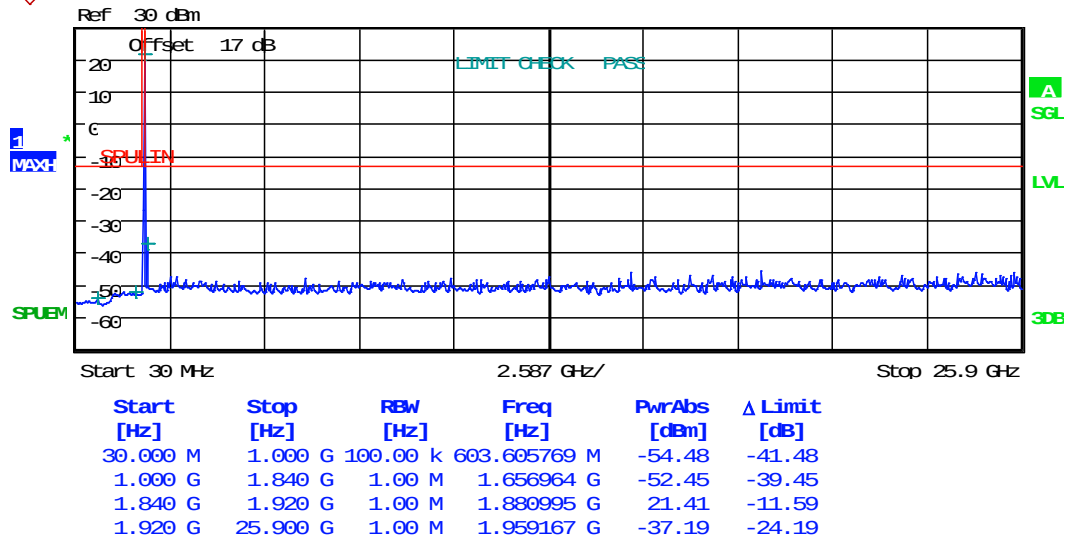


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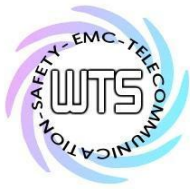


Report Number: W6M22106-21044-P-247

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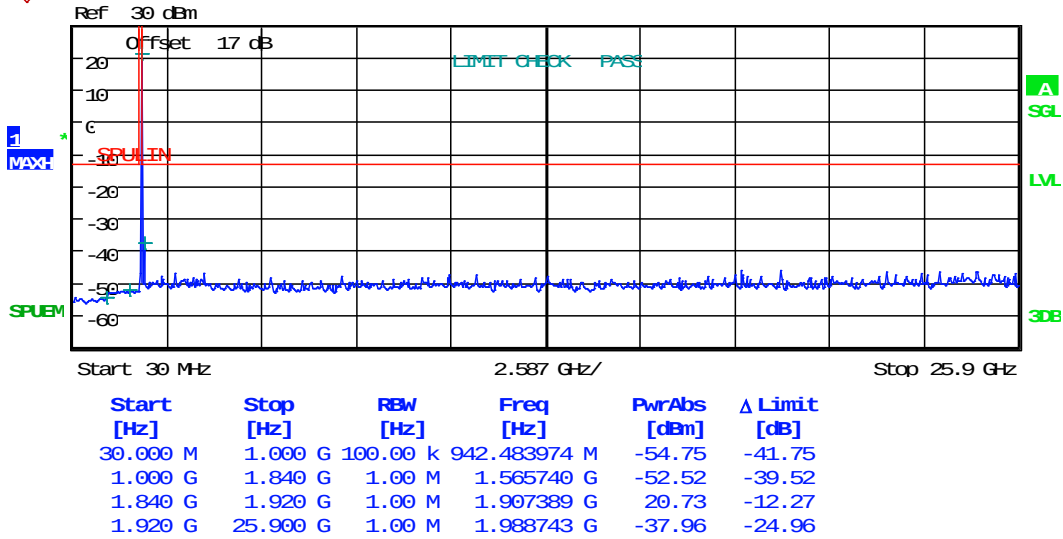


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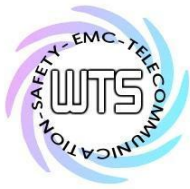


Report Number: W6M22106-21044-P-247

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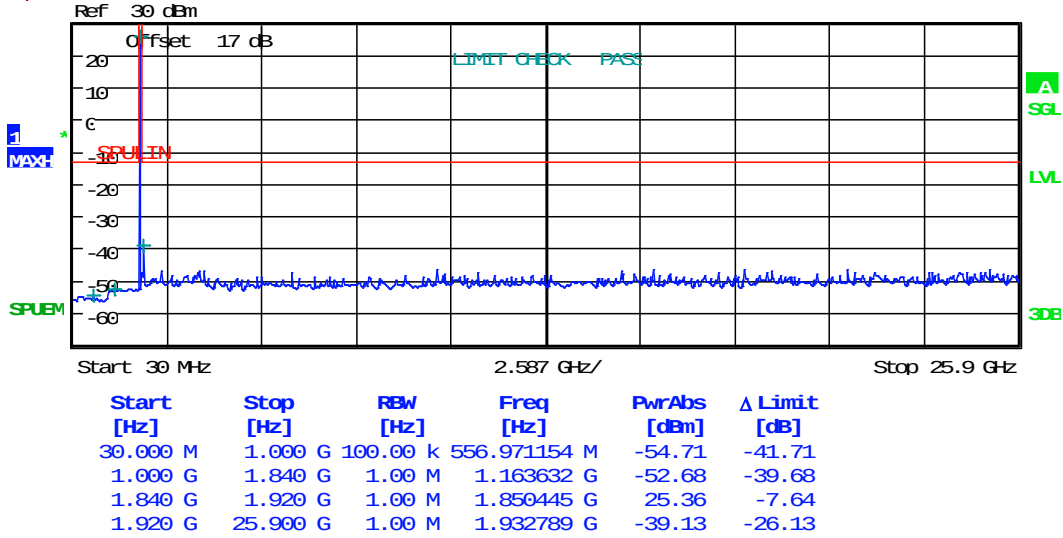
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Report Number: W6M22106-21044-P-247

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5MHz

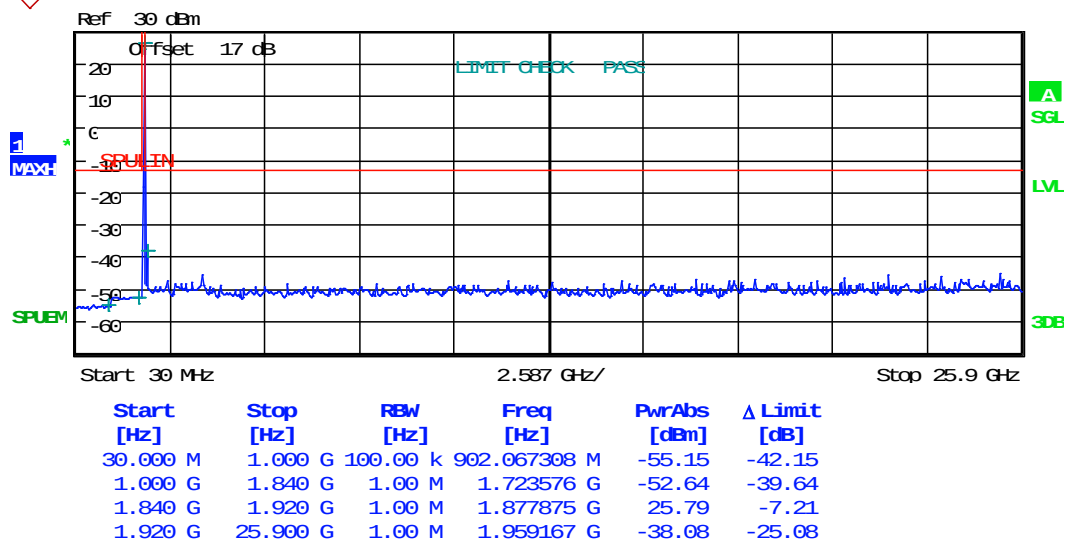


Date: 5.JUL.2021 17:34:42



Report Number: W6M22106-21044-P-247

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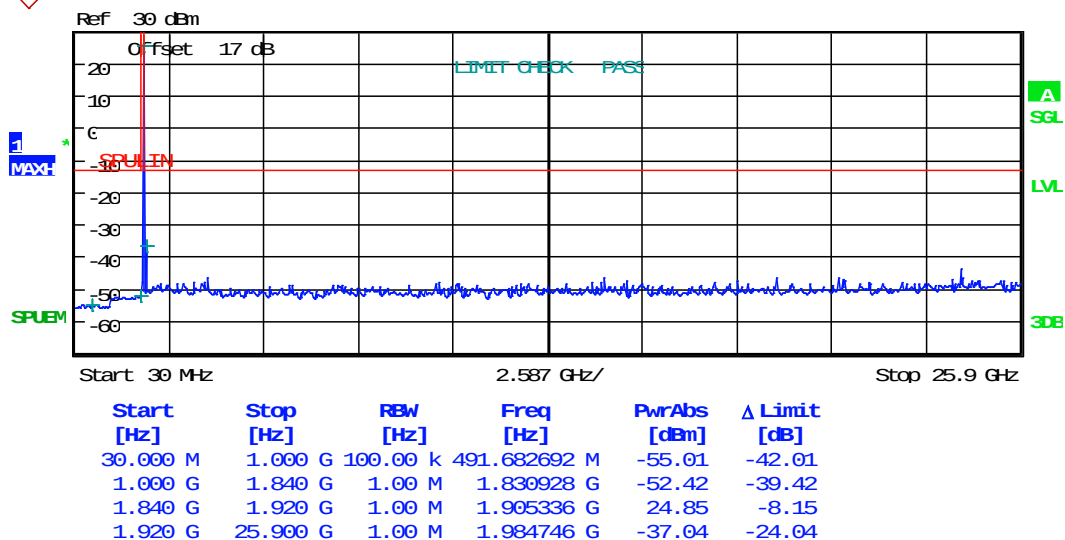


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Report Number: W6M22106-21044-P-247

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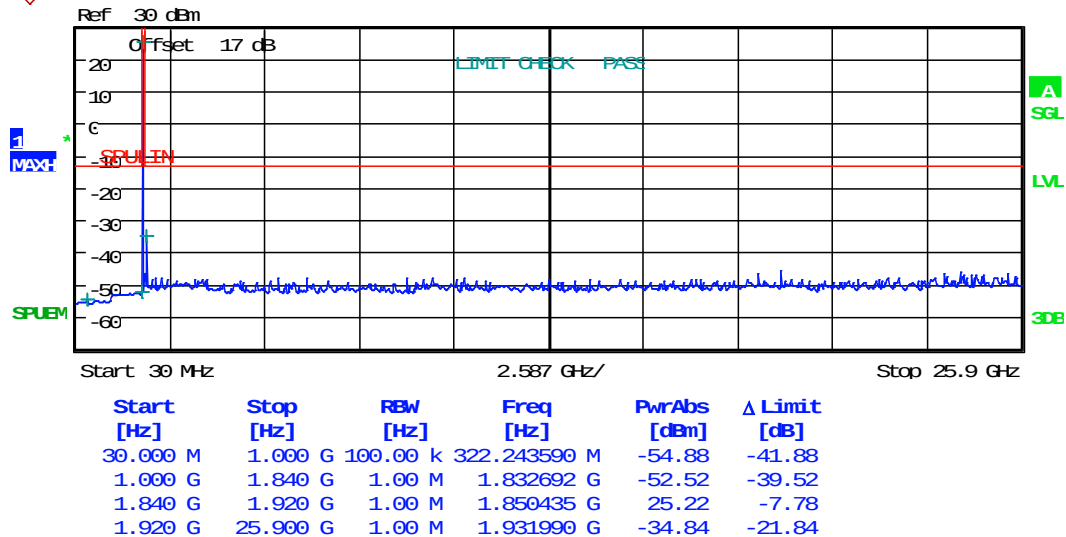
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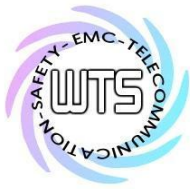
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10MHz

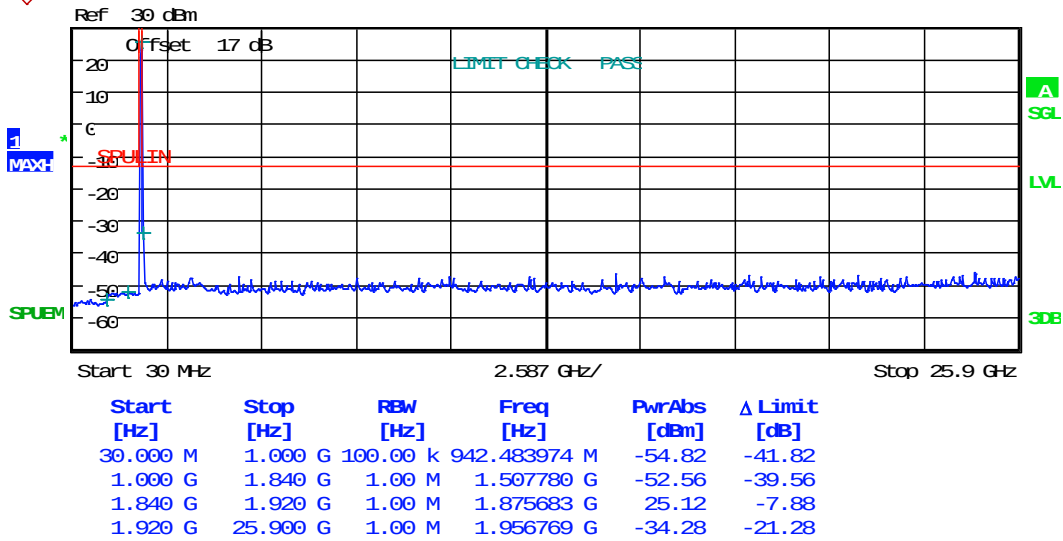


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Report Number: W6M22106-21044-P-247

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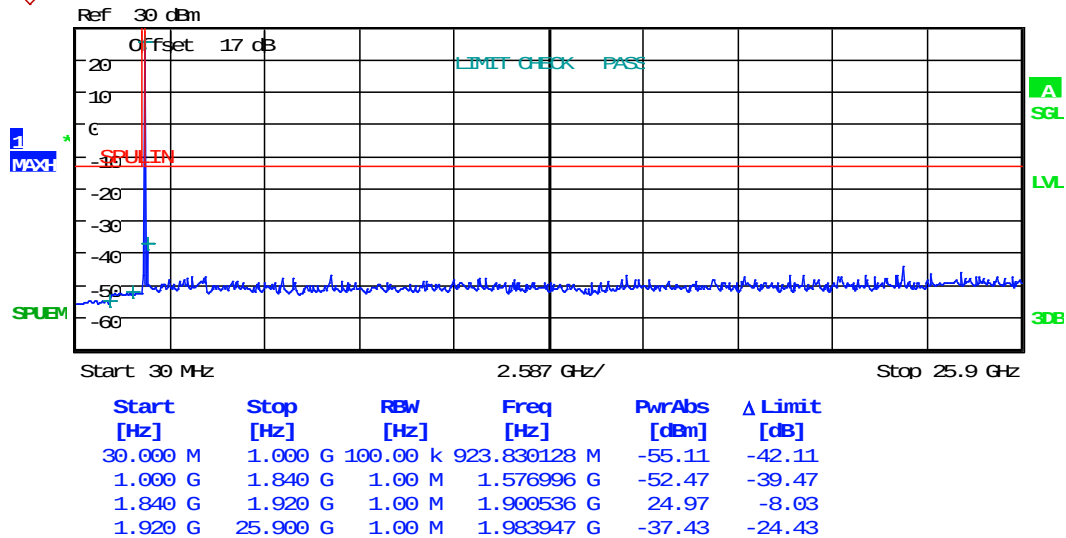


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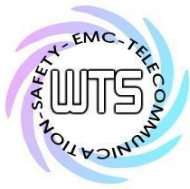


Report Number: W6M22106-21044-P-247

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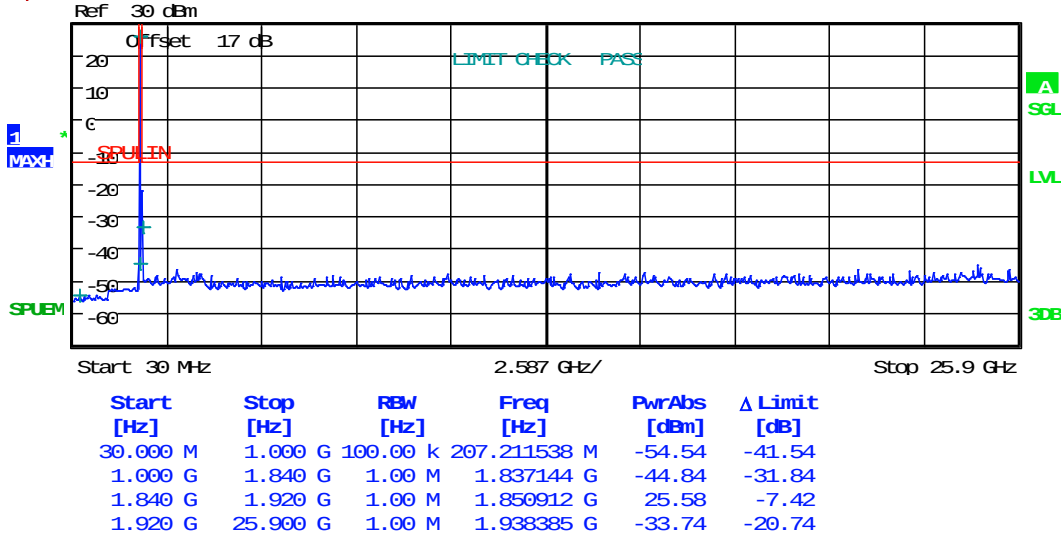
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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz

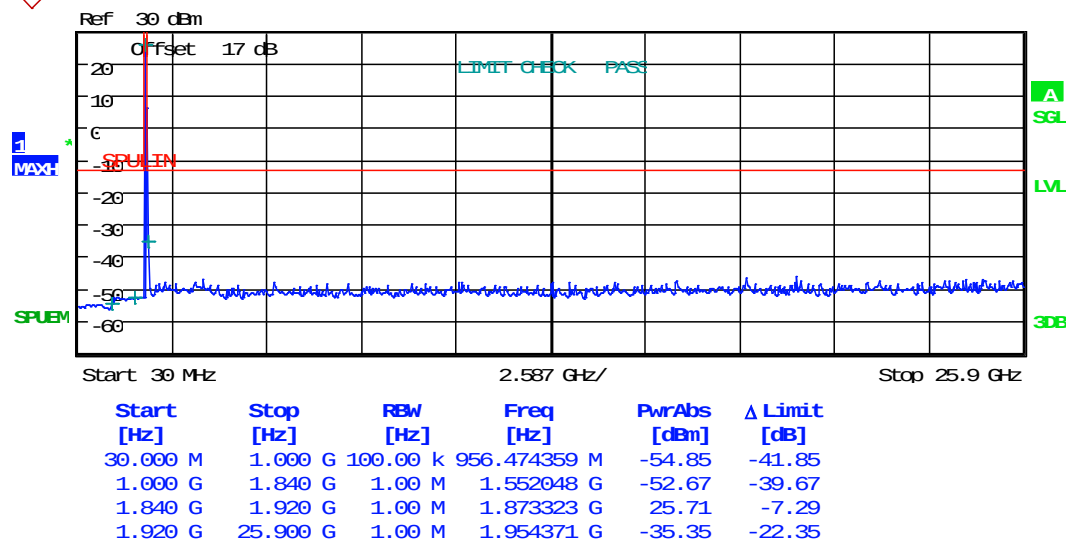


Date: 5.JUL.2021 17:47:42



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

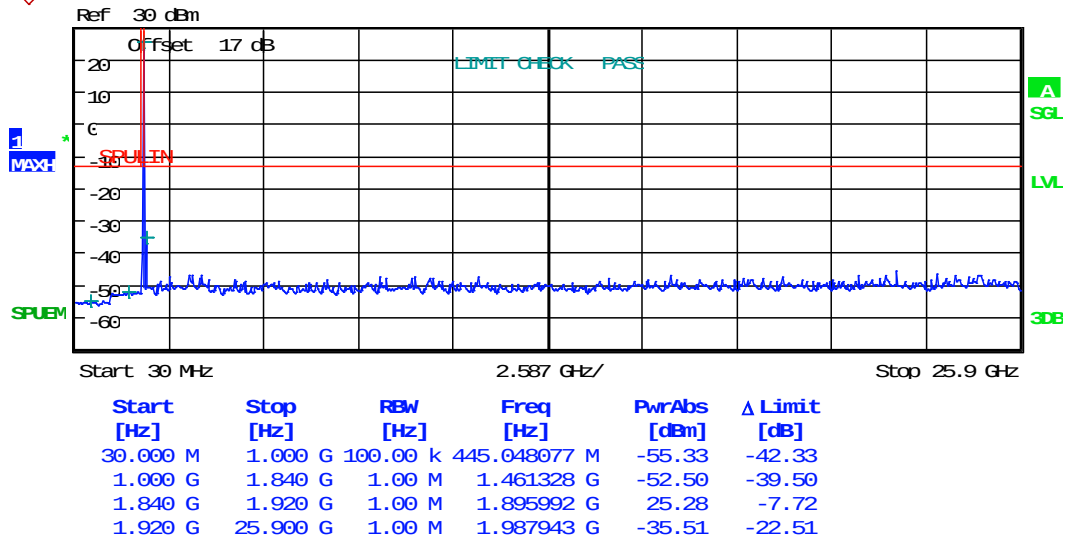


Date: 5.JUL.2021 17:48:05



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



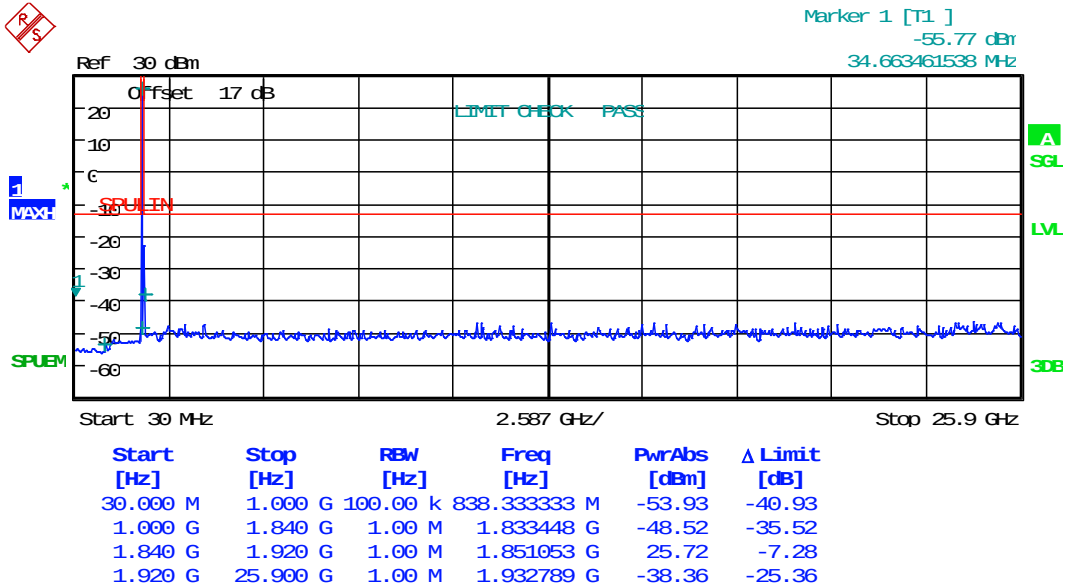
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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

20MHz

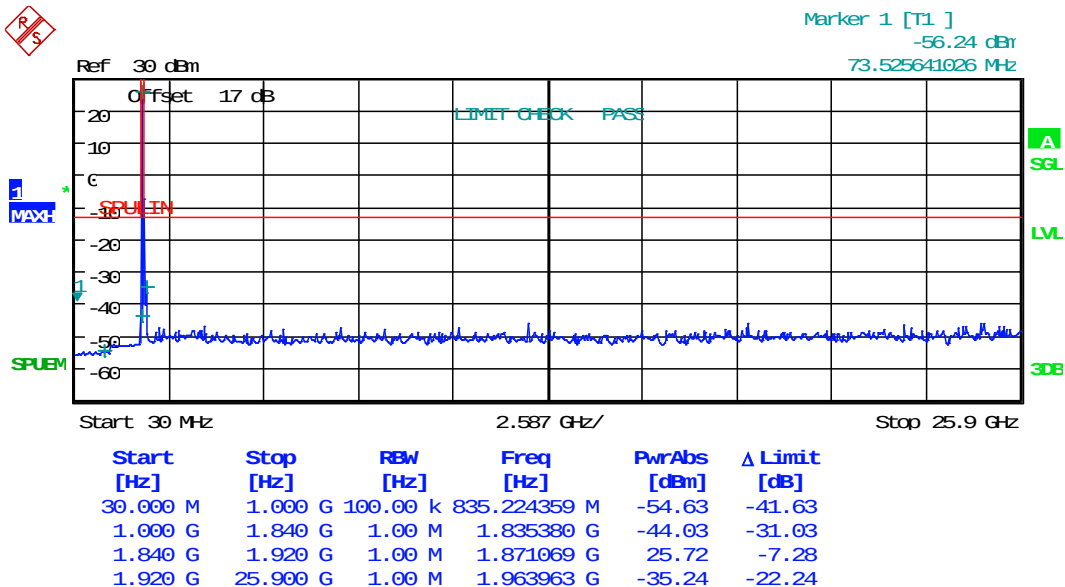


Date: 5.JUL.2021 19:54:22

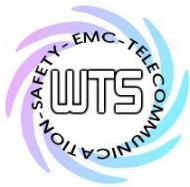


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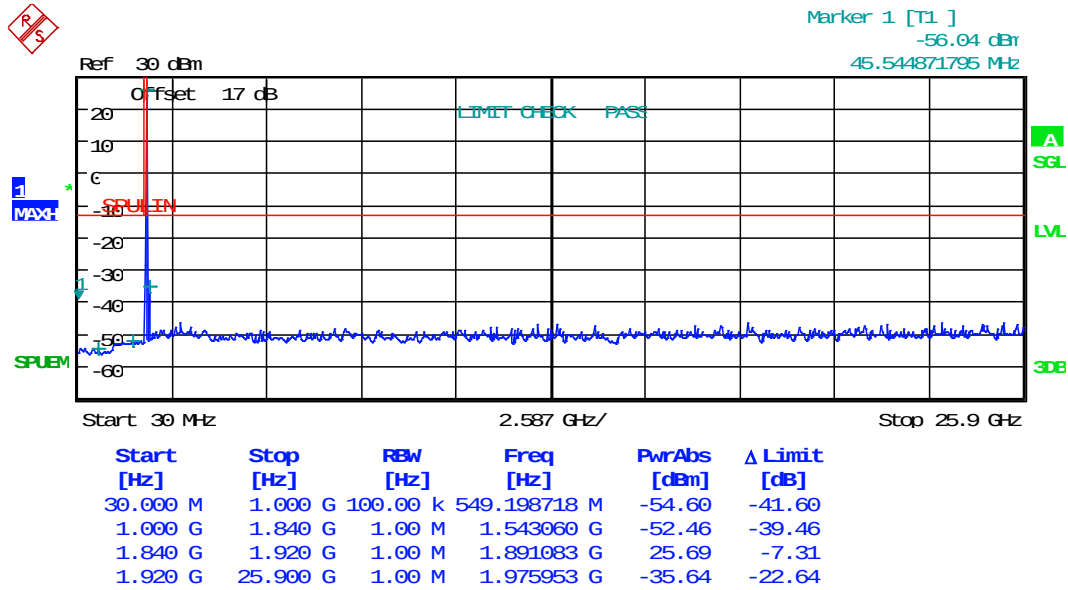


Date: 5.JUL.2021 19:54:00



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 19:53:37



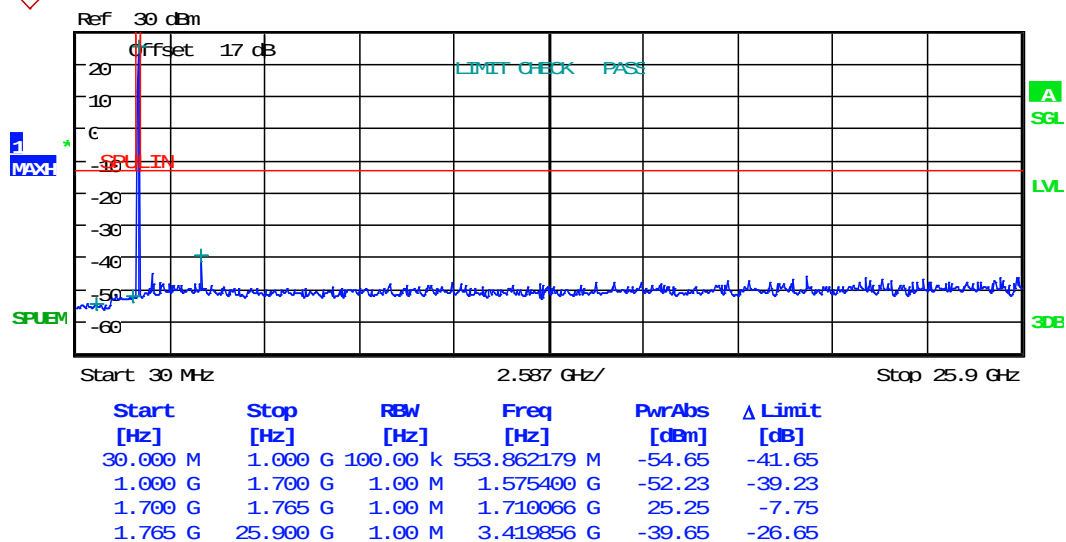
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

Band IV

16QAM

1.4MHz



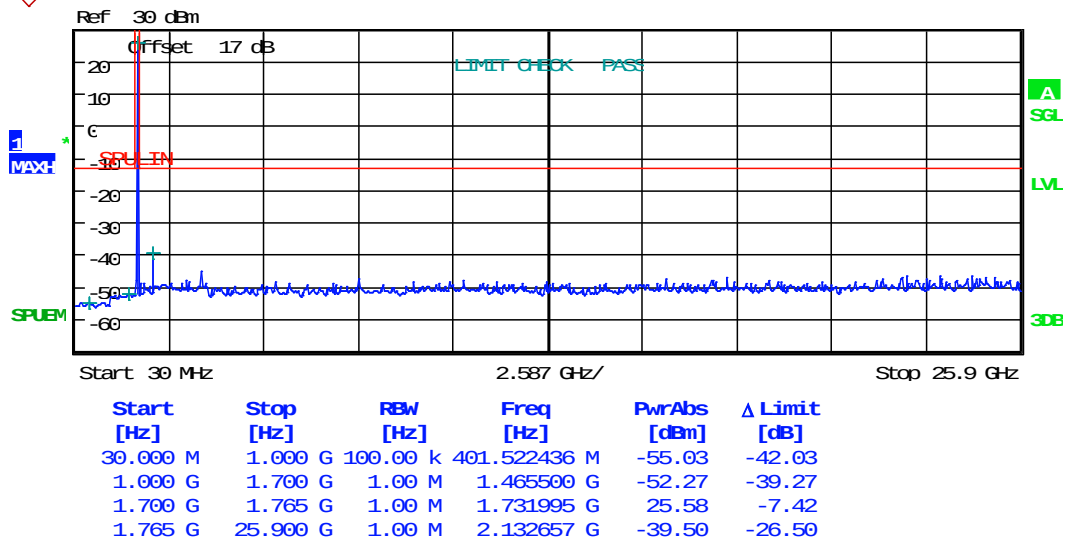
Date: 5.JUL.2021 19:59:52



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

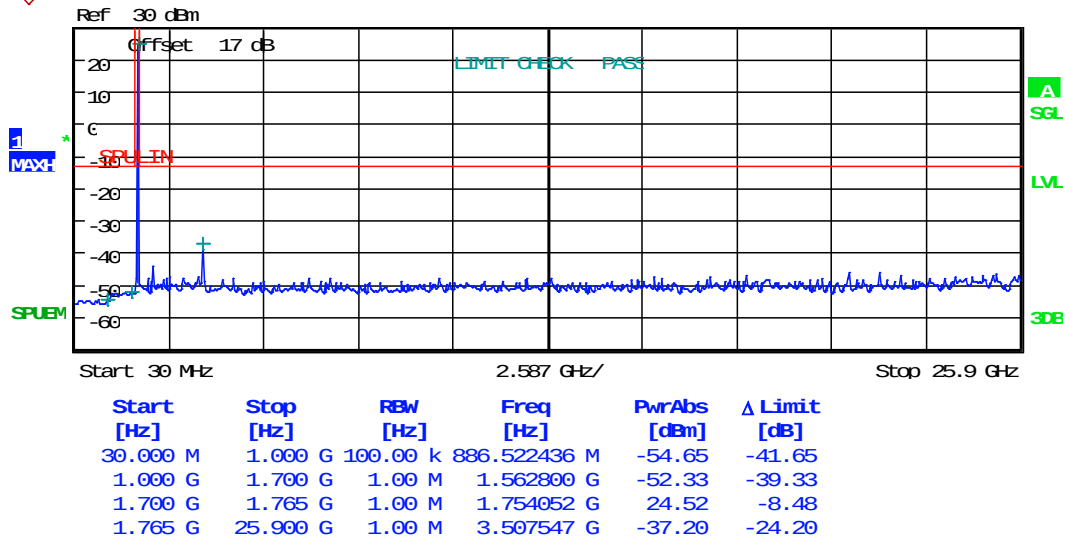


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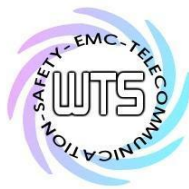


Report Number: W6M22106-21044-P-247

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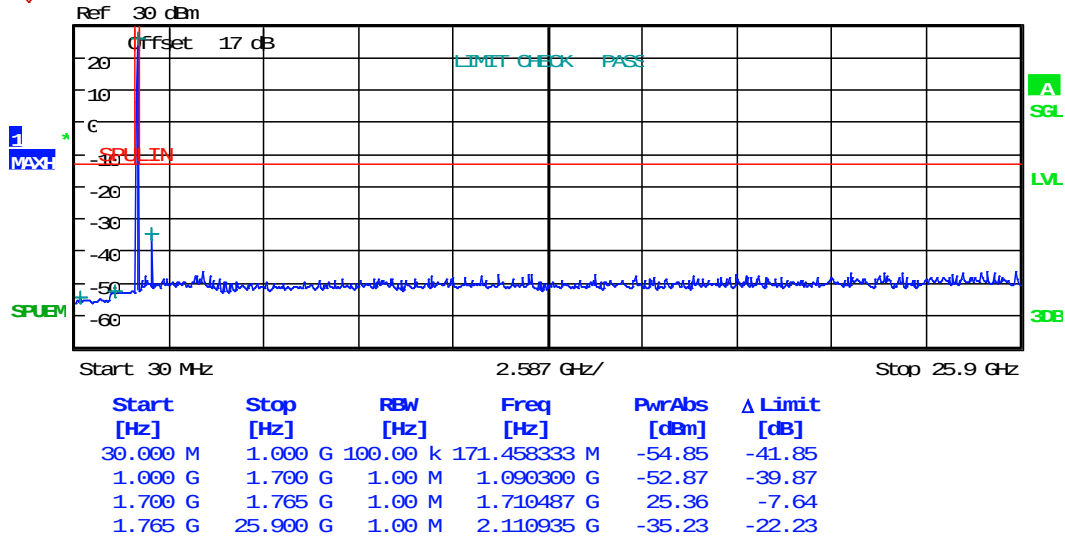
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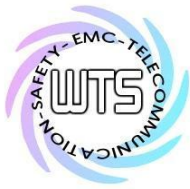
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3MHz

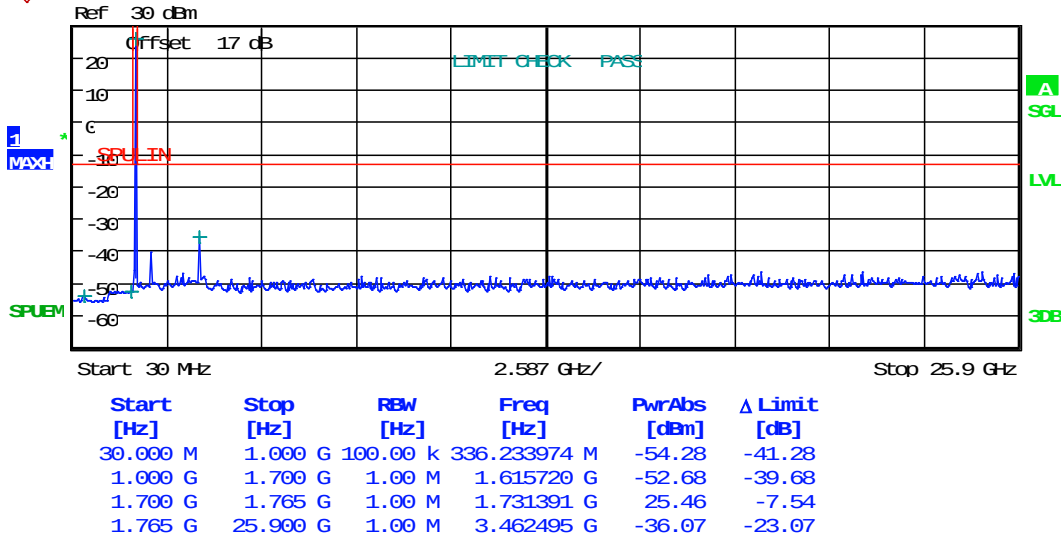


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Report Number: W6M22106-21044-P-247

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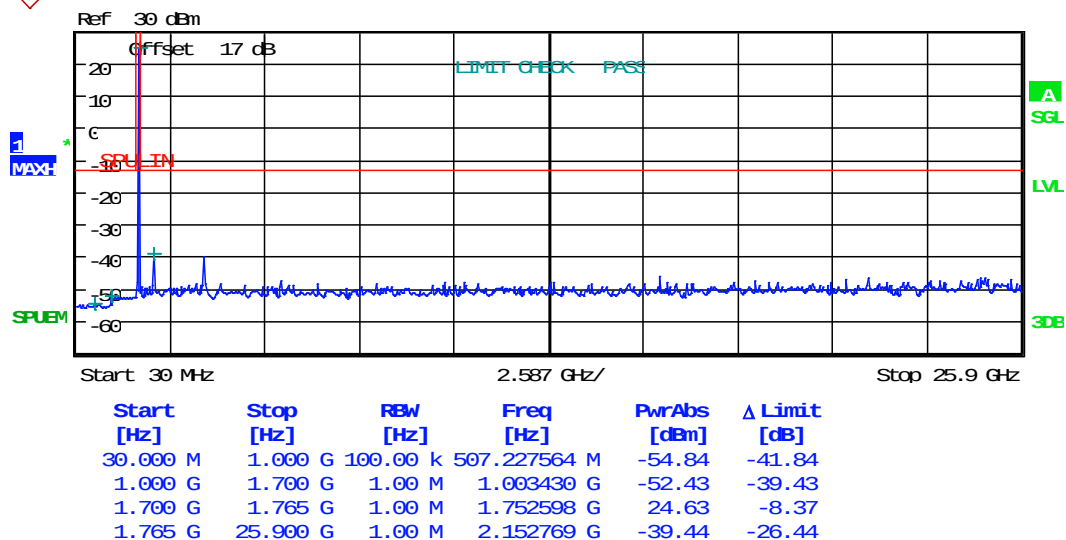


Date: 5.JUL.2021 20:04:09



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 20:04:35

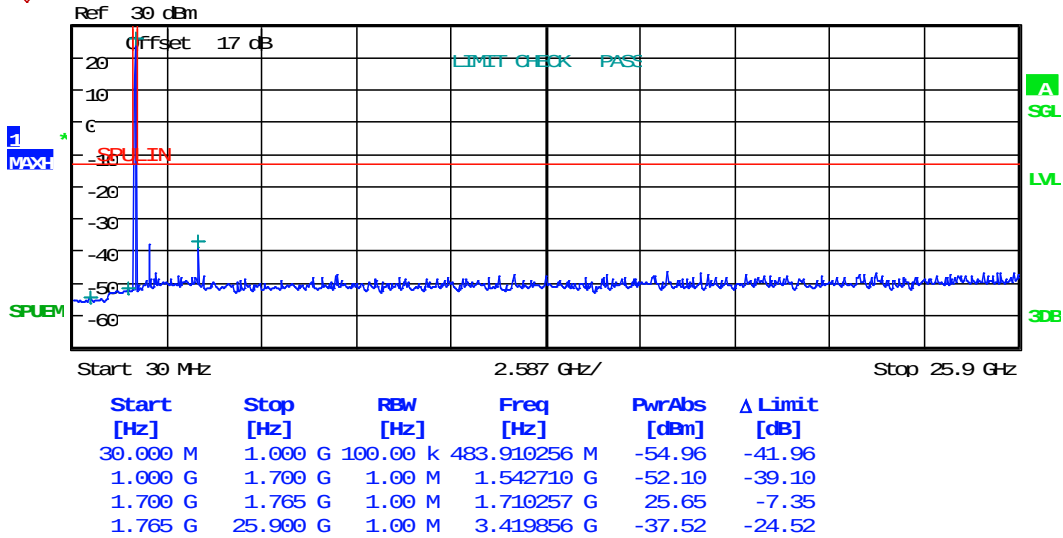


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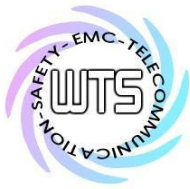
Report Number: W6M22106-21044-P-247

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5MHz



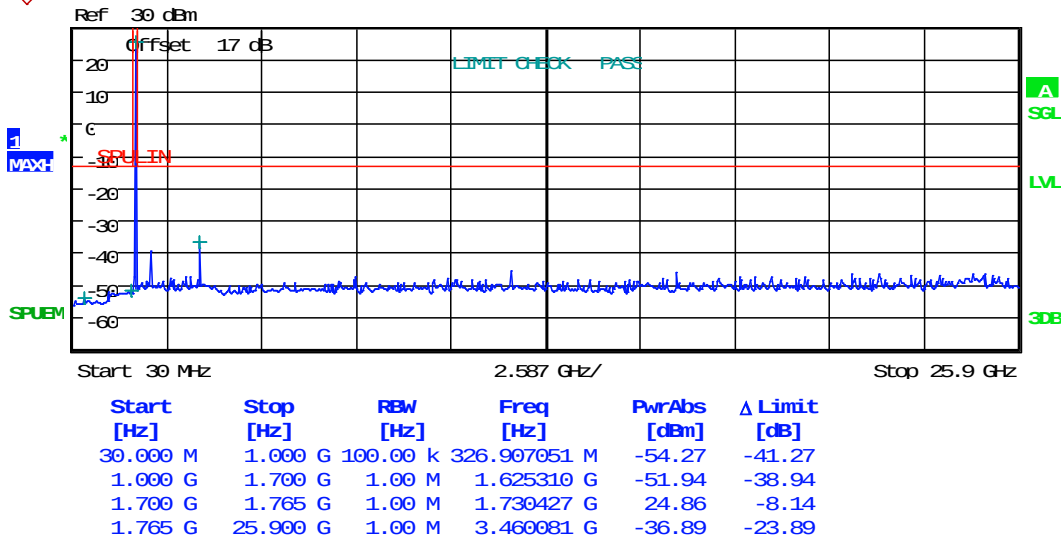
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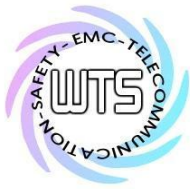
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

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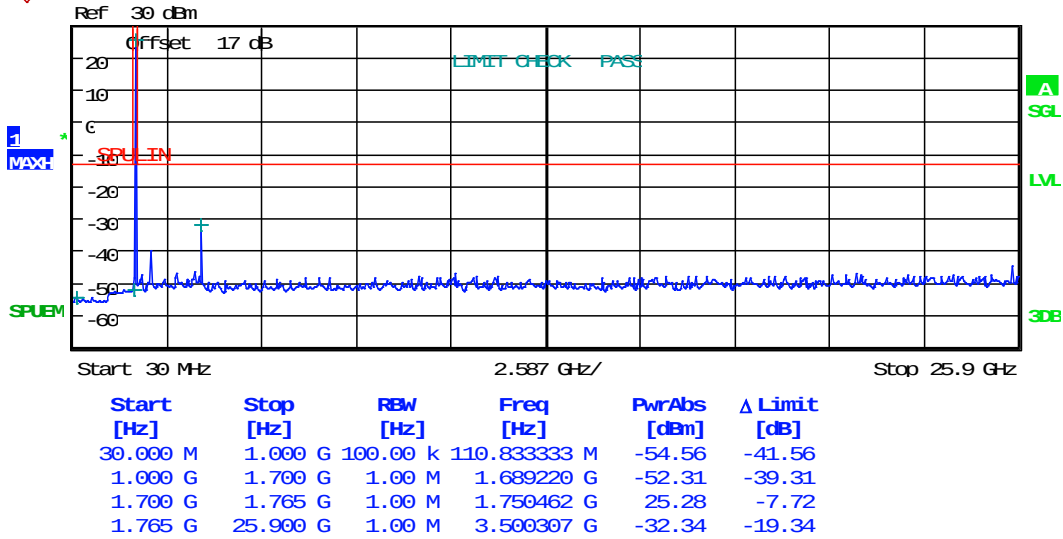


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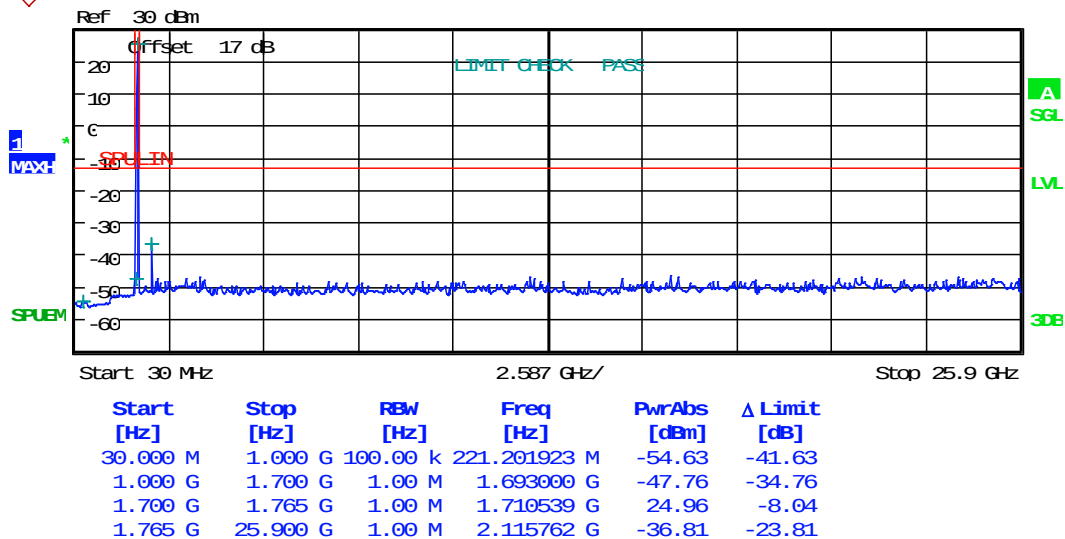
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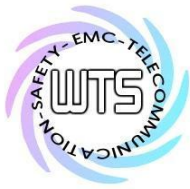
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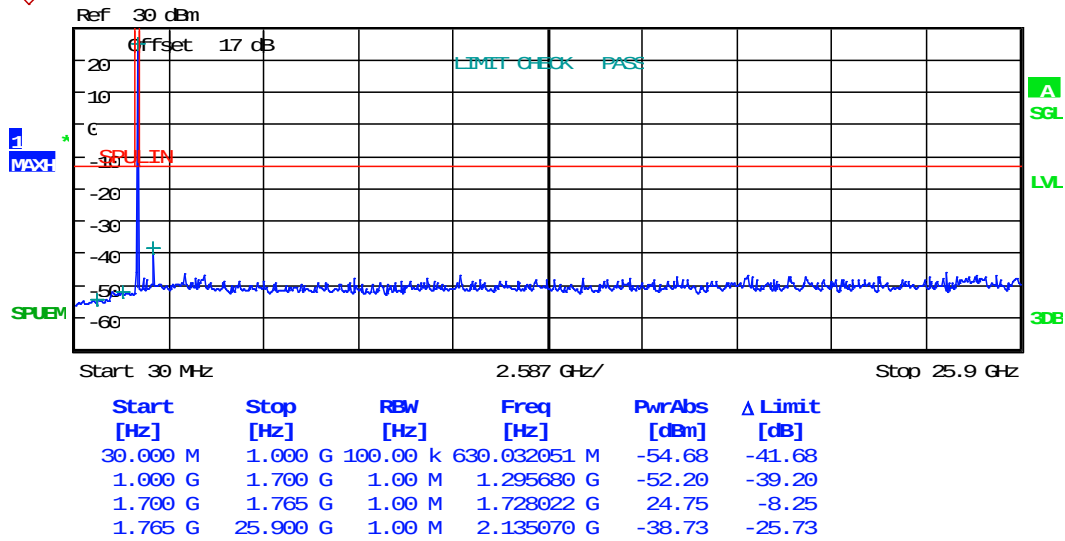


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Report Number: W6M22106-21044-P-247

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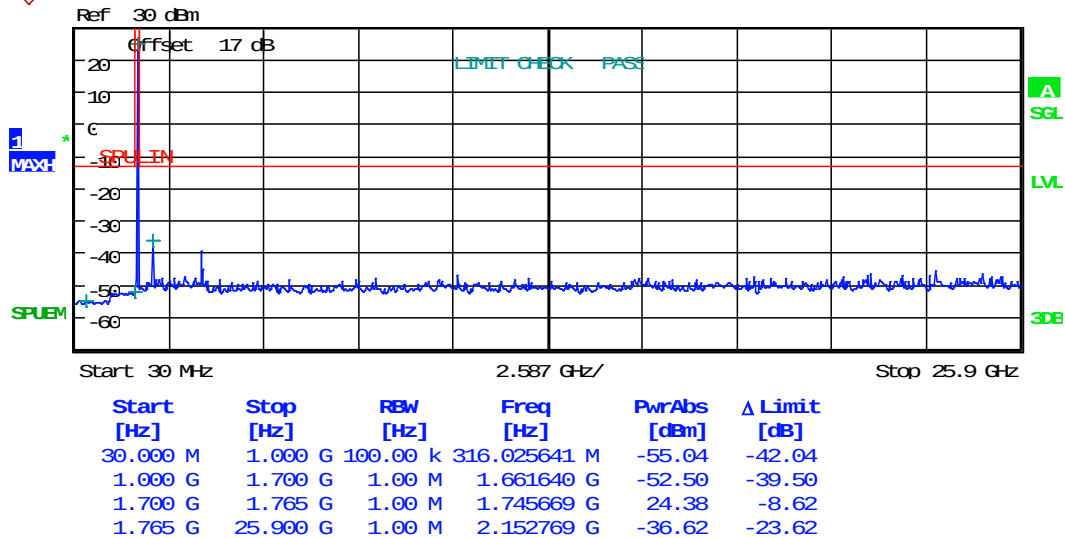


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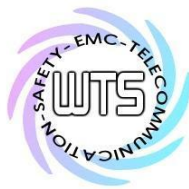


Report Number: W6M22106-21044-P-247

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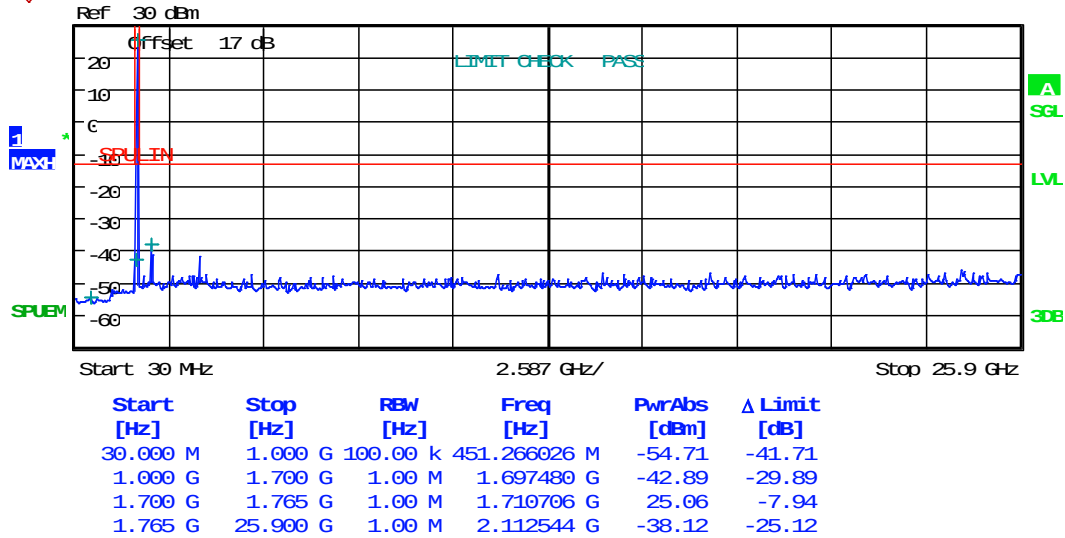
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Report Number: W6M22106-21044-P-247

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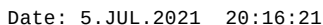
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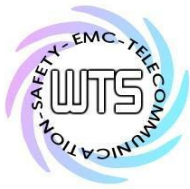


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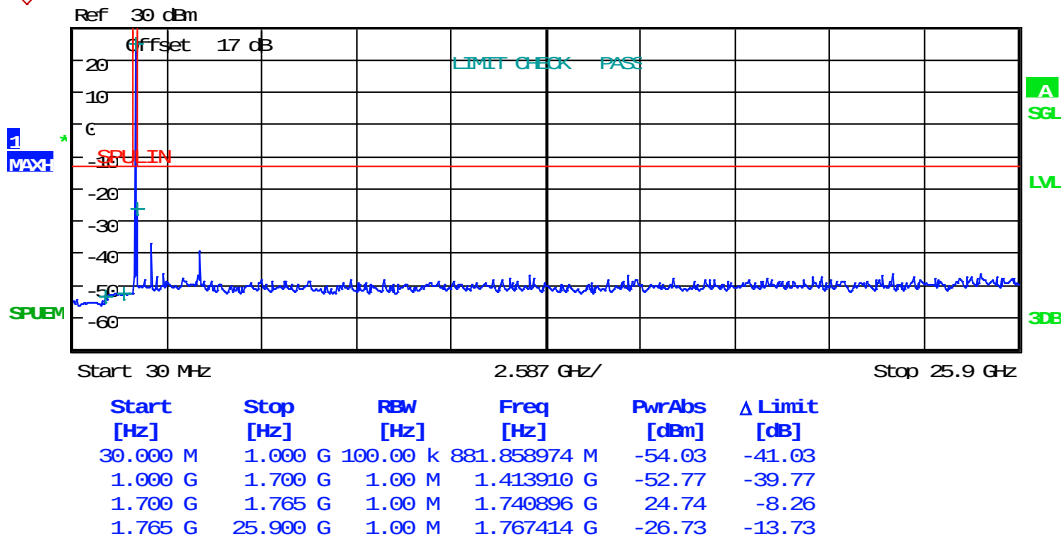
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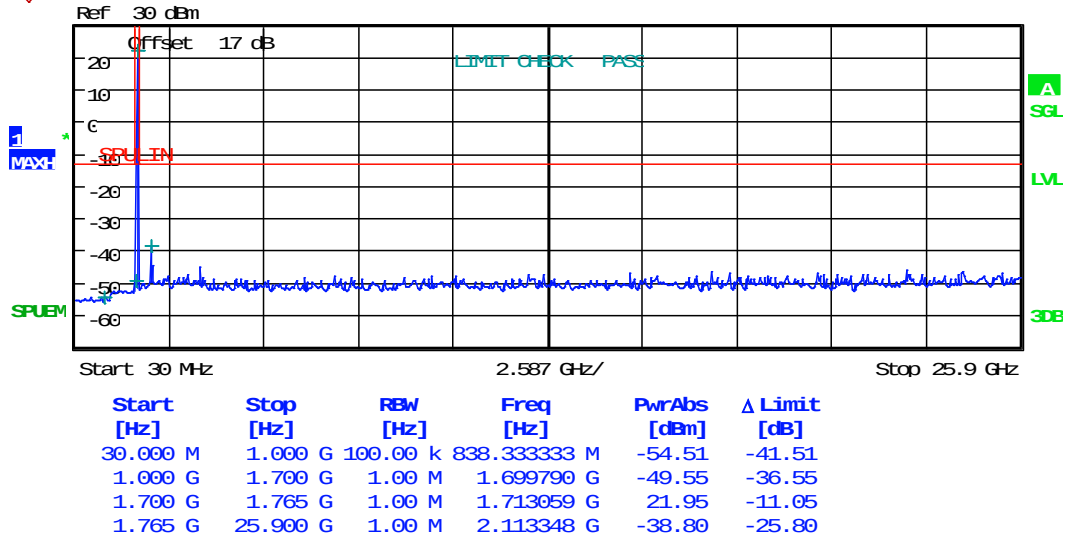
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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

20MHz

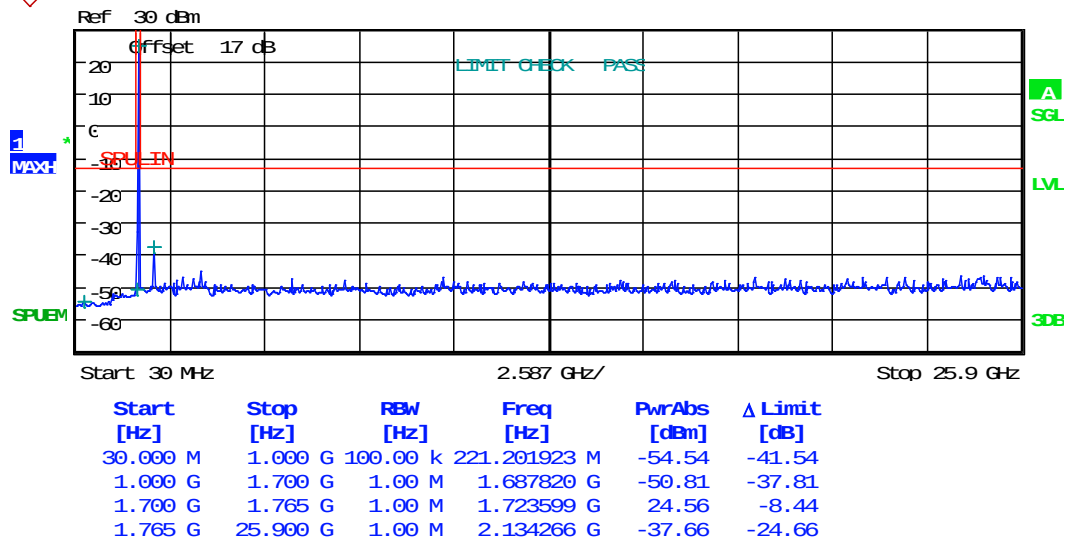


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Report Number: W6M22106-21044-P-247

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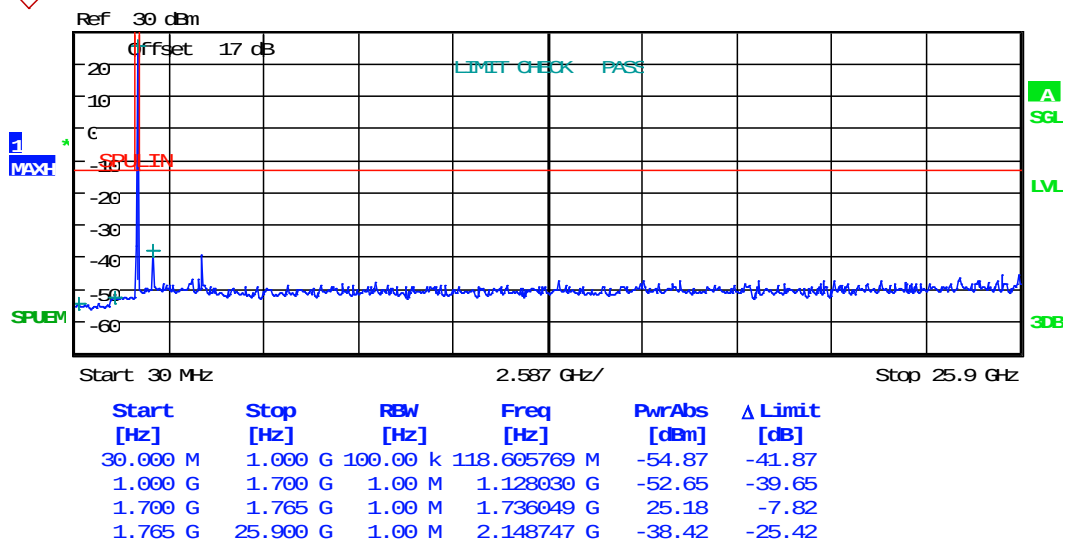


Date: 5.JUL.2021 20:19:34



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 20:19:59



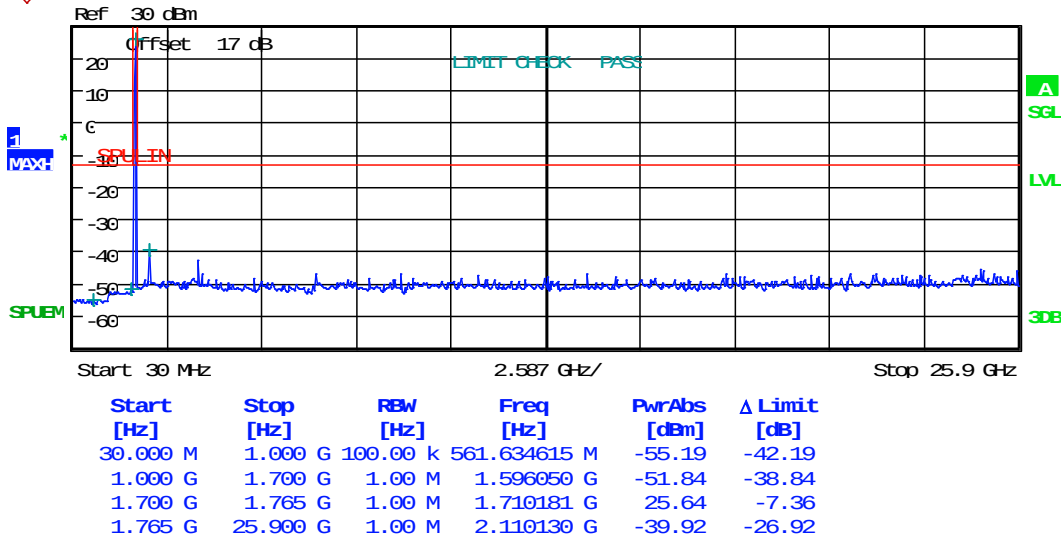
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

QPSK

1.4MHz



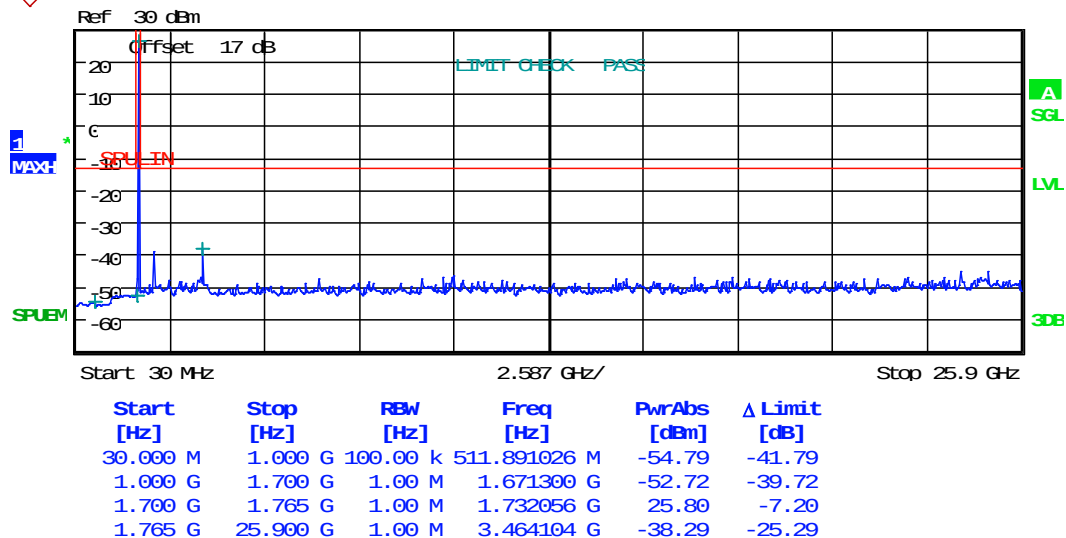
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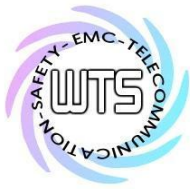
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

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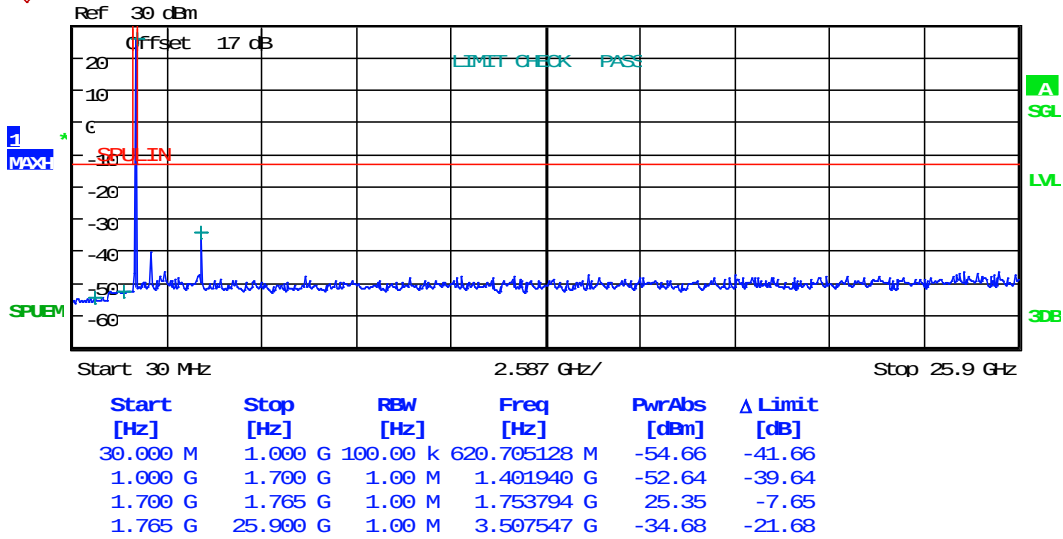
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FCC ID: GX9HYBRID



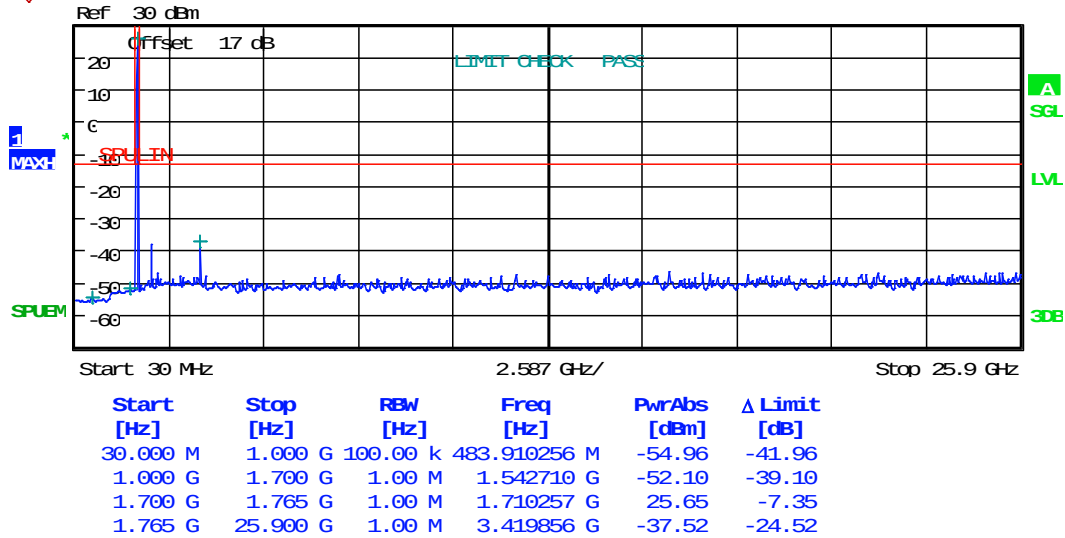
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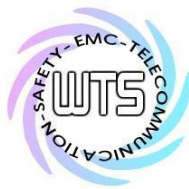
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

3MHz

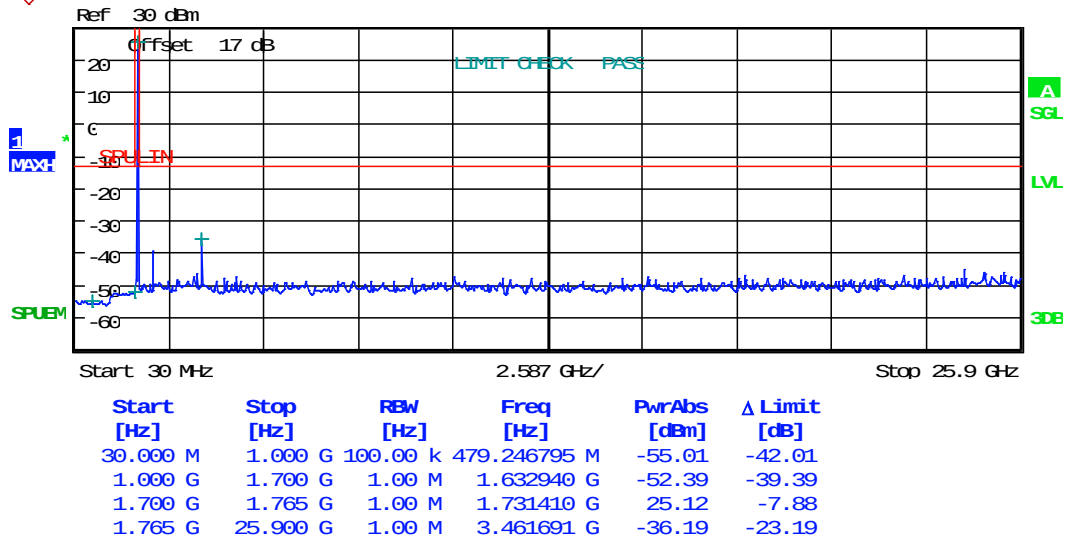


Date: 5.JUL.2021 20:05:44

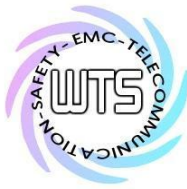


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

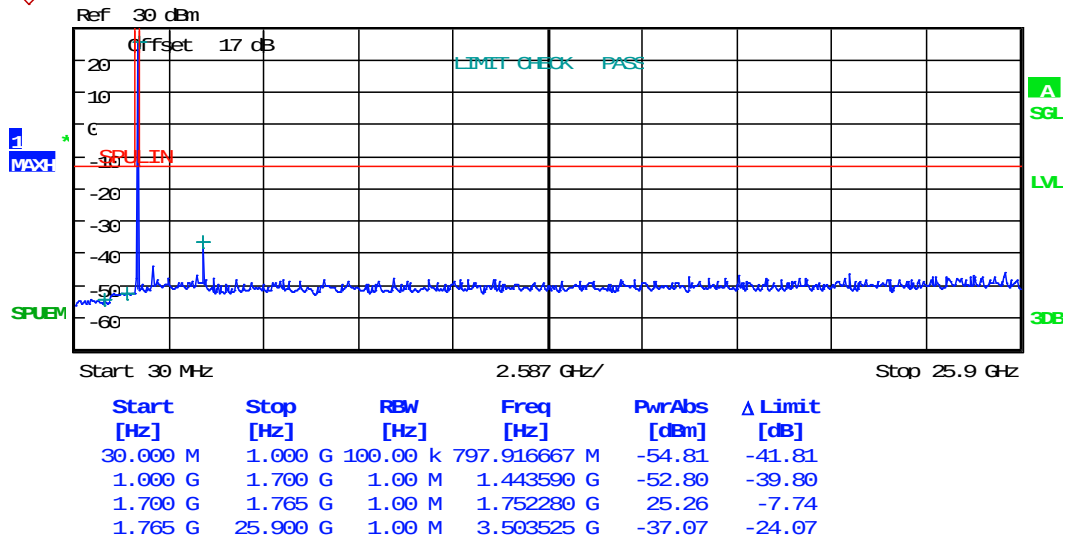


Date: 5.JUL.2021 20:05:24

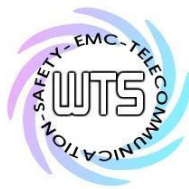


Report Number: W6M22106-21044-P-247

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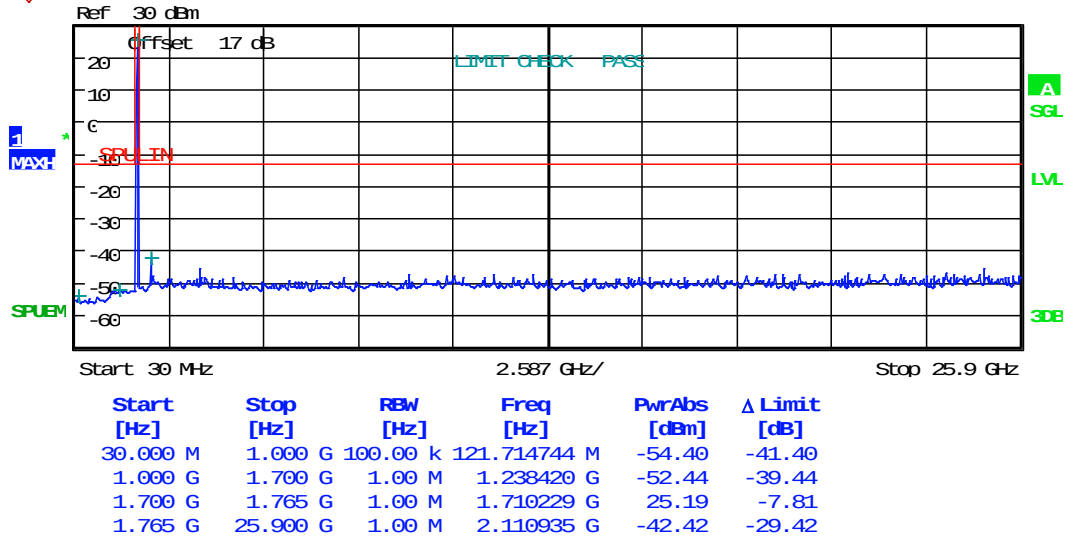
Date: 5.JUL.2021 20:05:02



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz

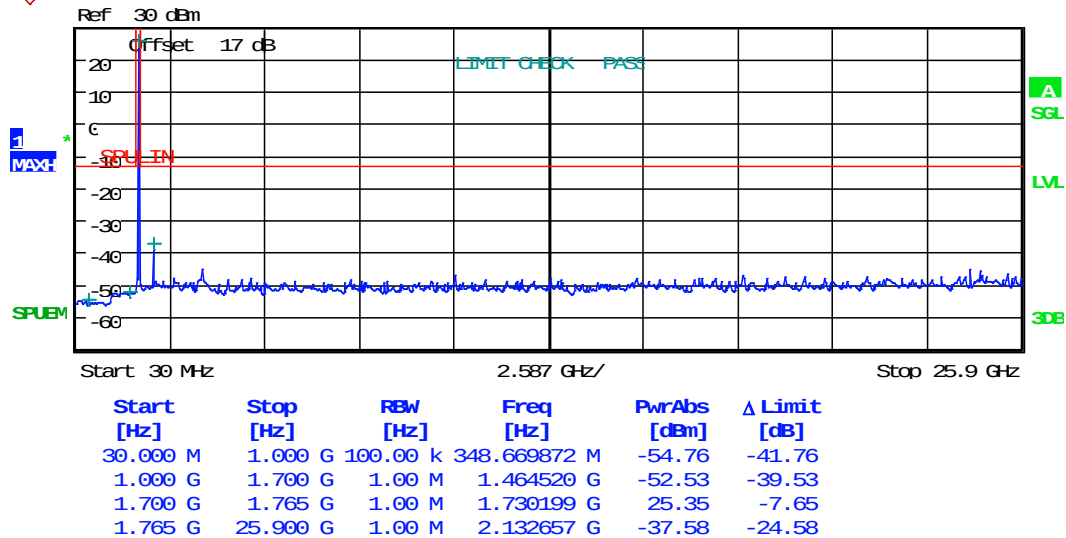


Date: 5.JUL.2021 20:09:17

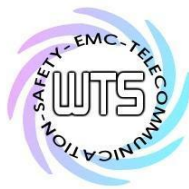


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

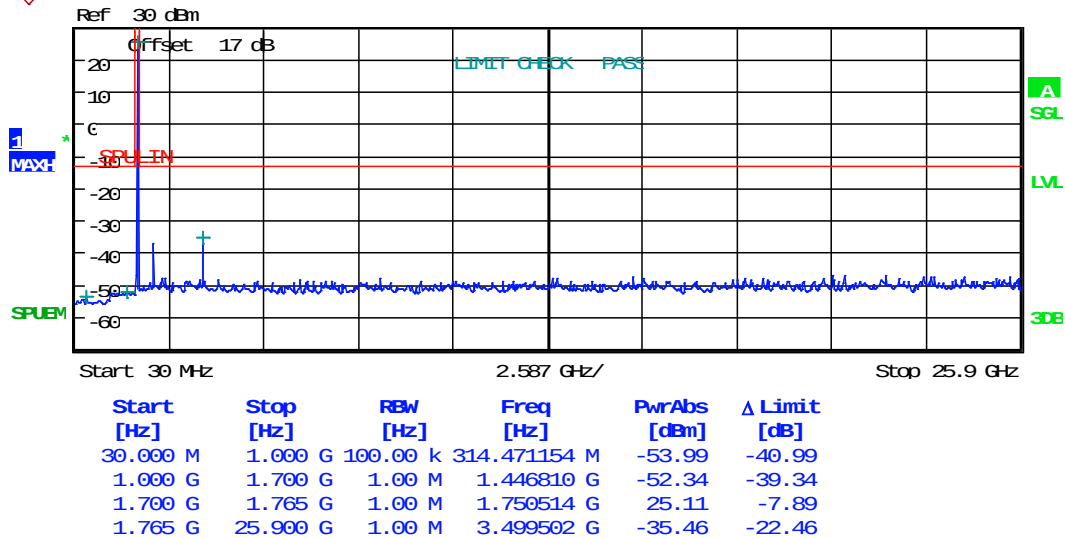


Date: 5.JUL.2021 20:08:48



Report Number: W6M22106-21044-P-247

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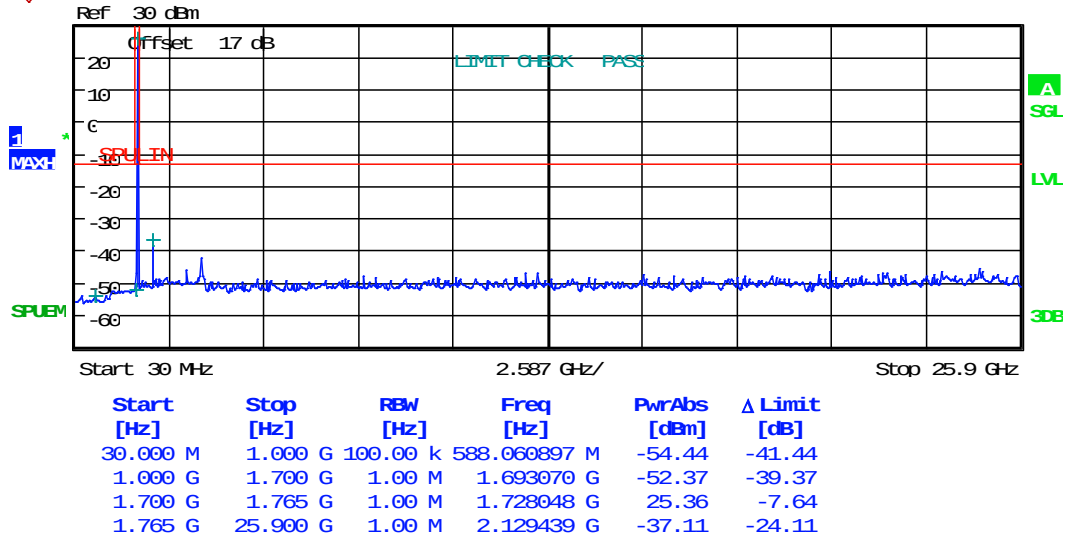
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10MHz

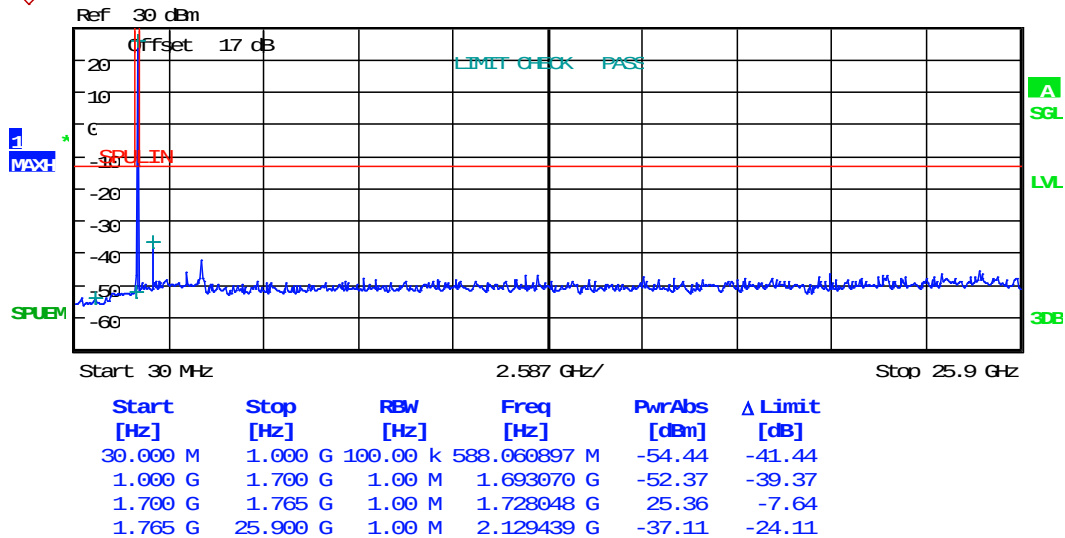


Date: 5.JUL.2021 20:14:49

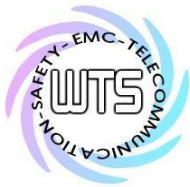


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



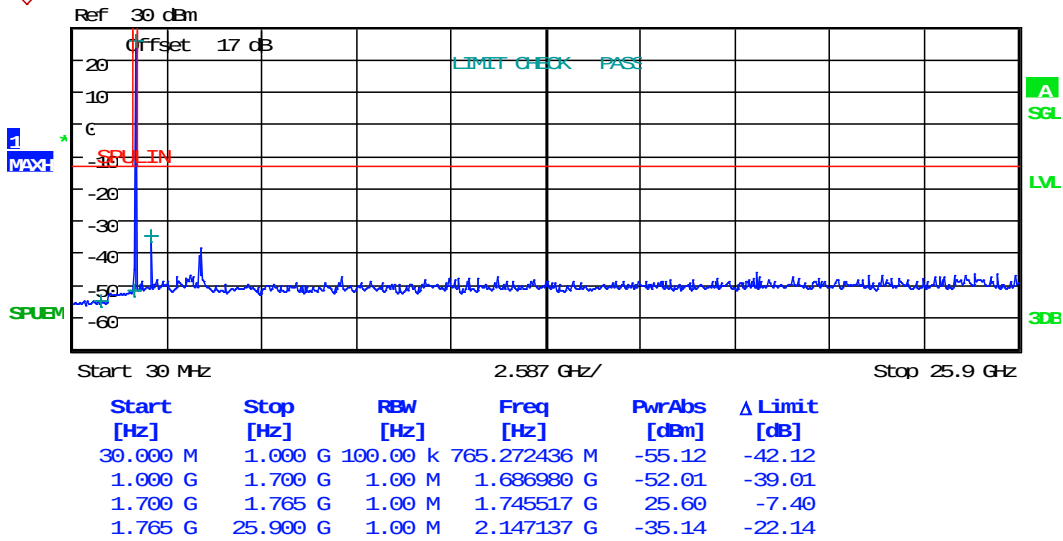
Date: 5.JUL.2021 20:14:34



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



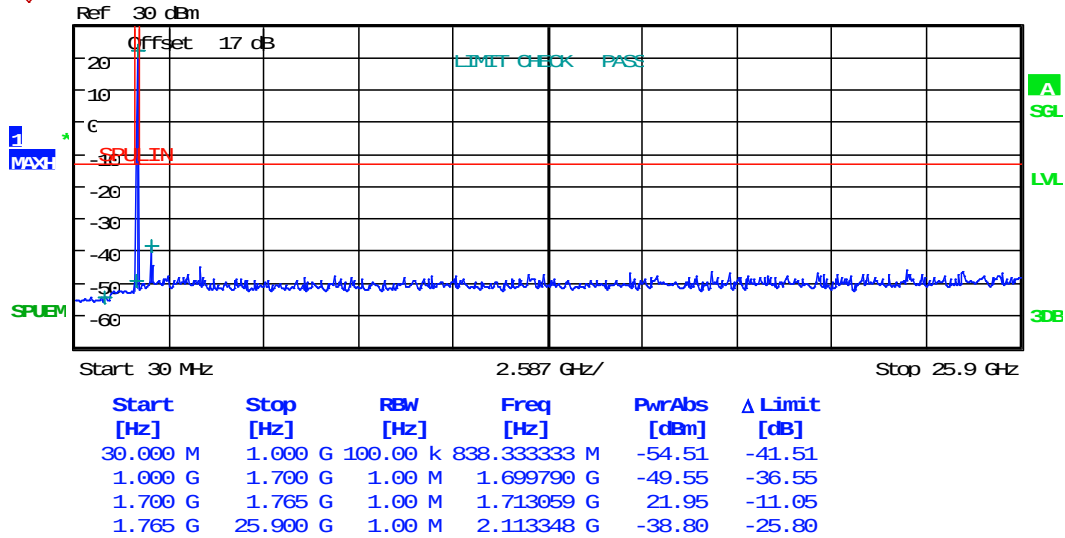
Date: 5.JUL.2021 20:14:12



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz

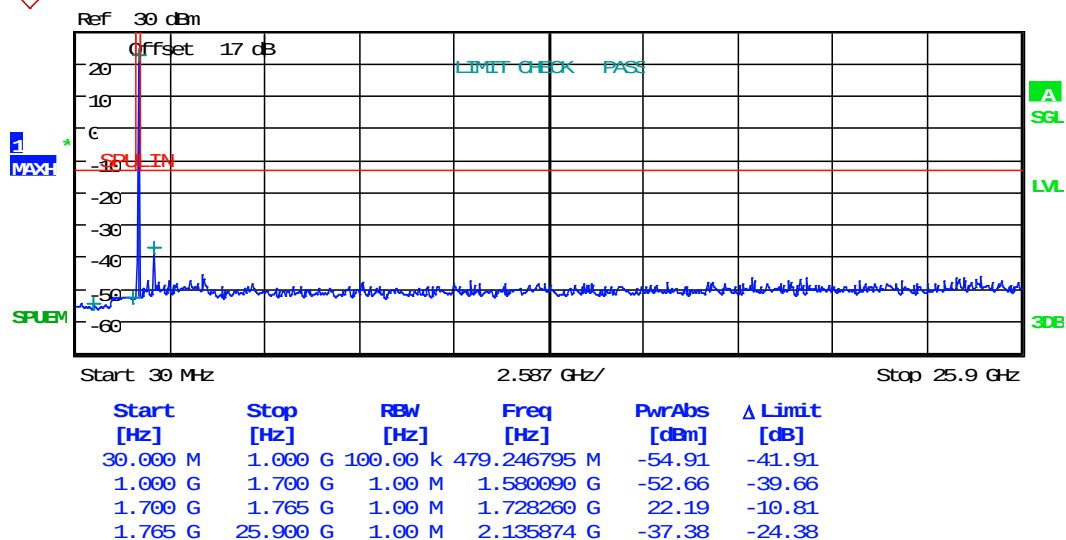


Date: 5.JUL.2021 20:18:02



Report Number: W6M22106-21044-P-247

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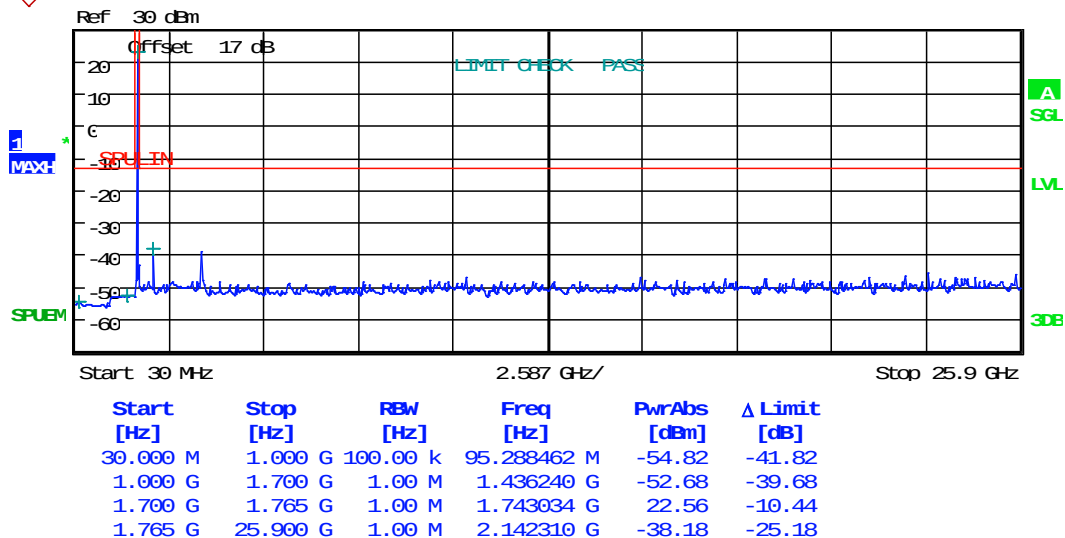
Date: 5.JUL.2021 20:17:37



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



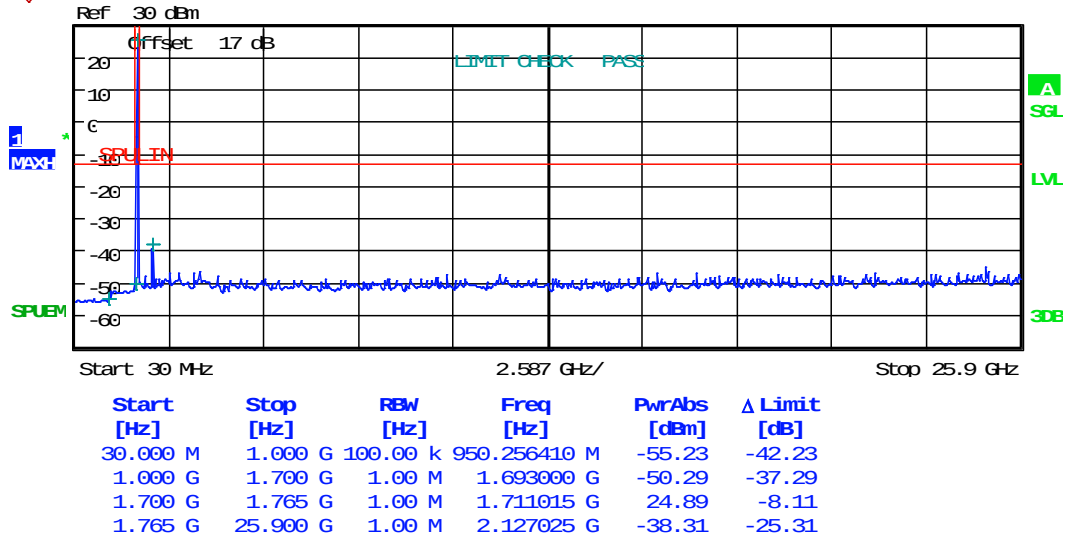
Date: 5.JUL.2021 20:17:07



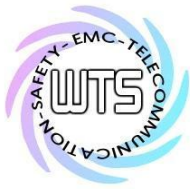
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

20MHz

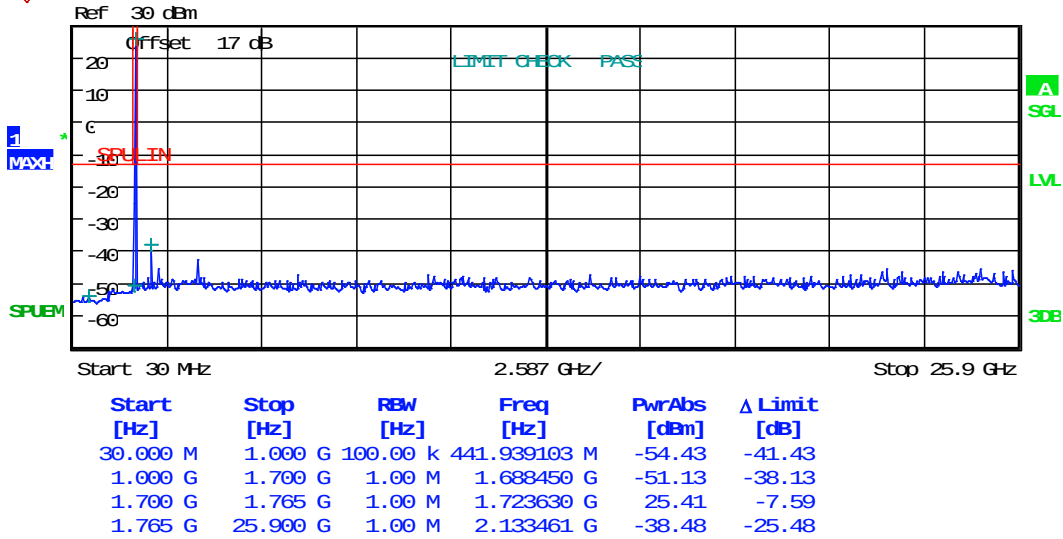


Date: 5.JUL.2021 20:21:03



Report Number: W6M22106-21044-P-247

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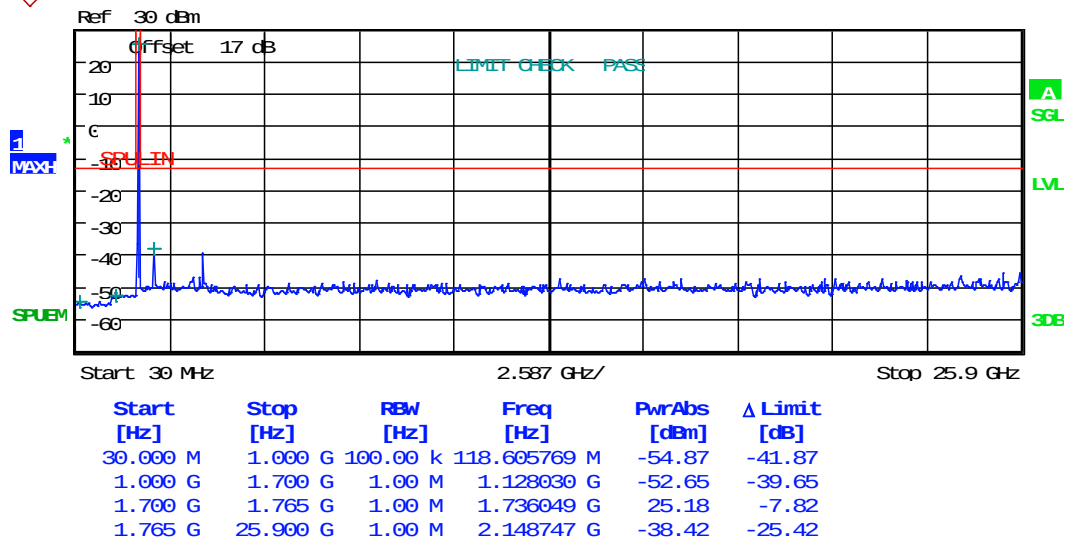
Date: 5.JUL.2021 20:20:41



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 20:20:19



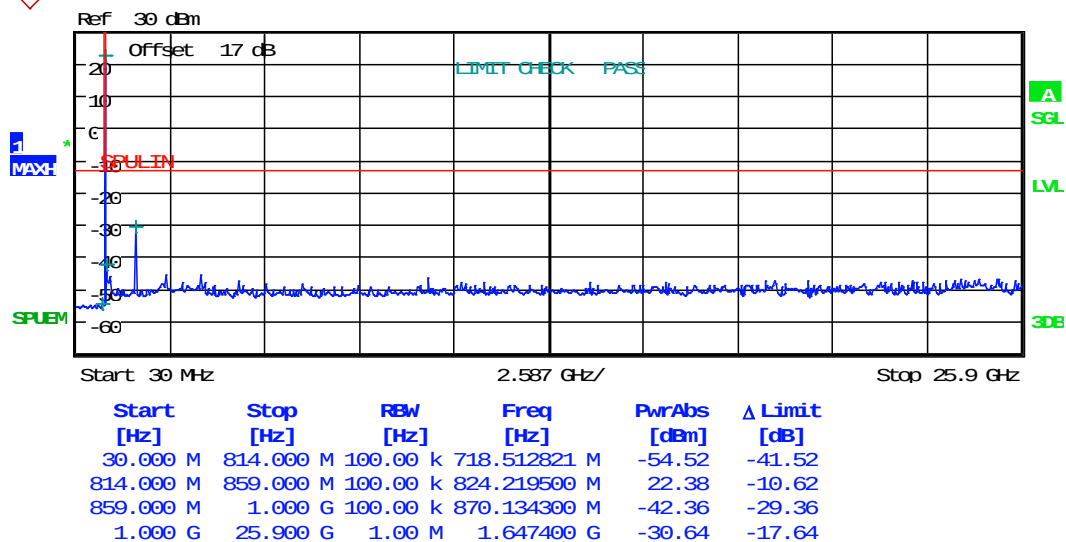
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

Band V

16QAM

1.4MHz

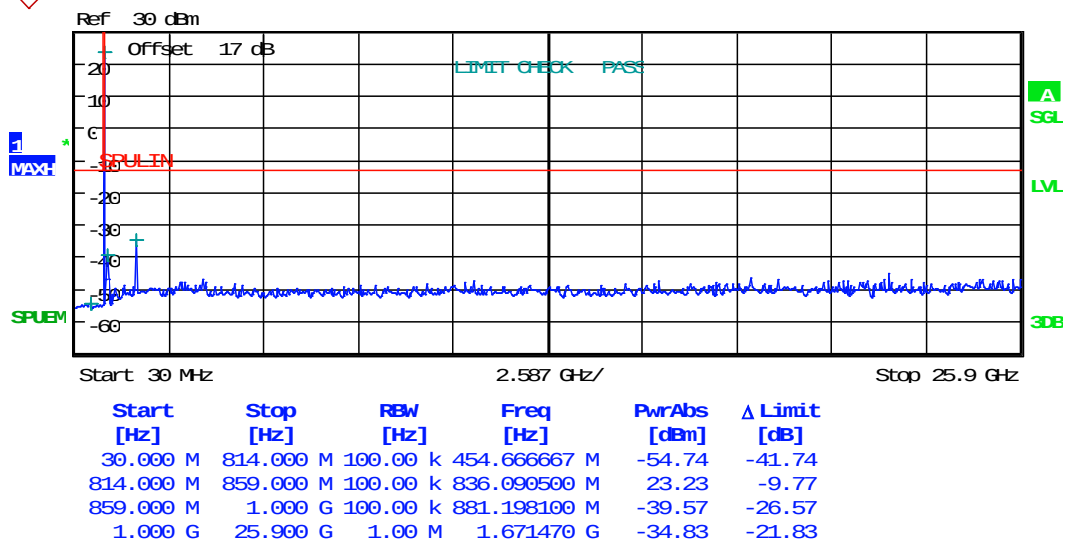


Date: 5.JUL.2021 20:27:56



Report Number: W6M22106-21044-P-247

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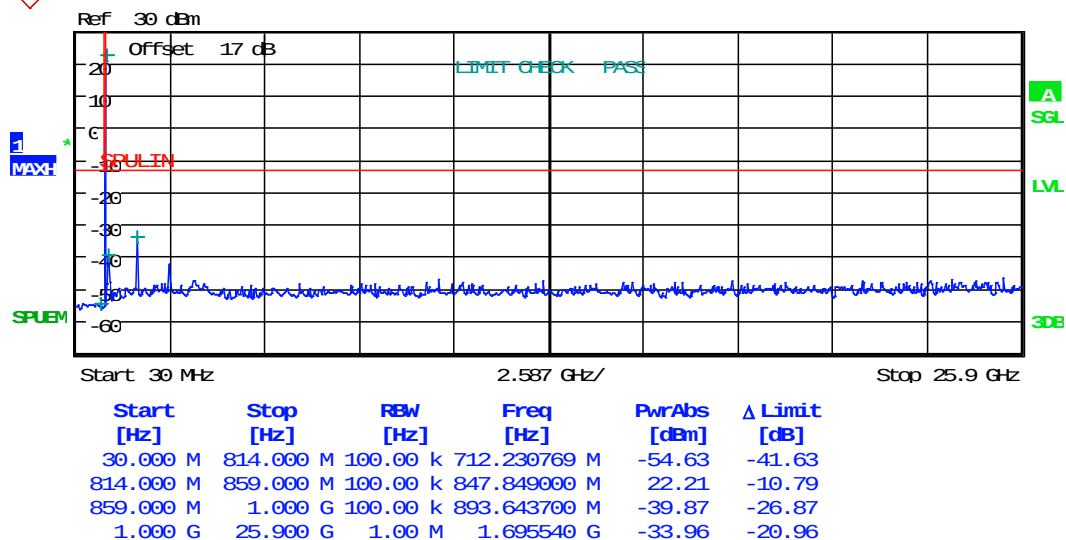


Date: 5.JUL.2021 20:28:27



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



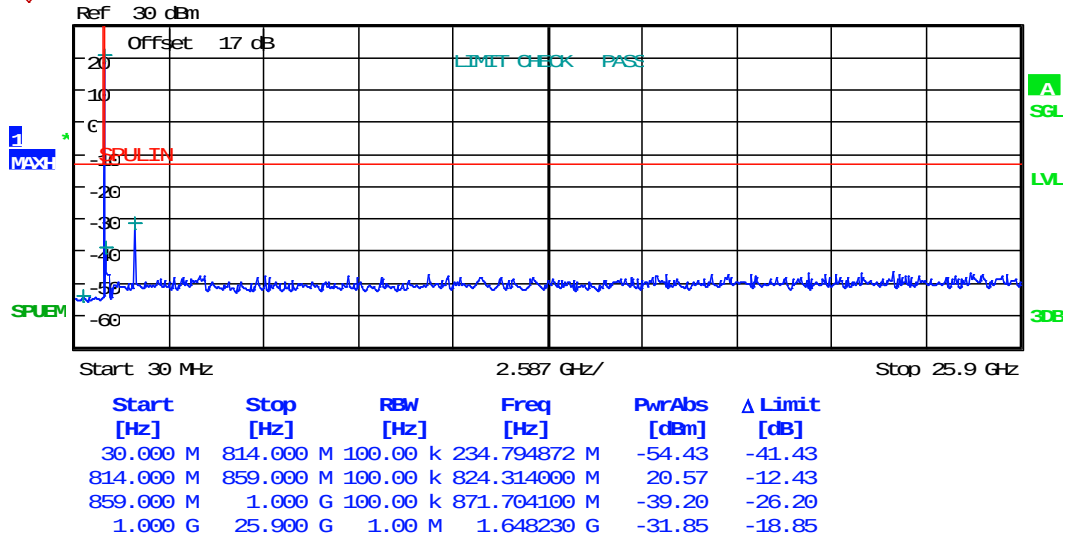
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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

3MHz

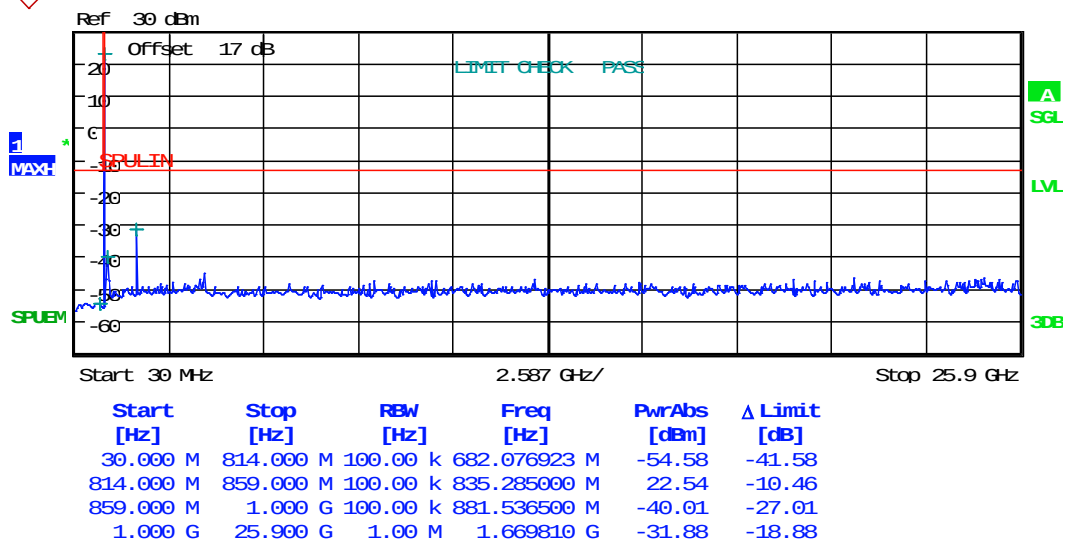


Date: 5.JUL.2021 20:31:48



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

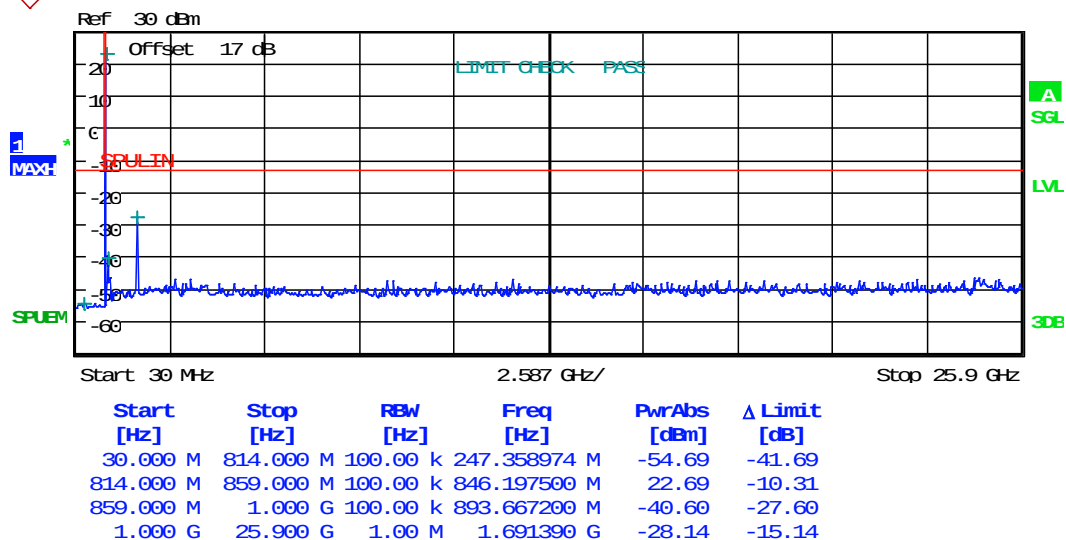


Date: 5.JUL.2021 20:32:14



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 20:33:03

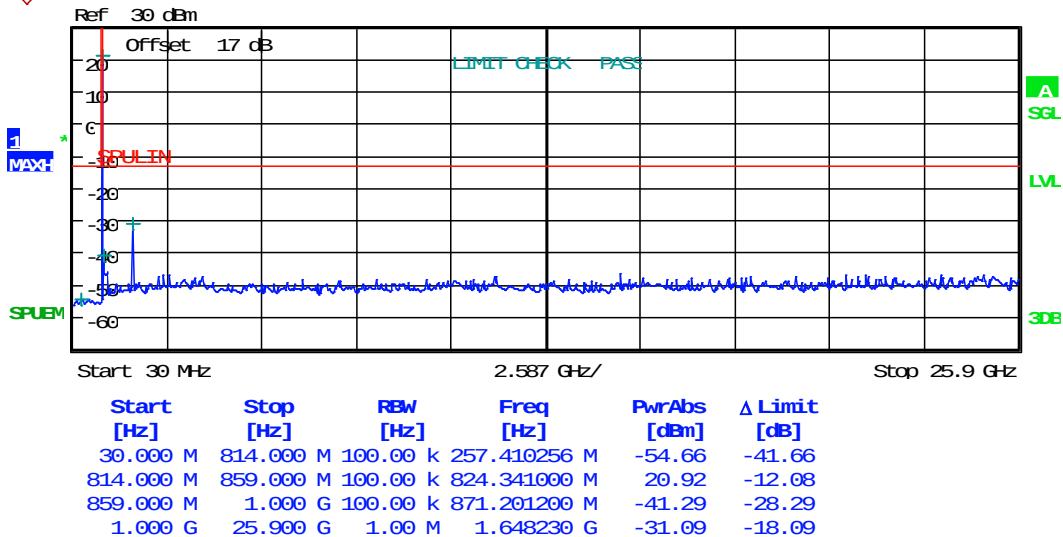


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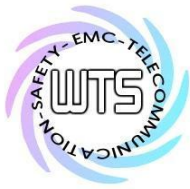
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz

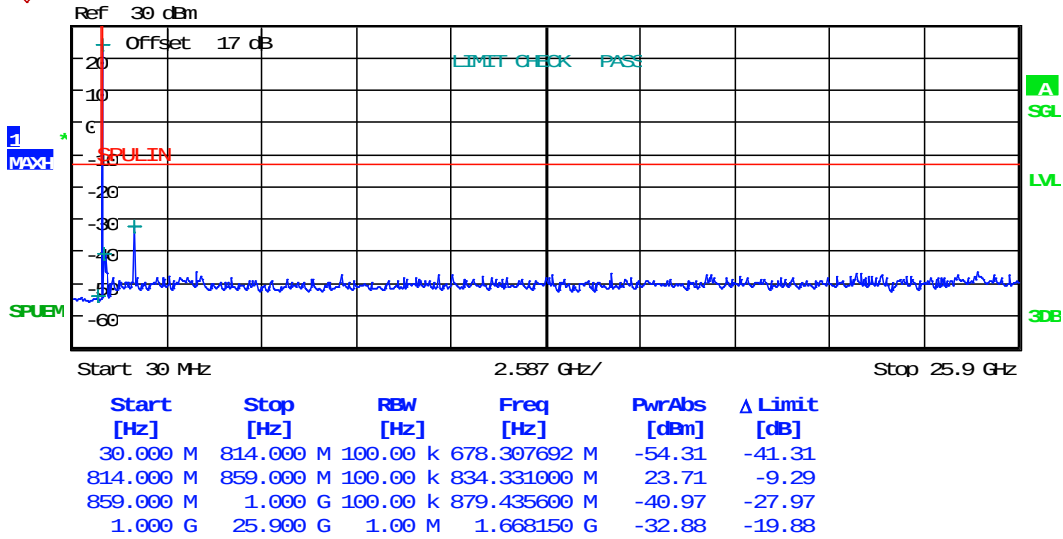


Date: 5.JUL.2021 20:36:58



Report Number: W6M22106-21044-P-247

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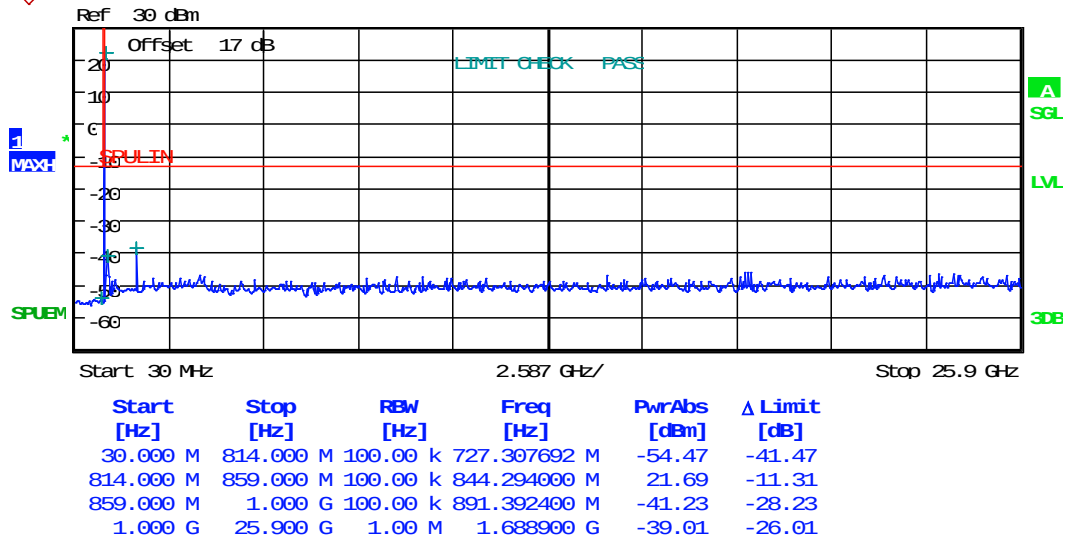


Date: 5.JUL.2021 20:37:18



Report Number: W6M22106-21044-P-247

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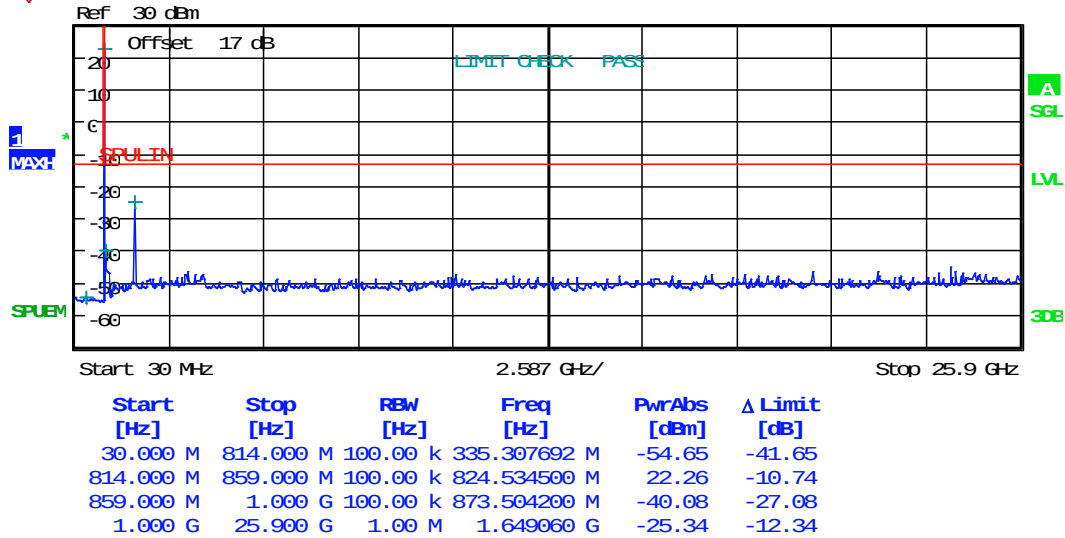
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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

10MHz

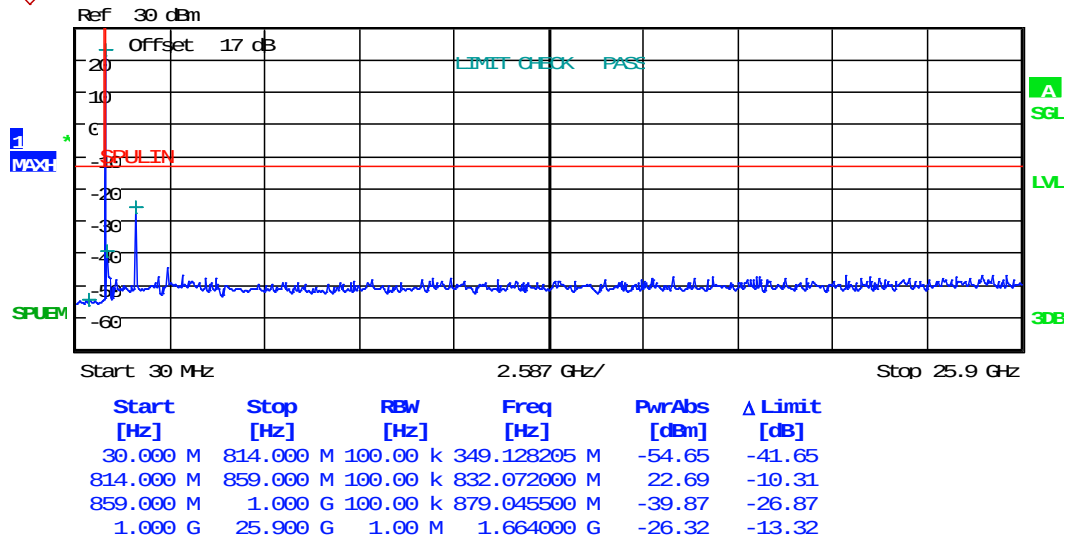


Date: 5.JUL.2021 20:40:43



Report Number: W6M22106-21044-P-247

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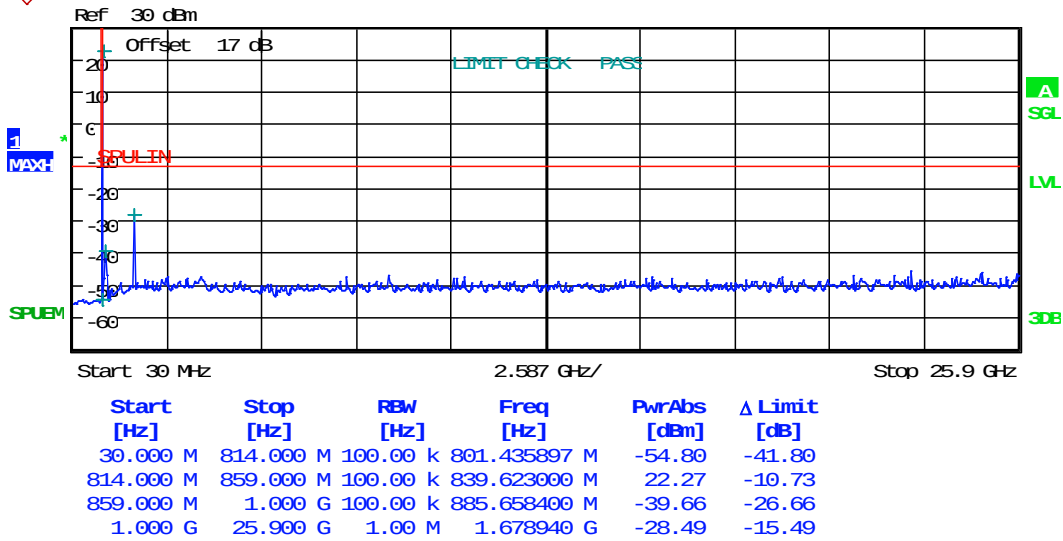


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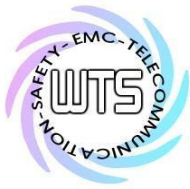


Report Number: W6M22106-21044-P-247

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Date: 5.JUL.2021 20:41:40



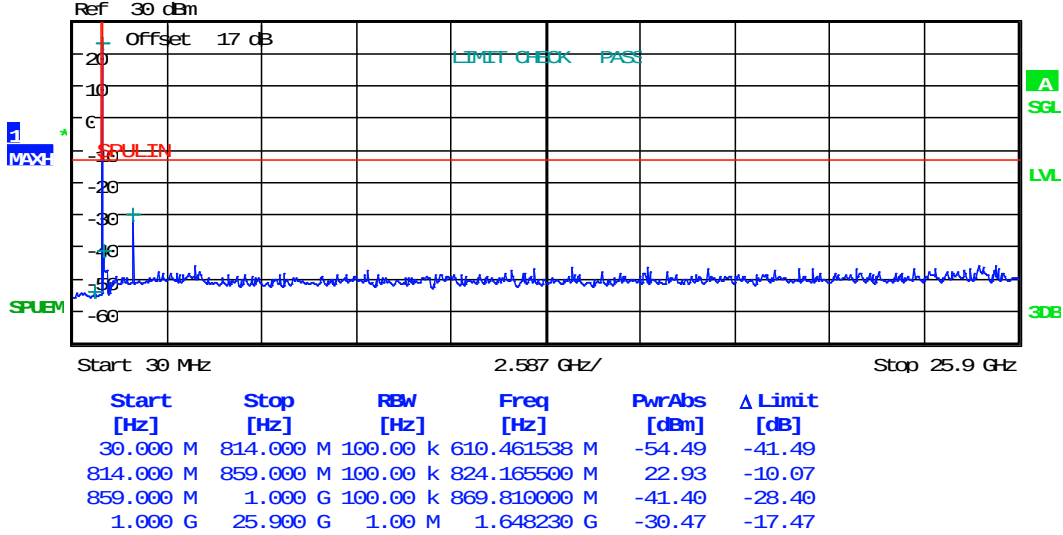
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

QPSK

1.4MHz

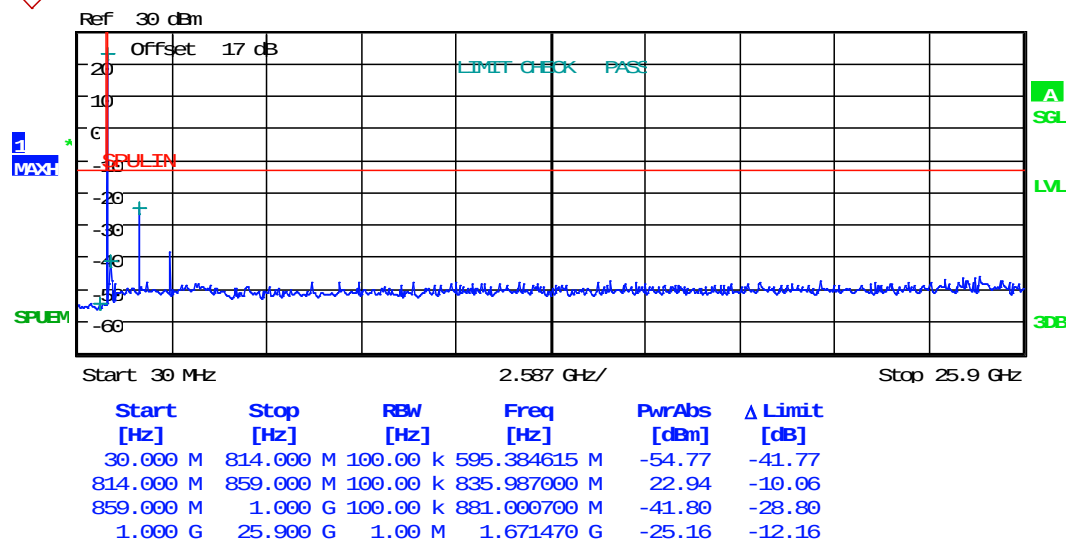


Date: 5.JUL.2021 20:30:43



Report Number: W6M22106-21044-P-247

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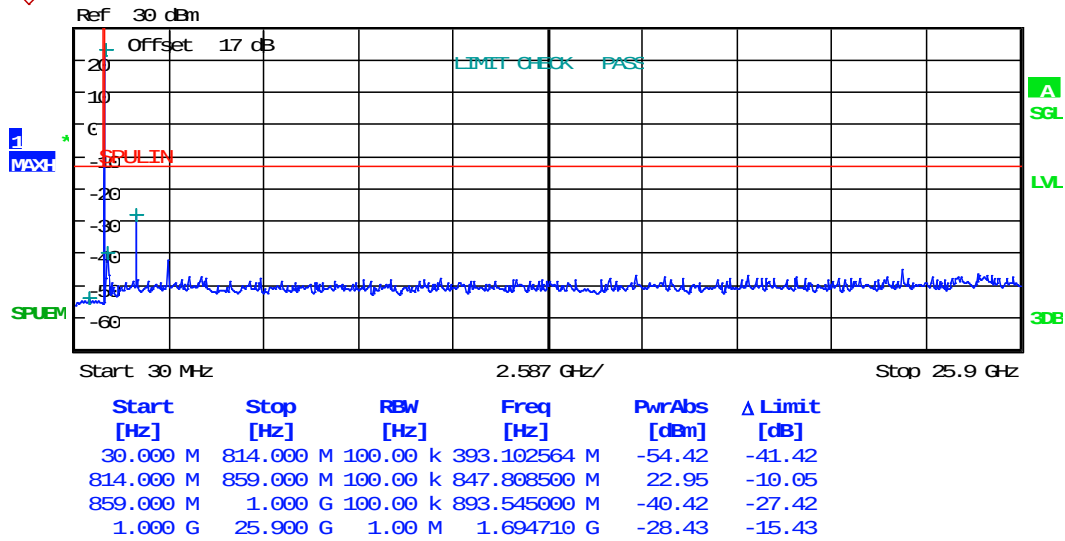


Date: 5.JUL.2021 20:30:20



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 20:29:57

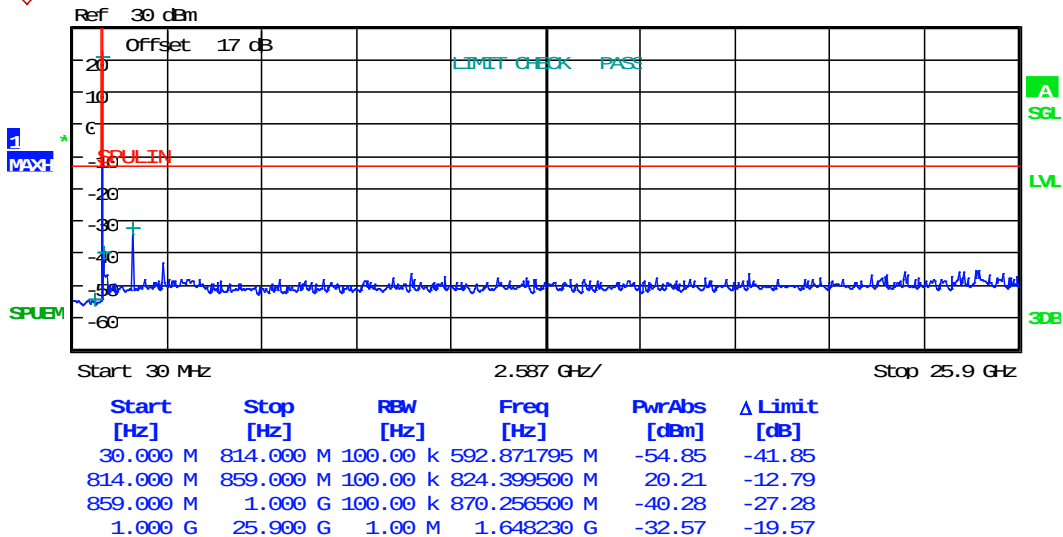


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

3MHz

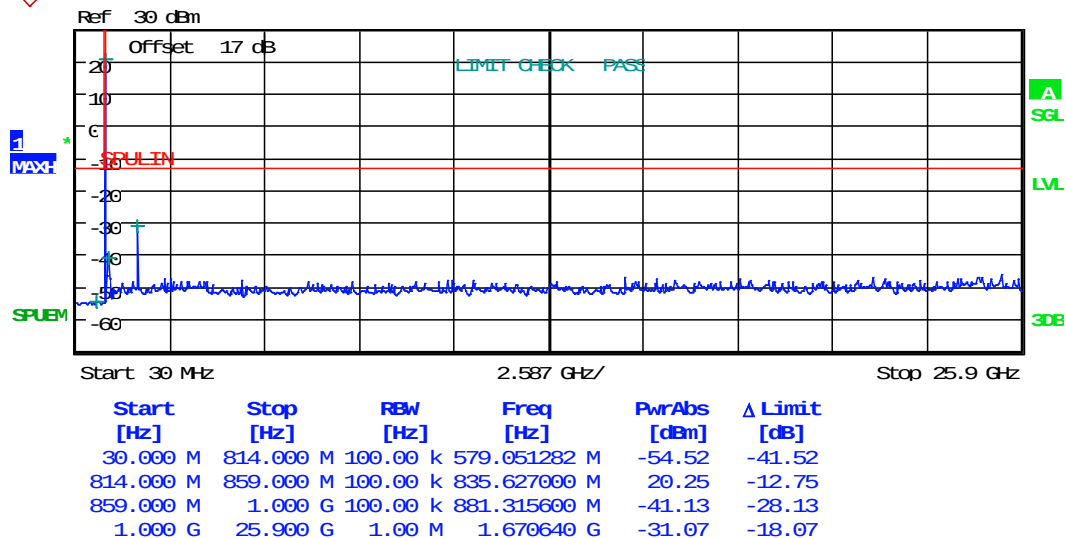


Date: 5.JUL.2021 20:34:24



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

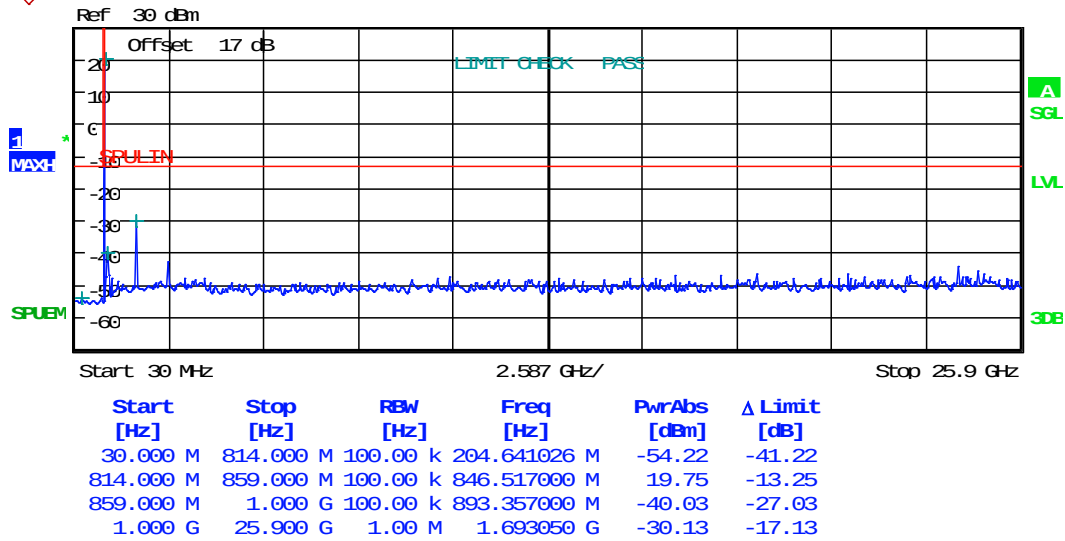


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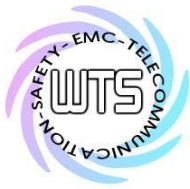


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



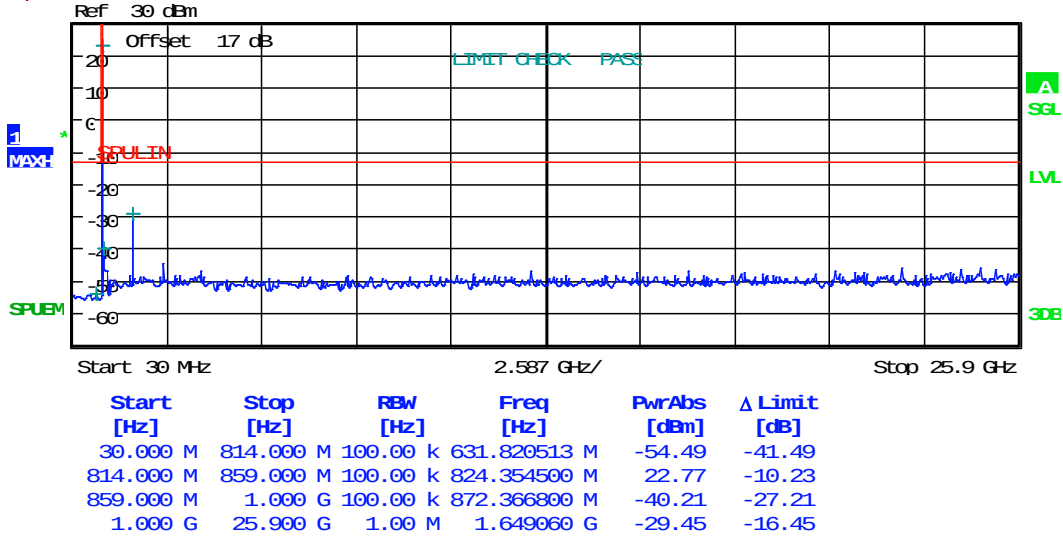
Date: 5.JUL.2021 20:33:31



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz

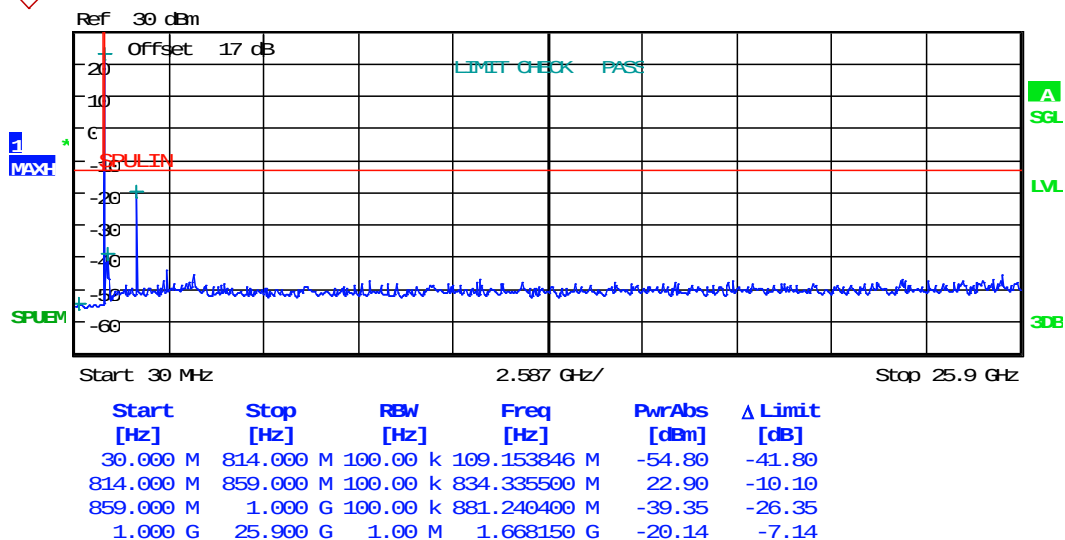


Date: 5.JUL.2021 20:39:28



Report Number: W6M22106-21044-P-247

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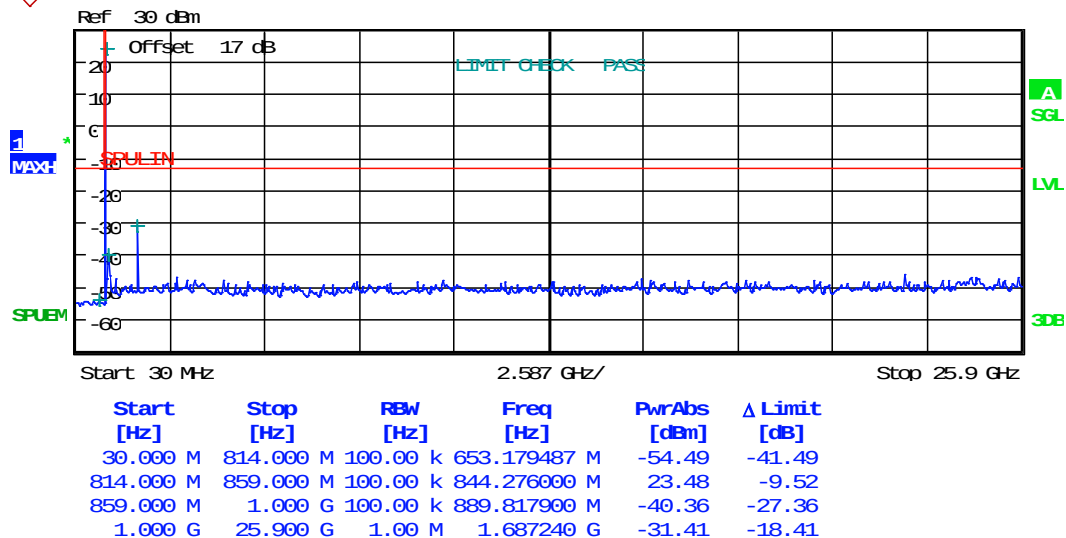


Date: 5.JUL.2021 20:39:09



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 20:38:47

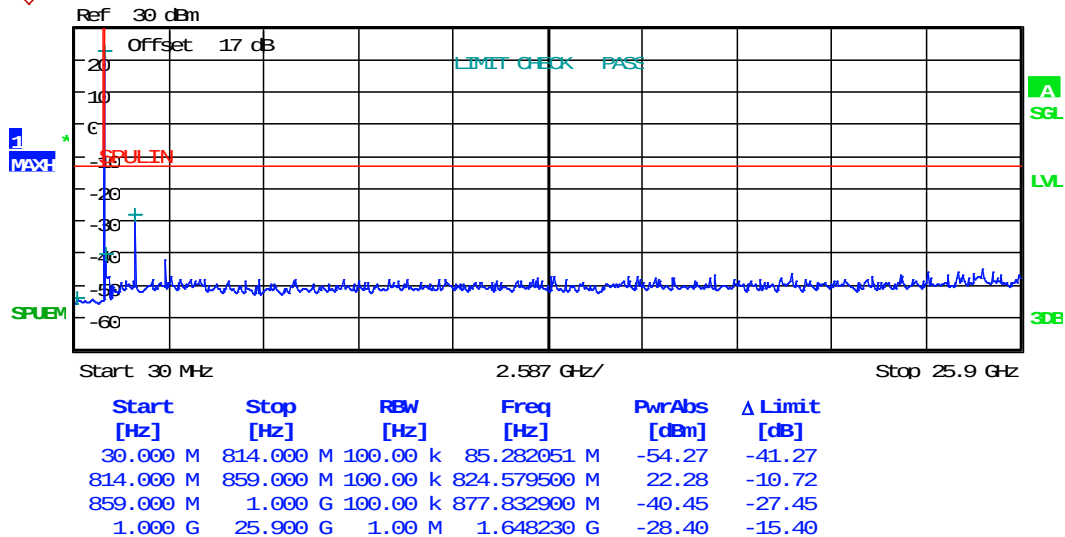


Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

10MHz

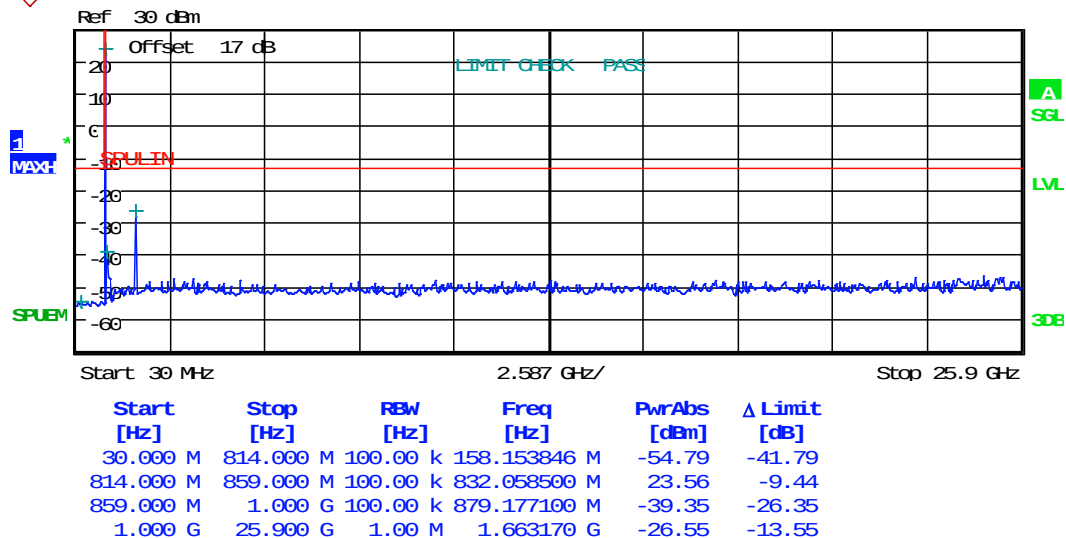


Date: 5.JUL.2021 20:42:48



Report Number: W6M22106-21044-P-247

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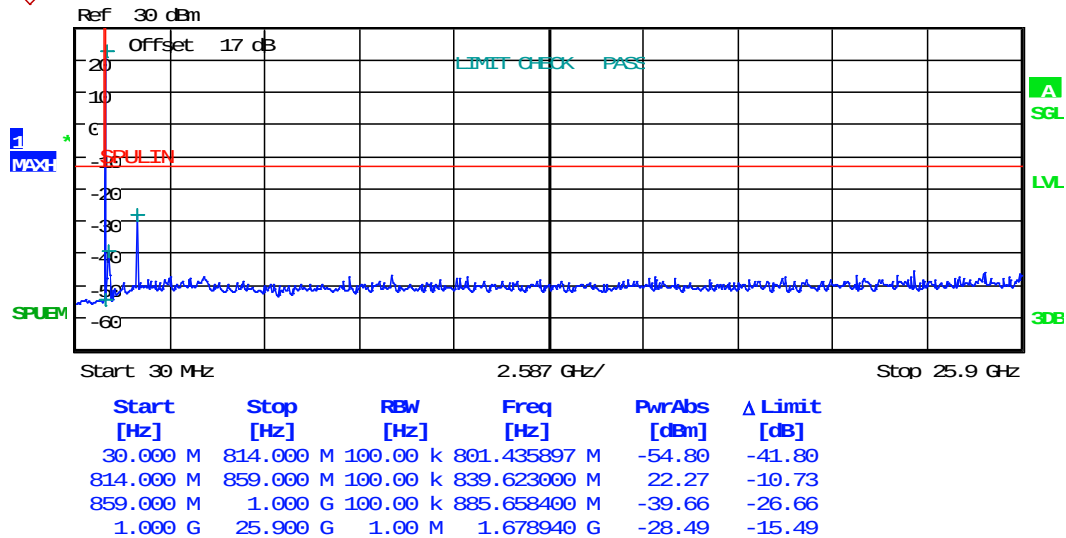


Date: 5.JUL.2021 20:42:26



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 20:42:07



Worldwide Testing Services(Taiwan) Co., Ltd.

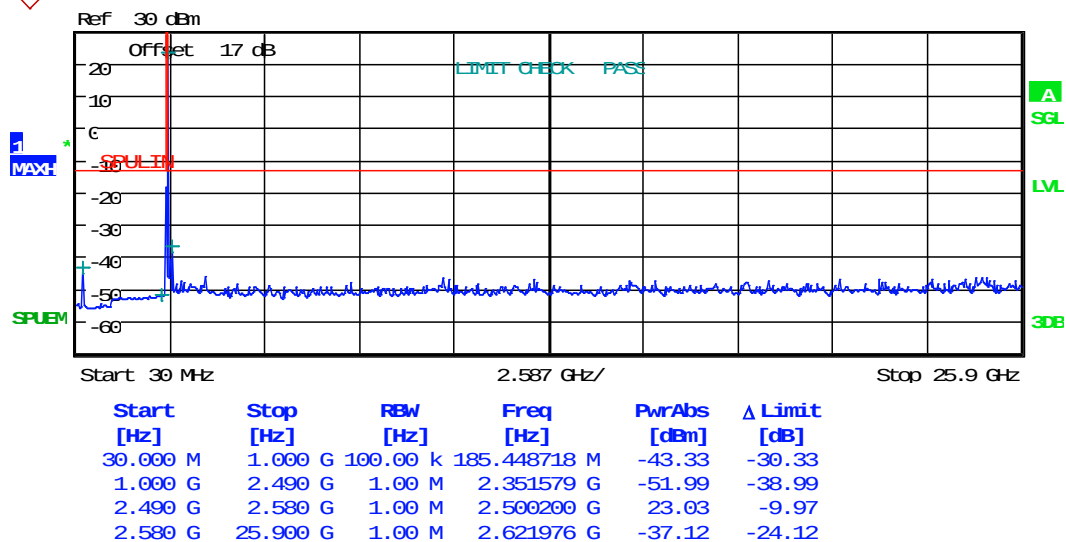
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

Band VII

16QAM

5MHz



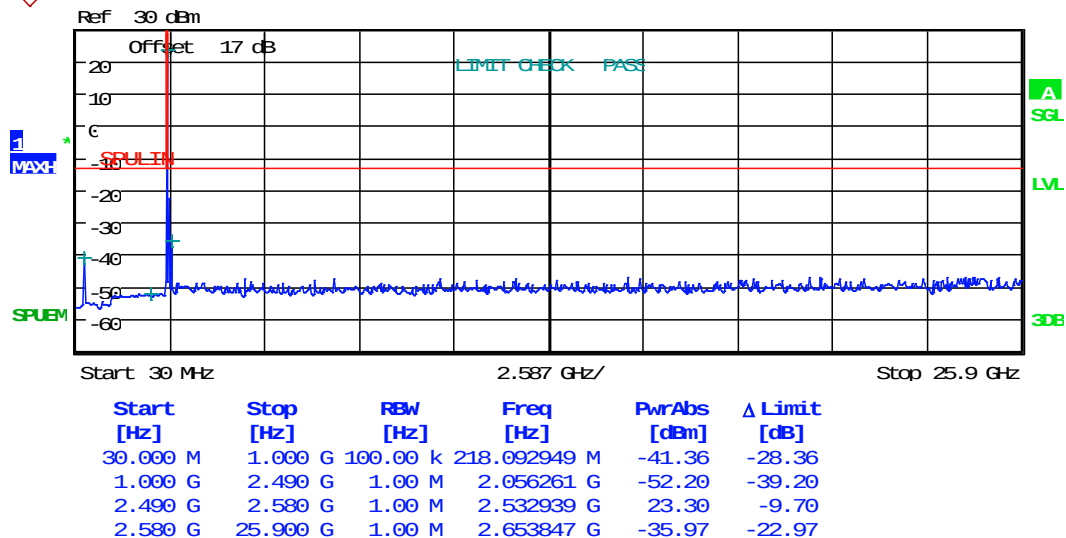
Date: 5.JUL.2021 20:48:23



Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

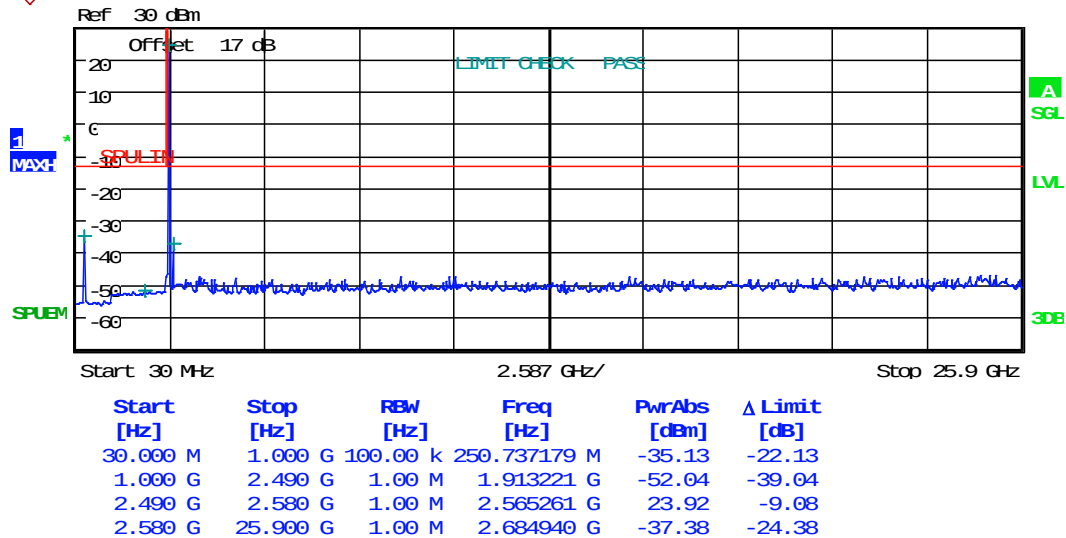


Date: 5.JUL.2021 20:48:47



Report Number: W6M22106-21044-P-247

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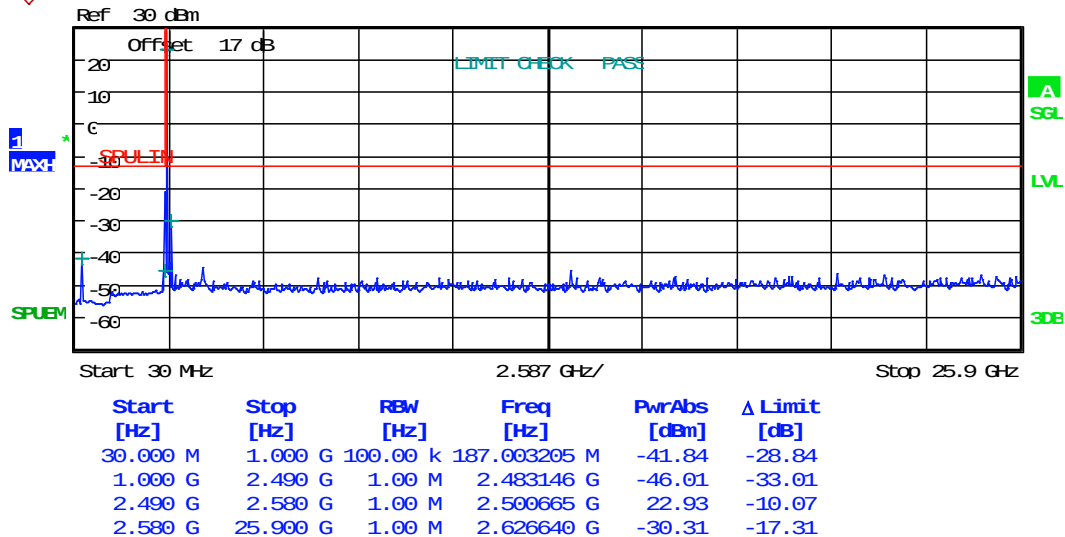
Date: 5.JUL.2021 20:49:21



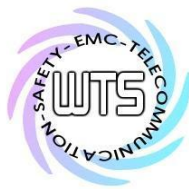
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

10MHz

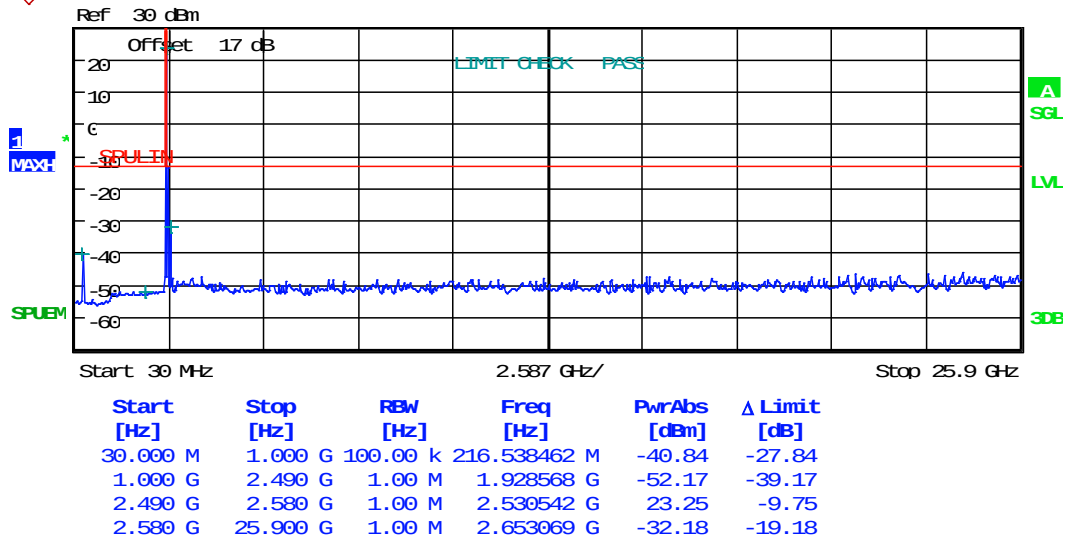


Date: 5.JUL.2021 20:52:49



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



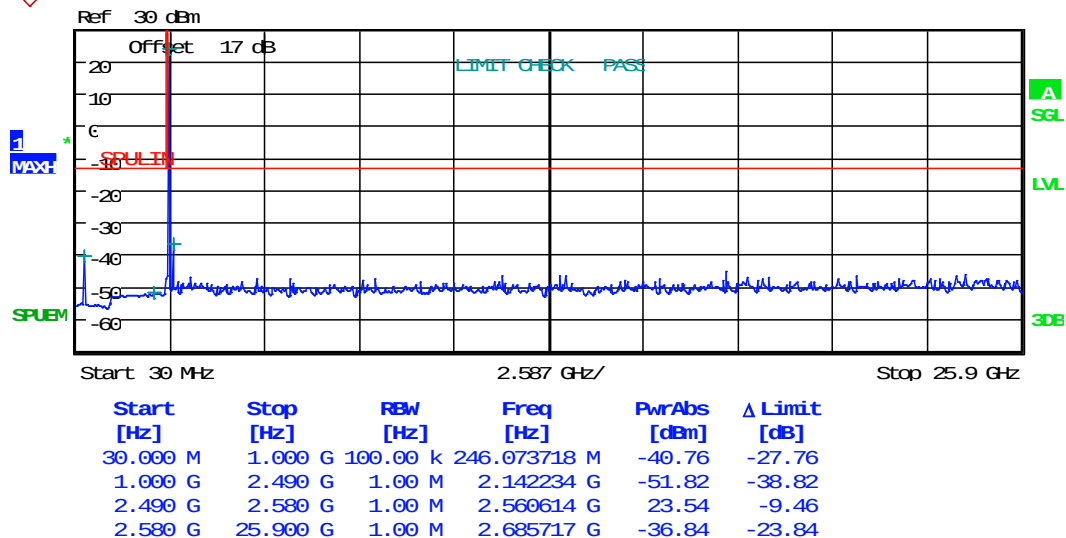
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Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



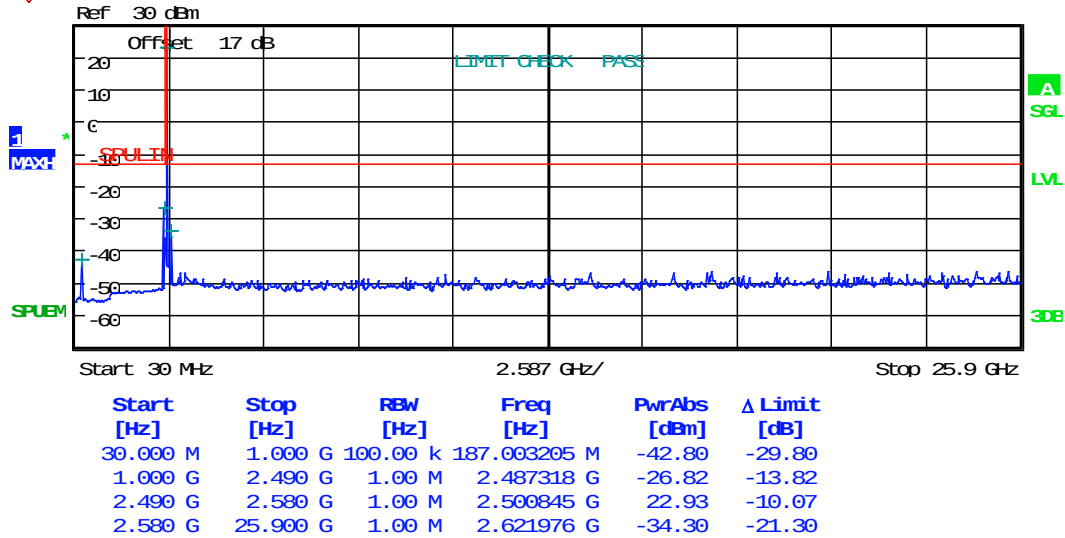
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Report Number: W6M22106-21044-P-247

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15MHz

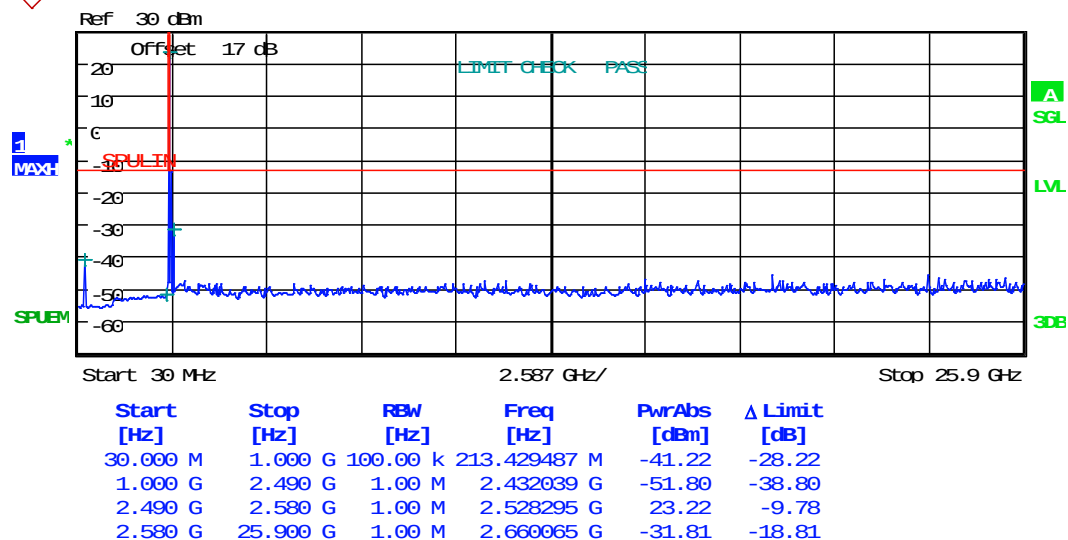


Date: 5.JUL.2021 21:01:23



Report Number: W6M22106-21044-P-247

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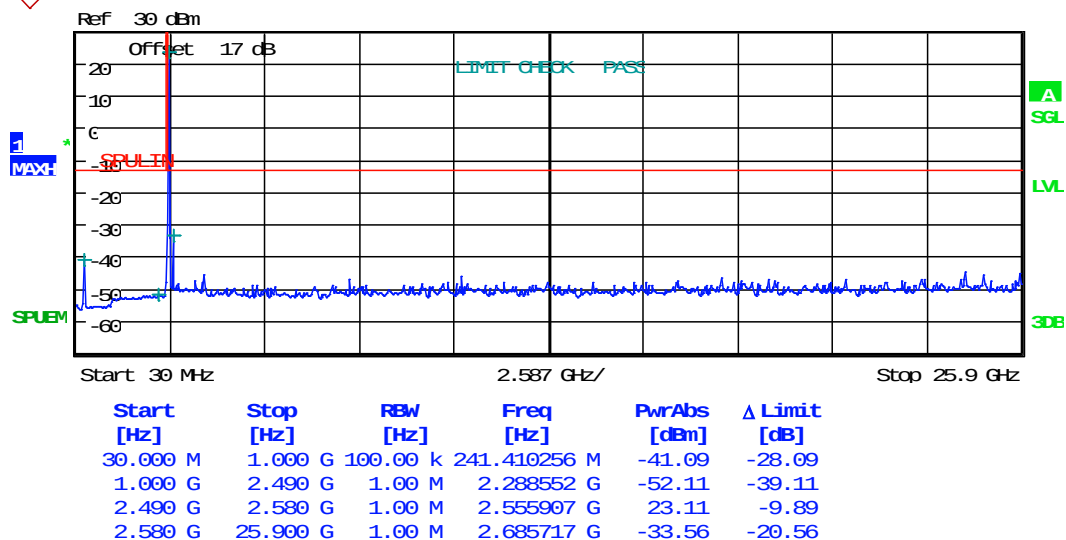


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Report Number: W6M22106-21044-P-247

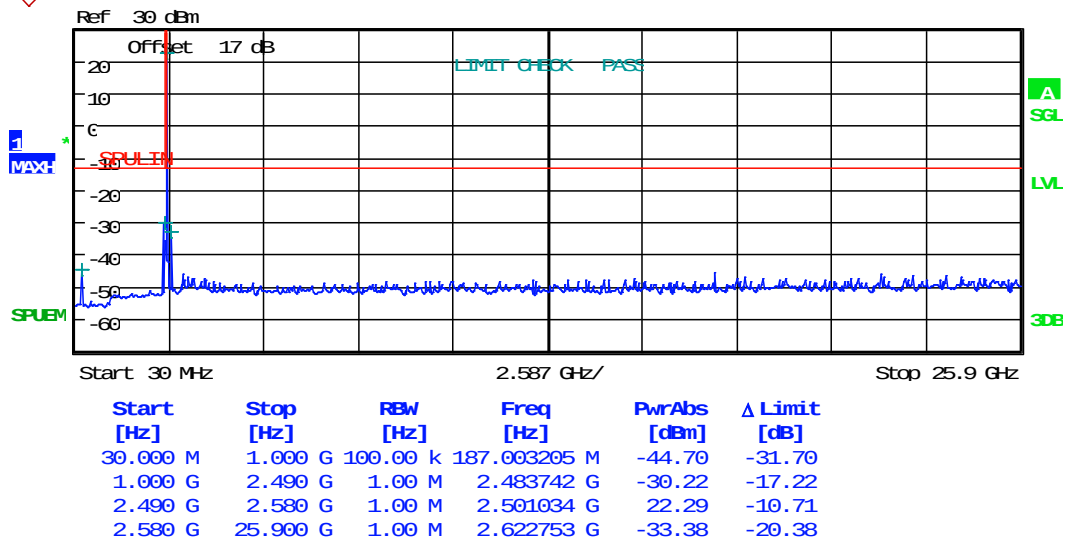
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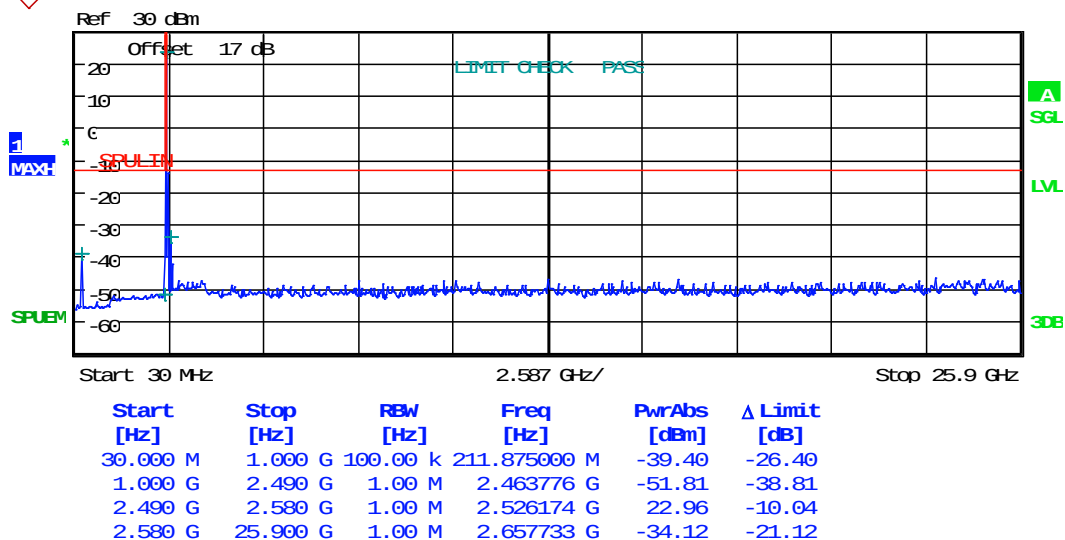


Date: 5.JUL.2021 21:05:59



Report Number: W6M22106-21044-P-247

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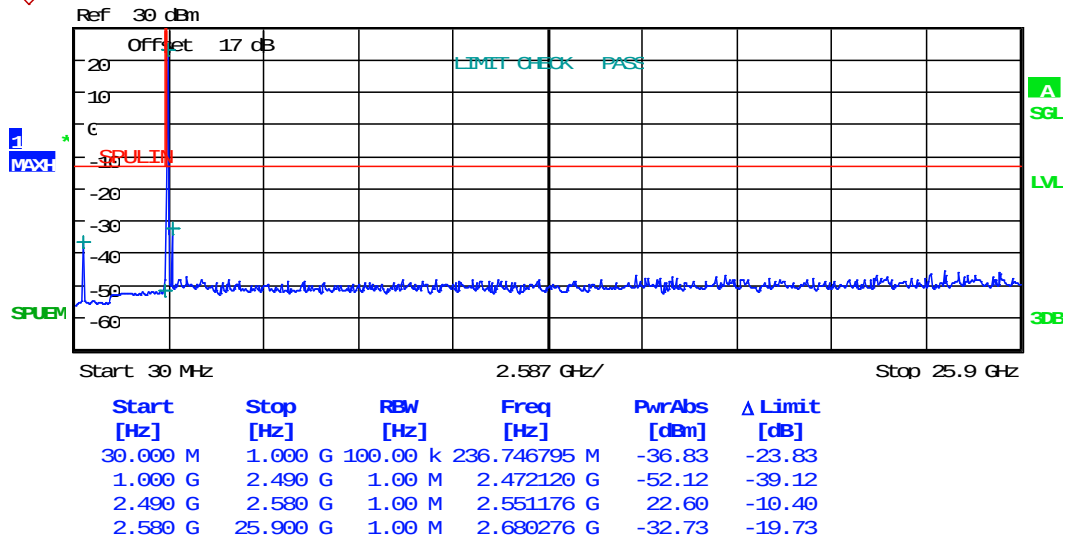


Date: 5.JUL.2021 21:06:18

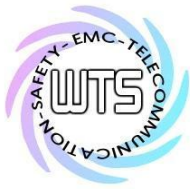


Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 21:06:37



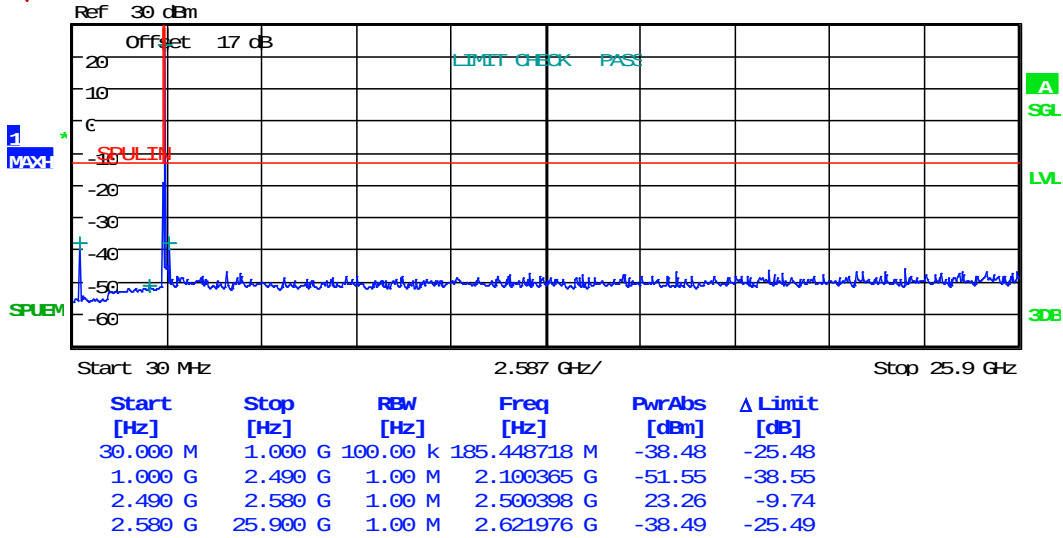
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

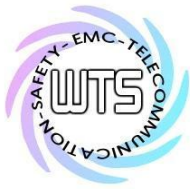
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QPSK

5MHz

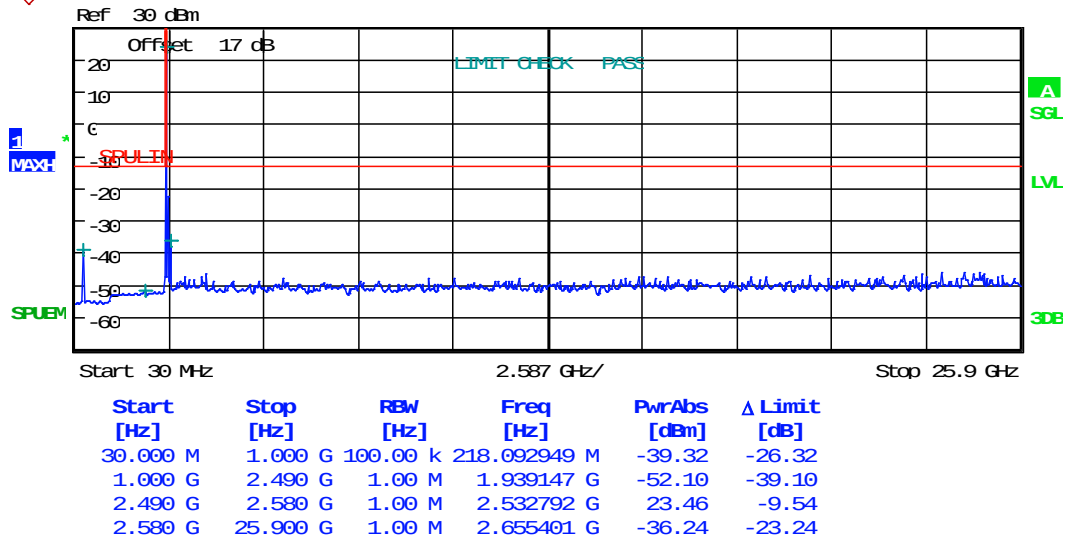


Date: 5.JUL.2021 20:50:20



Report Number: W6M22106-21044-P-247

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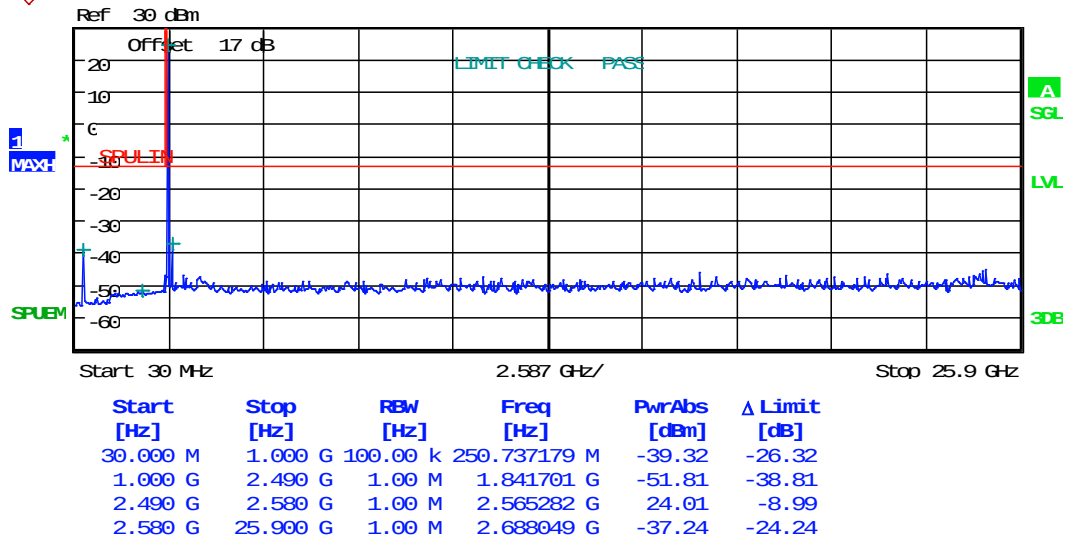


Date: 5.JUL.2021 20:50:47

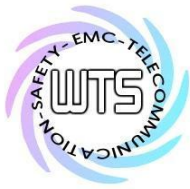


Report Number: W6M22106-21044-P-247

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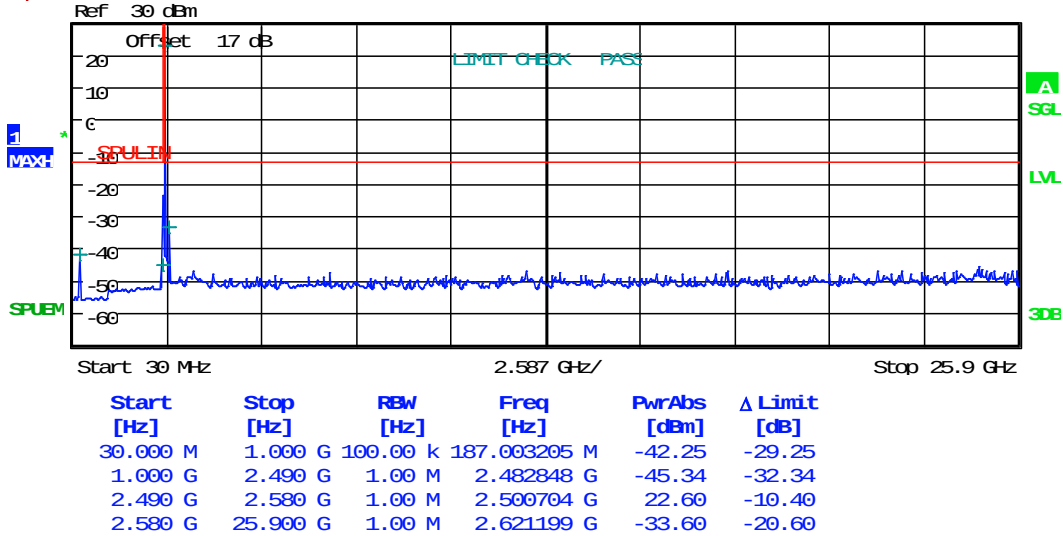
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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

10MHz

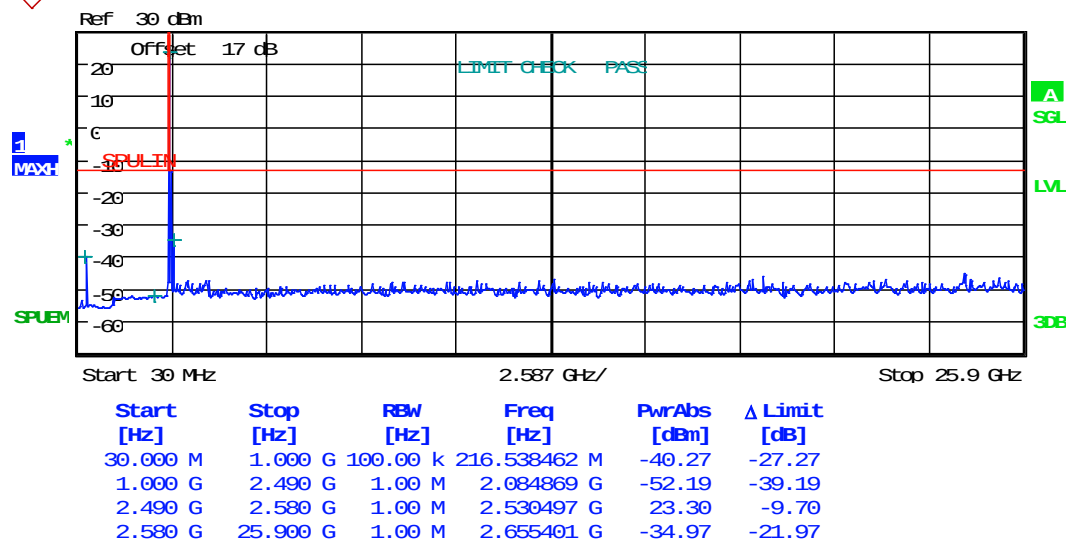


Date: 5.JUL.2021 20:55:00



Report Number: W6M22106-21044-P-247

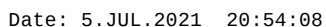
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Date: 5.JUL.2021 20:54:40

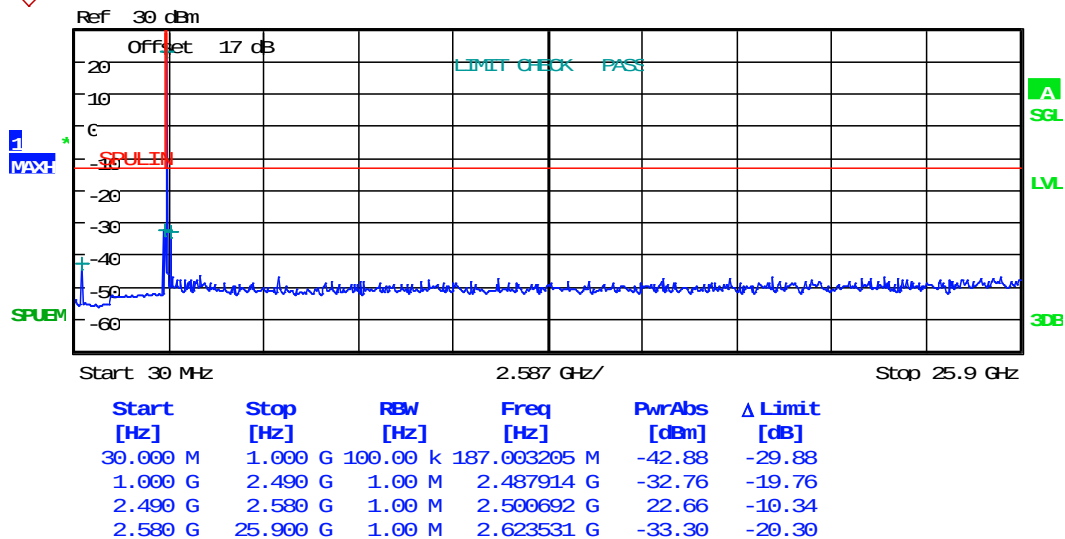


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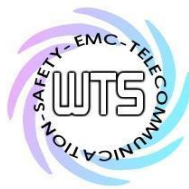




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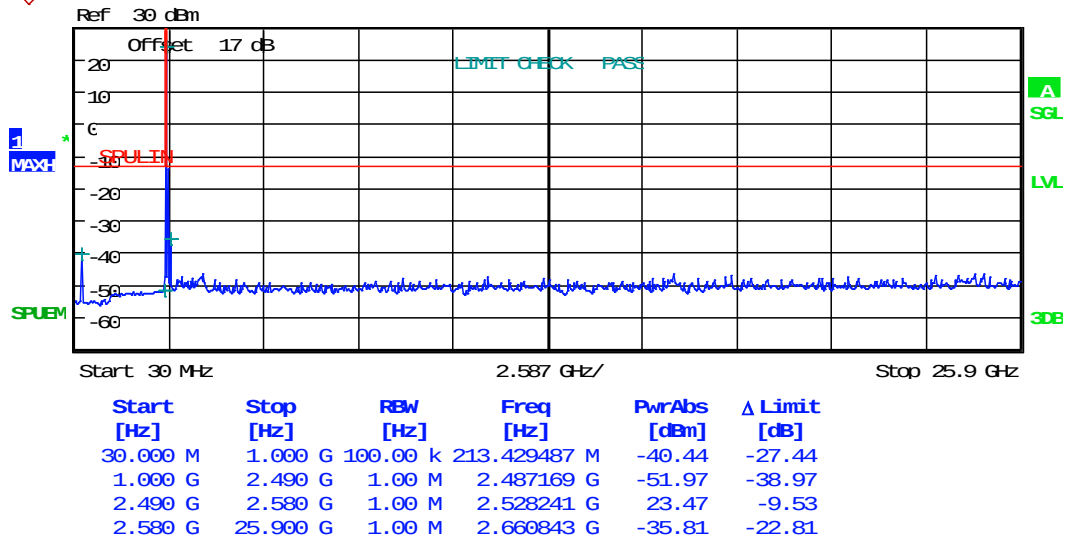


Date: 5.JUL.2021 21:05:09

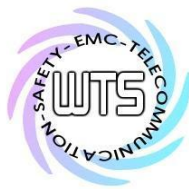


Report Number: W6M22106-21044-P-247

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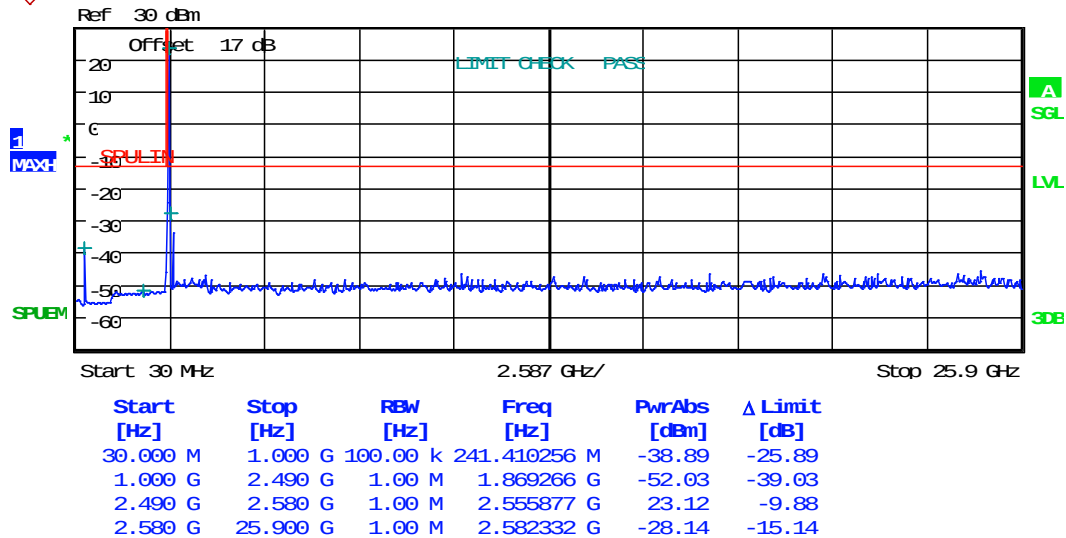


Date: 5.JUL.2021 21:04:51



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



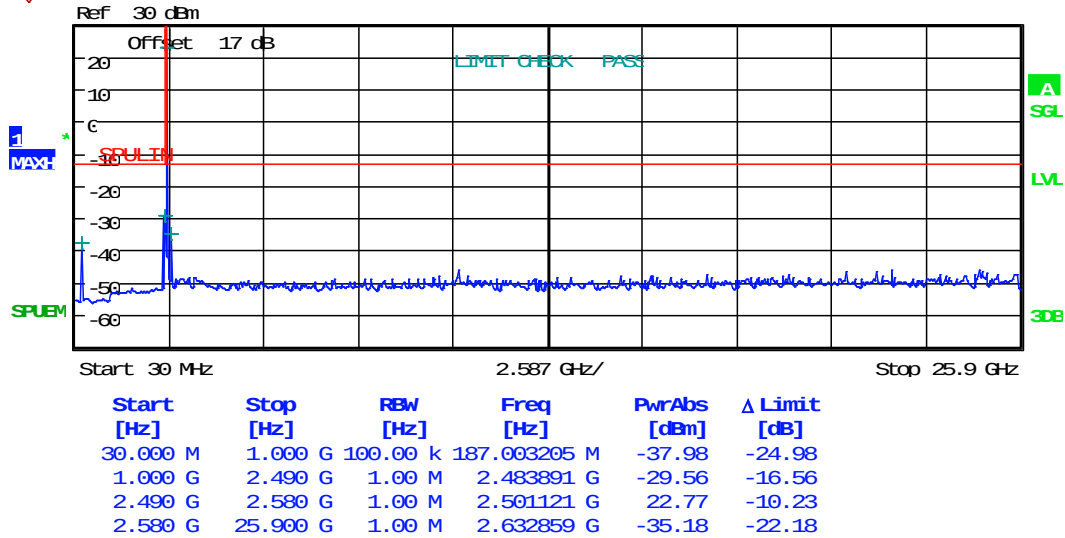
Date: 5.JUL.2021 21:04:33



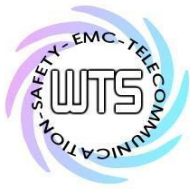
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

20MHz

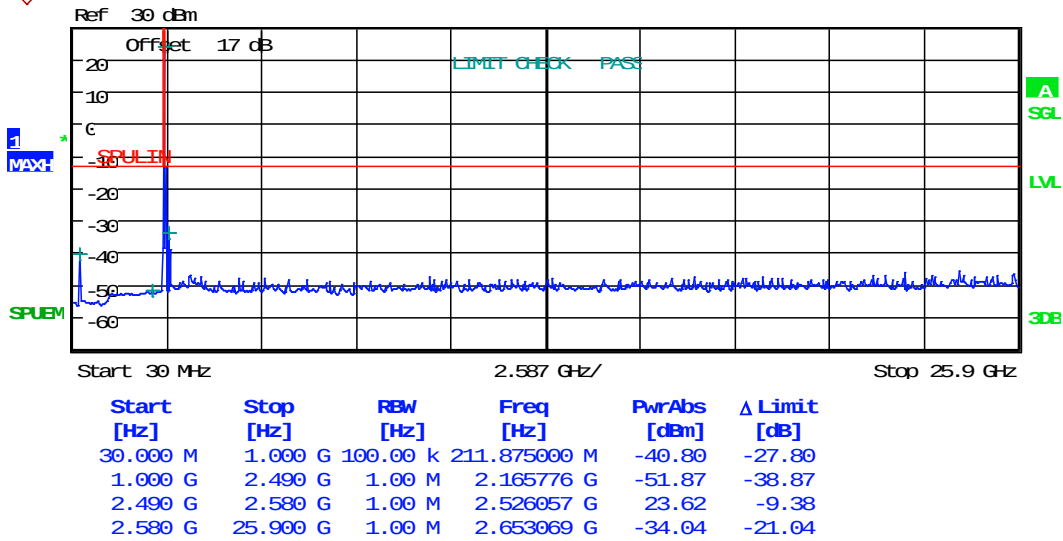


Date: 5.JUL.2021 21:07:41



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

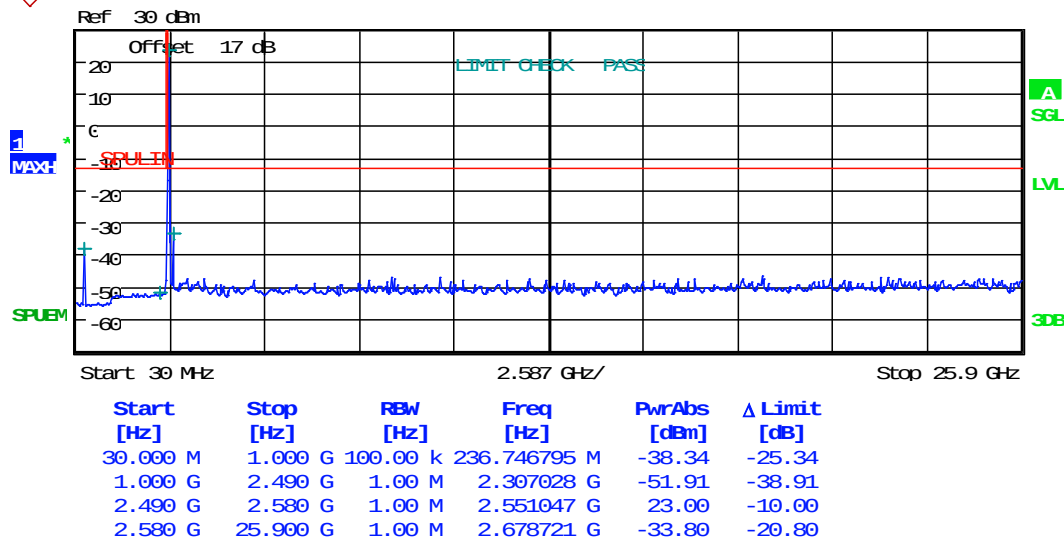


Date: 5.JUL.2021 21:07:23



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



Date: 5.JUL.2021 21:07:04

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

7.3 Explanation of test result

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

7.4 Calculation of Limit for Spurious at Antenna Terminals

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

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



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FCC ID: GX9HYBRID

8. Field Strength of Spurious Radiation

8.1 Test procedure

The test procedure for field 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: Hybrid Panel-1

Date:

Mode: --

Temperature: -- °C

Engineer: --

Polarization: Horizontal

Humidity: -- %

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

Polarization: Vertical

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

- Note**
1. Correction Factor = Antenna factor + Cable loss - Preamplifier
 2. The formula of measured value as: Test Result = Reading + Correction Factor
 3. Detector function in the form: PK = Peak, QP = Quasi Peak, AV = Average
 4. All not in the table noted test results are more than 20 dB below the relevant limits.
 5. See attached diagrams in appendix.

8.3 Explanation of test result

Result Level = Reading Level + Corrected Factor

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

8.4 Calculation of Limit for Field Strength of Spurious

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

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

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



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FCC ID: GX9HYBRID

8.5 Test result of band edge emissions

Test date: July 02, 2021~July 05, 2021

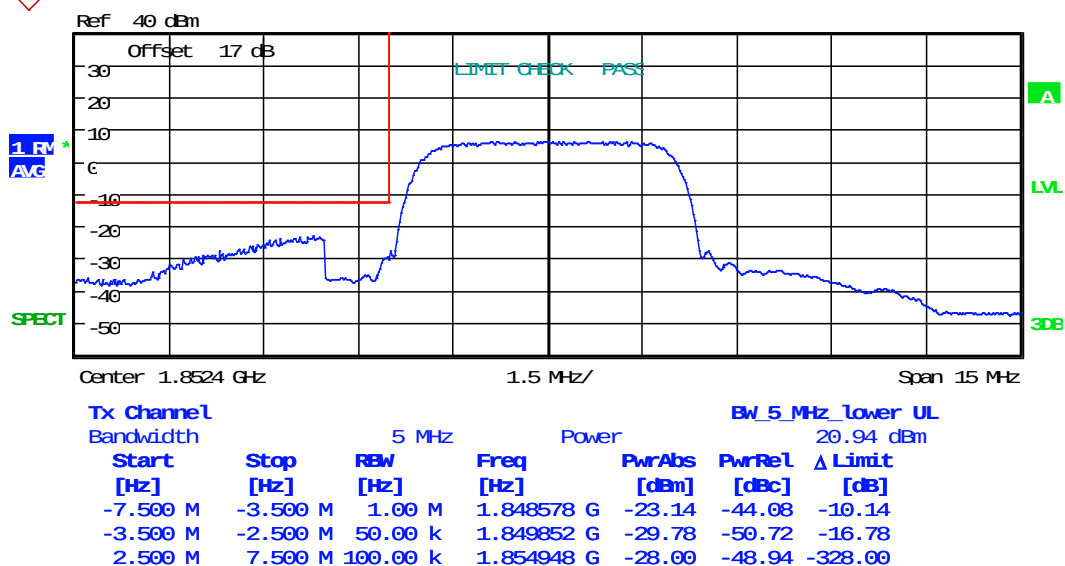
Temperature: 24.2 °C

Humidity: 50.0 %

Tester: Kent

WCDMA

Band II



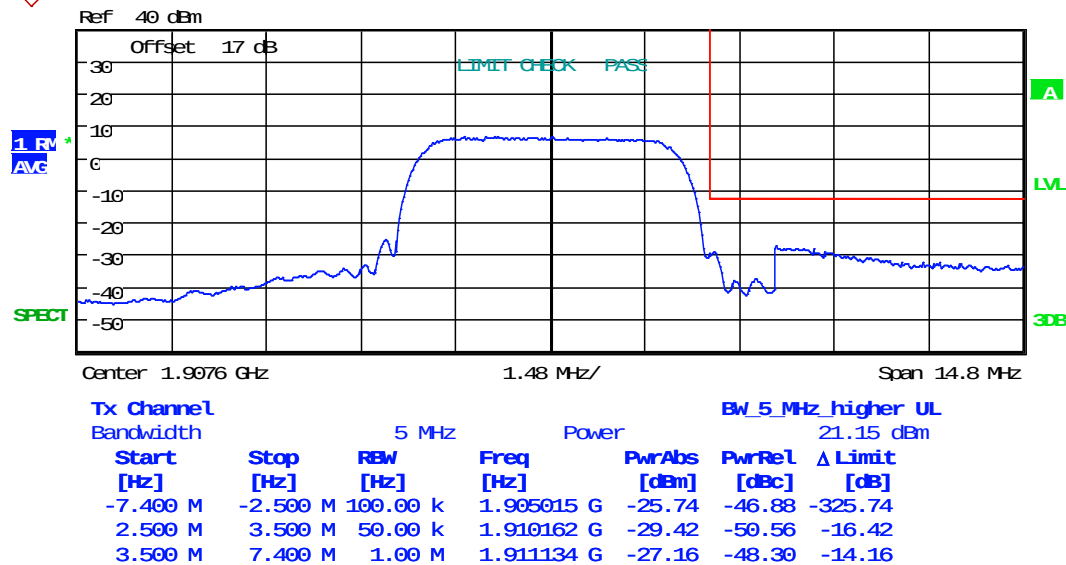
Date: 2.JUL.2021 19:54:30



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FCC ID: GX9HYBRID



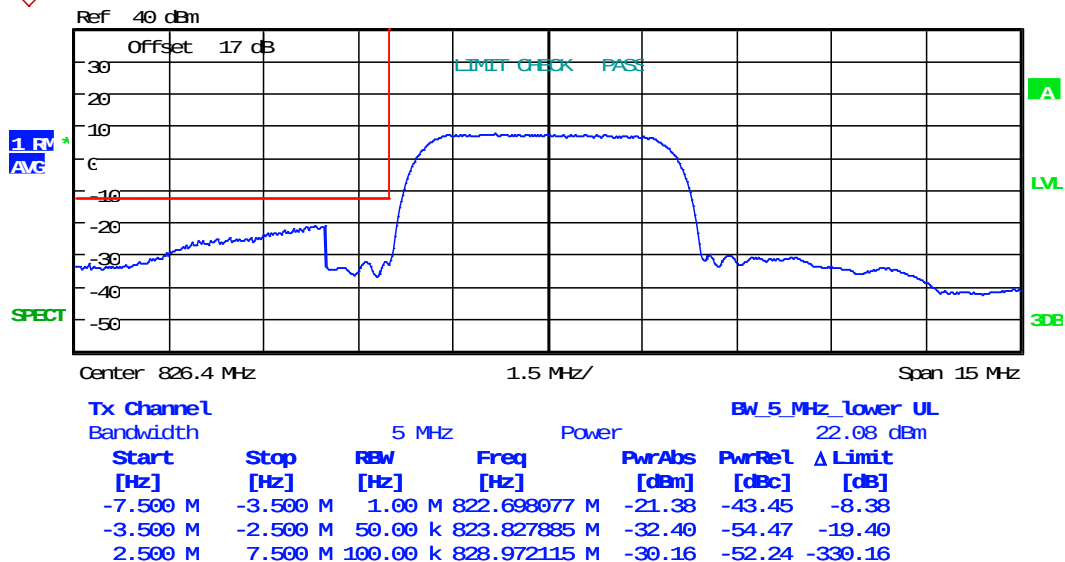
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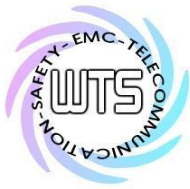
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

Band V

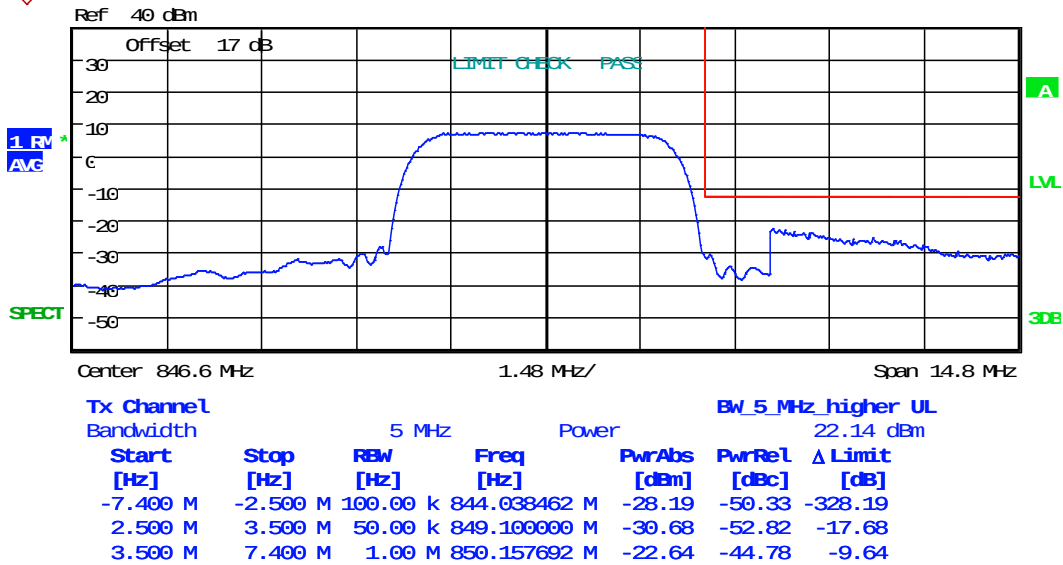


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FCC ID: GX9HYBRID



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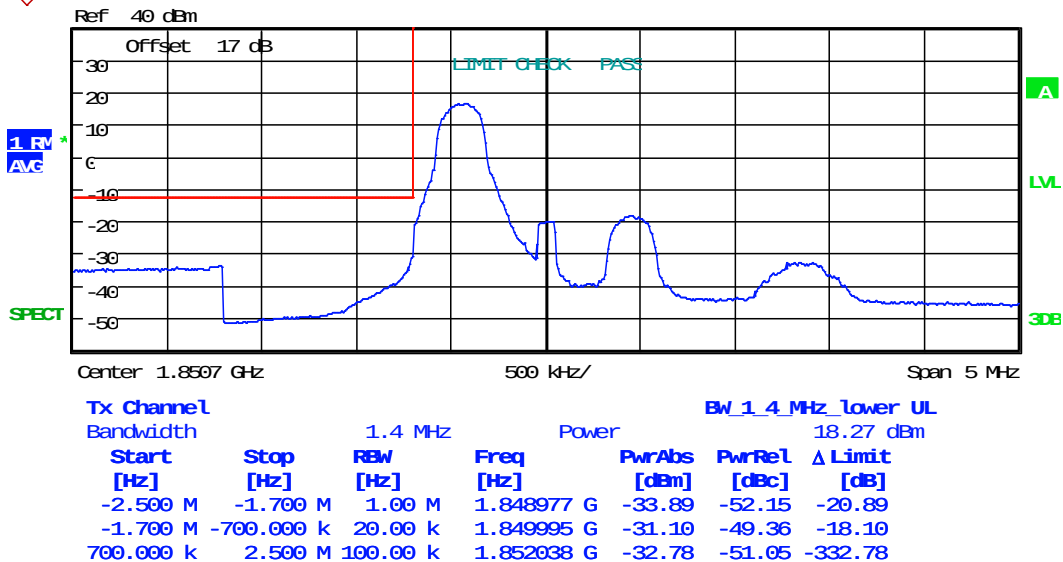


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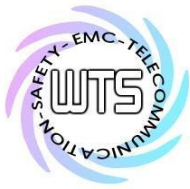
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

LTE
Band II
16QAM
1RB
1.4MHz

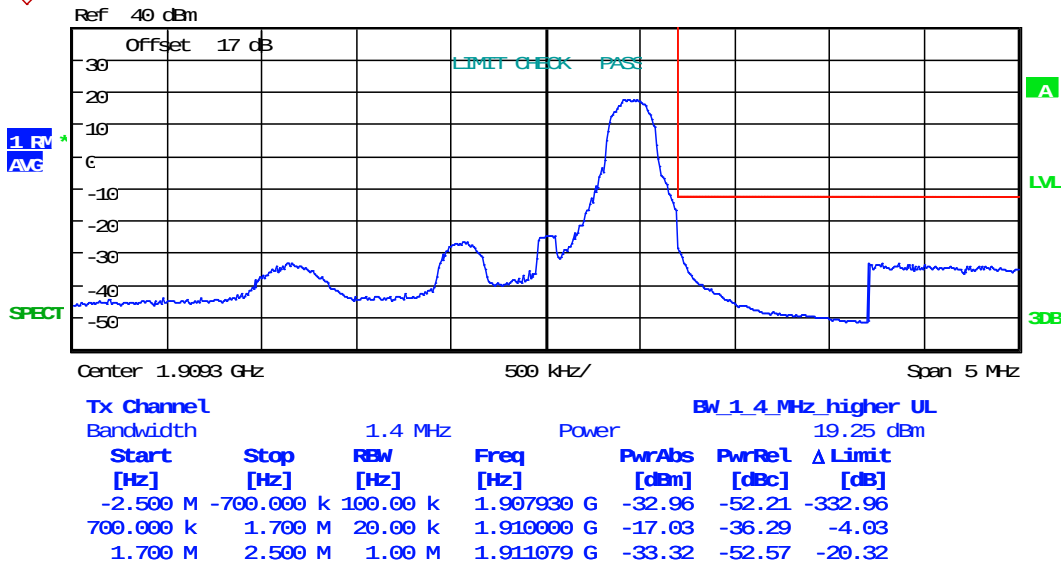


Date: 5.JUL.2021 13:31:50



Report Number: W6M22106-21044-P-247

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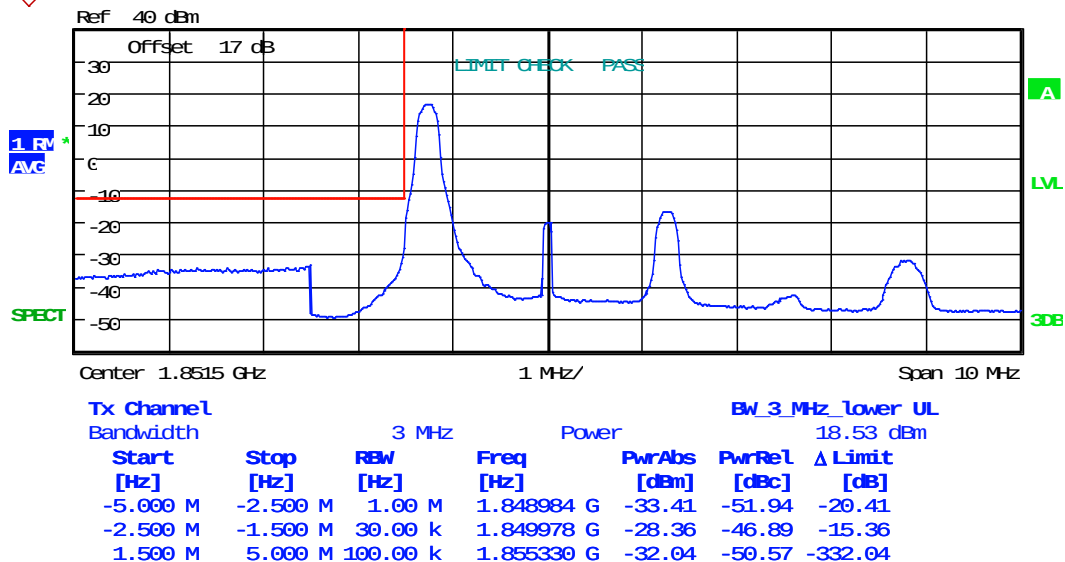
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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

3MHz

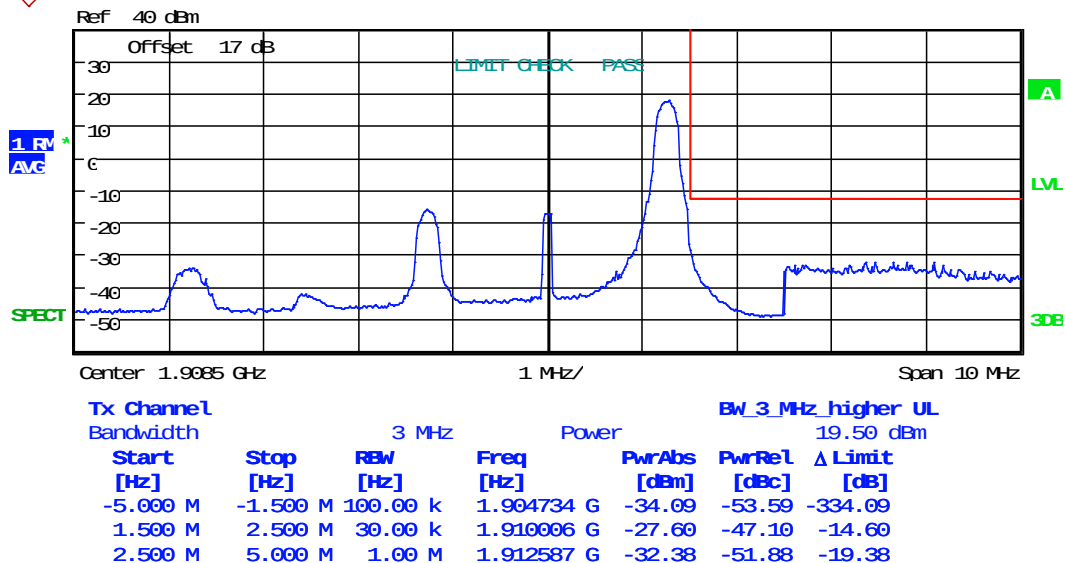


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Report Number: W6M22106-21044-P-247

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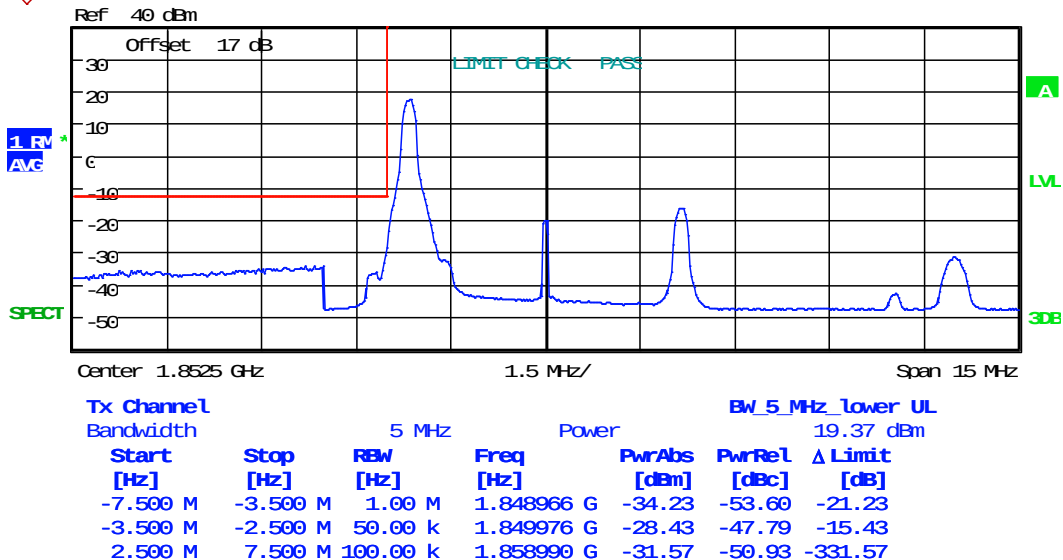


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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz

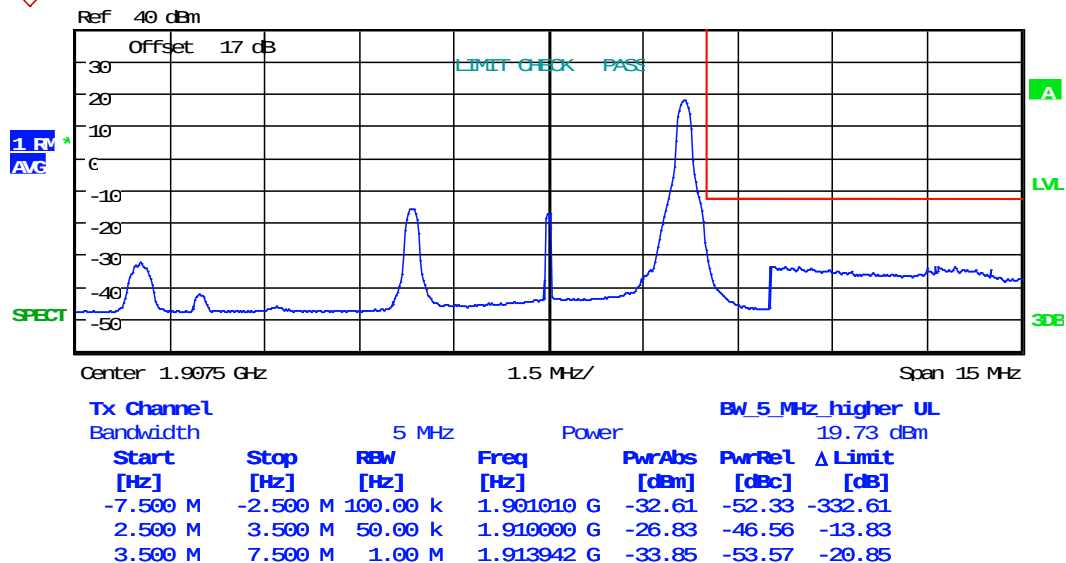


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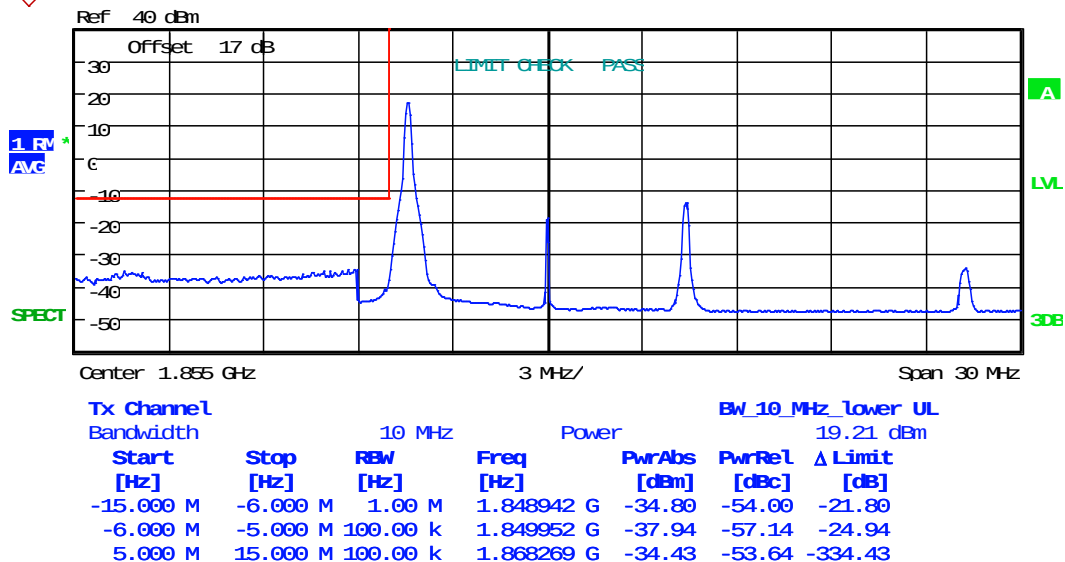
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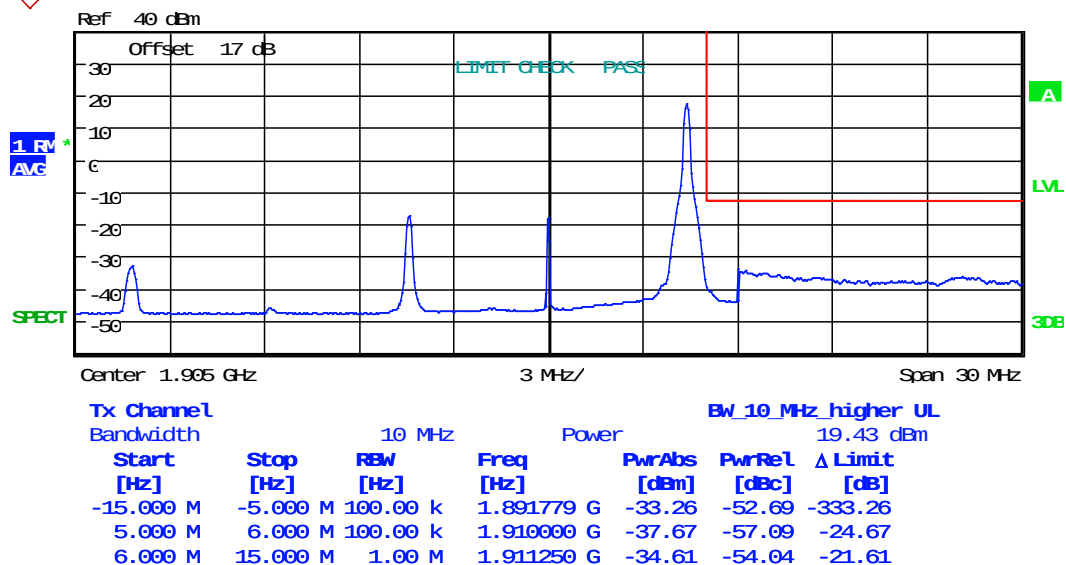


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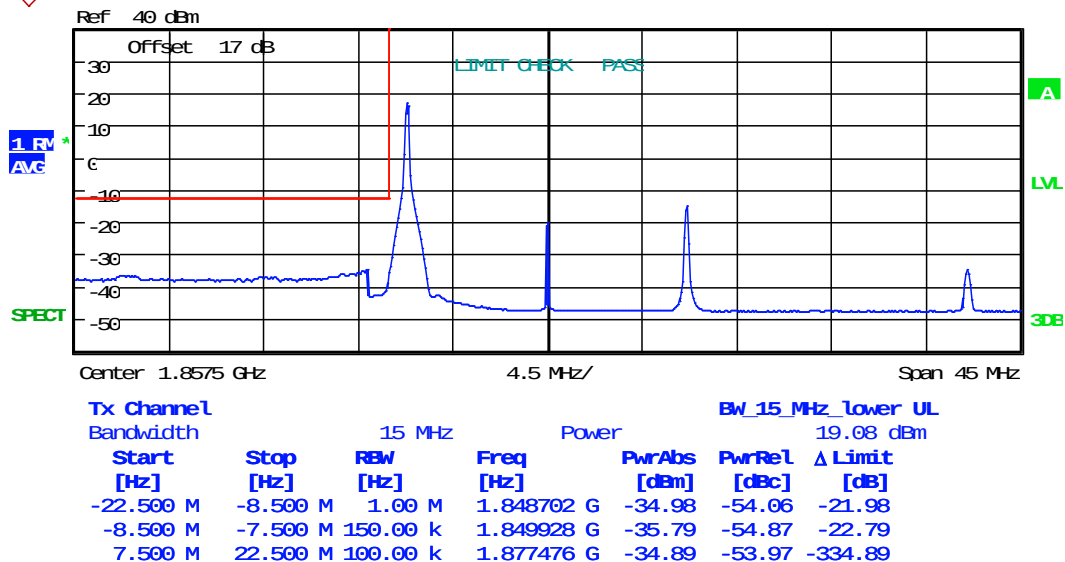
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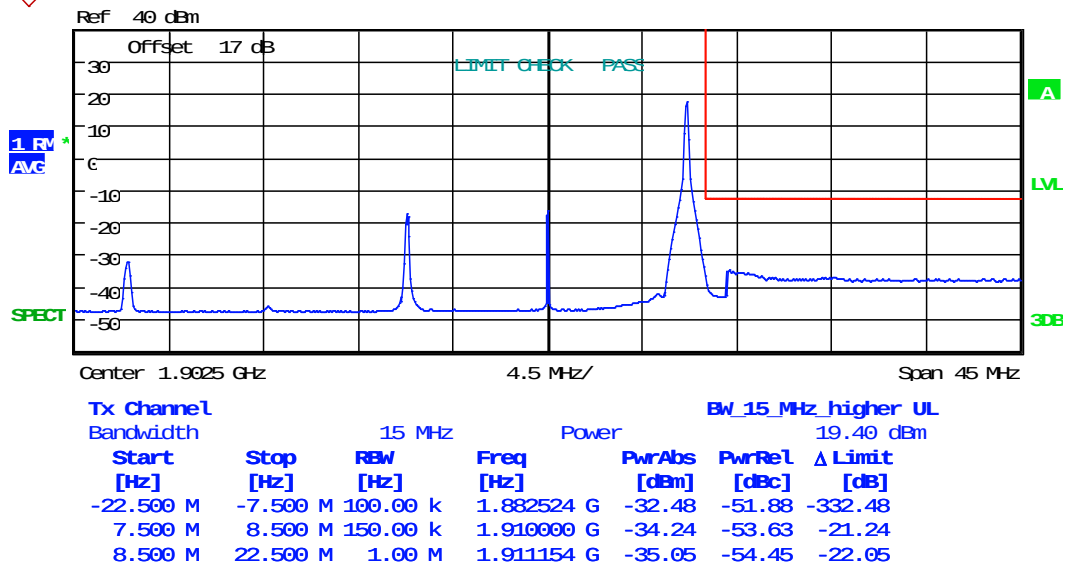


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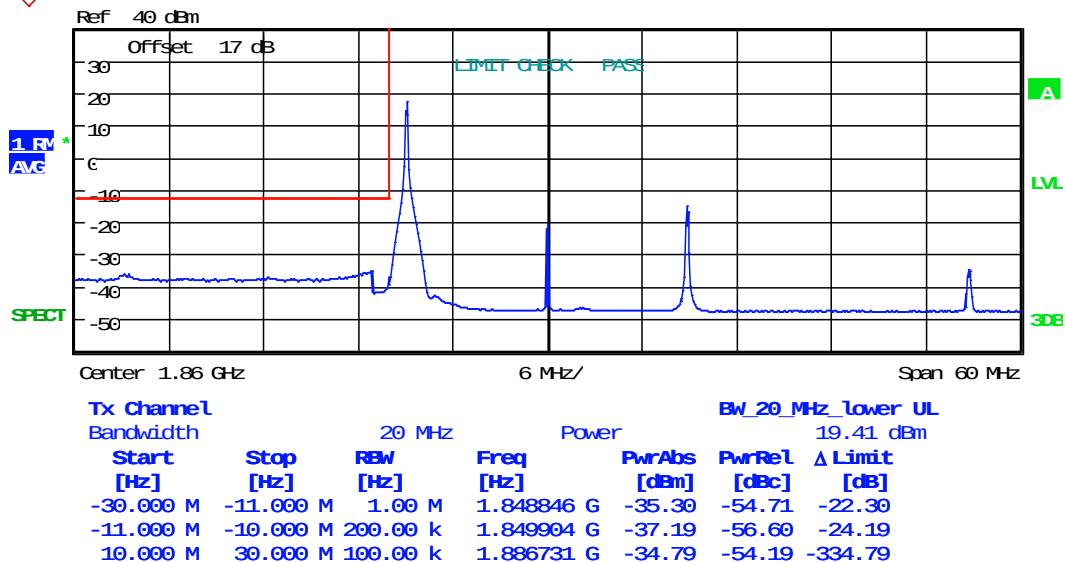
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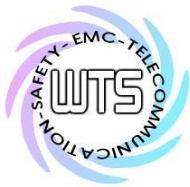
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

20MHz

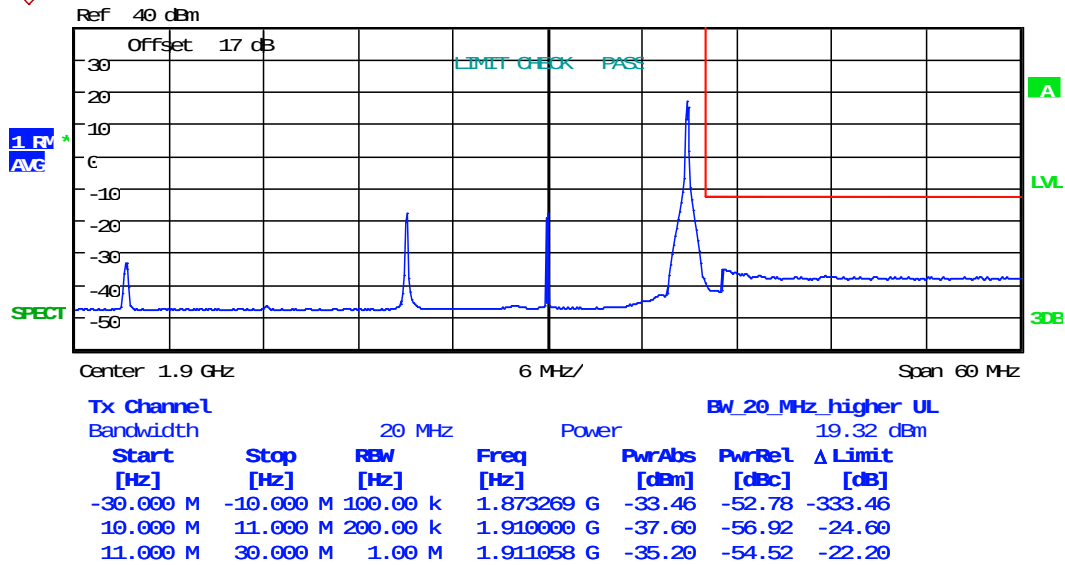


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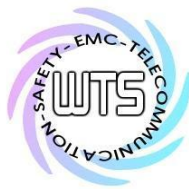


Report Number: W6M22106-21044-P-247

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Date: 5.JUL.2021 13:48:41



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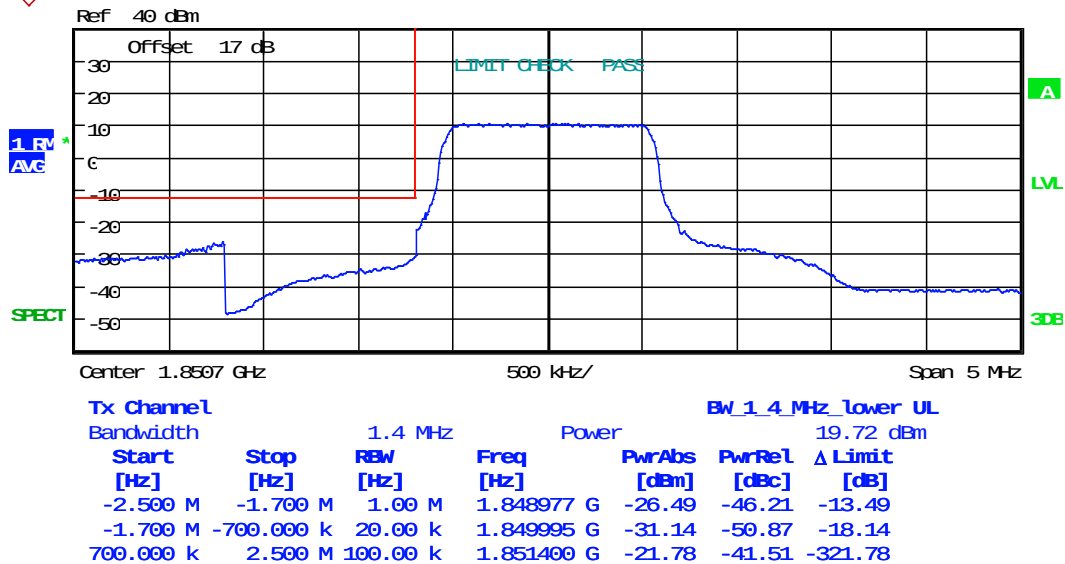
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FCC ID: GX9HYBRID

QPSK

FRB

1.4MHz

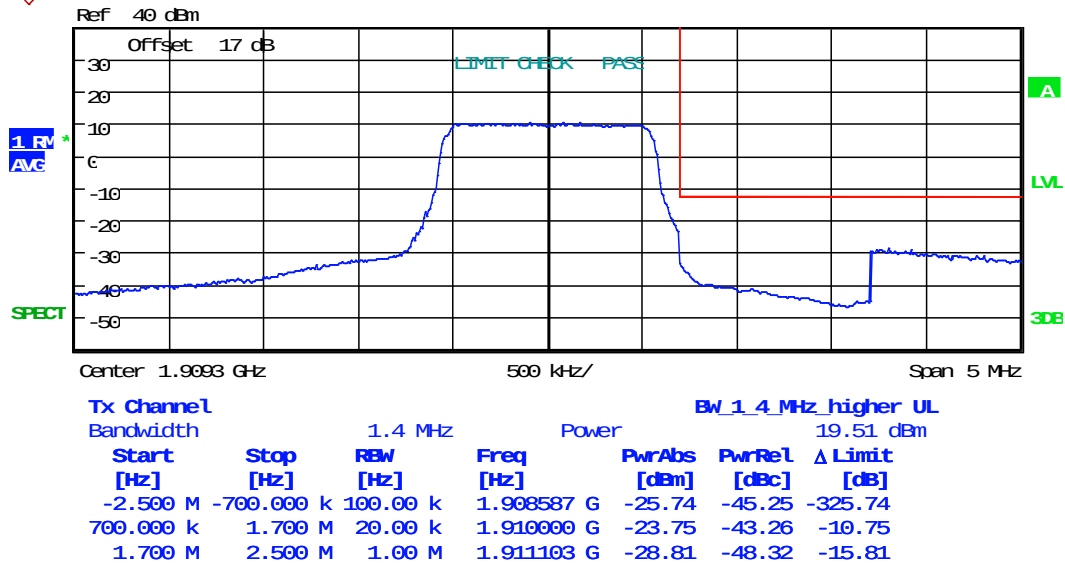


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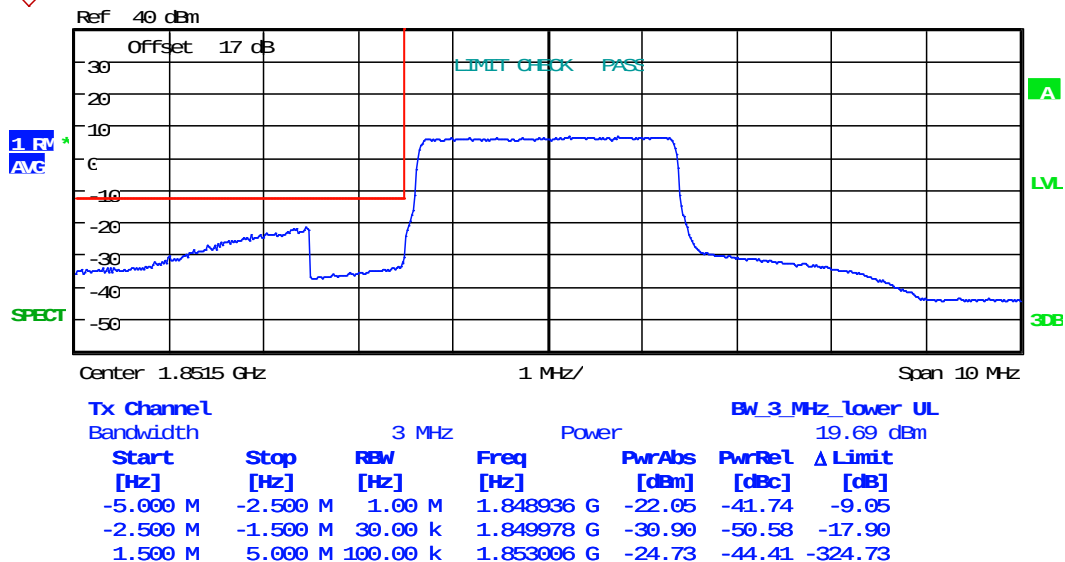
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Report Number: W6M22106-21044-P-247

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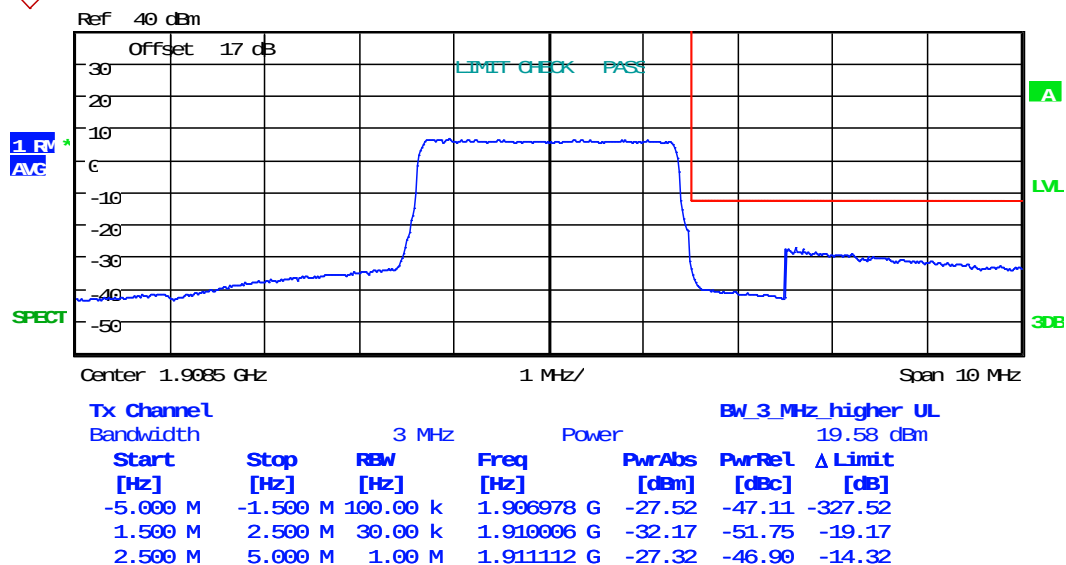


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Report Number: W6M22106-21044-P-247

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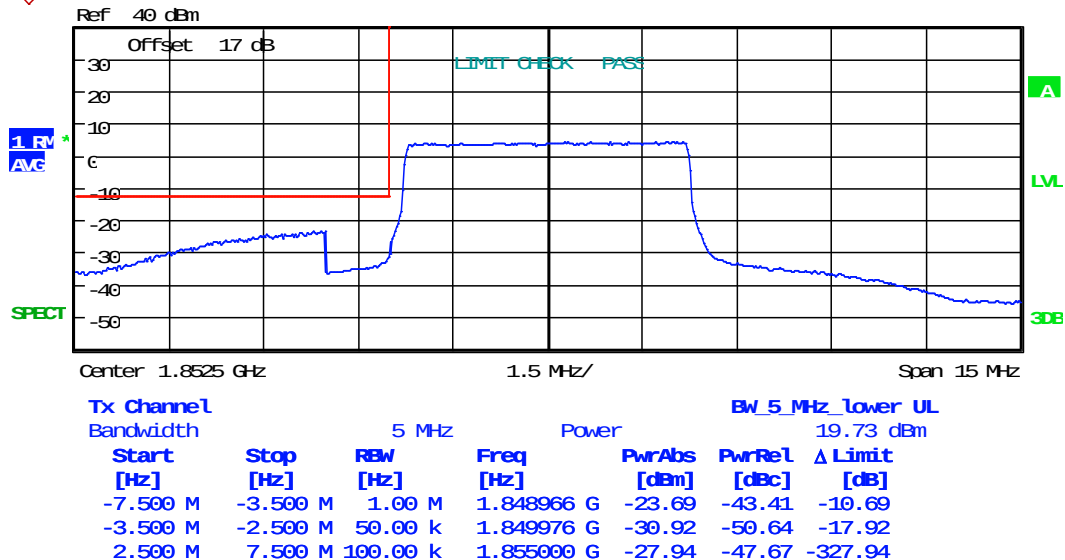
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Report Number: W6M22106-21044-P-247

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5MHz

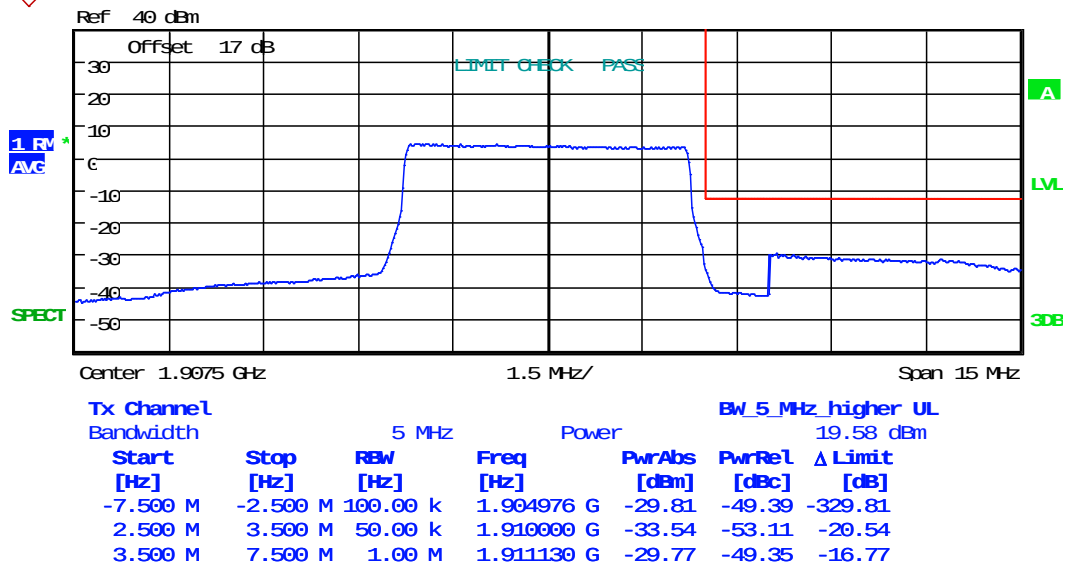


Date: 5.JUL.2021 13:58:21



Report Number: W6M22106-21044-P-247

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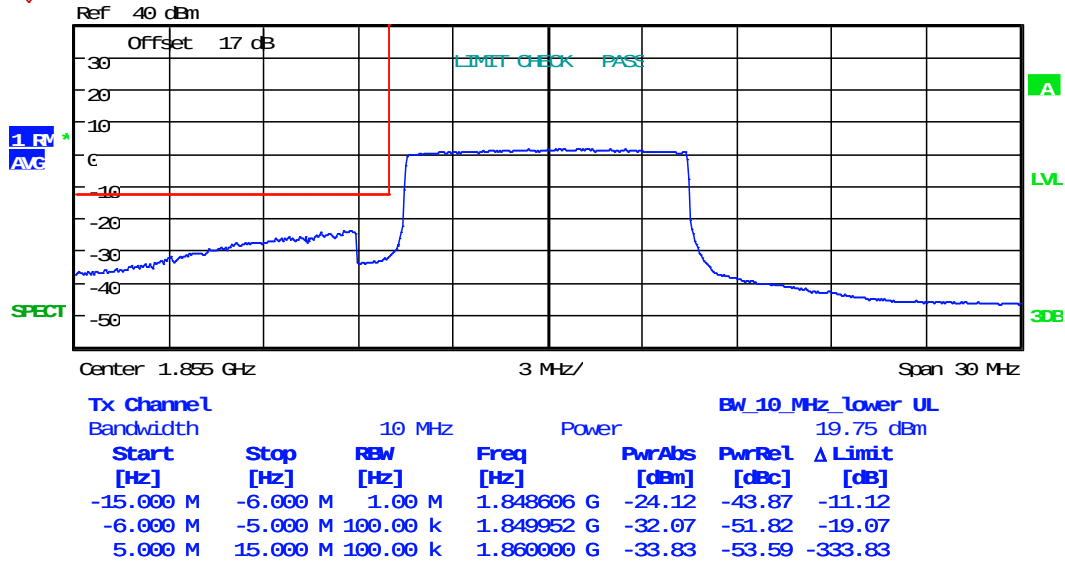
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Report Number: W6M22106-21044-P-247

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10MHz

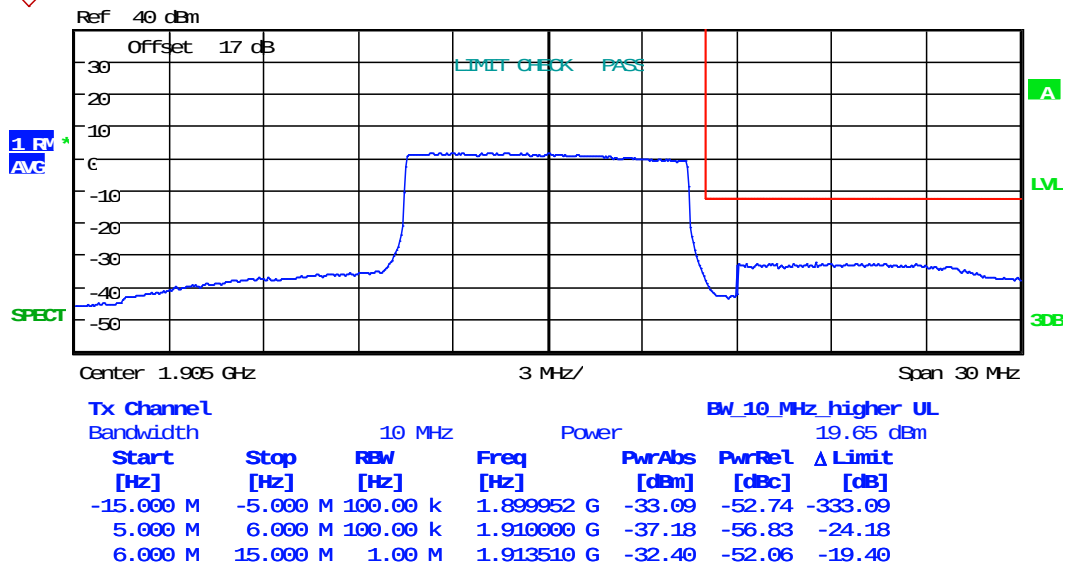


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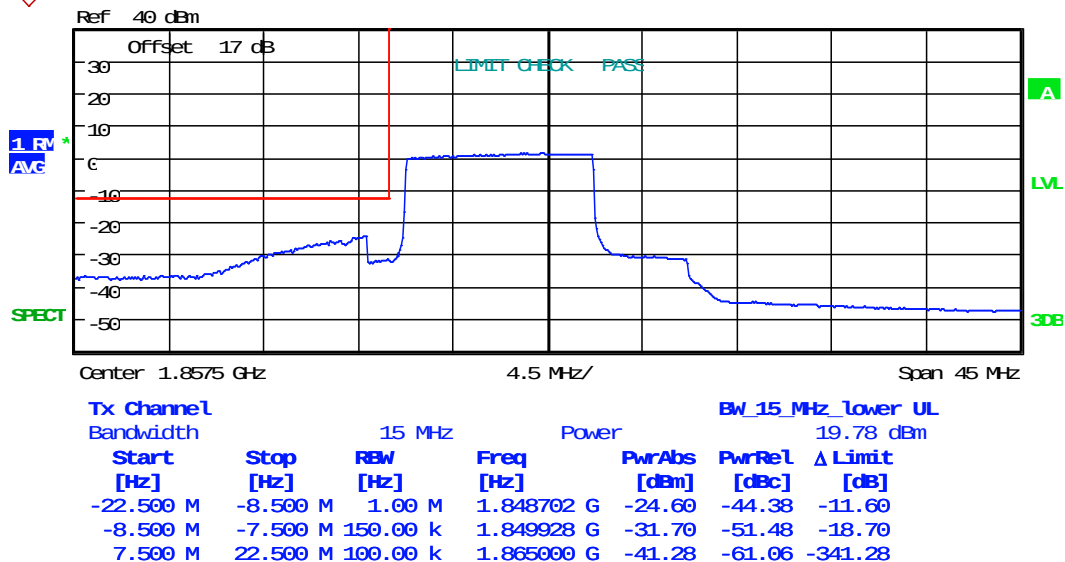
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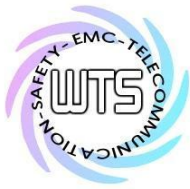
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz

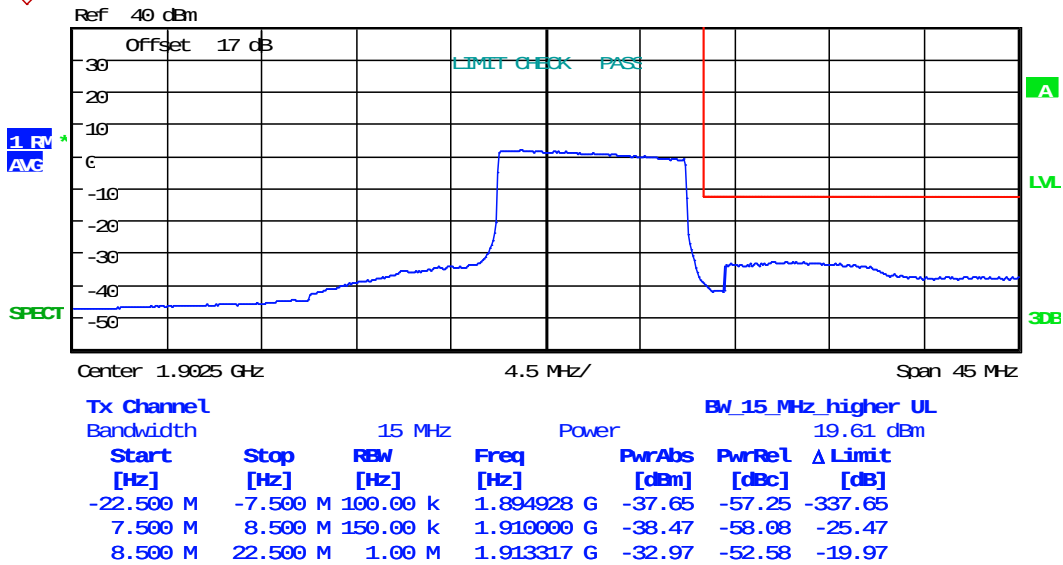


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Report Number: W6M22106-21044-P-247

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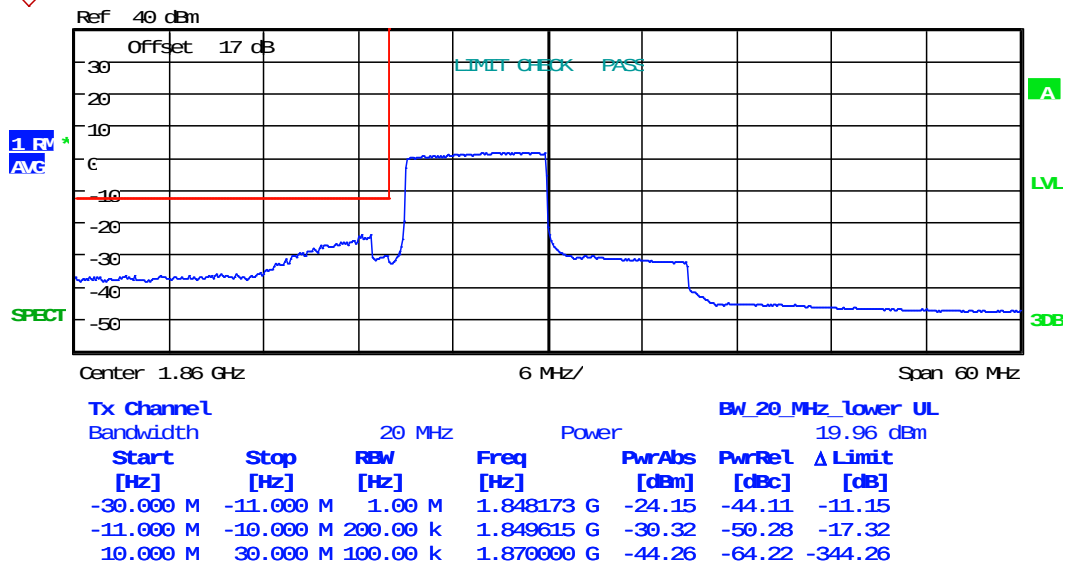
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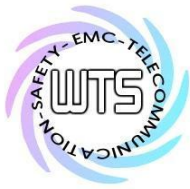
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20MHz

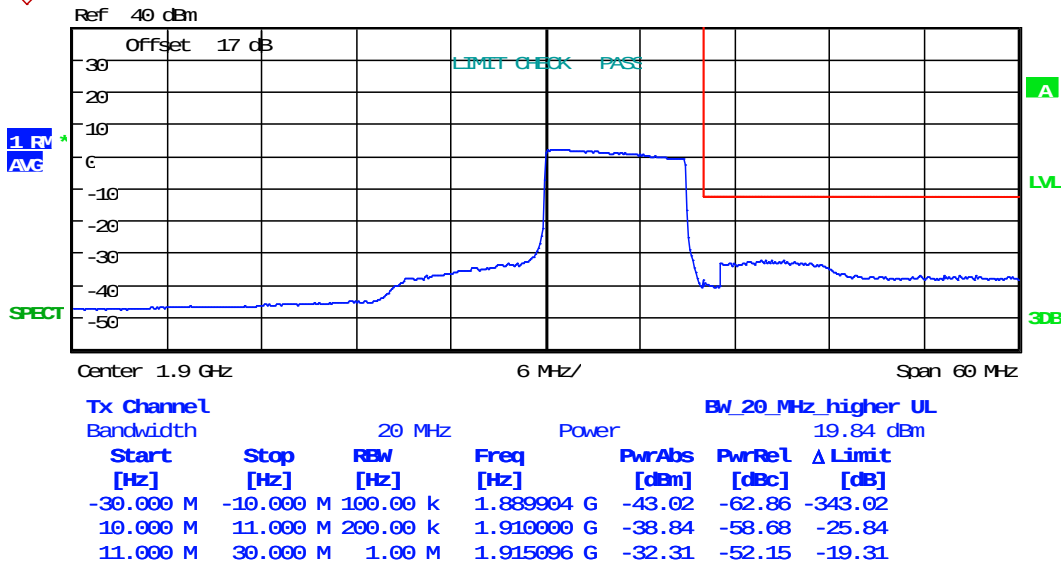


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Report Number: W6M22106-21044-P-247

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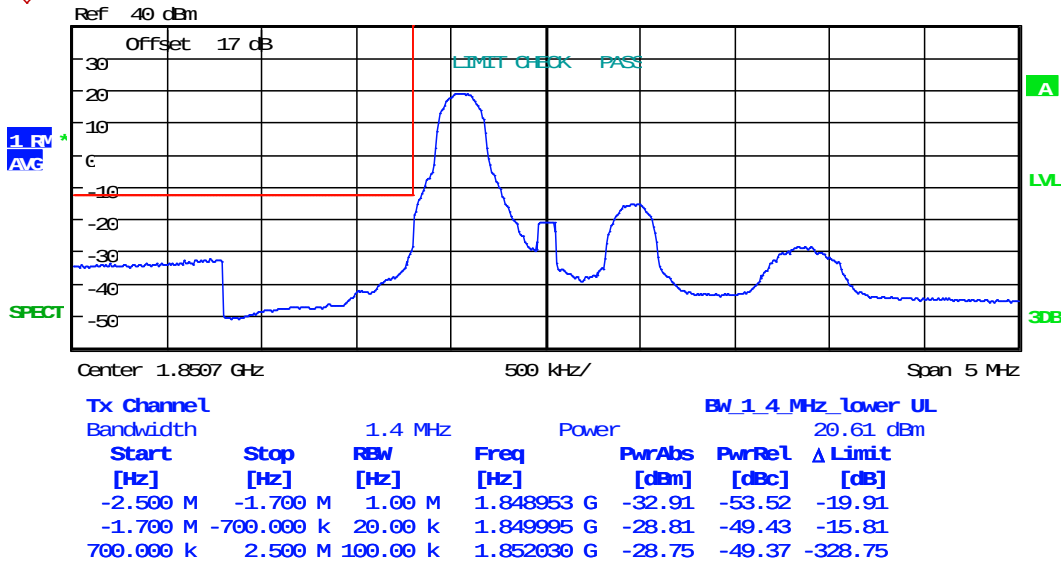
Worldwide Testing Services(Taiwan) Co., Ltd.

Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

1RB

1.4MHz

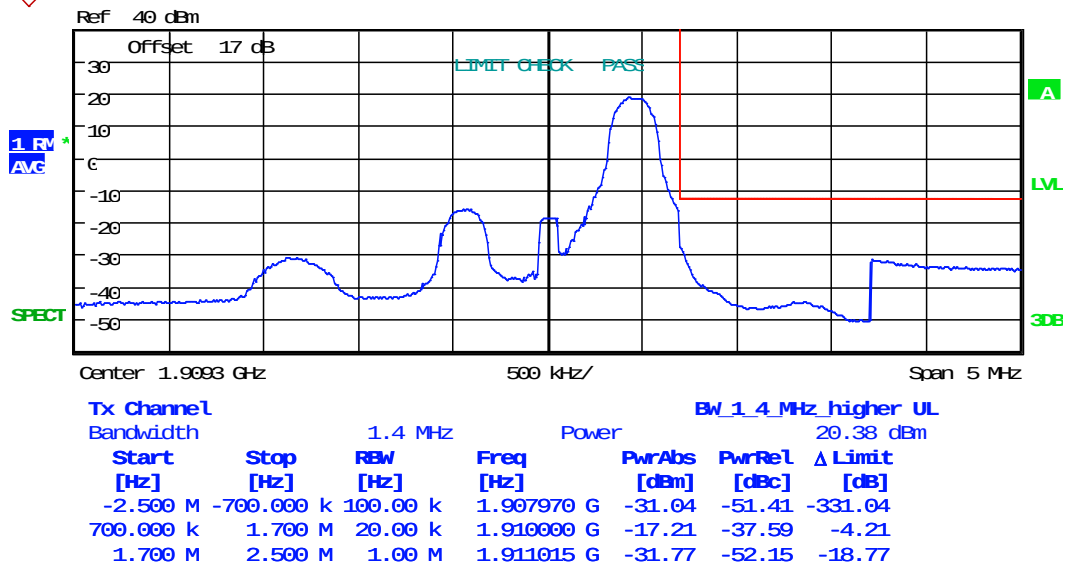


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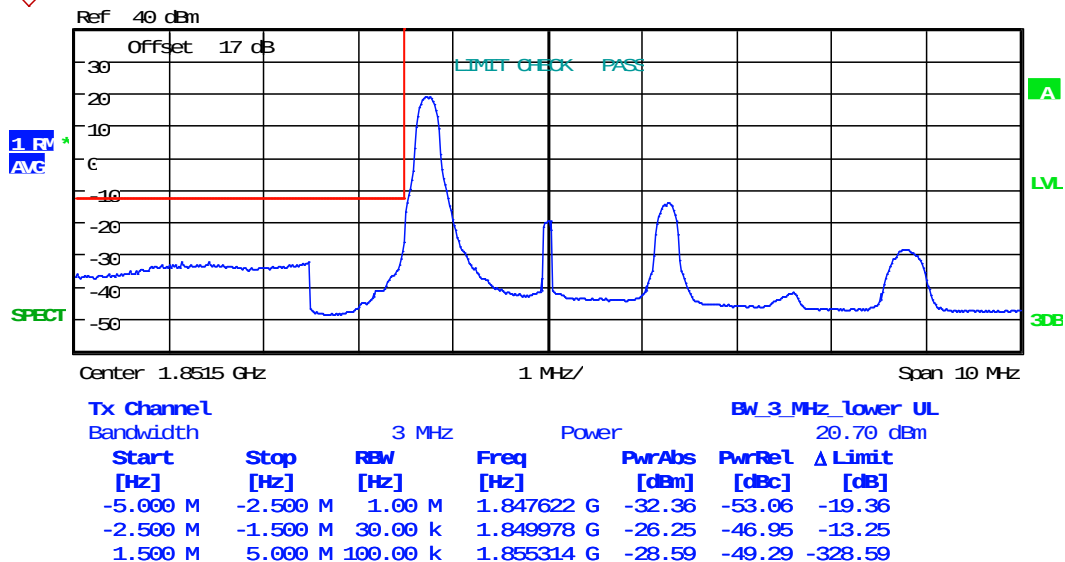
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Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

3MHz

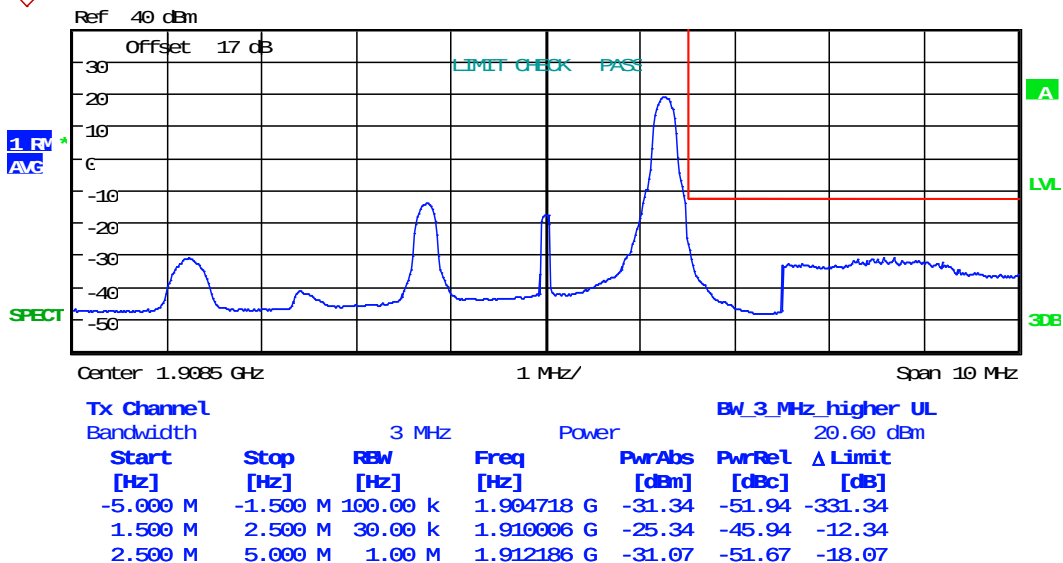


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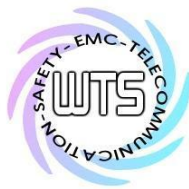


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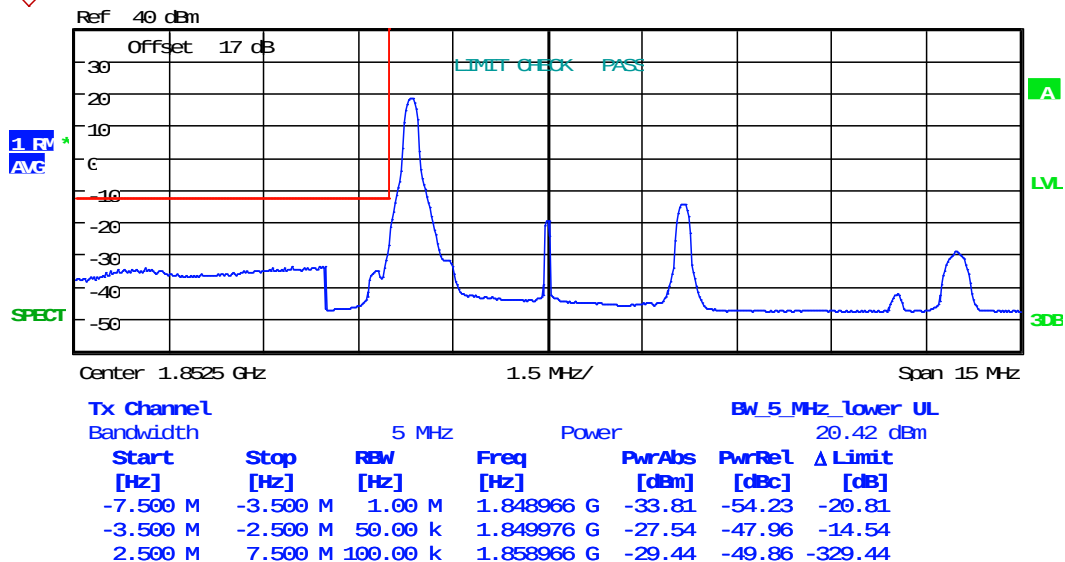
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Report Number: W6M22106-21044-P-247

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5MHz

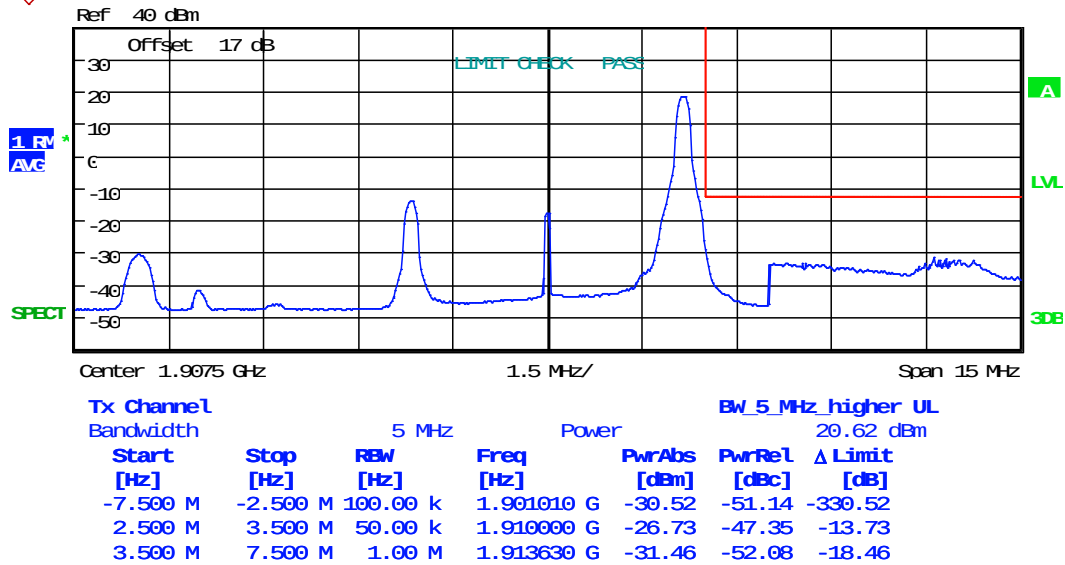


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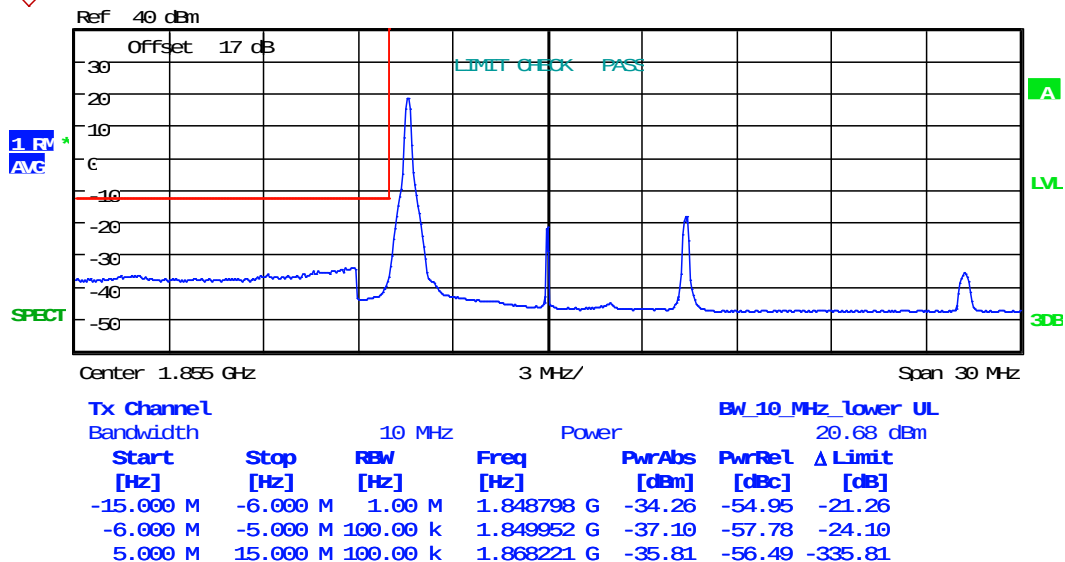
Date: 5.JUL.2021 13:59:53



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

10MHz

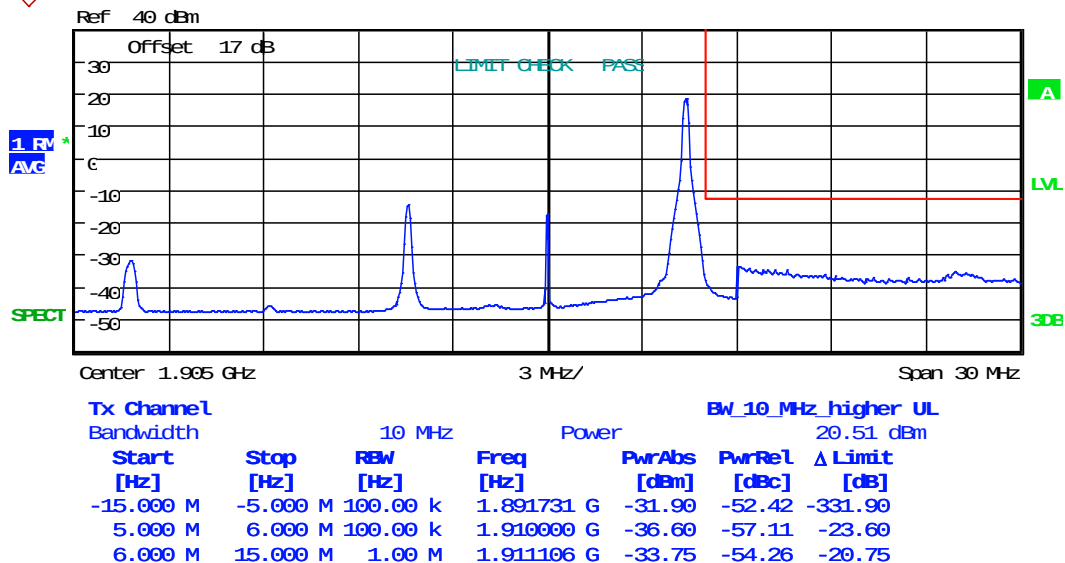


Date: 5.JUL.2021 14:00:55



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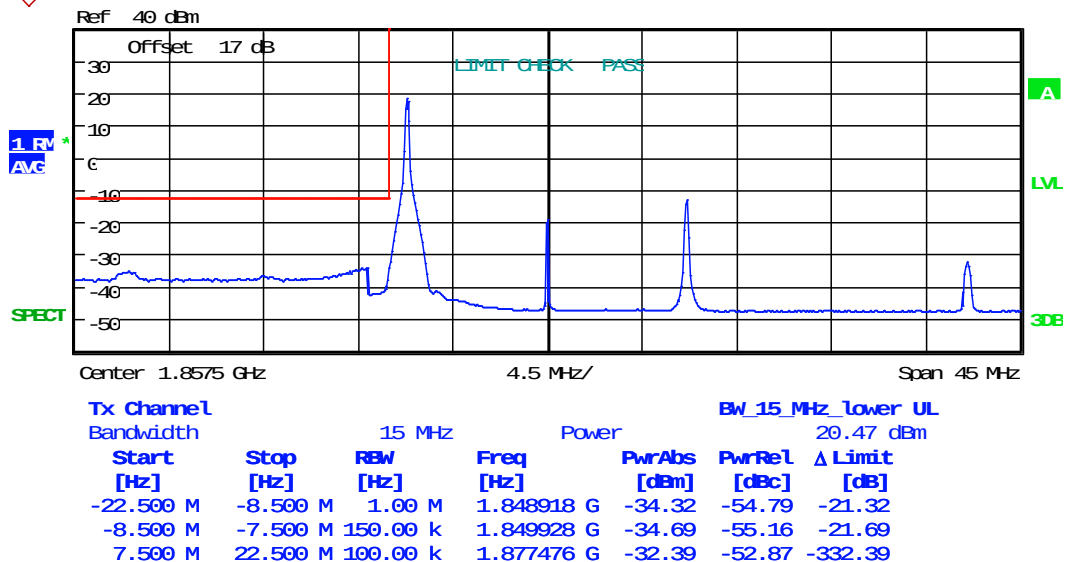
Date: 5.JUL.2021 14:02:11



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz

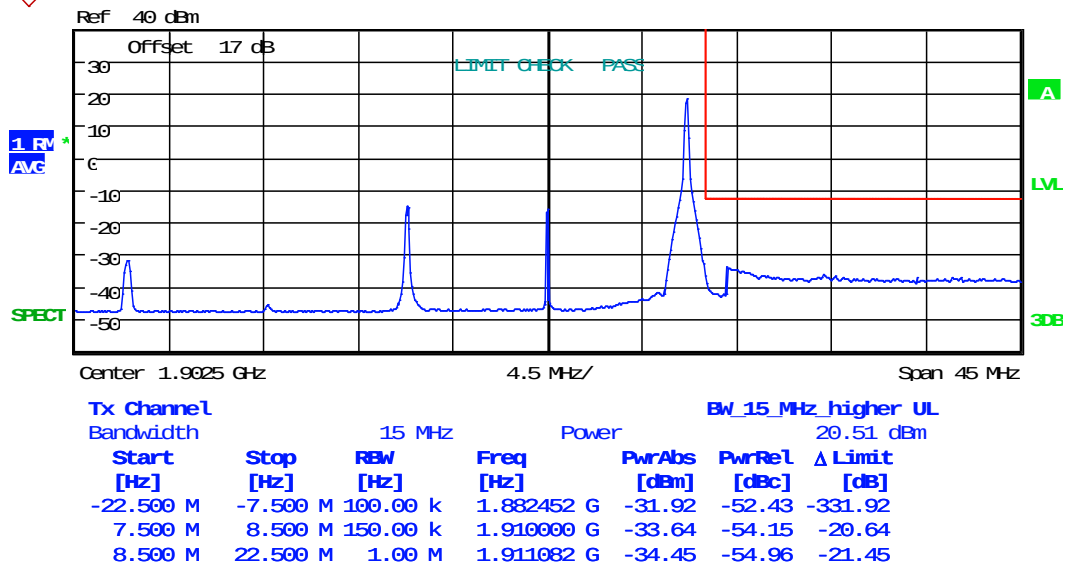


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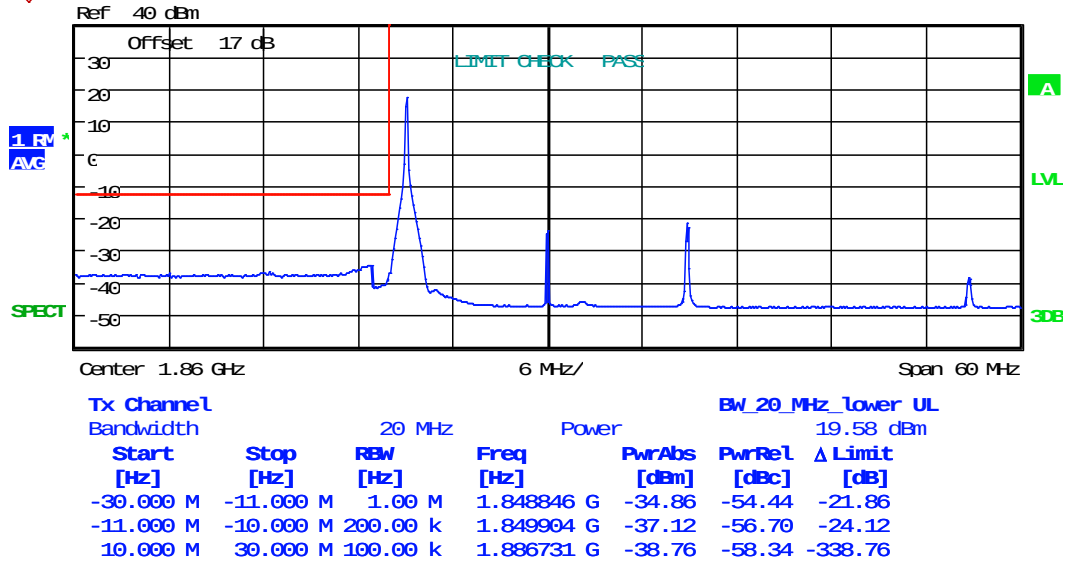
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Report Number: W6M22106-21044-P-247

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20MHz

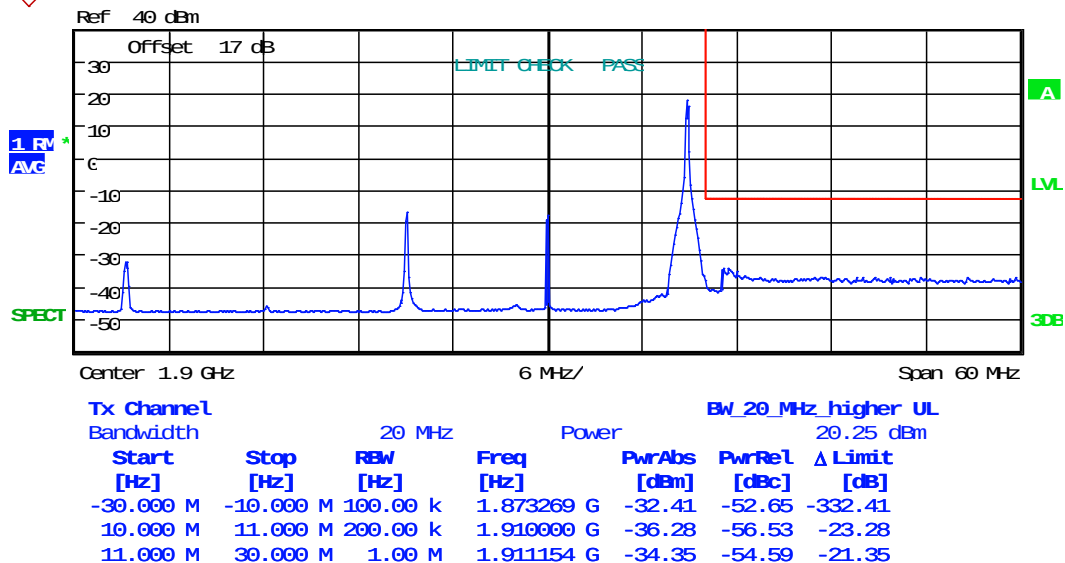


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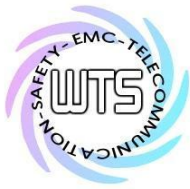


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FCC ID: GX9HYBRID



Date: 5.JUL.2021 14:08:58



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Report Number: W6M22106-21044-P-247

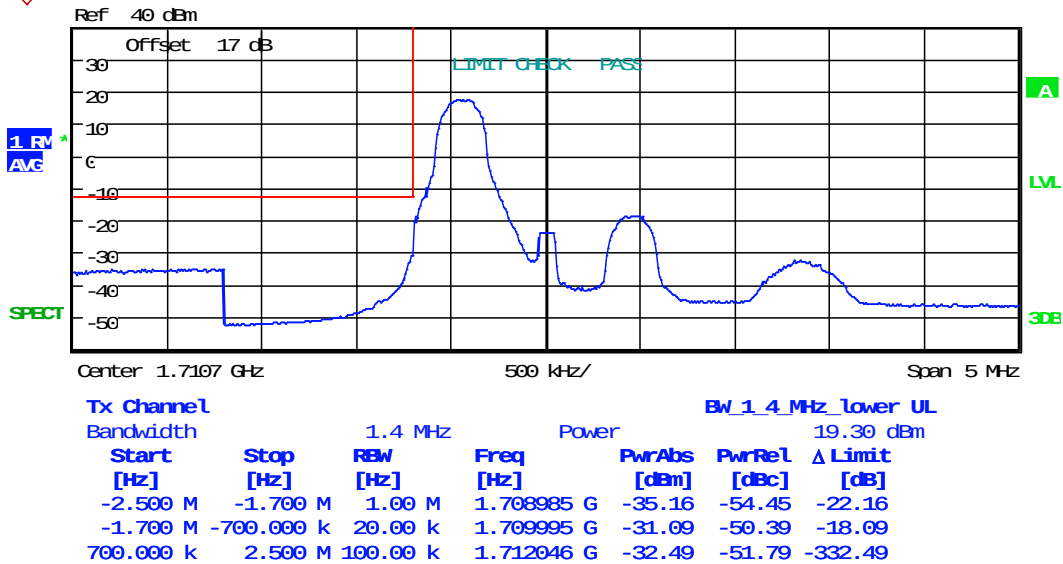
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Band IV

16QAM

1RB

1.4MHz

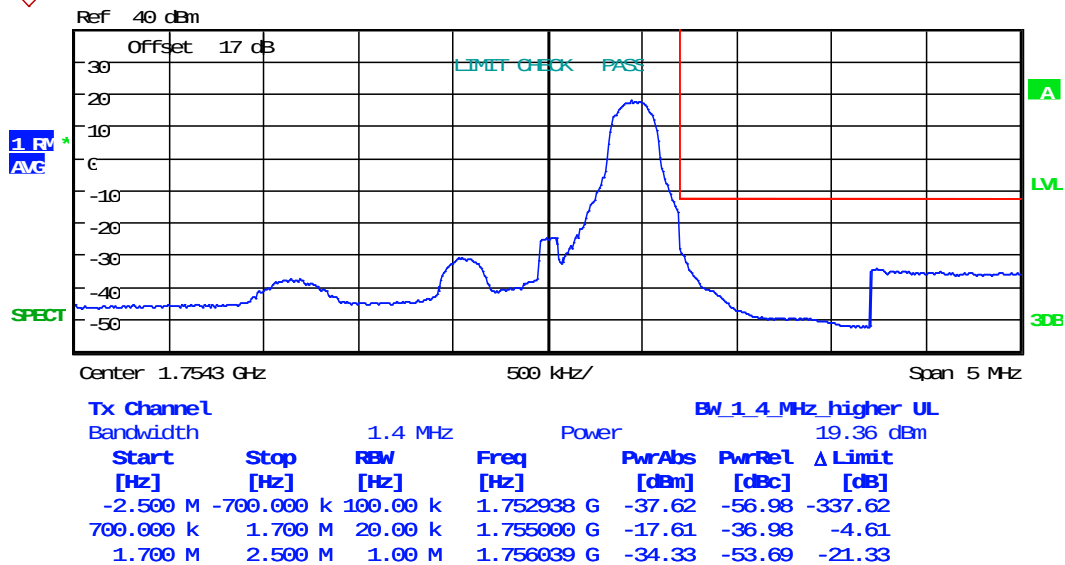


Date: 5.JUL.2021 14:16:06



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



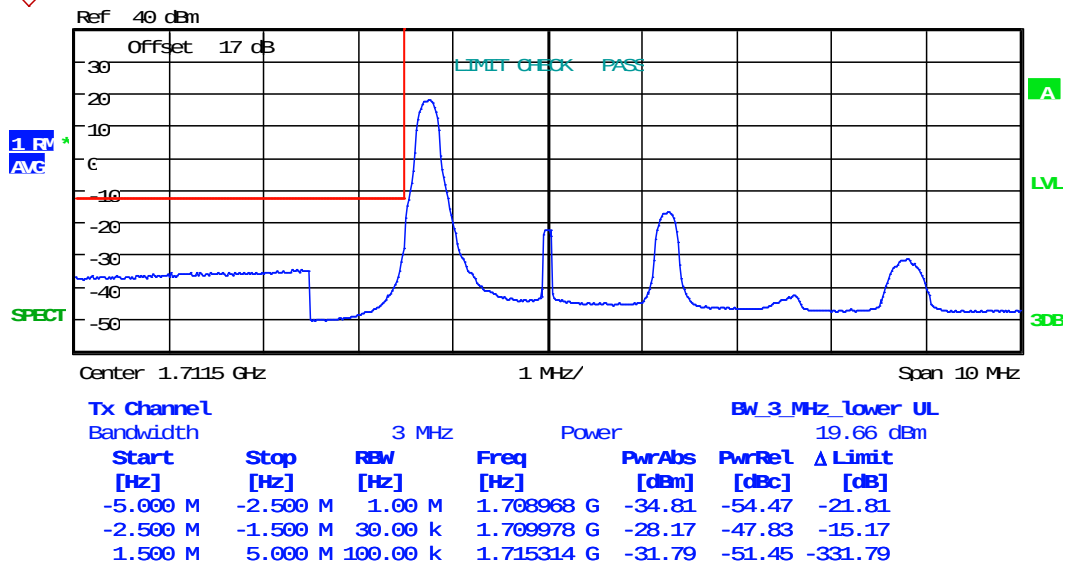
Date: 5.JUL.2021 14:17:03



Report Number: W6M22106-21044-P-247

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3MHz

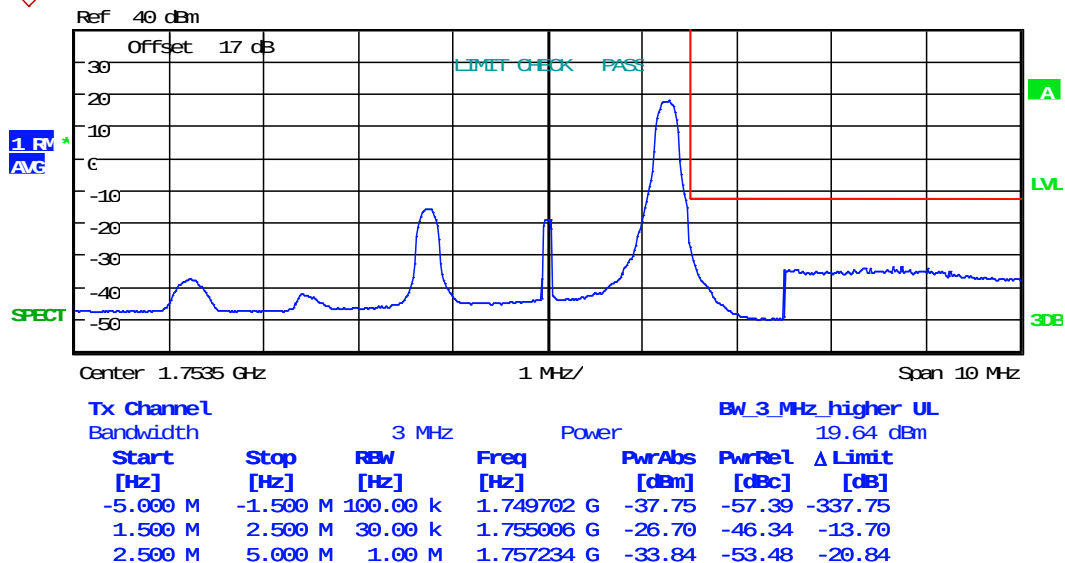


Date: 5.JUL.2021 14:19:38

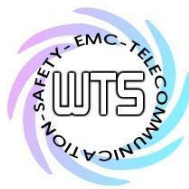


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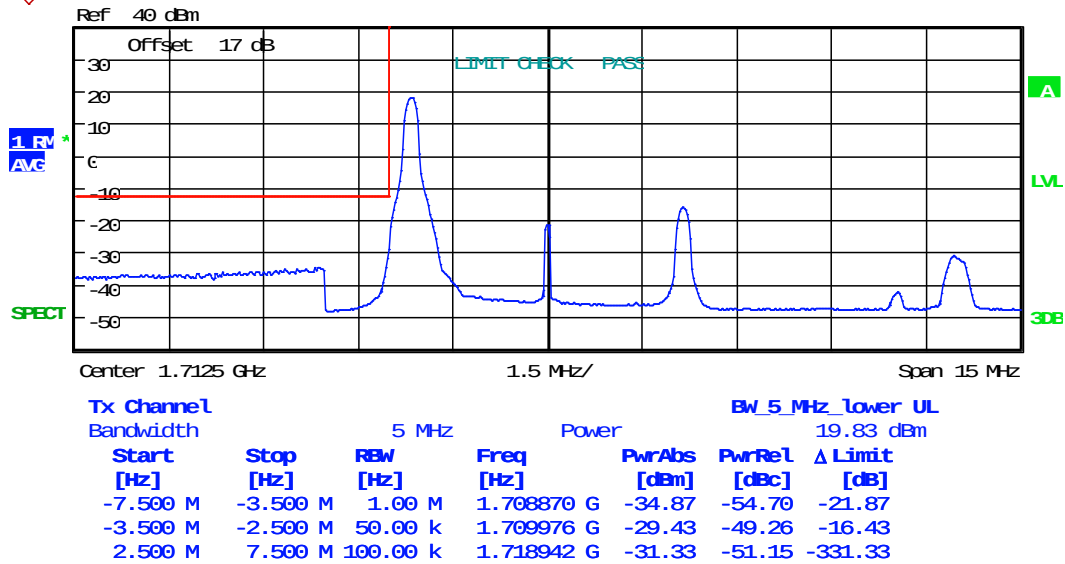
Date: 5.JUL.2021 14:20:28



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

5MHz

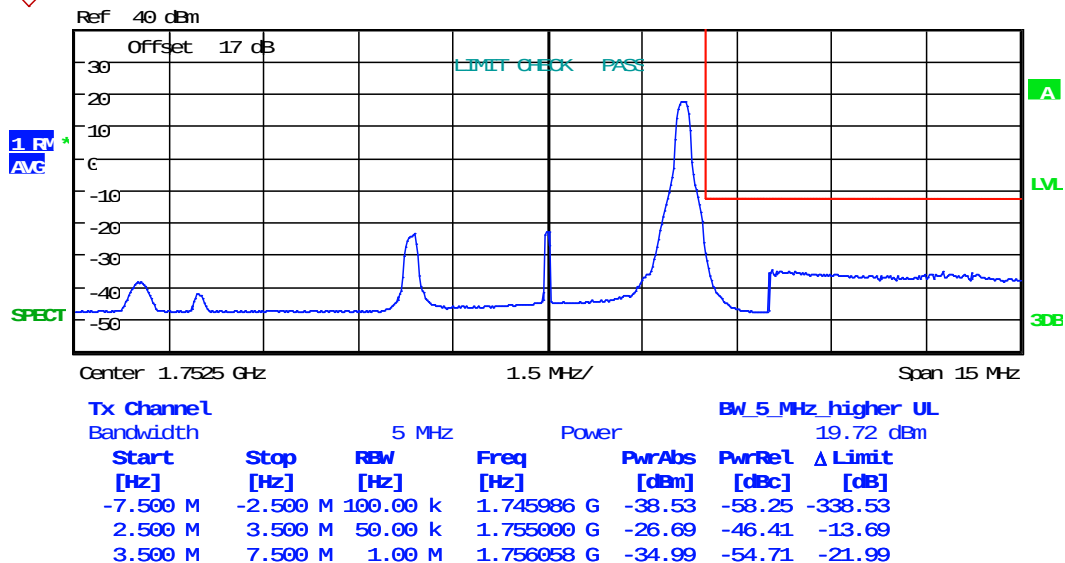


Date: 5.JUL.2021 14:59:09

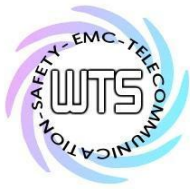


Report Number: W6M22106-21044-P-247

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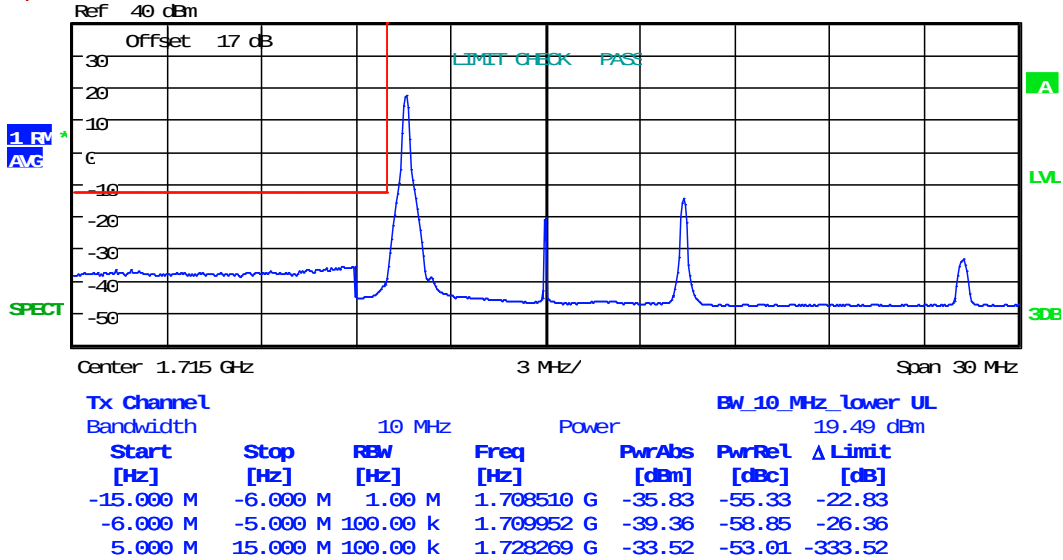
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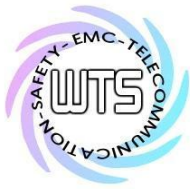
Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

10MHz

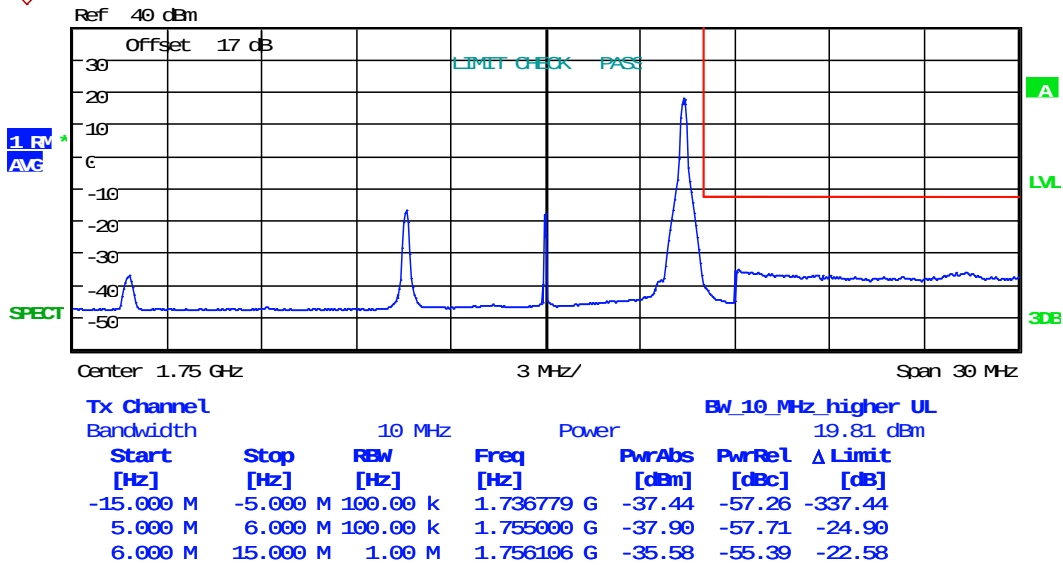


Date: 5.JUL.2021 15:02:15



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID



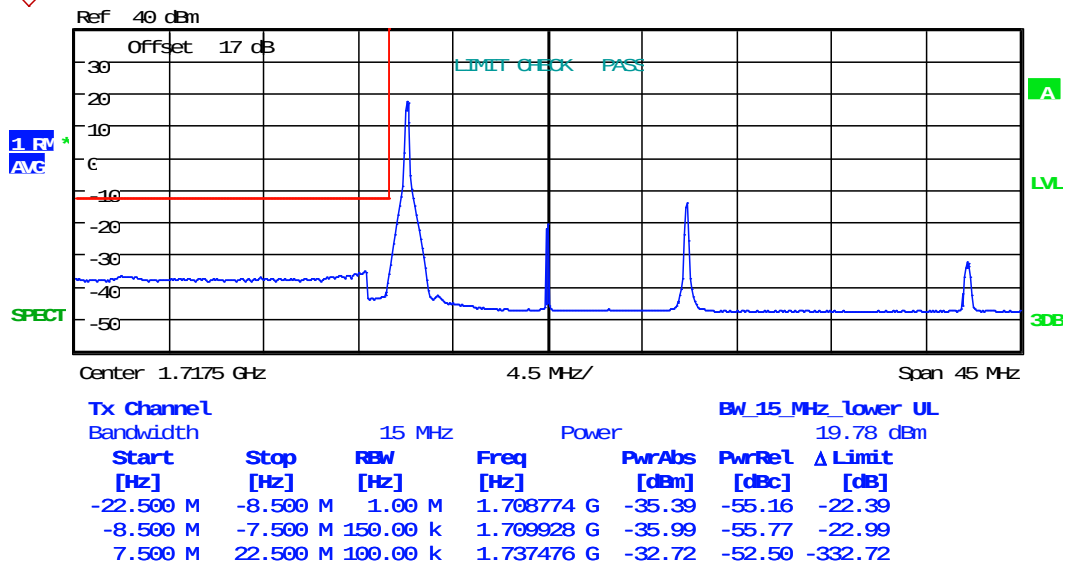
Date: 5.JUL.2021 15:03:15



Report Number: W6M22106-21044-P-247

FCC ID: GX9HYBRID

15MHz



Date: 5.JUL.2021 15:04:23