

FCC TEST REPORT

(PART 24)

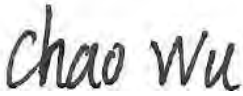
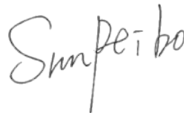
Applicant:	MUNIC
Address:	100 Avenue de Stalingrad 94800 Villejuif – France

Manufacturer or Supplier:	MUNIC
Address:	100 Avenue de Stalingrad 94800 Villejuif – France
Product:	telematics embedded system
Brand Name:	MUNIC
Model Name:	C4D-4G4USAD_V8+
FCC ID:	A6GC4D-4G4USV8-4
Date of tests:	Nov. 28, 2022 ~ Dec. 12, 2022

The tests have been carried out according to the requirements of the following standard:

☒ **FCC PART 24, Subpart E** ☒ **FCC PART 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Chao Wu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
	
Date: Dec. 12, 2022	Date: Dec. 12, 2022

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P22110018RF02	Original release	Dec. 12, 2022



Test Report No.: W7L-P22110018RF02

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2			
STANDARD SECTION	TEST TYPE	RESULT	Test lab*
§2.1046	Coducted Output Power	Compliance	A
§24.232(c)	Equivalent Isotropic Radiated Power	Compliance	A
§2.1055 §24.235	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§24.232(d)	Peak to average ratio	Compliance	A
§24.238(a)(b)	Band Edge Measurements	Compliance	A
§2.1051 §24.238(a)(b)	Conducted Spurious Emissions	Compliance	A
§2.1053 §24.238(a)(b)	Radiated Spurious Emissions	Compliance	A

- **NOTE** : This report refers to the data of W7L-P22050013RF02(FCC ID:A6GC4D-4G4USV8-3, Date of Grant: Jul. 07, 2022, model name: C4D-4G4USAC_V8+), the difference of C4D-4G4USAC_V8+ and C4D-4G4USAD_V8+ is C4D-4G4USAD_V8+ change the GNSS chipset: MPN : UBX-M8030 changed to MPN : UBX-M10050-KB and change model name. In this report only verify power and RSE worst case. So this report only replaces the RSE data of LTE B2.

*Test Lab Information Reference

Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zhuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions & Radiated Power (30MHz~1GMHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GMHz ~18GMHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GMHz ~40GMHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$
Peak to average ratio	$\pm 0.76\text{dB}$

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



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1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,22	Aug.29,23
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,23
Vector Signal Generator	R&S	SMBV100B	102176	Feb.16,22	Fed.15,23
Signal Generator	R&S	SMB100A	182185	Feb.16,22	Fed.15,23
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-E MC-01Chamber	Nov.12,22	Nov.11,24
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-E MC-02Chamber	Nov.12,22	Nov.11,24
EMI TEST Receiver	R&S	ESR26	101734	Feb.25,22	Feb.24,23
EMI TEST Receiver	R&S	ESW44	101973	Feb.25,22	Feb.24,23
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.28,22	Feb.27,23
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,22	Aug.21,23
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.23,22	Feb.22,23
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,23
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,22	Feb.22,23
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.27,22	Jun.26,23
Test Software	EMC32	EMC32	N/A	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	Oct.01,22	Sep.30,23
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,23
Hygrothermograph	DELI	20210528	SZ014	Sep.6,22	Sep.5,23
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Oct.31,22	Apr.29,23
CABLE	R&S	W12.14	N/A	Oct.31,22	Apr.29,23
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Oct.31,22	Apr.29,23
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Oct.31,22	Apr.29,23
Temperature Chamber	votsch	VT4002	58566078100050	May.31,22	May.30,23



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- NOTE:** 1. The calibration interval of the above test instruments is 6 months or 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	telematics embedded system	
BRAND NAME	MUNIC	
MODEL NAME	C4D-4G4USAD_V8+	
NOMINAL VOLTAGE	DC13.7V	
MODULATION TYPE	LTE Band 2: QPSK, 16QAM	
FREQUENCY RANGE	LTE Band 2 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1909.3MHz
	LTE Band 2 Channel Bandwidth: 3MHz	1851.5MHz ~ 1908.5MHz
	LTE Band 2 Channel Bandwidth: 5MHz	1852.5MHz ~ 1907.5MHz
	LTE Band 2 Channel Bandwidth: 10MHz	1855.0MHz ~ 1905.0MHz
	LTE Band 2 Channel Bandwidth: 15MHz	1857.5MHz ~ 1902.5MHz
	LTE Band 2 Channel Bandwidth: 20MHz	1860.0MHz ~ 1900.0MHz
MAX. EIRP POWER	LTE Band 2 Channel Bandwidth: 1.4MHz	405.51mW
	LTE Band 2 Channel Bandwidth: 3MHz	406.44mW
	LTE Band 2 Channel Bandwidth: 5MHz	403.65mW
	LTE Band 2 Channel Bandwidth: 10MHz	404.58mW
	LTE Band 2 Channel Bandwidth: 15MHz	408.32mW
	LTE Band 2 Channel Bandwidth: 20MHz	411.15mW
EMISSION DESIGNATOR	LTE Band 2 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D 16QAM: 1M09W7D
	LTE Band 2 Channel Bandwidth: 3MHz	QPSK: 2M70G7D 16QAM: 2M69W7D
	LTE Band 2 Channel Bandwidth: 5MHz	QPSK: 4M51G7D 16QAM: 4M51W7D
	LTE Band 2 Channel Bandwidth: 10MHz	QPSK: 8M97G7D 16QAM: 8M96W7D

	LTE Band 2	QPSK: 13M4G7D
	Channel Bandwidth: 15MHz	16QAM: 13M4W7D
	LTE Band 2	QPSK: 17M9G7D
	Channel Bandwidth: 20MHz	16QAM: 17M9W7D
ANTENNA TYPE	Fixed Internal Antenna with 3.04 dBi gain for LTE B2	
HW VERSION	D3	
SW VERSION	SW.018	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	
EXTREME TEMPERATURE	-20-50 °C	
EXTREME VOLTAGE	DC8V - DC18V	

NOTE:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

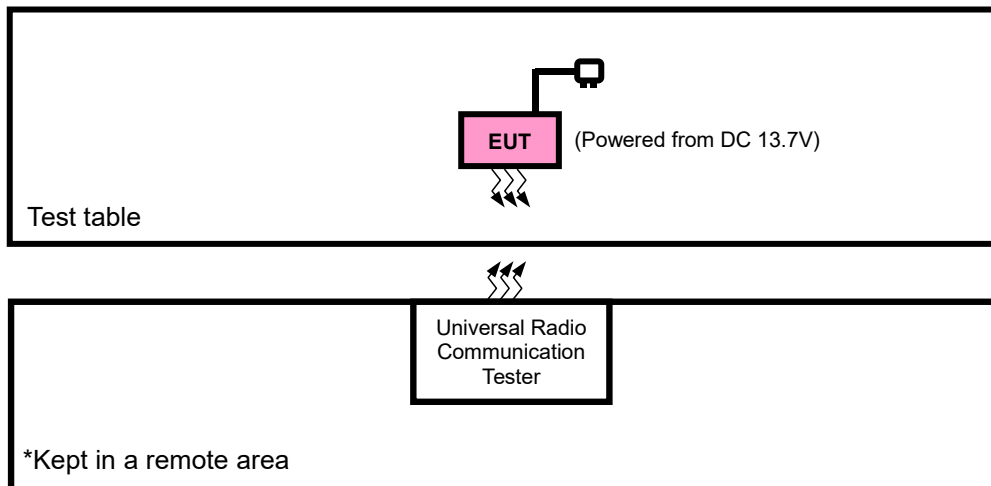
- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery	Howell	352535H	Capacity : Li-ion, 270mAh

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST





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2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	Kikusui/JP	PMX18-5A	0000001	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case in EIRP and radiated emission was found when positioned on X-plane for GSM/EDGE/ LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + DC Source with LTE link

LTE BAND 2 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	1 RB / 0 RB Offset

A	BAND EDGE	18607 to 19193	18607	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
			19193	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18615 to 19185	18615	3MHz	QPSK,16QAM	1 RB / 5 RB Offset
			19185	3MHz	QPSK,16QAM	6 RB / 0 RB Offset
		18625 to 19175	18625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
			19175	5MHz	QPSK,16QAM	15 RB / 0 RB Offset
		18650 to 19150	18650	10MHz	QPSK,16QAM	1 RB / 14 RB Offset
			19150	10MHz	QPSK,16QAM	15 RB / 0 RB Offset
		18675 to 19125	18675	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
			19125	15MHz	QPSK,16QAM	25 RB / 0 RB Offset
		18700 to 19100	18700	20MHz	QPSK,16QAM	1 RB / 24 RB Offset
			19100	20MHz	QPSK,16QAM	25 RB / 0 RB Offset
A	CONDCUDED EMISSION	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	18607 to 19193	18607,18900,19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18900	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18900	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18900	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18900	20MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

**TEST CONDITION:**

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	25deg. C, 57%RH	DC 13.7V	Jace Hu
FREQUENCY STABILITY	23deg. C, 61%RH	DC 13.7V	James Fu
OCCUPIED BANDWIDTH	23deg. C, 61%RH	DC 13.7V	James Fu
PEAK TO AVERAGE RATIO	23deg. C, 61%RH	DC 13.7V	James Fu
BAND EDGE	23deg. C, 61%RH	DC 13.7V	James Fu
CONDCUDED EMISSION	23deg. C, 61%RH	DC 13.7V	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC 13.7V	Jace Hu

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile and portable stations are limited to 2 watts EIRP.

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas} , typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

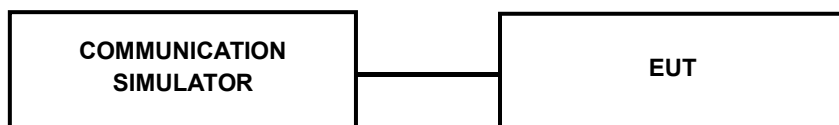
The EUT was set up for the maximum power with WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



3.1.3 TEST SETUP

EIRP / ERP Measurement:

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

LTE BAND 2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18607	Mid CH 18900	High CH 19193	MPR
				Frequency 1850.7 MHz	Frequency 1880 MHz	Frequency 1909.3 MHz	
2/ 1.4	QPSK	1	0	22.67	22.89	22.73	0
		1	2	22.88	23.04	23.02	0
		1	5	22.63	22.70	22.67	0
		3	0	22.72	22.87	22.79	0
		3	1	22.56	22.84	22.64	0
		3	3	22.55	22.79	22.59	0
		6	0	21.38	21.85	21.53	1
	16QAM	1	0	21.93	22.19	21.97	1
		1	2	22.21	22.29	22.18	1
		1	5	22.10	21.91	21.88	1
		3	0	21.53	21.65	21.71	1
		3	1	21.53	21.73	21.73	1
		3	3	21.63	21.74	21.69	1
		6	0	20.42	20.79	20.58	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18615	Mid CH 18900	High CH 19185	MPR
				Frequency 1851.5 MHz	Frequency 1880 MHz	Frequency 1908.5 MHz	
2/ 3	QPSK	1	0	22.69	22.91	22.72	0
		1	7	22.84	23.05	23.02	0
		1	14	22.59	22.70	22.67	0
		8	0	21.71	21.90	21.79	1
		8	3	21.49	21.84	21.66	1
		8	7	21.52	21.86	21.63	1
		15	0	21.35	21.86	21.47	1
	16QAM	1	0	21.90	22.25	22.00	1
		1	7	22.18	22.32	22.16	1
		1	14	22.13	21.91	21.88	1
		8	0	20.49	20.66	20.71	2
		8	3	20.58	20.68	20.76	2
		8	7	20.65	20.72	20.65	2
		15	0	20.42	20.73	20.61	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18625	Mid CH 18900	High CH 19175	MPR
				Frequency 1852.5 MHz	Frequency 1880 MHz	Frequency 1907.5 MHz	
2/ 5	QPSK	1	0	22.70	22.86	22.73	0
		1	12	22.89	23.02	23.02	0
		1	24	22.60	22.69	22.71	0
		12	0	21.74	21.90	21.76	1
		12	6	21.49	21.85	21.67	1
		12	13	21.56	21.82	21.64	1
		25	0	21.33	21.89	21.50	1
	16QAM	1	0	21.91	22.21	22.00	1
		1	12	22.15	22.35	22.15	1
		1	24	22.13	21.91	21.87	1
		12	0	20.49	20.64	20.68	2
		12	6	20.55	20.72	20.72	2
		12	13	20.60	20.74	20.68	2
		25	0	20.42	20.74	20.58	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18650	Mid CH 18900	High CH 19150	MPR
				Frequency 1855 MHz	Frequency 1880 MHz	Frequency 1905 MHz	
2/ 10	QPSK	1	0	22.67	22.89	22.73	0
		1	24	22.89	23.02	23.03	0
		1	49	22.57	22.73	22.67	0
		25	0	21.75	21.89	21.79	1
		25	12	21.55	21.79	21.67	1
		25	25	21.54	21.79	21.63	1
		50	0	21.38	21.89	21.47	1
	16QAM	1	0	21.91	22.18	21.96	1
		1	24	22.20	22.31	22.18	1
		1	49	22.13	21.92	21.84	1
		25	0	20.51	20.62	20.74	2
		25	12	20.59	20.66	20.77	2
		25	25	20.59	20.75	20.65	2
		50	0	20.46	20.73	20.62	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18675	Mid CH 18900	High CH 19125	MPR
				Frequency 1857.5 MHz	Frequency 1880 MHz	Frequency 1902.5 MHz	
2/ 15	QPSK	1	0	22.74	22.89	22.70	0
		1	37	22.87	23.07	22.98	0
		1	74	22.63	22.76	22.68	0
		36	0	21.72	21.90	21.80	1
		36	19	21.56	21.84	21.67	1
		36	39	21.52	21.80	21.63	1
		75	0	21.38	21.87	21.52	1
	16QAM	1	0	21.95	22.25	21.96	1
		1	37	22.19	22.32	22.18	1
		1	74	22.09	21.97	21.86	1
		36	0	20.55	20.62	20.75	2
		36	19	20.53	20.70	20.73	2
		36	39	20.64	20.73	20.68	2
		75	0	20.47	20.76	20.55	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18700	Mid CH 18900	High CH 19100	MPR
				Frequency 1860 MHz	Frequency 1880 MHz	Frequency 1900 MHz	
2/ 20	QPSK	1	0	22.75	22.93	22.78	0
		1	50	22.91	23.10	23.04	0
		1	99	22.65	22.77	22.72	0
		50	0	21.78	21.95	21.81	1
		50	25	21.57	21.86	21.72	1
		50	50	21.60	21.87	21.65	1
		100	0	21.39	21.91	21.55	1
	16QAM	1	0	21.98	22.26	22.02	1
		1	50	22.23	22.37	22.20	1
		1	99	22.15	21.99	21.89	1
		50	0	20.57	20.70	20.76	2
		50	25	20.61	20.74	20.78	2
		50	50	20.67	20.79	20.70	2
		100	0	20.48	20.81	20.63	2



Test Report No.: W7L-P22110018RF02

EIRP POWER (dBm)

LTE BAND 2

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	22.88	3.04	25.92	390.84	2
18900	1880	23.04	3.04	26.08	405.51	2
19193	1909.3	23.02	3.04	26.06	403.65	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	22.21	3.04	25.25	334.97	2
18900	1880	22.29	3.04	25.33	341.19	2
19193	1909.3	22.18	3.04	25.22	332.66	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	22.84	3.04	25.88	387.26	2
18900	1880	23.05	3.04	26.09	406.44	2
19185	1908.5	23.02	3.04	26.06	403.65	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	22.18	3.04	25.22	332.66	2
18900	1880	22.32	3.04	25.36	343.56	2
19185	1908.5	22.16	3.04	25.2	331.13	2



Test Report No.: W7L-P22110018RF02

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	22.89	3.04	25.93	391.74	2
18900	1880	23.02	3.04	26.06	403.65	2
19175	1907.5	23.02	3.04	26.06	403.65	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	22.15	3.04	25.19	330.37	2
18900	1880	22.35	3.04	25.39	345.94	2
19175	1907.5	22.15	3.04	25.19	330.37	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855	22.89	3.04	25.93	391.74	2
18900	1880	23.02	3.04	26.06	403.65	2
19150	1905	23.03	3.04	26.07	404.58	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855	22.2	3.04	25.24	334.2	2
18900	1880	22.31	3.04	25.35	342.77	2
19150	1905	22.18	3.04	25.22	332.66	2



Test Report No.: W7L-P22110018RF02

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _{T-Lc} (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	22.87	3.04	25.91	389.94	2
18900	1880	23.07	3.04	26.11	408.32	2
19125	1902.5	22.98	3.04	26.02	399.94	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _{T-Lc} (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	22.19	3.04	25.23	333.43	2
18900	1880	22.32	3.04	25.36	343.56	2
19125	1902.5	22.18	3.04	25.22	332.66	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _{T-Lc} (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	22.91	3.04	25.95	393.55	2
18900	1880	23.1	3.04	26.14	411.15	2
19100	1900	23.04	3.04	26.08	405.51	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _{T-Lc} (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	22.23	3.04	25.27	336.51	2
18900	1880	22.37	3.04	25.41	347.54	2
19100	1900	22.2	3.04	25.24	334.2	2

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

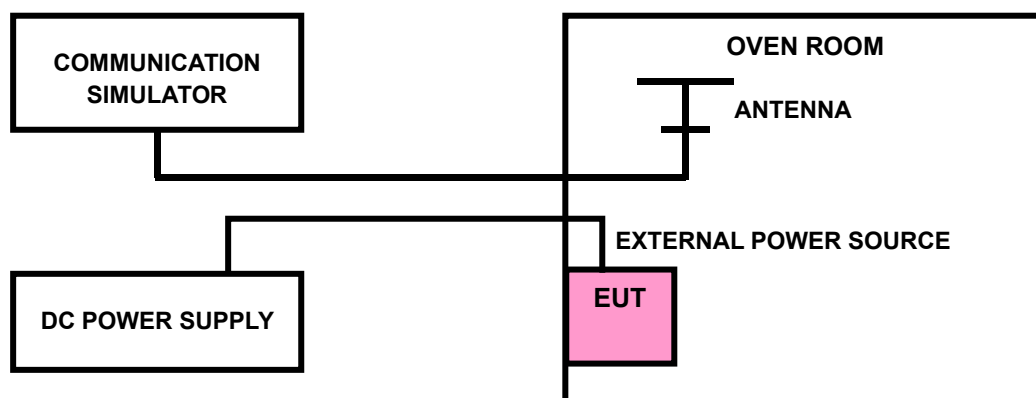
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

3.2.2 TEST PROCEDURE

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP





Test Report No.: W7L-P22110018RF02

3.2.4 TEST RESULTS

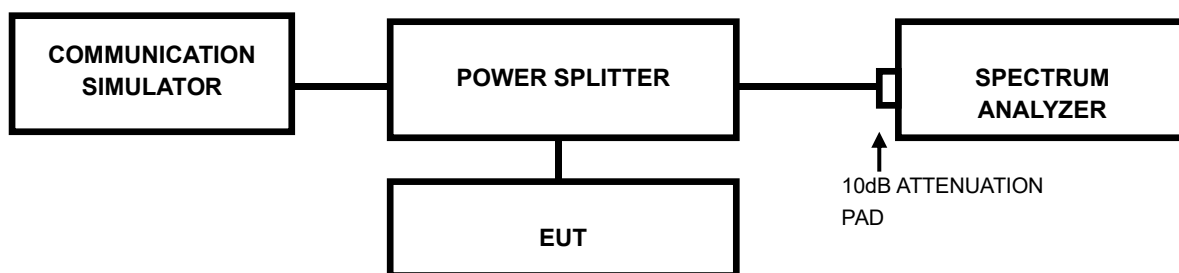
Please Refer to Appendix A Of this test report.

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.3.2 TEST SETUP





Test Report No.: W7L-P22110018RF02

3.3.3 TEST RESULTS

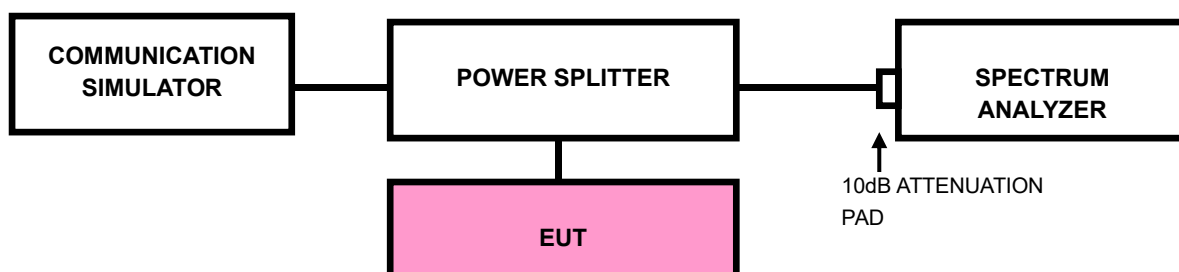
Please Refer to Appendix A Of this test report.

3.4 BAND EDGE MEASUREMENTC

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.4.2 TEST SETUP





3.4.3 TEST PROCEDURES

- a. All measurements were done at low and high operational frequency range.
- b. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz.
RBW of the spectrum is 10kHz and VBW of the spectrum is 30kHz (LTE bandwidth for (1.4M/3M/5M/10M/15M/20M)1RB/0RB&1RB/MAXRB).
- c. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz.
RBW of the spectrum is $\geq 1\% \cdot \text{EBW kHz}$ and VBW of the spectrum is $3 \cdot \text{RBW kHz}$. (LTE bandwidth 1.4M/3M/5M/10M/15M/20MHz).
- d. Record the max trace plot into the test report.

3.4.4. TEST RESULTS

Please Refer to Appendix A Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

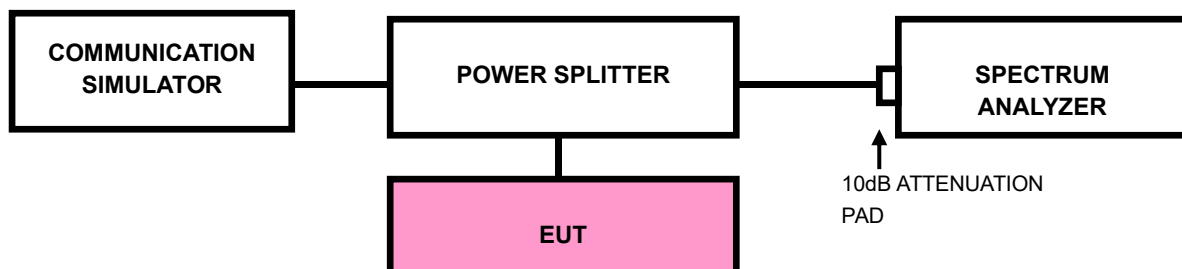
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

3.5.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 30MHz up to a frequency including its 10th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP





Test Report No.: W7L-P22110018RF02

3.5.4 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Please Refer to Appendix A Of this test report.



3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$

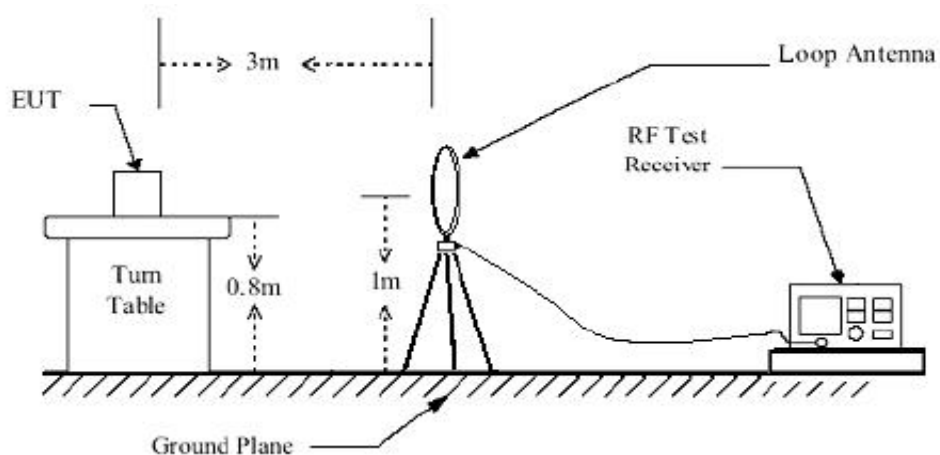
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

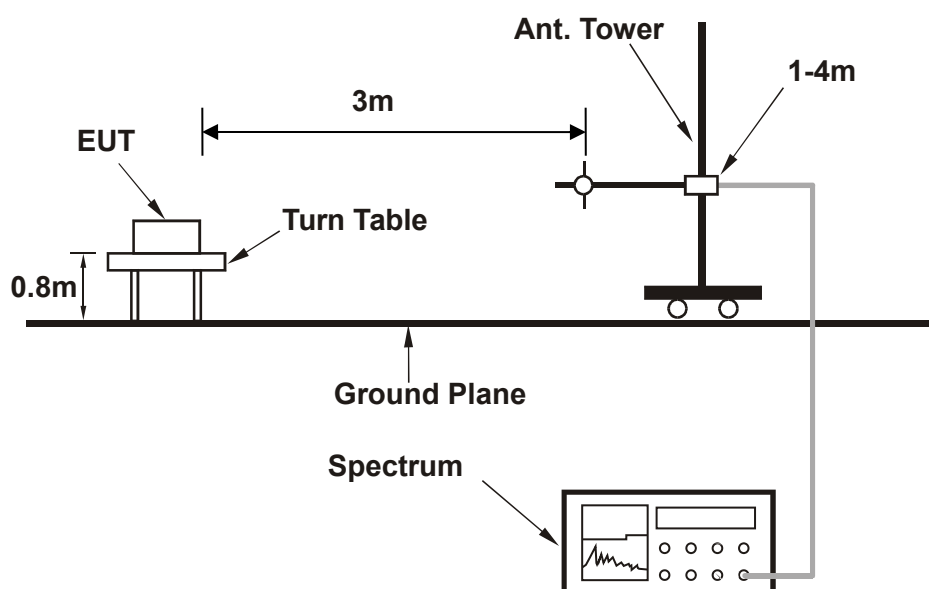
No deviation

3.6.4 TEST SETUP

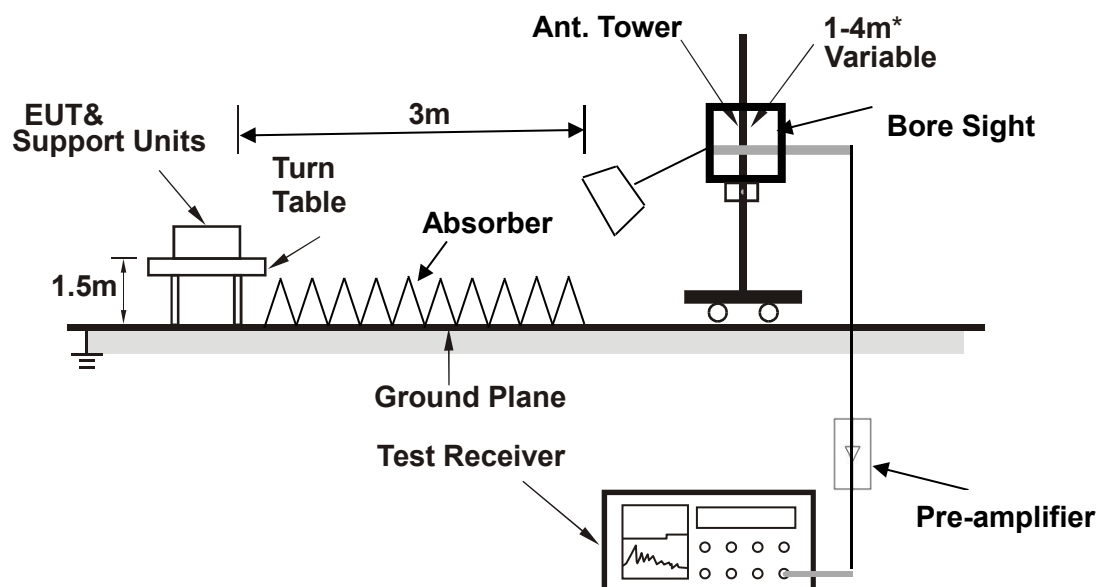
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.6.5 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

LTE Band 2

CHANNEL BANDWIDTH: 1.4MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

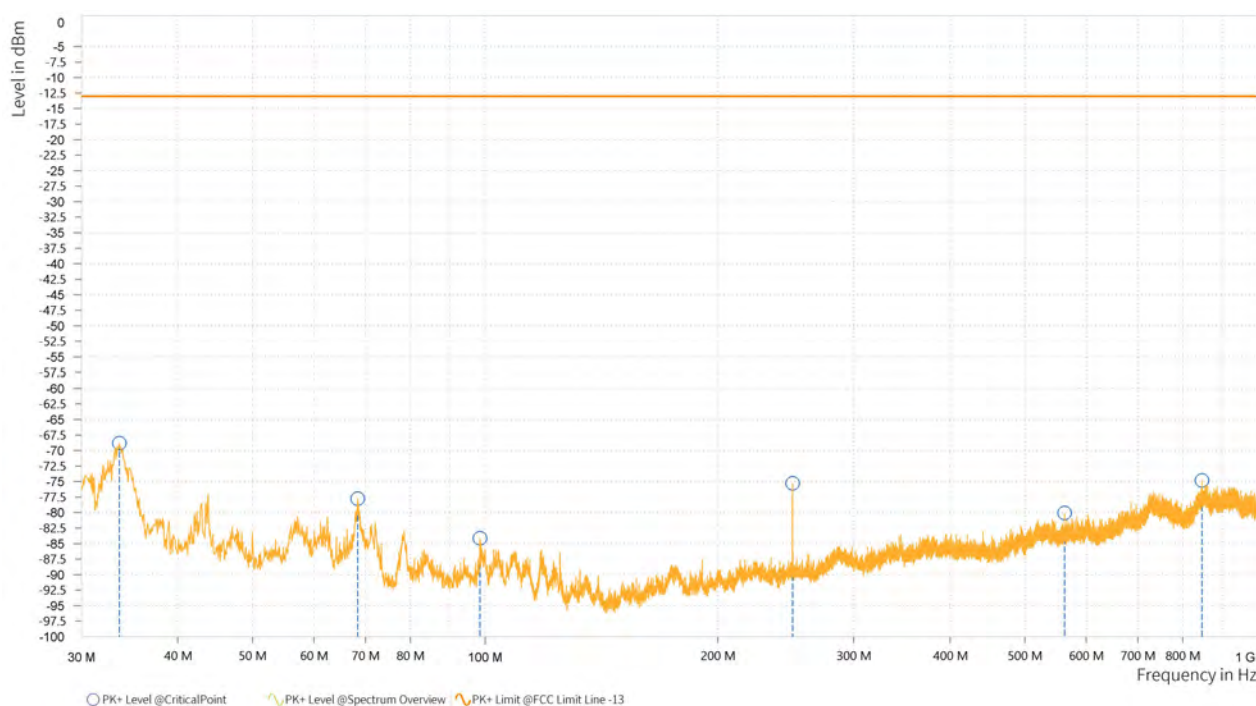
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	33.650	-79.10	-13.00	66.10	-9.39	H	225.7	1
1	56.600	-82.72	-13.00	69.72	-5.39	H	0.1	1
1	125.000	-88.99	-13.00	75.99	-14.38	H	0	2
1	250.050	-73.15	-13.00	60.15	-7.42	H	356.3	2
1	445.300	-81.60	-13.00	68.60	-4.03	H	5	1
2	938.354	-74.60	-13.00	61.60	3.53	H	359.9	2



MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	33.600	-68.83	-13.00	55.83	-11.36	V	4.2	1
1	68.400	-77.75	-13.00	64.75	-2.61	V	355.7	2
1	98.450	-84.12	-13.00	71.12	-8.93	V	0.1	1
1	250.050	-75.29	-13.00	62.29	-9.48	V	359.9	2
2	562.567	-80.09	-13.00	67.09	-3.73	V	0	2
2	847.329	-74.81	-13.00	61.81	2.62	V	0.1	1





Test Report No.: W7L-P22110018RF02

ABOVE 1GHz DATA

Note: For higher frequency, the emission is too low to be detected.

WORST-CASE DATA

LTE Band 2

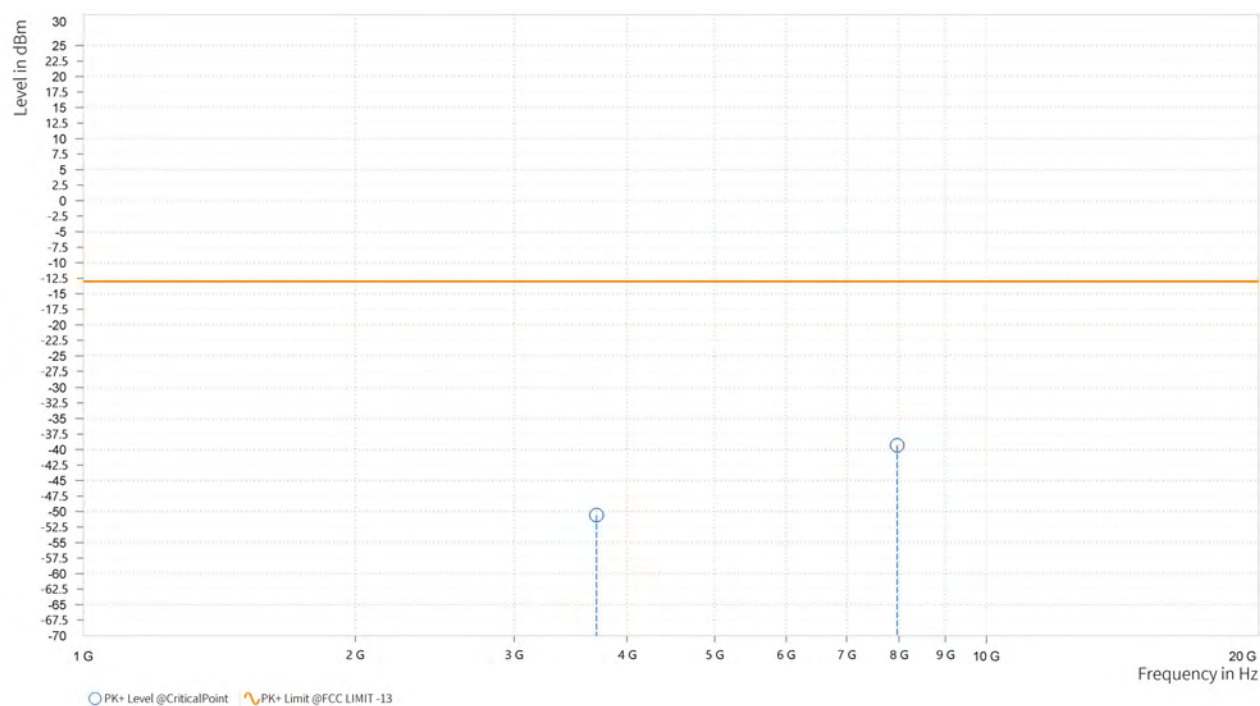
CHANNEL BANDWIDTH: 1.4MHz / QPSK

CH18607

MODE	TX channel 18607	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,700.000	-50.56	-13.00	37.56	22.65	H	159.2	2
5	7,961.000	-39.34	-13.00	26.34	32.98	H	72.1	2



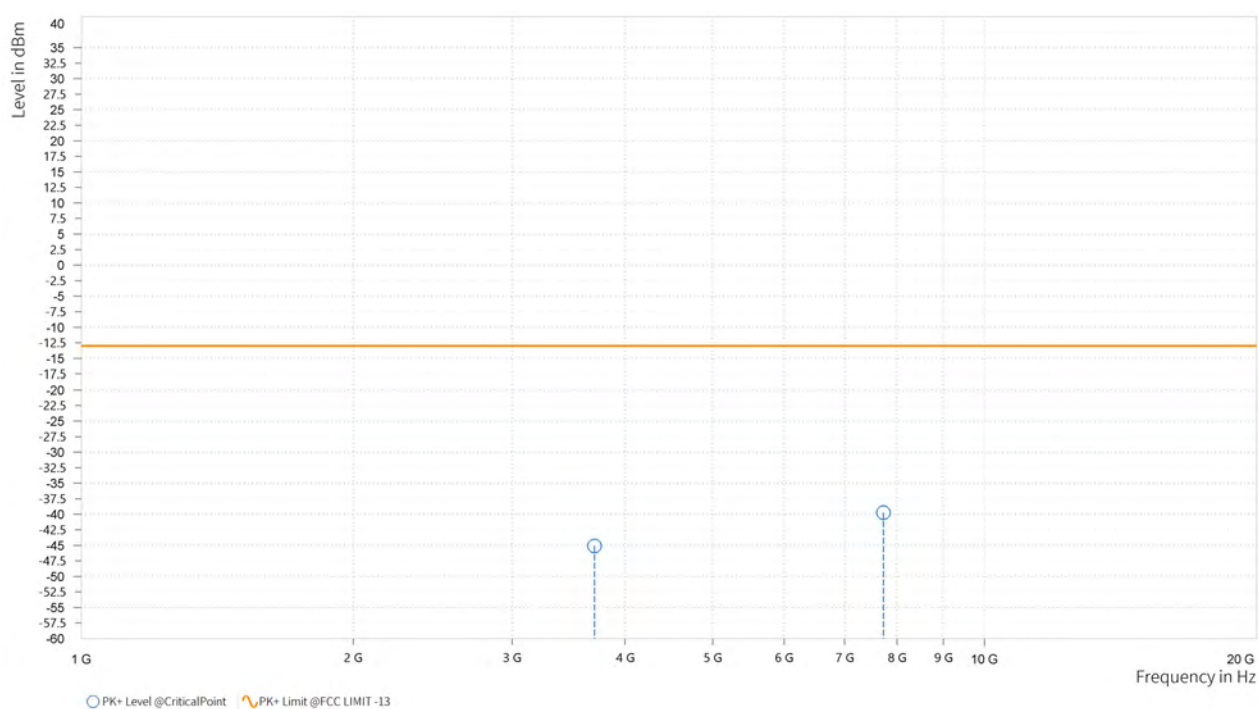


Test Report No.: W7L-P22110018RF02

MODE	TX channel 18607	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,700.500	-45.11	-13.00	32.11	22.58	V	129.5	2
5	7,729.000	-39.73	-13.00	26.73	33.01	V	290.2	1





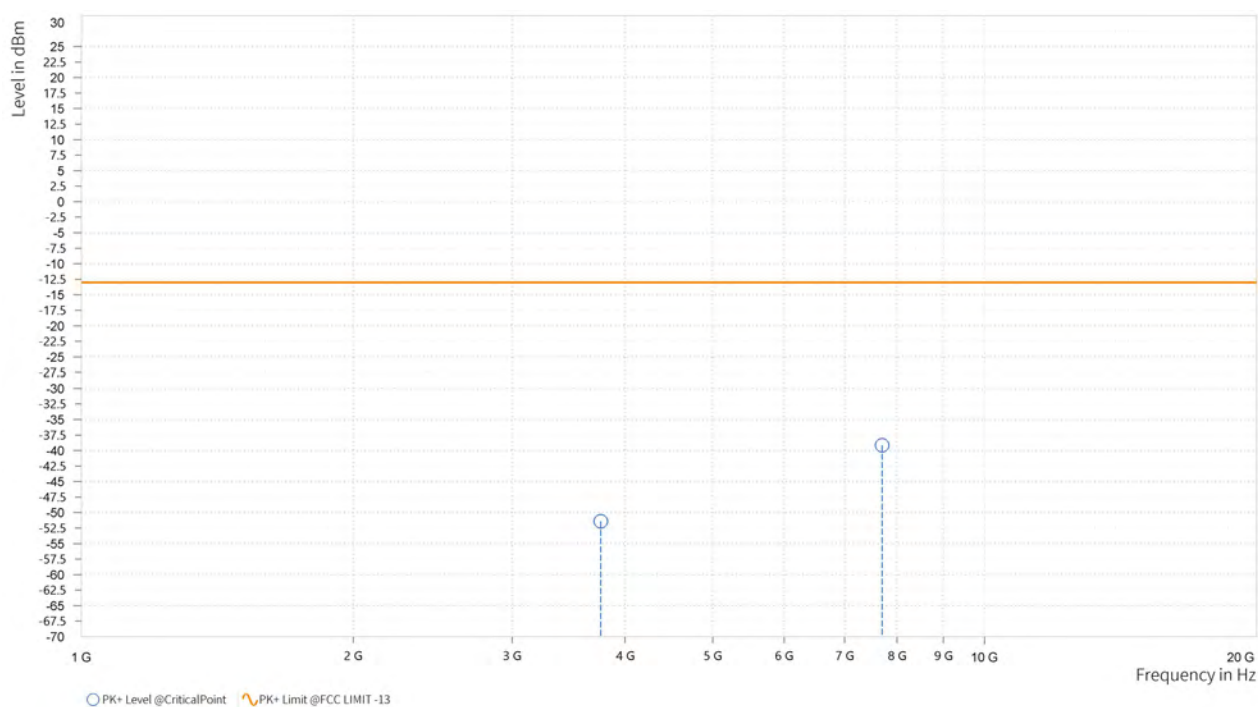
Test Report No.: W7L-P22110018RF02

CH18900

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,758.500	-51.41	-13.00	38.41	23.53	H	158.1	2
5	7,704.000	-39.17	-13.00	26.17	32.74	H	357.8	1



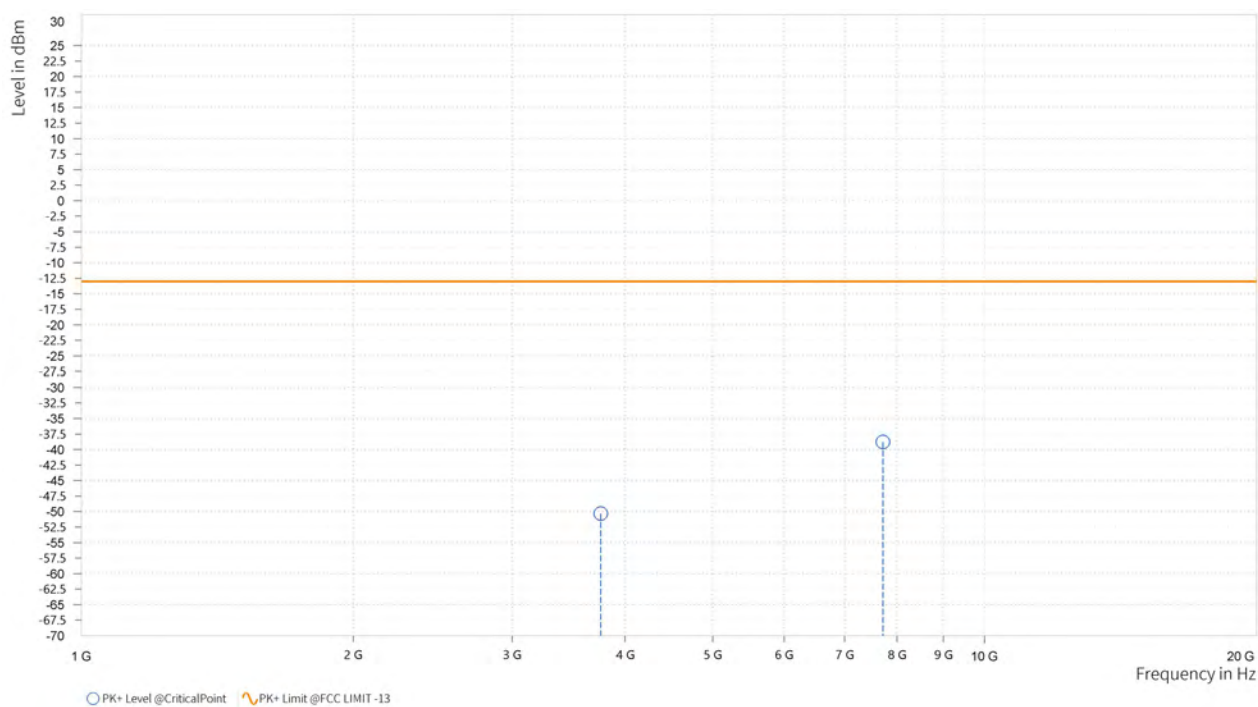


Test Report No.: W7L-P22110018RF02

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,759.000	-50.31	-13.00	37.31	23.53	V	360	1
5	7,719.500	-38.79	-13.00	25.79	32.78	V	301	1





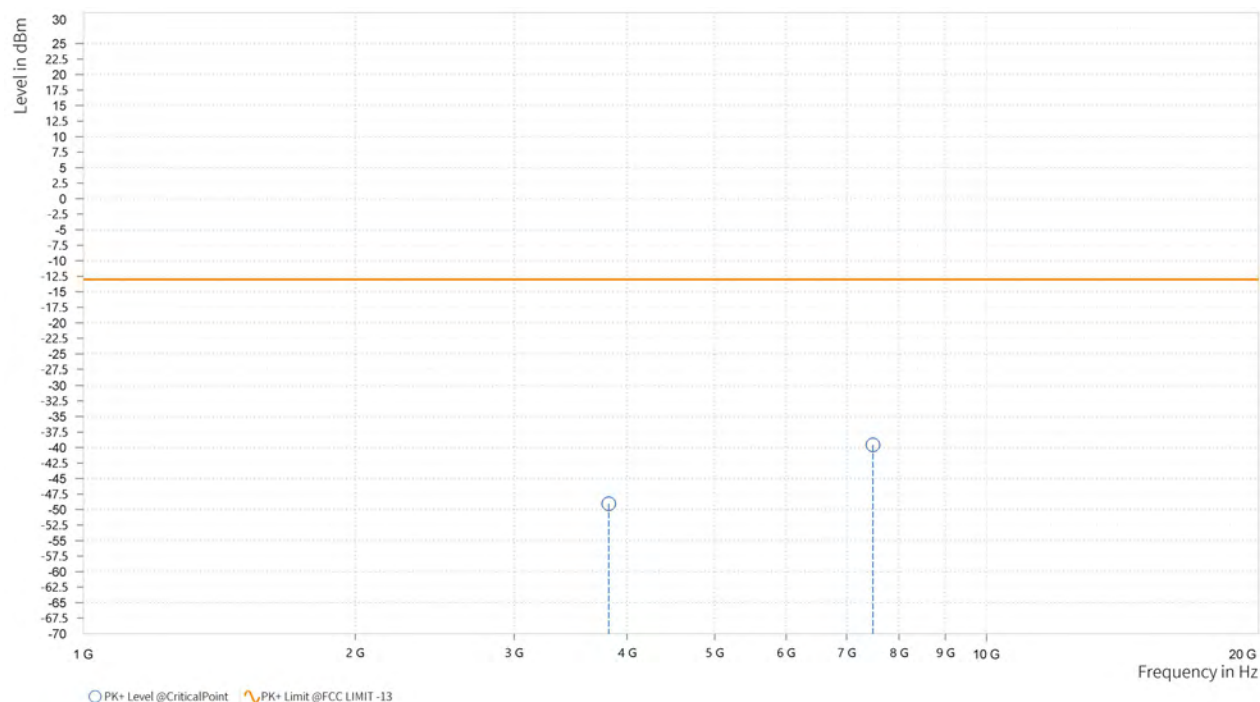
Test Report No.: W7L-P22110018RF02

CH19193

MODE	TX channel 19193	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,818.000	-49.04	-13.00	36.04	23.54	H	359.9	2
5	7,485.500	-39.59	-13.00	26.59	31.76	H	360	1



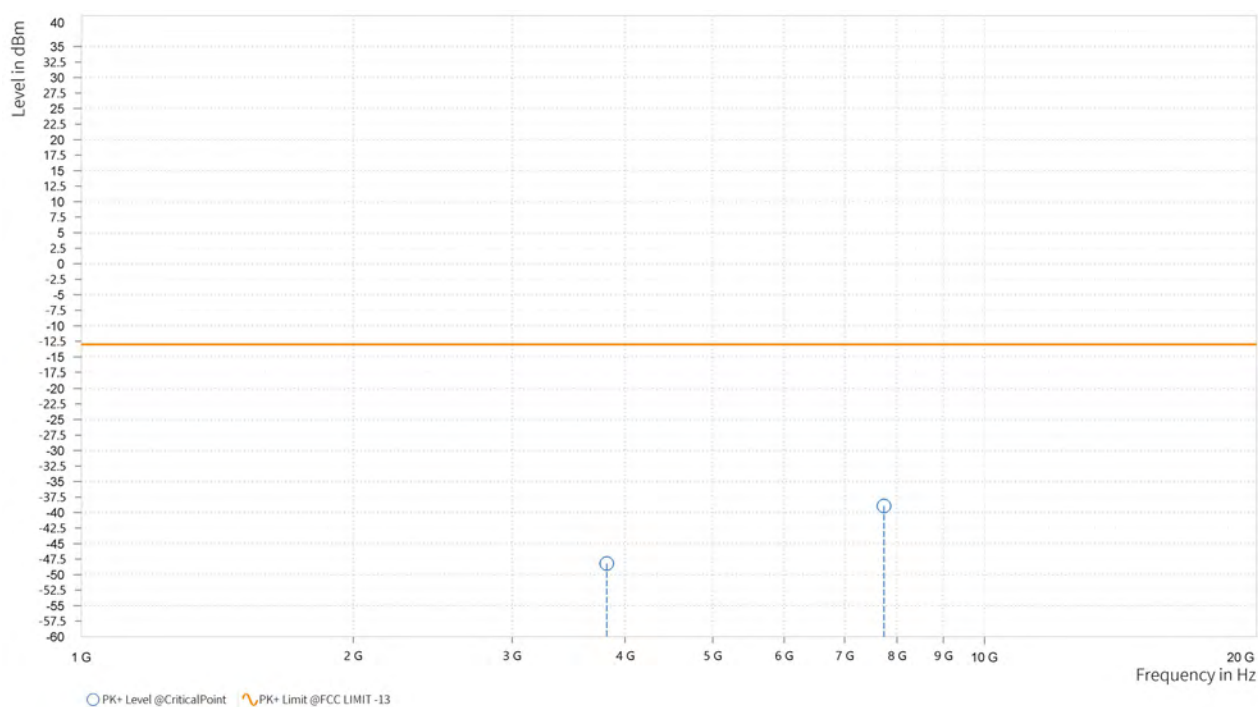


Test Report No.: W7L-P22110018RF02

MODE	TX channel 19193	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,817.500	-48.19	-13.00	35.19	23.32	V	129.4	2
5	7,736.000	-38.92	-13.00	25.92	33.03	V	287.9	1

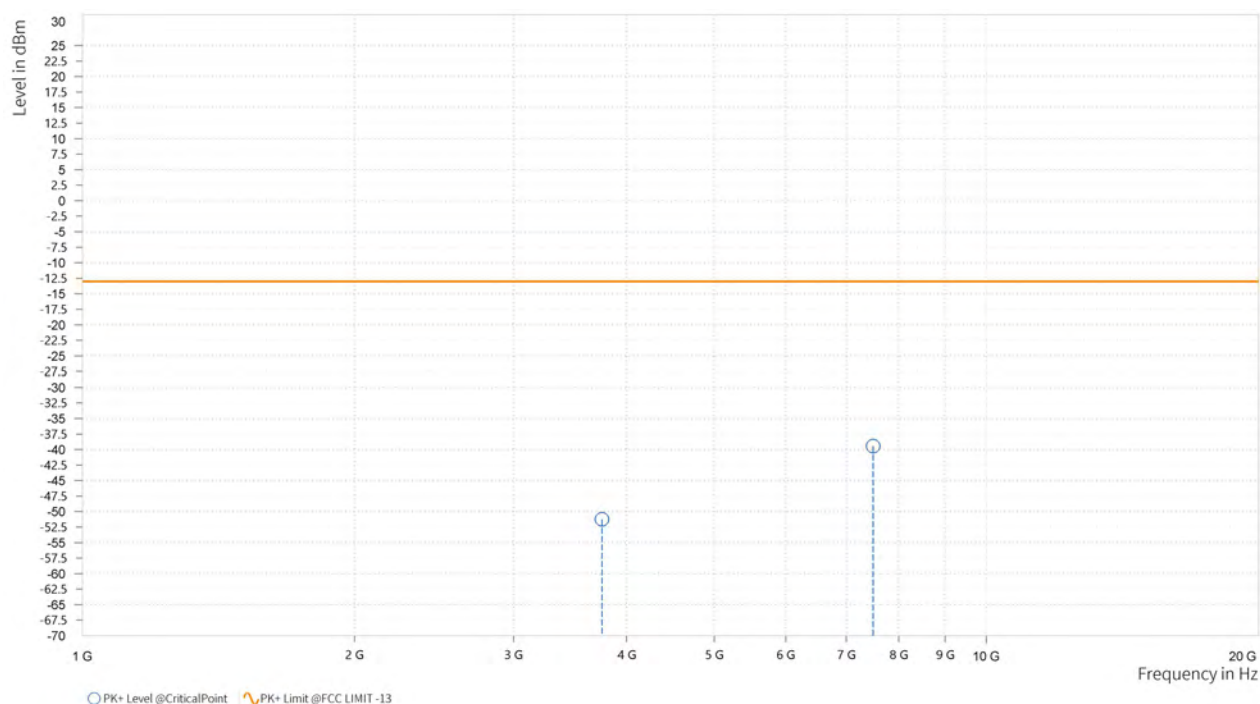


CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,757.000	-51.24	-13.00	38.24	23.54	H	158	2
5	7,496.000	-39.45	-13.00	26.45	31.83	H	359.9	1



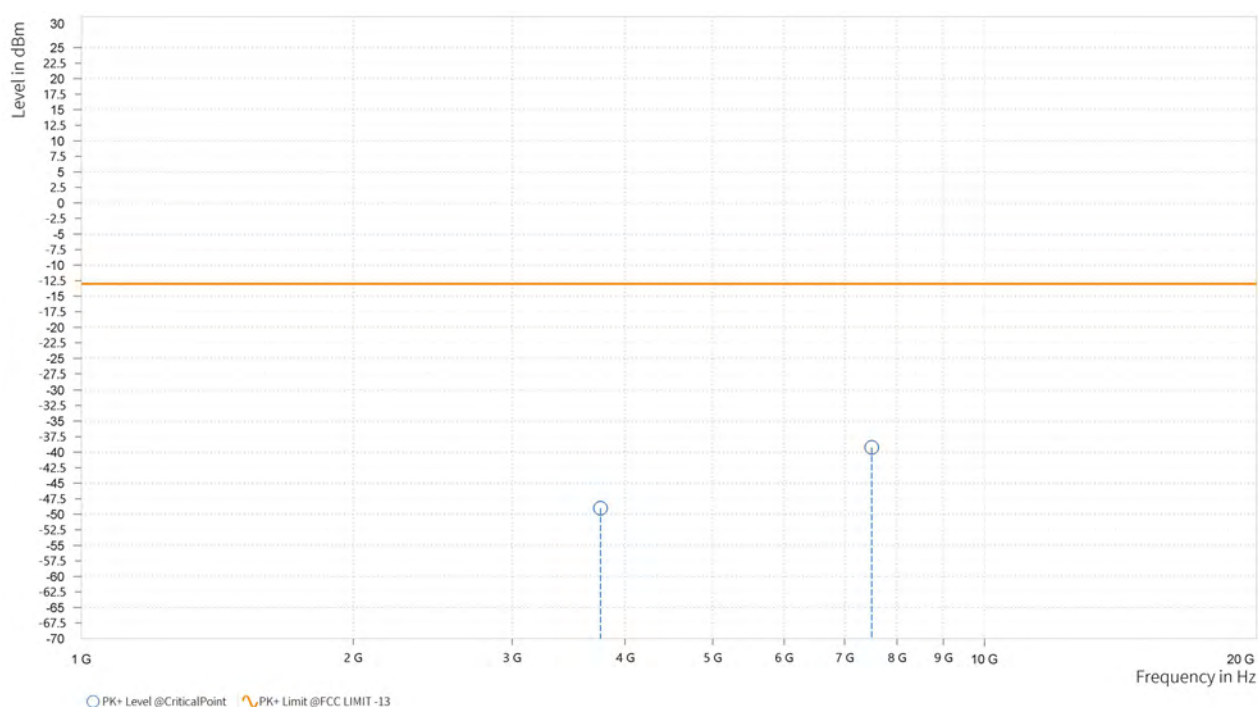


Test Report No.: W7L-P22110018RF02

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,757.500	-49.00	-13.00	36.00	23.43	V	0.1	1
5	7,497.500	-39.23	-13.00	26.23	31.88	V	0.1	2





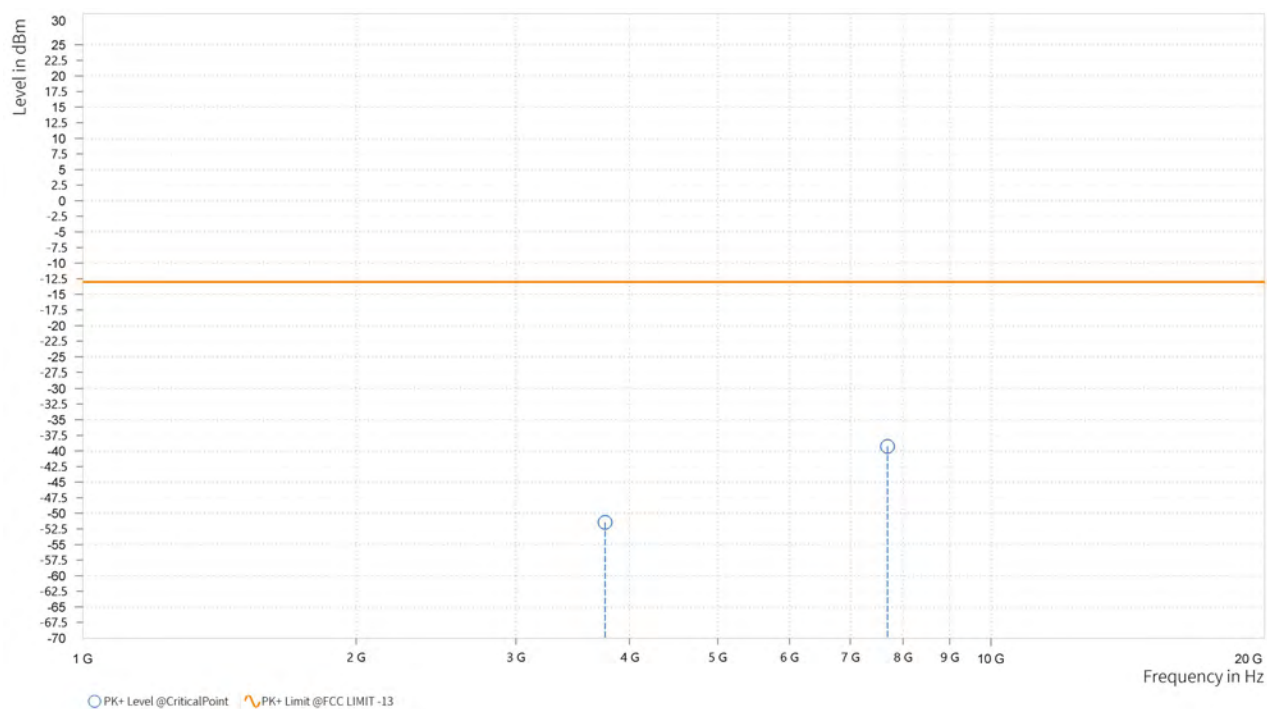
Test Report No.: W7L-P22110018RF02

CHANNEL BANDWIDTH: 5MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,759.500	-51.46	-13.00	38.46	23.53	H	212.6	1
5	7,691.500	-39.30	-13.00	26.30	32.71	H	73.3	2



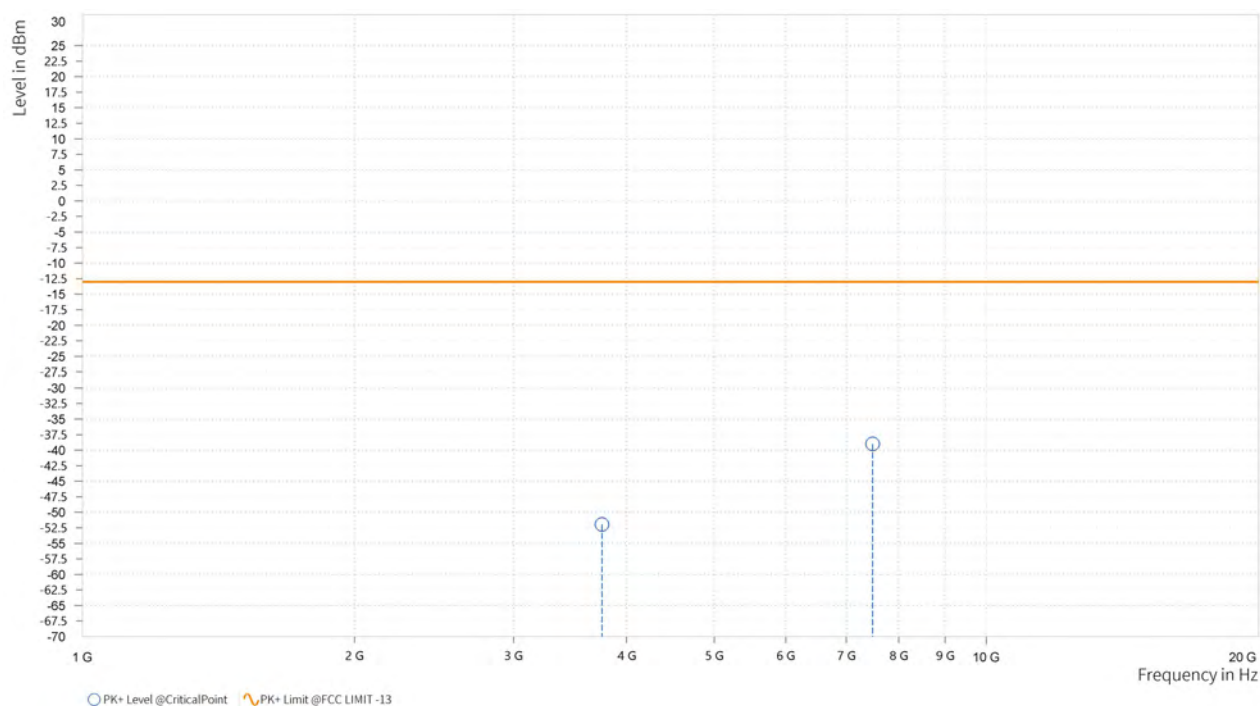


Test Report No.: W7L-P22110018RF02

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,757.000	-51.94	-13.00	38.94	23.43	V	0.1	2
5	7,484.000	-39.00	-13.00	26.00	31.82	V	359.9	2





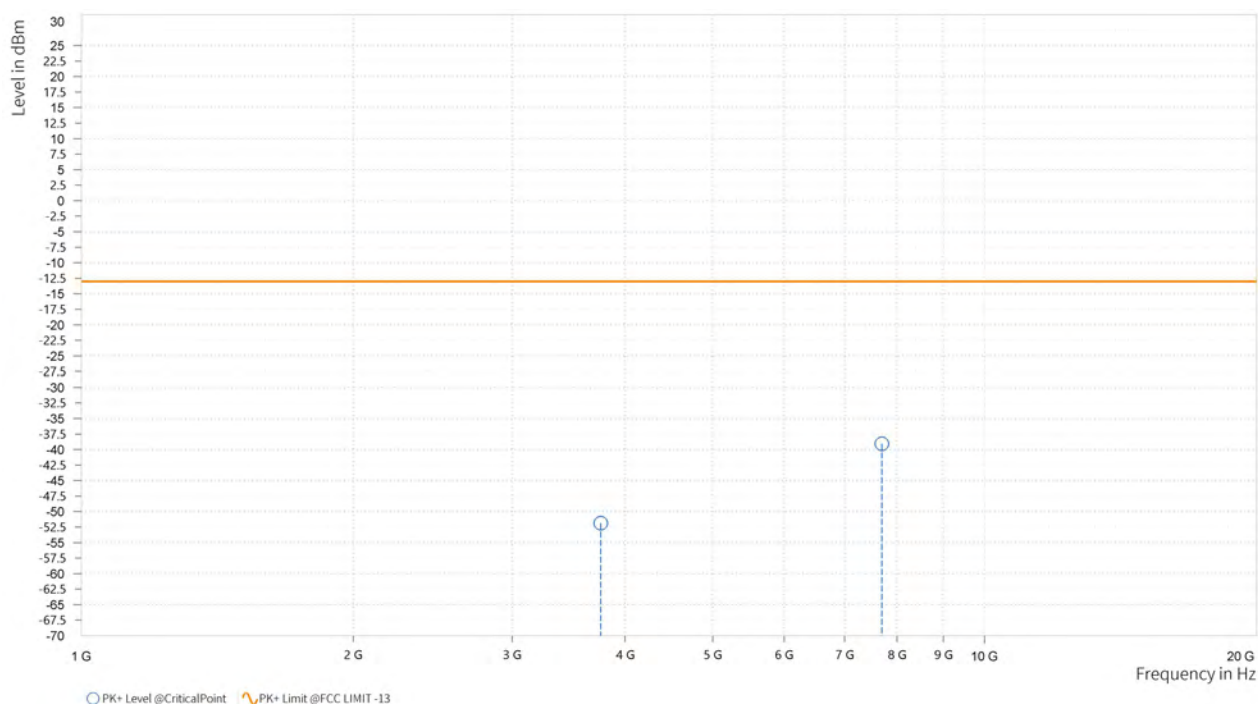
Test Report No.: W7L-P22110018RF02

CHANNEL BANDWIDTH: 10MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,760.000	-51.87	-13.00	38.87	23.52	H	359.9	2
5	7,697.000	-39.09	-13.00	26.09	32.72	H	0.1	1



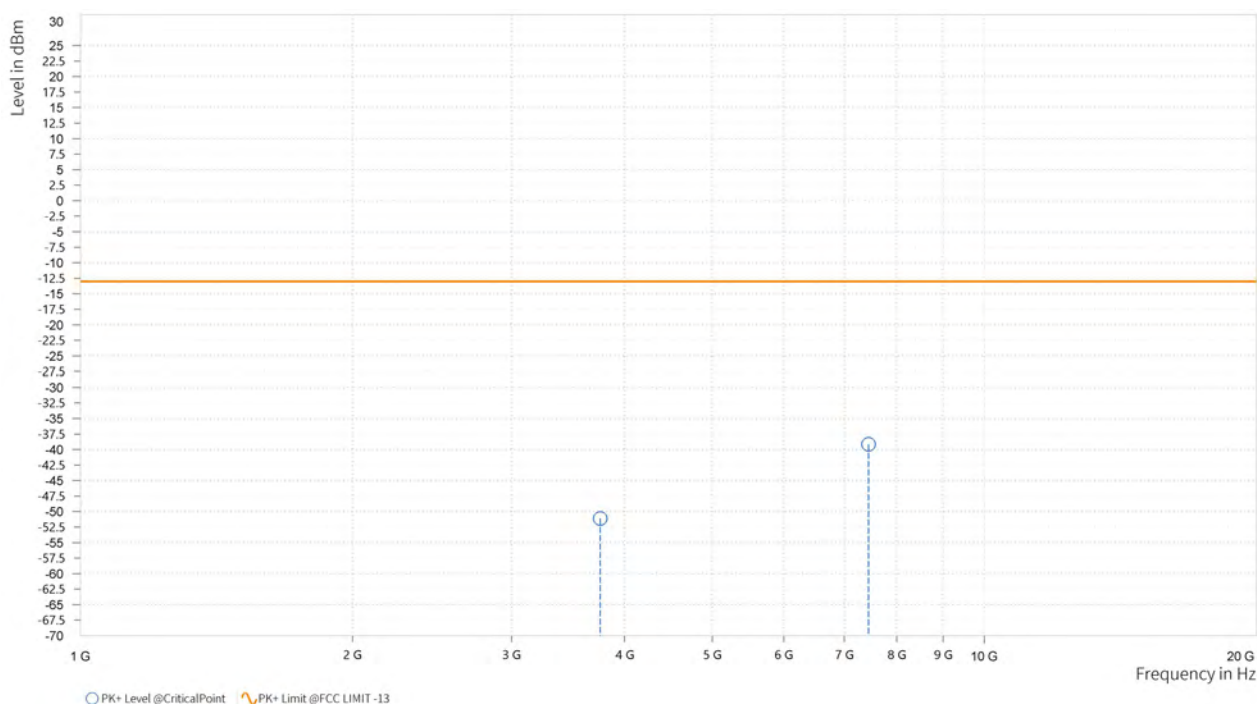


Test Report No.: W7L-P22110018RF02

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,759.500	-51.13	-13.00	38.13	23.42	V	161.6	2
5	7,447.500	-39.16	-13.00	26.16	31.73	V	0.1	1





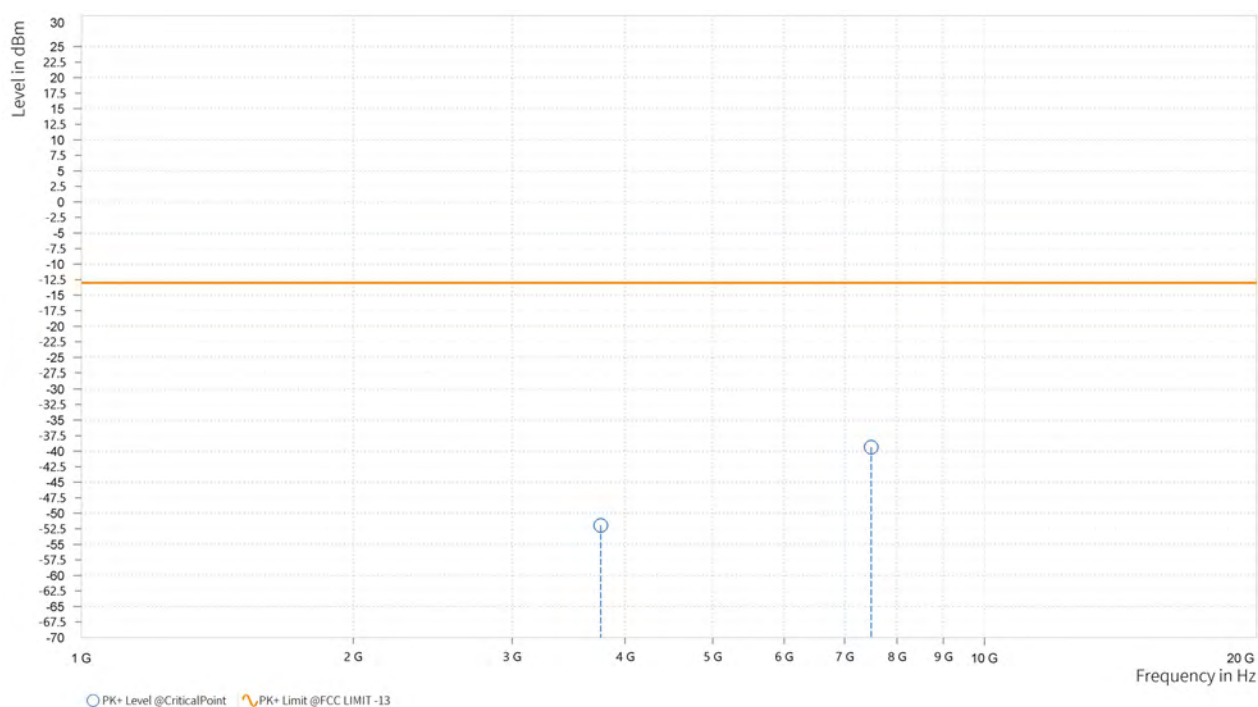
Test Report No.: W7L-P22110018RF02

CHANNEL BANDWIDTH: 15MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,758.000	-51.95	-13.00	38.95	23.54	H	0.1	2
5	7,488.500	-39.35	-13.00	26.35	31.78	H	0.1	2



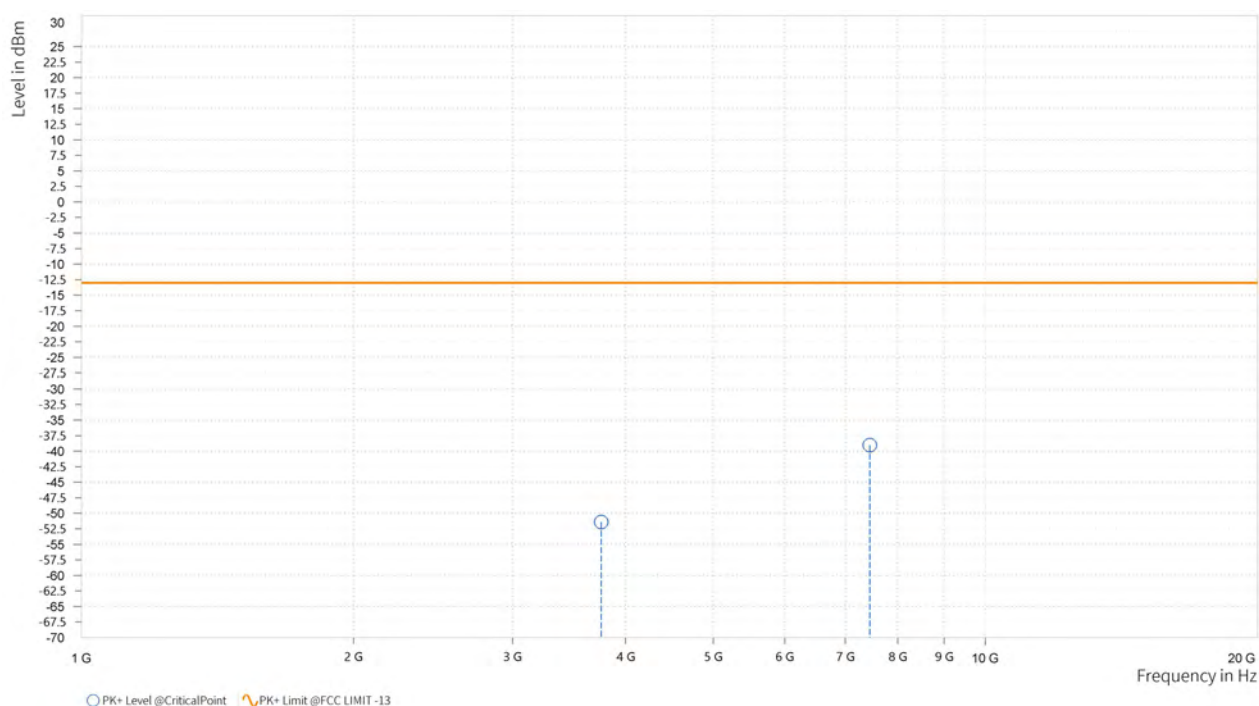


Test Report No.: W7L-P22110018RF02

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,759.500	-51.41	-13.00	38.41	23.42	V	359.9	1
5	7,452.000	-39.02	-13.00	26.02	31.73	V	70.9	2





Test Report No.: W7L-P22110018RF02

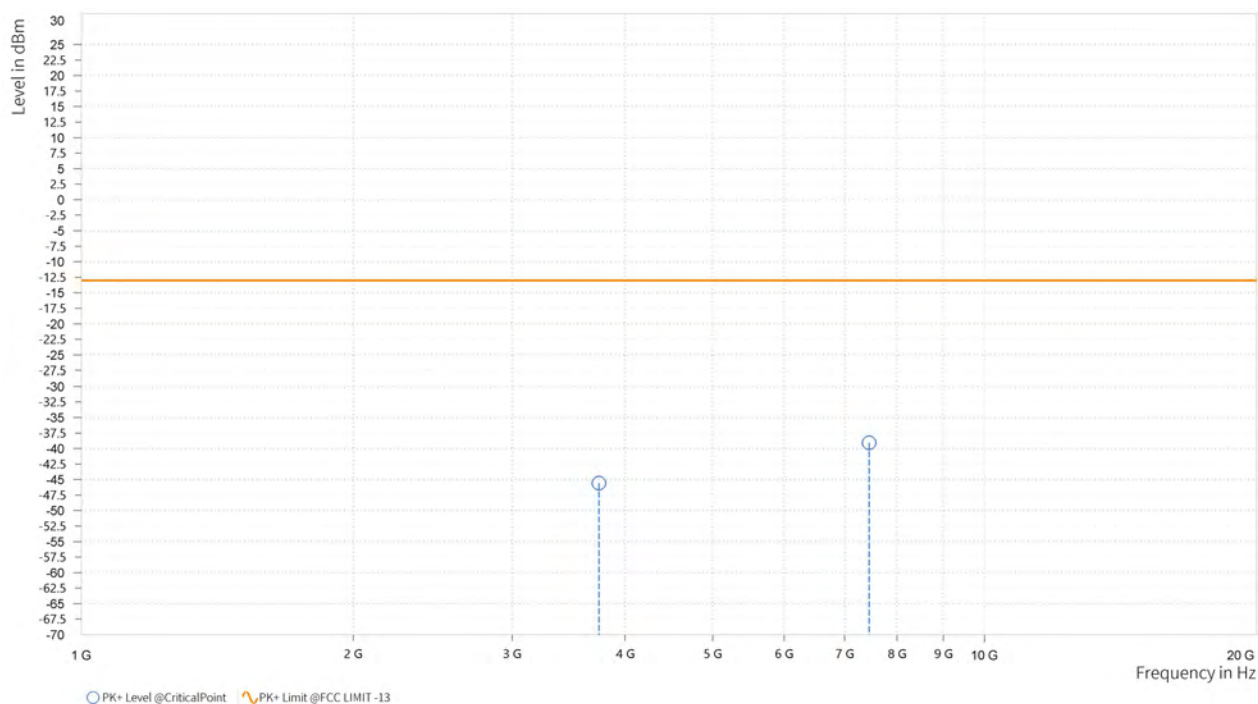
CHANNEL BANDWIDTH: 20MHz / QPSK

CH18900

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

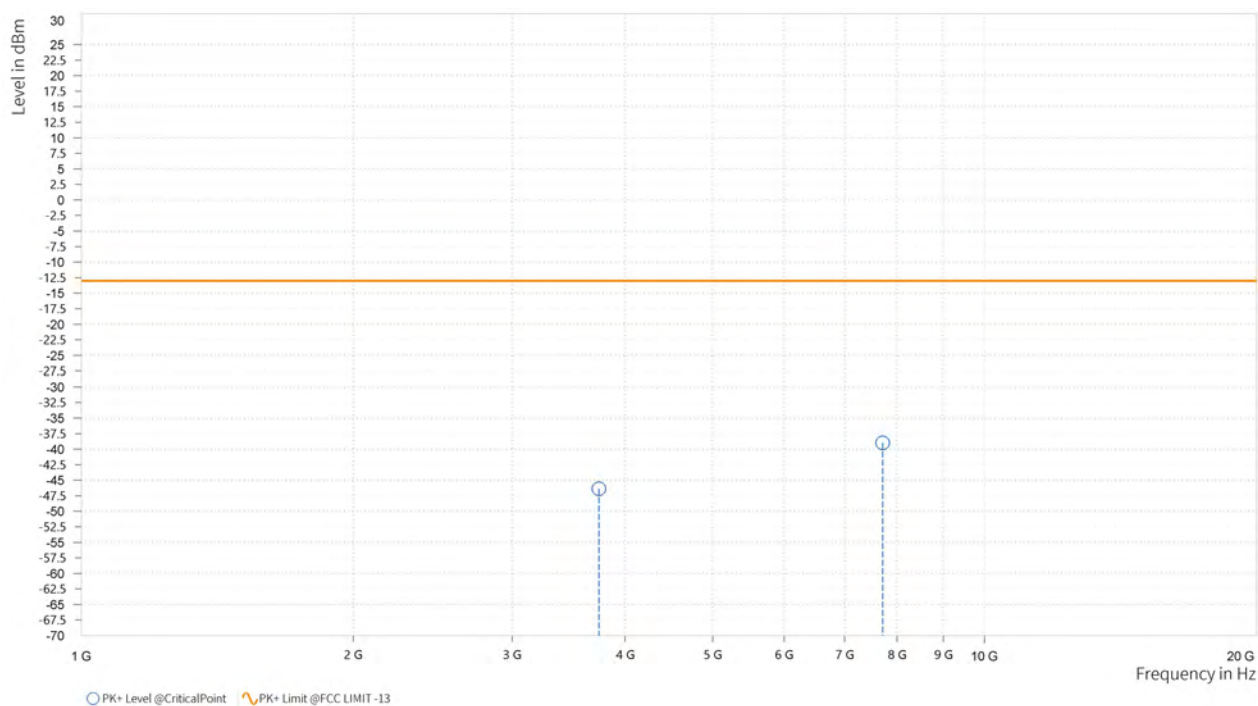
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,742.000	-45.57	-13.00	32.57	23.46	H	158.1	2
5	7,452.500	-39.07	-13.00	26.07	31.61	H	70.9	2



MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC13.7V
TESTED BY	Chao Wu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,742.000	-46.39	-13.00	33.39	23.35	V	129.5	2
5	7,711.500	-39.01	-13.00	26.01	32.94	V	0.1	1

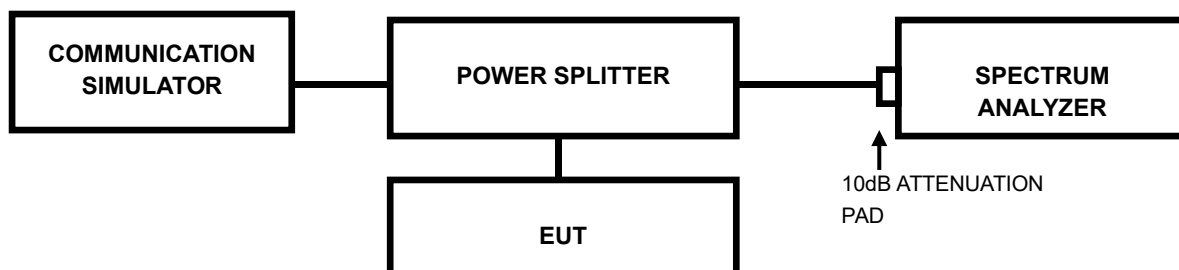


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.



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3.7.4 TEST RESULTS

Please Refer to Appendix A Of this test report.



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4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Suzhou EMC/RF Lab:

Tel: +86 (0557) 368 1008



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5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

NOTE: Please Refer to Appendix A Of this test report.



6. APPENDIX A

LTE BAND2

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band2	1.4MHz	QPSK	18607	1RB#0	4.14	13	PASS
Band2	1.4MHz	QPSK	18607	6RB#0	5.10	13	PASS
Band2	1.4MHz	QPSK	18900	1RB#0	3.85	13	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	4.85	13	PASS
Band2	1.4MHz	QPSK	19193	1RB#0	4.31	13	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	4.98	13	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	5.18	13	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	5.97	13	PASS
Band2	1.4MHz	16QAM	18900	1RB#0	4.92	13	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	5.64	13	PASS
Band2	1.4MHz	16QAM	19193	1RB#0	5.13	13	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	5.88	13	PASS
Band2	3MHz	QPSK	18615	1RB#0	4.29	13	PASS
Band2	3MHz	QPSK	18615	15RB#0	5.06	13	PASS
Band2	3MHz	QPSK	18900	1RB#0	3.99	13	PASS
Band2	3MHz	QPSK	18900	15RB#0	4.93	13	PASS
Band2	3MHz	QPSK	19185	1RB#0	3.47	13	PASS
Band2	3MHz	QPSK	19185	15RB#0	4.50	13	PASS
Band2	3MHz	16QAM	18615	1RB#0	5.26	13	PASS
Band2	3MHz	16QAM	18615	15RB#0	6.01	13	PASS
Band2	3MHz	16QAM	18900	1RB#0	4.92	13	PASS
Band2	3MHz	16QAM	18900	15RB#0	5.71	13	PASS
Band2	3MHz	16QAM	19185	1RB#0	4.35	13	PASS
Band2	3MHz	16QAM	19185	15RB#0	5.51	13	PASS
Band2	5MHz	QPSK	18625	1RB#0	4.27	13	PASS
Band2	5MHz	QPSK	18625	25RB#0	5.09	13	PASS
Band2	5MHz	QPSK	18900	1RB#0	3.97	13	PASS
Band2	5MHz	QPSK	18900	25RB#0	5.61	13	PASS
Band2	5MHz	QPSK	19175	1RB#0	3.40	13	PASS
Band2	5MHz	QPSK	19175	25RB#0	6.97	13	PASS
Band2	5MHz	16QAM	18625	1RB#0	5.40	13	PASS
Band2	5MHz	16QAM	18625	25RB#0	5.95	13	PASS
Band2	5MHz	16QAM	18900	1RB#0	4.87	13	PASS
Band2	5MHz	16QAM	18900	25RB#0	5.74	13	PASS
Band2	5MHz	16QAM	19175	1RB#0	4.36	13	PASS
Band2	5MHz	16QAM	19175	25RB#0	5.39	13	PASS
Band2	10MHz	QPSK	18650	1RB#0	4.20	13	PASS
Band2	10MHz	QPSK	18650	50RB#0	4.97	13	PASS
Band2	10MHz	QPSK	18900	1RB#0	3.60	13	PASS

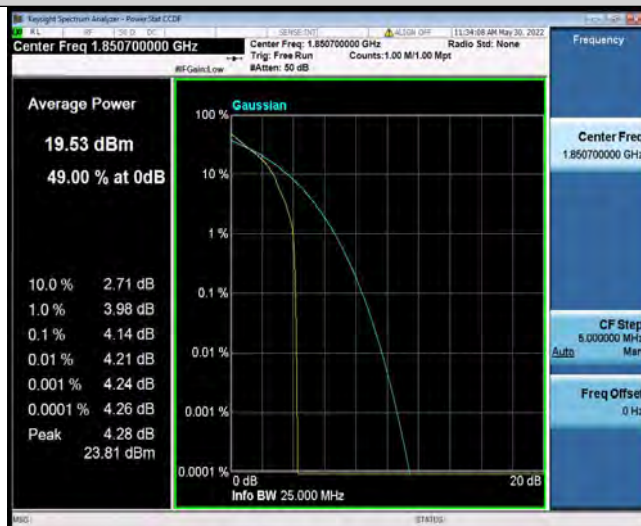


Test Report No.: W7L-P22110018RF02

Band2	10MHz	QPSK	18900	50RB#0	4.96	13	PASS
Band2	10MHz	QPSK	19150	1RB#0	3.42	13	PASS
Band2	10MHz	QPSK	19150	50RB#0	4.33	13	PASS
Band2	10MHz	16QAM	18650	1RB#0	5.15	13	PASS
Band2	10MHz	16QAM	18650	50RB#0	5.86	13	PASS
Band2	10MHz	16QAM	18900	1RB#0	4.74	13	PASS
Band2	10MHz	16QAM	18900	50RB#0	5.79	13	PASS
Band2	10MHz	16QAM	19150	1RB#0	4.14	13	PASS
Band2	10MHz	16QAM	19150	50RB#0	5.18	13	PASS
Band2	15MHz	QPSK	18675	1RB#0	4.19	13	PASS
Band2	15MHz	QPSK	18675	75RB#0	5.04	13	PASS
Band2	15MHz	QPSK	18900	1RB#0	3.65	13	PASS
Band2	15MHz	QPSK	18900	75RB#0	5.10	13	PASS
Band2	15MHz	QPSK	19125	1RB#0	3.93	13	PASS
Band2	15MHz	QPSK	19125	75RB#0	4.68	13	PASS
Band2	15MHz	16QAM	18675	1RB#0	5.12	13	PASS
Band2	15MHz	16QAM	18675	75RB#0	5.85	13	PASS
Band2	15MHz	16QAM	18900	1RB#0	4.54	13	PASS
Band2	15MHz	16QAM	18900	75RB#0	5.90	13	PASS
Band2	15MHz	16QAM	19125	1RB#0	4.67	13	PASS
Band2	15MHz	16QAM	19125	75RB#0	5.45	13	PASS
Band2	20MHz	QPSK	18700	1RB#0	3.75	13	PASS
Band2	20MHz	QPSK	18700	100RB#0	4.75	13	PASS
Band2	20MHz	QPSK	18900	1RB#0	3.63	13	PASS
Band2	20MHz	QPSK	18900	100RB#0	5.01	13	PASS
Band2	20MHz	QPSK	19100	1RB#0	3.78	13	PASS
Band2	20MHz	QPSK	19100	100RB#0	4.63	13	PASS
Band2	20MHz	16QAM	18700	1RB#0	4.44	13	PASS
Band2	20MHz	16QAM	18700	100RB#0	5.65	13	PASS
Band2	20MHz	16QAM	18900	1RB#0	4.48	13	PASS
Band2	20MHz	16QAM	18900	100RB#0	5.91	13	PASS
Band2	20MHz	16QAM	19100	1RB#0	4.96	13	PASS
Band2	20MHz	16QAM	19100	100RB#0	5.57	13	PASS

Test Graphs

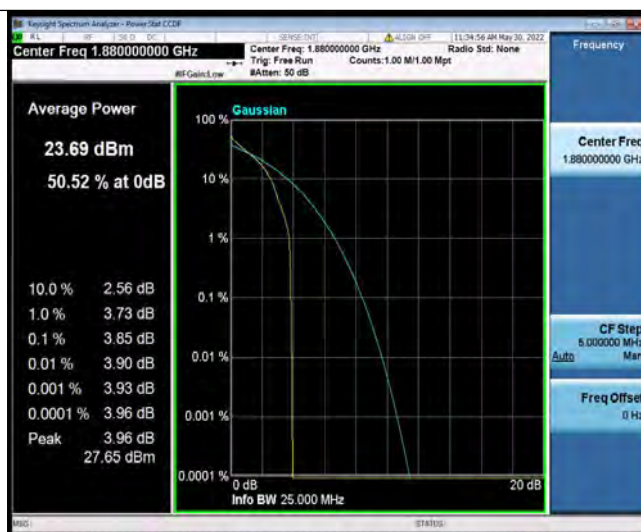
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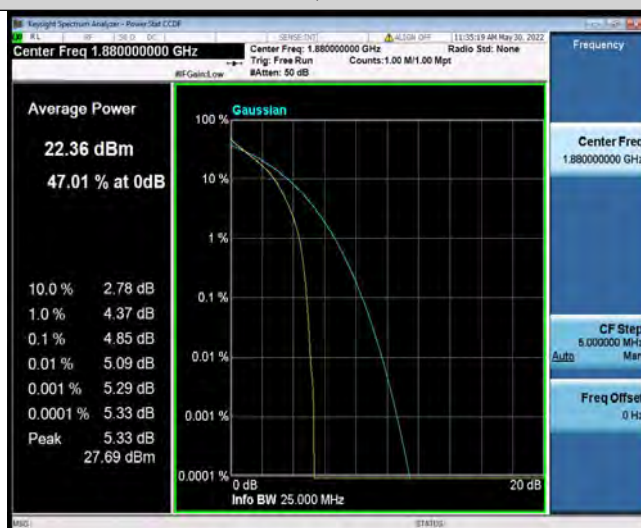
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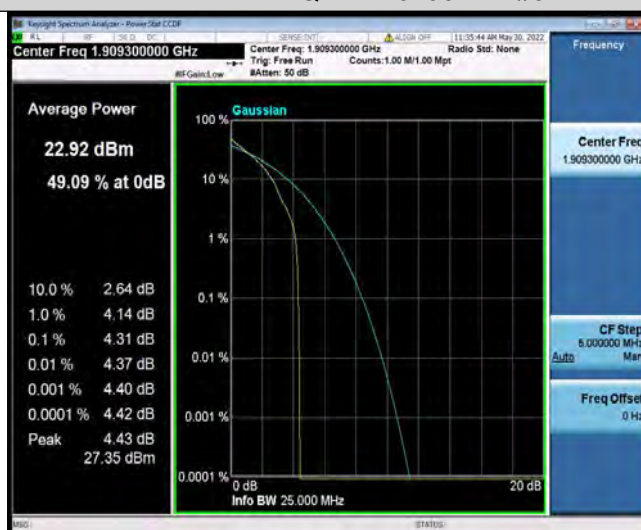
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Band2-1.4MHz-QPSK-19193-6RB#0



Band2-1.4MHz-16QAM-18607-1RB#0



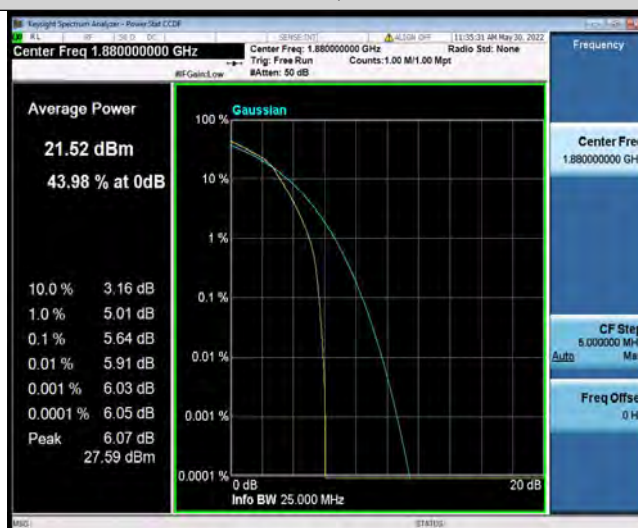
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Band2-1.4MHz-16QAM-18900-6RB#0



Band2-1.4MHz-16QAM-19193-1RB#0



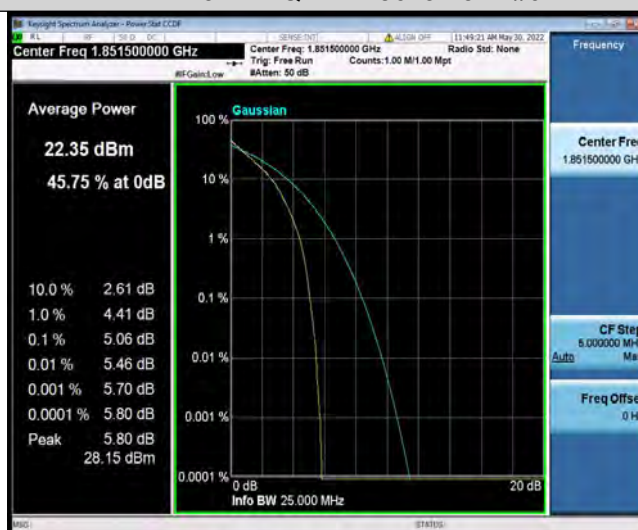
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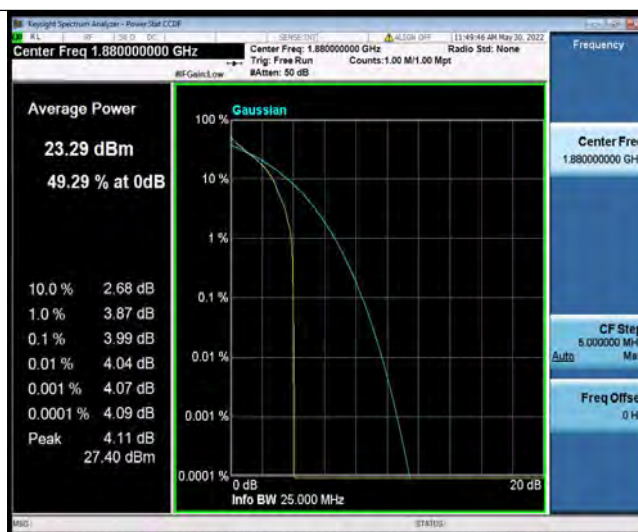
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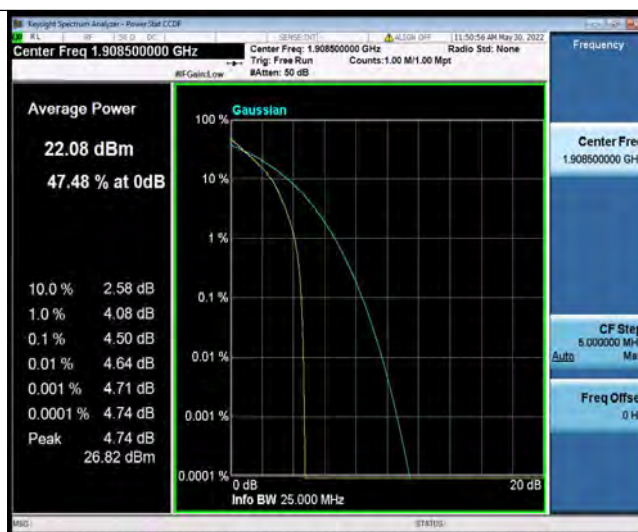
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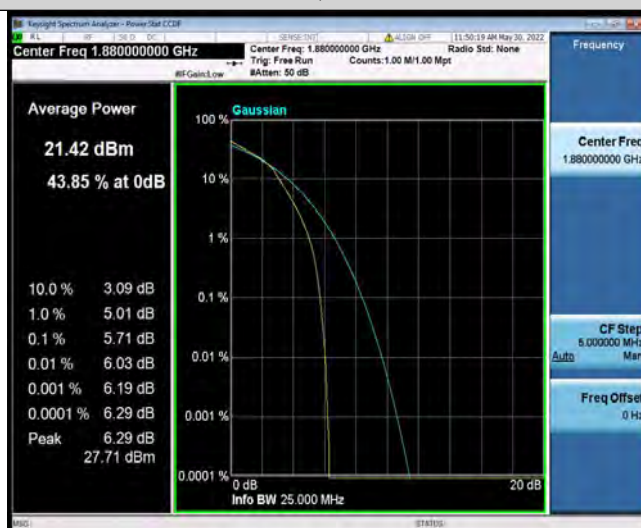
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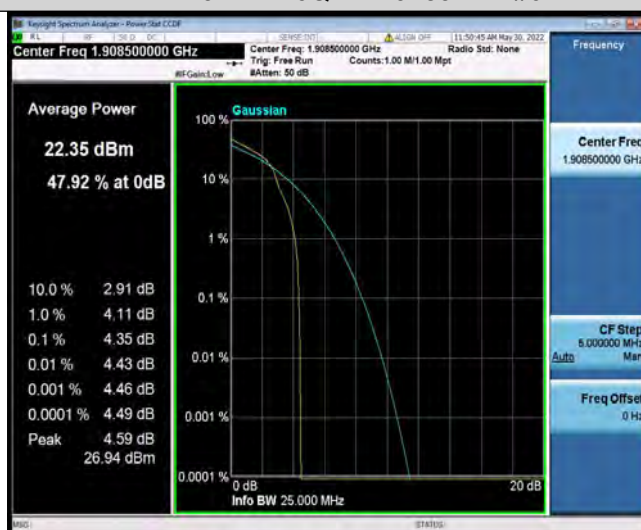
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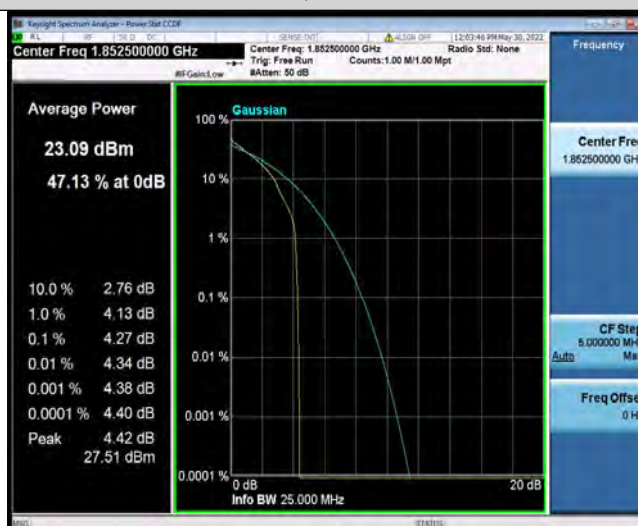
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Band2-5MHz-QPSK-18625-1RB#0



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Band2-5MHz-QPSK-18900-1RB#0



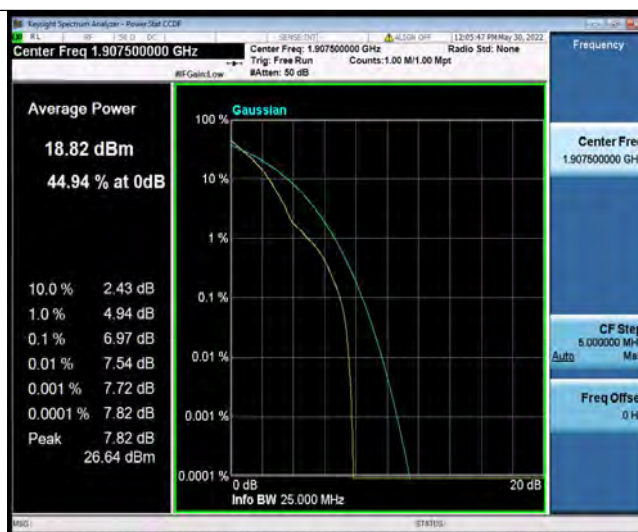
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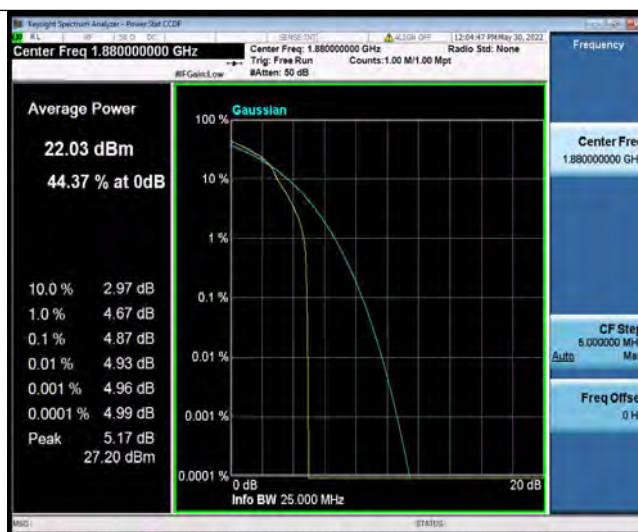
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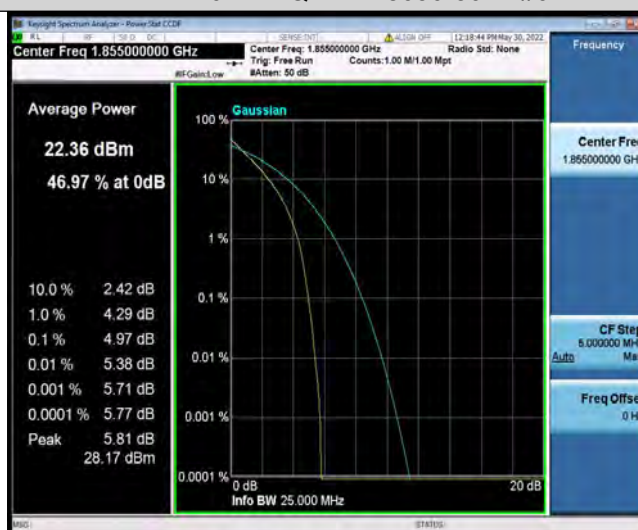
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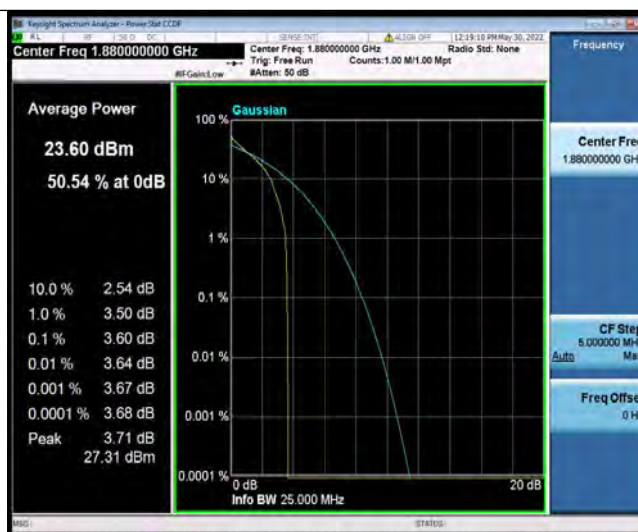
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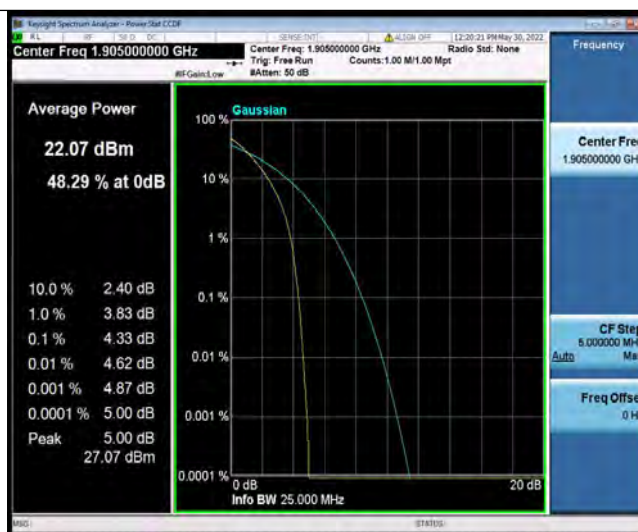
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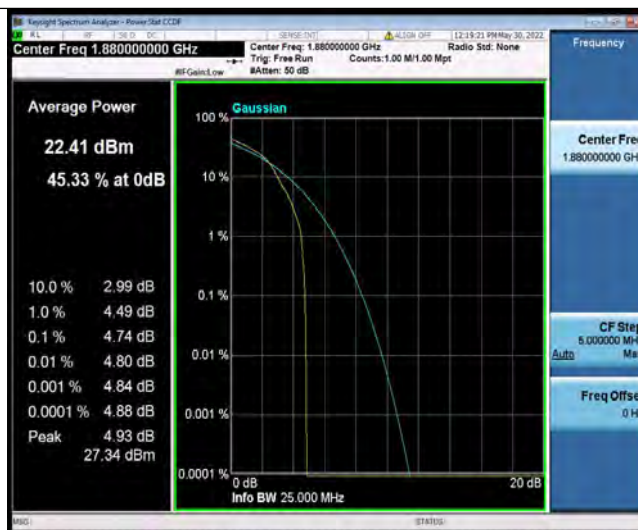
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Band2-10MHz-16QAM-18900-1RB#0



Band2-10MHz-16QAM-18900-50RB#0



Band2-10MHz-16QAM-19150-1RB#0



Band2-10MHz-16QAM-19150-50RB#0



Band2-15MHz-QPSK-18675-1RB#0



Band2-15MHz-QPSK-18675-75RB#0



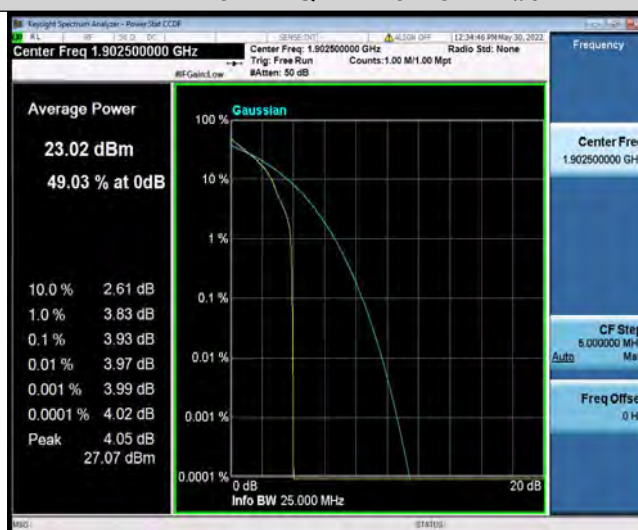
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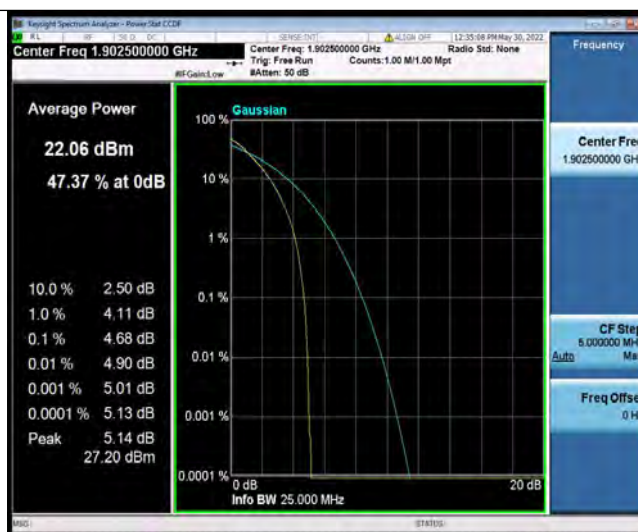
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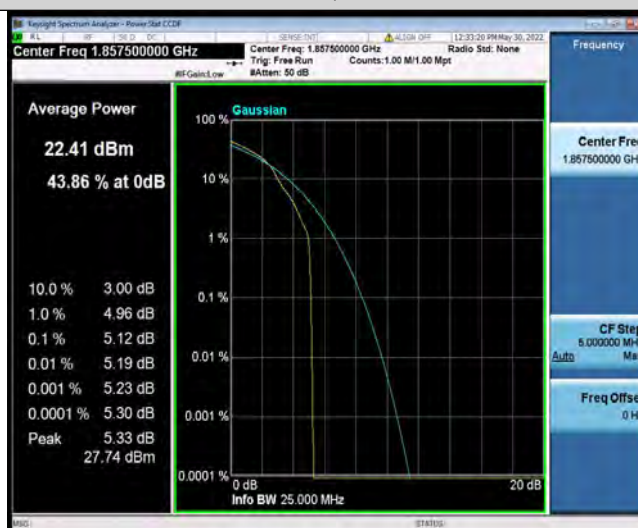
Band2-15MHz-QPSK-19125-1RB#0



Band2-15MHz-QPSK-19125-75RB#0



Band2-15MHz-16QAM-18675-1RB#0



Band2-15MHz-16QAM-18675-75RB#0



Band2-15MHz-16QAM-18900-1RB#0



Band2-15MHz-16QAM-18900-75RB#0



Band2-15MHz-16QAM-19125-1RB#0



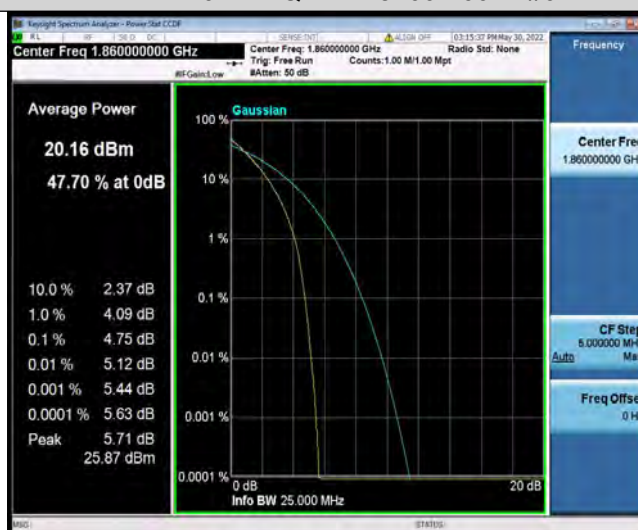
Band2-15MHz-16QAM-19125-75RB#0



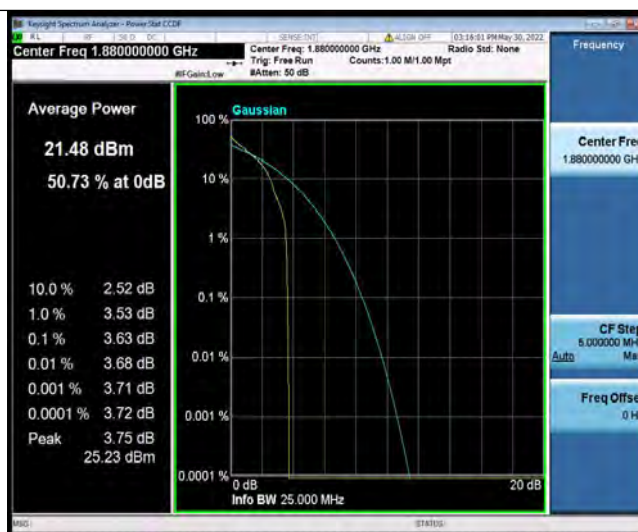
Band2-20MHz-QPSK-18700-1RB#0



Band2-20MHz-QPSK-18700-100RB#0



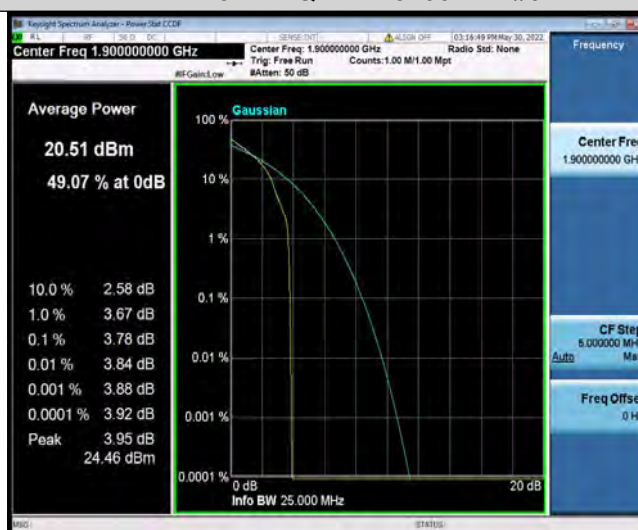
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Band2-20MHz-QPSK-18900-100RB#0



Band2-20MHz-QPSK-19100-1RB#0



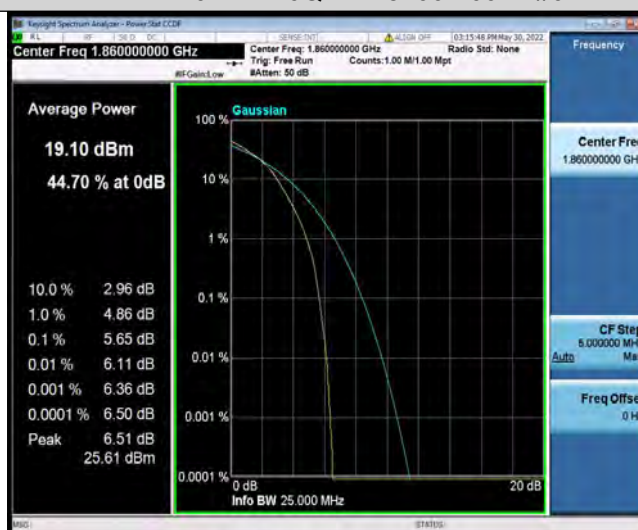
Band2-20MHz-QPSK-19100-100RB#0



Band2-20MHz-16QAM-18700-1RB#0



Band2-20MHz-16QAM-18700-100RB#0



Band2-20MHz-16QAM-18900-1RB#0



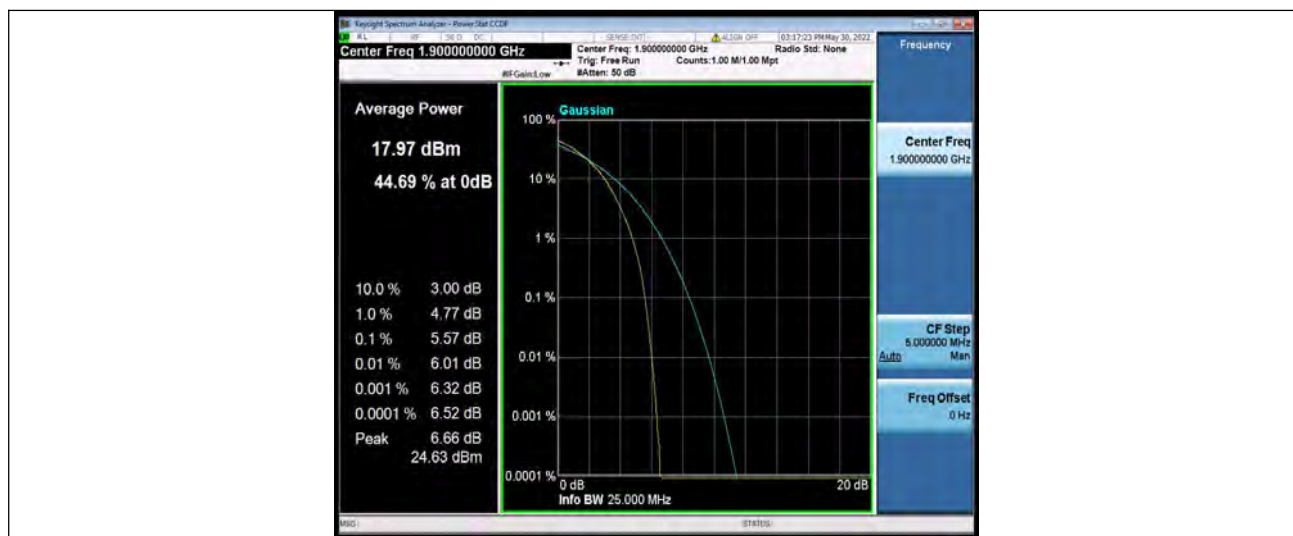
Band2-20MHz-16QAM-18900-100RB#0



Band2-20MHz-16QAM-19100-1RB#0



Band2-20MHz-16QAM-19100-100RB#0



**26DB BANDWIDTH AND OCCUPIED BANDWIDTH****Test Result**

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band2	1.4MHz	QPSK	18607	6RB#0	1.0932	1.281	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	1.0901	1.246	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	1.0952	1.258	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	1.0938	1.264	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	1.0928	1.272	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	1.0929	1.270	PASS
Band2	3MHz	QPSK	18615	15RB#0	2.6950	2.916	PASS
Band2	3MHz	QPSK	18900	15RB#0	2.6940	2.906	PASS
Band2	3MHz	QPSK	19185	15RB#0	2.6993	2.917	PASS
Band2	3MHz	16QAM	18615	15RB#0	2.6920	2.930	PASS
Band2	3MHz	16QAM	18900	15RB#0	2.6924	2.916	PASS
Band2	3MHz	16QAM	19185	15RB#0	2.6941	2.922	PASS
Band2	5MHz	QPSK	18625	25RB#0	4.5029	4.907	PASS
Band2	5MHz	QPSK	18900	25RB#0	4.5096	4.894	PASS
Band2	5MHz	QPSK	19175	25RB#0	4.4996	4.889	PASS
Band2	5MHz	16QAM	18625	25RB#0	4.5032	4.867	PASS
Band2	5MHz	16QAM	18900	25RB#0	4.5078	4.877	PASS
Band2	5MHz	16QAM	19175	25RB#0	4.5061	4.885	PASS
Band2	10MHz	QPSK	18650	50RB#0	8.9647	9.556	PASS
Band2	10MHz	QPSK	18900	50RB#0	8.9685	9.601	PASS
Band2	10MHz	QPSK	19150	50RB#0	8.9454	9.520	PASS
Band2	10MHz	16QAM	18650	50RB#0	8.9563	9.536	PASS
Band2	10MHz	16QAM	18900	50RB#0	8.9594	9.529	PASS
Band2	10MHz	16QAM	19150	50RB#0	8.9491	9.535	PASS
Band2	15MHz	QPSK	18675	75RB#0	13.420	14.30	PASS
Band2	15MHz	QPSK	18900	75RB#0	13.448	14.28	PASS
Band2	15MHz	QPSK	19125	75RB#0	13.360	14.20	PASS
Band2	15MHz	16QAM	18675	75RB#0	13.399	14.22	PASS
Band2	15MHz	16QAM	18900	75RB#0	13.437	14.19	PASS
Band2	15MHz	16QAM	19125	75RB#0	13.368	14.19	PASS
Band2	20MHz	QPSK	18700	100RB#0	17.857	18.97	PASS
Band2	20MHz	QPSK	18900	100RB#0	17.914	18.95	PASS
Band2	20MHz	QPSK	19100	100RB#0	17.809	18.88	PASS
Band2	20MHz	16QAM	18700	100RB#0	17.872	18.96	PASS
Band2	20MHz	16QAM	18900	100RB#0	17.934	18.98	PASS
Band2	20MHz	16QAM	19100	100RB#0	17.807	18.89	PASS

Test Graphs

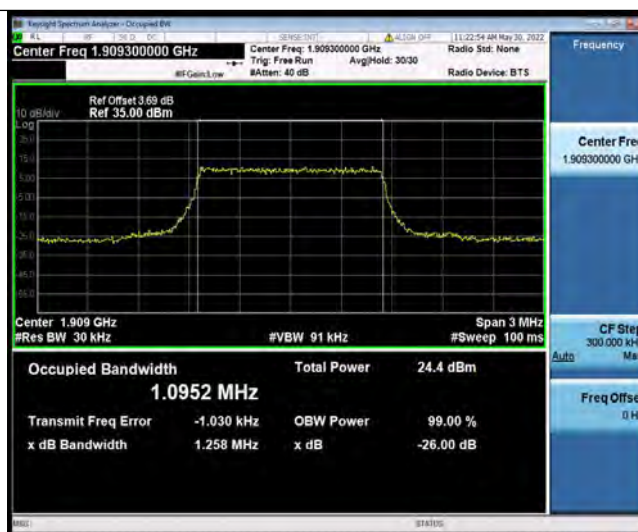
Band2-1.4MHz-QPSK-18607-6RB#0



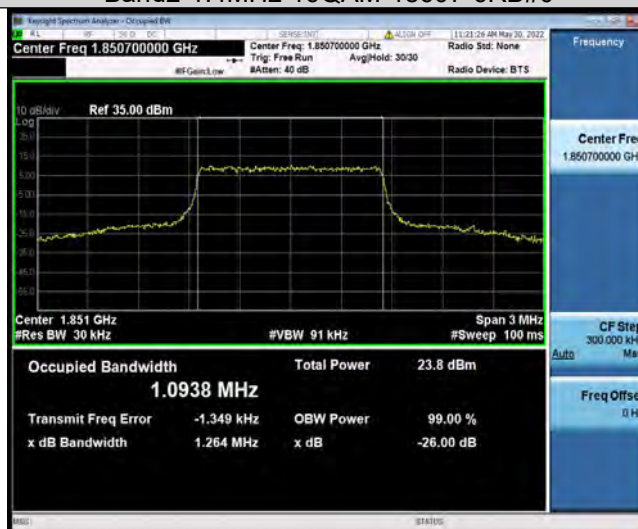
Band2-1.4MHz-QPSK-18900-6RB#0



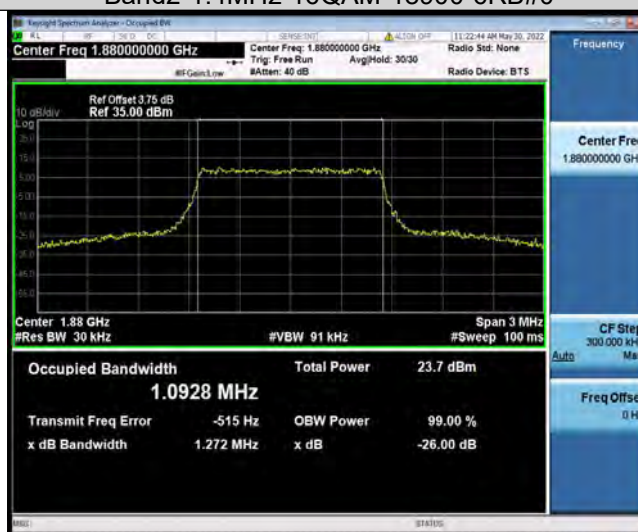
Band2-1.4MHz-QPSK-19193-6RB#0



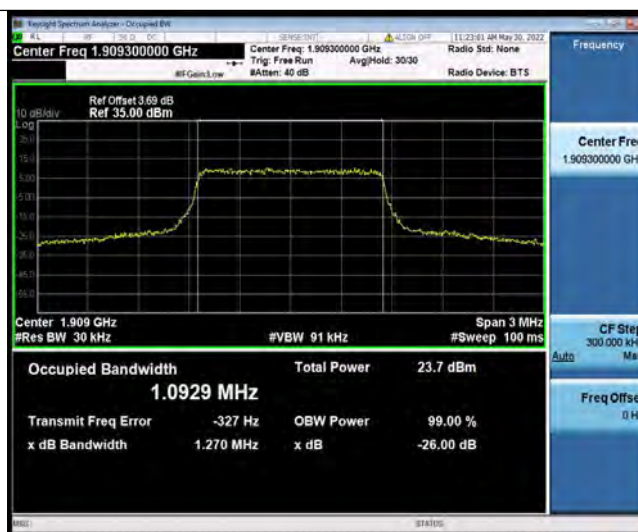
Band2-1.4MHz-16QAM-18607-6RB#0



Band2-1.4MHz-16QAM-18900-6RB#0



Band2-1.4MHz-16QAM-19193-6RB#0



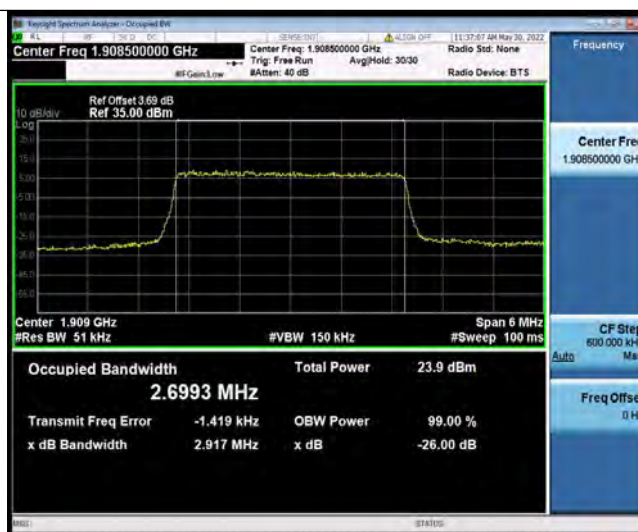
Band2-3MHz-QPSK-18615-15RB#0



Band2-3MHz-QPSK-18900-15RB#0



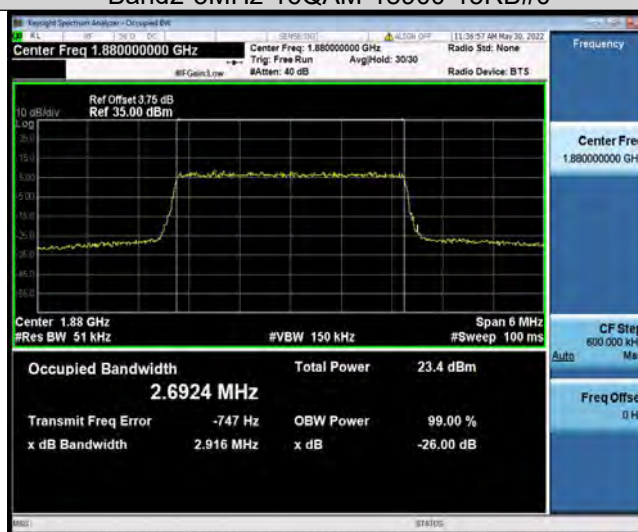
Band2-3MHz-QPSK-19185-15RB#0



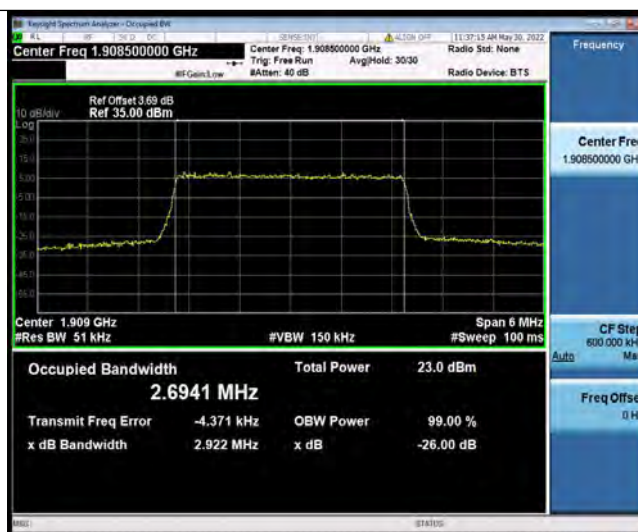
Band2-3MHz-16QAM-18615-15RB#0



Band2-3MHz-16QAM-18900-15RB#0



Band2-3MHz-16QAM-19185-15RB#0



Band2-5MHz-QPSK-18625-25RB#0



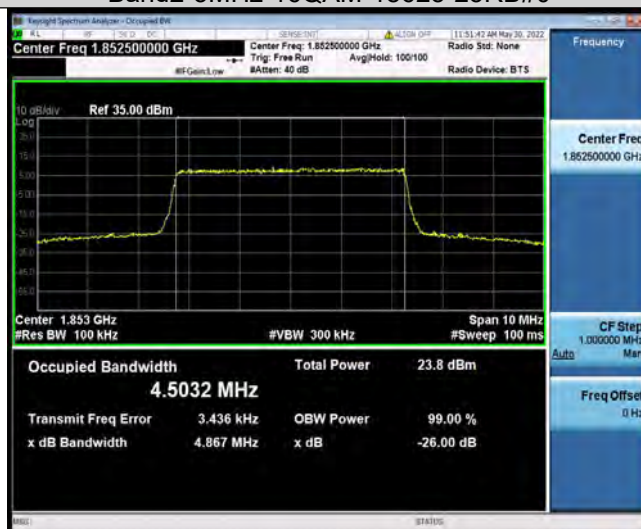
Band2-5MHz-QPSK-18900-25RB#0



Band2-5MHz-QPSK-19175-25RB#0



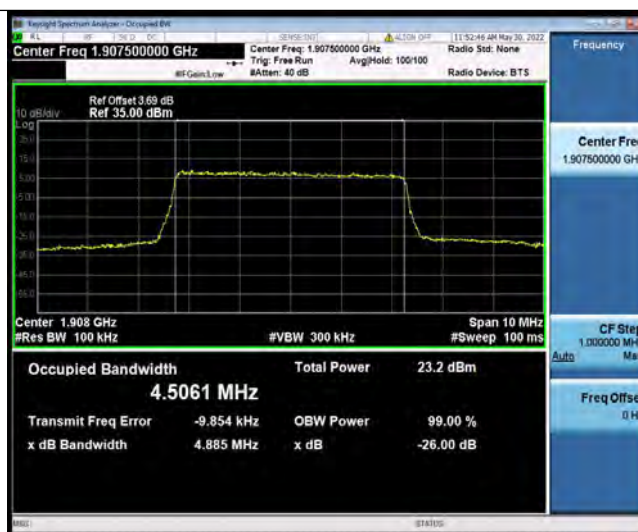
Band2-5MHz-16QAM-18625-25RB#0



Band2-5MHz-16QAM-18900-25RB#0



Band2-5MHz-16QAM-19175-25RB#0



Band2-10MHz-QPSK-18650-50RB#0



Band2-10MHz-QPSK-18900-50RB#0



Band2-10MHz-QPSK-19150-50RB#0



Band2-10MHz-16QAM-18650-50RB#0



Band2-10MHz-16QAM-18900-50RB#0



Band2-10MHz-16QAM-19150-50RB#0



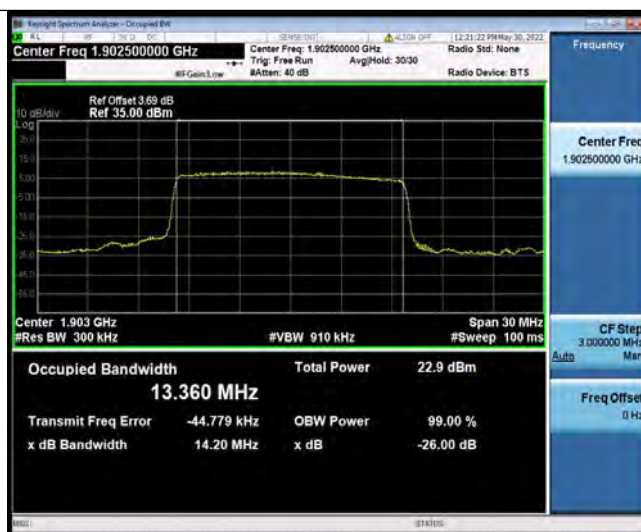
Band2-15MHz-QPSK-18675-75RB#0



Band2-15MHz-QPSK-18900-75RB#0



Band2-15MHz-QPSK-19125-75RB#0



Band2-15MHz-16QAM-18675-75RB#0



Band2-15MHz-16QAM-18900-75RB#0



Band2-15MHz-16QAM-19125-75RB#0



Band2-20MHz-QPSK-18700-100RB#0



Band2-20MHz-QPSK-18900-100RB#0



Band2-20MHz-QPSK-19100-100RB#0



Band2-20MHz-16QAM-18700-100RB#0



Band2-20MHz-16QAM-18900-100RB#0



Band2-20MHz-16QAM-19100-100RB#0



Test Report No.: W7L-P22110018RF02



**BAND EDGE****Test Result**

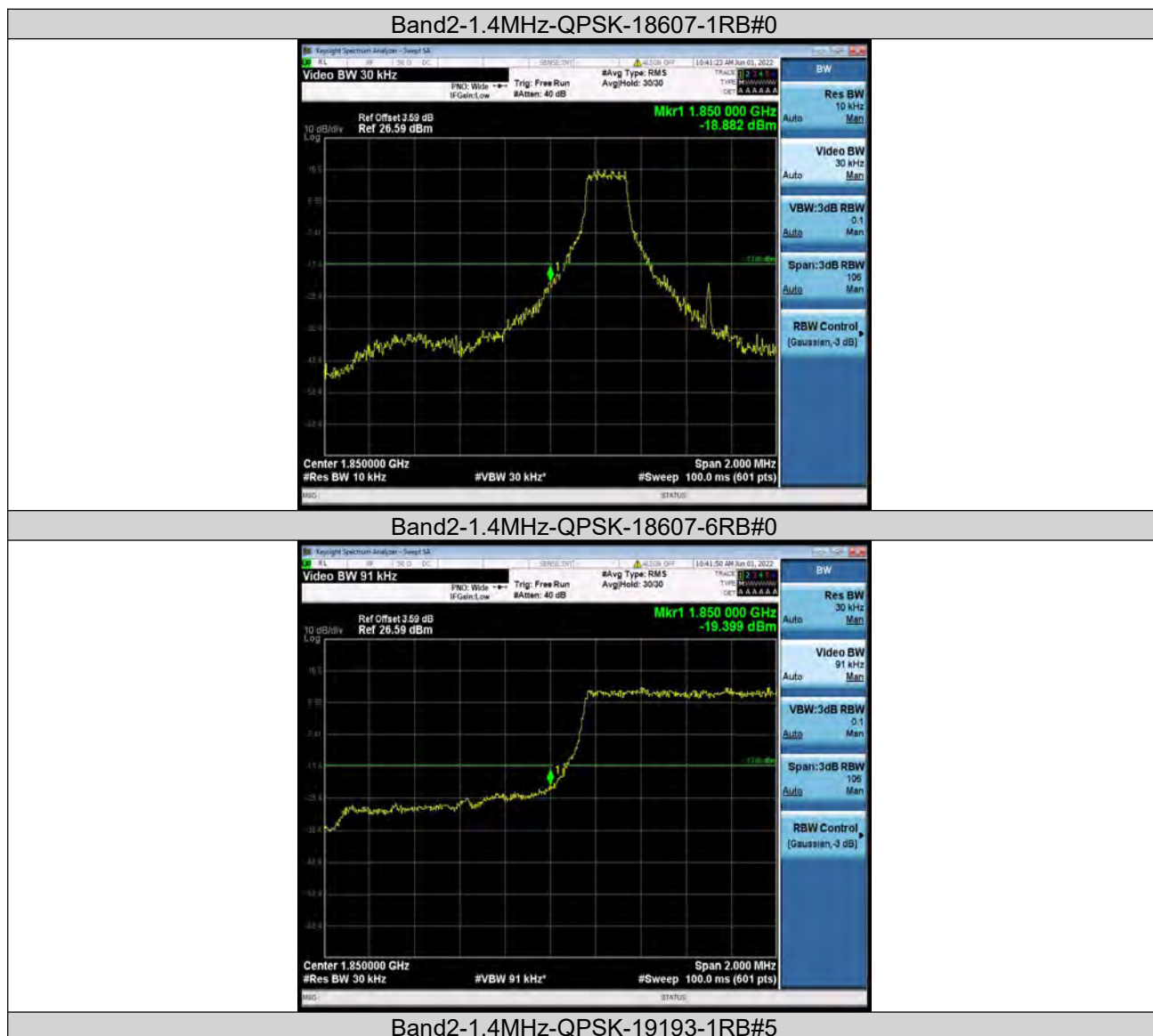
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band2	1.4MHz	QPSK	18607	1RB#0	-18.88	PASS
Band2	1.4MHz	QPSK	18607	6RB#0	-19.40	PASS
Band2	1.4MHz	QPSK	19193	1RB#5	-17.86	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	-20.35	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	-20.74	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	-19.04	PASS
Band2	1.4MHz	16QAM	19193	1RB#5	-18.66	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	-21.66	PASS
Band2	3MHz	QPSK	18615	1RB#0	-18.32	PASS
Band2	3MHz	QPSK	18615	15RB#0	-20.32	PASS
Band2	3MHz	QPSK	19185	1RB#14	-15.03	PASS
Band2	3MHz	QPSK	19185	15RB#0	-20.81	PASS
Band2	3MHz	16QAM	18615	1RB#0	-18.27	PASS
Band2	3MHz	16QAM	18615	15RB#0	-21.33	PASS
Band2	3MHz	16QAM	19185	1RB#14	-14.58	PASS
Band2	3MHz	16QAM	19185	15RB#0	-21.95	PASS
Band2	5MHz	QPSK	18625	1RB#0	-21.67	PASS
Band2	5MHz	QPSK	18625	25RB#0	-21.15	PASS
Band2	5MHz	QPSK	19175	1RB#24	-13.85	PASS
Band2	5MHz	QPSK	19175	25RB#0	-22.55	PASS
Band2	5MHz	16QAM	18625	1RB#0	-25.16	PASS
Band2	5MHz	16QAM	18625	25RB#0	-21.88	PASS
Band2	5MHz	16QAM	19175	1RB#24	-15.18	PASS
Band2	5MHz	16QAM	19175	25RB#0	-23.26	PASS
Band2	10MHz	QPSK	18650	1RB#0	-21.39	PASS
Band2	10MHz	QPSK	18650	50RB#0	-24.50	PASS
Band2	10MHz	QPSK	19150	1RB#49	-23.32	PASS
Band2	10MHz	QPSK	19150	50RB#0	-26.37	PASS
Band2	10MHz	16QAM	18650	1RB#0	-20.26	PASS
Band2	10MHz	16QAM	18650	50RB#0	-25.53	PASS
Band2	10MHz	16QAM	19150	1RB#49	-19.36	PASS
Band2	10MHz	16QAM	19150	50RB#0	-26.66	PASS
Band2	15MHz	QPSK	18675	1RB#0	-21.40	PASS
Band2	15MHz	QPSK	18675	75RB#0	-22.54	PASS
Band2	15MHz	QPSK	19125	1RB#74	-21.52	PASS
Band2	15MHz	QPSK	19125	75RB#0	-29.47	PASS
Band2	15MHz	16QAM	18675	1RB#0	-21.54	PASS
Band2	15MHz	16QAM	18675	75RB#0	-26.40	PASS
Band2	15MHz	16QAM	19125	1RB#74	-21.54	PASS
Band2	15MHz	16QAM	19125	75RB#0	-28.04	PASS
Band2	20MHz	QPSK	18700	1RB#0	-24.09	PASS
Band2	20MHz	QPSK	18700	100RB#0	-29.79	PASS
Band2	20MHz	QPSK	19100	1RB#99	-27.49	PASS
Band2	20MHz	QPSK	19100	100RB#0	-33.02	PASS



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Band2	20MHz	16QAM	18700	1RB#0	-23.28	PASS
Band2	20MHz	16QAM	18700	100RB#0	-29.14	PASS
Band2	20MHz	16QAM	19100	1RB#99	-27.65	PASS
Band2	20MHz	16QAM	19100	100RB#0	-30.18	PASS

Test Graphs





Band2-1.4MHz-QPSK-19193-6RB#0



Band2-1.4MHz-16QAM-18607-1RB#0



Band2-1.4MHz-16QAM-18607-6RB#0



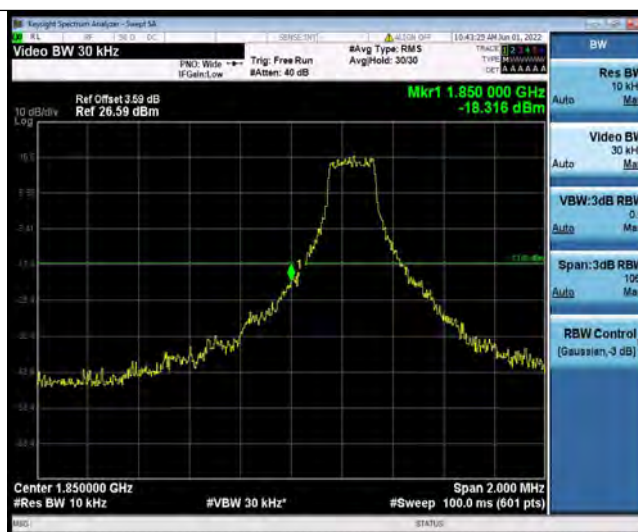
Band2-1.4MHz-16QAM-19193-1RB#5



Band2-1.4MHz-16QAM-19193-6RB#0



Band2-3MHz-QPSK-18615-1RB#0



Band2-3MHz-QPSK-18615-15RB#0



Band2-3MHz-QPSK-19185-1RB#14



Band2-3MHz-QPSK-19185-15RB#0



Band2-3MHz-16QAM-18615-1RB#0



Band2-3MHz-16QAM-18615-15RB#0



Band2-3MHz-16QAM-19185-1RB#14



Band2-3MHz-16QAM-19185-15RB#0



Band2-5MHz-QPSK-18625-1RB#0



Band2-5MHz-QPSK-18625-25RB#0



Band2-5MHz-QPSK-19175-1RB#24



Band2-5MHz-QPSK-19175-25RB#0



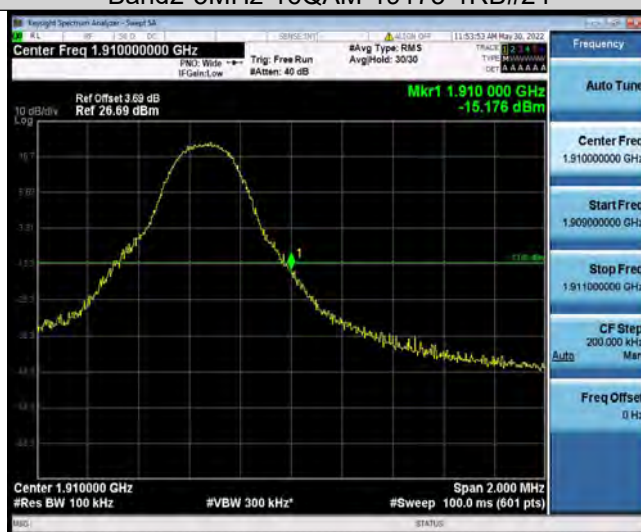
Band2-5MHz-16QAM-18625-1RB#0



Band2-5MHz-16QAM-18625-25RB#0



Band2-5MHz-16QAM-19175-1RB#24



Band2-5MHz-16QAM-19175-25RB#0



Band2-10MHz-QPSK-18650-1RB#0



Band2-10MHz-QPSK-18650-50RB#0



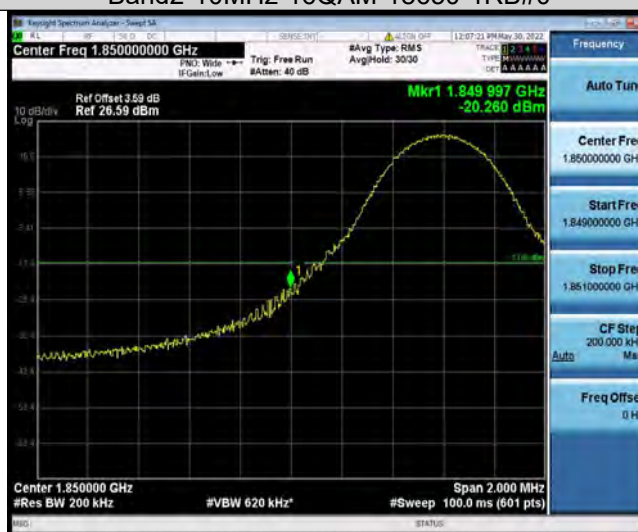
Band2-10MHz-QPSK-19150-1RB#49



Band2-10MHz-QPSK-19150-50RB#0



Band2-10MHz-16QAM-18650-1RB#0



Band2-10MHz-16QAM-18650-50RB#0



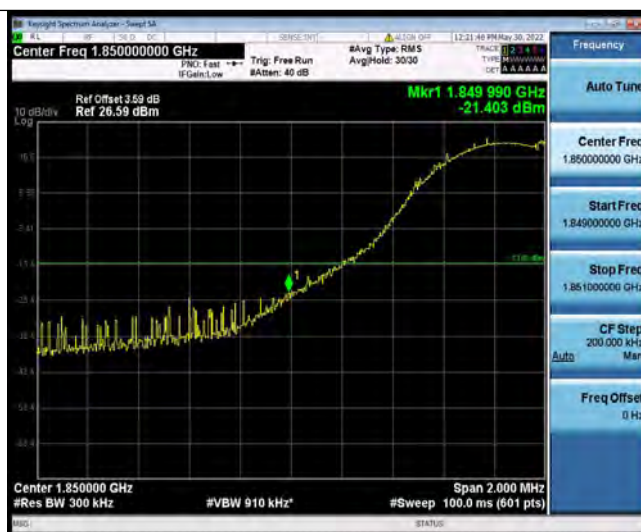
Band2-10MHz-16QAM-19150-1RB#49



Band2-10MHz-16QAM-19150-50RB#0



Band2-15MHz-QPSK-18675-1RB#0



Band2-15MHz-QPSK-18675-75RB#0



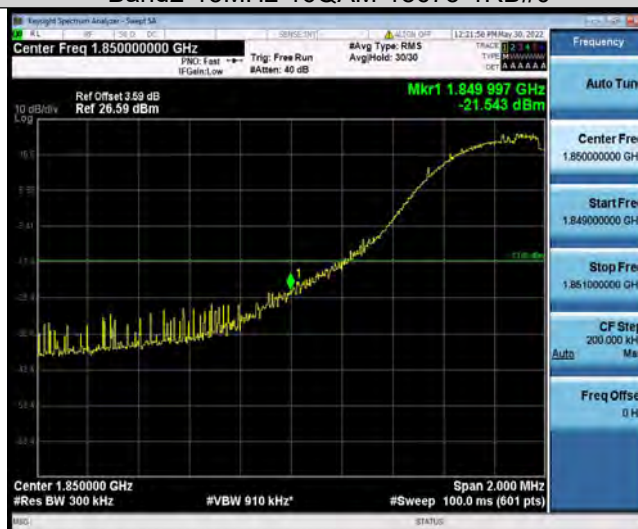
Band2-15MHz-QPSK-19125-1RB#74



Band2-15MHz-QPSK-19125-75RB#0



Band2-15MHz-16QAM-18675-1RB#0



Band2-15MHz-16QAM-18675-75RB#0



Band2-15MHz-16QAM-19125-1RB#74



Band2-15MHz-16QAM-19125-75RB#0



Band2-20MHz-QPSK-18700-1RB#0



Band2-20MHz-QPSK-18700-100RB#0



Band2-20MHz-QPSK-19100-1RB#99



Band2-20MHz-QPSK-19100-100RB#0



Band2-20MHz-16QAM-18700-1RB#0



Band2-20MHz-16QAM-18700-100RB#0



Band2-20MHz-16QAM-19100-1RB#99



Band2-20MHz-16QAM-19100-100RB#0



Test Report No.: W7L-P22110018RF02



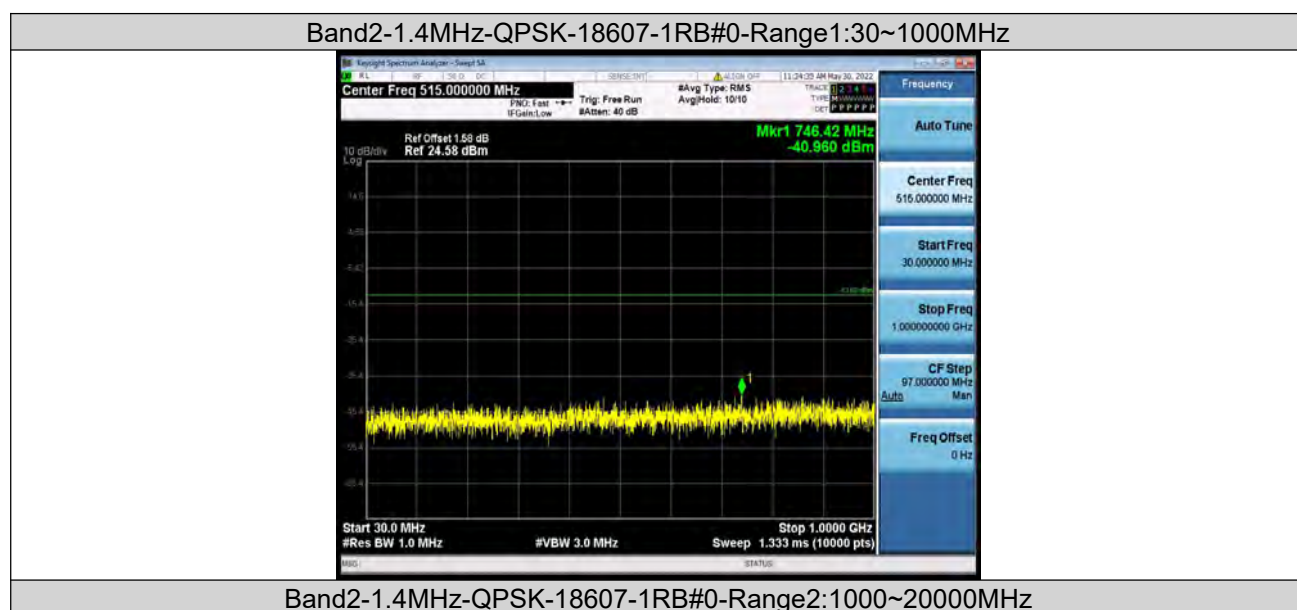
CONDUCTED SPURIOUS EMISSION

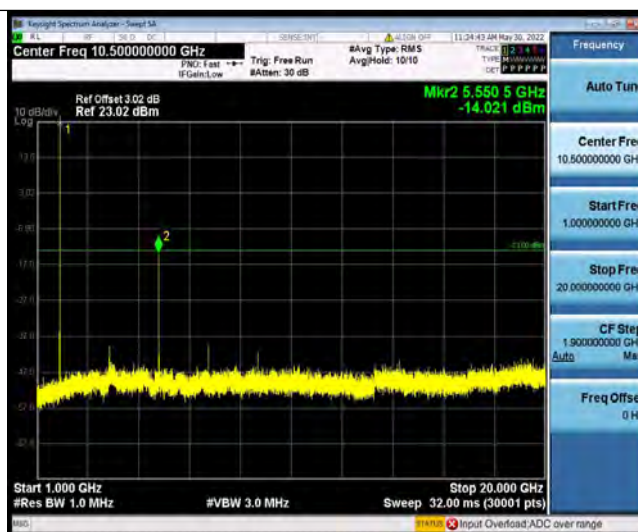
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band2	1.4MHz	QPSK	18607	1RB#0	Range1:30~1000MHz	-40.96	PASS
Band2	1.4MHz	QPSK	18607	1RB#0	Range2:1000~20000MHz	-14.02	PASS
Band2	1.4MHz	QPSK	18900	1RB#0	Range1:30~1000MHz	-40.91	PASS
Band2	1.4MHz	QPSK	18900	1RB#0	Range2:1000~20000MHz	-13.9	PASS
Band2	1.4MHz	QPSK	19193	1RB#0	Range1:30~1000MHz	-41.04	PASS
Band2	1.4MHz	QPSK	19193	1RB#0	Range2:1000~20000MHz	-14.36	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	Range1:30~1000MHz	-41.1	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	Range2:1000~20000MHz	-13.85	PASS
Band2	1.4MHz	16QAM	18900	1RB#0	Range1:30~1000MHz	-40.24	PASS
Band2	1.4MHz	16QAM	18900	1RB#0	Range2:1000~20000MHz	-13.94	PASS
Band2	1.4MHz	16QAM	19193	1RB#0	Range1:30~1000MHz	-40.33	PASS
Band2	1.4MHz	16QAM	19193	1RB#0	Range2:1000~20000MHz	-14.32	PASS
Band2	3MHz	QPSK	18615	1RB#0	Range1:30~1000MHz	-41.12	PASS
Band2	3MHz	QPSK	18615	1RB#0	Range2:1000~20000MHz	-14.61	PASS
Band2	3MHz	QPSK	18900	1RB#0	Range1:30~1000MHz	-39.25	PASS
Band2	3MHz	QPSK	18900	1RB#0	Range2:1000~20000MHz	-14.69	PASS
Band2	3MHz	QPSK	19185	1RB#0	Range1:30~1000MHz	-40.08	PASS
Band2	3MHz	QPSK	19185	1RB#0	Range2:1000~20000MHz	-14.82	PASS
Band2	3MHz	16QAM	18615	1RB#0	Range1:30~1000MHz	-40.29	PASS
Band2	3MHz	16QAM	18615	1RB#0	Range2:1000~20000MHz	-14.6	PASS
Band2	3MHz	16QAM	18900	1RB#0	Range1:30~1000MHz	-41.38	PASS
Band2	3MHz	16QAM	18900	1RB#0	Range2:1000~20000MHz	-14.65	PASS
Band2	3MHz	16QAM	19185	1RB#0	Range1:30~1000MHz	-39.59	PASS
Band2	3MHz	16QAM	19185	1RB#0	Range2:1000~20000MHz	-14.7	PASS
Band2	5MHz	QPSK	18625	1RB#0	Range1:30~1000MHz	-40.73	PASS
Band2	5MHz	QPSK	18625	1RB#0	Range2:1000~20000MHz	-14.69	PASS
Band2	5MHz	QPSK	18900	1RB#0	Range1:30~1000MHz	-40.32	PASS
Band2	5MHz	QPSK	18900	1RB#0	Range2:1000~20000MHz	-14.81	PASS
Band2	5MHz	QPSK	19175	1RB#0	Range1:30~1000MHz	-41.22	PASS
Band2	5MHz	QPSK	19175	1RB#0	Range2:1000~20000MHz	-14.85	PASS
Band2	5MHz	16QAM	18625	1RB#0	Range1:30~1000MHz	-40.6	PASS
Band2	5MHz	16QAM	18625	1RB#0	Range2:1000~20000MHz	-14.76	PASS
Band2	5MHz	16QAM	18900	1RB#0	Range1:30~1000MHz	-40.19	PASS
Band2	5MHz	16QAM	18900	1RB#0	Range2:1000~20000MHz	-14.77	PASS
Band2	5MHz	16QAM	19175	1RB#0	Range1:30~1000MHz	-40.01	PASS
Band2	5MHz	16QAM	19175	1RB#0	Range2:1000~20000MHz	-14.83	PASS
Band2	10MHz	QPSK	18650	1RB#0	Range1:30~1000MHz	-40.61	PASS
Band2	10MHz	QPSK	18650	1RB#0	Range2:1000~20000MHz	-14.91	PASS
Band2	10MHz	QPSK	18900	1RB#0	Range1:30~1000MHz	-40.3	PASS
Band2	10MHz	QPSK	18900	1RB#0	Range2:1000~20000MHz	-15.06	PASS
Band2	10MHz	QPSK	19150	1RB#0	Range1:30~1000MHz	-40.78	PASS
Band2	10MHz	QPSK	19150	1RB#0	Range2:1000~20000MHz	-15.17	PASS
Band2	10MHz	16QAM	18650	1RB#0	Range1:30~1000MHz	-40.59	PASS
Band2	10MHz	16QAM	18650	1RB#0	Range2:1000~20000MHz	-14.85	PASS

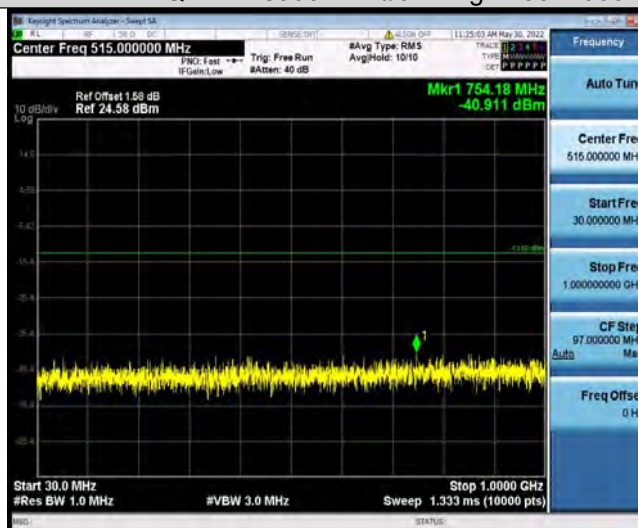
Band2	10MHz	16QAM	18900	1RB#0	Range1:30~1000MHz	-40.11	PASS
Band2	10MHz	16QAM	18900	1RB#0	Range2:1000~20000MHz	-15	PASS
Band2	10MHz	16QAM	19150	1RB#0	Range1:30~1000MHz	-39.75	PASS
Band2	10MHz	16QAM	19150	1RB#0	Range2:1000~20000MHz	-15.19	PASS
Band2	15MHz	QPSK	18675	1RB#0	Range1:30~1000MHz	-40.15	PASS
Band2	15MHz	QPSK	18675	1RB#0	Range2:1000~20000MHz	-14.76	PASS
Band2	15MHz	QPSK	18900	1RB#0	Range1:30~1000MHz	-40.84	PASS
Band2	15MHz	QPSK	18900	1RB#0	Range2:1000~20000MHz	-14.97	PASS
Band2	15MHz	QPSK	19125	1RB#0	Range1:30~1000MHz	-40.79	PASS
Band2	15MHz	QPSK	19125	1RB#0	Range2:1000~20000MHz	-14.59	PASS
Band2	15MHz	16QAM	18675	1RB#0	Range1:30~1000MHz	-41.27	PASS
Band2	15MHz	16QAM	18675	1RB#0	Range2:1000~20000MHz	-14.82	PASS
Band2	15MHz	16QAM	18900	1RB#0	Range1:30~1000MHz	-40.6	PASS
Band2	15MHz	16QAM	18900	1RB#0	Range2:1000~20000MHz	-14.92	PASS
Band2	15MHz	16QAM	19125	1RB#0	Range1:30~1000MHz	-40.56	PASS
Band2	15MHz	16QAM	19125	1RB#0	Range2:1000~20000MHz	-14.56	PASS
Band2	20MHz	QPSK	18700	1RB#0	Range1:30~1000MHz	-39.6	PASS
Band2	20MHz	QPSK	18700	1RB#0	Range2:1000~20000MHz	-20.36	PASS
Band2	20MHz	QPSK	18900	1RB#0	Range1:30~1000MHz	-39.31	PASS
Band2	20MHz	QPSK	18900	1RB#0	Range2:1000~20000MHz	-19.17	PASS
Band2	20MHz	QPSK	19100	1RB#0	Range1:30~1000MHz	-40.91	PASS
Band2	20MHz	QPSK	19100	1RB#0	Range2:1000~20000MHz	-18.8	PASS
Band2	20MHz	16QAM	18700	1RB#0	Range1:30~1000MHz	-40.2	PASS
Band2	20MHz	16QAM	18700	1RB#0	Range2:1000~20000MHz	-20.45	PASS
Band2	20MHz	16QAM	18900	1RB#0	Range1:30~1000MHz	-40.63	PASS
Band2	20MHz	16QAM	18900	1RB#0	Range2:1000~20000MHz	-19.39	PASS
Band2	20MHz	16QAM	19100	1RB#0	Range1:30~1000MHz	-41.16	PASS
Band2	20MHz	16QAM	19100	1RB#0	Range2:1000~20000MHz	-18.71	PASS

Test Graphs

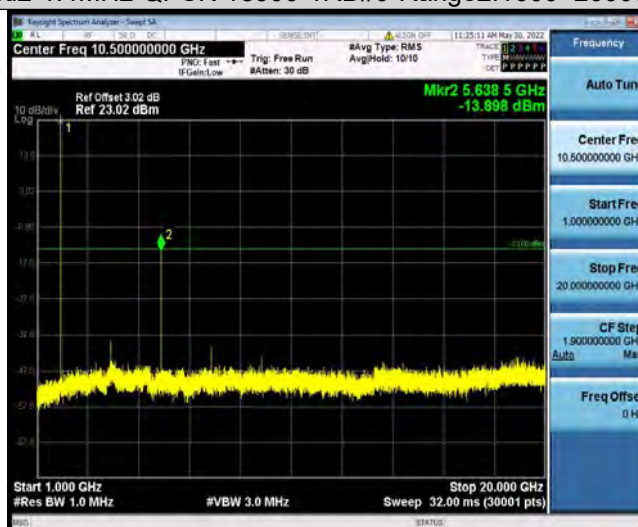




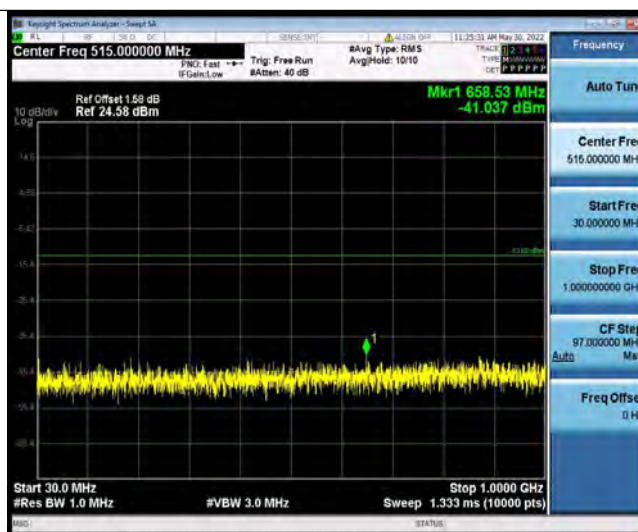
Band2-1.4MHz-QPSK-18900-1RB#0-Range1:30~1000MHz



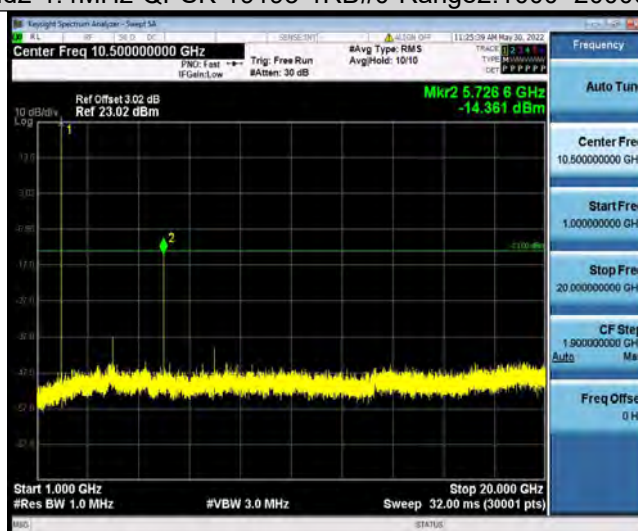
Band2-1.4MHz-QPSK-18900-1RB#0-Range2:1000~20000MHz



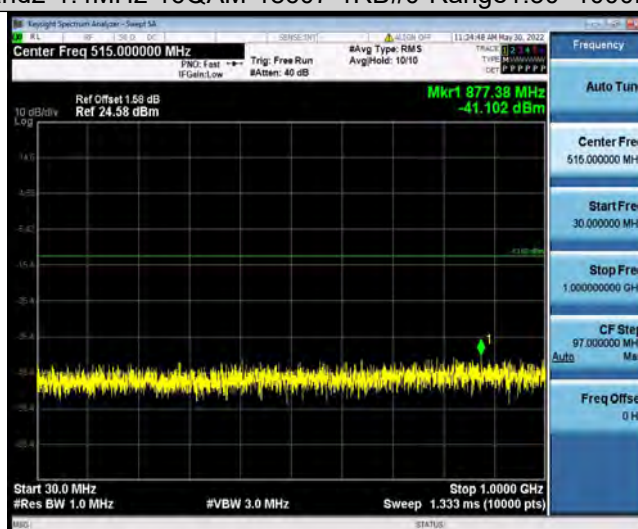
Band2-1.4MHz-QPSK-19193-1RB#0-Range1:30~1000MHz



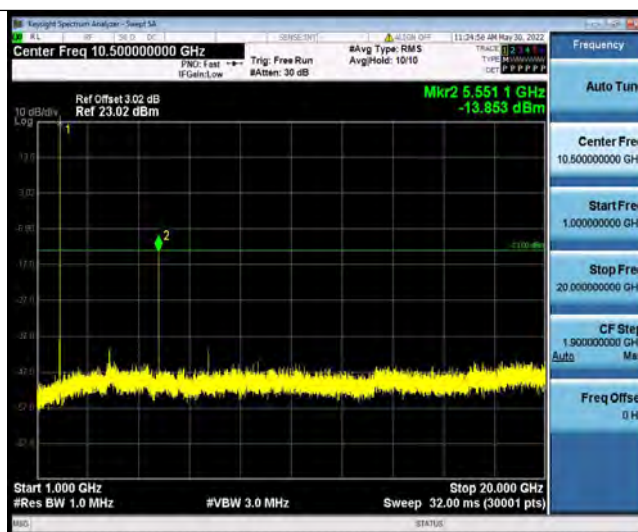
Band2-1.4MHz-QPSK-19193-1RB#0-Range2:1000~20000MHz



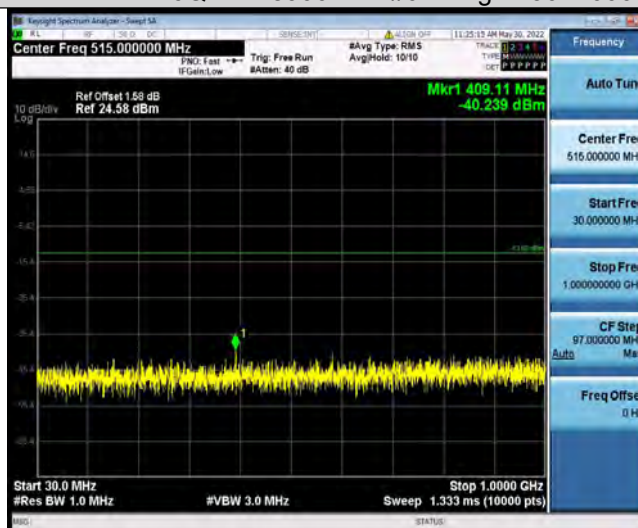
Band2-1.4MHz-16QAM-18607-1RB#0-Range1:30~1000MHz



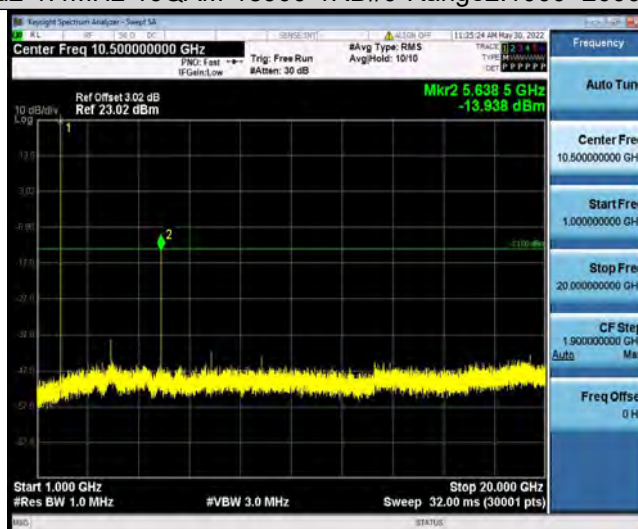
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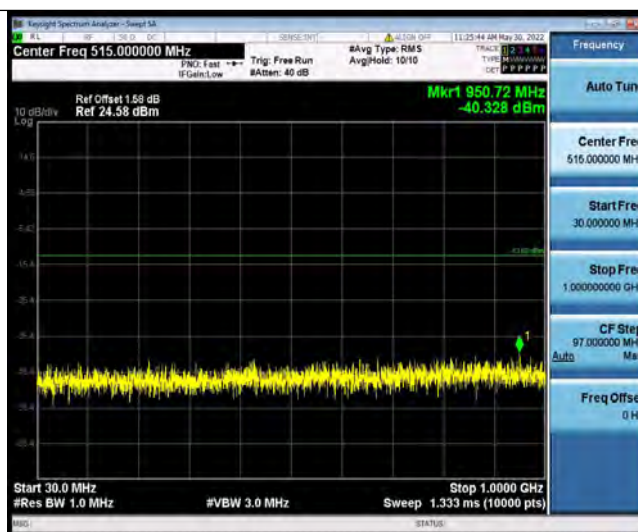
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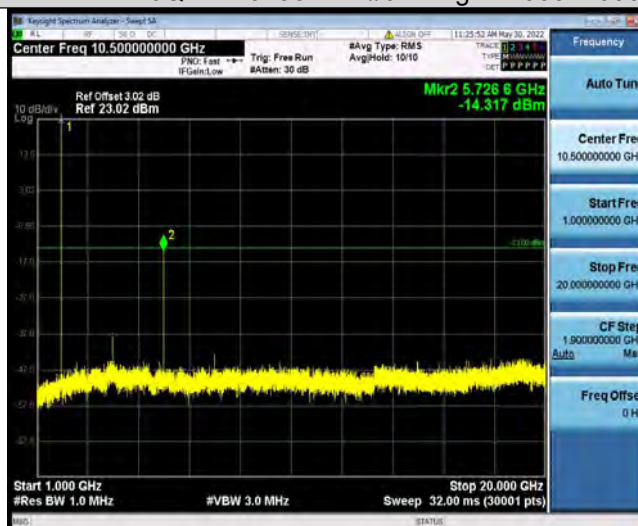
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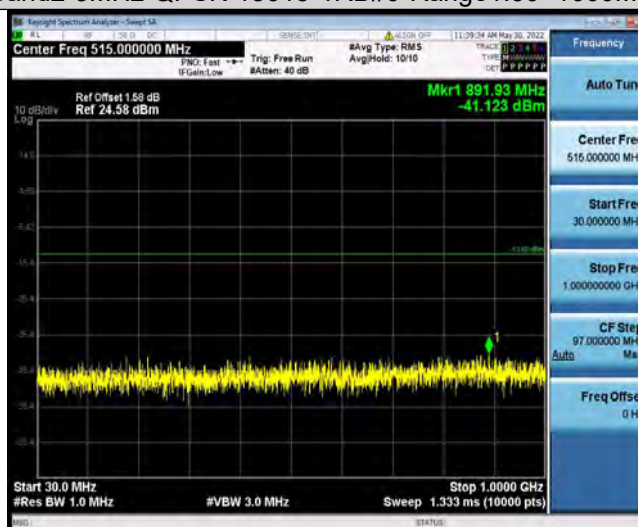
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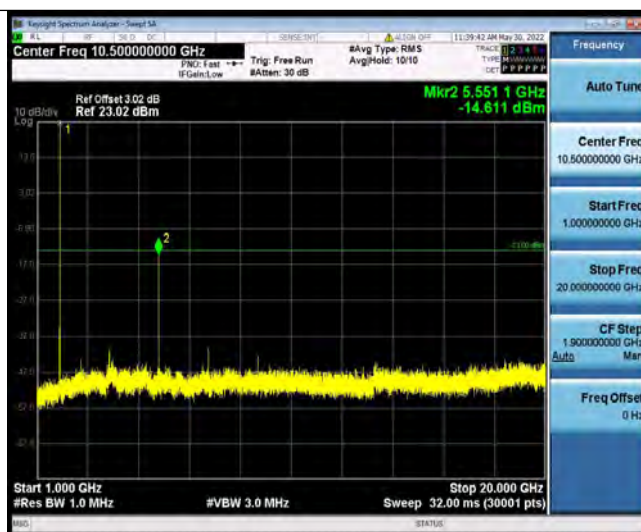
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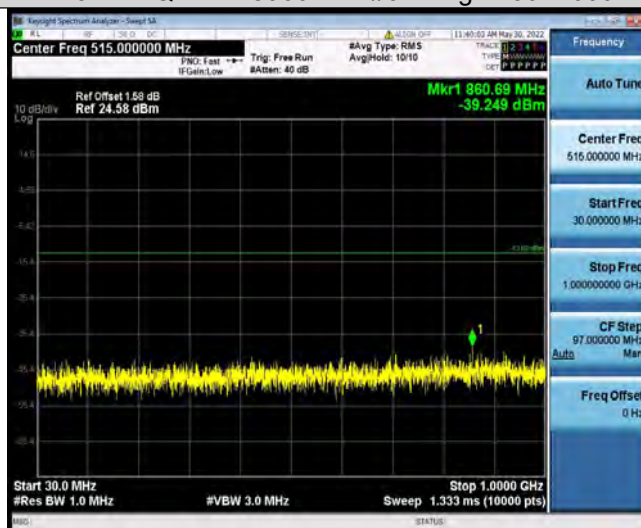
Band2-3MHz-QPSK-18615-1RB#0-Range1:30~1000MHz



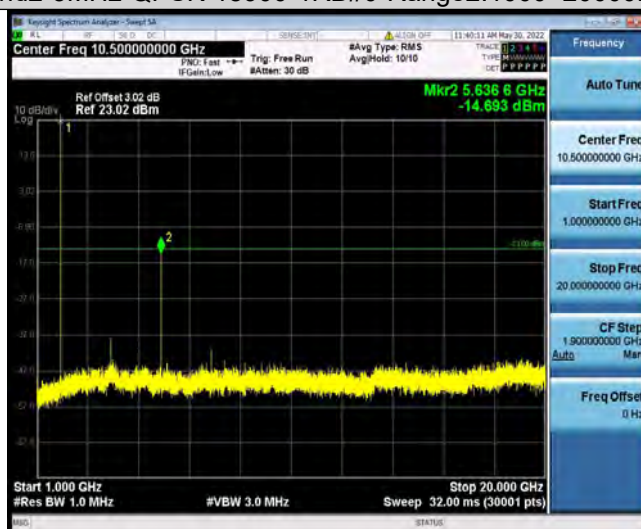
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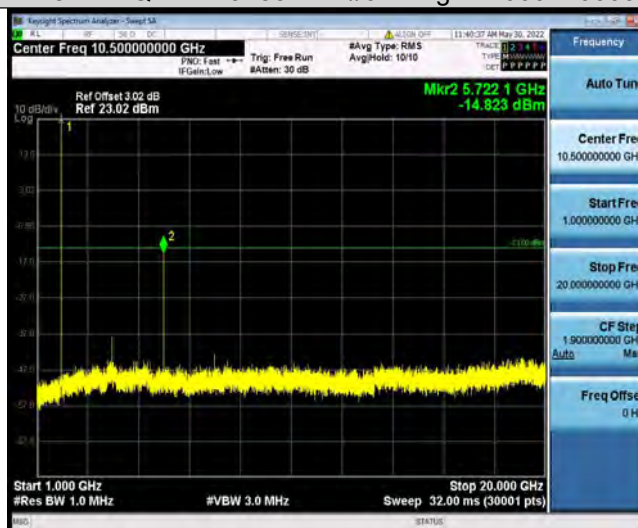
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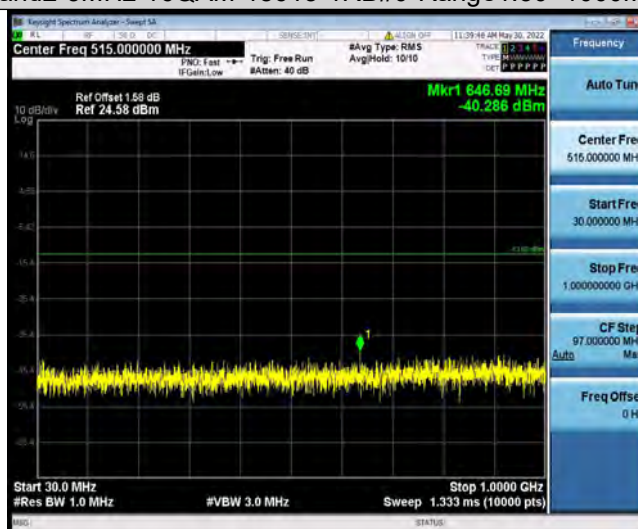
Band2-3MHz-QPSK-19185-1RB#0-Range1:30~1000MHz



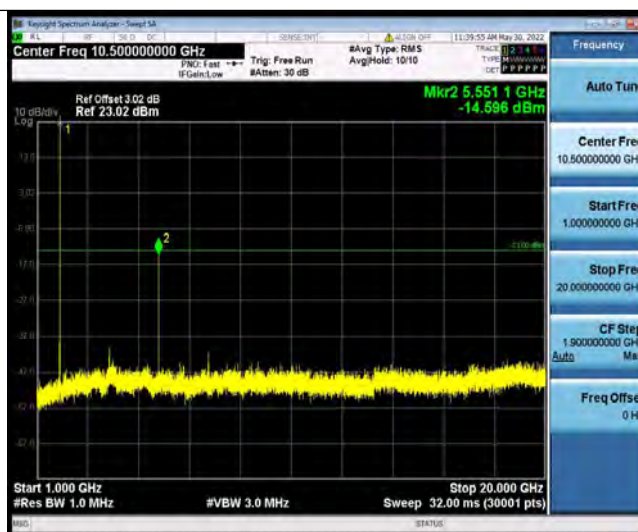
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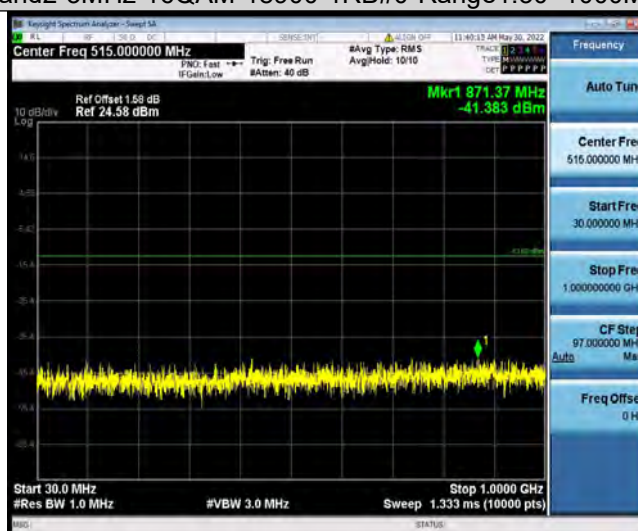
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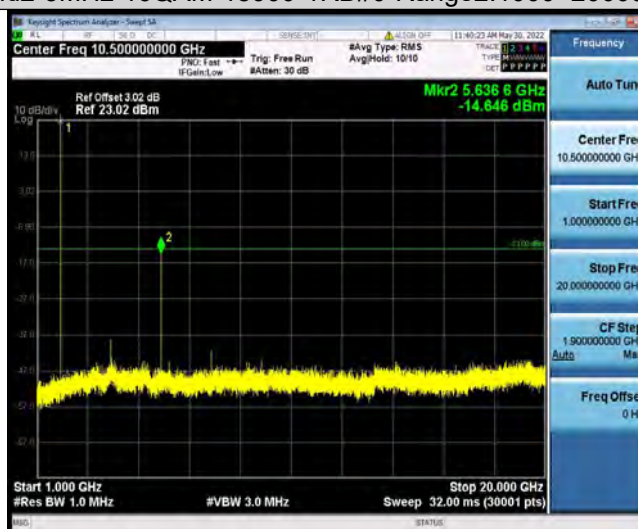
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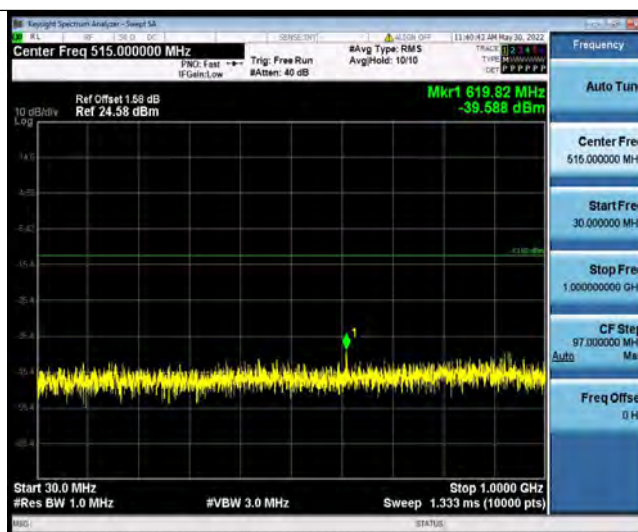
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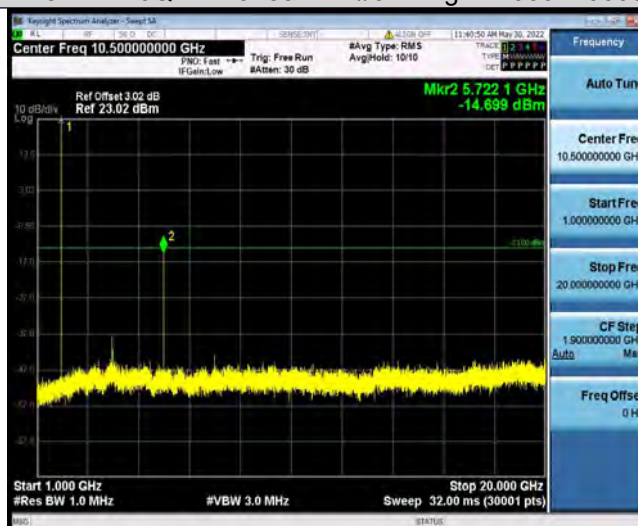
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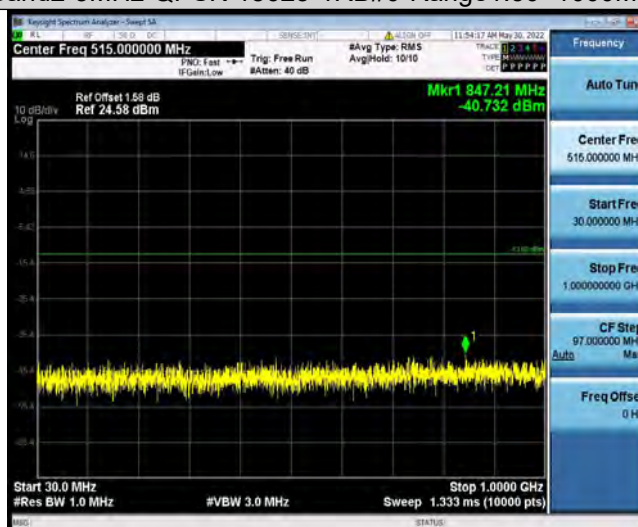
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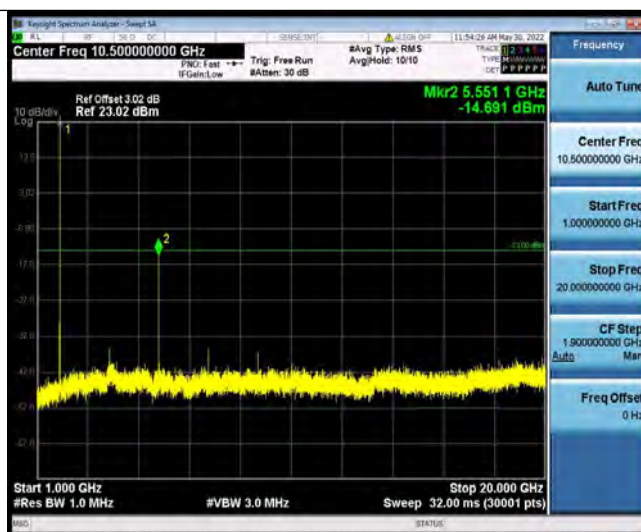
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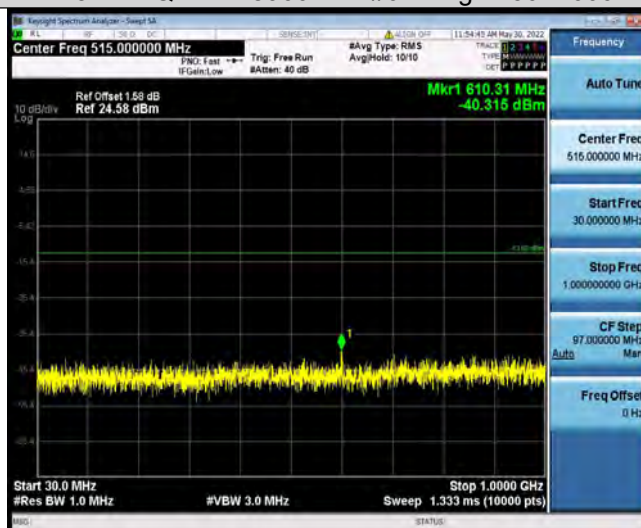
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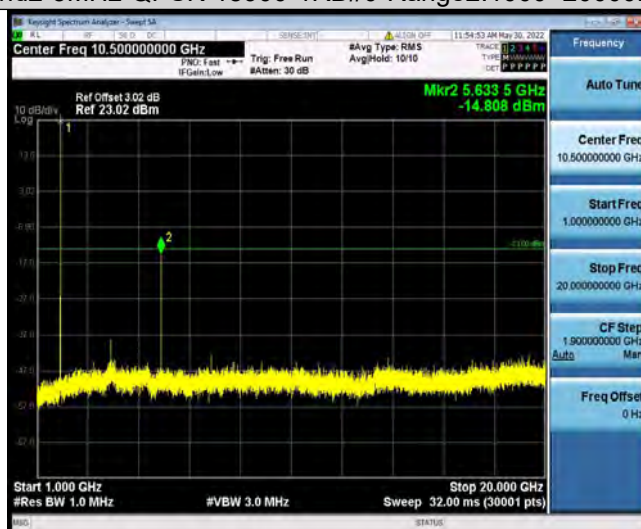
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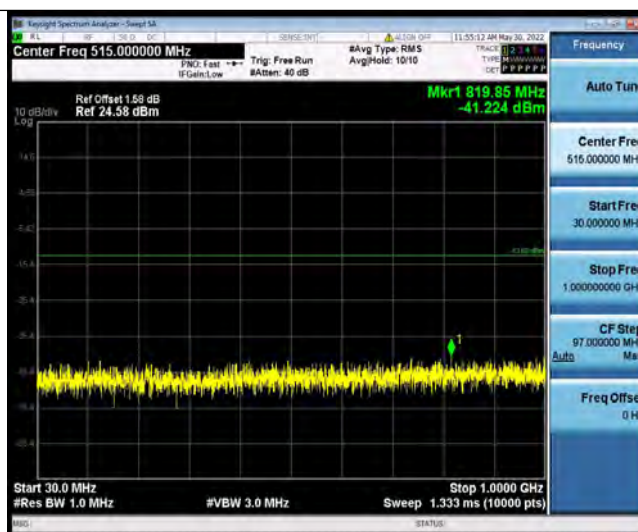
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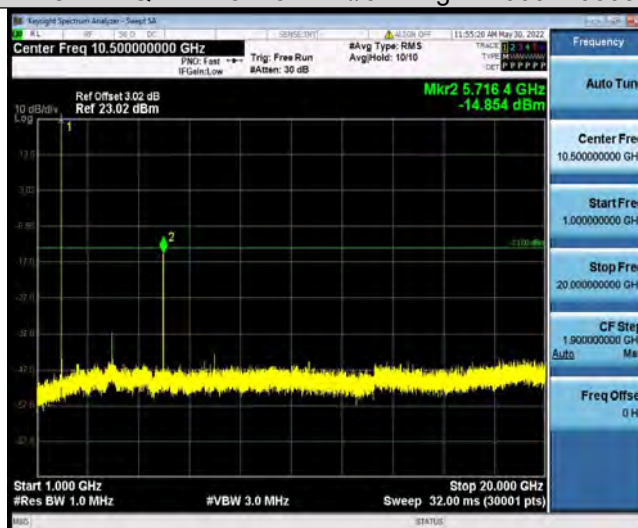
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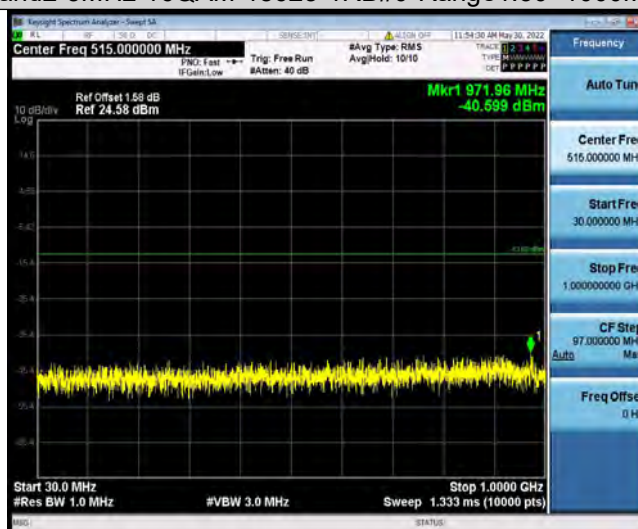
Band2-5MHz-QPSK-19175-1RB#0-Range1:30~1000MHz



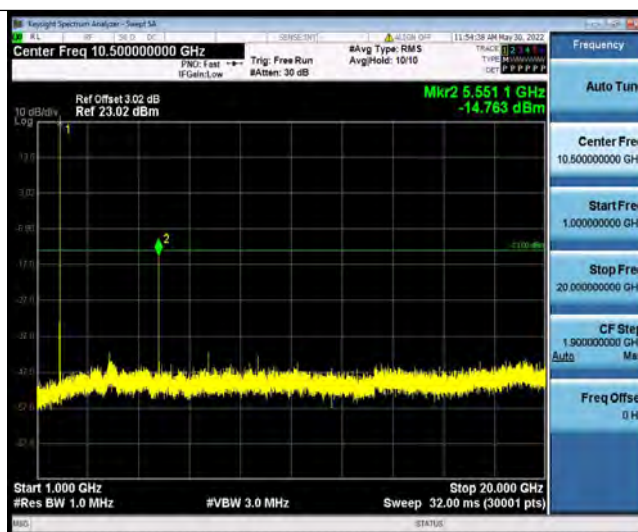
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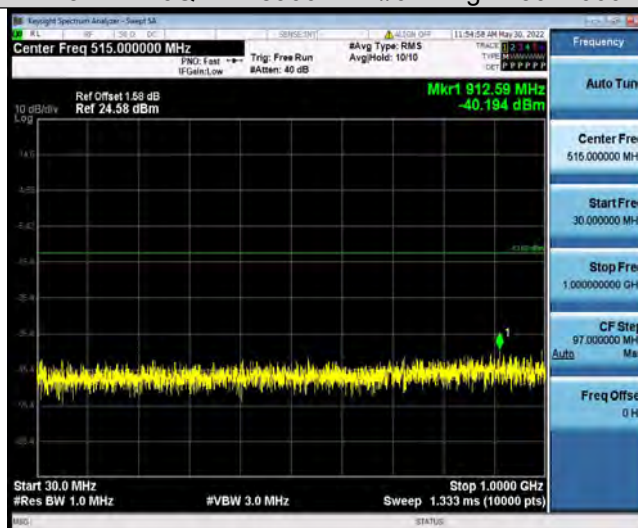
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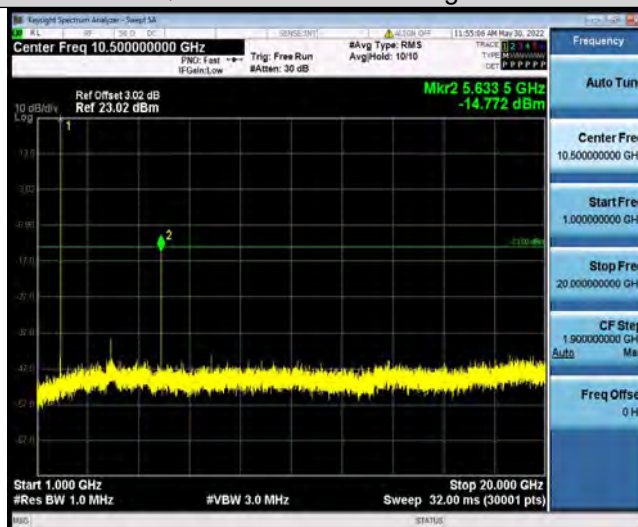
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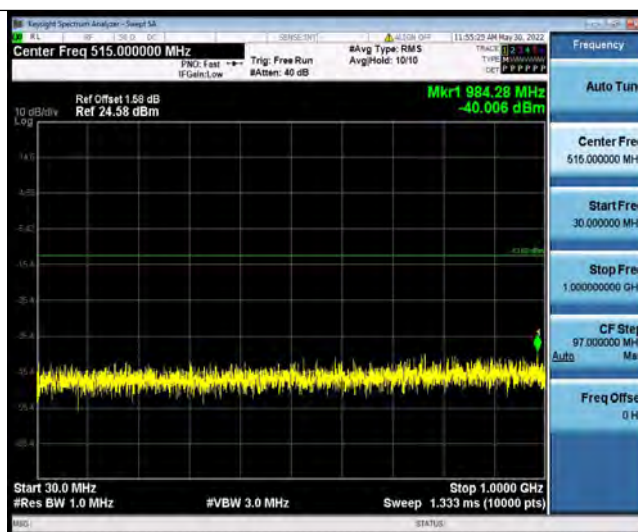
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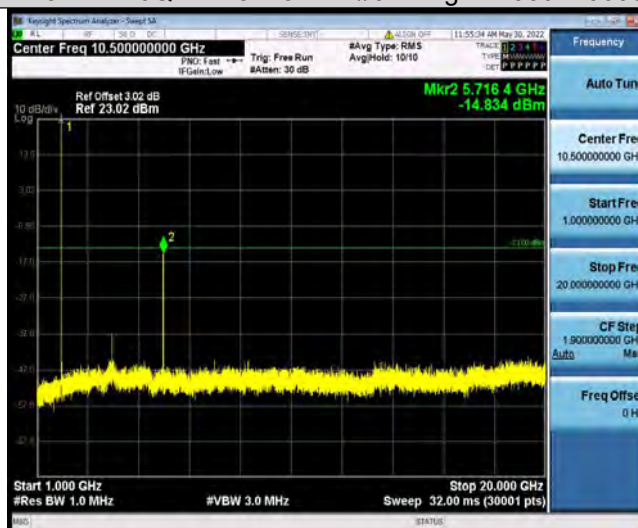
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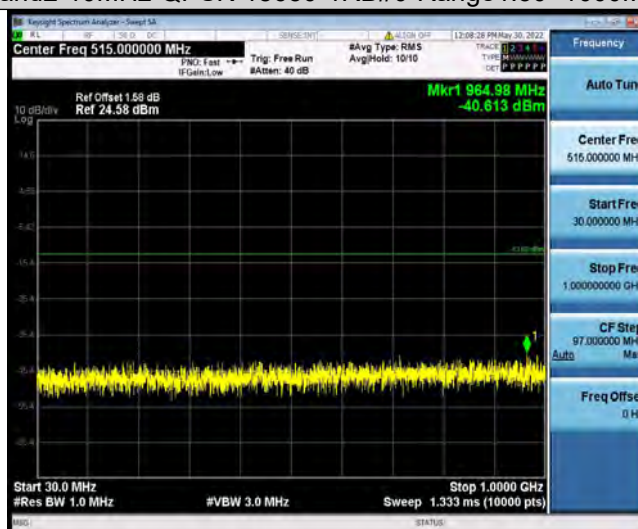
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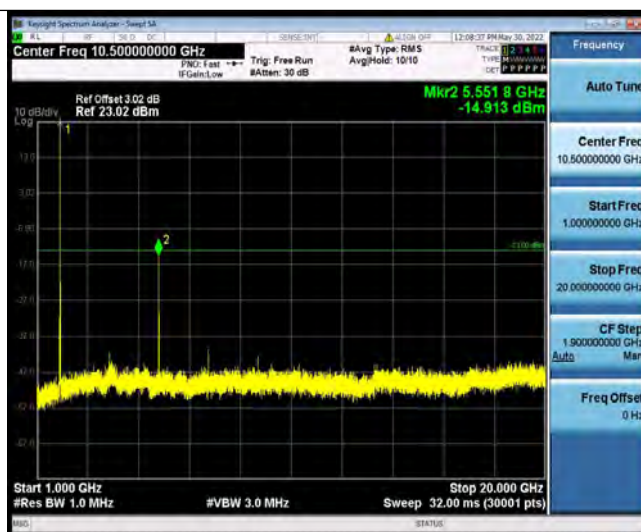
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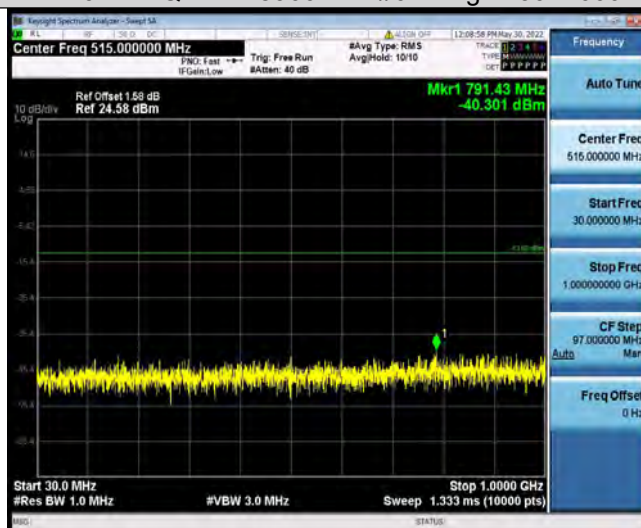
Band2-10MHz-QPSK-18650-1RB#0-Range1:30~1000MHz



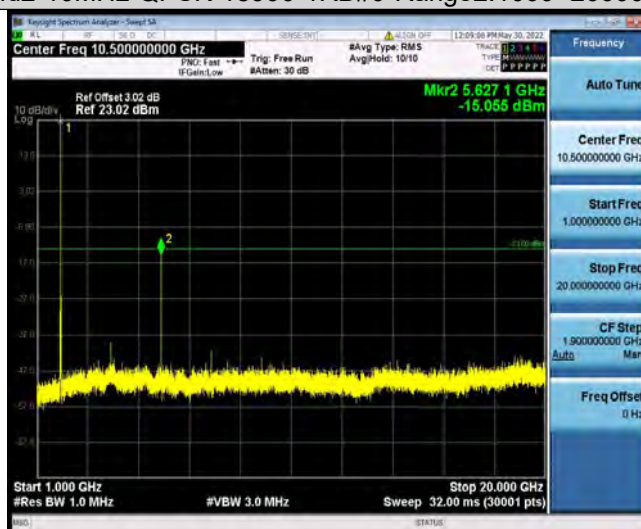
Band2-10MHz-QPSK-18650-1RB#0-Range2:1000~20000MHz



Band2-10MHz-QPSK-18900-1RB#0-Range1:30~1000MHz



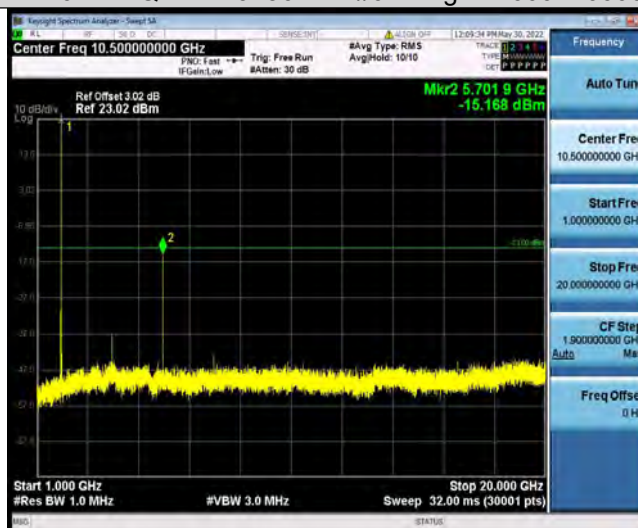
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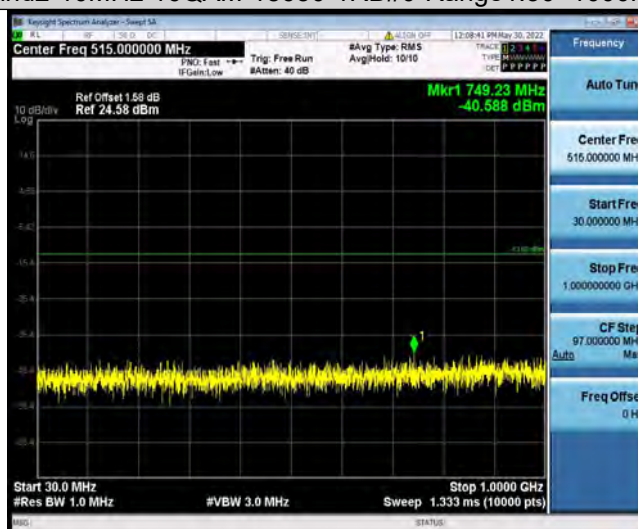
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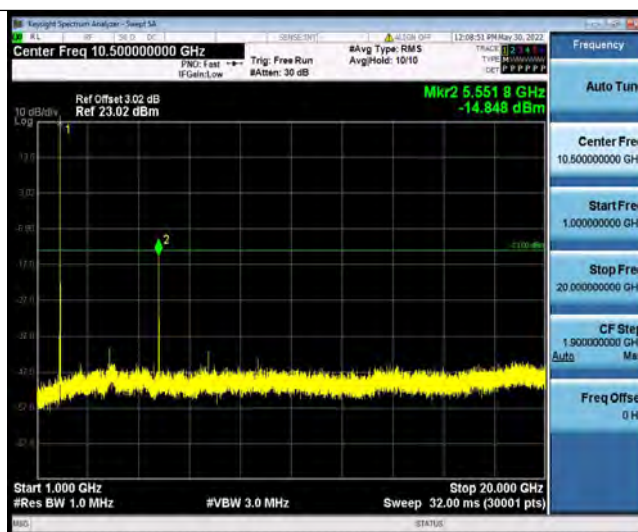
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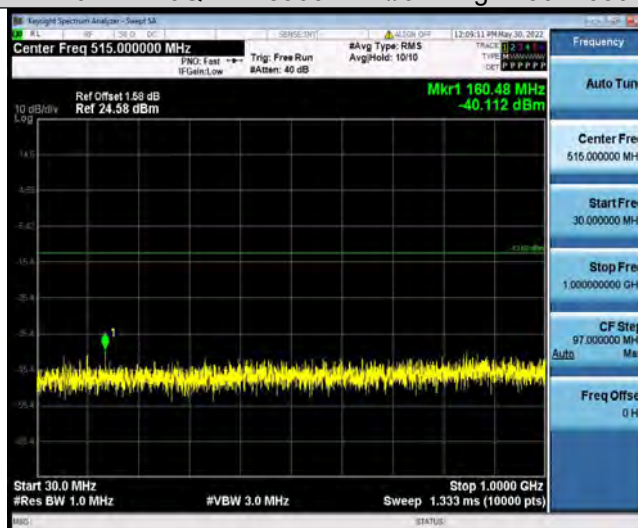
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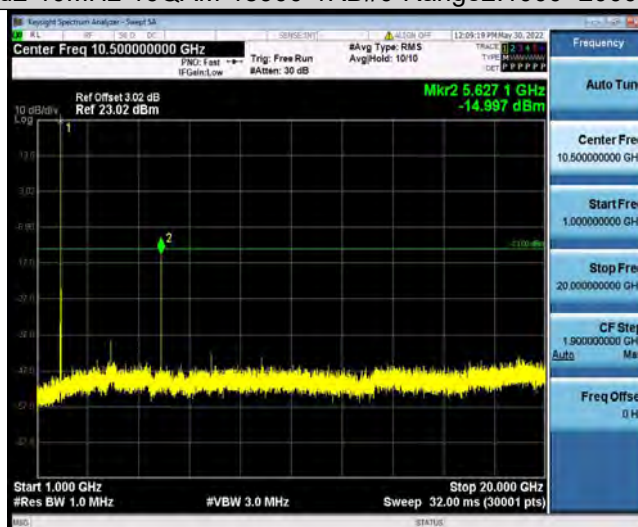
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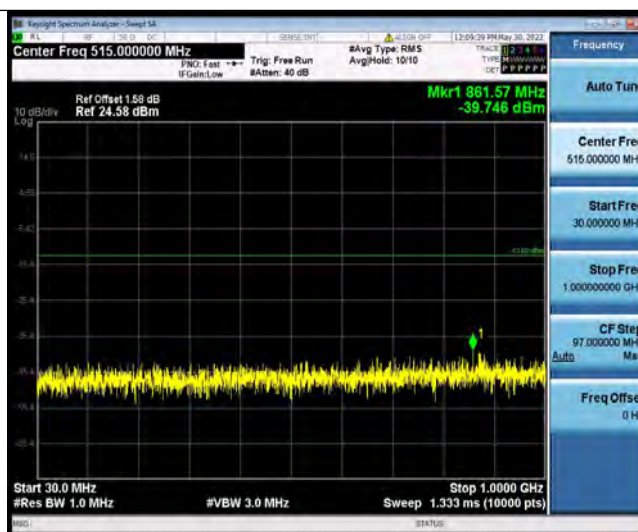
Band2-10MHz-16QAM-18900-1RB#0-Range1:30~1000MHz



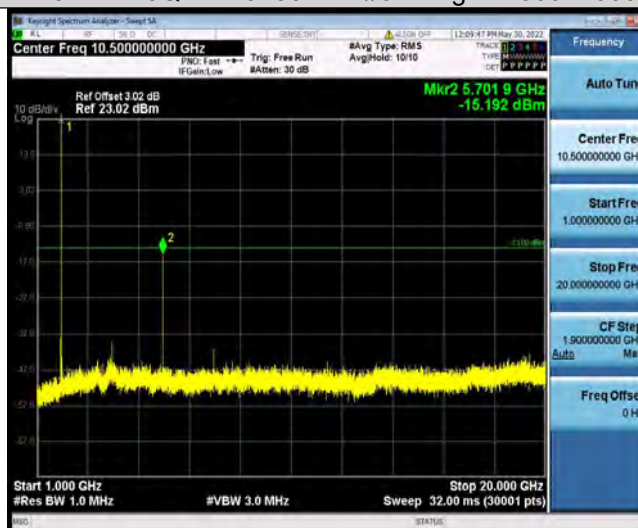
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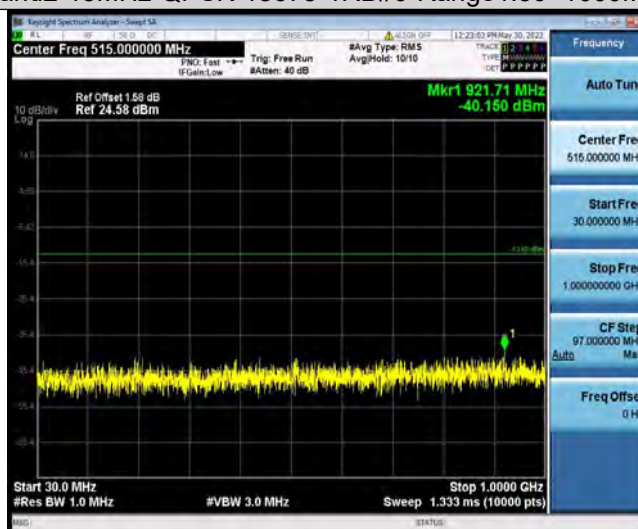
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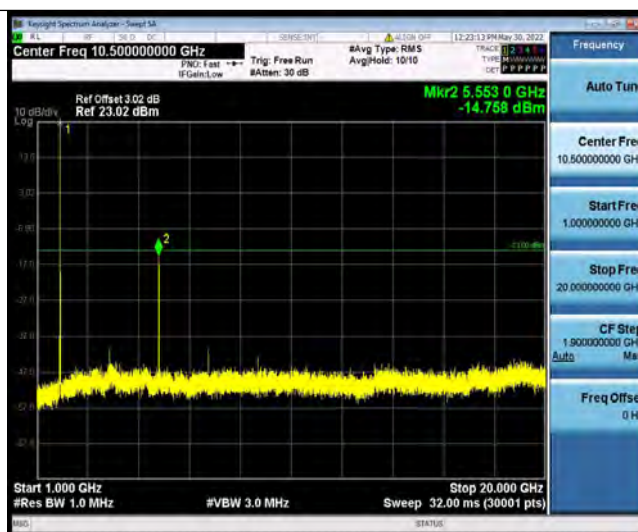
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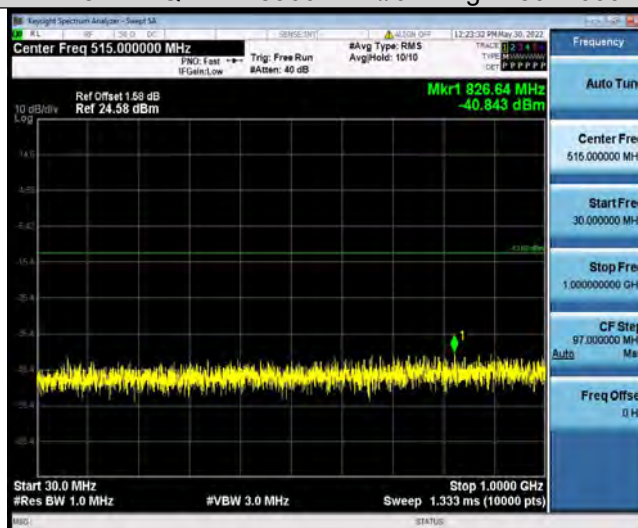
Band2-15MHz-QPSK-18675-1RB#0-Range1:30~1000MHz



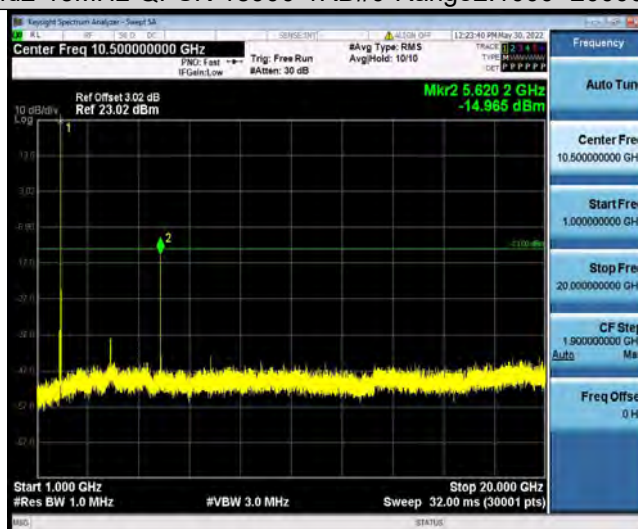
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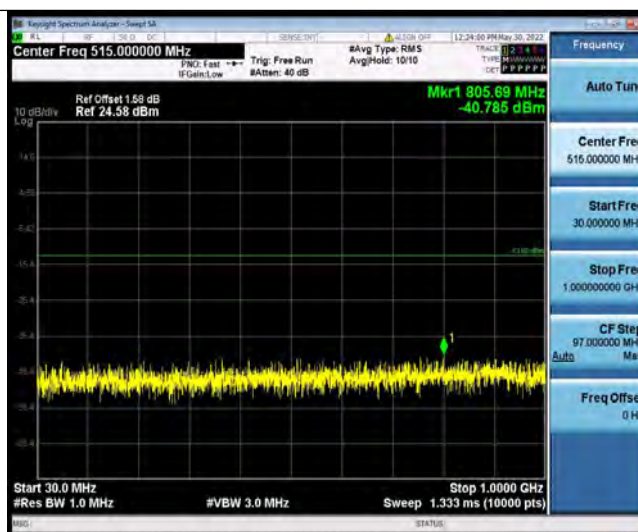
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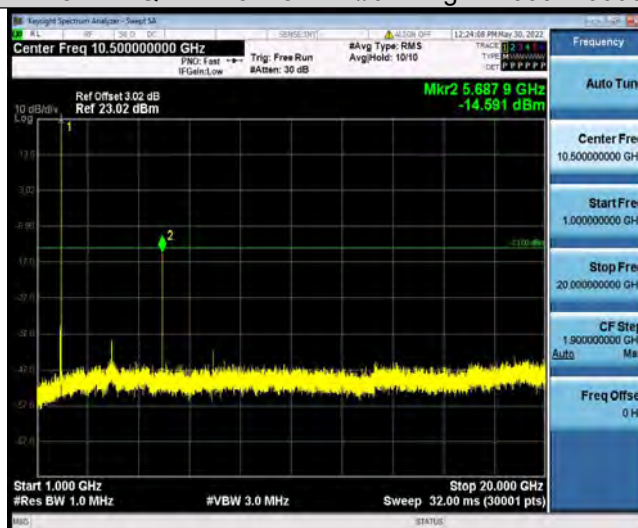
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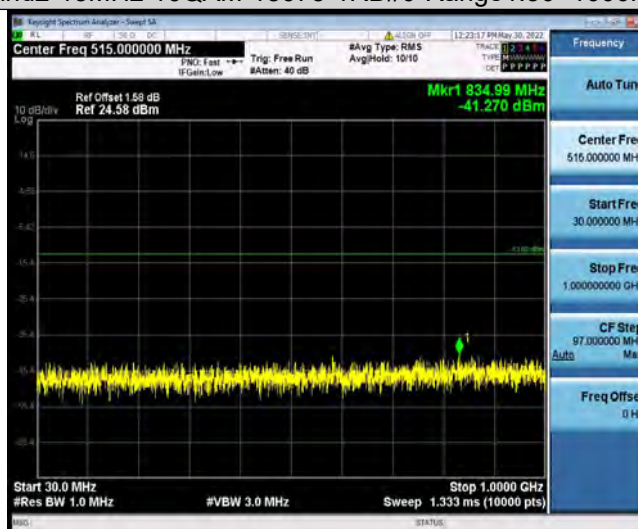
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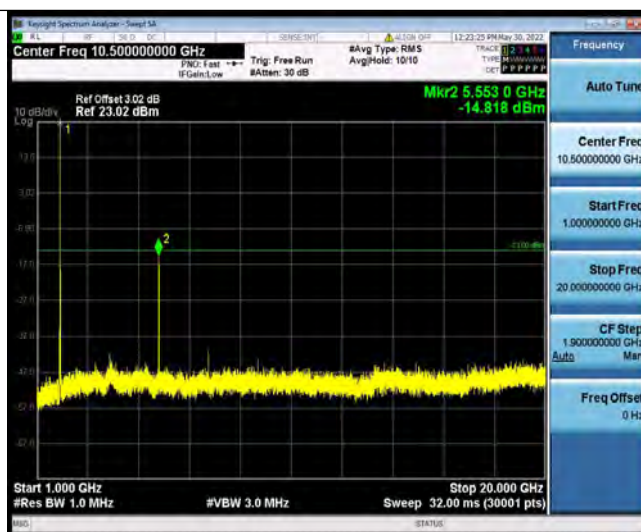
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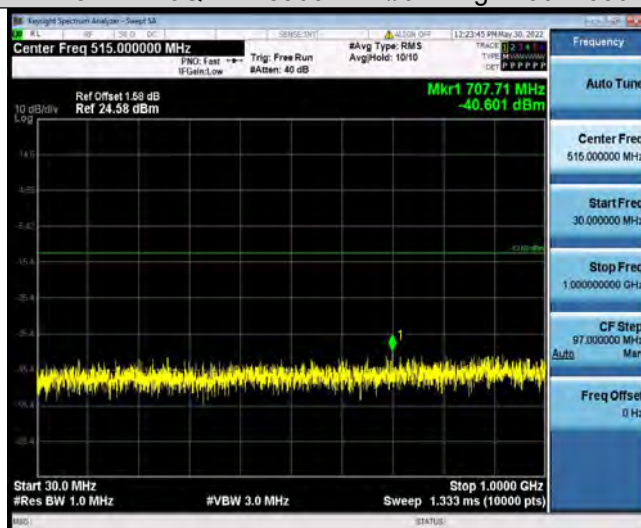
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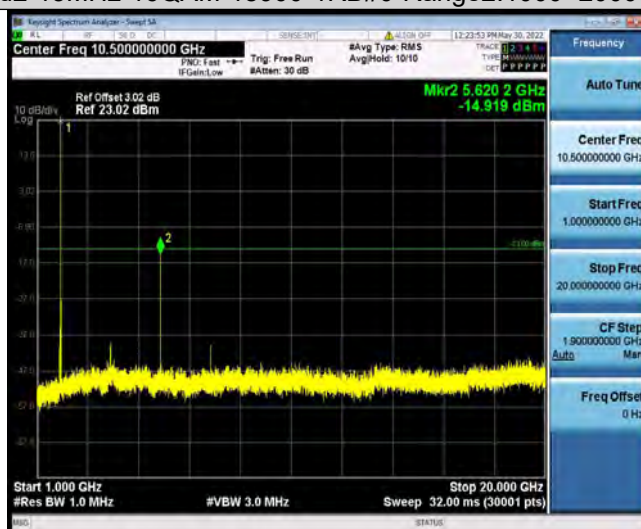
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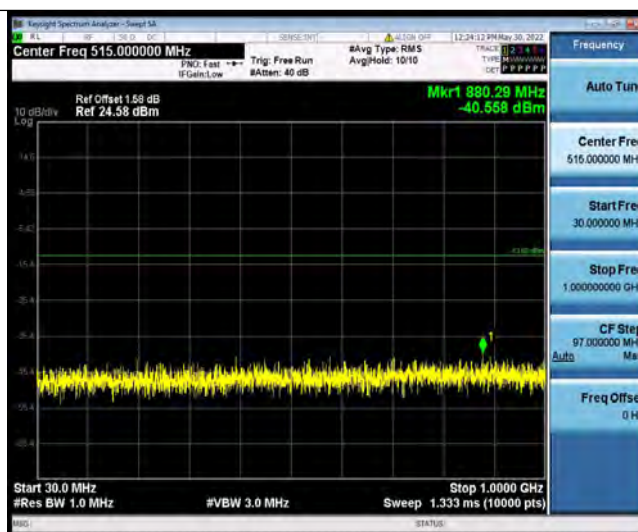
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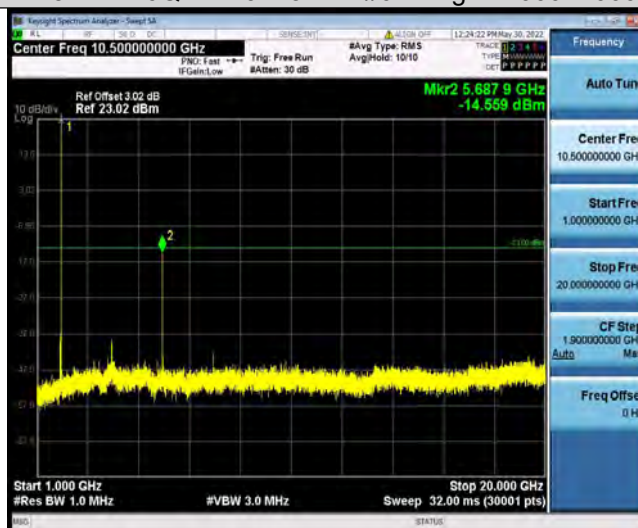
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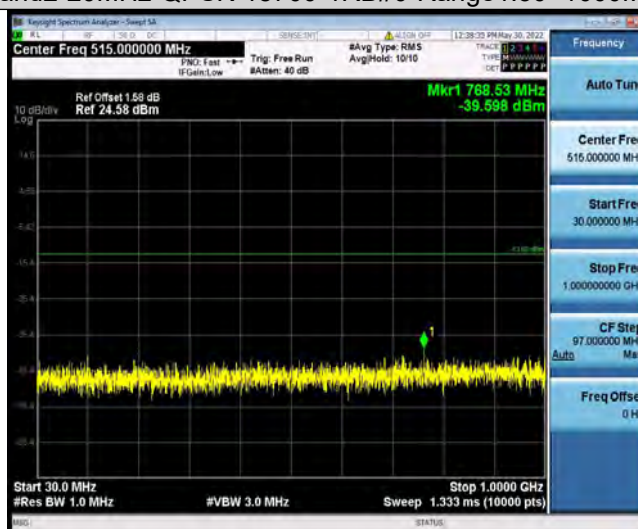
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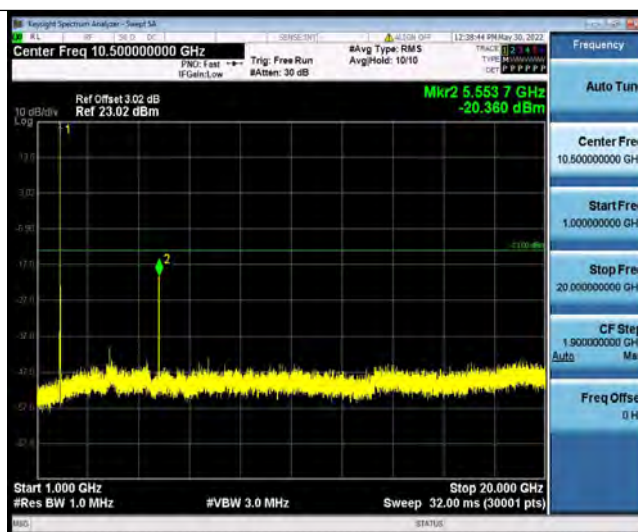
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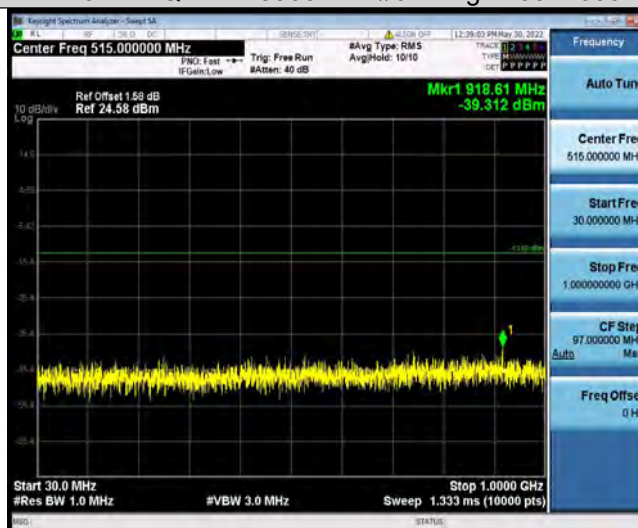
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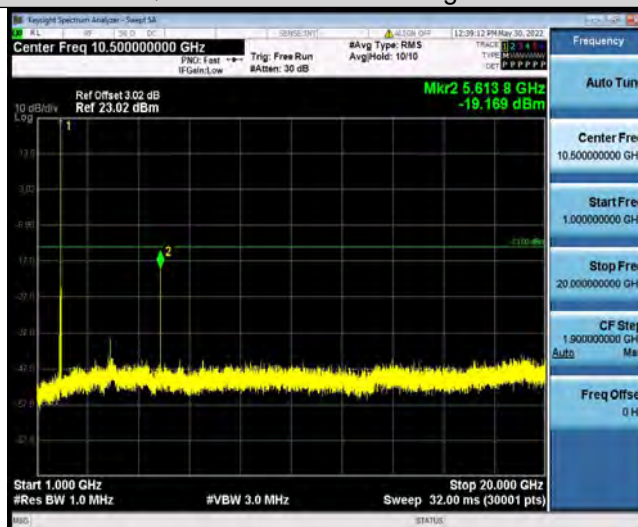
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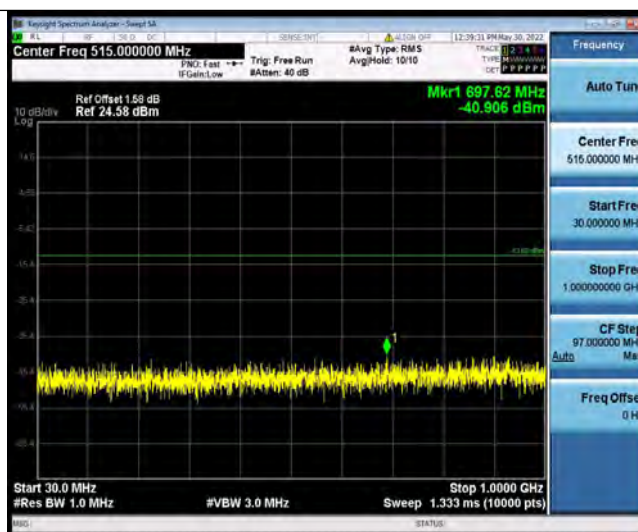
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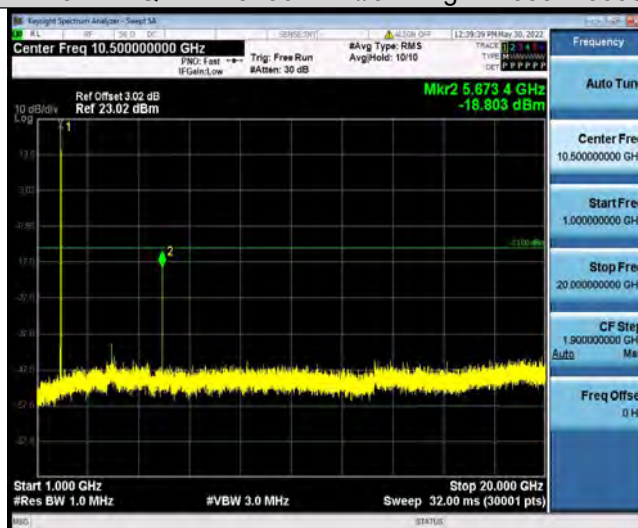
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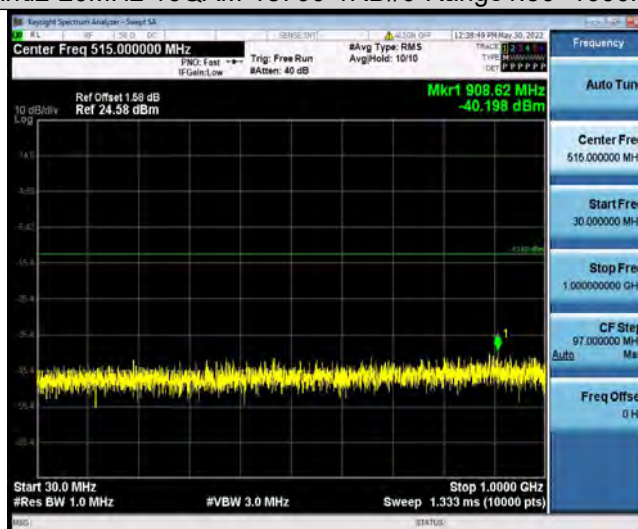
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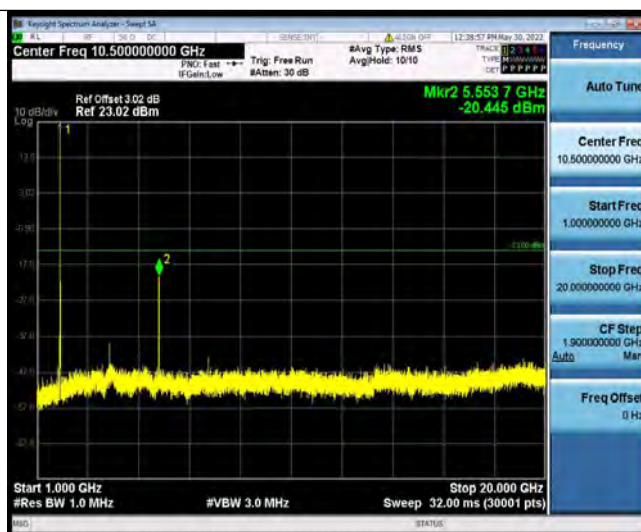
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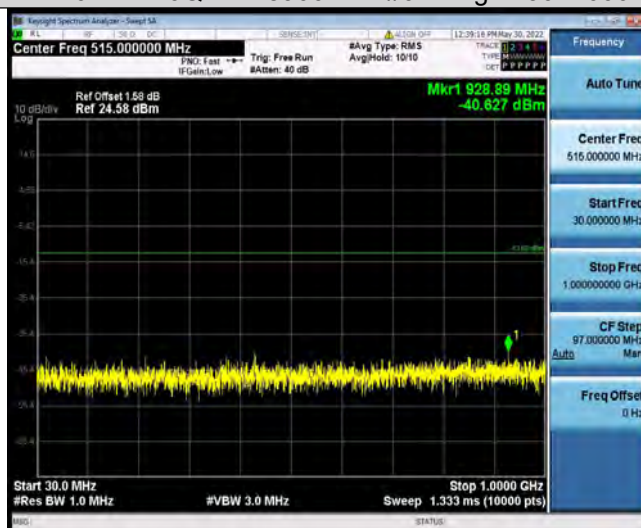
Band2-20MHz-16QAM-18700-1RB#0-Range1:30~1000MHz



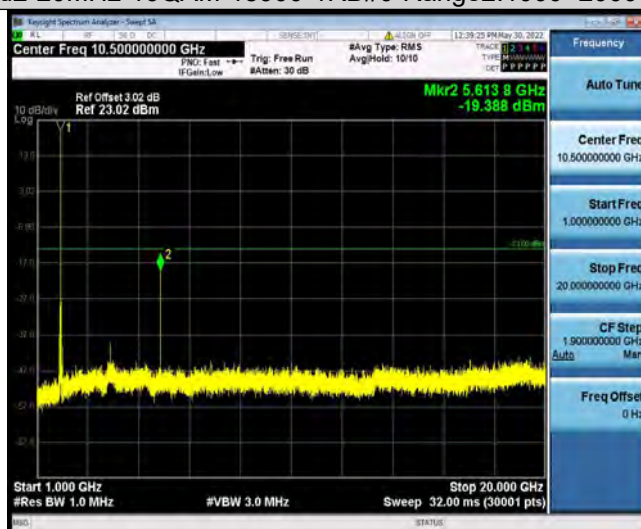
Band2-20MHz-16QAM-18700-1RB#0-Range2:1000~20000MHz



Band2-20MHz-16QAM-18900-1RB#0-Range1:30~1000MHz



Band2-20MHz-16QAM-18900-1RB#0-Range2:1000~2000MHz



Band2-20MHz-16QAM-19100-1RB#0-Range1:30~1000MHz