

FCC TEST REPORT

(PART 22)

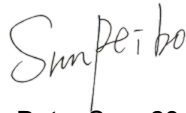
Applicant:	Unplugged Technologies Ltd.
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Manufacturer or Supplier:	Unplugged Technologies Ltd.
Address:	3 Hakidma St., Yokneam 2066731, Israel
Product:	UP Phone 1
Brand Name:	UP Phone
Model Name:	UP01
FCC ID	2BBBCUP01
Date of tests	Jul. 03, 2023 ~ Sep. 28, 2023

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

- ☒ **FCC PART 22, Subpart H** ☒ **FCC Part 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI C63.26-2015**
☒ **ANSI/TIA/EIA-603-E**

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: Sep. 28, 2023	 Date: Sep. 28, 2023

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2306120115RF03	Original release	Sep. 28, 2023

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	TEST TYPE	RESULT	Test lab*
§2.1046	Coducted Output Power	Compliance	A
§22.913 (a)(5)	Equivalent Isotropic Radiated Power	Compliance	A
§2.1055 §22.355	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§22.913 (d)	Peak to average ratio*	Compliance	A
§2.1051 §22.917(a)	Band Edge Measurements	Compliance	A
§2.1051 §22.917(a)	Conducted Spurious Emissions	Compliance	A
§2.1053 §22.917(a)	Radiated Spurious Emissions	Compliance	A

* Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

*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
Maximum Peak Output Power	$\pm 2.06\text{dB}$
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
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 $k=2$.

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.29,24
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,24
Vector Signal Generator	R&S	SMBV100B	102176	Feb.16,22	Feb.15,24
Signal Generator	R&S	SMB100A	182185	Feb.16,22	Feb.15,24
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-E MC-01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-E MC-02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESR26	101734	Feb.25,22	Feb.24,24
EMI TEST Receiver	R&S	ESW44	101973	Feb.25,22	Feb.24,24
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.28,22	Feb.27,24
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,22	Aug.21,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.23,22	Feb.22,24
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,22	Feb.22,24
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.27,22	Jun.26,24
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.30,24
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,24
Hygrothermograph	DELI	20210528	SZ014	Sep.06,22	Sep.05,24
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	Apr.28,23	Oct.27,23
CABLE	R&S	W12.14	N/A	Apr.28,23	Oct.27,23
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.28,23	Oct.27,23
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.28,23	Oct.27,23
Temperature Chamber	votsch	VT4002	58566078100050	May.31,22	May.30,24



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- NOTE:**
1. The calibration interval of the above test instruments is 6 months or 12 months or 36 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 434559; The Designation No. is CN1325.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	UP Phone 1	
BRAND NAME*	UP Phone	
MODEL NAME*	UP01	
NOMINAL VOLTAGE*	3.87 Vdc (Battery)	
MODULATION TYPE	GSM/EDGE	GMSK, 8PSK
	WCDMA	BPSK, QPSK
	LTE	QPSK, 16QAM, 64QAM
FREQUENCY RANGE	GSM/EDGE	824.2MHz ~ 848.8MHz
	WCDMA	826.4MHz ~ 846.6MHz
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	LTE Band 26 (Channel Bandwidth: 15MHz)	831.5MHz ~ 841.5MHz
	LTE CA	b5+b66(See Note5)
MAX. ERP POWER	GSM	812.83mW
	EDGE	222.84mW
	WCDMA	85.11mW
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	102.57mW
	LTE Band 5 (Channel Bandwidth: 3MHz)	102.57mW
	LTE Band 5 (Channel Bandwidth: 5MHz)	103.28mW

	LTE Band 5 (Channel Bandwidth: 10MHz)	104.23mW
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	98.17mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	97.5mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	97.5mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	97.5mW
	LTE Band 26 (Channel Bandwidth: 15MHz)	100.0mW
EMISSION DESIGNATOR GOGN	GSM	248KGXW
	EDGE	247KG7W
	WCDMA	4M17F9W
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	QPSK: 1M09G7D
		16QAM: 1M10W7D
		64QAM: 1M10W7D
	LTE Band 26 (Channel Bandwidth: 3MHz)	QPSK: 2M71G7D
		16QAM: 2M72W7D
		64QAM: 2M72W7D
	LTE Band 26 (Channel Bandwidth: 5MHz)	QPSK: 4M49G7D
		16QAM: 4M49W7D
		64QAM: 4M49W7D
	LTE Band 26 (Channel Bandwidth: 10MHz)	QPSK: 9M09G7D
		16QAM: 9M03W7D
		64QAM: 9M06W7D
	LTE Band 26 (Channel Bandwidth: 15MHz)	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
ANTENNA TYPE*	LOOP Antenna with -1.5dBi gain for GSM850/WCDMA V/LTE B5	
HW VERSION*	M156-MUB-V2	
SW VERSION*	NR_D011.13_N_UP01_1.000.01	
I/O PORTS*	Refer to user's manual	
CABLE SUPPLIED*	N/A	
EXTREME TEMPERATURE*	0-55 °C	
EXTREME VOLTAGE*	3.6V – 4.45V	

NOTE:

- *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and four receivers.

MODULATION MODE	TX FUNCTION
GSM/EDGE	1TX/2RX
WCDMA	1TX/2RX
LTE	1TX/4RX

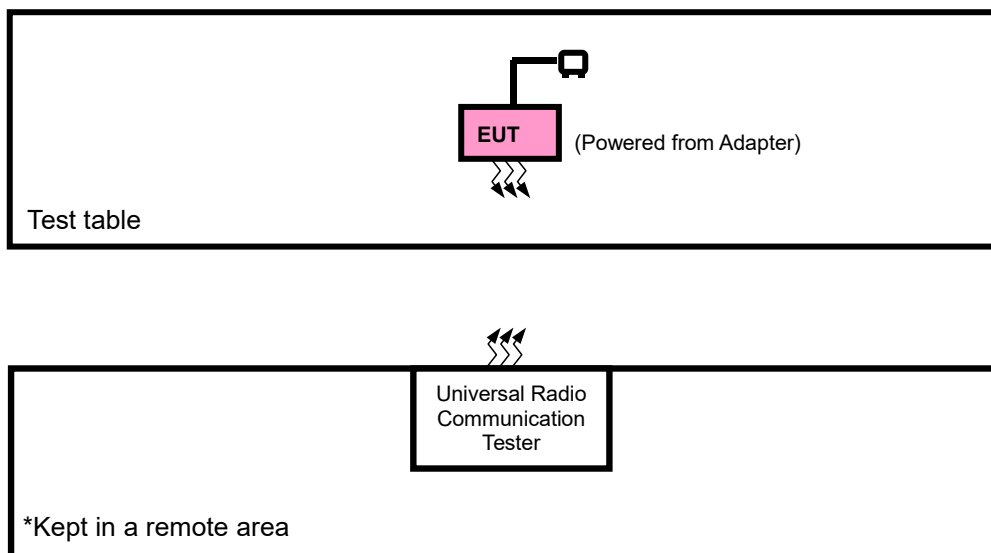
4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in the test report.
5. The power of single LTE band is larger than that in CA mode, so single LTE band can cover the RSE risk of CA part.



List of Accessory:

ACCESSORIES	Brand	MODEL / SPECIFICATION
CPU	MediaTek	MT6893
eMMC 1 (=ROM 1)	Sandisk	SDINFDK4-256G
eMMC 2 (=ROM 2)	Samsung	KLUEG4RHGB-B0E1
eMMC 3 (=ROM 3)	Samsung	KLUEG4RHGB-B0E1
eMMC 4 (=ROM 4)	Samsung	KLUEG4RHGB-B0E1
RAM 1	Hynix	H9HKNNNFBMAVAR-NEH
RAM 2	Samsung	K3UH7H70BM-AGCL
BT/WLAN Module	MediaTek	/
NFC chipset	ST	/
Battery	/	Power Rating: 16.98Wh

2.2 CONFIGURATION OF SYSTEM UNDER TEST FOR RADIATION EMISSION



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	Laptop	Lenovo	ThinkPad E14	HRSW00024	N/A
2	DC Source	HYELEC	HY3010B	551016	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable, 1.0m;
2	PC USB 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 ERP 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 + Adapter with WCDMA or LTE link
B	EUT + DC Supply with WCDMA or LTE link

WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	ERP	4132 to 4233	4132, 4182, 4233	WCDMA
B	FREQUENCY STABILITY	4132 to 4233	4132, 4182, 4233	WCDMA
A	OCCUPIED BANDWIDTH	4132 to 4233	4132, 4182, 4233	WCDMA
A	BAND EDGE	4132 to 4233	4132, 4233	WCDMA
A	CONDUCTED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
A	RADIATED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
A	PEAK TO AVERAGE RATIO	4132 to 4233	4132, 4182, 4233	WCDMA

LTE BAND 5 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset

Note: 1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

2. LTE Band 5 are covered by LTE Band 26, Because it is a subset of LTE Band 26 with the same output power and supported bandwidths, So the test data please refer to LTE Band 26

LTE BAND 26 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	26865 to 26965	26865, 26915, 26965	15MHz	QPSK	75 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM,64QAM	6 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM,64QAM	15 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM,64QAM	75 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
A	BAND EDGE	26797 to 27033	26797	1.4 MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset 6 RB / 0 RB Offset
			27033	1.4 MHz	QPSK,16QAM,64QAM	1 RB / 5 RB Offset 6 RB / 0 RB Offset
		26805 to 27025	26805	3 MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset 15 RB / 0 RB Offset

		26805 to 27025	27025	3 MHz	QPSK,16QAM,64QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26815 to 27015	26815	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		26815 to 27015	27015	5MHz	QPSK,16QAM,64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		26840 to 26990	26840	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
A	CONDCUDETED EMISSION	26840 to 26990	26990	10MHz	QPSK,16QAM,64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		26865 to 26965	26865	15MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
		26865 to 26965	26965	15MHz	QPSK,16QAM,64QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
A	RADIATED EMISSION	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	26797 to 27033	26915	1.4MHz	QPSK	1 RB / 0 RB Offset
		26805 to 27025	26915	3MHz	QPSK	1 RB / 0 RB Offset
		26815 to 27015	26915	5MHz	QPSK	1 RB / 0 RB Offset
		26840 to 26990	26915	10MHz	QPSK	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	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
ERP	23deg. C, 70%RH	DC 3.87V By Battery	Chao Wu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.6V/ 3.87V/ 4.45V By DC Source	Chao Wu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 3.87V By Battery	Chao Wu
BAND EDGE	23deg. C, 70%RH	DC 3.87V By Battery	Chao Wu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 3.87V By Battery	Chao Wu
RADIATED EMISSION	23deg. C, 70%RH	AC 120V/60Hz	Chao Wu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 3.87V By Battery	Chao Wu

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



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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 22

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 / Portable station are limited to 7 watts e.r.p.

3.1.2 TEST PROCEDURES

EIRP / ERP 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:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$$

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):

Band	GSM850		
Channel	128	189	251
Frequency	824.2	836.4	848.8
GSM	32.63	32.75	32.68
GPRS 1Tx Slot	32.61	32.72	32.66
GPRS 2Tx Slot	31.80	31.89	31.84
GPRS 3Tx Slot	29.97	30.07	30.03
GPRS 4Tx Slot	28.67	28.85	28.77
EDGE 1Tx Slot	27.01	27.13	27.09
EDGE 2Tx Slot	25.68	25.39	25.59
EDGE 3Tx Slot	23.34	22.95	22.93
EDGE 4Tx Slot	21.88	21.59	21.57

Band	WCDMA V		
TX Channel	4132	4182	4233
Rx Channel	4357	4407	4458
Frequency	826.4	836.4	846.6
RMC 12.2K	22.91	22.95	22.89
HSDPA Subtest-1	22.23	22.28	22.18
HSDPA Subtest-2	22.22	22.27	22.17
HSDPA Subtest-3	21.71	21.76	21.66
HSDPA Subtest-4	21.70	21.75	21.65
DC-HSDPA Subtest-1	22.15	22.22	22.10
DC-HSDPA Subtest-2	22.14	22.21	22.09
DC-HSDPA Subtest-3	21.72	21.70	21.60
DC-HSDPA Subtest-4	21.71	21.69	21.59
HSUPA Subtest-1	22.19	22.24	22.14
HSUPA Subtest-2	21.18	21.23	21.13
HSUPA Subtest-3	21.66	21.72	21.62
HSUPA Subtest-4	21.15	21.21	21.11
HSUPA Subtest-5	22.14	22.20	22.10
HSPA+ Subtest-1	21.70	21.77	21.67

LTE Band 5

Band/BW	Modulation	RB Size	RB Offset	Low CH 20407	Mid CH 20525	High CH 20643
				Frequency 824.7 MHz	Frequency 836.5 MHz	Frequency 848.3 MHz
5/ 1.4	QPSK	1	0	23.61	23.67	23.63
		1	2	23.76	23.69	23.76
		1	5	23.68	23.64	23.72
		3	0	23.58	23.62	23.69
		3	1	23.62	23.76	23.64
		3	3	23.61	23.62	23.66
		6	0	22.62	22.70	22.67
	16QAM	1	0	22.69	22.75	22.76
		1	2	22.67	22.79	22.84
		1	5	22.81	22.78	22.79
		3	0	22.61	22.66	22.68
		3	1	22.57	22.69	22.69
		3	3	22.56	22.63	22.72
		6	0	21.54	21.66	21.66
	64QAM	1	0	21.61	21.78	21.84
		1	2	21.71	21.82	21.79
		1	5	21.69	21.73	21.79
		3	0	21.56	21.63	21.59
		3	1	21.56	21.68	21.64
		3	3	21.57	21.54	21.61
		6	0	20.59	20.66	20.69

Band/BW	Modulation	RB Size	RB Offset	Low CH 20415	Mid CH 20525	High CH 20635
				Frequency 825.5 MHz	Frequency 836.5 MHz	Frequency 847.5 MHz
5/ 3	QPSK	1	0	23.63	23.69	23.62
		1	7	23.72	23.70	23.76
		1	14	23.64	23.64	23.72
		8	0	22.57	22.65	22.69
		8	3	22.55	22.76	22.66
		8	7	22.58	22.69	22.70
		15	0	22.59	22.71	22.61
	16QAM	1	0	22.66	22.81	22.79
		1	7	22.64	22.82	22.82
		1	14	22.84	22.78	22.79
		8	0	21.57	21.67	21.68
		8	3	21.62	21.64	21.72
		8	7	21.58	21.61	21.68
		15	0	21.54	21.60	21.69
	64QAM	1	0	21.67	21.81	21.78
		1	7	21.74	21.76	21.78
		1	14	21.70	21.75	21.79
		8	0	20.59	20.67	20.60
		8	3	20.60	20.62	20.69
		8	7	20.54	20.58	20.57
		15	0	20.61	20.63	20.73

Band/BW	Modulation	RB Size	RB Offset	Low CH 20425	Mid CH 20525	High CH 20625
				Frequency 826.5 MHz	Frequency 836.5 MHz	Frequency 846.5 MHz
5/ 5	QPSK	1	0	23.69	23.71	23.68
		1	12	23.79	23.75	23.78
		1	24	23.70	23.71	23.77
		12	0	22.64	22.70	22.71
		12	6	22.63	22.78	22.72
		12	13	22.66	22.70	22.72
		25	0	22.63	22.76	22.69
	16QAM	1	0	22.74	22.82	22.81
		1	12	22.69	22.87	22.86
		1	24	22.86	22.86	22.80
		12	0	21.65	21.71	21.73
		12	6	21.65	21.70	21.74
		12	13	21.60	21.68	21.73
		25	0	21.60	21.68	21.71
	64QAM	1	0	21.68	21.83	21.86
		1	12	21.79	21.84	21.84
		1	24	21.71	21.81	21.81
		12	0	20.64	20.69	20.67
		12	6	20.62	20.70	20.70
		12	13	20.62	20.62	20.62
		25	0	20.63	20.71	20.74

Band/BW	Modulation	RB Size	RB Offset	Low CH 20450	Mid CH 20525	High CH 20600
				Frequency 829 MHz	Frequency 836.5 MHz	Frequency 844 MHz
5/ 10	QPSK	1	0	23.74	23.78	23.73
		1	24	23.81	23.83	23.80
		1	49	23.75	23.79	23.78
		25	0	22.68	22.75	22.76
		25	12	22.71	22.79	22.77
		25	25	22.70	22.75	22.73
		50	0	22.69	22.78	22.74
	16QAM	1	0	22.81	22.87	22.83
		1	24	22.77	22.89	22.91
		1	49	22.88	22.94	22.82
		25	0	21.73	21.77	21.81
		25	12	21.71	21.72	21.80
		25	25	21.67	21.73	21.75
		50	0	21.66	21.75	21.76
	64QAM	1	0	21.75	21.88	21.88
		1	24	21.87	21.86	21.90
		1	49	21.79	21.82	21.83
		25	0	20.68	20.74	20.75
		25	12	20.70	20.71	20.72
		25	25	20.66	20.67	20.70
		50	0	20.69	20.73	20.77

LTE BAND 26

Band/BW	Modulation	RB Size	RB Offset	Low CH 26797	Mid CH 26915	High CH 27033
				Frequency 824.7 MHz	Frequency 836.5 MHz	Frequency 848.3 MHz
26/ 1.4	QPSK	1	0	23.35	23.43	23.39
		1	2	23.53	23.56	23.52
		1	5	23.45	23.47	23.44
		3	0	23.36	23.40	23.52
		3	1	23.50	23.55	23.46
		3	3	23.33	23.39	23.37
		6	0	22.51	22.48	22.51
	16QAM	1	0	22.51	22.70	22.68
		1	2	22.76	22.64	22.81
		1	5	22.47	22.51	22.69
		3	0	22.42	22.37	22.47
		3	1	22.31	22.47	22.46
		3	3	22.36	22.38	22.46
		6	0	21.39	21.46	21.40
	64QAM	1	0	21.38	21.60	21.54
		1	2	21.66	21.60	21.60
		1	5	21.47	21.49	21.58
		3	0	21.35	21.47	21.41
		3	1	21.35	21.49	21.44
		3	3	21.44	21.43	21.43
		6	0	20.39	20.44	20.45

Band/BW	Modulation	RB Size	RB Offset	Low CH 26805	Mid CH 26915	High CH 27025
				Frequency 825.5 MHz	Frequency 836.5 MHz	Frequency 847.5 MHz
26/ 3	QPSK	1	0	23.37	23.45	23.38
		1	7	23.49	23.57	23.52
		1	14	23.41	23.47	23.44
		8	0	22.35	22.43	22.52
		8	3	22.43	22.55	22.48
		8	7	22.30	22.46	22.41
		15	0	22.48	22.49	22.45
	16QAM	1	0	22.48	22.76	22.71
		1	7	22.73	22.67	22.79
		1	14	22.50	22.51	22.69
		8	0	21.38	21.38	21.47
		8	3	21.36	21.42	21.49
		8	7	21.38	21.36	21.42
		15	0	21.39	21.40	21.43
	64QAM	1	0	21.44	21.63	21.48
		1	7	21.69	21.54	21.59
		1	14	21.48	21.51	21.58
		8	0	20.38	20.51	20.42
		8	3	20.39	20.43	20.49
		8	7	20.41	20.47	20.39
		15	0	20.41	20.41	20.49

Band/BW	Modulation	RB Size	RB Offset	Low CH 26815	Mid CH 26915	High CH 27015
				Frequency 826.5 MHz	Frequency 836.5 MHz	Frequency 846.5 MHz
26/ 5	QPSK	1	0	23.38	23.40	23.39
		1	12	23.54	23.54	23.52
		1	24	23.42	23.46	23.48
		12	0	22.38	22.43	22.49
		12	6	22.43	22.56	22.49
		12	13	22.34	22.42	22.42
		25	0	22.46	22.52	22.48
	16QAM	1	0	22.49	22.72	22.71
		1	12	22.70	22.70	22.78
		1	24	22.50	22.51	22.68
		12	0	21.38	21.36	21.44
		12	6	21.33	21.46	21.45
		12	13	21.33	21.38	21.45
		25	0	21.39	21.41	21.40
	64QAM	1	0	21.38	21.60	21.54
		1	12	21.66	21.60	21.59
		1	24	21.41	21.56	21.58
		12	0	20.39	20.48	20.41
		12	6	20.33	20.50	20.48
		12	13	20.45	20.46	20.36
		25	0	20.37	20.47	20.47

Band/BW	Modulation	RB Size	RB Offset	Low CH 26840	Mid CH 26915	High CH 26990
				Frequency 829 MHz	Frequency 836.5 MHz	Frequency 844 MHz
26/10	QPSK	1	0	23.35	23.43	23.39
		1	24	23.54	23.54	23.53
		1	49	23.39	23.50	23.44
		25	0	22.39	22.42	22.52
		25	12	22.49	22.50	22.49
		25	25	22.32	22.39	22.41
		50	0	22.51	22.52	22.45
	16QAM	1	0	22.49	22.69	22.67
		1	24	22.75	22.66	22.81
		1	49	22.50	22.52	22.65
		25	0	22.40	21.34	21.50
		25	12	21.37	21.40	21.50
		25	25	21.32	21.39	21.42
		50	0	21.43	21.40	21.44
	64QAM	1	0	21.37	21.61	21.51
		1	24	21.71	21.56	21.63
		1	49	21.47	21.50	21.55
		25	0	20.37	20.45	20.47
		25	12	20.40	20.49	20.42
		25	25	20.44	20.43	20.38
		50	0	20.42	20.43	20.48

Band/BW	Modulation	RB Size	RB Offset	Low CH 26865	Mid CH 26915	High CH 26965
				Frequency 831.5 MHz	Frequency 836.5 MHz	Frequency 841.5 MHz
26/ 15	QPSK	1	0	23.44	23.51	23.52
		1	37	23.60	23.65	23.60
		1	74	23.49	23.55	23.53
		36	0	22.48	22.53	22.55
		36	19	22.52	22.59	22.59
		36	39	22.46	22.54	22.45
		75	0	22.53	22.58	22.56
	16QAM	1	0	22.59	22.78	22.79
		1	37	22.82	22.77	22.85
		1	74	22.58	22.61	22.73
		36	0	22.48	21.50	21.53
		36	19	21.47	21.52	21.56
		36	39	21.43	21.49	21.49
		75	0	21.46	21.53	21.53
	64QAM	1	0	21.51	21.68	21.60
		1	37	21.76	21.69	21.70
		1	74	21.55	21.65	21.62
		36	0	20.44	20.55	20.57
		36	19	20.48	20.59	20.56
		36	39	20.51	20.52	20.48
		75	0	20.45	20.57	20.51

ERP POWER (dBm)

GSM 850

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
128	824.2	32.63	-1.5	28.98	790.68	7
189	836.4	32.75	-1.5	29.1	812.83	7
251	848.8	32.68	-1.5	29.03	799.83	7

EDGE 850

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
128	824.2	27.01	-1.5	23.36	216.77	7
189	836.4	27.13	-1.5	23.48	222.84	7
251	848.8	27.09	-1.5	23.44	220.8	7

WCDMA

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
4132	826.4	22.91	-1.5	19.26	84.33	7
4182	836.4	22.95	-1.5	19.3	85.11	7
4233	846.6	22.89	-1.5	19.24	83.95	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 5

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	23.76	-1.5	20.11	102.57	7
20525	836.5	23.76	-1.5	20.11	102.57	7
20643	848.3	23.76	-1.5	20.11	102.57	7

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	22.81	-1.5	19.16	82.41	7
20525	836.5	22.79	-1.5	19.14	82.04	7
20643	848.3	22.84	-1.5	19.19	82.99	7

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20407	824.7	21.71	-1.5	18.06	63.97	7
20525	836.5	21.82	-1.5	18.17	65.61	7
20643	848.3	21.84	-1.5	18.19	65.92	7

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	23.72	-1.5	20.07	101.62	7
20525	836.5	23.7	-1.5	20.05	101.16	7
20635	847.5	23.76	-1.5	20.11	102.57	7

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	22.84	-1.5	19.19	82.99	7
20525	836.5	22.82	-1.5	19.17	82.6	7
20635	847.5	22.82	-1.5	19.17	82.6	7

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20415	825.5	21.74	-1.5	18.09	64.42	7
20525	836.5	21.81	-1.5	18.16	65.46	7
20635	847.5	21.79	-1.5	18.14	65.16	7

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	23.79	-1.5	20.14	103.28	7
20525	836.5	23.75	-1.5	20.1	102.33	7
20625	846.5	23.78	-1.5	20.13	103.04	7

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	22.86	-1.5	19.21	83.37	7
20525	836.5	22.87	-1.5	19.22	83.56	7
20625	846.5	22.86	-1.5	19.21	83.37	7

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20425	826.5	21.79	-1.5	18.14	65.16	7
20525	836.5	21.84	-1.5	18.19	65.92	7
20625	846.5	21.86	-1.5	18.21	66.22	7

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829	23.81	-1.5	20.16	103.75	7
20525	836.5	23.83	-1.5	20.18	104.23	7
20600	844	23.8	-1.5	20.15	103.51	7

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829	22.88	-1.5	19.23	83.75	7
20525	836.5	22.94	-1.5	19.29	84.92	7
20600	844	22.91	-1.5	19.26	84.33	7

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20450	829	21.87	-1.5	18.22	66.37	7
20525	836.5	21.88	-1.5	18.23	66.53	7
20600	844	21.9	-1.5	18.25	66.83	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26797	824.7	23.53	-1.5	19.88	97.27	7
26915	836.5	23.56	-1.5	19.91	97.95	7
27033	848.3	23.52	-1.5	19.87	97.05	7

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26797	824.7	22.76	-1.5	19.11	81.47	7
26915	836.5	22.7	-1.5	19.05	80.35	7
27033	848.3	22.81	-1.5	19.16	82.41	7

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26797	824.7	21.66	-1.5	18.01	63.24	7
26915	836.5	21.6	-1.5	17.95	62.37	7
27033	848.3	21.6	-1.5	17.95	62.37	7

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26805	825.5	23.49	-1.5	19.84	96.38	7
26915	836.5	23.57	-1.5	19.92	98.17	7
27025	847.5	23.52	-1.5	19.87	97.05	7

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26805	825.5	22.73	-1.5	19.08	80.91	7
26915	836.5	22.76	-1.5	19.11	81.47	7
27025	847.5	22.79	-1.5	19.14	82.04	7

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26805	825.5	21.69	-1.5	18.04	63.68	7
26915	836.5	21.63	-1.5	17.98	62.81	7
27025	847.5	21.59	-1.5	17.94	62.23	7

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26815	826.5	23.54	-1.5	19.89	97.5	7
26915	836.5	23.54	-1.5	19.89	97.5	7
27015	846.5	23.52	-1.5	19.87	97.05	7

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26815	826.5	22.7	-1.5	19.05	80.35	7
26915	836.5	22.72	-1.5	19.07	80.72	7
27015	846.5	22.78	-1.5	19.13	81.85	7

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26815	826.5	21.66	-1.5	18.01	63.24	7
26915	836.5	21.6	-1.5	17.95	62.37	7
27015	846.5	21.59	-1.5	17.94	62.23	7

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26840	829	23.54	-1.5	19.89	97.5	7
26915	836.5	23.54	-1.5	19.89	97.5	7
26990	844	23.53	-1.5	19.88	97.27	7

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26840	829	22.75	-1.5	19.1	81.28	7
26915	836.5	22.69	-1.5	19.04	80.17	7
26990	844	22.81	-1.5	19.16	82.41	7

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26840	829	21.71	-1.5	18.06	63.97	7
26915	836.5	21.61	-1.5	17.96	62.52	7
26990	844	21.63	-1.5	17.98	62.81	7

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26865	831.5	23.6	-1.5	19.95	98.86	7
26915	836.5	23.65	-1.5	20	100	7
26965	841.5	23.6	-1.5	19.95	98.86	7

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26865	831.5	22.82	-1.5	19.17	82.6	7
26915	836.5	22.78	-1.5	19.13	81.85	7
26965	841.5	22.85	-1.5	19.2	83.18	7

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26865	831.5	21.76	-1.5	18.11	64.71	7
26915	836.5	21.69	-1.5	18.04	63.68	7
26965	841.5	21.7	-1.5	18.05	63.83	7

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

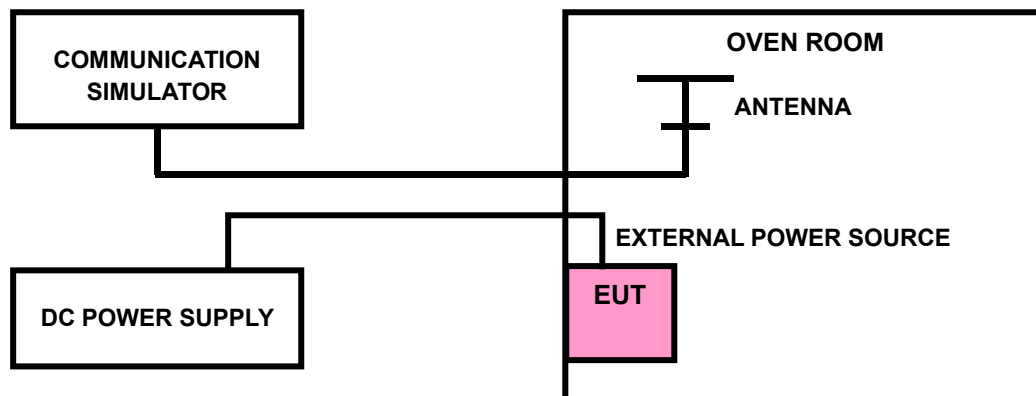
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

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.: PSU-QSU2306120115RF03

3.2.4 TEST RESULTS

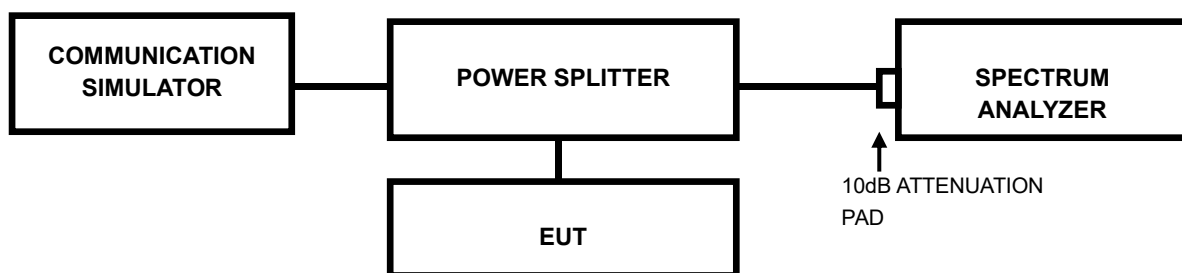
Please Refer to Appendix Of this test report.

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.



Test Report No.: PSU-QSU2306120115RF03

3.3.4 TEST RESULTS

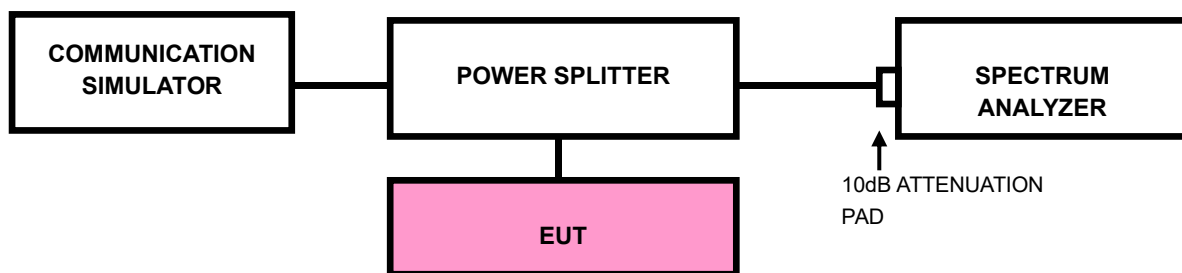
Please Refer to Appendix Of this test report.

3.4 BAND EDGE MEASUREMENT

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) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- c) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW)
- d) .Set the resolution bandwidth (RBW) $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
- e) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- f) Set the video bandwidth (VBW) to $\geq 3 \times$ RBW.
- g) Select the average power (RMS) display detector.
- h) Set the number of measurement points to ≥ 1001 .
- i) Use auto-coupled sweep time.
- j) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- k) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.
- l) Record the max trace plot into the test report.



Test Report No.: PSU-QSU2306120115RF03

3.4.4 TEST RESULTS

Please Refer to Appendix Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

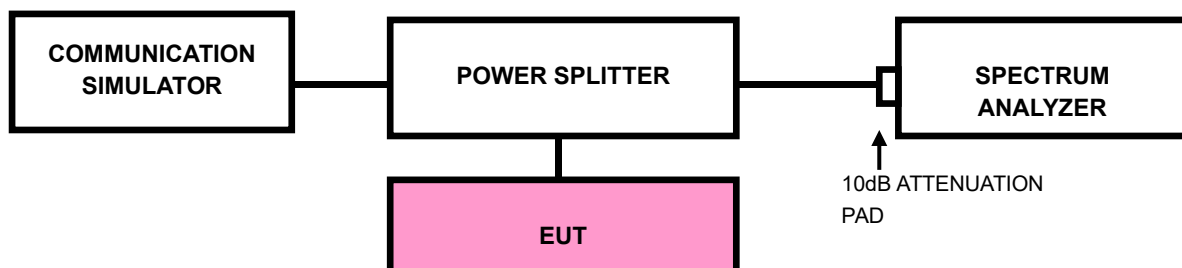
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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 9kHz 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.: PSU-QSU2306120115RF03

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 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. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,
 $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$.

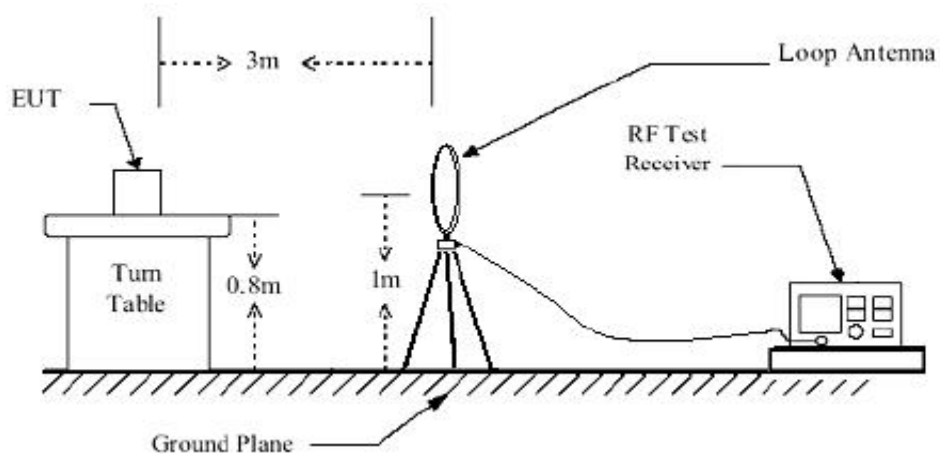
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

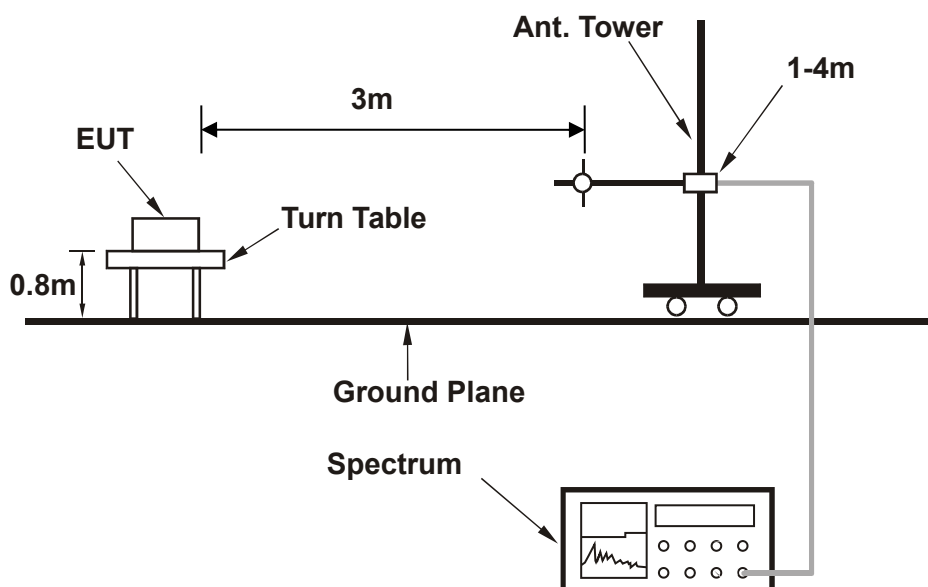
No deviation

3.6.4 TEST SETUP

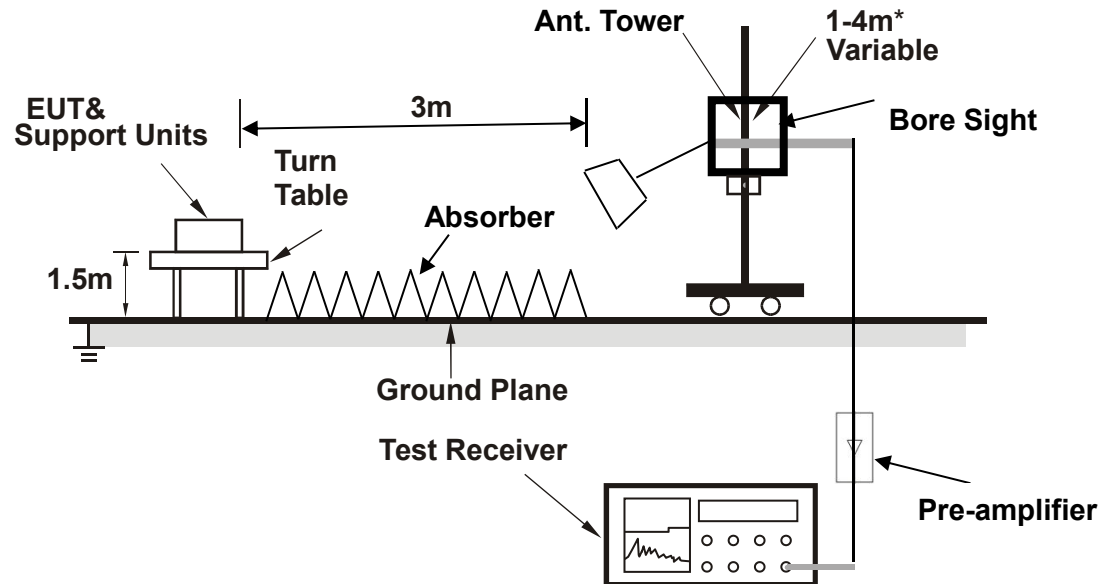
< Frequency Range below 30MHz >



< 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

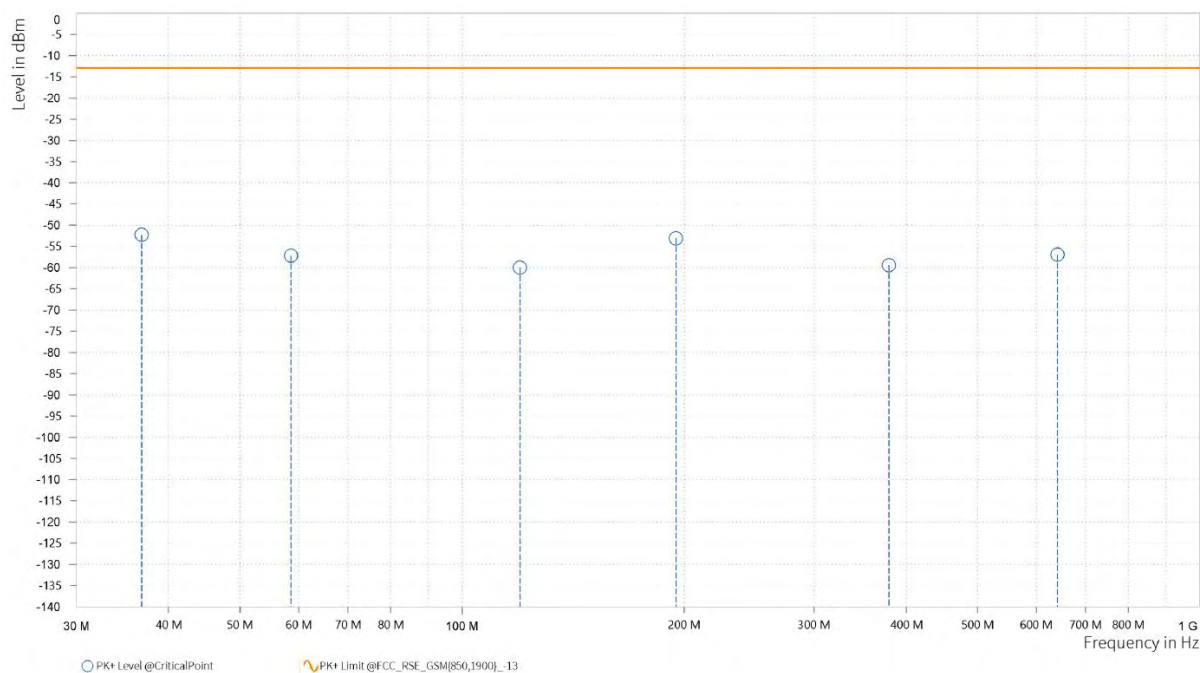
30 MHz – 1GHz data:

GSM 850 :

CHANNEL BANDWIDTH: 128 ~ 251

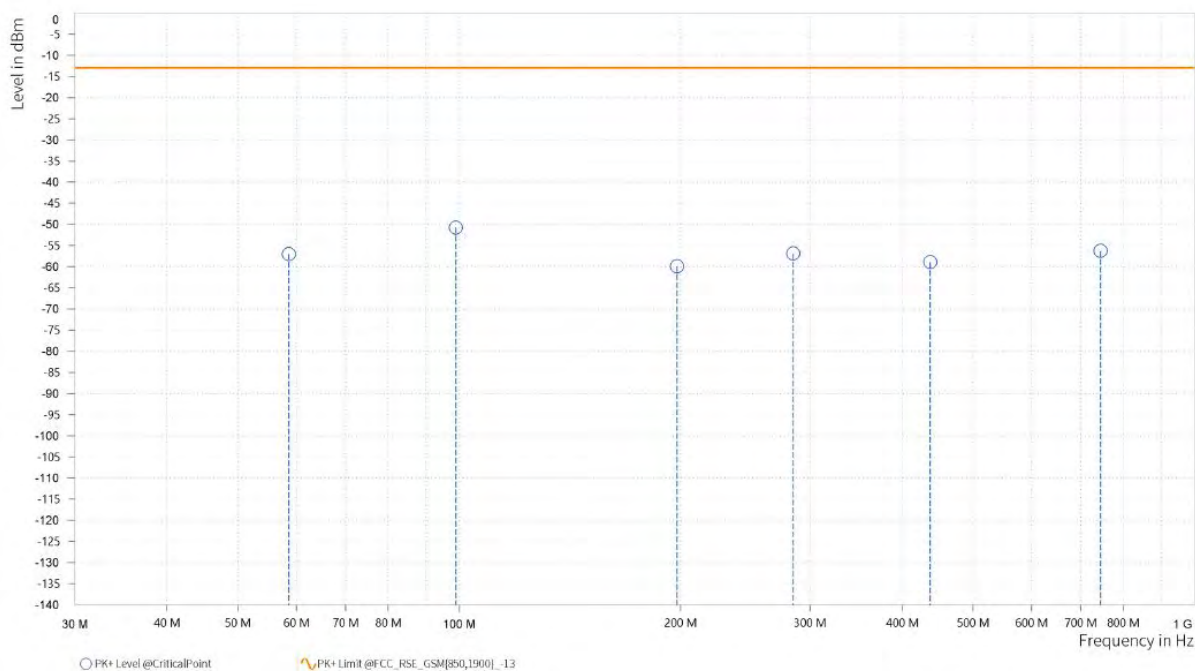
MODE	TX channel 128	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	36.790	-52.25	-13.00	39.25	4.54	H	355	2
1	58.615	-57.19	-13.00	44.19	1.12	H	170.6	2
1	119.725	-59.95	-13.00	46.95	-7.10	H	170.6	2
1	194.900	-53.10	-13.00	40.10	0.20	H	106	2
1	378.715	-59.44	-13.00	46.44	4.24	H	298.5	2
1	641.100	-56.96	-13.00	43.96	7.00	H	106	2



MODE	TX channel 20525	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
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	58.615	-56.99	-13.00	43.99	1.19	V	216	2
1	98.870	-50.74	-13.00	37.74	10.06	V	1	1
1	197.810	-59.94	-13.00	46.94	-1.62	V	59.4	2
1	284.625	-56.88	-13.00	43.88	3.98	V	251.5	1
1	436.915	-58.91	-13.00	45.91	5.83	V	251.5	1
1	744.890	-56.24	-13.00	43.24	7.94	V	99.7	1



ABOVE 1GHz DATA

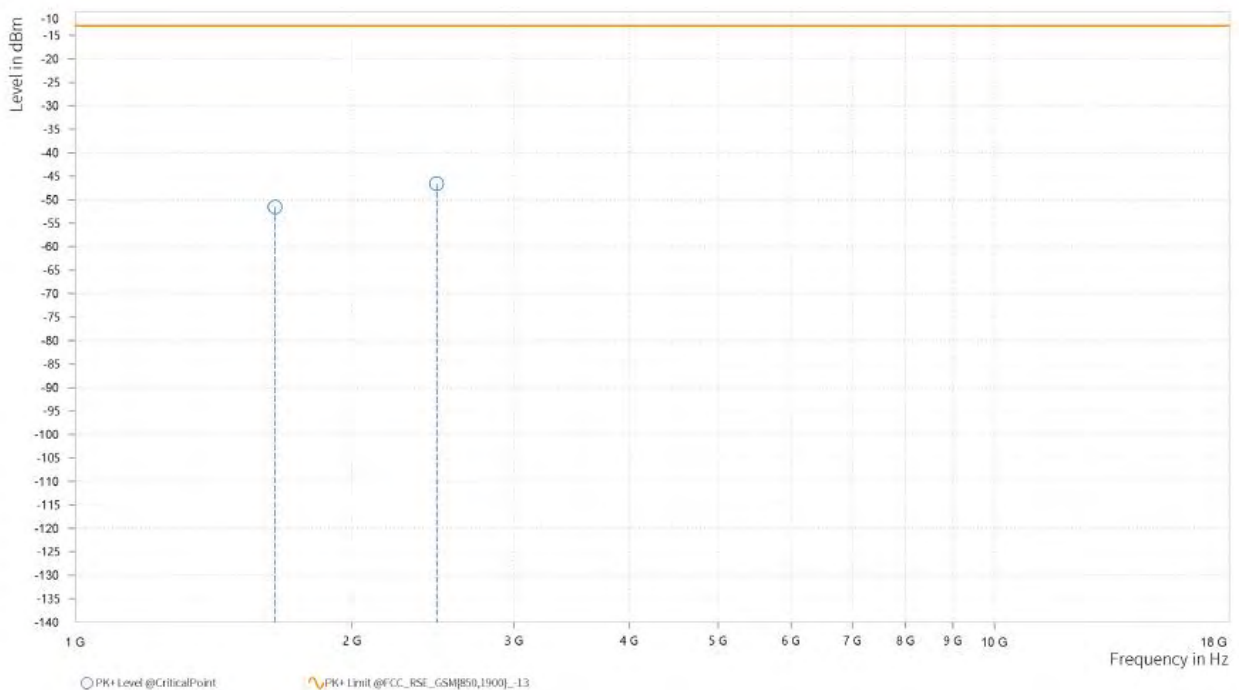
Note: For higher frequency, the emission is too low to be detected.

GSM 850

CH 128:

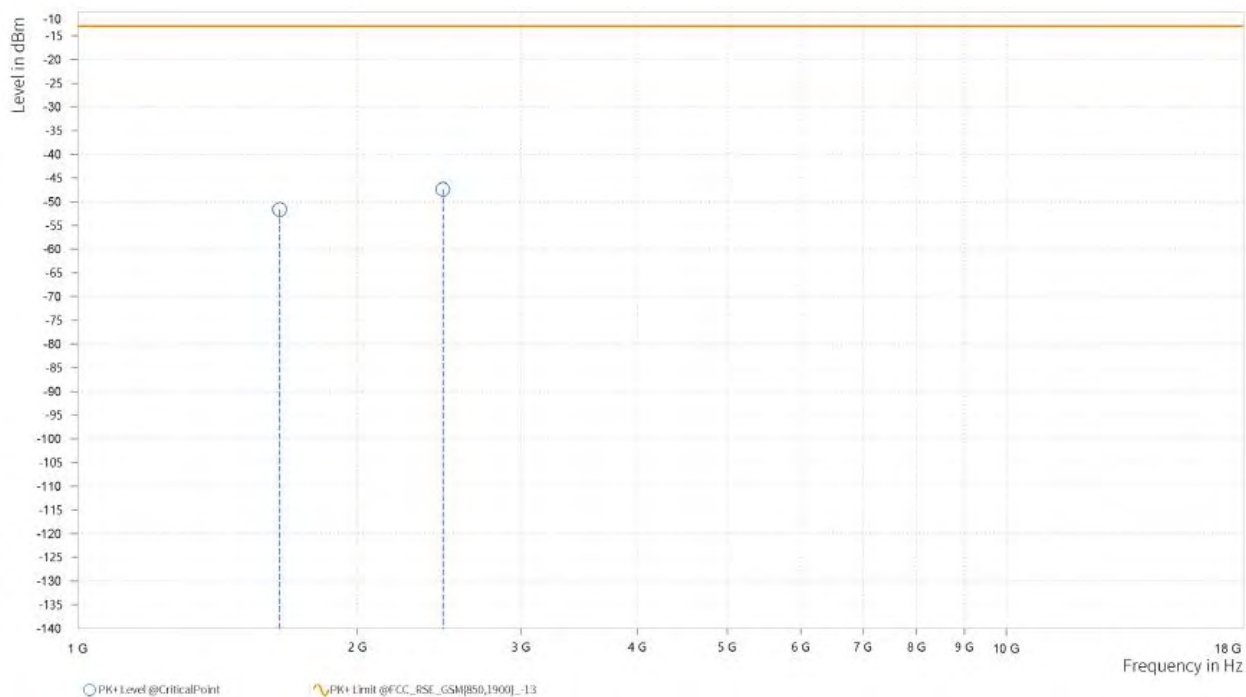
MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,648.400	-51.57	-13.00	38.57	17.46	H	1.2	2
3	2,472.600	-46.62	-13.00	33.62	22.42	H	196.9	2



MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

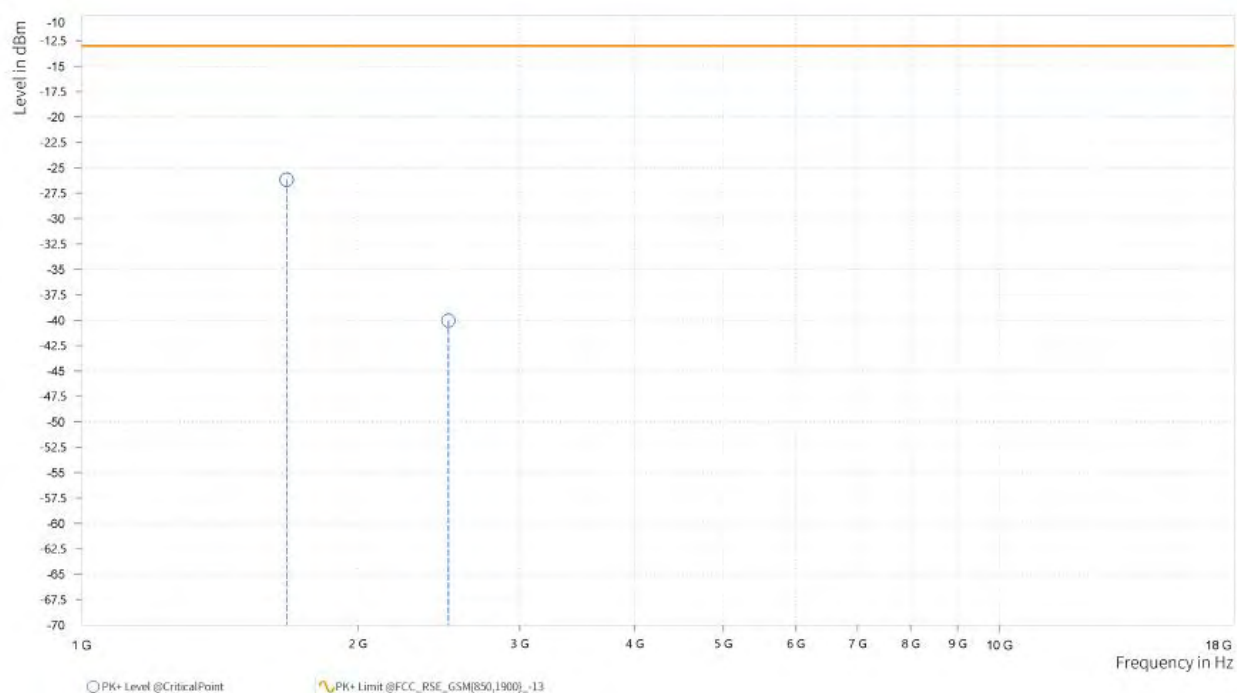
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,648.400	-51.64	-13.00	38.64	17.04	V	1	1
3	2,472.600	-47.37	-13.00	34.37	22.67	V	1	1



CH 189:

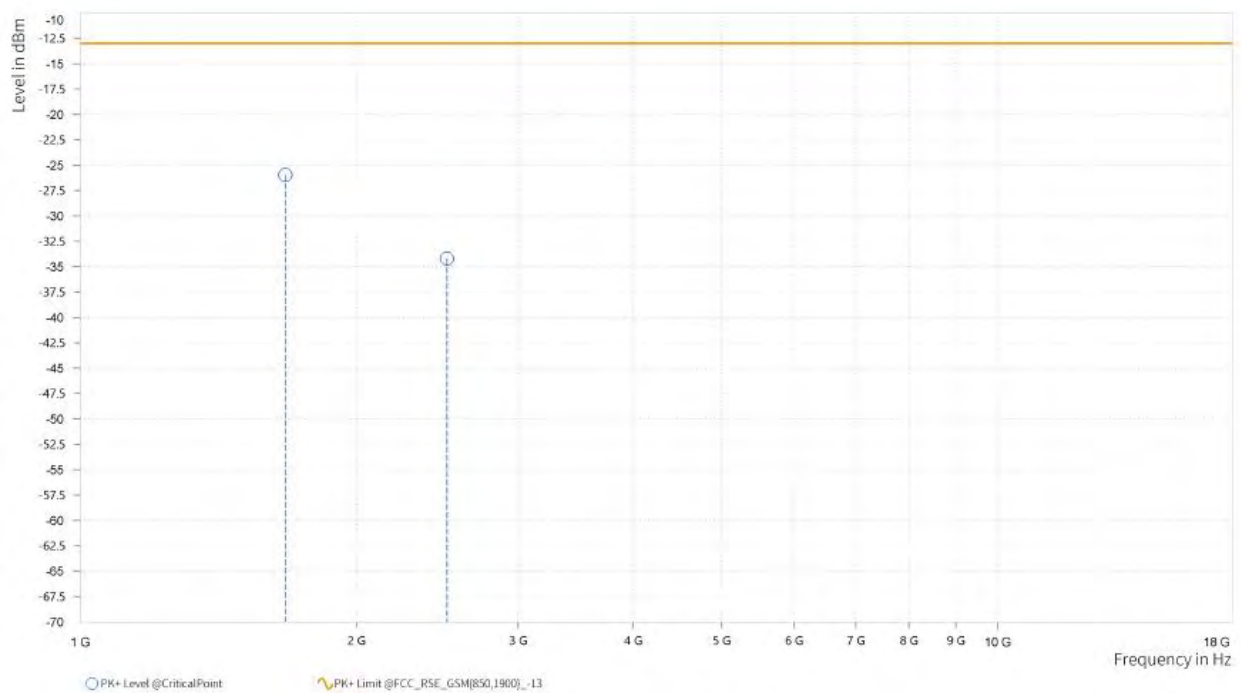
MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,673.000	-26.17	-13.00	13.17	23.84	H	1	1
3	2,509.500	-40.03	-13.00	27.03	24.20	H	225.4	2



MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

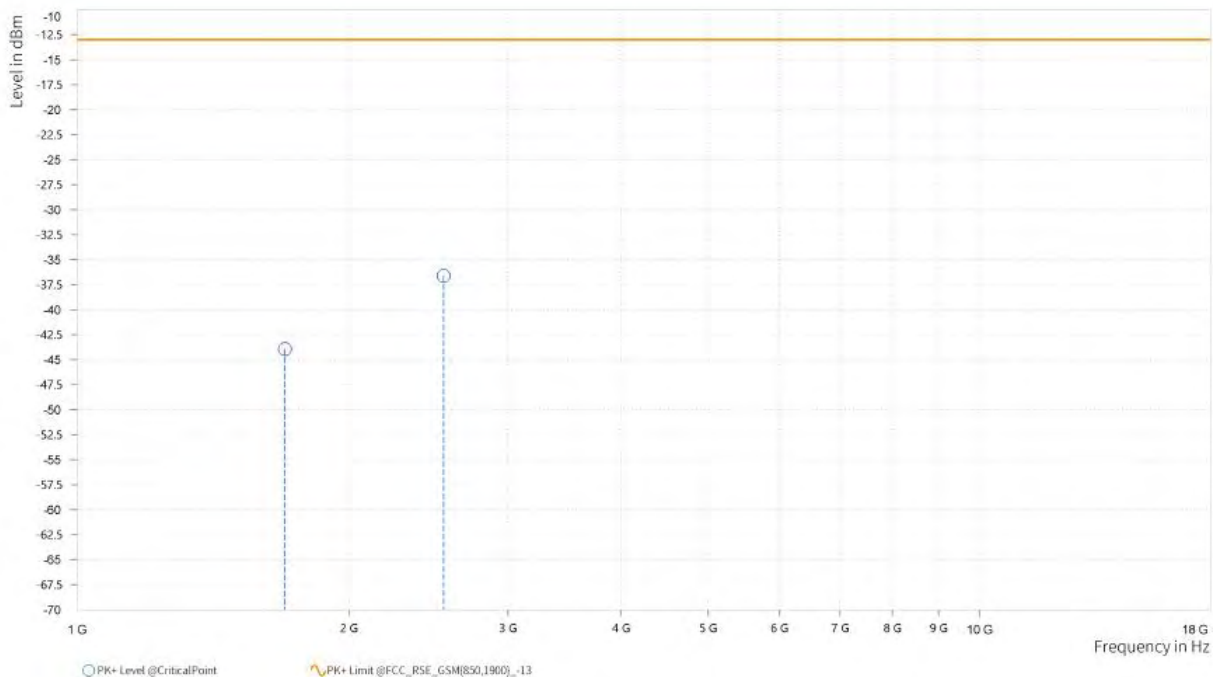
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,673.000	-25.96	-13.00	12.96	23.65	V	1	2
3	2,509.000	-34.19	-13.00	21.19	23.87	V	126.2	1



CH 251:

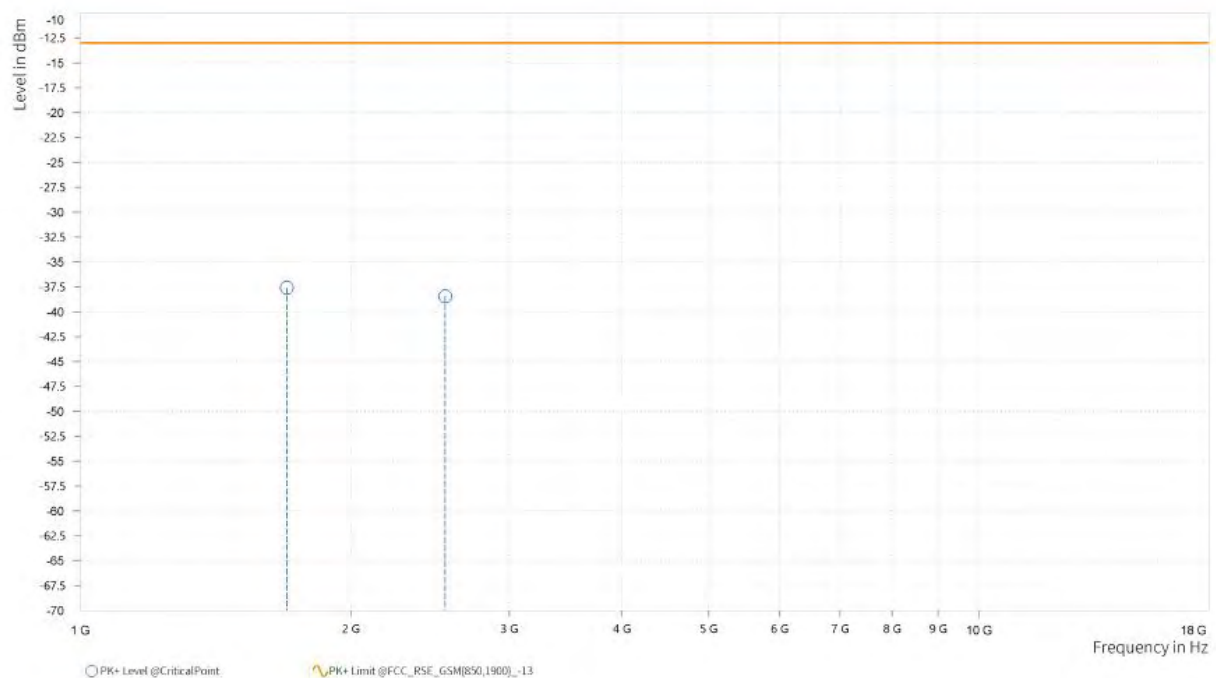
MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,698.500	-43.93	-13.00	30.93	23.21	H	1	1
3	2,546.500	-36.61	-13.00	23.61	24.69	H	129.7	1



MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
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]
2	1,698.000	-37.60	-13.00	24.60	23.21	V	359	2
3	2,546.500	-38.44	-13.00	25.44	24.48	V	359	2





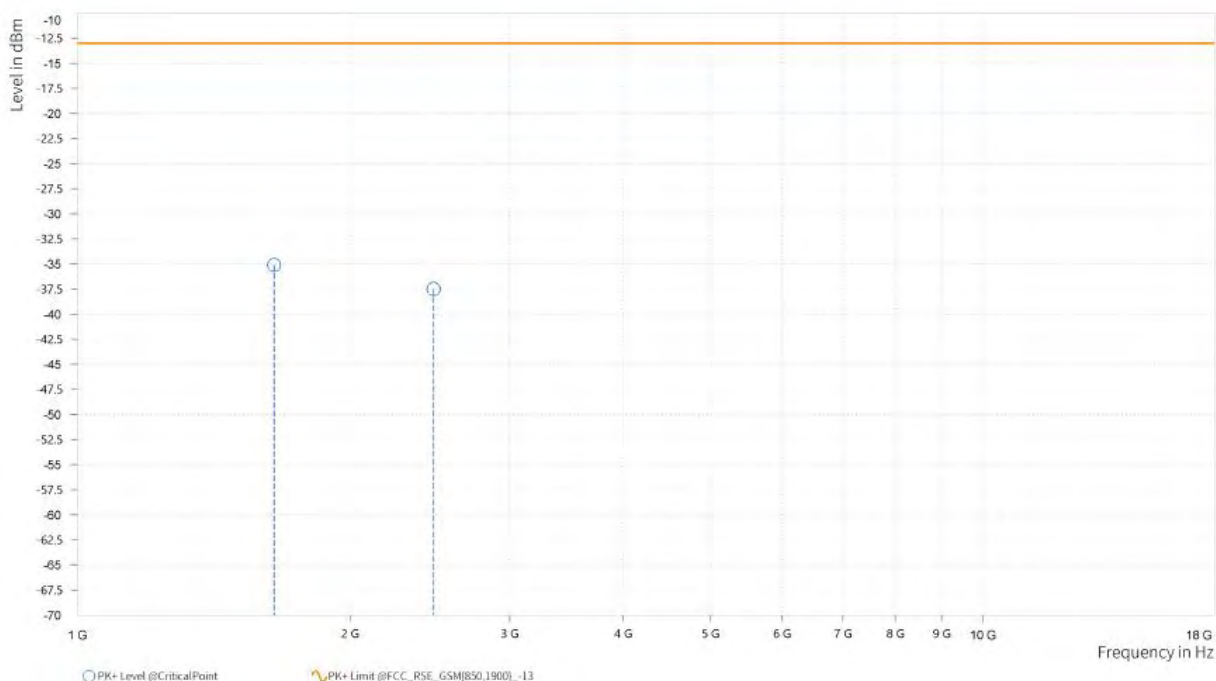
Test Report No.: PSU-QSU2306120115RF03

EDGE 850:

CH 128:

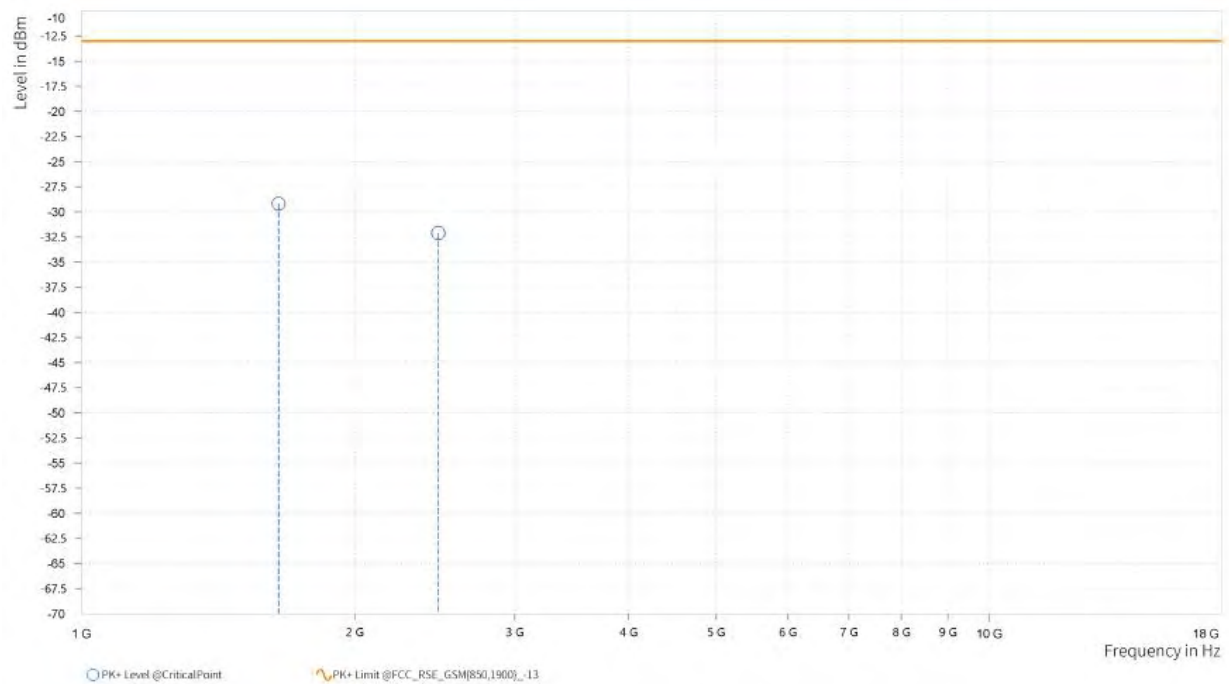
MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,648.000	-35.09	-13.00	22.09	22.15	H	1	1
3	2,473.500	-37.50	-13.00	24.50	24.76	H	359	1



MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

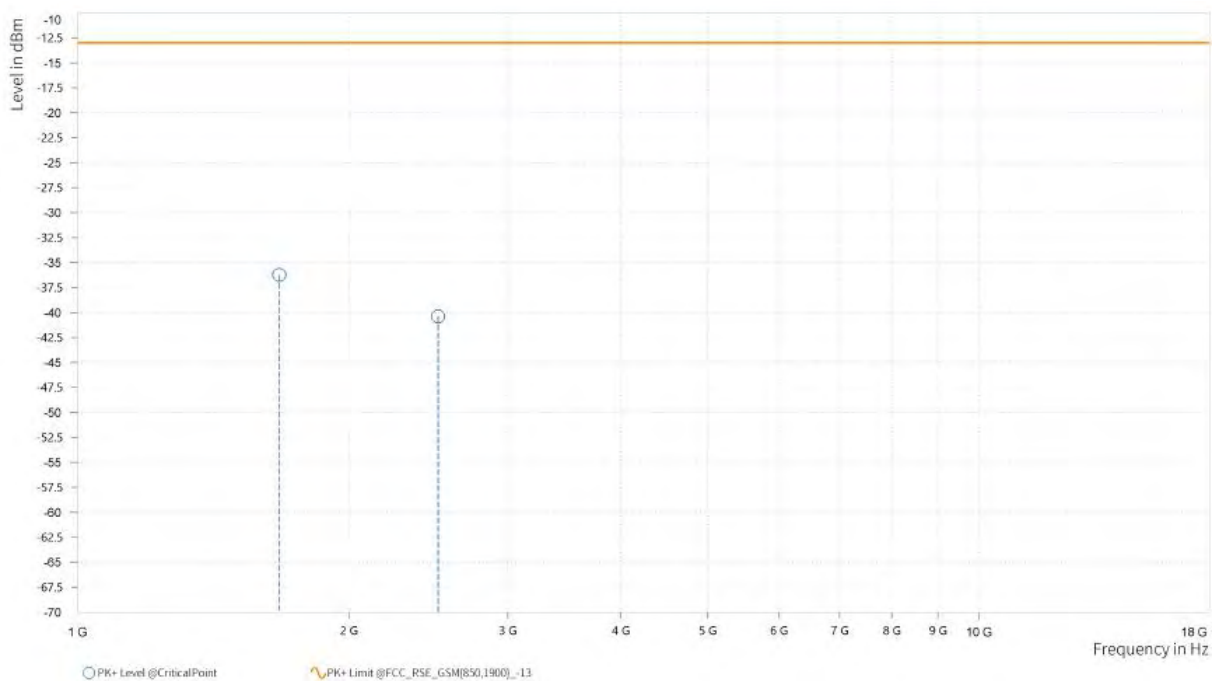
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,648.500	-29.18	-13.00	16.18	21.63	V	359	2
3	2,472.000	-32.11	-13.00	19.11	24.48	V	1	2



CH 189:

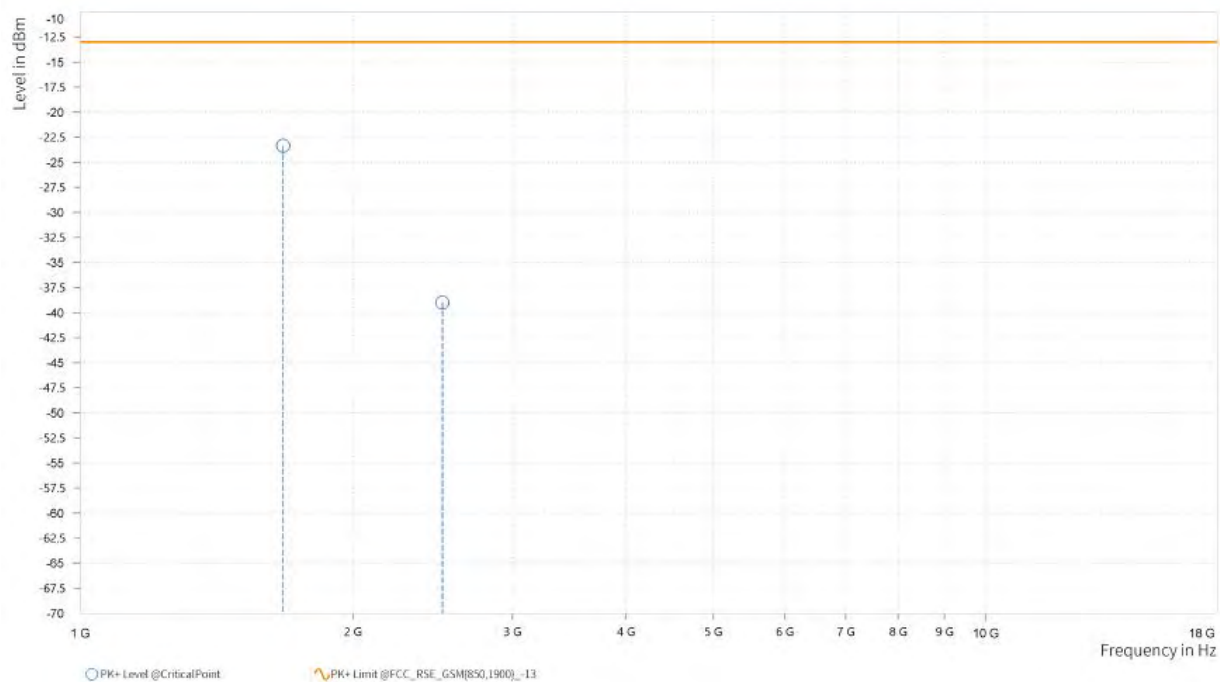
MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,674.000	-36.23	-13.00	23.23	23.82	H	1	2
3	2,510.500	-40.38	-13.00	27.38	24.19	H	122.6	1



MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

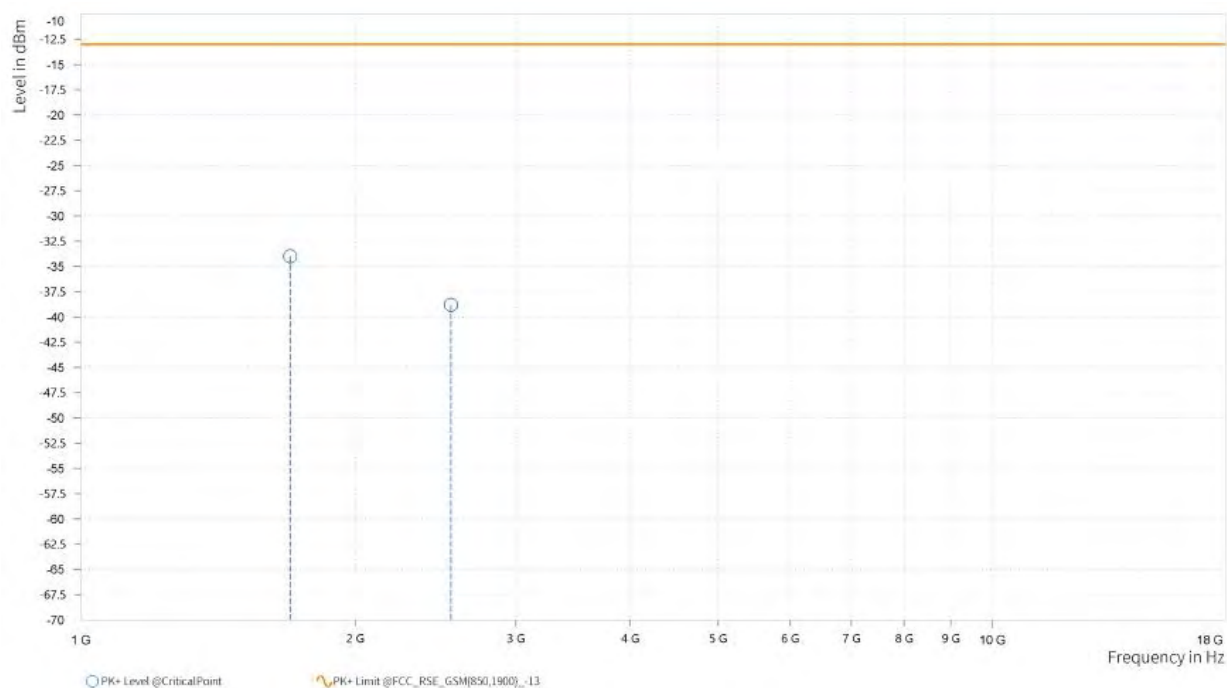
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,674.500	-23.35	-13.00	10.35	23.63	V	62.9	2
3	2,510.500	-39.00	-13.00	26.00	23.85	V	122.6	2



CH 251:

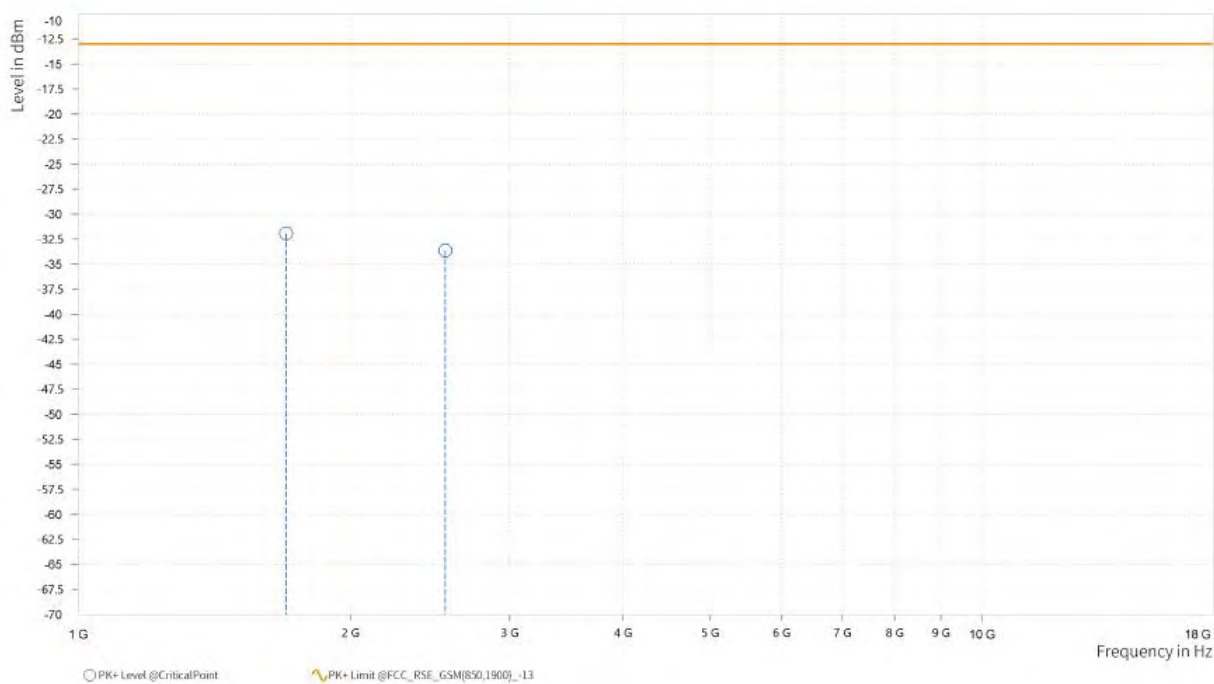
MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,697.000	-33.99	-13.00	20.99	23.22	H	359	2
3	2,547.000	-38.81	-13.00	25.81	24.69	H	1	2



MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
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]
2	1,698.000	-31.94	-13.00	18.94	23.43	V	99.8	1
3	2,546.500	-33.63	-13.00	20.63	24.48	V	159.7	2

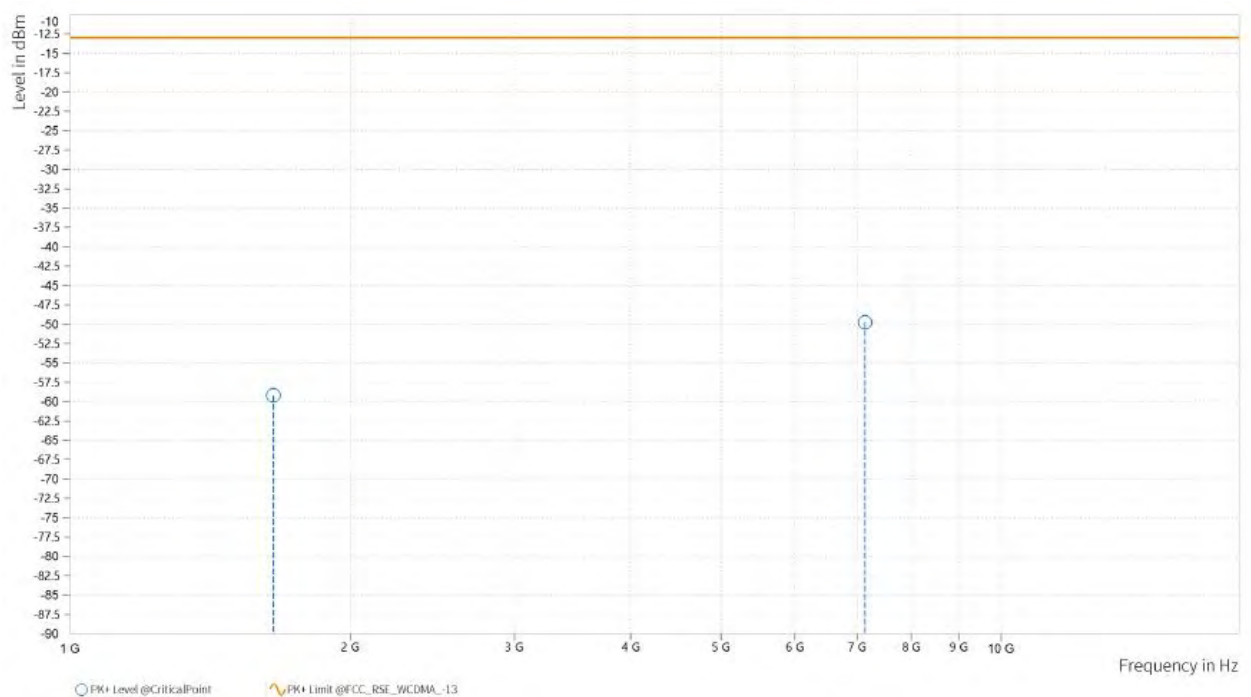


WCDMA Band V:

CH 4132:

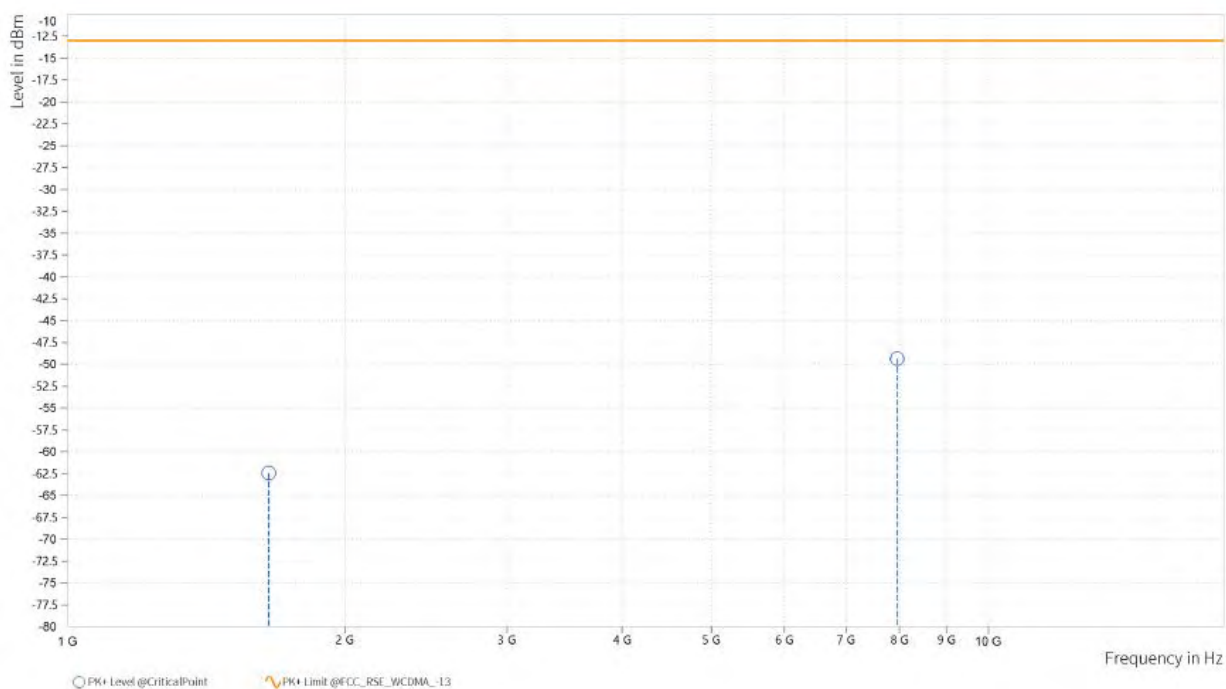
MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,653.500	-59.21	-13.00	46.21	5.87	H	2.3	2
4	7,136.000	-49.73	-13.00	36.73	20.80	H	230.1	1



MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

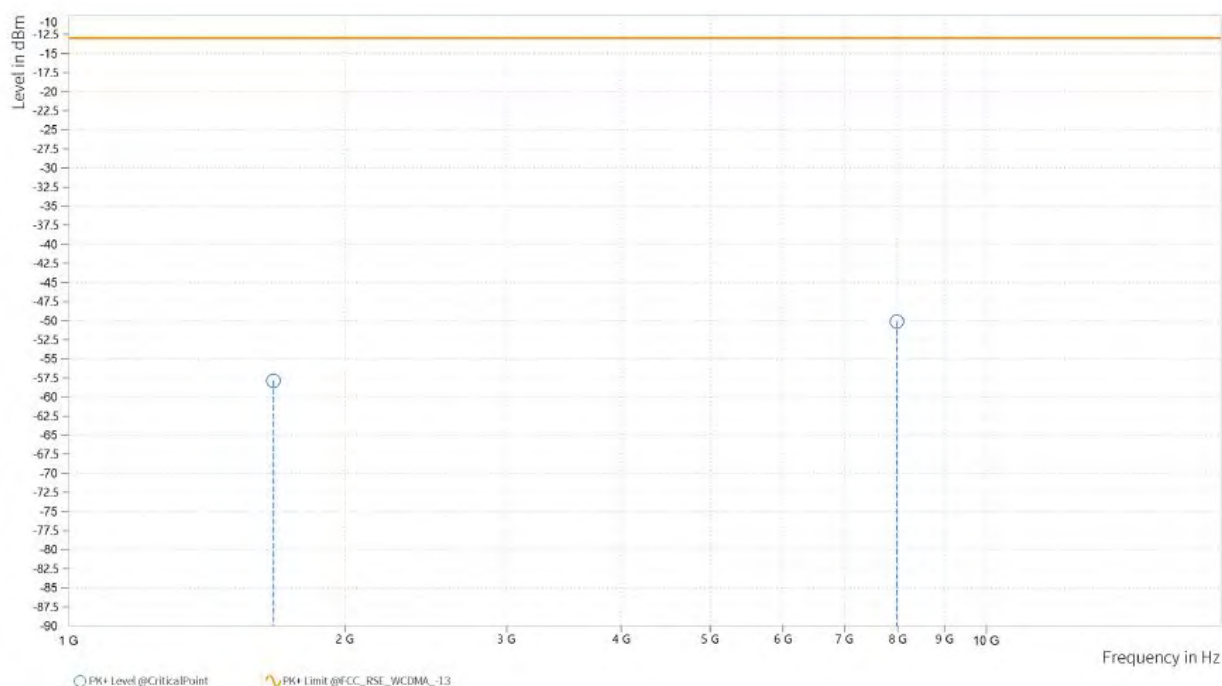
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,653.500	-62.44	-13.00	49.44	5.87	V	86.7	1
4	7,955.000	-49.36	-13.00	36.36	22.02	V	1	1



CH 4182:

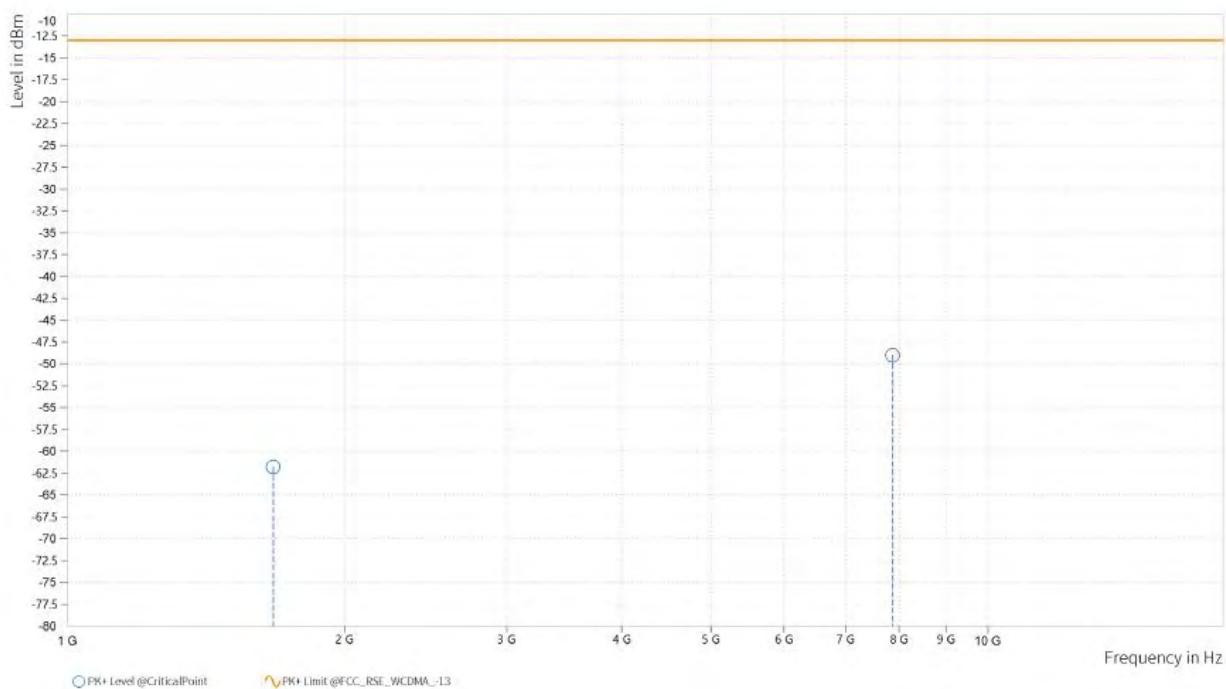
MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,671.500	-57.86	-13.00	44.86	6.23	H	2.6	2
4	7,979.500	-50.12	-13.00	37.12	21.98	H	1	2



MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

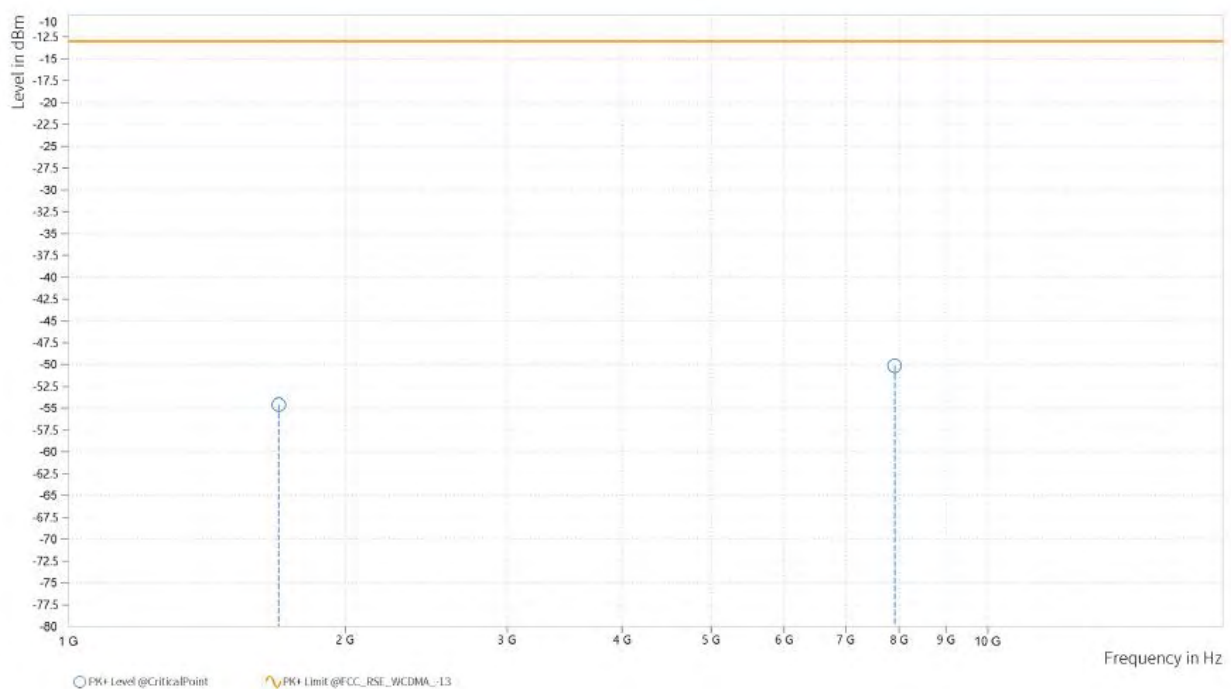
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.500	-61.77	-13.00	48.77	6.25	V	84.2	1
4	7,874.000	-49.01	-13.00	36.01	21.49	V	359	2



CH 4233:

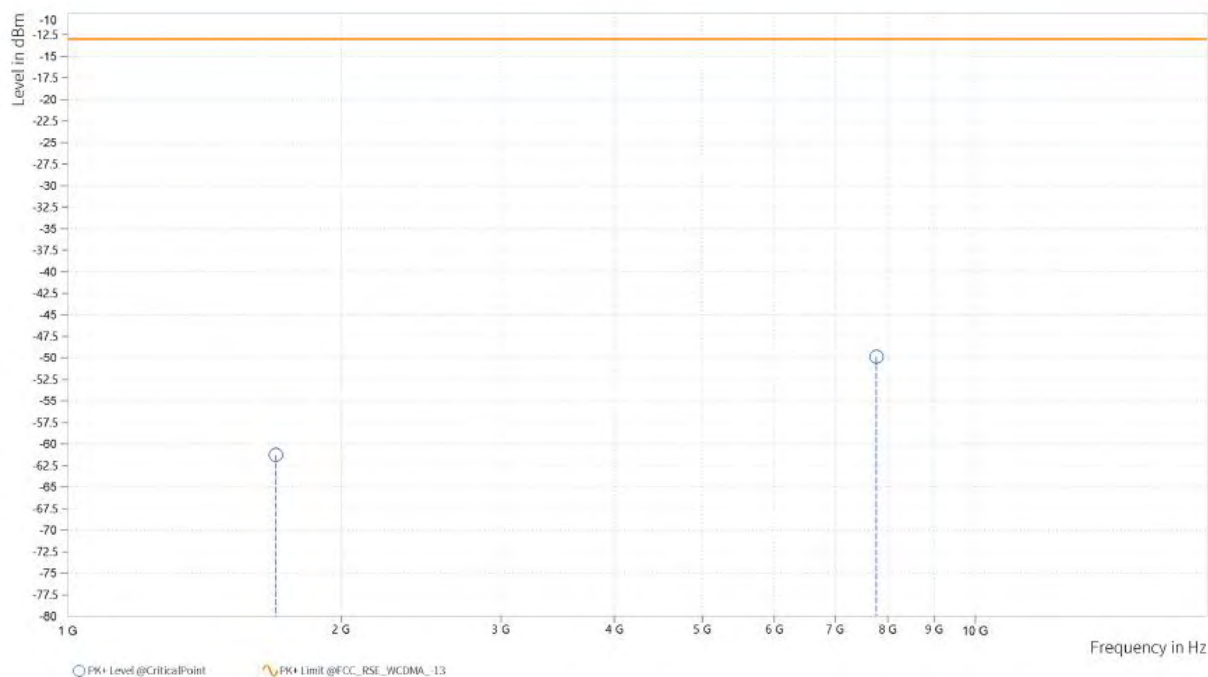
MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,692.000	-54.59	-13.00	41.59	6.42	H	1	1
4	7,917.000	-50.15	-13.00	37.15	21.81	H	1	1



MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
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]
2	1,694.000	-61.26	-13.00	48.26	6.41	V	359	2
4	7,776.500	-49.87	-13.00	36.87	20.99	V	359	2





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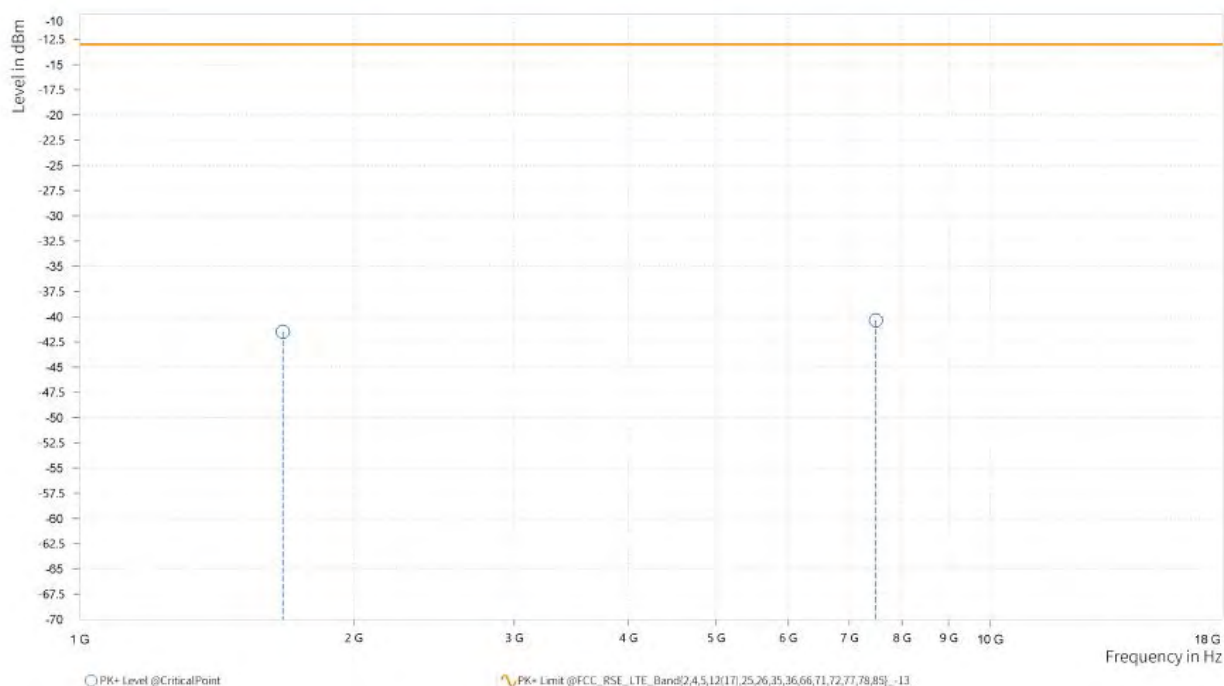
LTE Band 26

CHANNEL BANDWIDTH: 1.4MHz / QPSK

CH26915

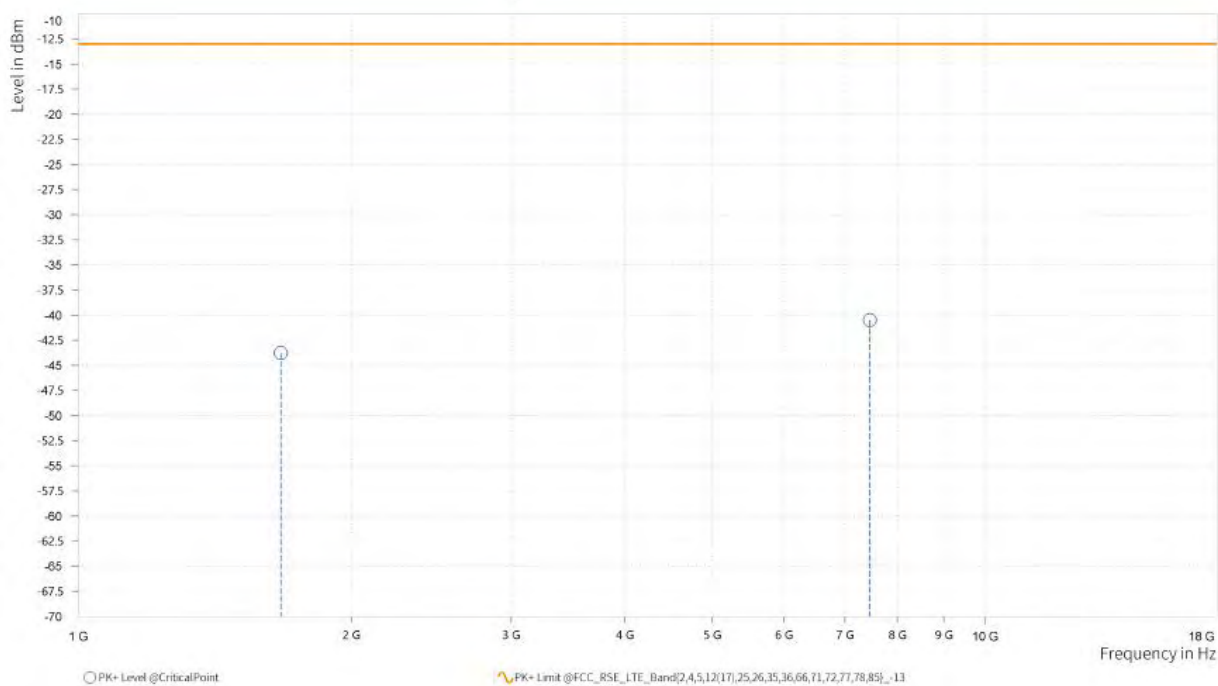
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.000	-41.49	-13.00	28.49	23.74	H	359	2
5	7,488.455	-40.37	-13.00	27.37	28.67	H	86.7	2



MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

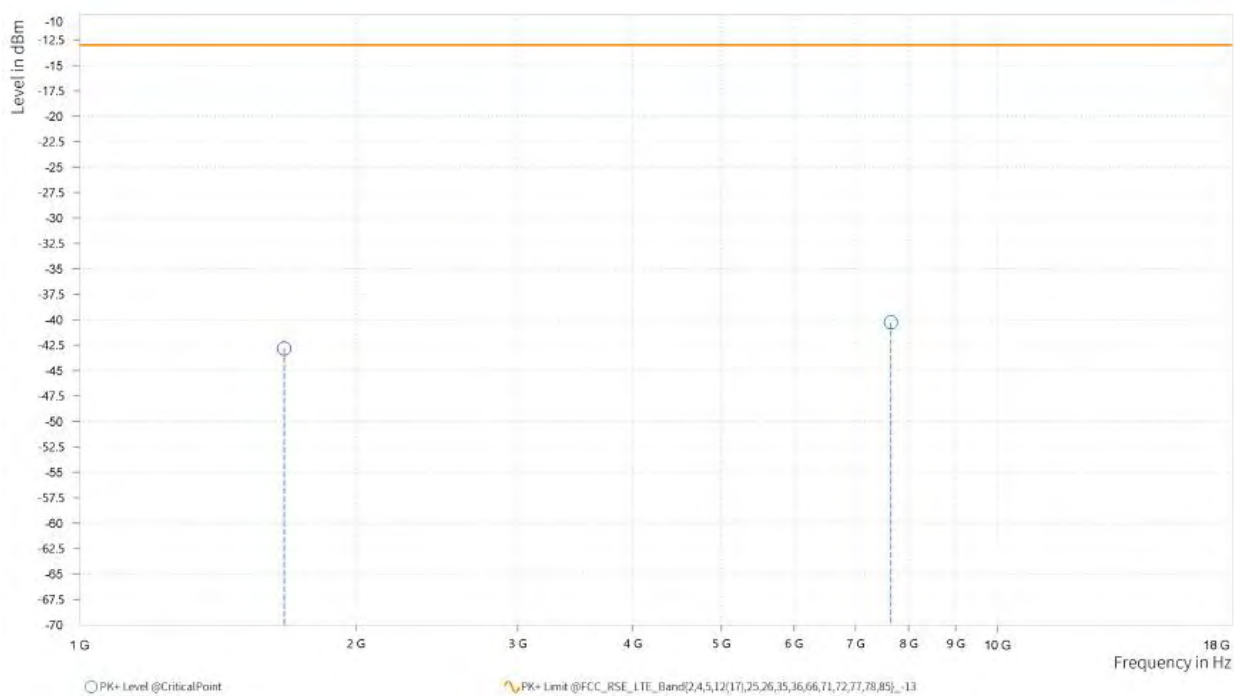
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,672.000	-43.76	-13.00	30.76	23.53	V	295.9	2
5	7,458.318	-40.49	-13.00	27.49	28.77	V	359	2



CHANNEL BANDWIDTH: 3MHz / QPSK

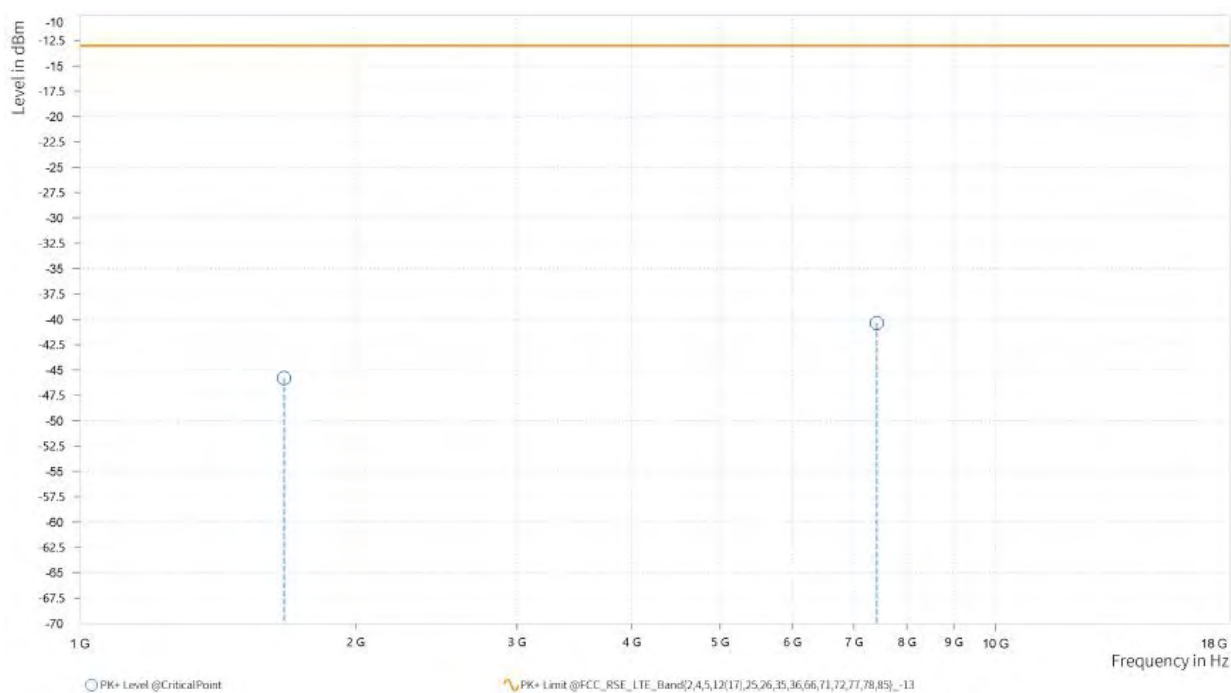
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,670.500	-42.82	-13.00	29.82	23.58	H	1	1
5	7,649.955	-40.27	-13.00	27.27	29.32	H	359	1



MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

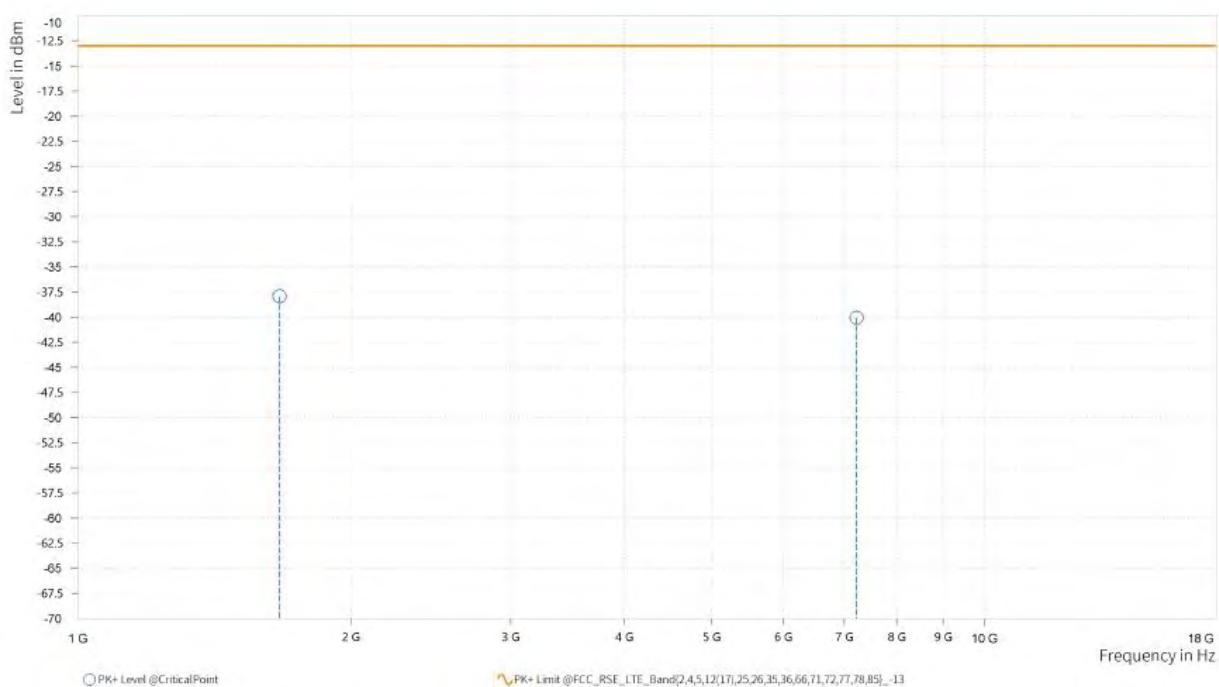
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,671.000	-45.80	-13.00	32.80	23.41	V	0.9	2
5	7,414.530	-40.35	-13.00	27.35	29.03	V	1	1



CHANNEL BANDWIDTH: 5MHz / QPSK

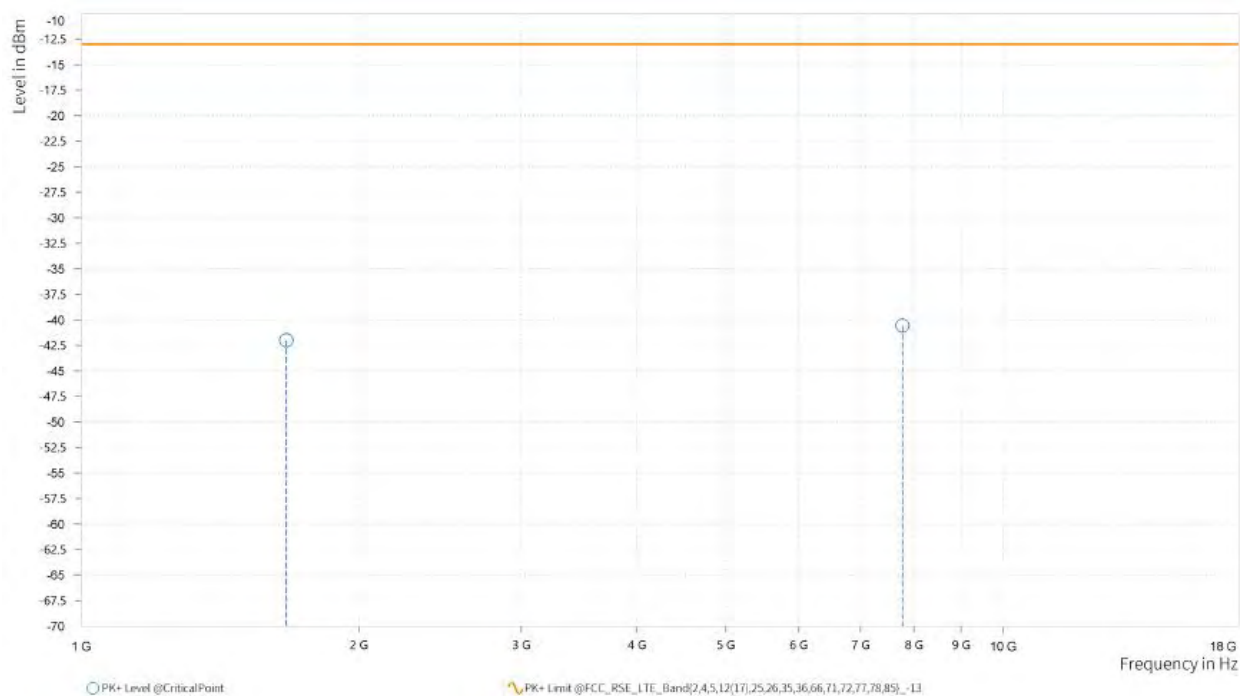
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,668.500	-37.92	-13.00	24.92	23.37	H	1	1
5	7,222.636	-40.06	-13.00	27.06	29.06	H	0.9	2



MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

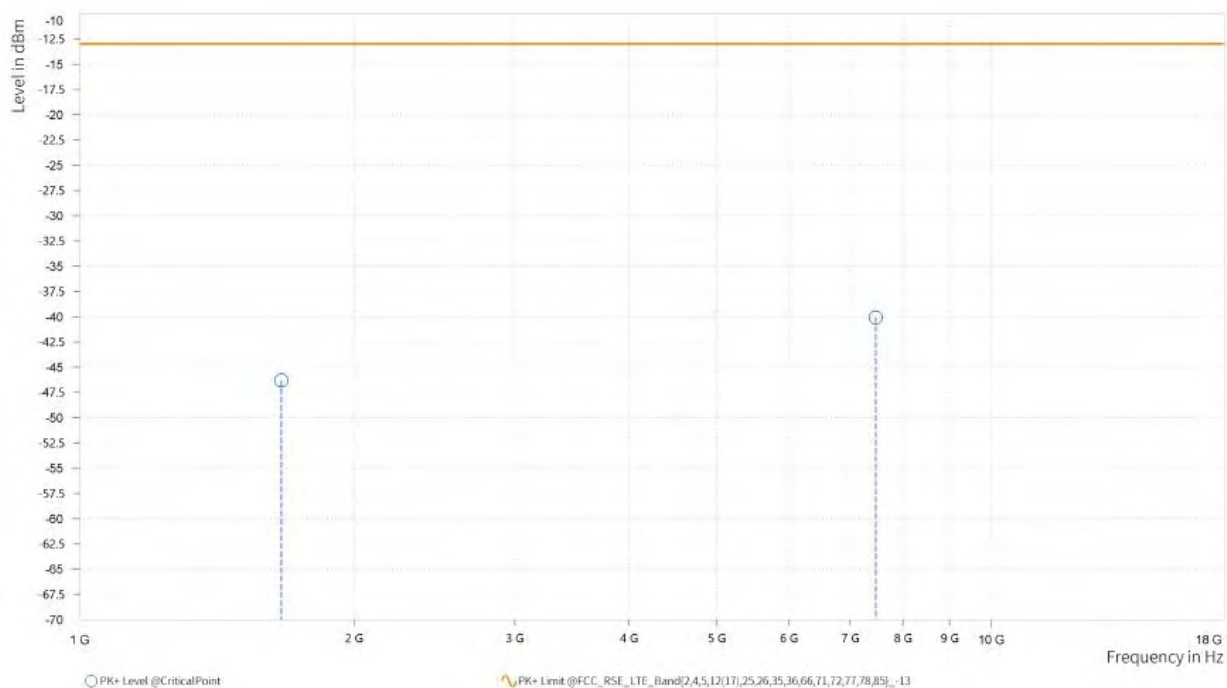
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,669.000	-41.99	-13.00	28.99	23.16	V	359	1
5	7,774.621	-40.57	-13.00	27.57	29.15	V	359	1



CHANNEL BANDWIDTH: 10MHz / QPSK

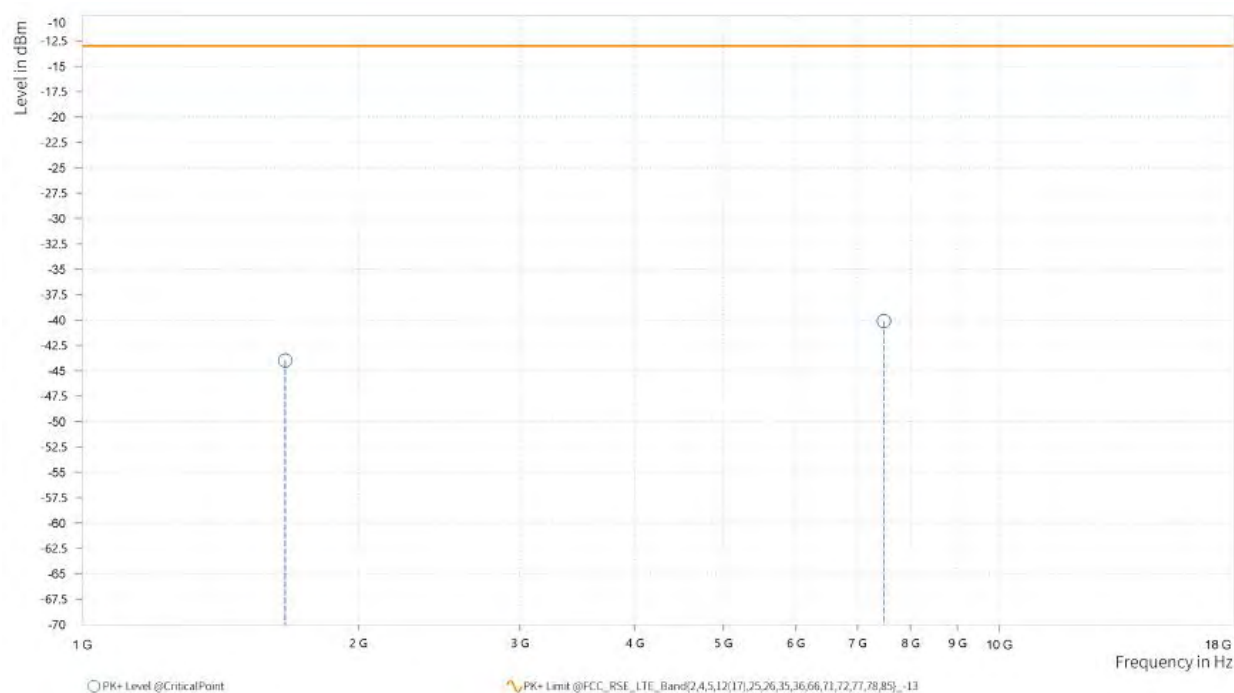
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,664.500	-46.30	-13.00	33.30	22.94	H	359.1	1
5	7,469.136	-40.10	-13.00	27.10	28.56	H	359.1	1



MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
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]
2	1,664.000	-44.00	-13.00	31.00	22.55	V	64.2	1
5	7,482.788	-40.12	-13.00	27.12	28.83	V	273.3	1

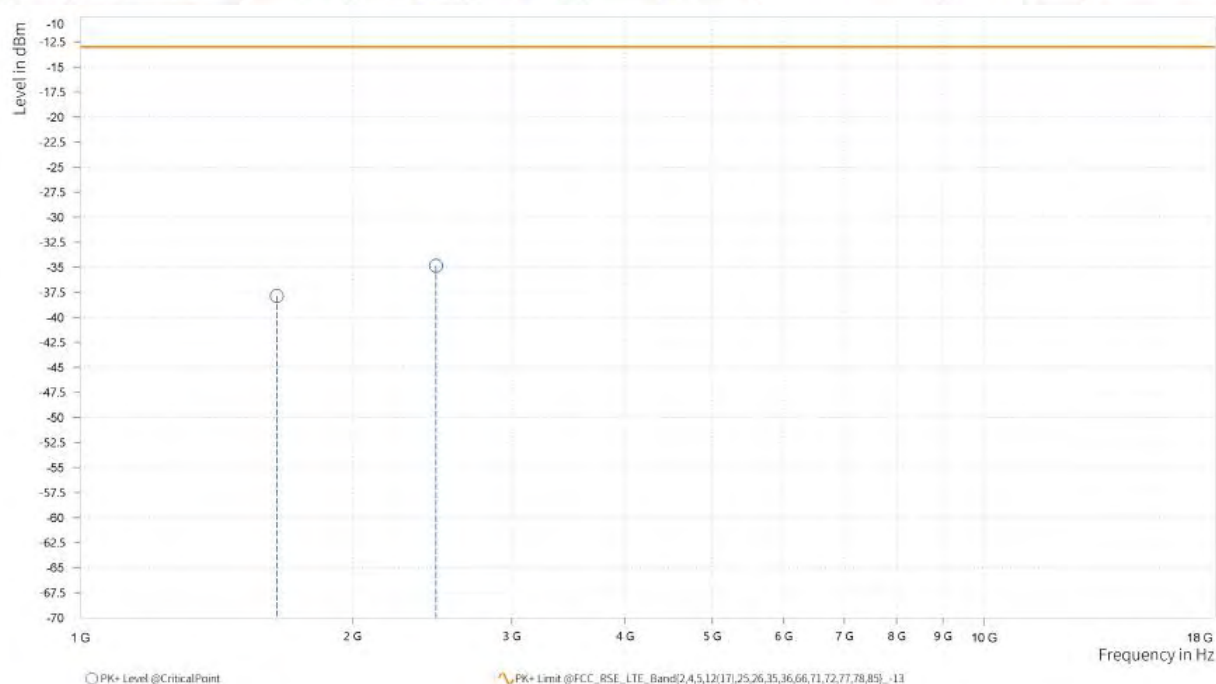


CHANNEL BANDWIDTH: 15MHz / QPSK

CH26865

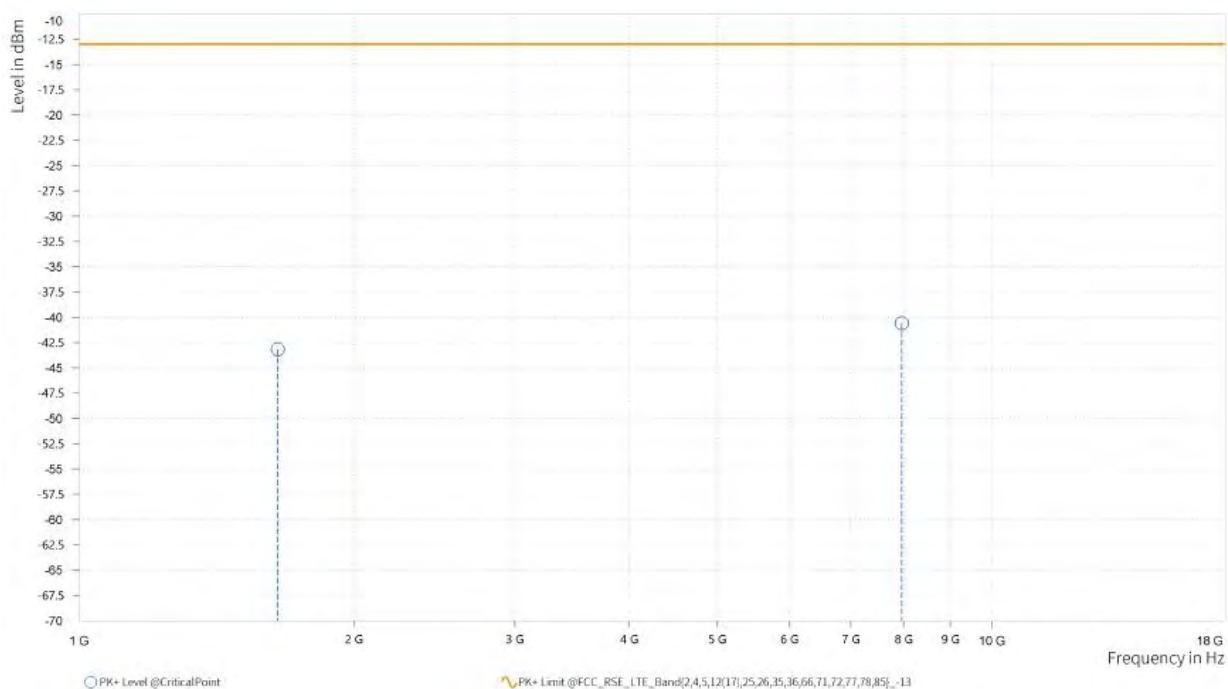
MODE	TX channel 26865	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,649.500	-37.87	-13.00	24.87	22.15	H	359	2
3	2,475.000	-34.86	-13.00	21.86	24.75	H	125	1



MODE	TX channel 26865	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

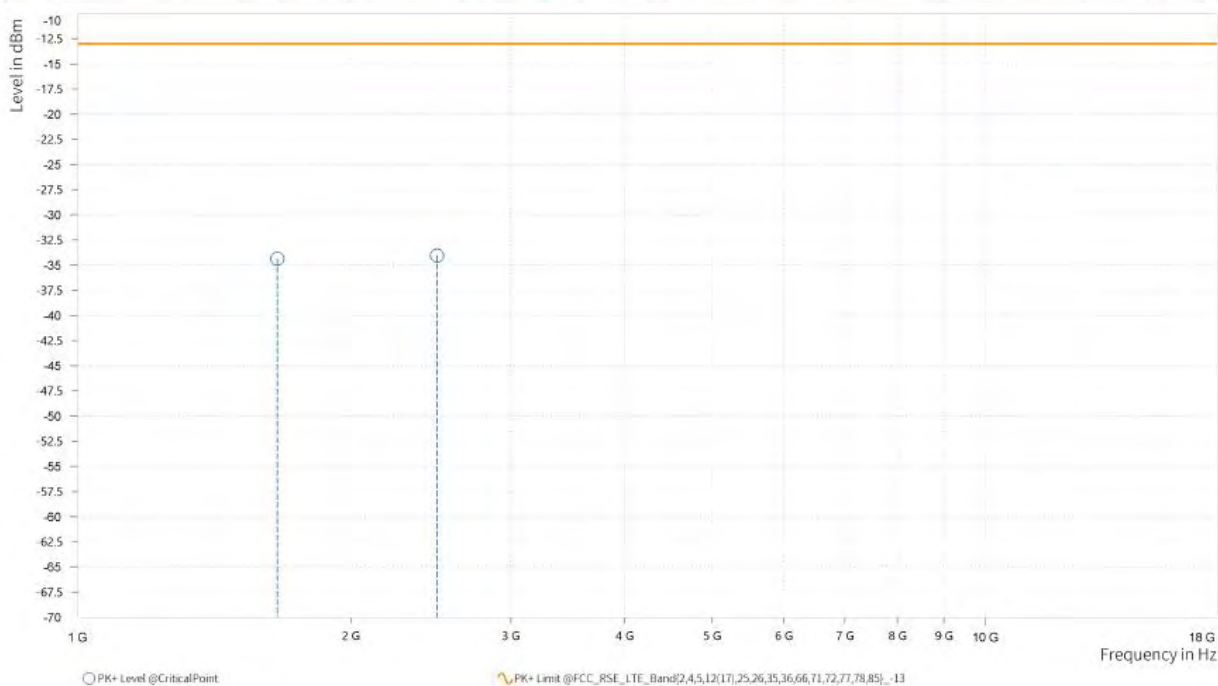
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,650.000	-43.15	-13.00	30.15	21.61	V	0.9	2
5	7,961.879	-40.58	-13.00	27.58	29.57	V	359	2



CH26915

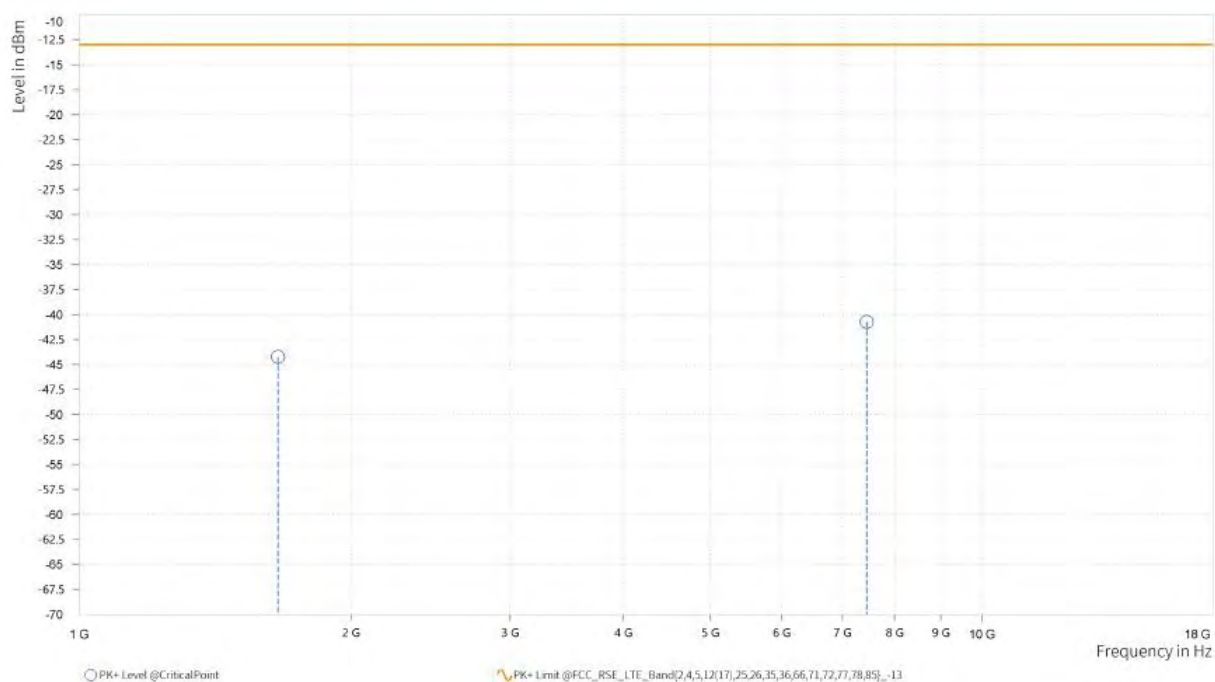
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,659.500	-34.38	-13.00	21.38	22.41	H	0.9	2
3	2,489.500	-34.03	-13.00	21.03	24.59	H	125	1



MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

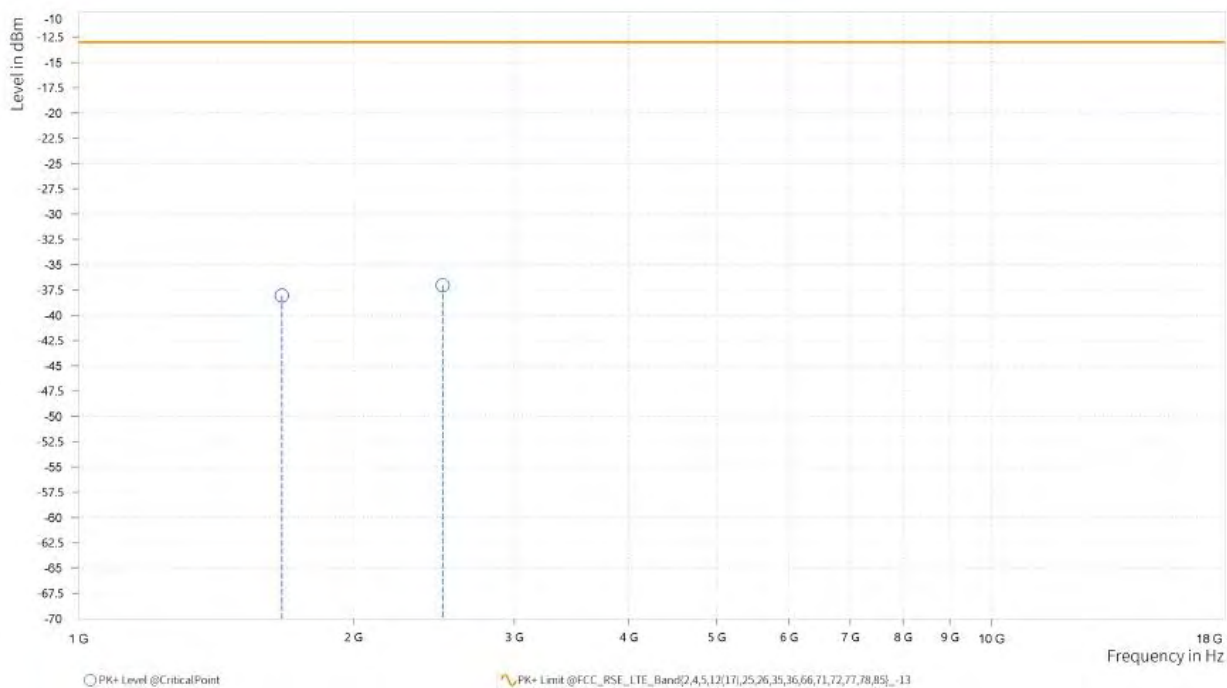
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,660.000	-44.24	-13.00	31.24	22.06	V	359	1
5	7,450.848	-40.74	-13.00	27.74	28.81	V	273.2	1



CH26965

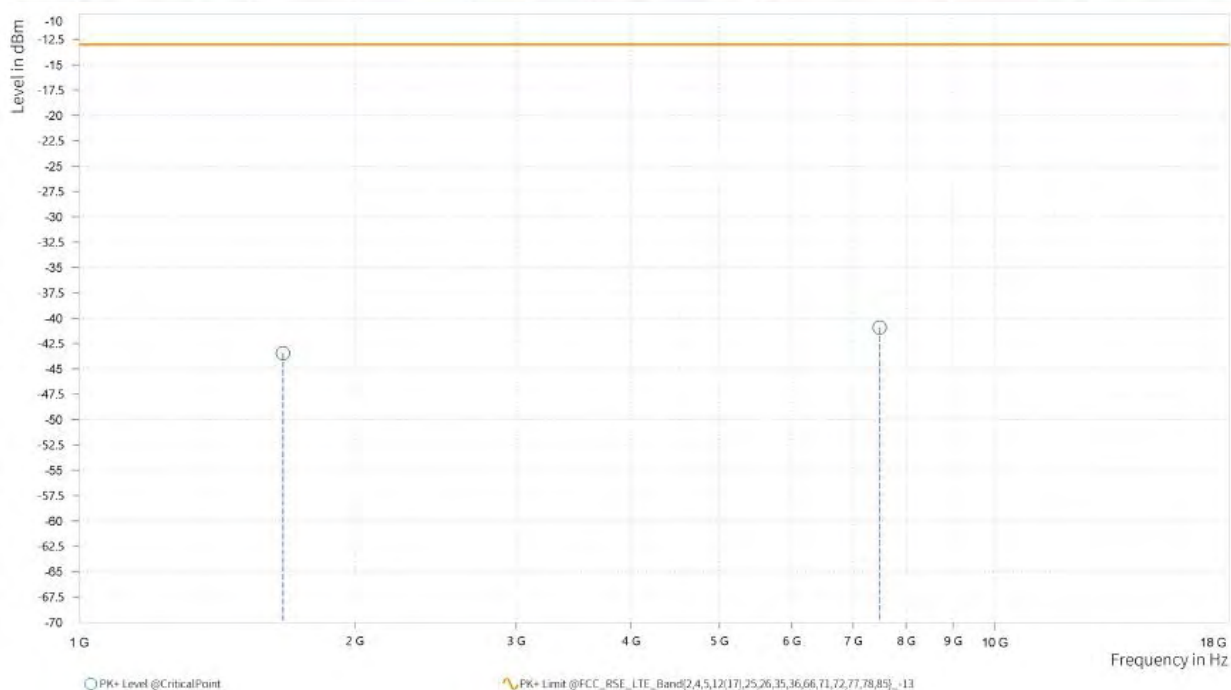
MODE	TX channel 26965	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,669.500	-38.05	-13.00	25.05	23.47	H	295.8	2
3	2,504.500	-37.05	-13.00	24.05	24.30	H	135.8	1



MODE	TX channel 26965	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Jace Hu		
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]
2	1,669.500	-43.47	-13.00	30.47	23.22	V	295.9	2
5	7,480.470	-40.92	-13.00	27.92	28.83	V	285.3	1

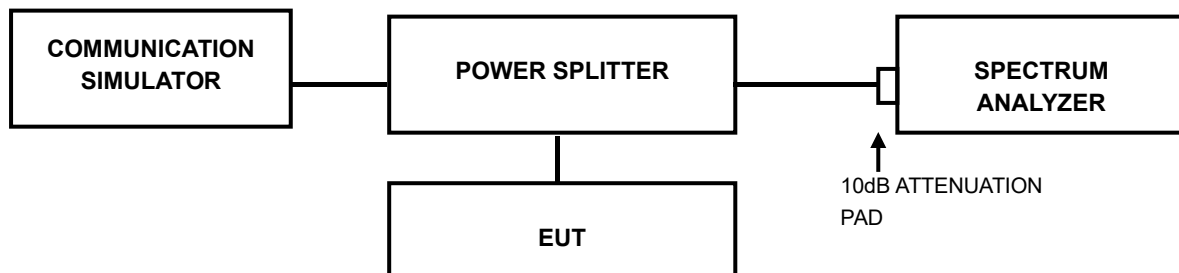


3.7 PEAK TO AVERAGE RATIO

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%.



Test Report No.: PSU-QSU2306120115RF03

3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.



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4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



Test Report No.: PSU-QSU2306120115RF03

5 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 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



Test Report No.: PSU-QSU2306120115RF03

6 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.



7 APPENDIX:

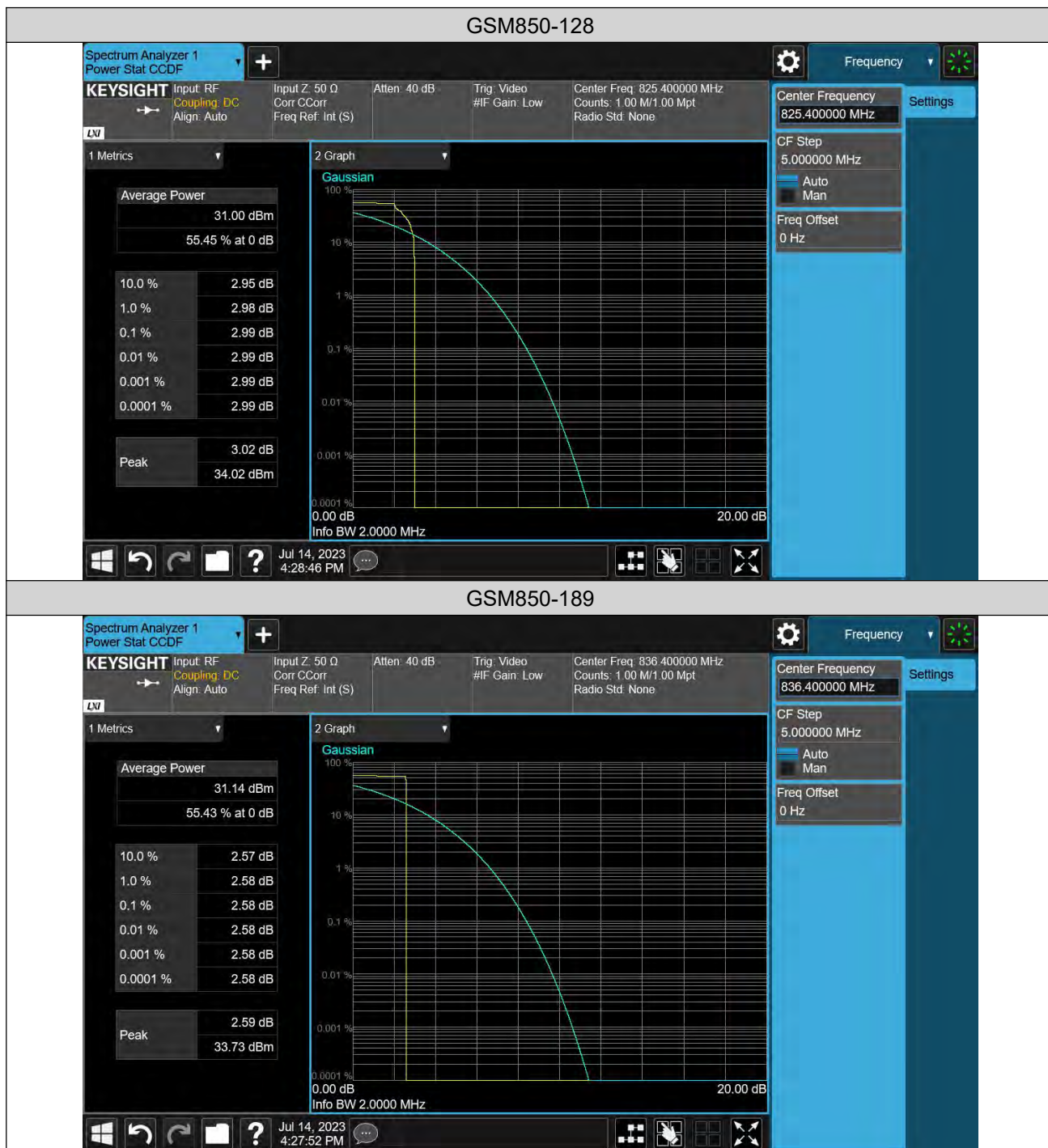
GSM850

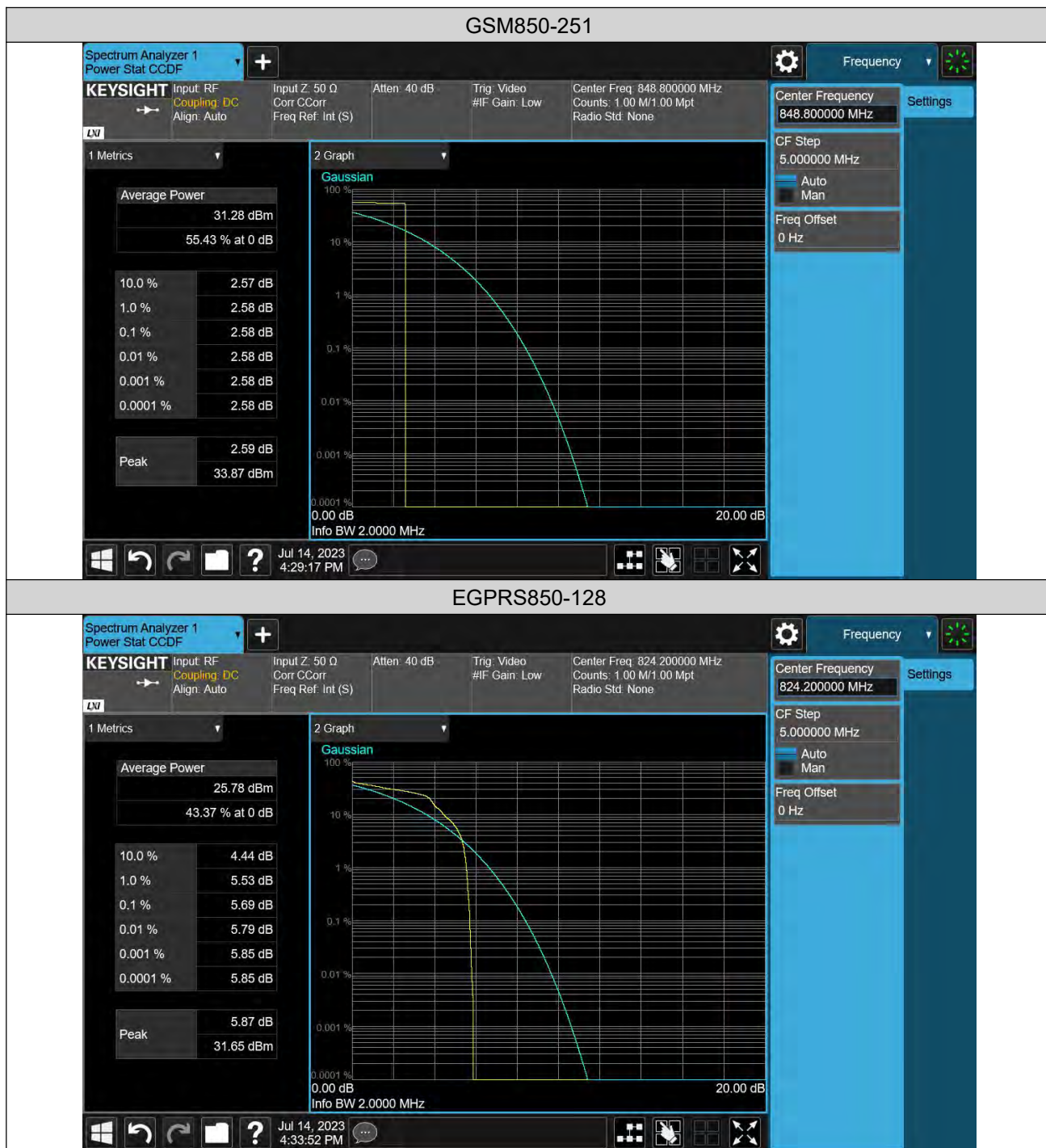
PEAK-TO-AVERAGE RATIO(CCDF)

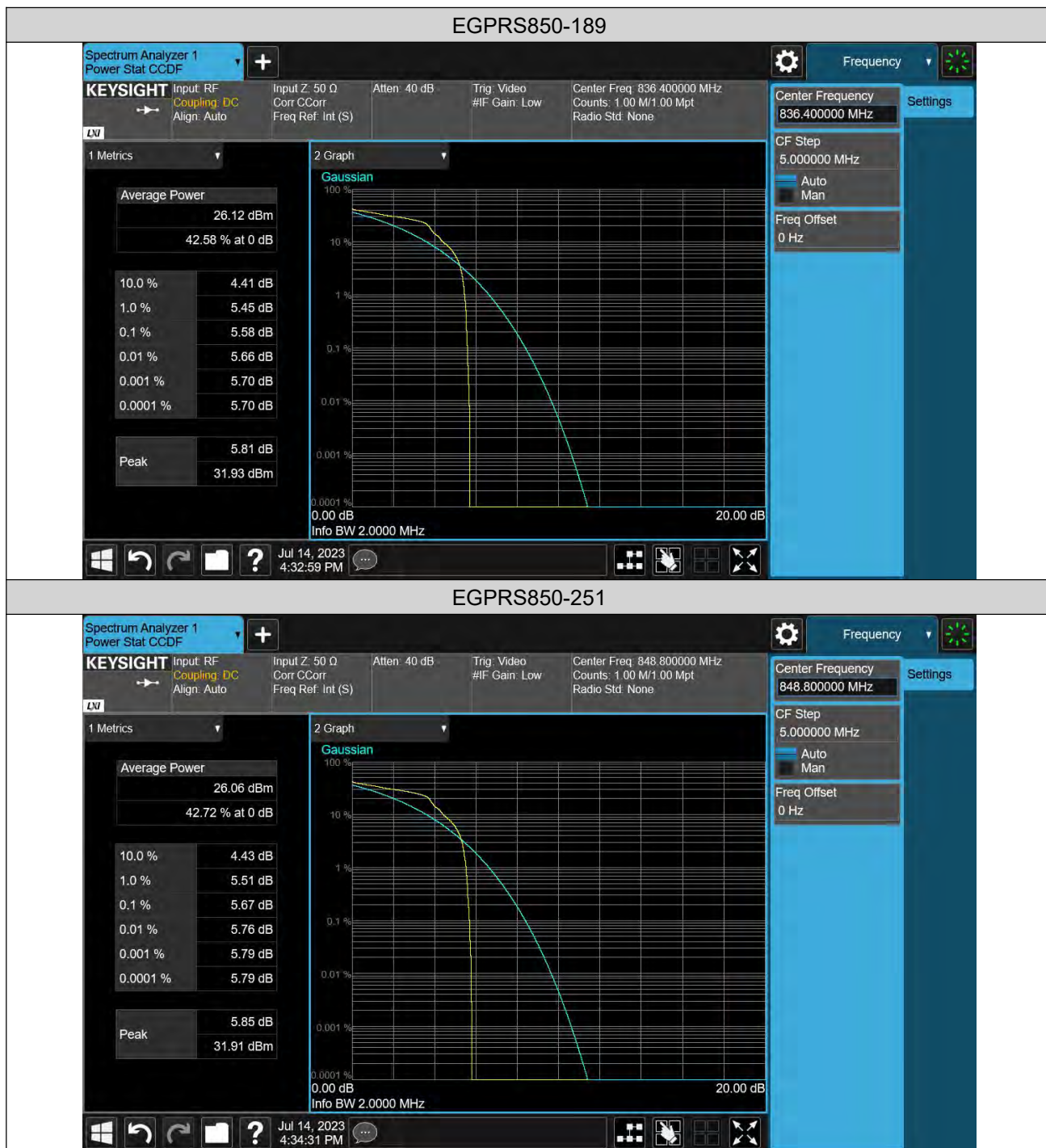
Test Result

Band	Channel	Result(dB)	Limit(dB)	Verdict
GSM850	128	2.99	13	PASS
GSM850	189	2.58	13	PASS
GSM850	251	2.58	13	PASS
EGPRS850	128	5.69	13	PASS
EGPRS850	189	5.58	13	PASS
EGPRS850	251	5.67	13	PASS

Test Graphs









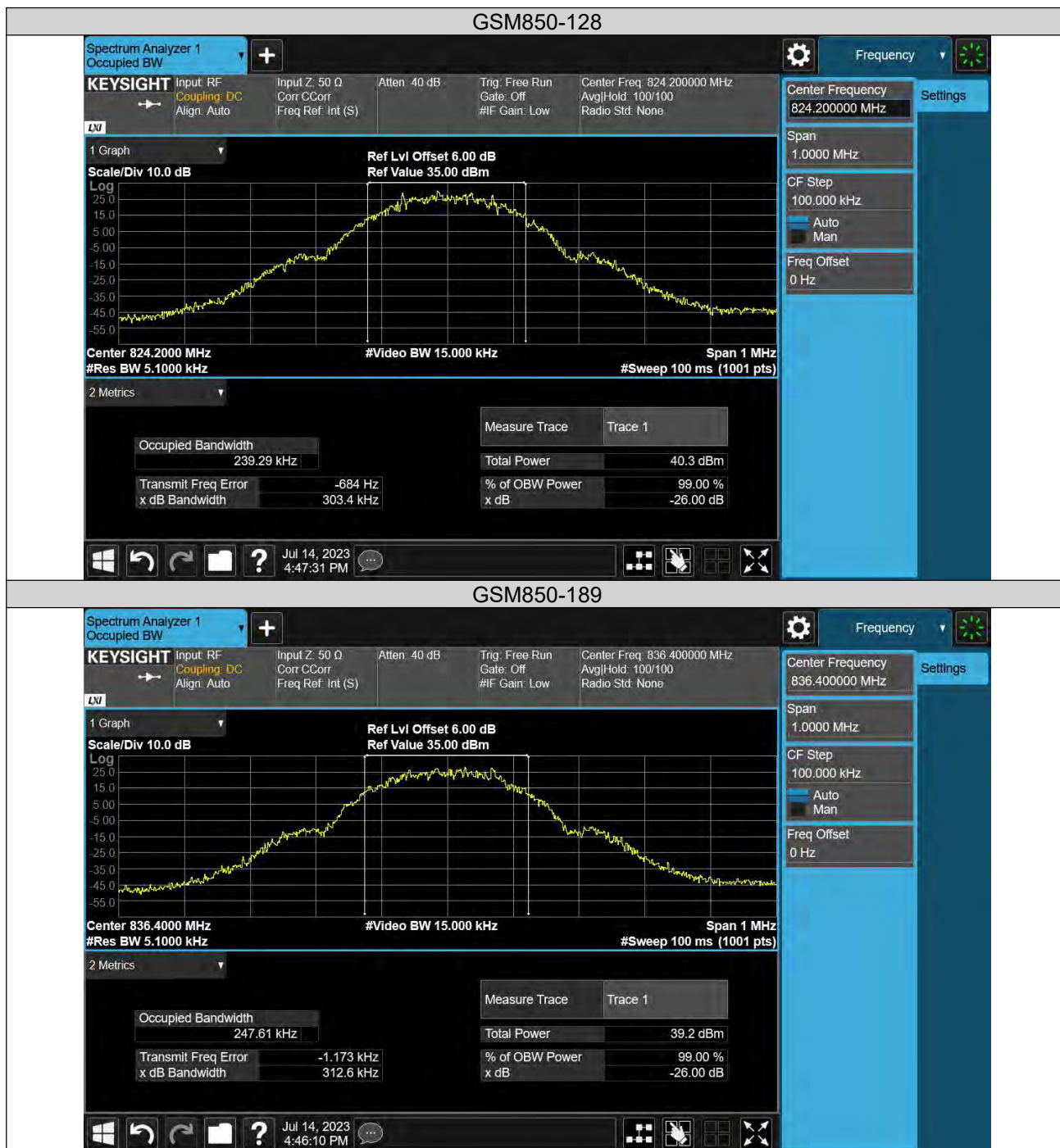
Test Report No.: PSU-QSU2306120115RF03

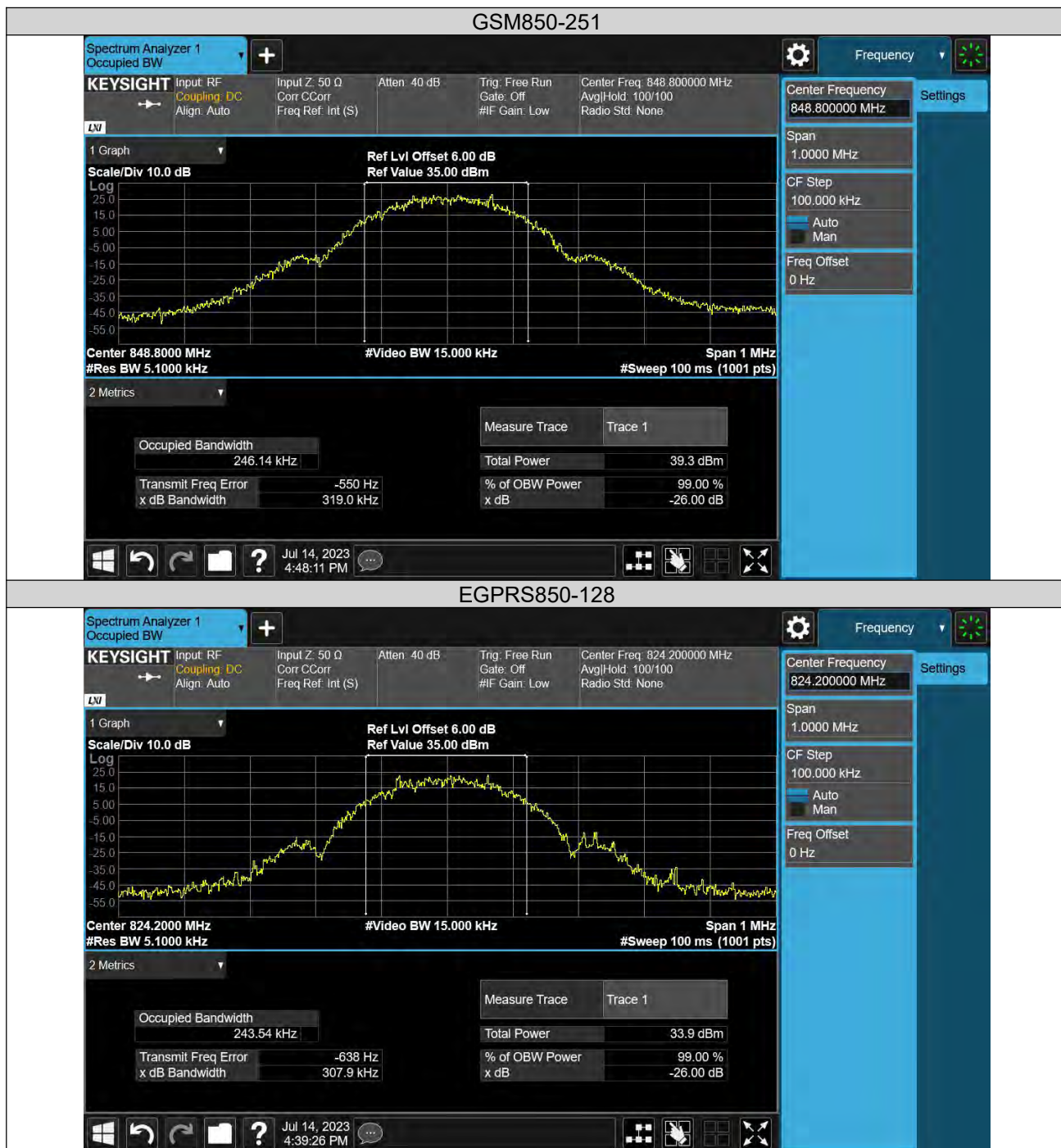
26DB BANDWIDTH AND OCCUPIED BANDWIDTH

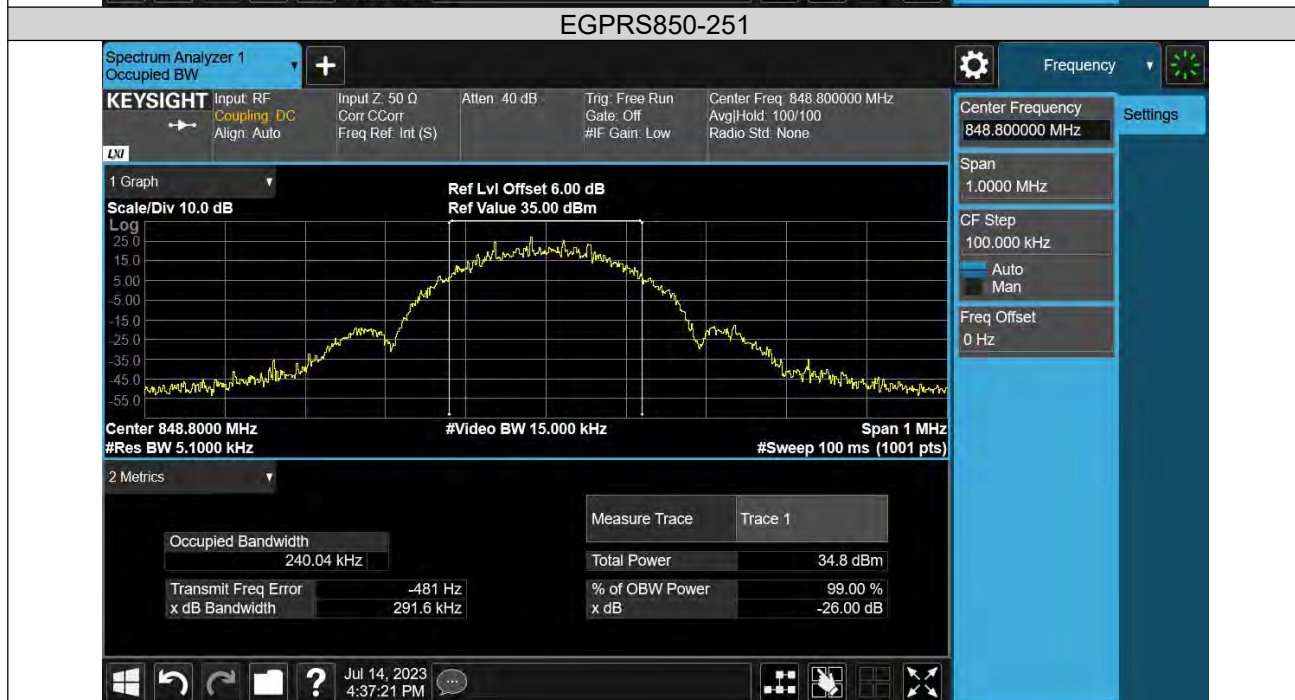
Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
GSM850	128	0.23929	0.3034	---	PASS
GSM850	189	0.24761	0.3126	---	PASS
GSM850	251	0.24614	0.3190	---	PASS
EGPRS850	128	0.24354	0.3079	---	PASS
EGPRS850	189	0.24653	0.3061	---	PASS
EGPRS850	251	0.24004	0.2916	---	PASS

Test Graphs









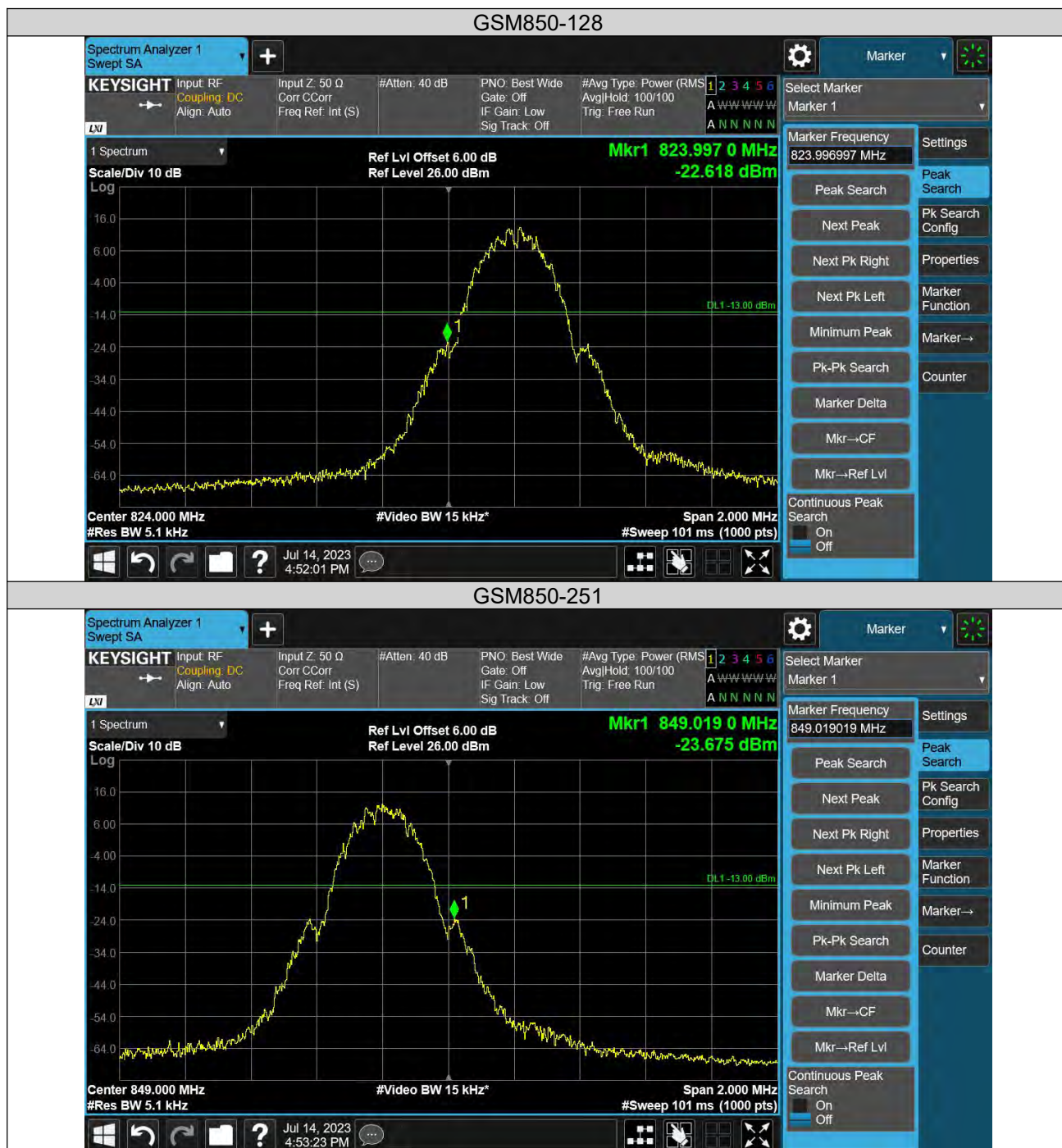
Test Report No.: PSU-QSU2306120115RF03

BAND EDGE

Test Result

Band	Channel	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM850	128	823.99725	-22.618	-13	PASS
GSM850	251	849.02274	-23.675	-13	PASS
EGPRS850	128	823.99725	-32.784	-13	PASS
EGPRS850	251	849.02274	-30.390	-13	PASS

Test Graphs



EGPRS850-128



EGPRS850-251



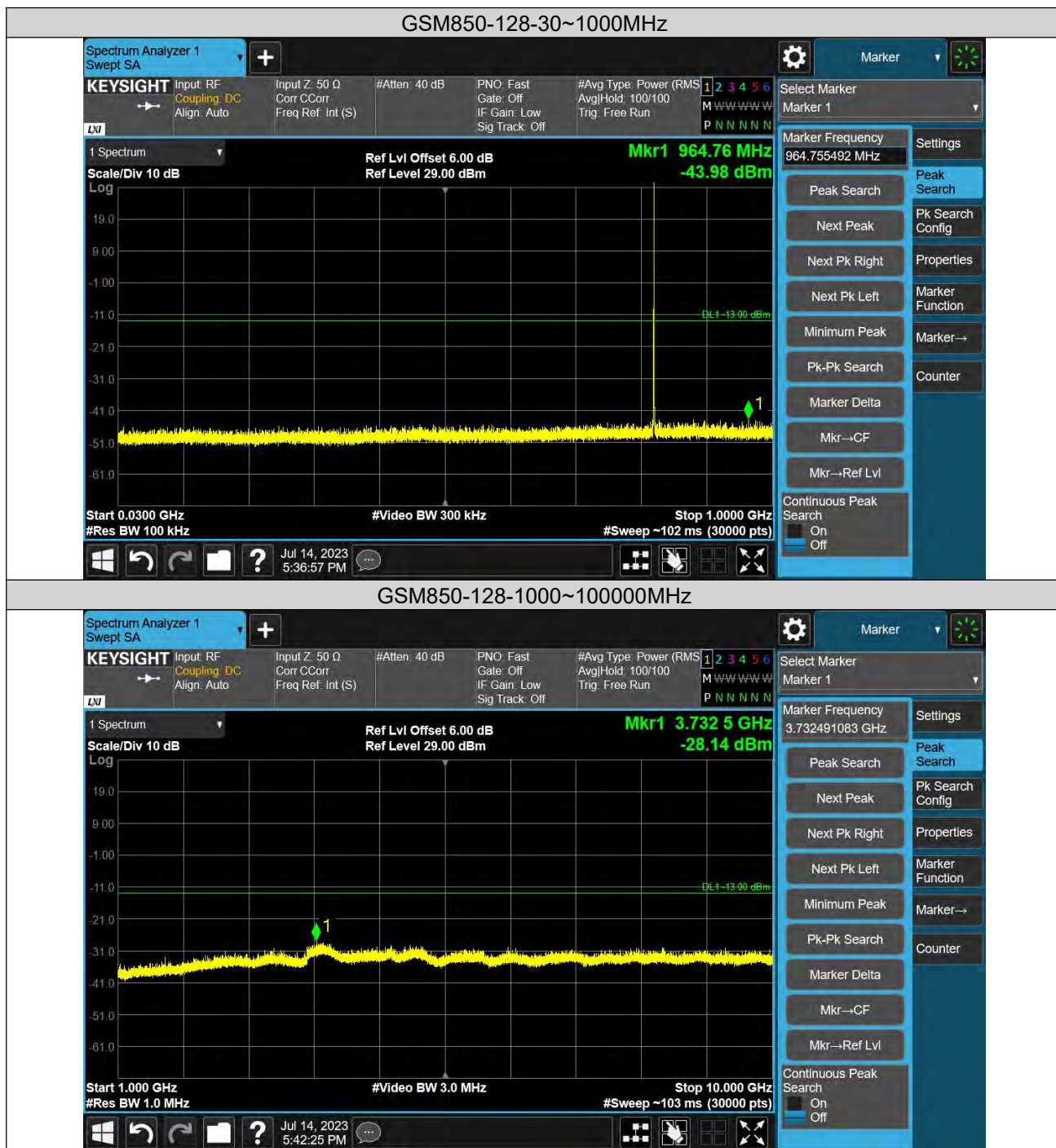


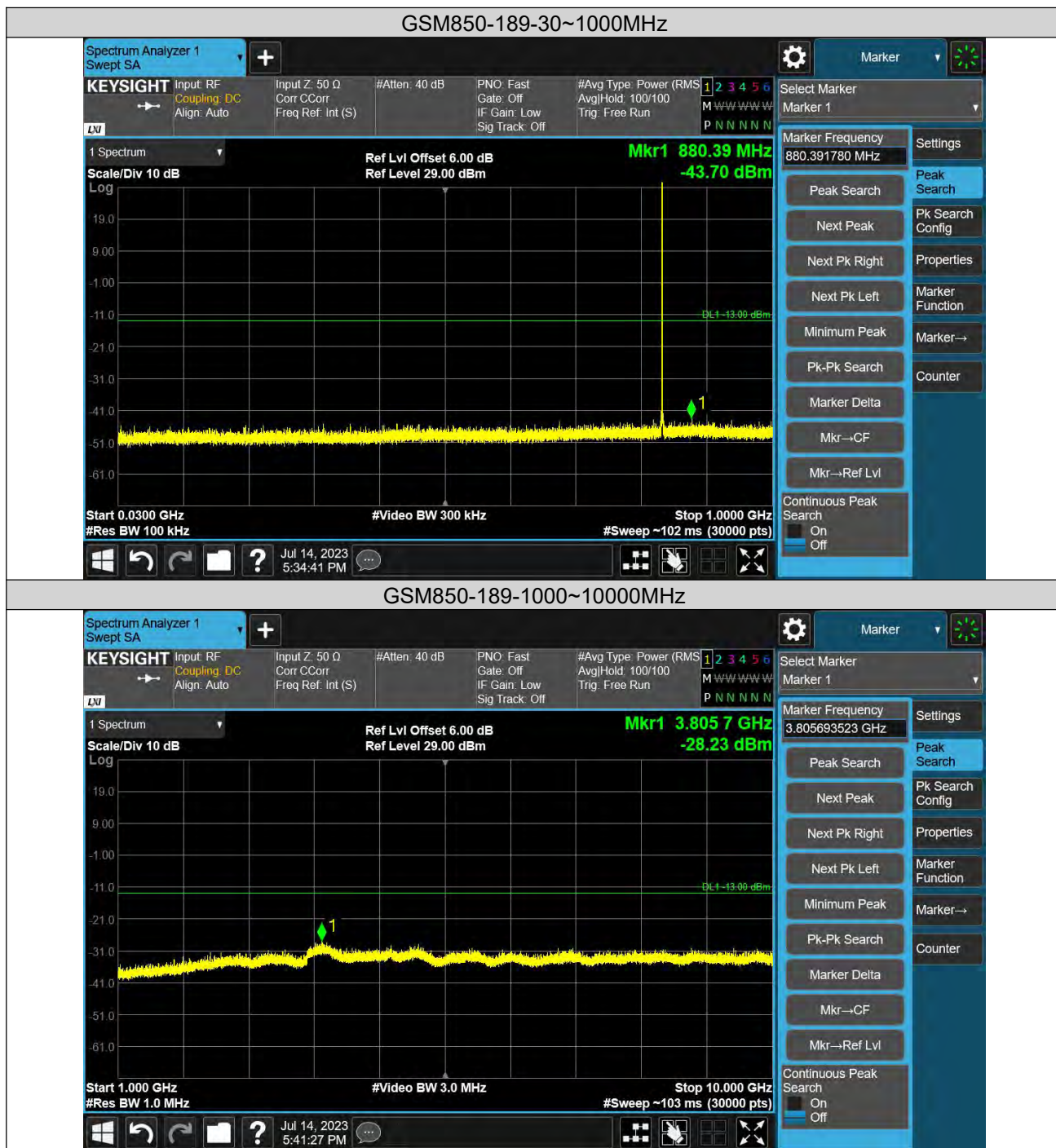
CONDUCTED SPURIOUS EMISSION

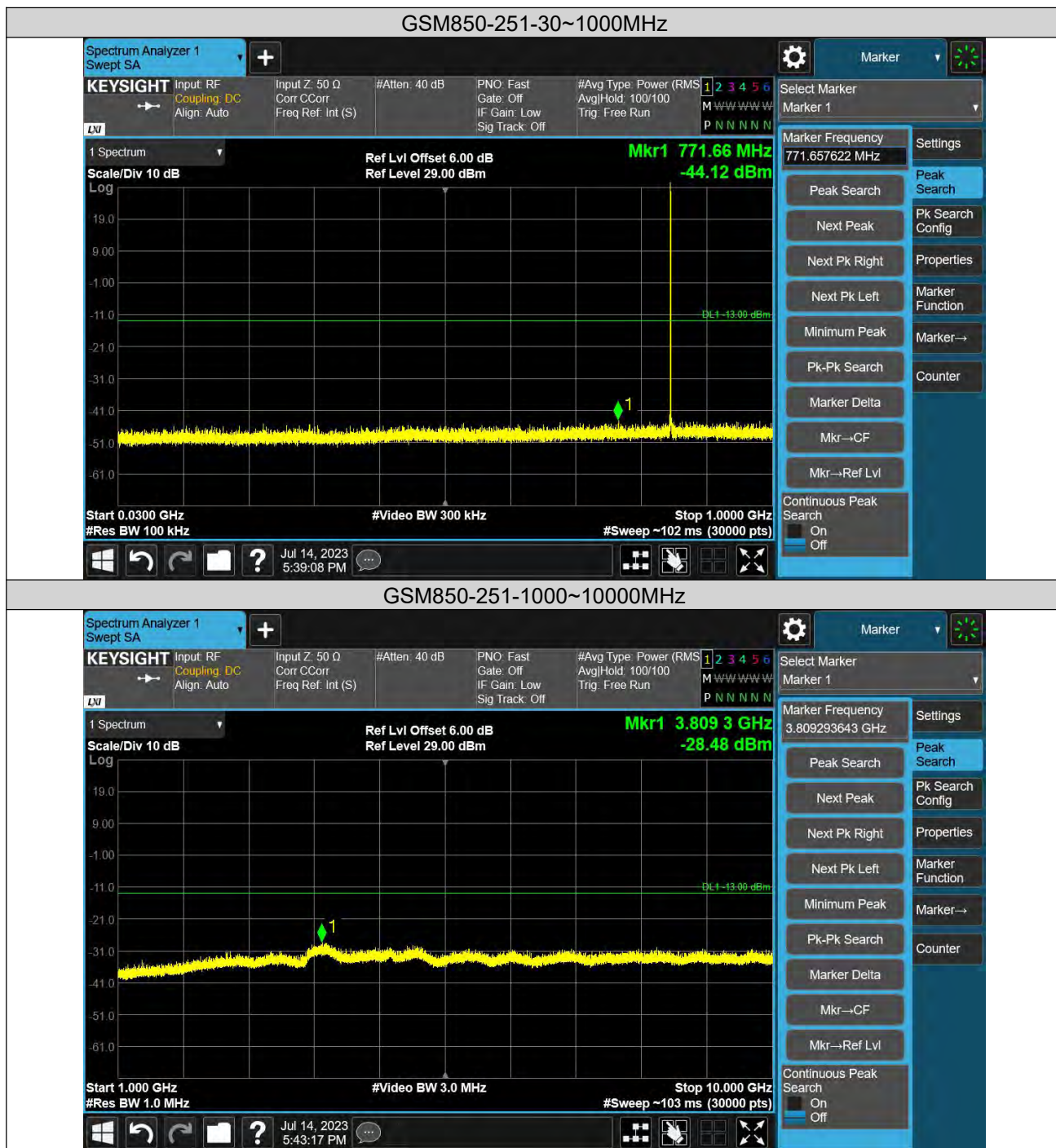
Test Result

Band	Channel	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM850	128	30~1000MHz	964.76	-43.98	-13	PASS
GSM850	128	1000~10000MHz	3732.5	-28.14	-13	PASS
GSM850	189	30~1000MHz	880.39	-43.70	-13	PASS
GSM850	189	1000~10000MHz	3805.7	-28.23	-13	PASS
GSM850	251	30~1000MHz	771.6	-44.12	-13	PASS
GSM850	251	1000~10000MHz	3909.3	-28.48	-13	PASS
EGPRS850	128	30~1000MHz	908.36	-44.2	-13	PASS
EGPRS850	128	1000~10000MHz	3906.8	-28.04	-13	PASS
EGPRS850	189	30~1000MHz	905.94	-44.28	-13	PASS
EGPRS850	189	1000~9000MHz	3800.0	-28.05	-13	PASS
EGPRS850	251	30~1000MHz	734.57	-44.35	-13	PASS
EGPRS850	251	1000~9000MHz	3831.8	-28.62	-13	PASS

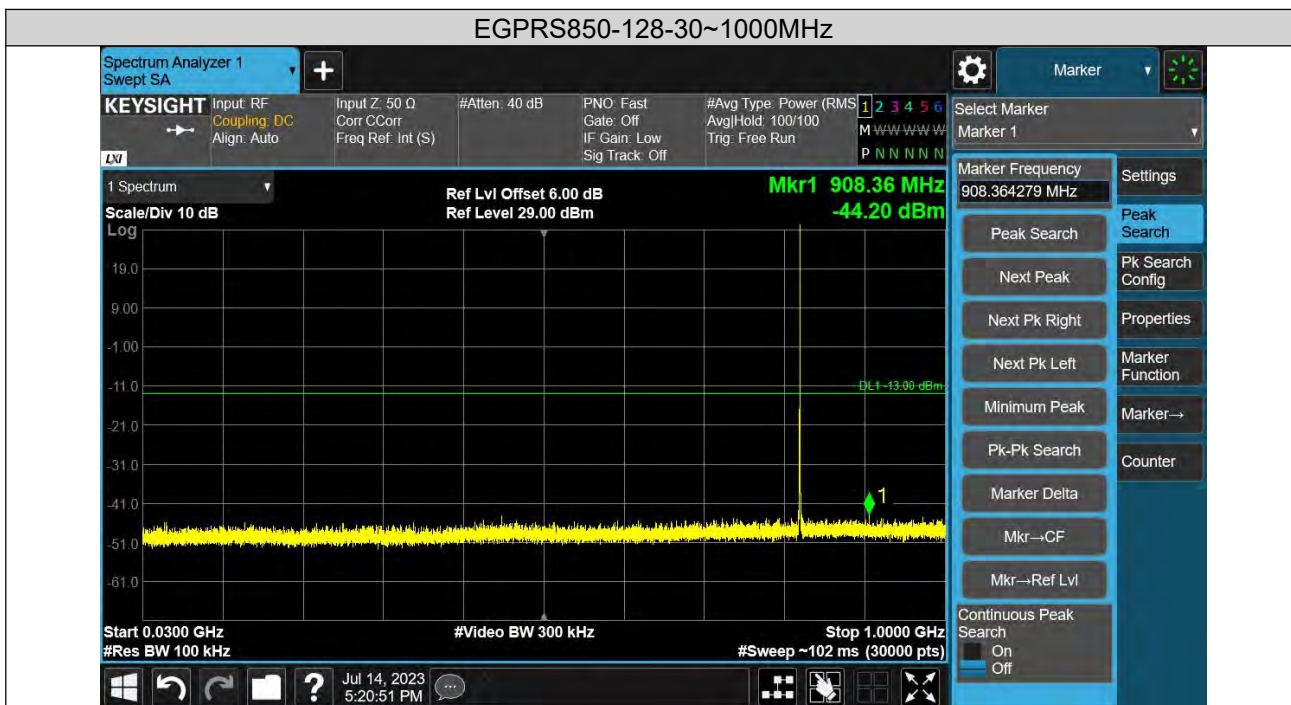
Test Graphs



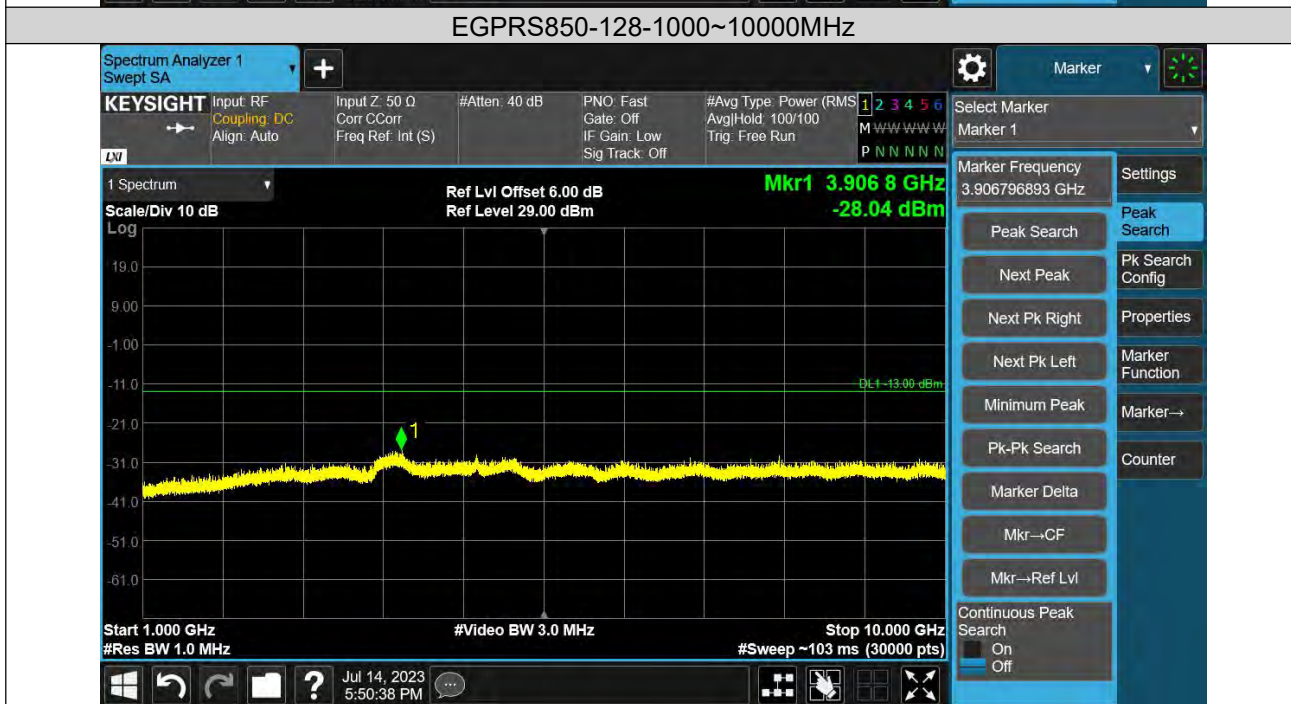


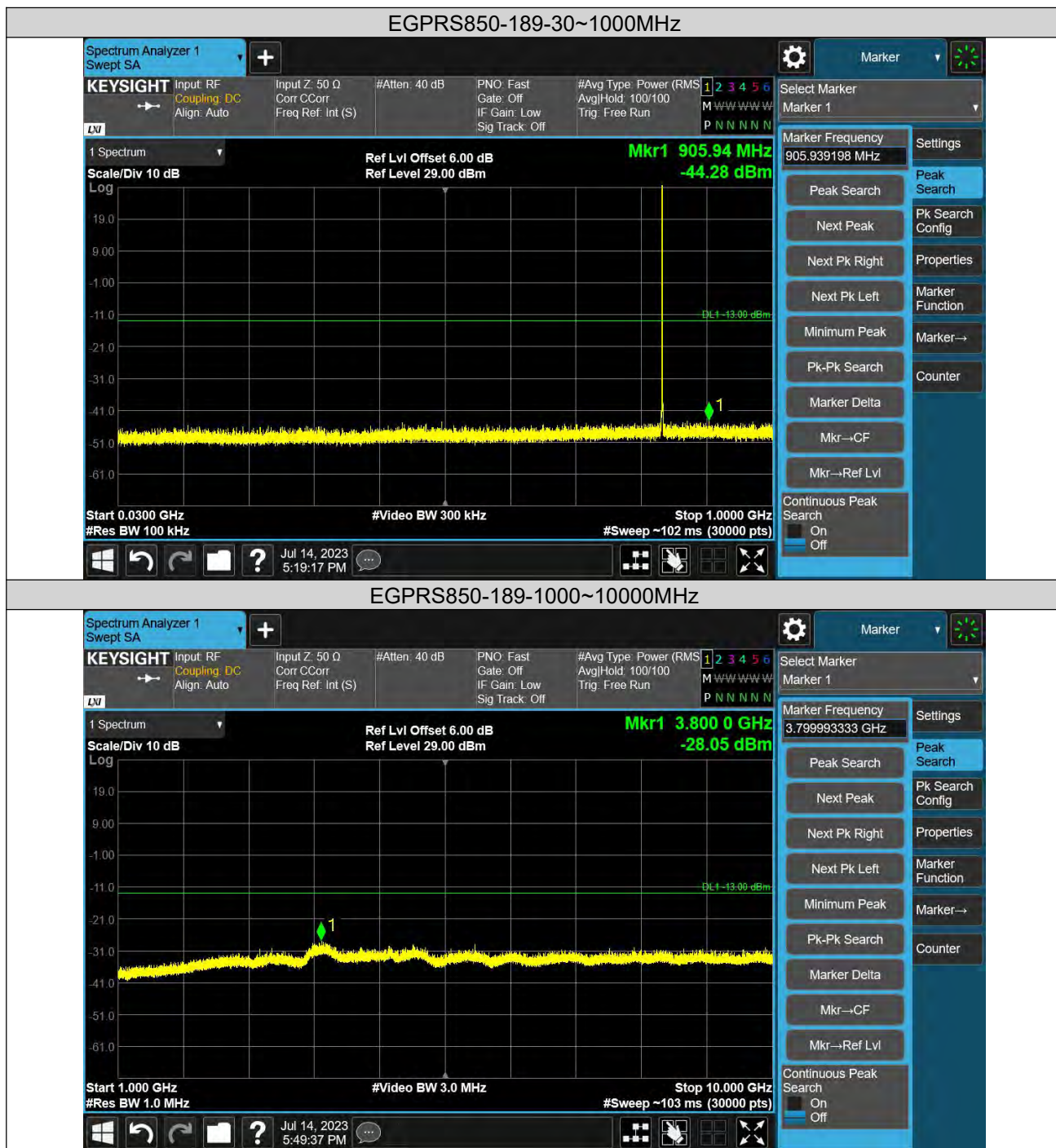


EGPRS850-128-30~1000MHz

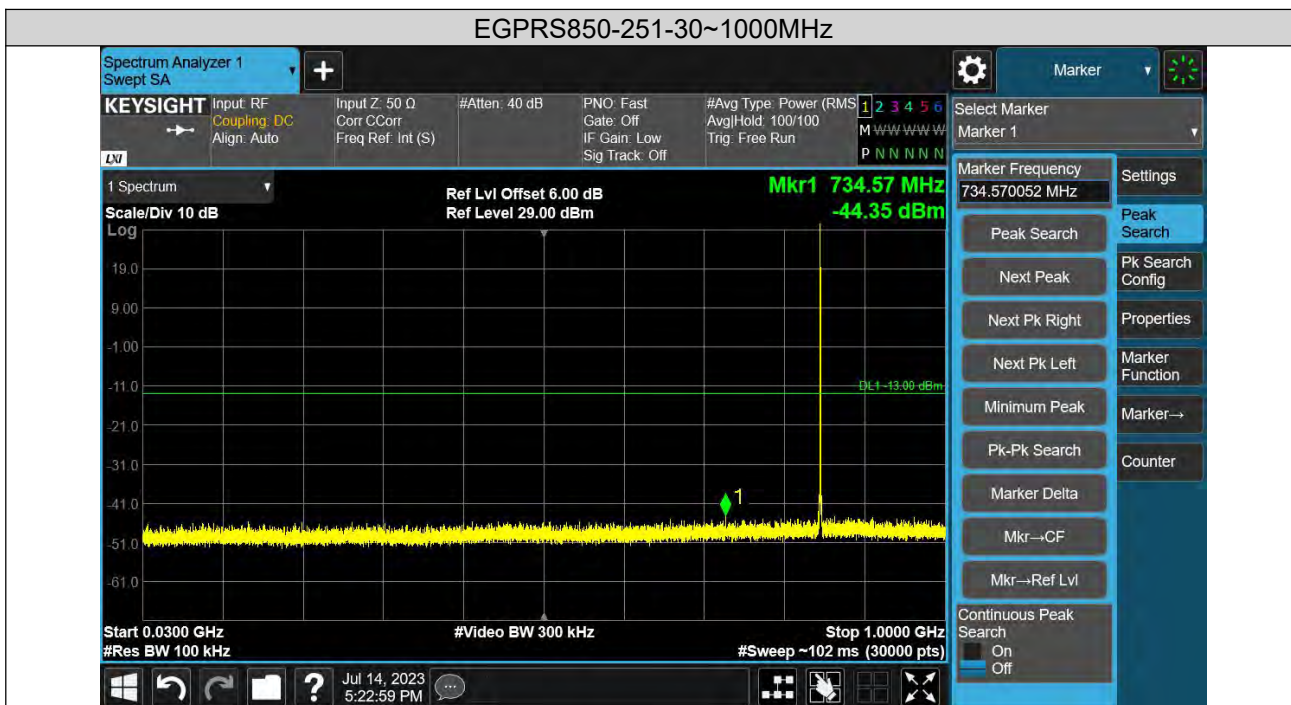


EGPRS850-128-1000~10000MHz

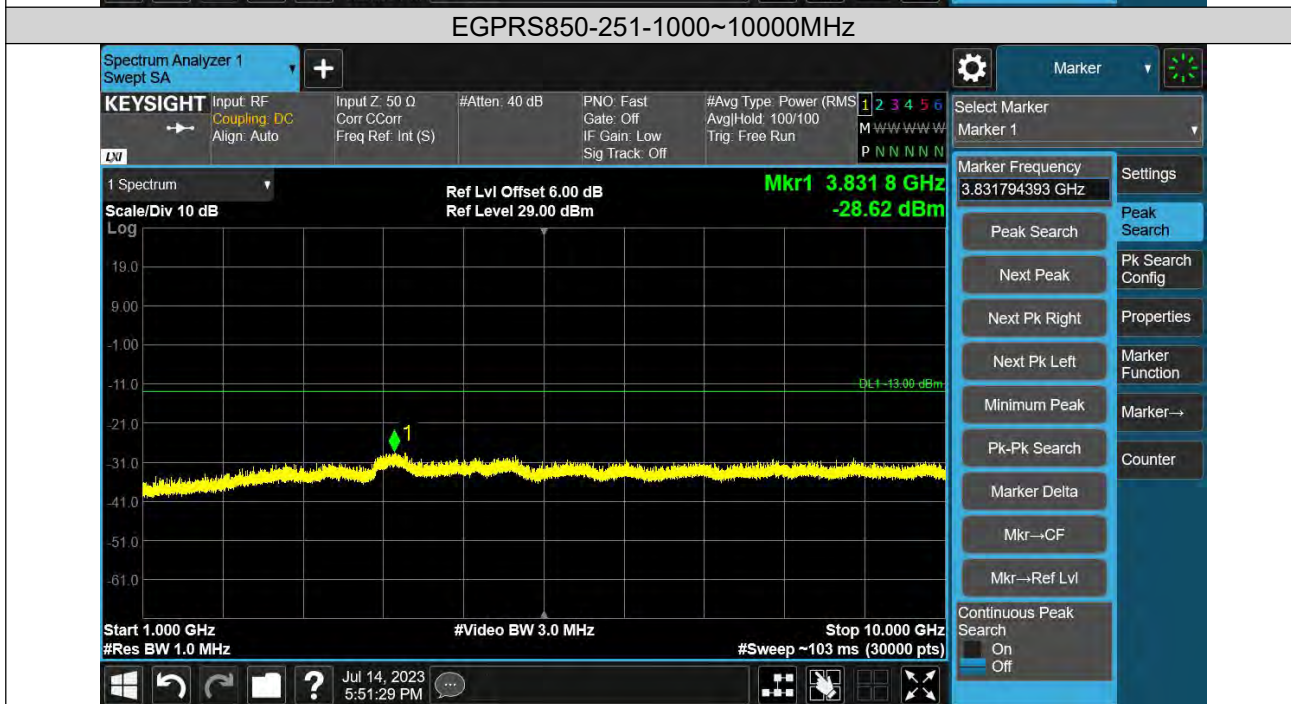




EGPRS850-251-30~1000MHz



EGPRS850-251-1000~10000MHz



FREQUENCY STABILITY

Test Result

Voltage							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	VL	NT	3.2	0.003883	±2.5	PASS
GSM850	128	VN	NT	0.01	0.000012	±2.5	PASS
GSM850	128	VH	NT	-5.68	-0.006892	±2.5	PASS
GSM850	189	VL	NT	-7.93	-0.009481	±2.5	PASS
GSM850	189	VN	NT	-1.38	-0.001650	±2.5	PASS
GSM850	189	VH	NT	-3.82	-0.004567	±2.5	PASS
GSM850	251	VL	NT	-7.02	-0.008270	±2.5	PASS
GSM850	251	VN	NT	6.7	0.007893	±2.5	PASS
GSM850	251	VH	NT	-0.37	-0.000436	±2.5	PASS
EGPRS850	128	VL	NT	-8.9	-0.010798	±2.5	PASS
EGPRS850	128	VN	NT	-1.57	-0.001905	±2.5	PASS
EGPRS850	128	VH	NT	1.92	0.002330	±2.5	PASS
EGPRS850	189	VL	NT	7.48	0.008943	±2.5	PASS
EGPRS850	189	VN	NT	-9.38	-0.011215	±2.5	PASS
EGPRS850	189	VH	NT	-7.66	-0.009158	±2.5	PASS
EGPRS850	251	VL	NT	-7.36	-0.008671	±2.5	PASS
EGPRS850	251	VN	NT	-0.09	-0.000106	±2.5	PASS
EGPRS850	251	VH	NT	-8.11	-0.009555	±2.5	PASS

Temperature							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	NV	-30	-6.33	-0.007680	±2.5	PASS
GSM850	128	NV	-20	3.94	0.004780	±2.5	PASS
GSM850	128	NV	-10	-7.96	-0.009658	±2.5	PASS
GSM850	128	NV	0	-2.68	-0.003252	±2.5	PASS
GSM850	128	NV	10	5.75	0.006976	±2.5	PASS
GSM850	128	NV	20	-3.92	-0.004756	±2.5	PASS
GSM850	128	NV	30	-7.61	-0.009233	±2.5	PASS
GSM850	128	NV	40	7.1	0.008614	±2.5	PASS
GSM850	128	NV	50	8.99	0.010908	±2.5	PASS
GSM850	189	NV	-30	4.95	0.005918	±2.5	PASS
GSM850	189	NV	-20	0.99	0.001184	±2.5	PASS
GSM850	189	NV	-10	4.76	0.005691	±2.5	PASS
GSM850	189	NV	0	-5.17	-0.006181	±2.5	PASS
GSM850	189	NV	10	-7.87	-0.009409	±2.5	PASS
GSM850	189	NV	20	5.22	0.006241	±2.5	PASS
GSM850	189	NV	30	-6.22	-0.007437	±2.5	PASS
GSM850	189	NV	40	1.49	0.001781	±2.5	PASS
GSM850	189	NV	50	6.86	0.008202	±2.5	PASS
GSM850	251	NV	-30	-4.53	-0.005337	±2.5	PASS
GSM850	251	NV	-20	-5.79	-0.006821	±2.5	PASS



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VERITAS

Test Report No.: PSU-QSU2306120115RF03

GSM850	251	NV	-10	-4.94	-0.005820	±2.5	PASS
GSM850	251	NV	0	-9.02	-0.010627	±2.5	PASS
GSM850	251	NV	10	0.36	0.000424	±2.5	PASS
GSM850	251	NV	20	-5.44	-0.006409	±2.5	PASS
GSM850	251	NV	30	-9.84	-0.011593	±2.5	PASS
GSM850	251	NV	40	1.68	0.001979	±2.5	PASS
GSM850	251	NV	50	-4.59	-0.005408	±2.5	PASS
EGPRS850	128	NV	-30	-8.95	-0.004837	±2.5	PASS
EGPRS850	128	NV	-20	-6.23	-0.003367	±2.5	PASS
EGPRS850	128	NV	-10	3.13	0.001692	±2.5	PASS
EGPRS850	128	NV	0	-8.65	-0.004675	±2.5	PASS
EGPRS850	128	NV	10	-5.21	-0.002816	±2.5	PASS
EGPRS850	128	NV	20	-8.2	-0.004432	±2.5	PASS
EGPRS850	128	NV	30	-6.06	-0.003275	±2.5	PASS
EGPRS850	189	NV	40	3.33	0.001800	±2.5	PASS
EGPRS850	189	NV	50	-6.05	-0.003270	±2.5	PASS
EGPRS850	189	NV	-30	-9.52	-0.005064	±2.5	PASS
EGPRS850	189	NV	-20	2.43	0.001293	±2.5	PASS
EGPRS850	189	NV	-10	-3.59	-0.001910	±2.5	PASS
EGPRS850	189	NV	0	1.02	0.000543	±2.5	PASS
EGPRS850	189	NV	10	4.53	0.002410	±2.5	PASS
EGPRS850	189	NV	20	9.84	0.005234	±2.5	PASS
EGPRS850	189	NV	30	-2.6	-0.001383	±2.5	PASS
EGPRS850	189	NV	40	0.75	0.000399	±2.5	PASS
EGPRS850	189	NV	50	-5.68	-0.003021	±2.5	PASS
EGPRS850	251	NV	-30	-3.45	-0.001806	±2.5	PASS
EGPRS850	251	NV	-20	-8.17	-0.004278	±2.5	PASS
EGPRS850	251	NV	-10	-3.49	-0.001827	±2.5	PASS
EGPRS850	251	NV	0	-4.77	-0.002498	±2.5	PASS
EGPRS850	251	NV	10	-1.19	-0.000623	±2.5	PASS
EGPRS850	251	NV	20	9.79	0.005126	±2.5	PASS
EGPRS850	251	NV	30	-8.49	-0.004445	±2.5	PASS
EGPRS850	251	NV	40	1.5	0.000785	±2.5	PASS
EGPRS850	251	NV	50	1.12	0.000586	±2.5	PASS



Test Report No.: PSU-QSU2306120115RF03

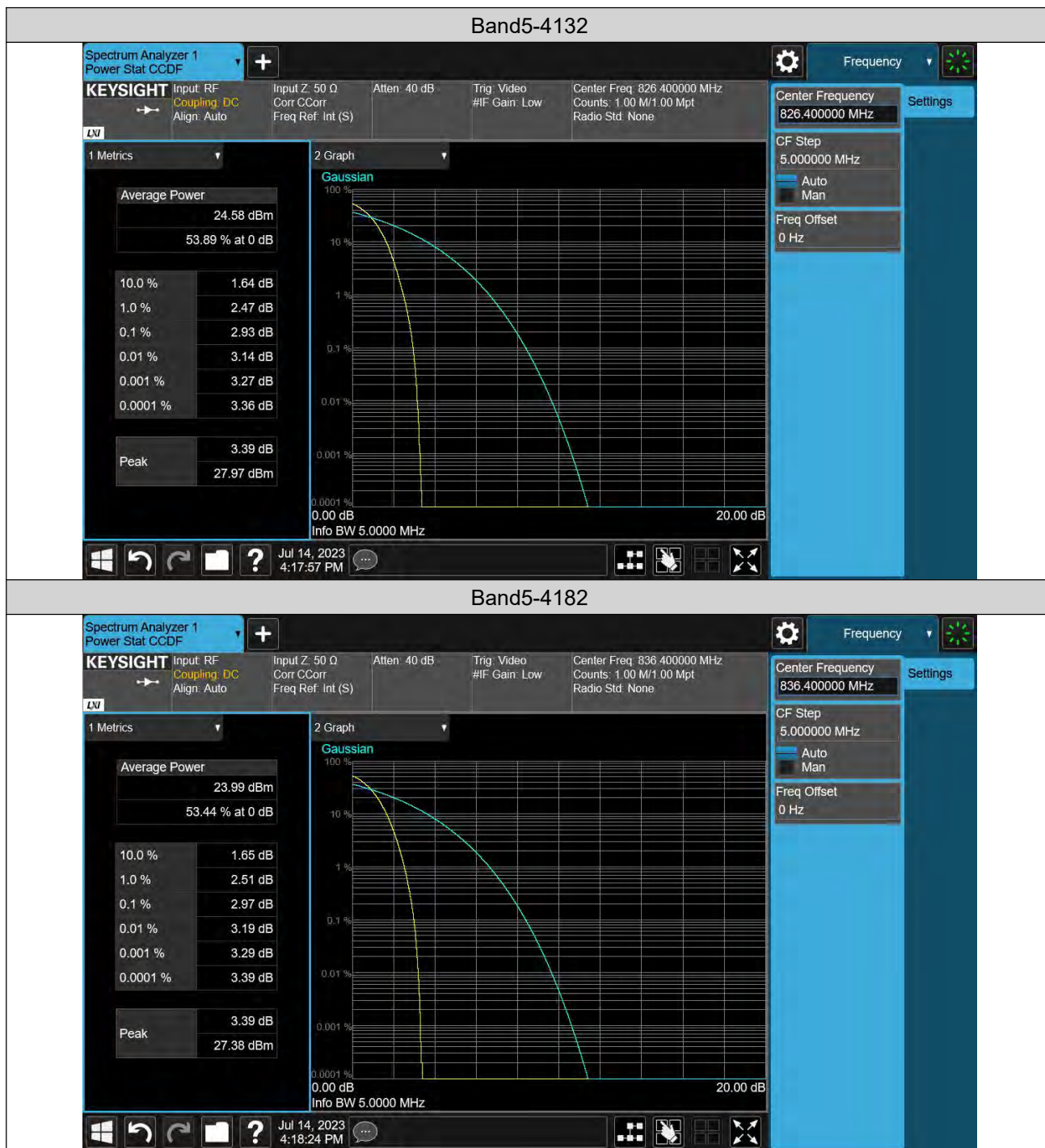
WCMDA BAND5

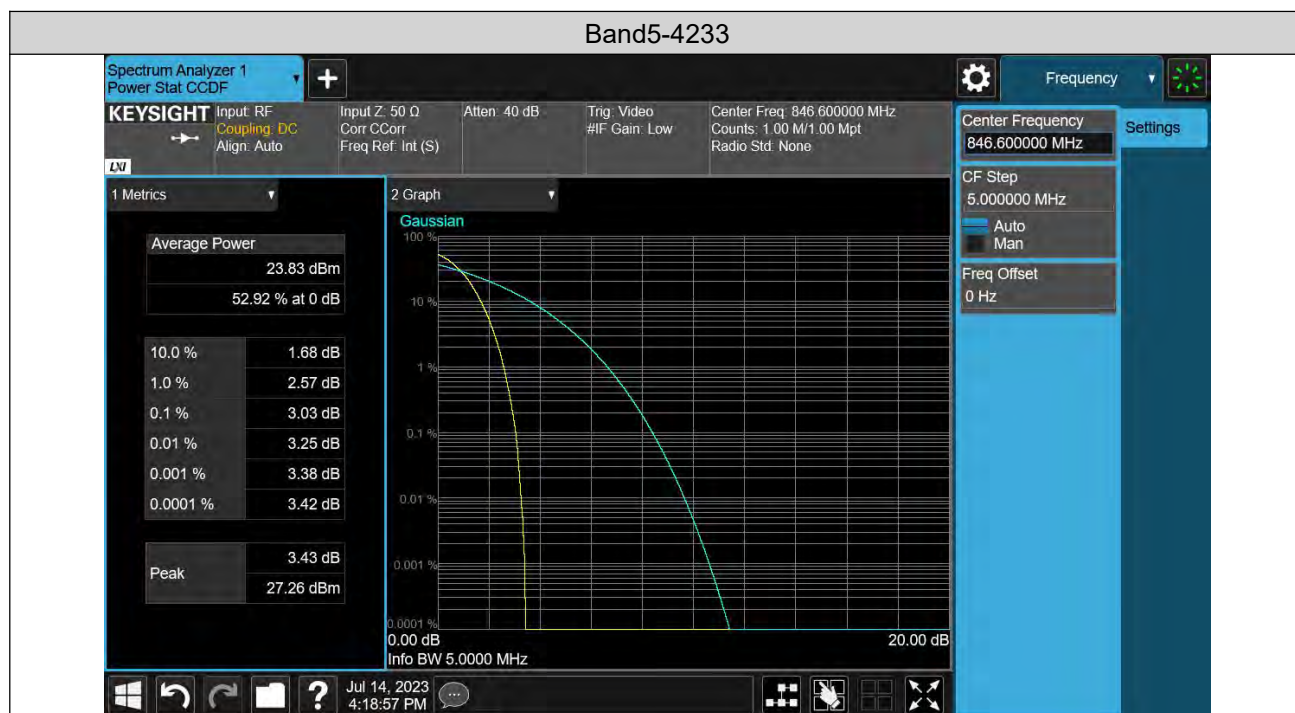
PEAK-TO-AVERAGE RATIO

Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band5	4132	2.93	13	PASS
Band5	4182	2.97	13	PASS
Band5	4233	3.03	13	PASS

Test Graphs







Test Report No.: PSU-QSU2306120115RF03

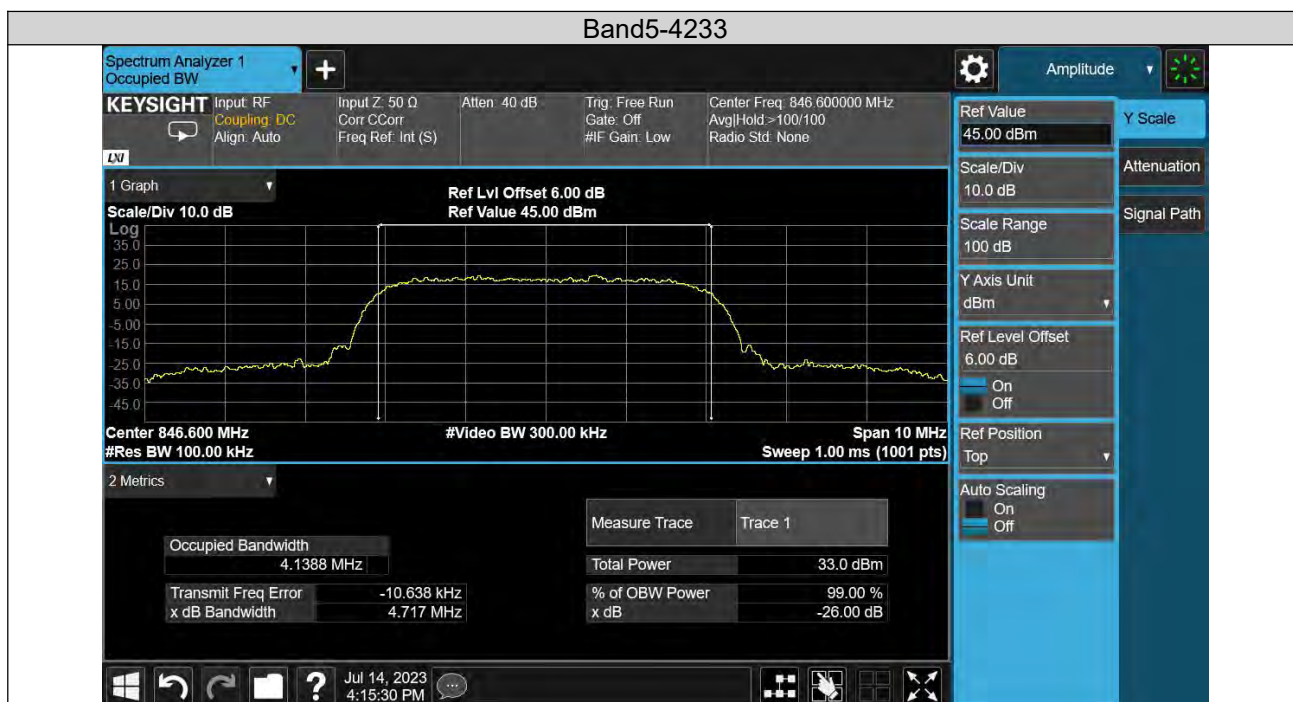
26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
Band5	4132	4.1665	4.713	---	PASS
Band5	4182	4.1446	4.713	---	PASS
Band5	4233	4.1388	4.717	---	PASS

Test Graphs







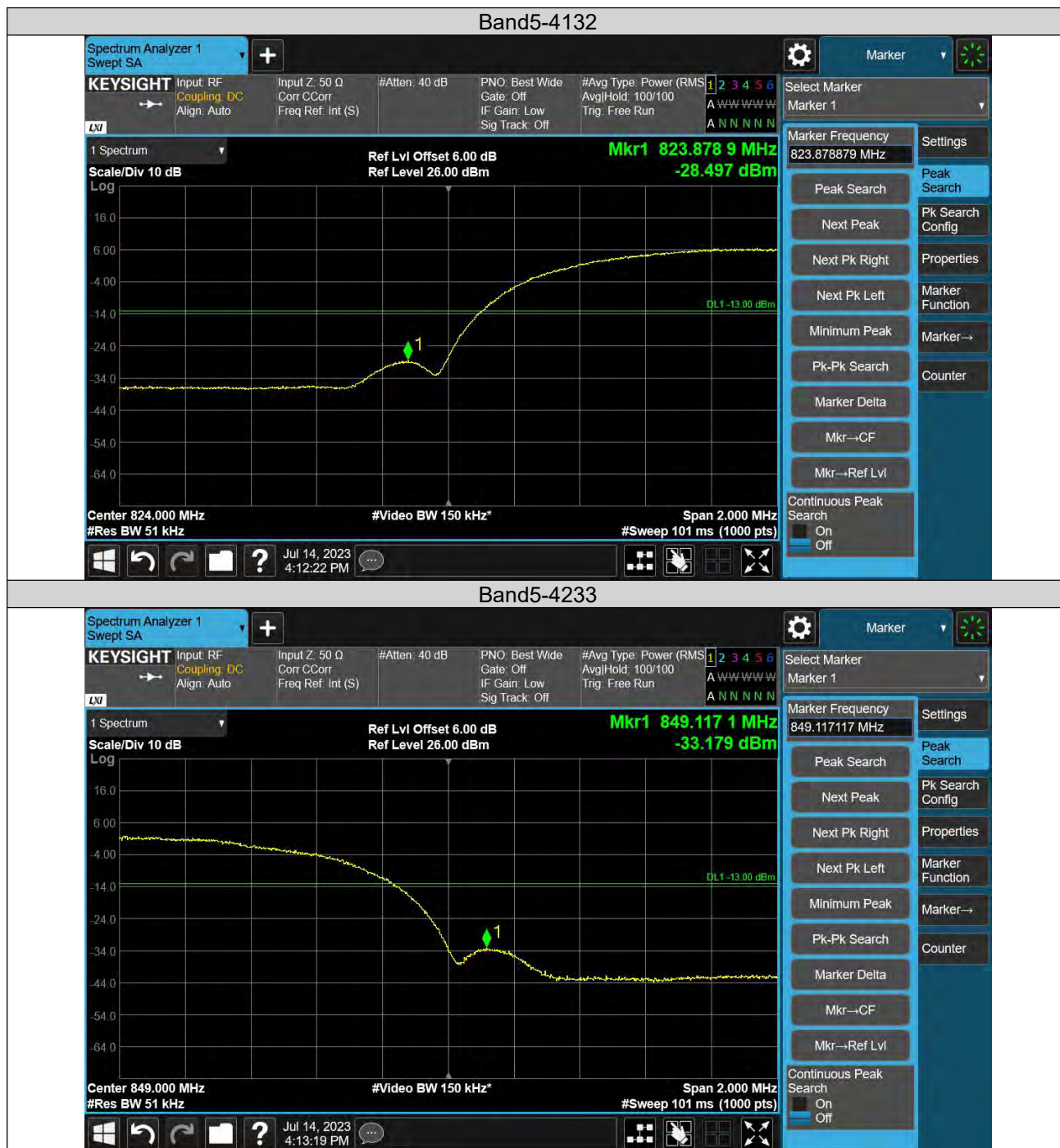
Test Report No.: PSU-QSU2306120115RF03

BAND EDGE

Test Result

Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band5	4132	823.8789	-28.497	-13	PASS
Band5	4233	849.1171	-33.179	-13	PASS

Test Graphs





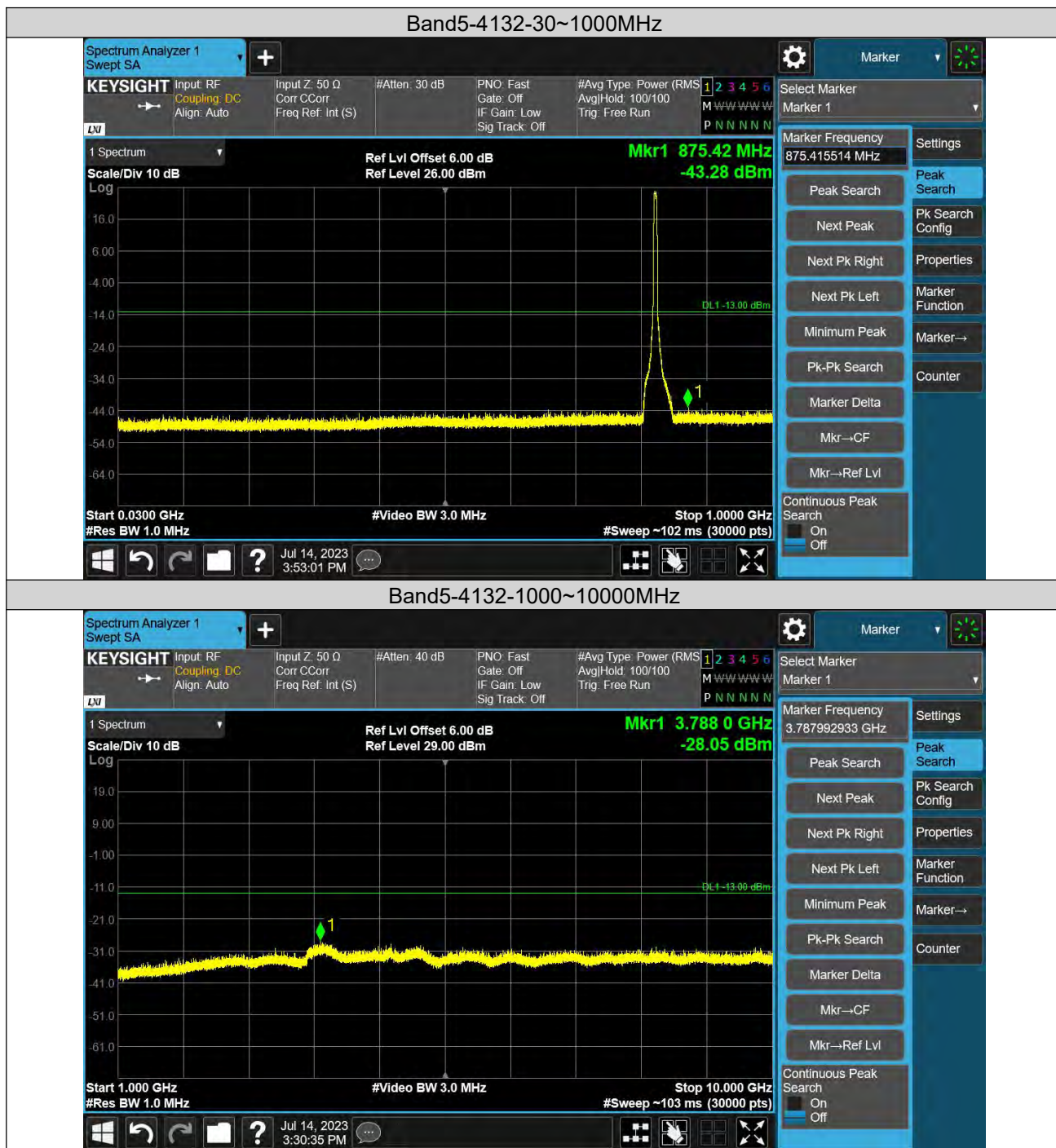
Test Report No.: PSU-QSU2306120115RF03

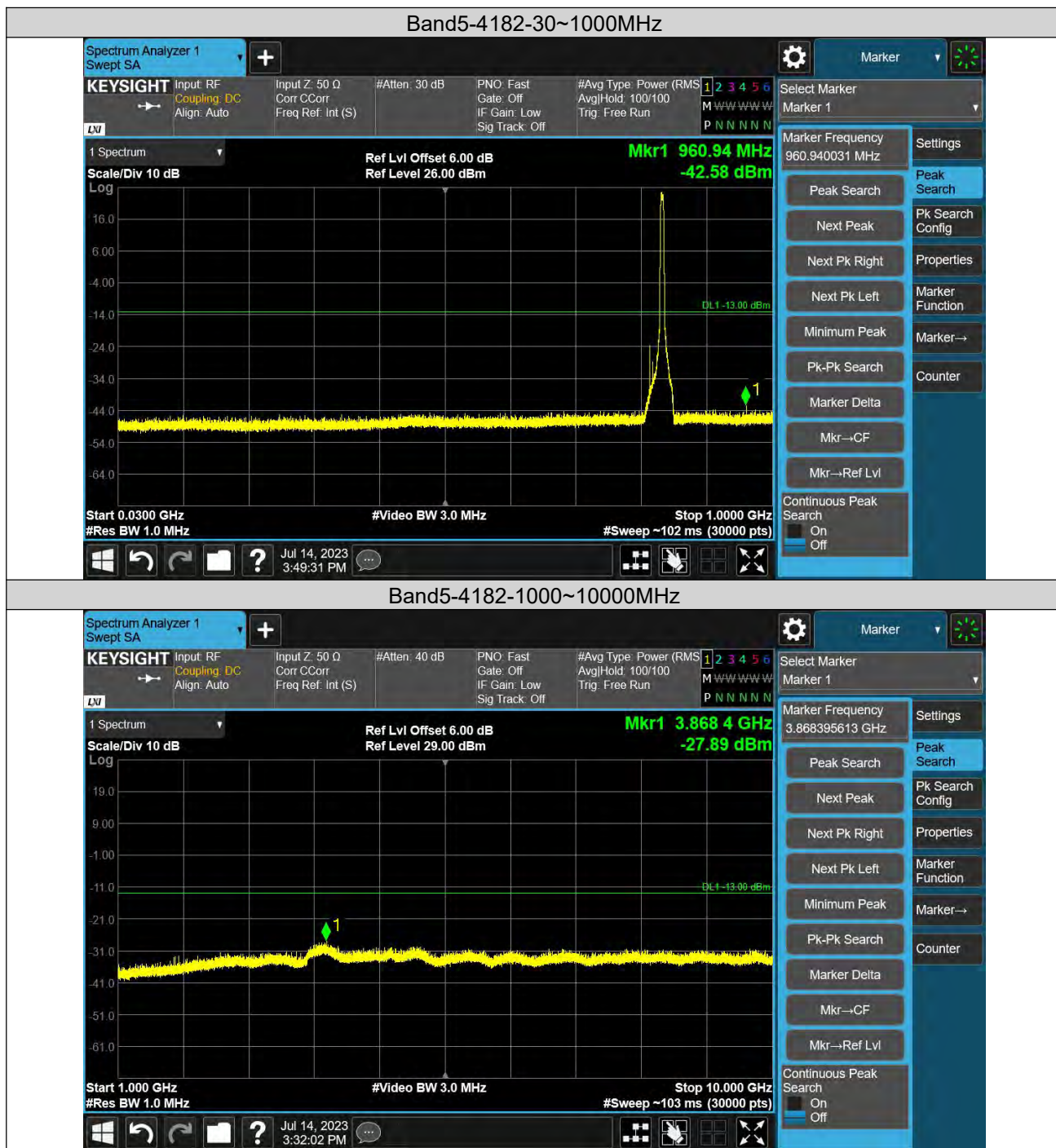
CONDUCTED SPURIOUS EMISSION

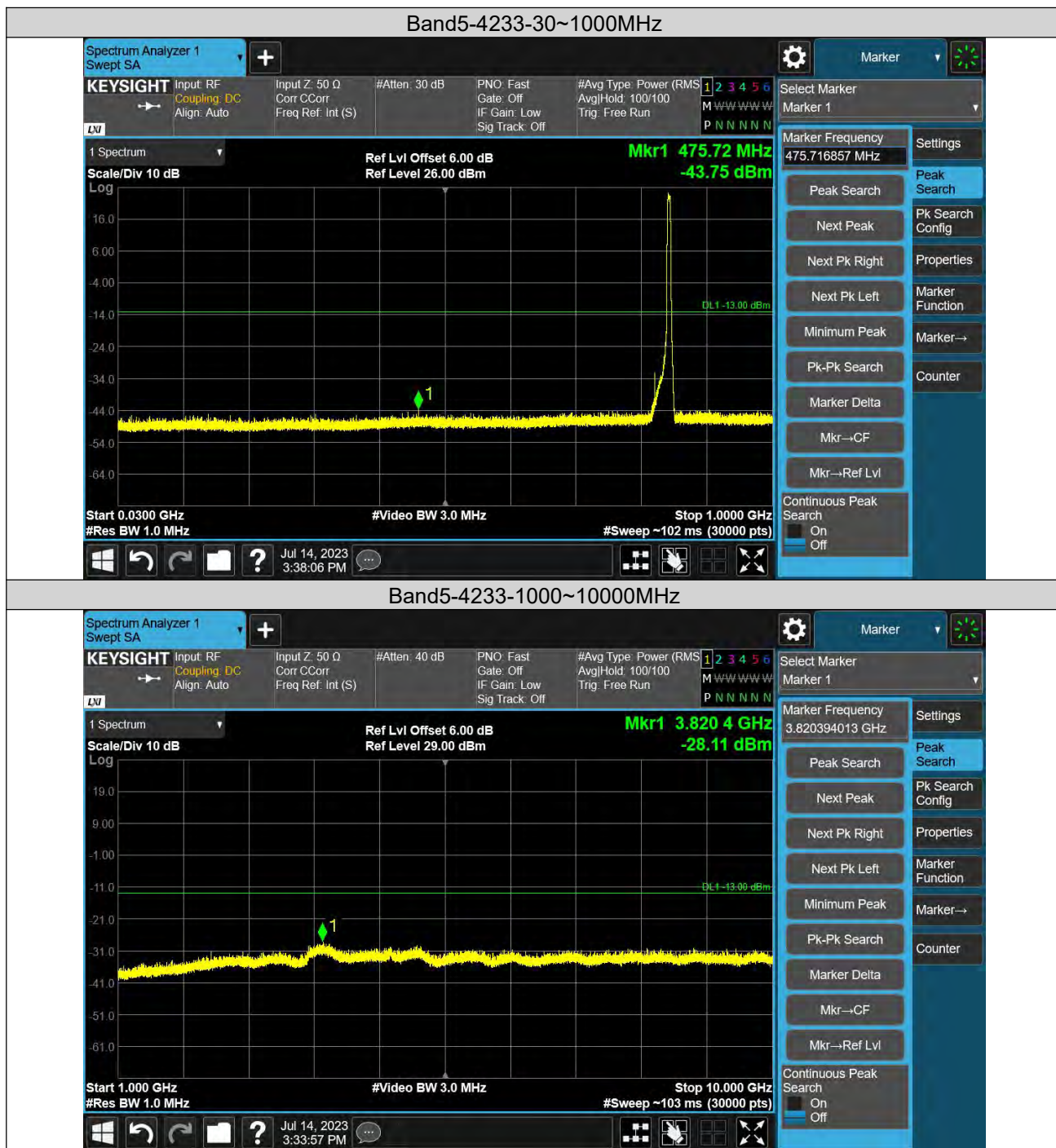
Test Result

Band	Channel	Frequency Range (Mhz)	Frequency (MHz)	Result (dBm)	Limit (dBm)	Verdict
Band5	4132	30~1000MHz	875.42	-43.28	-13	PASS
Band5	4132	1000~10000MHz	3788	-28.05	-13	PASS
Band5	4182	30~1000MHz	960.94	-42.58	-13	PASS
Band5	4182	1000~10000MHz	3868.4	-27.89	-13	PASS
Band5	4233	30~1000MHz	475.72	-43.75	-13	PASS
Band5	4233	1000~10000MHz	3820.4	-28.11	-13	PASS

Test Graphs







FREQUENCY STABILITY

Test Result

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	4132	VL	NT	-7.17	-0.008676	±2.5	PASS
Band5	4132	VN	NT	5.21	0.006304	±2.5	PASS
Band5	4132	VH	NT	3.9	0.004719	±2.5	PASS
Band5	4182	VL	NT	4.73	0.005654	±2.5	PASS
Band5	4182	VN	NT	-3.3	-0.003945	±2.5	PASS
Band5	4182	VH	NT	8.71	0.010411	±2.5	PASS
Band5	4233	VL	NT	-9.73	-0.011493	±2.5	PASS
Band5	4233	VN	NT	-3.03	-0.003579	±2.5	PASS
Band5	4233	VH	NT	-3.05	-0.003603	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	826.4	NV	-30	-1.5	-0.001815	±2.5	PASS
Band5	826.4	NV	-20	-7.26	-0.008785	±2.5	PASS
Band5	826.4	NV	-10	-5.05	-0.006092	±2.5	PASS
Band5	826.4	NV	0	0.76	0.000920	±2.5	PASS
Band5	826.4	NV	10	-7.18	-0.008688	±2.5	PASS
Band5	826.4	NV	20	-1.52	-0.001839	±2.5	PASS
Band5	826.4	NV	30	-4	-0.004840	±2.5	PASS
Band5	826.4	NV	40	-3.64	-0.004405	±2.5	PASS
Band5	826.4	NV	50	6.36	0.007696	±2.5	PASS
Band5	836.6	NV	-30	-6.54	-0.007817	±2.5	PASS
Band5	836.6	NV	-20	-8.13	-0.009718	±2.5	PASS
Band5	836.6	NV	0	-4.28	-0.005116	±2.5	PASS
Band5	836.6	NV	-10	-13.35	-0.015959	±2.5	PASS
Band5	836.6	NV	10	4.55	0.005439	±2.5	PASS
Band5	836.6	NV	20	-2.96	-0.003538	±2.5	PASS
Band5	836.6	NV	30	-1.8	-0.002152	±2.5	PASS
Band5	836.6	NV	40	-5.97	-0.007136	±2.5	PASS
Band5	836.6	NV	50	-0.02	-0.000024	±2.5	PASS
Band5	846.6	NV	-30	-2.11	-0.002492	±2.5	PASS
Band5	846.6	NV	-20	3.72	0.004394	±2.5	PASS
Band5	846.6	NV	-10	4.43	0.005249	±2.5	PASS
Band5	846.6	NV	0	-6.49	-0.007666	±2.5	PASS
Band5	846.6	NV	10	1.3	0.001536	±2.5	PASS
Band5	846.6	NV	20	6.95	0.008209	±2.5	PASS
Band5	846.6	NV	30	-6.92	-0.008174	±2.5	PASS
Band5	846.6	NV	40	-7.28	-0.008599	±2.5	PASS
Band5	846.6	NV	50	2.28	0.002693	±2.5	PASS



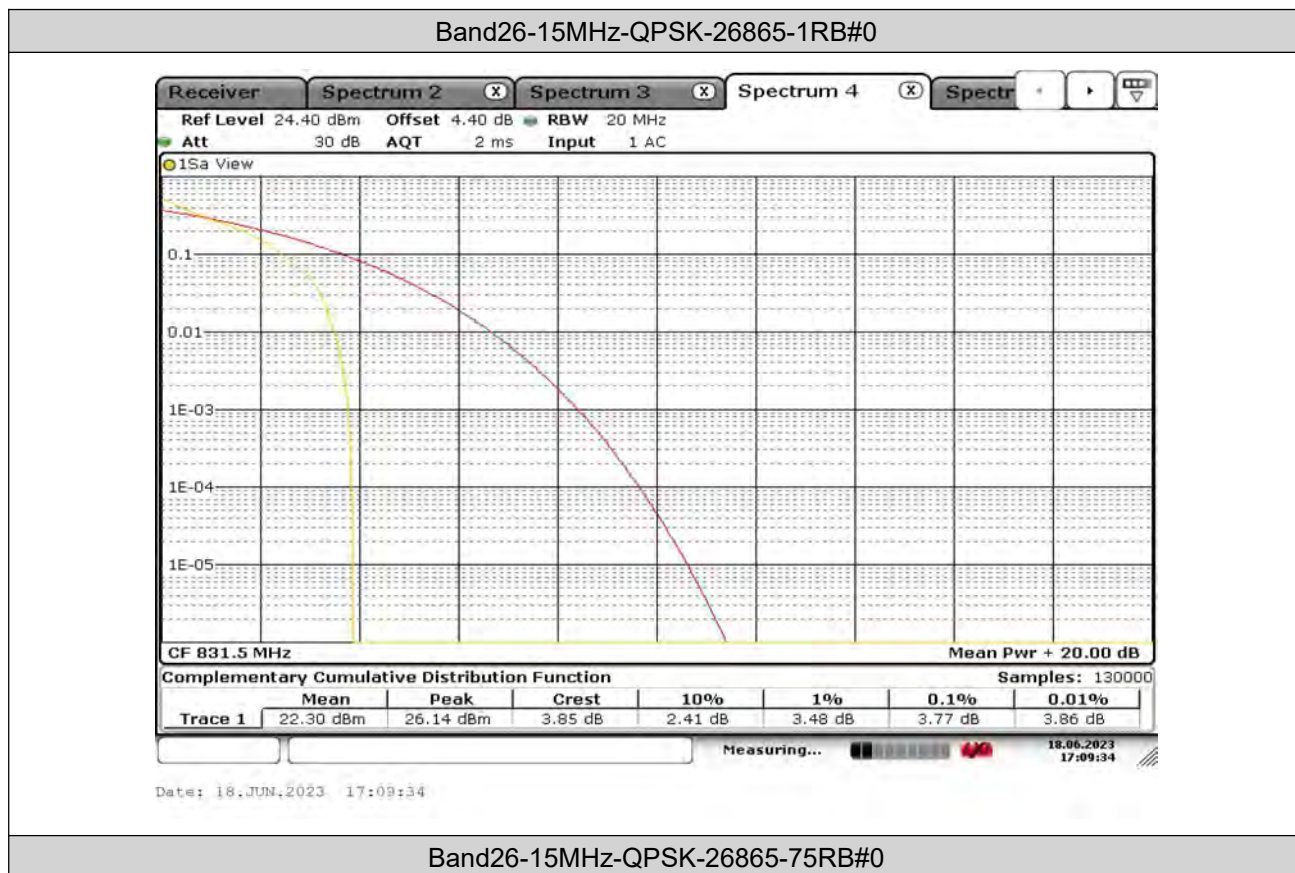
LTE BAND26

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band26	15MHz	QPSK	26865	1RB#0	3.77	13	PASS
Band26	15MHz	QPSK	26865	75RB#0	5.01	13	PASS
Band26	15MHz	QPSK	26915	1RB#0	4.35	13	PASS
Band26	15MHz	QPSK	26915	75RB#0	5.33	13	PASS
Band26	15MHz	QPSK	26965	1RB#0	4.00	13	PASS
Band26	15MHz	QPSK	26965	75RB#0	5.30	13	PASS
Band26	15MHz	16QAM	26865	1RB#0	4.78	13	PASS
Band26	15MHz	16QAM	26865	75RB#0	5.83	13	PASS
Band26	15MHz	16QAM	26915	1RB#0	5.13	13	PASS
Band26	15MHz	16QAM	26915	75RB#0	5.97	13	PASS
Band26	15MHz	16QAM	26965	1RB#0	5.07	13	PASS
Band26	15MHz	16QAM	26965	75RB#0	6.06	13	PASS
Band26	15MHz	64QAM	26865	1RB#0	6.26	13	PASS
Band26	15MHz	64QAM	26865	75RB#0	6.29	13	PASS
Band26	15MHz	64QAM	26915	1RB#0	5.86	13	PASS
Band26	15MHz	64QAM	26915	75RB#0	6.38	13	PASS
Band26	15MHz	64QAM	26965	1RB#0	5.57	13	PASS
Band26	15MHz	64QAM	26965	75RB#0	6.46	13	PASS

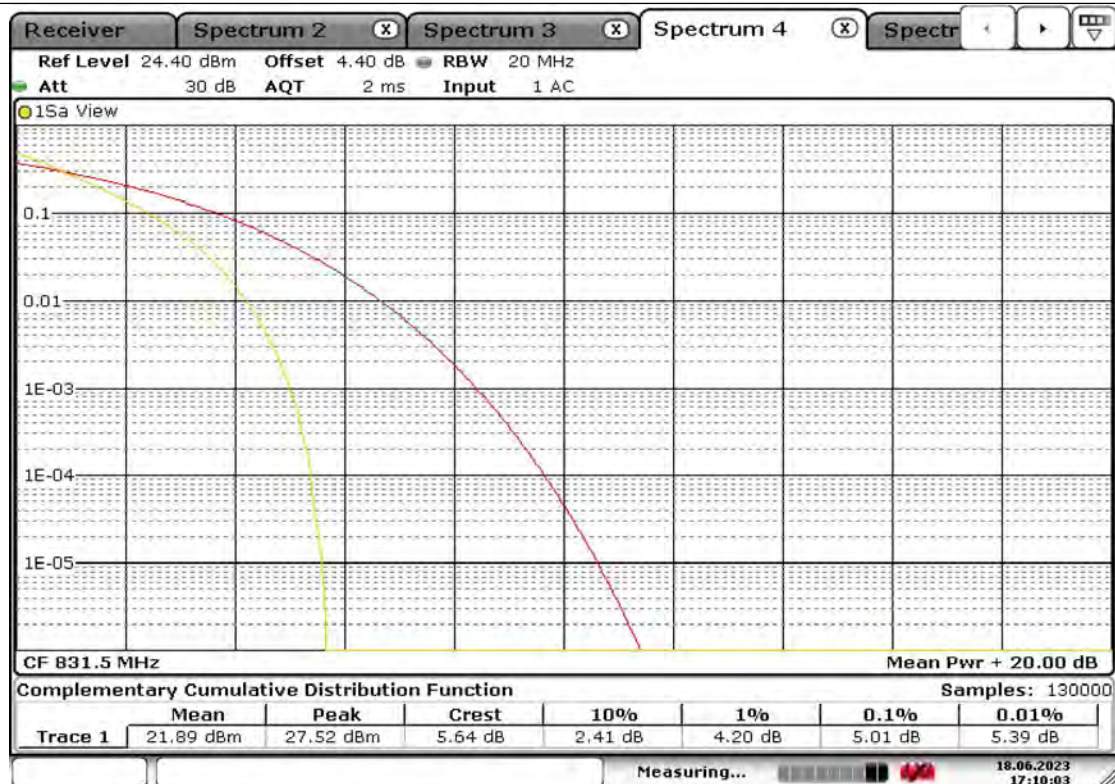
Test Graphs





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VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 17:10:03

Band26-15MHz-QPSK-26915-1RB#0



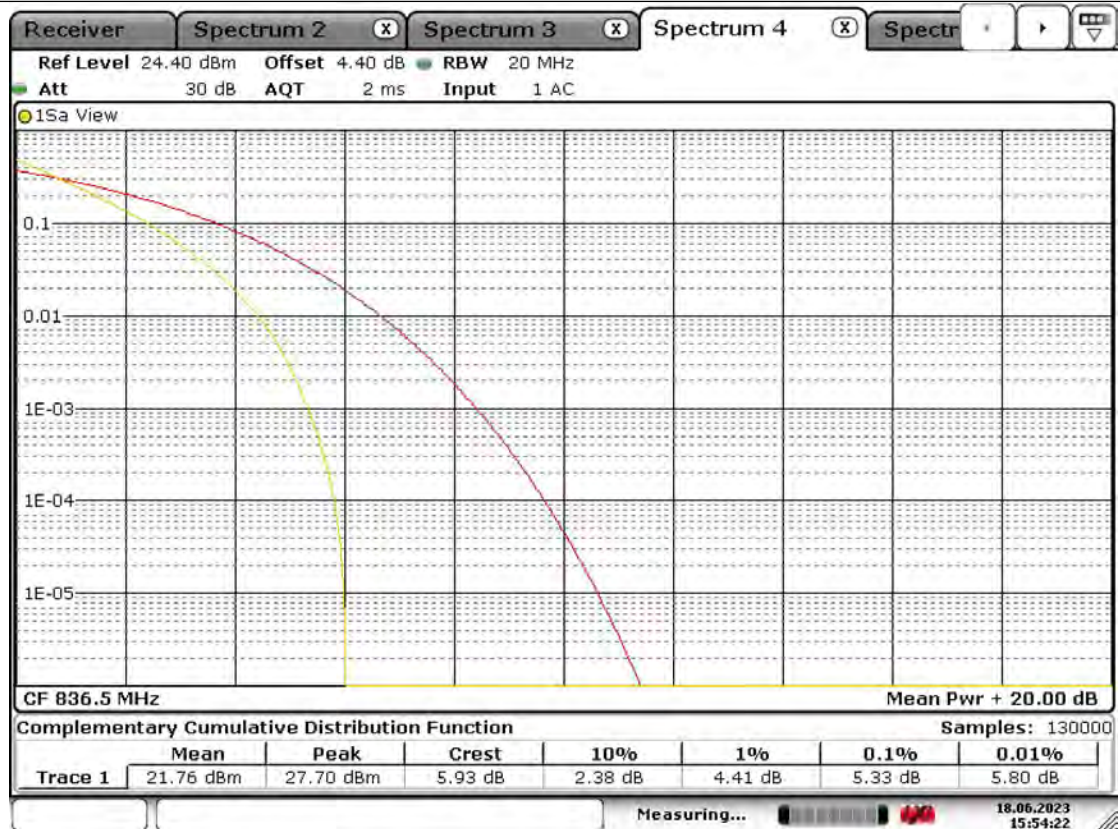
Date: 18.JUN.2023 15:54:11

Band26-15MHz-QPSK-26915-75RB#0



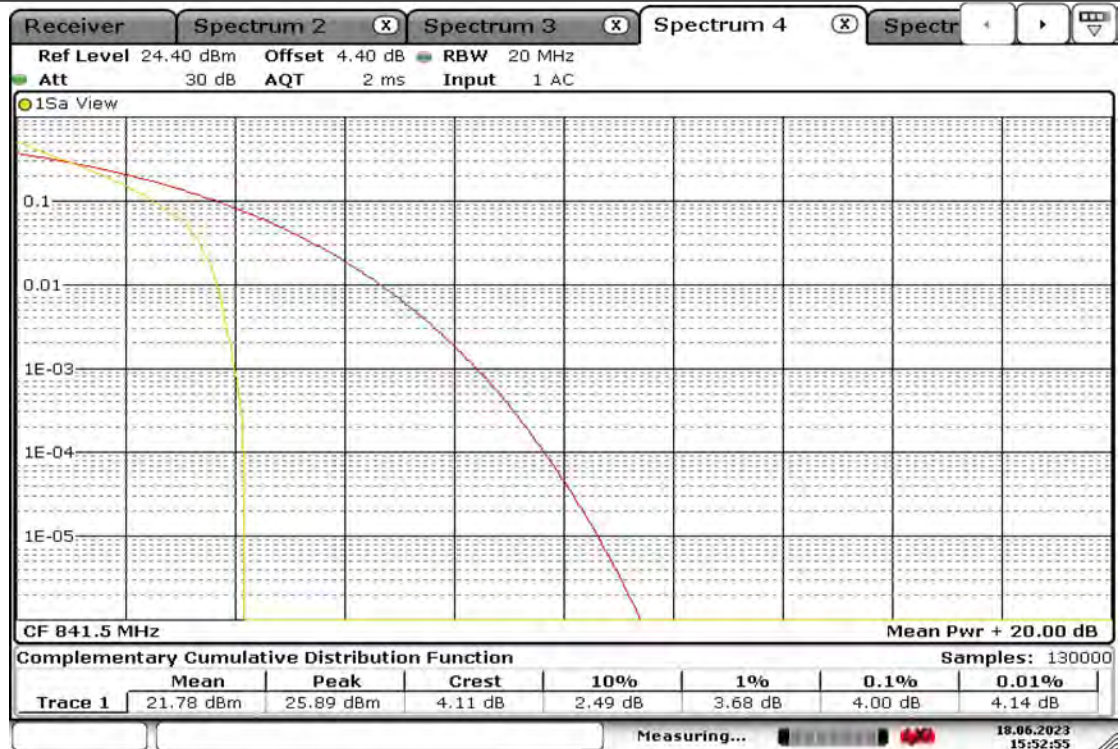
BUREAU
VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 15:54:22

Band26-15MHz-QPSK-26965-1RB#0



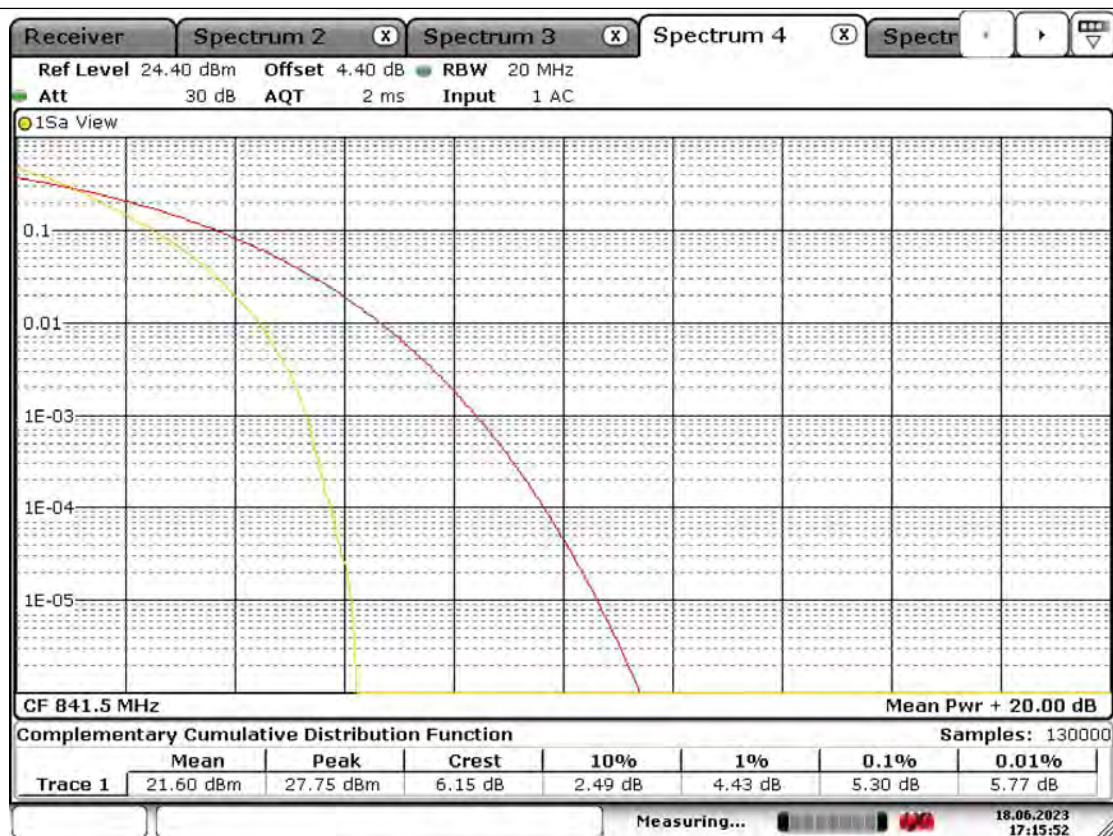
Date: 18.JUN.2023 15:52:55

Band26-15MHz-QPSK-26965-75RB#0



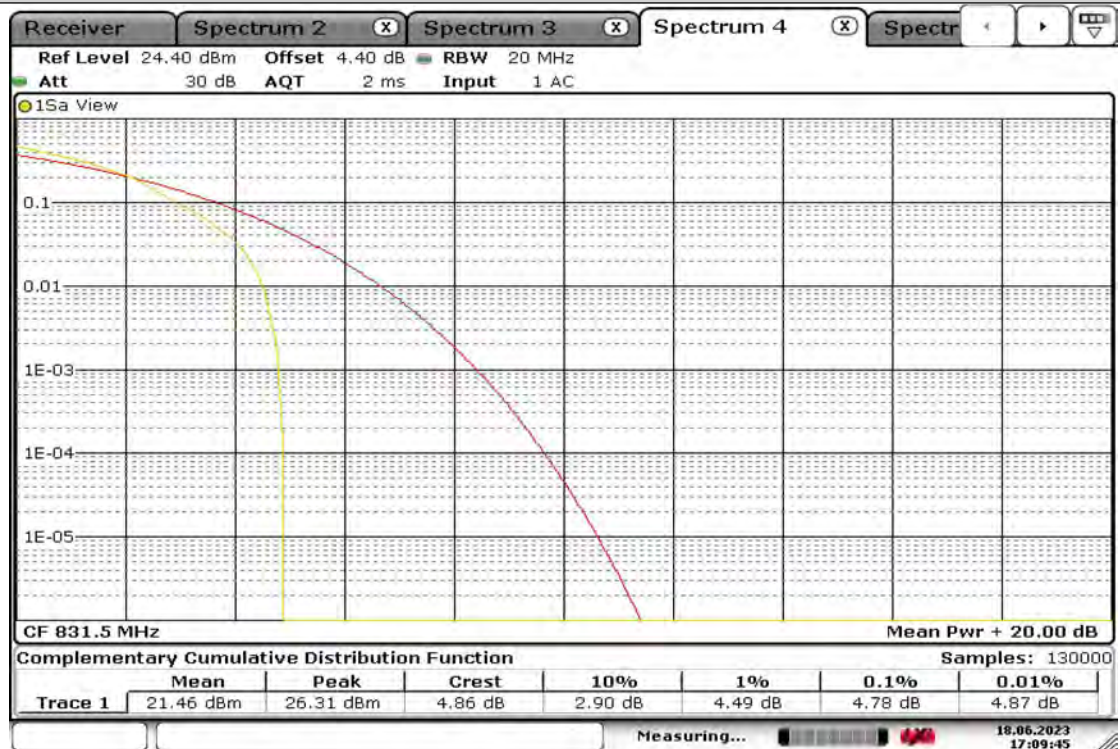
BUREAU
VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 17:15:52

Band26-15MHz-16QAM-26865-1RB#0



Date: 18.JUN.2023 17:09:45

Band26-15MHz-16QAM-26865-75RB#0

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

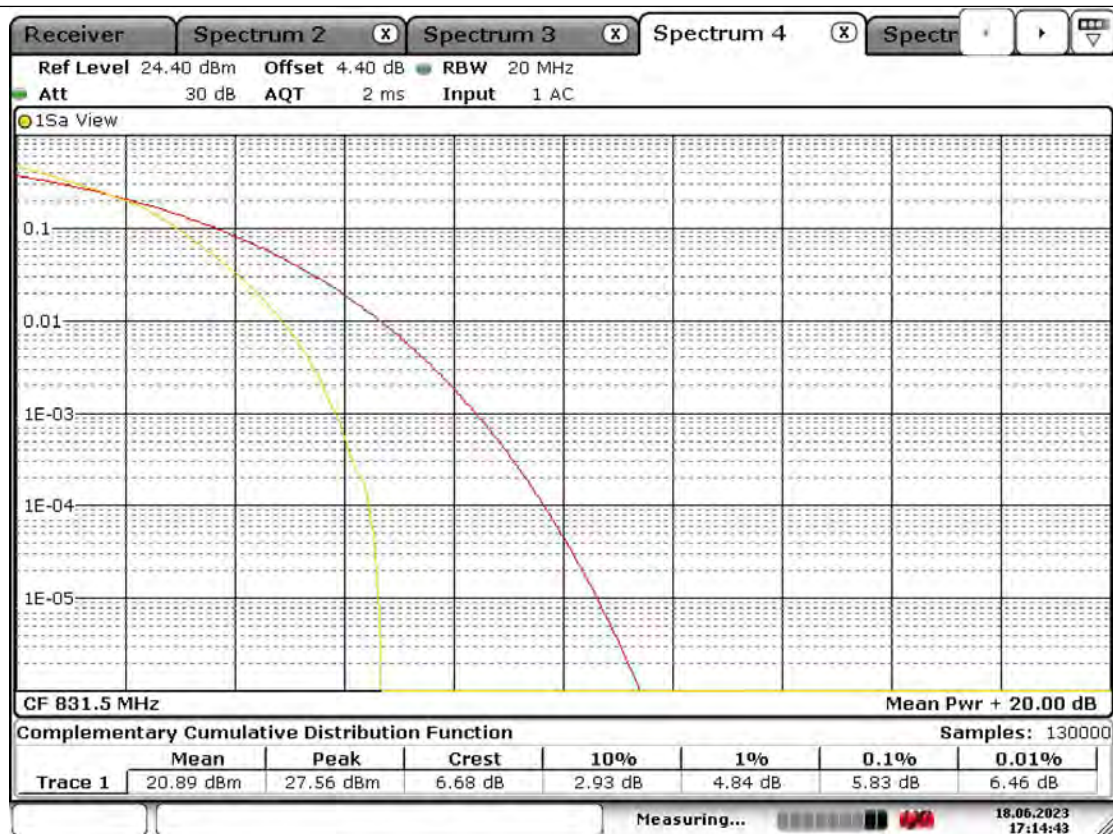
Tower N, Innovation Center, 88 Zhuyi Road,
High-tech District, Suzhou City, Anhui Province

Tel: +86 (0557) 368 1008



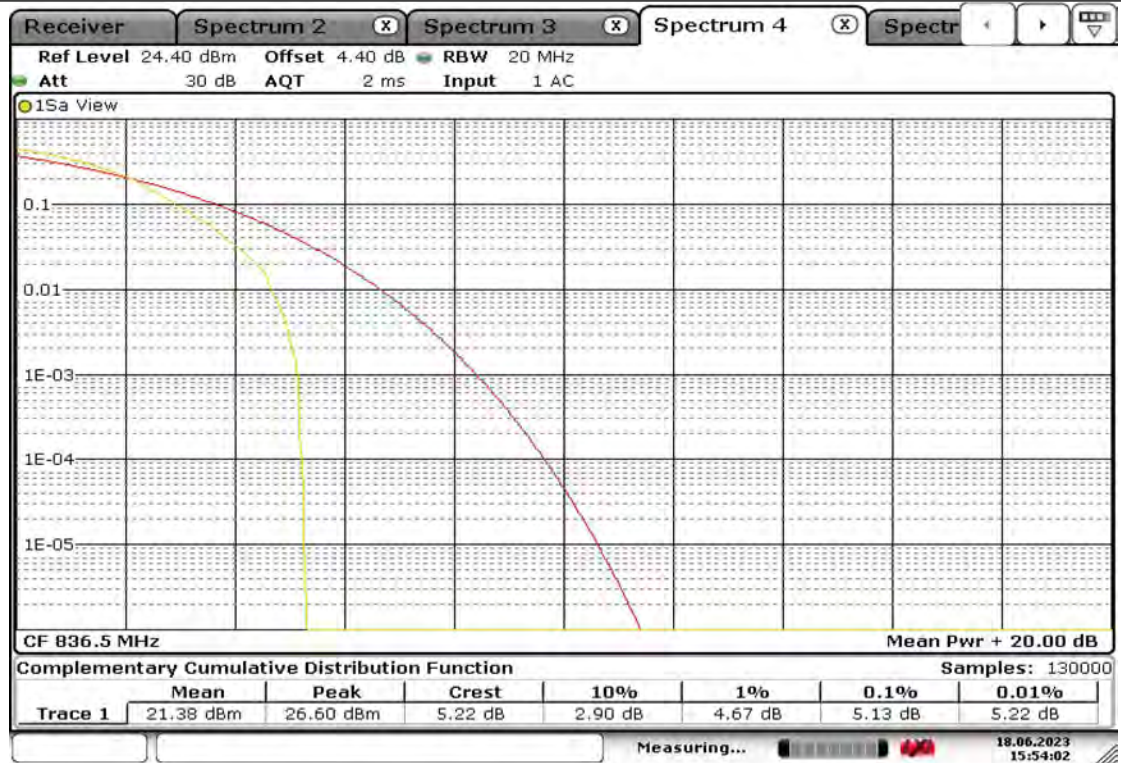
BUREAU
VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 17:14:43

Band26-15MHz-16QAM-26915-1RB#0



Date: 18.JUN.2023 15:54:02

Band26-15MHz-16QAM-26915-75RB#0

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(Suzhou) Co., Ltd.

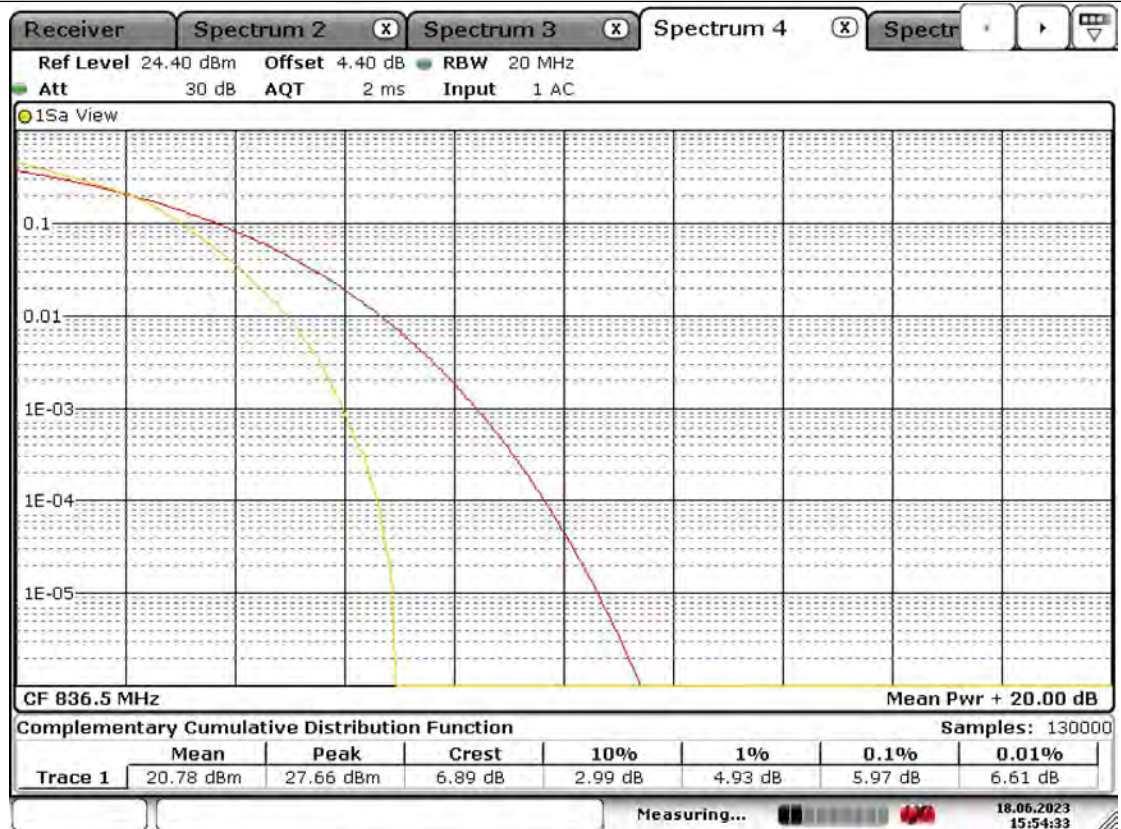
Tower N, Innovation Center, 88 Zhuyi Road,
High-tech District, Suzhou City, Anhui Province

Tel: +86 (0557) 368 1008



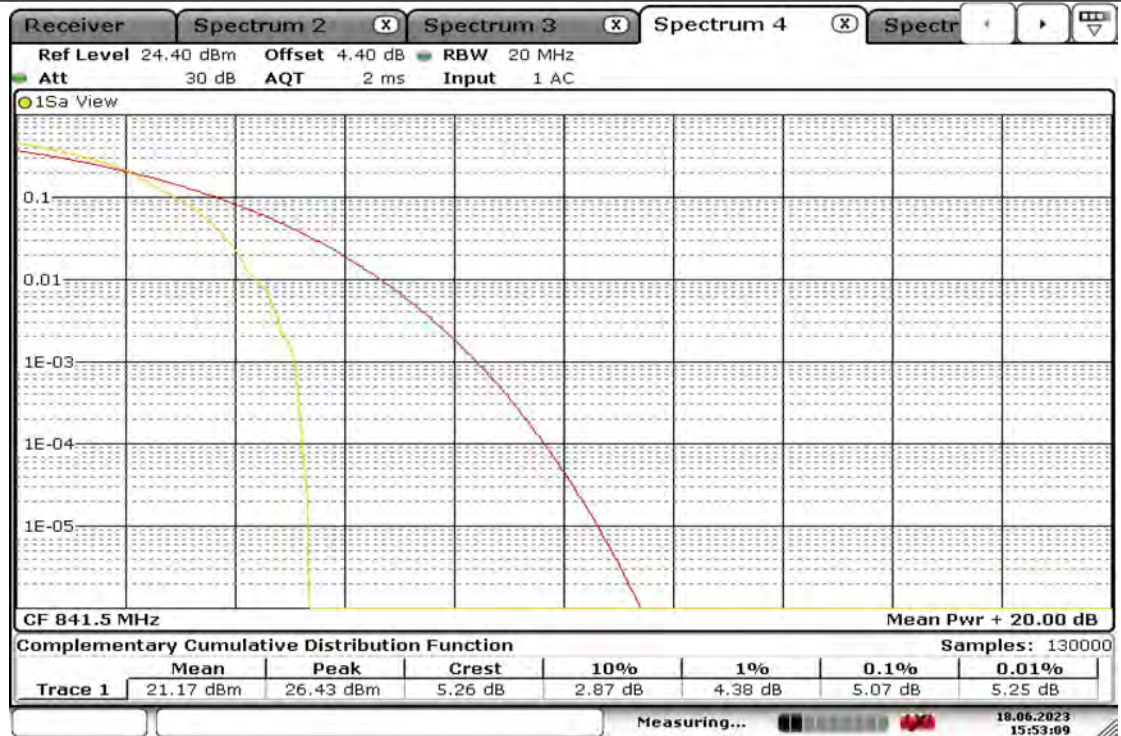
BUREAU
VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 15:54:34

Band26-15MHz-16QAM-26965-1RB#0



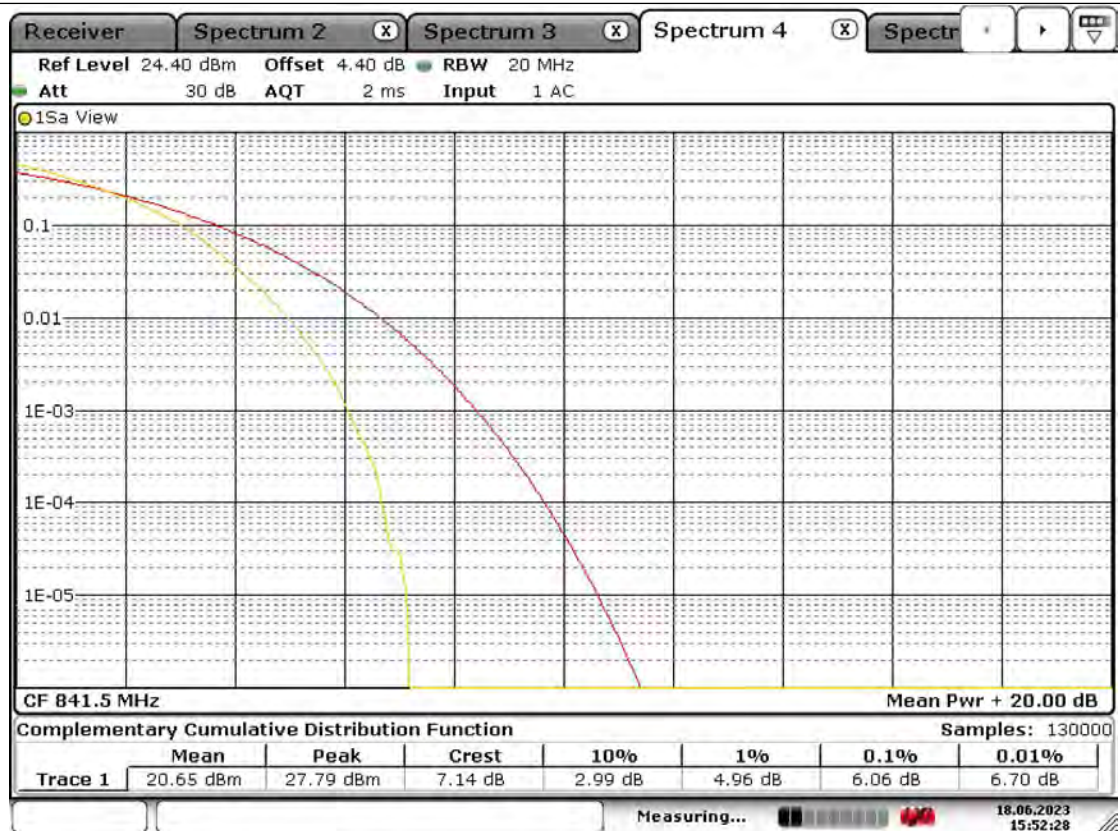
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Band26-15MHz-16QAM-26965-75RB#0



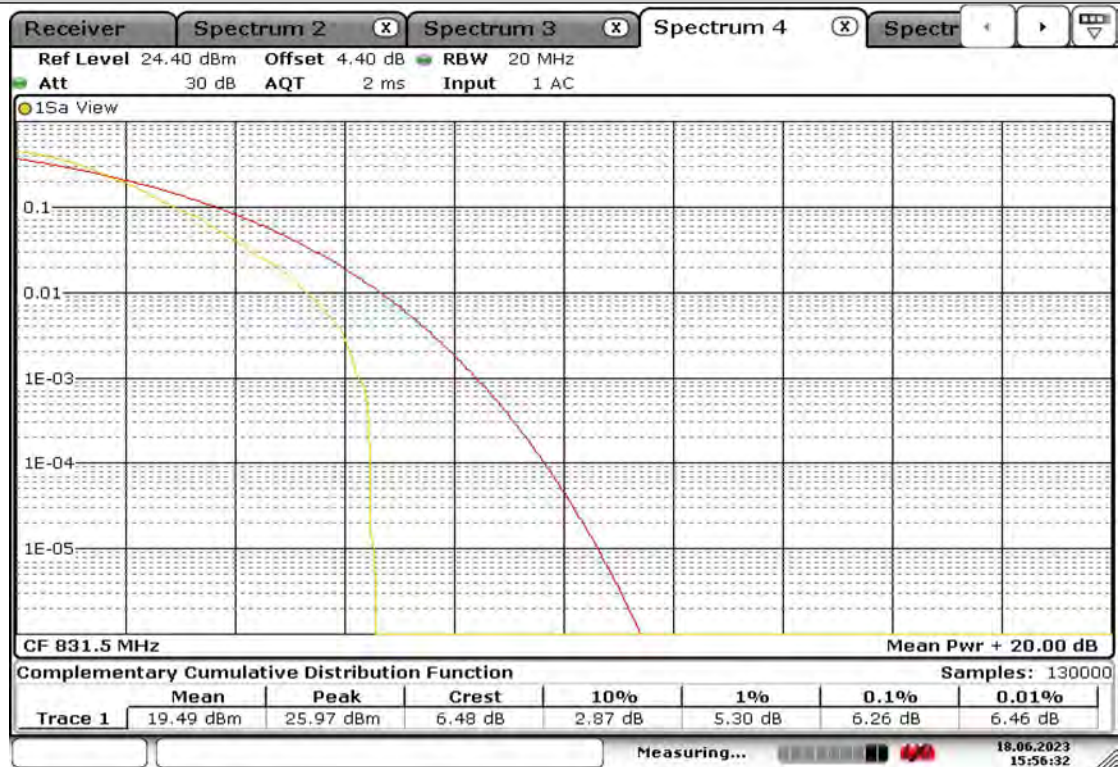
BUREAU
VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 15:52:28

Band26-15MHz-64QAM-26865-1RB#0



Date: 18.JUN.2023 15:56:32

Band26-15MHz-64QAM-26865-75RB#0

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(Suzhou) Co., Ltd.

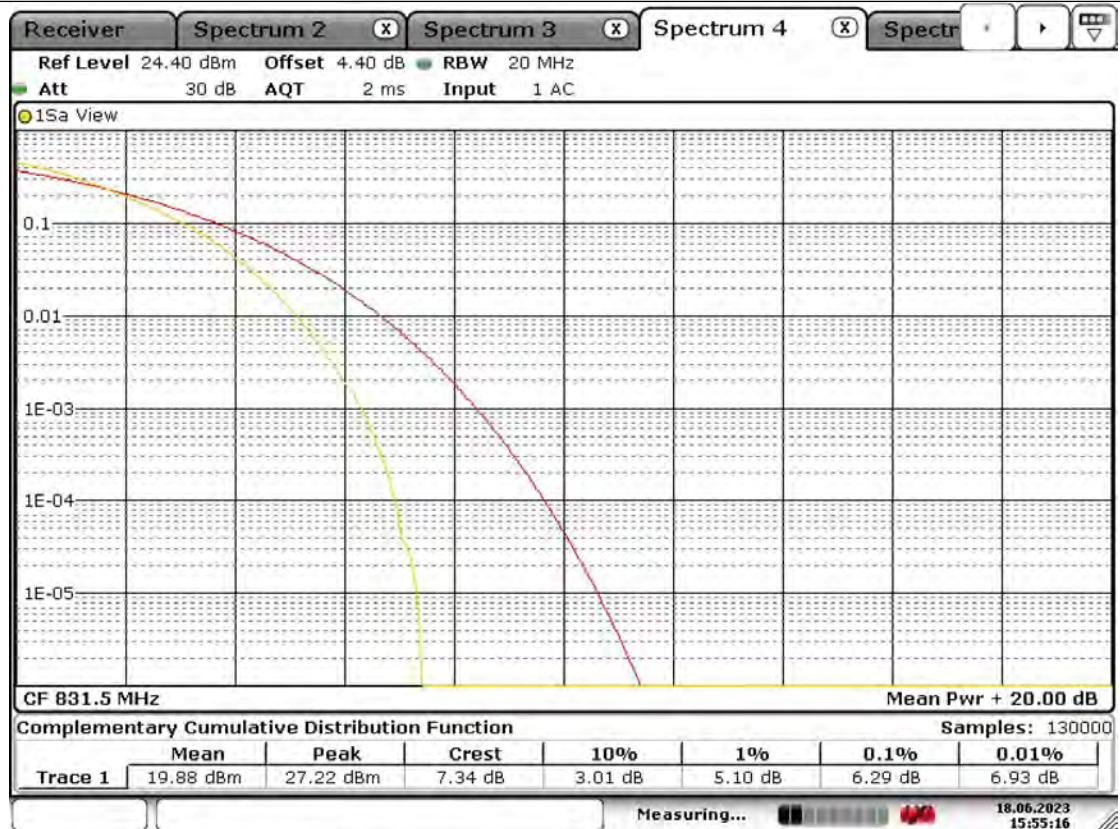
Tower N, Innovation Center, 88 Zhuyi Road,
High-tech District, Suzhou City, Anhui Province

Tel: +86 (0557) 368 1008



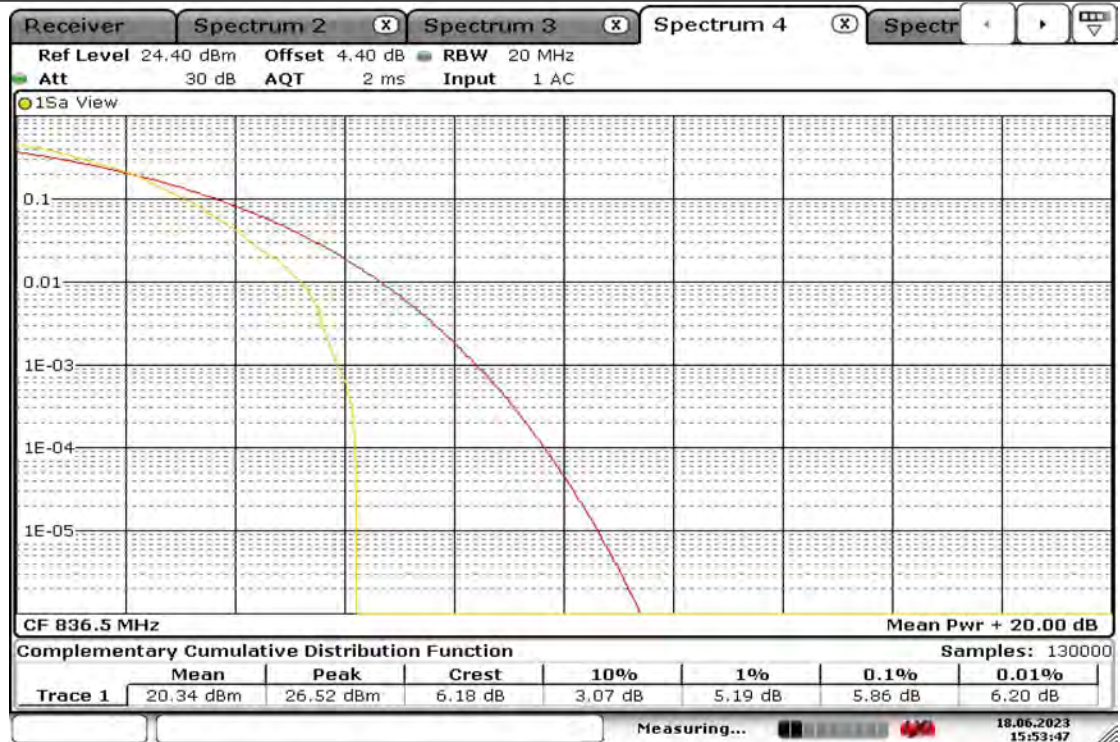
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VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 15:55:16

Band26-15MHz-64QAM-26915-1RB#0



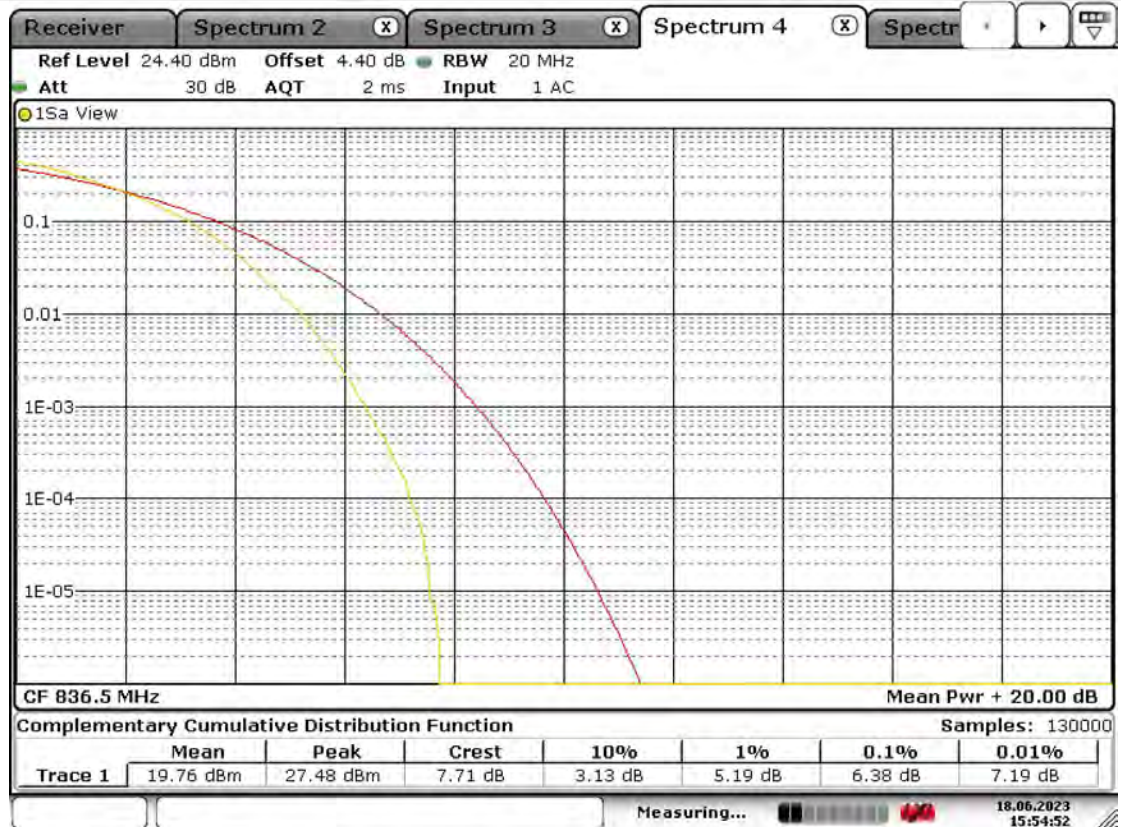
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Band26-15MHz-64QAM-26915-75RB#0



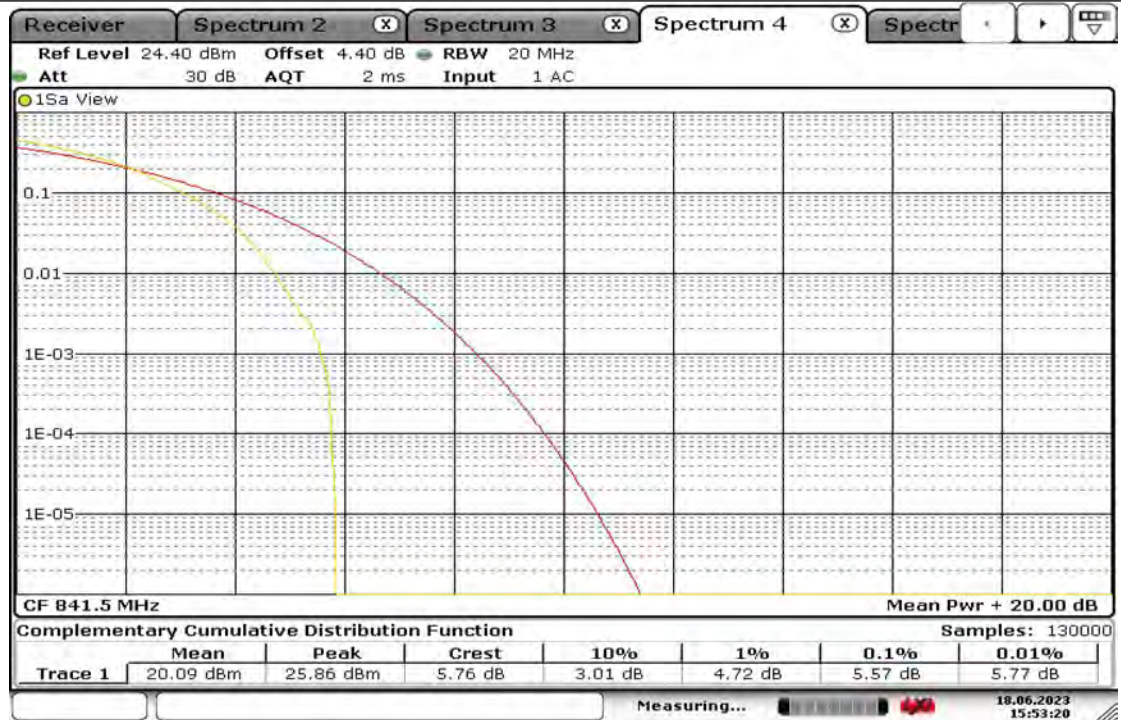
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VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 15:54:52

Band26-15MHz-64QAM-26965-1RB#0



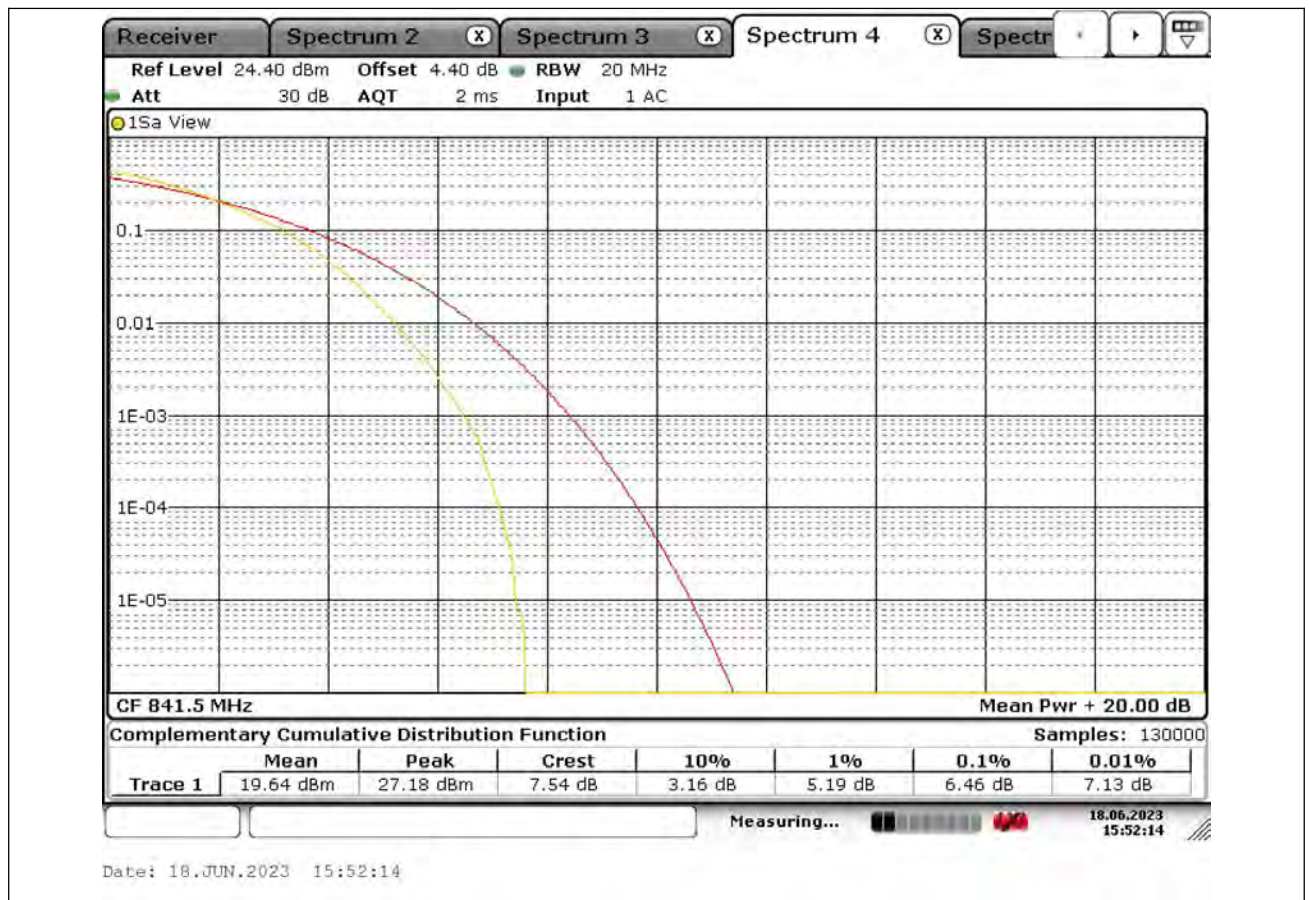
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Band26-15MHz-64QAM-26965-75RB#0



BUREAU
VERITAS

Test Report No.: PSU-QSU2306120115RF03





26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band26	1.4MHz	QPSK	26797	6RB#0	1.0860	1.2724	PASS
Band26	1.4MHz	QPSK	26915	6RB#0	1.0941	1.2805	PASS
Band26	1.4MHz	QPSK	27033	6RB#0	1.0900	1.2562	PASS
Band26	1.4MHz	16QAM	26797	6RB#0	1.0981	1.3169	PASS
Band26	1.4MHz	16QAM	26915	6RB#0	1.0900	1.2764	PASS
Band26	1.4MHz	16QAM	27033	6RB#0	1.0860	1.2967	PASS
Band26	1.4MHz	64QAM	26797	6RB#0	1.0981	1.2480	PASS
Band26	1.4MHz	64QAM	26915	6RB#0	1.1022	1.2683	PASS
Band26	1.4MHz	64QAM	27033	6RB#0	1.0941	1.2886	PASS
Band26	3MHz	QPSK	26805	15RB#0	2.7004	3.0043	PASS
Band26	3MHz	QPSK	26915	15RB#0	2.7091	2.9783	PASS
Band26	3MHz	QPSK	27025	15RB#0	2.7004	2.9696	PASS
Band26	3MHz	16QAM	26805	15RB#0	2.7178	2.9783	PASS
Band26	3MHz	16QAM	26915	15RB#0	2.7004	2.9783	PASS
Band26	3MHz	16QAM	27025	15RB#0	2.7091	2.9522	PASS
Band26	3MHz	64QAM	26805	15RB#0	2.7091	2.9696	PASS
Band26	3MHz	64QAM	26915	15RB#0	2.7091	2.9609	PASS
Band26	3MHz	64QAM	27025	15RB#0	2.7178	2.9870	PASS
Band26	5MHz	QPSK	26815	25RB#0	4.4863	4.9930	PASS
Band26	5MHz	QPSK	26915	25RB#0	4.4863	4.8190	PASS
Band26	5MHz	QPSK	27015	25RB#0	4.4718	4.9200	PASS
Band26	5MHz	16QAM	26815	25RB#0	4.4718	4.8630	PASS
Band26	5MHz	16QAM	26915	25RB#0	4.4863	4.8630	PASS
Band26	5MHz	16QAM	27015	25RB#0	4.4863	4.9350	PASS
Band26	5MHz	64QAM	26815	25RB#0	4.4863	4.8910	PASS
Band26	5MHz	64QAM	26915	25RB#0	4.4863	4.8050	PASS
Band26	5MHz	64QAM	27015	25RB#0	4.4573	4.8910	PASS
Band26	10MHz	QPSK	26840	50RB#0	9.0883	9.7830	PASS
Band26	10MHz	QPSK	26915	50RB#0	9.0304	9.6960	PASS
Band26	10MHz	QPSK	26990	50RB#0	9.0593	9.7540	PASS
Band26	10MHz	16QAM	26840	50RB#0	9.0014	9.7540	PASS
Band26	10MHz	16QAM	26915	50RB#0	9.0014	9.8120	PASS
Band26	10MHz	16QAM	26990	50RB#0	9.0304	9.7830	PASS
Band26	10MHz	64QAM	26840	50RB#0	9.0593	9.9570	PASS
Band26	10MHz	64QAM	26915	50RB#0	9.0304	9.7830	PASS
Band26	10MHz	64QAM	26990	50RB#0	9.0304	9.8410	PASS
Band26	15MHz	QPSK	26865	75RB#0	13.5022	14.4140	PASS
Band26	15MHz	QPSK	26915	75RB#0	13.4588	14.4570	PASS
Band26	15MHz	QPSK	26965	75RB#0	13.4153	14.3270	PASS
Band26	15MHz	16QAM	26865	75RB#0	13.4588	14.5440	PASS
Band26	15MHz	16QAM	26915	75RB#0	13.4588	14.5440	PASS
Band26	15MHz	16QAM	26965	75RB#0	13.4153	14.5440	PASS
Band26	15MHz	64QAM	26865	75RB#0	13.4153	14.2400	PASS



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Band26	15MHz	64QAM	26915	75RB#0	13.5022	14.4570	PASS
Band26	15MHz	64QAM	26965	75RB#0	13.4588	14.2840	PASS

Test Graphs

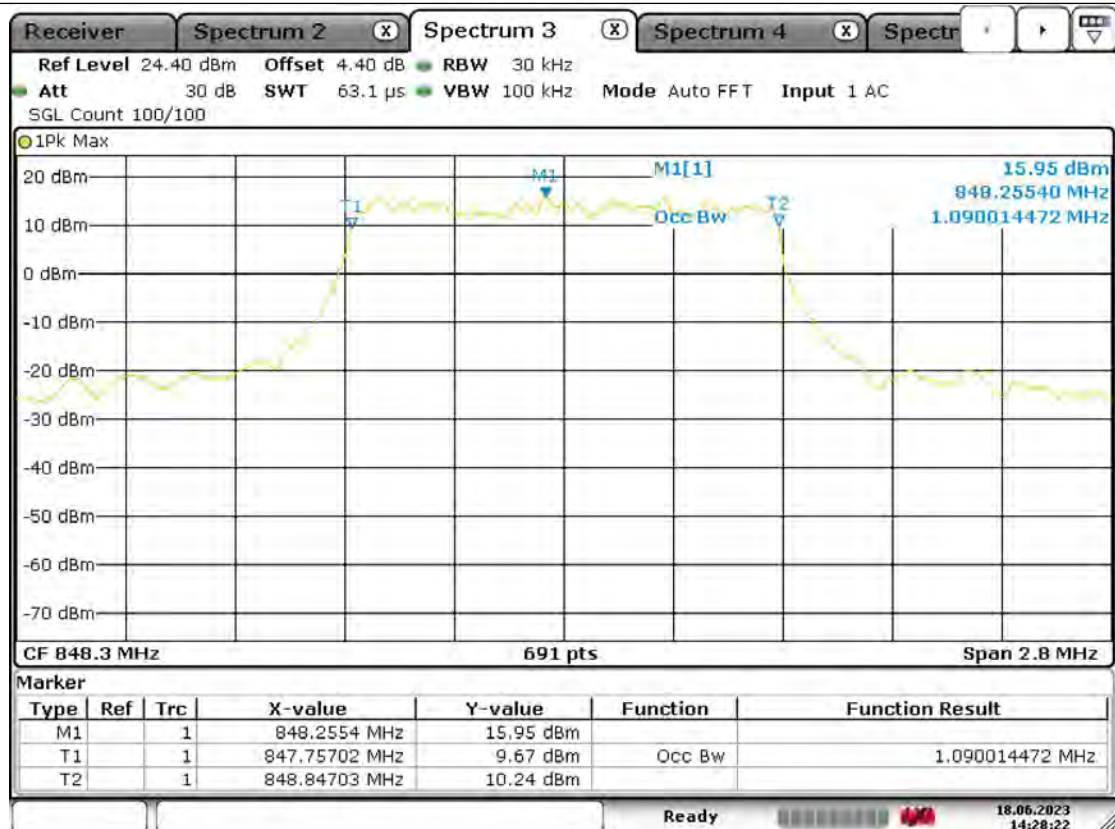
Occupied Bandwidth





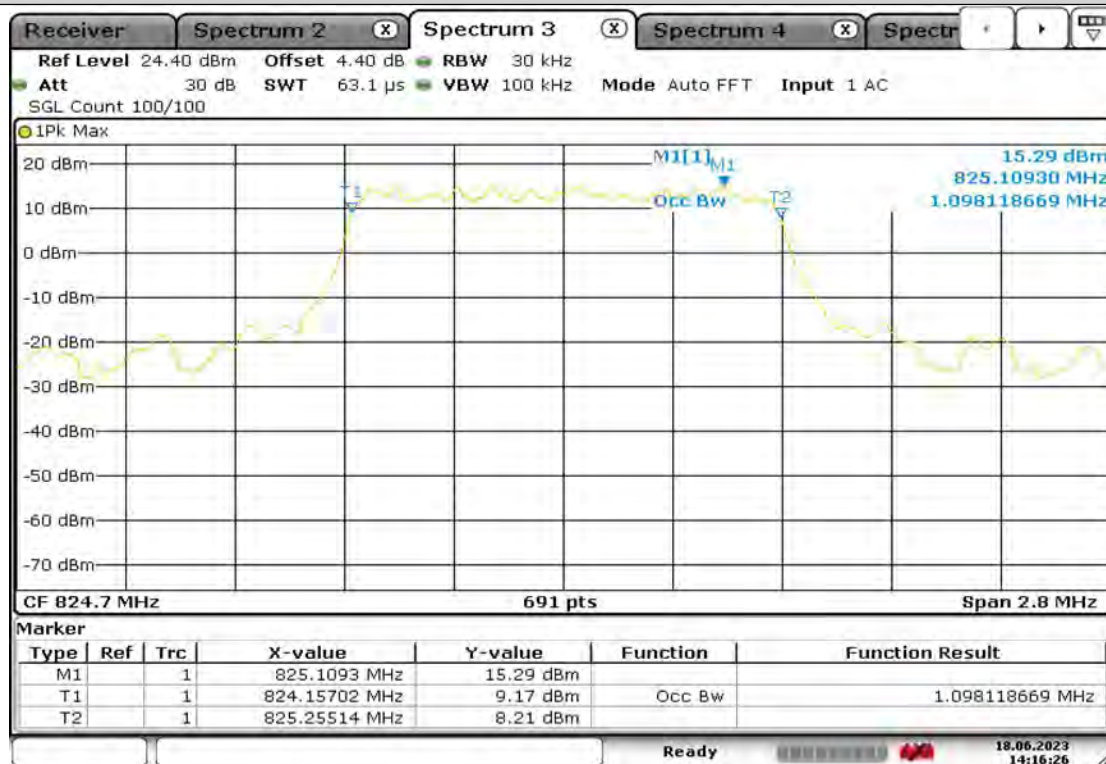
BUREAU
VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 14:28:22

Band26-1.4MHz-16QAM-26797-6RB#0



Date: 18.JUN.2023 14:16:26

Band26-1.4MHz-16QAM-26915-6RB#0

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

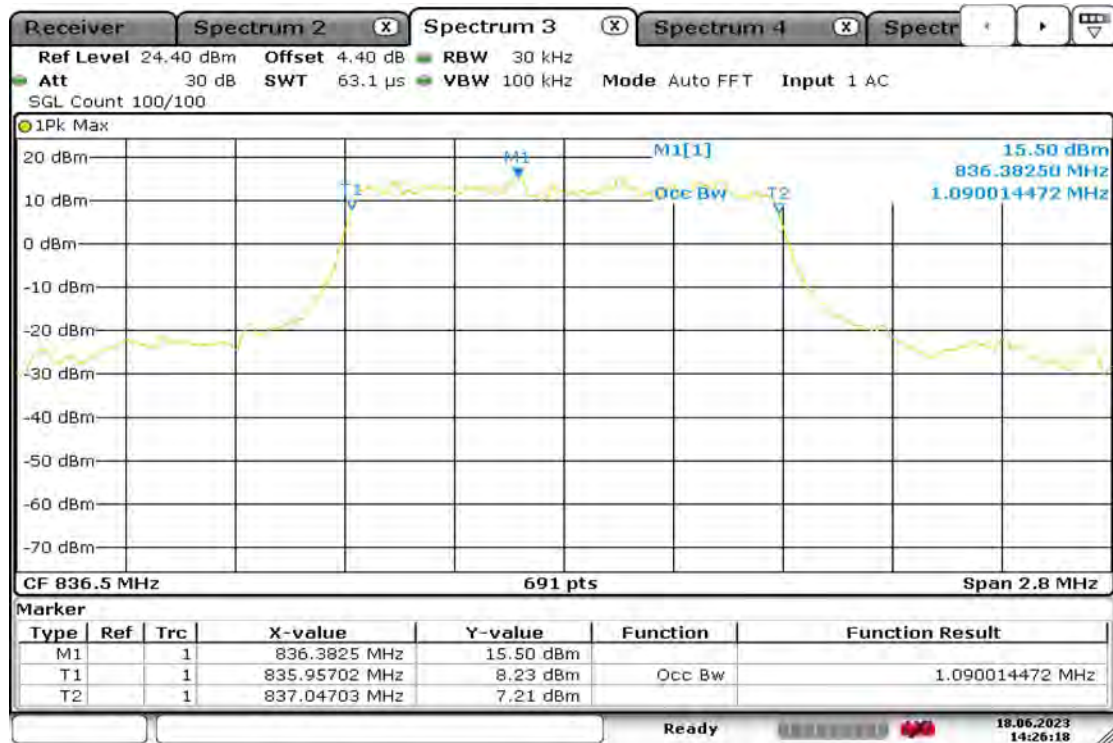
Tower N, Innovation Center, 88 Zhuyi Road,
High-tech District, Suzhou City, Anhui Province

Tel: +86 (0557) 368 1008



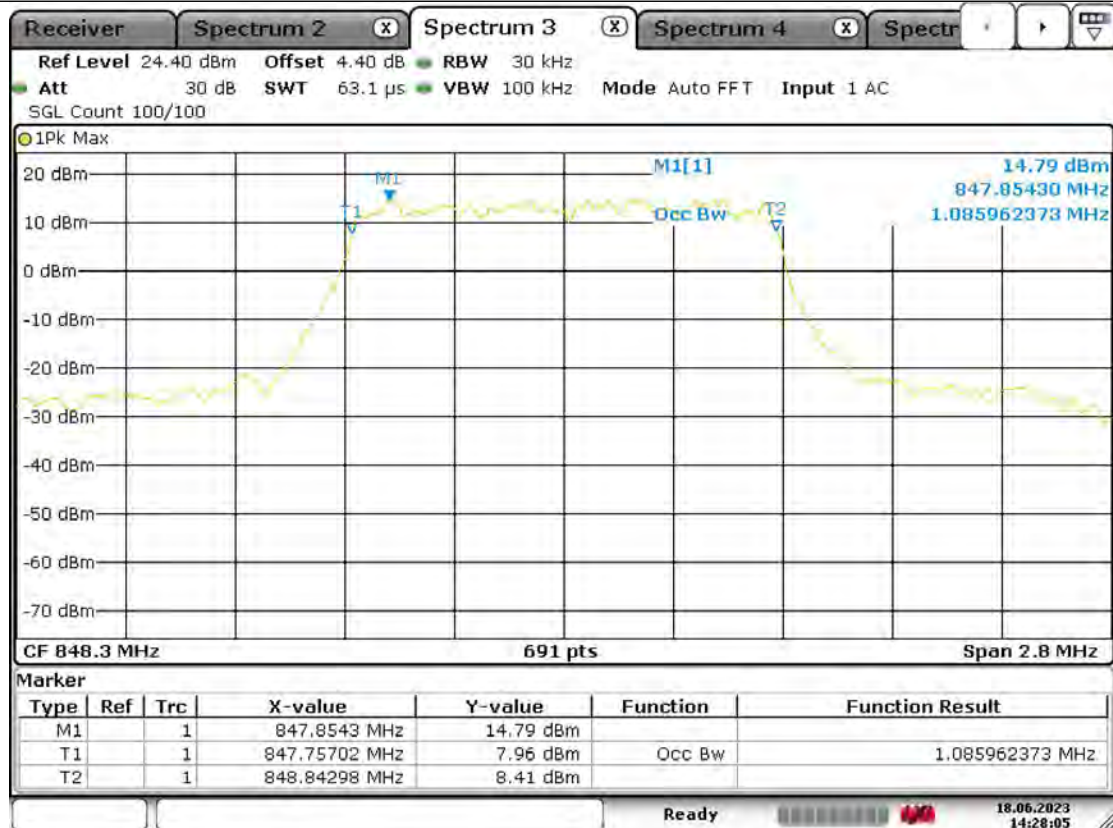
BUREAU
VERITAS

Test Report No.: PSU-QSU2306120115RF03



Date: 18.JUN.2023 14:26:18

Band26-1.4MHz-16QAM-27033-6RB#0



Date: 18.JUN.2023 14:28:05