



RF TEST REPORT

Report No.: SET2022-06944

Product Name: METAVERTU 5G digital mobile phone

Model No.: VTL-202201

FCC ID: 2A6IQ-VTL202201

IC: 28629-VTL202201

Applicant: VERTU INTERNATIONAL CORPORATION LIMITED

Address: 25 St Thomas Street, Winchester, Hampshire, SO23 9HJ, United Kingdom

Dates of Testing: 05/09/2022 - 06/15/2022

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.

Tel: 86 755 26627338 **Fax:** 86 755 26627238

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Test Report

Product: METAVERTU 5G digital mobile phone

Brand Name.....: VERTU

Trade Name: VERTU

Applicant.....: VERTU INTERNATIONAL CORPORATION LIMITED

Applicant Address: 25 St Thomas Street, Winchester, Hampshire, SO23 9HJ, United Kingdom

Manufacturer: Chengdu Vertu Business and Service Management Co., Ltd.

Manufacturer Address: 1601,16th Floor, No. 1577 Middle Section of Tianfu Avenue, Chengdu High-tech Zone, China (Sichuan) Pilot Free Trade Zone

Test Standards: 47 CFR Part 2/22/24/27
RSS-Gen, Issue 5: Feb 2021
RSS-132, Issue 3: Jan 2013
RSS-133, Issue 6: Jan 2018
RSS-139, issue 3: Jul 2015

Test Result.....: Pass

Tested by:  2022.08.01
Chuiwang Zhang, Test Engineer

Reviewed by:  2022.08.01
Chris You, Senior Engineer

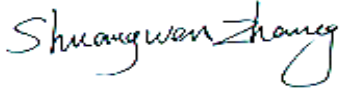
Approved by:  2022.08.01
Shuangwen Zhang, Manager

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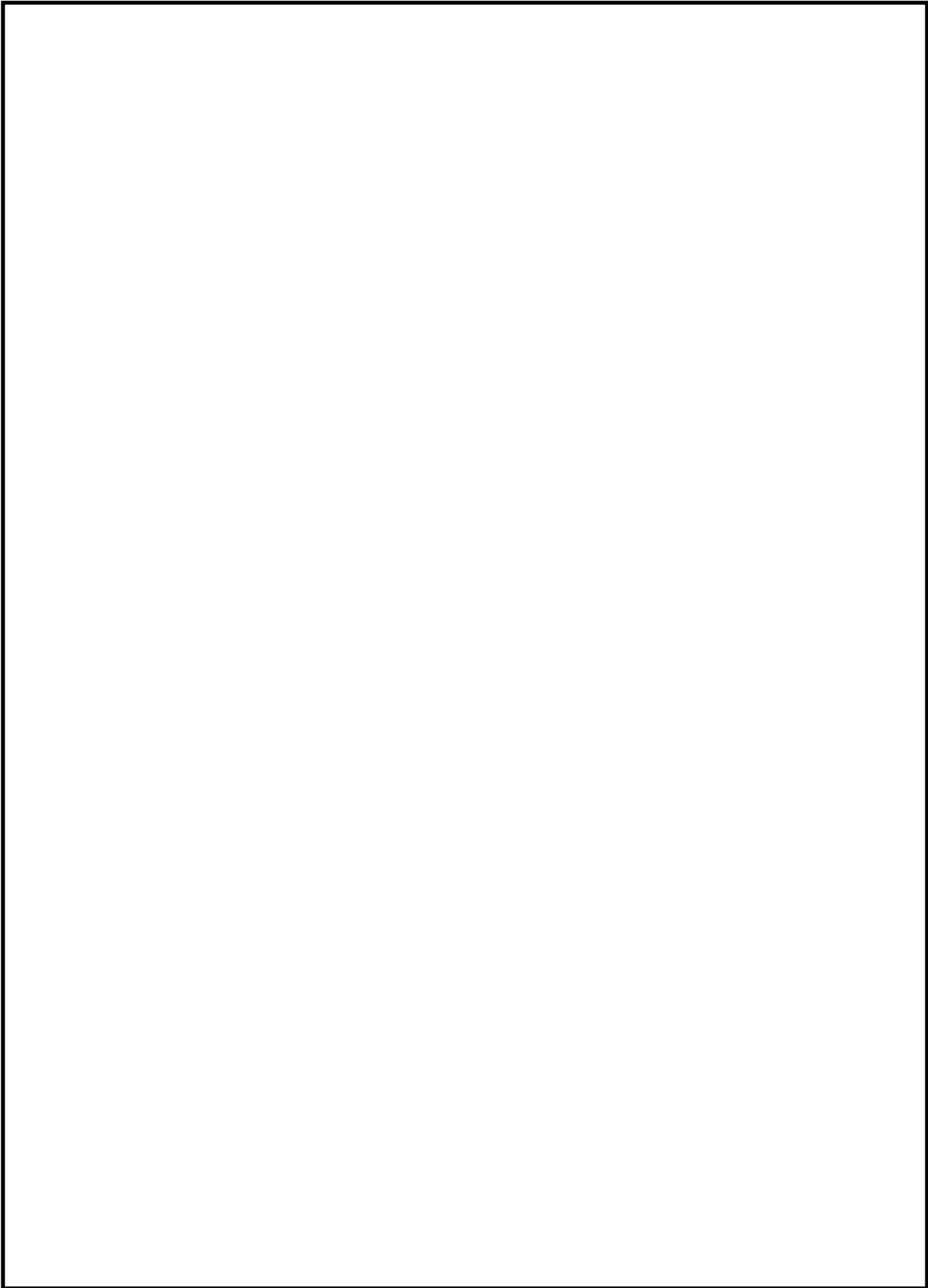


Change History		
Issue	Date	Reason for change
1.0	2022.08.01	First edition

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	METAVERTU 5G digital mobile phone	
Model No.	VTL-202201	
Hardware Version	P10	
Software Version	12.0.0_6.01.01.01	
EUT supports Radios application	GSM/GPRS/EDGE/WCDMA/HSPA	
Multi Slot Class	GPRS: Multi slot Class 33, EDGE: Multi slot Class 33	
Frequency Range	GSM 850:	Tx: 824.2 - 848.8MHz (at intervals of 200kHz); Rx: 869.2 - 893.8MHz (at intervals of 200kHz)
	PCS 1900:	Tx: 1850.2 - 1909.8MHz (at intervals of 200kHz); Rx: 1930.2 - 1989.8MHz (at intervals of 200kHz)
	WCDMA 850:	Tx: 826.4 - 846.6MHz (at intervals of 200kHz); Rx: 871.4 - 891.6MHz (at intervals of 200kHz)
	WCDMA 1900:	Tx: 1852.4 - 1907.6MHz (at intervals of 200kHz); Rx: 1932.4 - 1987.6MHz (at intervals of 200kHz)
	WCDMA 1700:	Tx: 1712.4 - 1752.6MHz (at intervals of 200kHz); Rx: 2112.4 - 2152.6MHz (at intervals of 200kHz)
Maximum Output Power to Antenna	GSM: 850(Ant1): 32.76dBm, EDGE 850: 26.41dBm PCS: 1900(Ant2): 30.04dBm, EDGE 1900: 25.77dBm PCS: 1900(Ant4): 28.14dBm, EDGE 1900: 24.17dBm WCDMA 850(Ant1): 23.75dBm WCDMA 1900(Ant2): 24.34dBm WCDMA 1900(Ant4): 23.56dBm WCDMA 1700(Ant2): 24.14dBm WCDMA 1700(Ant4): 23.58dBm	
Type of Modulation	GSM / GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK(Uplink) HSDPA: QPSK(Uplink) HSUPA: QPSK(Uplink)	
Antenna Type	Internal Antenna	
Antenna gain	Antenna 1	GSM 850/WCDMA 850: -6.0 dBi
	Antenna 2	PCS 1900/WCDMA 1900: -2.1 dBi, WCDMA 1700: -1.1 dBi
	Antenna 4	PCS 1900/WCDMA 1900: -2.3 dBi, WCDMA 1700: -3.5 dBi
Power supply	Rechargeable Li-ion Polymer Battery DC3.87V/4500mAh	



1.2. Maximum ERP/EIRP, Frequency Tolerance and Emission Designator

FCC				
System	Type of Modulation	Emission Designator	Frequency Tolerance (ppm)	Maximum ERP(W)
GSM 850(Ant1)	GMSK	248KGXW	0.0072	0.289
EDGE 850(Ant1)	8PSK	242KG7W	0.0068	0.067
WCDMA 850 (Ant1)	QPSK	4M16F9W	0.0070	0.036

IC				
System	Type of Modulation	Emission Designator	Frequency Tolerance (ppm)	Maximum EIRP(W)
GSM 850(Ant1)	GMSK	248KGXW	0.0072	0.474
EDGE 850(Ant1)	8PSK	242KG7W	0.0068	0.110
WCDMA 850(Ant1)	QPSK	4M16F9W	0.0070	0.060

FCC/IC				
System	Type of Modulation	Emission Designator	Frequency Tolerance (ppm)	Maximum EIRP(W)
PCS 1900(Ant2)	GMSK	247KGXW	0.0061	0.622
PCS 1900(Ant4)	GMSK	249KGXW	0.0067	0.384
EDGE 1900(Ant2)	8PSK	252KG7W	0.0064	0.233
EDGE1900(Ant4)	8PSK	245KG7W	0.0060	0.154
WCDMA 1900(Ant2)	QPSK	4M18F9W	0.0063	0.167
WCDMA 1900(Ant4)	QPSK	4M16F9W	0.0062	0.101
WCDMA 1700(Ant2)	QPSK	4M18F9W	0.0060	0.201
WCDMA 1700(Ant4)	QPSK	4M16F9W	0.0055	0.134

1.3. Test Standards and Results

The purpose of the report is to conduct testing according to the following FCC/IC certification standards:

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22	Public Mobile Services
3	47 CFR Part 24	Personal Communications Services
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
5	RSS-Gen-Issue 5: Feb 2021	General Requirements for Compliance of Radio Apparatus
6	RSS-132-Issue 3: Jan 2013	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz
7	RSS-133-Issue 6: Jan 2018	2 GHz Personal Communications Services
8	RSS-139-Issue 3: Jul 2015	Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2180 MHz
9	KDB 971168 D01 Power Meas License Digital Systems v03r01	Measurement Guidance For Certification of Licensed Digital Transmitters
12	KDB 412172 D01 Determining ERP and EIRP v01r01	Guidelines for Determining the Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) of an RF Transmitting Systems
13	ANSI/TIA-603-E-2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
14	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

Test detailed items/section required by FCC/IC rules and results are as below:

No.	FCC Rule	IC Rule	Description	Limit	Result
1	2.1046	RSS-GEN, 6.12	Conducted Output Power	Reporting Only	PASS
2	22.913(a)(5)	RSS-132,5.4	Effective Radiated Power (FCC GSM850/W850) Equivalent Isotropic Radiated Power (IC GSM850/W850)	ERP < 7Watts EIRP < 11.5Watts	PASS
	24.232 (c)	RSS-133,6.4	Equivalent Isotropic Radiated Power	EIRP < 2Watts	PASS
	27.50(d)(4)	RSS-139,6.5	Equivalent Isotropic Radiated Power	EIRP < 1Watts	PASS
3	22.913(d) 24.232(d) 27.50(d)(5)	RSS-132,5.4 RSS-133,6.4 RSS-139,6.5	Peak to Average Ratio	< 13dBm	PASS
4	2.1049	RSS-GEN,6.7	Occupied Bandwidth	Reporting Only	PASS
5	2.1055 22.355	RSS-GEN, 6.11 RSS-132, 5.3	Frequency Stability (GSM850/W850)	< $\pm 2.5\text{ppm}$	PASS
	24.235 27.54	RSS-133, 6.3 RSS-139, 6.4	Frequency Stability (PCS1900/W1700/W1900)	Within the Authorized Band	PASS
6	2.1051 22.917 24.238 27.53	RSS-GEN,6.13 RSS-132,5.5 RSS-133,6.5 RSS-139,6.6	Conducted Spurious Emission and Conducted Band Edge	< $43+10\log_{10}$ (P[Watts])	PASS
7	2.1053 22.917 24.238 27.53	RSS-GEN,6.13 RSS-132,5.5 RSS-133,6.5 RSS-139,6.6	Radiated Spurious Emissions	< $43+10\log_{10}$ (P[Watts])	PASS

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B and ICES-003 Issue 7 October 2020, recorded in a separate test report.

1.4. Test Configuration of Equipment Under Test

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V.
2. 30 MHz to 20000 MHz for PCS1900 and WCDMA Band II.
3. 30 MHz to 18000 MHz for WCDMA Band IV.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	Radiated TCs	Conducted TCs
GSM 850	GSM Link, EDGE Link	GSM Link, EDGE Link
PCS 1900	GSM Link, EDGE Link	GSM Link, EDGE Link
WCDMA Band V	RMC 12.2kbps Link	RMC 12.2kbps Link
WCDMA Band II	RMC 12.2kbps Link	RMC 12.2kbps Link
WCDMA Band IV	RMC 12.2kbps Link	RMC 12.2kbps Link

Note: The maximum power levels are chosen to test as the worst case configuration as follows:

- GSM mode for GMSK modulation,
- EDGE multi-slot class 8 mode for 8PSK modulation,
- RMC 12.2kbps mode for WCDMA band V,
- RMC 12.2kbps mode for WCDMA band II,
- RMC 12.2kbps mode for WCDMA band IV, only these modes were used for all tests.

1.5. Measurement Results Explanation Example

For all conduction test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + Power Splitter + attenuator factor..

Following shows an offset computation example with cable loss 1dB, 3dB Power Splitter, 10dB attenuator.

Example: Offset (dB) = RF cable loss(dB) + Power Splitter(dB) + attenuator factor(dB).

$$= 1 + 3 + 10 = 14 \text{ (dB)}$$

1.6. Laboratory Facilities

FCC-Registration No.: 406086

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN1283, valid time is until April 19th, 2023.

ISED Registration: 11185A-1

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Jun. 30th, 2023.

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

1.7. Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15°C - 35°C
Relative Humidity (%):	30% -60%
Atmospheric Pressure (kPa):	86KPa-106KPa

2. 47 CFR Part 2 Requirements

2.1. Conducted Output Power and ERP/EIRP

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

The EIRP of mobile transmitters must not exceed 2 Watts for PCS1900 and W1900.

The EIRP of mobile transmitters must not exceed 1 Watts for W1700.

The ERP of mobile transmitters must not exceed 7 Watts for GSM850 and W850(Part 22).

The EIRP of mobile transmitters must not exceed 11.5 Watts for GSM850 and W850 (RSS-132).

According to KDB 412172 D01 Determining ERP and EIRP v01r01.

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm;

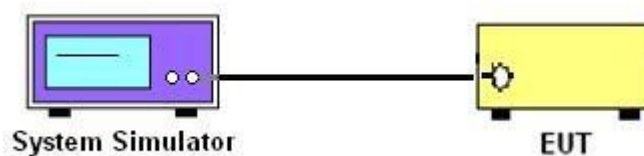
G_T = gain of the transmitting antenna in dBi;

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

2.1.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.1.3. Test Setup



2.1.4. Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

2.1.5. Test Results of Conducted Output Power and ERP/EIRP

FCC GSM 850-Ant1:

GSM 850							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. ERP (dBm)	ERP Limit (dBm)
		128	190	251			
		824.2MHz	836.6MHz	848.8MHz			
GSM	Voice	32.64	32.51	32.76	-6.00	24.61	38.45
GPRS	Slot 1	32.63	32.50	32.75			
	Slot 2	30.30	30.41	30.24			
	Slot 3	28.54	28.67	28.54			
	Slot 4	27.41	27.50	27.49			
EGPRS	Slot 1	26.30	26.41	26.33		18.26	
	Slot 2	24.17	24.20	24.36			
	Slot 3	22.48	22.51	22.47			
	Slot 4	21.34	21.45	21.54			

IC GSM 850-Ant1:

GSM 850							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		128	190	251			
		824.2MHz	836.6MHz	848.8MHz			
GSM	Voice	32.64	32.51	32.76	-6.00	26.76	40.61
GPRS	Slot 1	32.63	32.50	32.75			
	Slot 2	30.30	30.41	30.24			
	Slot 3	28.54	28.67	28.54			
	Slot 4	27.41	27.50	27.49			
EGPRS	Slot 1	26.30	26.41	26.33		20.41	
	Slot 2	24.17	24.20	24.36			
	Slot 3	22.48	22.51	22.47			
	Slot 4	21.34	21.45	21.54			

PCS 1900-Ant2:

PCS 1900							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		512	661	810			
		1850.2MHz	1880.0MHz	1909.8MHz			
GSM	Voice	30.04	29.79	29.90	-2.10	27.94	33.00
GPRS	Slot 1	30.02	29.76	29.88			
	Slot 2	27.45	27.47	27.39			
	Slot 3	25.41	25.47	25.54			
	Slot 4	24.29	24.46	24.14			
EGPRS	Slot 1	25.77	25.71	25.64		23.67	
	Slot 2	23.35	23.42	23.23			
	Slot 3	21.61	21.68	21.64			
	Slot 4	20.59	20.63	20.64			

PCS 1900-Ant4:

PCS 1900							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		512	661	810			
		1850.2MHz	1880.0MHz	1909.8MHz			
GSM	Voice	28.10	28.14	28.13	-2.30	25.84	33.00
GPRS	Slot 1	28.09	28.12	28.10			
	Slot 2	25.97	26.01	25.87			
	Slot 3	24.03	24.12	23.76			
	Slot 4	23.05	23.04	22.91			
EGPRS	Slot 1	24.11	24.17	24.07		21.87	
	Slot 2	22.05	21.98	21.77			
	Slot 3	20.41	20.33	20.36			
	Slot 4	19.26	19.30	19.34			

FCC WCDMA 850-Ant1:

WCDMA 850							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. ERP (dBm)	ERP Limit (dBm)
		4132	4183	4233			
		826.4MHz	836.6MHz	846.6MHz			
RMC	12.2 kbps	23.75	23.68	23.69	-6.0	15.6	38.45
AMR	12.2 kbps	23.73	23.64	23.66			
HSDPA	Subtest 1	22.47	22.53	22.54			
	Subtest 2	22.35	22.29	22.32			
	Subtest 3	21.95	21.89	21.92			
	Subtest 4	21.76	21.72	21.74			
HSUPA	Subtest 1	22.32	22.27	22.29			
	Subtest 2	22.48	22.43	22.46			
	Subtest 3	21.94	21.90	21.92			
	Subtest 4	22.40	22.34	22.37			
	Subtest 5	22.29	22.25	22.27			

IC WCDMA 850-Ant1:

WCDMA 850							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		4132	4183	4233			
		826.4MHz	836.6MHz	846.6MHz			
RMC	12.2 kbps	23.75	23.68	23.69	-6	17.75	40.61
AMR	12.2 kbps	23.73	23.64	23.66			
HSDPA	Subtest 1	22.47	22.53	22.54			
	Subtest 2	22.35	22.29	22.32			
	Subtest 3	21.95	21.89	21.92			
	Subtest 4	21.76	21.72	21.74			
HSUPA	Subtest 1	22.32	22.27	22.29			
	Subtest 2	22.48	22.43	22.46			
	Subtest 3	21.94	21.90	21.92			
	Subtest 4	22.40	22.34	22.37			
	Subtest 5	22.29	22.25	22.27			

WCDMA 1900-Ant2:

WCDMA 1900							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		9262	9400	9538			
		1852.4MHz	1880.0MHz	1907.6MHz			
RMC	12.2 kbps	24.26	24.34	24.25	-2.1	22.24	33.00
AMR	12.2 kbps	24.22	24.24	24.20			
HSDPA	Subtest 1	22.86	22.91	22.94			
	Subtest 2	22.34	22.37	22.42			
	Subtest 3	21.17	21.18	21.27			
	Subtest 4	21.48	21.52	21.59			
HSUPA	Subtest 1	22.92	22.95	23.04			
	Subtest 2	23.13	23.20	23.18			
	Subtest 3	21.24	21.29	21.31			
	Subtest 4	22.99	23.00	23.03			
	Subtest 5	21.99	22.05	22.04			

WCDMA 1900-Ant4:

WCDMA 1900							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		9262	9400	9538			
		1852.4MHz	1880.0MHz	1907.6MHz			
RMC	12.2 kbps	23.49	23.56	23.48	-3.5	20.06	33.00
AMR	12.2 kbps	23.44	23.52	23.45			
HSDPA	Subtest 1	22.21	22.32	22.01			
	Subtest 2	21.80	21.87	21.67			
	Subtest 3	21.88	22.04	21.76			
	Subtest 4	21.07	21.20	21.01			
HSUPA	Subtest 1	21.77	22.12	22.04			
	Subtest 2	21.25	21.42	21.24			
	Subtest 3	20.84	20.96	21.18			
	Subtest 4	21.66	21.76	21.89			
	Subtest 5	21.38	21.59	21.54			

WCDMA 1700-Ant2:

WCDMA 1700							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		1312	1412	1513			
		1712.4MHz	1713.4MHz	1752.6MHz			
RMC	12.2 kbps	24.10	24.14	24.08	-1.1	23.04	30.00
AMR	12.2 kbps	24.08	24.12	24.07			
HSDPA	Subtest 1	23.07	23.13	23.06			
	Subtest 2	22.64	22.44	22.45			
	Subtest 3	21.27	21.29	21.34			
	Subtest 4	21.80	21.80	21.94			
HSUPA	Subtest 1	23.09	23.12	23.18			
	Subtest 2	22.61	22.70	22.66			
	Subtest 3	21.21	21.15	21.17			
	Subtest 4	23.02	23.05	23.15			
	Subtest 5	22.23	22.18	22.05			

WCDMA 1700-Ant4:

WCDMA 1700							
EUT Mode		Average power (dBm)			Ant. Gain (dBi)	Max. EIRP (dBm)	EIRP Limit (dBm)
		1312	1412	1513			
		1712.4MHz	1713.4MHz	1752.6MHz			
RMC	12.2 kbps	23.47	23.58	23.49	-2.3	21.28	30.00
AMR	12.2 kbps	23.45	23.53	23.46			
HSDPA	Subtest 1	22.12	22.24	22.19			
	Subtest 2	21.45	21.28	21.31			
	Subtest 3	21.35	21.53	21.45			
	Subtest 4	20.61	20.68	20.76			
HSUPA	Subtest 1	21.42	21.49	21.27			
	Subtest 2	20.17	20.35	20.49			
	Subtest 3	21.10	21.27	21.23			
	Subtest 4	22.09	22.24	22.15			
	Subtest 5	21.50	21.29	21.47			

2.2. Peak-to-average power ratio (PAPR)

2.2.1. Requirement

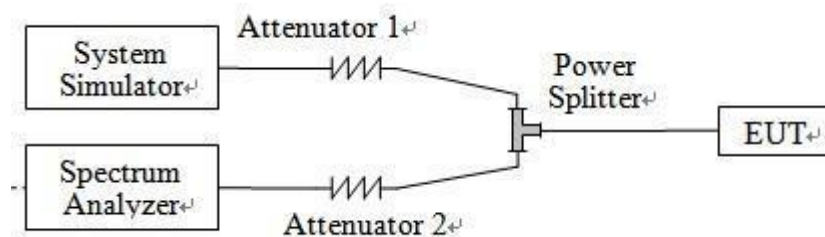
Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth.

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

2.2.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.2.3. Test Description



2.2.4. Test Procedures

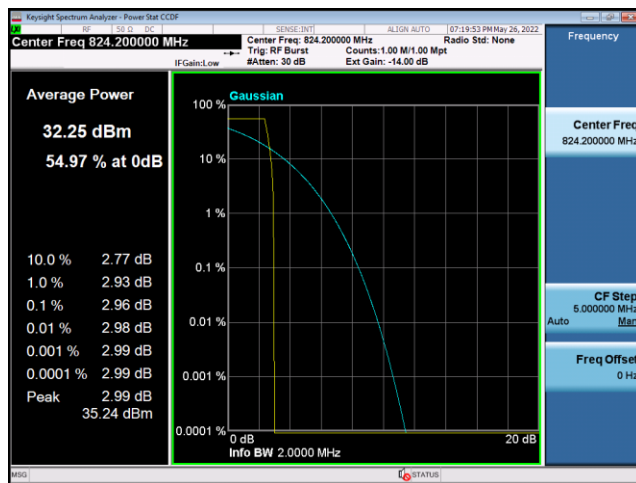
1. The testing follows the of KDB 971168 D01 v03r01 Section 5.7.2 and ANSI C63.26-2015 Section 5.2.3.4.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider, Path loss compensation is then performed on the spectrum analyzer and the system simulator respectively.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. Set resolution/measurement bandwidth $\geq$ OBW or specified reference bandwidth.
5. Set the number of counts to a value that stabilizes the measured CCDF curve.
6. Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level.
7. Repeat step 3~6 at other frequency and modulations.

2.2.5. Test Results of Peak-to-average power ratio (PAPR)

Band	Channel	Frequency (MHz)	Peak to Average radio	Limit	Verdict
			dB	dB	
GSM 850MHz (Ant1)	128	824.2	2.96	13	PASS
	190	836.6	2.91		PASS
	251	848.8	2.87		PASS
EDGE 850MHz (Ant1)	128	824.2	5.87	13	PASS
	190	836.6	5.87		PASS
	251	848.8	5.90		PASS
PCS 1900MHz (Ant2)	512	1850.2	3.12	13	PASS
	661	1880.0	3.12		PASS
	810	1909.8	3.14		PASS
EDGE 1900MHz (Ant2)	512	1850.2	6.13	13	PASS
	661	1880.0	6.15		PASS
	810	1909.8	6.21		PASS
PCS 1900MHz (Ant4)	512	1850.2	3.12	13	PASS
	661	1880.0	3.12		PASS
	810	1909.8	3.12		PASS
EDGE 1900MHz (Ant4)	512	1850.2	6.05	13	PASS
	661	1880.0	6.03		PASS
	810	1909.8	6.10		PASS
WCDMA 850MHz (Ant1)	4132	826.4	2.93	13	PASS
	4183	836.6	2.91		PASS
	4233	846.6	2.92		PASS
WCDMA 1900MHz (Ant2)	9262	1852.4	2.84	13	PASS
	9400	1880.0	2.81		PASS
	9538	1907.6	2.94		PASS
WCDMA 1900MHz (Ant4)	9262	1852.4	2.92	13	PASS
	9400	1880.0	2.91		PASS
	9538	1907.6	2.96		PASS
WCDMA 1700MHz (Ant2)	1312	1712.4	2.84	13	PASS
	1412	1732.4	2.83		PASS
	1513	1752.6	2.79		PASS
WCDMA 1700MHz (Ant4)	1312	1712.4	2.88	13	PASS
	1412	1732.4	2.81		PASS
	1513	1752.6	2.79		PASS

GSM 850-Ant1:

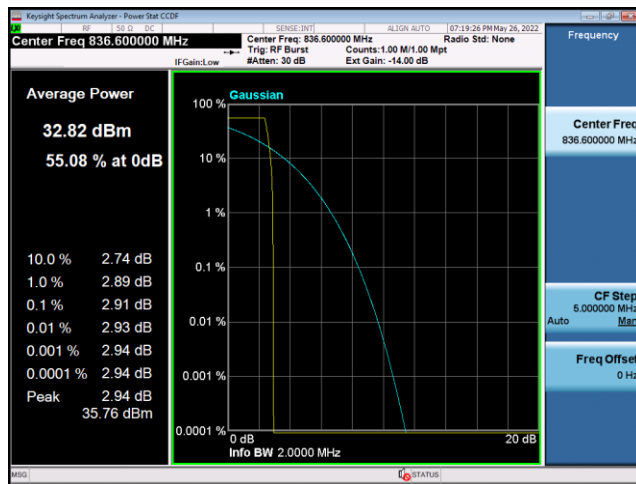
GSM 850-128



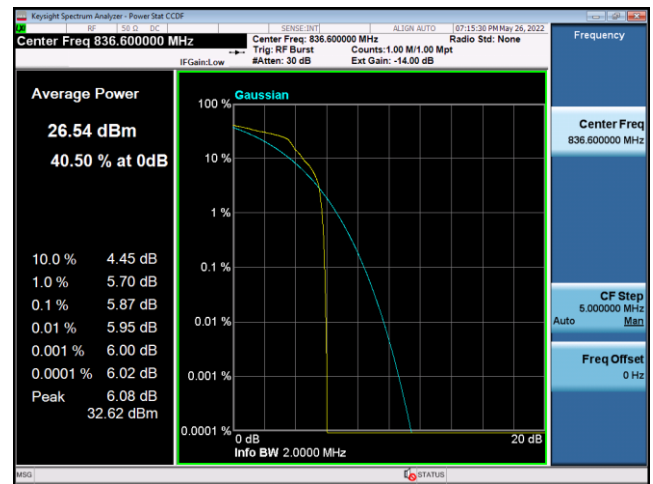
EDGE 850-128



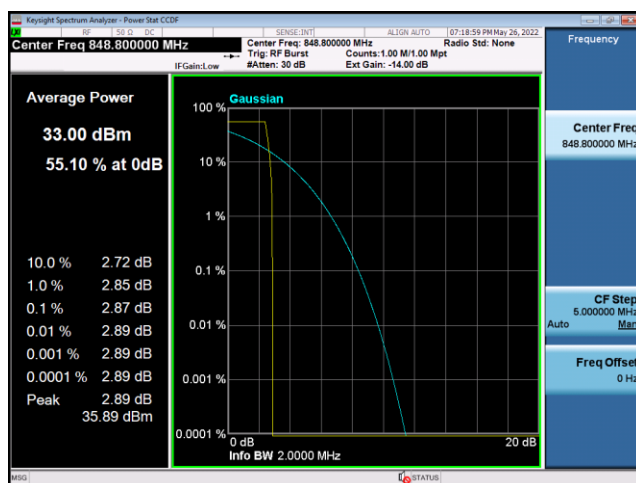
GSM 850-190



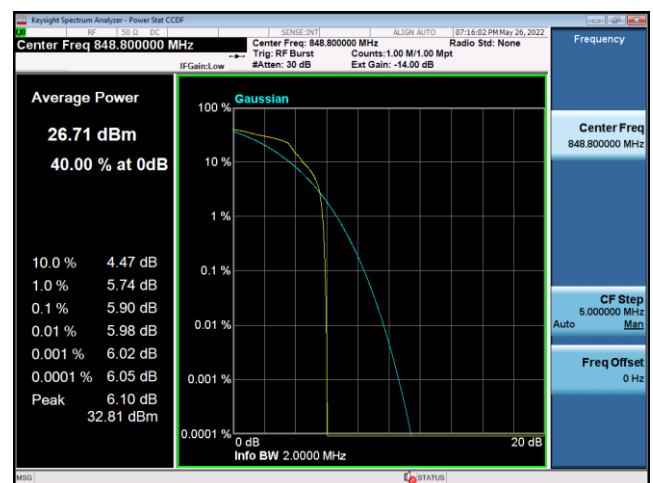
EDGE 850-190



GSM 850-251

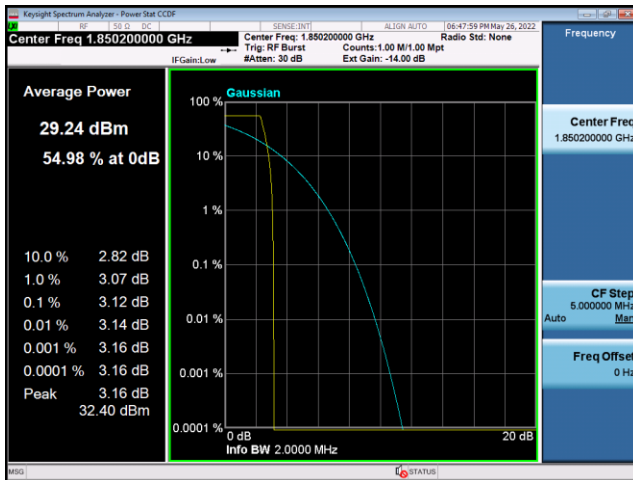


EDGE 850-251

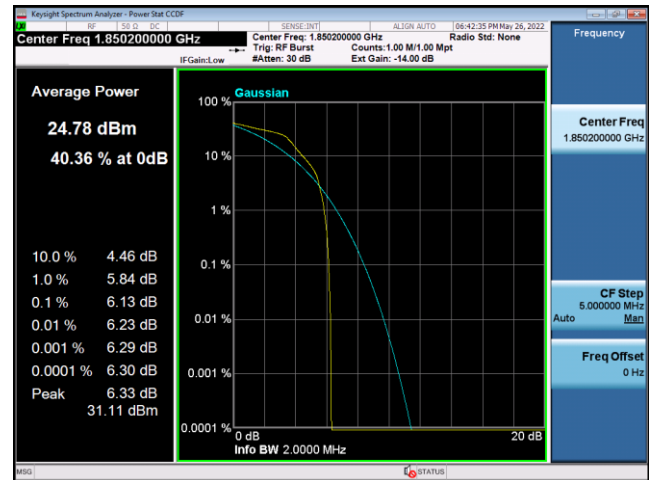


PCS 1900-Ant2:

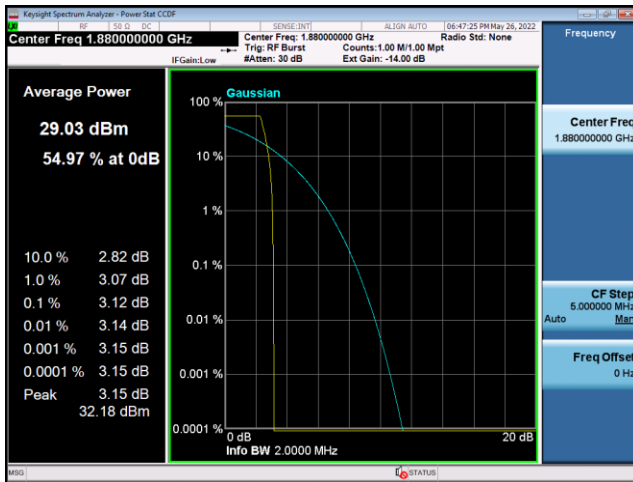
PCS 1900-512



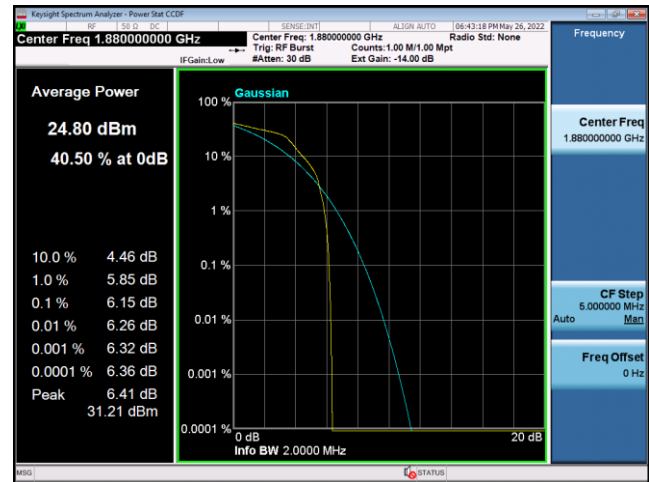
EDGE 1900-512



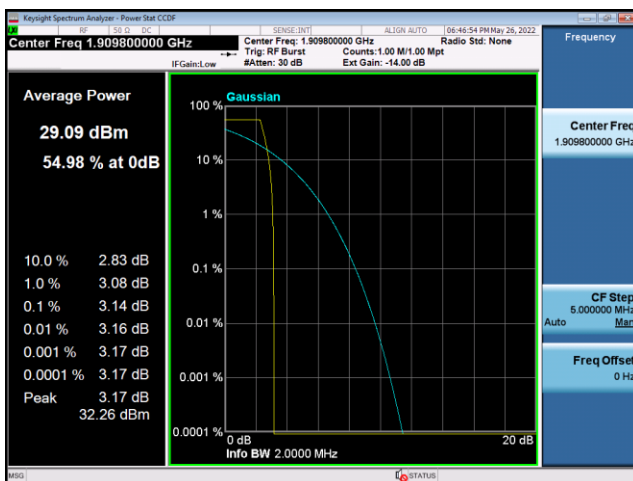
PCS 1900-661



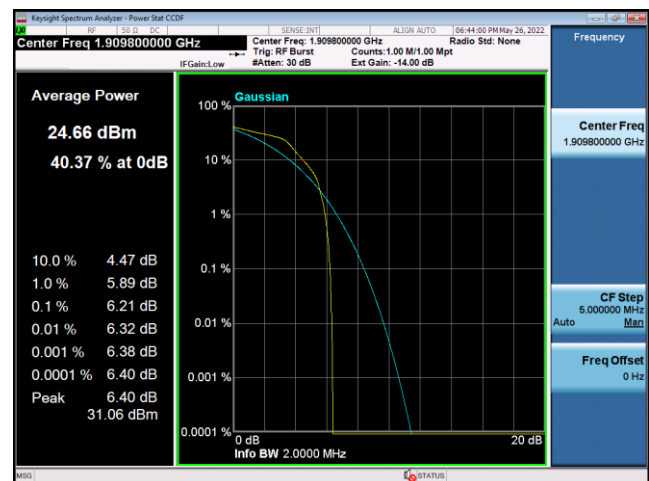
EDGE 1900-661



PCS 1900-810

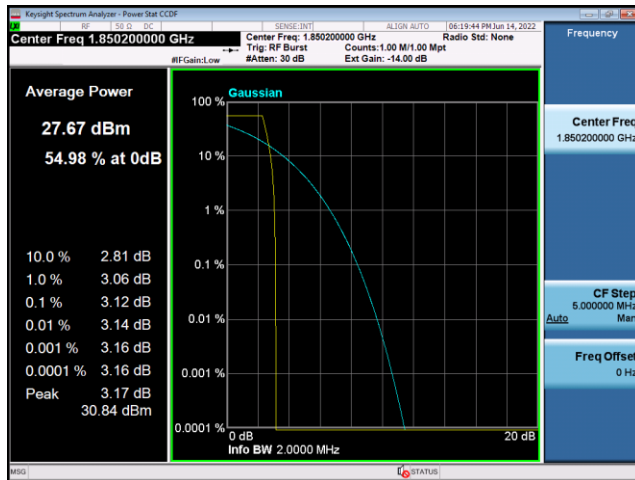


EDGE 1900-810

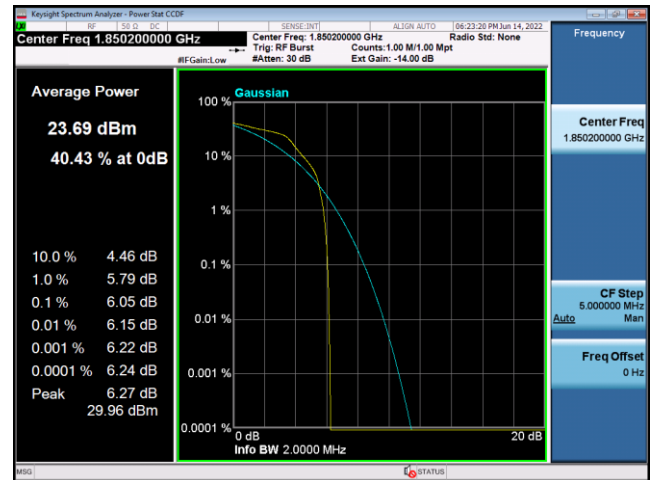


PCS 1900-Ant4:

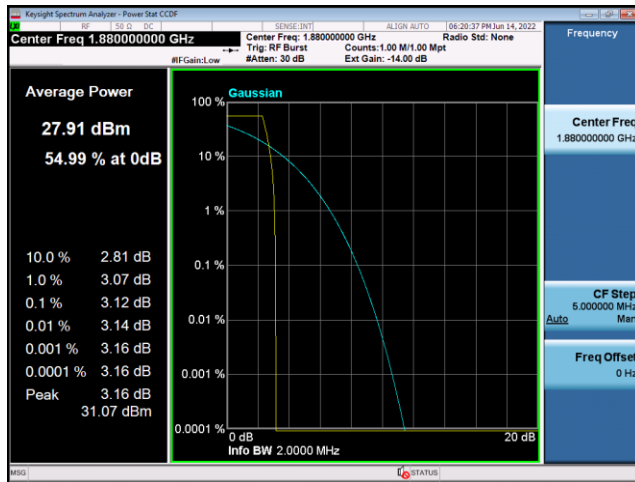
PCS 1900-512



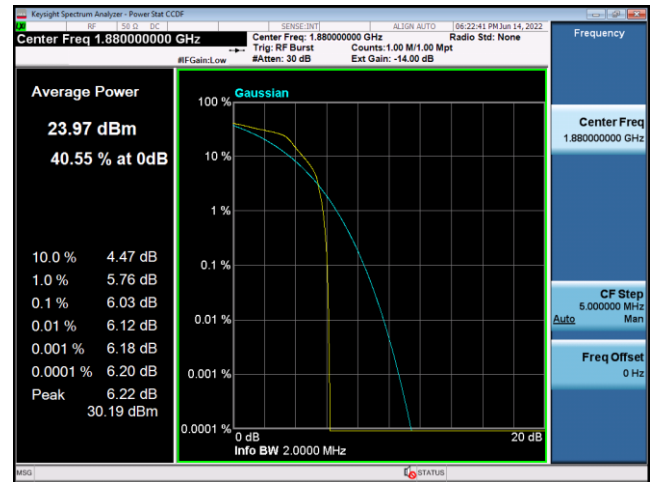
EDGE 1900-512



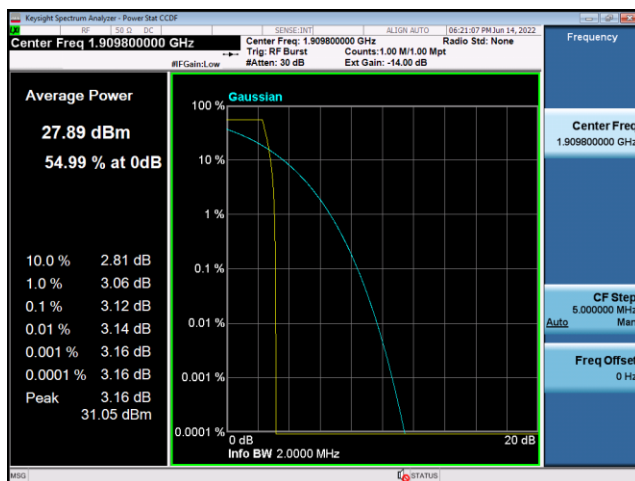
PCS 1900-661



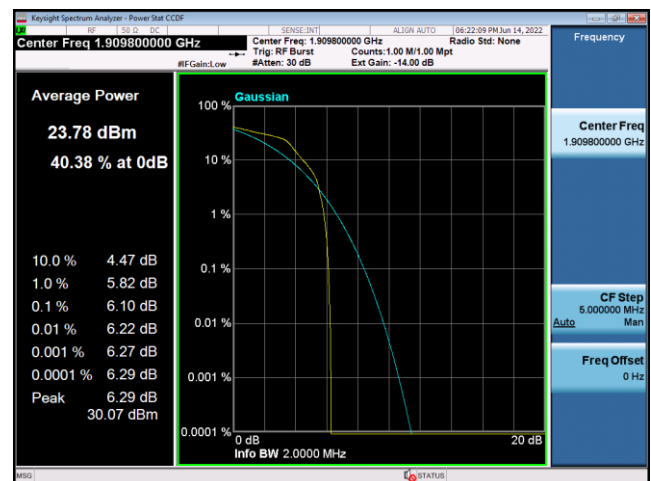
EDGE 1900-661



PCS 1900-810

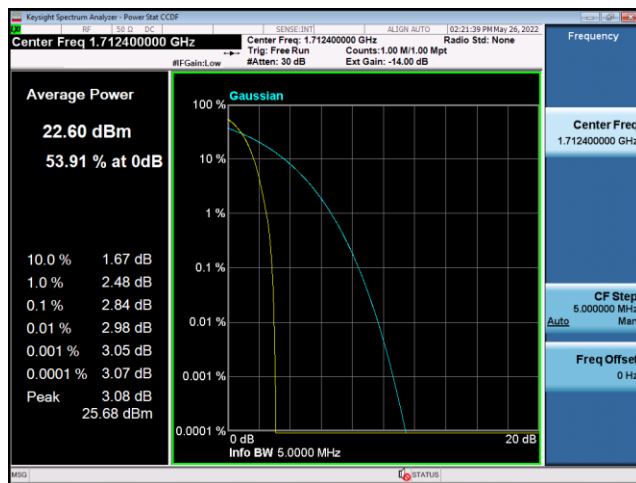


EDGE 1900-810



WCDMA 1700-Ant2&Ant4:

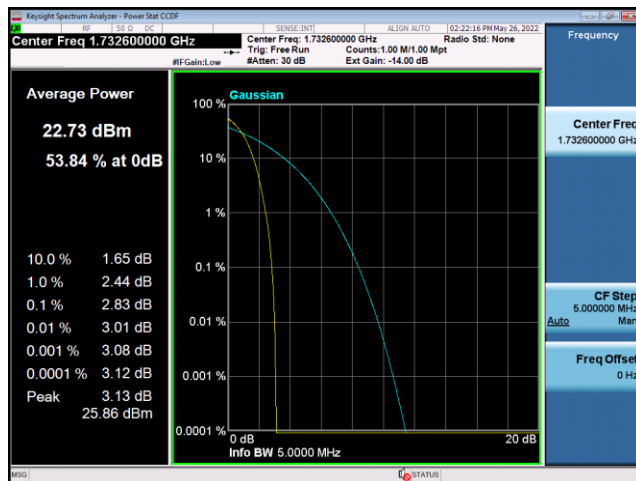
WCDMA 1700-1312-Ant2



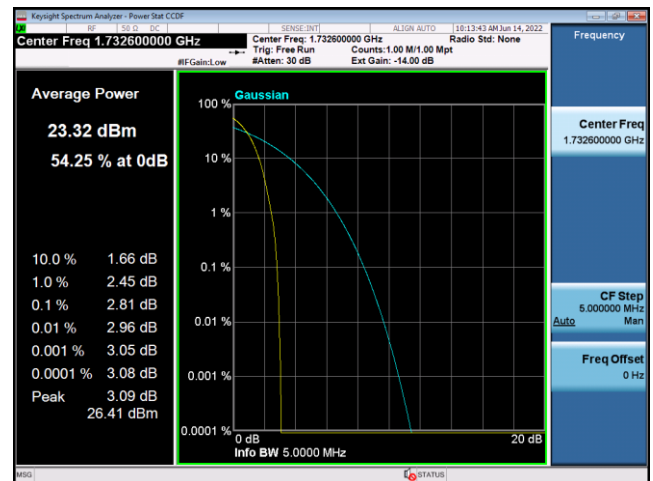
WCDMA 1700-1312-Ant4



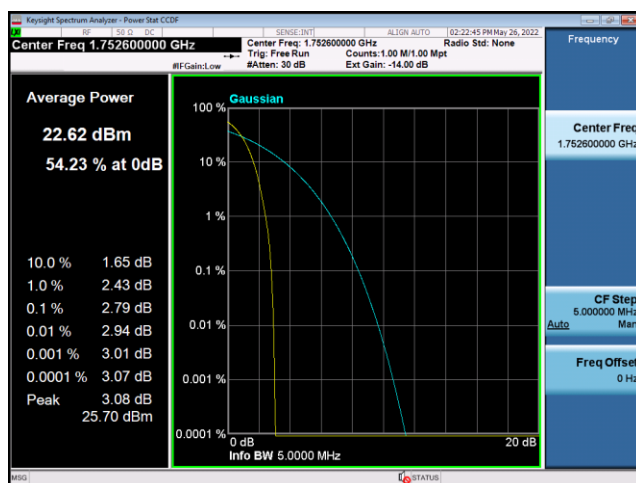
WCDMA 1700-1413-Ant2



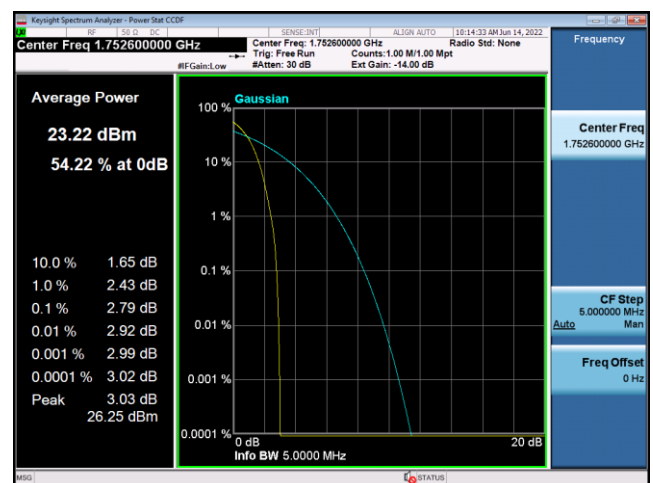
WCDMA 1700-1413-Ant4



WCDMA 1700-1513-Ant2

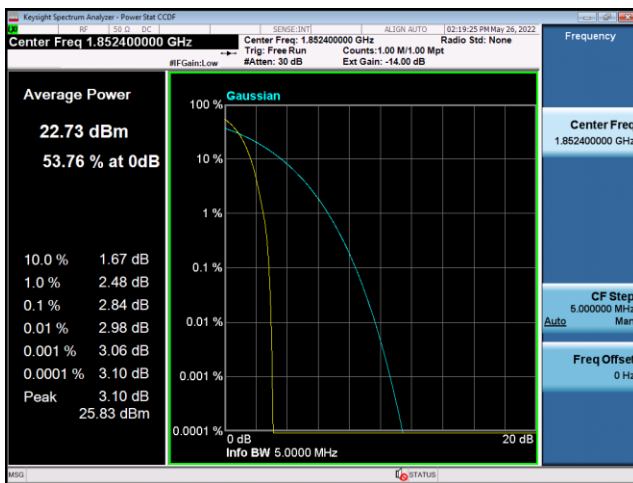


WCDMA 1700-1513-Ant4

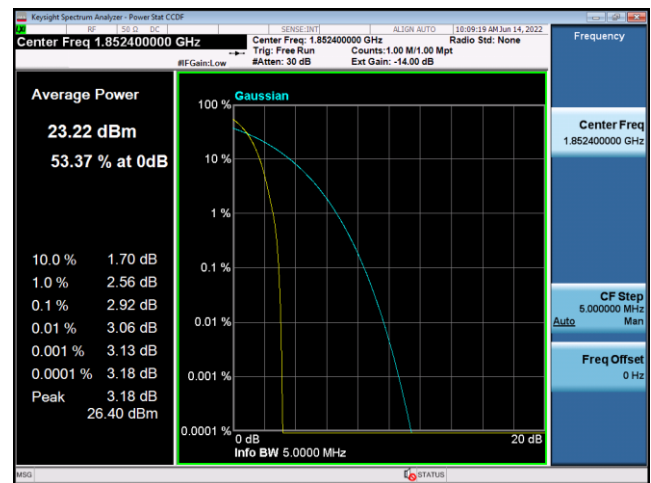


WCDMA 1900-Ant2&Ant4:

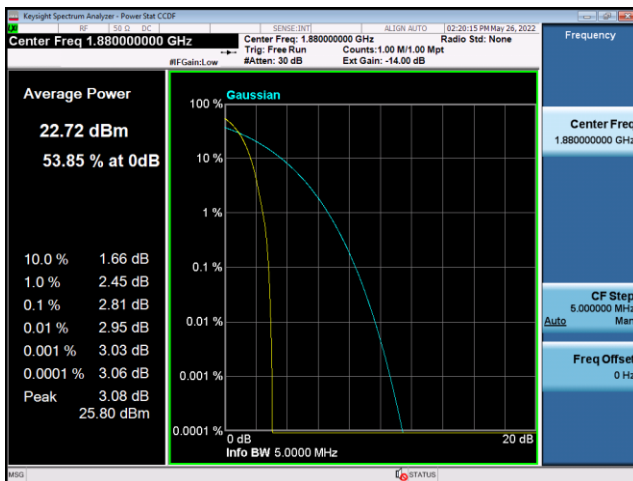
WCDMA 1900-9262-Ant2



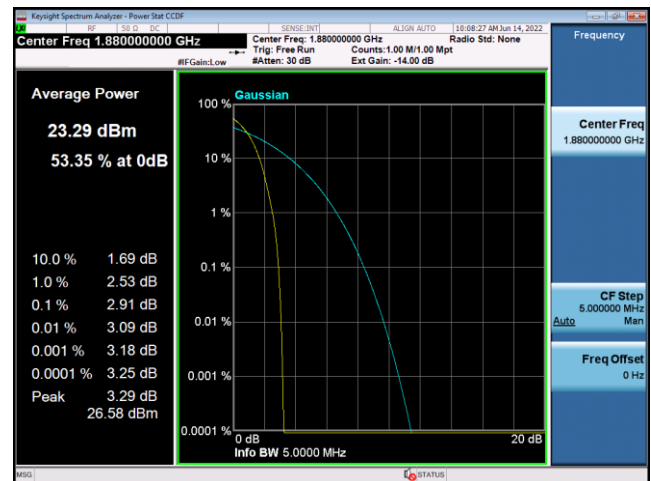
WCDMA 1900-9262-Ant4



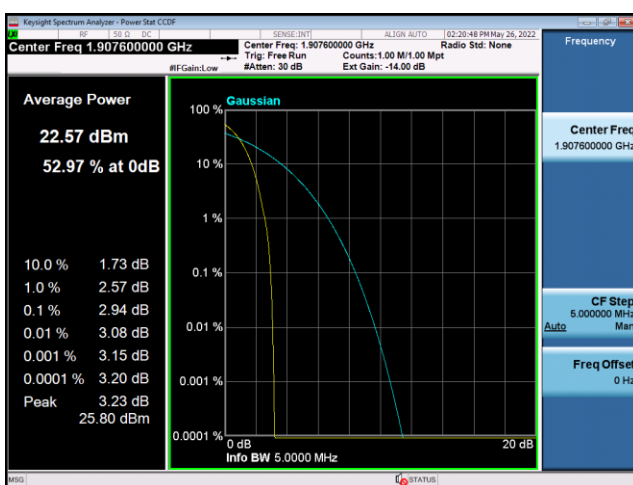
WCDMA 1900-9400-Ant2



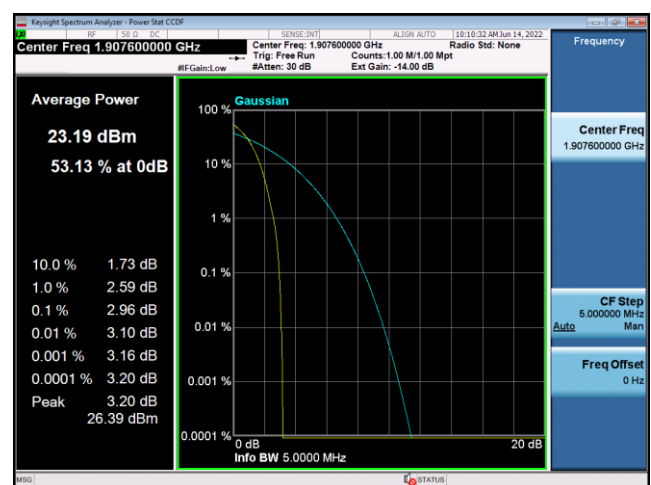
WCDMA 1900-9400-Ant4



WCDMA 1900-9538-Ant2

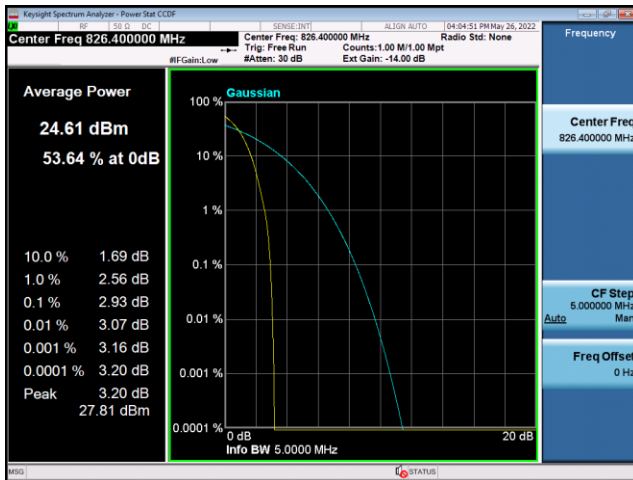


WCDMA 1900-9538-Ant4

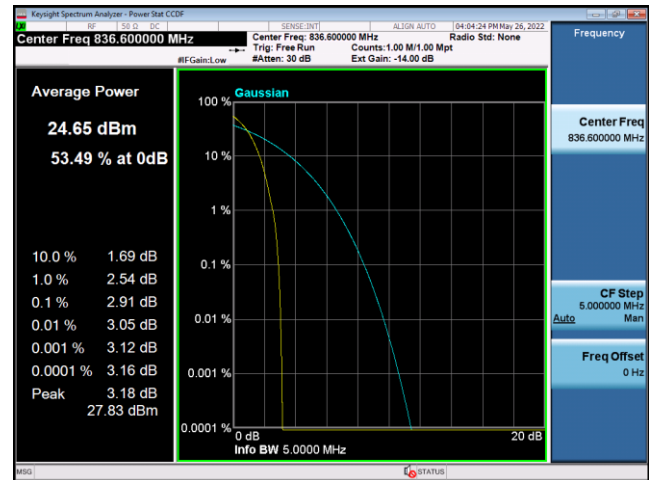


WCDMA 850-Ant1:

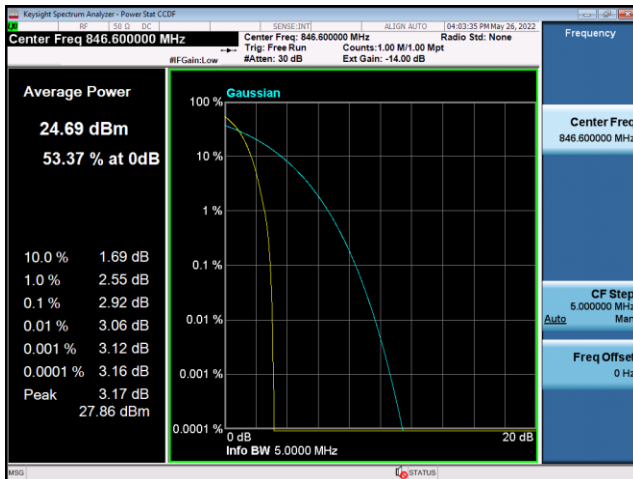
WCDMA 850-4132



WCDMA 850-4183



WCDMA 850-4233



2.3. 99% Occupied Bandwidth and 26dB Emission Bandwidth

2.3.1. Requirement

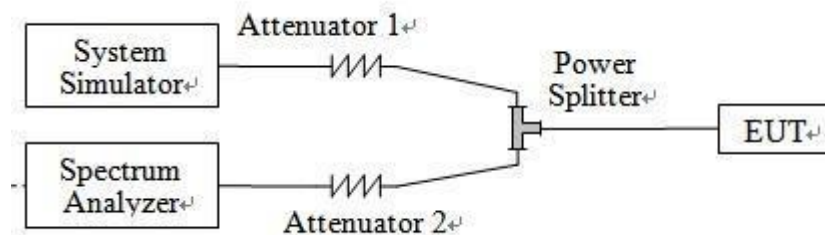
The Occupied Bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

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

2.3.2. Measuring Instruments

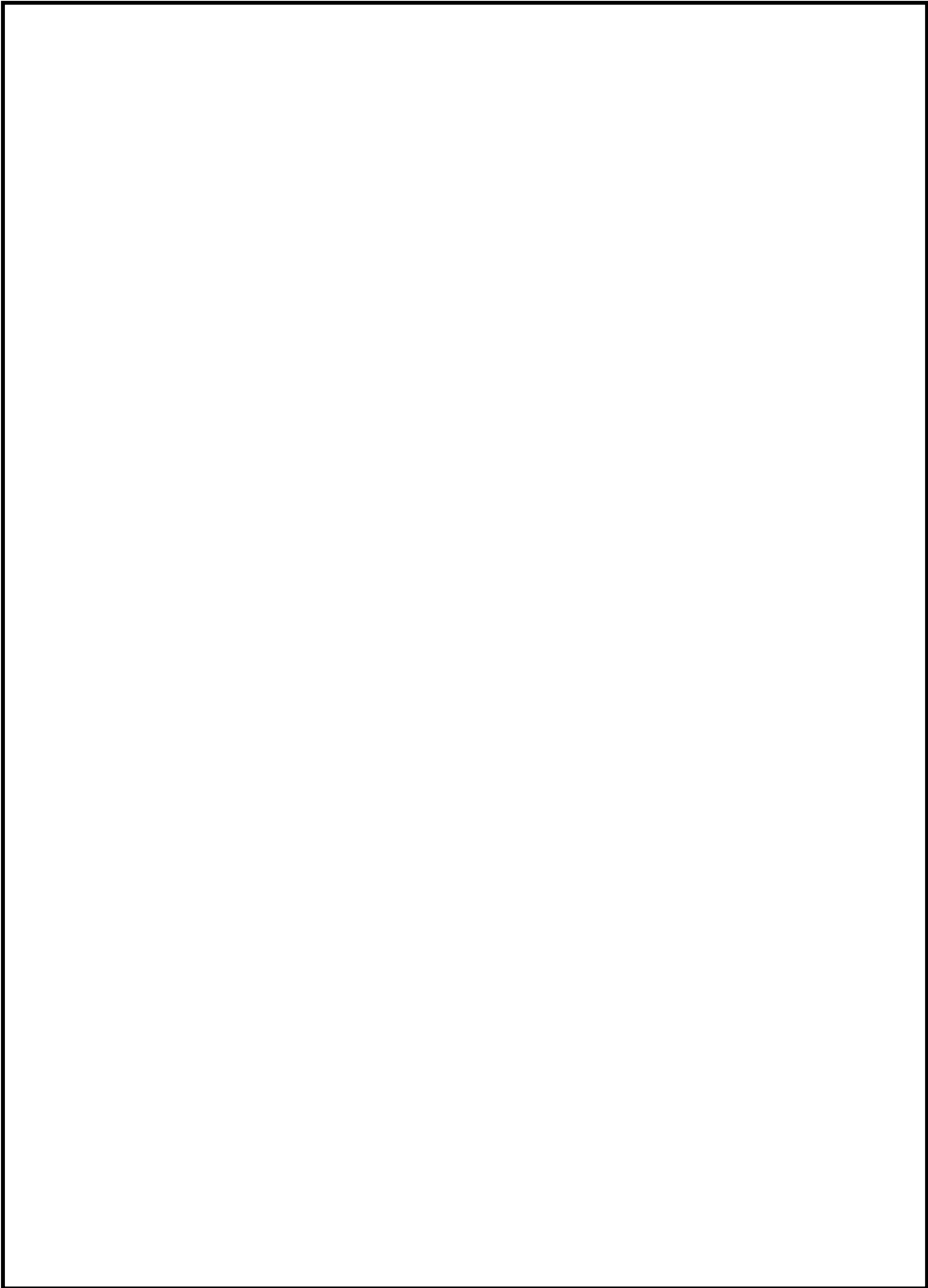
The measuring equipment is listed in the section 3 of this test report.

2.3.3. Test Setup



2.3.4. Test Procedures

1. The testing follows the of KDB 971168 D01 v03r01 Section 4 and ANSI C63.26-2015 Section 5.4.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider, Path loss compensation is then performed on the spectrum analyzer and the system simulator respectively.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.
4. Set span to be approximately 1.5 to 5 times the OBW.
5. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW.
6. Set $VBW \geq 3 \times RBW$.
7. Set Detection mode = peak.
8. Set Trace mode = max hold.
9. Allow trace to stabilize.
10. Repeat step 3~9 at other frequency and modulations.



2.3.5. Test Result of 99% Occupied Bandwidth and 26dB Emission Bandwidth

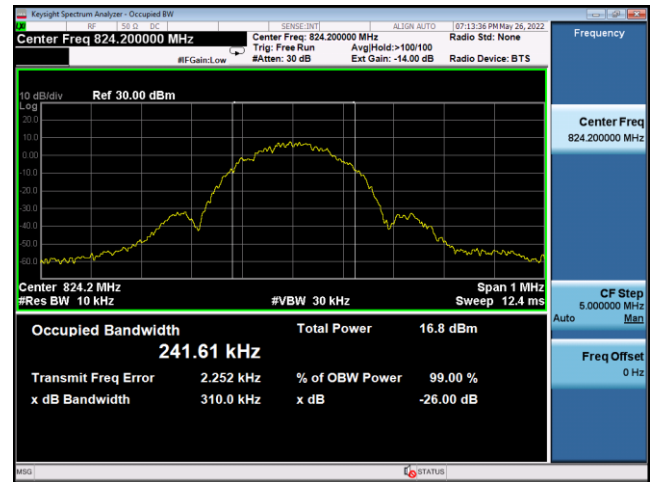
Band	Channel	Frequency (MHz)	26dB EBW (KHz)	99% OBW (KHz)	Verdict
GSM 850MHz (Ant1)	128	824.2	321.5	247.56	PASS
	190	836.6	320.1	245.15	PASS
	251	848.8	318.2	245.40	PASS
EDGE 850MHz (Ant1)	128	824.2	310.0	241.61	PASS
	190	836.6	305.0	242.11	PASS
	251	848.8	305.1	239.33	PASS
PCS 1900MHz (Ant2)	512	1850.2	314.2	242.90	PASS
	661	1880.0	318.5	244.39	PASS
	810	1909.8	317.8	246.92	PASS
EDGE 1900MHz (Ant2)	512	1850.2	307.0	237.76	PASS
	661	1880.0	304.9	251.60	PASS
	810	1909.8	308.9	250.35	PASS
PCS 1900MHz (Ant4)	512	1850.2	317.3	243.70	PASS
	661	1880.0	317.5	248.75	PASS
	810	1909.8	305.3	244.14	PASS
EDGE 1900MHz (Ant4)	512	1850.2	307.8	243.41	PASS
	661	1880.0	308.0	244.59	PASS
	810	1909.8	309.0	244.35	PASS
WCDMA 850MHz (Ant1)	4132	826.4	4738	4160.2	PASS
	4183	836.6	4748	4160.5	PASS
	4233	846.6	4742	4153.8	PASS
WCDMA 1700MHz (Ant2)	1312	1712.4	4760	4170.5	PASS
	1412	1732.4	4756	4168.5	PASS
	1513	1752.6	4768	4177.0	PASS
WCDMA 1700MHz (Ant4)	1312	1712.4	4725	4159.0	PASS
	1412	1732.4	4717	4158.1	PASS
	1513	1752.6	4725	4153.4	PASS
WCDMA 1900MHz (Ant2)	9262	1852.4	4753	4168.3	PASS
	9400	1880.0	4769	4173.4	PASS
	9538	1907.6	4761	4176.9	PASS
WCDMA 1900MHz (Ant4)	9262	1852.4	4715	4160.5	PASS
	9400	1880.0	4719	4156.5	PASS
	9538	1907.6	4710	4150.6	PASS

GSM 850-Ant1:

GSM 850-128



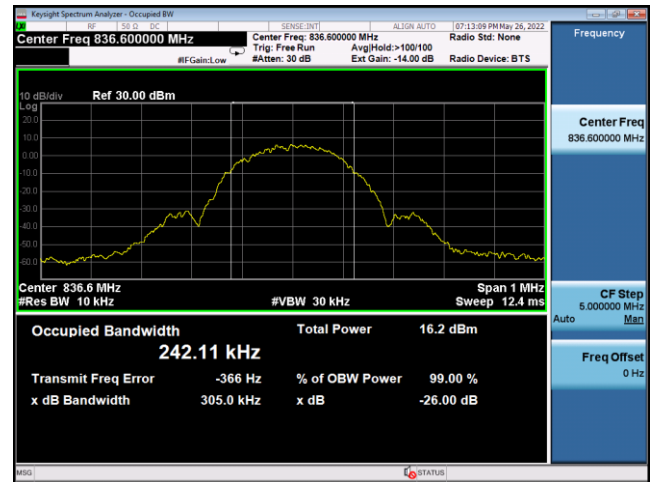
EDGE 850-128



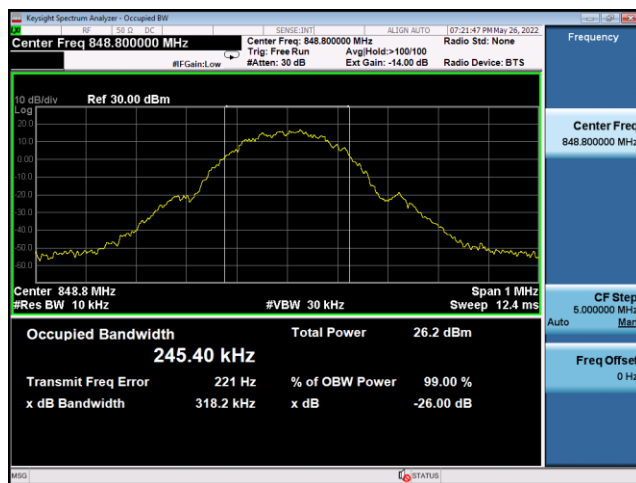
GSM 850-190



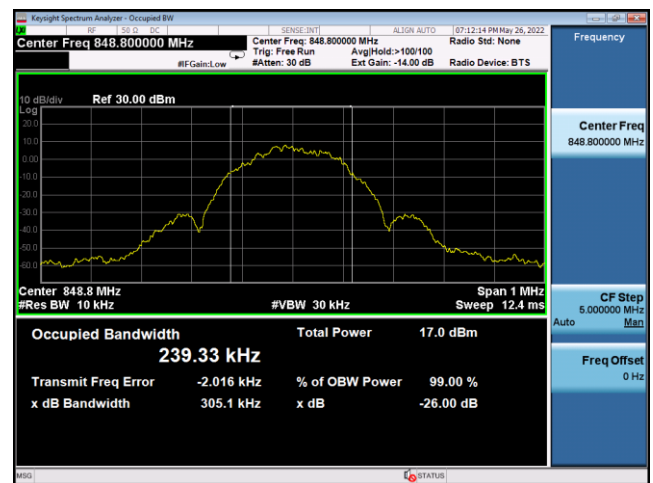
EDGE 850-190



GSM 850-251



EDGE 850-251

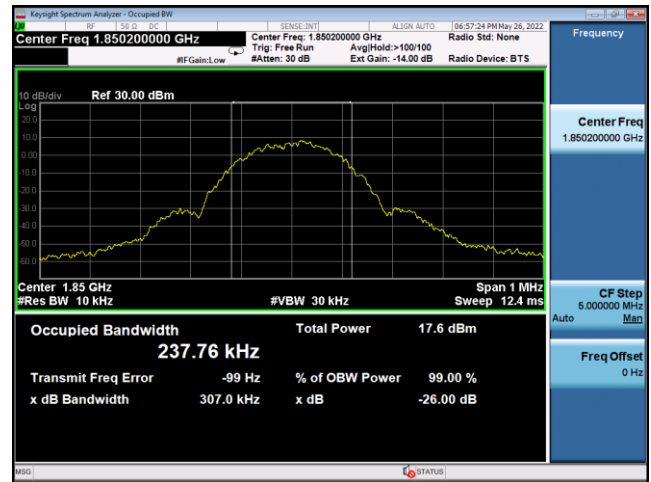


PCS 1900-Ant2:

PCS 1900-512



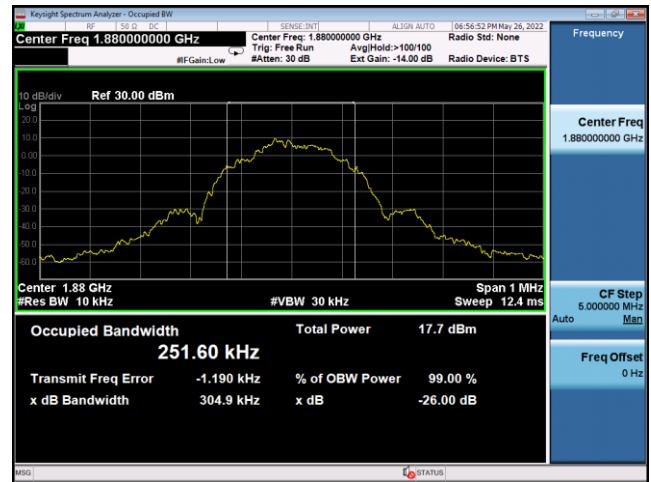
EDGE 1900-512



PCS 1900-661



EDGE 1900-661



PCS 1900-810

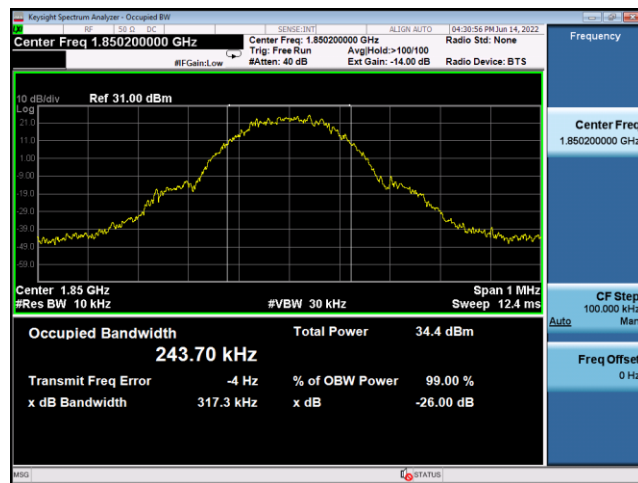


EDGE 1900-810

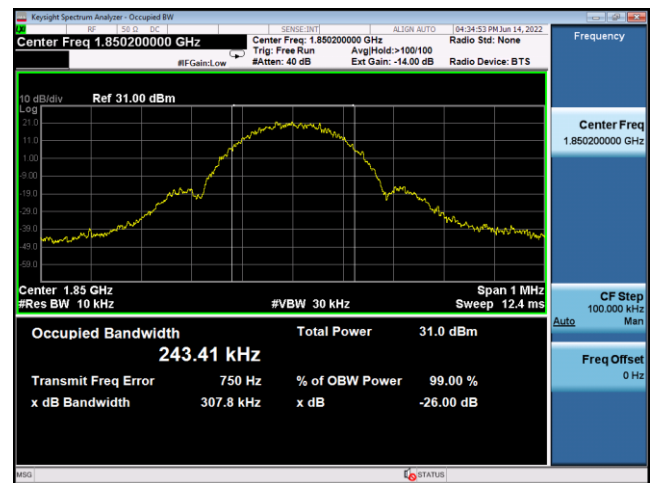


PCS 1900-Ant4:

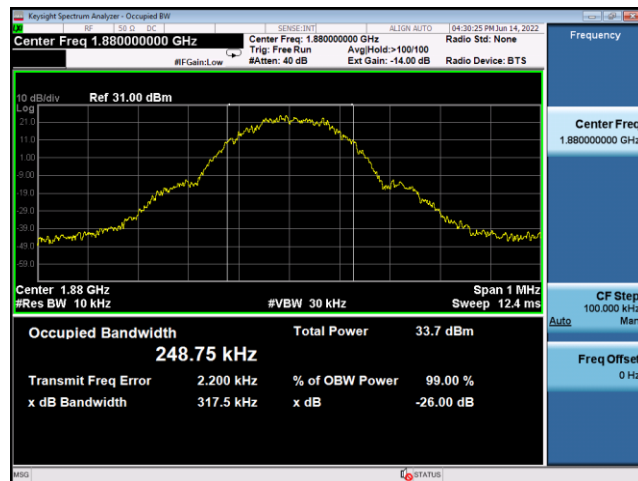
PCS 1900-512



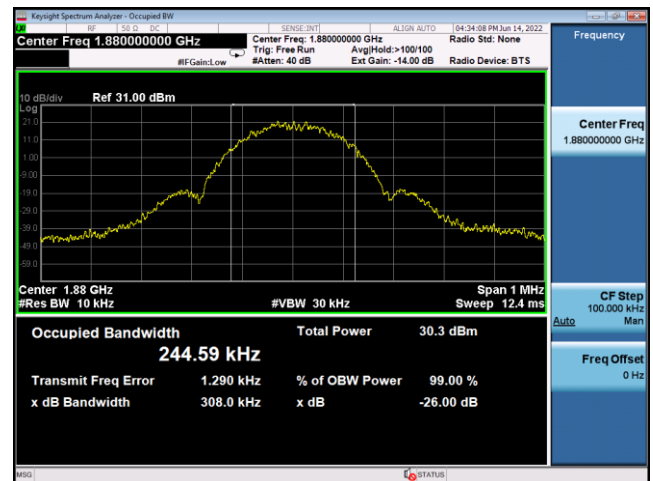
EDGE 1900-512



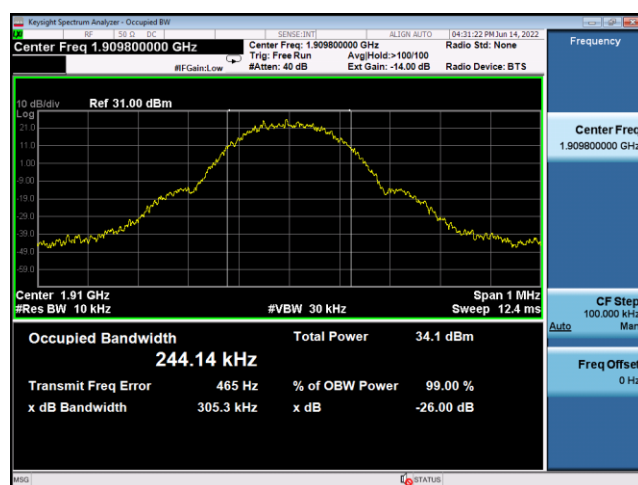
PCS 1900-661



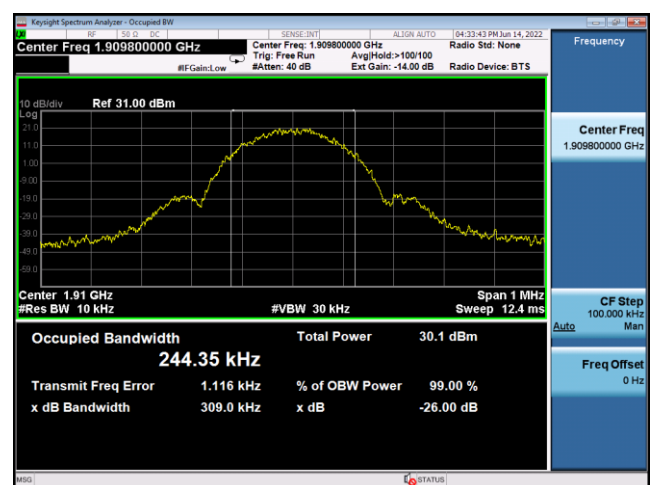
EDGE 1900-661



PCS 1900-810

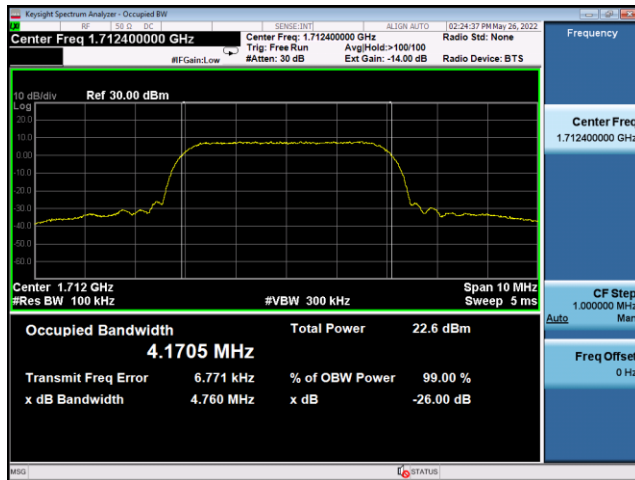


EDGE 1900-810

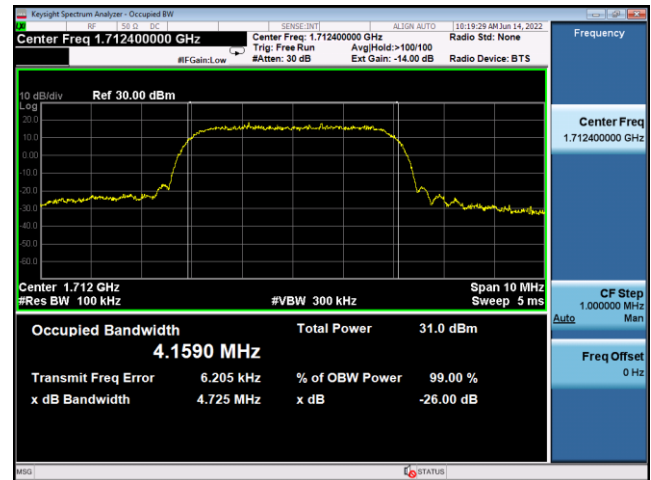


WCDMA 1700-Ant2&Ant4:

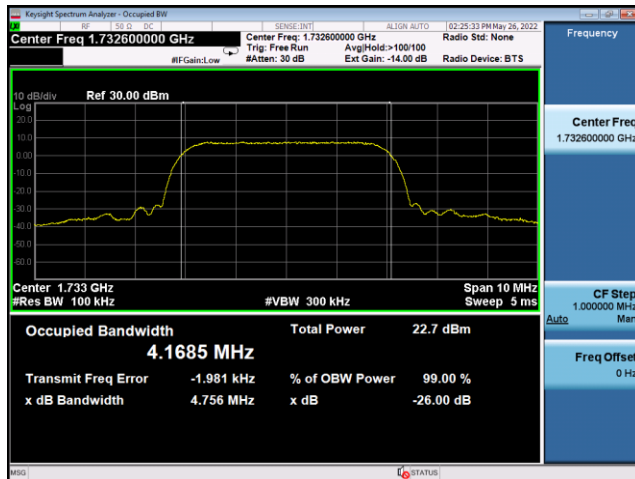
WCDMA 1700-1312-Ant2



WCDMA 1700-1312-Ant4



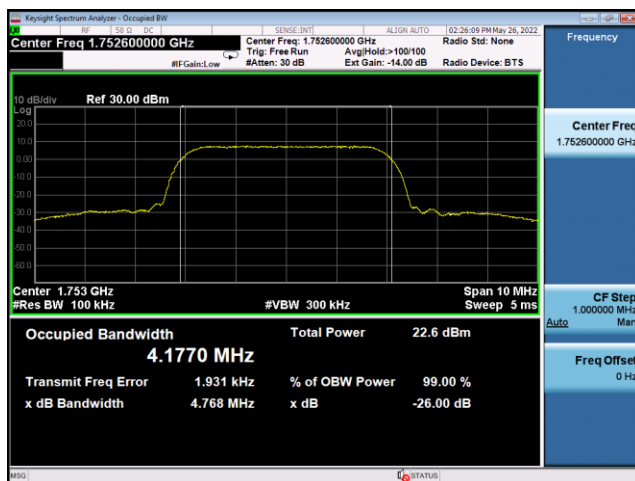
WCDMA 1700-1413-Ant2



WCDMA 1700-1413-Ant4



WCDMA 1700-1513-Ant2



WCDMA 1700-1513-Ant4

