

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 22 SUBPART H, PART 24 SUBPART E and PART 27 SUBPART
B, C & SUBPART L REQUIREMENT

OF

Applicant: Sharp Corporation, Mobile Communication B.U.
2-13-1, Hachihonmatsu-lida, Higashi-hiroshima-shi,
Hiroshima 739-0192, Japan
Sharp Corporation

Manufacturer: 1 Takumi-cho, Sakai-ku, Sakai-Shi, Osaka 590-8522,
Japan

Product Name: Smart Phone

Report Number: ER/2018/90103

FCC ID: APYHRO00263

FCC Rule Part: 2, 22H & 24E & 27B, C & L

Issue Date: Oct. 17, 2018

Date of Test: Sep. 04, 2018 ~ Oct. 11, 2018

Date of EUT Received: Sep. 04, 2018

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.26-2015 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

Tested By:

Marcus Tseng

Marcus Tseng / Engineer

Approved By:

CHUN-CHIEH, CHEN

**CHUN-CHIEH, CHEN /
Asst. Supervisor**



Testing Laboratory
0513

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Revision History

Report Number	Revision	Description	Effected Page	Issue Date	Revised By
ER/2018/90103	Rev.00	Initial creation of document	All	Oct. 17, 2018	Yuri Tsai / Clerk

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1. GENERAL PRODUCT INFORMATION

1.1. Product Description

General:

Product Name:	Smart Phone
Hardware Version:	DVT
Software Version:	N/A
Power Supply:	3.85V from Rechargeable Li-ion Battery
IMEI:	004401116468048 / 004401116468337 / 004401116467198 004401116468923 / 004401116468030 / 004401116468295 004401116469293

1.2. GSM / WCDMA / LTE: Cellular Phone Standards Frequency Range

Operating Frequency (MHz)			
GSM/GPRS 850	824.2	-	848.8
GSM/GPRS 1900	1850.2	-	1909.8

Operating Frequency (MHz)			
WCDMA / HSPA+ Band II	1852.4	-	1907.6
WCDMA/HSPA+ Band IV	1712.4	-	1752.6

LTE Band	BW (MHz)	Operation Frequency (MHz)			LTE Band	BW (MHz)	Operation Frequency (MHz)		
2	1.4	1850.7	-	1909.3	12	1.4	699.7	-	715.3
	3	1851.5	-	1908.5		3	700.5	-	714.5
	5	1852.5	-	1907.5		5	701.5	-	713.5
	10	1855.0	-	1905.0		10	704.0	-	711.0
	15	1857.5	-	1902.5	17	5	706.5	-	713.5
	20	1860.0	-	1900.0		10	709.0	-	711.0
4	1.4	1710.7	-	1754.3	17	1.4	699.7	-	715.3
	3	1711.5	-	1753.5		3	700.5	-	714.5
	5	1712.5	-	1752.5		5	701.5	-	713.5
	10	1715.0	-	1780.0		10	704.0	-	711.0
	15	1717.5	-	1747.5		5	706.5	-	713.5
	20	1720.0	-	1745.0		10	709.0	-	711.0

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1.3. Type of Emission & Max ERP/EIRP Power Measurement Result:

	ERP / EIRP (dBm)		(W)	Type of Emission
GSM 850	21.98	ERP	0.158	242KGXW
GPRS 850	22.95	ERP	0.197	243KGXW
GSM 1900	26.09	EIRP	0.406	244KGXW
GPRS 1900	26.76	EIRP	0.474	248KGXW

	ERP / EIRP (dBm)		(W)	Type of Emission
WCDMA Band II	26.21	EIRP	0.418	4M13F9W
HSDPA Band II	25.69	EIRP	0.371	4M13F9W
HSUPA Band II	24.86	EIRP	0.306	4M12F9W
WCDMA Band IV	20.34	EIRP	0.108	4M12F9W
HSDPA Band IV	25.86	EIRP	0.385	4M12F9W
HSUPA Band IV	23.43	EIRP	0.220	4M12F9W

LTE Band	BW (MHz)	Modulation	ERP / EIRP (dBm)		(W)	Type of Emission	LTE Band	BW (MHz)	Modulation	ERP / EIRP (dBm)		(W)	Type of Emission
2	1.4	QPSK	21.62	EIRP	0.145	1M09G7D	4	1.4	QPSK	19.84	EIRP	0.096	1M09G7D
	1.4	16QAM	22.16	EIRP	0.164	1M10W7D		1.4	16QAM	19.47	EIRP	0.089	1M10W7D
	1.4	64QAM	23.16	EIRP	0.207	1M10W7D		1.4	64QAM	17.97	EIRP	0.063	1M10W7D
	3	QPSK	21.75	EIRP	0.150	2M70G7D		3	QPSK	20.06	EIRP	0.101	2M70G7D
	3	16QAM	22.13	EIRP	0.163	2M70W7D		3	16QAM	20.27	EIRP	0.106	2M71W7D
	3	64QAM	23.10	EIRP	0.204	2M70W7D		3	64QAM	18.29	EIRP	0.067	2M71W7D
	5	QPSK	21.56	EIRP	0.143	4M50G7D		5	QPSK	19.99	EIRP	0.100	4M50G7D
	5	16QAM	22.52	EIRP	0.179	4M50W7D		5	16QAM	20.32	EIRP	0.108	4M50W7D
	5	64QAM	23.08	EIRP	0.203	4M52W7D		5	64QAM	18.36	EIRP	0.069	4M51W7D
	10	QPSK	21.83	EIRP	0.152	9M00G7D		10	QPSK	19.92	EIRP	0.098	9M01G7D
	10	16QAM	22.32	EIRP	0.171	8M95W7D		10	16QAM	20.67	EIRP	0.117	8M97W7D
	10	64QAM	23.32	EIRP	0.215	8M98W7D		10	64QAM	18.67	EIRP	0.074	8M97W7D
	15	QPSK	21.20	EIRP	0.132	13M5G7D		15	QPSK	21.64	EIRP	0.146	13M5G7D
	15	16QAM	21.84	EIRP	0.153	13M5W7D		15	16QAM	20.80	EIRP	0.120	13M5W7D
	15	64QAM	22.84	EIRP	0.192	13M5W7D		15	64QAM	19.44	EIRP	0.088	13M5W7D
	20	QPSK	23.75	EIRP	0.237	18M0G7D		20	QPSK	19.97	EIRP	0.099	17M9G7D
	20	16QAM	22.23	EIRP	0.167	18M0W7D		20	16QAM	20.41	EIRP	0.110	18M0W7D
	20	64QAM	23.00	EIRP	0.200	19M9W7D		20	64QAM	20.41	EIRP	0.110	18M0W7D

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LTE Band	BW (MHz)	Modulation	ERP / EIRP (dBm)		(W)	Type of Emission	LTE Band	BW (MHz)	Modulation	ERP / EIRP (dBm)		(W)	Type of Emission
12	1.4	QPSK	20.72	ERP	0.118	1M10G7D	17	5	QPSK	22.19	ERP	0.166	4M52G7D
	1.4	16QAM	20.79	ERP	0.120	1M10W7D		5	16QAM	21.15	ERP	0.130	4M51W7D
	1.4	64QAM	19.82	ERP	0.096	1M10W7D		5	64QAM	18.45	ERP	0.070	4M52W7D
	3	QPSK	20.84	ERP	0.121	2M71G7D		10	QPSK	15.76	ERP	0.038	9M03G7D
	3	16QAM	21.19	ERP	0.132	2M72W7D		10	16QAM	15.74	ERP	0.037	8M99W7D
	3	64QAM	20.56	ERP	0.114	2M71W7D		10	64QAM	18.73	ERP	0.075	9M00W7D
	5	QPSK	22.75	ERP	0.188	4M52G7D							
	5	16QAM	22.06	ERP	0.161	4M51W7D							
	5	64QAM	20.44	ERP	0.111	4M51W7D							
	10	QPSK	20.96	ERP	0.125	9M02G7D							
	10	16QAM	21.39	ERP	0.138	9M00W7D							
	10	64QAM	20.22	ERP	0.105	8M99W7D							

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1.4. Test Methodology of Applied Standards

CC 47 CFR Part 2, 22, 24, 27.

ANSI C63.26-2015

KDB971168 D01 Power Meas license Digital System v03

KDB941225 D01 SAR test for 3G devices v03r01 (SAR Measurement Procedures for 3G Devices, WCDMA / HSPA) was used for EUT and Base station setting.

TS 151 010-1 is used to set, and measure the output power.

Note: All test items have been performed and record as per the above standards.

1.5. Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803 code 0513)

FCC Registration Numbers are: 509634 / TW0001

1.6. Special Accessories

No special accessories were used during testing.

1.7. Equipment Modifications

There were no modifications incorporated into the EUT.

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2. SYSTEM TEST CONFIGURATION

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

2.3. Test Procedure

2.3.1 Conducted Measurement at Antenna Port

According to measurement procured ANSI C63.26-2015, the EUT is placed on a turn table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

2.3.2 Radiated Emissions (ERP/EIRP)

According to measurement procured ANSI C63.26-2015, The EUT is a placed on as turn table, for emission measurements below 1 GHz is 0.8 m above ground plane, for emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 8 and 13.

2.4. Measurement Results Explanation Example

For all conducted test items:

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

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Note:

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

Following shows an offset computation in physical test.

	RF cable loss (dB)	Attenuation factor(dB)	offset(dB)
Low Band (Below 1GHz)	0.2	21	21.2
High Band (Above 1 GHz)	0.5	21.36	21.86

2.5. Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
GPRS 850	3.85	563
GSM 1900		532
WCDMA B2		575
WCDMA B4		584
LTE Band 2		591
LTE Band 4		592
LTE Band 12		595
LTE Band 17		562

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2.6. Configuration of Tested System

Fig. 2-1 Configuration of Tested System (Fixed Channel-Conducted)

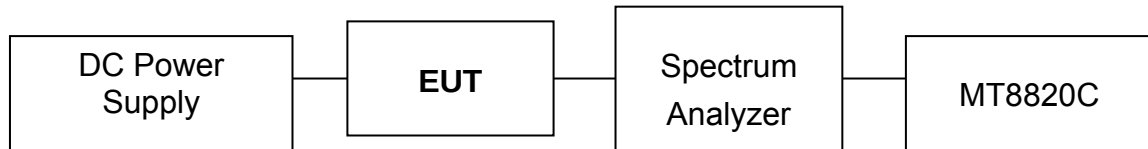
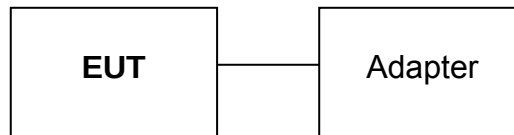


Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)



Remote Side

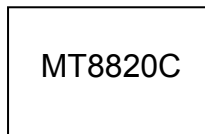


Table 2-1 Equipment Used in

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Radio Communication Analyzer	Anritsu	MT8820C	6201465317	shielded	Un-shielded

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3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)	RF Power Output	Compliant
§2.1046(a) §22.913(a)(5) §24.232(c) §27.50(c)(10) §27.50(h)(2)	ERP/ EIRP measurement	Compliant
§2.1049(h)	99% & 26dB Occuupied Bandwidth	Compliant
§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h) §27.53(m)(4)	Out of Band Emissions at Antenna Terminals and Band Edge / Emission mask requirements	Compliant
§2.1053 §22.917(a) §24.238(a) §27.53(g) §27.53(h) §27.53(m)(4)	Field Strength of Spurious Radiation	Compliant
§24.232(d) §27.50(d) (5)	Peak to Average Ratio	Compliant
§2.1055(a)(1) §22.355 §24.235 §27.54	Frequency Stability	Compliant

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4. DESCRIPTION OF TEST MODES

4.1. The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, X(E1)Y(E2)Z(H) axis and antenna ports. The worst case was found as listed below. Following channel(s) was (were) selected for the final test as listed below:

BAND	ERP/EIRP	RADIATED EMISSION
GSM/GPRS 850	H-plan	H-plan
GSM/GPRS 1900	H-plan	H-plan
WCDMA/HSPA Band II	H-plan	H-plan
WCDMA/HSPA Band IV	H-plan	H-plan
LTE Band 2	H-plan	H-plan
LTE Band 4	H-plan	H-plan
LTE Band 12	H-plan	H-plan
LTE Band 17	H-plan	H-plan

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GSM/GPRS MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
ERP	128 to 251	128, 190, 251	GSM/GPRS 850
EIRP	512 to 810	512, 661, 810	GSM/GPRS 1900
FREQUENCY STABILITY	128 to 251 512 to 810	190 661	GPRS 850 GPRS 1900
OCCUPIED BANDWIDTH	128 to 251 512 to 810	190 661	GSM/GPRS 850 GSM/GPRS 1900
PEAK TO AVERAGE RATIO	128 to 251 512 to 810	128, 190, 251 512, 661, 810	GSM/GPRS 850 GSM/GPRS 1900
BAND EDGE	128 to 251 512 to 810	128, 251 512, 810	GSM/GPRS 850 GSM/GPRS 1900
CONDCUDED EMISSION	128 to 251 512 to 810	128, 190, 251 512, 661, 810	GSM/GPRS 850 GSM/GPRS 1900
RADIATED EMISSION	128 to 251 512 to 810	128, 190, 251 512, 661, 810	GPRS 850 GPRS 1900

WCDMA/HSPA MODE

TEST ITEM	AVAILABLE CHAN- NEL	TESTED CHANNEL	MODE
EIRP	9262 to 9538 1312 to 1513	9262, 9400, 9583 1312, 1413, 1513	WCDMA/HSPA Band II WCDMA/HSPA Band IV
FREQUENCY STABILITY	4132 to 4233 1312 to 1513	4183 1413	WCDMA Band II WCDMA Band IV
OCCUPIED BANDWIDTH	4132 to 4233 1312 to 1513	4132, 4183, 4233 1312, 1413, 1513	WCDMA/HSPA Band II WCDMA/HSPA Band IV
PEAK TO AVERAGE RATIO	4132 to 4233 1312 to 1513	4132, 4183, 4233 1312, 1413, 1513	WCDMA/HSPA Band II WCDMA/HSPA Band IV
BAND EDGE	4132 to 4233 1312 to 1513	4132, 4233 1312, 1513	WCDMA Band II WCDMA Band IV
CONDCUDED EMISSION	4132 to 4233 1312 to 1513	4132, 4183, 4233 1312, 1413, 1513	WCDMA Band II WCDMA Band IV
RADIATED EMISSION	4132 to 4233 1312 to 1513	4132, 4183, 4233 1312, 1413, 1513	HSUPA Band II WCDMA Band IV

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LTE Band 2 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	1 RB/ 0,5 RB Offest
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	1 RB/ 0,14 RB Offest
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	1 RB/ 0,74 RB Offest
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	1 RB/ 0,99 RB Offest
FREQUENCY STABILITY	18650 to 19150	18900	10MHz	QPSK	Full RB
OCCUPIED BAND-WIDTH	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	Full RB
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	Full RB
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	Full RB
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	Full RB
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	Full RB
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	Full RB
PEAK TO AVERAGE RATIO	18607 to 19193	18607, 18900, 19193	1.4MHz	16QAM	Full RB
	18615 to 19185	18615, 18900, 19185	3MHz	16QAM	Full RB
	18625 to 19175	18625, 18900, 19175	5MHz	16QAM	Full RB
	18650 to 19150	18650, 18900, 19150	10MHz	16QAM	Full RB
	18675 to 19125	18675, 18900, 19125	15MHz	16QAM	Full RB
	18700 to 19100	18700, 18900, 19100	20MHz	16QAM	Full RB
BAND EDGE	18607 to 19193	18607, 19193	1.4MHz	QPSK	1 RB/ 0,5 RB Offes Full RB
	18615 to 19185	18615, 19185	3MHz	QPSK	1 RB/ 0,14 RB Offest Full RB
	18625 to 19175	18625, 19175	5MHz	QPSK	1 RB/ 0,24 RB Offest Full RB
	18650 to 19150	18650, 19150	10MHz	QPSK	1 RB/ 0,49 RB Offest Full RB
	18675 to 19125	18675, 19125	15MHz	QPSK	1 RB/ 0,74 RB Offest Full RB
	18700 to 19100	18700, 19100	20MHz	QPSK	1 RB/ 0,99 RB Offest Full RB
CONDCUDED EMISSION	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK	1 RB, 0 RB Offest
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK	1 RB, 0 RB Offest
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB, 0 RB Offest
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB, 0 RB Offest
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB, 0 RB Offest
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB, 0 RB Offest
RADIATED EMISSION	18607 to 19193	18607, 18900, 19193	5MHz	16QAM	1 RB, 24 RB Offest

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LTE Band 4 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK, 16QAM	1 RB/ 0,5 RB Offest
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK, 16QAM	1 RB/ 0,14 RB Offest
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB/ 0,74 RB Offest
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB/ 0,99 RB Offest
FREQUENCY STABILITY	20000 to 20350	20175	10MHz	QPSK	Full RB
OCCUPIED BAND-WIDTH	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK, 16QAM	Full RB
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK, 16QAM	Full RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	Full RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	Full RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	Full RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	Full RB
PEAK TO AVERAGE RATIO	19957 to 19393	19957, 20175, 19393	1.4MHz	16QAM	Full RB
	19965 to 22385	19965, 20175, 22385	3MHz	16QAM	Full RB
	19975 to 20375	19975, 20175, 20375	5MHz	16QAM	Full RB
	20000 to 20350	20000, 20175, 20350	10MHz	16QAM	Full RB
	20025 to 20325	20025, 20175, 20325	15MHz	16QAM	Full RB
	20050 to 20300	20050, 20175, 20300	20MHz	16QAM	Full RB
BAND EDGE	19957 to 19393	19957, 19393	1.4MHz	QPSK	1 RB/ 0,5 RB Offes Full RB
	19965 to 22385	19965, 22385	3MHz	QPSK	1 RB/ 0,14 RB Offest Full RB
	19975 to 20375	19975, 20375	5MHz	QPSK	1 RB/ 0,24 RB Offest Full RB
	20000 to 20350	20000, 20350	10MHz	QPSK	1 RB/ 0,49 RB Offest Full RB
	20025 to 20325	20025, 20325	15MHz	QPSK	1 RB/ 0,74 RB Offest Full RB
	20050 to 20300	20050, 20300	20MHz	QPSK	1 RB/ 0,99 RB Offest Full RB
CONDCUDED EMISSION	19957 to 19393	19957, 20175, 19393	1.4MHz	QPSK	1 RB, 0 RB Offest
	19965 to 22385	19965, 20175, 22385	3MHz	QPSK	1 RB, 0 RB Offest
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 RB, 0 RB Offest
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 RB, 0 RB Offest
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK	1 RB, 0 RB Offest
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK	1 RB, 0 RB Offest
RADIATED EMISSION	20050 to 20300	20050, 20175, 20300	15MHz	16QAM	1 RB, 74 RB Offest

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LTE Band 12 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BAND-WIDTH	MODULATION	MODE
ERP	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM, 64QAM	1 RB/ 0,5 RB Offest
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM, 64QAM	1 RB/ 0,14 RB Offest
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM, 64QAM	1 RB/ 0,24 RB Offest
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM, 64QAM	1 RB/ 0,49 RB Offest
FREQUENCY STABILITY	23060 to 23130	23095	10MHz	QPSK	Full RB
OCCUPIED BANDWIDTH	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM, 64QAM	Full RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM, 64QAM	Full RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM, 64QAM	Full RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM, 64QAM	Full RB
PEAK TO AVERAGE RATIO	23017 to 23173	23017, 23095, 23173	1.4MHz	64QAM	Full RB
	23025 to 23165	23025, 23095, 23165	3MHz	64QAM	Full RB
	23035 to 23155	23035, 23095, 23155	5MHz	64QAM	Full RB
	23060 to 23130	23060, 23095, 23130	10MHz	64QAM	Full RB
BAND EDGE	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK	1 RB/ 0,5 RB Offes Full RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK	1 RB/ 0,14 RB Offest Full RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK	1 RB/ 0,24 RB Offest Full RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK	1 RB/ 0,49 RB Offest Full RB
CONDCU-DETED EMISSION	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK	1 RB, 0 RB Offest
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK	1 RB, 0 RB Offest
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK	1 RB, 0 RB Offest
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK	1 RB, 0 RB Offest
RADIATED EMISSION	23017 to 23173	23017, 23095, 23173	5MHz	16QAM	1 RB, 24 RB Offest

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LTE Band 17 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
ERP	23755 to 23825	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 RB/ 0,24 RB Offest
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK, 16QAM	1 RB/ 0,49 RB Offest
FREQUENCY STABILITY	23780 to 23800	23790	10MHz	QPSK	Full RB
OCCUPIED BANDWIDTH	23755 to 23825	23755, 23790, 23825	5MHz	QPSK, 16QAM	Full RB
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK, 16QAM	Full RB
PEAK TO AVERAGE RATIO	23755 to 23825	23755, 23790, 23825	5MHz	16QAM	Full RB
	23780 to 23800	23780, 23790, 23800	10MHz	16QAM	Full RB
BAND EDGE	23755 to 23825	23755, 23825	5MHz	QPSK	1 RB/ 0,24 RB Offest Full RB
	23780 to 23800	23780, 23800	10MHz	QPSK	1 RB/ 0,49 RB Offest Full RB
CONDCUDED EMISSION	23755 to 23825	23755, 23790, 23825	5MHz	QPSK	1 RB, 0 RB Offest
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK	1 RB, 0 RB Offest
RADIATED EMISSION	23780 to 23800	23780, 23790, 23800	5MHz	QPSK	1 RB/ 0 RB Offest

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5. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
RF Power Output	+/- 1.10 dB
ERP/ EIRP measurement	Vertical Polarization = +/- 4.74dB Horizontal Polarization = +/- 4.62dB
99% Occupied Bandwidth	+/- 5.19 Hz
Out of Band Emissions at Antenna Terminals and Band Edge	+/- 0.70 dB
Peak to Average Ratio	+/- 0.70 dB
Frequency Stability vs. Temperature	+/- 5.19 Hz
Frequency Stability vs. Voltage	+/- 5.19 Hz
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC= +/- 0.2%

Radiated Spurious Emission:

Measurement uncertainty (Polarization : Vertical)	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : Horizontal)	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

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

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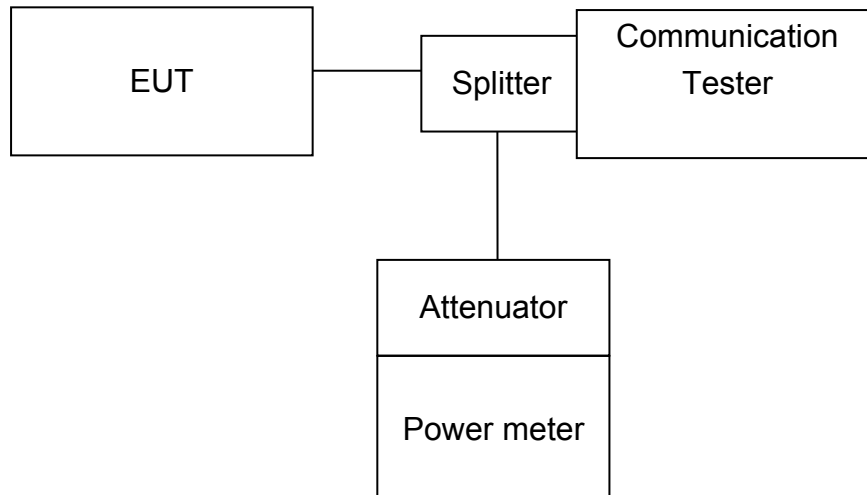
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6. RF CONDUCTED OUTPUT POWER MEASUREMENT

6.1. Standard Applicable

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals.

6.2. Test Set-up



Note: Measurement setup for testing on Antenna connector

6.3. Measurement Procedure

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading. TS 151 010-1 is reference to conduct the test measurement of output power.

The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, (WCD-MA/HSPA) was used for EUT and Base station setting. RMC 12.2kps is used for this testing, and KDB 971168 D01 Power Meas License Digital System as the supplemental test methodology to adjust the proper setting obtaining the measurement results

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6.4. Measurement Equipment Used

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Radio Communication Analyser	Anritsu	MT8820C	6201465317	2018/01/17	2019/01/16
Attenuator	Mini-Circuit	BW-S10W2+	2	2018/01/02	2019/01/01
Splitter	RF-LAMBDA	RFLT2W1G18G	11-JSPF412-018	2018/01/02	2019/01/01
Coaxial Cables	N/A	WK CE Cable	N/A	2018/01/02	2019/01/01

6.5. Measurement Result

RF Conducted Output Power

GSM/GPRS/EDGE (GMSK; 8-PSK) Result:

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
GSM 850	824.2	128	32.17	32.17	38.50	-6.33
	836.6	190	32.42	32.42	38.50	-6.08
	848.8	251	32.34	32.34	38.50	-6.16

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
GSM 1900	1850.2	512	29.36	29.36	33.00	-3.64
	1880.0	661	29.48	29.48	33.00	-3.52
	1909.8	810	29.50	29.50	33.00	-3.50

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EUT Mode	Frequency (MHz)	CH	Average Burst Power (1DN 1UP) Class 8 (dBm)	Average Burst Power (1DN 2UP) Class 10 (dBm)	Average Burst Power (1DN 3UP) Class 12 (dBm)	Average Burst Power (1DN 4UP) Class 12 (dBm)
GPRS 850	824.2	128	32.17	30.08	28.41	27.53
	836.6	190	32.42	30.02	28.36	27.40
	848.8	251	32.34	30.11	28.40	27.28

EUT Mode	Frequency (MHz)	CH	Average Burst Power (1DN 1UP) Class 8 (dBm)	Average Burst Power (1DN 2UP) Class 10 (dBm)	Average Burst Power (1DN 3UP) Class 12 (dBm)	Average Burst Power (1DN 4UP) Class 12 (dBm)
GPRS 1900	1850.2	512	29.36	27.42	25.75	24.66
	1880.0	661	29.48	27.50	25.84	24.75
	1909.8	810	29.50	27.50	25.91	24.64

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WCDMA MODE:

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 V8.4.0 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7). RMC 12.2kps is used for this testing.

Results:

WCDMA/HSUPA/HSDPA Band II Result:

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
WCDMA	1852.4	9262	22.82	22.82	33.00	-10.18
	1880.0	9400	22.99	22.99	33.00	-10.01
	1907.6	9538	22.98	22.98	33.00	-10.02
HSDPA	1852.4	9262	21.90	21.90	33.00	-11.10
	1880.0	9400	22.00	22.00	33.00	-11.00
	1907.6	9538	22.02	22.02	33.00	-10.98
HSUPA	1852.4	9262	21.84	21.84	33.00	-11.16
	1880.0	9400	21.96	21.96	33.00	-11.04
	1907.6	9538	21.99	21.99	33.00	-11.01

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WCDMA/HSUPA/HSDPA Band IV Result:

EUT Mode	Freq. (MHz)	CH	Conducted Avg. Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
WCDMA	1712.4	1312	22.89	22.89	30.00	-7.11
	1732.6	1413	22.92	22.92	30.00	-7.08
	1752.6	1513	22.85	22.85	30.00	-7.15
HSDPA	1712.4	1312	21.88	21.88	30.00	-8.12
	1732.6	1413	21.91	21.91	30.00	-8.09
	1752.6	1513	21.87	21.87	30.00	-8.13
HSUPA	1712.4	1312	21.88	21.88	30.00	-8.12
	1732.6	1413	21.89	21.89	30.00	-8.11
	1752.6	1513	21.84	21.84	30.00	-8.16

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LTE Result:

LTE Band 2_Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	18607	1850.7	QPSK	1	0	22.12	22.12	33	-10.88
				1	5	21.97	21.97	33	-11.03
				3	2	21.43	21.43	33	-11.57
				6	0	21.11	21.11	33	-11.89
	18900	1880	QPSK	1	0	22.23	22.23	33	-10.77
				1	5	22.23	22.23	33	-10.77
				3	2	21.38	21.38	33	-11.62
				6	0	21.17	21.17	33	-11.83
	19193	1909.3	QPSK	1	0	22.43	22.43	33	-10.57
				1	5	22.27	22.27	33	-10.73
				3	2	21.47	21.47	33	-11.53
				6	0	21.38	21.38	33	-11.62
	18607	1850.7	16QAM	1	0	21.85	21.85	33	-11.15
				1	5	21.68	21.68	33	-11.32
				3	2	20.29	20.29	33	-12.71
				6	0	20.20	20.20	33	-12.8
	18900	1880	16QAM	1	0	21.91	21.91	33	-11.09
				1	5	21.63	21.63	33	-11.37
				3	2	20.34	20.34	33	-12.66
				6	0	20.30	20.30	33	-12.7
	19193	1909.3	16QAM	1	0	21.66	21.66	33	-11.34
				1	5	21.95	21.95	33	-11.05
				3	2	20.63	20.63	33	-12.37
				6	0	20.51	20.51	33	-12.49
	18607	1850.7	64QAM	1	0	21.15	21.15	33	-11.85
				1	5	20.78	20.78	33	-12.22
				3	2	19.58	19.58	33	-13.42
				6	0	19.36	19.36	33	-13.64
	18900	1880	64QAM	1	0	21.17	21.17	33	-11.83
				1	5	20.91	20.91	33	-12.09
				3	2	19.55	19.55	33	-13.45
				6	0	19.43	19.43	33	-13.57
	19193	1909.3	64QAM	1	0	20.87	20.87	33	-12.13
				1	5	21.08	21.08	33	-11.92
				3	2	19.75	19.75	33	-13.25
				6	0	19.80	19.80	33	-13.2

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LTE Band 2 Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3	18615	1851.5	QPSK	1	0	22.17	22.17	33	-10.83
				1	14	22.13	22.13	33	-10.87
				8	4	21.13	21.13	33	-11.87
				15	0	21.11	21.11	33	-11.89
	18900	1880	QPSK	1	0	22.19	22.19	33	-10.81
				1	14	22.03	22.03	33	-10.97
				8	4	21.22	21.22	33	-11.78
				15	0	21.14	21.14	33	-11.86
	19185	1908.5	QPSK	1	0	22.41	22.41	33	-10.59
				1	14	22.29	22.29	33	-10.71
				8	4	21.34	21.34	33	-11.66
				15	0	21.34	21.34	33	-11.66
	18615	1851.5	16QAM	1	0	21.69	21.69	33	-11.31
				1	14	21.31	21.31	33	-11.69
				8	4	20.32	20.32	33	-12.68
				15	0	20.18	20.18	33	-12.82
	18900	1880	16QAM	1	0	21.72	21.72	33	-11.28
				1	14	21.36	21.36	33	-11.64
				8	4	20.35	20.35	33	-12.65
				15	0	20.30	20.30	33	-12.7
	19185	1908.5	16QAM	1	0	21.95	21.95	33	-11.05
				1	14	21.63	21.63	33	-11.37
				8	4	20.45	20.45	33	-12.55
				15	0	20.49	20.49	33	-12.51
	18615	1851.5	64QAM	1	0	20.93	20.93	33	-12.07
				1	14	20.45	20.45	33	-12.55
				8	4	19.45	19.45	33	-13.55
				15	0	19.40	19.40	33	-13.6
	18900	1880	64QAM	1	0	20.98	20.98	33	-12.02
				1	14	20.64	20.64	33	-12.36
				8	4	19.58	19.58	33	-13.42
				15	0	19.47	19.47	33	-13.53
	19185	1908.5	64QAM	1	0	21.01	21.01	33	-11.99
				1	14	20.79	20.79	33	-12.21
				8	4	19.57	19.57	33	-13.43
				15	0	19.69	19.69	33	-13.31

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LTE Band 2 Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5	18625	1852.5	QPSK	1	0	22.12	22.12	33	-10.88
				1	24	21.97	21.97	33	-11.03
				12	6	21.13	21.13	33	-11.87
				25	0	21.11	21.11	33	-11.89
	18900	1880	QPSK	1	0	22.23	22.23	33	-10.77
				1	24	22.23	22.23	33	-10.77
				12	6	21.18	21.18	33	-11.82
				25	0	21.17	21.17	33	-11.83
	19175	1907.5	QPSK	1	0	22.43	22.43	33	-10.57
				1	24	22.27	22.27	33	-10.73
				12	6	21.47	21.47	33	-11.53
				25	0	21.38	21.38	33	-11.62
	18625	1852.5	16QAM	1	0	21.48	21.48	33	-11.52
				1	24	21.25	21.25	33	-11.75
				12	6	20.25	20.25	33	-12.75
				25	0	20.26	20.26	33	-12.74
	18900	1880	16QAM	1	0	21.79	21.79	33	-11.21
				1	24	21.45	21.45	33	-11.55
				12	6	20.32	20.32	33	-12.68
				25	0	20.41	20.41	33	-12.59
	19175	1907.5	16QAM	1	0	21.58	21.58	33	-11.42
				1	24	22.02	22.02	33	-10.98
				12	6	20.46	20.46	33	-12.54
				25	0	20.52	20.52	33	-12.48
	18625	1852.5	64QAM	1	0	20.65	20.65	33	-12.35
				1	24	20.45	20.45	33	-12.55
				12	6	19.48	19.48	33	-13.52
				25	0	19.38	19.38	33	-13.62
	18900	1880	64QAM	1	0	20.92	20.92	33	-12.08
				1	24	20.62	20.62	33	-12.38
				12	6	19.61	19.61	33	-13.39
				25	0	19.57	19.57	33	-13.43
	19175	1907.5	64QAM	1	0	20.86	20.86	33	-12.14
				1	24	21.02	21.02	33	-11.98
				12	6	19.65	19.65	33	-13.35
				25	0	19.76	19.76	33	-13.24

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BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10	18650	1855	QPSK	1	0	22.22	22.22	33	-10.78
				1	49	22.11	22.11	33	-10.89
				25	12	21.16	21.16	33	-11.84
				50	0	21.18	21.18	33	-11.82
	18900	1880	QPSK	1	0	22.22	22.22	33	-10.78
				1	49	22.15	22.15	33	-10.85
				25	12	21.22	21.22	33	-11.78
				50	0	21.24	21.24	33	-11.76
	19150	1905	QPSK	1	0	22.61	22.61	33	-10.39
				1	49	22.35	22.35	33	-10.65
				25	12	21.46	21.46	33	-11.54
				50	0	21.45	21.45	33	-11.55
	18650	1855	16QAM	1	0	21.85	21.85	33	-11.15
				1	49	21.68	21.68	33	-11.32
				25	12	20.29	20.29	33	-12.71
				50	0	20.20	20.20	33	-12.8
	18900	1880	16QAM	1	0	21.91	21.91	33	-11.09
				1	49	21.63	21.63	33	-11.37
				25	12	20.34	20.34	33	-12.66
				50	0	20.30	20.30	33	-12.7
	19150	1905	16QAM	1	0	21.66	21.66	33	-11.34
				1	49	21.95	21.95	33	-11.05
				25	12	20.63	20.63	33	-12.37
				50	0	20.51	20.51	33	-12.49
	18650	1855	64QAM	1	0	21.14	21.14	33	-11.86
				1	49	20.89	20.89	33	-12.11
				25	12	19.43	19.43	33	-13.57
				50	0	19.45	19.45	33	-13.55
	18900	1880	64QAM	1	0	21.16	21.16	33	-11.84
				1	49	20.80	20.80	33	-12.2
				25	12	19.62	19.62	33	-13.38
				50	0	19.52	19.52	33	-13.48
	19150	1905	64QAM	1	0	20.88	20.88	33	-12.12
				1	49	21.20	21.20	33	-11.8
				25	12	19.78	19.78	33	-13.22
				50	0	19.76	19.76	33	-13.24

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BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15	18675	1857.5	QPSK	1	0	22.30	22.30	33	-10.7
				1	74	22.18	22.18	33	-10.82
				36	18	21.16	21.16	33	-11.84
				75	0	21.18	21.18	33	-11.82
	18900	1880	QPSK	1	0	22.37	22.37	33	-10.63
				1	74	22.23	22.23	33	-10.77
				36	18	21.21	21.21	33	-11.79
				75	0	21.20	21.20	33	-11.8
	19125	1902.5	QPSK	1	0	22.60	22.60	33	-10.4
				1	74	22.37	22.37	33	-10.63
				36	18	21.47	21.47	33	-11.53
				75	0	21.44	21.44	33	-11.56
	18675	1857.5	16QAM	1	0	21.23	21.23	33	-11.77
				1	74	21.27	21.27	33	-11.73
				36	18	20.36	20.36	33	-12.64
				75	0	20.26	20.26	33	-12.74
	18900	1880	16QAM	1	0	21.60	21.60	33	-11.4
				1	74	21.76	21.76	33	-11.24
				36	18	20.28	20.28	33	-12.72
				75	0	20.30	20.30	33	-12.7
	19125	1902.5	16QAM	1	0	21.72	21.72	33	-11.28
				1	74	21.96	21.96	33	-11.04
				36	18	20.52	20.52	33	-12.48
				75	0	20.53	20.53	33	-12.47
	18675	1857.5	64QAM	1	0	20.36	20.36	33	-12.64
				1	74	20.40	20.40	33	-12.6
				36	18	19.52	19.52	33	-13.48
				75	0	19.46	19.46	33	-13.54
	18900	1880	64QAM	1	0	20.89	20.89	33	-12.11
				1	74	21.05	21.05	33	-11.95
				36	18	19.57	19.57	33	-13.43
				75	0	19.48	19.48	33	-13.52
	19125	1902.5	64QAM	1	0	20.95	20.95	33	-12.05
				1	74	21.19	21.19	33	-11.81
				36	18	19.80	19.80	33	-13.2
				75	0	19.77	19.77	33	-13.23

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LTE Band 2 Uplink frequency band : 1850 to 1910 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20	18700	1860	QPSK	1	0	22.27	22.27	33	-10.73
				1	99	22.11	22.11	33	-10.89
				50	25	21.23	21.23	33	-11.77
				100	0	21.24	21.24	33	-11.76
	18900	1880	QPSK	1	0	22.29	22.29	33	-10.71
				1	99	22.05	22.05	33	-10.95
				50	25	21.29	21.29	33	-11.71
				100	0	21.31	21.31	33	-11.69
	19100	1900	QPSK	1	0	22.48	22.48	33	-10.52
				1	99	22.32	22.32	33	-10.68
				50	25	21.44	21.44	33	-11.56
				100	0	21.54	21.54	33	-11.46
	18700	1860	16QAM	1	0	21.75	21.75	33	-11.25
				1	99	21.25	21.25	33	-11.75
				50	25	20.30	20.30	33	-12.7
				100	0	20.33	20.33	33	-12.67
	18900	1880	16QAM	1	0	21.97	21.97	33	-11.03
				1	99	21.22	21.22	33	-11.78
				50	25	20.30	20.30	33	-12.7
				100	0	20.33	20.33	33	-12.67
	19100	1900	16QAM	1	0	22.08	22.08	33	-10.92
				1	99	22.01	22.01	33	-10.99
				50	25	20.58	20.58	33	-12.42
				100	0	20.69	20.69	33	-12.31
	18700	1860	64QAM	1	0	20.84	20.84	33	-12.16
				1	99	20.39	20.39	33	-12.61
				50	25	19.50	19.50	33	-13.5
				100	0	19.48	19.48	33	-13.52
	18900	1880	64QAM	1	0	21.15	21.15	33	-11.85
				1	99	20.27	20.27	33	-12.73
				50	25	19.49	19.49	33	-13.51
				100	0	19.45	19.45	33	-13.55
	19100	1900	64QAM	1	0	21.08	21.08	33	-11.92
				1	99	21.01	21.01	33	-11.99
				50	25	19.58	19.58	33	-13.42
				100	0	19.82	19.82	33	-13.18

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LTE Band 4 Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	19957	1710.7	QPSK	1	0	21.75	21.75	30	-8.25
				1	5	21.67	21.67	30	-8.33
				3	2	21.72	21.72	30	-8.28
				6	0	20.81	20.81	30	-9.19
	20175	1732.5	QPSK	1	0	21.84	21.84	30	-8.16
				1	5	21.71	21.71	30	-8.29
				3	2	21.75	21.75	30	-8.25
				6	0	20.85	20.85	30	-9.15
	20393	1754.3	QPSK	1	0	21.70	21.70	30	-8.3
				1	5	21.61	21.61	30	-8.39
				3	2	21.71	21.71	30	-8.29
				6	0	20.80	20.80	30	-9.2
	19957	1710.7	16QAM	1	0	21.60	21.60	30	-8.4
				1	5	21.11	21.11	30	-8.89
				3	2	20.96	20.96	30	-9.04
				6	0	19.85	19.85	30	-10.15
	20175	1732.5	16QAM	1	0	21.56	21.56	30	-8.44
				1	5	20.73	20.73	30	-9.27
				3	2	20.86	20.86	30	-9.14
				6	0	19.93	19.93	30	-10.07
	20393	1754.3	16QAM	1	0	21.23	21.23	30	-8.77
				1	5	21.06	21.06	30	-8.94
				3	2	20.90	20.90	30	-9.1
				6	0	19.94	19.94	30	-10.06
	19957	1710.7	64QAM	1	0	20.79	20.79	30	-9.21
				1	5	20.29	20.29	30	-9.71
				3	2	20.15	20.15	30	-9.85
				6	0	19.13	19.13	30	-10.87
	20175	1732.5	64QAM	1	0	20.82	20.82	30	-9.18
				1	5	19.92	19.92	30	-10.08
				3	2	20.05	20.05	30	-9.95
				6	0	19.10	19.10	30	-10.9
	20393	1754.3	64QAM	1	0	20.39	20.39	30	-9.61
				1	5	20.33	20.33	30	-9.67
				3	2	20.04	20.04	30	-9.96
				6	0	19.15	19.15	30	-10.85

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3	19965	1711.5	QPSK	1	0	21.75	21.75	30	-8.25
				1	14	21.67	21.67	30	-8.33
				8	4	20.77	20.77	30	-9.23
				15	0	20.81	20.81	30	-9.19
	20175	1732.5	QPSK	1	0	21.84	21.84	30	-8.16
				1	14	21.71	21.71	30	-8.29
				8	4	20.77	20.77	30	-9.23
				15	0	20.85	20.85	30	-9.15
	20385	1753.5	QPSK	1	0	21.70	21.70	30	-8.3
				1	14	21.61	21.61	30	-8.39
				8	4	20.71	20.71	30	-9.29
				15	0	20.80	20.80	30	-9.2
	19965	1711.5	16QAM	1	0	21.14	21.14	30	-8.86
				1	14	21.31	21.31	30	-8.69
				8	4	19.85	19.85	30	-10.15
				15	0	19.85	19.85	30	-10.15
	20175	1732.5	16QAM	1	0	21.16	21.16	30	-8.84
				1	14	20.94	20.94	30	-9.06
				8	4	19.87	19.87	30	-10.13
				15	0	19.86	19.86	30	-10.14
	20385	1753.5	16QAM	1	0	21.11	21.11	30	-8.89
				1	14	20.84	20.84	30	-9.16
				8	4	19.78	19.78	30	-10.22
				15	0	19.98	19.98	30	-10.02
	19965	1711.5	64QAM	1	0	20.29	20.29	30	-9.71
				1	14	20.48	20.48	30	-9.52
				8	4	18.98	18.98	30	-11.02
				15	0	18.97	18.97	30	-11.03
	20175	1732.5	64QAM	1	0	20.37	20.37	30	-9.63
				1	14	20.06	20.06	30	-9.94
				8	4	19.04	19.04	30	-10.96
				15	0	19.07	19.07	30	-10.93
	20385	1753.5	64QAM	1	0	20.23	20.23	30	-9.77
				1	14	20.08	20.08	30	-9.92
				8	4	18.96	18.96	30	-11.04
				15	0	19.16	19.16	30	-10.84

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LTE Band 4 Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5	19975	1712.5	QPSK	1	0	21.81	21.81	30	-8.19
				1	24	21.63	21.63	30	-8.37
				12	6	20.71	20.71	30	-9.29
				25	0	20.74	20.74	30	-9.26
	20175	1732.5	QPSK	1	0	21.75	21.75	30	-8.25
				1	24	21.73	21.73	30	-8.27
				12	6	20.72	20.72	30	-9.28
				25	0	20.76	20.76	30	-9.24
	20375	1752.5	QPSK	1	0	21.69	21.69	30	-8.31
				1	24	21.63	21.63	30	-8.37
				12	6	20.67	20.67	30	-9.33
				25	0	20.65	20.65	30	-9.35
	19975	1712.5	16QAM	1	0	20.70	20.70	30	-9.3
				1	24	21.28	21.28	30	-8.72
				12	6	19.81	19.81	30	-10.19
				25	0	19.87	19.87	30	-10.13
	20175	1732.5	16QAM	1	0	20.91	20.91	30	-9.09
				1	24	20.92	20.92	30	-9.08
				12	6	19.81	19.81	30	-10.19
				25	0	19.82	19.82	30	-10.18
	20375	1752.5	16QAM	1	0	20.84	20.84	30	-9.16
				1	24	21.22	21.22	30	-8.78
				12	6	19.81	19.81	30	-10.19
				25	0	19.73	19.73	30	-10.27
	19975	1712.5	64QAM	1	0	19.99	19.99	30	-10.01
				1	24	20.57	20.57	30	-9.43
				12	6	19.09	19.09	30	-10.91
				25	0	19.06	19.06	30	-10.94
	20175	1732.5	64QAM	1	0	20.18	20.18	30	-9.82
				1	24	20.17	20.17	30	-9.83
				12	6	19.01	19.01	30	-10.99
				25	0	18.97	18.97	30	-11.03
	20375	1752.5	64QAM	1	0	20.00	20.00	30	-10
				1	24	20.37	20.37	30	-9.63
				12	6	19.09	19.09	30	-10.91
				25	0	18.91	18.91	30	-11.09

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LTE Band 4 Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10	20000	1715	QPSK	1	0	21.75	21.75	30	-8.25
				1	49	21.67	21.67	30	-8.33
				25	12	20.77	20.77	30	-9.23
				50	0	20.81	20.81	30	-9.19
	20175	1732.5	QPSK	1	0	21.84	21.84	30	-8.16
				1	49	21.71	21.71	30	-8.29
				25	12	20.77	20.77	30	-9.23
				50	0	20.85	20.85	30	-9.15
	20375	1750	QPSK	1	0	21.70	21.70	30	-8.3
				1	49	21.61	21.61	30	-8.39
				25	12	20.71	20.71	30	-9.29
				50	0	20.80	20.80	30	-9.2
	20000	1715	16QAM	1	0	21.40	21.40	30	-8.6
				1	49	21.33	21.33	30	-8.67
				25	12	19.87	19.87	30	-10.13
				50	0	19.86	19.86	30	-10.14
	20175	1732.5	16QAM	1	0	21.09	21.09	30	-8.91
				1	49	20.69	20.69	30	-9.31
				25	12	19.85	19.85	30	-10.15
				50	0	19.88	19.88	30	-10.12
	20375	1750	16QAM	1	0	21.31	21.31	30	-8.69
				1	49	21.24	21.24	30	-8.76
				25	12	19.82	19.82	30	-10.18
				50	0	19.88	19.88	30	-10.12
	20000	1715	64QAM	1	0	20.58	20.58	30	-9.42
				1	49	20.59	20.59	30	-9.41
				25	12	19.12	19.12	30	-10.88
				50	0	19.15	19.15	30	-10.85
	20175	1732.5	64QAM	1	0	20.35	20.35	30	-9.65
				1	49	19.82	19.82	30	-10.18
				25	12	19.03	19.03	30	-10.97
				50	0	19.07	19.07	30	-10.93
	20375	1750	64QAM	1	0	20.49	20.49	30	-9.51
				1	49	20.53	20.53	30	-9.47
				25	12	19.01	19.01	30	-10.99
				50	0	19.14	19.14	30	-10.86

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BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15	20025	1717.5	QPSK	1	0	21.88	21.88	30	-8.12
				1	74	21.64	21.64	30	-8.36
				36	18	20.74	20.74	30	-9.26
				75	0	20.79	20.79	30	-9.21
	20175	1732.5	QPSK	1	0	21.95	21.95	30	-8.05
				1	74	21.78	21.78	30	-8.22
				36	18	20.82	20.82	30	-9.18
				75	0	20.80	20.80	30	-9.2
	20325	1747.5	QPSK	1	0	21.93	21.93	30	-8.07
				1	74	21.72	21.72	30	-8.28
				36	18	20.69	20.69	30	-9.31
				75	0	20.85	20.85	30	-9.15
	20025	1717.5	16QAM	1	0	21.14	21.14	30	-8.86
				1	74	21.31	21.31	30	-8.69
				36	18	19.85	19.85	30	-10.15
				75	0	19.85	19.85	30	-10.15
	20175	1732.5	16QAM	1	0	21.16	21.16	30	-8.84
				1	74	20.94	20.94	30	-9.06
				36	18	19.87	19.87	30	-10.13
				75	0	19.86	19.86	30	-10.14
	20325	1747.5	16QAM	1	0	21.11	21.11	30	-8.89
				1	74	20.84	20.84	30	-9.16
				36	18	19.78	19.78	30	-10.22
				75	0	19.98	19.98	30	-10.02
	20025	1717.5	64QAM	1	0	20.33	20.33	30	-9.67
				1	74	20.56	20.56	30	-9.44
				36	18	19.14	19.14	30	-10.86
				75	0	19.03	19.03	30	-10.97
	20175	1732.5	64QAM	1	0	20.41	20.41	30	-9.59
				1	74	20.21	20.21	30	-9.79
				36	18	19.11	19.11	30	-10.89
				75	0	19.13	19.13	30	-10.87
	20325	1747.5	64QAM	1	0	20.23	20.23	30	-9.77
				1	74	20.10	20.10	30	-9.9
				36	18	19.04	19.04	30	-10.96
				75	0	19.09	19.09	30	-10.91

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LTE Band 4 Uplink frequency band : 1710 to 1755 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20	20050	1720	QPSK	1	0	21.99	21.99	30	-8.01
				1	99	21.74	21.74	30	-8.26
				50	25	20.80	20.80	30	-9.2
				100	0	20.86	20.86	30	-9.14
	20175	1732.5	QPSK	1	0	22.00	22.00	30	-8
				1	99	21.63	21.63	30	-8.37
				50	25	20.86	20.86	30	-9.14
				100	0	20.78	20.78	30	-9.22
	20300	1745	QPSK	1	0	22.02	22.02	30	-7.98
				1	99	21.64	21.64	30	-8.36
				50	25	20.79	20.79	30	-9.21
				100	0	20.85	20.85	30	-9.15
	20050	1720	16QAM	1	0	21.60	21.60	30	-8.4
				1	99	21.11	21.11	30	-8.89
				50	25	19.86	19.86	30	-10.14
				100	0	19.85	19.85	30	-10.15
	20175	1732.5	16QAM	1	0	21.56	21.56	30	-8.44
				1	99	20.73	20.73	30	-9.27
				50	25	19.86	19.86	30	-10.14
				100	0	19.93	19.93	30	-10.07
	20300	1745	16QAM	1	0	21.23	21.23	30	-8.77
				1	99	21.06	21.06	30	-8.94
				50	25	19.90	19.90	30	-10.1
				100	0	19.94	19.94	30	-10.06
	20050	1720	64QAM	1	0	20.76	20.76	30	-9.24
				1	99	20.30	20.30	30	-9.7
				50	25	18.97	18.97	30	-11.03
				100	0	19.13	19.13	30	-10.87
	20175	1732.5	64QAM	1	0	20.76	20.76	30	-9.24
				1	99	20.01	20.01	30	-9.99
				50	25	19.10	19.10	30	-10.9
				100	0	19.15	19.15	30	-10.85
	20300	1745	64QAM	1	0	20.50	20.50	30	-9.5
				1	99	20.31	20.31	30	-9.69
				50	25	19.06	19.06	30	-10.94
				100	0	19.11	19.11	30	-10.89

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LTE Band 12_Uplink frequency band : 699 to 716 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	23017	699.7	QPSK	1	0	22.17	22.17	34.77	-12.6
				1	5	22.13	22.13	34.77	-12.64
				3	2	22.13	22.13	34.77	-12.64
				6	0	21.11	21.11	34.77	-13.66
	23095	707.5	QPSK	1	0	22.19	22.19	34.77	-12.58
				1	5	22.03	22.03	34.77	-12.74
				3	2	22.22	22.22	34.77	-12.55
				6	0	21.14	21.14	34.77	-13.63
	23173	715.5	QPSK	1	0	22.41	22.41	34.77	-12.36
				1	5	22.29	22.29	34.77	-12.48
				3	2	22.34	22.34	34.77	-12.43
				6	0	21.34	21.34	34.77	-13.43
	23017	699.7	16QAM	1	0	21.69	21.69	34.77	-13.08
				1	5	21.31	21.31	34.77	-13.46
				3	2	21.32	21.32	34.77	-13.45
				6	0	20.18	20.18	34.77	-14.59
	23095	707.5	16QAM	1	0	21.72	21.72	34.77	-13.05
				1	5	21.36	21.36	34.77	-13.41
				3	2	21.35	21.35	34.77	-13.42
				6	0	20.30	20.30	34.77	-14.47
	23173	715.5	16QAM	1	0	21.95	21.95	34.77	-12.82
				1	5	21.63	21.63	34.77	-13.14
				3	2	21.45	21.45	34.77	-13.32
				6	0	20.49	20.49	34.77	-14.28
	23017	699.7	64QAM	1	0	20.88	20.88	34.77	-13.89
				1	5	20.56	20.56	34.77	-14.21
				3	2	20.57	20.57	34.77	-14.2
				6	0	19.40	19.40	34.77	-15.37
	23095	707.5	64QAM	1	0	20.87	20.87	34.77	-13.9
				1	5	20.62	20.62	34.77	-14.15
				3	2	20.62	20.62	34.77	-14.15
				6	0	19.58	19.58	34.77	-15.19
	23173	715.5	64QAM	1	0	21.22	21.22	34.77	-13.55
				1	5	20.76	20.76	34.77	-14.01
				3	2	20.72	20.72	34.77	-14.05
				6	0	19.64	19.64	34.77	-15.13

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BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3	23025	700.5	QPSK	1	0	22.71	22.71	34.77	-12.06
				1	14	22.74	22.74	34.77	-12.03
				8	4	21.76	21.76	34.77	-13.01
				15	0	21.77	21.77	34.77	-13
	23095	707.5	QPSK	1	0	22.76	22.76	34.77	-12.01
				1	14	22.63	22.63	34.77	-12.14
				8	4	21.83	21.83	34.77	-12.94
				15	0	21.82	21.82	34.77	-12.95
	23165	714.5	QPSK	1	0	22.75	22.75	34.77	-12.02
				1	14	23.02	23.02	34.77	-11.75
				8	4	21.87	21.87	34.77	-12.9
				15	0	21.86	21.86	34.77	-12.91
	23025	700.5	16QAM	1	0	22.26	22.26	34.77	-12.51
				1	14	22.10	22.10	34.77	-12.67
				8	4	20.82	20.82	34.77	-13.95
				15	0	20.93	20.93	34.77	-13.84
	23095	707.5	16QAM	1	0	22.33	22.33	34.77	-12.44
				1	14	21.98	21.98	34.77	-12.79
				8	4	21.04	21.04	34.77	-13.73
				15	0	20.91	20.91	34.77	-13.86
	23165	714.5	16QAM	1	0	21.95	21.95	34.77	-12.82
				1	14	22.38	22.38	34.77	-12.39
				8	4	20.93	20.93	34.77	-13.84
				15	0	21.00	21.00	34.77	-13.77
	23025	700.5	64QAM	1	0	21.44	21.44	34.77	-13.33
				1	14	21.27	21.27	34.77	-13.5
				8	4	19.97	19.97	34.77	-14.8
				15	0	20.11	20.11	34.77	-14.66
	23095	707.5	64QAM	1	0	21.52	21.52	34.77	-13.25
				1	14	21.12	21.12	34.77	-13.65
				8	4	20.14	20.14	34.77	-14.63
				15	0	20.16	20.16	34.77	-14.61
	23165	714.5	64QAM	1	0	21.24	21.24	34.77	-13.53
				1	14	21.50	21.50	34.77	-13.27
				8	4	20.11	20.11	34.77	-14.66
				15	0	20.14	20.14	34.77	-14.63

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BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5	23035	701.5	QPSK	1	0	22.64	22.64	34.77	-12.13
				1	24	22.72	22.72	34.77	-12.05
				12	6	21.78	21.78	34.77	-12.99
				25	0	21.80	21.80	34.77	-12.97
	23095	707.5	QPSK	1	0	22.67	22.67	34.77	-12.1
				1	24	22.66	22.66	34.77	-12.11
				12	6	21.80	21.80	34.77	-12.97
				25	0	21.85	21.85	34.77	-12.92
	23155	713.5	QPSK	1	0	22.72	22.72	34.77	-12.05
				1	24	22.68	22.68	34.77	-12.09
				12	6	21.91	21.91	34.77	-12.86
				25	0	21.74	21.74	34.77	-13.03
	23035	701.5	16QAM	1	0	21.93	21.93	34.77	-12.84
				1	24	22.30	22.30	34.77	-12.47
				12	6	20.77	20.77	34.77	-14
				25	0	20.94	20.94	34.77	-13.83
	23095	707.5	16QAM	1	0	22.12	22.12	34.77	-12.65
				1	24	21.98	21.98	34.77	-12.79
				12	6	20.98	20.98	34.77	-13.79
				25	0	20.87	20.87	34.77	-13.9
	23155	713.5	16QAM	1	0	22.08	22.08	34.77	-12.69
				1	24	21.95	21.95	34.77	-12.82
				12	6	21.08	21.08	34.77	-13.69
				25	0	20.93	20.93	34.77	-13.84
	23035	701.5	64QAM	1	0	21.14	21.14	34.77	-13.63
				1	24	21.50	21.50	34.77	-13.27
				12	6	19.94	19.94	34.77	-14.83
				25	0	20.14	20.14	34.77	-14.63
	23095	707.5	64QAM	1	0	21.28	21.28	34.77	-13.49
				1	24	21.25	21.25	34.77	-13.52
				12	6	20.17	20.17	34.77	-14.6
				25	0	20.06	20.06	34.77	-14.71
	23155	713.5	64QAM	1	0	21.20	21.20	34.77	-13.57
				1	24	21.15	21.15	34.77	-13.62
				12	6	20.19	20.19	34.77	-14.58
				25	0	20.06	20.06	34.77	-14.71

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LTE Band 12_Uplink frequency band : 699 to 716 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10	23060	704	QPSK	1	0	22.76	22.76	34.77	-12.01
				1	49	22.82	22.82	34.77	-11.95
				25	12	21.90	21.90	34.77	-12.87
				50	0	21.89	21.89	34.77	-12.88
	23095	707.5	QPSK	1	0	22.70	22.70	34.77	-12.07
				1	49	22.71	22.71	34.77	-12.06
				25	12	21.84	21.84	34.77	-12.93
				50	0	21.85	21.85	34.77	-12.92
	23130	711	QPSK	1	0	23.05	23.05	34.77	-11.72
				1	49	22.89	22.89	34.77	-11.88
				25	12	21.92	21.92	34.77	-12.85
				50	0	21.83	21.83	34.77	-12.94
	23060	704	16QAM	1	0	21.67	21.67	34.77	-13.1
				1	49	22.43	22.43	34.77	-12.34
				25	12	20.86	20.86	34.77	-13.91
				50	0	20.99	20.99	34.77	-13.78
	23095	707.5	16QAM	1	0	22.26	22.26	34.77	-12.51
				1	49	21.95	21.95	34.77	-12.82
				25	12	20.94	20.94	34.77	-13.83
				50	0	20.99	20.99	34.77	-13.78
	23130	711	16QAM	1	0	21.99	21.99	34.77	-12.78
				1	49	21.81	21.81	34.77	-12.96
				25	12	20.92	20.92	34.77	-13.85
				50	0	20.97	20.97	34.77	-13.8
	23060	704	64QAM	1	0	20.87	20.87	34.77	-13.9
				1	49	21.55	21.55	34.77	-13.22
				25	12	20.15	20.15	34.77	-14.62
				50	0	20.28	20.28	34.77	-14.49
	23095	707.5	64QAM	1	0	21.46	21.46	34.77	-13.31
				1	49	21.10	21.10	34.77	-13.67
				25	12	20.21	20.21	34.77	-14.56
				50	0	20.17	20.17	34.77	-14.6
	23130	711	64QAM	1	0	21.27	21.27	34.77	-13.5
				1	49	20.92	20.92	34.77	-13.85
				25	12	20.06	20.06	34.77	-14.71
				50	0	20.11	20.11	34.77	-14.66

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LTE Band 17_Uplink frequency band : 704 to 716 MHz									
BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5	23755	706.5	QPSK	1	0	22.74	22.74	34.77	-12.03
				1	24	22.87	22.87	34.77	-11.9
				12	6	21.78	21.78	34.77	-12.99
				25	0	21.79	21.79	34.77	-12.98
	23790	710	QPSK	1	0	22.59	22.59	34.77	-12.18
				1	24	22.70	22.70	34.77	-12.07
				12	6	21.69	21.69	34.77	-13.08
				25	0	21.65	21.65	34.77	-13.12
	23825	713.5	QPSK	1	0	22.64	22.64	34.77	-12.13
				1	24	22.83	22.83	34.77	-11.94
				12	6	21.72	21.72	34.77	-13.05
				25	0	21.66	21.66	34.77	-13.11
	23755	706.5	16QAM	1	0	22.01	22.01	34.77	-12.76
				1	24	22.34	22.34	34.77	-12.43
				12	6	20.83	20.83	34.77	-13.94
				25	0	20.97	20.97	34.77	-13.8
	23790	710	16QAM	1	0	21.90	21.90	34.77	-12.87
				1	24	21.96	21.96	34.77	-12.81
				12	6	20.66	20.66	34.77	-14.11
				25	0	20.77	20.77	34.77	-14
	23825	713.5	16QAM	1	0	21.69	21.69	34.77	-13.08
				1	24	21.82	21.82	34.77	-12.95
				12	6	20.88	20.88	34.77	-13.89
				25	0	20.84	20.84	34.77	-13.93
	23755	706.5	64QAM	1	0	21.20	21.20	34.77	-13.57
				1	24	21.53	21.53	34.77	-13.24
				12	6	20.13	20.13	34.77	-14.64
				25	0	20.19	20.19	34.77	-14.58
	23790	710	64QAM	1	0	21.17	21.17	34.77	-13.6
				1	24	21.17	21.17	34.77	-13.6
				12	6	19.93	19.93	34.77	-14.84
				25	0	20.03	20.03	34.77	-14.74
	23825	713.5	64QAM	1	0	20.90	20.90	34.77	-13.87
				1	24	20.92	20.92	34.77	-13.85
				12	6	20.14	20.14	34.77	-14.63
				25	0	20.07	20.07	34.77	-14.7

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BW (MHz)	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10	23780	709	QPSK	1	0	22.62	22.62	34.77	-12.15
				1	49	22.89	22.89	34.77	-11.88
				25	12	21.76	21.76	34.77	-13.01
				50	0	21.74	21.74	34.77	-13.03
	23790	710	QPSK	1	0	22.66	22.66	34.77	-12.11
				1	49	22.74	22.74	34.77	-12.03
				25	12	21.73	21.73	34.77	-13.04
				50	0	21.69	21.69	34.77	-13.08
	23800	711	QPSK	1	0	22.81	22.81	34.77	-11.96
				1	49	22.75	22.75	34.77	-12.02
				25	12	21.77	21.77	34.77	-13
				50	0	21.78	21.78	34.77	-12.99
	23780	709	16QAM	1	0	22.27	22.27	34.77	-12.5
				1	49	22.21	22.21	34.77	-12.56
				25	12	20.74	20.74	34.77	-14.03
				50	0	20.85	20.85	34.77	-13.92
	23790	710	16QAM	1	0	22.18	22.18	34.77	-12.59
				1	49	21.79	21.79	34.77	-12.98
				25	12	20.72	20.72	34.77	-14.05
				50	0	20.71	20.71	34.77	-14.06
	23800	711	16QAM	1	0	21.96	21.96	34.77	-12.81
				1	49	22.31	22.31	34.77	-12.46
				25	12	20.88	20.88	34.77	-13.89
				50	0	20.79	20.79	34.77	-13.98
	23780	709	64QAM	1	0	21.45	21.45	34.77	-13.32
				1	49	21.31	21.31	34.77	-13.46
				25	12	19.88	19.88	34.77	-14.89
				50	0	20.01	20.01	34.77	-14.76
	23790	710	64QAM	1	0	21.42	21.42	34.77	-13.35
				1	49	21.07	21.07	34.77	-13.7
				25	12	19.89	19.89	34.77	-14.88
				50	0	19.97	19.97	34.77	-14.8
	23800	711	64QAM	1	0	21.23	21.23	34.77	-13.54
				1	49	21.53	21.53	34.77	-13.24
				25	12	20.15	20.15	34.77	-14.62
				50	0	20.02	20.02	34.77	-14.75

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HSDPA Release 6 MODE:

The following 4 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V8.4.0 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C10.1.4 & C11.1.3 in the 3GPP TS34.121-1 V8.4.0. RMC 12.2kps is used for this testing.

HSDPA SUB-TEST Setting

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)	RMC (Kbps)
1	2/15	15/15	64	2/15	4/15	0.0	0.0	12.2
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0	12.2
3	15/15	8/15	64	15/8	30/15	1.5	0.5	12.2
4	15/15	4/15	64	15/4	30/15	1.5	0.5	12.2

Note: The recommended HSDPA MPRs are implemented as per following sub-tests.

Results:

Mode	Sub test	Avg. Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		9262	9400	9538		
HSDPA II	1	21.90	22.00	22.02	20.3dBm – 25.7dBm	Pass
	2	21.37	21.50	21.51	20.3dBm – 25.7dBm	Pass
	3	21.38	21.52	21.51	19.8dBm – 25.7dBm	Pass
	4	21.40	21.56	21.49	19.8dBm – 25.7dBm	Pass

Mode	Sub test	Avg. Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		1312	1413	1513		
HSDPA IV	1	21.88	21.91	21.87	20.3dBm – 25.7dBm	Pass
	2	21.37	21.40	21.34	20.3dBm – 25.7dBm	Pass
	3	21.44	21.43	21.37	19.8dBm – 25.7dBm	Pass
	4	21.39	21.43	21.37	19.8dBm – 25.7dBm	Pass

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HSPA (HSDPA & HSUPA) Release 6 MODE

The following 5 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V8.4.0 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C11.1.3 in the 3GPP TS34.121-1 V8.4.0. RMC 12.2kps is used for this testing

HSPA SUB-TEST Setting

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH(FOR HSUPA)

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS}	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (Code s)	CM (dB)	MPR (dB)	AG Index	E-TFCI	RMC (Kbps)
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75	12.2
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67	12.2
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1} : 47/15 β_{ed2} : 47/15	4 4	2	2.0	1.0	15	92	12.2
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71	12.2
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81	12.2

Note: The recommended HSUPA MPRs are implemented as per following sub-tests.

Results:

Mode	Sub test	Avg. Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		9262	9400	9538		
HSUPA II	1	21.84	21.96	21.99	17.3dBm – 25.7dBm	Pass
	2	20.58	20.70	20.75	16.8dBm – 25.7dBm	Pass
	3	21.18	21.28	21.27	17.8dBm – 25.7dBm	Pass
	4	20.62	20.69	20.71	16.8dBm – 25.7dBm	Pass
	5	21.92	22.03	22.07	20.3dBm – 25.7dBm	Pass

Mode	Sub test	Avg. Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		1312	1413	1513		
HSUPA IV	1	21.88	21.89	21.84	17.3dBm – 25.7dBm	Pass
	2	20.57	20.60	20.58	16.8dBm – 25.7dBm	Pass
	3	21.14	21.27	21.19	17.8dBm – 25.7dBm	Pass
	4	20.63	20.63	20.60	16.8dBm – 25.7dBm	Pass
	5	21.91	21.92	21.88	20.3dBm – 25.7dBm	Pass

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Minimum Communications Power Measurement

PCS 1900 band

PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	29.12	27.31	25.14	23.19	21.22	19.15	17.24	15.31	13.14

PCL	9	10	11	12	13	14	15
Output power (dBm)	11.52	9.27	7.35	5.42	3.29	1.21	-0.98

Note: The EUT output power was controlled by simulator. Set Communication Tester [MT8820C](#) PCL as above, and get the mobile phone output power reading.

WCDMA/HSDPA/HSUPA band V

The EUT output power was controlled by simulator. Set Communication Tester MT8820C function key “UE Power Control” and enter max rated power 24dBm. The EUT is going to be set to max output power to 24dBm. Then record the read (see page 15 for measurement data). The min. power was measures by a function key “minimum power” then record the read. It is -52.3dBm. The power variation can be 0.1dB step by setting.

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7. EFFECTIVE RADIATED POWER AND EQUIVALENT ISOTROPIC RADIATED POWER MEASUREMENT

7.1. Standard Applicable

According to FCC §2.1046

FCC 22.913(a) Mobile station is limited to 7W ERP.

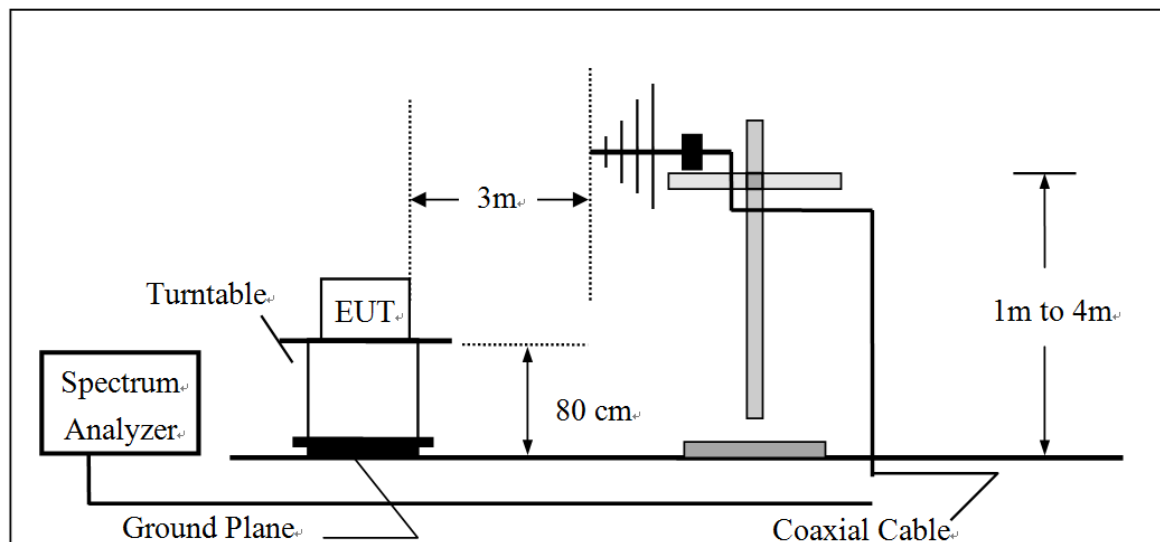
FCC 24.232(b) Mobile and portable stations are limited to 2W EIRP.

FCC 27.50(c)(10) Portable stations (hand-held devices) are limited to 3W ERP.

FCC 27, 50(h)(2) Mobile and other user stations. Mobile stations are limited to 2W EIRP

7.2. Test SET-UP

(A) Radiated Power Test Set-Up, Frequency Below 1000MHz



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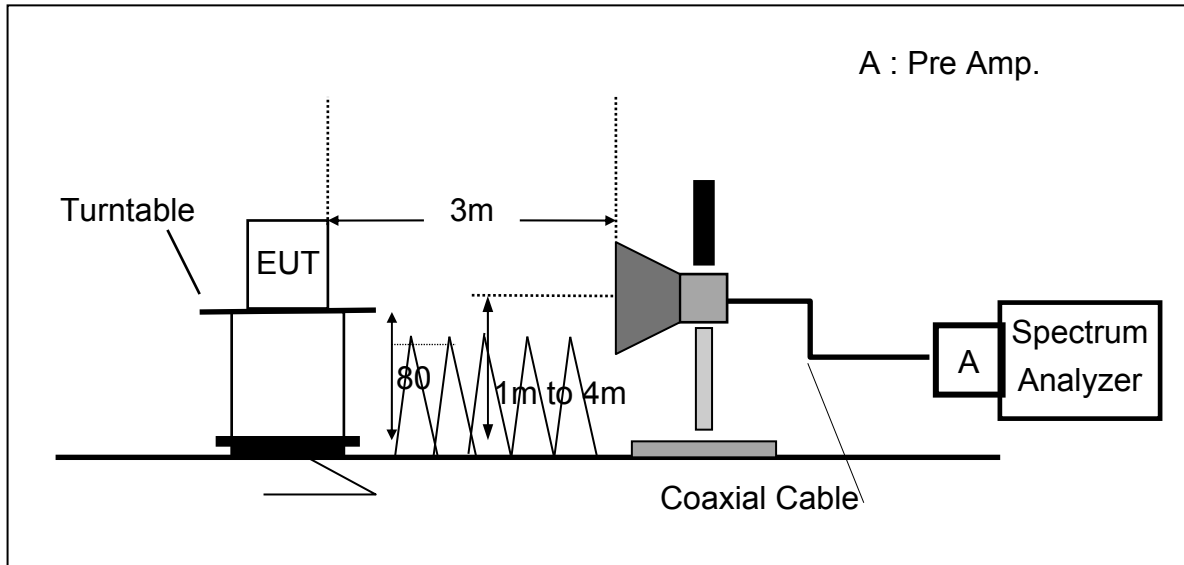
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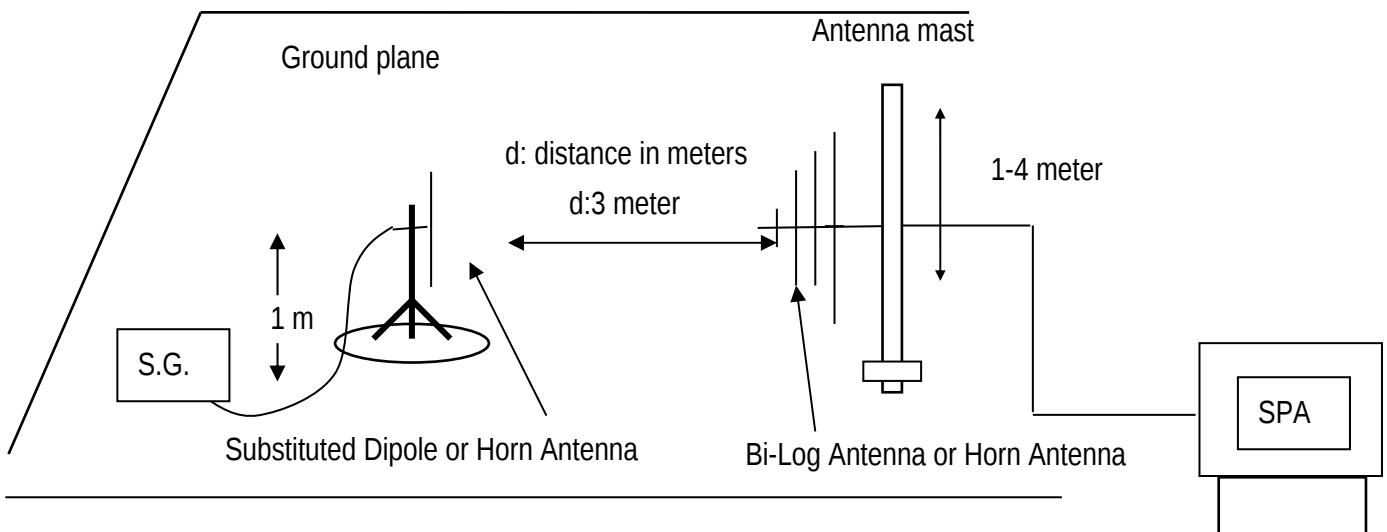
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(B) Radiated Power Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP



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7.3. Measurement Procedure

1. The testing follows the Measurement Procedure of FCC KDB 971168 D01
2. The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.
3. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated
4. The testing follows the Measurement Procedure of FCC KDB 971168 D01
5. 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 b. Record the power level of S.G.
6. $ERP = S.G. \text{ output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$
7. $EIRP = S.G. \text{ output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$
8. Spectrum setting:
 - (1) Detector = Peak, marker the highest value of the detector by maximum hold, set RBW wide enough to capture the entire signal of emission, and $VBW \geq 3 \times RBW$.
 - (2) KDB 971168 D01 is adopted, and the procedure as lists under item 4, Measurement of the Average Power over the Fundamental Signal Bandwidth, is followed to set correspondingly for the acquisition of proper measurement data.

Set frequency = nominal signal center frequency;
 Set span = 2 X occupied BW;
 Set RBW $\approx$ 1~5% of the span, not to exceed 1 MHz
 Set VBW = 3 x RBW;
 Select average power (RMS) detector
 Set sweep time and number of measurement points to achieve a minimum of 1 millisecond/pt integration time (ex. Point = 601points, then sweep time = $601 \times 10^{-3} = 6s$).

Activate trace averaging routine over a minimum of 10 sweeps;

Activate marker/span pair and set span = signal or channel bandwidth;

Activate the band/interval power marker function;

Record the band power level;

Record adjusted value as the average signal power level. Then activate the occupied bandwidth measurement function.

The proper adjustment due to limitation of spectrum capability is given compensated to spectrum with conversion factor of $10 \times \log(TBW/RBW)$, where TBW is the transmission of UE exceeding the maximum BW UE can extends, and RBW is the resolution BW in UE.

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7.4. Measurement Equipment Used

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Bi-log Antenna	SCHWAZBECK	VULB9168	378	2017/12/29	2018/12/28
Horn Antenna	Schwarzbeck	BBHA9120D	1441	2018/08/16	2019/08/15
Horn Antenna	Schwarzbeck	BBHA9170	184	2017/12/12	2018/12/11
Loop Antenna	ETS.LINDGREN	6502	148045	2017/09/26	2018/09/25
3m Site NSA	SGS	966 chamber	N/A	2018/01/02	2019/01/01
Spectrum Analyzer	Agilent	E4446A	MY51100003	2018/05/15	2019/05/14
EMI Test Receiver	R&S	ESCI7	100335	2018/02/02	2019/02/01
Pre-Amplifier	HP	8449B	3008A00578	2018/01/02	2019/01/01
Pre-Amplifier	HP	8447D	2944A07676	2018/01/02	2019/01/01
Pre-Amplifier	EMC Instruments	EMC184045B	980135	2017/10/27	2018/10/26
Attenuator	Mini-Circuit	BW-S10W2+	2	2018/01/02	2019/01/01
2GHz High Pass Filter	Micro-Tronics	HPM50110	36	2018/01/02	2019/01/01
Filter 5150-5350 MHz	Micro-Tronics	BRM50703	1	2018/01/02	2019/01/01
Low Loss Cable	Huber Suhner	966_RX	9	2018/01/02	2019/01/01

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7.5. Measurement Result: (Peak) –using option of peak measurement

EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
GSM 850	824.2	128	V	21.56	3.45	-3.12	21.89	38.45
			H	10.70	3.45	-3.11	11.04	38.45
	836.6	190	V	20.54	3.45	-3.32	20.68	38.45
			H	12.50	3.45	-3.32	12.63	38.45
	848.8	251	V	21.68	3.46	-3.16	21.98	38.45
			H	11.07	3.46	-3.16	11.37	38.45
GPRS 850	824.2	128	V	22.61	3.45	-3.12	22.95	38.45
			H	14.45	3.45	-3.12	14.78	38.45
	836.6	190	V	22.51	3.45	-3.32	22.65	38.45
			H	12.17	3.45	-3.32	12.30	38.45
	848.8	251	V	22.48	3.46	-3.16	22.78	38.45
			H	11.87	3.46	-3.17	12.16	38.45

Remark : (1)The RBW,VBW of SPA for frequency RBW=300 KHz, VBW=1MHz

EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dB	dB	dBm	dBm
GSM 1900	1850.2	512	V	16.43	9.77	-4.66	21.53	33.00
			H	20.47	9.77	-4.66	25.57	33.00
	1880.0	661	V	16.98	9.86	-4.70	22.14	33.00
			H	20.93	9.86	-4.70	26.09	33.00
	1909.8	810	V	16.71	9.94	-4.72	21.93	33.00
			H	20.29	9.94	-4.72	25.51	33.00
GPRS 1900	1850.2	512	V	18.44	9.77	-4.66	23.54	33.00
			H	21.66	9.77	-4.66	26.76	33.00
	1880.0	661	V	15.41	9.86	-4.70	20.57	33.00
			H	19.00	9.86	-4.70	24.16	33.00
	1909.8	810	V	18.55	9.94	-4.72	23.77	33.00
			H	21.51	9.94	-4.72	26.73	33.00

Remark : (1)The RBW,VBW of SPA for frequency RBW=300 KHz, VBW=1MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
WCDMA Band II	1852.4	9262	V	16.13	9.78	-4.67	21.24	33.00
			H	19.72	9.77	-4.67	24.83	33.00
	1880.0	9400	V	13.52	9.86	-4.70	18.68	33.00
			H	21.05	9.85	-4.70	26.21	33.00
	1907.6	9538	V	15.89	9.94	-4.72	21.11	33.00
			H	18.29	9.94	-4.72	23.50	33.00
HSDPA Band II	1852.4	9262	V	16.95	9.77	-4.67	22.06	33.00
			H	20.58	9.77	-4.67	25.69	33.00
	1880.0	9400	V	16.93	9.85	-4.70	22.09	33.00
			H	19.76	9.86	-4.70	24.92	33.00
	1907.6	9538	V	15.88	9.94	-4.72	21.10	33.00
			H	20.15	9.94	-4.72	25.37	33.00
HSUPA Band II	1852.4	9262	V	15.65	9.77	-4.67	20.76	33.00
			H	19.11	9.77	-4.67	24.21	33.00
	1880.0	9400	V	14.31	9.86	-4.70	19.47	33.00
			H	19.70	9.85	-4.70	24.86	33.00
	1907.6	9538	V	15.47	9.94	-4.72	20.69	33.00
			H	16.46	9.94	-4.72	21.68	33.00

Remark : (1)The RBW,VBW of SPA for frequency RBW=300 KHz, VBW=1MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
WCDMA Band IV	1712.4	1312	V	12.11	9.34	-4.45	17.00	30.00
			H	8.02	9.34	-4.45	12.91	30.00
	1732.6	1413	V	15.41	9.40	-4.48	20.34	30.00
			H	9.98	9.40	-4.48	14.91	30.00
	1752.6	1513	V	9.38	9.46	-4.49	14.35	30.00
			H	9.72	9.46	-4.49	14.68	30.00
HSDPA Band IV	1712.4	1312	V	16.81	9.34	-4.45	21.69	30.00
			H	13.01	9.35	-4.46	17.90	30.00
	1732.6	1413	V	20.94	9.40	-4.48	25.86	30.00
			H	16.08	9.40	-4.48	21.00	30.00
	1752.6	1513	V	16.48	9.46	-4.50	21.45	30.00
			H	14.33	9.46	-4.50	19.30	30.00
HSUPA Band IV	1712.4	1312	V	15.17	9.34	-4.45	20.06	30.00
			H	10.21	9.34	-4.45	15.09	30.00
	1732.6	1413	V	18.50	9.40	-4.48	23.43	30.00
			H	13.33	9.40	-4.48	18.25	30.00
	1752.6	1513	V	13.05	9.47	-4.50	18.02	30.00
			H	12.29	9.46	-4.50	17.26	30.00

Remark : (1)The RBW,VBW of SPA for frequency RBW= 5MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 2 BW: 1.4M QPSK RB: 1,0	1850.7	18607	V	16.52	9.77	-4.67	21.62	33.01
			H	11.16	9.77	-4.67	16.27	33.01
	1880.0	18900	V	16.39	9.85	-4.69	21.54	33.01
			H	11.53	9.85	-4.69	16.68	33.01
	1909.3	19193	V	15.34	9.94	-4.72	20.55	33.01
			H	10.98	9.94	-4.72	16.20	33.01
LTE BAND 2 BW: 1.4M QPSK RB: 1,5	1850.7	18607	V	16.35	9.77	-4.66	21.45	33.01
			H	11.07	9.77	-4.66	16.17	33.01
	1880.0	18900	V	16.15	9.85	-4.70	21.31	33.01
			H	11.39	9.85	-4.70	16.55	33.01
	1909.3	19193	V	15.38	9.94	-4.72	20.60	33.01
			H	10.96	9.94	-4.72	16.17	33.01
LTE BAND 2 BW: 1.4M 16QAM RB: 1,0	1850.7	18607	V	16.95	9.77	-4.67	22.05	33.01
			H	11.32	9.77	-4.67	16.43	33.01
	1880.0	18900	V	15.74	9.85	-4.69	20.90	33.01
			H	10.99	9.85	-4.69	16.14	33.01
	1909.3	19193	V	15.52	9.94	-4.72	20.73	33.01
			H	11.08	9.94	-4.72	16.29	33.01
LTE BAND 2 BW: 1.4M 16QAM RB: 1,5	1850.7	18607	V	17.06	9.77	-4.66	22.16	33.01
			H	11.45	9.77	-4.66	16.56	33.01
	1880.0	18900	V	15.96	9.85	-4.70	21.12	33.01
			H	11.27	9.85	-4.69	16.42	33.01
	1909.3	19193	V	15.81	9.94	-4.72	21.03	33.01
			H	11.23	9.94	-4.72	16.44	33.01
LTE BAND 2 BW: 1.4M 64QAM RB: 1,0	1850.7	18607	V	17.81	9.77	-4.67	22.92	33.01
			H	12.21	9.77	-4.67	17.32	33.01
	1880.0	18900	V	16.41	9.86	-4.70	21.57	33.01
			H	11.63	9.86	-4.70	16.79	33.01
	1909.3	19193	V	15.84	9.94	-4.72	21.06	33.01
			H	11.57	9.94	-4.72	16.78	33.01
LTE BAND 2 BW: 1.4M 64QAM RB: 1,74	1850.7	18607	V	18.06	9.77	-4.66	23.16	33.01
			H	12.51	9.77	-4.66	17.61	33.01
	1880.0	18900	V	16.72	9.85	-4.70	21.88	33.01
			H	11.85	9.86	-4.70	17.01	33.01
	1909.3	19193	V	16.33	9.94	-4.72	21.55	33.01
			H	11.93	9.94	-4.72	17.15	33.01

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 2 BW: 3M QPSK RB: 1,0	1851.5	18615	V	16.51	9.77	-4.67	21.62	33.01
			H	11.11	9.77	-4.67	16.22	33.01
	1880.0	18900	V	16.25	9.85	-4.69	21.41	33.01
			H	11.32	9.85	-4.69	16.48	33.01
	1908.5	19185	V	14.79	9.93	-4.72	20.00	33.01
			H	10.51	9.93	-4.72	15.72	33.01
LTE BAND 2 BW: 3M QPSK RB: 1,14	1851.5	18615	V	16.65	9.77	-4.67	21.75	33.01
			H	11.39	9.77	-4.66	16.49	33.01
	1880.0	18900	V	16.18	9.85	-4.70	21.34	33.01
			H	11.45	9.85	-4.70	16.61	33.01
	1908.5	19185	V	15.28	9.94	-4.72	20.50	33.01
			H	10.85	9.94	-4.72	16.07	33.01
LTE BAND 2 BW: 3M 16QAM RB: 1,0	1851.5	18615	V	16.83	9.77	-4.67	21.94	33.01
			H	11.51	9.77	-4.67	16.62	33.01
	1880.0	18900	V	15.78	9.85	-4.69	20.94	33.01
			H	10.73	9.85	-4.69	15.88	33.01
	1908.5	19185	V	15.16	9.93	-4.72	20.37	33.01
			H	10.91	9.93	-4.72	16.12	33.01
LTE BAND 2 BW: 3M 16QAM RB: 1,14	1851.5	18615	V	17.03	9.77	-4.66	22.13	33.01
			H	11.98	9.77	-4.67	17.09	33.01
	1880.0	18900	V	16.26	9.85	-4.70	21.42	33.01
			H	11.52	9.86	-4.70	16.67	33.01
	1908.5	19185	V	15.94	9.94	-4.72	21.16	33.01
			H	11.55	9.94	-4.72	16.77	33.01
LTE BAND 2 BW: 3M 64QAM RB: 1,0	1851.5	18615	V	17.82	9.77	-4.67	22.93	33.01
			H	12.48	9.77	-4.67	17.58	33.01
	1880.0	18900	V	16.25	9.86	-4.70	21.41	33.01
			H	11.41	9.86	-4.70	16.57	33.01
	1908.5	19185	V	15.82	9.94	-4.72	21.04	33.01
			H	11.33	9.94	-4.72	16.55	33.01
LTE BAND 2 BW: 3M 64QAM RB: 1,74	1851.5	18615	V	17.99	9.77	-4.67	23.10	33.01
			H	12.98	9.77	-4.67	18.09	33.01
	1880.0	18900	V	16.99	9.86	-4.70	22.15	33.01
			H	12.52	9.86	-4.70	17.67	33.01
	1908.5	19185	V	16.64	9.94	-4.72	21.86	33.01
			H	12.44	9.94	-4.72	17.66	33.01

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 2 BW: 5M QPSK RB: 1,0	1852.5	18625	V	16.27	9.77	-4.67	21.37	33.01
			H	10.82	9.77	-4.67	15.93	33.01
	1880.0	18900	V	16.11	9.84	-4.69	21.26	33.01
			H	10.99	9.84	-4.69	16.15	33.01
	1907.5	19175	V	14.24	9.93	-4.72	19.45	33.01
			H	10.06	9.93	-4.72	15.27	33.01
LTE BAND 2 BW: 5M QPSK RB: 1,24	1852.5	18625	V	16.45	9.78	-4.67	21.56	33.01
			H	11.15	9.77	-4.67	16.25	33.01
	1880.0	18900	V	15.85	9.86	-4.70	21.01	33.01
			H	11.19	9.86	-4.70	16.35	33.01
	1907.5	19175	V	15.01	9.94	-4.72	20.23	33.01
			H	10.62	9.94	-4.72	15.83	33.01
LTE BAND 2 BW: 5M 16QAM RB: 1,0	1852.5	18625	V	17.01	9.77	-4.67	22.11	33.01
			H	11.24	9.77	-4.67	16.35	33.01
	1880.0	18900	V	15.44	9.84	-4.69	20.59	33.01
			H	10.51	9.84	-4.69	15.66	33.01
	1907.5	19175	V	14.22	9.93	-4.72	19.43	33.01
			H	10.01	9.93	-4.72	15.22	33.01
LTE BAND 2 BW: 5M 16QAM RB: 1,24	1852.5	18625	V	17.41	9.78	-4.67	22.52	33.01
			H	11.88	9.78	-4.67	16.99	33.01
	1880.0	18900	V	16.17	9.86	-4.70	21.33	33.01
			H	11.60	9.86	-4.70	16.76	33.01
	1907.5	19175	V	15.58	9.94	-4.72	20.80	33.01
			H	11.24	9.94	-4.72	16.46	33.01
LTE BAND 2 BW: 5M 64QAM RB: 1,0	1852.5	18625	V	17.97	9.77	-4.67	23.08	33.01
			H	11.96	9.77	-4.67	17.06	33.01
	1880.0	18900	V	16.15	9.85	-4.70	21.31	33.01
			H	11.07	9.85	-4.70	16.23	33.01
	1907.5	19175	V	13.78	9.94	-4.72	18.99	33.01
			H	9.38	9.94	-4.72	14.60	33.01
LTE BAND 2 BW: 5M 64QAM RB: 1,74	1852.5	18625	V	17.83	9.77	-4.67	22.94	33.01
			H	11.94	9.77	-4.67	17.05	33.01
	1880.0	18900	V	17.17	9.86	-4.70	22.33	33.01
			H	12.60	9.86	-4.70	17.76	33.01
	1907.5	19175	V	16.10	9.94	-4.72	21.32	33.01
			H	11.95	9.94	-4.72	17.17	33.01

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 2 BW: 10M QPSK RB: 1,0	1855.0	18650	V	16.17	9.77	-4.67	21.28	33.01
			H	10.78	9.77	-4.67	15.88	33.01
	1880.0	18900	V	15.33	9.85	-4.69	20.49	33.01
			H	10.54	9.84	-4.69	15.69	33.01
	1905.0	19150	V	14.30	9.91	-4.71	19.50	33.01
			H	10.04	9.91	-4.71	15.24	33.01
LTE BAND 2 BW: 10M QPSK RB: 1,49	1855.0	18650	V	16.71	9.79	-4.67	21.83	33.01
			H	11.50	9.79	-4.67	16.62	33.01
	1880.0	18900	V	15.83	9.86	-4.70	21.00	33.01
			H	11.40	9.86	-4.70	16.56	33.01
	1905.0	19150	V	14.96	9.94	-4.72	20.17	33.01
			H	10.66	9.94	-4.72	15.88	33.01
LTE BAND 2 BW: 10M 16QAM RB: 1,0	1855.0	18650	V	16.69	9.77	-4.67	21.80	33.01
			H	14.38	9.77	-4.67	19.49	33.01
	1880.0	18900	V	14.49	9.84	-4.69	19.64	33.01
			H	9.65	9.84	-4.69	14.80	33.01
	1905.0	19150	V	14.25	9.91	-4.71	19.45	33.01
			H	10.10	9.91	-4.71	15.30	33.01
LTE BAND 2 BW: 10M 16QAM RB: 1,49	1855.0	18650	V	17.21	9.79	-4.67	22.32	33.01
			H	11.92	9.79	-4.67	17.04	33.01
	1880.0	18900	V	16.36	9.86	-4.70	21.52	33.01
			H	12.14	9.86	-4.70	17.30	33.01
	1905.0	19150	V	15.71	9.94	-4.72	20.92	33.01
			H	11.31	9.94	-4.72	16.53	33.01
LTE BAND 2 BW: 10M 64QAM RB: 1,0	1855.0	18650	V	17.69	9.77	-4.67	22.80	33.01
			H	15.38	9.77	-4.67	20.49	33.01
	1880.0	18900	V	15.47	9.85	-4.69	20.63	33.01
			H	10.32	9.85	-4.69	15.47	33.01
	1905.0	19150	V	14.94	9.92	-4.72	20.15	33.01
			H	10.74	9.92	-4.72	15.94	33.01
LTE BAND 2 BW: 10M 64QAM RB: 1,74	1855.0	18650	V	18.21	9.79	-4.67	23.32	33.01
			H	12.92	9.79	-4.67	18.04	33.01
	1880.0	18900	V	17.24	9.87	-4.70	22.41	33.01
			H	12.71	9.87	-4.70	17.88	33.01
	1905.0	19150	V	16.42	9.94	-4.72	21.64	33.01
			H	12.01	9.94	-4.72	17.23	33.01

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 2 BW: 15M QPSK RB: 1,0	1857.5	18675	V	16.06	9.77	-4.67	21.17	33.01
			H	10.72	9.77	-4.67	15.83	33.01
	1880.0	18900	V	15.22	9.83	-4.69	20.36	33.01
			H	10.06	9.83	-4.69	15.20	33.01
	1902.5	19125	V	15.29	9.90	-4.71	20.48	33.01
			H	11.13	9.90	-4.71	16.32	33.01
LTE BAND 2 BW: 15M QPSK RB: 1,74	1857.5	18675	V	16.07	9.80	-4.68	21.20	33.01
			H	10.71	9.80	-4.68	15.83	33.01
	1880.0	18900	V	15.81	9.87	-4.70	20.98	33.01
			H	11.48	9.87	-4.70	16.65	33.01
	1902.5	19125	V	14.78	9.94	-4.72	20.00	33.01
			H	10.52	9.94	-4.72	15.74	33.01
LTE BAND 2 BW: 15M 16QAM RB: 1,0	1857.5	18675	V	16.63	9.77	-4.67	21.73	33.01
			H	11.33	9.77	-4.67	16.44	33.01
	1880.0	18900	V	14.06	9.84	-4.69	19.21	33.01
			H	9.02	9.83	-4.69	14.16	33.01
	1902.5	19125	V	15.44	9.90	-4.71	20.63	33.01
			H	11.17	9.90	-4.71	16.36	33.01
LTE BAND 2 BW: 15M 16QAM RB: 1,74	1857.5	18675	V	16.14	9.80	-4.68	21.26	33.01
			H	10.84	9.80	-4.68	15.97	33.01
	1880.0	18900	V	16.68	9.87	-4.70	21.84	33.01
			H	13.13	9.87	-4.70	18.30	33.01
	1902.5	19125	V	15.33	9.94	-4.72	20.55	33.01
			H	10.88	9.94	-4.72	16.10	33.01
LTE BAND 2 BW: 15M 64QAM RB: 1,0	1857.5	18675	V	17.63	9.77	-4.67	22.73	33.01
			H	12.28	9.77	-4.67	17.39	33.01
	1880.0	18900	V	15.06	9.84	-4.69	20.21	33.01
			H	9.83	9.84	-4.69	14.98	33.01
	1902.5	19125	V	16.23	9.91	-4.71	21.43	33.01
			H	11.83	9.91	-4.71	17.03	33.01
LTE BAND 2 BW: 15M 64QAM RB: 1,74	1857.5	18675	V	17.14	9.80	-4.68	22.26	33.01
			H	11.84	9.80	-4.68	16.97	33.01
	1880.0	18900	V	17.68	9.87	-4.70	22.84	33.01
			H	14.13	9.87	-4.70	19.30	33.01
	1902.5	19125	V	16.33	9.94	-4.72	21.55	33.01
			H	11.76	9.94	-4.72	16.97	33.01

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT		CH	Measurement					
Operation Band	Fundamental Frequency		Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 2 BW: 20M QPSK RB: 1,0	1860.0	18700	V	18.65	9.77	-4.66	23.75	33.01
			H	12.81	9.77	-4.66	17.91	33.01
	1880.0	18900	V	17.18	9.83	-4.69	22.33	33.01
			H	11.54	9.83	-4.69	16.69	33.01
	1900.0	19100	V	17.74	9.89	-4.71	22.92	33.01
			H	13.40	9.89	-4.71	18.58	33.01
LTE BAND 2 BW: 20M QPSK RB: 1,99	1860.0	18700	V	17.30	9.82	-4.68	22.43	33.01
			H	11.80	9.82	-4.68	16.93	33.01
	1880.0	18900	V	18.02	9.88	-4.70	23.19	33.01
			H	13.63	9.88	-4.70	18.81	33.01
	1900.0	19100	V	16.81	9.94	-4.72	22.02	33.01
			H	12.46	9.94	-4.72	17.68	33.01
LTE BAND 2 BW: 20M 16QAM RB: 1,0	1860.0	18700	V	16.66	9.77	-4.67	21.77	33.01
			H	11.46	9.77	-4.67	16.57	33.01
	1880.0	18900	V	14.63	9.83	-4.69	19.78	33.01
			H	9.22	9.83	-4.69	14.37	33.01
	1900.0	19100	V	16.76	9.89	-4.71	21.95	33.01
			H	12.05	9.89	-4.71	17.23	33.01
LTE BAND 2 BW: 20M 16QAM RB: 1,99	1860.0	18700	V	15.33	9.82	-4.68	20.46	33.01
			H	10.89	9.82	-4.68	16.03	33.01
	1880.0	18900	V	17.06	9.88	-4.70	22.23	33.01
			H	12.55	9.88	-4.70	17.72	33.01
	1900.0	19100	V	15.47	9.94	-4.72	20.69	33.01
			H	10.97	9.94	-4.72	16.18	33.01
LTE BAND 2 BW: 20M 64QAM RB: 1,0	1860.0	18700	V	17.57	9.77	-4.66	22.67	33.01
			H	12.22	9.77	-4.66	17.32	33.01
	1880.0	18900	V	15.53	9.83	-4.69	20.67	33.01
			H	10.04	9.83	-4.69	15.18	33.01
	1900.0	19100	V	17.82	9.89	-4.71	23.00	33.01
			H	13.15	9.89	-4.71	18.33	33.01
LTE BAND 2 BW: 20M 64QAM RB: 1,99	1860.0	18700	V	15.83	9.82	-4.69	20.97	33.01
			H	11.28	9.82	-4.68	16.42	33.01
	1880.0	18900	V	17.16	9.88	-4.71	22.34	33.01
			H	13.08	9.88	-4.71	18.26	33.01
	1900.0	19100	V	16.05	9.94	-4.72	21.27	33.01
			H	11.39	9.94	-4.72	16.61	33.01

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 4 BW: 1.4M QPSK RB: 1,0	1710.7	19957	V	14.96	9.33	-4.45	19.84	30.00
			H	9.50	9.34	-4.45	14.38	30.00
	1732.5	20175	V	14.51	9.40	-4.48	19.44	30.00
			H	7.65	9.40	-4.48	12.58	30.00
	1754.3	20393	V	13.69	9.47	-4.50	18.66	30.00
			H	7.16	9.47	-4.50	12.13	30.00
LTE BAND 4 BW: 1.4M QPSK RB: 1,5	1710.7	19957	V	14.95	9.33	-4.45	19.83	30.00
			H	8.83	9.33	-4.45	13.72	30.00
	1732.5	20175	V	14.13	9.40	-4.48	19.06	30.00
			H	7.56	9.40	-4.48	12.49	30.00
	1754.3	20393	V	13.90	9.47	-4.50	18.88	30.00
			H	6.92	9.47	-4.50	11.89	30.00
LTE BAND 4 BW: 1.4M 16QAM RB: 1,0	1710.7	19957	V	14.54	9.33	-4.45	19.42	30.00
			H	8.62	9.33	-4.45	13.50	30.00
	1732.5	20175	V	14.31	9.39	-4.48	19.22	30.00
			H	7.65	9.40	-4.48	12.57	30.00
	1754.3	20393	V	14.40	9.47	-4.50	19.37	30.00
			H	6.13	9.47	-4.50	11.10	30.00
LTE BAND 4 BW: 1.4M 16QAM RB: 1,5	1710.7	19957	V	14.07	9.33	-4.45	18.96	30.00
			H	8.72	9.33	-4.45	13.60	30.00
	1732.5	20175	V	13.94	9.40	-4.48	18.87	30.00
			H	7.20	9.40	-4.48	12.12	30.00
	1754.3	20393	V	14.49	9.47	-4.50	19.47	30.00
			H	7.51	9.47	-4.50	12.49	30.00
LTE BAND 4 BW: 1.4M 64QAM RB: 1,0	1710.7	19957	V	12.66	9.34	-4.45	17.54	30.00
			H	6.64	9.34	-4.45	11.52	30.00
	1732.5	20175	V	12.34	9.41	-4.48	17.27	30.00
			H	5.54	9.41	-4.48	10.46	30.00
	1754.3	20393	V	12.87	9.47	-4.50	17.84	30.00
			H	6.01	9.46	-4.50	10.98	30.00
LTE BAND 4 BW: 1.4M 64QAM RB: 1,5	1710.7	19957	V	12.83	9.34	-4.45	17.72	30.00
			H	6.95	9.34	-4.45	11.84	30.00
	1732.5	20175	V	12.43	9.41	-4.48	17.36	30.00
			H	5.44	9.41	-4.48	10.37	30.00
	1754.3	20393	V	13.00	9.47	-4.50	17.97	30.00
			H	5.96	9.47	-4.50	10.93	30.00

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dB	dB	dBm	dBm
LTE BAND 4 BW: 3M QPSK RB: 1,0	1711.5	19965	V	14.44	9.33	-4.45	19.32	30.00
			H	8.82	9.33	-4.45	13.70	30.00
	1732.5	20175	V	14.30	9.40	-4.48	19.23	30.00
			H	7.58	9.40	-4.48	12.50	30.00
	1753.5	20385	V	13.93	9.47	-4.50	18.90	30.00
			H	7.53	9.47	-4.50	12.50	30.00
LTE BAND 4 BW: 3M QPSK RB: 1,14	1711.5	19965	V	15.18	9.34	-4.45	20.06	30.00
			H	9.37	9.34	-4.45	14.25	30.00
	1732.5	20175	V	14.37	9.40	-4.48	19.30	30.00
			H	7.77	9.40	-4.48	12.69	30.00
	1753.5	20385	V	14.04	9.47	-4.50	19.02	30.00
			H	7.36	9.47	-4.50	12.34	30.00
LTE BAND 4 BW: 3M 16QAM RB: 1,0	1711.5	19965	V	14.56	9.33	-4.45	19.45	30.00
			H	8.69	9.34	-4.45	13.58	30.00
	1732.5	20175	V	14.42	9.40	-4.48	19.34	30.00
			H	7.46	9.40	-4.48	12.38	30.00
	1753.5	20385	V	14.08	9.47	-4.50	19.05	30.00
			H	8.33	9.47	-4.50	13.31	30.00
LTE BAND 4 BW: 3M 16QAM RB: 1,14	1711.5	19965	V	15.33	9.33	-4.45	20.22	30.00
			H	9.66	9.33	-4.45	14.55	30.00
	1732.5	20175	V	14.66	9.40	-4.48	19.59	30.00
			H	7.82	9.40	-4.48	12.75	30.00
	1753.5	20385	V	15.30	9.47	-4.50	20.27	30.00
			H	8.29	9.47	-4.50	13.26	30.00
LTE BAND 4 BW: 3M 64QAM RB: 1,0	1711.5	19965	V	12.60	9.34	-4.45	17.48	30.00
			H	6.75	9.34	-4.45	11.63	30.00
	1732.5	20175	V	12.73	9.40	-4.48	17.66	30.00
			H	5.74	9.40	-4.48	10.66	30.00
	1753.5	20385	V	13.03	9.47	-4.50	18.00	30.00
			H	6.31	9.47	-4.50	11.29	30.00
LTE BAND 4 BW: 3M 64QAM RB: 1,5	1711.5	19965	V	13.25	9.34	-4.45	18.13	30.00
			H	7.61	9.34	-4.45	12.49	30.00
	1732.5	20175	V	12.29	9.40	-4.48	17.21	30.00
			H	5.64	9.40	-4.48	10.56	30.00
	1753.5	20385	V	13.32	9.47	-4.50	18.29	30.00
			H	5.71	9.47	-4.50	10.68	30.00

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 4 BW: 5M QPSK RB: 1,0	1712.5	19975	V	14.84	9.34	-4.45	19.72	30.00
			H	9.16	9.34	-4.45	14.05	30.00
	1732.5	20175	V	14.69	9.40	-4.48	19.61	30.00
			H	3.40	9.40	-4.48	12.70	30.00
	1752.5	20375	V	14.29	9.46	-4.49	19.26	30.00
			H	3.22	9.45	-4.49	13.07	30.00
LTE BAND 4 BW: 5M QPSK RB: 1,24	1712.5	19975	V	3.20	9.34	-4.45	19.99	30.00
			H	9.69	9.34	-4.45	14.57	30.00
	1732.5	20175	V	14.51	9.40	-4.48	19.44	30.00
			H	7.95	9.40	-4.48	12.87	30.00
	1752.5	20375	V	14.41	9.47	-4.50	19.38	30.00
			H	7.56	9.47	-4.50	12.53	30.00
LTE BAND 4 BW: 5M 16QAM RB: 1,0	1712.5	19975	V	14.52	9.34	-4.45	19.40	30.00
			H	9.01	9.34	-4.45	13.90	30.00
	1732.5	20175	V	14.87	9.40	-4.48	19.79	30.00
			H	7.92	9.40	-4.48	12.84	30.00
	1752.5	20375	V	15.01	9.46	-4.49	19.98	30.00
			H	8.72	9.46	-4.49	13.69	30.00
LTE BAND 4 BW: 5M 16QAM RB: 1,24	1712.5	19975	V	15.43	9.34	-4.45	20.32	30.00
			H	10.42	9.34	-4.45	15.31	30.00
	1732.5	20175	V	14.23	9.41	-4.48	19.16	30.00
			H	7.86	9.40	-4.48	12.78	30.00
	1752.5	20375	V	14.93	9.47	-4.50	19.91	30.00
			H	8.43	9.47	-4.50	13.41	30.00
LTE BAND 4 BW: 5M 64QAM RB: 1,0	1712.5	19975	V	12.31	9.33	-4.45	17.19	30.00
			H	6.79	9.33	-4.45	11.67	30.00
	1732.5	20175	V	12.63	9.40	-4.48	17.55	30.00
			H	5.88	9.40	-4.48	10.80	30.00
	1752.5	20375	V	12.60	9.46	-4.50	17.57	30.00
			H	6.69	9.46	-4.50	11.66	30.00
LTE BAND 4 BW: 5M 64QAM RB: 1,5	1712.5	19975	V	13.47	9.34	-4.45	18.36	30.00
			H	8.45	9.34	-4.45	13.34	30.00
	1732.5	20175	V	12.47	9.41	-4.48	17.39	30.00
			H	5.74	9.40	-4.48	10.67	30.00
	1752.5	20375	V	12.93	9.47	-4.50	17.91	30.00
			H	6.04	9.47	-4.50	11.01	30.00

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 4 BW: 10M QPSK RB: 1,0	1715.0	20000	V	14.89	9.34	-4.45	19.78	30.00
			H	9.24	9.34	-4.45	14.12	30.00
	1732.0	20175	V	13.87	9.40	-4.48	18.79	30.00
			H	7.81	9.39	-4.48	12.73	30.00
	1750.0	20350	V	14.28	9.45	-4.49	19.24	30.00
			H	8.03	9.45	-4.49	12.99	30.00
LTE BAND 4 BW: 10M QPSK RB: 1,49	1715.0	20000	V	15.03	9.35	-4.46	19.92	30.00
			H	10.18	9.35	-4.46	15.07	30.00
	1732.0	20175	V	14.53	9.41	-4.48	19.46	30.00
			H	7.96	9.41	-4.48	12.89	30.00
	1750.0	20350	V	14.46	9.47	-4.50	19.43	30.00
			H	7.60	9.46	-4.50	12.57	30.00
LTE BAND 4 BW: 10M 16QAM RB: 1,0	1715.0	20000	V	15.79	9.34	-4.45	20.67	30.00
			H	8.89	9.34	-4.45	13.77	30.00
	1732.0	20175	V	15.23	9.39	-4.48	20.15	30.00
			H	8.36	9.39	-4.47	13.28	30.00
	1750.0	20350	V	14.85	9.45	-4.49	19.81	30.00
			H	8.86	9.45	-4.49	13.81	30.00
LTE BAND 4 BW: 10M 16QAM RB: 1,49	1715.0	20000	V	15.64	9.35	-4.46	20.53	30.00
			H	9.40	9.35	-4.46	14.30	30.00
	1732.0	20175	V	14.63	9.41	-4.48	19.56	30.00
			H	8.16	9.41	-4.48	13.09	30.00
	1750.0	20350	V	14.84	9.47	-4.50	19.81	30.00
			H	8.33	9.47	-4.50	13.30	30.00
LTE BAND 4 BW: 10M 64QAM RB: 1,0	1715.0	20000	V	13.79	9.34	-4.45	18.67	30.00
			H	6.96	9.34	-4.45	11.85	30.00
	1732.0	20175	V	13.23	9.39	-4.47	18.15	30.00
			H	6.36	9.39	-4.47	11.28	30.00
	1750.0	20350	V	10.13	9.46	-4.49	15.10	30.00
			H	5.82	9.45	-4.49	10.78	30.00
LTE BAND 4 BW: 10M 64QAM RB: 1,5	1715.0	20000	V	13.50	9.35	-4.46	18.39	30.00
			H	7.11	9.35	-4.46	12.00	30.00
	1732.0	20175	V	12.21	9.41	-4.48	17.14	30.00
			H	5.80	9.41	-4.48	10.74	30.00
	1750.0	20350	V	12.93	9.47	-4.50	17.90	30.00
			H	6.54	9.47	-4.50	11.51	30.00

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 4 BW: 15M QPSK RB: 1,0	1717.5	20025	V	16.37	9.34	-4.45	21.25	30.00
			H	10.76	9.33	-4.45	15.64	30.00
	1732.5	20175	V	16.52	9.39	-4.47	21.43	30.00
			H	9.57	9.39	-4.47	14.48	30.00
	1747.5	20325	V	16.10	9.43	-4.49	21.05	30.00
			H	9.58	9.43	-4.49	14.53	30.00
LTE BAND 4 BW: 15M QPSK RB: 1,74	1717.5	20025	V	16.73	9.37	-4.47	21.64	30.00
			H	10.06	9.37	-4.47	14.96	30.00
	1732.5	20175	V	16.37	9.42	-4.48	21.30	30.00
			H	9.78	9.42	-4.48	14.72	30.00
	1747.5	20325	V	15.91	9.46	-4.50	20.88	30.00
			H	9.06	9.46	-4.50	14.03	30.00
LTE BAND 4 BW: 15M 16QAM RB: 1,0	1717.5	20025	V	14.74	9.34	-4.45	19.62	30.00
			H	9.02	9.34	-4.45	13.91	30.00
	1732.5	20175	V	15.88	9.39	-4.47	20.80	30.00
			H	8.26	9.38	-4.47	13.18	30.00
	1747.5	20325	V	14.56	9.43	-4.49	19.51	30.00
			H	8.19	9.43	-4.49	13.13	30.00
LTE BAND 4 BW: 15M 16QAM RB: 1,74	1717.5	20025	V	16.27	9.37	-4.46	21.18	30.00
			H	9.15	9.37	-4.47	14.06	30.00
	1732.5	20175	V	15.02	9.42	-4.48	19.96	30.00
			H	8.53	9.42	-4.48	13.47	30.00
	1747.5	20325	V	14.88	9.46	-4.50	19.85	30.00
			H	8.34	9.46	-4.50	13.31	30.00
LTE BAND 4 BW: 15M 64QAM RB: 1,0	1717.5	20025	V	12.62	9.33	-4.45	17.50	30.00
			H	6.90	9.33	-4.45	11.78	30.00
	1732.5	20175	V	13.87	9.39	-4.47	18.78	30.00
			H	6.22	9.39	-4.47	11.13	30.00
	1747.5	20325	V	12.22	9.43	-4.49	17.17	30.00
			H	6.17	9.43	-4.49	11.11	30.00
LTE BAND 4 BW: 15M 64QAM RB: 1,5	1717.5	20025	V	13.84	9.37	-4.47	18.75	30.00
			H	6.71	9.37	-4.47	11.62	30.00
	1732.5	20175	V	12.59	9.42	-4.48	17.53	30.00
			H	6.10	9.42	-4.48	11.04	30.00
	1747.5	20325	V	14.47	9.47	-4.50	19.44	30.00
			H	7.89	9.47	-4.50	12.86	30.00

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
	MHz		V/H	dBm	dBi	dB	dBm	dBm
LTE BAND 4 BW: 20M QPSK RB: 1,0	1720.0	20050	V	14.93	9.34	-4.45	19.81	30.00
			H	9.29	9.34	-4.45	14.18	30.00
	1732.5	20175	V	14.92	9.38	-4.47	19.82	30.00
			H	8.39	9.38	-4.47	13.30	30.00
	1745.0	20300	V	14.47	9.42	-4.48	19.40	30.00
			H	7.88	9.42	-4.48	12.81	30.00
LTE BAND 4 BW: 20M QPSK RB: 1,99	1720.0	20050	V	15.05	9.38	-4.47	19.97	30.00
			H	7.98	9.38	-4.47	12.89	30.00
	1732.5	20175	V	14.80	9.42	-4.48	19.74	30.00
			H	8.36	9.42	-4.48	13.30	30.00
	1745.0	20300	V	14.45	9.46	-4.50	19.42	30.00
			H	3.19	9.46	-4.50	12.61	30.00
LTE BAND 4 BW: 20M 16QAM RB: 1,0	1720.0	20050	V	14.87	9.34	-4.45	19.76	30.00
			H	9.14	9.34	-4.45	14.02	30.00
	1732.5	20175	V	15.50	9.38	-4.47	20.41	30.00
			H	9.01	9.38	-4.47	13.92	30.00
	1745.0	20300	V	14.24	9.42	-4.48	19.18	30.00
			H	7.84	9.42	-4.48	12.78	30.00
LTE BAND 4 BW: 20M 16QAM RB: 1,99	1720.0	20050	V	15.27	9.38	-4.47	20.19	30.00
			H	8.10	9.38	-4.47	13.01	30.00
	1732.5	20175	V	14.97	9.42	-4.48	19.91	30.00
			H	8.50	9.42	-4.48	13.44	30.00
	1745.0	20300	V	14.99	9.47	-4.50	19.96	30.00
			H	8.77	9.46	-4.50	13.73	30.00
LTE BAND 4 BW: 20M 64QAM RB: 1,0	1720.0	20050	V	14.87	9.34	-4.45	19.76	30.00
			H	9.14	9.34	-4.45	14.02	30.00
	1732.5	20175	V	15.50	9.38	-4.47	20.41	30.00
			H	9.01	9.38	-4.47	13.92	30.00
	1745.0	20300	V	14.24	9.42	-4.48	19.18	30.00
			H	7.84	9.42	-4.48	12.78	30.00
LTE BAND 4 BW: 20M 64QAM RB: 1,5	1720.0	20050	V	15.27	9.38	-4.47	20.19	30.00
			H	8.10	9.38	-4.47	13.01	30.00
	1732.5	20175	V	14.93	9.42	-4.48	19.87	30.00
			H	8.50	9.42	-4.48	13.44	30.00
	1745.0	20300	V	14.98	9.46	-4.50	19.95	30.00
			H	6.73	9.46	-4.50	11.70	30.00

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
LTE BAND 12 BW: 1.4M QPSK RB: 1,0	699.7	23017	V	16.41	3.67	-2.09	17.99	34.77
			H	14.13	3.67	-2.10	15.70	34.77
	707.5	23095	V	18.16	3.64	-2.01	19.79	34.77
			H	15.86	3.64	-2.03	17.47	34.77
	715.3	23173	V	19.43	3.62	-2.32	20.72	34.77
			H	16.47	3.62	-2.30	17.79	34.77
LTE BAND 12 BW: 1.4M QPSK RB: 1,5	699.7	23017	V	16.97	3.68	-2.23	18.42	34.77
			H	14.27	3.68	-2.23	15.72	34.77
	707.5	23095	V	17.73	3.65	-1.93	19.44	34.77
			H	15.51	3.64	-1.96	17.19	34.77
	715.3	23173	V	19.10	3.61	-2.42	20.29	34.77
			H	16.49	3.62	-2.37	17.74	34.77
LTE BAND 12 BW: 1.4M 16QAM RB: 1,0	699.7	23017	V	16.47	3.67	-2.10	18.04	34.77
			H	14.18	3.67	-2.11	15.74	34.77
	707.5	23095	V	18.30	3.64	-2.02	19.92	34.77
			H	15.93	3.64	-2.02	17.55	34.77
	715.3	23173	V	19.37	3.62	-2.32	20.66	34.77
			H	16.51	3.62	-2.33	17.79	34.77
LTE BAND 12 BW: 1.4M 16QAM RB: 1,5	699.7	23017	V	16.93	3.68	-2.25	18.36	34.77
			H	14.38	3.68	-2.21	15.84	34.77
	707.5	23095	V	17.96	3.65	-1.93	19.68	34.77
			H	15.40	3.65	-1.92	17.12	34.77
	715.3	23173	V	19.58	3.61	-2.41	20.79	34.77
			H	16.93	3.62	-2.36	18.19	34.77
LTE BAND 12 BW: 1.4M 64QAM RB: 1,0	699.7	23017	V	16.46	3.68	-2.19	17.95	34.77
			H	10.74	3.68	-2.19	12.23	34.77
	707.5	23095	V	18.09	3.65	-1.92	19.82	34.77
			H	12.49	3.65	-1.92	14.22	34.77
	715.3	23173	V	17.46	3.61	-2.41	18.66	34.77
			H	12.30	3.61	-2.41	13.51	34.77
LTE BAND 12 BW: 1.4M 64QAM RB: 1,5	699.7	23017	V	17.11	3.68	-2.25	18.54	34.77
			H	11.25	3.68	-2.24	12.68	34.77
	707.5	23095	V	18.00	3.65	-1.92	19.73	34.77
			H	12.43	3.65	-1.92	14.15	34.77
	715.3	23173	V	17.25	3.61	-2.41	18.46	34.77
			H	13.06	3.61	-2.40	14.27	34.77

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
LTE BAND 12 BW: 3M QPSK RB: 1,0	700.5	23025	V	16.77	3.67	-2.07	18.37	34.77
			H	15.10	3.67	-2.09	16.68	34.77
	707.5	23095	V	18.98	3.64	-2.00	20.63	34.77
			H	16.47	3.64	-2.00	18.11	34.77
	714.5	23165	V	18.27	3.61	-2.48	19.40	34.77
			H	15.52	3.61	-2.49	16.64	34.77
LTE BAND 12 BW: 3M QPSK RB: 1,14	700.5	23025	V	17.28	3.67	-2.10	18.85	34.77
			H	14.82	3.67	-2.10	16.39	34.77
	707.5	23095	V	18.10	3.65	-1.93	19.81	34.77
			H	15.36	3.65	-1.89	17.12	34.77
	714.5	23165	V	19.55	3.62	-2.33	20.84	34.77
			H	16.69	3.62	-2.33	17.98	34.77
LTE BAND 12 BW: 3M 16QAM RB: 1,0	700.5	23025	V	17.09	3.68	-2.22	18.55	34.77
			H	14.64	3.68	-2.18	16.13	34.77
	707.5	23095	V	19.17	3.64	-1.95	20.87	34.77
			H	16.76	3.64	-1.96	18.45	34.77
	714.5	23165	V	18.10	3.62	-2.32	19.39	34.77
			H	15.54	3.62	-2.30	16.86	34.77
LTE BAND 12 BW: 3M 16QAM RB: 1,14	700.5	23025	V	17.75	3.68	-2.18	19.25	34.77
			H	15.28	3.68	-2.19	16.76	34.77
	707.5	23095	V	18.25	3.65	-1.90	20.00	34.77
			H	15.58	3.65	-1.91	17.31	34.77
	714.5	23165	V	19.93	3.62	-2.36	21.19	34.77
			H	17.03	3.62	-2.36	18.29	34.77
LTE BAND 12 BW: 3M 64QAM RB: 1,0	700.5	23025	V	16.61	3.67	-2.14	18.15	34.77
			H	10.85	3.67	-2.13	12.39	34.77
	707.5	23095	V	18.49	3.64	-1.95	20.18	34.77
			H	14.02	3.65	-1.93	15.74	34.77
	714.5	23165	V	18.57	3.62	-2.39	19.80	34.77
			H	13.61	3.62	-2.40	14.82	34.77
LTE BAND 12 BW: 3M 64QAM RB: 1,14	700.5	23025	V	17.97	3.67	-2.17	19.47	34.77
			H	13.32	3.68	-2.19	14.81	34.77
	707.5	23095	V	18.84	3.65	-1.93	20.56	34.77
			H	13.47	3.65	-1.93	15.19	34.77
	714.5	23165	V	17.38	3.62	-2.37	18.63	34.77
			H	13.31	3.62	-2.38	14.55	34.77

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
LTE BAND 12 BW: 5M QPSK RB: 1,0	701.5	23035	V	20.10	3.67	-2.02	21.74	34.77
			H	15.18	3.67	-2.10	16.75	34.77
	707.5	23095	V	20.99	3.66	-1.90	22.75	34.77
			H	18.42	3.66	-1.89	20.18	34.77
	713.5	23155	V	19.84	3.62	-2.30	21.17	34.77
			H	16.03	3.64	-2.08	17.58	34.77
LTE BAND 12 BW: 5M QPSK RB: 1,24	701.5	23035	V	19.99	3.67	-2.02	21.64	34.77
			H	17.48	3.67	-2.02	19.13	34.77
	707.5	23095	V	19.08	3.64	-1.99	20.74	34.77
			H	16.25	3.64	-1.98	17.91	34.77
	713.5	23155	V	20.43	3.62	-2.36	21.69	34.77
			H	17.50	3.62	-2.37	18.75	34.77
LTE BAND 12 BW: 5M 16QAM RB: 1,0	701.5	23035	V	16.56	3.67	-2.10	18.14	34.77
			H	14.23	3.67	-2.10	15.80	34.77
	707.5	23095	V	20.32	3.65	-1.90	22.06	34.77
			H	17.63	3.65	-1.92	19.35	34.77
	713.5	23155	V	17.80	3.62	-2.26	19.16	34.77
			H	15.19	3.62	-2.33	16.48	34.77
LTE BAND 12 BW: 5M 16QAM RB: 1,24	701.5	23035	V	19.01	3.67	-2.08	20.60	34.77
			H	16.38	3.67	-2.07	17.98	34.77
	707.5	23095	V	18.17	3.64	-1.95	19.86	34.77
			H	15.29	3.64	-1.95	16.98	34.77
	713.5	23155	V	19.75	3.62	-2.33	21.04	34.77
			H	16.73	3.62	-2.33	18.02	34.77
LTE BAND 12 BW: 5M 64QAM RB: 1,0	701.5	23035	V	17.57	3.67	-2.10	19.14	34.77
			H	11.01	3.67	-2.08	12.59	34.77
	707.5	23095	V	18.73	3.65	-1.94	20.44	34.77
			H	13.28	3.65	-1.94	14.99	34.77
	713.5	23155	V	17.47	3.63	-2.14	18.97	34.77
			H	13.14	3.63	-2.14	14.63	34.77
LTE BAND 12 BW: 5M 64QAM RB: 1,24	701.5	23035	V	17.84	3.67	-2.01	19.50	34.77
			H	14.26	3.67	-2.00	15.93	34.77
	707.5	23095	V	17.59	3.64	-2.01	19.22	34.77
			H	13.24	3.64	-2.00	14.87	34.77
	713.5	23155	V	18.21	3.61	-2.41	19.41	34.77
			H	13.11	3.61	-2.41	14.31	34.77

Remark : (1) The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
LTE BAND 12 BW: 10M QPSK RB: 1,0	704.0	23060	V	18.18	3.66	-1.92	19.93	34.77
			H	15.76	3.66	-1.93	17.49	34.77
	707.5	23095	V	18.50	3.67	-2.06	20.10	34.77
			H	15.97	3.67	-2.06	17.58	34.77
	711.0	23130	V	18.94	3.65	-1.80	20.79	34.77
			H	16.27	3.65	-1.80	18.13	34.77
LTE BAND 12 BW: 10M QPSK RB: 1,49	704.0	23060	V	18.88	3.66	-1.83	20.70	34.77
			H	16.23	3.66	-1.82	18.07	34.77
	707.5	23095	V	18.21	3.64	-2.08	19.77	34.77
			H	15.33	3.64	-2.09	16.88	34.77
	711.0	23130	V	19.67	3.62	-2.33	20.96	34.77
			H	16.71	3.62	-2.33	17.99	34.77
LTE BAND 12 BW: 10M 16QAM RB: 1,0	704.0	23060	V	18.95	3.67	-2.12	20.50	34.77
			H	15.96	3.67	-2.15	17.48	34.77
	707.5	23095	V	18.21	3.66	-1.82	20.05	34.77
			H	15.76	3.66	-1.82	17.60	34.77
	711.0	23130	V	19.26	3.65	-1.80	21.11	34.77
			H	16.36	3.64	-1.99	18.02	34.77
LTE BAND 12 BW: 10M 16QAM RB: 1,49	704.0	23060	V	19.68	3.65	-1.94	21.39	34.77
			H	16.48	3.65	-1.87	18.26	34.77
	707.5	23095	V	18.28	3.63	-2.12	19.79	34.77
			H	15.25	3.63	-2.14	16.74	34.77
	711.0	23130	V	19.99	3.62	-2.34	21.27	34.77
			H	9.03	3.62	-2.34	10.31	34.77
LTE BAND 12 BW: 10M 64QAM RB: 1,0	704.0	23060	V	16.68	3.68	-2.25	18.11	34.77
			H	11.97	3.67	-2.15	13.50	34.77
	707.5	23095	V	18.31	3.66	-1.88	20.09	34.77
			H	12.72	3.66	-1.90	14.48	34.77
	711.0	23130	V	18.44	3.65	-1.87	20.22	34.77
			H	13.87	3.65	-1.88	15.64	34.77
LTE BAND 12 BW: 10M 64QAM RB: 1,49	704.0	23060	V	18.02	3.65	-1.93	19.74	34.77
			H	13.52	3.65	-1.93	15.23	34.77
	707.5	23095	V	16.81	3.63	-2.13	18.30	34.77
			H	13.41	3.63	-2.15	14.89	34.77
	711.0	23130	V	18.73	3.62	-2.36	19.99	34.77
			H	13.54	3.62	-2.36	14.80	34.77

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
LTE BAND 17 BW: 5M QPSK RB: 1,0	706.5	23755	V	10.22	3.65	-1.85	22.19	34.77
			H	8.91	3.65	-1.85	19.32	34.77
	710.0	23790	V	10.21	3.65	-1.87	20.76	34.77
			H	8.91	3.65	-1.87	18.30	34.77
	713.5	23825	V	10.05	3.62	-2.33	21.40	34.77
			H	9.16	3.62	-2.33	19.27	34.77
LTE BAND 17 BW: 5M QPSK RB: 1,24	706.5	23755	V	10.18	3.65	-1.93	20.61	34.77
			H	8.91	3.65	-1.92	18.17	34.77
	710.0	23790	V	10.11	3.63	-2.15	20.07	34.77
			H	8.98	3.63	-2.14	18.19	34.77
	713.5	23825	V	10.04	3.62	-2.36	21.55	34.77
			H	9.19	3.62	-2.36	19.39	34.77
LTE BAND 17 BW: 5M 16QAM RB: 1,0	706.5	23755	V	19.08	3.65	-1.84	20.89	34.77
			H	16.65	3.65	-1.84	18.46	34.77
	710.0	23790	V	17.85	3.64	-2.06	19.43	34.77
			H	15.51	3.64	-2.07	17.08	34.77
	713.5	23825	V	17.60	3.62	-2.28	18.95	34.77
			H	15.54	3.62	-2.29	16.87	34.77
LTE BAND 17 BW: 5M 16QAM RB: 1,24	706.5	23755	V	18.08	3.65	-1.92	19.80	34.77
			H	15.58	3.65	-1.92	17.30	34.77
	710.0	23790	V	17.70	3.63	-2.15	19.18	34.77
			H	15.41	3.63	-2.15	16.89	34.77
	713.5	23825	V	19.88	3.62	-2.36	21.15	34.77
			H	17.71	3.62	-2.35	18.97	34.77
LTE BAND 17 BW: 5M 64QAM RB: 1,0	706.5	23755	V	16.65	3.65	-1.85	18.45	34.77
			H	13.21	3.65	-1.85	15.01	34.77
	710.0	23790	V	15.86	3.64	-2.09	17.40	34.77
			H	11.39	3.64	-2.08	12.95	34.77
	713.5	23825	V	15.27	3.62	-2.29	16.60	34.77
			H	12.91	3.62	-2.30	14.23	34.77
LTE BAND 17 BW: 5M 64QAM RB: 1,24	706.5	23755	V	15.76	3.65	-1.91	17.50	34.77
			H	13.23	3.65	-1.93	14.94	34.77
	710.0	23790	V	15.68	3.63	-2.14	17.18	34.77
			H	13.11	3.63	-2.15	14.60	34.77
	713.5	23825	V	16.37	3.62	-2.38	17.61	34.77
			H	12.93	3.62	-2.38	14.17	34.77

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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EUT			Measurement					
Operation Band	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
	MHz		V/H	dBm	dBd	dB	dBm	dBm
LTE BAND 17 BW: 10M QPSK RB: 1,0	709.0	23780	V	13.75	3.65	-1.92	15.48	34.77
			H	13.39	3.65	-1.86	15.18	34.77
	710.0	23790	V	13.70	3.65	-1.92	15.43	34.77
			H	13.39	3.65	-1.92	15.11	34.77
	711.0	23800	V	13.59	3.64	-2.00	15.23	34.77
			H	13.21	3.64	-1.98	14.87	34.77
LTE BAND 17 BW: 10M QPSK RB: 1,49	709.0	23780	V	13.59	3.63	-2.19	15.04	34.77
			H	14.30	3.63	-2.24	15.68	34.77
	710.0	23790	V	14.01	3.62	-2.30	15.34	34.77
			H	14.43	3.62	-2.30	15.76	34.77
	711.0	23800	V	13.71	3.62	-2.35	14.97	34.77
			H	14.20	3.62	-2.36	15.46	34.77
LTE BAND 17 BW: 10M 16QAM RB: 1,0	709.0	23780	V	13.75	3.65	-1.94	15.46	34.77
			H	13.62	3.65	-1.88	15.39	34.77
	710.0	23790	V	13.92	3.64	-1.96	15.60	34.77
			H	13.43	3.65	-1.80	15.28	34.77
	711.0	23800	V	13.71	3.64	-2.02	15.34	34.77
			H	13.33	3.64	-1.97	15.00	34.77
LTE BAND 17 BW: 10M 16QAM RB: 1,49	709.0	23780	V	14.05	3.63	-2.24	15.44	34.77
			H	14.36	3.63	-2.25	15.73	34.77
	710.0	23790	V	14.12	3.62	-2.28	15.47	34.77
			H	14.41	3.62	-2.29	15.74	34.77
	711.0	23800	V	13.73	3.62	-2.36	14.99	34.77
			H	14.25	3.62	-2.37	15.50	34.77
LTE BAND 17 BW: 10M 64QAM RB: 1,0	709.0	23780	V	14.65	3.65	-1.85	16.44	34.77
			H	13.14	3.65	-1.88	14.91	34.77
	710.0	23790	V	16.51	3.65	-1.93	18.23	34.77
			H	14.01	3.65	-1.93	15.73	34.77
	711.0	23800	V	16.36	3.64	-2.01	17.99	34.77
			H	12.89	3.64	-1.98	14.55	34.77
LTE BAND 17 BW: 10M 64QAM RB: 1,49	709.0	23780	V	16.80	3.62	-2.25	18.17	34.77
			H	13.30	3.62	-2.25	14.67	34.77
	710.0	23790	V	15.84	3.62	-2.32	17.15	34.77
			H	13.39	3.62	-2.32	14.69	34.77
	711.0	23800	V	17.49	3.62	-2.38	18.73	34.77
			H	13.19	3.62	-2.35	14.46	34.77

Remark : (1)The RBW,VBW of SPA for frequency RBW= 8MHz , VBW= 8MHz

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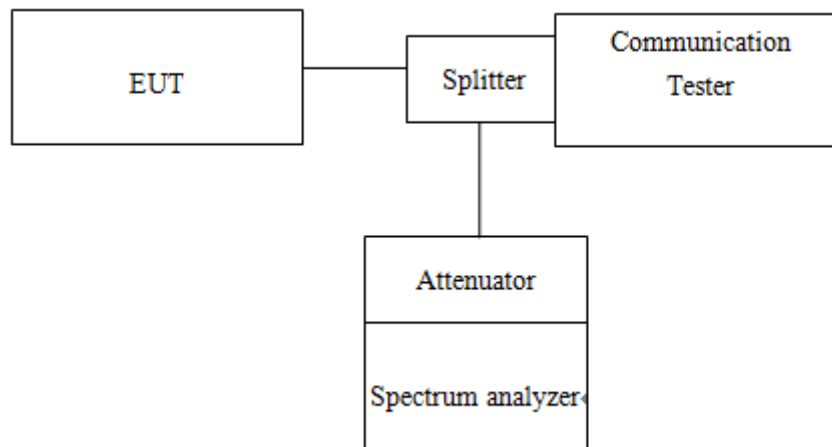
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8. OCCUPIED BANDWIDTH MEASUREMENT

8.1. Standard Applicable

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power.

8.2. Test Set-up



8.3. Measurement Procedure

99% &26dB Bandwidth with detector peak

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW= 3 times RBW, -26dBc display line was placed on the screen (or 26dB bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. Then set RBW to 99% bandwidth, RBW= 1%, VBW= 3 RBW, with span > 2 * Signal BW, set % Power = 99%.

99% Bandwidth with detector sample

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% ~ 5% of emission BW, VBW= 3 times RBW, -20dBc display line was placed on the screen (or 20dB bandwidth). Set RBW to 99% bandwidth, RBW= 1% ~ 5%, VBW= 3 RBW, with span > 2 * Signal BW, set % Power = 99%.

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8.4. Measurement Equipment Used

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EXA Spectrum Analyzer	Agilent	N9010A	MY57120290	2018/02/14	2019/02/13
Radio Communication Analyzer	Anritsu	MT8815B	6200711454	2018/04/05	2019/04/04
DC Power Supply	Anritsu	E3640A	MY40000811	2017/12/18	2018/12/17
Attenuator	Mini-Circuit	BW-S10W2+	2	2018/01/02	2019/01/01
DC Block	Mini-Circuits	BLK-18-S+	1	2018/01/02	2019/01/01
Splitter	RF-LAMBDA	RFLT2W1G18G	11-JSPF412-018	2018/01/02	2019/01/01
Coaxial Cables	N/A	WK CE Cable	N/A	2018/01/02	2019/01/01

8.5. Measurement Result

Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		GSM 850	GPRS 850	GSM 850	GPRS 850
824.2	128	0.23959	0.24283	0.302	0.314
836.6	190	0.24193	0.24134	0.306	0.317
848.8	251	0.24143	0.24194	0.322	0.305

Freq. (MHz)	CH	99% BW (MHz)		26 dB BW (MHz)	
		GSM 1900	GPRS 1900	GSM 1900	GPRS 1900
1850.2	512	0.24249	0.24213	0.304	0.322
1880.0	661	0.24390	0.24835	0.311	0.315
1909.8	810	0.24376	0.24545	0.301	0.312

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Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		WCDMA II	HSDPA II	HSUPA II	WCDMA II	HSDPA II	HSUPA II
1852.40	9262	4.12650	4.11030	4.11820	4.707	4.652	4.648
1880.00	9400	4.11770	4.13010	4.11400	4.652	4.679	4.675
1907.60	9538	4.12420	4.11390	4.11180	4.653	4.656	4.653

Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		WCDMA IV	HSDPA IV	HSUPA IV	WCDMA IV	HSDPA IV	HSUPA IV
1712.40	1312	4.12340	4.11690	4.12080	4.674	4.631	4.656
1732.60	1413	4.11560	4.12280	4.11780	4.628	4.654	4.655
1752.60	1513	4.11840	4.11880	4.11770	4.680	4.661	4.667

LTE BAND 2 Channel bandwidth: 1.4MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1850.7	18607	1.0920	1.0984	1.0935	1.235	1.245	1.230
1880.0	18900	1.0926	1.0957	1.0950	1.233	1.241	1.238
1909.3	19193	1.0939	1.0983	1.0974	1.239	1.236	1.236

LTE BAND 2 Channel bandwidth: 3MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1851.5	18615	2.6998	2.7028	2.7053	2.996	3.009	2.992
1880.0	18900	2.7005	2.7009	2.7006	3.017	3.021	2.986
1908.5	19185	2.6968	2.7031	2.7046	2.999	3.012	2.988

LTE BAND 2 Channel bandwidth: 5MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1852.5	18625	4.4976	4.5020	4.4999	5.004	4.964	4.983
1880.0	18900	4.4970	4.5012	4.5029	4.996	4.956	4.976
1907.5	19175	4.5012	4.4974	4.5166	4.997	4.973	4.956

LTE BAND 2 Channel bandwidth: 10MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1855.0	18650	9.0045	8.9519	8.9757	9.816	9.789	9.815
1880.0	18900	8.9900	8.9431	8.9789	9.828	9.749	9.811
1905.0	19150	8.9952	8.9547	8.9710	9.800	9.777	9.820

LTE BAND 2 Channel bandwidth: 15MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1857.5	18675	13.485	13.457	13.439	14.736	14.738	14.708
1880.0	18900	13.485	13.449	13.447	14.760	14.690	14.708
1902.5	19125	13.475	13.452	13.454	14.711	14.755	14.755

LTE BAND 2 Channel bandwidth: 20MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1860.0	18700	17.953	17.931	17.945	19.639	19.538	19.595
1880.0	18900	17.939	17.957	17.911	19.548	19.544	19.451
1900.0	19100	17.940	17.946	17.935	19.496	19.540	19.462

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LTE BAND 4 Channel bandwidth: 1.4MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1710.7	19957	1.0935	1.0981	1.0964	1.243	1.237	1.235
1732.5	20175	1.0944	1.0937	1.0959	1.236	1.237	1.239
1754.3	20393	1.0943	1.0971	1.0946	1.240	1.242	1.235

LTE BAND 4 Channel bandwidth: 3MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1711.5	19965	2.6979	2.6995	2.7070	2.999	3.007	2.995
1732.5	20175	2.7003	2.7054	2.7085	3.003	3.026	3.001
1753.5	20385	2.7033	2.7026	2.7057	2.995	3.009	2.985

LTE BAND 4 Channel bandwidth: 5MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1712.5	19957	4.5032	4.5021	4.5045	4.999	4.966	4.977
1732.5	20175	4.5021	4.5034	4.5063	4.975	4.942	4.972
1752.5	20375	4.5002	4.5023	4.5032	4.989	4.975	4.986

LTE BAND 4 Channel bandwidth: 10MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1715.0	20000	9.0110	8.9629	8.9559	9.785	9.794	9.772
1732.5	20175	8.9856	8.9674	8.9720	9.832	9.741	9.792
1750.0	20350	8.9913	8.9516	8.9558	9.831	9.771	9.801

LTE BAND 4 Channel bandwidth: 15MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1717.5	20025	13.471	13.461	13.444	14.668	14.756	14.703
1732.5	20175	13.475	13.476	13.464	14.651	14.734	14.708
1747.5	20325	13.485	13.459	13.457	14.639	14.704	14.712

LTE BAND 4 Channel bandwidth: 20MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
1720.0	20050	17.937	17.948	17.964	19.569	19.418	19.482
1732.5	20175	17.924	17.945	17.945	19.462	19.457	19.506
1745.0	20300	17.919	17.963	17.934	19.489	19.476	19.571

LTE BAND 12 Channel bandwidth: 1.4MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
699.7	23017	1.0979	1.0973	1.0962	1.245	1.238	1.235
707.5	23095	1.0959	1.0961	1.0961	1.241	1.240	1.237
715.3	23173	1.0942	1.0994	1.0934	1.239	1.241	1.234

LTE BAND 12 Channel bandwidth: 3MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
700.5	23025	2.7011	2.7004	2.7061	2.990	3.004	3.008
707.5	23095	2.7060	2.7164	2.7028	3.004	2.944	2.993
714.5	23165	2.7033	2.6992	2.6892	2.972	2.990	2.908

LTE BAND 12 Channel bandwidth: 5MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
701.5	23035	4.5102	4.5058	4.4998	5.003	4.972	4.962
707.5	23095	4.5204	4.5034	4.4972	4.994	4.990	4.971
713.5	23155	4.5048	4.4930	4.5068	4.972	4.954	4.946

LTE BAND 12 Channel bandwidth: 10MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
704.0	23060	8.9974	8.9769	8.9797	9.696	9.819	9.812
707.5	23095	9.0080	9.0034	8.9929	9.883	9.781	9.852
711.0	23130	9.0155	8.9838	8.9878	9.843	9.745	9.817

LTE BAND 17 Channel bandwidth: 5MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
706.5	23755	4.5188	4.5088	4.5123	4.992	4.990	4.953
710.0	23790	4.5177	4.5100	4.5244	5.008	4.975	4.972
713.5	23825	4.4985	4.4910	4.4951	4.975	4.927	4.968

LTE BAND 17 Channel bandwidth: 10MHz							
Freq. (MHz)	CH	99% BW (MHz)			26 dB BW (MHz)		
		QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
709.0	23780	9.0295	8.9891	9.0029	9.915	9.752	9.785
710.0	23790	9.0039	8.9927	8.9973	9.772	9.776	9.850
711.0	23800	8.9966	8.9678	8.9924	9.885	9.717	9.792

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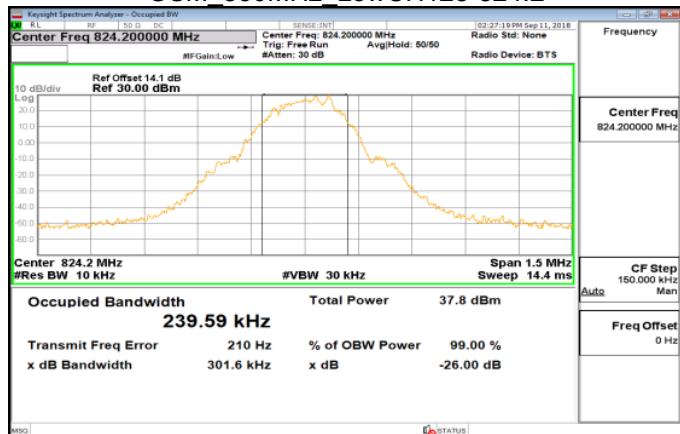
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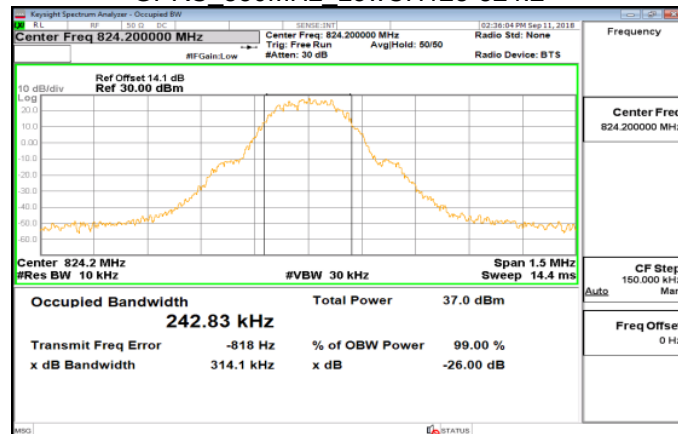
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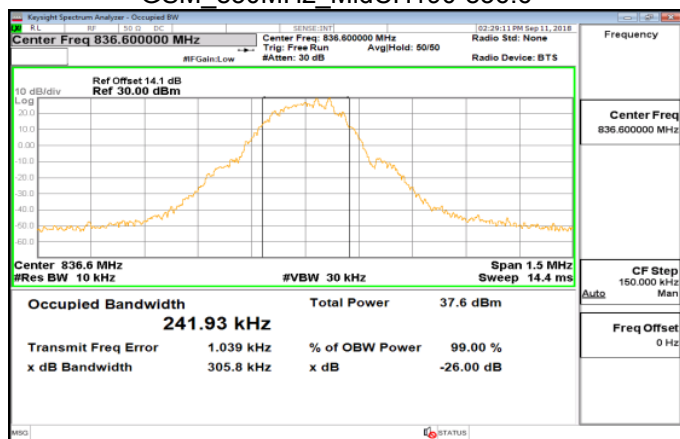
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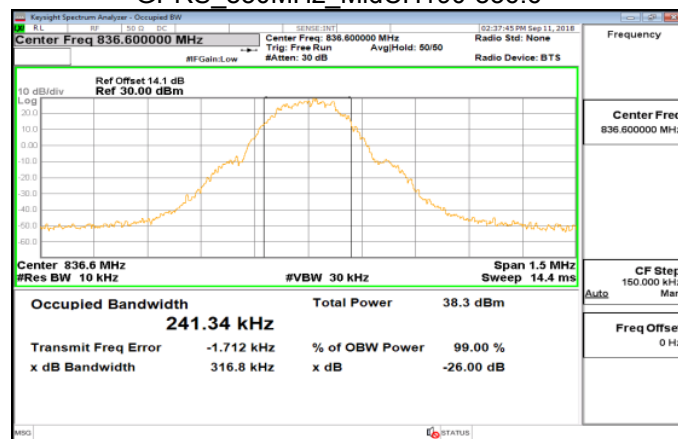
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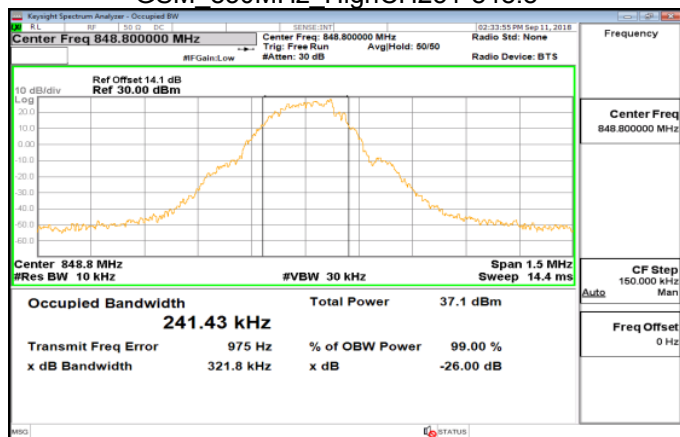
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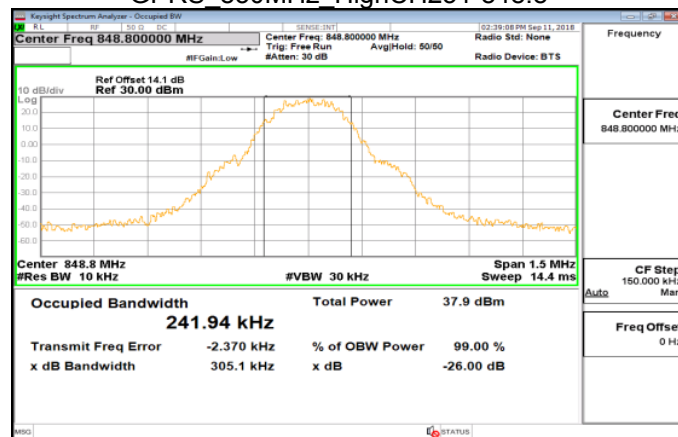
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GSM 850MHz HighCH251-848.8



GPRS 850MHz HighCH251-848.8



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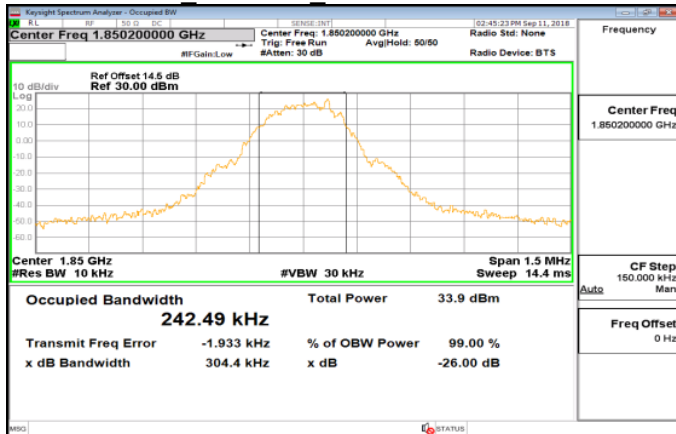
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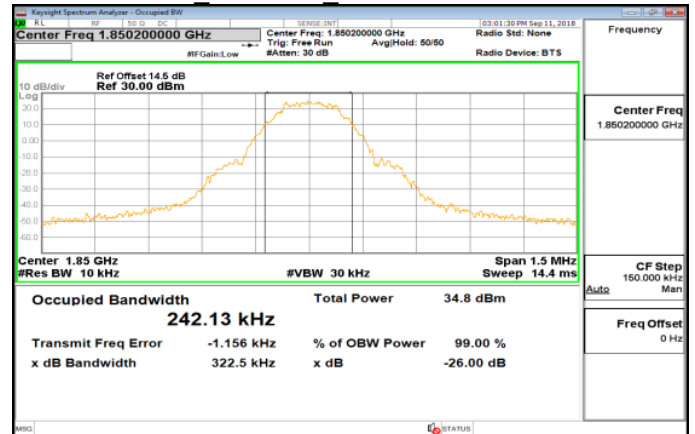
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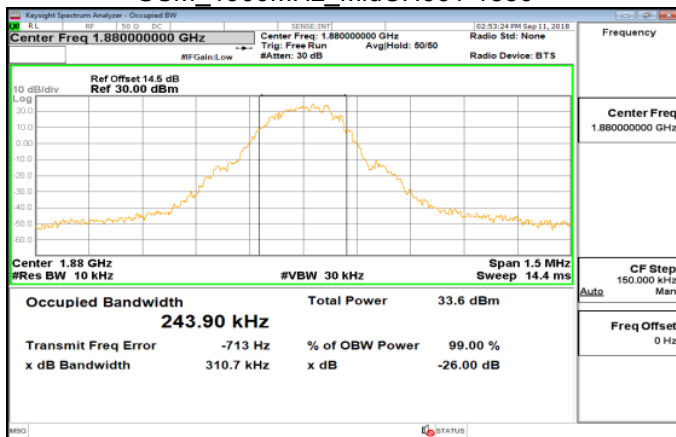
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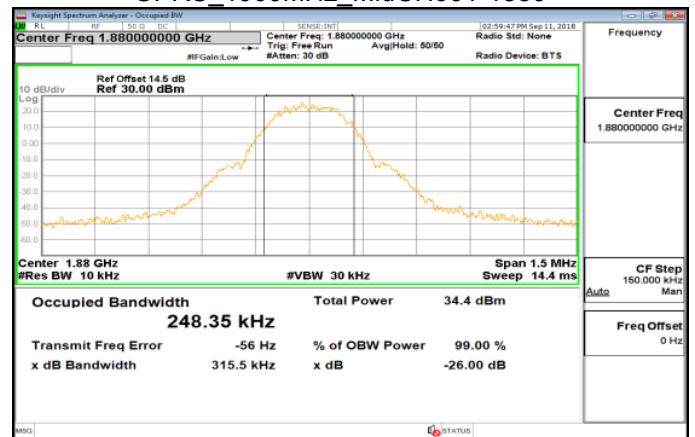
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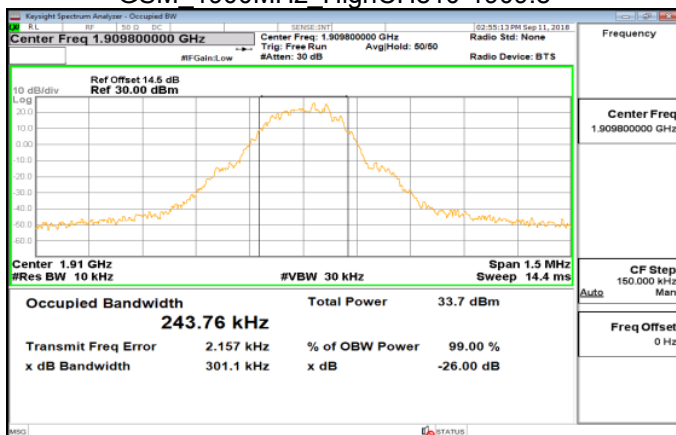
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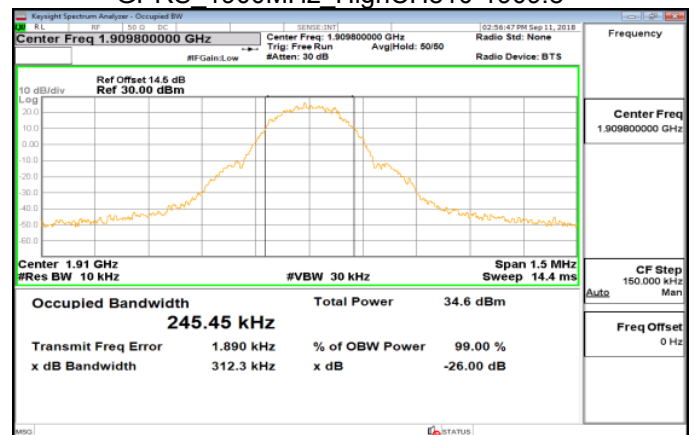
GPRS 1900MHz MidCH661-1880



GSM 1900MHz HighCH810-1909.8



GPRS 1900MHz HighCH810-1909.8



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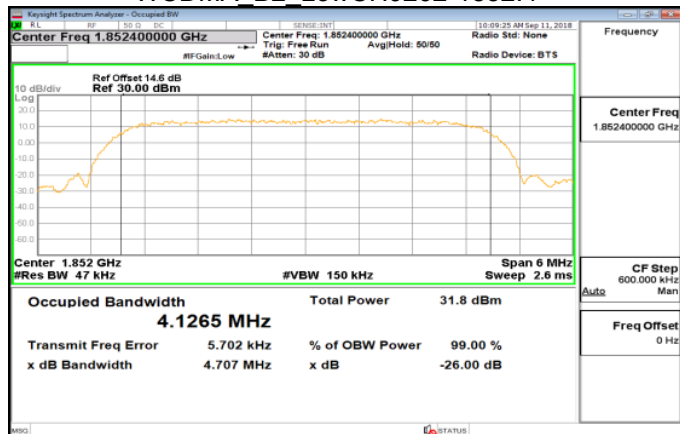
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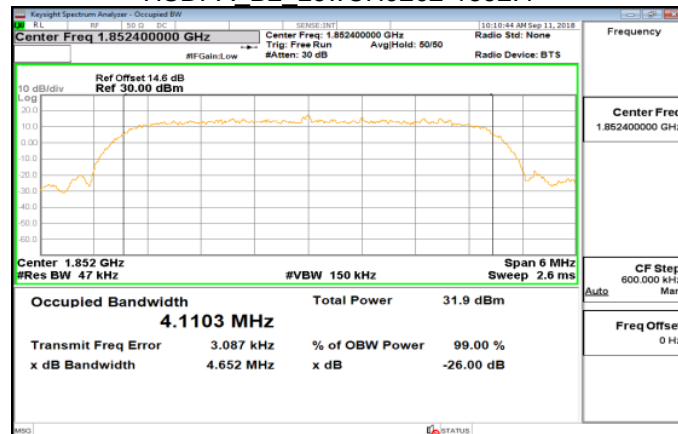
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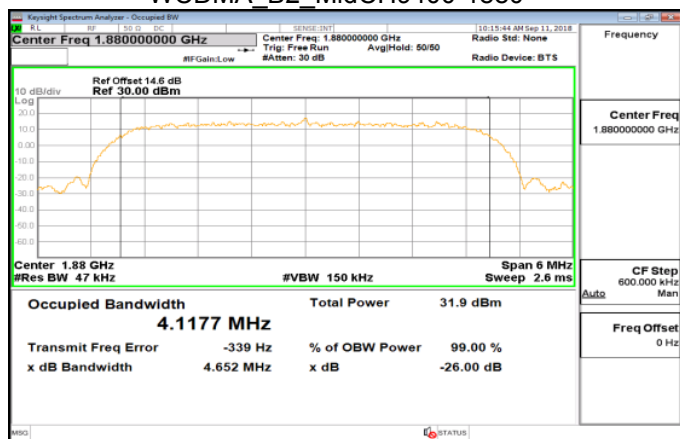
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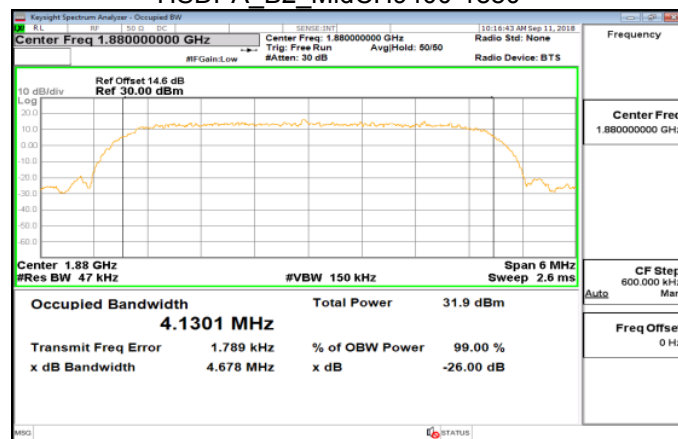
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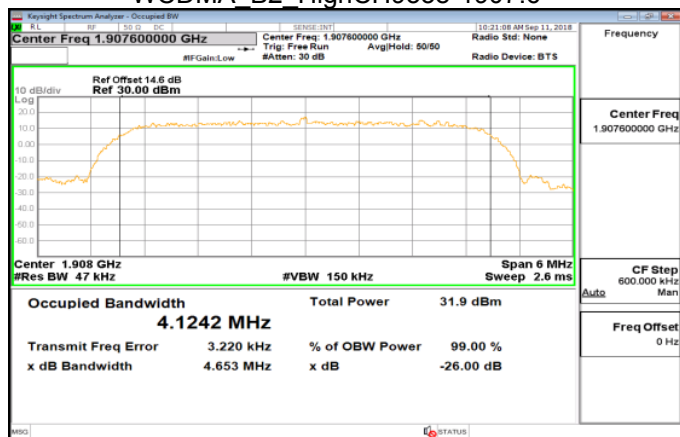
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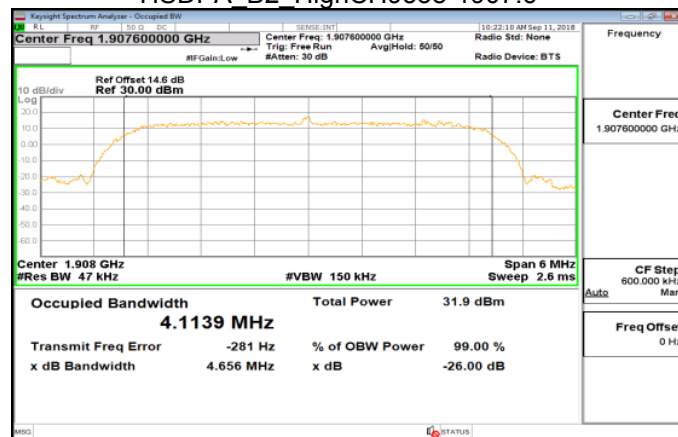
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HSDPA B2 HighCH9538-1907.6



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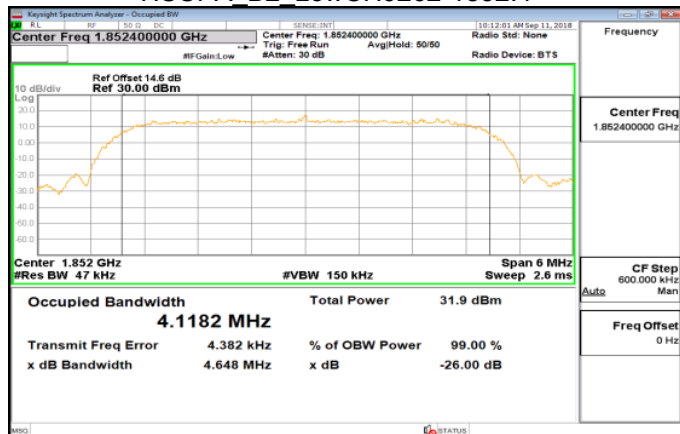
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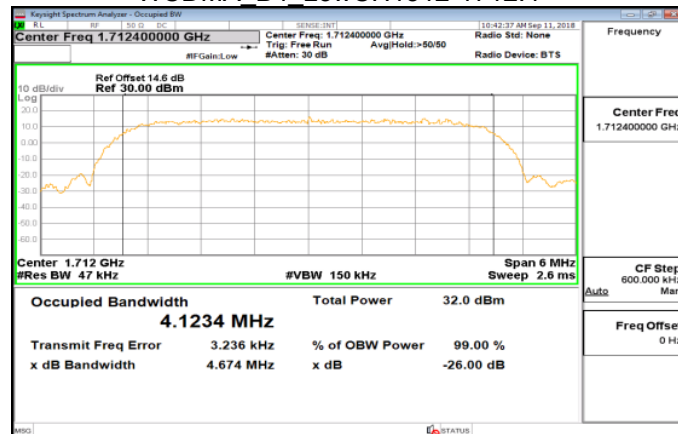
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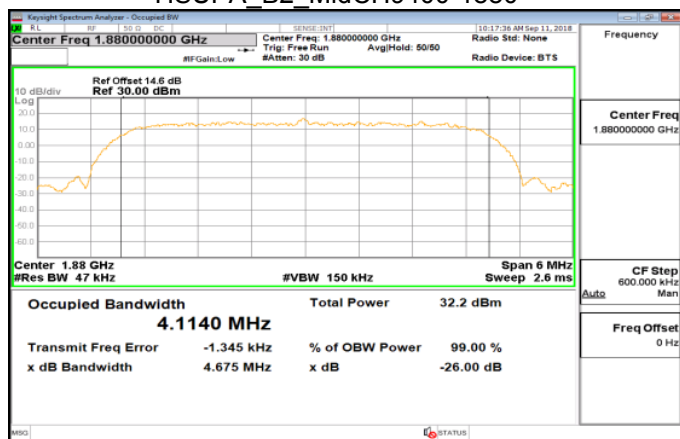
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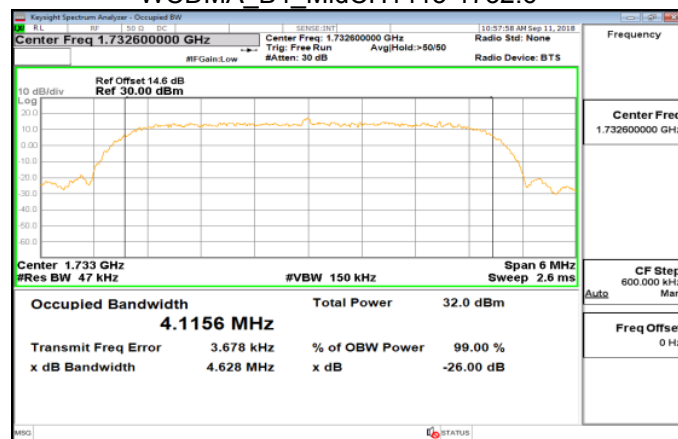
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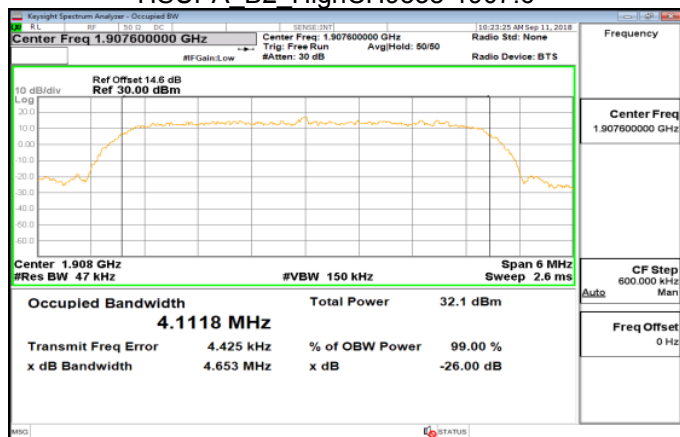
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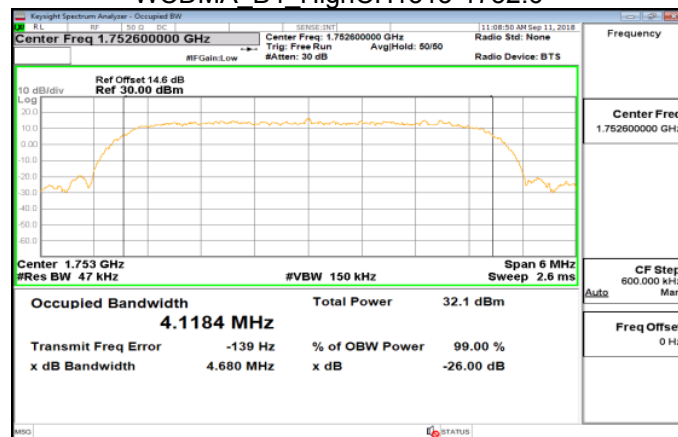
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WCDMA B4 HighCH1513-1752.6



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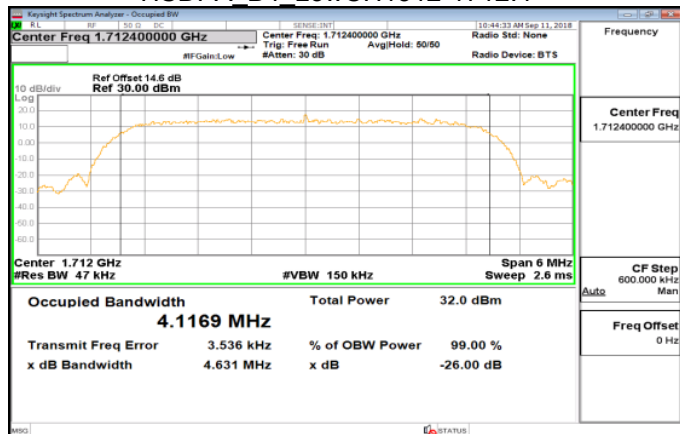
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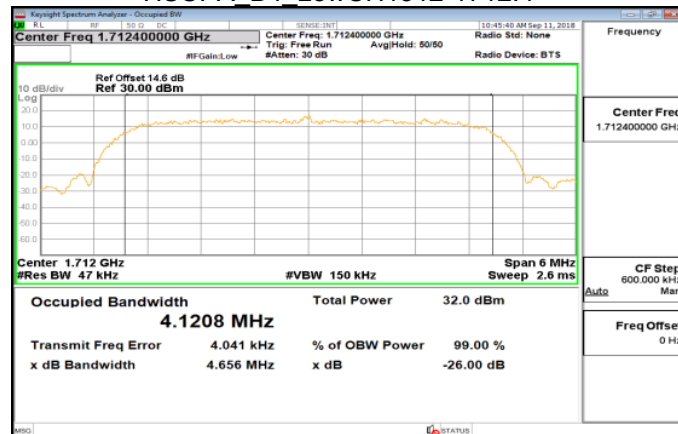
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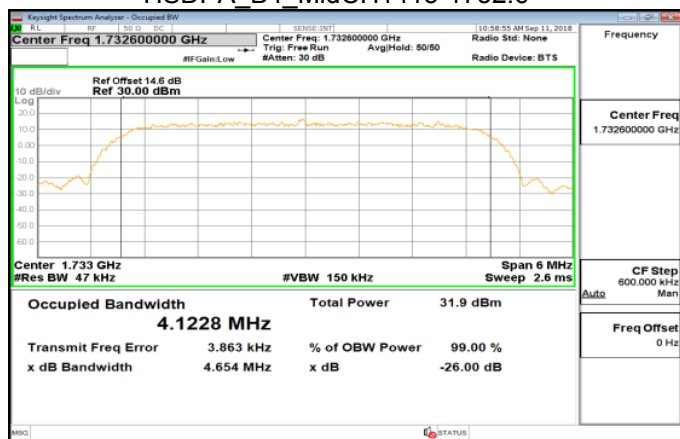
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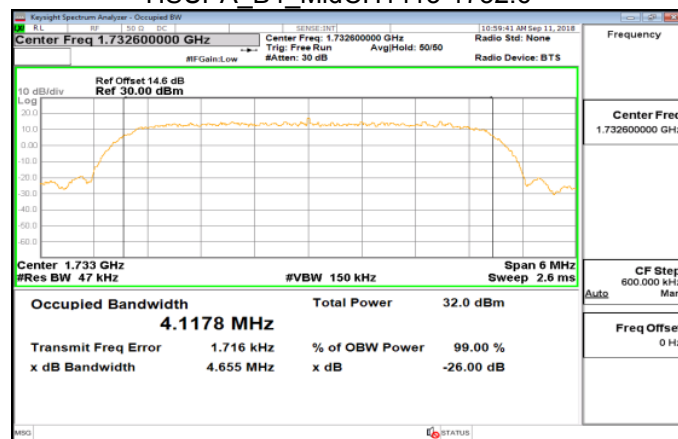
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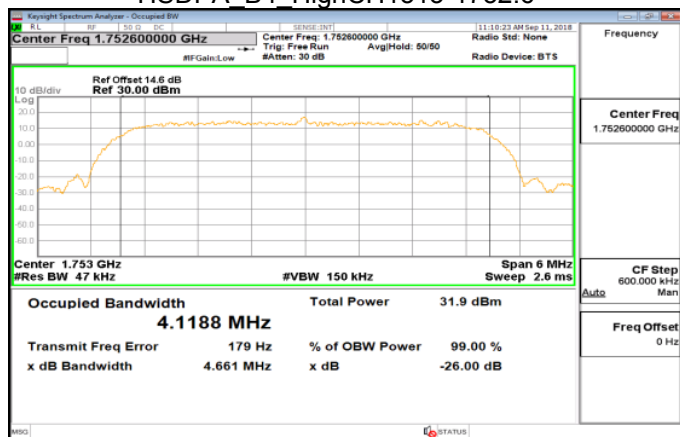
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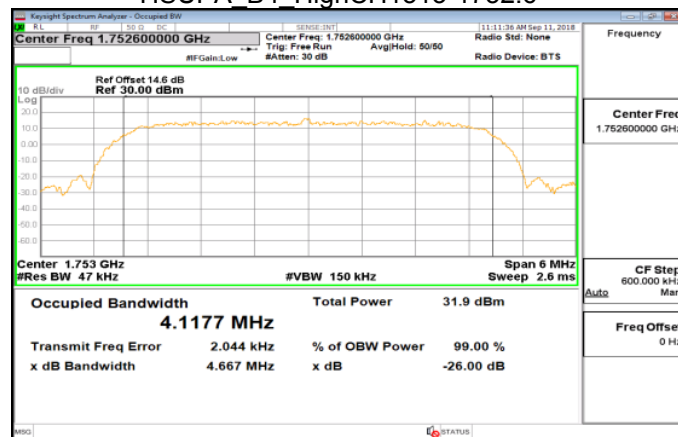
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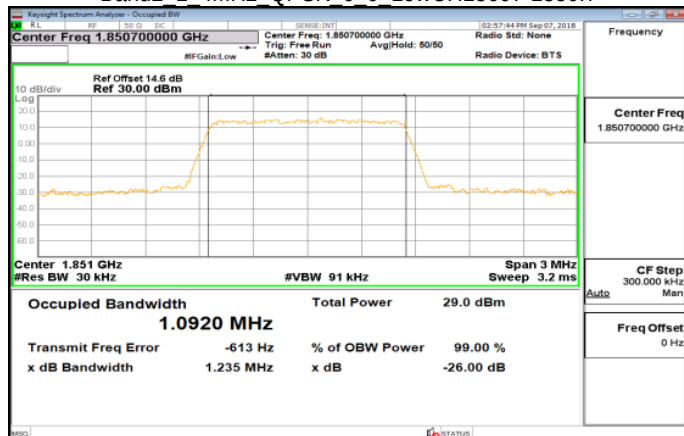
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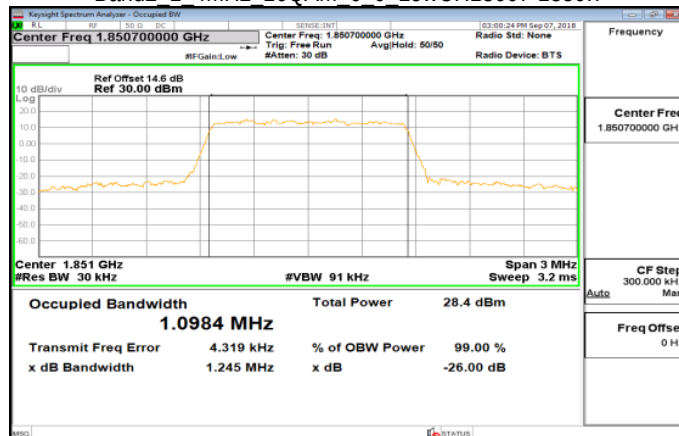
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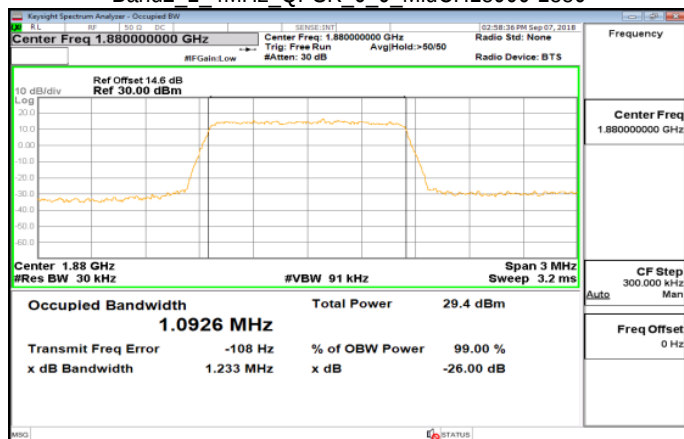
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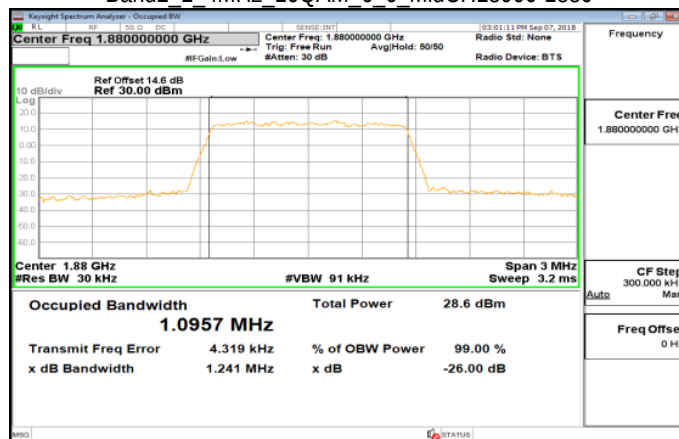
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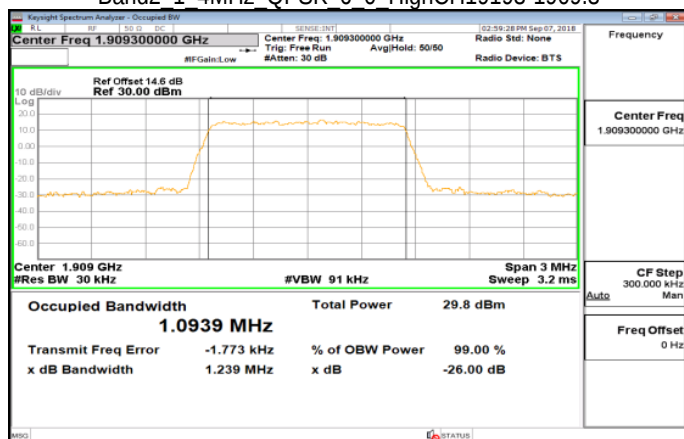
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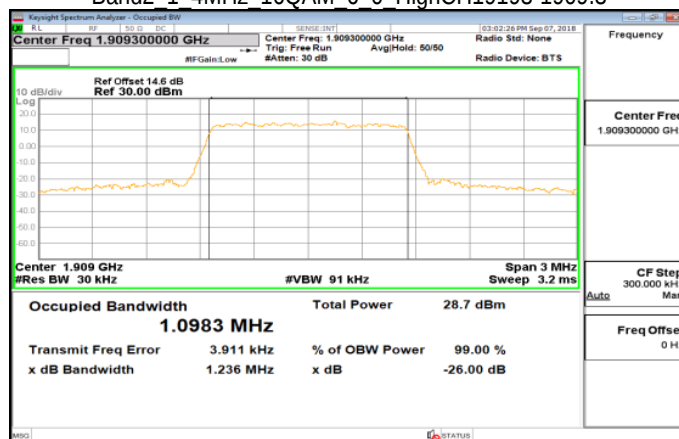
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Band2 1 4MHz QPSK 6 0 HighCH19193-1909.3



Band2 1 4MHz 16QAM 6 0 HighCH19193-1909.3



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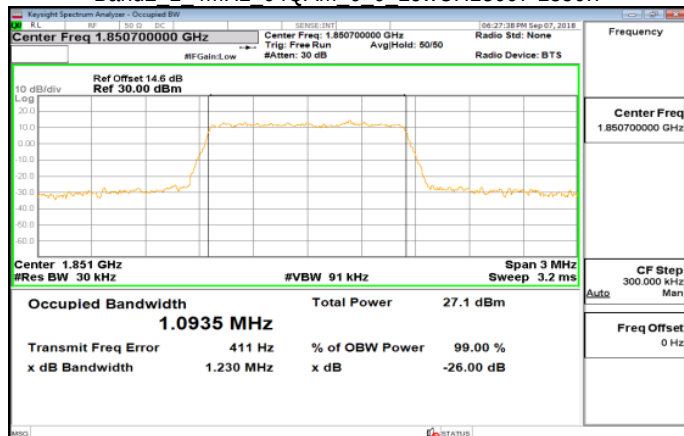
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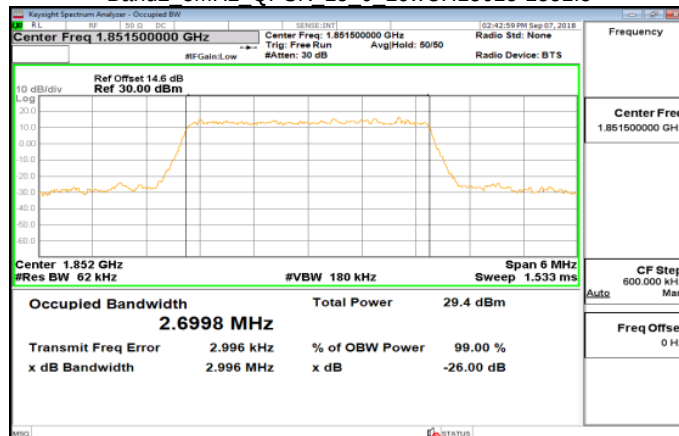
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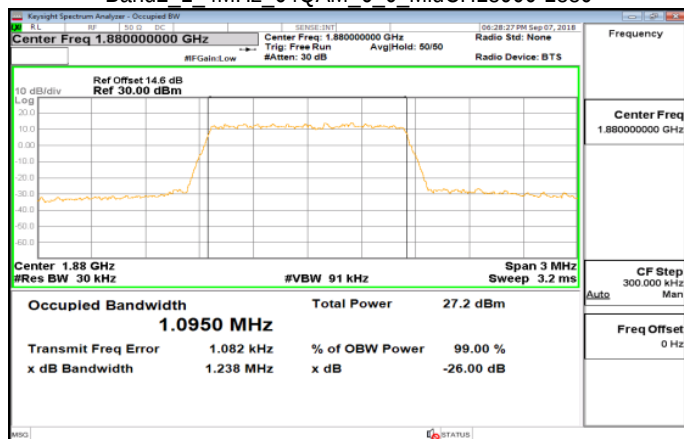
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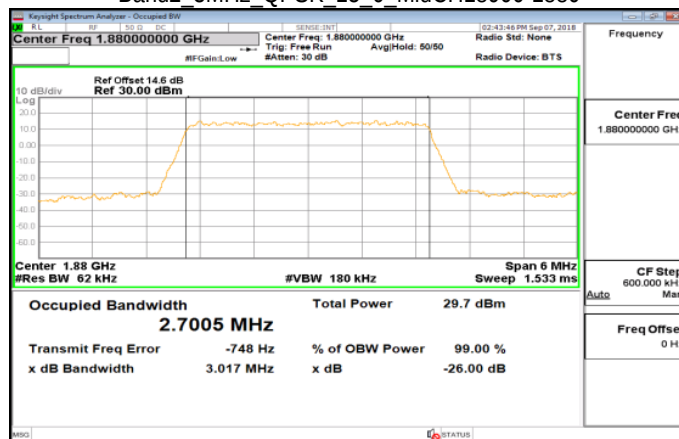
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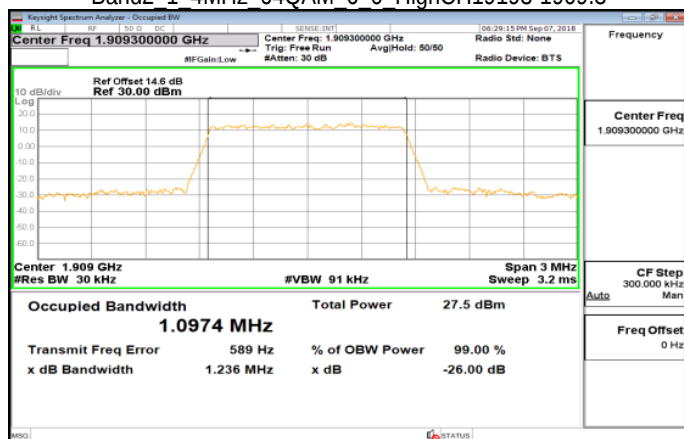
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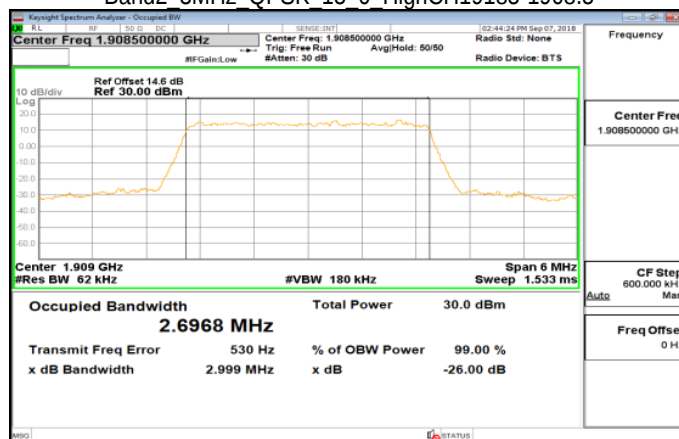
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Band2 3MHz QPSK 15 0 HighCH19185-1908.5



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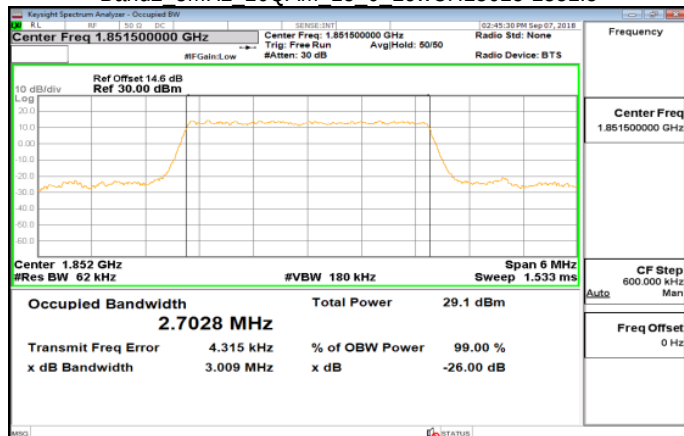
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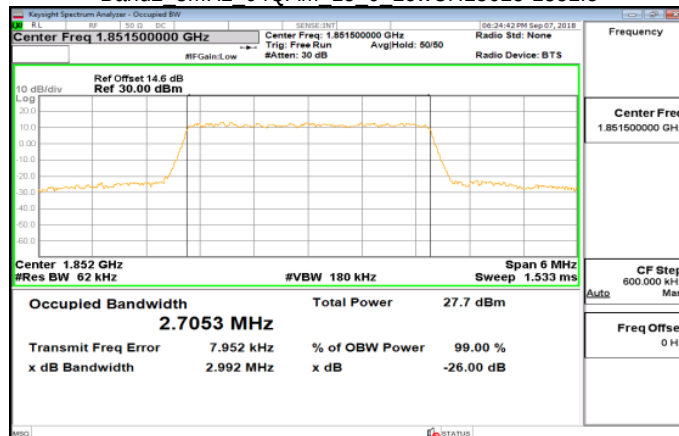
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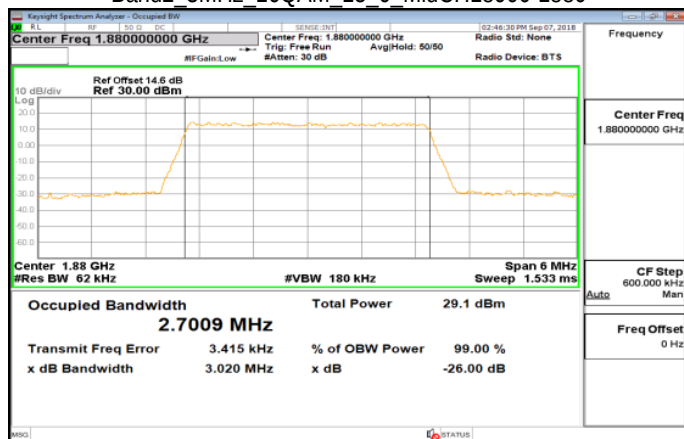
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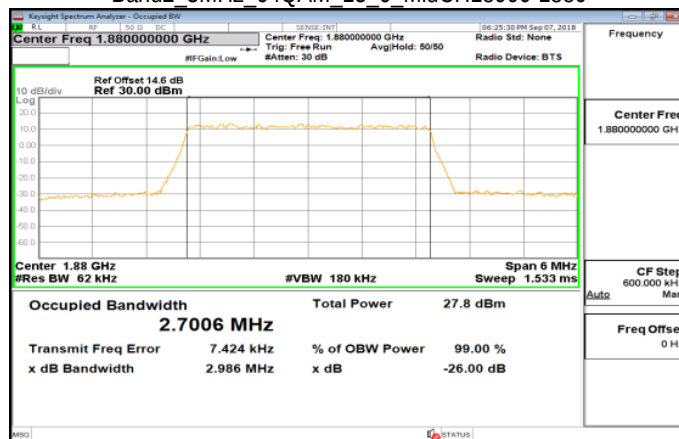
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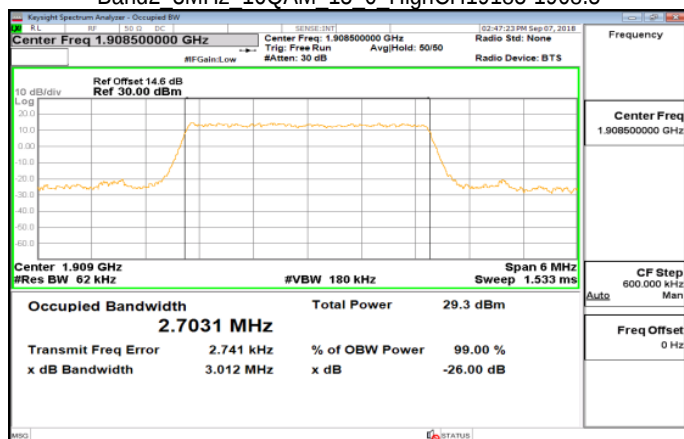
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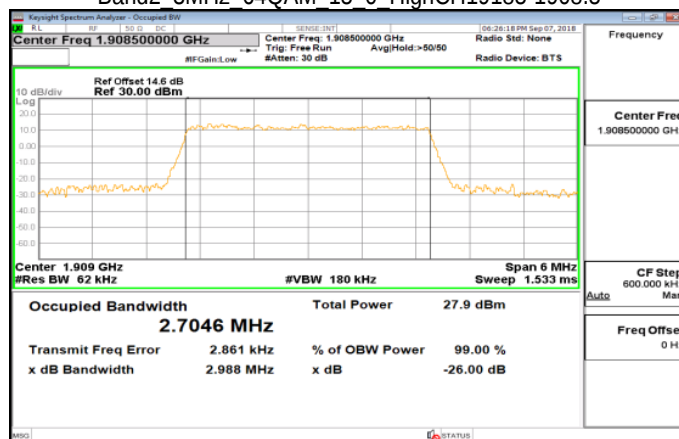
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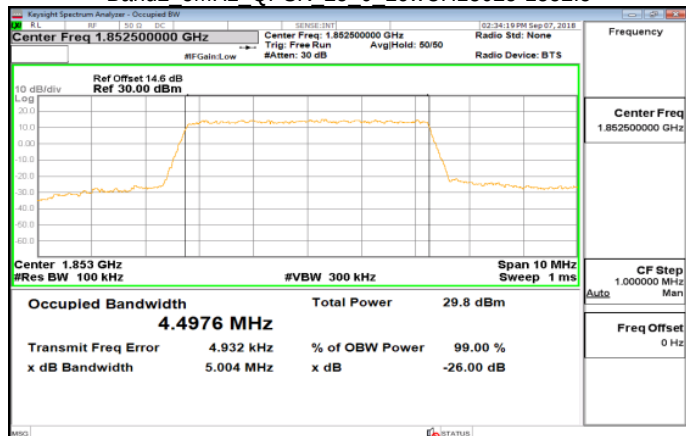
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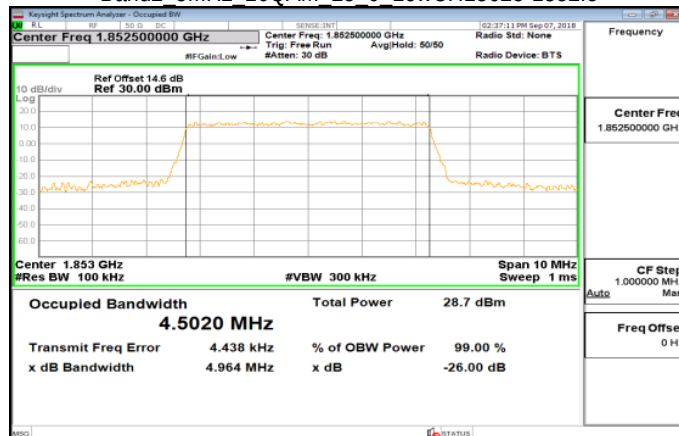
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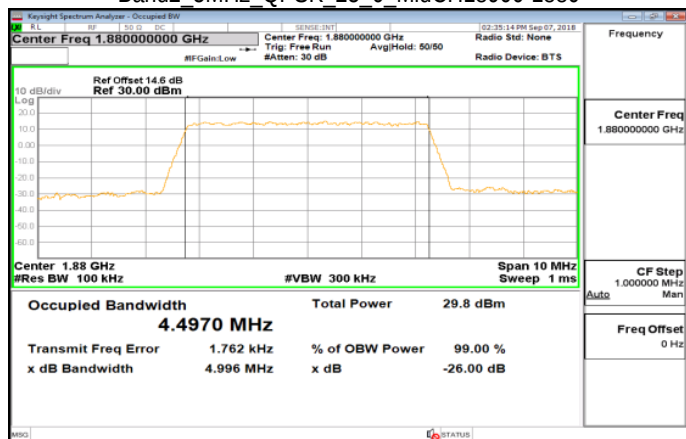
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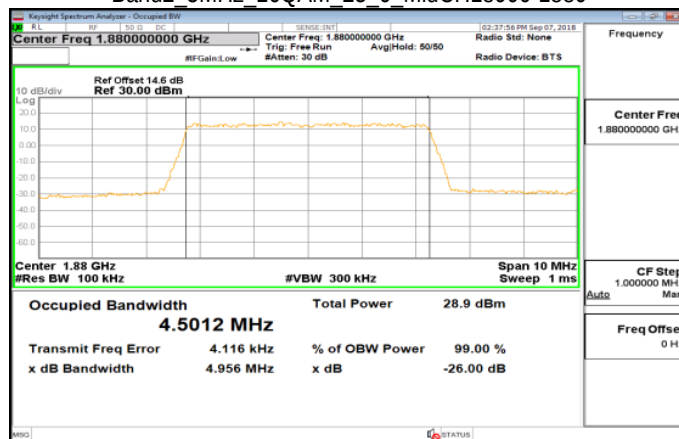
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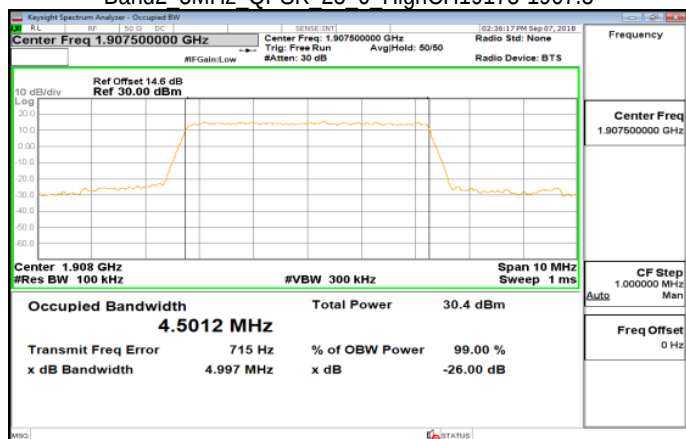
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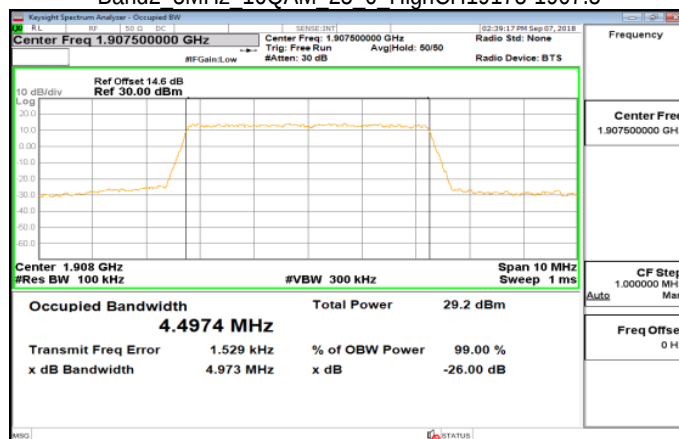
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Band2 5MHz QPSK 25 0 HighCH19175-1907.5



Band2 5MHz 16QAM 25 0 HighCH19175-1907.5



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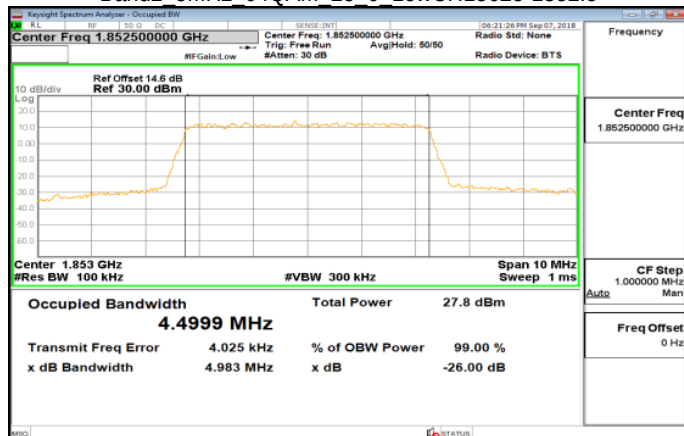
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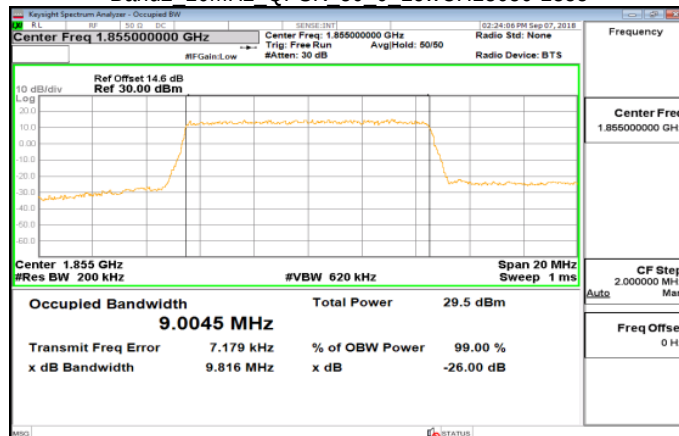
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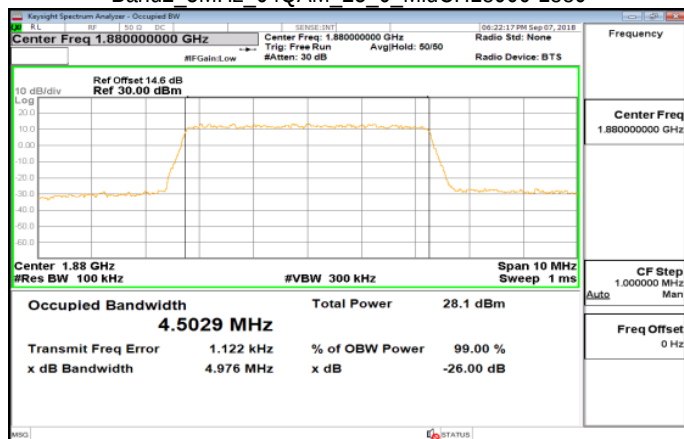
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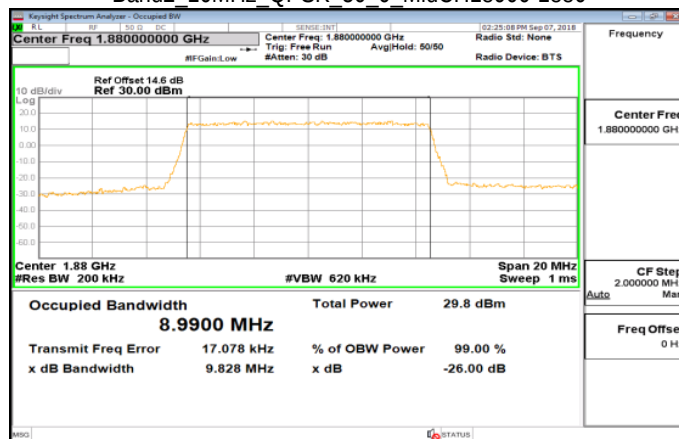
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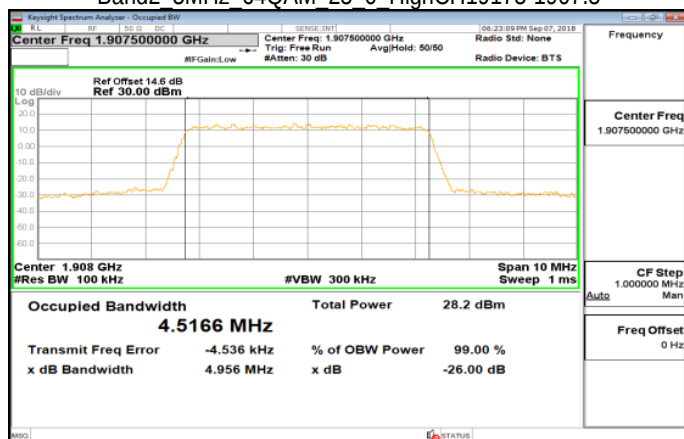
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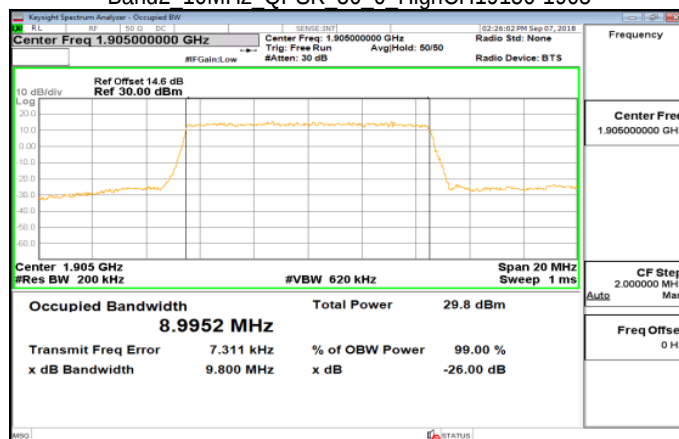
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Band2 10MHz QPSK 50 0 HighCH19150-1905



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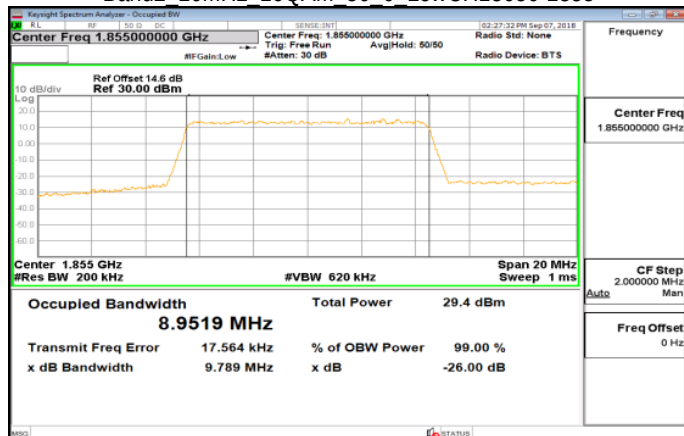
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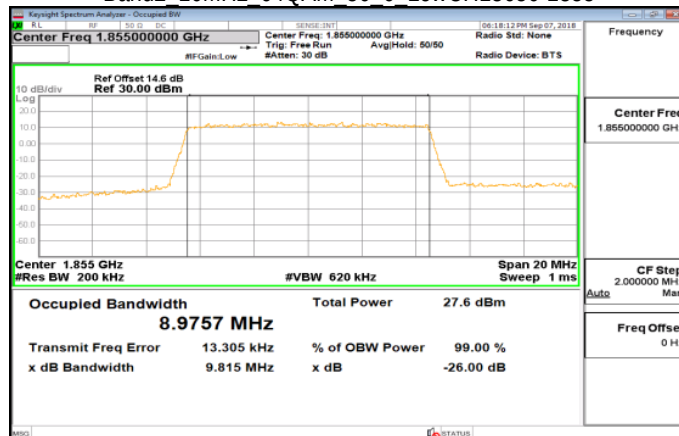
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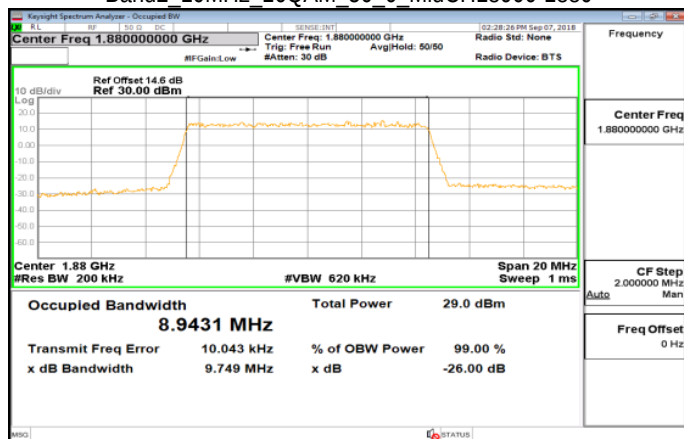
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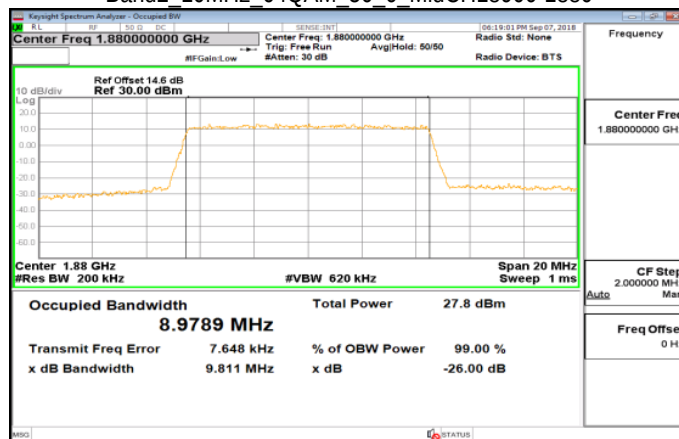
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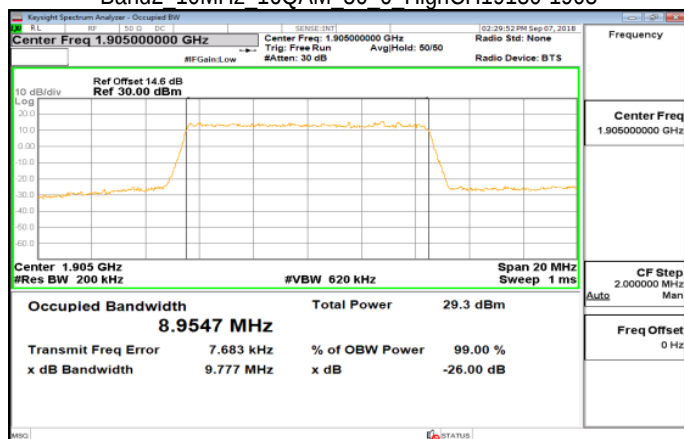
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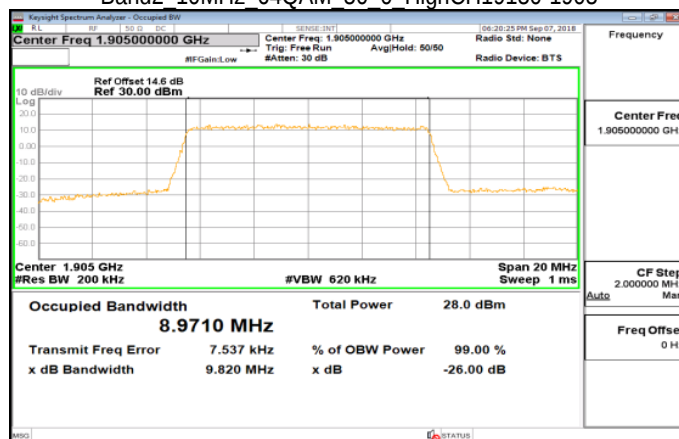
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Band2 10MHz 16QAM 50 0 HighCH19150-1905



Band2 10MHz 64QAM 50 0 HighCH19150-1905



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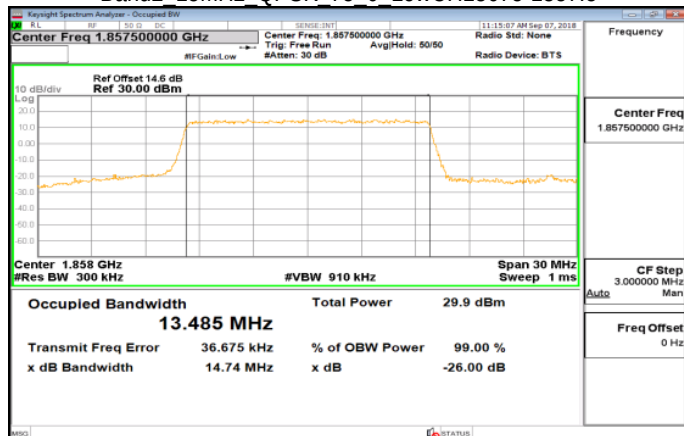
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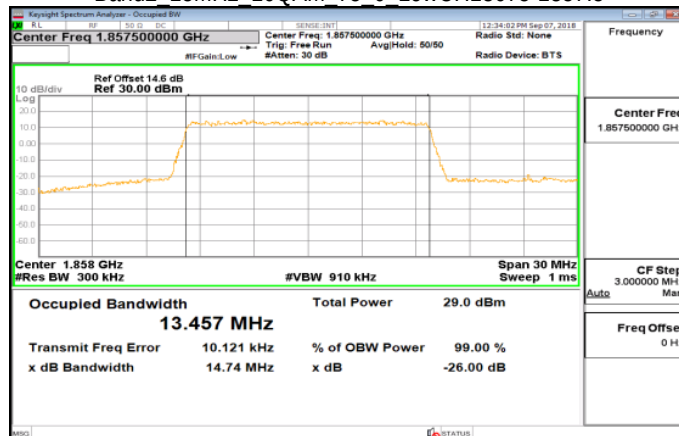
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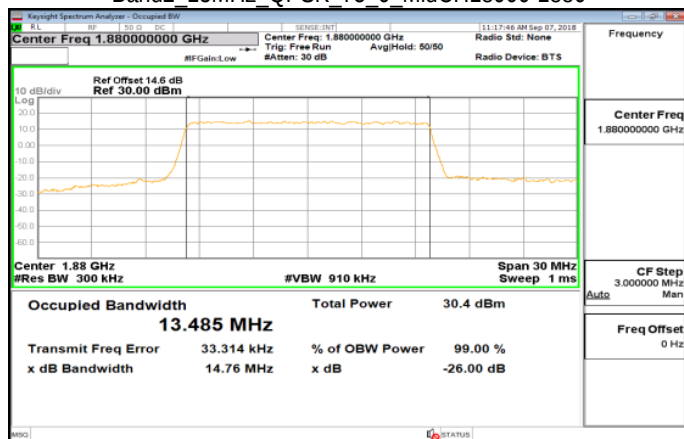
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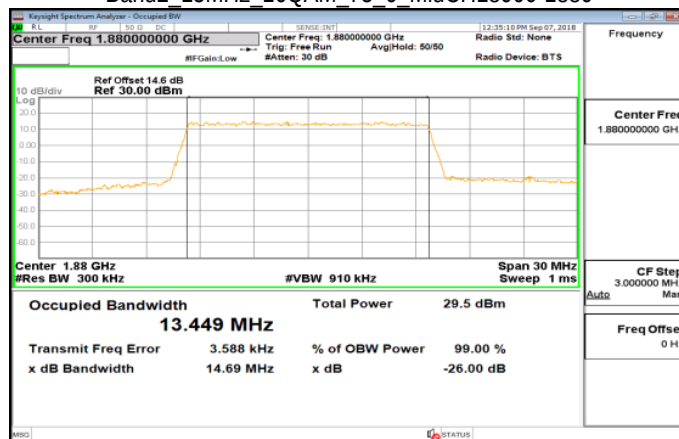
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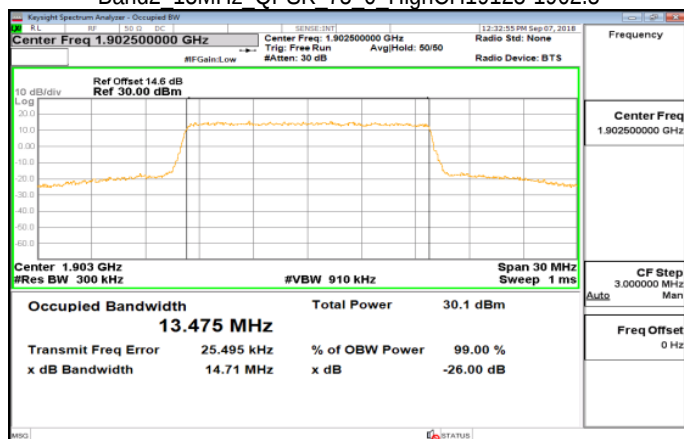
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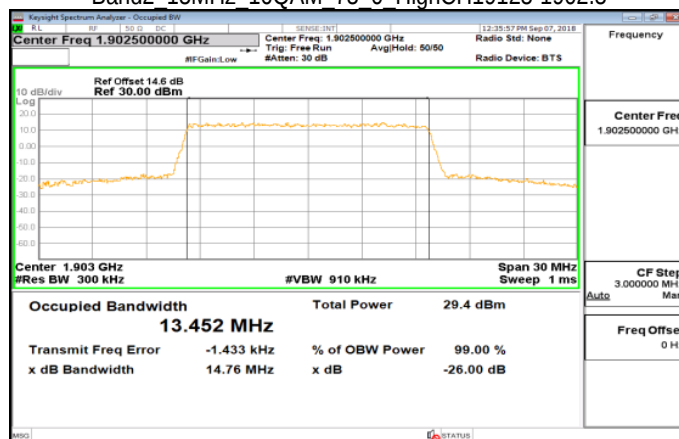
Band2 15MHz 16QAM 75 0 MidCH18900-1880



Band2 15MHz QPSK 75 0 HighCH19125-1902.5



Band2 15MHz 16QAM 75 0 HighCH19125-1902.5



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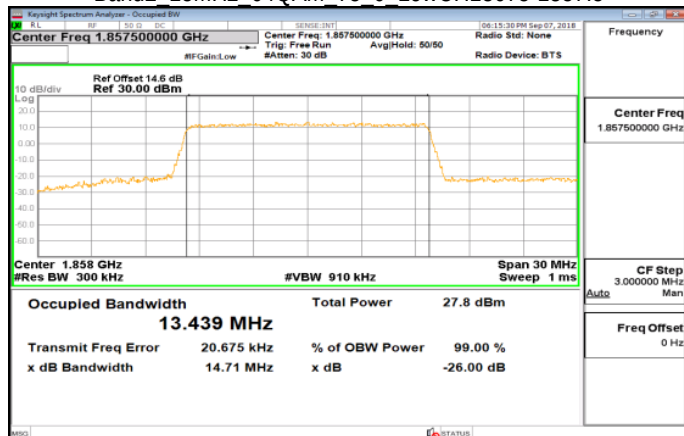
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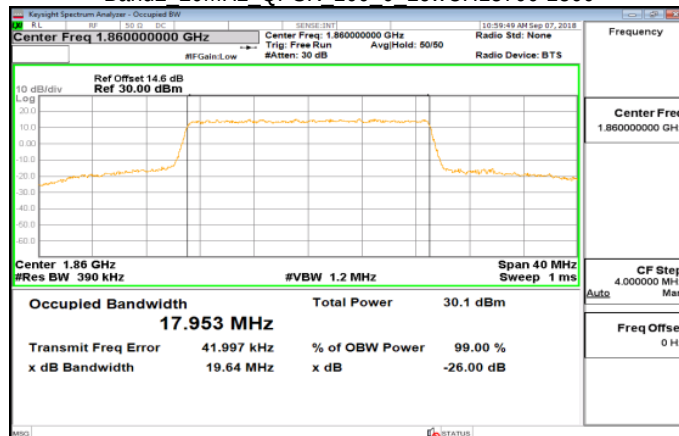
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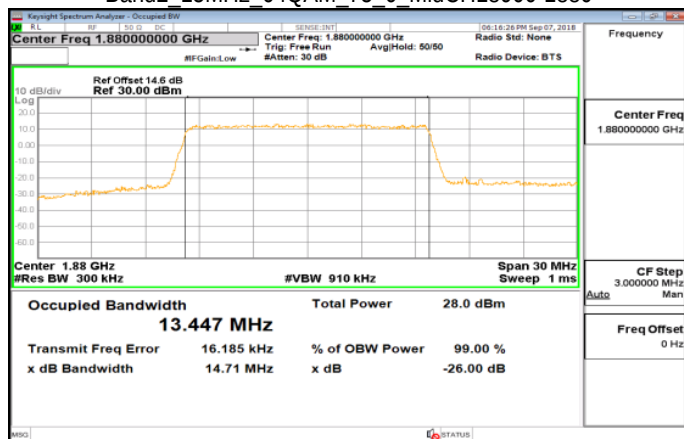
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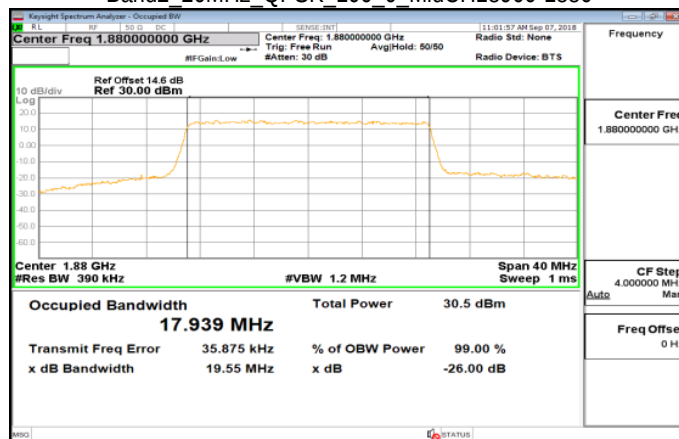
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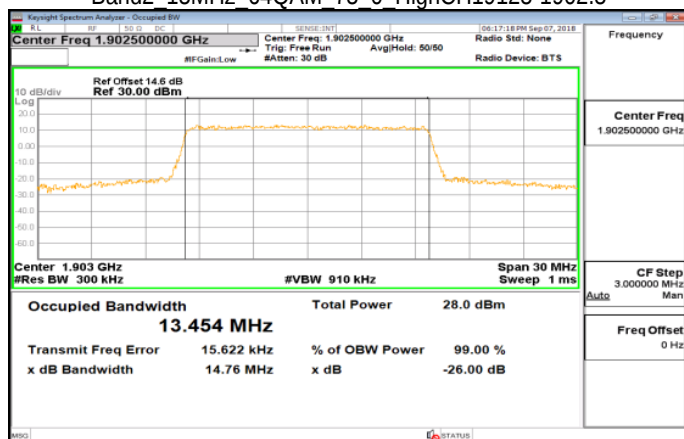
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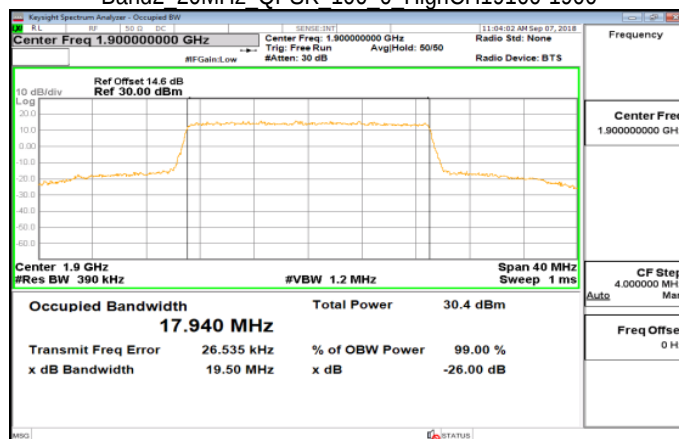
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Band2 15MHz 64QAM 75 0 HighCH19125-1902.5



Band2 20MHz QPSK 100 0 HighCH19100-1900



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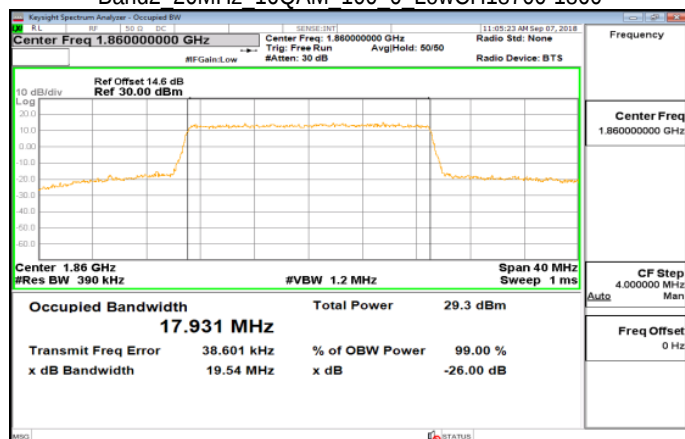
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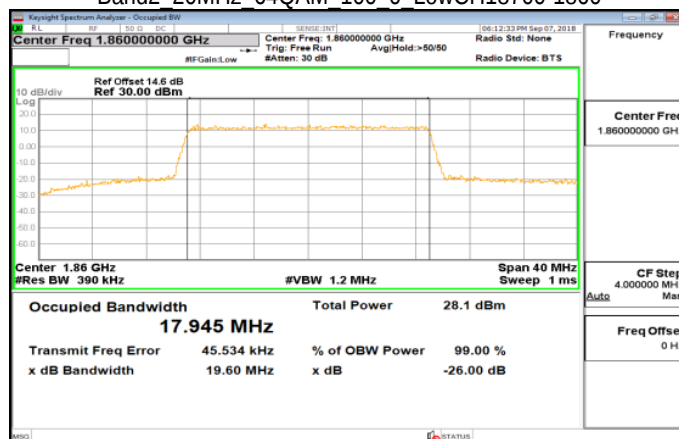
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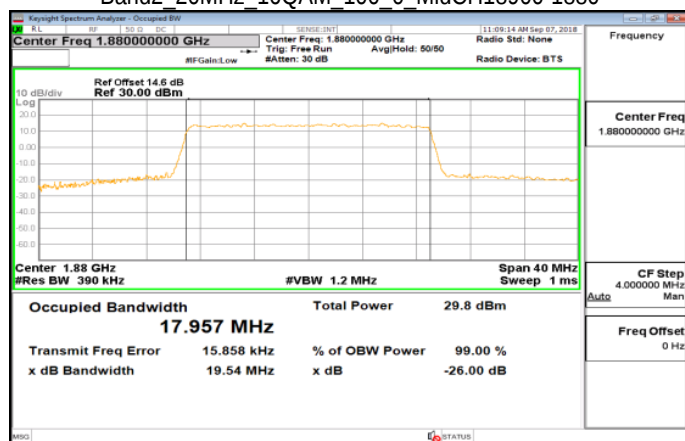
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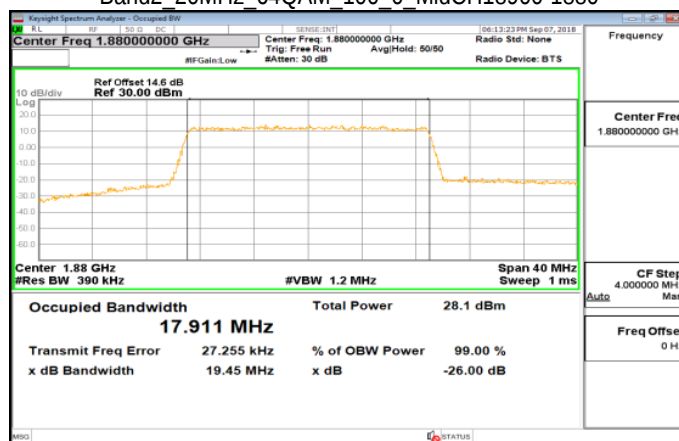
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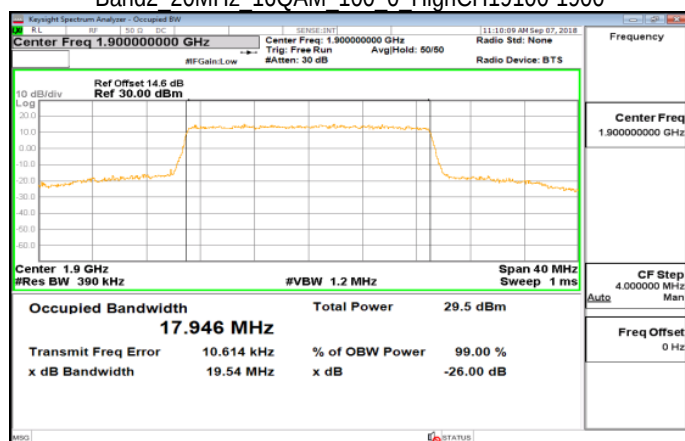
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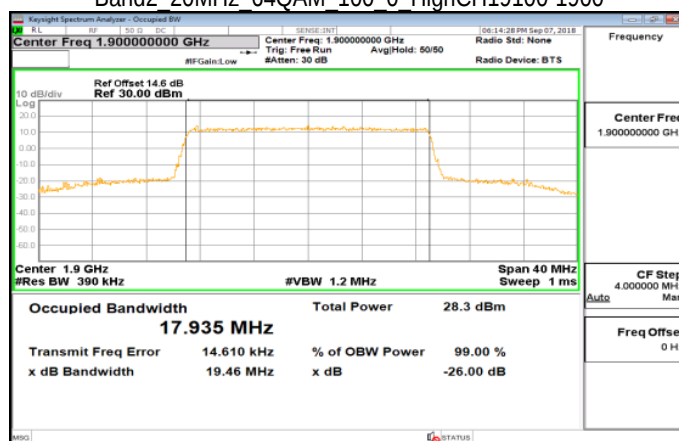
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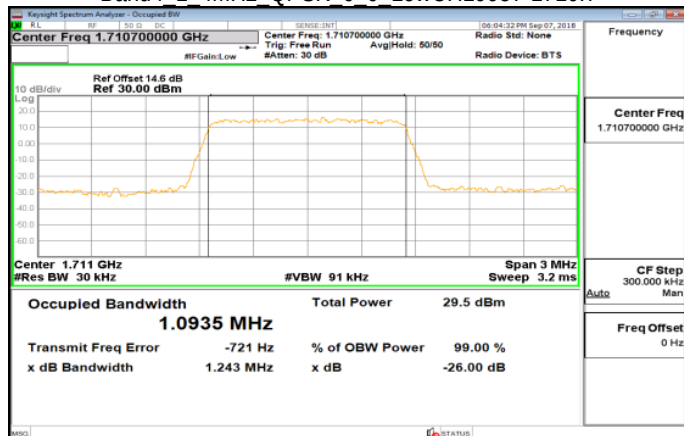


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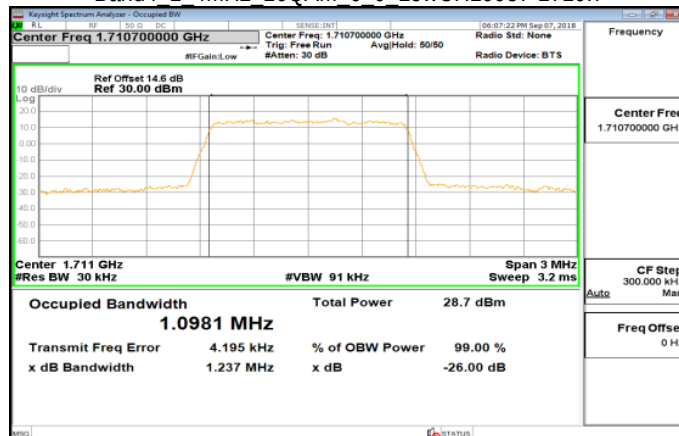
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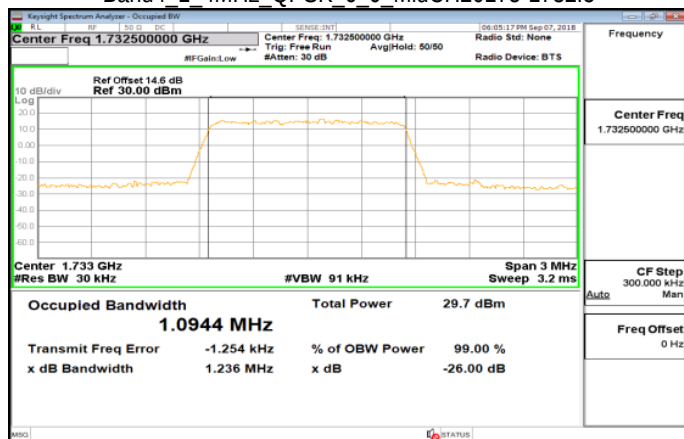
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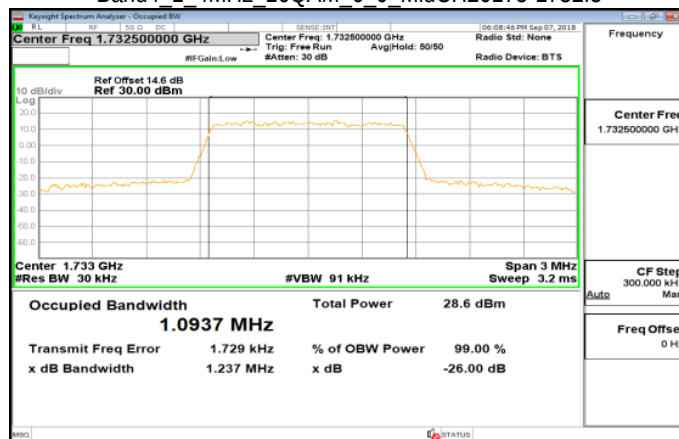
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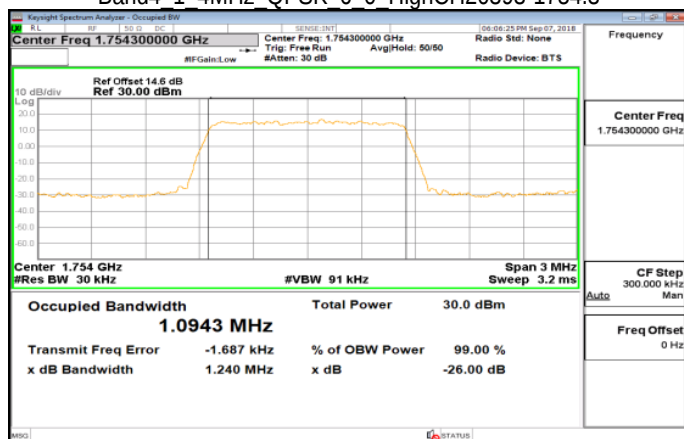
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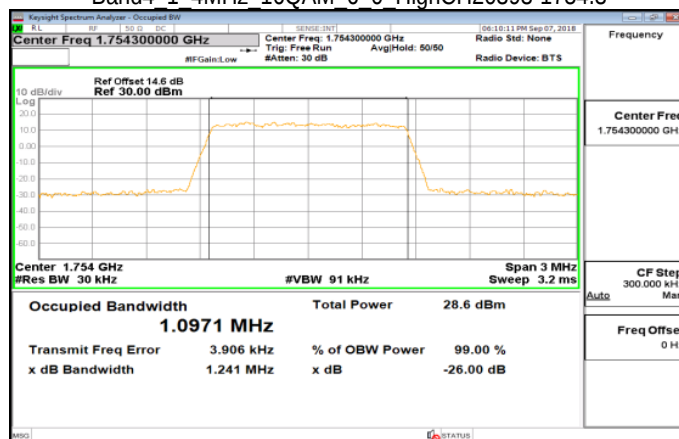
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Band4 1 4MHz QPSK 6 0 HighCH20393-1754.3



Band4 1 4MHz 16QAM 6 0 HighCH20393-1754.3



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