



RF TEST REPORT

Applicant	ZTE Corporation
FCC ID	SRQ-ZTEN9131
Product	LTE/WCDMA/GSM /CDMA Multi-Mode Digital Mobile Phone
Model	N9131
Report No.	RXA1603-0039RF04R3
Issue Date	April 28, 2016

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2(2015)/ FCC CFR 47 Part 24H(2015)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Changxu Wan

Performed by: Changxu Wan

Lingling Kang

Reviewed by: Lingling Kang

Kai Xu

Approved by: Kai Xu



TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

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Summary of measurement results

No.	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power	24.232	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	24.238	PASS
5	Peak-to-Average Power Ratio	24.232/KDB 971168 D01(5.7)	PASS
6	Frequency Stability	2.1055 / 24.235	PASS
7	Spurious Emissions at Antenna Terminals	2.1051 / 24.238	PASS
8	Radiates Spurious Emission	2.1053 / 24.238	PASS
Date of Testing: March 21, 2016~ April 11, 2016			

1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd**. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any government agencies.

1.2. Test facility

CNAS (accreditation number:L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (recognition number is 428261)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.



1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

2. General Description of Equipment under Test

Client Information

Applicant	ZTE Corporation
Applicant address	ZTE Plaza, #55 Keji Road South, Hi-Tech, Industrial Park, Nanshan District Shenzhen, Guangdong, P.R.China
Manufacturer	ZTE Corporation
Manufacturer address	ZTE Plaza, #55 Keji Road South, Hi-Tech, Industrial Park, Nanshan District Shenzhen, Guangdong, P.R.China

General information

Model:	N9131		
Product MEID:	99000680000315		
Hardware Version:	cuZA		
Software Version:	N9131V1.0.0B01		
Power Supply:	Battery/AC adapter		
Antenna Type:	Internal Antenna		
Test Mode(s):	GSM1900; CDMA BC1; WCDMA Band II; LTE Band 2/25;		
Test Modulation:	(GSM)GMSK,8PSK; (CDMA)QPSK; (WCDMA)QPSK; (LTE)QPSK,16QAM		
GPRS/EGPRS Multislot Class:	33		
HSDPA UE Category:	14		
HSUPA UE Category:	6		
Maximum E.I.R.P.	GSM 1900: 30.17 dBm WCDMA Band II: 23.79dBm CDMA BC1: 23.41dBm LTE Band 2: 23.62dBm LTE Band 25: 23.94dBm		
Rated Power Supply Voltage:	3.84V		
Extreme Voltage:	Minimum: 3.5V Maximum: 4.4V		
Extreme Temperature:	Lowest: -10°C Highest: +55°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM1900	1850 ~ 1910	1930 ~ 1990
	CDMA BC1	1850 ~ 1910	1930 ~ 1990
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 25	1850 ~ 1915	1930 ~ 1995
EUT Accessory			
Battery	Manufacturer: Scud Model: Li3922T44P6h903546 Power Rating: DC 3.84V, Li-ion		
Adapter	Manufacturer: RUIJING Model: STC-A508A-Z M5		
Note: The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.			



3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR47 Part 2 (2015)

FCC CFR 47 Part 24H (2015)

ANSI/TIA-603-D (2010)

KDB 971168 D01 Power Meas License Digital Systems v02r02

4. Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, vertical polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.

Subsequently, only the worst case emissions are reported.

The following testing in GSM/CDMA/WCDMA/LTE is set based on the maximum RF Output Power.

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

	Test items	Modes/Modulation		
		GSM 1900	WCDMA Band II	CDMA BC1
Conducted Test cases	RF power output	GSM /GPRS /EGPRS	RMC HSDPA HSUPA DC-HSDPA	1xRTT EV-DO Rev.0 EV-DO Rev.A
	Occupied Bandwidth	GSM /GPRS /EGPRS	RMC	1xRTT
	Band Edge Compliance	GSM /GPRS /EGPRS	RMC	1xRTT
	Peak-to-Average Power Ratio	GSM /GPRS /EGPRS	RMC	1xRTT
	Frequency Stability	GSM /GPRS /EGPRS	RMC	1xRTT
	Spurious Emissions at Antenna Terminals	GSM	RMC	1xRTT
Radiated Test cases	Effective Isotropic Radiated Power	GSM /GPRS /EGPRS	RMC	1xRTT
	Radiates Spurious Emission	GSM	RMC	1xRTT

Test modes are chosen to be reported as the worst case configuration below for LTE Band 2/25:



Test items	Bandwidth (MHz)						Modulation		RB			Test Channel		
	1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF power output	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Effective Isotropic Radiated power	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Occupied Bandwidth	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	O	O	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	O	O	O	O	O	O	O	O	-	-	O	-	O	-
Conducted Spurious Emissions	O	O	O	O	O	O	O	-	O	-	-	O	O	O
Radiates Spurious Emission	O	O	O	O	O	O	O	-	O	-	-	O	O	O
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.													

5. Test Case Results

5.1.RF Power Output

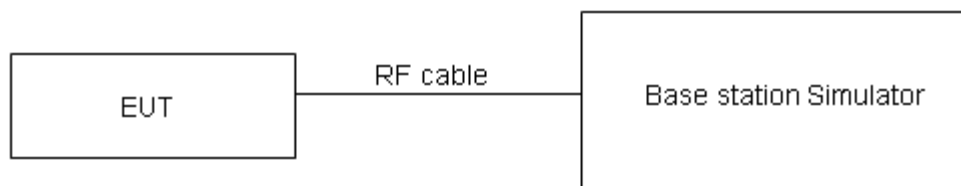
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.

Test Results

GSM 1900		AV Conducted Power(dBm)		
		Channel 512	Channel 661	Channel 810
		1850.2(MHz)	1880(MHz)	1909.8(MHz)
GSM	Results	29.33	29.47	29.44
GPRS (GMSK)	1TXslot	29.29	29.43	29.37
	2TXslots	27.48	27.57	27.56
	3TXslots	26.46	26.56	26.62
	4TXslots	25.04	25.10	25.18
EGPRS (8PSK)	1TXslot	25.48	25.43	25.50
	2TXslots	25.40	25.35	25.48
	3TXslots	25.10	25.15	25.28
	4TXslots	24.75	25.10	25.09
Note: 1) The maximum RF Output Power numbers are marks in bold.				
2) The following testing in GPRS/EGPRS is set to 1TXslot based on the maximum RF Output Power.				

CDMA BC1			AV Conducted Power(dBm)		
			Channel 25	Channel 600	Channel 1175
			1851.25(MHz)	1880(MHz)	1908.75(MHz)
1xRTT	RC 1	SO55 (Loopback)	24.25	24.26	24.25
	RC 3	SO55 (Loopback)	24.21	24.28	24.27
		TDSO32 (FCH+SCH)	24.25	24.29	24.27
		TDSO32 (FCH)	24.27	24.28	24.23
EV-DO	Rev.0	RTAP	23.85	24.05	24.01
	Rev.A	RETAP	24.02	24.07	23.86
Note: 1) The maximum RF Output Power numbers are marks in bold.					
2) The following testing in 1xRTT based on the maximum RF Output Power.					

WCDMA Band II		AV Conducted Power(dBm)		
		Channel 9262	Channel 9400	Channel 9538
		1852.4(MHz)	1880(MHz)	1907.6(MHz)
RMC		24.24	24.27	24.31
HSDPA	Sub - Test 1	24.16	24.19	24.23
	Sub - Test 2	24.15	24.18	24.22
	Sub - Test 3	23.64	23.67	23.71
	Sub - Test 4	23.63	23.66	23.70
HSUPA	Sub - Test 1	24.12	24.15	24.19
	Sub - Test 2	22.11	22.14	22.18
	Sub - Test 3	23.09	23.13	23.17
	Sub - Test 4	22.08	22.12	22.16
	Sub - Test 5	24.07	24.11	24.15
DC-HSDPA	Sub - Test 1	24.08	24.13	24.15
	Sub - Test 2	24.07	24.12	24.14
	Sub - Test 3	23.65	23.61	23.65
	Sub - Test 4	23.64	23.60	23.64
	Sub - Test 5	24.08	24.13	24.15
Note:1) The maximum RF Output Power numbers are marks in bold. 2) The following testing in RMC based on the maximum RF Output Power.				

LTE FDD Band 2				AV Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18607/1850.7	18900/1880	19193/1909.3
1.4MHz	QPSK	1	0	23.49	23.45	23.59
		1	2	23.28	23.37	23.69
		1	5	23.26	23.39	23.27
		3	0	22.49	22.25	22.40
		3	2	22.31	22.28	22.41
		3	3	22.37	22.29	22.41
		6	0	22.39	22.28	22.28
	16QAM	1	0	22.45	21.95	22.66
		1	2	22.83	22.48	22.92
		1	5	22.09	22.42	22.29
		3	0	21.35	21.28	21.34
		3	2	21.24	21.27	21.25
		3	3	21.04	21.38	21.33
		6	0	21.51	21.32	21.43
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18615/1851.5	18900/1880	19185/1908.5
3MHz	QPSK	1	0	23.51	23.49	23.62
		1	7	23.31	23.42	23.73
		1	14	23.29	23.44	23.31
		8	0	22.51	22.29	22.45
		8	4	22.39	22.30	22.45
		8	7	22.39	22.32	22.43
		15	0	22.42	22.32	22.31
	16QAM	1	0	22.48	21.97	22.69
		1	7	22.86	22.53	22.96
		1	14	22.11	22.46	22.32
		8	0	21.38	21.33	21.38
		8	4	21.27	21.32	21.29
		8	7	21.06	21.42	21.38
		15	0	21.54	21.36	21.46

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18625/1852.5	18900/1880	19175/1907.5
5MHz	QPSK	1	0	23.48	23.47	23.58
		1	13	23.29	23.38	23.70
		1	24	23.26	23.39	23.27
		12	0	22.48	22.24	22.41
		12	6	22.37	22.26	22.40
		12	13	22.37	22.30	22.39
		25	0	22.40	22.31	22.29
	16QAM	1	0	22.45	21.93	22.66
		1	13	22.83	22.51	22.93
		1	24	22.08	22.44	22.28
		12	0	21.36	21.29	21.35
		12	6	21.24	21.27	21.25
		12	13	21.03	21.37	21.34
		25	0	21.52	21.32	21.41
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18650/1855	18900/1880	19150/1905
10MHz	QPSK	1	0	23.50	23.48	23.61
		1	25	23.32	23.43	23.74
		1	49	23.28	23.43	23.30
		25	0	22.51	22.29	22.45
		25	13	22.40	22.31	22.44
		25	25	22.39	22.34	22.44
		50	0	22.48	22.33	22.33
	16QAM	1	0	22.47	21.96	22.68
		1	25	22.86	22.55	22.96
		1	49	22.11	22.46	22.31
		25	0	21.39	21.34	21.39
		25	13	21.26	21.31	21.28
		25	25	21.06	21.42	21.38
		50	0	21.55	21.37	21.45
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18675/1857.5	18900/1880	19125/1902.5

15MHz	QPSK	1	0	23.49	23.44	23.59
		1	38	23.30	23.42	23.71
		1	74	23.25	23.38	23.26
		36	0	22.49	22.25	22.42
		36	18	22.37	22.26	22.40
		36	39	22.36	22.31	22.40
		75	0	22.46	22.29	22.28
	16QAM	1	0	22.42	21.94	22.66
		1	38	22.84	22.52	22.94
		1	74	22.08	22.42	22.28
		36	0	21.36	21.32	21.36
		36	18	21.23	21.26	21.24
		36	39	21.04	21.38	21.35
		75	0	21.52	21.32	21.41
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18700/1860	18900/1880	19100/1900
20MHz	QPSK	1	0	23.46	23.40	23.56
		1	50	23.29	23.38	23.69
		1	99	23.23	23.37	23.23
		50	0	22.46	22.20	22.38
		50	25	22.35	22.22	22.37
		50	50	22.33	22.26	22.36
		100	0	22.43	22.24	22.24
	16QAM	1	0	22.40	21.90	22.61
		1	50	22.80	22.50	22.90
		1	99	22.06	22.39	22.26
		50	0	21.33	21.28	21.33
		50	25	21.20	21.24	21.21
		50	50	21.01	21.33	21.31
		100	0	21.50	21.28	21.38

LTE FDD Band 25				AV Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26047/1850.7	26365/1882.5	26683/1914.3
1.4MHz	QPSK	1	0	23.49	23.44	23.60
		1	2	23.74	23.54	23.85
		1	5	23.66	23.72	22.51
		3	0	22.68	22.39	22.58
		3	2	22.51	22.49	22.52
		3	3	22.47	22.52	22.36
		6	0	22.48	22.46	22.58
	16QAM	1	0	22.97	22.45	22.68
		1	2	22.96	22.94	22.72
		1	5	22.82	22.88	21.71
		3	0	21.45	21.45	21.52
		3	2	21.33	21.49	21.49
		3	3	21.24	21.45	21.45
		6	0	21.87	21.43	21.43
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26055/1851.5	26365/1882.5	26675/1913.5
3MHz	QPSK	1	0	23.51	23.48	23.63
		1	7	23.77	23.59	23.89
		1	14	23.69	23.77	22.55
		8	0	22.70	22.43	22.63
		8	4	22.59	22.51	22.56
		8	7	22.49	22.55	22.38
		15	0	22.51	22.50	22.61
	16QAM	1	0	22.90	22.47	22.71
		1	7	22.99	22.99	22.76
		1	14	22.84	22.92	21.74
		8	0	21.48	21.50	21.56
		8	4	21.36	21.54	21.53
		8	7	21.26	21.49	21.50
		15	0	21.90	21.47	21.46

Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26065/1852.5	26365/1882.5	26665/1912.5
5MHz	QPSK	1	0	23.48	23.46	23.59
		1	13	23.75	23.55	23.86
		1	24	23.66	23.72	22.51
		12	0	22.67	22.38	22.59
		12	6	22.57	22.47	22.51
		12	13	22.47	22.53	22.34
		25	0	22.49	22.49	22.59
	16QAM	1	0	22.97	22.43	22.68
		1	13	22.96	22.97	22.73
		1	24	22.81	22.90	21.70
		12	0	21.46	21.46	21.53
		12	6	21.33	21.49	21.49
		12	13	21.23	21.44	21.46
		25	0	21.88	21.43	21.41
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26090/1855	26365/1882.5	26640/1910
10MHz	QPSK	1	0	23.50	23.47	23.62
		1	25	23.78	23.60	23.90
		1	49	23.68	23.76	22.54
		25	0	22.70	22.43	22.63
		25	13	22.60	22.52	22.55
		25	25	22.49	22.57	22.39
		50	0	22.57	22.51	22.63
	16QAM	1	0	22.99	22.46	22.70
		1	25	22.99	22.95	22.76
		1	49	22.84	22.92	21.73
		25	0	21.49	21.51	21.57
		25	13	21.35	21.53	21.52
		25	25	21.26	21.49	21.50
		50	0	21.91	21.48	21.45
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26115/1857.5	26365/1882.5	26615/1907.5

15MHz	QPSK	1	0	23.49	23.43	23.60
		1	38	23.76	23.59	23.87
		1	74	23.65	23.71	22.50
		36	0	22.68	22.39	22.60
		36	18	22.57	22.47	22.51
		36	39	22.46	22.54	22.35
		75	0	22.55	22.47	22.58
	16QAM	1	0	22.94	22.44	22.68
		1	38	22.97	22.98	22.74
		1	74	22.81	22.88	21.70
		36	0	21.46	21.49	21.54
		36	18	21.32	21.48	21.48
		36	39	21.24	21.45	21.47
		75	0	21.88	21.43	21.41
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26140/1860	26365/1882.5	26590/1905
20MHz	QPSK	1	0	23.46	23.39	23.57
		1	50	23.75	23.55	23.85
		1	99	23.63	23.70	22.47
		50	0	22.65	22.34	22.56
		50	25	22.55	22.43	22.48
		50	50	22.43	22.49	22.31
		100	0	22.52	22.42	22.54
	16QAM	1	0	22.92	22.40	22.63
		1	50	22.93	22.86	22.70
		1	99	22.79	22.85	21.68
		50	0	21.43	21.45	21.51
		50	25	21.29	21.46	21.45
		50	50	21.21	21.40	21.43
		100	0	21.86	21.39	21.38

Note:

1) The following testing in worst case based on the maximum RF Output Power.

5.2.Effective Isotropic Radiated Power

Ambient condition

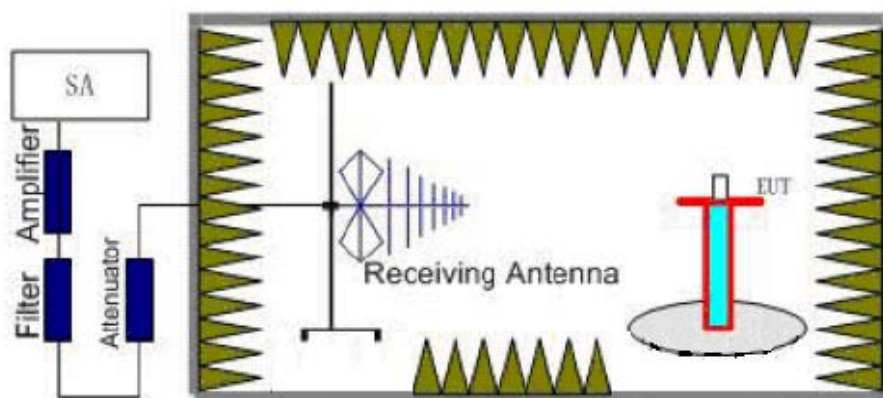
Temperature	Relative humidity
21°C ~25°C	40%~60%

Methods of Measurement

The measurement procedures in TIA- 603-D are used.

1. The EUT was placed on a turntable with 1.5 meter height in a fully anechoic chamber.
2. The EUT was set at 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. GSM operating modes: Set RBW= 1MHz, VBW= 3MHz, RMS detector over burst;
UMTS operating modes: Set RBW= 100 KHz, VBW= 300 KHz, RMS detector over frame, and use channel power option with bandwidth=5MHz, per section 4.0 of KDB 971168 D01.
4. The table was rotated 360 degrees to determine the position of the highest radiated power.
5. The height of the receiving antenna is adjusted to look for the maximum ERP/EIRP.
6. Taking the record of maximum ERP/EIRP.
7. A dipole antenna was substituted in place of the EUT and was driven by a signal generator.
8. The conducted power at the terminal of the dipole antenna is measured.
9. Repeat step 3 to step 5 to get the maximum ERP/EIRP of the substitution antenna.
10. $ERP/EIRP = P_s + E_t - E_s + G_s = P_s + R_t - R_s + G_s$
 P_s (dBm) : Input power to substitution antenna.
 G_s (dBi or dBd) : Substitution antenna Gain.
 $E_t = R_t + AF$
 $E_s = R_s + AF$
 AF (dB/m) : Receive antenna factor
 R_t : The highest received signal in spectrum analyzer for EUT.
 R_s : The highest received signal in spectrum analyzer for substitution antenna.

Test Setup



Limits



Rule Part 24.232(b) specifies that "Mobile/portable stations are limited to 2 watts EIRP. Peak power" and Rule Part 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage".

Limit (EIRP)	$\leq 2\text{ W}$ (33 dBm)
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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 1.19\text{ dB}$



Test Results:

Mode	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
GSM 1900	H	1850.2	-27.00	-53.21	0.00	1.92	28.13	33	Pass
	H	1880	-26.62	-53.42	0.00	1.94	28.74	33	Pass
	H	1909.8	-26.23	-53.67	0.00	1.90	29.34	33	Pass
	V	1850.2	-25.71	-53.70	0.00	1.92	29.91	33	Pass
	V	1880	-25.91	-53.91	0.00	1.94	29.94	33	Pass
	V	1909.8	-26.28	-54.55	0.00	1.90	30.17	33	Pass
GPRS 1900	H	1850.2	-32.47	-53.21	0.00	1.92	22.66	33	Pass
	H	1880	-32.09	-53.42	0.00	1.94	23.27	33	Pass
	H	1909.8	-31.46	-53.67	0.00	1.90	24.11	33	Pass
	V	1850.2	-31.23	-53.70	0.00	1.92	24.39	33	Pass
	V	1880	-31.38	-53.91	0.00	1.94	24.47	33	Pass
	V	1909.8	-31.38	-54.55	0.00	1.90	25.07	33	Pass
EGPRS 1900	H	1850.2	-28.75	-53.21	0.00	1.92	26.38	33	Pass
	H	1880	-29.21	-53.42	0.00	1.94	26.15	33	Pass
	H	1909.8	-29.18	-53.67	0.00	1.90	26.39	33	Pass
	V	1850.2	-27.87	-53.70	0.00	1.92	27.75	33	Pass
	V	1880	-28.45	-53.91	0.00	1.94	27.40	33	Pass
	V	1909.8	-28.51	-54.55	0.00	1.90	27.94	33	Pass
WCDMA Band II	H	1852.4	-31.74	-53.19	0.00	1.92	23.37	33	Pass
	H	1880	-32.76	-53.42	0.00	1.94	22.60	33	Pass
	H	1907.6	-32.46	-53.66	0.00	1.92	23.12	33	Pass
	V	1852.4	-31.82	-53.69	0.00	1.92	23.79	33	Pass
	V	1880	-32.43	-53.91	0.00	1.94	23.42	33	Pass
	V	1907.6	-32.77	-54.54	0.00	1.92	23.69	33	Pass
CDMA BC 1 1xRTT	H	1851.25	-33.72	-53.19	0.00	1.92	21.39	33	Pass
	H	1880	-33.62	-53.42	0.00	1.94	21.74	33	Pass
	H	1908.75	-34.28	-53.64	0.00	1.92	21.28	33	Pass
	V	1851.25	-32.22	-53.71	0.00	1.92	23.41	33	Pass
	V	1880	-32.57	-53.91	0.00	1.94	23.28	33	Pass
	V	1908.75	-33.59	-54.55	0.00	1.92	22.88	33	Pass



LTE Band 2									
bandwidth	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
1.4 MHz (QPSK)	H	1850.7	-36.61	-54.89	0.00	1.90	20.18	33	Pass
	H	1880	-37.67	-56.66	0.00	1.92	20.91	33	Pass
	H	1909.3	-39.15	-58.09	0.00	1.91	20.85	33	Pass
	V	1850.7	-35.60	-55.05	0.00	1.90	21.35	33	Pass
	V	1880	-35.99	-56.41	0.00	1.92	22.34	33	Pass
	V	1909.3	-37.23	-57.85	0.00	1.91	22.53	33	Pass
1.4 MHz (16QAM)	H	1850.7	-37.67	-54.89	0.00	1.90	19.12	33	Pass
	H	1880	-39.16	-56.66	0.00	1.92	19.42	33	Pass
	H	1909.3	-40.46	-58.09	0.00	1.91	19.54	33	Pass
	V	1850.7	-36.62	-55.05	0.00	1.90	20.33	33	Pass
	V	1880	-38.32	-56.41	0.00	1.92	20.01	33	Pass
	V	1909.3	-38.52	-57.85	0.00	1.91	21.24	33	Pass
3 MHz (QPSK)	H	1851.5	-36.92	-54.93	0.00	1.91	19.92	33	Pass
	H	1880	-38.83	-56.66	0.00	1.94	19.77	33	Pass
	H	1908.5	-39.38	-58.08	0.00	1.91	20.61	33	Pass
	V	1851.5	-35.84	-55.04	0.00	1.91	21.11	33	Pass
	V	1880	-36.75	-56.41	0.00	1.94	21.60	33	Pass
	V	1908.5	-37.50	-57.86	0.00	1.91	22.27	33	Pass
3 MHz (16QAM)	H	1851.5	-37.85	-54.93	0.00	1.91	18.99	33	Pass
	H	1880	-40.17	-56.66	0.00	1.94	18.43	33	Pass
	H	1908.5	-40.40	-58.08	0.00	1.91	19.59	33	Pass
	V	1851.5	-36.87	-55.04	0.00	1.91	20.08	33	Pass
	V	1880	-38.19	-56.41	0.00	1.94	20.16	33	Pass
	V	1908.5	-38.53	-57.86	0.00	1.91	21.24	33	Pass
5 MHz (QPSK)	H	1852.5	-35.67	-54.98	0.00	1.92	21.23	33	Pass
	H	1880	-37.66	-56.66	0.00	1.94	20.94	33	Pass
	H	1907.5	-38.26	-58.05	0.00	1.90	21.69	33	Pass
	V	1852.5	-34.66	-55.14	0.00	1.92	22.40	33	Pass
	V	1880	-35.69	-56.41	0.00	1.94	22.66	33	Pass
	V	1907.5	-36.38	-57.97	0.00	1.90	23.49	33	Pass
5 MHz (16QAM)	H	1852.5	-36.65	-54.98	0.00	1.92	20.25	33	Pass
	H	1880	-39.27	-56.66	0.00	1.94	19.33	33	Pass
	H	1907.5	-39.36	-58.05	0.00	1.90	20.59	33	Pass
	V	1852.5	-35.64	-55.14	0.00	1.92	21.42	33	Pass
	V	1880	-37.30	-56.41	0.00	1.94	21.05	33	Pass
	V	1907.5	-37.48	-57.97	0.00	1.90	22.39	33	Pass
10 MHz (QPSK)	H	1855	-35.35	-55.09	0.00	1.91	21.65	33	Pass
	H	1880	-37.19	-56.66	0.00	1.94	21.41	33	Pass
	H	1905	-38.40	-58.01	0.00	1.92	21.53	33	Pass



LTE Band 2									
bandwidth	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
	V	1855	-34.10	-55.08	0.00	1.91	22.89	33	Pass
	V	1880	-35.39	-56.41	0.00	1.94	22.96	33	Pass
	V	1905	-36.31	-57.81	0.00	1.92	23.42	33	Pass
10 MHz (16QAM)	H	1855	-36.36	-55.09	0.00	1.91	20.64	33	Pass
	H	1880	-38.84	-56.66	0.00	1.94	19.76	33	Pass
	H	1905	-39.49	-58.01	0.00	1.92	20.44	33	Pass
	V	1855	-35.08	-55.08	0.00	1.91	21.91	33	Pass
	V	1880	-37.00	-56.41	0.00	1.94	21.35	33	Pass
	V	1905	-37.41	-57.81	0.00	1.92	22.32	33	Pass
	V	1905	-37.41	-57.81	0.00	1.92	22.32	33	Pass
15 MHz (QPSK)	H	1857.5	-36.15	-55.23	0.00	1.93	21.01	33	Pass
	H	1880	-38.06	-56.66	0.00	1.94	20.54	33	Pass
	H	1902.5	-37.80	-57.95	0.00	1.92	22.07	33	Pass
	V	1857.5	-34.63	-55.24	0.00	1.93	22.54	33	Pass
	V	1880	-35.73	-56.41	0.00	1.94	22.62	33	Pass
	V	1902.5	-35.99	-57.69	0.00	1.92	23.62	33	Pass
15 MHz (16QAM)	H	1857.5	-37.12	-55.23	0.00	1.93	20.04	33	Pass
	H	1880	-39.71	-56.66	0.00	1.94	18.89	33	Pass
	H	1902.5	-38.89	-57.95	0.00	1.92	20.98	33	Pass
	V	1857.5	-35.61	-55.24	0.00	1.93	21.56	33	Pass
	V	1880	-37.34	-56.41	0.00	1.94	21.01	33	Pass
	V	1902.5	-37.09	-57.69	0.00	1.92	22.52	33	Pass
20 MHz (QPSK)	H	1860	-35.62	-55.35	0.00	1.93	21.66	33	Pass
	H	1880	-37.17	-56.66	0.00	1.94	21.43	33	Pass
	H	1900	-37.84	-57.86	0.00	1.92	21.94	33	Pass
	V	1860	-34.26	-55.31	0.00	1.93	22.98	33	Pass
	V	1880	-35.52	-56.41	0.00	1.94	22.83	33	Pass
	V	1900	-36.27	-57.66	0.00	1.92	23.31	33	Pass
20 MHz (16QAM)	H	1860	-36.59	-55.35	0.00	1.93	20.69	33	Pass
	H	1880	-38.76	-56.66	0.00	1.94	19.84	33	Pass
	H	1900	-38.93	-57.86	0.00	1.92	20.85	33	Pass
	V	1860	-35.24	-55.31	0.00	1.93	22.00	33	Pass
	V	1880	-37.11	-56.41	0.00	1.94	21.24	33	Pass
	V	1900	-37.36	-57.66	0.00	1.92	22.22	33	Pass



LTE Band 25									
bandwidth	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
1.4 MHz (QPSK)	H	1850.7	-37.49	-55.52	0.00	1.92	19.95	33	Pass
	H	1882.5	-38.61	-57.41	0.00	1.94	20.74	33	Pass
	H	1914.3	-39.07	-58.87	0.00	1.90	21.70	33	Pass
	V	1850.7	-35.36	-56.04	0.00	1.92	22.60	33	Pass
	V	1882.5	-36.34	-57.63	0.00	1.94	23.23	33	Pass
	V	1914.3	-37.65	-59.26	0.00	1.90	23.51	33	Pass
1.4 MHz (16QAM)	H	1850.7	-38.01	-55.52	0.00	1.92	19.43	33	Pass
	H	1882.5	-39.60	-57.41	0.00	1.94	19.75	33	Pass
	H	1914.3	-39.99	-58.87	0.00	1.90	20.78	33	Pass
	V	1850.7	-35.89	-56.04	0.00	1.92	22.07	33	Pass
	V	1882.5	-37.33	-57.63	0.00	1.94	22.24	33	Pass
	V	1914.3	-38.57	-59.26	0.00	1.90	22.59	33	Pass
3 MHz (QPSK)	H	1851.5	-36.68	-55.57	0.00	1.92	20.81	33	Pass
	H	1882.5	-38.61	-57.41	0.00	1.94	20.74	33	Pass
	H	1913.5	-38.84	-58.84	0.00	1.90	21.90	33	Pass
	V	1851.5	-35.53	-56.08	0.00	1.92	22.46	33	Pass
	V	1882.5	-36.50	-57.41	0.00	1.94	22.85	33	Pass
	V	1913.5	-38.08	-59.23	0.00	1.90	23.05	33	Pass
3 MHz (16QAM)	H	1851.5	-37.18	-55.57	0.00	1.92	20.31	33	Pass
	H	1882.5	-39.58	-57.41	0.00	1.94	19.77	33	Pass
	H	1913.5	-39.75	-58.84	0.00	1.90	20.99	33	Pass
	V	1851.5	-36.06	-56.08	0.00	1.92	21.93	33	Pass
	V	1882.5	-37.49	-57.41	0.00	1.94	21.86	33	Pass
	V	1913.5	-39.00	-59.23	0.00	1.90	22.13	33	Pass
5 MHz (QPSK)	H	1852.5	-36.53	-55.60	0.00	1.92	20.99	33	Pass
	H	1882.5	-38.70	-57.41	0.00	1.94	20.65	33	Pass
	H	1912.5	-38.68	-58.85	0.00	1.90	22.07	33	Pass
	V	1852.5	-35.88	-56.12	0.00	1.92	22.16	33	Pass
	V	1882.5	-36.53	-57.41	0.00	1.94	22.82	33	Pass
	V	1912.5	-37.86	-59.23	0.00	1.90	23.27	33	Pass
5 MHz (16QAM)	H	1852.5	-37.08	-55.60	0.00	1.92	20.44	33	Pass
	H	1882.5	-39.64	-57.41	0.00	1.94	19.71	33	Pass
	H	1912.5	-39.65	-58.85	0.00	1.90	21.10	33	Pass
	V	1852.5	-36.41	-56.12	0.00	1.92	21.63	33	Pass
	V	1882.5	-37.47	-57.41	0.00	1.94	21.88	33	Pass
	V	1912.5	-38.83	-59.23	0.00	1.90	22.30	33	Pass
10 MHz (QPSK)	H	1855	-36.59	-55.74	0.00	1.92	21.07	33	Pass
	H	1882.5	-38.55	-57.41	0.00	1.94	20.80	33	Pass
	H	1910	-38.98	-58.83	0.00	1.90	21.75	33	Pass



LTE Band 25									
bandwidth	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	EIRP (dBm)	Limit (dBm)	Conclusion
	V	1855	-35.38	-56.22	0.00	1.92	22.75	33	Pass
	V	1882.5	-36.33	-57.41	0.00	1.94	23.02	33	Pass
	V	1910	-38.08	-59.17	0.00	1.90	22.99	33	Pass
10 MHz (16QAM)	H	1855	-37.14	-55.74	0.00	1.92	20.52	33	Pass
	H	1882.5	-39.52	-57.41	0.00	1.94	19.83	33	Pass
	H	1910	-39.89	-58.83	0.00	1.90	20.84	33	Pass
	V	1855	-35.91	-56.22	0.00	1.92	22.22	33	Pass
	V	1882.5	-37.32	-57.41	0.00	1.94	22.03	33	Pass
	V	1910	-39.00	-59.17	0.00	1.90	22.07	33	Pass
	V	1910	-39.00	-59.17	0.00	1.90	22.07	33	Pass
15 MHz (QPSK)	H	1857.5	-36.67	-55.87	0.00	1.93	21.13	33	Pass
	H	1882.5	-38.50	-57.41	0.00	1.94	20.85	33	Pass
	H	1907.5	-39.10	-58.77	0.00	1.92	21.60	33	Pass
	V	1857.5	-35.38	-56.28	0.00	1.93	22.83	33	Pass
	V	1882.5	-36.19	-57.41	0.00	1.94	23.16	33	Pass
	V	1907.5	-37.58	-59.08	0.00	1.92	23.43	33	Pass
15 MHz (16QAM)	H	1857.5	-37.20	-55.87	0.00	1.93	20.60	33	Pass
	H	1882.5	-39.41	-57.41	0.00	1.94	19.94	33	Pass
	H	1907.5	-40.09	-58.77	0.00	1.92	20.61	33	Pass
	V	1857.5	-35.90	-56.28	0.00	1.93	22.31	33	Pass
	V	1882.5	-37.18	-57.41	0.00	1.94	22.17	33	Pass
	V	1907.5	-38.50	-59.08	0.00	1.92	22.51	33	Pass
20 MHz (QPSK)	H	1860	-36.54	-55.99	0.00	1.94	21.39	33	Pass
	H	1882.5	-38.33	-57.41	0.00	1.94	21.02	33	Pass
	H	1905	-38.10	-58.67	0.00	1.92	22.49	33	Pass
	V	1860	-35.35	-56.38	0.00	1.94	22.96	33	Pass
	V	1882.5	-36.15	-57.41	0.00	1.94	23.20	33	Pass
	V	1905	-36.99	-59.00	0.00	1.92	23.94	33	Pass
20 MHz (16QAM)	H	1860	-37.05	-55.99	0.00	1.94	20.88	33	Pass
	H	1882.5	-39.30	-57.41	0.00	1.94	20.05	33	Pass
	H	1905	-39.01	-58.67	0.00	1.92	21.58	33	Pass
	V	1860	-35.88	-56.38	0.00	1.94	22.43	33	Pass
	V	1882.5	-37.14	-57.41	0.00	1.94	22.21	33	Pass
	V	1905	-37.91	-59.00	0.00	1.92	23.02	33	Pass

5.3.Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.

RBW is set to 3kHz, VBW is set to 10kHz for GSM 1900,

RBW is set to 51kHz, VBW is set to 160kHz for WCDMA Band II,

RBW is set to 15kHz,VBW is set to 51kHz for CDMA BC1,

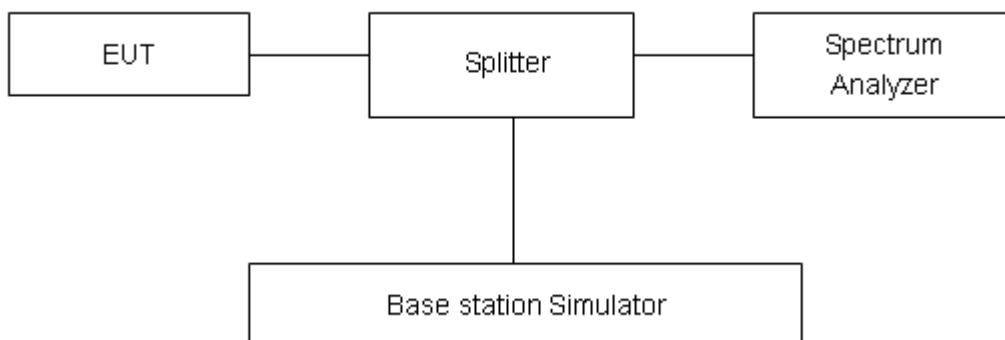
RBW is set to 51kHz, VBW is set to 160kHz for LTE Band 2/25(1.4MHz),

RBW is set to 100kHz,VBW is set to 300kHz for LTE Band 2/25 (3MHz/5MHz),

RBW is set to 300kHz,VBW is set to 1MHz for LTE Band 2/25(10MHz/15MHz/20MHz).

99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 624\text{Hz}$.

Test Result

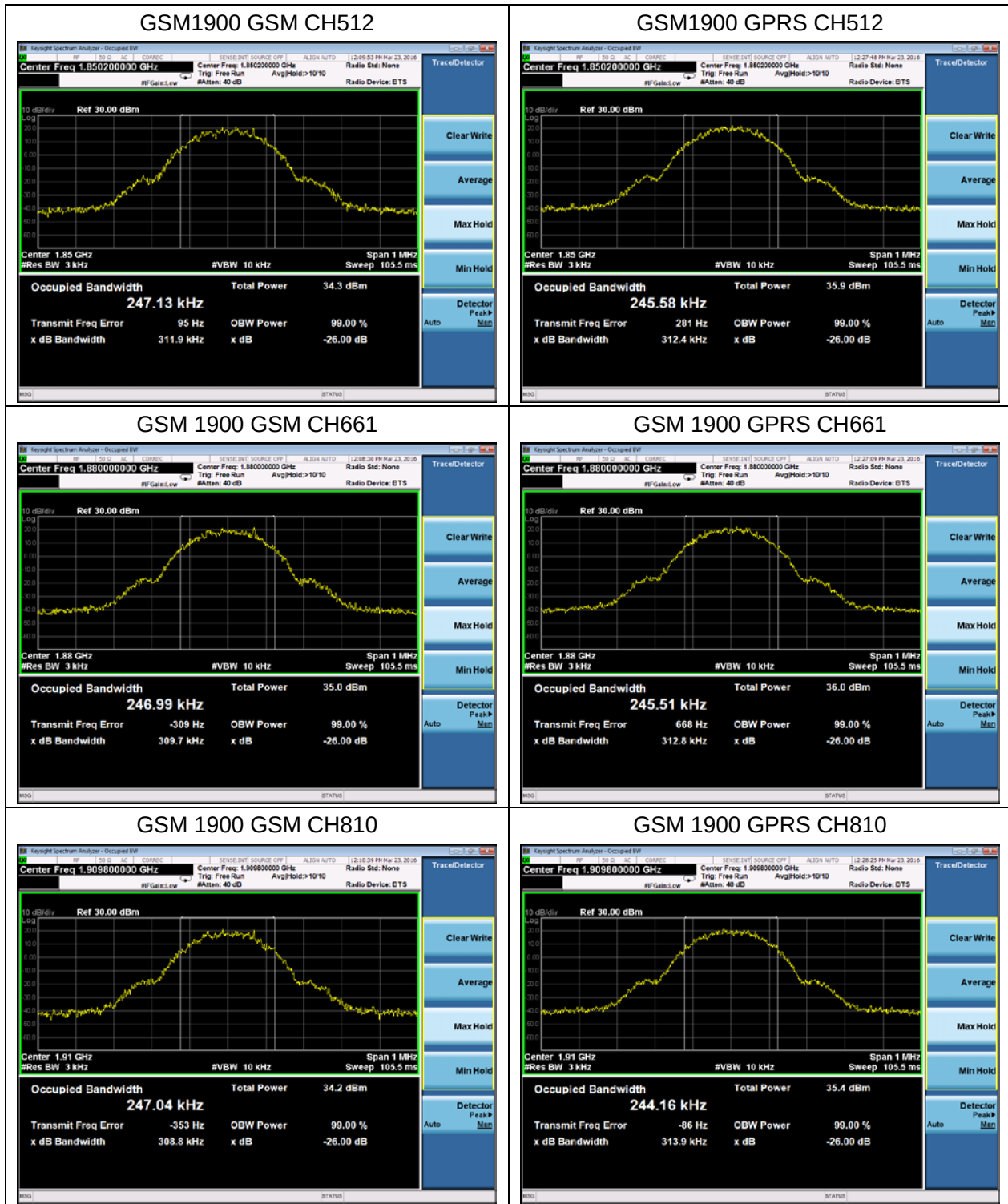
Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
GSM 1900 (GSM)	512	1850.2	0.24713	0.3119
	661	1880.0	0.24699	0.3097
	810	1909.8	0.24704	0.3088
GPRS 1900 (GMSK)	512	1850.2	0.24558	0.3124
	661	1880.0	0.24551	0.3128
	810	1909.8	0.24416	0.3139
EGPRS 1900 (8-PSK)	512	1850.2	0.24534	0.3092
	661	1880.0	0.24703	0.3099
	810	1909.8	0.24658	0.3130

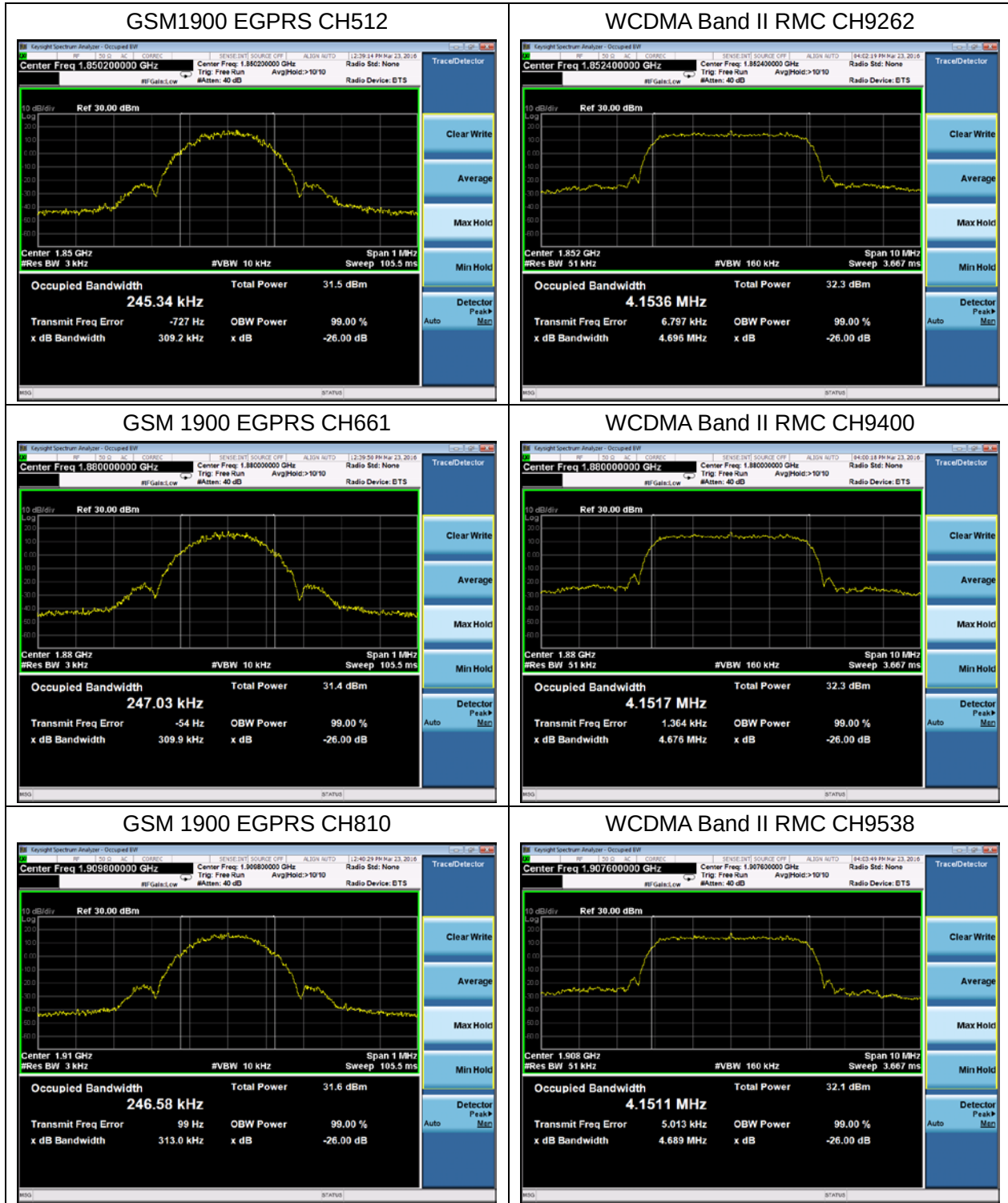
Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
WCDMA Band II (RMC)	9262	1852.4	4.1536	4.696
	9400	1880	4.1517	4.676
	9538	1907.6	4.1511	4.689
CDMA BC1 1xRTT	25	1851.25	1.2612	1.412
	600	1880	1.2612	1.412
	1175	1908.75	1.2592	1.415

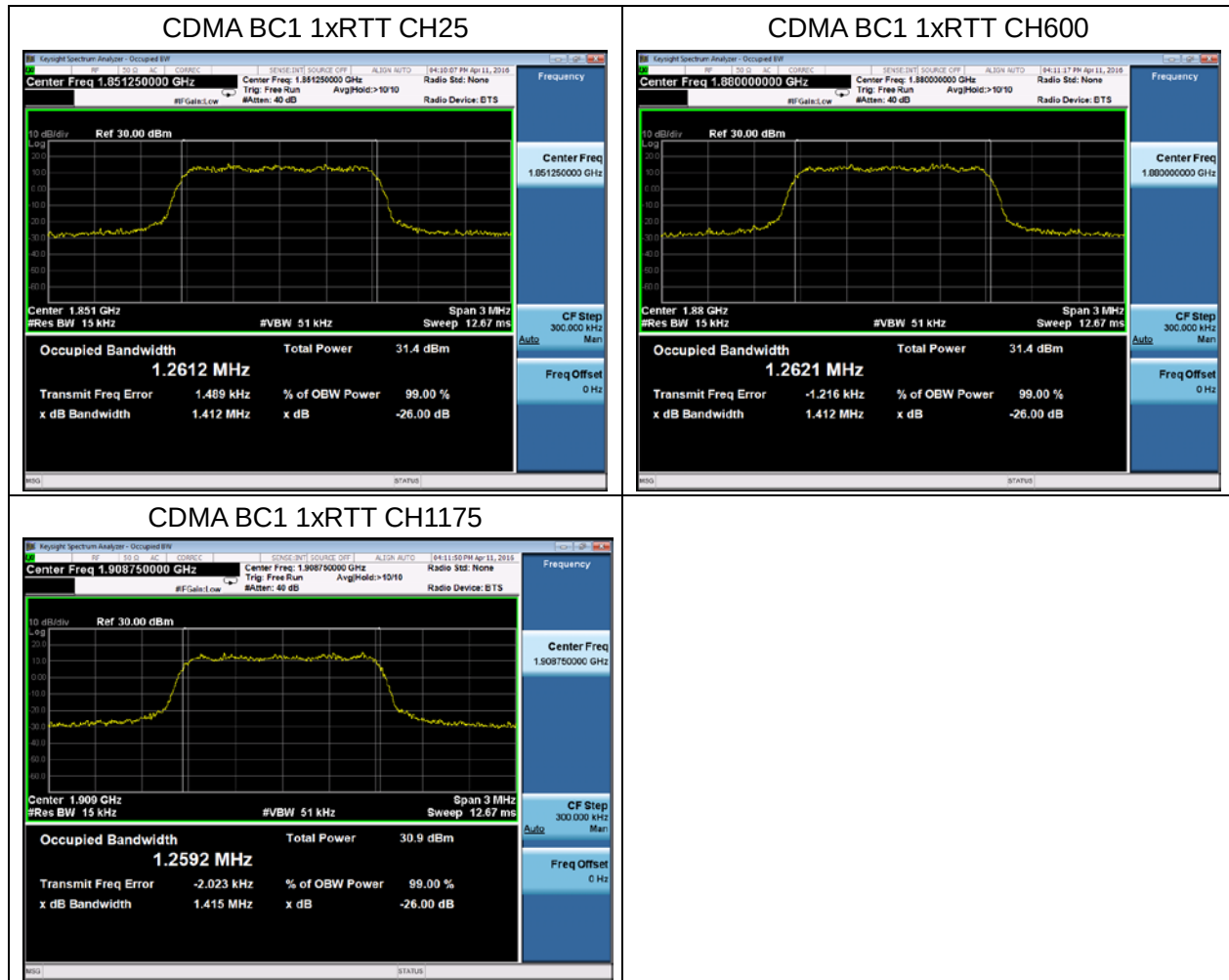
LTE Band 2		Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
Bandwidth	Modulation				
1.4MHz	QPSK	18607	1850.7	1.1263	1.343
		18900	1880.0	1.1359	1.379
		19193	1909.3	1.1324	1.345
	16QAM	18607	1850.7	1.1186	1.348
		18900	1880.0	1.1319	1.352
		19193	1909.3	1.1214	1.356
3MHz	QPSK	18615	1851.5	2.7429	3.066
		18900	1880	2.7468	3.080
		19185	1908.5	2.7412	3.063
	16QAM	18615	1851.5	2.7353	3.059
		18900	1880	2.7450	3.063
		19185	1908.5	2.7365	3.057
5MHz	QPSK	18625	1852.5	4.5164	5.034
		18900	1880	4.5293	5.022
		19175	1907.5	4.5100	5.014
	16QAM	18625	1852.5	4.5346	5.016
		18900	1880	4.5083	4.997
		19175	1907.5	4.5176	5.044
10MHz	QPSK	18650	1855	9.0625	10.10
		18900	1880	9.0462	10.09
		19150	1905	9.0468	10.07
	16QAM	18650	1855	9.0322	9.972
		18900	1880	9.0785	10.05
		19150	1905	9.0432	9.992
15MHz	QPSK	18675	1857.5	13.438	14.78
		18900	1880	13.531	14.95
		19125	1902.5	13.487	14.77
	16QAM	18675	1857.5	13.485	14.68
		18900	1880	13.514	14.73
		19125	1902.5	13.474	14.69
20MHz	QPSK	18700	1860	17.863	19.39
		18900	1880	17.917	19.23
		19100	1900	17.924	19.41
	16QAM	18700	1860	17.854	19.33
		18900	1880	17.930	19.24
		19100	1900	17.935	19.31



LTE Band 25		Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
Bandwidth	Modulation				
1.4MHz	QPSK	26047	1850.7	1.1186	1.368
		26365	1882.5	1.1327	1.381
		26683	1914.3	1.1221	1.335
	16QAM	26047	1850.7	1.1196	1.349
		26365	1882.5	1.1301	1.355
		26683	1914.3	1.1203	1.343
3MHz	QPSK	26055	1851.5	2.7496	3.033
		26365	1882.5	2.7420	3.069
		26675	1913.5	2.7486	3.043
	16QAM	26055	1851.5	2.7363	3.050
		26365	1882.5	2.7568	3.031
		26675	1913.5	2.7340	3.048
5MHz	QPSK	26065	1852.5	4.5148	5.036
		26365	1882.5	4.5223	5.029
		26665	1912.5	4.5110	4.984
	16QAM	26065	1852.5	4.5257	5.026
		26365	1882.5	4.5202	4.954
		26665	1912.5	4.5247	5.023
10MHz	QPSK	26090	1855	9.0330	10.00
		26365	1882.5	9.0703	10.09
		26640	1910	9.0147	9.951
	16QAM	26090	1855	9.0320	10.03
		26365	1882.5	9.0457	9.995
		26640	1910	8.9981	9.985
15MHz	QPSK	26115	1857.5	13.474	14.69
		26365	1882.5	13.501	14.71
		26615	1907.5	13.394	14.61
	16QAM	26115	1857.5	13.473	14.68
		26365	1882.5	13.540	14.76
		26615	1907.5	13.468	14.56
20MHz	QPSK	26140	1860	17.859	19.23
		26365	1882.5	17.935	19.28
		26590	1905	17.802	19.19
	16QAM	26140	1860	17.865	19.26
		26365	1882.5	17.946	19.29
		26590	1905	17.853	19.29

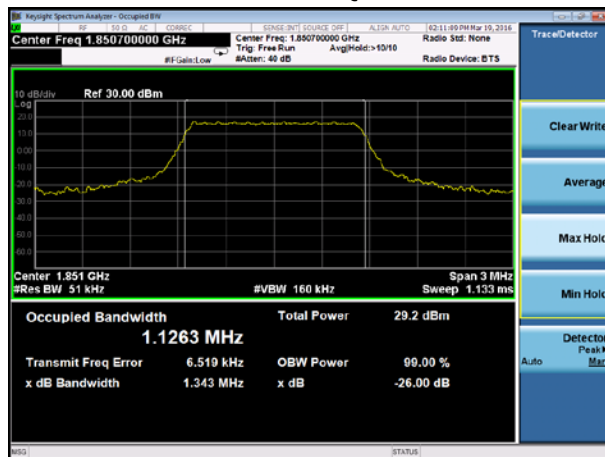




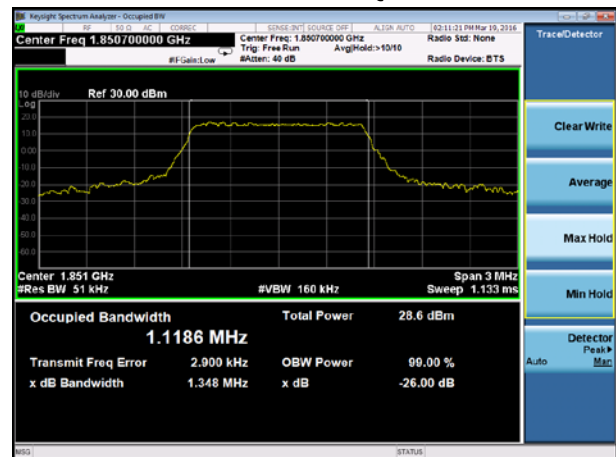




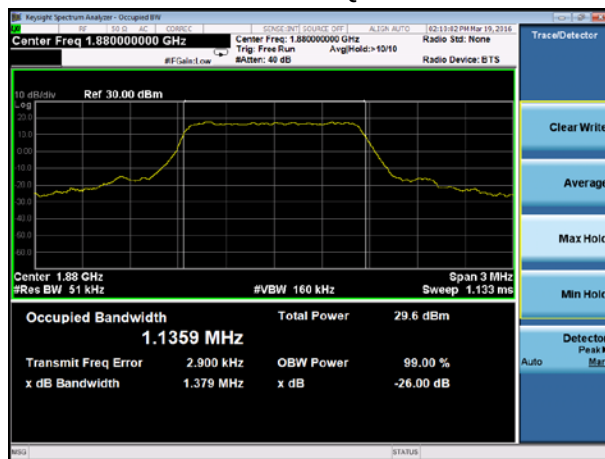
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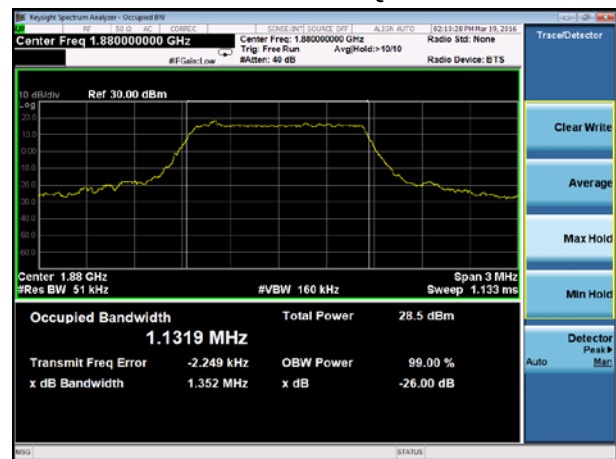
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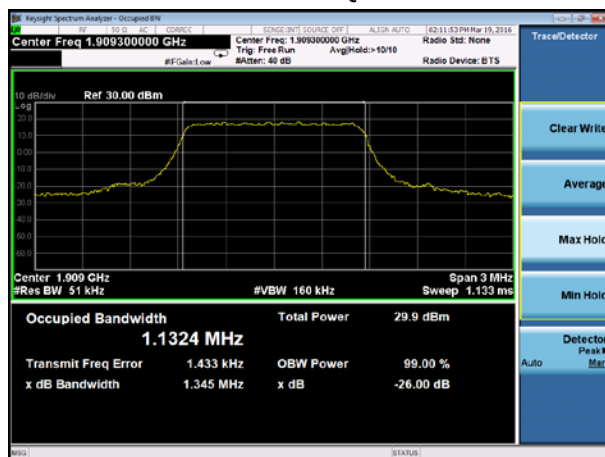
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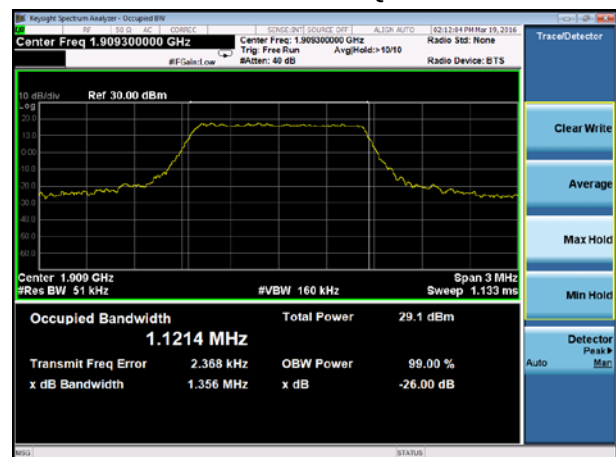
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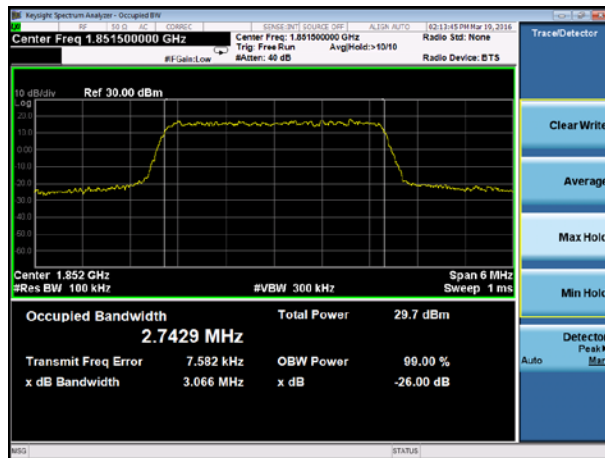


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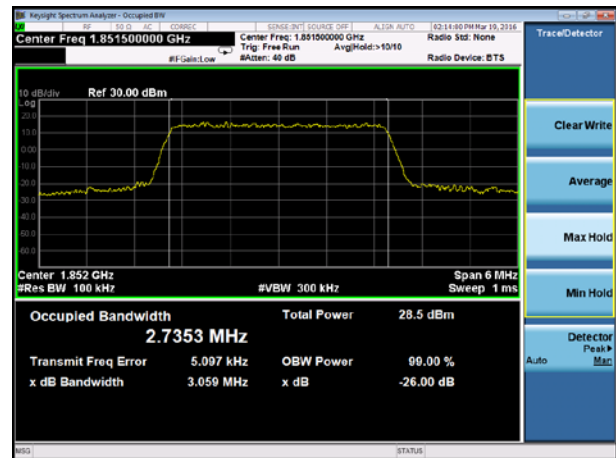




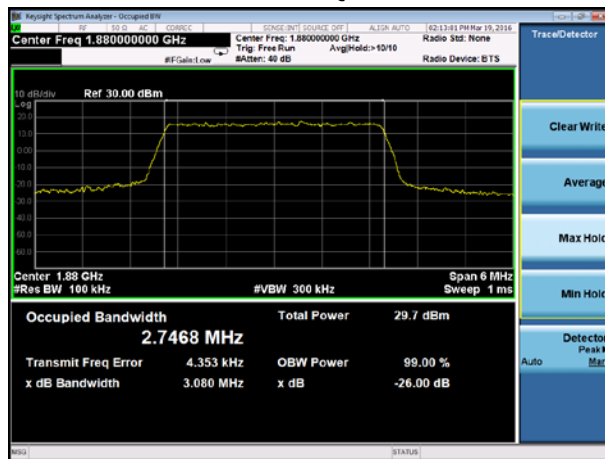
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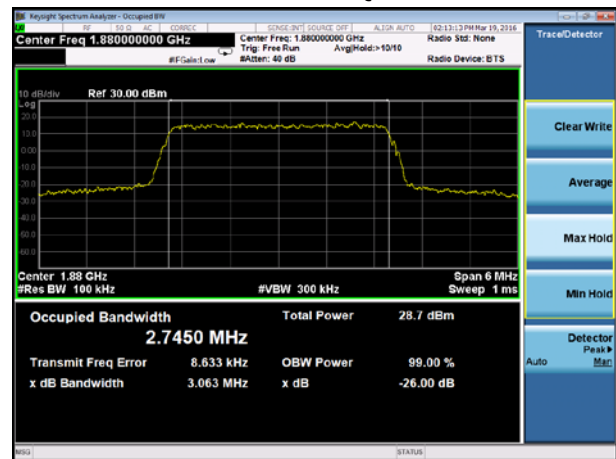
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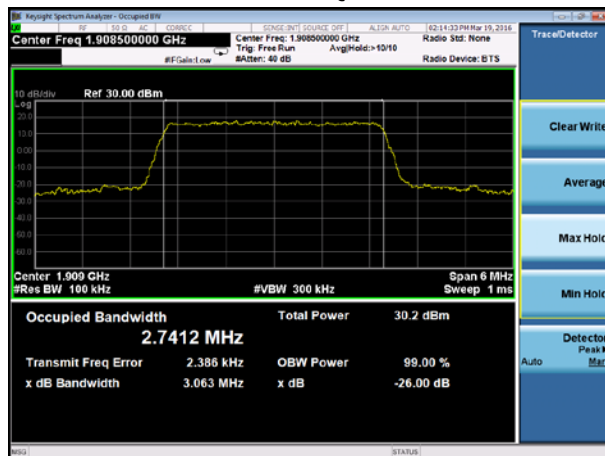
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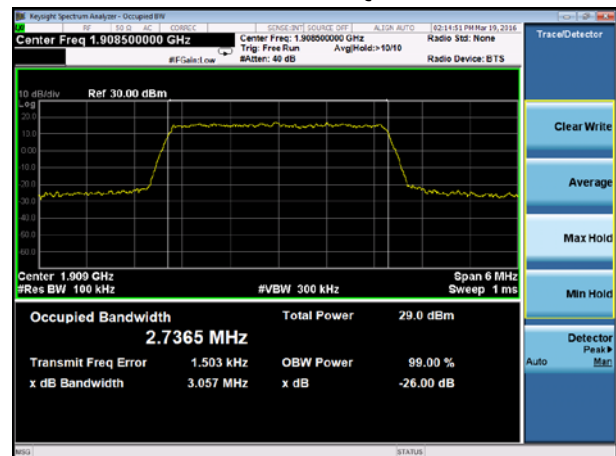
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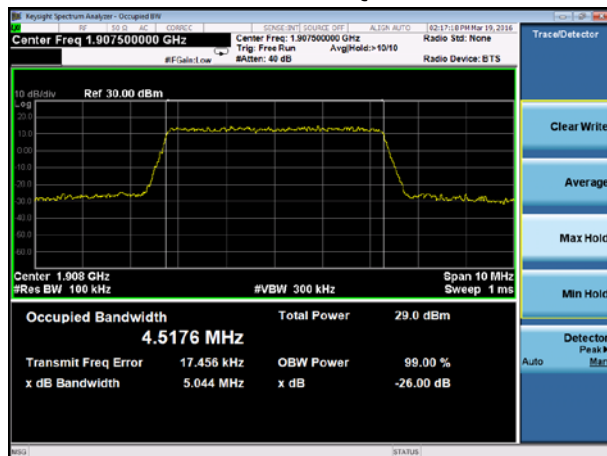


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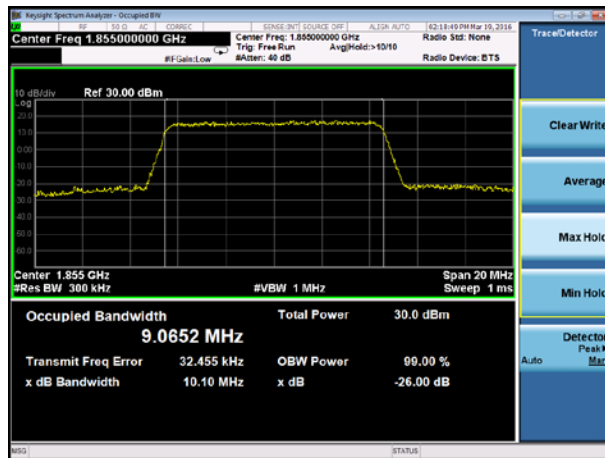
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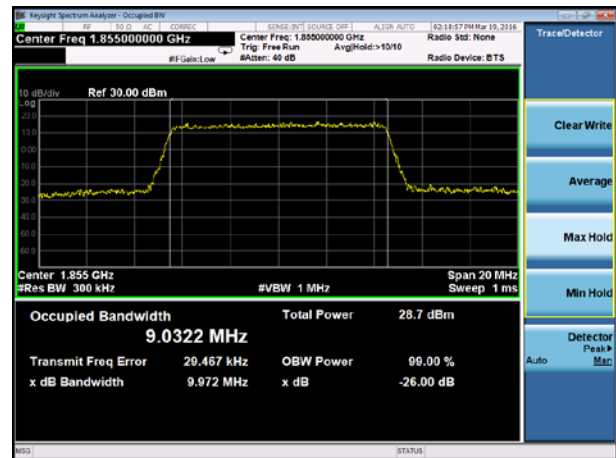




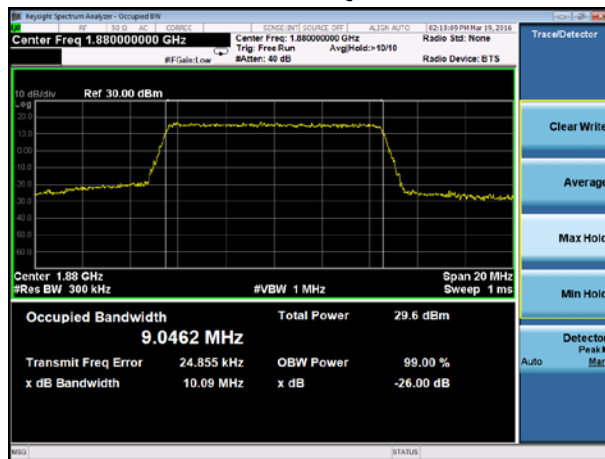
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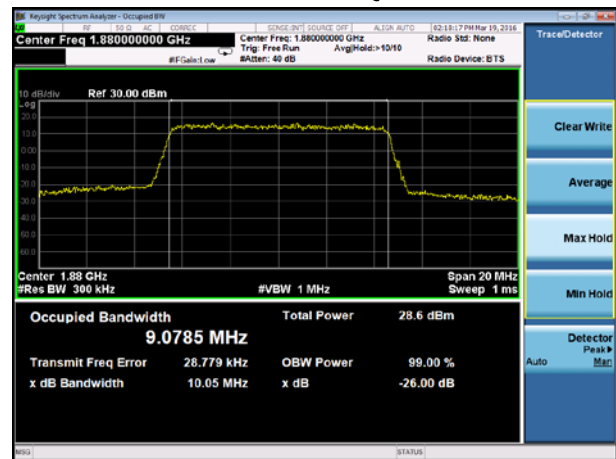
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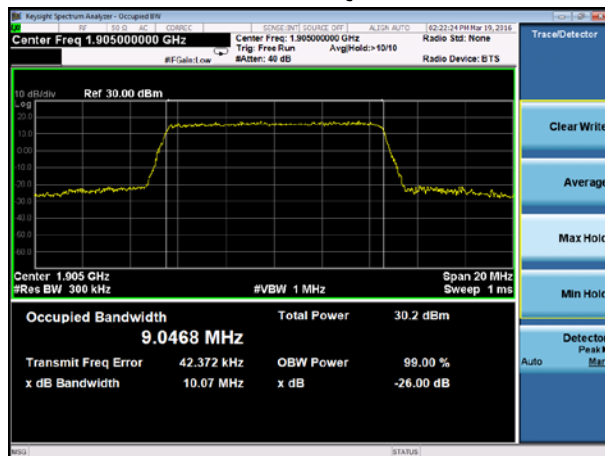
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LTE Band 2 10MHz 16QAM CH18900



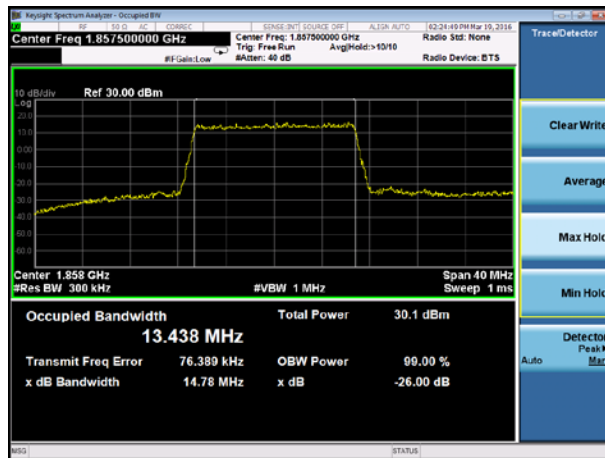
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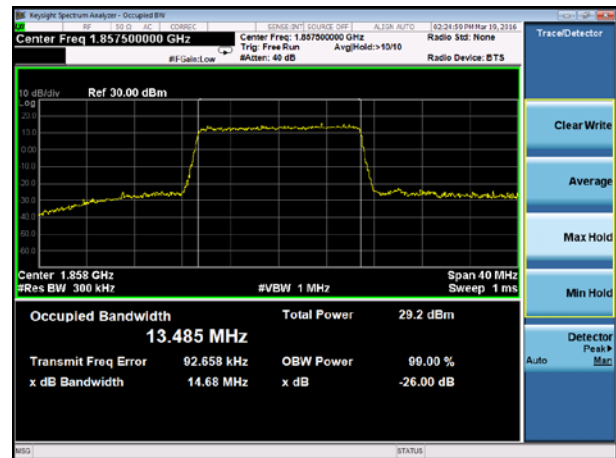
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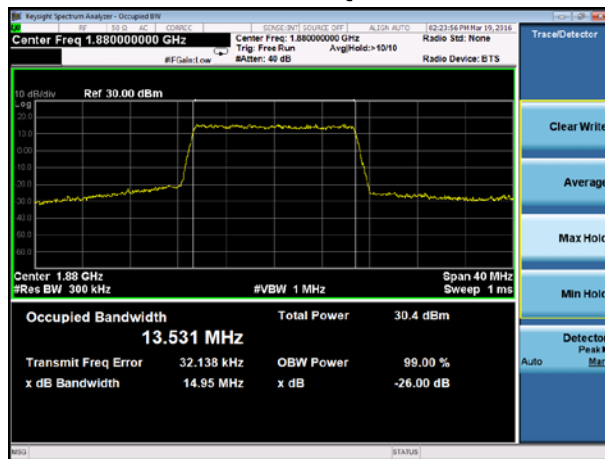
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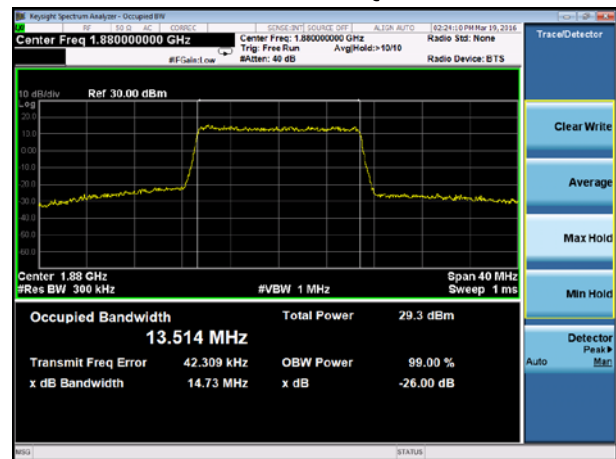
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LTE Band 2 15MHz QPSK CH18900



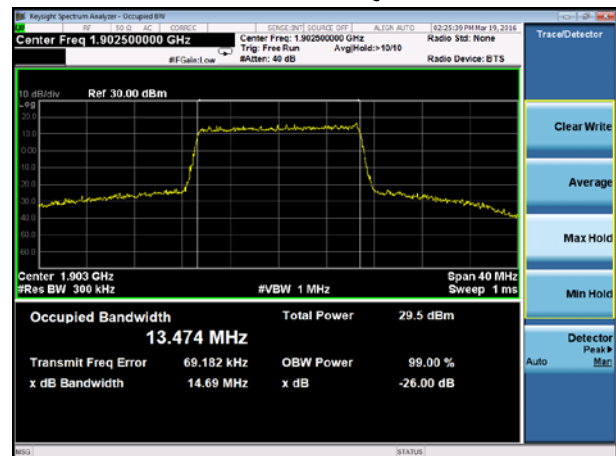
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LTE Band 2 15MHz QPSK CH19125

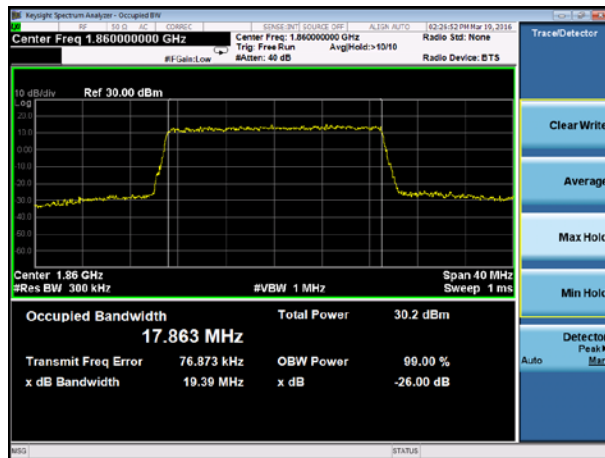


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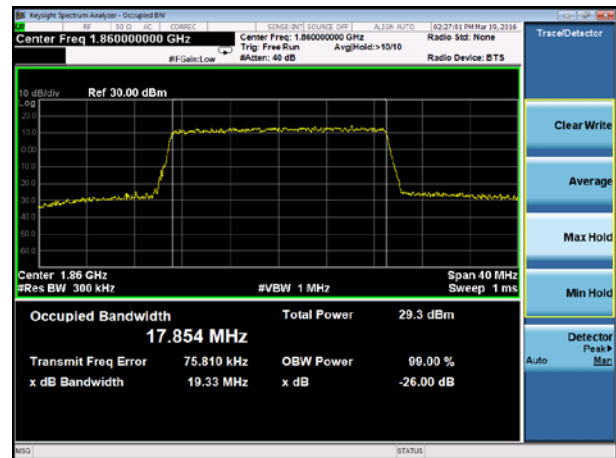




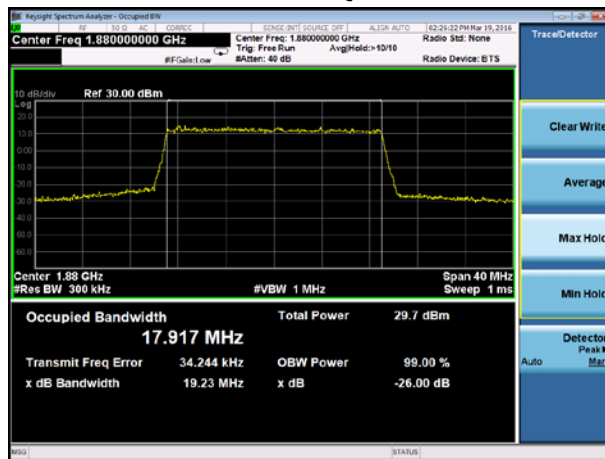
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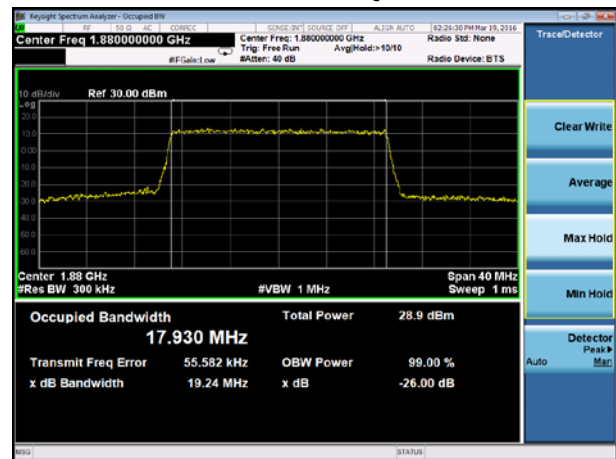
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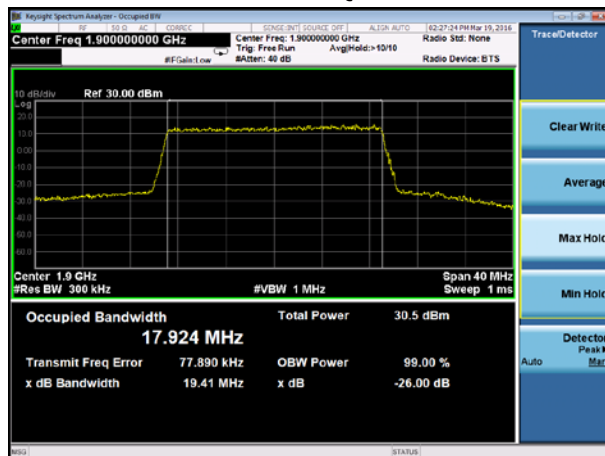
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LTE Band 2 20MHz 16QAM CH18900



LTE Band 2 20MHz QPSK CH19100



LTE Band 2 20MHz 16QAM CH19100



