RF TEST REPORT

Applicant	ZTE Corporation
FCC ID	SRQ-ZTEN9131
Product	LTE/WCDMA/GSM /CDMA Multi-Mode Digital Mobile Phone
Model	N9131
Report No.	RXA1603-0039RF03R1
Issue Date	April 29, 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 22H(2015)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Changxu Wan

Reviewed by: Lingling Kang

Approved by: Kai Xu

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Summary of measurement results

No.	Test Type	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Radiated Power	22.913(a)(2)	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	2.1051 / 22.917(a)	PASS
5	Frequency Stability	2.1055 / 22.355	PASS
6	Spurious Emissions at Antenna Terminals	2.1051 / 22.917(a)	PASS
7	Radiates Spurious Emission	2.1053 / 22.917 (a)	PASS
Date of Testing: March 21, 2016~ April 11, 2016			

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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.

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1.3. Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City:	Shanghai
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Country:	P. R. China
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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

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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):	GSM 850; WCDMA Band V; CDMA BC0; LTE Band 5/26;		
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.R.P.	GSM 850: 30.04 dBm WCDMA Band V: 22.60 dBm CDMA BC0: 20.45dBm LTE Band 5: 22.12dBm LTE Band 26: 21.6dBm		
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)
	GSM850	824 ~ 849	869 ~ 894
	WCDMA Band V	824 ~ 849	869 ~ 894
	CDMA BC0	824 ~ 849	869 ~ 894
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 26	814 ~ 849	859 ~ 894
EUT Accessory			
Battery	Manufacturer: SCUD(FUJIAN)ELECTRONICS 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.			

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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 22H (2015)

ANSI/TIA-603-D (2010)

KDB 971168 D01 Power Meas License Digital Systems v02r02

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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 were investigated.
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 850	WCDMA Band V	CDMA BC0
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 Radiated Power	GSM /GPRS /EGPRS	RMC	1xRTT
	Radiates Spurious Emission	GSM	RMC	1xRTT

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Test modes are chosen as the worst case configuration below for LTE Band 5/26

Test items	Modes	Bandwidth (MHz)					Modulation		RB			Test Channel		
		1.4	3	5	10	15	QPSK	16QAM	1	50%	100%	L	M	H
RF power output	LTE 5	O	O	O	O	-	O	O	O	O	O	O	O	O
	LTE 26	O	O	O	O	O	O	O	O	O	O	O	O	O
Effective Isotropic Radiated power	LTE 5	O	O	O	O	-	O	O	-	-	O	O	O	O
	LTE 26	O	O	O	O	O	O	O	-	-	O	O	O	O
Occupied Bandwidth	LTE 5	O	O	O	O	-	O	O	-	-	O	O	O	O
	LTE 26	O	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 5	O	O	O	O	-	O	O	O	-	O	O	-	O
	LTE 26	O	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 5	O	O	O	O	-	O	O	-	-	O	O	O	O
	LTE 26	O	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	LTE 5	O	O	O	O	-	O	O	-	-	O	-	O	-
	LTE 26	O	O	O	O	O	O	O	-	-	O	-	O	-
Spurious Emissions at Antenna Terminals	LTE 5	O	O	O	O	-	O	-	O	-	-	O	O	O
	LTE 26	O	O	O	O	O	O	-	O	-	-	O	O	O
Radiates Spurious Emission	LTE 5	O	O	O	O	-	O	-	O	-	-	O	O	O
	LTE 26	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.													

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5. Test Case Results

5.1. RF Power Output

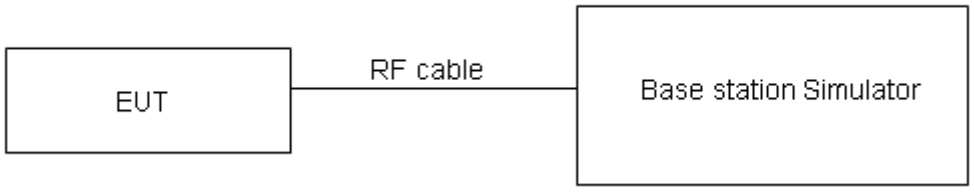
Ambient condition

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

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.

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Test Results

GSM 850		AV Conducted Power(dBm)		
		Channel 128	Channel 190	Channel 251
		824.2 (MHz)	836.6 (MHz)	848.8 (MHz)
GSM	Results	**31.57**	**31.60**	**31.56**
GPRS (GMSK)	1TXslot	**31.46**	**31.44**	**31.37**
	2TXslots	29.71	29.60	29.50
	3TXslots	27.54	27.57	27.56
	4TXslots	25.58	25.61	25.61
EGPRS (8PSK)	1TXslot	**26.31**	**26.16**	**26.24**
	2TXslots	25.17	25.09	25.27
	3TXslots	24.63	24.36	24.26
	4TXslots	24.29	24.17	24.18

WCDMA Band V		Conducted Power(dBm)		
		Channel 4132	Channel 4183	Channel 4233
		826.4(MHz)	836.6(MHz)	846.6(MHz)
RMC		**24.13**	**24.20**	**24.02**
HSDPA	Sub - Test 1	23.96	24.03	23.85
	Sub - Test 2	24.04	24.11	23.93
	Sub - Test 3	23.53	23.60	23.42
	Sub - Test 4	23.52	23.59	23.41
HSUPA	Sub - Test 1	24.01	24.08	23.90
	Sub - Test 2	22.00	22.07	21.89
	Sub - Test 3	22.93	23.00	22.98
	Sub - Test 4	21.92	21.99	21.97
	Sub - Test 5	24.07	24.14	23.96
DC-HSDPA	Sub - Test 1	24.06	24.09	23.91
	Sub - Test 2	24.05	24.08	23.90
	Sub - Test 3	23.54	23.57	23.39
	Sub - Test 4	23.53	23.66	23.37

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.

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CDMA BC0			AV Conducted Power(dBm)		
			Channel 1013	Channel 384	Channel 777
			824.7(MHz)	836.52(MHz)	848.31(MHz)
1xRTT	RC1	SO55 (Loopback)	23.72	23.76	23.62
	RC3	SO55 (Loopback)	23.79	23.81	23.65
		TDSO32 (FCH+SCH)	**23.94**	**23.98**	**23.80**
		TDSO32 (FCH)	23.95	23.91	23.90
EV-DO	Rev.0	RTAP	23.72	23.76	23.56
	Rev.A	RETAP	23.86	23.76	23.51

Note: 1) The maximum RF Output Power numbers are marks in bold.
2) The following testing in Rev 0 based on the maximum RF Output Power.

LTE FDD Band 5				Conducted Power(dBm)		
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				20407/824.7	20525/836.5	20643/848.3
1.4MHz	QPSK	1	0	23.46	23.33	23.50
		1	2	23.63	23.19	23.67
		1	5	23.08	23.57	23.57
		3	0	22.57	22.50	22.61
		3	2	22.44	22.42	22.60
		3	3	22.35	22.39	22.60
		6	0	22.28	22.34	22.59
	16QAM	1	0	22.90	22.05	22.45
		1	2	22.48	21.96	22.84
		1	5	21.91	22.01	22.79
		3	0	21.48	21.05	21.36
		3	2	21.34	21.06	21.38
		3	3	21.36	21.27	21.31
		6	0	21.37	20.23	21.70
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				20415/825.5	20525/836.5	20635/847.5
3MHz	QPSK	1	0	23.48	23.34	23.53
		1	7	23.66	23.24	23.71
		1	14	23.10	23.61	23.60
		8	0	22.60	22.55	22.65
		8	4	22.47	22.47	22.64

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		8	7	22.37	22.43	22.65
		15	0	22.36	22.36	22.63
	16QAM	1	0	22.92	22.08	22.47
		1	7	22.51	22.00	22.87
		1	14	21.94	22.03	22.82
		8	0	21.51	21.10	21.40
		8	4	21.36	21.10	21.41
		8	7	21.39	21.32	21.35
		15	0	21.40	20.28	21.74
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				20425/826.5	20525/836.5	20625/846.5
5MHz	QPSK	1	0	23.47	23.30	23.51
		1	13	23.64	23.23	23.68
		1	24	23.07	23.56	23.56
		12	0	22.58	22.51	22.62
		12	6	22.44	22.42	22.60
		12	13	22.34	22.40	22.61
		25	0	22.34	22.32	22.58
	16QAM	1	0	22.87	22.06	22.45
		1	13	22.49	21.97	22.85
		1	24	21.91	21.99	22.79
		12	0	21.48	21.08	21.37
		12	6	21.33	21.05	21.37
		12	13	21.37	21.28	21.32
		25	0	21.37	20.23	21.70
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				20450/829	20525/836.5	20600/844
10MHz	QPSK	1	0	23.44	23.26	23.48
		1	25	23.63	23.19	23.66
		1	49	23.05	23.55	23.53
		25	0	22.55	22.46	22.58
		25	13	22.42	22.38	22.57
		25	25	22.31	22.35	22.57
		50	0	22.31	22.27	22.54
	16QAM	1	0	22.85	22.02	22.40
		1	25	22.45	21.95	22.81

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		1	49	21.89	21.96	22.77
		25	0	21.45	21.04	21.34
		25	13	21.30	21.03	21.34
		25	25	21.34	21.23	21.28
		50	0	21.35	20.19	21.67

LTE FDD Band 26				Conducted Power(dBm)		
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				26797/824.7	26915/836.5	27033/848.3
1.4MHz	QPSK	1	0	23.94	23.96	23.21
		1	2	23.97	23.93	23.21
		1	5	23.95	23.98	23.21
		3	0	22.76	22.86	22.24
		3	2	22.82	22.96	22.31
		3	3	22.71	22.84	22.32
		6	0	22.97	22.95	22.29
	16QAM	1	0	22.81	22.56	21.97
		1	2	22.89	22.96	21.92
		1	5	22.73	22.75	21.98
		3	0	21.54	21.84	21.07
		3	2	21.84	21.86	21.08
		3	3	21.43	21.83	21.13
		6	0	21.96	21.44	21.28
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				26805/825.5	26915/836.5	27025/847.5
3MHz	QPSK	1	0	23.65	23.72	23.17
		1	7	23.61	23.82	23.18
		1	14	23.56	23.69	23.17
		8	0	22.82	22.97	22.20
		8	4	22.75	22.96	22.26
		8	7	22.72	22.94	22.28
		15	0	22.78	22.86	22.27
	16QAM	1	0	21.92	22.17	21.94
		1	7	22.18	22.57	21.89
		1	14	21.84	22.36	21.94
		8	0	21.13	21.23	21.04
		8	4	21.07	21.17	21.04
		8	7	20.97	21.97	21.09

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		15	0	21.57	21.35	21.23
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				26815/826.5	26915/836.5	27015/846.5
5MHz	QPSK	1	0	23.96	23.69	23.20
		1	13	23.92	23.84	23.22
		1	24	23.87	23.68	23.20
		12	0	22.93	22.97	22.24
		12	6	22.86	22.77	22.30
		12	13	22.83	22.75	22.33
		25	0	22.89	22.87	22.31
	16QAM	1	0	22.73	22.42	21.96
		1	13	22.99	22.81	21.92
		1	24	22.65	22.64	21.97
		12	0	21.85	21.84	21.08
		12	6	21.72	21.98	21.07
		12	13	21.74	21.78	21.13
		25	0	21.88	21.86	21.27
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				26840/829	26915/836.5	26990/844
10MHz	QPSK	1	0	23.27	23.34	23.18
		1	25	23.30	23.51	23.19
		1	49	23.13	23.26	23.16
		25	0	22.81	22.85	22.21
		25	13	22.79	22.70	22.26
		25	25	22.73	22.65	22.29
		50	0	22.85	22.49	22.26
	16QAM	1	0	22.39	22.64	21.94
		1	25	22.64	23.03	21.90
		1	49	22.34	22.86	21.94
		25	0	21.86	21.92	21.05
		25	13	21.94	21.91	21.03
		25	25	21.96	21.68	21.10
		50	0	21.50	21.38	21.23
BW	Modulation	RB size	RB offset	Channel/Frequency(MHz)		
				26865/831.5	26915/836.5	26965/841.5
15MHz	QPSK	1	0	23.93	23.74	23.15
		1	38	23.97	23.89	23.17
		1	74	23.92	23.73	23.13
		36	0	22.98	22.88	22.17
		36	18	22.91	22.82	22.23

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		36	39	22.88	22.80	22.25
		75	0	22.94	22.92	22.22
	16QAM	1	0	22.78	22.69	21.89
		1	38	22.89	22.85	21.86
		1	74	22.70	22.90	21.92
		36	0	21.90	21.76	21.02
		36	18	21.77	21.72	21.00
		36	39	21.79	21.94	21.06
		75	0	21.93	22.61	21.20

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5.2. Effective Radiated Power

Ambient condition

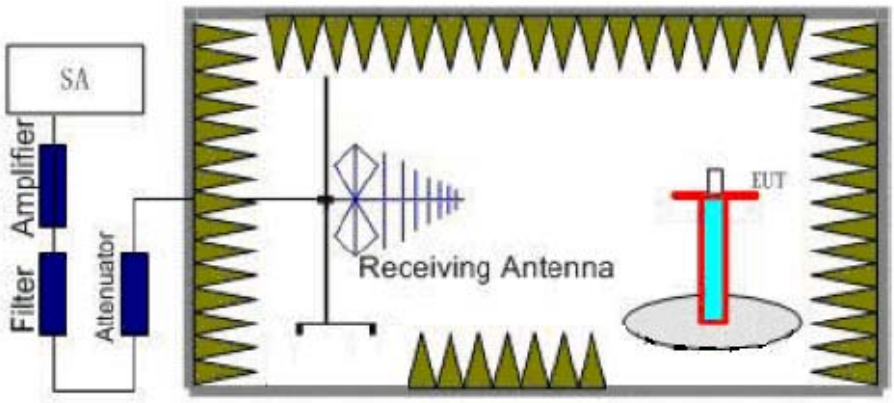
Temperature	Relative humidity
21°C ~25°C	40%~60%

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 = Ps + Et – Es + Gs = Ps + Rt – Rs + Gs
Ps (dBm)：Input power to substitution antenna.
Gs (dBi or dBd)：Substitution antenna Gain.
Et = Rt + AF
Es = Rs + AF
AF (dB/m)：Receive antenna factor
Rt：The highest received signal in spectrum analyzer for EUT.
Rs：The highest received signal in spectrum analyzer for substitution antenna.

EIRP= E.R.P+2.15

Test Setup



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Limits

Rule Part 22.913(a) specifies that "Mobile/portable stations are limited to 7 watts ERP".

Limit	≤ 7 W (38.45 dBm)

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 dB

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Test Results:

Mode	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBd)	ERP (dBm)	Limit (dBm)	Conclusion
GSM 850	H	824.2	-16.55	-45.53	0.00	1.06	30.04	38.45	Pass
	H	836.6	-16.79	-45.38	0.00	1.24	29.83	38.45	Pass
	H	848.8	-17.24	-45.37	0.00	1.38	29.51	38.45	Pass
	V	824.2	-32.97	-45.65	0.00	1.06	13.74	38.45	Pass
	V	836.6	-33.03	-45.46	0.00	1.24	13.67	38.45	Pass
	V	848.8	-32.94	-45.49	0.00	1.38	13.93	38.45	Pass
GPRS 850	H	824.2	-22.48	-45.53	0.00	1.06	24.11	38.45	Pass
	H	836.6	-22.88	-45.38	0.00	1.24	23.74	38.45	Pass
	H	848.8	-23.63	-45.37	0.00	1.38	23.12	38.45	Pass
	V	824.2	-38.69	-45.65	0.00	1.06	8.02	38.45	Pass
	V	836.6	-39.06	-45.46	0.00	1.24	7.64	38.45	Pass
	V	848.8	-40.13	-45.49	0.00	1.38	6.74	38.45	Pass
EGPRS 850	H	824.2	-20.79	-45.53	0.00	1.06	25.80	38.45	Pass
	H	836.6	-20.90	-45.38	0.00	1.24	25.72	38.45	Pass
	H	848.8	-21.91	-45.37	0.00	1.38	24.84	38.45	Pass
	V	824.2	-27.77	-45.65	0.00	1.06	18.94	38.45	Pass
	V	836.6	-28.06	-45.46	0.00	1.24	18.64	38.45	Pass
	V	848.8	-28.76	-45.49	0.00	1.38	18.11	38.45	Pass
WCDMA Band V	H	826.4	-23.97	-45.44	0.00	1.13	22.60	38.45	Pass
	H	836.6	-24.15	-45.38	0.00	1.24	22.47	38.45	Pass
	H	846.6	-24.70	-45.38	0.00	1.35	22.03	38.45	Pass
	V	826.4	-40.21	-45.54	0.00	1.13	6.46	38.45	Pass
	V	836.6	-40.70	-45.46	0.00	1.24	6.00	38.45	Pass
	V	846.6	-41.85	-45.49	0.00	1.35	4.99	38.45	Pass
CDMA BC0 1xRTT	H	824.7	-26.14	-45.53	0.00	1.06	20.45	38.45	Pass
	H	836.52	-26.30	-45.38	0.00	1.24	20.32	38.45	Pass
	H	848.31	-26.87	-45.07	0.00	1.68	19.88	38.45	Pass
	V	824.7	-42.44	-45.69	0.00	1.06	4.31	38.45	Pass
	V	836.52	-42.85	-45.46	0.00	1.24	3.85	38.45	Pass
	V	848.31	-44.03	-45.19	0.00	1.68	2.84	38.45	Pass

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LTE Band 5								
bandwidth	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	ERP (dBm)	Conclusion
1.4 MHz (QPSK)	H	824.7	-26.56	-47.61	0.00	1.06	22.11	Pass
	H	836.5	-27.87	-47.75	0.00	1.24	21.12	Pass
	H	848.3	-28.37	-48.23	0.00	1.38	21.24	Pass
	V	824.7	-32.09	-47.29	0.00	1.06	16.27	Pass
	V	836.5	-32.42	-47.15	0.00	1.24	15.97	Pass
	V	848.3	-32.52	-47.48	0.00	1.38	16.34	Pass
1.4 MHz (16QAM)	H	824.7	-27.11	-47.61	0.00	1.06	21.56	Pass
	H	836.5	-29.15	-47.75	0.00	1.24	19.84	Pass
	H	848.3	-29.42	-48.23	0.00	1.38	20.19	Pass
	V	824.7	-32.64	-47.29	0.00	1.06	15.72	Pass
	V	836.5	-33.70	-47.15	0.00	1.24	14.69	Pass
	V	848.3	-33.57	-47.48	0.00	1.38	15.29	Pass
3 MHz (QPSK)	H	825.5	-26.54	-47.59	0.00	1.06	22.12	Pass
	H	836.5	-27.93	-47.75	0.00	1.24	21.06	Pass
	H	847.5	-28.23	-48.18	0.00	1.38	21.33	Pass
	V	825.5	-31.95	-47.26	0.00	1.06	16.38	Pass
	V	836.5	-32.48	-47.15	0.00	1.24	15.91	Pass
	V	847.5	-32.55	-47.44	0.00	1.38	16.28	Pass
3 MHz (16QAM)	H	825.5	-27.09	-47.59	0.00	1.06	21.57	Pass
	H	836.5	-29.21	-47.75	0.00	1.24	19.78	Pass
	H	847.5	-29.28	-48.18	0.00	1.38	20.28	Pass
	V	825.5	-32.50	-47.26	0.00	1.06	15.83	Pass
	V	836.5	-33.76	-47.15	0.00	1.24	14.63	Pass
	V	847.5	-33.60	-47.44	0.00	1.38	15.23	Pass
5 MHz (QPSK)	H	826.5	-27.02	-47.60	0.00	1.13	21.71	Pass
	H	836.5	-28.09	-47.75	0.00	1.24	20.90	Pass
	H	846.5	-28.98	-48.12	0.00	1.38	20.53	Pass
	V	826.5	-32.28	-47.24	0.00	1.13	16.09	Pass
	V	836.5	-32.69	-47.15	0.00	1.24	15.70	Pass
	V	846.5	-32.72	-47.40	0.00	1.38	16.06	Pass
5 MHz (16QAM)	H	826.5	-27.61	-47.60	0.00	1.13	21.12	Pass
	H	836.5	-29.36	-47.75	0.00	1.24	19.63	Pass
	H	846.5	-30.06	-48.12	0.00	1.38	19.45	Pass
	V	826.5	-32.78	-47.24	0.00	1.13	15.59	Pass
	V	836.5	-33.89	-47.15	0.00	1.24	14.50	Pass
	V	846.5	-33.87	-47.40	0.00	1.38	14.91	Pass
10 MHz (QPSK)	H	829	-27.05	-47.61	0.00	1.13	21.69	Pass
	H	836.5	-27.75	-47.75	0.00	1.24	21.24	Pass
	H	844	-28.47	-48.01	0.00	1.33	20.86	Pass

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LTE Band 5								
bandwidth	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	ERP (dBm)	Conclusion
	V	829	-32.11	-47.19	0.00	1.13	16.21	Pass
	V	836.5	-32.71	-47.15	0.00	1.24	15.68	Pass
	V	844	-32.32	-47.29	0.00	1.33	16.29	Pass
	H	829	-27.60	-47.61	0.00	1.13	21.14	Pass
	H	836.5	-29.02	-47.75	0.00	1.24	19.97	Pass
10 MHz	H	844	-29.55	-48.01	0.00	1.33	19.78	Pass
(16QAM)	V	829	-32.61	-47.19	0.00	1.13	15.71	Pass
	V	836.5	-34.01	-47.15	0.00	1.24	14.38	Pass
	V	844	-33.59	-47.29	0.00	1.33	15.02	Pass

LTE Band 26								
bandwidth	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	ERP (dBm)	Conclusion
	H	824.7	-27.07	-47.61	0.00	1.06	21.60	Pass
	H	836.5	-28.24	-47.75	0.00	1.24	20.75	Pass
1.4 MHz	H	848.3	-28.88	-48.23	0.00	1.38	20.73	Pass
(QPSK)	V	824.7	-33.32	-47.29	0.00	1.06	15.04	Pass
	V	836.5	-33.25	-47.75	0.00	1.24	15.74	Pass
	V	848.3	-33.05	-47.48	0.00	1.38	15.81	Pass
	H	824.7	-27.62	-47.61	0.00	1.06	21.05	Pass
	H	836.5	-28.88	-47.75	0.00	1.24	20.11	Pass
1.4 MHz	H	848.3	-30.12	-48.23	0.00	1.38	19.49	Pass
(16QAM)	V	824.7	-34.07	-47.29	0.00	1.06	14.29	Pass
	V	836.5	-33.89	-47.75	0.00	1.24	15.10	Pass
	V	848.3	-34.29	-47.48	0.00	1.38	14.57	Pass
	H	825.5	-27.08	-47.59	0.00	1.06	21.58	Pass
	H	836.5	-28.40	-47.75	0.00	1.24	20.59	Pass
3 MHz	H	847.5	-29.23	-48.18	0.00	1.38	20.33	Pass
(QPSK)	V	825.5	-32.36	-47.26	0.00	1.06	15.97	Pass
	V	836.5	-34.31	-47.75	0.00	1.24	14.68	Pass
	V	847.5	-32.95	-47.44	0.00	1.38	15.88	Pass
	H	825.5	-27.79	-47.59	0.00	1.06	20.87	Pass
	H	836.5	-29.06	-47.75	0.00	1.24	19.93	Pass
3 MHz	H	847.5	-30.52	-48.18	0.00	1.38	19.04	Pass
(16QAM)	V	825.5	-33.11	-47.26	0.00	1.06	15.22	Pass
	V	836.5	-34.94	-47.75	0.00	1.24	14.05	Pass
	V	847.5	-34.19	-47.44	0.00	1.38	14.64	Pass
5 MHz	H	826.5	-27.43	-47.60	0.00	1.13	21.30	Pass
(QPSK)	H	836.5	-28.36	-47.75	0.00	1.24	20.63	Pass

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LTE Band 26								
bandwidth	Polarization	Frequency (MHz)	Rt (dBm)	Rs (dBm)	Ps (dBm)	Gs (dBi)	ERP (dBm)	Conclusion
	H	846.5	-28.94	-48.12	0.00	1.38	20.57	Pass
	V	826.5	-32.47	-47.24	0.00	1.13	15.90	Pass
	V	836.5	-33.33	-47.75	0.00	1.24	15.66	Pass
	V	846.5	-32.83	-47.40	0.00	1.38	15.95	Pass
5 MHz (16QAM)	H	826.5	-28.14	-47.60	0.00	1.13	20.59	Pass
	H	836.5	-29.02	-47.75	0.00	1.24	19.97	Pass
	H	846.5	-30.23	-48.12	0.00	1.38	19.28	Pass
	V	826.5	-33.22	-47.24	0.00	1.13	15.15	Pass
	V	836.5	-33.96	-47.75	0.00	1.24	15.03	Pass
	V	846.5	-34.07	-47.40	0.00	1.38	14.71	Pass
10 MHz (QPSK)	H	829	-27.22	-47.61	0.00	1.13	21.52	Pass
	H	836.5	-28.03	-47.75	0.00	1.24	20.96	Pass
	H	844	-28.56	-48.01	0.00	1.33	20.77	Pass
	V	829	-32.35	-47.19	0.00	1.13	15.97	Pass
	V	836.5	-33.28	-47.75	0.00	1.24	15.71	Pass
	V	844	-32.79	-47.29	0.00	1.33	15.82	Pass
10 MHz (16QAM)	H	829	-27.98	-47.61	0.00	1.13	20.76	Pass
	H	836.5	-28.64	-47.75	0.00	1.24	20.35	Pass
	H	844	-29.87	-48.01	0.00	1.33	19.46	Pass
	V	829	-33.10	-47.19	0.00	1.13	15.22	Pass
	V	836.5	-33.91	-47.75	0.00	1.24	15.08	Pass
	V	844	-34.03	-47.29	0.00	1.33	14.58	Pass
15 MHz (QPSK)	H	831.5	-27.38	-47.64	0.00	1.18	21.44	Pass
	H	836.5	-27.85	-47.75	0.00	1.24	21.14	Pass
	H	841.5	-28.30	-47.93	0.00	1.28	20.92	Pass
	V	831.5	-32.44	-47.15	0.00	1.18	15.89	Pass
	V	836.5	-33.27	-47.75	0.00	1.24	15.72	Pass
	V	841.5	-32.63	-47.23	0.00	1.28	15.89	Pass
15 MHz (16QAM)	H	831.5	-28.14	-47.64	0.00	1.18	20.68	Pass
	H	836.5	-28.51	-47.75	0.00	1.24	20.48	Pass
	H	841.5	-29.63	-47.93	0.00	1.28	19.59	Pass
	V	831.5	-33.19	-47.15	0.00	1.18	15.14	Pass
	V	836.5	-33.88	-47.75	0.00	1.24	15.11	Pass
	V	841.5	-33.94	-47.23	0.00	1.28	14.58	Pass

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5.3. Occupied Bandwidth

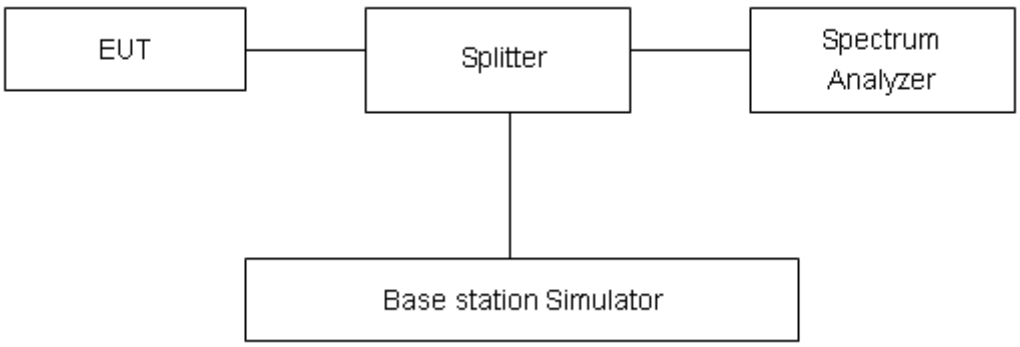
Ambient condition

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

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 850,
RBW is set to 51kHz, VBW is set to 160kHz for WCDMA Band V,
RBW is set to 15kHz, VBW is set to 51kHz for CDMA BC0,
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 5/26 (1.4MHz),
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 5 (3MHz/5MHz),
RBW is set to 300 kHz, VBW is set to 1 MHz for LTE Band 5 (10MHz),
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 26 (3MHz/5MHz),
RBW is set to 300 kHz, VBW is set to 1 MHz for LTE Band 26 (10MHz/15MHz).
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= 624Hz.

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Test Result

Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
GSM 850 (GSM)	128	824.2	0.24343	0.3179
	190	836.6	0.24393	0.3059
	251	848.8	0.24267	0.3148
GPRS 850 (GMSK)	128	824.2	0.24550	0.3107
	190	836.6	0.24441	0.3109
	251	848.8	0.24486	0.3136
EGPRS 850 (8-PSK)	128	824.2	0.24680	0.311
	190	836.6	0.24352	0.3056
	251	848.8	0.24745	0.3103

Mode	Channel	Frequency (MHz)	99% Power Bandwidth (MHz)	-26dBc Bandwidth(MHz)
WCDMA Band V (RMC)	4132	826.4	4.1362	4.669
	4183	836.6	4.1348	4.682
	4233	846.6	4.1293	4.667
CDMA BC0 1xRTT	1013	824.7	1.2639	1.419
	384	836.52	1.2555	1.405
	777	848.31	1.2600	1.397

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LTE Band 5						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	20407	824.7	1.1307	1.327
			20525	836.5	1.1246	1.344
			20643	848.3	1.1119	1.319
		3	20415	825.5	2.7486	3.056
			20525	836.5	2.7375	3.060
			20635	847.5	2.7484	3.050
		5	20425	826.5	4.5217	4.991
			20525	836.5	4.5338	5.020
			20625	846.5	4.5045	4.965
		10	20450	829	9.0331	9.911
			20525	836.5	9.0342	9.999
			20600	844	9.0590	10.13
	16QAM	1.4	20407	824.7	1.1193	1.316
			20525	836.5	1.1168	1.317
			20643	848.3	1.1213	1.320
		3	20415	825.5	2.7384	3.034
			20525	836.5	2.7496	3.067
			20635	847.5	2.7377	3.048
		5	20425	826.5	4.5201	4.983
			20525	836.5	4.5184	5.016
			20625	846.5	4.5330	5.016
		10	20450	829	9.0446	10.02
			20525	836.5	9.0180	10.05
			20600	844	9.0386	10.05

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LTE Band 26						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	26797	824.7	1.1228	1.339
			26915	836.5	1.1272	1.339
			27033	848.3	1.1202	1.326
		3	26805	825.5	2.7494	3.050
			26915	836.5	2.7444	3.047
			27025	847.5	2.7456	3.034
		5	26815	826.5	4.5176	5.027
			26915	836.5	4.5094	5.031
			27015	846.5	4.5032	4.984
		10	26840	829	9.0193	10.03
			26915	836.5	9.0461	10.07
			26990	844	9.0446	9.987
		15	26865	831.5	13.484	14.77
			26915	836.5	13.469	14.76
			26965	841.5	13.503	14.55
	16QAM	1.4	26797	824.7	1.1256	1.344
			26915	836.5	1.1217	1.330
			27033	848.3	1.1120	1.321
		3	26805	825.5	2.7375	3.043
			26915	836.5	2.7340	3.053
			27025	847.5	2.7393	3.061
		5	26815	826.5	4.5279	5.025
			26915	836.5	4.5263	5.026
			27015	846.5	4.5343	5.021
		10	26840	829	9.0332	10.04
			26915	836.5	9.0395	10.05
			26990	844	9.0306	10.01
		15	26865	831.5	13.482	14.72
			26915	836.5	13.492	14.79
			26965	841.5	13.504	14.56

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GSM 850 CH-Low

GSM 850 GPRS CH-Low

GSM 850 CH-Middle

GSM 850 GPRS CH-Middle

GSM 850 CH-High

GSM 850 GPRS CH-High

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GSM 850 EGPRS CH-Low

WCDMA Band V CH-Low

GSM 850 EGPRS CH-Middle

WCDMA Band V CH-Middle

GSM 850 EGPRS CH-High

WCDMA Band V CH-High

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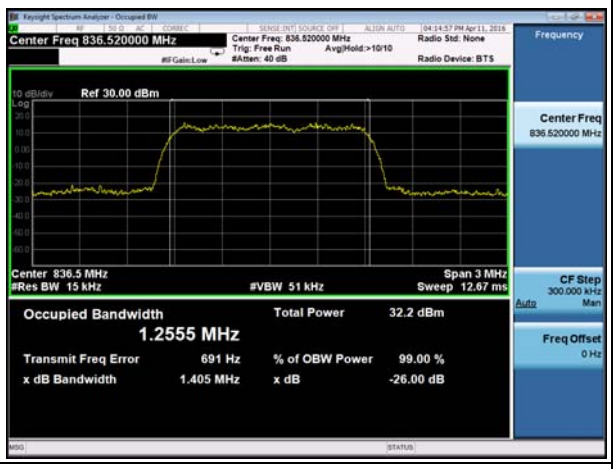
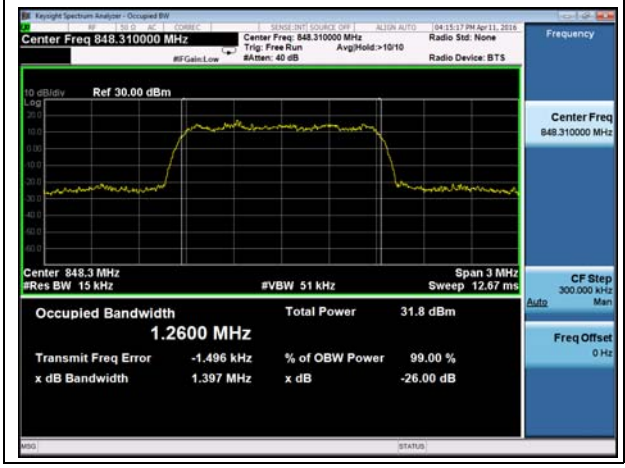
CDMA 1XRTT BC0 CH1013

CDMA 1XRTT BC0 CH384



CDMA 1XRTT BC0 CH777



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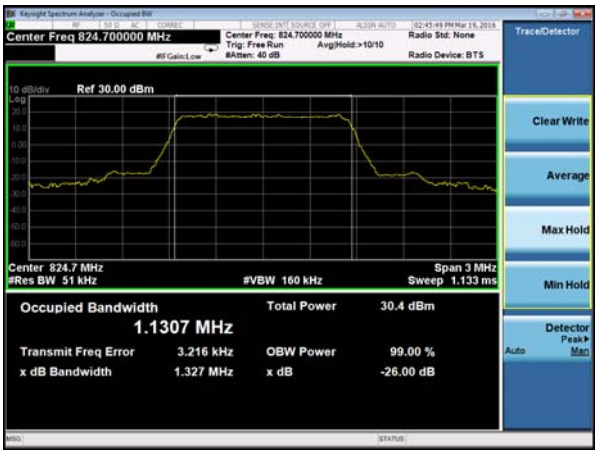
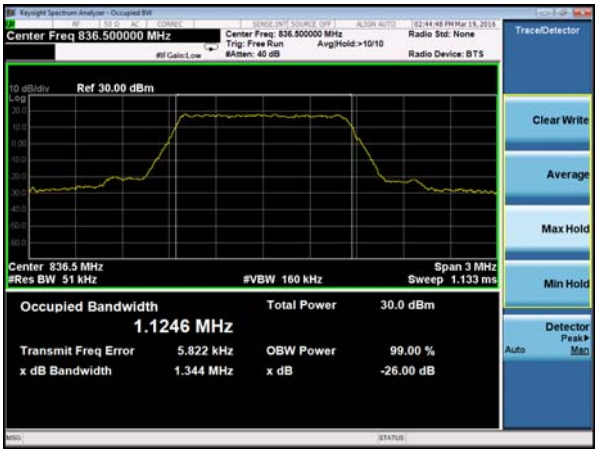
LTE Band 5 QPSK 1.4MHz CH-Low



LTE Band 5 QPSK 3MHz CH-Low

LTE Band 5 QPSK 1.4MHz CH-Middle



LTE Band 5 QPSK 3MHz CH-Middle

LTE Band 5 QPSK 1.4MHz CH-High

LTE Band 5 QPSK 3MHz CH-High

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LTE Band 5 QPSK 5MHz CH-Low

LTE Band 5 QPSK 10MHz CH-Low

LTE Band 5 QPSK 5MHz CH-Middle

LTE Band 5 QPSK 10MHz CH-Middle

LTE Band 5 QPSK 5MHz CH-High

LTE Band 5 QPSK 10MHz CH-High

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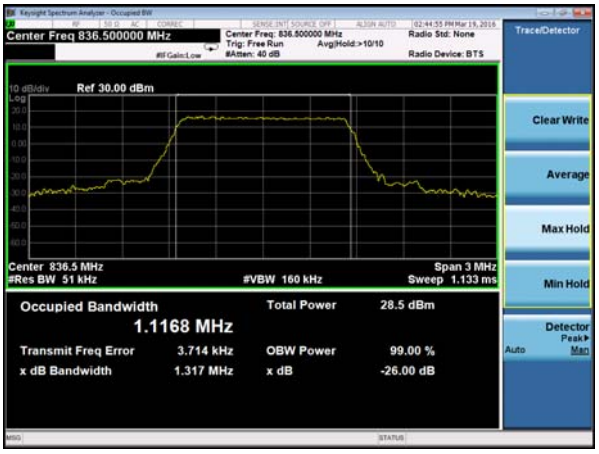
LTE Band 5 16QAM 1.4MHz CH-Low

LTE Band 5 16QAM 3MHz CH-Low

LTE Band 5 16QAM 1.4MHz CH-Middle



LTE Band 5 16QAM 3MHz CH-Middle

LTE Band 5 16QAM 1.4MHz CH-High

LTE Band 5 16QAM 3MHz CH-High

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LTE Band 5 16QAM 5MHz CH-Low

LTE Band 5 16QAM 10MHz CH-Low

LTE Band 5 16QAM 5MHz CH-Middle

LTE Band 5 16QAM 10MHz CH-Middle

LTE Band 5 16QAM 5MHz CH-High

LTE Band 5 16QAM 10MHz CH-High

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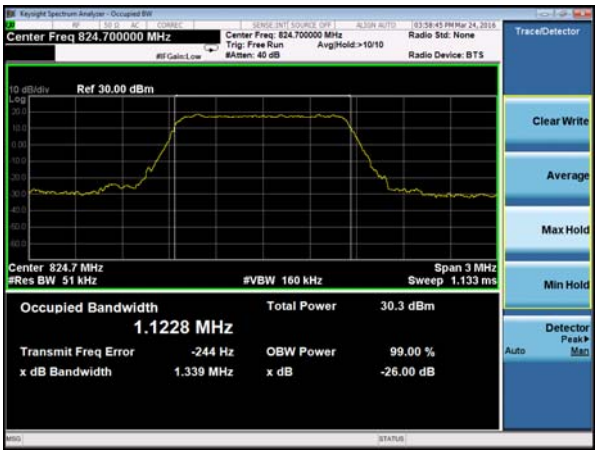
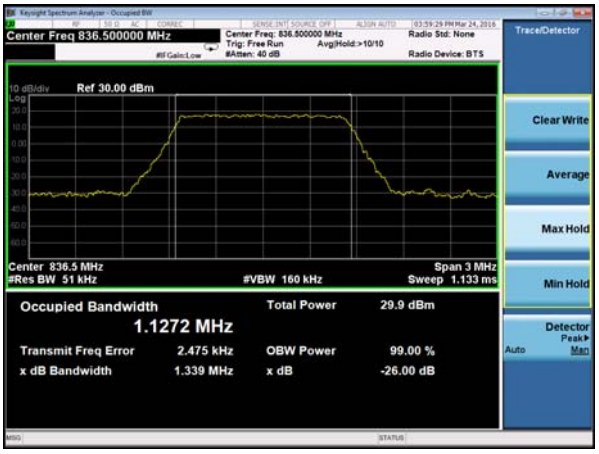
LTE Band 26 QPSK 1.4MHz CH-Low



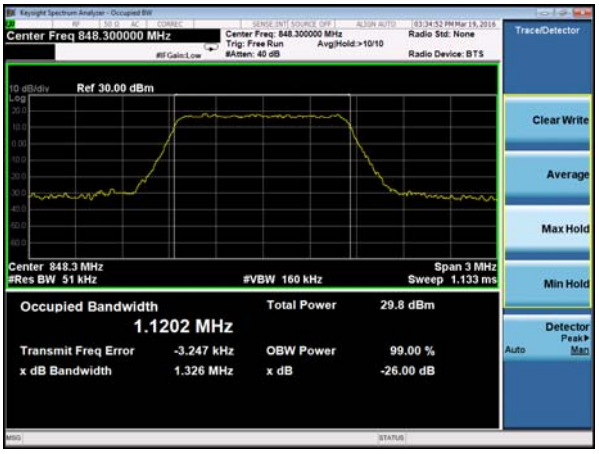
LTE Band 26 QPSK 3MHz CH-Low

LTE Band 26 QPSK 1.4MHz CH-Middle



LTE Band 26 QPSK 3MHz CH-Middle

LTE Band 26 QPSK 1.4MHz CH-High



LTE Band 26 QPSK 3MHz CH-High

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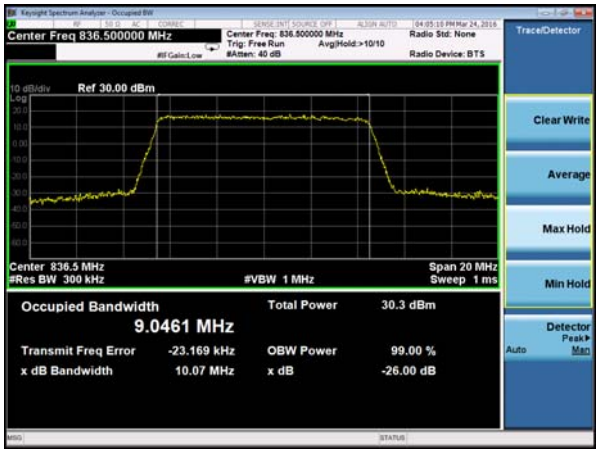
LTE Band 26 QPSK 5MHz CH-Low

LTE Band 26 QPSK 10MHz CH-Low

LTE Band 26 QPSK 5MHz CH-Middle

LTE Band 26 QPSK 10MHz CH-Middle



LTE Band 26 QPSK 5MHz CH-High

LTE Band 26 QPSK 10MHz CH-High

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LTE Band 26 QPSK 15MHz CH-Low

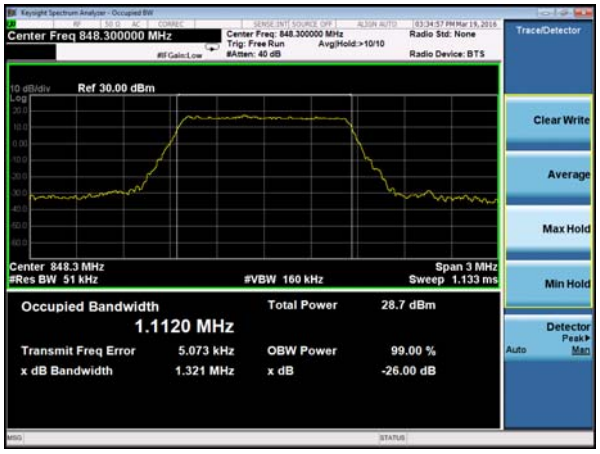
LTE Band 26 16QAM 1.4MHz CH-Low

LTE Band 26 QPSK 15MHz CH-Middle

LTE Band 26 16QAM 1.4MHz CH-Middle

LTE Band 26 QPSK 15MHz CH-High

LTE Band 26 16QAM 1.4MHz CH-High



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LTE Band 26 16QAM 3MHz CH-Low

LTE Band 26 16QAM 5MHz CH-Low

LTE Band 26 16QAM 3MHz CH-Middle

LTE Band 26 16QAM 5MHz CH-Middle

LTE Band 2616QAM 3MHz CH-High

LTE Band 26 16QAM 5MHz CH-High

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LTE Band 26 16QAM 10MHz CH-Low

LTE Band 26 16QAM 15MHz CH-Low

LTE Band 26 16QAM 10MHz CH-Middle

LTE Band 26 16QAM 15MHz CH-Middle

LTE Band 26 16QAM 10MHz CH-High

LTE Band 26 16QAM 15MHz CH-High

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5.4. Band Edge Compliance

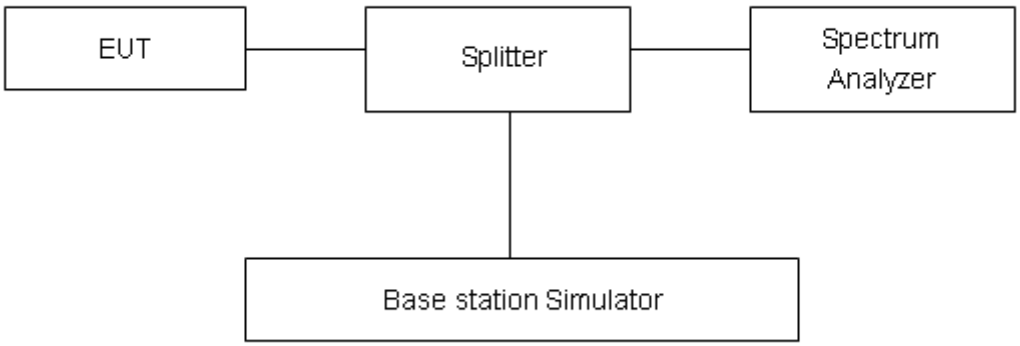
Ambient condition

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

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured. The average detector is used.
RBW is set to 3kHz,VBW is set to 10kHz for GSM 850,
RBW is set to 51kHz,VBW is set to 160kHz for WCDMA Band V,
RBW is set to 15kHz,VBW is set to 51kHz for CDMA BC0,
RBW is set to 15 kHz, VBW is set to 51 kHz for LTE Band 5/26 (1.4MHz),
RBW is set to 30 kHz, VBW is set to 100 kHz for LTE Band 5/26 (3MHz),
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 5/26 (5MHz),
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 5/26 (10MHz),
RBW is set to 150 kHz, VBW is set to 510kHz for LTE Band 26 (15MHz).
Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

Rule Part 22.917(a) specifies that “The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.”

Limit	-13 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U=0.684dB.

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Test Result:

Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit (dBm)	Conclusion
GSM 850 (GSM)	824.0	-31.624	-13	PASS
	849.0	-30.608	-13	PASS
GPRS 850 (GMSK)	824.0	-26.861	-13	PASS
	849.0	-26.209	-13	PASS
EGPRS 850 (8-PSK)	824.0	-34.313	-13	PASS
	849.0	-33.857	-13	PASS
WCDMA Band V RMC	824.0	-27.268	-13	PASS
	849.0	-27.211	-13	PASS
CDMA BC0 1xRTT	824.7	-17.173	-13	PASS
	848.31	-13.640	-13	PASS

LTE Band 5						
Modulation	Bandwidth	Channel	RB	Reference value (dBm)	Limit (dBm)	Conclusion
QPSK	1.4MHz	20407	1	-26.108	-13	PASS
			100%	-31.157	-13	PASS
		20643	1	-25.726	-13	PASS
			100%	-32.108	-13	PASS
	3MHz	20415	1	-22.192	-13	PASS
			100%	-27.831	-13	PASS
		20635	1	-22.428	-13	PASS
			100%	-29.241	-13	PASS
	5MHz	20425	1	-26.382	-13	PASS
			100%	-29.542	-13	PASS
		20625	1	-22.405	-13	PASS
			100%	-29.278	-13	PASS
	10MHz	20450	1	-34.565	-13	PASS
			100%	-31.045	-13	PASS
		20600	1	-33.115	-13	PASS
			100%	-32.459	-13	PASS
16QAM	1.4MHz	20407	1	-25.266	-13	PASS
			100%	-31.806	-13	PASS
		20643	1	-25.672	-13	PASS
			100%	-32.001	-13	PASS

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	3MHz	20415	1	-22.251	-13	PASS
			100%	-28.502	-13	PASS
		20635	1	-22.881	-13	PASS
			100%	-28.377	-13	PASS
	5MHz	20425	1	-30.026	-13	PASS
			100%	-22.763	-13	PASS
		20625	1	-21.784	-13	PASS
			100%	-29.833	-13	PASS
	10MHz	20450	1	-35.165	-13	PASS
			100%	-31.389	-13	PASS
		20600	1	-33.924	-13	PASS
			100%	-31.812	-13	PASS

LTE Band 26						
Modulation	**Bandwidth**	**Channel**	**RB**	**Reference value (dBm)**	**Limit (dBm)**	**Conclusion**
QPSK	1.4MHz	26797	1	-25.834	-13	PASS
			100%	-31.956	-13	PASS
		27033	1	-24.923	-13	PASS
			100%	-33.272	-13	PASS
	3MHz	26805	1	-20.849	-13	PASS
			100%	-27.829	-13	PASS
		27025	1	-22.707	-13	PASS
			100%	-30.889	-13	PASS
	5MHz	26815	1	-19.968	-13	PASS
			100%	-30.367	-13	PASS
		27015	1	-21.593	-13	PASS
			100%	-29.887	-13	PASS
	10MHz	26840	1	-31.805	-13	PASS
			100%	-32.928	-13	PASS
		26990	1	-30.640	-13	PASS
			100%	-34.668	-13	PASS
	15MHz	26865	1	-26.995	-13	PASS
			100%	-33.492	-13	PASS
		26965	1	-26.602	-13	PASS
			100%	-35.273	-13	PASS
16QAM	1.4MHz	26797	1	-27.519	-13	PASS
			100%	-35.029	-13	PASS
		27033	1	-26.079	-13	PASS
			100%	-34.345	-13	PASS
	3MHz	26805	1	-23.795	-13	PASS
			100%	-29.978	-13	PASS

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		27025	1	-22.626	-13	PASS
			100%	-29.608	-13	PASS
	5MHz	26815	1	-22.018	-13	PASS
			100%	-29.390	-13	PASS
		27015	1	-21.703	-13	PASS
			100%	-30.671	-13	PASS
	10MHz	26840	1	-33.265	-13	PASS
			100%	-33.669	-13	PASS
		26990	1	-32.524	-13	PASS
			100%	-35.261	-13	PASS
	15MHz	26865	1	-30.213	-13	PASS
			100%	-36.725	-13	PASS
		26965	1	-29.511	-13	PASS
			100%	-35.308	-13	PASS

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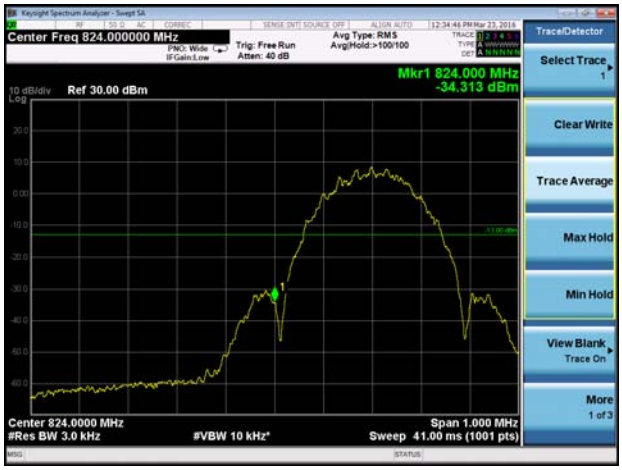
GSM 850 CH-Low

GSM 850 CH-High

GSM 850 GPRS CH-Low

GSM 850 GPRS CH-High

GSM 850 EGPRS CH-Low



GSM 850 EGPRS CH-High

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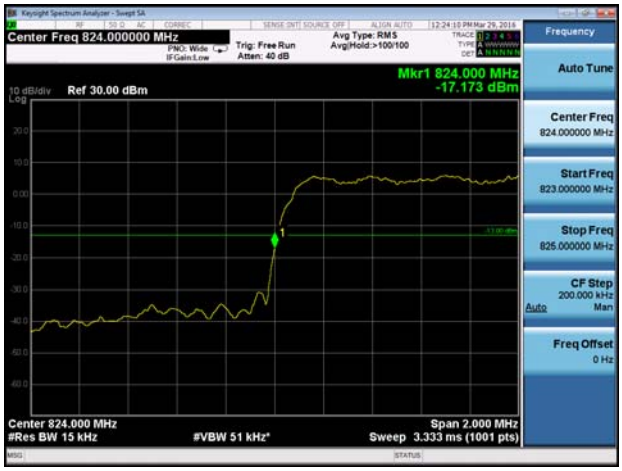
WCDMA Band V CH-Low

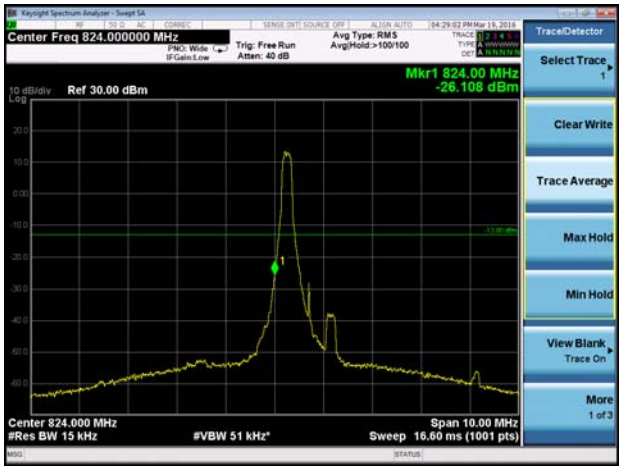
WCDMA Band V CH-High

CDMA 1XRTT BC0 CH-Low

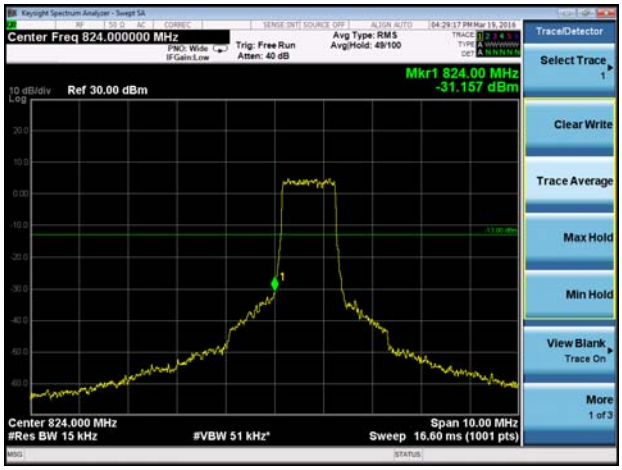


CDMA 1XRTT BC0 CH-High

LTE Band 5 QPSK 1.4MHz CH-Low 1RB



LTE Band 5 QPSK 1.4MHz CH-Low 100%RB



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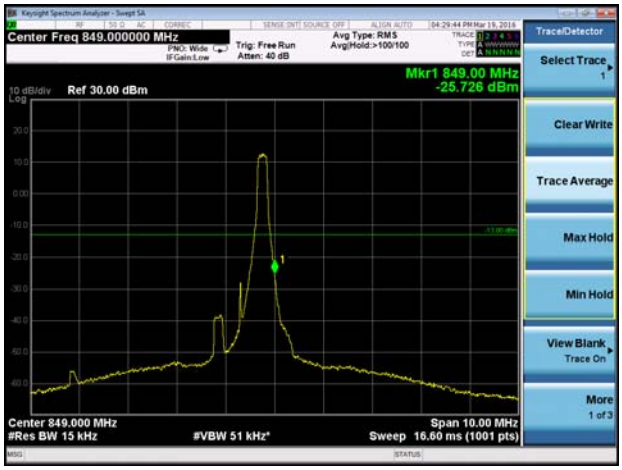
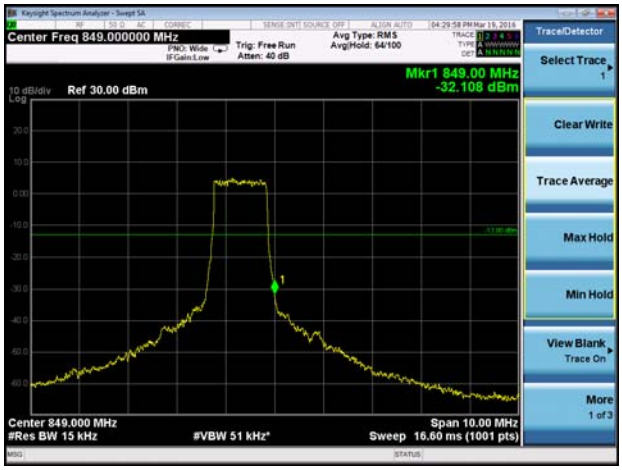
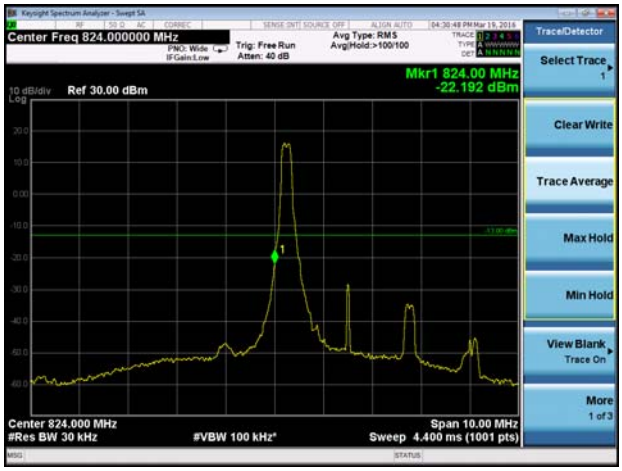
LTE Band 5 QPSK 1.4MHz CH-High 1RB



LTE Band 5 QPSK 1.4MHz CH-High 100%RB

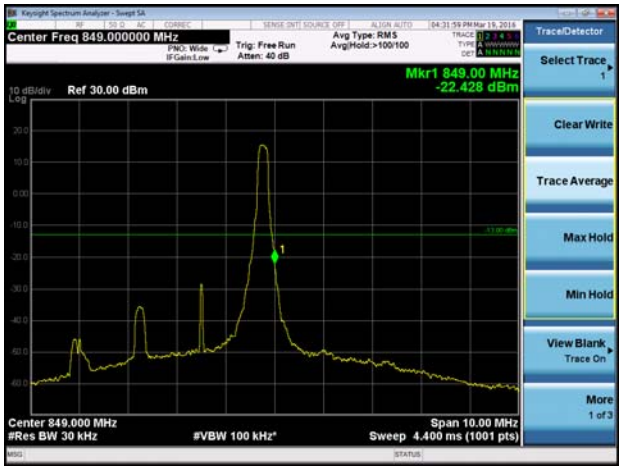


LTE Band 5 QPSK 3MHz CH-Low 1RB

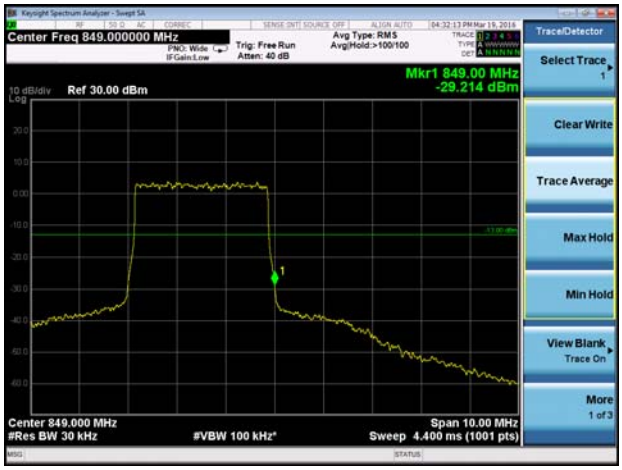


LTE Band 5 QPSK 3MHz CH-Low 100%RB

LTE Band 5 QPSK 3MHz CH-High 1RB



LTE Band 5 QPSK 3MHz CH-High 100%RB



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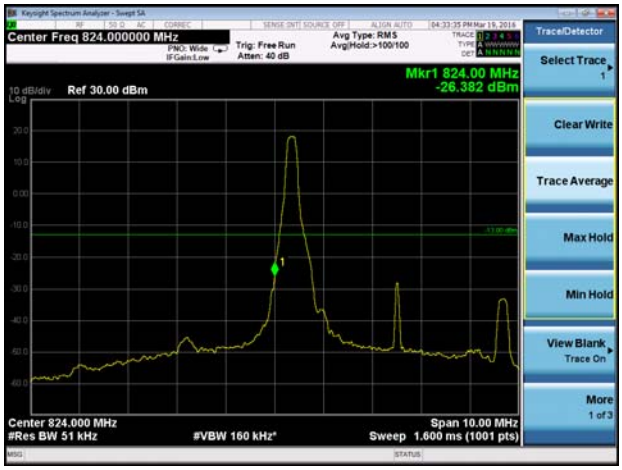
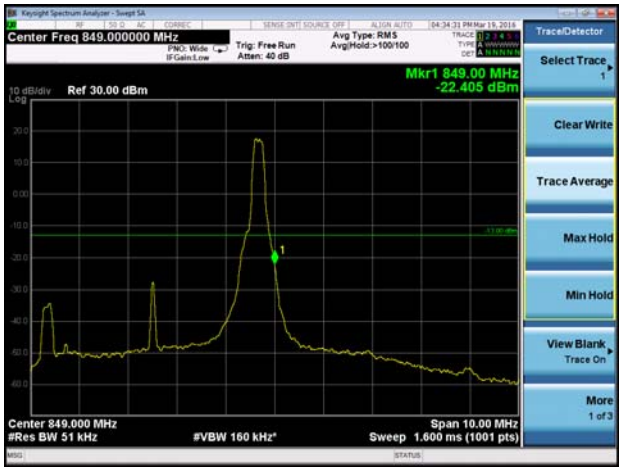
LTE Band 5 QPSK 5MHz CH-Low 1RB



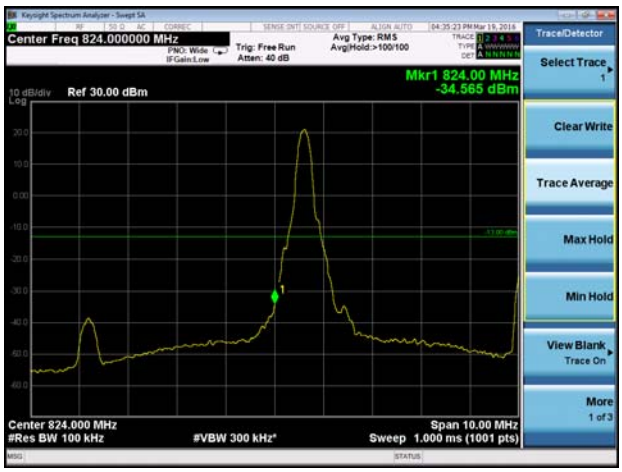
LTE Band 5 QPSK 5MHz CH-Low 100%RB

LTE Band 5 QPSK 5MHz CH-High 1RB



LTE Band 5 QPSK 5MHz CH-High 100%RB

LTE Band 5 QPSK 10MHz CH-Low 1RB



LTE Band 5 QPSK 10MHz CH-Low 100%RB

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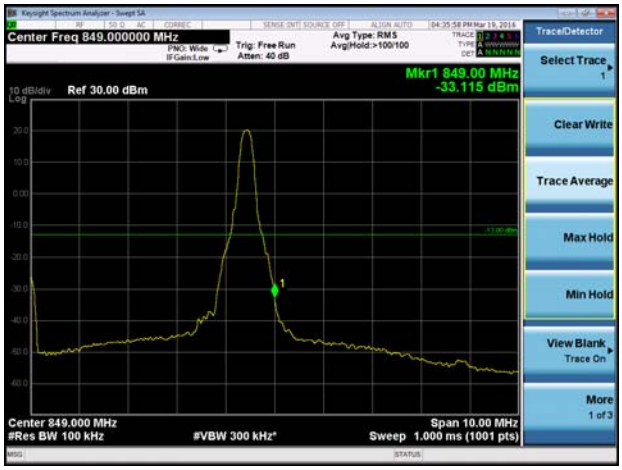
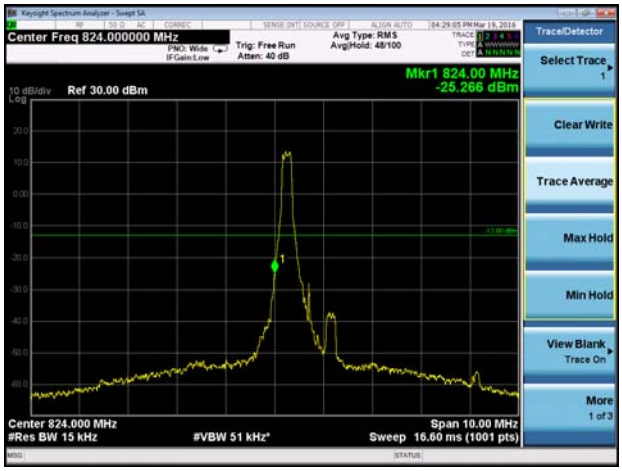
LTE Band 5 QPSK 10MHz CH-High 1RB

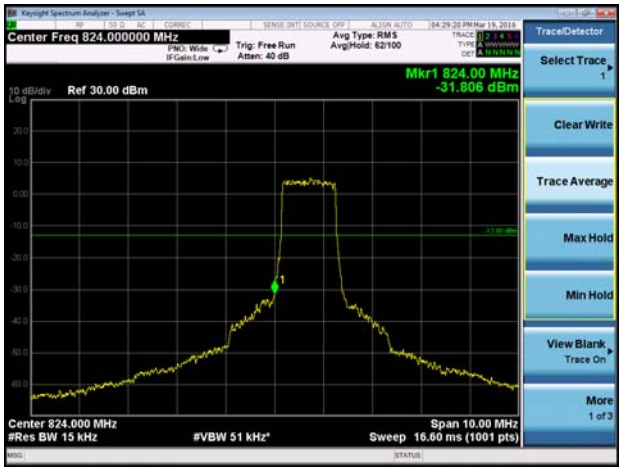


LTE Band 5 QPSK 10MHz CH-High 100%RB

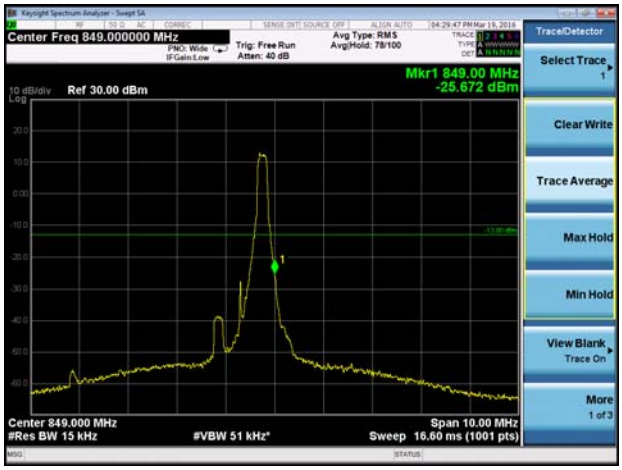
LTE Band 5 16QAM 1.4MHz CH-Low 1RB



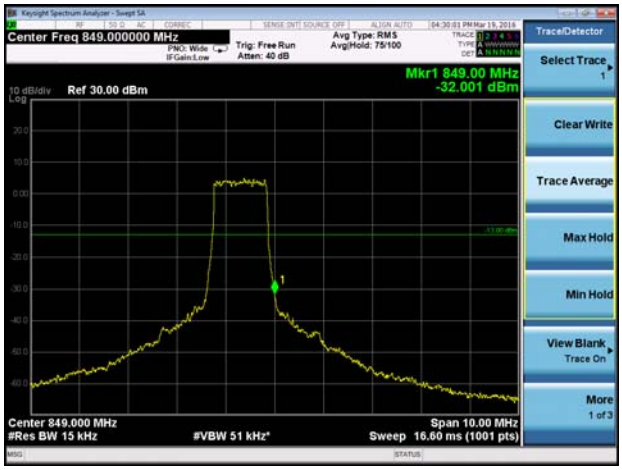
LTE Band 5 16QAM 1.4MHz CH-Low 100%RB



LTE Band 5 16QAM 1.4MHz CH-High 1RB



LTE Band 5 16QAM 1.4MHz CH-High 100%RB



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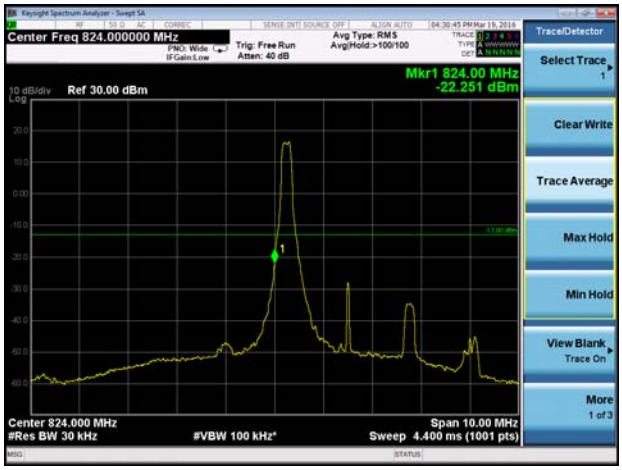
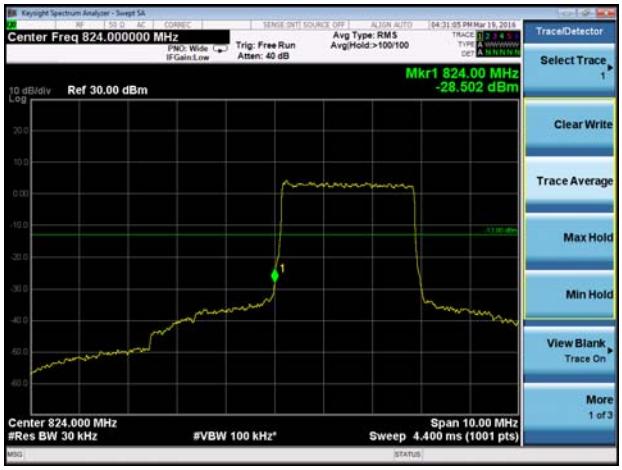
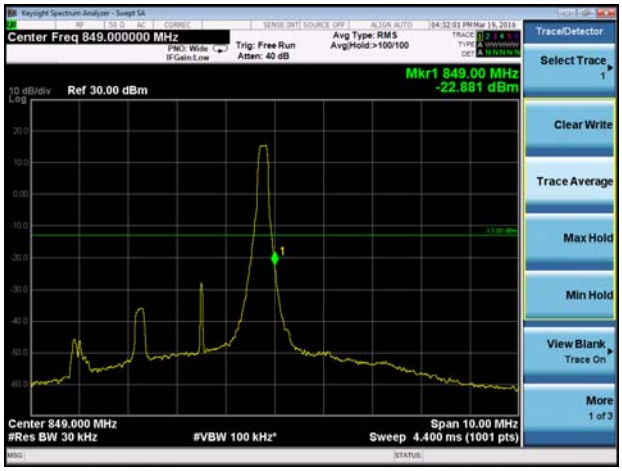
LTE Band 5 16QAM 3MHz CH-Low 1RB



LTE Band 5 16QAM 3MHz CH-Low 100%RB

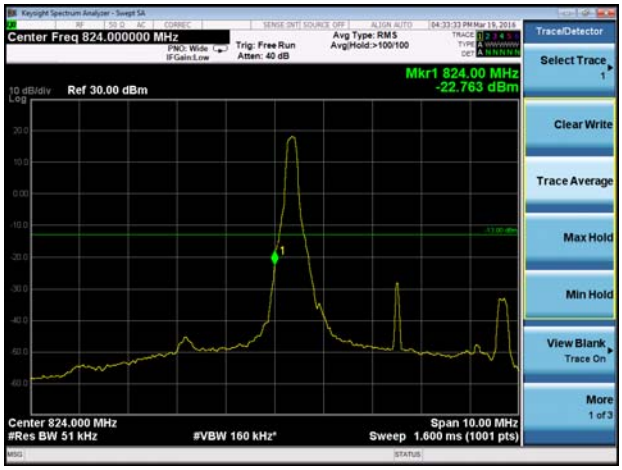


LTE Band 5 16QAM 3MHz CH-High 1RB



LTE Band 5 16QAM 3MHz CH-High 100%RB

LTE Band 5 16QAM 5MHz CH-Low 1RB



LTE Band 5 16QAM 5MHz CH-Low 100%RB

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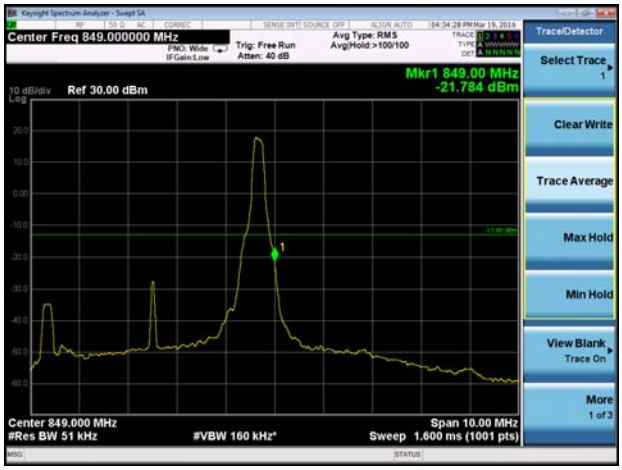
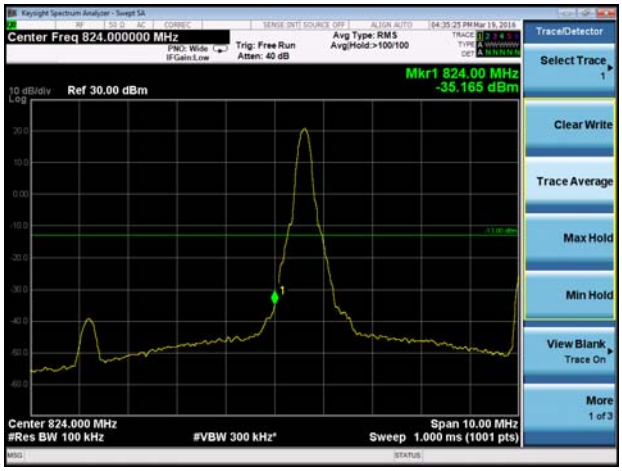
LTE Band 5 16QAM 5MHz CH-High 1RB



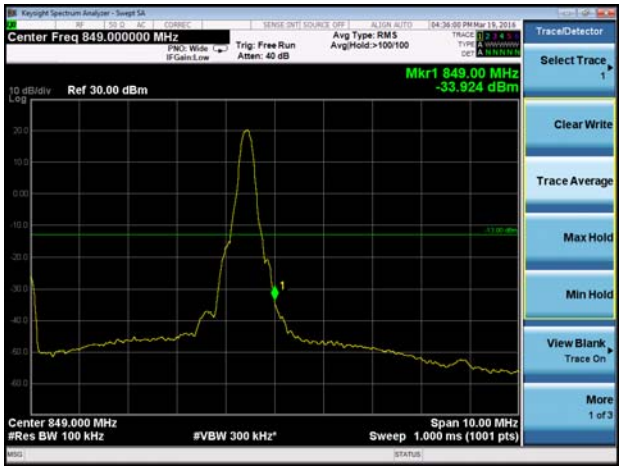
LTE Band 5 16QAM 5MHz CH-High 100%RB

LTE Band 5 16QAM 10MHz CH-Low 1RB



LTE Band 5 16QAM 10MHz CH-Low 100%RB

LTE Band 5 16QAM 10MHz CH-High 1RB



LTE Band 5 16QAM 10MHz CH-High 100%RB

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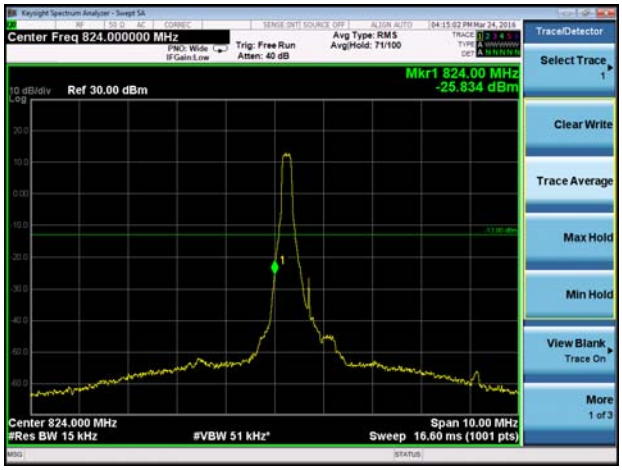
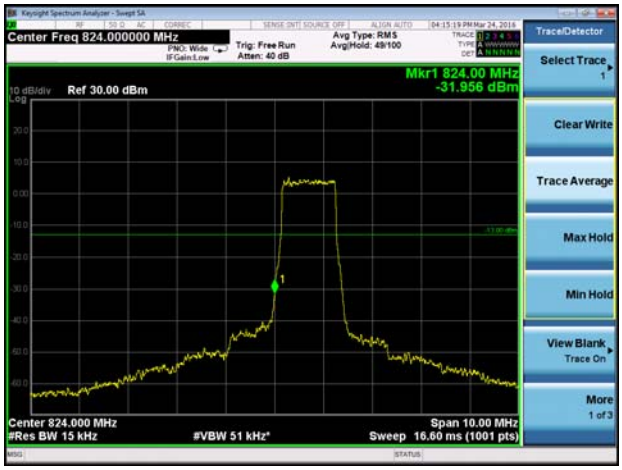
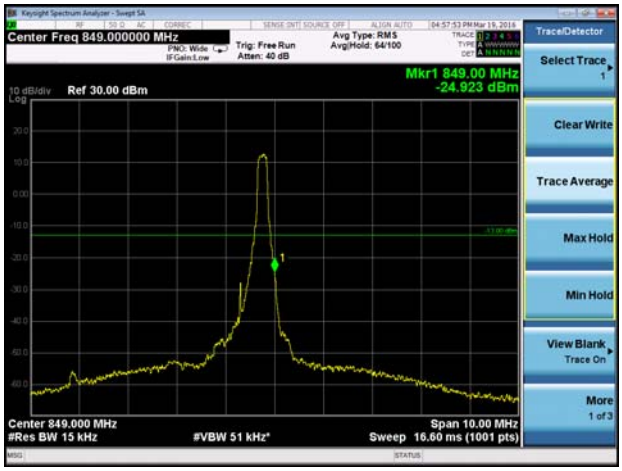
LTE Band 26 QPSK 1.4MHz CH-Low 1RB



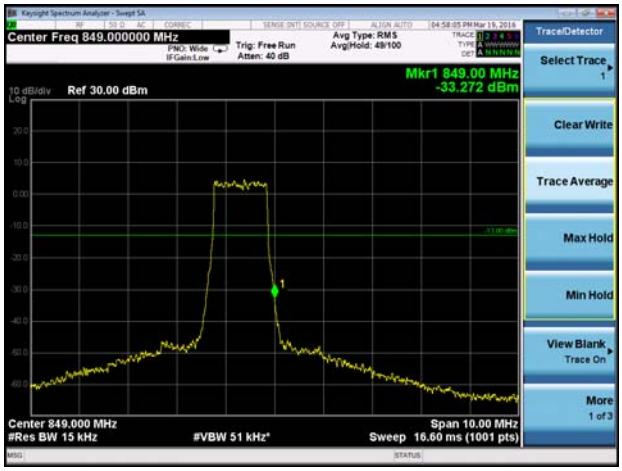
LTE Band 26 QPSK 1.4MHz CH-Low 100%RB



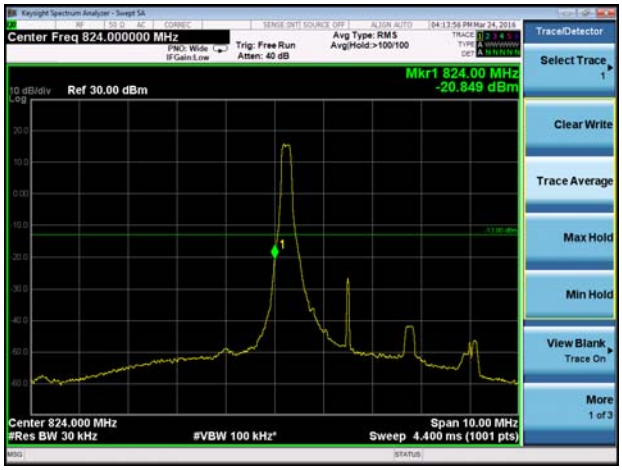
LTE Band 26 QPSK 1.4MHz CH-High 1RB



LTE Band 26 QPSK 1.4MHz CH-High 100%RB



LTE Band 26 QPSK 3MHz CH-Low 1RB



LTE Band 26 QPSK 3MHz CH-Low 100%RB

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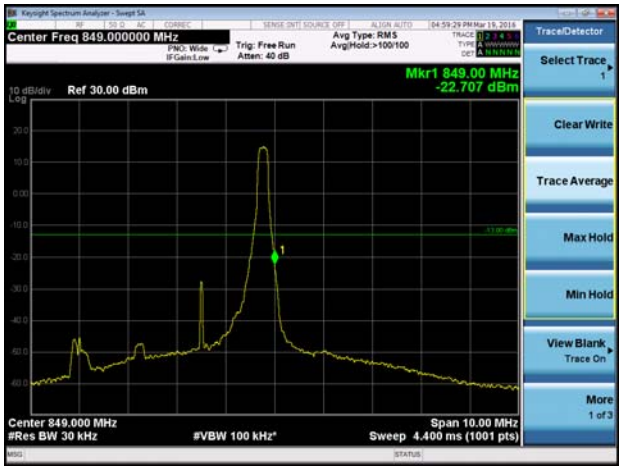
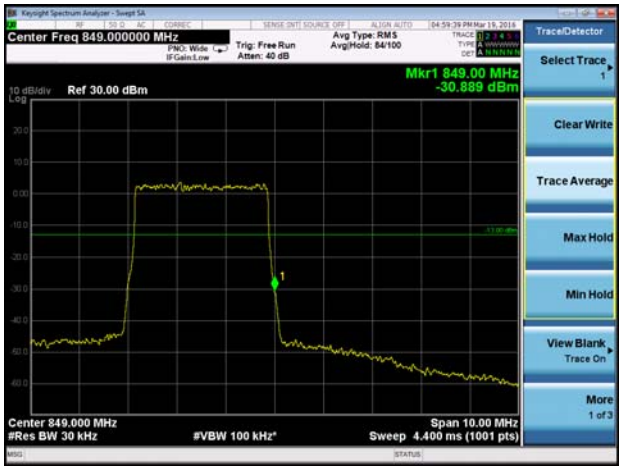
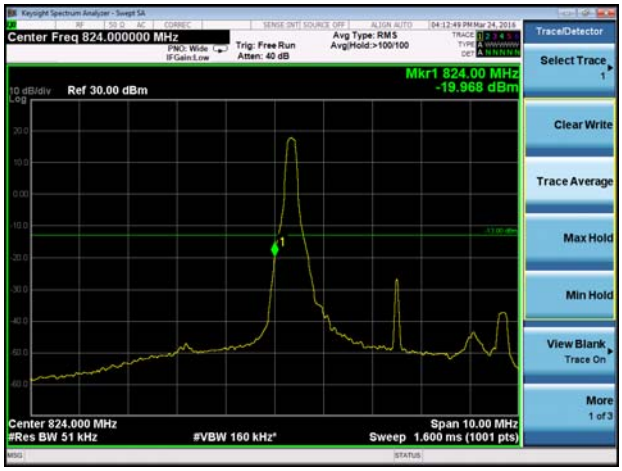
LTE Band 26 QPSK 3MHz CH-High 1RB



LTE Band 26 QPSK 3MHz CH-High 100%RB

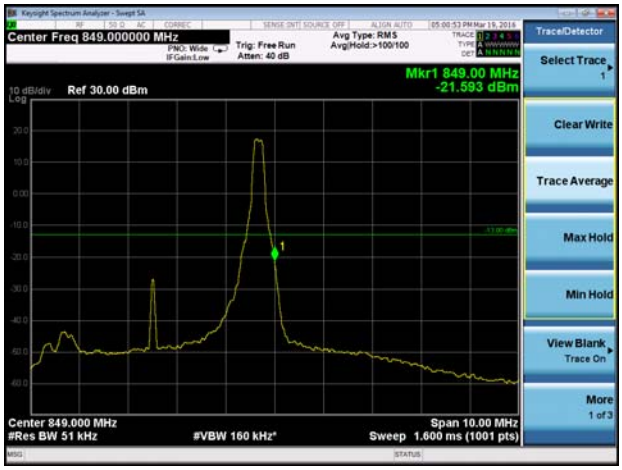


LTE Band 26 QPSK 5MHz CH-Low 1RB



LTE Band 26 QPSK 5MHz CH-Low 100%RB

LTE Band 26 QPSK 5MHz CH-High 1RB



LTE Band 26 QPSK 5MHz CH-High 100%RB

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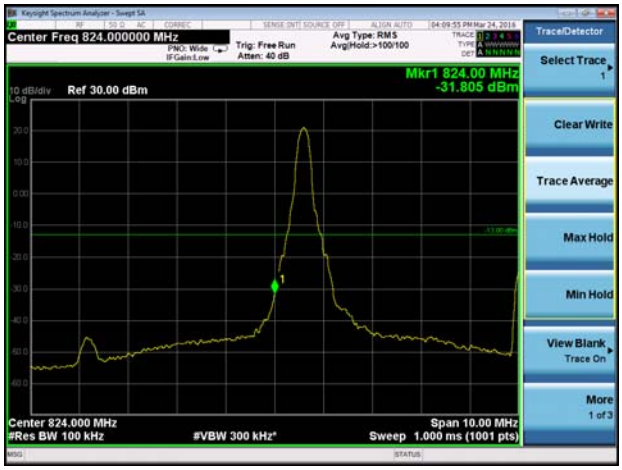
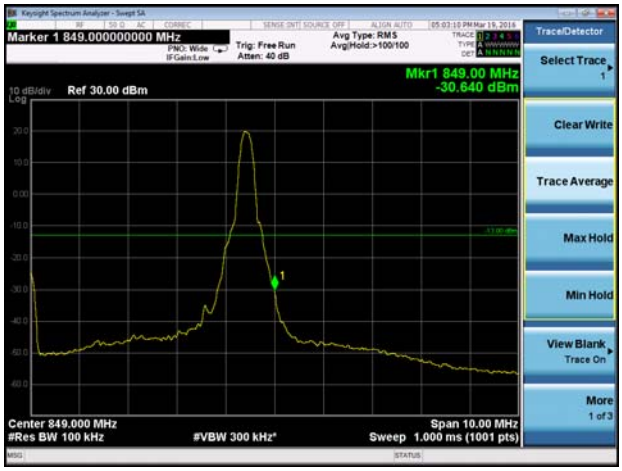
LTE Band 26 QPSK 10MHz CH-Low 1RB



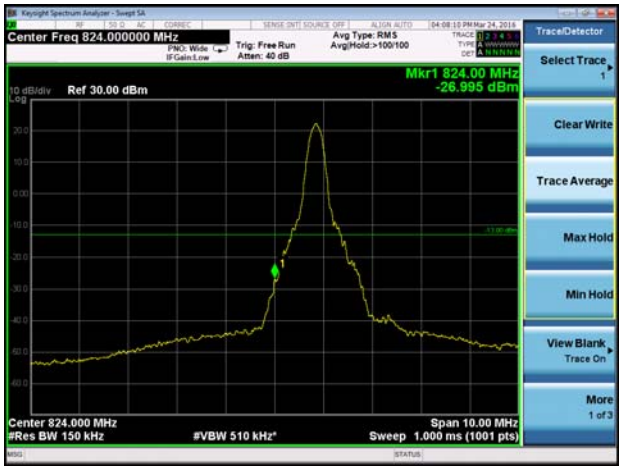
LTE Band 26 QPSK 10MHz CH-Low 100%RB

LTE Band 26 QPSK 10MHz CH-High 1RB



LTE Band 26 QPSK 10MHz CH-High 100%RB

LTE Band 26 QPSK 15MHz CH-Low 1RB



LTE Band 26 QPSK 15MHz CH-Low 100%RB

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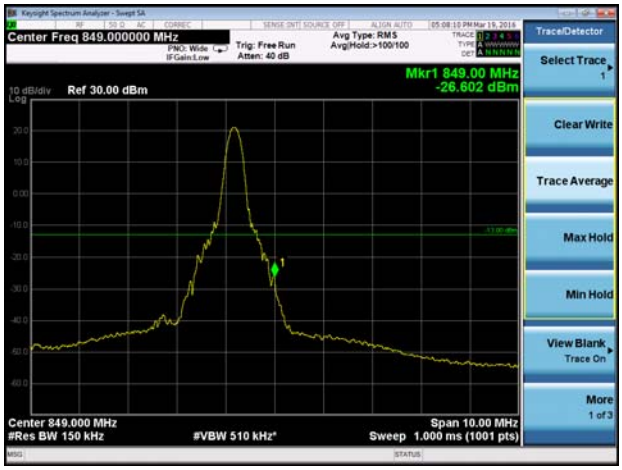
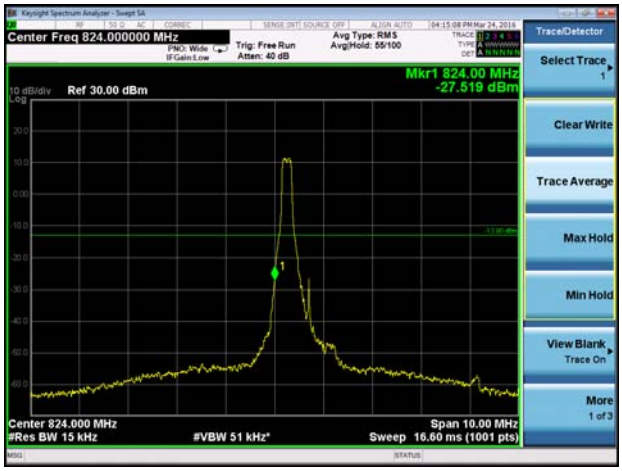
LTE Band 26 QPSK 15MHz CH-High 1RB

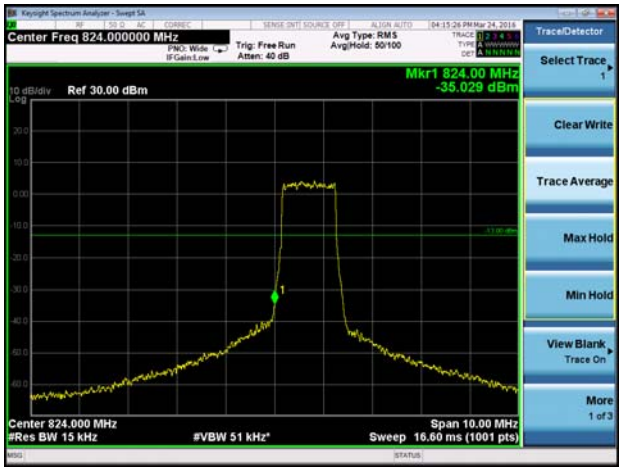


LTE Band 26 QPSK 15MHz CH-High 100%RB

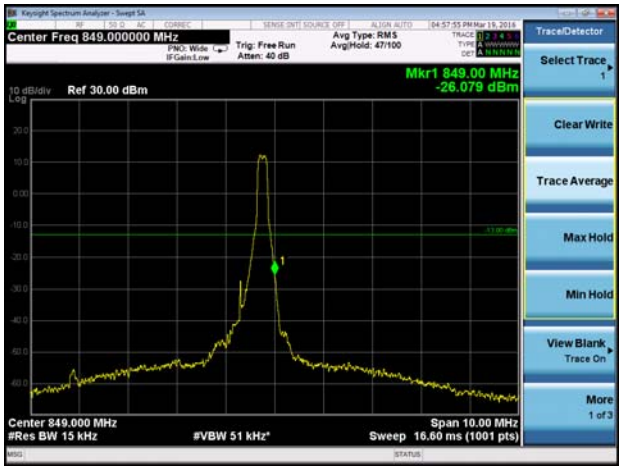
LTE Band 26 16QAM 1.4MHz CH-Low 1RB



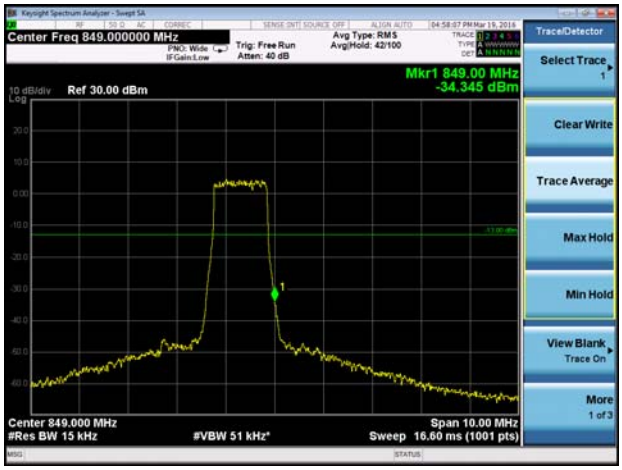
LTE Band 26 16QAM 1.4MHz CH-Low 100%RB



LTE Band 26 16QAM 1.4MHz CH-High 1RB



LTE Band 26 16QAM 1.4MHz CH-High 100%RB



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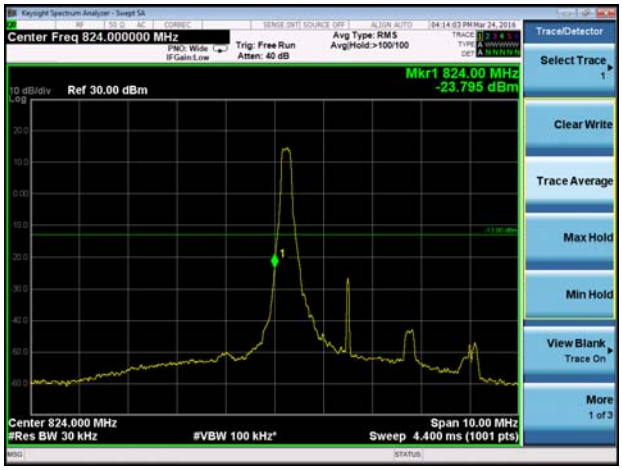
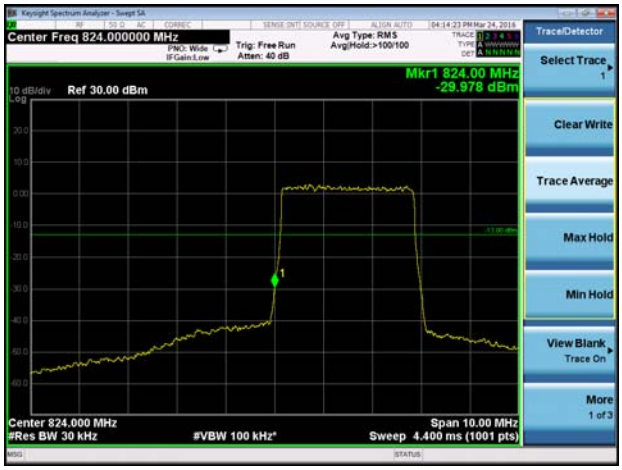
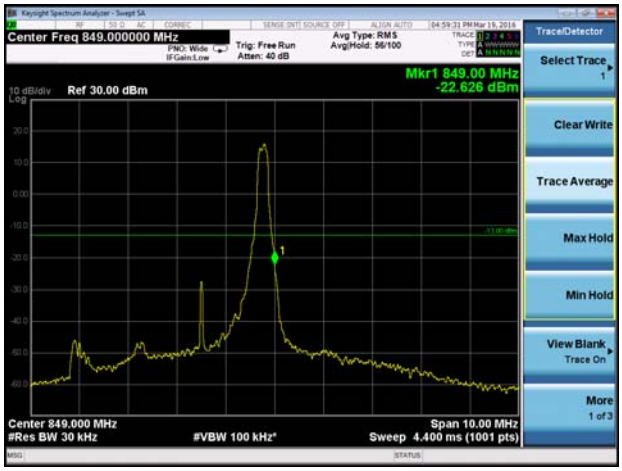
LTE Band 26 16QAM 3MHz CH-Low 1RB



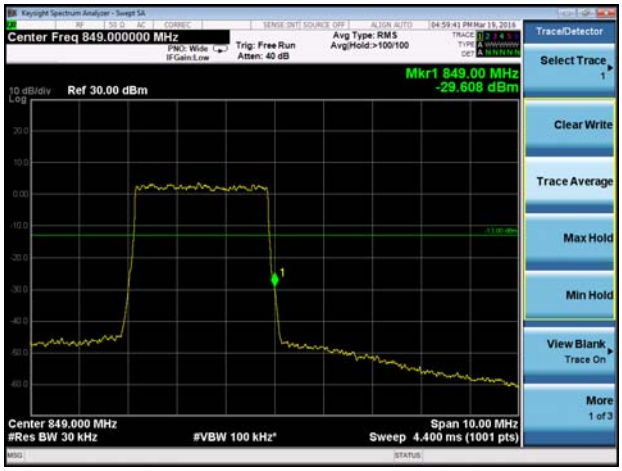
LTE Band 26 16QAM 3MHz CH-Low 100%RB



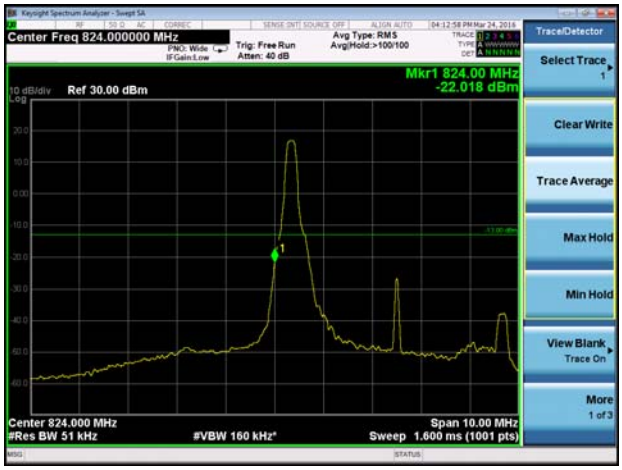
LTE Band 26 16QAM 3MHz CH-High 1RB



LTE Band 26 16QAM 3MHz CH-High 100%RB



LTE Band 26 16QAM 5MHz CH-Low 1RB



LTE Band 26 16QAM 5MHz CH-Low 100%RB

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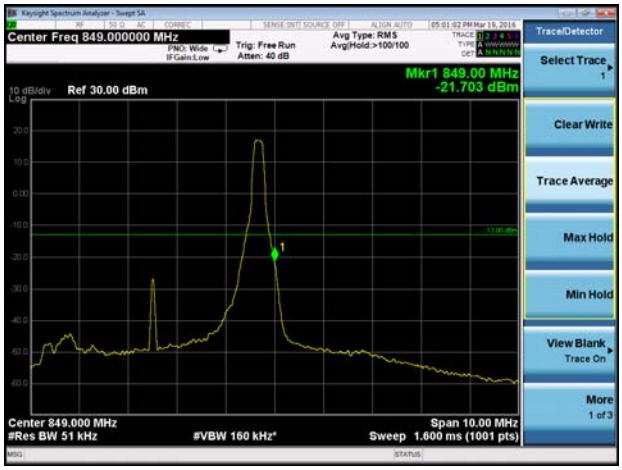
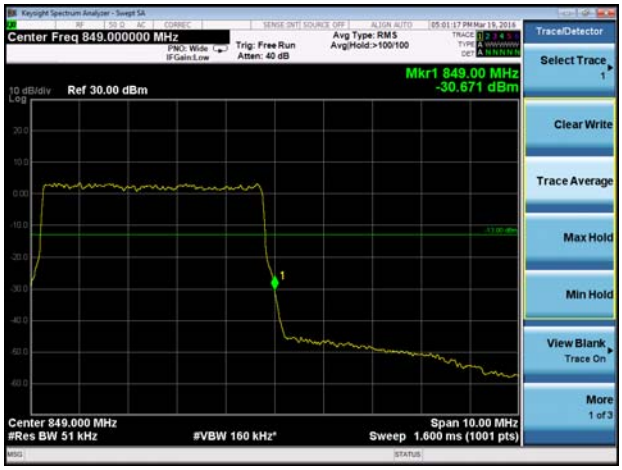
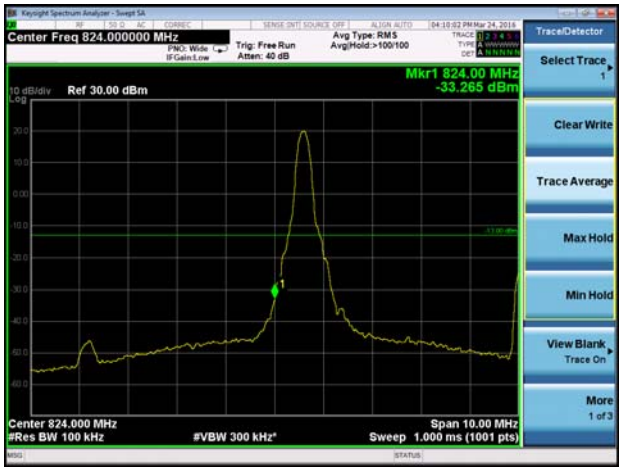
LTE Band 26 16QAM 5MHz CH-High 1RB



LTE Band 26 16QAM 5MHz CH-High 100%RB

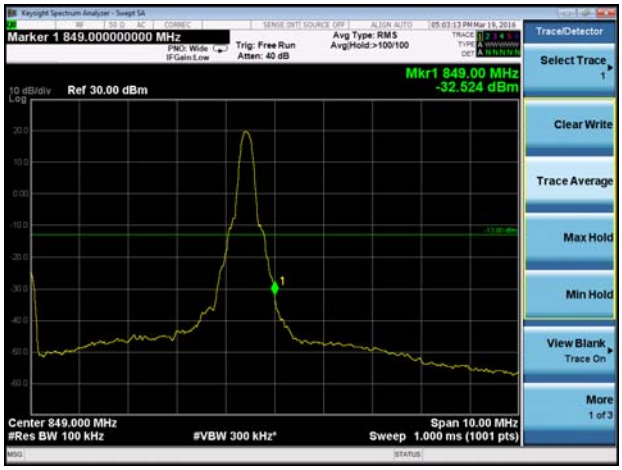


LTE Band 26 16QAM 10MHz CH-Low 1RB



LTE Band 26 16QAM 10MHz CH-Low 100%RB

LTE Band 26 16QAM 10MHz CH-High 1RB



LTE Band 26 16QAM 10MHz CH-High 100%RB

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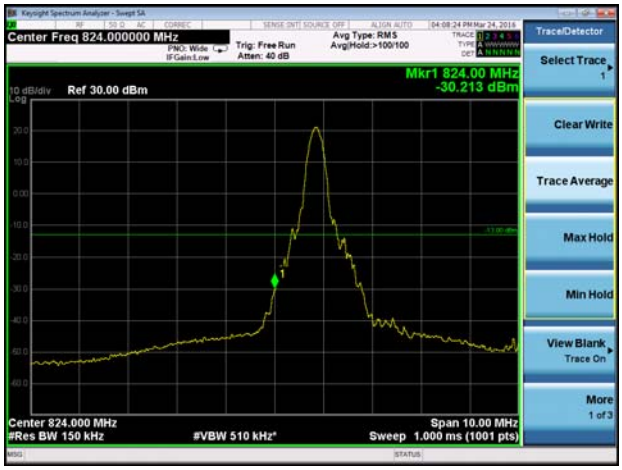
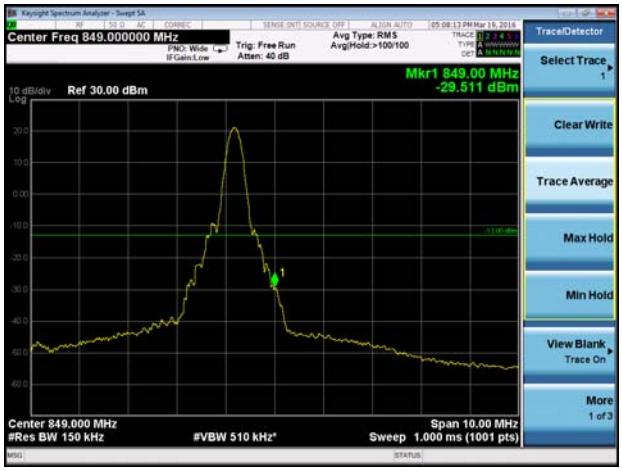
LTE Band 26 16QAM 15MHz CH-Low 1RB



LTE Band 26 16QAM 15MHz CH-Low 100%RB

LTE Band 26 16QAM 15MHz CH-High 1RB



LTE Band 26 16QAM 15MHz CH-High 100%RB

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5.5. Frequency Stability

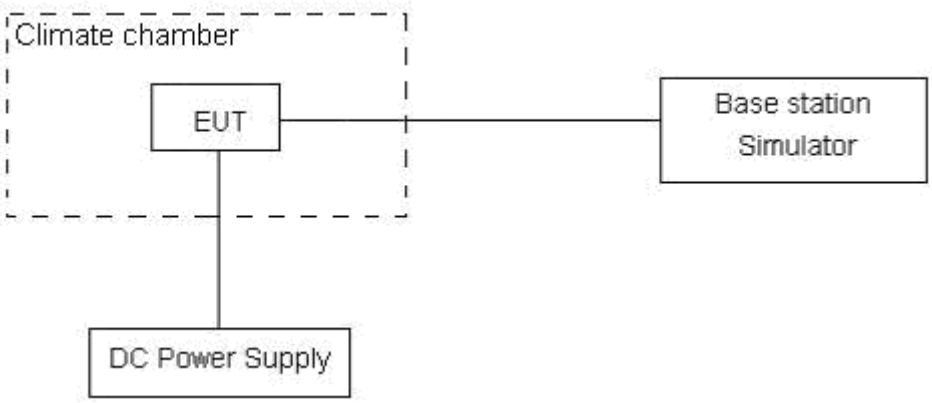
Ambient condition

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

Method of Measurement

1. Frequency Stability (Temperature Variation)
   The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size,
   (1) With all power removed, the temperature was decreased to 0°C and permitted to stabilize for three hours.
   (2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.
   (3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.
2. Frequency Stability (Voltage Variation)
   The frequency stability shall be measured with variation of primary supply voltage as follows:
   (1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
   (2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.
   This transceiver is specified to operate with an input voltage of between 3.5 V and 4.4 V, with a nominal voltage of 3.84V.

Test setup



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Limits

According to the Sec. 22.355, the frequency stability of the carrier shall be accurate to within 2.5 ppm of the received frequency for mobile stations.

Limits	≤ 2.5 ppm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor k = 3,U= 0.01ppm.

Test Result

Mode	Test status	Test Results (ppm)			Conclusion
		GSM (GMSK)	GPRS (GMSK)	EGPRS (8PSK)	
GSM 850 Channel 190	-30°C/3.84 V	0.00584509	-0.00007172	0.02360000	PASS
	-20°C/3.84 V	0.01118814	-0.00103992	0.02160000	PASS
	-10°C/3.84 V	0.00331102	0.00053789	0.02150000	PASS
	0°C/3.84 V	0.01033947	0.01458284	0.02230000	PASS
	10°C/3.84 V	0.00955056	0.00970595	0.02430000	PASS
	20°C/3.84 V	0.00498446	0.00479321	0.02340000	PASS
	30°C/3.84 V	0.01139135	0.00732728	0.02020000	PASS
	40°C/3.84 V	0.00264164	0.00172125	0.02260000	PASS
	50°C/3.84 V	-0.00162563	0.00745876	0.01900000	PASS
	20°C/3.5 V	0.00496055	0.01154674	0.02280000	PASS
	20°C/4.4 V	0.01617260	0.00524743	0.02200000	PASS
/	/	RMC			/
WCDMA Band V Channel 4183	-30°C/3.84 V	0.00104400			PASS
	-20°C/3.84 V	0.00142000			PASS
	-10°C/3.84 V	0.00080600			PASS
	0°C/3.84 V	0.00125500			PASS
	10°C/3.84 V	0.00016600			PASS
	20°C/3.84 V	0.00127500			PASS
	30°C/3.84 V	0.00053600			PASS
	40°C/3.84 V	0.00077200			PASS
	50°C/3.84 V	0.00109500			PASS
	20°C/3.5 V	0.00066600			PASS
	20°C/4.4 V	0.00093600			PASS

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Mode	Test status	Test Results (ppm)	Conclusion
		1xRTT	
CDMA BC0 Channel 384	-30°C/3.84 V	0.00932	PASS
	-20°C/3.84 V	0.00508	PASS
	-10°C/3.84 V	0.00837	PASS
	0°C/3.84 V	0.00383	PASS
	10°C/3.84 V	0.00586	PASS
	20°C/3.84 V	0.00562	PASS
	30°C/3.84 V	0.0043	PASS
	40°C/3.84 V	0.00586	PASS
	50°C/3.84 V	0.00873	PASS
	20°C/3.5 V	0.00538	PASS
	20°C/4.4 V	0.01136	PASS

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