MEASUREMENT REPORT

FCC PART 22 & 24 & 27 GSM & WCDMA

FCC ID:	2ATZUSOIMTZS11HA8SA
APPLICANT:	SAIC MOTOR Overseas Intelligent Mobility Technology Co., Ltd.
Application Type:	Certification
Product:	Color Radio
Model No.:	10682313/01
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	Part 2, Part 22 Subpart H, Part 24 Subpart E, Part 27 Subpart L
Test Procedure(s):	ANSI C63.26-2015, KDB 971168 D01v03r01
Test Date:	August 17, 2019 ~ March 05, 2020

Reviewed By: (Kevin Guo)

Approved By: (Robin Wu)

Revision History

Report No.	Version	Description	Issue Date	Note
1907RSU008-U4	Rev. 01	Initial report	03-05-2020	Valid

CONTENTS

Description Page

§2.1033 General Information

Applicant:	SAIC MOTOR Overseas Intelligent Mobility Technology Co., Ltd.
Applicant Address:	2nd Floor, Building No.8, No.2119 ZhangYang Rd., PuDong District, Shanghai, China
Manufacturer:	SAIC MOTOR Overseas Intelligent Mobility Technology Co., Ltd.
Manufacturer Address:	2nd Floor, Building No.8, No.2119 ZhangYang Rd., PuDong District, Shanghai, China
Test Site:	MRT Technology (Suzhou) Co., Ltd
Test Site Address:	D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- **MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.**
- **MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.**
- **MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.**
- **MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.**

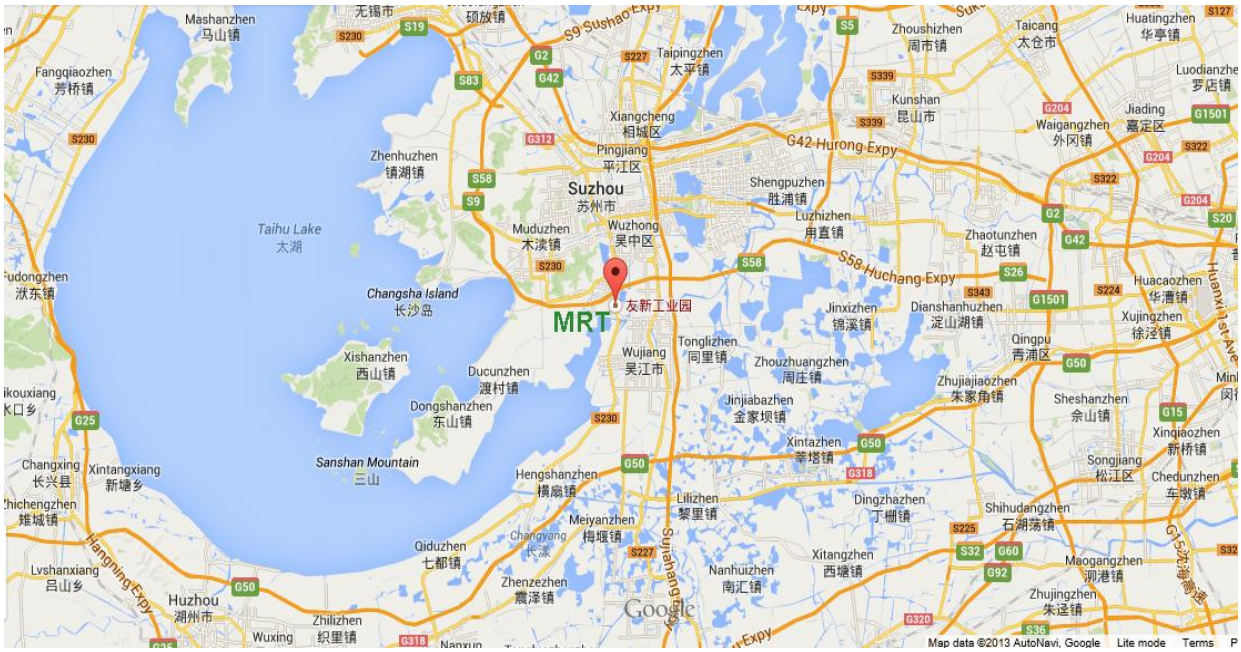
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada and Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The measurement facility compliant with the test site requirements specified in ANSI C63.4-2014.



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name:	Color Radio
Model No.:	10682313/01
Wi-Fi Specification:	802.11a/b/g/n
Bluetooth Version	v4.1 single mode
GSM Operation Band (s):	GSM 850 / 1900
WCDMA Operation Band (s):	Band II / IV / V
LTE Operation Band (s):	FDD Band 2 / 4 / 5 / 12 / 13 / 17
GNSS:	GPS, GLODNASS, BDS
Working Voltage:	DC 12V

2.2. Product Specification Subjective to this Report

T_X Frequency Range:	GSM850: 824.2 ~ 848.8MHz, PCS1900: 1850.2 ~ 1909.8MHz WCDMA Band II: 1852.4 ~ 1907.6MHz WCDMA Band IV: 1712.4 ~ 1752.6MHz WCDMA Band V: 826.4 ~ 846.6MHz
R_X Frequency Range:	GSM850: 869.2 ~ 893.8MHz PCS1900: 1930.2 ~ 1989.8MHz WCDMA Band II: 1852.4 ~ 1907.6MHz WCDMA Band IV: 1712.4 ~ 1752.6MHz WCDMA Band V: 826.4 ~ 846.6MHz
Type of Modulation:	GSM / GPRS: GMSK EDGE: 8PSK WCDMA: QPSK
Antenna Type:	PIFA Antenna
Antenna Gain:	-3.37dBi

Note: For other features of this EUT, test report will be issued separately.

2.3. Device Capabilities

This device contains the following capabilities:
GSM 850/1900 WCDMA Band II/IV/V, LTE FDD Band 2/4/5/12/13/17, 2.4GHz WLAN, 5GHz WLAN, Bluetooth v4.0 single mode.

2.4. Test Configuration

The device was tested per the guidance of ANSI C63.26-2015 and KDB 971168 D01v03r01. See section 3.0 of this report for a description of the radiated and antenna port conducted emissions tests.

2.5. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

2.6. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the “American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services” (ANSI C63.26-2015) and “MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS” (KDB 971168) was used in the measurement of the device.

Deviation from measurement procedure…….....None

3.2. Occupied Bandwidth

§2.1049

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. The spectrum analyzers’ “occupied bandwidth” measurement function was used to record the occupied bandwidth in accordance with KDB 971168.

3.3. Spurious and Harmonic Emissions at Antenna Terminal

§2.1051 §22.917(a) §24.238(a) §27.53(h)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10^{th} harmonic. On any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for Part 22 and 1 MHz or greater for Part 24 and Part 27L. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

3.4. Radiated Power and Radiated Spurious Emissions

§2.1053 §22.913(a.2) §22.917(a) §24.232(c) §24.238(a) &27.50(b.10) (d.4) &27.53(h)

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurement and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. A 80cm high PVC support structure is placed on top of the turntable.

The equipment under test was transmitting while connected to its integral antenna and is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer “Channel Power” function with the integration band set to the emissions’ occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168.

Per the guidance of ANSI/TIA-603-E-2016, a half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

$$Pd\ [dBm] = Pg\ [dBm] - cable\ loss\ [dB] + antenna\ gain\ [dBd/dBi]$$

Where, Pd is the dipole equivalent power, Pg is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to Pg [dBm] – cable loss [dB].

The calculated Pd levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of 43 + 10*log10(Power [Watts]) specified in 22.917(a) and 24.238(a) and 27.53(h).

3.5. Peak-Average Ratio

§24.232(d)

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

For pulsed signals, the spectrum analyzer is set to use an internal “RF Burst” trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the “on time” of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power. For continuous signals, the trigger is set to “free run” in the CCDF measurement mode.

3.6. Frequency Stability / Temperature Variation

§2.1055 §22.355 §22.863 §22.905 §24.229 §24.235 &27.54

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016.
The frequency stability of the transmitter is measured by:
a.) Temperature: The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.
Specification – For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24 and Part 27L, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.
Time Period and Procedure:
1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

4. TEST EQUIPMENT CALIBRATION DATE

Radiated Emissions - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2020/08/01
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2020/11/07
PXA Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2020/09/03
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2020/11/10
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2020/03/31
Broad Band Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2020/10/13
Microwave System Amplifier	Agilent	83017A	MRTSUE06076	1 year	2020/11/15
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2020/06/11
Thermohygrometer	Testo	608-H1	MRTSUE06403	1 year	2020/08/08
Anechoic Chamber	TDK	Chamber-AC1	MRTSUE06212	1 year	2020/04/30

Radiated Emission - AC2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	Keysight	N9038A	MRTSUE06125	1 year	2020/08/01
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2020/11/07
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2020/11/10
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2020/10/13
Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06171	1 year	2020/10/27
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2020/11/15
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2020/06/11
Temperature/Humidity Meter	Minggao	ETH529	MRTSUE06170	1 year	2020/12/15
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2020/04/30

Conducted Test Equipment - TR3

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2020/04/15
EXA Signal Analyzer	Keysight	N9010B	MRTSUE06452	1 year	2020/07/11
Signal Analyzer	R&S	FSV40	MRTSUE06218	1 year	2020/04/15
Power Meter	Agilent	U2021XA	MRTSUE06030	1 year	2020/11/18
USB wideband power sensor	Keysight	U2021XA	MRTSUE06446	1 year	2020/06/30
USB wideband power sensor	Keysight	U2021XA	MRTSUE06447	1 year	2020/06/30
Bluetooth Test Set	Anritsu	MT8852B-042	MRTSUE06389	1 year	2020/06/13
Audio Analyzer	Agilent	U8903B	MRTSUE06143	1 year	2020/06/13
Modulation Analyzer	HP	8901A	MRTSUE06098	1 year	2020/10/10
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2020/11/07
DC Power Supply	GWINSTEK	DPS-3303C	MRTSUE06064	N/A	N/A
Temperature & Humidity Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2020/11/07
Thermohygrometer	testo	608-H1	MRTSUE06401	1 year	2020/08/08

Software	**Version**	**Function**
EMI Software	V3	EMI Test Software

5. SAMPLE CALCULATIONS

GSM Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 250KG7W

GSM BW = 250 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data) (Measured at the 99.75% power bandwidth)

Spurious Radiated Emission

Example: Spurious emission at 3700.40 MHz

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was –81.0dBm. The gain of the substituted antenna is 8.1dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of –81.0dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3700.40MHz. So 6.1 dB is added to the signal generator reading of –30.9dBm yielding –24.80dBm. The fundamental EIRP was 25.50dBm so this harmonic was 25.50dBm – (-24.80) = 50.3dBc.

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Conducted Emission Measurement - SR2
The maximum measurement uncertainty is evaluated as: 9kHz~150kHz: 3.84dB 150kHz~30MHz: 3.46dB
Radiated Emission Measurement - AC1
The maximum measurement uncertainty is evaluated as: Horizontal: 30MHz~300MHz: 4.07dB 300MHz~1GHz: 3.63dB 1GHz~18GHz: 4.16dB Vertical: 30MHz~300MHz: 4.18dB 300MHz~1GHz: 3.60dB 1GHz~18GHz: 4.76dB
Radiated Emission Measurement - AC2
The maximum measurement uncertainty is evaluated as: Horizontal: 30MHz~300MHz: 3.75dB 300MHz~1GHz: 3.53dB 1GHz~18GHz: 4.28dB Vertical: 30MHz~300MHz: 3.86dB 300MHz~1GHz: 3.53dB 1GHz~18GHz: 4.33dB

7. TEST RESULT

7.1. Summary

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1049	Occupied bandwidth	N/A	Conducted	Pass	Section 7.2
2.1051 22.917(a) 24.238(a) 27.53(h)	Band Edge / Conducted Spurious Emissions	> 43 + log10 (P[Watts]) at Band Edge and for all out-of-band emissions		Pass	Section 7.3
24.232(d)	Peak-Average Ratio	< 13 dB		Pass	Section 7.4
2.1046	Conducted Output Power	N/A		Pass	Section 7.5
22.913(a.2)	Effective Radiated Power	< 7 Watts max. ERP		Pass	Section 7.5
24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		Pass	Section 7.5
27.50(d.4)	Equivalent Isotropic Radiated Power	< 1 Watts max. EIRP		Pass	Section 7.5
2.1053 22.917(a) 24.238(a) 27.53(h)	Undesirable Emissions	> 43 + log10 (P[Watts]) for all out-of-band emissions	Radiated	Pass	Section 7.6
2.1055 22.355 24.235 27.54	Frequency Stability	< 2.5 ppm (Part 22) Emission must remain in band (Part 24 and Part 27L)	Conducted	Pass	Section 7.7

Notes:

1) The test results shown in the following sections represent the worst case emissions.
2) The analyzer plots (Section 7.2 & 7.3 & 7.5) were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
3) Conducted emission testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.

7.2. Occupied Bandwidth

7.2.1.Test Limit

N/A

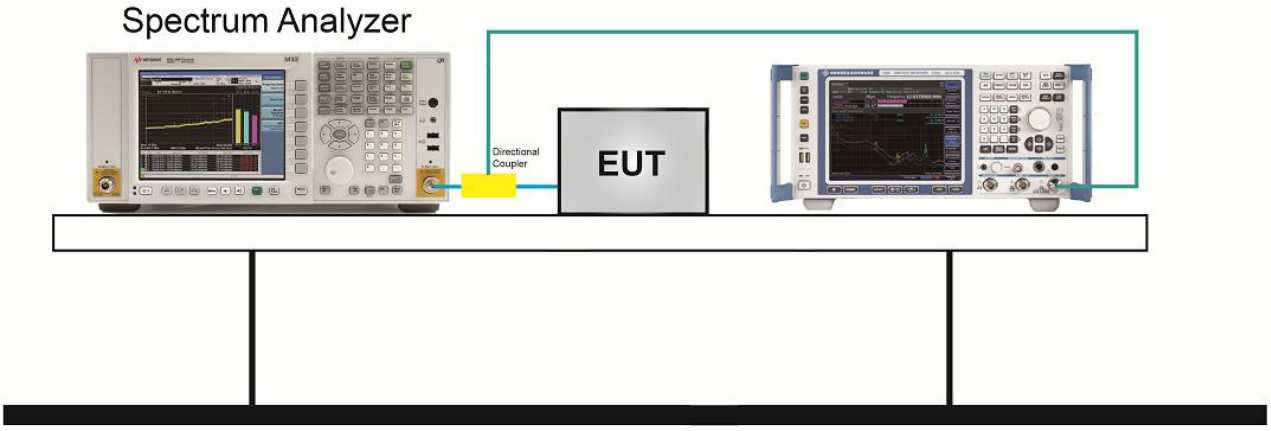
7.2.2.Test Procedure used

ANSI C63.26-2015 - Section 5.4.3 & 5.4.4

7.2.3.Test Setting

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 - 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize

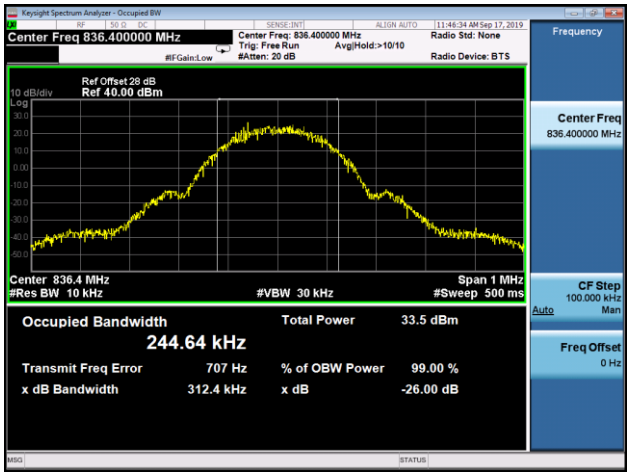
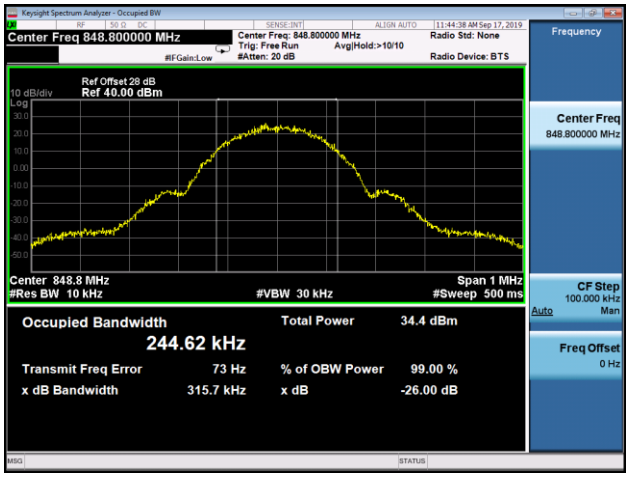
7.2.4.Test Setup

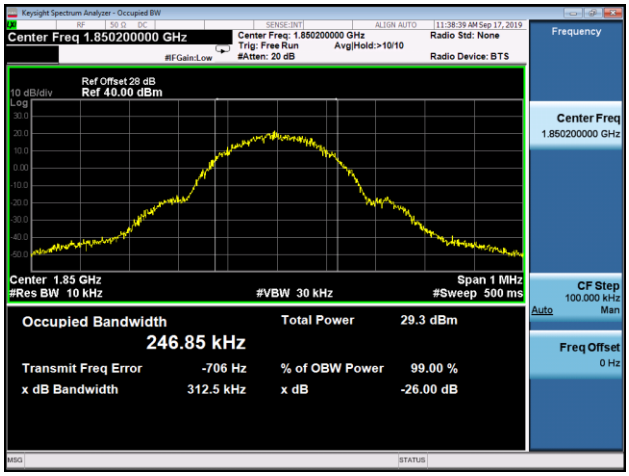
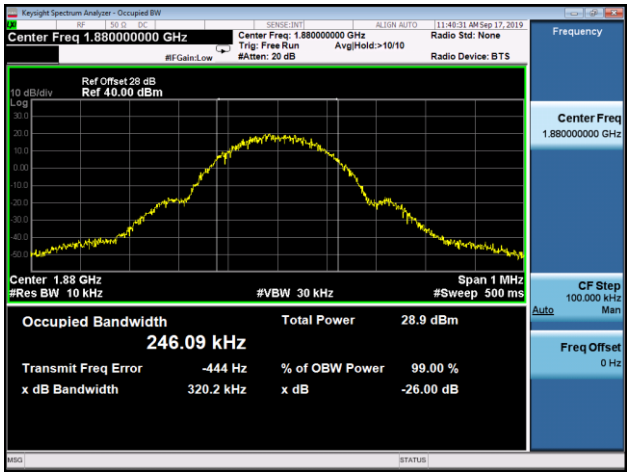
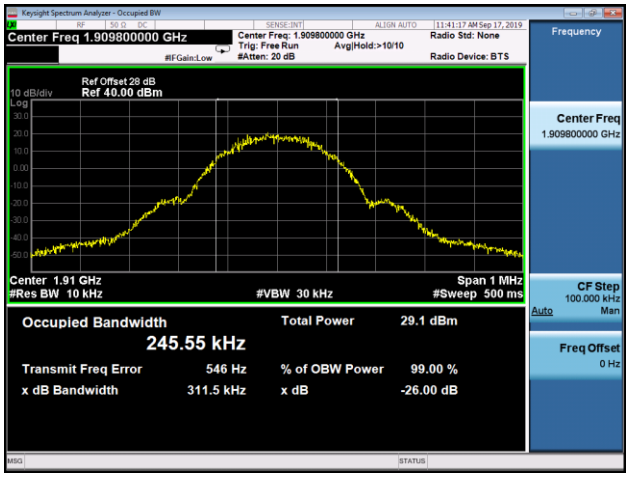


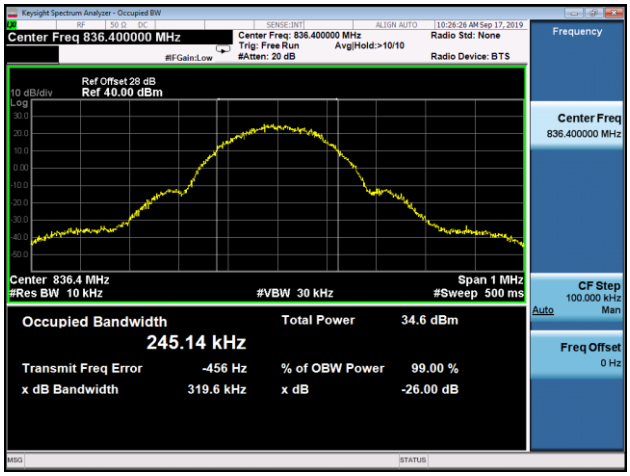
7.2.5.Test Result

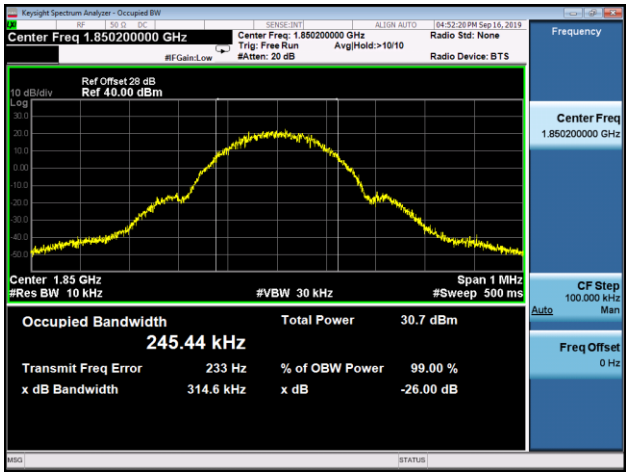
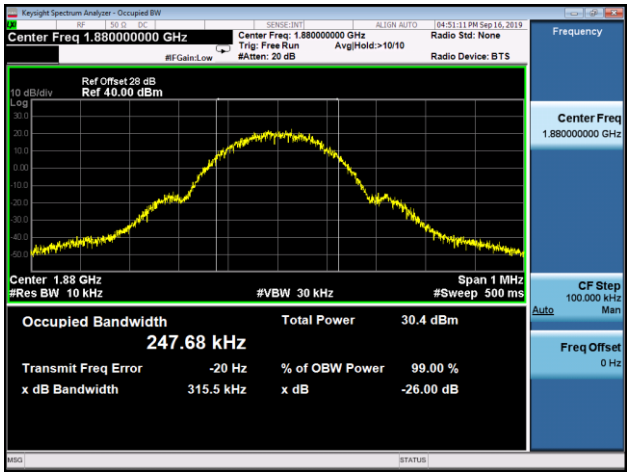
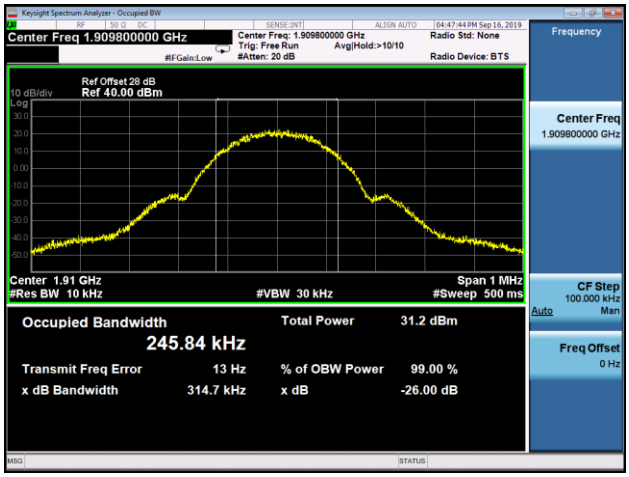
Product	Color Radio	Temperature	25°C
Test Engineer	Dandy Li	Relative Humidity	52%
Test Site	TR3	Test Date	2019/08/26 ~ 2019/09/17

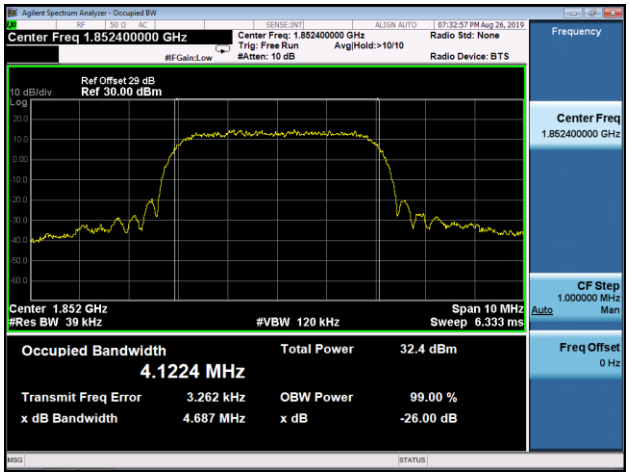
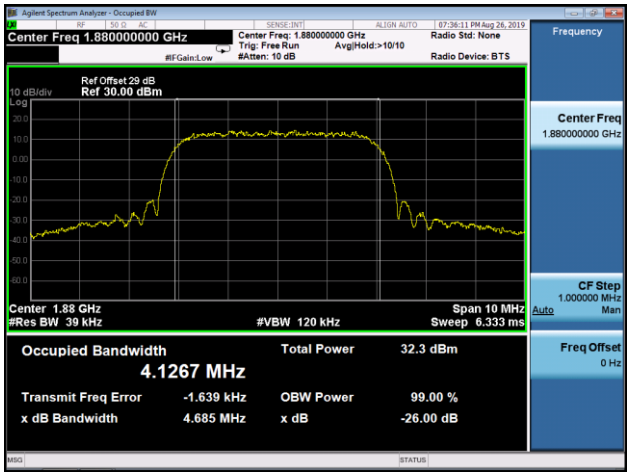
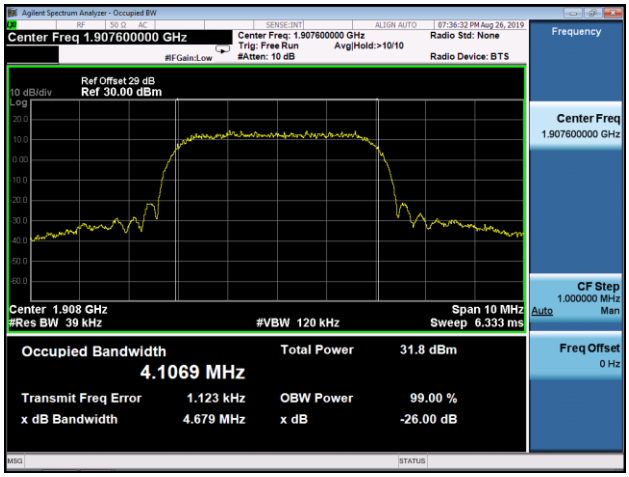
Test Mode	Channel No.	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dBc Occupied Bandwidth (kHz)	Result
GPRS850	128	824.2	245.9	317.7	Pass
	189	836.4	244.6	312.4	Pass
	251	848.8	244.6	315.7	Pass
GPRS1900	512	1850.2	246.9	312.5	Pass
	661	1880.0	246.1	320.2	Pass
	810	1909.8	245.6	311.5	Pass
EDGE850	128	824.2	244.9	311.7	Pass
	189	836.4	245.1	319.6	Pass
	251	848.8	244.7	312.1	Pass
EDGE1900	512	1850.2	245.4	314.6	Pass
	661	1880.0	247.7	315.5	Pass
	810	1909.8	245.8	314.7	Pass
WCDMA Band II	9262	1852.4	4122.4	4687.0	Pass
	9400	1880.0	4126.7	4685.0	Pass
	9538	1907.6	4106.9	4679.0	Pass
WCDMA Band IV	1312	1712.4	4134.2	4675.0	Pass
	1413	1732.6	4114.6	4681.0	Pass
	1513	1752.6	4119.9	4667.0	Pass
WCDMA Band V	4132	826.4	4133.7	4686.0	Pass
	4182	836.4	4105.8	4692.0	Pass
	4233	846.6	4107.3	4652.0	Pass

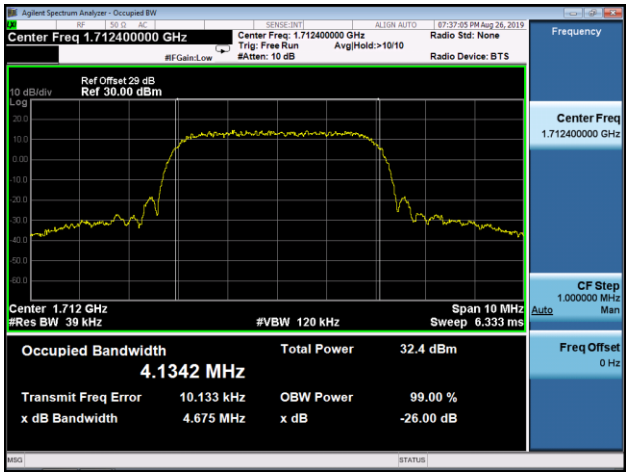
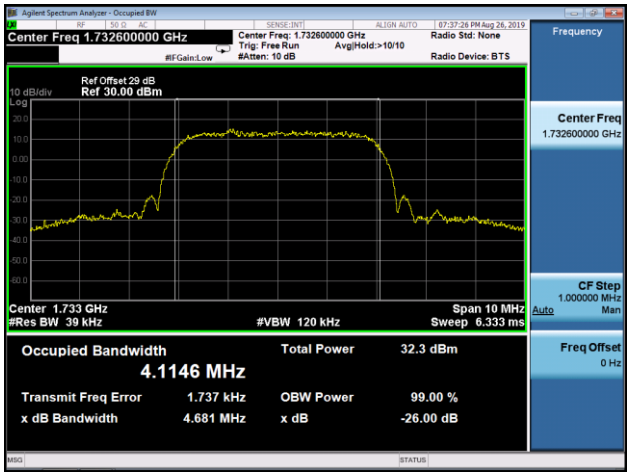
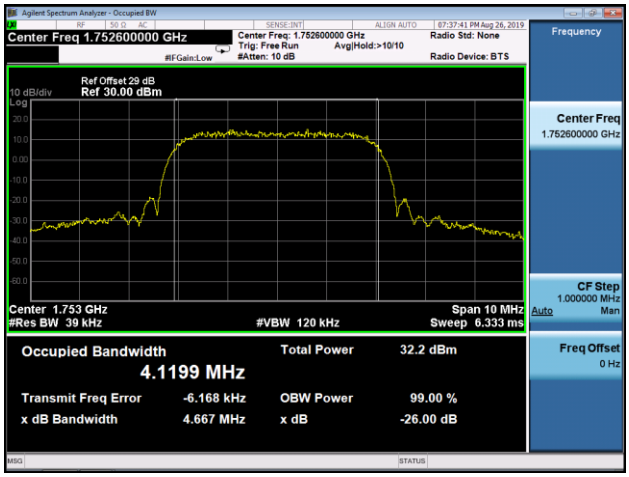
GPRS850 Occupied Bandwidth	
Channel 128 (824.2MHz)	**Channel 189 (836.4MHz)**
	
Channel 251 (848.8MHz)	
	

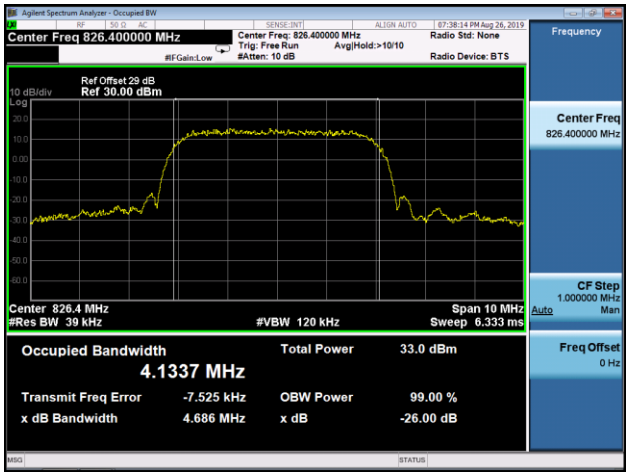
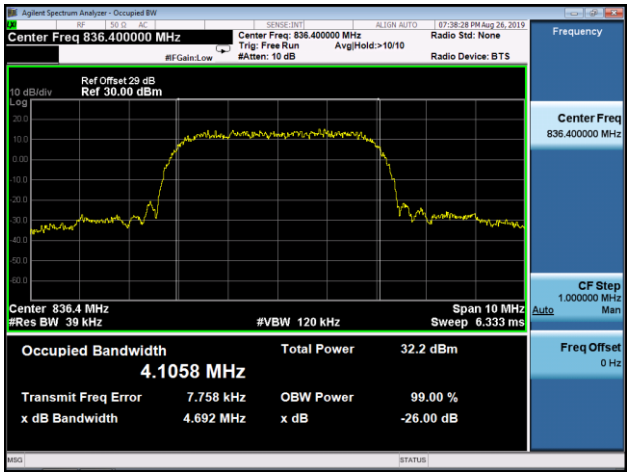
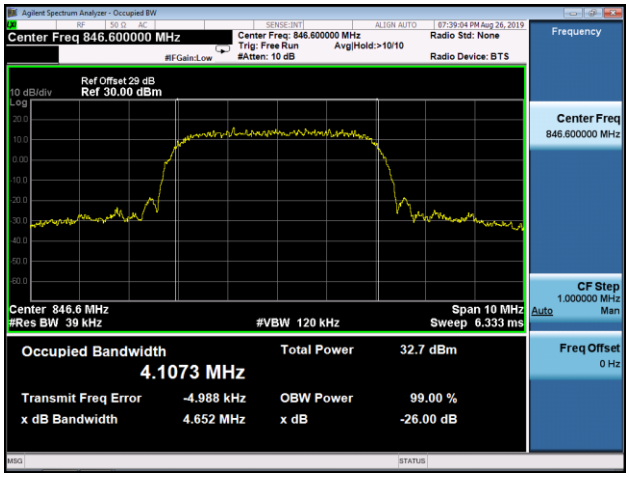
GPRS1900 Occupied Bandwidth	
Channel 512 (1850.2MHz)	**Channel 661 (1880.0MHz)**
	
Channel 810 (1909.8MHz)	
	

EDGE850 Occupied Bandwidth	
Channel 128 (824.2MHz)	**Channel 189 (836.4MHz)**
	
Channel 251 (848.8MHz)	
	

EDGE1900 Occupied Bandwidth	
Channel 512 (1850.2MHz)	**Channel 661 (1880.0MHz)**
	
Channel 810 (1909.8MHz)	
	

WCDMA Band II Occupied Bandwidth	
Channel 9262 (1852.4MHz)	**Channel 9400 (1880.0MHz)**
	
Channel 9538 (1907.6MHz)	
	

WCDMA Band IV Occupied Bandwidth	
Channel 1312 (1712.4MHz)	**Channel 1413 (1732.6MHz)**
	
Channel 1513 (1752.6MHz)	
	

WCDMA Band V Occupied Bandwidth	
Channel 4132 (826.4MHz)	**Channel 4182 (836.4MHz)**
	
Channel 4233 (846.6MHz)	
	

7.3. Band Edge Emissions and Spurious and Harmonic Emissions at Antenna Terminal

7.3.1.Test Limit

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.

7.3.2.Test Procedure Used

ANSI C63.26 - Section 5.7

7.3.3.Test Setting

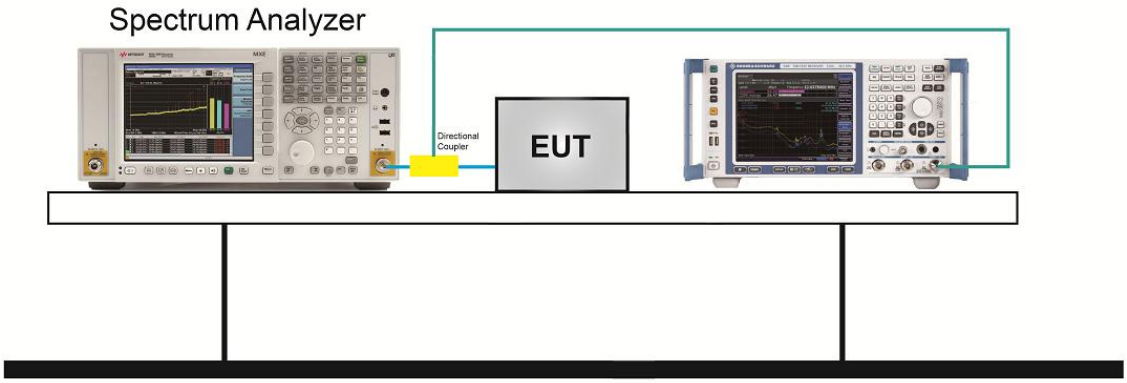
Band Edge Emission at Antenna Terminal

1. Span was set large enough so as to capture all out of band emissions near the band edge
2. RBW ≥ 1% of the emission bandwidth
3. VBW ≥ 3 x RBW
4. Detector = RMS
5. Number of sweep points ≥ 2 x Span/RBW
6. Trace mode = trace average for continuous emissions, max hold for pulse emissions
7. Sweep = auto couple
8. The trace was allowed to stabilize

Spurious Emissions at Antenna Terminal

1. Start frequency was set to 30MHz and stop frequency was set to 10GHz
2. RBW = 1MHz
3. VBW ≥ 3*RBW
4. Sweep time = auto
5. Detector = power averaging (rms)
6. Set sweep trigger to “free run.”
7. Sweep time = auto couple
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

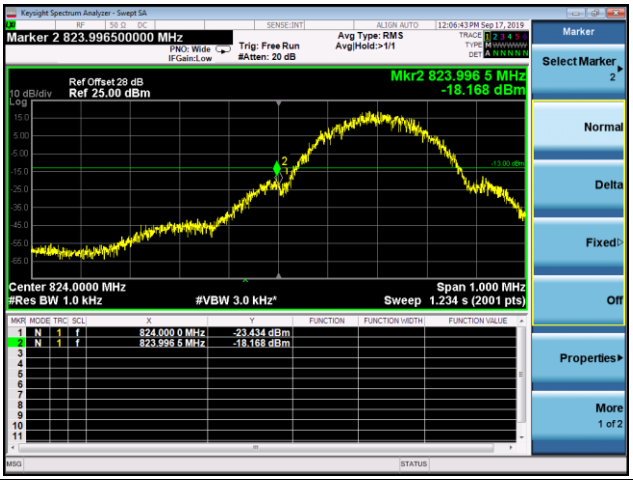
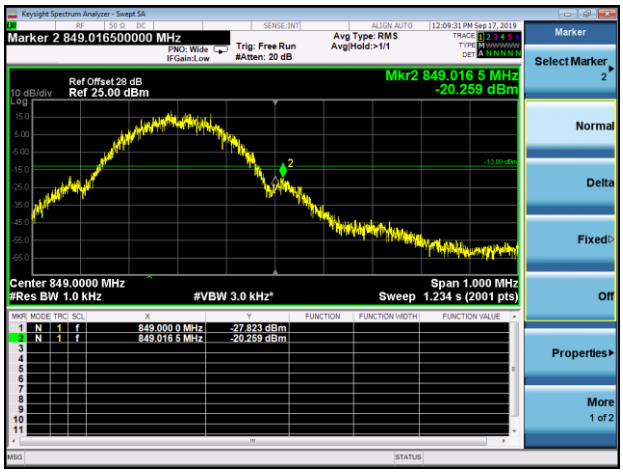
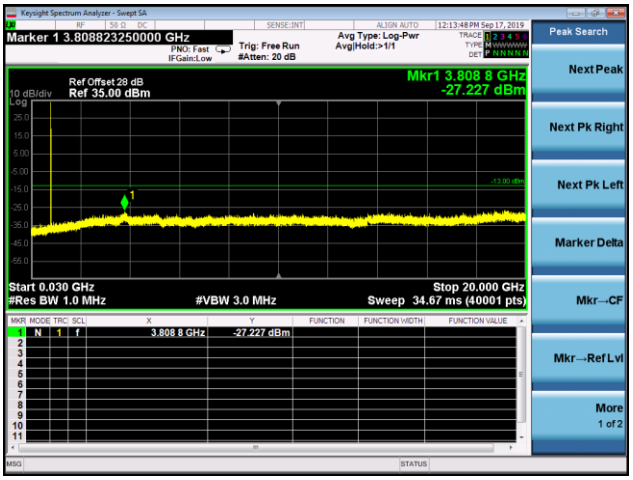
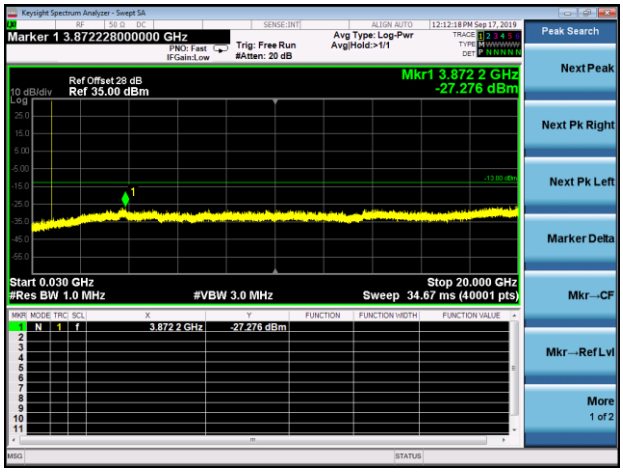
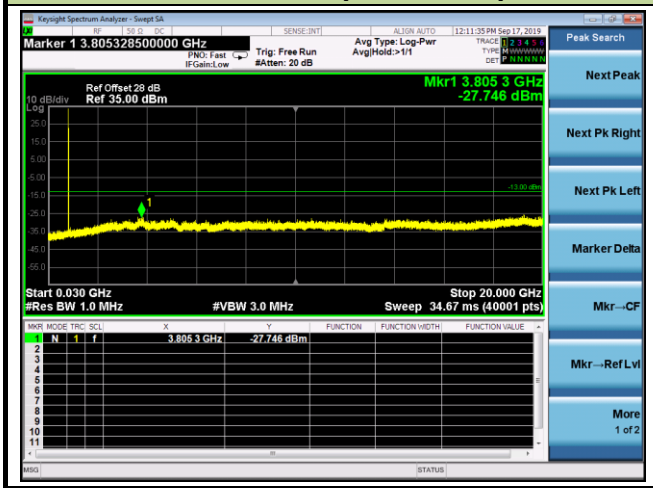
7.3.4.Test Setup

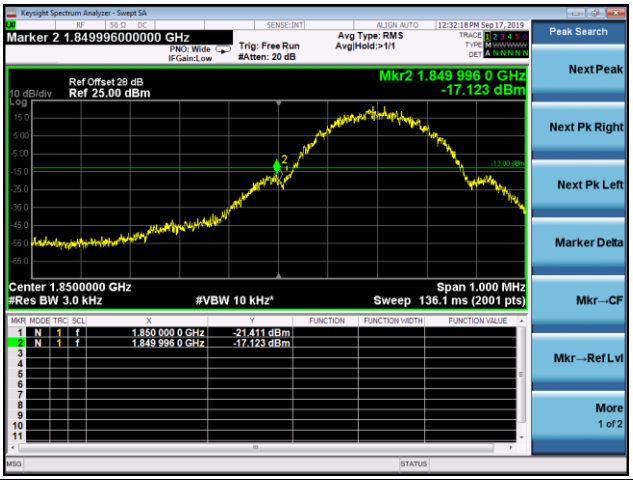
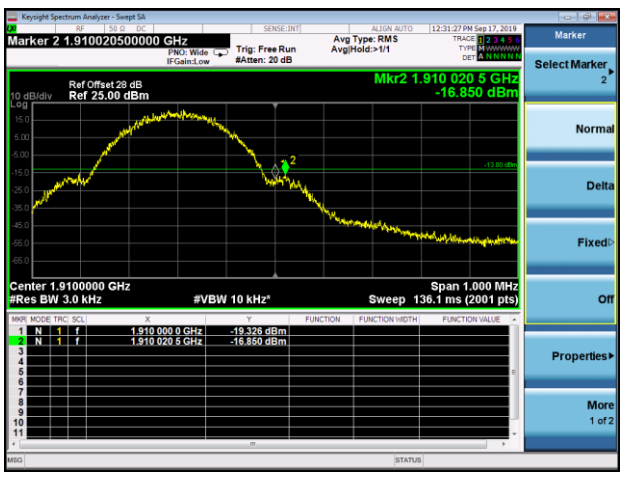
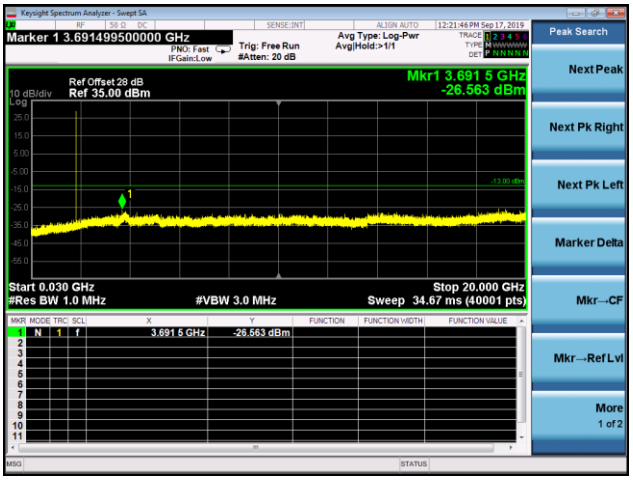
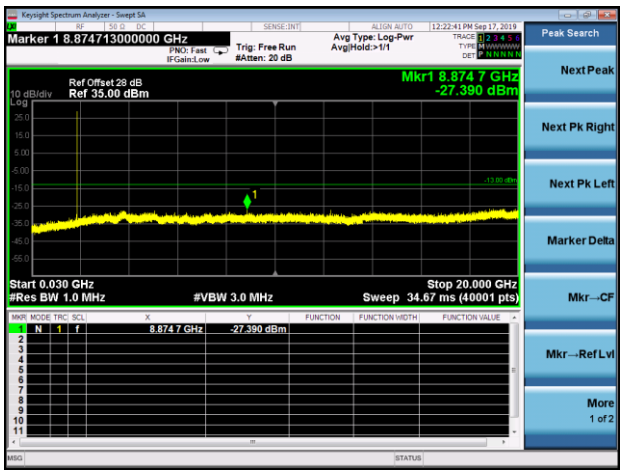
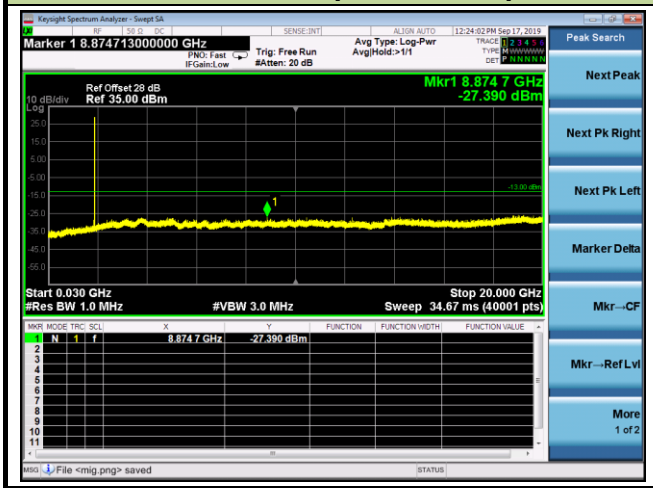


7.3.5.Test Result

Product	Color Radio	Temperature	25°C
Test Engineer	Dandy Li	Relative Humidity	52%
Test Site	TR3	Test Date	2019/08/26 ~2019/09/17

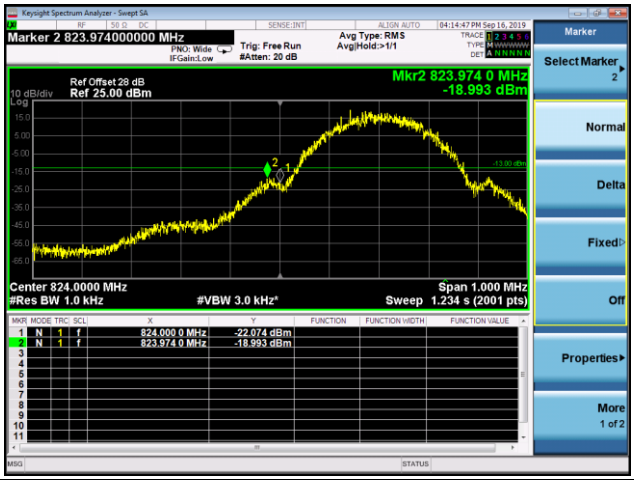
Mode	Channel No.	Frequency (MHz)	Modulation	Test Result
GPRS850	128	824.20	GMSK	Pass
GPRS850	189	836.40	GMSK	Pass
GPRS850	251	848.80	GMSK	Pass
GPRS1900	512	1850.20	GMSK	Pass
GPRS1900	661	1880.00	GMSK	Pass
GPRS1900	810	1909.80	GMSK	Pass
EDGE850	128	824.20	8PSK	Pass
EDGE850	189	836.40	8PSK	Pass
EDGE850	251	848.80	8PSK	Pass
EDGE1900	512	1850.20	8PSK	Pass
EDGE1900	661	1880.00	8PSK	Pass
EDGE1900	810	1909.80	8PSK	Pass
WCDMA Band II	9262	1852.4	QPSK	Pass
WCDMA Band II	9400	1880.0	QPSK	Pass
WCDMA Band II	9538	1907.6	QPSK	Pass
WCDMA Band IV	1312	1712.4	QPSK	Pass
WCDMA Band IV	1413	1732.6	QPSK	Pass
WCDMA Band IV	1513	1752.6	QPSK	Pass
WCDMA Band V	4132	826.40	QPSK	Pass
WCDMA Band V	4182	836.40	QPSK	Pass
WCDMA Band V	4233	846.60	QPSK	Pass

GPRS850 Band Edge	
Channel 128 (824.20MHz)	Channel 251 (848.80MHz)
	
GPRS850 Conducted Spurious Emission	
Channel 128 (824.20MHz)	Channel 189 (836.40MHz)
	
Channel 251 (848.80MHz)	
	

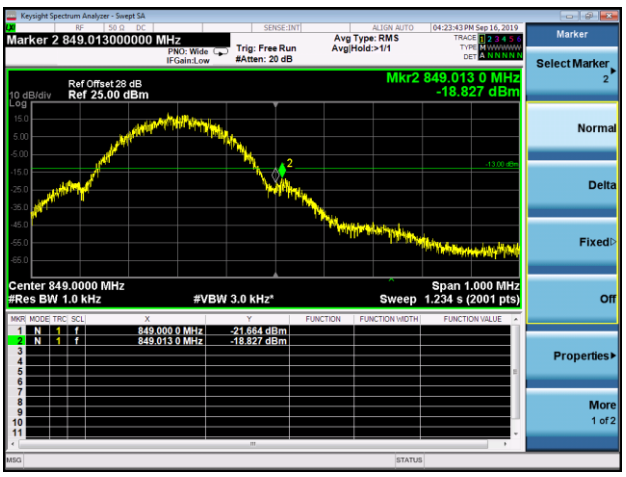
GPRS1900 Band Edge	
Channel 512 (1850.20MHz)	**Channel 810 (1909.80MHz)**
	
GPRS1900 Conducted Spurious Emission	
Channel 512 (1850.20MHz)	**Channel 661 (1880.00MHz)**
	
Channel 810 (1909.80MHz)	
	

EDGE850 Band Edge

Channel 128 (824.20MHz)

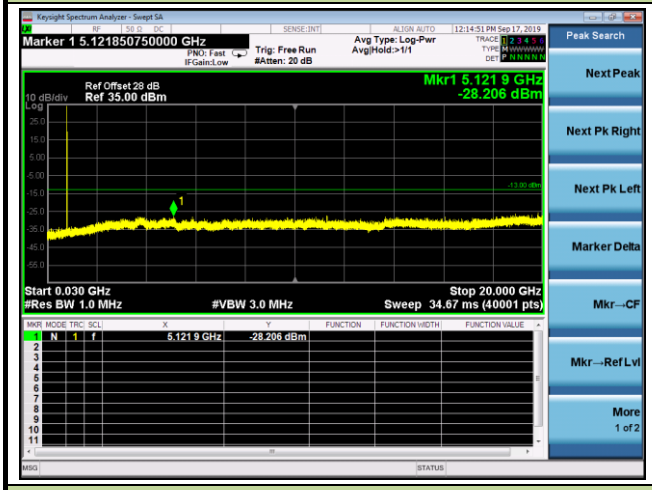


Channel 251 (848.80MHz)

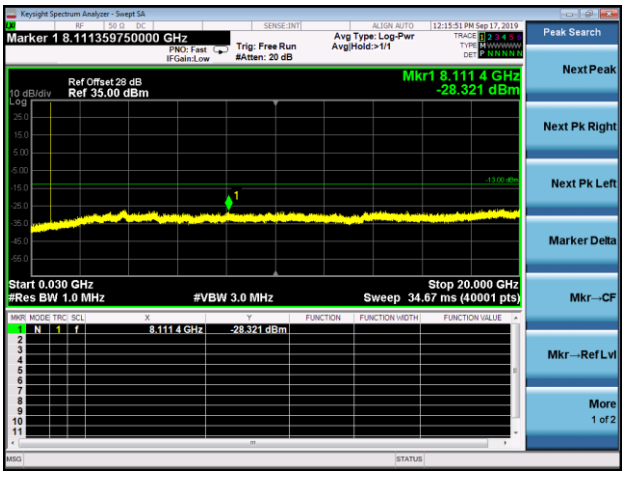


EDGE850 Conducted Spurious Emission

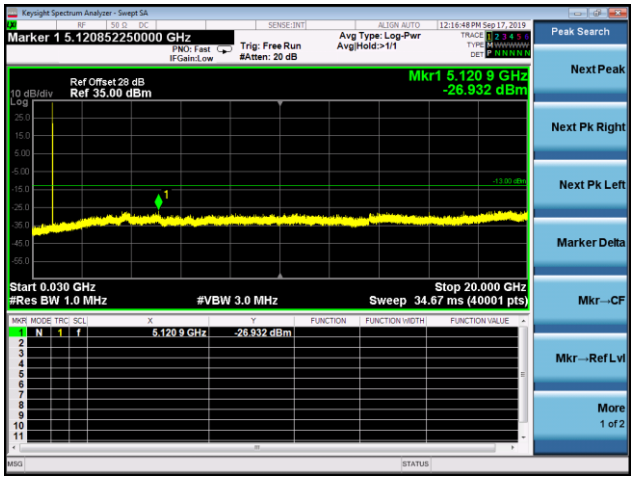
Channel 128 (824.20MHz)

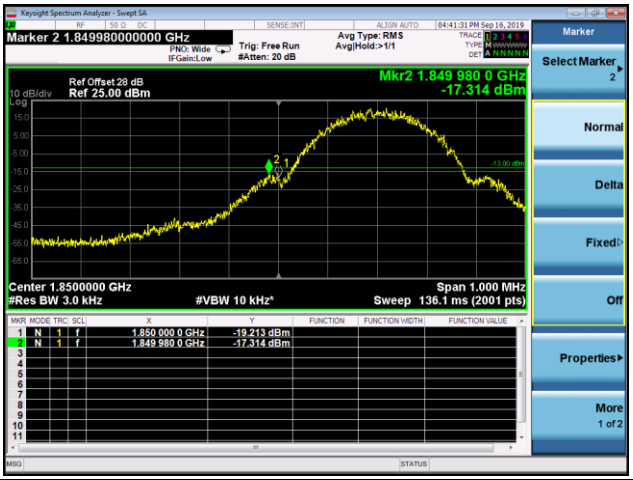
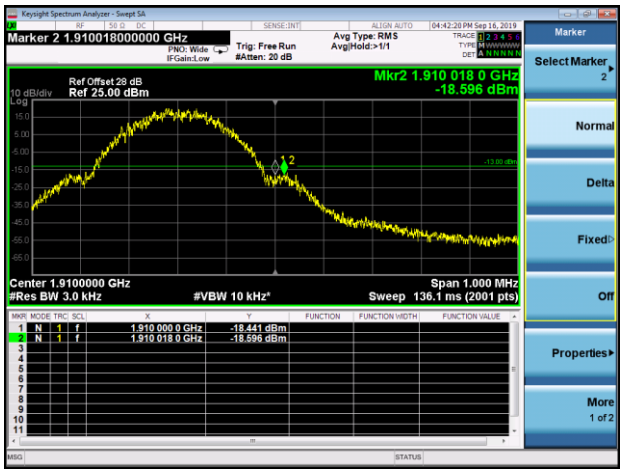
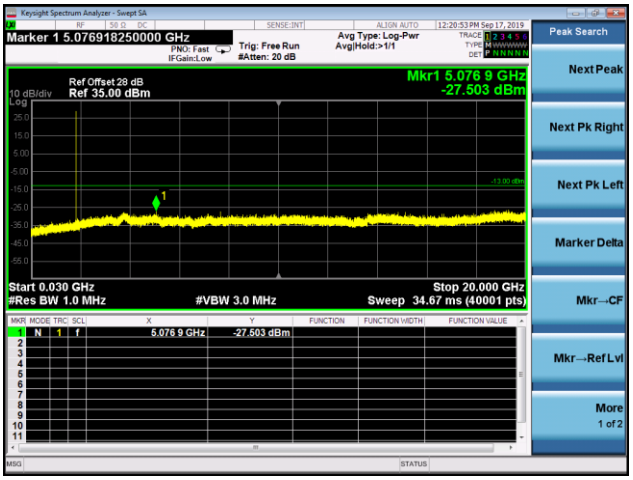
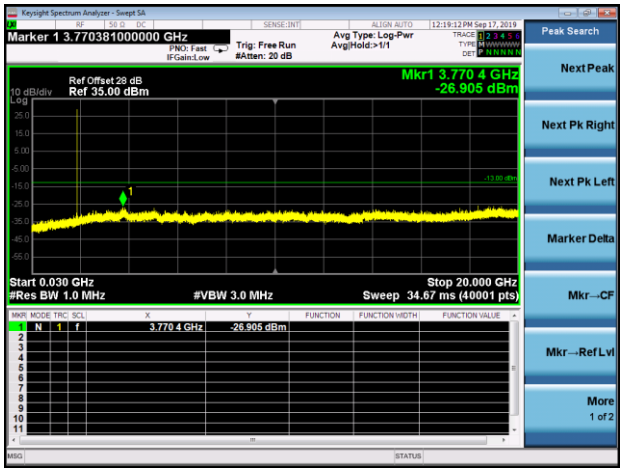


Channel 189 (836.40MHz)



Channel 251 (848.80MHz)



EDGE1900 Band Edge	
Channel 512 (1850.20MHz)	**Channel 810 (1909.80MHz)**
	
EDGE1900 Conducted Spurious Emission	
Channel 512 (1850.20MHz)	**Channel 661 (1880.00MHz)**
	
Channel 810 (1909.80MHz)