



# FCC PART 22H, PART 24E MEASUREMENT AND TEST REPORT

For

# **ITALCOM GROUP**

1728 Coral Way, Coral Gables, Miami, Florida, United States

FCC ID: YPVITALCOMKAMEO

Report Type: **Product Type:** Original Report Mobile Phone **Test Engineer:** Dean Liu Report Number: RSZ120418002-00D **Report Date:** 2012-05-31 Ivan Cao fram (av **Reviewed By:** EMC Engineer Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, **Test Laboratory:** ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

**Note**: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP\*, or any agency of the Federal Government.

\* This report contains data that are not covered by the NVLAP accreditation and are marked with an asterisk "\*\pm" (Rev.2)

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# Bay Area Compliance Laboratories Corp. (Shenzhen)

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#### GENERAL INFORMATION

### **Product Description for Equipment under Test (EUT)**

The *ITALCOM GROUP*'s product, model number: *Kameo (FCC ID: YPVITALCOMKAMEO* (the "EUT") in this report was a *Mobile Phone*, which was measured approximately: 11.3cm (L) x 6.5cm (W) x 1.5cm (H), rated input voltage: DC 3.7V Lithium battery or DC 5.0V from adapter for charging.

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Adapter Information: MODEL NO:Komeo

ENTRADA: 100-240Vca, 50/60 Hz, 0.15A

SALIDA: DC5Vcc, 500mA

Frequency Range:

GSM850: 824-849 MHz (Tx), 869-894 MHz (Rx) PCS 1900: 1850-1910 MHz (Tx), 1930-1990 MHz (Rx)

Wifi:2412-2462MHz Bluetooth:2402-2480MHz

Modulation Mode: GMSK (Cellular/PCS);

DSSS,OFDM(Wifi)

GFSK,8-DPSK,  $\pi/4$ -DQPSK(Bluetooth)

Transmitter Output Power:

GSM: 32.8dBm (ERP) PCS: 29.9dBm (EIRP) BT: 5.16dBm (conducted)

Wi-Fi: 802.11b: 17.48 dBm (conducted), 802.11g: 14.96dBm (conducted) 802.11n ht 20:14.63 dBm(conducted), 802.11n ht40: 12.87dBm (conducted)

### **Objective**

This report is prepared on behalf of *ITALCOM GROUP* in accordance with Part 2-Subpart J, Part 22-Subpart H, and Part 24-Subpart E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for output power, modulation characteristic, occupied bandwidth, spurious emissions at antenna terminal, spurious radiated emission, frequency stability and band edge.

#### **Related Submittal(s)/Grant(s)**

FCC Part 15B JBP submission with FCC ID: YPVITALCOMKAMEO.

FCC Part 15C DSS submission with FCC ID: YPVITALCOMKAMEO for BT.

FCC Part 15C DSS submission with FCC ID: YPVITALCOMKAMEO for WIFI.

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<sup>\*</sup> All measurement and test data in this report was gathered from production sample serial number: 1204041 (Assigned by BACL, Shenzhen). The EUT was received on 2012-04-23.

### **Test Methodology**

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

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Part 22 Subpart H – Public Mobile Services

Part 24 Subpart E – Personal Communication Services

Applicable Standards: TIA/EIA 603-D-2010, ANSI C63.4-2009.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

The uncertainty of any RF tests which use conducted method measurement is  $\pm 0.96$  dB, the uncertainty of any radiation on emissions measurement is  $\pm 4.0$  dB

### **Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at <a href="http://ts.nist.gov/Standards/scopes/2007070.htm">http://ts.nist.gov/Standards/scopes/2007070.htm</a>

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# **SYSTEM TEST CONFIGURATION**

### **Justification**

The EUT was configured for testing according to TIA/EIA-603-D-2010.

The GSM/PCS item test was performed with the EUT operating at testing mode.

The GPRS item test was performed with the EUT operating at testing mode.

# **Equipment Modifications**

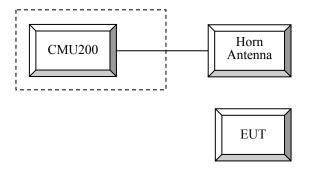
No modification was made to the EUT.

# **Support Equipment List and Details**

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	109038
Da yang	Horn Antenna	OMCDH10180	10279001A

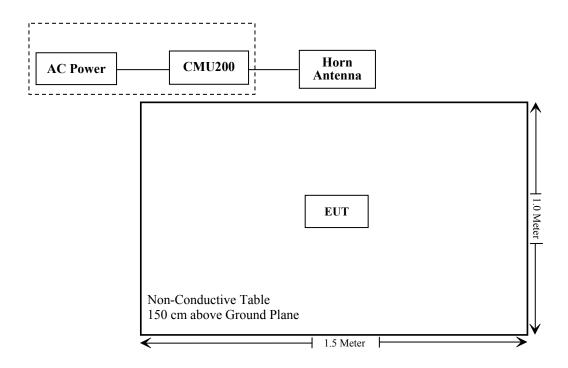
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# **Configuration of Test Setup**



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# **Block Diagram of Test Setup**



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# **SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Result
§1.1307, §2.1093	RF Exposure (SAR)	Compliance*
\$2.1046; \$ 22.913 (a); \$ 24.232 (c)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905 § 22.917; § 24.238	Occupied Bandwidth	Compliance
§ 2.1051, § 22.917 (a); § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053 § 22.917 (a); § 24.238 (a)	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a)	Out of band emission, Band Edge	Compliance
§ 2.1055 § 22.355; § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

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Note: \* Please refer to SAR report released by BACL, report number: R1205114-SAR

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# FCC §1.1307 & §2.1093 – RF EXPOSURE

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# **Applicable Standard**

FCC§1.1307 and §2.1093.

# **Test Result**

Compliance, please refer to the SAR report: R1205114-SAR

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# FCC §2.1047 – MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

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# FCC § 2.1046, § 22.913 (a) & § 24.232 (c) – RF OUTPUT POWER

### **Applicable Standard**

According to FCC  $\S 2.1046$  and  $\S 22.913$  (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

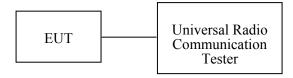
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According to FCC §2.1046 and §24.232 ©, mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications..

#### **Test Procedure**

Conducted method:

The RF output of the transmitter was connected to Universal Radio Communication Tester through sufficient attenuation.



Radiated method:

ANSI/TIA 603-D section 2.2.17

# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-1	2012-11-30
Rohde & Schwarz	Signal Analyzer	FSIQ 26	8386001028	2011-11-24	2012-11-23
Sunol Sciences	Broadband Antenna	ЈВ1	A040904-2	2011-11-28	2012-11-27
HP	Signal Generator	HP8657A	3217A04699	2011-12-19	2012-12-18
HP	Synthesized Sweeper	8341B	2624A00116	2012-04-11	2013-04-10
COM POWER	Dipole Antenna	AD-100	041000	2012-02-11	2013-02-10
A.H. System	Horn Antenna	SAS-200/571	135	2012-02-11	2013-02-10

<sup>\*</sup> **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

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# **Test Data**

# **Environmental Conditions**

Temperature:	25 °C	
Relative Humidity:	56 %	
ATM Pressure:	100.0kPa	

The testing was performed by Dean Liu on 2012-05-03.

# **Conducted Power**

# Cellular Band (Part 22H)& PCS Band (Part 24E)

Report No.: RSZ120418002 -00D

				lBm)		
Band	Channel No.	GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot
	128	31.83	31.78	31.26	29.67	28.47
Cellular	190	31.66	31.65	31.14	29.5	28.29
	251	31.56	31.51	30.99	29.36	28.18
	512	31.09	31.08	30.49	28.83	27.84
PCS	661	30.9	30.86	30.24	28.67	27.69
	810	30.47	30.42	29.79	28.15	27.13

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# **ERP for Cellular Band (Part 22H)**

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Frequency	Polar	S.A. Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit
	H/V	dΒμV	dBm	dBd	dB	dBm	dBm
824.2	Н	125.2	34.2	0.0	3.3	30.9	38.4
024.2	V	127.3	35.3	0.0	3.3	31.9	38.4
836.6	Н	126.3	34.1	0.0	3.3	30.8	38.4
830.0	V	128.4	36.2	0.0	3.3	32.8	38.4
040.0	Н	126.2	35.0	0.0	3.3	31.7	38.4
848.8	V	127.0	35.8	0.0	3.3	32.5	38.4

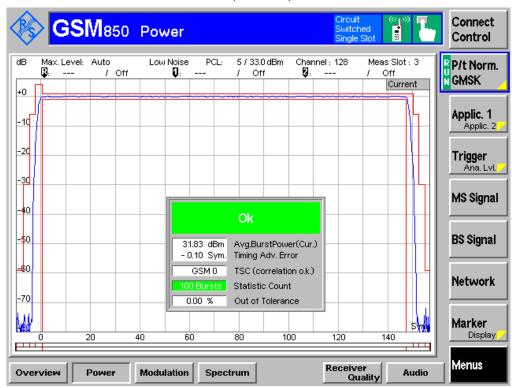
# **EIRP for PCS Band (Part 24E)**

Frequency	Polar	S.A. Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit
	H/V	dΒμV	dBm	dBi	dB	dBm	dBm
1850.2	Н	115.48	20.2	8.0	0.9	27.3	33.0
1830.2	V	115.67	20.4	8.0	0.9	27.5	33.0
1880	Н	116.33	21.0	8.0	0.9	28.2	33.0
1000	V	114.37	19.1	8.0	0.9	26.2	33.0
1000 0	Н	118.07	22.8	8.0	0.9	29.9	33.0
1908.8	V	115.70	20.4	8.0	0.9	27.5	33.0

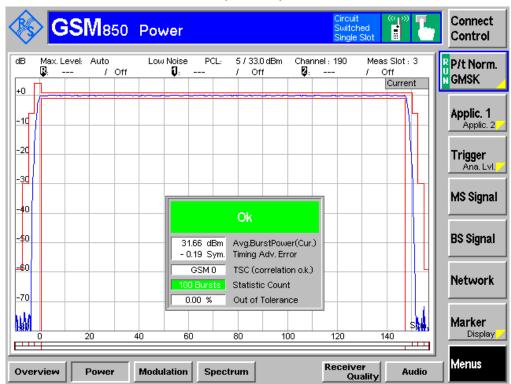
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GSM:

#### Cellular Band (Part 22H) Low channel

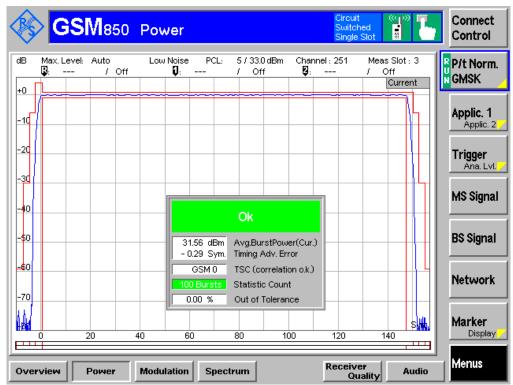


Cellular Band (Part 22H) Middle channel

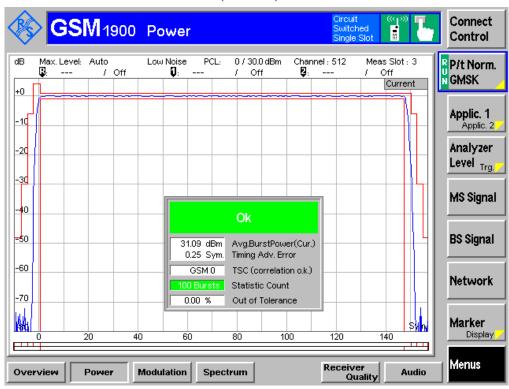


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### Cellular Band (Part 22H) High channel

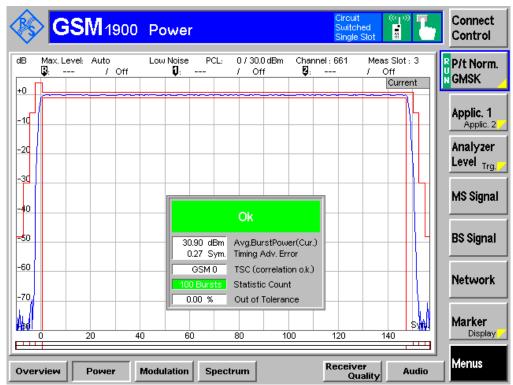


#### PCS Band (Part 24E) Low channel

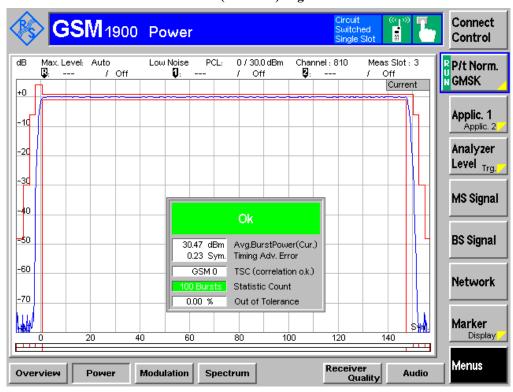


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### PCS Band (Part 24E) Middle channel



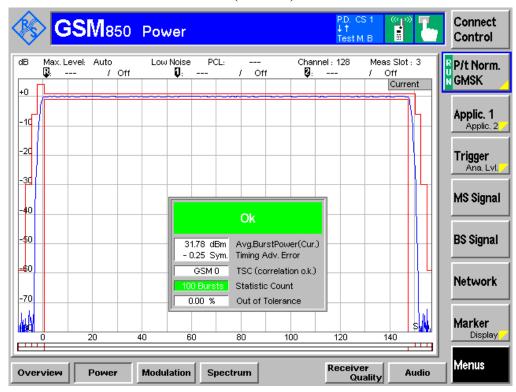
### PCS Band (Part 24E) High channel



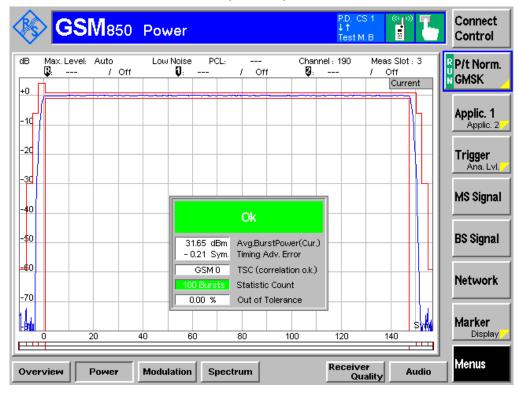
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GPRS:

#### Cellular Band (Part 22H) Low channel

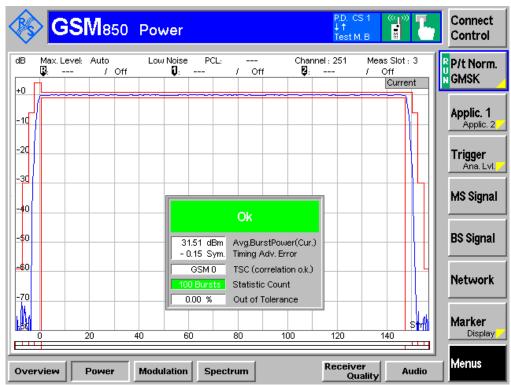


Cellular Band (Part 22H) Middle channel

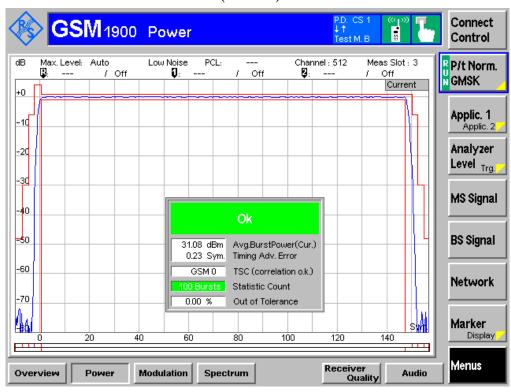


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### Cellular Band (Part 22H) High channel

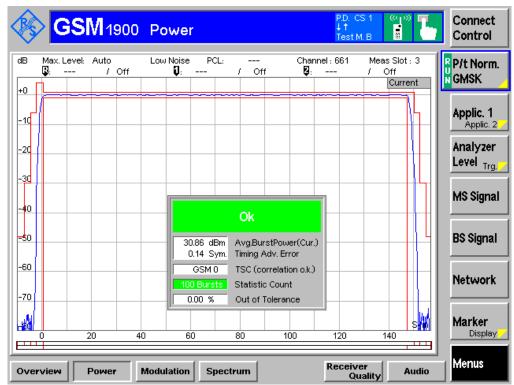


### PCS Band (Part 24E) Low channel

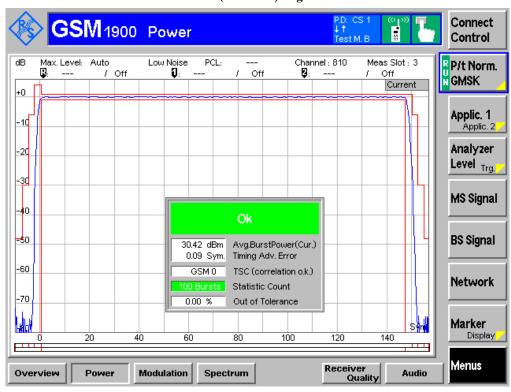


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### PCS Band (Part 24E) Middle channel



### PCS Band (Part 24E) High channel



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# FCC §2.1049, §22.917, §22.905 & §24.238 – OCCUPIED BANDWIDTH

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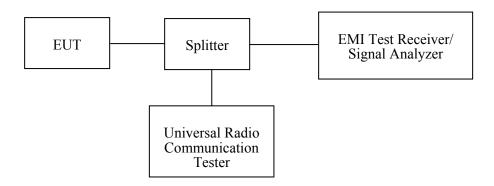
### **Applicable Standard**

FCC §2.1049, §22.917, §22.905 and §24.238.

### **Test Procedure**

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 3 kHz (Cellular /PCS) and the 26 dB & 99% bandwidth was recorded.



# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ 26	8386001028	2011-11-24	2012-11-23

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### **Test Data**

#### **Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

The testing was performed by Dean Liu on 2012-05-02.

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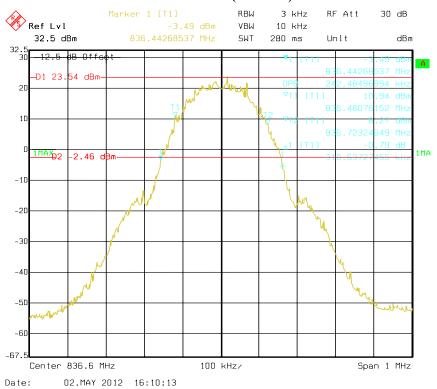
Report No.: RSZ120418002 -00D

Band	Channel No.	99% Occupied Bandwidth (kHz)	26 dB Occupied Bandwidth (kHz)
GSM	190	242.48	310.64
PCS	661	240.48	318.64

Please refer to the following plots.

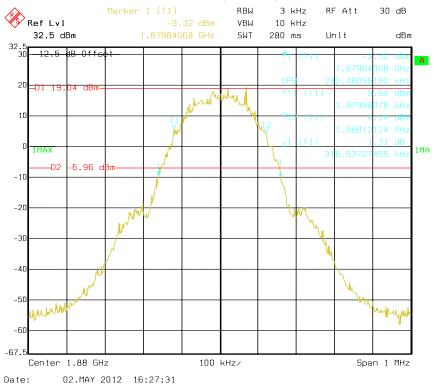
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#### Cellular Band (Part 22H)



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#### PCS Band (Part 24E)



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# FCC §2.1051, §22.917(a) & §24.238(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

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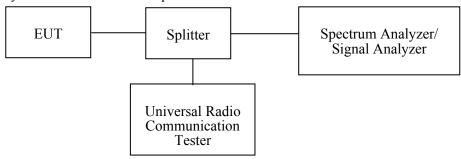
# **Applicable Standard**

FCC §2.1051, §22.917(a) and §24.238(a).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

#### **Test Procedure**

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100kHz. Sufficient scans were taken to show any out of band emissions up to 10<sup>th</sup> harmonic.



# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ 26	8386001028	2011-11-24	2012-11-23

<sup>\*</sup> **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### **Test Data**

#### **Environmental Conditions**

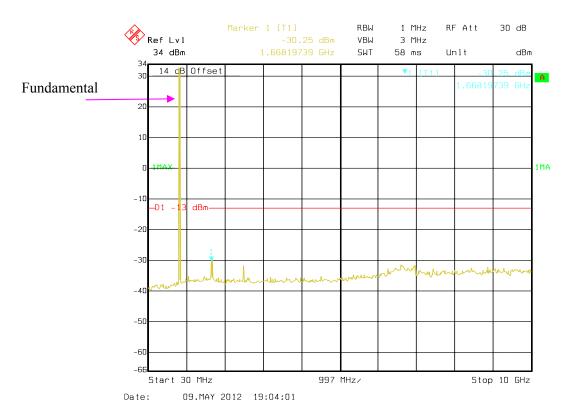
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Dean Liu on 2012-05-09.

Please refer to the following plots.

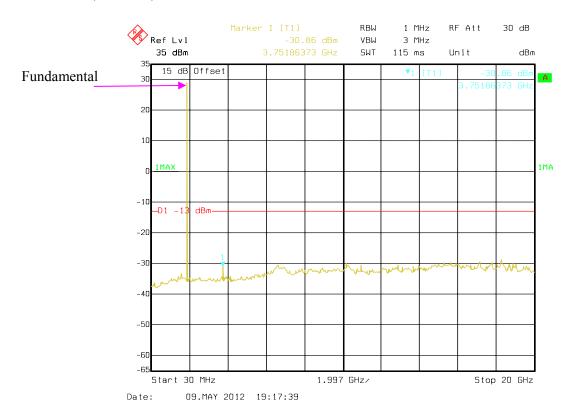
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### Cellular Band (Part 22H) — Middle Channel



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# PCS Band (Part 24E) — Middle Channel



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# FCC §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS

Report No.: RSZ120418002 -00D

# **Applicable Standard**

FCC § 2.1053, §22.917 and § 24.238.

### **Test Procedure**

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in  $dB = 10 \lg (TXpwr in Watts/0.001) - the absolute level$ 

Spurious attenuation limit in  $dB = 43 + 10 \text{ Log}_{10}$  (power out in Watts)

# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-1	2012-11-30
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2012-11-27
Rohde & Schwarz	Signal Analyzer	FSIQ 26	8386001028	2011-11-24	2012-11-23
DUCOMMUN Technologies	Pre-amp	ALN- 09173030-01	991396-01	2011-11-24	2012-11-23
HP	Signal Generator	HP8657A	3217A04699	2011-12-19	2012-12-18
HP	Amplifier	HP8447E	1937A01046	2011-11-24	2012-11-23
HP	Synthesized Sweeper	8341B	2624A00116	201204-11	2013-04-10
COM POWER	Dipole Antenna	AD-100	041000	N/A	N/A
A.H. System	Horn Antenna	SAS-200/571	135	2012-02-11	2013-02-10
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-1	2012-11-30

<sup>\*</sup> **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

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# **Test Data**

# **Environmental Conditions**

Temperature:	25 °C	
Relative Humidity:	56 %	
ATM Pressure:	100.0kPa	

The testing was performed by Dean Liu on 2012-05-03.

EUT Operation Mode: Transmitting

# Cellular Band (Part 22H)

Report No.: RSZ120418002 -00D

### **30 MHz-10 GHz**

Frequency	Polar	S.A Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dΒμV	dBm	dBd/dBi	dB	dBm	dBm	dB
	•		Low Cha	nnel, $fo = 8$	24.2 MHz			
1648.400	Н	51.9	-52.4	7.3	0.9	-45.9	-13.0	32.9
1648.400	V	52.3	-50.2	7.3	0.9	-43.7	-13.0	30.7
2472.600	Н	50.2	-58.9	9.8	0.9	-49.9	-13.0	36.9
2472.600	V	57.4	-58.1	9.8	0.9	-49.1	-13.0	36.1
			Middle Ch	annel, fo =	836.6 MHz			
1673.200	Н	49.8	-53.3	7.3	0.9	-46.9	-13.0	33.9
1673.200	V	51.5	-49.0	7.3	0.9	-42.6	-13.0	29.6
2509.800	Н	39.5	-61.2	10.1	0.9	-52.0	-13.0	39.0
2509.800	V	39.6	-56.8	10.1	0.9	-47.6	-13.0	34.6
	High Channel, fo = 848.8 MHz							
1696.800	Н	49.62	-54.5	7.3	0.9	-48.1	-13.0	35.1
1696.800	V	49.97	-52.8	7.3	0.9	-46.3	-13.0	33.3
2545.200	Н	50.18	-58.4	10.1	0.9	-49.2	-13.0	36.2
2545.200	V	5.61	-58.1	10.1	0.9	-48.8	-13.0	35.8

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# PCS Band (Part 24E)

Report No.: RSZ120418002 -00D

# **30 MHz-20 GHz**

Frequency	Polar	S.A. Reading	S.G. Level	Antenna Gain	Cable Loss	Absolute Level	Limit	Margin
MHz	H/V	dΒμV	dBm	dBd/dBi	dB	dBm	dBm	dB
			Low Char	$\frac{1}{1}$	350.2 MHz			
3700.400	Н	49.41	-51.3	10.0	1.1	-42.4	-13.0	29.4
3700.400	Н	44.87	-55.9	10.0	1.1	-47.0	-13.0	34.0
5550.600	Н	43.42	-59.9	11.3	1.5	-50.1	-13.0	37.1
5550.600	Н	46.92	-55.0	11.3	1.5	-45.2	-13.0	32.2
		]	Middle Ch	annel, fo = 1	1880.0 MHz	Z		
3760.000	Н	38.69	-58.3	10.0	1.1	-49.4	-13.0	36.4
3760.000	Н	39.42	-56.7	10.0	1.1	-47.8	-13.0	34.8
5640.000	V	45.73	-46.7	11.2	1.5	-37.0	-13.0	24.0
5640.000	V	39.39	-51.8	11.2	1.5	-42.1	-13.0	29.1
			High Cha	nnel, fo $= 19$	909.8 MHz			
3816.400	V	46.62	-55.1	9.8	1.1	-46.3	-13.0	33.3
3816.400	V	48.41	-51.2	9.8	1.1	-42.4	-13.0	29.4
5729.400	V	43.27	-60.3	11.1	1.5	-50.7	-13.0	37.7
5729.400	V	49.90	-52.1	11.1	1.5	-42.5	-13.0	29.5

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# FCC §22.917(a) & §24.238(a) - BAND EDGES

# **Applicable Standard**

According to § 22.917(a), the power of any emissions 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.

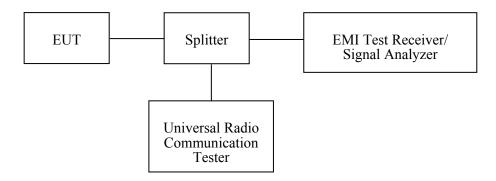
Report No.: RSZ120418002 -00D

According to \$24.238(a), the power of any emissions 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.

#### **Test Procedure**

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency, RBW set to 3 kHz.



### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
BIZI	Signal Analyzer	FSIQ26	8386001028	2011-11-24	2012-11-23

<sup>\*</sup> **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

#### **Test Data**

#### **Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Dean Liu on 2012-05-02.

Please refer to the following tables and plots.

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# Cellular Band (Part 22H)

Report No.: RSZ120418002 -00D

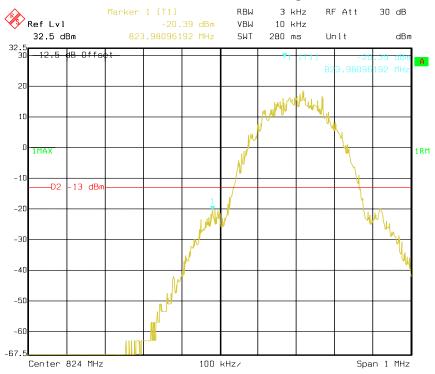
Frequency (MHz)	Emission (dBm)	Limit (dBm)
128	-20.39	-13
251	-17.54	-13

# PCS Band (Part 24E)

Frequency (MHz)	Emission (dBm)	Limit (dBm)
512	-23.24	-13
810	-21.13	-13

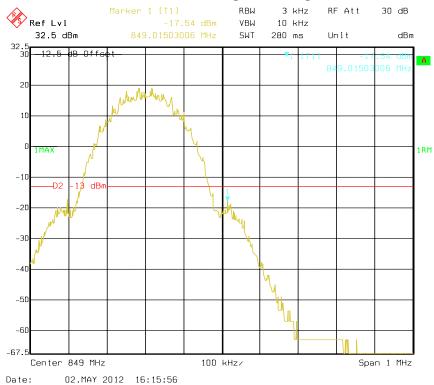
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#### Cellular Band, Left Band Edge



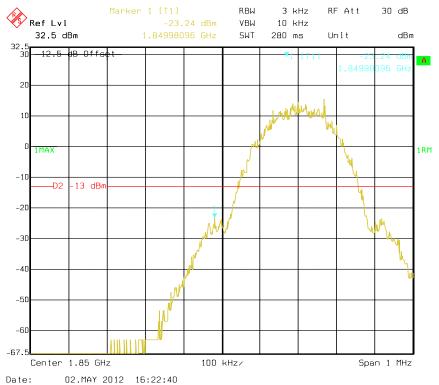
#### Date: 02.MAY 2012 16:13:12

#### Cellular Band, Right Band Edge

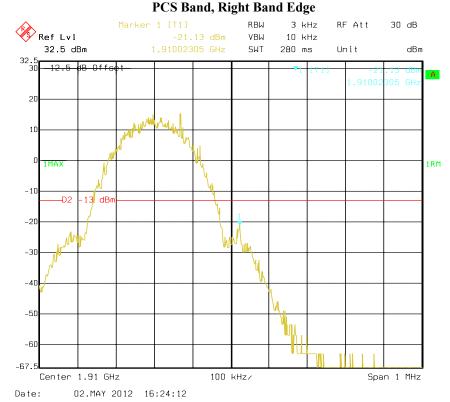


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### **PCS Band, Left Band Edge**



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# FCC §2.1055, §22.355 & §24.235 - FREQUENCY STABILITY

# **Applicable Standard**

FCC § 2.1055 (a), § 2.1055 (d), §22.355, §24.235

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

	TD 1 C	TD ***		D 11'	3 / 1 '1	α .
Frequency	Tolerance fo	r Transmitte	rc in the	Puhlic	Mobile	Services
1 1 Cquciic y	1 Officiality 10	1 11 ansmitte	is ili uic	I uone	WIODIIC	DCI VICCS

Report No.: RSZ120418002 -00D

Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

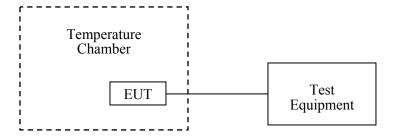
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

#### **Test Procedure**

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the battery end point. The output frequency was recorded for each battery voltage.



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Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
WUHUAN	Temperature & Humidity Chamber	HTP205	20021115	2011-06-04	2012-06-03
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	109038	2011-04-11	2012-04-10

Report No.: RSZ120418002 -00D

### **Test Data**

#### **Environmental Conditions**

Temperature:	25 °C		
Relative Humidity:	56 %		
ATM Pressure:	100.0kPa		

The testing was performed by Dean Liu on 2012-05-03.

# Cellular Band (Part 22H)

Middle Channel, f <sub>c</sub> = 836.6 MHz					
Temperature	Voltage	Frequency Error	Frequency Error	Limit	
${\mathfrak C}$	$V_{DC}$	Hz	ppm	ppm	
-30	3.7	-12	-0.01	2.5	
-20	3.7	-7	-0.01	2.5	
-10	3.7	-8	-0.01	2.5	
0	3.7	-5	-0.01	2.5	
10	3.7	-2	0.00	2.5	
20	3.7	-3	0.00	2.5	
30	3.7	-1	0.00	2.5	
40	3.7	2	0.00	2.5	
50	3.7	3	0.00	2.5	
25	$V_{\text{end point}} = 3.5$	-15	-0.02	2.5	

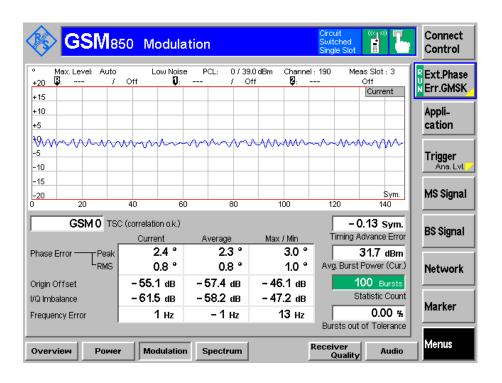
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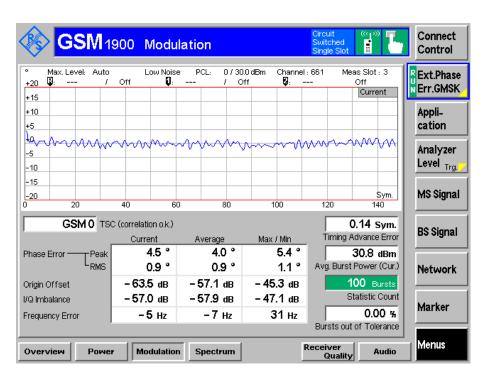
<sup>\*</sup> **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

# PCS Band (Part 24E)

Middle Channel, f <sub>c</sub> = 1880.0 MHz					
Temperature	Voltage	Frequency Error Error		Result	
င္	$V_{DC}$	Hz	ppm		
-30	3.7	-16	-0.01	Pass	
-20	3.7	-15	-0.01	Pass	
-10	3.7	-13	-0.01	Pass	
0	3.7	-10	-0.01	Pass	
10	3.7	-11	-0.01	Pass	
20	3.7	-9	0.00	Pass	
30	3.7	-7	0.00	Pass	
40	3.7	-8	0.00	Pass	
50	3.7	-9	0.00	Pass	
25	$V_{\text{end point}} = 3.5$	-20	-0.01	Pass	

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\*\*\*\*\* END OF REPORT \*\*\*\*\*

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