

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

For

Interglobe Connection Corp

8228 NW 30th Terrace, Doral, Florida, United States

FCC ID: 2AC7IEKOP180

Report Type: Original Report		Product Name: Mobile phone
Report Number:	RDG1707	10015-00C
Report Date:	2017-08-1	1995 S. 551 A
Reviewed By:	Jerry Zhan EMC Man	
Test Laboratory:	No.69 Pulo Tangxia, E Tel: +86-7 Fax: +86-7	Compliance Laboratories Corp. (Dongguan) ongcun, Puxinhu Industry Area, Dongguan, Guangdong, China 69-86858888 769-86858891 <u>corp.com.cn</u>

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.(Dongguan).

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Interglobe Connection Corp*'s product, model: *Pocket P180 (FCC ID: 2AC7IEKOP180)*, which was measured approximately:8.8 cm (H) x 4.4 cm (W) x 1.7 cm (H), rated input voltage: DC3.7V from battery or DC 5V from adapter.

Adapter Information: INPUT: AC 100-240V, 50/60Hz OUTPUT: DC 5.0V, 500mA

Note: The series product, model Pocket P180, EKO Pocket are electrically identical, the difference them is the model name, we selected Pocket P180 for fully testing, the details was explained in the declaration letter.

All measurement and test data in this report was gathered from production sample serial number: 170710015 (Assigned by BACL Dongguan). The EUT was received on 2017-06-23.

Objective

This report is prepared on behalf of *Interglobe Connection Corp* in accordance with: Part 2-Subpart J, Part 22-Subpart H, and Part 24-Subpart E of the Federal Communications Commission's 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 submissions with FCC ID: 2AC7IEKOP180 FCC Part 15C DSS submissions with FCC ID: 2AC7IEKOP180

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, Part 22 Subpart H, Part 24 Subpart E.

Applicable Standards: TIA/EIA 603-D-2010.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp.(Dongguan).

Measurement Uncertainty

Parameter	Measurement Uncertainty		
Occupied Channel Bandwidth	± 5 %		
RF output power, conducted	±0.61dB		
Unwanted Emissions, radiated	30MHz ~ GHz:5.85 dB 1G~26.5GHz: 5.23 dB		
Unwanted Emissions	±1.5 dB		
Temperature	± 1 °C		
Humidity	±5%		
DC and low frequency voltages	±0.4%		
Duty Cycle	1%		

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 Industry Area, Tangxia, Dongguan, Guangdong, China

Bay Area Compliance Laboratories Corp. (Dongguan) has been accredited to ISO 17025 by CNAS(Lab code: L5662). And accredited to ISO 17025 by NVLAP(Test Laboratory Accreditation Certificate Number 500069-0), the FCC Designation No. CN5002 under the KDB 974614 D01.

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.

Bay Area Compliance Laboratories Corp. (Dongguan) was registered with ISED Canada under ISED Canada Registration Number 3062D.

SYSTEM TEST CONFIGURATION

Justification

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

The test items were performed with the EUT operating at testing mode.

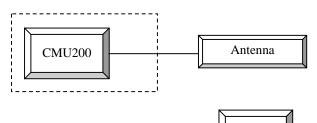
Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

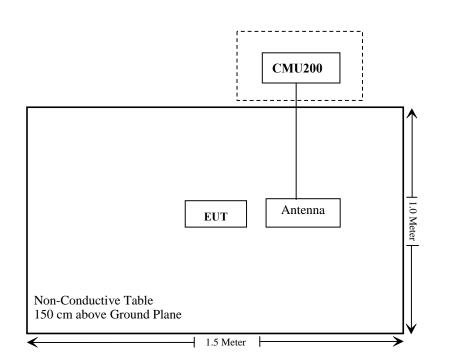
Manufacturer	Description	Model	Serial Number
R&S	Universial Radio Communication Tester	CMU200	109038

Configuration of Test Setup



EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310, §2.1093	RF Exposure	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

FCC §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: RDG170710015-20.

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 §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), 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.

According to §24.232 (d) Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Test Procedure

GSM/GPRS

Menu select > GSM Mobile Station > GSM 850/1900 Function: Press Connection control to choose the different menus Press RESET > choose all the reset all settings Connection Press Signal Off to turn off the signal and change settings Network Support > GSM + GPRS or GSM + EGSM Main Service > Packet Data Service selection > Test Mode A – Auto Slot Config. off Press Slot Config Bottom on the right twice to select and change the number of time slots MS Signal and power setting > Slot configuration > Uplink/Gamma > 33 dBm for GPRS 850 > 30 dBm for GPRS 1900 **BS** Signal Enter the same channel number for TCH channel (test channel) and BCCH channel Frequency Offset > +0 Hz Mode > BCCH and TCH BCCH Level > -85 dBm (May need to adjust if link is not stable) BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0 >	4 dB
Slot Config >	Unchanged (if already set under MS signal)
TCH >	choose desired test channel
Hopping >	Off
Main Timeslot >	3
Network	Coding Scheme > CS4 (GPRS)
Bit Stream >	2E9-1 PSR Bit Stream
AF/RF	Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection	Press Signal on to turn on the signal and change settings

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2016-09-01	2017-08-31
Sunol Sciences	Antenna	JB3	A060611-1	2014-11-06	2017-11-05
R&S	Spectrum Analyzer	FSU 26	200256	2016-12-08	2017-12-08
ETS LINDGREN	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-04
HP	Signal Generator	1026	320408	2016-12-08	2017-12-08
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2016-01-05	2019-01-04
Unknown	Coaxial Cable	Chamber10-1	0.75m	2016-09-01	2017-09-01
Unknown	Coaxial Cable	Chamber10-2	14m	2016-09-01	2017-09-01
Unknown	Coaxial Cable	Chamber B-2	8m	2016-09-01	2017-09-01
Unknown	Coaxial Cable	0.1m	C-1	Each Time	/
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2017-05-06	2018-05-06
R&S	Universal Radio Communication Tester	CMU200	109 038	2017-07-18	2018-07-18

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25.4 °C
Relative Humidity:	53 %
ATM Pressure:	99.6 kPa

The testing was performed by Steve Zuo on 2017-08-03.

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Conducted Output Power

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

	Channel	Conducted Peak Output Power (dBm)						
Band	No.	GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot		
	128	32.60	32.78	30.92	28.91	26.51		
Cellular	190	32.60	32.83	30.96	28.96	26.59		
	251	32.60	32.94	31.11	29.01	26.69		
	512	29.8	30.26	28.57	26.41	24.22		
PCS	661	30	30.31	28.16	26.24	24.03		
	810	30	30.79	28.14	26.23	24.32		

Peak-to-average ratio (PAR)<13dB

ERP & EIRP

Part 22H								
		Dession	Substituted Method					
Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			GSM 8	50_Middle C	hannel			
824.200	Н	106.77	31.7	0.0	1	30.7	38.5	7.8
824.200	V	105.08	33.2	0.0	1	32.2	38.5	6.3

Part 24E

		Dession	Su	bstituted Met	thod	Abaalata		
Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			PCS 19	00_Middle C	hannel			
1880.000	Н	90.48	17.9	11.7	2.7	26.9	33.0	6.1
1880.000	V	88.62	16.2	11.7	2.7	25.2	33.0	7.8

Note:

1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.

2) Absolute Level = Substituted Level - Cable loss + Antenna Gain

3) Margin = Limit-Absolute Level

FCC §2.1049, §22.917, §22.905 & §24.238 - OCCUPIED BANDWIDTH

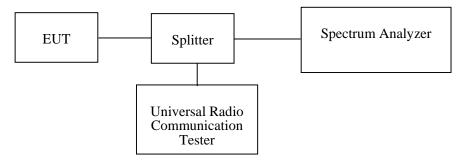
Applicable Standard

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

Test Procedure

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

The 26 dB & 99% bandwidth was recorded.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	831259/019	2016-07-18	2017-07-18
R&S	Universal Radio Communication Tester	CMU200	109 038	2016-07-18	2017-07-18
Unknown	Coaxial Cable	0.1m	C-1	Each Time	/
Pasternack	RF Coaxial Cable	0.5m	C-6	Each Time	/
E-Microwave	Two-way Spliter	ODP-1-6-2S	OE0120142	Each Time	/

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

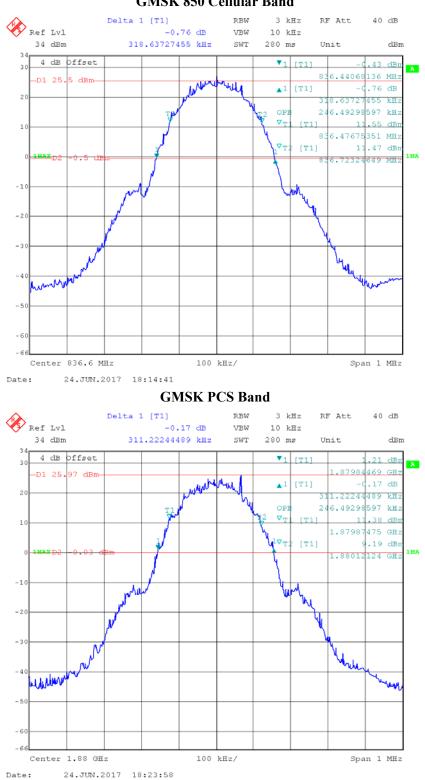
Temperature:	27.7 °C	
Relative Humidity:	59 %	
ATM Pressure:	99.8 kPa	

The testing was performed by Harry Yang on 2017-06-24.

Test Mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots.

Band	Test Channel	Mode	99% Occupied Bandwidth (MHz)	26 dB Occupied Bandwidth (MHz)
Cellular	м	GSM	0.246	0.319
PCS	М	PCS	0.246	0.311



GMSK 850 Cellular Band

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

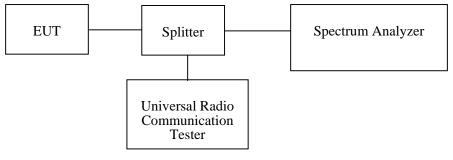
Applicable Standard

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. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	831259/019	2017-07-18	2018-07-18
R&S	Universal Radio Communication Tester	CMU200	109 038	2017-07-18	2018-07-18
Unknown	Coaxial Cable	0.1m	C-1	Each Time	/
Pasternack	RF Coaxial Cable	0.5m	C-6	Each Time	/
E-Microwave	Two-way Spliter	ODP-1-6-2S	OE0120142	Each Time	/

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

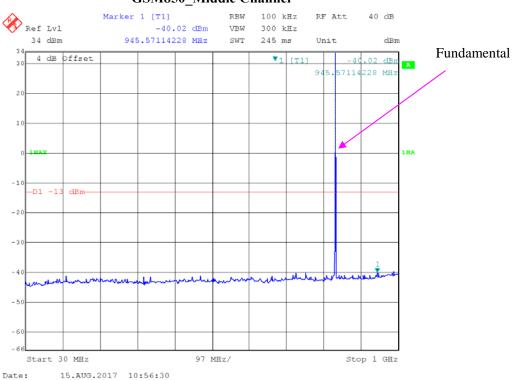
Test Data

Environmental Conditions

Temperature:	27.7 °C	
Relative Humidity:	59 %	
ATM Pressure:	100.3 kPa	

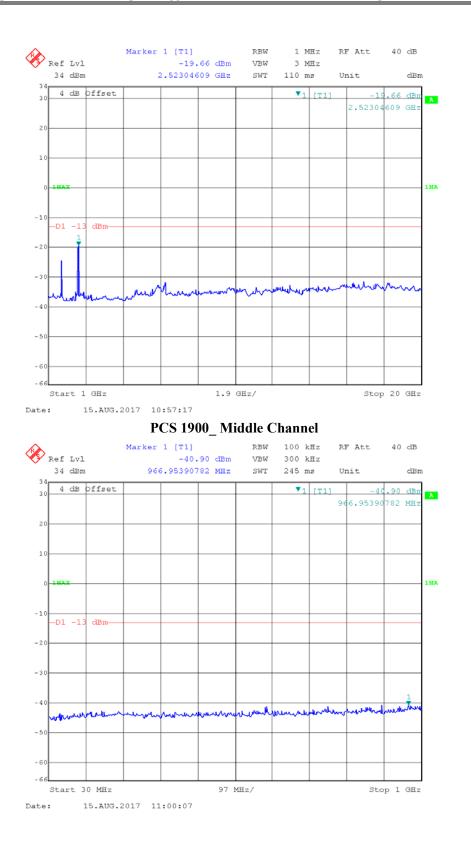
The testing was performed by Harry Yang on 2017-08-15.

Please refer to the following plots.



GSM850_Middle Channel

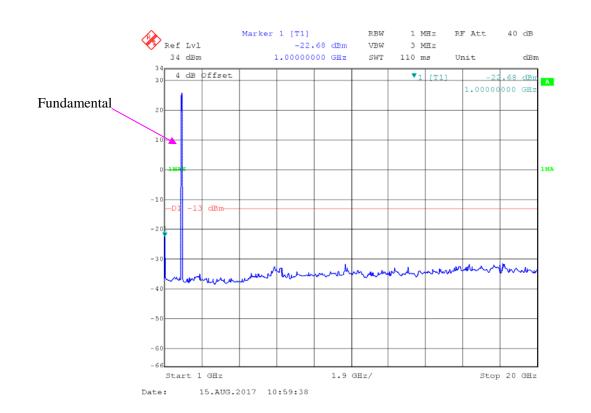
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FCC §2.1053, §22.917 & §24.238 - SPURIOUS RADIATED EMISSIONS

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)

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2016-09-01	2017-08-31
Sunol Sciences	Antenna	JB3	A060611-1	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2016-09-01	2017-09-01
R&S	Spectrum Analyzer	FSU 26	200256	2016-12-08	2017-12-08
ETS LINDGREN	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-04
Mini-Circuit	Amplifier	ZVA-213-S+	SN054201245	2017-02-19	2018-02-19
HP	Signal Generator	1026	320408	2016-12-08	2017-12-08
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2016-01-05	2019-01-04
Unknown	Coaxial Cable	Chamber B-1	14m	2016-09-01	2017-09-01
Unknown	Coaxial Cable	Chamber B-2	8m	2016-09-01	2017-09-01
Unknown	Coaxial Cable	Chamber10-1	0.75m	2016-09-01	2017-09-01
Unknown	Coaxial Cable	Chamber10-2	14m	2016-09-01	2017-09-01

Test Equipment List and Details

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	26.1 °C
Relative Humidity:	54 %
ATM Pressure:	99.8 kPa

The testing was performed by Steven Zuo on 2017-07-27.

EUT Operation Mode: Transmitting

30 MHz-10 GHz:

Cellular Band (PART 22H)

		D	Su	bstituted Met	hod		Limit (dBm)	Margin (dB)
Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)		
			GSM850, Fre	equency:836.6	00 MHz			
1673.200	Н	59.28	-54.9	10.6	0.7	-45.0	-13.0	32.0
1673.200	V	60.37	-54.4	10.6	0.7	-44.5	-13.0	31.5
2509.800	Н	70.77	-42.2	13.1	1.2	-30.3	-13.0	17.3
2509.800	V	68.86	-44.2	13.1	1.2	-32.3	-13.0	19.3
3346.400	Н	62.99	-47.7	13.8	1.6	-35.5	-13.0	22.5
3346.400	V	52.36	-58.3	13.8	1.6	-46.1	-13.0	33.1
569.320	Н	58.68	-39.2	0.0	0.7	-39.9	-13.0	26.9
305.480	V	61.80	-43.9	0.0	0.5	-44.4	-13.0	31.4

PCS Band (PART 24E)

30 MHz-20 GHz:

		Receiver	Su	bstituted Met	hod	Absoluto		
Frequency (MHz)	Polar (H/V)	Reading (dBµV)	Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			GSM1900, Fre	quency:1880.0	000 MHz			
3760.000	Н	59.24	-49.6	13.8	1.6	-37.4	-13.0	24.4
3760.000	V	61.49	-47.2	13.8	1.6	-35.0	-13.0	22.0
5640.000	Н	56.33	-49.7	14.0	1.3	-37.0	-13.0	24.0
5640.000	V	61.85	-44.1	14.0	1.3	-31.4	-13.0	18.4
736.160	Н	59.34	-36.2	0.0	0.9	-37.1	-13.0	24.1
555.740	V	64.60	-36.7	0.0	0.7	-37.4	-13.0	24.4

Note:

1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.

2) Absolute Level = Substituted Level - Cable loss + Antenna Gain

3) Margin = Limit-Absolute Level

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

Applicable Standard

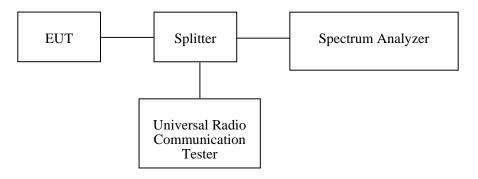
According to 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$.

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.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSEM	831259/019	2016-07-18	2017-07-18
R&S	Universal Radio Communication Tester	CMU200	109 038	2016-07-18	2017-07-18
Unknown	Coaxial Cable	0.1m	C-1	Each Time	/
Pasternack	RF Coaxial Cable	0.5m	C-6	Each Time	/
E-Microwave	Two-way Spliter	ODP-1-6-2S	OE0120142	Each Time	/

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

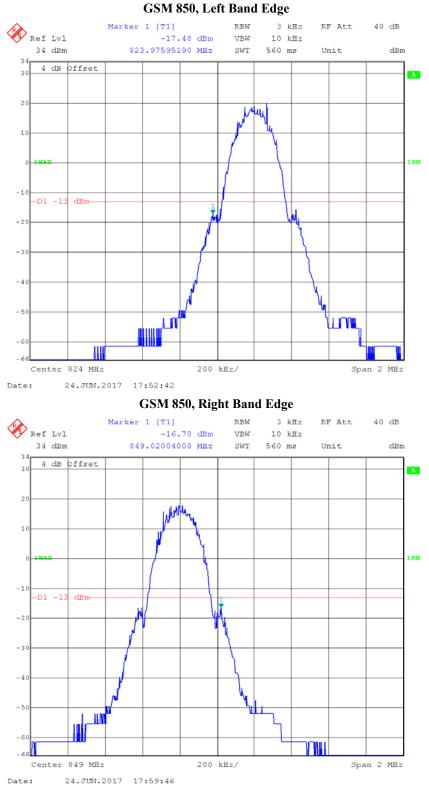
Temperature:	27.7 °C	
Relative Humidity:	59 %	
ATM Pressure:	99.8 kPa	

The testing was performed by Harry Yang on 2017-06-24.

Test Mode: Transmitting

Test Result: Compliant. Please refer to the following plots.

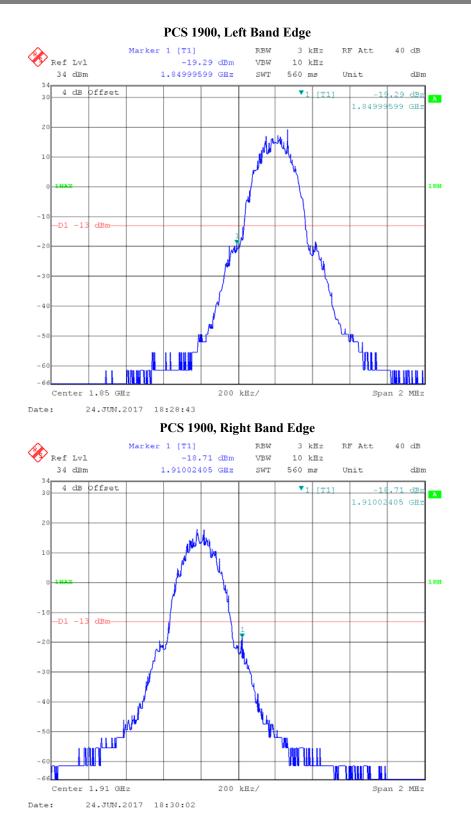
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FCC §2.1055, §22.355 & §24.235 - FREQUENCY STABILITY

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:

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

Frequency Tolerance for Transmitters in the Public Mobile Services

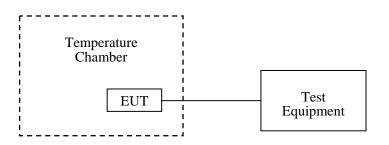
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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 from 85% 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.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Dongzhixu	High Temperature Test Chamber	DP1000	201105083-4	2016-09-10	2017-09-09
R&S	Universal Radio Communication Tester	CMU200	109 038	2017-07-18	2018-07-18
UNI-T	Multimeter	UT39A	M130199938	2017-04-02	2018-04-02
Unknown	Coaxial Cable	0.1m	C-1	Each Time	/

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25.4 °C		
Relative Humidity:	53 %		
ATM Pressure:	99.6 kPa		

The testing was performed by Harry Yang on 2017-08-03.

Cellular Band (Part 22H)

GMSK, Middle Channel, f _c = 836.6 MHz					
Temperature	Voltage	Frequency Error	Frequency Error	Limit	
C	V _{DC}	Hz	ppm	ppm	
-30		-5	-0.006		
-20		-7	-0.008		
-10		-4	-0.005		
0		-5	-0.006		
10	3.7	-8	-0.010		
20		-4	-0.005	2.5	
30		-3	-0.004		
40		-6	-0.007		
50		-8	-0.010		
25	3.5	-2	-0.002		
25	4.2	-7	-0.008		

PCS Band (Part 24E)

GMSK, Middle Channel, f _c = 1880.0 MHz						
Temperature	Voltage	Frequency Error	Frequency Error	Result		
Ĉ	V _{DC}	Hz	ppm			
-30		-13	-0.007			
-20		-15	-0.008			
-10		-14	-0.007			
0		-17	-0.009			
10	3.7	-12	-0.006			
20		-15	-0.008	Compliance		
30		-9	-0.005			
40		-10	-0.005			
50		-12	-0.006			
25	3.5	-11	-0.006			
25	4.2	-11	-0.006			

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