FCC PART 22H, PART 24E

TEST REPORT

For

Queclink Wireless Solutions Co.,Ltd.

Room 501, Building 9, No 99, TianZhou Road, shanghai, china

FCC ID: YQD-GD100

Report Type:	**Product Type:**
Original Report	GD100

Test Engineer:	Matt Yao
Report Number:	RKS160421001-00D
Report Date:	2016-05-11
Reviewed By:	Jesse Huang EMC Manager
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) Chenghu Road,Kunshan Development Zone No.248,Kunshan, Jiangsu, China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Queclink Wireless Solutions Co.,Ltd. Room 501, Building 9, No 99, TianZhou Road, shanghai, china
Manufacturer	N/A
Product	GD100
Model	GD100
Model Discrepancy	N/A
Trade Name	N/A
Power Supply	9V
Frequency Range	TX GSM850: 824-849 MHz RX GSM850: 869-894 MHz TX GSM1900: 1850~1910 MHz RX GSM1900: 1930~1990 MHz
Type of Emission	GSM850: 243KGXW--- GSM1900: 246KGXW--
Antenna Gain	GSM850:-2.99dBi GSM1900:-1.66dBi GPS:1.7dBi
Antenna Type	GSM: Steel sheet GPS: Ceramics
Date of Test:	APR. 27, 2016~MAY. 10, 2016

**All measurement and test data in this report was gathered from production sample serial number: 160418002 (Assigned by BACL, Kunshan). The EUT supplied by the applicant was received on 2016-04-18.*

Objective

This test report is prepared on behalf of Queclink Wireless Solutions Co.,Ltd. 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 the compliance of the EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability and band edge.

Related Submittal(s)/Grant(s)

Part 15B JBP submissions with FCC ID: YQD-GD100.

Test Methodology

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

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services

Applicable Standards: TIA/EIA 603-D, ANSI C63.4-2014.

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.

Measurement uncertainty with radiated emission is 5.81 dB for 30MHz-1GHz.and 4.88 dB for above 1GHz, 1.95dB for conducted measurement.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

The final qualification test was performed with the EUT operating at normal mode.

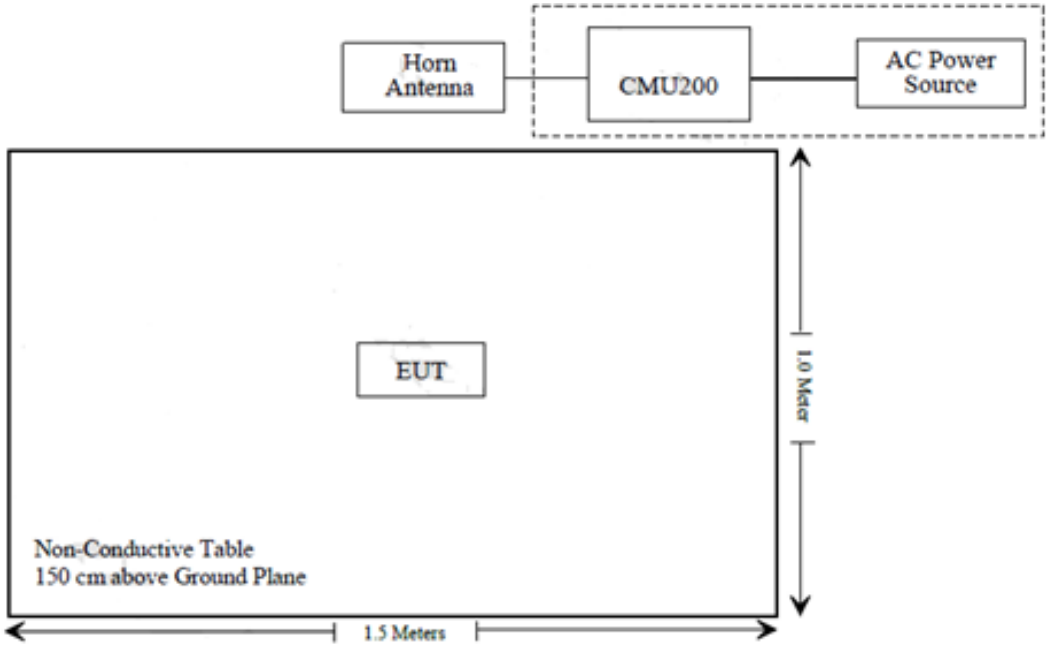
Equipment Modifications

No modification was made to the EUT tested.

External I/O Cable

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§1.1307, §2.1091	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	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	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 §1.1307& §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart § 2.1051and subpart §1.1310, systems operating under the provisions of this section
shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in
excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm2)**	**Averaging Time (minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:
Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain
factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Mode	Antenna Gain		Target Power		Evaluation Distance (cm)	Power Density (mW/cm2)	MPE Limit (mW/cm2)
	(dBi)	(numeric)	(dBm)	(mW)			
GSM850	-2.99	0.502	33	2000	20	0.200	0.56
GSM1900	-1.66	0.682	29.5	891.25	20	0.121	1.0

Note ： Target Power =the max power from Tune-up Procedure

GSM850= 32±1 dBm;GSM1900=28.5±1 dBm

Result: The device meet FCC MPE at 20 cm distance

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.

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

Applicable Standard

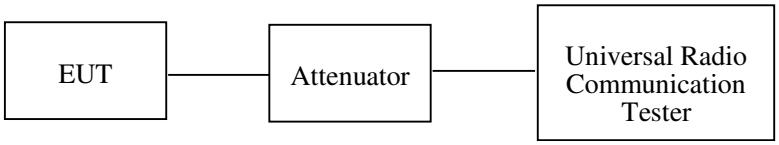
According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

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.

Test Procedure

Conducted method:

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



Radiated method:

TIA 603-D section 2.2.17

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2015-11-12	2016-11-11
Sonoma Instrunent	Amplifier	330	171377	2015-09-16	2016-09-16
Agilent	Signal Generator	8648C	3537A01810	2015-06-19	2016-06-18
ETS	Horn Antenna	3115	6229	2015-11-07	2016-11-06
ETS	Horn Antenna	3115	6431	2015-11-07	2016-11-06
Mini	Pre-amplifier	ZVA-183-S+	857001418	2015-11-12	2016-11-11
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2015-11-12	2016-11-11
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	828590	2015-11-12	2016-11-11
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2015-11-07	2016-11-06
Sunol Sciences	Broadband Antenna	JB3	A090421-2	2015-11-07	2016-11-06
MCH	Regulated DC Power Supply	MCH-303D-II	14070562	2015-12-03	2016-12-03
BACL	RF cable	KS-LAB-012	KS-LAB-012	2015-12-16	2016-12-15
BACL	RF cable	KS-LAB-010	KS-LAB-010	2015-12-16	2016-12-15

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

Test Data

Environmental Conditions

Temperature:	22 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2016-04-28.

Conducted Power

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	128	824.2	31.90	38.45
	190	836.6	31.94	38.45
	251	848.8	31.50	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	31.30	30.84	29.15	27.84	38.45
	190	836.6	31.17	30.70	29.03	27.74	38.45
	251	848.8	31.10	30.74	29.12	27.74	38.45

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	512	1850.2	28.45	33
	661	1880.0	28.44	33
	810	1909.8	28.05	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.09	28.60	27.05	25.88	33
	661	1880.0	28.97	28.41	26.75	25.47	33
	810	1909.8	29.09	28.47	26.62	25.26	33

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	0.23	13
	Middle	0.31	13
	High	0.33	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	0.25	13
	Middle	0.33	13
	High	0.37	13

Radiated Power

GSM Mode:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E	
			Height (m)	Polar (H/V)	S.G. Level (dBm)	Cable loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
ERP for Cellular Band (Part 22H), Middle Channel										
836.6	97.07	233	1.9	H	29.73	0.3	0.0	29.43	38.45	9.02
836.6	95.58	155	2.3	V	28.23	0.3	0.0	27.93	38.45	10.52
EIRP for PCS Band (Part 24E), Middle Channel										
1880.00	91.55	52	1.5	H	22.9	1.40	7.30	28.80	33	4.2
1880.00	90.19	220	2.2	V	21	1.40	7.30	26.90	33	6.1

Note:

All above data were tested with no amplifier.

Absolute Level = SG Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

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

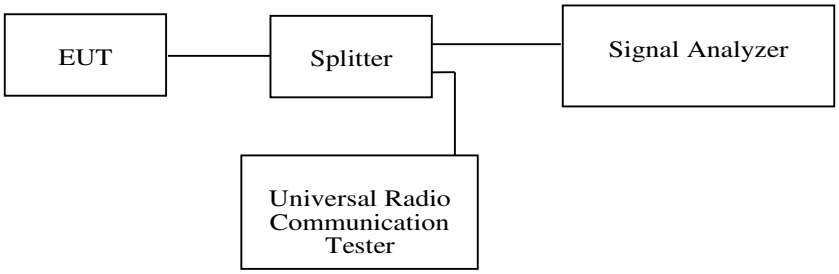
Applicable Standard

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 5 kHz (GSM) & 100 kHz (WCDMA) 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	FSV40	101116	2015-09-02	2016-09-02
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	828590	2015-11-12	2016-11-11
Mini	Splitter	ZFRSC-14-S+	SF019411452	2016-01-11	2016-07-10
BACL	RF cable	KS-LAB-020	KS-LAB-020	2016-01-11	2016-07-10

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

Test Data

Environmental Conditions

Temperature:	22 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2016-05-03.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following tables and plots.

Cellular Band (Part 22H)

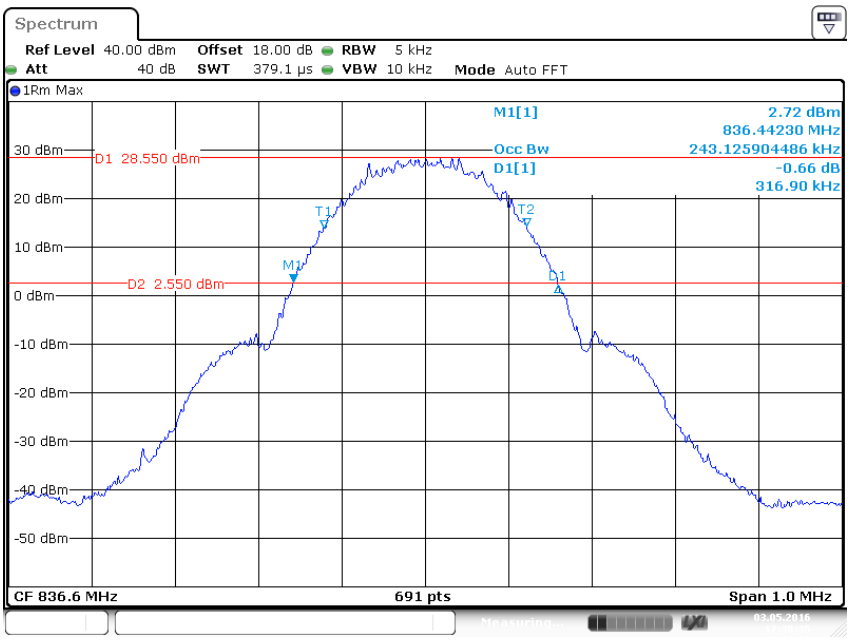
Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	836.6	243.13	316.90

PCS Band (Part 24E)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	1880.0	246.02	316.90

Cellular Band (Part 22H)

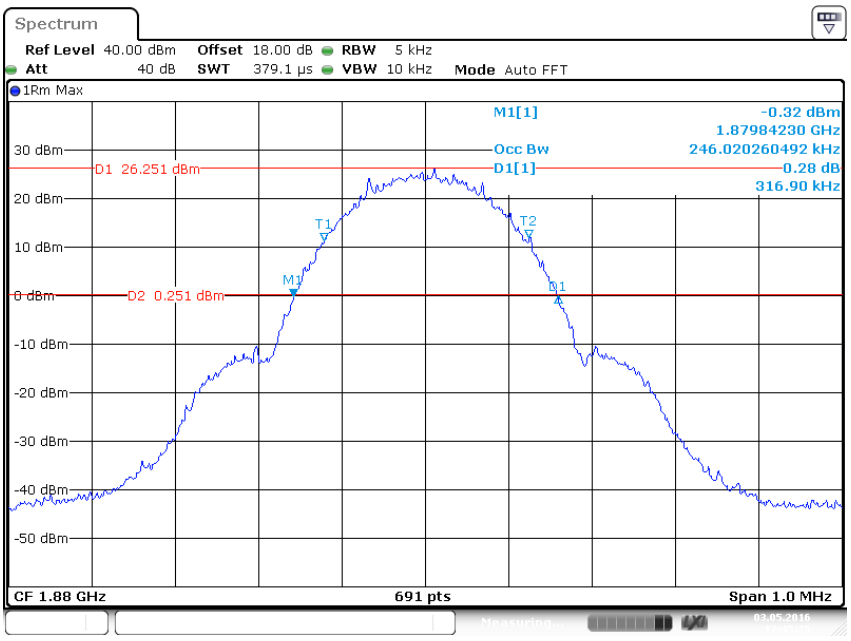
99% Occupied Bandwidth & 26 dB Emissions Bandwidth for GSM (GMSK) Mode



Date: 3.MAY.2016 17:38:35

PCS Band (Part 24E)

99% Occupied Bandwidth & 26 dB Emissions Bandwidth for GSM (GMSK) Mode



Date: 3.MAY.2016 17:45:26

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

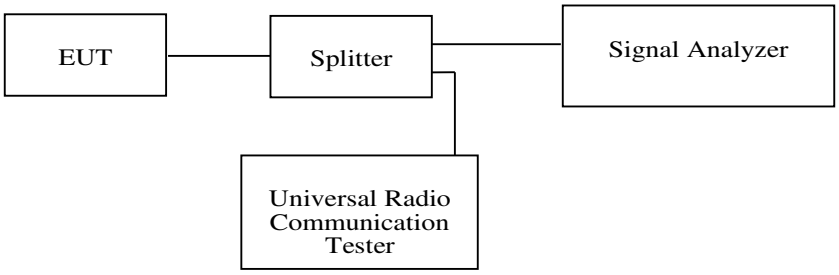
Applicable Standard

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. The resolution bandwidth of the spectrum analyzer was set at 1MHz. 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
Rohde & Schwarz	SIGNAL ANALYZER	FSV40	101116	2015-09-02	2016-09-02
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	828590	2015-11-12	2016-11-11
Mini	Splitter	ZFRSC-14-S+	SF019411452	2016-01-11	2016-07-10
BACL	RF cable	KS-LAB-020	KS-LAB-020	2016-01-11	2016-07-10

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

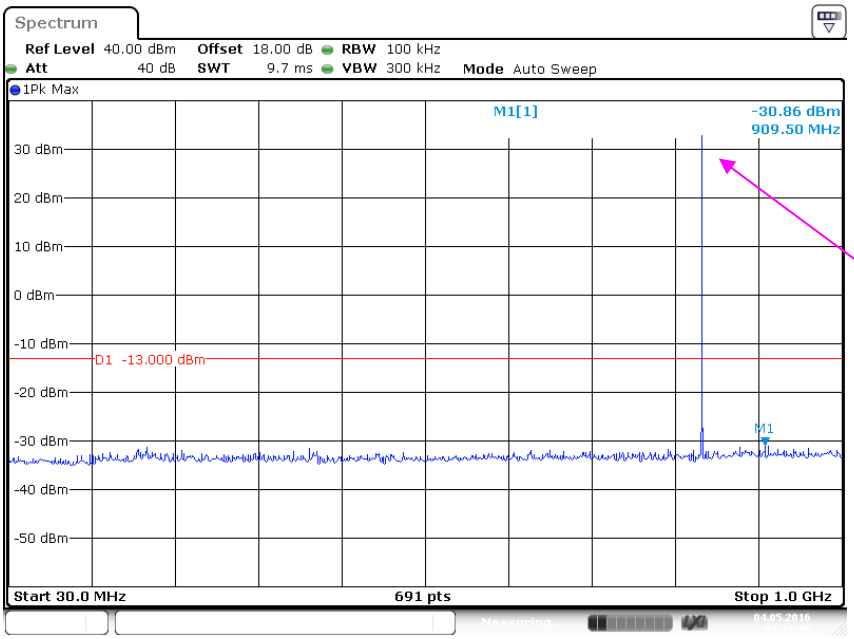
Test Data
Environmental Conditions

Temperature:	22 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2016-05-04.

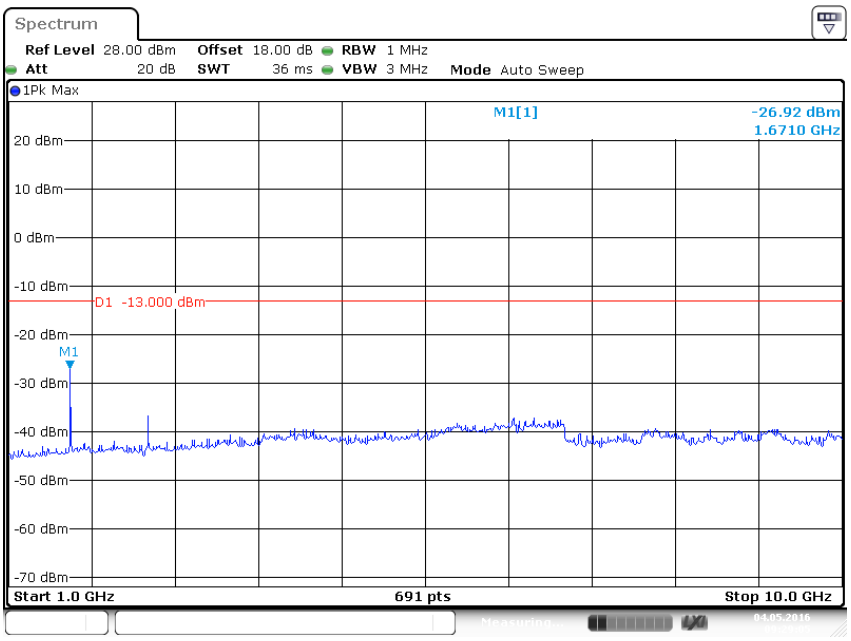
Cellular Band (Part 22H)

30 MHz – 1 GHz



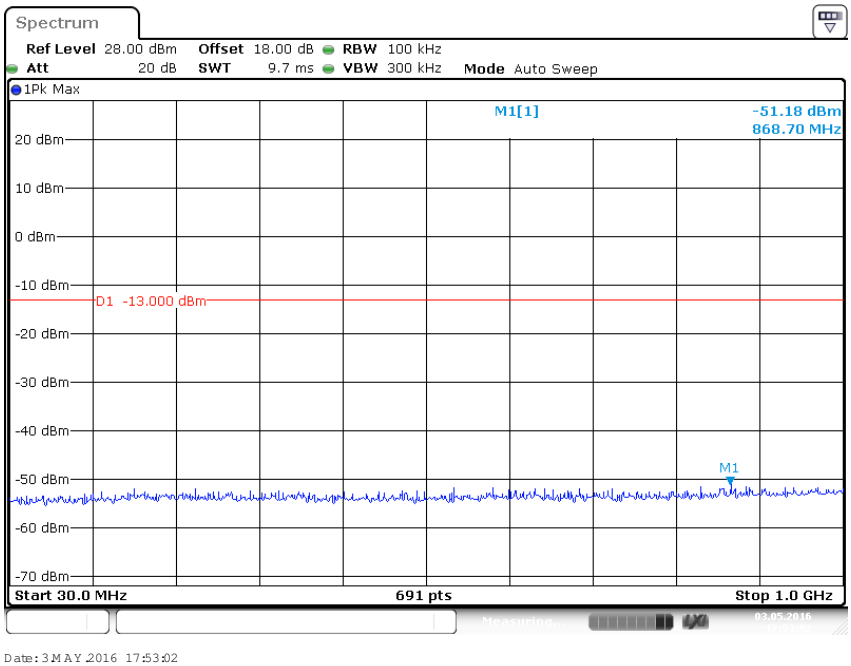
Fundamental

1 GHz – 10 GHz (GSM Mode)

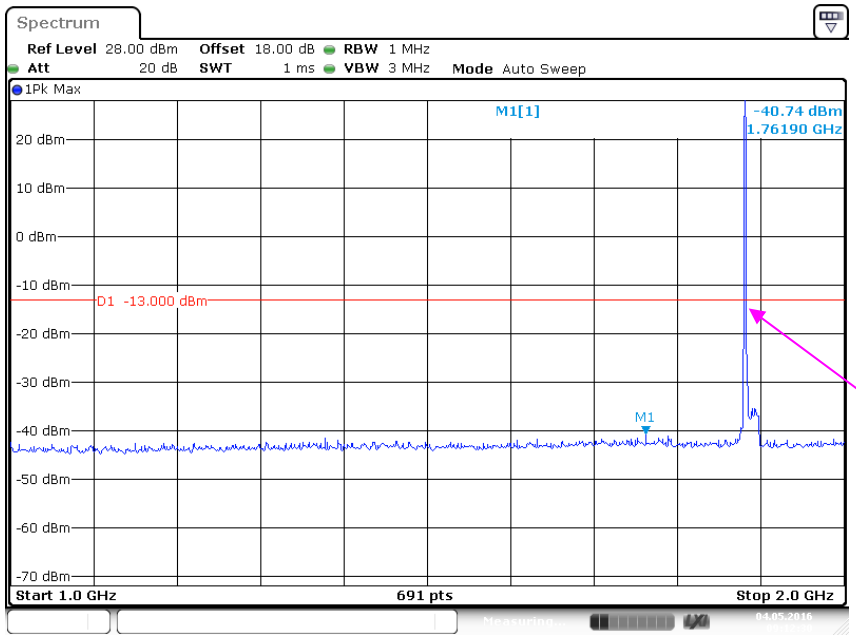


PCS Band (Part 24E)

30 MHz – 1 GHz (GSM Mode)

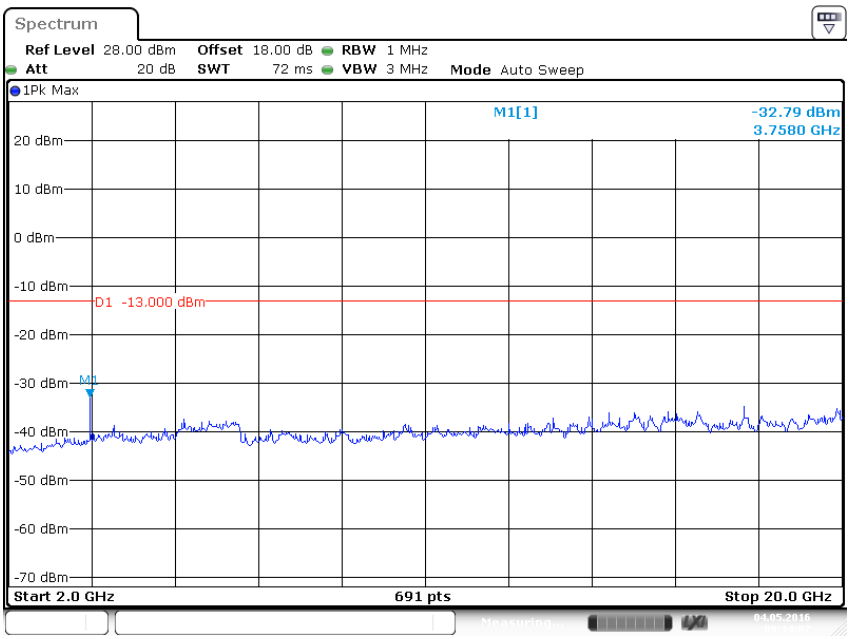


1 GHz – 2 GHz (GSM Mode)



Date: 4.MAY.2016 09:12:31

2 GHz – 20 GHz (GSM Mode)



Date: 4.MAY.2016 09:14:08

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

Applicable Standard

FCC §2.1051, §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 receiving 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 Log10 (power out in Watts)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2015-11-12	2016-11-11
Sonoma Instrunent	Amplifier	330	171377	2015-09-16	2016-09-16
Agilent	Signal Generator	8648C	3537A01810	2015-06-19	2016-06-18
ETS	Horn Antenna	3115	6229	2015-11-07	2016-11-06
ETS	Horn Antenna	3115	6431	2015-11-07	2016-11-06
Mini	Pre-amplifier	ZVA-183-S+	857001418	2015-11-12	2016-11-11
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2015-11-12	2016-11-11
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	828590	2015-11-12	2016-11-11
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2015-11-07	2016-11-06
Sunol Sciences	Broadband Antenna	JB3	A090421-2	2015-11-07	2016-11-06
MCH	Regulated DC Power Supply	MCH-303D-II	14070562	2015-12-03	2016-12-03
BACL	RF cable	KS-LAB-012	KS-LAB-012	2015-12-16	2016-12-15
BACL	RF cable	KS-LAB-010	KS-LAB-010	2015-12-16	2016-12-15

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

Test Data

Environmental Conditions

Temperature:	22 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2016-05-05.

EUT operation mode: Transmitting

Pre-scan with Low,Middle,High channel,and the worst case as below:

GSM Mode

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
GSM 850, Middle channel										
184.90	38.61	150	1.4	H	-58.49	0.28	0	-58.77	-13	45.77
184.90	40.84	224	1.3	V	-56.26	0.28	0	-56.54	-13	43.54
1673.20	57.38	6	2.3	H	-43.15	1.60	6.90	-37.85	-13	24.85
1673.20	61.51	200	1.3	V	-39.02	1.60	6.90	-33.72	-13	20.72
2509.80	64.81	47	1.8	H	-37.32	1.70	8.60	-30.42	-13	17.42
2509.80	63.86	262	1.3	V	-38.27	1.70	8.60	-31.37	-13	18.37
3346.40	44.68	100	2.3	H	-58.45	1.90	9.80	-50.55	-13	37.55
3346.40	42.65	319	2.2	V	-60.48	1.90	9.80	-52.58	-13	39.58
PCS 1900, Middle channel										
184.90	38.04	23	2.4	H	-59.06	0.28	0	-59.34	-13	46.34
184.90	38.51	66	2.0	V	-58.59	0.28	0	-58.87	-13	45.87
3760.00	54.11	289	1.3	H	-49.12	1.90	9.90	-41.12	-13	28.12
3760.00	59.01	119	1.4	V	-44.22	1.90	9.90	-36.22	-13	23.22

Note:

1) Absolute Level = SG Level - Cable loss + Antenna Gain

2) Margin = Limit- Absolute Level

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

Applicable Standard

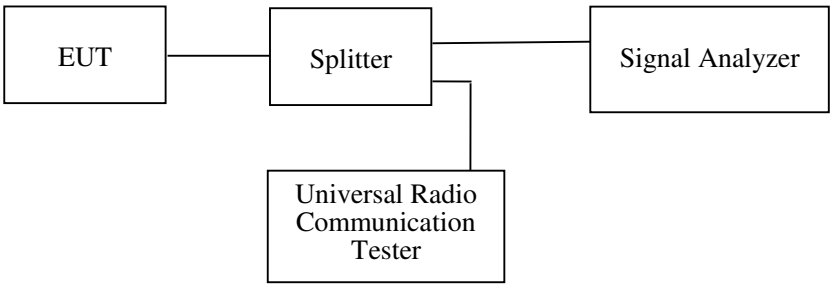
According to § 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

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
Rohde & Schwarz	SIGNAL ANALYZER	FSV40	101116	2015-09-02	2016-09-02
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	828590	2015-11-12	2016-11-11
Mini	Splitter	ZFRSC-14-S+	SF019411452	2016-01-11	2016-07-10
BACL	RF cable	KS-LAB-020	KS-LAB-020	2016-01-11	2016-07-10

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

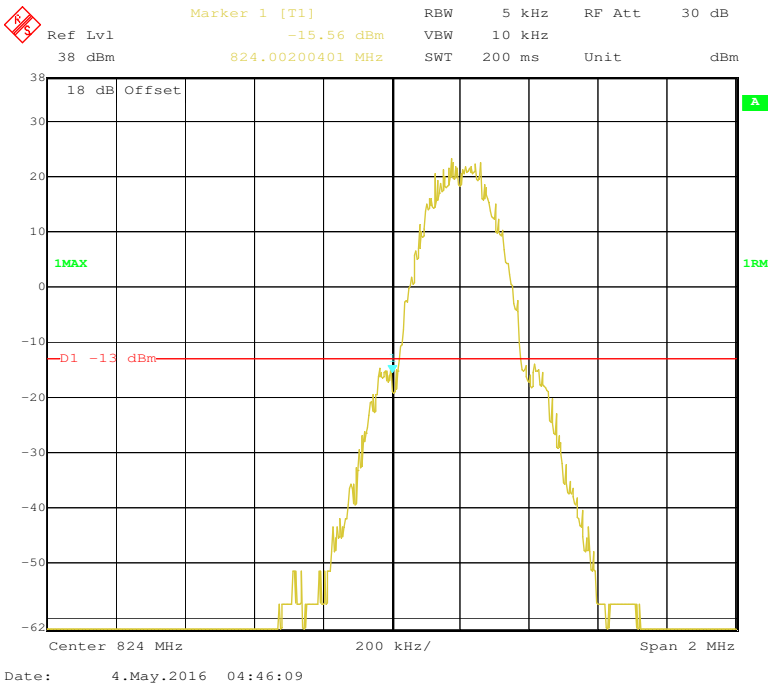
Test Data

Environmental Conditions

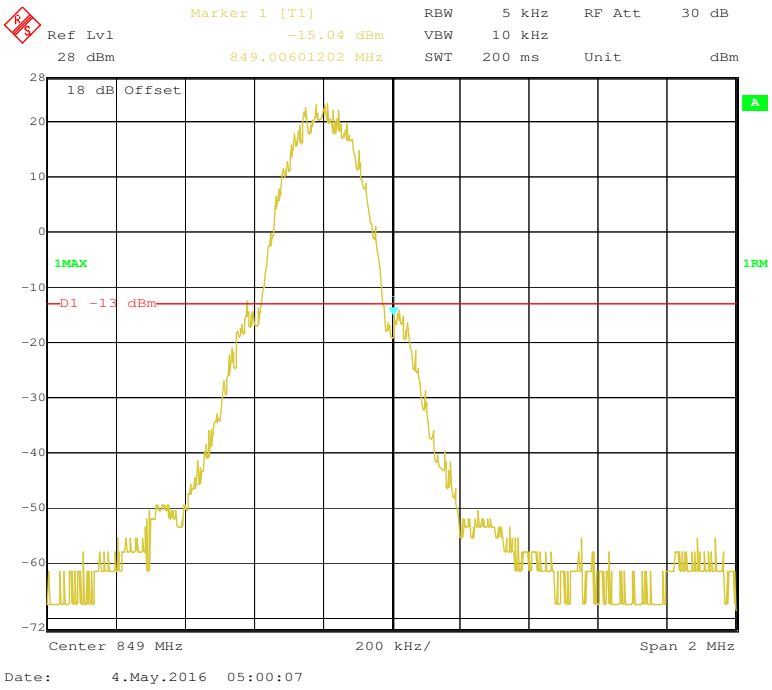
Temperature:	22 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2016-05-4.

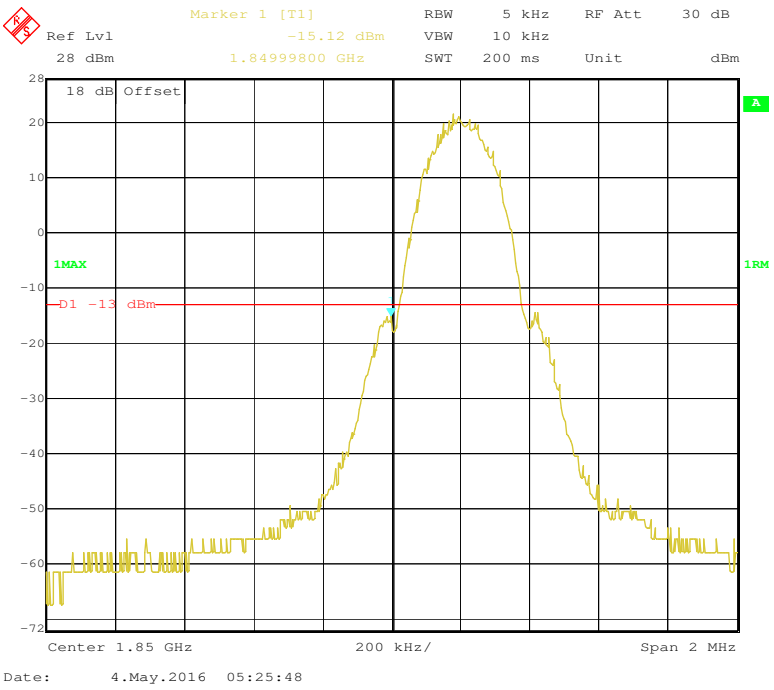
Cellular Band, Left Band Edge for GSM (GMSK) Mode



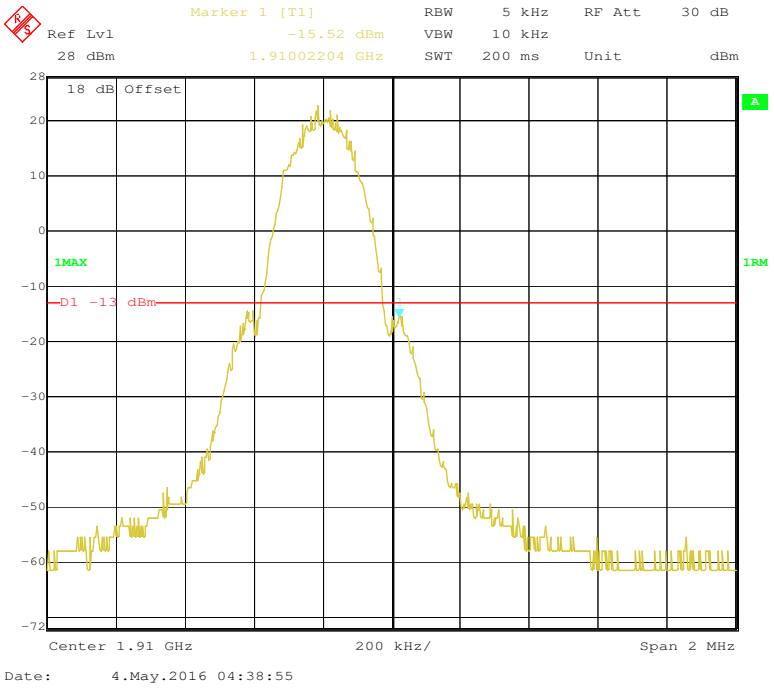
Cellular Band, Right Band Edge for GSM (GMSK) Mode



PCS Band, Left Band Edge for GSM (GMSK) Mode



PCS Band, Right Band Edge for GSM (GMSK) Mode



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

Applicable Standard

FCC§ 2.1055, §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 Tolerance for Transmitters in the Public Mobile Services

FrequencyRange (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

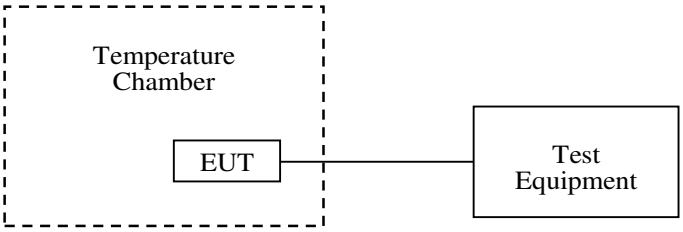
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
BACL	Temperature Chamber	BTH-150	30023	/	/
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	828590	2015-11-12	2016-11-11
Mini	Splitter	ZFRSC-14-S+	SF019411452	2016-01-11	2016-07-10
BACL	RF cable	KS-LAB-020	KS-LAB-020	2016-01-11	2016-07-10

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

Test Data

Environmental Conditions

Temperature:	22 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Matt Yao on 2016-05-10.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following tables.

Cellular Band (Part 22H)

GSM Mode

Middle Channel, f_o=836.6MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	9	-11	-0.01315	2.5
-20		-10	-0.01195	2.5
-10		-11	-0.01315	2.5
0		-10	-0.01195	2.5
10		-10	-0.01195	2.5
20		-12	-0.01434	2.5
30		-12	-0.01434	2.5
40		-18	-0.02152	2.5
50		-18	-0.02152	2.5
25	V min.= 8.1	-15	-0.01793	2.5
25	V max.= 9.9	-18	-0.02152	2.5

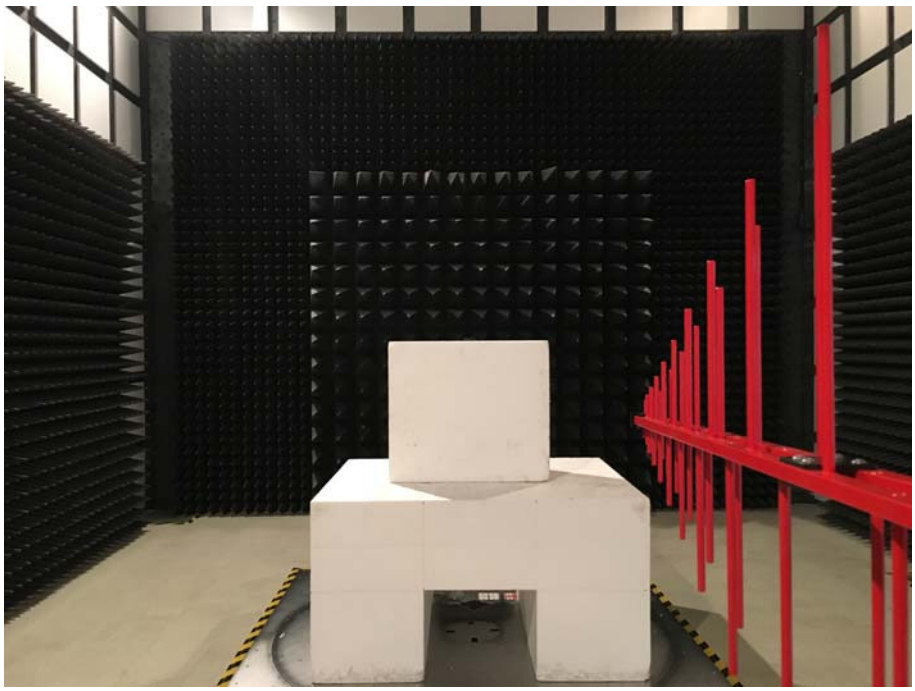
PCS Band (Part 24E)

GSM Mode

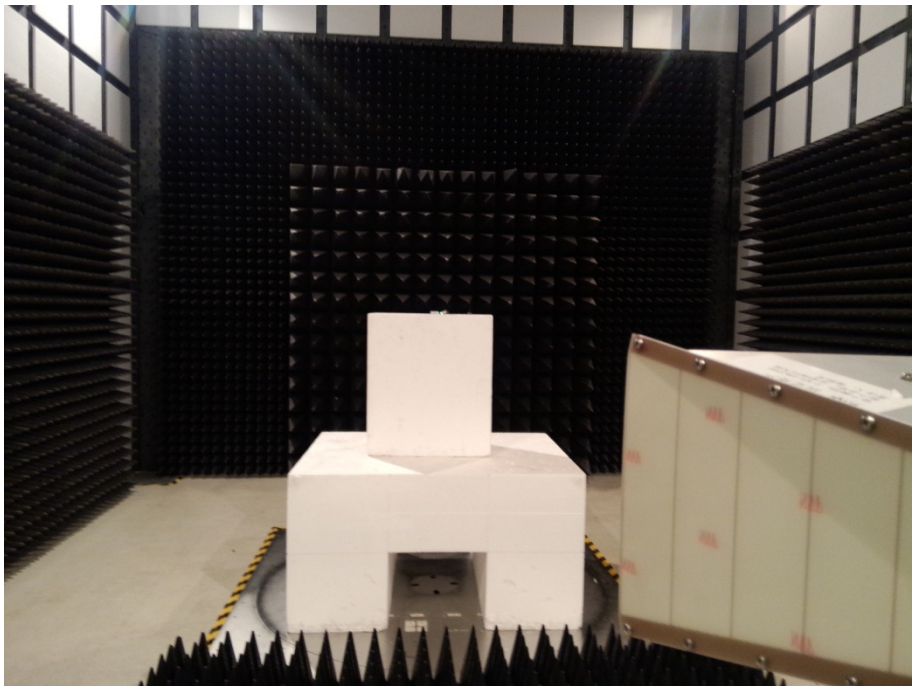
Middle Channel, f_o =1880.0MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	9	-28	-0.01489	Pass
-20		-28	-0.01489	Pass
-10		-26	-0.01383	Pass
0		-24	-0.01277	Pass
10		-28	-0.01489	Pass
20		-29	-0.01543	Pass
30		-26	-0.01383	Pass
40		-30	-0.01596	Pass
50		-30	-0.01596	Pass
25	V min.= 8.1	-31	-0.01649	Pass
25	V max.= 9.9	-28	-0.01489	pass

Exhibit A -EUT Setup Photographs

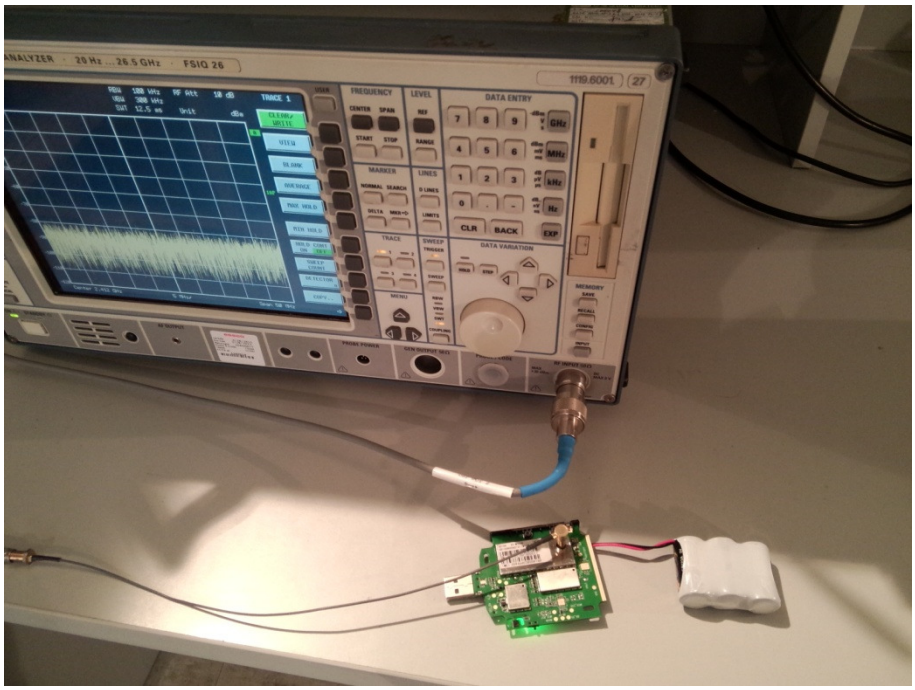
RAD Front View (Below 1 GHz)



RAD Front View(Above 1GHz)



Conducted View

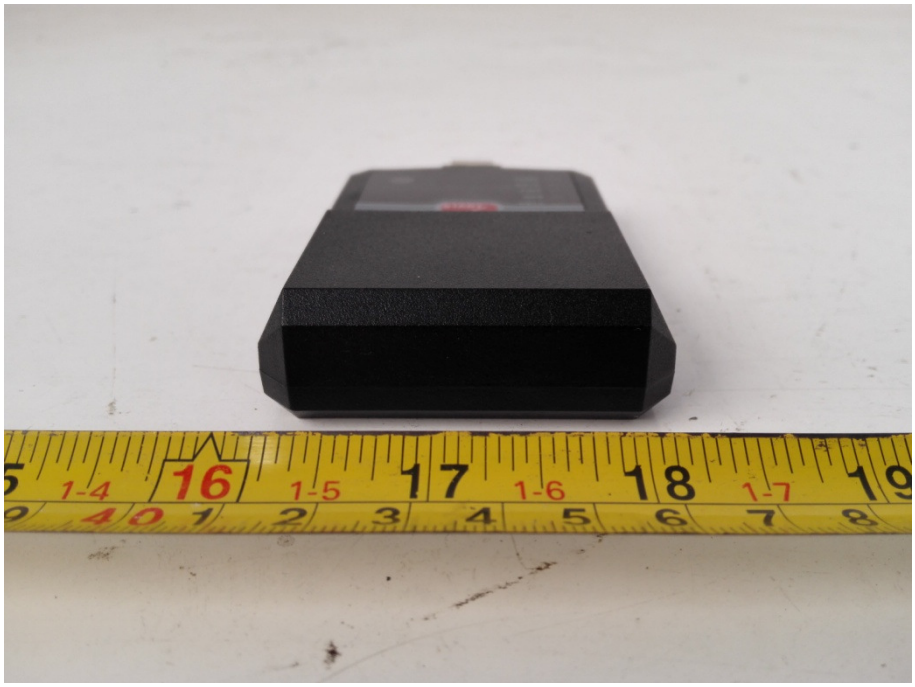


Appendix–EUT Photographs

EUT – Front View

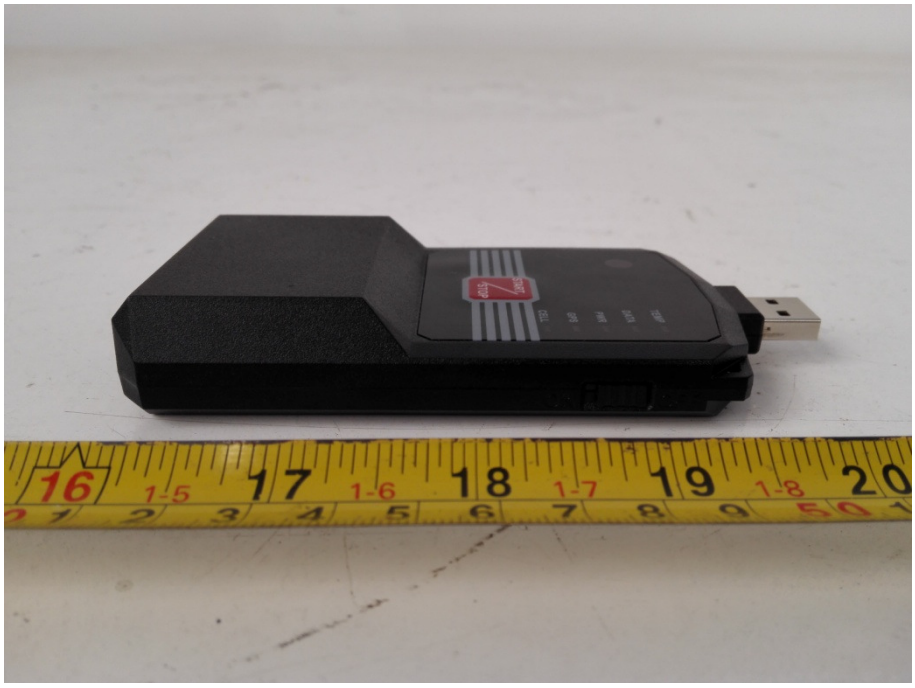
EUT – Rear View

EUT – Top View

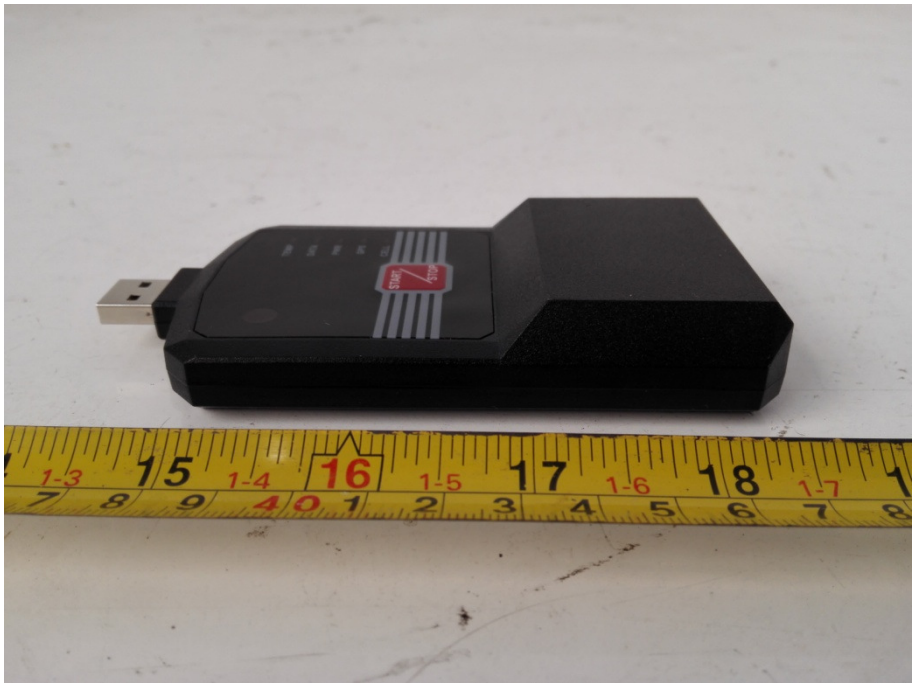


EUT – Bottom View

EUT –Left Side View



EUT – Right Side View

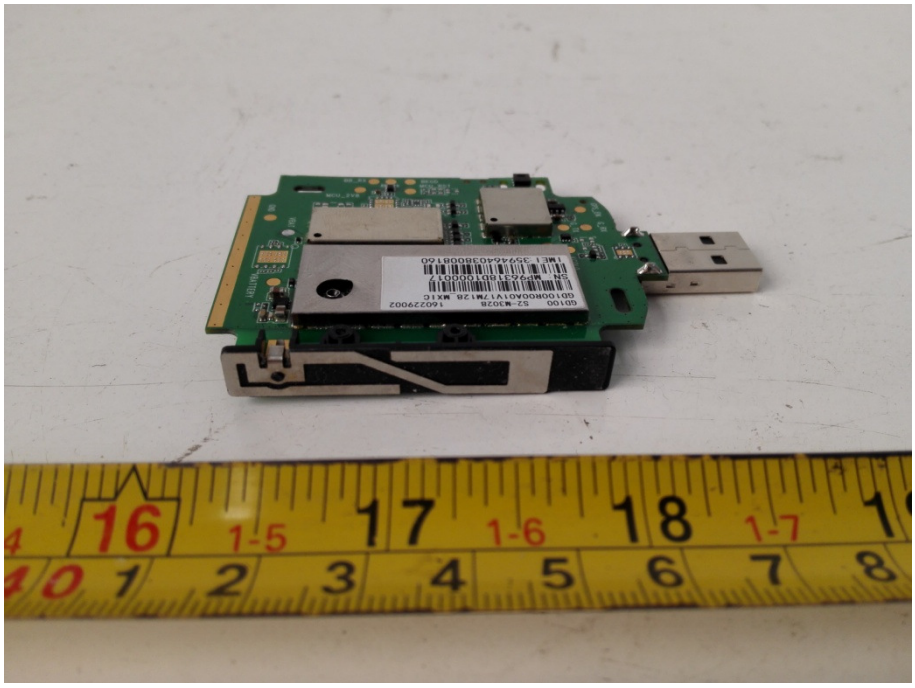


EUT –Cover off View

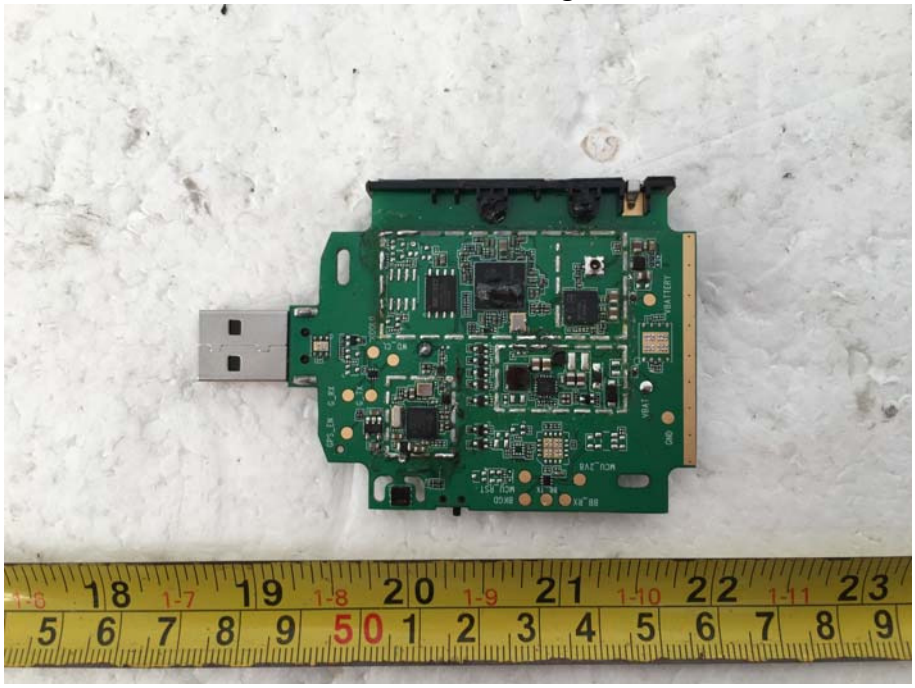
EUT – Main Board Top View

EUT – Main Board Top View

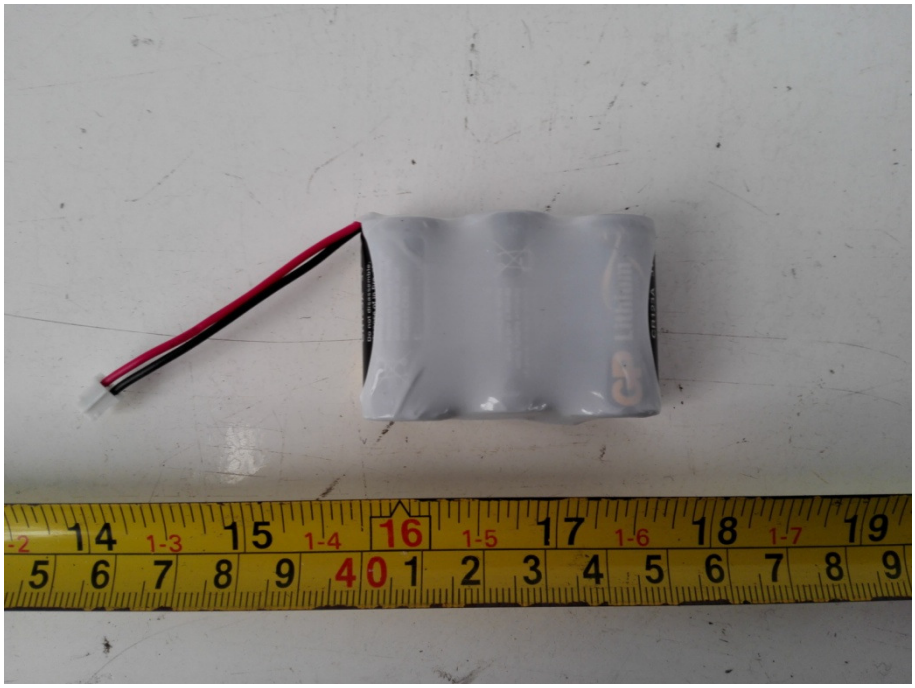
EUT –Antenna View



EUT –Main Board Shielding off View



EUT – Battery View



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