

## TEST REPORT



Applicant	Telitek Wireless Inc.
Address	1001 Denison Street Suite 202 Markham Ontario Canada L3R 2Z6

Manufacturer or Supplier	Telitek Wireless Inc.
Address	1001 Denison Street Suite 202 Markham Ontario Canada L3R 2Z6
Product	GPS Tracker
FCC ID	2AD7A-1508
Brand Name	Telitek
Model Name	GMS50T
Additional Model & Model Difference	GMS50; See items 2.1
Date of tests	Jan. 09, 2015 ~ Feb. 09, 2015

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

☒ **FCC PART 24, Subpart H**

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Tested by Yuqiang Yin Project Engineer / EMC Department	Approved by Glyn He Supervisor / EMC Department
	  Date: Feb. 09, 2015

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

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Test Report No.: RF150109N009-2

**5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....34**



## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF150109N009-2	Original release	Feb. 09, 2015



## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
2.1046 24.232	Equivalent Isotropic Radiated Power	PASS	Meet the requirement of limit.
2.1055 24.235	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 24.238(b)	Occupied Bandwidth	PASS	Meet the requirement of limit.
24.232(d)	Peak to average ratio	PASS	Meet the requirement of limit.
24.238(b)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -44.00dB at 5686.67MHz.

### 1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.74dB
	30MHz ~ 1GHz	3.55dB
	1GHz ~ 18GHz	4.84dB
	18GHz ~ 40GHz	4.84dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



## 1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU 26	100005	May 13,14	May 12,15
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Aug. 08, 14	Aug. 07, 15
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 25, 14	Jul. 24, 15
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 30, 14	May 29, 16
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Mar. 05,14	Mar. 04, 15
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 20,14	Nov. 19,15
Pre-Amplifier (100MHz-26.5GHz)	Agilent	8449B	3008A00409	May 13,14	May 12,15
GPS Generator+ Antenna	TOJOIN	GNSS-5000A	E1-010119	Aug. 08, 14	Aug. 07, 15
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Apr. 19,14	Apr. 18,15
Test Software	ADT	ADT_Radiated _V7.6.15.9.2	N/A	N/A	N/A
Spectrum Analyzer (9KHz-25GHz)	Agilent	E7405A	MY45118807	May 13,14	May 12,15
Power Meter	Anritsu	ML2495A	1139001	Feb. 20,14	Feb. 19,15
Power Sensor	Anritsu	MA2411B	1126068	Feb. 20,14	Feb. 19,15
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 29, 14	Oct. 28, 15
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.04,14	Sep. 03,15
Oscilloscope	Agilent	DSO9254A	MY51260160	Oct. 17, 14	Oct. 16, 15
Signal Analyzer	Rohde & Schwarz	FSV7	102331	Nov. 05,14	Nov. 04,15
Signal Generator	Agilent	N5183A	MY50140980	Nov. 05,14	Nov. 04,15
ESG Vector Signal Generator	Agilent	E4438C	MY49072505	Mar.13, 14	Mar.12, 15
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	Sep. 04,14	Sep. 03,15

**NOTE:** 1. The calibration interval of the above test instruments is 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in Dongguan 966 Chamber.

3. The horn antenna are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 494399.



## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

PRODUCT NAME	GPS Tracker	
FCC ID	2AD7A-1508	
MODEL NAME	GMS50T	
POWER SUPPLY	DC Input 12V or DC 3.7V from internal rechargeable battery	
MODULATION TYPE	GSM/GPRS	GMSK
FREQUENCY RANGE	GSM/GPRS	1850.2MHz ~ 1909.8MHz
MAX. ERP POWER	GSM	432.51mW
EMISSION DESIGNATOR	GSM	246KGXW
ANTENNA TYPE	Fixed Internal antenna with 2dBi gain	
HW VERSION	V2.4	
SW VERSION	V1.9	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	Refer to user's manual	

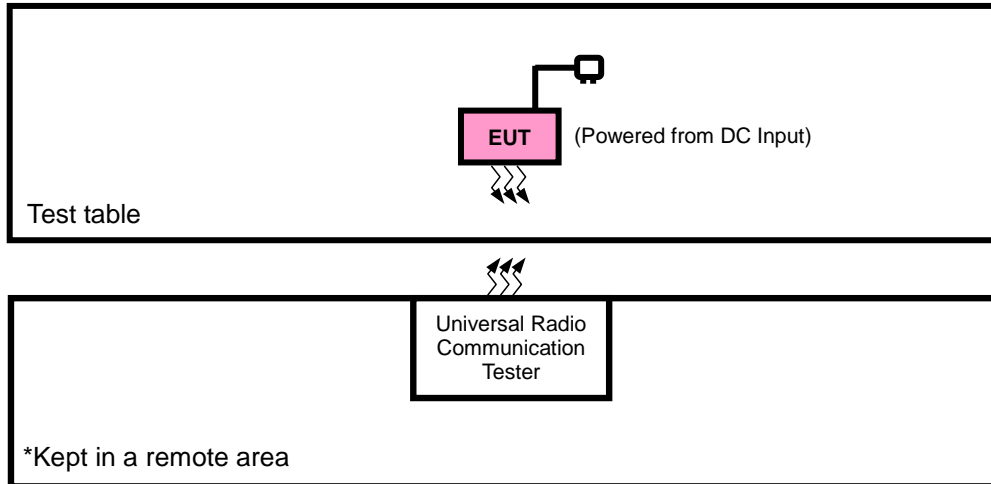
**NOTE:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Please refer to the EUT photo document (Reference No.: 150109N009) for detailed product photo.
3. Additional model GMS50 is identical with the test model GMS50T except the Housing, connector and model name for marketing purpose.
4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

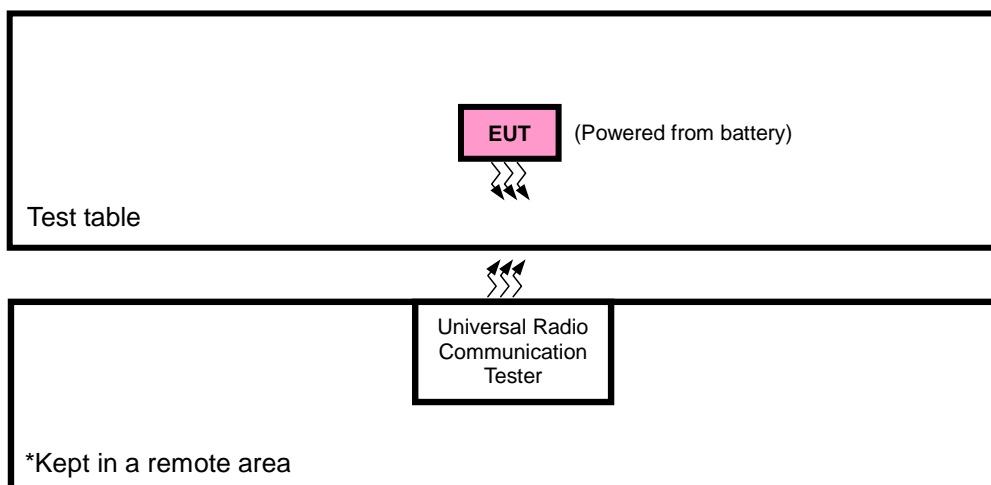


## 2.2 CONFIGURATION OF SYSTEM UNDER TEST

### FOR RADIATION EMISSION TEST



### FOR E.I.R.P. TEST







## 2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A
2	PC	HP	A6608CN	3CR83825X3	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m
2	AC Line :Unshielded, Detachable 1.5m

## 2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case in EIRP and radiated emission was found when positioned on X-plane for GSM. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + DC Input with GSM
B	EUT + battery with GSM

### GSM MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
B	EIRP	512 to 810	512, 661, 810	GSM, EDGE
A	FREQUENCY STABILITY	512 to 810	661	GSM, EDGE
A	OCCUPIED BANDWIDTH	512 to 810	512, 661, 810	GSM, EDGE
A	PEAK TO AVERAGE RATIO	512 to 810	661	GSM, EDGE
A	BAND EDGE	512 to 810	512, 810	GSM, EDGE
A	CONDUCTED SPURIOUS EMISSION	512 to 810	661	GSM, EDGE
A	RADIATED EMISSION	512 to 810	661	GSM, EDGE

**TEST CONDITION:**

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	25deg. C, 55%RH	DC 3.7V from battery	Bob Chen
FREQUENCY STABILITY	23deg. C, 61%RH	DC 12V	Yuqiang Yin
OCCUPIED BANDWIDTH	23deg. C, 61%RH	DC 12V	Yuqiang Yin
PEAK TO AVERAGE RATIO	23deg. C, 61%RH	DC 12V	Yuqiang Yin
BAND EDGE	23deg. C, 61%RH	DC 12V	Yuqiang Yin
CONDUCTED SPURIOUS EMISSION	23deg. C, 61%RH	DC 12V	Yuqiang Yin
RADIATED EMISSION	25deg. C, 55%RH	DC 12V	Bob Chen



## **2.5 EUT OPERATING CONDITIONS**

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

## **2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 24**

**ANSI/TIA/EIA-603-C 2004**

**NOTE:** All test items have been performed and recorded as per the above standards.

### 3 TEST TYPES AND RESULTS

#### 3.1 OUTPUT POWER MEASUREMENT

##### 3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile and portable stations are limited to 2 watts EIRP

##### 3.1.2 TEST PROCEDURES

###### EIRP MEASUREMENT:

- a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GSM, GPRS & EDGE; 5MHz for WCDMA mode.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step b. Record the power level of S.G
- d.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$

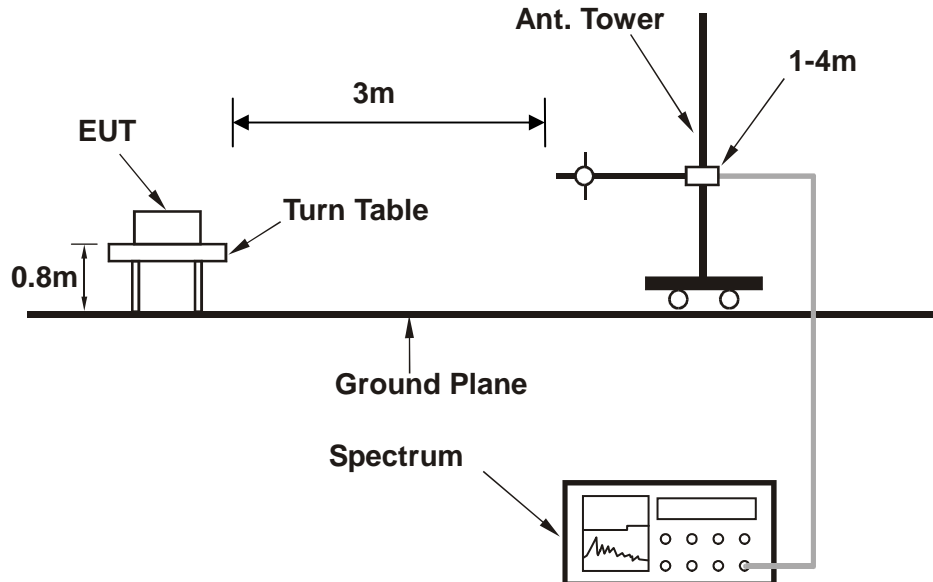
###### CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with GSM, GPRS, EDGE & WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



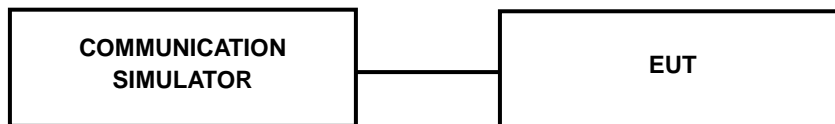
### 3.1.3 TEST SETUP

#### EIRP MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

#### CONDUCTED POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).



### 3.1.4 TEST RESULTS

#### CONDUCTED OUTPUT POWER (dBm)

Band	GSM1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8
GSM	28.20	28.09	28.24
GPRS 8	28.17	28.07	28.18
GPRS 10	27.06	26.87	27.08
GPRS 11	25.09	25.02	25.18
GPRS 12	24.28	24.35	24.20

#### EIRP POWER (dBm)

##### GSM

Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)
512	1850.2	-16.21	41.66	25.45	350.75	H
661	1880	-16.01	42.34	26.33	429.54	H
810	1909.8	-16.13	42.49	26.36	<b>432.51</b>	H
512	1850.2	-22.96	44.28	21.32	135.52	V
661	1880	-22.14	44.10	21.96	157.04	V
810	1909.8	-22.55	44.42	21.87	153.82	V



## 3.2 FREQUENCY STABILITY MEASUREMENT

### 3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

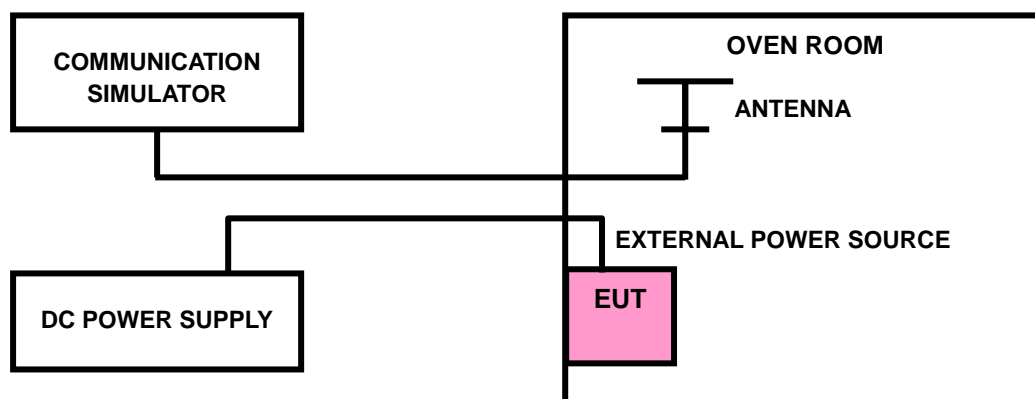
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

### 3.2.2 TEST PROCEDURE

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

**NOTE:** The frequency error was recorded frequency error from the communication simulator.

### 3.2.3 TEST SETUP





### 3.2.4 TEST RESULTS

#### FREQUENCY ERROR VS. VOLTAGE

Voltage (Volts)	Frequency Error (ppm)	Limit(ppm)
	GSM	
12(normal)	0.001	2.5
6(Min.)	0.000	2.5
30(Max.)	0.003	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 6Vdc to 30Vdc.

#### FREQUENCY ERROR VS. TEMPERATURE.

Voltage (Volts)	Frequency Error (ppm)	Limit (ppm)
	GSM	
-30	-0.005	2.5
-20	-0.004	2.5
-10	-0.004	2.5
0	-0.003	2.5
10	-0.002	2.5
20	-0.001	2.5
30	0.000	2.5
40	0.001	2.5
50	0.003	2.5
60	0.004	2.5



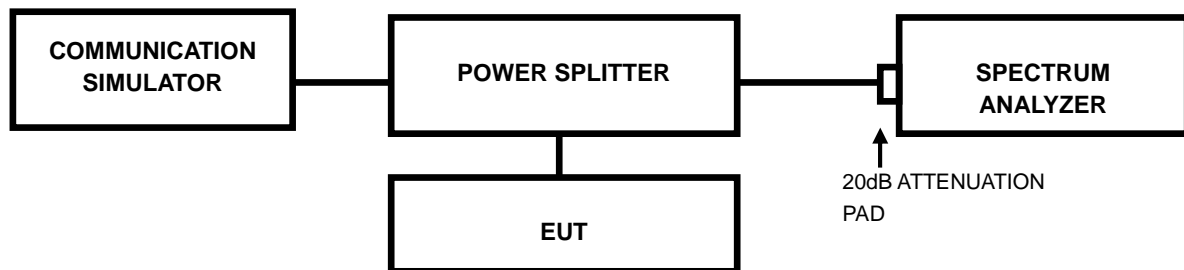


### 3.3 OCCUPIED BANDWIDTH MEASUREMENT

#### 3.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

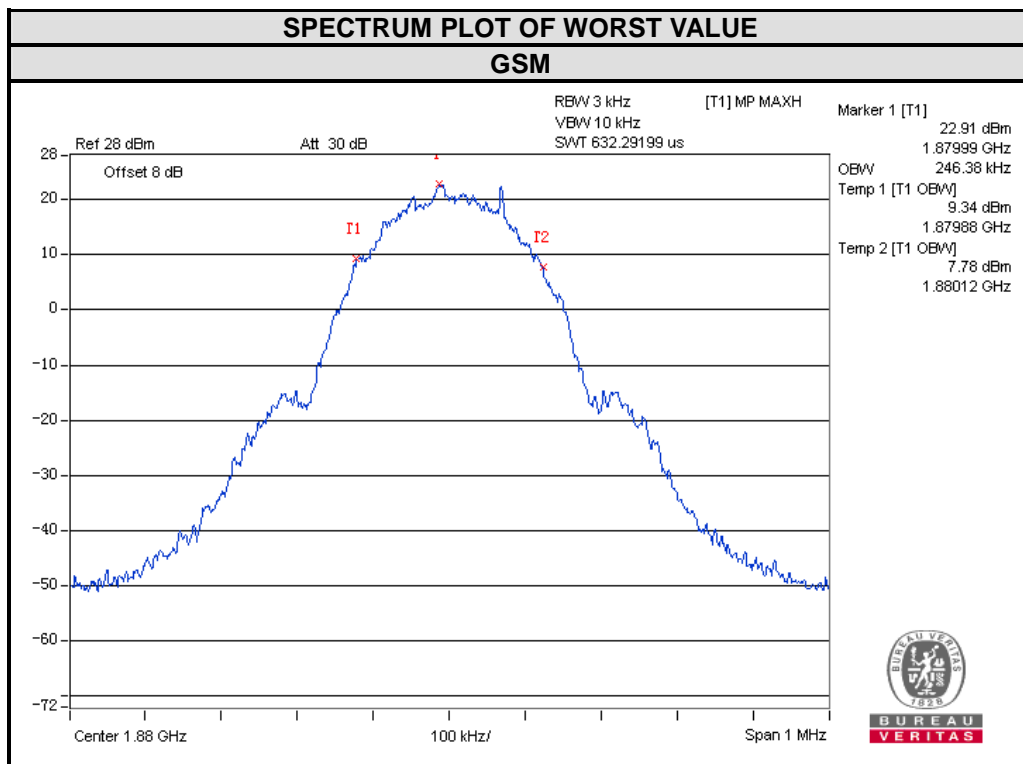
#### 3.3.2 TEST SETUP



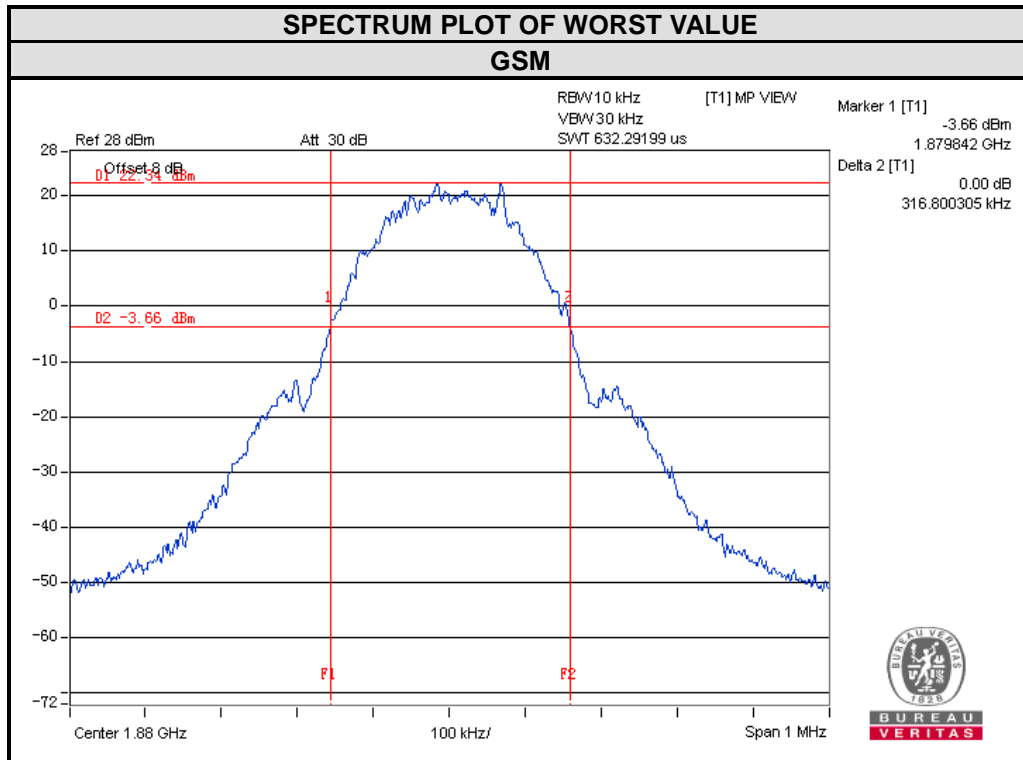


### 3.3.3 TEST RESULTS

CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (kHz)
		GSM
512	1850.2	243.48
661	1880.0	246.38
810	1909.8	244.93



CHANNEL	FREQUENCY (MHz)	26dB BANDWIDTH (kHz)
		GSM
512	1850.2	312.37
661	1880.0	316.80
810	1909.8	316.59



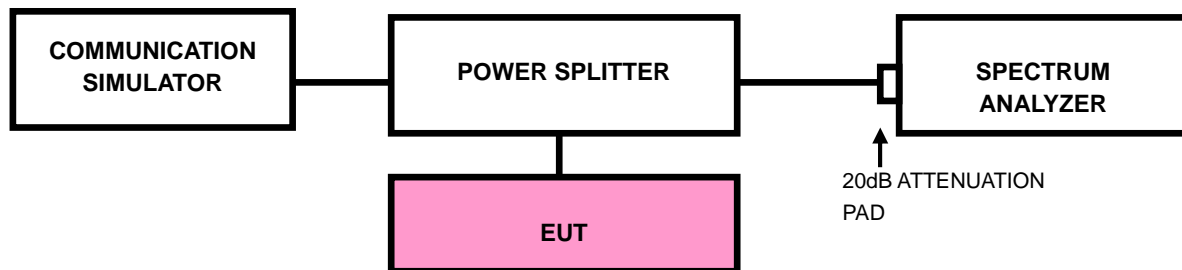


### 3.4 BAND EDGE MEASUREMENT

#### 3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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. 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.

#### 3.4.2 TEST SETUP



#### 3.4.3 TEST PROCEDURES

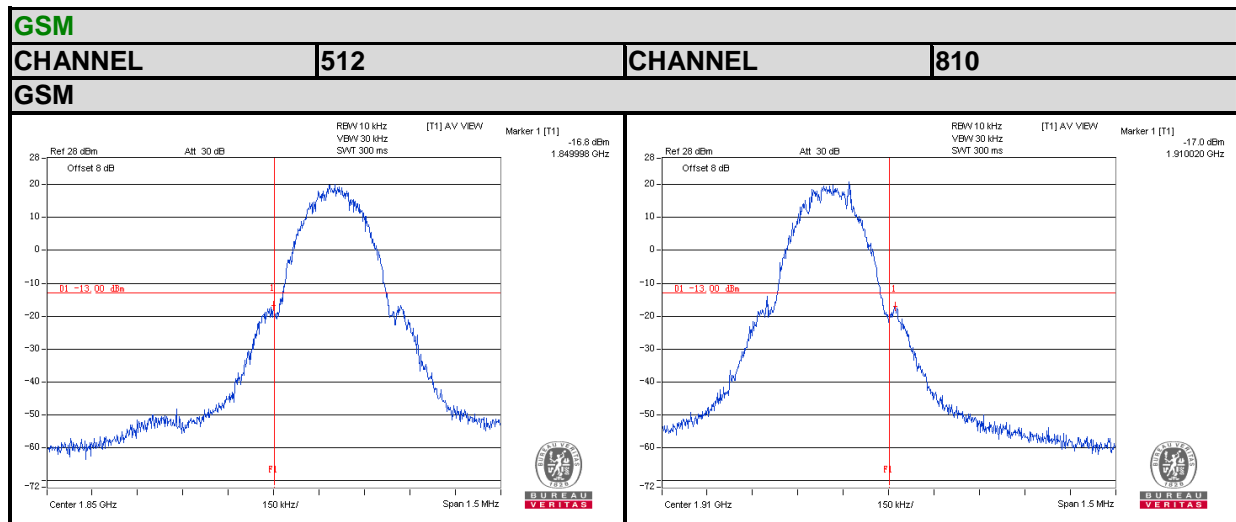
- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1.5 MHz. RBW of the spectrum is 10kHz and VBW of the spectrum is 30kHz (GSM/GPRS/EDGE).
- The center frequency of spectrum is the band edge frequency and span is 10MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA).
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RB of the spectrum is 20kHz and VB of the spectrum is 100 kHz. (LTE bandwidth 1.4MHz)
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz. (LTE bandwidth 3MHz)
- The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RB of the spectrum is 50kHz and VB of the spectrum is 200kHz. (LTE bandwidth 5MHz)



- g. The center frequency of spectrum is the band edge frequency and span is 1~10 MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz. (LTE bandwidth 10MHz)
- h. The center frequency of spectrum is the band edge frequency and span is 1~10 MHz. RB of the spectrum is 200kHz and VB of the spectrum is 1MHz. (LTE bandwidth 15MHz)
- i. The center frequency of spectrum is the band edge frequency and span is 2~10 MHz. RB of the spectrum is 200kHz and VB of the spectrum is 1MHz. (LTE bandwidth 20MHz)
- j. Record the max trace plot into the test report.



### 3.4.4 TEST RESULTS





### 3.5 CONDUCTED SPURIOUS EMISSIONS

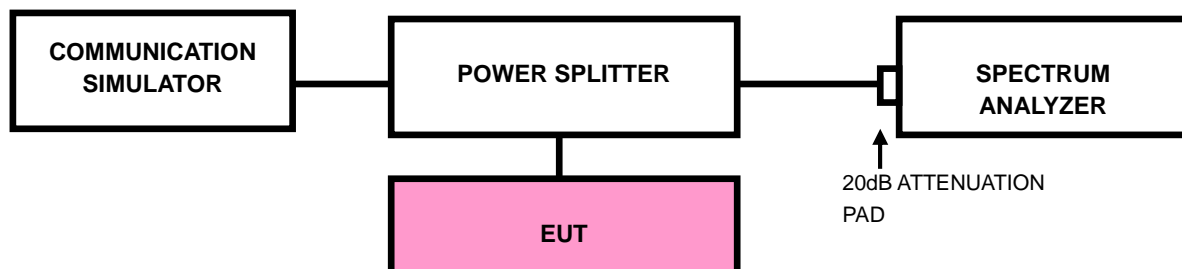
#### 3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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. The emission limit equal to  $-13\text{dBm}$ .

#### 3.5.2 TEST PROCEDURE

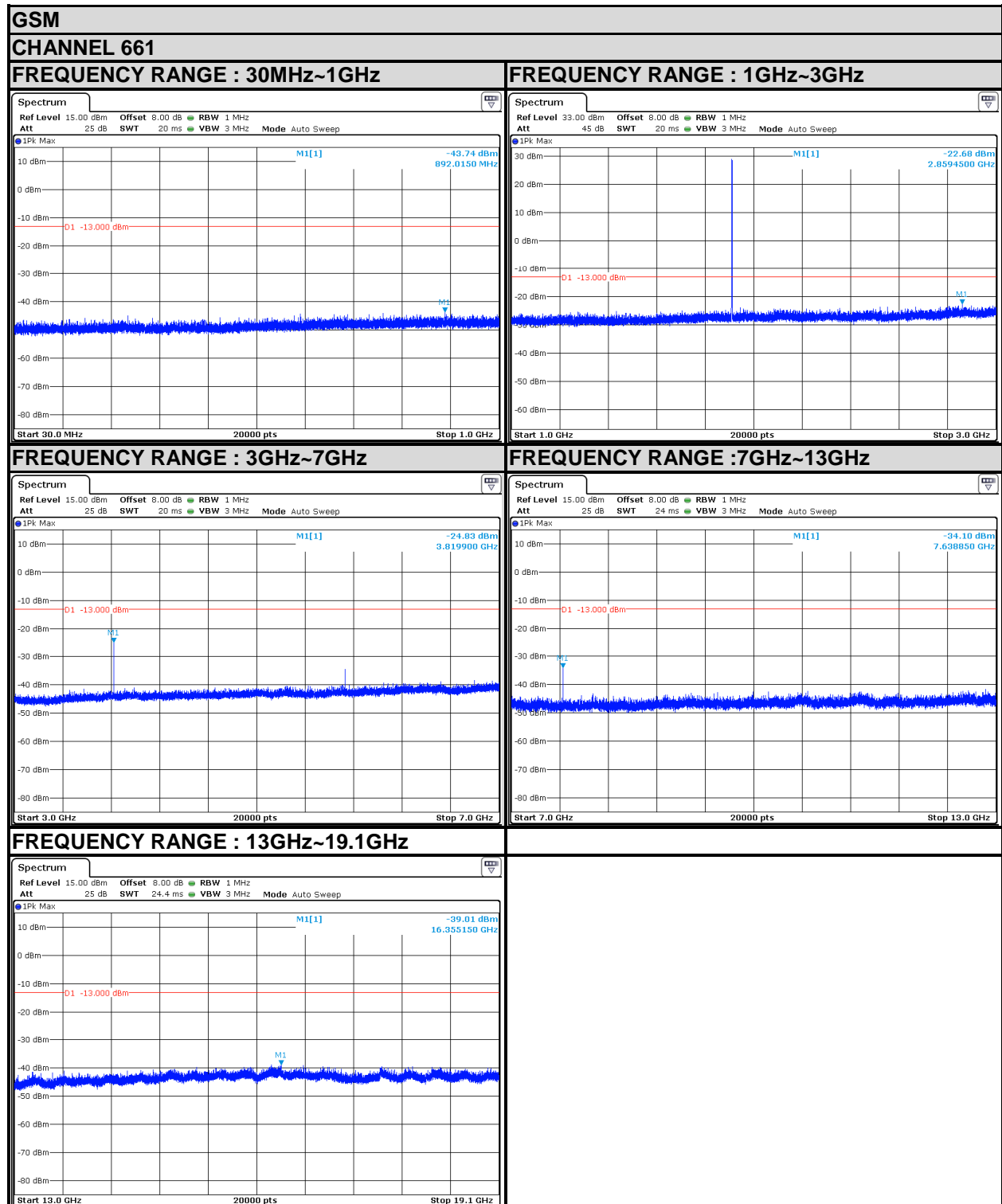
- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 9 kHz to 19.1GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

#### 3.5.3 TEST SETUP





### 3.5.4 TEST RESULTS





### 3.6 RADIATED EMISSION MEASUREMENT

#### 3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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. The emission limit equal to  $-13\text{dBm}$ .

#### 3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G
- c.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ .

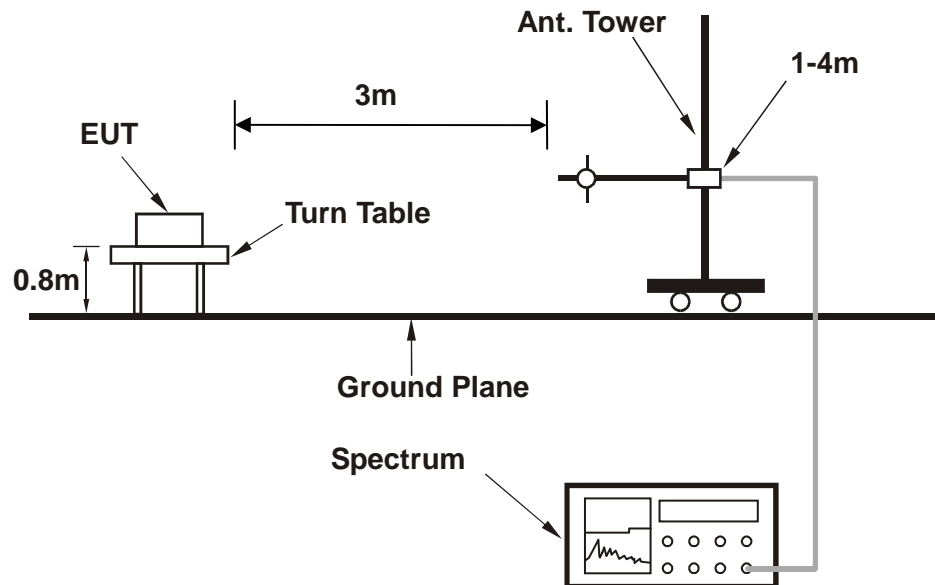
**NOTE:** The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

#### 3.6.3 DEVIATION FROM TEST STANDARD

No deviation.



### 3.6.4 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

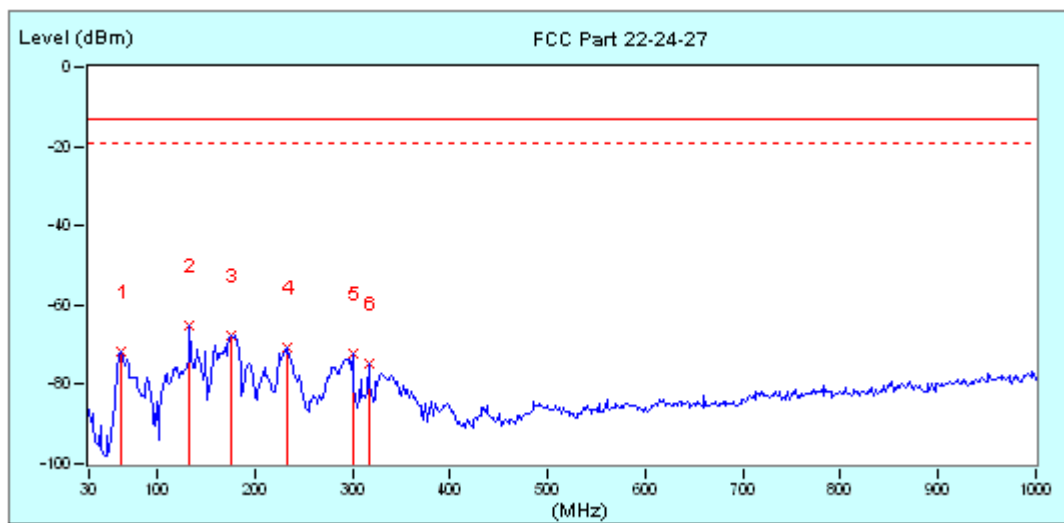


## 3.6.5 TEST RESULTS

## BELOW 1GHz WORST-CASE DATA

## GSM 1900:

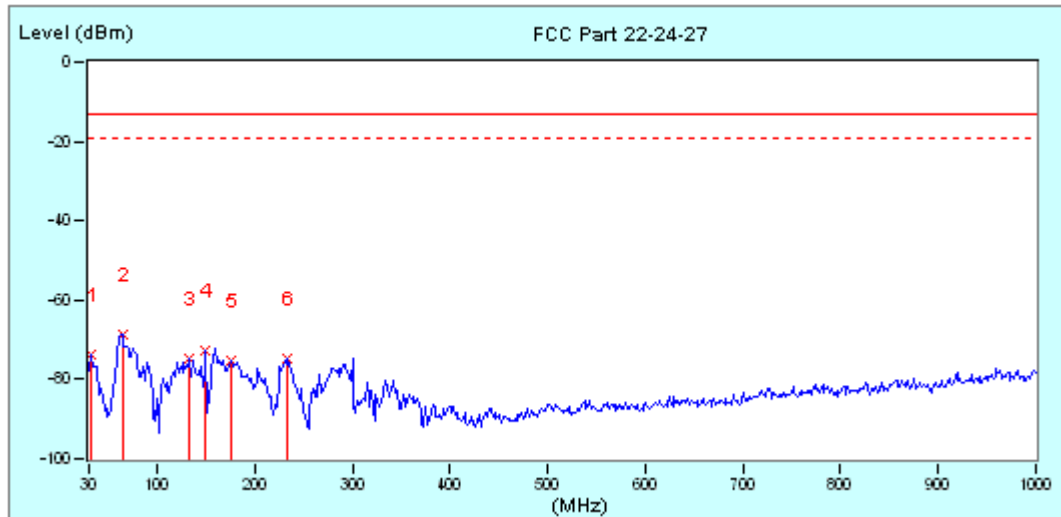
MODE	TX channel 512	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH	INPUT POWER	DC 12V
TESTED BY	Bob Chen		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			



No.	Frequency MHz	Factor dB	Reading dBm	Emission dBm	Limit dBm	Margin dB	Tower / Table	
							cm	deg
1	62.33	-25.09	-46.74	-71.83	-13.00	-58.83	100	0
* 2	133.47	-18.17	-46.81	-64.98	-13.00	-51.98	100	0
3	175.50	-19.92	-47.52	-67.44	-13.00	-54.44	100	0
4	232.08	-18.71	-51.94	-70.65	-13.00	-57.65	100	0
5	299.98	-15.13	-56.99	-72.12	-13.00	-59.12	100	0
6	316.15	-14.52	-60.15	-74.67	-13.00	-61.67	100	0



MODE	TX channel 512	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH	INPUT POWER	DC 12V
TESTED BY	Bob Chen		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			



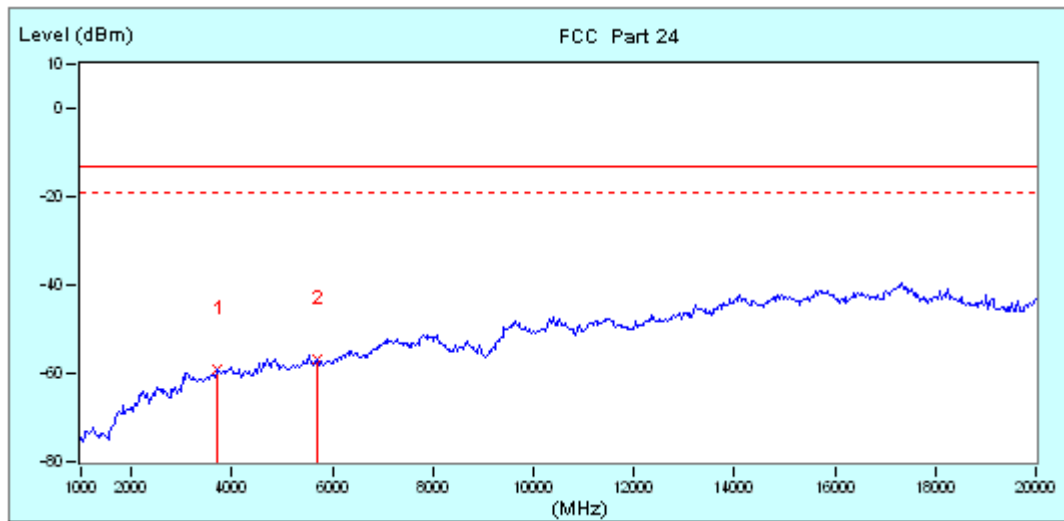
No.	Frequency MHz	Factor dB	Reading dBm	Emission dBm	Limit dBm	Margin dB	Tower / Table	
							cm	deg
1	31.62	-13.06	-60.76	-73.82	-13.00	-60.82	100	0
* 2	63.95	-25.05	-43.76	-68.81	-13.00	-55.81	100	0
3	133.47	-18.17	-56.33	-74.50	-13.00	-61.50	100	0
4	149.63	-18.52	-54.07	-72.59	-13.00	-59.59	100	0
5	175.50	-19.92	-55.08	-75.00	-13.00	-62.00	100	0
6	233.70	-18.59	-56.25	-74.84	-13.00	-61.84	100	0



## ABOVE 1GHz DATA

### GSM 1900:

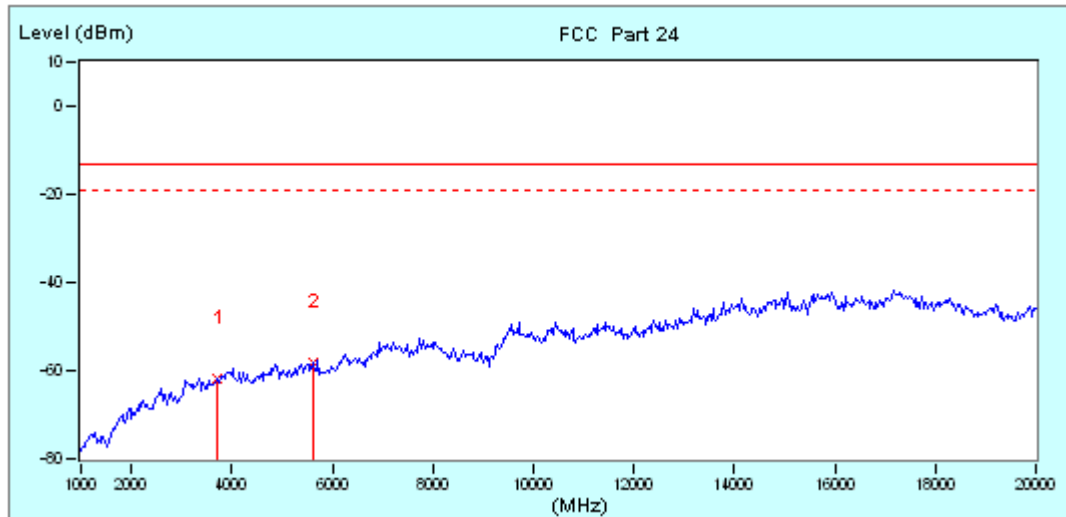
MODE	TX channel 512	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH	INPUT POWER	DC 12V
TESTED BY	Bob Chen		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			



No.	Frequency MHz	Factor dB	Reading dBm	Emission dBm	Limit dBm	Margin dB	Tower / Table	
							cm	deg
1	3723.33 (PK)	6.86	-65.82	-58.96	-13.00	-45.96	100	0
*	2	5686.67 (PK)	-68.19	-57.00	-13.00	-44.00	100	0



MODE	TX channel 512	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH	INPUT POWER	DC 12V
TESTED BY	Tyler Zhang		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			



No.	Frequency MHz	Factor dB	Reading dBm	Emission dBm	Limit dBm	Margin dB	Tower / Table	
							cm	deg
1	3723.33 (PK)	6.86	-68.53	-61.67	-13.00	-48.67	100	0
* 2	5623.33 (PK)	11.14	-69.21	-58.07	-13.00	-45.07	100	0

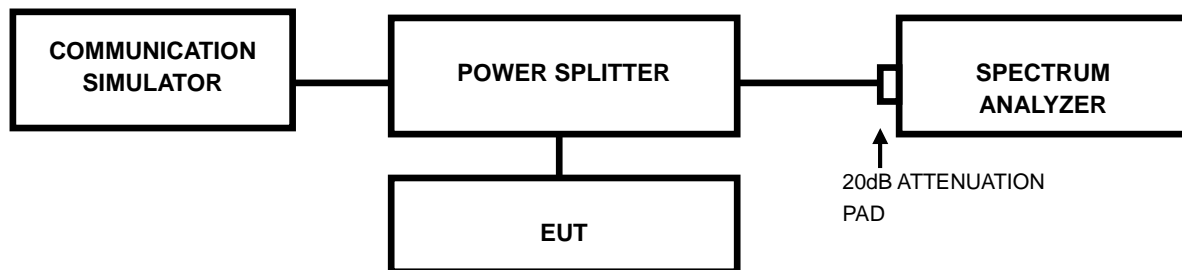


### 3.7 PEAK TO AVERAGE RATIO

#### 3.7.1 LIMITS OF peak to average ratio MEASUREMENT

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

#### 3.7.2 TEST SETUP



#### 3.7.3 TEST PROCEDURES

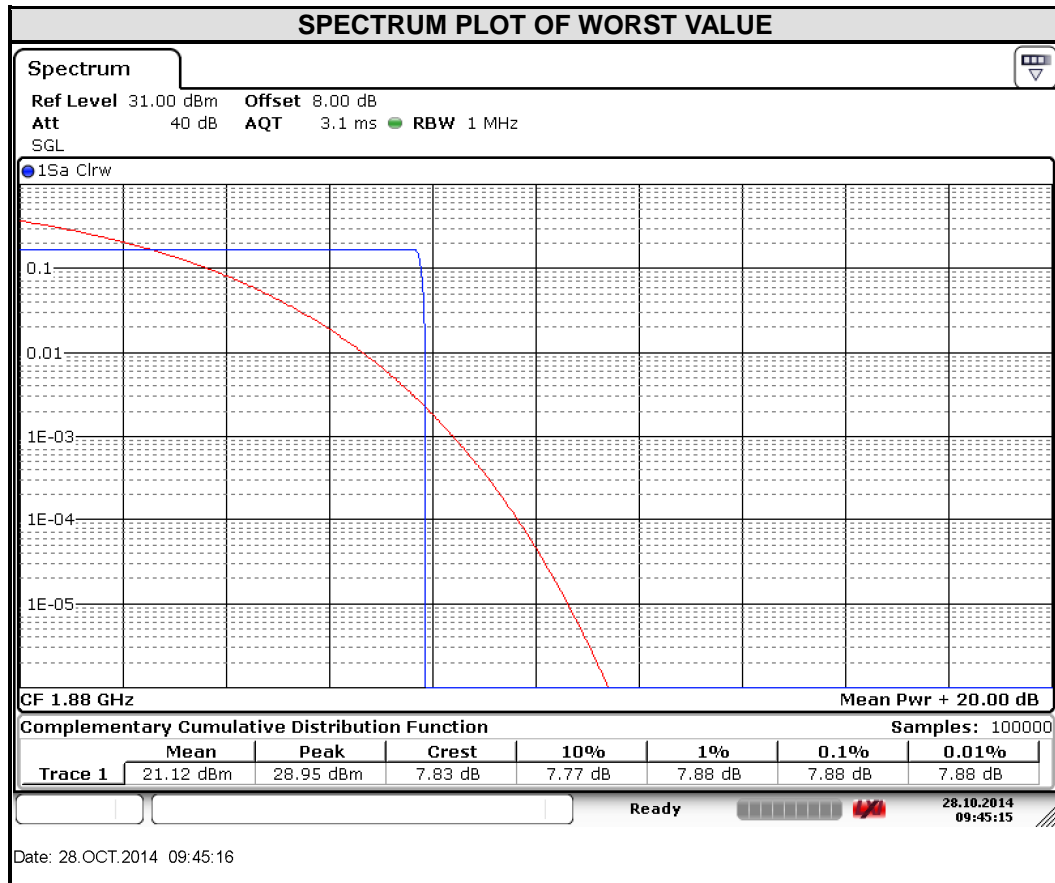
1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.



### 3.7.4 TEST RESULTS

#### GSM

CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
661	1880	7.88







## 4 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch, were founded in 2002 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

**Dongguan EMC/RF Lab:**

Tel: +86-769-85935656

Fax: +86-769-85931080

**Email:** [customerservice.dg@cn.bureauveritas.com](mailto:customerservice.dg@cn.bureauveritas.com)

**Web Site:** [www.adt.com.tw](http://www.adt.com.tw)

The address and road map of all our labs can be found in our web site also.



## **5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB**

No any modifications are made to the EUT by the lab during the test.

**---END---**