


## FCC Part 22H&24E Test Report

Product Name : ME910C1-WW  
Trade Name :   
Model No. : ME910C1-WW  
FCC ID : RI7ME910C1WW  
IC ID : 5131A-ME910C1WW

Applicant : Telit communications Spa  
Address : Via Stazione di Prosecco 5/B  
34010 Sgonico  
Trieste-Italy

Date of Receipt : Jun. 14, 2018  
Issued Date : Sep. 14, 2018  
Report No. : 1860156R-HPUSP17V00  
Report Version : V1.0



The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd..

# Test Report Certification

Issued Date : Sep. 14, 2018

Report No. : 1860156R-HPUSP17V00



Product Name : ME910C1-WW  
 Applicant : Telit communications Spa  
 Address : Via Stazione di Prosecco 5/B  
 34010 Sgonico  
 Trieste-Italy  
 Manufacturer : Telit Wireless Solutions Co., LTD  
 Model No. : ME910C1-WW  
 FCC ID : RI7ME910C1WW  
 IC ID : 5131A-ME910C1WW  
 EUT Voltage : DC 3.8V  
 Testing Voltage : DC 3.8V  
 Trade Name :

Applicable Standard : FCC CFR Title 47 Part 2, ANSI/TIA-603-D  
 FCC Part 22 Subpart H, FCC Part 24 Subpart E,  
 Industry Canada RSS-132, Issue 3  
 Industry Canada RSS-133, Issue 6  
 ANSI/TIA-603-D-2010  
 RSS Gen Issue 5

Test Lab : Hsin Chu Laboratory  
 Test Result : Complied

Documented By :   
 \_\_\_\_\_  
 ( Lyla Yang / Engineering Adm. Specialist )

Tested By :   
 \_\_\_\_\_  
 ( Clemens Fang / Engineer )

Approved By :   
 \_\_\_\_\_  
 ( Roy Wang / Director )

**Revision History**

<b>Report No.</b>	<b>Version</b>	<b>Description</b>	<b>Issued Date</b>
1860156R-HPUSP17V00	V1.0	Initial issue of report	Sep. 14, 2018

## TABLE OF CONTENTS


Description	Page
1. General Information .....	6
1.1. EUT Description .....	6
1.2. Mode of Operation .....	7
1.3. Tested System Details .....	8
1.4. Configuration of Tested System .....	8
1.5. EUT Exercise Software .....	8
2. Technical Test .....	9
2.1. Summary of Test Result .....	9
2.2. Test Environment .....	11
2.3. List of Test Equipment .....	12
2.4. Measurement Uncertainty .....	14
3. RF Output Power .....	15
3.1. Test Setup .....	15
3.2. Test Procedure .....	15
3.3. Test Method .....	15
3.4. Test Result .....	16
4. Occupied Bandwidth .....	18
4.1. Test Setup .....	18
4.2. Test Procedure .....	18
4.3. Test Method .....	18
4.4. Test Result .....	19
5. Peak To Average Ratio .....	25
5.1. Test Setup .....	25
5.2. Test Procedure .....	25
5.3. Test Method .....	25
5.4. Test Result .....	26
6. Conducted Band Edge .....	28
6.1. Test Setup .....	28
6.2. Test Procedure .....	28
6.3. Test Method .....	28
6.4. Test Result .....	29
7. Spurious Emission .....	31
7.1. Test Setup .....	31
7.2. Test Procedure .....	32
7.3. Test Method .....	32

---

7.4. Test Result.....	33
8. Frequency Stability .....	41
8.1. Test Setup.....	41
8.2. Test Procedure .....	41
8.3. Test Method .....	41
8.4. Test Result.....	42
Attachment 1.....	48
Test Setup Photograph .....	48
Attachment 2.....	51
EUT External Photograph.....	51
Attachment 3.....	53
EUT Internal Photograph .....	53

## 1. General Information

### 1.1. EUT Description

Product Name	ME910C1-WW
Trade Name	
Model No.	ME910C1-WW
Tx Frequency Range/ Channel number	GSM 850: 824.2-848.8 MHz DCS 1900: 1850.2-1909.8 MHz
Rx Frequency Range/ Channel number	GSM 850: 869.2-893.8 MHz DCS 1900: 1930.2-1989.8 MHz
Type of Modulation	GPRS: GMSK; EGPRS: GMSK / 8PSK
HW Version	0.0
SW Version	M0B.800003
IMEI No.	353081099991658 #7 353081099992102 #8

Accessories Information	
Antenna	1 pcs

Antenna Information	
MFR. / Model	ADEL-CAB / T-AT305
Antenna Type	Dipole Antenna
Antenna Gain	2.14dBi

Note:

1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

## 1.2. Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

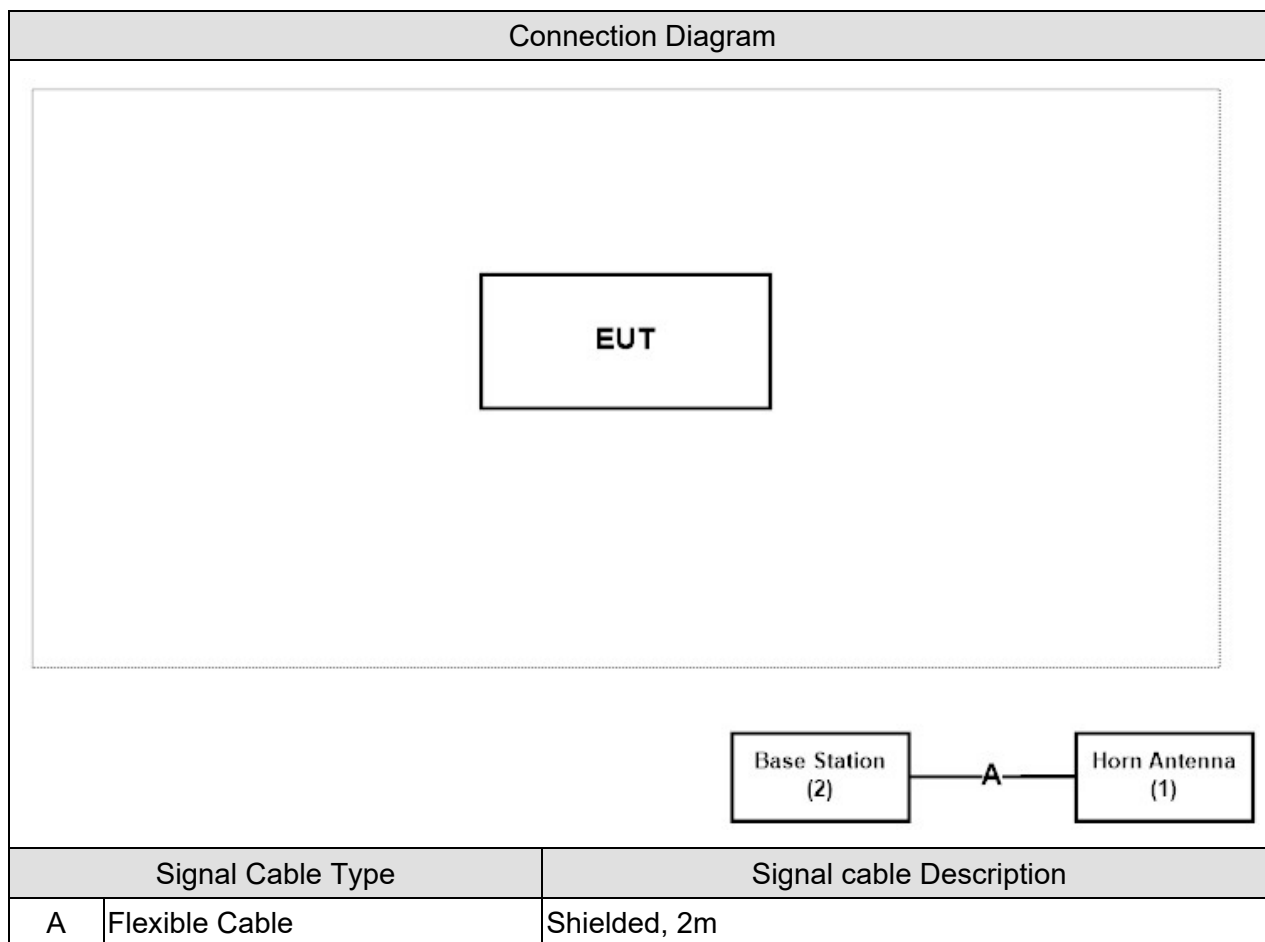
Test Mode
Mode 1: GSM 850
Mode 2: DCS 1900

### 1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1   Horn Antenna	ELECTRO METRICS	EM-6961	103326	--
2   Base Station	R&S	CMW500	106071	Non-Shielded, 2m.

### 1.4. Configuration of Tested System



### 1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Turn on the power of all equipment. Horn link with base station.
3	The EUT link with base station and it will continue receive the signal.
4	Repeat the above procedure.



**2. Technical Test**

**2.1. Summary of Test Result**

- No deviations from the test standards
- Deviations from the test standards as below description:

**For GPRS850/EGPRS850**

**(FCC Part 22 Subpart H, Industry Canada RSS-132, Issue 3, Industry Canada RSS-GEN )**

Performed Item	FCC Rule	IC Rule	Limit	Result
Maximum Output Power	§2.1033 §2.1046 §22.913	§5.4	< 7 Watts	Pass
Modulation characteristic	§2.1047	§5.2	N/A	Pass
Occupied Bandwidth	§2.1049	RSS-GEN §4.2	N/A	Pass
Peak To Average Ratio	§22.913(d)	§5.4	≤ 13dB	Pass
Conducted Band Edge	§22.917	§5.5	< -13dBm	Pass
Spurious Emission	§2.1053 §22.917	§5.5	< -13dBm	Pass
Frequency Stability	§2.1055 §22.335	§5.3	< ±2.5 ppm	Pass

**For GPRS1900/EGPRS1900**

**(FCC Part 24 Subpart E, Industry Canada RSS-133, Issue 6, Industry Canada RSS-GEN )**

Performed Item	FCC Rule	IC Rule	Limit	Result
Maximum Output Power	§2.1033	§6.4	< 2 Watts	Pass
	§2.1046			
	§24.232			
Modulation characteristic	§2.1047	§6.2	N/A	Pass
Occupied Bandwidth	§2.1049	RSS-GEN §4.2	N/A	Pass
Peak To Average Ratio	§24.232(d)	§6.4	≤ 13dB	Pass
Conducted Band Edge	§24.238	§6.5	< -13dBm	Pass
Spurious Emission	§2.1053	§6.5	< -13dBm	Pass
	§24.238			
Frequency Stability	§2.1055	§6.3	< ±2.5 ppm	Pass
	§24.235			

## 2.2. Test Environment

Items	Test Item	Required (IEC 68-1)	Actual	Test Site
Temperature (°C)	RF Output Power	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Occupied Bandwidth	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Peak To Average Ratio	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Conducted Band Edge	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Spurious Emission	15-35	23	2/3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	
Temperature (°C)	Frequency Stability	15-35	23	3
Humidity (%RH)		25-75	52	
Barometric pressure (mbar)		860-1060	950-1000	

Note: Test Site information refers to Laboratory Information.

### Laboratory Information

**USA : FCC Registration Number: TW3024**

**Canada : IC Registration Number: 22397-1 / 22397-2 / 22397-3**

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site :

<http://www.dekra.com.tw/english/about/certificates.aspx?bval=5>

The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site : [http://www.dekra.com.tw/index\\_en.aspx](http://www.dekra.com.tw/index_en.aspx)

If you have any comments, Please don't hesitate to contact us. Our test sites as below:

- No. 75-2, 3rd Lin, WangYe Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan (R.O.C.)  
TEL: +886-3-592-8858 / FAX: +886-3-592-8859 E-Mail : [info.tw@dekra.com](mailto:info.tw@dekra.com)
- No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.  
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : [info.tw@dekra.com](mailto:info.tw@dekra.com)
- No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.  
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : [info.tw@dekra.com](mailto:info.tw@dekra.com)

### 2.3. List of Test Equipment

#### RF Output Power / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
High Speed Peak Power Meter Dual Input	Anritsu	ML2496A	1602004	2018/01/02	2019/01/01
Pulse Power Sensor	Anritsu	MA2411B	1531043	2018/01/02	2019/01/01
Pulse Power Sensor	Anritsu	MA2411B	1531044	2018/01/02	2019/01/01
Wideband Radio Communication Tester	R&S	CMW500	150246	2018/03/30	2019/03/29
Directional Coupler	Agilent	778D	20402	2017/09/25	2018/09/24

#### Occupied Bandwidth / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2017/11/21	2018/11/20
Wideband Radio Communication Tester	R&S	CMW500	150246	2018/03/30	2019/03/29
Directional Coupler	Agilent	778D	20402	2017/09/25	2018/09/24

#### Peak To Average Ratio / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2017/11/21	2018/11/20
Wideband Radio Communication Tester	R&S	CMW500	150246	2018/03/30	2019/03/29
Directional Coupler	Agilent	778D	20402	2017/09/25	2018/09/24

#### Conducted Band Edge / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2017/11/21	2018/11/20
Wideband Radio Communication Tester	R&S	CMW500	150246	2018/03/30	2019/03/29
Directional Coupler	Agilent	778D	20402	2017/09/25	2018/09/24

## Conducted Spurious Emissions / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2017/11/21	2018/11/20
Wideband Radio Communication Tester	R&S	CMW500	150246	2018/03/30	2019/03/29
Directional Coupler	Agilent	778D	20402	2017/09/25	2018/09/24

## Radiated Spurious Emissions / CB4-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2017/11/21	2018/11/20
Spectrum Analyzer	R&S	FSV40	101049	2018/01/10	2019/01/09
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2018/03/05	2019/03/04
Bilog Antenna	Teseq	CBL6112D	23191	2018/06/26	2019/06/25
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2018/06/01	2019/05/31
Horn Antenna	Schwarzbeck	BBHA 9170	202	2018/01/31	2019/01/30
Pre-Amplifier	DEKRA.	AP-025C	201801235	2018/03/12	2019/03/11
Pre-Amplifier	EMCI	EMCI 1830I	980366	2018/01/08	2019/01/07
Pre-Amplifier	Dekra	AP-400C	201801231	2017/12/13	2018/12/12

## Frequency Stability / SR10-H

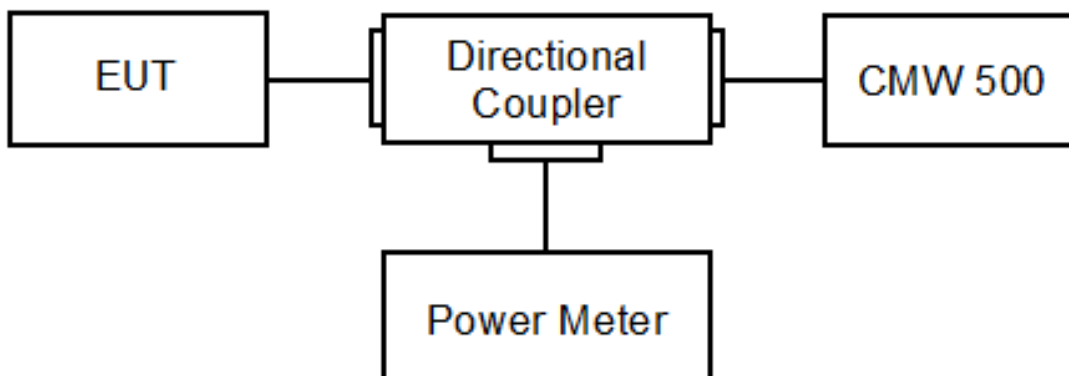
Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal Analyzer	R&S	FSVA40	101455	2017/11/21	2018/11/20
Wideband Radio Communication Tester	R&S	CMW500	150246	2018/03/30	2019/03/29
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2018/01/23	2019/01/22

## 2.4. Measurement Uncertainty

Test Item	Uncertainty
RF Output Power	$\pm 1.27\text{dB}$
Occupied Bandwidth	$\pm 10\text{ Hz}$
Peak To Average Ratio	In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13dB.
Conducted Band Edge	$\pm 1.2\text{ dB}$
Spurious Emissions	The measurement uncertainty is defined as $\pm 1.27\text{ dB}$ for Conducted Measurement. The measurement uncertainty is defined as $\pm 3.2\text{ dB}$ for Radiated Measurement.
Frequency Stability	$\pm 10\text{ Hz}$

### 3. RF Output Power

#### 3.1. Test Setup



#### 3.2. Test Procedure

- a) The RF output of the transmitter was connected to base station simulator.
- b) The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- c) Set EUT at maximum average power by base station simulator.
- d) Measure lowest, middle, and highest channels for each bandwidth and different modulation.

Effective Isotropic Radiated Power = Conducted Power(dBm) + Antenna Gain(dBi)

Effective Radiated Power = Conducted Power(dBm) + Antenna Gain(dBi) - 2.15dB

#### 3.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause5.2.4

ANSI C63.26-2015 Sub-clause 5.2.4.2

### 3.4. Test Result

Product	ME910C1-WW		
Test Item	RF Output Power		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/04	Test Site	SR10-H

#### GPRS850

Frequency (MHz)	Average Power		Limit (dBm)
	Reading Level (dBm)	Measure Level (dBm)	
824.2	34.10	34.09	38.45
836.6	33.94	33.93	38.45
848.8	34.04	34.03	38.45

#### EGPRS850

Frequency (MHz)	Average Power		Limit (dBm)
	Reading Level (dBm)	Measure Level (dBm)	
824.2	34.11	34.10	38
836.6	33.93	33.92	38
848.8	34.03	34.02	38

Note: Measure Level(ERP)= Reading Level +Antenna Gain -2.15dB



Product	ME910C1-WW		
Test Item	RF Output Power		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/04	Test Site	SR10-H

## GPRS1900

Frequency (MHz)	Average Power		Limit (dBm)
	Reading Level (dBm)	Measure Level (dBm)	
1850.2	30.74	32.88	38
1880	30.57	32.71	38
1909.8	30.58	32.72	38

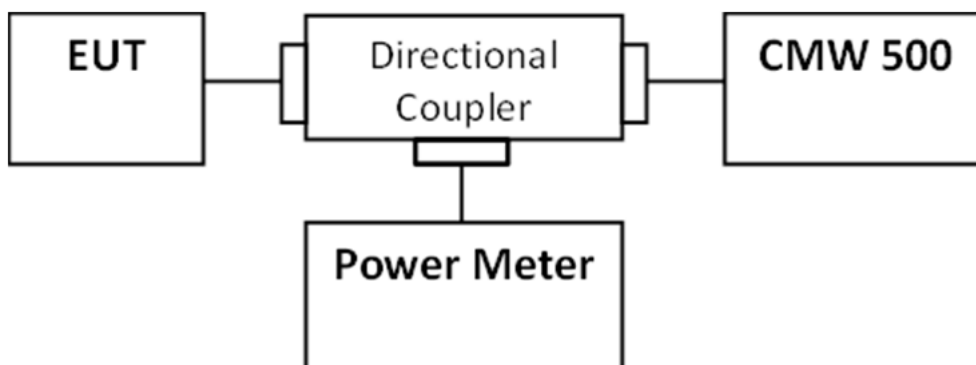
## EGPRS1900

Frequency (MHz)	Average Power		Limit (dBm)
	Reading Level (dBm)	Measure Level (dBm)	
1850.2	30.73	32.87	38
1880	30.59	32.73	38
1909.8	30.56	32.70	38

Note: Measure Level(ERP)= Reading Level +Antenna Gain

## 4. Occupied Bandwidth

### 4.1. Test Setup



### 4.2. Test Procedure

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The 26 dB bandwidth and 99% occupied bandwidth of the low & middle & high channel for the highest RF powers were measured.

### 4.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 4.2 & 4.3  
ANSI C63.26-2015 Sub-clause 5.4.3 & 5.4.4

#### 4.4. Test Result

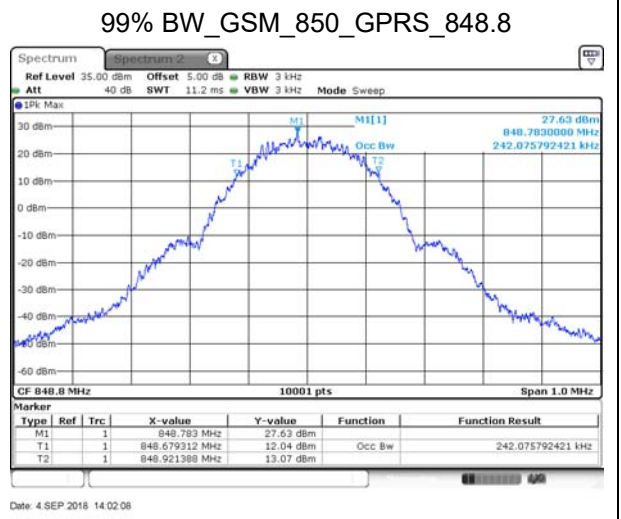
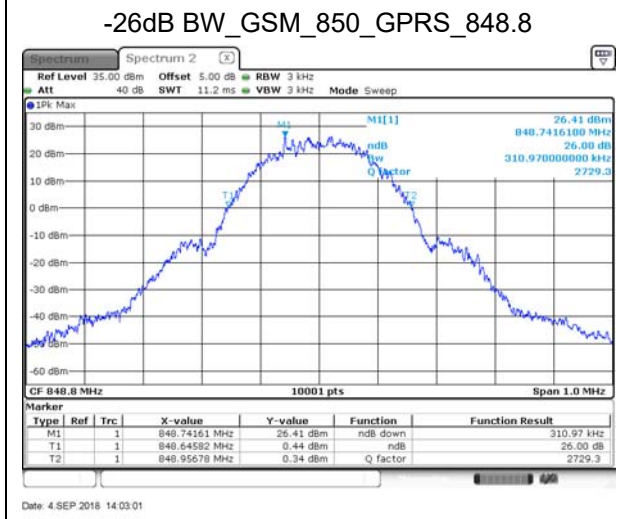
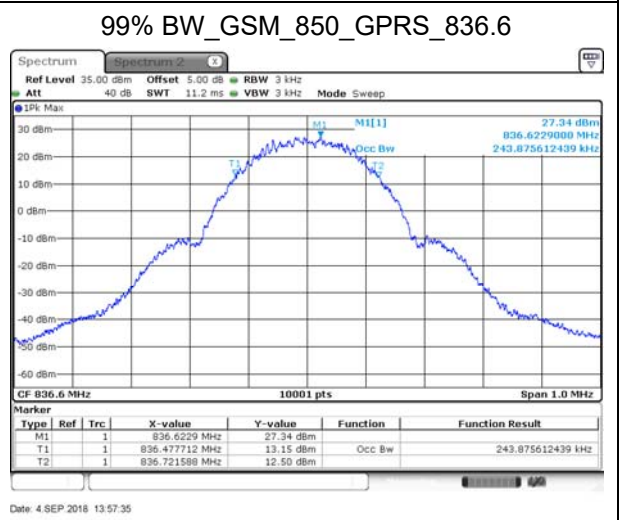
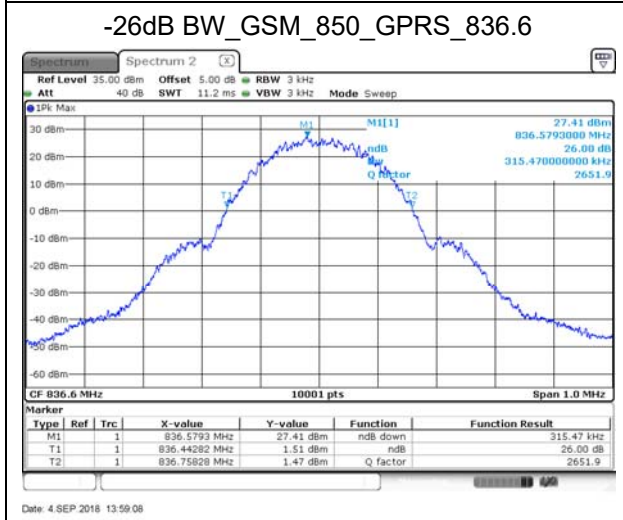
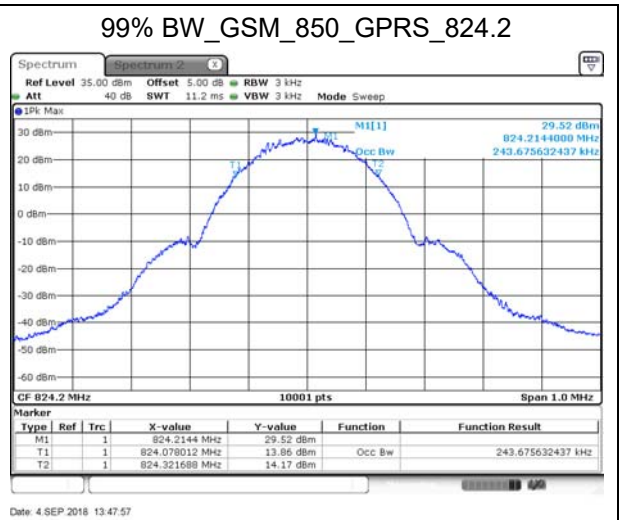
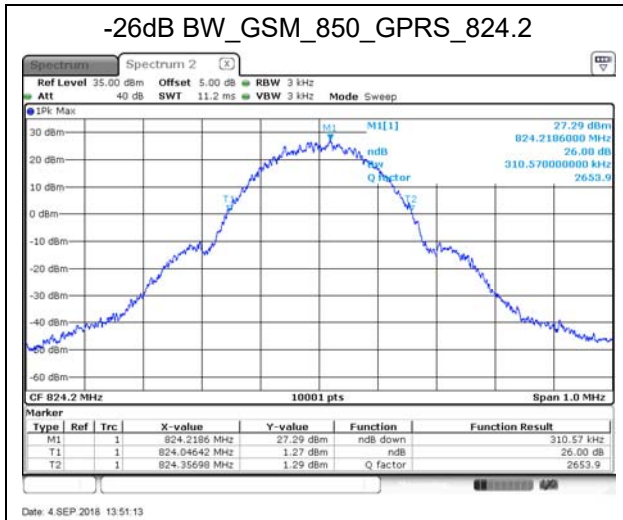
Product	ME910C1-WW		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/04	Test Site	SR10-H

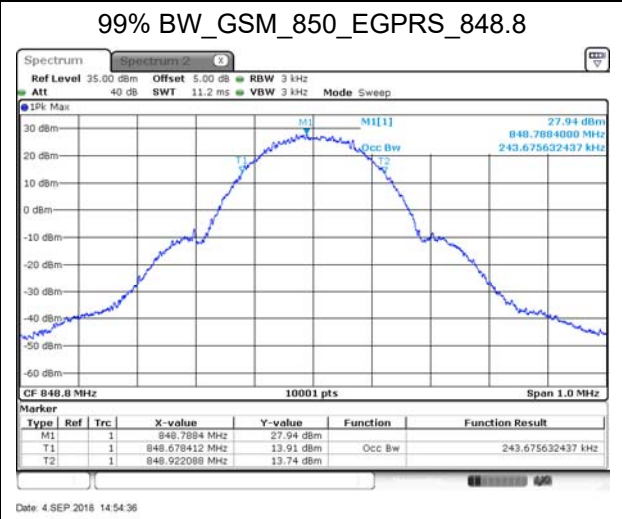
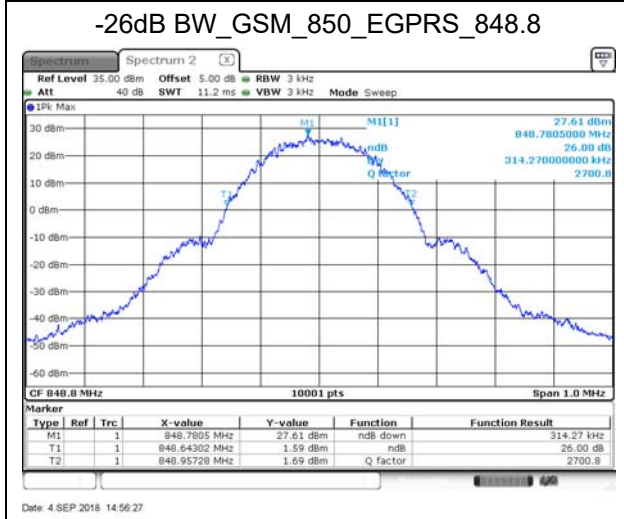
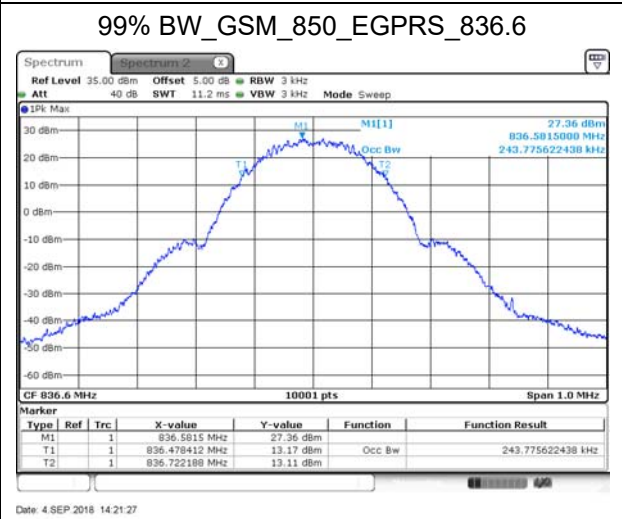
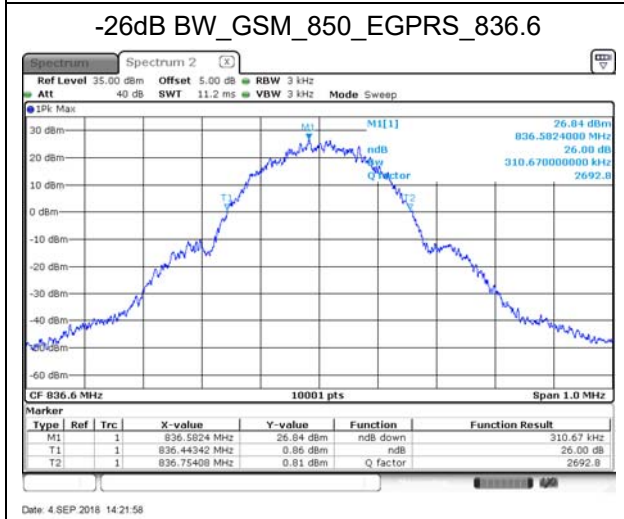
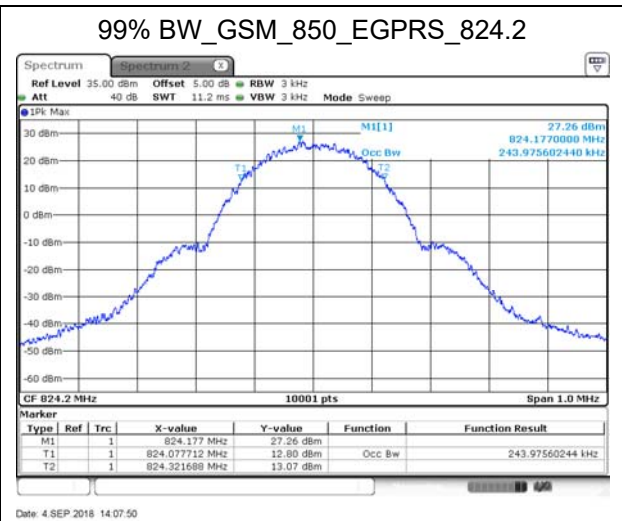
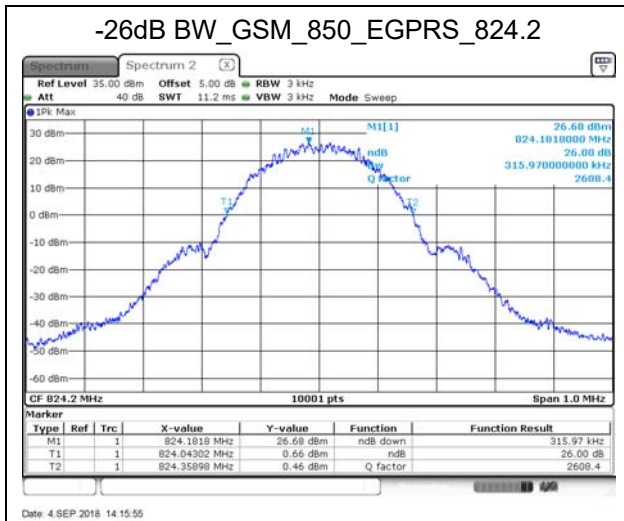
##### GPRS850

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)
128	824.20	310.57	243.675	NA
190	836.60	315.47	243.875	NA
251	848.80	310.97	242.075	NA

##### EGPRS850

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)
128	824.20	315.97	243.975	NA
190	836.60	310.67	243.775	NA
251	848.80	314.27	243.675	NA





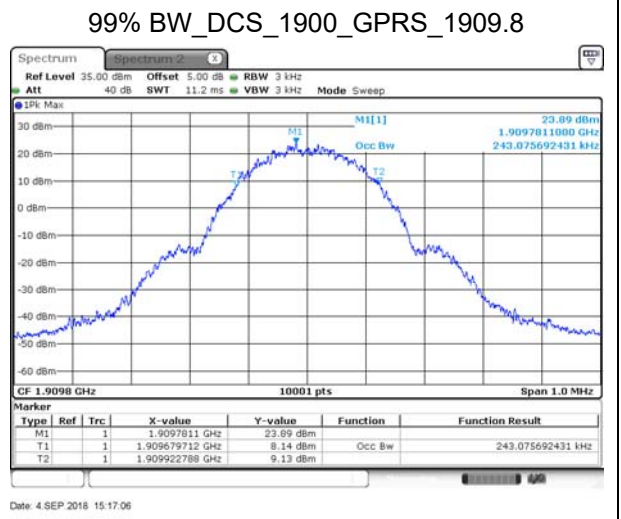
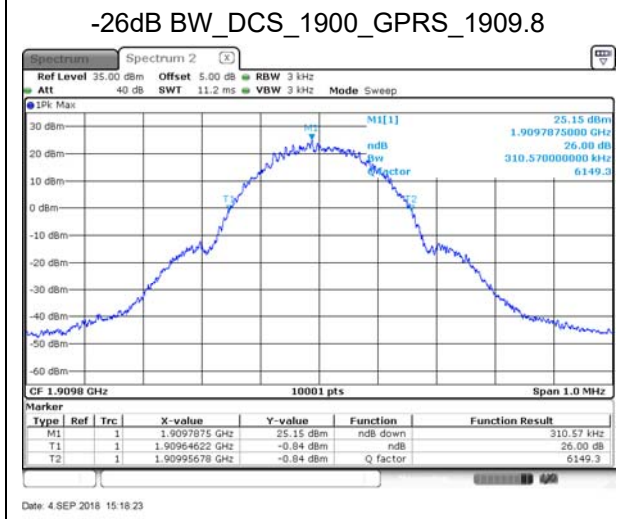
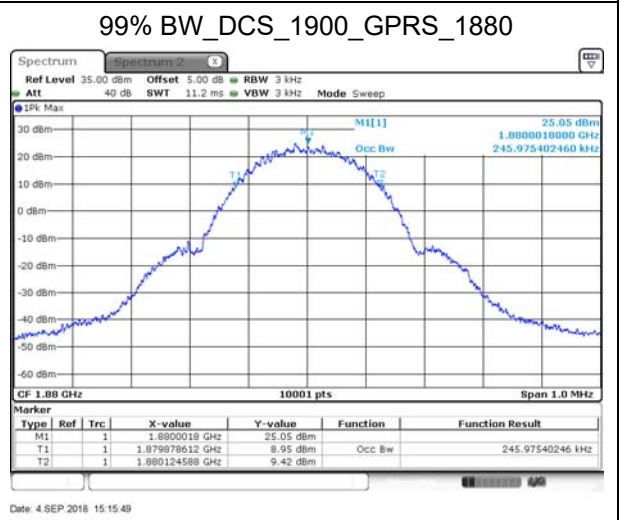
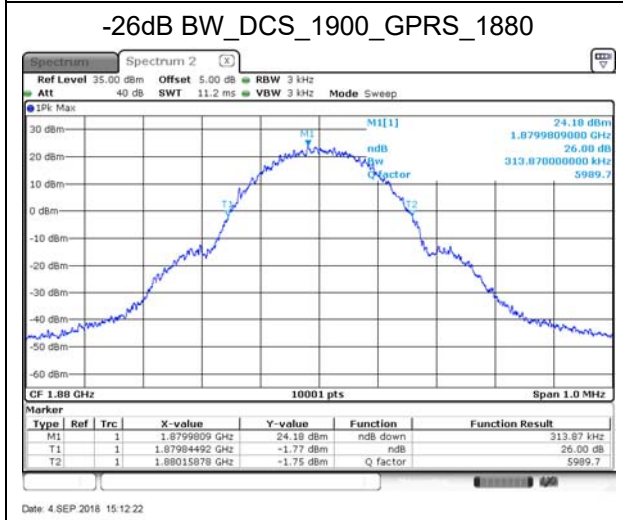
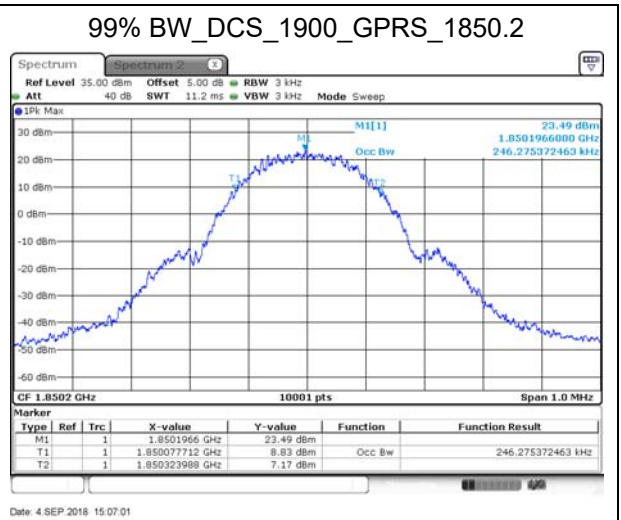
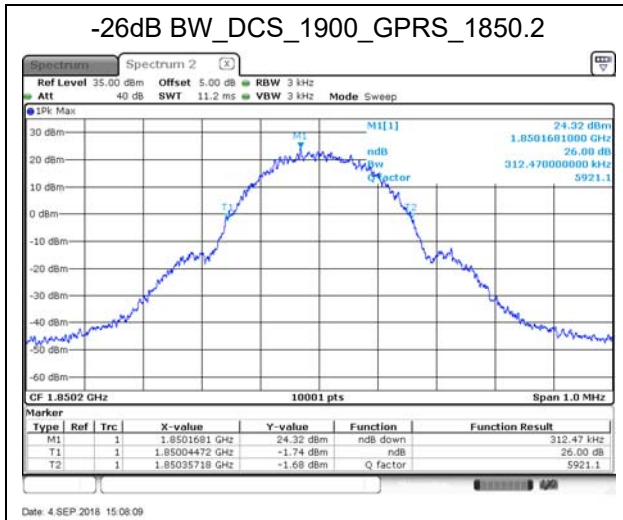
Product	ME910C1-WW		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/04	Test Site	SR10-H

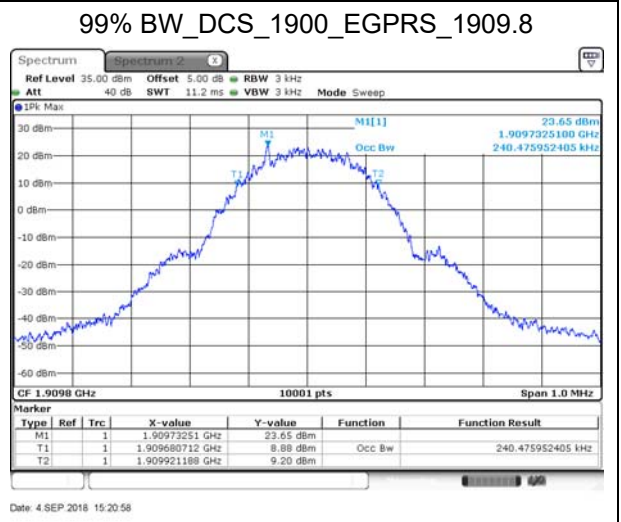
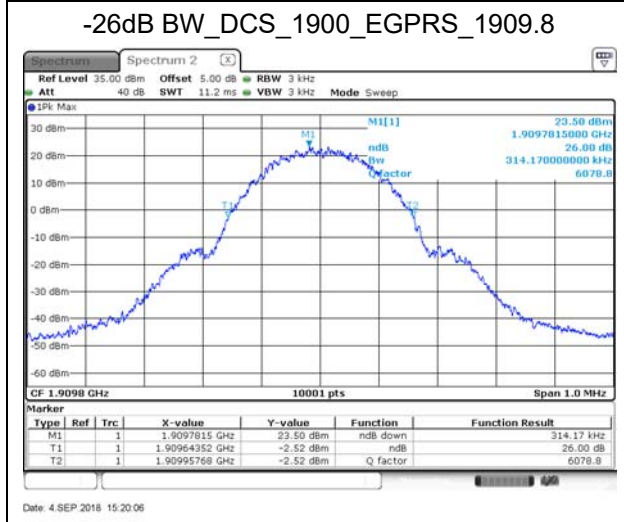
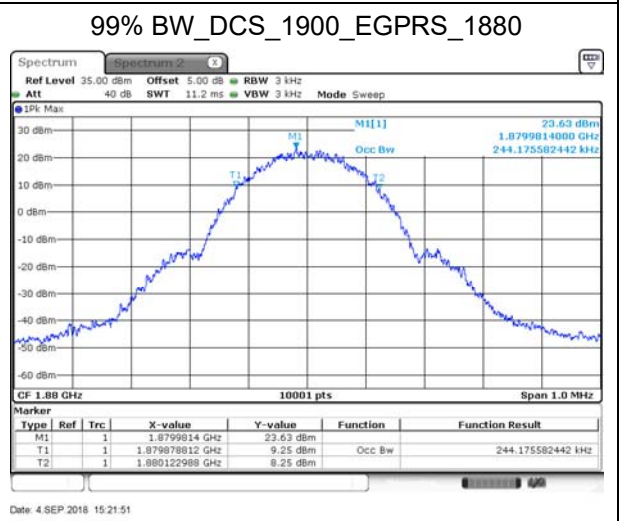
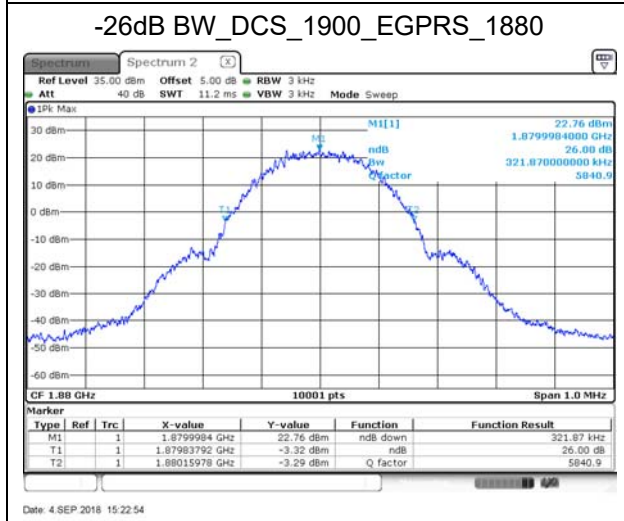
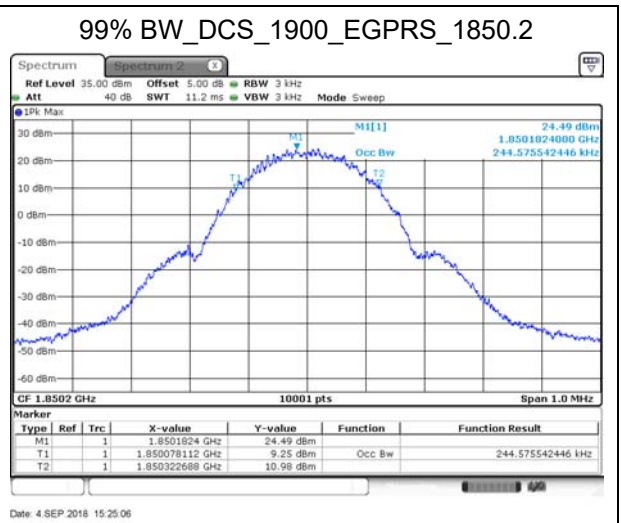
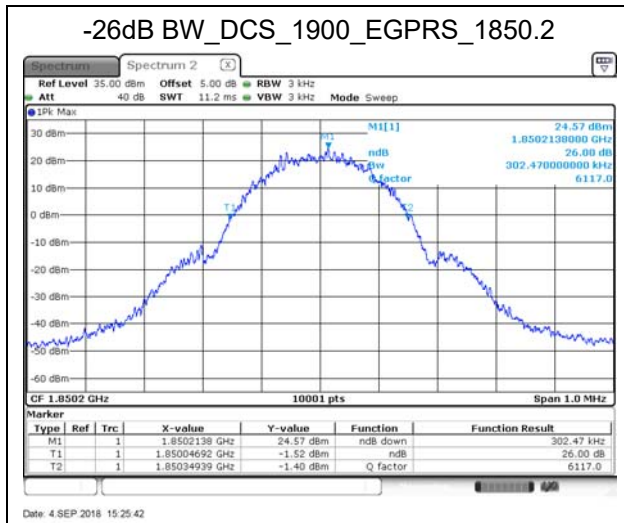
## GPRS1900

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)
512	1850.2	312.47	246.275	NA
661	1880	313.87	245.975	NA
810	1909.8	310.57	243.075	NA

## EGPRS1900

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)
512	1850.2	302.47	244.575	NA
661	1880	321.87	244.175	NA
810	1909.8	314.17	240.475	NA

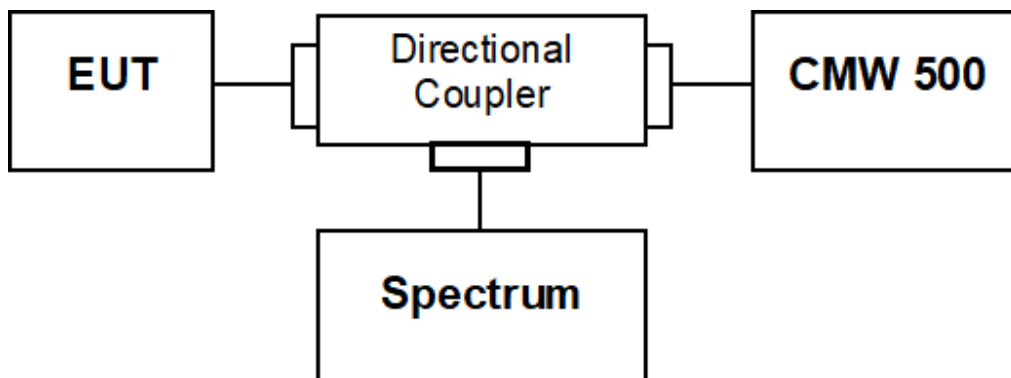






## 5. Peak To Average Ratio

### 5.1. Test Setup



### 5.2. Test Procedure

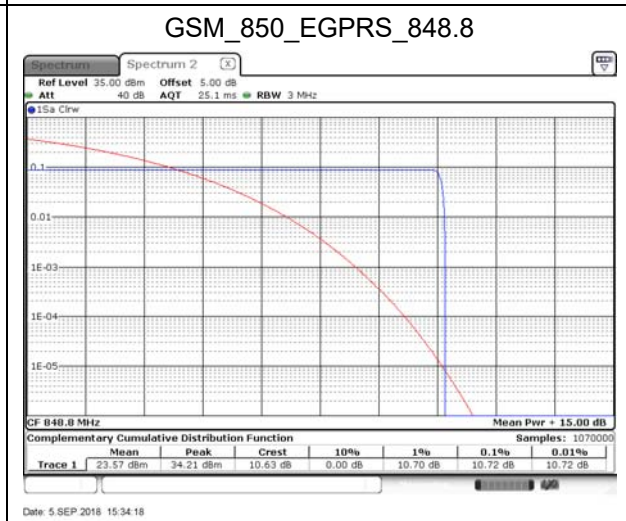
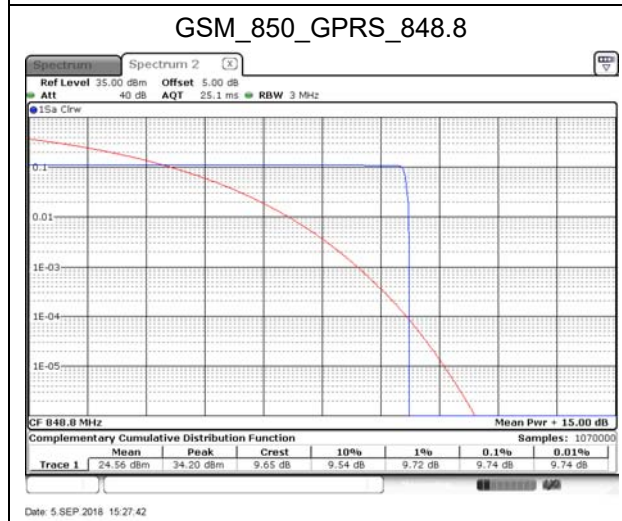
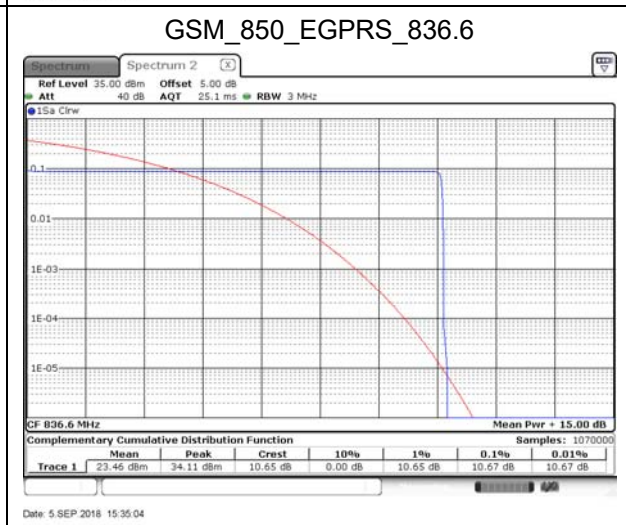
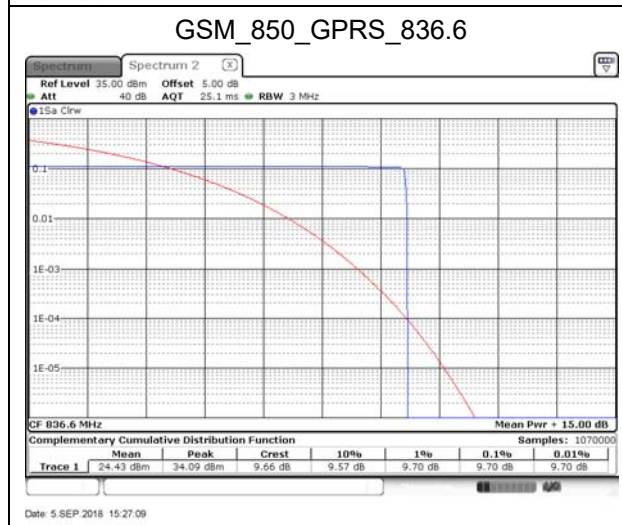
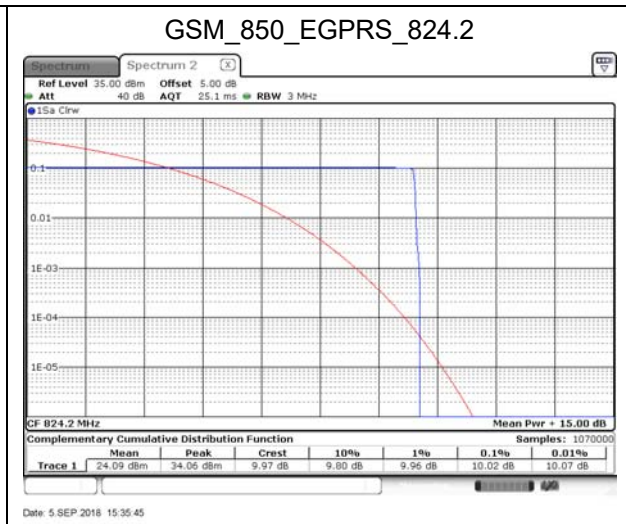
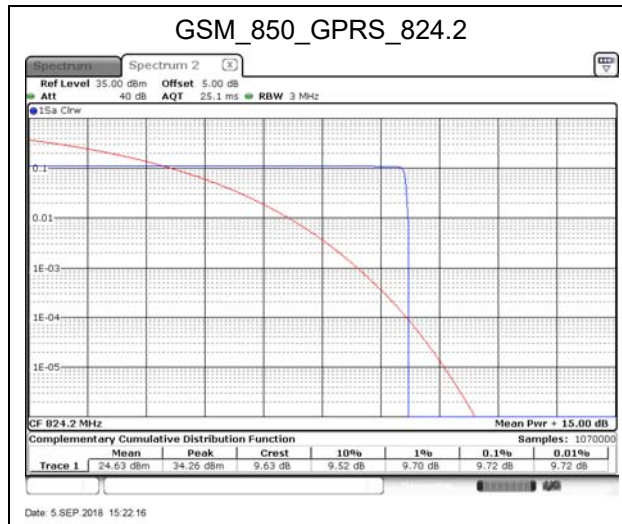
1. Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Record the maximum PAPR level associated with a probability of 0.1 %.

### 5.3. Test Method

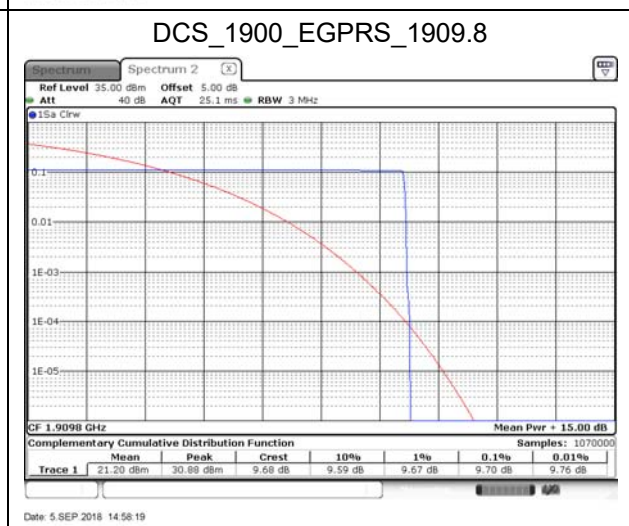
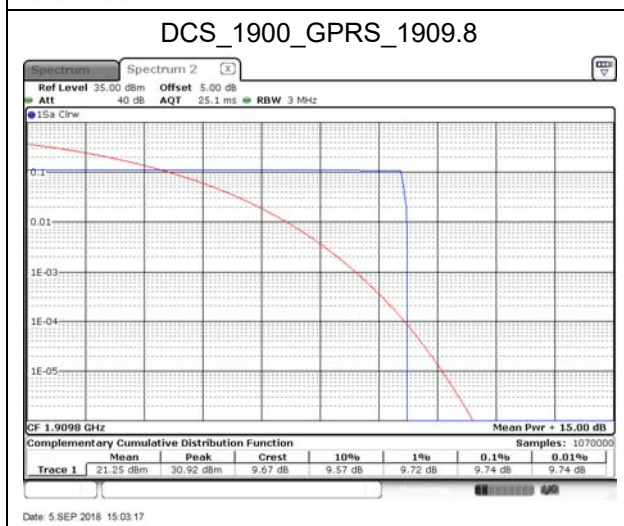
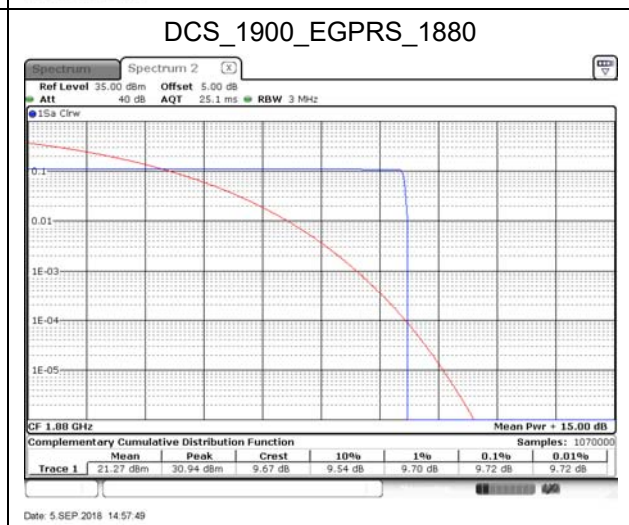
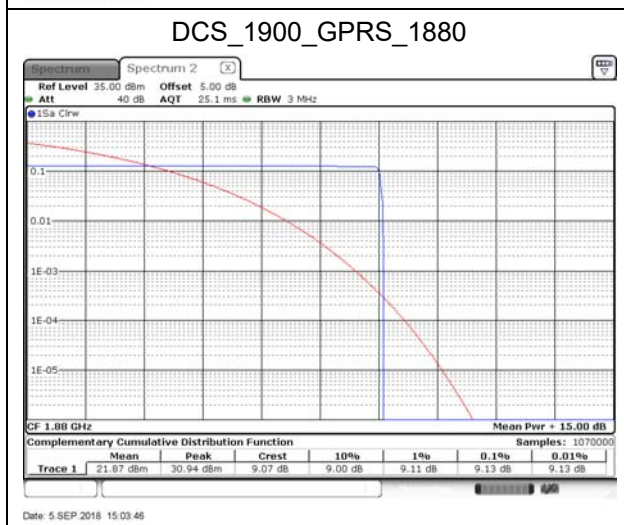
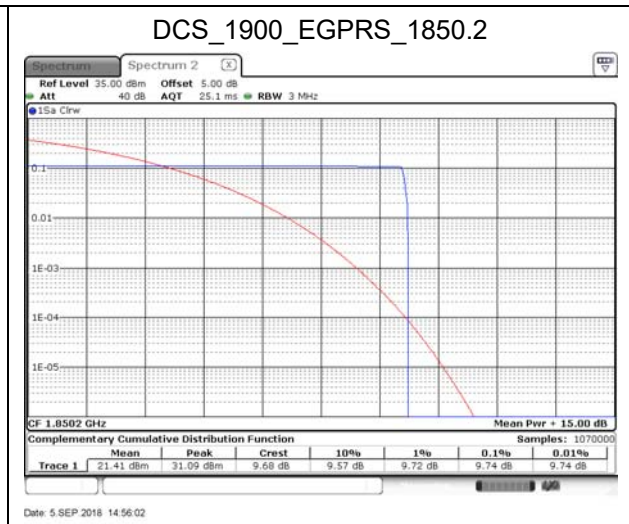
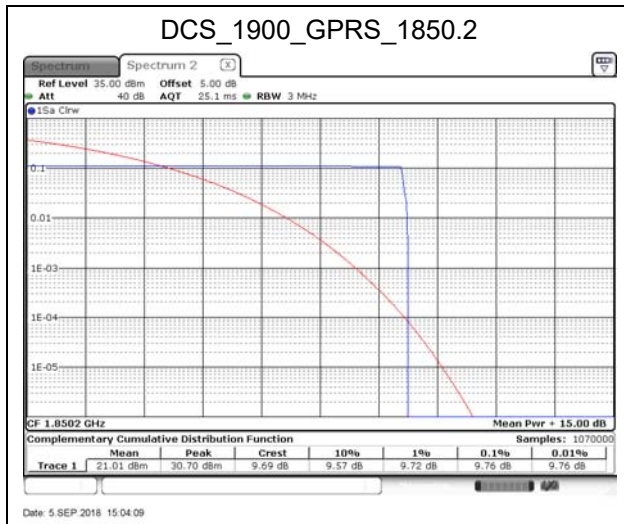
KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 5.7.2  
ANSI C63.26-2015 Sub-clause 5.2.3.4

### 5.4. Test Result

Product	ME910C1-WW		
Test Item	Peak To Average Ratio		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/05	Test Site	SR10-H

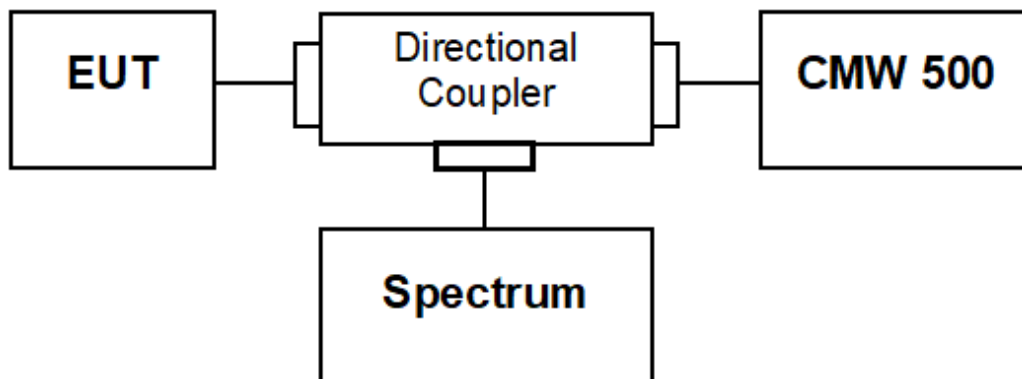


Product	ME910C1-WW		
Test Item	Peak To Average Ratio		
Test Mode	Mode 2: DCS 1900		
Date of Test	2018/09/05	Test Site	SR10-H



## 6. Conducted Band Edge

### 6.1. Test Setup



### 6.2. Test Procedure

1. The EUT was connected to spectrum analyzer and System Simulator via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The conducted spurious emission for the whole frequency range was taken.
4. In the 1MHz 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 to measure the out of band Emissions.

### 6.3. Test Method

#### **Conducted Spurious Measurement:**

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause6.1

ANSI C63.26: 2015 Sub-clause 5.7

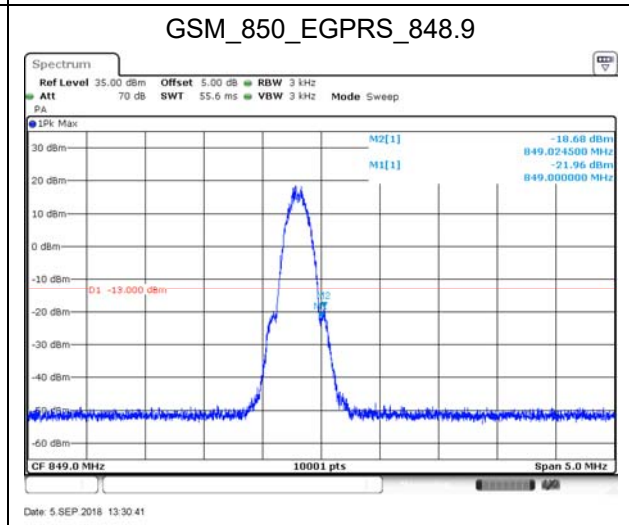
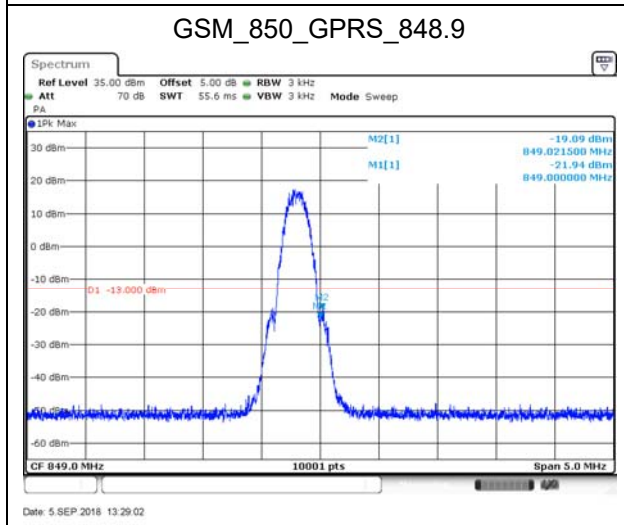
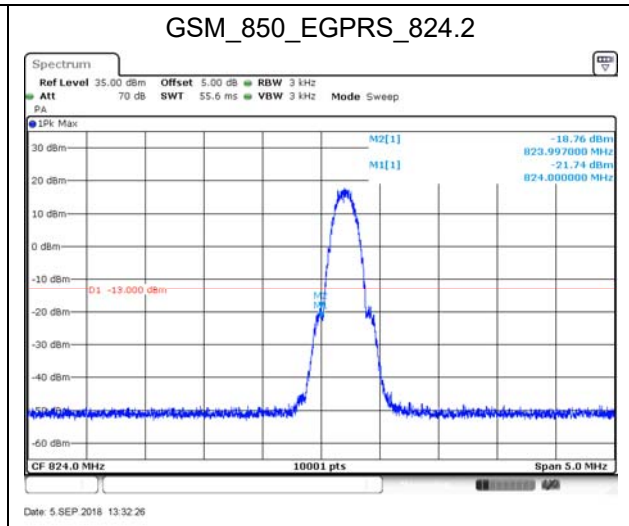
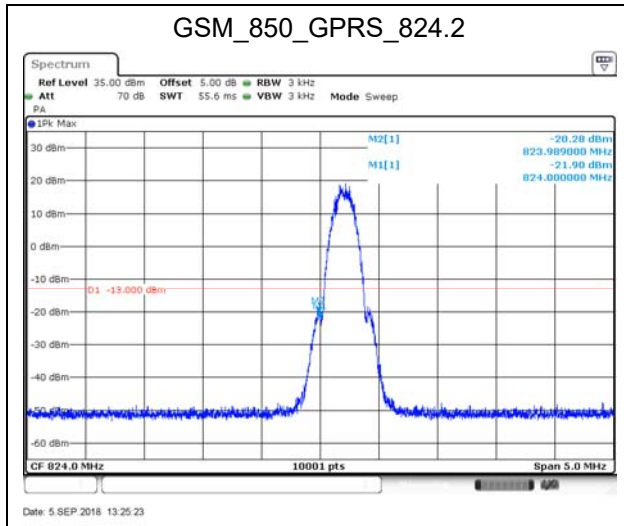
#### **Radiated Spurious Measurement:**

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause5.8

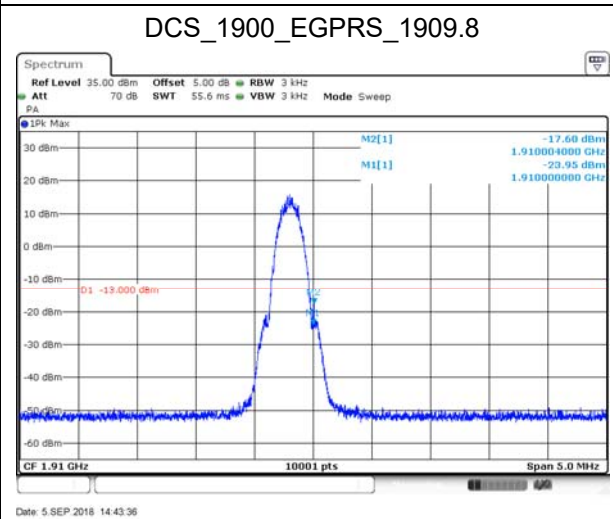
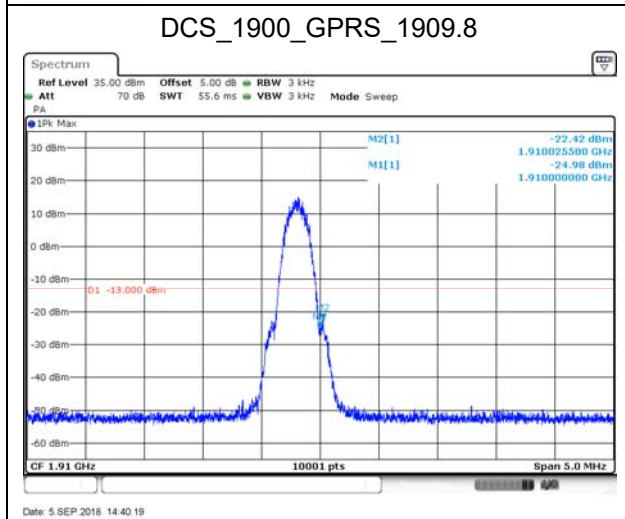
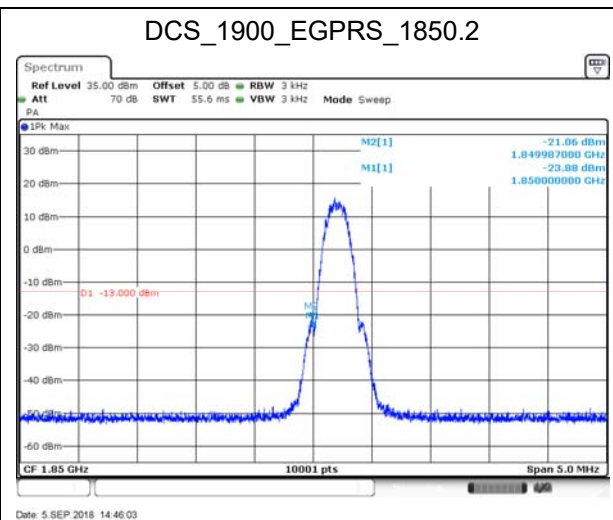
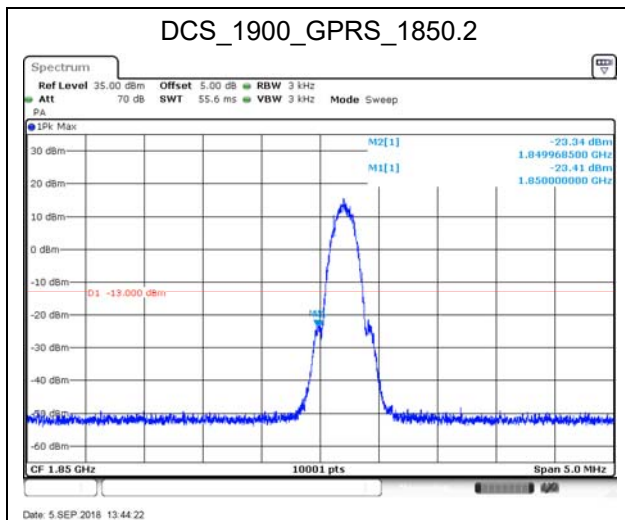
ANSI C63.26: 2015 Sub-clause 5.5.3.2

### 6.4. Test Result

Product	ME910C1-WW		
Test Item	Conducted Band Edge		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/05	Test Site	SR10-H



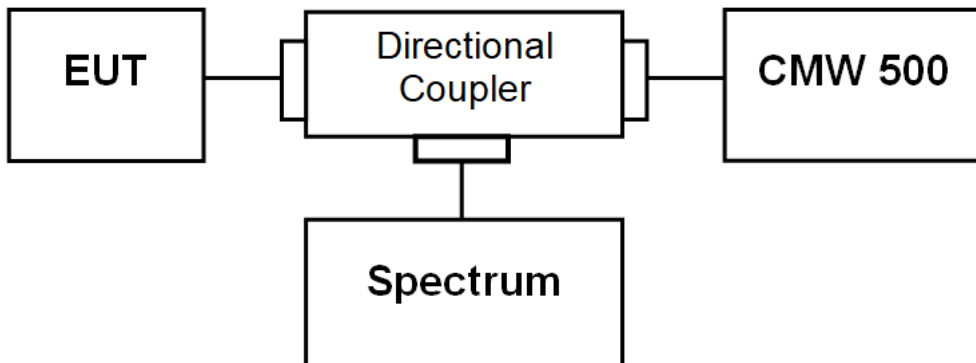
Product	ME910C1-WW		
Test Item	Conducted Band Edge		
Test Mode	Mode 2: DCS 1900		
Date of Test	2018/09/05	Test Site	SR10-H



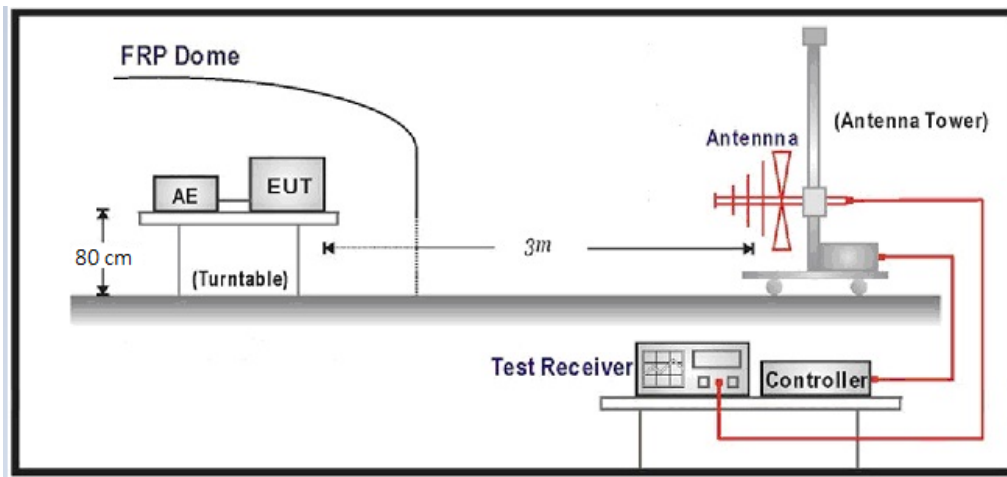
## 7. Spurious Emission

### 7.1. Test Setup

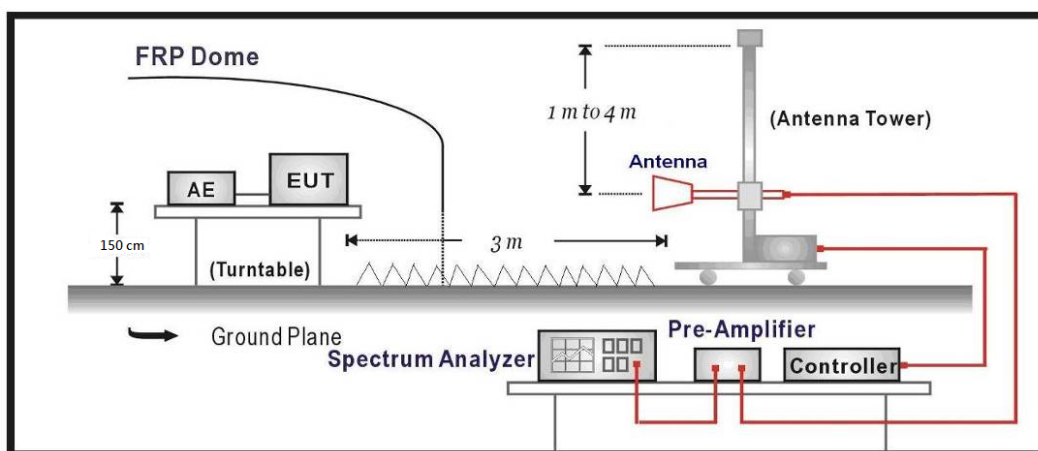
Conducted Spurious Measurement (below 1GHz)



Radiated Spurious Measurement (below 1GHz)



Radiated Spurious Measurement (above 1GHz)



## 7.2. Test Procedure

### Conducted Spurious Measurement:

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer and Base station by a Directional Couple.
- c) EUT Communicate with Base station, then select a channel for testing.
- d) Add a correction factor to the display of spectrum, and then test.
- e) The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10<sup>th</sup> harmonic.

### Radiated Spurious Measurement:

- a) The EUT was placed on a rotatable wooden table with 1.5 meter above ground.
- b) The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
- c) The table was rotated 360 degrees to determine the position of the highest spurious emission.
- d) The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
- e) Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 1MHz, Sweep 500ms, Taking the record of maximum spurious emission.
- f) A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- g) Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- h) Taking the record of output power at antenna port
- i) Repeat step 7 to step 8 for another polarization.
- j)  $EIRP = SG - \text{Cable loss} + \text{Antenna Gain}$

## 7.3. Test Method

### Conducted Spurious Measurement:

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause6.1  
ANSI C63.26-2015 Sub-clause 5.7

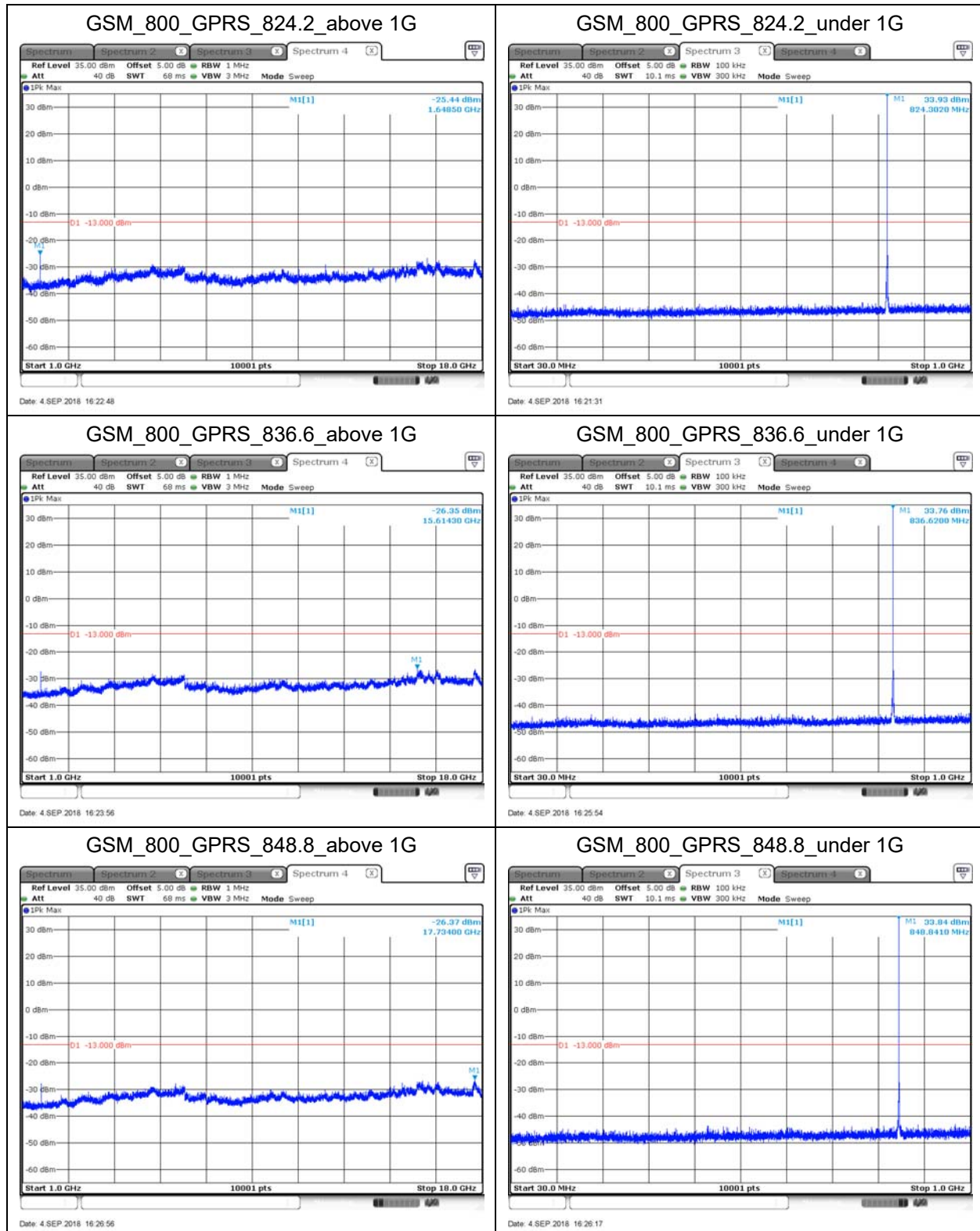
### Radiated Spurious Measurement:

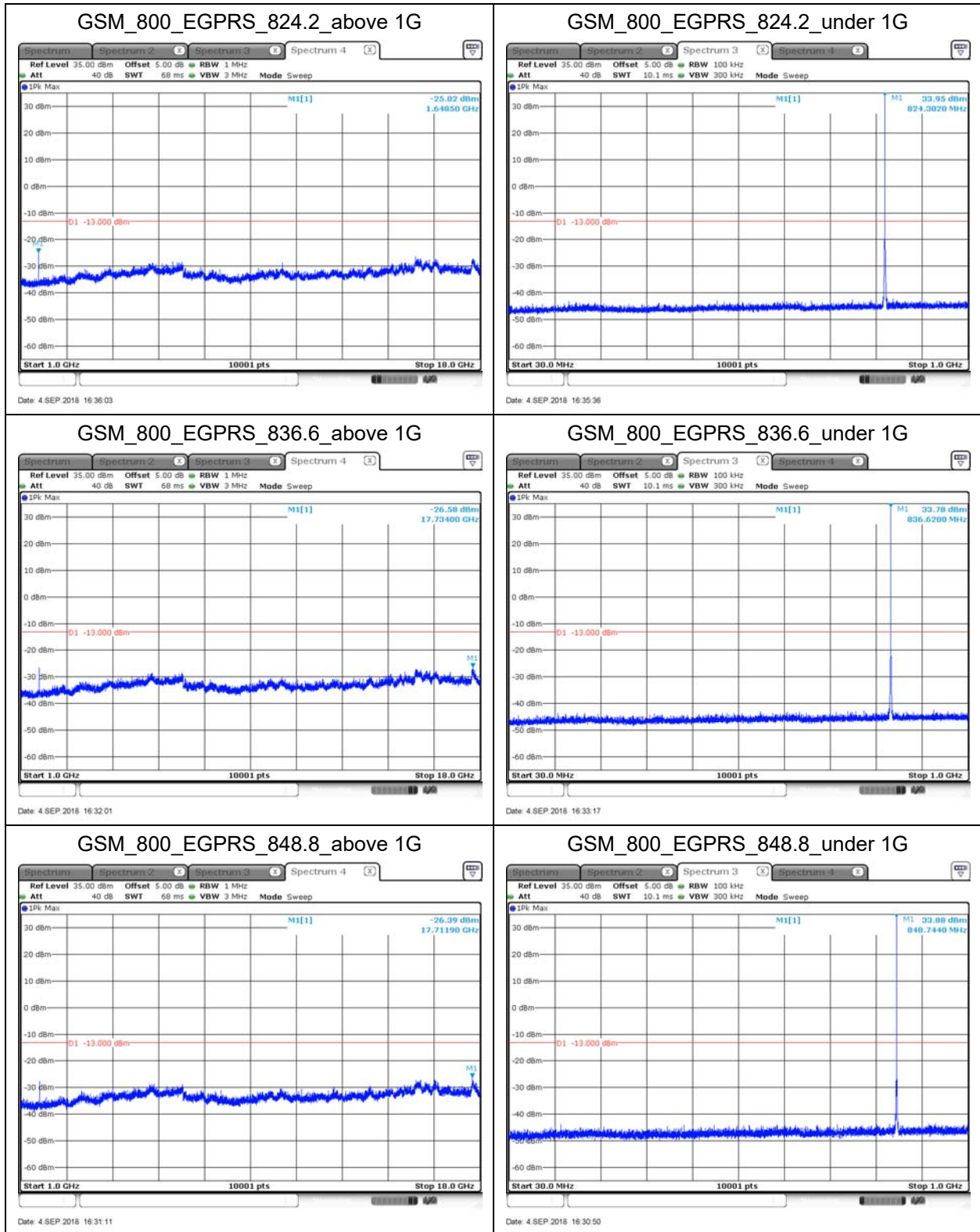
KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause5.8  
ANSI C63.26-2015 Sub-clause 5.5.3.2



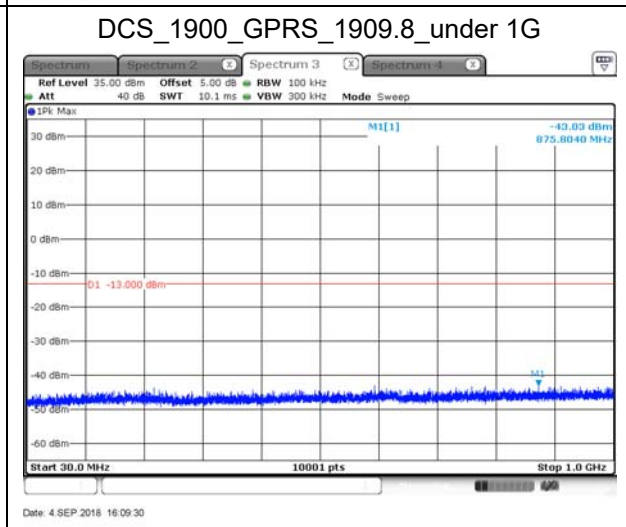
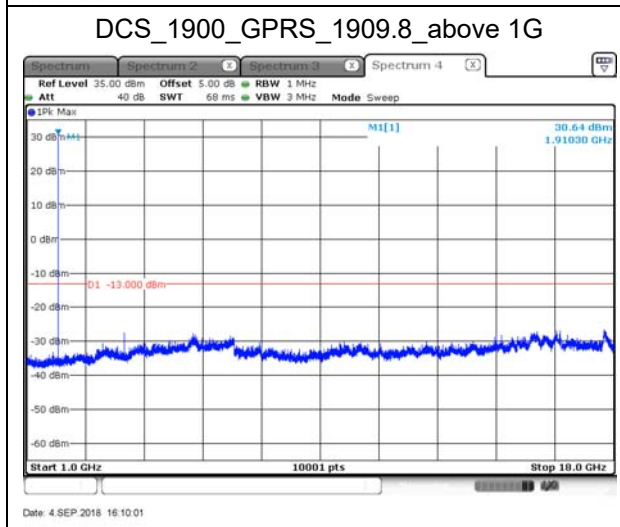
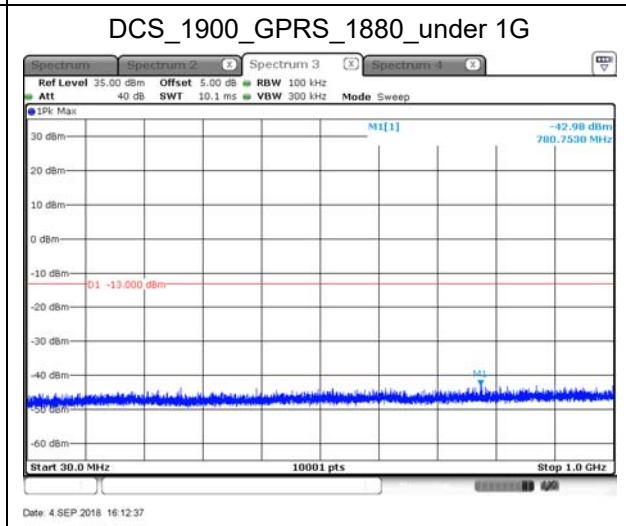
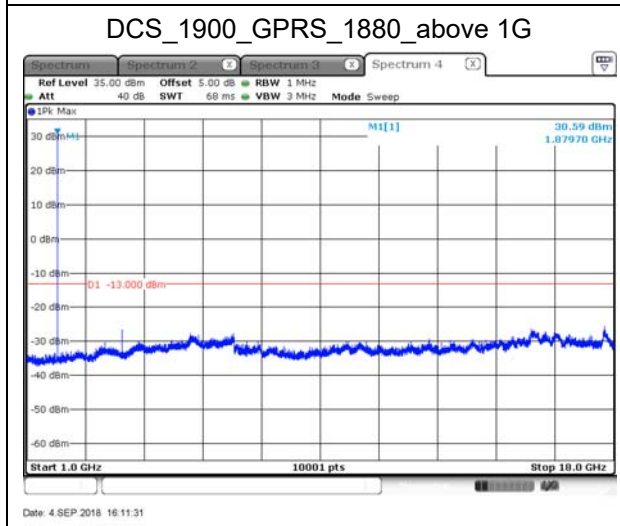
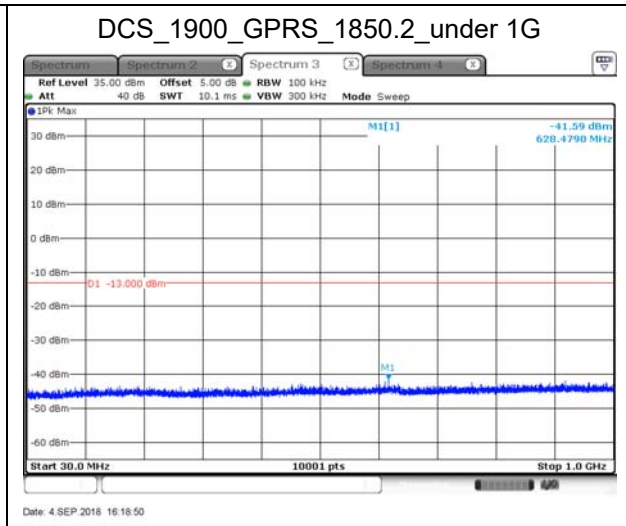
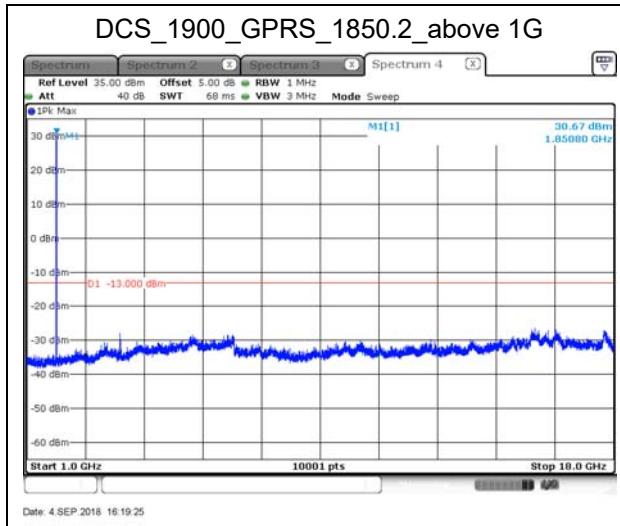
### 7.4. Test Result

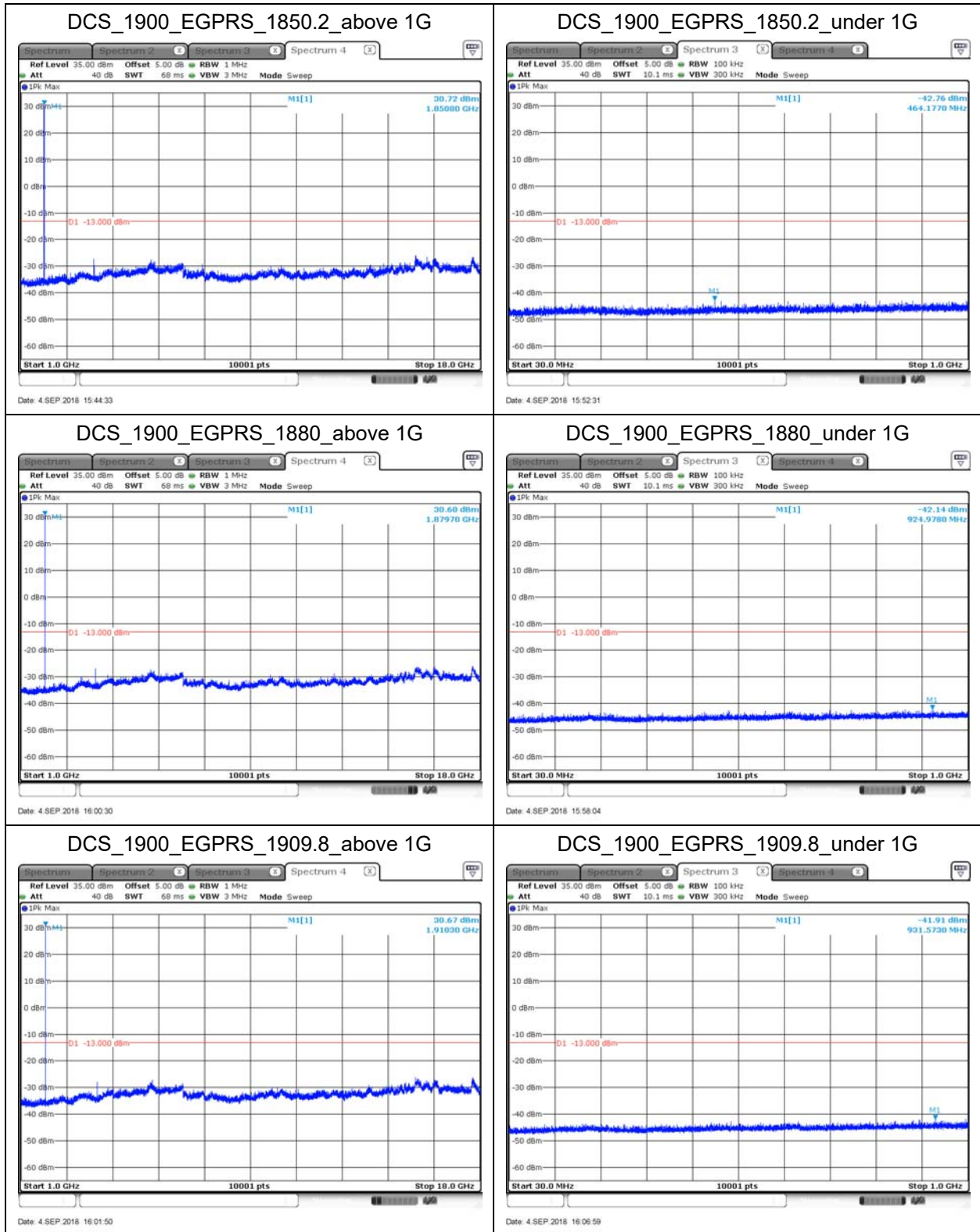
Product	ME910C1-WW		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/04	Test Site	SR10-H





Product	ME910C1-WW		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 2: DCS 1900		
Date of Test	2018/09/04	Test Site	SR10-H





Product	ME910C1-WW		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/08/31	Test Site	CB4-H

## GSM850\_GPRS\_Link

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.2MHz)								
1648.40	-55.230	H	-50.634	2.790	8.745	-44.679	-13	-31.679
2472.60	-61.360	H	-52.766	3.437	10.556	-45.647	-13	-32.647
1648.40	-53.410	V	-48.295	2.790	8.745	-42.340	-13	-29.340
2472.60	-57.600	V	-48.670	3.437	10.556	-41.551	-13	-28.551
Middle Channel 190 (836.6MHz)								
1673.20	-53.640	H	-49.136	2.813	8.820	-43.129	-13	-30.129
2509.80	-61.260	H	-52.841	3.463	10.608	-45.696	-13	-32.696
1673.20	-50.440	V	-45.371	2.813	8.820	-39.364	-13	-26.364
2509.80	-61.130	V	-52.322	3.463	10.608	-45.177	-13	-32.177
High Channel 251 (848.8MHz)								
1697.60	-58.620	H	-54.224	2.835	8.893	-48.166	-13	-35.166
2546.40	-61.790	H	-53.199	3.489	10.637	-46.051	-13	-33.051
1697.60	-54.470	V	-49.464	2.835	8.893	-43.406	-13	-30.406
2546.40	-59.230	V	-50.264	3.489	10.637	-43.116	-13	-30.116

Test Result (EIRP) = SG Level - Cable Loss + Antenna Gain.

## GSM850\_EGPRS\_Link

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.2MHz)								
1648.40	-56.270	H	-51.674	2.790	8.745	-45.719	-13	-32.719
2472.60	-60.540	H	-51.946	3.437	10.556	-44.827	-13	-31.827
1648.40	-54.670	V	-49.555	2.790	8.745	-43.600	-13	-30.600
2472.60	-60.340	V	-51.410	3.437	10.556	-44.291	-13	-31.291
Middle Channel 190 (836.6MHz)								
1673.20	-54.410	H	-49.906	2.813	8.820	-43.899	-13	-30.899
2509.80	-61.300	H	-52.881	3.463	10.608	-45.736	-13	-32.736
1673.20	-50.340	V	-45.271	2.813	8.820	-39.264	-13	-26.264
2509.80	-61.110	V	-52.302	3.463	10.608	-45.157	-13	-32.157
High Channel 251 (848.8MHz)								
1697.60	-58.800	H	-54.404	2.835	8.893	-48.346	-13	-35.346
2546.40	-61.090	H	-52.499	3.489	10.637	-45.351	-13	-32.351
1697.60	-54.450	V	-49.444	2.835	8.893	-43.386	-13	-30.386
2546.40	-59.370	V	-50.404	3.489	10.637	-43.256	-13	-30.256

Test Result (EIRP) = SG Level - Cable Loss + Antenna Gain.

Product	ME910C1-WW		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 2: DCS 1900		
Date of Test	2018/08/31	Test Site	CB4-H

## DCS1900\_GPRS\_Link

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.2MHz)								
3700.40	-61.050	H	-49.382	4.283	11.939	-41.726	-13	-28.726
5550.60	-73.190	H	-58.127	5.201	12.900	-50.428	-13	-37.428
3700.40	-68.380	V	-55.910	4.283	11.939	-48.254	-13	-35.254
5550.60	-71.810	V	-56.900	5.201	12.900	-49.201	-13	-36.201
Middle Channel 661 (1880MHz)								
3760.00	-72.180	H	-60.201	4.335	11.832	-52.704	-13	-39.704
5640.00	-73.030	H	-57.978	5.235	12.900	-50.313	-13	-37.313
3760.00	-64.810	V	-52.039	4.335	11.832	-44.542	-13	-31.542
5640.00	-69.200	V	-54.307	5.235	12.900	-46.642	-13	-33.642
High Channel 810 (1909.8MHz)								
3819.60	-64.900	H	-52.647	4.386	11.725	-45.308	-13	-32.308
5729.40	-69.010	H	-53.655	5.270	12.900	-46.025	-13	-33.025
3819.60	-59.870	V	-46.847	4.386	11.725	-39.508	-13	-26.508
5729.40	-69.110	V	-53.918	5.270	12.900	-46.288	-13	-33.288

Test Result (EIRP) = SG Level - Cable Loss + Antenna Gain.

DCS1900\_EGPRS\_Link

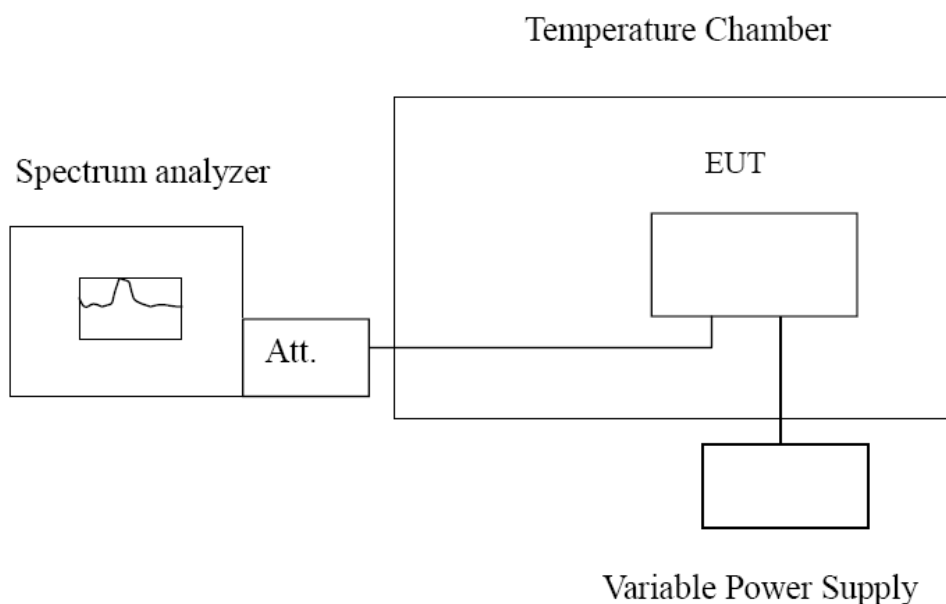
Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.2MHz)								
3700.40	-69.560	H	-57.892	4.283	11.939	-50.236	-13	-37.236
5550.60	-69.520	H	-54.457	5.201	12.900	-46.758	-13	-33.758
3700.40	-66.340	V	-53.870	4.283	11.939	-46.214	-13	-33.214
5550.60	-68.920	V	-54.010	5.201	12.900	-46.311	-13	-33.311
Middle Channel 661 (1880MHz)								
3760.00	-69.270	H	-57.291	4.335	11.832	-49.794	-13	-36.794
5640.00	-69.240	H	-54.188	5.235	12.900	-46.523	-13	-33.523
3760.00	-63.790	V	-51.019	4.335	11.832	-43.522	-13	-30.522
5640.00	-69.120	V	-54.227	5.235	12.900	-46.562	-13	-33.562
High Channel 810 (1909.8MHz)								
3819.60	-68.550	H	-56.297	4.386	11.725	-48.958	-13	-35.958
5729.40	-68.580	H	-53.225	5.270	12.900	-45.595	-13	-32.595
3819.60	-69.810	V	-56.787	4.386	11.725	-49.448	-13	-36.448
5729.40	-68.680	V	-53.488	5.270	12.900	-45.858	-13	-32.858

Test Result (EIRP) = SG Level - Cable Loss + Antenna Gain.



## 8. Frequency Stability

### 8.1. Test Setup



### 8.2. Test Procedure

#### Frequency Stability under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

#### Frequency Stability under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. Reduce the input voltage to specify extreme voltage variation ( $\pm 15\%$ ) and endpoint, record the maximum frequency change.

### 8.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause 9  
ANSI C63.26-2015 Sub-clause 5.6

#### 8.4. Test Result

Product	ME910C1-WW		
Test Item	Frequency Stability		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/04	Test Site	SR10-H

GSM 850\_824.2MHz

Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-13	0.0191
3.8	-15	0.0220
3.4	5	-0.0073

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-38	0.0558
-20	19	-0.0279
-10	-2	0.0029
0	1	-0.0015
10	-35	0.0514
20	23	-0.0342
30	19	-0.0282
40	-24	0.0357
50	-15	0.0223

Product	ME910C1-WW		
Test Item	Frequency Stability		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/04	Test Site	SR10-H

GSM 850\_836.6MHz

Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	19	-0.0279
3.8	18	-0.0265
3.4	22	-0.0323

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-21	0.0309
-20	-26	0.0382
-10	15	-0.0220
0	-31	0.0456
10	-21	0.0309
20	13	-0.0191
30	6	-0.0088
40	-1	0.0015
50	-41	0.0602

Product	ME910C1-WW		
Test Item	Frequency Stability		
Test Mode	Mode 1: GSM 850		
Date of Test	2018/09/04	Test Site	SR10-H

GSM 850\_848.8MHz

Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	14	-0.0206
3.8	-3	0.0044
3.4	8	-0.0118

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-33	0.0485
-20	-6	0.0088
-10	-25	0.0367
0	14	-0.0206
10	10	-0.0147
20	12	-0.0176
30	-22	0.0323
40	-18	0.0265
50	4	-0.0059

Product	ME910C1-WW		
Test Item	Frequency Stability		
Test Mode	Mode 2: DCS 1900		
Date of Test	2018/09/04	Test Site	SR10-H

DCS 1900\_1850.2MHz

Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-22	0.0316
3.8	15	-0.0216
3.4	-27	0.0388

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-33	0.0474
-20	-7	0.0101
-10	-1	0.0014
0	5	-0.0072
10	-35	0.0503
20	-4	0.0058
30	5	-0.0072
40	-38	0.0546
50	-18	0.0259

Product	ME910C1-WW		
Test Item	Frequency Stability		
Test Mode	Mode 2: DCS 1900		
Date of Test	2018/09/04	Test Site	SR10-H

DCS 1900\_1880MHz

Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	-22	0.0323
3.8	17	-0.0250
3.4	-11	0.0162

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	-22	0.0323
-20	14	-0.0206
-10	22	-0.0323
0	-4	0.0059
10	-37	0.0544
20	-24	0.0353
30	10	-0.0147
40	18	-0.0265
50	-1	0.0015

Product	ME910C1-WW		
Test Item	Frequency Stability		
Test Mode	Mode 2: DCS 1900		
Date of Test	2018/09/04	Test Site	SR10-H

DCS 1900\_1909.8MHz

Voltage

DC Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
4.2	13	-0.0193
3.8	14	-0.0201
3.4	17	-0.0253

Temperature

Temperature	Frequency Error (Hz)	Frequency Error (ppm)
-30	21	-0.0302
-20	-5	0.0072
-10	5	-0.0072
0	-33	0.0474
10	-31	0.0446
20	-1	0.0014
30	-32	0.0460
40	5	-0.0072
50	-3	0.0043