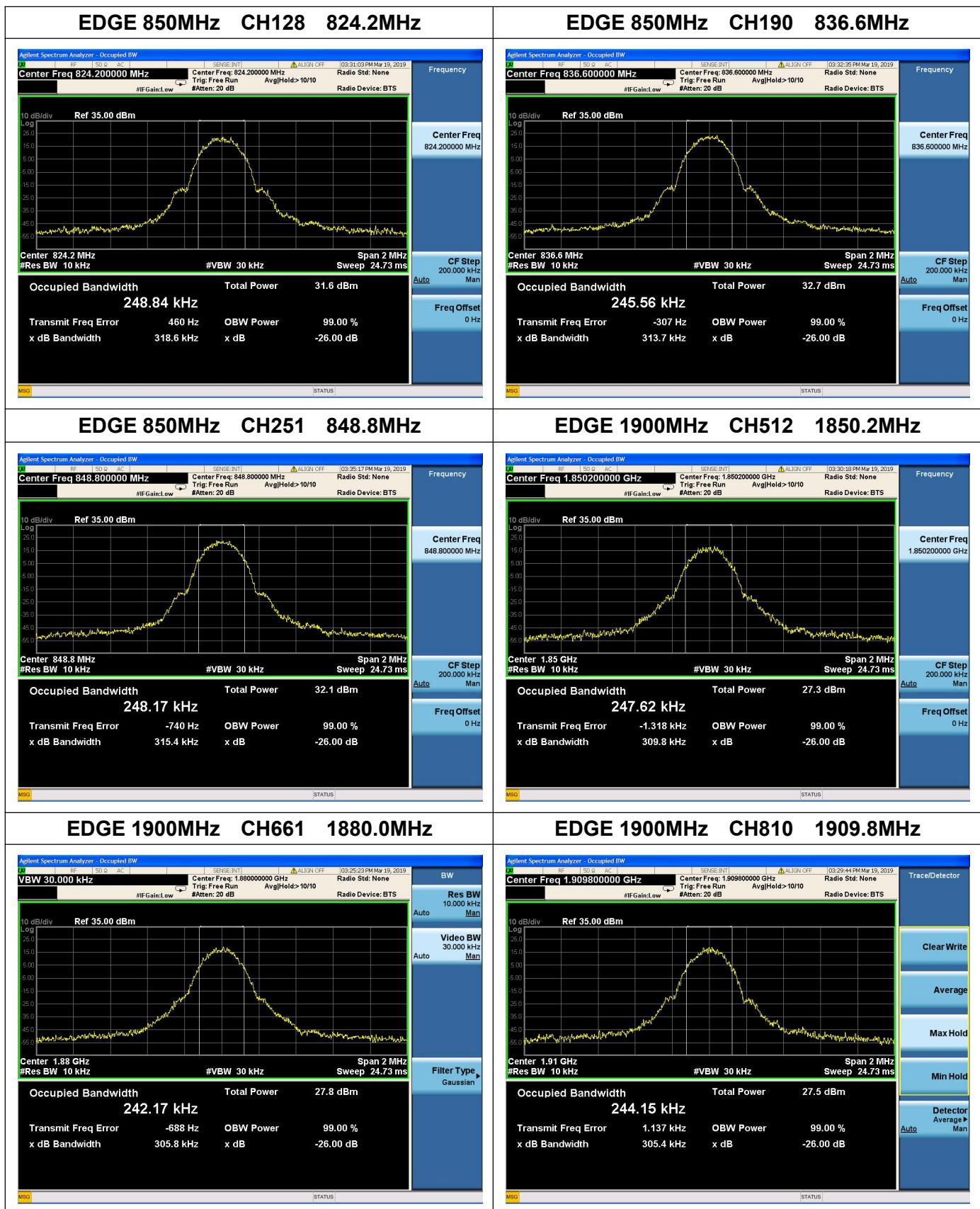


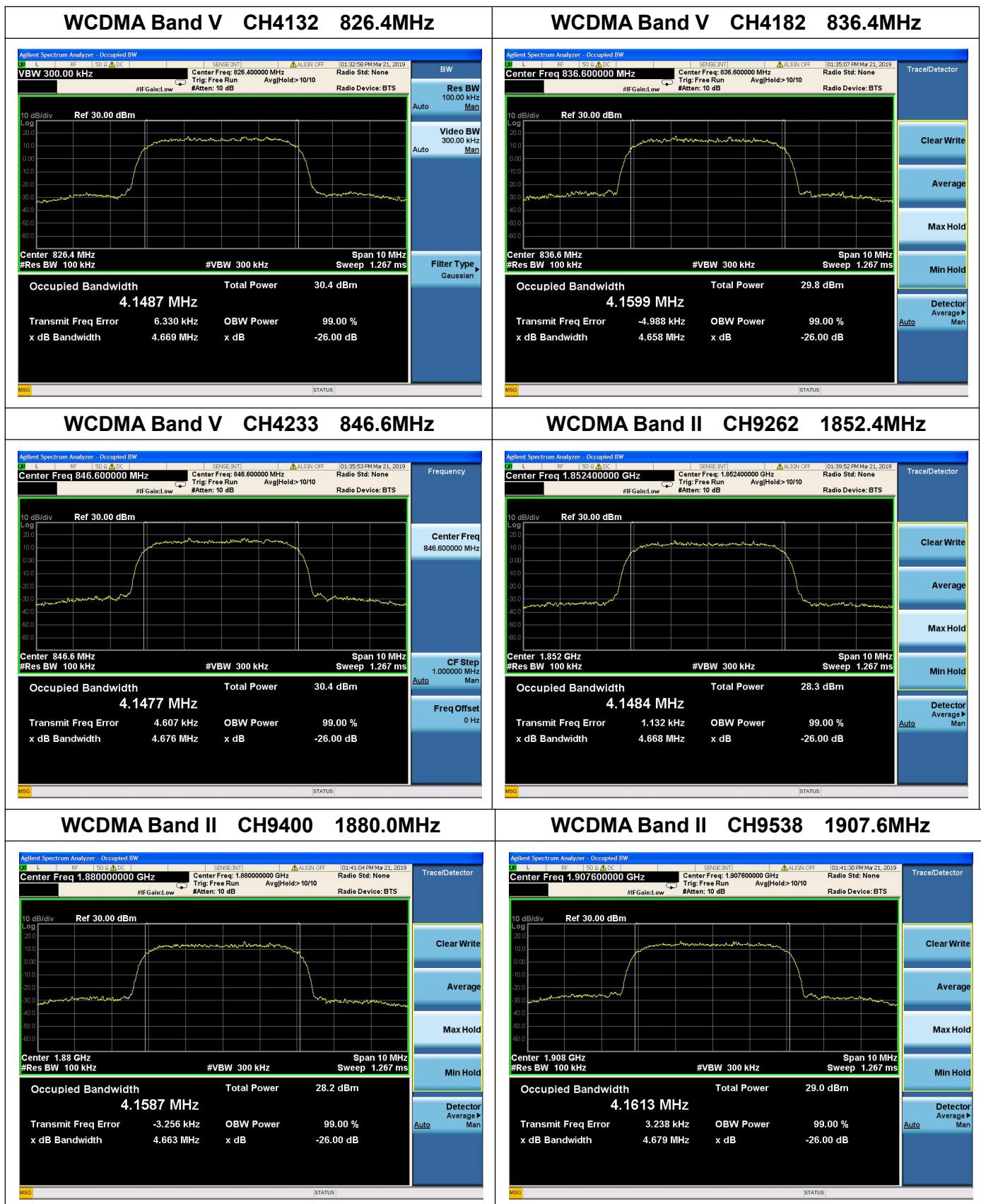


REPORT No.: SZ19020019W01

**MORLAB**SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.  
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,  
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. ChinaTel: 86-755-36698555 Fax: 86-755-36698525  
Http://www.morlab.cn E-mail: service@morlab.cn



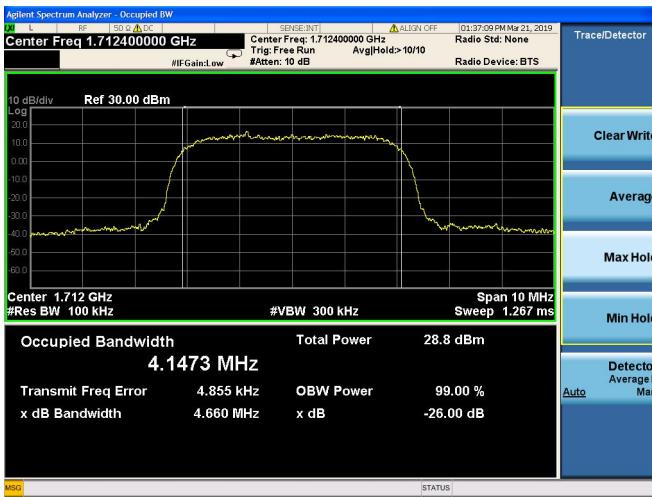
REPORT No.: SZ19020019W01

**MORLAB**SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.  
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,  
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. ChinaTel: 86-755-36698555      Fax: 86-755-36698525  
Http://www.morlab.cn      E-mail: service@morlab.cn

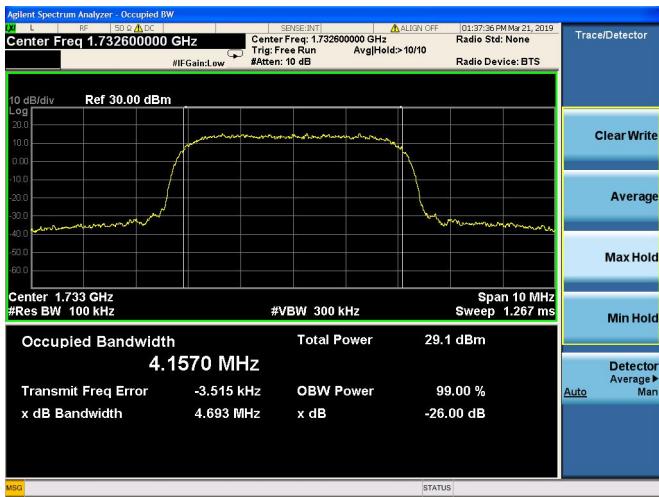


REPORT No.: SZ19020019W01

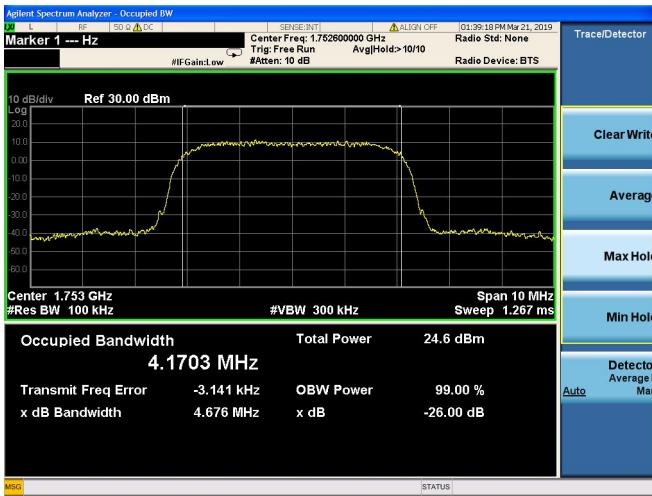
## WCDMA Band IV CH1312 1712.4MHz



## WCDMA Band IV CH1413 1732.6MHz



## WCDMA Band IV CH1513 1752.6MHz



## 2.4. Frequency Stability

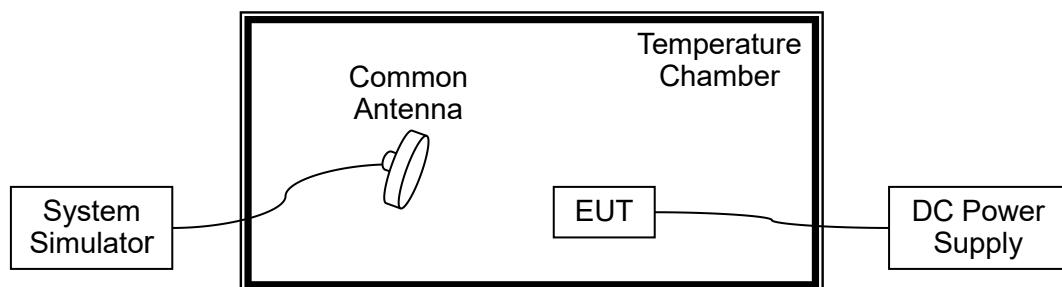
### 2.4.1. Requirement

According to FCC section 22.355, 24.235 and 27.54 the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

### 2.4.2. Test Description

Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.



### 2.4.3. Test Result

#### A. Test Verdict:

GSM 850MHz, Channel 190, Frequency 836.6MHz					
Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	42	0.050	PASS
100		-30	-67	-0.080	
100		-20	-17	-0.020	
100		-10	-79	-0.094	
100		0	-47	-0.056	
100		+10	82	0.098	
100		+20	71	0.085	
100		+30	41	0.049	
100		+40	26	0.031	
100		+50	41	0.049	
115	4.35	+20	-37	-0.044	
85	3.5	+20	-48	-0.057	

GSM 1900MHz, Channel 661, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	61	0.032	PASS
100		-30	42	0.022	
100		-20	-77	-0.041	
100		-10	51	0.027	
100		0	-54	-0.029	
100		+10	-36	-0.019	
100		+20	88	0.047	
100		+30	51	0.027	
100		+40	63	0.034	
100		+50	71	0.038	
115	4.35	+20	-73	-0.039	
85	3.5	+20	34	0.018	



REPORT No.: SZ19020019W01

EDGE 850MHz, Channel 190, Frequency 836.6MHz Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	42	0.050	PASS
100		-30	-77	-0.092	
100		-20	-33	-0.039	
100		-10	-69	-0.082	
100		0	-73	-0.087	
100		+10	56	0.067	
100		+20	82	0.098	
100		+30	43	0.051	
100		+40	15	0.018	
100		+50	34	0.041	
115	4.35	+20	-59	-0.071	
85	3.5	+20	-75	-0.090	

EDGE 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	42	0.022	PASS
100		-30	54	0.029	
100		-20	-27	-0.014	
100		-10	24	0.013	
100		0	-46	-0.024	
100		+10	-87	-0.046	
100		+20	16	0.009	
100		+30	74	0.039	
100		+40	52	0.028	
100		+50	46	0.024	
115	4.35	+20	-35	-0.019	
85	3.5	+20	37	0.020	



REPORT No.: SZ19020019W01

WCDMA Band V, Channel 4182, Frequency 836.4MHz Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	32	0.038	PASS
100		-30	-57	-0.068	
100		-20	-44	-0.053	
100		-10	-24	-0.029	
100		0	-11	-0.013	
100		+10	54	0.065	
100		+20	76	0.091	
100		+30	53	0.063	
100		+40	67	0.080	
100		+50	72	0.086	
115		+20	-59	-0.071	
85		+20	-32	-0.038	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	35	0.019	PASS
100		-30	62	0.033	
100		-20	-11	-0.006	
100		-10	11	0.006	
100		0	-24	-0.013	
100		+10	-53	-0.028	
100		+20	62	0.033	
100		+30	43	0.023	
100		+40	64	0.034	
100		+50	53	0.028	
115		+20	-56	-0.030	
85		+20	59	0.031	



REPORT No.: SZ19020019W01

**WCDMA Band IV, Channel 1413, Frequency 1732.6MHz**  
**Limit =Within Authorized Band**

Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	3.8	+20(Ref)	75	0.043	PASS
100		-30	31	0.018	
100		-20	-65	-0.038	
100		-10	-35	-0.020	
100		0	-29	-0.017	
100		+10	-65	-0.038	
100		+20	69	0.040	
100		+30	35	0.020	
100		+40	22	0.013	
100		+50	35	0.020	
100		+60	35	0.020	
115	4.35	+20	-76	-0.044	
85	3.5	+20	75	0.043	

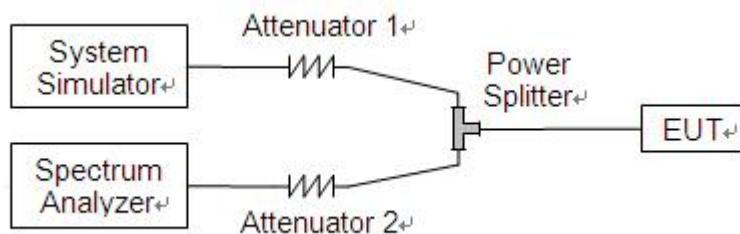
## 2.5. Conducted Out of Band Emissions

### 2.5.1. Requirement

According to FCC section 22.917(a), 24.238(a) and 27.53(h) 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. This calculated to be -13dBm.

### 2.5.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

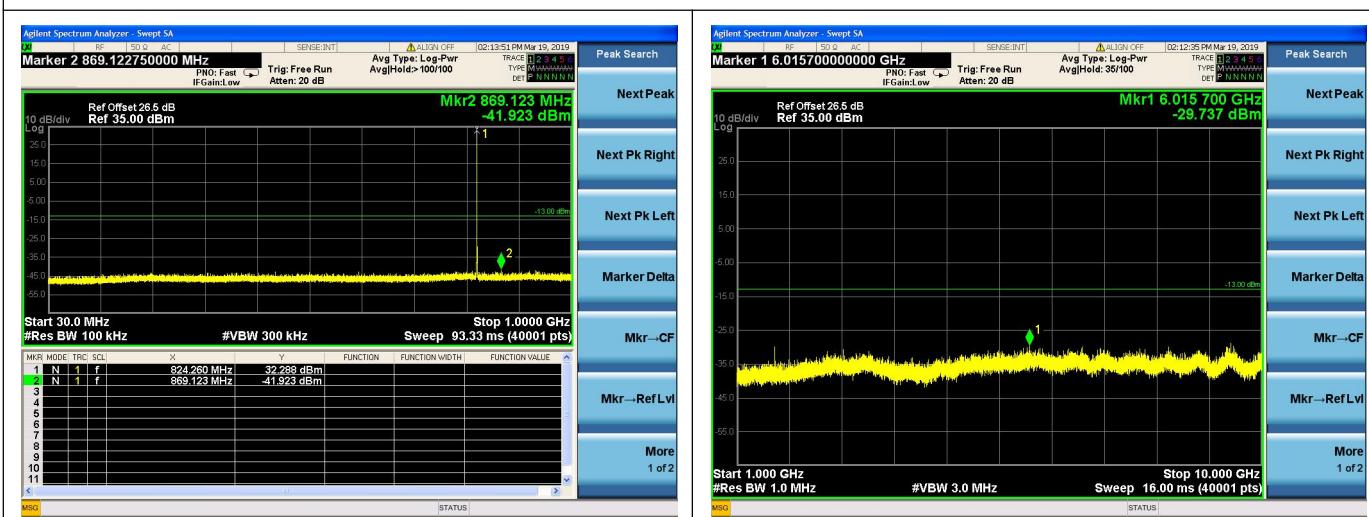
### 2.5.3. Test Result

The measurement frequency range is from 30MHz to the 10<sup>th</sup> harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

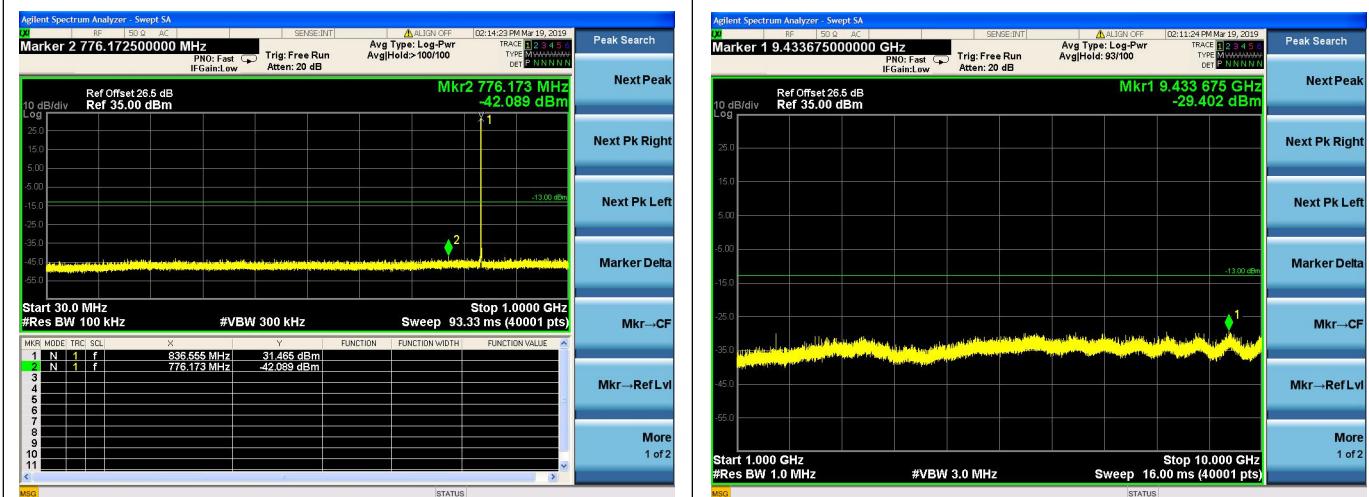


REPORT No.: SZ19020019W01

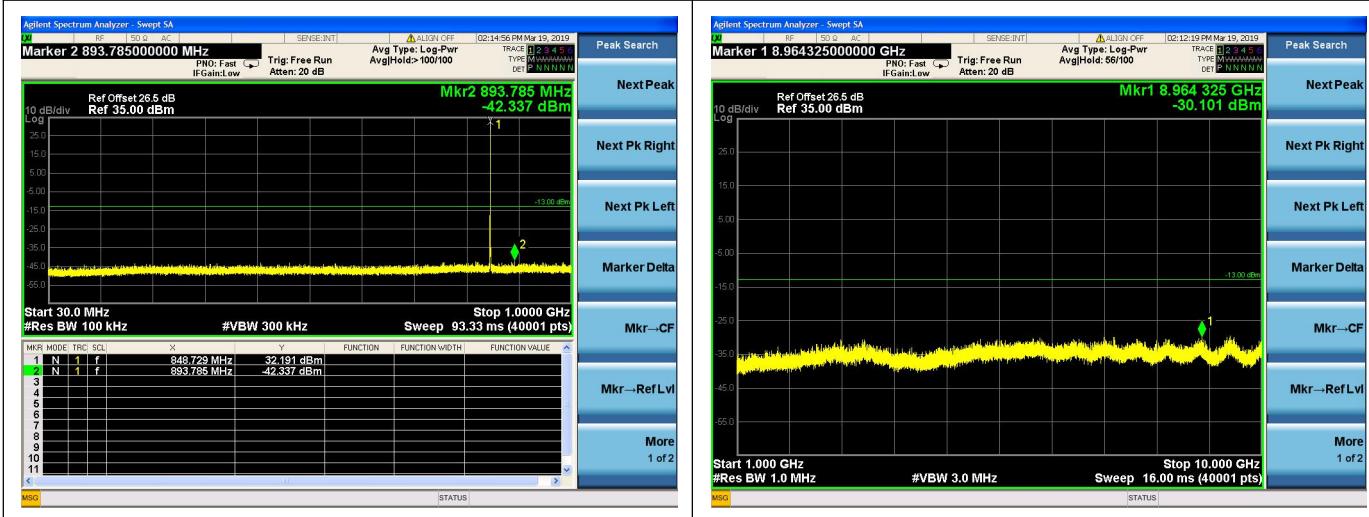
## GSM 850MHz CH128 824.2MHz



## GSM 850MHz CH190 836.6MHz



## GSM 850MHz CH251 848.8MHz

**MORLAB**

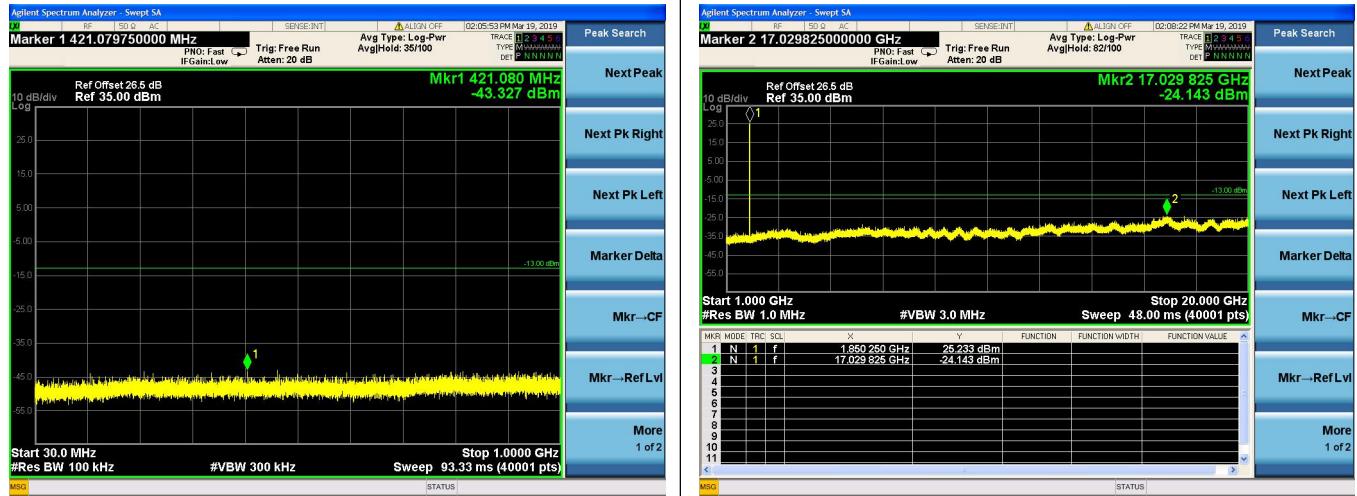
SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.  
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,  
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555 Fax: 86-755-36698525  
Http://www.morlab.cn E-mail: service@morlab.cn

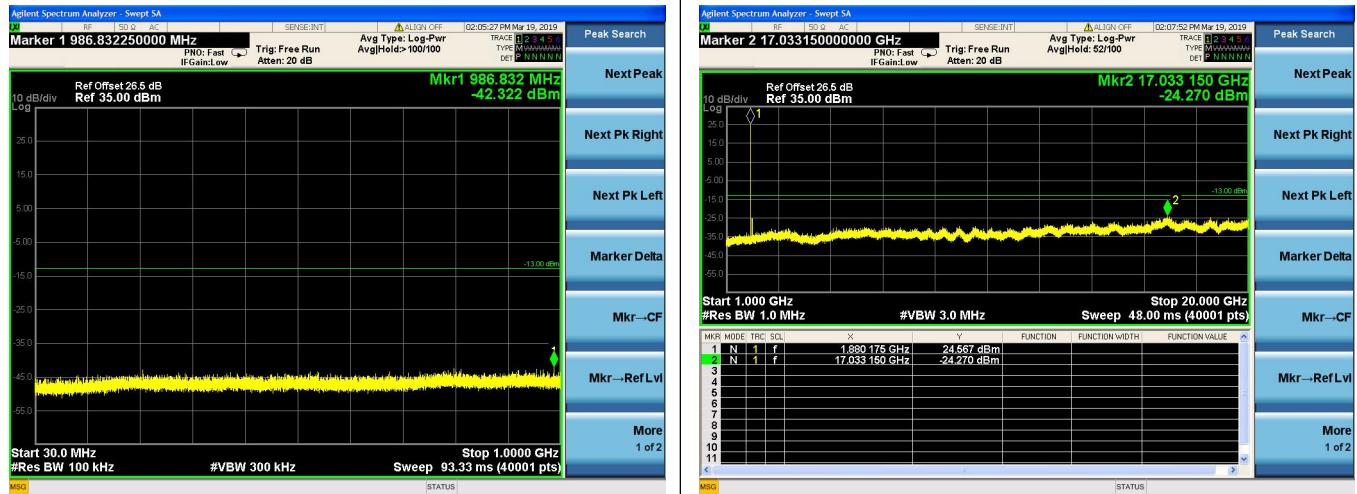


REPORT No.: SZ19020019W01

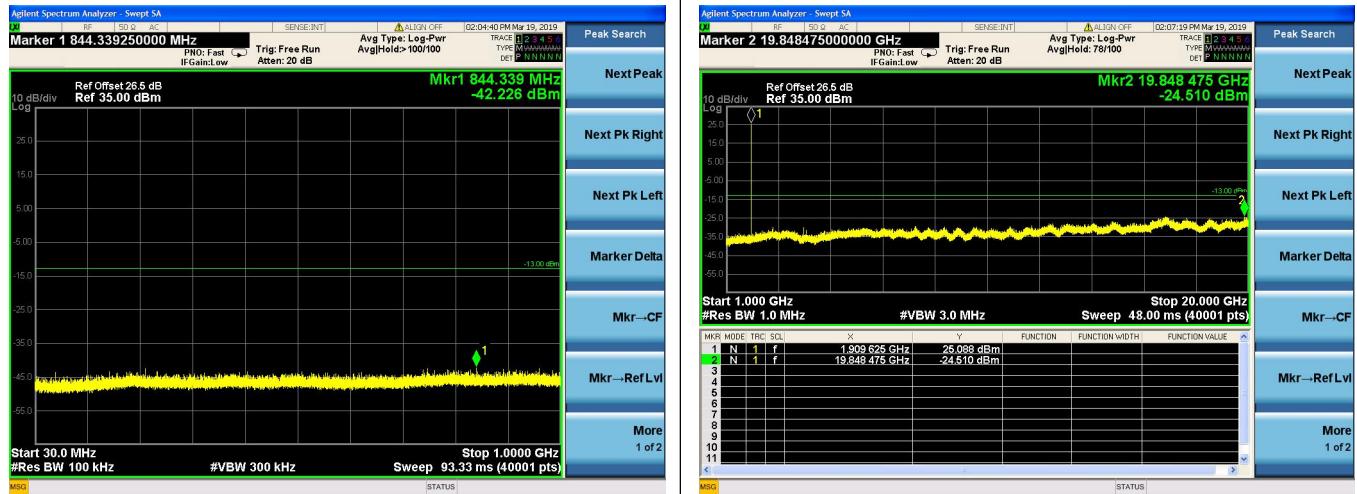
## GSM 1900MHz CH521 1850.2MHz



## GSM 1900MHz CH661 1880.0MHz



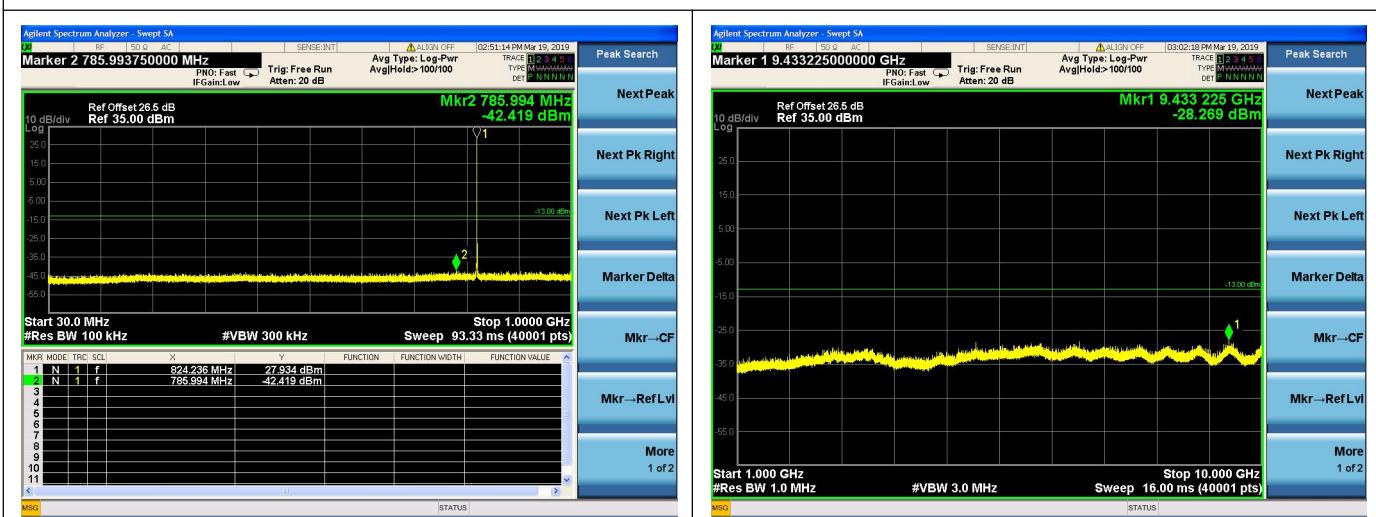
## GSM 1900MHz CH810 1909.8MHz

**MORLAB**SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.  
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,  
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. ChinaTel: 86-755-36698555 Fax: 86-755-36698525  
Http://www.morlab.cn E-mail: service@morlab.cn

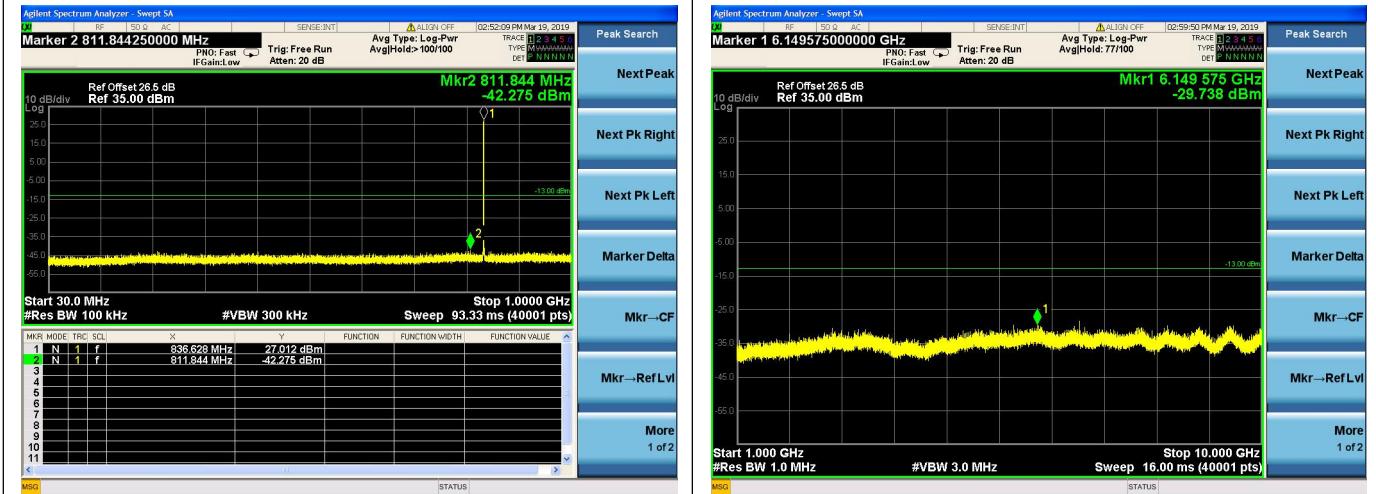


REPORT No.: SZ19020019W01

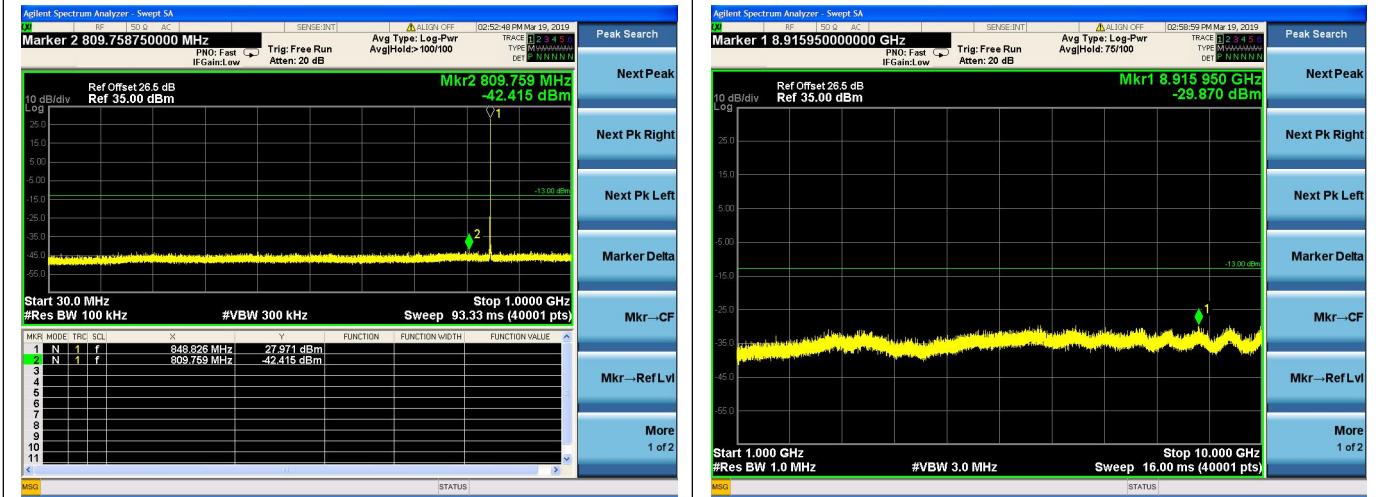
## EDGE 850MHz CH128 824.2MHz



## EDGE 850MHz CH190 836.6MHz



## EDGE 850MHz CH251 848.8MHz

**MORLAB**SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.  
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,  
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. ChinaTel: 86-755-36698555 Fax: 86-755-36698525  
Http://www.morlab.cn E-mail: service@morlab.cn