

RF TEST REPORT



Report No.: 17071218-FCC-R1

Supersede Report No.: N/A

Applicant	Telepower Communication Co., Ltd	
Product Name	Smart POS Terminal	
Model No.	TPS900	
Serial No.	N/A	
Test Standard	FCC Part 22(H):2017 ;FCC Part 24(E):2017; ANSI/TIA-603-D: 2010	
Test Date	November 09, 2017 to January 29, 2018	
Issue Date	January 30, 2018	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification		<input checked="" type="checkbox"/>
Equipment did not comply with the specification		<input type="checkbox"/>
Aaron Liang 	David Huang 	
Aaron Liang Test Engineer	David Huang Checked By	
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Test result presented in this test report is applicable to the tested sample only		

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

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Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
17071218-FCC-R1	NONE	Original	January 30, 2018

2. Customer information

Applicant Name	Telepower Communication Co., Ltd
Applicant Add	5 Bld, Zone A, Hantian Technology Town, No.17 ShenHai RD, Nanhai District Foshan, China
Manufacturer	Telepower Communication Co., Ltd
Manufacturer Add	5 Bld, Zone A, Hantian Technology Town, No.17 ShenHai RD, Nanhai District Foshan, China

3. Test site information

Test Lab A:

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

Test Lab B:

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	694825
IC Test Site No.	4842B-1
Test Software	EZ_EMC(ver.lcp-03A1)

Note: We just perform Radiated Spurious Emission above 18GHz in the test Lab. B.

4. Equipment under Test (EUT) Information

Description of EUT: Smart POS Terminal

Main Model: TPS900

Serial Model: N/A

Date EUT received: November 09, 2017

Test Date(s): November 09, 2017 to January 29, 2018

Equipment Category : PCT

Antenna Gain:
 GSM850: -4dBi
 PCS1900: 0dBi
 UMTS-FDD Band V: -4dBi
 UMTS-FDD Band II: 0dBi
 LTE Band II: 0dBi
 LTE Band IV: 1dBi
 LTE Band V: -4dBi
 WIFI: 2.7dBi
 Bluetooth/BLE: 2.7dBi
 GPS: 1.6dBi

Antenna Type: PIFA antenna

Type of Modulation:
 GSM / GPRS: GMSK
 EGPRS: GMSK,8PSK
 UMTS-FDD: QPSK
 LTE Band: QPSK, 16QAM
 802.11b/g/n: DSSS, OFDM
 Bluetooth: GFSK, π /4DQPSK, 8DPSK
 BLE: GFSK
 GPS:BPSK

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GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz
PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz
UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz
UMTS-FDD Band II TX: 1852.4 ~ 1907.6 MHz;
RX: 1932.4 ~ 1987.6 MHz

RF Operating Frequency (ies):

LTE Band II TX: 1850.7 ~ 1909.3MHz; RX : 1930.7 ~ 1989.3 MHz
LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX : 2110.7~ 2154.3 MHz
LTE Band V TX: 824.7~ 848.3 MHz; RX : 869.7 ~ 893.3MHz
WIFI: 802.11b/g/n(20M): 2412-2462 MHz
WIFI: 802.11n(40M): 2422-2452 MHz
Bluetooth& BLE: 2402-2480 MHz
GPS: 1575.42 MHz

GSM Vjoce:GSM850: 32.28dBm

PCS1900: 29.65 dBm

GPRS:GSM850: 32.24dBm

PCS1900: 29.71dBm

EGPRS(MCS5):GSM850: 26.49dBm

Maximum Conducted

PCS1900: 26.01dBm

AV Power to Antenna:

RMC:UMTS-FDD Band V: 23.54 dBm
UMTS-FDD Band II: 23.26 dBm
HSUPA:UMTS-FDD Band V: 22.95dBm
UMTS-FDD Band II: 22.67dBm
HSDPA:UMTS-FDD Band V: 22.96dBm
UMTS-FDD Band II: 22.65 dBm

GSM Vioce:GSM850: 30.63dBm / ERP

PCS1900: 30.45dBm / EIRP

GPRS/GSM850: 30.59dBm / ERP

PCS1900: 30.51 dBm / EIRP

EGPRS(MCS5)·GSM850·24.84dBm / ERP

PCS1900: 26.81 dBm / EIRP

ERP/EIRP:

RMC:UMTS-FDD Band V: 21.89dBm / ERP
UMTS-FDD Band II: 24.06 dBm / EIR
HSDPA:UMTS-FDD Band V: 21.24 dBm / E
UMTS-FDD Band II: 23.29 dBm / E
HSUPA:UMTS-FDD Band V:21.29 dBm / E
UMTS-FDD Band II: 23.36dBm / E

GSM 850: 124CH

PCS1900: 299CH

UMTS-FDD Band V: 102CH

UMTS-FDD Band II: 277CH

Number of Channels: WIFI :802.11b/g/n(20M): 11CH

WIFI :802.11n(40M): 7CH

Bluetooth: 79CH

BLE: 40CH

GPS:1CH

Port: Please refer to user manual

Adapter:

Model: SC/10WA050200US

Input: AC100-240V~50/60Hz,0.5A

Output: DC 5.0V,2A

Input Power: Battery

Model: 325987P

Spec: 7.4V/2200mAh,16.28Wh

Charging limited voltage: 8.4V

Trade Name : N/A

GPRS/ EGPRS Multi-slot class 8/10/11/12

FCC ID: 2AJ2B-TPS900

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§ 1.1307; § 2.1093	RF Exposure (SAR)	Compliance
§2.1046; § 22.913(a); § 24.232(c); § 27.50(c.10) ;	RF Output Power	Compliance
§ 24.232 (d) ;	Peak-Average Ratio	Compliance
§ 2.1049; § 22.905; § 22.917; § 24.238;	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051; § 22.917(a); § 24.238(a);	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917(a); § 24.238(a);	Field Strength of Spurious Radiation	Compliance
§ 22.917(a); § 24.238(a);	Out of band emission, Band Edge	Compliance
§ 2.1055; § 22.355; § 24.235;	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

Measurement Uncertainty

Emissions		
Test Item	Description	Uncertainty
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

6.1 RF Exposure (SAR)

Test Result: Pass

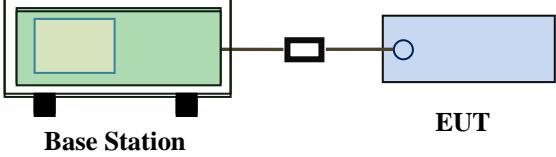
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 17071218-FCC-H.

6.2 RF Output Power

Temperature	26°C
Relative Humidity	57%
Atmospheric Pressure	1025mbar
Test date :	January 25, 2018
Tested By :	Aaron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§22.913 (a)	a)	ERP:38.45dBm	<input checked="" type="checkbox"/>
§24.232 (c)	b)	EIRP:33dBm	<input checked="" type="checkbox"/>
Test Setup	 <p>The diagram illustrates the test setup. A green rectangular box labeled "Base Station" is connected to a blue rectangular box labeled "EUT" by a horizontal line representing a cable. Below the "Base Station" box, there are two black vertical bars representing antennas.</p>		
Test Procedure	<p>For Conducted Power:</p> <ul style="list-style-type: none"> - The transmitter output port was connected to base station. - Set EUT at maximum power through base station. - Select lowest, middle, and highest channels for each band and different test mode. <p>For ERP/EIRP:</p> <p>According with KDB 971168 v02r02</p> <ul style="list-style-type: none"> - The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable. - The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis. - The frequency range up to tenth harmonic of the fundamental frequency was investigated. 		

	<ul style="list-style-type: none"> - 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 = $10 \log (\text{TX power in Watts}/0.001)$ – the absolute level - Spurious attenuation limit in dB = $43 + 10 \log_{10} (\text{power out in Watts})$.
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data Yes N/A

Test Plot Yes (See below) N/A

Conducted Power

GSM Mode:

Burst Average Power (dBm);								
Band	GSM850				PCS1900			
Channel	128	190	251	Tune up Power tolerant	512	661	810	Tune up Power tolerant
Frequency (MHz)	824.2	836.6	848.8	/	1850.2	1880	1909.8	/
GSM Voice (1 uplink),GMSK	32.28	32.24	32.16	32±1	29.65	29.34	29.39	30±1
GPRS Multi-Slot Class 8 (1 uplink),GMSK	32.24	32.21	32.16	32±1	29.71	29.35	29.40	30±1
GPRS Multi-Slot Class 10 (2 uplink),GMSK	32.07	32.07	32.05	32±1	29.59	29.28	29.32	29±1
GPRS Multi-Slot Class 11 (3 uplink) GMSK	30.58	30.60	30.50	30±1	29.45	29.15	29.17	29±1
GPRS Multi-Slot Class 12 (4 uplink) GMSK	29.51	29.40	29.41	29±1	29.31	28.94	29.02	29±1
EGPRS Multi-Slot Class 8 (1 uplink) GMSK MCS1	32.20	32.19	32.13	32±1	29.68	29.35	29.39	29±1
EGPRS Multi-Slot Class 10 (2 uplink) GMSK MCS1	32.06	32.02	32.00	32±1	29.58	29.27	29.30	29±1
EGPRS Multi-Slot Class 11 (3 uplink) GMSK MCS1	30.58	30.48	30.41	30±1	29.48	29.14	29.16	29±1
EGPRS Multi-Slot Class 12 (4 uplink) GMSK MCS1	29.40	29.36	29.3	29±1	29.25	29.01	29.04	29±1
EGPRS Multi-Slot Class 8 (1 uplink) GMSK MCS5	26.49	26.37	26.27	26±1	26.01	25.85	25.82	26±1

UMTS Mode:

UMTS-FDD Band V

Band/ Time Slot configuration	Channel	Frequency	Average power (dBm)	Tune up Power tolerant
RMC 12.2kbps	4132	826.4	23.49	23±1
	4175	835	23.54	23±1
	4233	846.6	23.49	23±1
HSDPA Subtest1	4132	826.4	22.89	22±1
	4175	835	22.74	22±1
	4233	846.6	22.77	22±1
HSDPA Subtest2	4132	826.4	22.95	22±1
	4175	835	22.87	22±1
	4233	846.6	22.80	22±1
HSDPA Subtest3	4132	826.4	22.81	22±1
	4175	835	22.90	22±1
	4233	846.6	22.86	22±1
HSDPA Subtest4	4132	826.4	22.79	22±1
	4175	835	22.87	22±1
	4233	846.6	22.83	22±1
HSUPA Subtest1	4132	826.4	22.83	22±1
	4175	835	22.94	22±1
	4233	846.6	22.76	22±1
HSUPA Subtest2	4132	826.4	22.82	22±1
	4175	835	22.89	22±1
	4233	846.6	22.59	22±1
HSUPA Subtest3	4132	826.4	22.86	22±1
	4175	835	22.83	22±1
	4233	846.6	22.76	22±1
HSUPA Subtest4	4132	826.4	22.53	22±1
	4175	835	22.70	22±1
	4233	846.6	22.57	22±1
HSUPA Subtest5	4132	826.4	22.91	22±1
	4175	835	22.90	22±1
	4233	846.6	22.96	22±1

UMTS-FDD Band II

Band/ Time Slot configuration	Channel	Frequency	Average power (dBm)	Tune up Power tolerant
RMC 12.2kbps	9262	1852.4	23.22	23±1
	9400	1880	23.16	23±1
	9538	1907.6	23.26	23±1
HSDPA Subtest1	9262	1852.4	22.45	22±1
	9400	1880	22.36	22±1
	9538	1907.6	22.49	22±1
HSDPA Subtest2	9262	1852.4	22.52	22±1
	9400	1880	22.47	22±1
	9538	1907.6	22.57	22±1
HSDPA Subtest3	9262	1852.4	22.53	22±1
	9400	1880	22.37	22±1
	9538	1907.6	22.66	22±1
HSDPA Subtest4	9262	1852.4	22.61	22±1
	9400	1880	22.51	22±1
	9538	1907.6	22.67	22±1
HSUPA Subtest1	9262	1852.4	22.42	21±1
	9400	1880	22.40	22±1
	9538	1907.6	22.56	22±1
HSUPA Subtest2	9262	1852.4	22.38	21±1
	9400	1880	22.21	22±1
	9538	1907.6	22.36	22±1
HSUPA Subtest3	9262	1852.4	22.50	22±1
	9400	1880	22.53	22±1
	9538	1907.6	22.51	22±1
HSUPA Subtest4	9262	1852.4	22.50	21±1
	9400	1880	22.25	22±1
	9538	1907.6	22.42	22±1
HSUPA Subtest5	9262	1852.4	22.65	21±1
	9400	1880	22.42	22±1
	9538	1907.6	22.52	22±1

ERP & EIRP

GSM Voice

ERP for Cellular Band (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.2	25.06	V	6.1	0.53	30.63	38.45
824.2	23.89	H	6.1	0.53	29.46	38.45
836.6	24.92	V	6.2	0.53	30.59	38.45
836.6	24.01	H	6.2	0.53	29.68	38.45
848.8	24.84	V	6.2	0.53	30.51	38.45
848.8	23.51	H	6.2	0.53	29.18	38.45

EIRP for PCS Band (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.2	23.29	V	7.88	0.72	30.45	33
1850.2	22.37	H	7.88	0.72	29.53	33
1880	22.98	V	7.88	0.72	30.14	33
1880	21.42	H	7.88	0.72	28.58	33
1909.8	23.05	V	7.86	0.72	30.19	33
1909.8	21.07	H	7.86	0.72	28.21	33

GPRS:

ERP for Cellular Band (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.2	25.02	V	6.1	0.53	30.59	38.45
824.2	24.06	H	6.1	0.53	29.63	38.45
836.6	24.89	V	6.2	0.53	30.56	38.45
836.6	23.93	H	6.2	0.53	29.60	38.45
848.8	24.84	V	6.2	0.53	30.51	38.45
848.8	23.46	H	6.2	0.53	29.13	38.45

EIRP for PCS Band (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.2	23.35	V	7.88	0.72	30.51	33
1850.2	21.54	H	7.88	0.72	28.70	33
1880	22.99	V	7.88	0.72	30.15	33
1880	21.63	H	7.88	0.72	28.79	33
1909.8	23.06	V	7.86	0.72	30.20	33
1909.8	22.04	H	7.86	0.72	29.18	33

EGPRS (MCS5):

ERP for Cellular Band (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.2	19.27	V	6.1	0.53	24.84	38.45
824.2	18.01	H	6.1	0.53	23.58	38.45
836.6	19.05	V	6.2	0.53	24.72	38.45
836.6	17.92	H	6.2	0.53	23.59	38.45
848.8	18.95	V	6.2	0.53	24.62	38.45
848.8	17.9	H	6.2	0.53	23.57	38.45

EIRP for PCS Band (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.2	19.65	V	7.88	0.72	26.81	33
1850.2	18.29	H	7.88	0.72	25.45	33
1880	19.49	V	7.88	0.72	26.65	33
1880	17.54	H	7.88	0.72	24.70	33
1909.8	19.48	V	7.86	0.72	26.62	33
1909.8	18.57	H	7.86	0.72	25.71	33

RMC

ERP for UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	16.27	V	6.1	0.53	21.84	38.45
826.4	14.8	H	6.1	0.53	20.37	38.45
835	16.22	V	6.2	0.53	21.89	38.45
835	15.14	H	6.2	0.53	20.81	38.45
846.6	16.17	V	6.2	0.53	21.84	38.45
846.6	14.75	H	6.2	0.53	20.42	38.45

EIRP for UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	16.86	V	7.88	0.72	24.02	33
1852.4	14.99	H	7.88	0.72	22.15	33
1880	16.8	V	7.88	0.72	23.96	33
1880	15.98	H	7.88	0.72	23.14	33
1907.6	16.92	V	7.86	0.72	24.06	33
1907.6	15.96	H	7.86	0.72	23.10	33

HSDPA

ERP for UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	15.67	V	6.1	0.53	21.24	38.45
826.4	14.96	H	6.1	0.53	20.53	38.45
835	15.42	V	6.2	0.53	21.09	38.45
835	14.51	H	6.2	0.53	20.18	38.45
846.6	15.45	V	6.2	0.53	21.12	38.45
846.6	13.46	H	6.2	0.53	19.13	38.45

EIRP for UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	16.09	V	7.88	0.72	23.25	33
1852.4	14.13	H	7.88	0.72	21.29	33
1880	16	V	7.88	0.72	23.16	33
1880	15.08	H	7.88	0.72	22.24	33
1907.6	16.15	V	7.86	0.72	23.29	33
1907.6	14.31	H	7.86	0.72	21.45	33

HSUPA

ERP for UMTS-FDD Band V (Part 22H)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
826.4	15.61	V	6.1	0.53	21.18	38.45
826.4	14	H	6.1	0.53	19.57	38.45
835	15.62	V	6.2	0.53	21.29	38.45
835	14.02	H	6.2	0.53	19.69	38.45
846.6	15.44	V	6.2	0.53	21.11	38.45
846.6	14.43	H	6.2	0.53	20.10	38.45

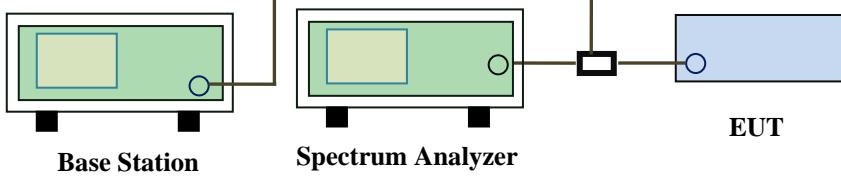
EIRP for UMTS-FDD Band II (Part 24E)

Frequency (MHz)	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1852.4	16.06	V	7.88	0.72	23.22	33
1852.4	15.08	H	7.88	0.72	22.24	33
1880	16.04	V	7.88	0.72	23.20	33
1880	14.36	H	7.88	0.72	21.52	33
1907.6	16.22	V	7.86	0.72	23.36	33
1907.6	15.33	H	7.86	0.72	22.47	33

6.3 Peak-Average Ratio

Temperature	26°C
Relative Humidity	57%
Atmospheric Pressure	1025mbar
Test date :	January 25, 2018
Tested By :	Aaron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§24.232(d)	a)	The peak-to-average ratio (PAR) of the transmission may not exceed 13dB.	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Base Station Spectrum Analyzer EUT</p>		
Test Procedure	<p>According with KDB 971168 v02r02</p> <p>5.7.2 Alternate procedure for PAPR</p> <p>5.1.2 Peak power measurements with a peak power meter</p> <p>The total peak output power may be measured using a broadband peak RF power meter. The power meter must have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.</p> <p>5.2.3 Average power measurement with average power meter</p> <p>As an alternative to the use of a spectrum/signal analyzer or EMI receiver to perform a measurement of the total in-band average output power, a wideband RF average power meter with a thermocouple detector or equivalent can be used under certain conditions</p> <p>If the EUT can be configured to transmit continuously (i.e., the burst duty cycle $\geq 98\%$) and at all times the EUT is transmitting at its maximum output</p>		

	<p>power level, then a conventional wide-band RF power meter can be used.</p> <p>If the EUT cannot be configured to transmit continuously (i.e., the burst duty cycle < 98%), then there are two options for the use of an average power meter. First, a gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only over active transmission bursts at maximum output power levels. A conventional average power meter can also be used if the measured burst duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to $10\log(1/\text{duty cycle})$</p>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data Yes N/A

Test Plot Yes (See below) N/A

GSM : GSM 1900 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1850.2	30.66	29.65	1.01
1880	30.42	29.34	1.08
1909.8	30.41	29.39	1.02

GPRS 1900 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1850.2	30.77	29.71	1.06
1880	30.34	29.35	0.99
1909.8	30.44	29.4	1.04

EGPRS (MSC5) 1900 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1850.2	26.89	26.01	0.88
1880	26.87	25.85	1.02
1909.8	26.72	25.82	0.9

RMC : UMTS-FDD Band 2 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1852.4	24.18	23.22	0.96
1880	24.13	23.16	0.97
1907.6	24.16	23.26	0.9

HSDPA : UMTS-FDD Band 2 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1852.4	23.36	22.42	0.94
1880	23.43	22.4	1.03
1907.6	23.46	22.56	0.9

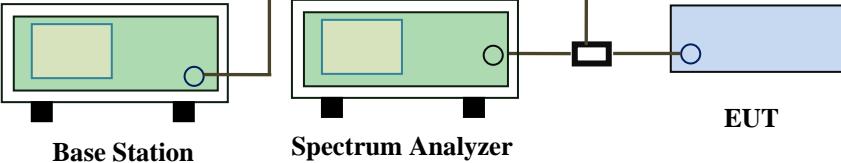
HSUPA : UMTS-FDD Band 2 PK-AV POWER (PART 24E)

Frequency (MHz)	Conducted power(dBm)		Peak-Average Ratio(PAR)
	Peak	Average	
1852.4	23.43	22.45	0.98
1880	23.35	22.36	0.99
1907.6	23.39	22.49	0.9

6.4 Occupied Bandwidth

Temperature	26°C
Relative Humidity	57%
Atmospheric Pressure	1025mbar
Test date :	January 25, 2018
Tested By :	Aaron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1049, §22.917, §22.905 §24.238	a)	99% Occupied Bandwidth(kHz)	<input checked="" type="checkbox"/>
	b)	26 dB Bandwidth(kHz)	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;"> Base Station Spectrum Analyzer EUT </p>		
Test Procedure	<ul style="list-style-type: none"> - The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers. 		
Remark			
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

Test Data Yes N/A

Test Plot Yes (See below) N/A

GSM Voice:

Cellular Band (Part 22H) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
128	824.2	246.60	316.6
190	836.6	248.75	318.1
251	848.8	249.62	318.3

PCS Band (Part 24E) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
512	1850	248.70	315.1
661	1880	248.29	311.0
810	1910	243.65	304.9

GPRS:

Cellular Band (Part 22H) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
128	824.2	246.21	317.7
190	836.6	251.23	318.6
251	848.8	246.65	315.3

PCS Band (Part 24E) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
512	1850	248.26	314.7
661	1880	246.40	310.1
810	1910	243.66	306.7

EGPRS (MCS 5):

Cellular Band (Part 22H) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
128	824.2	246.54	317.7
190	836.6	250.22	318.1
251	848.8	246.78	315.3

PCS Band (Part 24E) result

Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
512	1850.2	248.57	315.1
661	1880.0	247.78	308.9
810	1909.8	244.45	304.9

RMC:

UMTS-FDD Band V (Part 22H)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
4132	826.6	4.0922	4.641
4175	835.0	4.0937	4.637
4233	846.4	4.0608	4.654

UMTS-FDD Band II (Part 24E)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
9262	1853	4.1159	4.659
9400	1880	4.0941	4.644
9538	1907	4.1054	4.670

HSDPA:

UMTS-FDD Band V (Part 22H)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
4132	826.6	4.1013	4.633
4175	835.0	4.0934	4.646
4233	846.4	4.0622	4.640

UMTS-FDD Band II (Part 24E)

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
9262	1853	4.1037	4.666
9400	1880	4.1051	4.632
9538	1907	4.0974	4.673

HSUPA:

UMTS-FDD Band V (Part 22H)

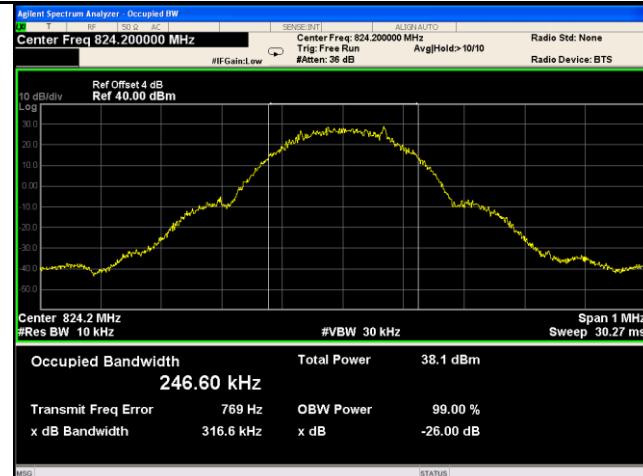
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
4132	826.6	4.0963	4.635
4175	835.0	4.0957	4.643
4233	846.4	4.0656	4.645

UMTS-FDD Band II (Part 24E)

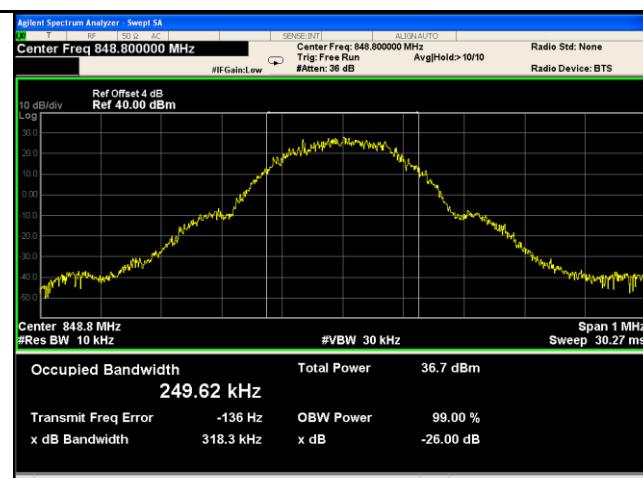
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
9262	1853	4.0992	4.664
9400	1880	4.0959	4.644
9538	1907	4.0963	4.674

Test Plots

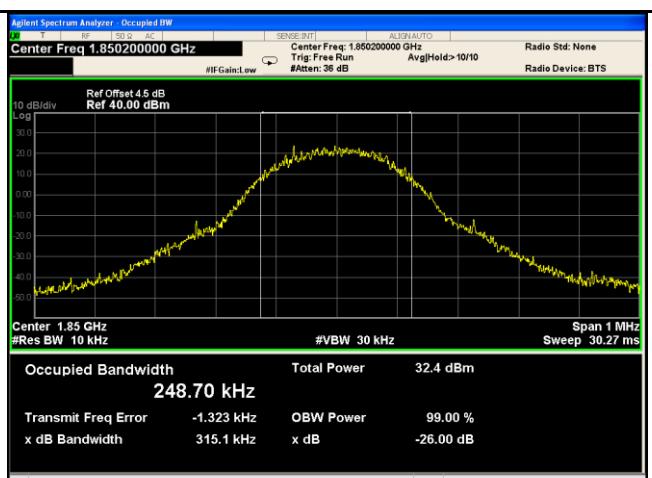
GSM Voice:



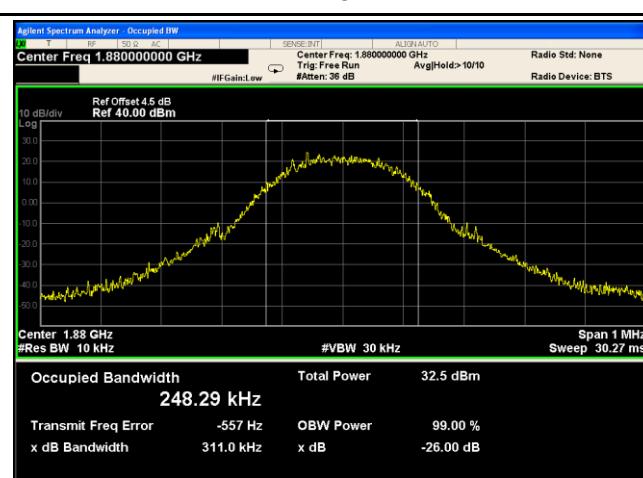
GSM 850 BW - Low CH 824.2MHz



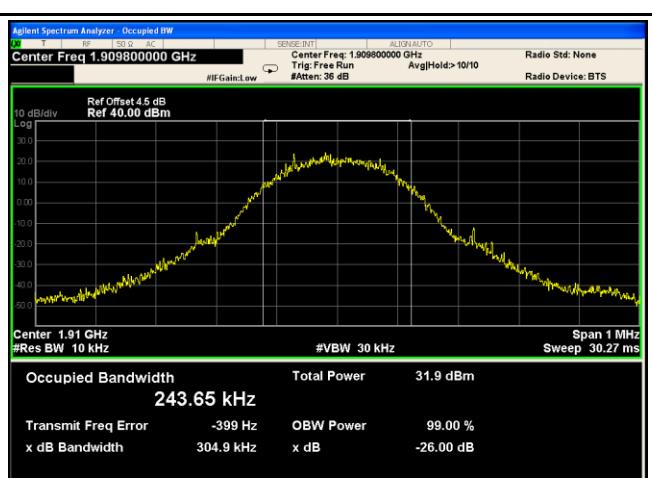
GSM 850 BW - Mid CH 836.6MHz



GSM 850 BW - High CH 848.8MHz



PCS 1900 BW - Low CH 1850MHz



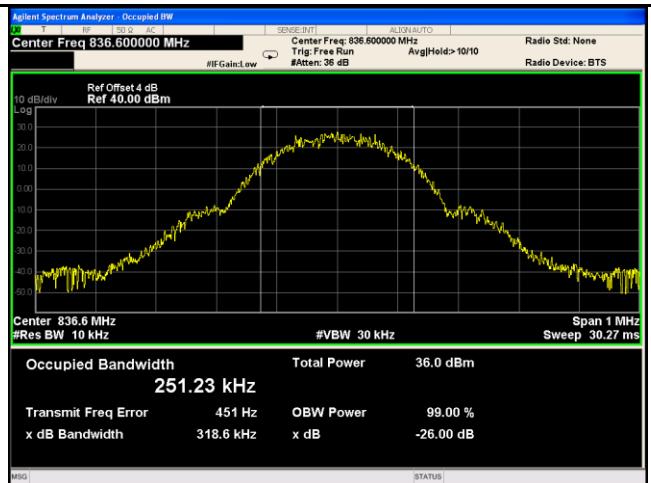
PCS 1900 BW - Mid CH 1880MHz

PCS 1900 BW - High CH 1910MHz

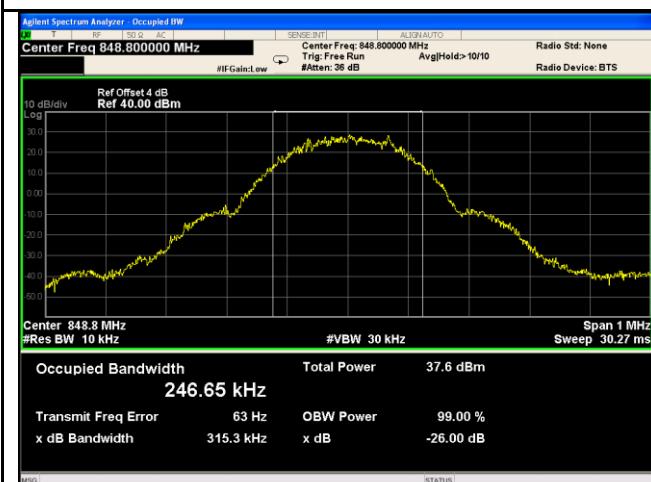
GPRS:



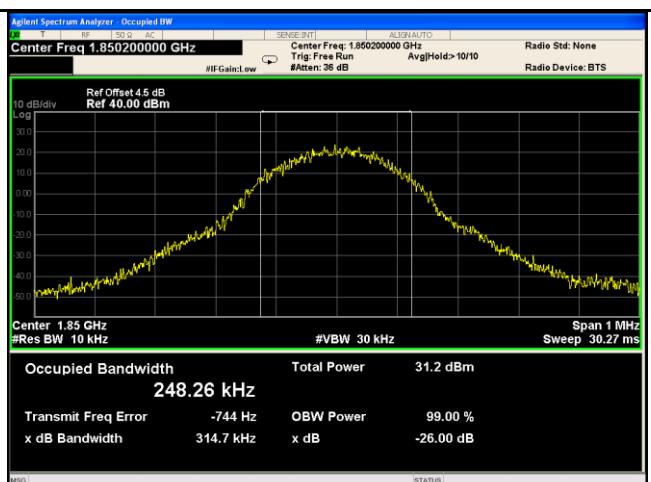
GSM 850 BW - Low CH 824.2MHz



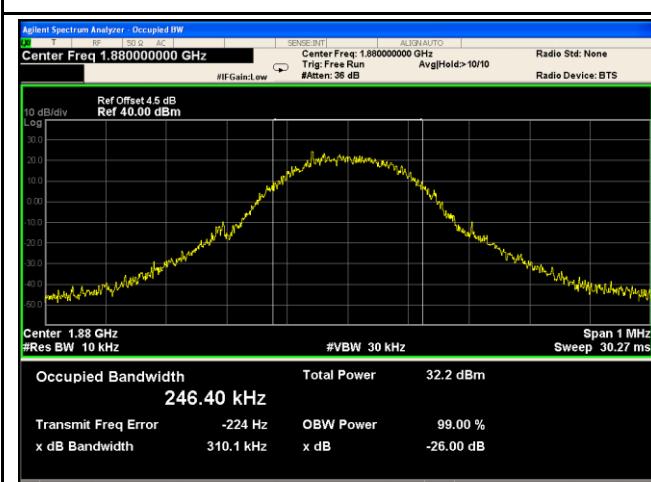
GSM 850 BW - Mid CH 836.6MHz



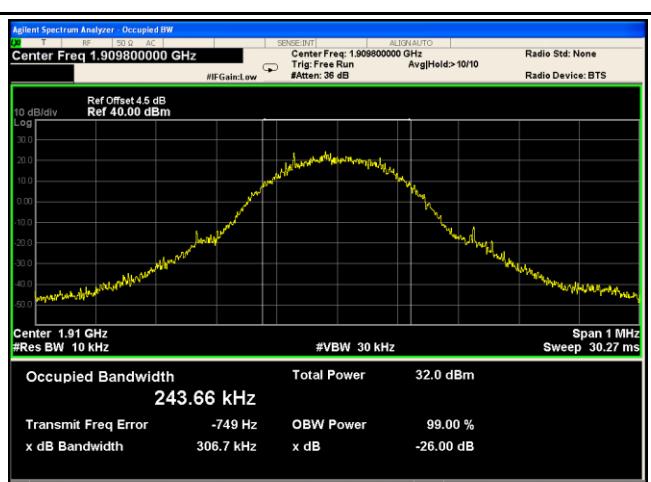
GSM 850 BW - High CH 848.8MHz



PCS 1900 BW - Low CH 1850MHz

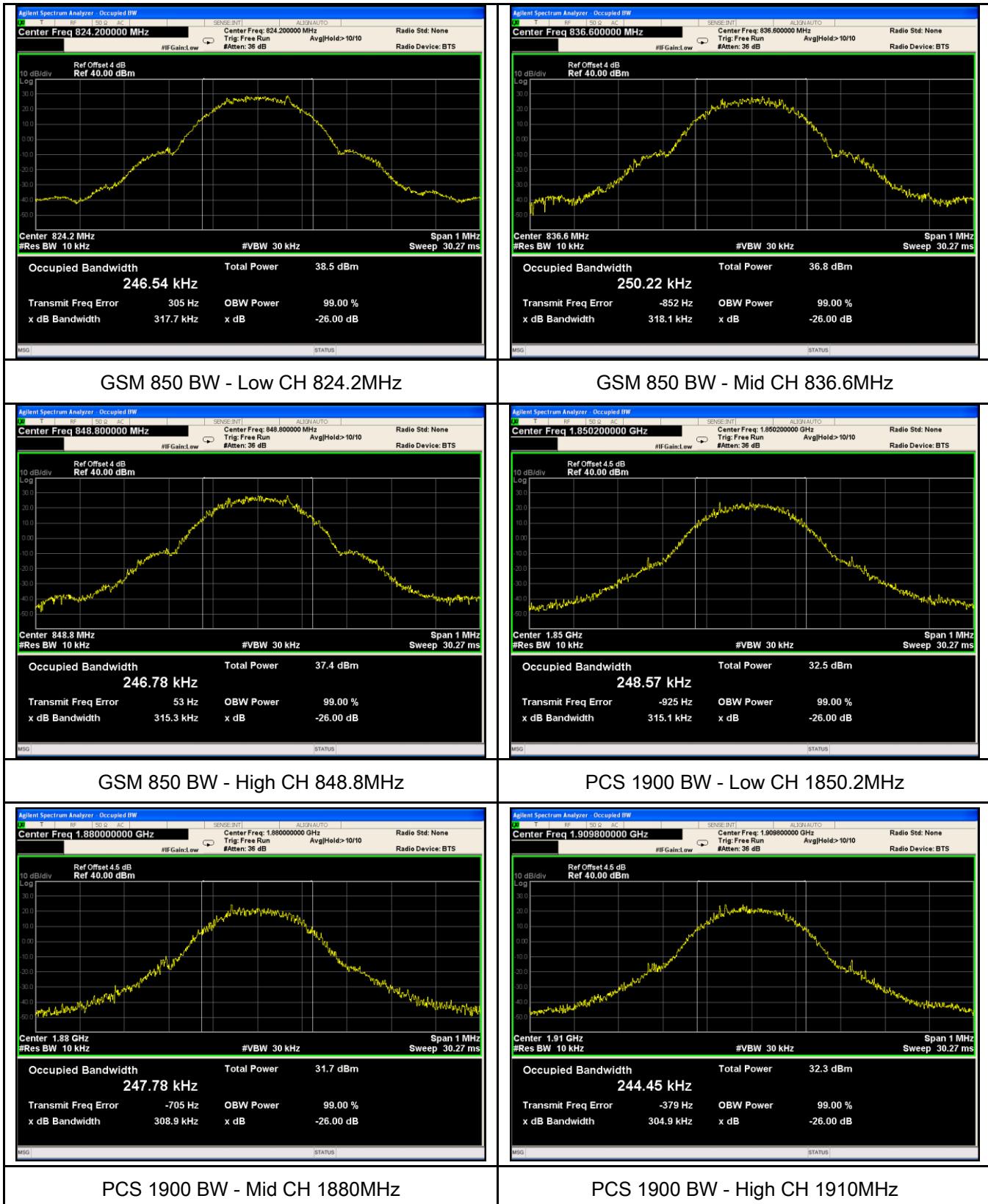


PCS 1900 BW - Mid CH 1880MHz

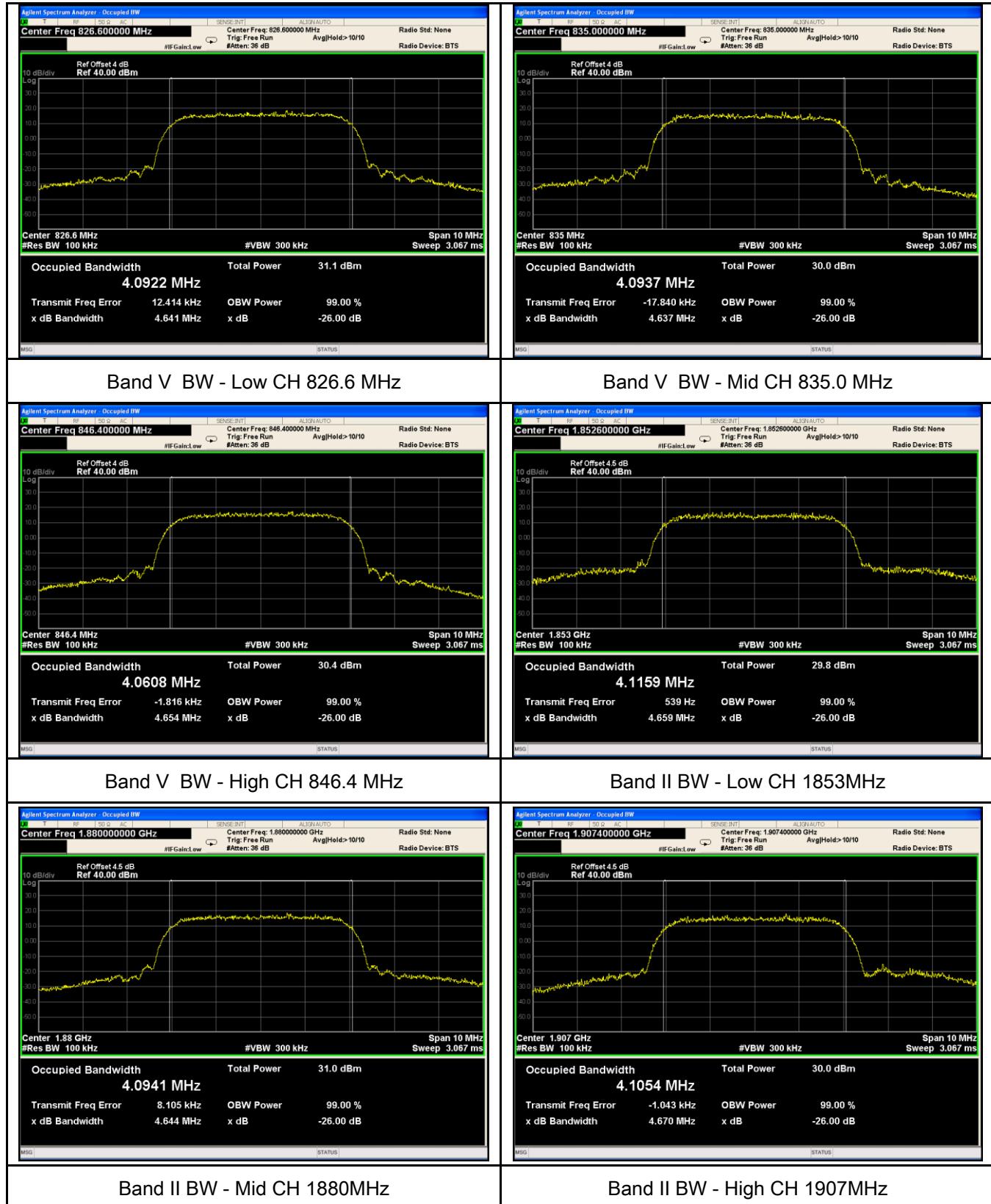


PCS 1900 BW - High CH 1910MHz

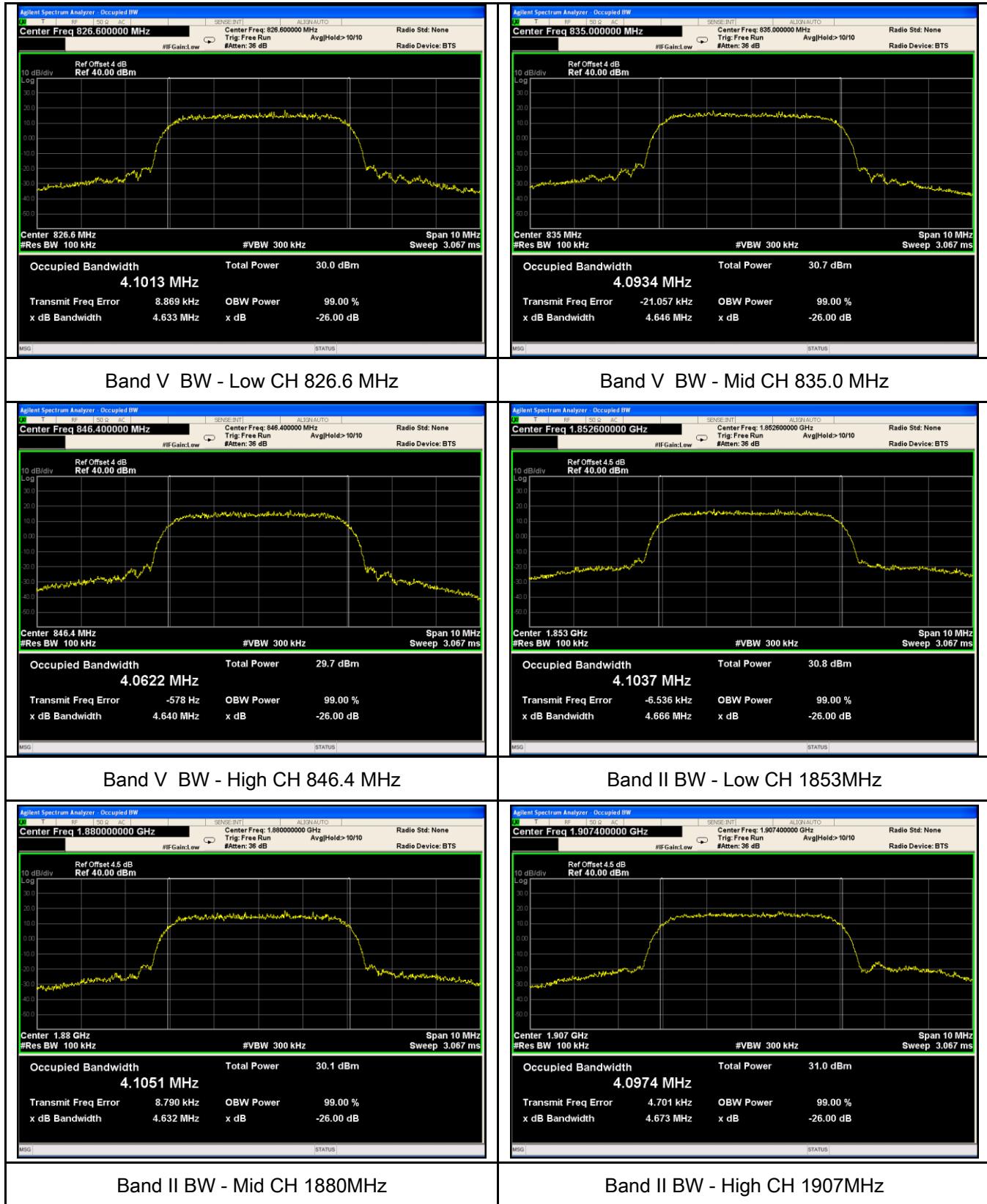
EGPRS:



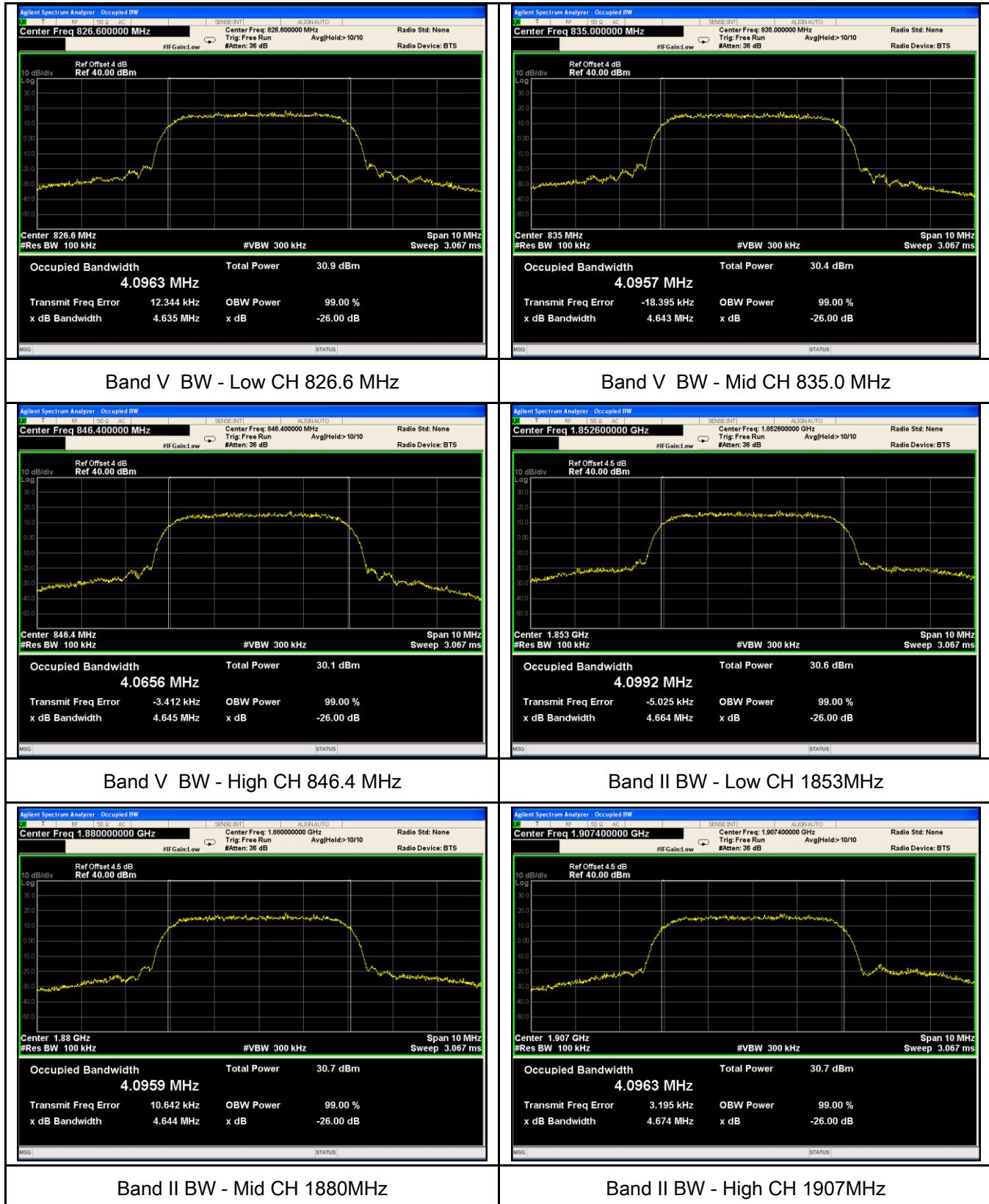
RMC:



HSDPA:



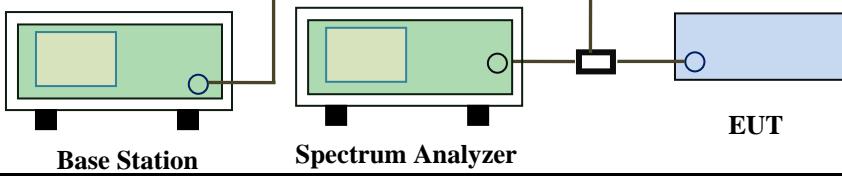
HSUPA:



6.5 Spurious Emissions at Antenna Terminals

Temperature	26°C
Relative Humidity	57%
Atmospheric Pressure	1025mbar
Test date :	January 25, 2018
Tested By :	Aaron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1051, §22.917(a)& §24.238(a)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB	<input checked="" type="checkbox"/>
Test Setup		 <p style="text-align: center;">Base Station Spectrum Analyzer EUT</p>	
Test Procedure		<ul style="list-style-type: none"> - The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The Band Edges of low and high channels for the highest RF powers were measured. - Setting RBW as roughly BW/100. 	
Remark			
Result		<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

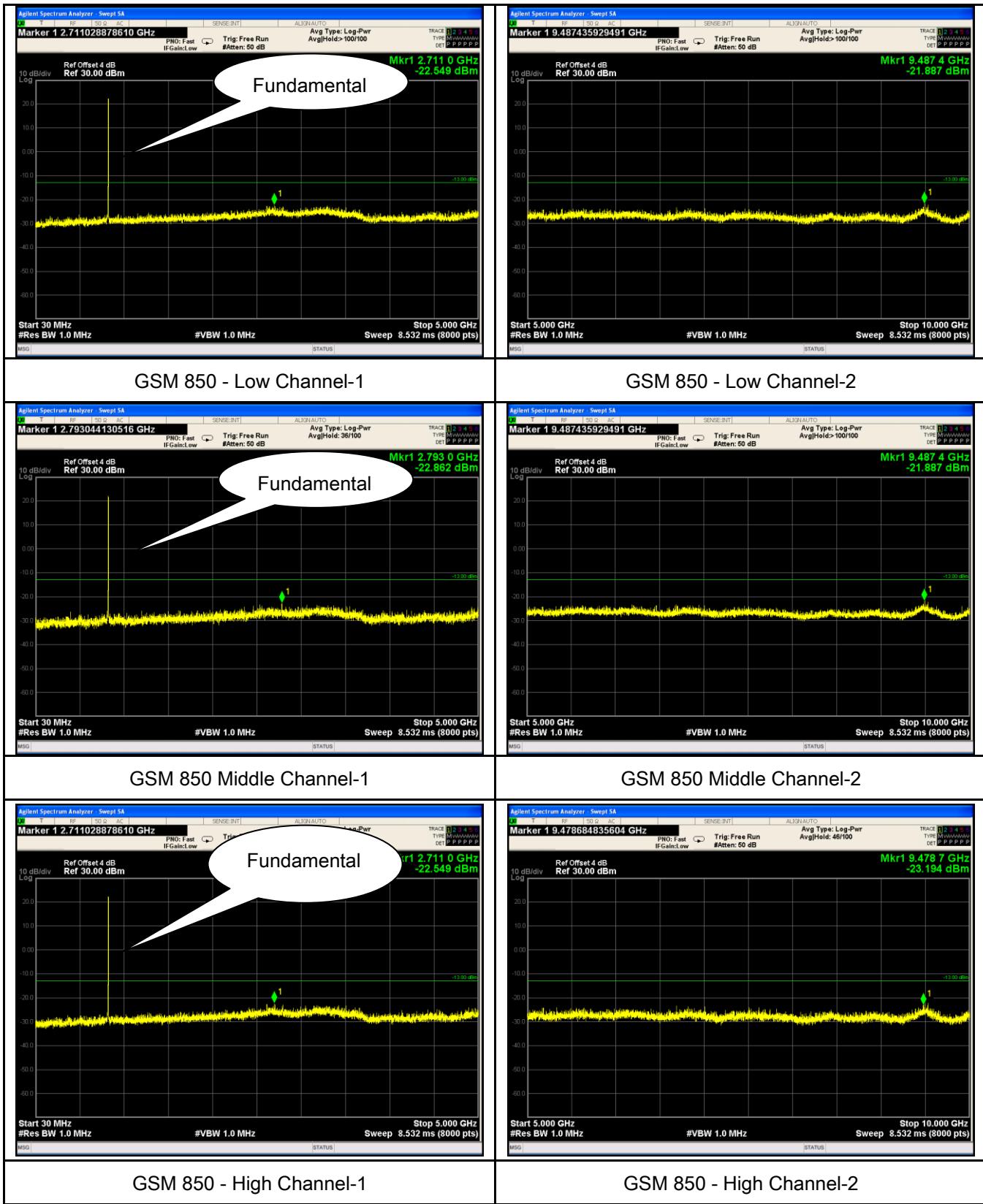
Test Data Yes N/A

Test Plot Yes (See below) N/A

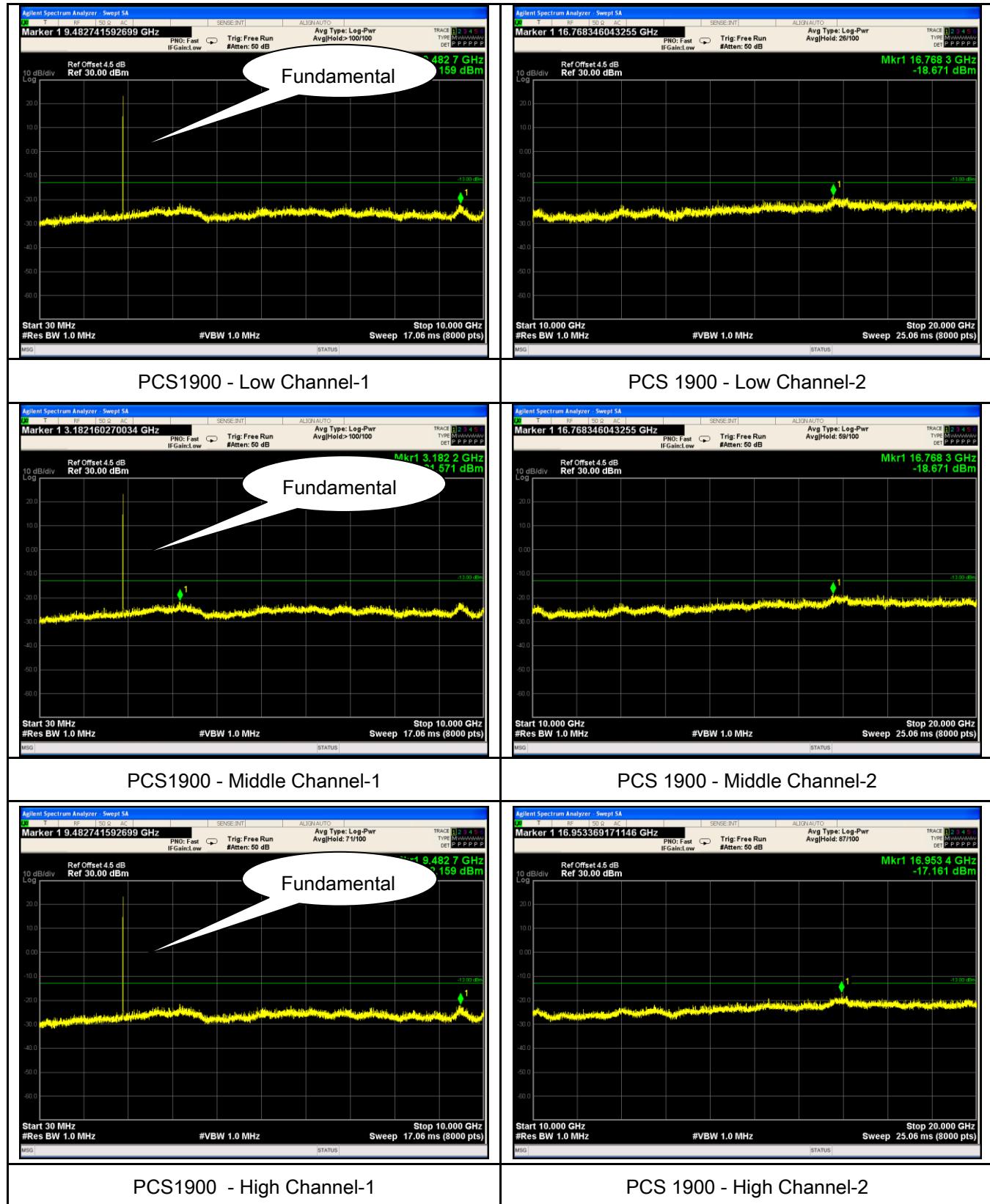
Test Plots

GSM Voice:

Cellular Band (Part 22H) result

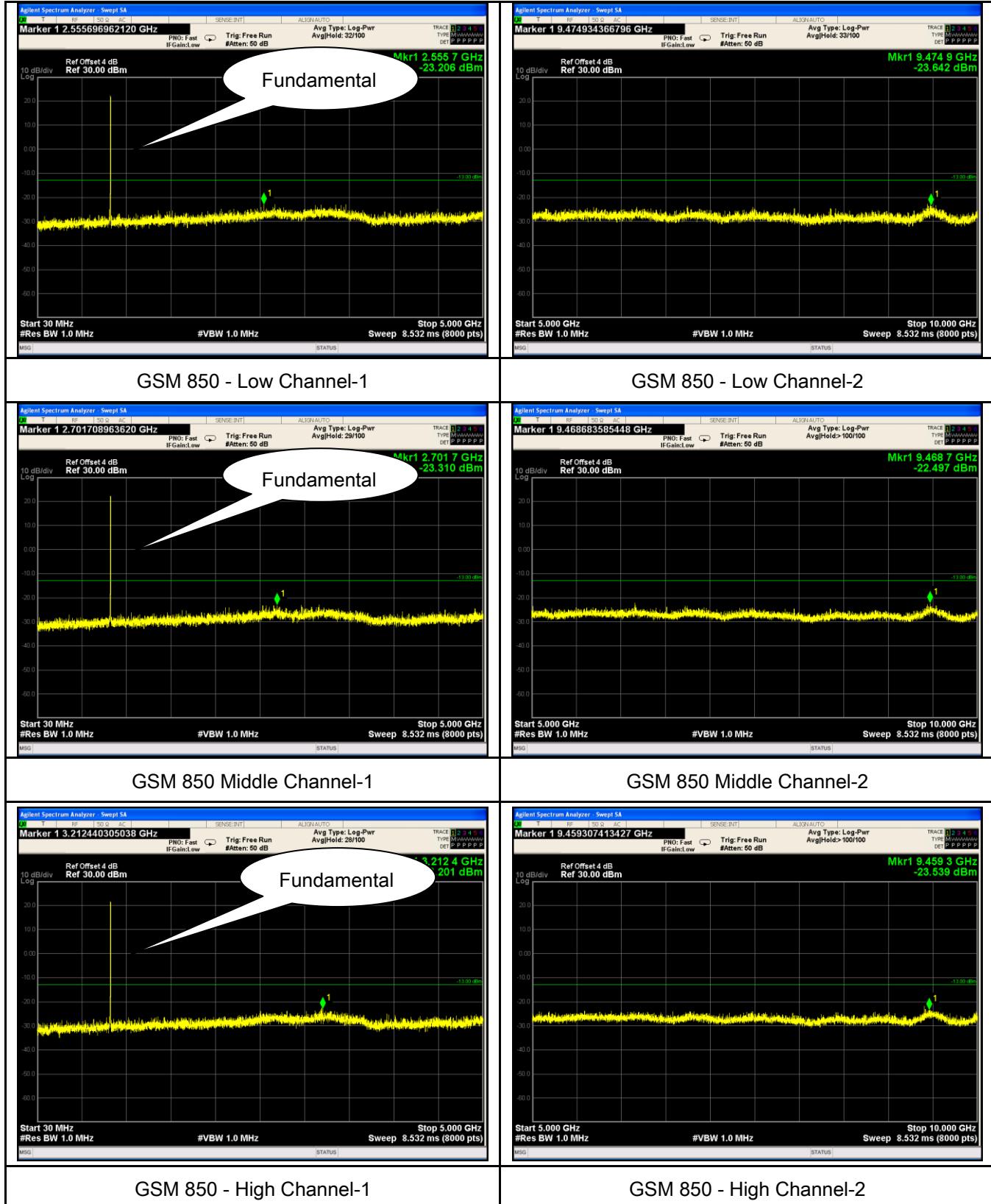


PCS Band (Part24E) result

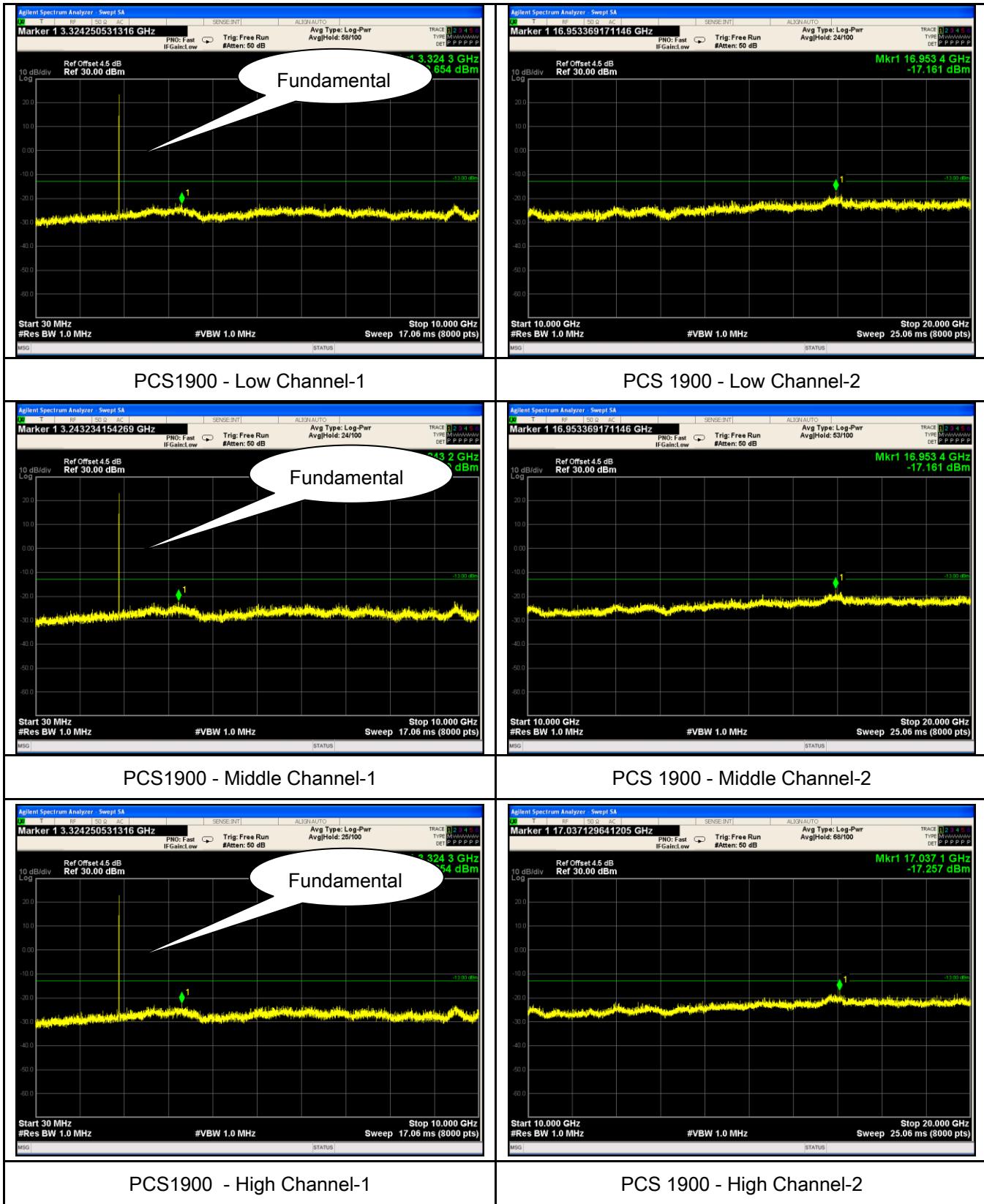


GPRS:

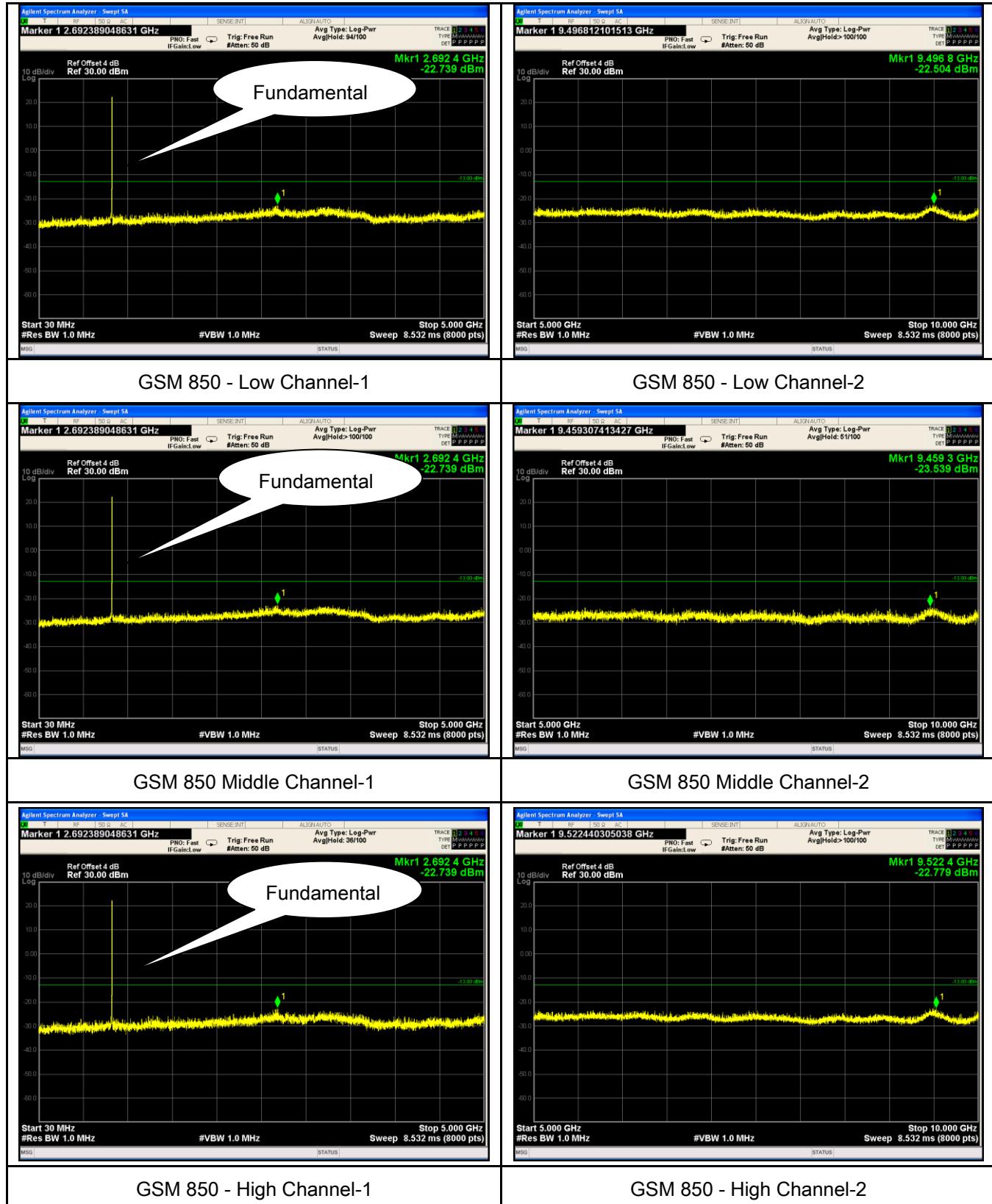
Cellular Band (Part 22H) result



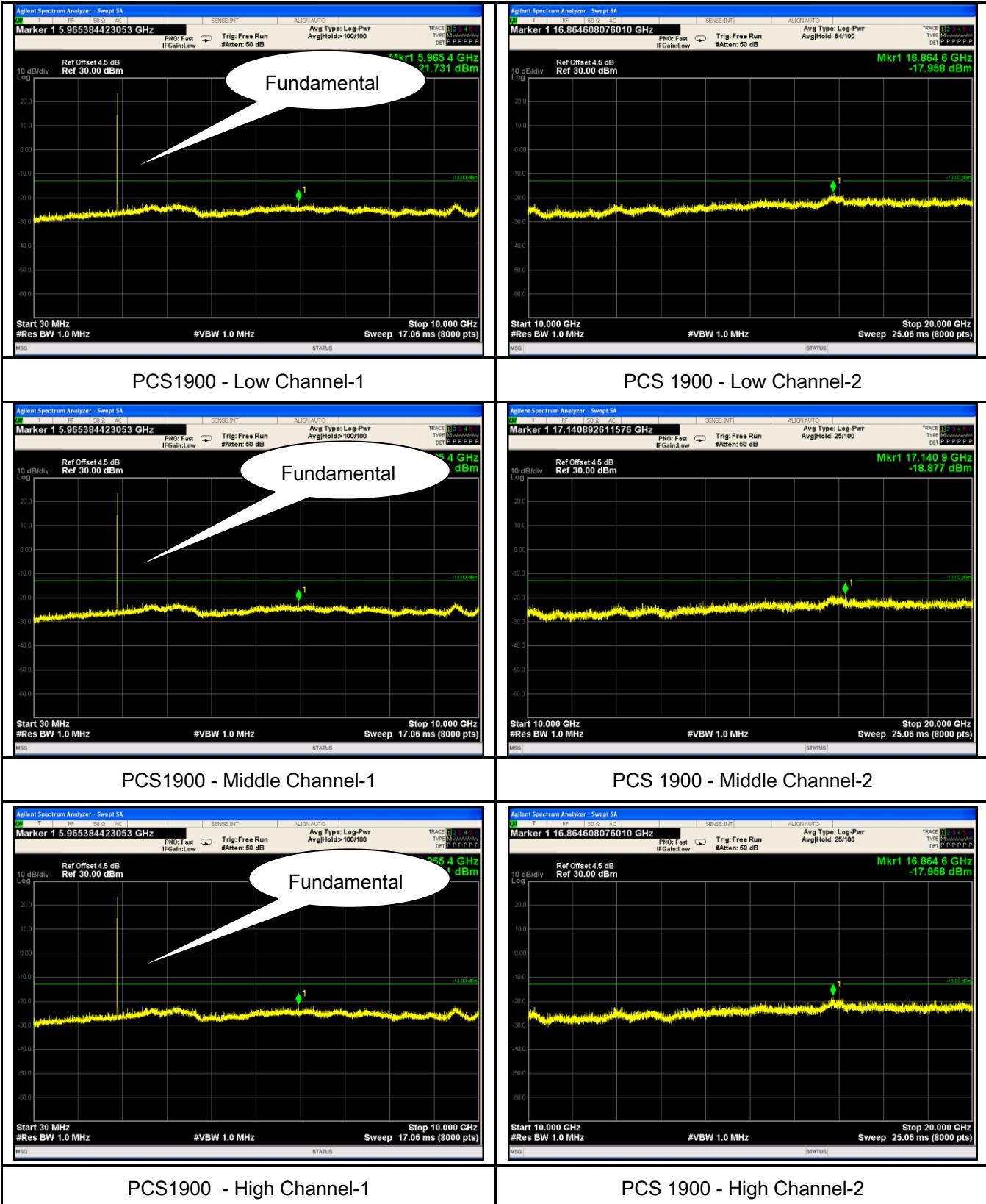
PCS Band (Part24E) result



EGPRS (MCS 5): Cellular Band (Part 22H) result



PCS Band (Part24E) result



RMC

UMTS-FDD Band V (Part 22H)

