TEST REPORT

For

Applicant :	**Xiamen Puxing Electronics Science & Technology Co., Ltd.**
Address :	**FL3-4 NO.11, XiangHong Road, Xiang'An District, Xiamen China**
Product Name :	**GSM Radio**
Model Name :	**PX-800S**
Brand Name :	**PUXING**
FCC ID :	**AUJPXDZPX800S**
Report No. :	**MTE/DYY/A15121779**
Date of Issue :	**Dec. 17, 2015**

Issued by :	**Most Technology Service Co., Ltd.**
Address :	**No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China**
Tel :	**86-755-8602 6850**
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1. VERIFICATION OF CONFORMITY

Equipment Under Test:	GSM Radio
Brand Name:	PUXING
Model Number:	PX-800S
FCC ID：	AUJPXDZPX800S
IC:	11334A-PXDZPX800S
Applicant:	Xiamen Puxing Electronics Science & Technology Co., Ltd.
	FL3-4 NO.11, XiangHong Road, Xiang'An District, Xiamen China
Manufacturer:	Xiamen Puxing Electronics Science & Technology Co., Ltd.
	FL3-4 NO.11, XiangHong Road, Xiang'An District, Xiamen China
Technical Standards:	FCC Part 22H and 24E
File Number:	MTE/DYY/A15121779
Date of test:	Dec. 03-16, 2015
Deviation:	None
Condition of Test Sample:	Normal
Test Result:	PASS

The above equipment was tested by Most Technology Service Co., Ltd. for compliance with the requirements set forth in FCC rules and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Tested by (+ signature): Daisy

Daisy Yu Dec. 03-16, 2015

Review by (+ signature):

Henry Chen Dec. 17, 2015

MOST TECHNOLOGY SERVICE CO., LTD. APPROVED EMC & SAFETY

Approved by (+ signature):

Yvette Zhou (Manager) Dec. 17, 2015

2. GENERAL INFORMATION

2.1 Product Information

Product Designation:	GSM Radio
Hardware version:	N/A
Software version:	N/A
Frequency Bands:	☒GSM850 ☒PCS1900 (U.S. Bands)
Antenna:	FPCB Antenna
Antenna gain:	850MHz/900MHz/1800/1900MHz : 2.15dBi
Power Supply:	DC 7.4V by battery or DC 12V supplied by adapter
Battery parameter:	DC 7.4V/1800mAh
Adapter Input:	100-240V~,50/60Hz,0.2A MAX
Adapter Output:	12V⎓, 500mA
Extreme Vol. Limits:	DC 6.66 V to 7.4 V (Nominal DC 7.4 V)
Extreme Temp. Tolerance	-20℃ to +40℃
SIM CARD	only one SIM Card
** Note: The High Voltage 7.4V and Low Voltage 6.66V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

NOTE:

1. For a more detailed features description about the EUT, please refer to User's Manual.

2.2 Objective

The objective of the report is to perform tests according to the standards as below for the EUT FCC ID& IC Certification:

No.	Identity	Document Title
1	FCC Part 22H and 24E	PUBLIC MOBILE SERVICES
2	ANSI C63.4-2014, TIA/EIA 603 C	Test procedure

2.3 Test Standards and Results

No.	Section	Test Items	Result	Date of Test
1	22.913(a)& 24.232 (b)	Conducted output power	PASS	2015-12-14
2	22.913(a)& 24.232 (b)	Radiated output power	PASS	2015-12-14
3	2.1051 & 22.917	Transmitter Conducted spurious emission	PASS	2015-12-14
4	2.1055 & 24.235	Transmitter Radiated spurious emission	PASS	2015-12-14
5	2.1055 & 24.235	Frequency Stability	PASS	2015-12-15
6	2.1049 (h)(i)	Occupied Bandwidth	PASS	2015-12-15
7	22.917(b) & 24.238 (b)	Emission Bandwidth	PASS	2015-12-15
8	22.917(b) & 24.238 (b)	Band Edge	PASS	2015-12-15
9	2.1055 & 24.235	Receiver Radiated spurious emission	PASS	2015-12-14
Remark: N/A means not applicable				

Note: 1. The test result judgment is decided by the limit of measurement standard

2.4. DESCRIPTION OF TEST MODES

During the testing, the EUT was controlled via Digital Radio Communication Tester (Agilent 8960) to ensure max power transmission and proper modulation. Three channels (The top channel, the middle channel and the bottom channel) were chosen for testing on both GSM850 and PCS1900 frequency band.

Note: GSM850, PCS1900 modes have been tested during the test. The worst condition (GSM850, PCS1900) be recorded in the test report if no other modes test data.

2.5 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:
- Temperature: -10-55ºC
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

3. TEST METHODOLOGY

3. 1TEST FACILITY

Test Site: Most Technology Service Co., Ltd

Location: No.5, Langshan 2nd Rd., North Hi-Tech Industrial park, Nanshan, Shenzhen, Guangdong, China

Description: There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2014 and CISPR 16 requirements.

The FCC Registration Number is **490827.** The **IC** Registration Number is **7103A-1.**

Site Filing: The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.

Instrument Tolerance: All measuring equipment is in accord with ANSI C63.4:2014 and CISPR 16 requirements that meet industry regulatory agency and accreditation agency requirement.

Ground Plane: Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna.

4. SETUP OF EQUIPMENT UNDER TEST

4.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

4.2 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at Most for testing. The equipment conforms to the CISPR 16-1 / ANSI C63.2 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10 kHz to 1.0 GHz or above.

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	Spectrum Analyzer	ADVANTEST	R3182	150900201	2015.06.27	2016.06.26
2	EMI Measuring Receiver	R&S	ESR	101660	2015.12.01	2016.11.30
3	Low Noise Pre Amplifier	Tsj	MLA-10K01-B01-27	1205323	2015.06.27	2016.06.26
4	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2015.12.02	2016.12.01
5	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9160	9160-3206	2015.12.03	2016.12.02
6	Broadband Horn Antenna	SCHWARZBECK	BBHA9120D	452	2015.12.03	2016.12.02
7	SHF-EHF Horn	SCHWARZBECK	BBHA9170	BBHA9170367	2015.12.03	2016.12.02
8	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2015.09.26	2016.09.25
9	EMI Test Receiver	R&S	ESCI	100124	2015.06.20	2016.06.19
10	LISN	Kyoritsu	KNW-242	8-837-4	2015.06.20	2016.06.19
11	LISN	Kyoritsu	KNW-407	8-1789-3	2015.06.20	2016.06.19
12	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2015.09.25	2016.09.24
13	Loop Antenna	ARA	PLA-1030/B	1029	2015.03.19	2016.03.18
14	Radiated Cable 1# （30MHz-1GHz）	FUJIKURA	5D-2W	01	2015.01.04	2016.01.03
15	Radiated Cable 2# （1GHz -25GHz）	FUJIKURA	10D2W	02	2015.12.25	2016.12.24

16	Conducted Cable 1#(9KHz-30MHz)	FUJIKURA	1D-2W	01	2015.01.04	2016.01.03
17	SMA Antenna connector	Dosin	Dosin-SMA	N/A	N/A	N/A
18	Agilent 8960	Agilent	E5515C	AT0-30319	2015.07.22	2016.07.22

NOTE: *Equipments listed above have been calibrated and are in the period of validation*

5.1 Conducted Output Power

5.1.1 Measurement method

The EUT was setup for the max output power with pseudo random data modulation. Power was measured with Spectrum Analyzer. The measurements were performed on all modes(GSM850, PCS1900) at 3 typical channels(the Top Channel, the Middle Channel and the Bottom Channel) for each band.

5.1.2 Measurement Result

Conducted Output Power Limits for GSM 850 MHZ		
Mode	**Nominal Peak Power**	**Tolerance(dB)**
GSM850	32 dBm	+/- 1

Conducted Output Power Limits for PCS 1900 MHZ		
Mode	**Nominal Peak Power**	**Tolerance(dB)**
PCS1900	30dBm	+/- 1

GSM 850:

Mode	**Frequency (MHz)**	Maximum Burst-Average Output Power
GSM850	824.2	32.27
	836.6	32.45
	848.8	32.36

PCS 1900:

Mode	**Frequency (MHz)**	Maximum Burst-Average Output Power
PCS1900	1850.2	30.29
	1880	30.61
	1909.8	30.38

According to 3GPP 25.101 sub-clause 6.2.2 , the maximum output power is allowed to be reduced by following the table.

Table 6.1aA: UE maximum output power with HS-DPCCH and E-DCH

UE Transmit Channel Configuration	CM(db)	MPR(db)
For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH	0≤ CM≤3.5	MAX(CM-1,0)
Note: CM=1 for β_c/β_d=12/15, β_{hs}/β_c=24/15.For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.		

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensate for the power back-off by increasing the gain of TX_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.

5.2 Radiated Output Power

5.2.1 Measurement method

The measurements procedures specified in TIA-603C-2004 were applied.

1 In an anechoic antenna test chamber, a half-wave dipole antenna for the frequency band of interest is placed at the reference centre of the chamber. An RF Signal source for the frequency band of interest is connected to the dipole with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A known (measured) power (Pin) is applied to the input of the dipole, and the power received (Pr) at the chamber's probe antenna is recorded.

2 The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established as ARpl=Pin + 2.15 - Pr. The ARpl is the attenuation of “reference path loss”, and including the gain of receive antenna, the cable loss and the air loss. The measurement results are obtained as described below: Power=PMea+ARpl

3 The EUT is substituted for the dipole at the reference centre of the chamber and a scan is performed to obtain the radiation pattern.

4 From the radiation pattern, the co-ordinates where the maximum antenna gain occurs are identified.

5 The EUT is then put into continuously transmitting mode at its maximum power level.

6 Power mode measurements are performed with the receiving antenna placed at the coordinates determined in Step 3 to determine the output power as defined in Rule 24.232 (b) and (c). The "reference path loss" from Step1 is added to this result.

7 This value is EIRP since the measurement is calibrated using a half-wave dipole antenna of known gain (2.15 dBi) and known input power (Pin).

8 ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi..

9. Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

5.2.2 Provision applicable

This is the test for the maximum radiated power from the EUT. Rule Part 24.232(b) specifies, “Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power” and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.” Rule Part 22.913(a) specifies “Maximum ERP. The effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.”

Mode	Nominal Peak Power
GSM850	<=38.45 dBm (7W)
PCS1900	<=33 dBm (2W)
UMTS BANDV	<=38.45 dBm (7W)

5.2.3 Measurement Result

Radiated Power (ERP) for GSM 850 MHZ				
Mode	Frequency	Result		Conclusion
		Max. Peak ERP (dBm)	Polarization Of Max. ERP	
GSM850	824.2	32.68	Horizontal	Pass
	824.2	**32.79**	Vertical	Pass
	836.6	32.65	Horizontal	Pass
	836.6	32.48	Vertical	Pass
	848.8	32.26	Horizontal	Pass
	848.8	32.54	Vertical	Pass

Radiated Power (E.I.R.P) for PCS 1900 MHZ				
Mode	Frequency	Result		Conclusion
		Max. Peak E.I.R.P.(dBm)	Polarization Of Max. E.I.R.P.	
PCS1900	1850.2	31.69	Horizontal	Pass
	1850.2	31.43	Vertical	Pass
	1880.0	31.24	Horizontal	Pass
	1880.0	31.11	Vertical	Pass
	1909.8	**31.89**	Horizontal	Pass
	1909.8	31.27	Vertical	Pass

6 SPURIOUS EMISSION

6.1 Conducted spurious emission

6.1.1 Measurement method

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1: Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of PCS1900 band, this equates to a frequency range of 30 MHz to 19.1 GHz, data taken from 30 MHz to 20 GHz. For GSM850, data taken from 30 MHz to 9 GHz.

2: Determine EUT transmit frequencies: the following typical channels were chosen to conducted emissions testing.

Typical Channels for testing of GSM850	
Channel	Frequency (MHz)
128	824.2
190	836.6
251	848.8

Typical Channels for testing of PCS1900	
Channel	Frequency (MHz)
512	1850.2
661	1880.0
810	1909.8

6.1.2 Provisions applicable

On any frequency outside frequency band of the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

6.1.3 Measurement Result

Please refer to: APPENDIX I TEST PLOTS FOR CONDUCTED SPURIOUS EMISSION

Note: 1. Below 30MHz no Spurious found and The GSM modes is the worst condition.
2. As no emission found in standby or receive mode, no recording in this report.

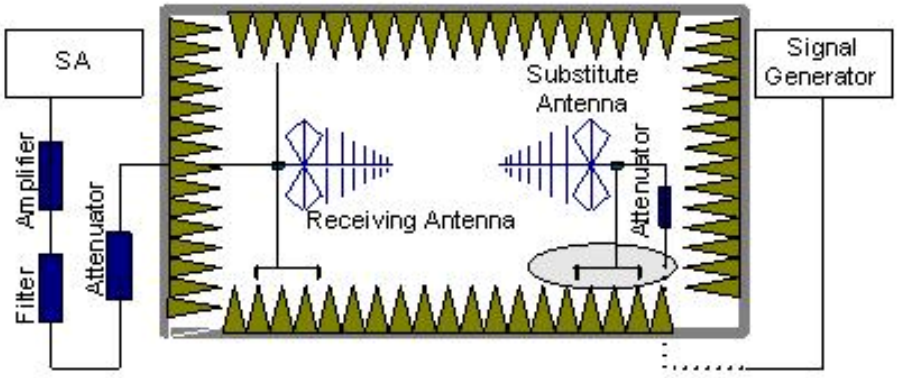
6.2 Radiated Spurious Emission

6.2.1 Measurement method

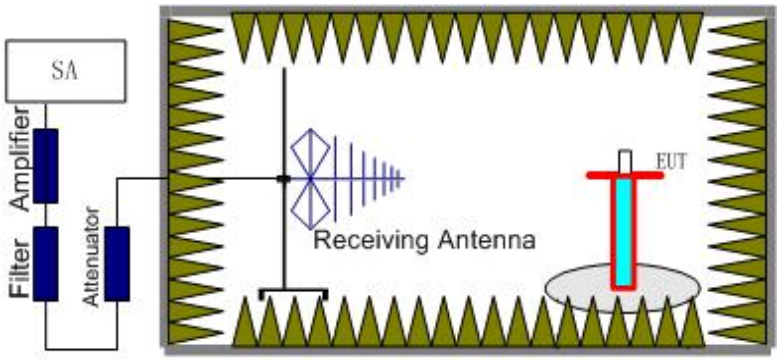
The measurements procedures specified in TIA-603C-2004 were used for testing. The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment. The resolution bandwidth is set 1MHz as outlined in Part 24.238. The measurements were performed on all modes(GSM850,PCS1900) at 3 typical channels(the Top Channel, the Middle Channel and the Bottom Channel) for each band. Only shown the worst data.

The procedure of radiated spurious emissions is as follows:

a) Pre-calibration With pre-calibration method, the Radiated Spurious Emissions(RSE) is calculated as, RSE=Rx（dBuV）+CL（dB）+SA（dB）+Gain（dBi）-107（dBuV to dBm）The SA is calibrated using following setup.



b) EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the test item for emission measurements. The height of receiving antenna is 0.8m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the test item and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector and 1MHz bandwidth.



Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the PCS1900 band (1850.2 MHz, 1880 MHz and 1909.8 MHz) ,GSM850 band (824.2MHz, 836.6MHz, 848.8MHz), It was decided that measurements at these three carrier frequencies would be sufficient to

demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of any band into any of the other blocks.The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established and the ARpl is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss and the air loss. The measurement results are obtained as described below: Power=PMea+ARpl

6.2.2 Provisions applicable

(a) On any frequency outside a licensee’s frequency block (e.g. A, D, B, etc.) within the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Note: only result the worst condition of each test mode

6.2.3 Measurement Result

GSM 850:

The Worst Test Results for Channel 251/848.8 MHz					
Frequency(MHz)	Reading (dBm)	Factor(dB)	Absolute Level(dBm)	Limit（dBm）	Polarity
1697.6	-24.50	8.10	-16.40	-13.00	Vertical
1697.6	-23.76	8.10	-15.66	-13.00	Horizontal
2546.4	-30.29	11.69	-18.60	-13.00	Vertical
2546.4	-31.48	11.69	-19.79	-13.00	Horizontal
3395.2	-33.37	12.92	-20.45	-13.00	Horizontal
3395.2	-31.16	12.92	-18.24	-13.00	Vertical

The Worst Test Results for Channel 190/836.6 MHz					
Frequency(MHz)	Reading (dBm)	Factor(dB)	Absolute Level(dBm)	Limit（dBm）	Polarity
1673.2	-26.05	8.00	-18.05	-13.00	Vertical
1673.2	-27.43	8.00	-19.43	-13.00	Horizontal
2509.8	-26.85	11.20	-15.65	-13.00	Vertical
2509.8	-33.17	11.20	-21.97	-13.00	Horizontal
3346.4	-33.56	12.60	-20.96	-13.00	Horizontal
3346.4	-34.24	12.60	-21.64	-13.00	Vertical

The Worst Test Results for Channel 128/824.2 MHz					
Frequency(MHz)	Reading (dBm)	Factor(dB)	Absolute Level(dBm)	Limit（dBm）	Polarity
1648.4	-25.93	7.80	-18.13	-13.00	Vertical
1648.4	-29.62	7.80	-21.82	-13.00	Horizontal
2472.6	-29.75	11.00	-18.75	-13.00	Vertical
2472.6	-31.44	11.00	-20.44	-13.00	Horizontal
3296.8	-33.25	12.30	-20.95	-13.00	Horizontal
3296.8	-35.38	12.30	-23.08	-13.00	Vertical

PCS 1900:

The Worst Test Results for Channel 512/1850.2MHz					
Frequency(MHz)	Reading (dBm)	Factor(dB)	Absolute Level(dBm)	Limit（dBm）	Polarity
3700.4	-35.12	13.42	-21.70	-13.00	Horizontal
3700.4	-37.58	13.42	-24.16	-13.00	Vertical
5550.6	-38.49	17.12	-21.37	-13.00	Vertical
5550.6	-43.72	17.12	-26.60	-13.00	Horizontal
7400.8	-40.51	19.26	-21.25	-13.00	Horizontal
7400.8	-42.68	19.26	-23.42	-13.00	Vertical

The Worst Test Results for Channel 661/1880.0MHz					
Frequency(MHz)	Reading (dBm)	Factor(dB)	Absolute Level(dBm)	Limit（dBm）	Polarity
3760	-35.19	13.76	-21.43	-13.00	Horizontal
3760	-38.73	13.76	-24.97	-13.00	Vertical
5640	-38.62	17.56	-21.06	-13.00	Vertical
5640	-42.50	17.56	-24.94	-13.00	Horizontal
7520	-40.76	19.60	-21.16	-13.00	Horizontal
7520	-45.42	19.60	-25.82	-13.00	Vertical

The Worst Test Results for Channel 810/1909.8MHz					
Frequency(MHz)	Reading (dBm)	Factor(dB)	Absolute Level(dBm)	Limit（dBm）	Polarity
3819.6	-36.30	13.87	-22.43	-13.00	Horizontal
3819.6	-37.41	13.87	-23.54	-13.00	Vertical
5729.4	-40.52	17.66	-22.86	-13.00	Vertical
5729.4	-47.96	17.66	-30.30	-13.00	Horizontal
7639.2	-44.55	19.75	-24.80	-13.00	Horizontal
7639.2	-46.73	19.75	-26.98	-13.00	Vertical

Note: Below 30MHZ no Spurious found and The GSM/PCS modes is the worst condition.

7. Frequency stability

7.1 Measurement method

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of (Aglient 8960) DIGITAL RADIO COMMUNICATION TESTER.

1 , Measure the carrier frequency at room temperature.

2 , Subject the EUT to overnight soak at -10℃.

3 , With the EUT, powered via nominal voltage, connected to the Aglient 8960 and in a simulated call on channel 661 for PCS1900 band , channel 190 for GSM850 band measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

4 , Repeat the above measurements at 10℃ increments from -10℃ to +55℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

5 , Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.

6 , Subject the EUT to overnight soak at +55℃.

7 , With the EUT, powered via nominal voltage, connected to the Aglient 8960 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

8 , Repeat the above measurements at 10℃ increments from +55℃ to -10℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

9 At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

7.2 Provisions applicable

7.2.1 For Hand carried battery powered equipment

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 6.66VDC and 7.4VDC, with a nominal voltage of 7.4VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of -10 % and +12.5 %. For the purposes of measuring frequency stability these voltage limits are to be used.

7.3 Measurement Result

Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
6.29	11	0.013
7.4	26	0.031
8.51	30	0.036

Frequency Error Against Temperature for GSMS850 band		
temperature(℃)	Frequency error(Hz)	Frequency error(ppm)
-10	12	0.014
0	17	0.020
10	16	0.019
20	9	0.011
30	8	0.010
40	13	0.016
50	15	0.018

Note: The EUT doesn't work below -10℃

Frequency Error Against Voltage for GSM1900 band		
Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
6.29	24	0.013
7.4	19	0.010
8.51	30	0.016

Frequency Error Against Temperature for GSM1900 band		
temperature(℃)	Frequency error(Hz)	Frequency error(ppm)
-10	28	0.015
0	19	0.010
10	30	0.016
20	27	0.014
30	25	0.013
40	18	0.010
50	24	0.013

8. Occupied bandwidth

8.1 Measurement method

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

8.2 Provisions applicable

The occupied bandwidth (99%) shall not exceed 300 KHz.

8.3 Measurement Result

Occupied Bandwidth (99%) for GSM850 band		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(kHz)
Low Channel	824.2	249.97
Middle Channel	836.6	245.14
High Channel	848.8	244.68

Occupied Bandwidth (99%) for PCS1900 band		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(kHz)
Low Channel	1850.2	251.82
Middle Channel	1880.0	245.98
High Channel	1909.8	242.06

9. Emission bandwidth

9.1 Measurement method

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

9.2 Provisions applicable

The emission bandwidth is defined as two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power

9.3 Measurement Result

Emission Bandwidth (-26dBc) for GSM850 band		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)
Low Channel	824.2	322.188
Middle Channel	836.6	323.929
High Channel	848.8	314.517

Emission Bandwidth (-26dBc) for PCS1900 band		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)
Low Channel	1850.2	318.193
Middle Channel	1880.0	315.662
High Channel	1909.8	313.348

10. Band edge

10.1 Measurement method

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

10.2 Provisions applicable

As Specified in FCC rules of 22.917(b) and 24.238(b)

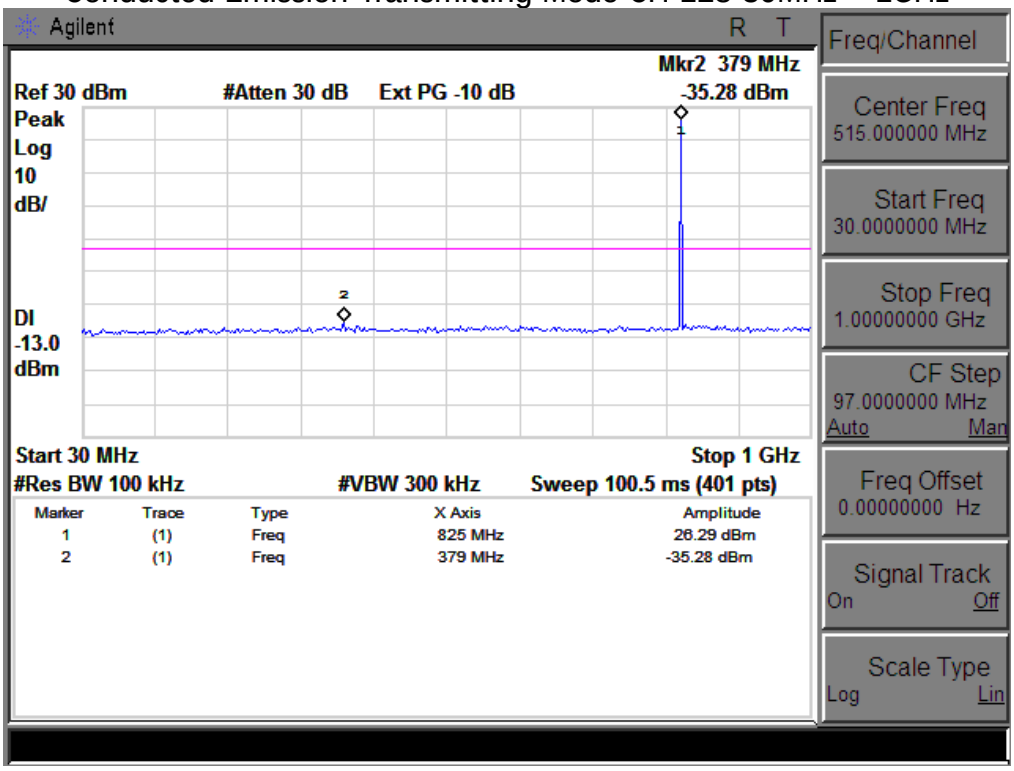
10.3 Measurement Result

Please refers to Appendix III for compliance test plots for band edges

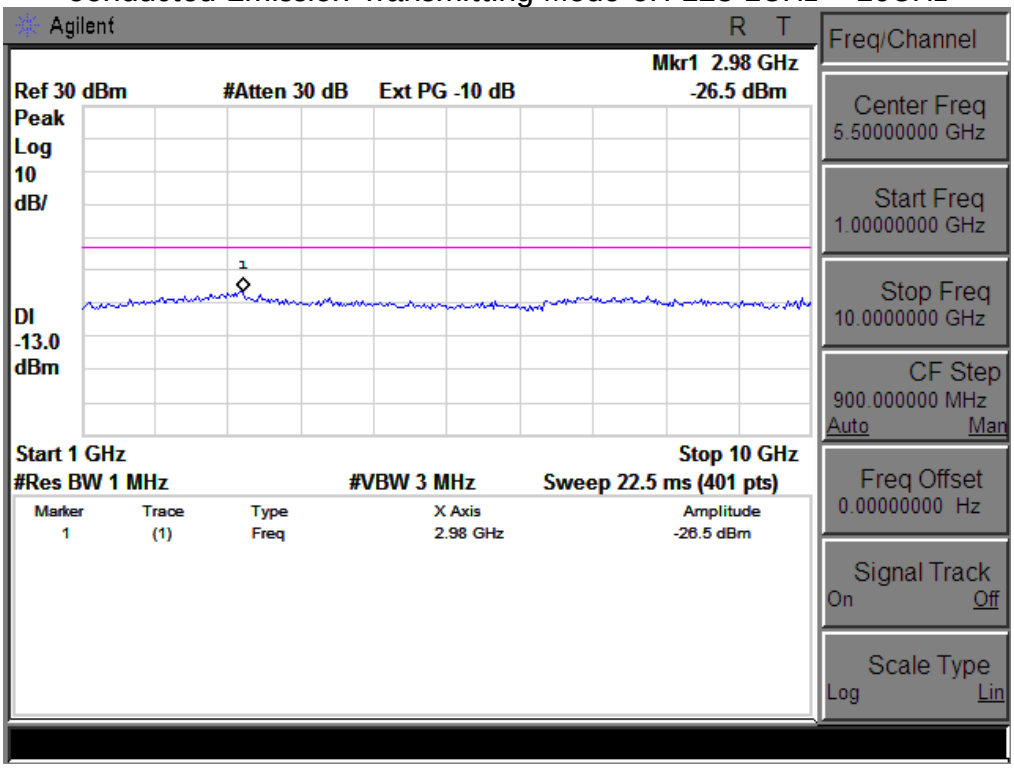
APPENDIX I
TEST PLOTS FOR CONDUCTED SPURIOUS EMISSION

CONDUCTED EMISSION IN GSM850 BAND

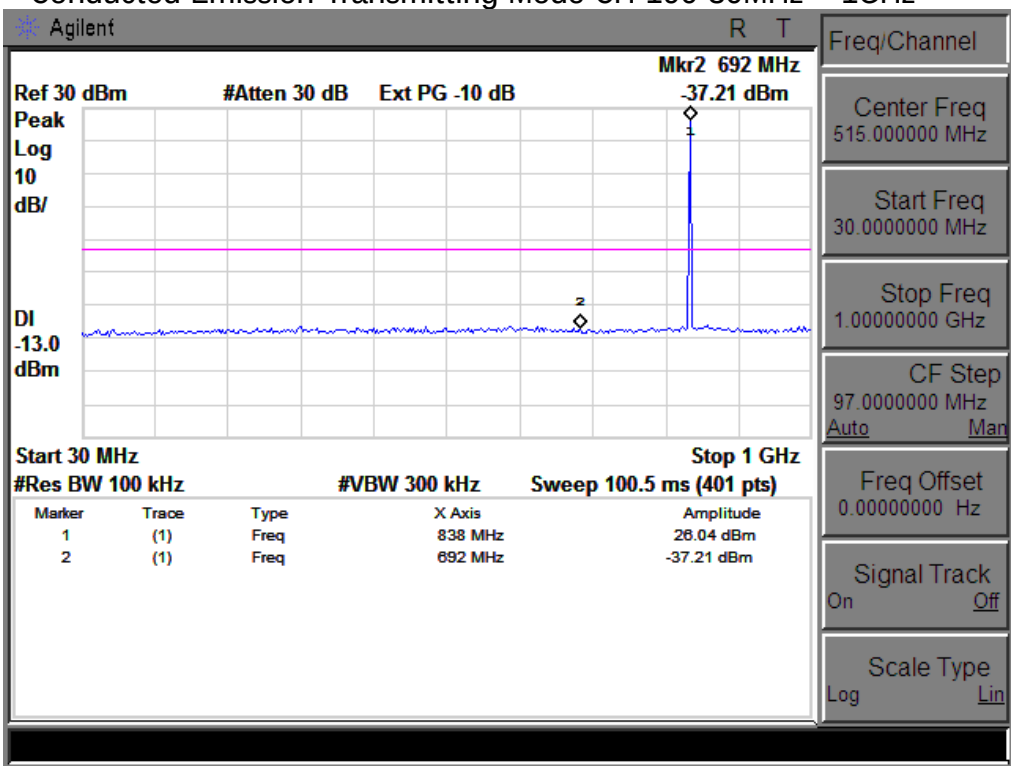
Conducted Emission Transmitting Mode CH 128 30MHz – 1GHz



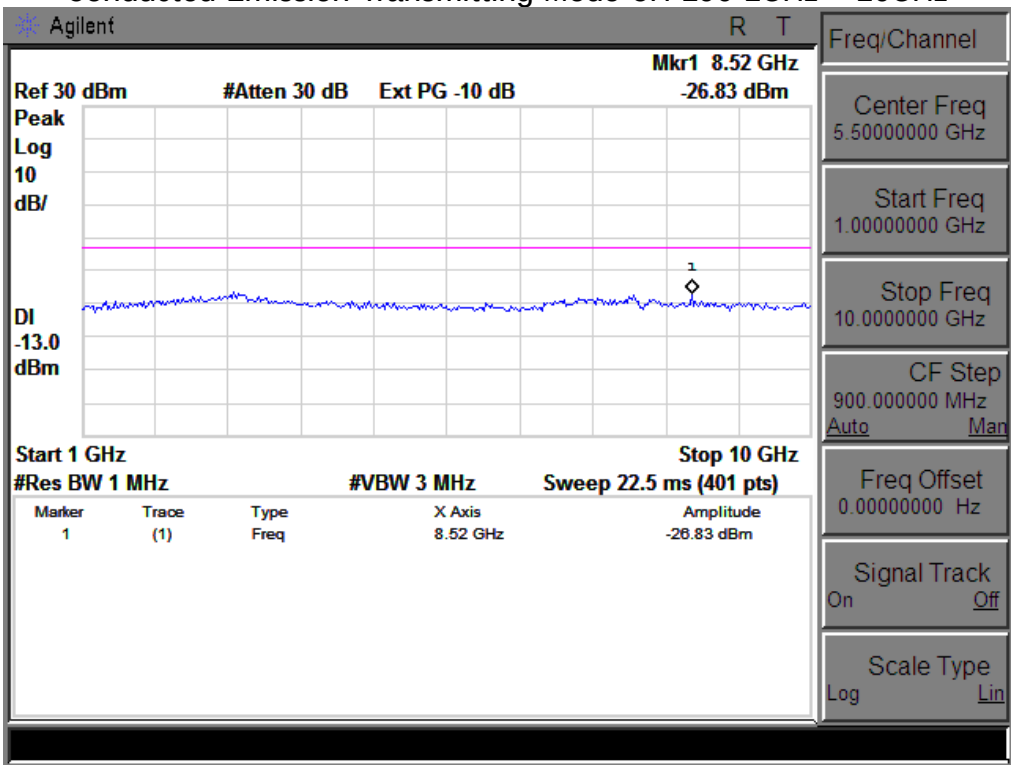
Conducted Emission Transmitting Mode CH 128 1GHz – 10GHz



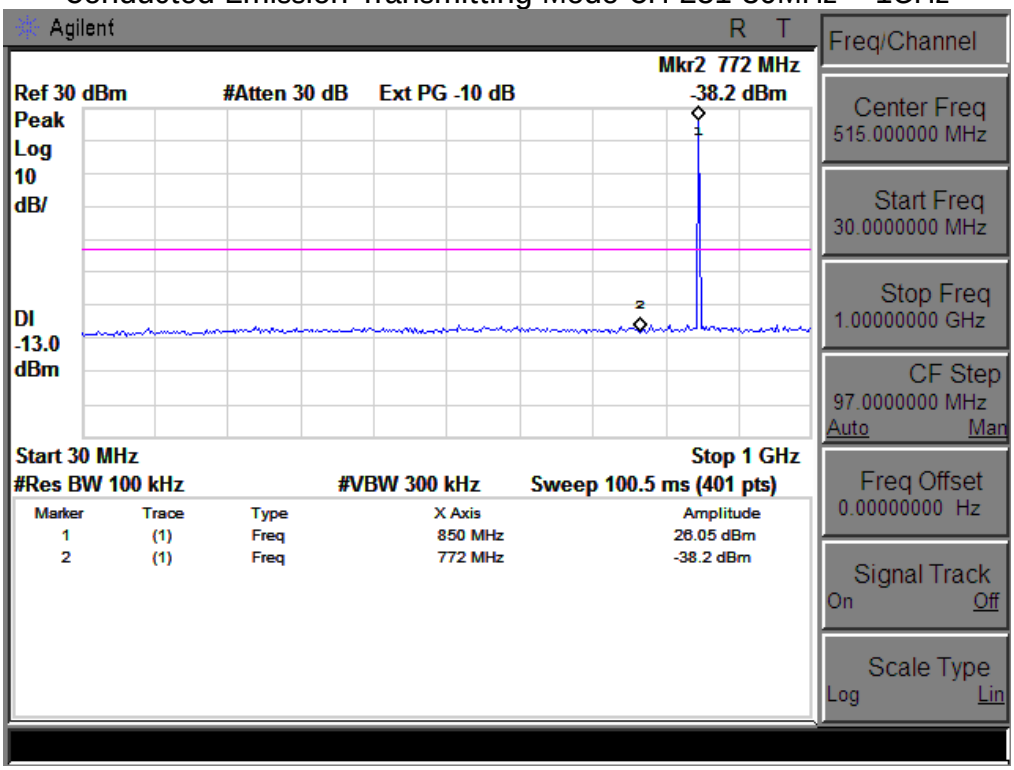
Conducted Emission Transmitting Mode CH 190 30MHz – 1GHz



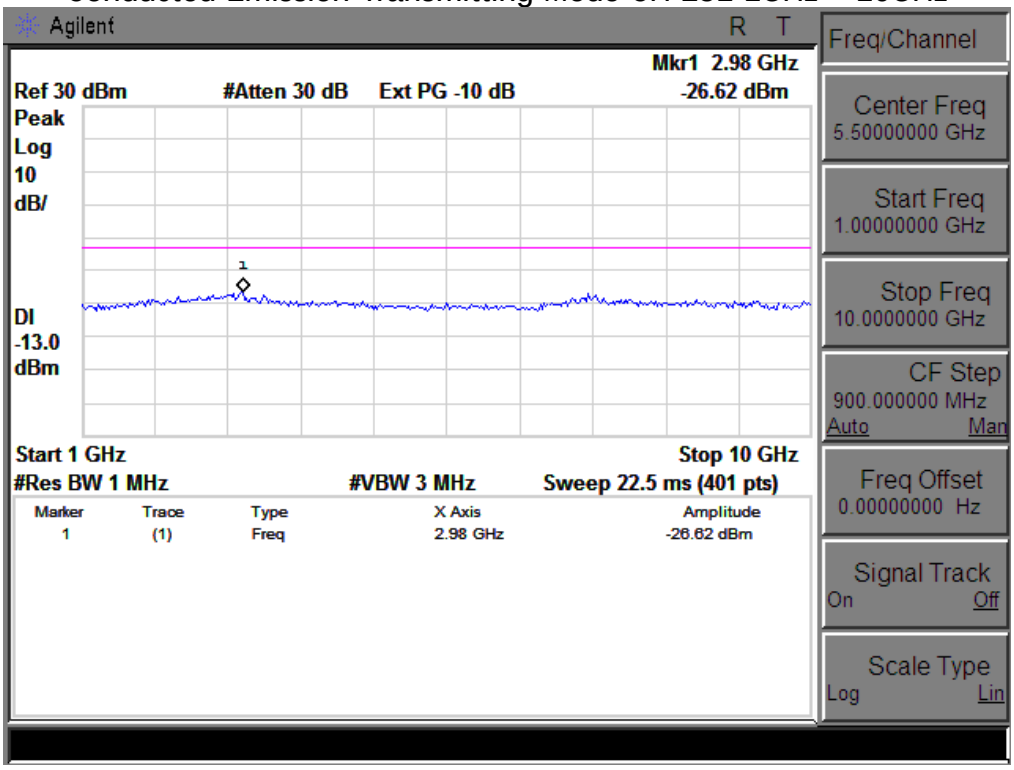
Conducted Emission Transmitting Mode CH 190 1GHz – 10GHz



Conducted Emission Transmitting Mode CH 251 30MHz – 1GHz

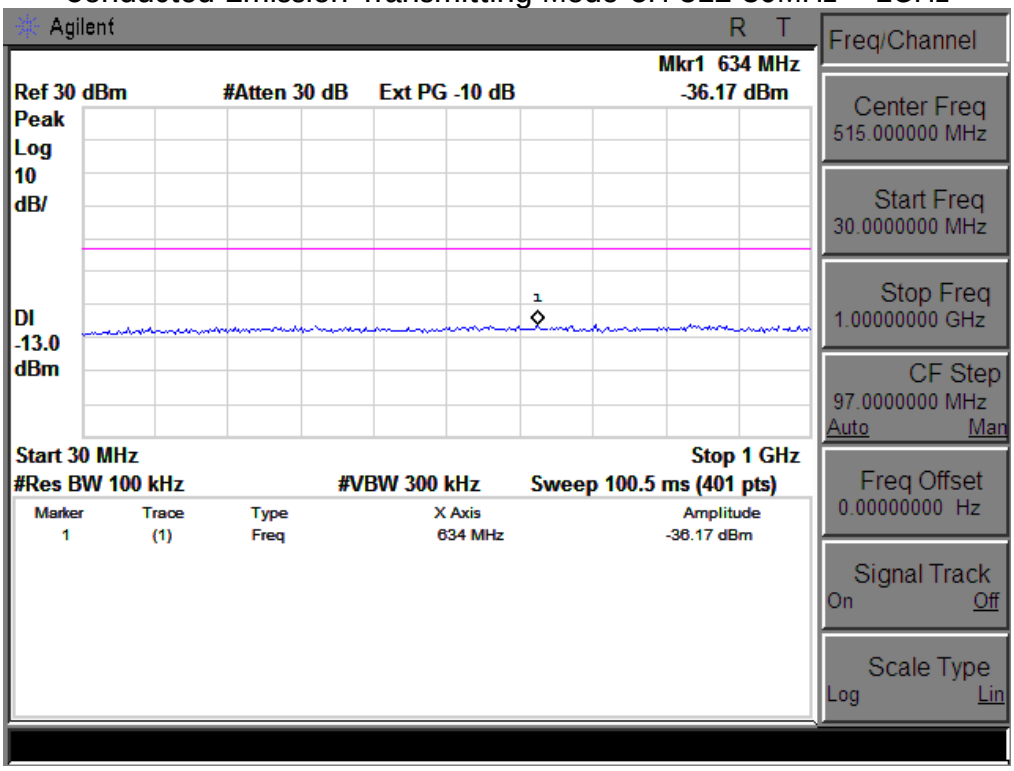


Conducted Emission Transmitting Mode CH 251 1GHz – 10GHz

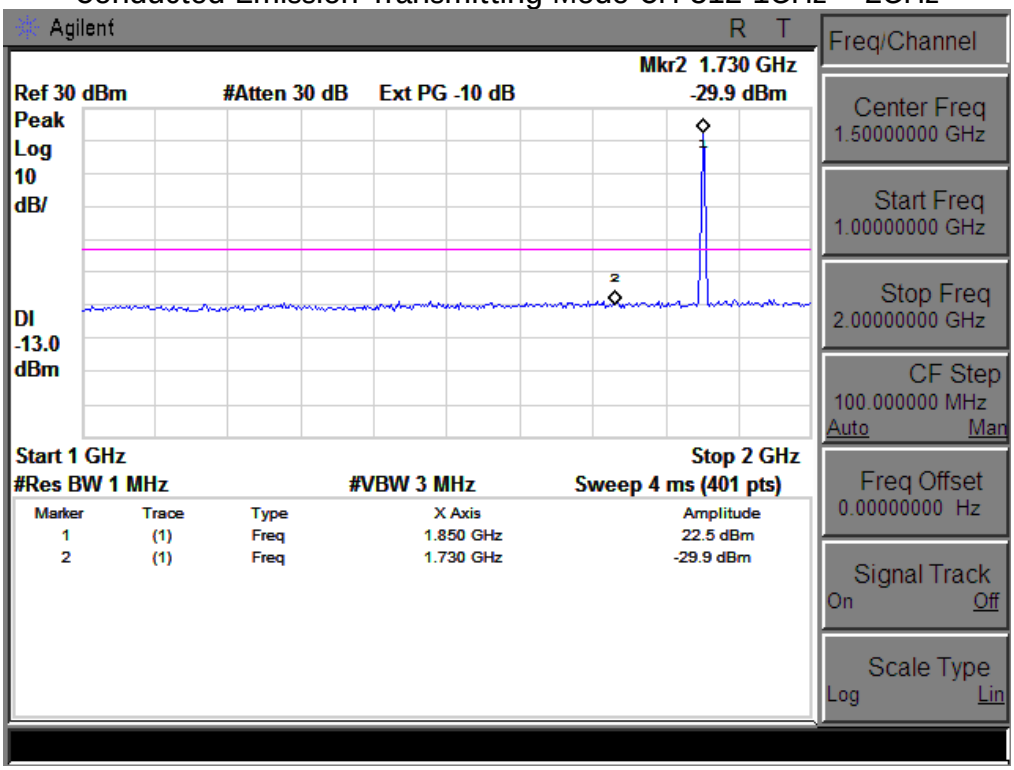


CONDUCTED EMISSION IN PCS1900 BAND

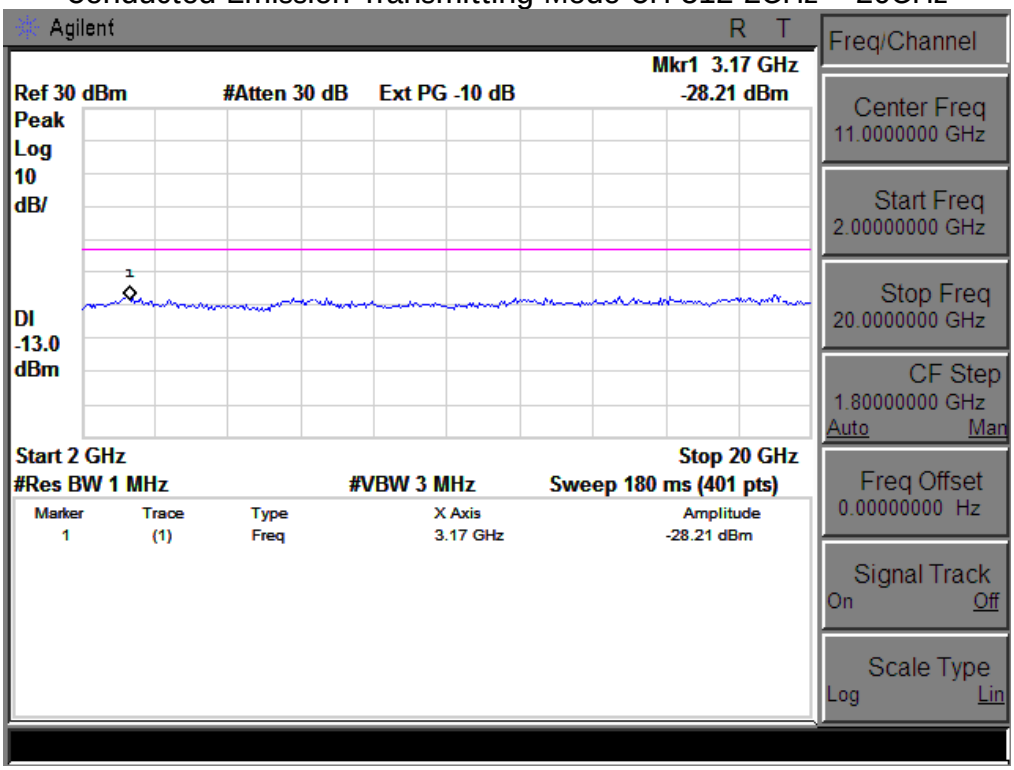
Conducted Emission Transmitting Mode CH 512 30MHz – 1GHz



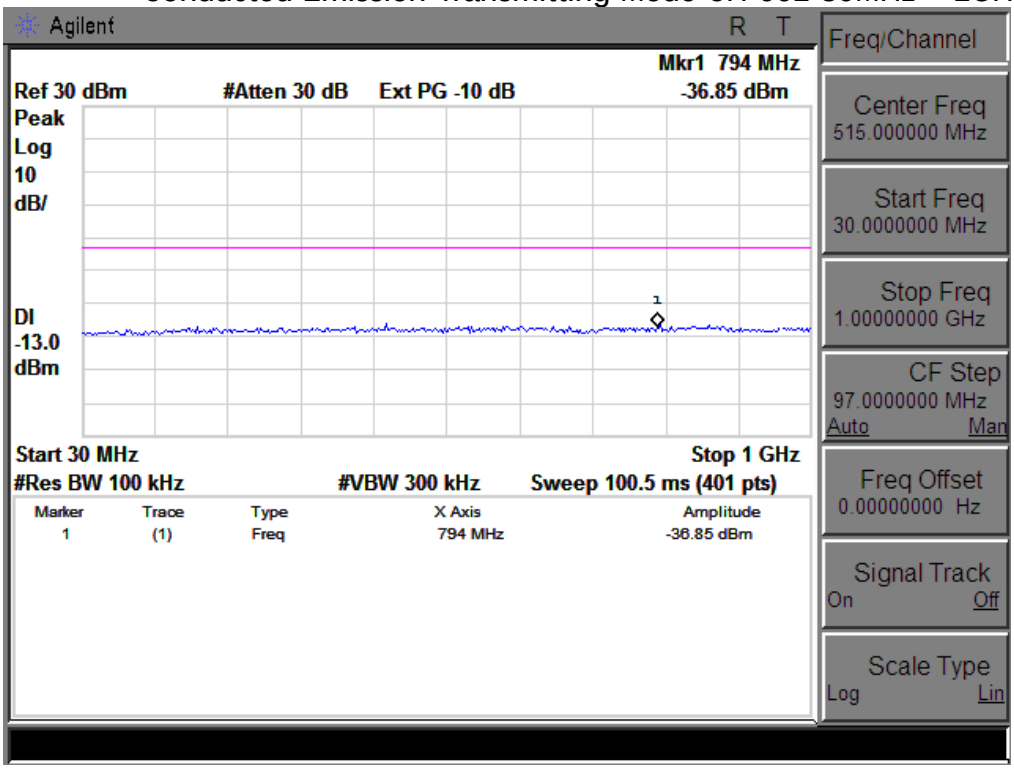
Conducted Emission Transmitting Mode CH 512 1GHz – 2GHz



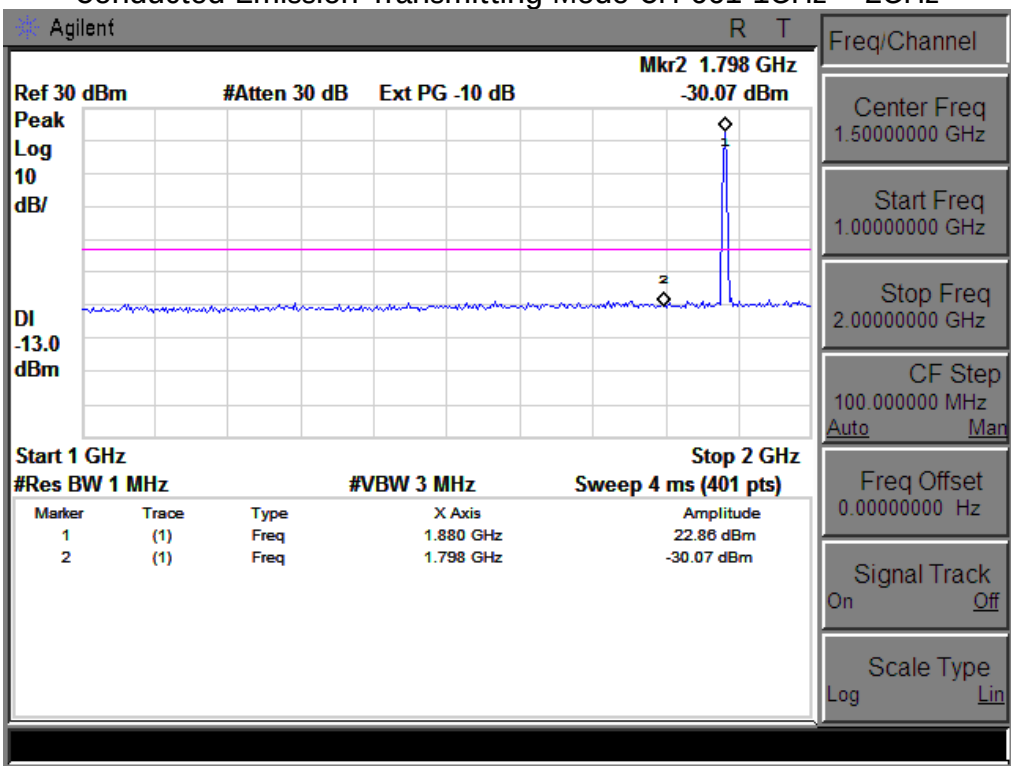
Conducted Emission Transmitting Mode CH 512 2GHz – 20GHz



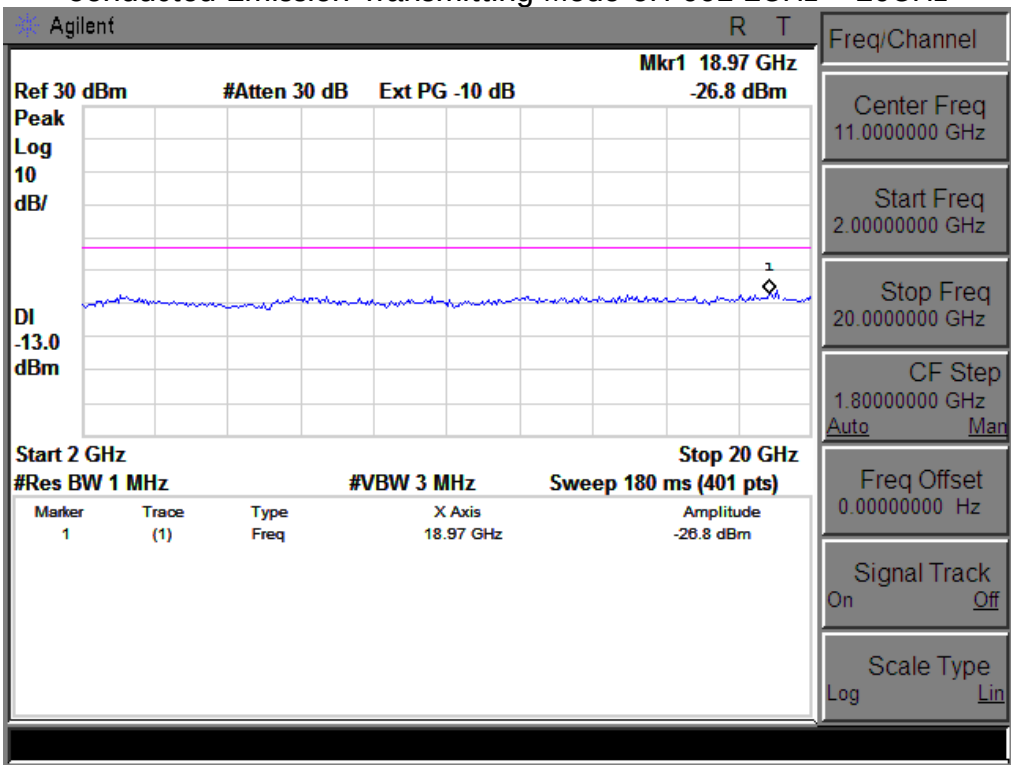
Conducted Emission Transmitting Mode CH 661 30MHz – 1GHz



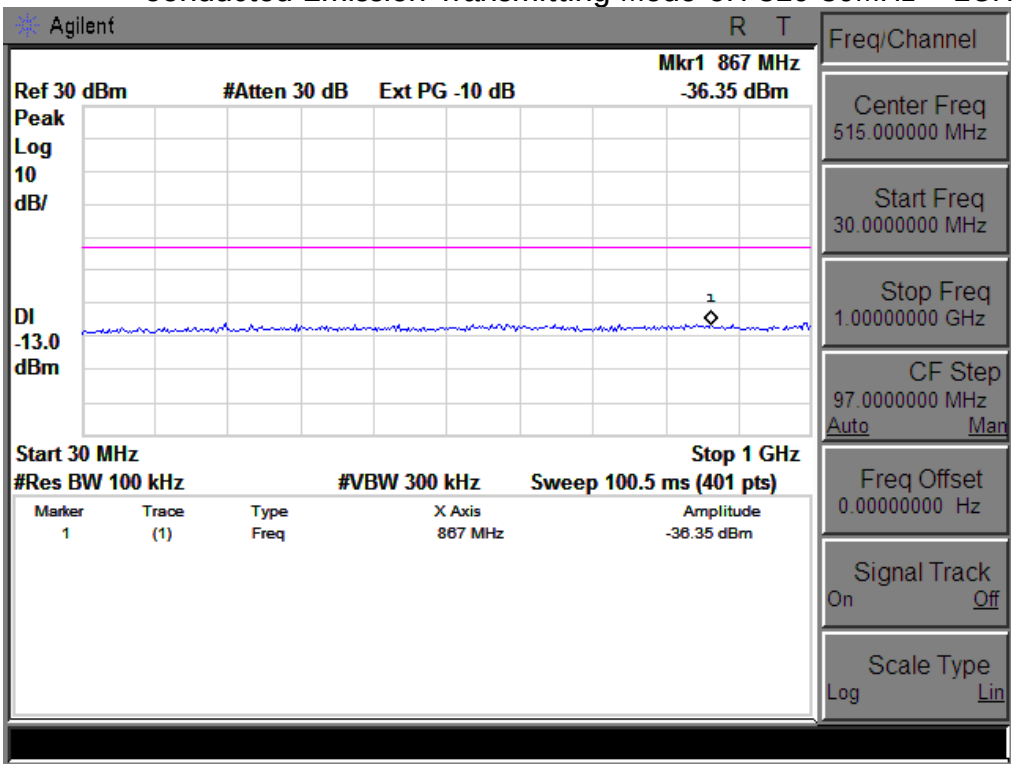
Conducted Emission Transmitting Mode CH 661 1GHz – 2GHz



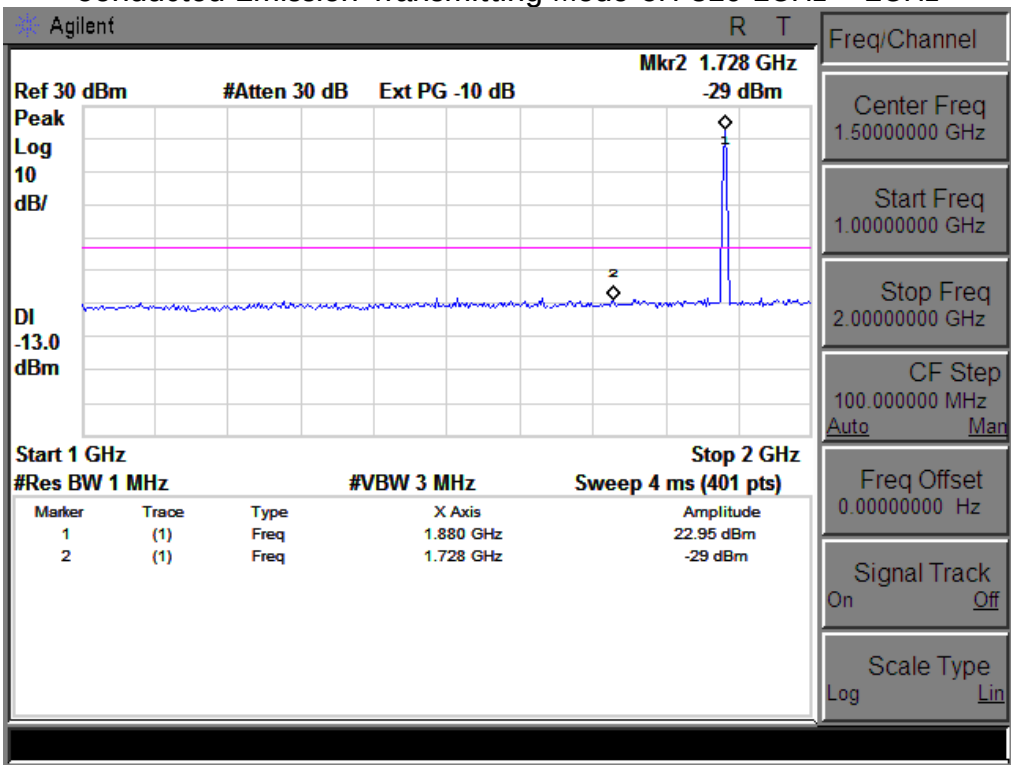
Conducted Emission Transmitting Mode CH 661 2GHz – 20GHz



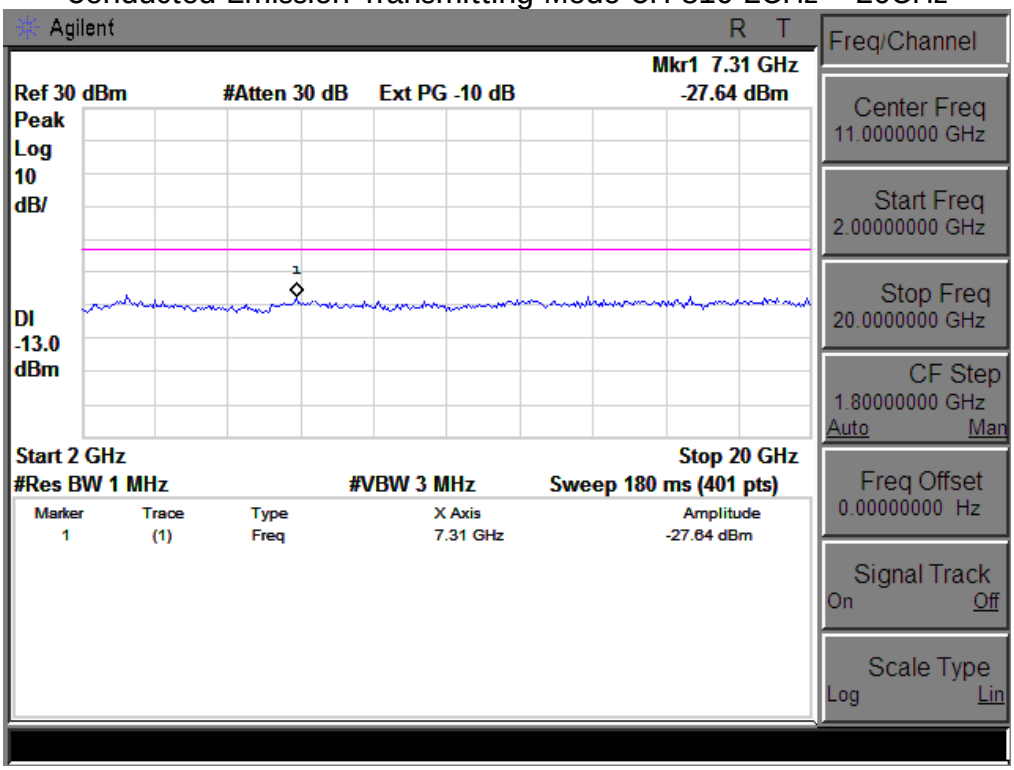
Conducted Emission Transmitting Mode CH 810 30MHz – 1GHz



Conducted Emission Transmitting Mode CH 810 1GHz – 2GHz

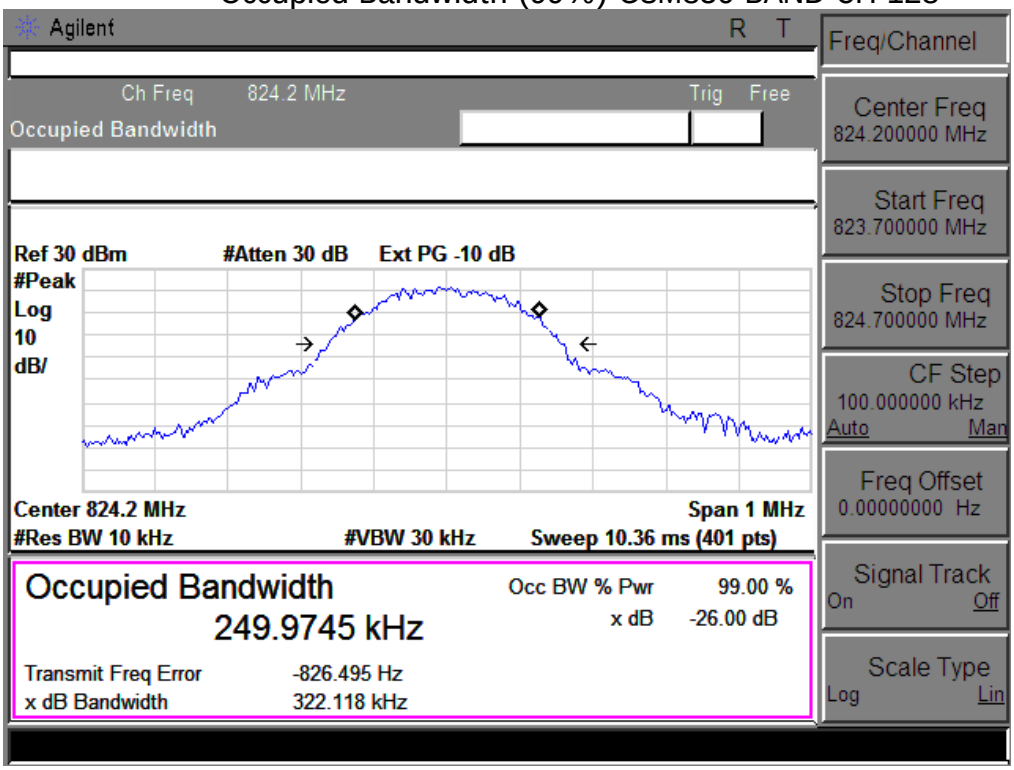


Conducted Emission Transmitting Mode CH 810 2GHz – 20GHz

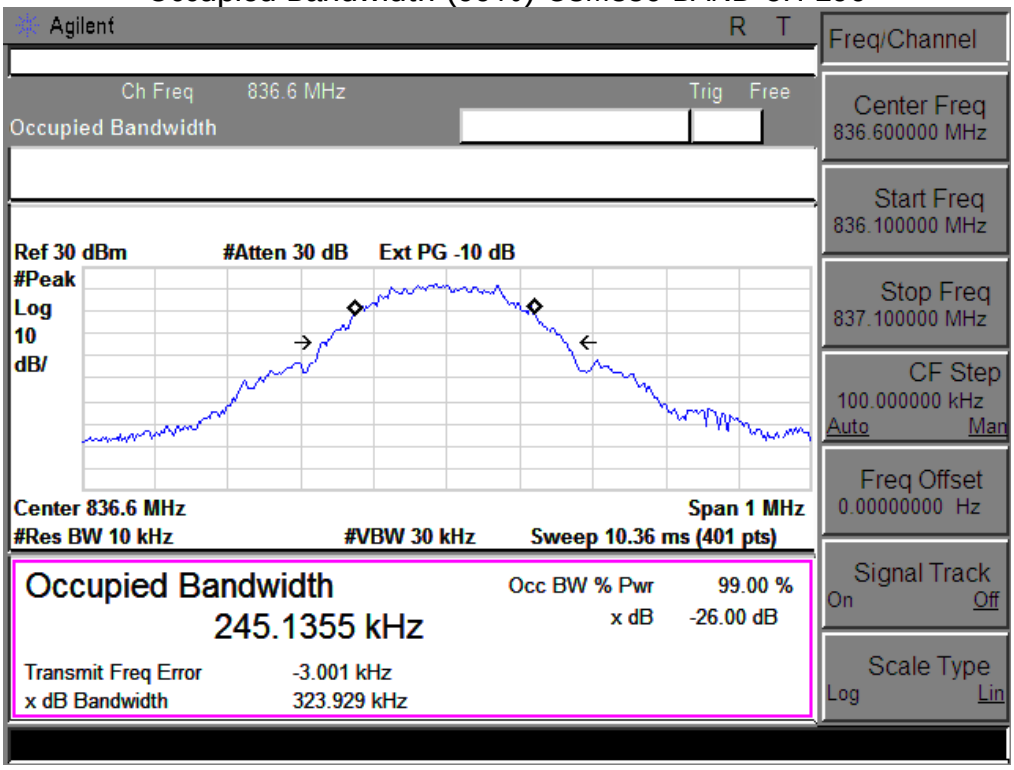


APPENDIX II
TEST PLOTS FOR OCCUPIED BANDWIDTH (99%) EMISSION BANDWIDTH (-26dBC)

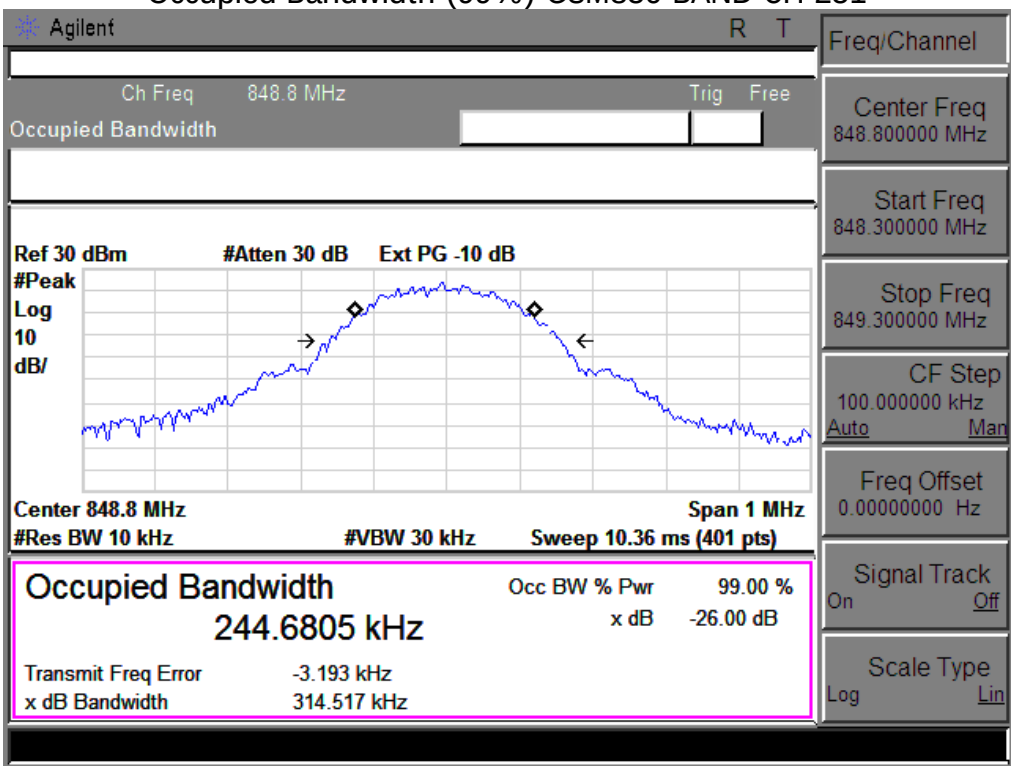
Occupied Bandwidth (99%) GSM850 BAND CH 128



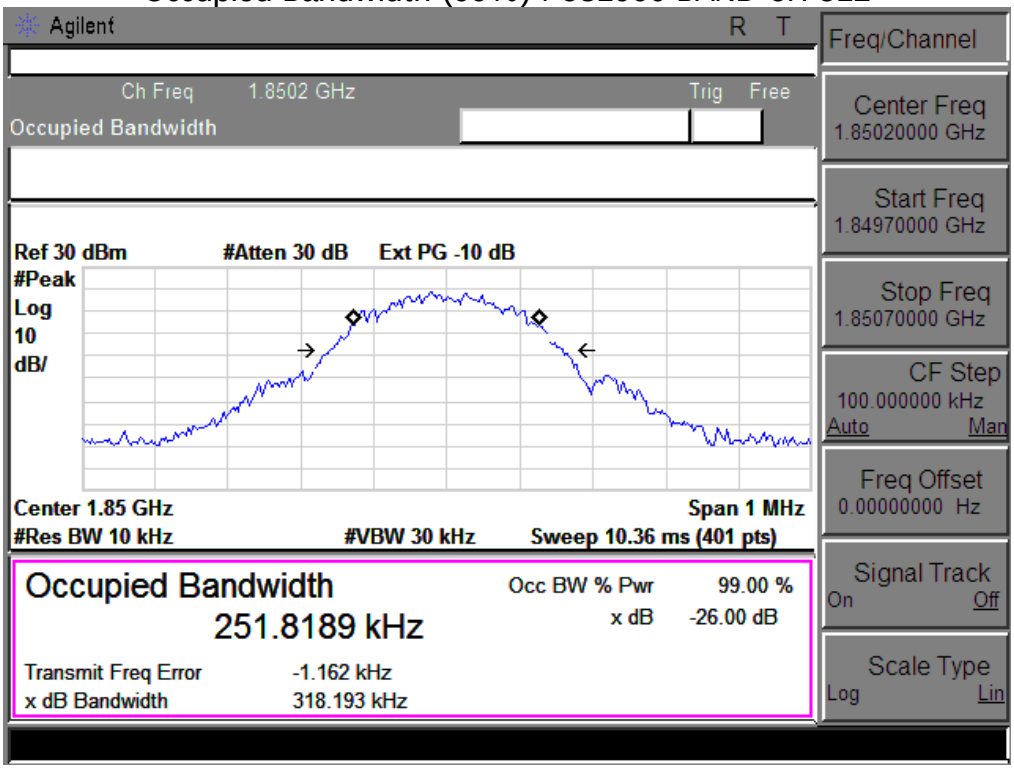
Occupied Bandwidth (99%) GSM850 BAND CH 190



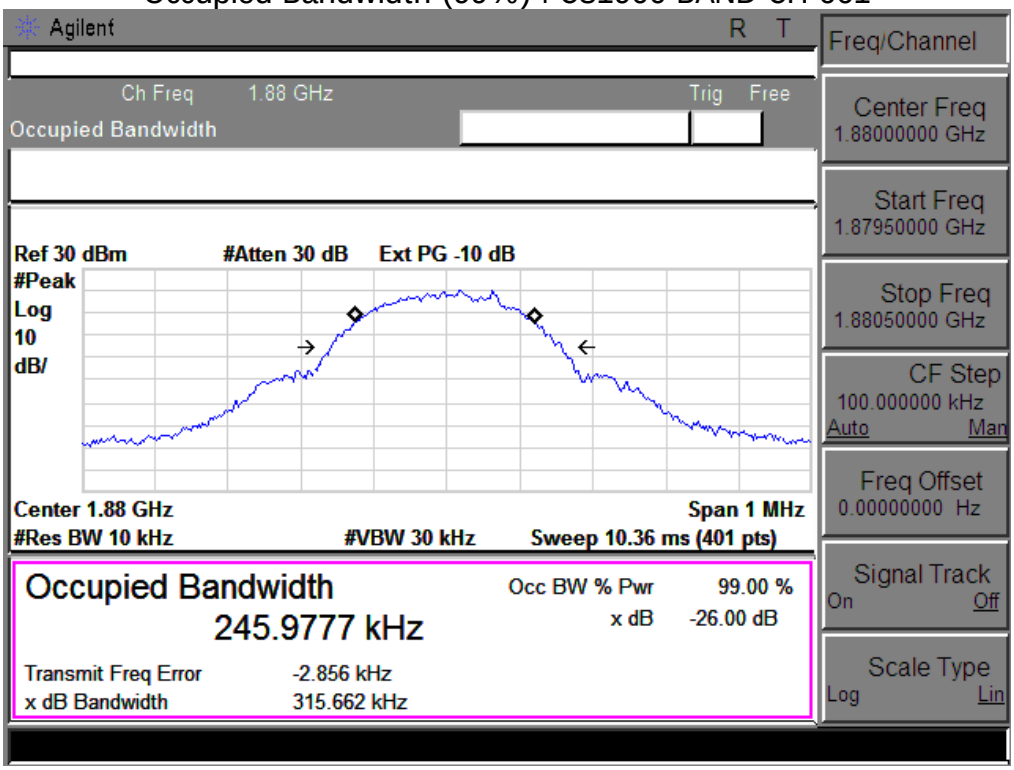
Occupied Bandwidth (99%) GSM850 BAND CH 251



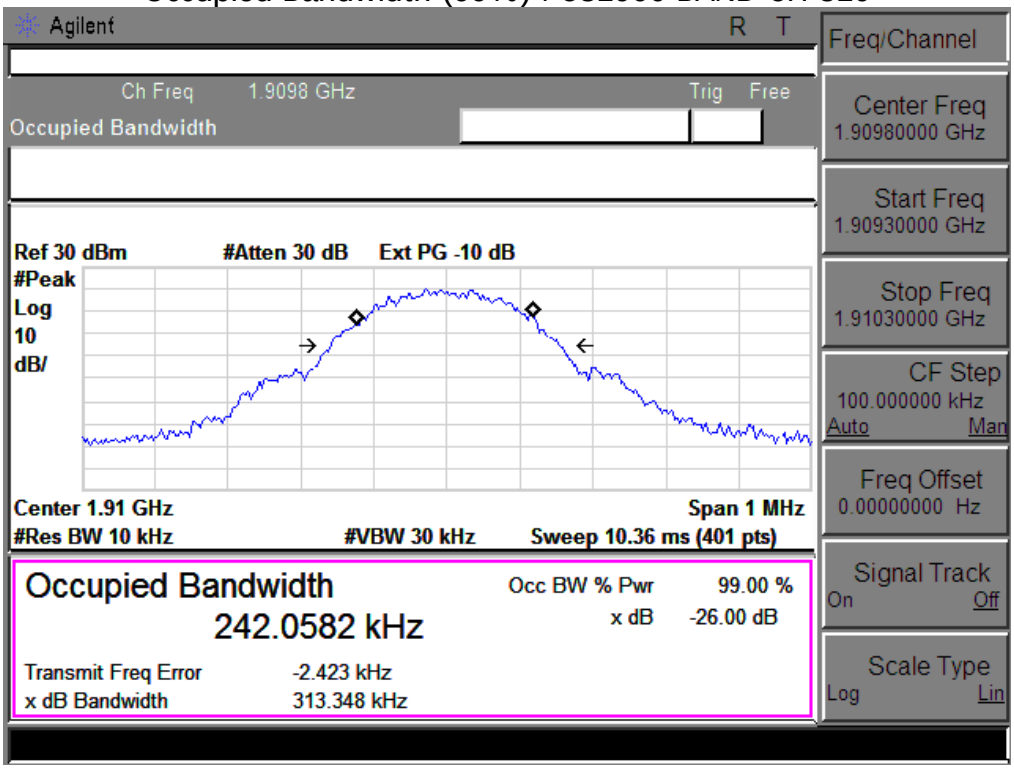
Occupied Bandwidth (99%) PCS1900 BAND CH 512



Occupied Bandwidth (99%) PCS1900 BAND CH 661

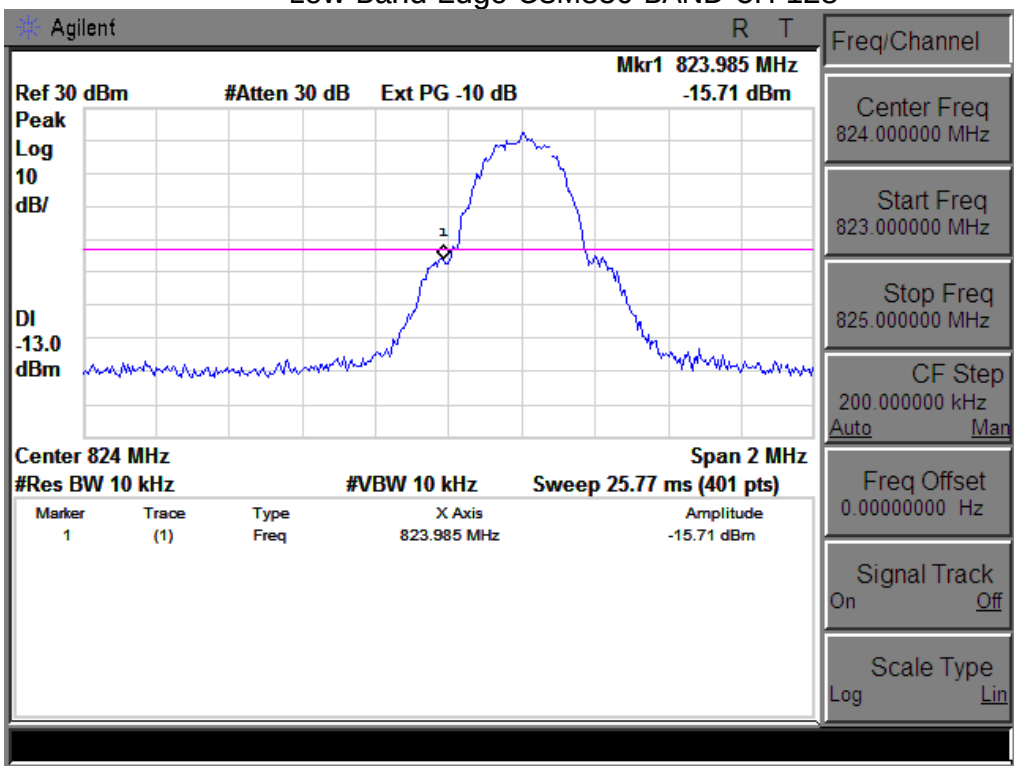


Occupied Bandwidth (99%) PCS1900 BAND CH 810

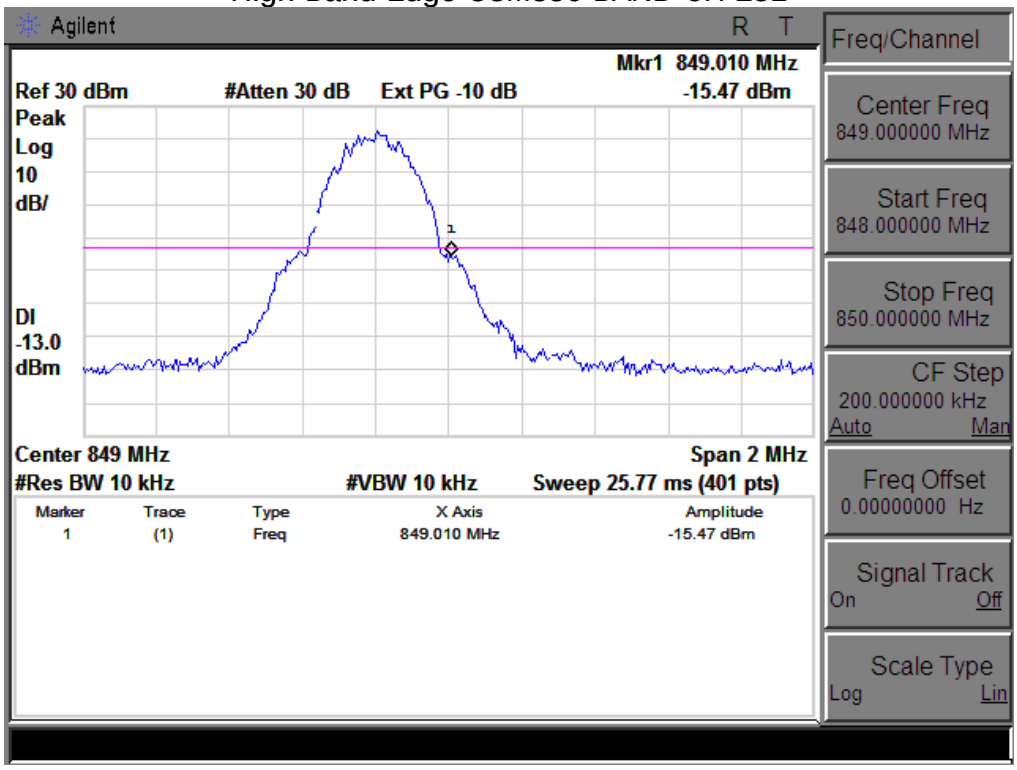


APPENDIX III
TEST PLOTS FOR BAND EDGES

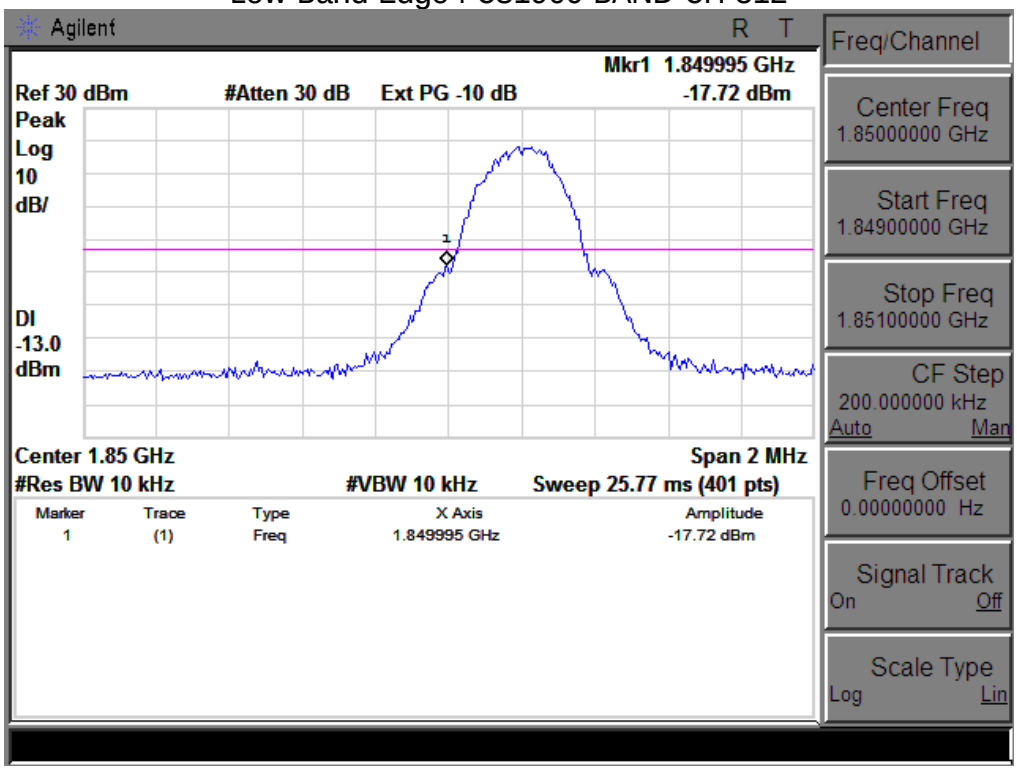
Low Band Edge GSM850 BAND CH 128



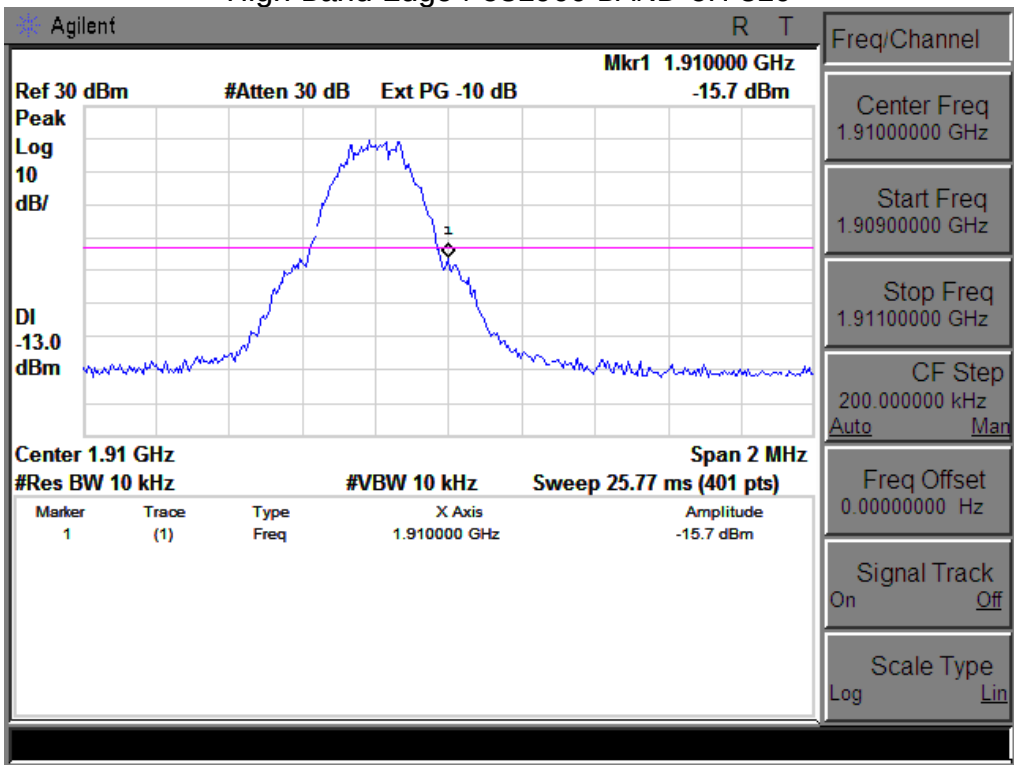
High Band Edge GSM850 BAND CH 251



Low Band Edge PCS1900 BAND CH 512



High Band Edge PCS1900 BAND CH 810



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