

FCC CDMA REPORT

FCC Certification

Applicant Name:
 LG Electronics Inc.

Date of Issue:
 February 22, 2017

Location:

Address:
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 Republic of Korea

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Report No.: HCT-R-1702-F011-1
HCT FRN: 0005866421

FCC ID: BEJGEN21NA

APPLICANT: LG Electronics Inc.

FCC Model(s): TM03LNNAHK0

EUT Type: AVN Modem Module

FCC Classification: PCS Licensed Transmitter (PCB)

FCC Rule Part(s): §22, §24, §2

Mode	Tx Frequency (MHz)	Rx Frequency (MHz)	Emission Designator	Conducted output power		ERP	
				Max. Power (W)	Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)
CDMA	824.70– 848.31	869.70– 893.31	1M28F9W	0.244	23.88	0.161	22.07
CDMA EVDO_Rev.0			1M28F9W	0.239	23.78	0.155	21.91
CDMA EVDO_Rev.A			1M27F9W	0.243	23.86	0.158	22.00

Mode	Tx Frequency (MHz)	Rx Frequency (MHz)	Emission Designator	Conducted output power		EIRP	
				Max. Power (W)	Max. Power (dBm)	Max. Power (W)	Max. Power (dBm)
PCS CDMA	1851.25– 1 908.75	1 931.25– 1 988.75	1M27F9W	0.251	23.99	0.200	23.01
PCS CDMA EVDO_Rev.0			1M27F9W	0.249	23.96	0.134	21.26
PCS CDMA EVDO_Rev.A			1M27F9W	0.243	23.86	0.134	21.26

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S.C. 853(a)



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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1702-F011	February 13, 2017	- First Approval Report
HCT-R-1702-F011-1	February 22, 2017	- Revised Antenna gain of CDMA 850 band.

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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	LG Electronics Inc.
Address:	2621, Nambusunhwan-ro, Gangnam-gu, Seoul, Republic of Korea
FCC ID:	BEJGEN21NA
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§22, §24, §2
EUT Type:	AVN Modem Module
FCC Model(s):	TM03LNNAHK0
Tx Frequency:	824.70 — 848.31 MHz (CDMA) 1 851.25 — 1 908.75 MHz (PCS CDMA)
Rx Frequency:	869.70 — 893.31 MHz (CDMA) 1 931.25 — 1 988.75 MHz (PCS CDMA)
Conducted output power:	0.244 W CDMA(23.88 dBm)/ 0.239 W CDMA EVDO_Rev.0 (23.78 dBm) / 0.243 W CDMA EVDO_Rev.A(23.86 dBm) 0.251 W PCS CDMA(23.99 dBm) / 0.249 W PCS CDMA EVDO_Rev.0 (23.96 dBm) / 0.243 W PCS CDMA EVDO_Rev.A(23.86 dBm)
Max. RF Output Power:	0.161 W CDMA(22.07 dBm)/ 0.155 W CDMA EVDO_Rev.0 (21.91 dBm) / 0.158 W CDMA EVDO_Rev.A(22.00 dBm) 0.200 W PCS CDMA(23.01 dBm) / 0.134 W PCS CDMA EVDO_Rev.0 (21.26 dBm) / 0.134 W PCS CDMA EVDO_Rev.A(21.26 dBm)
Emission Designator(s):	1M28F9W (CDMA)/1M28F9W (CDMA EVDO_Rev.0) /1M27F9W (CDMA EVDO_Rev.A) 1M27F9W (PCS CDMA)/ 1M27F9W (PCS CDMA EVDO_Rev.0) / 1M27F9W (PCS CDMA EVDO_Rev.A)
Date(s) of Tests:	December 20, 2016 ~ February 13, 2017
Antenna Specification	Manufacturer: INFAC Elecs co., Ltd Antenna type: PCB Antenna Peak Gain: CDMA850 : 0.89 dBi PCS : 3.2 dBi

2. INTRODUCTION

2.1. EUT DESCRIPTION

The LG Electronics Inc. TM03LNNAHK0 AVN Modem Module consists of Cellular CDMA, PCS CDMA, EVDO_Rev.0 and EVDO_Rev.A.

2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3. TEST FACILITY

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the **74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA.**

3. DESCRIPTION OF TESTS

3.1 CONDUCTED OUTPUT POWER

Test Procedure

Conducted Output Power is tested in accordance with KDB971168 D01 Power Meas License Digital Systems v02r02, October 17, 2014, Section 5.2.

5.2.1 Procedure for use with a spectrum/signal analyzer when EUT can be configured to transmit continuously or when sweep triggering/signal gating can be properly implemented

The EUT is considered to transmit continuously if it can be configured to transmit at a burst duty cycle of greater than or equal to 98% throughout the duration of the measurement. If this condition can be achieved, then the following procedure can be used to measure the average output power of the EUT.

This procedure can also be used when the EUT cannot be configured to transmit continuously, provided that the measurement instrument can be configured to trigger a sweep at the beginning of each full-power transmission burst, and the sweep time is less than or equal to the minimum transmission time during each burst (*i.e.*, no burst off-time is to be included in the measurement).

- a) Set span to at least 1.5 times the OBW.
- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
- c) Set VBW $\geq 3 \times$ RBW.
- d) Set number of points in sweep $\geq 2 \times$ span / RBW.
- e) Sweep time = auto-couple.
- f) Detector = RMS (power averaging).
- g) If the EUT can be configured to transmit continuously (*i.e.*, burst duty cycle $\geq 98\%$), then set the trigger to free run.
- h) If the EUT cannot be configured to transmit continuously (*i.e.*, burst duty cycle $< 98\%$), then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep. Ensure that the sweep time is less than or equal to the transmission burst duration.
- i) Trace average at least 100 traces in power averaging (*i.e.*, RMS) mode.
- j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with the band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

3.2 ERP/EIRP RADIATED POWER AND RADIATED SPURIOUS EMISSIONS

Note: ERP(Effective Radiated Power), EIRP(Effective Isotropic Radiated Power)

Test Procedure

Radiated emission measurements are performed in the Fully-anechoic chamber. The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna in accordance with ANSI/TIA-603-D-2010 Clause 2.2.17. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission. The level and position of the maximized emission is recorded with the spectrum analyzer using RMS detector.

A half wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The power is calculated by the following formula;

$$P_{d(dBm)} = P_{g(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.

The maximum EIRP is calculated by adding the forward power to the calibrated source plus its appropriate gain value. These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration

Radiated spurious emissions

1. Frequency Range : 9 kHz ~ 10th Harmonics of highest channel fundamental frequency.
2. The EUT was setup to maximum output power. The 100 kHz RBW was used to scan from 30 MHz to 1 GHz. Also, the 1 MHz RBW was used to scan from 1 GHz to 10 GHz(Cellular CDMA) or 20 GHz(PCS CDMA). The high, low and a middle channel were tested for out of band measurements.

Note : This device was tested under all R.C.s and S.O.s and worst case is reported with 'All Up' power control bits.

3.3 PEAK- TO- AVERAGE RATIO

Test Procedure

Peak to Average Power Ratio is tested in accordance with KDB971168 D01 Power Meas License Digital Systems v02r02, October 17, 2014, Section 5.7.

- Section 5.7.1 CCDF Procedure

- a) Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- b) Set the number of counts to a value that stabilizes the measured CCDF curve;
- c) Set the measurement interval as follows:
 - 1) for continuous transmissions, set to 1 ms,
 - 2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
- d) Record the maximum PAPR level associated with a probability of 0.1%.

- Section 5.7.2 Alternate Procedure

Use one of the procedures presented in 5.1 to measure the total peak power and record as P_{Pk} . Use one of the applicable procedures presented 5.2 to measure the total average power and record as P_{Avg} . Determine the P.A.R. from: $P.A.R_{(dB)} = P_{Pk(dBm)} - P_{Avg(dBm)}$ (P_{Avg} = Average Power + Duty cycle Factor)

5.1.1 Peak power measurements with a spectrum/signal analyzer or EMI receiver

The following procedure can be used to determine the total peak output power.

- a) Set the RBW $\geq$ OBW.
- b) Set VBW $\geq 3 \times$ RBW.
- c) Set span $\geq 2 \times$ RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Ensure that the number of measurement points $\geq$ span/RBW.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the peak amplitude level.

5.2.2 Procedures for use with a spectrum/signal analyzer when EUT cannot be configured to transmit continuously and sweep triggering/signal gating cannot be properly implemented

If the EUT cannot be configured to transmit continuously (burst duty cycle < 98%), then one of the following procedures can be used. The selection of the applicable procedure will depend on the characteristics of the measured burst duty cycle.

Measure the burst duty cycle with a spectrum/signal analyzer or EMC receiver can be used in zero-span mode if the response time and spacing between bins on the sweep are sufficient to permit accurate measurement of the burst on/off time of the transmitted signal.

5.2.2.2 Constant burst duty cycle

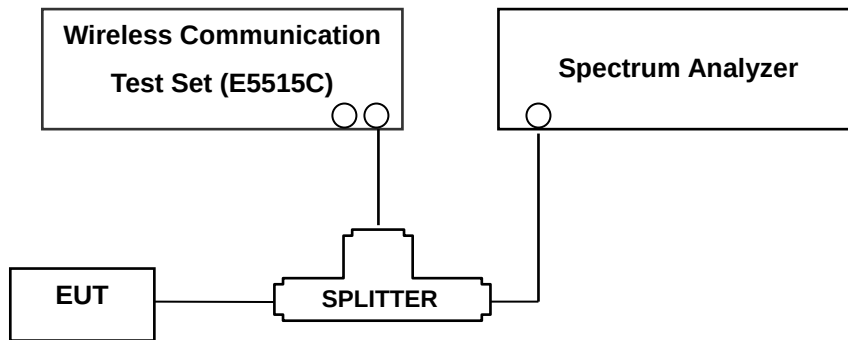
If the measured burst duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent), then:

- a) Set span to at least 1.5 times the OBW.
- b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
- c) Set VBW $\geq 3 \times$ RBW.
- d) Number of points in sweep $\geq 2 \times$ span / RBW. (This gives bin-to-bin spacing $\leq$ RBW/2, so that narrowband signals are not lost between frequency bins.)
- e) Sweep time = auto.
- f) Detector = RMS (power averaging).
- g) Set sweep trigger to "free run".
- h) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
- i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
- j) Add $10 \log (1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).

For example, add $10 \log (1/0.25) = 6$ dB if the duty cycle is a constant 25%.

3.4 OCCUPIED BANDWIDTH.

Test set-up



(Configuration of conducted Emission measurement)

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

Test Procedure

OBW is tested in accordance with KDB971168 D01 Power Meas License Digital Systems v02r02, October 17, 2014, Section 4.2.

The EUT makes a call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels(low, middle and high operational range.)

The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Note : This device was tested under all R.C.s and S.O.s and worst case is reported with 'All Up' power control bits.

3.5 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL.

Test Procedure

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer.

On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. The RBW settings used in the testing are greater than 1 % of the occupied bw. The 1 MHz RBW was used to scan from 10 MHz to 10 GHz. (GSM1900 Mode: 10 MHz to 20 GHz). A display line was placed at - 13 dBm to show compliance. The high, lowest and a middle channel were tested for out of band measurements.

Measurements of all out of band are made on RBW = 1MHz and VBW $\geq$ 3 MHz in the worst case despite RBW = 100 kHz and VBW $\geq$ 300 kHz upon 1 GHz.

- RBW = 1 MHz
- VBW $\geq$ 3 MHz
- Detector = Peak
- Trace Mode = max hold
- Sweep time = auto
- Number of points in sweep $\geq 2 * \text{Span} / \text{RBW}$

- Band Edge Requirement : According to FCC 22.917, 24.238(a) specified that power of any emission outside of The authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The EUT makes a call to the communication simulator. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels(low and high operational frequency range.)

The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

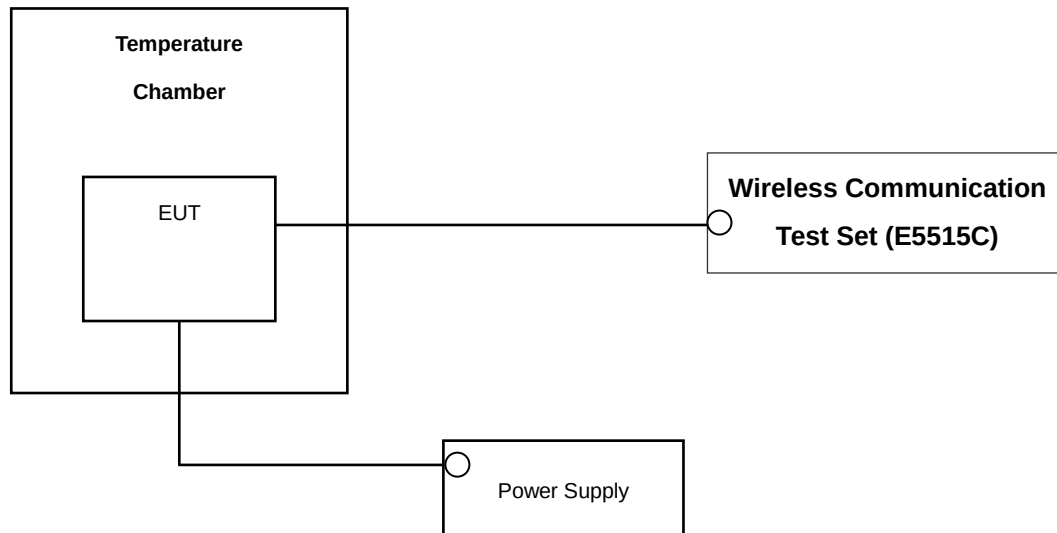
Note : This device was tested under all R.C.s and S.O.s and worst case is reported with 'All Up' power control bits.

NOTES: The analyzer plot offsets were determined by below conditions.

- For CDMA, total offset 27.4 dB = 20 dB attenuator + 6 dB Splitter + 1.4 dB RF cables,
- For PCS, total offset 28.0 dB = 20 dB attenuator + 6 dB Splitter + 2.0 dB RF cables,

3.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

Test Set-up



* Nominal Operating Voltage

Test Procedure

Frequency stability is tested in accordance with ANSI/TIA-603-D-2010 section 2.2.2.

The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from - 30 °C to + 50 °C using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from battery end point to 100 % of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification — the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block(PCS CDMA). The frequency stability of the transmitter shall be maintained within ± 0.00025 % (± 2.5 ppm) of the center frequency(Cellular CDMA).

Time Period and Procedure:

The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).

1. The equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
2. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

NOTE: The EUT is tested down to the battery endpoint.

Note : This device was tested under all R.C.s and S.O.s and worst case is reported with ‘All Up’ power control bits.

4. LIST OF TEST EQUIPMENT

Manufacture	Model/ Equipment	Serial Number	Calibration Date	Calibration Interval	Calibration Due
REOHDE&SCHWARZ	SCU 18 / AMPLIFIER	10094	09/07/2016	Annual	09/07/2017
Wainwright	WHK1.2/15G-10EF/H.P.F	4	04/11/2016	Annual	04/11/2017
Wainwright	WHK3.3/18G-10EF/H.P.F	2	04/11/2016	Annual	04/11/2017
Hewlett Packard	11667B / Power Splitter	10545	02/15/2016	Annual	02/15/2017
Hewlett Packard	11667B / Power Splitter	11275	04/29/2016	Annual	04/29/2017
Agilent	E3632A/DC Power Supply	KR75303243	07/12/2016	Annual	07/12/2017
Schwarzbeck	UHAP/ Dipole Antenna	557	03/23/2015	Biennial	03/23/2017
Schwarzbeck	UHAP/ Dipole Antenna	558	03/23/2015	Biennial	03/23/2017
EXP	EX-TH400/ Chamber	None	05/31/2016	Annual	05/31/2017
Schwarzbeck	BBHA 9120D/ Horn Antenna	147	09/09/2016	Biennial	09/09/2018
Schwarzbeck	BBHA 9120D/ Horn Antenna	1299	05/15/2015	Biennial	05/15/2017
Schwarzbeck	BBHA 9170/ Horn Antenna(15~40GHz)	BBHA9170342	04/30/2015	Biennial	04/30/2017
Schwarzbeck	BBHA 9170/ Horn Antenna(15~35GHz)	BBHA9170124	04/30/2015	Biennial	04/30/2017
Agilent	N9020A/Signal Analyzer	MY52090906	05/13/2016	Annual	05/13/2017
Hewlett Packard	8493C/ATTENUATOR	17280	06/22/2016	Annual	06/22/2017
REOHDE&SCHWARZ	FSV40/Spectrum Analyzer	1307.9002K40-100931-NK	06/15/2016	Annual	06/15/2017
Agilent	8960 (E5515C)/ Base Station(Now)	MY48360800	10/19/2016	Annual	10/19/2017
Schwarzbeck	FMZB1513/ Loop Antenna(9kHz~30MHz)	1513-175	02/23/2016	Biennial	02/23/2018
Schwarzbeck	VULB9160/ Bilog Antenna	3150	09/30/2016	Biennial	09/30/2018
Schwarzbeck	VULB9160/ Bilog Antenna	3368	10/14/2016	Biennial	10/14/2018
Anritsu Corp.	MT8820C/Wideband Radio Communication Tester	6200863156	02/26/2016	Annual	02/26/2017
Anritsu Corp.	MT8820C/Wideband Radio Communication Tester	6201026545	02/16/2016	Annual	02/16/2017
CERNEX	CBLU1183540B-01/ POWER AMP	25539	05/17/2017	Annual	05/17/2018
REOHDE & SCHWARZ	ESU / EMI TEST RECEIVER	100346	08/11/2017	Annual	08/11/2018

5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014.

All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80
Radiated Disturbance (1 GHz ~ 18 GHz)	6.07

6. SUMMARY OF TEST RESULTS

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result
2.1049	Occupied Bandwidth	N/A	CONDUCTED	PASS
2.1051, 22.917(a), 24.238(a)	Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	$< 43 + 10\log_{10}(P[\text{Watts}])$ at Band Edge and for all out-of-band emissions		PASS
2.1046	Conducted Output Power	-		PASS
24.232(d)	Peak- to- Average Ratio	$< 13 \text{ dB}$		PASS
2.1055, 22.355	Frequency stability / variation of ambient temperature	$< 2.5 \text{ ppm (Part22)}$		PASS
24.235		Emission must remain in band (Part24)		PASS
22.913(a)(2)	Effective Radiated Power	$< 7 \text{ Watts max. ERP}$	RADIATED	PASS
24.232(c)	Equivalent Isotropic Radiated Power	$< 2 \text{ Watts max. EIRP}$		PASS
2.1053, 22.917(a), 24.238(a)	Radiated Spurious and Harmonic Emissions	$< 43 + 10\log_{10}(P[\text{Watts}])$ for all out-ofband emissions		PASS

7. SAMPLE CALCULATION

A. ERP Sample Calculation

Mode	Ch./ Freq.		Measured Level(dBm)	Substitute LEVEL(dBm)	Ant. Gain (dBd)	C.L	Pol.	Limit	ERP	
	channel	Freq.(MHz)						W	W	dBm
CDMA	384	836.52	-23.45	38.92	-10.53	0.88	V	<7.00	0.564	27.51

$$\text{ERP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test , the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power (ERP).

B. Emission Designator

CDMA Emission Designator

Emission Designator = 1M27F9W

CDMA BW = 1.27 MHz

(Measured at the 99% power bandwidth)

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

EVDO Emission Designator

Emission Designator = 1M27F9W

CDMA BW = 1.27 MHz

(Measured at the 99% power bandwidth)

F = Frequency Modulation

9 = Composite Digital Info

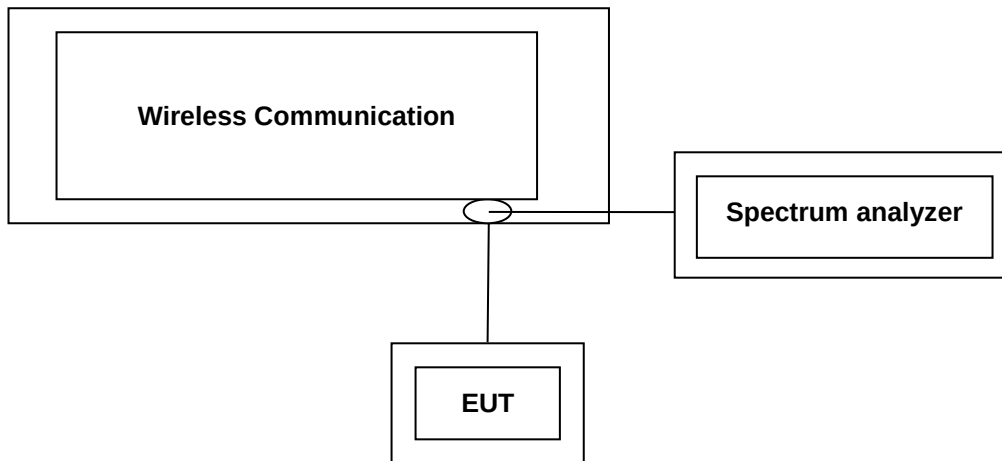
W = Combination (Audio/Data)

8. TEST DATA

8.1 CONDUCTED OUTPUT POWER

Conducted Output Power is tested in accordance with KDB971168 D01 Power Meas License Digital Systems v02r02, October 17, 2014, Section 5.2.

A base station simulator was used to establish communication with the EUT, and Spectrum analyzer was used for test results. This device was tested under all configurations and the highest power is reported. Conducted Output Powers of EUT are reported below.



Test Result

Band	Channel	SO2	SO2	SO55	SO55	TDSO SO32	1xEvDO Rev.0	1xEvDO Rev.0	1xEvDO Rev.A	1xEvDO Rev.A
		RC1/1 (dBm)	RC3/3 (dBm)	RC1/1 (dBm)	RC3/3 (dBm)	RC3/3 (dBm)	(FTAP)	(RTAP)	(FETAP)	(RETAP)
CDMA A	1013	23.78	23.78	23.76	23.77	23.74	23.73	23.76	23.77	23.78
	384	23.71	23.68	23.73	23.76	23.70	23.64	23.69	23.71	23.72
	777	23.80	23.79	23.88	23.80	23.78	23.74	23.78	23.84	23.86
PCS	25	23.84	23.82	23.89	23.85	23.86	23.83	23.94	23.73	23.83
	600	23.94	23.88	23.91	23.89	23.97	23.82	23.96	23.75	23.86
	1175	23.95	23.85	23.99	23.92	23.95	23.84	23.89	23.72	23.76

(CDMA / PCS / EVDO Conducted Output Powers)

Note : Detecting mode is average.

8.2 EFFECTIVE RADIATED POWER(CDMA Mode)

Mode	Ch./ Freq.		Measured Level (dBm)	Substitute LEVEL (dBm)	Ant. Gain (dBd)	C.L	Pol.	Limit	ERP	
	channel	Freq.(MHz)						W	W	dBm
CDMA	1013	824.7	-29.43	33.09	-10.59	1.67	H	< 7.00	0.121	20.83
	384	836.5	-29.31	34.29	-10.54	1.68	H		0.161	22.07
	777	848.3	-30.77	32.32	-10.49	1.69	H		0.103	20.14
EVDO Rev.0	1013	824.7	-29.56	32.96	-10.59	1.67	H		0.118	20.70
	384	836.5	-29.47	34.13	-10.54	1.68	H		0.155	21.91
	777	848.3	-30.82	32.27	-10.49	1.69	H		0.102	20.09
EVDO Rev.A	1013	824.7	-29.54	32.98	-10.59	1.67	H		0.118	20.72
	384	836.5	-29.38	34.22	-10.54	1.68	H		0.158	22.00
	777	848.3	-30.96	32.13	-10.49	1.69	H		0.099	19.95

This device uses 4.9 m cables interchangeably.

NOTES:

Effective Radiated Power Output Measurements by Substitution Method

according to ANSI/TIA/EIA-603-D-2010 June 24, 2010:

The EUT was placed on a non-conductive styrofoam resin table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, RBW = 1-5% of the OBW, not to exceed 1MHz, VBW ≥ 3 x RBW, Detector = RMS. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

This device was tested under all configurations and the highest power is reported. Also, we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna. The worst case of the EUT is in y plane in CDMA mode, CDMA EVDO_Rev.0 mode and CDMA EVDO_Rev.A mode. Also worst case of detecting Antenna is in horizontal polarization in CDMA mode, CDMA EVDO_Rev.0 mode and CDMA EVDO_Rev.A mode.

8.3 EQUIVALENT ISOTROPIC RADIATED POWER(PCS CDMA Mode)

Mode	Ch./ Freq.		Measured Level (dBm)	Substitute LEVEL (dBm)	Ant. Gain (dBi)	C.L	Pol.	Limit	EIRP	
	channel	Freq.(MHz)						W	W	dBm
PCS	25	1851.3	-18.23	15.38	9.82	2.54	V	< 2.00	0.185	22.66
	600	1880.0	-18.21	15.67	9.91	2.57	V		0.200	23.01
	1175	1908.8	-19.26	14.98	10.00	2.60	V		0.173	22.38
EVDO Rev.0	25	1851.3	-19.89	13.72	9.82	2.54	V		0.126	21.00
	600	1880.0	-19.96	13.92	9.91	2.57	V		0.134	21.26
	1175	1908.8	-20.82	13.42	10.00	2.60	V		0.121	20.82
EVDO Rev.A	25	1851.3	-19.89	13.72	9.82	2.54	V		0.126	21.00
	600	1880.0	-19.96	13.92	9.91	2.57	V		0.134	21.26
	1175	1908.8	-20.79	13.45	10.00	2.60	V		0.122	20.85

This device uses 4.9 m cables interchangeably.

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method

according to ANSI/TIA/EIA-603-D-2010 June 24, 2010:

The EUT was placed on a non-conductive styrofoam resin table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, RBW = 1-5% of the OBW, not to exceed 1MHz, VBW $\geq 3 \times$ RBW, Detector = RMS. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The EIRP is recorded.

This device was tested under all configurations and the highest power is reported. Also, we have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna. The worst case of the EUT is in y plane in PCS mode, PCSEVDO_Rev.0 mode and PCS EVDO_Rev.A mode. Also worst case of detecting Antenna is in vertical polarization in PCS mode, PCSEVDO_Rev.0 mode and PCS EVDO_Rev.A mode.

8.4 RADIATED SPURIOUS EMISSIONS

8.4.1 RADIATED SPURIOUS EMISSIONS (CDMA Mode)

■ MEASURED OUTPUT POWER: 22.07 dBm = 0.161 W

■ MODULATION SIGNAL: CDMA

■ DISTANCE: 3 meters

■ LIMIT: $43 + 10 \log_{10} (W) =$ 35.07dBc

Ch.	Freq.(MHz)	<u>Measured Level</u> [dBm]	Ant. Gain (dBd)	<u>Substitute</u> <u>Level</u> [dBm]	C.L	Pol.	ERP (dBm)	dBc
1013 (824.70)	1,649.40	-49.82	9.15	-60.52	1.17	V	-52.54	74.61
	2,474.10	-51.51	10.92	-58.90	1.18	H	-49.16	71.23
	3,298.80	-56.30	11.93	-63.81	1.40	V	-53.28	75.35
384 (836.52)	1,673.00	-51.81	9.24	-62.52	1.17	V	-54.45	76.52
	2,509.50	-56.27	10.96	-63.92	1.23	V	-54.19	76.26
	3,346.00	-55.82	12.03	-63.56	1.45	V	-52.98	75.05
777 (848.31)	1,696.60	-50.37	9.32	-61.09	1.16	V	-52.93	75.00
	2,544.90	-54.29	10.98	-61.74	1.21	V	-51.97	74.04
	3,393.20	-56.65	12.13	-64.31	1.48	V	-53.66	75.73

NOTES: 1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method

according to ANSI/TIA/EIA-603-D-2010 Jun 24, 2010:

2. We are performed all frequency to 10th harmonics from 9 kHz. Measurements above show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

4. This device uses 4.9 m cables interchangeably.

5. The cable provided by the manufacturer was used for the radiation test.

8.4.2 RADIATED SPURIOUS EMISSIONS (CDMA EVDO_Rev.A Mode)

- MEASURED OUTPUT POWER: 22.00 dBm = 0.158 W
- MODULATION SIGNAL: CDMA EVDO_Rev.A
- DISTANCE: 3 meters
- LIMIT: $43 + 10 \log_{10}(W) =$ 35.00 dBc

Ch.	Freq.(MHz)	<u>Measured Level</u> [dBm]	Ant. Gain (dBd)	<u>Substitute</u> <u>Level</u> [dBm]	C.L	Pol.	ERP (dBm)	dBc
1013 (824.70)	1,649.40	-50.67	9.15	-61.37	1.17	V	-53.39	75.39
	2,474.10	-47.40	10.92	-54.79	1.18	H	-45.05	67.05
	3,298.80	-54.41	11.93	-61.92	1.40	V	-51.39	73.39
384 (836.52)	1,673.00	-51.46	9.24	-62.17	1.17	V	-54.10	76.10
	2,509.50	-51.67	10.96	-59.32	1.23	V	-49.59	71.59
	3,346.00	-55.17	12.03	-62.91	1.45	H	-52.33	74.33
777 (848.31)	1,696.60	-47.89	9.32	-58.61	1.16	V	-50.45	72.45
	2,544.90	-53.06	10.98	-60.51	1.21	V	-50.74	72.74
	3,393.20	-56.09	12.13	-63.75	1.48	V	-53.10	75.10

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-D-2010 Jun 24, 2010:
 2. We are performed all frequency to 10th harmonics from 9 kHz. Measurements above show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
 3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. This device uses 4.9 m cables interchangeably.
 5. The cable provided by the manufacturer was used for the radiation test.

8.4.3 RADIATED SPURIOUS EMISSIONS (PCS Mode)

- MEASURED OUTPUT POWER: 23.01 dBm = 0.200 W
- MODULATION SIGNAL: PCS
- DISTANCE: 3 meters
- LIMIT: $43 + 10 \log_{10} (W) =$ 36.01dBc

Ch.	Freq.(MHz)	<u>Measured Level</u> [dBm]	Ant. Gain (dBi)	<u>Substitute</u> <u>Level</u> [dBm]	C.L	Pol.	EIRP (dBm)	dBc
25 (1851.25)	3,702.60	-49.75	12.52	-55.73	1.69	V	-44.90	67.91
	5,553.90	-55.93	13.29	-56.43	2.82	V	-45.96	68.97
	7,405.20	-54.45	11.72	-49.95	3.87	V	-42.10	65.11
600 (1880.00)	3,760.00	-50.88	12.56	-56.71	1.67	V	-45.82	68.83
	5,640.00	-56.16	13.30	-56.29	2.91	H	-45.90	68.91
	7,520.00	-54.38	11.70	-50.10	3.98	H	-42.38	65.39
1175 (1908.75)	3,817.60	-50.57	12.60	-56.16	1.66	V	-45.22	68.23
	5,726.40	-54.99	13.31	-53.98	2.92	V	-43.59	66.60
	7,635.20	-53.28	11.62	-49.22	3.98	V	-41.58	64.59

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-D-2010 Jun 24, 2010:
 2. We are performed all frequency to 10th harmonics from 9 kHz. Measurements above show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
 3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. This device uses 4.9 m cables interchangeably.
 5. The cable provided by the manufacturer was used for the radiation test.

8.4.4 RADIATED SPURIOUS EMISSIONS (PCS EVDO_Rev.A Mode)

- MEASURED OUTPUT POWER: 21.26 dBm = 0.134 W
- MODULATION SIGNAL: PCS EVDO Rev.A
- DISTANCE: 3 meters
- LIMIT: $43 + 10 \log_{10} (W) =$ 34.26 dBc

Ch.	Freq.(MHz)	<u>Measured Level</u> [dBm]	Ant. Gain (dBi)	<u>Substitute</u> <u>Level</u> [dBm]	C.L	Pol.	EIRP (dBm)	dBc
25 (1851.25)	3,702.60	-49.72	12.52	-55.70	1.69	V	-44.87	66.13
	5,553.90	-53.50	13.29	-54.00	2.82	V	-43.53	64.79
	7,405.20	-54.33	11.72	-49.83	3.87	V	-41.98	63.24
600 (1880.00)	3,760.00	-48.39	12.56	-54.22	1.67	V	-43.33	64.59
	5,640.00	-54.54	13.30	-54.67	2.91	V	-44.28	65.54
	7,520.00	-52.87	11.70	-48.59	3.98	V	-40.87	62.13
1175 (1908.75)	3,817.60	-46.53	12.60	-52.12	1.66	V	-41.18	62.44
	5,726.40	-54.64	13.31	-53.63	2.92	H	-43.24	64.50
	7,635.20	-52.08	11.62	-48.02	3.98	V	-40.38	61.64

- NOTES:**
1. Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA/EIA-603-D-2010 Jun 24, 2010:
 2. We are performed all frequency to 10th harmonics from 9 kHz. Measurements above show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
 3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
 4. This device uses 4.9 m cables interchangeably.
 5. The cable provided by the manufacturer was used for the radiation test.

8.5 PEAK-TO-AVERAGE RATIO

Band	Ch.	Measured P _{Pk} (dBm)	Measured P _{Avg} (dBm)	P _{Avg} (Duty Cycle)			P.A.R. = P _{Pk} - P _{Avg} (dB)	Limit (dB)	Pass / Fail	
				Tx _{Total} (ms)	Tx _{On} (ms)	Factor (dB)				
PCS	600	CCDF Procedure						4.03	13	Pass
PCS_Rev.0								4.87		
PCS_Rev.A								4.91		

- Plots of the EUT's Peak- to- Average Ratio are shown Page 40 ~ 41.

NOTES:

Peak to Average Power Ratio was tested in accordance with KDB971168 D01 Power Meas License Digital Systems v02r02, October 17, 2014, Section 5.7

8.6 OCCUPIED BANDWIDTH

Band	Channel	Frequency(MHz)	Data (MHz)
CDMA	1013	824.70	1.2700
	384	836.52	1.2640
	777	848.31	1.2773
CDMA EVDO_Rev.0	1013	824.70	1.2691
	384	836.52	1.2793
	777	848.31	1.2712
CDMA EVDO_Rev.A	1013	824.70	1.2705
	384	836.52	1.2679
	777	848.31	1.2677
PCS	25	1851.25	1.2727
	600	1880.00	1.2739
	1175	1908.75	1.2685
PCS EVDO_Rev.0	25	1851.25	1.2705
	600	1880.00	1.2727
	1175	1908.75	1.2719
PCS EVDO_Rev.A	25	1851.25	1.2718
	600	1880.00	1.2699
	1175	1908.75	1.2714

- Plots of the EUT's Occupied Bandwidth are shown Page 31 ~ 39.

8.7 CONDUCTED SPURIOUS EMISSIONS

■FACTORS FOR FREQUENCY

Frequency Range (GHz)	Factor [dB]
0.03 – 1	27.145
1 – 5	26.960
5 – 10	27.542
10 – 15	28.439
15 – 20	29.144
Above 20	30.148

NOTES:

Factor(dB) = Cable Loss + Attenuator +Power Splitter

Band	Channel	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
CDMA	1013	1.6501	26.96	-76.210	-49.250	-13.00
	384	2.5105	26.96	-76.016	-49.056	
	777	2.5454	26.96	-74.665	-47.705	
CDMA EVDO_Rev.0	1013	1.6501	26.96	-75.702	-48.742	
	384	2.5105	26.96	-74.480	-47.520	
	777	2.5449	26.96	-73.330	-46.370	
CDMA EVDO_Rev.A	1013	2.4751	26.96	-74.064	-47.104	
	384	2.5110	26.96	-74.780	-47.820	
	777	2.5449	26.96	-72.980	-46.020	
PCS	25	3.7024	26.96	-77.451	-50.491	
	600	3.7029	26.96	-78.090	-51.130	
	1175	3.6760	26.96	-77.382	-50.422	
PCS EVDO_Rev.0	25	3.7034	26.96	-76.820	-49.860	
	600	3.7613	26.96	-76.997	-50.037	
	1175	3.7015	26.96	-77.530	-50.570	
PCS EVDO_Rev.A	25	3.6990	26.96	-77.160	-50.200	
	600	3.6955	26.96	-77.540	-50.580	
	1175	3.6830	26.96	-77.650	-50.690	

NOTES:

1. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)

- Plots of the EUT's Conducted Spurious Emissions are shown Page 53 ~ 66.

8.7.1 Band Edge

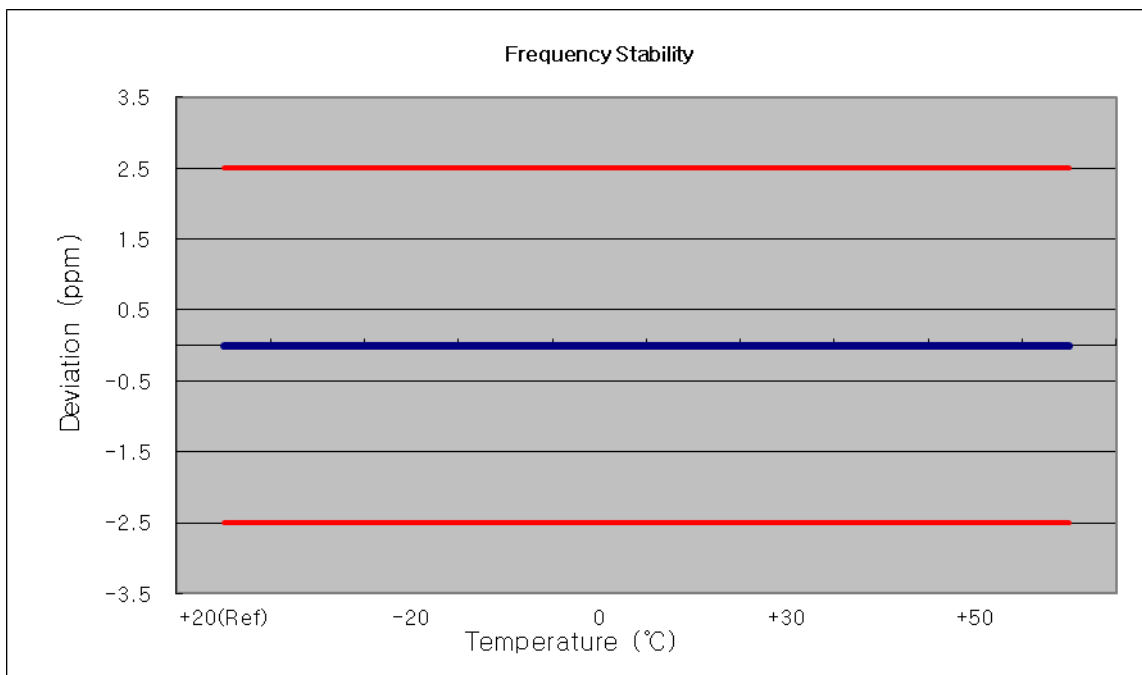
- Plots of the EUT's Band Edge are shown Page 41 ~ 53.

8.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

8.8.1 FREQUENCY STABILITY (CDMA Mode)

☒ OPERATING FREQUENCY: 836,520,000 Hz
☒ CHANNEL: 384
☒ REFERENCE VOLTAGE: 12.0 VDC
☒ DEVIATION LIMIT: ± 0.000 25 % or 2.5 ppm

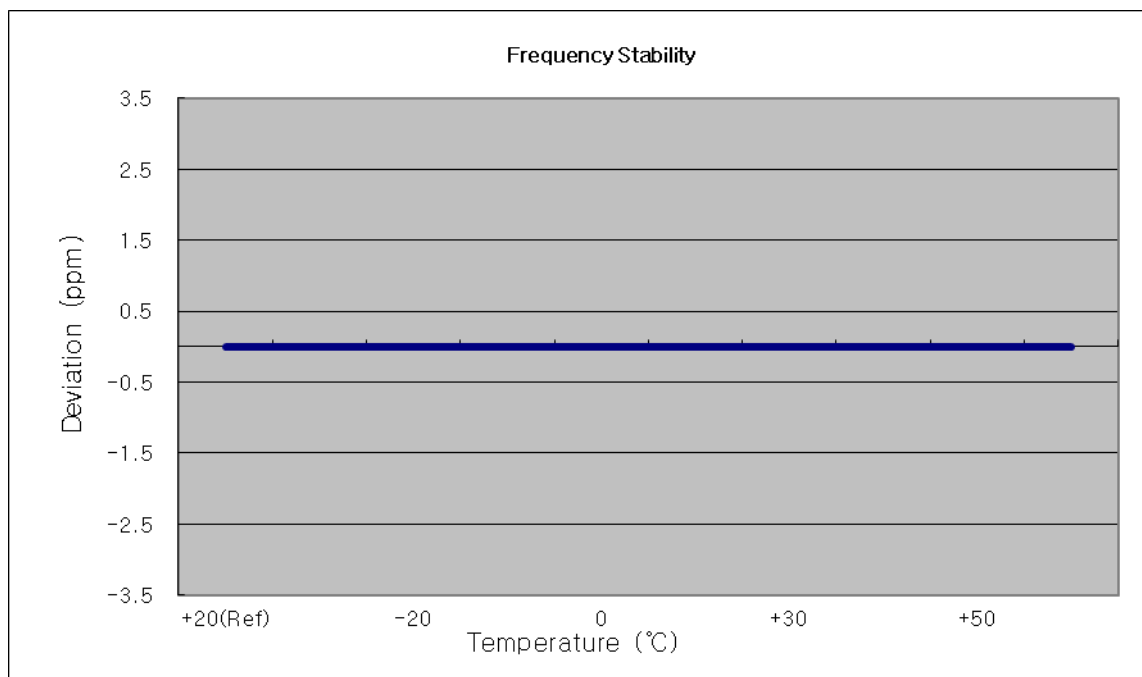
Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	12.0	+20(Ref)	836 519 998	0.00	0.000 000	0.000
100%		-30	836 519 996	-2.69	0.000 000	-0.003
100%		-20	836 519 996	-2.23	0.000 000	-0.003
100%		-10	836 519 996	-1.97	0.000 000	-0.002
100%		0	836 519 996	-2.51	0.000 000	-0.003
100%		+10	836 519 994	-3.99	0.000 000	-0.005
100%		+30	836 519 996	-2.54	0.000 000	-0.003
100%		+40	836 519 994	-4.08	0.000 000	-0.005
100%		+50	836 519 996	-2.76	0.000 000	-0.003
Batt. Endpoint	10.2	+20	836 519 995	-3.48	0.000 000	-0.004



8.8.2 FREQUENCY STABILITY (PCS Mode)

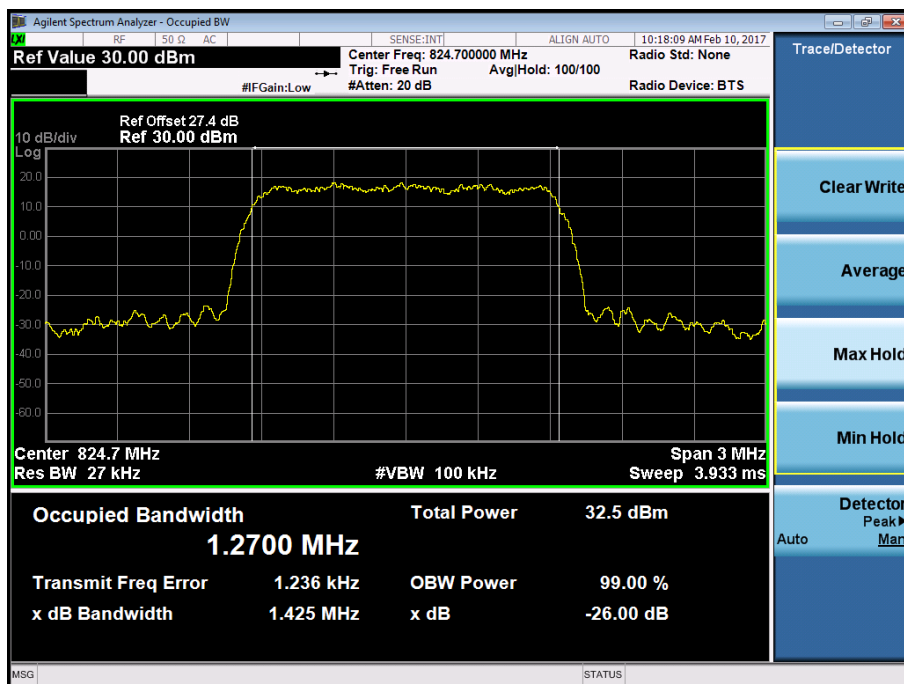
- ☒ OPERATING FREQUENCY: 1880,000,000 Hz
☒ CHANNEL: 600
☒ REFERENCE VOLTAGE: 12.0 VDC
☒ DEVIATION LIMIT: Emission must remain in band

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (Hz)	Frequency Error (Hz)	Deviation (%)	ppm
100%	12.0	+20(Ref)	1879 999 993	0.00	0.000 000	0.000
100%		-30	1879 999 989	-4.24	0.000 000	-0.002
100%		-20	1879 999 990	-2.88	0.000 000	-0.002
100%		-10	1879 999 989	-4.00	0.000 000	-0.002
100%		0	1879 999 986	-7.40	0.000 000	-0.004
100%		+10	1879 999 991	-2.54	0.000 000	-0.001
100%		+30	1879 999 989	-4.59	0.000 000	-0.002
100%		+40	1879 999 987	-6.07	0.000 000	-0.003
100%		+50	1879 999 987	-6.69	0.000 000	-0.004
Batt. Endpoint	10.2	+20	1879 999 990	-3.75	0.000 000	-0.002

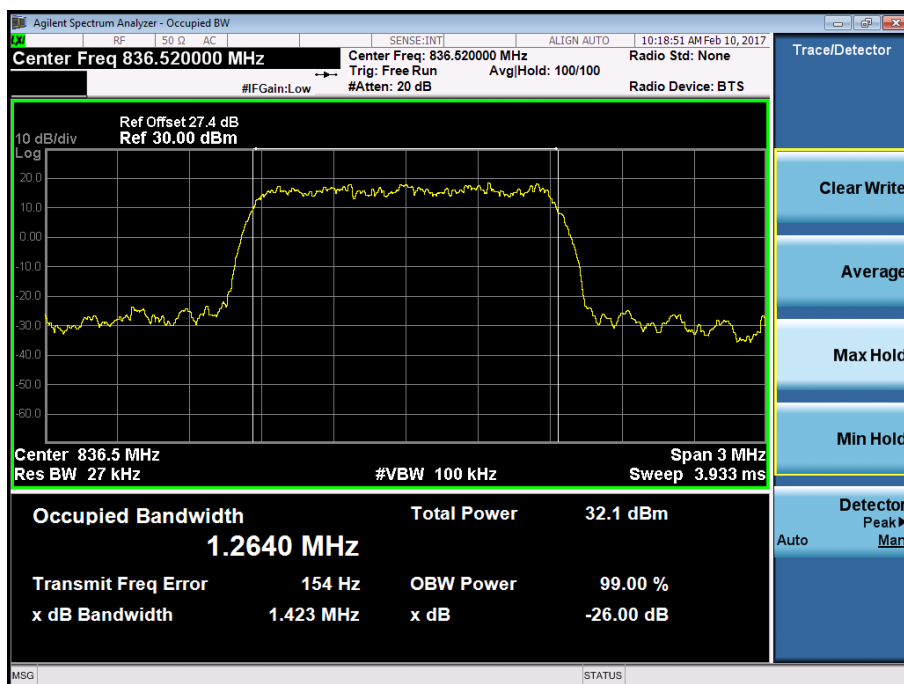


9. TEST PLOTS

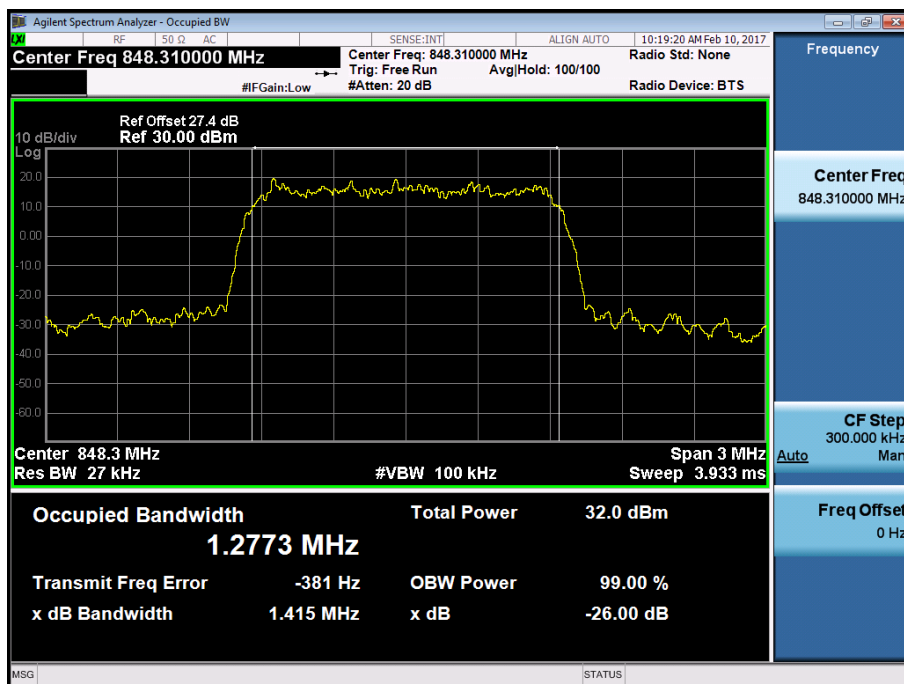
■ CDMA MODE (1013 CH.) Occupied Bandwidth



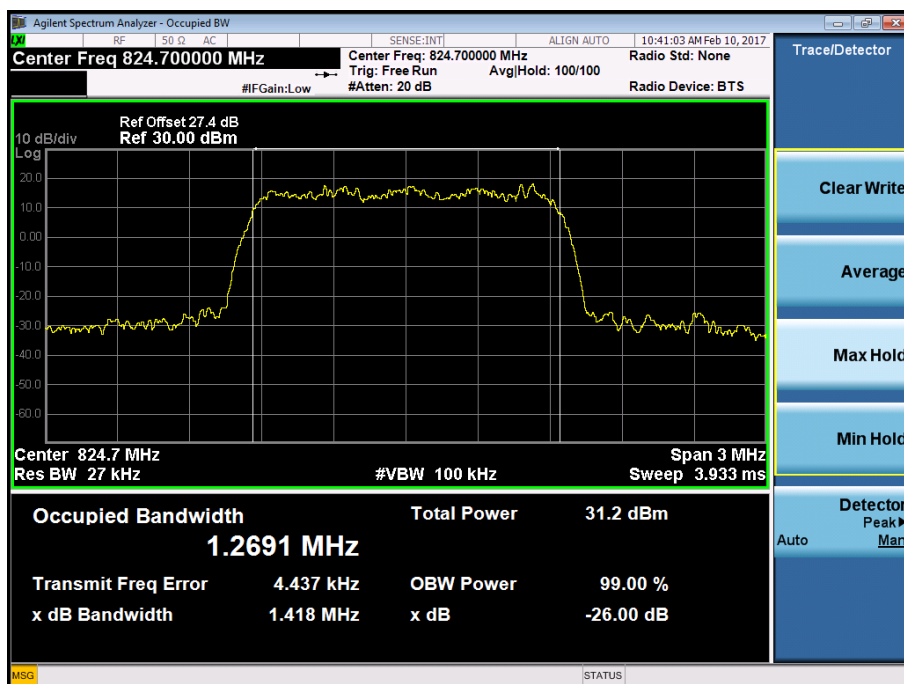
■ CDMA MODE (384 CH.) Occupied Bandwidth



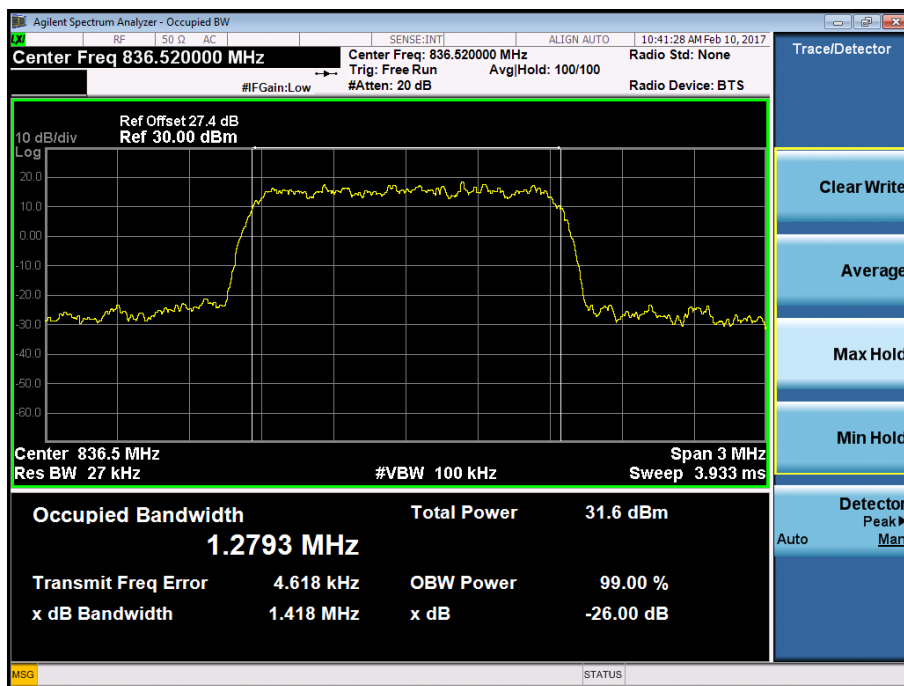
■ CDMA MODE (777 CH.) Occupied Bandwidth



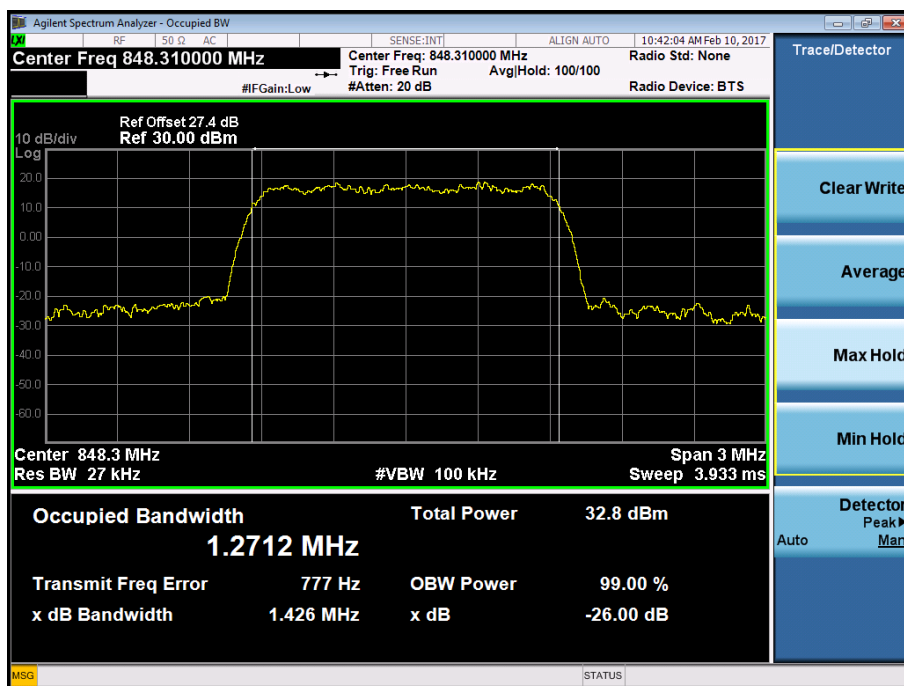
■ CDMA EVDO_Rev.0 MODE (1013 CH.) Occupied Bandwidth



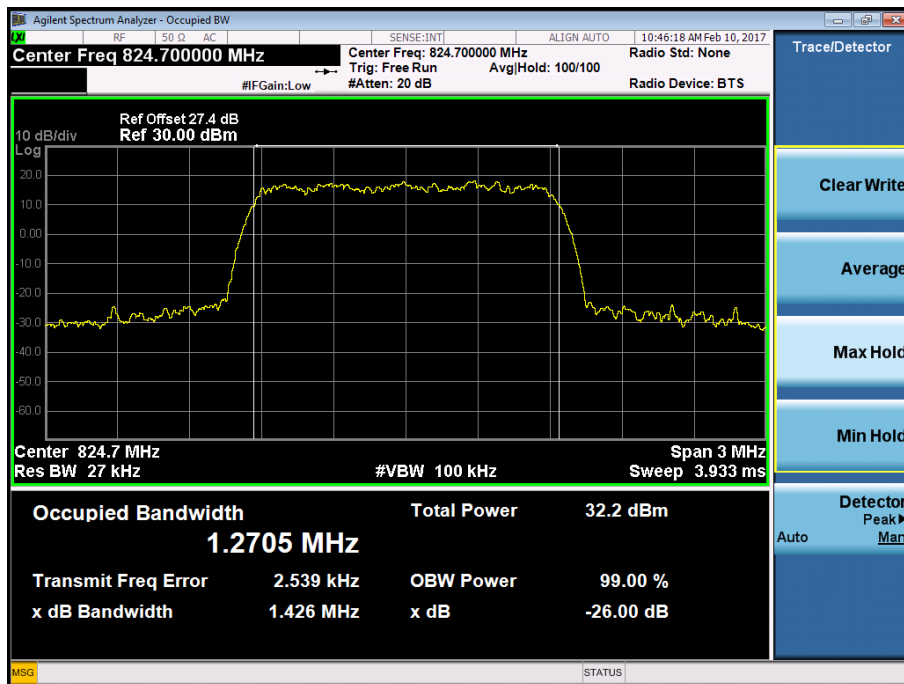
■ CDMA EVDO_Rev.0 MODE (384 CH.) Occupied Bandwidth



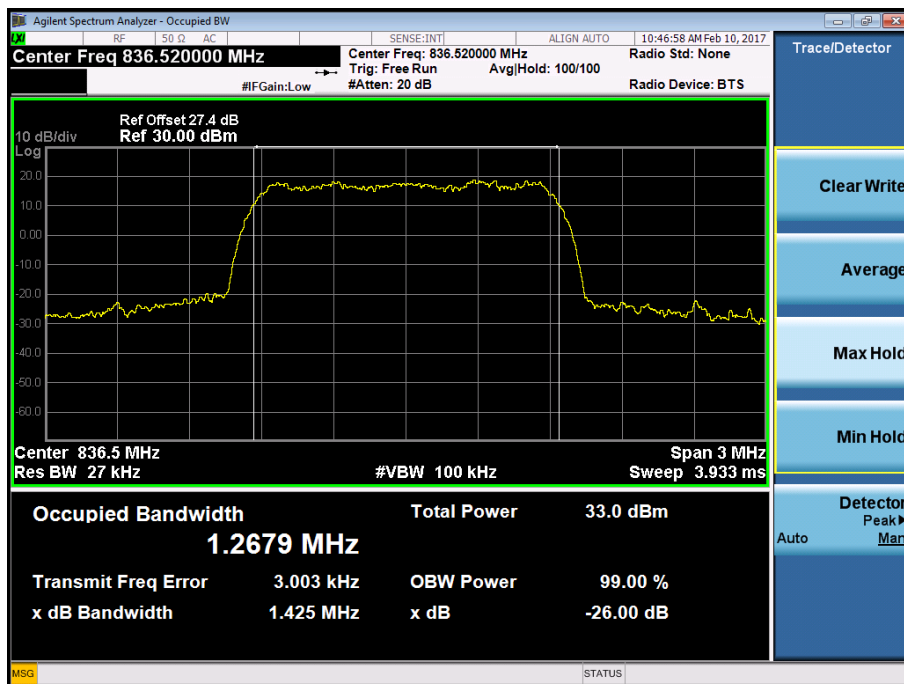
■ CDMA EVDO_Rev.0 MODE (777 CH.) Occupied Bandwidth



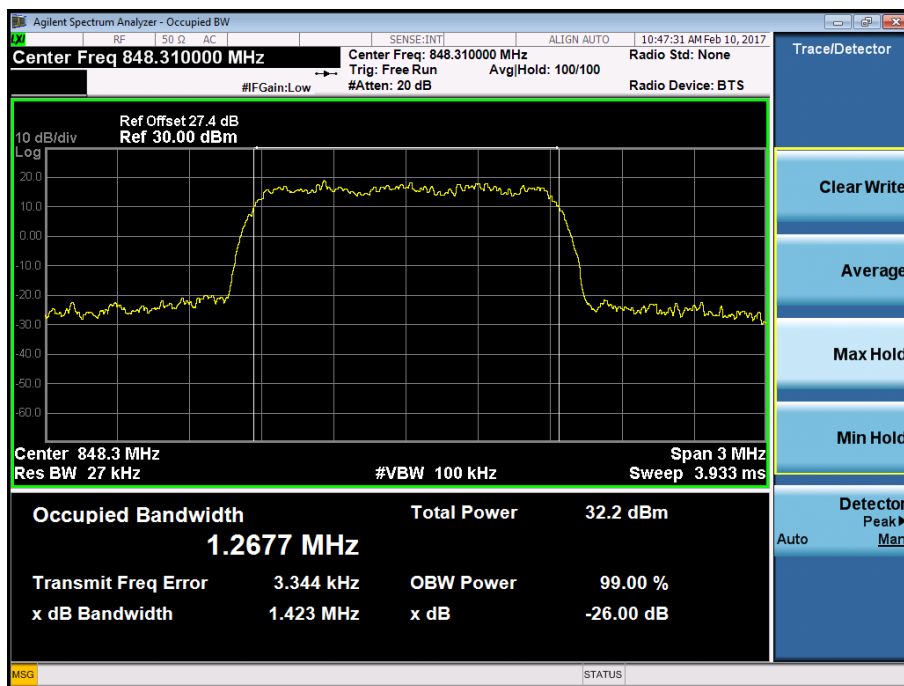
■ CDMA EVDO_Rev.A MODE (1013 CH.) Occupied Bandwidth



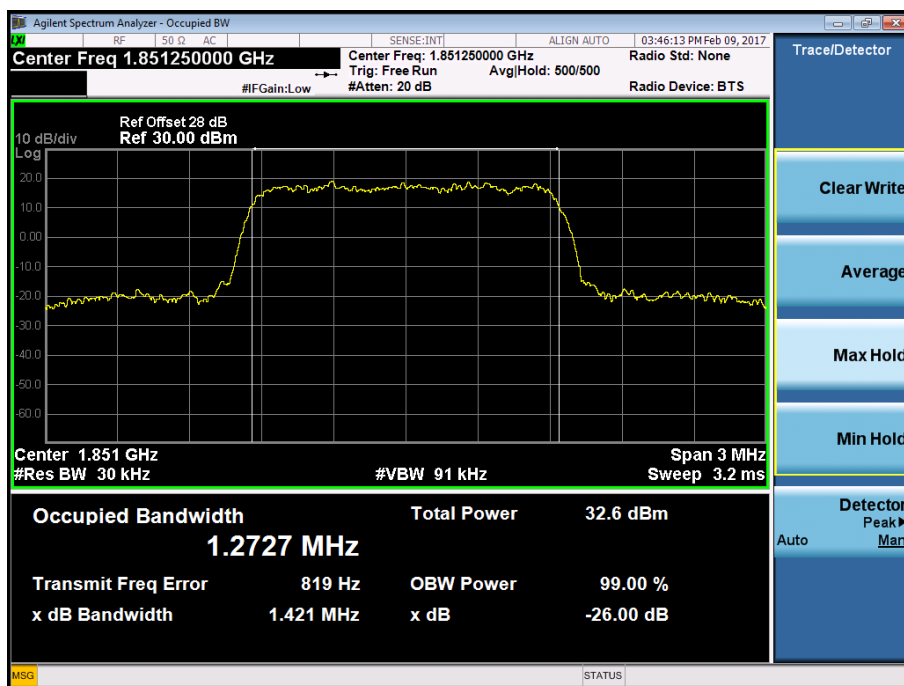
■ CDMA EVDO_Rev.A MODE (384 CH.) Occupied Bandwidth



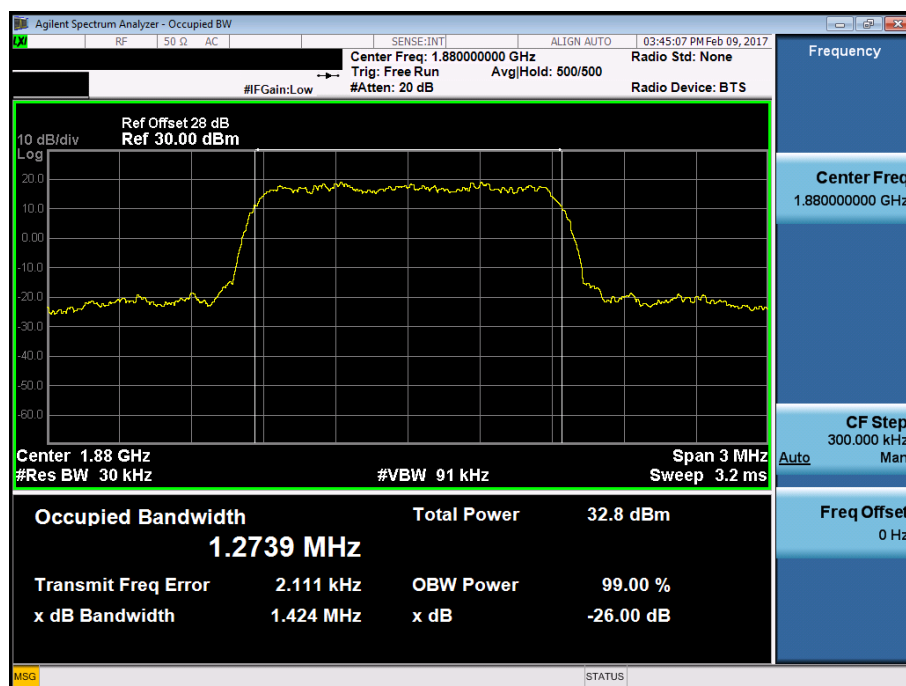
■ CDMA EVDO_Rev.A MODE (777 CH.) Occupied Bandwidth



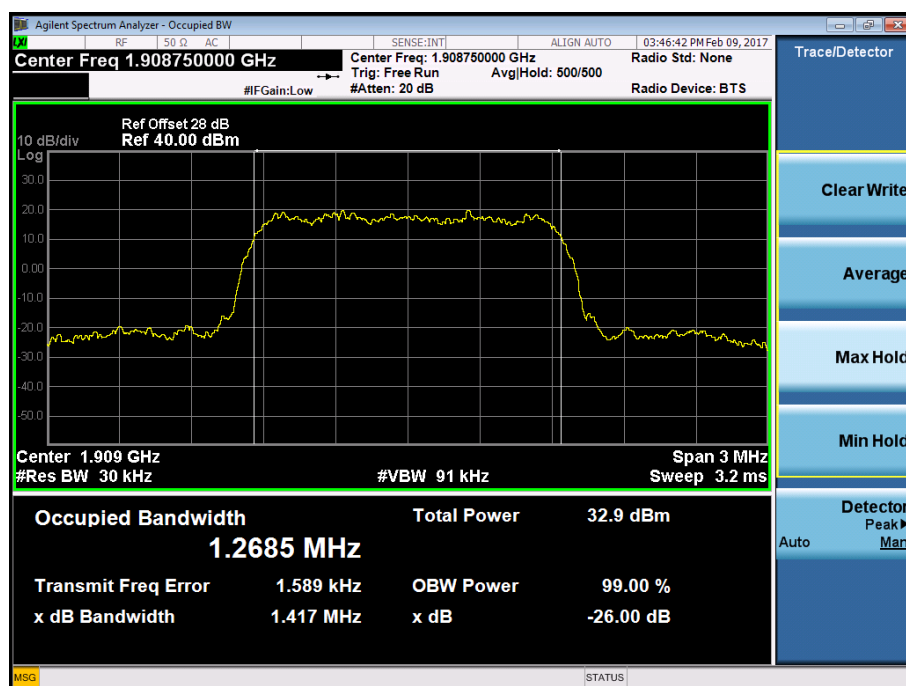
■ PCS MODE (25 CH.) Occupied Bandwidth



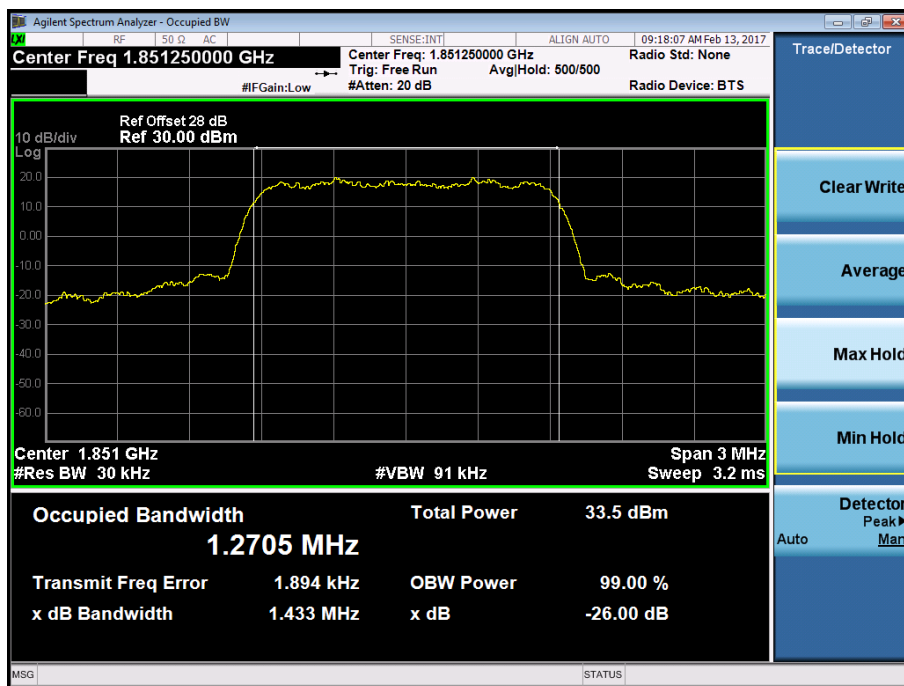
■ PCS MODE (600 CH.) Occupied Bandwidth



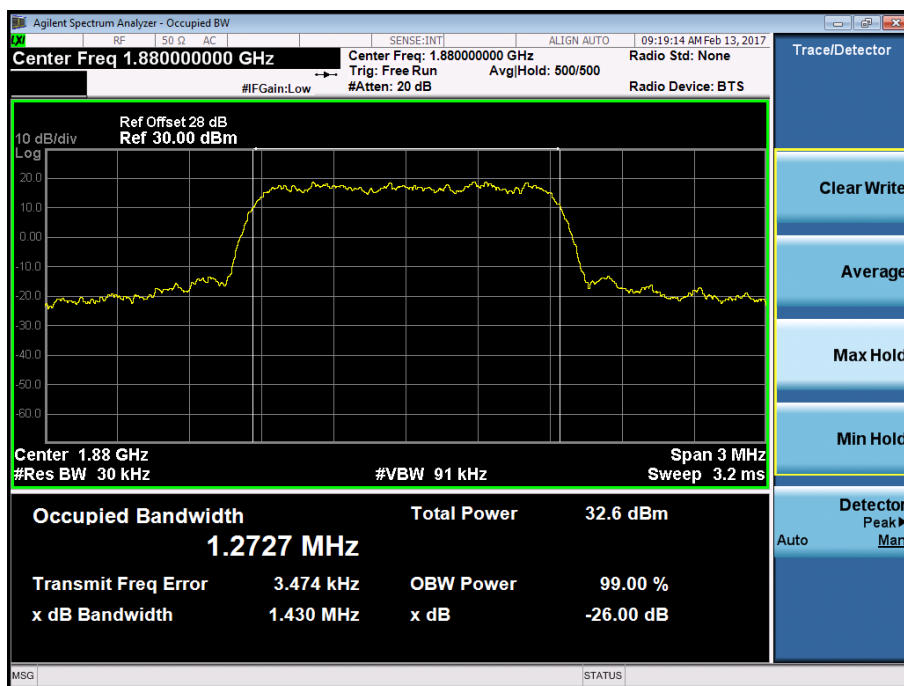
■ PCS MODE (1175 CH.) Occupied Bandwidth



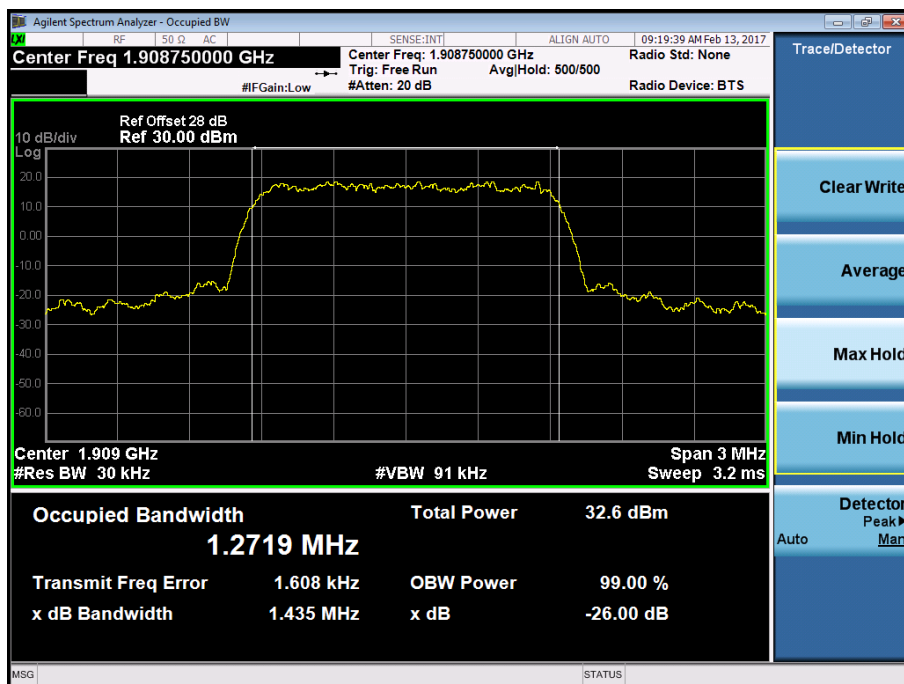
■ PCS EVDO_Rev.0 MODE (25 CH.) Occupied Bandwidth



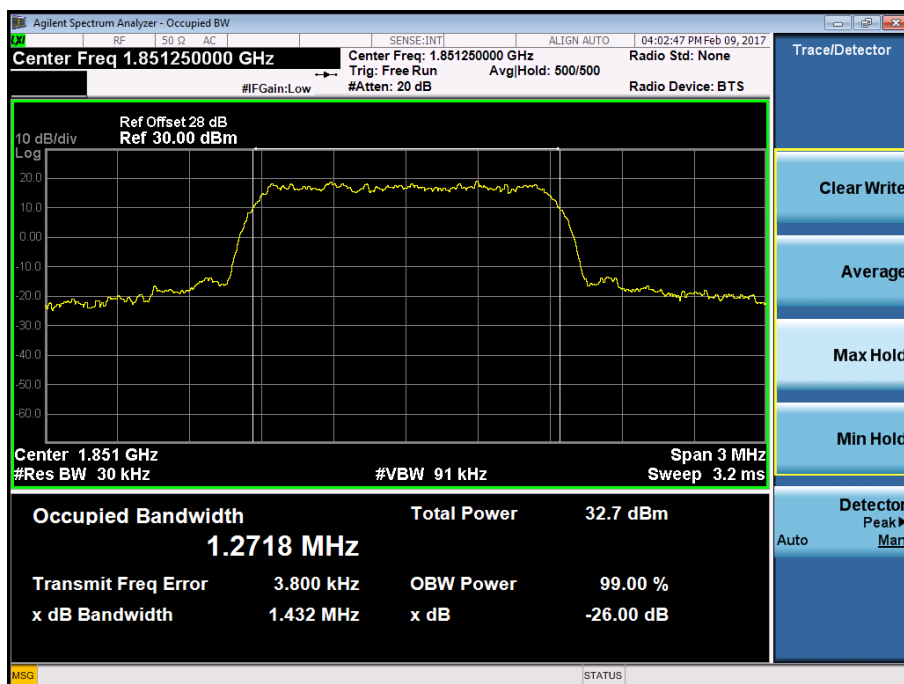
■ PCS EVDO_Rev.0 MODE (600 CH.) Occupied Bandwidth



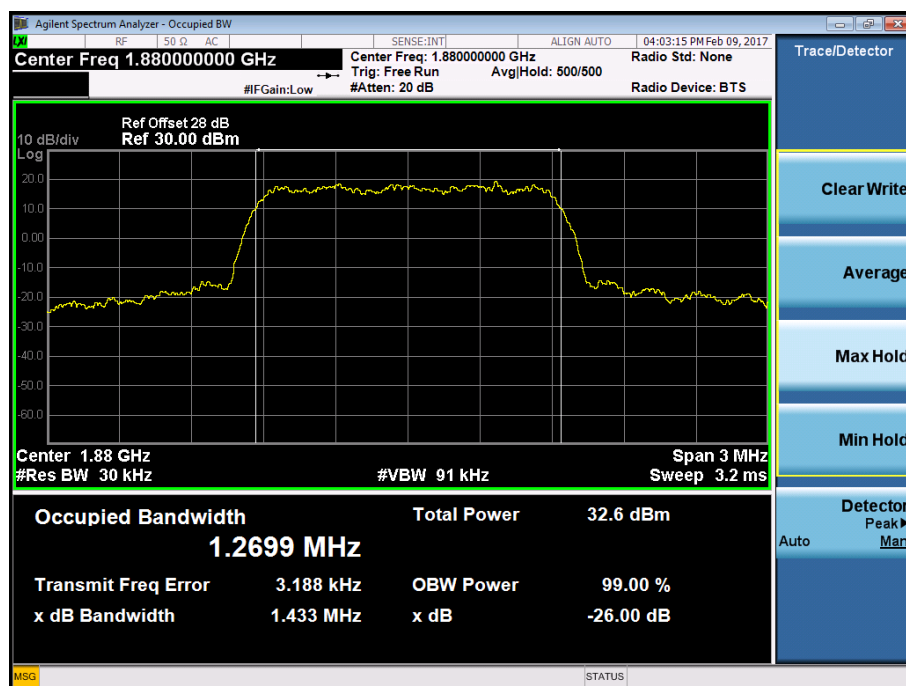
■ PCS EVDO_Rev.0 MODE (1175 CH.) Occupied Bandwidth



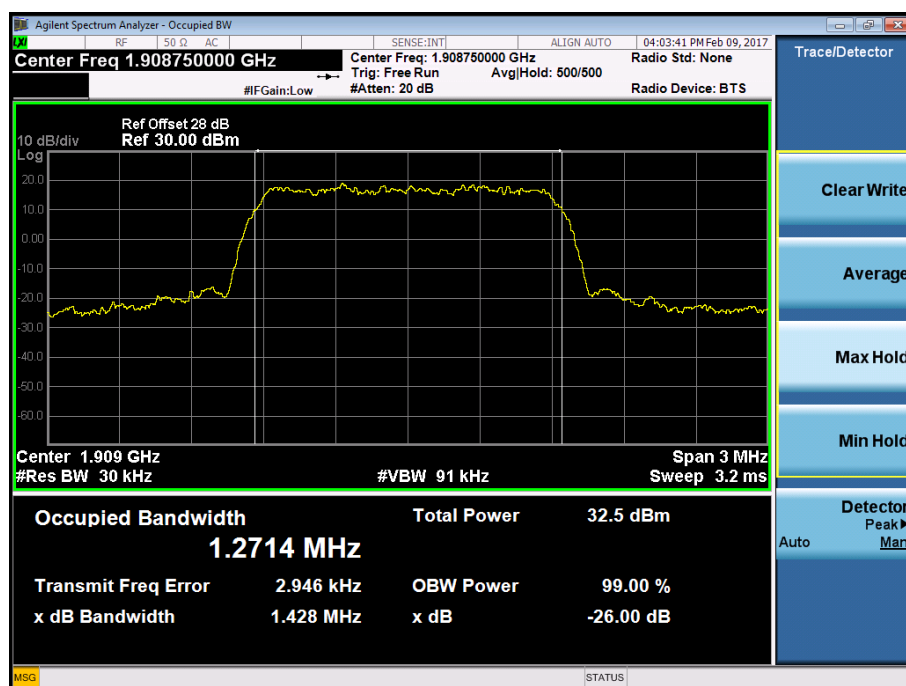
■ PCS EVDO_Rev.A MODE (25 CH.) Occupied Bandwidth



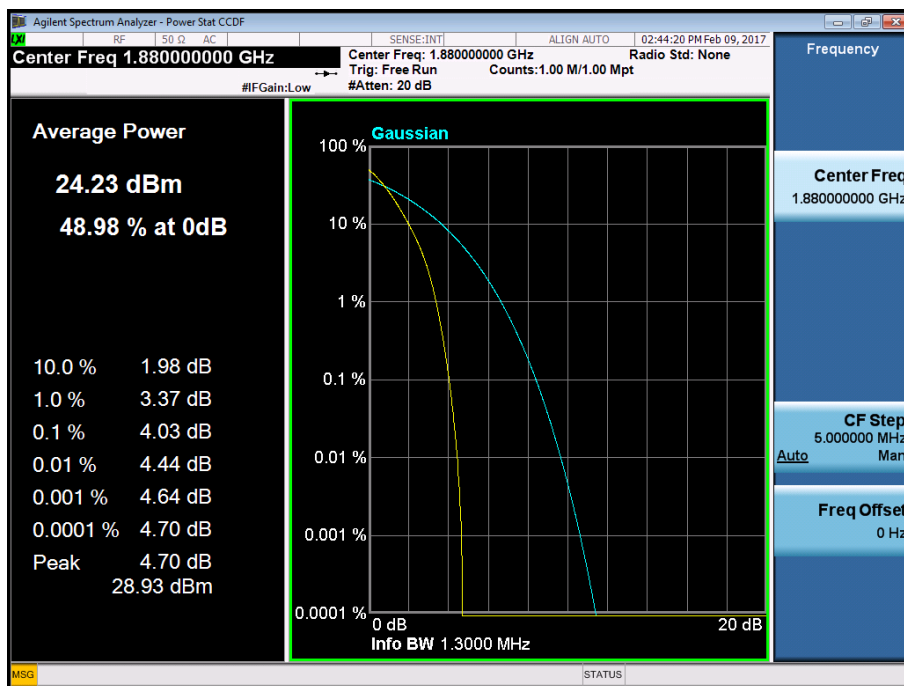
■ PCS EVDO_Rev.A MODE (600 CH.) Occupied Bandwidth



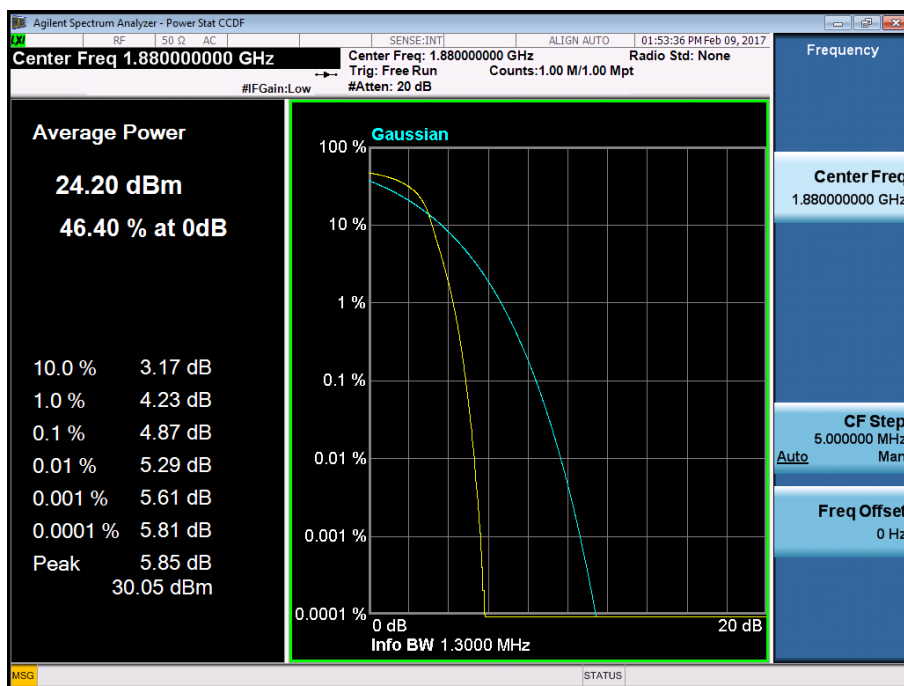
■ PCS EVDO_Rev.A MODE (1175 CH.) Occupied Bandwidth



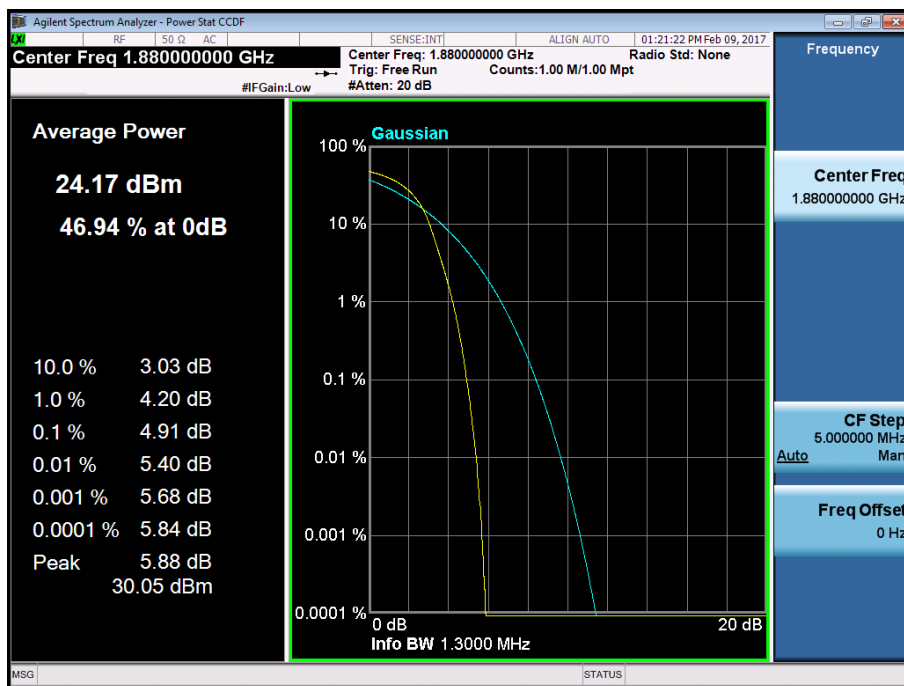
■ PCS CDMA MODE (600 CH.) Peak-to-Average Ratio



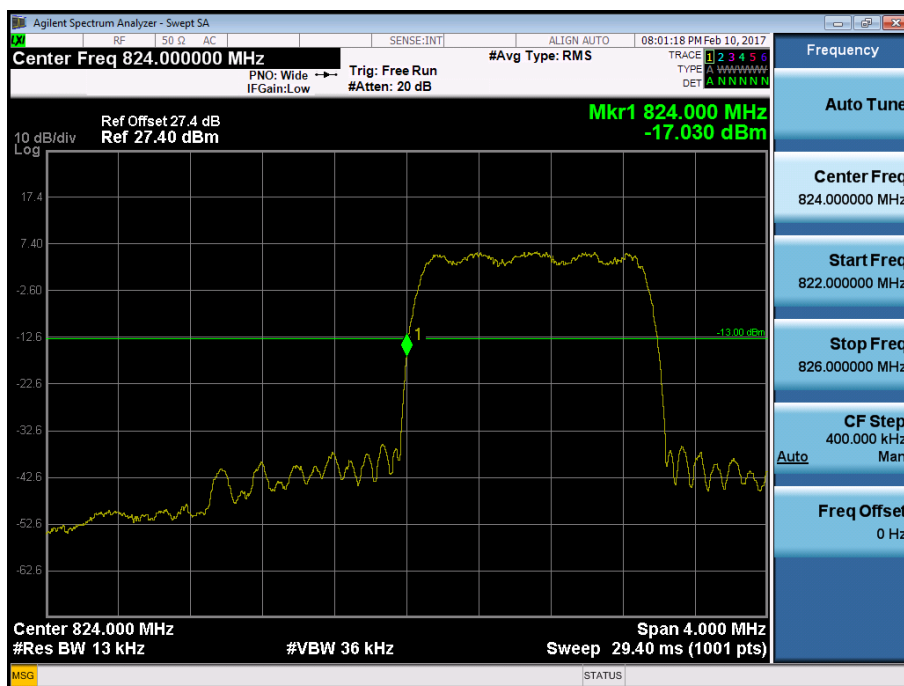
■ PCS CDMA EVDO_Rev.0 MODE (600 CH.) Peak-to-Average Ratio



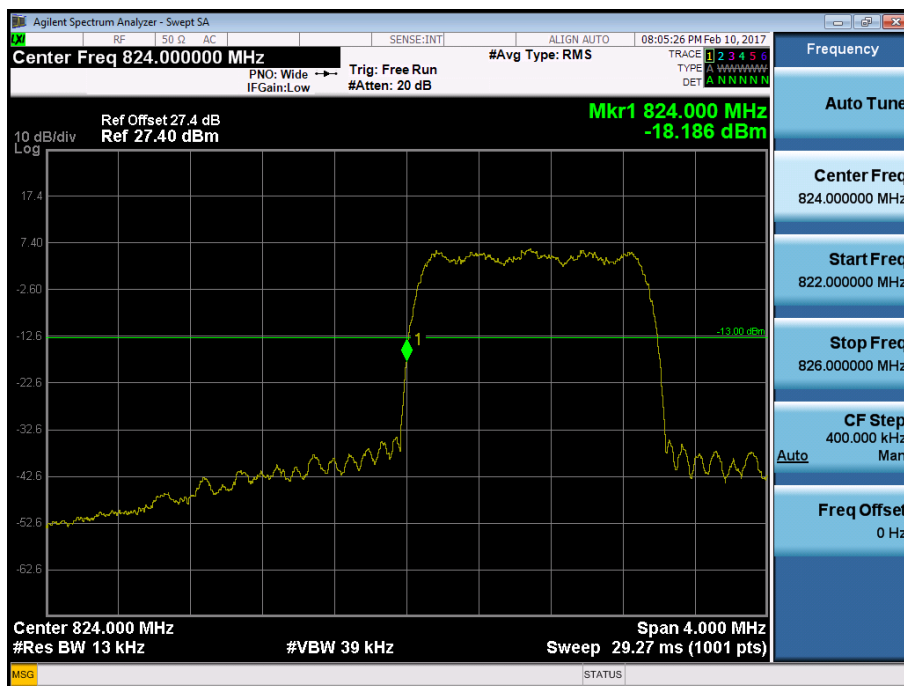
■ PCS CDMA EVDO_Rev.A MODE (600 CH.) Peak-to-Average Ratio



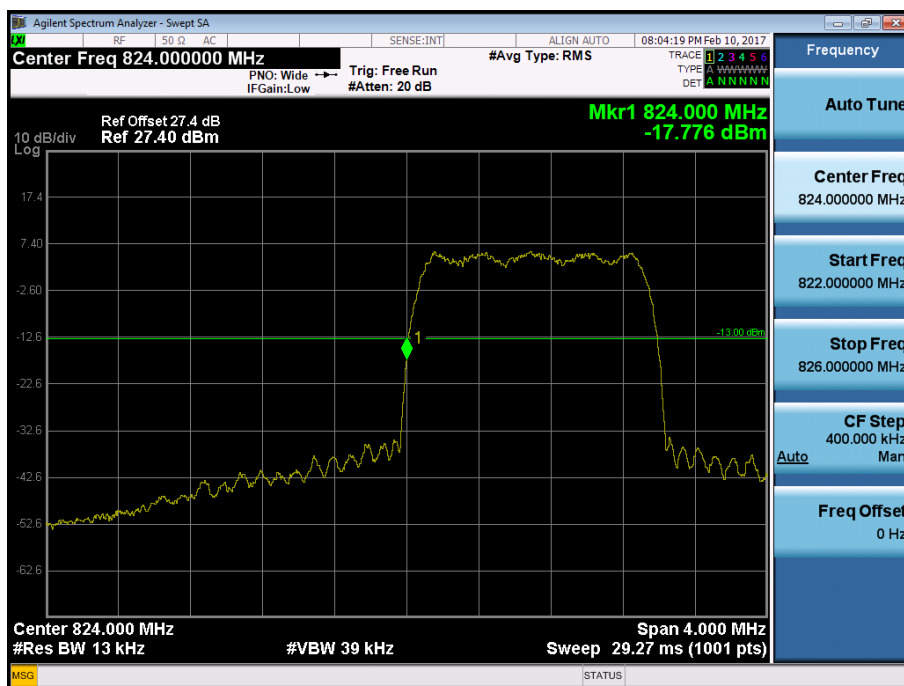
■ CDMA MODE (1013 CH.) Block Edge



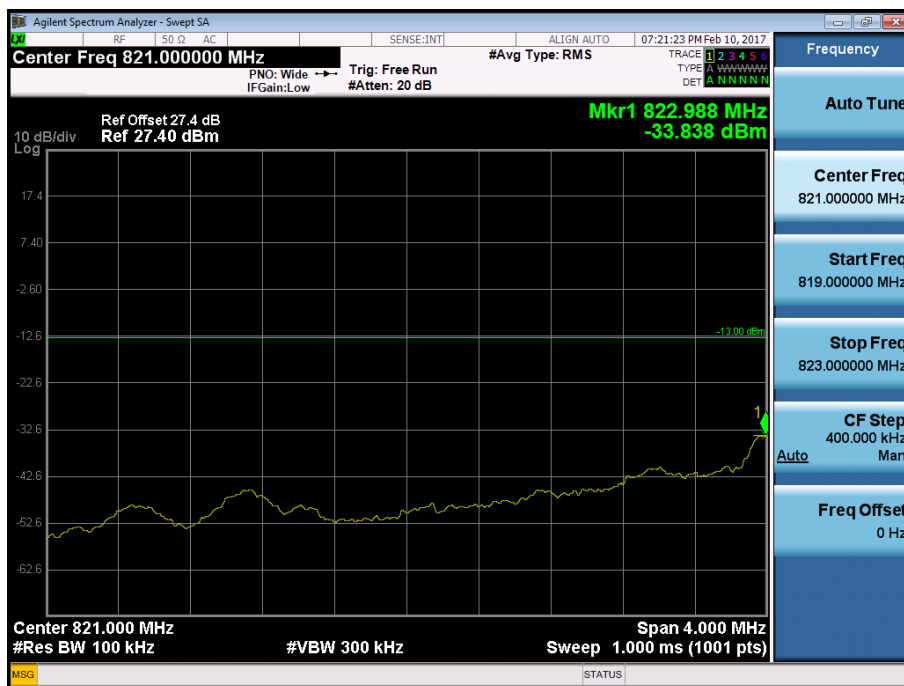
■ CDMA EVDO_Rev.0 MODE (1013 CH.) Block Edge



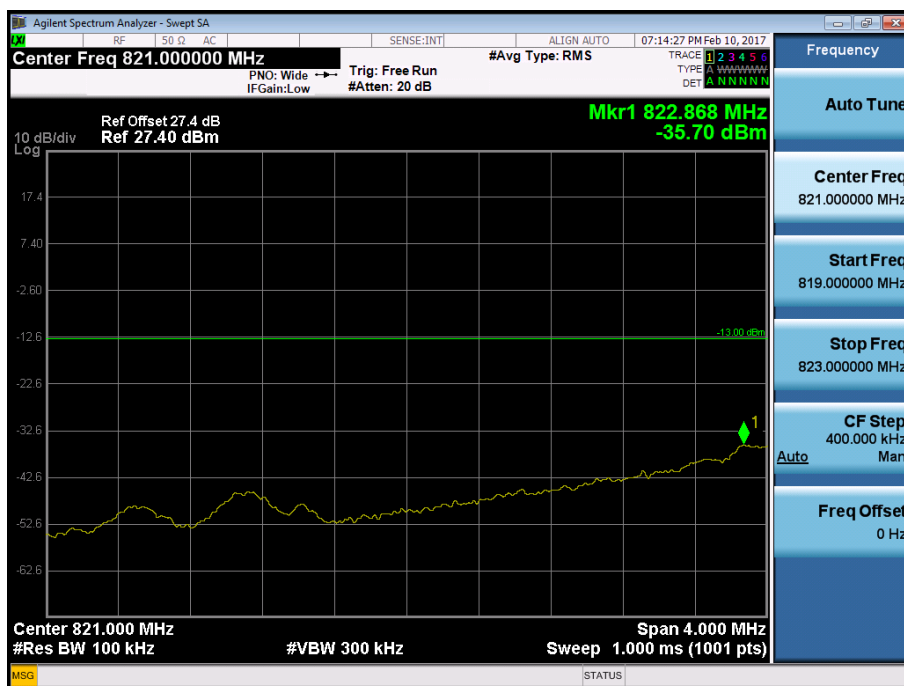
■ CDMA EVDO_Rev.A MODE (1013 CH.) Block Edge



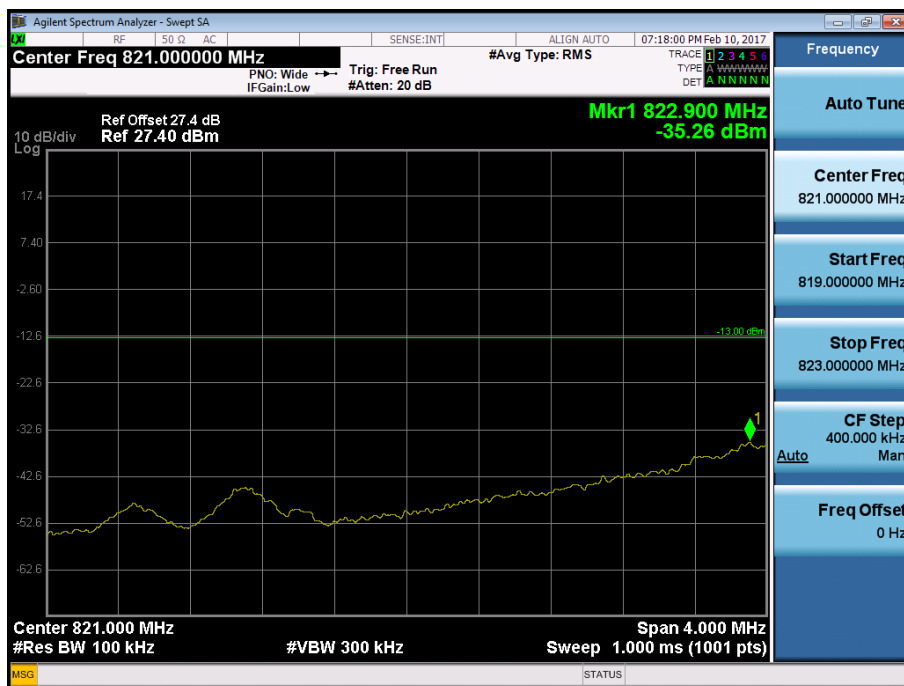
■ CDMA MODE (1013 CH.) 4 MHz Span



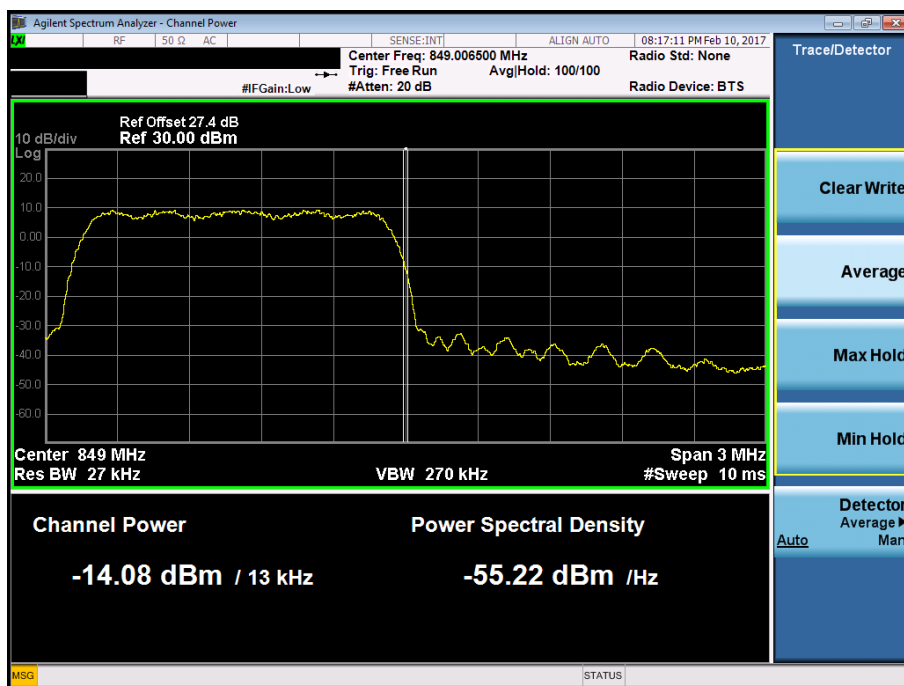
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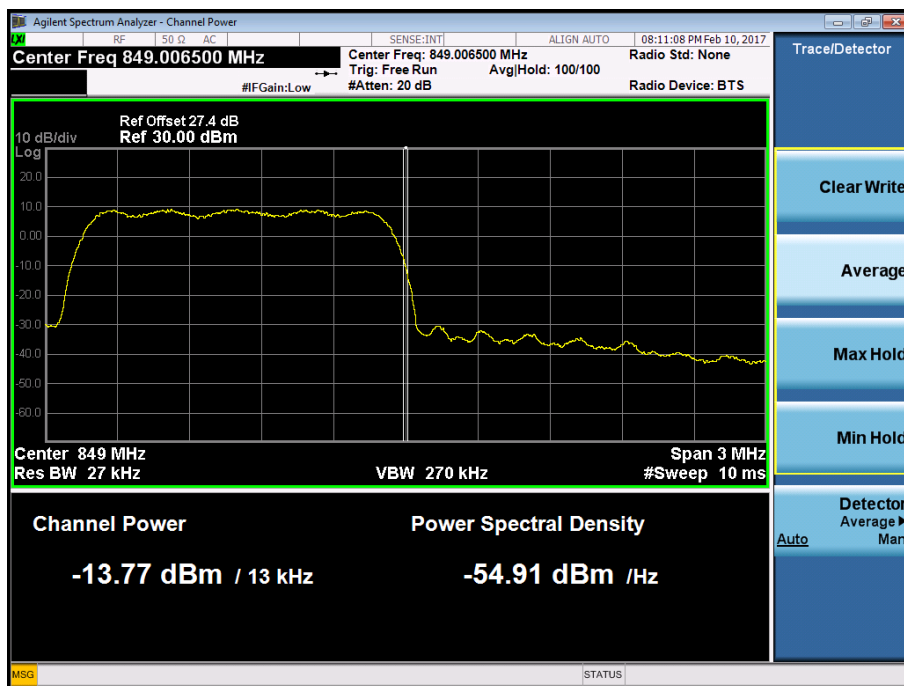
■ CDMA EVDO_Rev.A MODE (1013 CH.) 4 MHz Span



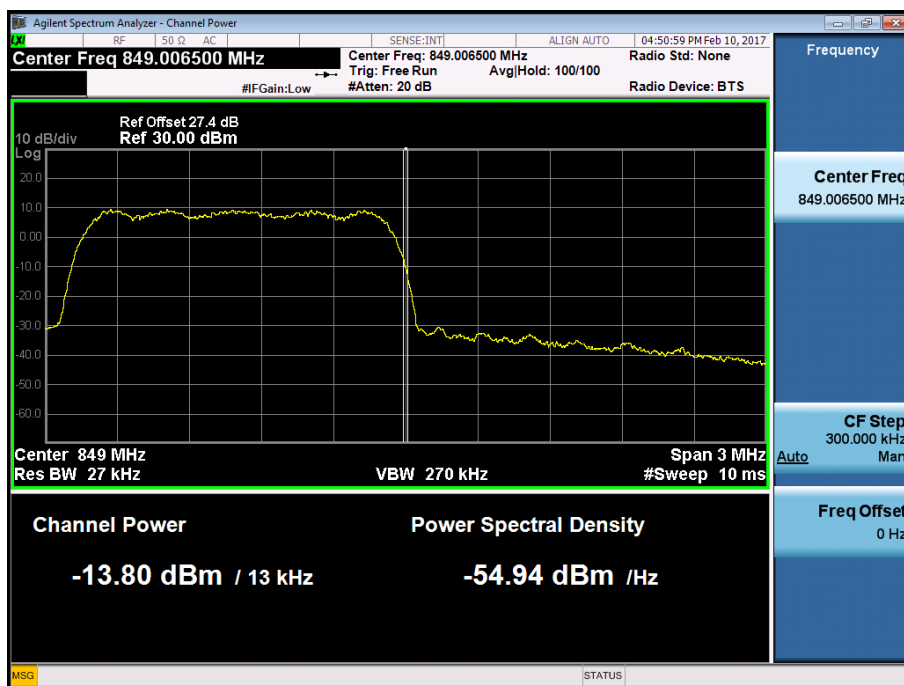
■ CDMA MODE (777 CH.) Block Edge



■ CDMA EVDO_Rev.0 MODE (777 CH.) Block Edge



■ CDMA EVDO_Rev.A MODE (777 CH.) Block Edge



■ CDMA MODE (777 CH.) 4 MHz Span



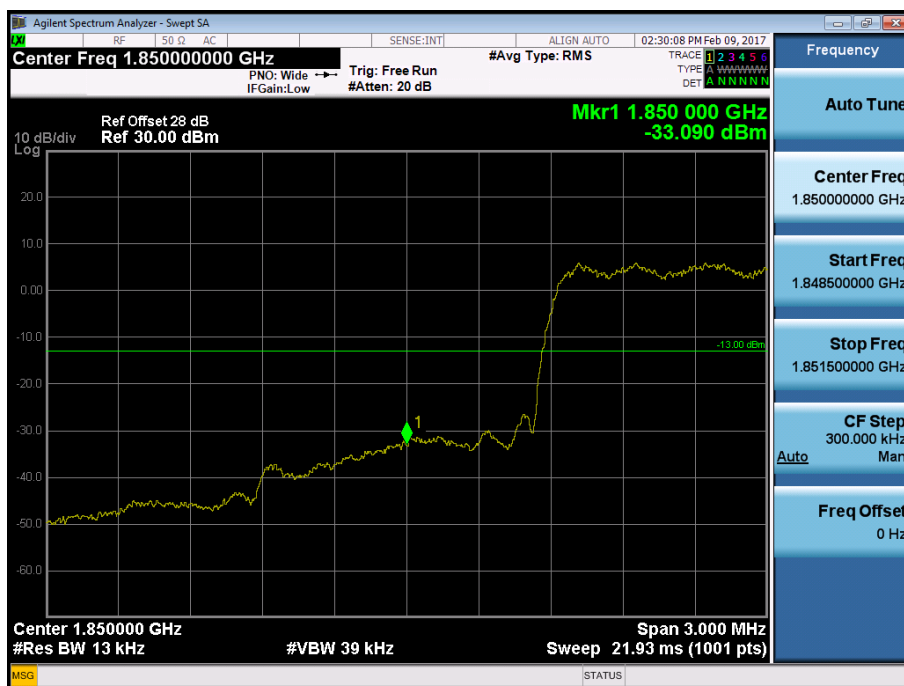
■ CDMA EVDO_Rev.0 MODE (777 CH.) 4 MHz Span



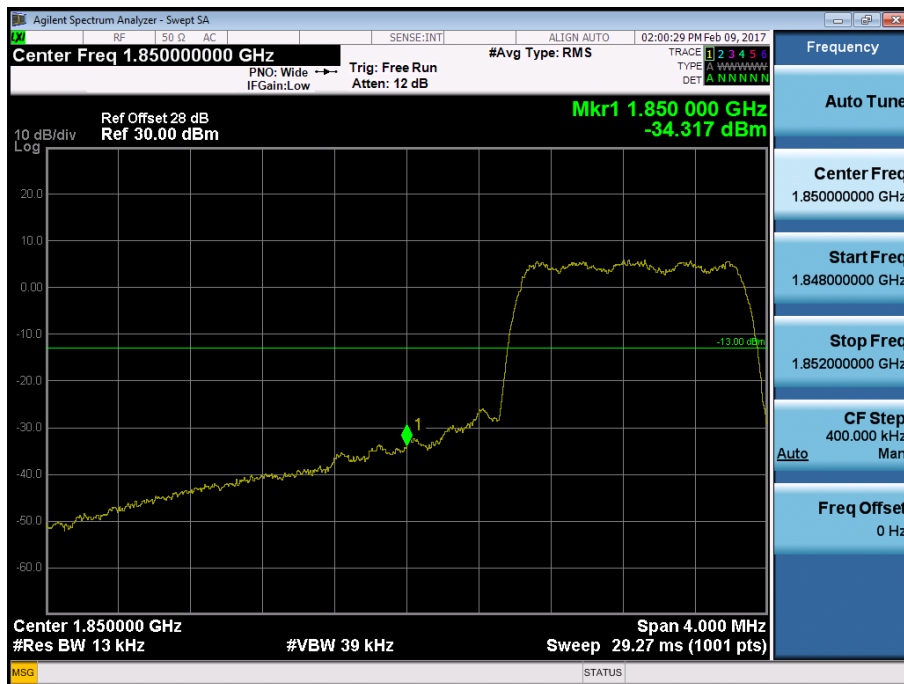
■ CDMA EVDO_Rev.A MODE (777 CH.) 4 MHz Span



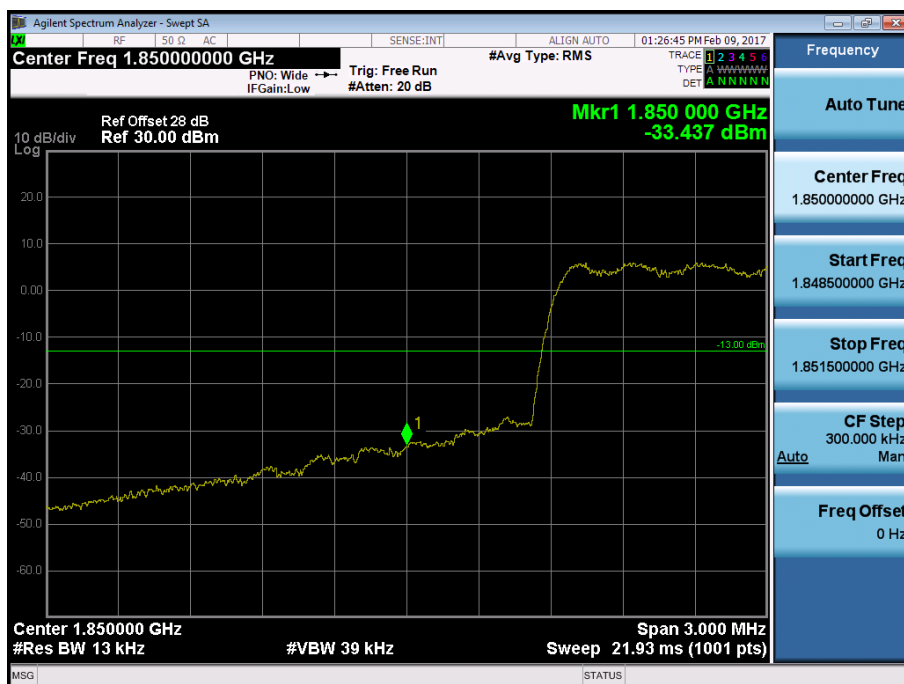
■ PCS MODE (25 CH.) Block Edge pan



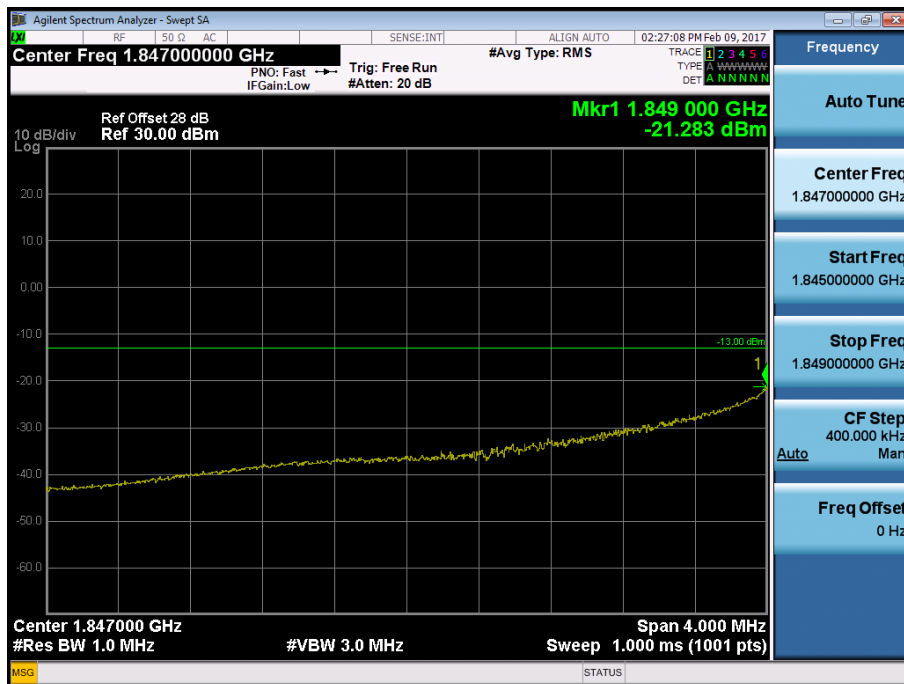
■ PCS EVDO_Rev.0 MODE (25 CH.) Block Edge



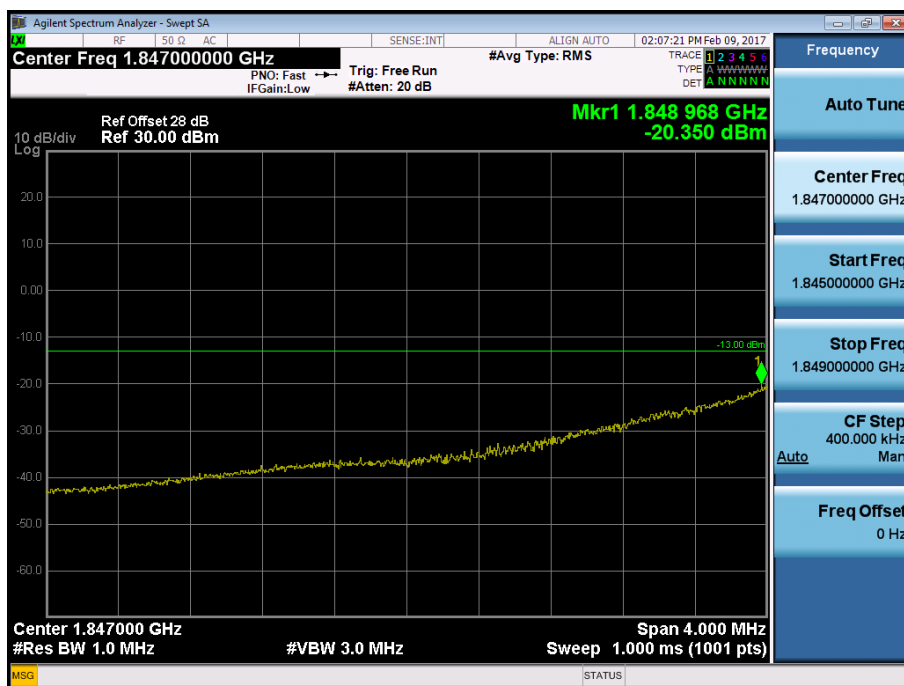
■ PCS EVDO_Rev.A MODE (25 CH.) Block Edge



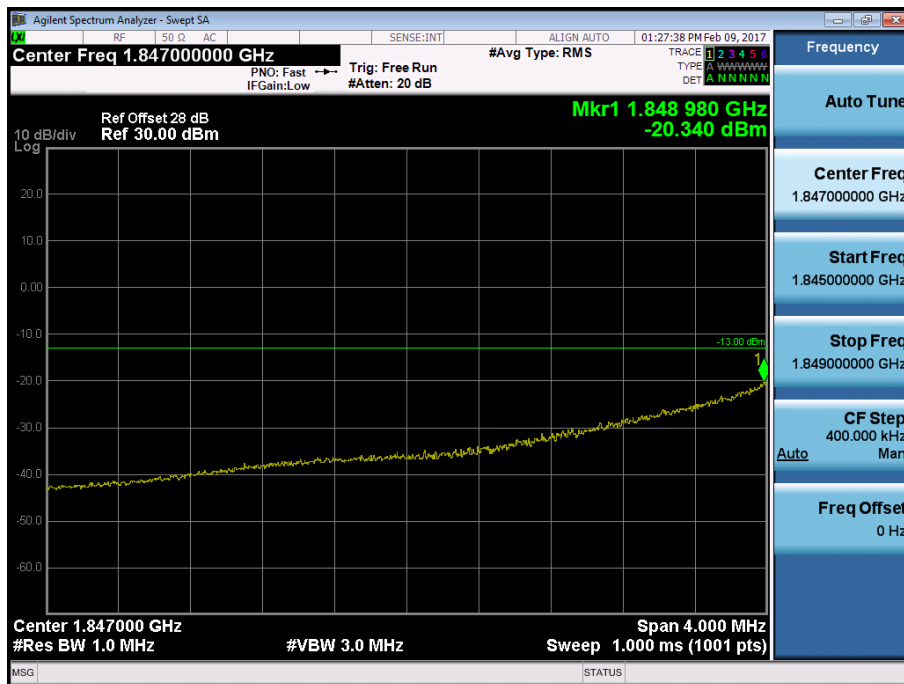
■ PCS MODE (25 CH.) 4 MHz Span



■ PCS EVDO_Rev.0 MODE (25 CH.) 4 MHz Span



■ PCS EVDO_Rev.A MODE (25 CH.) 4 MHz Span



■ PCS MODE (1175 CH.) Block Edge



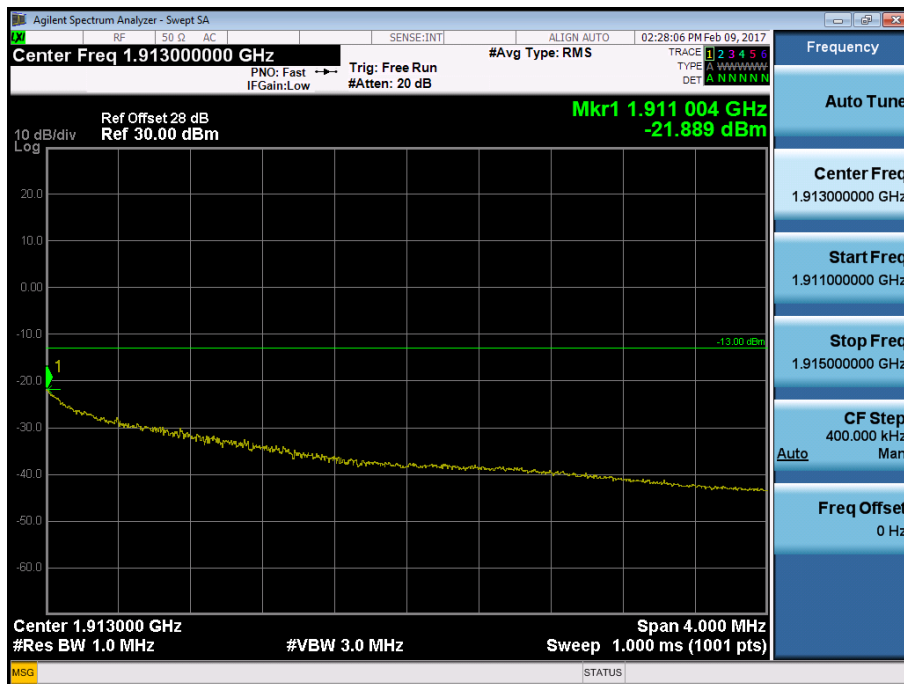
■ PCS EVDO_Rev.0 MODE (1175 CH.) Block Edge



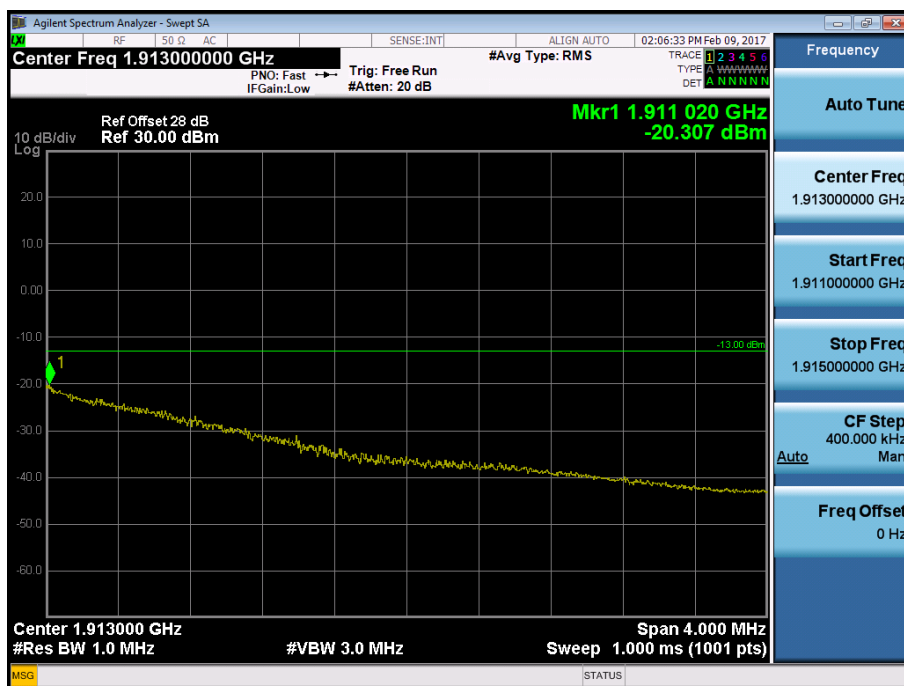
■ PCS EVDO_Rev.A MODE (1175 CH.) Block Edge



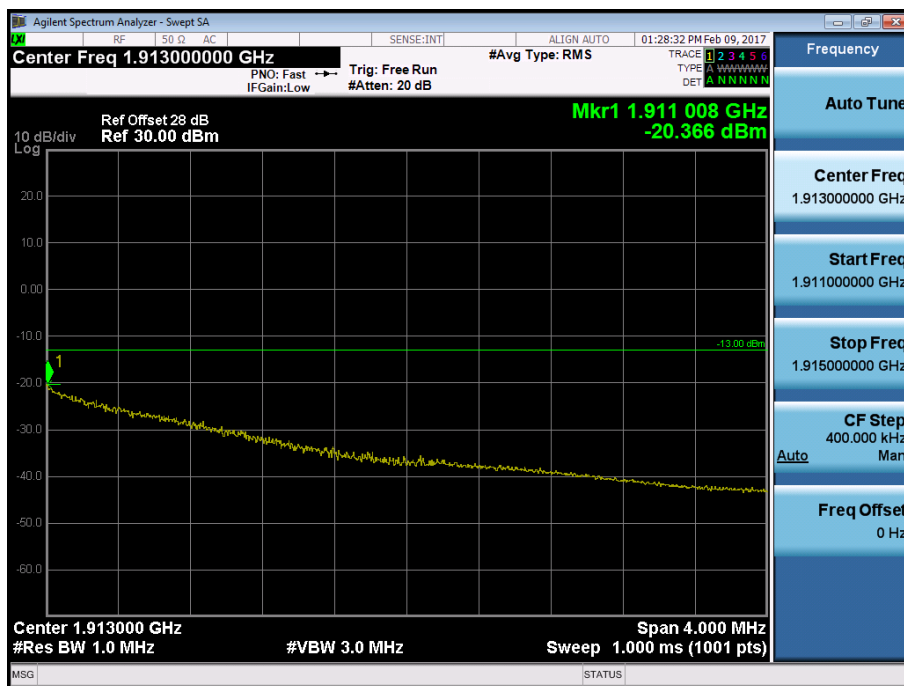
■ PCS MODE (1175 CH.) 4 MHz Span



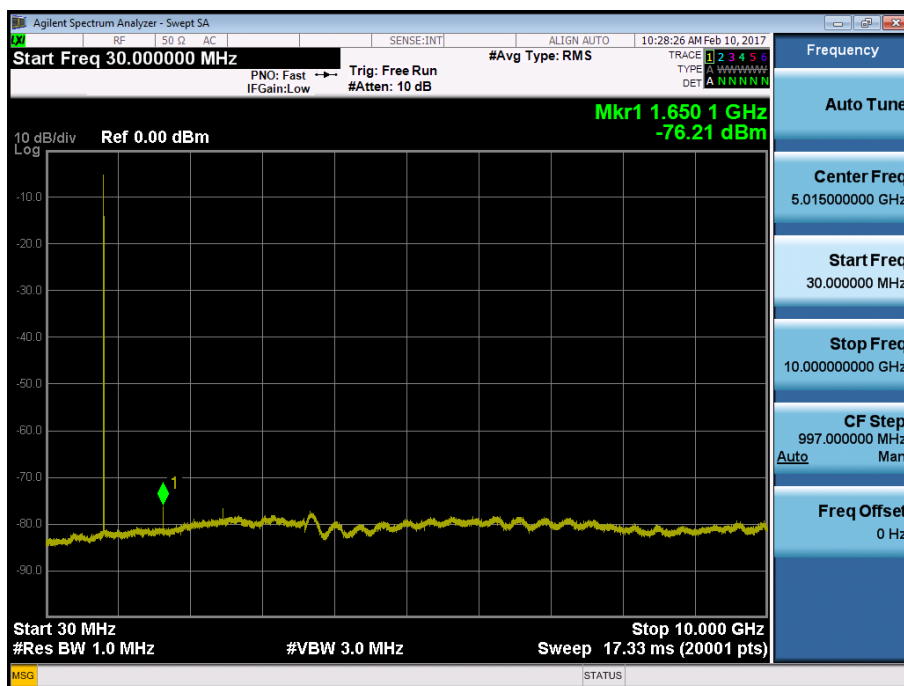
■ PCS EVDO_Rev.0 MODE (1175 CH.) 4 MHz Span



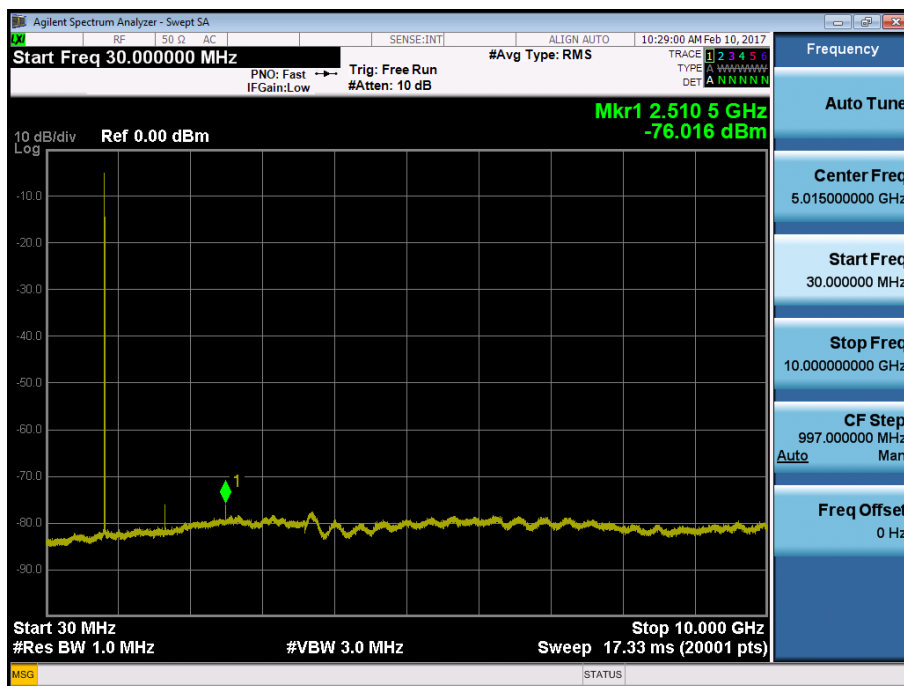
■ PCS EVDO_Rev.A MODE (1175 CH.) 4 MHz Span



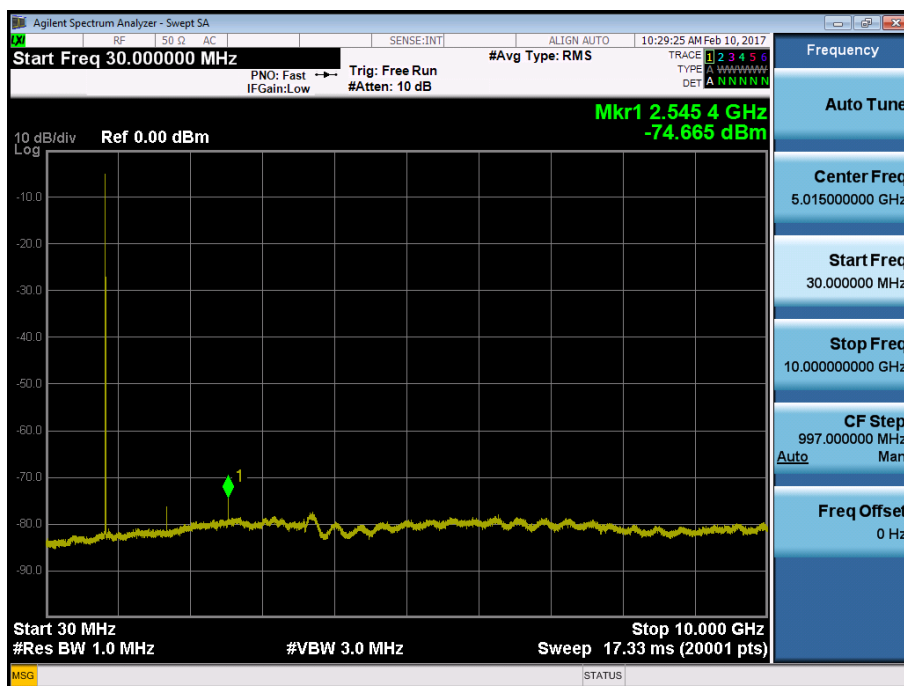
■ CDMA MODE (1013 CH.) Conducted Spurious Emissions



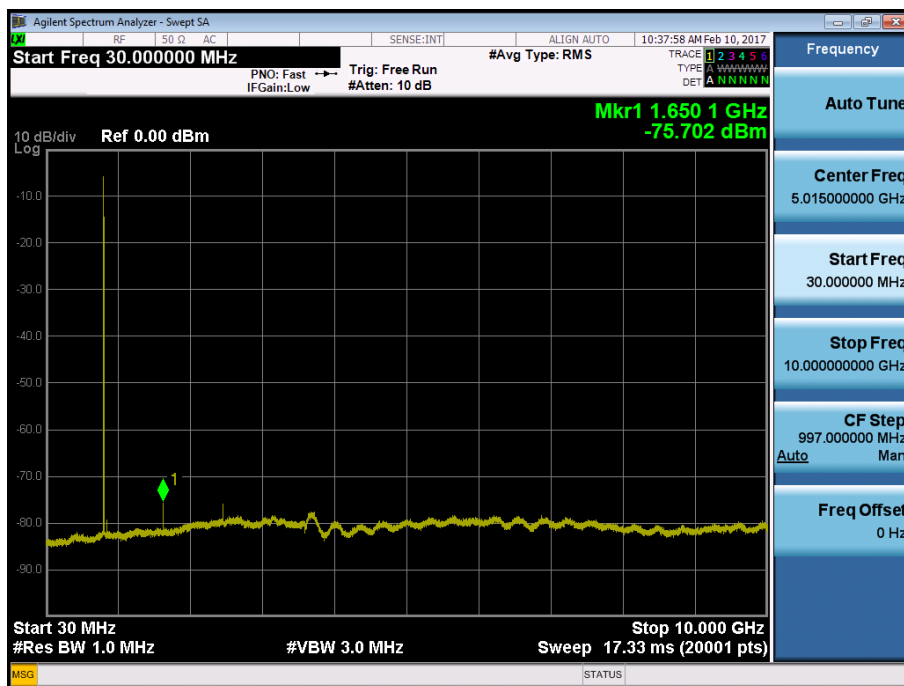
■ CDMA MODE (384 CH.) Conducted Spurious Emissions



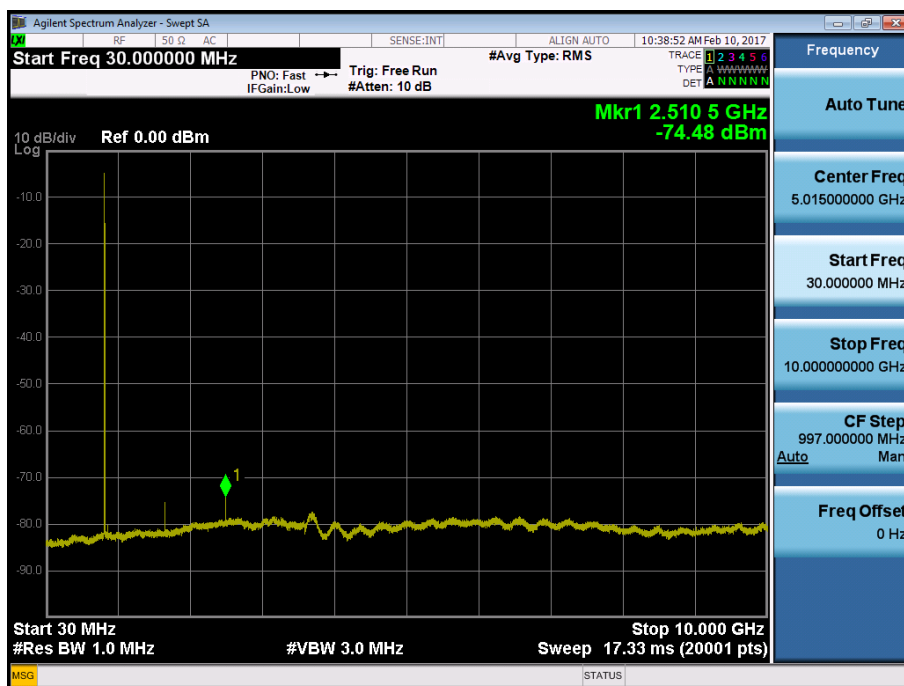
■ CDMA MODE (777 CH.) Conducted Spurious Emissions



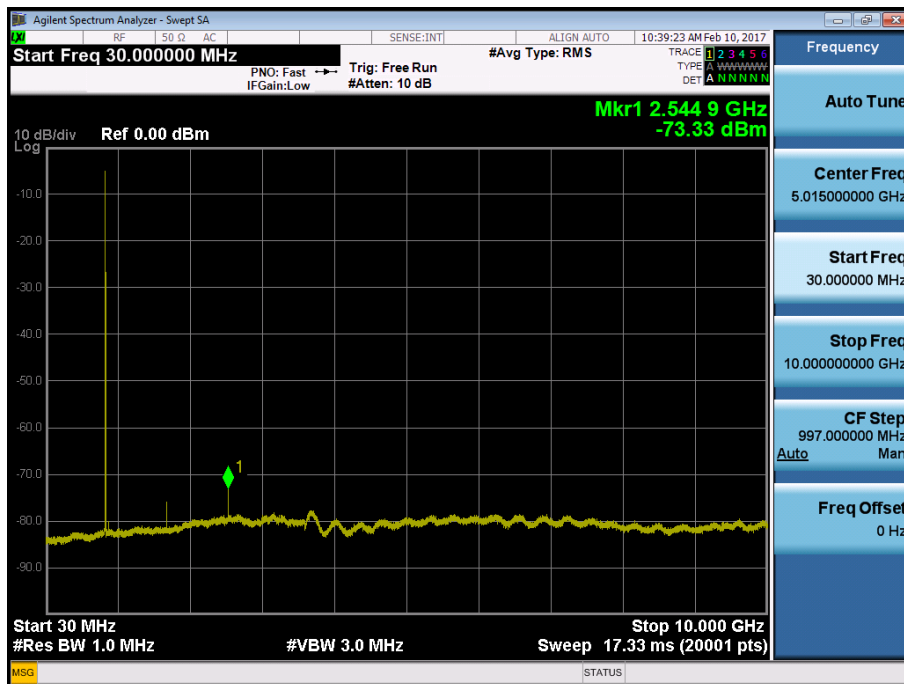
■ CDMA _Rev.0 MODE (1013 CH.) Conducted Spurious Emissions



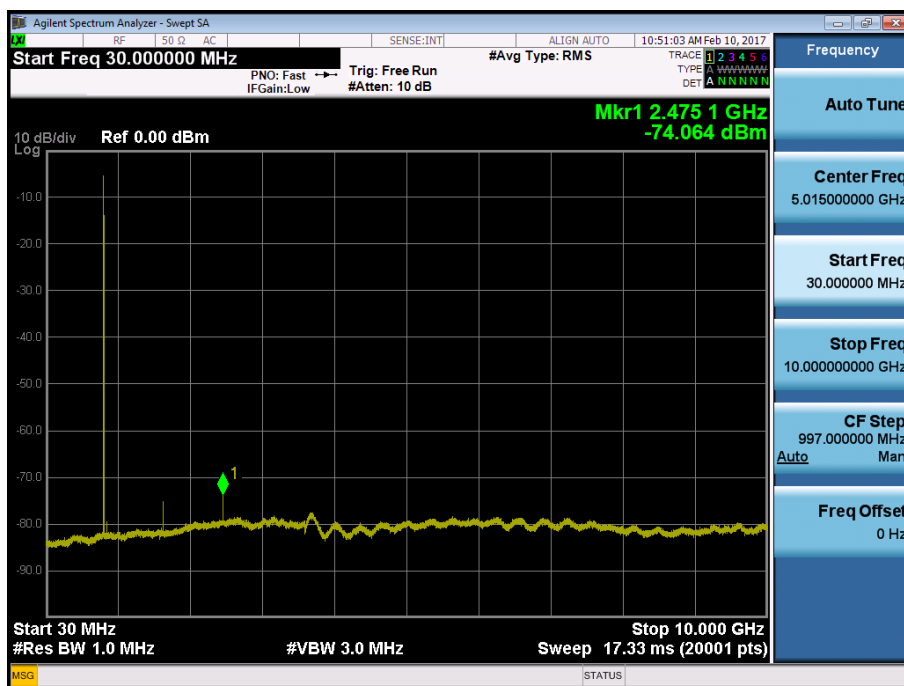
■ CDMA _Rev.0 MODE (384 CH.) Conducted Spurious Emissions



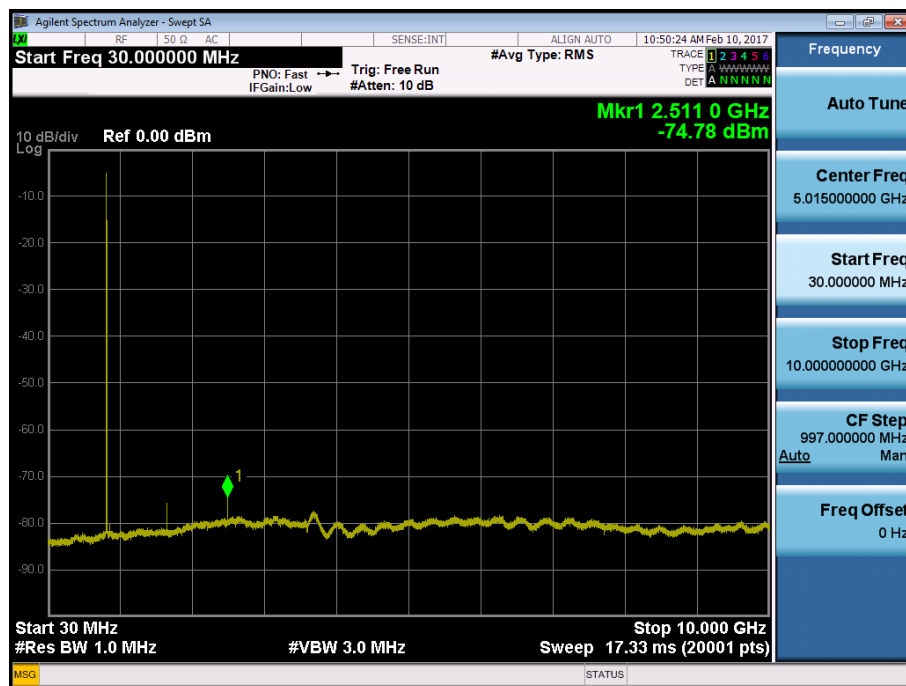
■ CDMA _Rev.0 MODE (777 CH.) Conducted Spurious Emissions



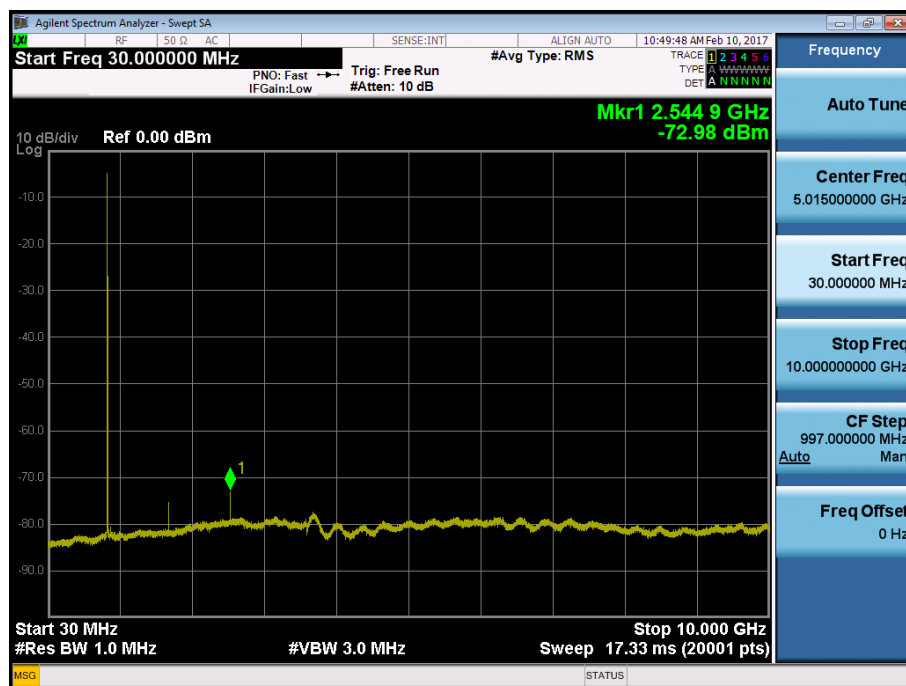
■ CDMA _Rev.A MODE (1013 CH.) Conducted Spurious Emissions



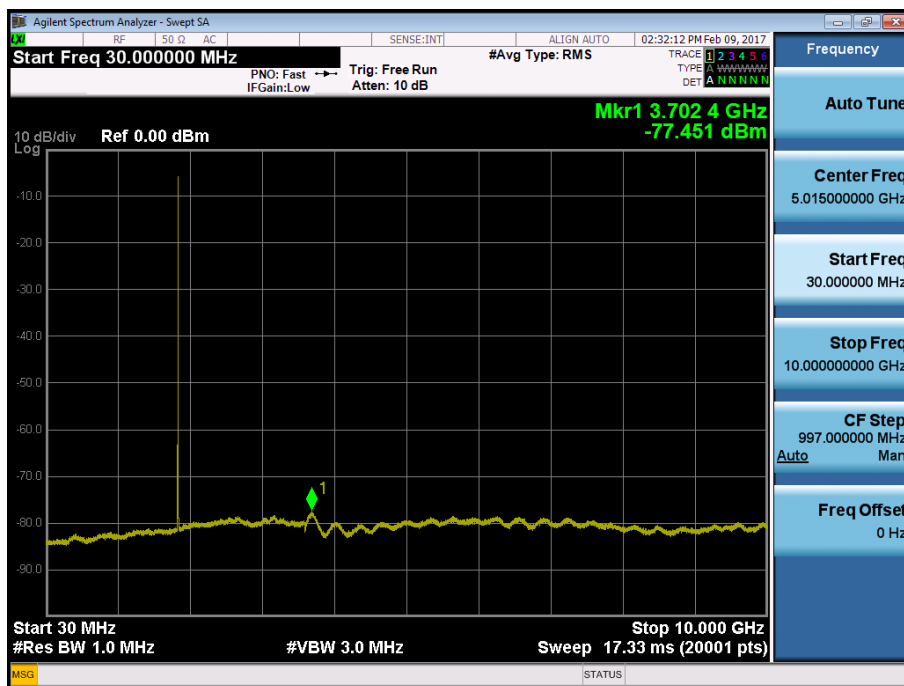
■ CDMA _ Rev.A MODE (384 CH.) Conducted Spurious Emissions



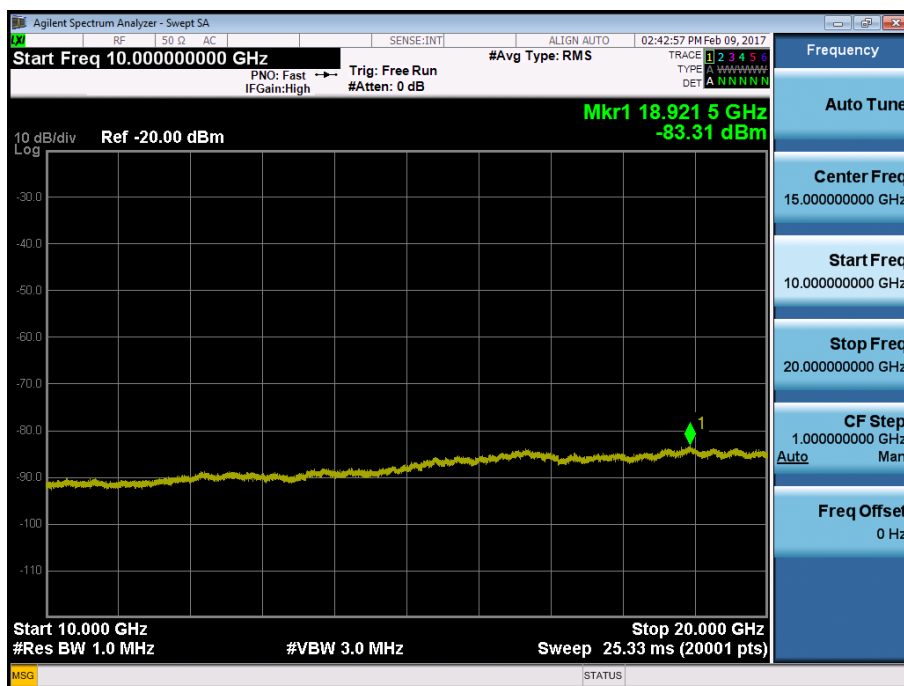
■ CDMA _ Rev.A MODE (777 CH.) Conducted Spurious Emissions



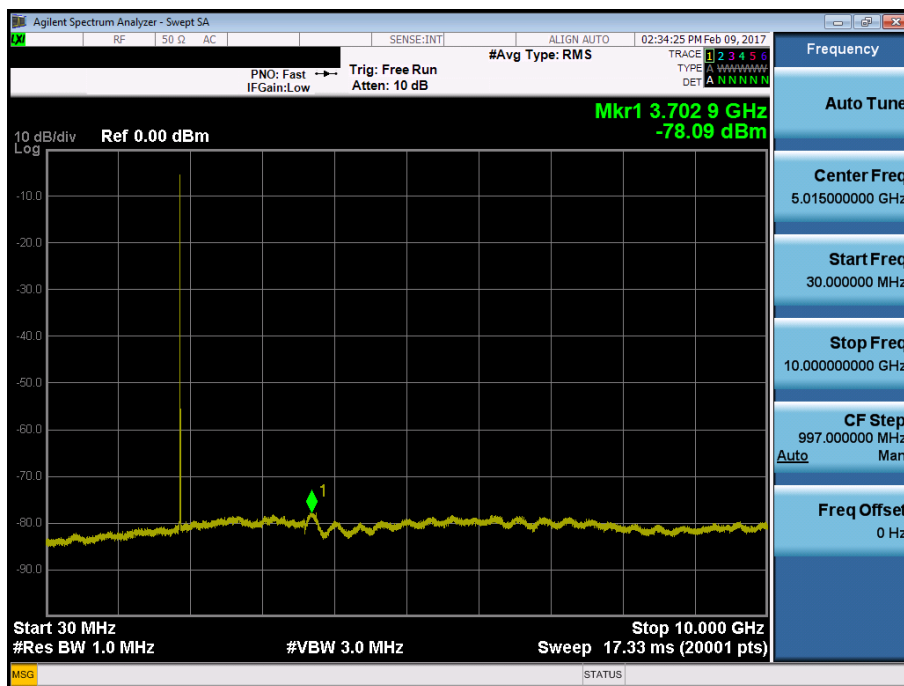
■ PCS MODE (25 CH.) Conducted Spurious Emissions -1



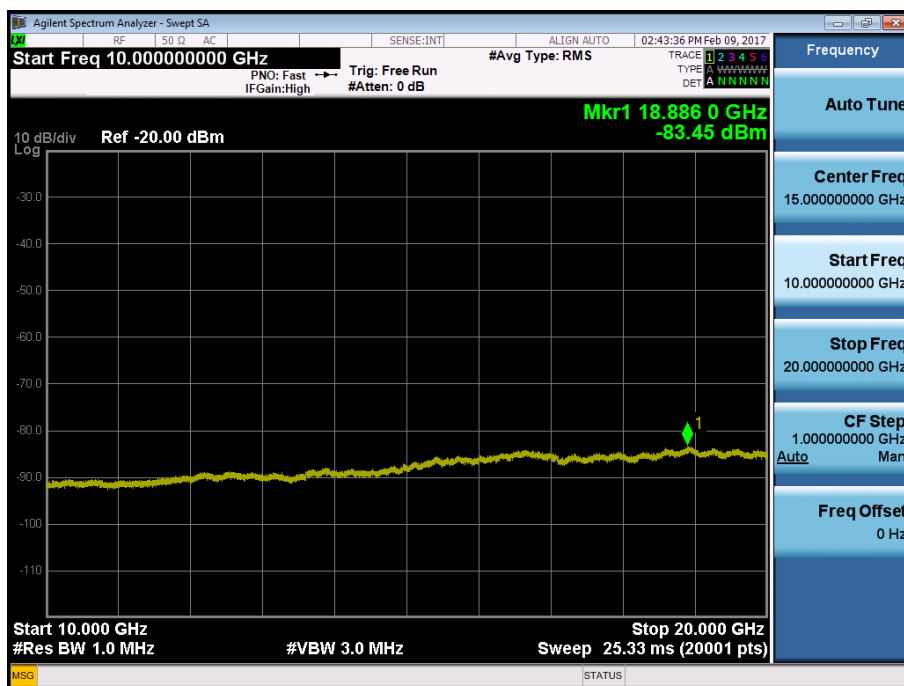
■ PCS MODE (25 CH.) Conducted Spurious Emissions -2



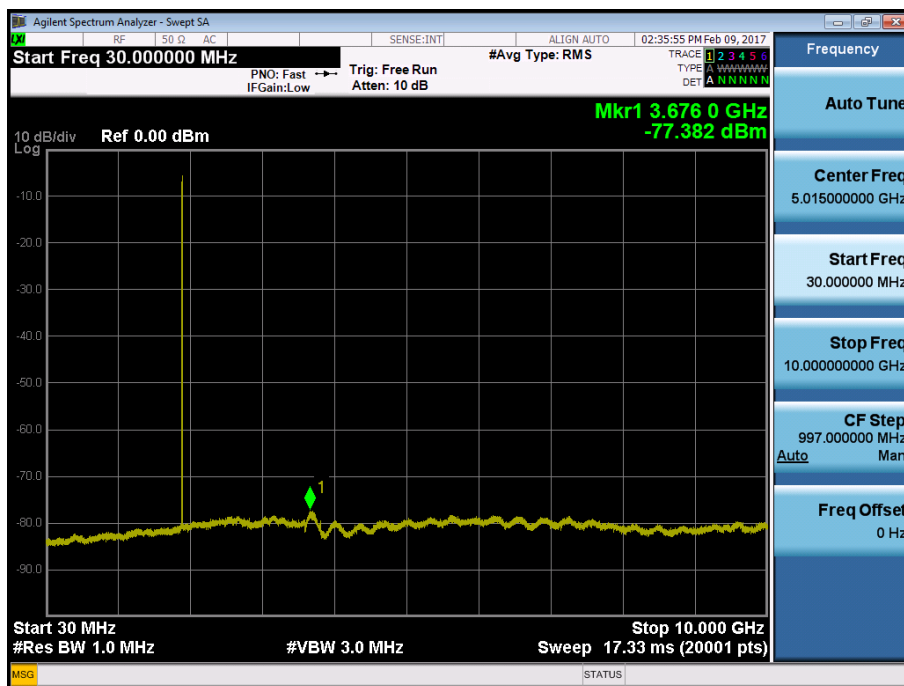
■ PCS MODE (600 CH.) Conducted Spurious Emissions -1



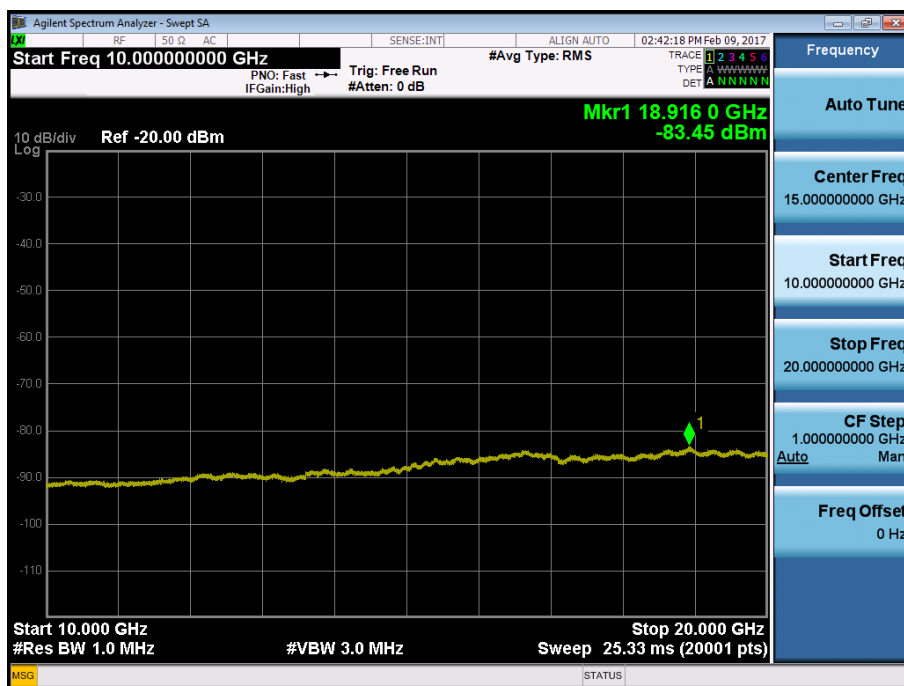
■ PCS MODE (600 CH.) Conducted Spurious Emissions -2



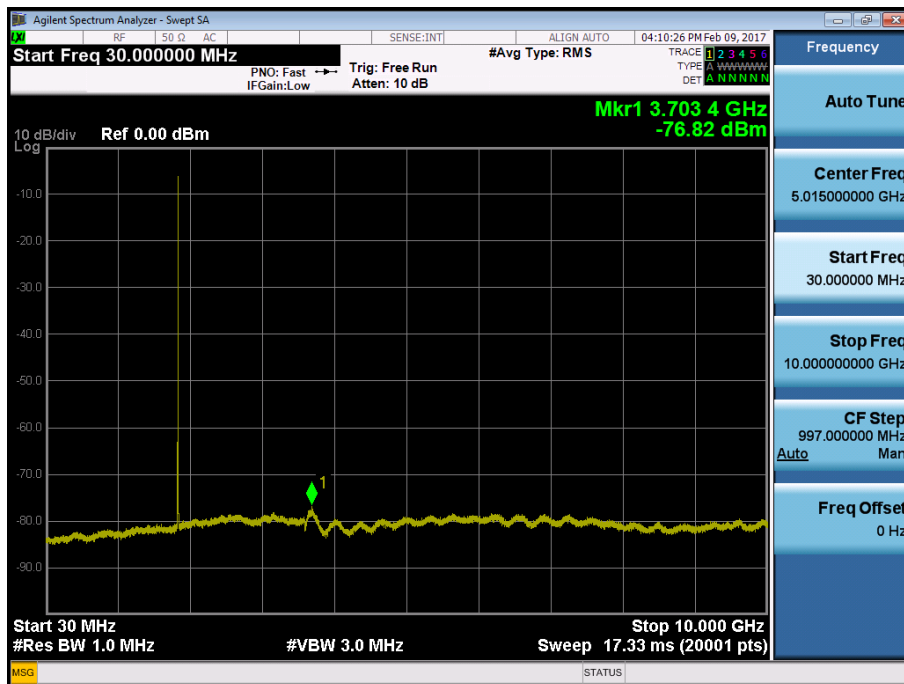
■ PCS MODE (1175 CH.) Conducted Spurious Emissions -1



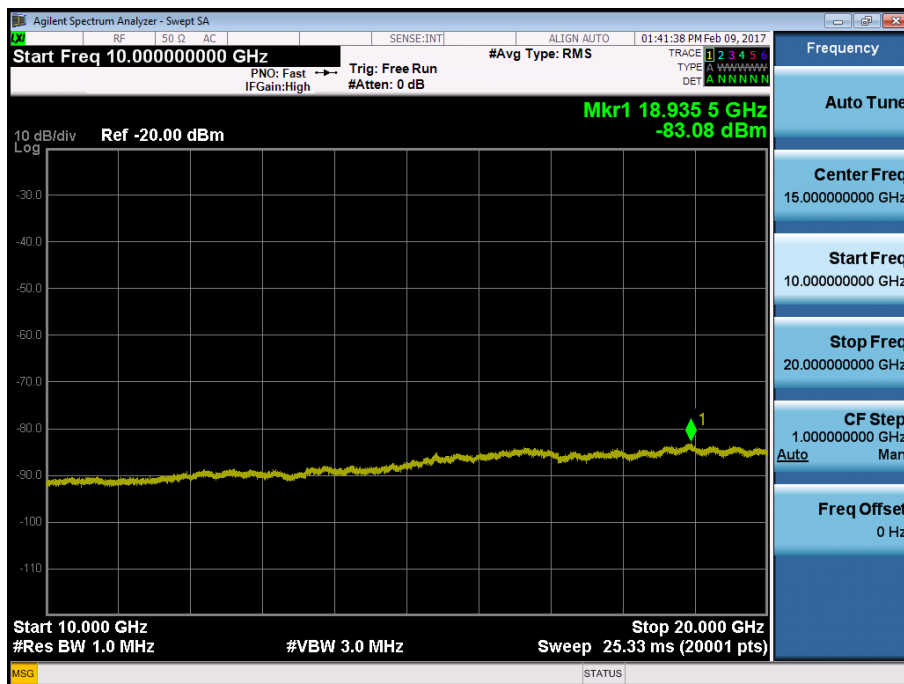
■ PCS MODE (1175 CH.) Conducted Spurious Emissions -2



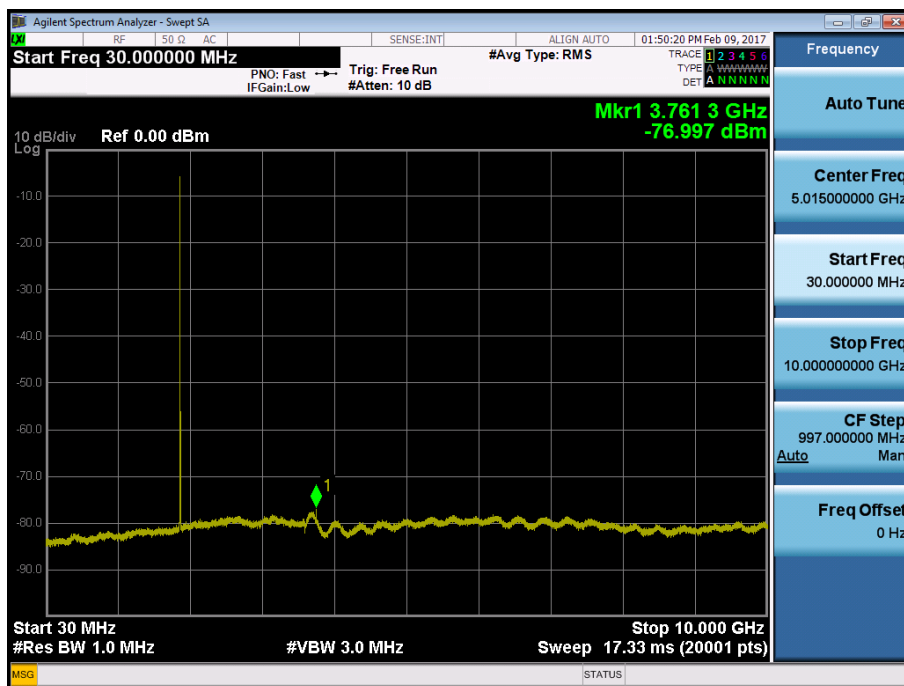
■ PCS_Rev.0 MODE (25 CH.) Conducted Spurious Emissions -1



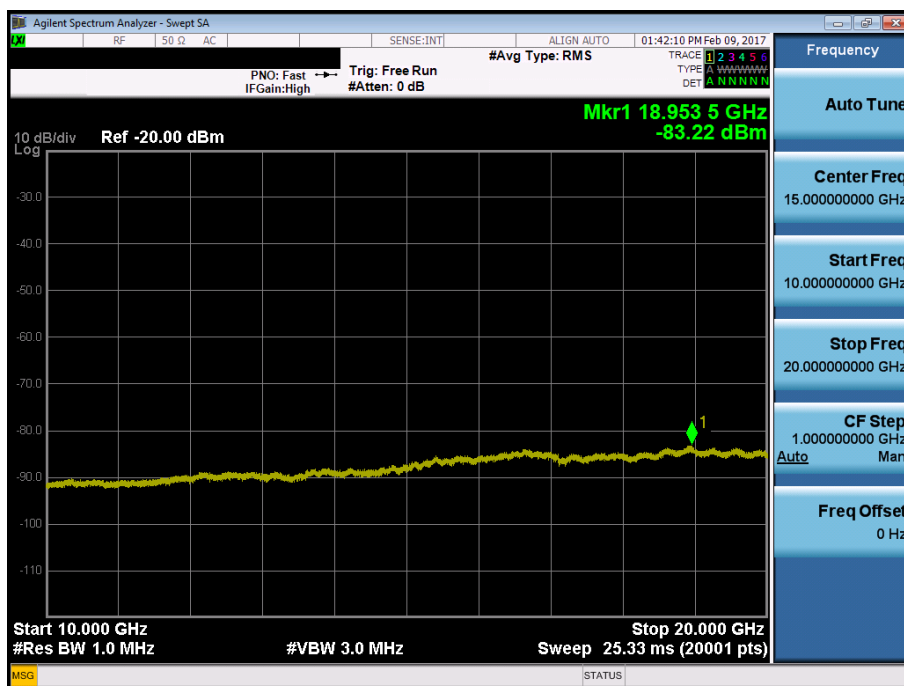
■ PCS_Rev.0 MODE (25 CH.) Conducted Spurious Emissions -2



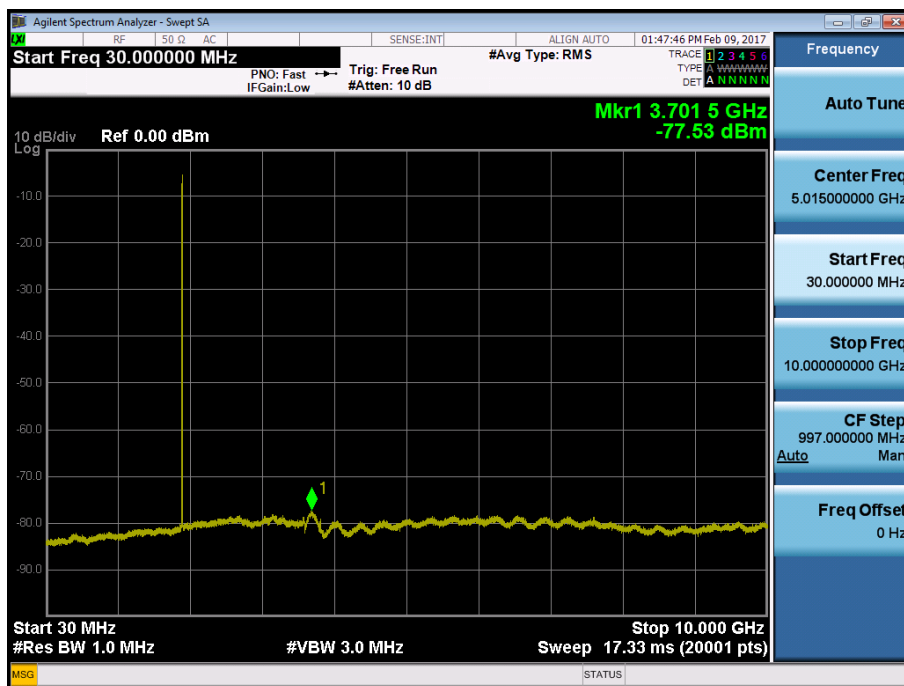
■ PCS_Rev.0 MODE (600 CH.) Conducted Spurious Emissions -1



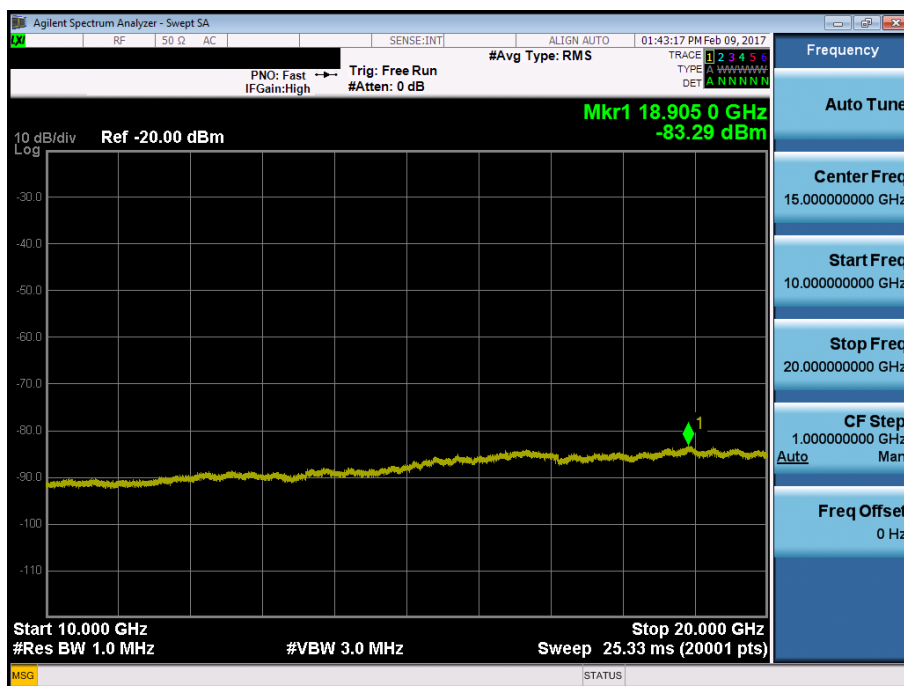
■ PCS_Rev.0 MODE (600 CH.) Conducted Spurious Emissions -2



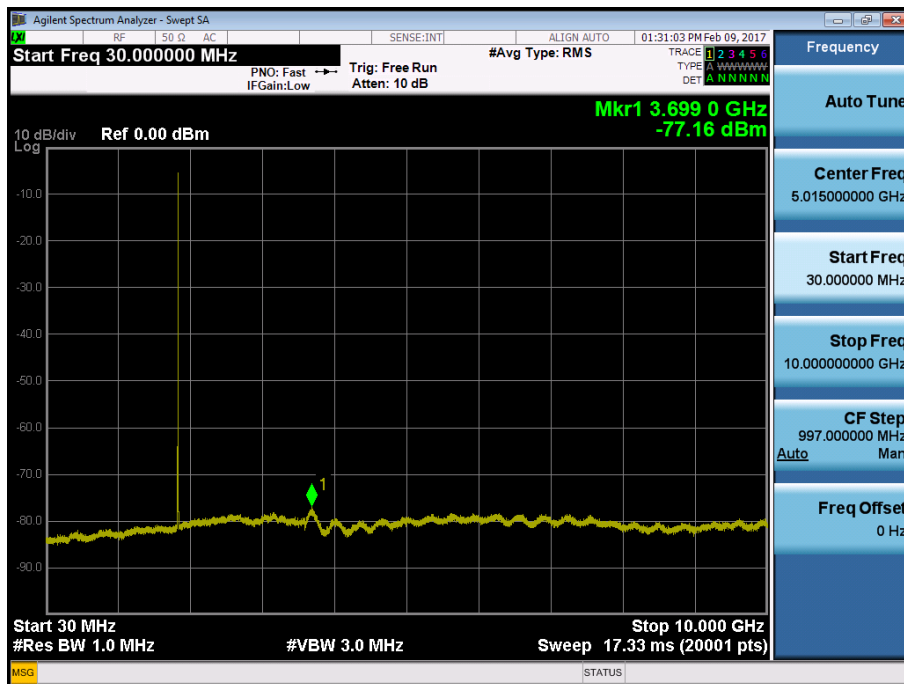
■ PCS_Rev.0 MODE (1175 CH.) Conducted Spurious Emissions -1



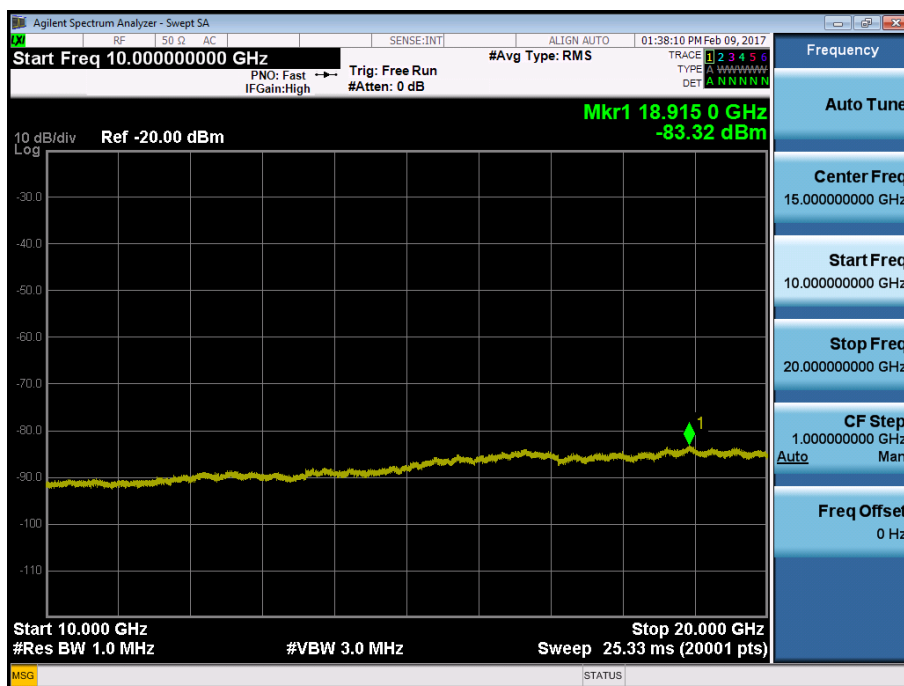
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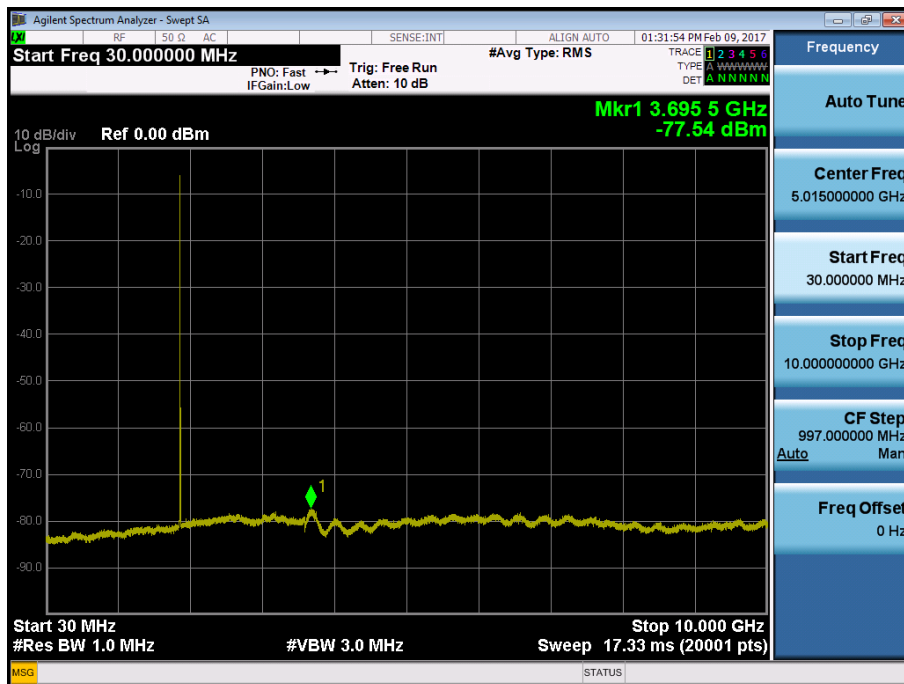
■ PCS_ Rev.A MODE (25 CH.) Conducted Spurious Emissions -1



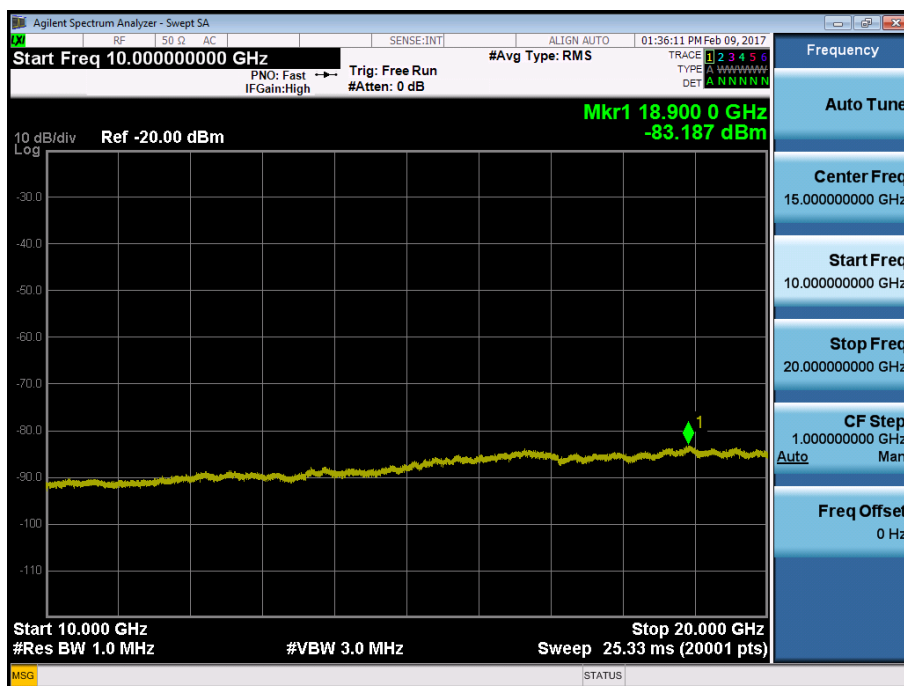
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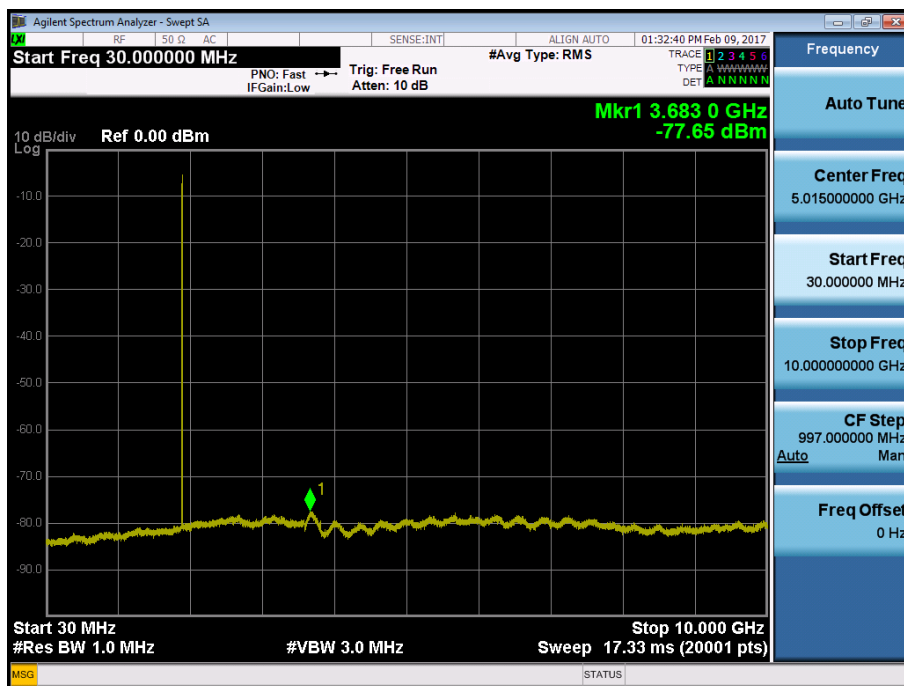
■ PCS_ Rev.A MODE (600 CH.) Conducted Spurious Emissions -1



■ PCS_ Rev.A MODE (600 CH.) Conducted Spurious Emissions -2



■ PCS_ Rev.A MODE (1175 CH.) Conducted Spurious Emissions -1



■ PCS_ Rev.A MODE (1175 CH.) Conducted Spurious Emissions -2

