FCC CFR47 PART 22H, 24E, 27L, AND 90S
CERTIFICATION TEST REPORT

FOR

CELLULAR PHONE WITH BLUETOOTH AND WLAN RADIOS

MODEL NUMBERS: A1633, A1688, A1691 AND A1700

FCC ID: BCG-E2946A

REPORT NUMBER: 15U20164-E7, REVISION C

ISSUE DATE: JULY 24, 2015

Prepared for
APPLE, INC.
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.

Prepared by
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	07/17/15	Initial Issue	M. Mekuria
A	07/21/15	Removed EIRP table from cell bands	C. Pang
B	07/22/15	Addressed TCB's questions	T. Chu
C	07/24/15	Addressed TCB's questions	T. Chu

TABLE OF CONTENTS

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701i
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.

EUT DESCRIPTION: CELLULAR PHONE WITH BLUETOOTH AND WLAN RADIOS

MODEL: A1633, A1688, A1691 AND A1700

SERIAL NUMBER: A1633:
C7JPH02MGL2T (CONDUCTED); C7JPG05ZGKW8 (RADIATED)
A1688:
C7JPR03QGNPC (CONDUCTED); C7JPQODAGNPS (RADIATED)

DATE TESTED: APRIL 22, 2015 – JULY 22, 2015

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 22H, 24E, 27L, AND 90S	Pass

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

CHIN PANG
SENIOR ENGINNER
UL VERIFICATION SERVICES INC.

Tested By:

TINA CHU
LAB ENGINEER
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24, FCC Part 27 and FCC KDB 971168 D01 v02r02.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☒ Chamber D
☐ Chamber B	☒ Chamber E
☐ Chamber C	☒ Chamber F
	☒ Chamber G
	☒ Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	± 3.52 dB
Radiated Disturbance, 30 to 1000 MHz	± 4.94 dB
Radiated Disturbance, 1 to 6 GHz	± 3.86 dB
Radiated Disturbance, 6 to 18 GHz	± 4.23 dB
Radiated Disturbance, 18 to 26 GHz	± 5.30 dB
Radiated Disturbance, 26 to 40 GHz	± 5.23 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a mobile phone with multimedia functions (music, application support, and video), cellular GSM/GPRS/EGPRS/WCDMA/HSPA+/DC-HSDPA/CDMA/EVDO/LTE radio, IEEE 802.11a/b/g/n/ac, NFC, Bluetooth and GPS radio. The rechargeable battery is not user accessible.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum average conducted and ERP / EIRP output powers as follows:

5.2.1. MODEL: A1633 (LAT)

GSM MODES

Part 22/ RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824- 849	GPRS	33.50	2238.7	30.81	1205.0
	EGPRS	29.00	794.3	25.71	372.4

Part 24/RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 - 1910	GPRS	31.50	1412.5	30.10	1023.3
	EGPRS	27.90	616.6	28.87	770.9

CDMA2000 MODES

Part 90 800MHz SECONDARY Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
816 – 824	CDMA 2000 1xRTT	25.0	316.2	20.5	111.7
	CDMA 2000 EVDO-Rev A	25.0	316.2	20.5	112.2

Part 22 / RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824 – 849	CDMA 2000 1xRTT	25.0	316.2	22.3	167.9
	CDMA 2000 EVDO-Rev A	25.0	316.2	22.2	166.0

Part 24 / RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 – 1910	CDMA 2000 1xRTT	25.0	316.2	25.8	383.7
	CDMA 2000 EVDO-Rev A	25.0	316.2	26.0	401.8

Part 27 / RSS 139 1700MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1710 – 1755	CDMA 2000 1xRTT	25.0	316.2	23.9	243.2
	CDMA 2000 EVDO-Rev A	25.0	316.2	24.0	248.9

UMTS MODES

Part 22 / RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824 – 849	REL 99	25.0	316.2	23.4	216.3
	HSDPA REL 5	24.0	251.2	22.5	176.6

Part 24 / RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 – 1910	REL 99	25.0	316.2	26.9	487.5
	HSDPA REL 5	24.0	251.2	25.9	387.3

Part 27 /RSS 139 1700MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1710– 1755	REL 99	25.0	316.2	24.7	292.4
	HSDPA REL 5	24.0	251.2	23.8	241.5

5.2.2. MODEL: A1633 (UAT)

GSM MODES

Part 22/ RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824- 849	GPRS	31.5	1412.5	25.7	375.0
	EGPRS	27.0	501.2	22.7	187.9

Part 24/RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 - 1910	GPRS	27.5	562.3	26.2	415.9
	EGPRS	25.0	316.2	23.1	206.1

CDMA2000 MODES

Part 90 800MHz SECONDARY Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
816 – 824	CDMA 2000 1xRTT	23.5	223.9	17.4	55.2
	CDMA 2000 EVDO-Rev A	23.5	223.9	17.2	52.7

Part 22 / RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824 – 849	CDMA 2000 1xRTT	23.5	223.9	16.8	47.3
	CDMA 2000 EVDO-Rev A	23.5	223.9	16.8	48.0

Part 24 / RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 – 1910	CDMA 2000 1xRTT	21.5	141.3	20.6	115.1
	CDMA 2000 EVDO-Rev A	21.5	141.3	20.7	116.4

Part 27 / RSS 139 1700MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1710 – 1755	CDMA 2000 1xRTT	20.0	100.0	18.7	73.3
	CDMA 2000 EVDO-Rev A	20.0	100.0	18.6	71.9

UMTS MODES

Part 22 / RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824 – 849	REL 99	23.5	223.9	16.7	46.2
	HSDPA REL 5	22.5	177.8	15.8	37.7

Part 24 / RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 – 1910	REL 99	21.5	141.3	20.5	112.2
	HSDPA REL 5	20.5	112.2	19.6	92.0

Part 27 /RSS 139 1700MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1710– 1755	REL 99	20.0	100.0	19.5	89.5
	HSDPA REL 5	19.0	79.4	18.7	73.5

5.2.3. MODEL: A1688 (LAT)

GSM MODES

Part 22/ RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824- 849	GPRS	33.4	2187.8	30.3	1071.5
	EGPRS	28.9	776.2	25.6	363.1

Part 24/RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 - 1910	GPRS	30.4	1096.5	30.0	1002.3
	EGPRS	27.8	602.6	28.5	704.7

CDMA2000 MODES

Part 90 800MHz SECONDARY Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
816 – 824	CDMA 2000 1xRTT	24.9	309.0	20.4	110.2
	CDMA 2000 EVDO-Rev A	24.9	309.0	20.4	108.9

Part 22 / RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824 – 849	CDMA 2000 1xRTT	24.9	309.0	22.0	160.0
	CDMA 2000 EVDO-Rev A	24.9	309.0	22.1	161.8

Part 24 / RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 – 1910	CDMA 2000 1xRTT	24.9	309.0	25.8	377.6
	CDMA 2000 EVDO-Rev A	24.9	309.0	26.0	398.1

Part 27 / RSS 139 1700MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1710 – 1755	CDMA 2000 1xRTT	24.9	309.0	23.5	225.9
	CDMA 2000 EVDO-Rev A	24.9	309.0	23.8	237.7

UMTS MODES

Part 22 / RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824 – 849	REL 99	24.9	309.0	23.1	204.2
	HSDPA REL 5	23.9	245.5	22.2	166.7

Part 24 / RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 – 1910	REL 99	24.9	309.0	26.6	455.0
	HSDPA REL 5	23.9	245.5	25.8	378.4

Part 27 /RSS 139 1700MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1710– 1755	REL 99	24.9	309.0	24.3	266.7
	HSDPA REL 5	23.9	245.5	23.6	227.0

5.2.4. MODEL: A1688 (UAT)

GSM MODES

Part 22/ RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824- 849	GPRS	31.4	1380.4	25.5	358.1
	EGPRS	26.9	489.8	22.7	184.1

Part 24/RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 - 1910	GPRS	27.4	549.5	26.1	402.7
	EGPRS	24.9	309.0	23.0	200.4

CDMA2000 MODES

Part 90 800MHz SECONDARY Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
816 – 824	CDMA 2000 1xRTT	23.4	218.8	17.3	53.2
	CDMA 2000 EVDO-Rev A	23.4	218.8	17.2	52.7

Part 22 / RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824 – 849	CDMA 2000 1xRTT	23.4	218.8	16.7	46.9
	CDMA 2000 EVDO-Rev A	23.4	218.8	16.9	48.4

Part 24 / RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 – 1910	CDMA 2000 1xRTT	21.4	138.0	20.5	111.4
	CDMA 2000 EVDO-Rev A	21.4	138.0	20.5	111.9

Part 27 / RSS 139 1700MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1710 – 1755	CDMA 2000 1xRTT	19.9	97.7	18.4	69.3
	CDMA 2000 EVDO-Rev A	19.9	97.7	18.5	70.3

UMTS MODES

Part 22 / RSS 132 850MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		ERP (Average)	
		dBm	mW	dBm	mW
824 – 849	REL 99	23.4	218.8	16.6	45.8
	HSDPA REL 5	22.4	173.8	15.9	39.3

Part 24 / RSS 133 1900MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1850 – 1910	REL 99	21.4	138.0	20.4	110.7
	HSDPA REL 5	20.4	109.6	19.4	86.3

Part 27 /RSS 139 1700MHz Band

Frequency range (MHz)	Modulation	Conducted (Average)		EIRP (Average)	
		dBm	mW	dBm	mW
1710– 1755	REL 99	19.8	95.5	19.1	80.5
	HSDPA REL 5	18.9	77.6	18.5	70.1

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Range (MHz)	Gain (dBi)	
	LAT	UAT
816 - 824	-1.42	-3.59
824- 849	-0.85	-3.59
1850 - 1910	2.53	-0.82
1710 - 1755	0.09	-0.37

5.4. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 13A283 Baseband 0.31.02.
The EUT is linked with Agilent 8960 and CMW500 Communication Test Sets.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case is EUT on the highest power. Based on Peak Power measurement investigations, the following modes should be considered as worst-case scenario for all other measurements.

Worst-case modes:
- GSM GPRS
- GSM EGPRS
- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A
- UMTS REL 99
- UMTS HSDPA

The fundamental of the EUT was investigated in three orthogonal orientations X/Y/Z, it was determined that Portrait orientation was worst-case orientation for cell bands; Flatbed orientation was worst-case orientation for pcs bands without AC/DC adapter and headset.

For simultaneous transmission of multiple channels from the same antenna in the 2.4 GHz and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

Based on the manufacturer's statement Model A1688, A1700 and A1691 are exactly same, except for marketing reasons.

Delta Items	A1633	A1688	A1691	A1700
Band 30	Yes	No	No	No

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List			
Description	**Manufacturer**	**Model**	**Serial Number**
AC/DC adapter	Dell	Latitude D630	N/A
Laptop	Dell	PA-1900-02D	N/A
DC power supply	Sorensen	XHR 60-18	N/A

I/O CABLES (RF Conducted Test)

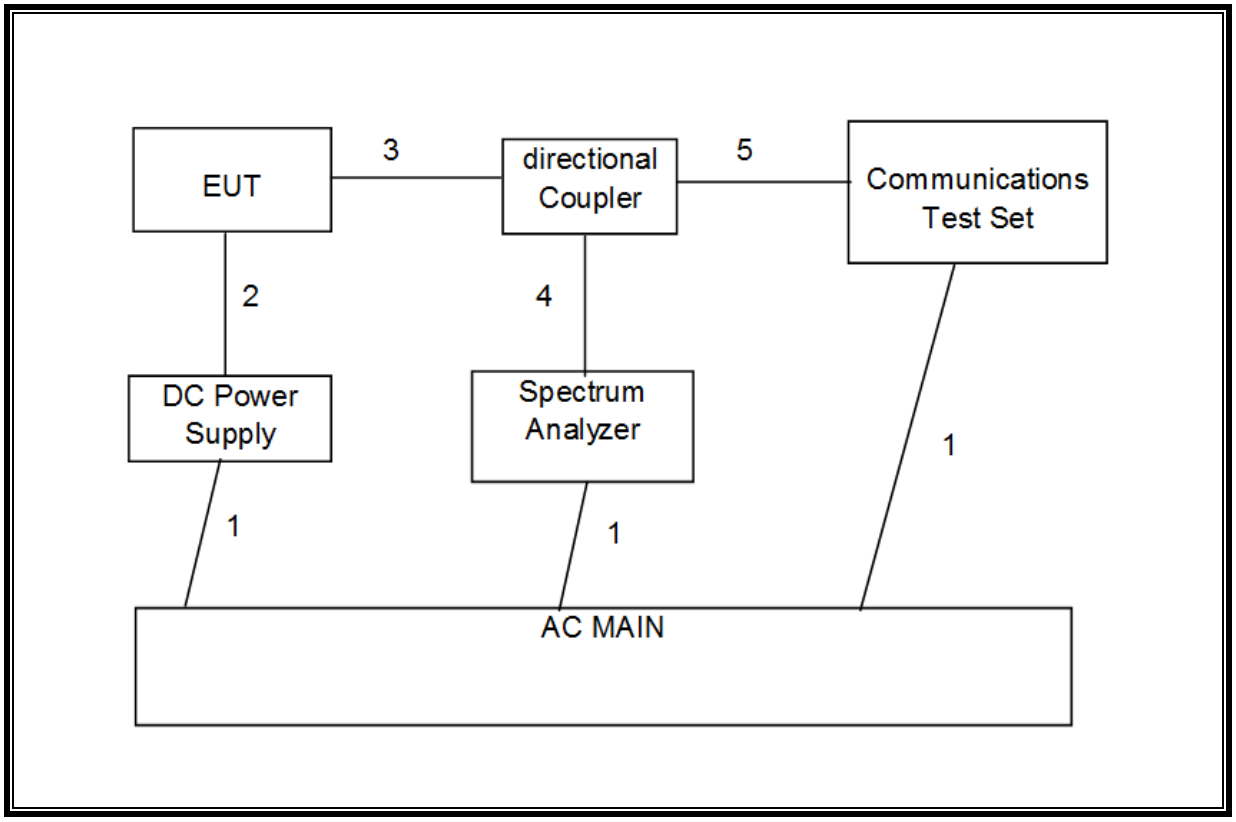
I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	US 115V	Un-shielded	2m	N/A
2	DC	1	DC	Un-shielded	1.4m	N/A
3	RF In/Out	1	EUT	Un-shielded	0.4m	N/A
4	RF In/Out	1	Barrel	N/A	N/A	N/A
5	RF In/Out	1	Communication Test Set	Un-shielded	1m	N/A

I/O CABLES (RF Radiated Test)

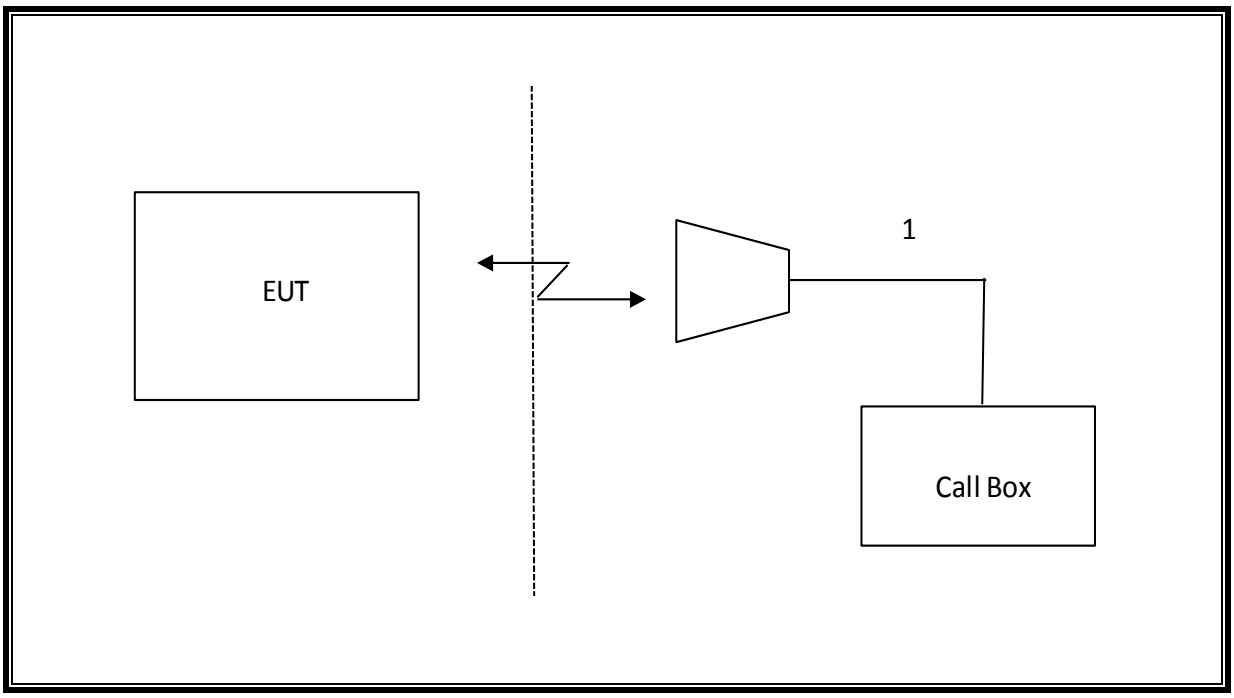
I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	RF In/Out	1	Antenna	Un-shielded	5m	NA

TEST SETUP

CONDUCTED SETUP



RADIATED SETUP



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**T No.**	**Cal Due**
8960 series 10 wireless communications	Agilent	E5515C	T211	11/25/15
Spectrum Analyzer, PSA, 3Hz-44GHz	Agilent	E4440A	T198	02/06/16
Wideband Radio Communication Tester	R & S	CMW500	T978	07/28/15
Temperature / Humidity Chamber	CSZ	ZPHS-8-3.5-SCT/WC	T754	09/18/15
Directional Coupler	Krytar	Directional Coupler	T923	03/06/16
Wideband Radio Communication Tester	R & S	CMW500	T953	04/06/16
Spectrum Analyzer, PXA, 44GHz	Agilent	N9030A	T339	01/21/16
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T119	01/15/16
Amplifier, 1 to 18GHz	Miteq	AFS42-00101800-25-S-42	T742	01/31/16
Amplifier 10KHz-1GHz	Sonoma	310N	T286	05/07/16
Amplifier 10KHz-1GHz	Sonoma	310N	T173	06/09/16
Antenna, Biconolog, 30MHz-2 GHz	Sunol Sciences	JB1	T122	02/13/16
Highpass Filter, 3.0 GHz	Micro-Tronics	HPM17543	T427	01/31/16
Highpass Filter, 1.0 GHz	Micro-Tronics	HPM18129	T889	09/03/15
Antenna, Horn, 18 GHz	EMCO	3115	T59	01/15/16
Power Meter	Agilent	N1911A	T379	10/13/15
Power Sensor	Agilent	E9323A	T751	07/12/15
Spectrum Analyzer, PXA, 44GHz	Agilent	N9030A	T341	11/12/15

7. RF POWER OUTPUT VERIFICATION

7.1. GSM

Using CMU200 Communication Test Set

Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press **Connection control** to choose the different menus
Press **RESET** > choose all to reset all settings

Connection	Press **Signal Off** to turn off the signal and change settings Network Support > GSM+GPRS or GSM+EGPRS Main Service > Packet Data Service selection > Test Mode A – Auto Slot Config. off	
MS Signal	Press Slot Config bottom on the right twice to select and change the number of time slots and power setting	
	> Slot configuration	> Uplink/Gamma > 33 dBm for GPRS 850/900 > 27 dBm for EGPRS 850/900 > 30 dBm for GPRS1800/1900 > 26 dBm for EGPRS1800/1900
BS Signal	Enter the same channel number for TCH channel (test channel) and BCCH channel	
	Frequency Offset >	+ 0 Hz
	Mode >	BCCH and TCH
	BCCH Level >	-85 dBm (May need to adjust if link is not stable)
	BCCH Channel >	choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]
	Channel Type >	Off
	P0>	4 dB
	Slot Config >	Unchanged (if already set under MS Signal)
	TCH >	choose desired test channel
	Hopping >	Off
	Main Timeslot >	3 (Default)
Network	Coding Scheme >	CS 4 (GPRS) and MCS5-9 (EGPRS)
	Bit Stream >	2E9-1PSR Bit Pattern
AF/RF	Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input	
Connection	Press **Signal On** to turn on the signal and change settings	

Using Agilent 8960A Communication Test Set

System Config:	GSM/GPRS Mobile Test	
	E1968A	A.06.31
Call Parms:	BCH ➔	Cell Band: GSM850/PCS
	TCH ➔	Traffic Band: GSM850/PCS
		Traffic Channel: 128/192/251 or 512/661/810
		MS Tx Level: 0
	PDTCH ➔	Traffic Band: GSM850/PCS
		Traffic Channel: 128/192/251 512/661/810
		MS Tx Level: 0
		Coding Scheme: CS-4 (GPRS)
		Coding Scheme: MCS-5 to 9 (EGPRS)
		MultiSlot Config: 1up, 1 down (Assuming that the highest conducted power)
Control:	Active Cell ➔	GSM/GPRS

7.1.1. GPRS AND EGPRS MODEL: 1633 (LAT)

Mode	Ch.	f (MHz)	1 time slot		2 time slots	
			Peak (dBm)	Average (dBm)	Peak (dBm)	Average (dBm)
GPRS	128	824.2	33.7	33.4	32.6	32.3
	190	836.6	**33.7**	**33.5**	32.6	32.4
	251	848.8	33.7	33.4	32.6	32.3
EGPRS	128	824.2	31.9	28.7	31.9	28.6
	190	836.6	31.9	28.7	31.9	28.7
	251	848.8	**32.1**	**29.0**	32.0	28.9
GPRS	512	1850.2	**30.7**	**30.5**	29.6	29.4
	661	1880.0	30.6	30.4	29.5	29.3
	810	1909.8	30.7	30.4	29.7	29.5
EGPRS	512	1850.2	31.1	27.8	30.8	27.7
	661	1880.0	**31.2**	**27.9**	31.0	27.9
	810	1909.8	31.1	27.8	30.8	27.7

7.1.2. GPRS AND EGPRS MODEL: 1633 (UAT)

Mode	Ch.	f (MHz)	1 time slot		2 time slots	
			Peak (dBm)	Average (dBm)	Peak (dBm)	Average (dBm)
GPRS	128	824.2	**31.7**	**31.5**	30.8	30.5
	190	836.6	31.6	31.4	30.8	30.5
	251	848.8	31.4	31.2	30.5	30.3
EGPRS	128	824.2	30.1	26.9	29.9	26.8
	190	836.6	30.2	26.9	30.0	26.8
	251	848.8	**30.5**	**27.0**	30.3	26.9
GPRS	512	1850.2	27.6	27.4	25.2	25.0
	661	1880.0	27.6	27.4	25.3	25.0
	810	1909.8	**27.7**	**27.5**	25.4	25.1
EGPRS	512	1850.2	28.1	24.9	28.0	24.8
	661	1880.0	**28.3**	**25.0**	28.3	24.9
	810	1909.8	28.1	24.8	28.0	24.6

7.1.3. GPRS AND EGPRS MODEL: 1688 (LAT)

Mode	Ch.	f (MHz)	1 time slot		2 time slots	
			Peak (dBm)	Average (dBm)	Peak (dBm)	Average (dBm)
GPRS	128	824.2	33.5	33.3	32.5	32.2
	190	836.6	**33.6**	**33.4**	32.5	32.3
	251	848.8	33.5	33.3	32.5	32.2
EGPRS	128	824.2	31.8	28.7	29.8	26.7
	190	836.6	31.8	28.7	29.8	26.7
	251	848.8	**32.0**	**28.9**	29.9	26.8
GPRS	512	1850.2	**30.6**	**30.4**	29.5	29.3
	661	1880.0	30.5	30.3	29.4	29.2
	810	1909.8	**30.6**	30.3	29.5	29.2
EGPRS	512	1850.2	31.0	27.7	30.9	27.8
	661	1880.0	**31.1**	**27.8**	31.1	27.8
	810	1909.8	31.0	27.7	31.0	27.8

7.1.4. GPRS AND EGPRS MODEL: 1688 (UAT)

Mode	Ch.	f (MHz)	1 time slot		2 time slots	
			Peak (dBm)	Average (dBm)	Peak (dBm)	Average (dBm)
GPRS	128	824.2	**31.6**	**31.4**	30.7	30.4
	190	836.6	31.5	31.3	30.7	30.4
	251	848.8	31.3	31.1	30.4	30.2
EGPRS	128	824.2	30.0	26.8	29.9	26.7
	190	836.6	30.1	26.8	29.9	26.7
	251	848.8	**30.4**	**26.9**	30.2	26.8
GPRS	512	1850.2	27.5	27.3	25.1	24.9
	661	1880.0	27.5	27.3	25.2	25.0
	810	1909.8	**27.6**	**27.4**	25.3	25.0
EGPRS	512	1850.2	28.0	24.8	27.9	24.7
	661	1880.0	**28.2**	**24.9**	28.2	24.8
	810	1909.8	28.0	24.7	27.9	24.6

7.2. CDMA2000

Maximum output power is verified on the Low, Middle and High channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E for 1xRTT, section 3.1.2.3.4 of 3GPP2 C.S0033-0/TIA-866 for Rel. 0 and section 4.3.4 of 3GPP2 C.S0033-A for Rev. A

CDMA2000 1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobile Test	B.15.18, L

- Protocol Rev > 6 (IS-2000-0)
- System ID: 18; NID: 65535, Reg. Ch. #.: 610 for Cell, 600 for PCS & 450 for AWS
- Radio Config (RC) > RC1 or RC3
- Service Option (SO) Setup > SO55 or SO32
- Traffic Data Rate > Full
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

RESULT

7.2.1. 1xRTT MODEL: A1633 (LAT)

BC10, SECONDARY 800

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 450 - 817.25MHz		CH 560 - 820MHz		CH 670 - 822.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	**30.9**	**25.0**	30.8	24.9	30.9	24.8
	55 (Loopback)	30.8	24.9	30.8	24.9	30.7	24.8
RC2	9 (Loopback)	30.8	24.9	30.7	24.9	30.8	24.8
	55 (Loopback)	30.6	24.9	30.8	24.8	30.7	24.7
RC3	2 (Loopback)	30.0	24.9	30.3	24.8	30.2	24.7
	55 (Loopback)	30.1	24.9	30.2	24.8	30.2	24.7
	32 (+ F-SCH)	30.6	24.9	30.1	24.8	30.2	24.8
	32 (+ SCH)	30.1	24.9	30.5	24.8	30.6	24.8
RC4	2 (Loopback)	30.4	24.9	30.4	24.9	30.0	24.7
	55 (Loopback)	30.2	24.9	30.2	24.8	29.9	24.7
	32 (+ F-SCH)	30.5	24.9	30.1	24.8	30.2	24.8
	32 (+ SCH)	30.0	24.9	30.0	24.9	30.6	24.9
RC5	9 (Loopback)	30.1	24.9	30.4	24.9	30.1	24.8
	55 (Loopback)	30.0	24.9	30.0	24.9	30.2	24.8
RC11	2 (Loopback)	30.6	24.9	30.1	24.9	30.1	24.8
	75 (Loopback)	30.3	24.9	30.0	24.9	30.2	24.8
	32 (+ F-SCH)	30.2	24.9	30.1	24.9	30.3	24.9
	32 (+ SCH)	30.1	24.9	30.6	24.9	30.6	24.9

BC0, CELL BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 1013 - 824.7MHz		CH 384 - 836.52MHz		CH 777 - 848.31MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	**30.6**	**25.0**	30.5	25.0	29.3	24.5
	55 (Loopback)	30.5	24.9	30.1	24.9	29.3	24.2
RC2	9 (Loopback)	30.4	24.9	30.3	24.9	29.2	24.2
	55 (Loopback)	30.4	24.9	30.4	24.9	29.3	24.3
RC3	2 (Loopback)	30.3	24.9	30.2	24.9	29.2	24.2
	55 (Loopback)	30.3	24.9	30.2	24.9	29.2	24.2
	32 (+ F-SCH)	30.2	24.9	30.3	24.9	29.2	24.2
	32 (+ SCH)	30.5	24.9	30.5	24.9	29.4	24.3
RC4	2 (Loopback)	30.3	24.9	30.2	24.9	29.3	24.3
	55 (Loopback)	30.2	24.9	30.2	24.9	29.0	24.2
	32 (+ F-SCH)	30.3	24.9	30.2	24.9	29.3	24.3
	32 (+ SCH)	30.5	24.9	30.5	24.9	29.4	24.3
RC5	9 (Loopback)	30.3	24.9	30.2	24.9	29.2	24.3
	55 (Loopback)	30.0	24.9	30.0	24.9	29.1	24.2
RC11	2 (Loopback)	30.3	24.9	30.4	24.9	29.2	24.3
	75 (Loopback)	30.3	24.9	30.3	24.9	29.2	24.2
	32 (+ F-SCH)	30.2	24.9	30.4	24.9	29.3	24.3
	32 (+ SCH)	30.4	24.9	30.5	24.9	29.4	24.4

BC1, PCS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 25 - 1851.25MHz		CH 600 - 1880MHz		CH 1175 - 1908.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	29.3	24.9	29.0	24.9	**30.4**	**25.0**
	55 (Loopback)	29.1	24.9	29.2	24.9	30.2	24.9
RC2	9 (Loopback)	29.2	24.9	29.1	24.9	29.9	24.9
	55 (Loopback)	29.2	24.9	29.0	24.9	30.1	24.9
RC3	2 (Loopback)	29.2	24.9	28.9	24.9	29.9	24.9
	55 (Loopback)	29.2	24.9	28.9	24.9	29.7	24.9
	32 (+ F-SCH)	29.5	24.9	29.1	24.9	30.2	24.9
	32 (+ SCH)	29.6	24.9	29.3	24.9	30.4	24.9
RC4	2 (Loopback)	29.3	24.9	29.2	24.9	30.1	24.9
	55 (Loopback)	29.3	24.9	29.2	24.9	29.8	24.9
	32 (+ F-SCH)	29.3	24.9	29.5	24.9	29.9	25.0
	32 (+ SCH)	29.5	24.9	29.7	24.9	29.9	24.9
RC5	9 (Loopback)	29.5	24.9	29.9	24.9	30.1	24.9
	55 (Loopback)	29.5	24.9	29.6	24.9	29.8	24.9
RC11	2 (Loopback)	29.1	24.9	29.6	24.9	29.8	24.9
	75 (Loopback)	29.2	24.9	29.6	24.9	29.8	24.9
	32 (+ F-SCH)	29.3	24.9	29.6	24.9	29.6	24.9
	32 (+ SCH)	29.5	24.9	29.9	24.9	29.6	24.9

BC15, AWS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 25 - 1711.25MHz		CH 450 - 1732.5MHz		CH 875 - 1753.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	29.5	24.7	**30.5**	**25.0**	29.7	24.9
	55 (Loopback)	29.3	24.8	30.4	24.8	29.5	24.9
RC2	9 (Loopback)	29.3	24.8	30.3	24.8	29.5	24.8
	55 (Loopback)	29.2	24.8	30.3	24.8	29.5	24.8
RC3	2 (Loopback)	29.3	24.9	29.8	24.8	29.3	24.9
	55 (Loopback)	29.2	24.8	29.7	24.8	29.3	24.8
	32 (+ F-SCH)	29.4	24.7	29.8	24.8	29.5	24.8
	32 (+ SCH)	29.6	24.7	30.5	24.7	29.7	24.9
RC4	2 (Loopback)	29.4	24.7	29.9	24.8	29.5	24.9
	55 (Loopback)	29.2	24.7	29.7	24.7	29.3	24.9
	32 (+ F-SCH)	29.3	24.7	29.6	24.9	29.5	24.9
	32 (+ SCH)	29.5	24.7	30.4	24.9	29.9	24.9
RC5	9 (Loopback)	29.4	24.7	29.8	24.9	29.6	24.9
	55 (Loopback)	29.4	24.7	29.7	24.9	29.5	24.9
*RC11	2 (Loopback)	29.3	24.8	29.9	24.9	29.4	24.9
	75 (Loopback)	29.2	24.8	29.8	24.9	29.5	24.9
	32 (+ F-SCH)	29.4	24.8	29.7	24.9	29.6	24.9
	32 (+ SCH)	29.5	24.8	30.5	24.9	29.8	24.9

7.2.2. 1xRTT MODEL: A1633 (UAT)

BC10, SECONDARY 800

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 450 - 817.25MHz		CH 560 - 820MHz		CH 670 - 822.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	29.2	23.4	29.1	23.2	29.1	23.3
	55 (Loopback)	29.2	23.3	29.0	23.3	29.0	23.2
RC2	9 (Loopback)	29.2	23.4	29.2	23.3	29.0	23.2
	55 (Loopback)	**29.3**	**23.5**	29.3	23.3	29.0	23.1
RC3	2 (Loopback)	28.3	23.4	28.2	23.3	28.4	23.2
	55 (Loopback)	28.4	23.4	28.1	23.3	28.3	23.2
	32 (+ F-SCH)	28.6	23.4	28.7	23.4	28.5	23.2
	32 (+ SCH)	28.5	23.4	28.3	23.3	29.2	23.3
RC4	2 (Loopback)	28.5	23.4	28.3	23.3	28.6	23.3
	55 (Loopback)	28.4	23.4	28.4	23.2	28.5	23.3
	32 (+ F-SCH)	28.3	23.4	28.3	23.2	28.5	23.3
	32 (+ SCH)	29.2	23.4	28.4	23.2	29.2	23.3
RC5	9 (Loopback)	28.5	23.4	28.2	23.2	28.5	23.2
	55 (Loopback)	28.1	23.4	28.1	23.2	28.2	23.2
RC11	2 (Loopback)	28.5	23.4	28.3	23.2	28.4	23.2
	75 (Loopback)	28.6	23.4	28.2	23.2	28.5	23.2
	32 (+ F-SCH)	28.6	23.4	28.4	23.3	28.5	23.2
	32 (+ SCH)	28.5	23.4	28.5	23.3	28.5	23.3

BC0, CELL BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 1013 - 824.7MHz		CH 384 - 836.52MHz		CH 777 - 848.31MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	29.0	23.3	28.6	23.4	28.1	23.4
	55 (Loopback)	28.8	23.2	28.8	23.4	28.1	23.4
RC2	9 (Loopback)	28.8	23.3	28.9	23.4	28.1	23.4
	55 (Loopback)	28.9	23.3	**29.0**	**23.5**	28.1	23.3
RC3	2 (Loopback)	28.2	23.4	28.1	23.4	27.9	23.4
	55 (Loopback)	28.2	23.3	28.2	23.4	28.0	23.4
	32 (+ F-SCH)	28.2	23.3	28.2	23.4	27.9	23.4
	32 (+ SCH)	28.2	23.3	28.0	23.5	28.2	23.4
RC4	2 (Loopback)	28.3	23.3	28.2	23.4	28.0	23.4
	55 (Loopback)	28.1	23.4	28.2	23.4	27.9	23.4
	32 (+ F-SCH)	28.2	23.4	28.2	23.4	28.0	23.4
	32 (+ SCH)	28.2	23.3	28.0	23.4	27.9	23.4
RC5	9 (Loopback)	28.2	23.3	28.2	23.4	27.9	23.4
	55 (Loopback)	28.3	23.4	28.3	23.4	27.9	23.4
RC11	2 (Loopback)	28.3	23.4	28.3	23.5	27.9	23.4
	75 (Loopback)	28.2	23.4	28.2	23.5	27.9	23.4
	32 (+ F-SCH)	28.2	23.4	28.2	23.4	27.9	23.4
	32 (+ SCH)	28.3	23.4	28.3	23.5	27.9	23.4

BC1, PCS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 25 - 1851.25MHz		CH 600 - 1880MHz		CH 1175 - 1908.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	26.2	21.3	26.2	21.3	25.4	21.4
	55 (Loopback)	26.0	21.3	26.1	21.3	25.2	21.4
RC2	9 (Loopback)	25.9	21.3	26.1	21.3	26.3	21.4
	55 (Loopback)	25.9	21.3	26.1	21.3	**26.3**	**21.5**
RC3	2 (Loopback)	25.8	21.3	25.8	21.4	26.2	21.4
	55 (Loopback)	25.8	21.4	25.9	21.4	25.4	21.5
	32 (+ F-SCH)	25.9	21.4	25.9	21.4	25.1	21.4
	32 (+ SCH)	25.8	21.4	25.9	21.4	25.1	21.4
RC4	2 (Loopback)	25.9	21.4	25.9	21.4	25.1	21.5
	55 (Loopback)	25.8	21.4	25.8	21.4	25.1	21.4
	32 (+ F-SCH)	25.9	21.4	25.8	21.4	25.7	21.5
	32 (+ SCH)	26.0	21.4	25.8	21.4	25.4	21.4
RC5	9 (Loopback)	25.9	21.4	25.7	21.4	25.1	21.4
	55 (Loopback)	25.9	21.3	25.8	21.4	25.1	21.4
RC11	2 (Loopback)	25.8	21.5	25.9	21.4	25.3	21.5
	75 (Loopback)	25.9	21.5	25.8	21.4	25.9	21.4
	32 (+ F-SCH)	25.9	21.5	26.0	21.4	25.8	21.5
	32 (+ SCH)	25.9	21.5	25.9	21.4	26.0	21.5

BC15, AWS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 25 - 1711.25MHz		CH 450 - 1732.5MHz		CH 875 - 1753.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	25.2	19.9	24.7	19.6	24.9	20.0
	55 (Loopback)	25.0	19.9	24.4	19.6	25.0	20.0
RC2	9 (Loopback)	25.1	19.9	25.2	19.6	24.9	19.9
	55 (Loopback)	25.0	19.9	**25.2**	**20.0**	24.9	19.9
RC3	2 (Loopback)	24.4	19.9	24.4	19.7	24.5	20.0
	55 (Loopback)	24.4	19.9	24.3	19.7	24.5	20.0
	32 (+ F-SCH)	24.4	20.0	24.4	19.7	24.5	20.0
	32 (+ SCH)	24.4	20.0	24.4	19.7	24.4	20.0
RC4	2 (Loopback)	24.5	19.9	24.8	19.7	23.3	20.0
	55 (Loopback)	24.5	20.0	24.4	19.7	23.3	20.0
	32 (+ F-SCH)	24.3	19.9	25.1	19.7	23.3	20.0
	32 (+ SCH)	24.5	20.0	24.4	19.7	23.3	20.0
RC5	9 (Loopback)	24.4	19.9	24.7	19.7	24.4	20.0
	55 (Loopback)	24.5	19.9	24.5	19.7	24.5	20.0
RC11	2 (Loopback)	24.5	20.0	24.5	19.7	24.6	19.9
	75 (Loopback)	24.4	20.0	24.4	19.7	24.5	20.0
	32 (+ F-SCH)	24.4	20.0	24.5	19.7	24.4	19.9
	32 (+ SCH)	24.5	20.0	24.5	19.7	24.4	19.9

7.2.3. 1xRTT MODEL: A1688 (LAT)

BC10, SECONDARY 800

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 450 - 817.25MHz		CH 560 - 820MHz		CH 670 - 822.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	**30.8**	**24.9**	30.7	24.8	30.8	24.7
	55 (Loopback)	30.7	24.8	30.7	24.8	30.6	24.7
RC2	9 (Loopback)	30.7	24.8	30.6	24.8	30.7	24.7
	55 (Loopback)	30.5	24.8	30.7	24.8	30.6	24.6
RC3	2 (Loopback)	29.9	24.8	30.2	24.8	30.1	24.6
	55 (Loopback)	30.0	24.8	30.1	24.8	30.1	24.6
	32 (+ F-SCH)	30.5	24.8	30.0	24.8	30.1	24.7
	32 (+ SCH)	30.0	24.8	30.4	24.8	30.4	24.7
RC4	2 (Loopback)	30.3	24.8	30.2	24.8	29.8	24.6
	55 (Loopback)	30.1	24.8	30.1	24.8	29.8	24.6
	32 (+ F-SCH)	30.4	24.8	30.0	24.8	30.1	24.7
	32 (+ SCH)	29.9	24.8	29.9	24.8	30.4	24.8
RC5	9 (Loopback)	30.0	24.8	30.2	24.9	30.0	24.7
	55 (Loopback)	29.9	24.8	29.9	24.8	30.1	24.7
RC11	2 (Loopback)	30.5	24.8	30.0	24.9	30.0	24.7
	75 (Loopback)	30.2	24.8	29.9	24.9	30.0	24.7
	32 (+ F-SCH)	30.1	24.8	30.0	24.9	30.2	24.8
	32 (+ SCH)	30.0	24.8	30.5	24.9	30.4	24.8

BC0, CELL BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 1013 - 824.7MHz		CH 384 - 836.52MHz		CH 777 - 848.31MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	30.5	24.9	**30.5**	**24.9**	29.3	24.5
	55 (Loopback)	30.4	24.8	30.1	24.8	29.2	24.2
RC2	9 (Loopback)	30.3	24.8	30.3	24.9	29.1	24.2
	55 (Loopback)	30.3	24.8	30.3	24.8	29.3	24.3
RC3	2 (Loopback)	30.3	24.8	30.1	24.9	29.2	24.2
	55 (Loopback)	30.2	24.8	30.1	24.9	29.2	24.2
	32 (+ F-SCH)	30.1	24.8	30.3	24.8	29.1	24.2
	32 (+ SCH)	30.5	24.8	30.4	24.8	29.4	24.2
RC4	2 (Loopback)	30.2	24.8	30.1	24.8	29.2	24.3
	55 (Loopback)	30.1	24.8	30.2	24.9	29.0	24.2
	32 (+ F-SCH)	30.2	24.8	30.1	24.8	29.3	24.3
	32 (+ SCH)	30.4	24.8	30.4	24.8	29.4	24.3
RC5	9 (Loopback)	30.2	24.8	30.1	24.8	29.1	24.3
	55 (Loopback)	29.9	24.9	30.0	24.8	29.1	24.2
RC11	2 (Loopback)	30.2	24.9	30.3	24.9	29.2	24.3
	75 (Loopback)	30.2	24.9	30.2	24.8	29.1	24.2
	32 (+ F-SCH)	30.1	24.8	30.3	24.9	29.2	24.3
	32 (+ SCH)	30.3	24.8	30.4	24.8	29.4	24.3

BC1, PCS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 25 - 1851.25MHz		CH 600 - 1880MHz		CH 1175 - 1908.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	29.3	24.8	28.9	24.9	**30.3**	**24.9**
	55 (Loopback)	29.1	24.8	29.1	24.9	30.1	24.8
RC2	9 (Loopback)	29.2	24.8	29.0	24.8	29.8	24.8
	55 (Loopback)	29.1	24.8	28.9	24.8	30.0	24.8
RC3	2 (Loopback)	29.1	24.8	28.9	24.8	29.8	24.9
	55 (Loopback)	29.1	24.8	28.9	24.8	29.6	24.8
	32 (+ F-SCH)	29.5	24.8	29.1	24.8	30.1	24.9
	32 (+ SCH)	29.6	24.8	29.3	24.8	30.3	24.8
RC4	2 (Loopback)	29.3	24.8	29.1	24.8	30.0	24.9
	55 (Loopback)	29.3	24.8	29.2	24.8	29.7	24.9
	32 (+ F-SCH)	29.3	24.8	29.4	24.8	29.8	24.9
	32 (+ SCH)	29.5	24.8	29.6	24.9	29.8	24.9
RC5	9 (Loopback)	29.4	24.8	29.8	24.8	30.1	24.9
	55 (Loopback)	29.4	24.9	29.5	24.9	29.7	24.9
RC11	2 (Loopback)	29.1	24.8	29.5	24.9	29.7	24.9
	75 (Loopback)	29.1	24.8	29.5	24.8	29.8	24.8
	32 (+ F-SCH)	29.3	24.8	29.6	24.8	29.5	24.9
	32 (+ SCH)	29.5	24.8	29.8	24.8	29.5	24.8

BC15, AWS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 25 - 1711.25MHz		CH 450 - 1732.5MHz		CH 875 - 1753.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	**30.3**	**24.9**	29.8	24.9	29.6	24.8
	55 (Loopback)	29.2	24.7	30.3	24.7	29.4	24.8
RC2	9 (Loopback)	29.2	24.7	30.2	24.7	29.4	24.7
	55 (Loopback)	29.2	24.7	30.2	24.7	29.4	24.7
RC3	2 (Loopback)	29.2	24.8	29.7	24.7	29.2	24.8
	55 (Loopback)	29.1	24.7	29.6	24.7	29.2	24.7
	32 (+ F-SCH)	29.4	24.6	29.7	24.7	29.4	24.7
	32 (+ SCH)	29.5	24.6	30.2	24.6	29.6	24.8
RC4	2 (Loopback)	29.4	24.6	29.8	24.7	29.4	24.8
	55 (Loopback)	29.1	24.6	29.6	24.6	29.3	24.8
	32 (+ F-SCH)	29.3	24.6	29.5	24.8	29.4	24.8
	32 (+ SCH)	29.4	24.6	30.2	24.8	29.8	24.8
RC5	9 (Loopback)	29.3	24.6	29.7	24.8	29.5	24.8
	55 (Loopback)	29.3	24.6	29.6	24.8	29.4	24.8
*RC11	2 (Loopback)	29.3	24.7	29.8	24.8	29.3	24.8
	75 (Loopback)	29.2	24.7	29.7	24.8	29.4	24.8
	32 (+ F-SCH)	29.3	24.7	29.6	24.8	29.5	24.8
	32 (+ SCH)	29.4	24.7	30.2	24.8	29.7	24.8

7.2.4. 1xRTT MODEL: A1688 (UAT)

BC10, SECONDARY 800

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 450 - 817.25MHz		CH 560 - 820MHz		CH 670 - 822.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	29.1	23.3	29.0	23.2	29.0	23.2
	55 (Loopback)	29.2	23.3	28.9	23.2	28.9	23.1
RC2	9 (Loopback)	29.1	23.3	29.2	23.2	28.9	23.1
	55 (Loopback)	29.2	23.3	**29.2**	**23.4**	28.9	23.2
RC3	2 (Loopback)	28.2	23.3	28.1	23.2	28.3	23.1
	55 (Loopback)	28.3	23.3	28.0	23.2	28.3	23.1
	32 (+ F-SCH)	28.5	23.3	28.7	23.4	28.4	23.1
	32 (+ SCH)	28.4	23.3	28.2	23.2	29.1	23.2
RC4	2 (Loopback)	28.4	23.3	28.3	23.2	28.5	23.2
	55 (Loopback)	28.3	23.3	28.3	23.1	28.4	23.2
	32 (+ F-SCH)	28.2	23.3	28.2	23.1	28.4	23.2
	32 (+ SCH)	29.1	23.3	28.3	23.2	29.1	23.2
RC5	9 (Loopback)	28.4	23.3	28.1	23.1	28.4	23.1
	55 (Loopback)	28.1	23.4	28.1	23.1	28.1	23.1
RC11	2 (Loopback)	28.4	23.3	28.3	23.1	28.3	23.1
	75 (Loopback)	28.5	23.4	28.1	23.1	28.4	23.1
	32 (+ F-SCH)	28.6	23.3	28.3	23.2	28.4	23.1
	32 (+ SCH)	28.4	23.3	28.5	23.2	28.4	23.2

BC0, CELL BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 1013 - 824.7MHz		CH 384 - 836.52MHz		CH 777 - 848.31MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	28.9	23.2	28.5	23.3	28.0	23.3
	55 (Loopback)	28.7	23.2	28.7	23.3	28.1	23.3
RC2	9 (Loopback)	28.7	23.2	28.8	23.3	28.0	23.3
	55 (Loopback)	**29.0**	**23.4**	28.9	23.4	28.0	23.3
RC3	2 (Loopback)	28.1	23.3	28.0	23.3	27.8	23.3
	55 (Loopback)	28.1	23.2	28.1	23.3	27.9	23.3
	32 (+ F-SCH)	28.1	23.3	28.1	23.3	27.9	23.3
	32 (+ SCH)	28.1	23.3	27.9	23.4	28.1	23.4
RC4	2 (Loopback)	28.2	23.2	28.1	23.3	27.9	23.3
	55 (Loopback)	28.0	23.3	28.1	23.4	27.8	23.3
	32 (+ F-SCH)	28.1	23.3	28.1	23.3	27.9	23.3
	32 (+ SCH)	28.1	23.2	27.9	23.4	27.8	23.3
RC5	9 (Loopback)	28.1	23.2	28.1	23.4	27.8	23.3
	55 (Loopback)	28.2	23.3	28.2	23.3	27.8	23.3
RC11	2 (Loopback)	28.2	23.3	28.2	23.4	27.8	23.3
	75 (Loopback)	28.1	23.3	28.1	23.4	27.8	23.3
	32 (+ F-SCH)	28.1	23.3	28.1	23.3	27.8	23.3
	32 (+ SCH)	28.2	23.3	28.2	23.4	27.9	23.3

BC1, PCS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 25 - 1851.25MHz		CH 600 - 1880MHz		CH 1175 - 1908.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	26.1	21.2	26.1	21.2	25.3	21.3
	55 (Loopback)	25.9	21.2	26.0	21.2	25.1	21.3
RC2	9 (Loopback)	25.9	21.2	26.0	21.2	26.2	21.3
	55 (Loopback)	26.0	21.2	**26.2**	**21.4**	26.1	21.4
RC3	2 (Loopback)	25.7	21.2	25.7	21.3	26.1	21.3
	55 (Loopback)	25.7	21.3	25.8	21.3	25.3	21.4
	32 (+ F-SCH)	25.8	21.3	25.8	21.3	25.0	21.3
	32 (+ SCH)	25.8	21.3	25.8	21.3	25.0	21.3
RC4	2 (Loopback)	25.8	21.3	25.8	21.3	25.0	21.4
	55 (Loopback)	25.7	21.3	25.7	21.3	25.0	21.3
	32 (+ F-SCH)	25.8	21.3	25.7	21.3	25.6	21.4
	32 (+ SCH)	25.9	21.3	25.7	21.3	25.3	21.3
RC5	9 (Loopback)	25.9	21.3	25.6	21.3	25.0	21.3
	55 (Loopback)	25.8	21.2	25.7	21.3	25.0	21.3
RC11	2 (Loopback)	25.7	21.4	25.8	21.3	25.2	21.4
	75 (Loopback)	25.8	21.4	25.7	21.3	25.8	21.3
	32 (+ F-SCH)	25.8	21.4	25.9	21.3	25.7	21.4
	32 (+ SCH)	25.8	21.4	25.8	21.3	25.9	21.4

BC15, AWS BAND

Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		CH 25 - 1711.25MHz		CH 450 - 1732.5MHz		CH 875 - 1753.75MHz	
		Peak	Average	Peak	Average	Peak	Average
RC1	2 (Loopback)	25.0	19.8	24.6	19.5	24.8	19.9
	55 (Loopback)	24.9	19.8	24.4	19.5	24.9	19.9
RC2	9 (Loopback)	25.0	19.8	25.0	19.5	24.8	19.8
	55 (Loopback)	24.9	19.8	**25.0**	**19.9**	24.8	19.8
RC3	2 (Loopback)	24.3	19.8	24.3	19.6	24.4	19.9
	55 (Loopback)	24.3	19.8	24.2	19.6	24.4	19.9
	32 (+ F-SCH)	24.3	19.9	24.3	19.6	24.4	19.9
	32 (+ SCH)	24.3	19.9	24.3	19.6	24.3	19.9
RC4	2 (Loopback)	24.4	19.8	24.7	19.6	23.2	19.9
	55 (Loopback)	24.4	19.9	24.4	19.6	23.2	19.9
	32 (+ F-SCH)	24.2	19.8	25.0	19.6	23.2	19.9
	32 (+ SCH)	24.4	19.9	24.3	19.6	23.2	19.9
RC5	9 (Loopback)	24.3	19.9	24.6	19.6	24.3	19.9
	55 (Loopback)	24.4	19.8	24.4	19.6	24.4	19.9
RC11	2 (Loopback)	24.4	19.9	24.4	19.6	24.5	19.9
	75 (Loopback)	24.3	19.9	24.3	19.6	24.4	19.9
	32 (+ F-SCH)	24.3	19.9	24.4	19.6	24.3	19.8
	32 (+ SCH)	24.4	19.9	24.4	19.6	24.3	19.9

CDMA2000 1xEV-DO - Release 0 (REV 0)

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

RESULTS

7.2.5. 1xEV-DO - REV 0, MODEL: A1633 (LAT)

CDMA2000 EVDO REV. 0 800MHz SECONDARY BAND (25)

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2 kbps (2 Slot QPSK)	153.6 kbps	450	817.25	30.8	**24.8**
		560	820.00	**30.9**	24.7
		670	822.75	30.9	24.7

CDMA2000 EVDO REV 0 850MHz BAND

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2 Kbps (2 slot QPSK)	153.6 Kbps	1013	824.70	30.9	24.9
		384	836.52	**31.1**	**25.0**
		777	848.31	29.5	24.6

CDMA2000 EVDO REV 0 1900MHz BAND

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2 Kbps (2 slot QPSK)	153.6 Kbps	25	1851.25	29.4	24.7
		600	1880.00	**29.7**	**24.8**
		1175	1908.75	29.3	24.7

CDMA2000 EVDO REV. 0 1700MHz BAND

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2 kbps (2 Slot QPSK)	153.6 kbps	25	1711.25	30.1	24.7
		450	1732.50	29.3	24.5
		875	1753.75	**30.2**	**24.8**

7.2.6. 1xEV-DO - REV 0, MODEL: A1633 (UAT)

CDMA2000 EVDO REV. 0 800MHz SECONDARY BAND

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2 kbps (2 Slot QPSK)	153.6 kbps	450	817.25	**29.1**	**23.4**
		560	820.00	29.0	23.2
		670	822.75	29.0	23.2

CDMA2000 EVDO REV 0 850MHz BAND

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2 Kbps (2 slot QPSK)	153.6 Kbps	1013	824.70	29.0	23.4
		384	836.52	**29.1**	**23.5**
		777	848.31	28.0	23.1

CDMA2000 EVDO REV 0 1900MHz BAND

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2 Kbps (2 slot QPSK)	153.6 Kbps	25	1851.25	26.0	21.4
		600	1880.00	26.1	21.4
		1175	1908.75	**26.9**	**21.5**

CDMA2000 EVDO REV. 0 1700MHz BAND

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2 kbps (2 Slot QPSK)	153.6 kbps	25	1711.25	25.7	19.7
		450	1732.50	**26.6**	**20.0**
		875	1753.75	25.9	19.8

7.2.7. 1xEV-DO - REV 0, MODEL: A1688 (LAT)

CDMA2000 EVDO REV. 0 800MHz SECONDARY BAND (25)

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2 kbps (2 Slot QPSK)	153.6 kbps	450	817.25	30.7	24.6
		560	820.00	**30.8**	**24.7**
		670	822.75	30.8	24.6

CDMA2000 EVDO REV 0 850MHz BAND

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2 Kbps (2 slot QPSK)	153.6 Kbps	1013	824.70	30.8	24.8
		384	836.52	**31.0**	**24.9**
		777	848.31	29.4	24.5

CDMA2000 EVDO REV 0 1900MHz BAND

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2 Kbps (2 slot QPSK)	153.6 Kbps	25	1851.25	29.3	24.5
		600	1880.00	**29.5**	**24.7**
		1175	1908.75	29.3	24.5

CDMA2000 EVDO REV. 0 1700MHz BAND

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2 kbps (2 Slot QPSK)	153.6 kbps	25	1711.25	29.9	24.5
		450	1732.50	29.2	24.4
		875	1753.75	**30.0**	**24.6**

7.2.8. 1xEV-DO - REV 0, MODEL: A1688 (UAT)

CDMA2000 EVDO REV. 0 800MHz SECONDARY BAND

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2 kbps (2 Slot QPSK)	153.6 kbps	450	817.25	29.0	23.3
		560	820.00	**29.1**	**23.4**
		670	822.75	29.0	23.2

CDMA2000 EVDO REV 0 850MHz BAND

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2 Kbps (2 slot QPSK)	153.6 Kbps	1013	824.70	**29.1**	**23.4**
		384	836.52	29.0	23.4
		777	848.31	28.2	23.0

CDMA2000 EVDO REV 0 1900MHz BAND

FTAP Rate	RTAP Rate	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2 Kbps (2 slot QPSK)	153.6 Kbps	25	1851.25	25.9	21.3
		600	1880.00	26.0	21.3
		1175	1908.75	**26.7**	**21.4**

CDMA2000 EVDO REV. 0 1700MHz BAND

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2 kbps (2 Slot QPSK)	153.6 kbps	25	1711.25	25.5	19.5
		450	1732.50	**26.4**	**19.9**
		875	1753.75	25.7	19.6

CDMA2000 1xEV-DO - Revision A (REV A)

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

EVDO Rev. A – RETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2 > PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000: 00000000: 00000000: 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Rev. A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2 > PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000: 00000000: 00000000: 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

RESULTS

7.2.9. 1xEV-DO - REV A, MODEL: 1633 (LAT)

CDMA2000 EVDO REV A 800MHz SECONDARY BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	450	817.25	30.9	24.8
		560	820.00	**30.9**	**25.0**
		670	822.75	30.9	24.9

CDMA2000 EVDO REV A 850MHz BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	1013	824.70	31.0	24.9
		384	836.52	**31.2**	**25.0**
		777	848.31	29.5	24.4

CDMA2000 EVDO REV A 1900MHz BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	25	1851.25	29.5	24.8
		600	1880.00	**29.7**	**25.0**
		1175	1908.75	29.6	24.9

CDMA2000 EVDO REV A 1700MHz BAND

FETAP - Traffic Format	RETAP - Data Payload Size	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2k QPSK/ ACK channel is transmitted at all the slots	4096	25	1711.25	**30.6**	**25.0**
		450	1732.50	29.6	24.7
		875	1753.75	30.5	24.9

7.2.10. 1xEV-DO - REV A, MODEL: 1633 (UAT)

CDMA2000 EVDO REV A 800MHz SECONDARY BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	450	817.25	**29.4**	**23.5**
		560	820.00	29.1	23.3
		670	822.75	29.1	23.2

CDMA2000 EVDO REV A 850MHz BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	1013	824.70	29.1	23.4
		384	836.52	**29.2**	**23.5**
		777	848.31	28.1	23.2

CDMA2000 EVDO REV A 1900MHz BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	25	1851.25	25.9	21.4
		600	1880.00	26.1	21.5
		1175	1908.75	**27.1**	**21.5**

CDMA2000 EVDO REV A 1700MHz BAND

FETAP - Traffic Format	RETAP - Data Payload Size	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2k QPSK/ ACK channel is transmitted at all the slots	4096	25	1711.25	**26.1**	**20.0**
		450	1732.50	26.0	19.8
		875	1753.75	25.8	19.8

7.2.11. 1xEV-DO - REV A, MODEL: 1688 (LAT)

CDMA2000 EVDO REV A 800MHz SECONDARY BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	450	817.25	30.8	24.6
		560	820.00	**30.9**	**24.9**
		670	822.75	30.8	24.7

CDMA2000 EVDO REV A 850MHz BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	1013	824.70	31.0	24.8
		384	836.52	**31.1**	**24.9**
		777	848.31	29.6	24.6

CDMA2000 EVDO REV A 1900MHz BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	25	1851.25	29.4	24.6
		600	1880.00	**29.6**	**24.9**
		1175	1908.75	29.5	24.7

CDMA2000 EVDO REV A 1700MHz BAND

FETAP - Traffic Format	RETAP - Data Payload Size	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2k QPSK/ ACK channel is transmitted at all the slots	4096	25	1711.25	**30.4**	**24.9**
		450	1732.50	30.1	24.6
		875	1753.75	30.3	24.7

7.2.12. 1xEV-DO - REV A, MODEL: 1688 (UAT)

CDMA2000 EVDO REV A 800MHz SECONDARY BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	450	817.25	**29.2**	**23.4**
		560	820.00	29.0	23.0
		670	822.75	29.1	23.1

CDMA2000 EVDO REV A 850MHz BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	1013	824.70	29.0	23.3
		384	836.52	**29.1**	**23.4**
		777	848.31	28.0	23.0

CDMA2000 EVDO REV A 1900MHz BAND

FETAP Traffic Format	RETAP Data Payload Size	Channel	Frequency (MHz)	Peak Conducted Power (dBm)	Average Conducted Power (dBm)
307.2k, QPSK / ACK channel is transmitted at all the slots	4096	25	1851.25	25.9	21.0
		600	1880.00	26.0	21.4
		1175	1908.75	**27.0**	**21.4**

CDMA2000 EVDO REV A 1700MHz BAND

FETAP - Traffic Format	RETAP - Data Payload Size	Channel	f (MHz)	Conducted Output Power (dBm)	
				Peak	Average
307.2k QPSK/ ACK channel is transmitted at all the slots	4096	25	1711.25	**26.0**	**19.9**
		450	1732.50	25.9	19.7
		875	1753.75	25.8	19.7

7.3. UMTS

TEST PROCEDURE

The transmitter output was connected to the input terminal of Directional Coupler via calibrated coaxial cable. The output coupling terminal of the Directional Coupler was directly connected to a spectrum analyzer while the output through terminal connected to the communication test set via calibrated coaxial cable.

The output power was measured with the spectrum analyzer at the low, middle and high channel in each band.

- Set the spectrum analyzer span wide enough or greater than the modulated signal BW.
- Set a spectrum analyzer at peak detection mode with VBW ≥ RBW.≥ 26dB BW, typically 5MHz.
- Set a marker to point the corresponding peak value.

UMTS REL99

The following summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	βc	Not Applicable
	βd	Not Applicable
	βec	Not Applicable
	βc/βd	8/15
	βhs	Not Applicable
	βed	Not Applicable

RESULTS

7.3.1. UMTS REL99 MODEL: A1633 (LAT)

REL 99

Part 22 / RSS 132 850MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 850MHz	4132	4357	826.4	29.1	**25.0**
	4183	4408	836.6	**29.4**	24.9
	4233	4458	846.6	29.3	24.9

Part 24 / RSS 133 1900MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 1900MHz	9262	9662	1852.4	28.9	**25.0**
	9400	9800	1880.0	28.9	24.9
	9538	9938	1907.6	**29.1**	24.9

Part 27 / RSS 139 1700MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 1700MHz	1312	1537	1712.4	**29.0**	**25.0**
	1413	1638	1732.6	28.9	24.9
	1513	1738	1752.6	28.9	24.9

7.3.2. UMTS REL99 MODEL: A1633 (UAT)

REL99

Part 22 / RSS 132 850MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 850MHz	4132	4357	826.4	27.8	23.4
	4183	4408	836.6	**28.0**	**23.5**
	4233	4458	846.6	27.6	23.5

Part 24 / RSS 133 1900MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 1900MHz	9262	9662	1852.4	26.2	21.5
	9400	9800	1880.0	**26.5**	**21.5**
	9538	9938	1907.6	26.3	21.5

Part 27 / RSS 139 1700MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 1700MHz	1312	1537	1712.4	25.4	20.0
	1413	1638	1732.6	**25.6**	**20.0**
	1513	1738	1752.6	25.5	20.0

7.3.3. UMTS REL99 MODEL: A1688 (LAT)

REL 99

Part 22 / 850MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 850MHz	4132	4357	826.4	29.0	24.8
	4183	4408	836.6	**29.3**	**24.9**
	4233	4458	846.6	29.2	24.8

Part 24 / 1900MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 1900MHz	9262	9662	1852.4	**28.9**	**24.9**
	9400	9800	1880.0	28.8	24.8
	9538	9938	1907.6	28.8	24.8

Part 27 / 1700MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 1700MHz	1312	1537	1712.4	28.8	24.8
	1413	1638	1732.6	**28.9**	**24.9**
	1513	1738	1752.6	28.8	24.8

7.3.4. UMTS REL99 MODEL: A1688 (UAT)

REL99

Part 22 / 850MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 850MHz	4132	4357	826.4	27.7	23.3
	4183	4408	836.6	**27.9**	**23.4**
	4233	4458	846.6	27.5	23.4

Part 24 / 1900MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 1900MHz	9262	9662	1852.4	26.0	21.4
	9400	9800	1880.0	**26.3**	**21.4**
	9538	9938	1907.6	26.2	21.4

Part 27 / 1700MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS Rel. 99 1700MHz	1312	1537	1712.4	25.1	19.5
	1413	1638	1732.6	**25.4**	**19.8**
	1513	1738	1752.6	25.3	19.6

HSDPA REL 5

The following 4 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121.

Summary of settings are illustrated below:

	Mode	Rel5 HSDPA			
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

RESULT

7.3.5. HSDPA REL 5, MODEL: A1633 (LAT)

HSDPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 850MHz	1	4132	4357	826.4	28.5	**24.0**
		4183	4408	836.6	**28.6**	23.9
		4233	4458	846.6	28.5	23.9
	2	4132	4357	826.4	28.5	23.5
		4183	4408	836.6	28.3	23.6
		4233	4458	846.6	28.4	23.6
	3	4132	4357	826.4	28.5	23.5
		4183	4408	836.6	28.3	23.6
		4233	4458	846.6	28.4	23.4
	4	4132	4357	826.4	28.2	23.5
		4183	4408	836.6	28.5	23.6
		4233	4458	846.6	28.4	23.5

Part 24 / 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	28.2	23.9
		9400	9800	1880.0	28.2	**24.0**
		9538	9938	1907.6	**28.8**	23.9
	2	9262	9662	1852.4	28.3	23.5
		9400	9800	1880.0	28.6	23.5
		9538	9938	1907.6	28.4	23.5
	3	9262	9662	1852.4	28.7	23.6
		9400	9800	1880.0	28.4	23.5
		9538	9938	1907.6	28.5	23.6
	4	9262	9662	1852.4	28.3	23.6
		9400	9800	1880.0	28.3	23.6
		9538	9938	1907.6	28.4	23.6

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	28.2	23.9
		1413	1638	1732.6	**29.0**	**24.0**
		1513	1738	1752.6	28.2	23.9
	2	1312	1537	1712.4	28.4	23.7
		1413	1638	1732.6	28.3	23.7
		1513	1738	1752.6	28.5	23.6
	3	1312	1537	1712.4	28.6	23.4
		1413	1638	1732.6	28.5	23.6
		1513	1738	1752.6	28.8	23.6
	4	1312	1537	1712.4	28.6	23.7
		1413	1638	1732.6	28.6	23.6
		1513	1738	1752.6	28.4	23.5

7.3.6. HSDPA REL 5, MODEL: A1633 (UAT)

HSDPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 850MHz	1	4132	4357	826.4	27.5	22.5
		4183	4408	836.6	**27.7**	22.5
		4233	4458	846.6	27.3	**22.5**
	2	4132	4357	826.4	27.5	21.9
		4183	4408	836.6	27.3	22.2
		4233	4458	846.6	27.2	22.1
	3	4132	4357	826.4	27.2	22.1
		4183	4408	836.6	26.7	22.1
		4233	4458	846.6	27.2	22.1
	4	4132	4357	826.4	27.3	22.0
		4183	4408	836.6	27.4	22.2
		4233	4458	846.6	27.6	22.0

Part 24 / 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	24.6	20.4
		9400	9800	1880.0	**24.7**	**20.5**
		9538	9938	1907.6	24.7	20.5
	2	9262	9662	1852.4	24.4	20.0
		9400	9800	1880.0	24.6	20.1
		9538	9938	1907.6	24.7	20.0
	3	9262	9662	1852.4	24.2	20.3
		9400	9800	1880.0	24.5	20.1
		9538	9938	1907.6	24.6	20.0
	4	9262	9662	1852.4	24.6	19.9
		9400	9800	1880.0	24.6	20.1
		9538	9938	1907.6	24.7	20.0

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	23.4	19.0
		1413	1638	1732.6	**23.7**	**19.0**
		1513	1738	1752.6	23.5	19.0
	2	1312	1537	1712.4	23.4	18.5
		1413	1638	1732.6	23.5	18.6
		1513	1738	1752.6	23.3	18.6
	3	1312	1537	1712.4	23.4	18.6
		1413	1638	1732.6	23.2	18.7
		1513	1738	1752.6	23.2	18.6
	4	1312	1537	1712.4	23.5	18.6
		1413	1638	1732.6	23.5	18.7
		1513	1738	1752.6	23.7	18.6

7.3.7. HSDPA REL 5, MODEL: A1688 (LAT)

HSDPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 850MHz	1	4132	4357	826.4	28.3	23.9
		4183	4408	836.6	**28.4**	**23.9**
		4233	4458	846.6	28.3	23.8
	2	4132	4357	826.4	28.3	23.4
		4183	4408	836.6	28.1	23.5
		4233	4458	846.6	28.2	23.5
	3	4132	4357	826.4	28.2	23.4
		4183	4408	836.6	28.1	23.5
		4233	4458	846.6	28.2	23.3
	4	4132	4357	826.4	28.0	23.4
		4183	4408	836.6	28.3	23.5
		4233	4458	846.6	28.2	23.3

Part 24 / 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	28.1	23.8
		9400	9800	1880.0	28.1	23.9
		9538	9938	1907.6	**28.7**	**23.9**
	2	9262	9662	1852.4	28.2	23.4
		9400	9800	1880.0	28.5	23.4
		9538	9938	1907.6	28.3	23.4
	3	9262	9662	1852.4	28.5	23.5
		9400	9800	1880.0	28.3	23.4
		9538	9938	1907.6	28.4	23.4
	4	9262	9662	1852.4	28.1	23.5
		9400	9800	1880.0	28.2	23.4
		9538	9938	1907.6	28.3	23.5

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	28.1	23.8
		1413	1638	1732.6	**28.9**	**23.9**
		1513	1738	1752.6	28.0	23.8
	2	1312	1537	1712.4	28.3	23.6
		1413	1638	1732.6	28.2	23.6
		1513	1738	1752.6	28.4	23.4
	3	1312	1537	1712.4	28.4	23.3
		1413	1638	1732.6	28.4	23.5
		1513	1738	1752.6	28.7	23.4
	4	1312	1537	1712.4	28.5	23.6
		1413	1638	1732.6	28.5	23.5
		1513	1738	1752.6	28.2	23.4

7.3.8. HSDPA REL 5, MODEL: A1688 (UAT)

HSDPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 850MHz	1	4132	4357	826.4	27.4	22.4
		4183	4408	836.6	**27.6**	**22.4**
		4233	4458	846.6	27.2	22.3
	2	4132	4357	826.4	27.4	21.8
		4183	4408	836.6	27.2	22.1
		4233	4458	846.6	27.1	22.0
	3	4132	4357	826.4	27.1	21.9
		4183	4408	836.6	26.6	22.0
		4233	4458	846.6	27.0	22.0
	4	4132	4357	826.4	27.2	21.9
		4183	4408	836.6	27.3	22.1
		4233	4458	846.6	27.5	21.9

Part 24 / 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	24.5	20.3
		9400	9800	1880.0	**24.6**	**20.4**
		9538	9938	1907.6	24.6	20.4
	2	9262	9662	1852.4	24.2	19.8
		9400	9800	1880.0	24.5	20.0
		9538	9938	1907.6	24.6	19.9
	3	9262	9662	1852.4	24.1	20.2
		9400	9800	1880.0	24.4	19.9
		9538	9938	1907.6	24.4	19.9
	4	9262	9662	1852.4	24.5	19.8
		9400	9800	1880.0	24.4	20.0
		9538	9938	1907.6	24.5	19.9

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	23.2	18.8
		1413	1638	1732.6	**23.5**	**18.9**
		1513	1738	1752.6	23.3	18.9
	2	1312	1537	1712.4	23.2	18.4
		1413	1638	1732.6	23.3	18.5
		1513	1738	1752.6	23.1	18.4
	3	1312	1537	1712.4	23.2	18.4
		1413	1638	1732.6	23.0	18.6
		1513	1738	1752.6	23.0	18.4
	4	1312	1537	1712.4	23.3	18.4
		1413	1638	1732.6	23.3	18.6
		1513	1738	1752.6	23.5	18.4

HSPA REL 6 (HSDPA & HSUPA)

TEST PROCEDURE

The following summary of these settings are illustrated below:

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	15/1
	βhs	22/15	12/15	30/15	4/15	5/15
	βed	1309/225	94/75	47/15	56/75	47/15
	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

RESULTS

7.3.9. HSPA REL 6 (HSDPA & HSUPA), MODEL: A1633 (LAT)

HSUPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSUPA 850MHz	1	4132	4357	826.4	28.5	23.8
		4183	4408	836.6	28.5	23.8
		4233	4458	846.6	**28.5**	**23.9**
	2	4132	4357	826.4	27.4	22.9
		4183	4408	836.6	27.9	22.9
		4233	4458	846.6	27.9	22.9
	3	4132	4357	826.4	28.3	23.8
		4183	4408	836.6	28.4	23.8
		4233	4458	846.6	28.5	23.8
	4	4132	4357	826.4	27.4	22.9
		4183	4408	836.6	27.5	22.9
		4233	4458	846.6	27.3	22.9
	5	4132	4357	826.4	28.5	23.8
		4183	4408	836.6	28.4	23.8
		4233	4458	846.6	28.1	23.8

Part 24 / 1900MHz Band

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted Output Power (dBm)	
					Peak	Average
UMTS HSUPA 1900MHz (Band 2)	1	9262	9662	1852.4	28.7	23.9
		9400	9800	1880.0	28.5	23.9
		9538	9938	1907.6	**28.7**	**24.0**
	2	9262	9662	1852.4	28.1	22.9
		9400	9800	1880.0	28.0	23.0
		9538	9938	1907.6	28.1	22.9
	3	9262	9662	1852.4	28.5	23.8
		9400	9800	1880.0	28.6	23.8
		9538	9938	1907.6	28.6	23.8
	4	9262	9662	1852.4	27.4	22.9
		9400	9800	1880.0	27.7	22.9
		9538	9938	1907.6	27.5	22.9
	5	9262	9662	1852.4	28.6	23.9
		9400	9800	1880.0	28.6	23.9
		9538	9938	1907.6	28.5	23.9

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSUPA 1700MHz	1	1312	1537	1712.4	**28.9**	23.9
		1413	1638	1732.6	28.9	**24.0**
		1513	1738	1752.6	28.8	23.9
	2	1312	1537	1712.4	28.3	22.9
		1413	1638	1732.6	28.2	22.9
		1513	1738	1752.6	28.2	22.9
	3	1312	1537	1712.4	28.9	23.8
		1413	1638	1732.6	28.6	23.9
		1513	1738	1752.6	28.9	23.8
	4	1312	1537	1712.4	27.9	22.9
		1413	1638	1732.6	27.7	22.9
		1513	1738	1752.6	27.8	22.9
	5	1312	1537	1712.4	28.7	23.9
		1413	1638	1732.6	28.6	23.9
		1513	1738	1752.6	28.6	23.9

7.3.10. HSPA REL 6 (HSDPA & HSUPA), MODEL: A1633 (UAT)

HSUPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSUPA 850MHz	1	4132	4357	826.4	27.0	22.5
		4183	4408	836.6	27.1	22.5
		4233	4458	846.6	**27.3**	**22.5**
	2	4132	4357	826.4	26.5	21.4
		4183	4408	836.6	26.6	21.6
		4233	4458	846.6	26.6	21.5
	3	4132	4357	826.4	27.0	22.4
		4183	4408	836.6	27.0	22.5
		4233	4458	846.6	26.9	22.5
	4	4132	4357	826.4	26.1	21.5
		4183	4408	836.6	26.2	21.5
		4233	4458	846.6	26.0	21.4
	5	4132	4357	826.4	27.2	22.5
		4183	4408	836.6	27.3	22.4
		4233	4458	846.6	26.9	22.5

Part 24 / 1900MHz Band

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted Output Power (dBm)	
					Peak	Average
UMTS HSUPA 1900MHz (Band 2)	1	9262	9662	1852.4	25.0	20.5
		9400	9800	1880.0	24.5	20.5
		9538	9938	1907.6	**24.5**	**20.5**
	2	9262	9662	1852.4	23.8	19.4
		9400	9800	1880.0	23.8	19.5
		9538	9938	1907.6	23.8	19.5
	3	9262	9662	1852.4	24.4	20.5
		9400	9800	1880.0	24.4	20.5
		9538	9938	1907.6	24.4	20.5
	4	9262	9662	1852.4	23.5	19.4
		9400	9800	1880.0	23.4	19.5
		9538	9938	1907.6	23.2	19.5
	5	9262	9662	1852.4	24.5	20.4
		9400	9800	1880.0	24.5	20.5
		9538	9938	1907.6	24.5	20.5

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSUPA 1700MHz	1	1312	1537	1712.4	23.3	18.9
		1413	1638	1732.6	**23.6**	**19.0**
		1513	1738	1752.6	23.6	19.0
	2	1312	1537	1712.4	22.2	18.0
		1413	1638	1732.6	22.2	18.0
		1513	1738	1752.6	22.3	17.9
	3	1312	1537	1712.4	23.3	18.9
		1413	1638	1732.6	23.2	18.9
		1513	1738	1752.6	23.4	18.9
	4	1312	1537	1712.4	22.4	17.9
		1413	1638	1732.6	22.4	18.0
		1513	1738	1752.6	22.2	17.9
	5	1312	1537	1712.4	23.5	18.8
		1413	1638	1732.6	23.6	18.9
		1513	1738	1752.6	23.6	18.9

7.3.11. HSPA REL 6 (HSDPA & HSUPA), MODEL: A1688 (LAT)

HSUPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSUPA 850MHz	1	4132	4357	826.4	28.3	23.7
		4183	4408	836.6	28.4	23.7
		4233	4458	846.6	**28.4**	**23.8**
	2	4132	4357	826.4	27.3	22.8
		4183	4408	836.6	27.8	22.8
		4233	4458	846.6	27.7	22.7
	3	4132	4357	826.4	28.2	23.7
		4183	4408	836.6	28.3	23.7
		4233	4458	846.6	28.4	23.7
	4	4132	4357	826.4	27.2	22.7
		4183	4408	836.6	27.3	22.7
		4233	4458	846.6	27.1	22.7
	5	4132	4357	826.4	28.4	23.7
		4183	4408	836.6	28.3	23.7
		4233	4458	846.6	28.0	23.7

Part 24 / 1900MHz Band

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted Output Power (dBm)	
					Peak	Average
UMTS HSUPA 1900MHz (Band 2)	1	9262	9662	1852.4	28.6	23.8
		9400	9800	1880.0	28.4	23.8
		9538	9938	1907.6	**28.6**	**23.8**
	2	9262	9662	1852.4	27.9	22.8
		9400	9800	1880.0	27.8	22.8
		9538	9938	1907.6	27.9	22.8
	3	9262	9662	1852.4	28.4	23.7
		9400	9800	1880.0	28.4	23.7
		9538	9938	1907.6	28.5	23.7
	4	9262	9662	1852.4	27.3	22.8
		9400	9800	1880.0	27.5	22.8
		9538	9938	1907.6	27.4	22.8
	5	9262	9662	1852.4	28.5	23.8
		9400	9800	1880.0	28.5	23.8
		9538	9938	1907.6	28.4	23.8

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSUPA 1700MHz	1	1312	1537	1712.4	28.8	23.8
		1413	1638	1732.6	**28.8**	**23.8**
		1513	1738	1752.6	28.7	23.8
	2	1312	1537	1712.4	28.1	22.8
		1413	1638	1732.6	28.0	22.8
		1513	1738	1752.6	28.1	22.8
	3	1312	1537	1712.4	28.7	23.7
		1413	1638	1732.6	28.5	23.7
		1513	1738	1752.6	28.8	23.7
	4	1312	1537	1712.4	27.7	22.8
		1413	1638	1732.6	27.5	22.8
		1513	1738	1752.6	27.7	22.7
	5	1312	1537	1712.4	28.5	23.8
		1413	1638	1732.6	28.5	23.8
		1513	1738	1752.6	28.5	23.8

7.3.12. HSPA REL 6 (HSDPA & HSUPA), MODEL: A1688 (UAT)

HSUPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSUPA 850MHz	1	4132	4357	826.4	26.8	22.3
		4183	4408	836.6	26.9	22.3
		4233	4458	846.6	**27.2**	**22.4**
	2	4132	4357	826.4	26.4	21.2
		4183	4408	836.6	26.4	21.5
		4233	4458	846.6	26.4	21.3
	3	4132	4357	826.4	26.9	22.3
		4183	4408	836.6	26.9	22.3
		4233	4458	846.6	26.8	22.3
	4	4132	4357	826.4	25.9	21.3
		4183	4408	836.6	26.1	21.3
		4233	4458	846.6	25.9	21.3
	5	4132	4357	826.4	27.1	22.3
		4183	4408	836.6	27.1	22.3
		4233	4458	846.6	26.7	22.3

Part 24 / 1900MHz Band

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted Output Power (dBm)	
					Peak	Average
UMTS HSUPA 1900MHz (Band 2)	1	9262	9662	1852.4	**24.5**	**20.4**
		9400	9800	1880.0	24.3	20.3
		9538	9938	1907.6	24.3	20.4
	2	9262	9662	1852.4	23.7	19.3
		9400	9800	1880.0	23.7	19.3
		9538	9938	1907.6	23.7	19.3
	3	9262	9662	1852.4	24.3	20.3
		9400	9800	1880.0	24.3	20.3
		9538	9938	1907.6	24.3	20.3
	4	9262	9662	1852.4	23.3	19.3
		9400	9800	1880.0	23.2	19.3
		9538	9938	1907.6	23.1	19.3
	5	9262	9662	1852.4	24.3	20.2
		9400	9800	1880.0	24.3	20.3
		9538	9938	1907.6	24.3	20.3

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSUPA 1700MHz	1	1312	1537	1712.4	23.2	18.8
		1413	1638	1732.6	**23.5**	**18.9**
		1513	1738	1752.6	23.4	18.8
	2	1312	1537	1712.4	22.1	17.8
		1413	1638	1732.6	22.0	17.9
		1513	1738	1752.6	22.2	17.8
	3	1312	1537	1712.4	23.2	18.7
		1413	1638	1732.6	23.0	18.7
		1513	1738	1752.6	23.3	18.7
	4	1312	1537	1712.4	22.2	17.7
		1413	1638	1732.6	22.2	17.8
		1513	1738	1752.6	22.0	17.8
	5	1312	1537	1712.4	23.3	18.7
		1413	1638	1732.6	23.4	18.7
		1513	1738	1752.6	23.4	18.8

DUAL CARRIER HSDPA

DC-HSDPA (Rel 8, CAT 24)

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

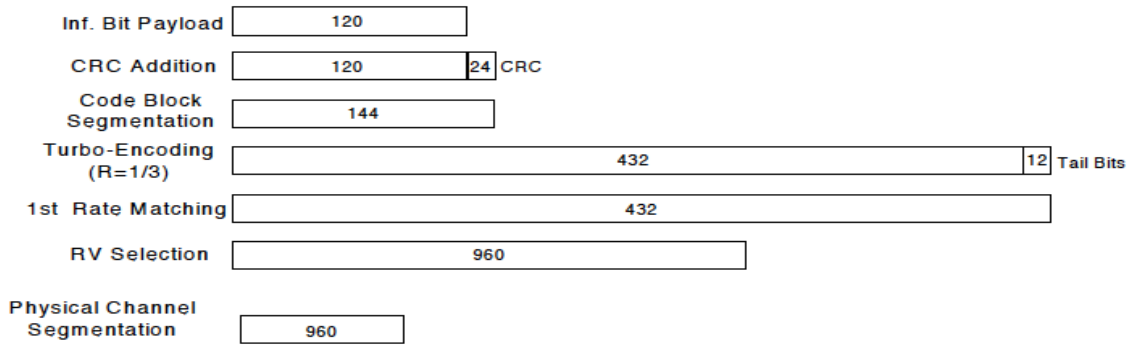


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1A			
	Power Control Algorithm	Algorithm2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = βhs/ βc	30/15			

RESULT

7.3.13. DUAL CARRIER HSDPA, MODEL: A1633 (LAT)

DC-HSDPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 850MHz	1	4132	4357	826.4	28.4	23.8
		4183	4408	836.6	**28.6**	23.8
		4233	4458	846.6	28.4	**23.9**
	2	4132	4357	826.4	28.4	23.8
		4183	4408	836.6	28.5	23.8
		4233	4458	846.6	28.5	23.8
	3	4132	4357	826.4	28.4	23.7
		4183	4408	836.6	28.5	23.8
		4233	4458	846.6	28.5	23.7
	4	4132	4357	826.4	28.1	23.5
		4183	4408	836.6	28.1	23.6
		4233	4458	846.6	28.1	23.5

Part 24 / 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	28.1	23.8
		9400	9800	1880.0	28.4	**23.9**
		9538	9938	1907.6	**28.6**	23.8
	2	9262	9662	1852.4	28.4	23.8
		9400	9800	1880.0	28.5	23.9
		9538	9938	1907.6	28.5	23.8
	3	9262	9662	1852.4	28.3	23.8
		9400	9800	1880.0	28.3	23.7
		9538	9938	1907.6	28.5	23.8
	4	9262	9662	1852.4	28.1	23.6
		9400	9800	1880.0	28.2	23.6
		9538	9938	1907.6	28.1	23.5

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	**28.5**	23.8
		1413	1638	1732.6	28.3	**23.9**
		1513	1738	1752.6	28.4	23.8
	2	1312	1537	1712.4	28.4	23.8
		1413	1638	1732.6	28.3	23.8
		1513	1738	1752.6	28.5	23.8
	3	1312	1537	1712.4	28.4	23.8
		1413	1638	1732.6	28.3	23.8
		1513	1738	1752.6	28.3	23.8
	4	1312	1537	1712.4	28.0	23.6
		1413	1638	1732.6	28.2	23.6
		1513	1738	1752.6	28.1	23.6

7.3.14. DUAL CARRIER HSDPA, MODEL: A1633 (UAT)

DC-HSDPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 850MHz	1	4132	4357	826.4	27.1	23.5
		4183	4408	836.6	**27.5**	**23.5**
		4233	4458	846.6	27.3	23.3
	2	4132	4357	826.4	27.3	23.2
		4183	4408	836.6	27.3	23.2
		4233	4458	846.6	27.5	23.2
	3	4132	4357	826.4	24.5	22.1
		4183	4408	836.6	24.6	22.3
		4233	4458	846.6	24.6	22.2
	4	4132	4357	826.4	24.5	22.1
		4183	4408	836.6	24.6	22.3
		4233	4458	846.6	24.5	22.2

Part 24 / 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	22.9	20.5
		9400	9800	1880.0	**23.4**	**20.5**
		9538	9938	1907.6	23.2	20.5
	2	9262	9662	1852.4	23.4	20.5
		9400	9800	1880.0	23.2	20.5
		9538	9938	1907.6	22.6	20.4
	3	9262	9662	1852.4	22.1	20.1
		9400	9800	1880.0	22.0	20.1
		9538	9938	1907.6	22.3	20.1
	4	9262	9662	1852.4	22.0	20.1
		9400	9800	1880.0	22.1	20.2
		9538	9938	1907.6	22.3	20.2

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	20.8	18.9
		1413	1638	1732.6	**21.2**	**18.9**
		1513	1738	1752.6	20.4	18.9
	2	1312	1537	1712.4	20.8	18.8
		1413	1638	1732.6	21.1	18.9
		1513	1738	1752.6	20.8	18.9
	3	1312	1537	1712.4	20.5	18.6
		1413	1638	1732.6	20.8	18.6
		1513	1738	1752.6	20.4	18.5
	4	1312	1537	1712.4	20.5	18.6
		1413	1638	1732.6	20.8	18.6
		1513	1738	1752.6	20.5	18.6

7.3.15. DUAL CARRIER HSDPA, MODEL: A1688 (LAT)

DC-HSDPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 850MHz	1	4132	4357	826.4	28.3	23.7
		4183	4408	836.6	**28.4**	**23.8**
		4233	4458	846.6	28.2	23.7
	2	4132	4357	826.4	28.3	23.7
		4183	4408	836.6	28.4	23.7
		4233	4458	846.6	28.3	23.7
	3	4132	4357	826.4	28.3	23.6
		4183	4408	836.6	28.3	23.6
		4233	4458	846.6	28.3	23.6
	4	4132	4357	826.4	27.9	23.4
		4183	4408	836.6	28.0	23.4
		4233	4458	846.6	28.0	23.4

Part 24 / 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	27.9	23.7
		9400	9800	1880.0	28.3	23.7
		9538	9938	1907.6	**28.4**	**23.7**
	2	9262	9662	1852.4	28.2	23.7
		9400	9800	1880.0	28.4	23.7
		9538	9938	1907.6	28.4	23.7
	3	9262	9662	1852.4	28.1	23.6
		9400	9800	1880.0	28.1	23.6
		9538	9938	1907.6	28.3	23.6
	4	9262	9662	1852.4	27.9	23.4
		9400	9800	1880.0	28.0	23.4
		9538	9938	1907.6	28.0	23.4

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	**28.3**	23.6
		1413	1638	1732.6	28.1	**23.8**
		1513	1738	1752.6	28.2	23.6
	2	1312	1537	1712.4	28.2	23.6
		1413	1638	1732.6	28.1	23.6
		1513	1738	1752.6	28.3	23.6
	3	1312	1537	1712.4	28.2	23.6
		1413	1638	1732.6	28.1	23.6
		1513	1738	1752.6	28.2	23.6
	4	1312	1537	1712.4	27.8	23.5
		1413	1638	1732.6	28.1	23.4
		1513	1738	1752.6	28.0	23.4

7.3.16. DUAL CARRIER HSDPA, MODEL: A1688 (UAT)

DC-HSDPA

Part 22 / 850MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 850MHz	1	4132	4357	826.4	26.9	23.3
		4183	4408	836.6	**27.4**	**23.4**
		4233	4458	846.6	27.2	23.2
	2	4132	4357	826.4	27.2	23.0
		4183	4408	836.6	27.2	23.1
		4233	4458	846.6	27.3	23.1
	3	4132	4357	826.4	26.3	21.9
		4183	4408	836.6	26.5	22.1
		4233	4458	846.6	26.4	22.1
	4	4132	4357	826.4	26.3	21.9
		4183	4408	836.6	26.4	22.1
		4233	4458	846.6	26.3	22.1

Part 24 / 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	**22.8**	**20.4**
		9400	9800	1880.0	22.3	20.4
		9538	9938	1907.6	22.2	20.3
	2	9262	9662	1852.4	22.2	20.3
		9400	9800	1880.0	22.0	20.3
		9538	9938	1907.6	22.4	20.3
	3	9262	9662	1852.4	22.0	19.9
		9400	9800	1880.0	22.0	19.9
		9538	9938	1907.6	22.1	19.9
	4	9262	9662	1852.4	22.7	19.9
		9400	9800	1880.0	22.0	20.0
		9538	9938	1907.6	22.1	20.0

Part 27 / 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	Average Power (dBm)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	20.6	18.7
		1413	1638	1732.6	**20.8**	**18.8**
		1513	1738	1752.6	20.3	18.7
	2	1312	1537	1712.4	20.6	18.7
		1413	1638	1732.6	20.1	18.7
		1513	1738	1752.6	20.6	18.8
	3	1312	1537	1712.4	20.4	18.4
		1413	1638	1732.6	20.6	18.5
		1513	1738	1752.6	20.3	18.4
	4	1312	1537	1712.4	20.3	18.4
		1413	1638	1732.6	20.6	18.4
		1513	1738	1752.6	20.4	18.4

8. CONDUCTED TEST RESULTS

8.1. OCCUPIED BANDWIDTH (MODEL: A1633)

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

RESULTS

GSM-GPRS MODE PART 22 AND 24

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
CELL	GPRS	128	824.2	242.0980	307.804
		190	836.6	246.0455	312.905
		251	848.8	**246.3313**	**316.498**

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
PCS	GPRS	512	1850.2	**247.6614**	303.559
		661	1880.0	246.6813	**311.683**
		810	1909.8	247.4480	297.892

GSM-EGPRS MODE PART 22 AND 24

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
CELL	EGPRS	128	824.2	244.8454	**299.843**
		190	836.6	241.9666	282.415
		251	848.8	**246.9858**	294.873

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
PCS	EGPRS	512	1850.2	**247.2845**	307.127
		661	1880.0	244.9336	**315.179**
		810	1909.8	246.5429	299.822

CDMA2000 1xRTT, PART 22, 24, 27 AND 90

Band	Mode	Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
CELL	CDMA 2000 1xRTT	1013	824.70	1.2610	1.369
		384	836.52	**1.2665**	1.405
		777	848.31	1.2639	1.411
PCS		25	1851.25	1.2668	1.370
		600	1880.00	**1.2782**	1.375
		1175	1908.75	1.2630	1.371
AWS		25	1711.25	1.2750	1.391
		450	1732.50	**1.2777**	1.400
		875	1753.75	1.2666	1.393
800 MHz Secondary		450	817.25	1.2618	1.386
		560	820.00	**1.2761**	1.379
		670	822.75	1.2681	1.416

CDMA2000 EVDO REV A, PART 22, 24, 27 AND 90

Band	Mode	Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
CELL	CDMA 2000 EVDO Rev. A	1013	824.70	1.2774	1.395
		384	836.52	1.2736	1.404
		777	848.31	**1.2817**	1.405
PCS		25	1851.25	1.2615	1.429
		600	1880.00	**1.2720**	1.399
		1175	1908.75	1.2403	1.392
AWS		25	1711.25	**1.2977**	1.402
		450	1732.50	1.2765	1.394
		875	1753.75	1.2646	1.406
800 MHz Secondary		450	817.25	**1.2895**	1.383
		560	820.00	1.2737	1.416
		670	822.75	1.2738	1.386

UMTS REL99 MODE PART 22, 24, AND 27

PART 22, 24, AND 27					
Band	Mode	DL Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
850MHz	UMTS Rel. 99	4357	826.40	4.0708	4.516
		4408	836.60	**4.2303**	**4.664**
		4458	846.60	4.1753	4.580
1900MHz		9662	1852.40	**4.2131**	**4.624**
		9800	1880.00	4.1998	4.599
		9938	1907.60	4.1149	4.535
1700MHz		1537	1712.40	4.1580	**4.579**
		1638	1732.60	**4.1936**	4.505
		1738	1752.60	4.1917	4.533

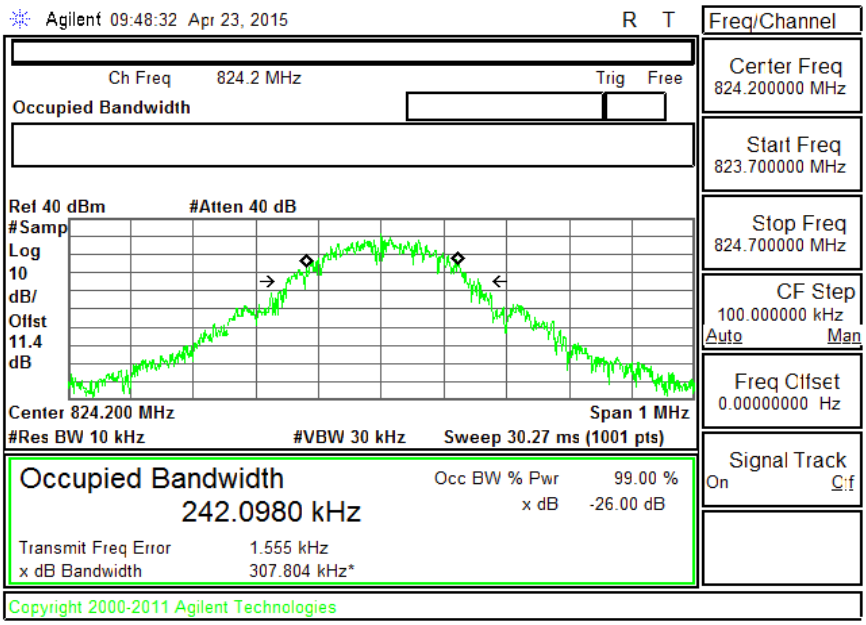
UMTS HSDPA MODE PART 22, 24, AND 27

PART 22, 24, AND 27					
Band	Mode	DL Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
850MHz	UMTS HSDPA	4357	826.40	4.1593	**4.721**
		4408	836.60	4.1609	4.539
		4458	846.60	**4.2049**	4.615
1900MHz		9662	1852.40	4.0997	4.644
		9800	1880.00	**4.1854**	4.621
		9938	1907.60	4.1258	**4.679**
1700MHz		1537	1712.40	4.1644	4.625
		1638	1732.60	4.1625	**4.679**
		1738	1752.60	**4.1650**	4.510

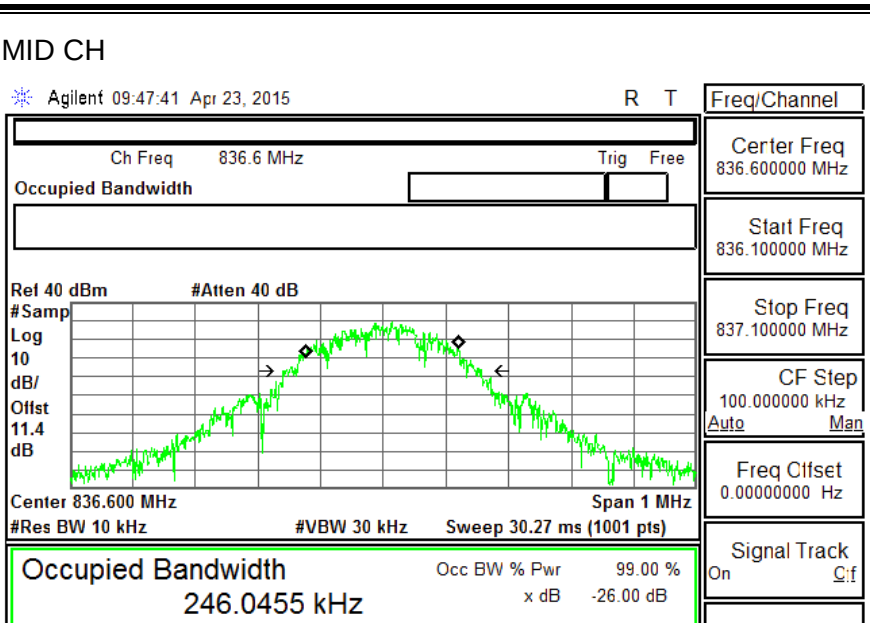
8.1.1. GSM GPRS

850MHz BAND

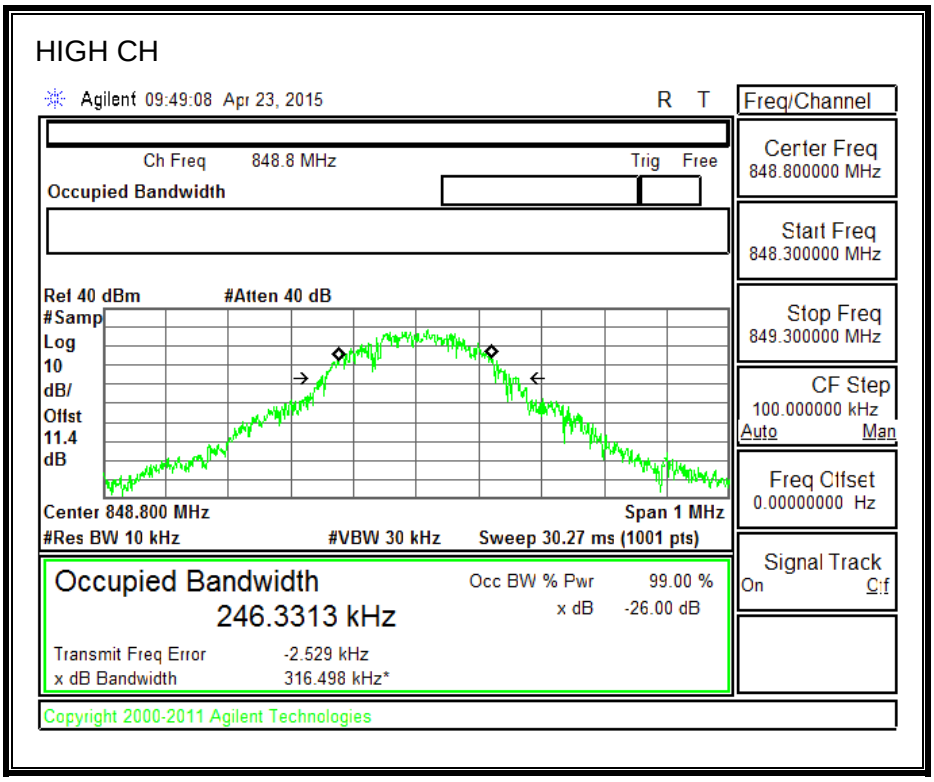
LOW CH



MID CH

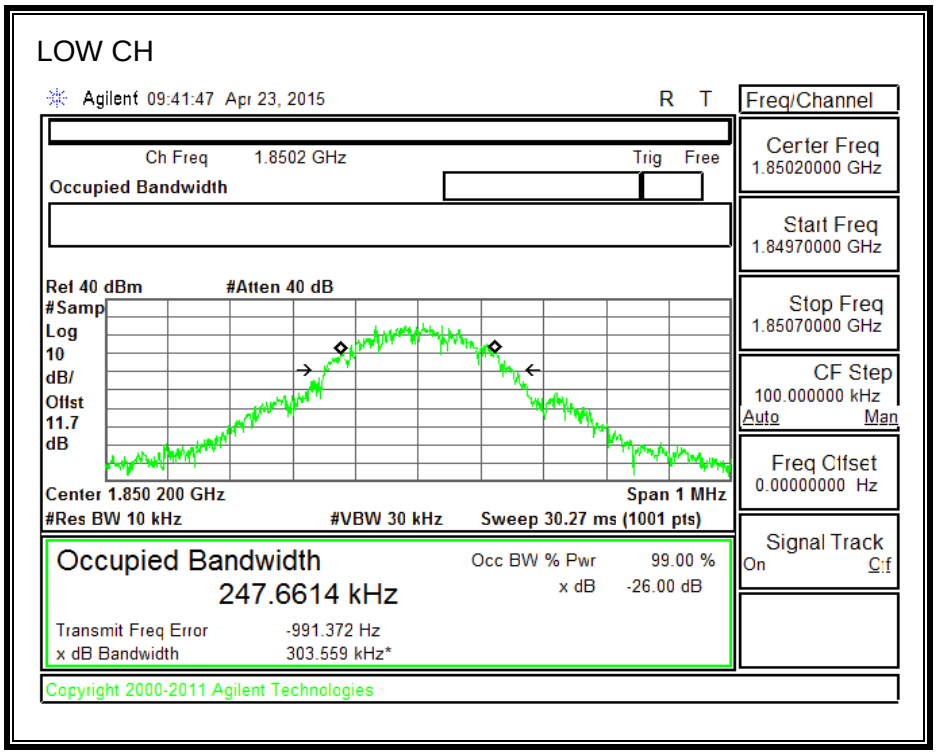


HIGH CH

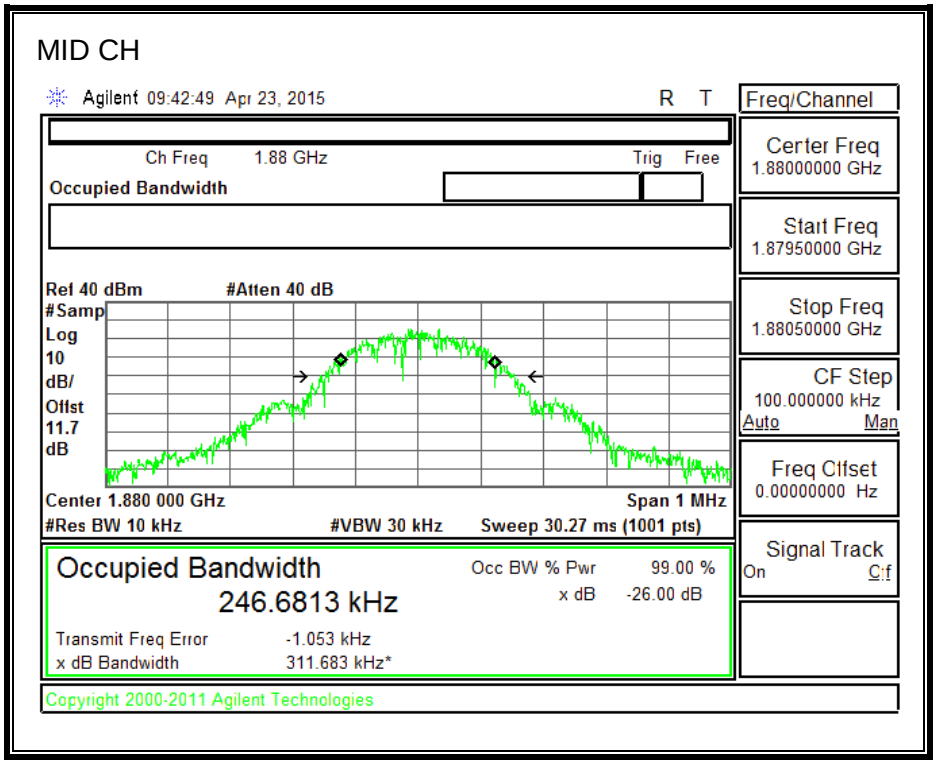


1900MHz BAND

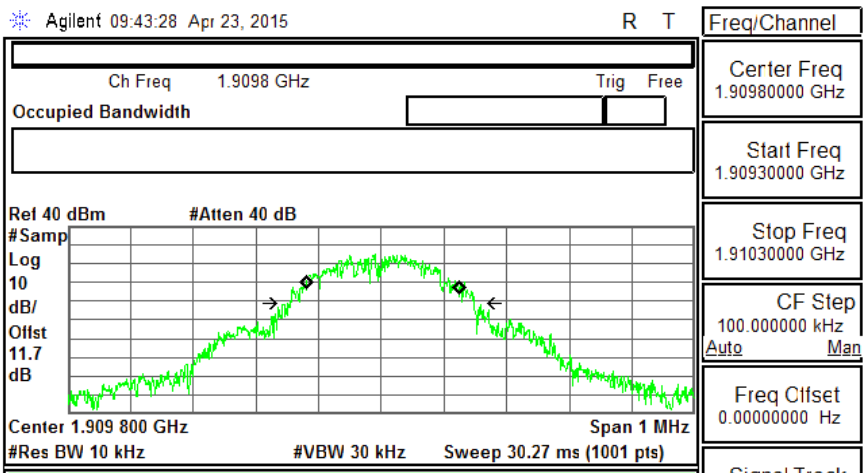
LOW CH



MID CH



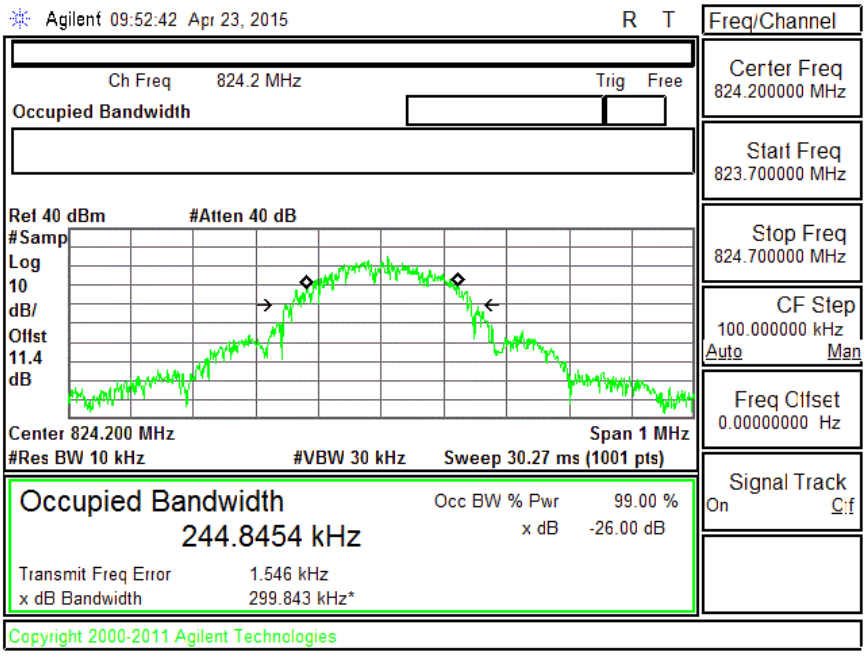
HIGH CH



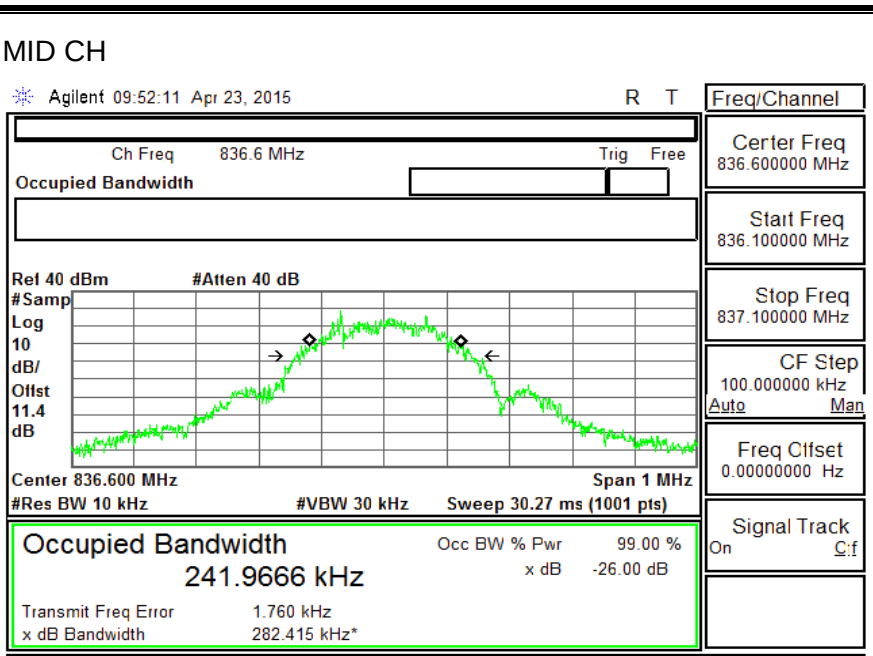
8.1.2. GSM EGPRS

850MHz BAND

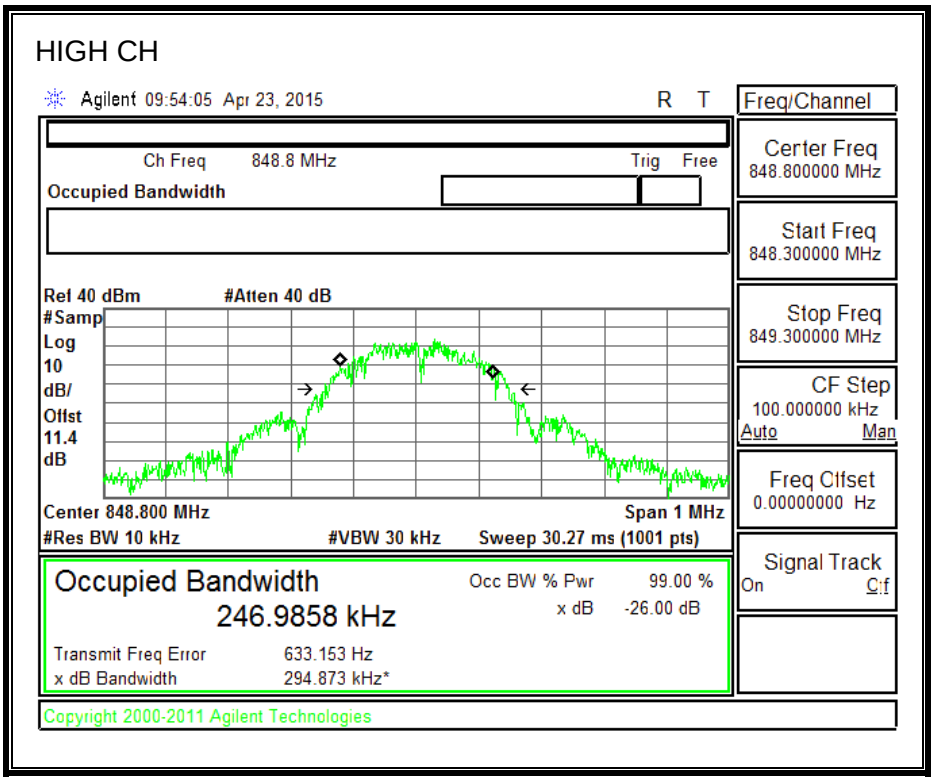
LOW CH



MID CH

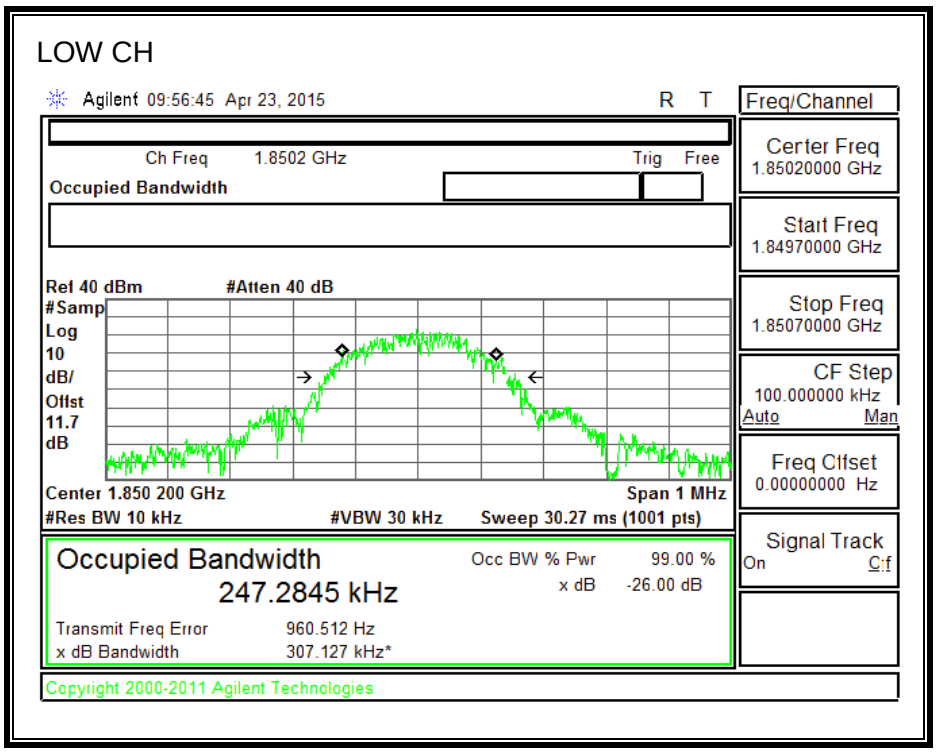


HIGH CH

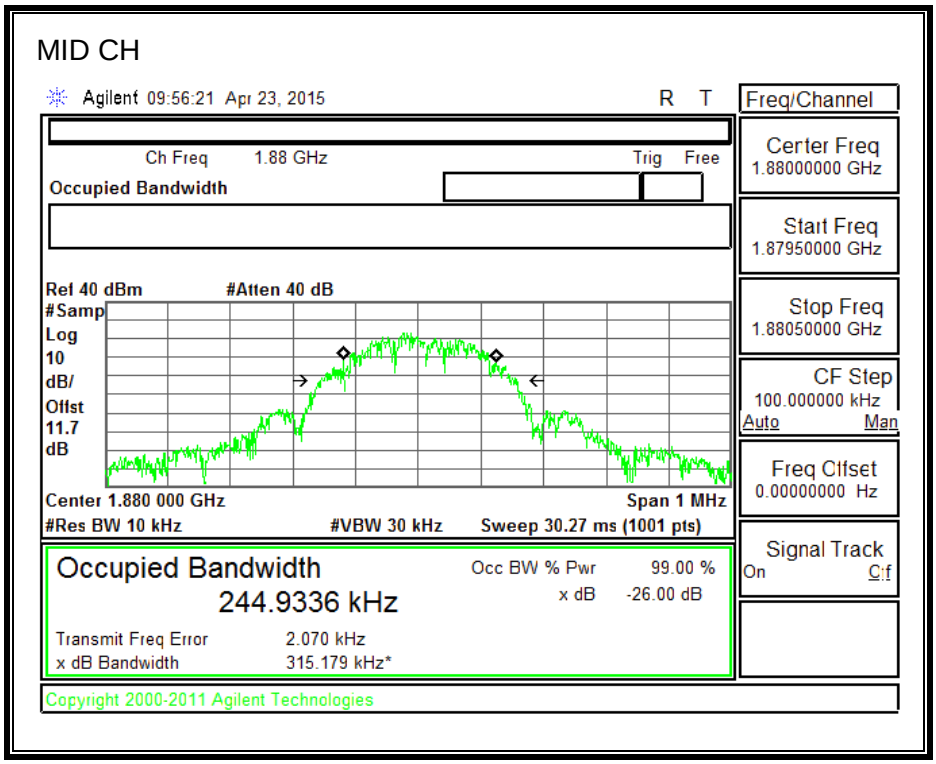


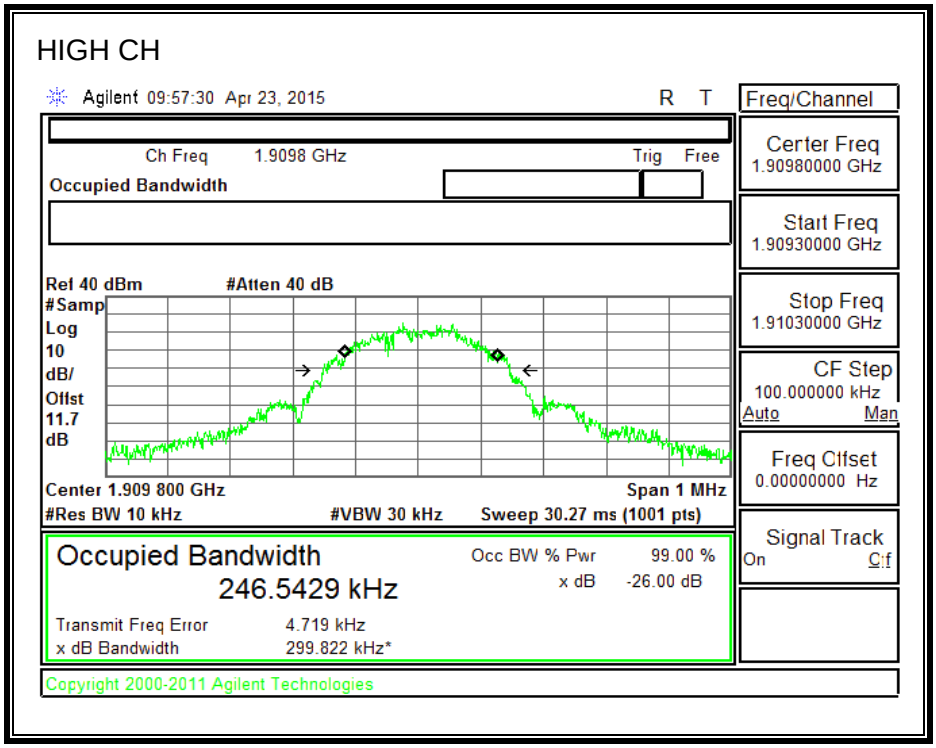
1900MHz BAND

LOW CH



MID CH

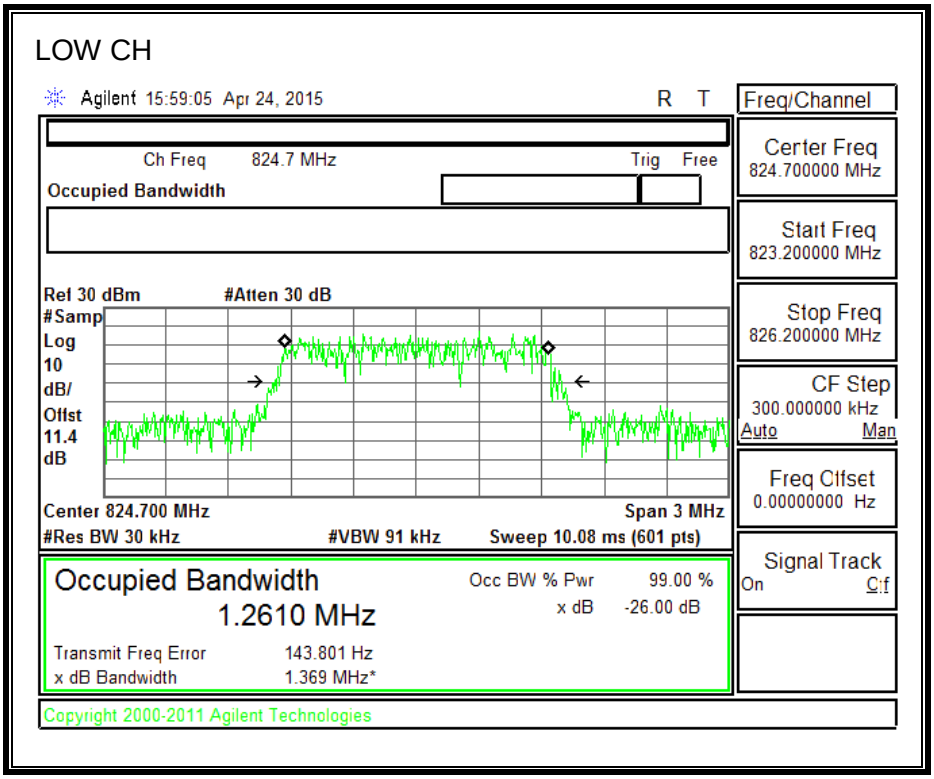




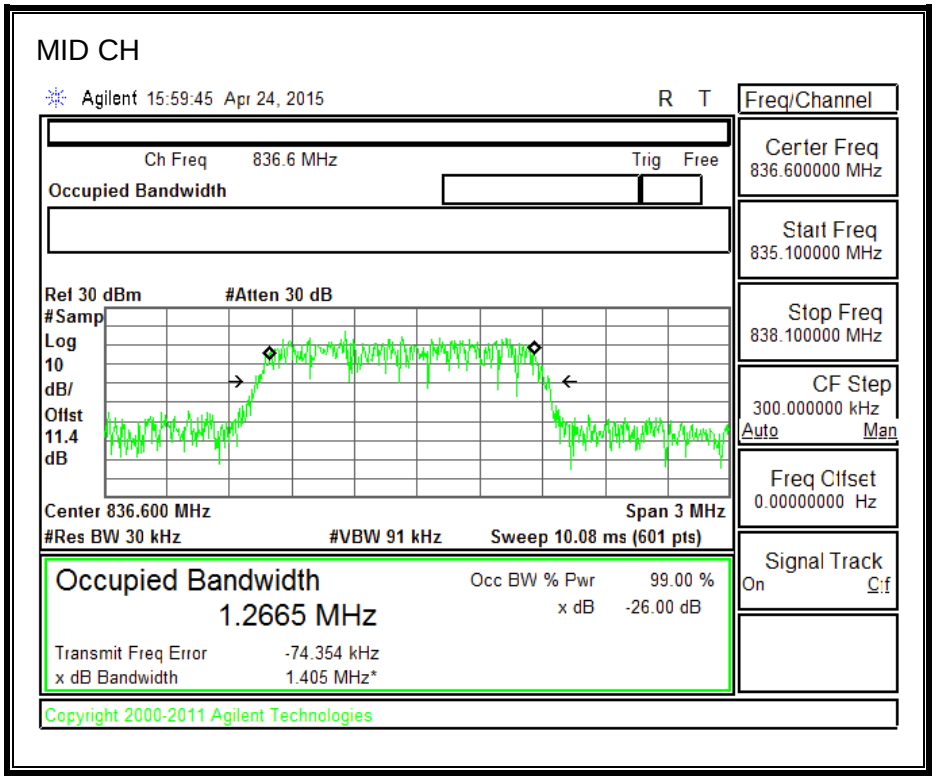
8.1.3. CDMA2000 1xRTT

850MHz BAND

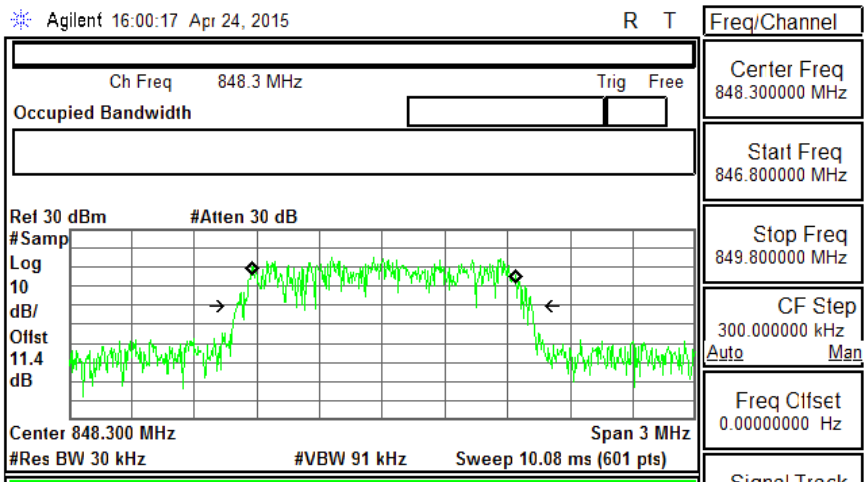
LOW CH



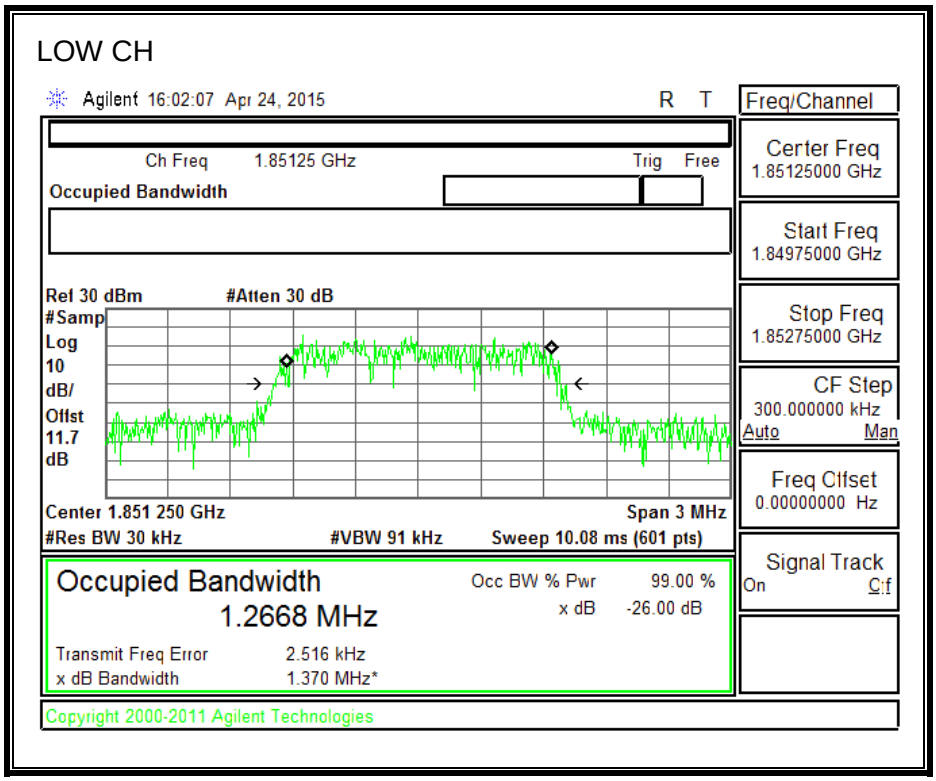
MID CH

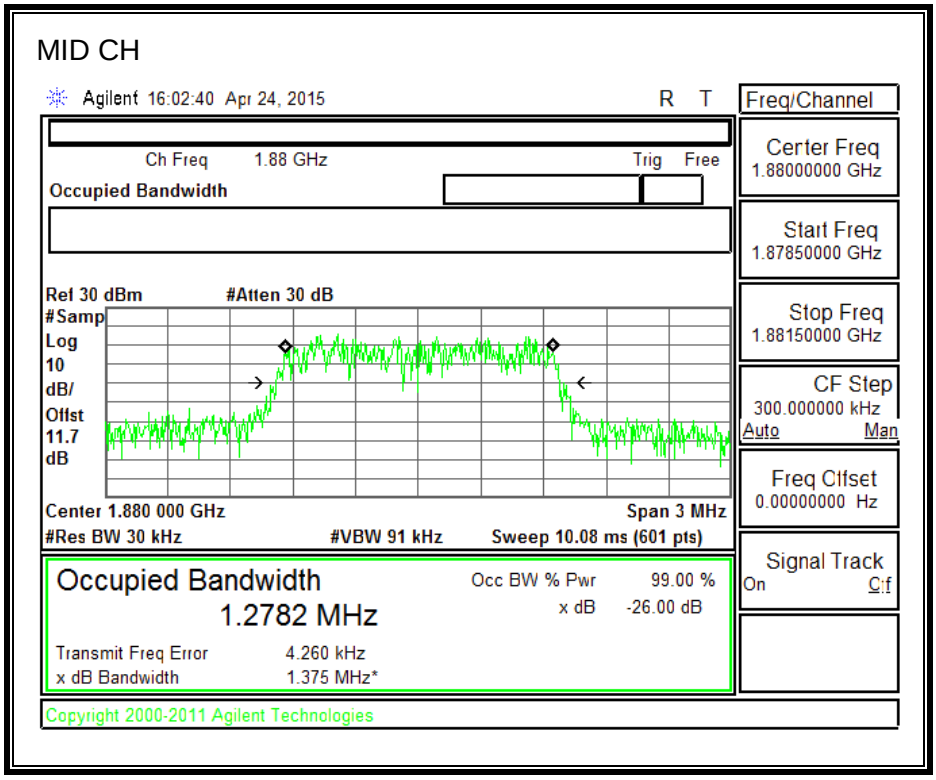


HIGH CH

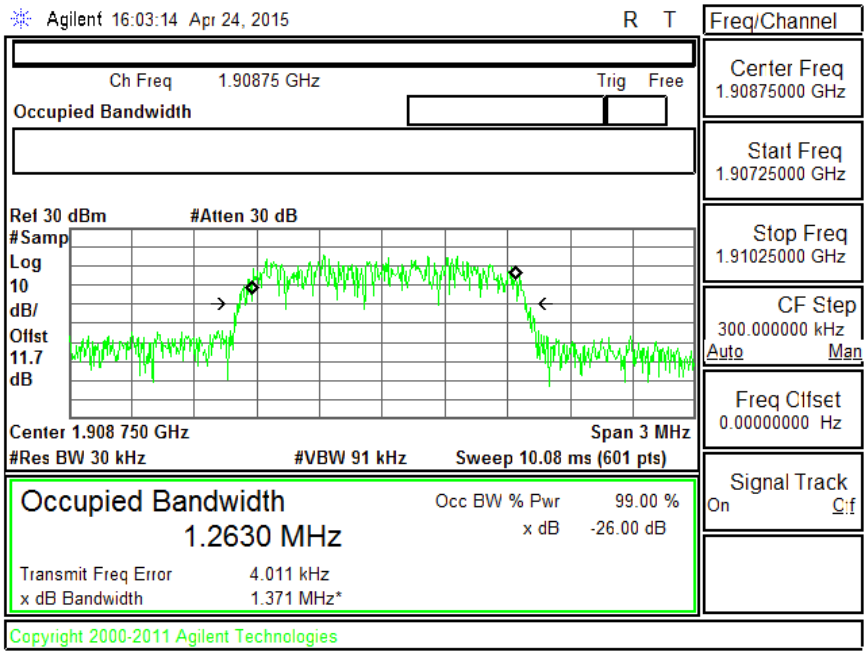


1900MHz BAND



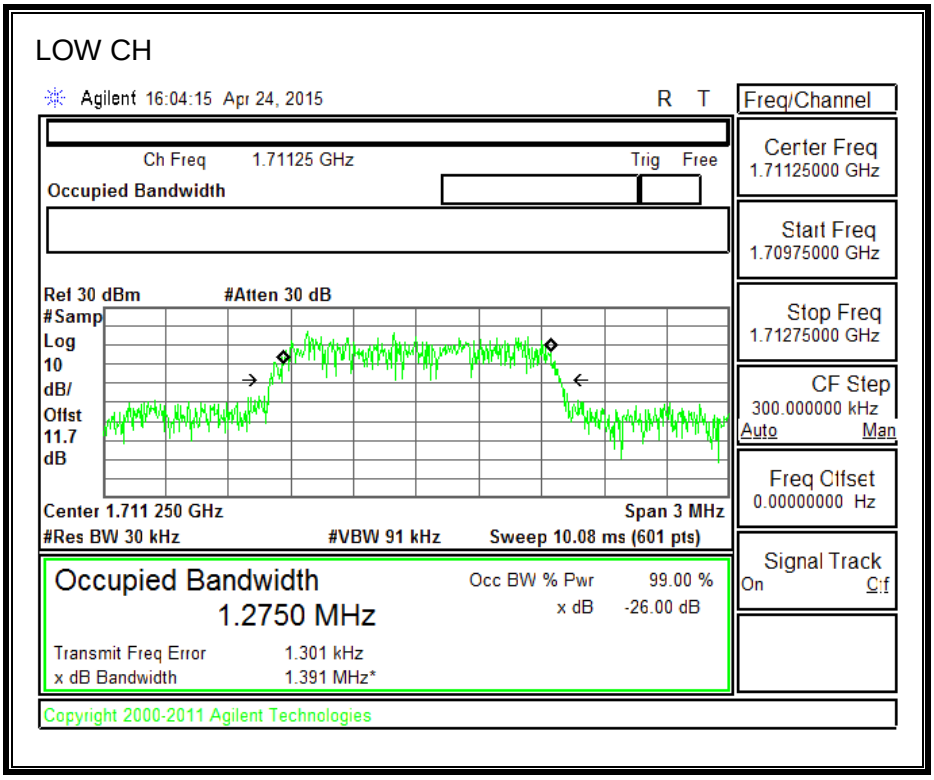


HIGH CH

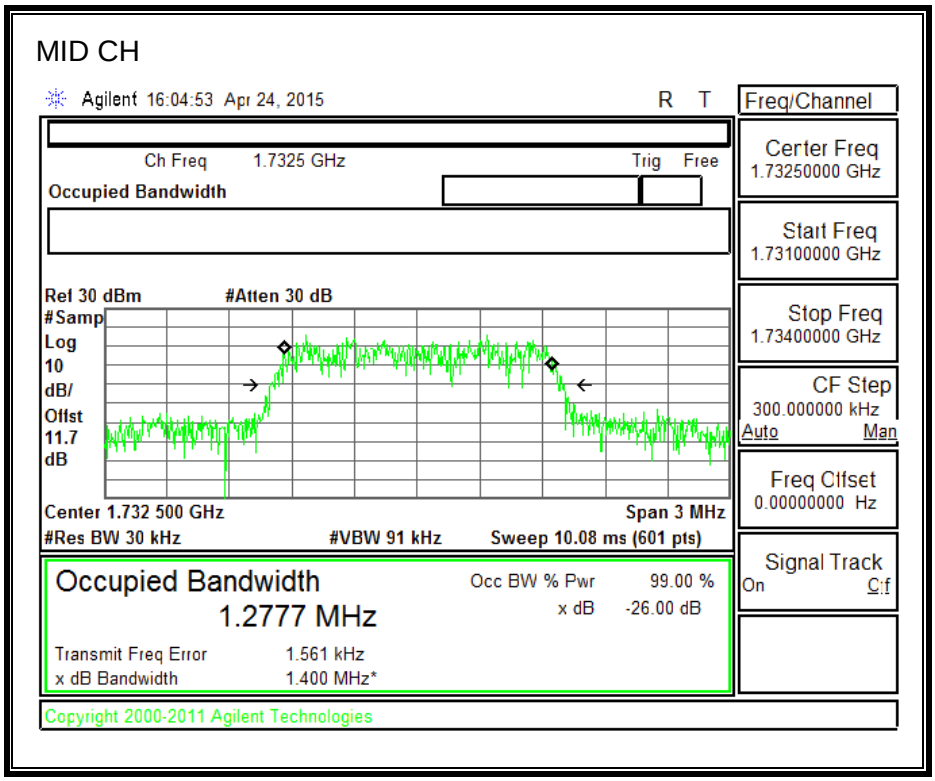


1700MHz BAND

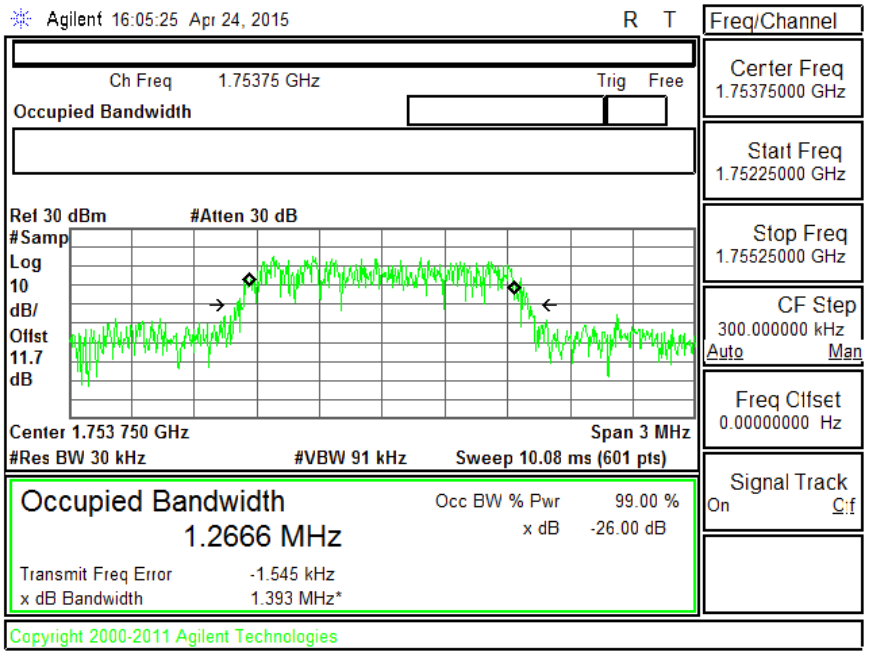
LOW CH



MID CH

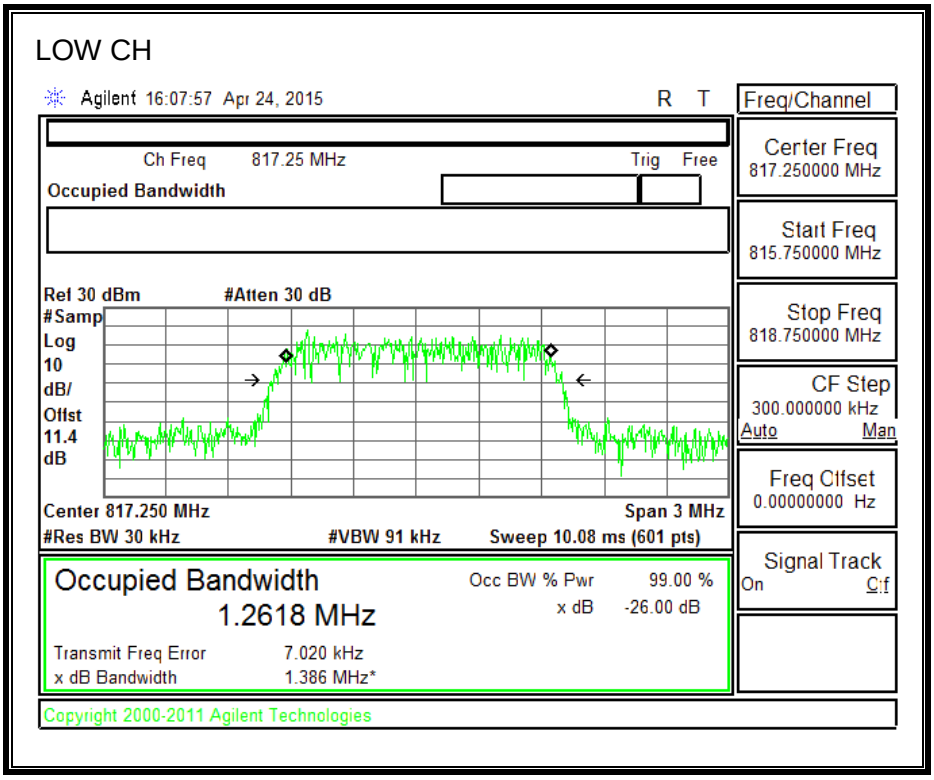


HIGH CH

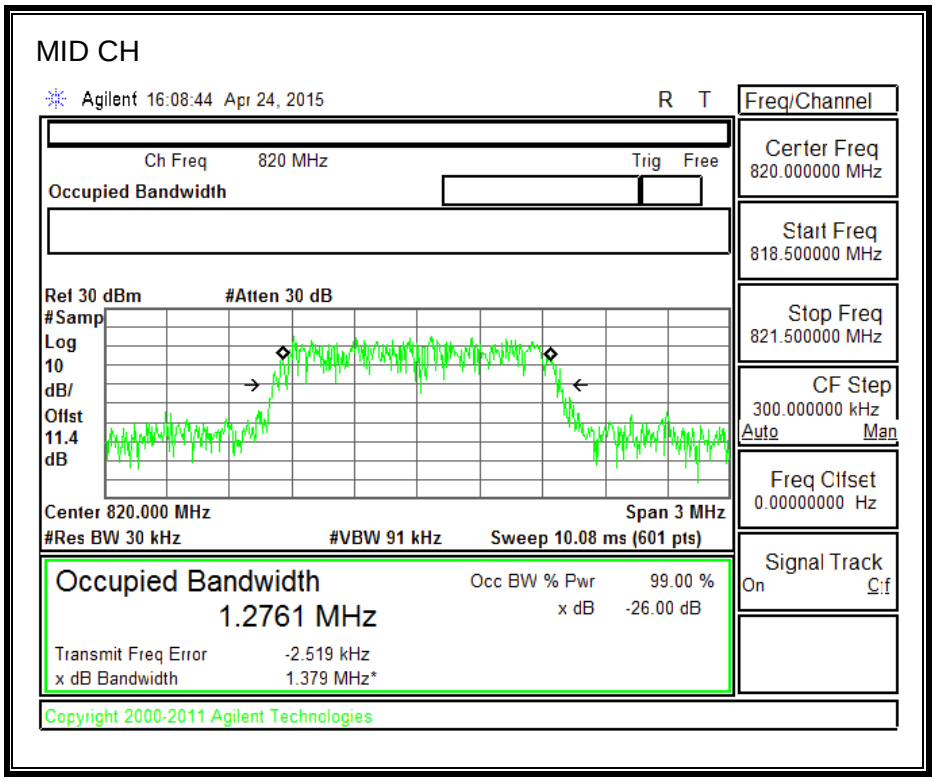


800MHz SECONDARY BAND

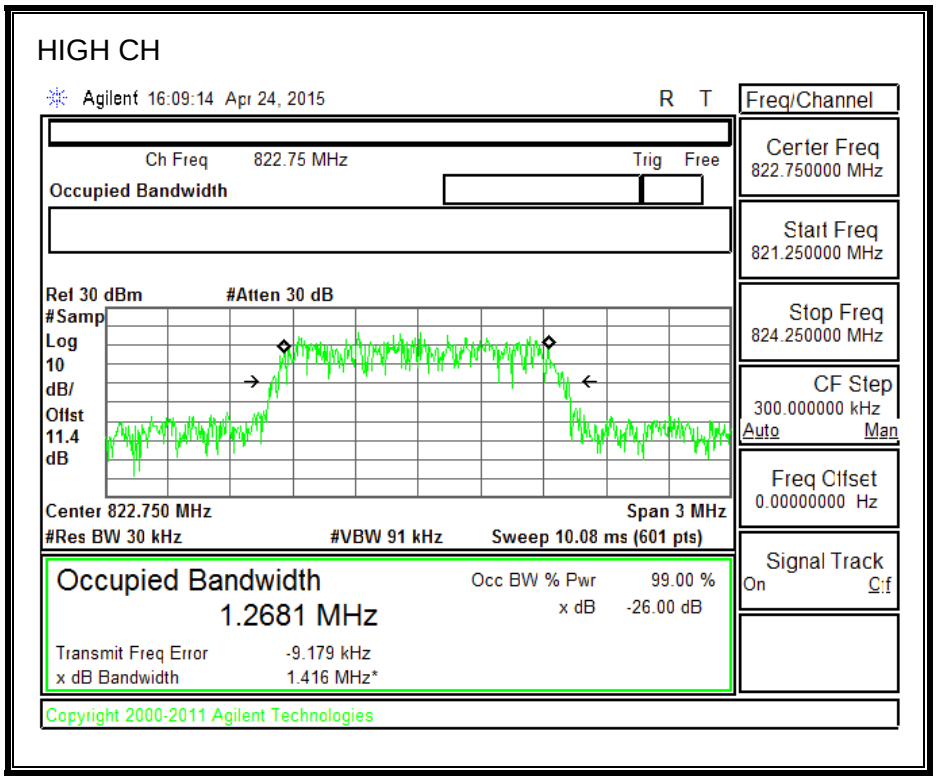
LOW CH



MID CH



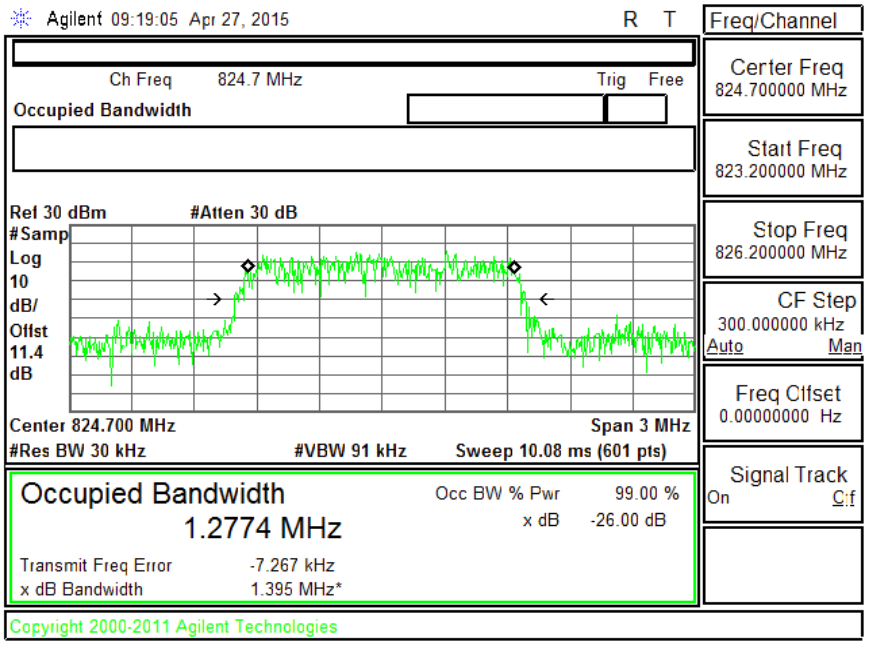
HIGH CH



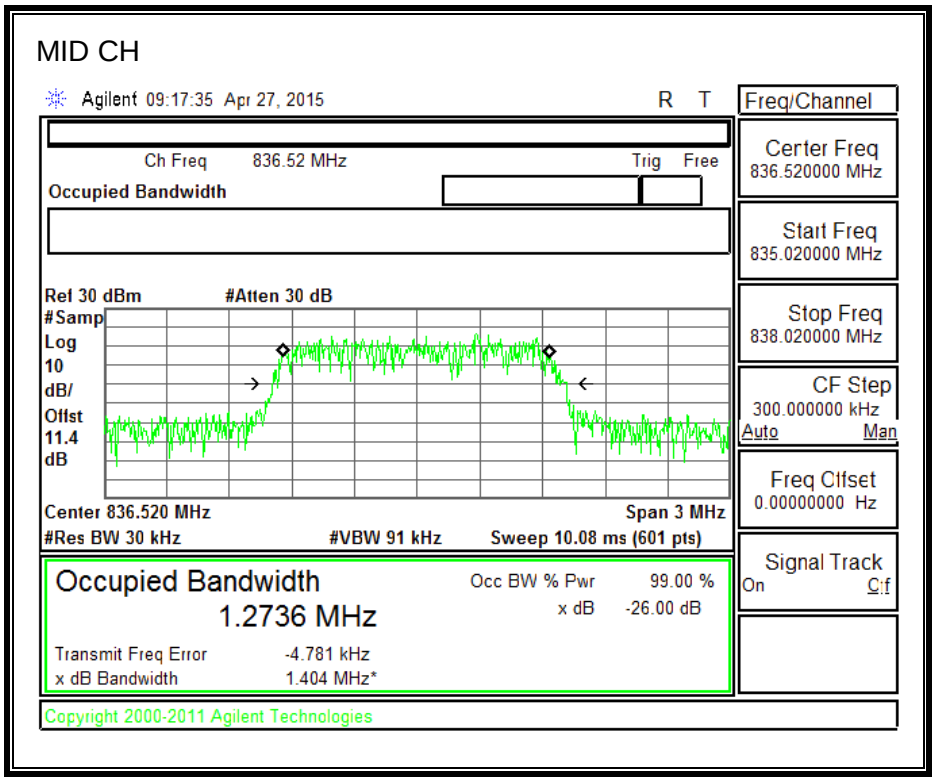
8.1.4. CDMA2000 EVDO Rev. A

850MHz BAND

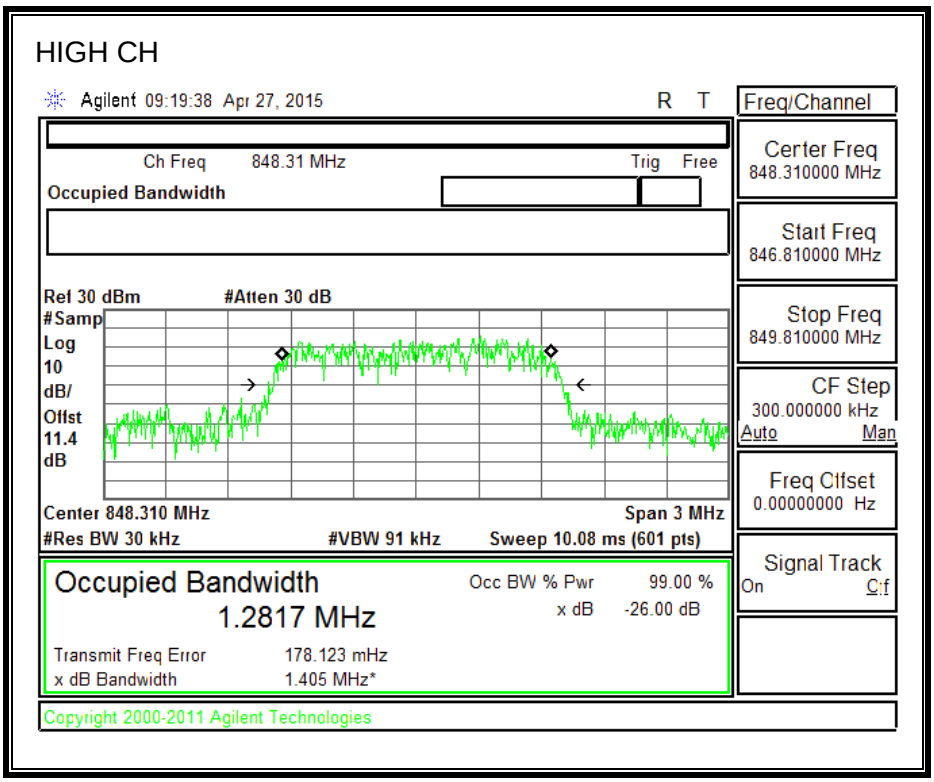
LOW CH



MID CH

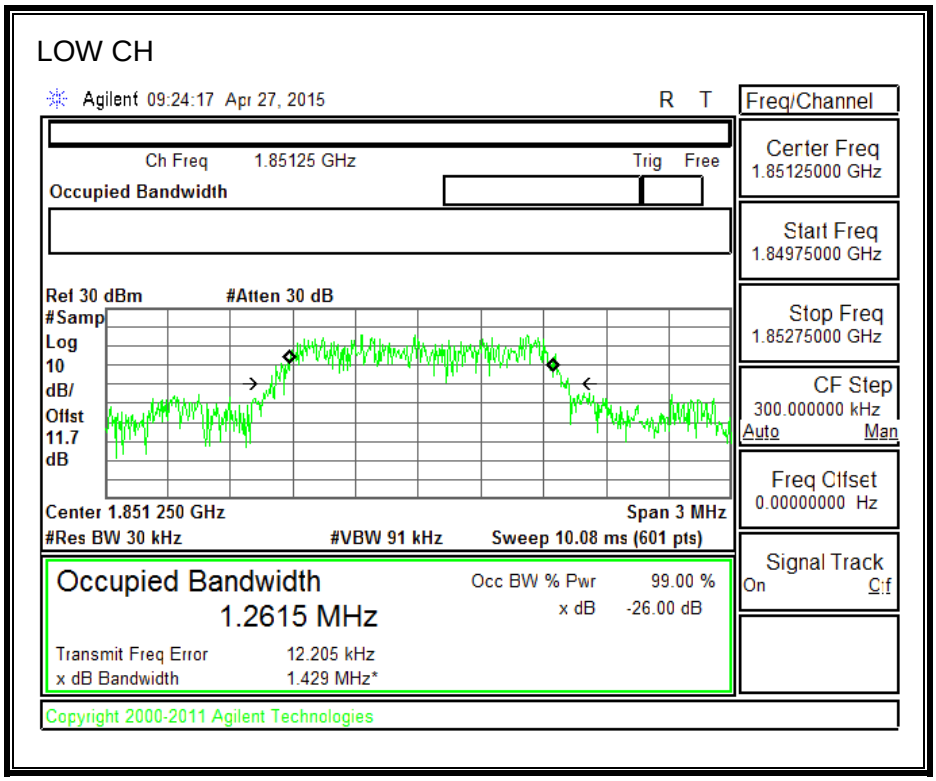


HIGH CH

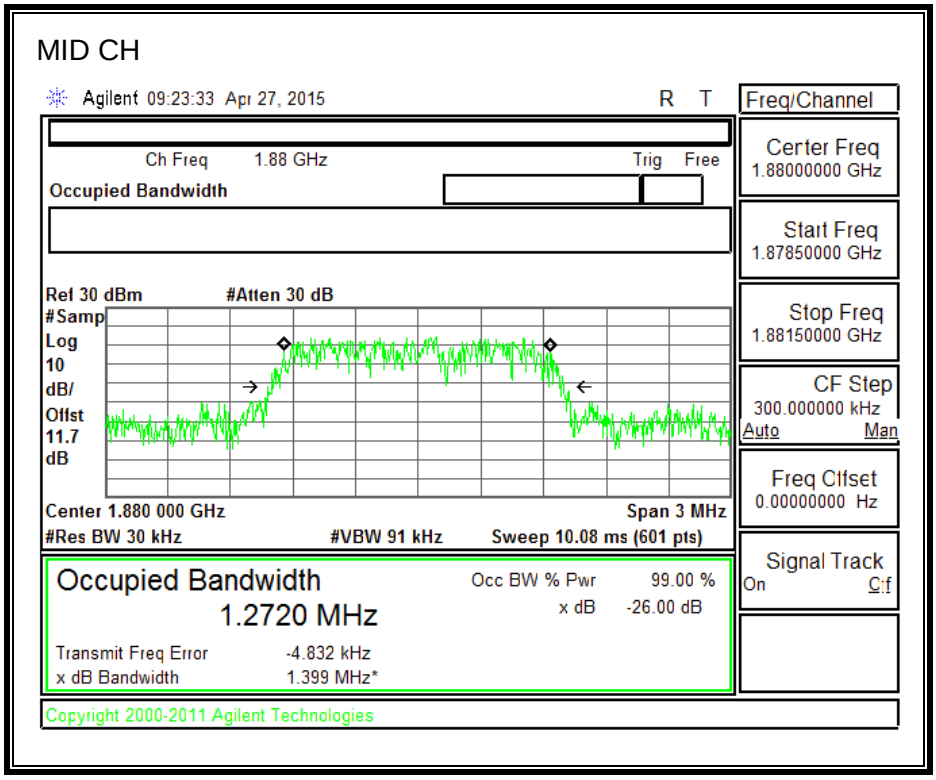


1900MHz BAND

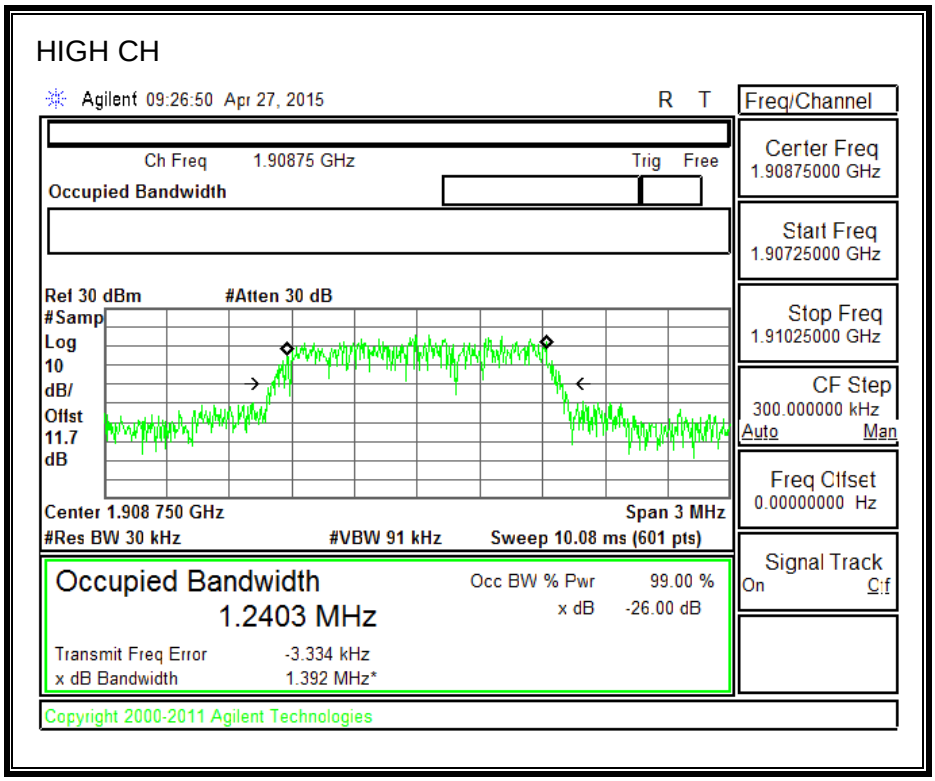
LOW CH



MID CH

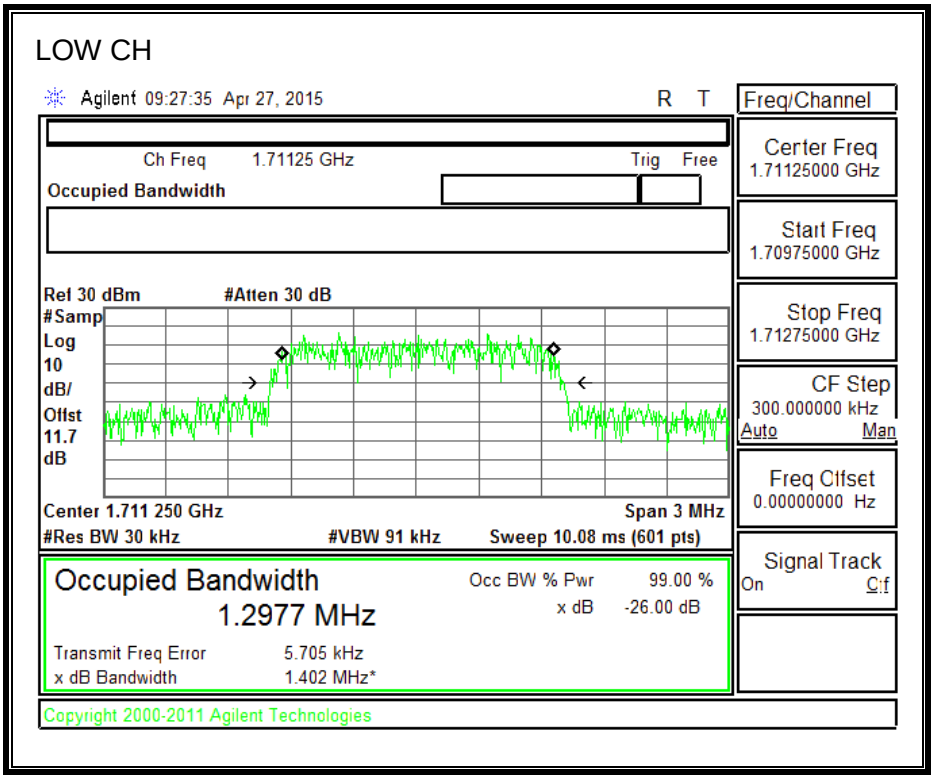


HIGH CH

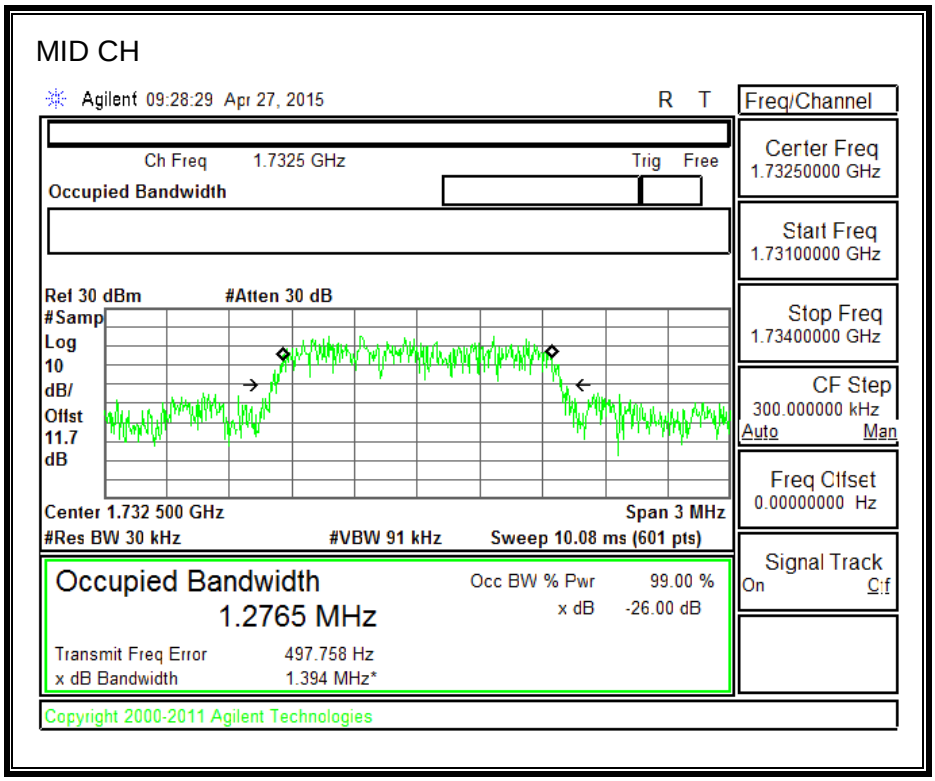


1700MHz BAND

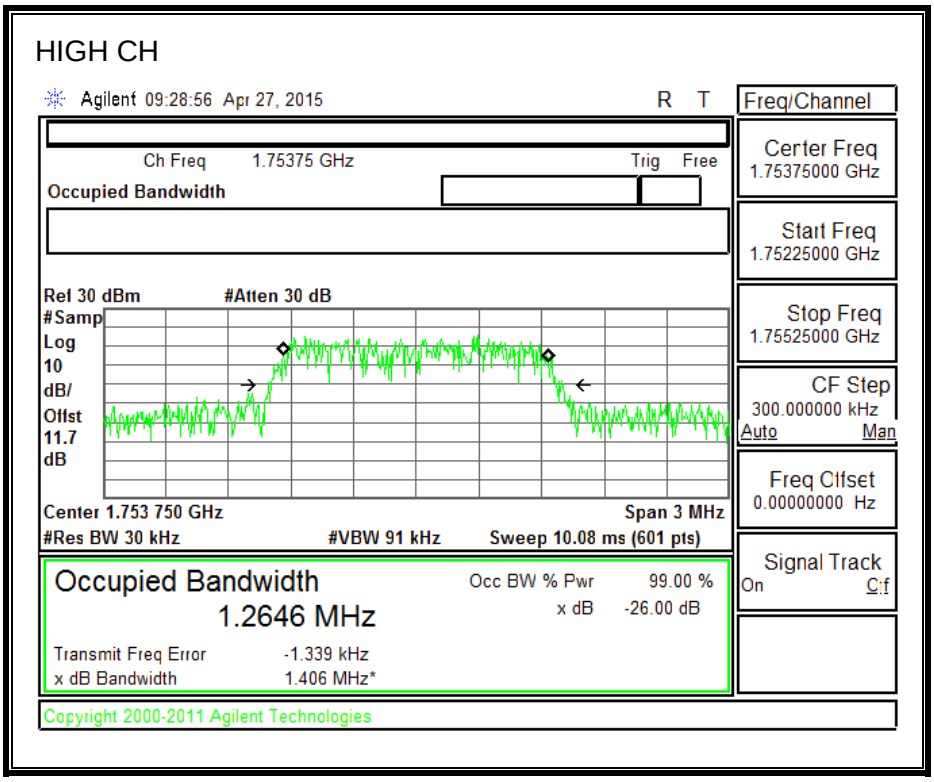
LOW CH



MID CH

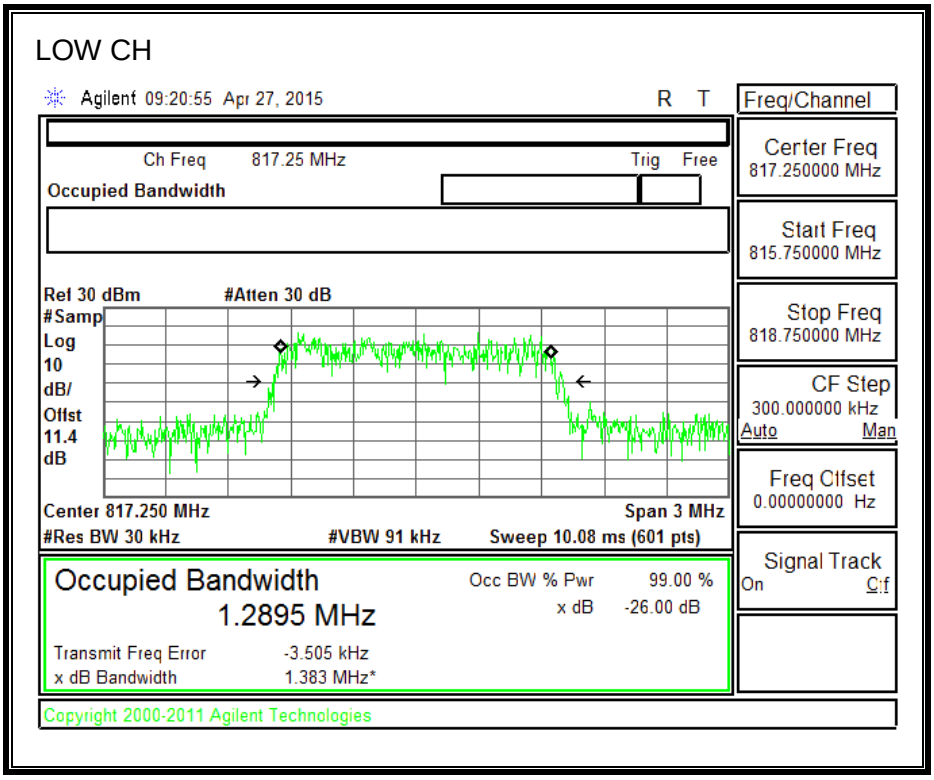


HIGH CH

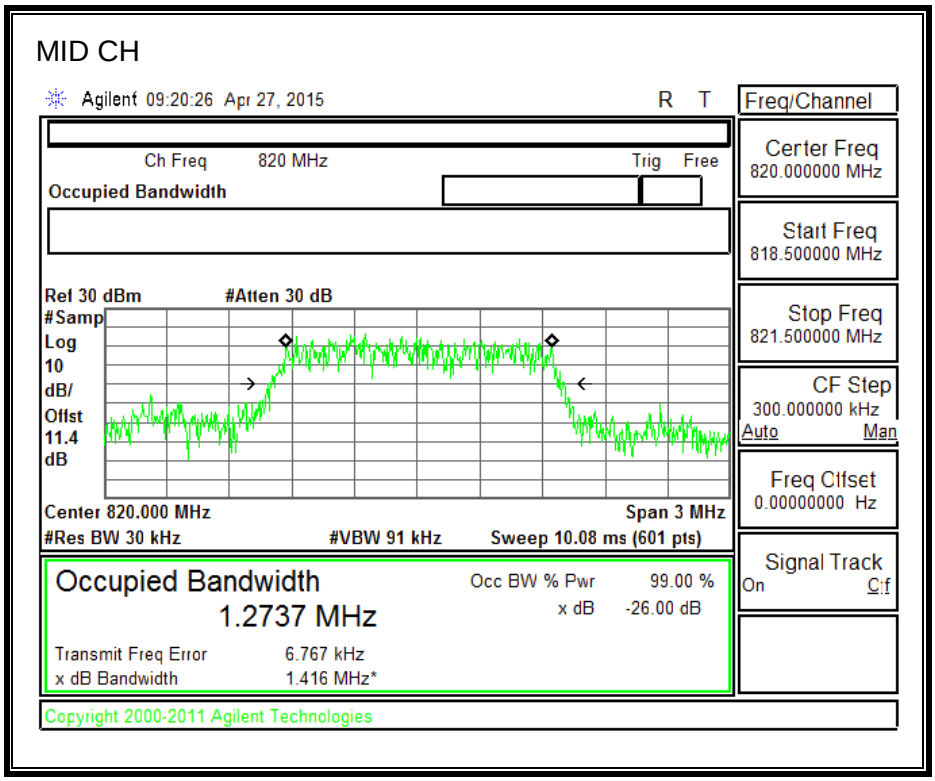


800MHz SECONDARY BAND

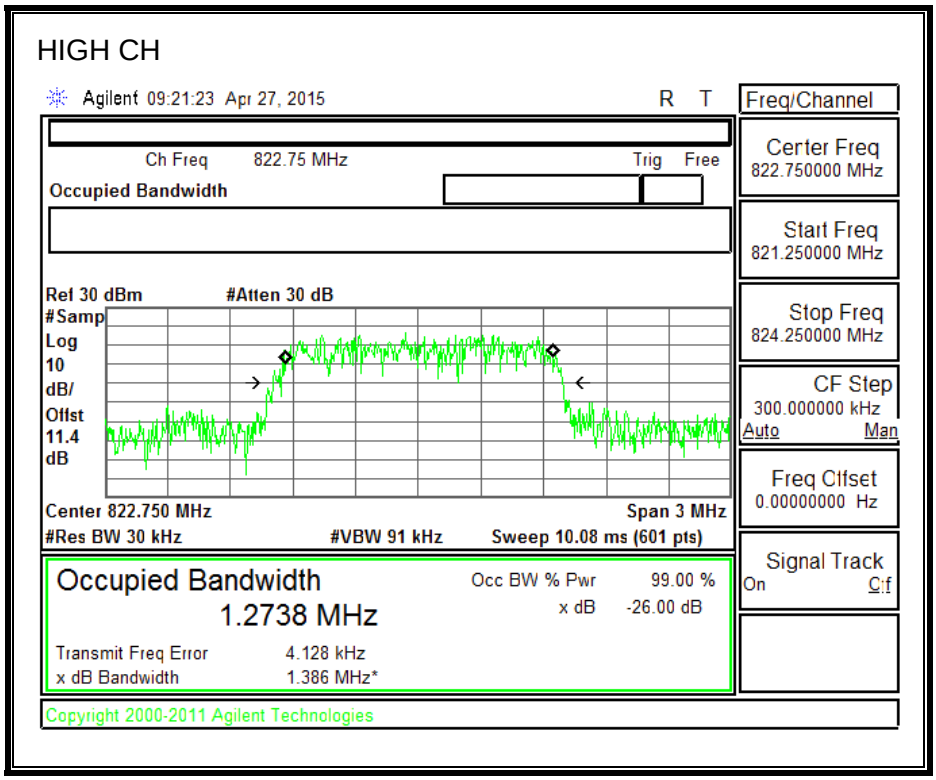
LOW CH



MID CH



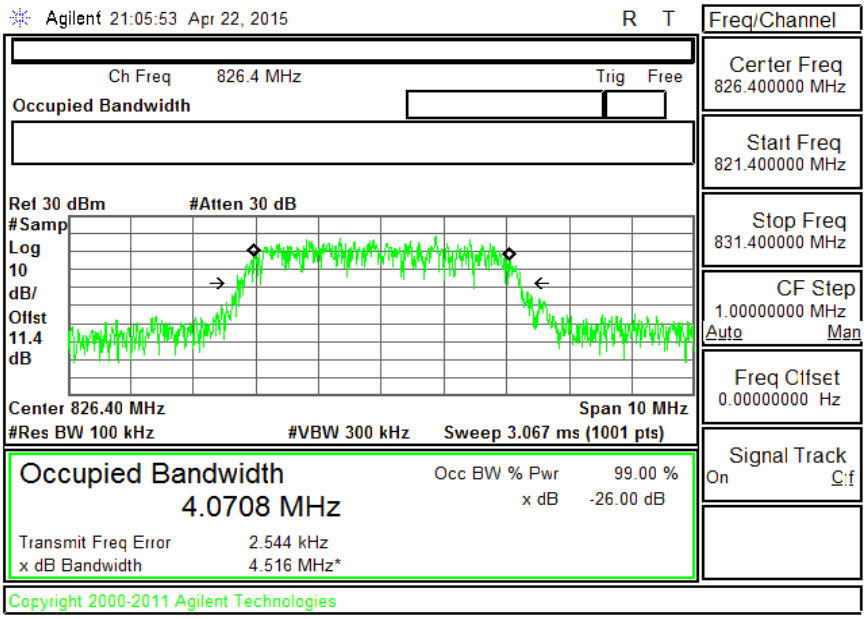
HIGH CH



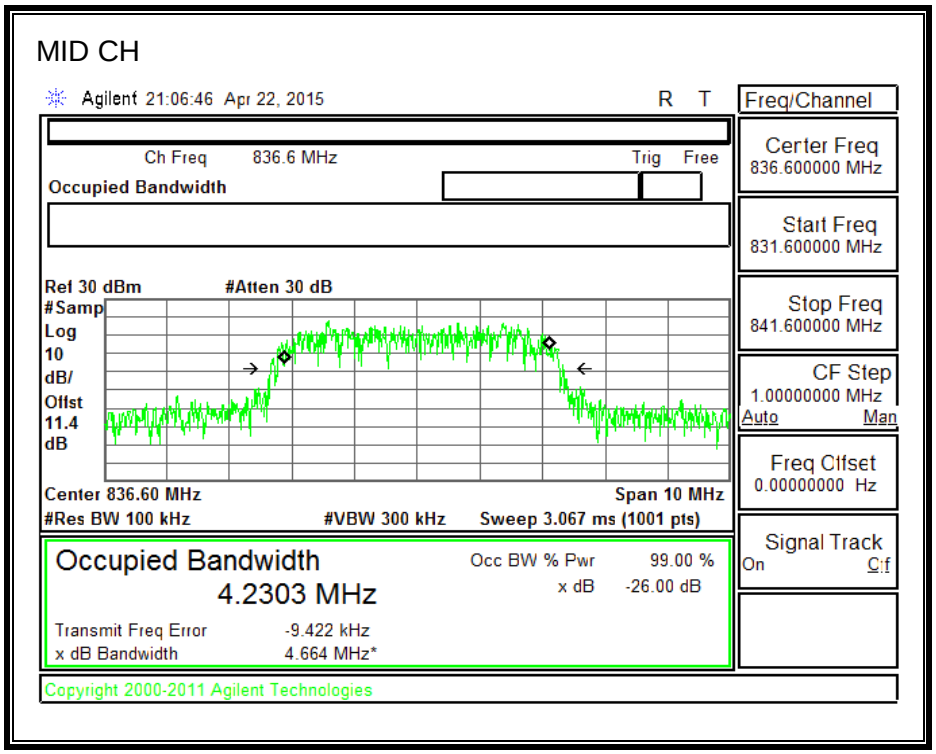
8.1.5. UMTS REL 99

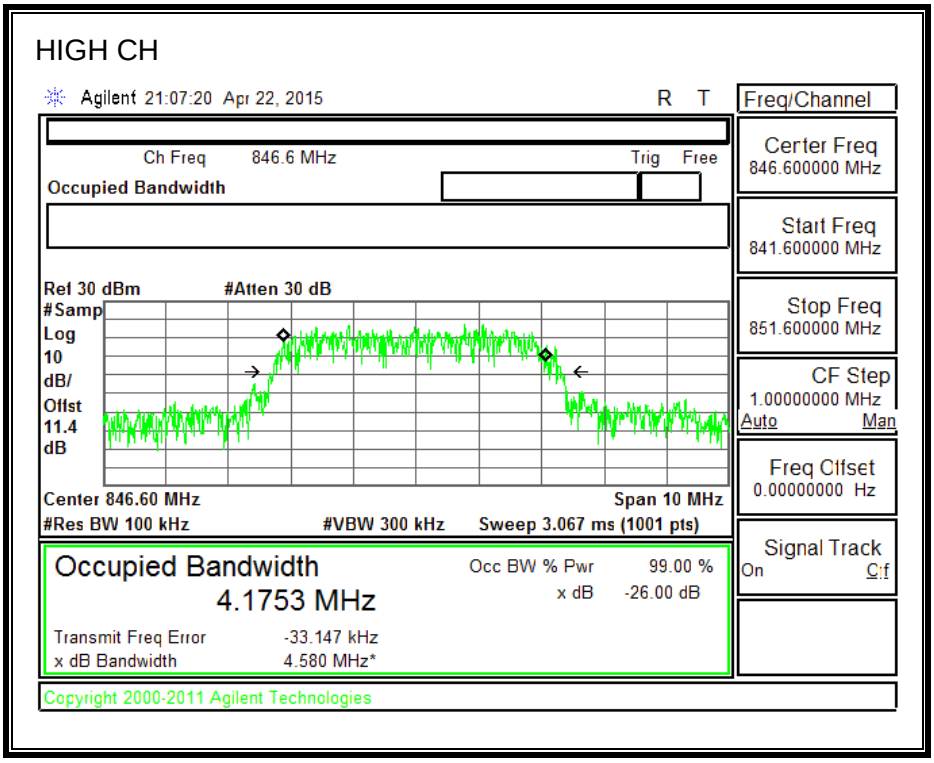
850MHz BAND

LOW CH

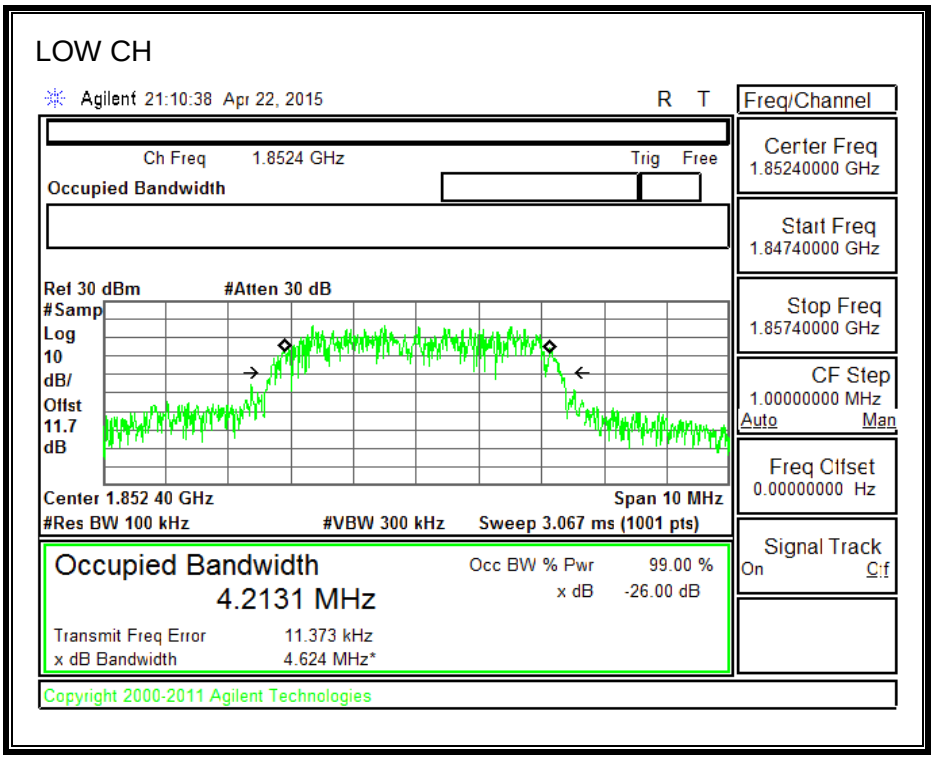


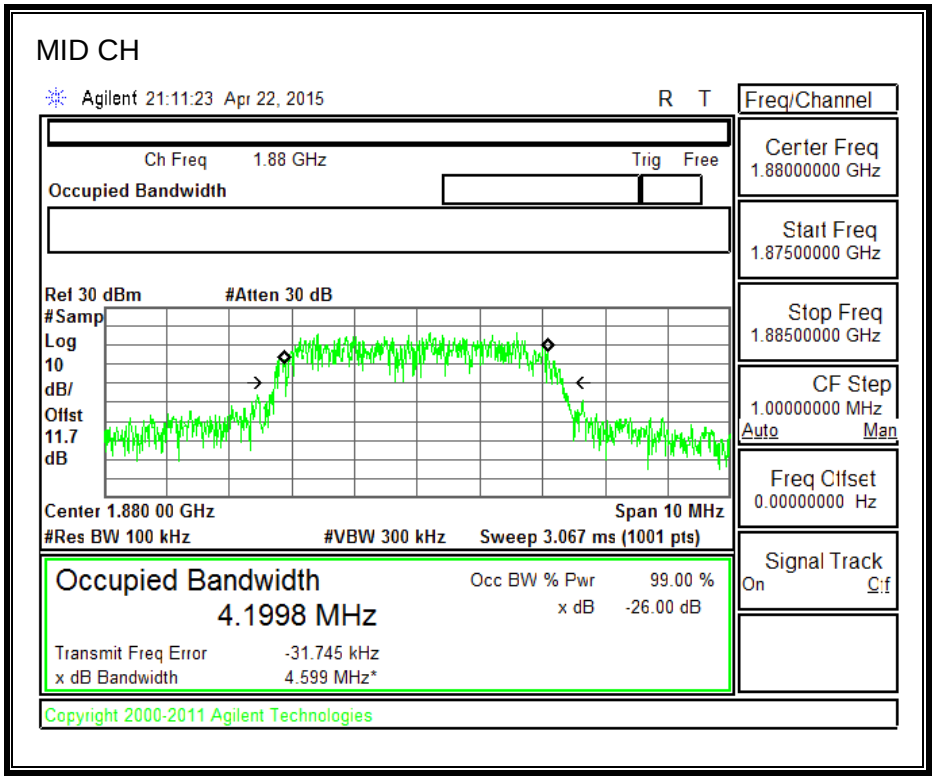
MID CH

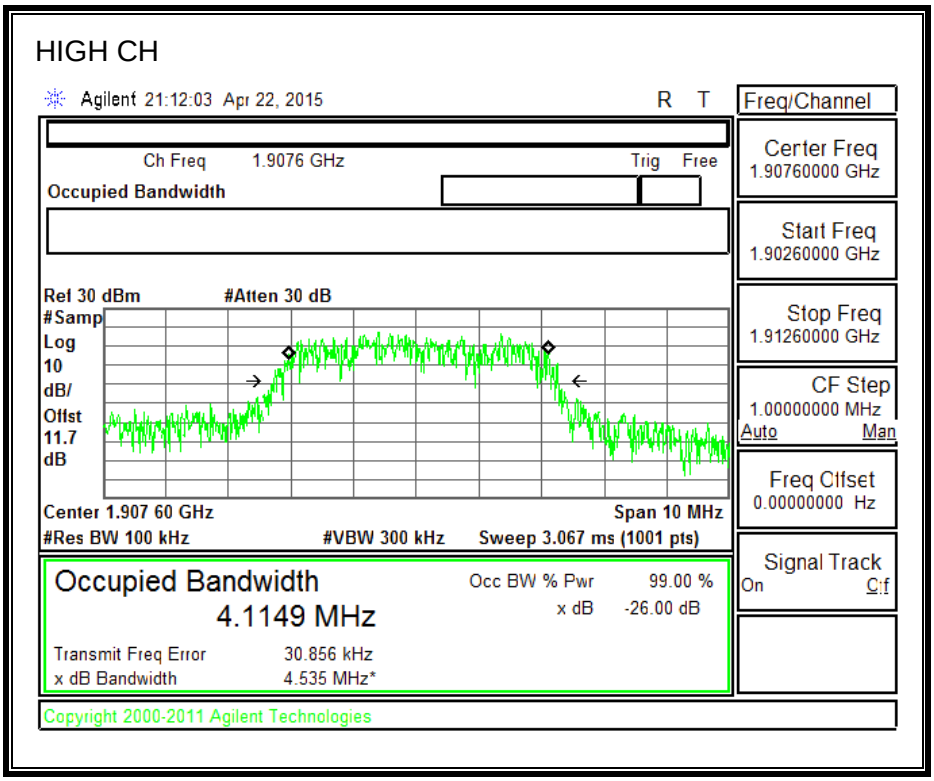




1900MHz BAND

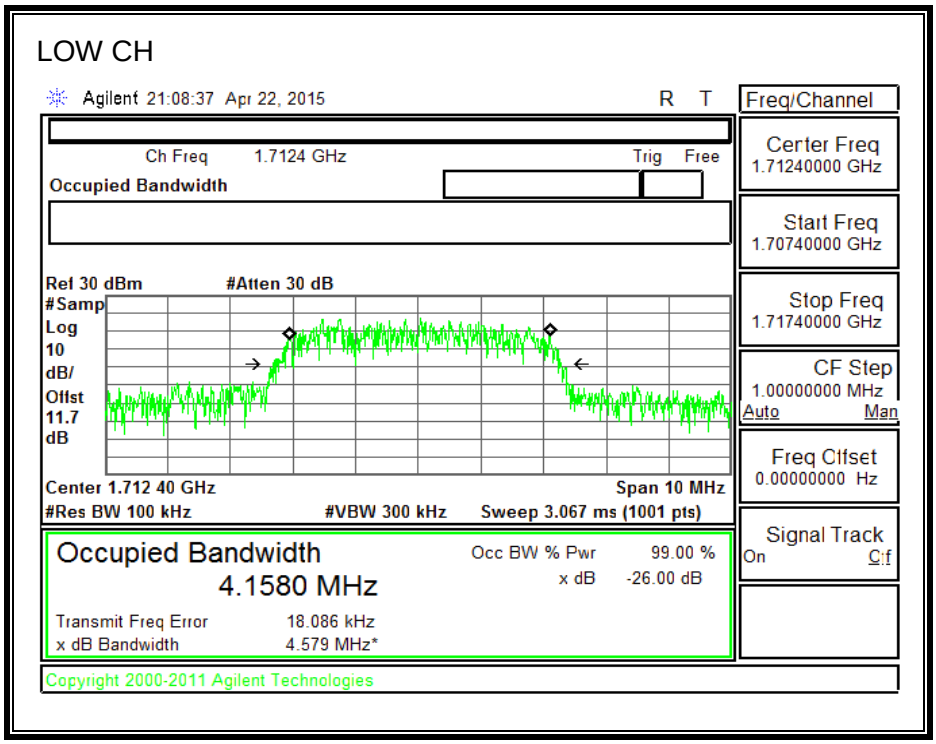




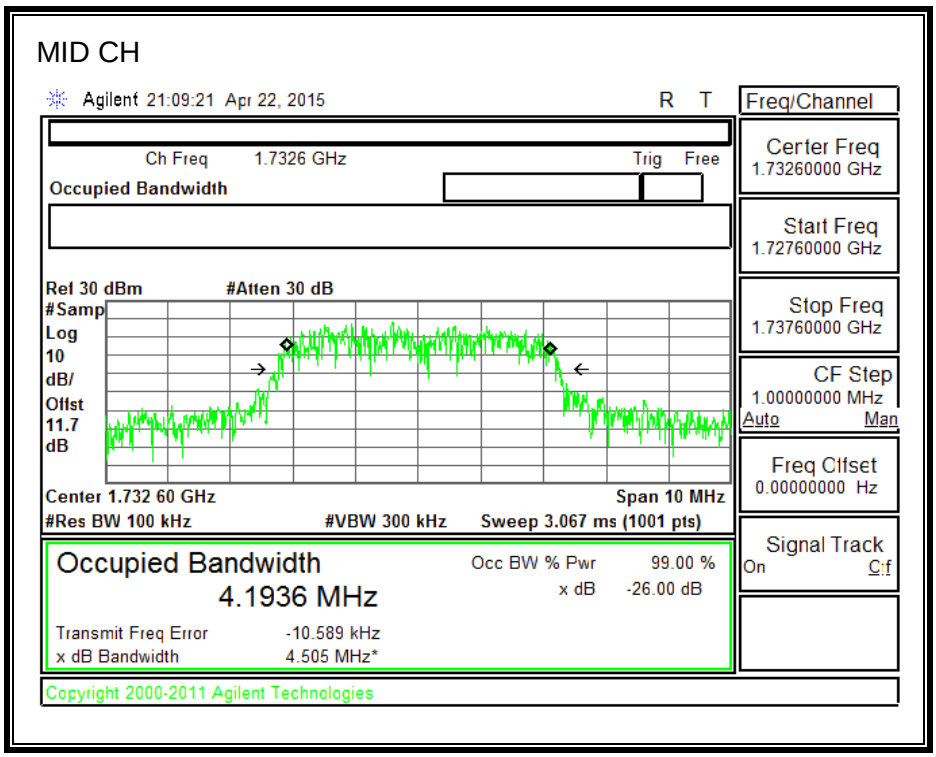


1700MHz BAND

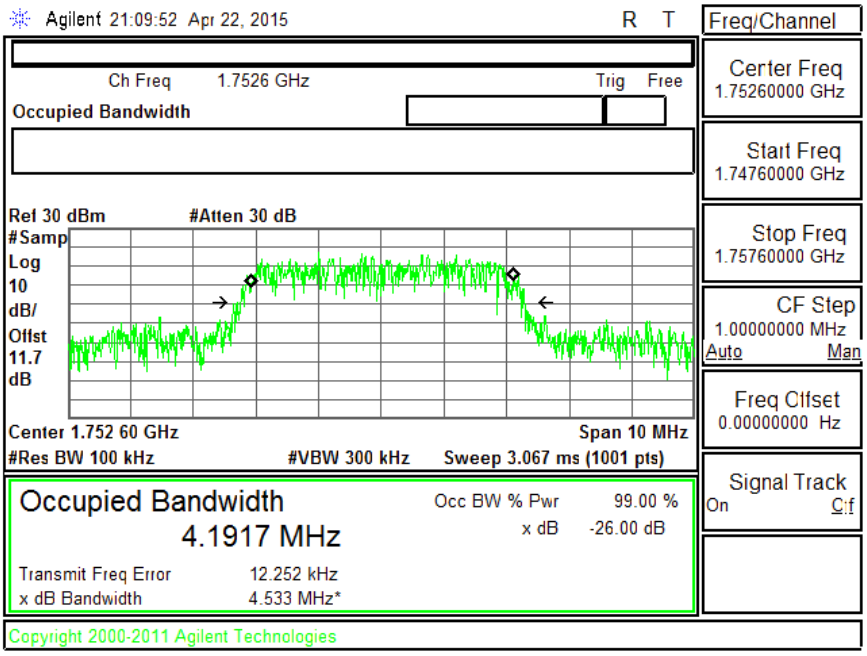
LOW CH



MID CH

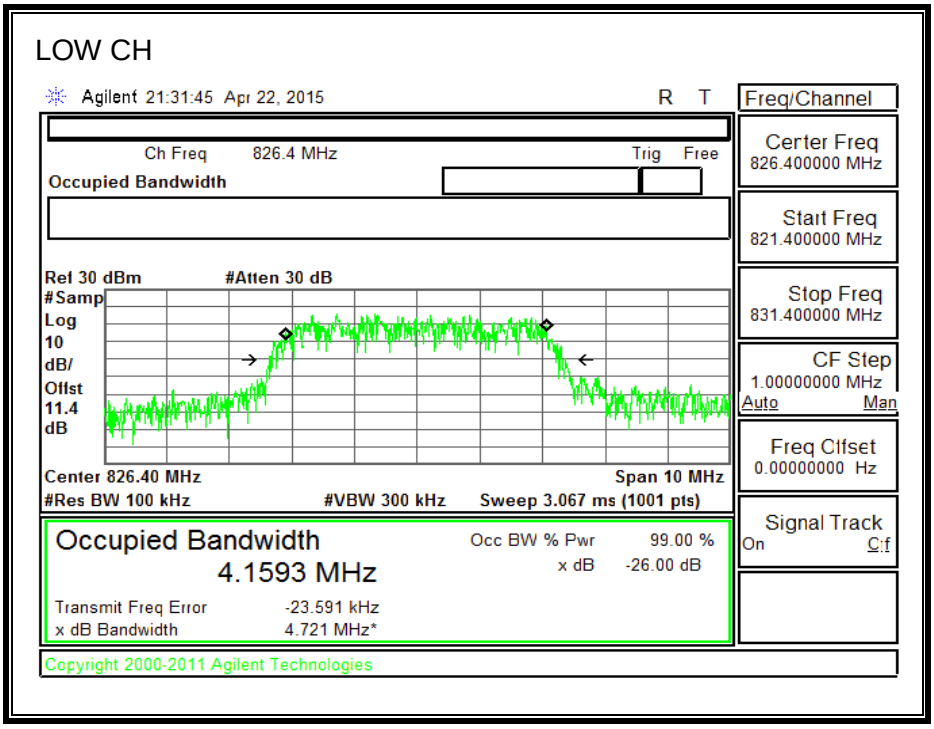


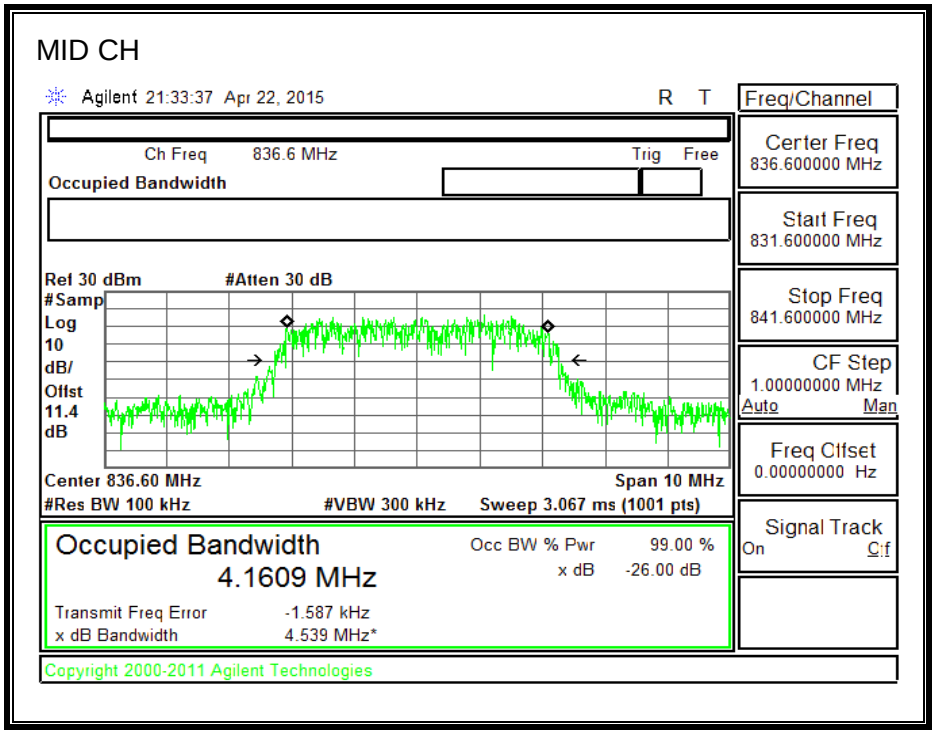
HIGH CH



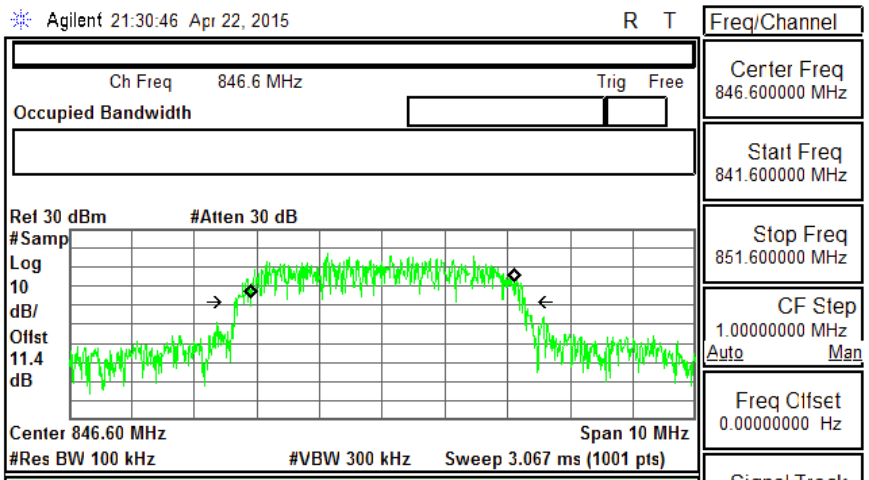
8.1.6. UMTS HSDPA

850MHz BAND



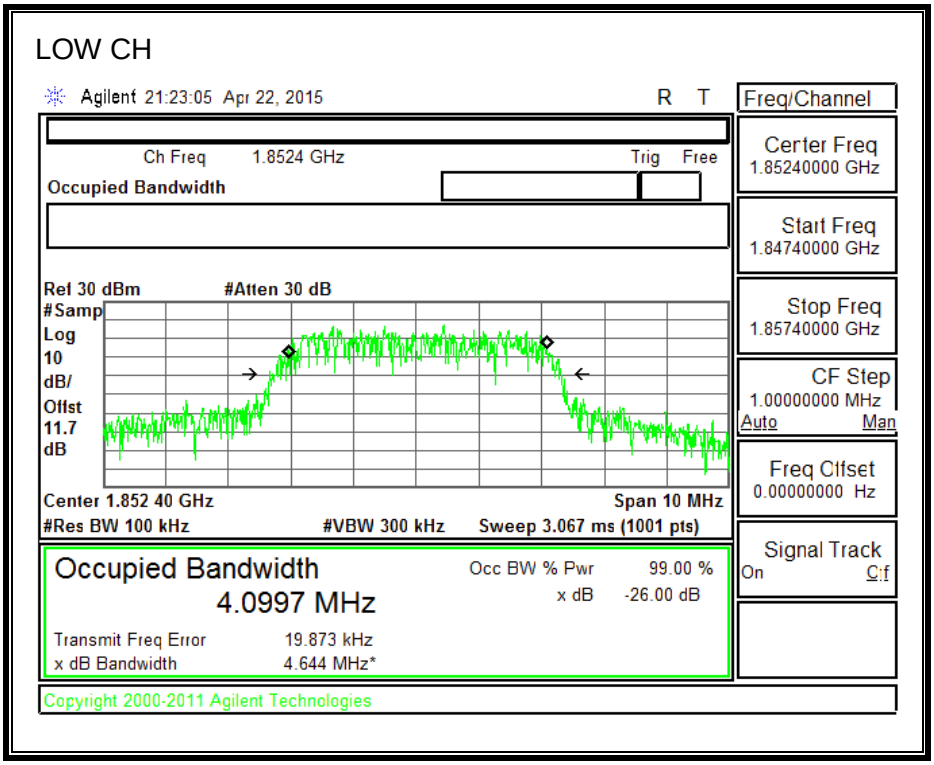


HIGH CH

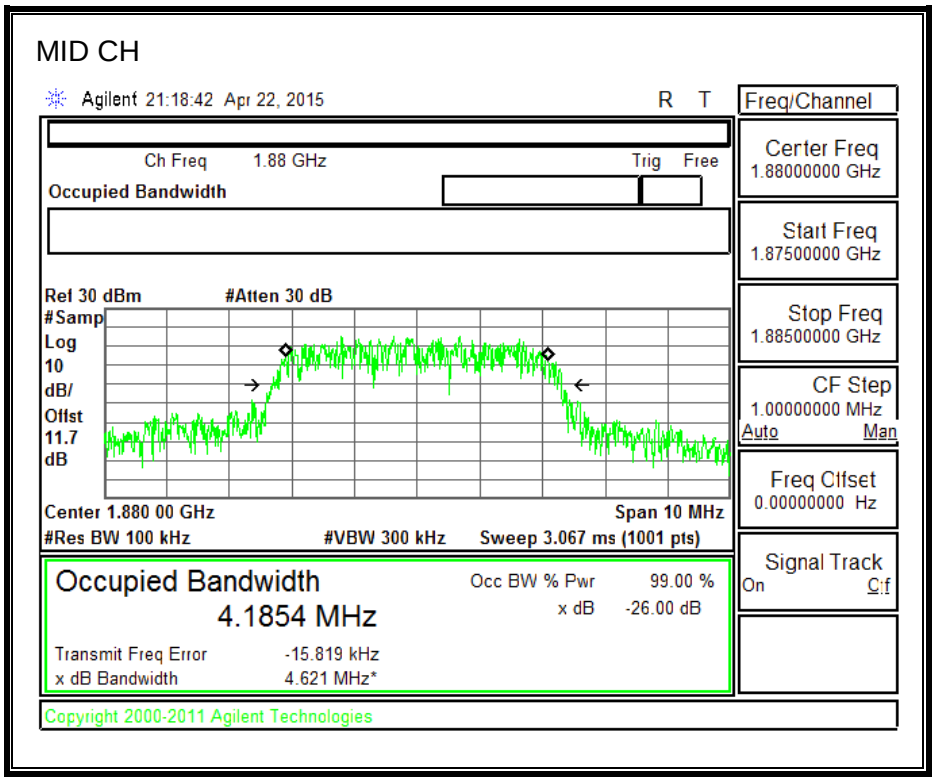


1900MHz BAND

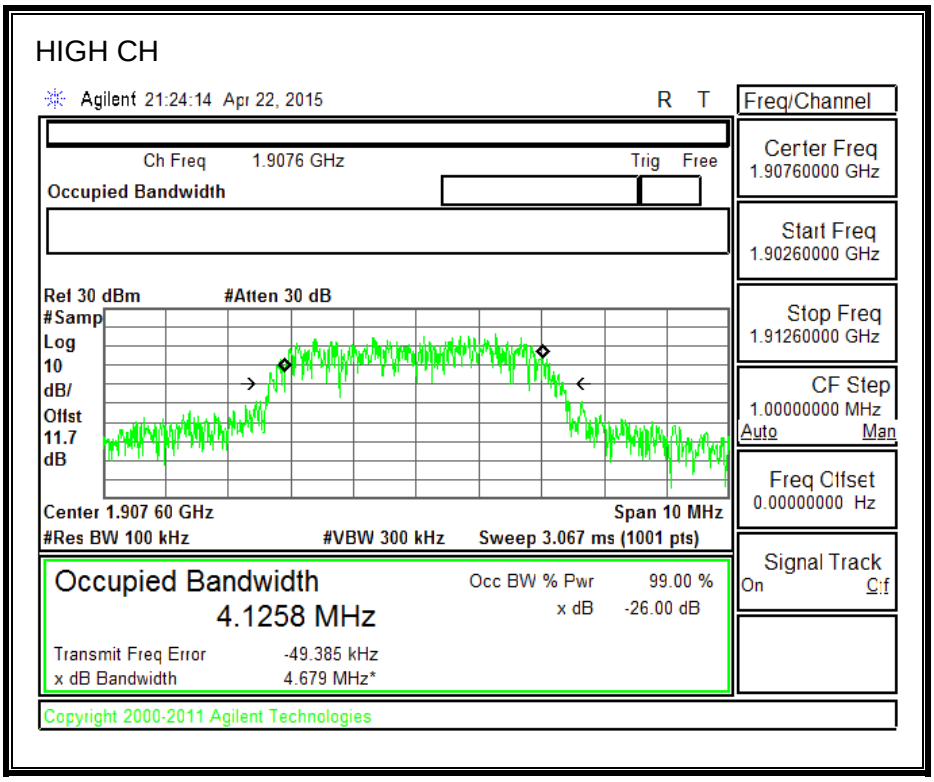
LOW CH



MID CH

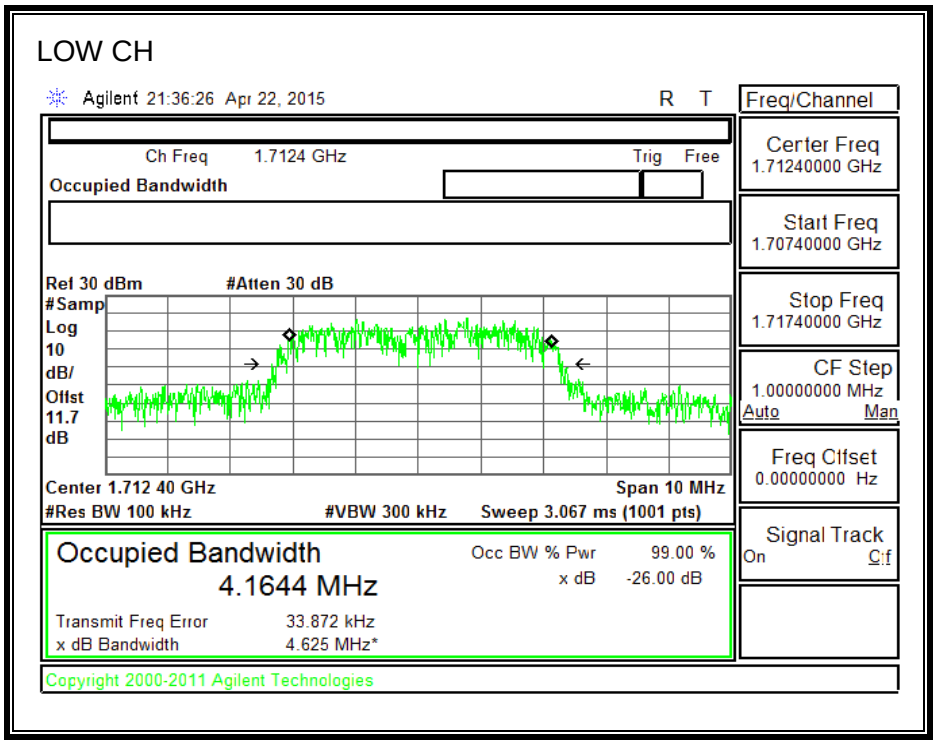


HIGH CH

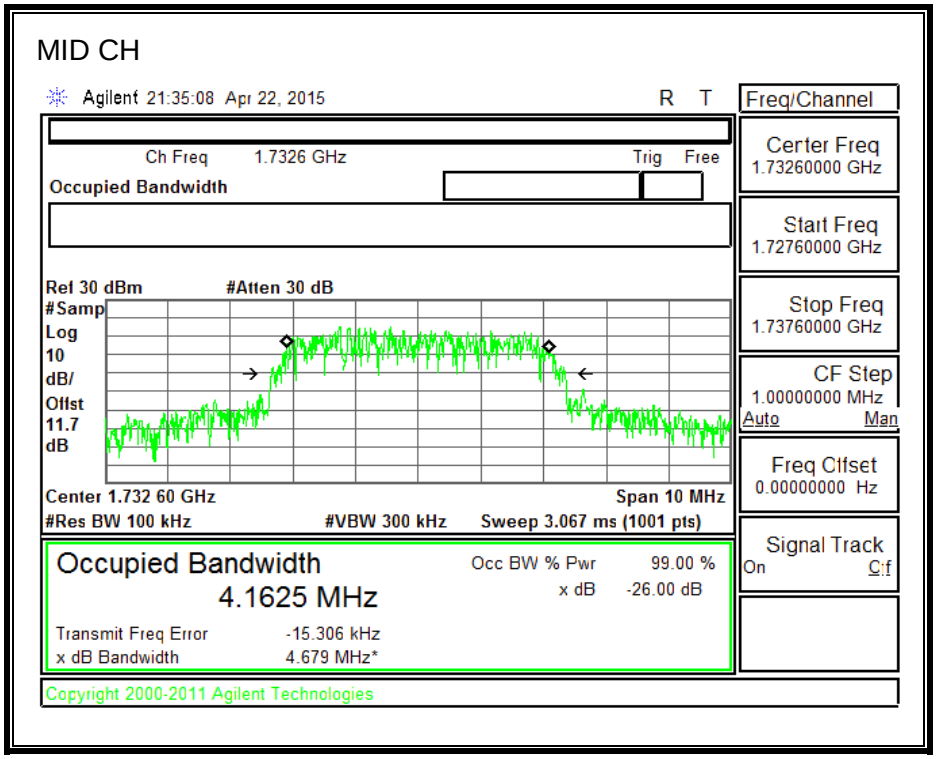


1700MHz BAND

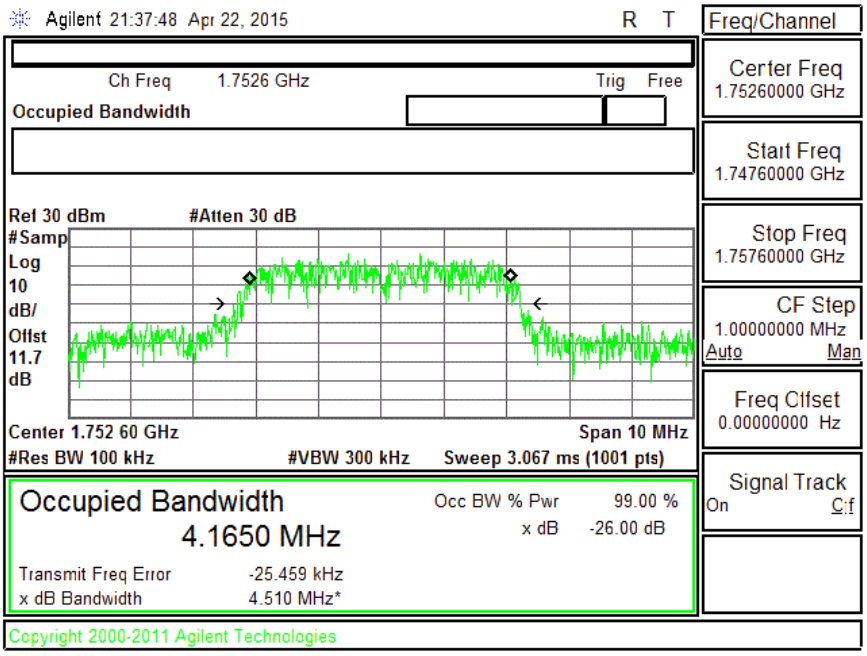
LOW CH



MID CH



HIGH CH



8.2. OCCUPIED BANDWIDTH (MODEL: A1688)

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

RESULTS

GSM-GPRS MODE PART 22 AND 24

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
CELL	GPRS	128	824.2	243.1798	304.131
		190	836.6	241.7341	**318.748**
		251	848.8	**244.4065**	297.808

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
PCS	GPRS	512	1850.2	242.1252	317.113
		661	1880.0	242.0221	313.918
		810	1909.8	**248.4105**	**325.992**

GSM-EGPRS MODE PART 22 AND 24

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
CELL	EGPRS	128	824.2	239.1025	292.024
		190	836.6	245.2970	**324.673**
		251	848.8	**245.3549**	289.671

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
PCS	EGPRS	512	1850.2	240.2286	309.109
		661	1880.0	245.3680	298.869
		810	1909.8	**246.1184**	**312.383**

CDMA2000 1xRTT, PART 22, 24, 27 AND 90

Band	Mode	Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
CELL	CDMA 2000 1xRTT	1013	824.70	1.2674	1.412
		384	836.52	**1.2817**	1.416
		777	848.31	1.2485	1.371
PCS		25	1851.25	1.2597	1.395
		600	1880.00	1.2519	1.361
		1175	1908.75	**1.2819**	1.406
AWS		25	1711.25	**1.2731**	1.379
		450	1732.50	1.2547	1.364
		875	1753.75	1.2596	1.395
800 MHz Secondary		450	817.25	**1.2946**	1.409
		560	820.00	1.2595	1.418
		670	822.75	1.2594	1.391

CDMA2000 EVDO REV A, PART 22, 24, 27 AND 90

Band	Mode	Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
CELL	CDMA 2000 EVDO Rev. A	1013	824.70	1.2748	1.404
		384	836.52	**1.2901**	1.394
		777	848.31	1.2597	1.378
PCS		25	1851.25	**1.2908**	1.410
		600	1880.00	1.2769	1.412
		1175	1908.75	1.2841	1.416
AWS		25	1711.25	**1.2744**	1.395
		450	1732.50	1.2677	1.399
		875	1753.75	1.2741	1.409
800 MHz Secondary		450	817.25	**1.2744**	1.403
		560	820.00	1.2620	1.398
		670	822.75	1.2648	1.374

UMTS REL99 MODE PART 22, 24, AND 27

PART 22, 24, AND 27					
Band	Mode	DL Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
850MHz	UMTS Rel. 99	4357	826.40	4.0446	4.527
		4408	836.60	**4.1750**	**4.664**
		4458	846.60	4.1253	4.643
1900MHz		9662	1852.40	**4.2462**	**4.684**
		9800	1880.00	4.0889	4.548
		9938	1907.60	4.065	4.658
1700MHz		1537	1712.40	4.0884	4.532
		1638	1732.60	**4.1513**	**4.625**
		1738	1752.60	4.1292	4.621

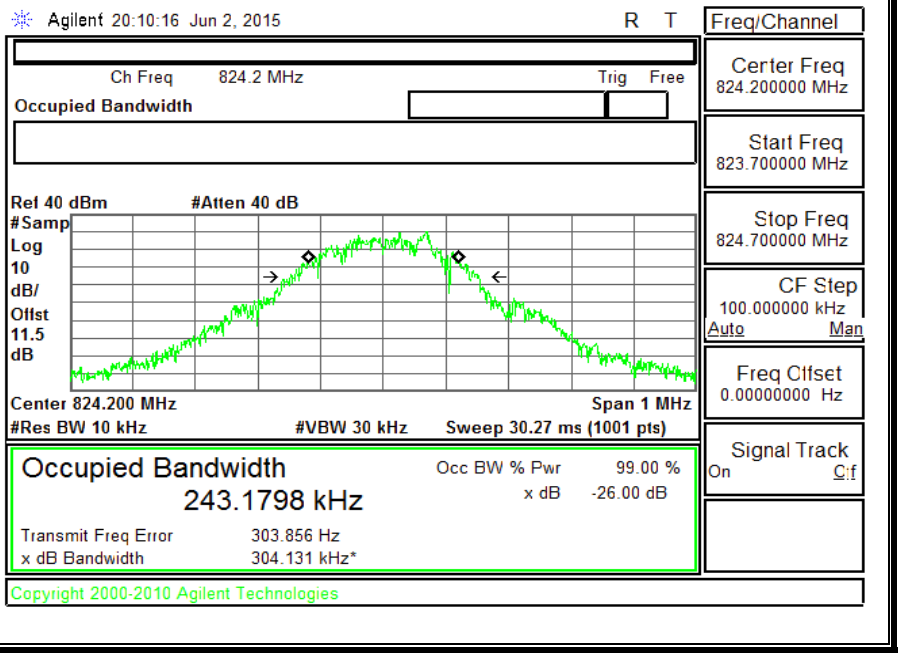
UMTS HSDPA MODE PART 22, 24, AND 27

PART 22, 24, AND 27					
Band	Mode	DL Channel	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
850MHz	UMTS HSDPA	4357	826.40	4.0885	4.600
		4408	836.60	**4.2115**	**4.641**
		4458	846.60	4.1754	4.573
1900MHz		9662	1852.40	4.1745	**4.685**
		9800	1880.00	**4.1964**	4.656
		9938	1907.60	4.1643	4.625
1700MHz		1537	1712.40	4.1261	4.641
		1638	1732.60	**4.1398**	4.671
		1738	1752.60	4.0500	**4.696**

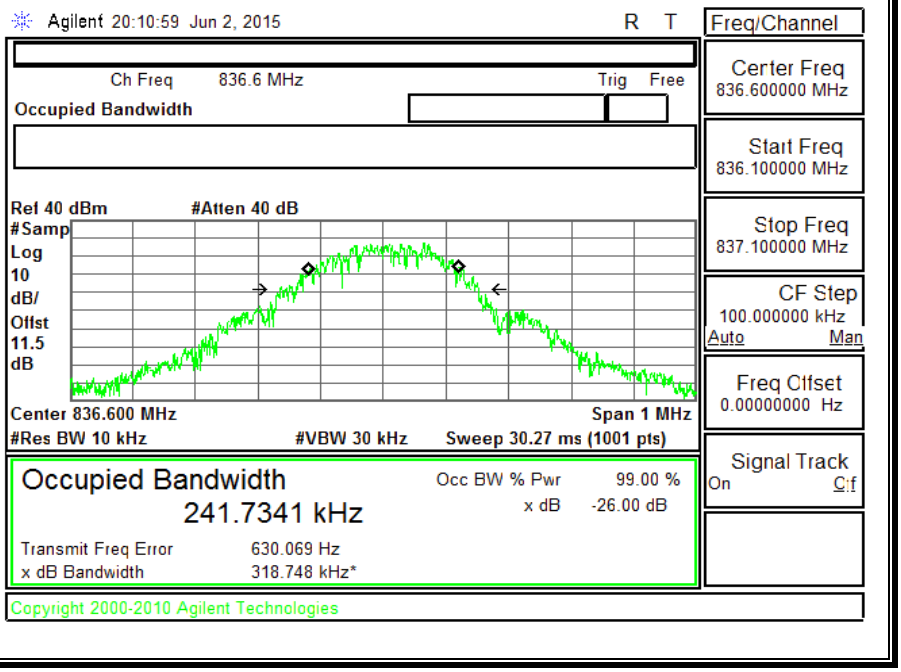
8.2.1. GSM GPRS

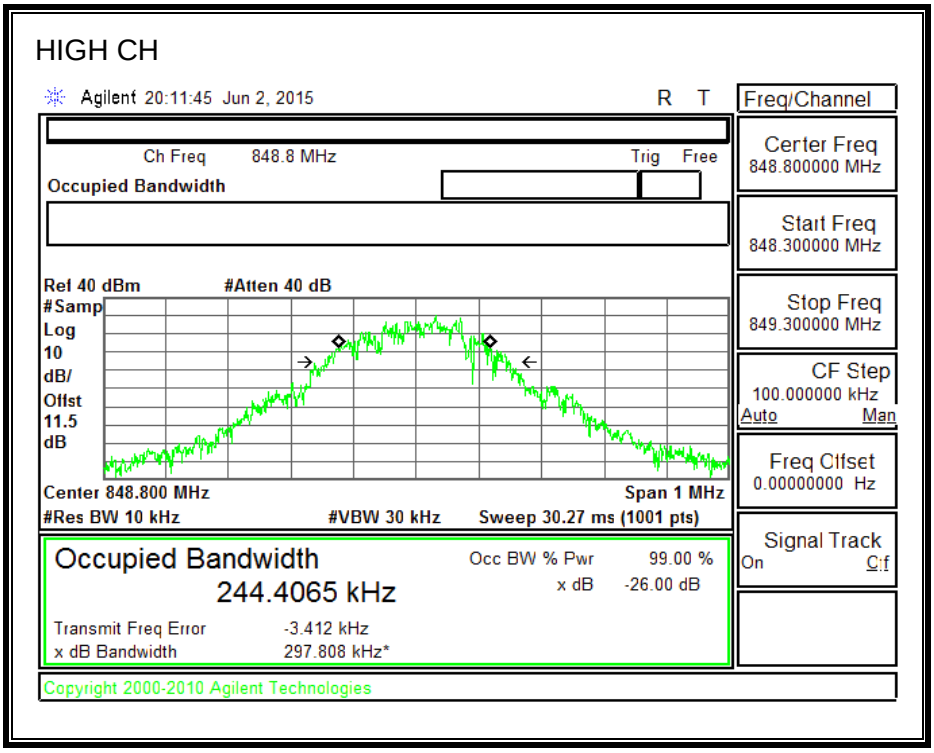
850MHz BAND

LOW CH



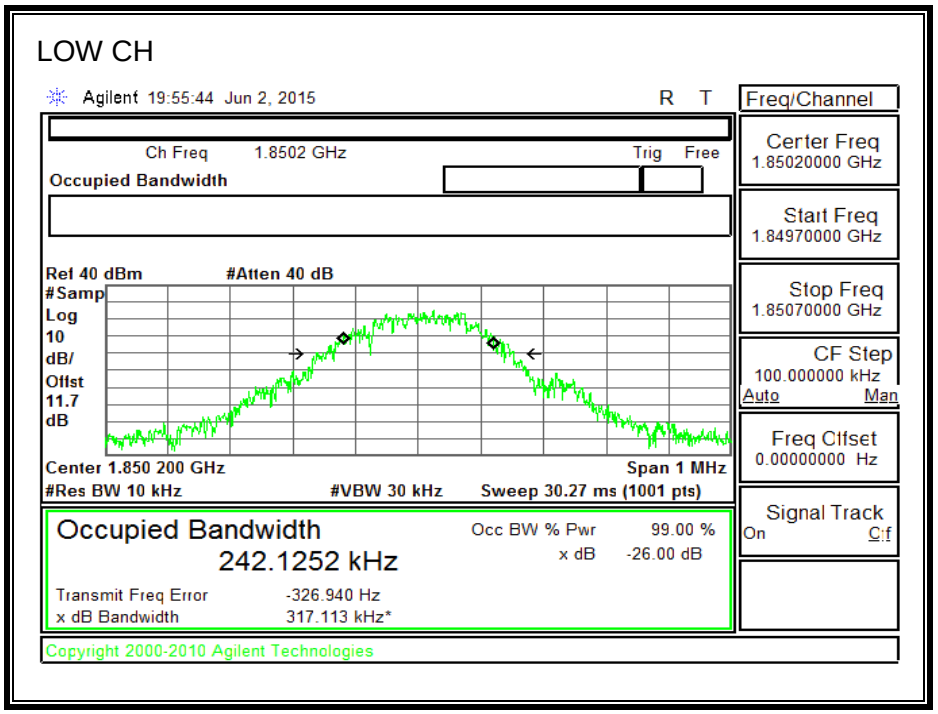
MID CH



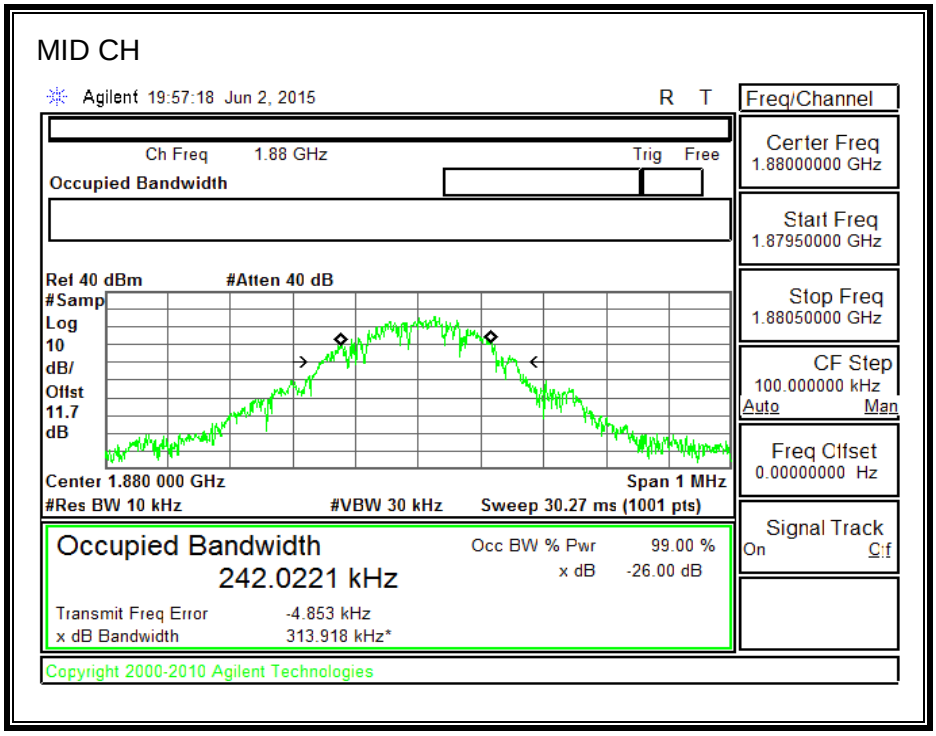


1900MHz BAND

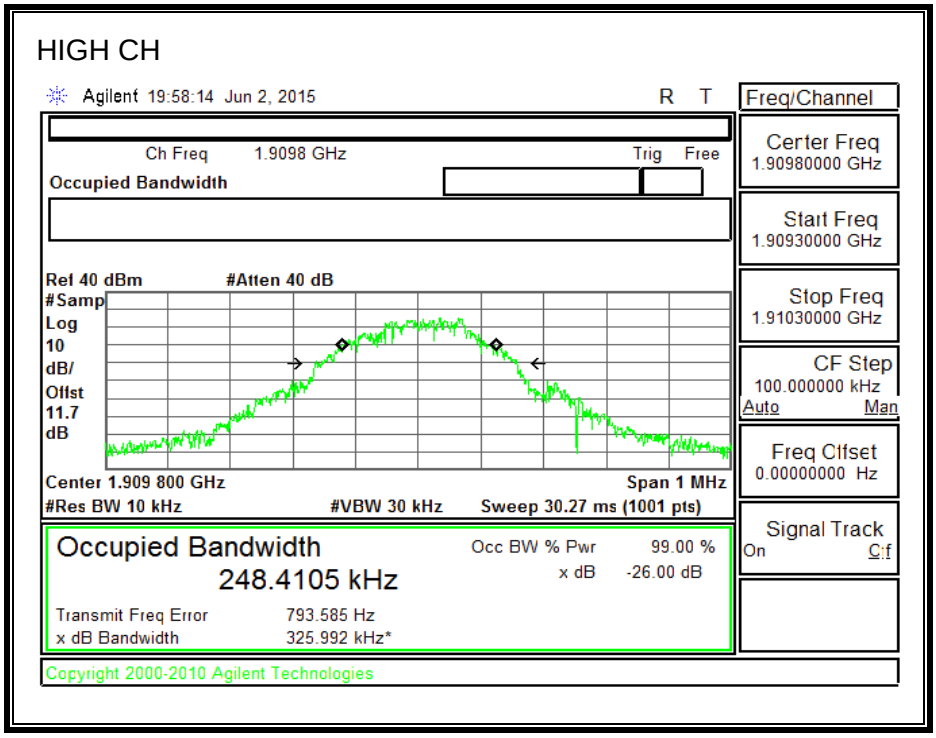
LOW CH



MID CH



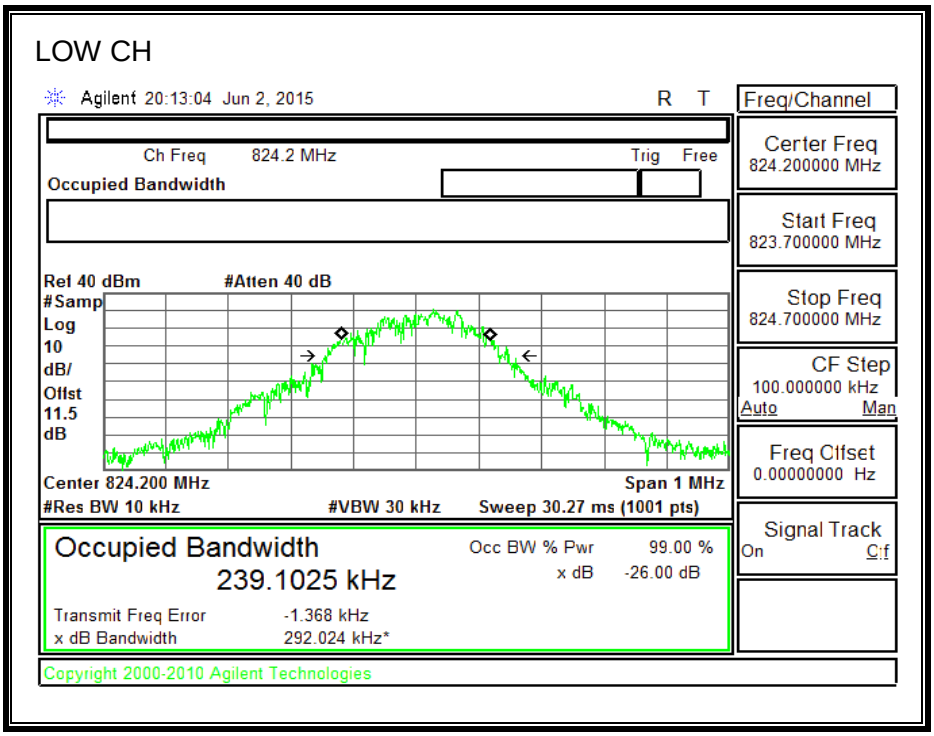
HIGH CH



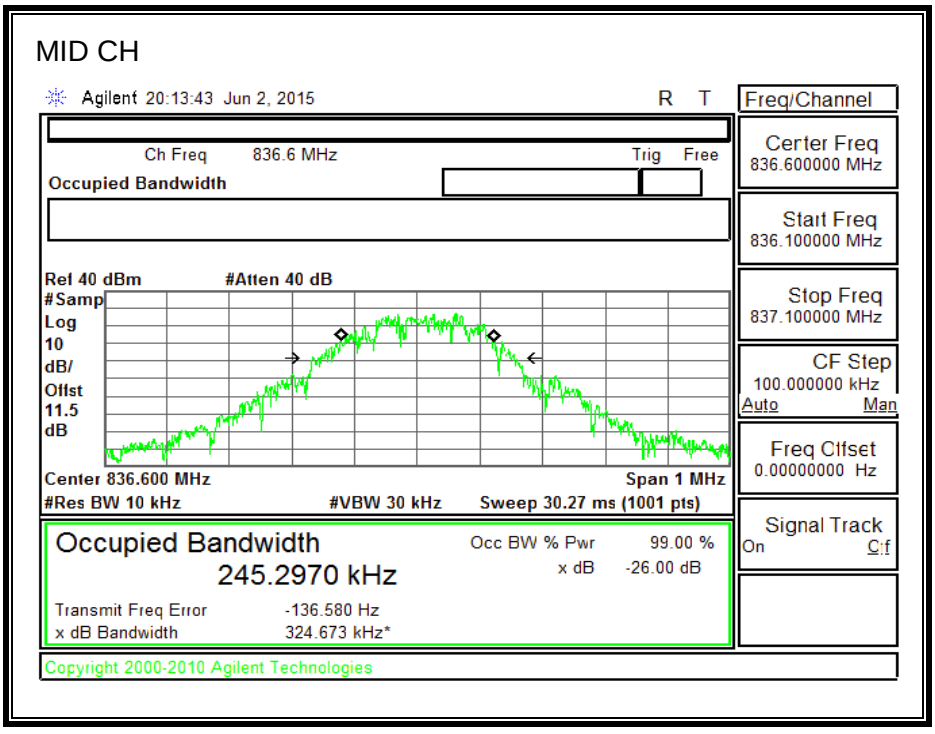
8.2.2. GSM EGPRS

850MHz BAND

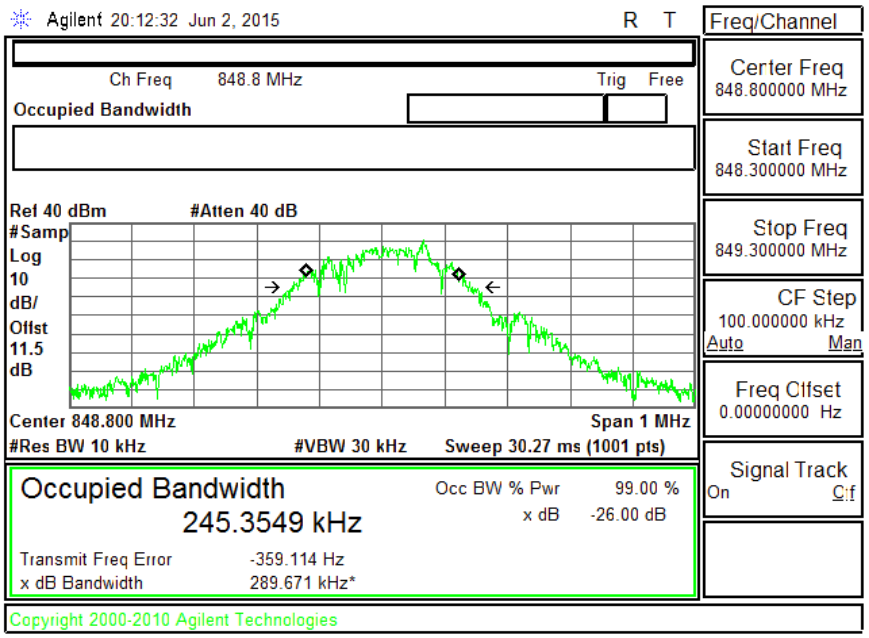
LOW CH



MID CH

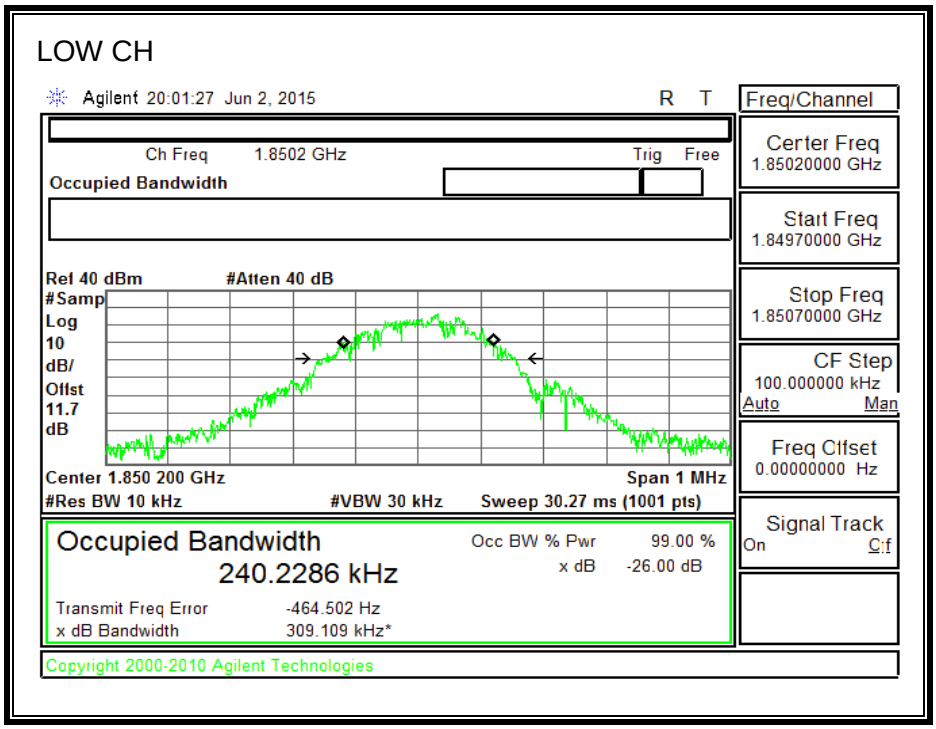


HIGH CH

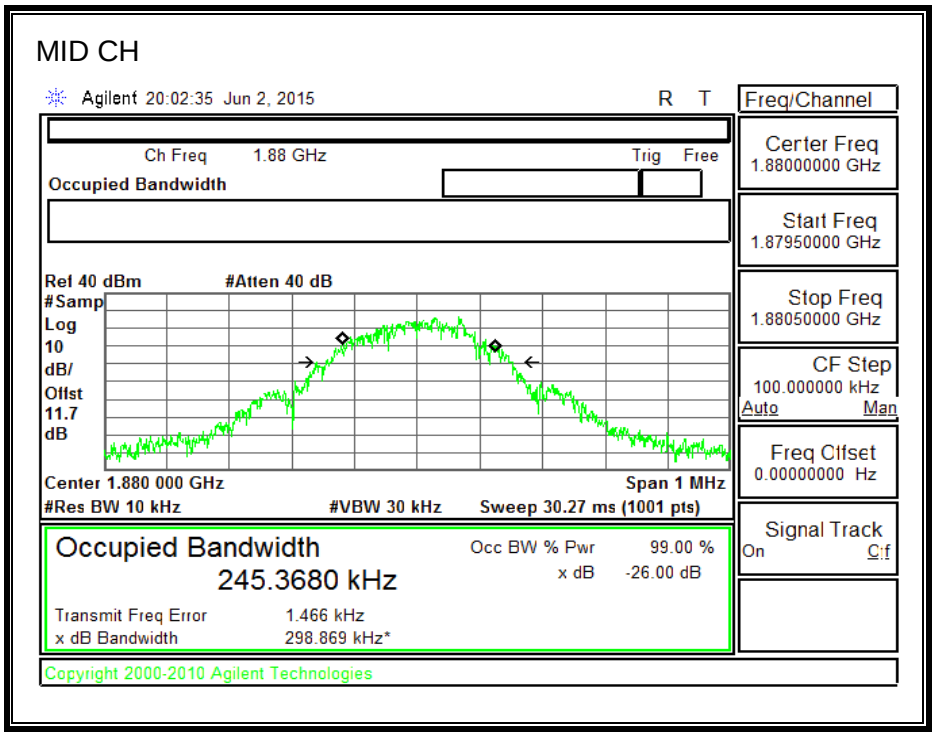


1900MHz BAND

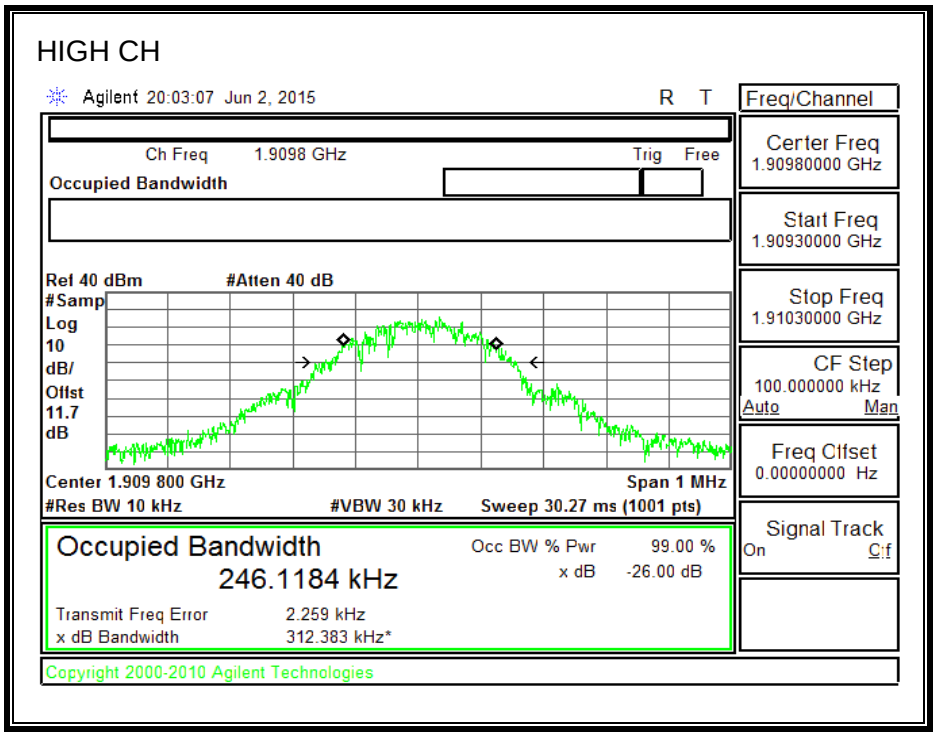
LOW CH



MID CH



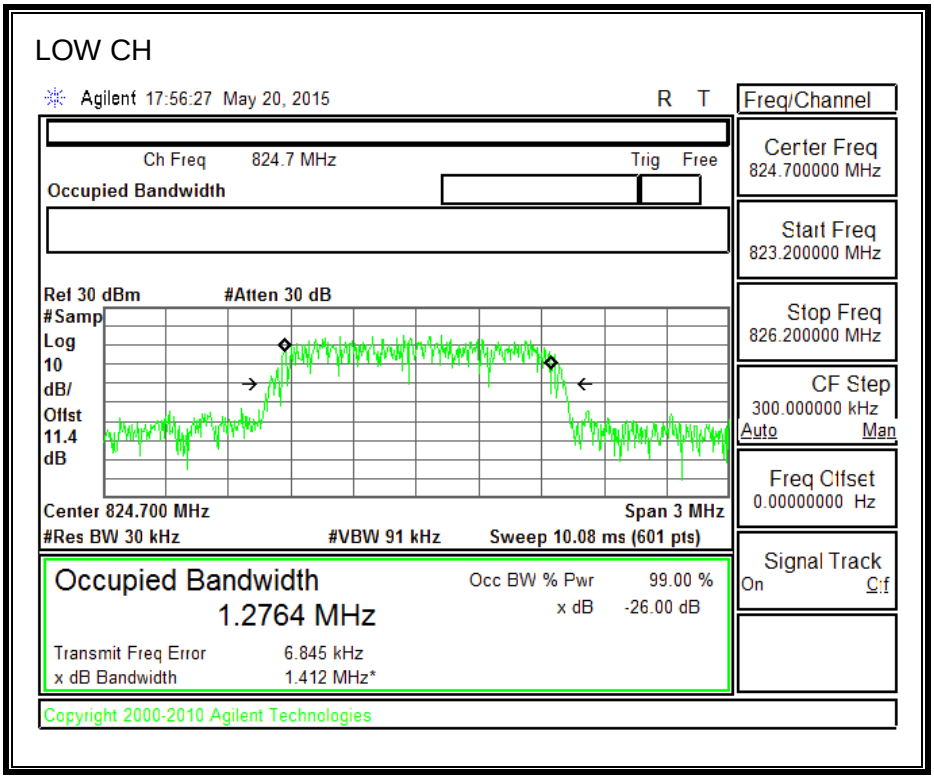
HIGH CH



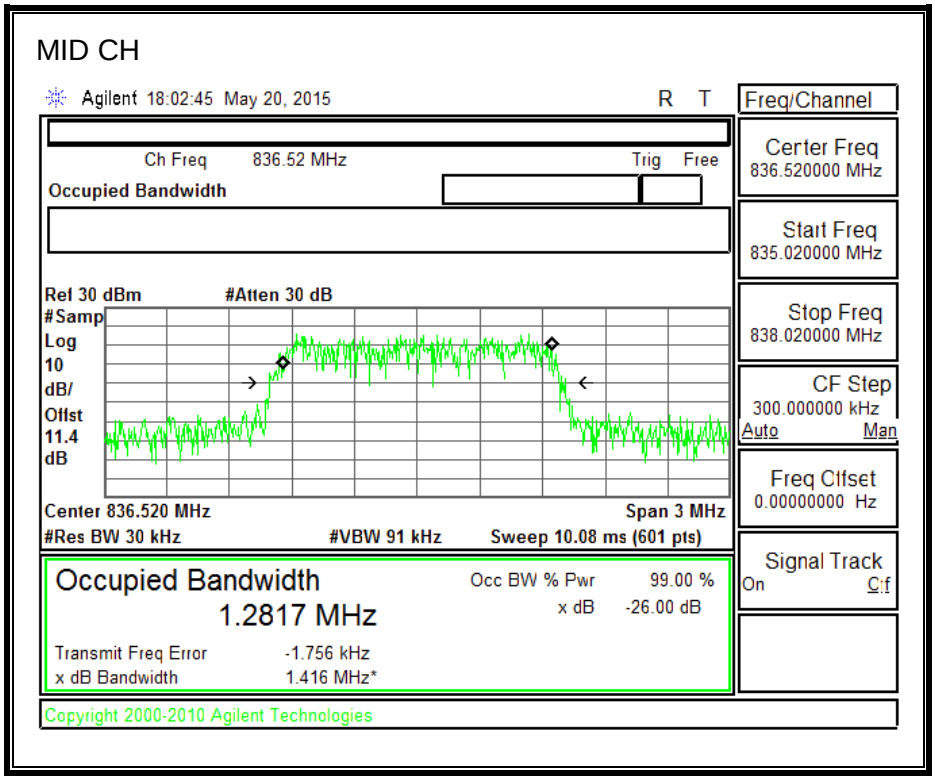
8.2.3. CDMA2000 1xRTT

850MHz BAND

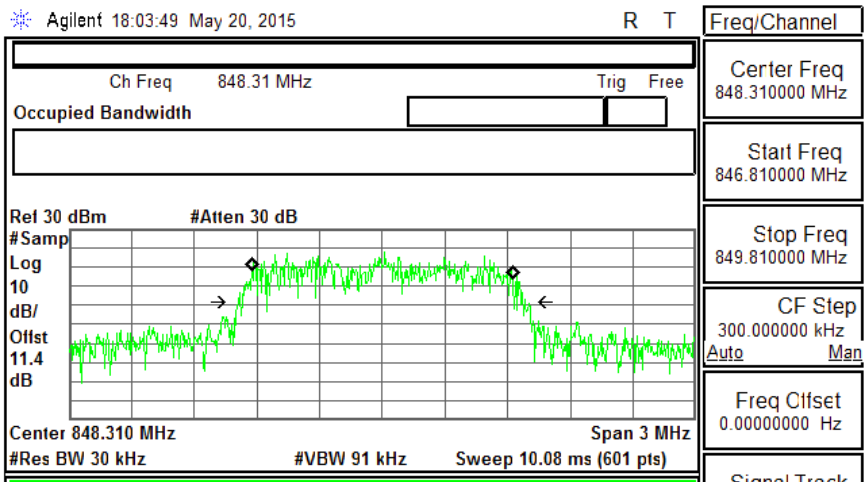
LOW CH



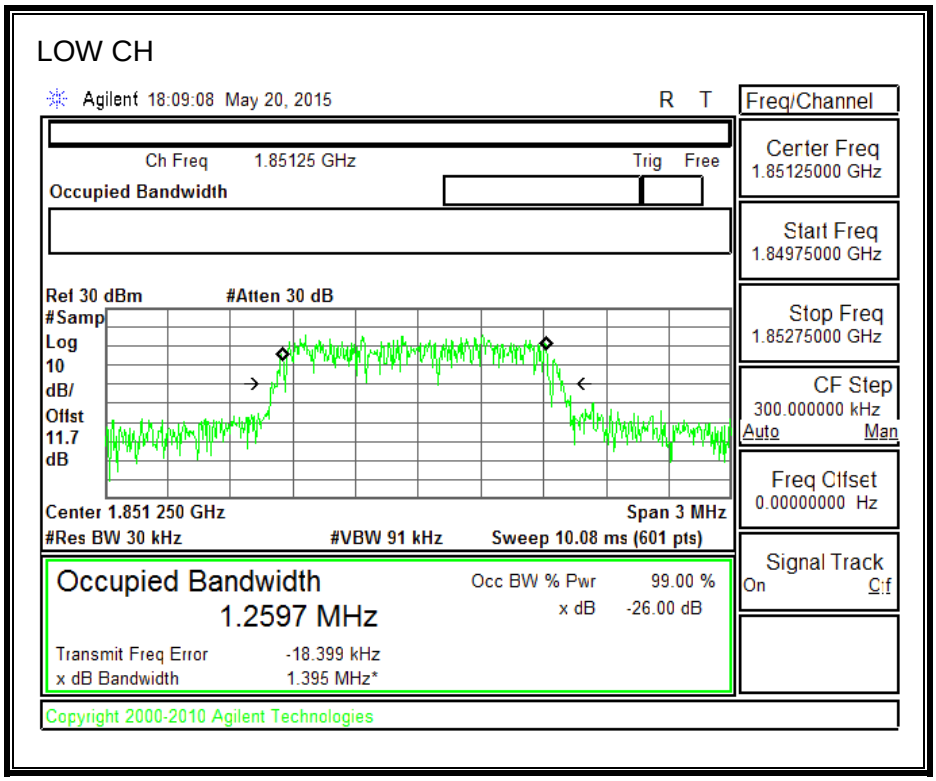
MID CH

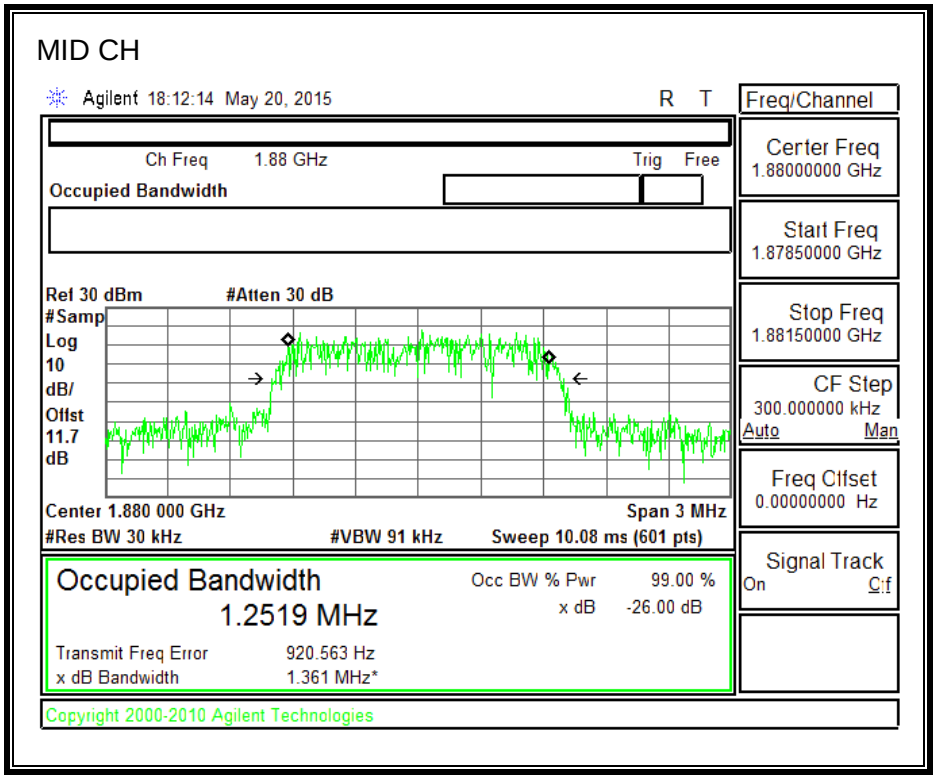


HIGH CH

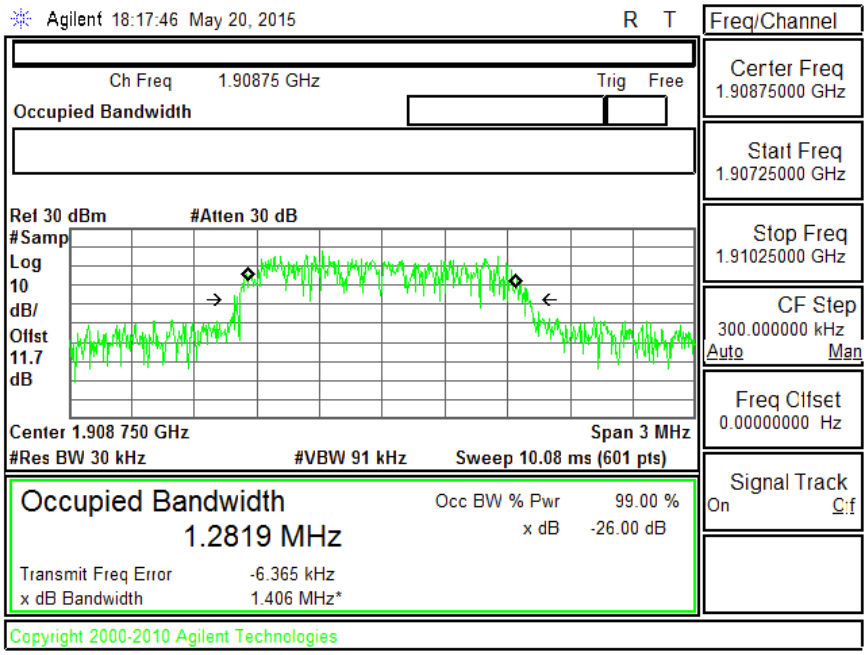


1900MHz BAND



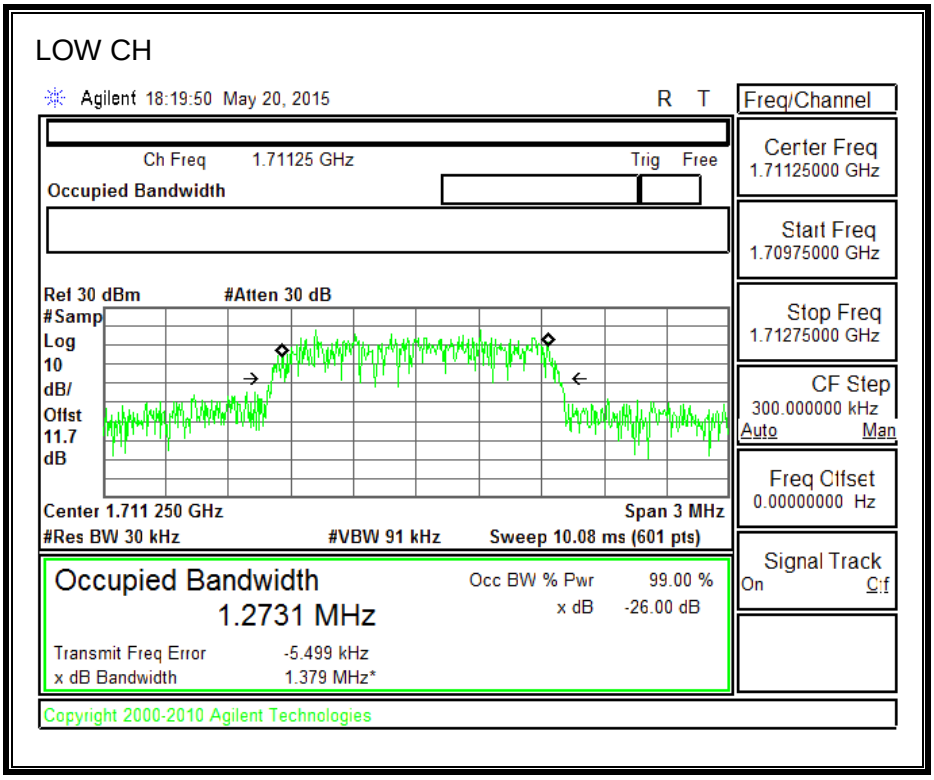


HIGH CH

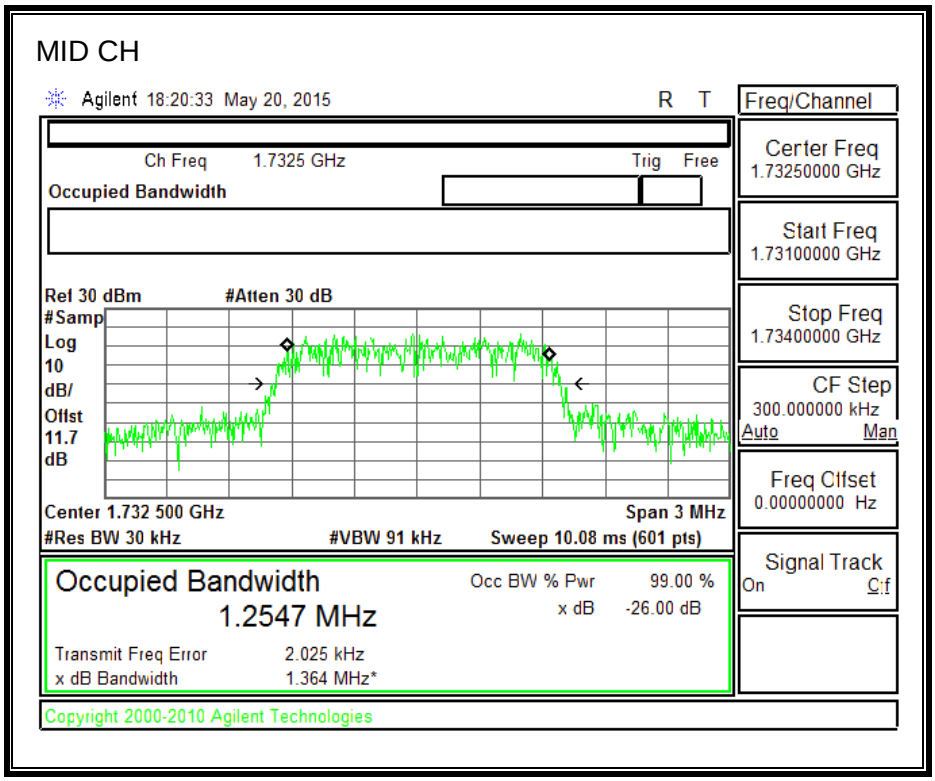


1700MHz BAND

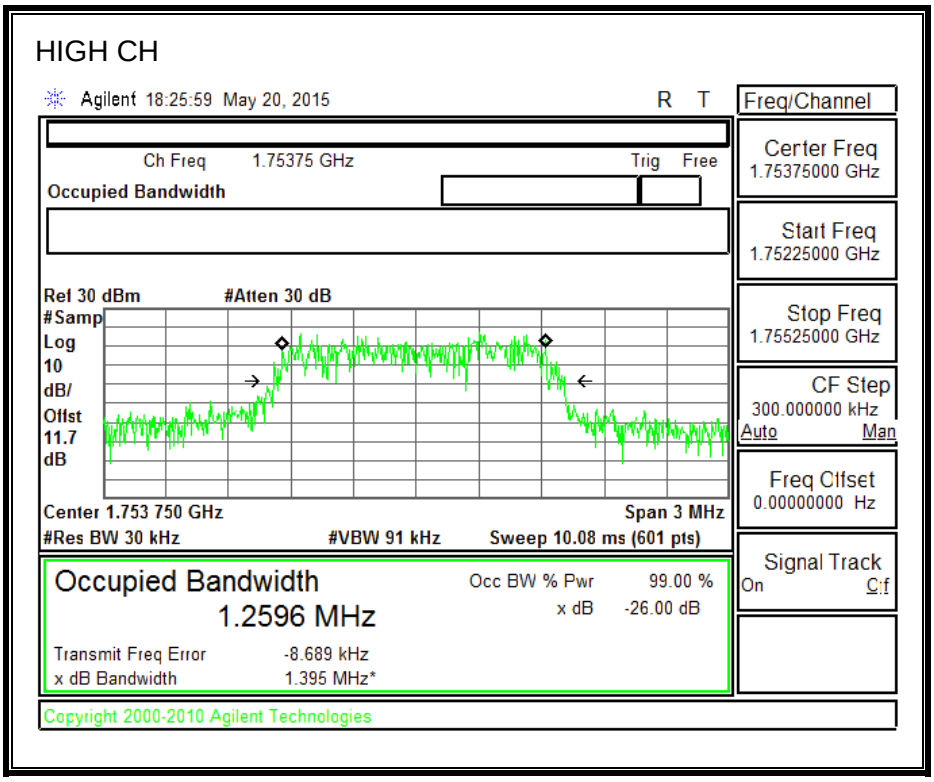
LOW CH



MID CH

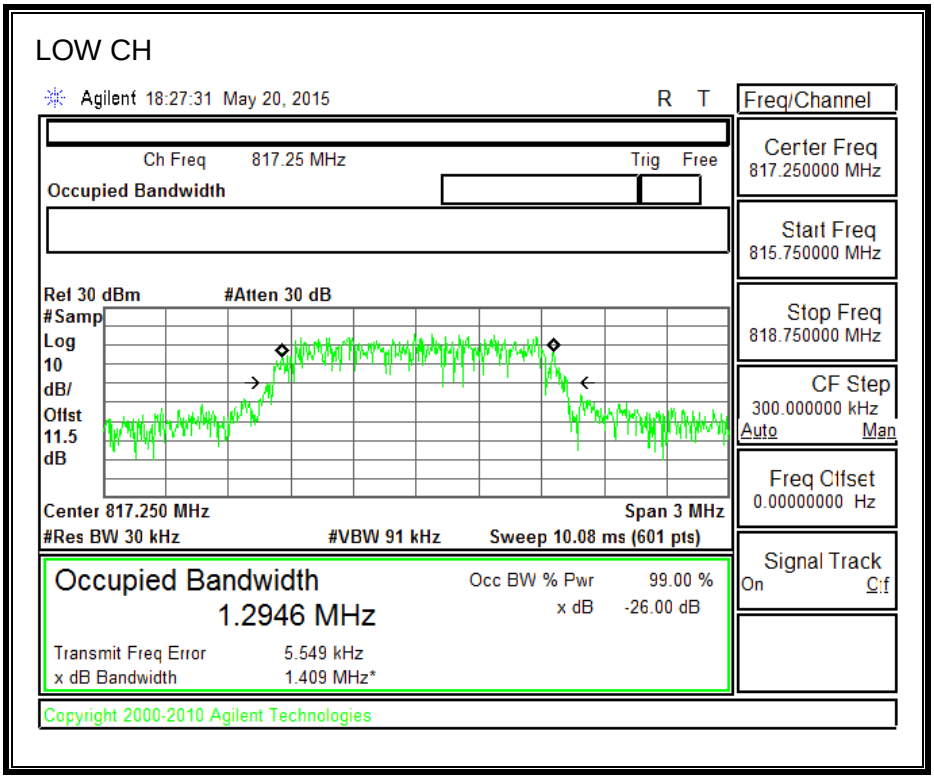


HIGH CH

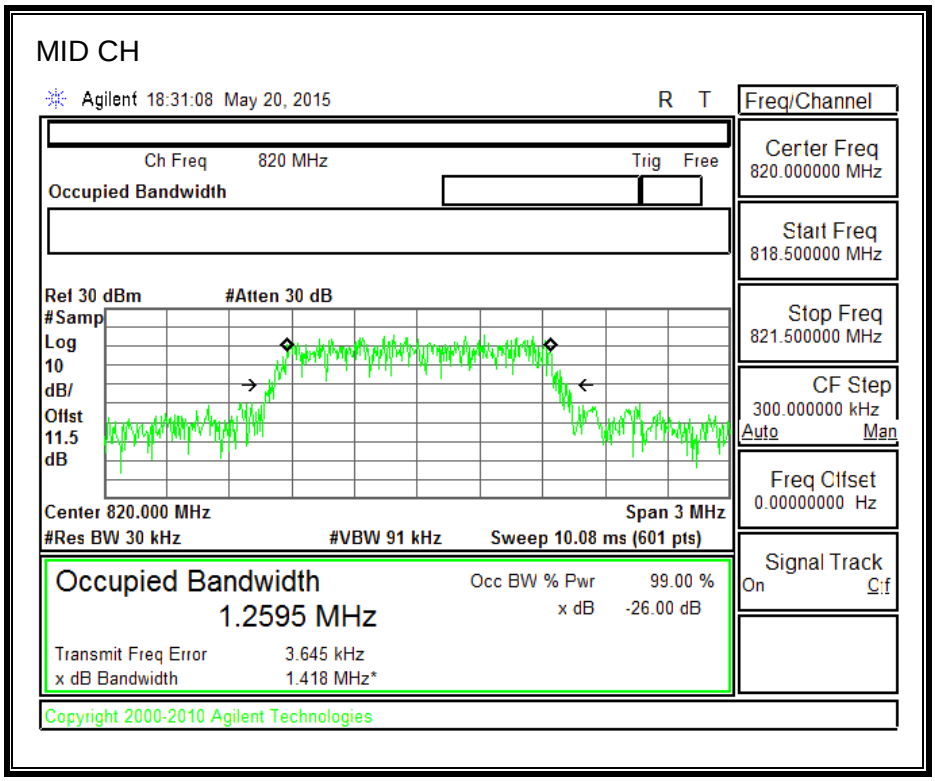


800MHz SECONDARY BAND

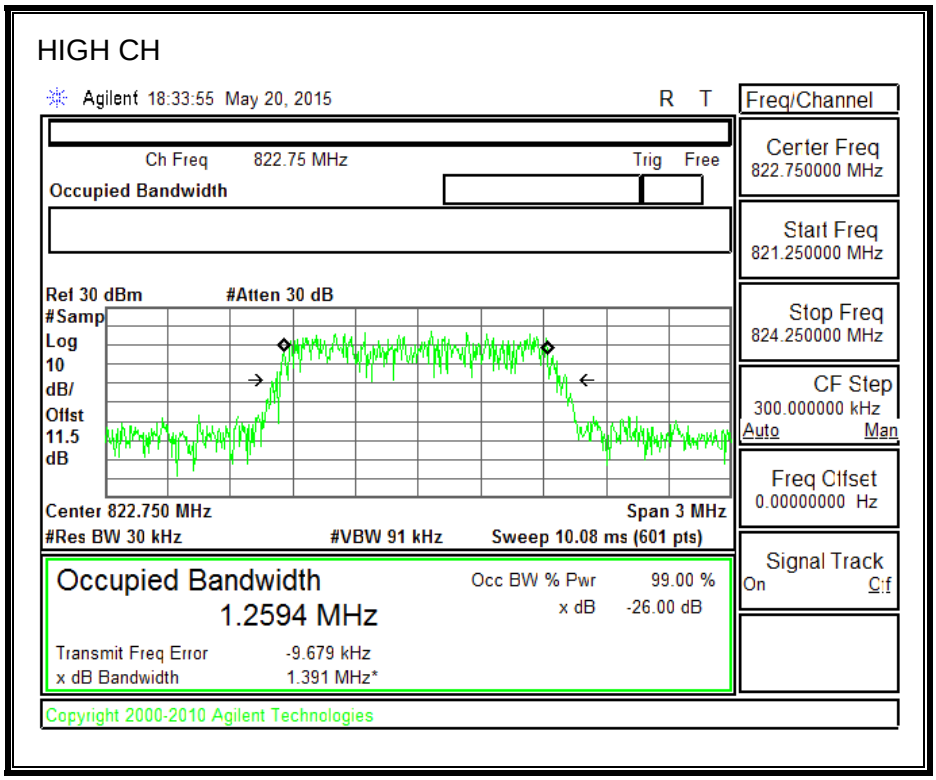
LOW CH



MID CH



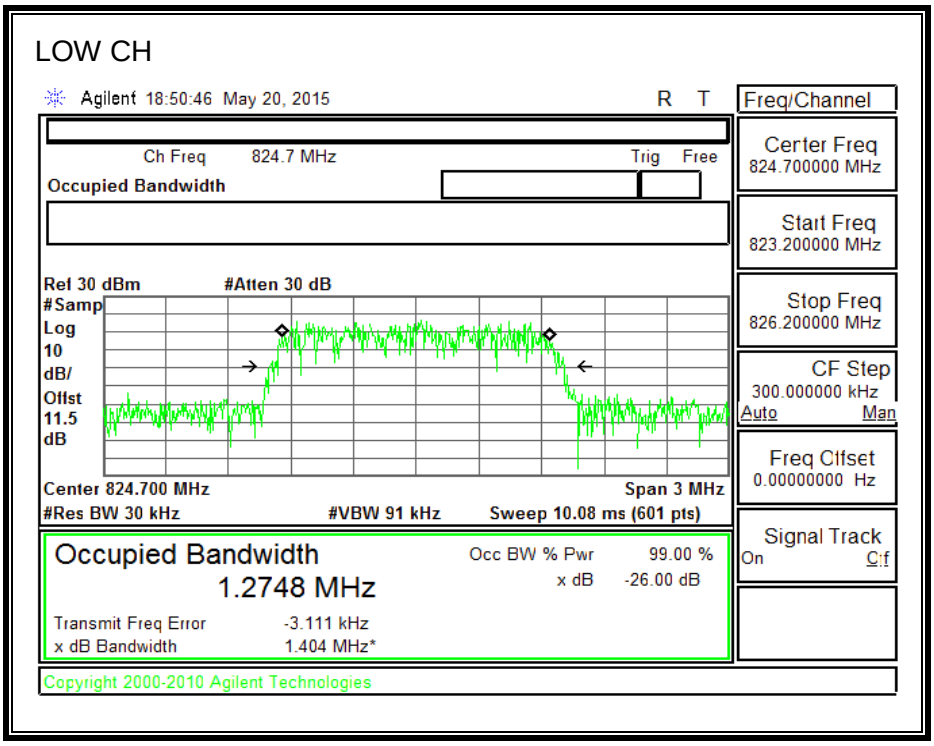
HIGH CH



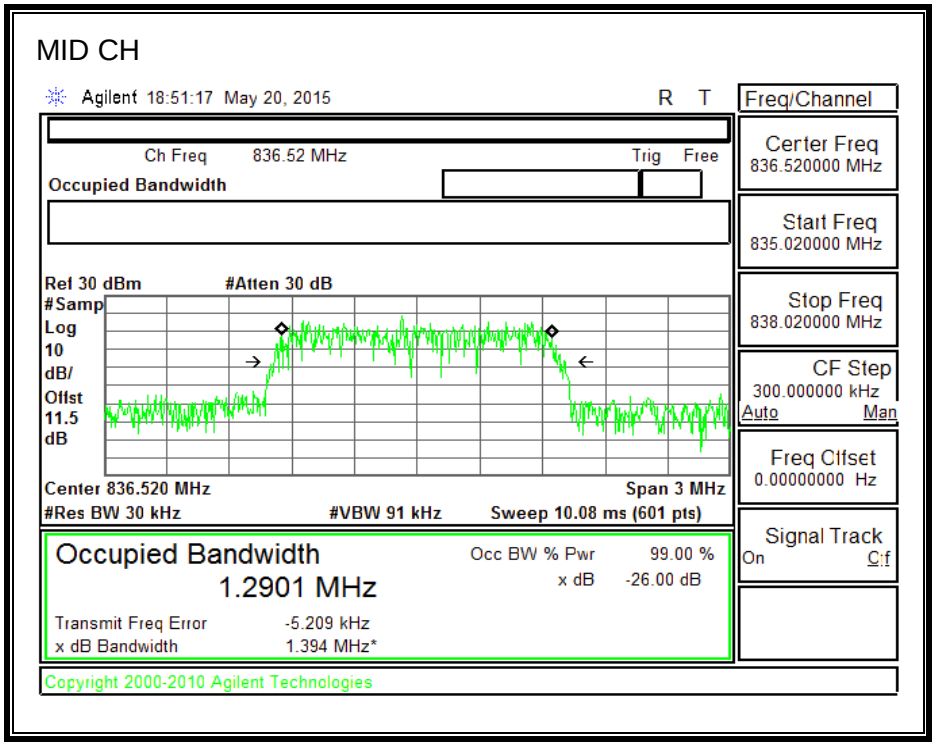
8.2.4. CDMA2000 EVDO Rev. A

850MHz BAND

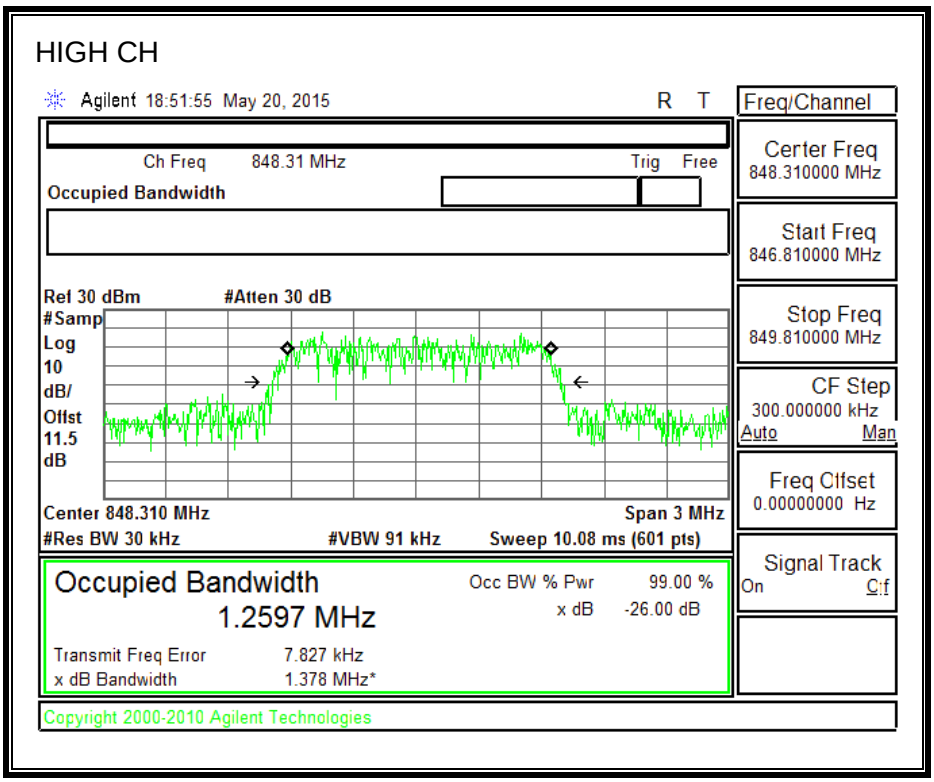
LOW CH



MID CH

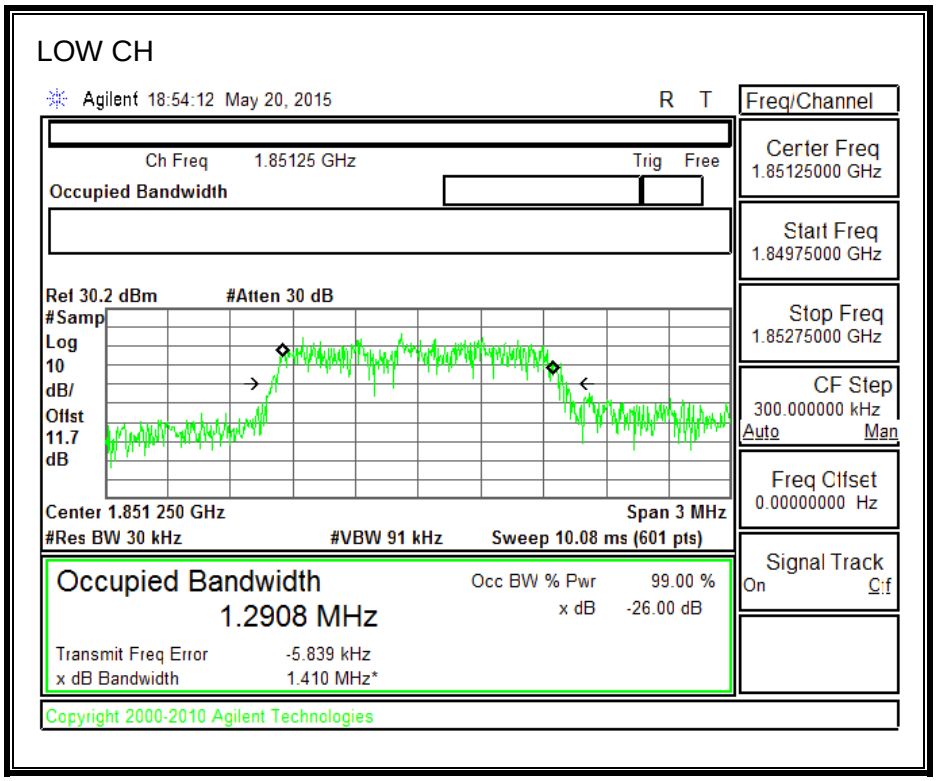


HIGH CH

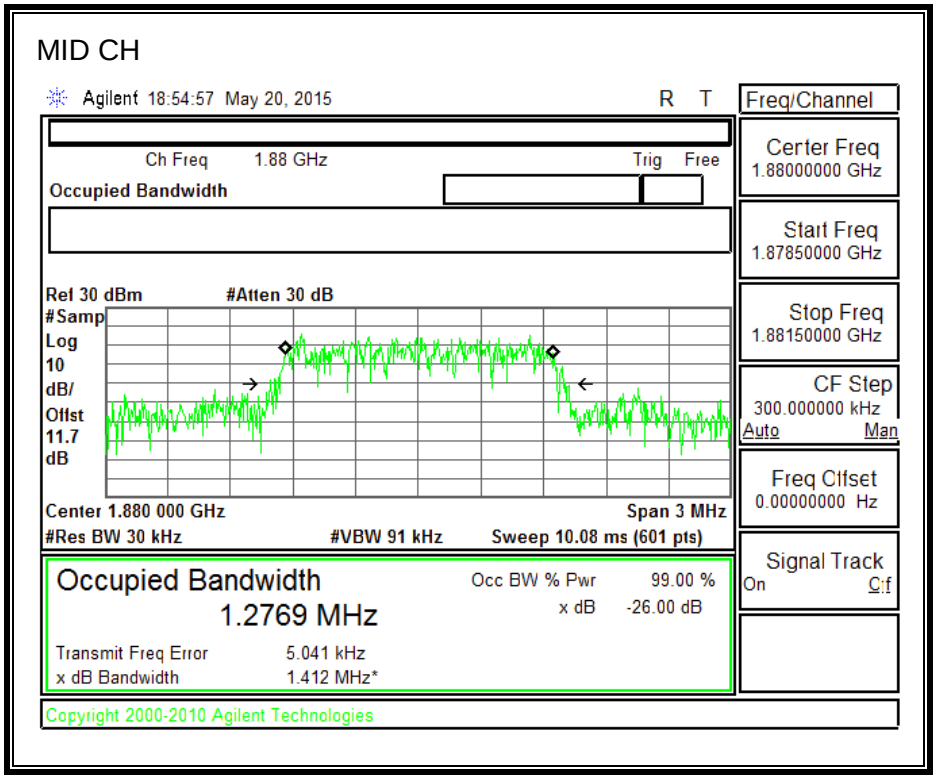


1900MHz BAND

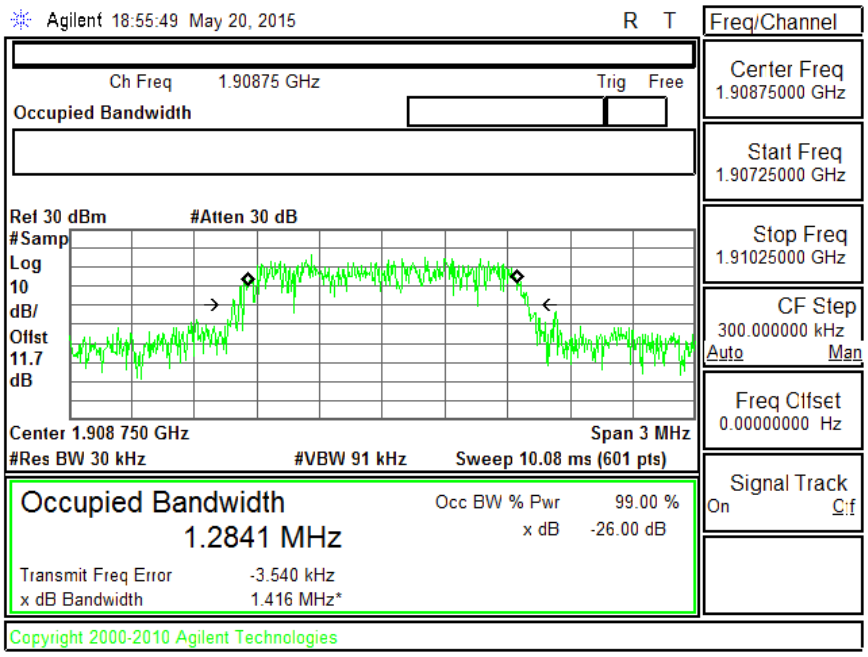
LOW CH



MID CH

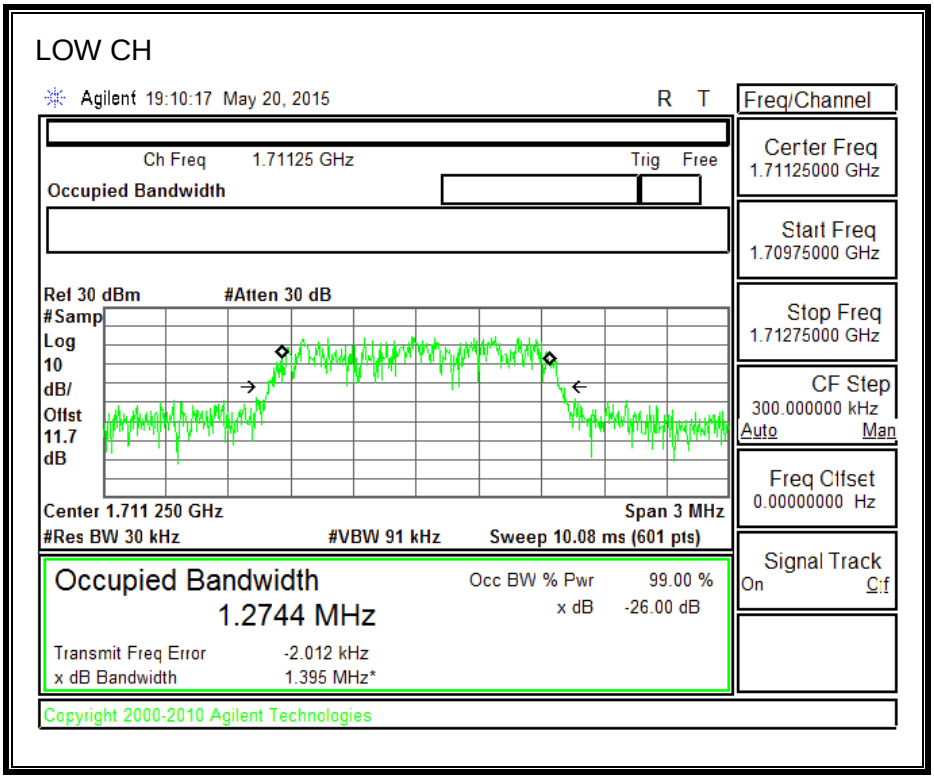


HIGH CH

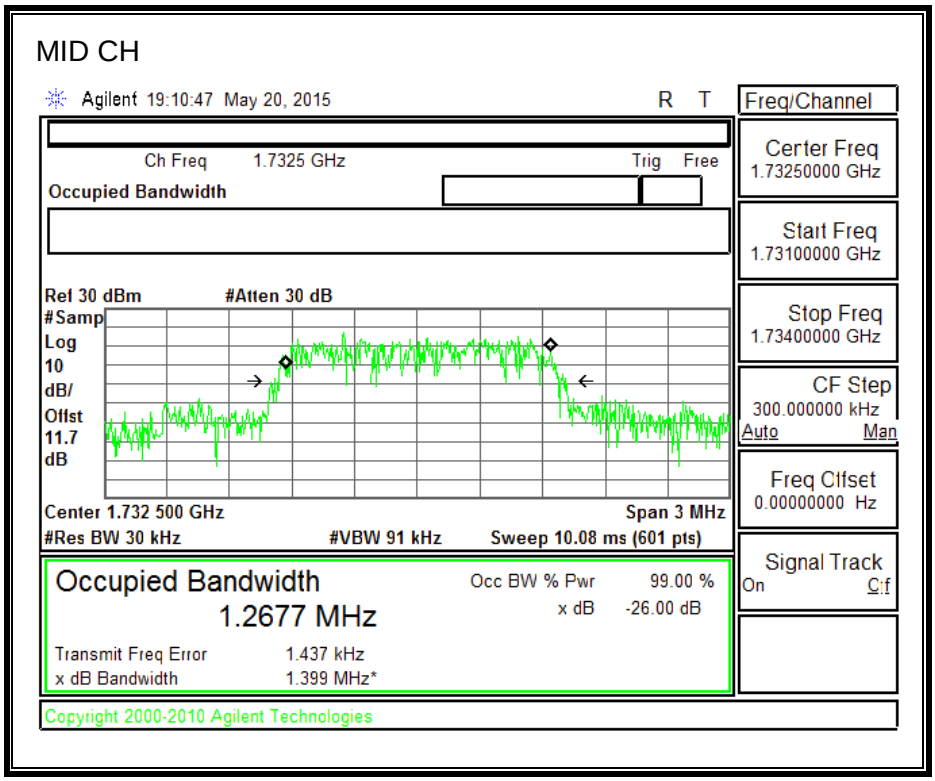


1700MHz BAND

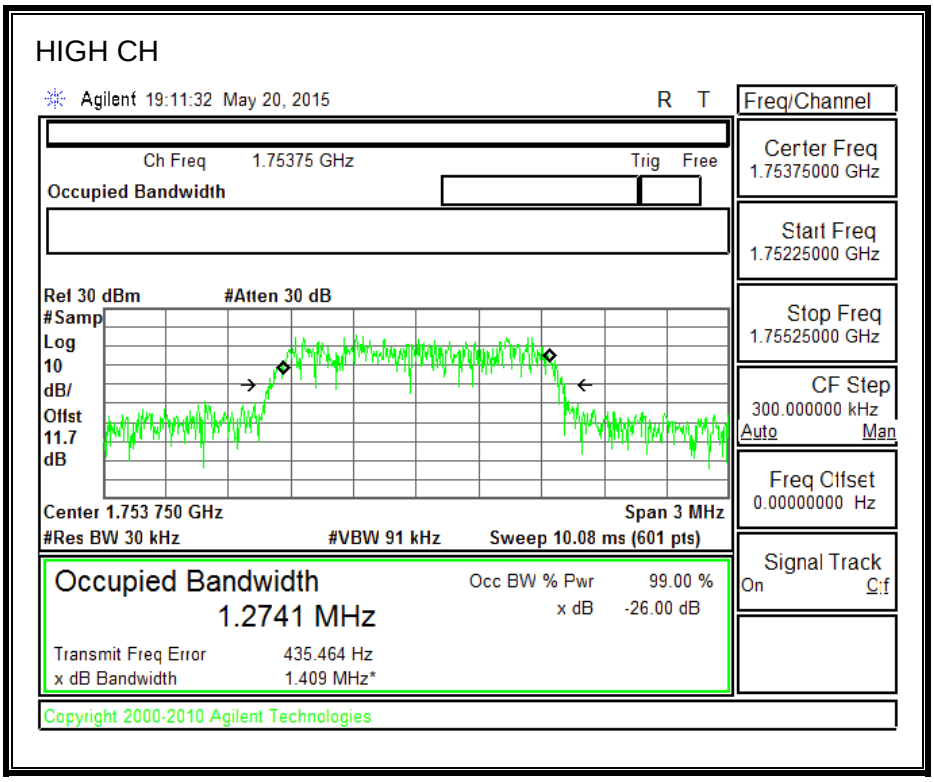
LOW CH



MID CH

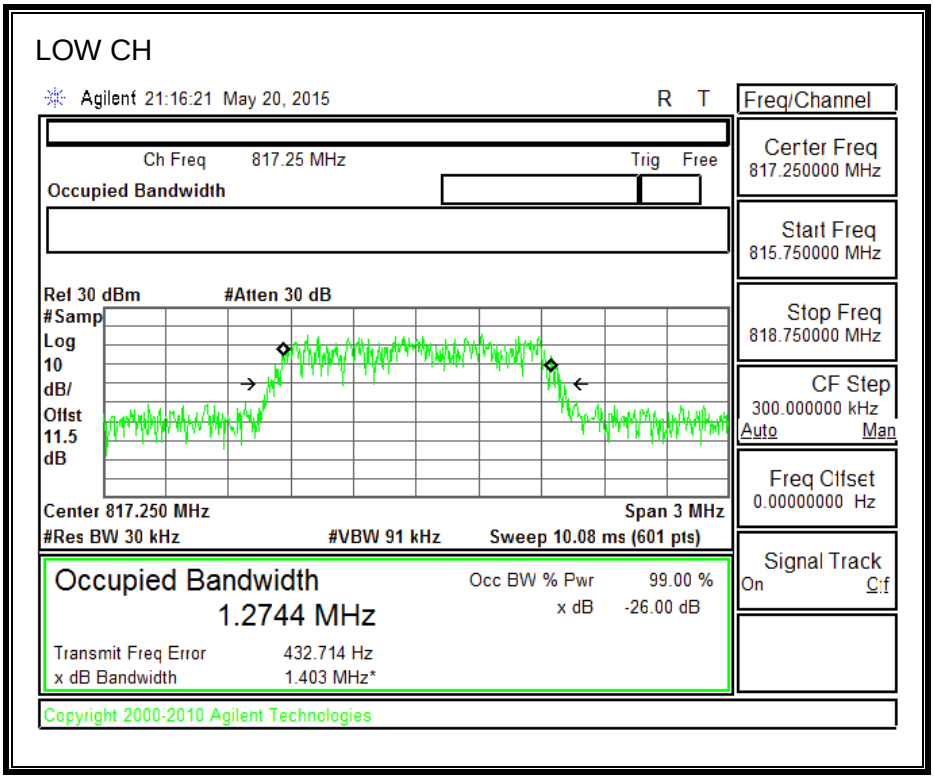


HIGH CH

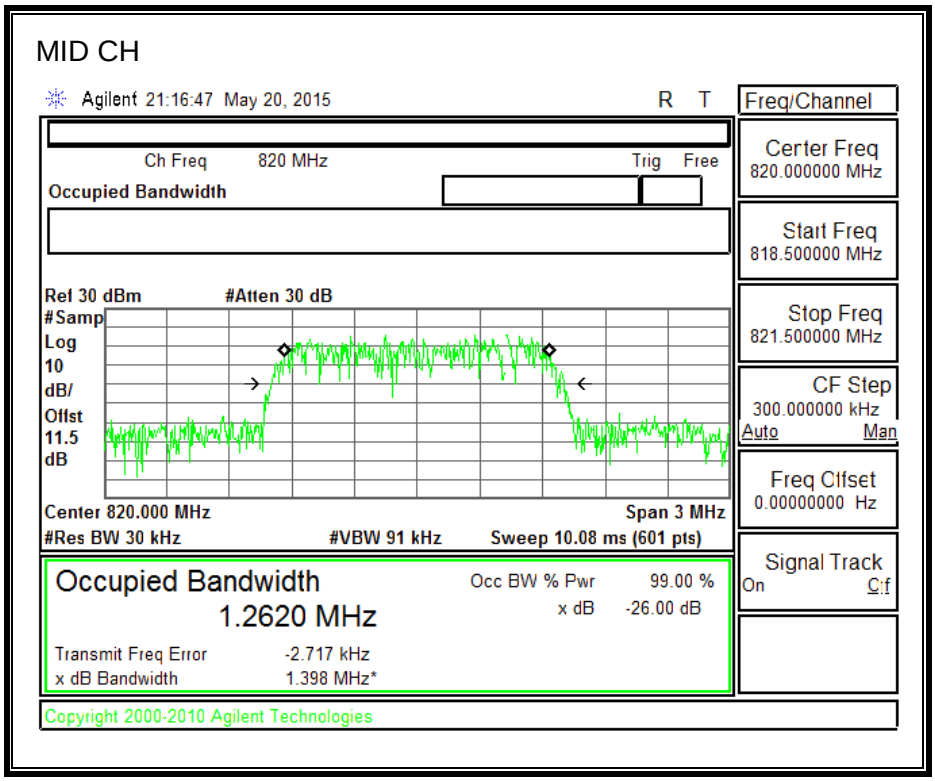


800MHz SECONDARY BAND

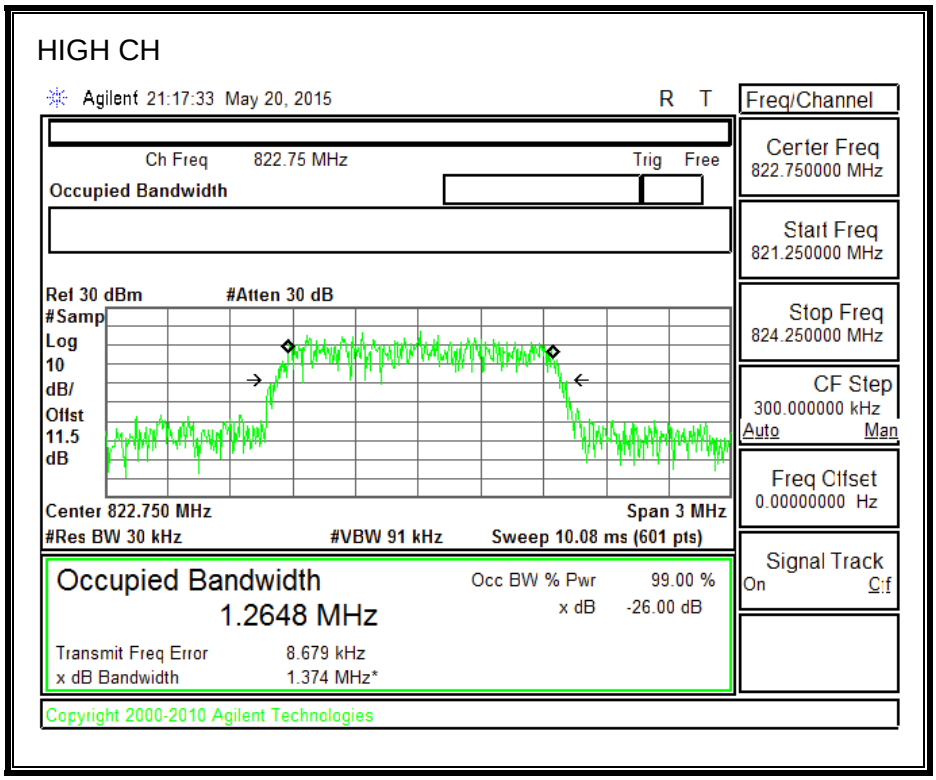
LOW CH



MID CH



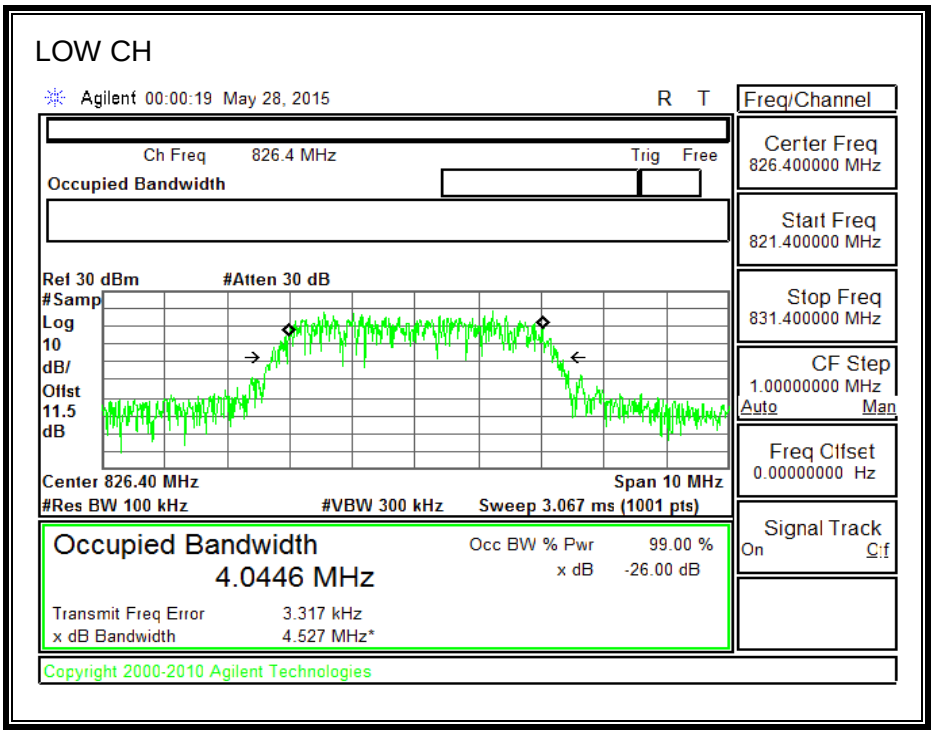
HIGH CH



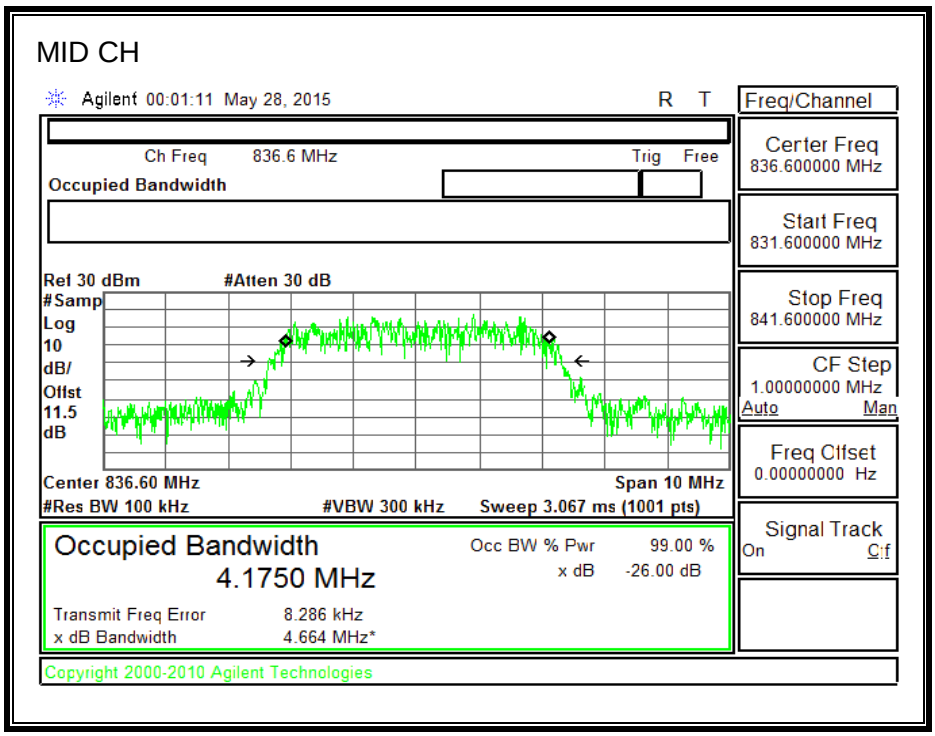
8.2.5. UMTS REL 99

850MHz BAND

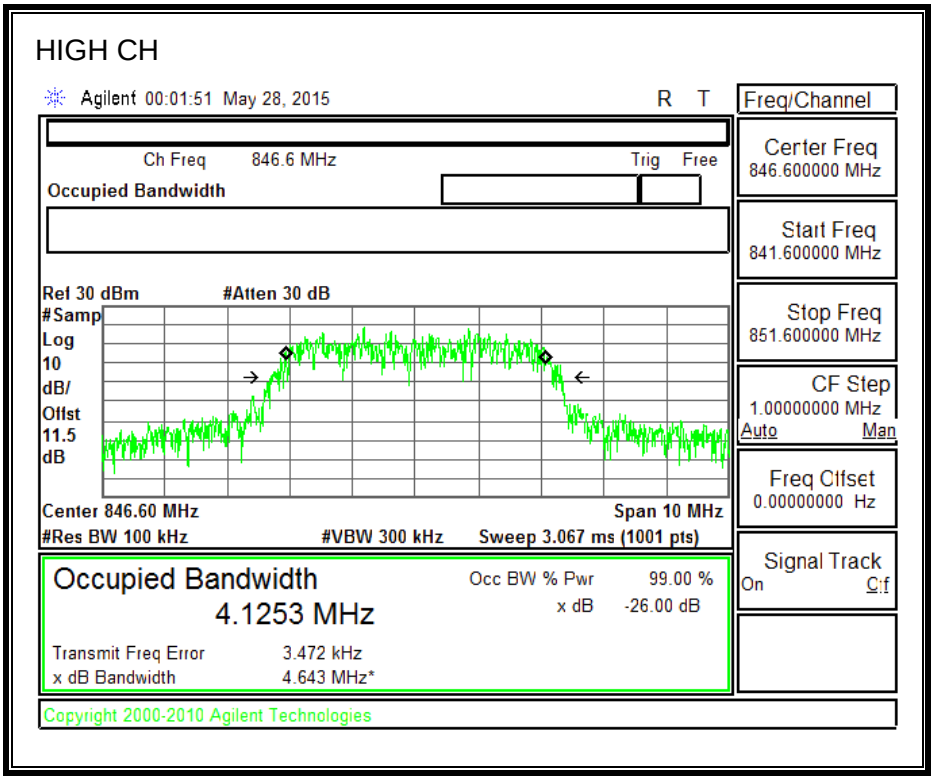
LOW CH



MID CH

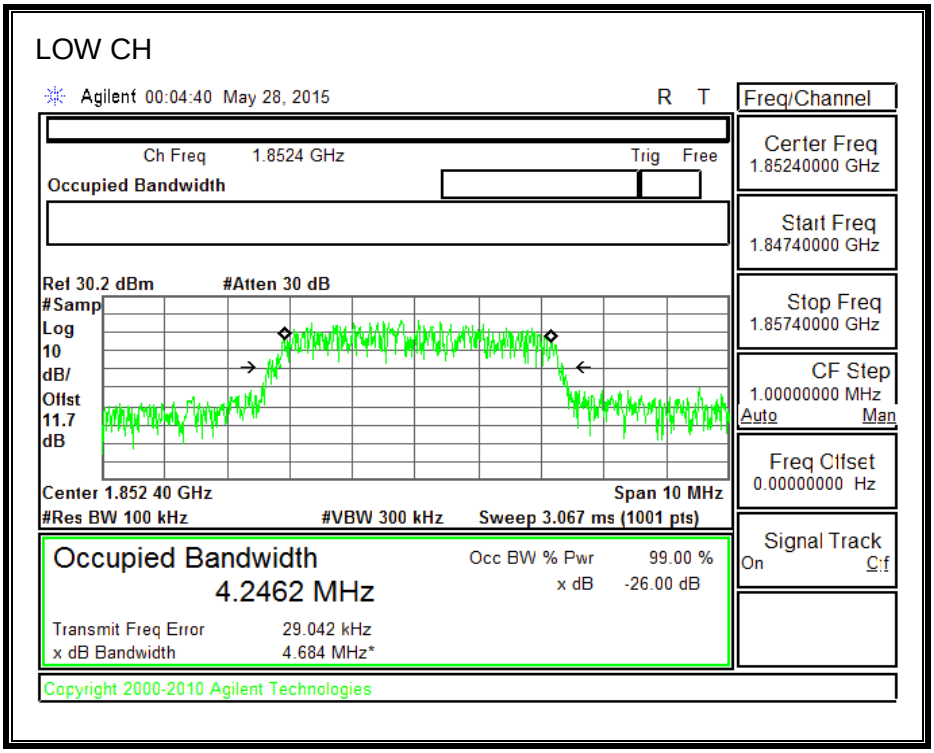


HIGH CH

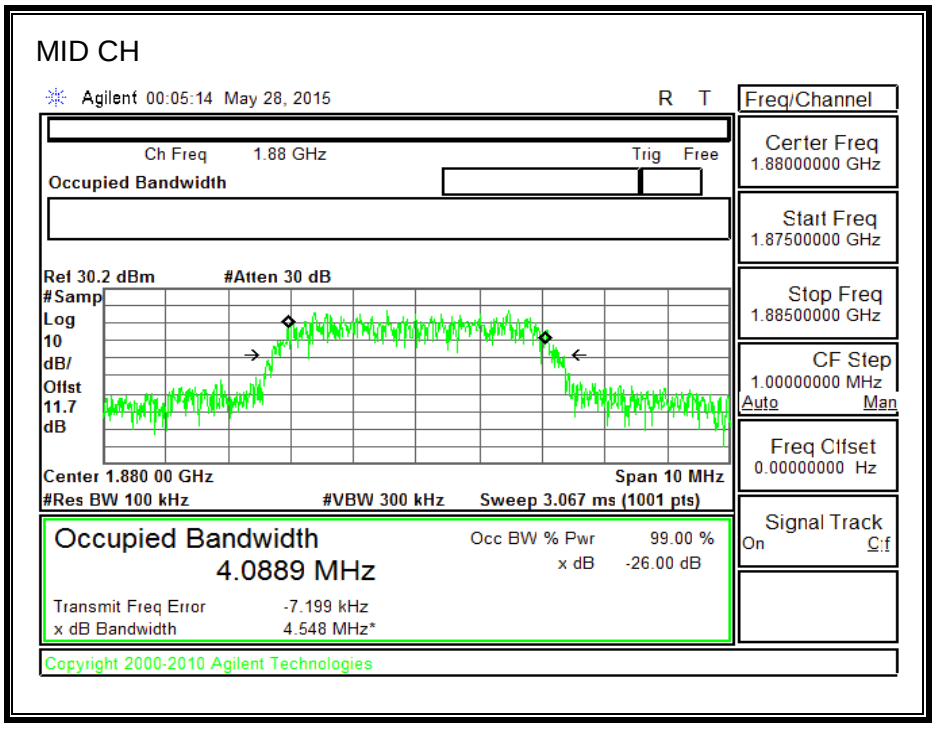


1900MHz BAND

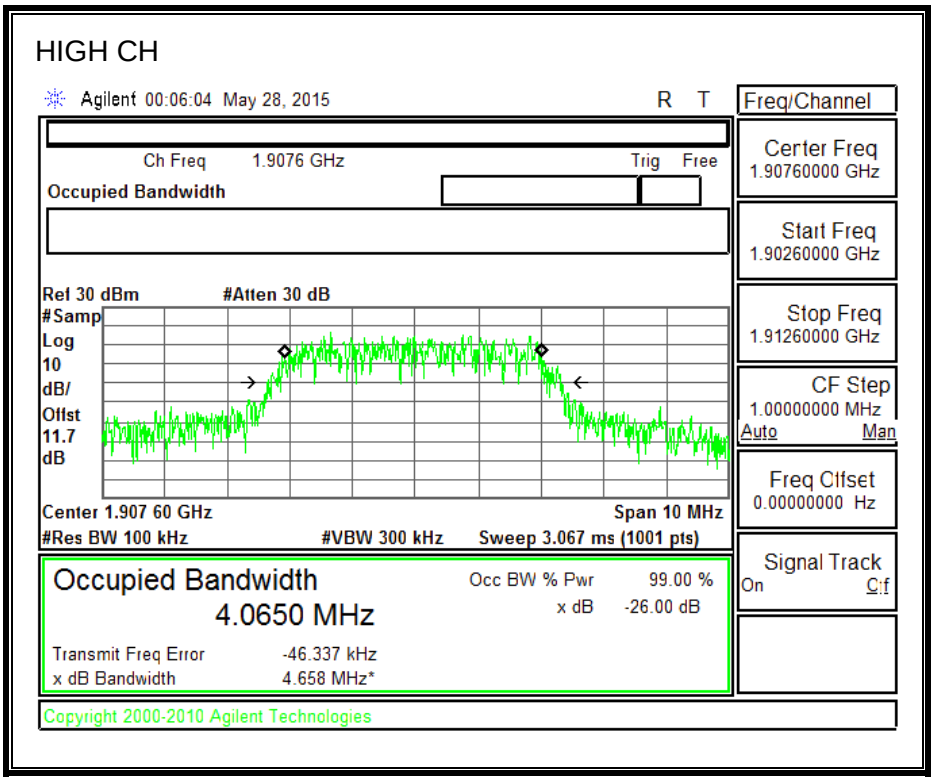
LOW CH



MID CH

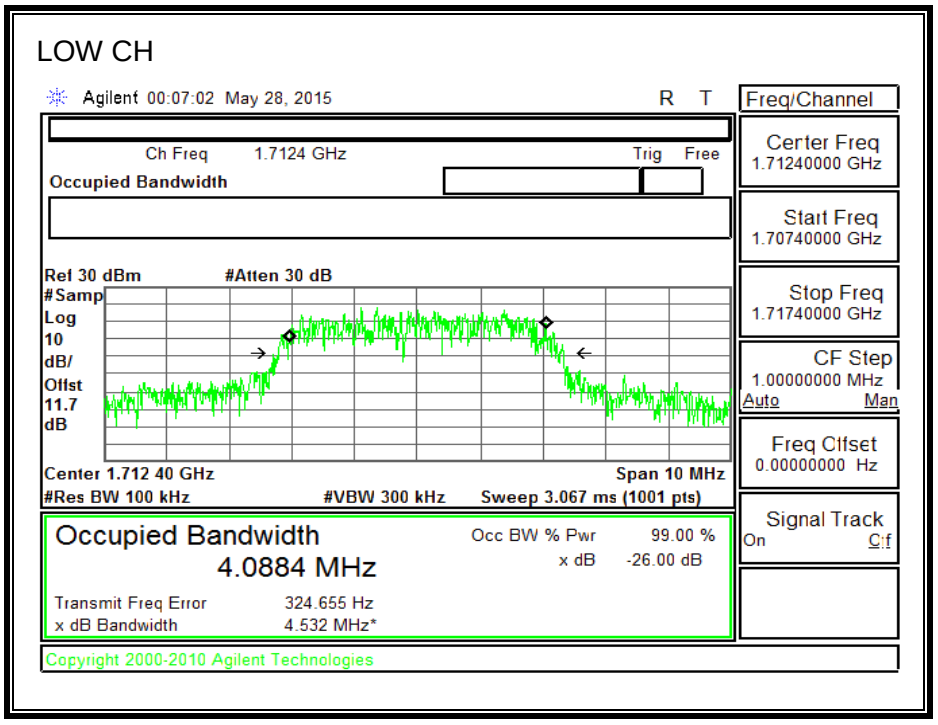


HIGH CH

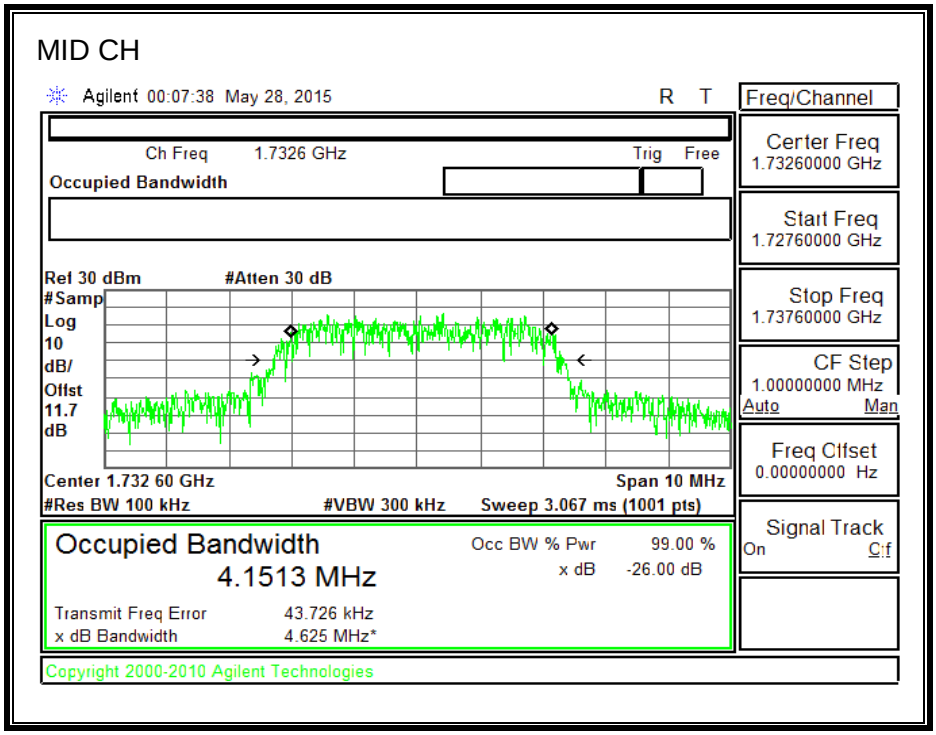


1700MHz BAND

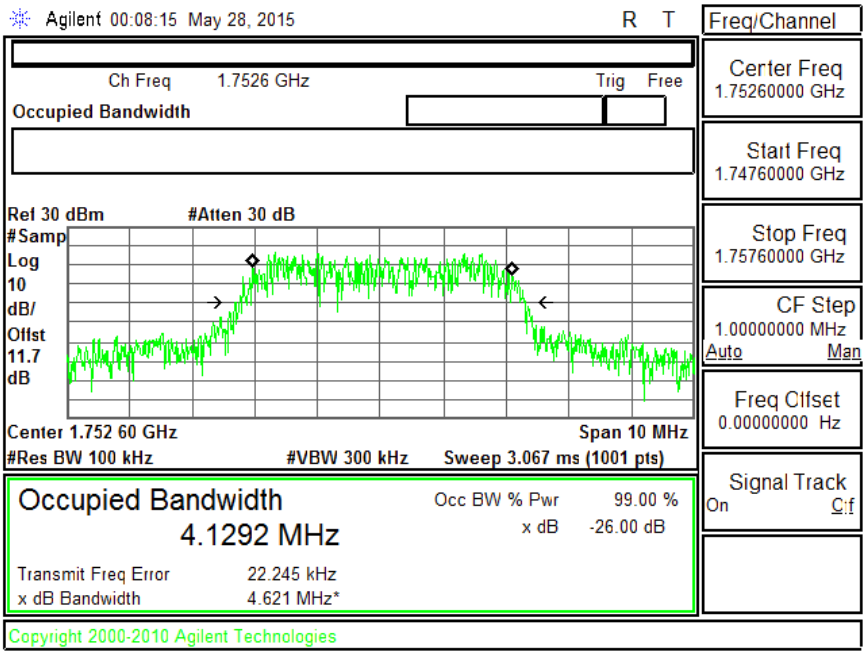
LOW CH



MID CH



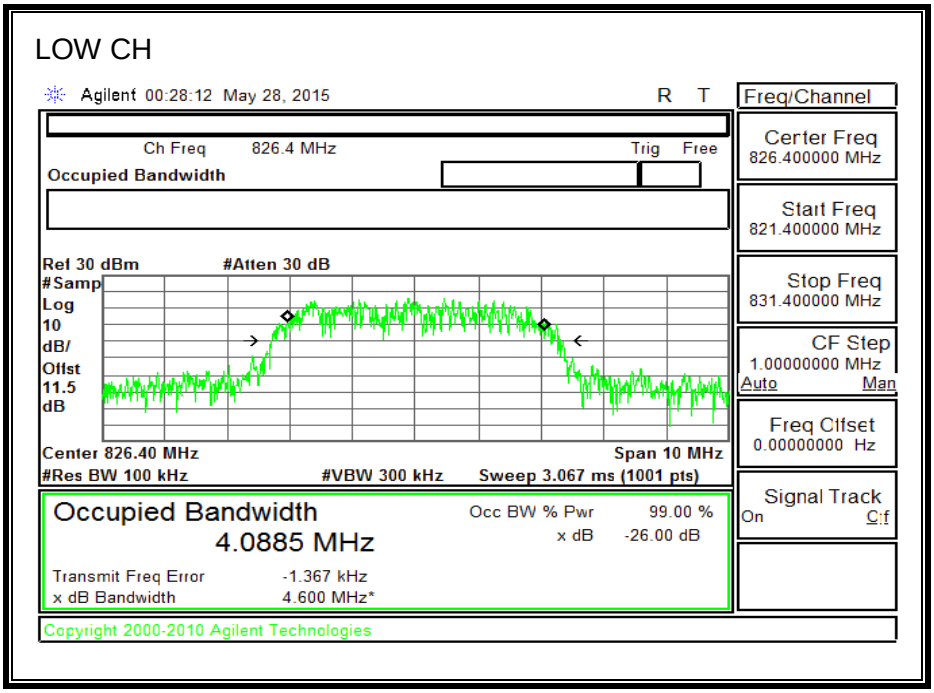
HIGH CH



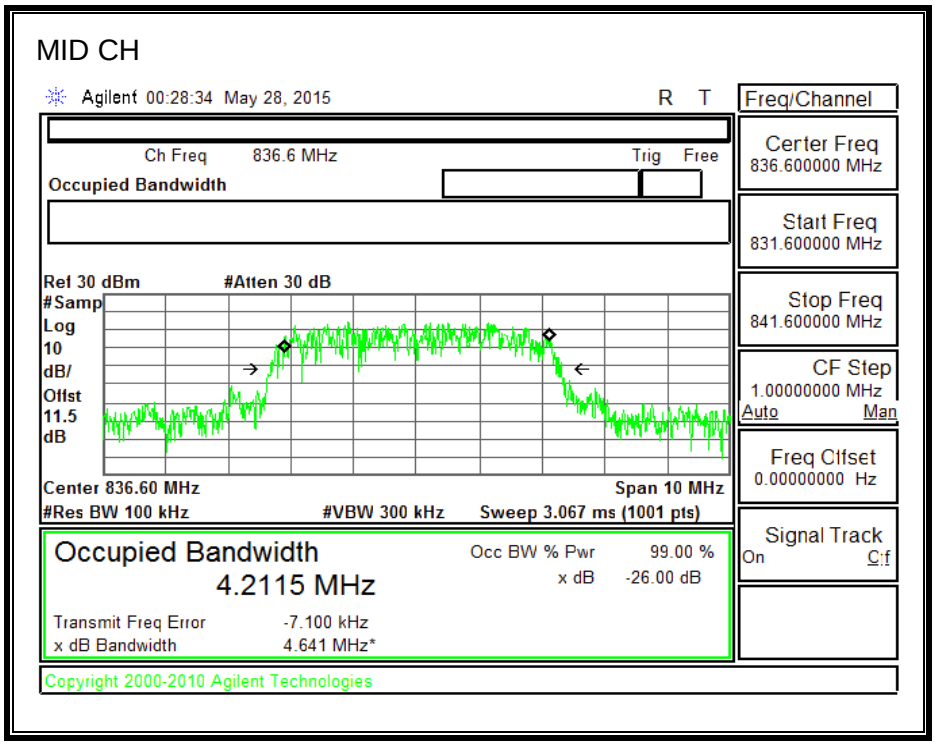
8.2.6. UMTS HSDPA

850MHz BAND

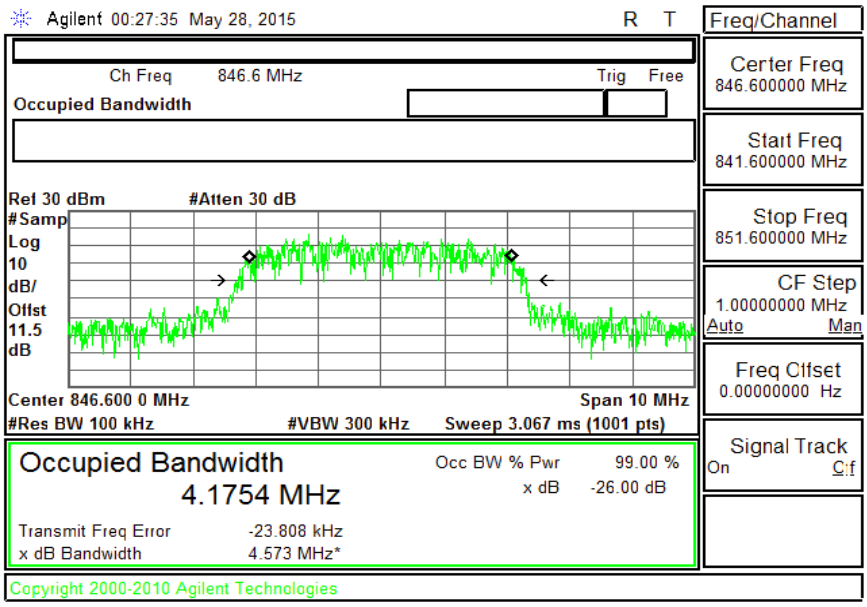
LOW CH



MID CH

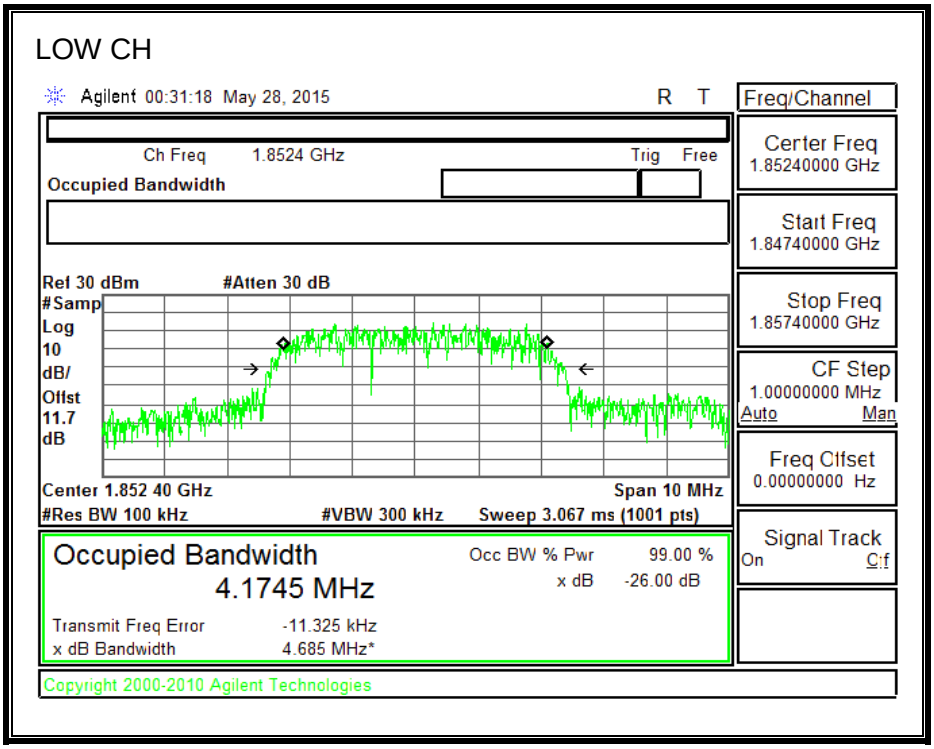


HIGH CH

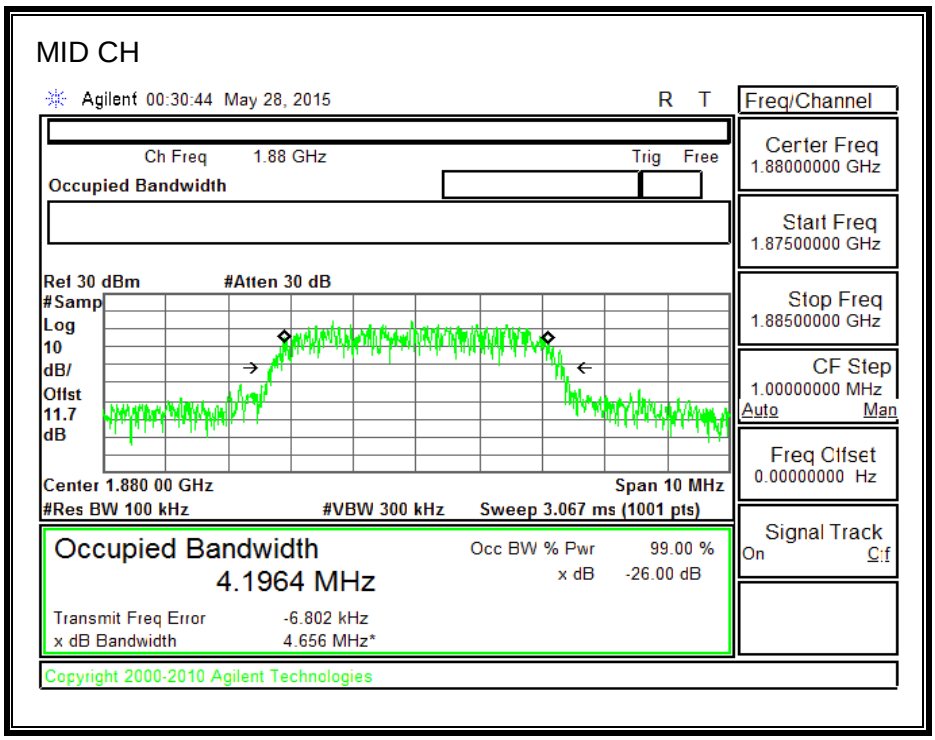


1900MHz BAND

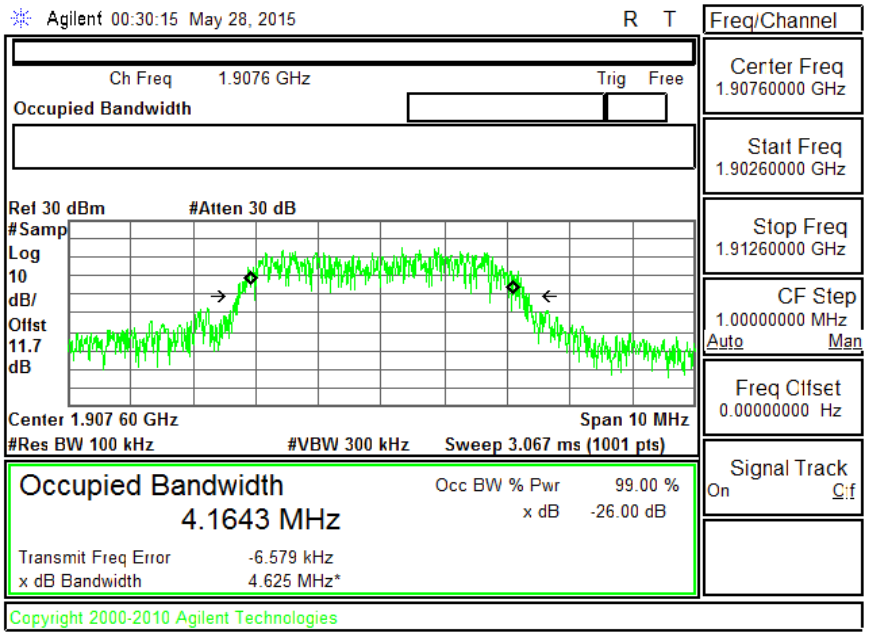
LOW CH



MID CH

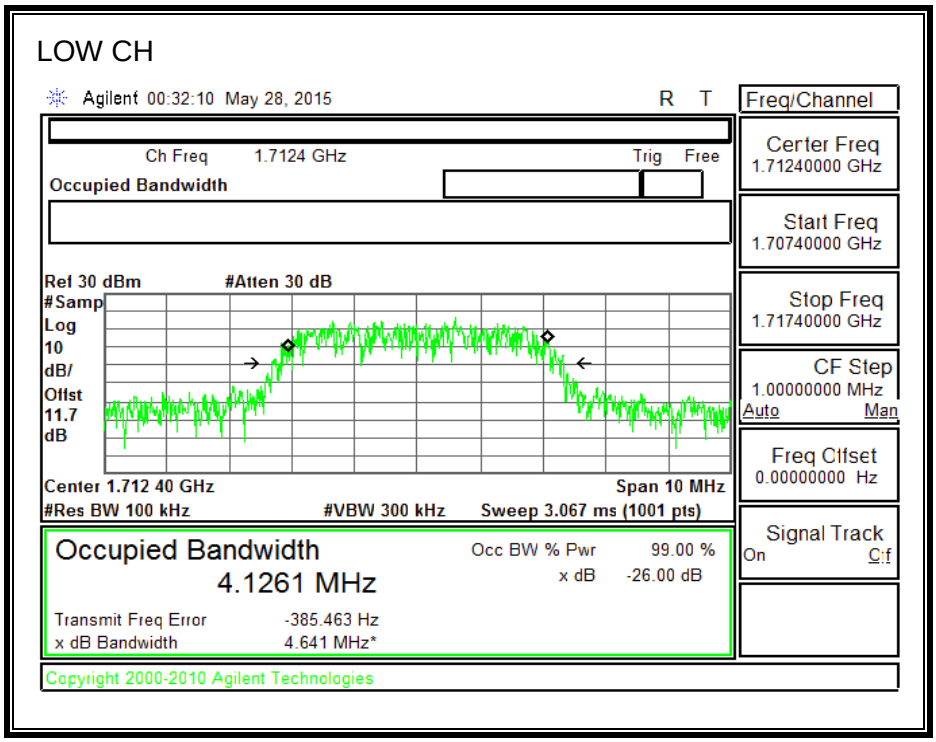


HIGH CH

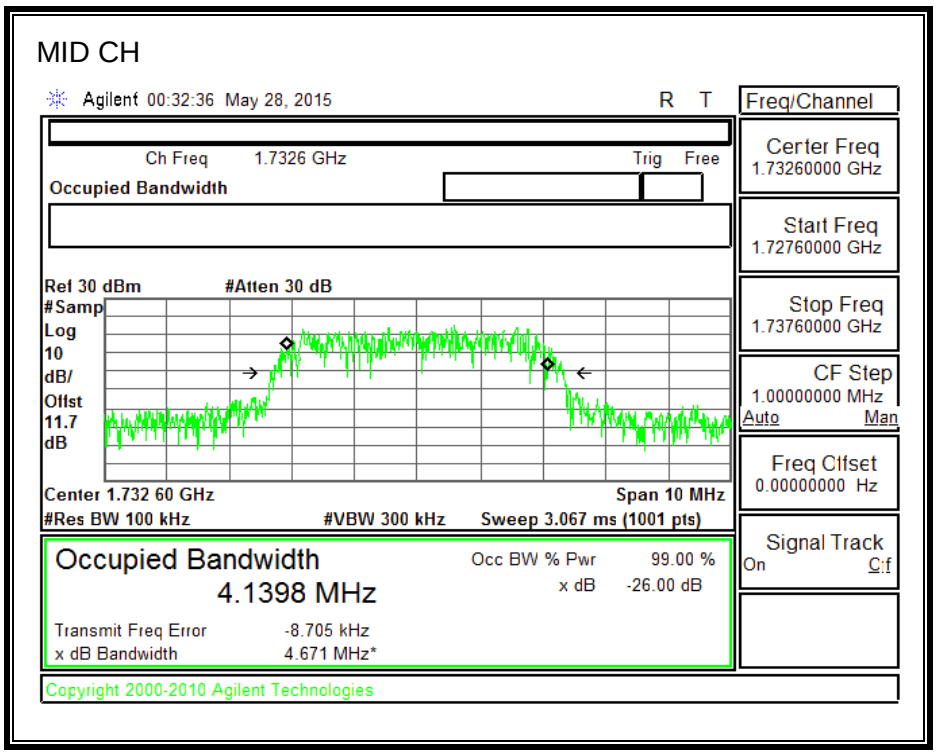


1700MHz BAND

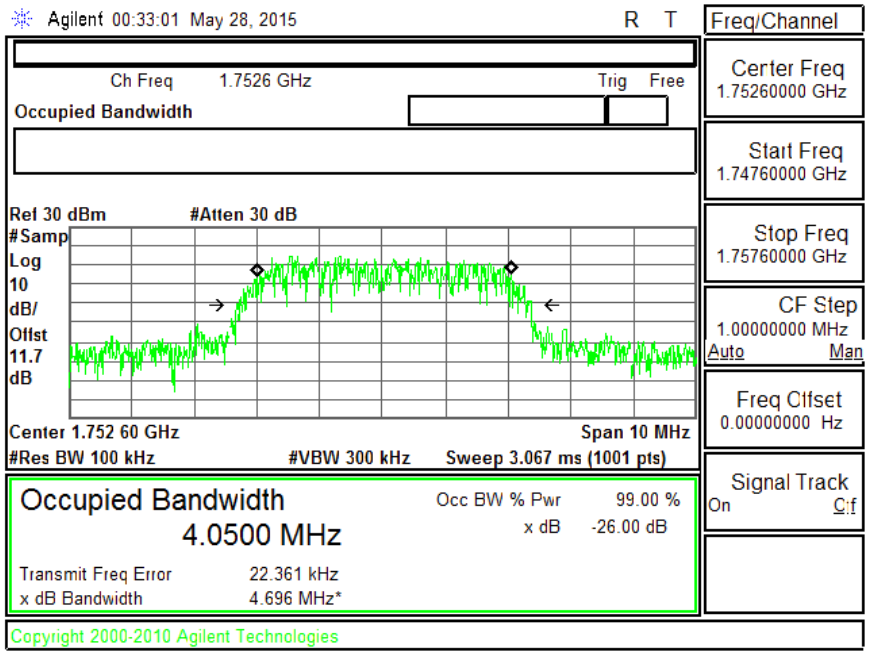
LOW CH



MID CH



HIGH CH



8.3. BAND EDGE (MODEL: A1633)

RULE PART(S)

FCC: §22.917, 24.238, §27.53 and §90.691

LIMITS

§22. 917 & 24.238
Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

§27.53
AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1710-1755 MHz, band, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

§90.691 Emission mask requirements for EA-based systems.

Compliance with the provisions of paragraphs above of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

TEST PROCEDURE

The transmitter output was connected to a Agilent 8960 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.
For each band edge measurement:

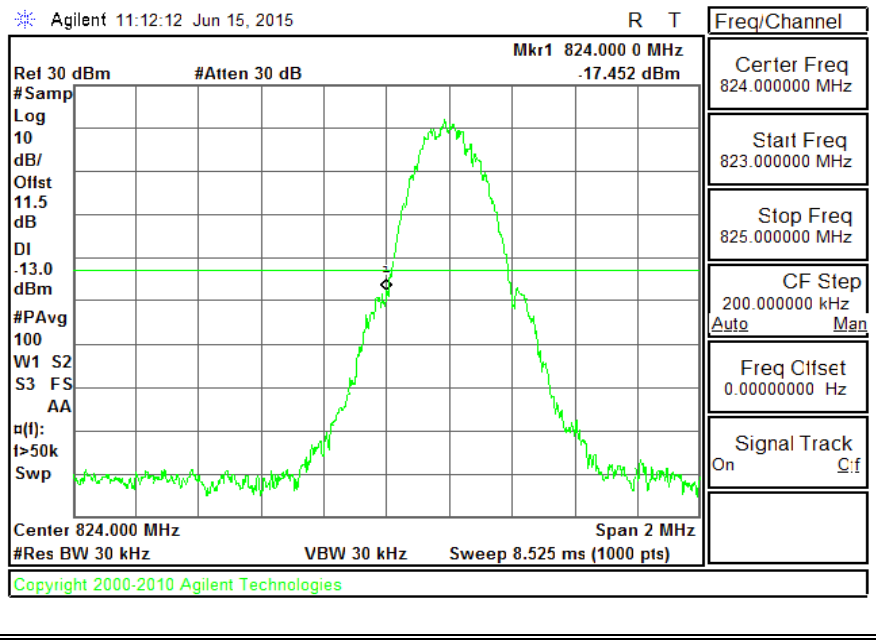
- Set the spectrum analyzer span to include the block edge frequency (824, 849, 1850, 1910MHz)
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

RESULTS

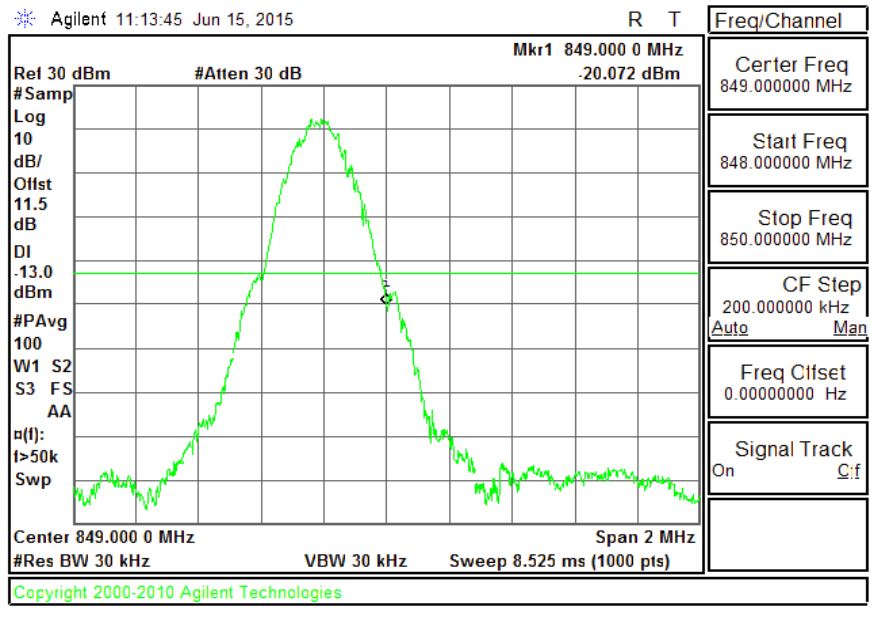
8.3.1. GSM-GPRS

850MHz BAND

LOW CH

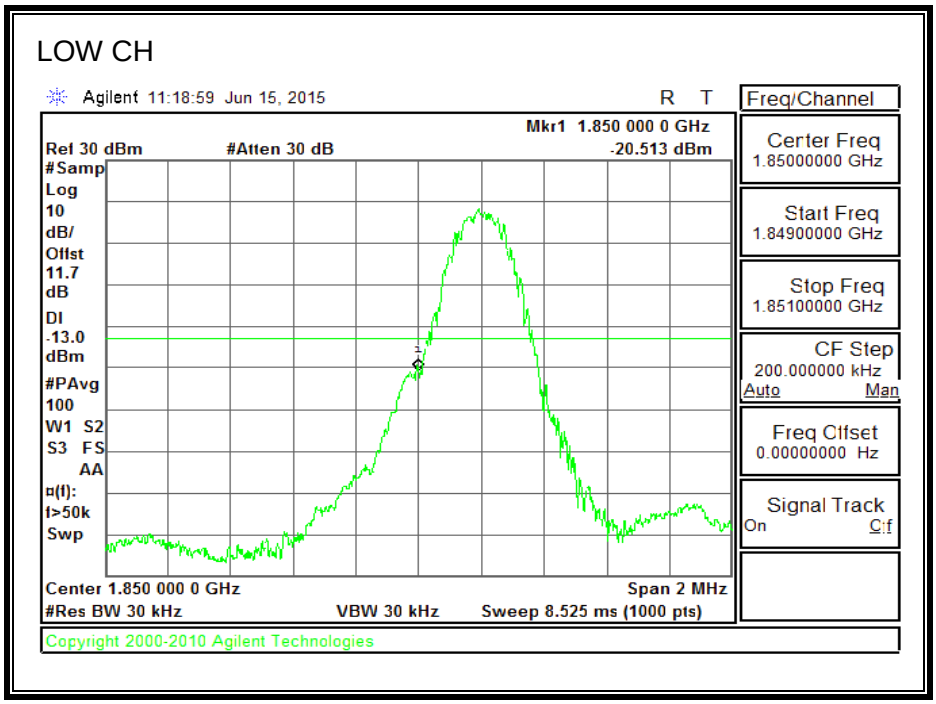


HIGH CH

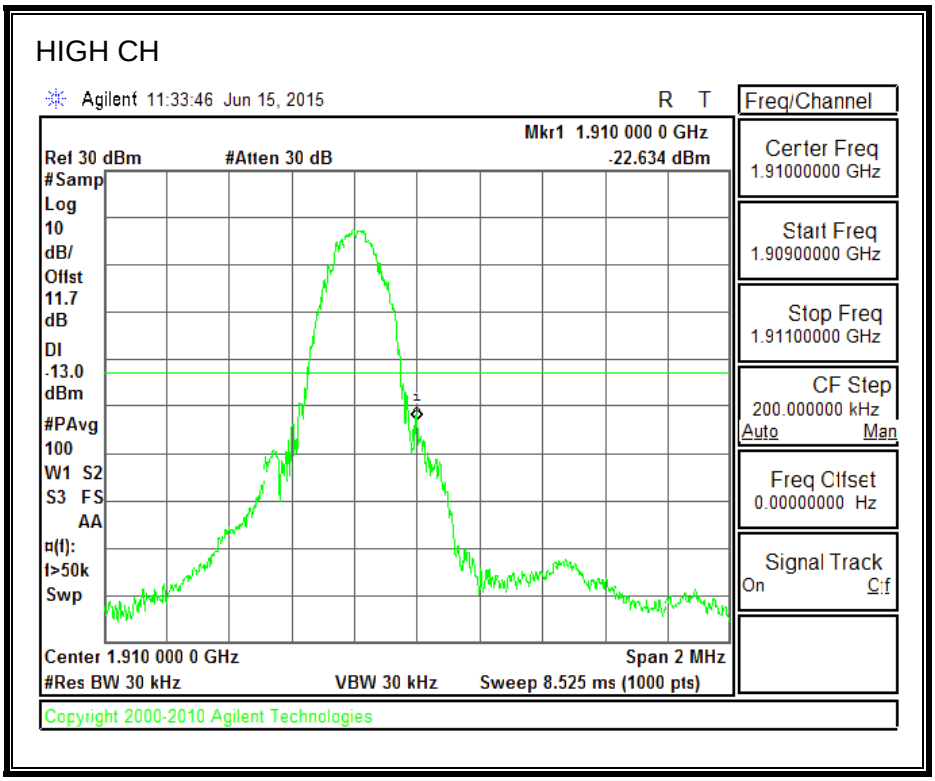


1900MHz BAND

LOW CH



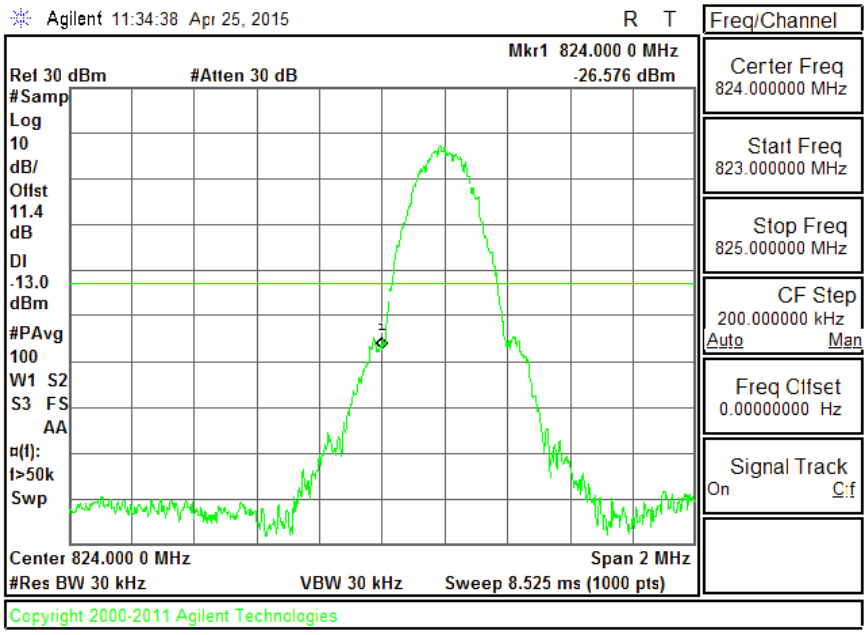
HIGH CH



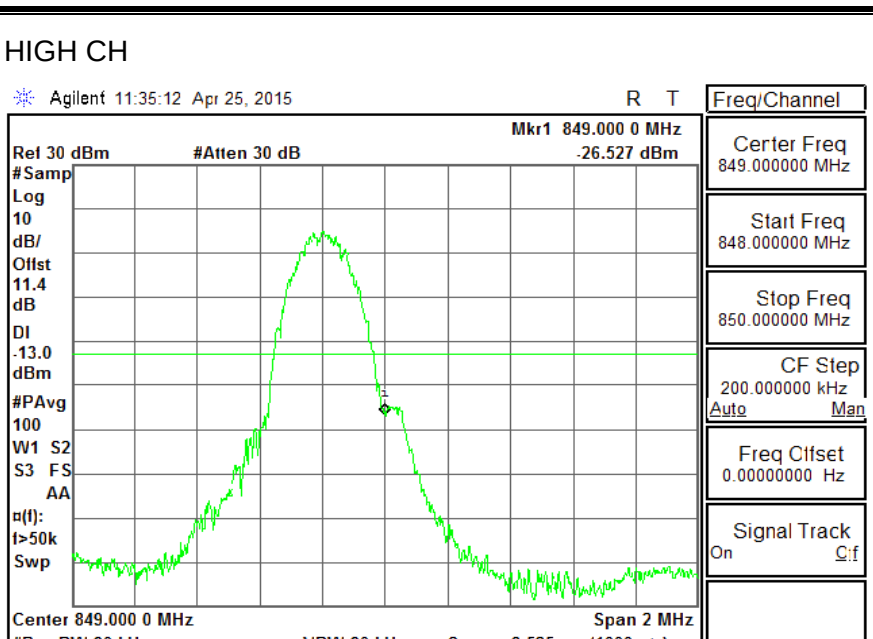
8.3.2. GSM-EGPRS

850MHz BAND

LOW CH

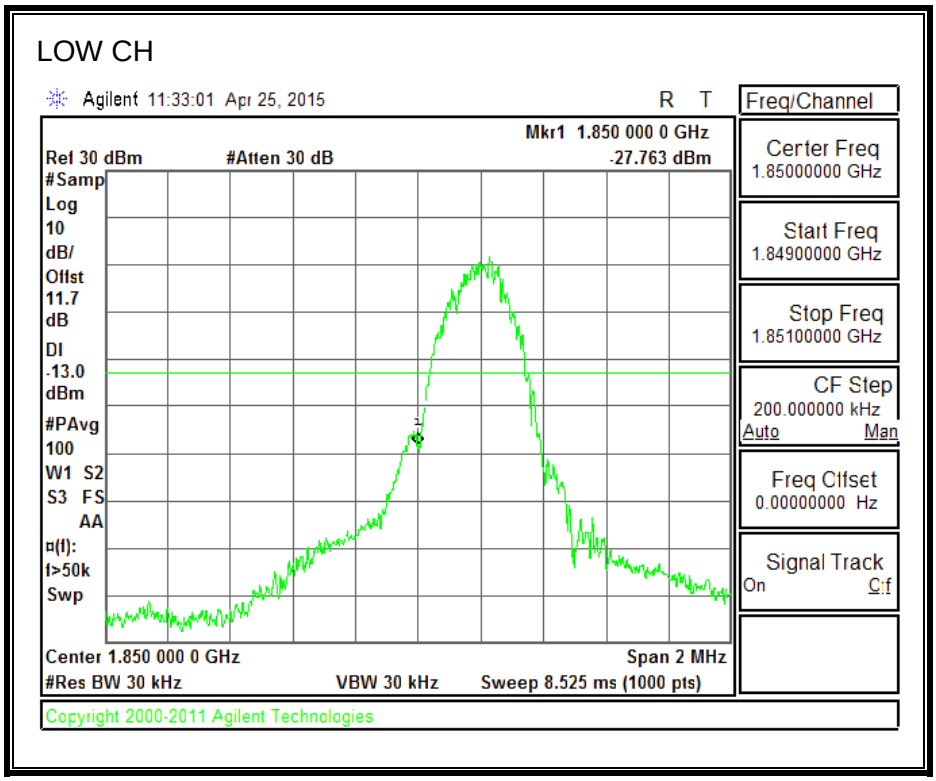


HIGH CH

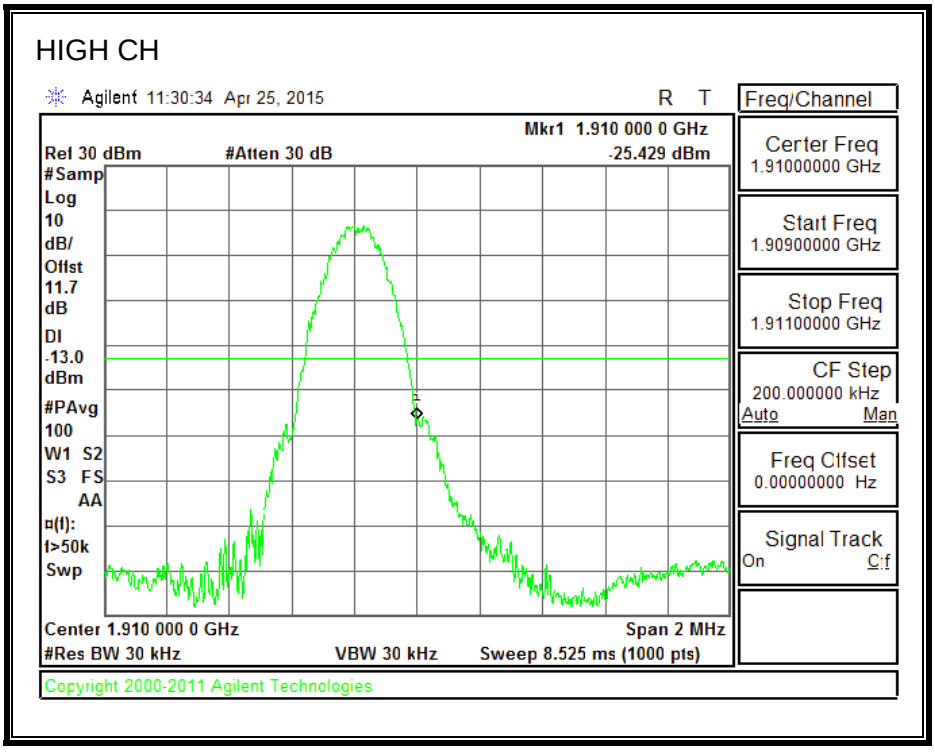


1900MHz BAND

LOW CH

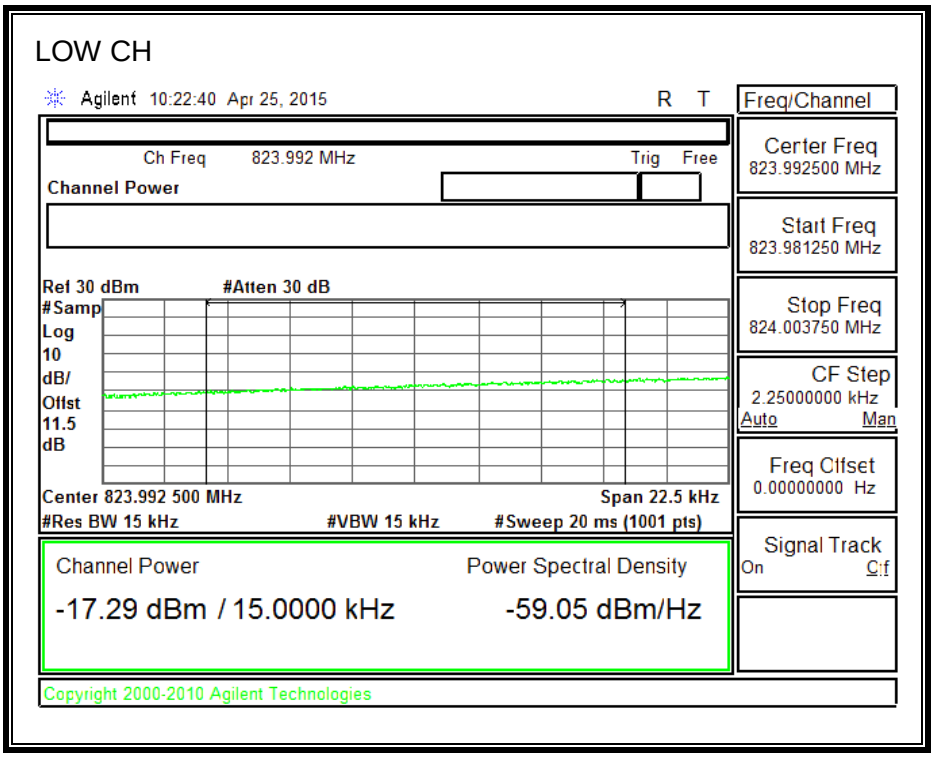


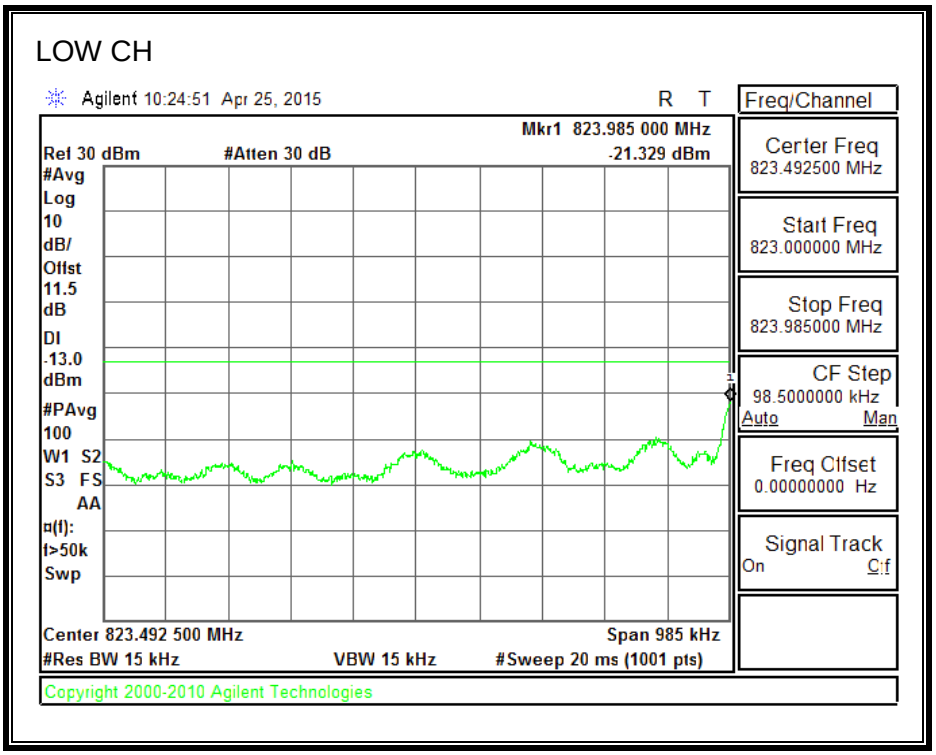
HIGH CH



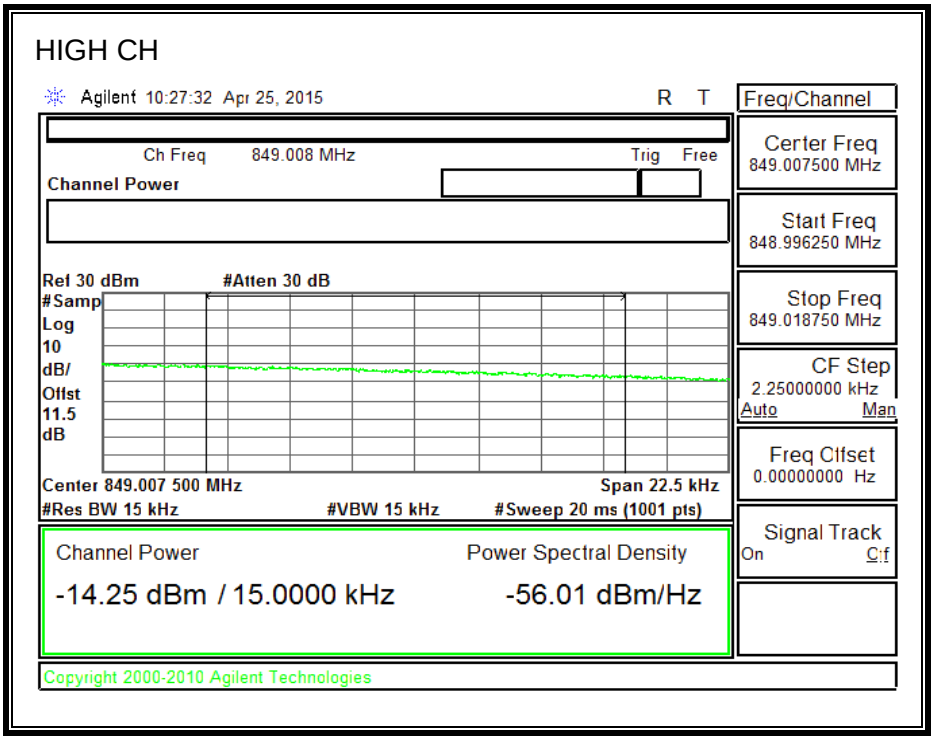
8.3.3. CDMA2000 1xRTT

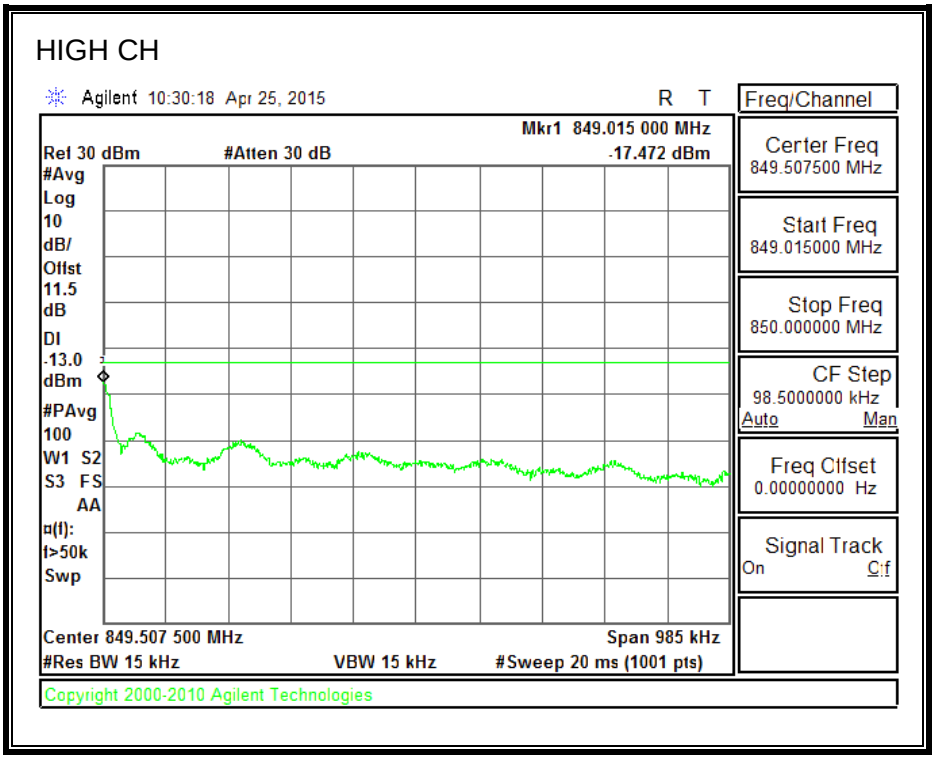
850MHz BAND





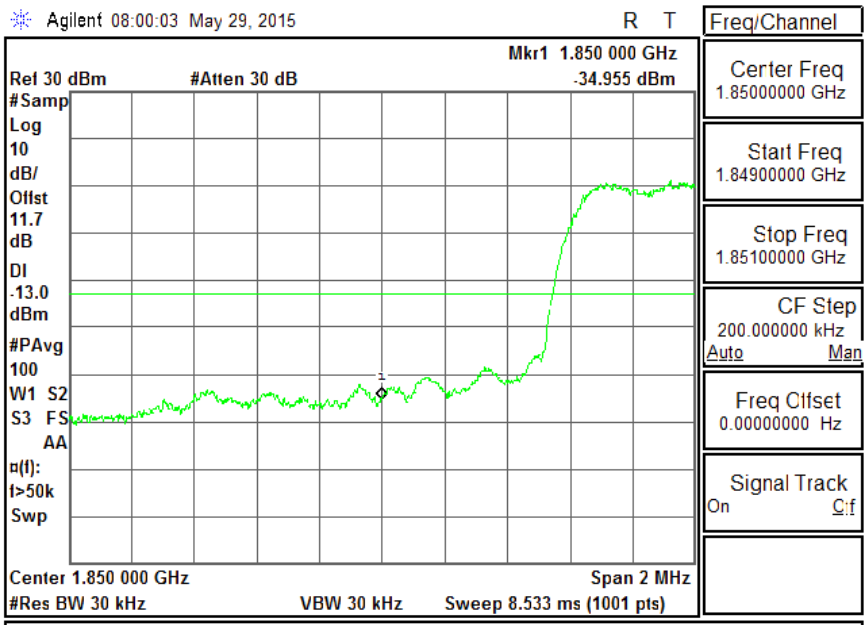
850MHz BAND



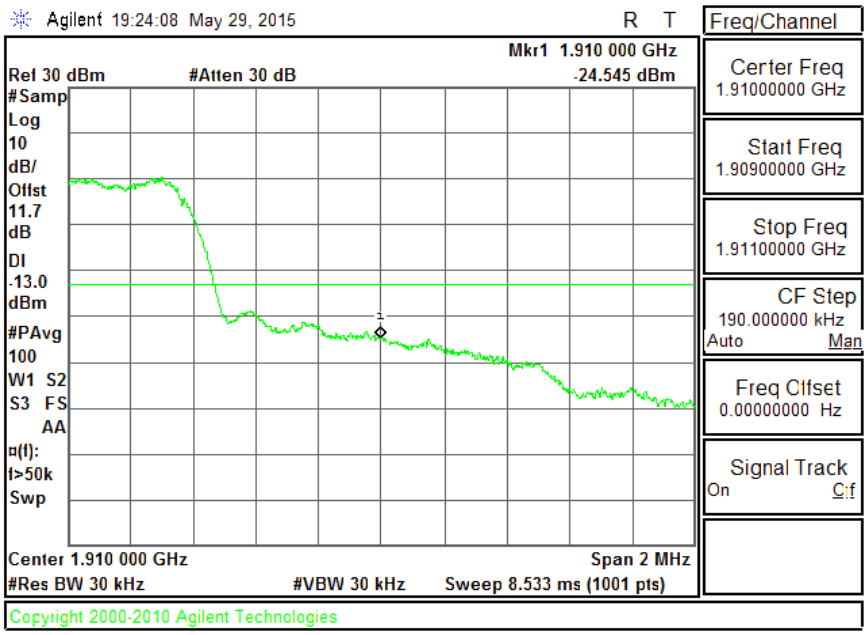


1900MHz BAND

LOW CH

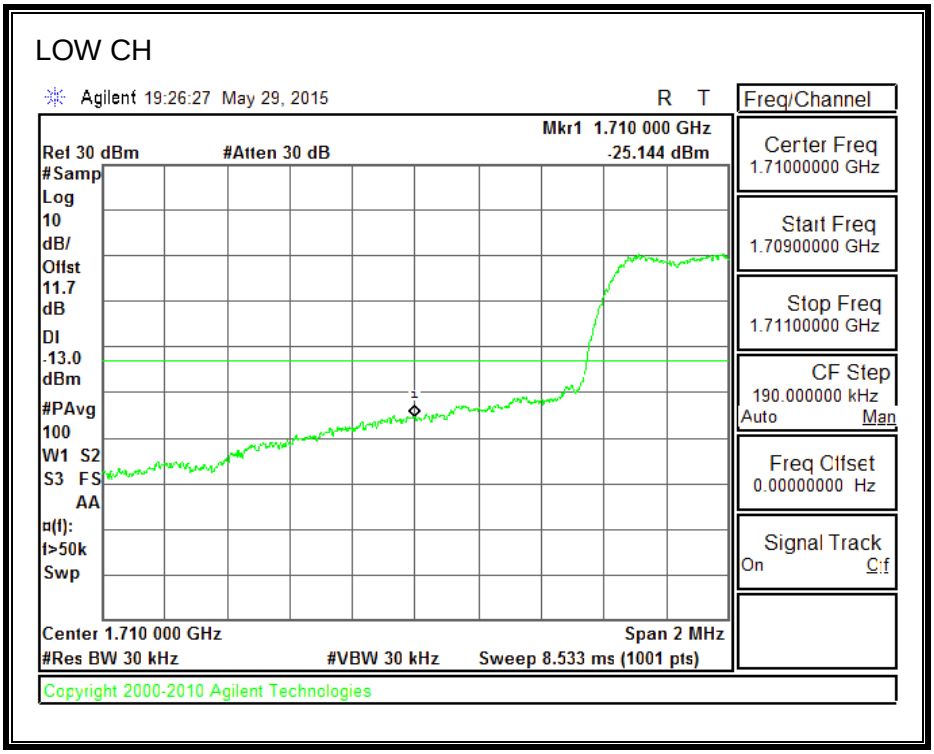


HIGH CH

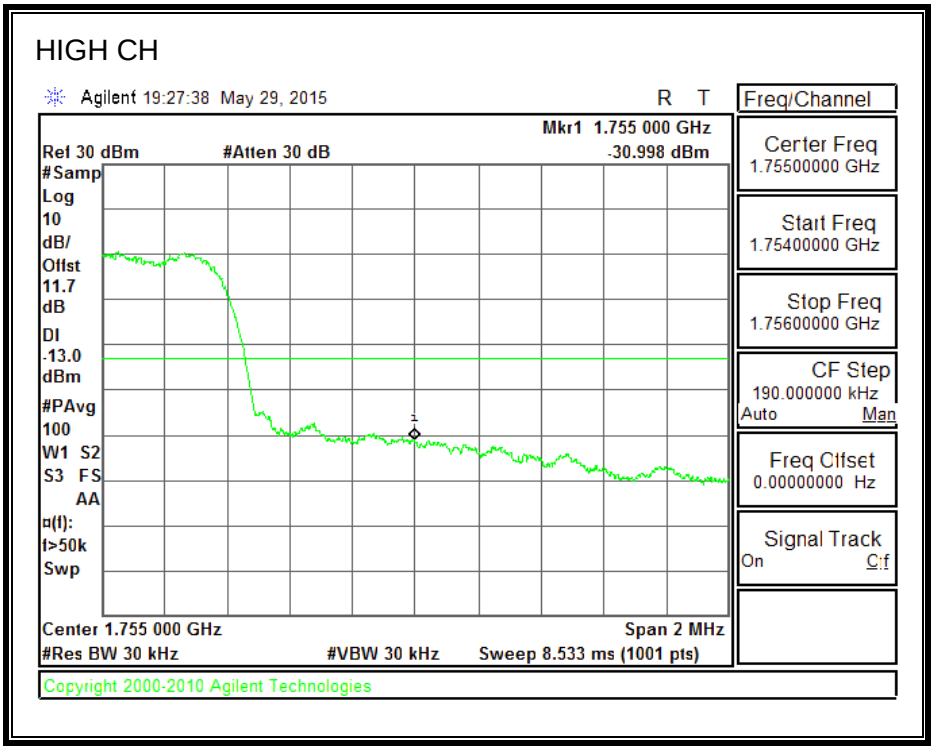


1700MHz BAND

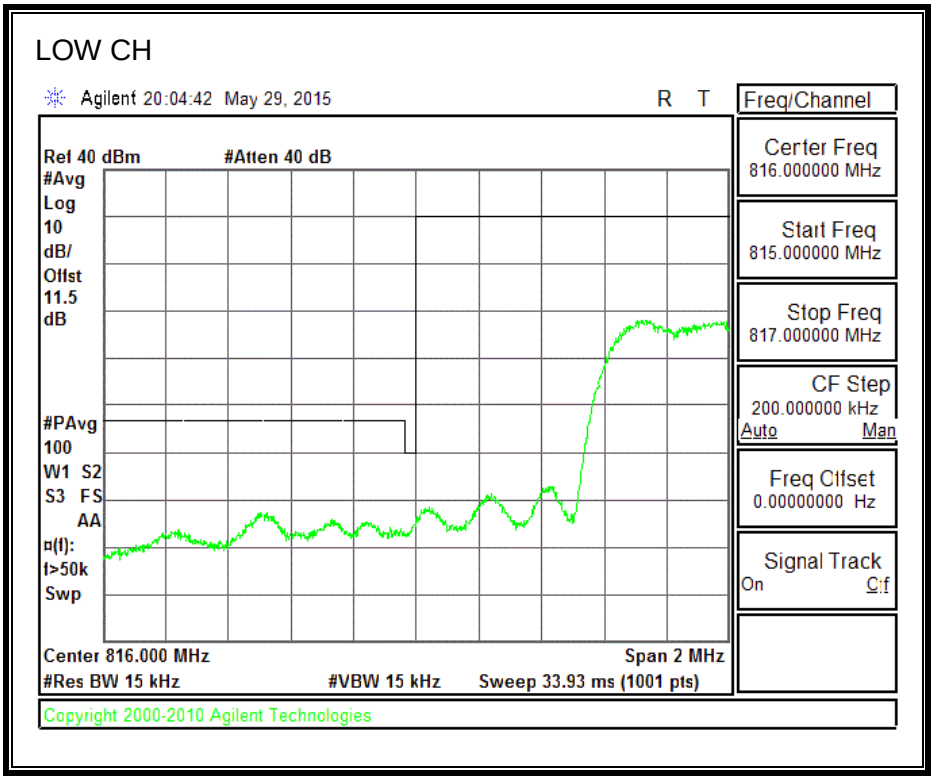
LOW CH



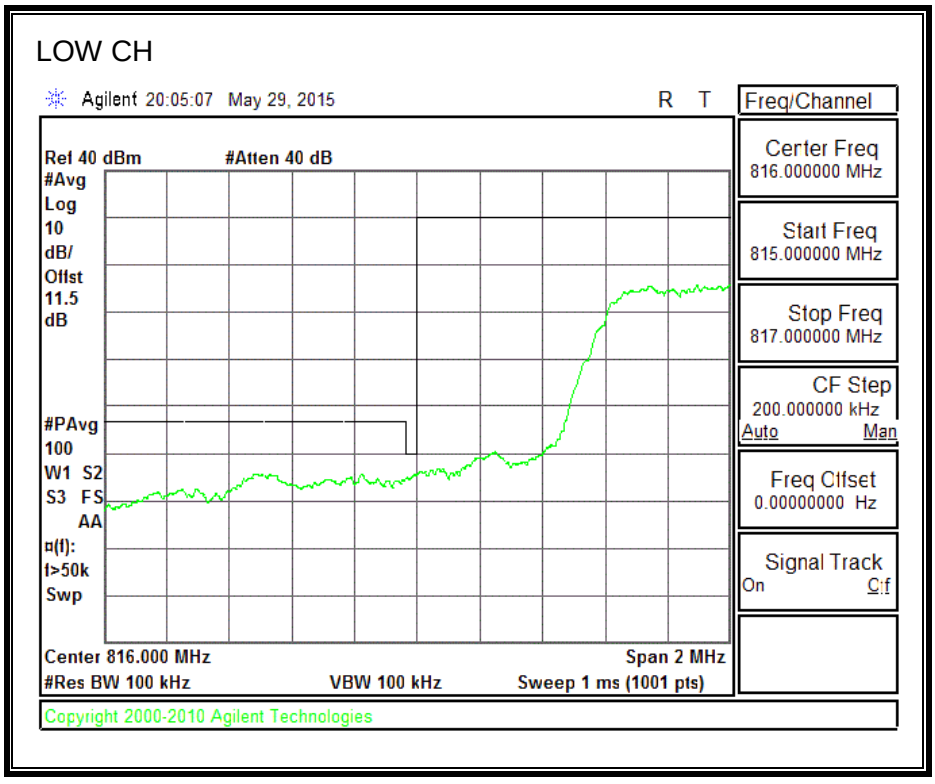
HIGH CH

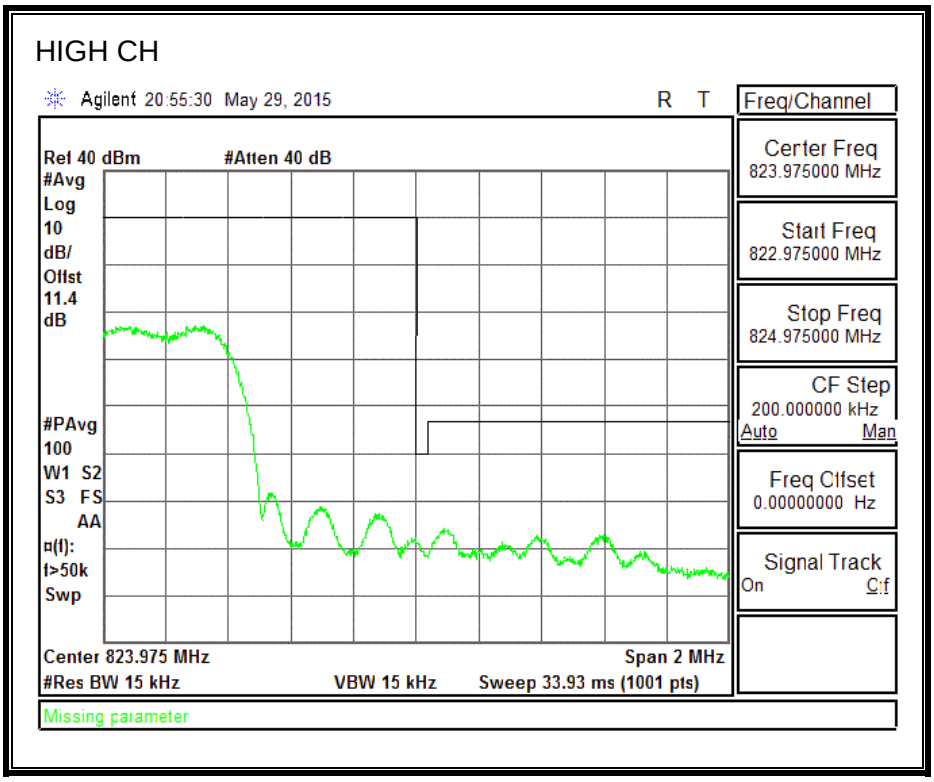


8.3.4. CDMA2000 1xRTT BC10 MASK

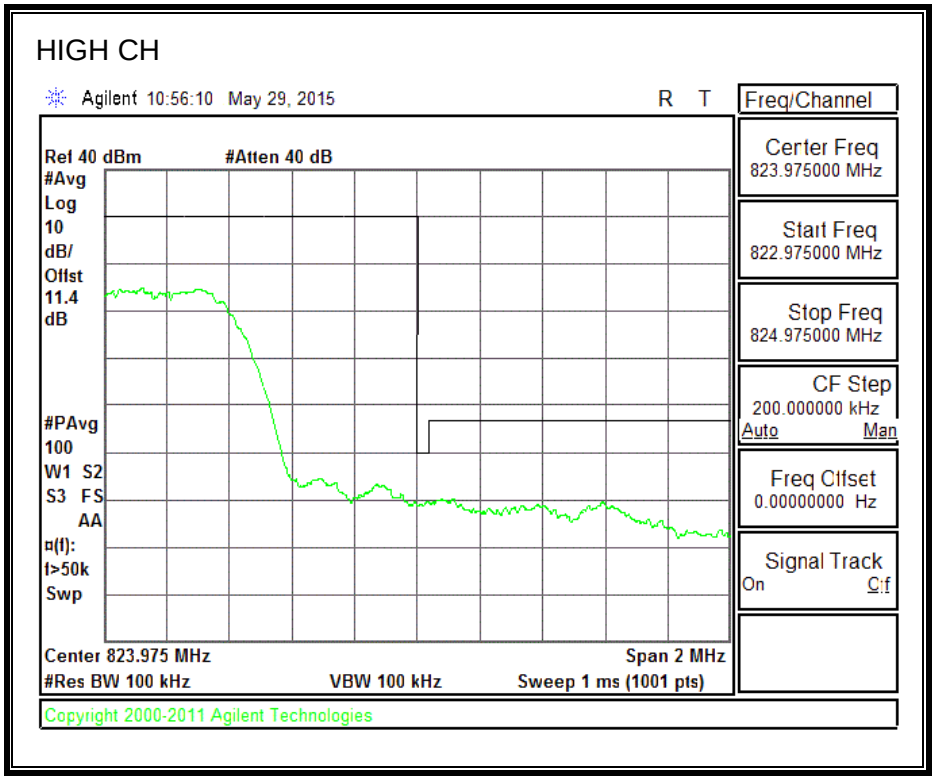


Note: RBW=1% of EBW





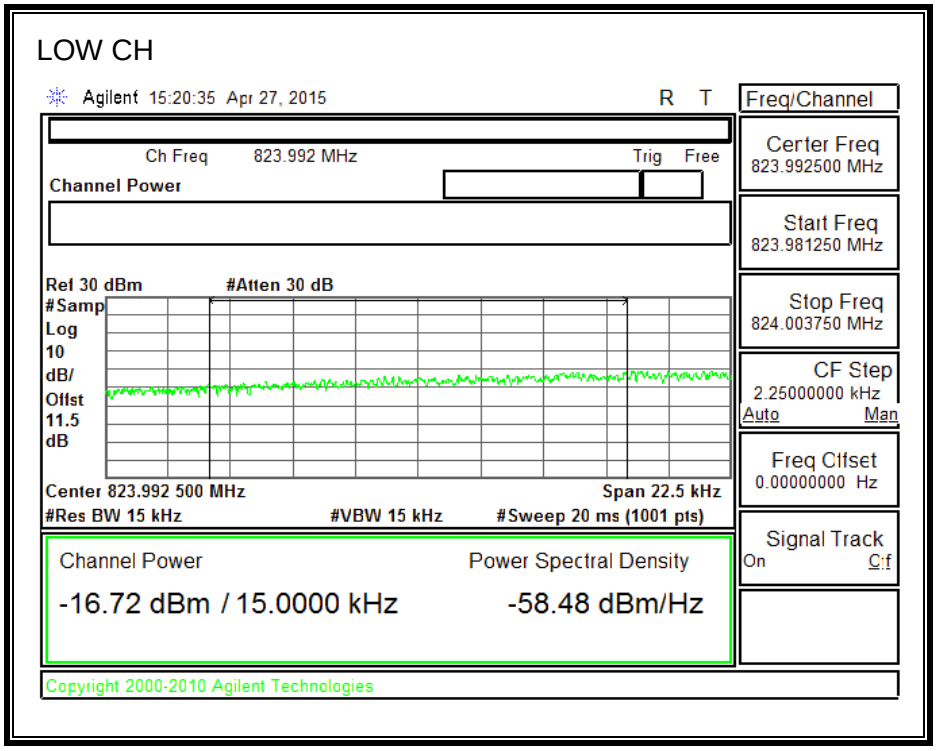
Note: RBW=1% of EBW

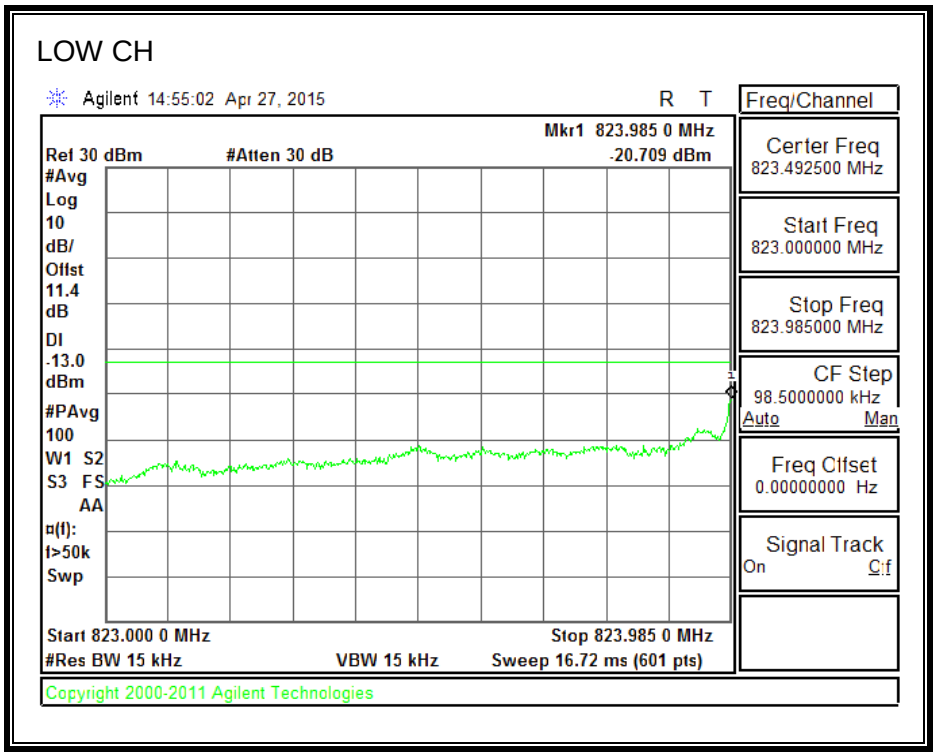


Note: RBW of 1% of 37.5KHz of outer channel frequency block

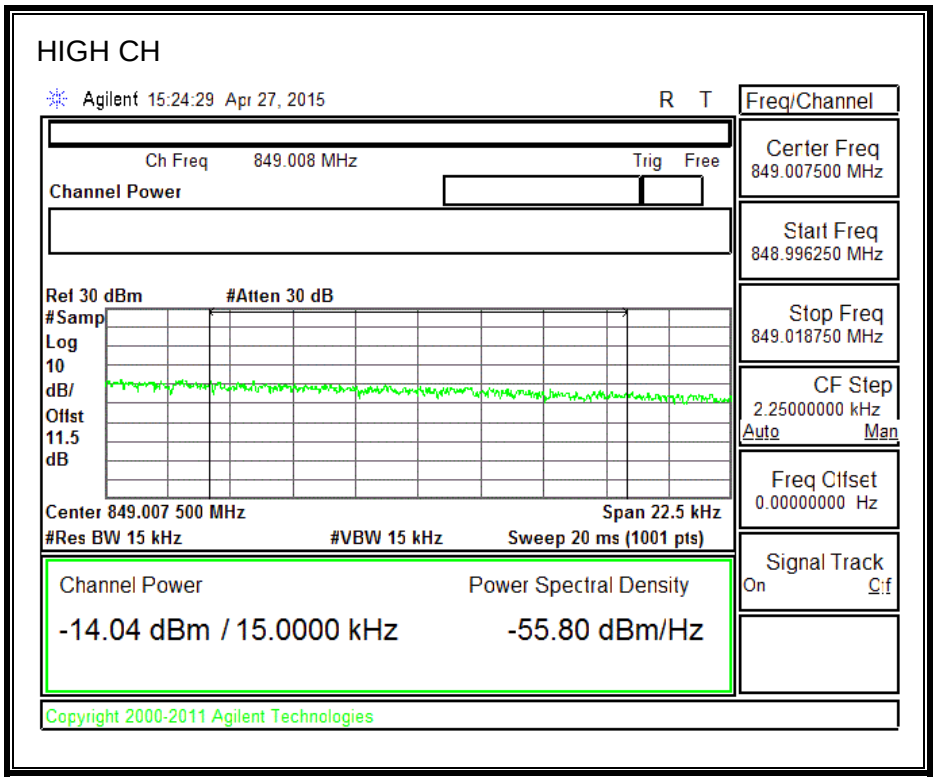
8.3.5. CDMA2000 EVDO REV A

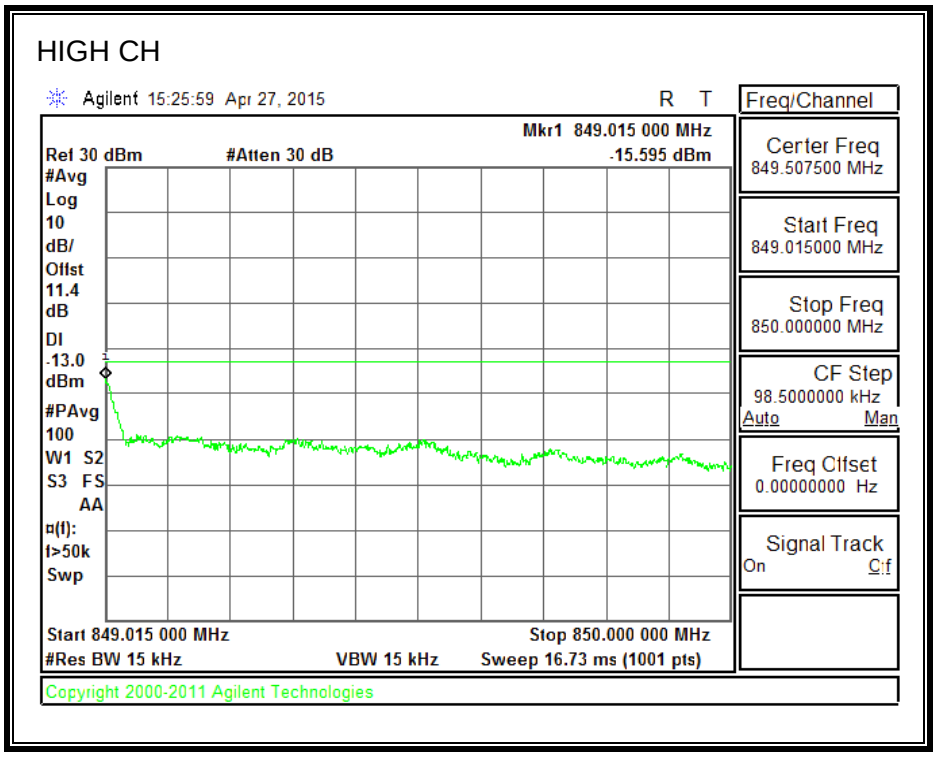
850MHz BAND





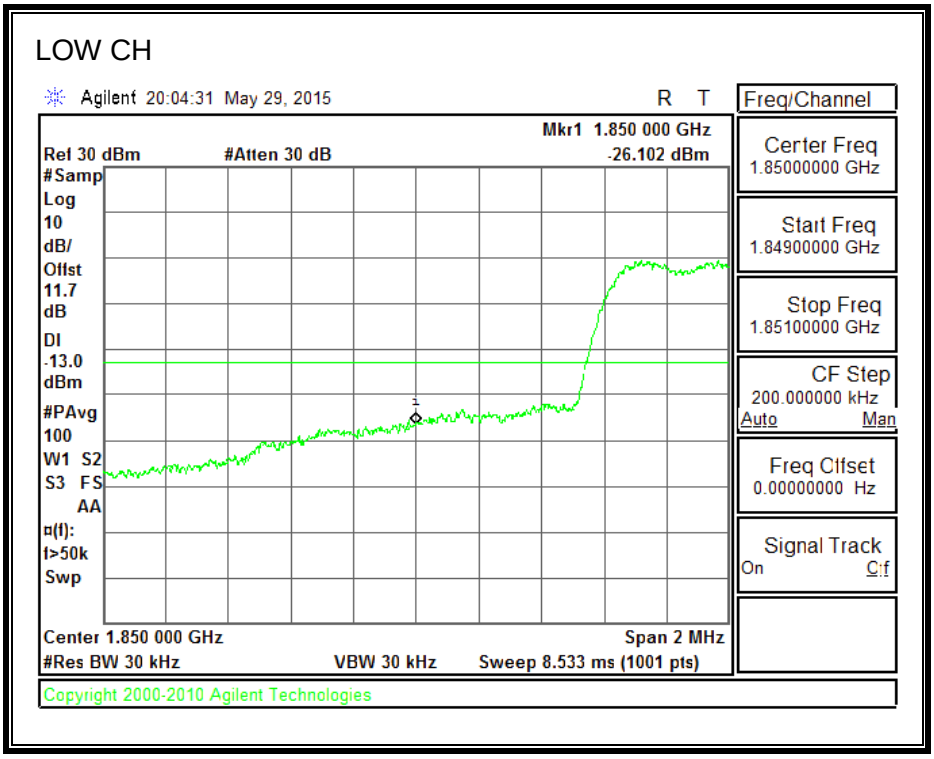
850MHz BAND



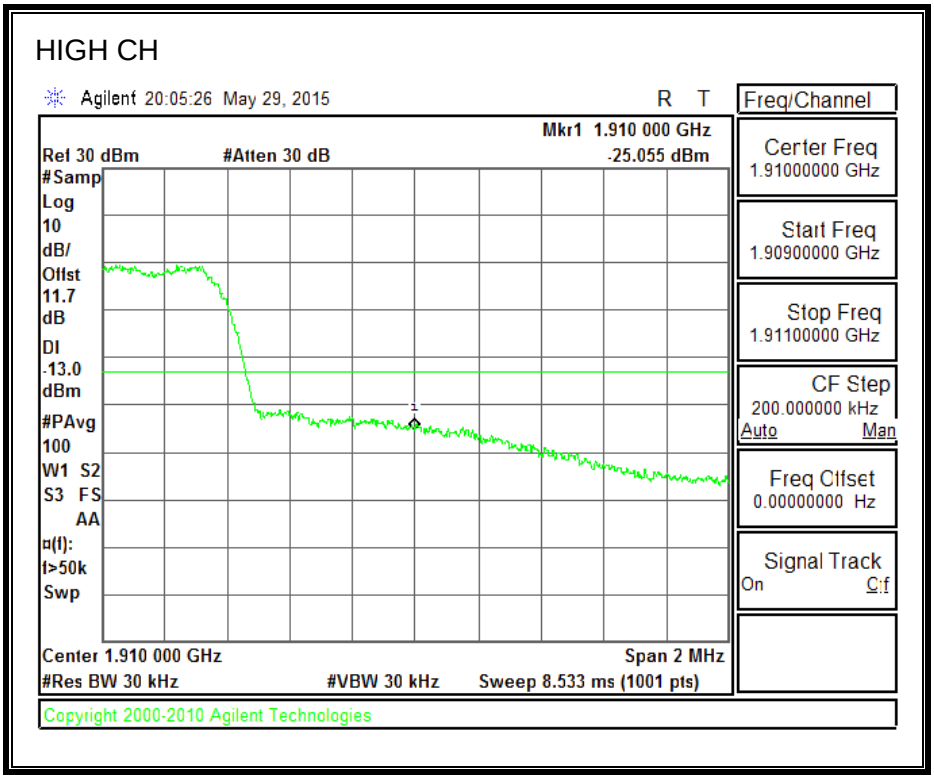


1900MHz BAND

LOW CH

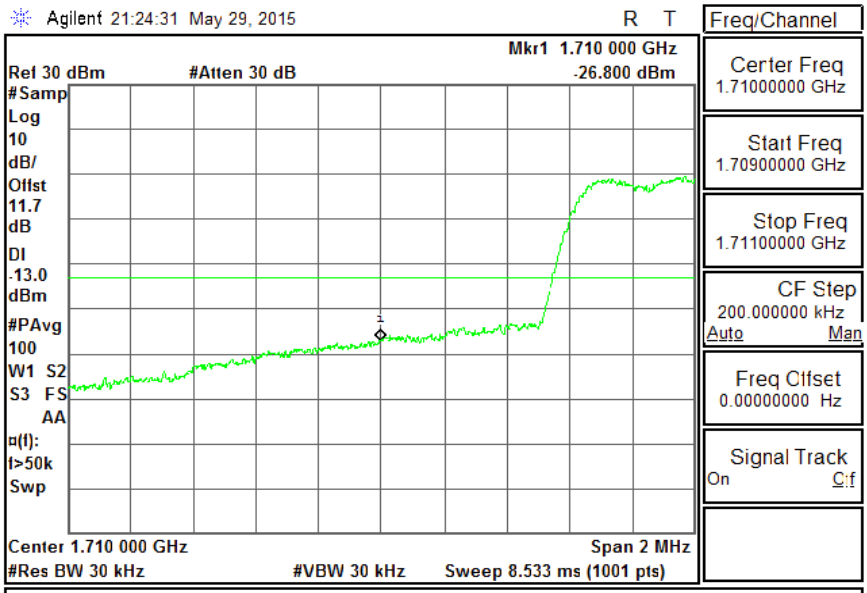


HIGH CH

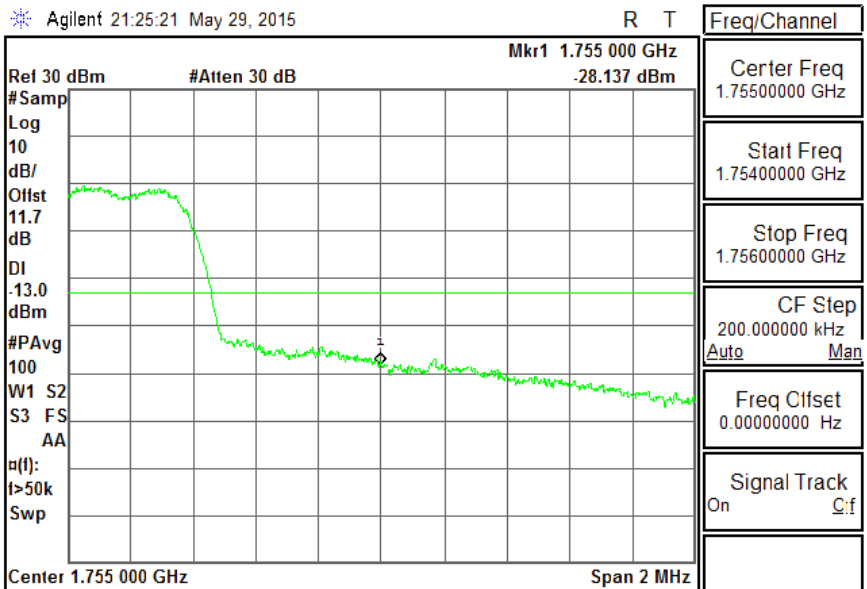


1700MHz BAND

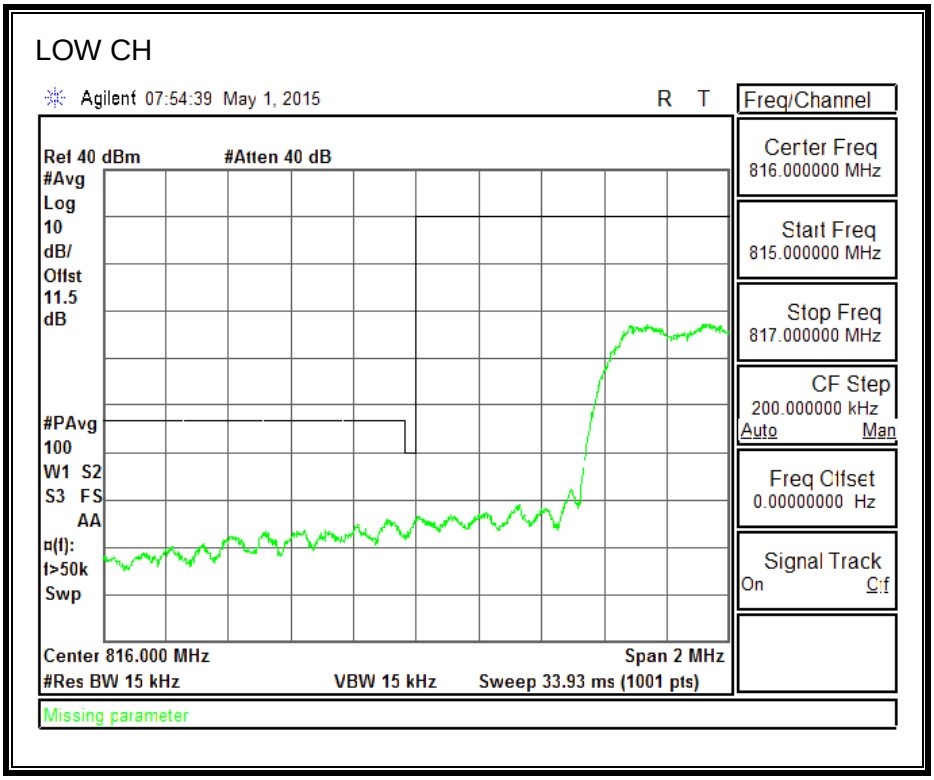
LOW CH



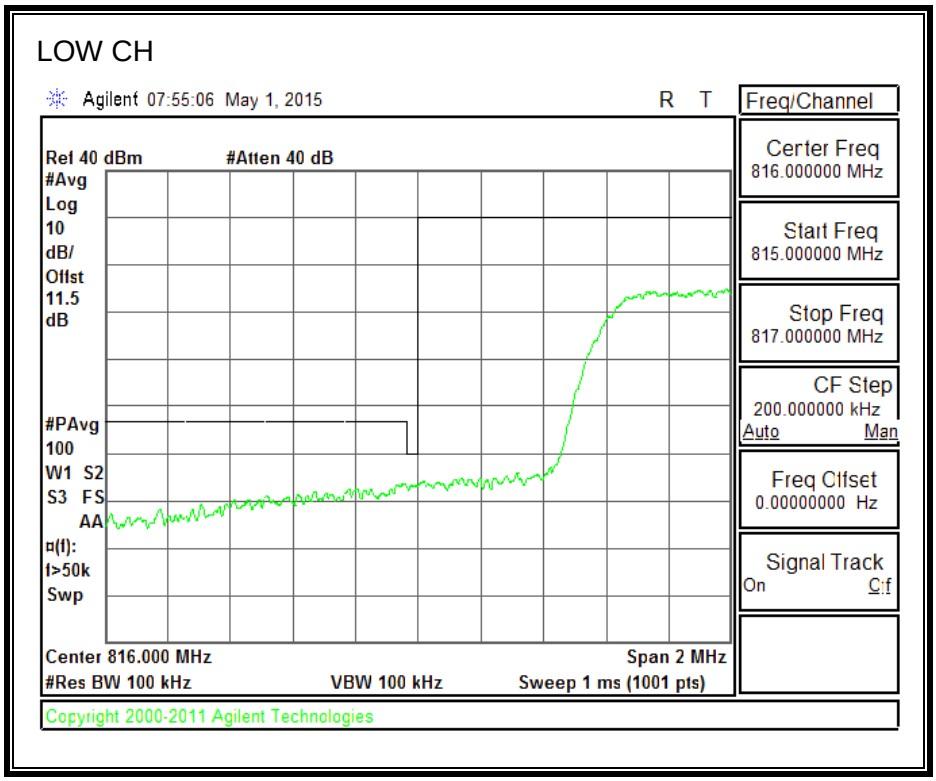
HIGH CH



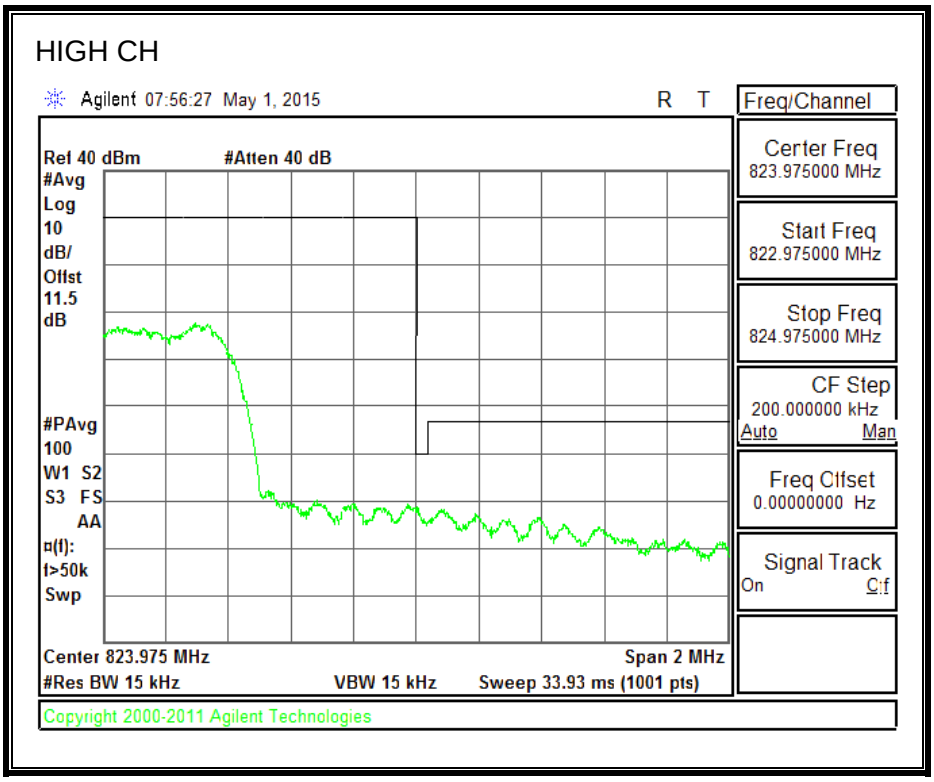
8.3.6. CDMA2000 EVDO REV A BC10 MASK



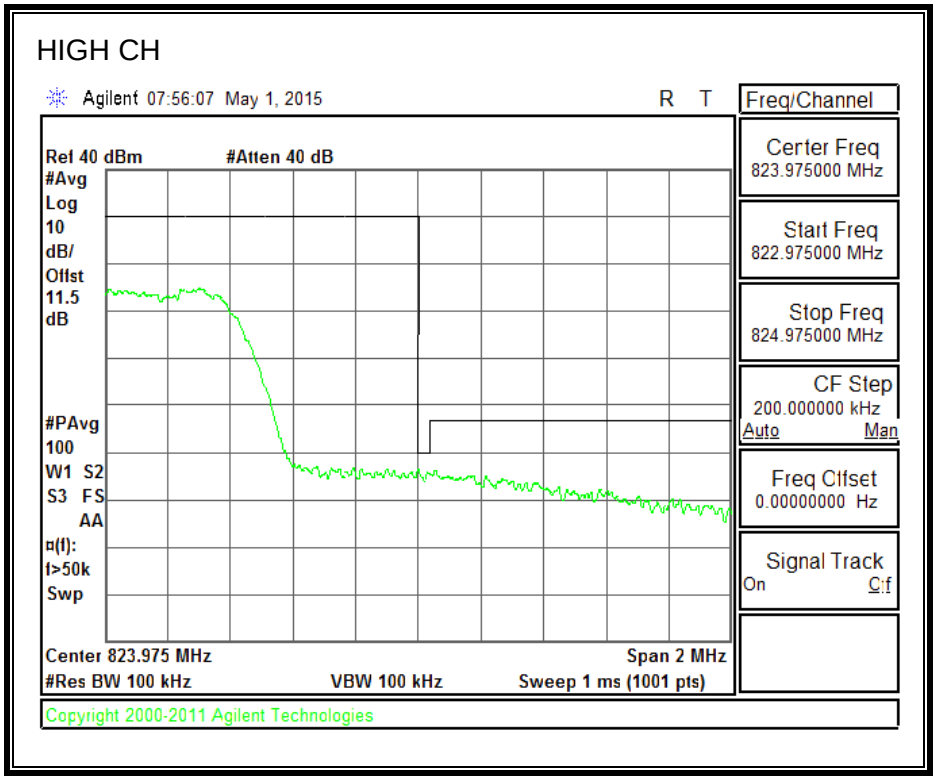
Note: RBW=1% of EBW



Note: RBW of 1% of 37.5KHz of outer channel frequency block



Note: RBW=1% of EBW

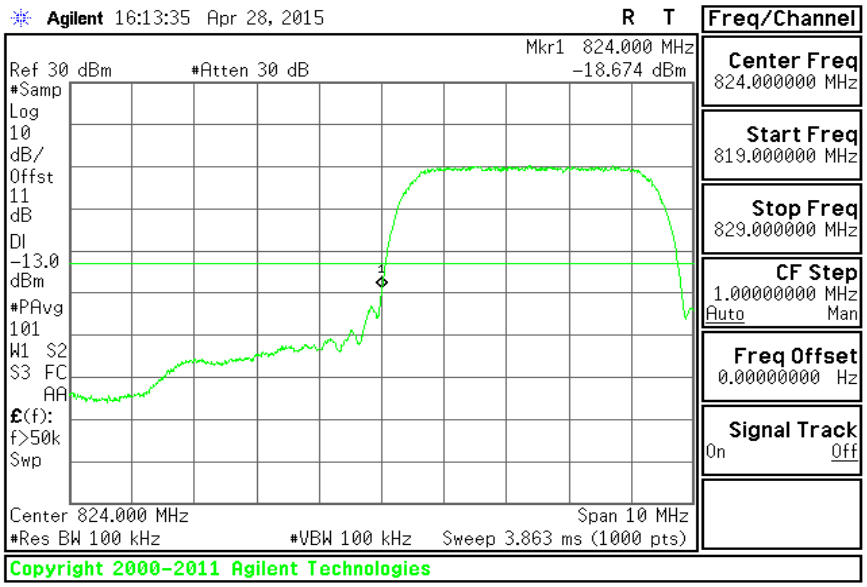


Note: RBW of 1% of 37.5KHz of outer channel frequency block

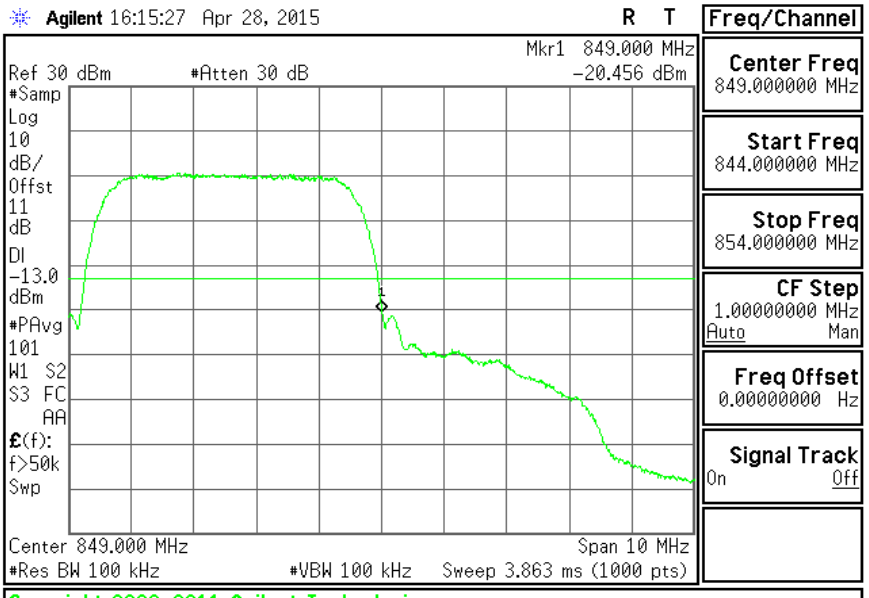
8.3.7. UMTS REL 99

850MHz BAND

LOW CH

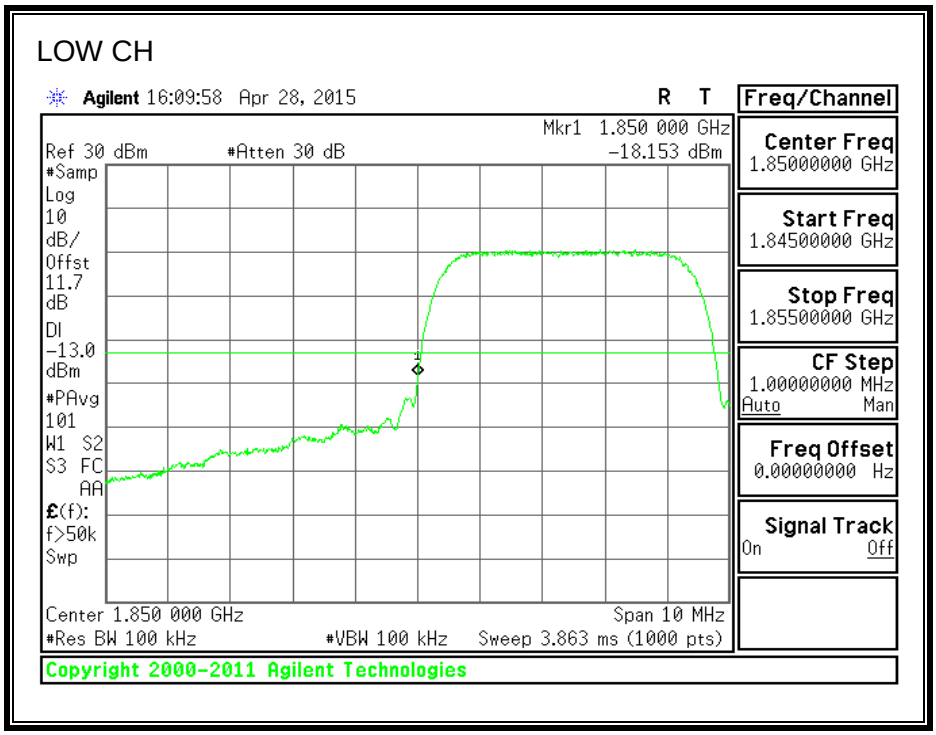


HIGH CH

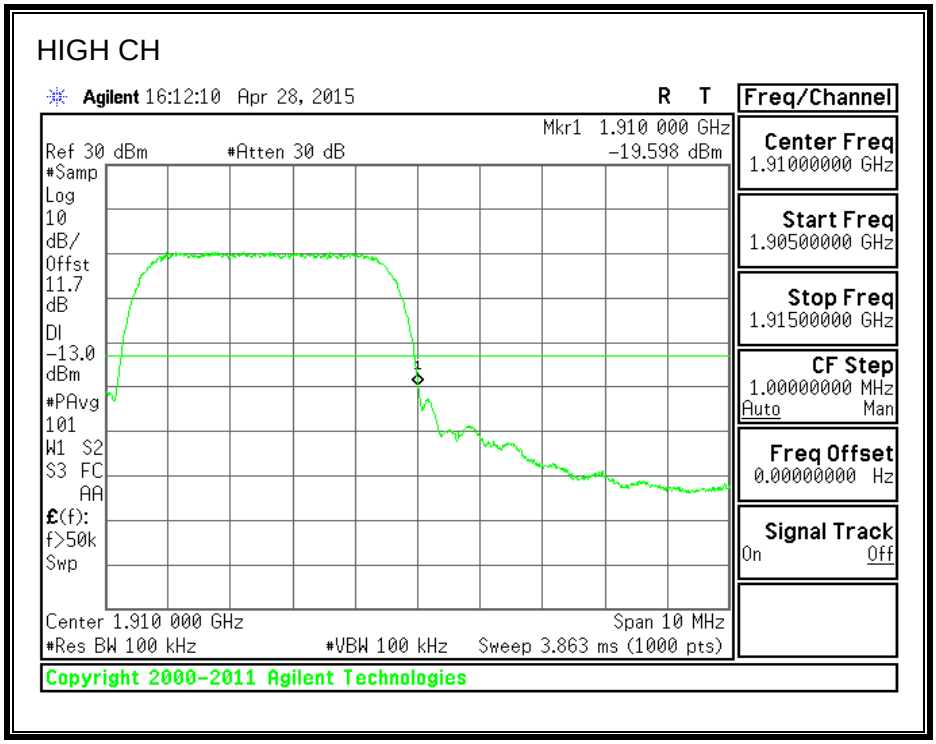


1900MHz BAND

LOW CH

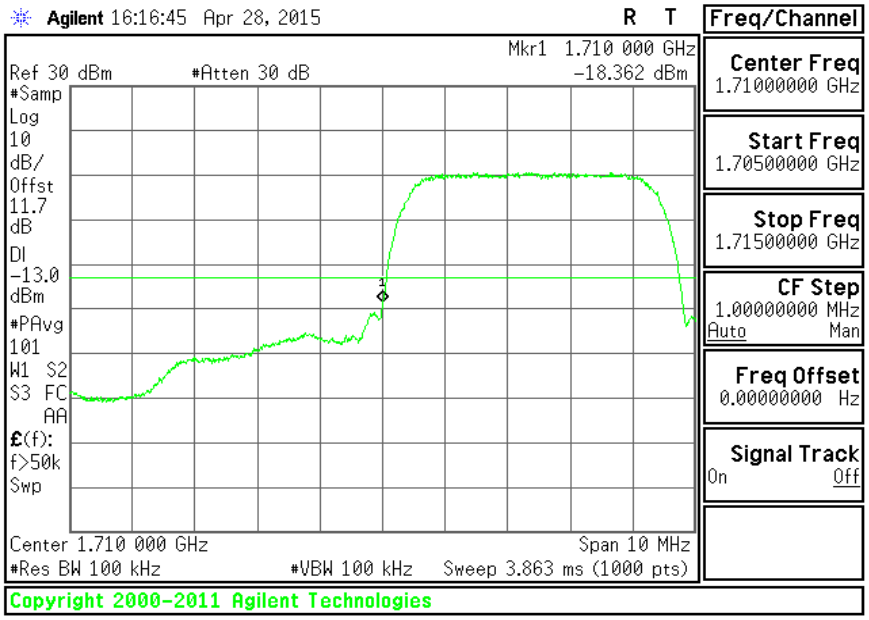


HIGH CH

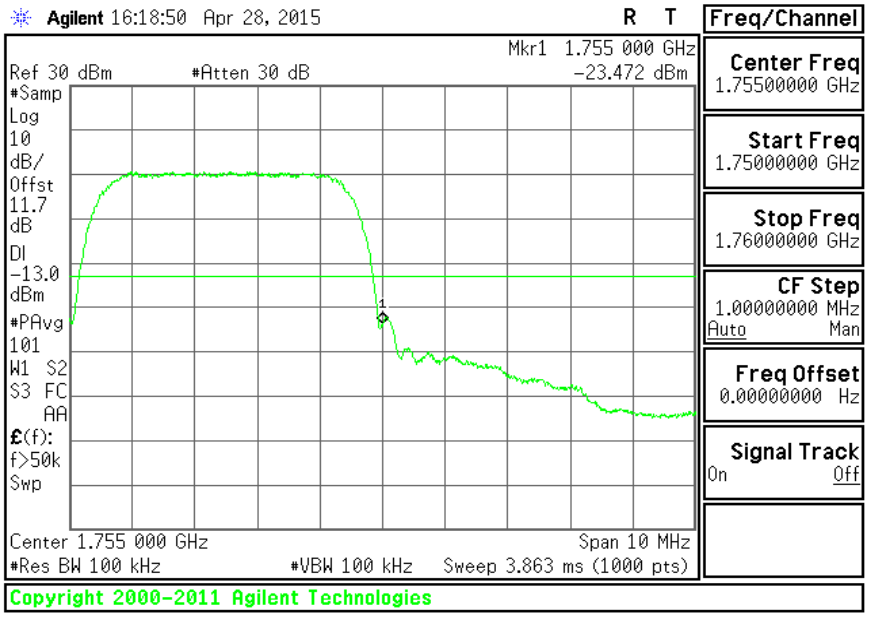


1700MHz BAND

LOW CH



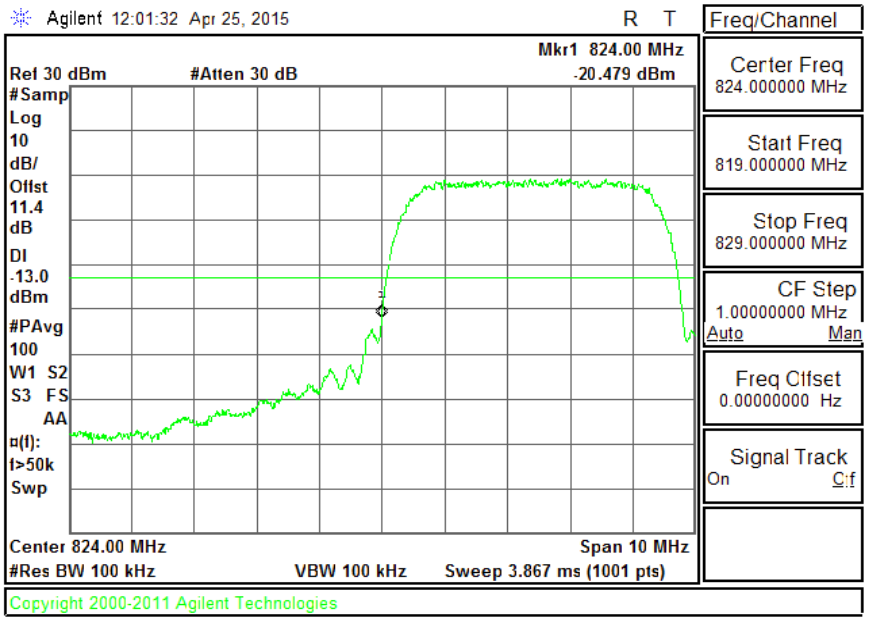
HIGH CH



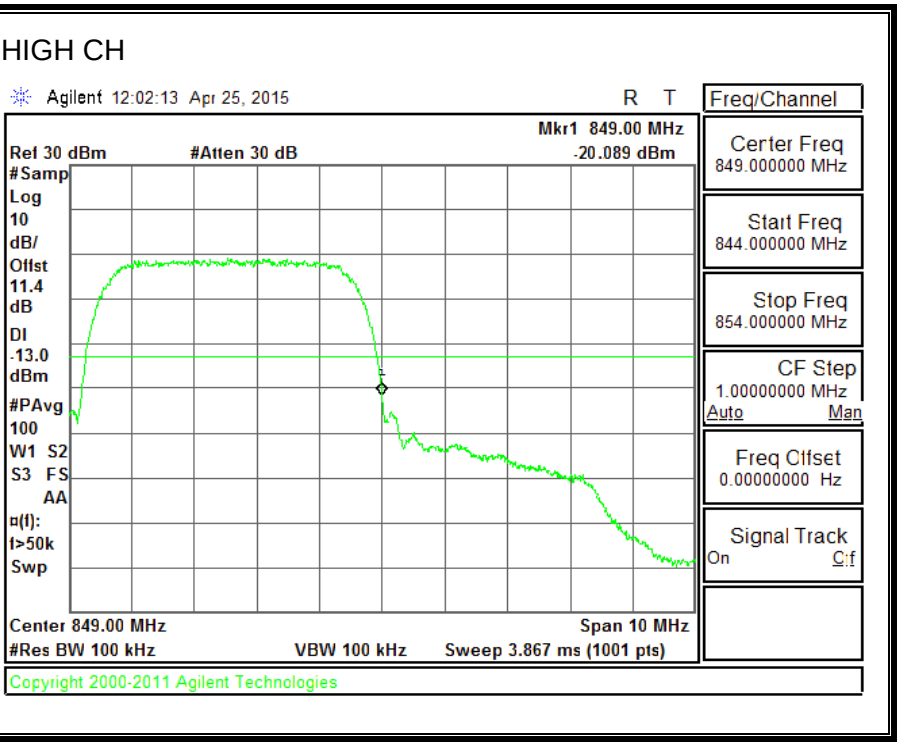
8.3.8. UMTS HSDPA

850MHz BAND

LOW CH

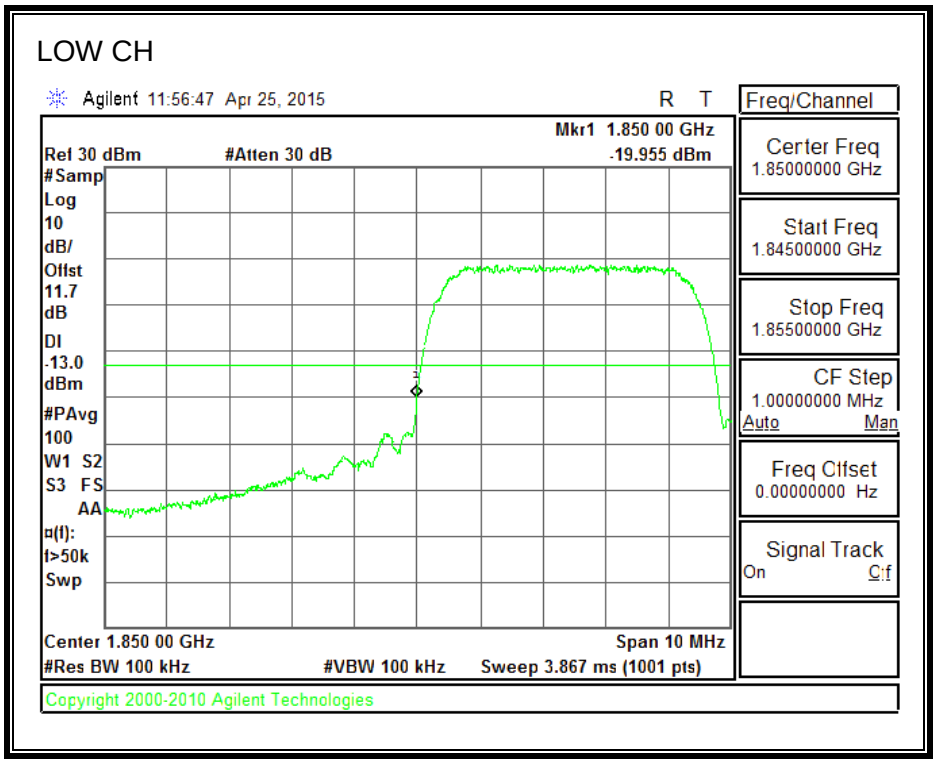


HIGH CH

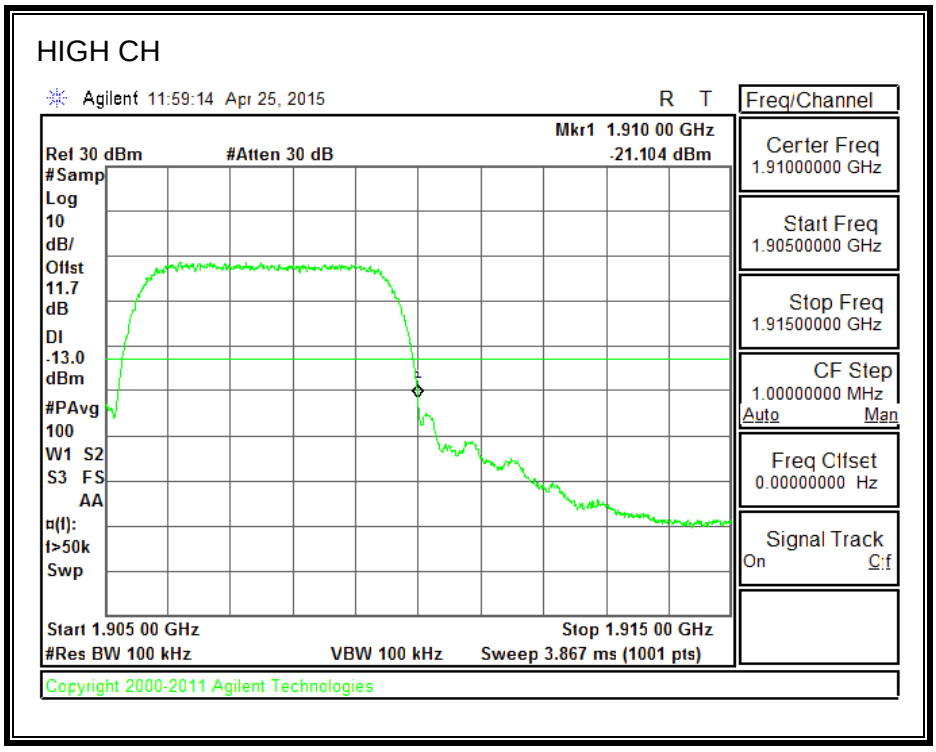


1900MHz BAND

LOW CH

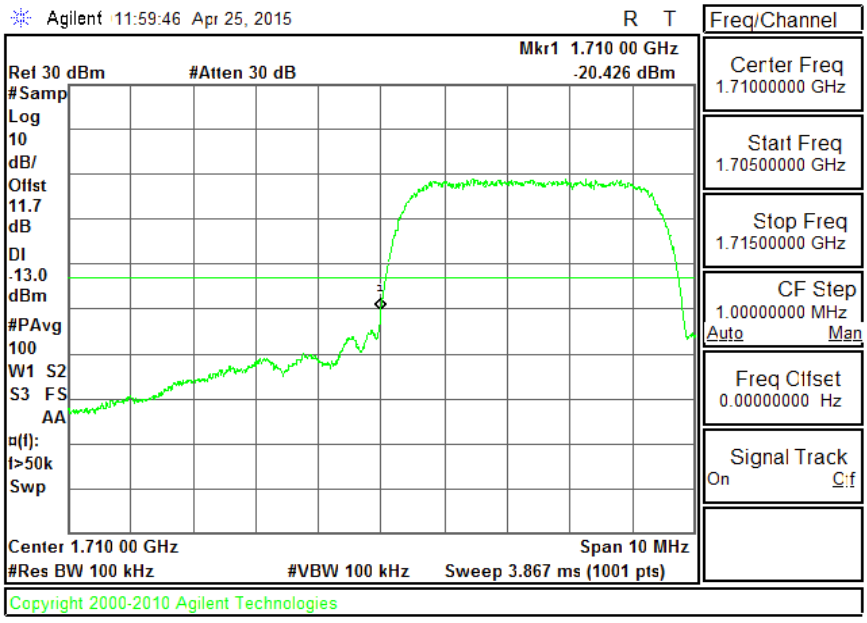


HIGH CH

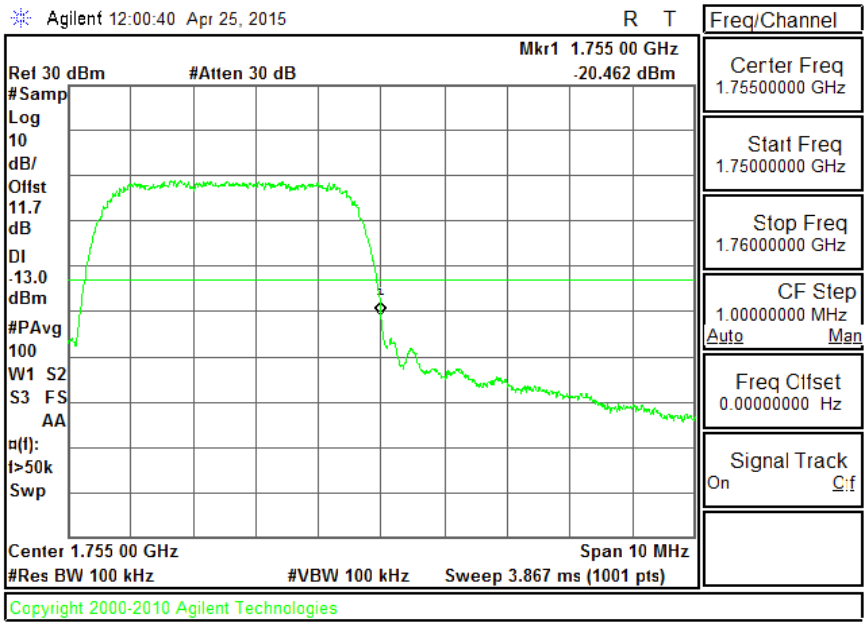


1700MHz BAND

LOW CH



HIGH CH



8.4. BAND EDGE (MODEL: A1688)

RULE PART(S)

FCC: §22.359, 24.238, §27.53 and §90.691

LIMITS

§22. 917 & 24.238
Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

§27.53
AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1710-1755 MHz, band, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

§90.691 Emission mask requirements for EA-based systems.

Compliance with the provisions of paragraphs above of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

TEST PROCEDURE

The transmitter output was connected to a Agilent 8960 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.
For each band edge measurement:

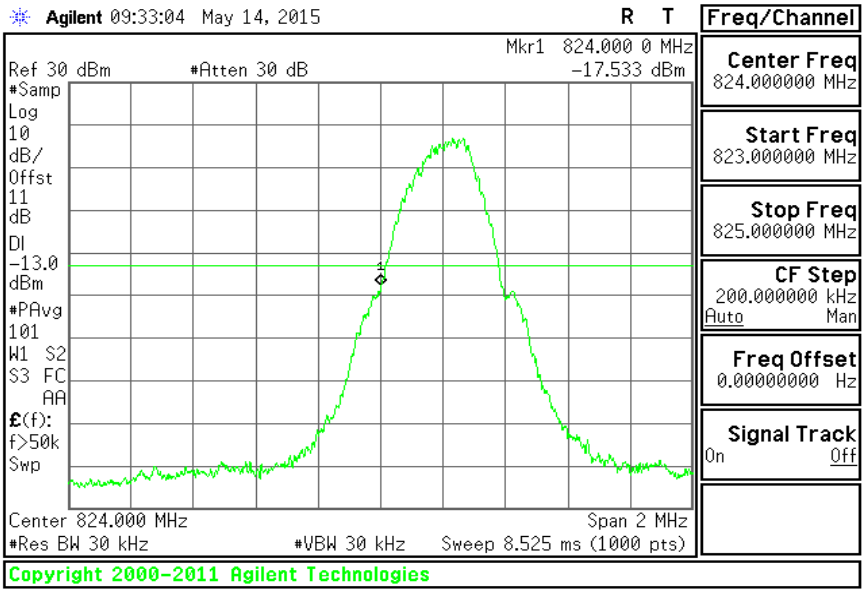
- Set the spectrum analyzer span to include the block edge frequency (824, 849, 1850, 1910MHz)
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

RESULTS

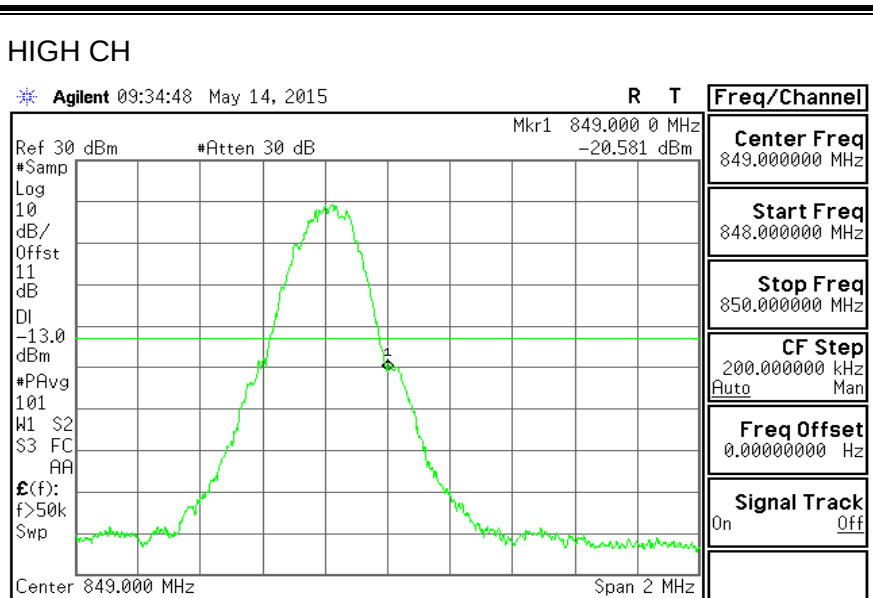
8.4.1. GSM-GPRS

850MHz BAND

LOW CH

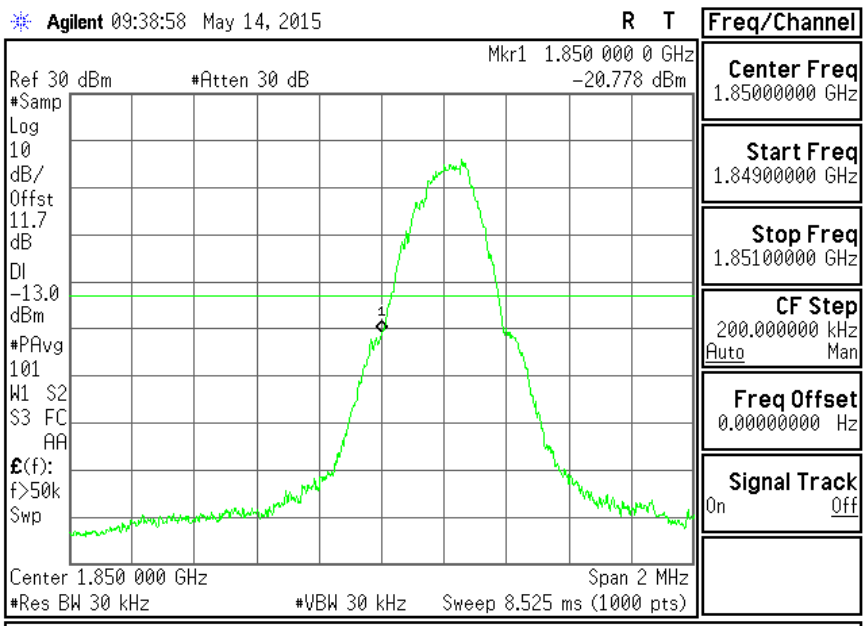


HIGH CH

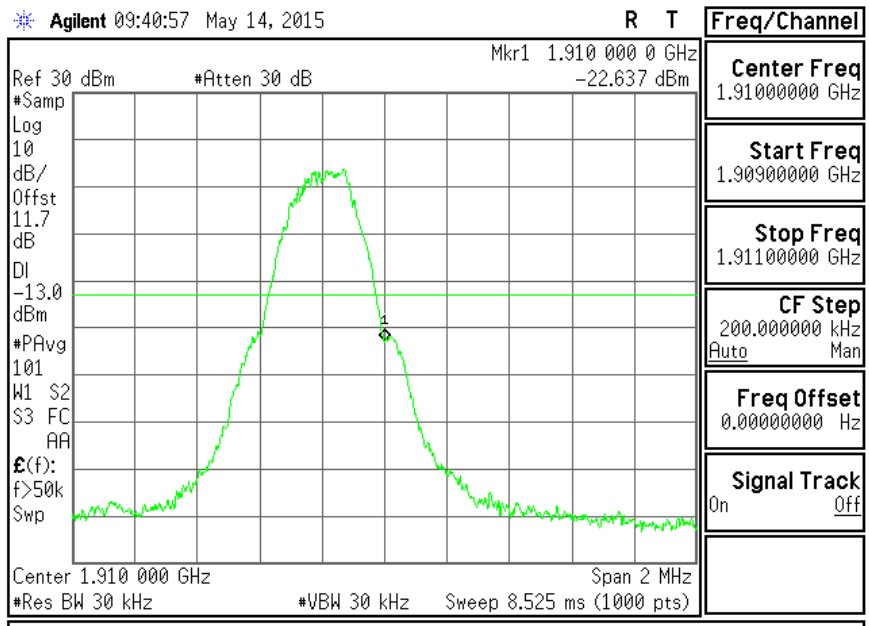


1900MHz BAND

LOW CH



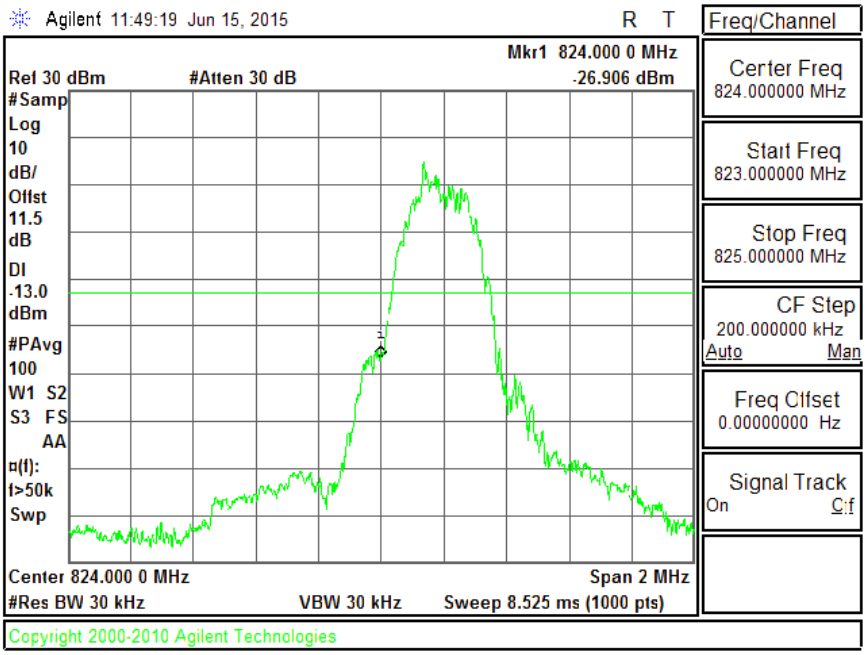
HIGH CH



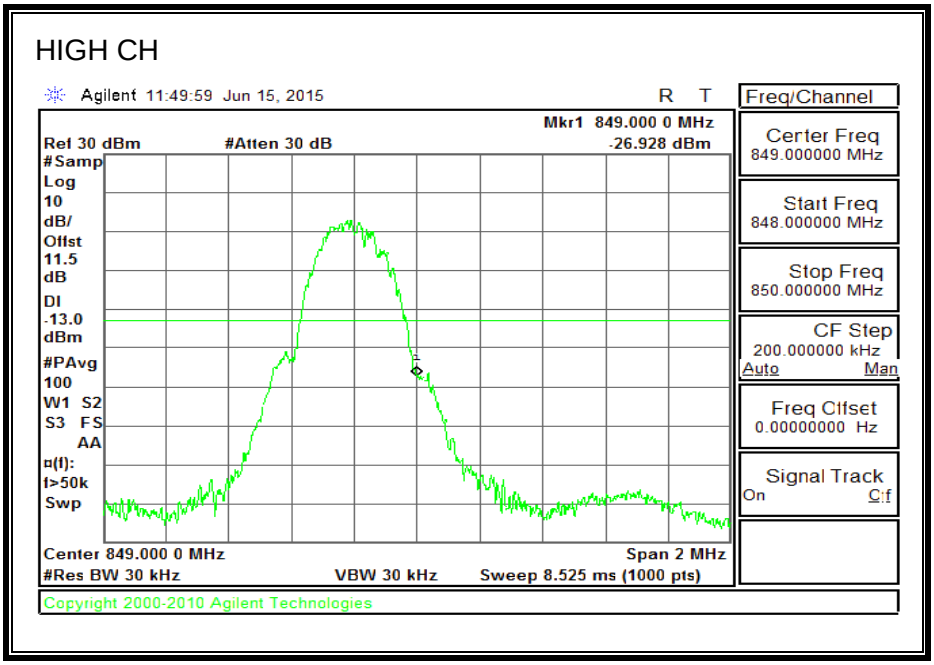
8.4.2. GSM-EGPRS

850MHz BAND

LOW CH

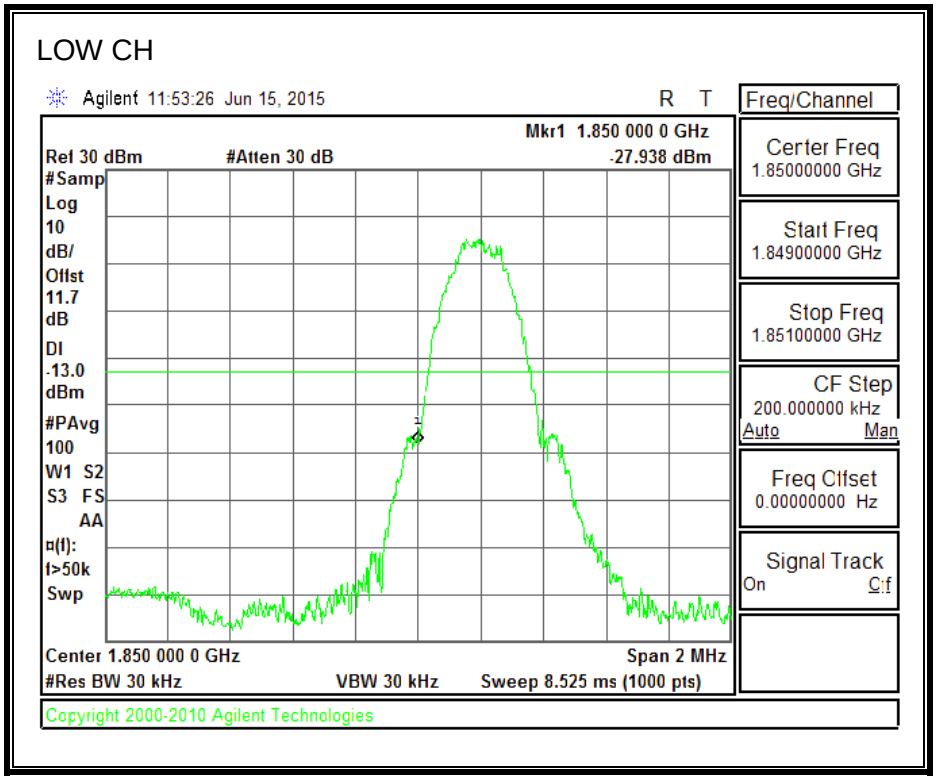


HIGH CH

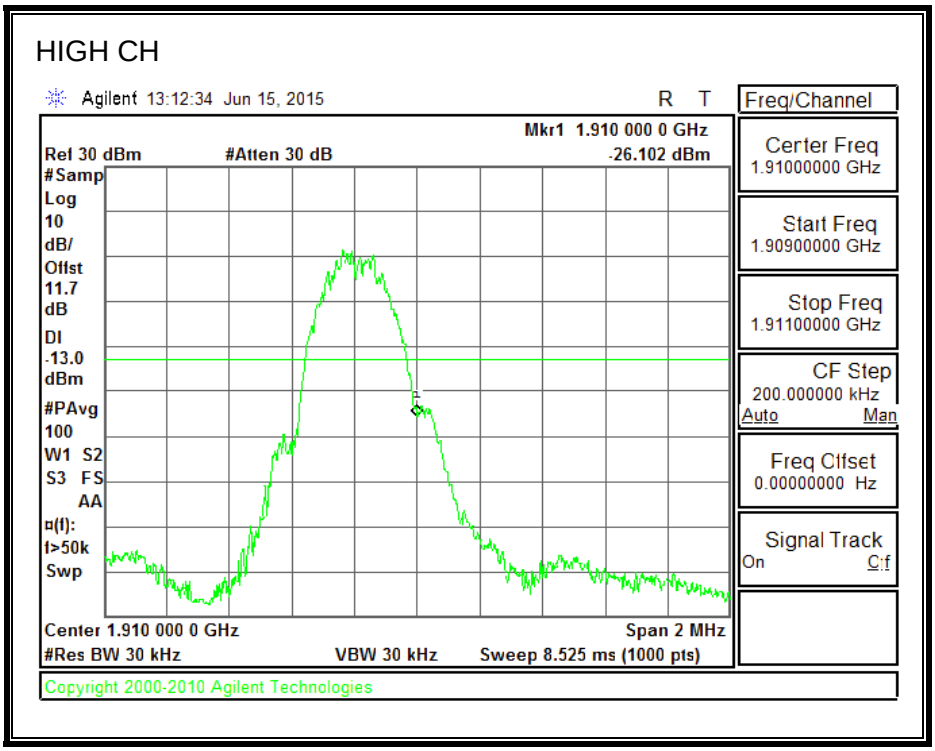


1900MHz BAND

LOW CH

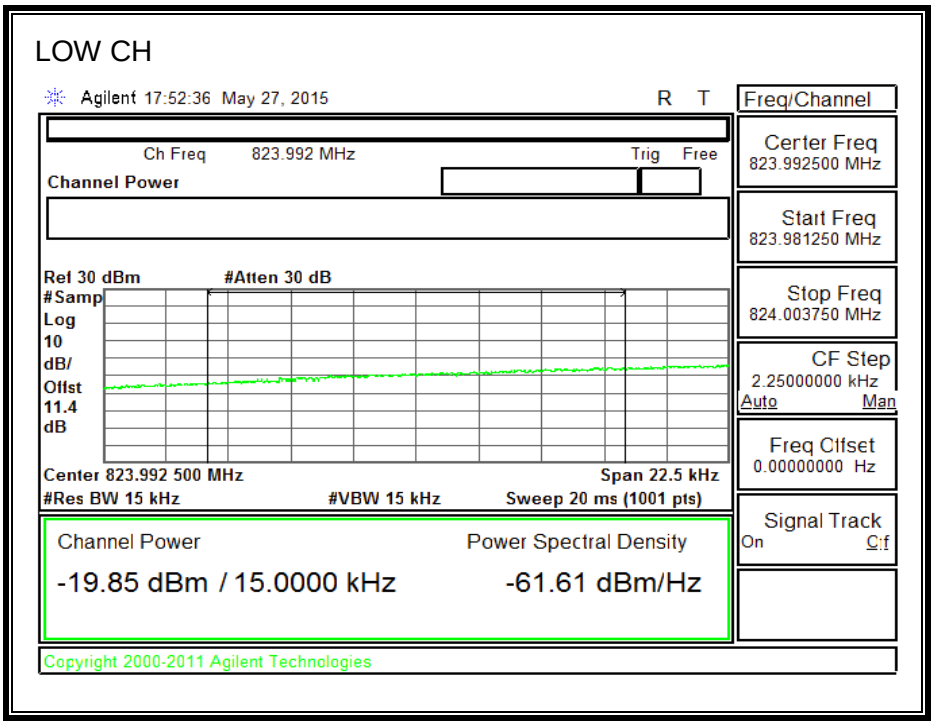


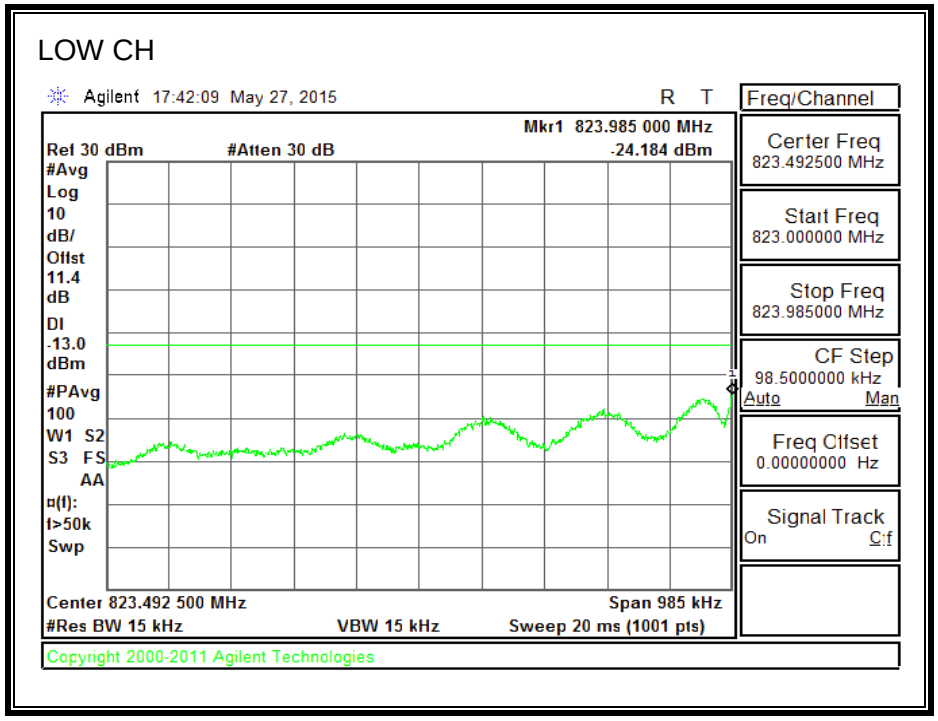
HIGH CH



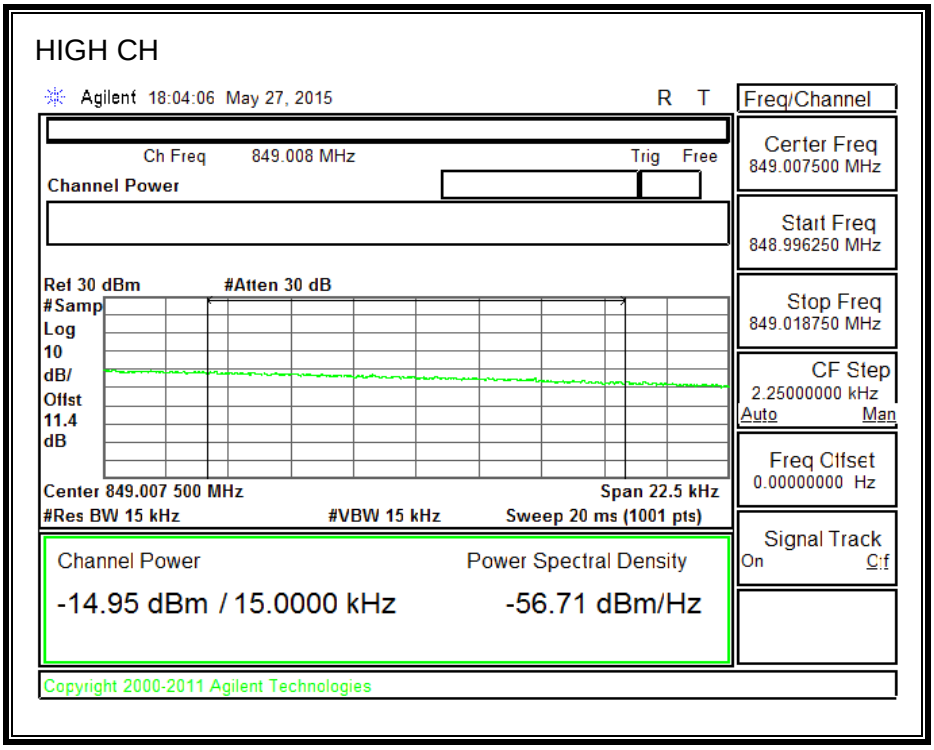
8.4.3. CDMA2000 1xRTT

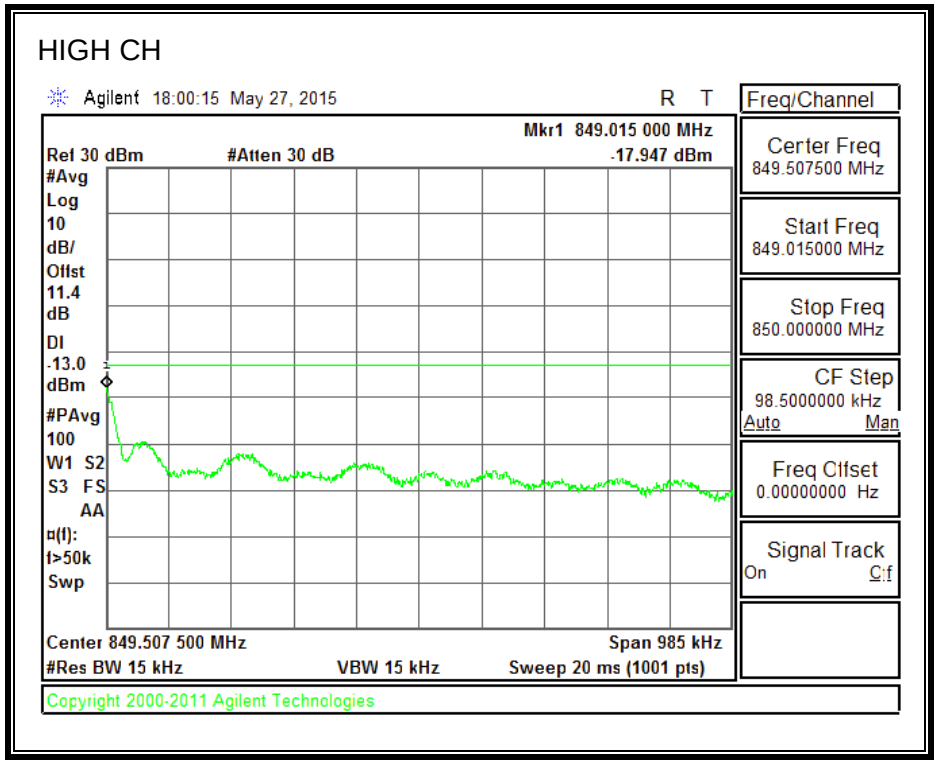
850MHz BAND





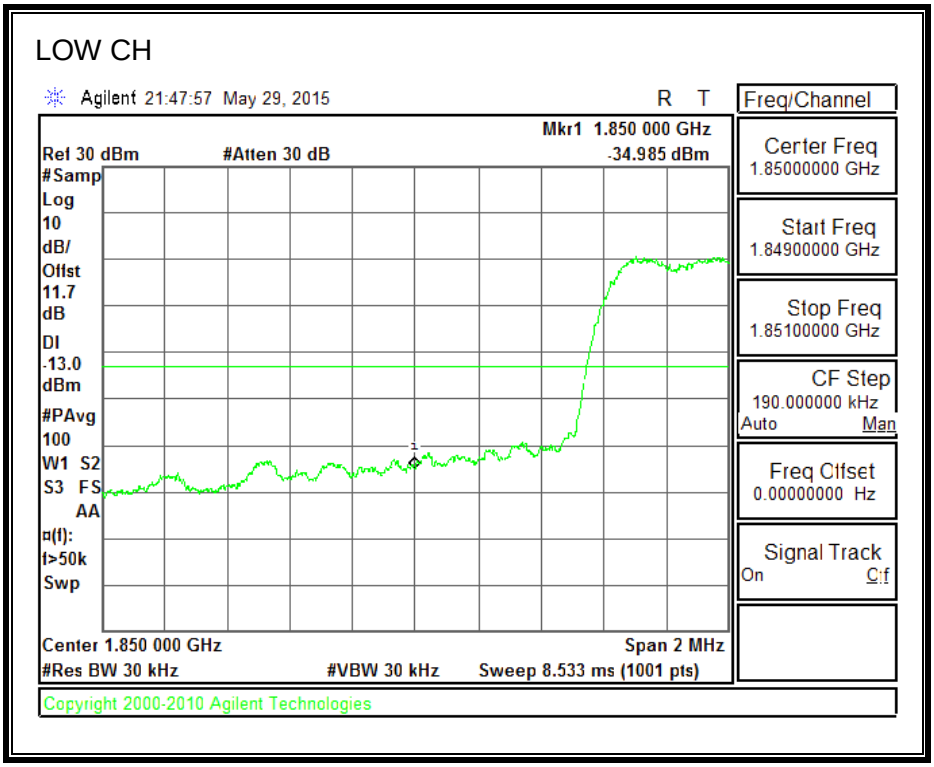
850MHz BAND



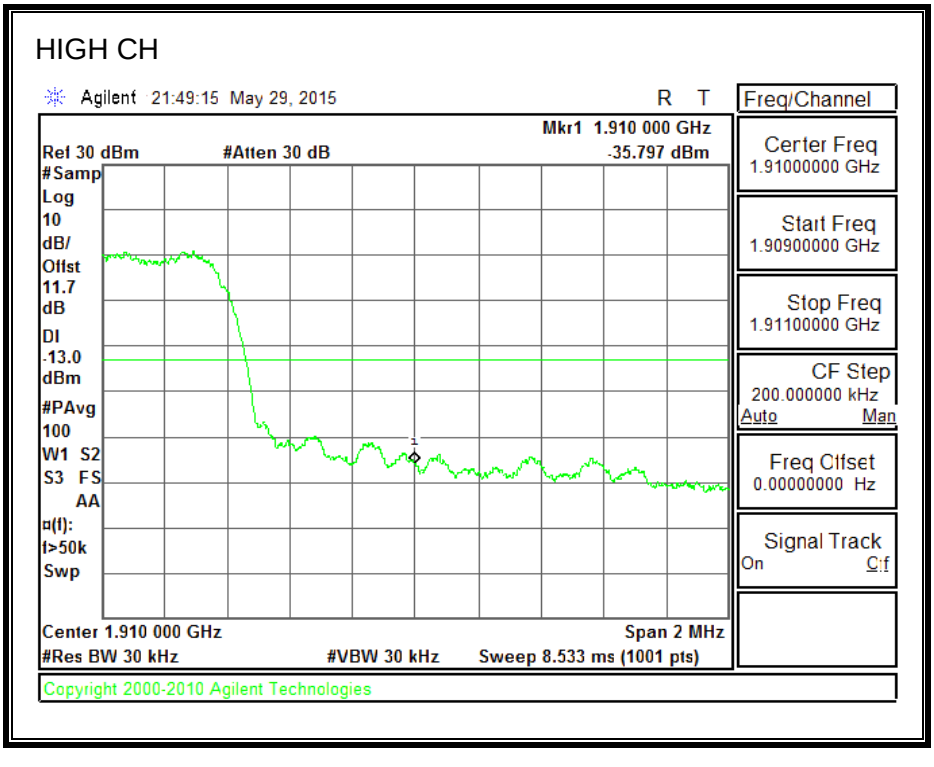


1900MHz BAND

LOW CH

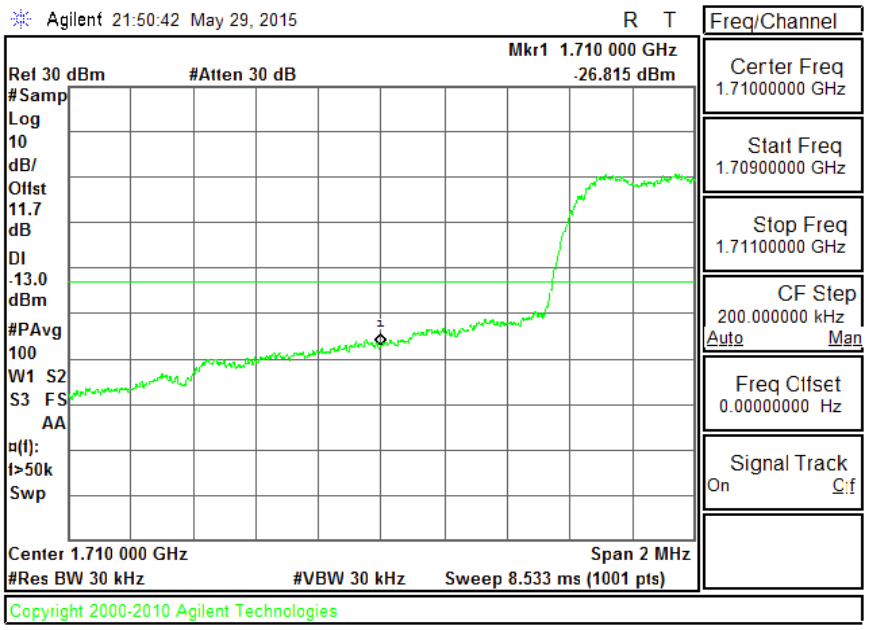


HIGH CH

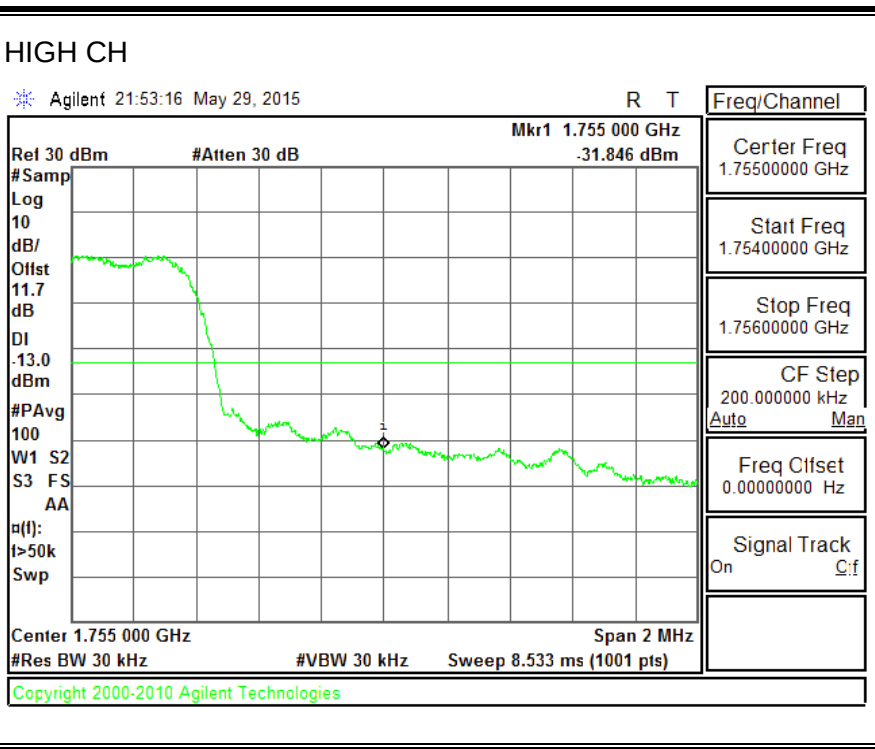


1700MHz BAND

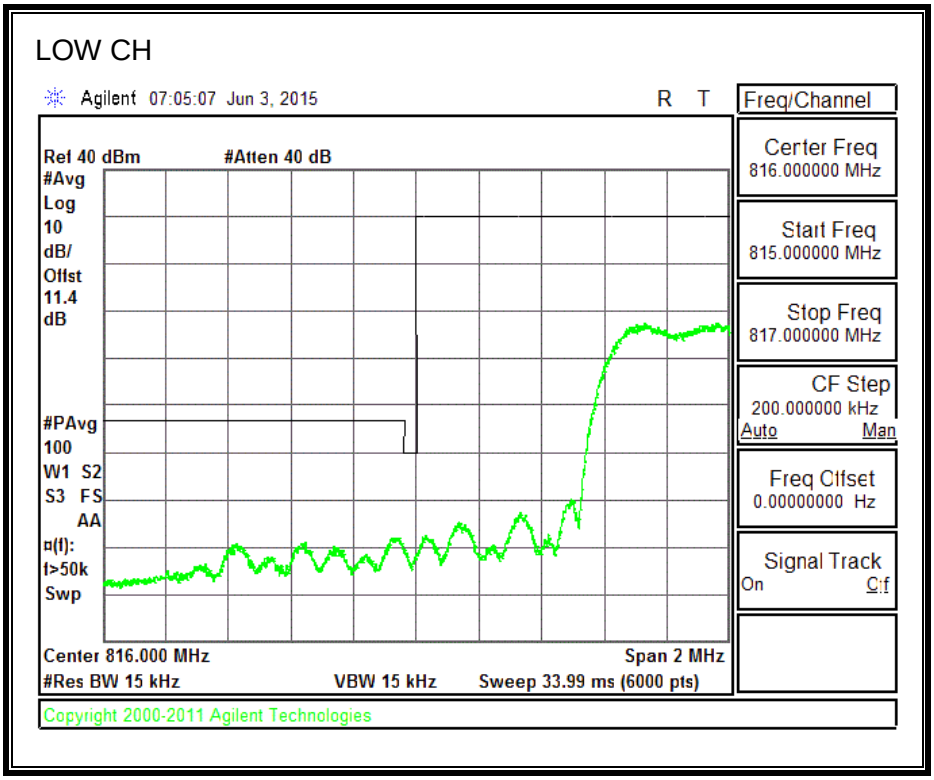
LOW CH



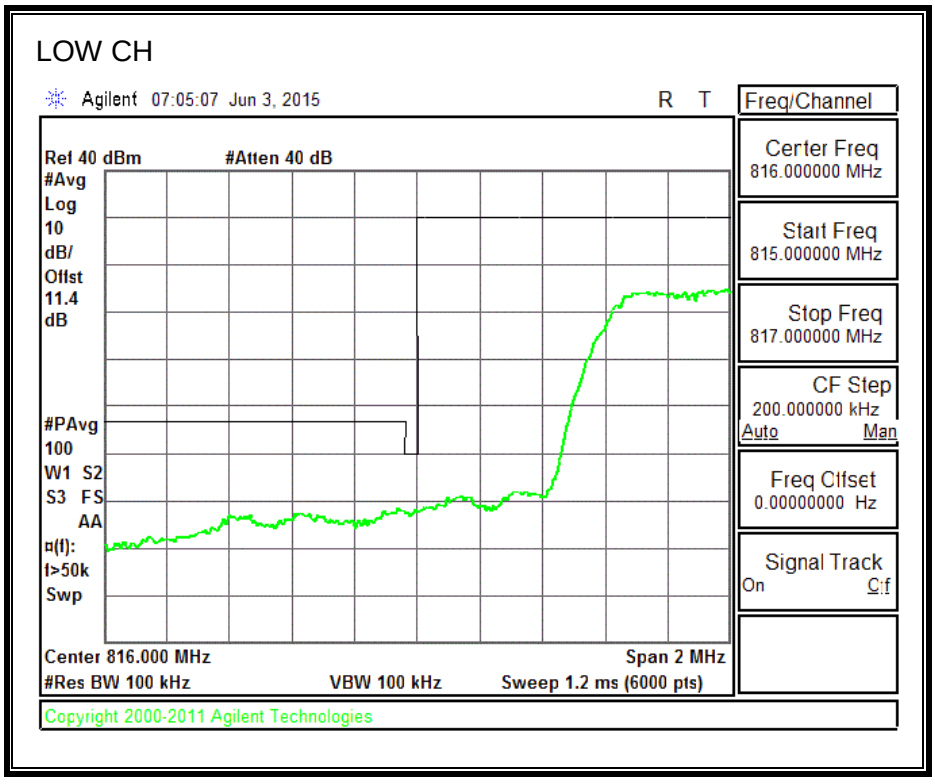
HIGH CH



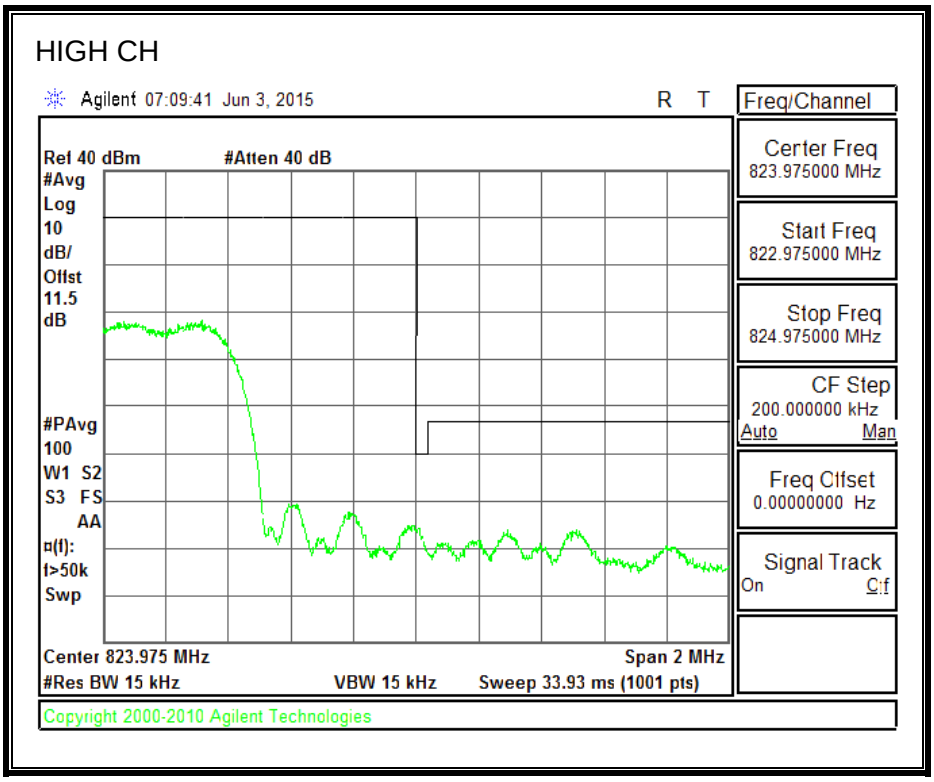
8.4.4. CDMA2000 1xRTT BC10 MASK



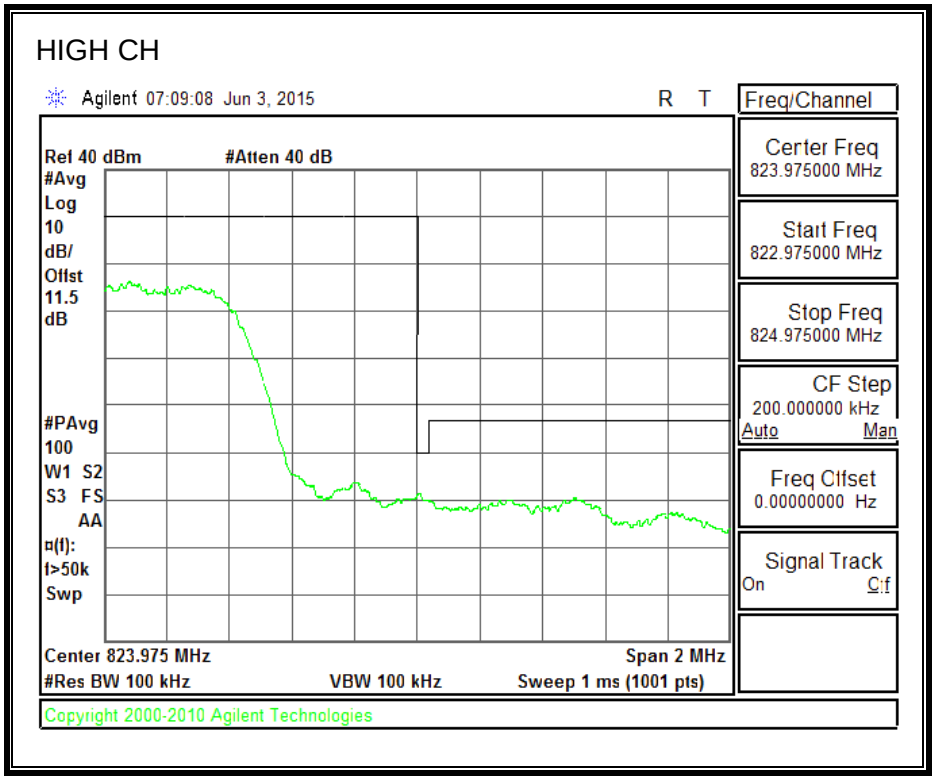
Note: RBW=1% of EBW



Note: RBW of 1% of 37.5KHz of outer channel frequency block



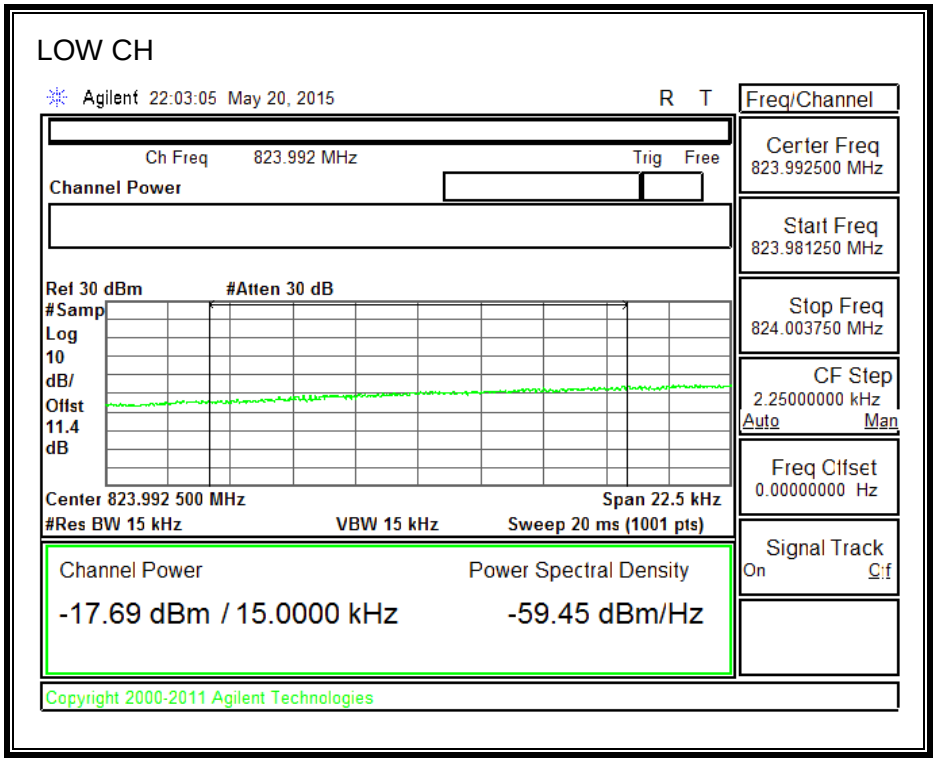
Note: RBW=1% of EBW

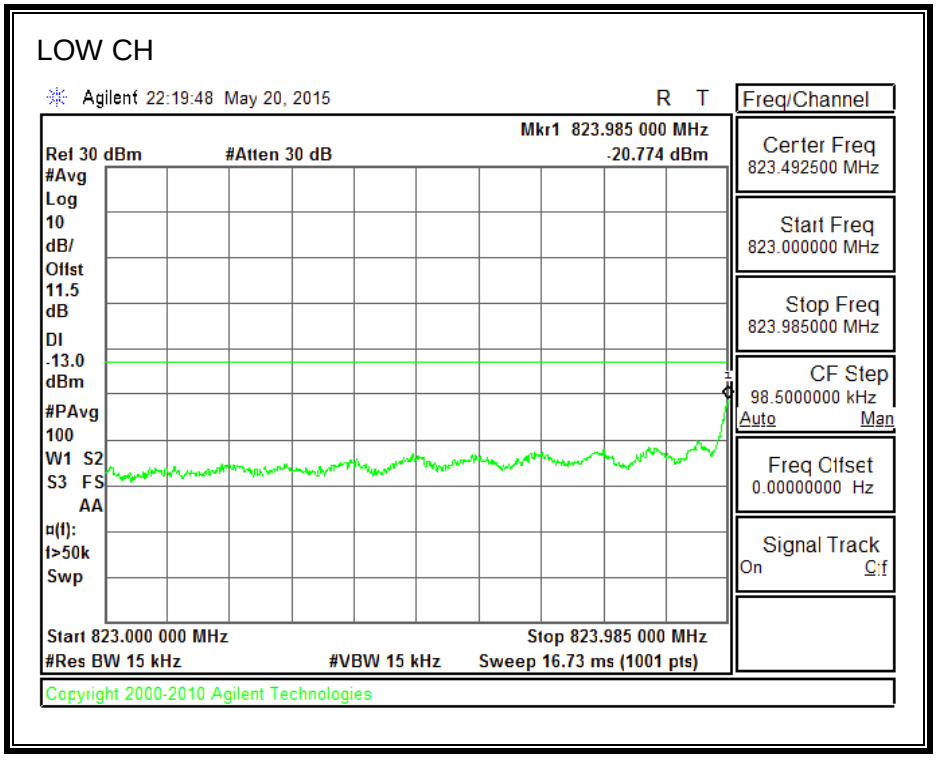


Note: RBW of 1% of 37.5KHz of outer channel frequency block

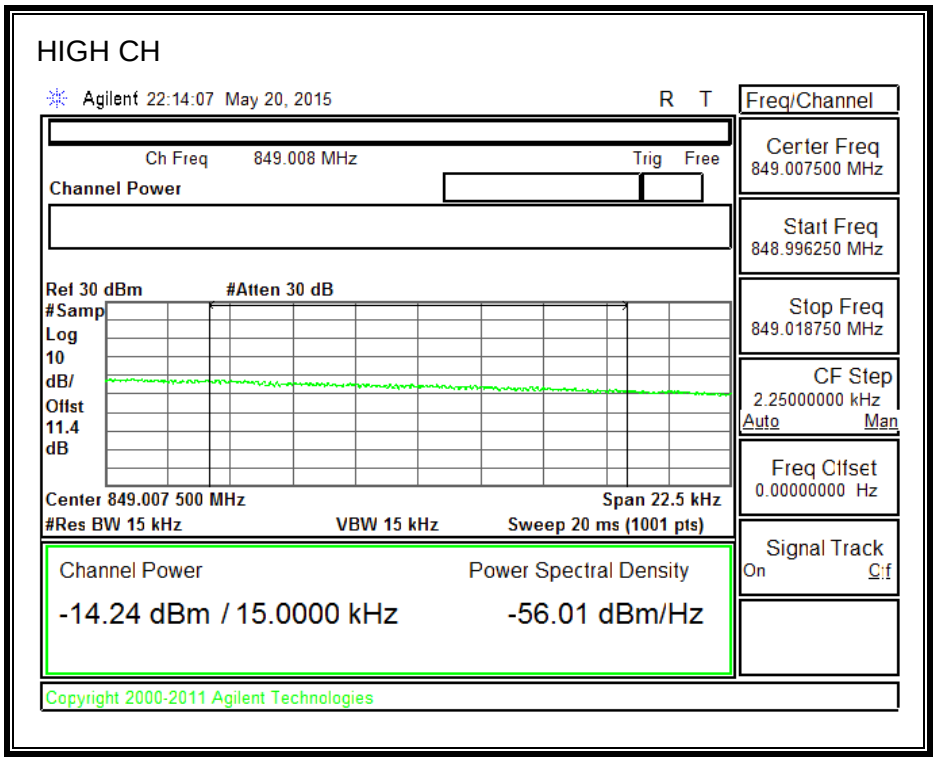
8.4.5. CDMA2000 EVDO REV A

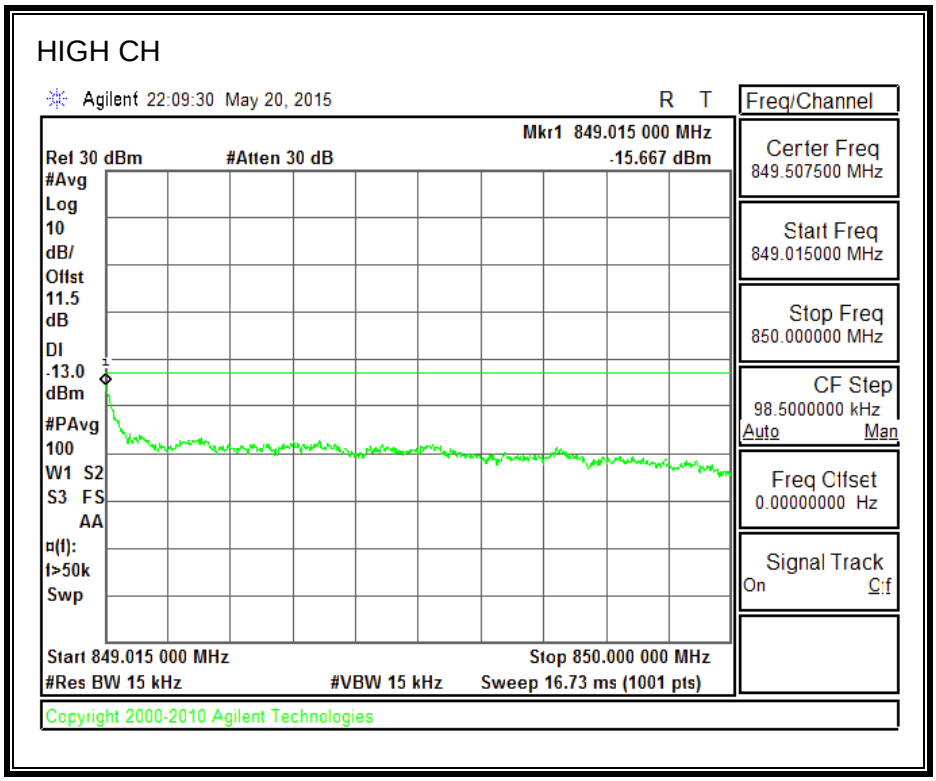
850MHz BAND





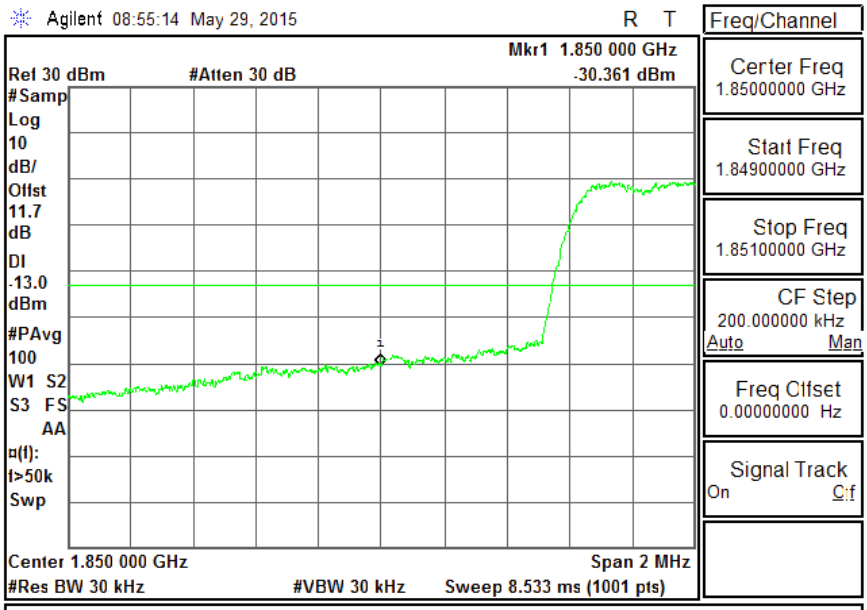
850MHz BAND



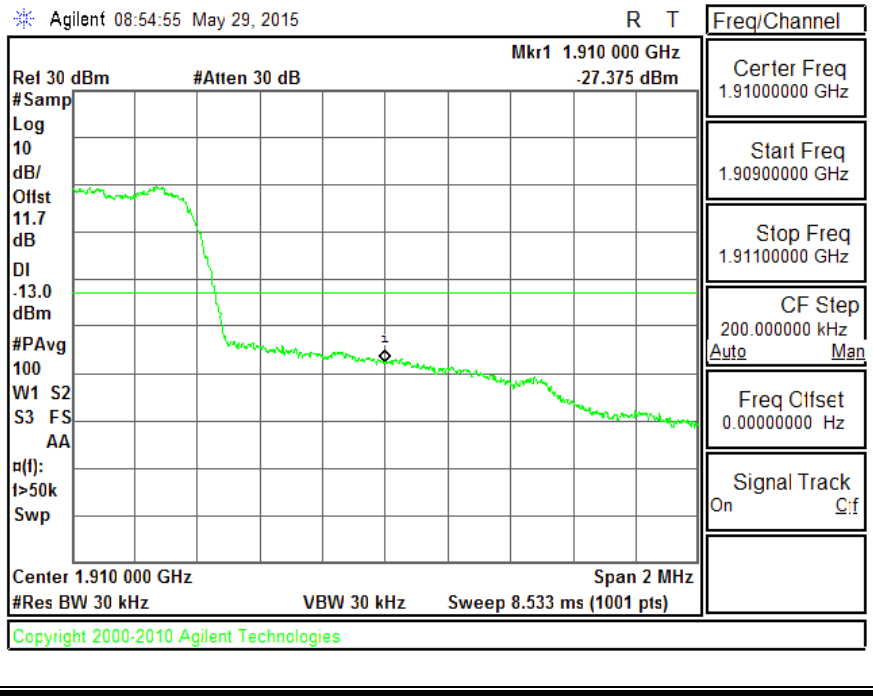


1900MHz BAND

LOW CH

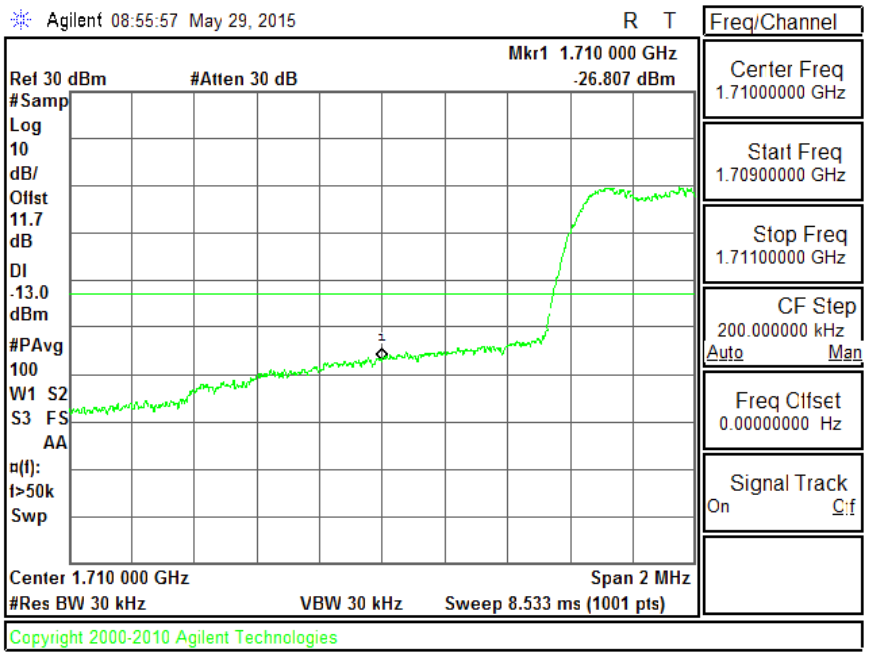


HIGH CH

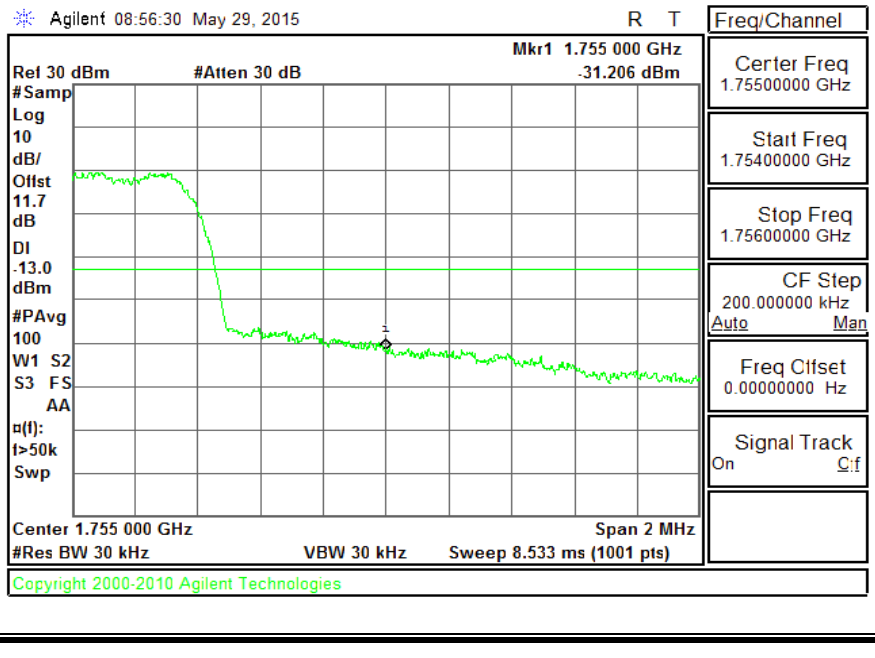


1700MHz BAND

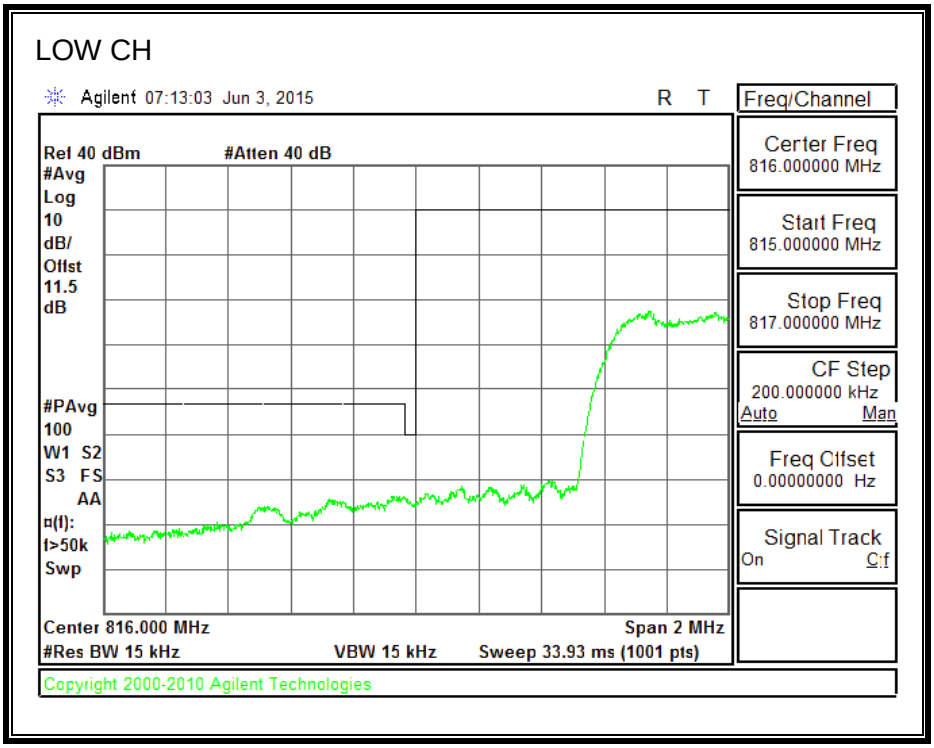
LOW CH



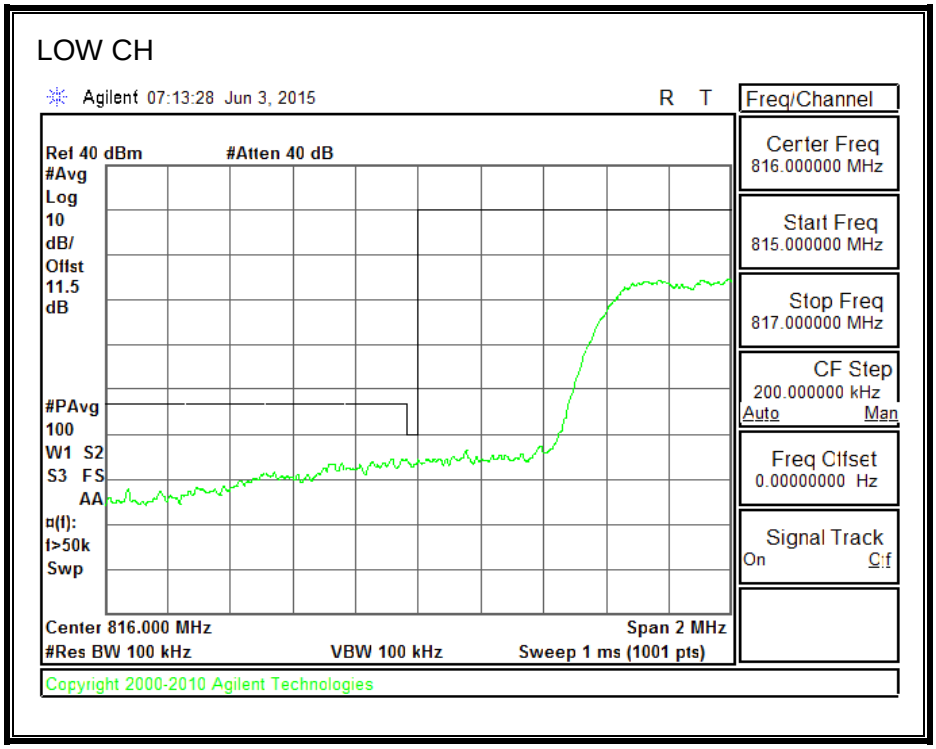
HIGH CH



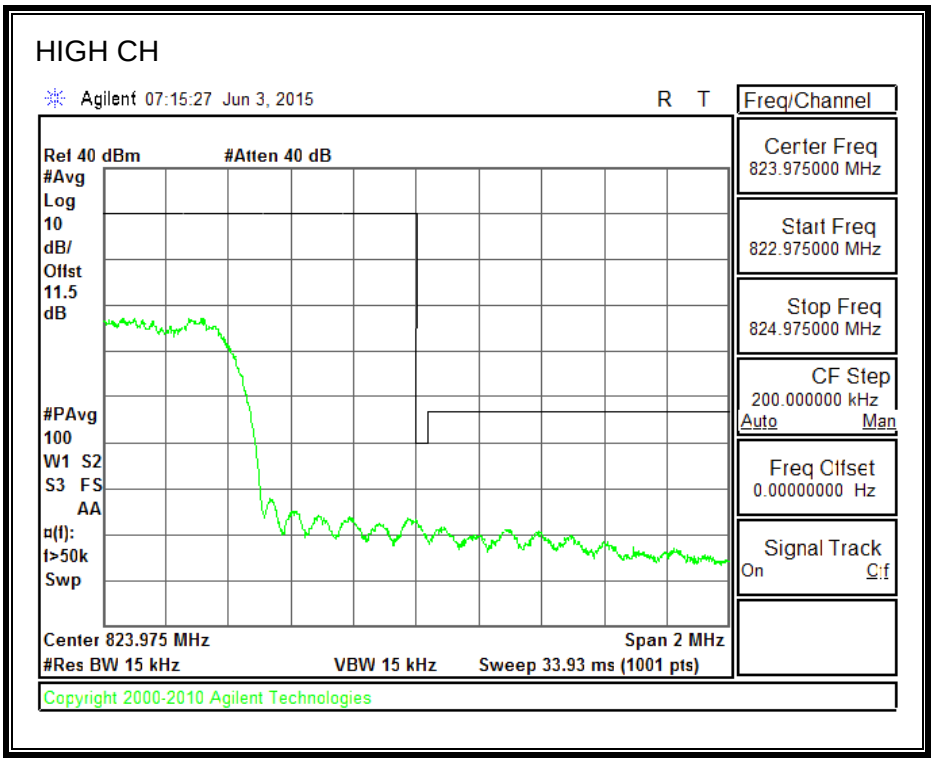
8.4.6. CDMA2000 EVDO REV A BC10 MASK



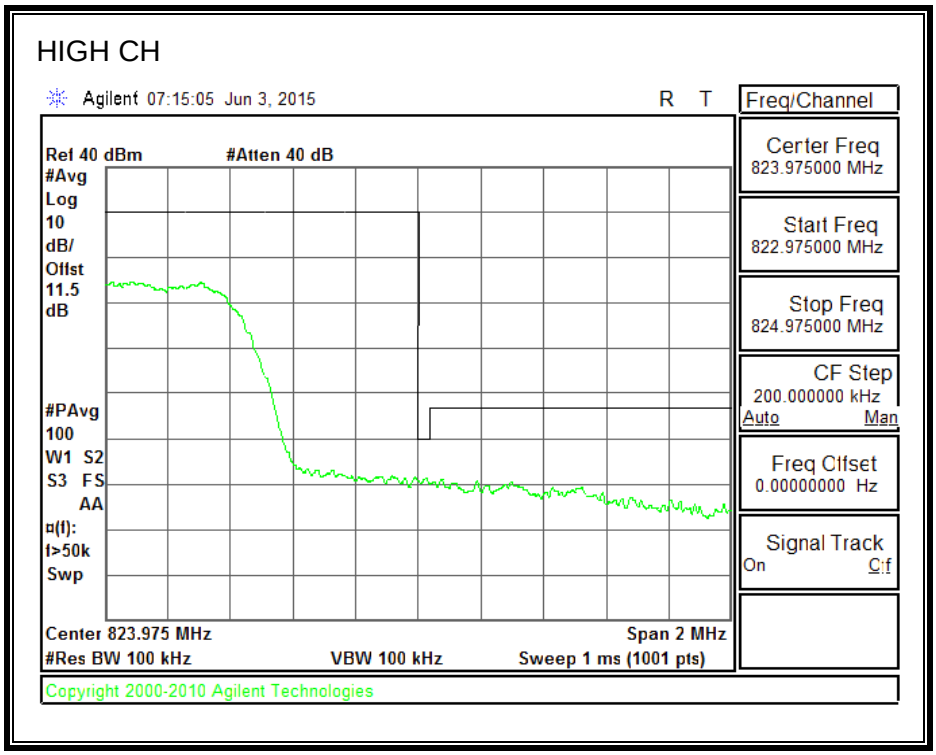
Note: RBW=1% of EBW



Note: RBW of 1% of 37.5KHz of outer channel frequency block



Note: RBW=1% of EBW

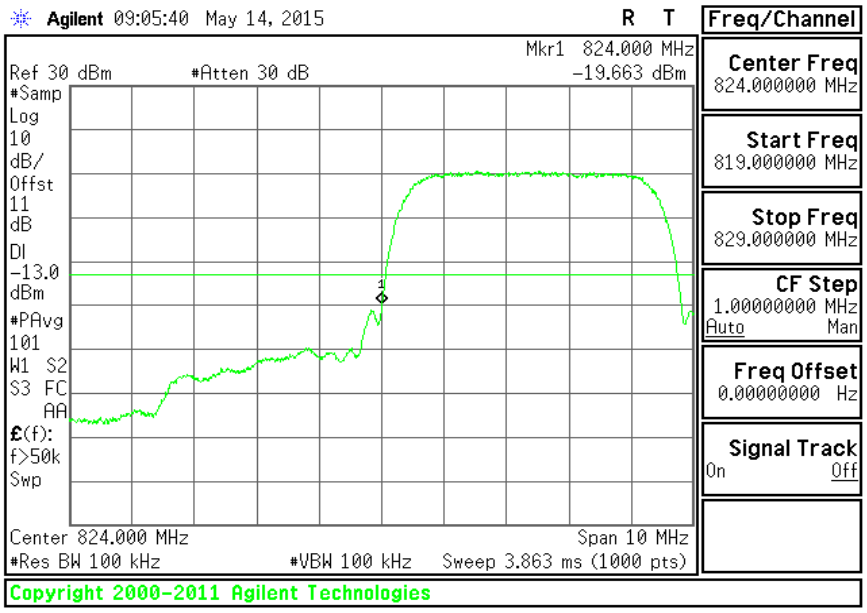


Note: RBW of 1% of 37.5KHz of outer channel frequency block

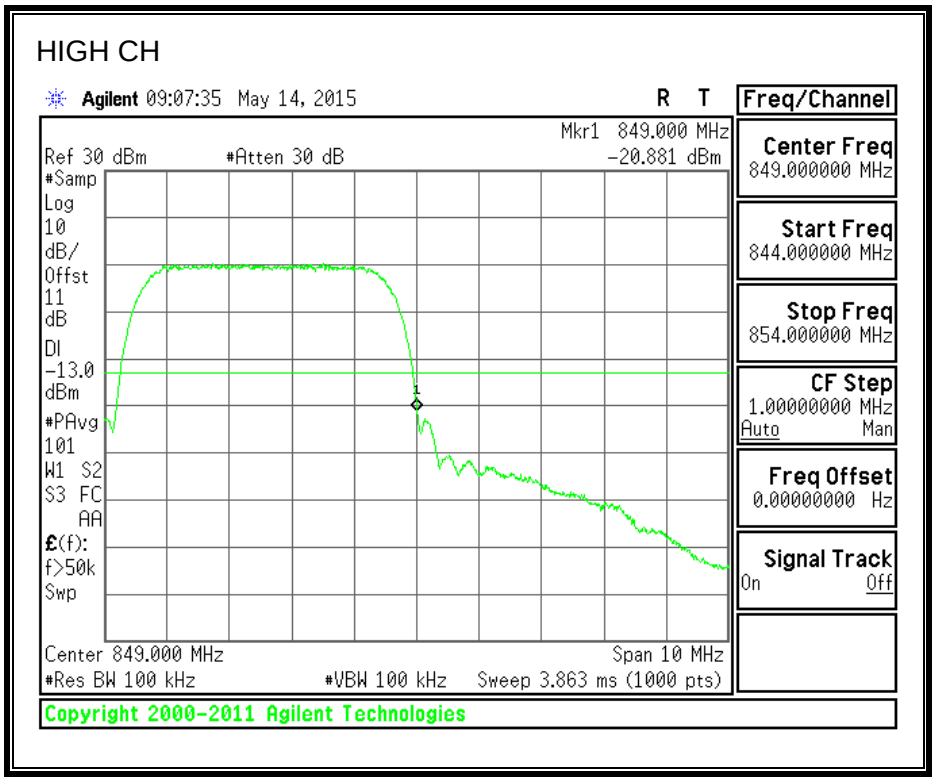
8.4.7. UMTS REL 99

850MHz BAND

LOW CH

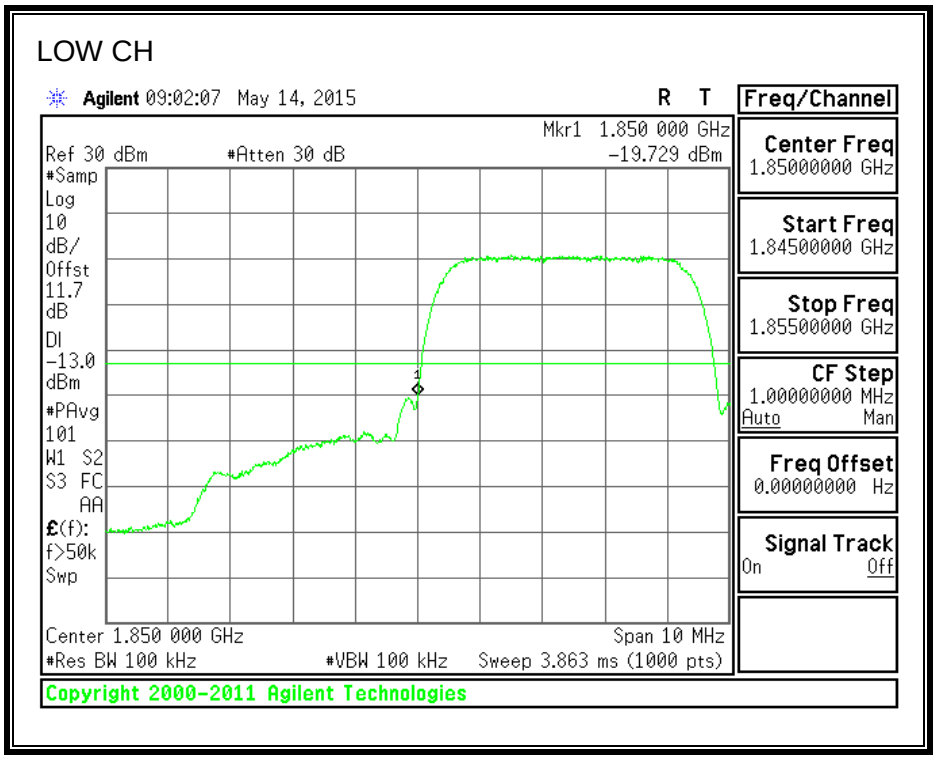


HIGH CH

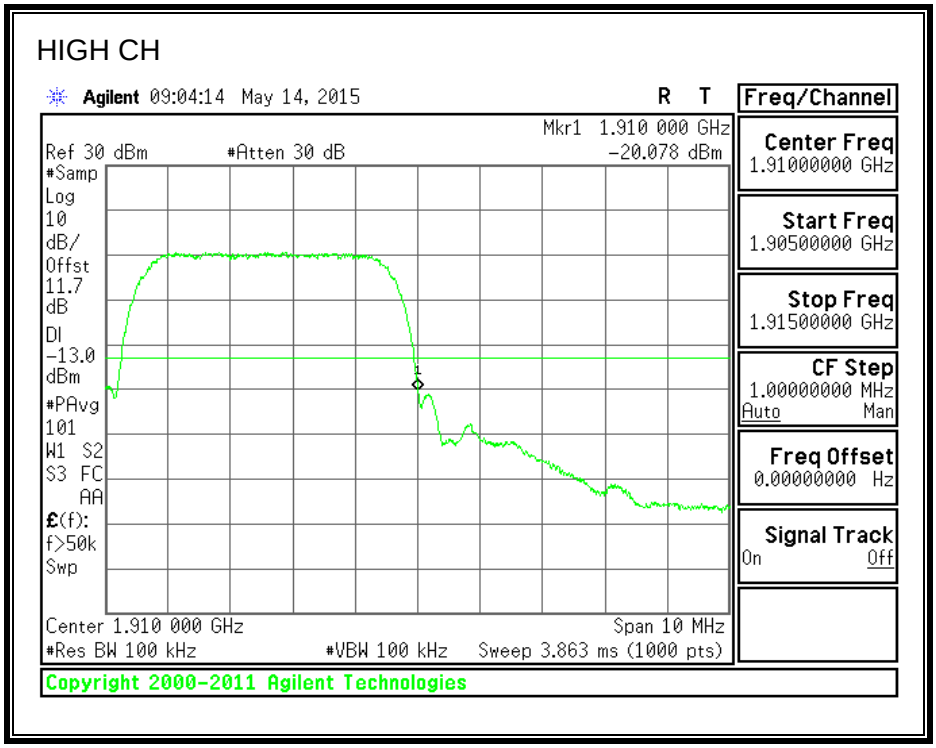


1900MHz BAND

LOW CH

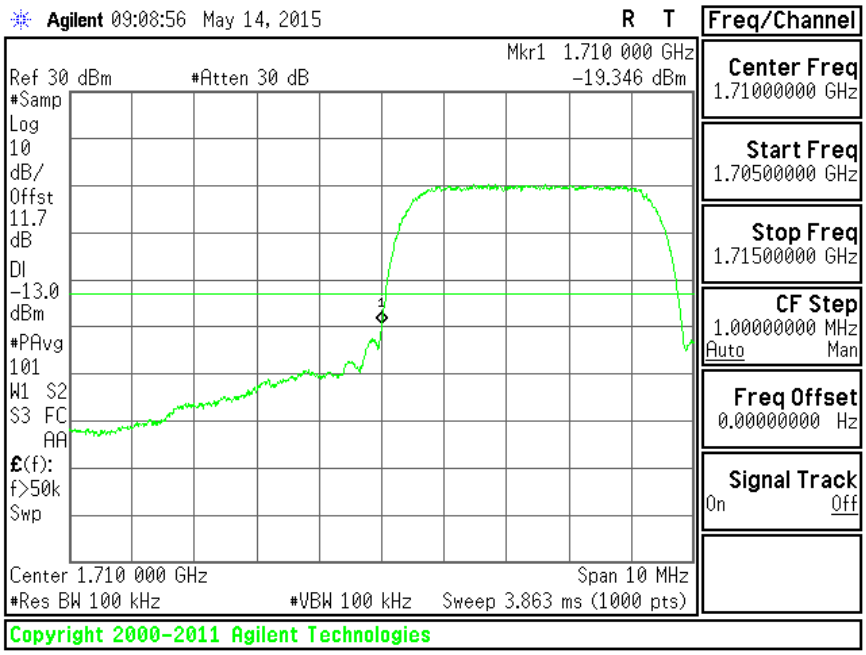


HIGH CH



1700MHz BAND

LOW CH



HIGH CH