



FCC PART 22H & 24E TEST AND MEASUREMENT REPORT

For

ADC Telecommunications Inc.

1187 Park Place, Shakopee, MN 55379, USA

FCC ID: NOO-S2791-012

Report Type: Original Report	Product Type: Remote Access Unit for InterReach Fusion System
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1207097-2224	Original Report	2012-08-07

1 General Description

1.1 Product Description for Equipment under Test (EUT)

The ADC Telecommunications Inc. product, model: Inter Reach Fusion, FCC ID: NOO-S2791-012 or the “EUT” as referred to in this report, is a RAU for *Indoor Booster*; which is an Indoor Wireless Repeater System that consists Five modular components, the Spectrum Host Unit, Spectrum DART Remote Unit, Spectrum IF Expansion Unit, Spectrum Remote Access Unit (EUT)(Model Number:SPT-S1-8519-22) and Support Spectrum Remote Access Unit (Model Number: SPT-M1-8519-1). The downlink frequency bands are: PCS Band: 1930-1995 MHz, Cell Band: 869-894 MHz.

1.2 Mechanical Description

The EUT dimension is approximately 29.21cm (L) x 22.86cm (W) x 8.9cm (H) and weighs approximately 7.5 Pounds.

The test data gathered are from production sample. Serial number: R1207097-1, assigned by BACL.

1.3 Objective

This type approval report is prepared on behalf of ADC Telecommunications Inc. in accordance with Part 22, Subpart H and Part 24, Subpart E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for RF output power, modulation characteristic, occupied bandwidth, spurious emissions at antenna terminal, field strength of spurious radiation, frequency stability, band edge, and conducted and radiated margin.

1.4 Related Submittal(s)/Grant(s)

N/A

1.5 Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47:

Part 24 – Personal Communications Services
Part 22 – Public Mobile Services

Applicable Standards: TIA/EIA 603-C

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory, Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR16-4-2:2003, The Treatment of Uncertainty in EMC Measurements, the values ranging from ± 2.0 dB for Conducted Emissions tests and ± 4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

1.7 Test Facility

The test site used by BACL Corp. to collect radiated and conducted emissions measurement data is located at its facility in Sunnyvale, California, USA.

The test site at BACL Corp. has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997, and Article 8 of the VCCI regulations on December 25, 1997. The test site also complies with the test methods and procedures set forth in CISPR 22:2008 §10.4 for measurements below 1 GHz and §10.6 for measurements above 1 GHz as well as ANSI C63.4-2003, ANSI C63.4-2009, TIA/EIA-603 & CISPR 24:2010.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and they are listed under FCC registration number: 90464 and VCCI Registration No.: A-0027. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL Corp. is an American Association for Laboratory Accreditation (A2LA) accredited laboratory (Lab Code 3297-02). The current scope of accreditations can be found at

<http://www.a2la.org/scopepdf/3297-02.pdf?CFID=1132286&CFTOKEN=e42a3240dac3f6ba-6DE17DCB-1851-9E57-477422F667031258&jsessionid=8430d44f1f47cf2996124343c704b367816b>

2 EUT Test Configuration

2.1 Justification

The EUT was configured for testing according to TIA/EIA-603-C.

The final qualification test was performed with the EUT operating at normal mode.

2.2 EUT Exercise Software

The Modulated signal with applied from the signal generator, and the output port of the EUT was connected to the test instrument and/or terminator.

2.3 Equipment Modifications

No modifications were made to the EUT.

2.4 Special Equipment

No special equipment used during testing.

2.5 Local Support Equipment

Spectrum Host Unit

Manufacturers	Descriptions	Models	Serial Number
ADC Telecommunications Inc.	Spectrum-Prism,800 SMR, Classic RF DART	FWU-40000HUDART	-
ADC Telecommunications Inc.	Spectrum-Prism,850 CELL, Classic RF DART	FWU-20000HUDART	-
ADC Telecommunications Inc.	Spectrum-Prism,1900 PCS, Single RF SuperDART	FWU-86000HUDART	-
ADC Telecommunications Inc.	Spectrum-Prism,2100 AWS, Single RF SuperDART	FWU-A6000HUDART	-

Spectrum DART Remote Unit

Manufacturers	Descriptions	Models	Serial Number
ADC Telecommunications Inc.	Spectrum,800 SMR, Path-2 IF DART	SPT-000800SMRIFD	-
ADC Telecommunications Inc.	Spectrum,850 CELL, Path-2 IF DART	SPT-0000850P2IFD	-
ADC Telecommunications Inc.	Spectrum,1900 PCS, Path-2 IF DART	SPT-0001900P2IFD	-
ADC Telecommunications Inc.	Spectrum,2100 AWS, Path-1 IF DART	SPT-2100AWSP1IFD	-
ADC Telecommunications Inc.	Spectrum IF Expansion Unit	SPT-00000IFEU-1	-
ADC Telecommunications Inc.	850p1-1900p1 main RAU	SPT-M1-8519-1	-
Unipower Corporation	Power Supply	TPCPR1U3C-Z	24090T0019

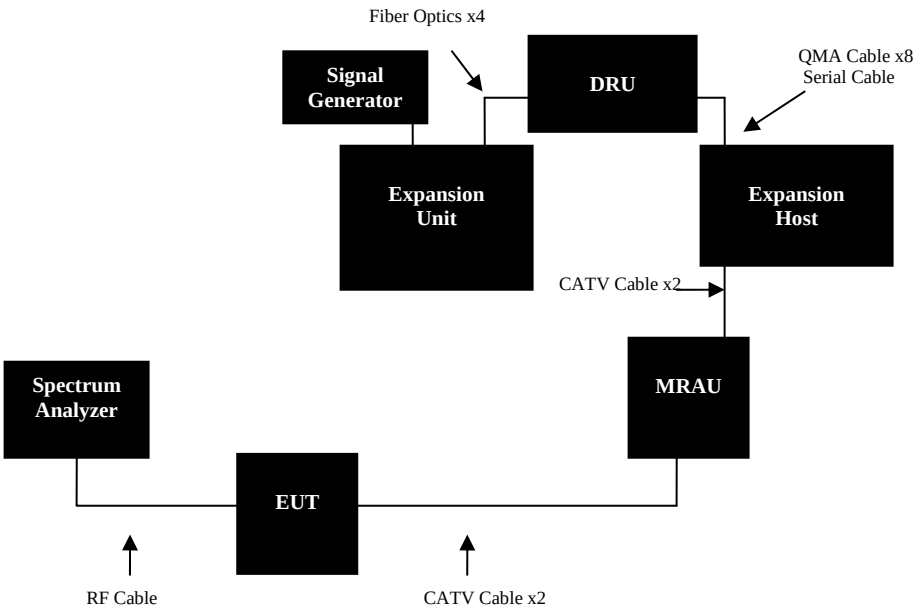
2.6 EUT Internal Configuration Details

Manufacturers	Descriptions	Models	Serial Number
ADC Telecommunications Inc.	Main PCB Board of 850 MHz Cell Band Module	MR225N6G	R1152M0862NC
ADC Telecommunications Inc.	Main PCB Board of 1900 MHz Cell Band Module	MR225N5Y	R1152M093NC
ADC Telecommunications Inc.	Main PCB Board	MR225N64	R1152M0011NC

2.7 External I/O Cabling List and Details

Cable Description	Length (m)	From	To
Power Cable x4	2.0	Power Supply	Expansion Unit
CATV Cable x2	15.0	850p1-1900p1 main RAU	Expansion Unit
CATV Cable x2	15.0	850p1-1900p1 main RAU	EUT
Fiber Optic Cable x4	2.0	DRU	Expansion Host
Serial Cable	1.0	DRU	Expansion Host
QMA Cable x8	1.0	DRU	Expansion Host

2.8 Test Setup Block Diagram



3 Summary of Test Results

FCC Rules	Description of Tests	Results
§2.1046 §22.913, §24.232	RF Output Power	Compliant
§2.1047	Modulation Characteristics	N/A
§2.1049 §22.917, §24.238	Occupied Bandwidth / Out of Band Emissions	Compliant
§2.1051 §22.917, §24.238	Spurious Radiated Emissions	Compliant
§2.1051 §22.917, §24.238	Spurious Emissions at Antenna Terminals	Compliant
§22.917, §24.238	Band Edge	Compliant
§2.1055 §22.355, §24.235	Frequency Stability	Compliant
§2.1091	RF Exposure Information	Compliant

N/A: According to FCC §2.1047(d), Part 22H and Part 24E, there is no specific requirement for digital modulation and no oscillator circuit, therefore modulation characteristic is not presented.

4 FCC §§2.1046, §22.913 & §24.232 – RF Output Power

4.1 Applicable Standard

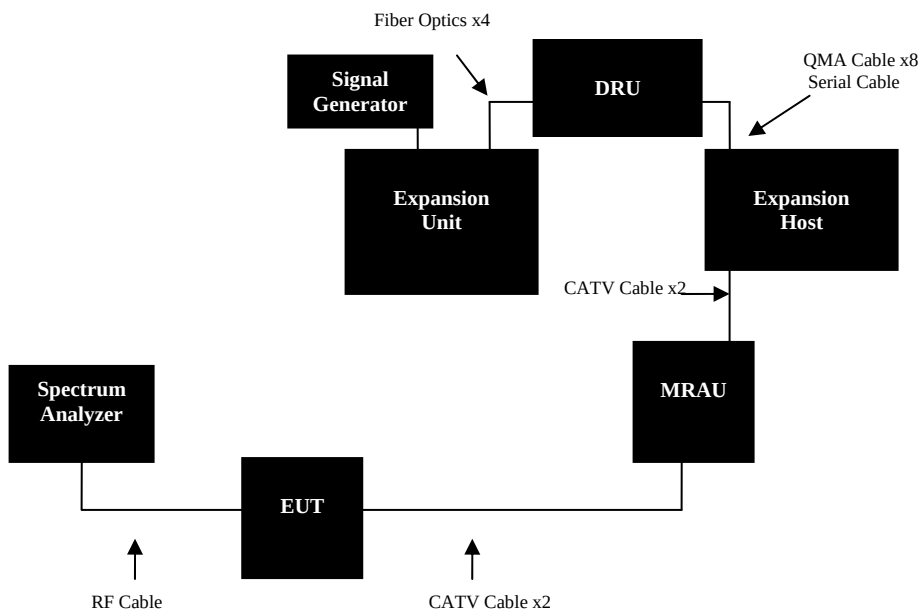
According to FCC §22.913 (a), the maximum effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts.

According to FCC §24.232 , Mobile/portable stations are limited to 2 watts EIRP peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

4.2 Test Procedure and Setup Block Diagram

Conducted:

The RF output of the transmitter was connected to the signal generator and the spectrum analyzer through sufficient attenuation.



4.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	US45303156	2010-08-09	2 years
Agilent	Signal Generator	E4438C	MY45091309	2012-05-03	1 year

Statement of Traceability: BACL Corp. attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

4.4 Test Environmental Conditions

Temperature:	21 °C
Relative Humidity:	57 %
ATM Pressure:	101.4kPa

The testing was performed by Wei Sun on 2012-07-22 at RF Site.

4.5 Test Results

Maximum Output Power – Modulated Signal

Cell Band Downlink: 869-894 MHz band:

GSM/GPRS

Mode		Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
GSM/GPRS	850 MHz Downlink	Low	869.2	-13	26.44
		Middle	881.6	-13	26.57
		High	893.8	-15	26.57

EDGE

Mode		Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
EDGE	850 MHz Downlink	Low	869.2	-15	22.92
		Middle	881.6	-16	23.88
		High	893.8	-16	22.95

CDMA/EVDO

Mode		Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
CDMA/EVDO	850 MHz Downlink	Low	869.8	-21	18.77
		Middle	881.52	-24	18.03
		High	893.2	-23	18.60

WCDMA/HSPA

Mode		Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
WCDMA/HSPA	850 MHz Downlink	Low	871.4	-23	18.02
		Middle	881.4	-24	18.23
		High	891.6	-23	18.49

LTE

Mode		Modulation	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
LTE	850 MHz Downlink	QPSK (1.4 MHz)	Low	870	-22	18.43
		QPSK (1.4 MHz)	Middle	881.5	-23	18.73
		QPSK (1.4 MHz)	High	893	-23	18.46
		16QAM (1.4 MHz)	Low	870	-22	18.46
		16QAM (1.4 MHz)	Middle	881.5	-23	18.71
		16QAM (1.4 MHz)	High	893	-23	18.46
		64QAM (1.4 MHz)	Low	870	-22	18.40
		64QAM (1.4 MHz)	Middle	881.5	-23	18.74
		64QAM (1.4 MHz)	High	893	-23	18.42
		QPSK (3 MHz)	Low	871	-22	18.80
		QPSK (3 MHz)	Middle	881.5	-24	18.22
		QPSK (3 MHz)	High	892	-23	18.56
		16QAM (3 MHz)	Low	871	-22	18.82
		16QAM (3 MHz)	Middle	881.5	-24	18.24
		16QAM (3 MHz)	High	892	-23	18.53
		64QAM (3 MHz)	Low	871	-22	18.81
		64QAM (3 MHz)	Middle	881.5	-24	18.27
		64QAM (3 MHz)	High	892	-23	18.58
		QPSK (5 MHz)	Low	872	-23	18.00
		QPSK (5 MHz)	Middle	881.5	-24	18.10
		QPSK (5 MHz)	High	891	-23	18.46
		16QAM (5 MHz)	Low	872	-23	18.03
		16QAM (5 MHz)	Middle	881.5	-24	18.14
		16QAM (5 MHz)	High	891	-23	18.43
		64QAM (5 MHz)	Low	872	-23	17.99
		64QAM (5 MHz)	Middle	881.5	-24	18.45
		64QAM (5 MHz)	High	891	-23	18.03
		QPSK (10 MHz)	Low	874	-23	18.35
		QPSK (10 MHz)	Middle	881.5	-23	18.97
		QPSK (10 MHz)	High	889	-23	18.45
		16QAM (10 MHz)	Low	874	-23	18.37
		16QAM (10 MHz)	Middle	881.5	-23	18.93
		16QAM (10 MHz)	High	889	-23	18.45
		64QAM (10 MHz)	Low	874	-23	18.34
		64QAM (10 MHz)	Middle	881.5	-23	18.99
		64QAM (10 MHz)	High	889	-23	18.40

PCS Band Downlink: 1930 -1995 MHz band:**GSM/GPRS**

Mode		Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
GSM/GPRS	1900 MHz Downlink	Low	1930.2	-13	25.98
		Middle	1962.6	-13	26.14
		High	1994.8	-14	26.62

EDGE

Mode		Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
EDGE	1900 MHz Downlink	Low	1930.2	-13	23.70
		Middle	1962.6	-15	22.90
		High	1994.8	-14	22.96

CDMA/EVDO

Mode		Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
CDMA/EVDO	1900 MHz Downlink	Low	1930.8	-21	18.21
		Middle	1962.52	-24	18.71
		High	1994.2	-23	18.71

WCDMA/HSPA

Mode		Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
WCDMA/HSPA	1900 MHz Downlink	Low	1932.4	-22	18.38
		Middle	1962.4	-24	18.40
		High	1992.6	-23	18.31

LTE

Mode		Modulation	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)
LTE	1900 MHz Downlink	QPSK (1.4 MHz)	Low	1931	-21	18.49
		QPSK (1.4 MHz)	Middle	1962.5	-24	18.73
		QPSK (1.4 MHz)	High	1994	-23	18.62
		16QAM (1.4 MHz)	Low	1931	-21	18.45
		16QAM (1.4 MHz)	Middle	1962.5	-24	18.73
		16QAM (1.4 MHz)	High	1994	-23	18.60
		64QAM (1.4 MHz)	Low	1931	-21	18.52
		64QAM (1.4 MHz)	Middle	1962.5	-24	18.67
		64QAM (1.4 MHz)	High	1994	-23	18.63
		QPSK (3 MHz)	Low	1932	-21	18.78
		QPSK (3 MHz)	Middle	1962.5	-24	18.89
		QPSK (3 MHz)	High	1993	-23	18.69
		16QAM (3 MHz)	Low	1932	-21	18.75
		16QAM (3 MHz)	Middle	1962.5	-24	18.87
		16QAM (3 MHz)	High	1993	-23	18.77
		64QAM (3 MHz)	Low	1932	-21	18.91
		64QAM (3 MHz)	Middle	1962.5	-24	18.64
		64QAM (3 MHz)	High	1993	-23	18.75
		QPSK (5 MHz)	Low	1933	-22	18.40
		QPSK (5 MHz)	Middle	1962.5	-24	18.85
		QPSK (5 MHz)	High	1992	-23	18.57
		16QAM (5 MHz)	Low	1933	-22	18.43
		16QAM (5 MHz)	Middle	1962.5	-24	18.85
		16QAM (5 MHz)	High	1992	-23	18.54
		64QAM (5 MHz)	Low	1933	-22	18.44
		64QAM (5 MHz)	Middle	1962.5	-24	18.86
		64QAM (5 MHz)	High	1992	-23	18.41
		QPSK (10 MHz)	Low	1935	-23	18.02
		QPSK (10 MHz)	Middle	1962.5	-24	18.90
		QPSK (10 MHz)	High	1990	-23	18.51
		16QAM (10 MHz)	Low	1935	-23	18.00
		16QAM (10 MHz)	Middle	1962.5	-24	18.93
		16QAM (10 MHz)	High	1990	-23	18.50
		64QAM (10 MHz)	Low	1935	-23	18.01
		64QAM (10 MHz)	Middle	1962.5	-24	18.54
		64QAM (10 MHz)	High	1990	-23	18.92

5 §2.1049, §22.917 & §24.238 – Occupied Bandwidth

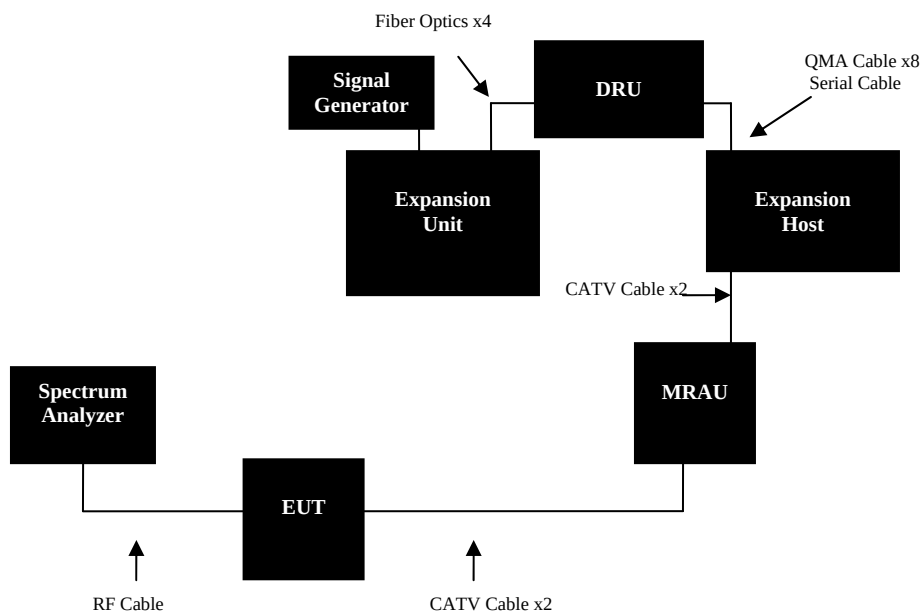
5.1 Applicable Standard

Requirements: FCC §2.1049, §22.917 and §24.238.

5.2 Test Procedure and Setup Block Diagram

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 1% of the authorized bandwidth and the 26 dB & 99% bandwidth was recorded.



5.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	US45303156	2010-08-09	2 years
Agilent	Signal Generator	E4438C	MY45091309	2012-05-03	1 year

Statement of Traceability: BACL Corp. attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

5.4 Test Environmental Conditions

Temperature:	21 °C
Relative Humidity:	57 %
ATM Pressure:	101.4kPa

The testing was performed by Wei Sun on 2012-07-25 at RF Site.

5.5 Test Results

850 MHz Cell Band Downlink

Mode		Channel	Frequency (MHz)	Emission Bandwidth Input (kHz)	Emission Bandwidth Output (kHz)
GSM/GPRS	850 MHz Downlink	Middle	881.6	244.1350	246.8726
Mode		Channel	Frequency (MHz)	Emission Bandwidth Input (kHz)	Emission Bandwidth Output (kHz)
EDGE	850 MHz Downlink	Middle	881.6	249.1136	244.7668
Mode		Channel	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
CDMA/EVDO	850 MHz Downlink	Middle	881.52	1.2611	1.2630
Mode		Channel	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
WCDMA/HSPA	850 MHz Downlink	Middle	881.4	4.2895	4.2833

Mode		Modulation	Channel	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
LTE	850 MHz Downlink	QPSK (1.4 MHz)	Middle	881.5	1.0906	1.0918
		16QAM (1.4 MHz)	Middle	881.5	1.0913	1.0917
		64QAM (1.4 MHz)	Middle	881.5	1.0918	1.0913
		QPSK (3 MHz)	Middle	881.5	2.6947	2.6941
		16QAM (3 MHz)	Middle	881.5	2.6905	2.6906
		64QAM (3 MHz)	Middle	881.5	2.6944	2.6929
		QPSK (5 MHz)	Middle	881.5	4.4864	4.4829
		16QAM (5 MHz)	Middle	881.5	4.4882	4.4867
		64QAM (5 MHz)	Middle	881.5	4.4864	4.4742
		QPSK (10 MHz)	Middle	881.5	8.9539	8.9373
		16QAM (10 MHz)	Middle	881.5	8.9561	8.9324
		64QAM (10 MHz)	Middle	881.5	8.9534	8.9264

1900MHz PCS Band Downlink:

Mode		Channel	Frequency (MHz)	Emission Bandwidth Input (kHz)	Emission Bandwidth Output (kHz)
GSM/GPRS	1900 MHz Downlink	Middle	1962.6	245.9485	241.6047
Mode		Channel	Frequency (MHz)	Emission Bandwidth Input (kHz)	Emission Bandwidth Output (kHz)
EDGE	1900 MHz Downlink	Middle	1962.6	253.9717	251.5257
Mode		Channel	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
CDMA/EVDO	1900 MHz Downlink	Middle	1962.52	1.2643	1.2652
Mode		Channel	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
WCDMA/HSPA	1900 MHz Downlink	Middle	1962.4	4.2942	4.2861

Mode		Modulation	Channel	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
LTE	1900 MHz Downlink	QPSK (1.4 MHz)	Middle	1962.5	1.0920	1.0915
		16QAM (1.4 MHz)	Middle	1962.5	1.0924	1.0924
		64QAM (1.4 MHz)	Middle	1962.5	1.0921	1.0911
		QPSK (3 MHz)	Middle	1962.5	2.6932	2.6866
		16QAM (3 MHz)	Middle	1962.5	2.6946	2.6877
		64QAM (3 MHz)	Middle	1962.5	2.6949	2.6883
		QPSK (5 MHz)	Middle	1962.5	4.4865	4.4959
		16QAM (5 MHz)	Middle	1962.5	4.4867	4.4759
		64QAM (5 MHz)	Middle	1962.5	4.4828	4.4796
		QPSK (10 MHz)	Middle	1962.5	8.9523	8.9347
		16QAM (10 MHz)	Middle	1962.5	8.9587	8.9347
		64QAM (10 MHz)	Middle	1962.5	8.9553	8.9385

Please refer to the following plots.

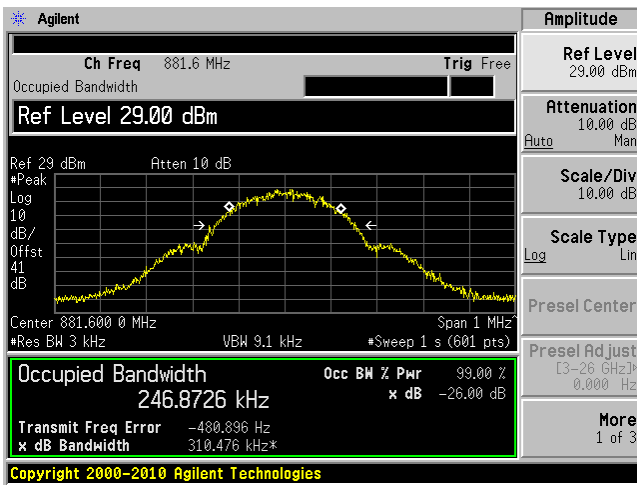
850MHz Cell Band, Downlink:

GSM/GPRS (Middle Channel)

Input

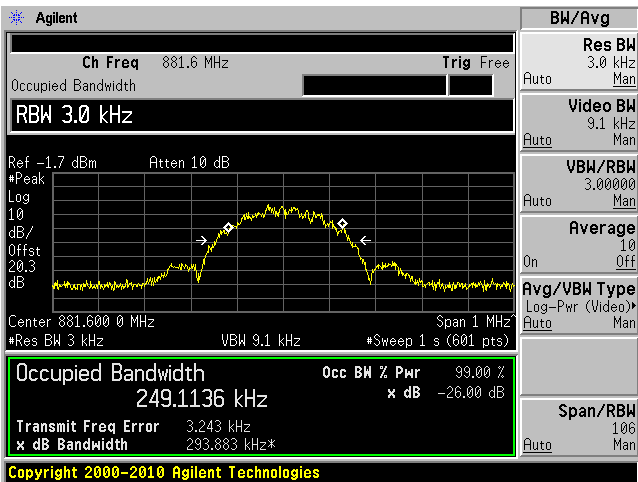


Output

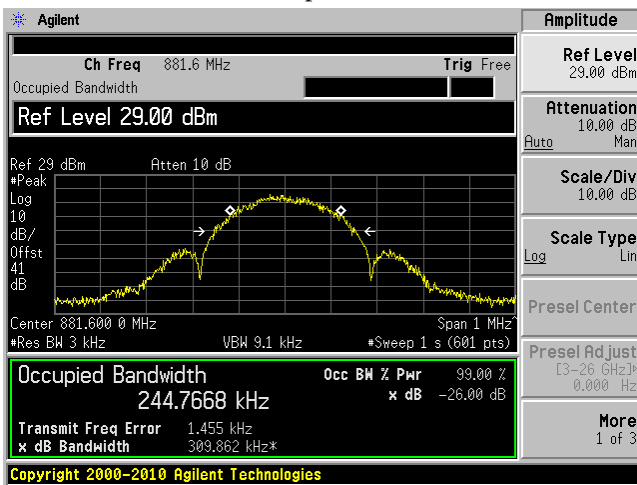


EDGE (Middle Channel)

Input



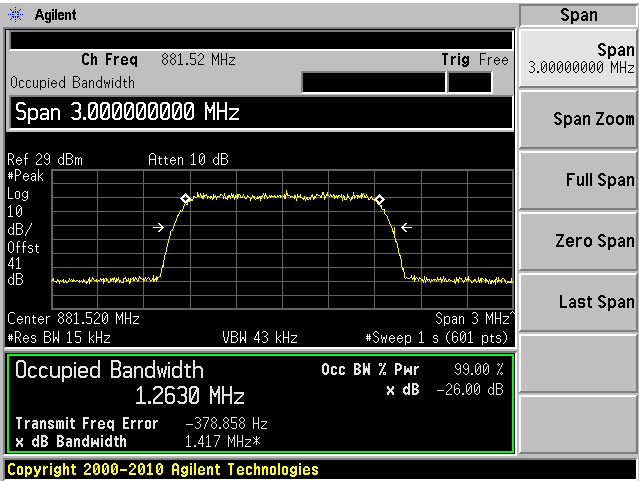
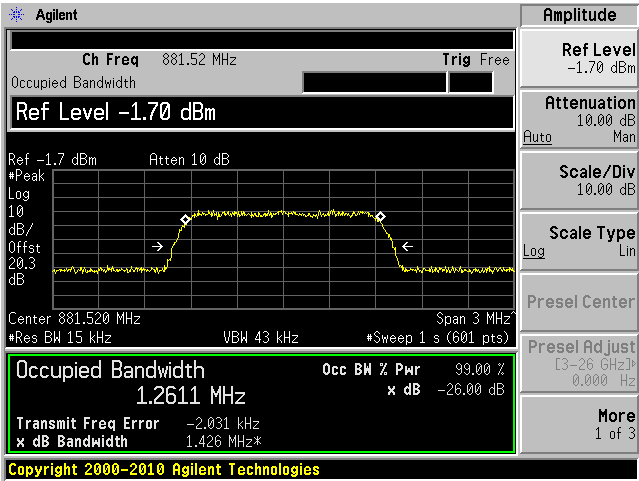
Output



CDMA/EVDO (Middle Channel)

Input

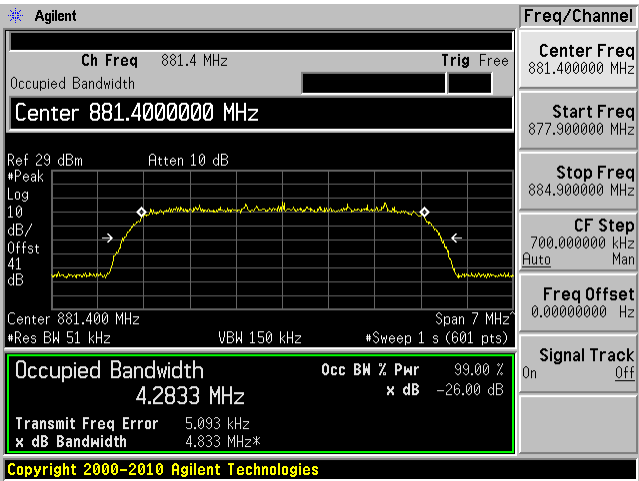
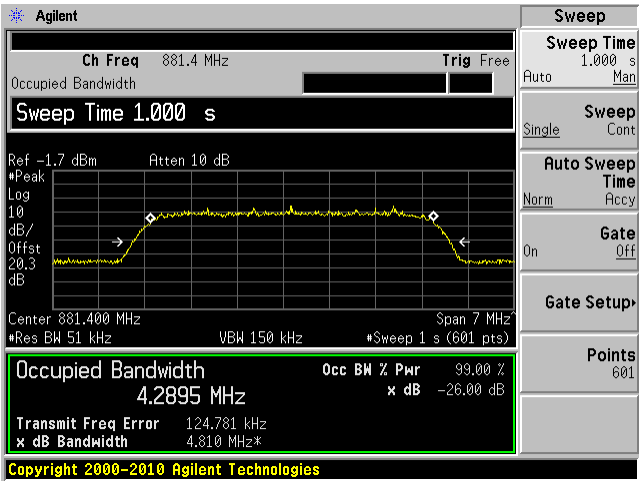
Output



WCDMA/HSPA (Middle Channel)

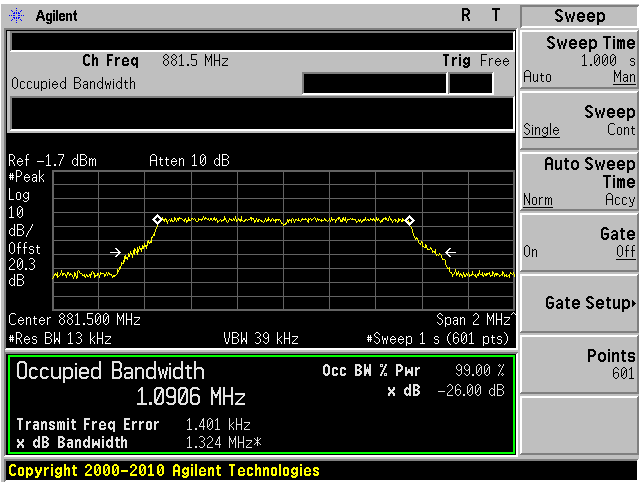
Input

Output

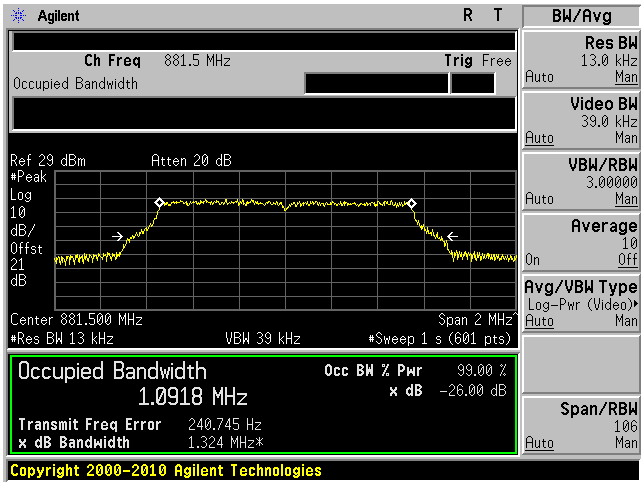


QPSK (1.4 MHz) (Middle Channel)

Input

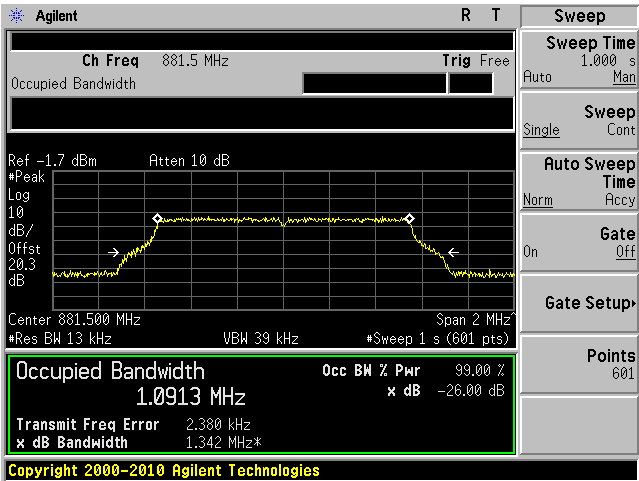


Output

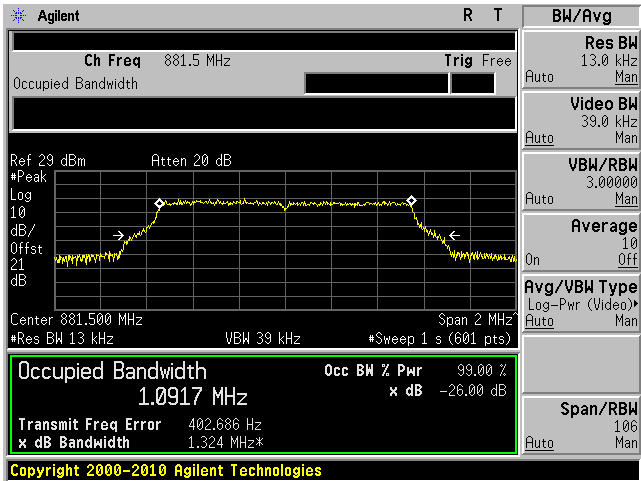


16QAM (1.4 MHz) (Middle Channel)

Input

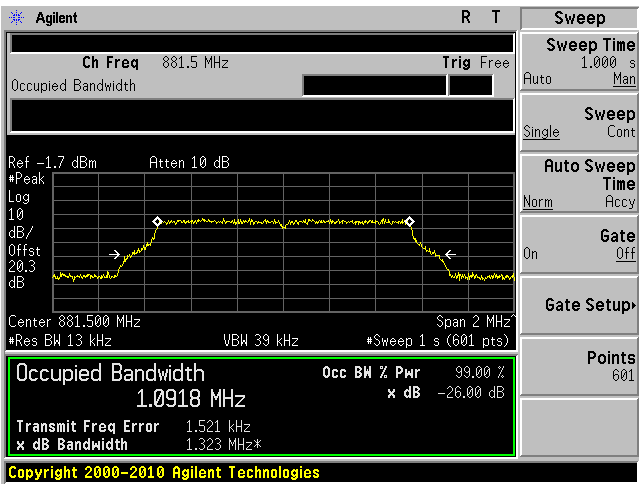


Output

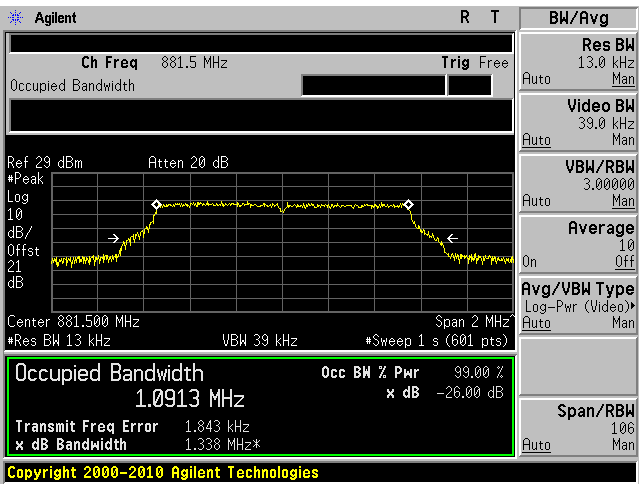


64QAM (1.4 MHz) (Middle Channel)

Input

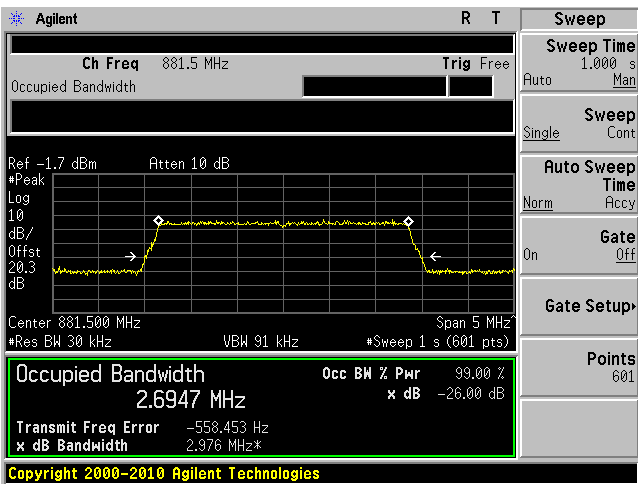


Output

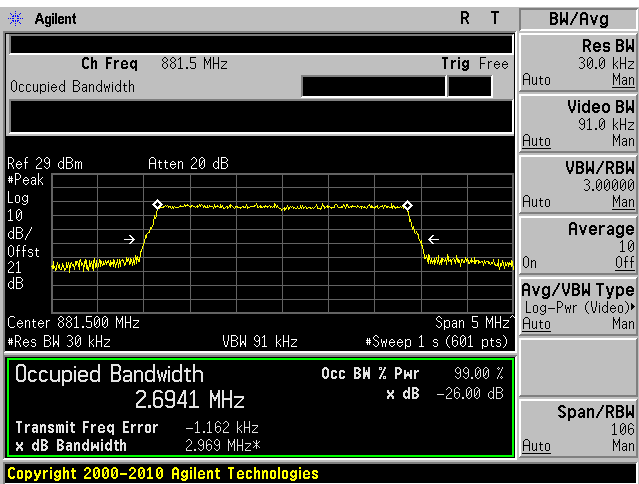


QPSK (3 MHz) (Middle Channel)

Input

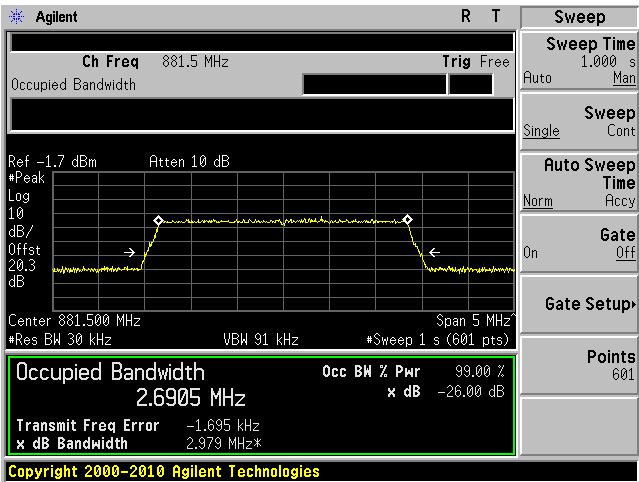


Output

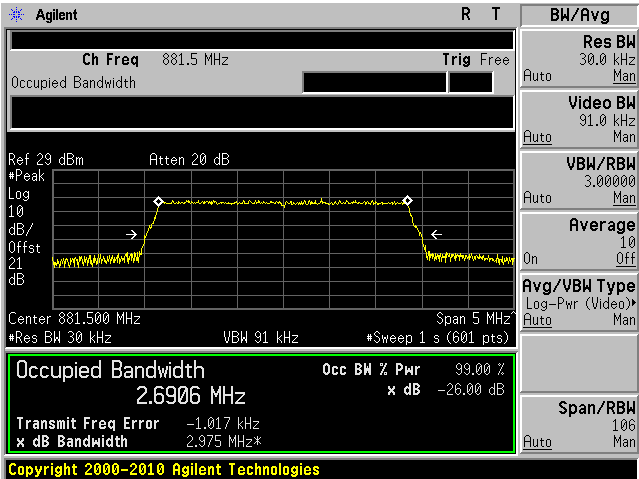


16QAM (3 MHz) (Middle Channel)

Input

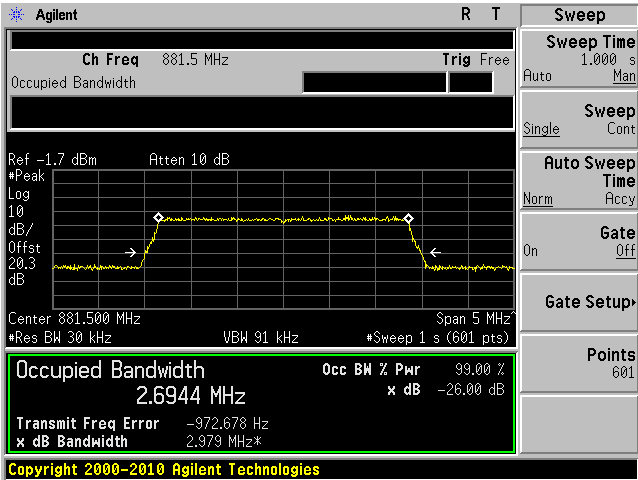


Output

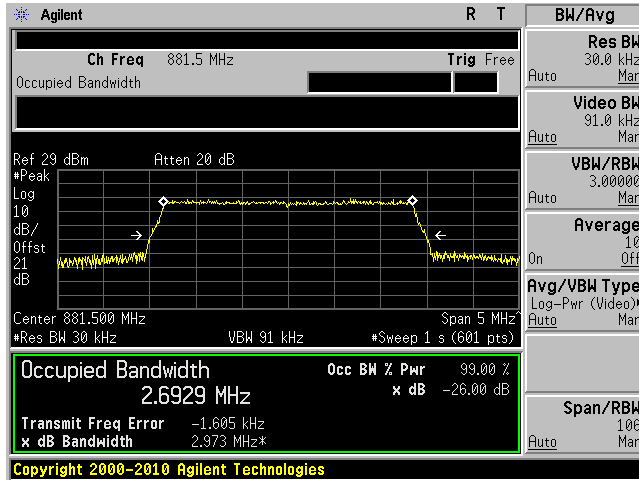


64QAM (3 MHz) (Middle Channel)

Input

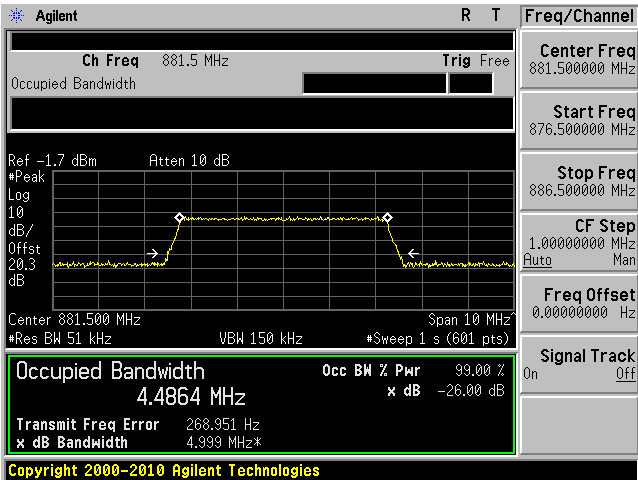


Output

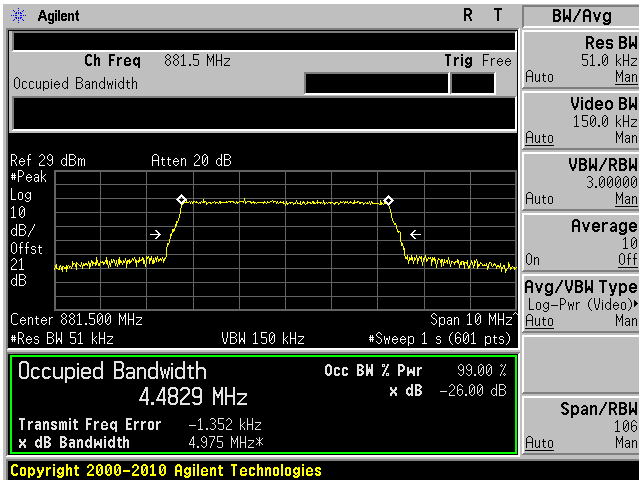


QPSK (5 MHz) (Middle Channel)

Input

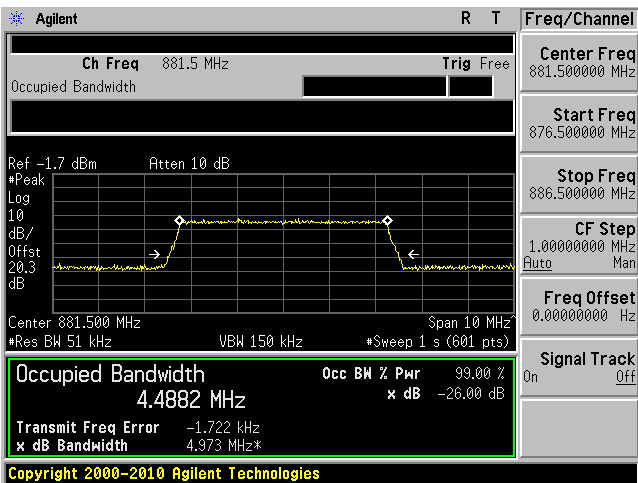


Output

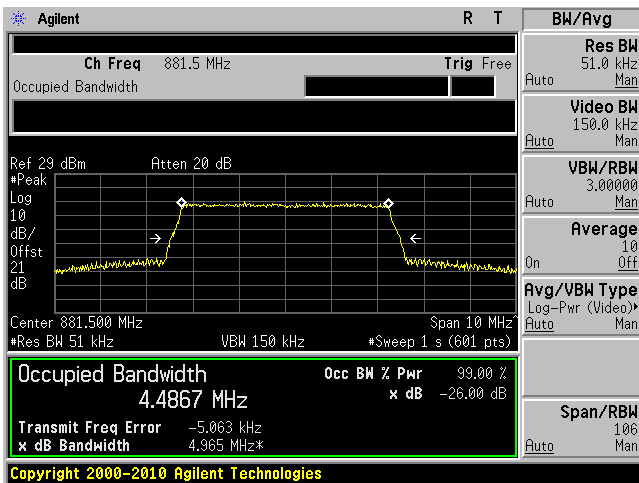


16QAM (5 MHz) (Middle Channel)

Input



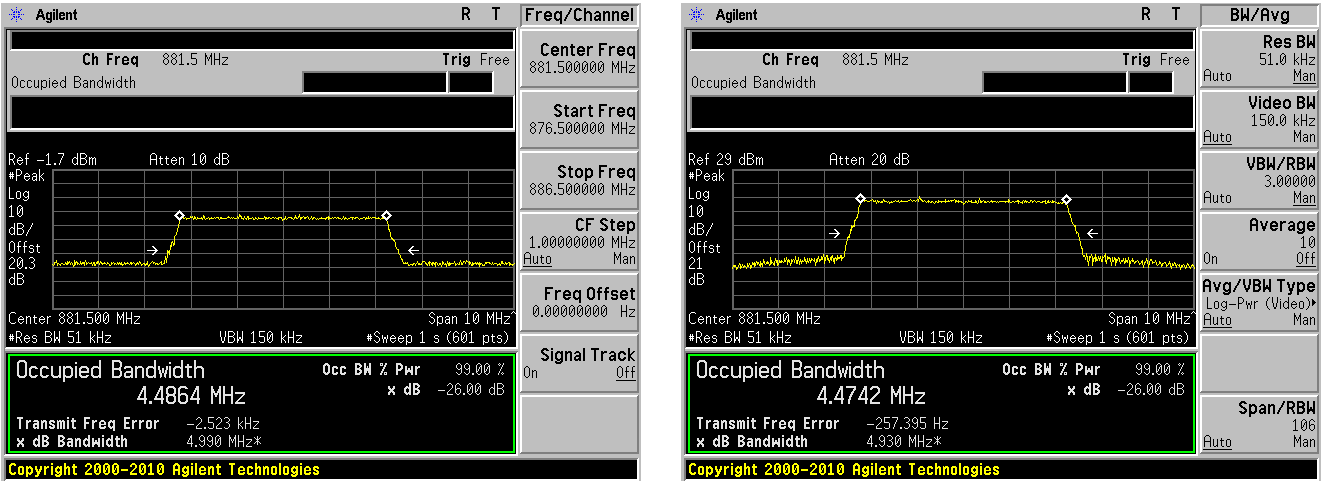
Output



64QAM (5 MHz) (Middle Channel)

Input

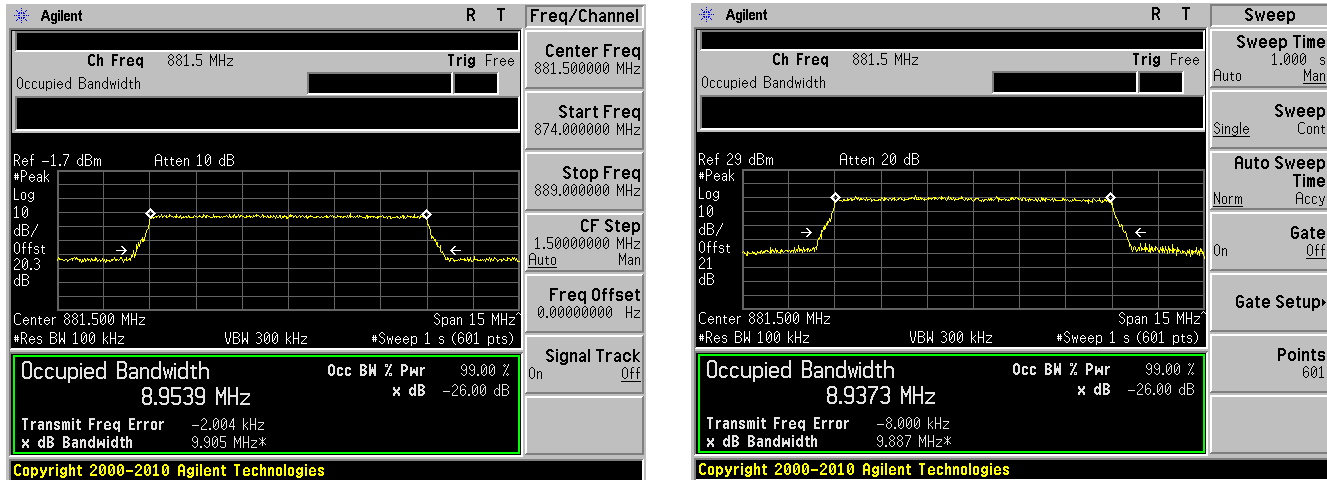
Output



QPSK (10 MHz) (Middle Channel)

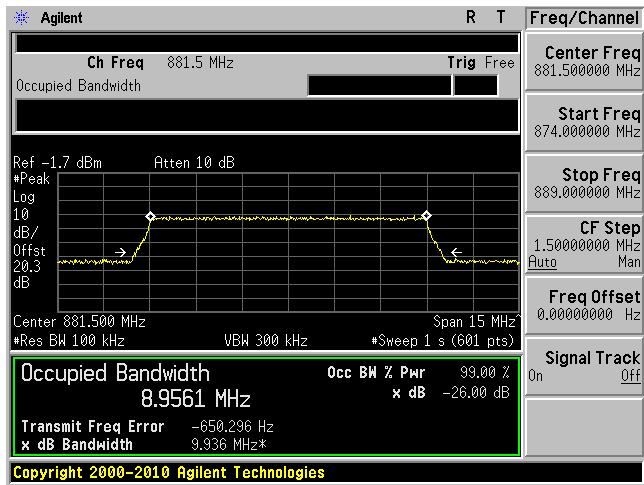
Input

Output

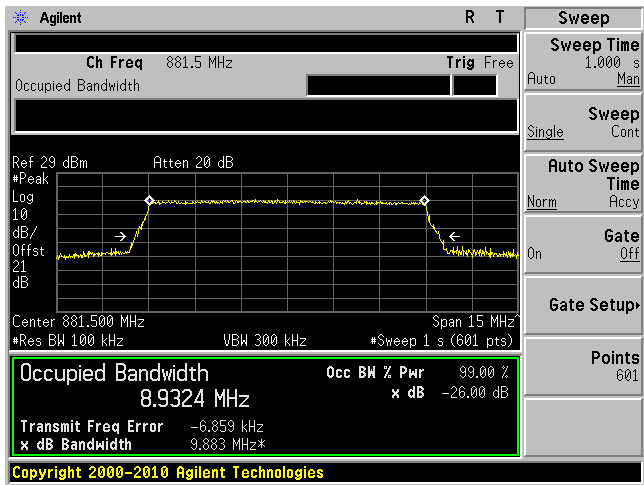


16QAM (10 MHz) (Middle Channel)

Input

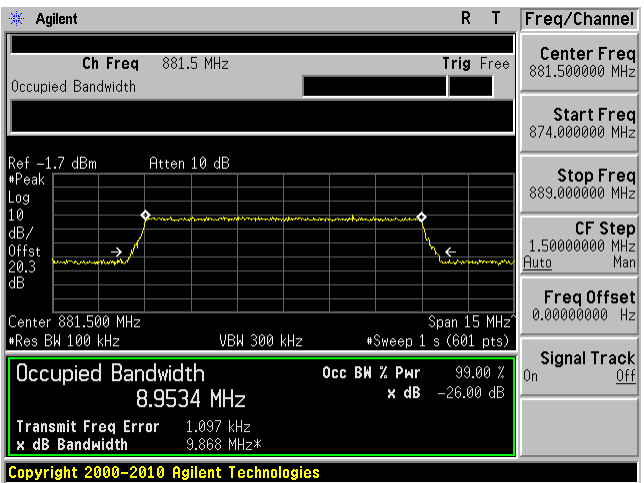


Output

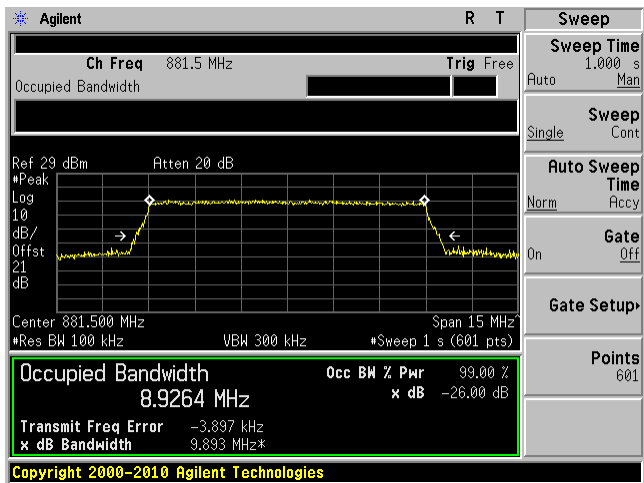


64QAM (10 MHz) (Middle Channel)

Input



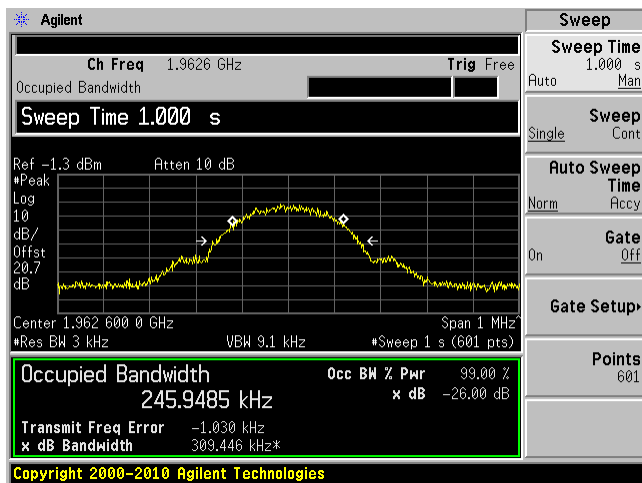
Output



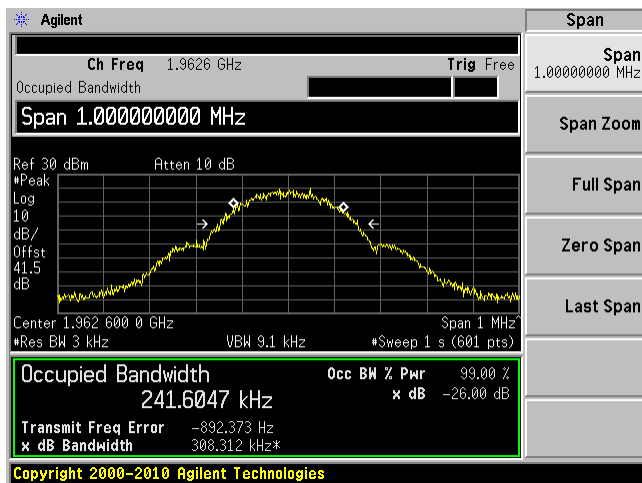
1900MHz PCS Band, Downlink:

GSM/GPRS (Middle Channel)

Input

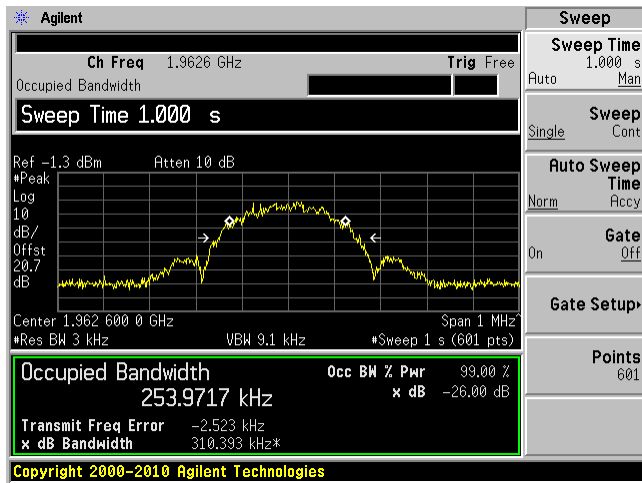


Output

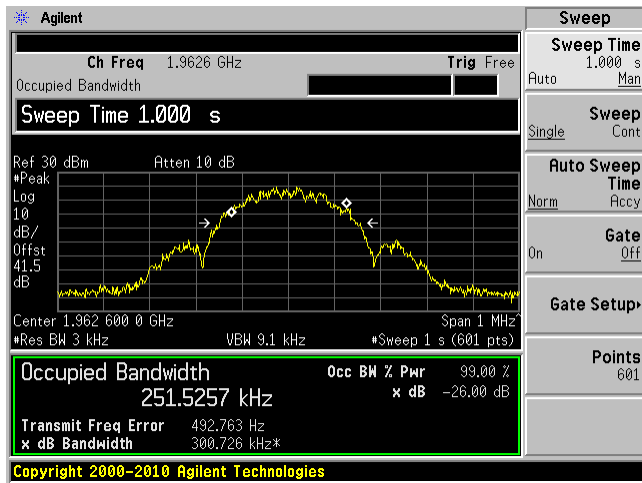


EDGE (Middle Channel)

Input



Output



CDMA/EVDO (Middle Channel)

Input

Output



WCDMA/HSPA (Middle Channel)

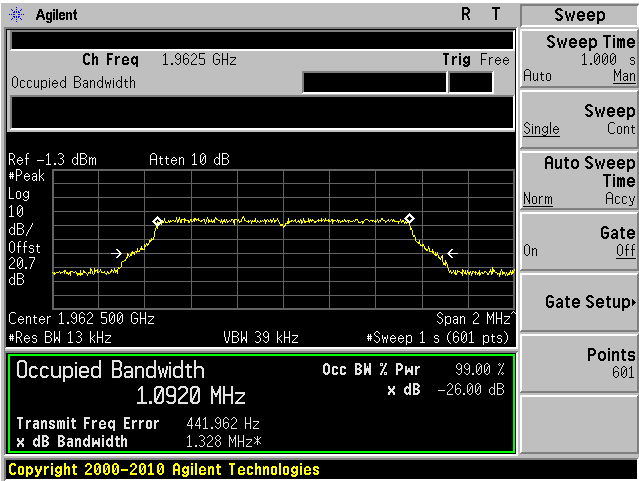
Input

Output

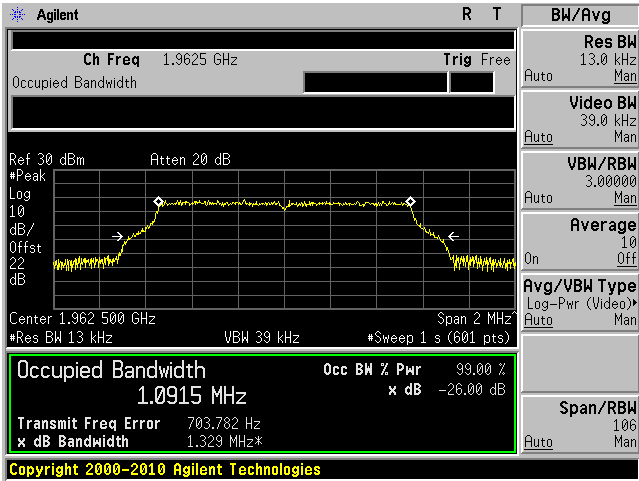


QPSK (1.4 MHz) (Middle Channel)

Input

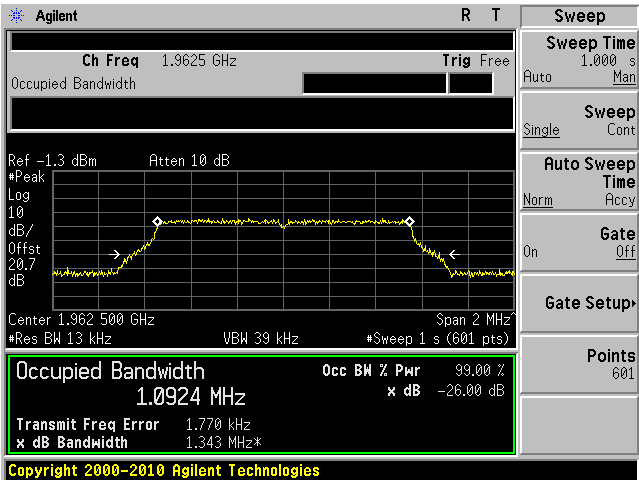


Output

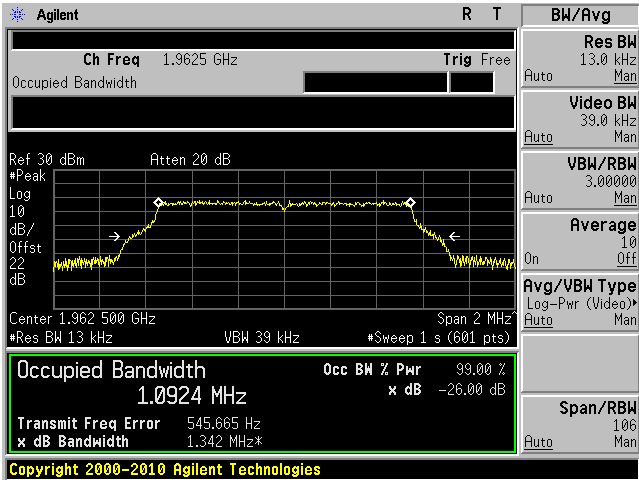


16QAM (1.4 MHz) (Middle Channel)

Input

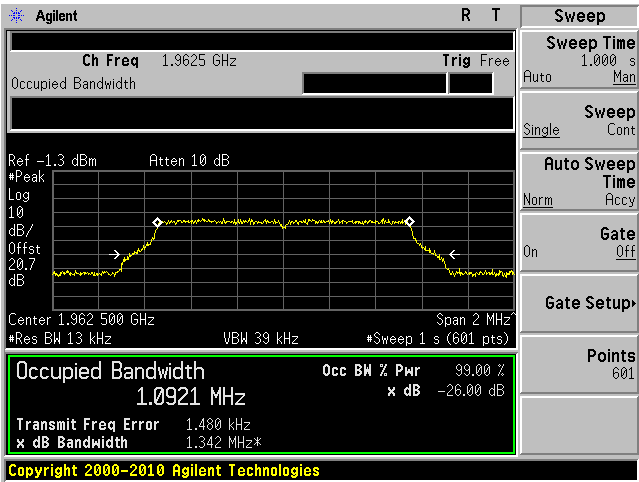


Output

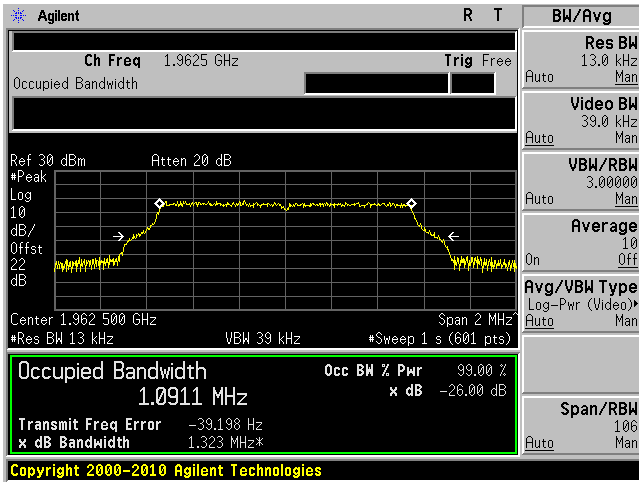


64QAM (1.4 MHz) (Middle Channel)

Input

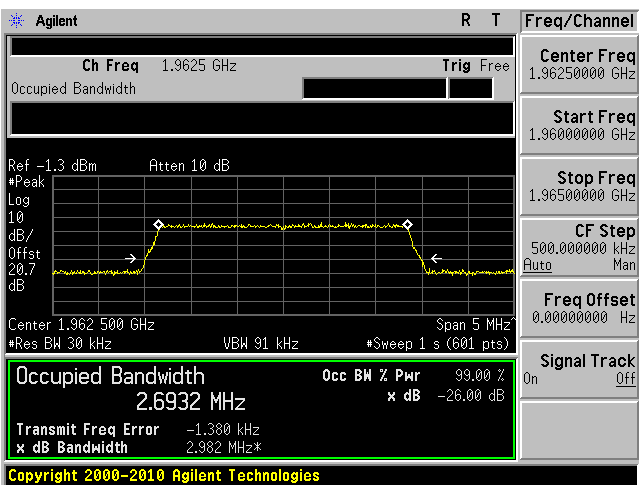


Output

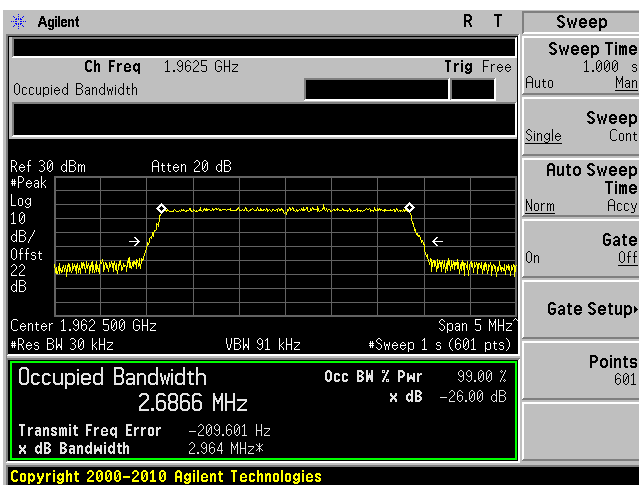


QPSK (3 MHz) (Middle Channel)

Input

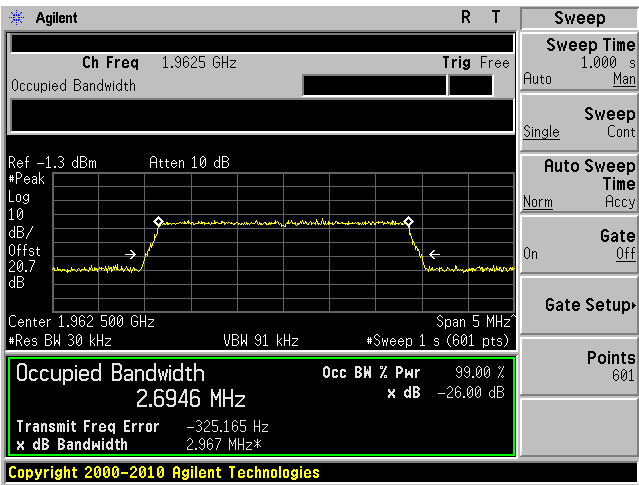


Output

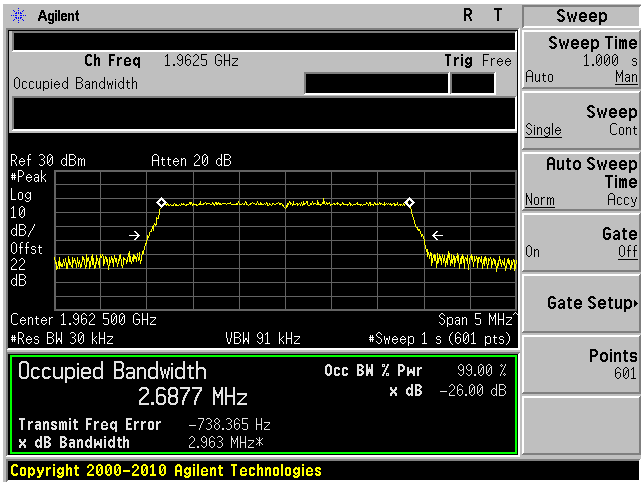


16QAM (3 MHz) (Middle Channel)

Input

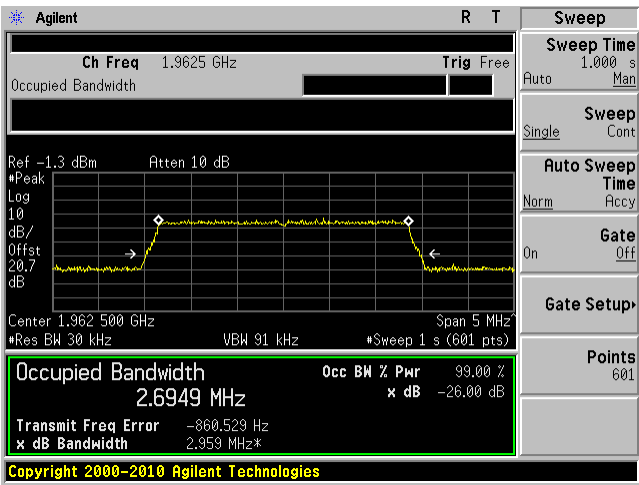


Output

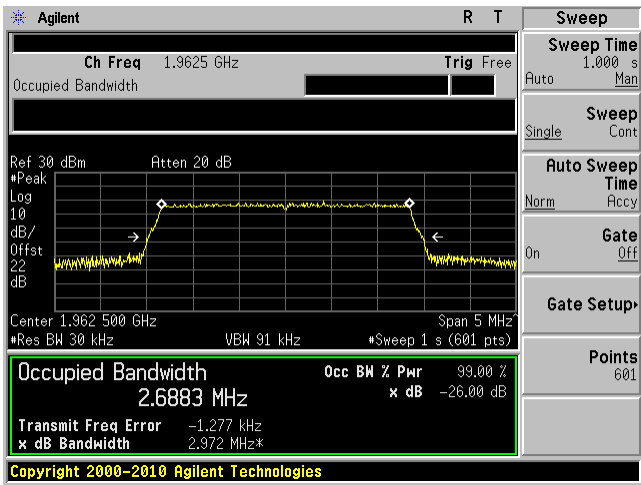


64QAM (3 MHz) (Middle Channel)

Input

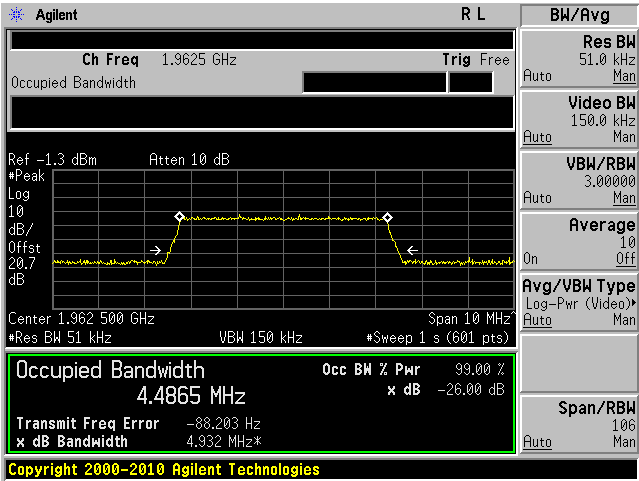


Output

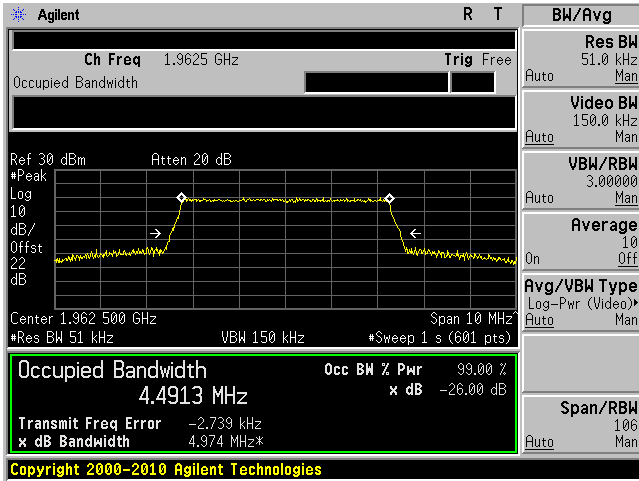


QPSK (5 MHz) (Middle Channel)

Input

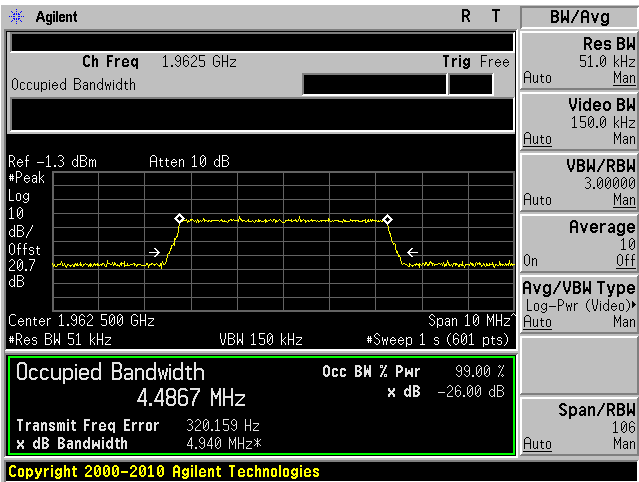


Output

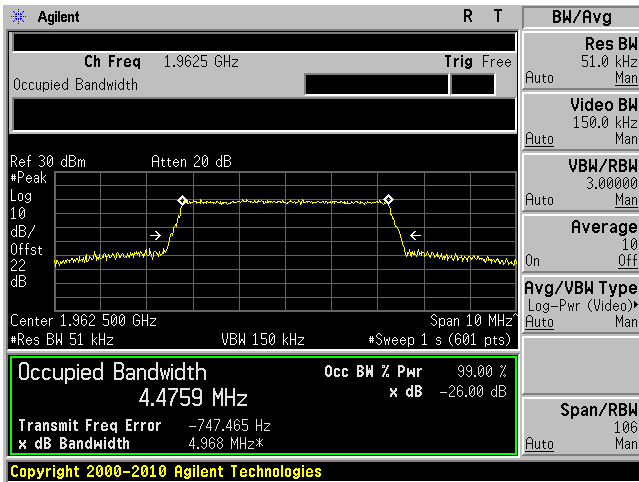


16QAM (5 MHz) (Middle Channel)

Input

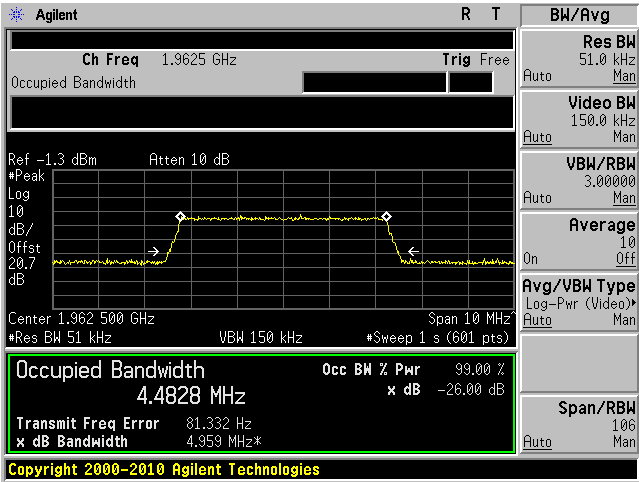


Output

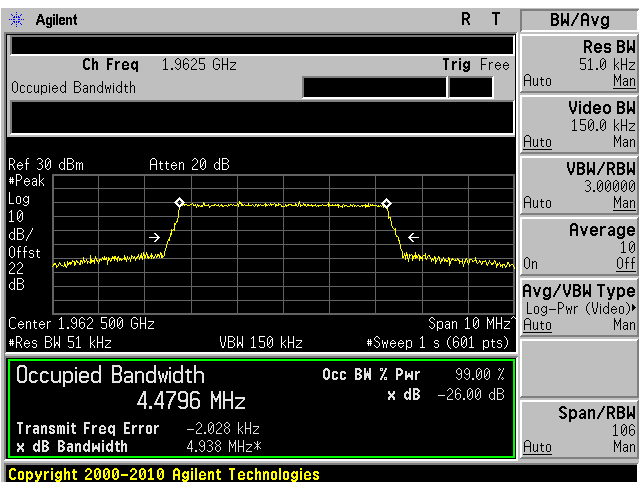


64QAM (5 MHz) (Middle Channel)

Input

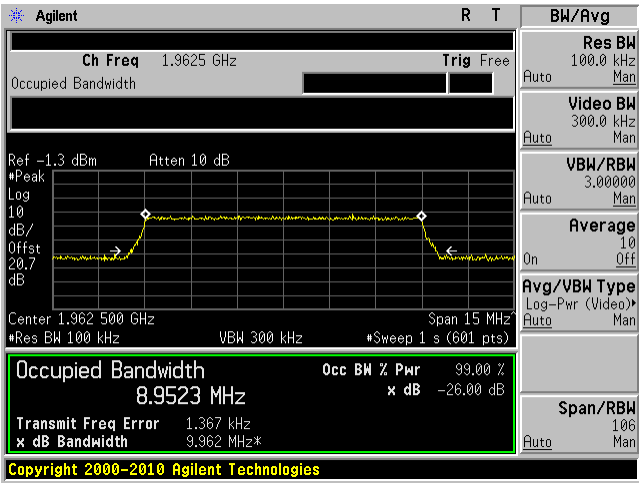


Output

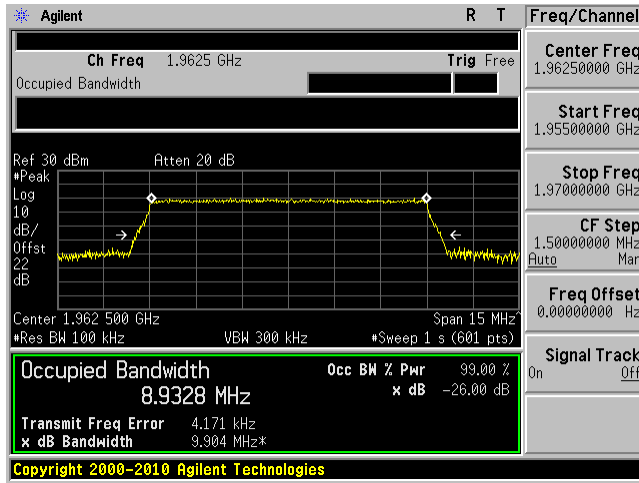


QPSK (10 MHz) (Middle Channel)

Input

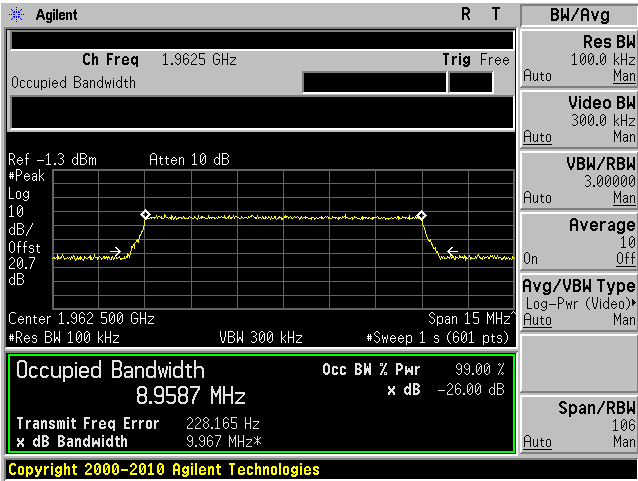


Output

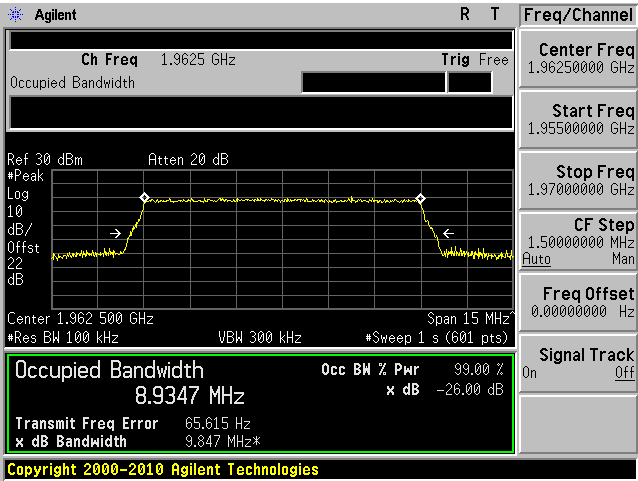


16QAM (10 MHz) (Middle Channel)

Input

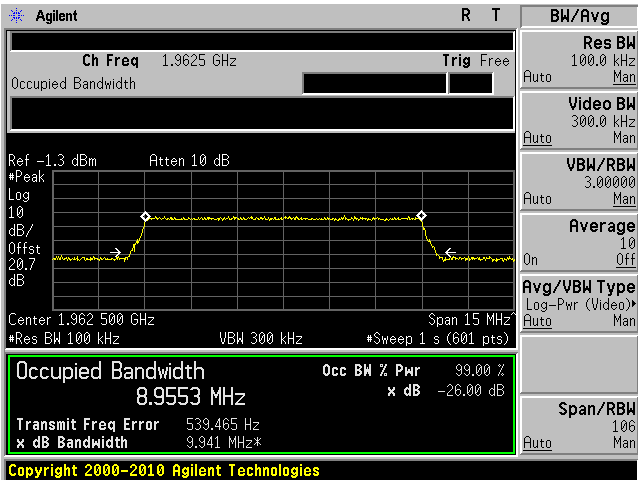


Output

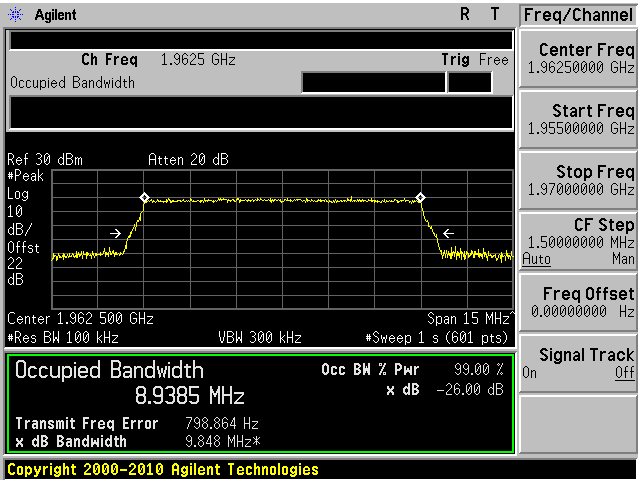


64QAM (10 MHz) (Middle Channel)

Input



Output



6 FCC §2.1053, §22.917 & §24.238 - Spurious Radiated Emissions

6.1 Applicable Standard

Requirements: FCC §2.1053, §22.917 and §24.238.

6.2 Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = $10 \log (\text{TX Power in Watts}/0.001)$ – the absolute level
 Spurious attenuation limit in dB = $43 + 10 \log_{10} (\text{power out in Watts})$

6.3 Test Equipment List and Details

Manufacturers	Descriptions	Models	Serial Numbers	Calibration Dates	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	US45303156	2010-08-09	2 years
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	-
Sunol Science Corp	Combination Antenna	JB3	A020106-2	2011-08-10	1year
Hewlett Packard	Pre amplifier	8447D	2944A06639	2012-03-18	1year
Eaton	Horn antenna	96001	Mar-07	2011-10-03	1year
A.H. Systems	Horn antenna	SAS-200/571	261	2012-01-18	1year
Mini-Circuits	Pre Amplifier	ZVA-183-S	667400960	2012-05-08	1year
HP	Signal Generator	8648C	3426A00417	2011-08-18	1year

Statement of Traceability: BACL Corp. attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

6.4 Test Environmental Conditions

Temperature:	23 °C
Relative Humidity:	42 %
ATM Pressure:	101.79kPa

The testing was performed by Wei Sun on 2012-07-26 in 5 meters Chamber 3.

6.5 Test Results

850 MHz Cell Band Downlink (Input frequency = 881.5 MHz)

Indicated		Azimuth (degree)	Test Antenna		Substituted					Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Correction (dB)	Cable Loss (dB)	Absolute Level (dBm)		
66.5	75.84	100	155	V	66.5	-20.87	0	0.5	-21.37	-13	-8.37
66.5	69.02	155	201	H	66.5	-28.27	0	0.5	-28.77	-13	-15.77
6653	40	281	155	V	6653	-61.91	11.4	6.25	-56.76	-13	-43.76
6653	40.21	59	212	H	6653	-60.08	11.4	6.25	-54.93	-13	-41.93

1900 MHz PCS Band Downlink (Input frequency = 1962.5 MHz)

Indicated		Azimuth (degree)	Test Antenna		Substituted					Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Correction (dB)	Cable Loss (dB)	Absolute Level (dBm)		
73.167	77	201	100	V	73.167	-18.39	0	0.5	-18.89	-13	-5.89
73.167	70.9	137	322	H	73.167	-25.1	0	0.5	-25.6	-13	-12.60
6650	40.12	200	155	V	6650	-61.24	11.4	6.25	-56.09	-13	-43.09
6650	40.31	121	201	H	6650	-59.79	11.4	6.25	-54.64	-13	-41.64

7 FCC §§2.1051, §22.917 & §24.238 - Spurious Emissions at Antenna Terminals

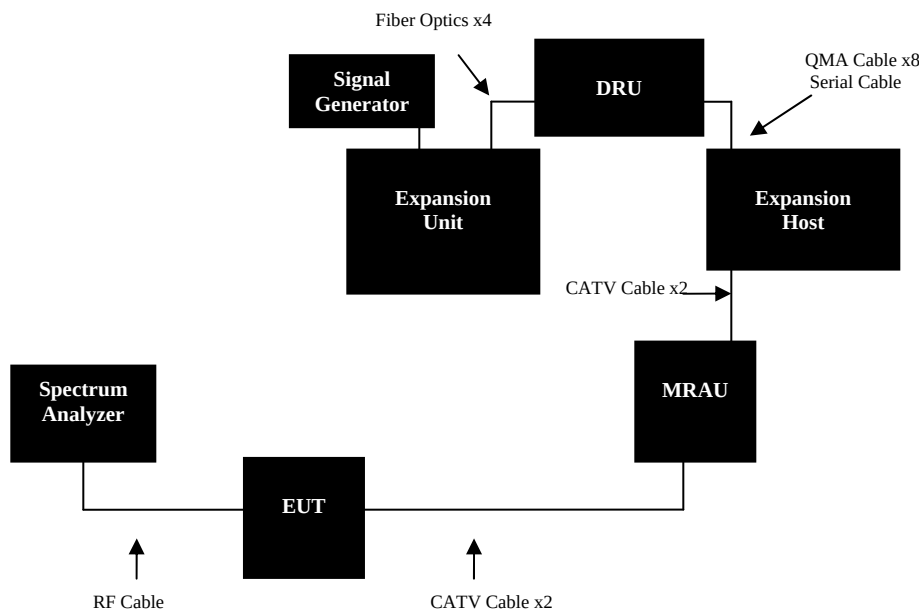
7.1 Applicable Standard

Requirements: FCC §2.1051, §22.917 and §24.238.

The spectrum shall be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1057.

7.2 Test Procedure and Setup Block Diagram

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



7.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	US45303156	2010-08-09	2 years
Agilent	Signal Generator	E4438C	MY45091309	2012-05-03	1 year

Statement of Traceability: BACL Corp. attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

7.4 Test Environmental Conditions

Temperature:	21 °C
Relative Humidity:	57 %
ATM Pressure:	101.4kPa

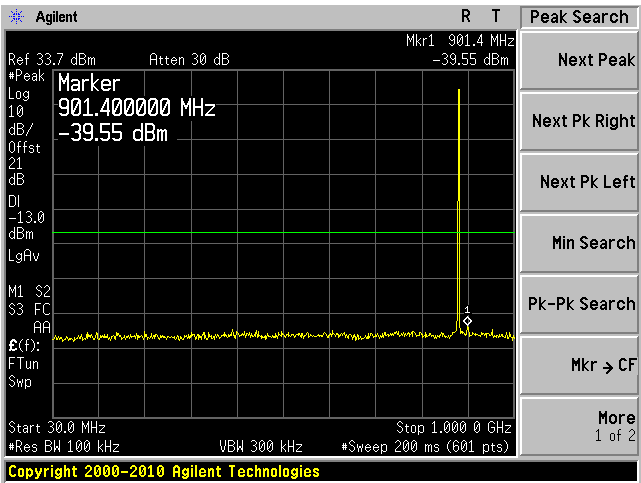
The testing was performed by Wei Sun on 2012-07-25 at RF Site.

7.5 Test Results

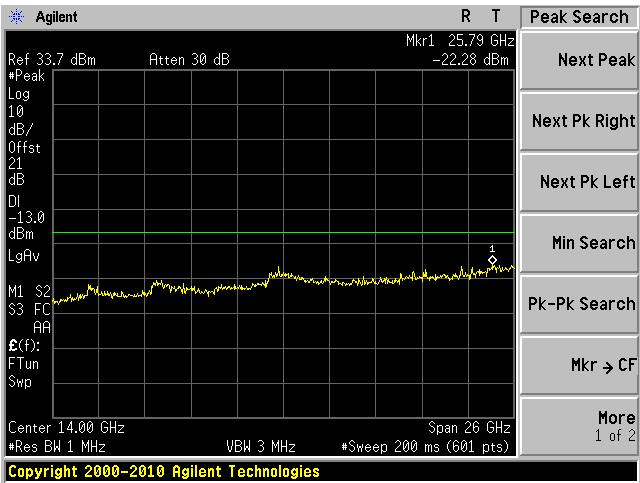
Please refer to the following plots.

850 MHz Cell Band Downlink, Middle Channel: 881.5 MHz

Plot 1: 30 MHz to 1 GHz

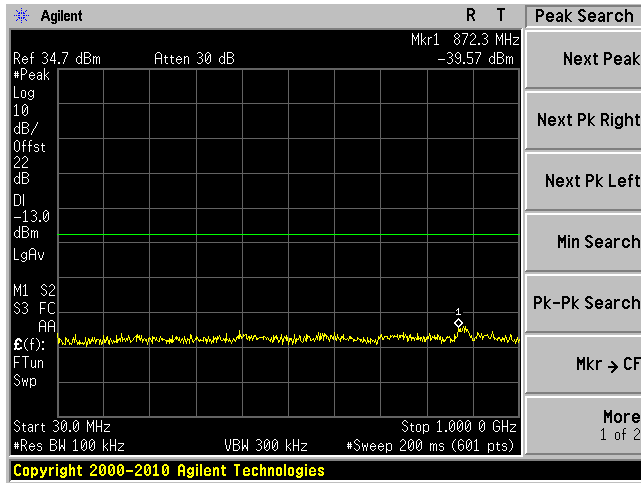


Plot 2: Above 1 GHz

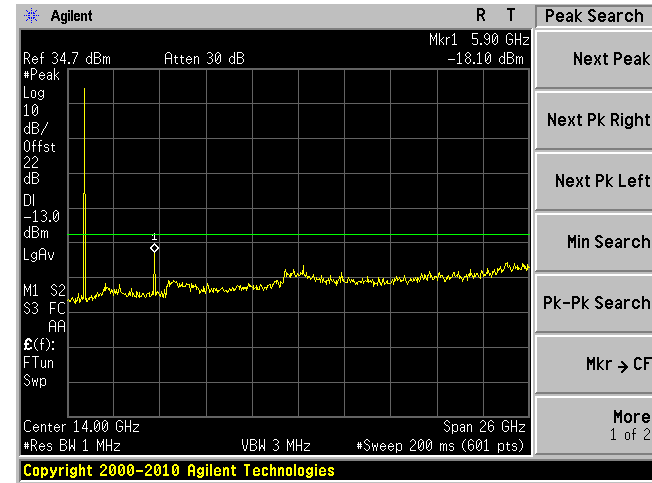


1900 MHz PCS Band Downlink, Middle Channel: 1962.5 MHz

Plot 1: 30 MHz to 1 GHz



Plot 2: Above 1 GHz

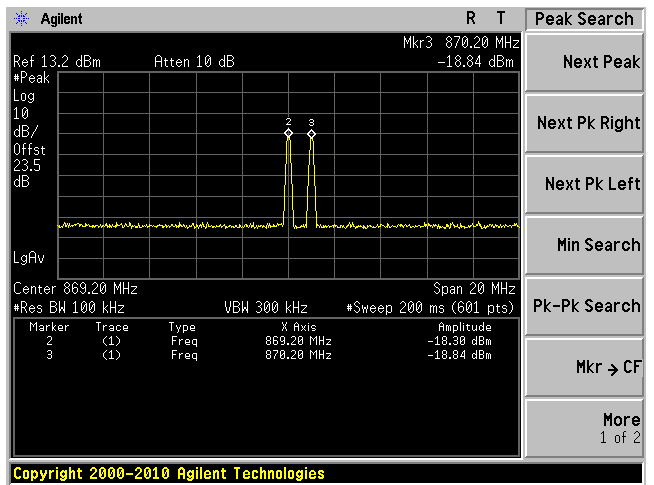


Inter-modulation

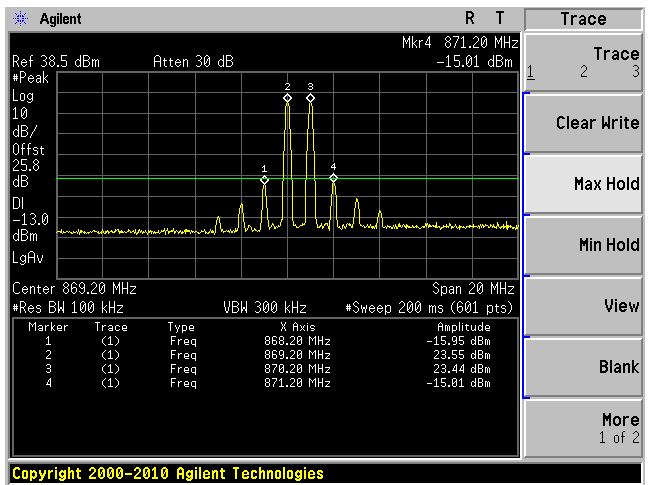
850 MHz Cell Band Downlink

Worst Case between GSM/GPRS and EDGE Modulation

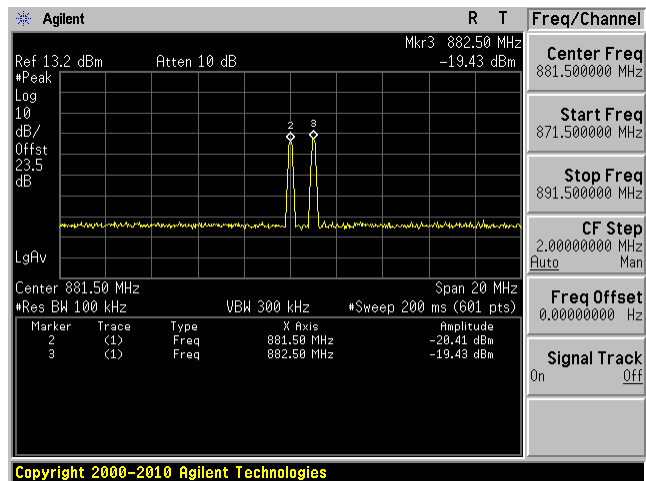
Low Channel (869.2 MHz), Input



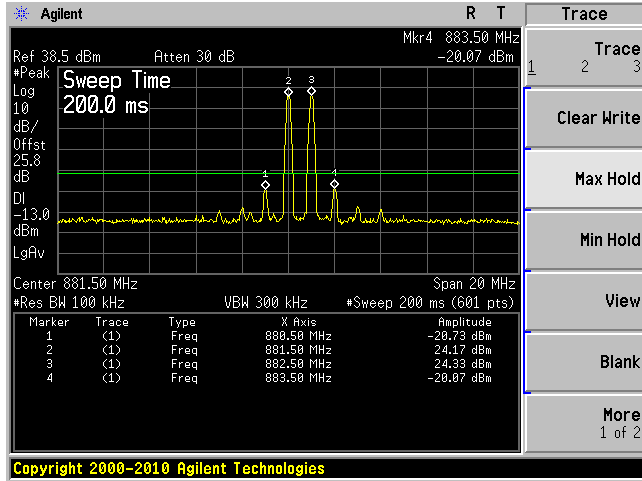
Low Channel (869.2 MHz), Output



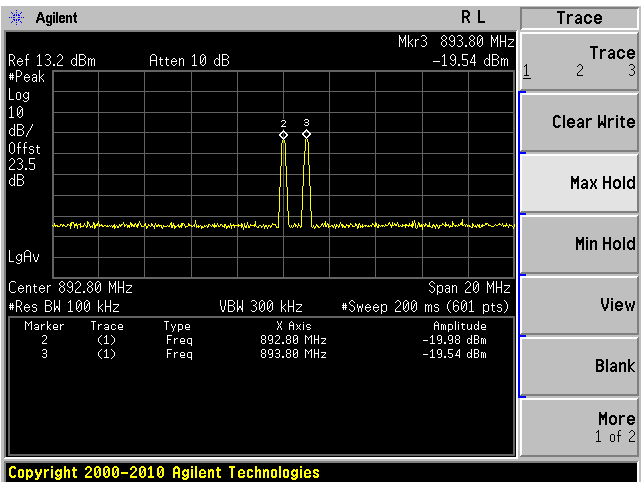
Middle Channel (881.5 MHz), Input



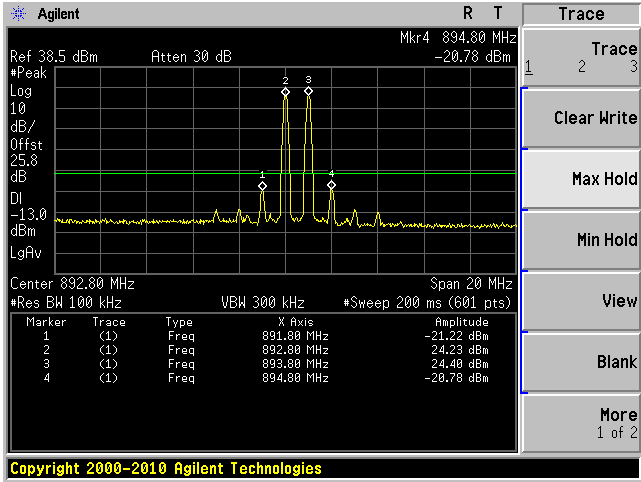
Middle Channel (881.5 MHz), Output



High Channel (893.8 MHz), Input

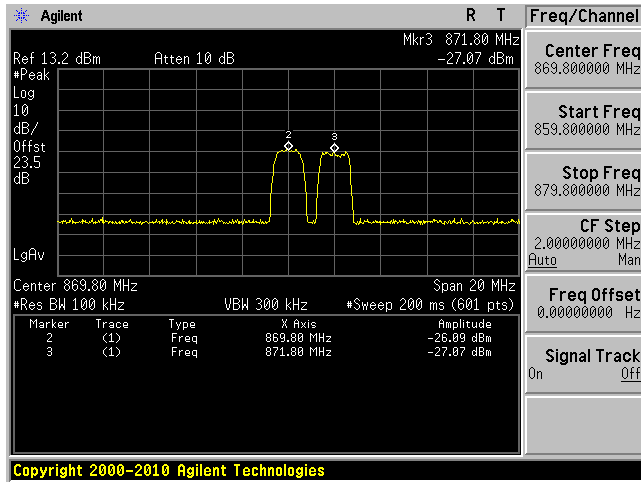


High Channel (893.8 MHz), Output

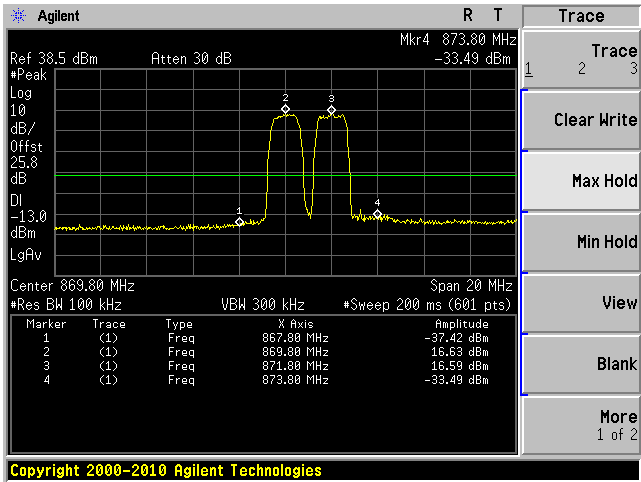


CDMA/EVDO

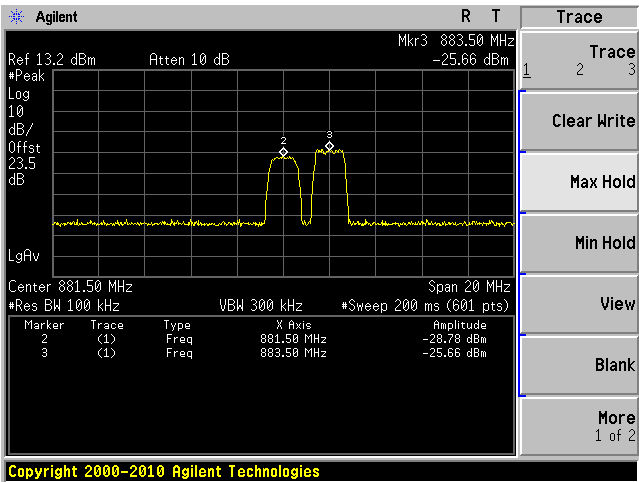
Low Channel (869.8 MHz), Input



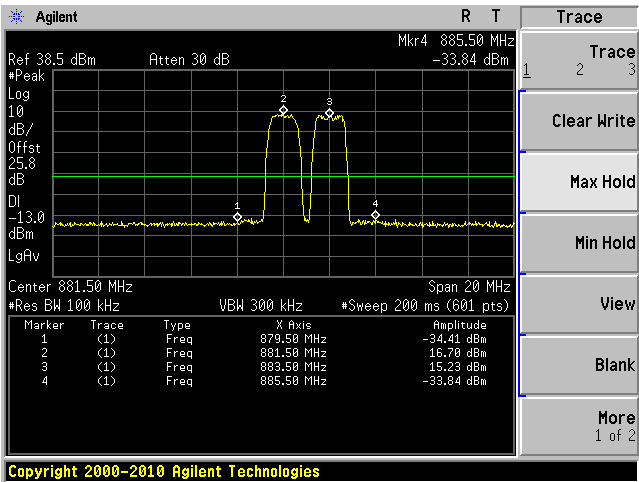
Low Channel (868.9 MHz), Output



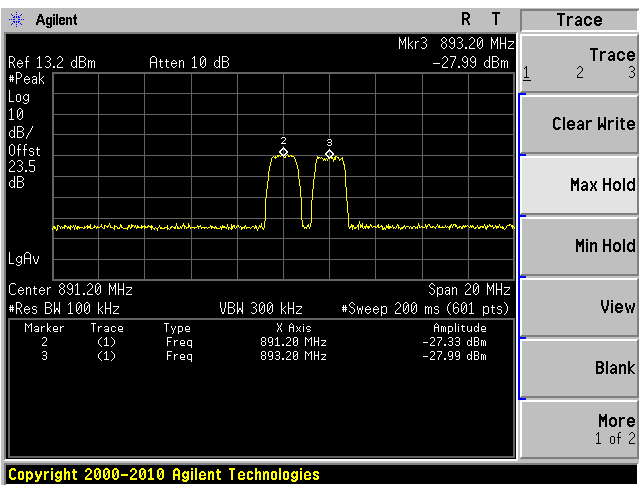
Middle Channel (881.5 MHz), Input



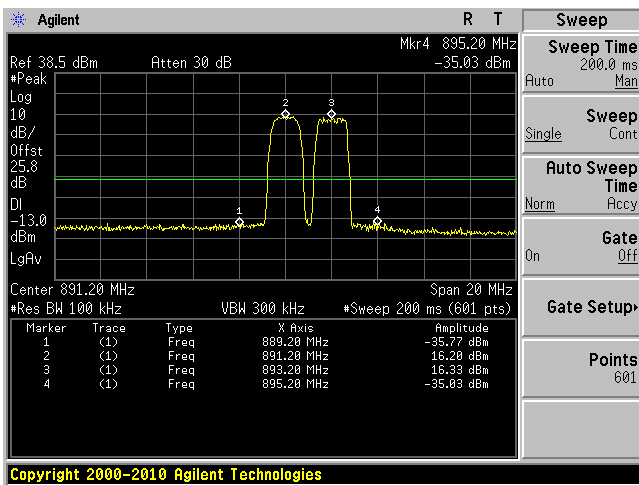
Middle Channel (881.5 MHz), Output



High Channel (893.2 MHz), Input

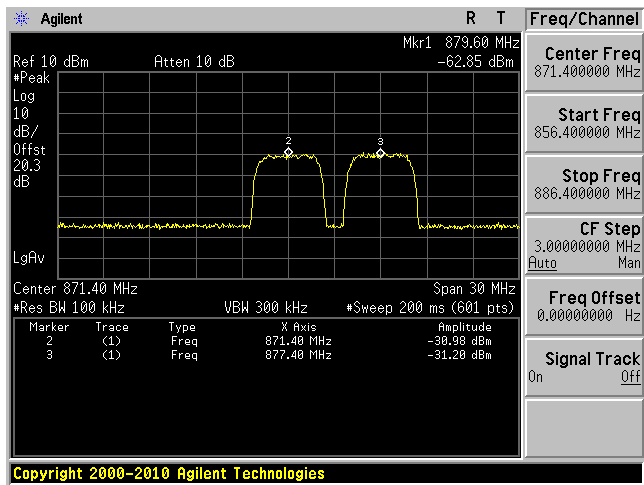


High Channel (893.2 MHz), Output

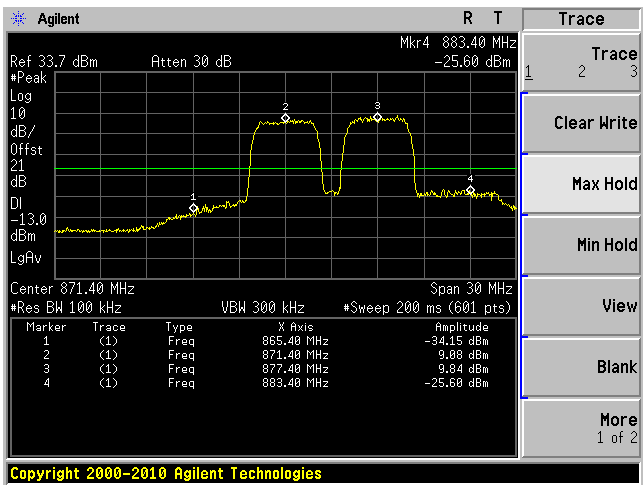


WCDMA/HSPA

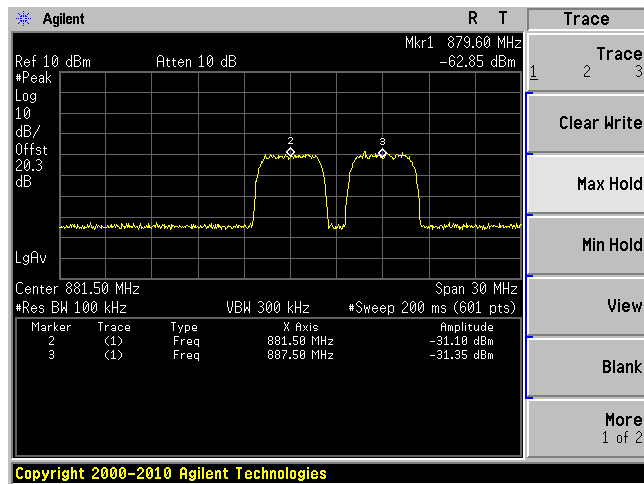
Low Channel (871.4 MHz), Input



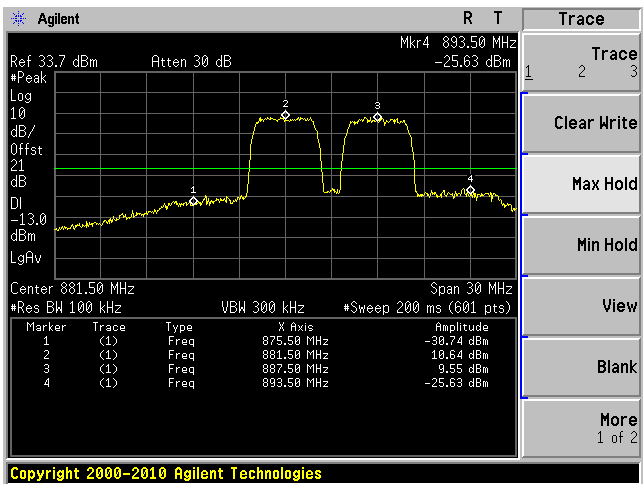
Low Channel (871.4 MHz), Output



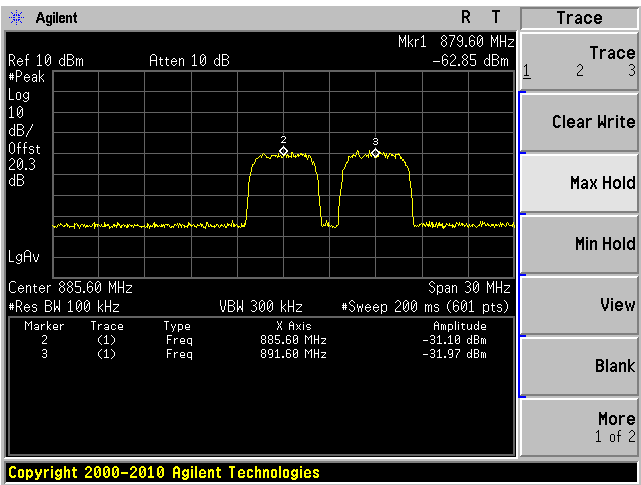
Middle Channel (881.5 MHz), Input



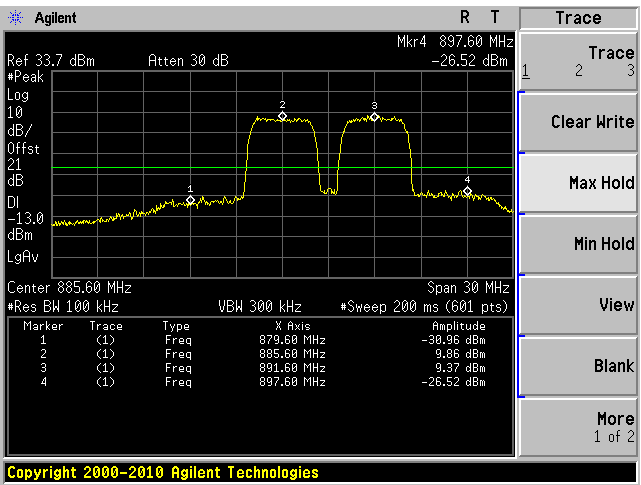
Middle Channel (881.5 MHz), Output



High Channel (891.6 MHz), Input

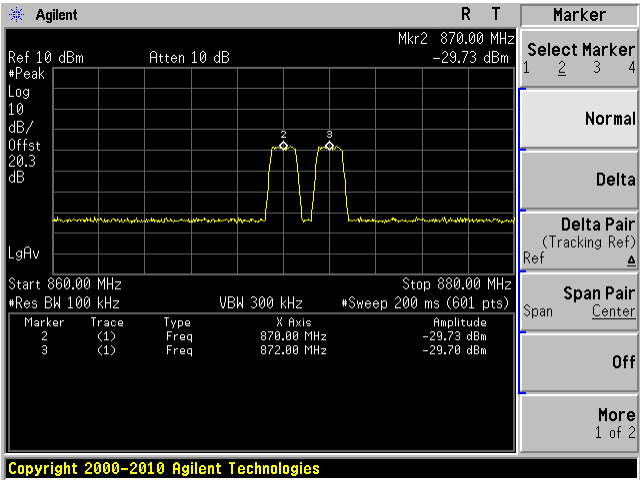


High Channel (891.6 MHz), Output

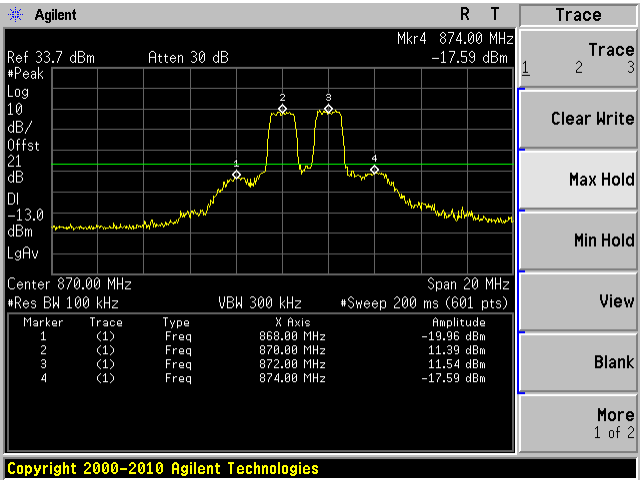


QPSK (1.4 MHz)

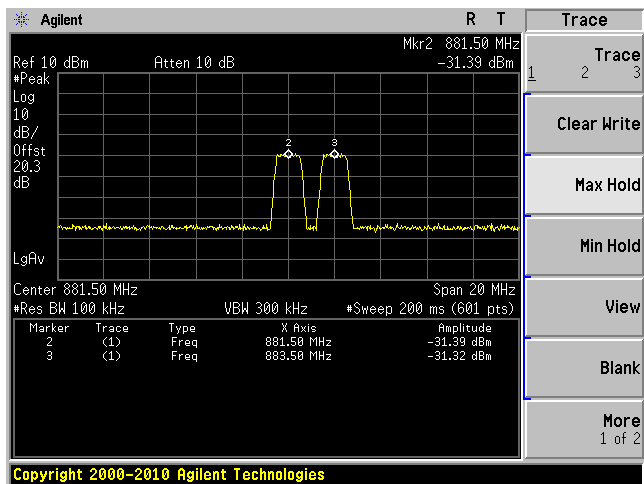
Low Channel (870 MHz), Input



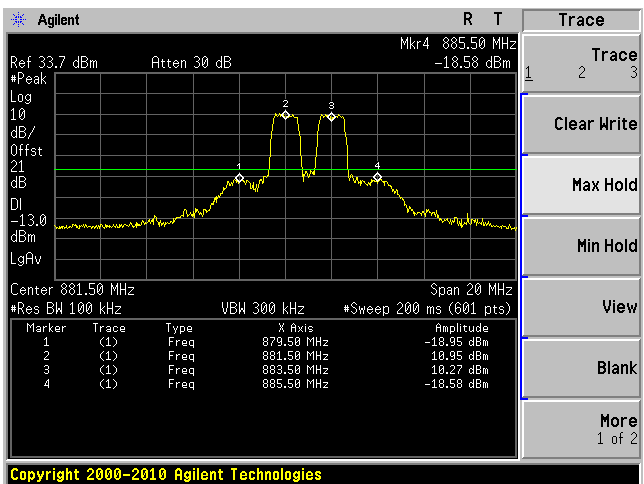
Low Channel (870 MHz), Output



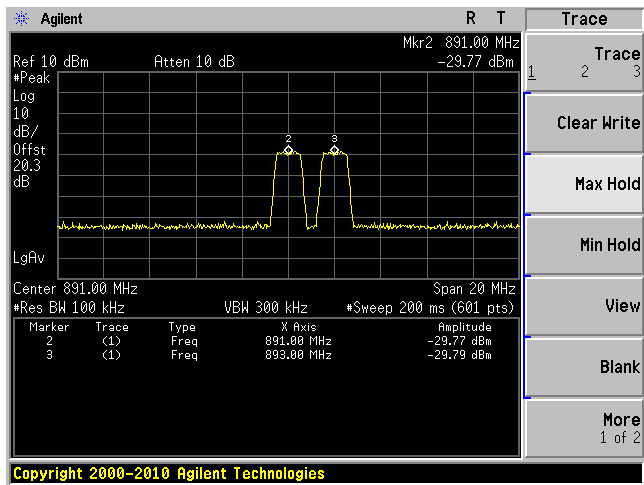
Middle Channel (881.5 MHz), Input



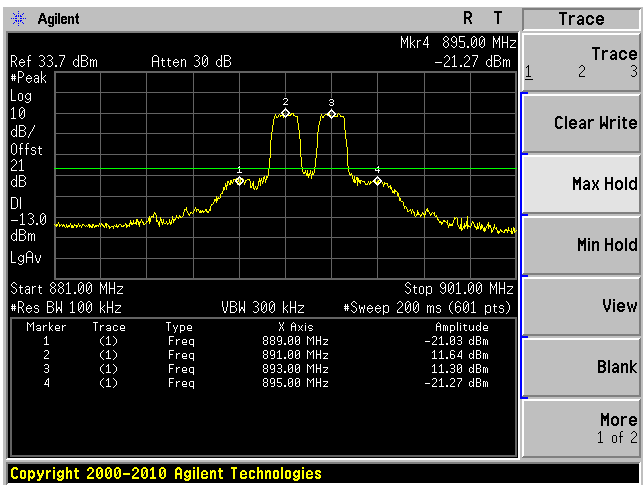
Middle Channel (881.5 MHz), Output



High Channel (893 MHz), Input

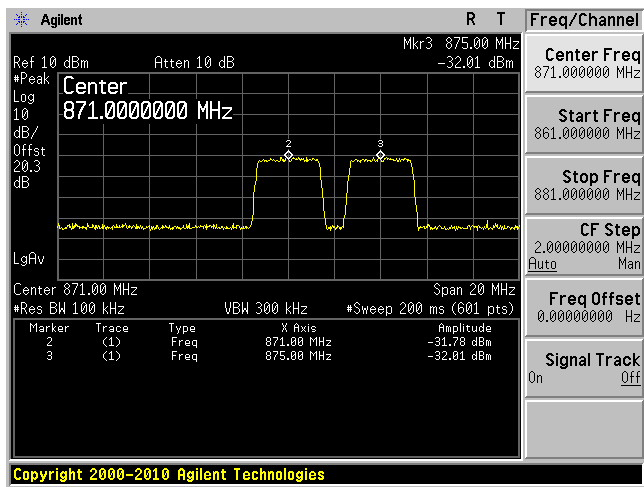


High Channel (893 MHz), Output

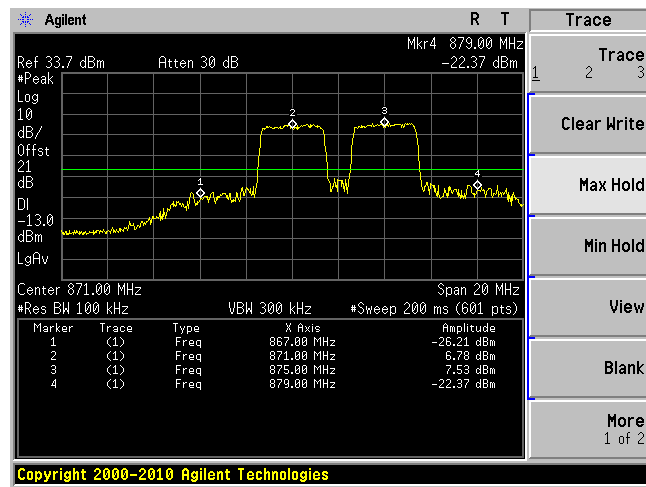


QPSK (3 MHz)

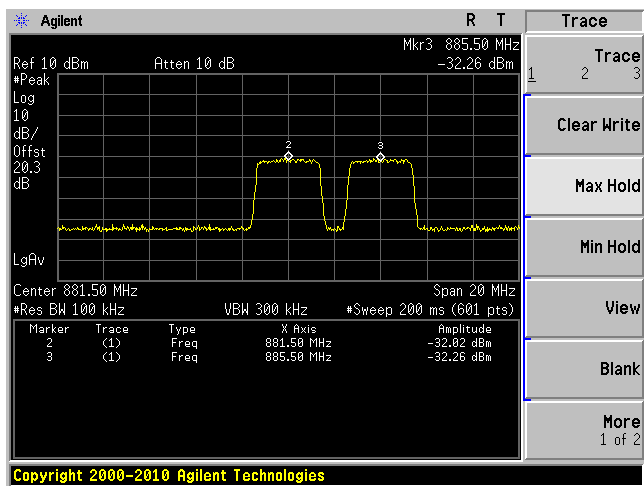
Low Channel (871 MHz), Input



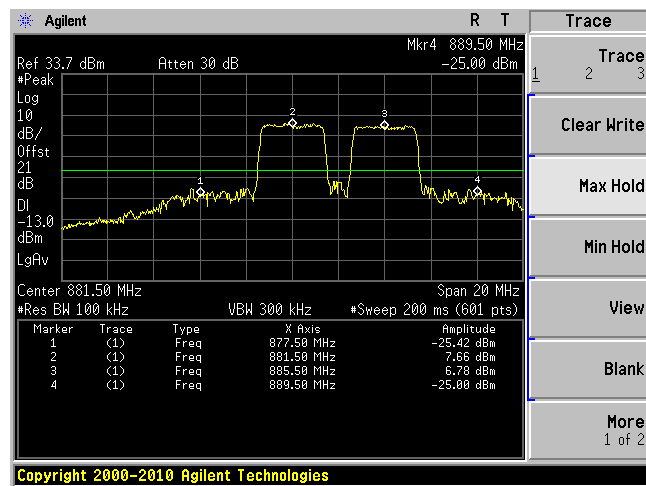
Low Channel (871 MHz), Output



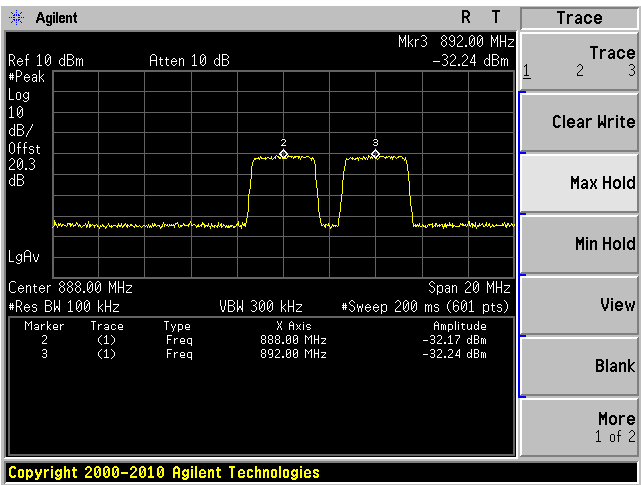
Middle Channel (881.5 MHz), Input



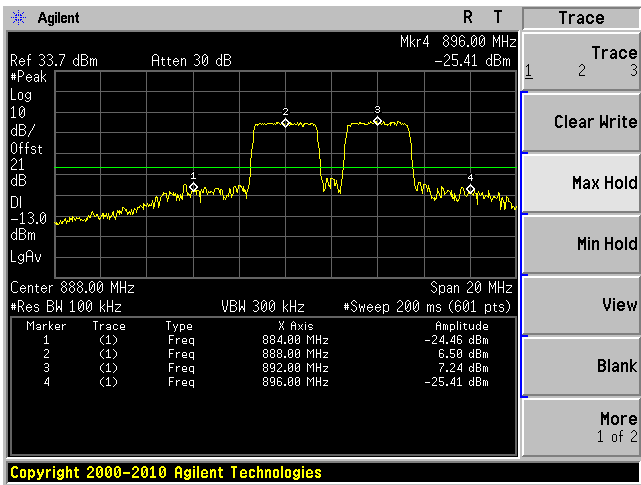
Middle Channel (881.5 MHz), Output



High Channel (892 MHz), Input

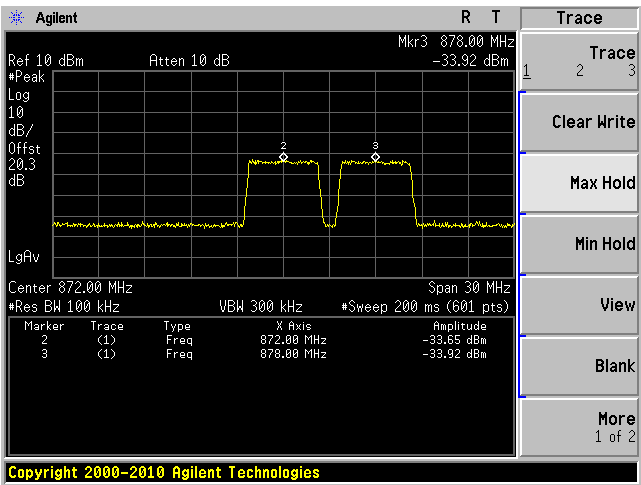


High Channel (892 MHz), Output

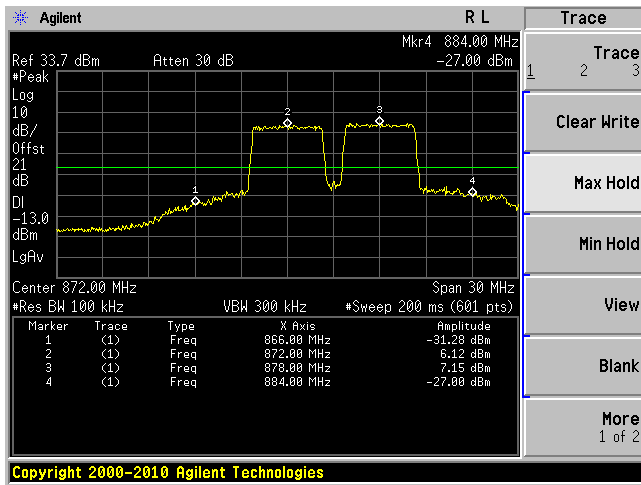


QPSK (5 MHz)

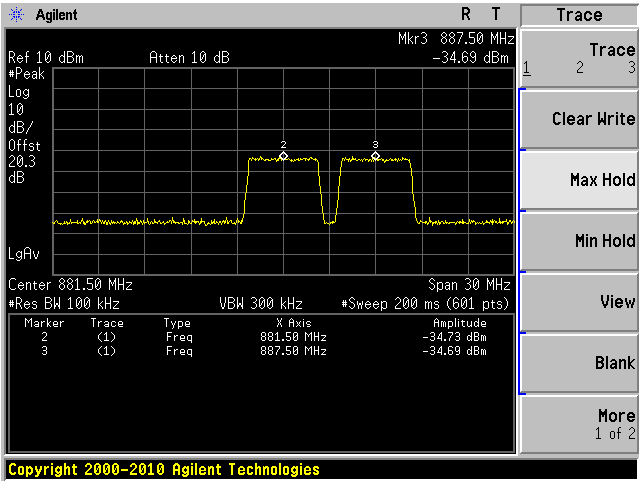
Low Channel (872 MHz), Input



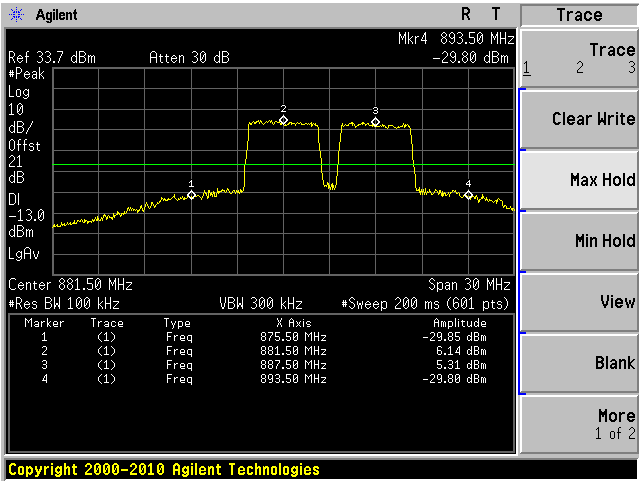
Low Channel (872 MHz), Output



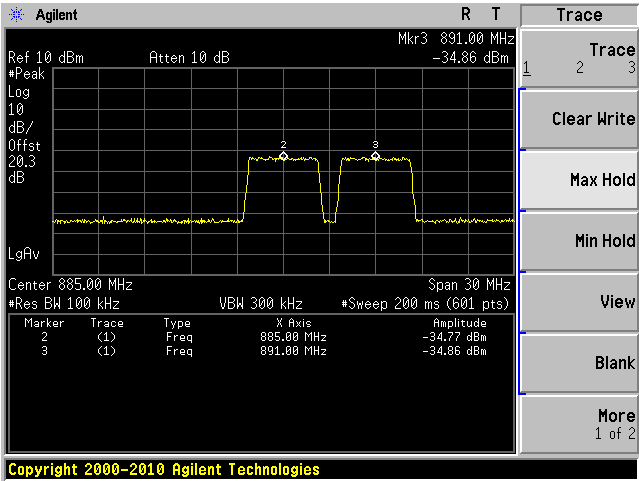
Middle Channel (881.5 MHz), Input



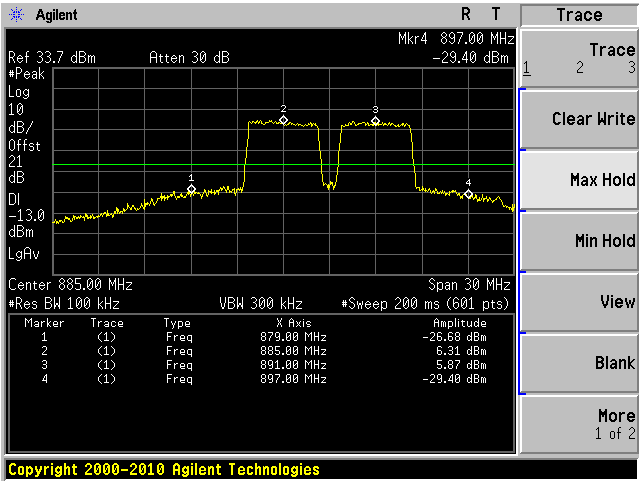
Middle Channel (881.5 MHz), Output



High Channel (891 MHz), Input

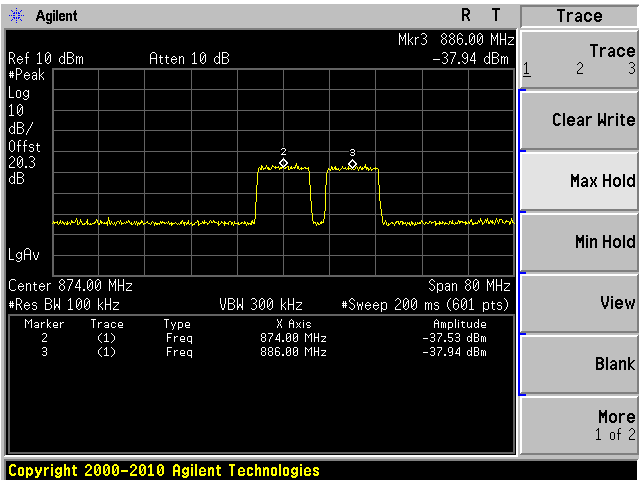


High Channel (891 MHz), Output

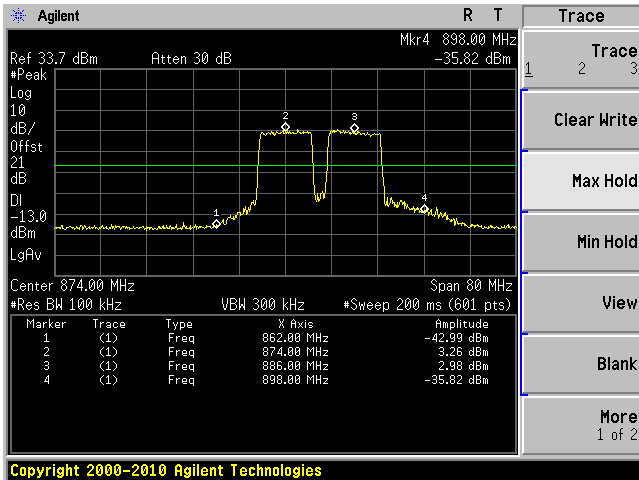


QPSK (10 MHz)

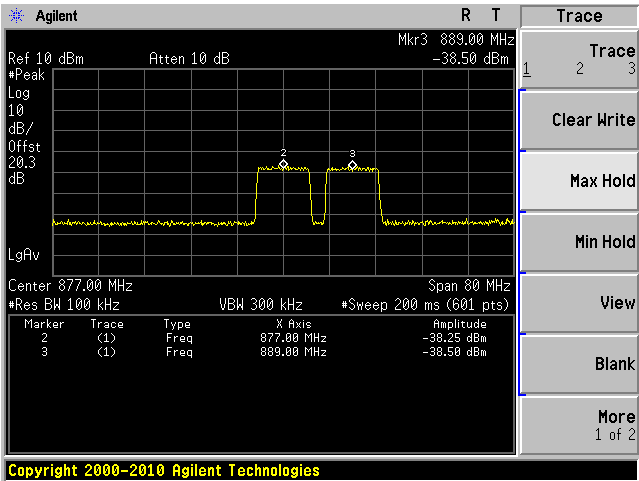
Low Channel (874 MHz), Input



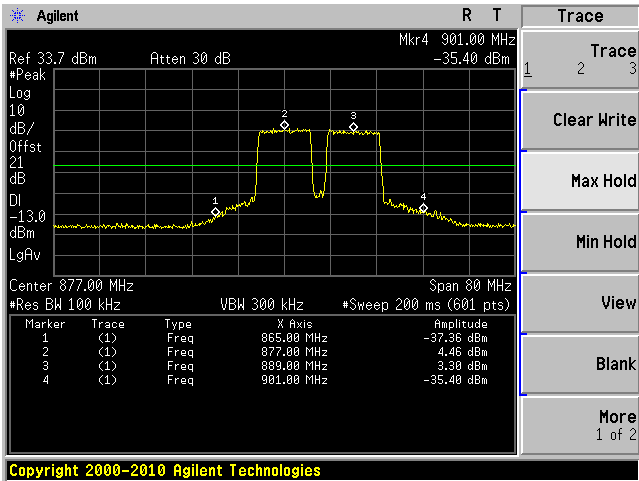
Low Channel (874 MHz), Output



High Channel (889 MHz), Input



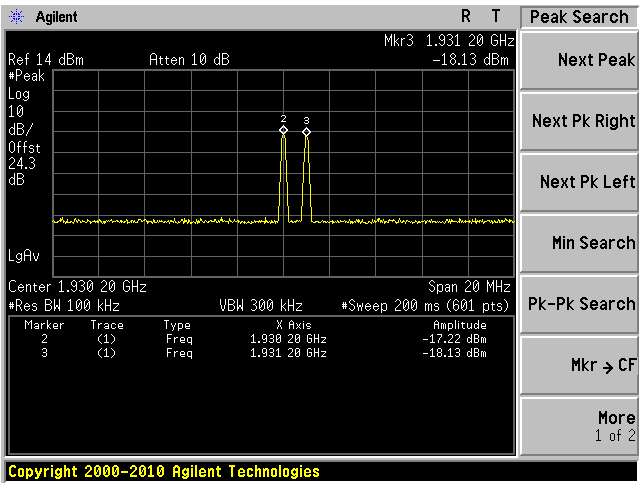
High Channel (889 MHz), Output



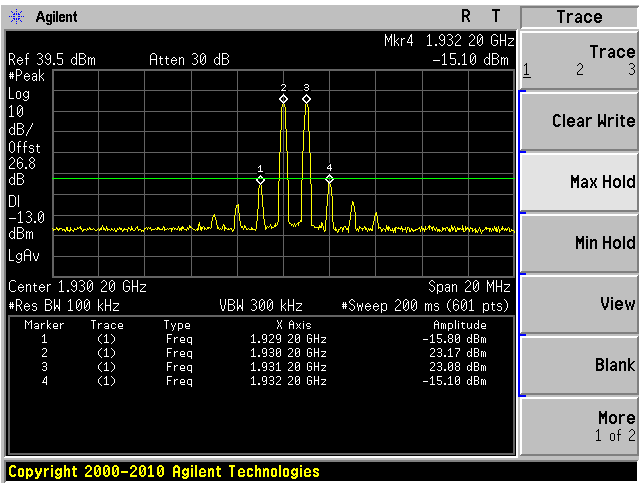
1900 MHz PCS Band Downlink

Worst Case between GSM/GPRS and EDGE Modulation

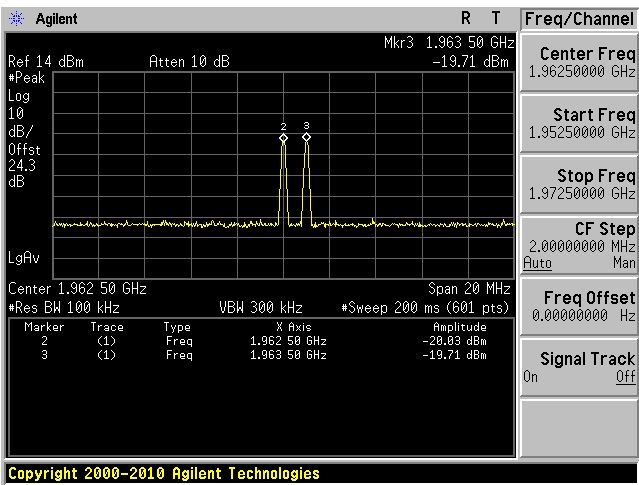
Low Channel (1930.2 MHz), Input



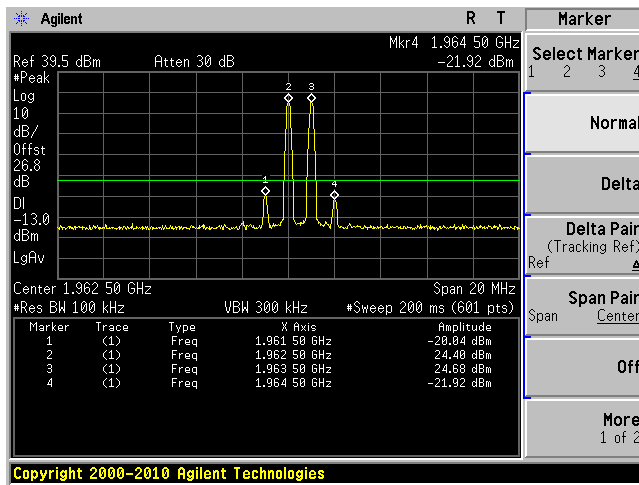
Low Channel (1930.2 MHz), Output



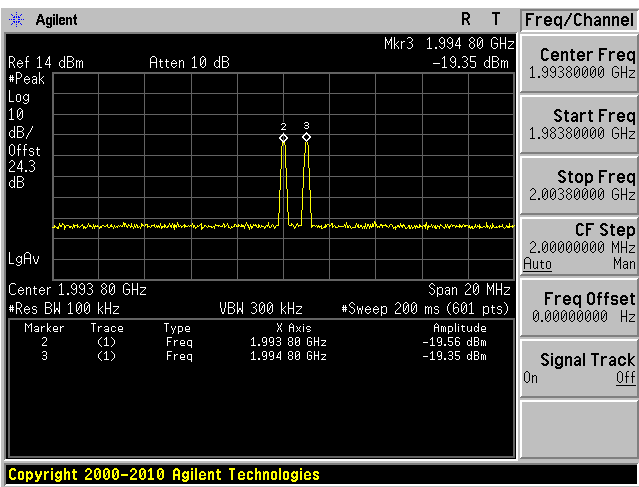
Middle Channel (1962.5 MHz), Input



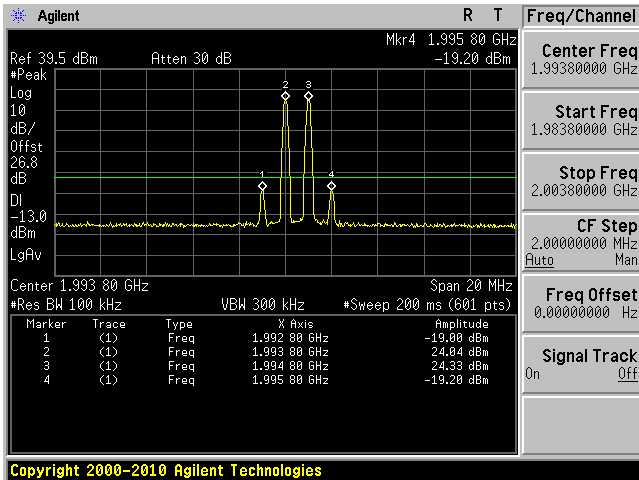
Middle Channel (1962.5 MHz), Output



High Channel (1994.8 MHz), Input

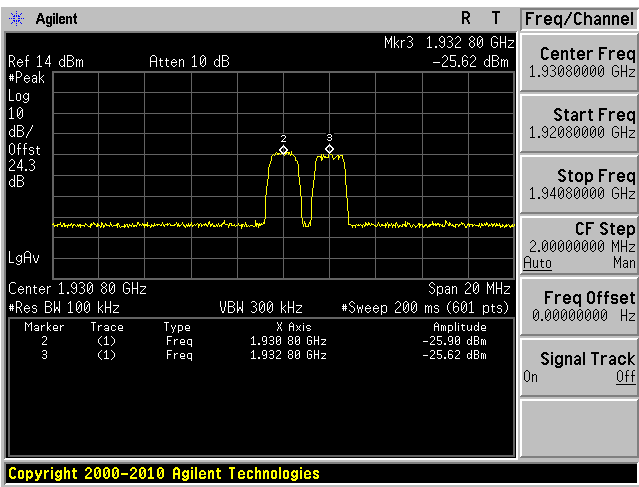


High Channel (1994.8 MHz), Output

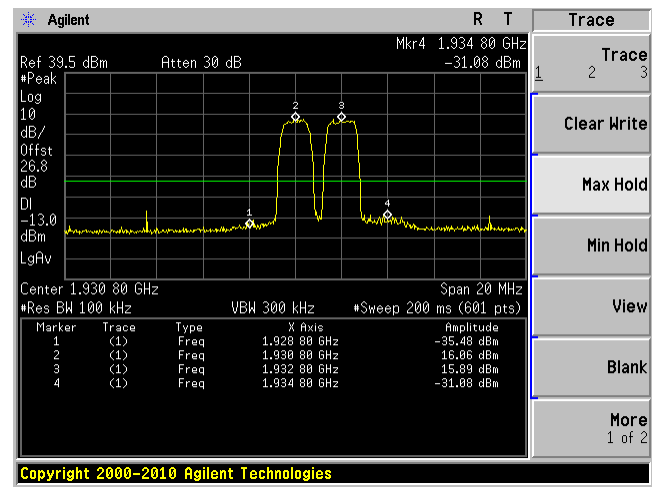


WCDMA/HSPA Modulation

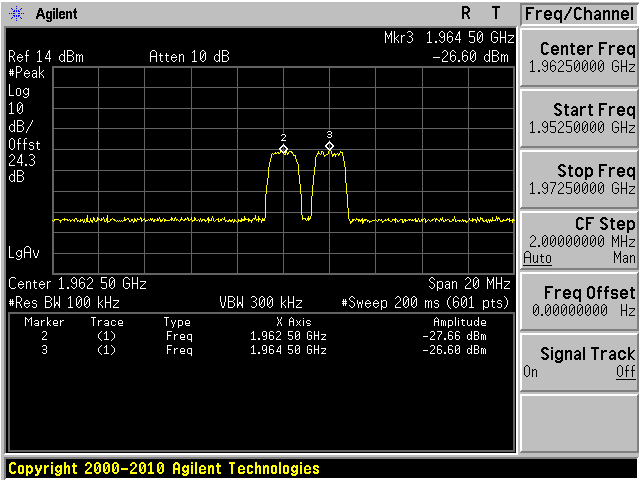
Low Channel (1930.8 MHz), Input



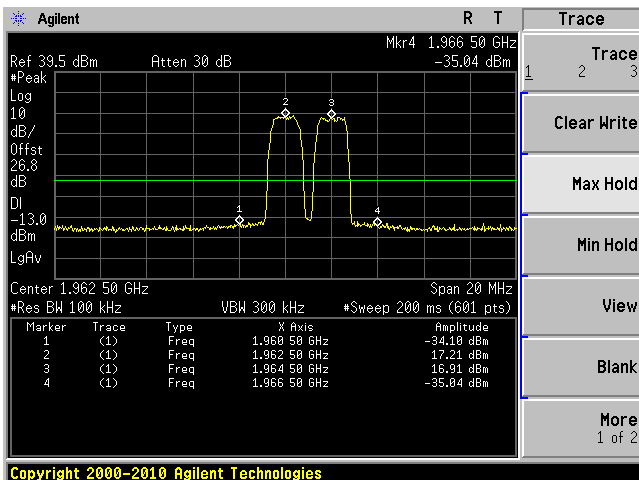
Low Channel (1930.8 MHz), Output



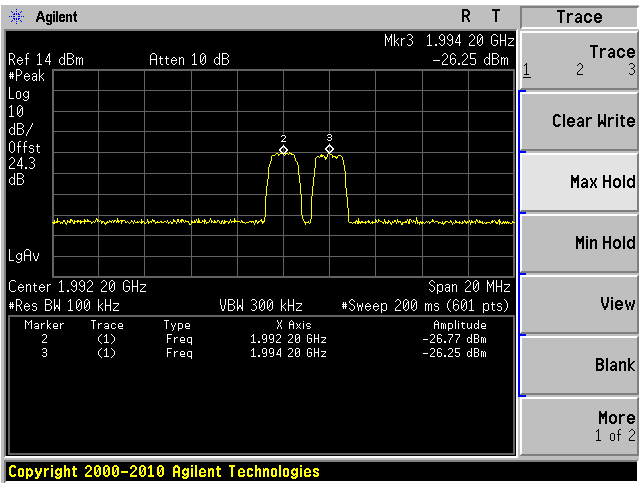
Middle Channel (1962.5 MHz), Input



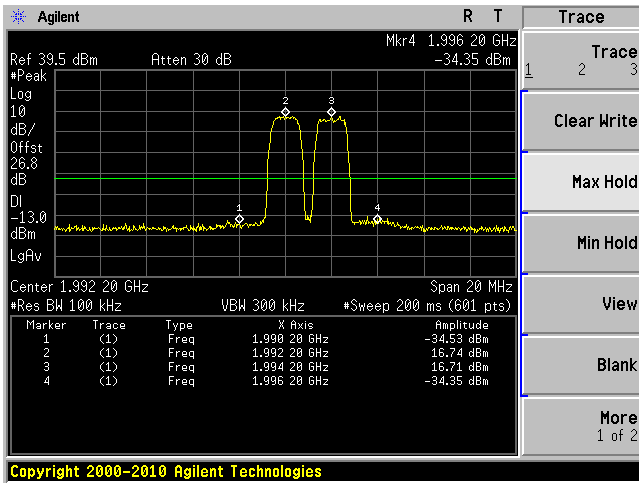
Middle Channel (1962.5 MHz), Output



High Channel (1994.2 MHz), Input

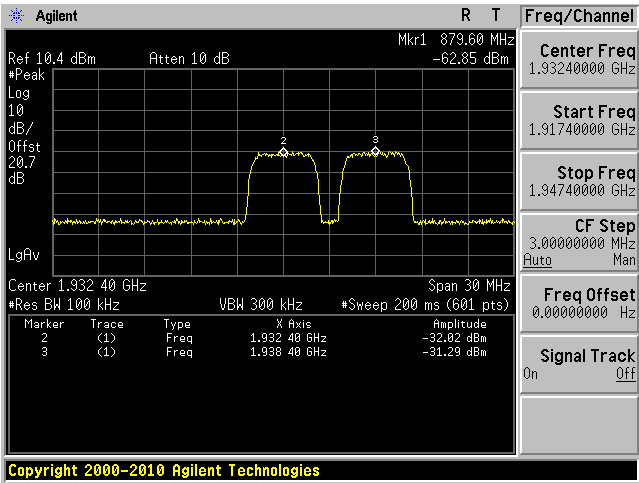


High Channel (1994.2 MHz), Output

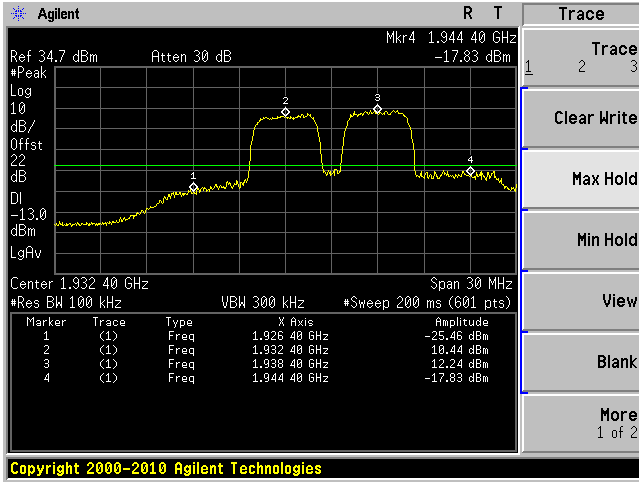


WCDMA/HSPA Modulation

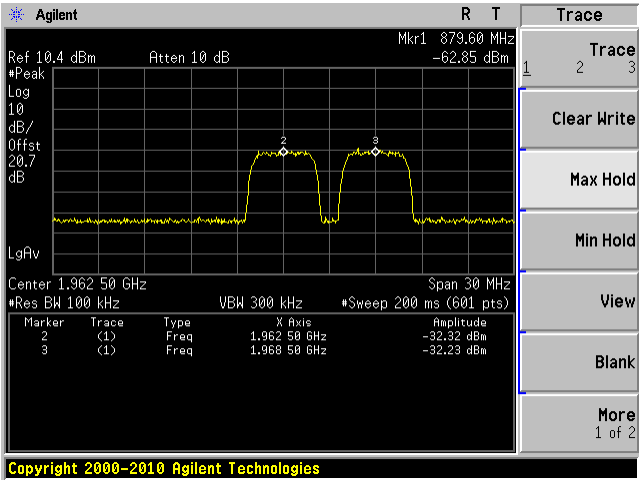
Low Channel (1932.4 MHz), Input



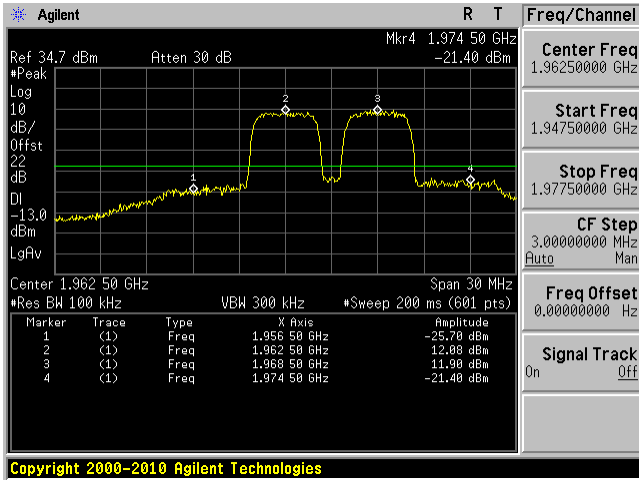
Low Channel (1932.4 MHz), Output



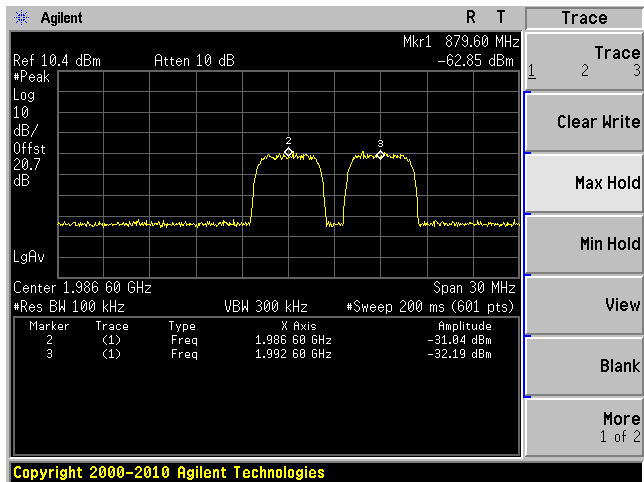
Middle Channel (1962.5 MHz), Input



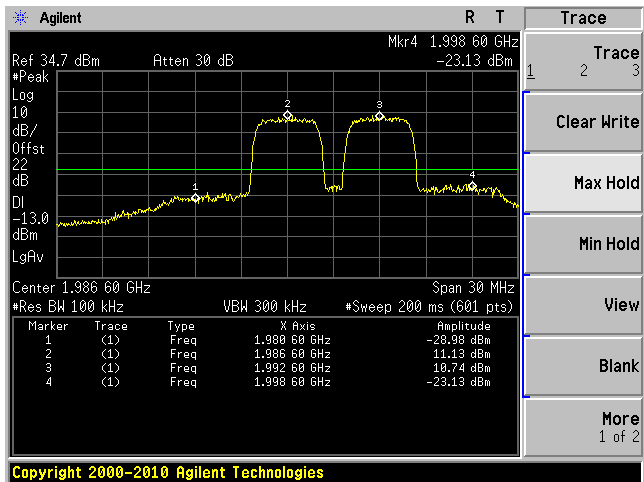
Middle Channel (1962.5 MHz), Output



High Channel (1992.6 MHz), Input

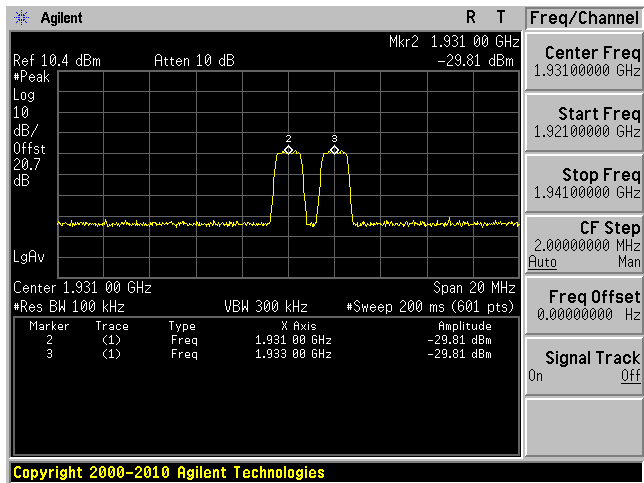


High Channel (1992.6 MHz), Output

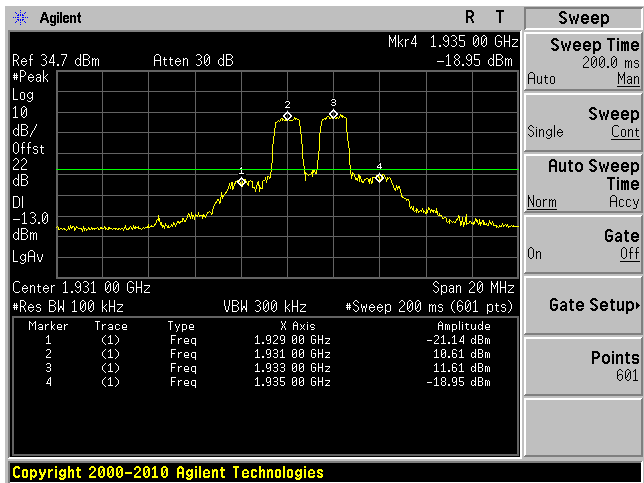


QPSK (1.4 MHz) Modulation

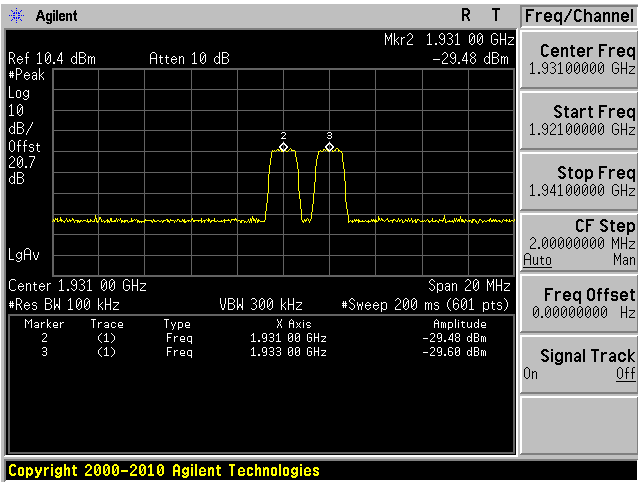
Low Channel (1931 MHz), Input



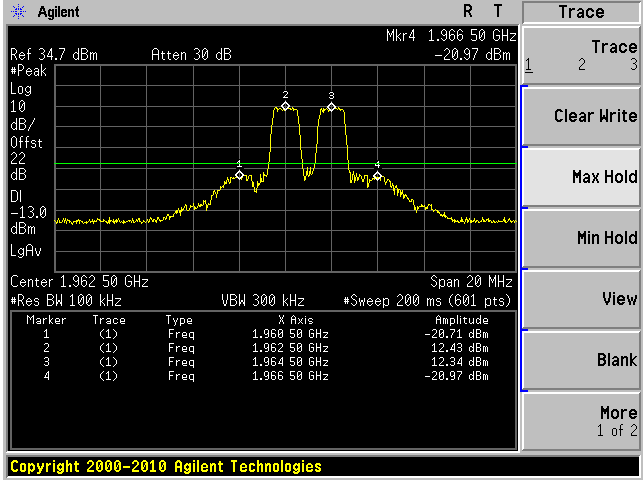
Low Channel (1931 MHz), Output



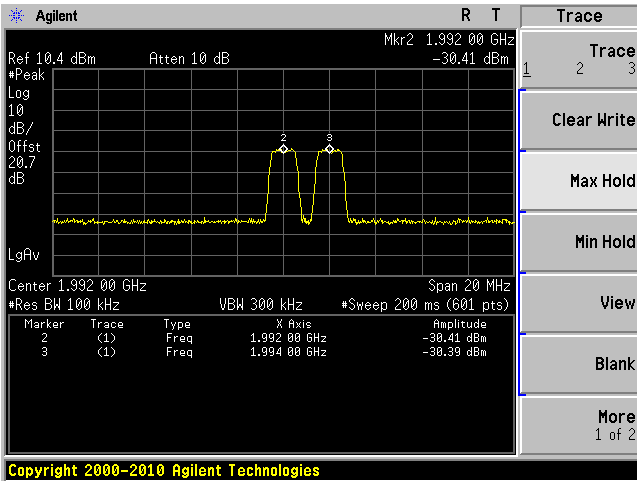
Middle Channel (1962.5 MHz), Input



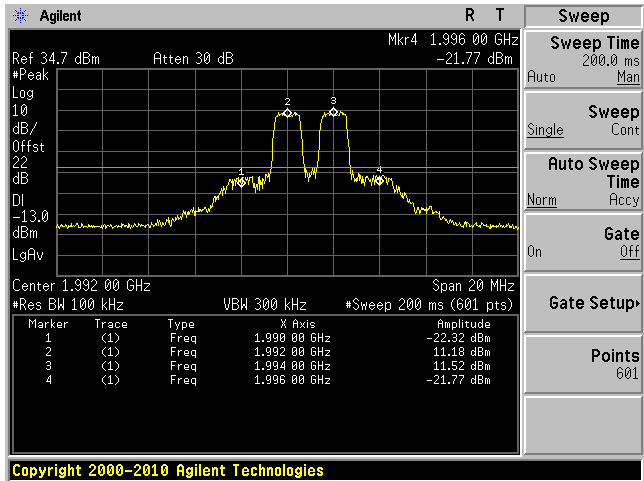
Middle Channel (1962.5 MHz), Output



High Channel (1994 MHz), Input

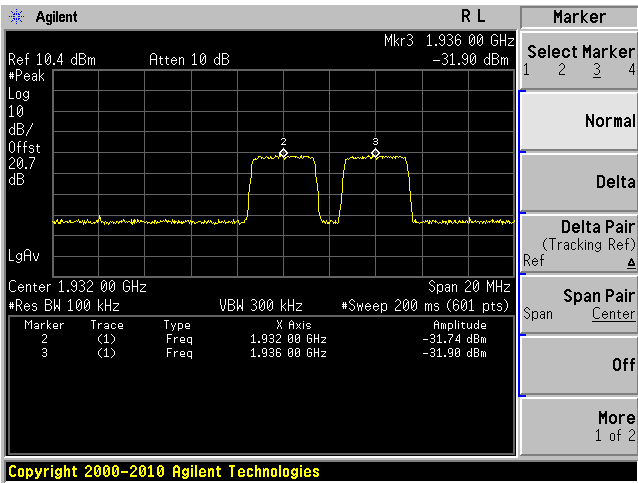


High Channel (1994 MHz), Output

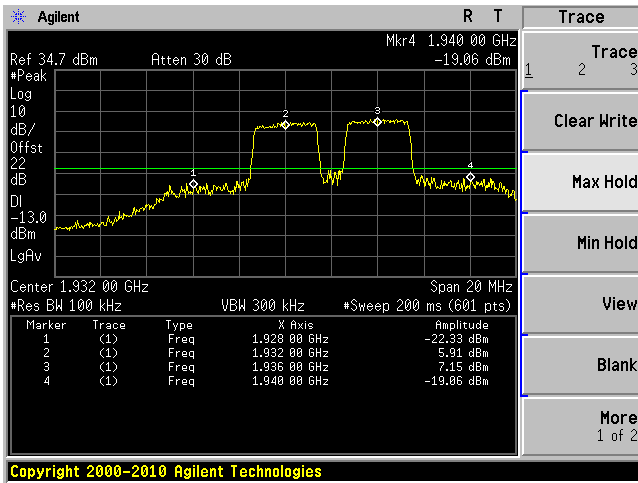


QPSK (3 MHz) Modulation

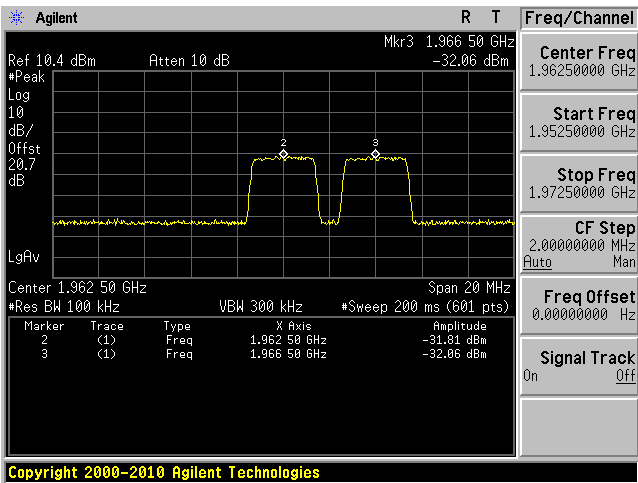
Low Channel (1932 MHz), Input



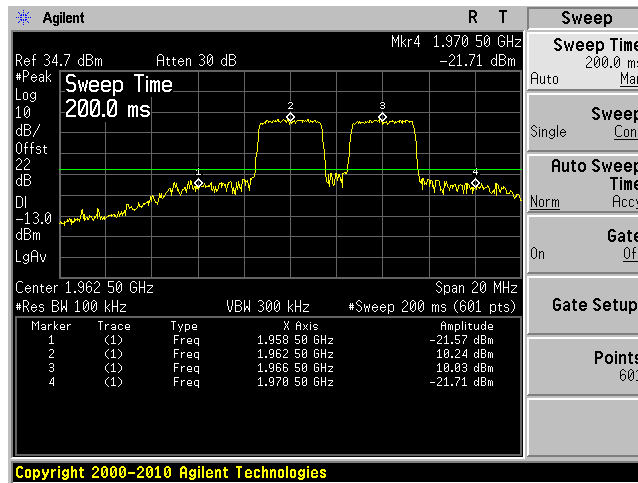
Low Channel (1932 MHz), Output



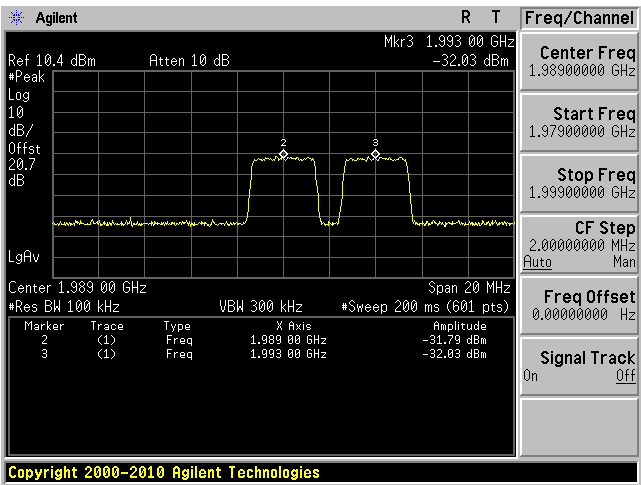
Middle Channel (1962.5 MHz), Input



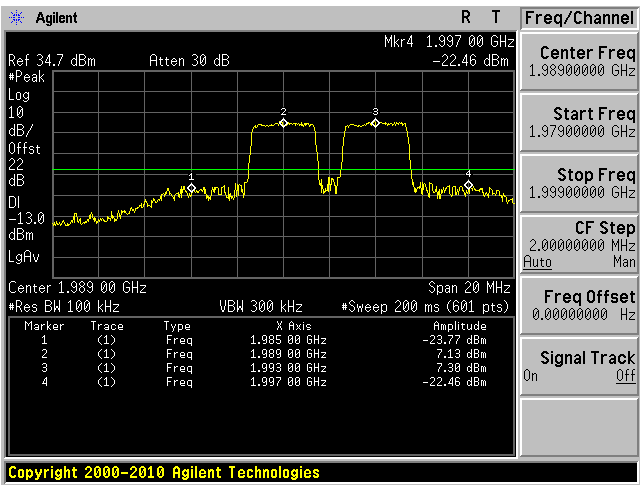
Middle Channel (1962.5 MHz), Output



High Channel (1993 MHz), Input

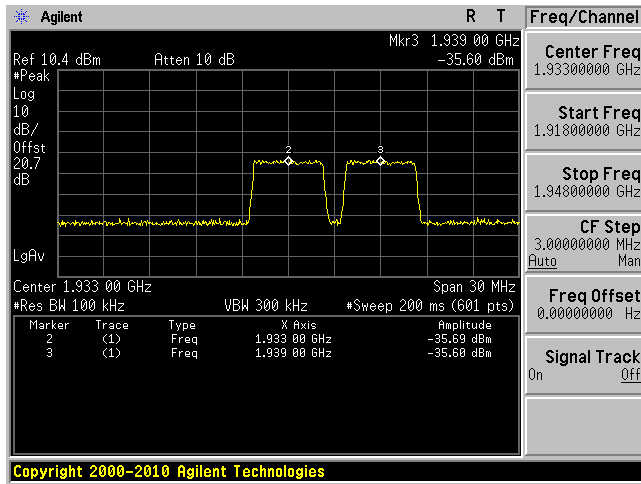


High Channel (1993 MHz), Output

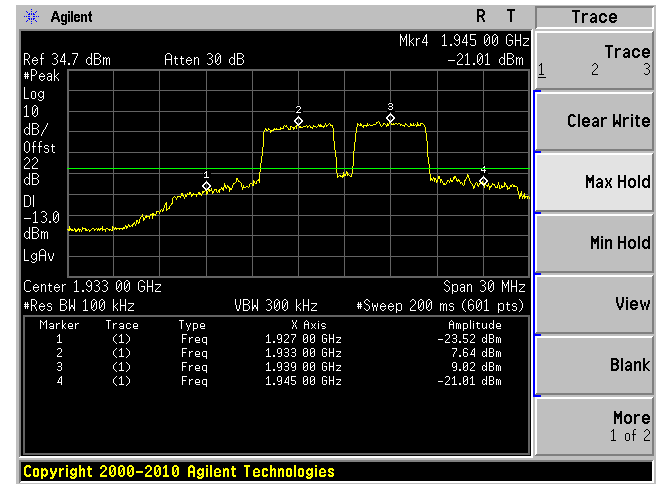


QPSK (5MHz) Modulation

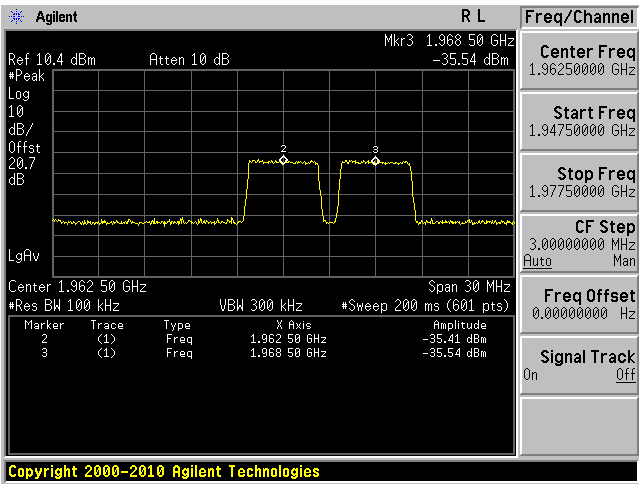
Low Channel (1933MHz), Input



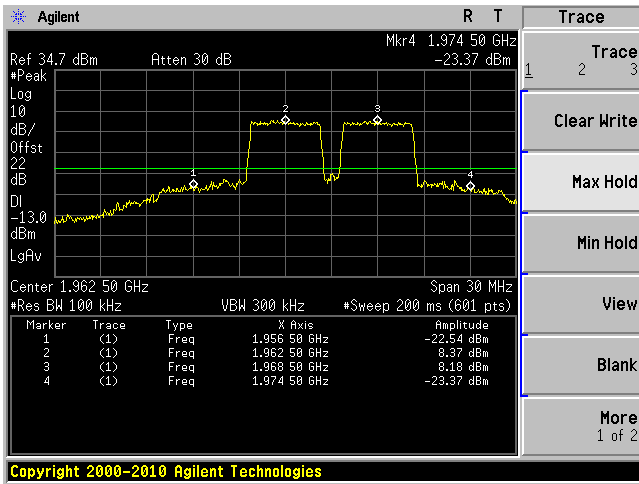
Low Channel (1933MHz), Output



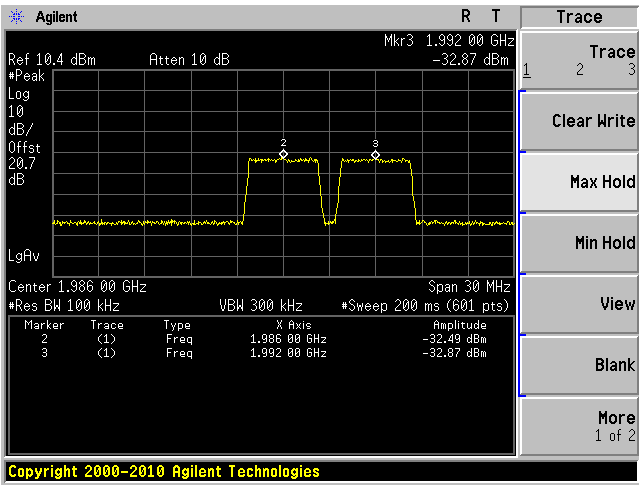
Middle Channel (1962.5 MHz), Input



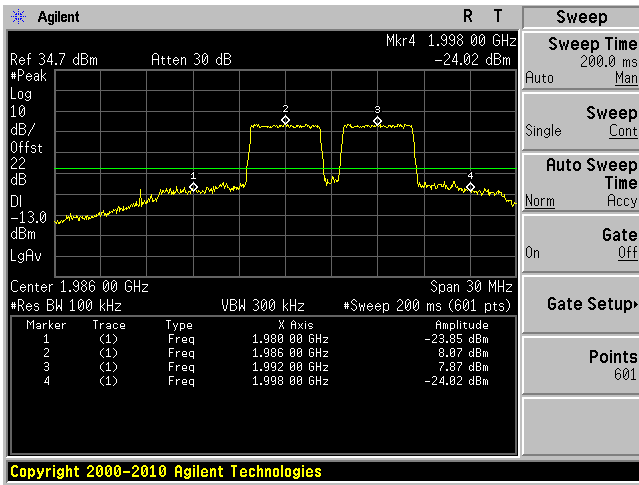
Middle Channel (1962.5 MHz), Output



High Channel (1992MHz), Input

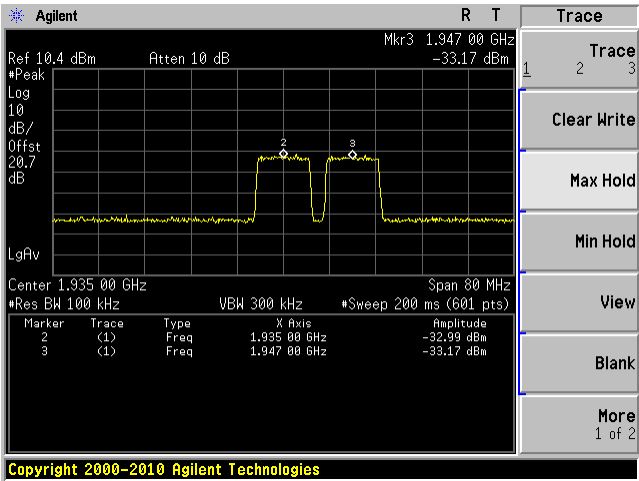


High Channel (1992 MHz), Output

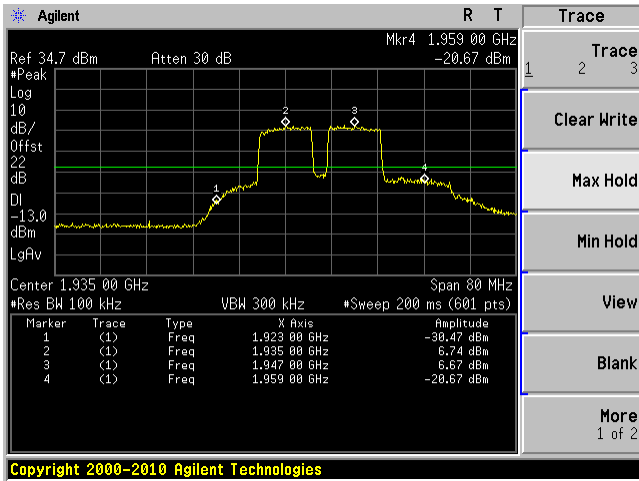


QPSK (10 MHz) Modulation

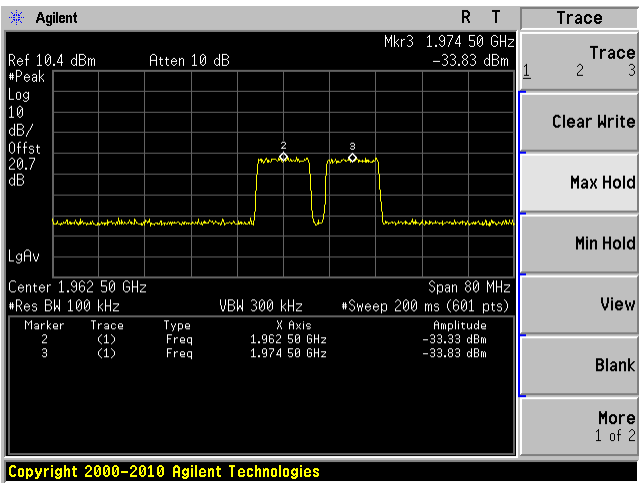
Low Channel (1935 MHz), Input



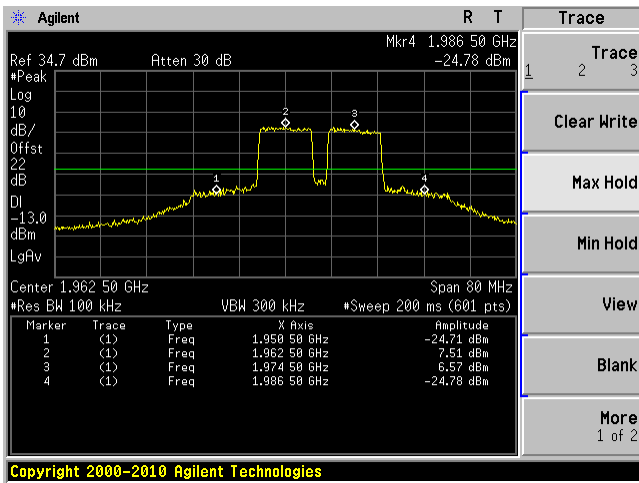
Low Channel (1935 MHz), Output



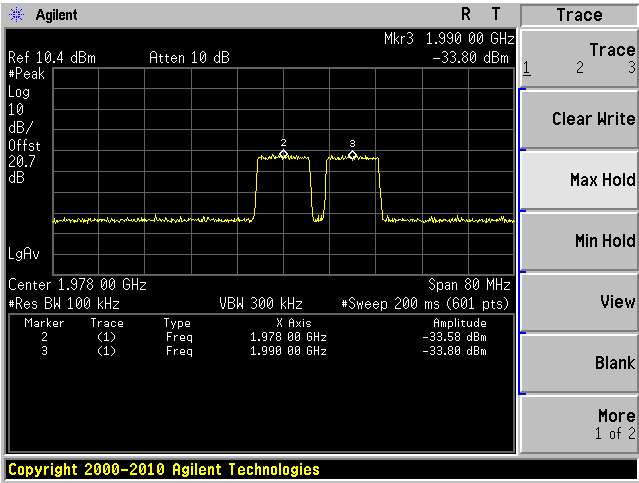
Middle Channel (1962.5 MHz), Input



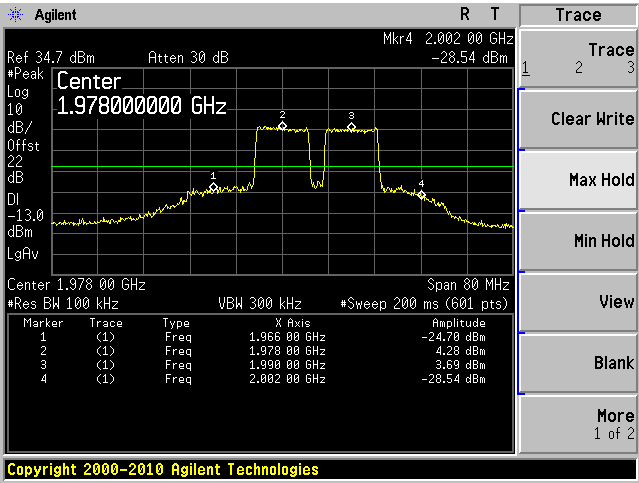
Middle Channel (1962.5 MHz), Output



High Channel (1990 MHz), Input



High Channel (1990 MHz), Output



8 FCC §22.917 & §24.238 – Band Edge

8.1 Applicable Standard

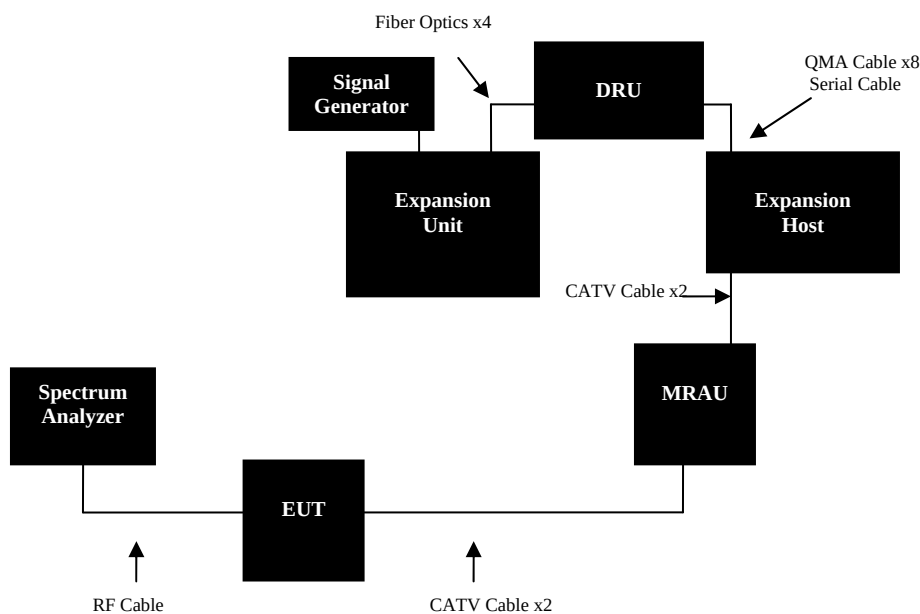
According to FCC §22.917, the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to FCC §24.238, 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.

8.2 Test Procedure and Setup Block Diagram

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency.



8.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	US45303156	2010-08-09	2 years
Agilent	Signal Generator	E4438C	MY45091309	2012-05-03	1 year

Statement of Traceability: BACL Corp. attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

8.4 Test Environmental Conditions

Temperature:	21 °C
Relative Humidity:	57 %
ATM Pressure:	101.4kPa

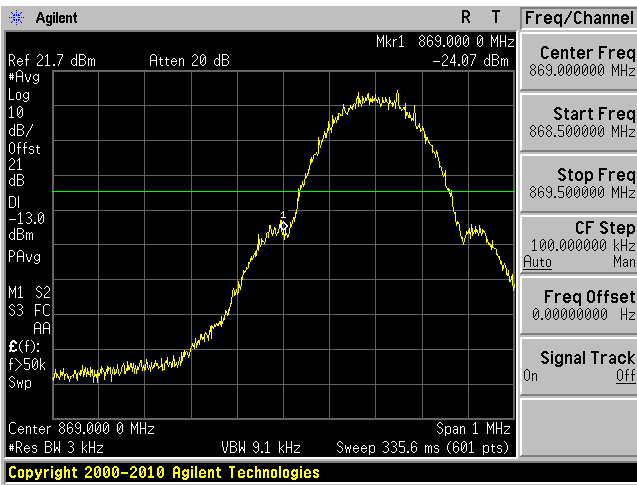
The testing was performed by Wei Sun on 2012-07-25 at RF Site.

8.5 Test Results

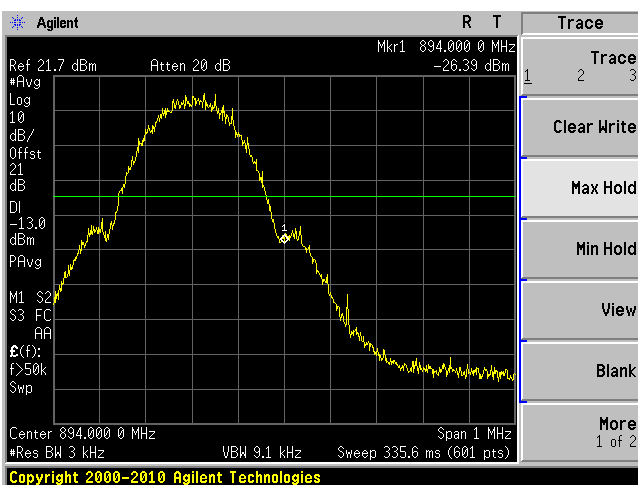
Please refer to the following plots.

850 MHz Cell Band Downlink

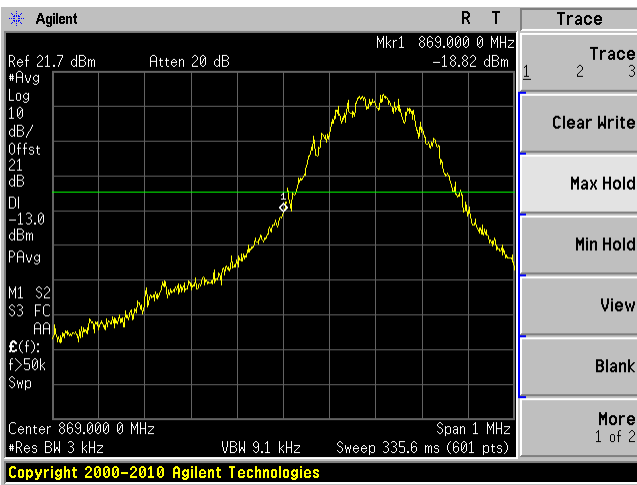
GSM/GPRS - Low Channel



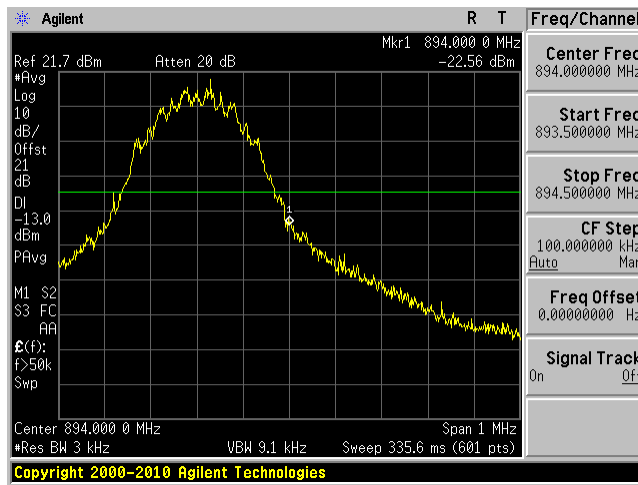
GSM/GPRS - High Channel



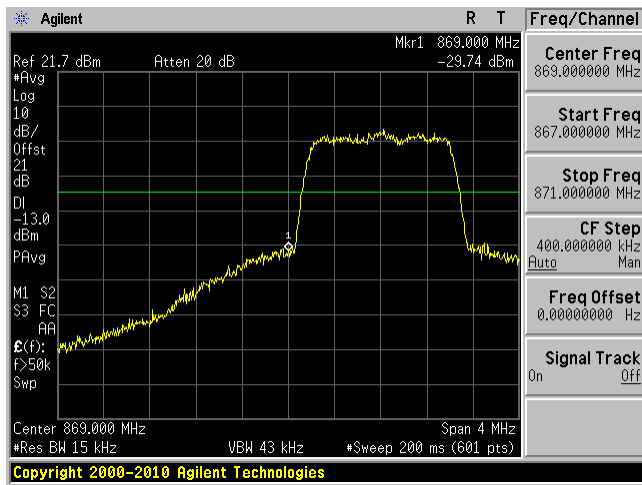
EDEG - Low Channel



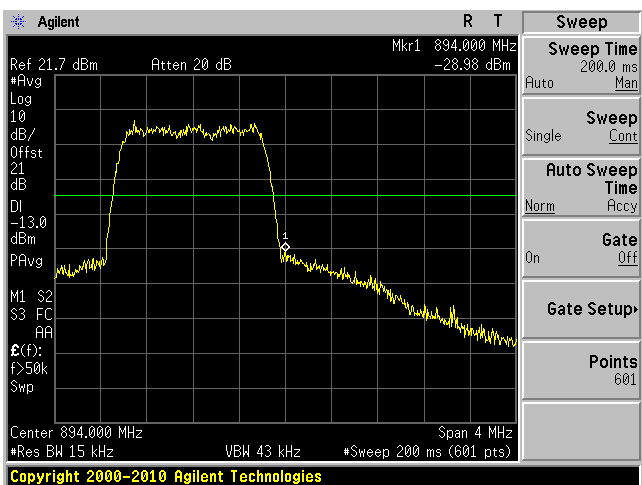
EDGE - High Channel



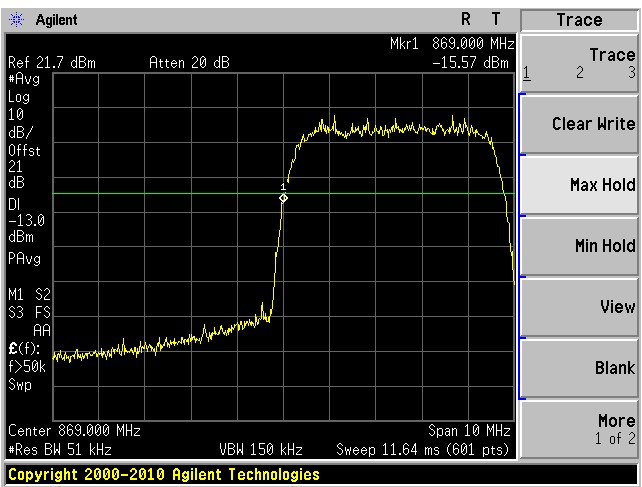
CDMA/EVDO - Low Channel



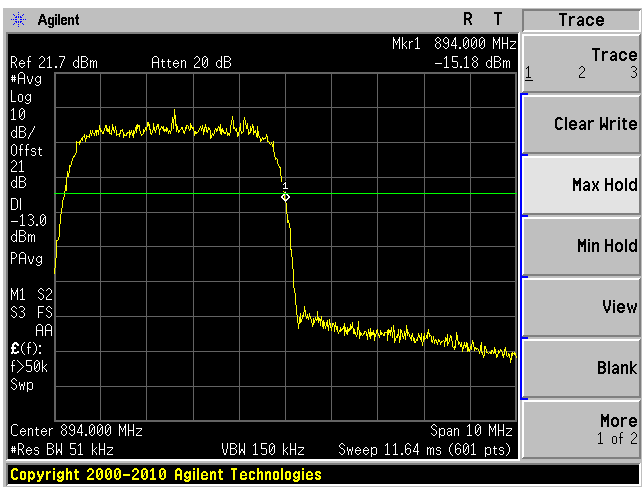
CDMA/EVDO - High Channel



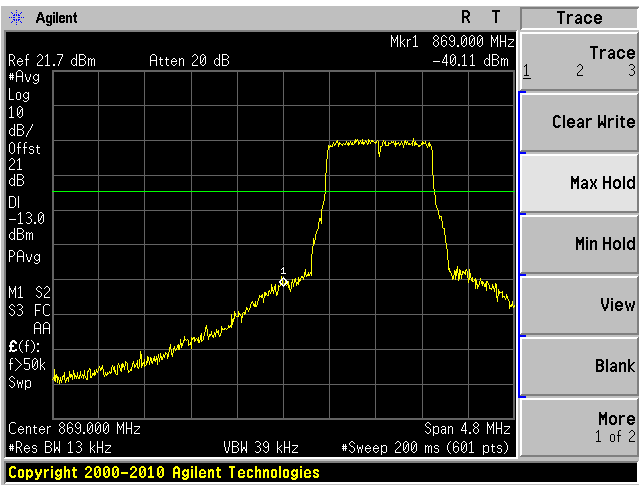
WCDMA/HSPA - Low Channel



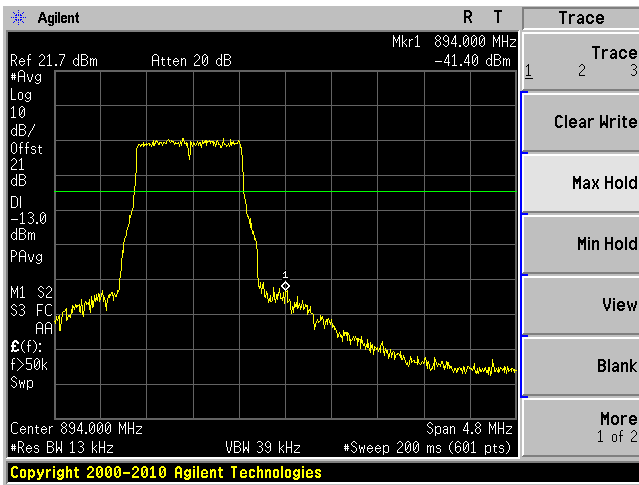
WCDMA/HSPA - High Channel



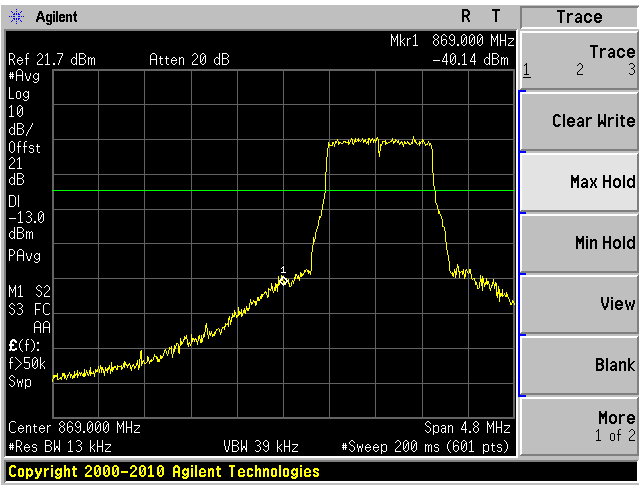
QPSK (1.4 MHz) - Low Channel



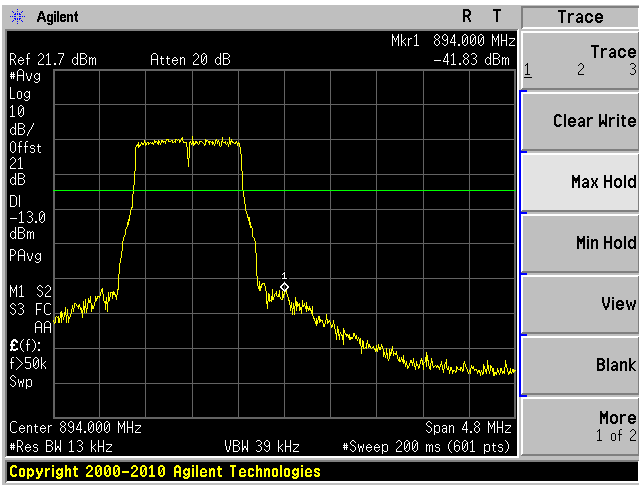
QPSK (1.4 MHz) - High Channel



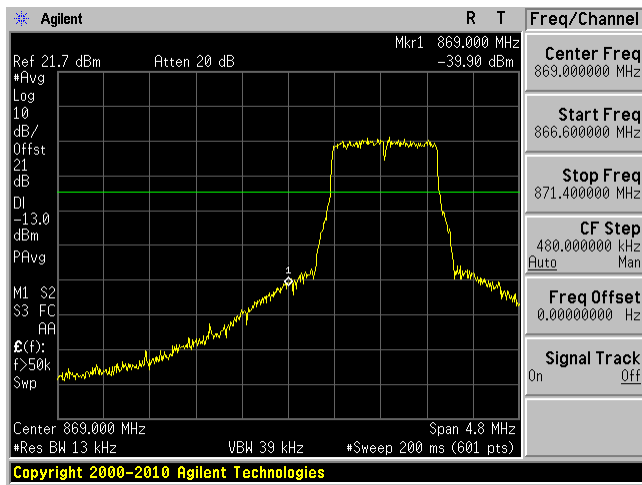
16QAM (1.4 MHz) - Low Channel



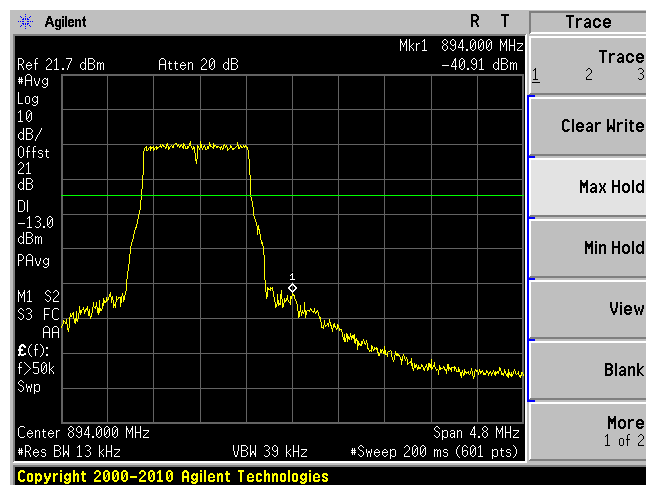
16QAM (1.4 MHz) - High Channel



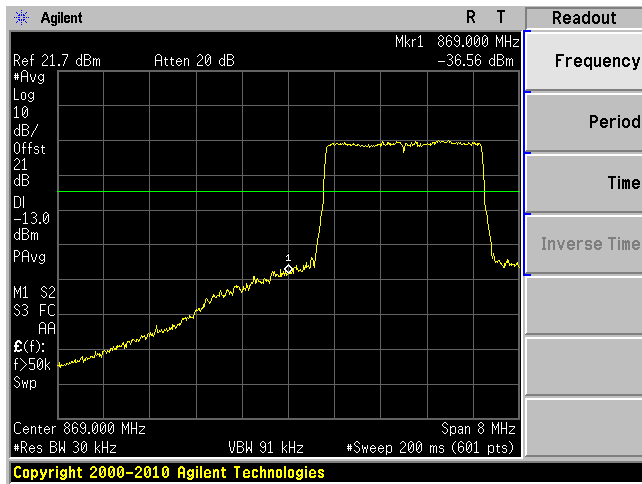
64QAM (1.4 MHz) - Low Channel



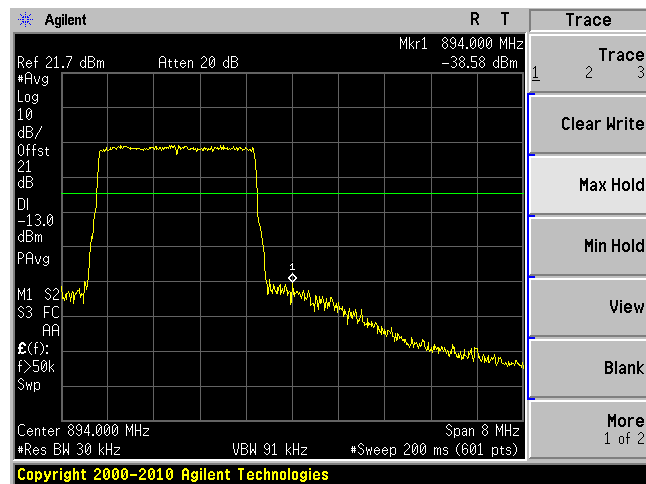
64QAM (1.4 MHz) - High Channel



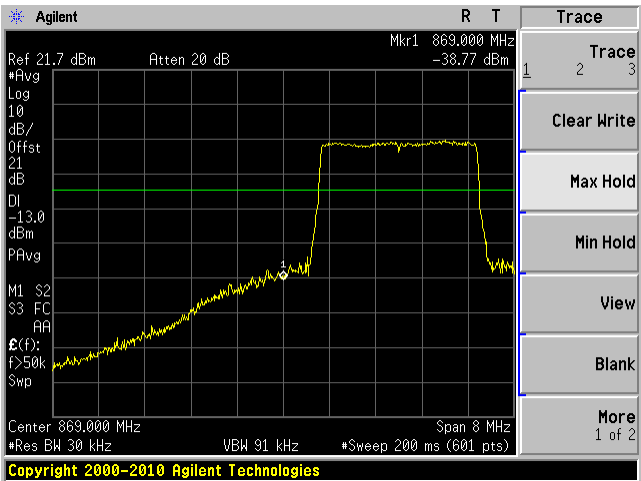
QPSK (3 MHz) - Low Channel



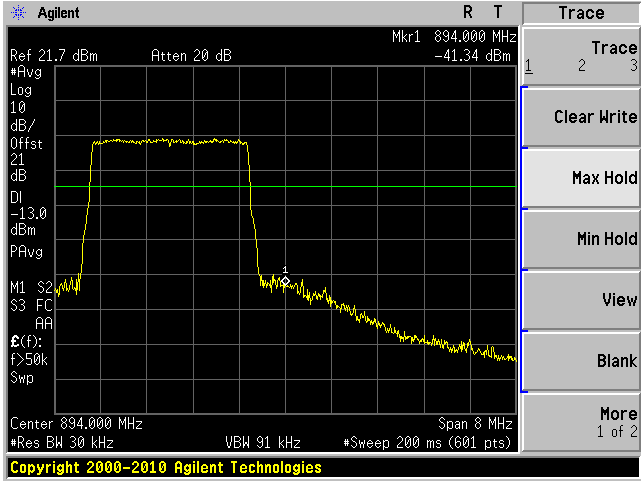
QPSK (3 MHz) - High Channel



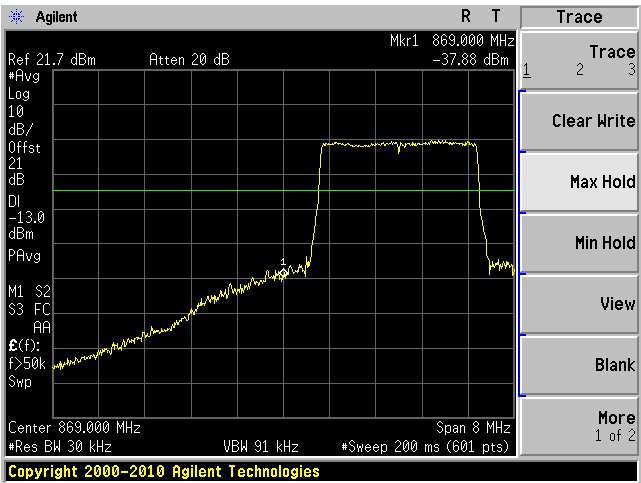
16QAM (3 MHz) - Low Channel



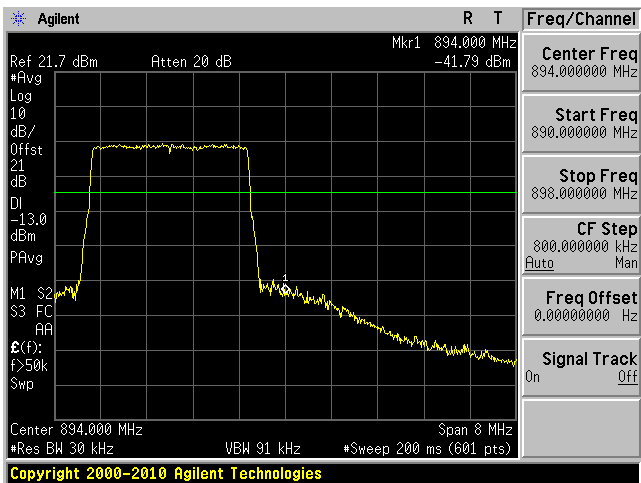
16QAM (3 MHz) - High Channel



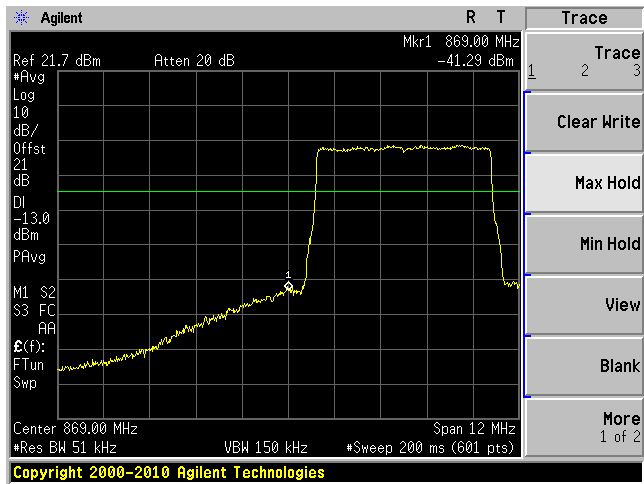
64QAM (3 MHz) - Low Channel



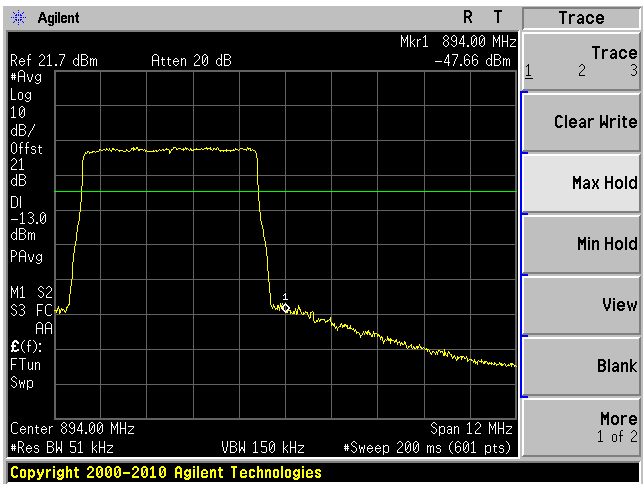
64QAM (3 MHz) - High Channel



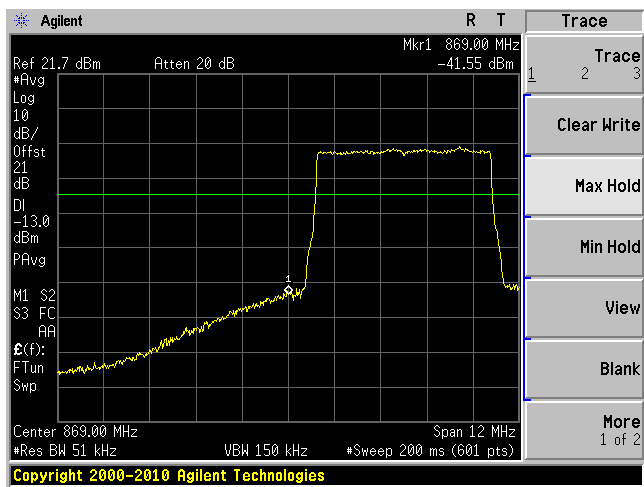
QPSK (5 MHz) - Low Channel



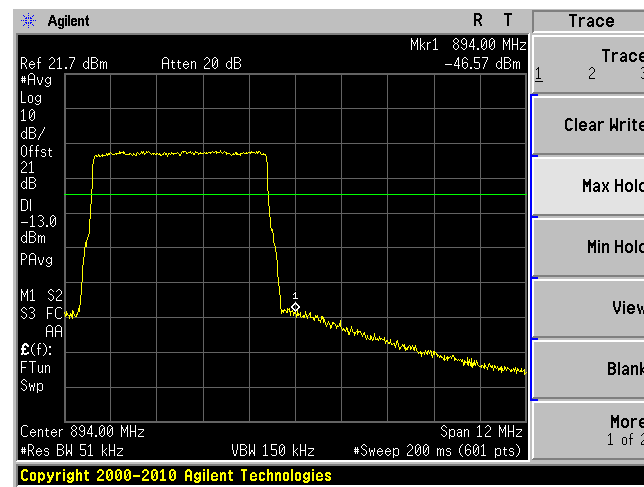
QPSK (5 MHz) - High Channel



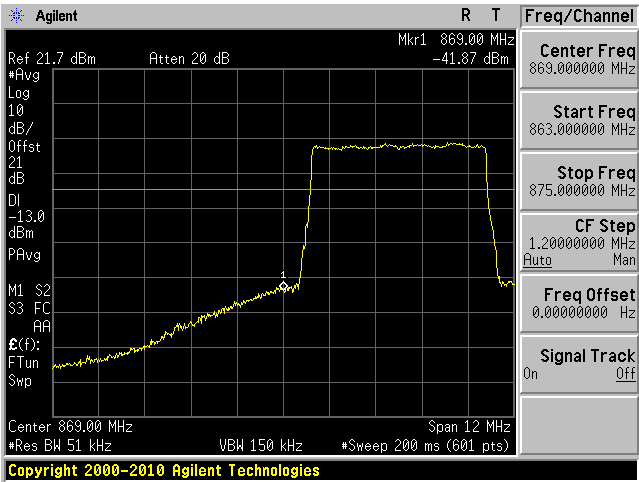
16QAM (5 MHz) - Low Channel



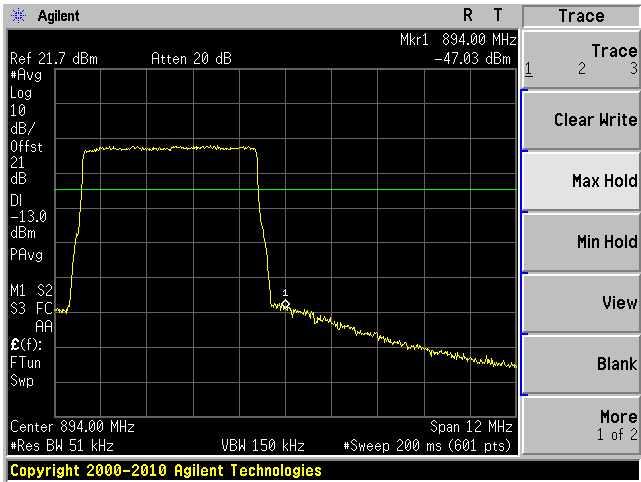
16QAM (5 MHz) - High Channel



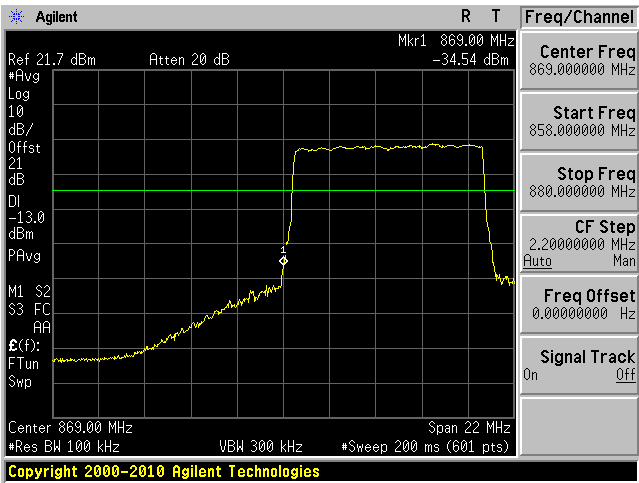
64QAM (5 MHz) - Low Channel



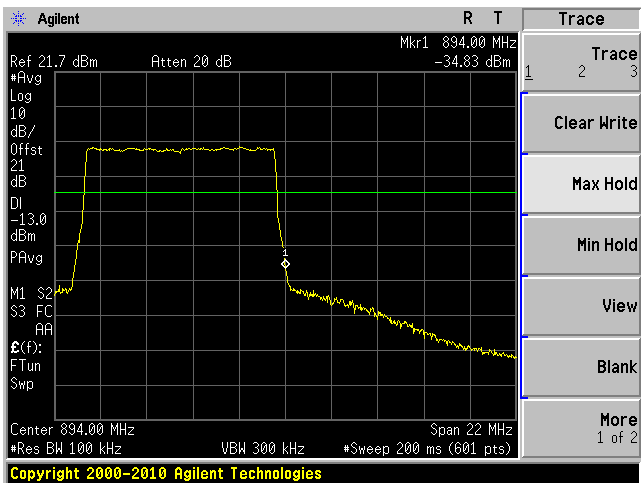
64QAM (5 MHz) - High Channel



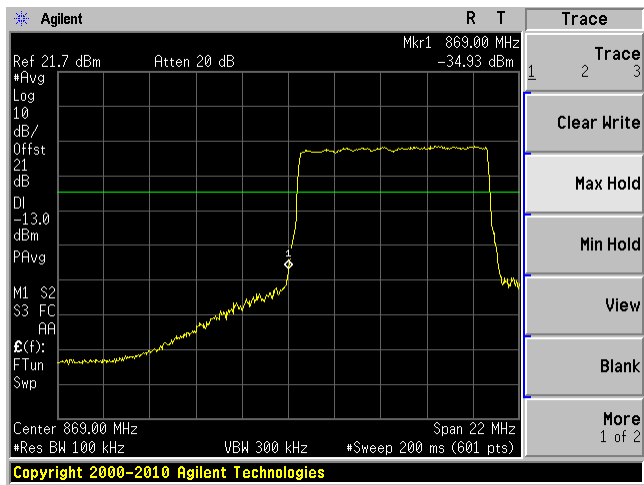
QPSK (10 MHz) - Low Channel



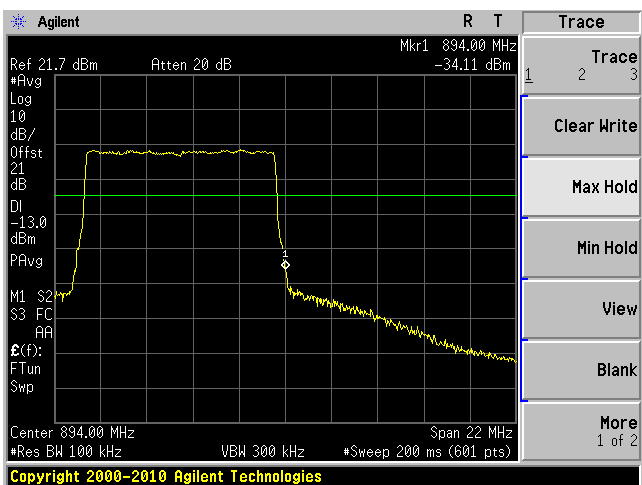
QPSK (10 MHz) - High Channel



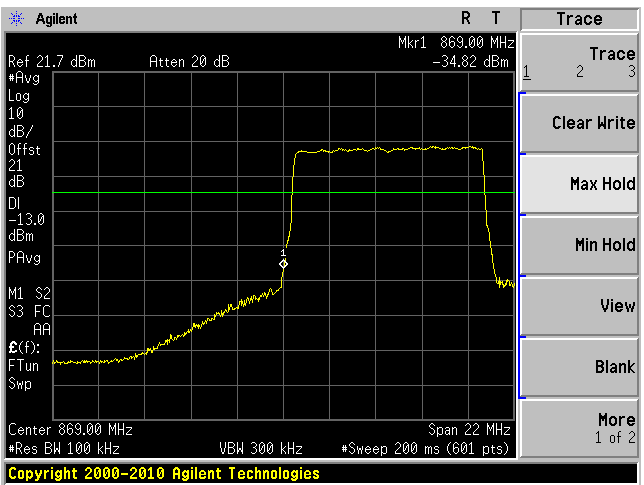
16QAM (10 MHz) - Low Channel



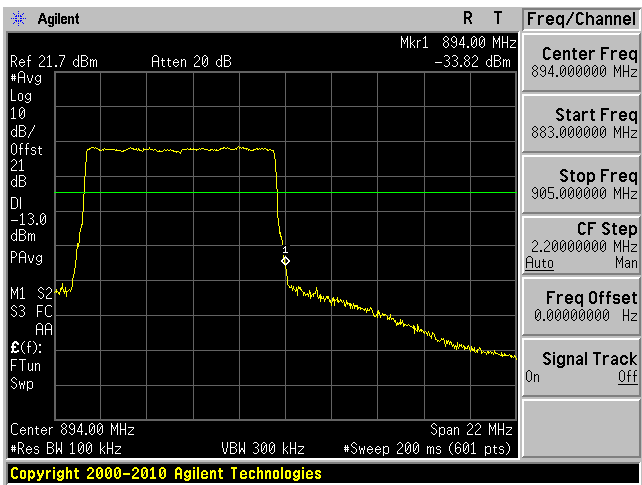
16QAM (10 MHz) - High Channel



64QAM (10 MHz) - Low Channel

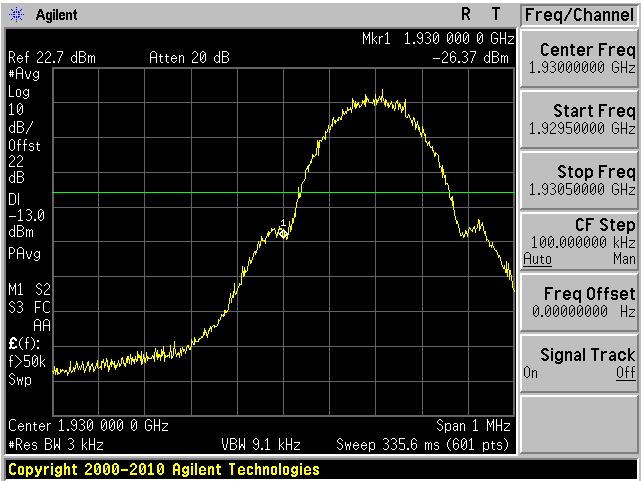


64QAM (10 MHz) - High Channel

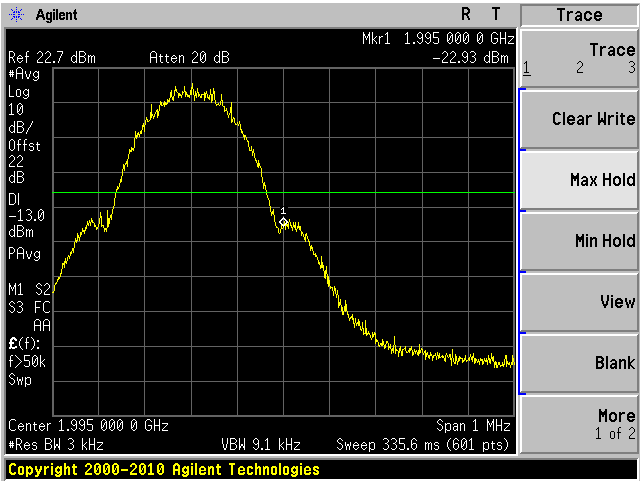


1900 MHz PCS Band Downlink:

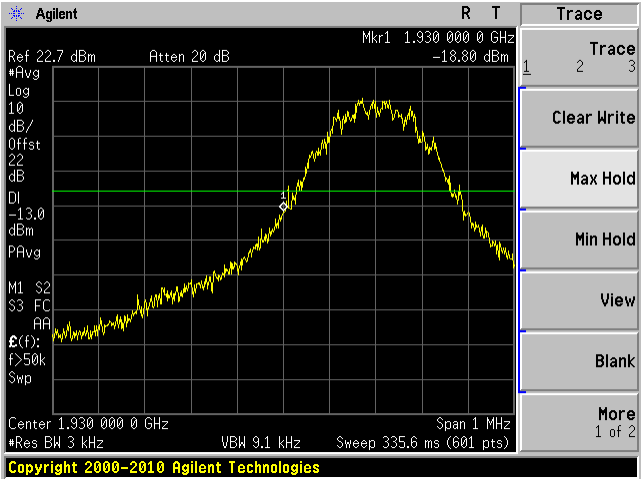
GSM/GPRS - Low Channel



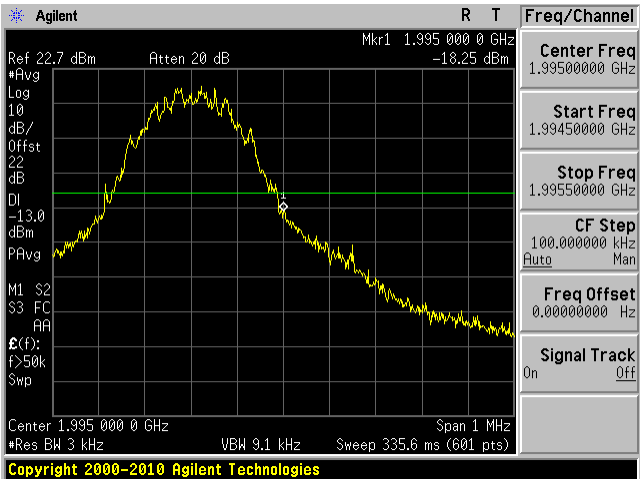
GSM/GPRS - High Channel



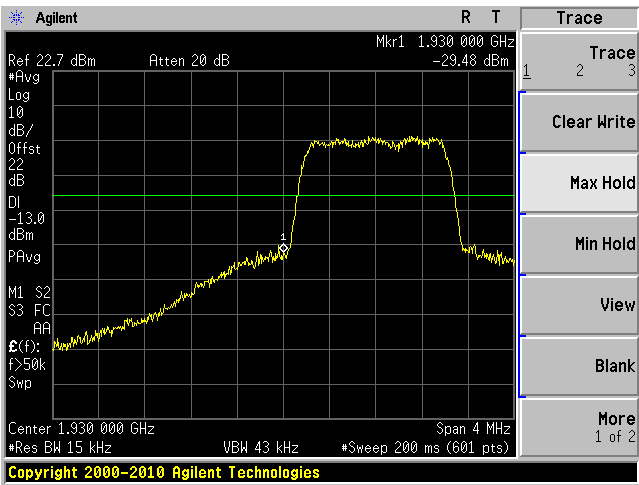
EDGE- Low Channel



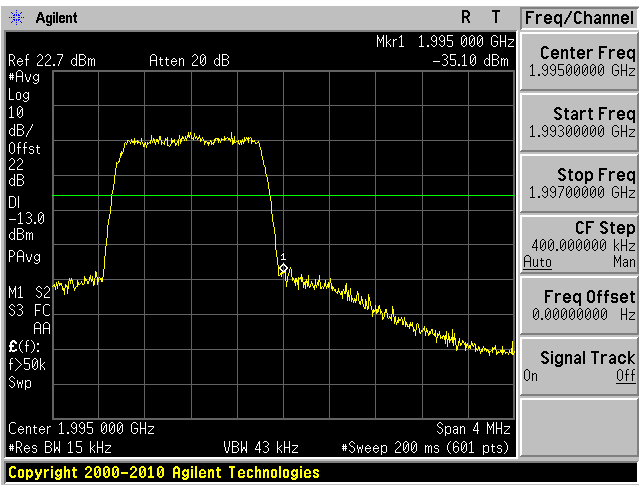
EDGE - High Channel



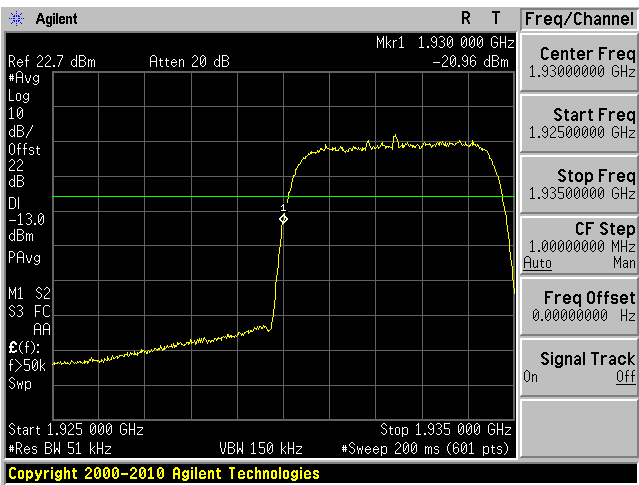
CDMA/EVDO - Low Channel



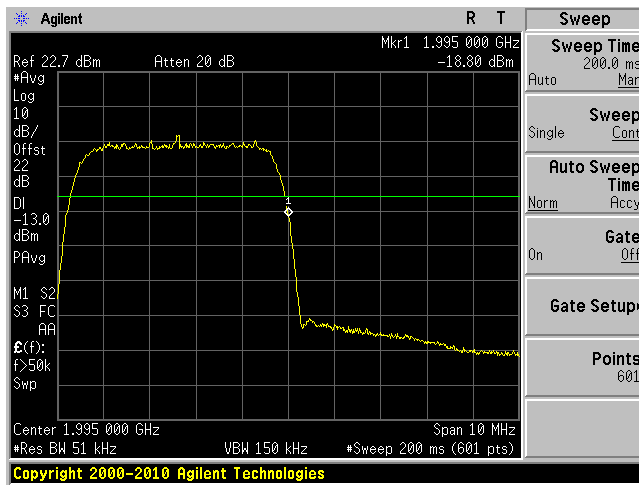
CDMA/EVDO - High Channel



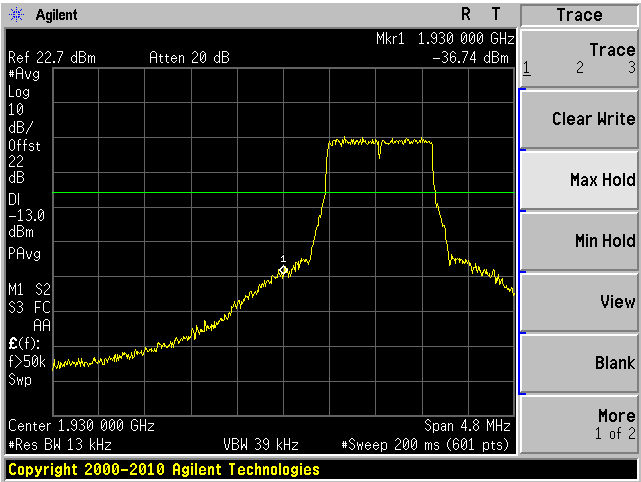
WCDMA/HSPA - Low Channel



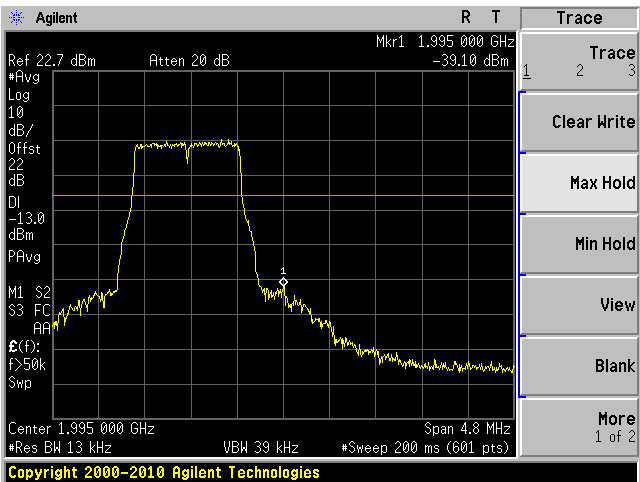
WCDMA/HSPA - High Channel



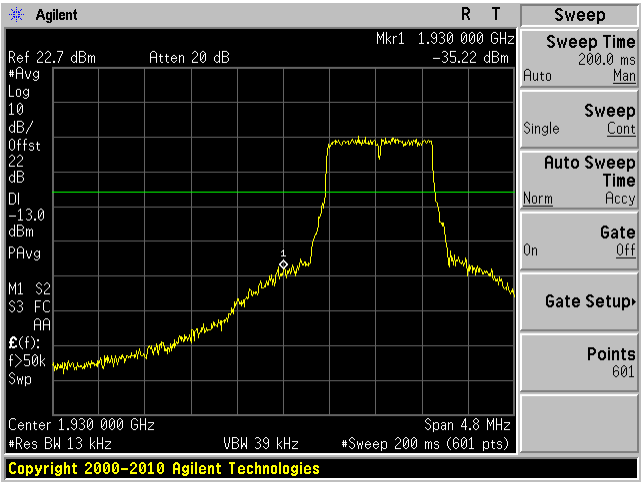
QPSK (1.4 MHz) - Low Channel



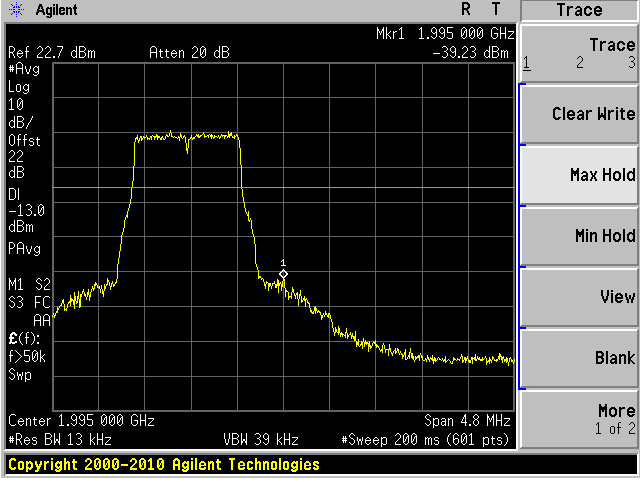
QPSK (1.4 MHz) - High Channel



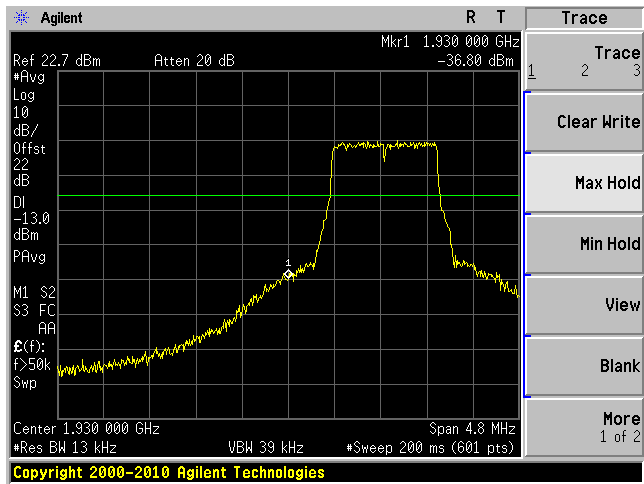
16QAM (1.4 MHz) - Low Channel



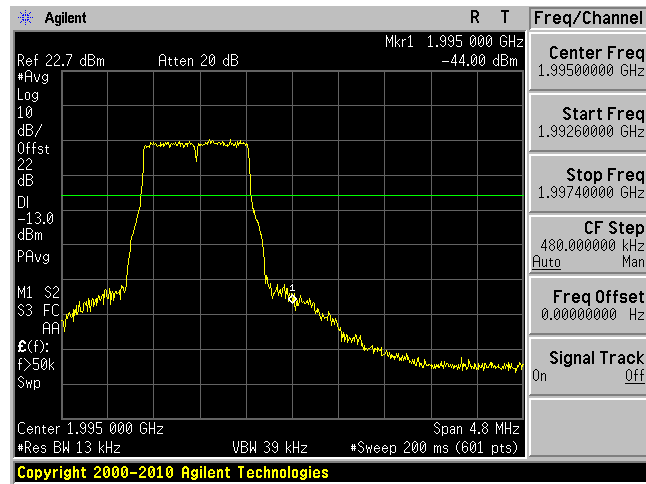
16QAM (1.4 MHz) - High Channel



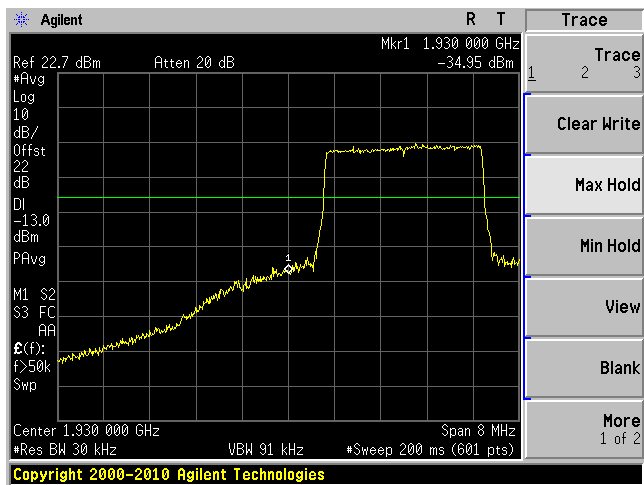
64QAM (1.4 MHz) - Low Channel



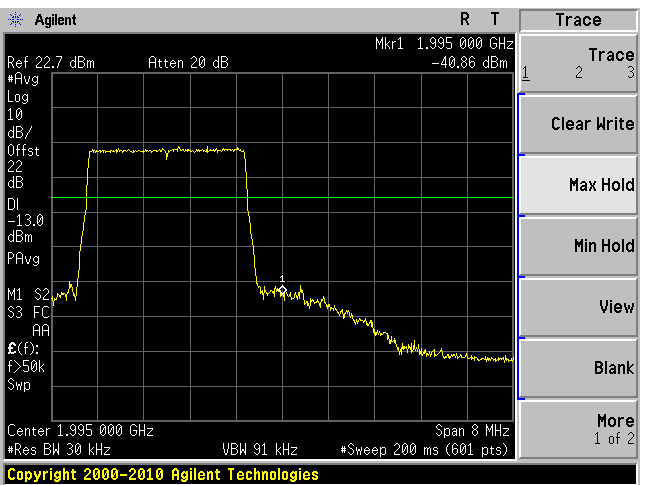
64QAM (1.4 MHz) - High Channel



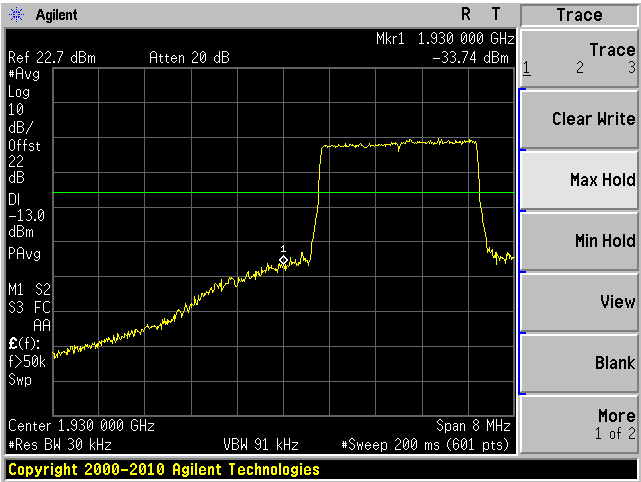
QPSK (3 MHz) - Low Channel



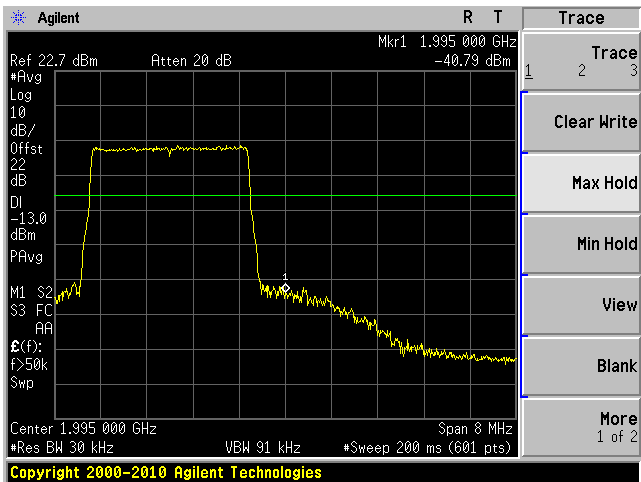
QPSK (3 MHz) - High Channel



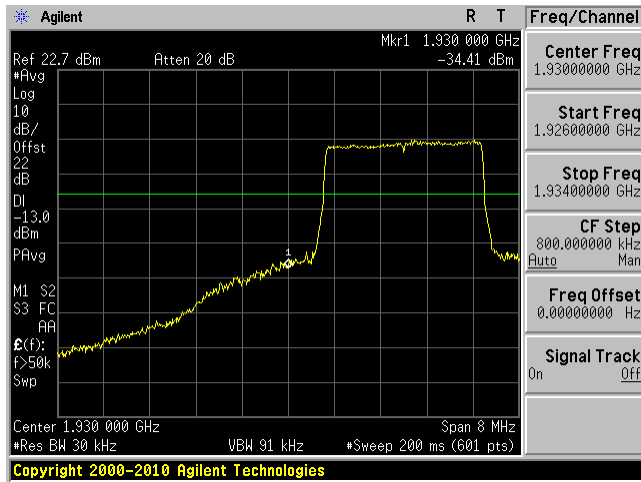
16QAM (3 MHz) - Low Channel



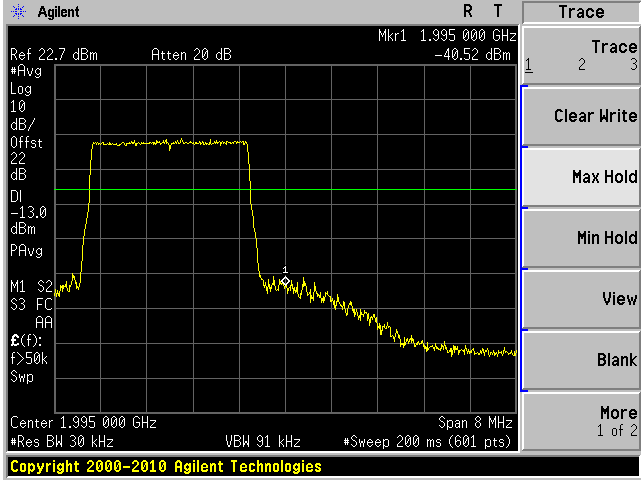
16QAM (3 MHz) - High Channel



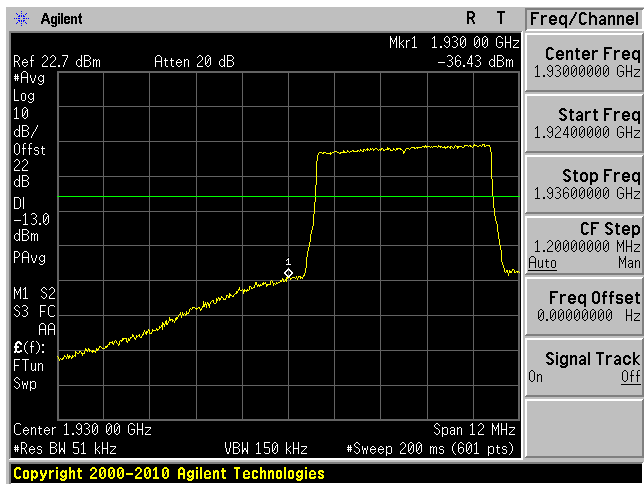
64QAM (3 MHz) - Low Channel



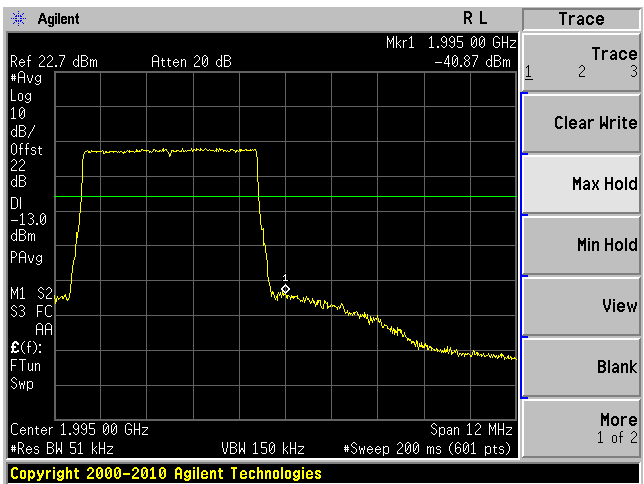
64QAM (3 MHz) - High Channel



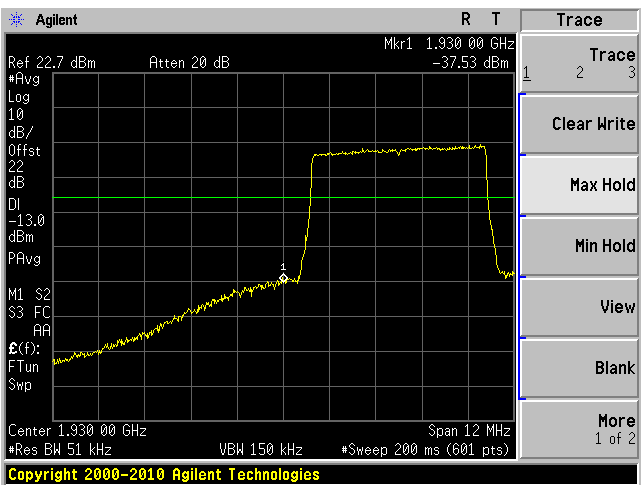
QPSK (5 MHz) - Low Channel



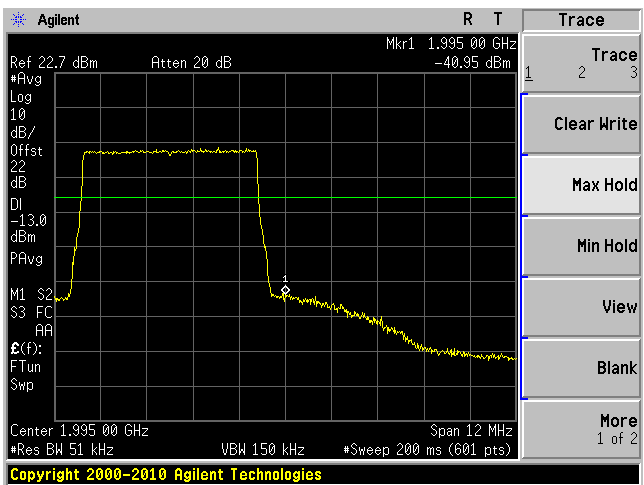
QPSK (5 MHz) - High Channel



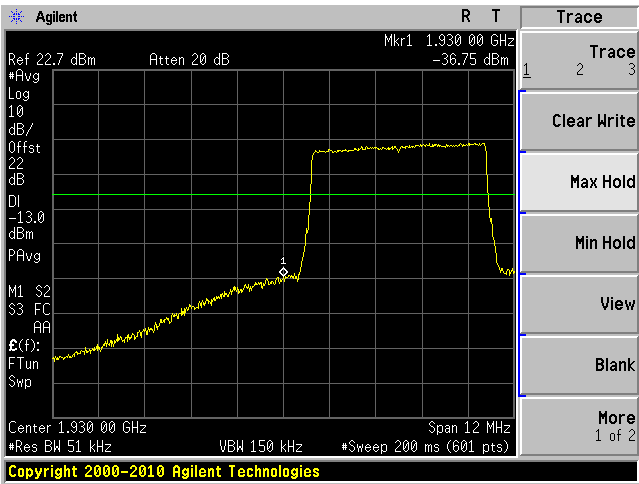
16QAM (5 MHz) - Low Channel



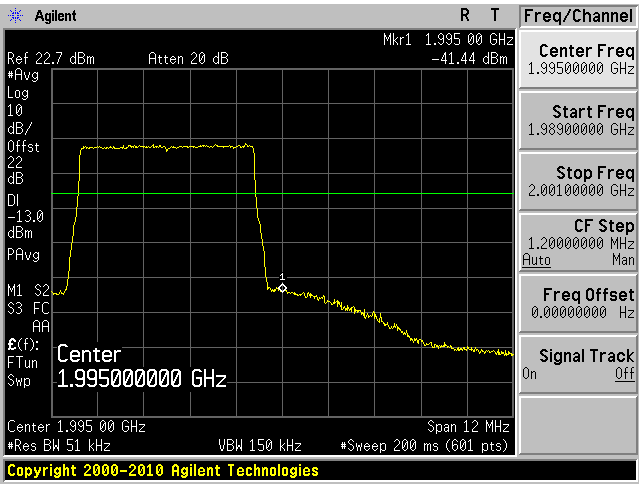
16QAM (5 MHz) - High Channel



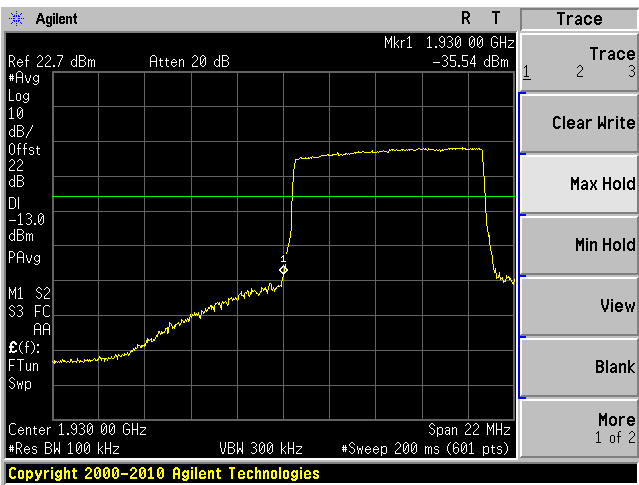
64QAM (5 MHz) - Low Channel



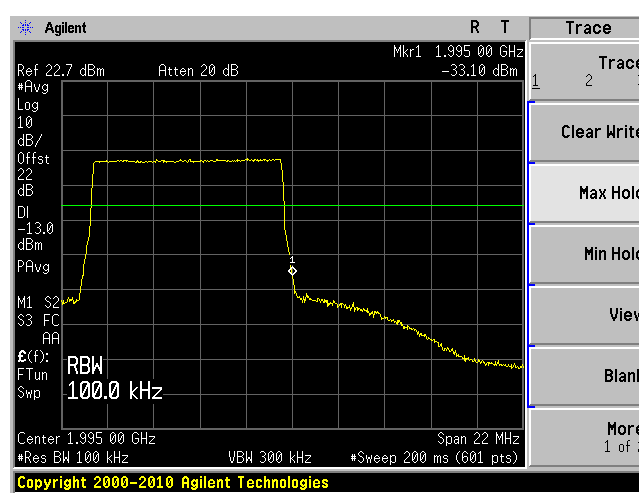
64QAM (5 MHz) - High Channel



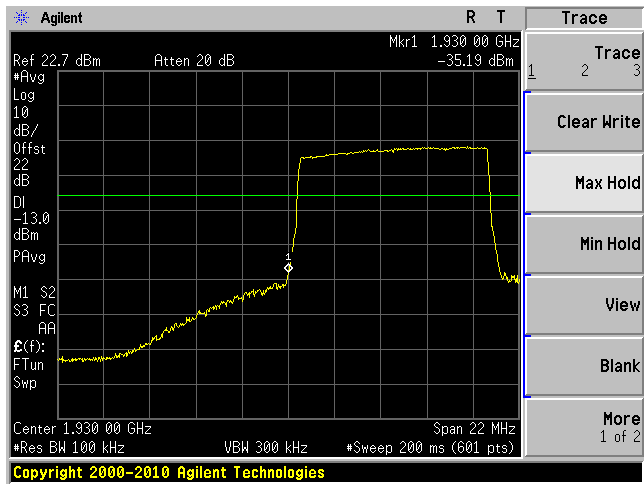
QPSK (10 MHz) - Low Channel



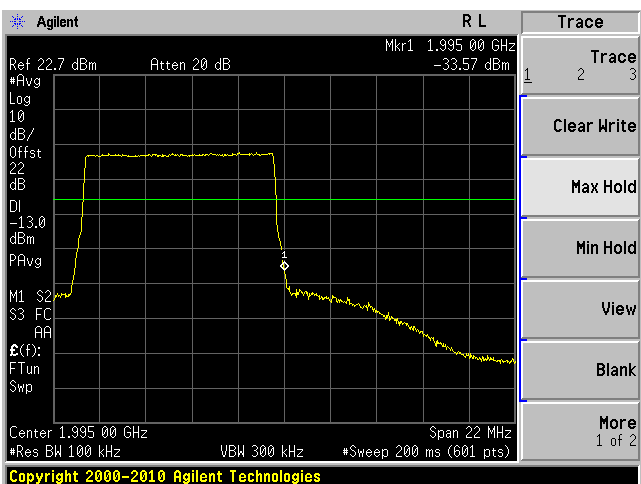
QPSK (10 MHz) - High Channel



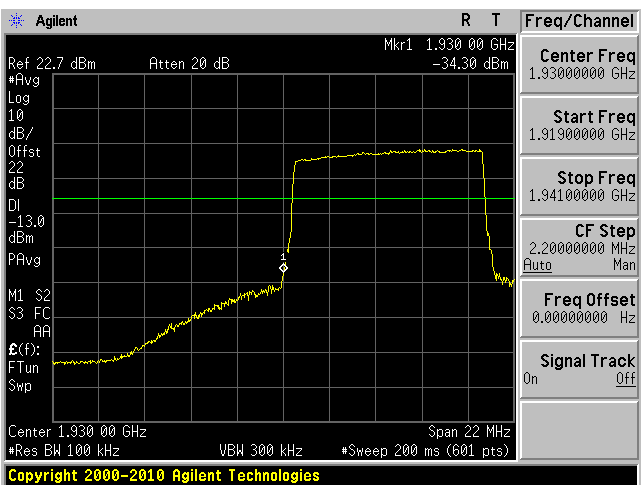
16QAM (10 MHz) - Low Channel



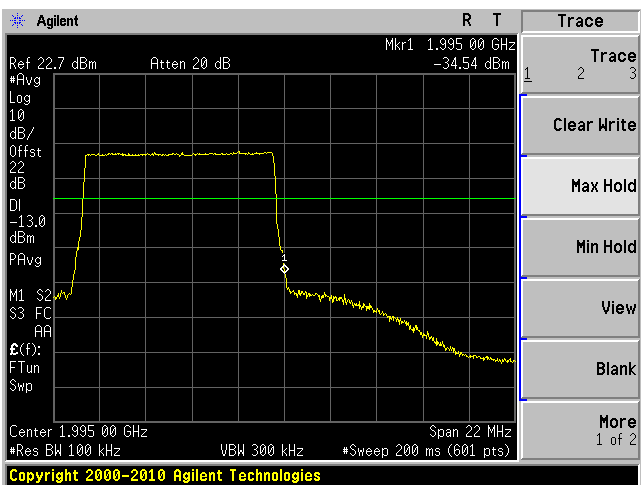
16QAM (10 MHz) - High Channel



64QAM (10 MHz) - Low Channel



64QAM (10 MHz) - High Channel



9 FCC §2.1055, §22.355 & §24.235 – Frequency Stability

9.1 Applicable Standard

According to FCC §2.1055 the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

9.2 Test Procedure

The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from - 30 °C to + 50 °C using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from battery end point to 115 % of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

CW was tested at worst case.

9.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	US45303156	2010-08-09	2 years
Agilent	Signal Generator	E4438C	MY45091309	2012-05-03	1 year

Statement of Traceability: BACL Corp. attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

9.4 Test Environmental Conditions

Temperature:	21 °C
Relative Humidity:	57 %
ATM Pressure:	101.4kPa

The testing was performed by Wei Sun on 2012-07-21 at RF Site.

9.5 Test Results

850 Cell Band Downlink: 869-894 MHz

Test Condition		Reference Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (PPM)	Limit (PPM)
Voltage (Vac)	Temperature (°C)				
Frequency vs. Temperature					
120	45	881.5	881.5	0	1.5
120	35	881.5	881.5	0	1.5
120	25	881.5	881.5	0	1.5
120	15	881.5	881.5	0	1.5
120	5	881.5	881.5	0	1.5
120	-5	881.5	881.5	0	1.5
120	-15	881.5	881.5	0	1.5
120	-25	881.5	881.500015	0.0017	1.5
Frequency vs. Voltage					
102	25	881.5	881.5	0	1.5
138	25	881.5	881.5	0	1.5

1900 PCS Band Downlink: 1930-1995 MHz

Test Condition		Reference Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (PPM)	Limit and Results (within 1930-1995 MHz)
Voltage (Vac)	Temperature (°C)				
Frequency vs. Temperature					
120	45	1962.5	1962.5	0	Pass
120	35	1962.5	1962.5	0	Pass
120	25	1962.5	1962.5	0	Pass
120	15	1962.5	1962.5	0	Pass
120	5	1962.5	1962.5	0	Pass
120	-5	1962.5	1962.5	0	Pass
120	-15	1962.5	1962.5	0	Pass
120	-25	1962.5	1962.500017	0.00087	Pass
Frequency vs. Voltage					
102	25	1962.5	1962.5	0	Pass
138	25	1962.5	1962.5	0	Pass

10 FCC §1.1307(b) (1) & §2.1091 – RF Exposure Information

10.1 Applicable Standard

According to FCC §1.1310 and §2.1091 (Mobile Devices) RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Note: f = frequency in MHz

* = Plane-wave equivalent power density

10.2 MPE Prediction

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

850 Cell Band Downlink: 869-894 MHz

Maximum peak output power at antenna input terminal (dBm): 26.57

Maximum peak output power at antenna input terminal (mW): 453.94

Prediction distance (cm): 20

Prediction frequency (MHz): 881.5

Antenna Gain, typical (dBi): 3.0

Maximum Antenna Gain (numeric): 2.0

Power density at predication frequency and distance (mW/cm²): 0.181

MPE limit for uncontrolled exposure at predication frequency (mW/cm²): 0.588

1900 MHz PCS Band Downlink: 1930-1995 MHz

<u>Maximum peak output power at antenna input terminal (dBm):</u>	<u>26.62</u>
<u>Maximum peak output power at antenna input terminal (mW):</u>	<u>459.20</u>
<u>Prediction distance (cm):</u>	<u>20</u>
<u>Prediction frequency (MHz):</u>	<u>1994.8</u>
<u>Antenna Gain, typical (dBi):</u>	<u>3.0</u>
<u>Maximum Antenna Gain (numeric):</u>	<u>2</u>
<u>Power density at predication frequency and distance (mW/cm²):</u>	<u>0.183</u>
<u>MPE limit for uncontrolled exposure at predication frequency (mW/cm²):</u>	<u>1.0</u>

Results

The highest power density level at 20 cm is below the MPE uncontrolled exposure limit.