FCC RADIO TEST REPORT
FCC ID:2AF3TZX-MD7058

Product：	Tablet PC
Trade Name：	N/A
Model Number：	ZX-MD7058
Serial Model：	N/A
Report No.：	NTEK-2015NT09182690F6

Prepared for

KIMUS Trading, Inc.

1460 Distribution Drive. #1302, Suwanee, GA 30024, USA

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name ..... :	KIMUS Trading, Inc.
Address ..... :	1460 Distribution Drive. #1302, Suwanee, GA 30024, USA
Manufacture's Name ..... :	ERIWIN TECHNOLOGY LIMITED
Address ..... :	No,3 building, Donglongxing Industry Zone, Huaning Road,Dalang Town,Longhua District,shenzhen,china
Product name ..... :	Tablet PC
Model and/or type reference ... :	ZX-MD7058
Serial Model:	N/A
Standards ..... :	FCC CFR 47 Part 22H, Part 24E, Part 27
Test procedure ..... :	TIA/EIA 603D

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test.....

Date (s) of performance of tests ..... 18 Sep. 2015 ~31 Oct. 2015

Date of Issue ..... 31 Oct. 2015

Test Result ..... **Pass**

Testing Engineer : Jason chen

(Jason Chen)

Technical Manager : Brown Lu

(Brown Lu)

Authorized Signatory : Sam . Chen

(Sam Chen)

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	Tablet PC
Hardware version:	--
Software version:	--
FCC ID:	2AF3TZX-MD7058
Frequency Range:	LTE Band 2 Uplink: 1850MHz-1910MHz, Downlink: 1930MHz-1990MHz LTE Band 4 Uplink: 1710MHz-1755MHz, Downlink: 2110MHz-2155MHz LTE Band 17 Uplink: 704MHz-716MHz, Downlink: 734MHz-746MHz
Type of Modulation:	QPSK/16QAM
Antenna:	FPCB Antenna
Antenna gain:	1.0dBi
Power Supply:	DC 3.7V by battery or DC 5.0V supplied by adapter
Battery parameter:	DC 3.7V/3100mAh
Adapter Input:	AC100-240V, 50-60Hz
Adapter Output:	DC 5.0V, 2A
Extreme Vol. Limits:	DC3.5 V to 4.2 V (Nominal DC3.7 V)
Extreme Temp. Tolerance	-10℃ to +50℃
** Note: The High Voltage 4.2V and Low Voltage 3.4V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID:** 2AF3TZX-MD7058 filing to comply with the FCC Part 22H&24E &27.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

The test site used to collect the radiated data is located at:

NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003.

FCC Registration No.:238937

IC Registration No.:9270A-1,

CNAS Registration No.:L5516

1.5 SPECIAL ACCESSORIES

The battery and the charger, earphone supplied by the applicant were used as accessories and being tested with EUT intended for FCC grant together.

1.6 WORST-CASE CONFIGURATION AND MODE

The worst-case scenario for all measurements is based on the investigation results.

The device has LTE Bands of: Band 2, Band 4, Band 17,

The RB Size was selected to measure for peak or average ERP and EIRP, which was based on the conducted power verification baseline data.

For the fundamental investigation of radiated emissions, the EUT is investigated for vertical and horizontal antenna orientations and X Y and Z orientations of the EUT alone. After the investigations the worst case was determined to be at X orientation for all LTE bands.

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.

2.3 CONFIGURATION OF EUT SYSTEM

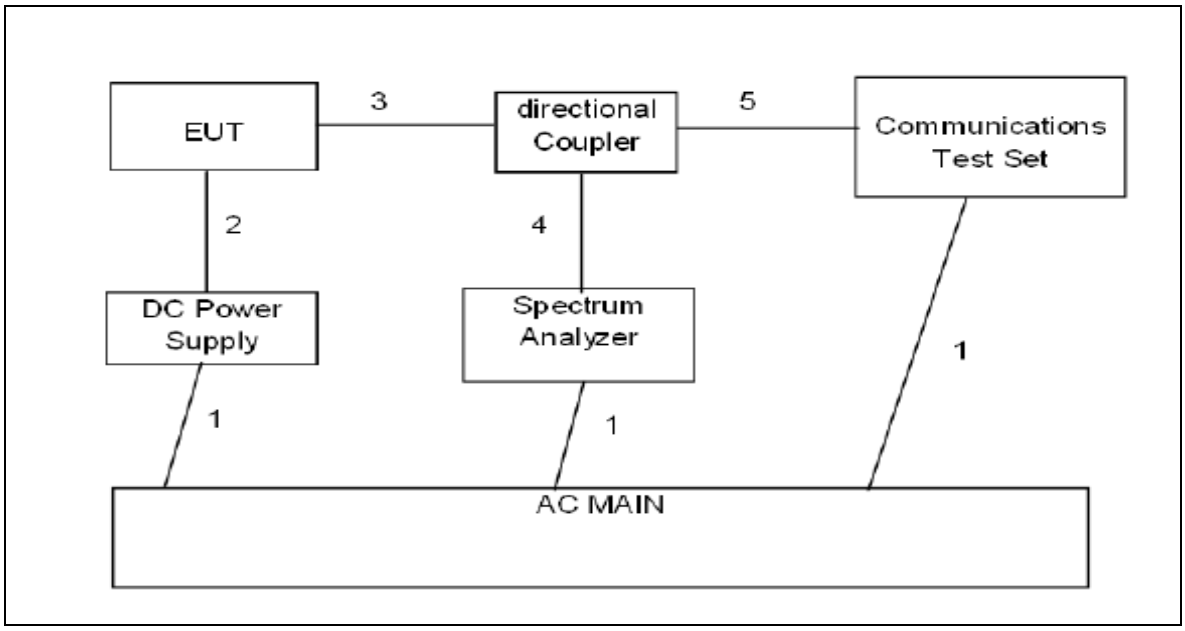
Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Tablet PC	ZX-MD7058	FCC ID: 2AF3TZX-MD7058	EUT

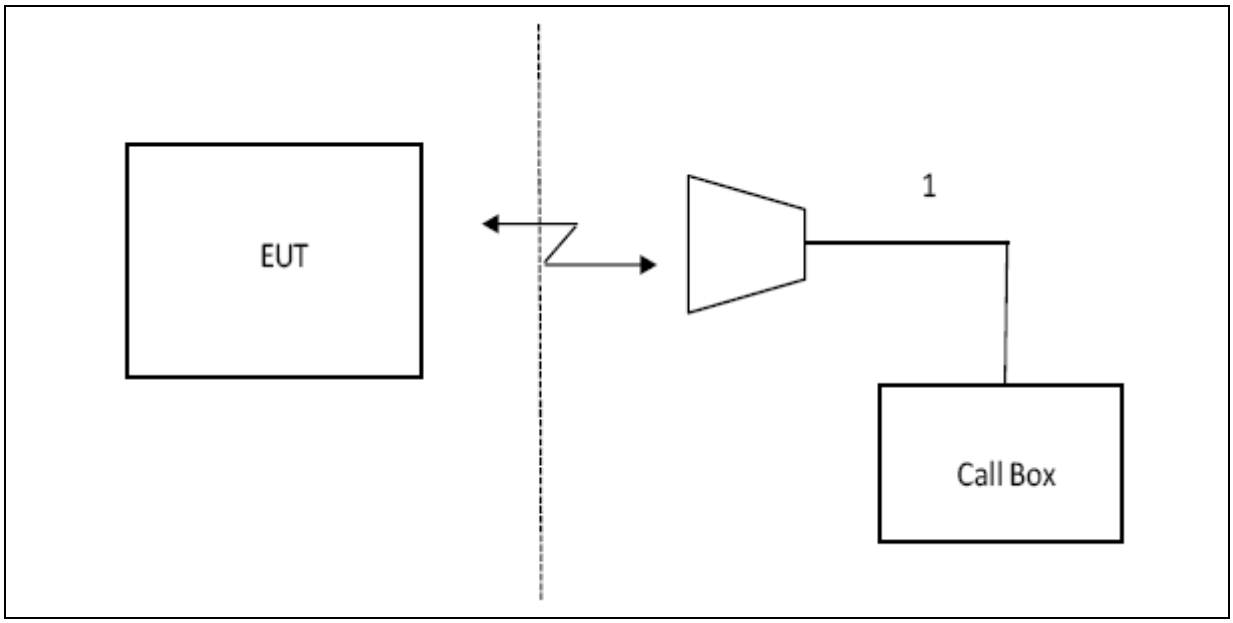
Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

2.4 TEST SETUP

CONDUCTED SETUP DIAGRAM FOR TESTS



RADIATED SETUP DIAGRAM FOR TESTS



3.TEST AND MEASUREMENT EQUIPMENT

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

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	NEXT CAL. DATE
SPECTRUM ANALYZER	AGILENT	E4440A	US44300399	2016.6.26
TEST RECEIVER	R&S	ESCI	A0304218	2016.6.26
COMMUNICATION TESTER	R&S	CMU200	A0304247	2016.6.26
COMMUNICATION TESTER	R&S	CMW500	X	2016.6.26
TEST RECEIVER	R&S	FCKL1528	A0304230	2016.6.26
LISN	SCHWARZBECK	NSLK8127	A0304233	2016.6.26
CLIMATE CHAMBER	ALBATROSS	--	--	2016.6.26
Loop Antenna	Daze	ZN30900N	SEL0097	2016.6.26
Bilogical Antenna	A.H. Systems Inc.	SAS-521-4	N/A	2016.6.26
Horn Antenna	EM	EM-AH-10180	N/A	2016.6.26

4. OUTPUT POWER

4.1 OUTPUT POWER MEASUREMENT

LTE Measurement Procedure:

All LTE bands conducted power peak and average are obtained from the CMW500 telecommunication test set. The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.3

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
--					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

4.1.2 LTE BAND 2

OUTPUT POWER FOR LTE BAND 2 (1.4MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	1.4MHz	18607	1850.7	QPSK	1	Low	27.06	22.12
					1	Mid	27.03	22.22
					1	High	27.07	22.11
					3	Low	27.32	21.12
					3	High	**27.42**	21.13
					6	Low	27.27	21.22
				16QAM	1	Low	27.04	21.02
					1	Mid	27.09	22.03
					1	High	27.03	22.12
					3	Low	27.35	22.14
					3	High	27.42	21.16
					6	Low	27.37	21.18
	1.4MHz	18900	1880.0	QPSK	1	Low	27.11	22.62
					1	Mid	27.18	22.64
					1	High	27.14	22.67
					3	Low	27.47	21.63
					3	High	27.53	21.63
					6	Low	**27.59**	21.64
				16QAM	1	Low	27.13	21.64
					1	Mid	27.16	22.65
					1	High	27.29	22.60
					3	Low	27.43	22.62
					3	High	27.56	21.63
					6	Low	27.43	21.63
	1.4MHz	19193	1909.3	QPSK	1	Low	25.69	22.63
					1	Mid	25.64	22.65
					1	High	25.72	22.66
					3	Low	26.06	21.64
					3	High	26.03	21.62
					6	Low	26.69	21.50
				16QAM	1	Low	25.64	21.62
					1	Mid	25.69	22.62
					1	High	25.73	22.64
					3	Low	26.09	22.63
					3	High	26.13	21.62
					6	Low	26.68	21.63

OUTPUT POWER FOR LTE BAND 2 (3.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	3.0 MHz	18615	1851.5	QPSK	1	Low	26.62	22.02
					1	Mid	26.73	22.16
					1	High	26.72	22.00
					8	Low	26.72	21.14
					8	High	26.65	21.14
					15	Low	26.91	21.13
				16QAM	1	Low	26.64	21.08
					1	Mid	26.72	22.03
					1	High	26.75	22.17
					8	Low	26.71	22.16
					8	High	26.76	21.15
					15	Low	27.02	21.14
	3.0 MHz	18900	1880.0	QPSK	1	Low	26.83	22.56
					1	Mid	26.94	22.64
					1	High	26.96	22.63
					8	Low	26.91	21.66
					8	High	26.85	21.63
					15	Low	27.33	21.62
				16QAM	1	Low	26.82	21.65
					1	Mid	26.95	22.62
					1	High	26.81	22.68
					8	Low	26.96	22.60
					8	High	26.83	21.56
					15	Low	**27.22**	21.62
	3.0 MHz	19185	1908.5	QPSK	1	Low	25.56	22.73
					1	Mid	25.62	22.72
					1	High	25.65	22.60
					8	Low	25.66	21.62
					8	High	25.62	21.61
					15	Low	27.28	21.60
				16QAM	1	Low	25.53	21.62
					1	Mid	25.65	22.71
					1	High	25.62	22.73
					8	Low	25.67	22.60
					8	High	25.66	21.61
					15	Low	27.22	21.63

OUTPUT POWER FOR LTE BAND 2 (5.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	5.0 MHz	18625	1852.5	QPSK	1	Low	26.82	22.12
					1	Mid	26.91	22.21
					1	High	26.95	22.16
					12	Low	27.32	21.20
					12	High	27.54	21.21
					25	Low	27.51	21.23
				16QAM	1	Low	26.83	21.21
					1	Mid	26.91	22.20
					1	High	26.94	22.22
					12	Low	27.41	22.23
					12	High	27.43	21.24
					25	Low	27.85	21.24
	5.0 MHz	18900	1880.0	QPSK	1	Low	26.96	22.60
					1	Mid	27.01	22.67
					1	High	27.15	22.74
					12	Low	27.46	21.74
					12	High	27.63	21.73
					25	Low	27.66	21.72
				16QAM	1	Low	26.92	21.65
					1	Mid	27.05	22.61
					1	High	27.12	22.73
					12	Low	27.64	22.75
					12	High	27.61	21.72
					25	Low	**27.14**	21.72
	5.0 MHz	19175	1907.5	QPSK	1	Low	25.71	22.80
					1	Mid	25.62	22.72
					1	High	25.74	22.73
					12	Low	26.25	21.76
					12	High	26.01	21.68
					25	Low	26.86	21.62
				16QAM	1	Low	25.73	21.64
					1	Mid	25.64	22.82
					1	High	25.79	22.64
					12	Low	26.26	22.63
					12	High	26.18	21.71
					25	Low	26.92	21.71

OUTPUT POWER FOR LTE BAND 2 (10.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	10.0 MHz	18625	1852.5	QPSK	1	Low	26.75	22.11
					1	Mid	26.84	22.23
					1	High	26.78	22.00
					25	Low	27.24	21.22
					25	High	27.42	21.22
					50	Low	27.46	21.22
				16QAM	1	Low	26.73	21.21
					1	Mid	26.87	22.12
					1	High	26.71	22.26
					25	Low	27.27	22.03
					25	High	27.34	21.24
					50	Low	27.42	21.25
	10.0 MHz	18900	1880.0	QPSK	1	Low	26.77	22.52
					1	Mid	26.94	22.65
					1	High	26.93	22.44
					25	Low	27.38	21.65
					25	High	27.52	21.68
					50	Low	27.53	21.73
				16QAM	1	Low	26.81	21.74
					1	Mid	26.92	22.63
					1	High	26.95	22.72
					25	Low	27.42	22.52
					25	High	27.59	21.62
					50	Low	27.75	21.69
	10.0 MHz	19175	1907.5	QPSK	1	Low	25.97	22.63
					1	Mid	25.63	22.73
					1	High	25.65	22.33
					25	Low	26.44	21.67
					25	High	26.16	21.69
					50	Low	26.78	21.72
				16QAM	1	Low	25.92	21.73
					1	Mid	25.61	22.65
					1	High	25.66	22.74
					25	Low	26.48	22.30
					25	High	26.16	21.74
					50	Low	26.87	21.70

OUTPUT POWER FOR LTE BAND 2 (15.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	15.0 MHz	18675	1857.5	QPSK	1	Low	26.75	22.21
					1	Mid	26.82	22.23
					1	High	26.81	22.32
					36	Low	27.36	21.23
					36	High	27.47	21.30
					75	Low	28.06	21.35
				16QAM	1	Low	26.72	21.32
					1	Mid	26.81	22.20
					1	High	26.93	22.27
					36	Low	27.34	22.36
					36	High	27.47	21.22
					75	Low	28.04	21.29
	15.0 MHz	18900	1880.0	QPSK	1	Low	26.72	22.52
					1	Mid	26.96	22.74
					1	High	27.02	22.66
					36	Low	27.34	21.64
					36	High	27.69	21.70
					75	Low	28.22	21.83
				16QAM	1	Low	26.75	21.72
					1	Mid	26.94	22.54
					1	High	27.01	22.75
					36	Low	27.39	22.64
					36	High	27.56	21.62
					75	Low	**28.28**	21.81
	15.0 MHz	19125	1902.5	QPSK	1	Low	26.41	22.72
					1	Mid	25.76	22.77
					1	High	25.62	22.53
					36	Low	26.88	21.95
					36	High	26.24	21.90
					75	Low	27.46	21.84
				16QAM	1	Low	26.48	21.82
					1	Mid	25.74	22.63
					1	High	25.56	22.67
					36	Low	26.77	22.44
					36	High	26.27	21.82
					75	Low	27.36	21.83

OUTPUT POWER FOR LTE BAND 2 (20.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	20.0 MHz	18700	1860.0	QPSK	1	Low	26.90	22.55
					1	Mid	27.04	22.23
					1	High	27.02	22.52
					50	Low	27.48	21.21
					50	High	27.46	21.19
					100	Low	27.54	21.30
				16QAM	1	Low	26.93	21.32
					1	Mid	27.05	22.23
					1	High	27.04	22.26
					50	Low	27.49	22.54
					50	High	27.55	21.24
					100	Low	27.52	21.30
	20.0 MHz	18900	1880.0	QPSK	1	Low	26.94	22.83
					1	Mid	27.07	22.52
					1	High	27.15	22.64
					50	Low	27.42	21.64
					50	High	27.66	21.65
					100	Low	27.74	21.72
				16QAM	1	Low	26.93	21.67
					1	Mid	27.05	22.52
					1	High	27.12	22.67
					50	Low	27.48	22.72
					50	High	27.67	21.61
					100	Low	27.78	21.65
	20.0 MHz	19100	1900.0	QPSK	1	Low	27.05	22.63
					1	Mid	26.04	22.62
					1	High	25.66	22.41
					50	Low	27.04	21.97
					50	High	26.32	21.73
					100	Low	27.34	21.72
				16QAM	1	Low	26.95	21.73
					1	Mid	26.02	22.62
					1	High	25.66	22.55
					50	Low	27.12	22.41
					50	High	26.31	21.72
					100	Low	27.43	21.71

4.1.3 LTE BAND 4

OUTPUT POWER FOR LTE BAND 4 (1.4MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	1.4MHz	19957	1710.7	QPSK	1	Low	27.15	22.52
					1	Mid	27.13	22.52
					1	High	27.17	22.53
					3	Low	27.48	21.65
					3	High	27.41	21.65
					6	Low	**27.62**	21.64
				16QAM	1	Low	27.03	21.52
					1	Mid	27.05	22.61
					1	High	27.16	22.53
					3	Low	27.34	22.54
					3	High	27.43	21.76
					6	Low	27.68	21.72
	1.4MHz	20175	1732.5	QPSK	1	Low	27.09	22.53
					1	Mid	27.04	22.54
					1	High	27.02	22.52
					3	Low	27.33	21.65
					3	High	27.37	21.66
					6	Low	27.62	21.62
				16QAM	1	Low	27.01	21.52
					1	Mid	27.02	22.51
					1	High	27.09	22.56
					3	Low	27.33	22.52
					3	High	27.42	21.64
					6	Low	27.67	21.62
	1.4MHz	20393	1754.3	QPSK	1	Low	26.91	22.81
					1	Mid	26.82	22.62
					1	High	26.83	22.60
					3	Low	27.39	21.76
					3	High	27.32	21.72
					6	Low	27.30	21.63
				16QAM	1	Low	26.82	21.78
					1	Mid	26.73	22.81
					1	High	26.88	22.61
					3	Low	27.37	22.62
					3	High	27.33	21.74
					6	Low	27.39	21.71

OUTPUT POWER FOR LTE BAND 4 (3.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	3.0 MHz	19965	1711.5	QPSK	1	Low	26.82	22.55
					1	Mid	26.94	22.52
					1	High	26.98	22.54
					8	Low	26.82	21.52
					8	High	26.89	21.54
					15	Low	27.42	21.55
				16QAM	1	Low	26.87	21.64
					1	Mid	26.93	22.51
					1	High	26.98	22.54
					8	Low	26.85	22.42
					8	High	26.82	21.43
					15	Low	27.81	21.43
	3.0 MHz	20175	1732.5	QPSK	1	Low	26.59	22.44
					1	Mid	26.95	22.52
					1	High	26.82	22.53
					8	Low	26.79	21.55
					8	High	26.83	21.55
					15	Low	27.77	21.52
				16QAM	1	Low	26.85	21.63
					1	Mid	26.73	22.43
					1	High	26.85	22.52
					8	Low	26.64	22.50
					8	High	26.83	21.52
					15	Low	27.41	21.53
	3.0 MHz	20385	1753.5	QPSK	1	Low	26.92	22.82
					1	Mid	26.85	22.70
					1	High	26.78	22.63
					8	Low	26.79	21.65
					8	High	26.78	21.64
					15	Low	28.55	21.64
				16QAM	1	Low	26.93	21.92
					1	Mid	26.82	22.83
					1	High	26.71	22.65
					8	Low	26.73	22.54
					8	High	26.75	21.52
					15	Low	**28.58**	21.61

OUTPUT POWER FOR LTE BAND 4 (5.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	5.0 MHz	19975	1712.5	QPSK	1	Low	26.92	22.62
					1	Mid	27.01	22.50
					1	High	27.05	22.41
					12	Low	27.63	21.63
					12	High	27.74	21.63
					25	Low	28.11	21.62
				16QAM	1	Low	26.98	21.56
					1	Mid	27.02	22.64
					1	High	27.09	22.52
					12	Low	27.62	22.43
					12	High	27.77	21.67
					25	Low	**28.14**	21.66
	5.0 MHz	20175	1732.5	QPSK	1	Low	26.91	22.54
					1	Mid	26.82	22.30
					1	High	26.98	22.63
					12	Low	27.56	21.62
					12	High	27.52	21.61
					25	Low	27.57	21.56
				16QAM	1	Low	26.93	21.50
					1	Mid	26.81	22.53
					1	High	26.95	22.31
					12	Low	27.52	22.66
					12	High	27.48	21.53
					25	Low	27.59	21.52
	5.0 MHz	20375	1752.5	QPSK	1	Low	27.12	22.88
					1	Mid	26.94	22.43
					1	High	26.97	22.54
					12	Low	27.46	21.76
					12	High	27.32	21.59
					25	Low	28.02	21.43
				16QAM	1	Low	27.01	21.55
					1	Mid	26.93	22.89
					1	High	26.98	22.34
					12	Low	27.23	22.45
					12	High	27.10	21.63
					25	Low	27.94	21.62

OUTPUT POWER FOR LTE BAND 4 (10.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	10.0 MHz	20000	1715.0	QPSK	1	Low	26.85	22.63
					1	Mid	26.92	22.44
					1	High	26.84	22.25
					25	Low	27.47	21.56
					25	High	27.62	21.55
					50	Low	27.68	21.57
				16QAM	1	Low	26.83	21.56
					1	Mid	26.99	22.67
					1	High	26.93	22.45
					25	Low	27.55	22.23
					25	High	27.68	21.53
					50	Low	27.62	21.52
	10.0 MHz	20175	1732.5	QPSK	1	Low	26.73	22.21
					1	Mid	26.65	22.22
					1	High	26.67	22.26
					25	Low	27.24	21.44
					25	High	27.28	21.44
					50	Low	27.54	21.44
				16QAM	1	Low	26.76	21.43
					1	Mid	26.62	22.22
					1	High	26.74	22.25
					25	Low	27.23	22.23
					25	High	27.37	21.42
					50	Low	27.53	21.45
	10.0 MHz	20350	1750.0	QPSK	1	Low	26.96	22.52
					1	Mid	26.72	22.44
					1	High	26.67	22.02
					25	Low	27.64	21.73
					25	High	27.53	21.68
					50	Low	27.68	21.42
				16QAM	1	Low	26.84	21.65
					1	Mid	26.77	22.52
					1	High	26.63	22.32
					25	Low	27.68	22.00
					25	High	27.56	21.74
					50	Low	27.33	21.59

OUTPUT POWER FOR LTE BAND 4 (15.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	15.0 MHz	20025	1717.5	QPSK	1	Low	26.94	22.65
					1	Mid	27.03	22.57
					1	High	26.95	22.48
					36	Low	27.42	21.63
					36	High	27.55	21.60
					75	Low	27.36	21.54
				16QAM	1	Low	26.95	21.67
					1	Mid	27.02	22.62
					1	High	26.95	22.54
					36	Low	27.43	22.47
					36	High	27.46	21.65
					75	Low	28.23	21.59
	15.0 MHz	20175	1732.5	QPSK	1	Low	26.99	22.46
					1	Mid	26.76	22.23
					1	High	26.85	22.54
					36	Low	27.32	21.46
					36	High	27.45	21.50
					75	Low	28.19	21.54
				16QAM	1	Low	26.94	21.55
					1	Mid	26.77	22.47
					1	High	26.84	22.32
					36	Low	27.47	22.64
					36	High	27.43	21.57
					75	Low	28.16	21.60
	15.0 MHz	20325	1747.5	QPSK	1	Low	26.93	22.85
					1	Mid	26.95	22.73
					1	High	26.73	22.47
					36	Low	27.68	21.92
					36	High	27.64	21.88
					75	Low	27.27	21.83
				16QAM	1	Low	26.95	21.78
					1	Mid	26.92	22.83
					1	High	26.75	22.76
					36	Low	27.61	22.44
					36	High	27.65	21.89
					75	Low	27.28	21.87

OUTPUT POWER FOR LTE BAND 4 (20.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	20.0 MHz	20050	1720.0	QPSK	1	Low	27.15	22.64
					1	Mid	27.22	22.56
					1	High	27.14	22.54
					50	Low	27.67	21.58
					50	High	27.65	21.58
					100	Low	27.82	21.57
				16QAM	1	Low	27.16	21.58
					1	Mid	27.29	22.63
					1	High	27.27	22.54
					50	Low	27.66	22.57
					50	High	27.69	21.59
					100	Low	27.74	21.55
	20.0 MHz	20175	1732.5	QPSK	1	Low	27.20	22.92
					1	Mid	27.14	22.63
					1	High	27.25	22.89
					50	Low	27.53	21.52
					50	High	27.65	21.60
					100	Low	27.78	21.74
				16QAM	1	Low	27.22	21.67
					1	Mid	27.18	22.53
					1	High	27.24	22.65
					50	Low	27.55	22.52
					50	High	27.67	21.51
					100	Low	27.84	21.60
	20.0 MHz	20300	1745.0	QPSK	1	Low	27.18	22.85
					1	Mid	27.22	22.82
					1	High	27.18	22.83
					50	Low	27.63	21.87
					50	High	27.74	21.90
					100	Low	28.27	21.97
				16QAM	1	Low	27.04	21.87
					1	Mid	27.28	22.62
					1	High	27.23	22.79
					50	Low	27.68	22.82
					50	High	27.74	21.85
					100	Low	28.18	21.89

4.1.4 LTE BAND 17

OUTPUT POWER FOR LTE BAND 17 (5.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 17	5.0MHz	23755	706.5	QPSK	1	Low	26.75	22.62
					1	Mid	27.24	22.56
					1	High	27.12	22.45
					12	Low	27.78	21.62
					12	High	27.86	21.62
					25	Low	28.22	21.55
				16QAM	1	Low	27.23	21.52
					1	Mid	27.59	22.64
					1	High	27.50	22.57
					12	Low	27.95	22.46
					12	High	28.26	21.62
					25	Low	28.37	21.58
	5.0MHz	23790	710.0	QPSK	1	Low	27.53	22.43
					1	Mid	27.56	22.44
					1	High	27.18	22.46
					12	Low	27.25	21.44
					12	High	27.86	21.43
					25	Low	27.84	21.42
				16QAM	1	Low	27.63	21.43
					1	Mid	27.58	22.44
					1	High	27.12	22.41
					12	Low	28.19	22.42
					12	High	27.75	21.44
					25	Low	27.84	21.49
	5.0MHz	23825	713.5	QPSK	1	Low	27.62	22.52
					1	Mid	27.47	22.55
					1	High	27.64	22.70
					12	Low	27.43	21.54
					12	High	27.66	21.59
					25	Low	27.94	21.63
				16QAM	1	Low	27.68	21.54
					1	Mid	27.42	22.53
					1	High	27.69	22.66
					12	Low	27.72	22.66
					12	High	27.50	21.53
					25	Low	28.12	21.53

OUTPUT POWER FOR LTE BAND 17 (10.0MHZ)

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 17	10.0MHz	23780	709.0	QPSK	1	Low	27.13	22.54
					1	Mid	27.49	22.46
					1	High	27.06	22.52
					25	Low	27.74	21.52
					25	High	27.75	21.49
					50	Low	27.72	21.44
				16QAM	1	Low	27.19	21.55
					1	Mid	27.44	22.52
					1	High	27.06	22.42
					25	Low	27.93	22.47
					25	High	27.66	21.53
					50	Low	28.04	21.54
	10.0MHz	23790	710.0	QPSK	1	Low	27.23	22.72
					1	Mid	27.26	22.34
					1	High	27.04	22.54
					25	Low	27.87	21.40
					25	High	27.52	21.50
					50	Low	27.73	21.75
				16QAM	1	Low	27.26	21.56
					1	Mid	27.29	22.51
					1	High	27.04	22.43
					25	Low	27.76	22.57
					25	High	27.54	21.42
					50	Low	27.85	21.43
	10.0MHz	23800	711.0	QPSK	1	Low	27.59	22.62
					1	Mid	27.37	22.40
					1	High	27.36	22.58
					25	Low	28.17	21.41
					25	High	27.86	21.49
					50	Low	27.38	21.51
				16QAM	1	Low	27.53	21.51
					1	Mid	27.30	22.55
					1	High	27.35	22.44
					25	Low	27.94	22.56
					25	High	27.87	21.42
					50	Low	27.66	21.42

5. OCCUPIED BANDWIDTH

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 -26dB bandwidth was also measured and recorded.

MODES TESTED

LTE Band 2
LTE Band 4
LTE Band 17

RESULTS

Test results:

Band	Mode	RB Size/RB Offset	Frequency (MHz)	99% Occupied Bandwidth (MHz)	-26dBc Occupied Bandwidth (MHz)
LTE Band 2	1.4MHz BAND QPSK	6/0	1880	1.09	1.3
	1.4MHz BAND 16QAM	6/0	1880	1.09	1.3
	3.0MHz BAND QPSK	15/0	1880	2.75	3.1
	3.0MHz BAND 16QAM	15/0	1880	2.74	3.0
	5.0MHz BAND QPSK	25/0	1880	4.53	5.0
	5.0MHz BAND 16QAM	25/0	1880	4.53	5.0
	10.0MHz BAND QPSK	50/0	1880	9.04	10.0
	10.0MHz BAND 16QAM	50/0	1880	9.04	10.0
	15.0MHz BAND QPSK	75/0	1880	13.50	14.7
	15.0MHz BAND 16QAM	75/0	1880	13.45	14.8
	20.0MHz BAND QPSK	100/0	1880	18.36	20.4
	20.0MHz BAND 16QAM	100/0	1880	18.35	20.4

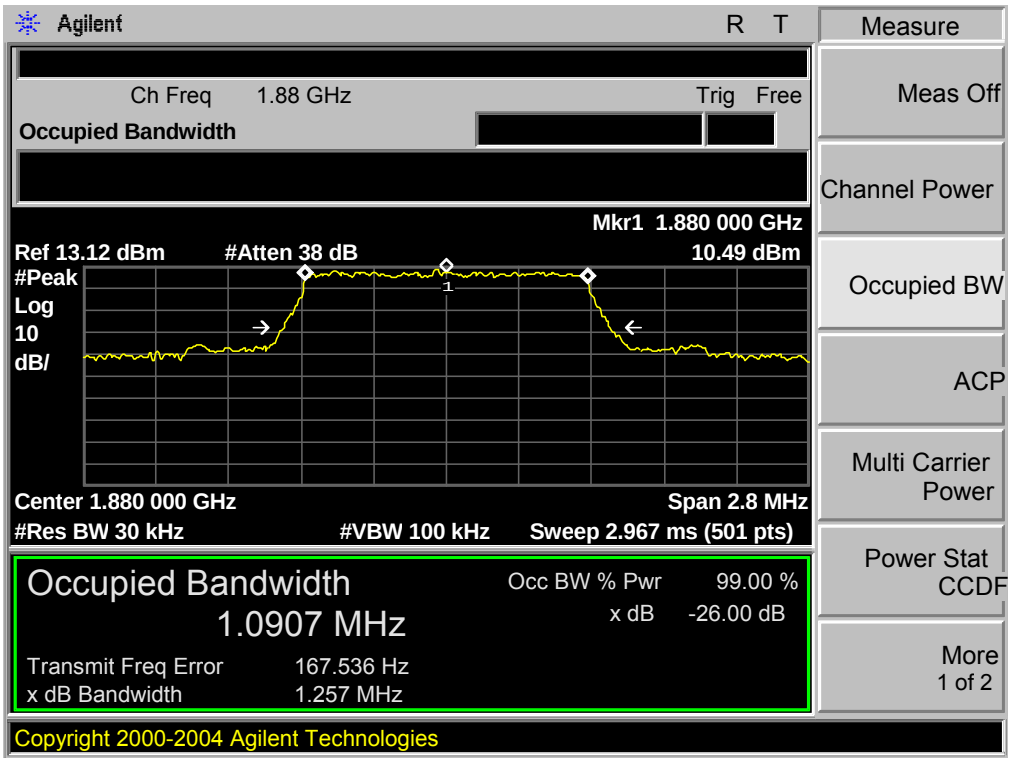
Band	Mode	RB Size/RB Offset	Frequency (MHz)	99% Occupied Bandwidth (MHz)	-26dBc Occupied Bandwidth (MHz)
LTE Band 4	1.4MHz BAND QPSK	6/0	1732.5	1.10	1.3
	1.4MHz BAND 16QAM	6/0	1732.5	1.09	1.3
	3.0MHz BAND QPSK	15/0	1732.5	2.75	3.1
	3.0MHz BAND 16QAM	15/0	1732.5	2.75	3.0
	5.0MHz BAND QPSK	25/0	1732.5	4.52	5.0
	5.0MHz BAND 16QAM	25/0	1732.5	4.51	5.0
	10.0MHz BAND QPSK	50/0	1732.5	9.05	10.1
	10.0MHz BAND 16QAM	50/0	1732.5	9.03	10.2
	15.0MHz BAND QPSK	75/0	1732.5	13.46	14.7
	15.0MHz BAND 16QAM	75/0	1732.5	13.46	14.8
	20.0MHz BAND QPSK	100/0	1732.5	18.35	20.4
	20.0MHz BAND 16QAM	100/0	1732.5	18.40	20.6

Band	Mode	RB Size/RB Offset	Frequency (MHz)	99% Occupied Bandwidth (MHz)	-26dBc Occupied Bandwidth (MHz)
LTE Band 4	5.0MHz BAND QPSK	25/0	710.0	4.52	5.0
	5.0MHz BAND 16QAM	25/0	710.0	4.54	5.1
	10.0MHz BAND QPSK	50/0	710.0	9.02	10.1
	10.0MHz BAND 16QAM	50/0	710.0	9.02	10.0

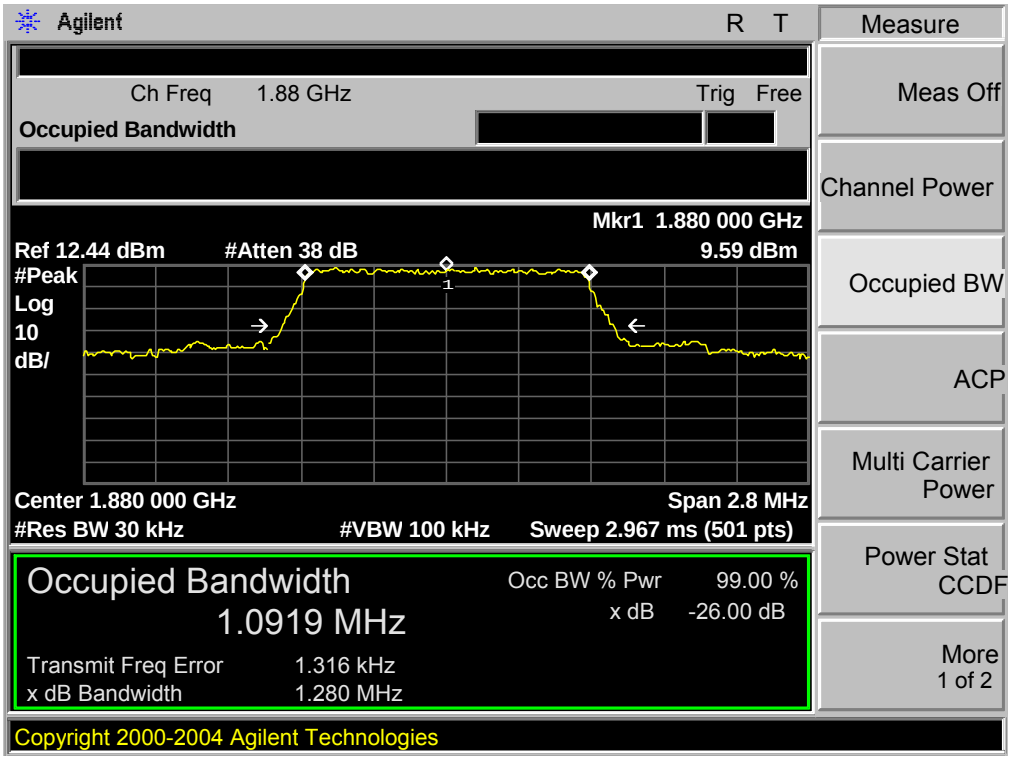
Note: This test was only measured at maximum RB allocation and at CENTER of band for each LTE BW

5.1.1. LTE BAND 2

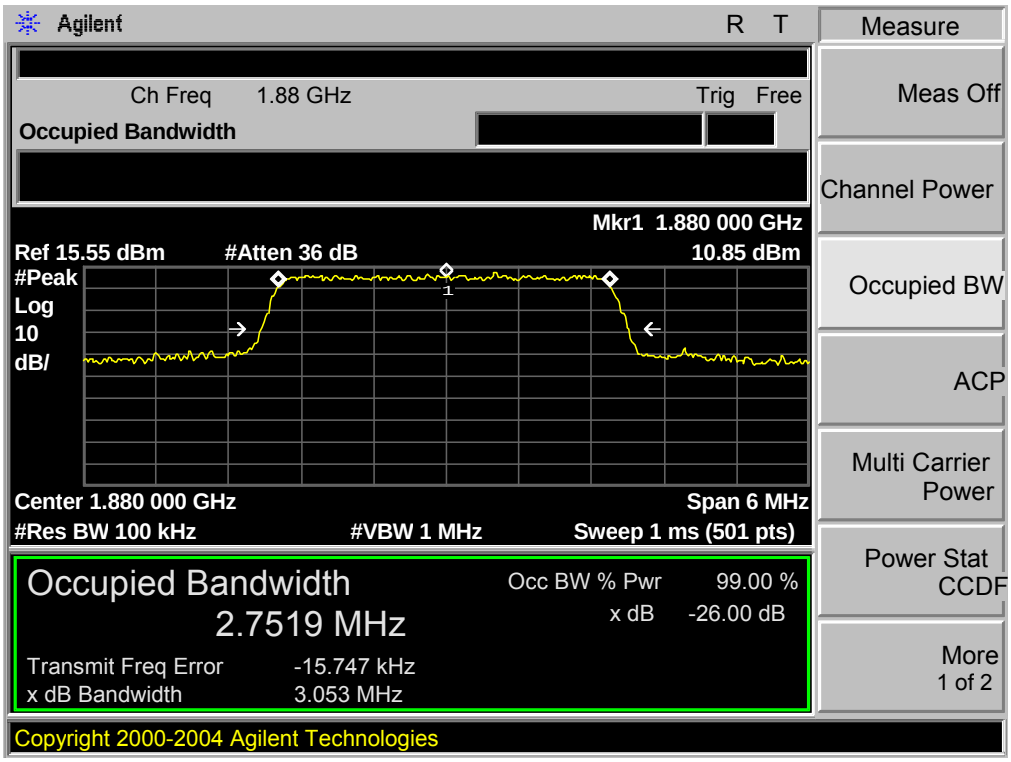
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 6,RB POS. Low,QPSK



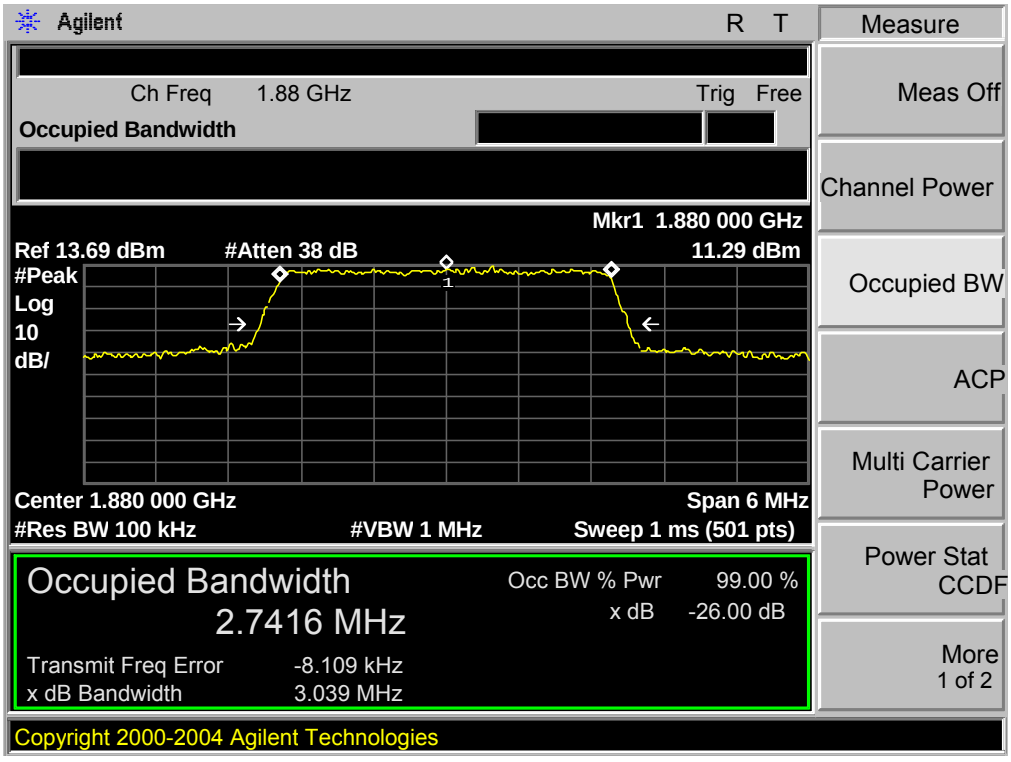
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 6,RB POS. Low,16QAM



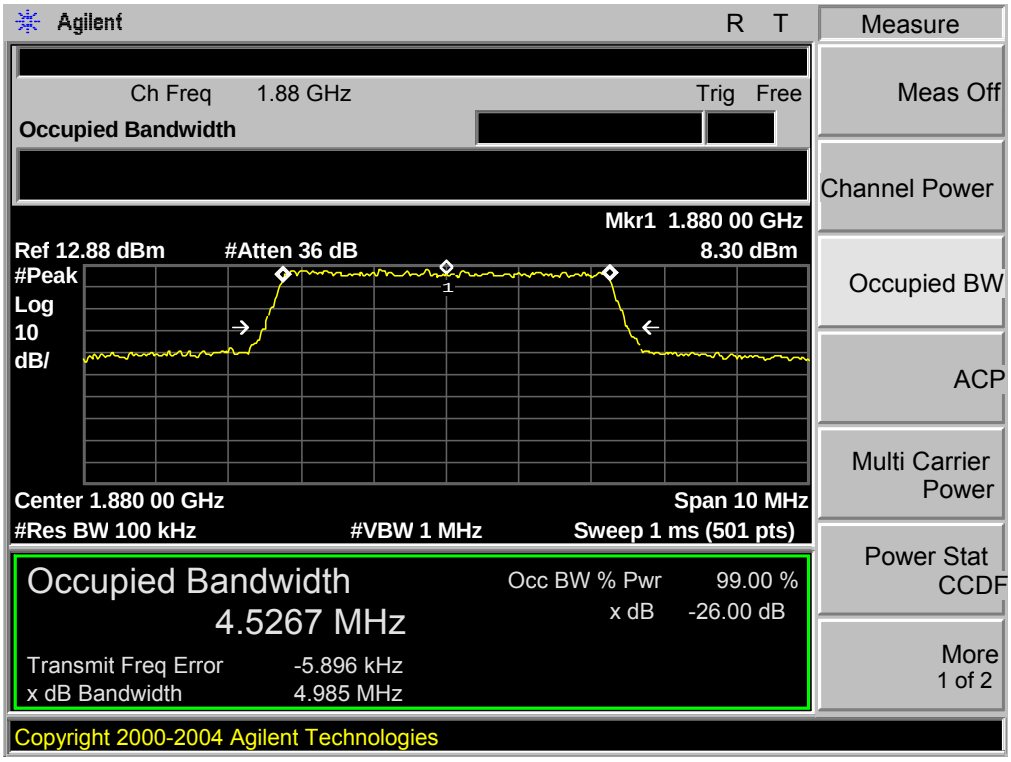
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 15,RB POS. Low,QPSK



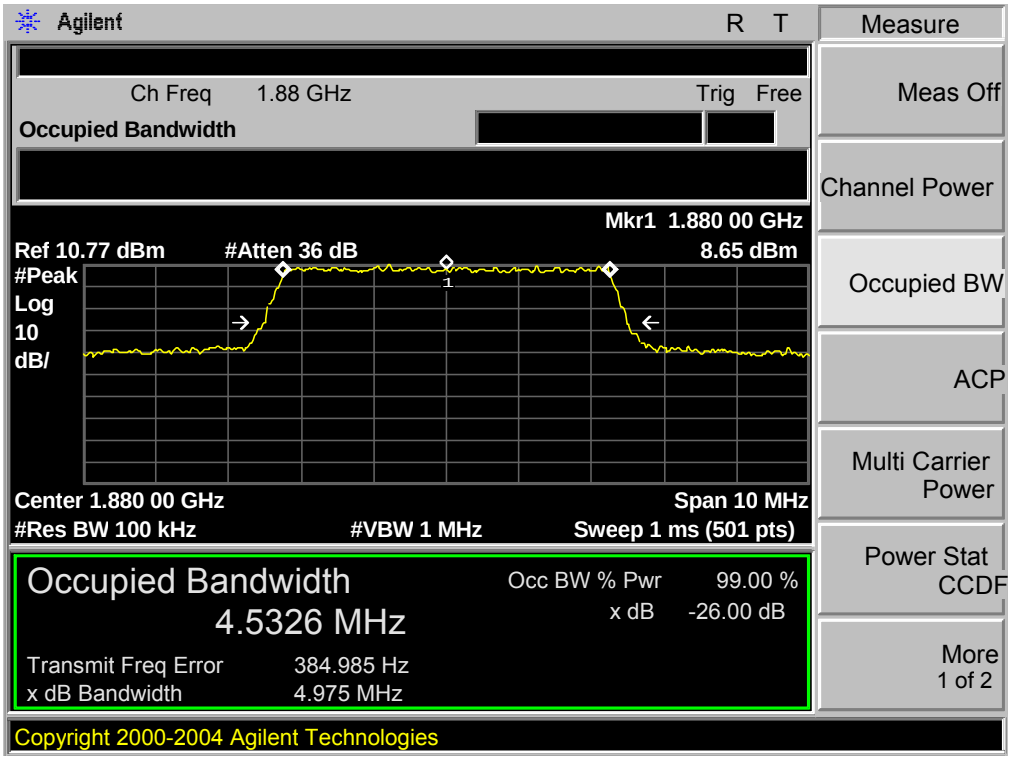
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 15,RB POS. Low,16QAM



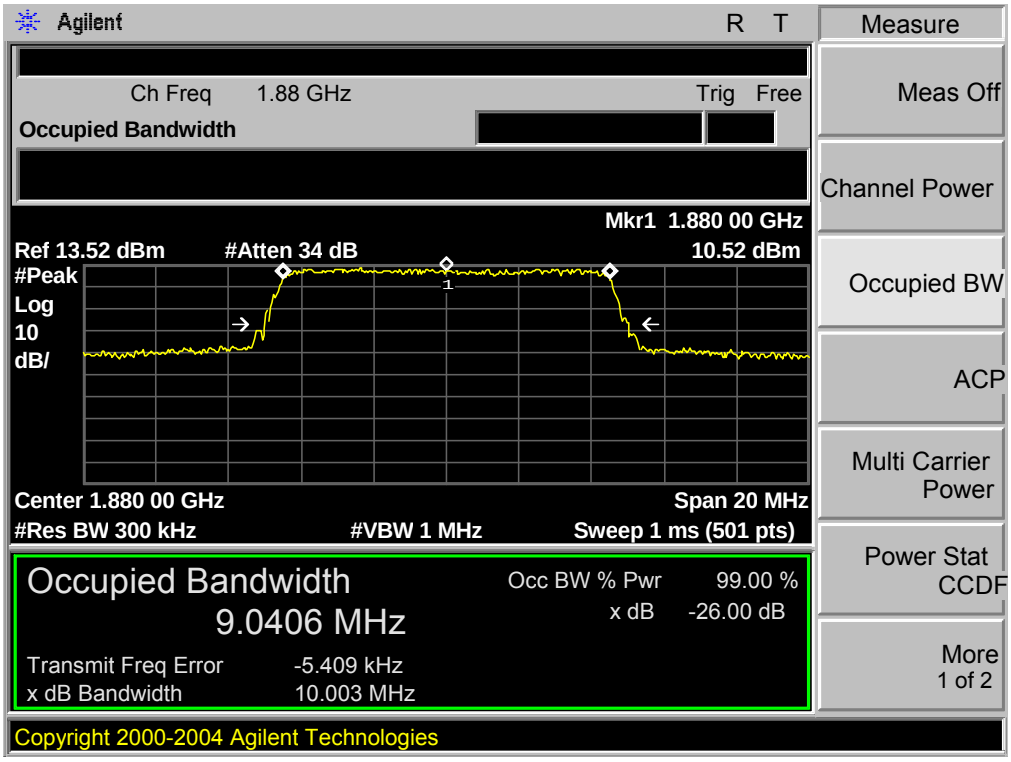
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 25,RB POS. Low,QPSK



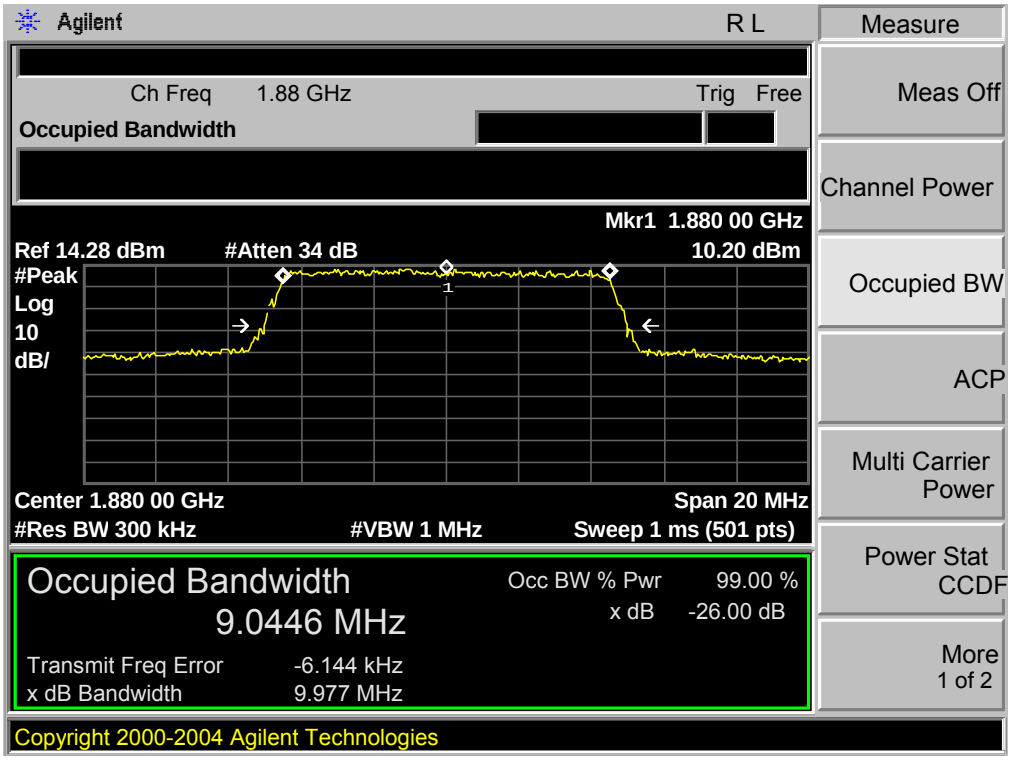
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 25,RB POS. Low,16QAM



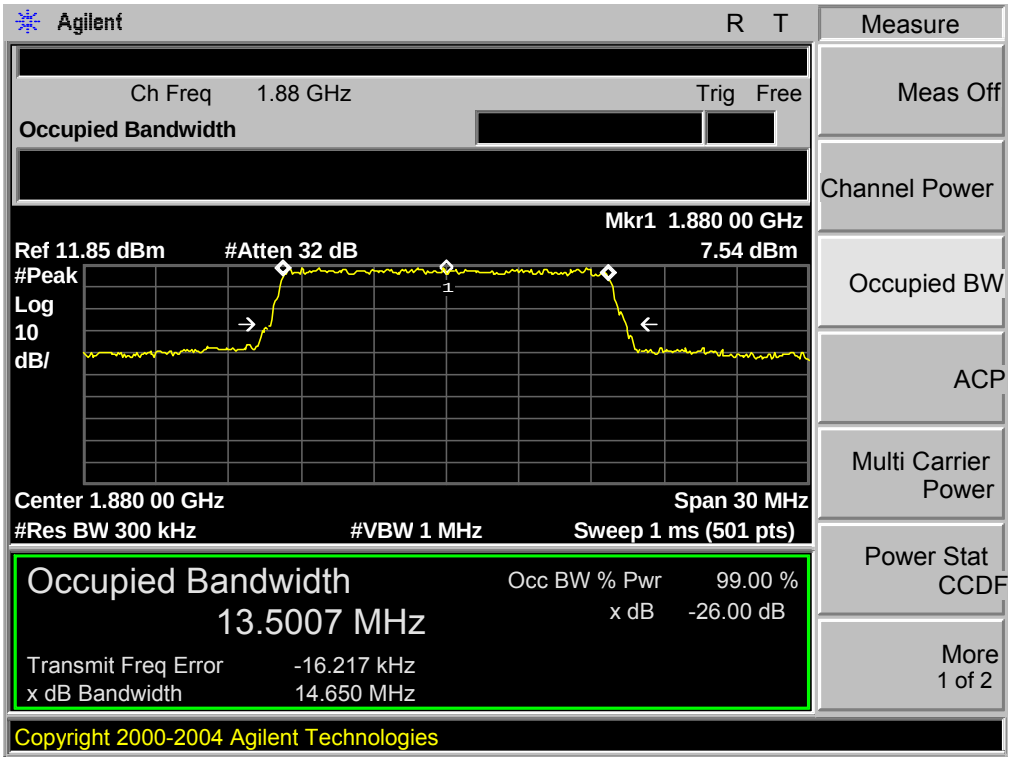
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



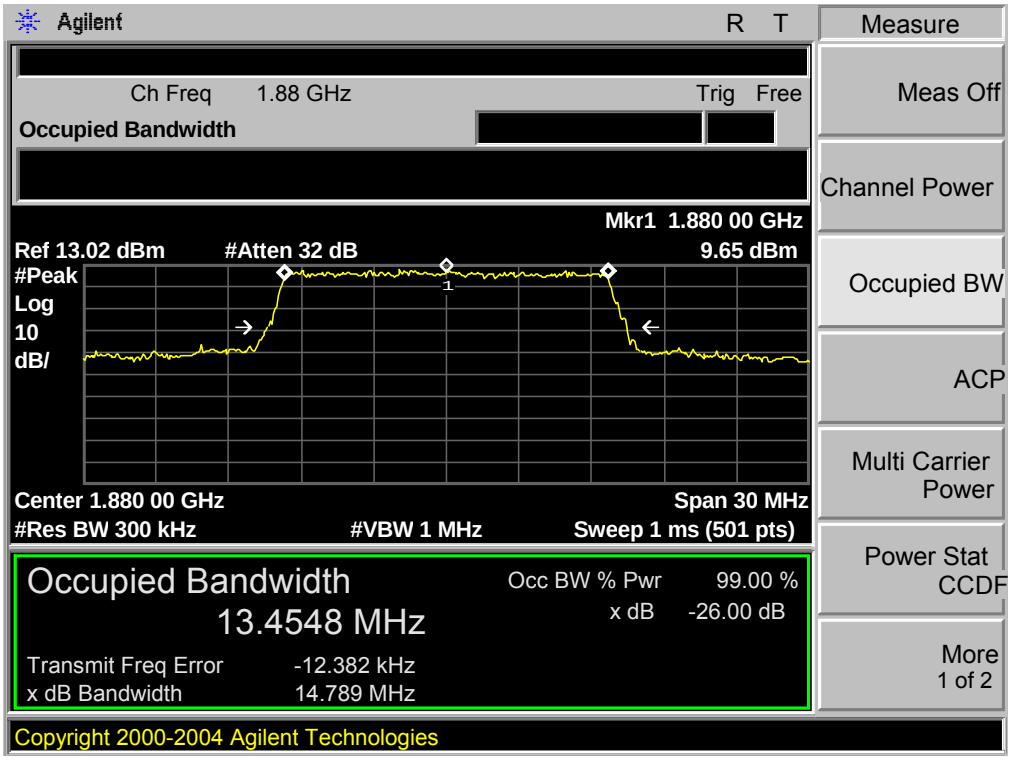
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



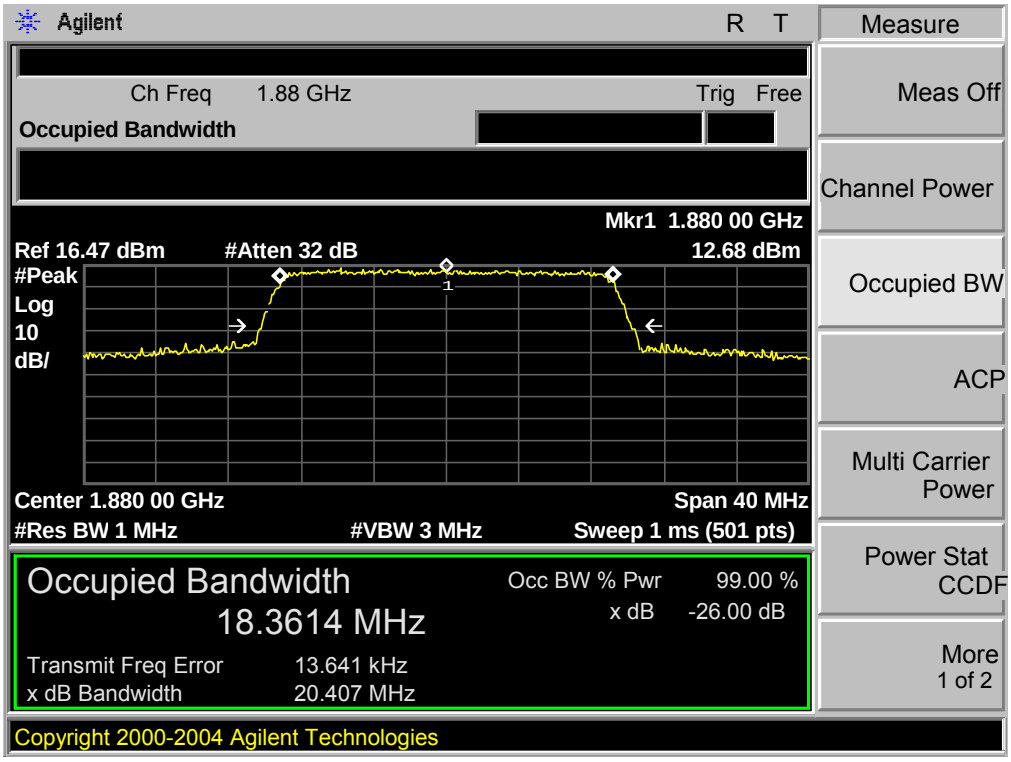
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 75,RB POS. Low,QPSK



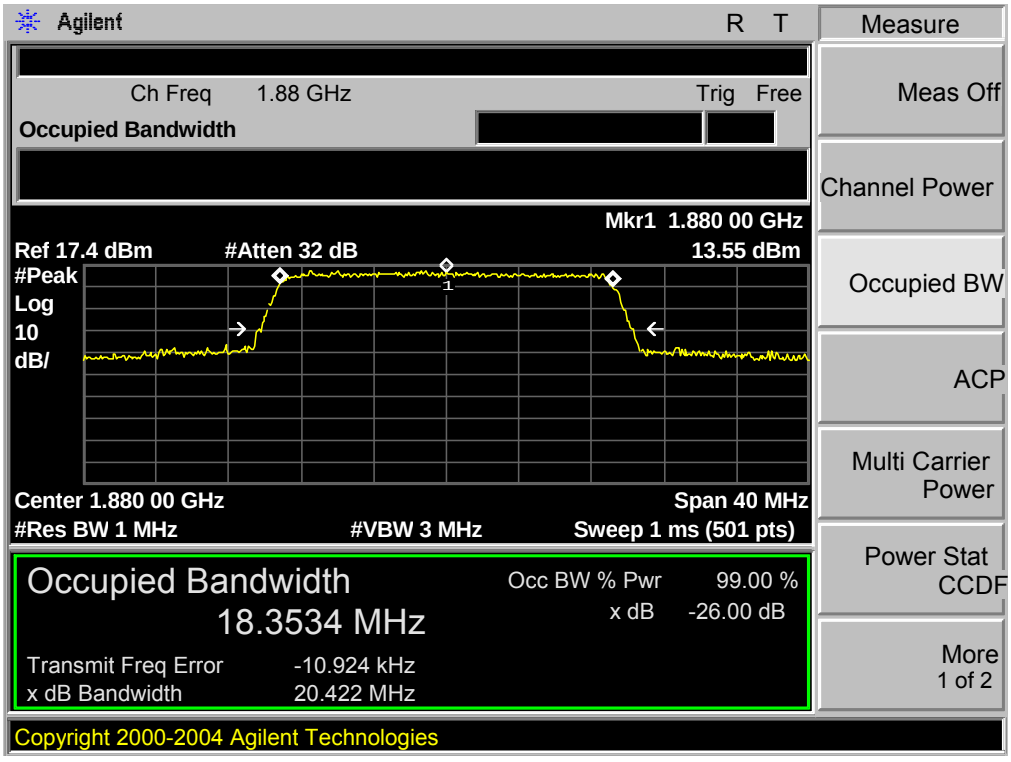
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 75,RB POS. Low,16QAM



Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK

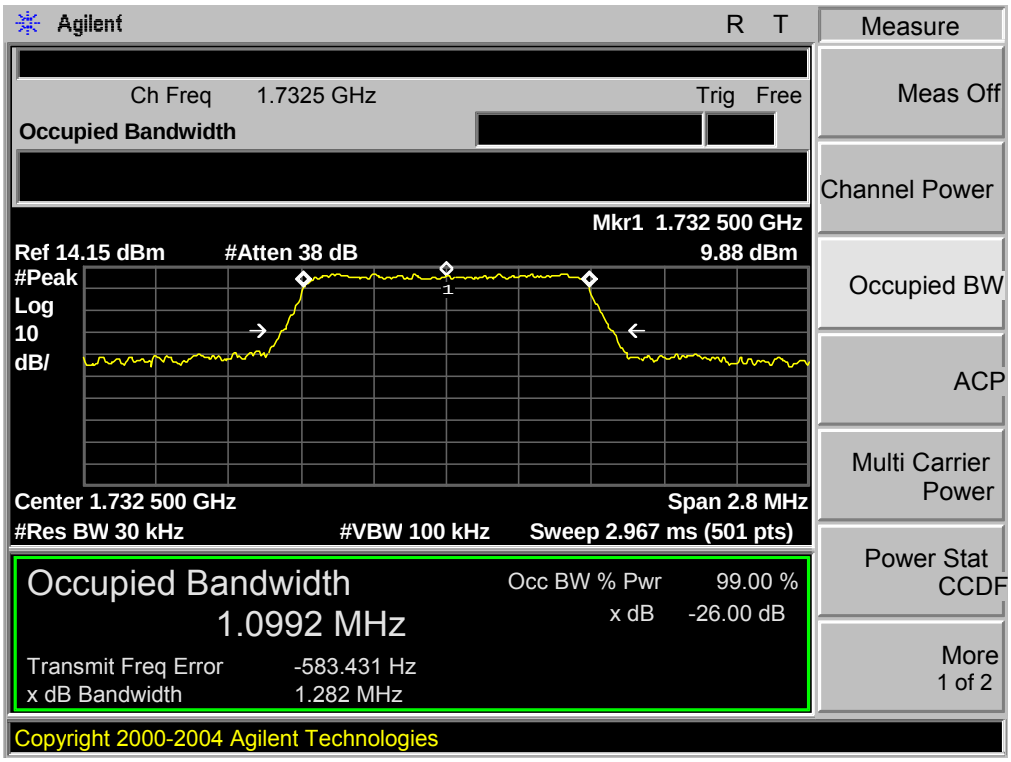


Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM

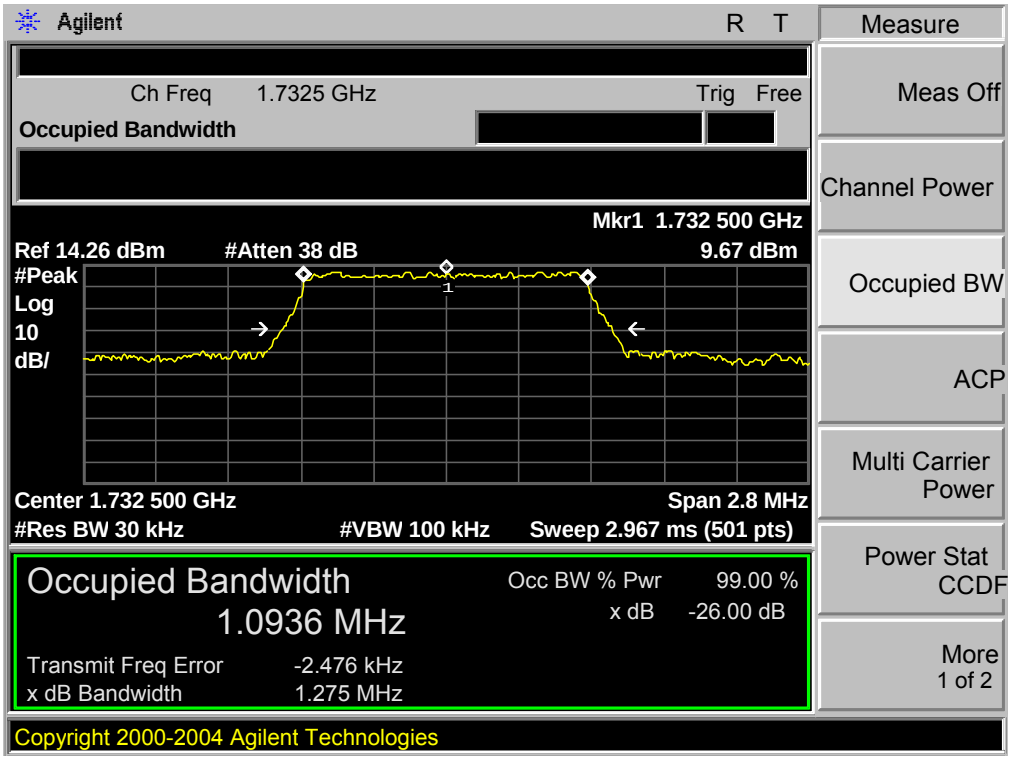


5.1.2. LTE BAND 4

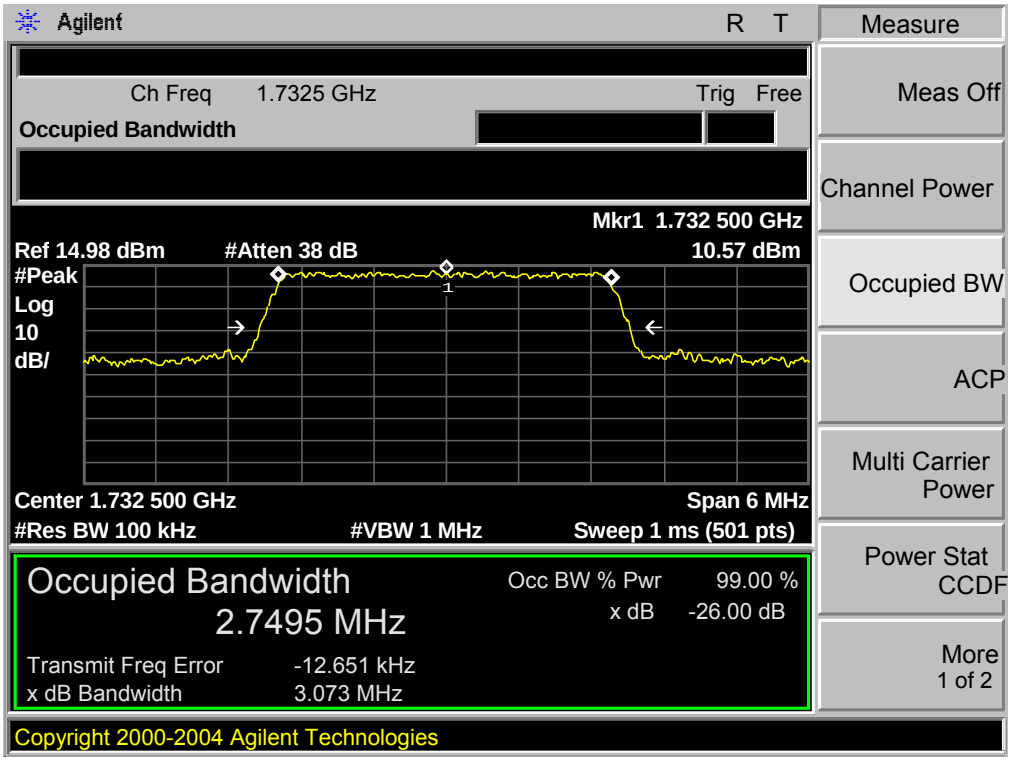
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 6,RB POS. Low,QPSK



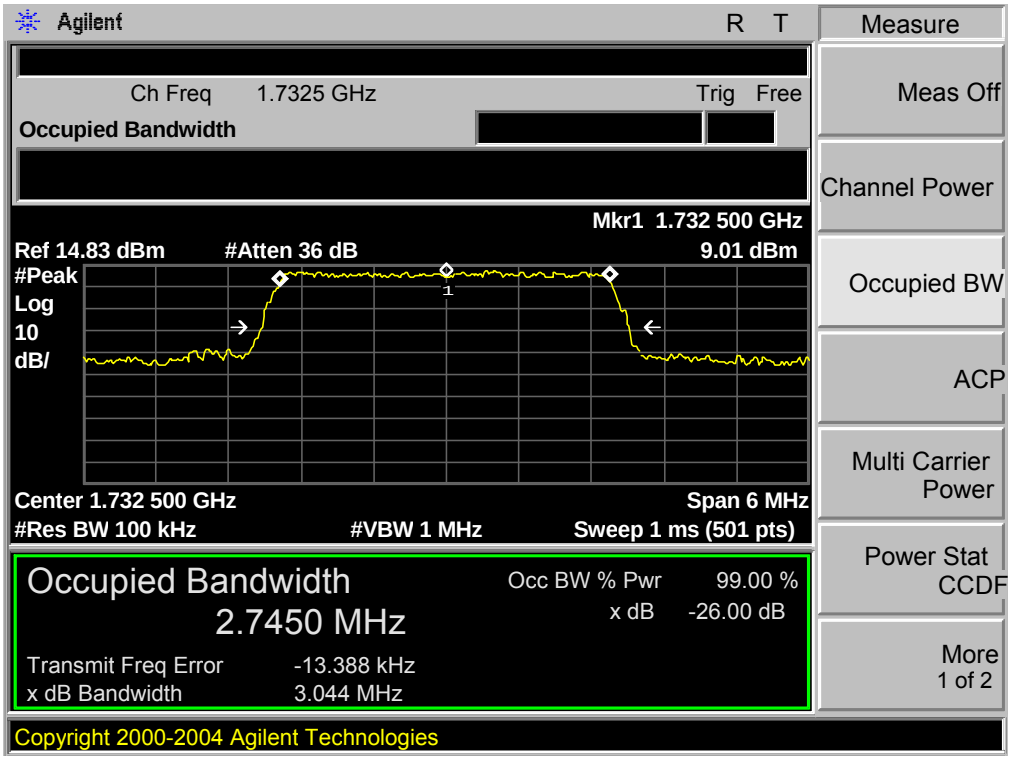
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 6,RB POS. Low,16QAM



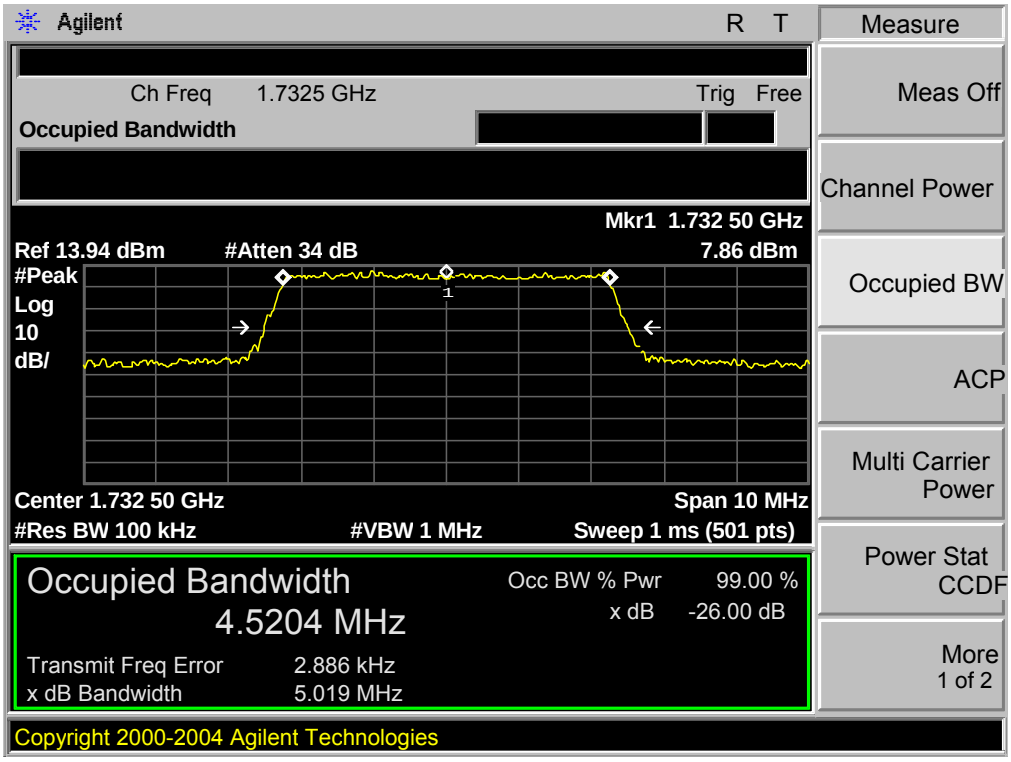
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



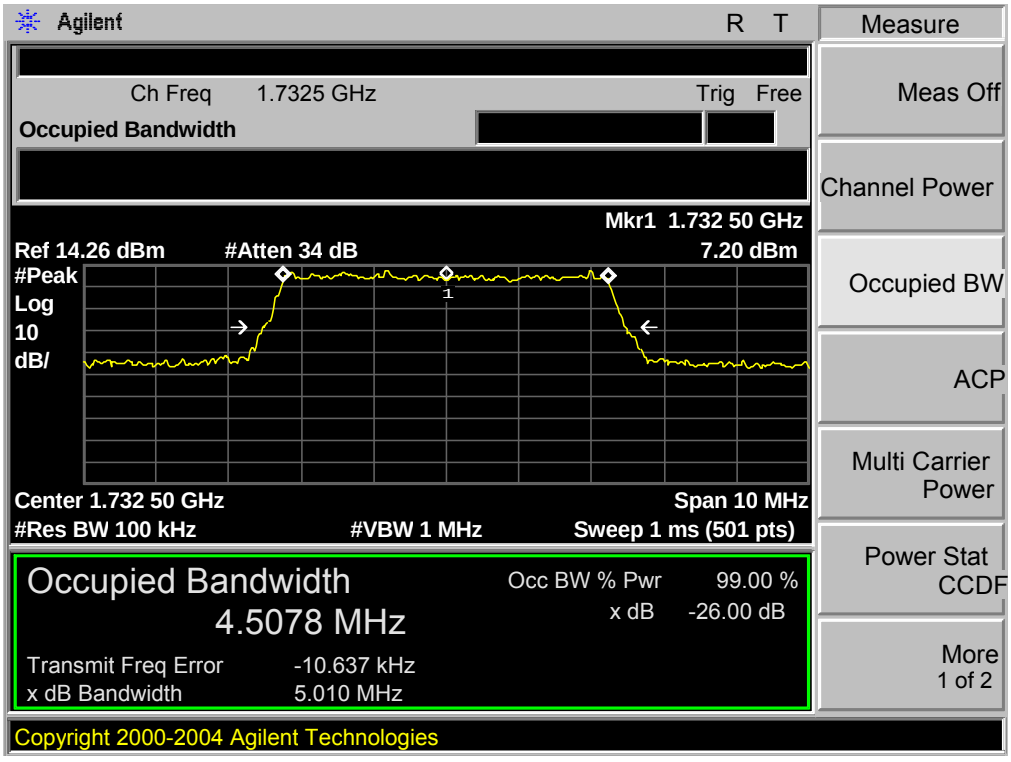
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



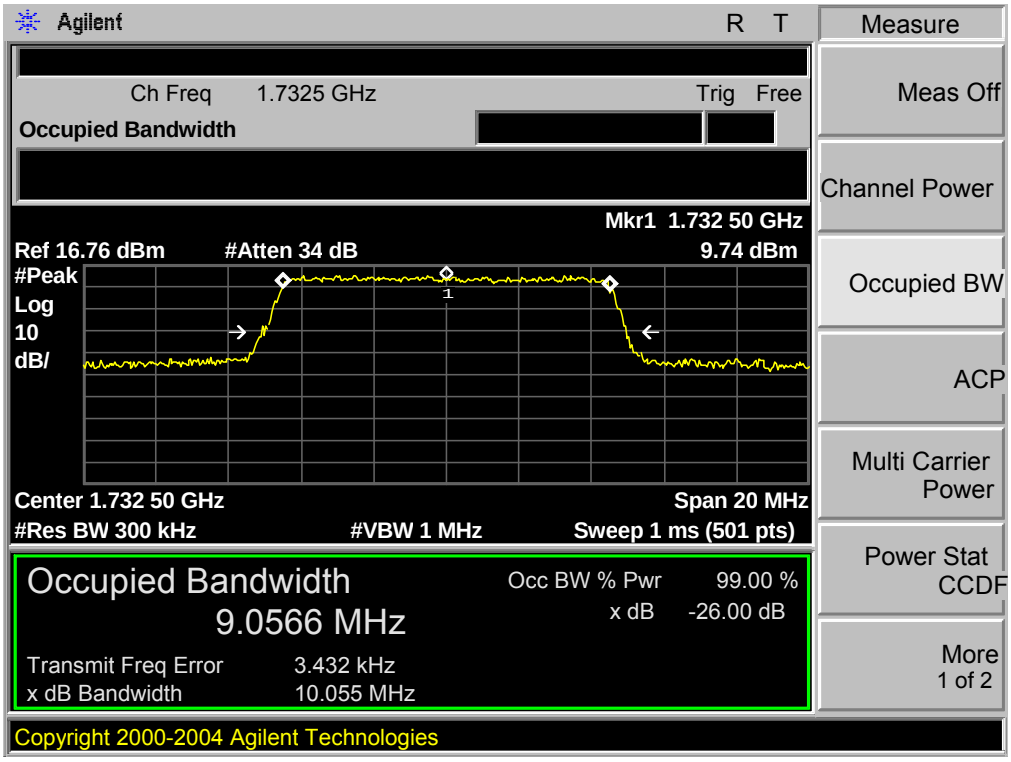
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



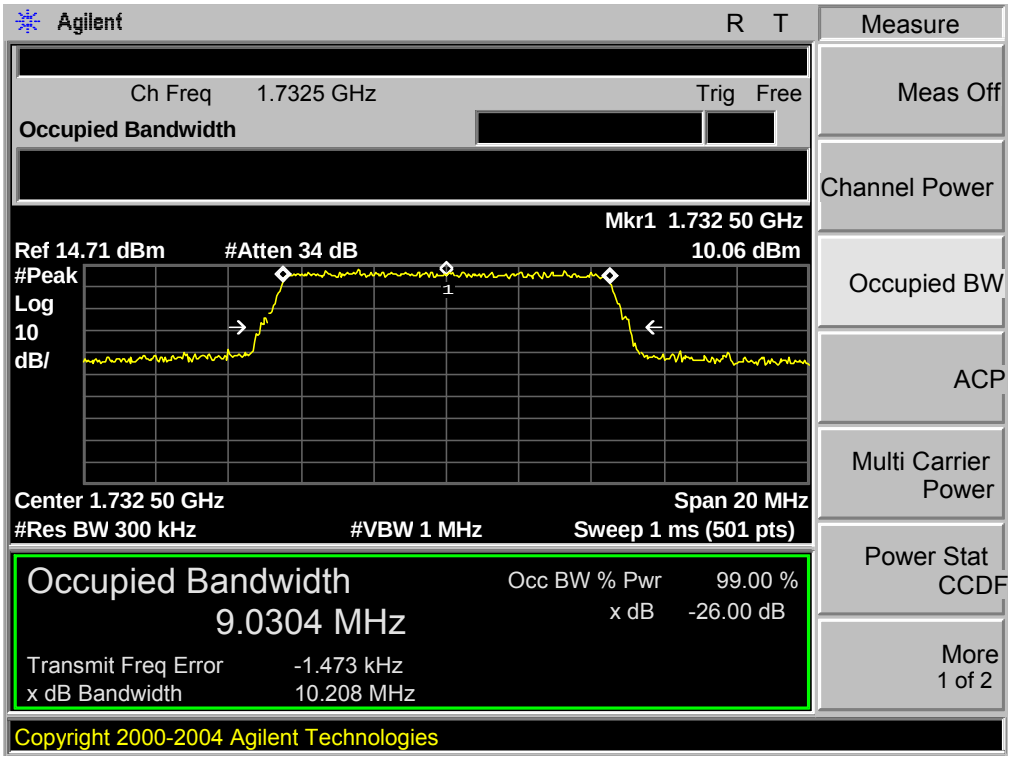
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



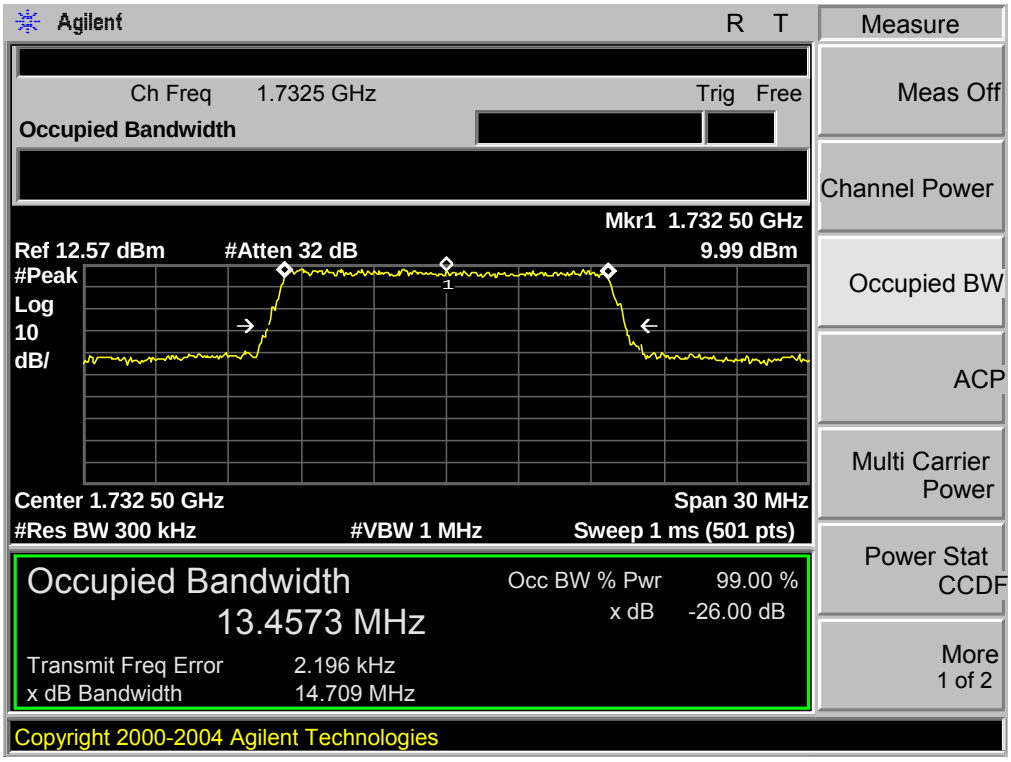
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 50,RB POS. Low,QPSK



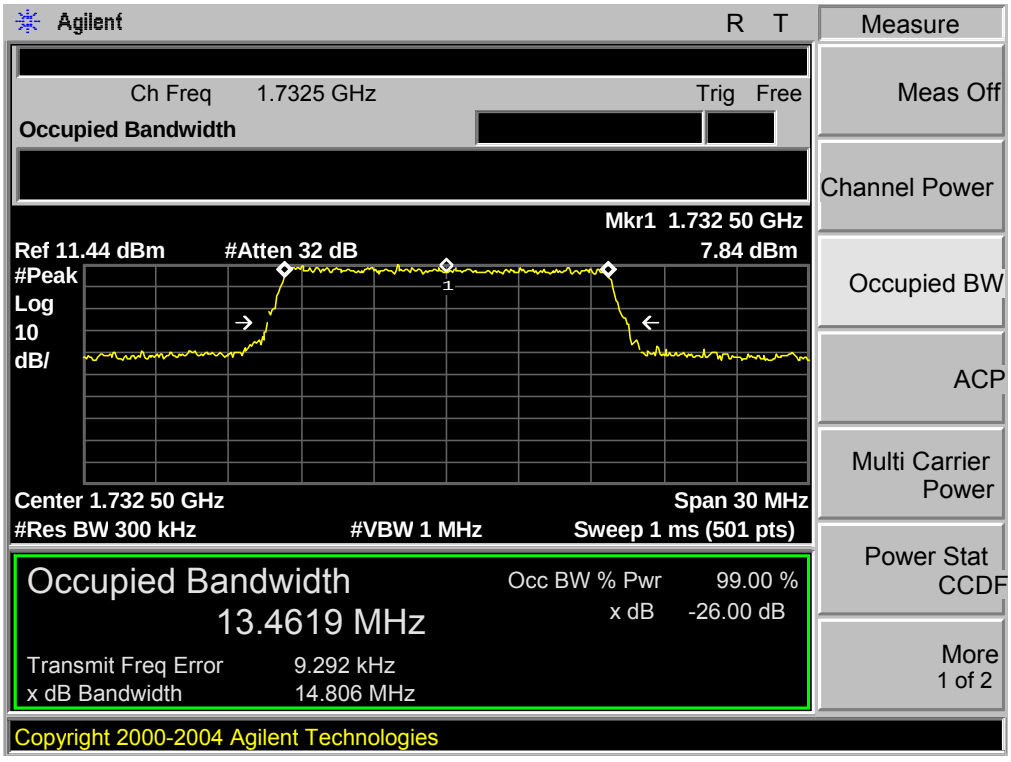
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 50,RB POS. Low,16QAM



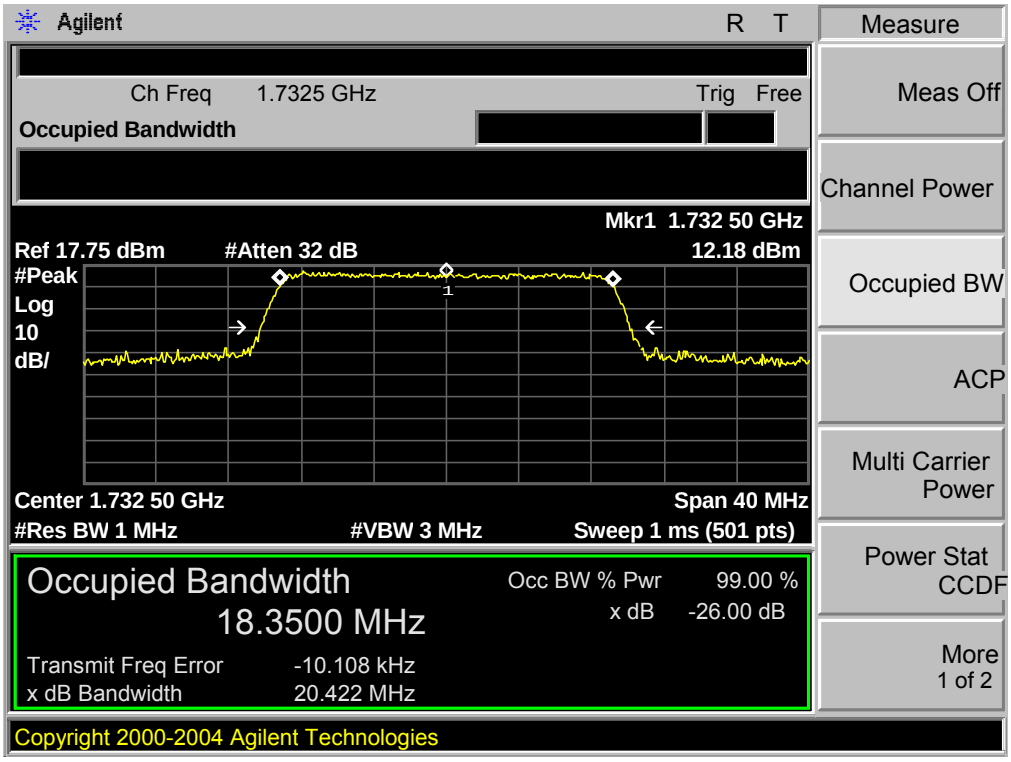
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



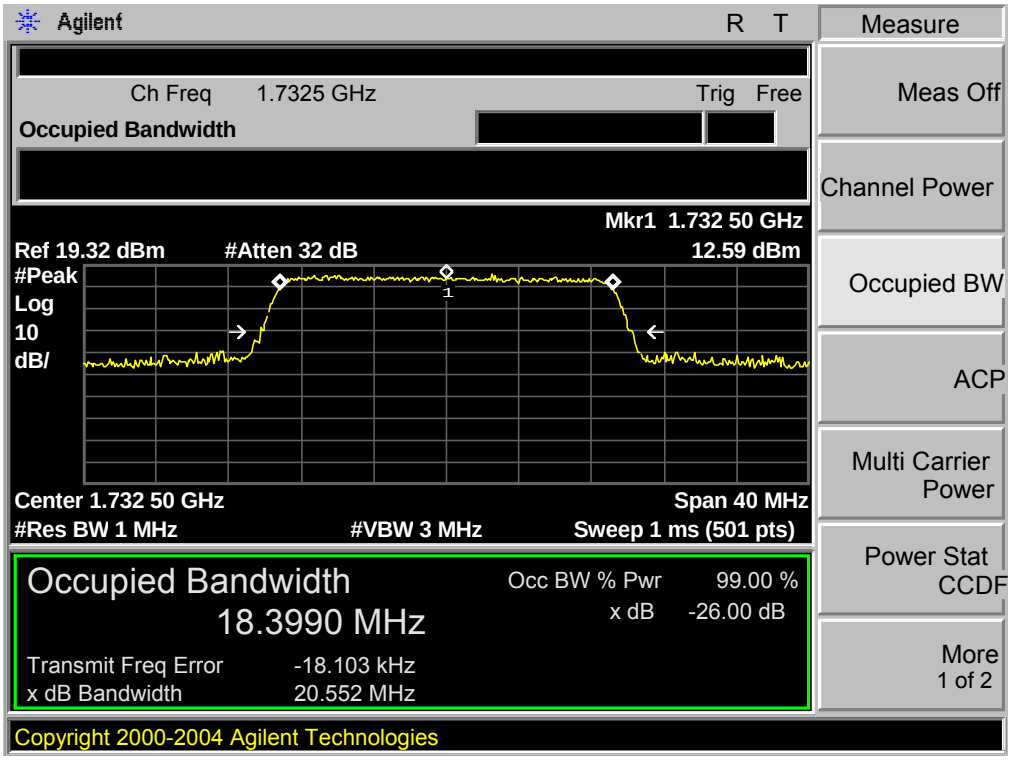
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 100,RB POS. Low,QPSK

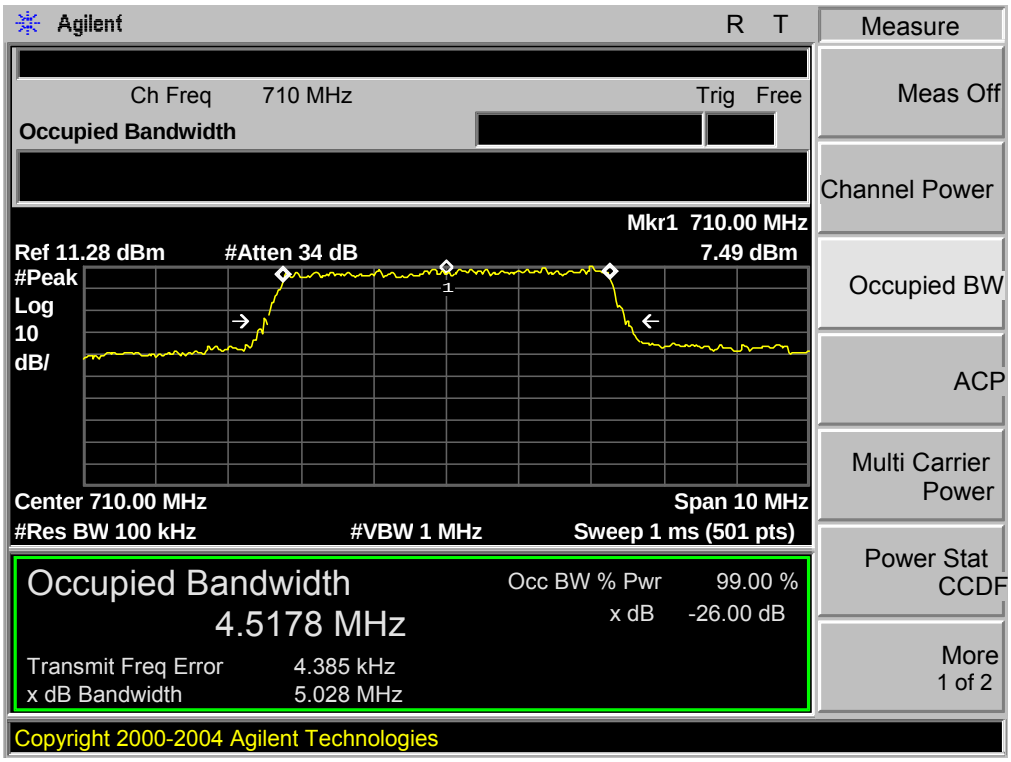


Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 100,RB POS. Low,16QAM

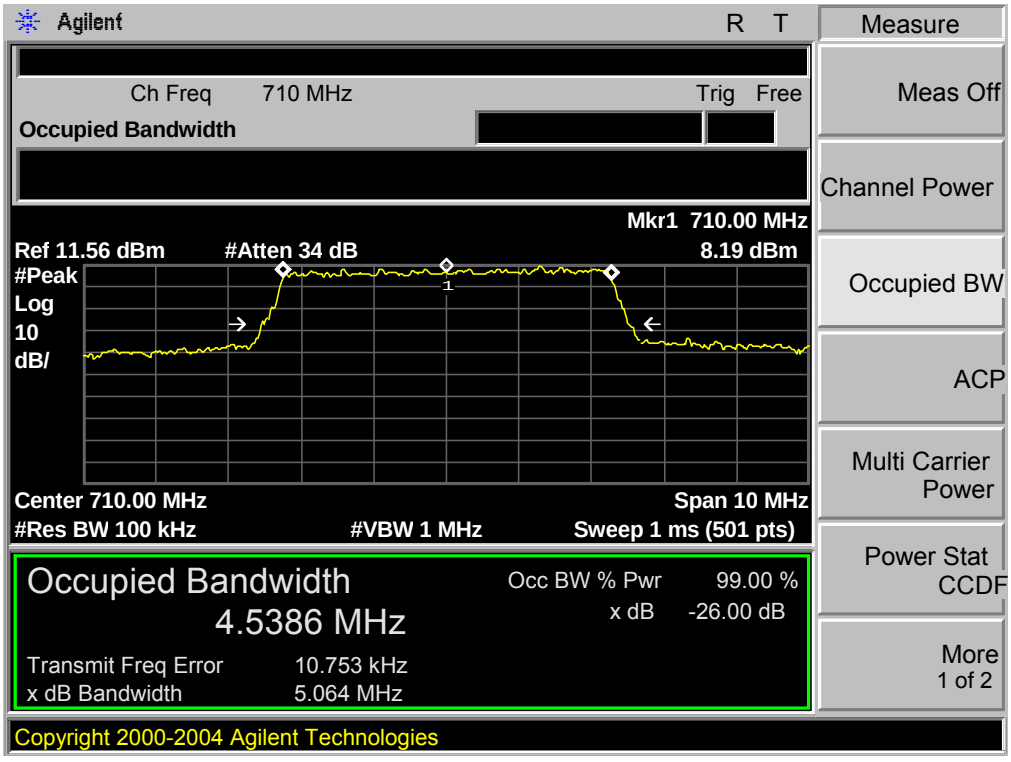


5.1.3. LTE BAND 17

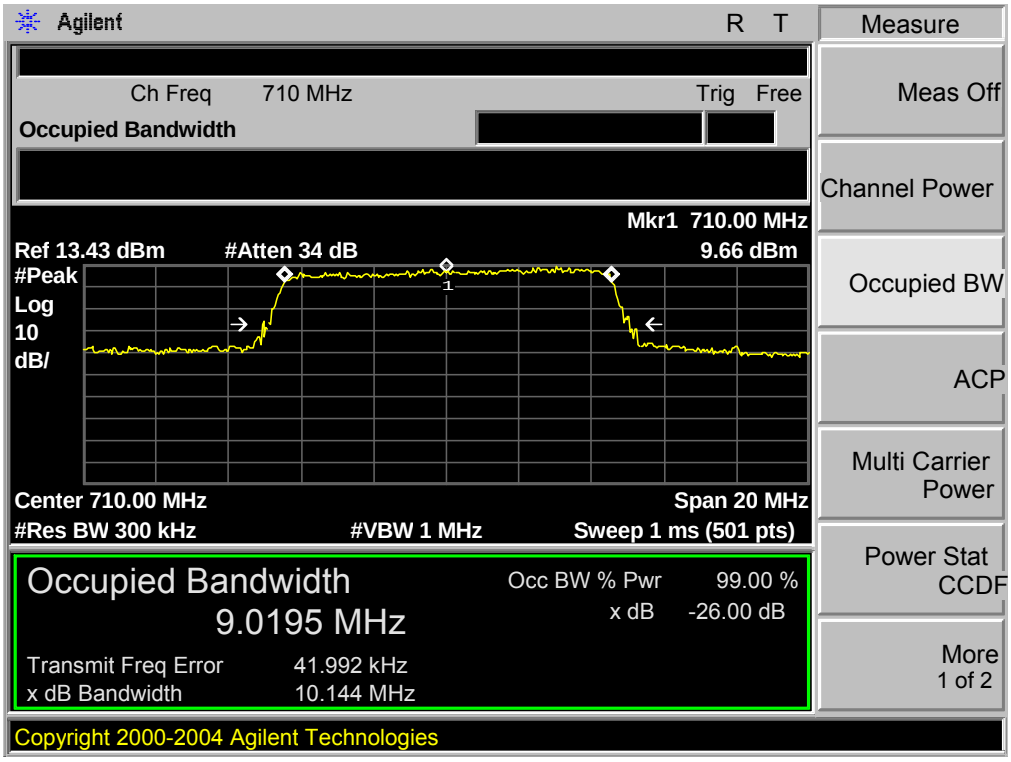
Band 17,UL Channel 23790,UL Frequency 710.0,BW 5.0,NO. RB 25,RB POS. Low,QPSK



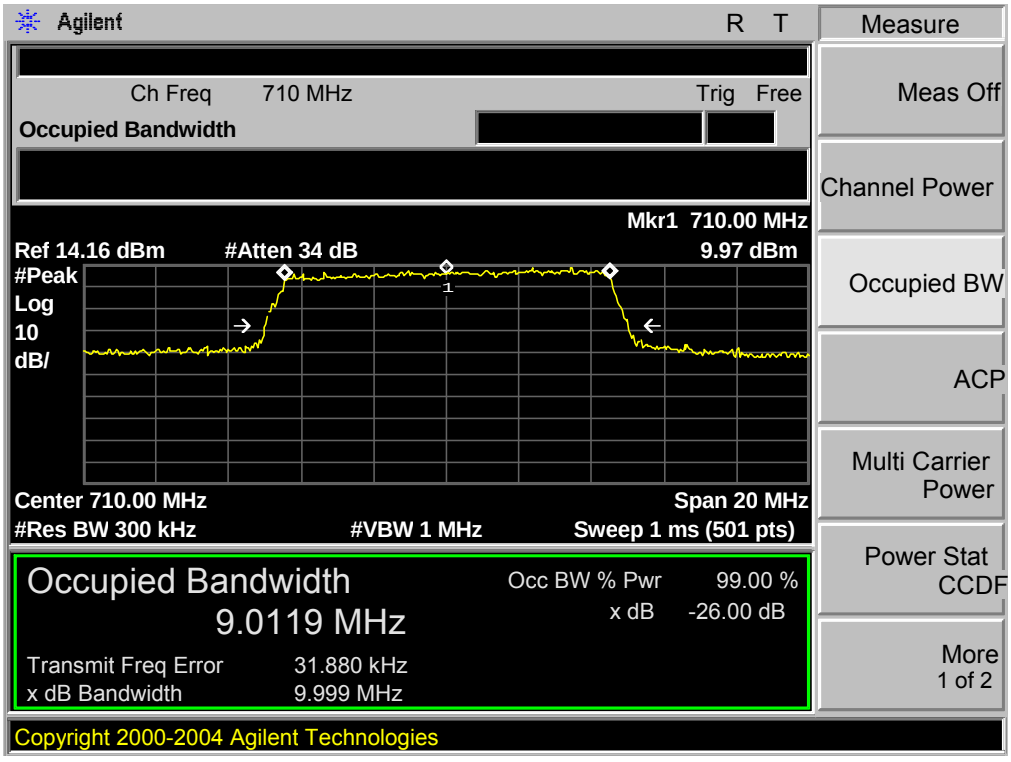
Band 17,UL Channel 23790,UL Frequency 710.0,BW 5.0,NO. RB 25,RB POS. Low,16QAM



Band 17,UL Channel 23790,UL Frequency 710.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



Band 17,UL Channel 23790,UL Frequency 710.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



6. BANDEDGE AND EMISSION MASK

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238, §27.53, and §90.691
FCC: §22.359

LIMITS

FCC: §22.359, §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.

(m)(4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.Show citation box.

TEST PROCEDURE

The transmitter output was connected to a CMW500Test 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 (704, 716, 824, 849, 1710 and 1755, 1850 and 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.

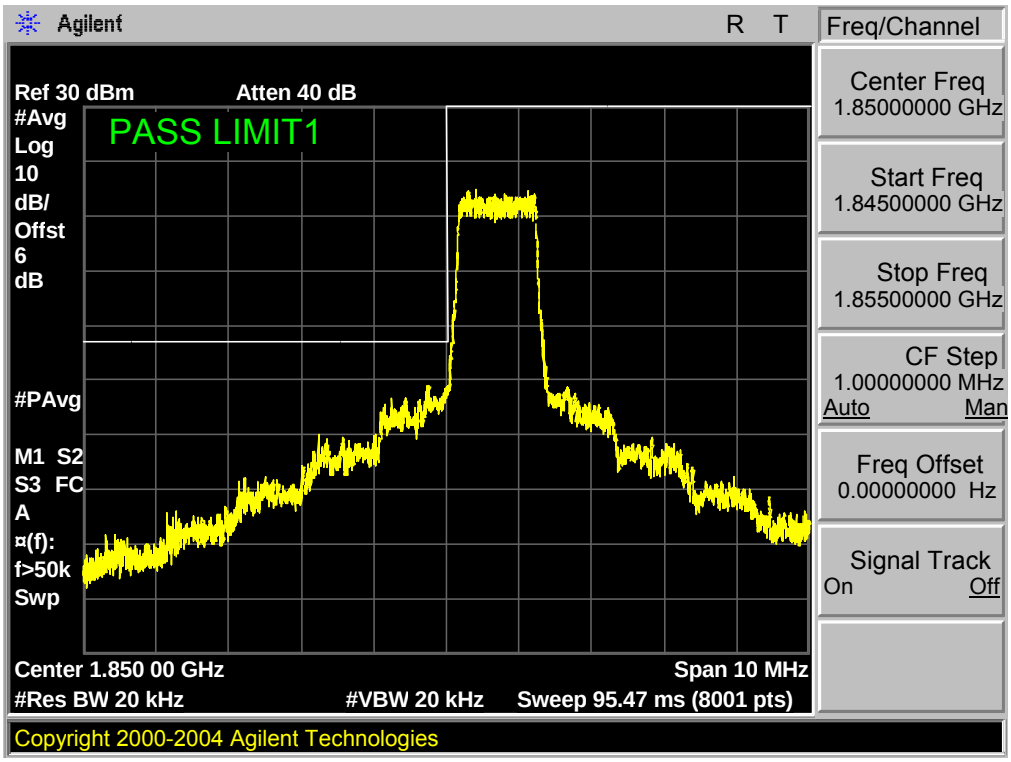
MODES TESTED

LTE Band 2
LTE Band 4
LTE Band 17

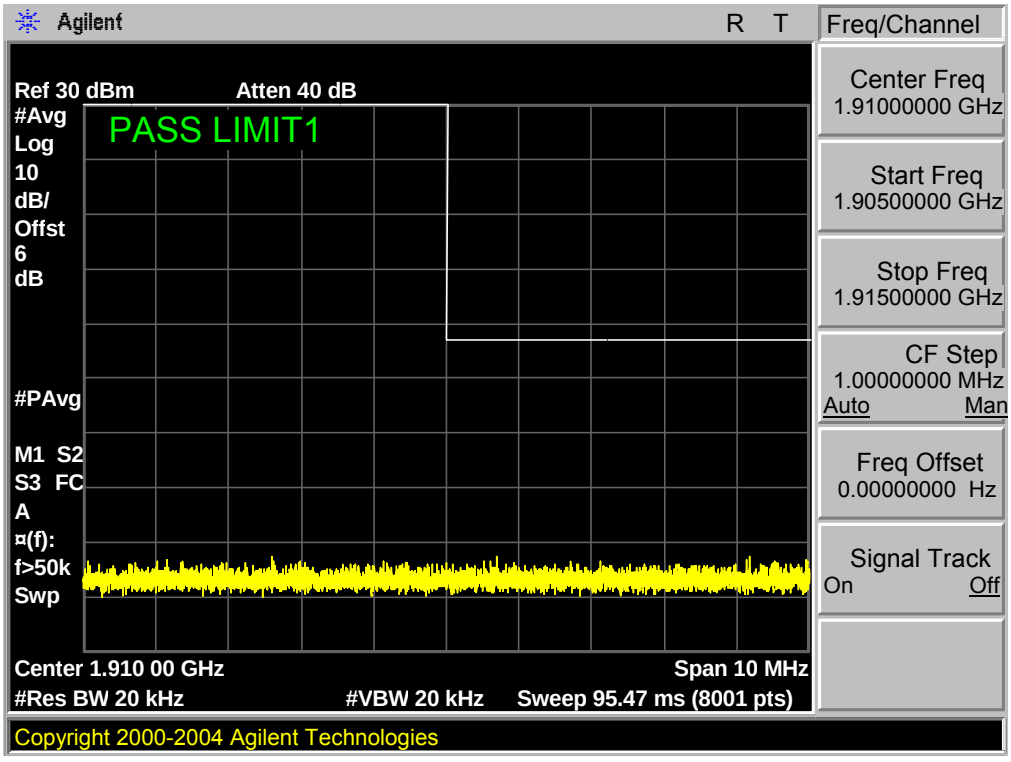
RESULTS

6.1.1. LTE BAND 2

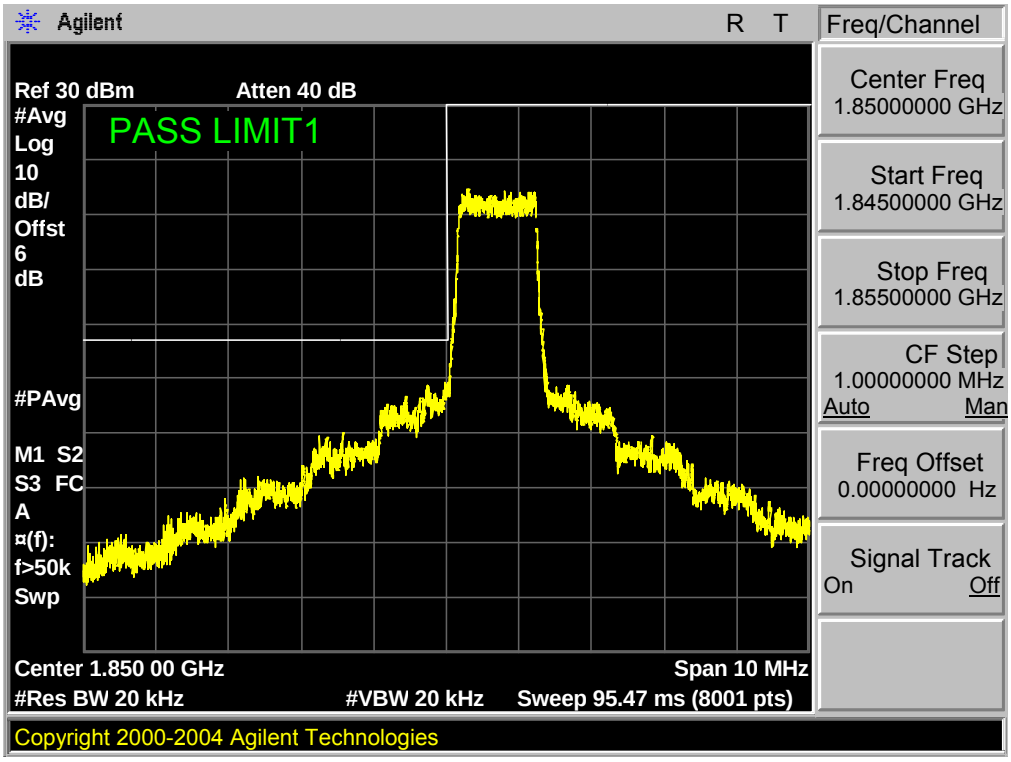
Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 6,RB POS. Low,QPSK



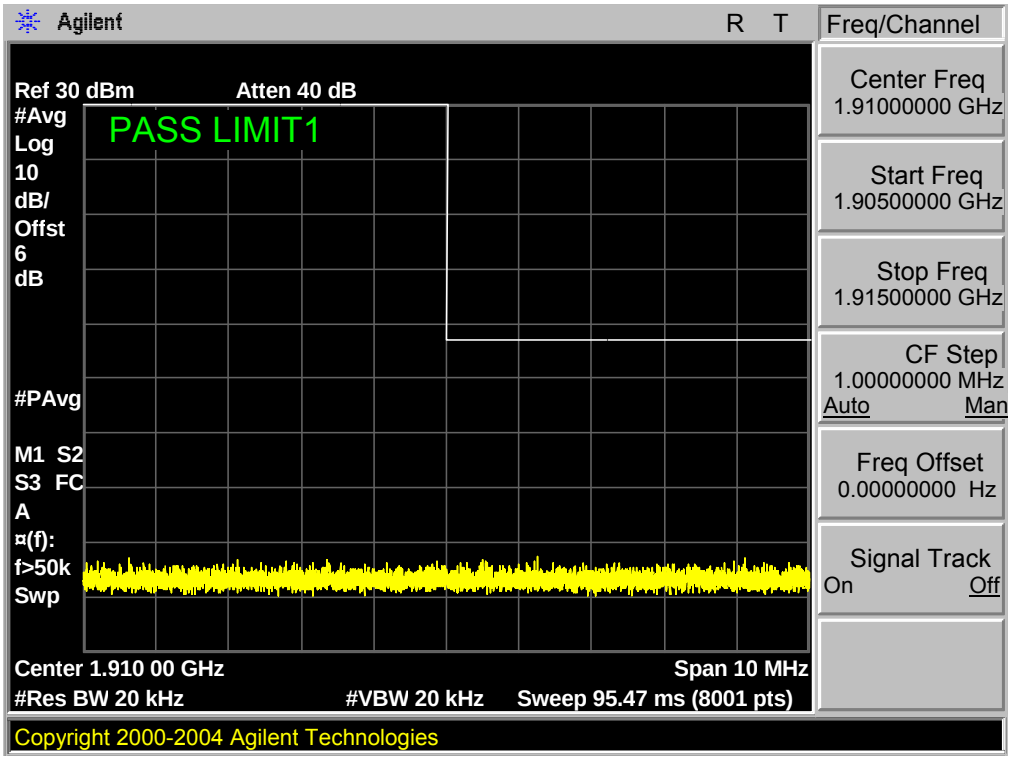
Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 6,RB POS. Low,QPSK



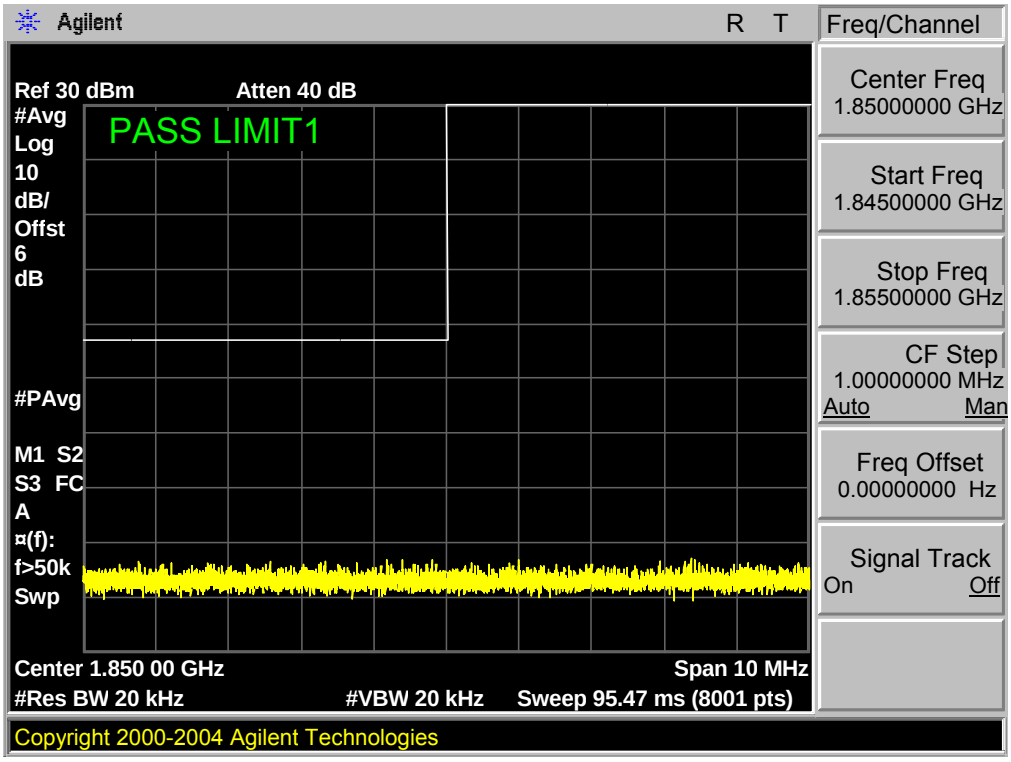
Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 6,RB POS. Low,16QAM



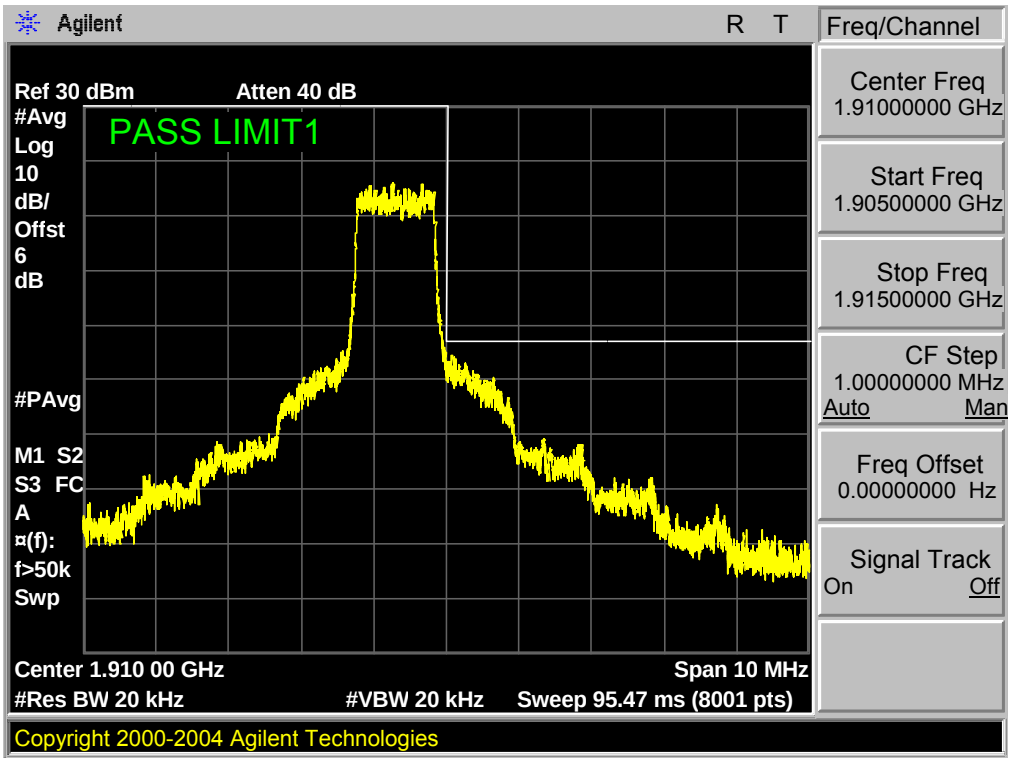
Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 6,RB POS. Low,16QAM



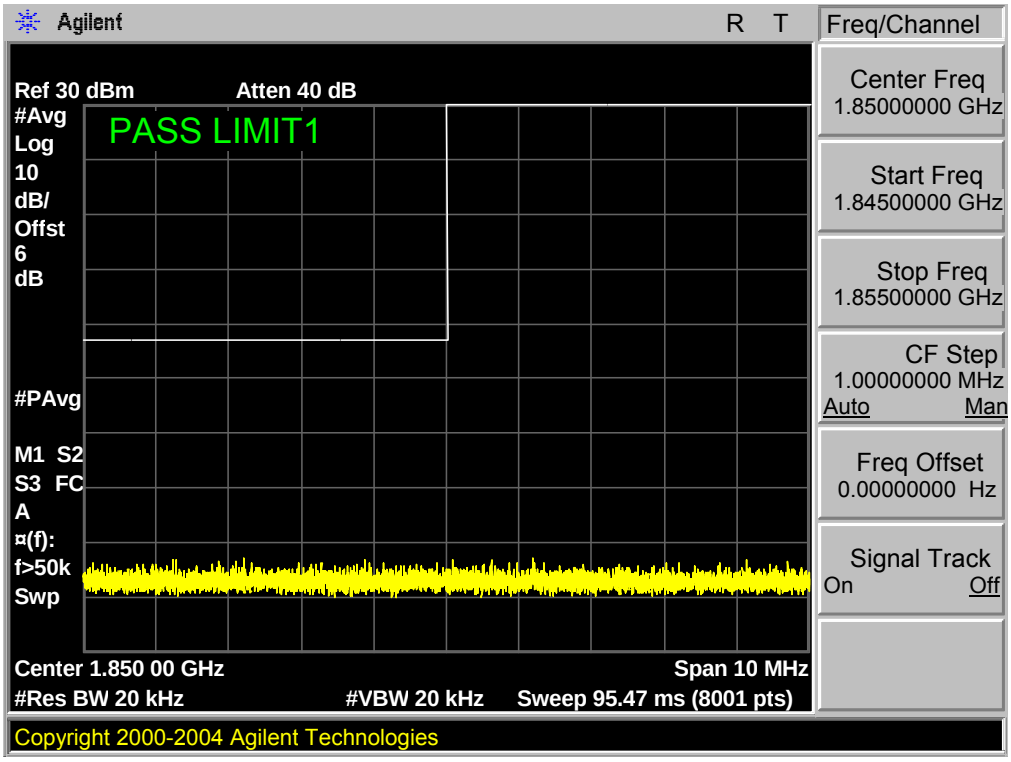
Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 6,RB POS. Low,QPSK



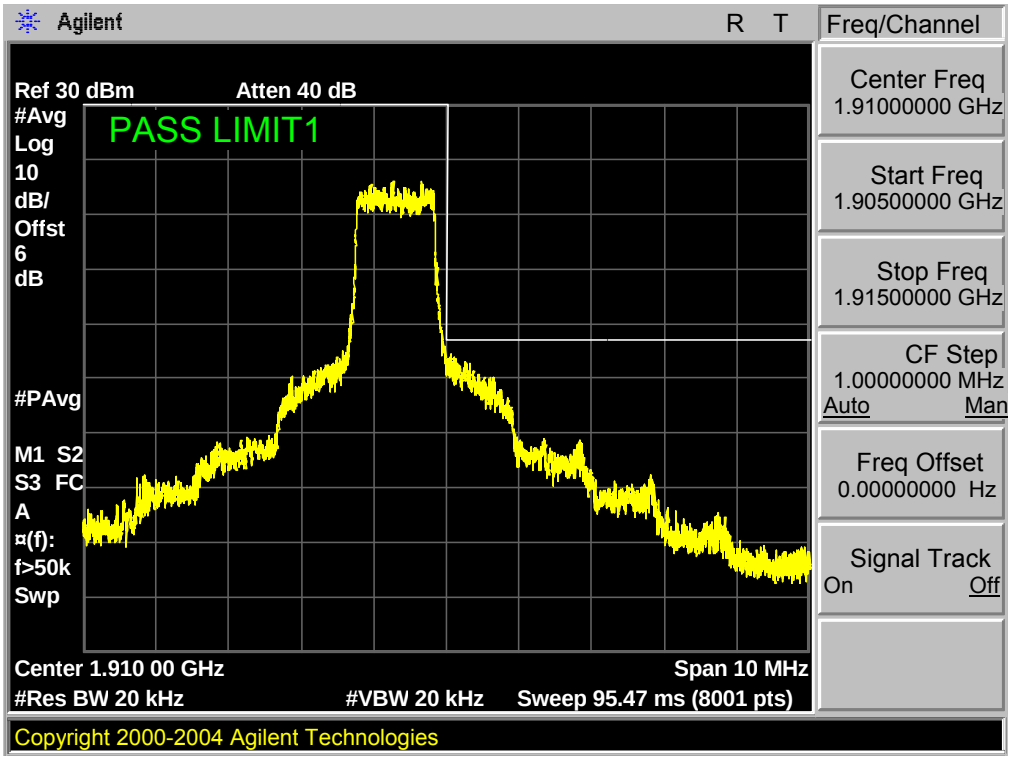
Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 6,RB POS. Low,QPSK



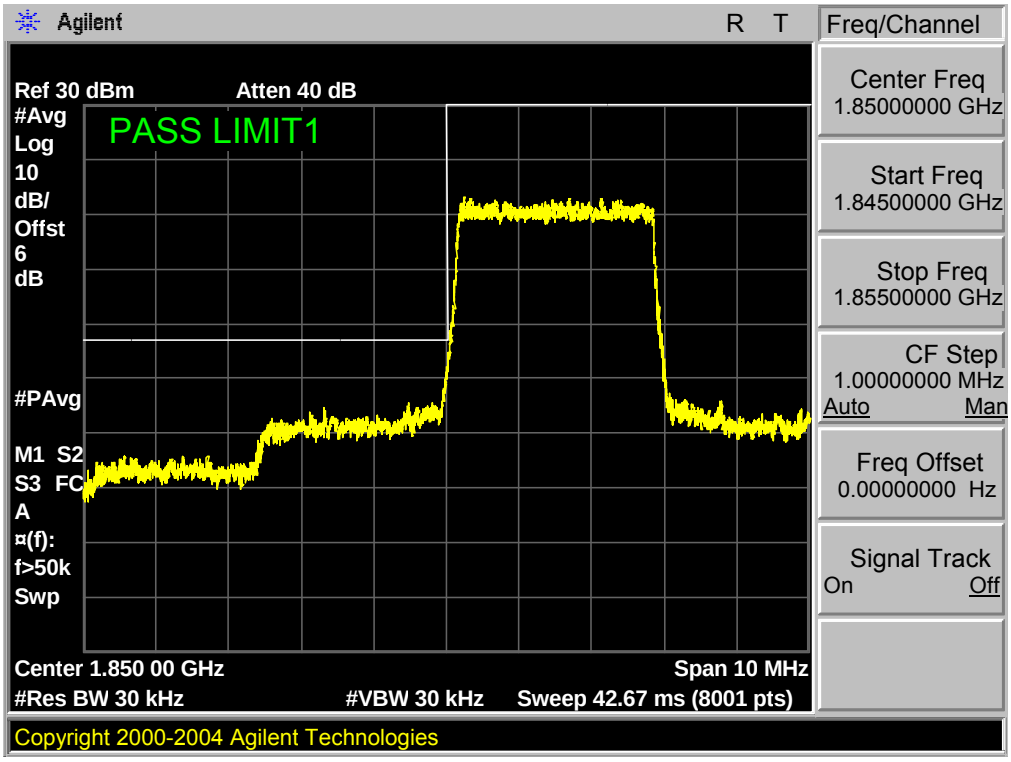
Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 6,RB POS. Low,16QAM



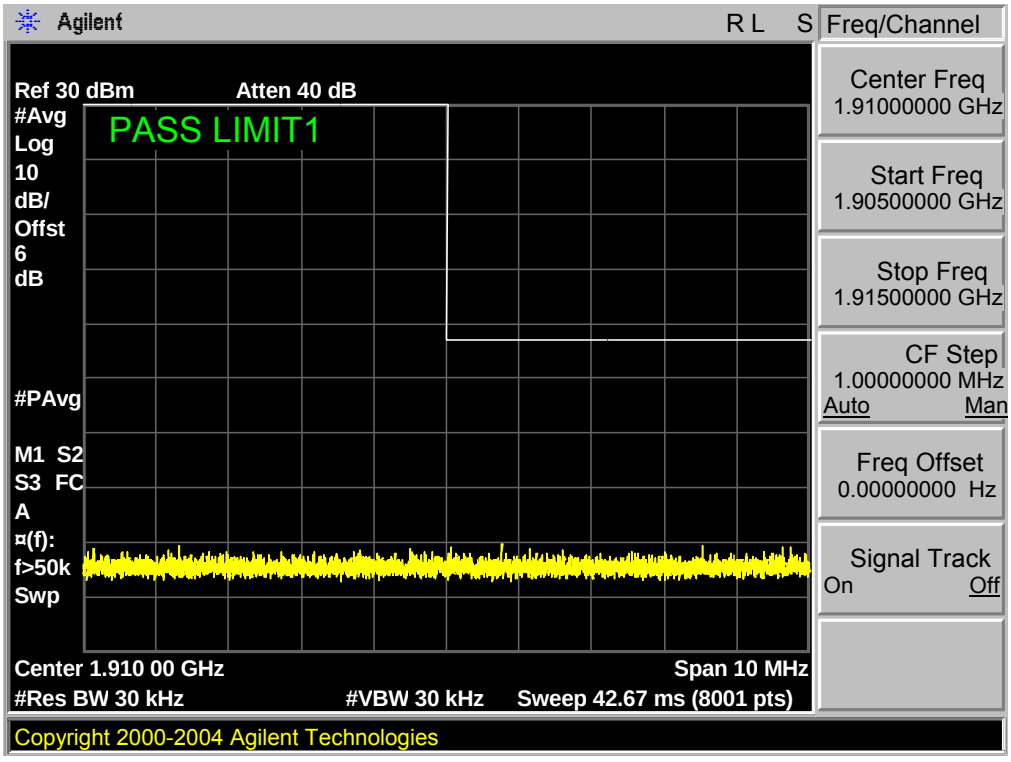
Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 6,RB POS. Low,16QAM



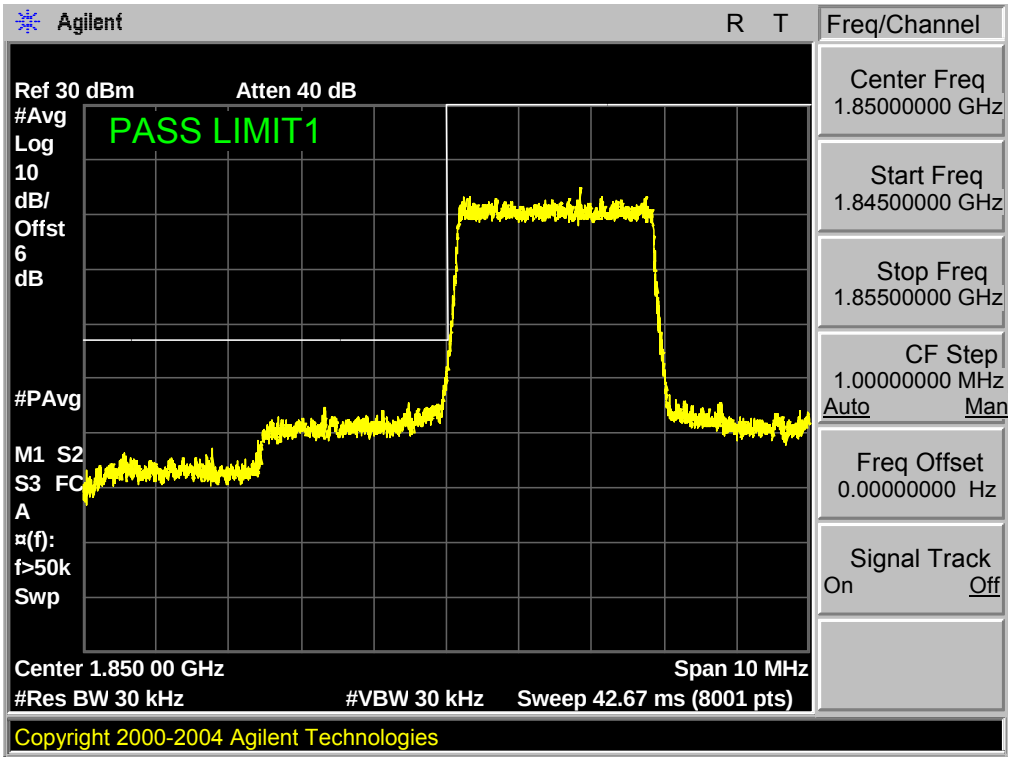
Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



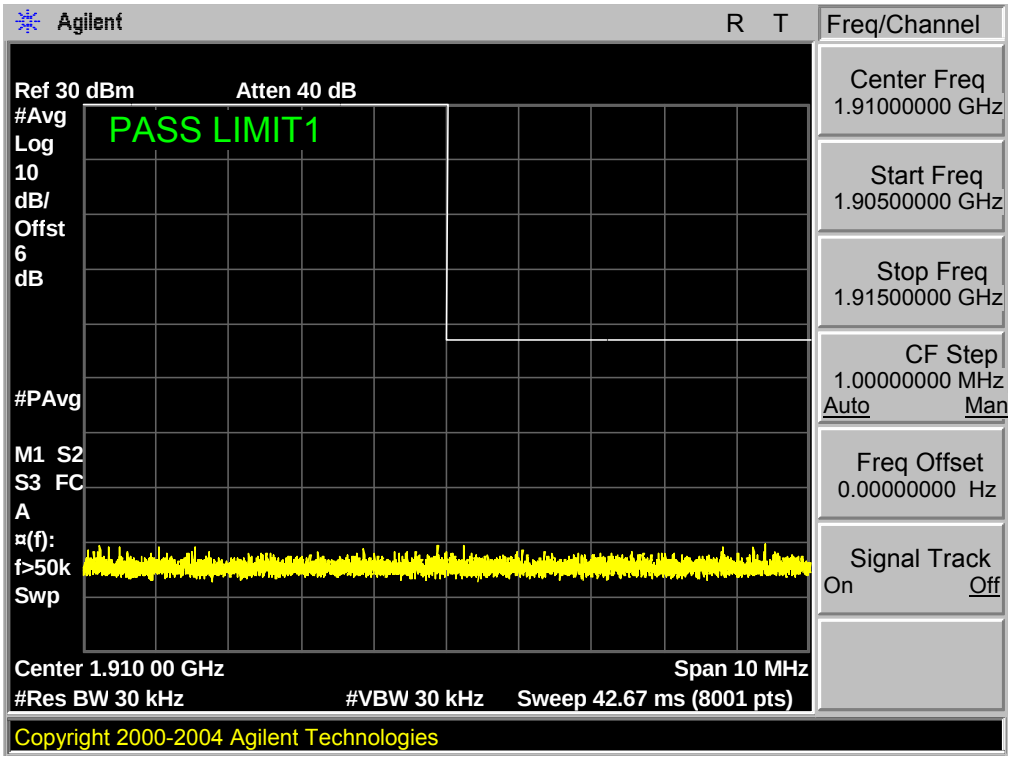
Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



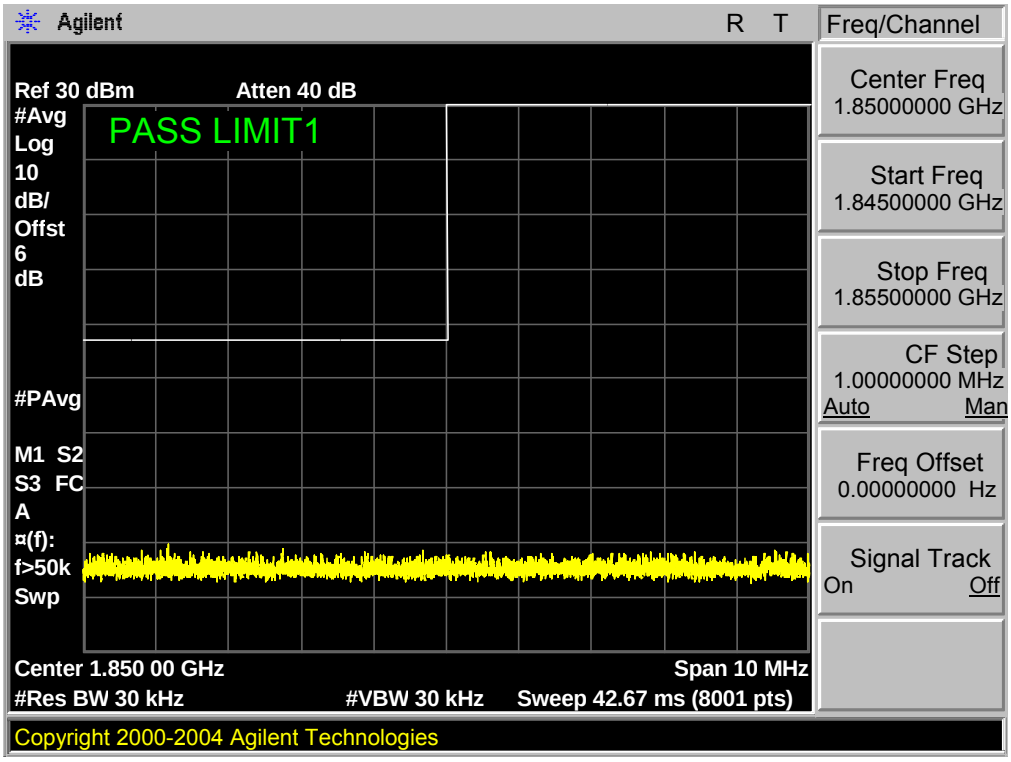
Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



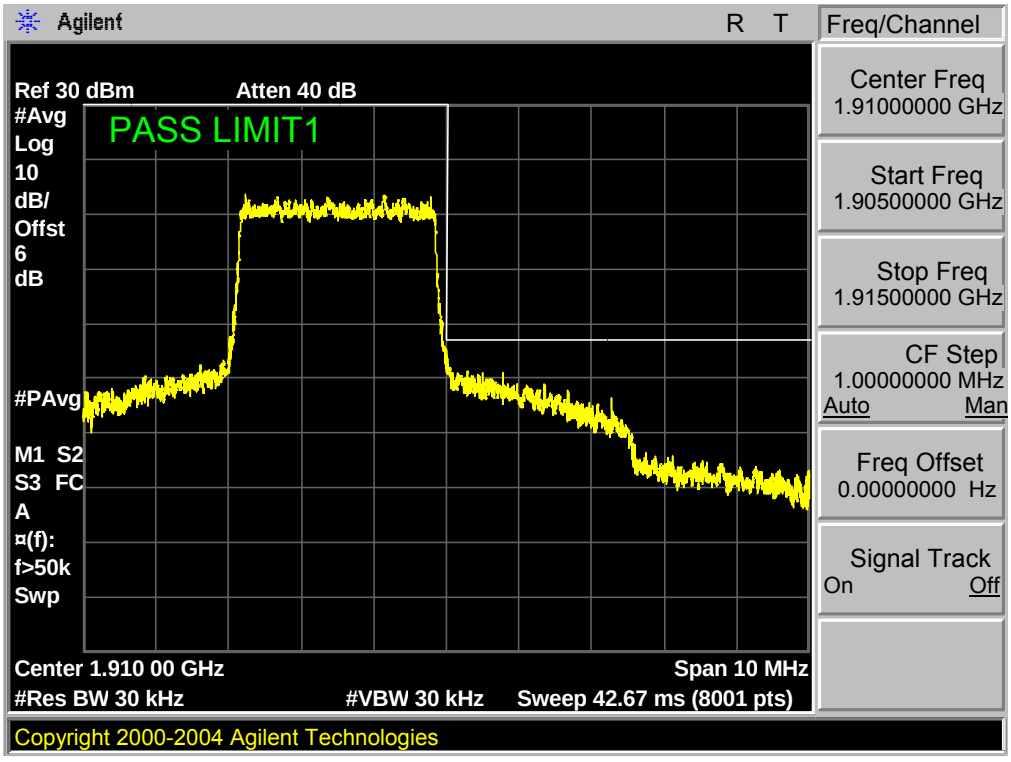
Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



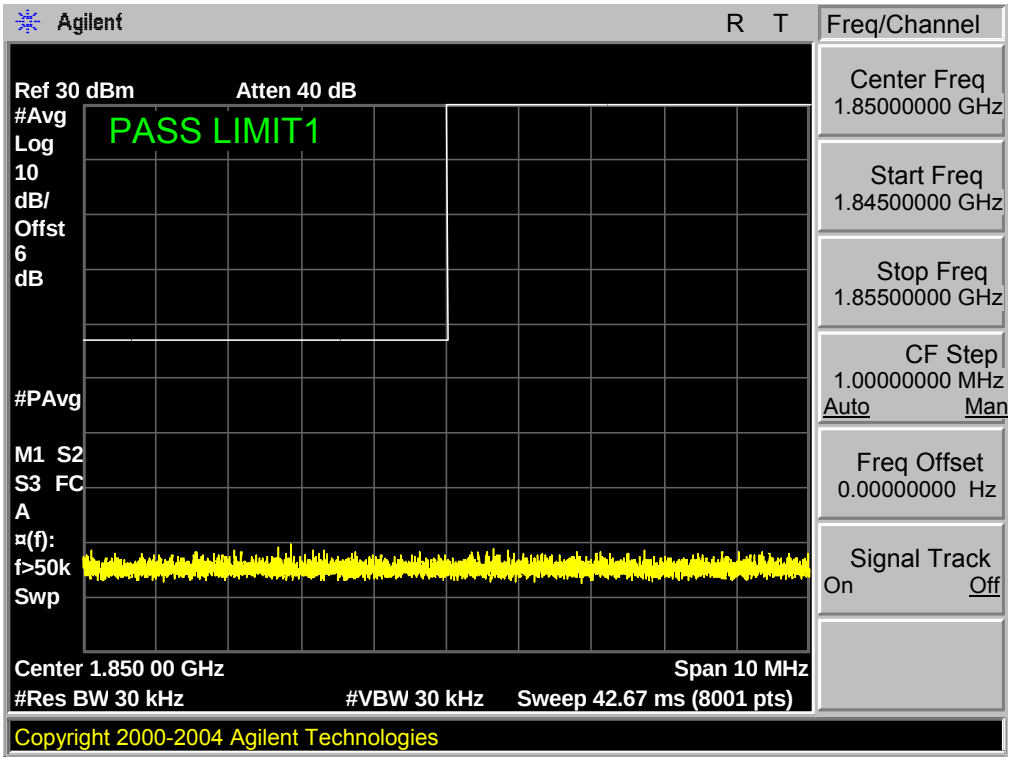
Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



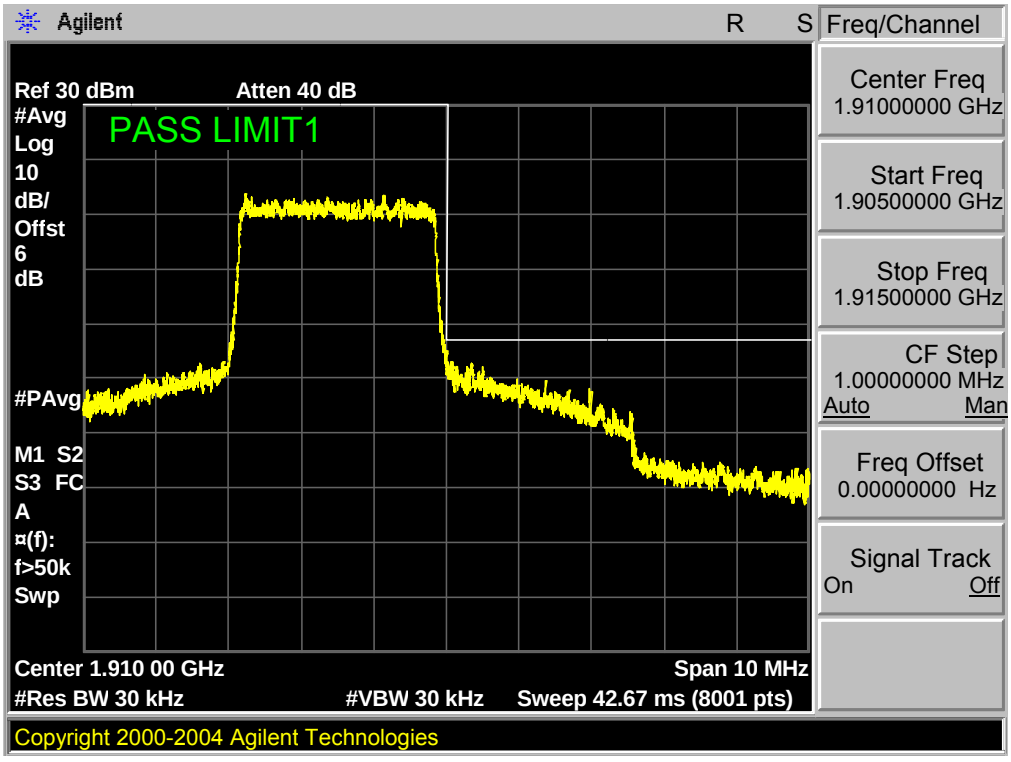
Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



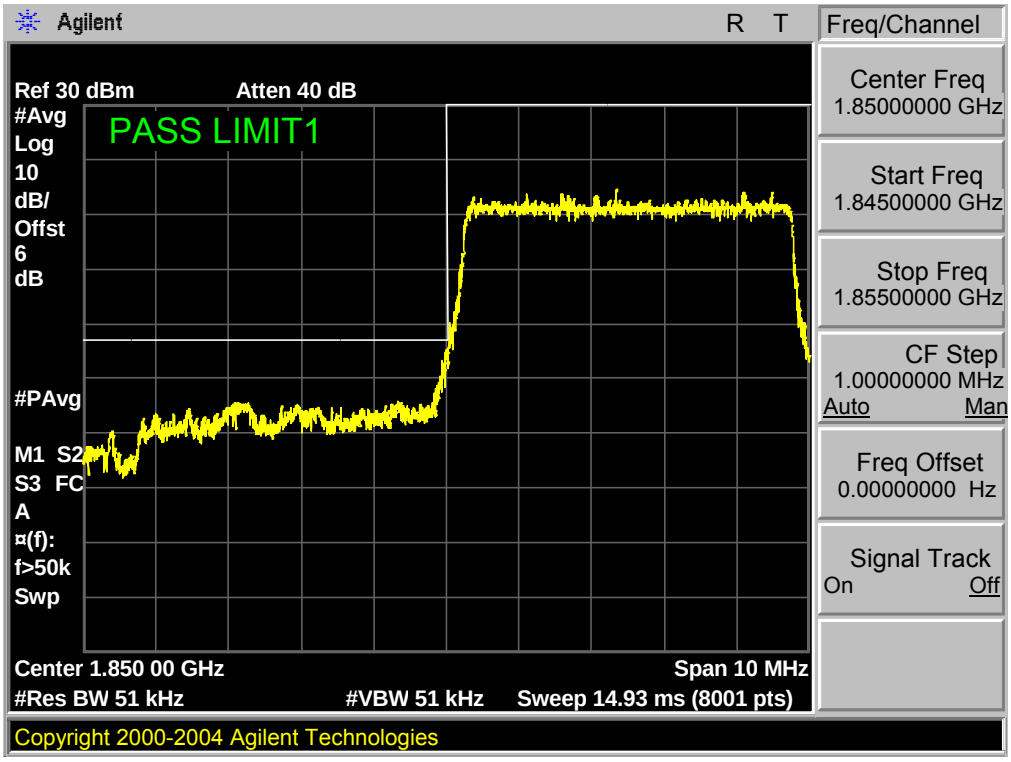
Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



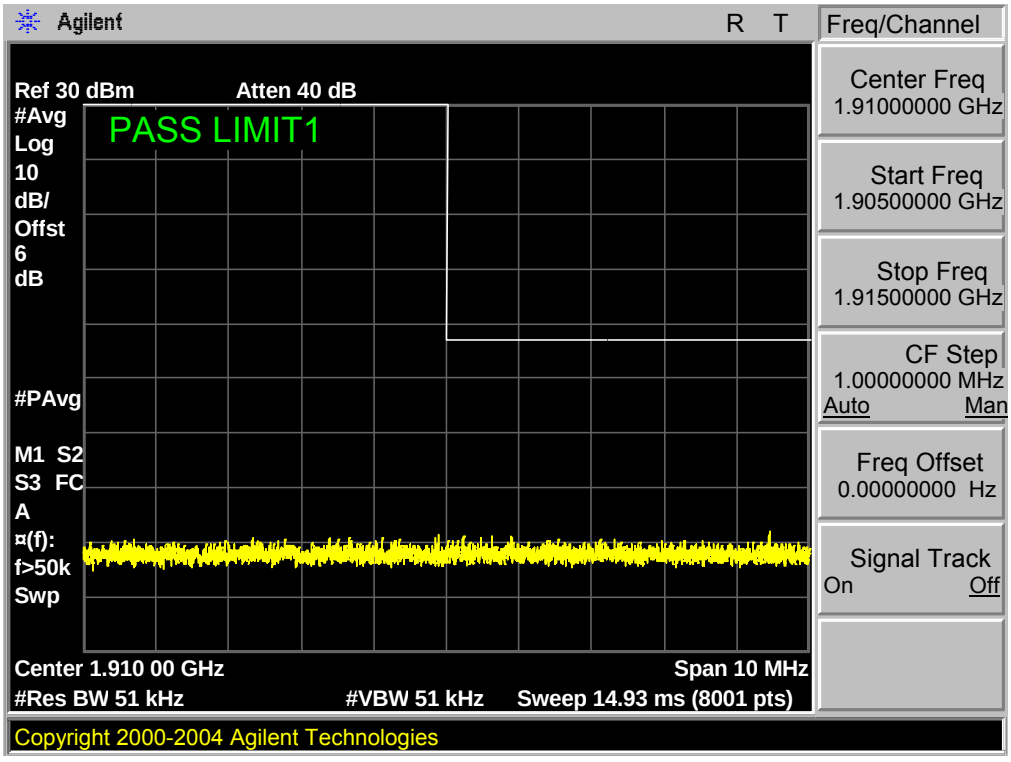
Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



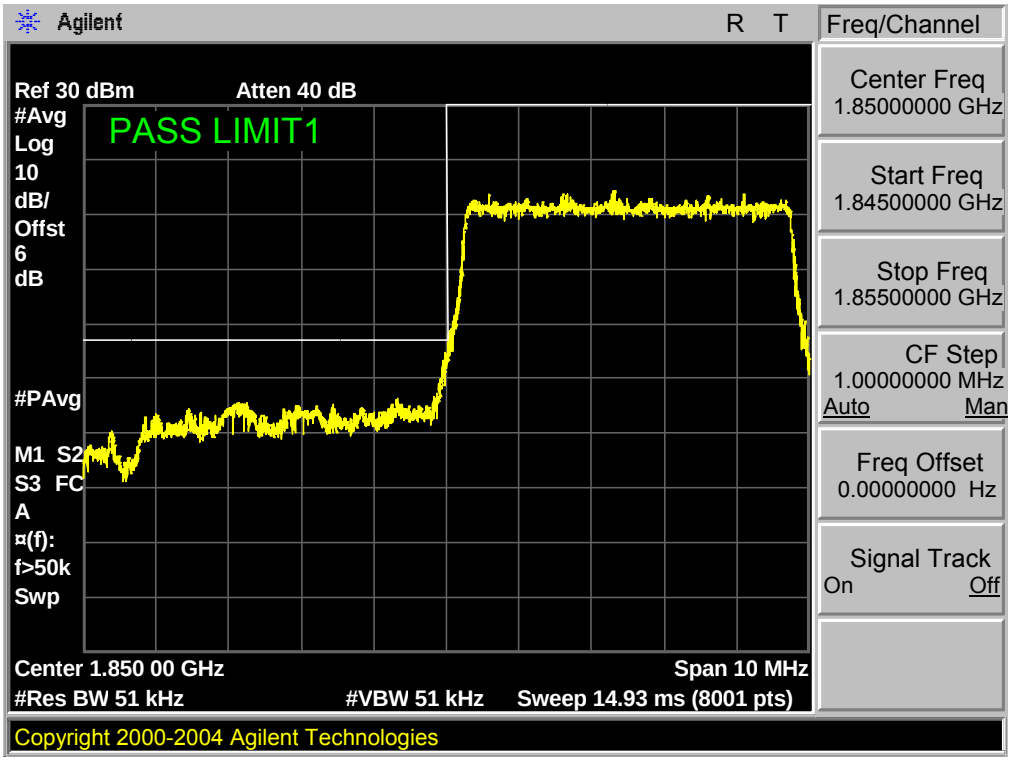
Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



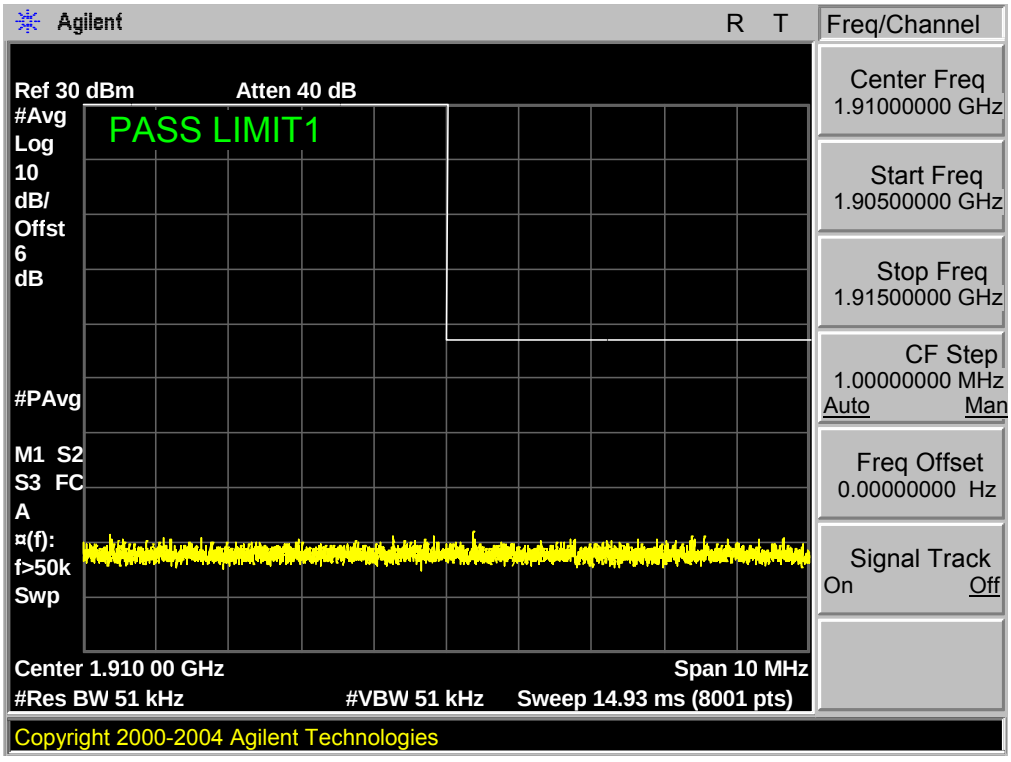
Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



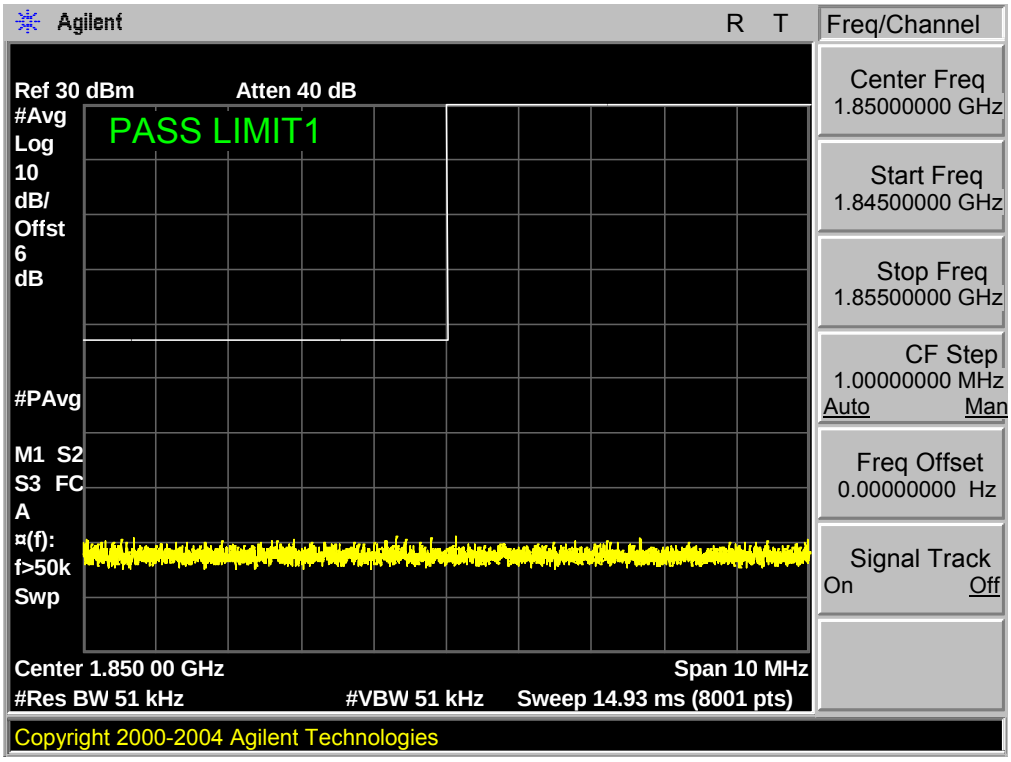
Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



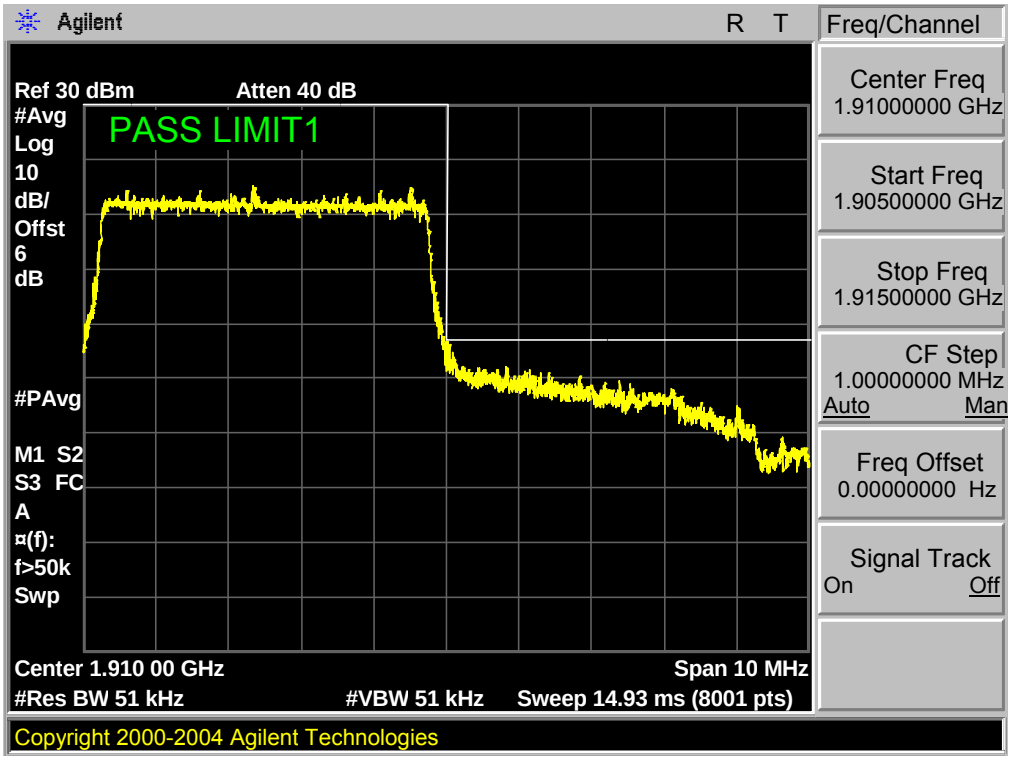
Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



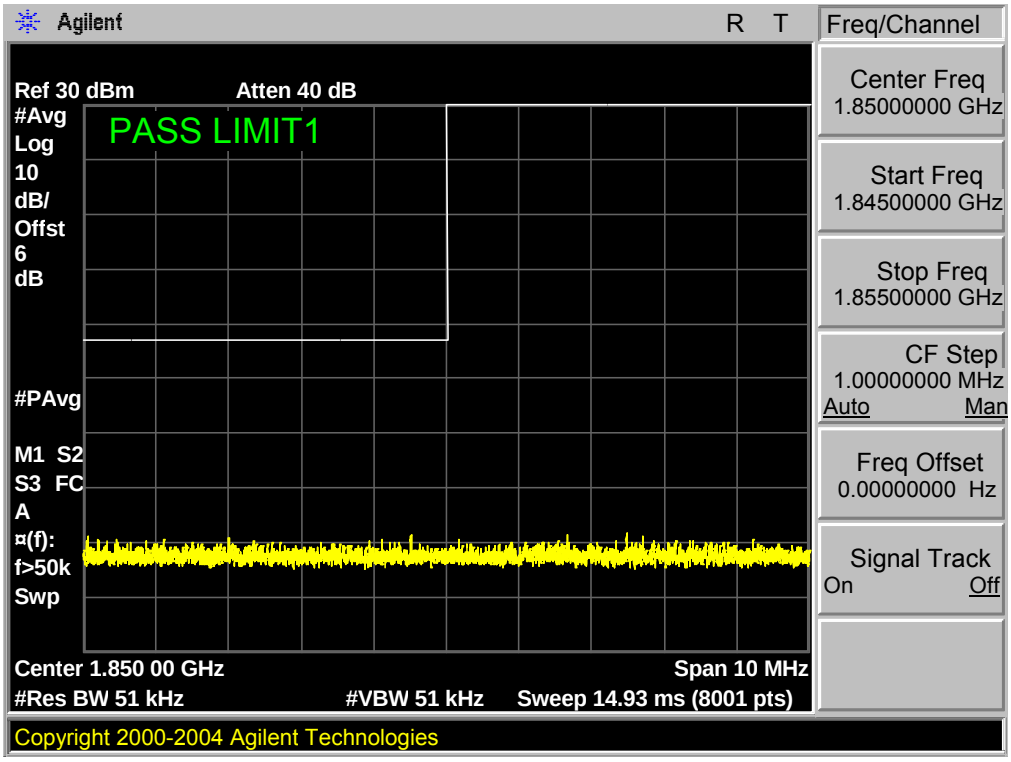
Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



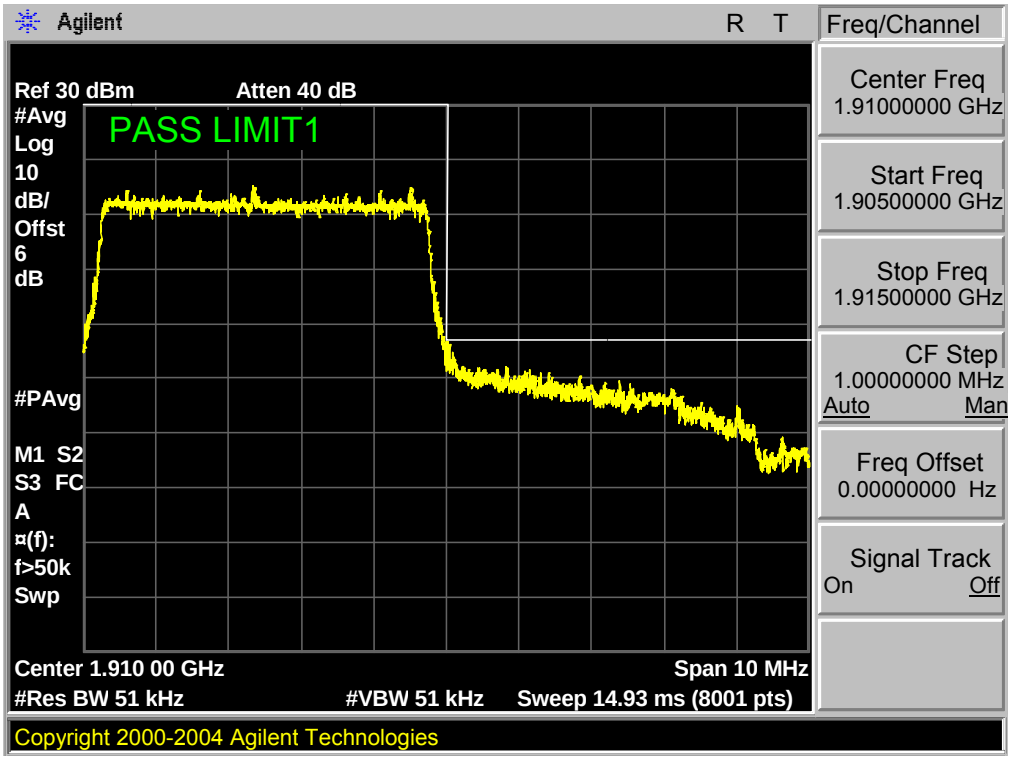
Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



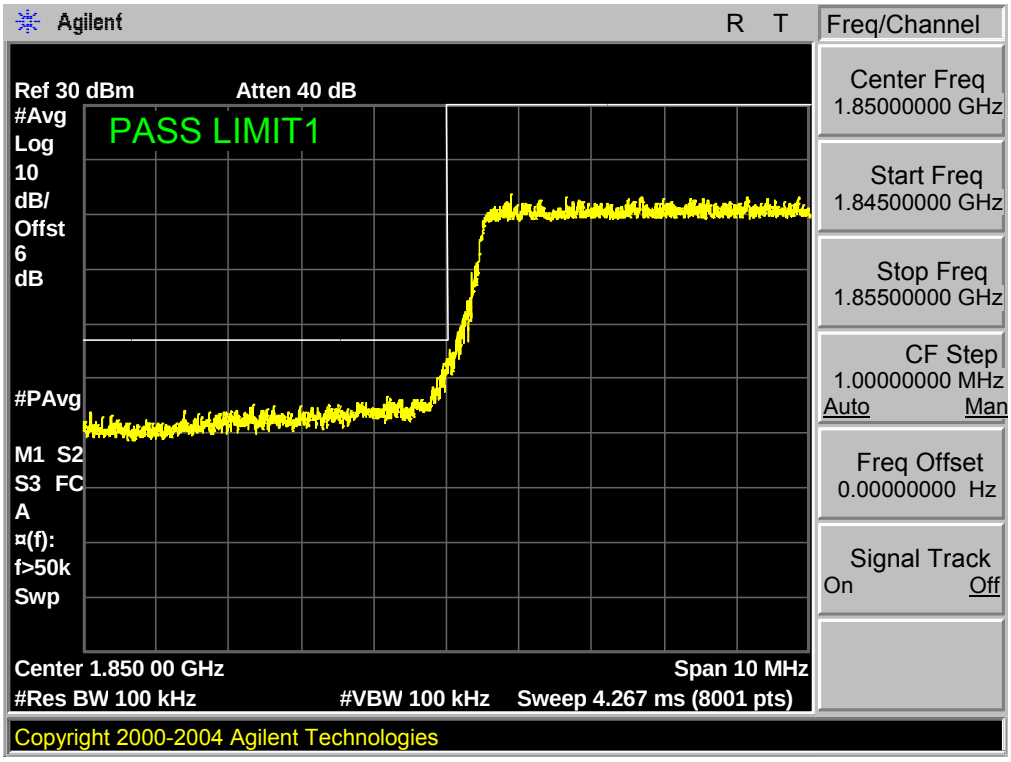
Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



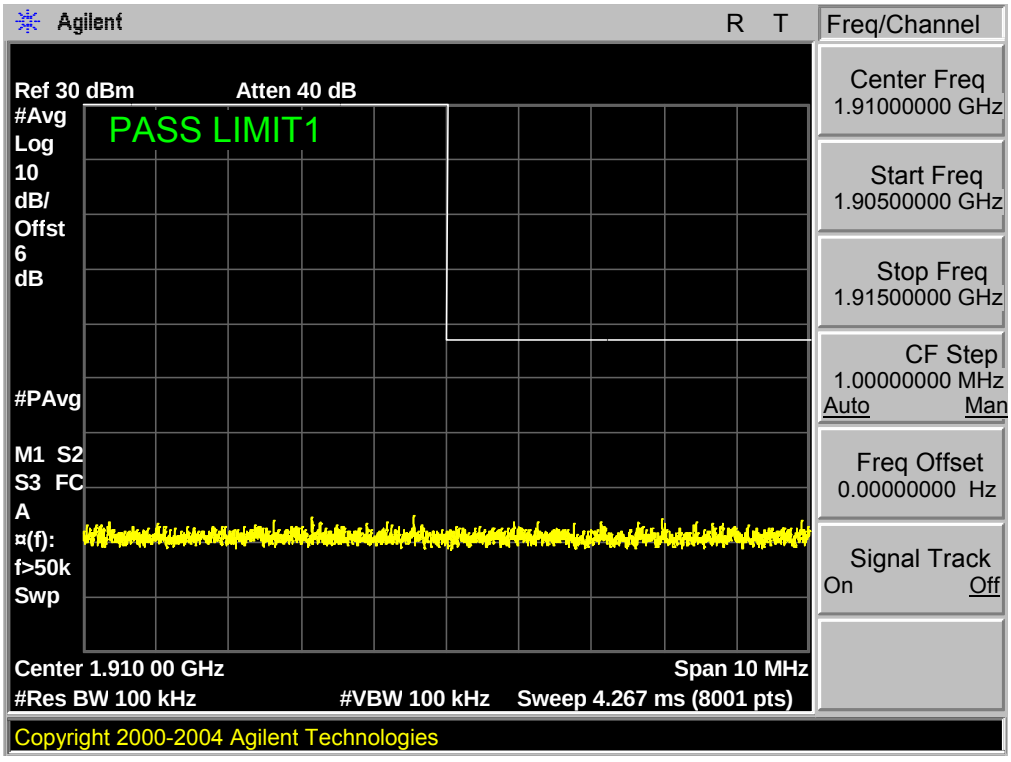
Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



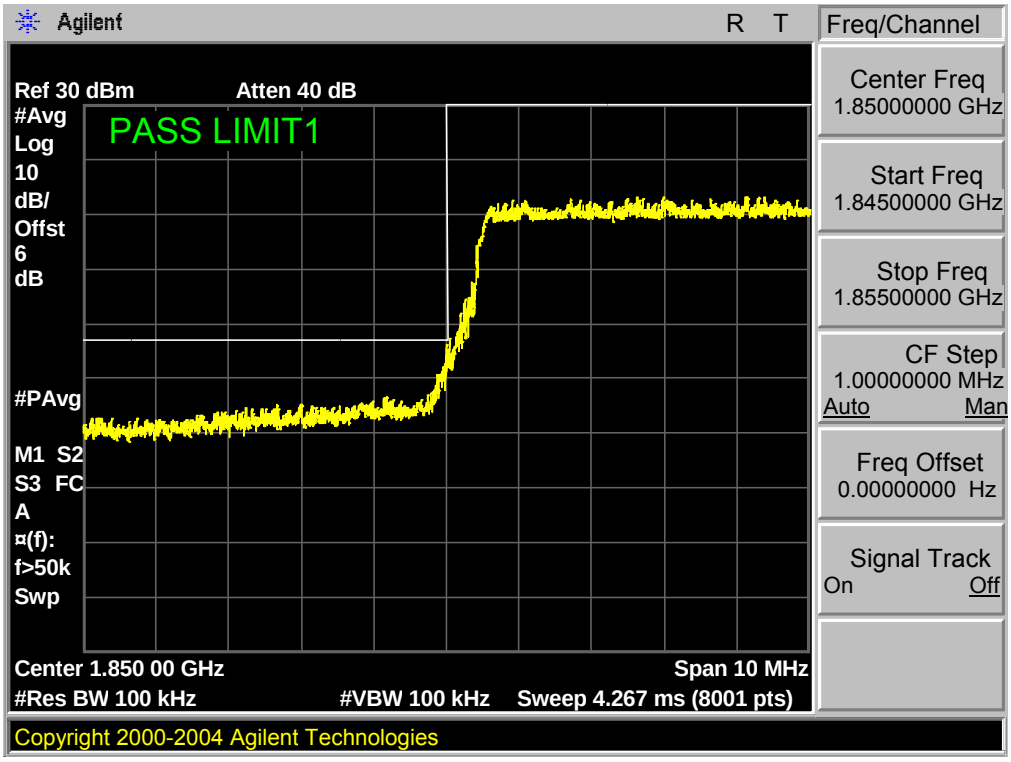
Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



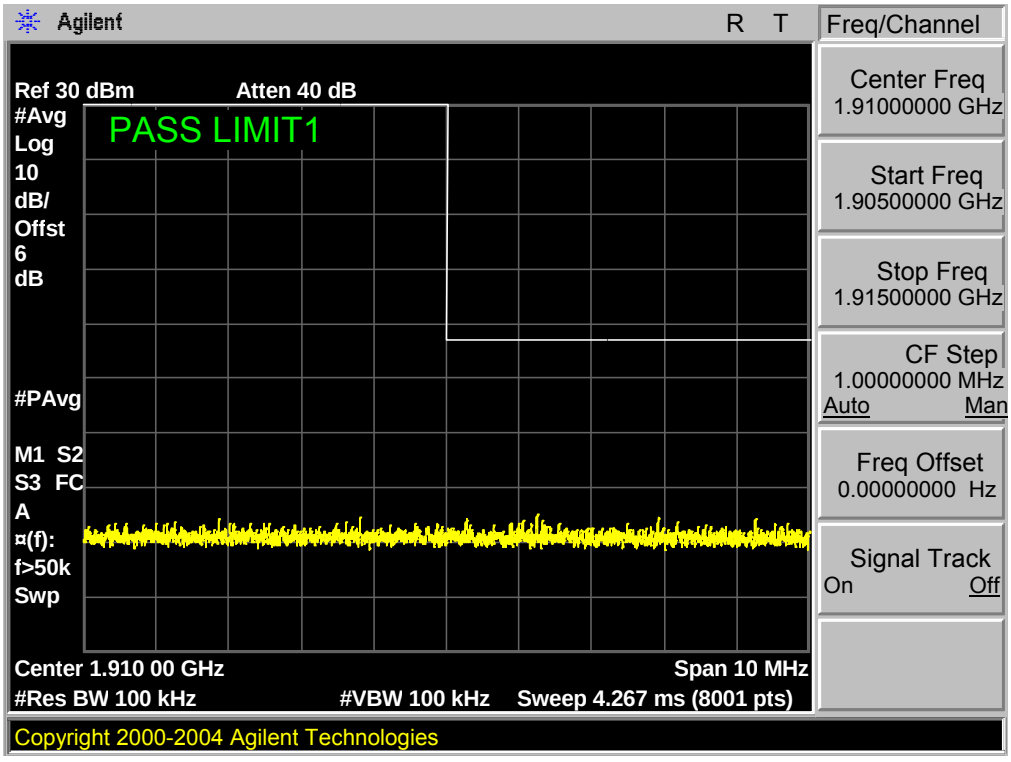
Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



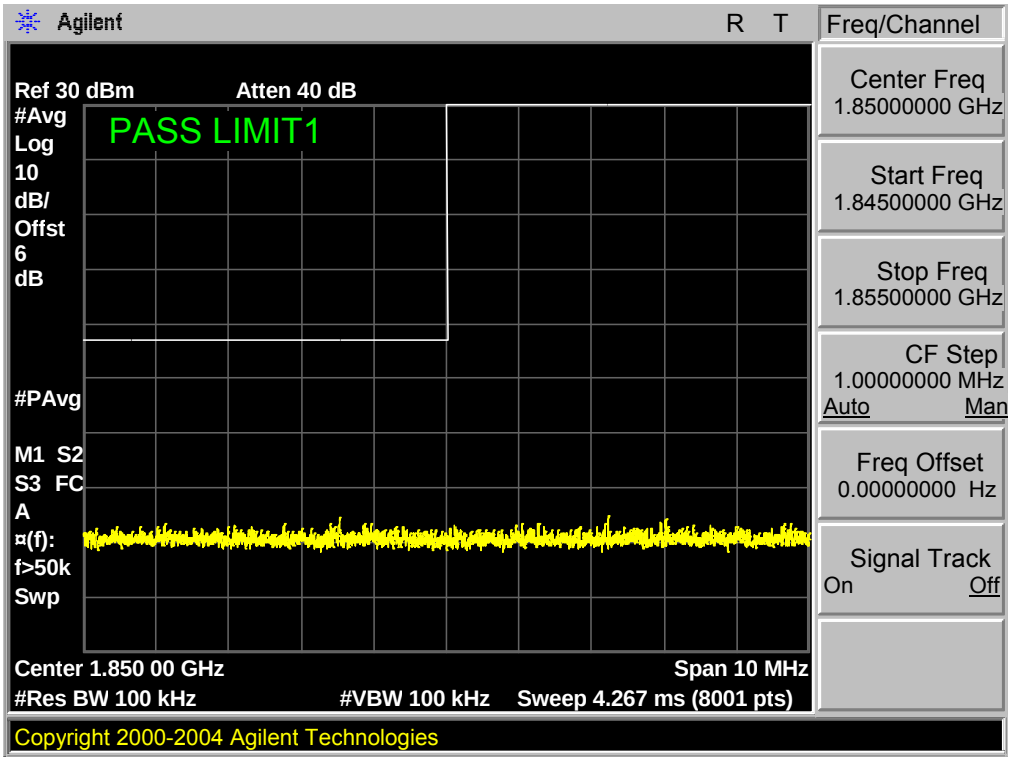
Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



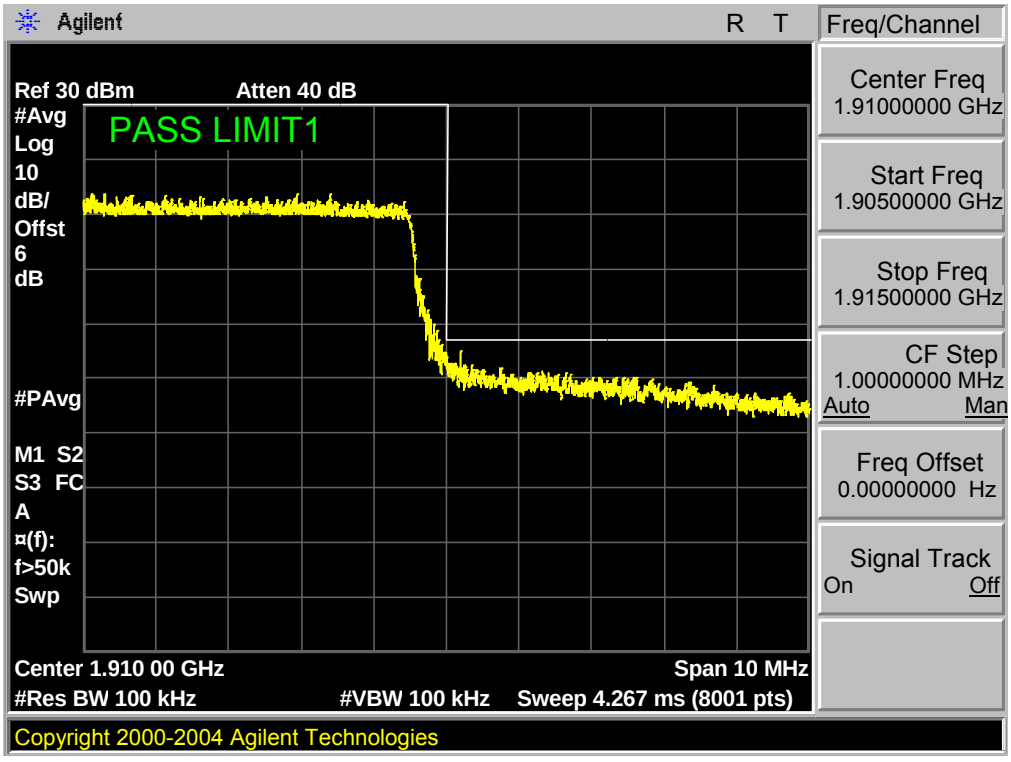
Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



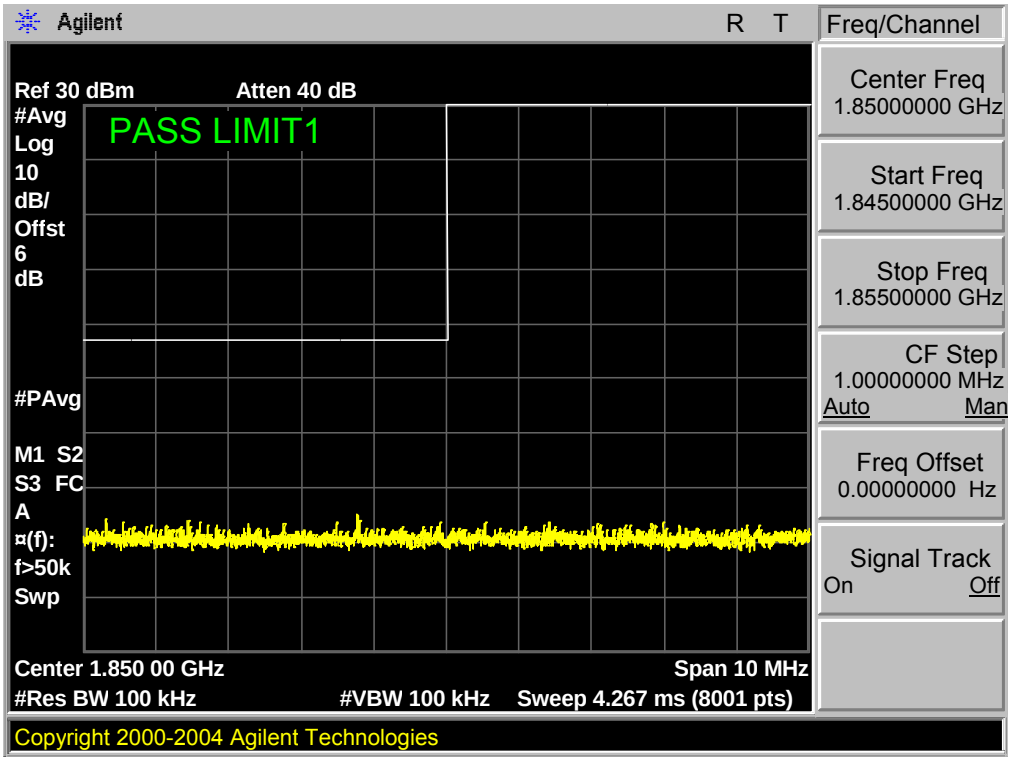
Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



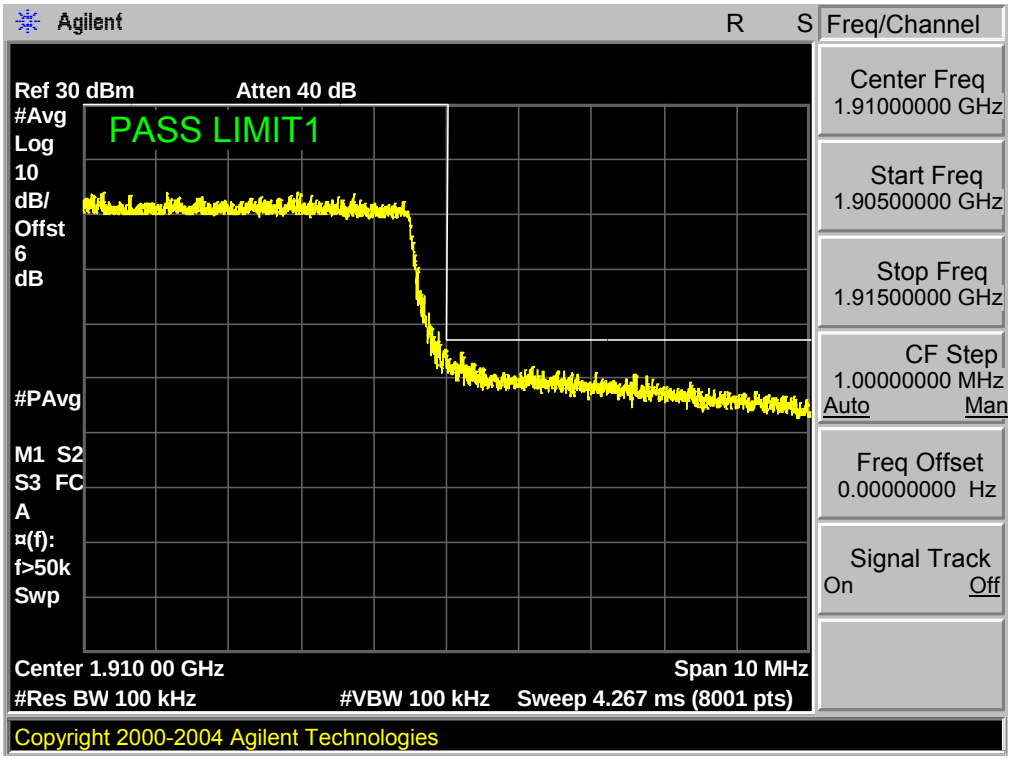
Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



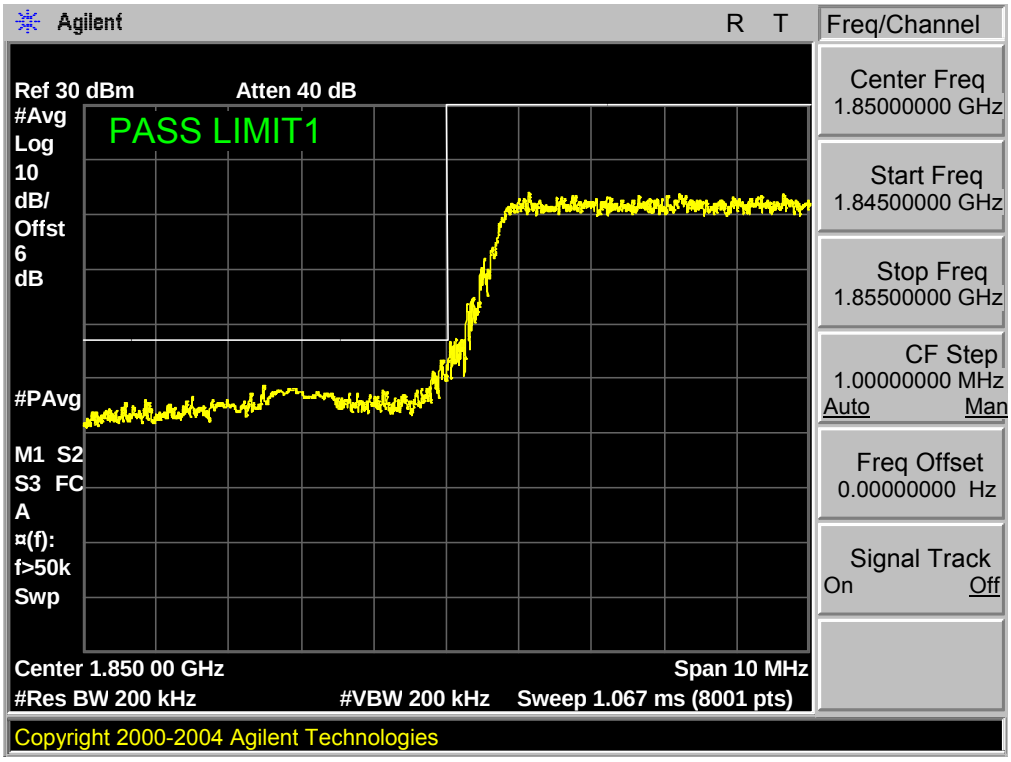
Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



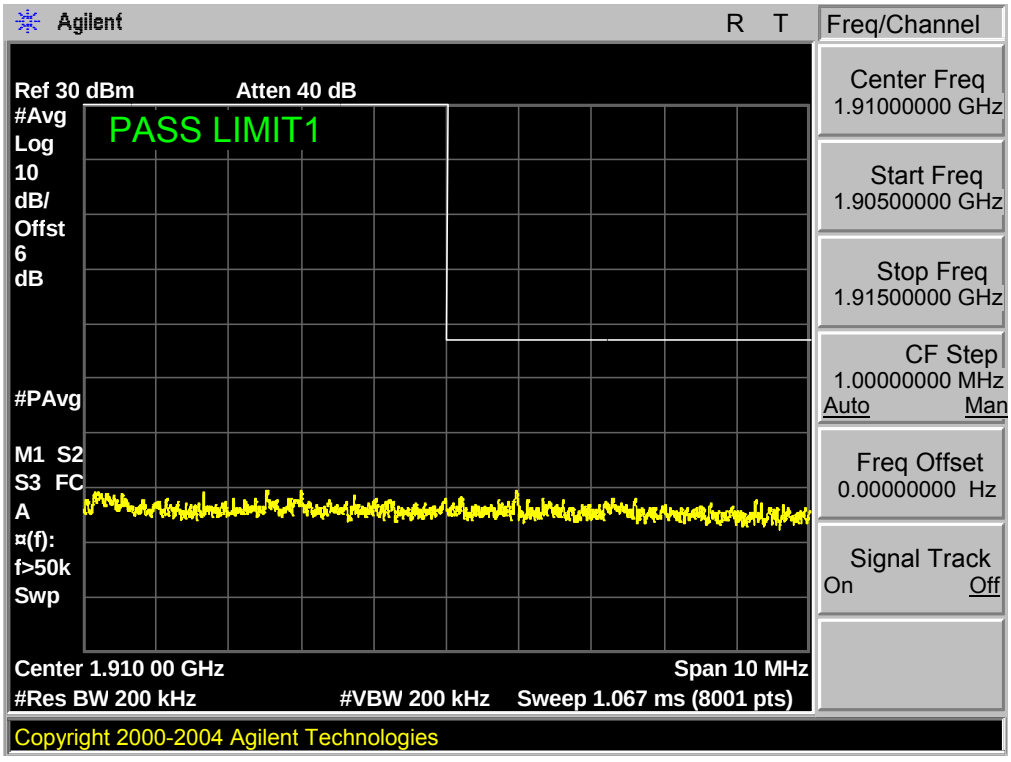
Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



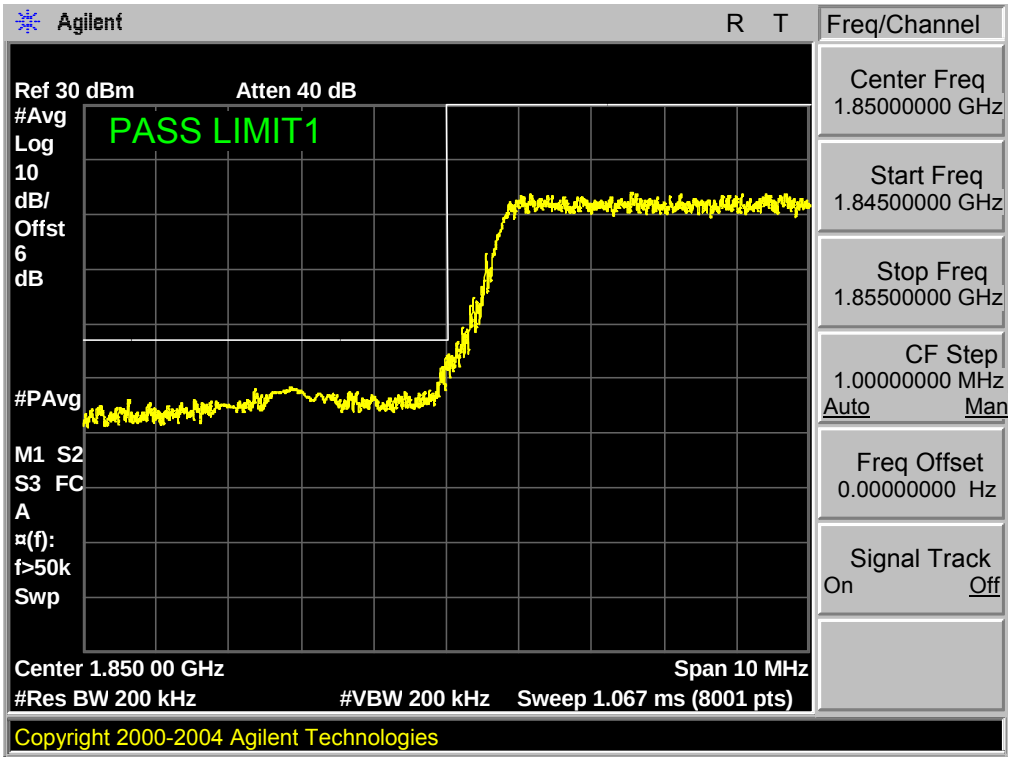
Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



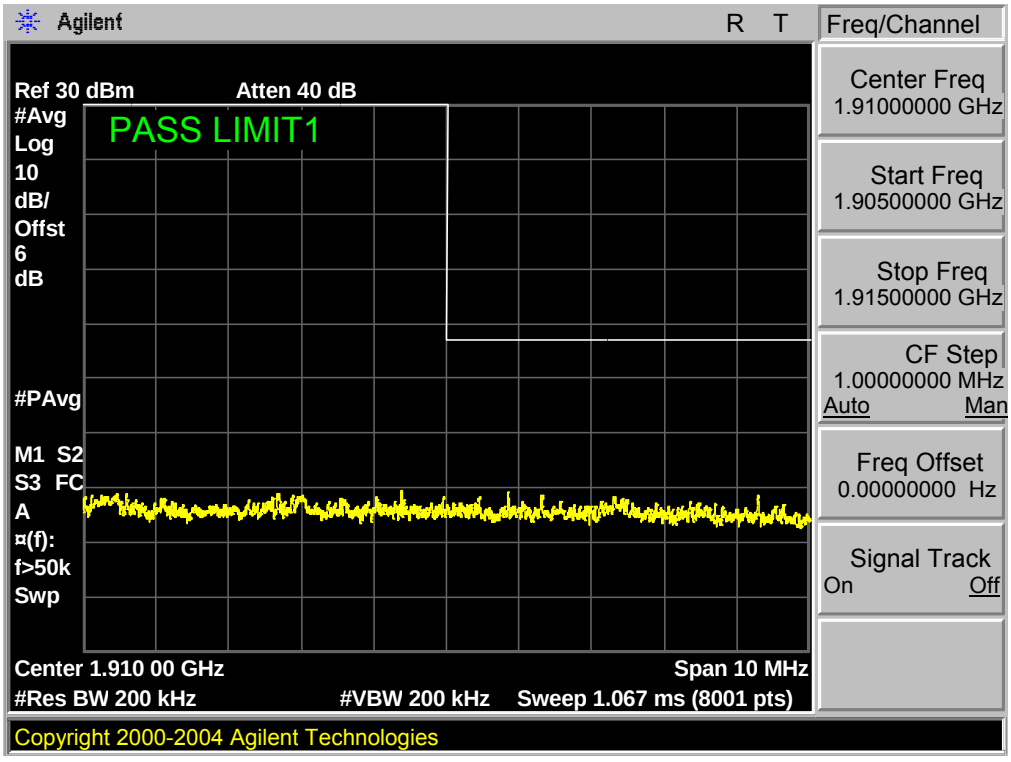
Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



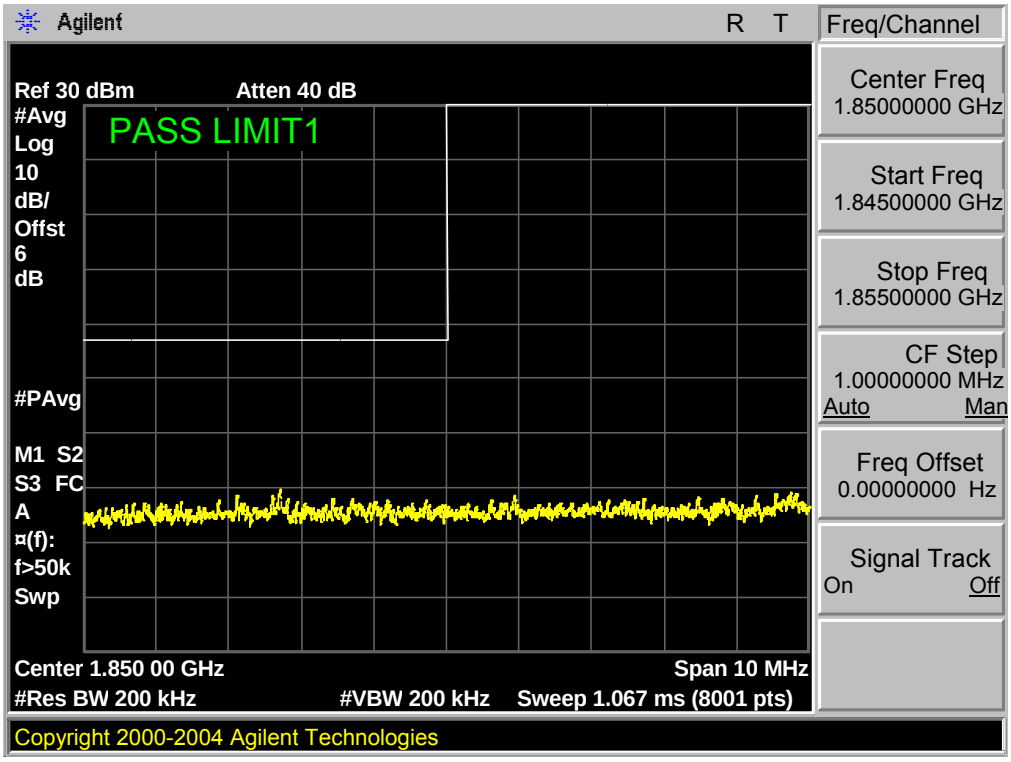
Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



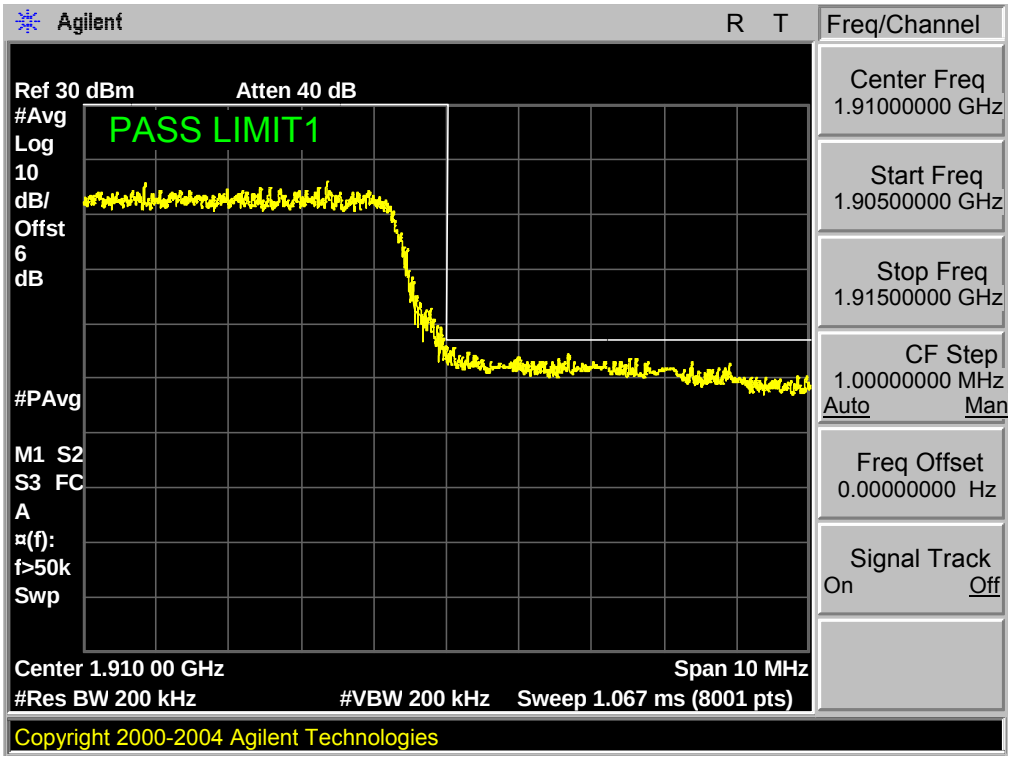
Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



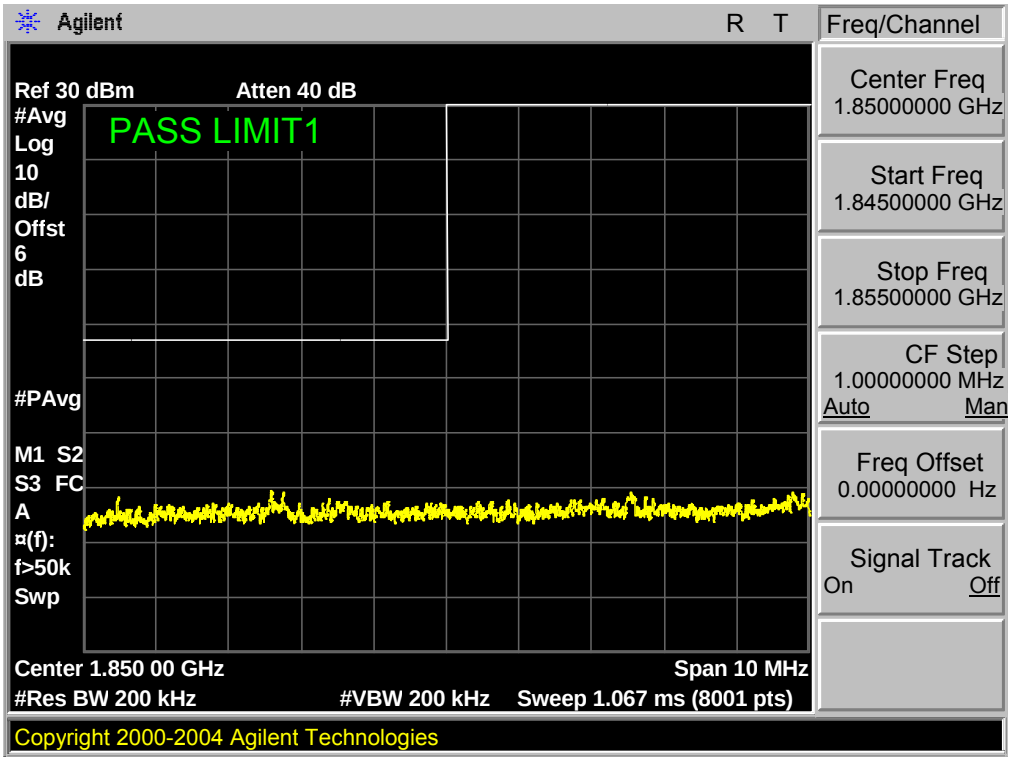
Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



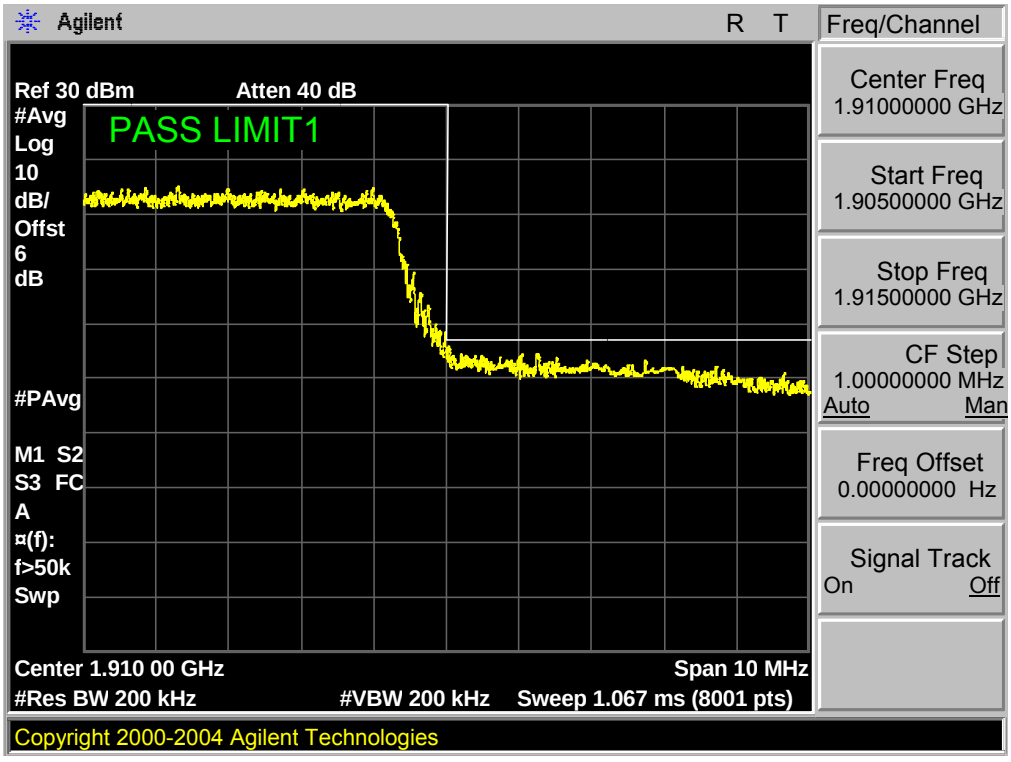
Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



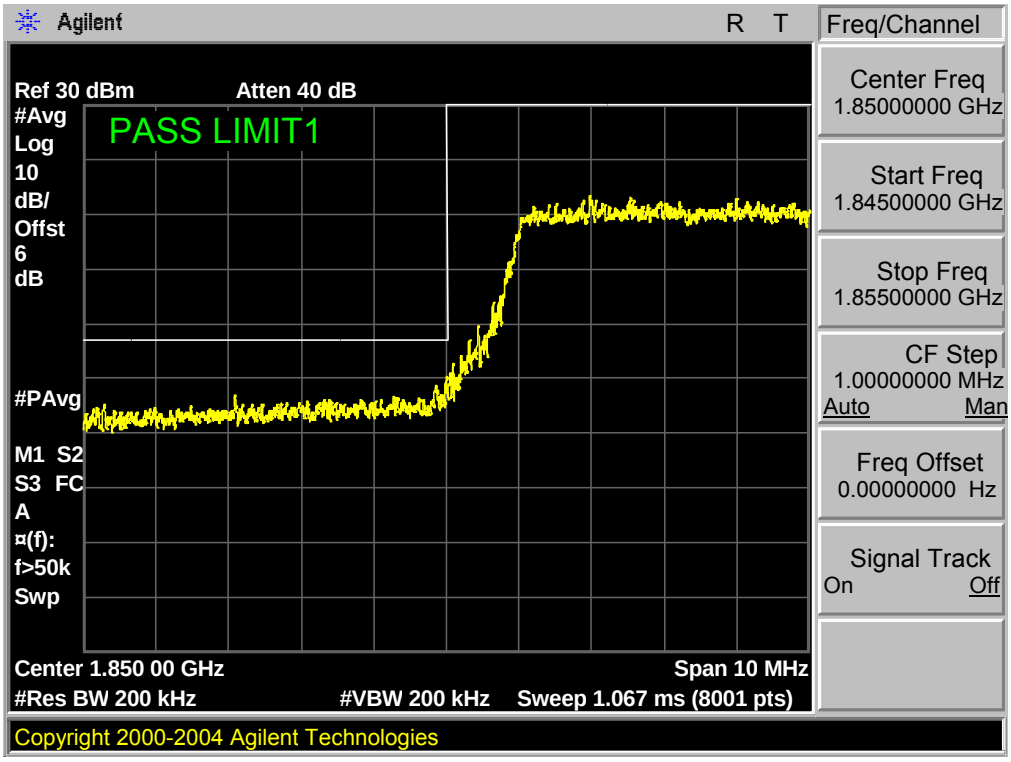
Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



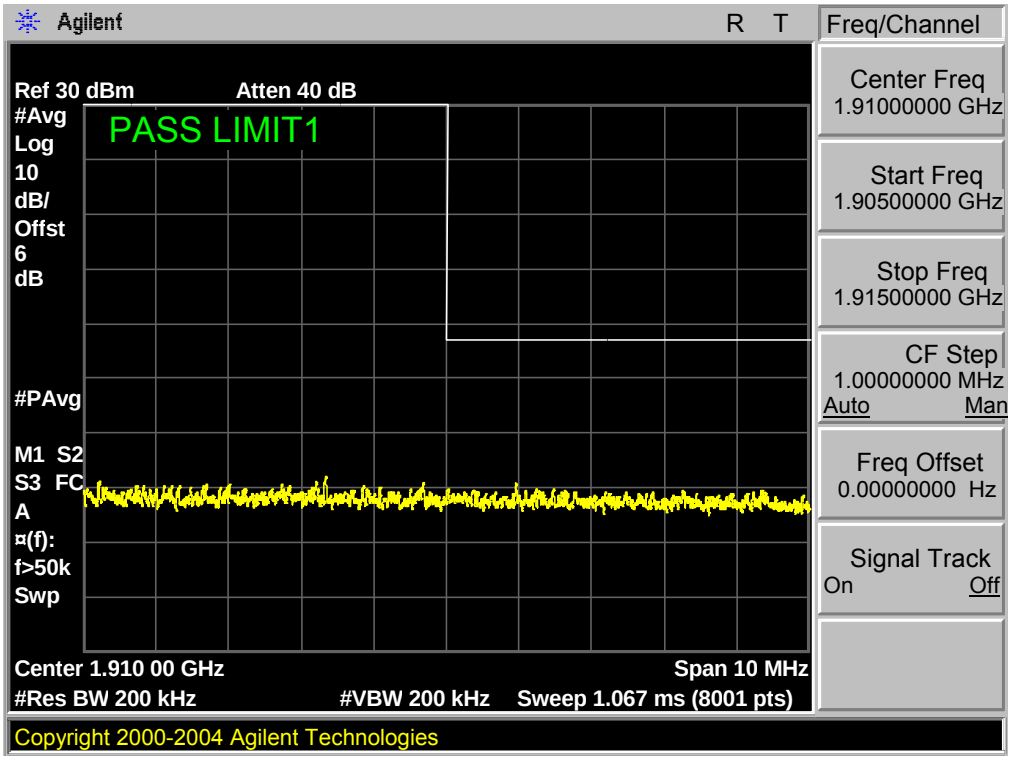
Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



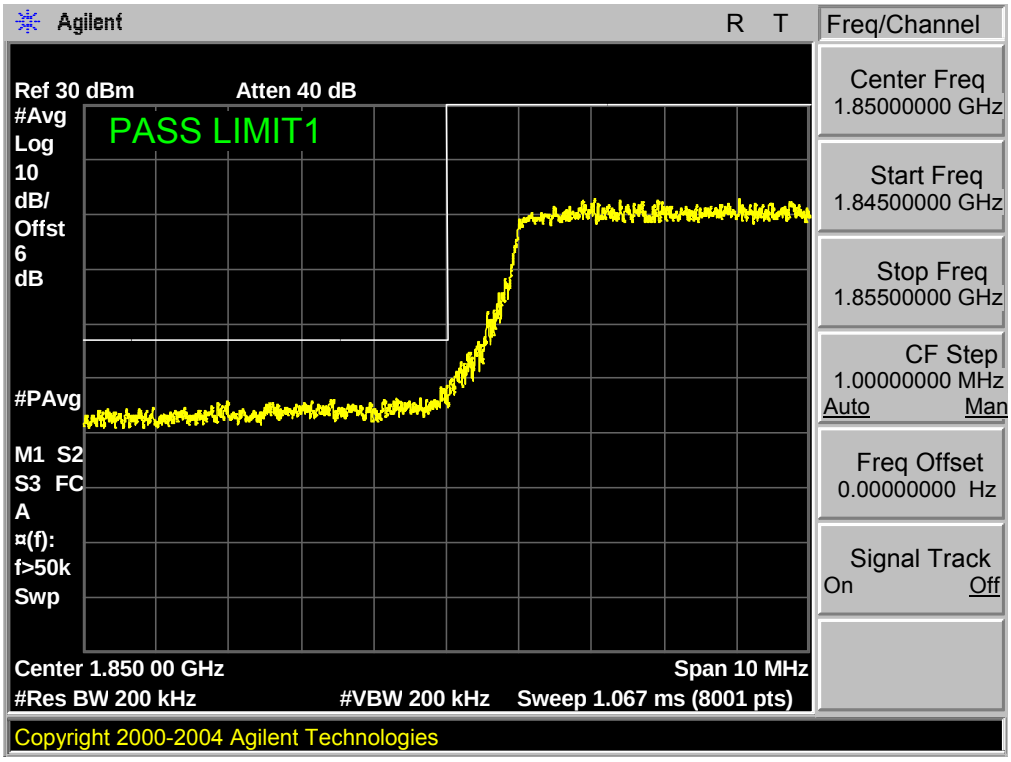
Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK



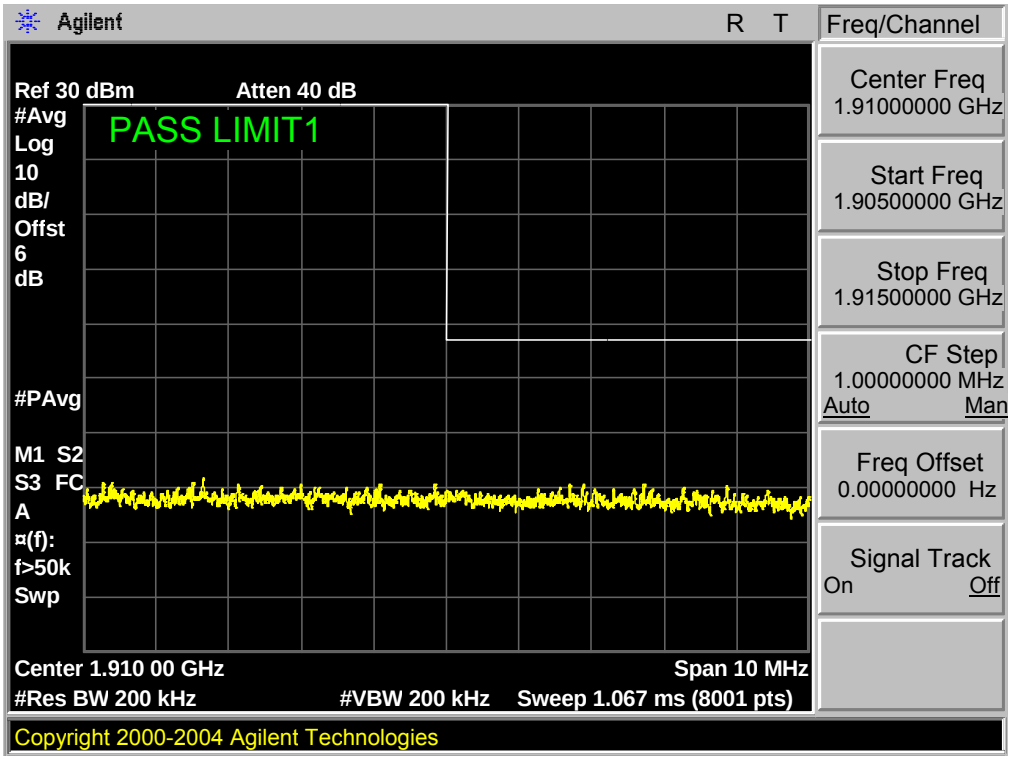
Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK



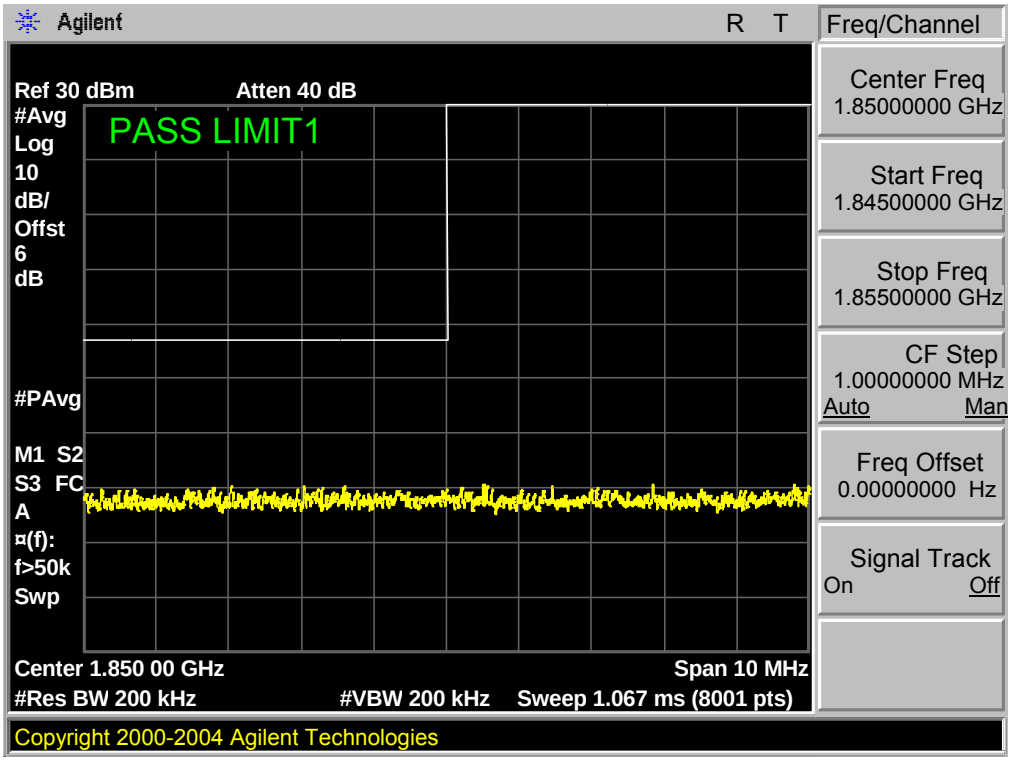
Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM



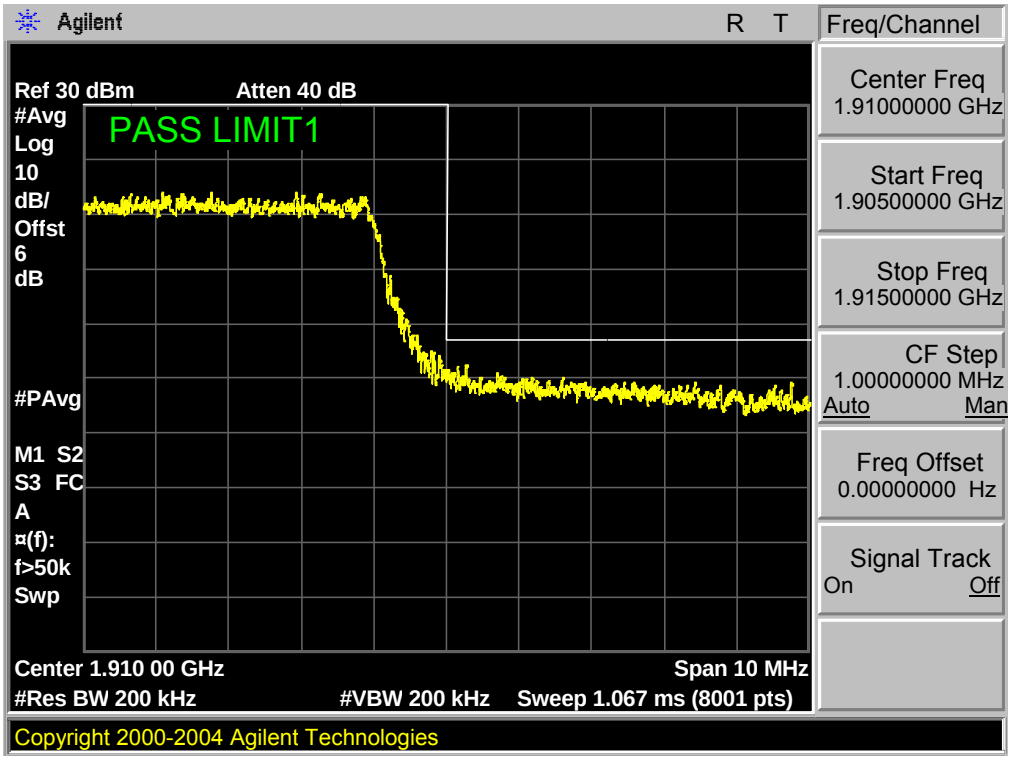
Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM



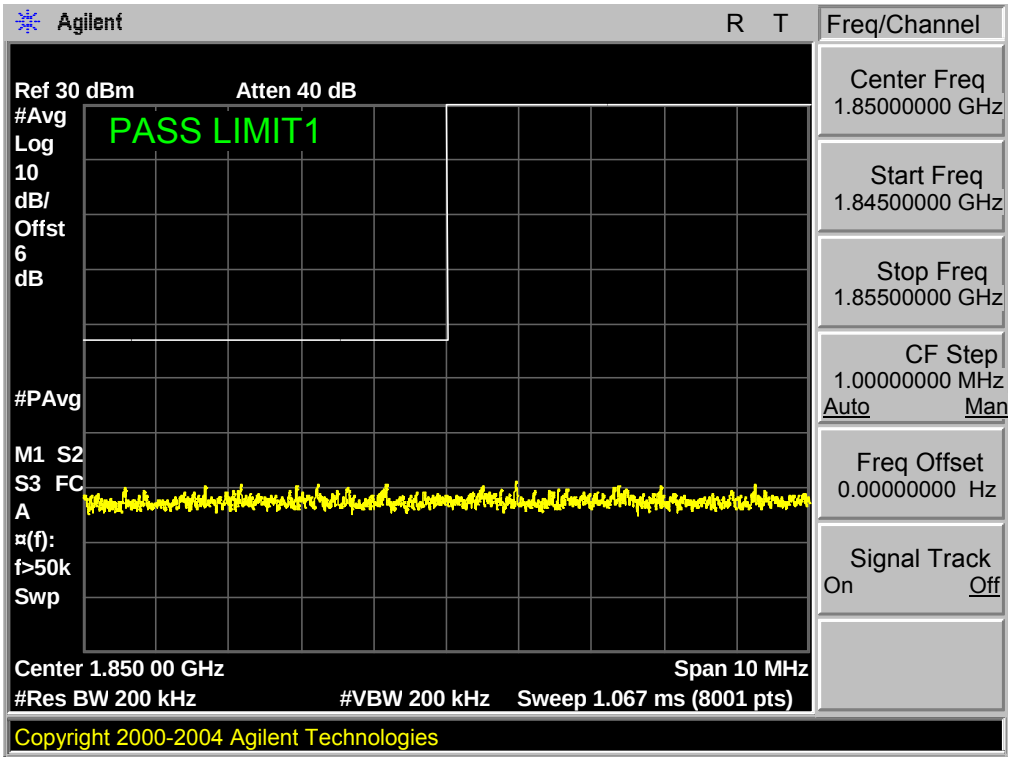
Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK



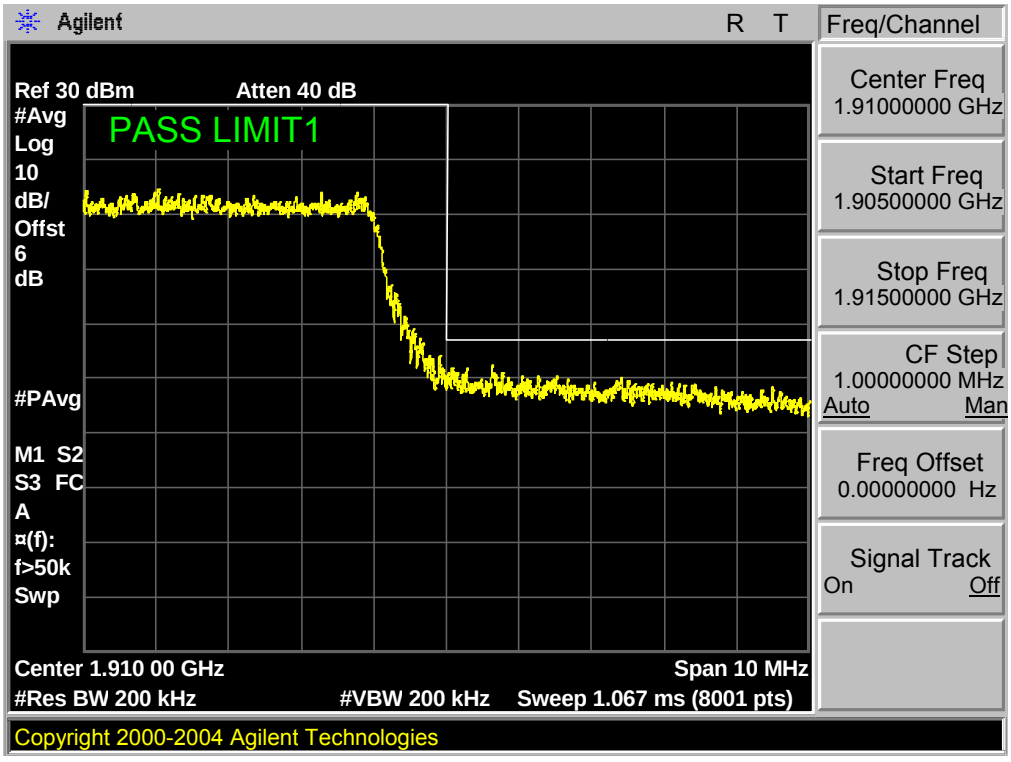
Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK



Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM

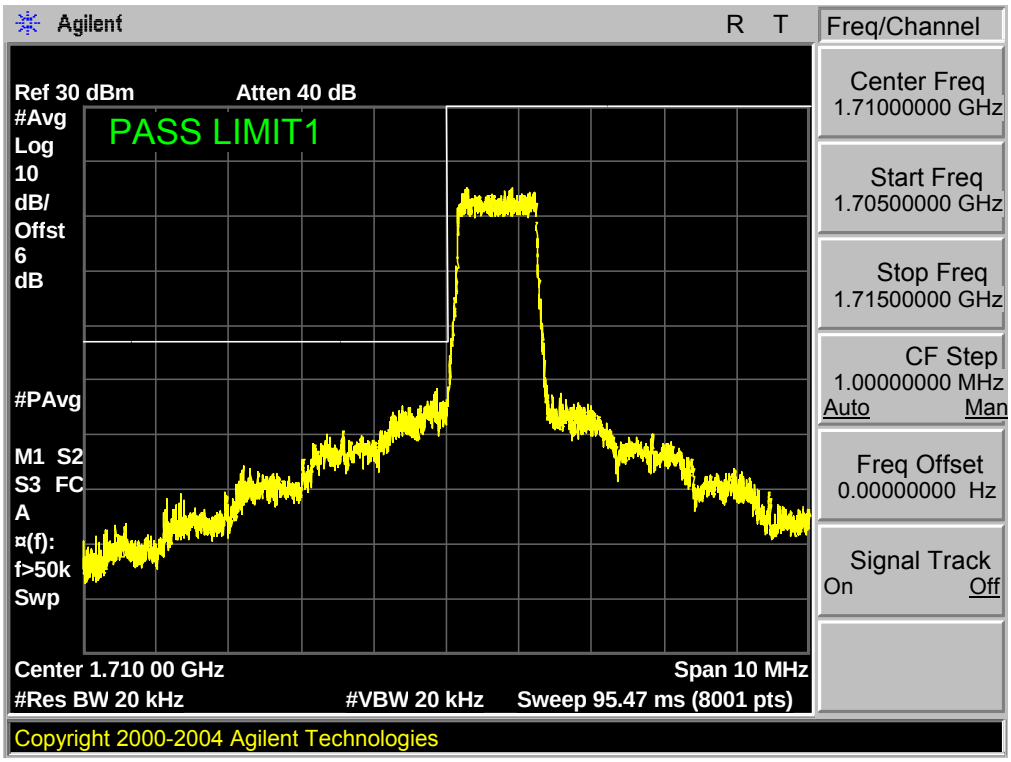


Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM

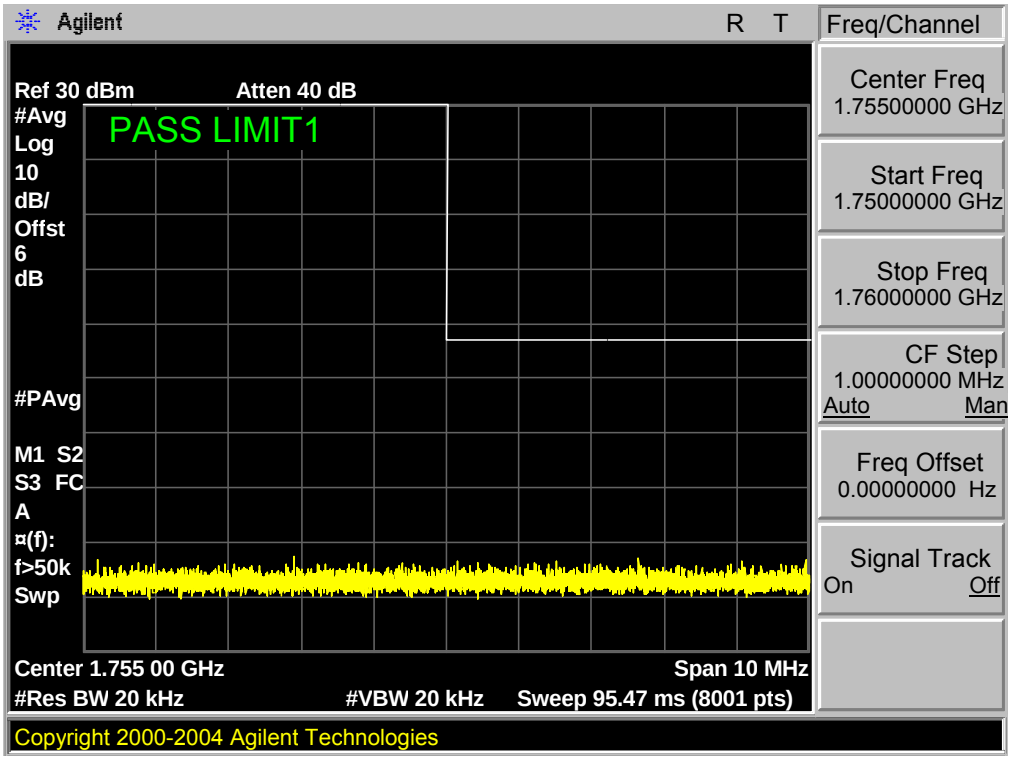


6.1.2. LTE BAND 4

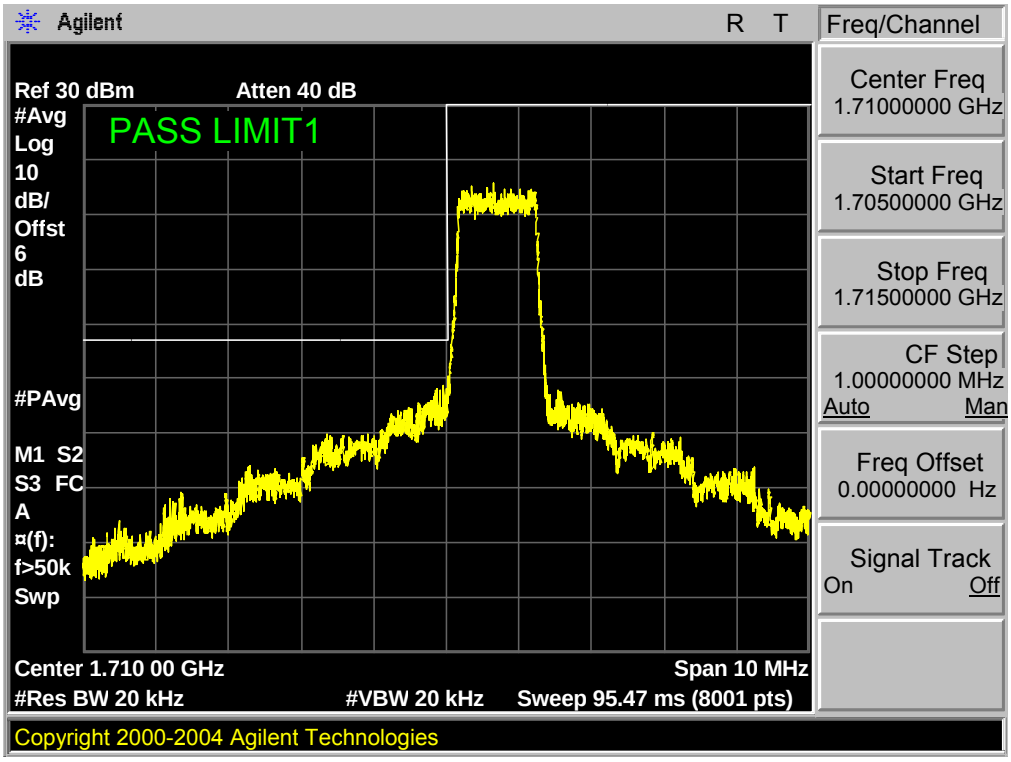
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,QPSK



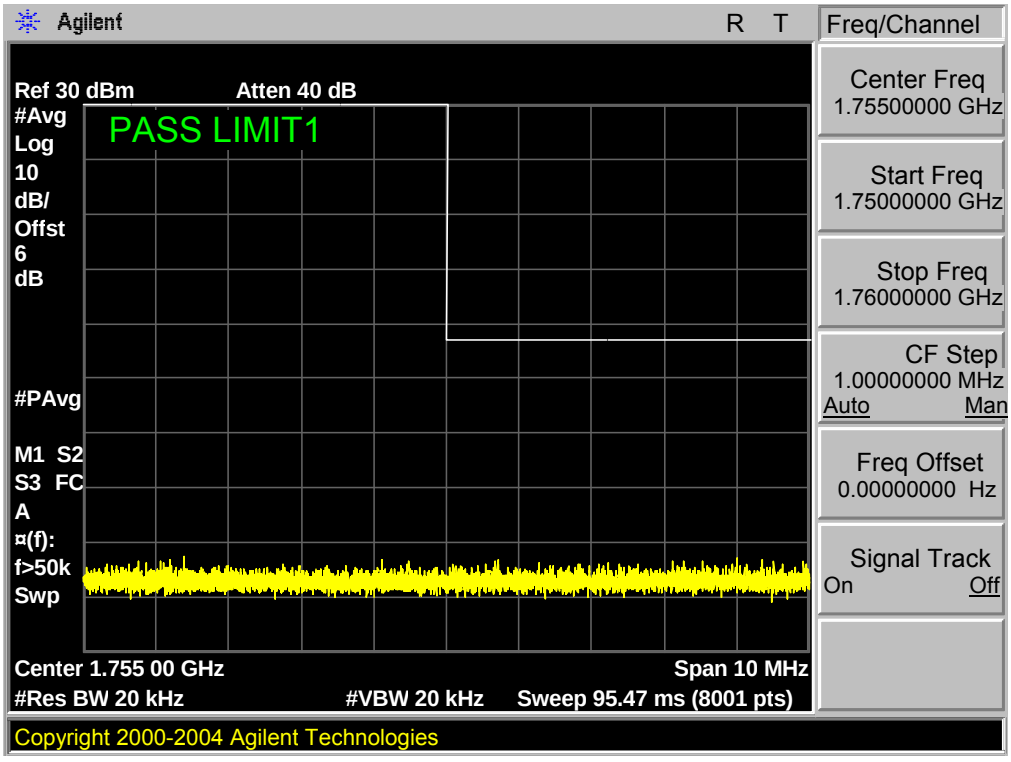
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,QPSK



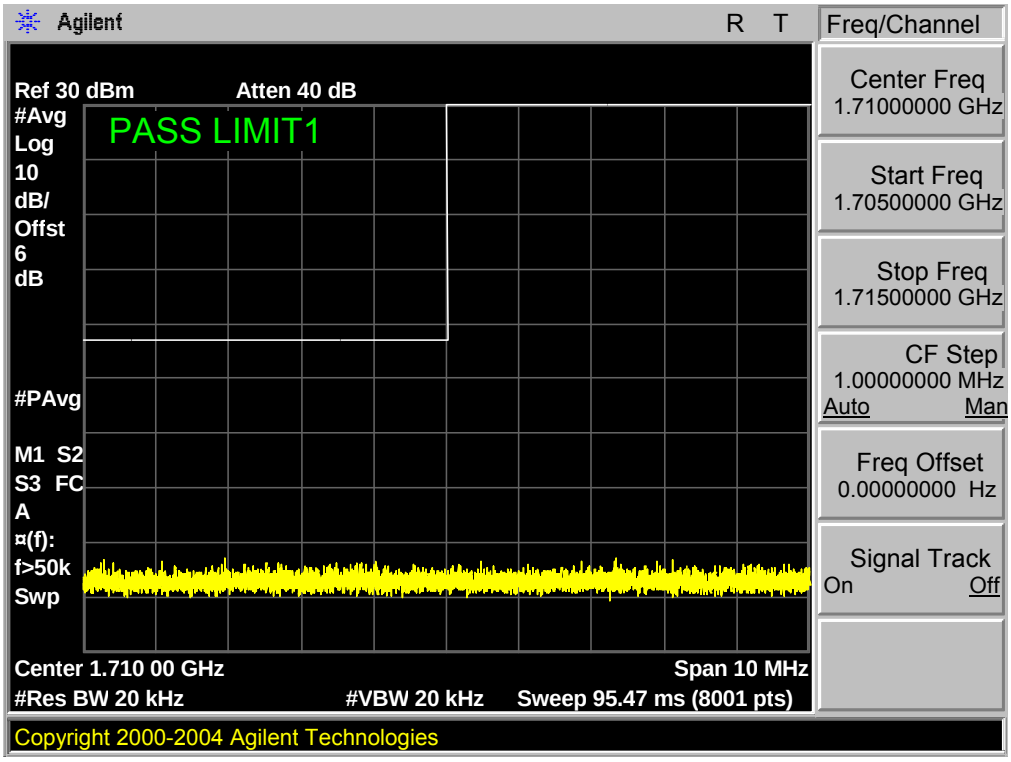
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,16QAM



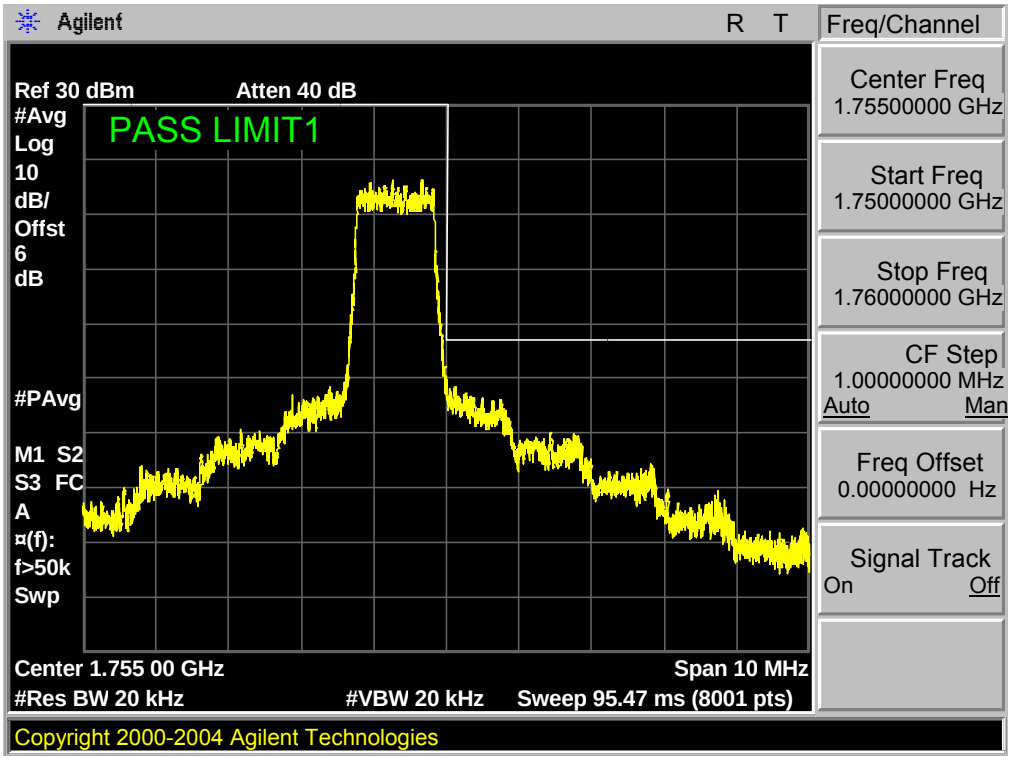
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 6,RB POS. Low,16QAM



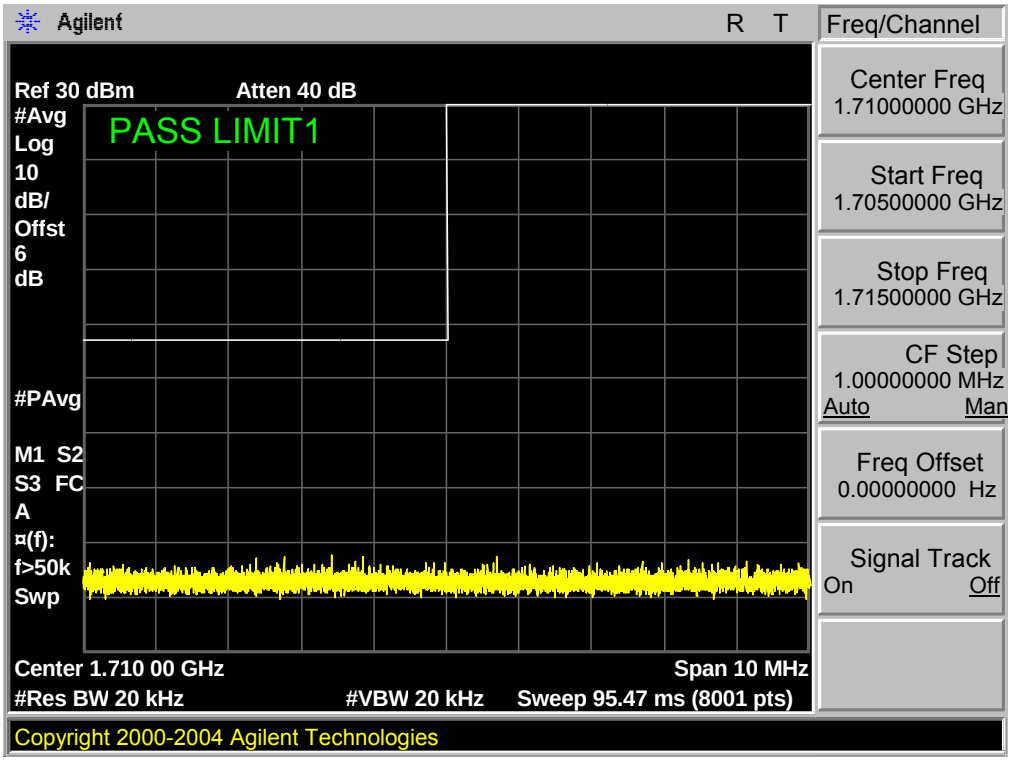
Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 6,RB POS. Low,QPSK



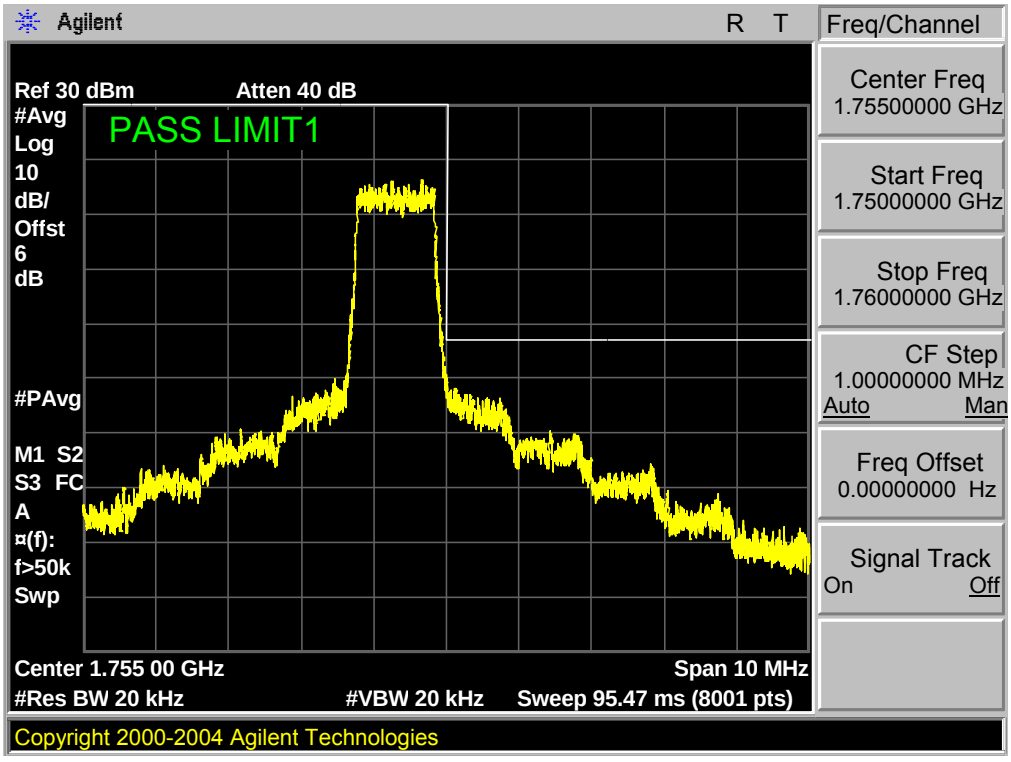
Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 6,RB POS. Low,QPSK



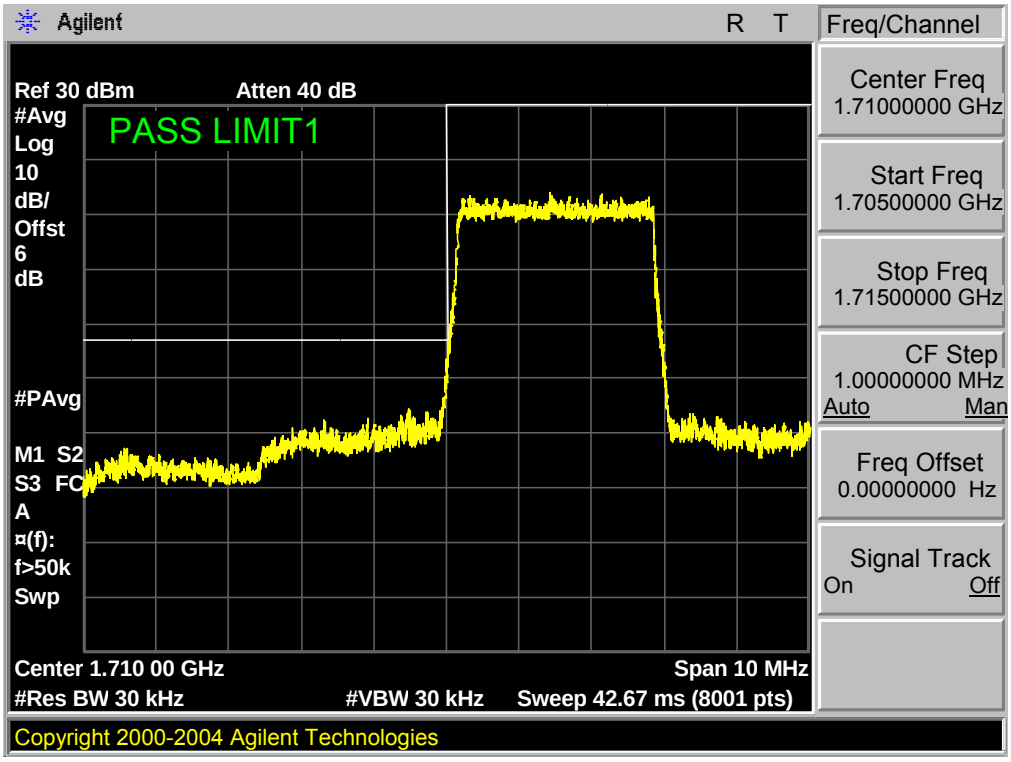
Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 6,RB POS. Low,16QAM



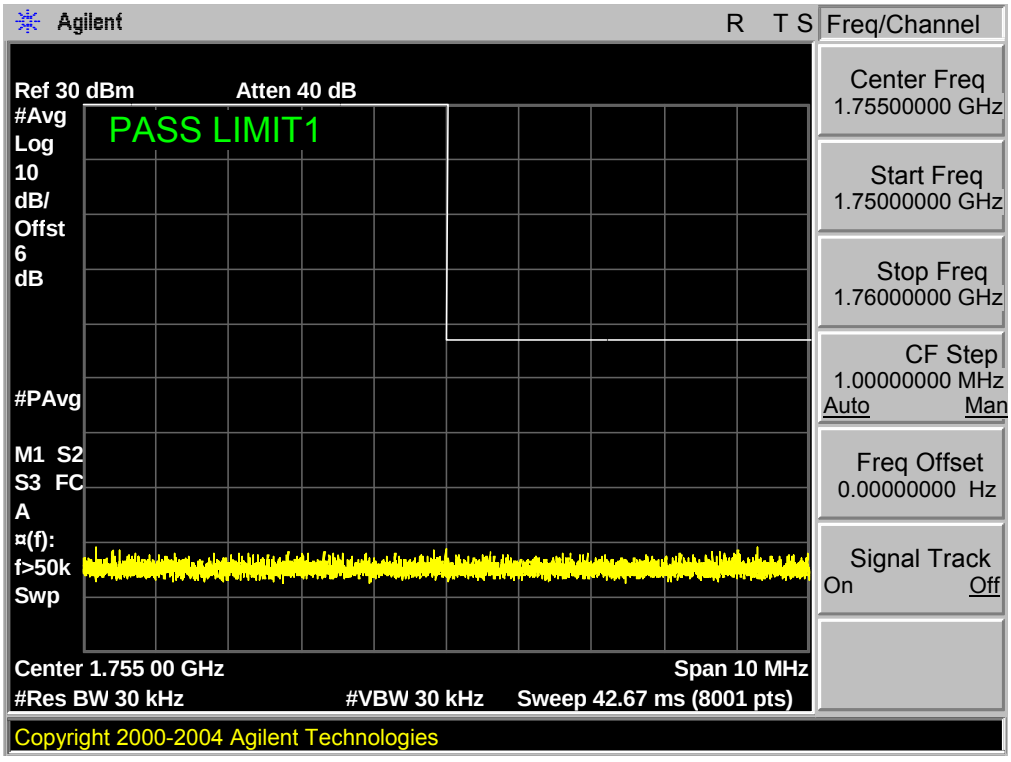
Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 6,RB POS. Low,16QAM



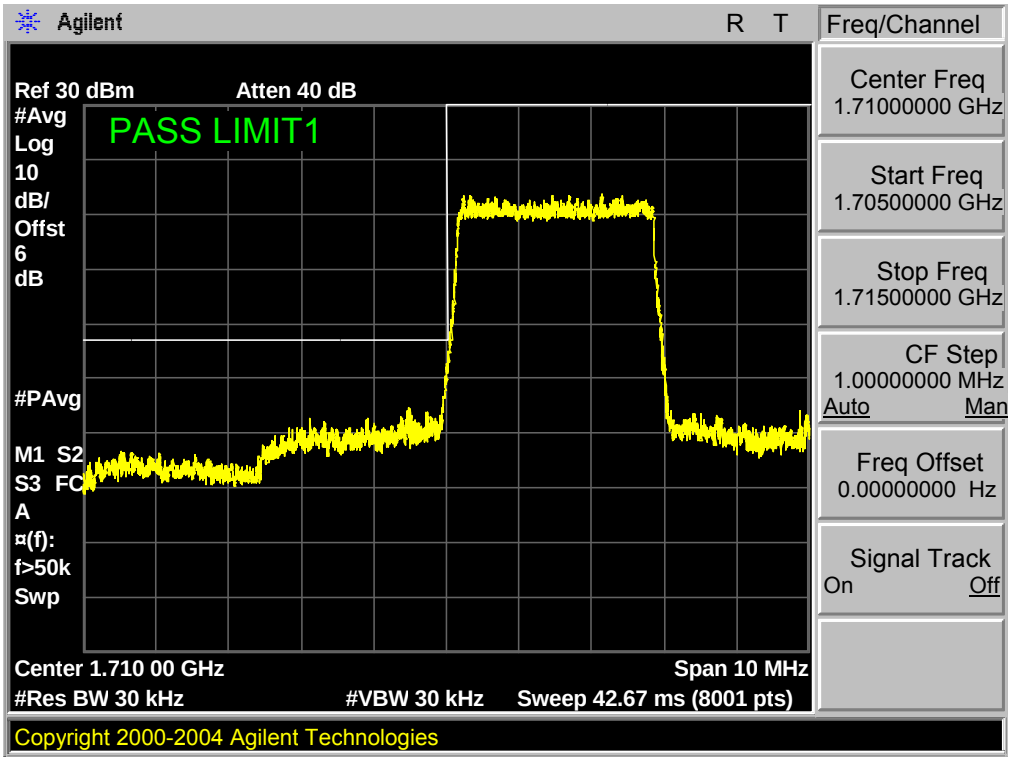
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



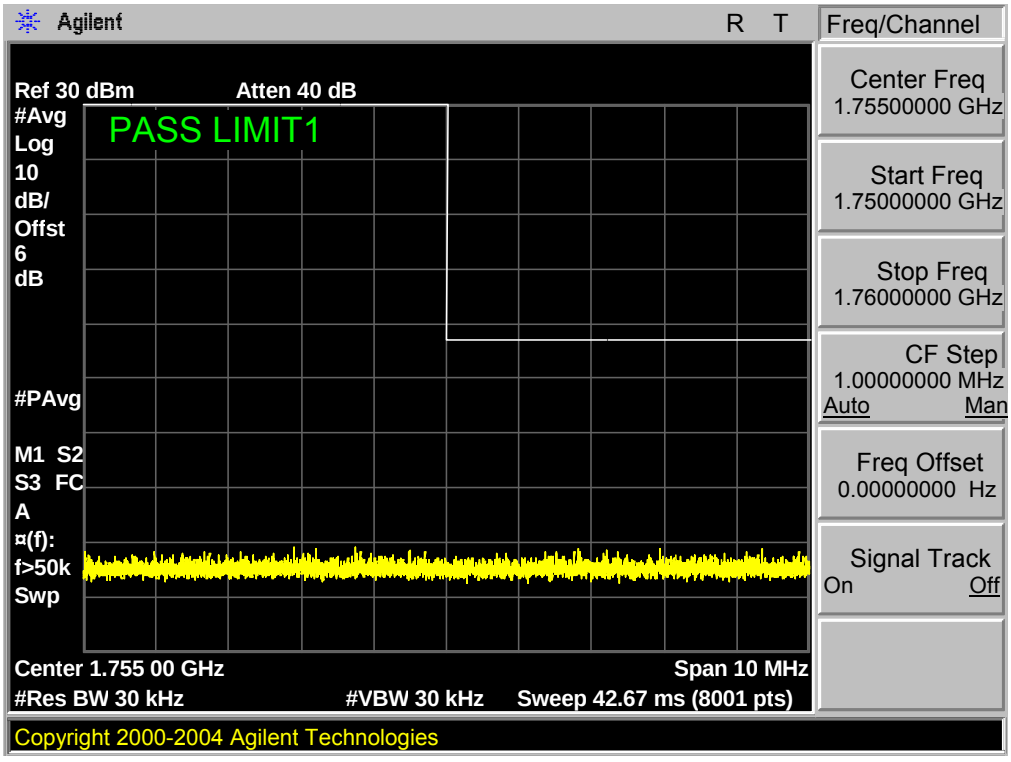
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



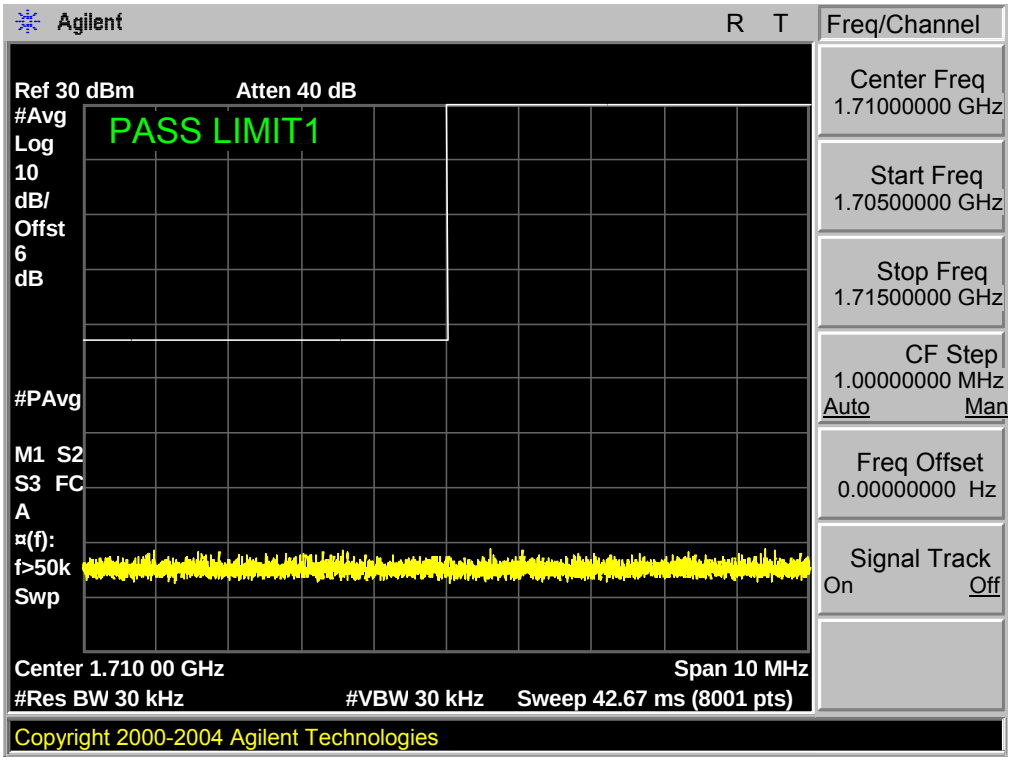
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



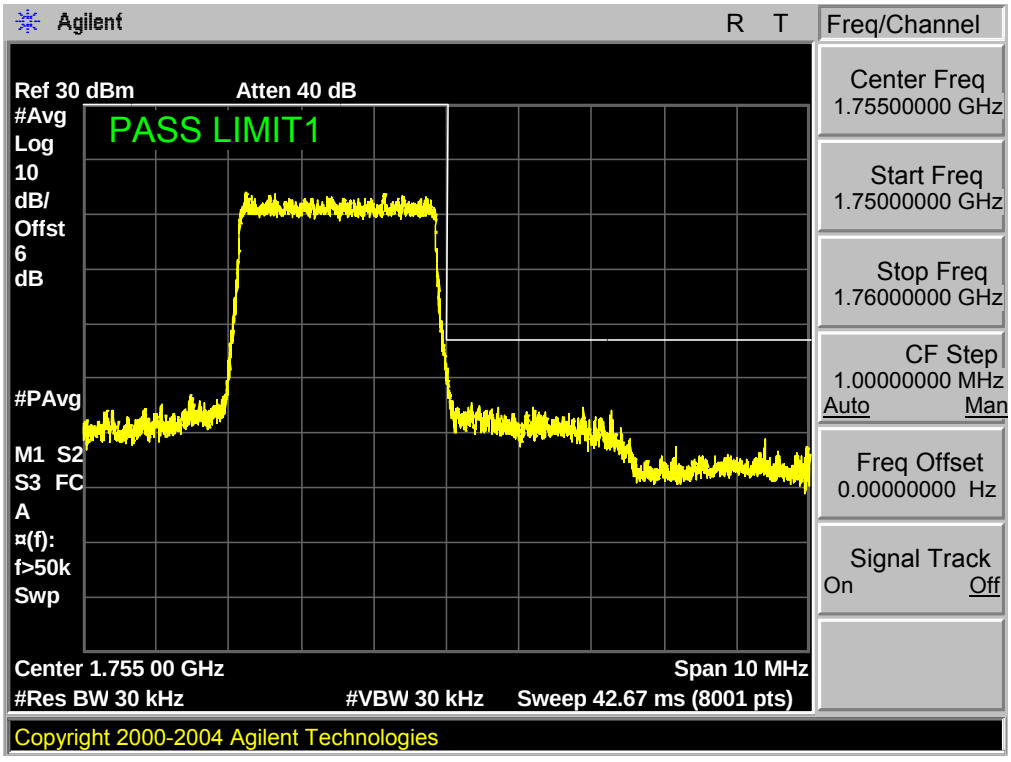
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



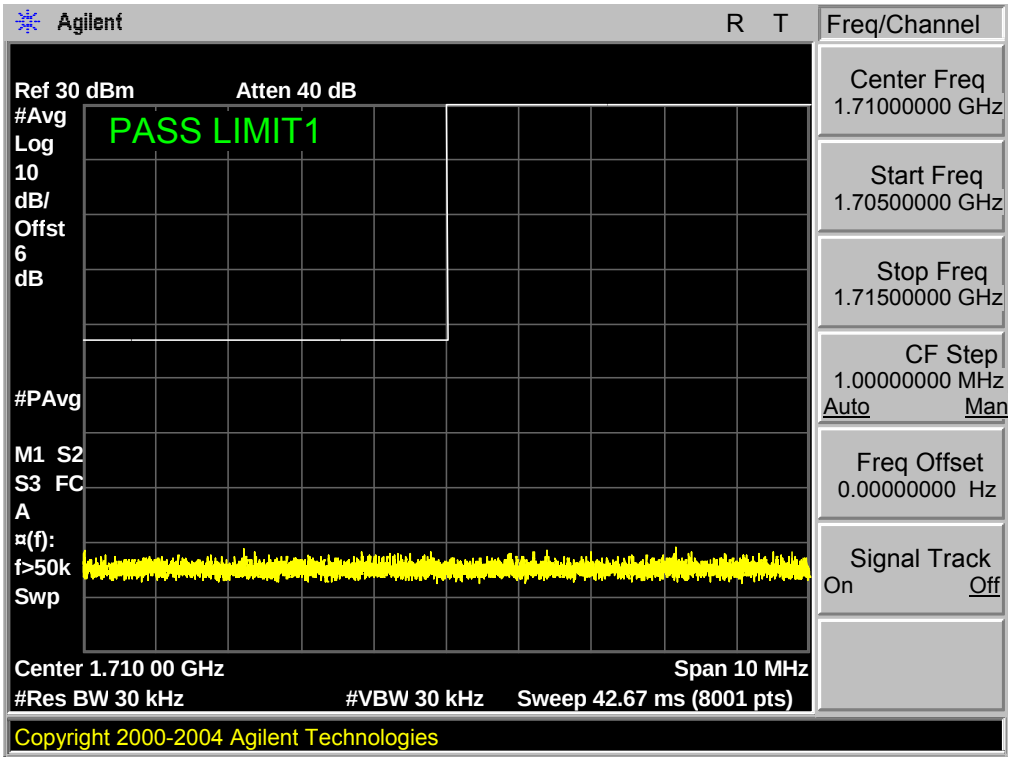
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



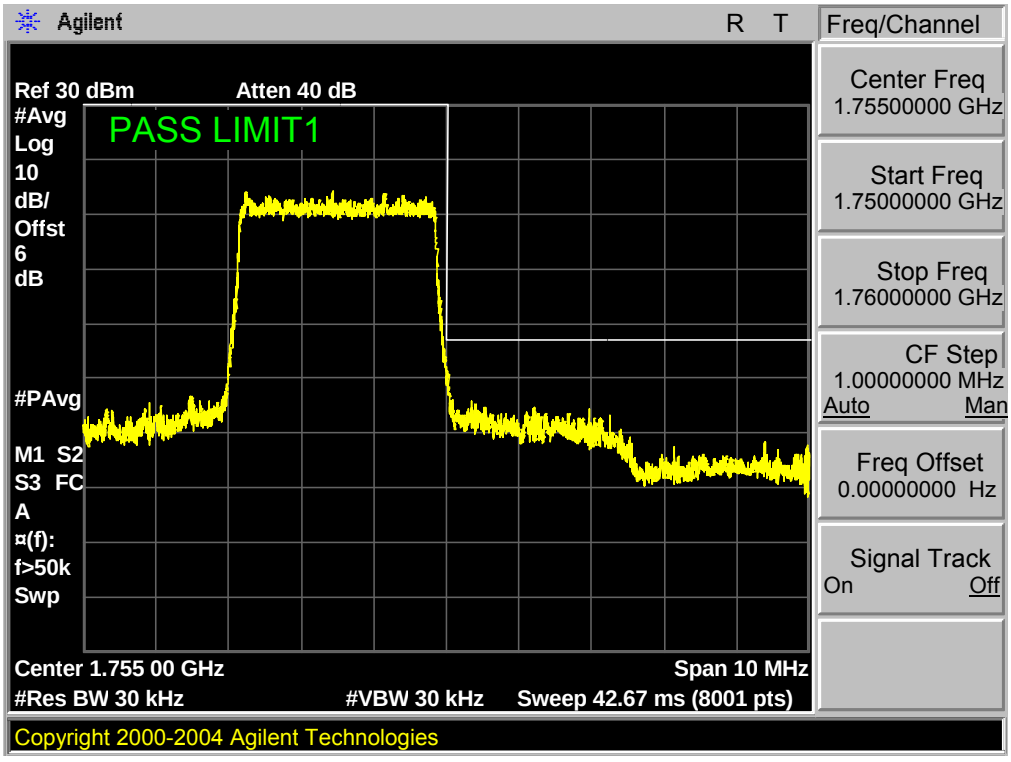
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 15,RB POS. Low,QPSK



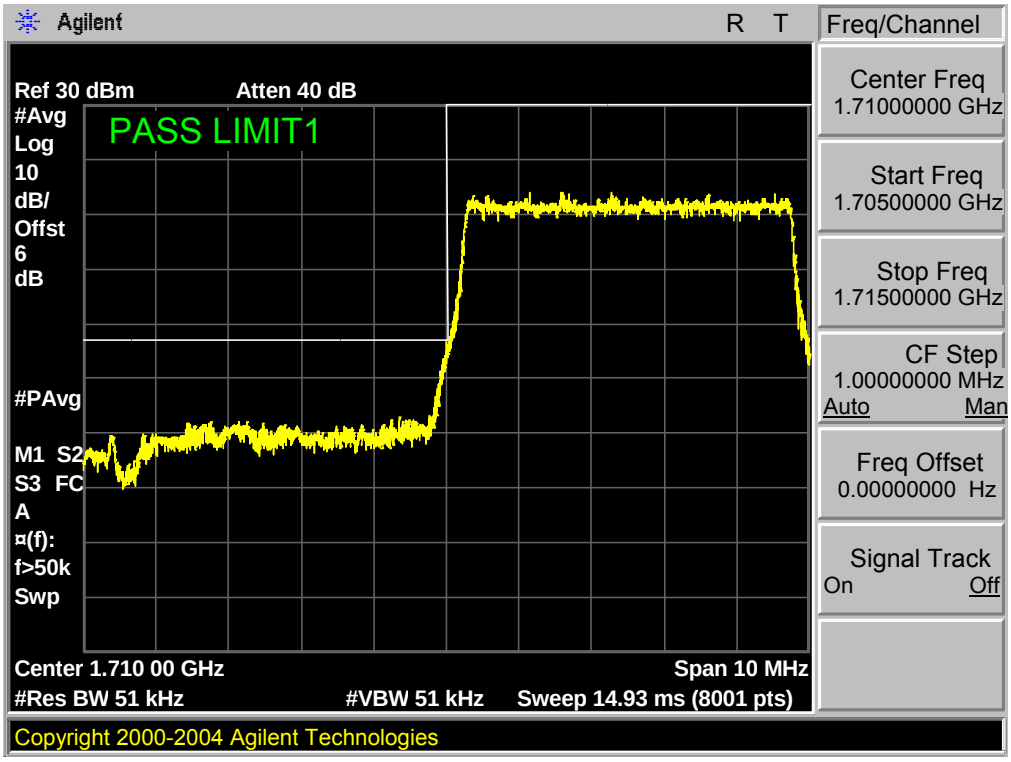
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



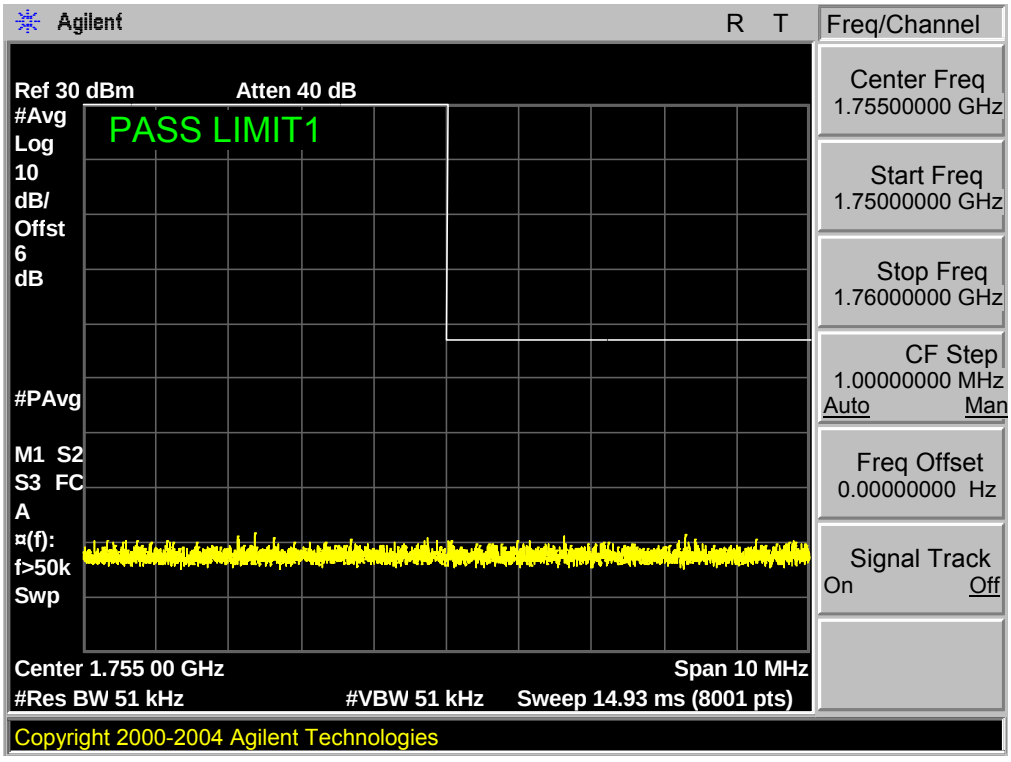
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 15,RB POS. Low,16QAM



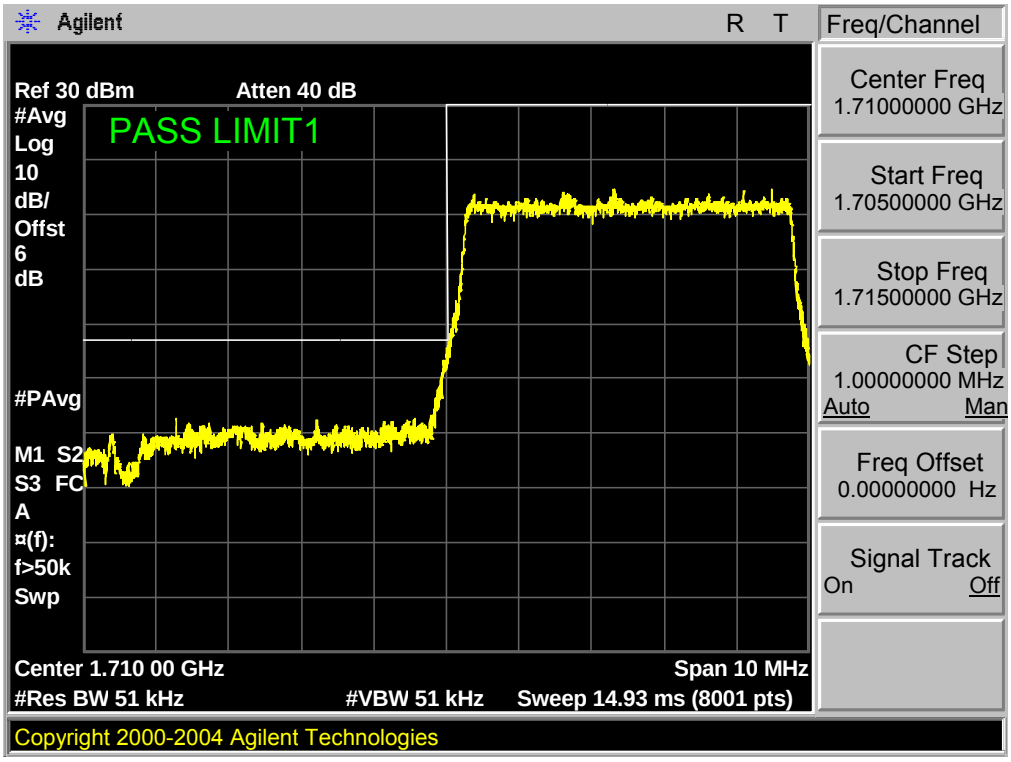
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



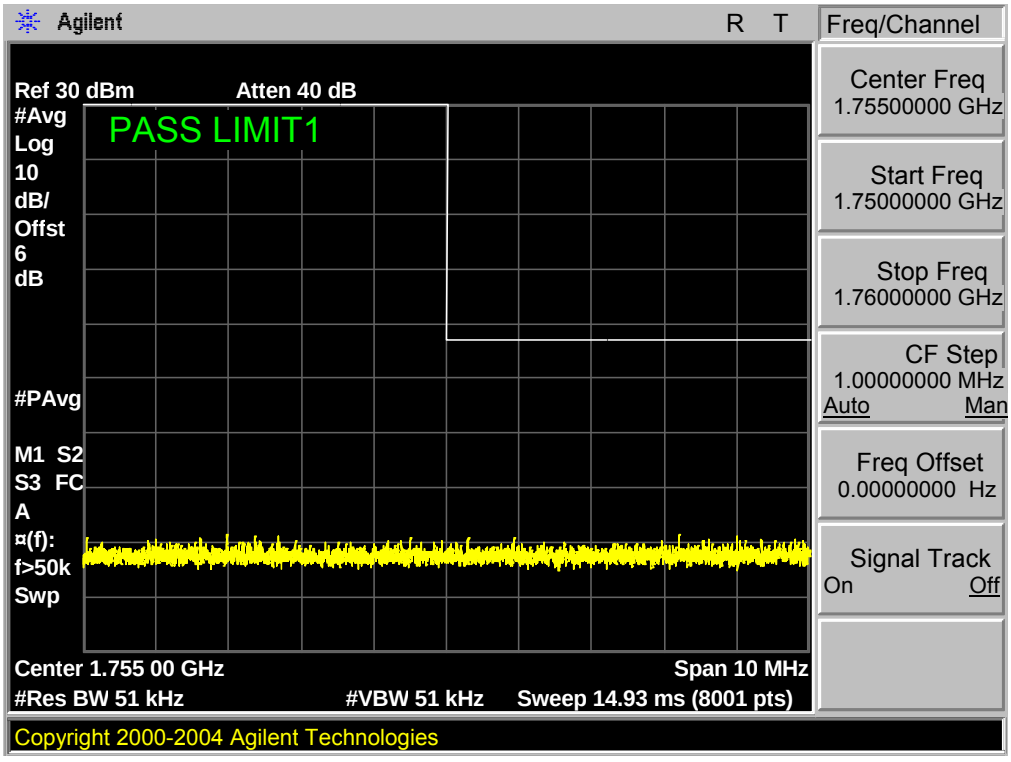
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



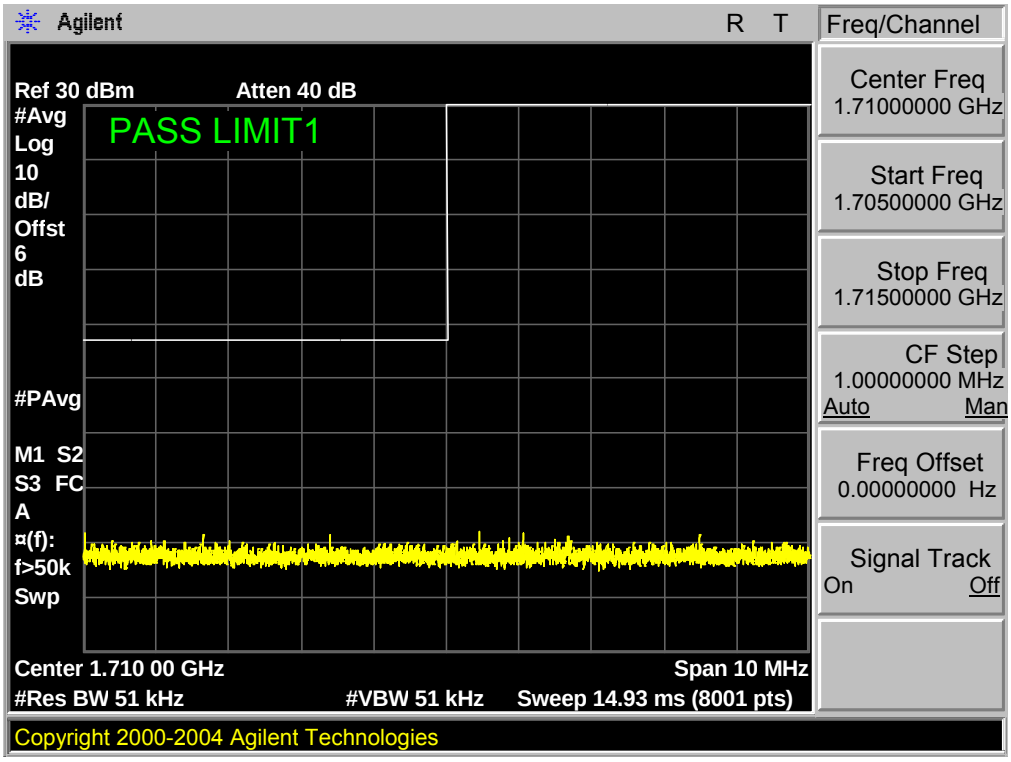
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



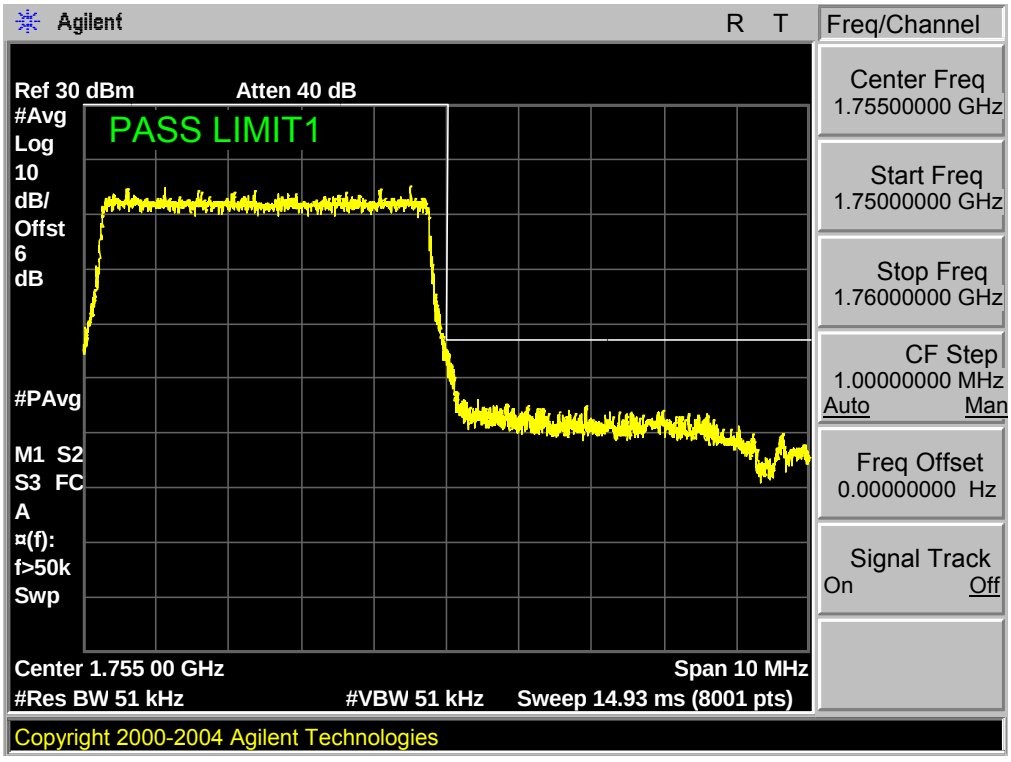
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



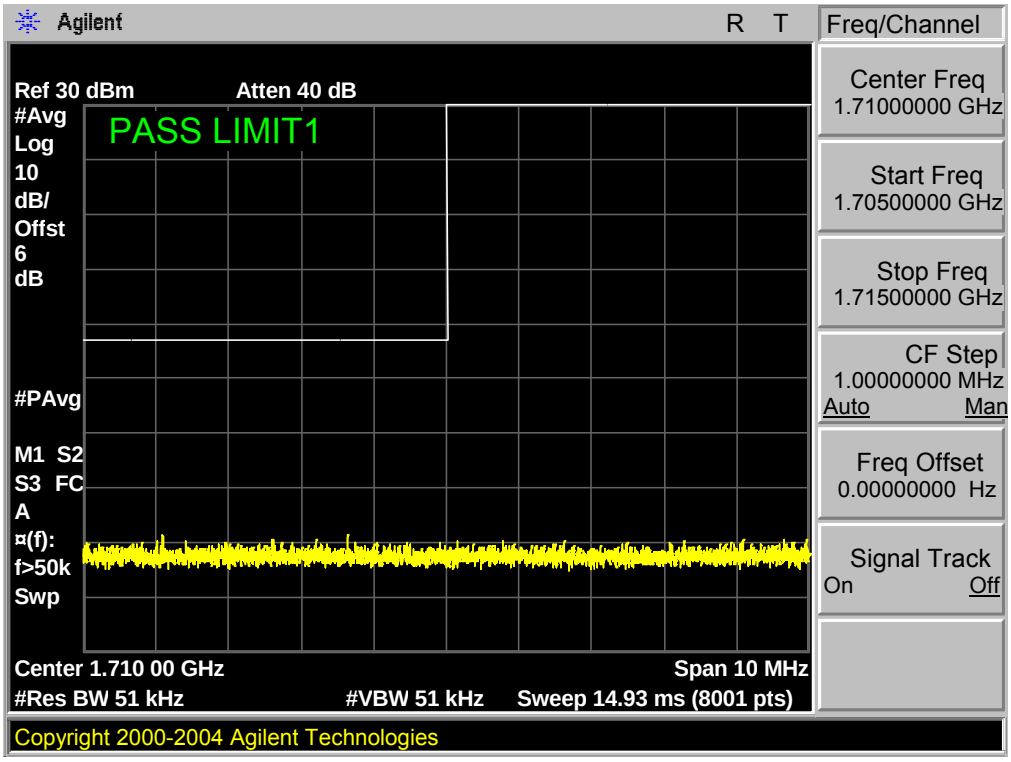
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



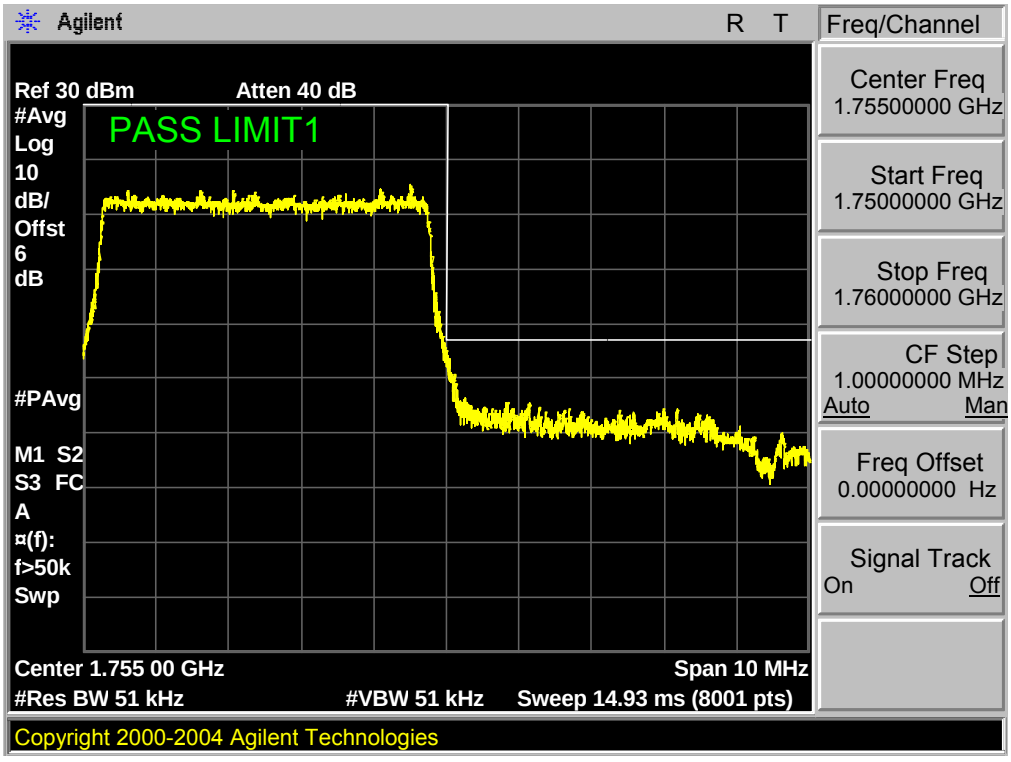
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



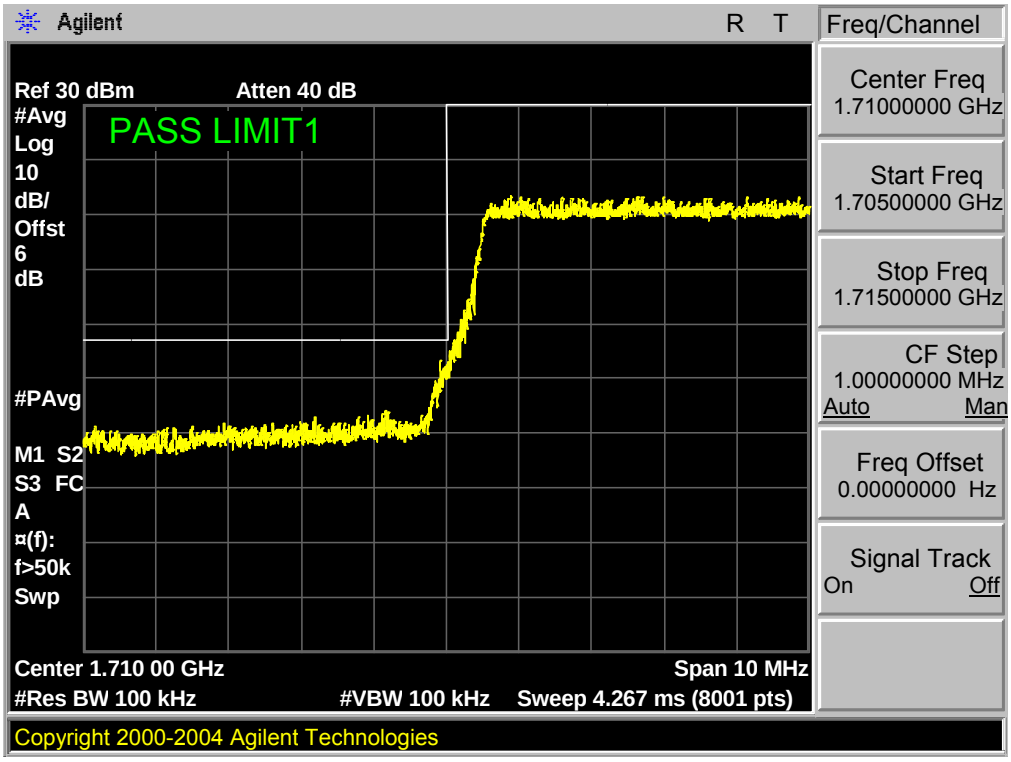
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



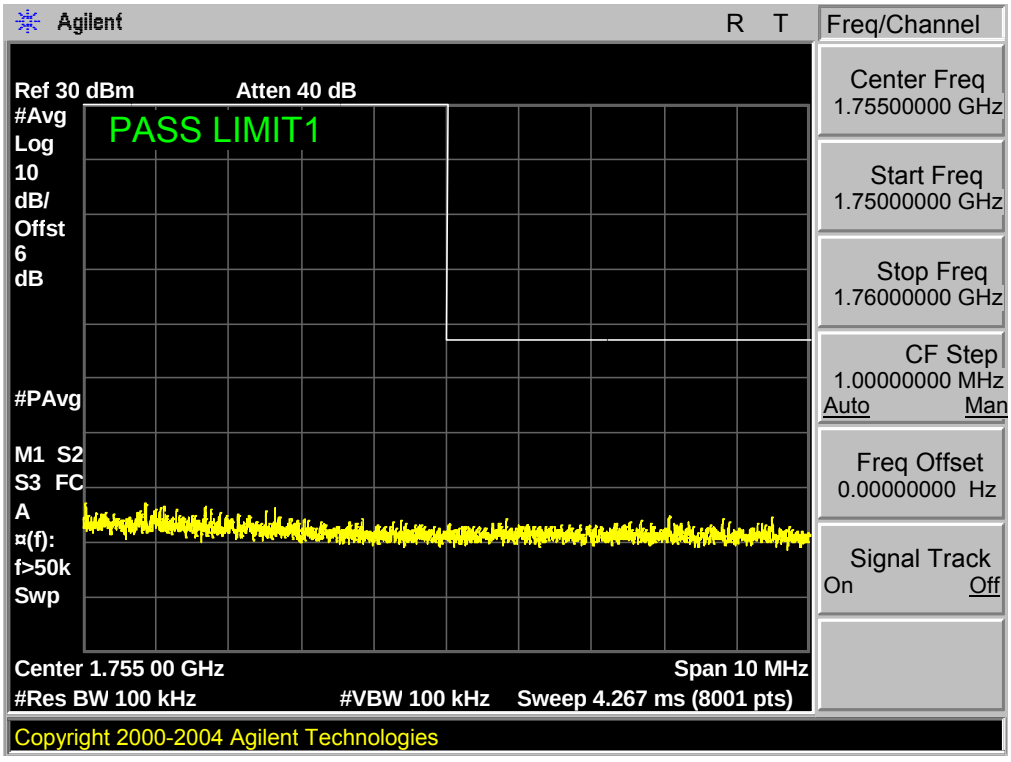
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



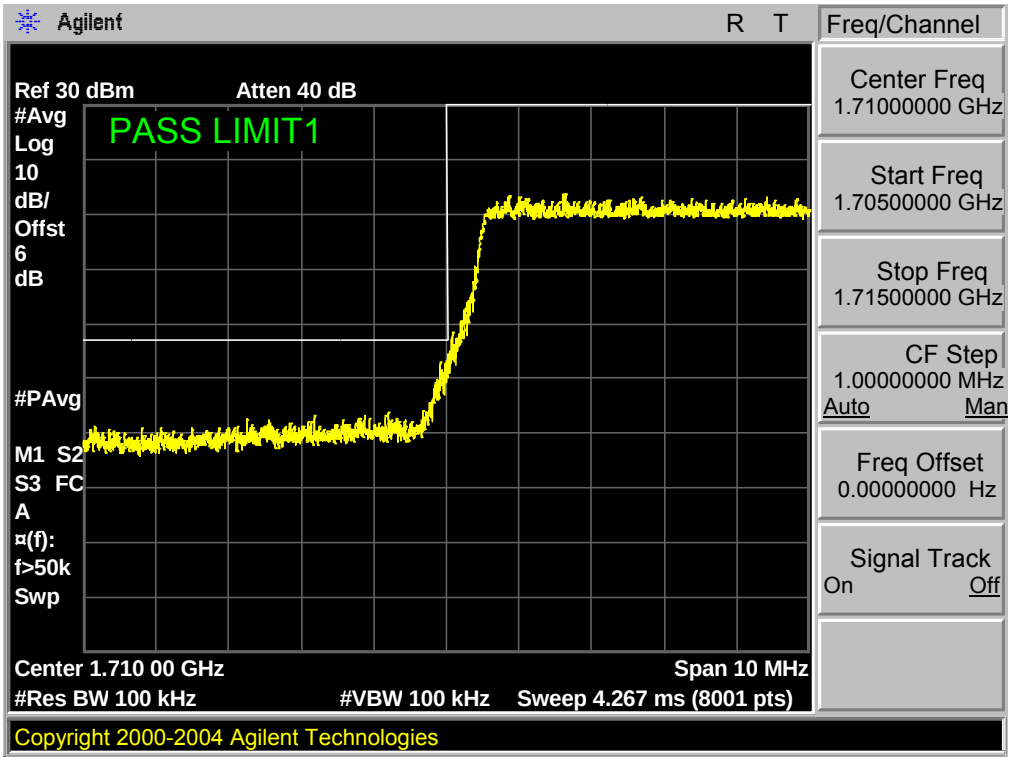
Band 4,UL Channel 20000,UL Frequency 1715.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



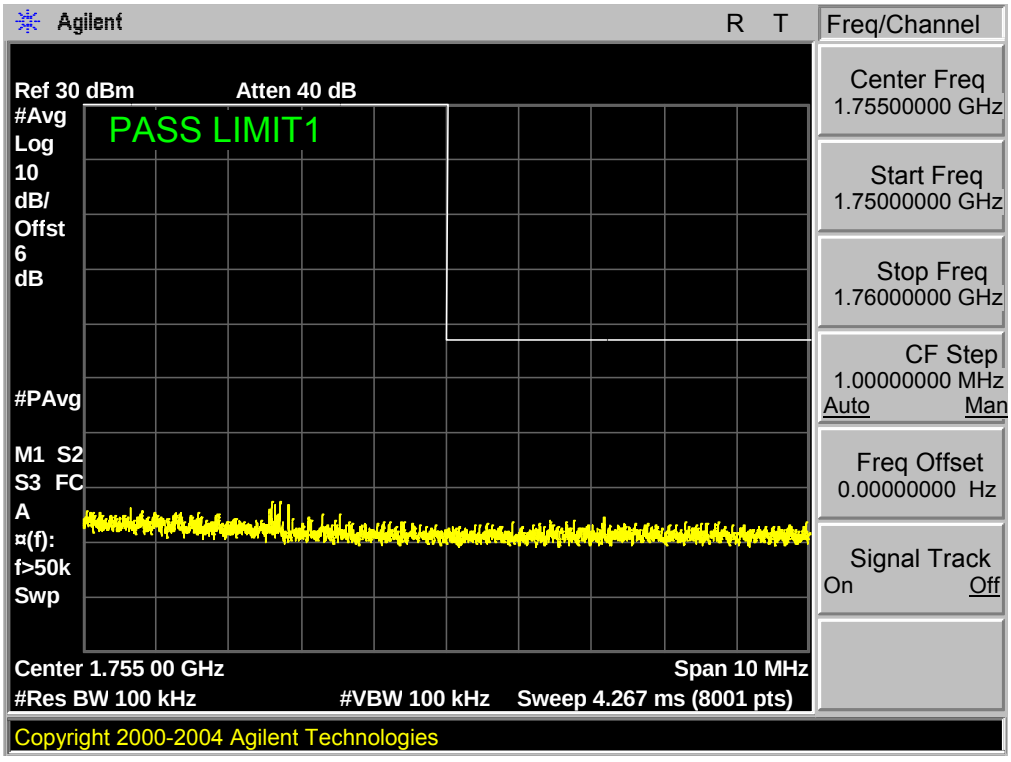
Band 4,UL Channel 20000,UL Frequency 1715.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



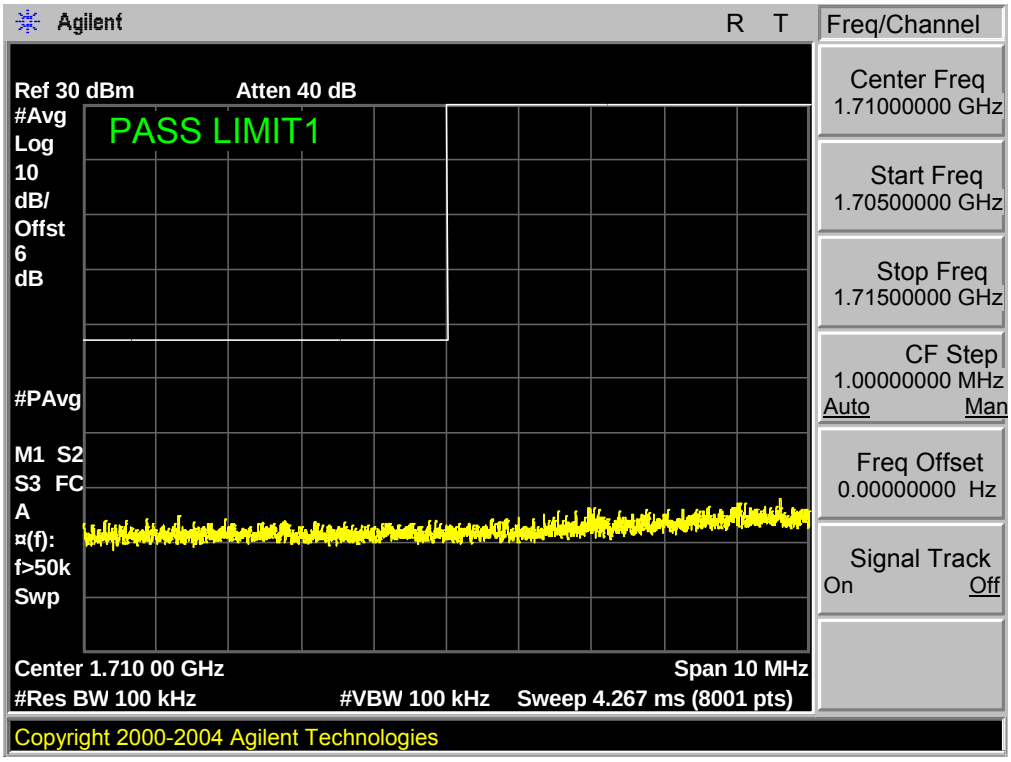
Band 4,UL Channel 20000,UL Frequency 1715.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



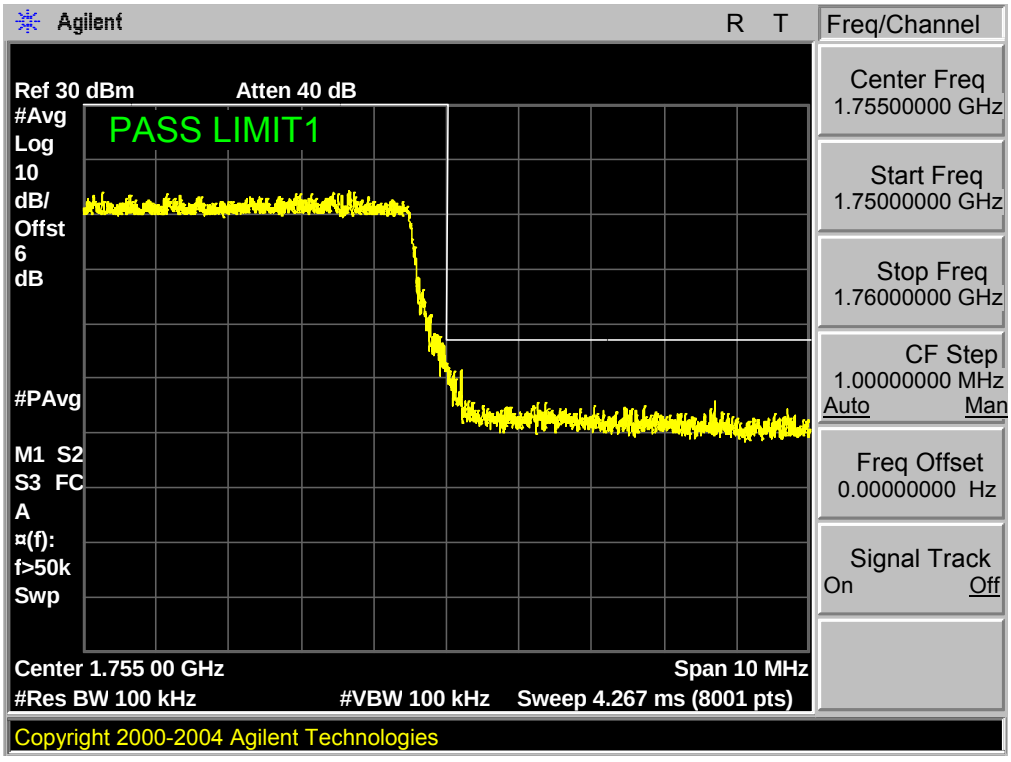
Band 4,UL Channel 20000,UL Frequency 1715.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



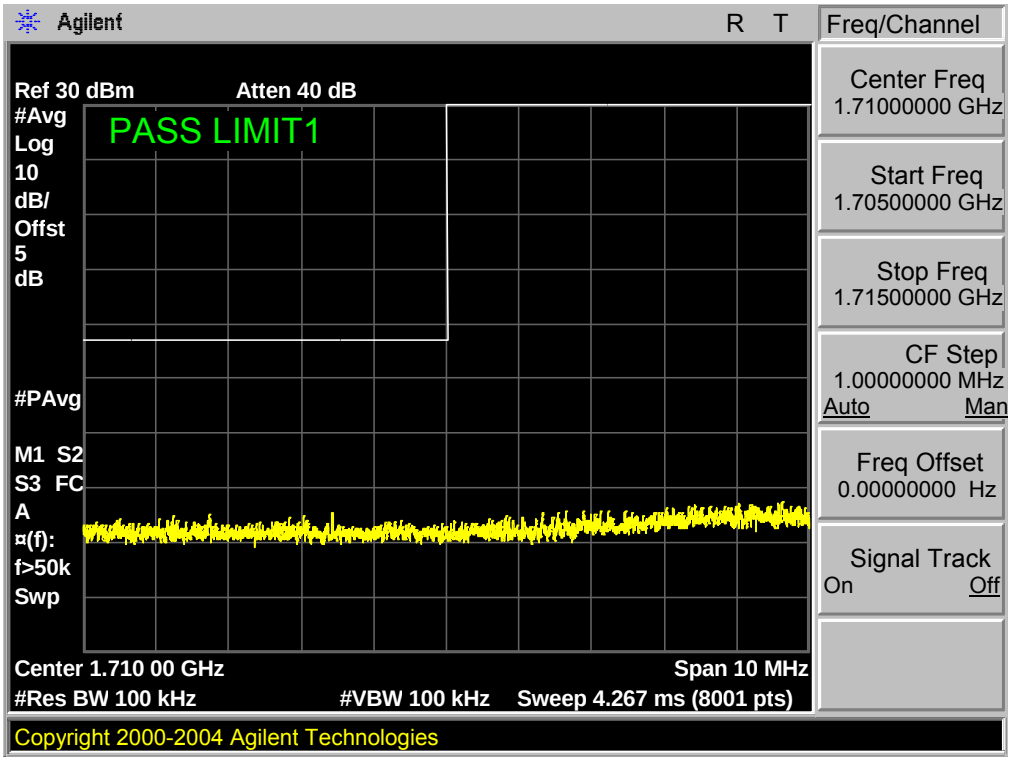
Band 4,UL Channel 20350,UL Frequency 1750.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



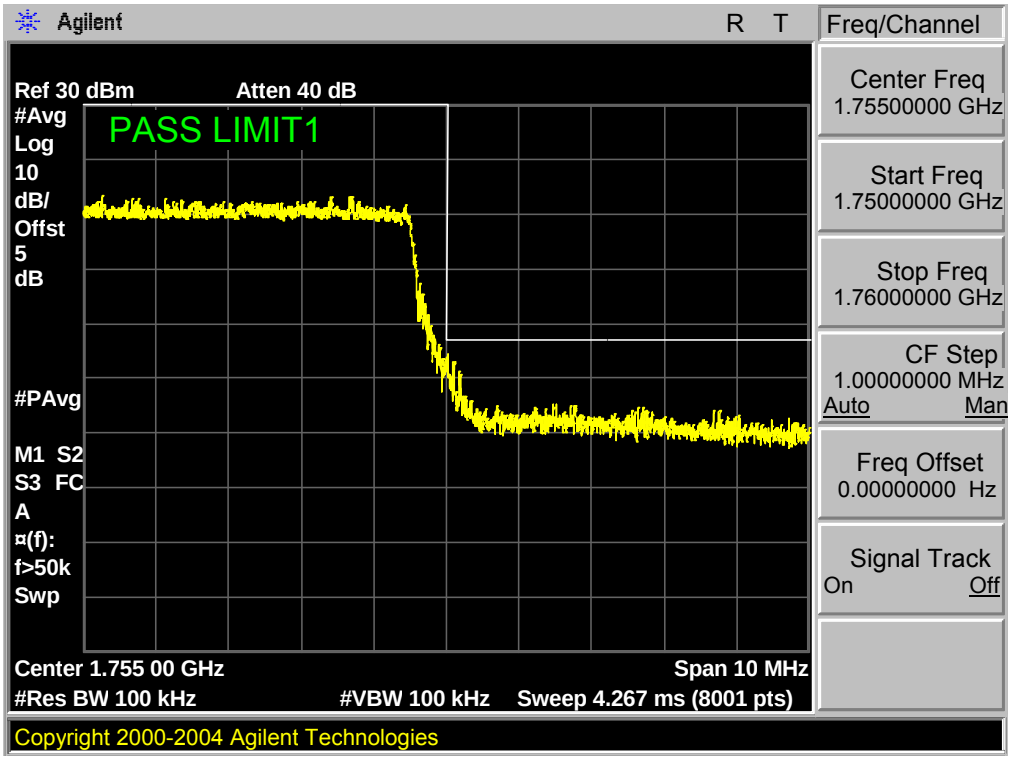
Band 4,UL Channel 20350,UL Frequency 1750.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



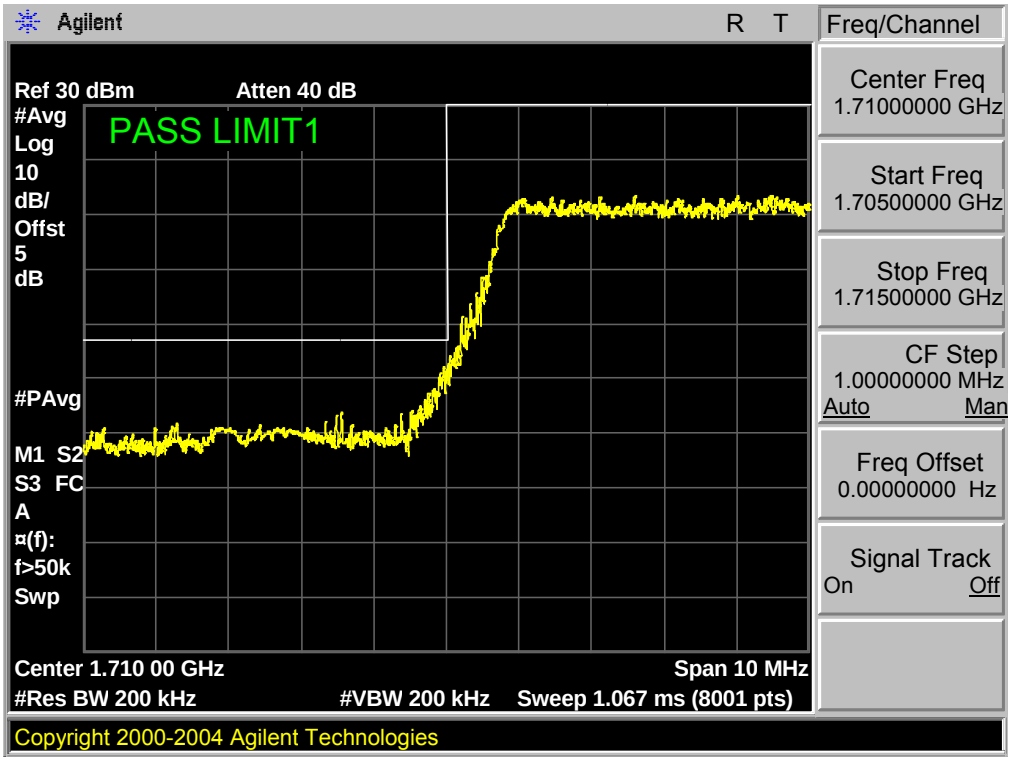
Band 4,UL Channel 20350,UL Frequency 1750.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



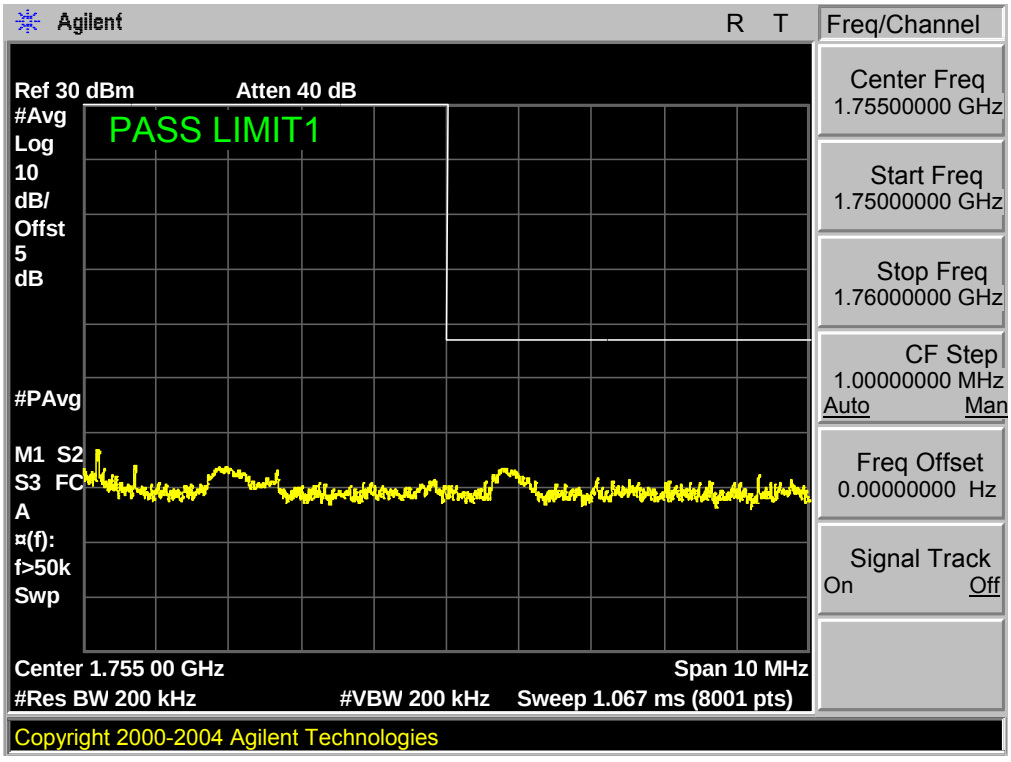
Band 4,UL Channel 20350,UL Frequency 1750.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



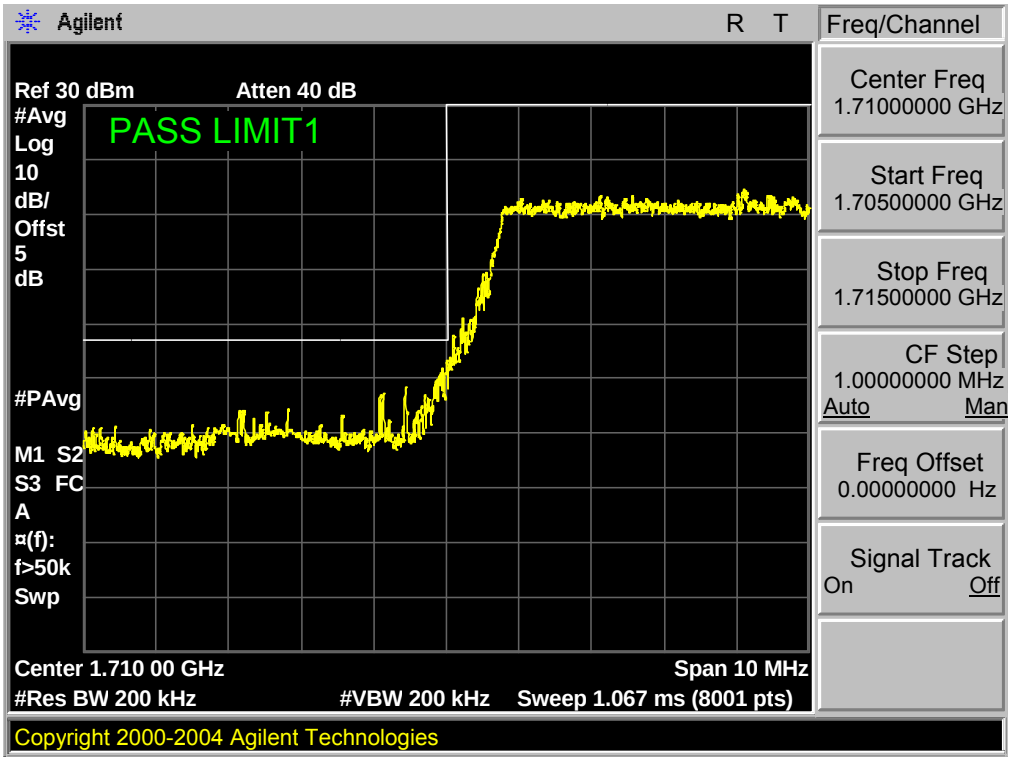
Band 4,UL Channel 20025,UL Frequency 1717.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



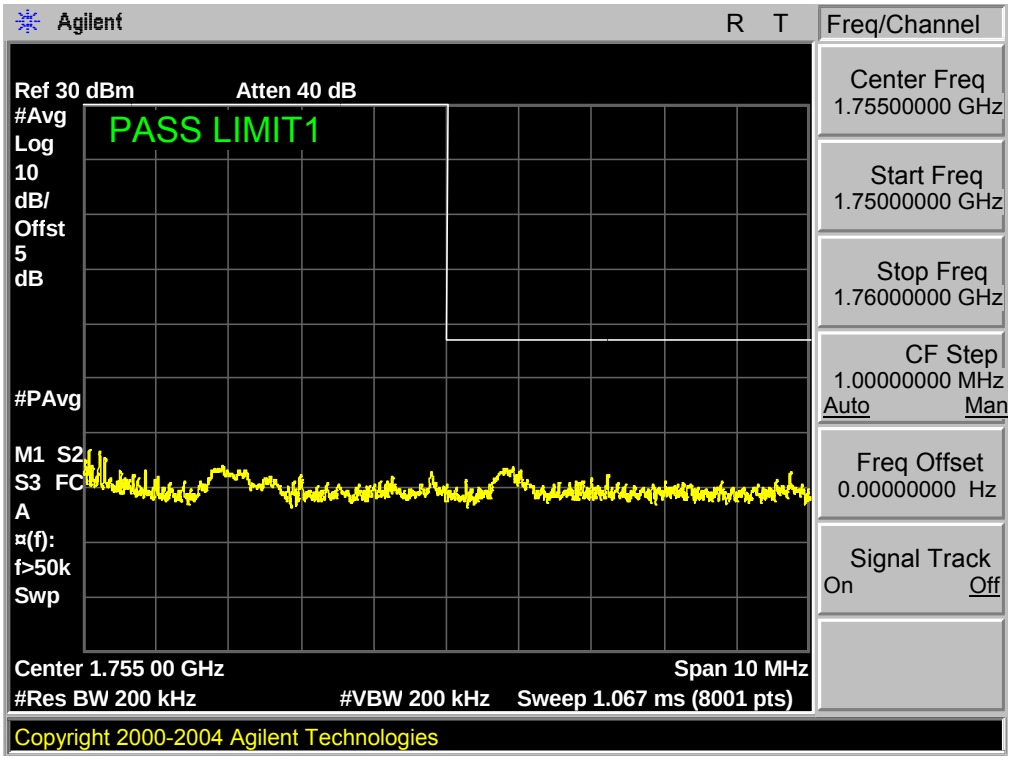
Band 4,UL Channel 20025,UL Frequency 1717.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



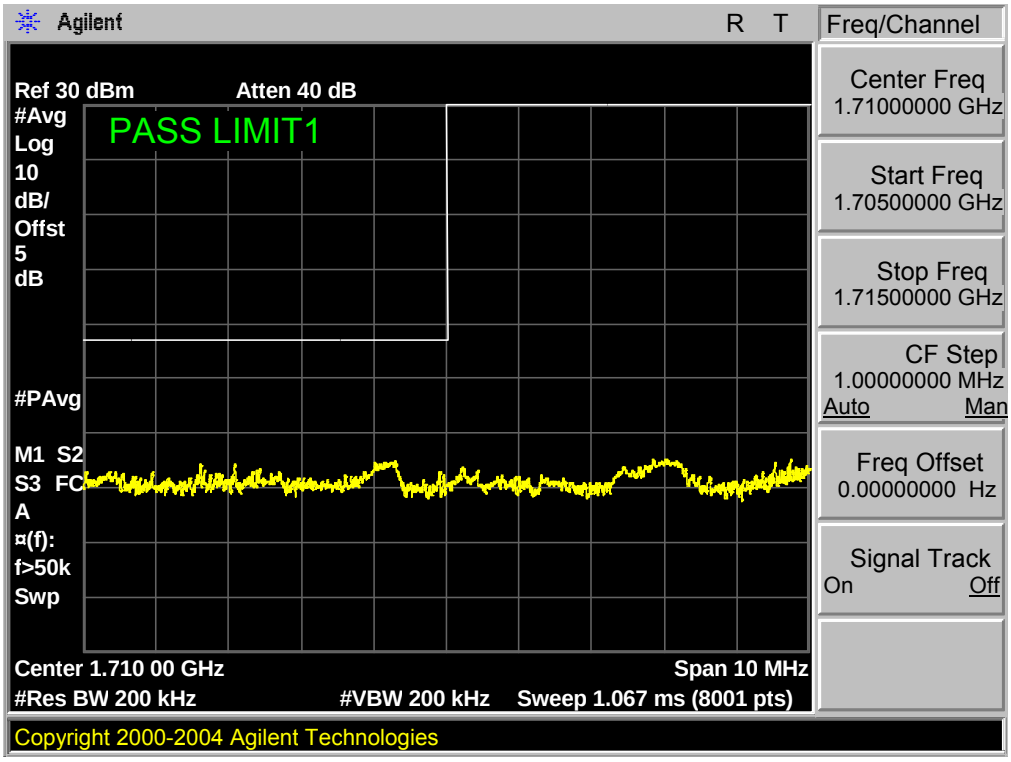
Band 4,UL Channel 20025,UL Frequency 1717.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



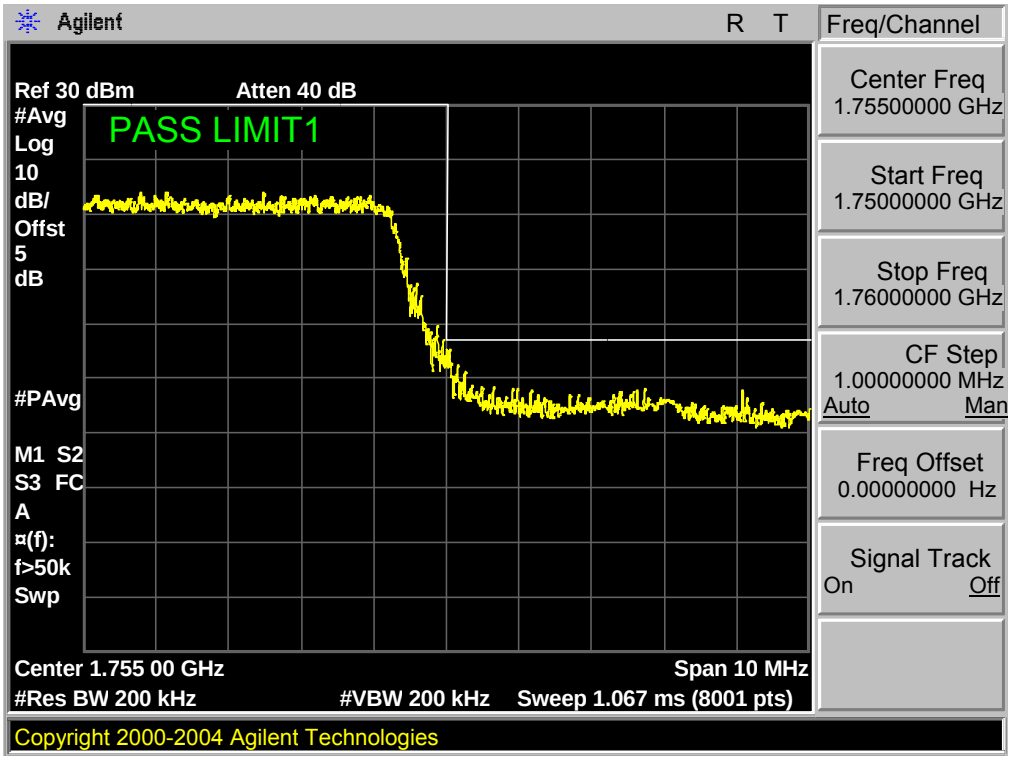
Band 4,UL Channel 20025,UL Frequency 1717.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



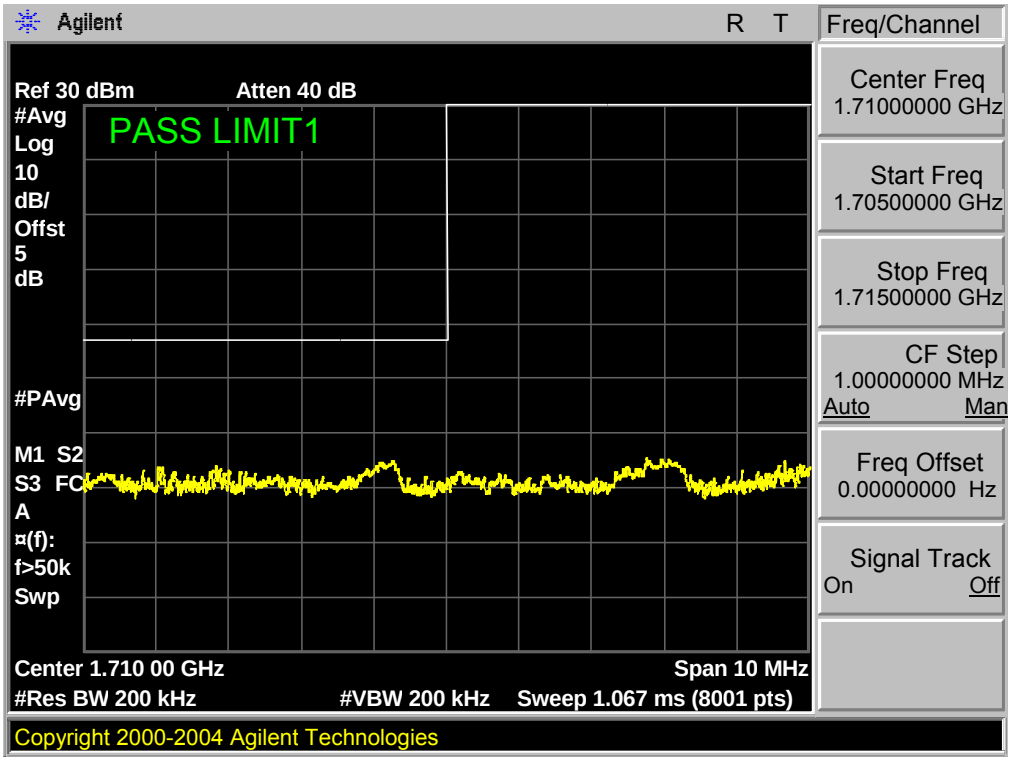
Band 4,UL Channel 20325,UL Frequency 1747.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



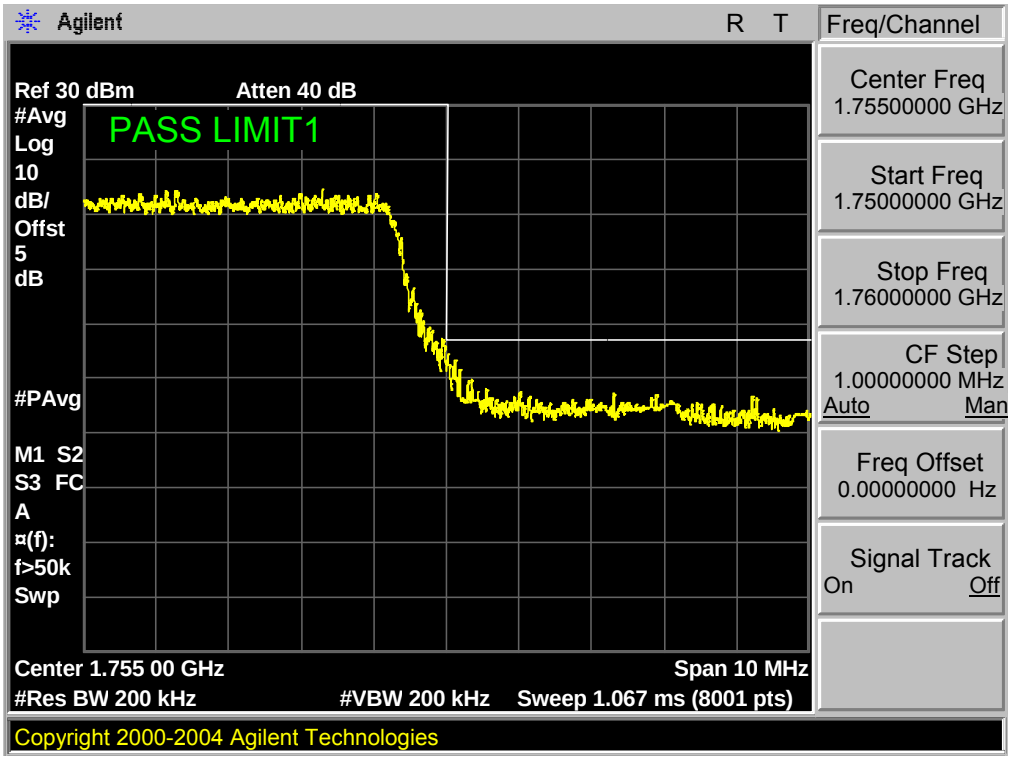
Band 4,UL Channel 20325,UL Frequency 1747.5,BW 15.0,NO. RB 75,RB POS. Low,QPSK



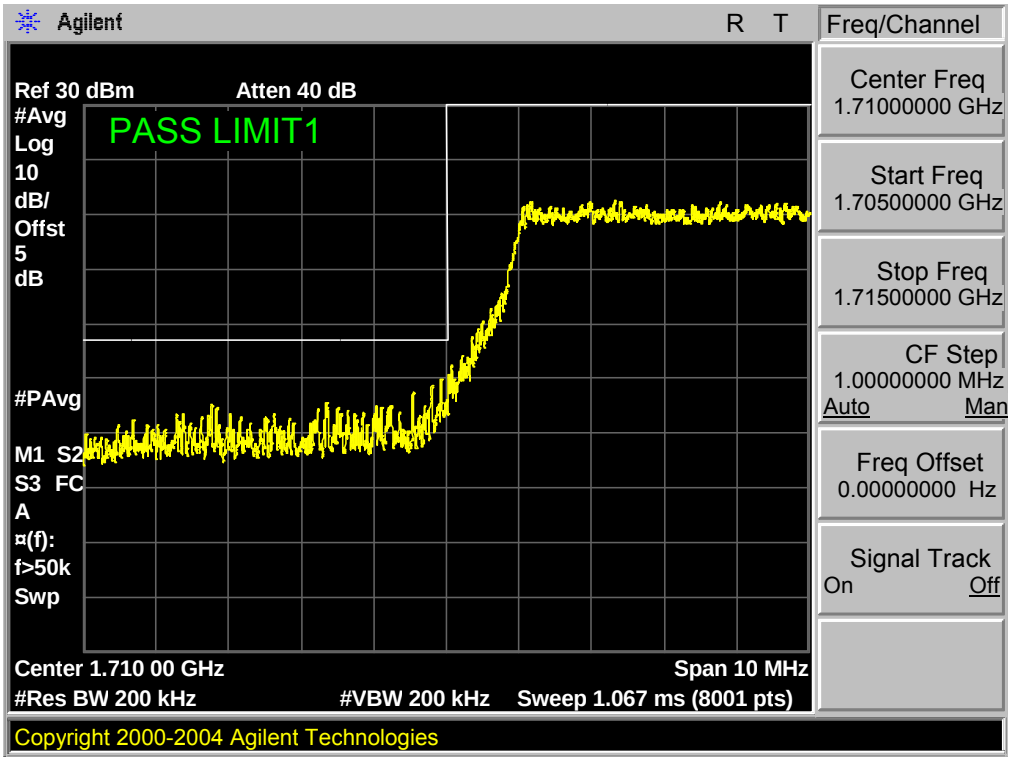
Band 4,UL Channel 20325,UL Frequency 1747.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



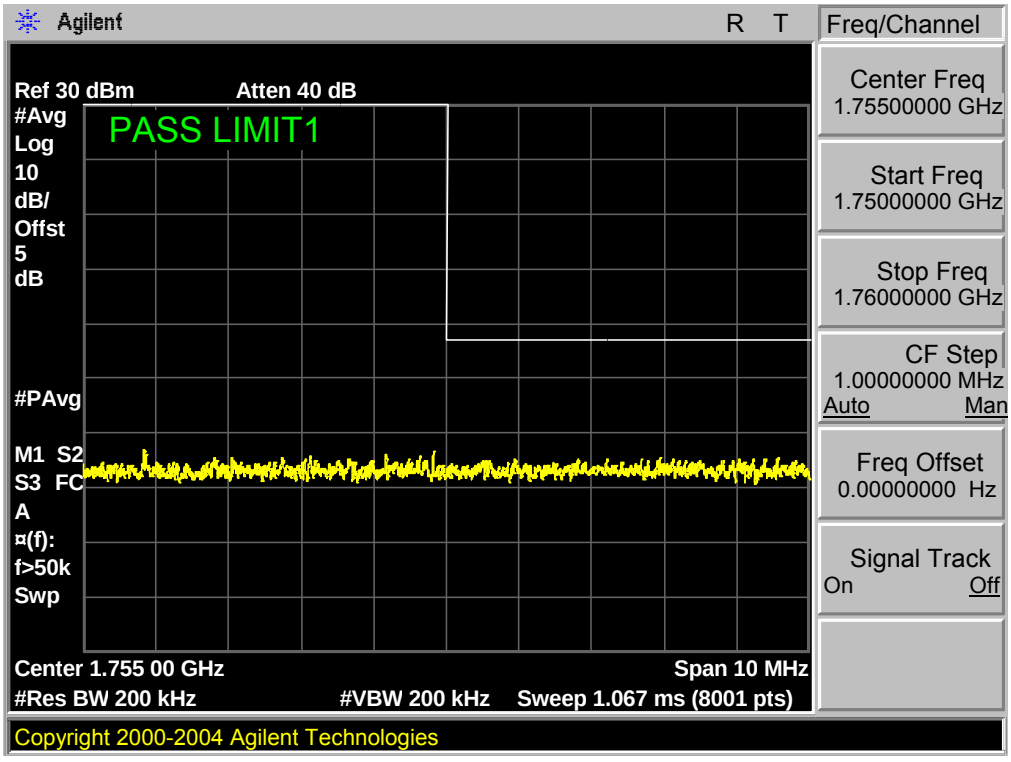
Band 4,UL Channel 20325,UL Frequency 1747.5,BW 15.0,NO. RB 75,RB POS. Low,16QAM



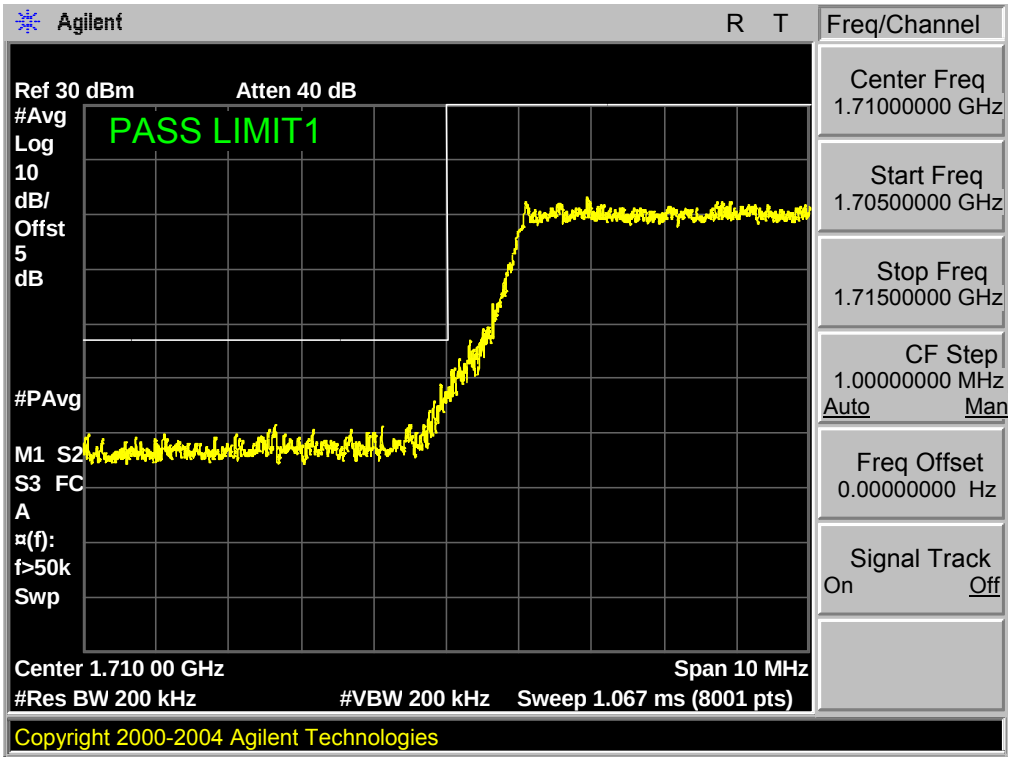
Band 4,UL Channel 20050,UL Frequency 1720.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK



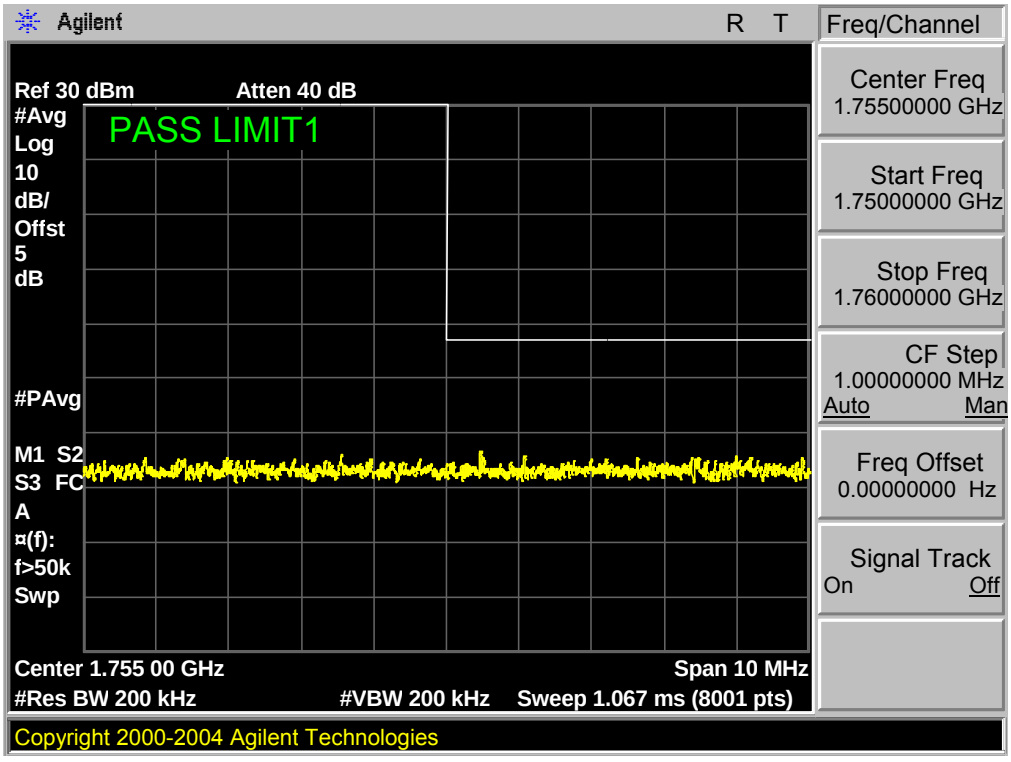
Band 4,UL Channel 20050,UL Frequency 1720.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK



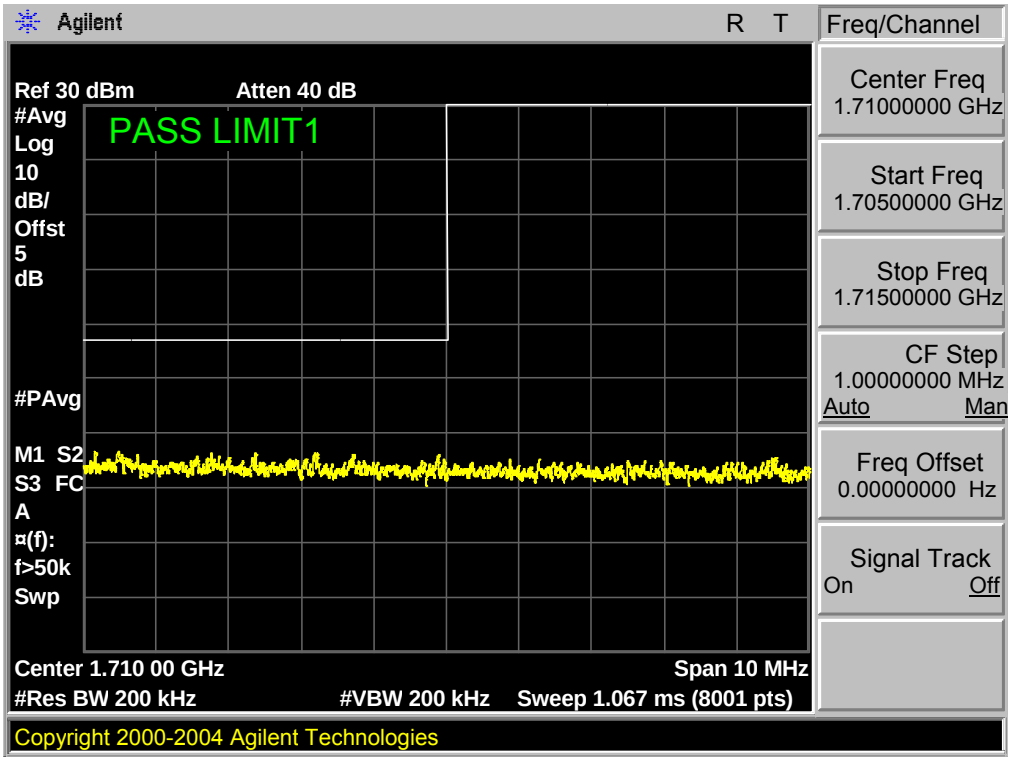
Band 4,UL Channel 20050,UL Frequency 1720.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM



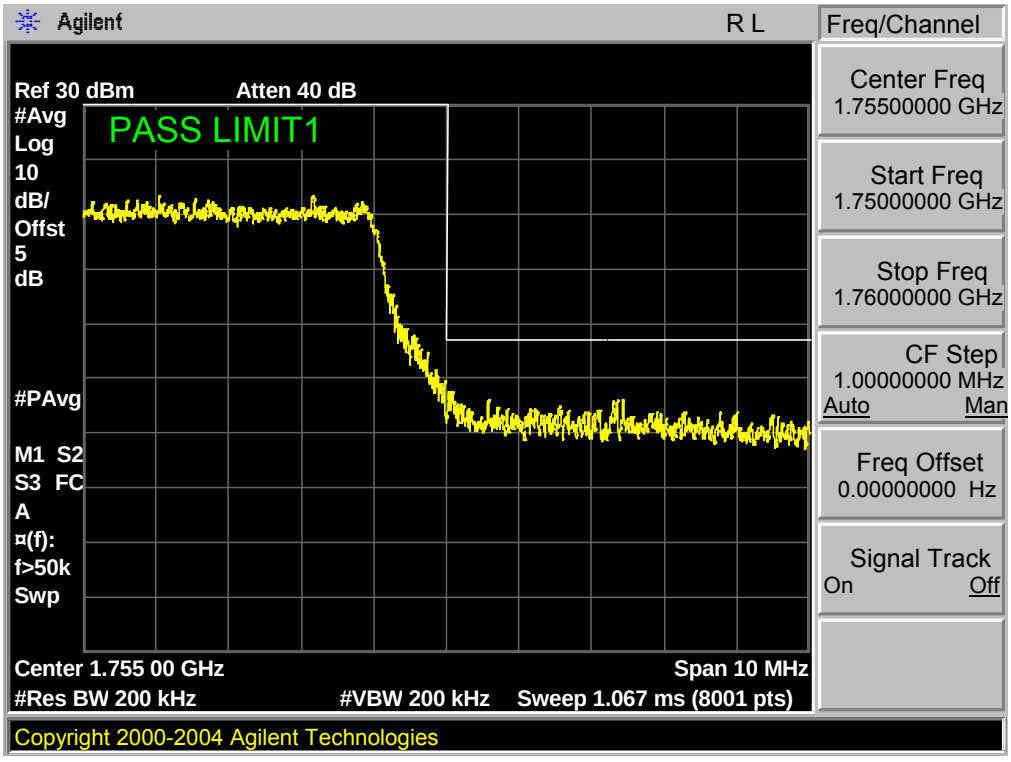
Band 4,UL Channel 20050,UL Frequency 1720.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM



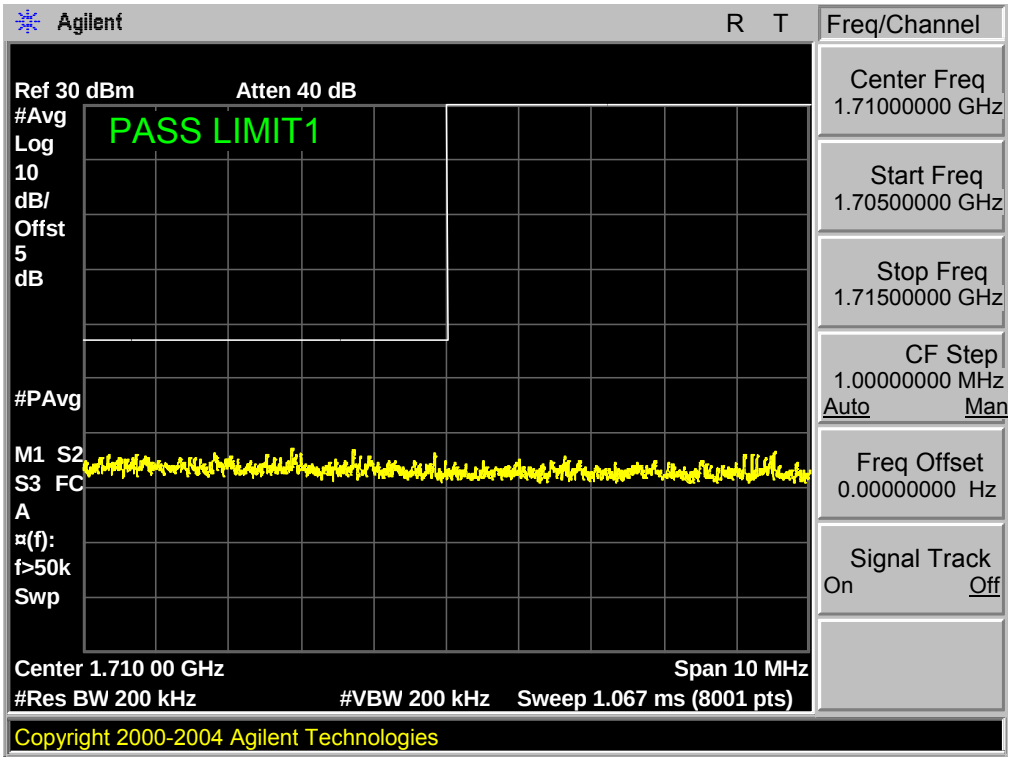
Band 4,UL Channel 20300,UL Frequency 1745.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK



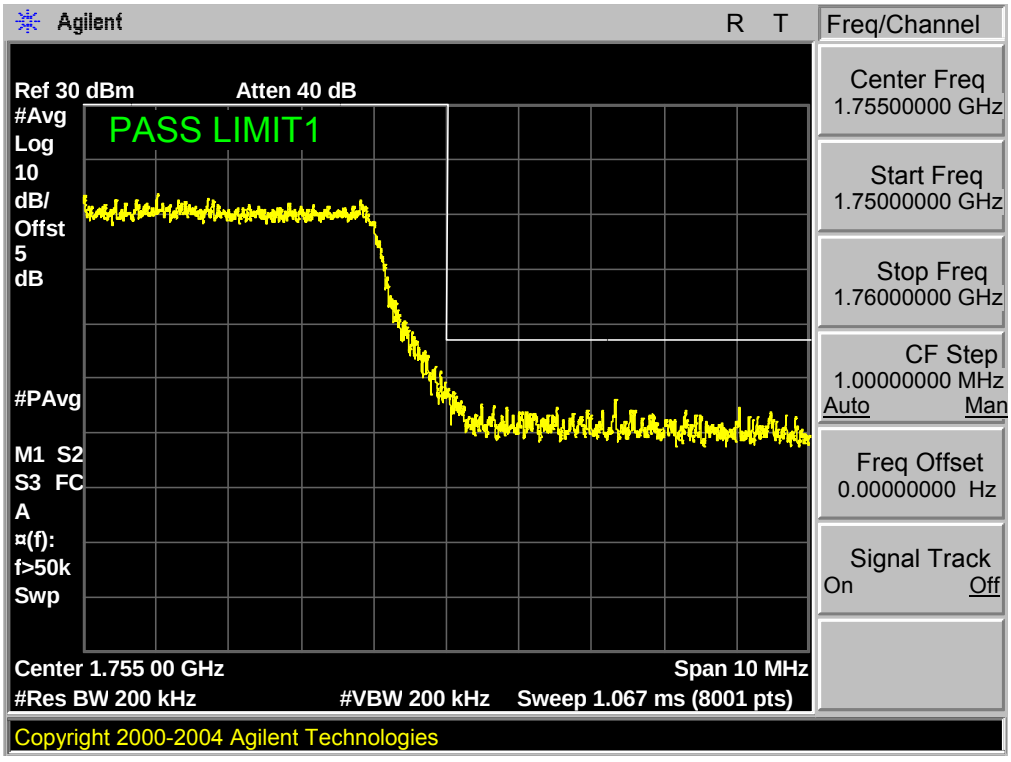
Band 4,UL Channel 20300,UL Frequency 1745.0,BW 20.0,NO. RB 100,RB POS. Low,QPSK



Band 4,UL Channel 20300,UL Frequency 1745.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM

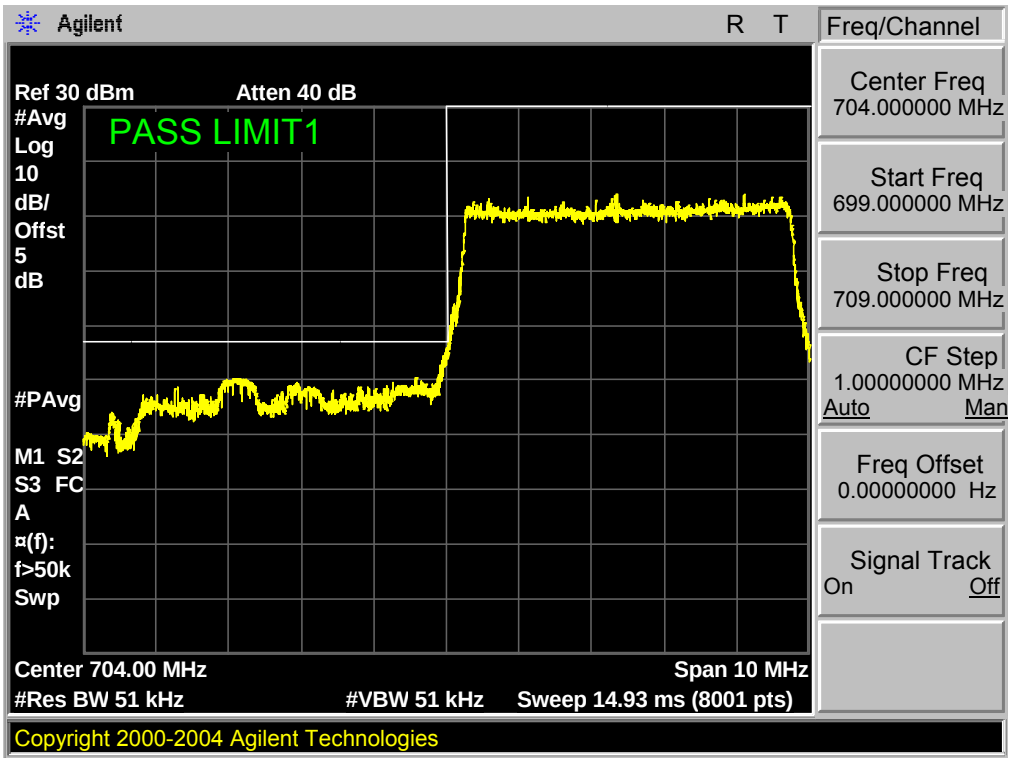


Band 4,UL Channel 20300,UL Frequency 1745.0,BW 20.0,NO. RB 100,RB POS. Low,16QAM

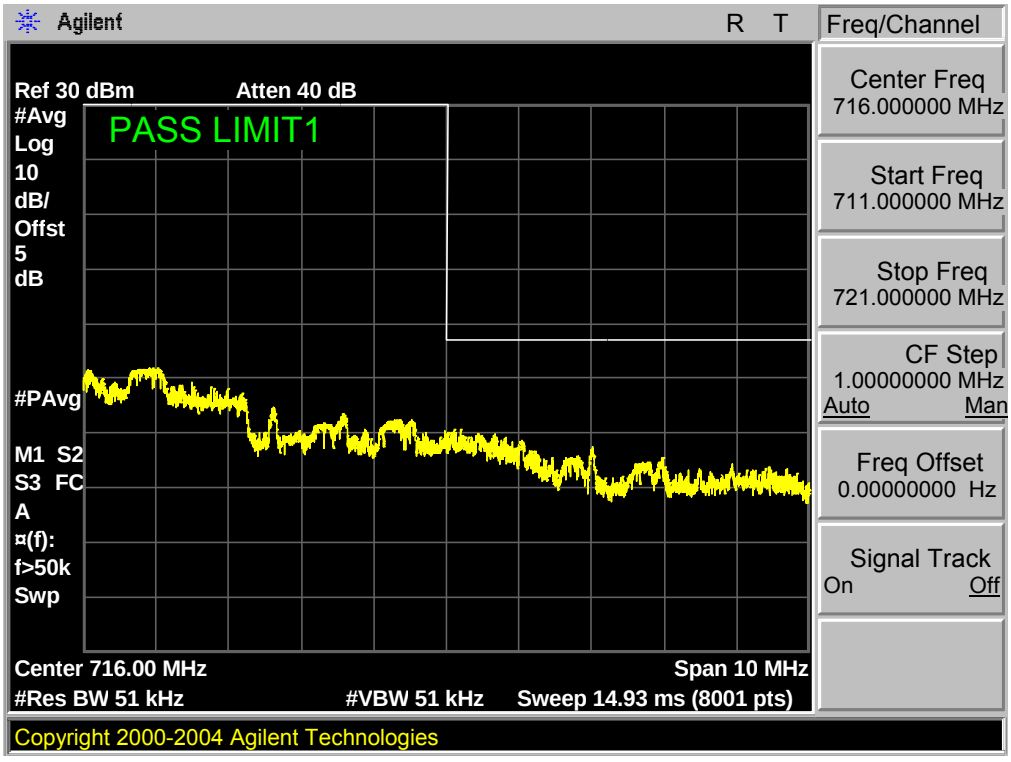


6.1.3. LTE BAND 17

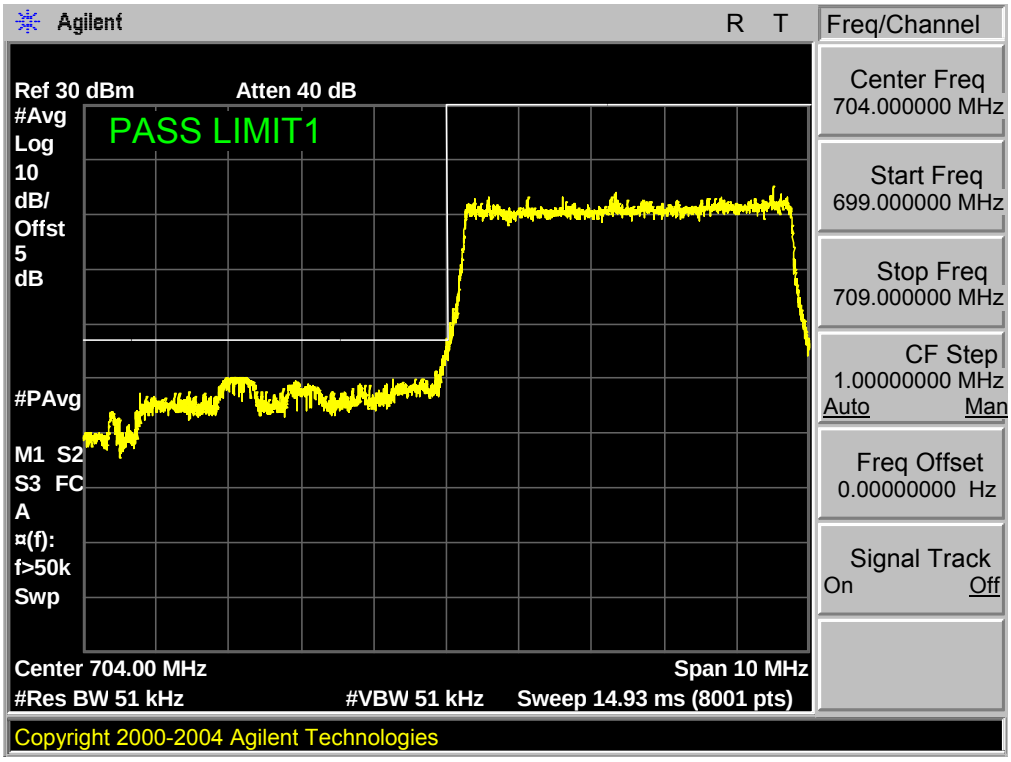
Band 17,UL Channel 23755,UL Frequency 706.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



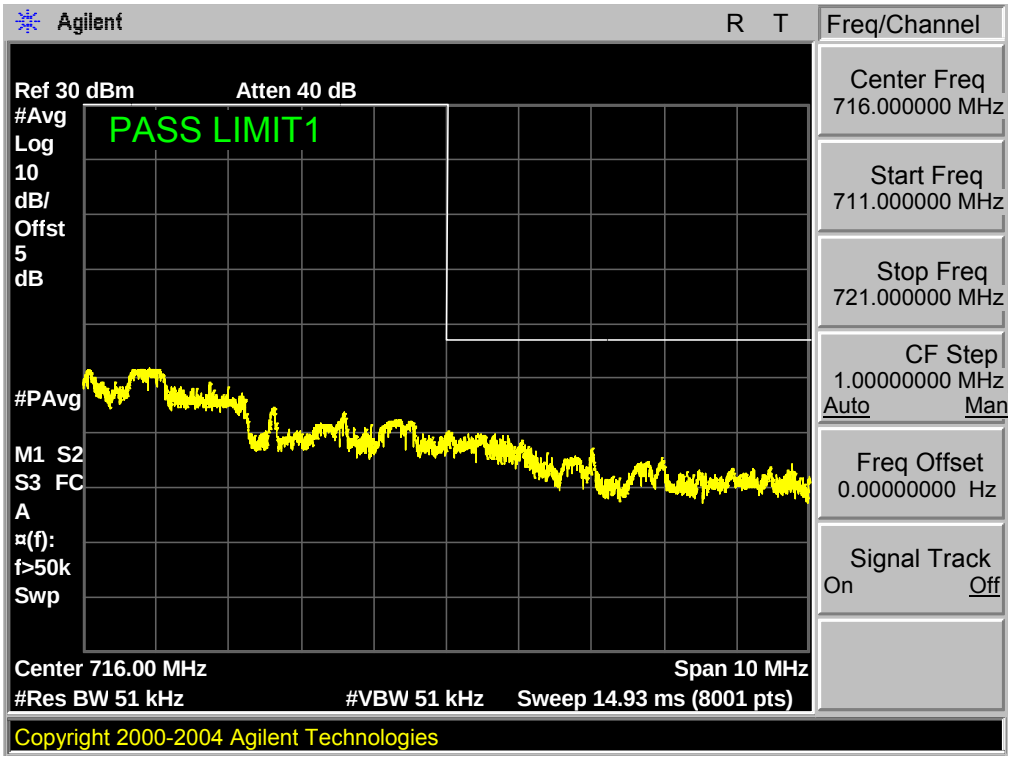
Band 17,UL Channel 23755,UL Frequency 706.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



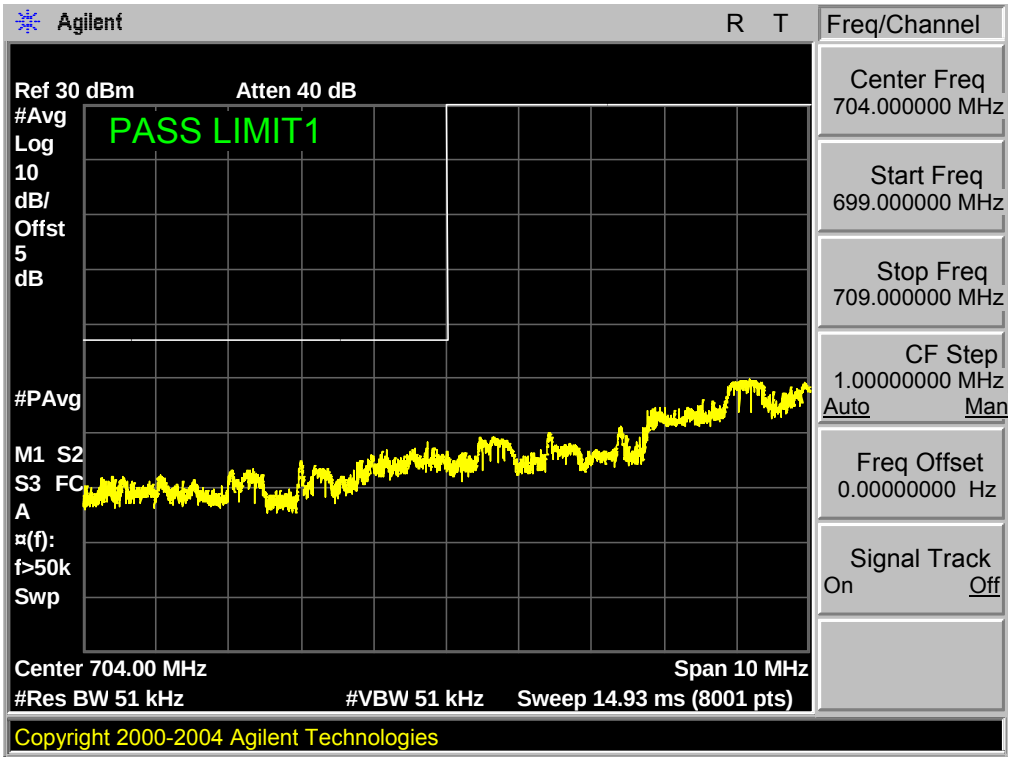
Band 17,UL Channel 23755,UL Frequency 706.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



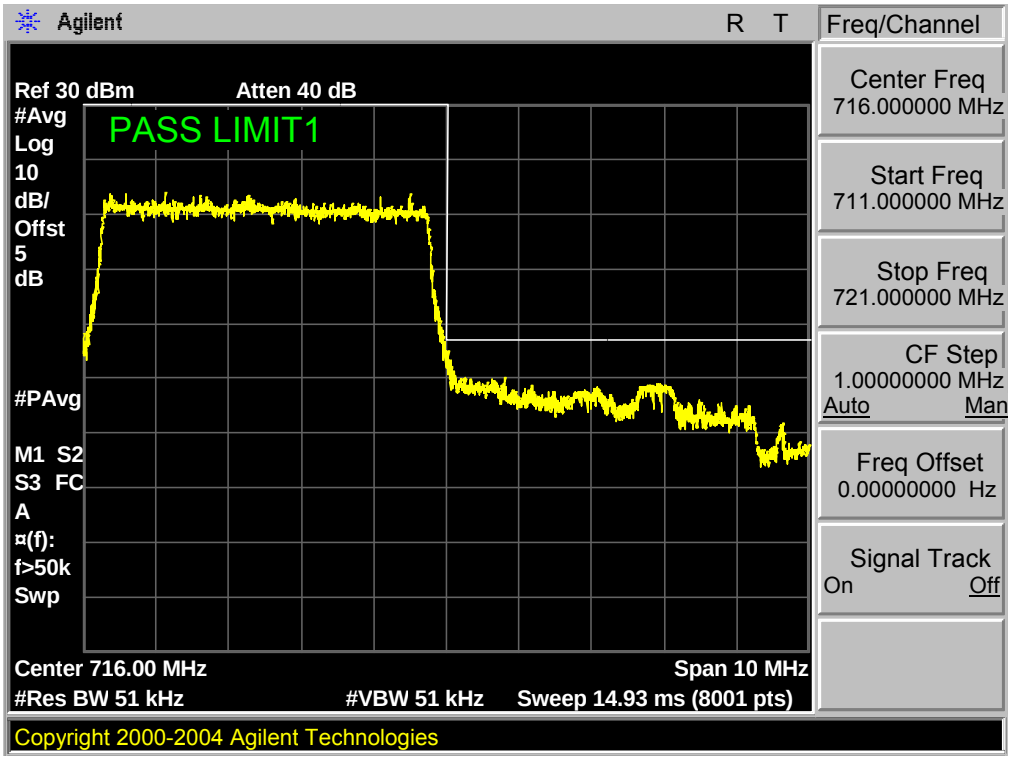
Band 17,UL Channel 23755,UL Frequency 706.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



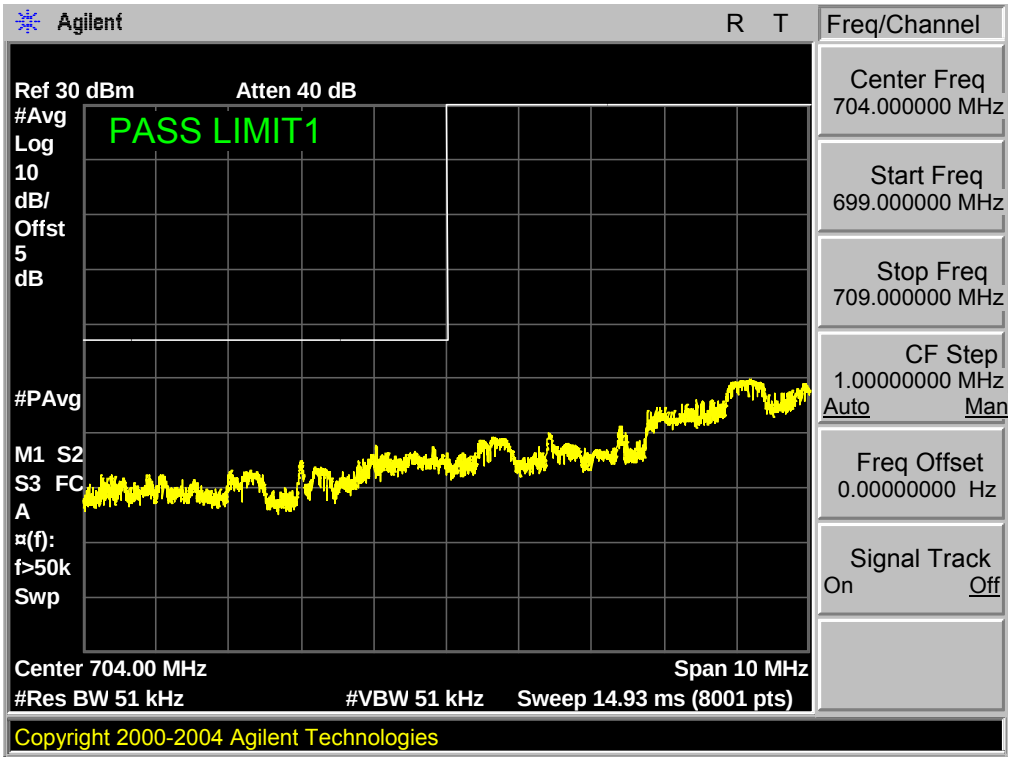
Band 17,UL Channel 23825,UL Frequency 713.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



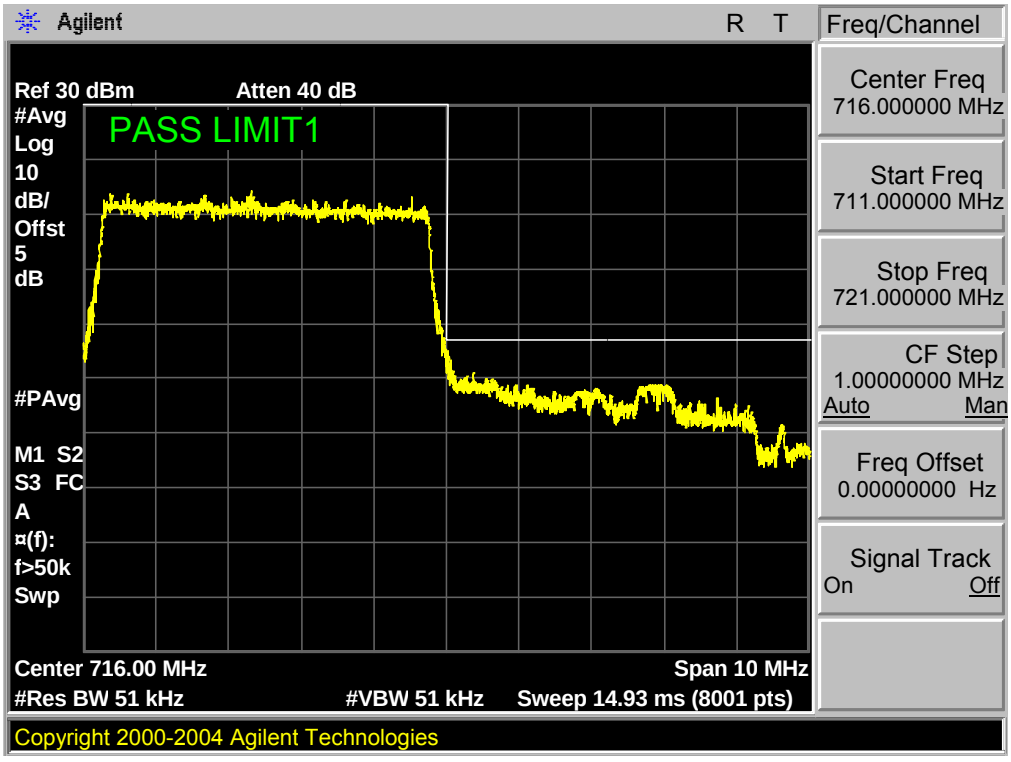
Band 17,UL Channel 23825,UL Frequency 713.5,BW 5.0,NO. RB 25,RB POS. Low,QPSK



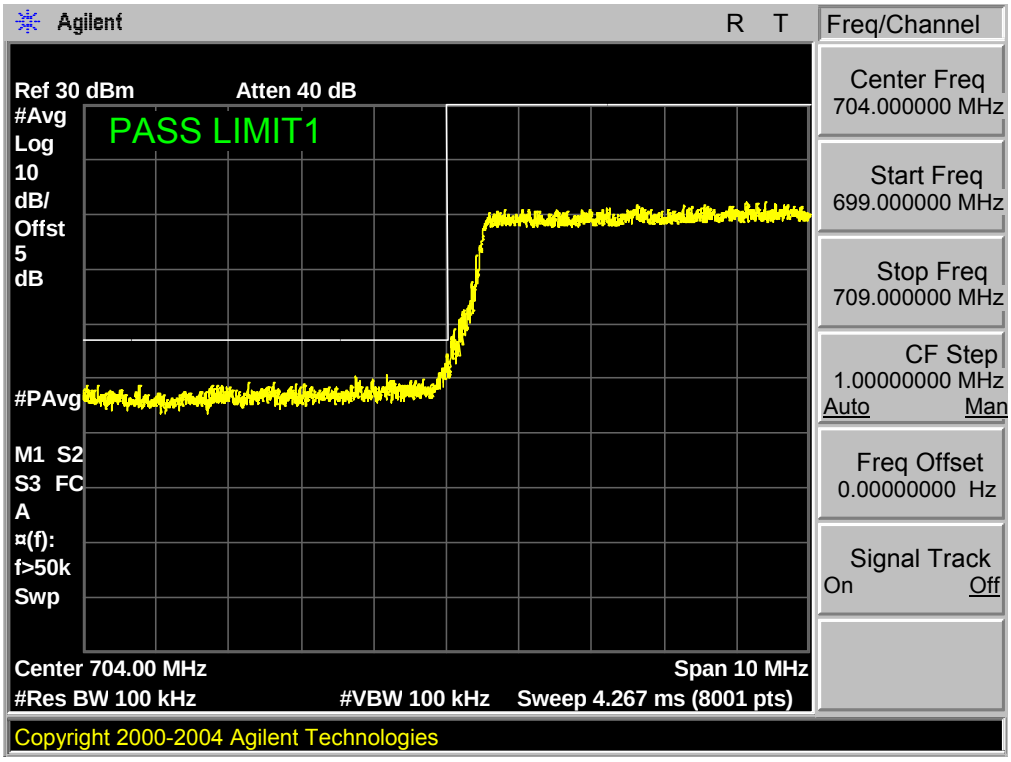
Band 17,UL Channel 23825,UL Frequency 713.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



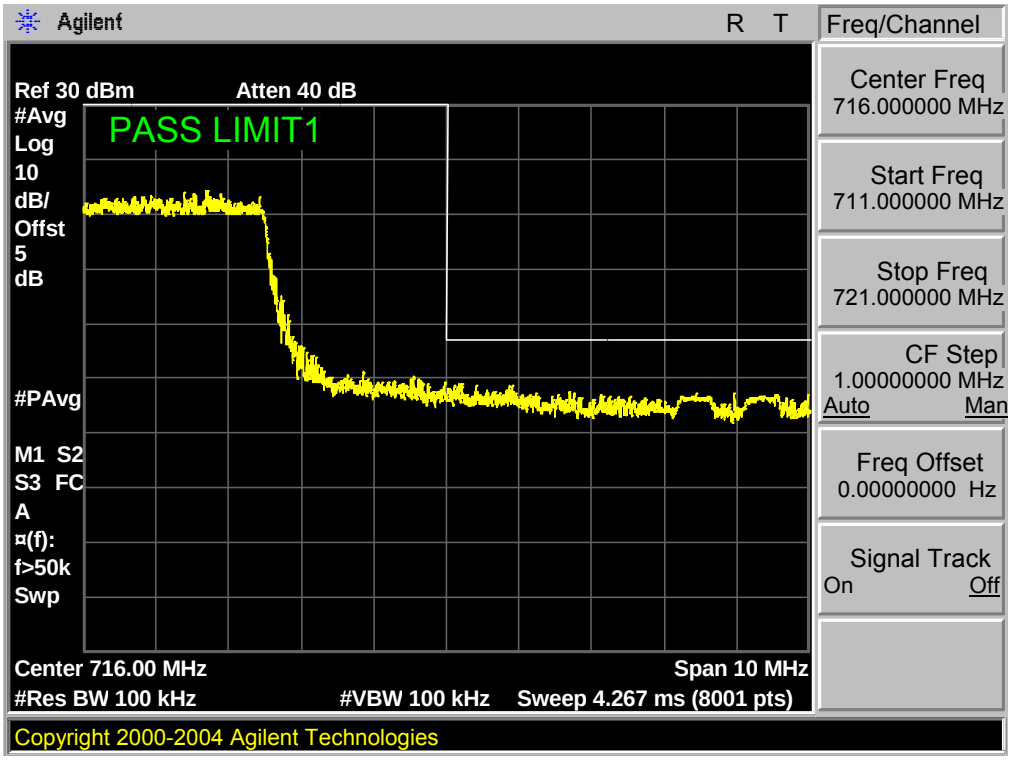
Band 17,UL Channel 23825,UL Frequency 713.5,BW 5.0,NO. RB 25,RB POS. Low,16QAM



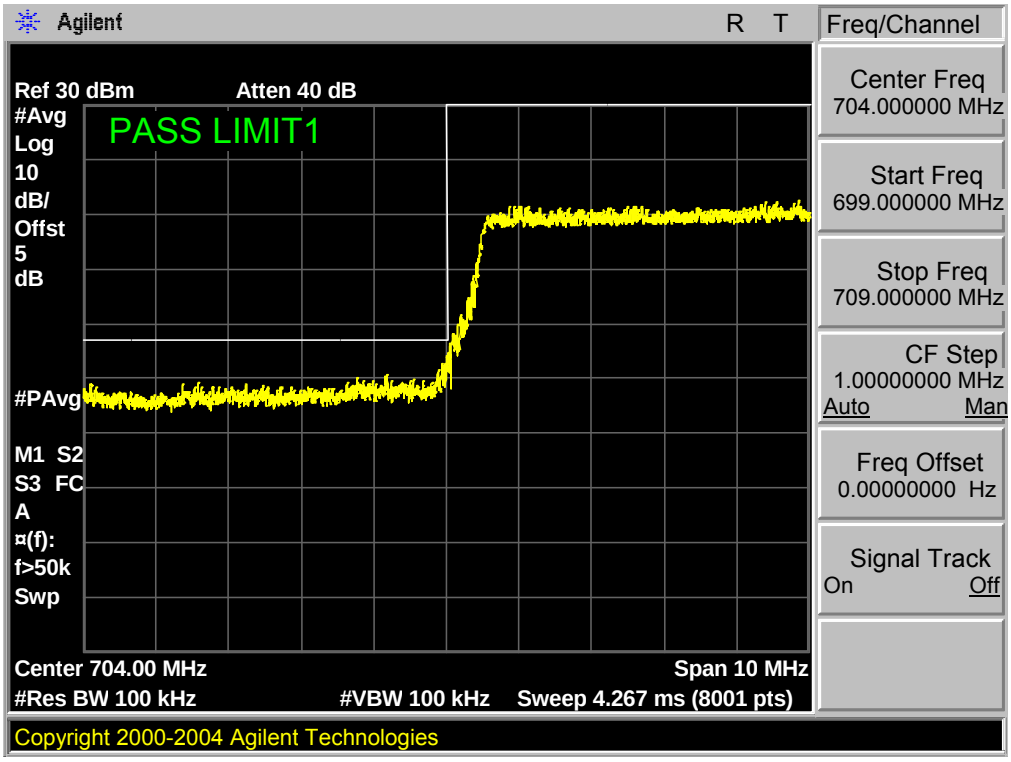
Band 17,UL Channel 23780,UL Frequency 709.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



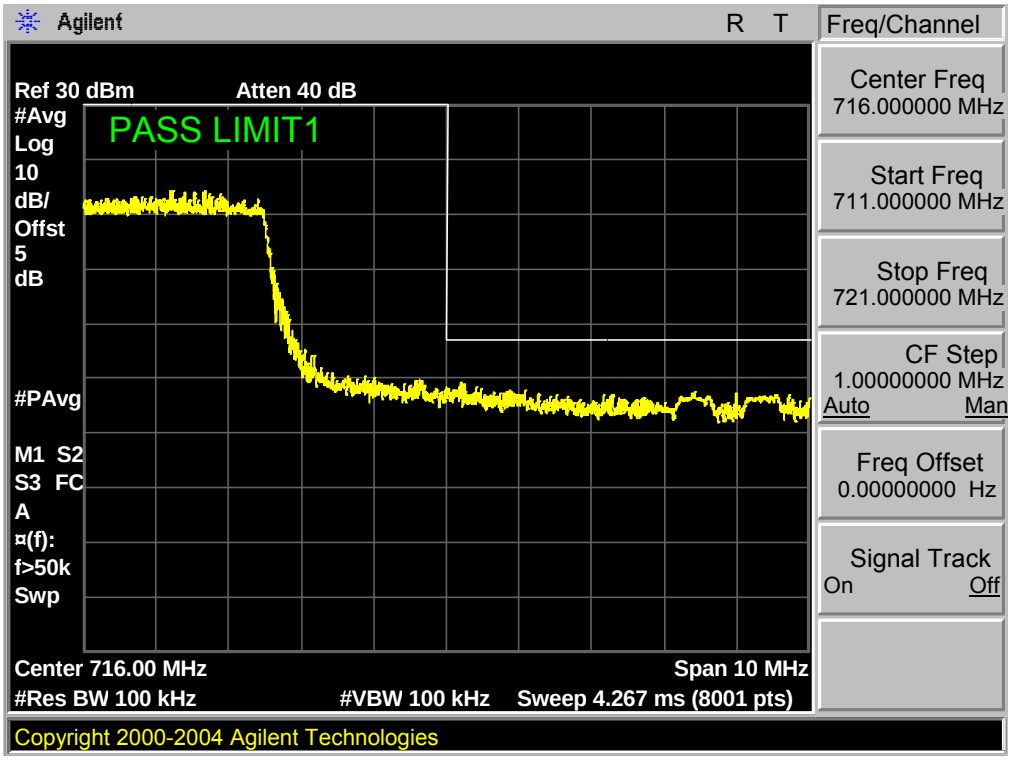
Band 17,UL Channel 23780,UL Frequency 709.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



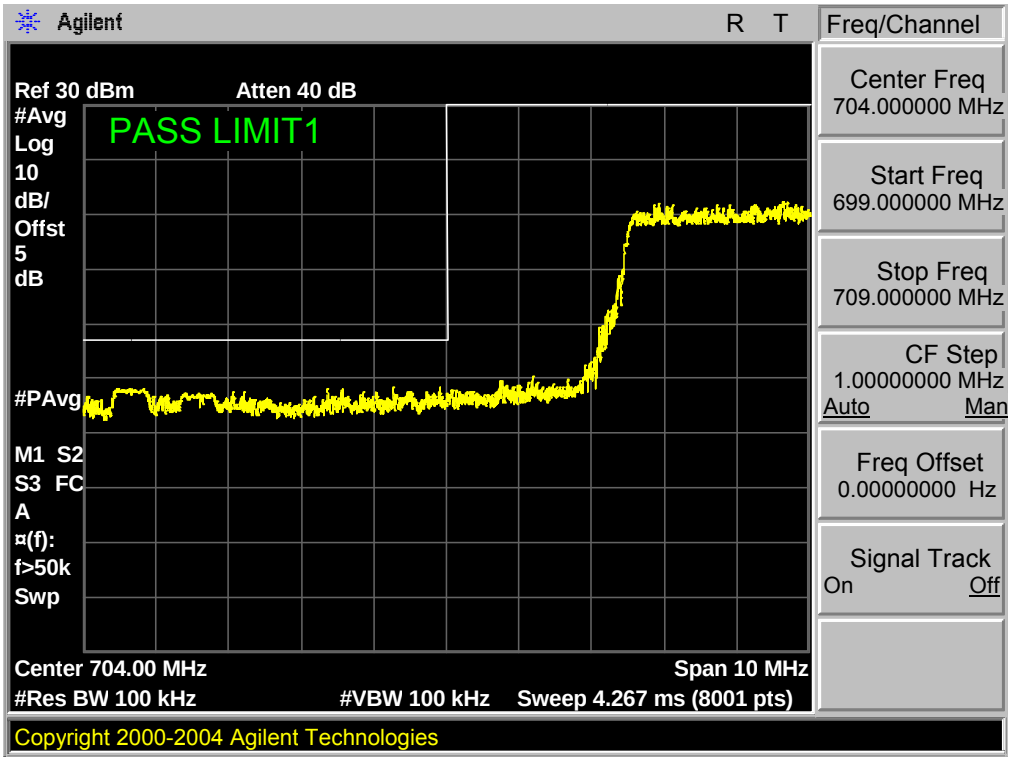
Band 17,UL Channel 23780,UL Frequency 709.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



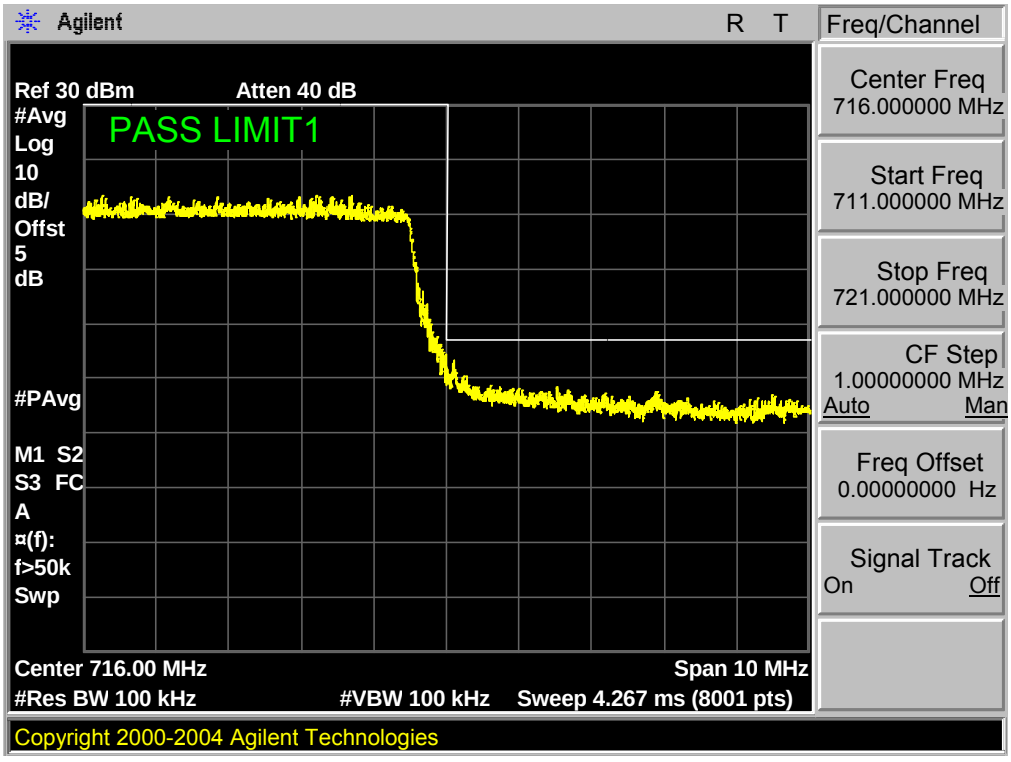
Band 17,UL Channel 23780,UL Frequency 709.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



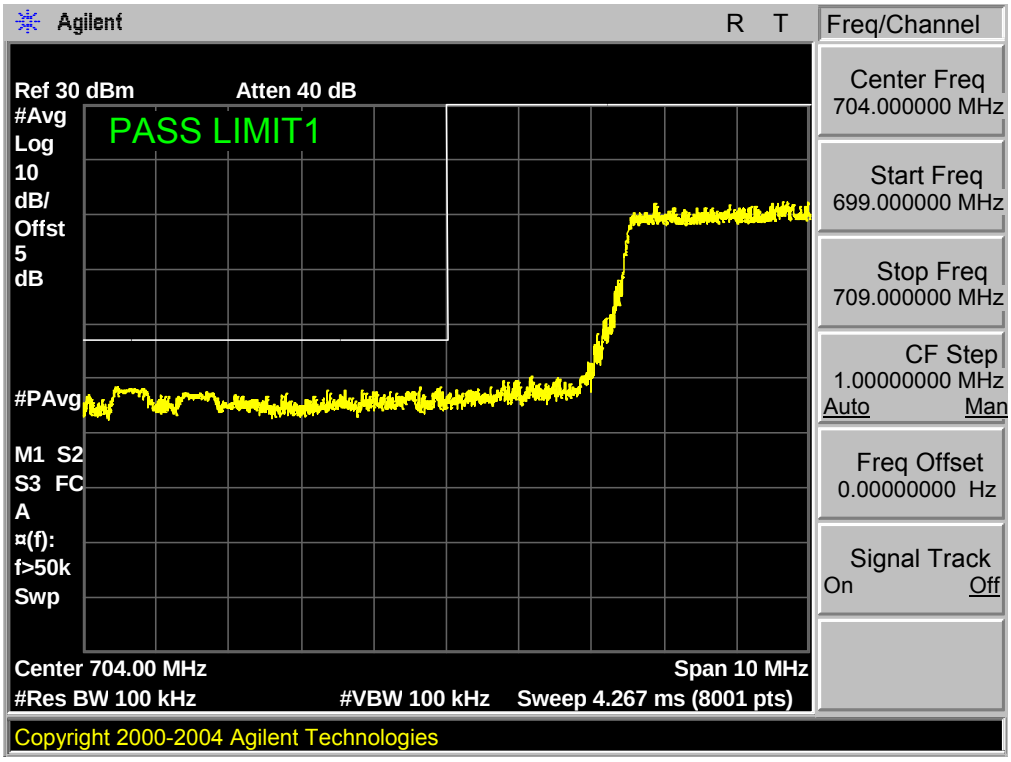
Band 17,UL Channel 23800,UL Frequency 711.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



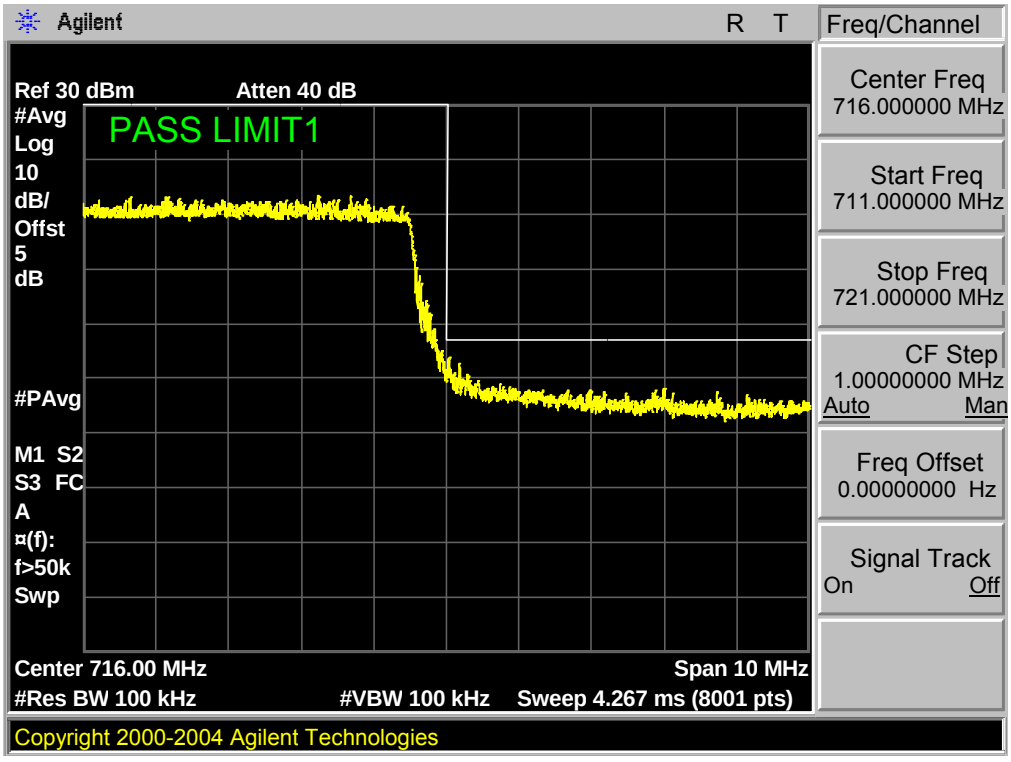
Band 17,UL Channel 23800,UL Frequency 711.0,BW 10.0,NO. RB 50,RB POS. Low,QPSK



Band 17,UL Channel 23800,UL Frequency 711.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



Band 17,UL Channel 23800,UL Frequency 711.0,BW 10.0,NO. RB 50,RB POS. Low,16QAM



7. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §27.53

LIMITS

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.

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

Set display line at -13 dBm

Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

MODES TESTED

LTE Band 2

LTE Band 4

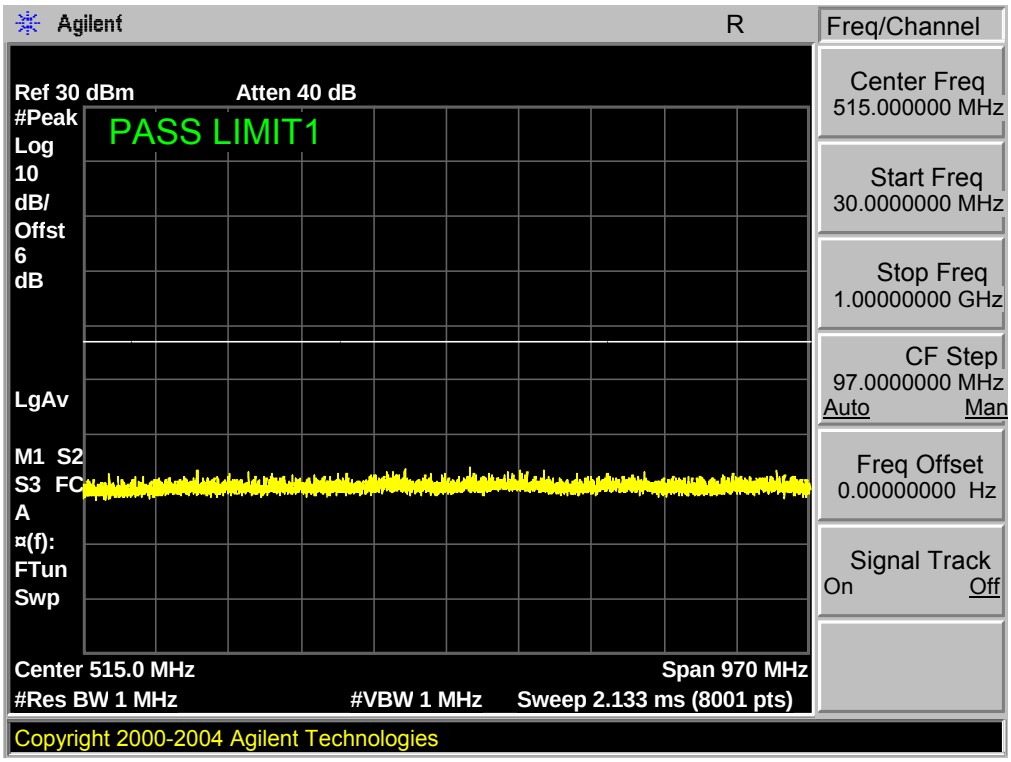
LTE Band 17

7.1 MEASUREMENT METHOD

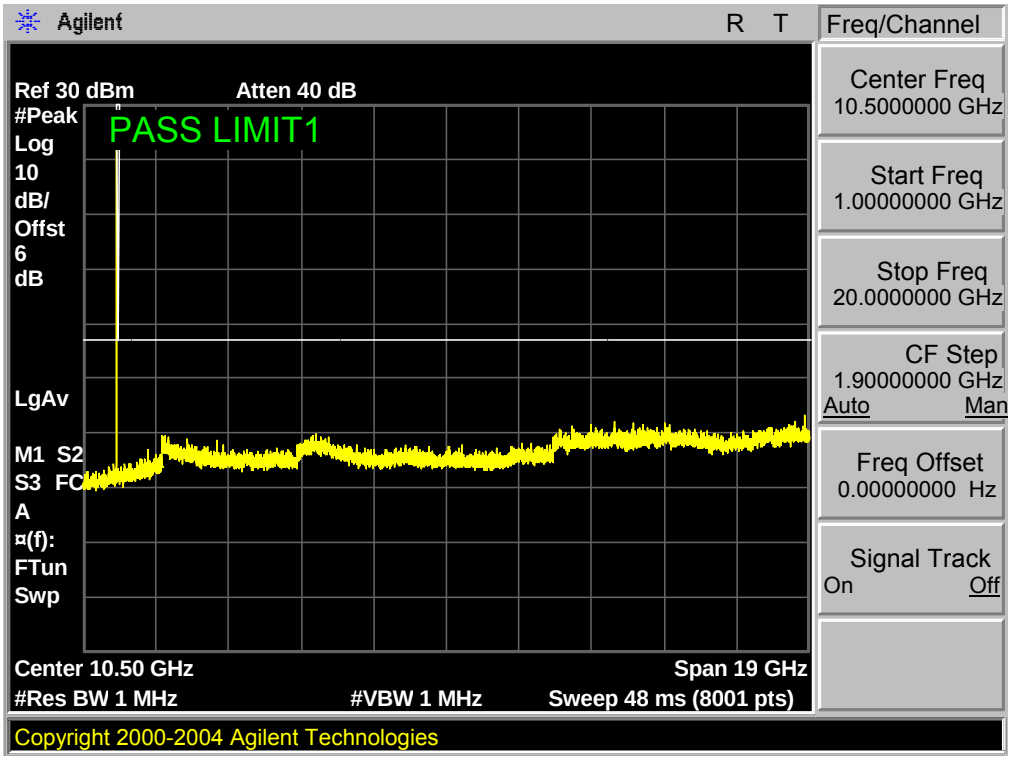
The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

7.1.1 LTE BAND 2

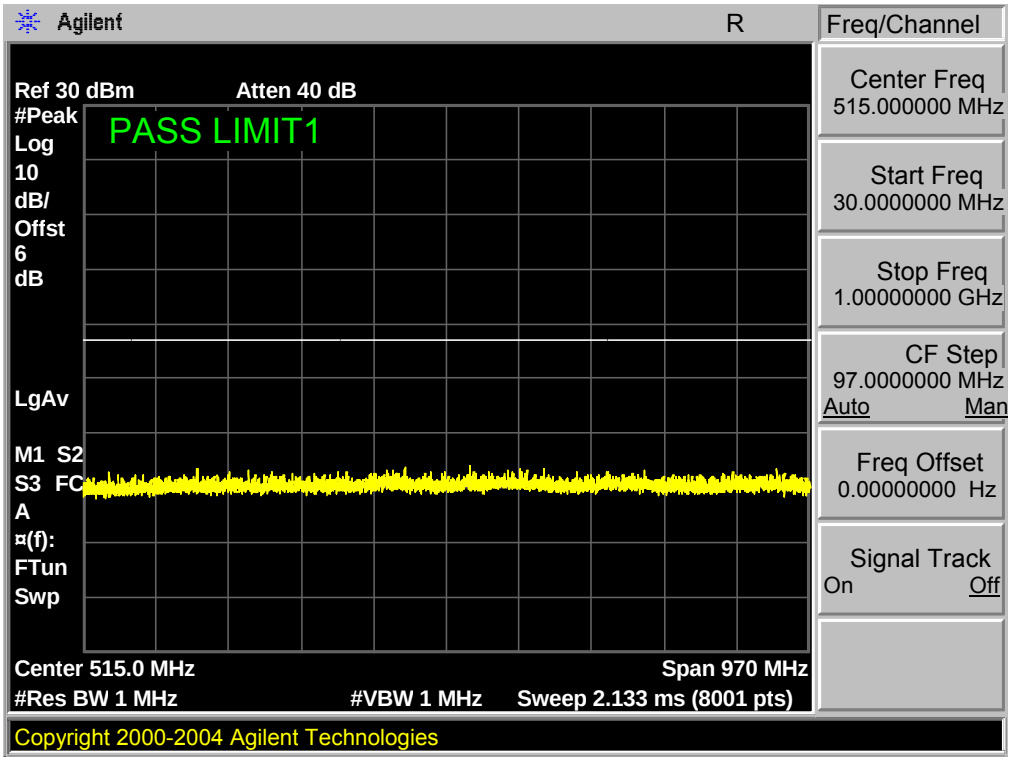
Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 1,RB POS. Low,QPSK



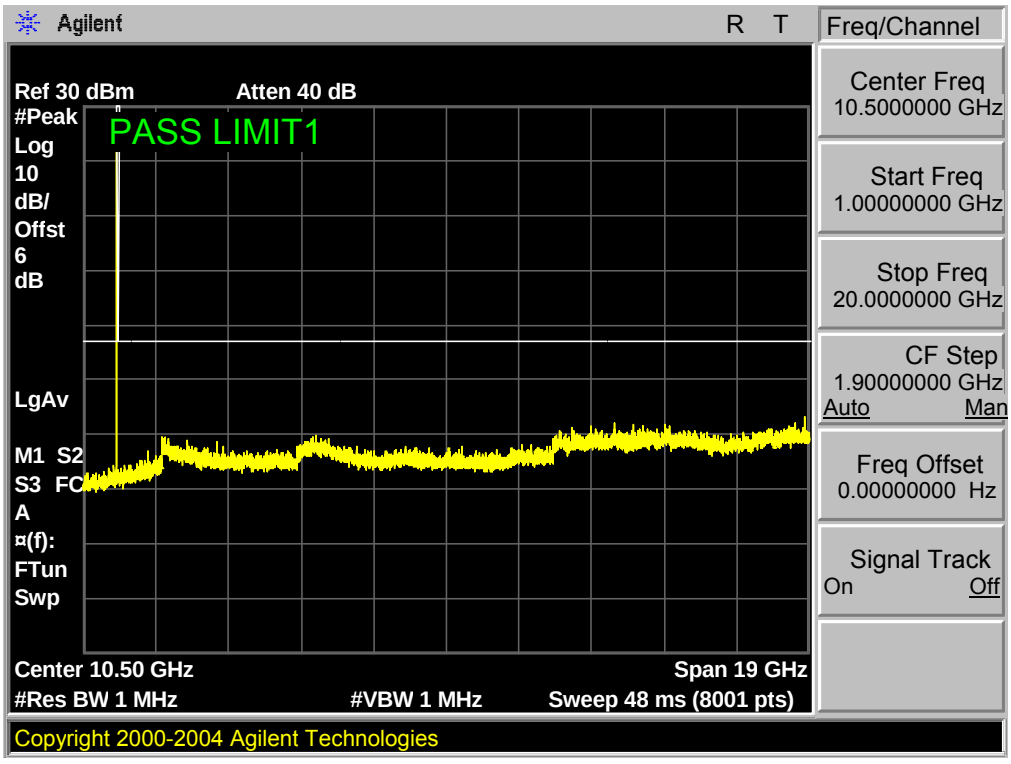
Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 1,RB POS. Low,QPSK



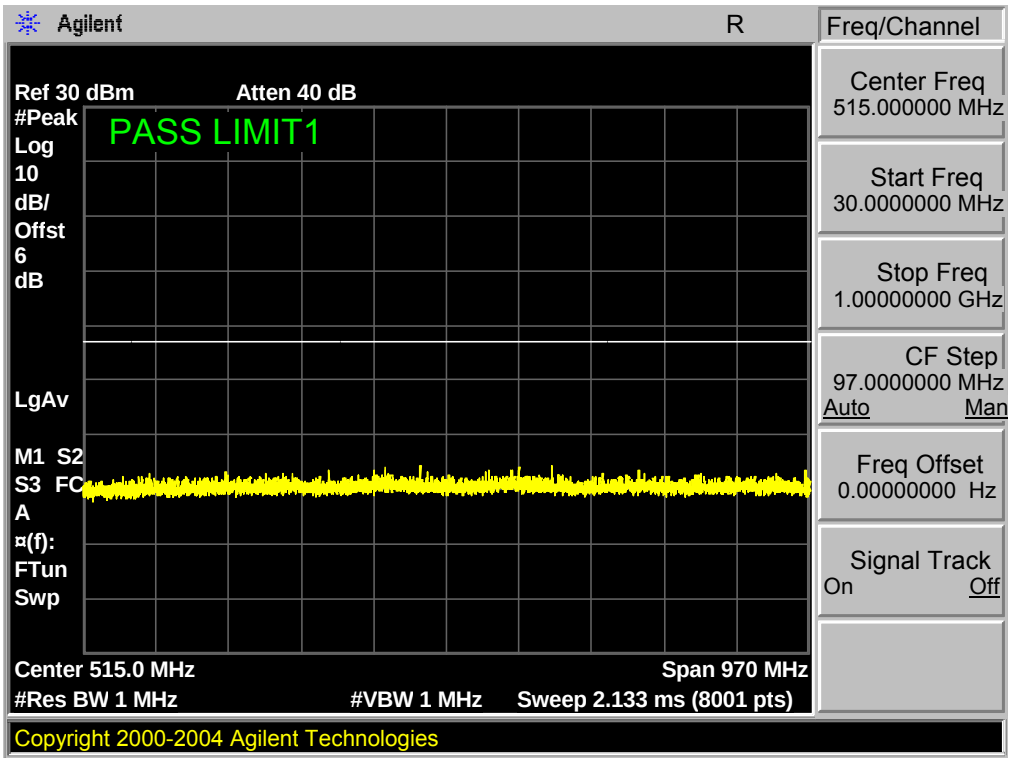
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low,QPSK



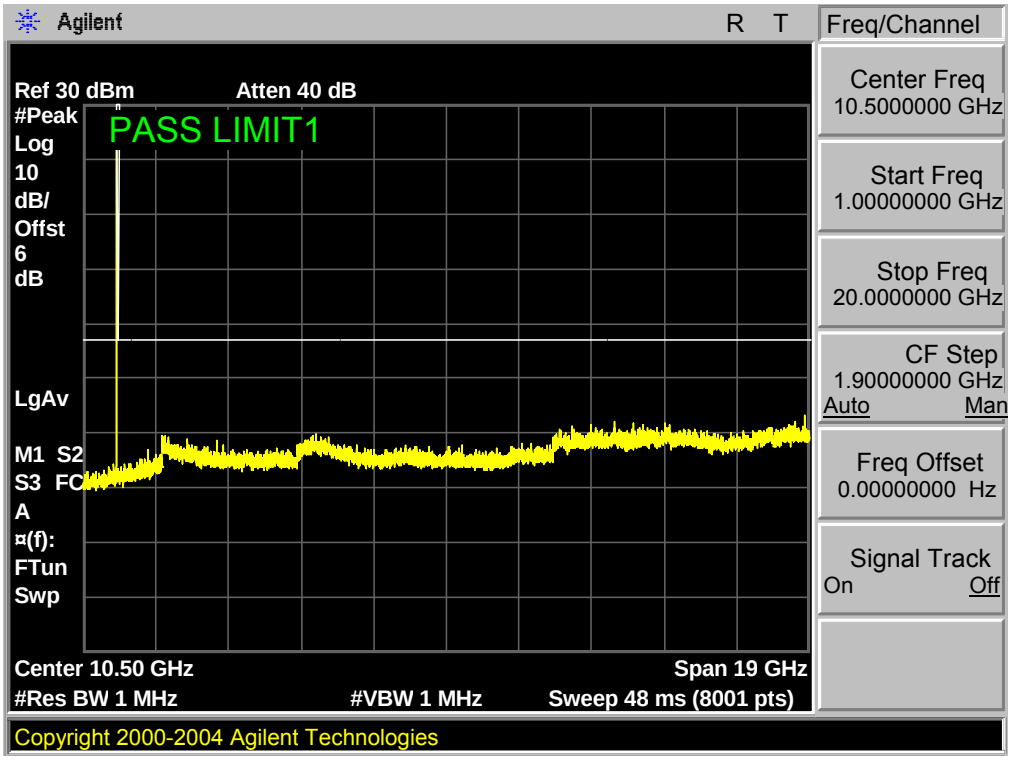
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low,QPSK



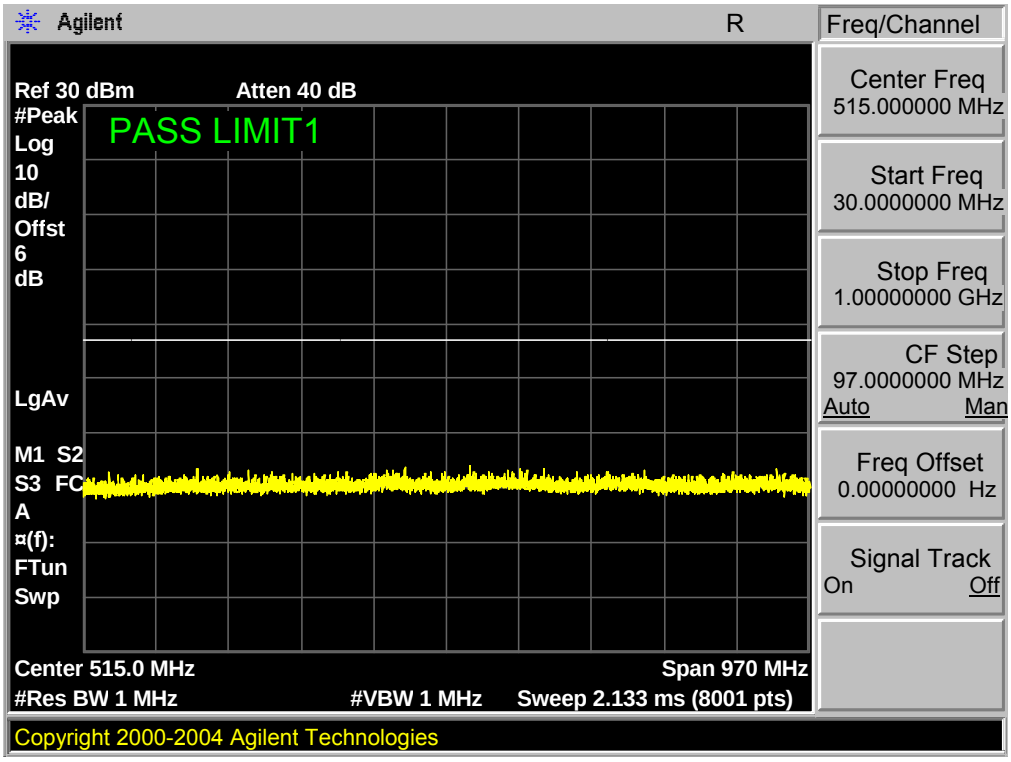
Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 1,RB POS. Low,QPSK



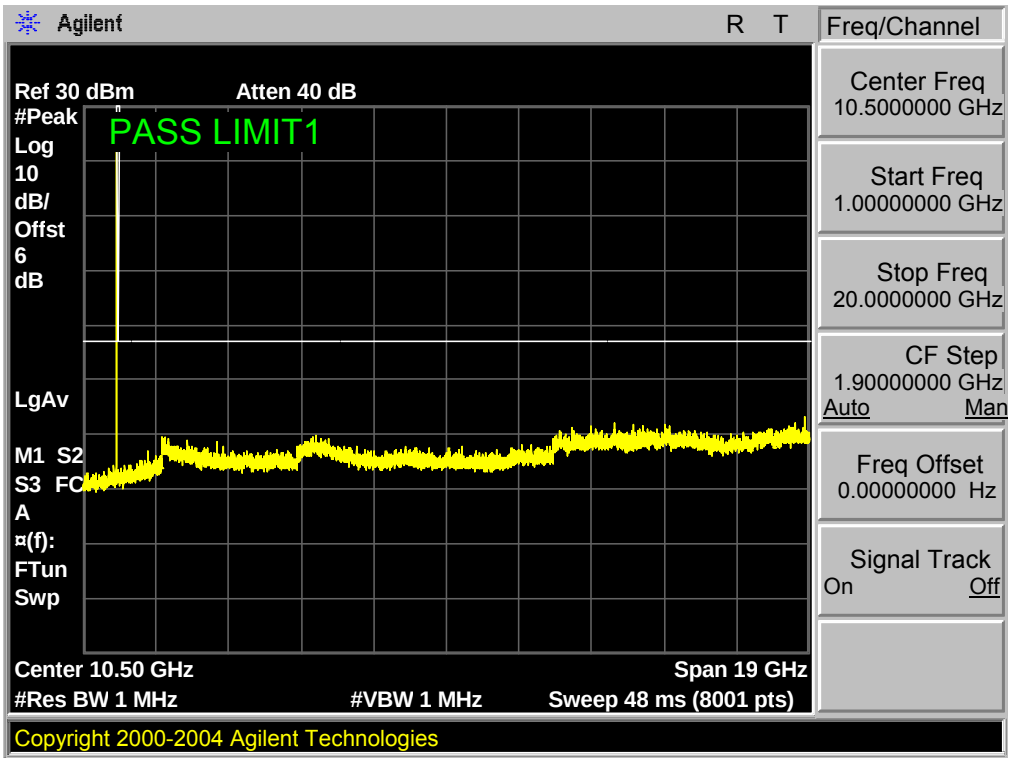
Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 1,RB POS. Low,QPSK



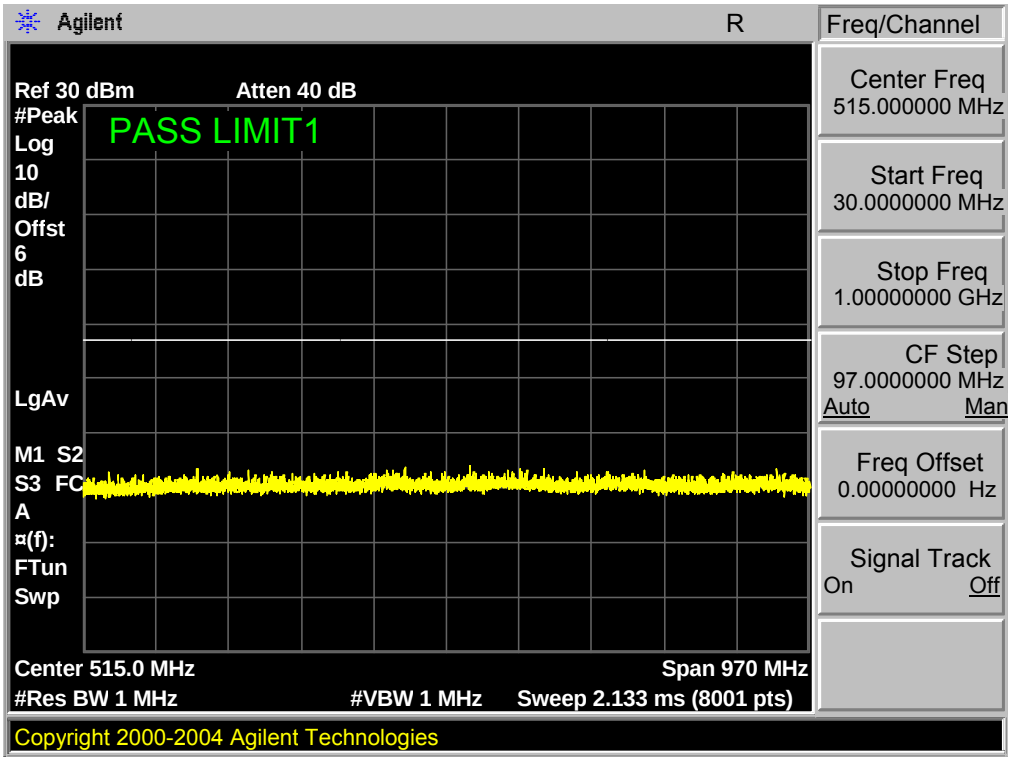
Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 1,RB POS. Low, 16QAM



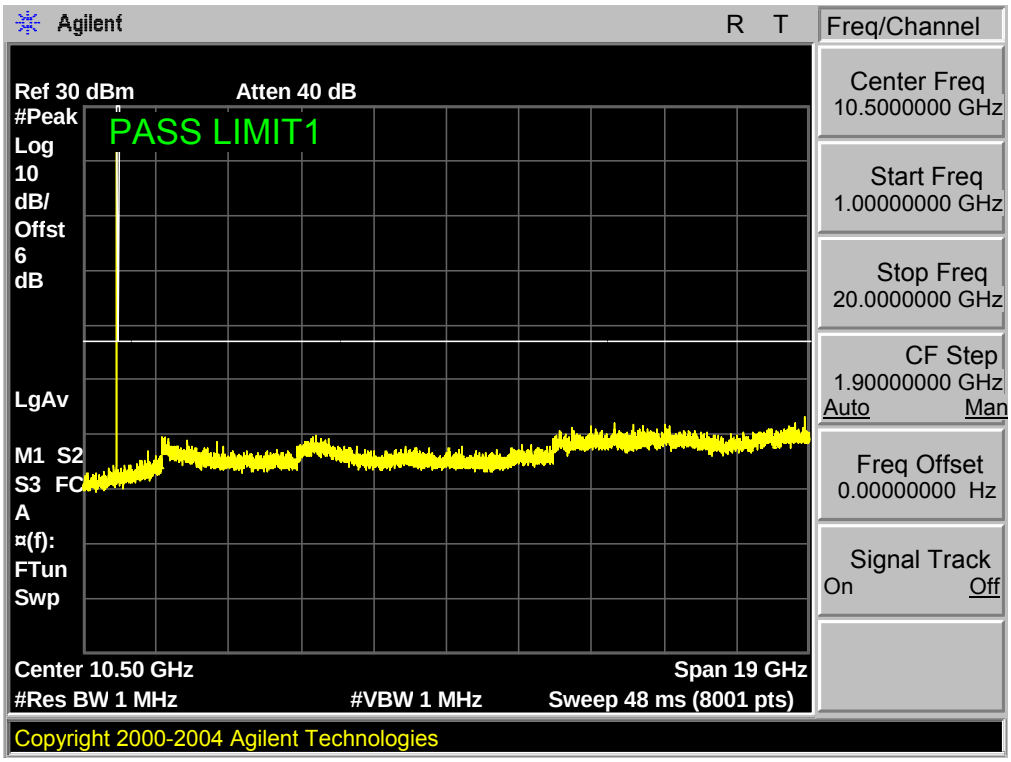
Band 2,UL Channel 18607,UL Frequency 1850.7,BW 1.4,NO. RB 1,RB POS. Low, 16QAM



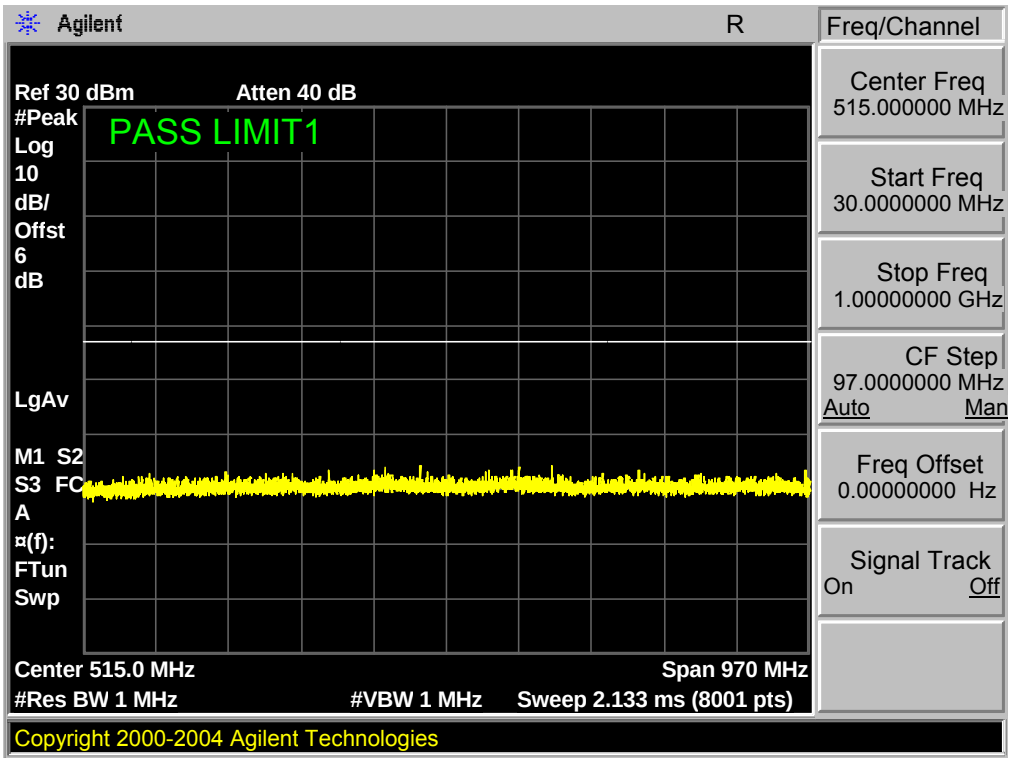
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low, 16QAM



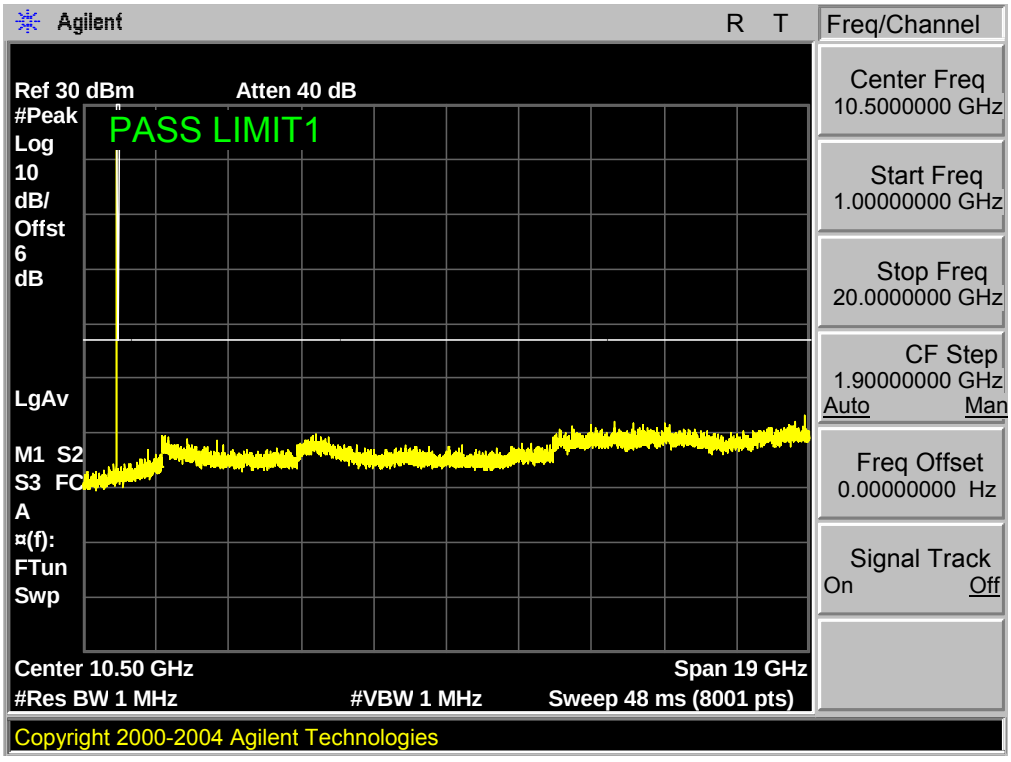
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low, 16QAM



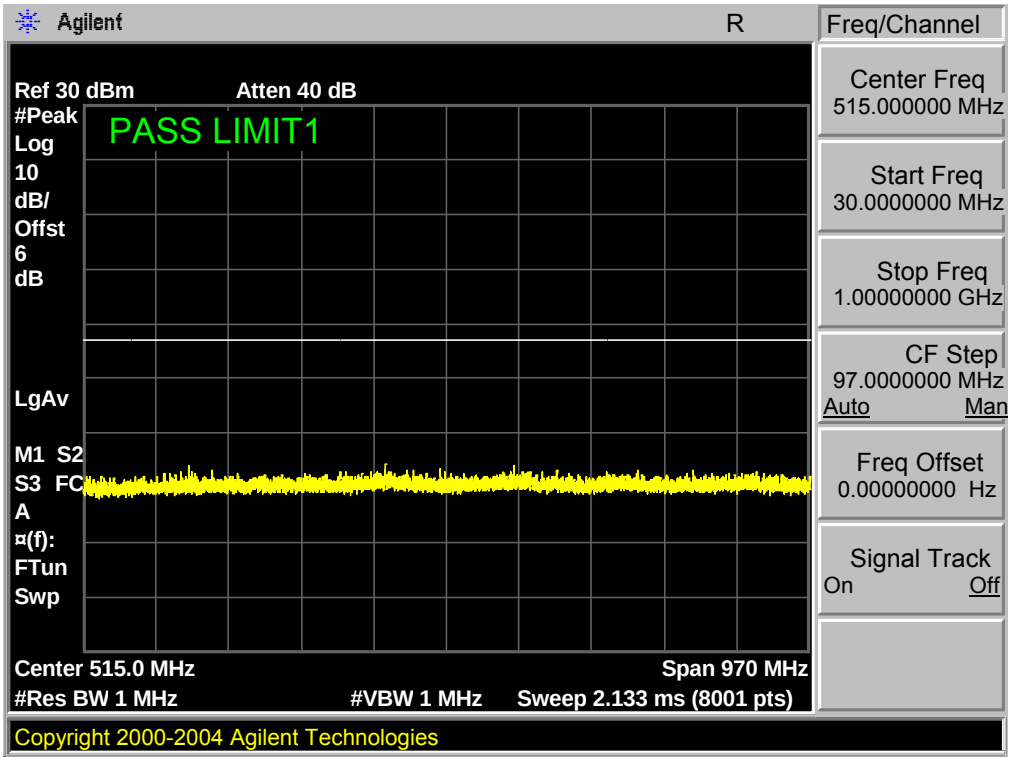
Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 1,RB POS. Low, 16QAM



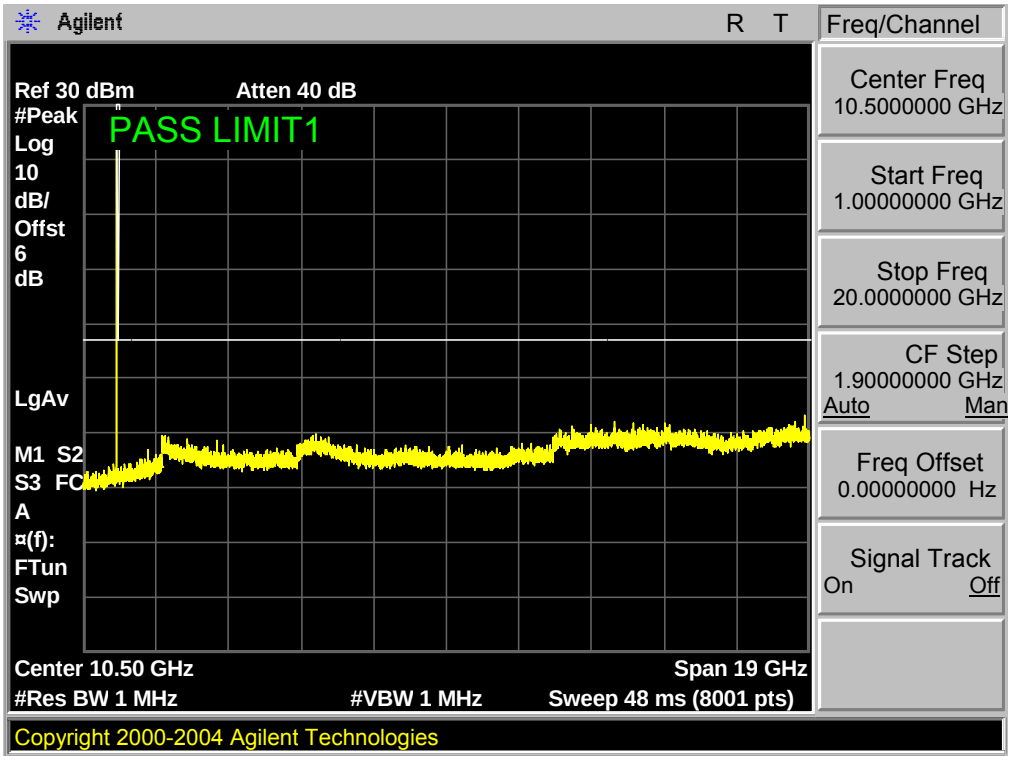
Band 2,UL Channel 19193,UL Frequency 1909.3,BW 1.4,NO. RB 1,RB POS. Low, 16QAM



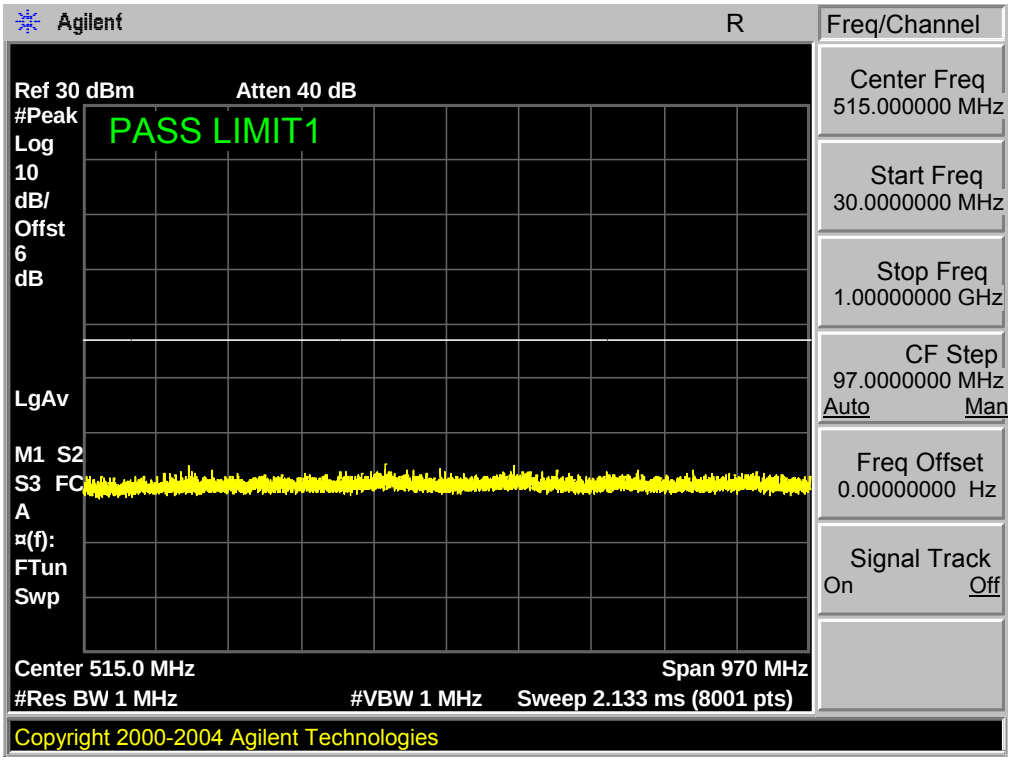
Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



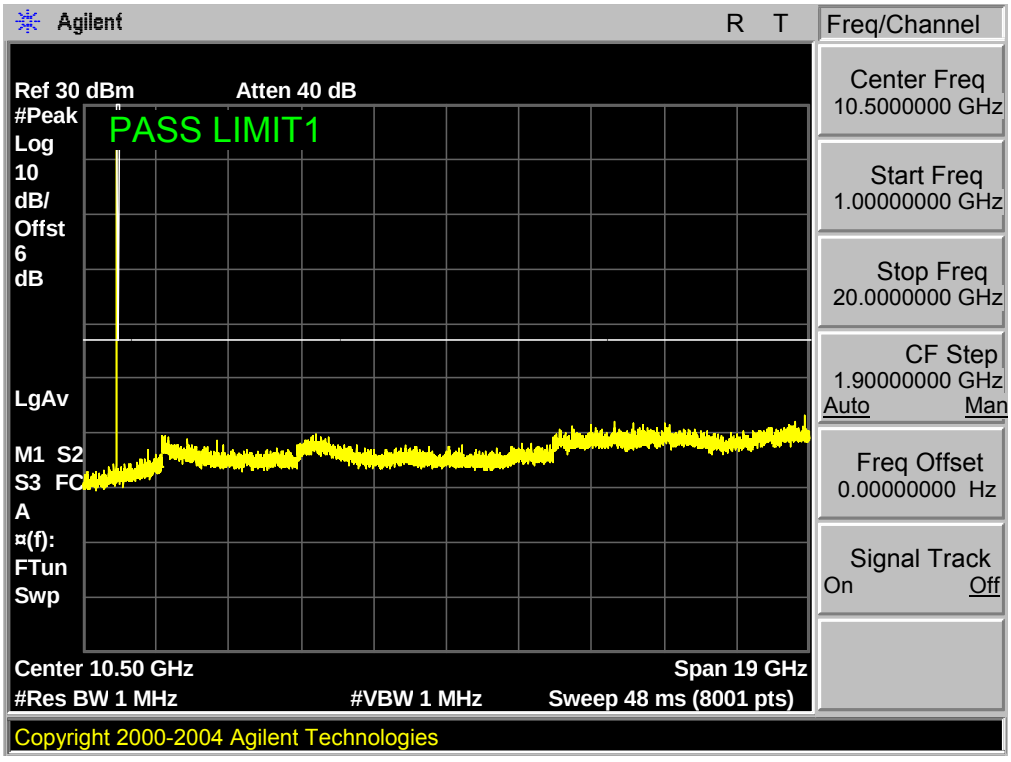
Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



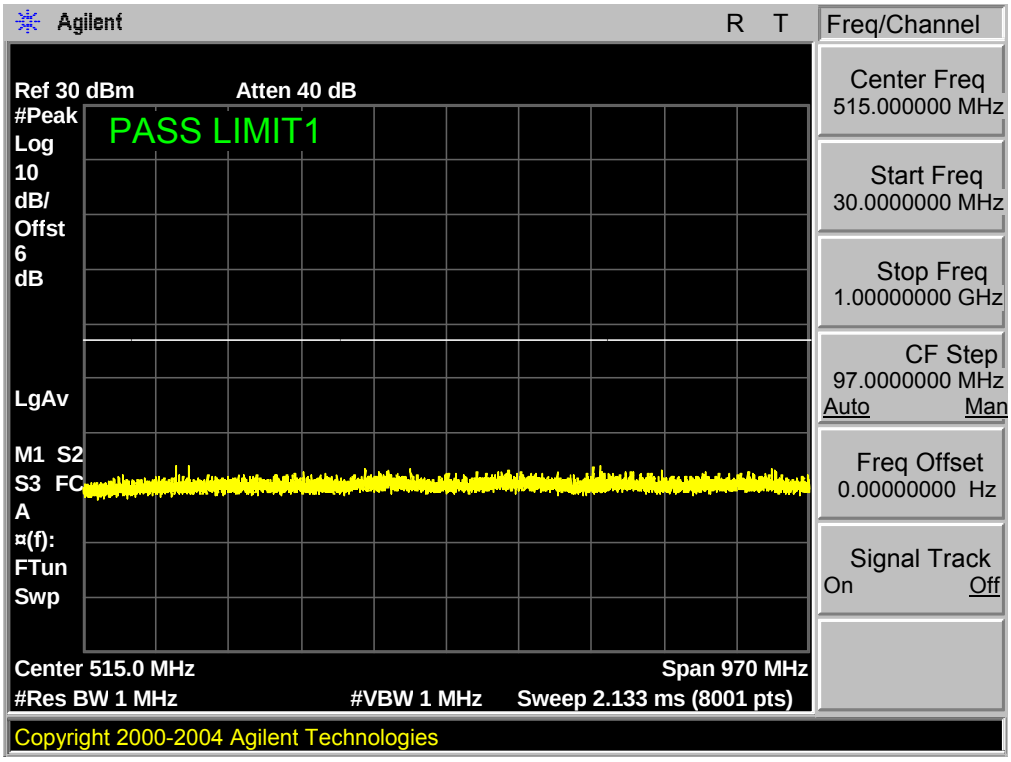
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,QPSK



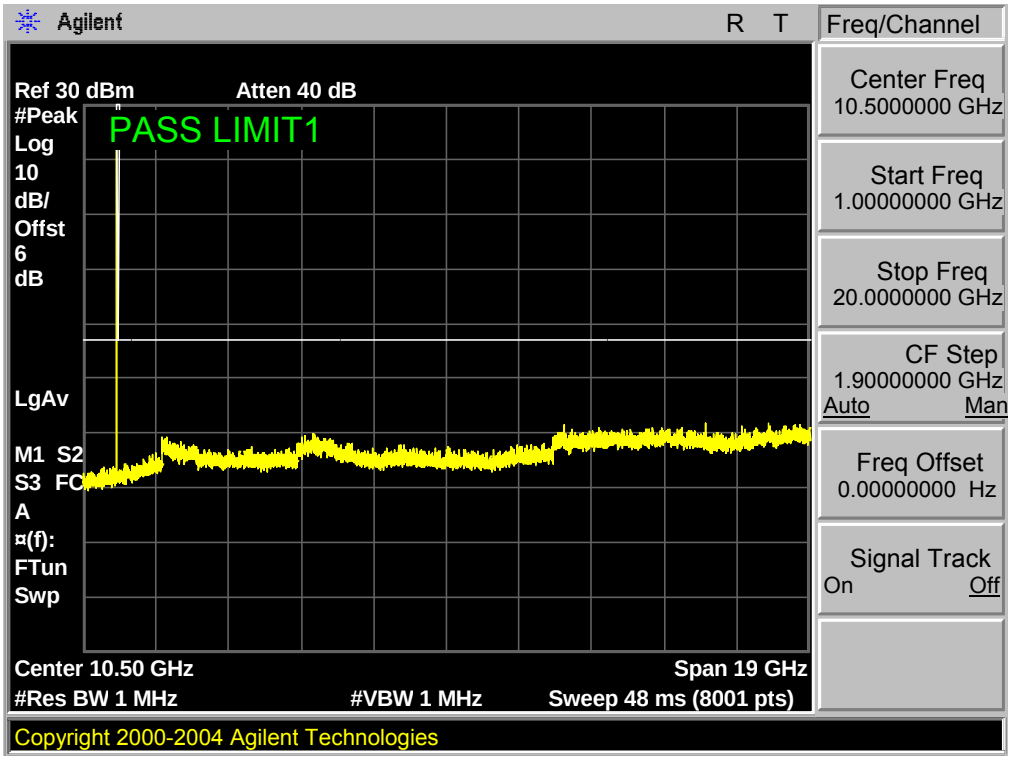
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,QPSK



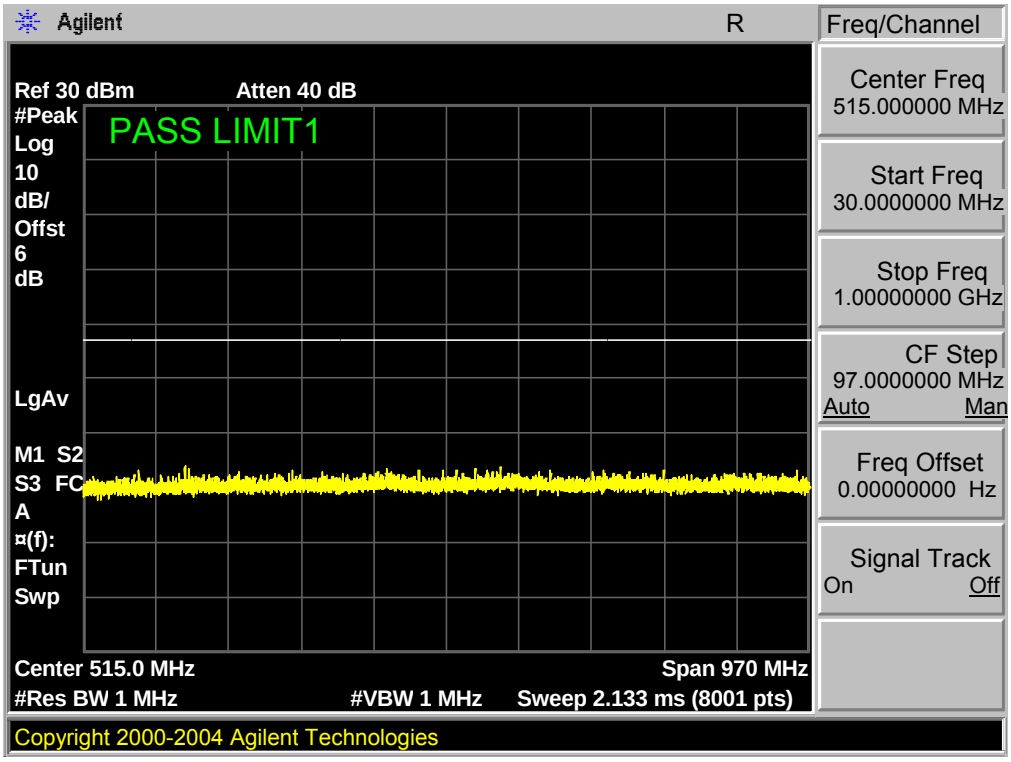
Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



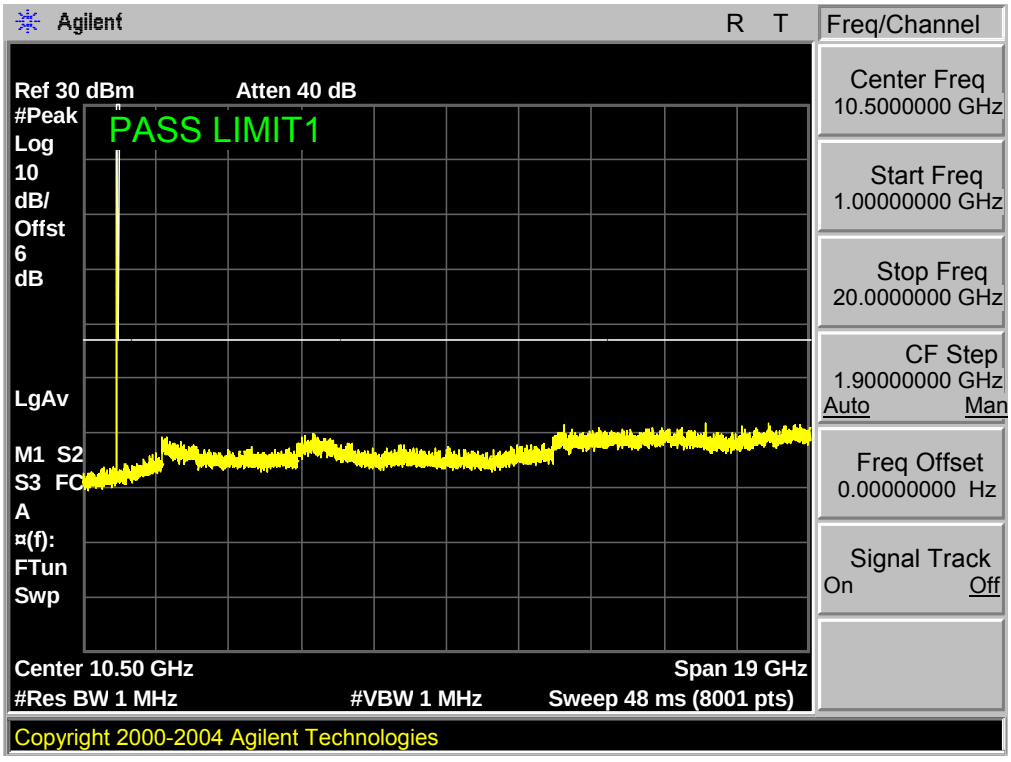
Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



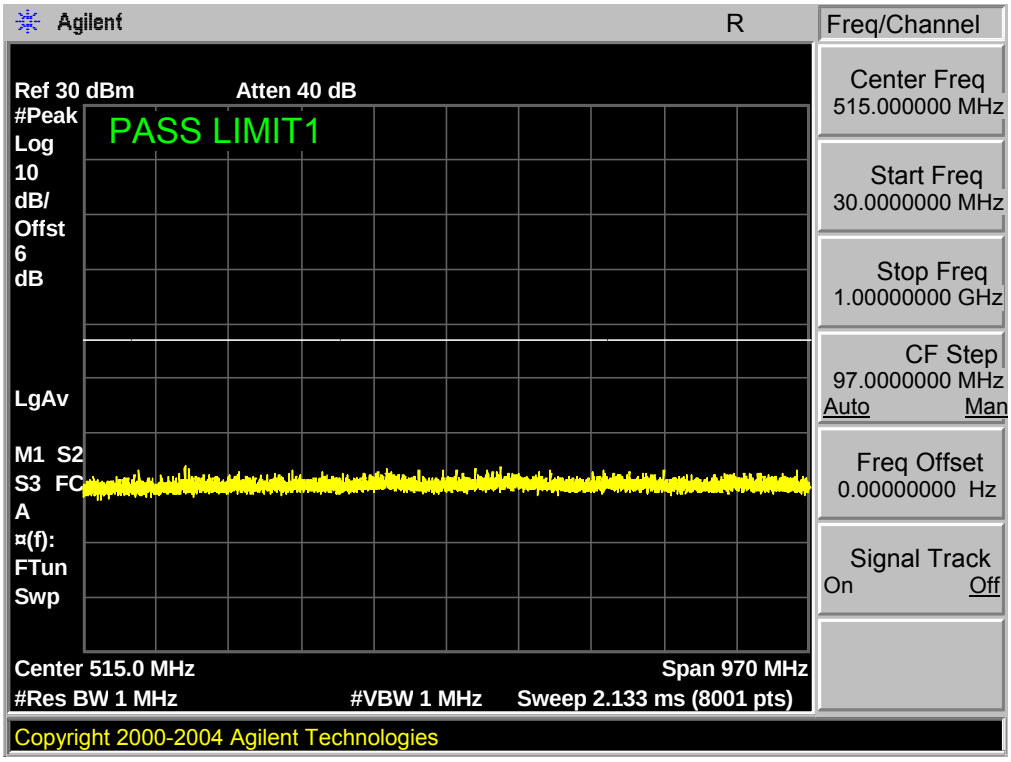
Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 1,RB POS. Low,16QAM



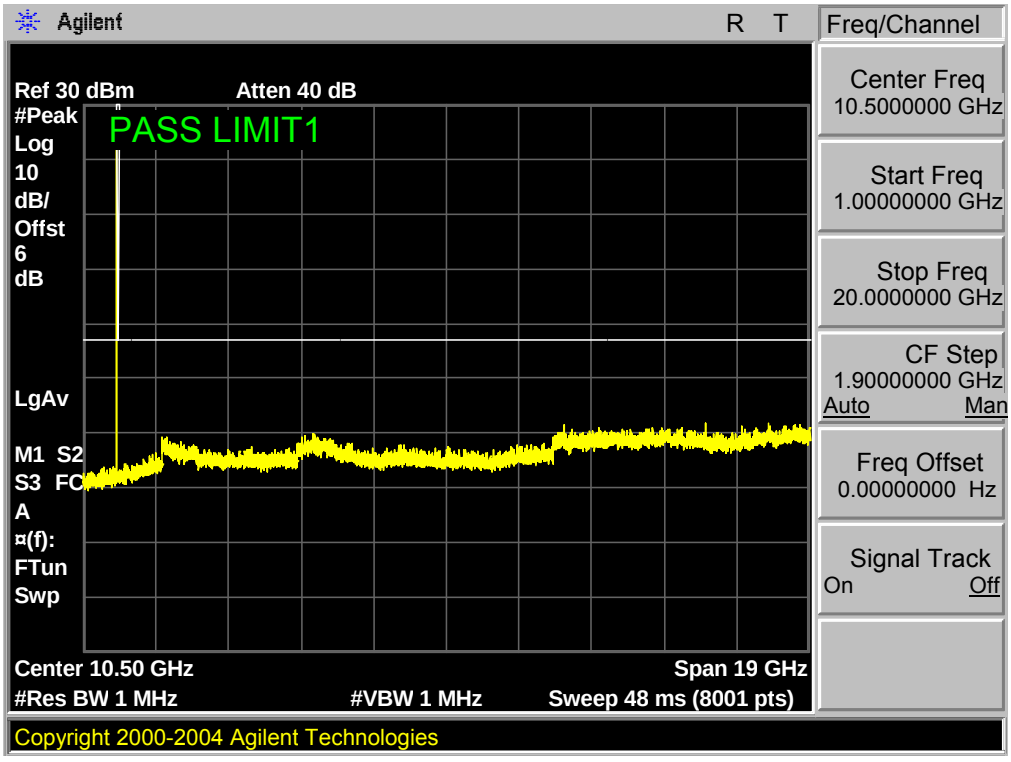
Band 2,UL Channel 18615,UL Frequency 1851.5,BW 3.0,NO. RB 1,RB POS. Low,16QAM



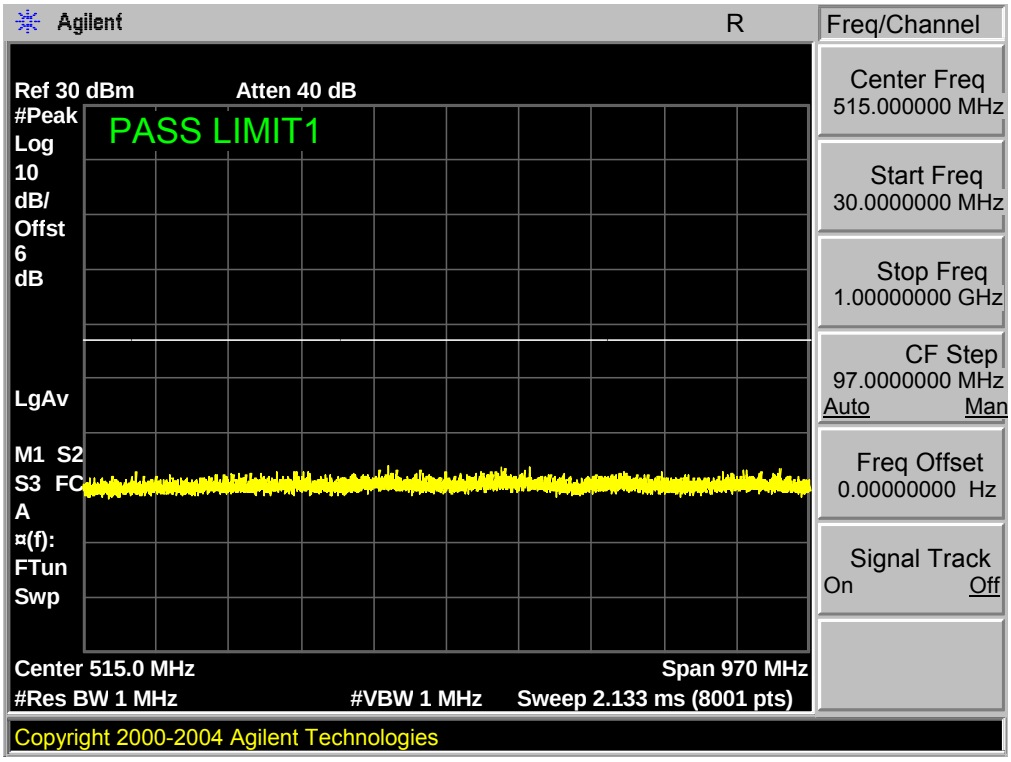
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,16QAM



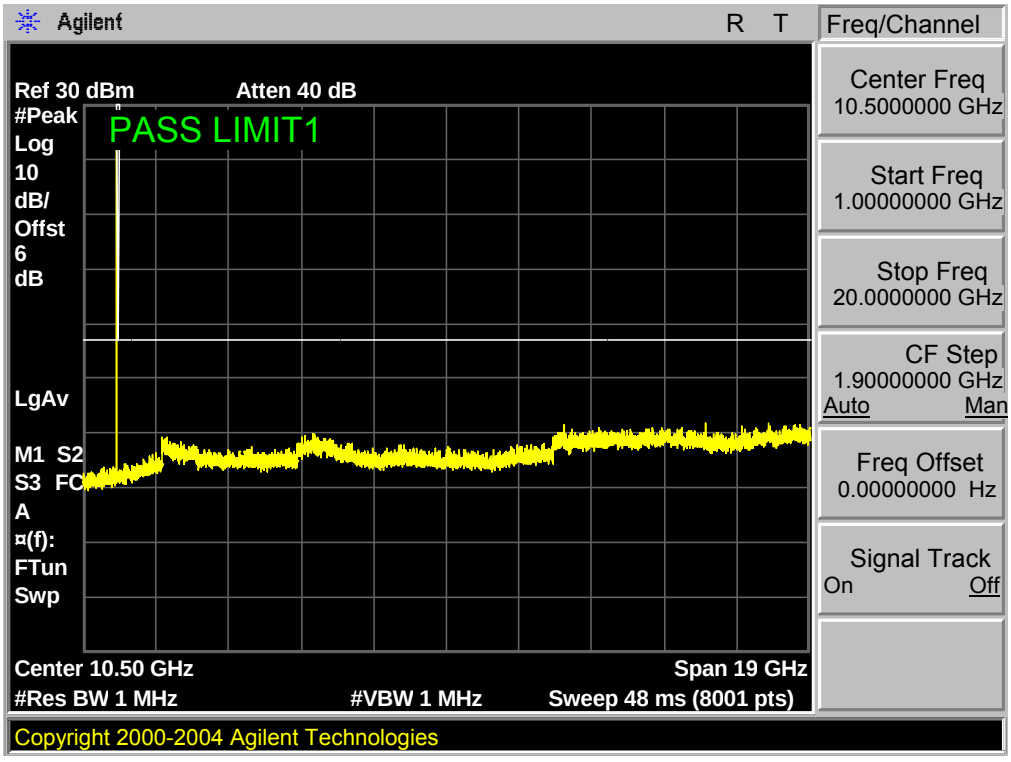
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,16QAM



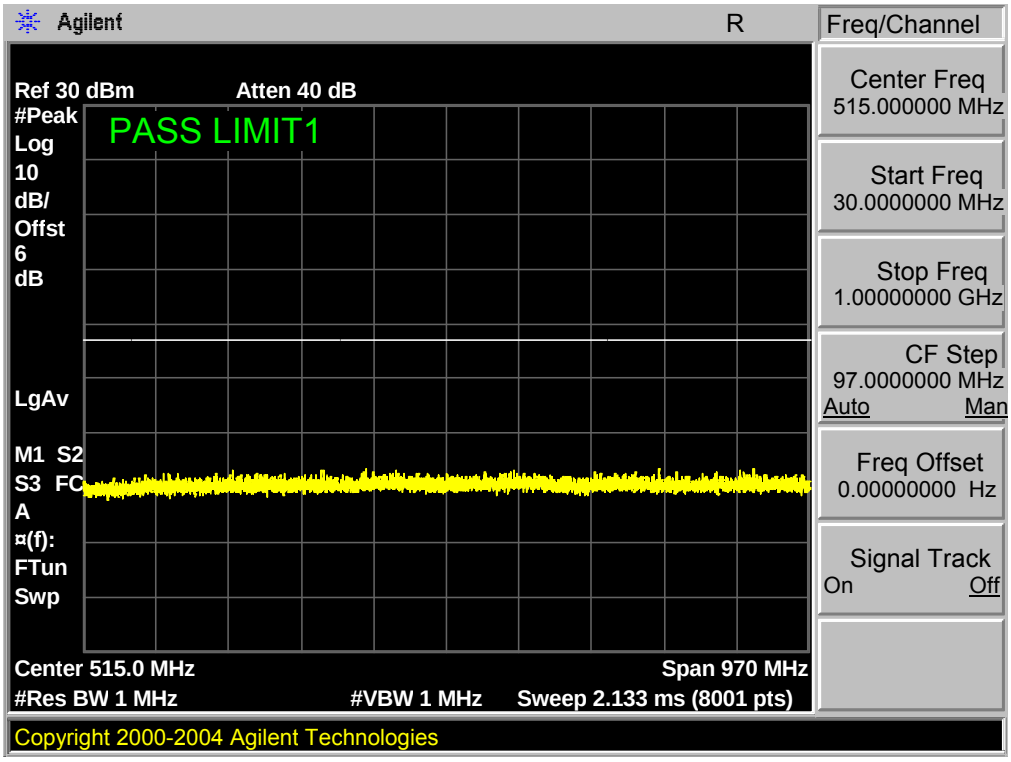
Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 1,RB POS. Low,16QAM



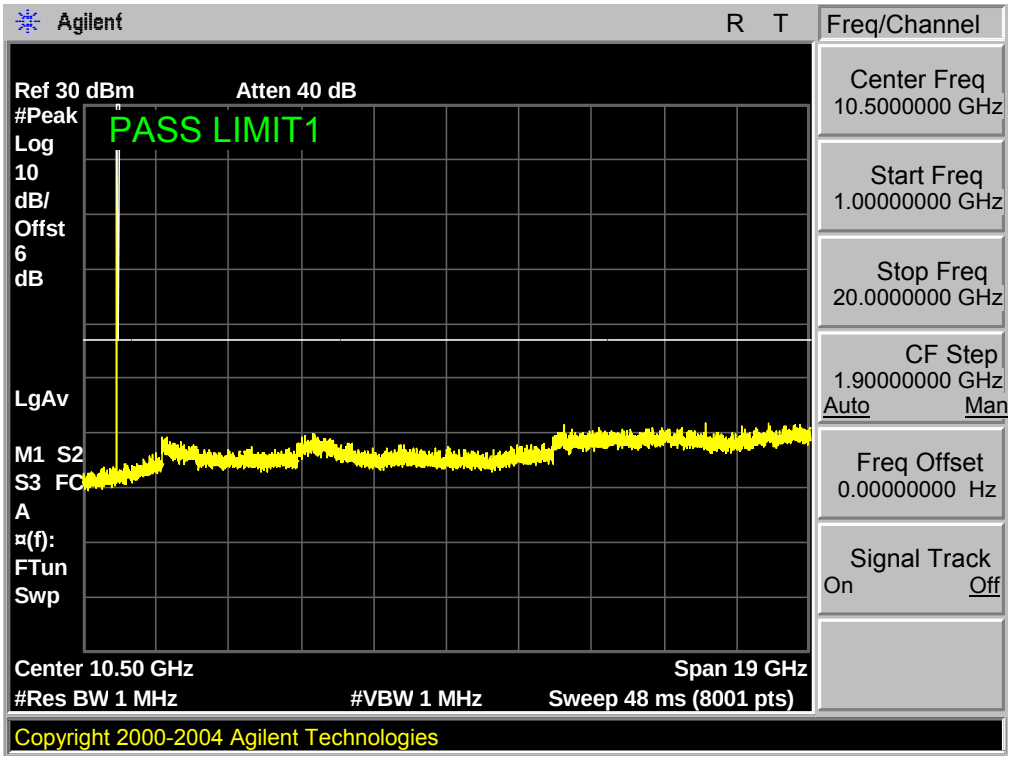
Band 2,UL Channel 19185,UL Frequency 1908.5,BW 3.0,NO. RB 1,RB POS. Low,16QAM



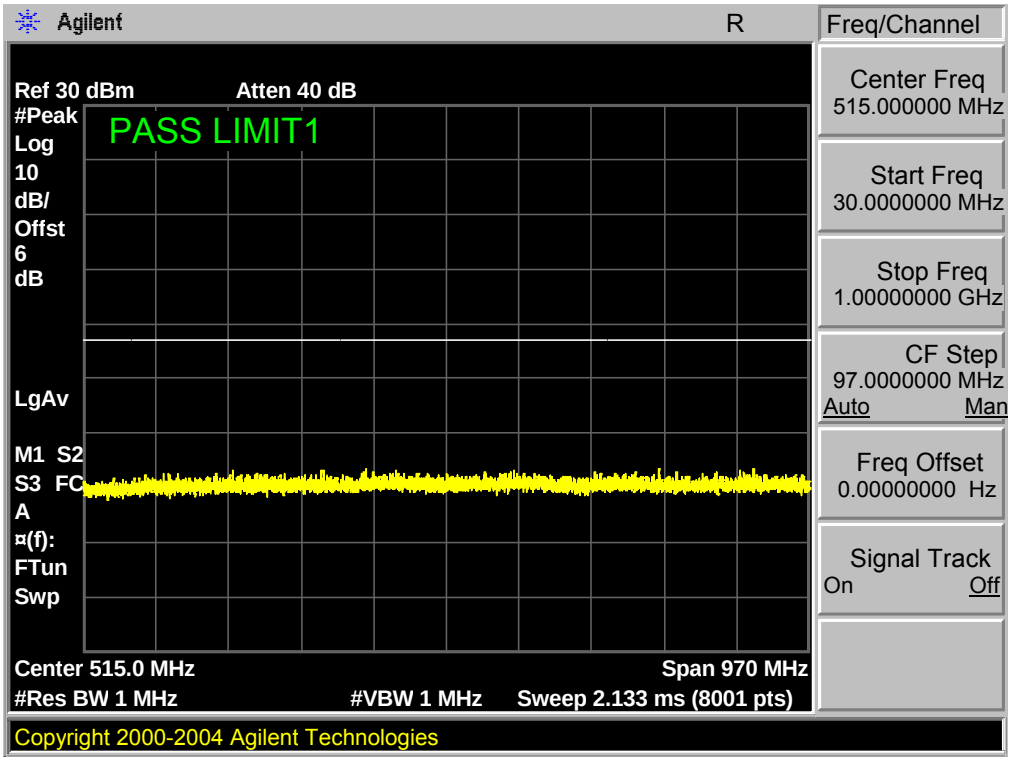
Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



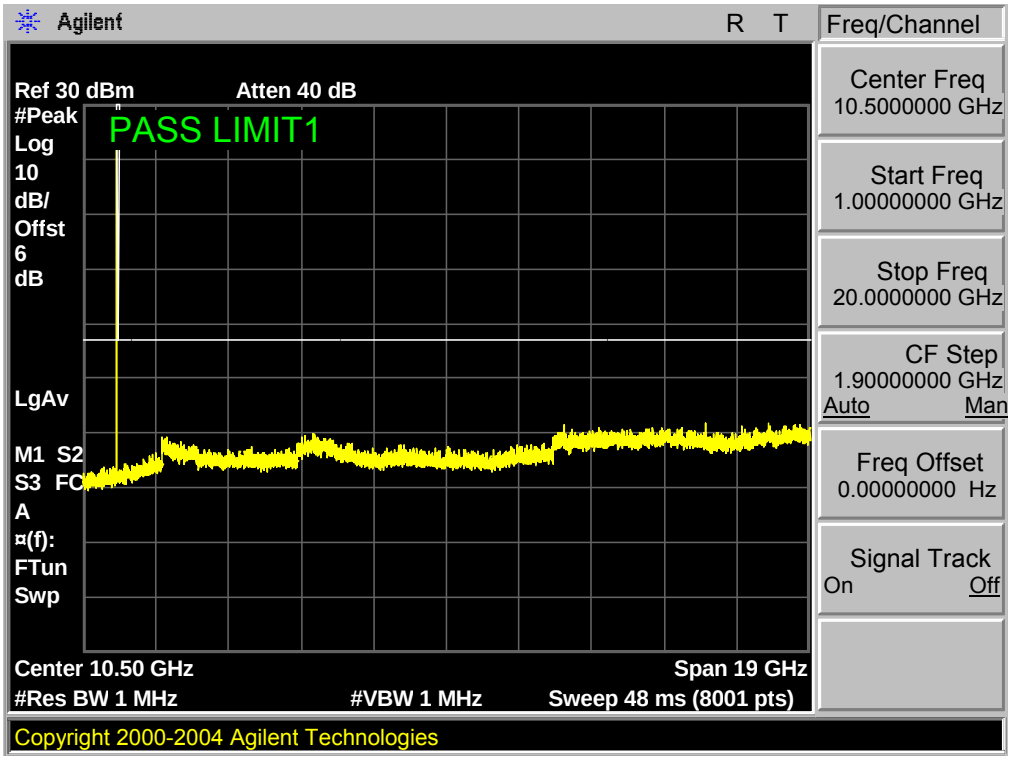
Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



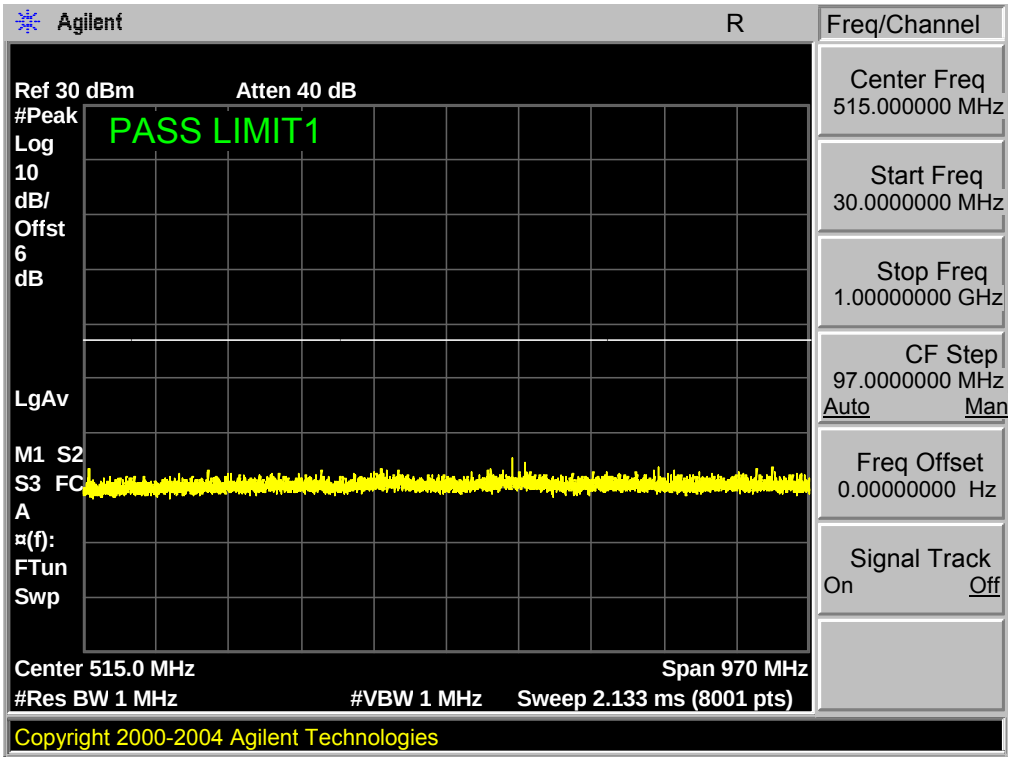
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK



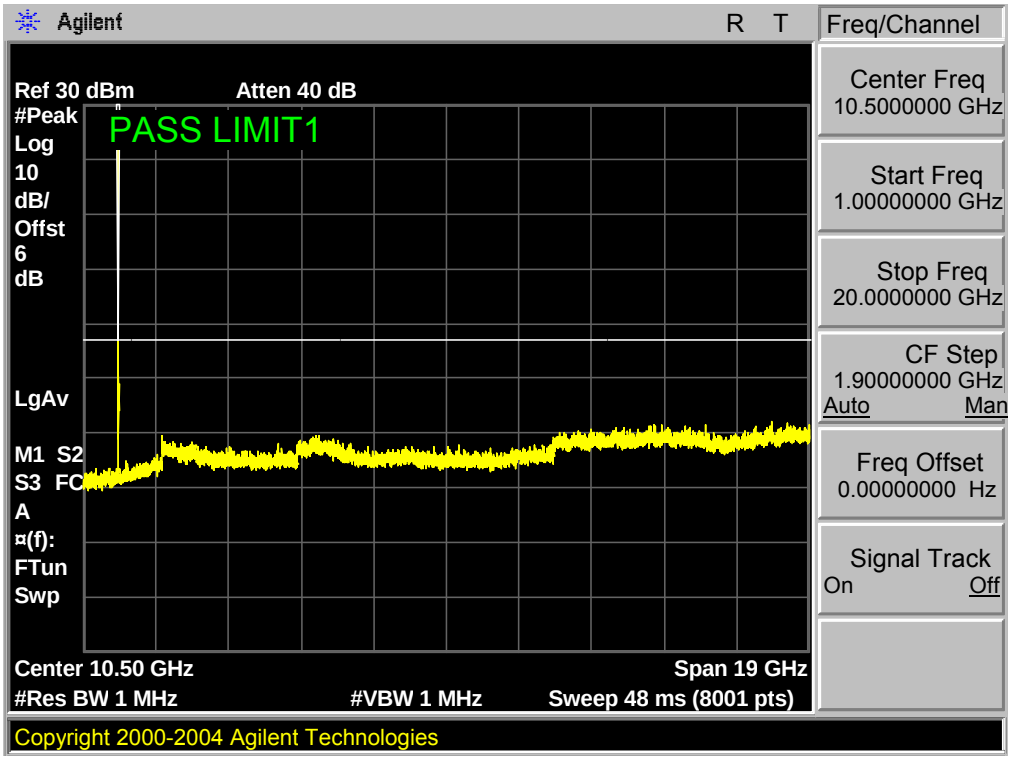
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK



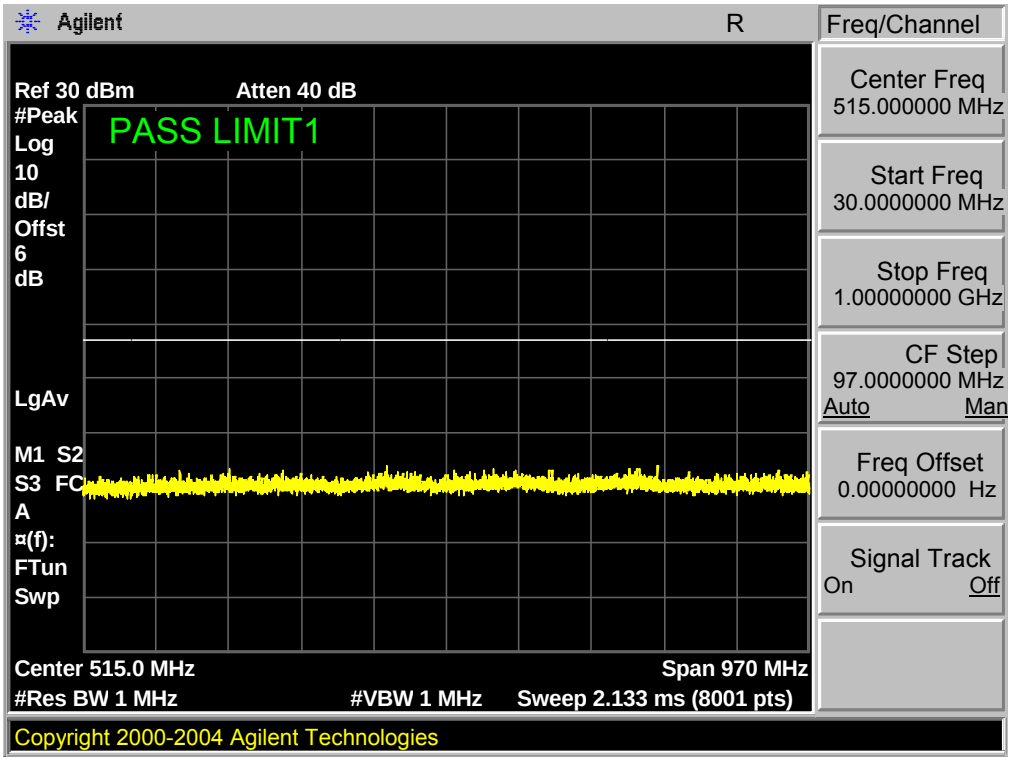
Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



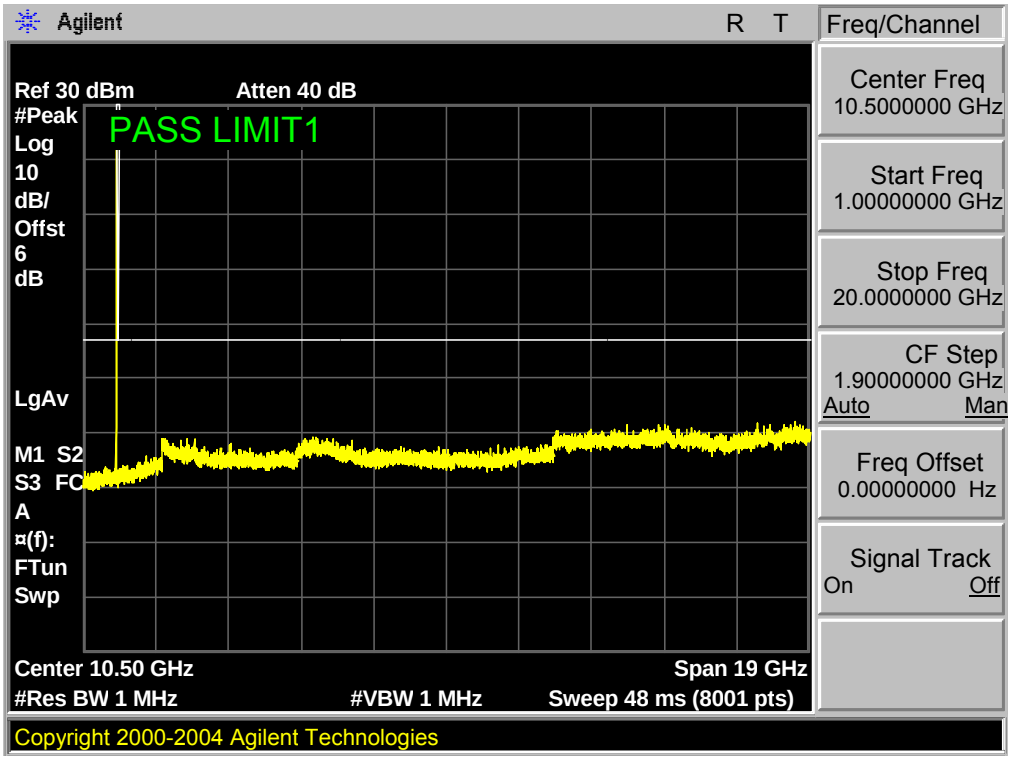
Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



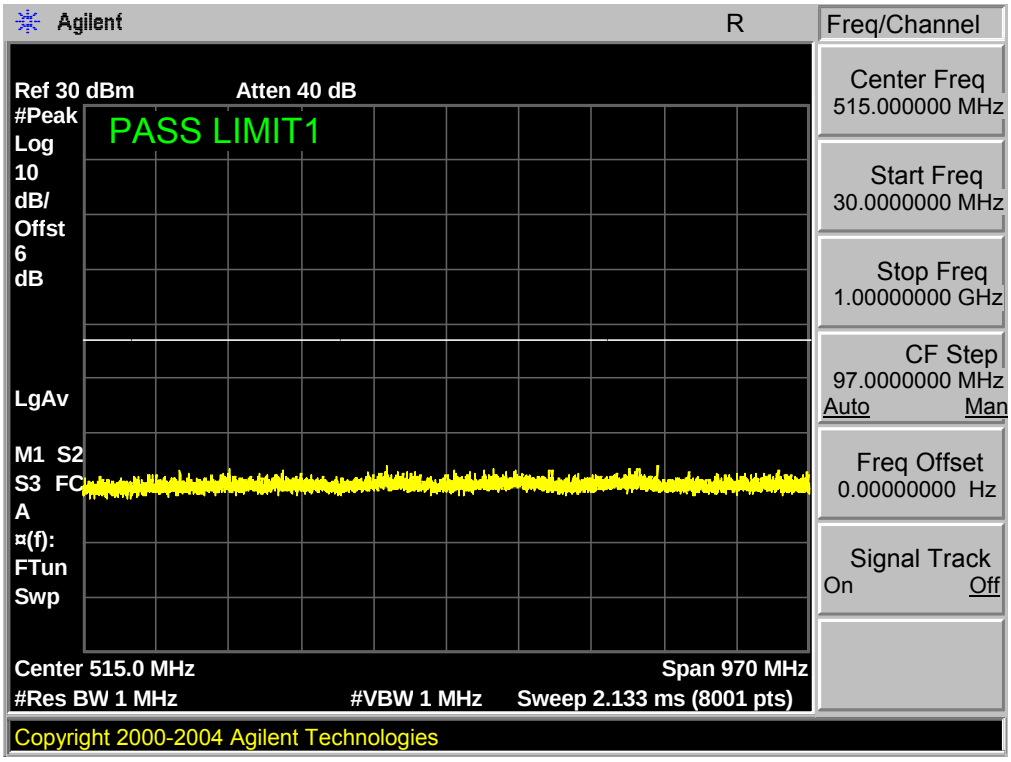
Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



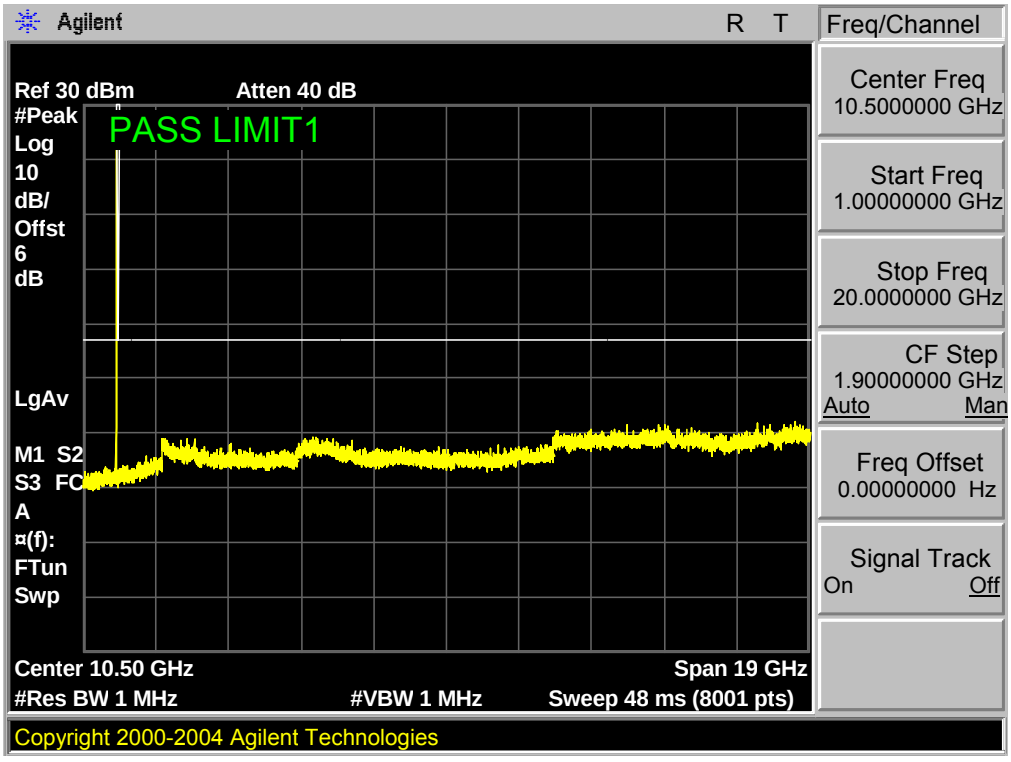
Band 2,UL Channel 18625,UL Frequency 1852.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



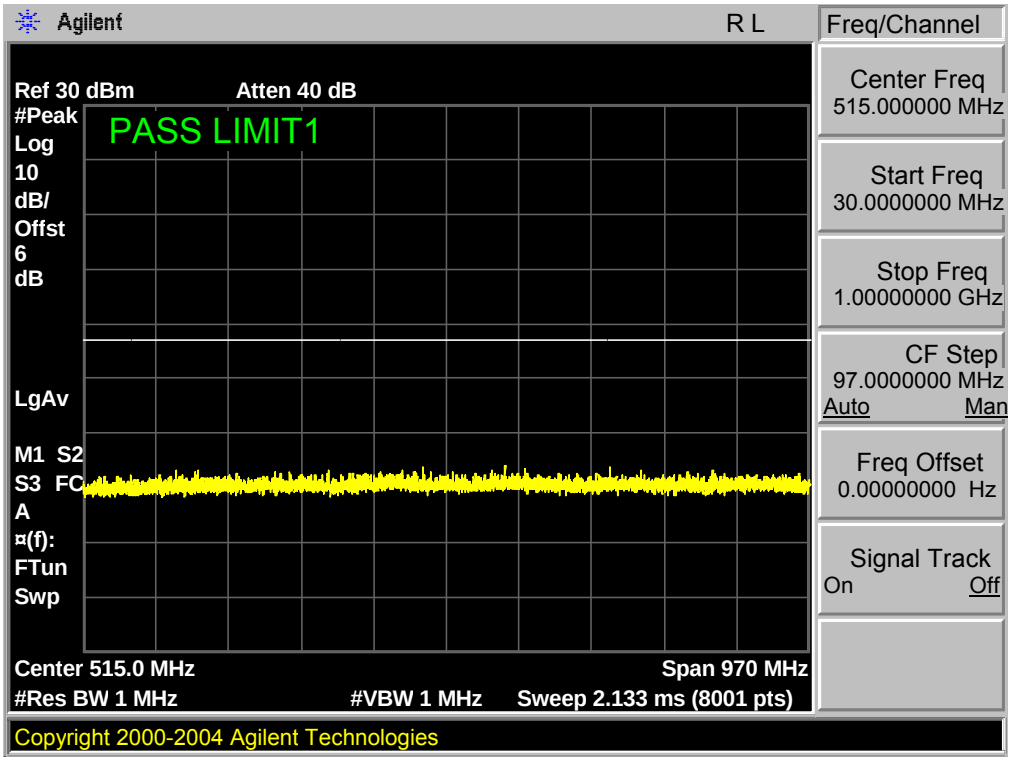
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,16QAM



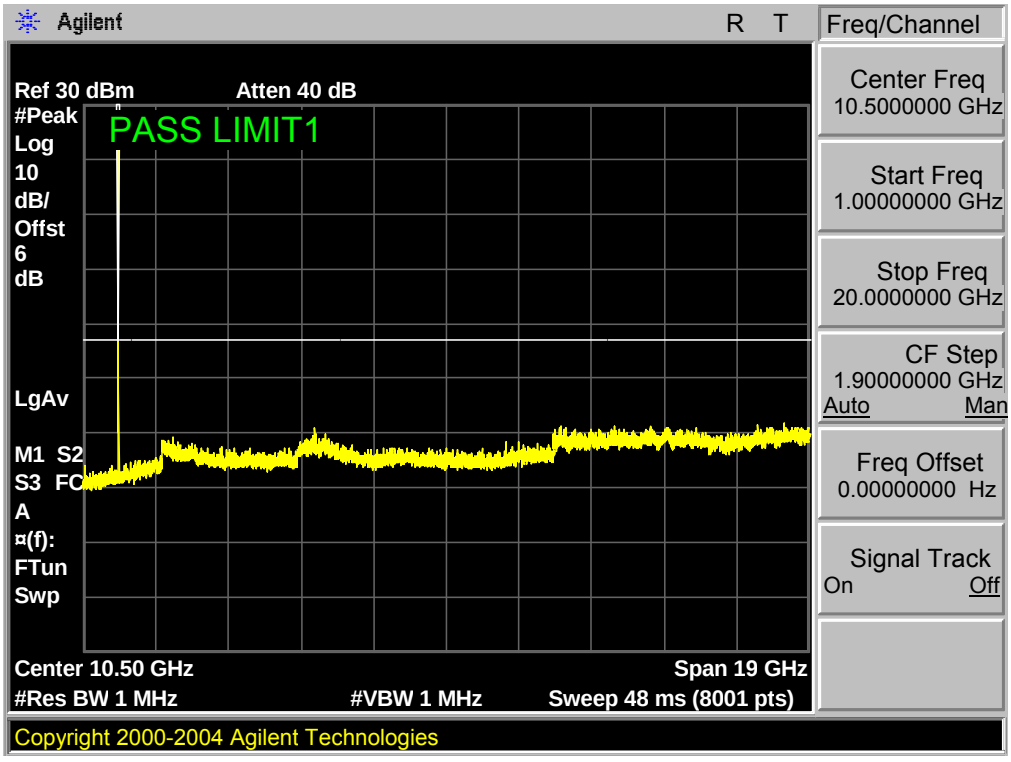
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,16QAM



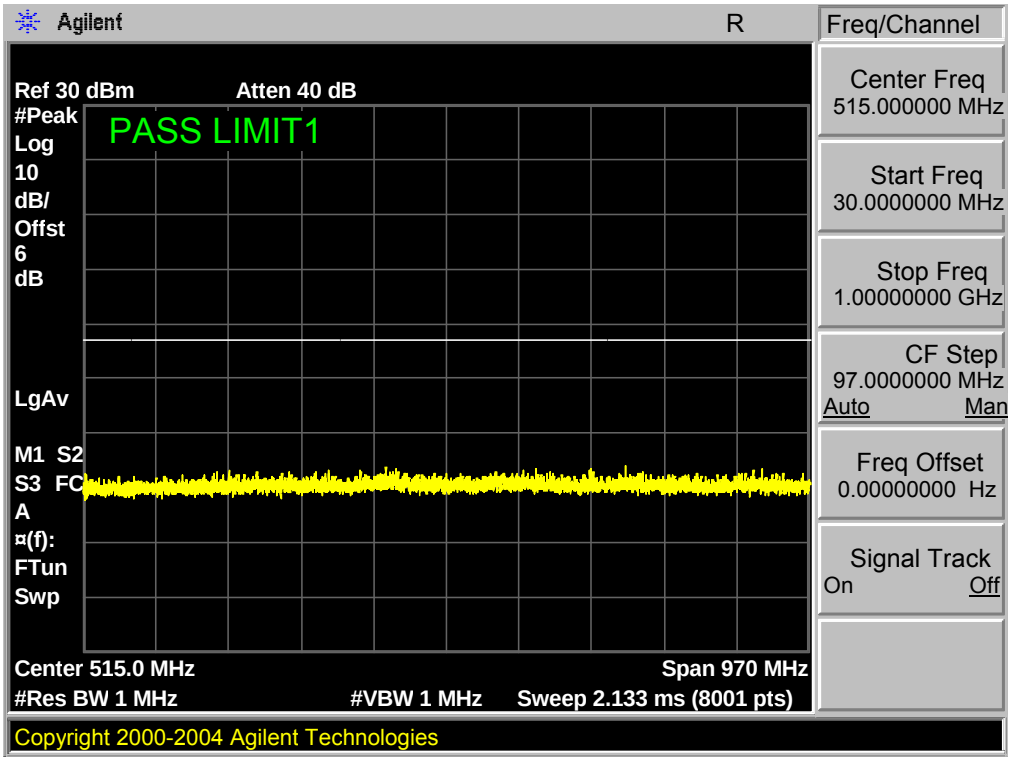
Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



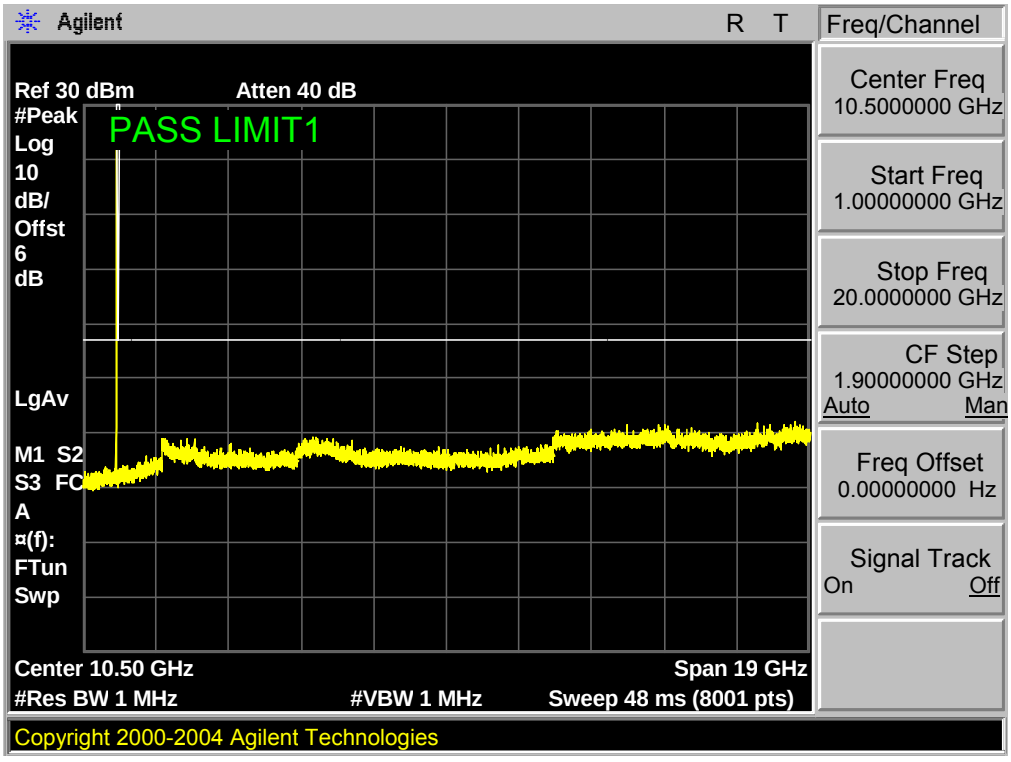
Band 2,UL Channel 19175,UL Frequency 1907.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



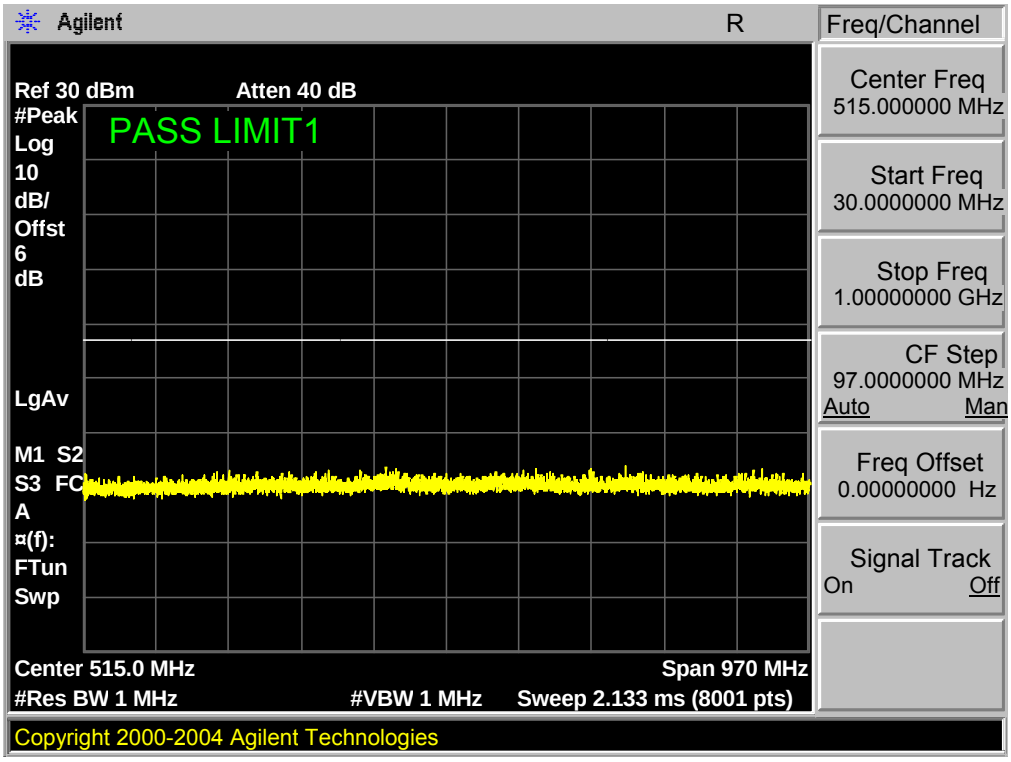
Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



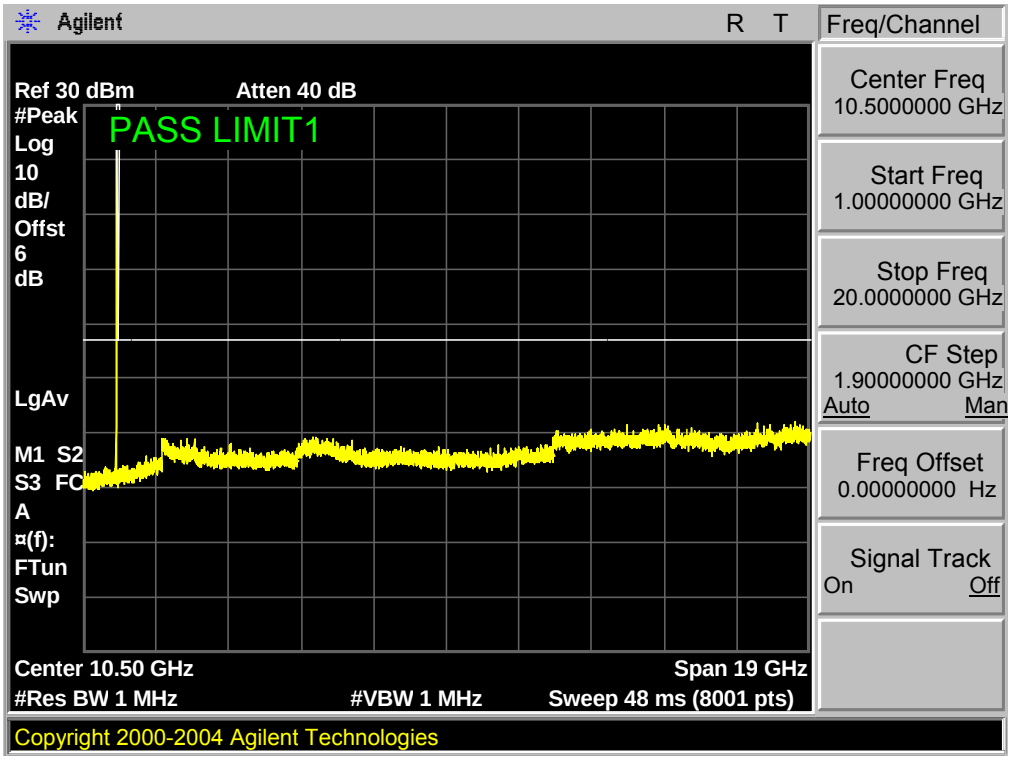
Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



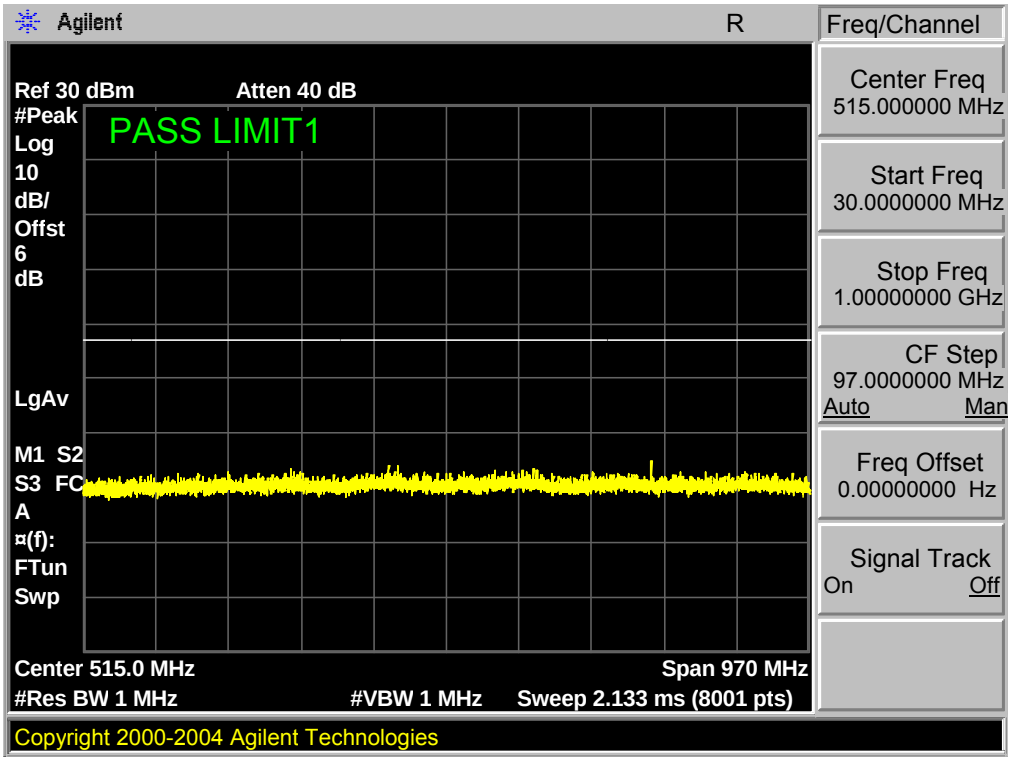
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



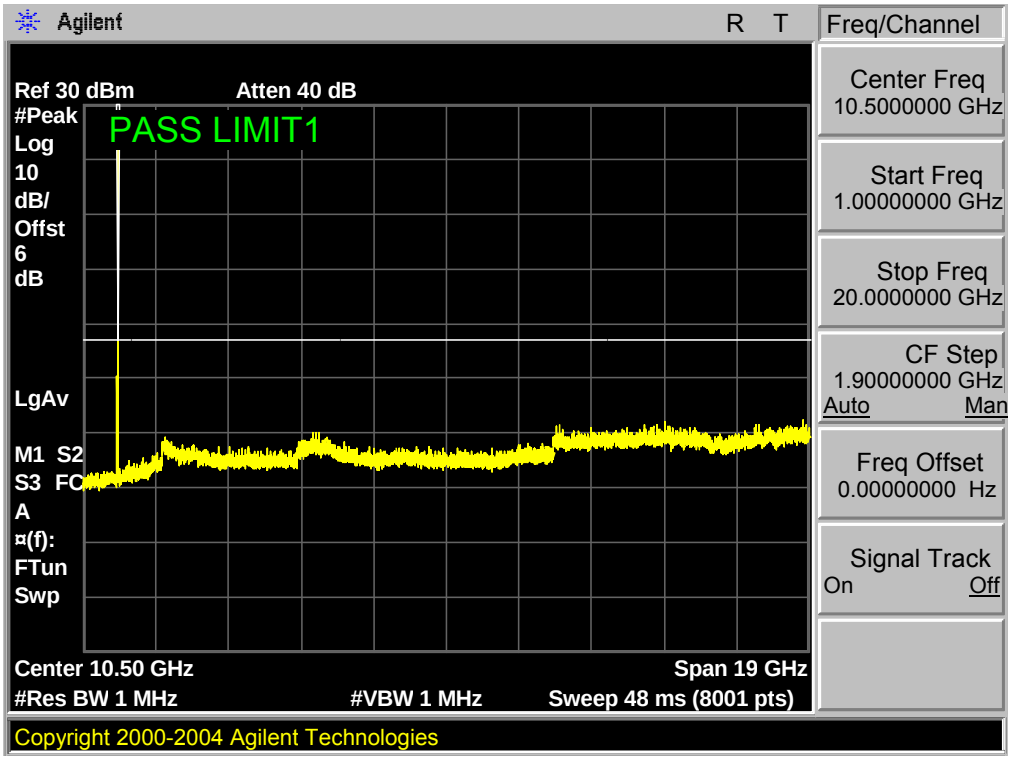
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



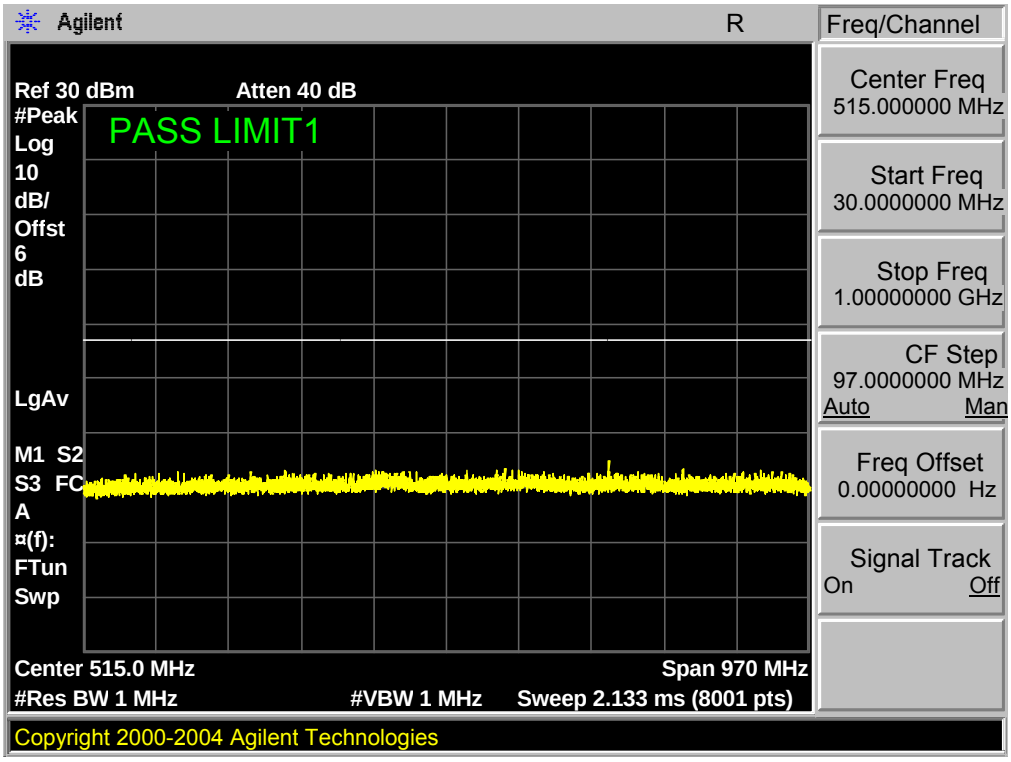
Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



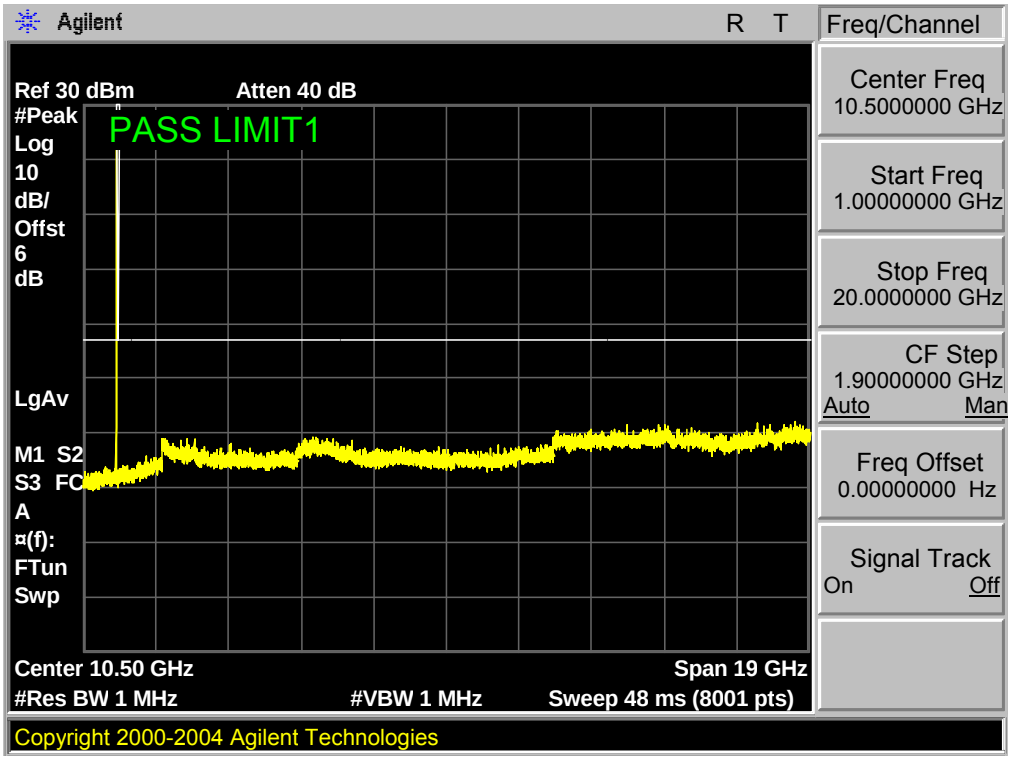
Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



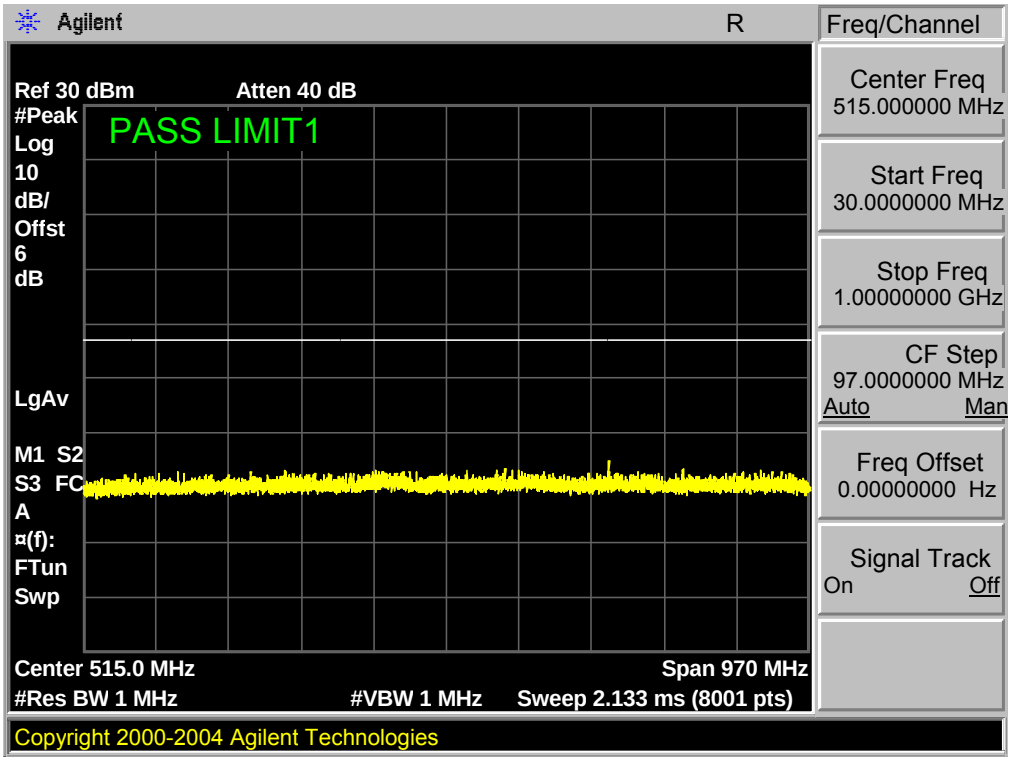
Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



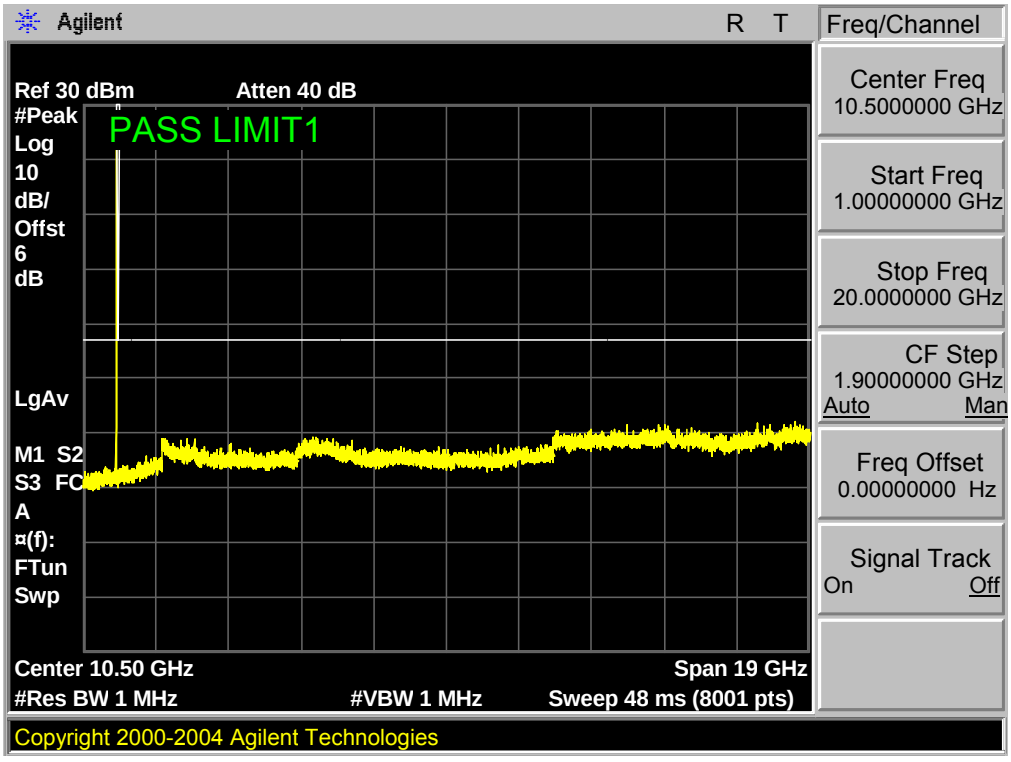
Band 2,UL Channel 18650,UL Frequency 1855.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



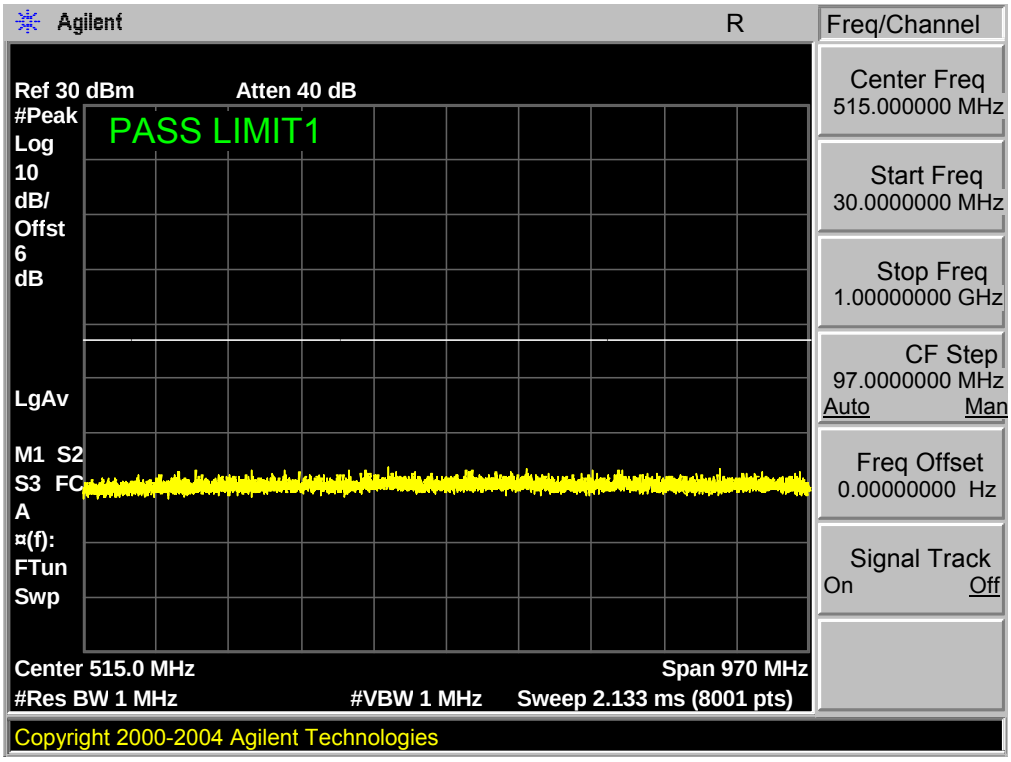
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



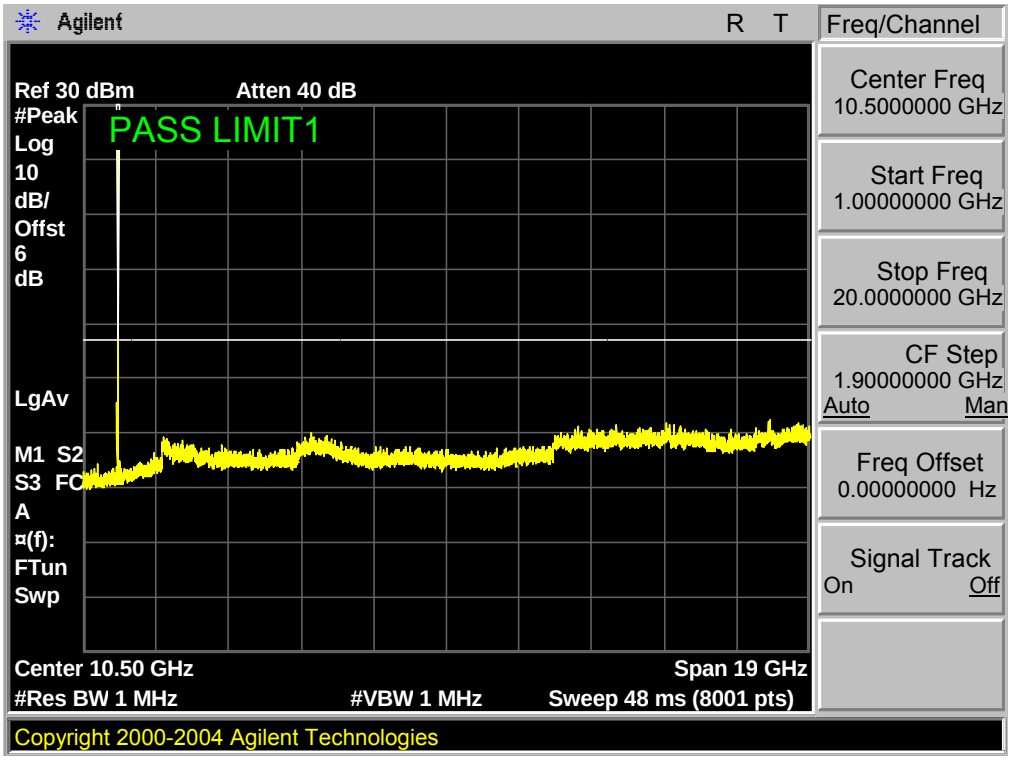
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



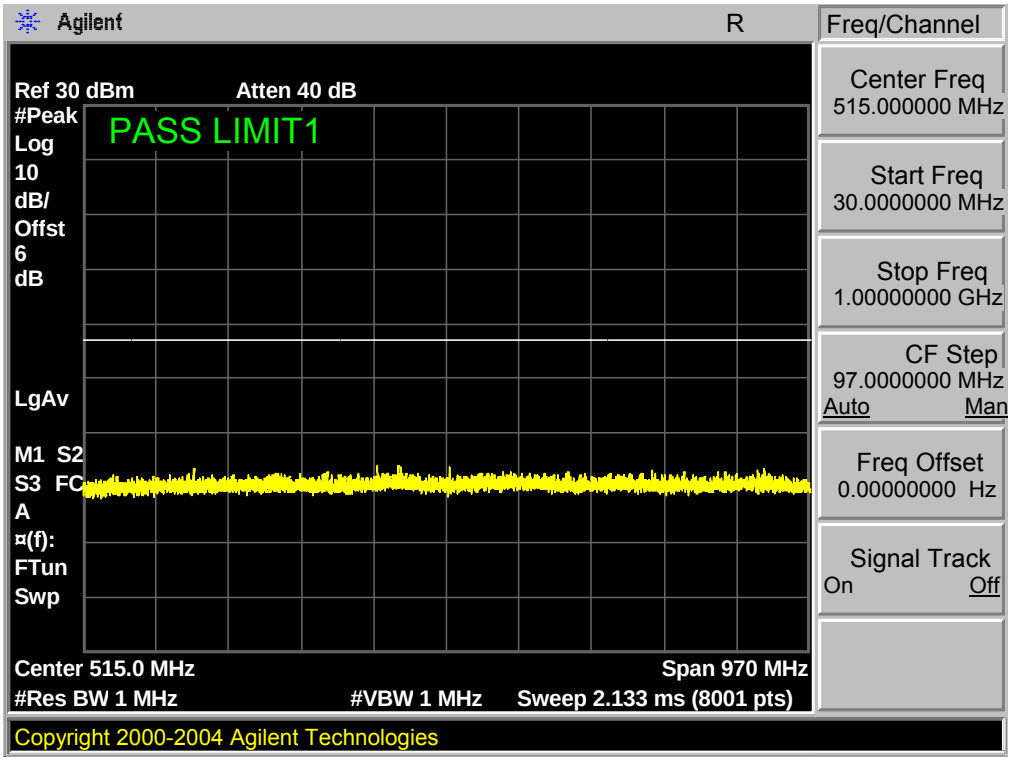
Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



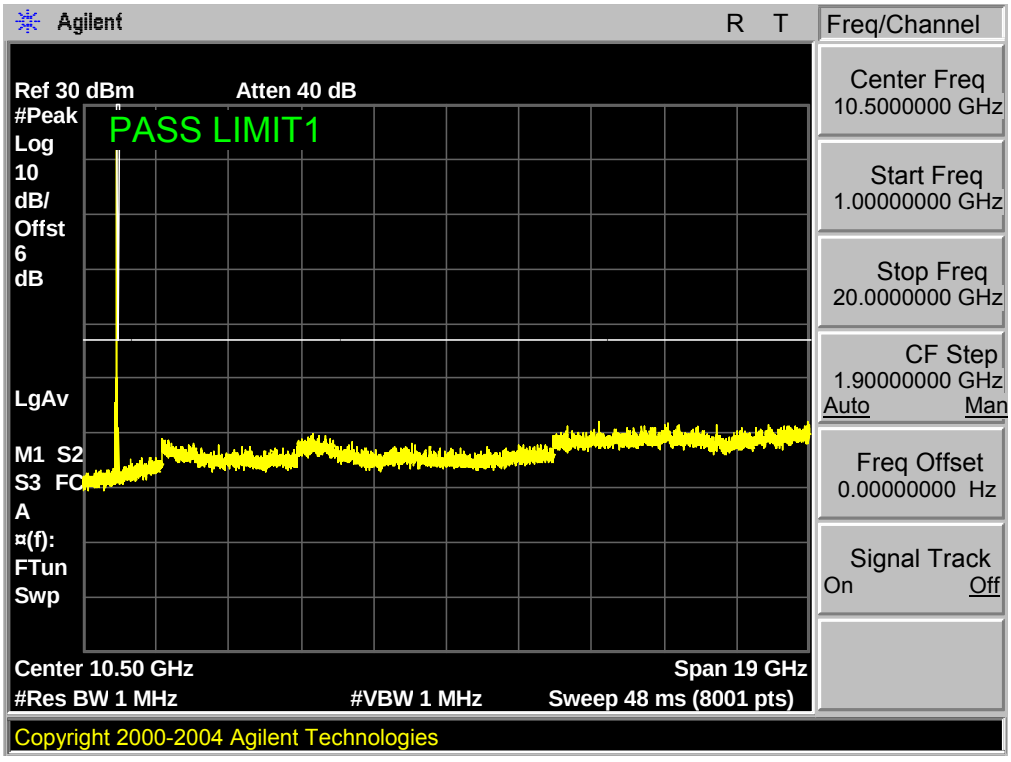
Band 2,UL Channel 19150,UL Frequency 1905.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



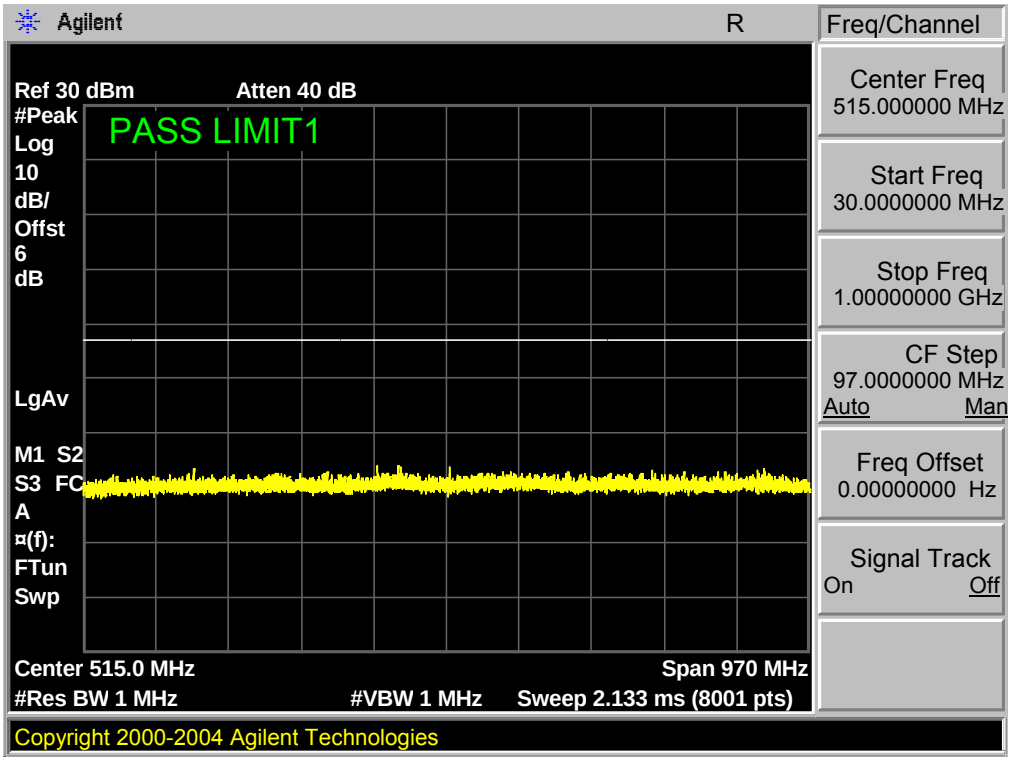
Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 1,RB POS. High,QPSK



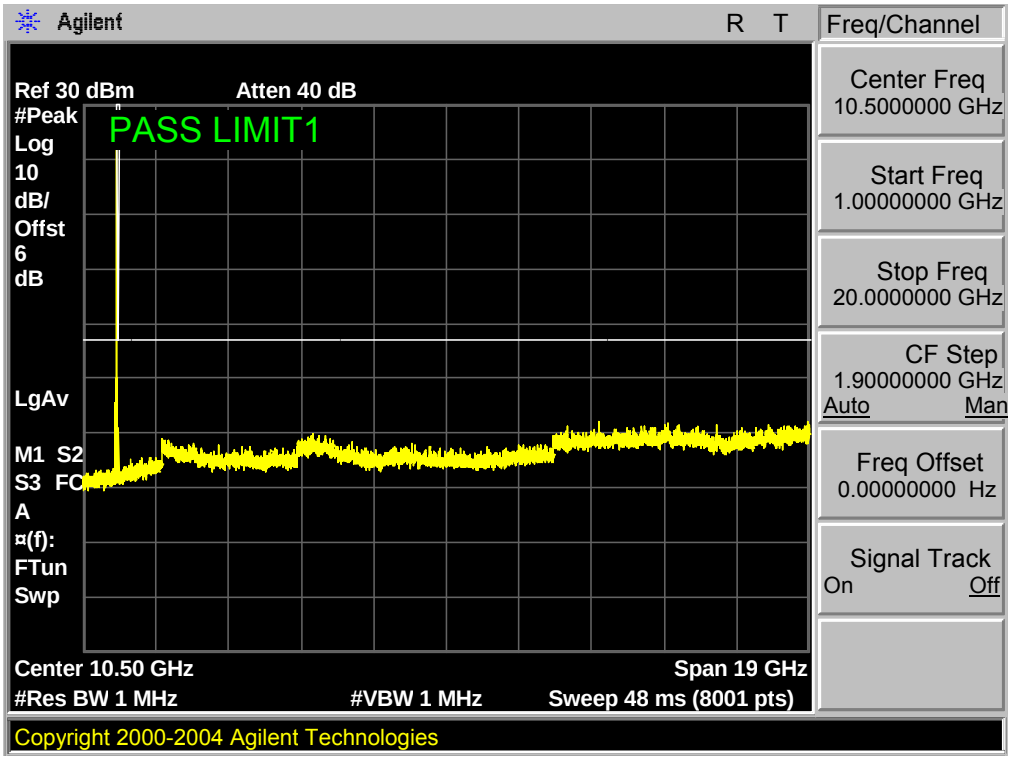
Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 1,RB POS. High,QPSK



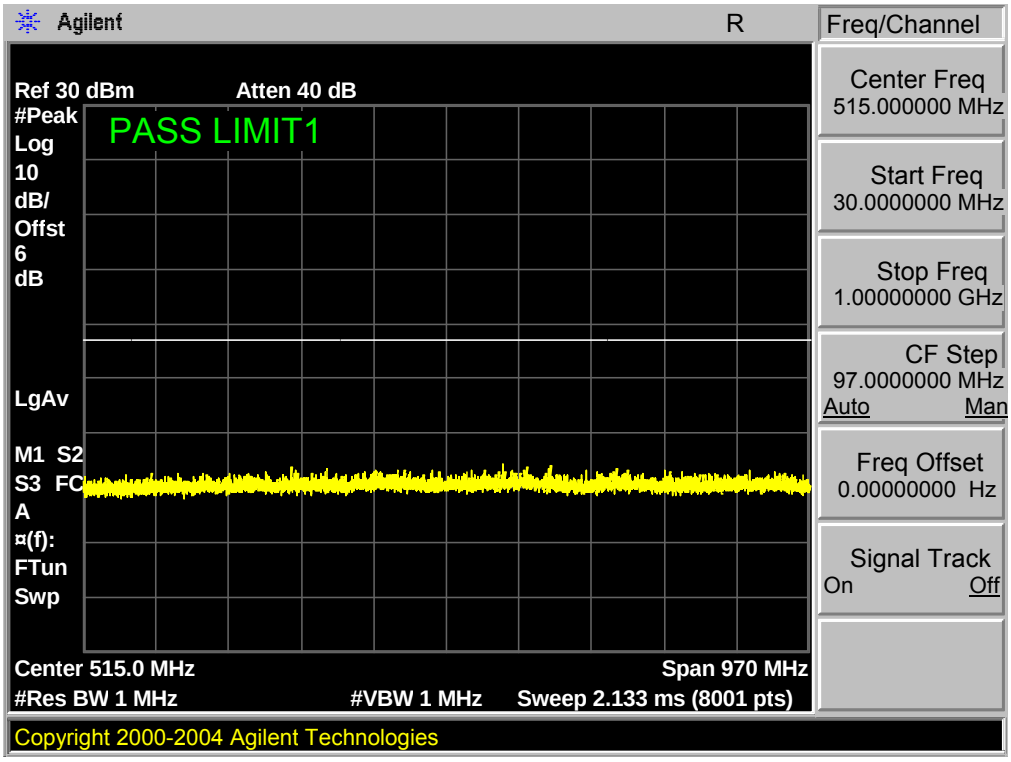
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. High,QPSK



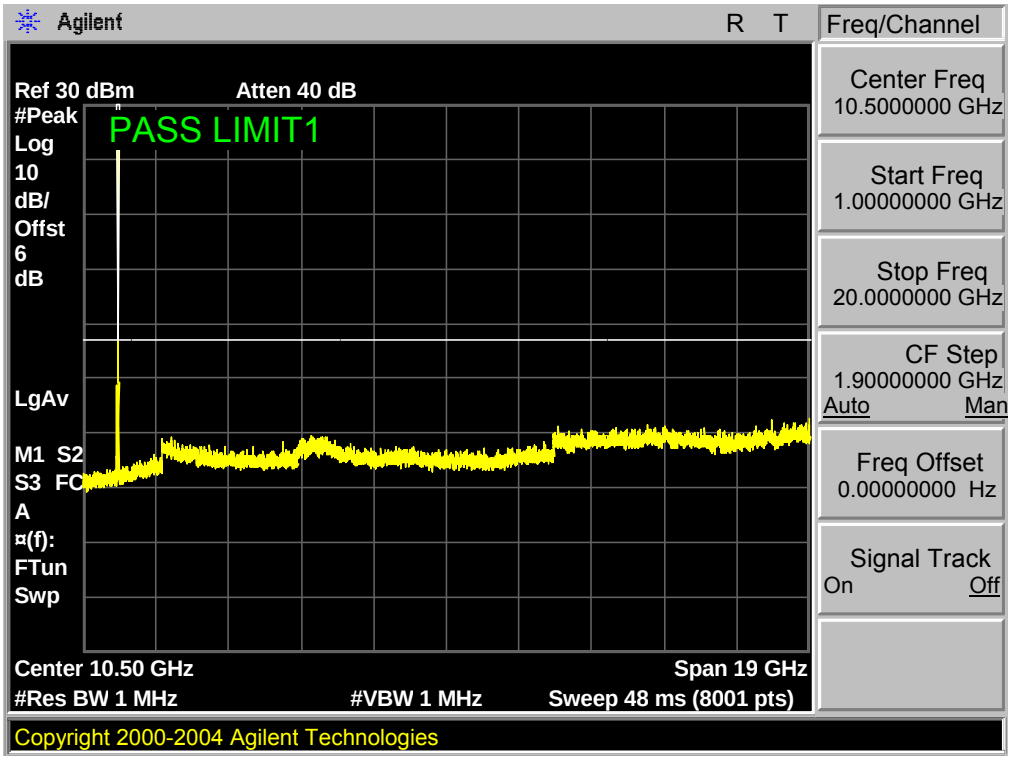
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. High,QPSK



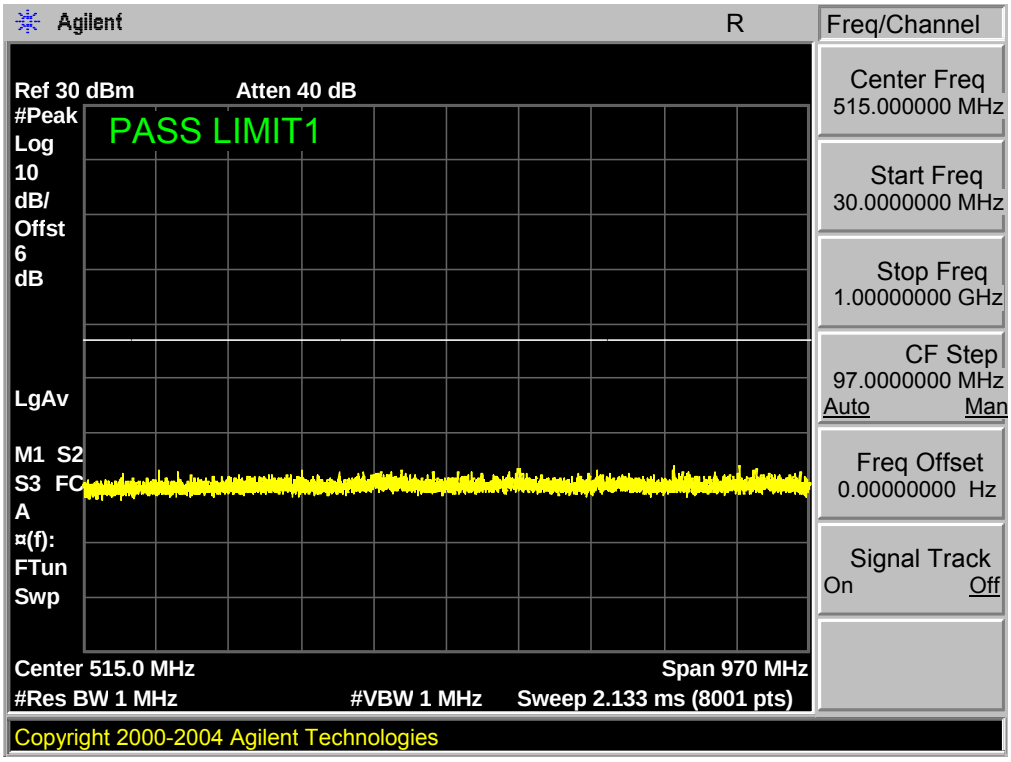
Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



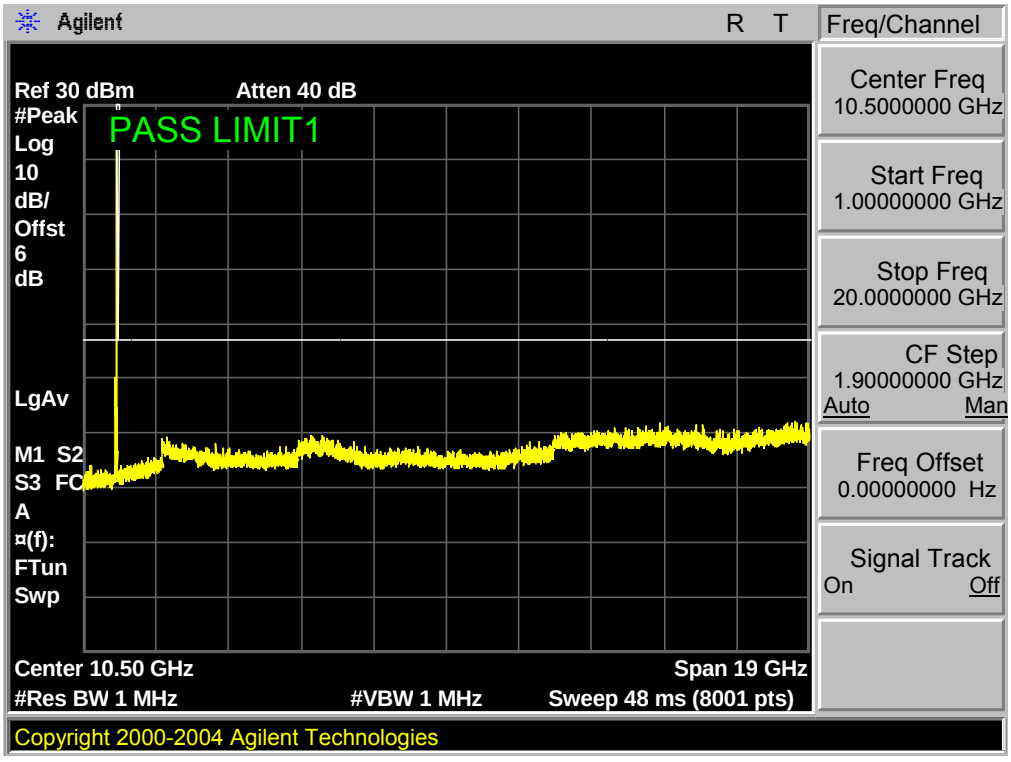
Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



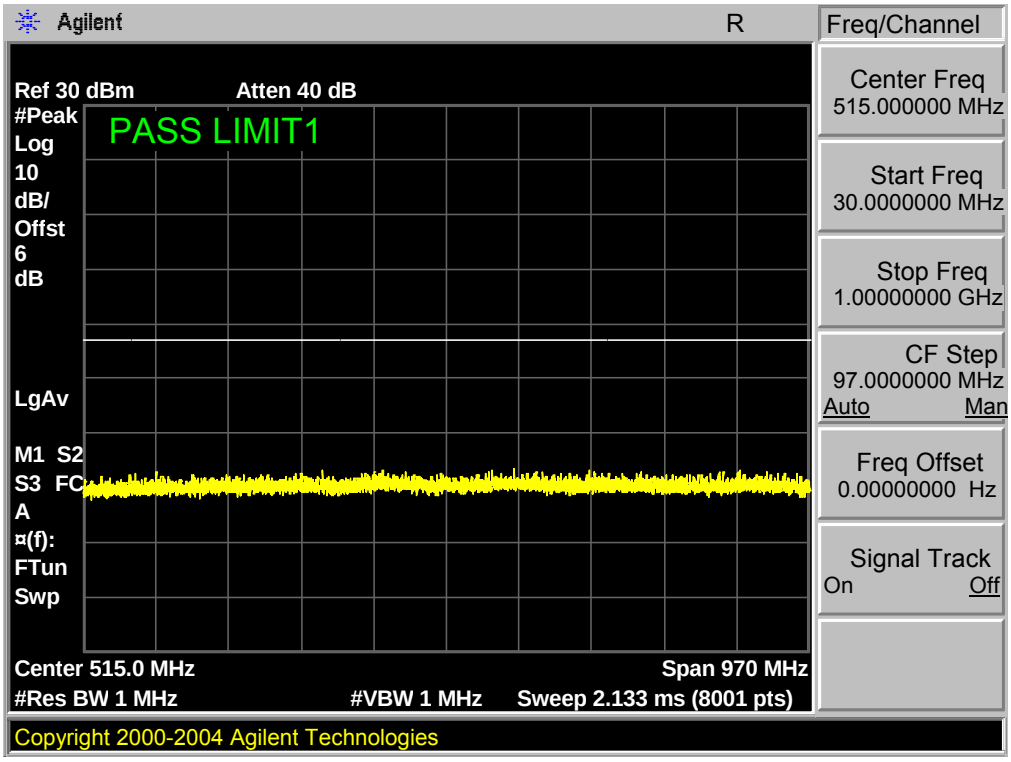
Band 2,UL Channel 18675,UL Frequency 1857.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



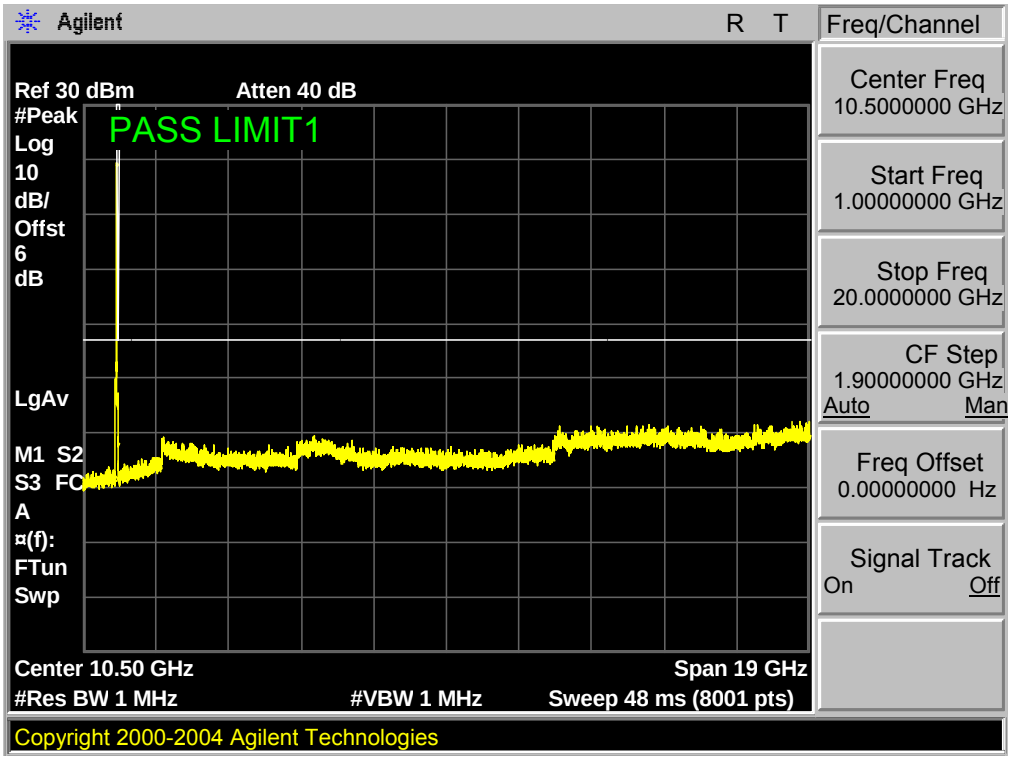
Band 2,UL Channel 18675,UL Frequency 1857.5,BW 10.0,NO. RB 1,RB POS. Low,16QAM



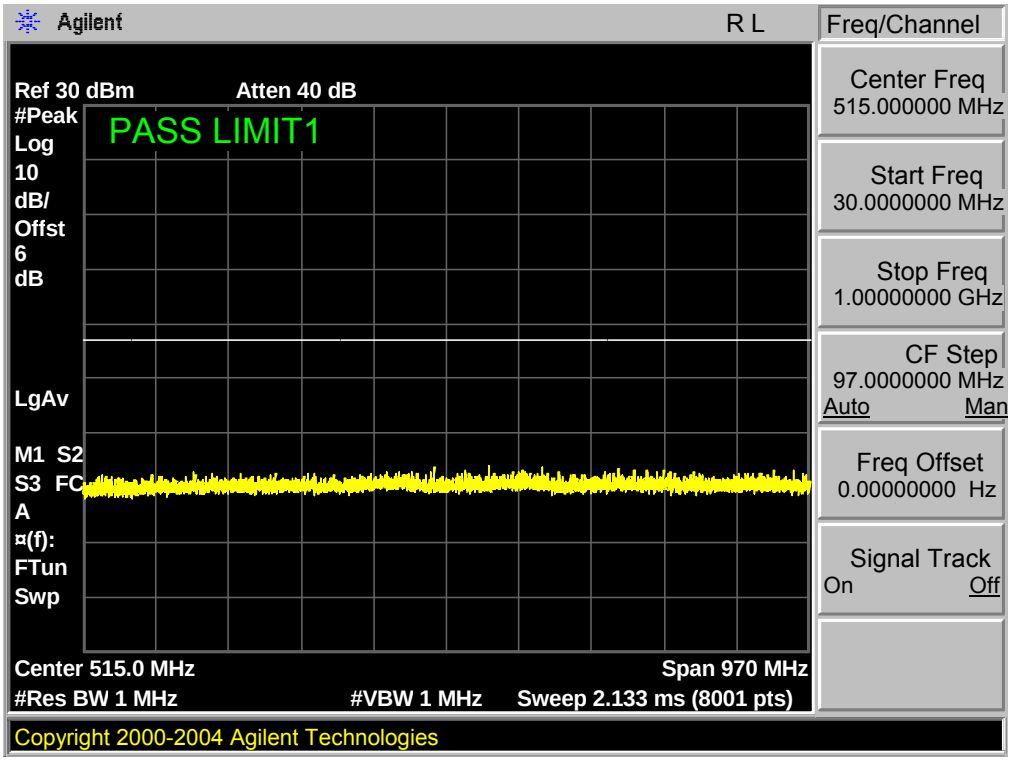
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. Low,16QAM



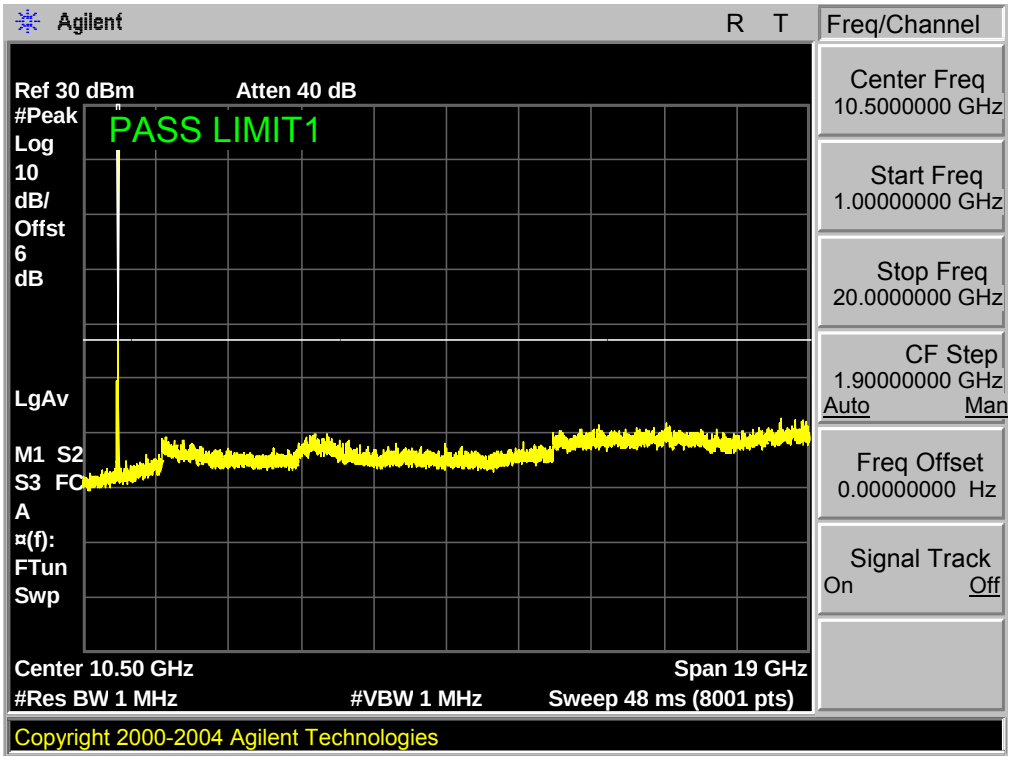
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. Low,16QAM



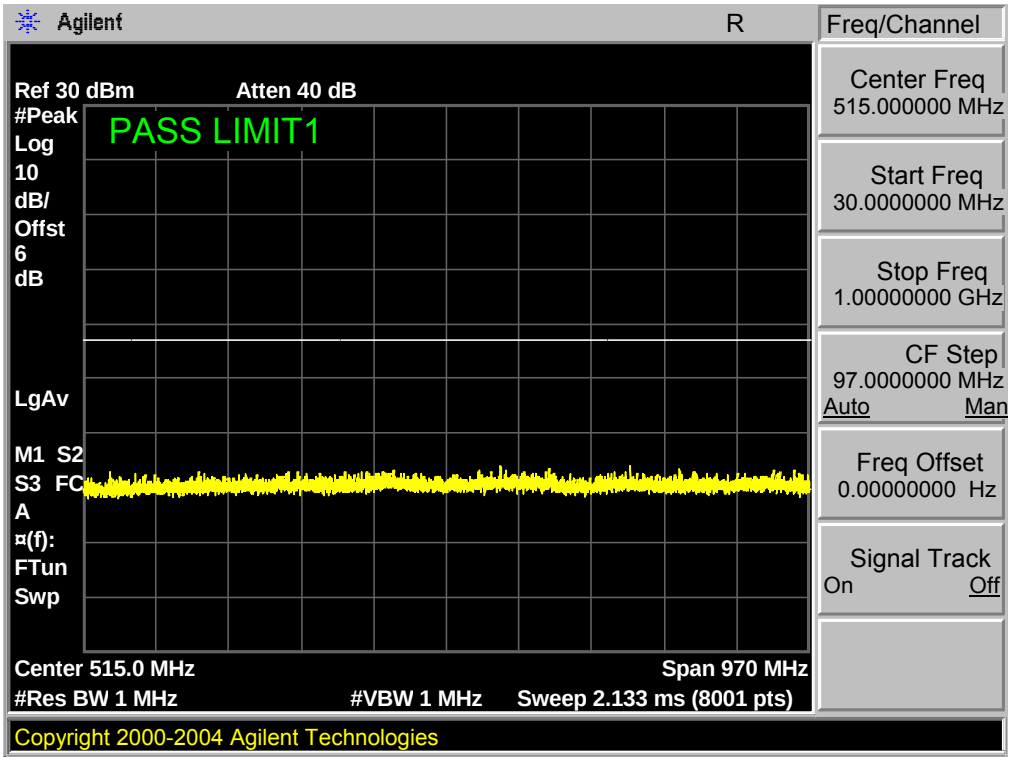
Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



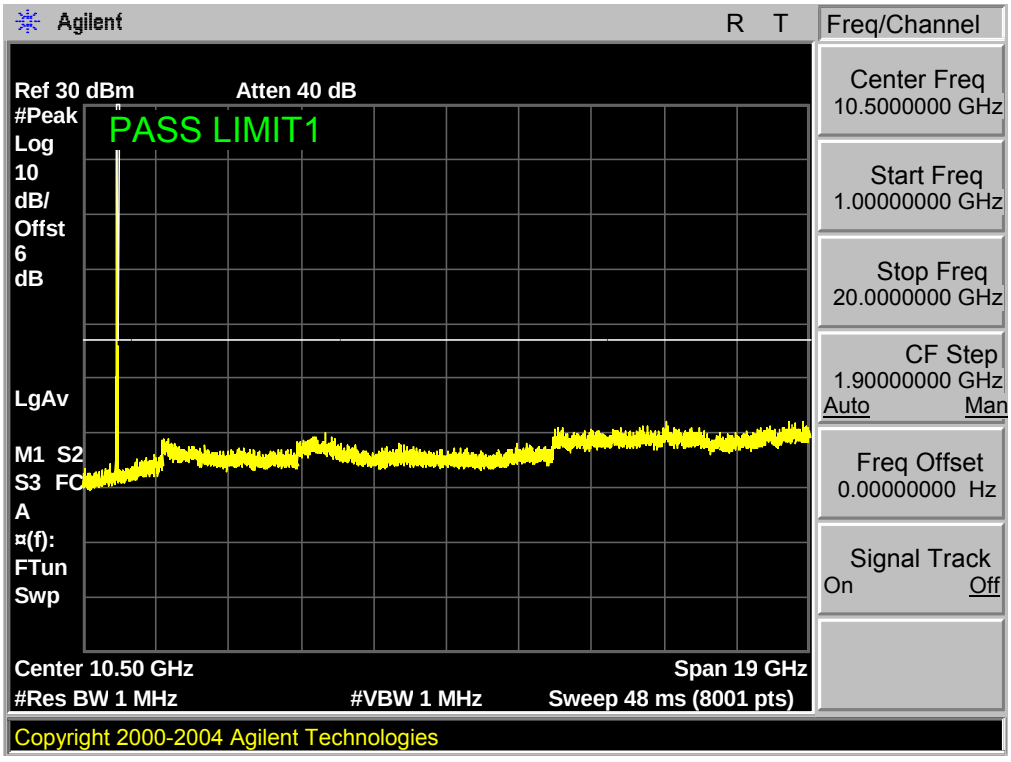
Band 2,UL Channel 19125,UL Frequency 1902.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



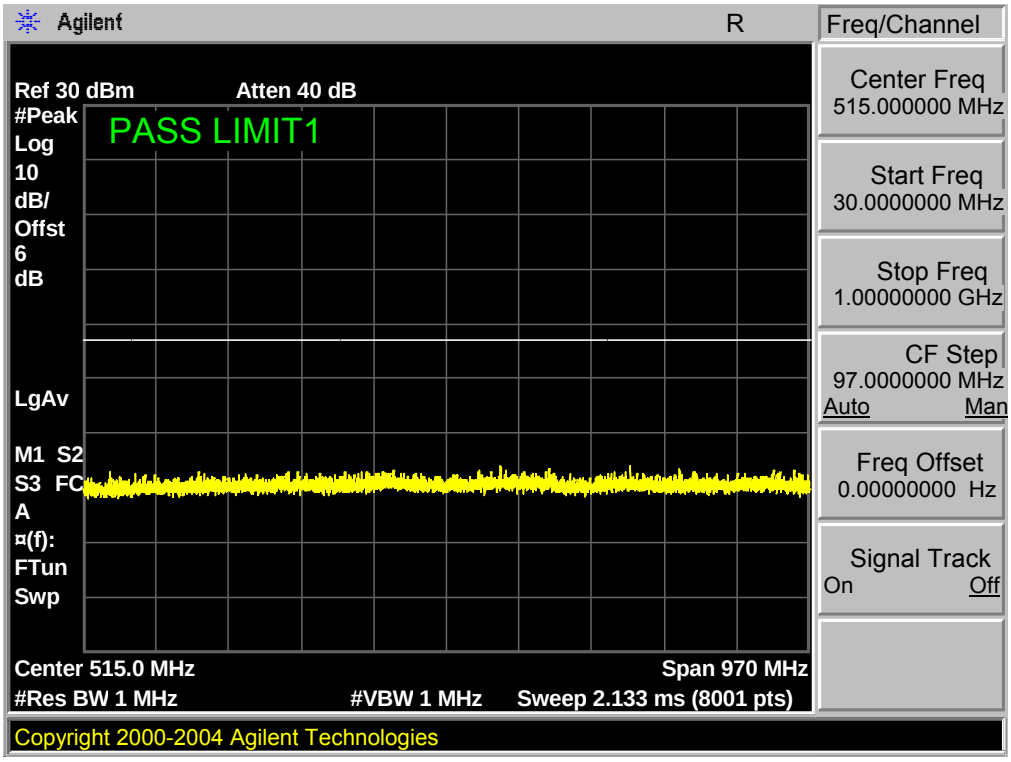
Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



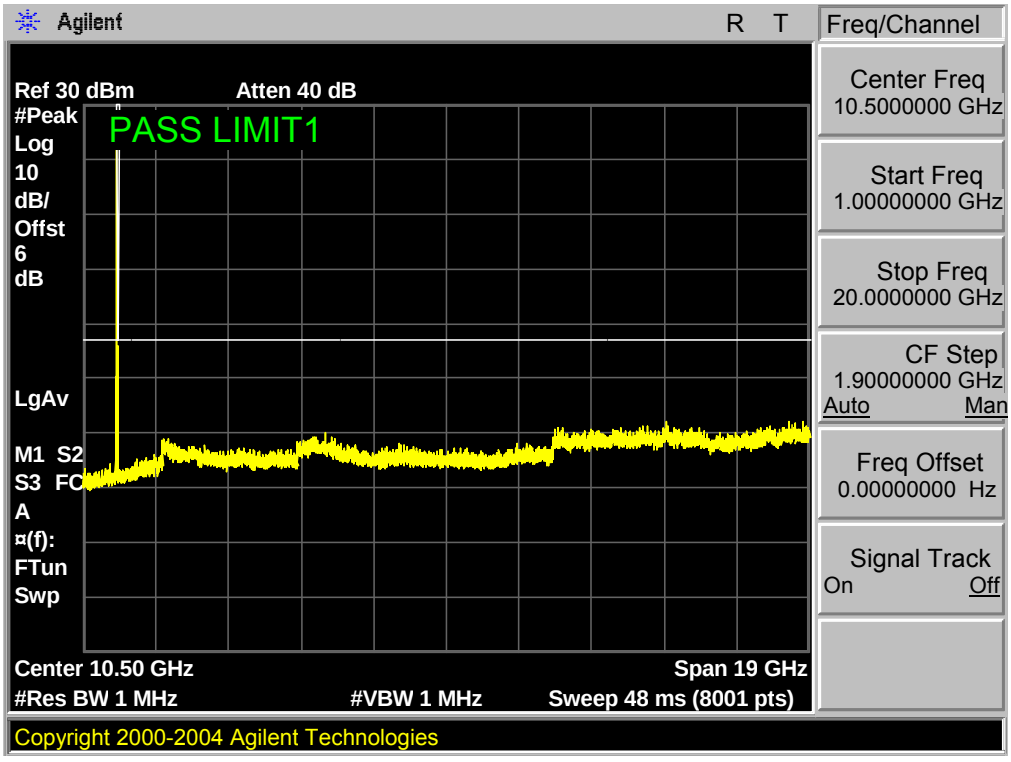
Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



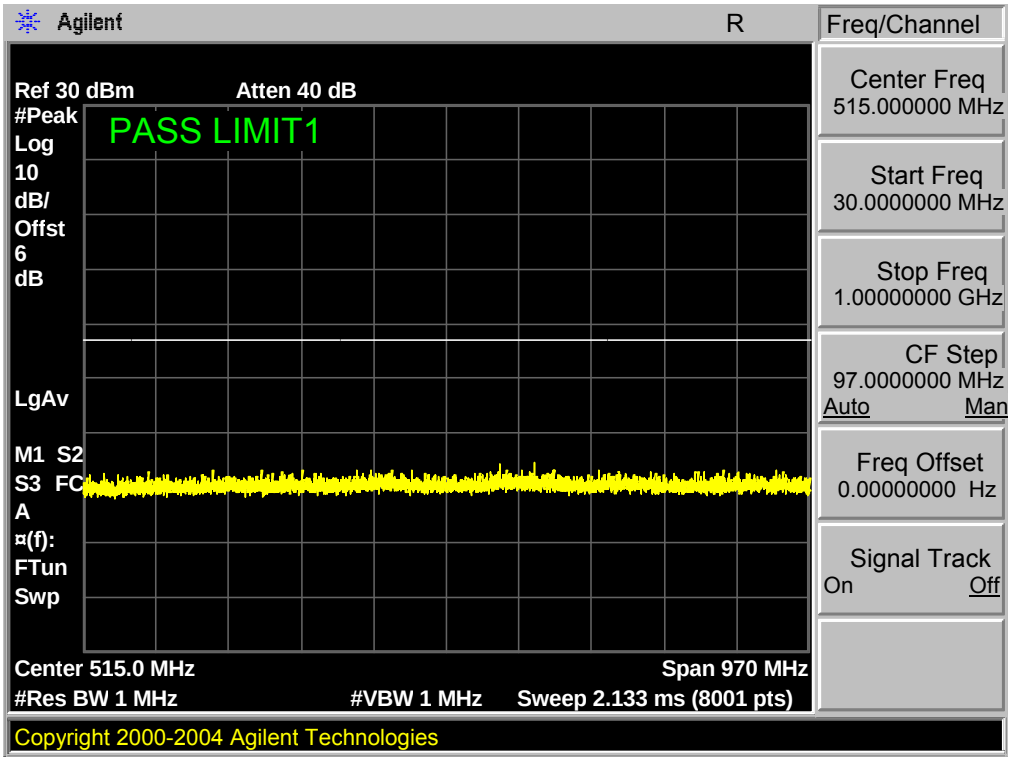
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



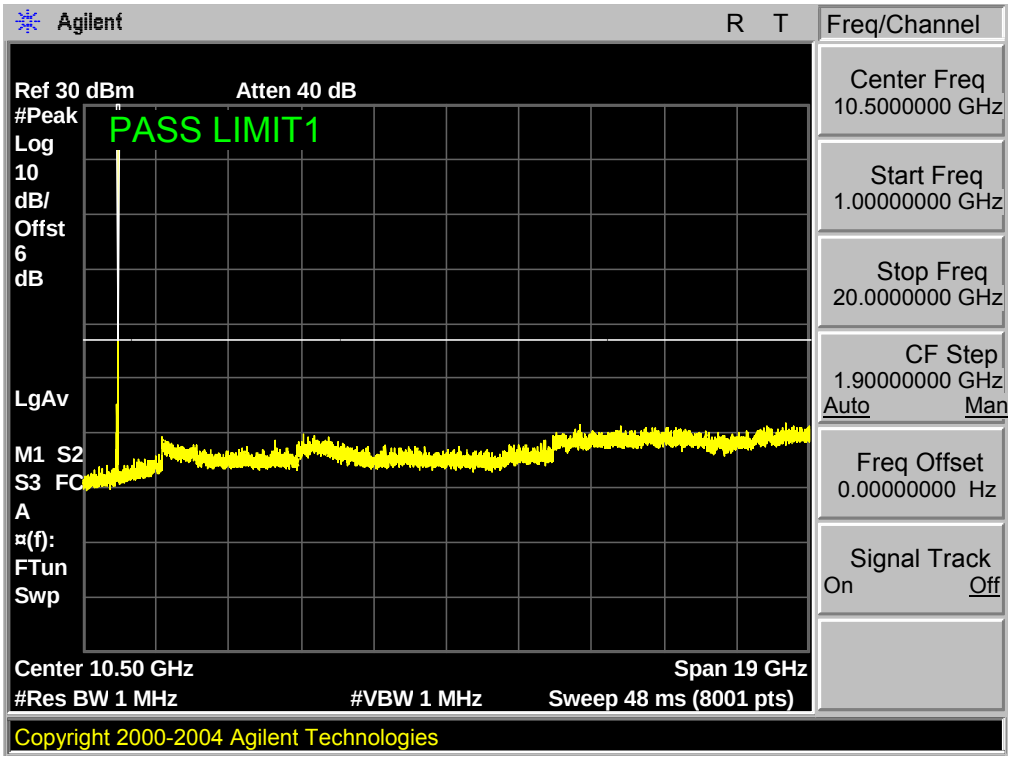
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



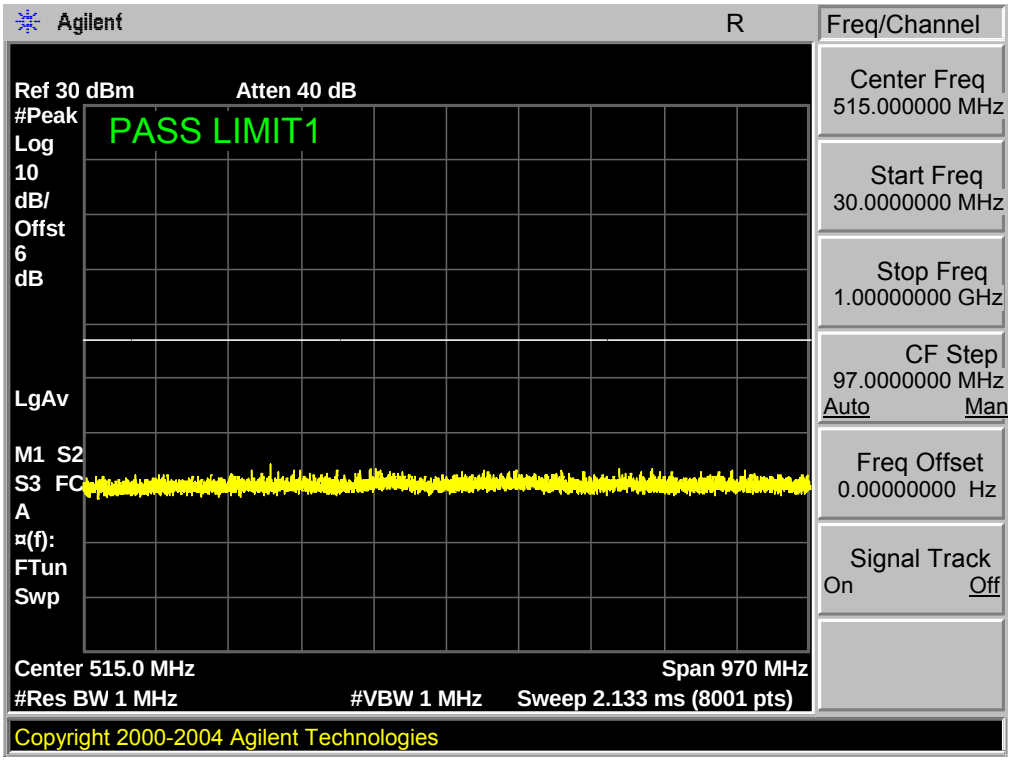
Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



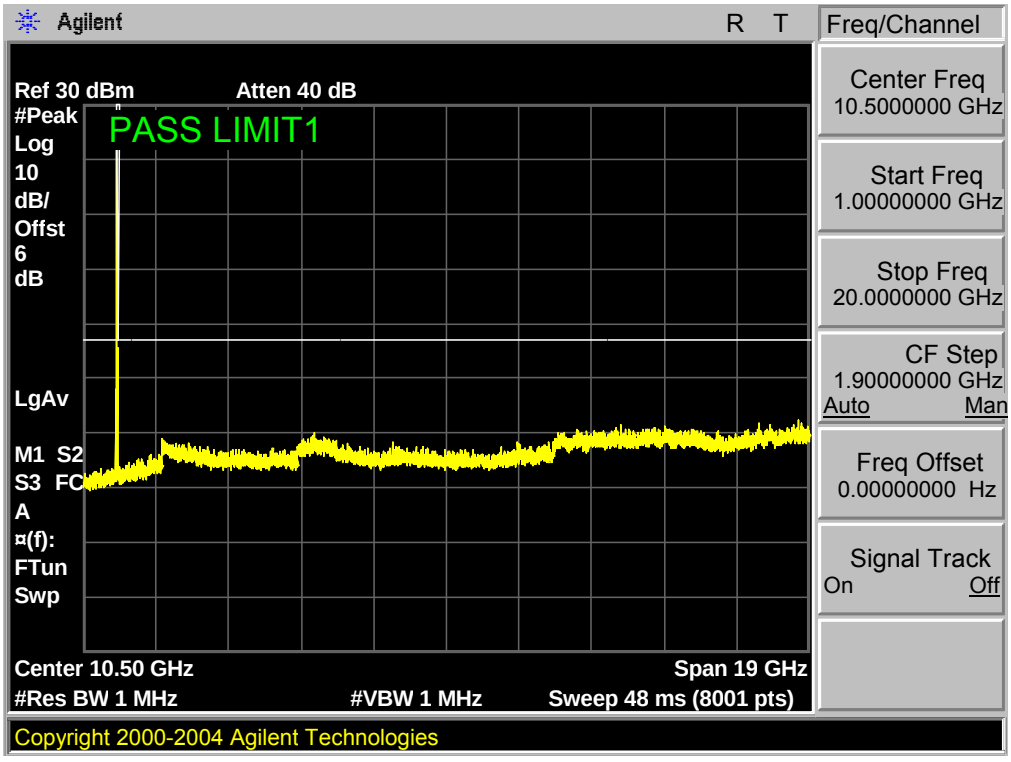
Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



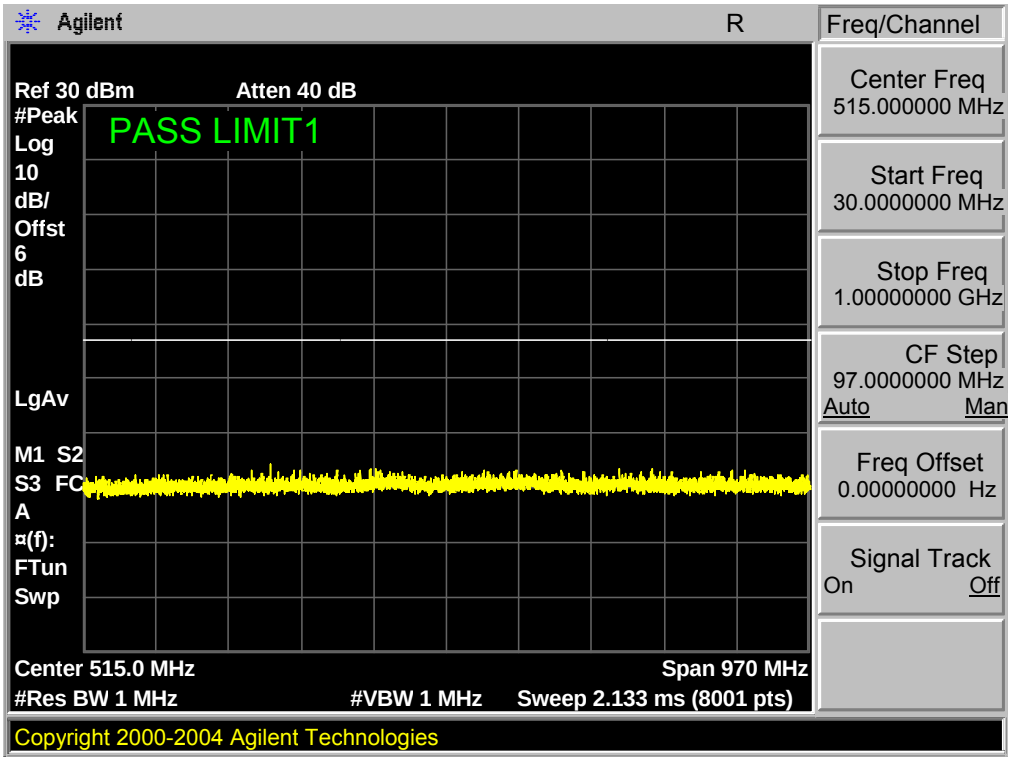
Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM



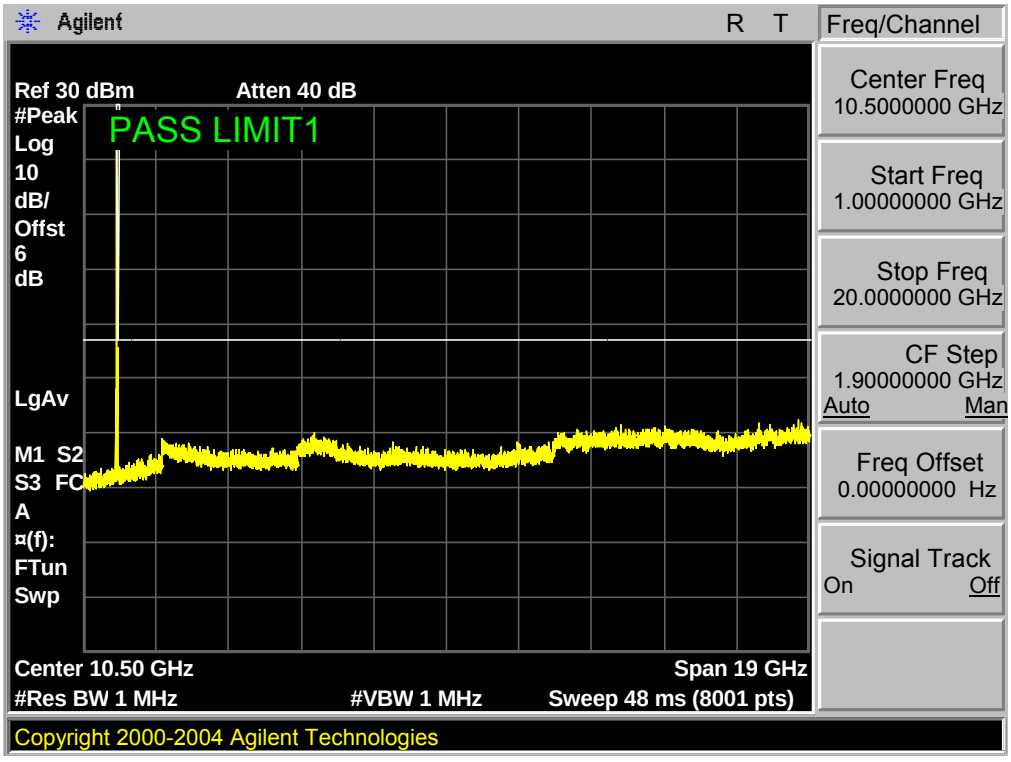
Band 2,UL Channel 18700,UL Frequency 1860.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM



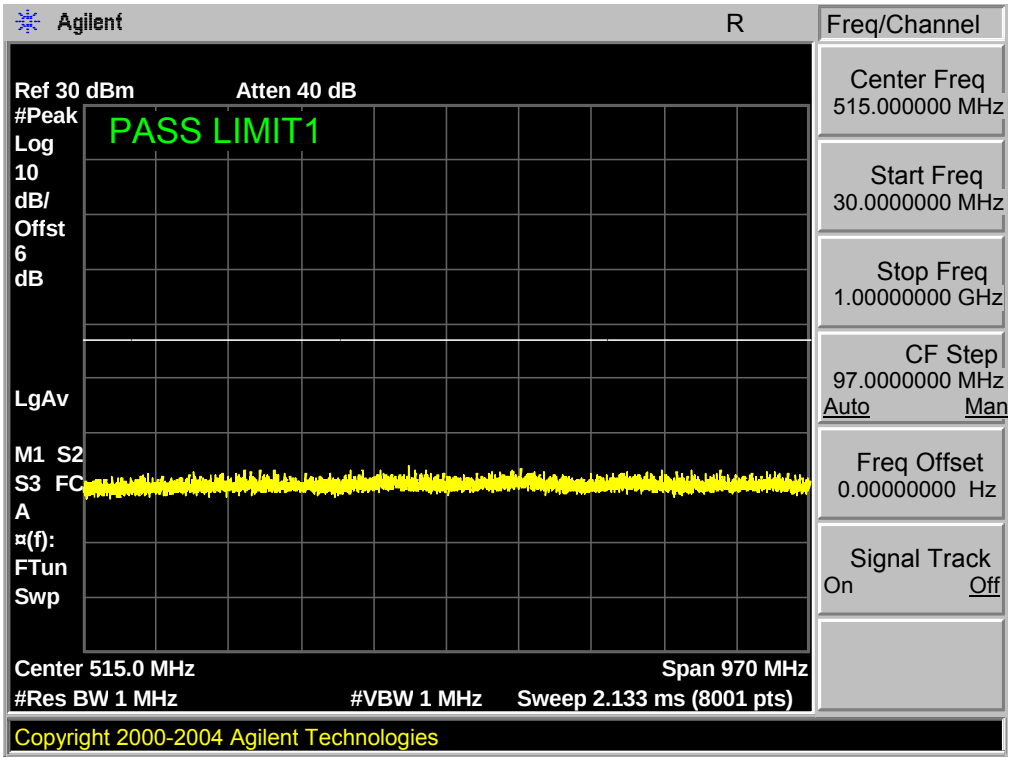
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM



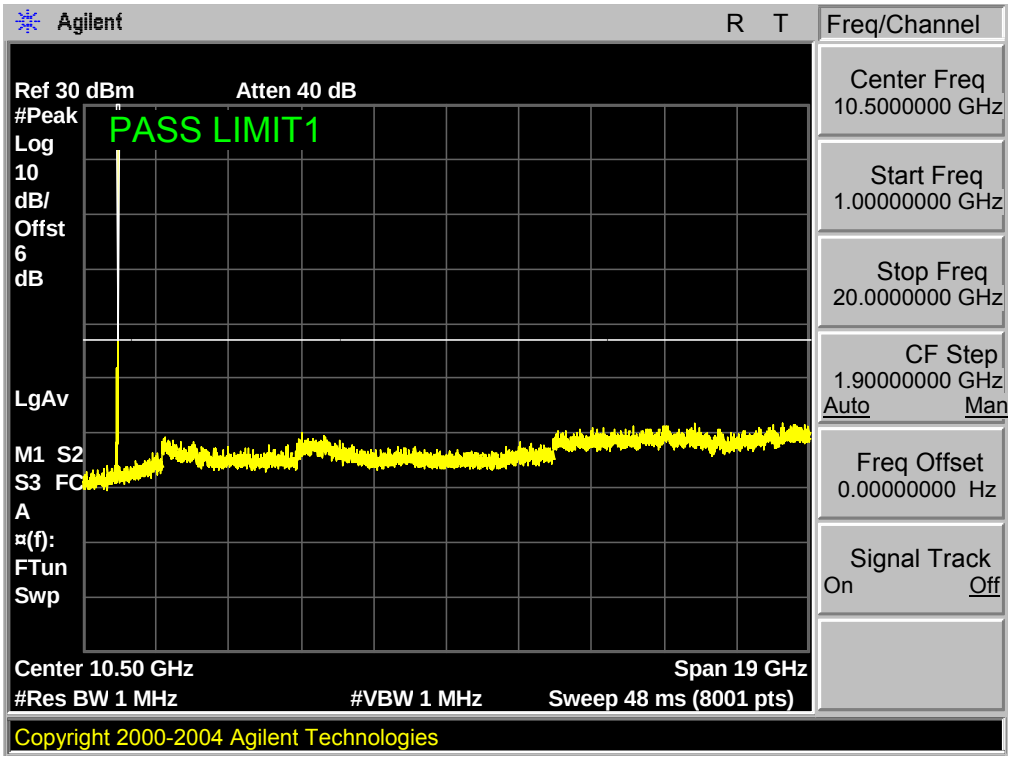
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM



Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM

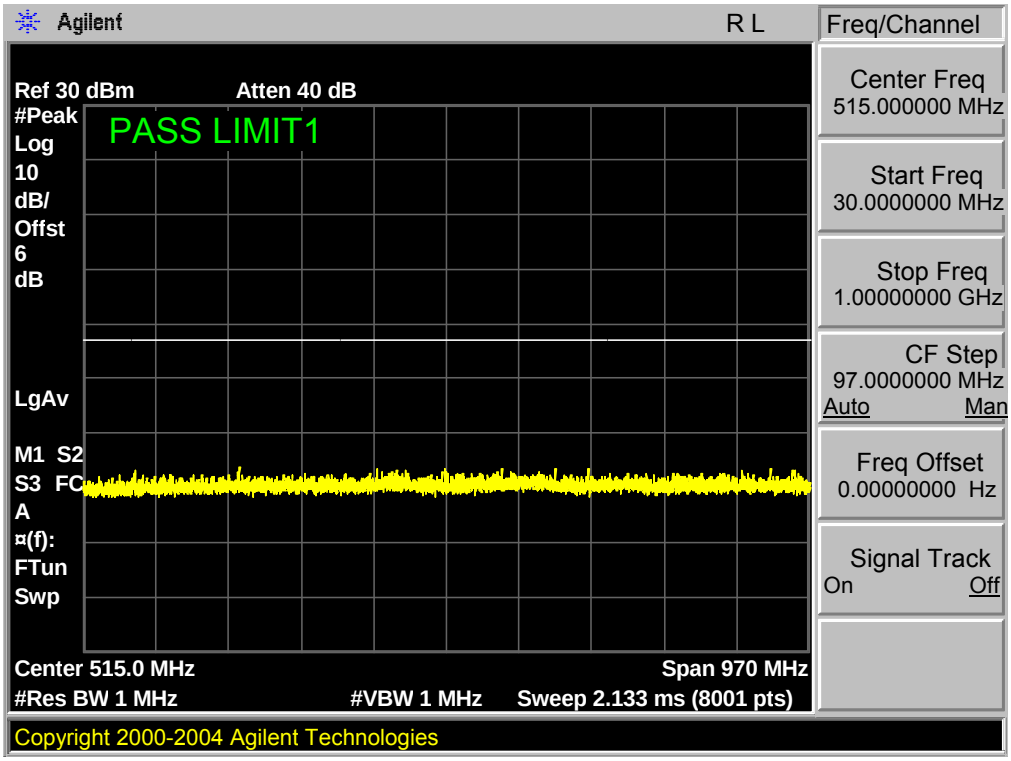


Band 2,UL Channel 19100,UL Frequency 1900.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM

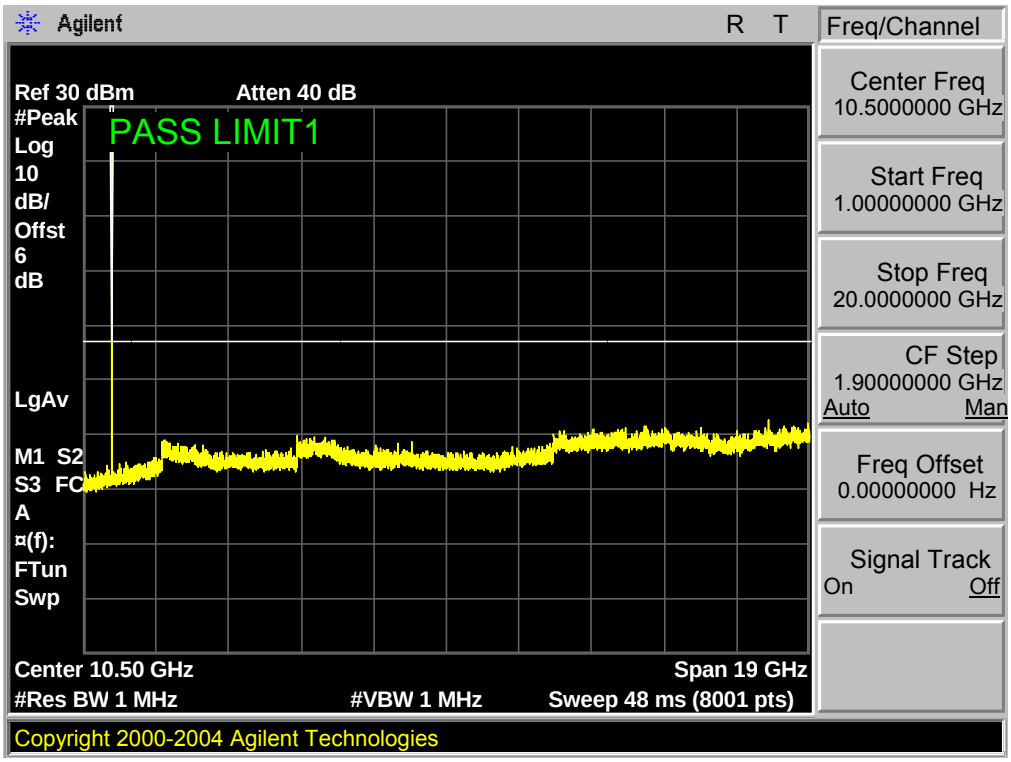


7.1.2 LTE BAND 4

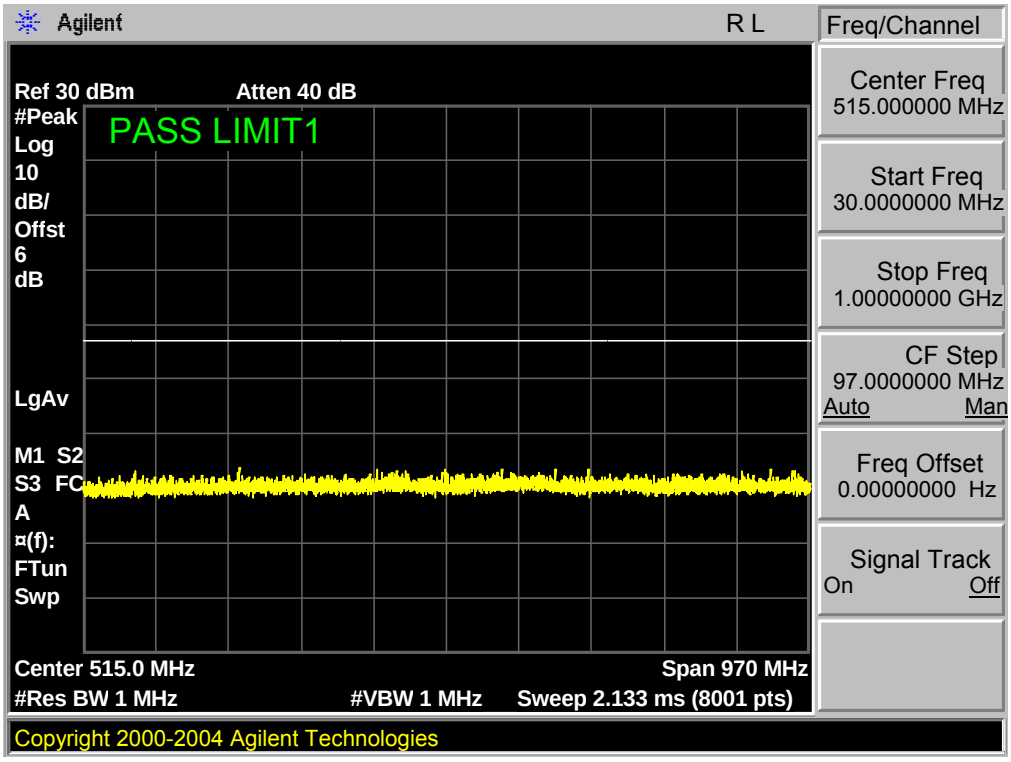
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 1,RB POS. Low,QPSK



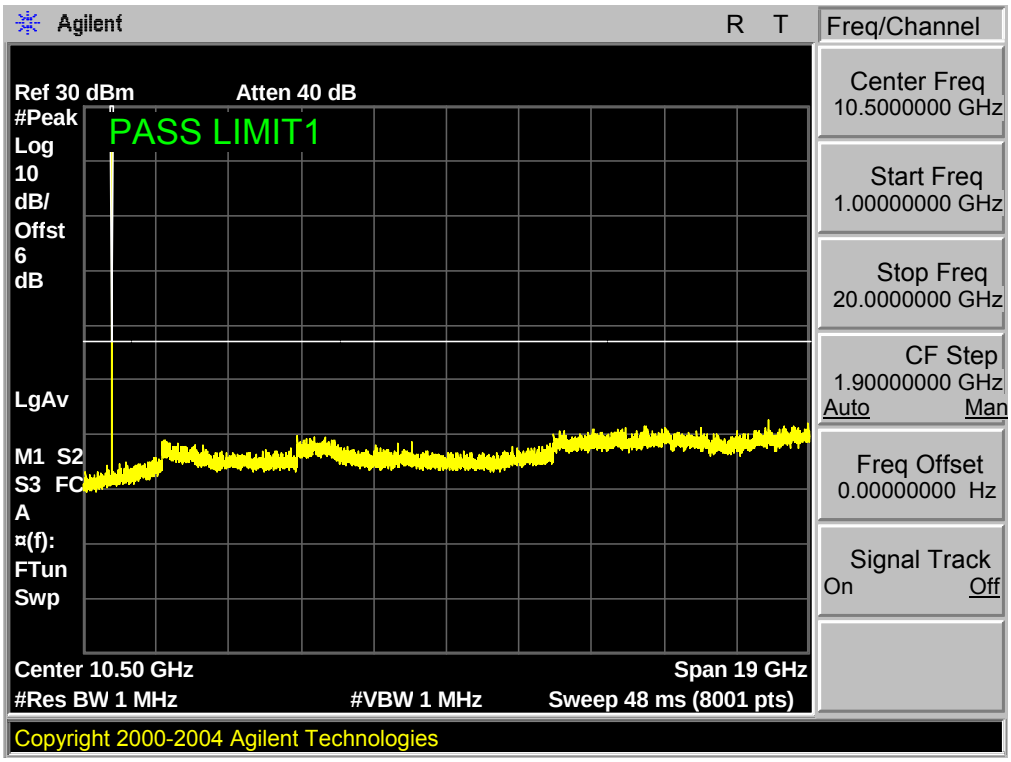
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 1,RB POS. Low,QPSK



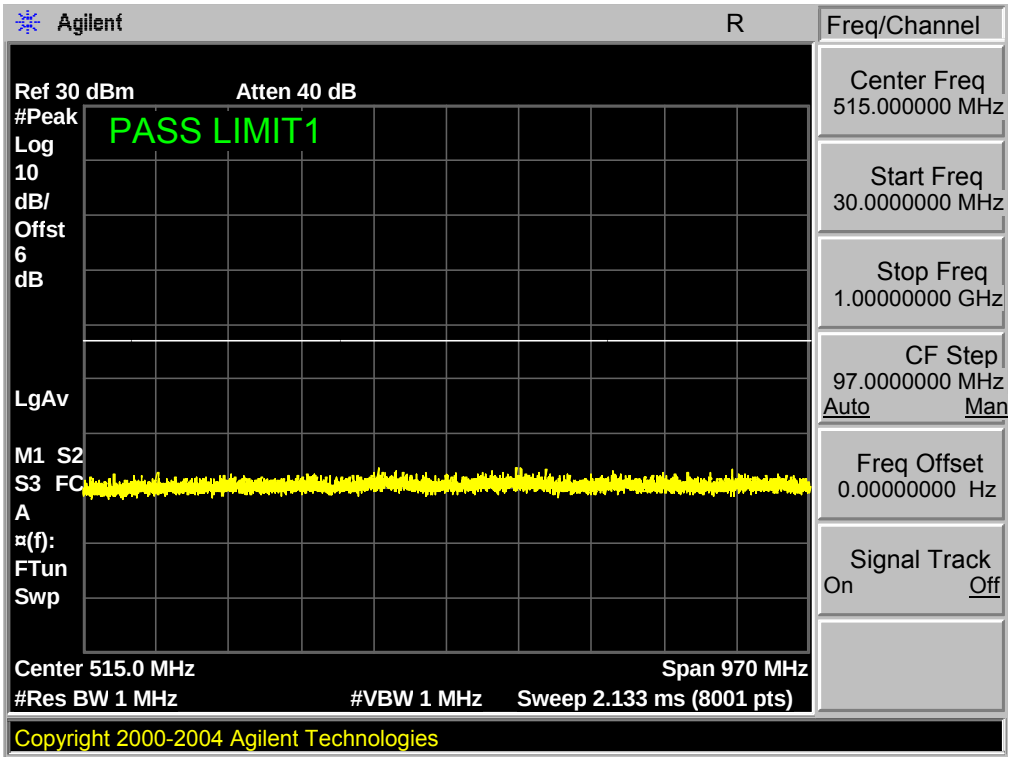
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,QPSK



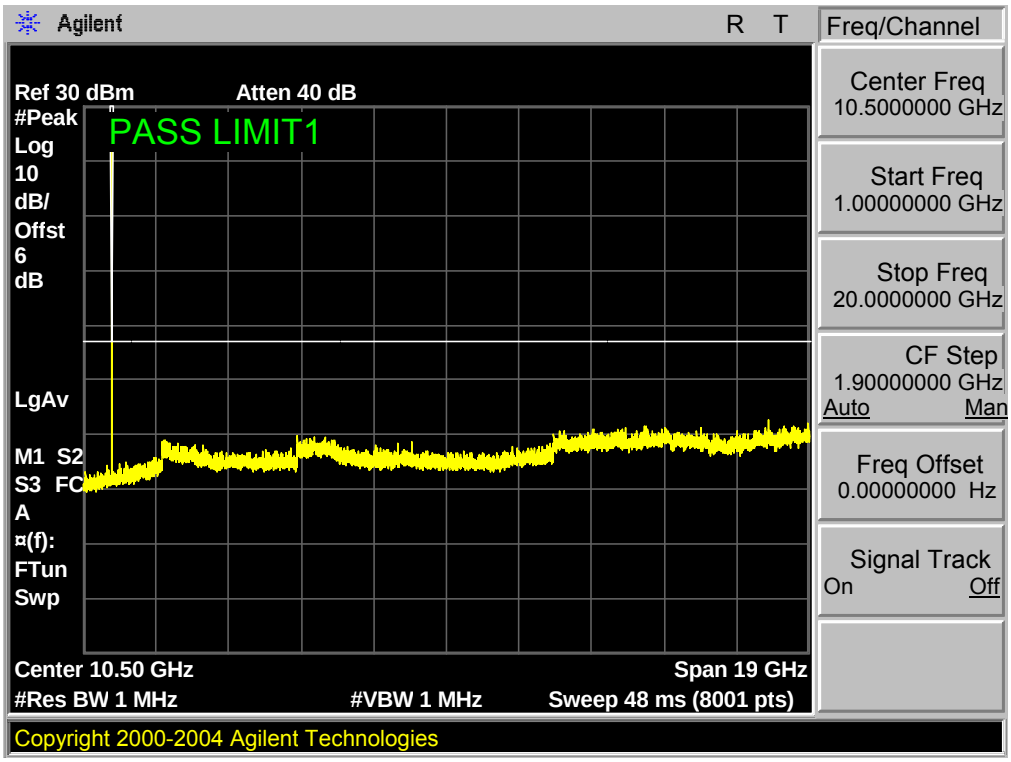
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,QPSK



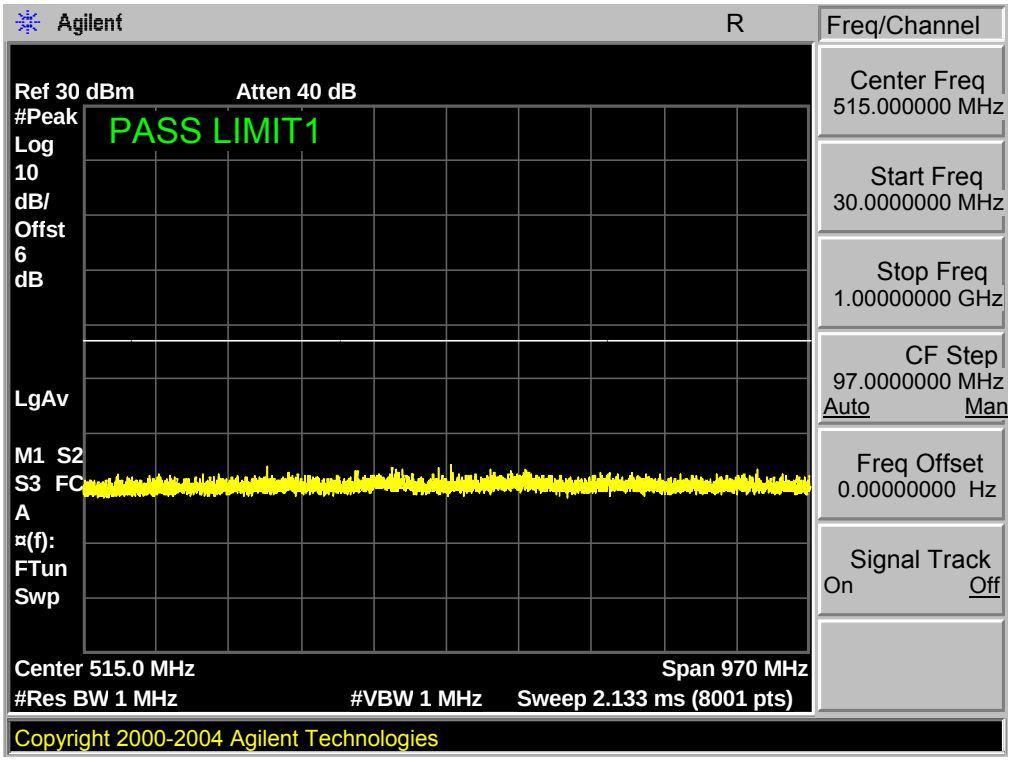
Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 1,RB POS. Low,QPSK



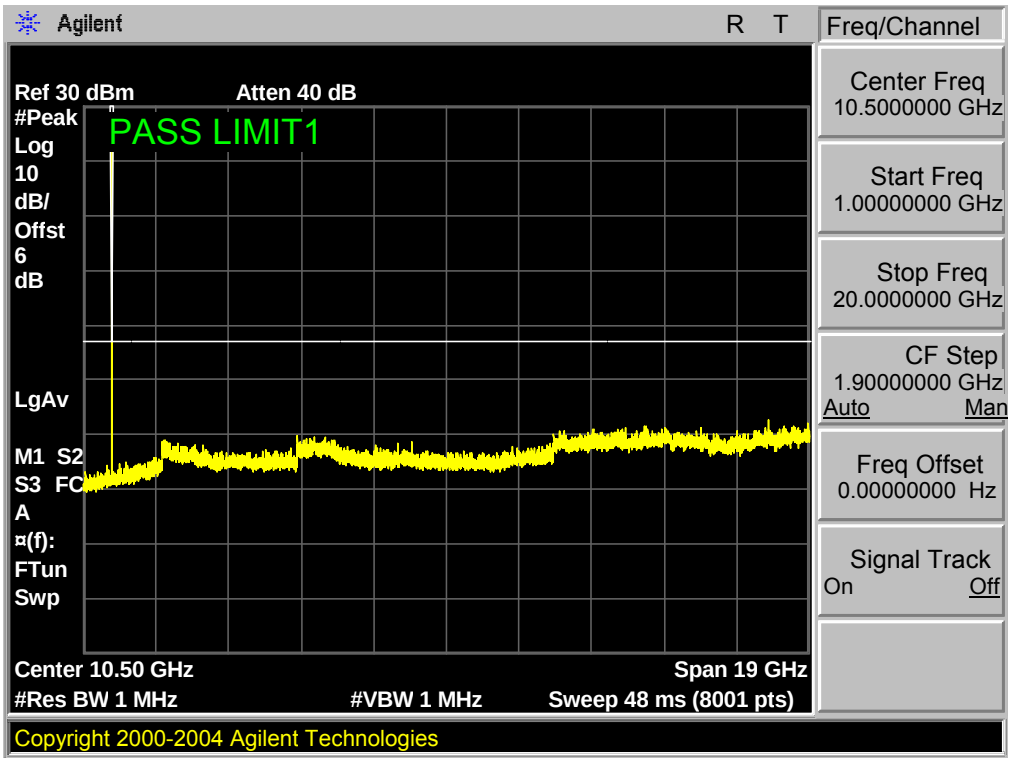
Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 1,RB POS. Low,QPSK



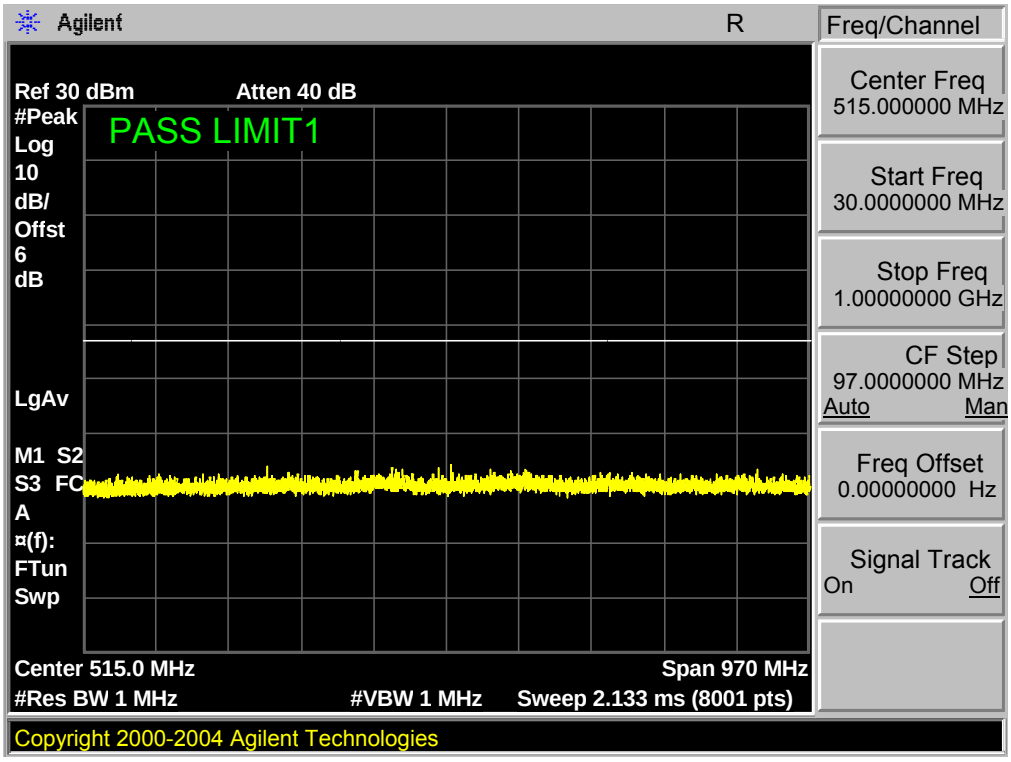
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 1,RB POS. Low,16QAM



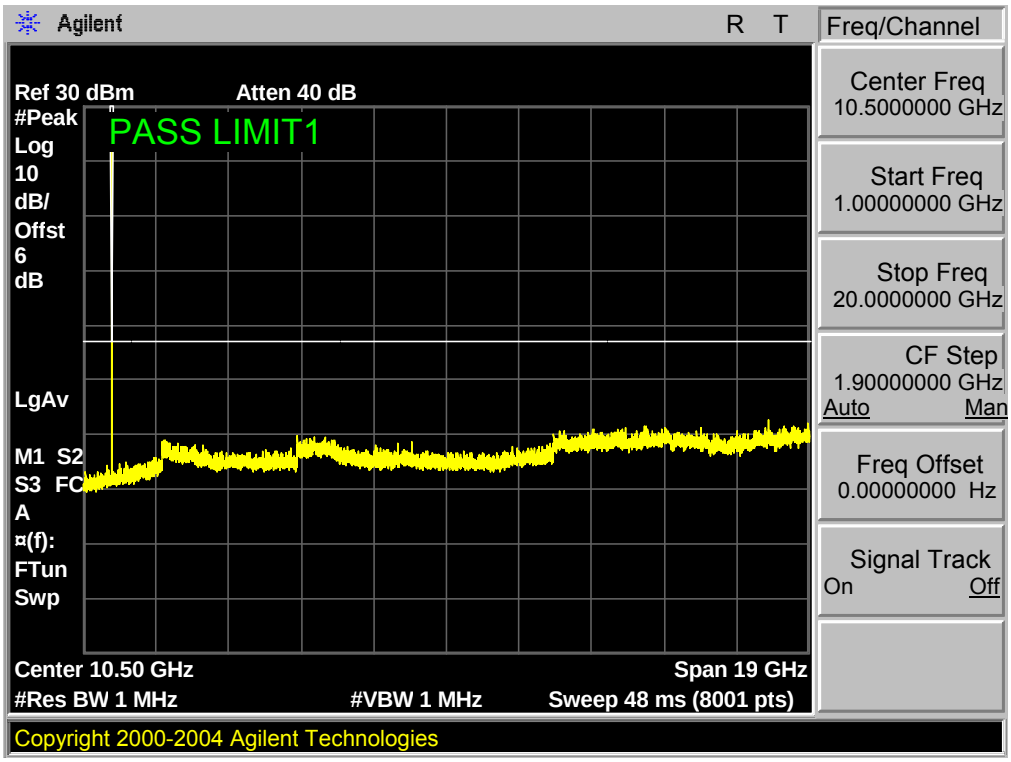
Band 4,UL Channel 19957,UL Frequency 1710.7,BW 1.4,NO. RB 1,RB POS. Low,16QAM



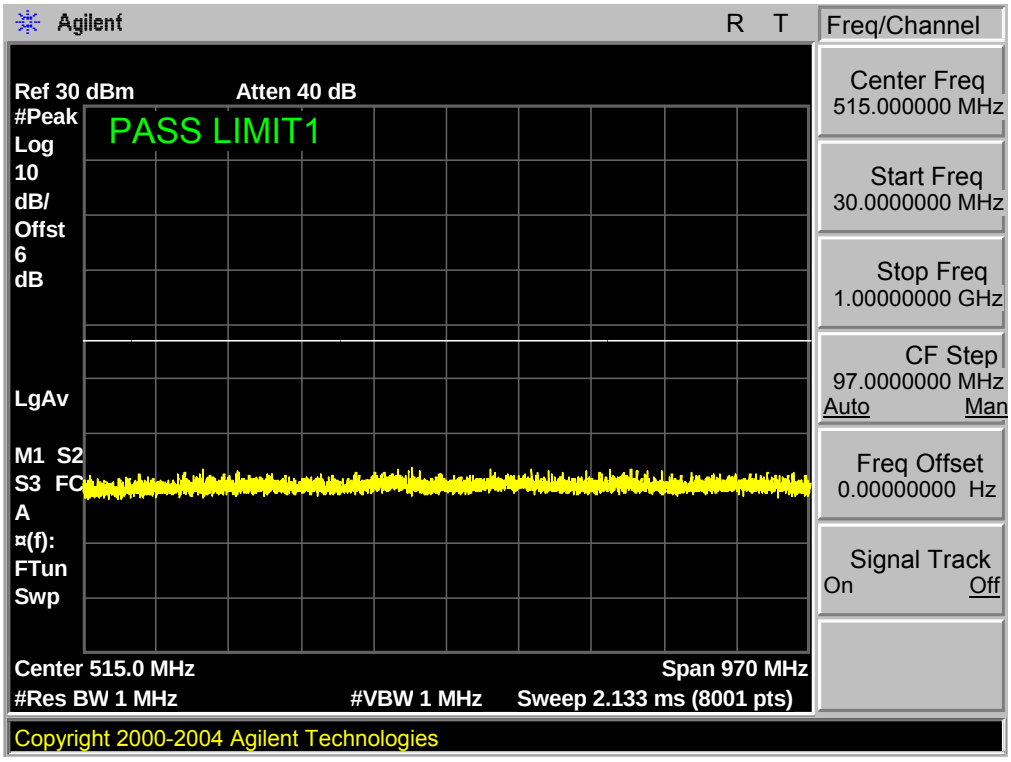
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,16QAM



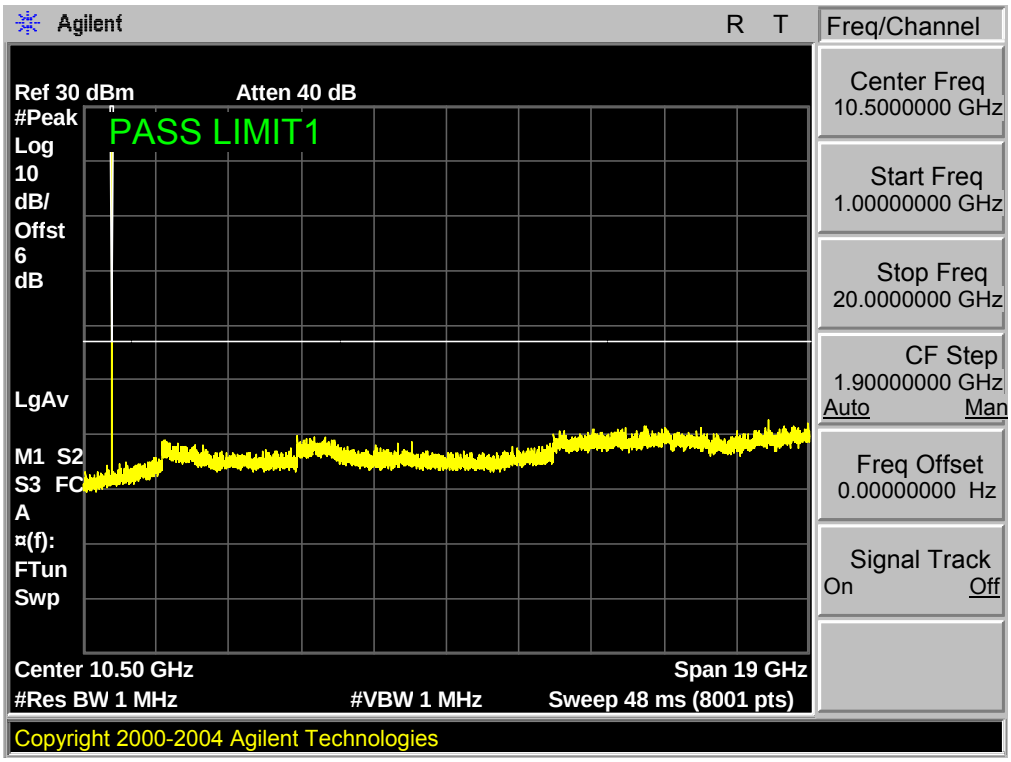
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,16QAM



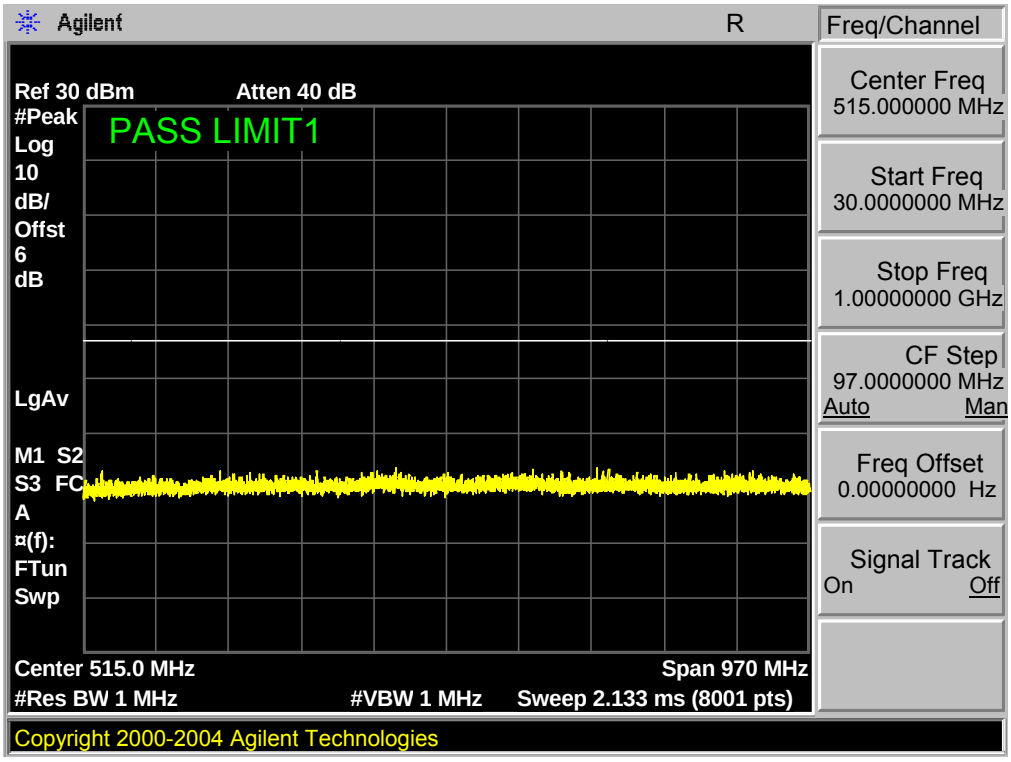
Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 1,RB POS. Low,16QAM



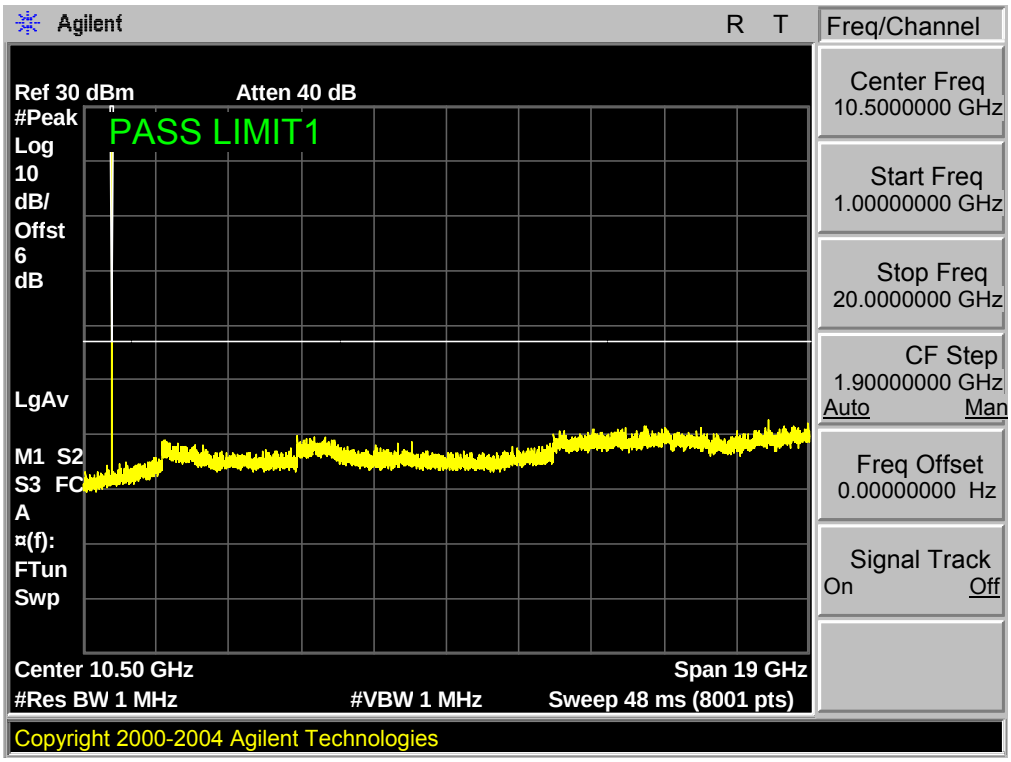
Band 4,UL Channel 20393,UL Frequency 1754.3,BW 1.4,NO. RB 1,RB POS. Low,16QAM



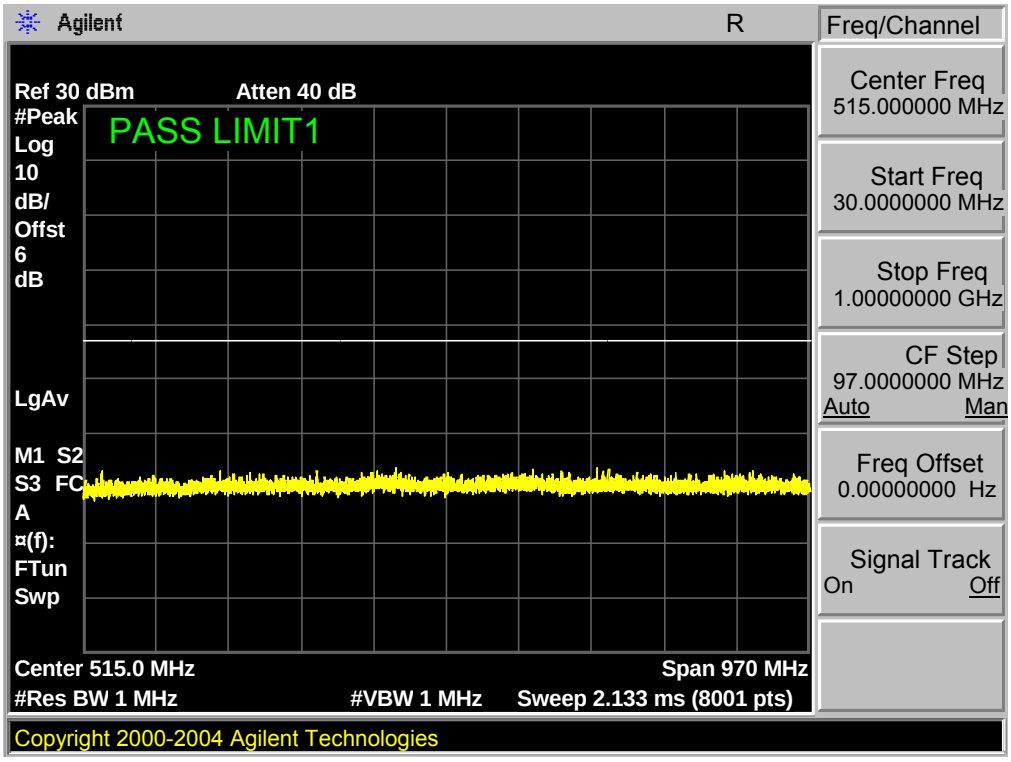
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



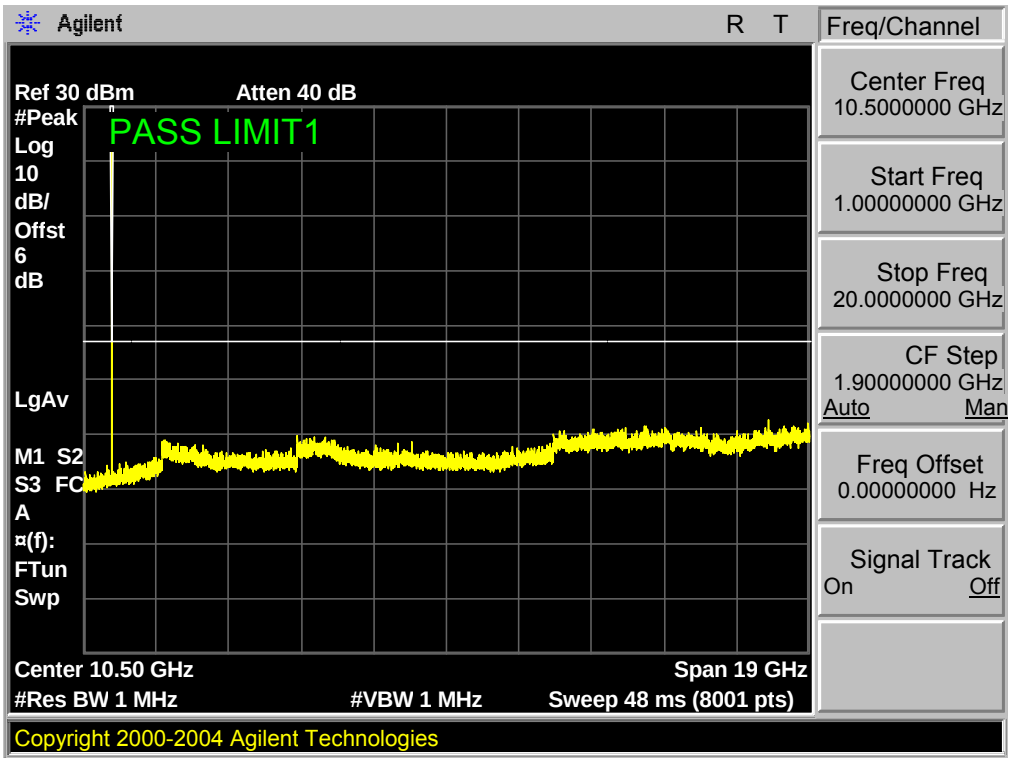
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



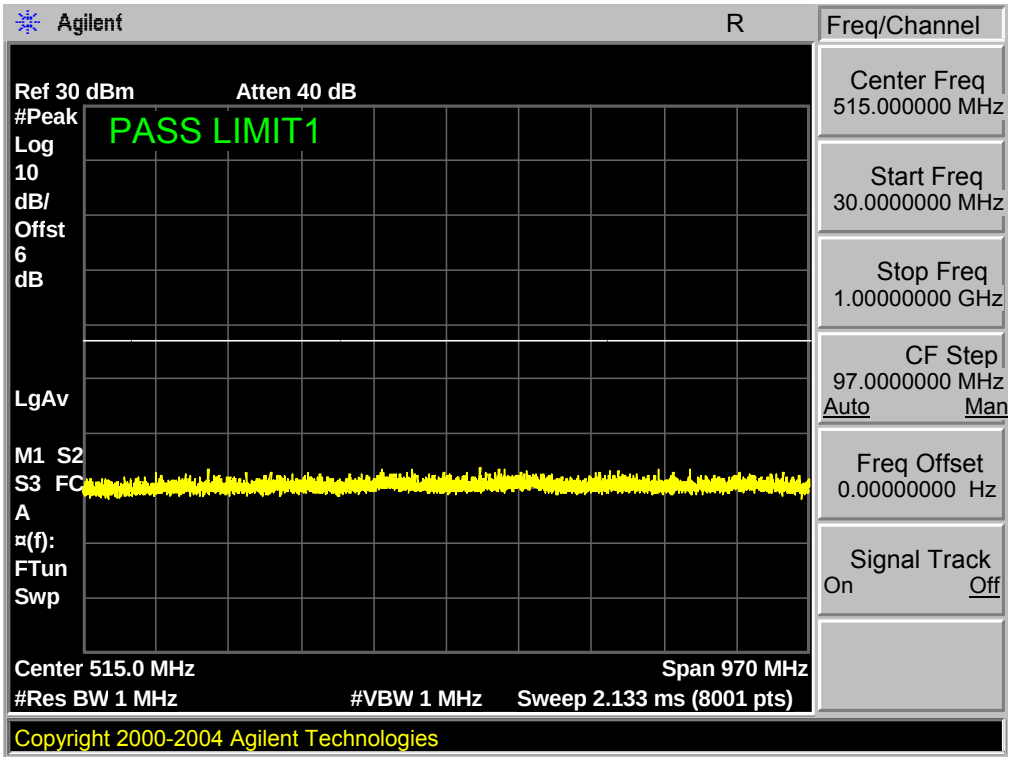
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



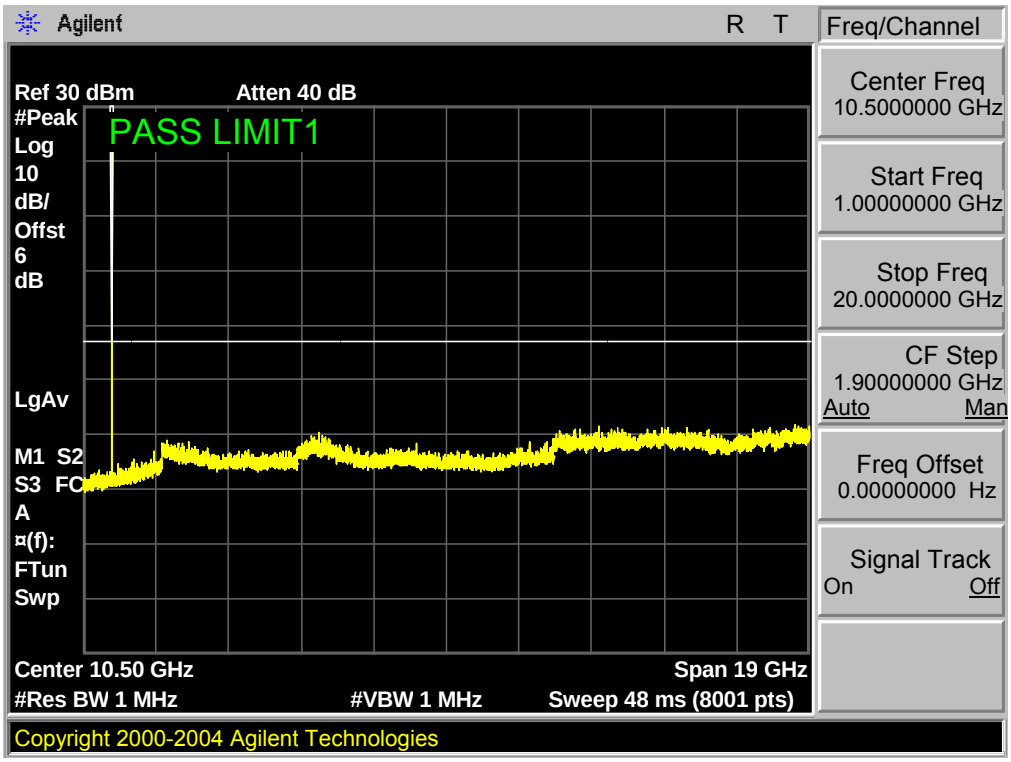
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



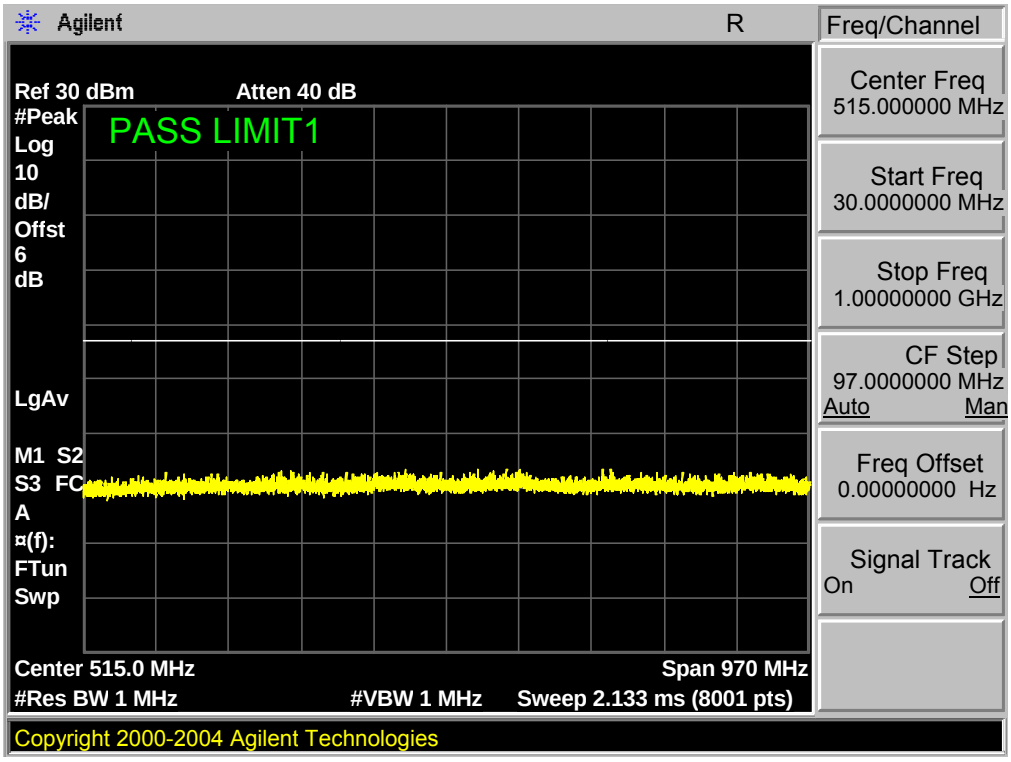
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



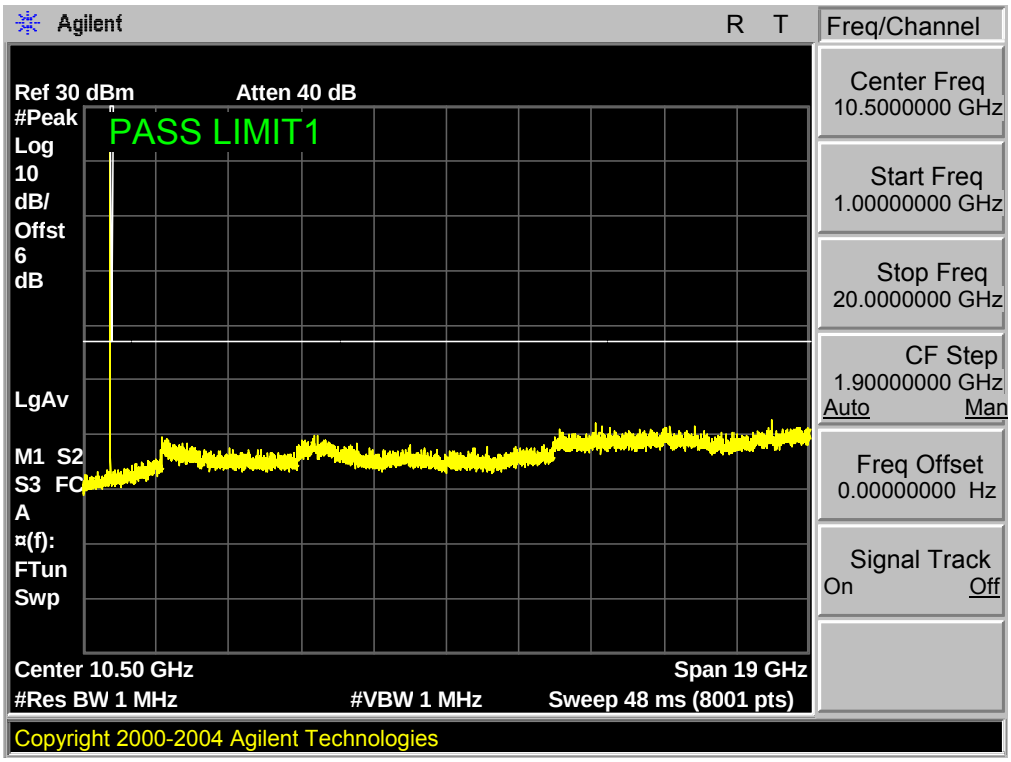
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



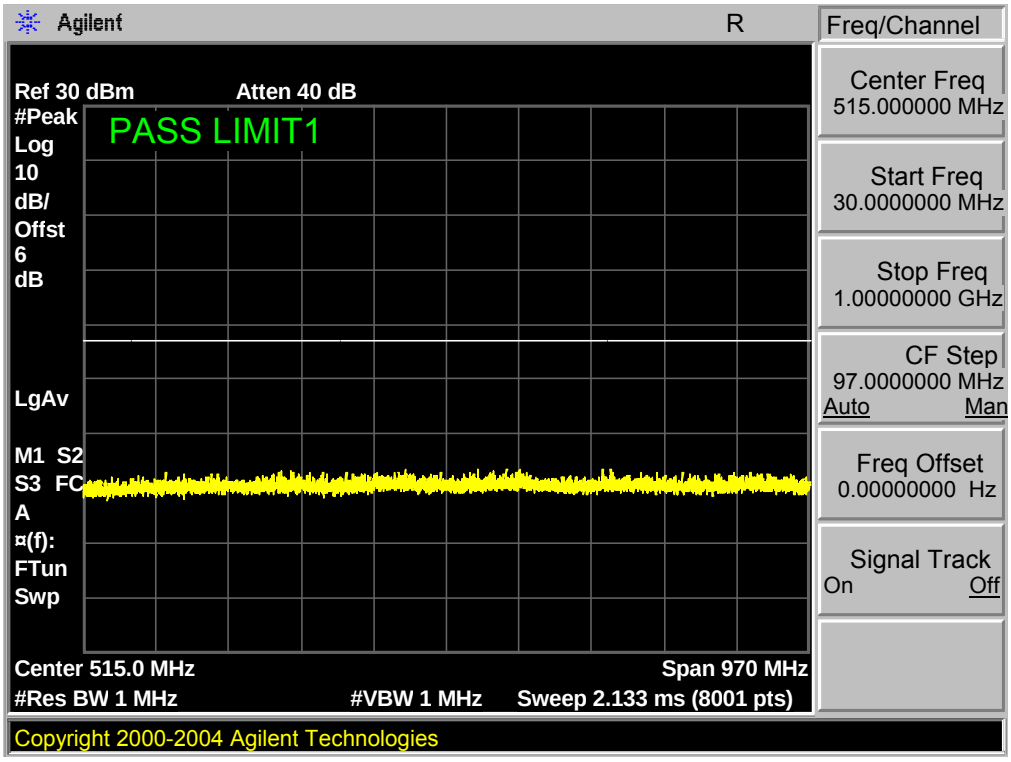
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 1,RB POS. High,16QAM



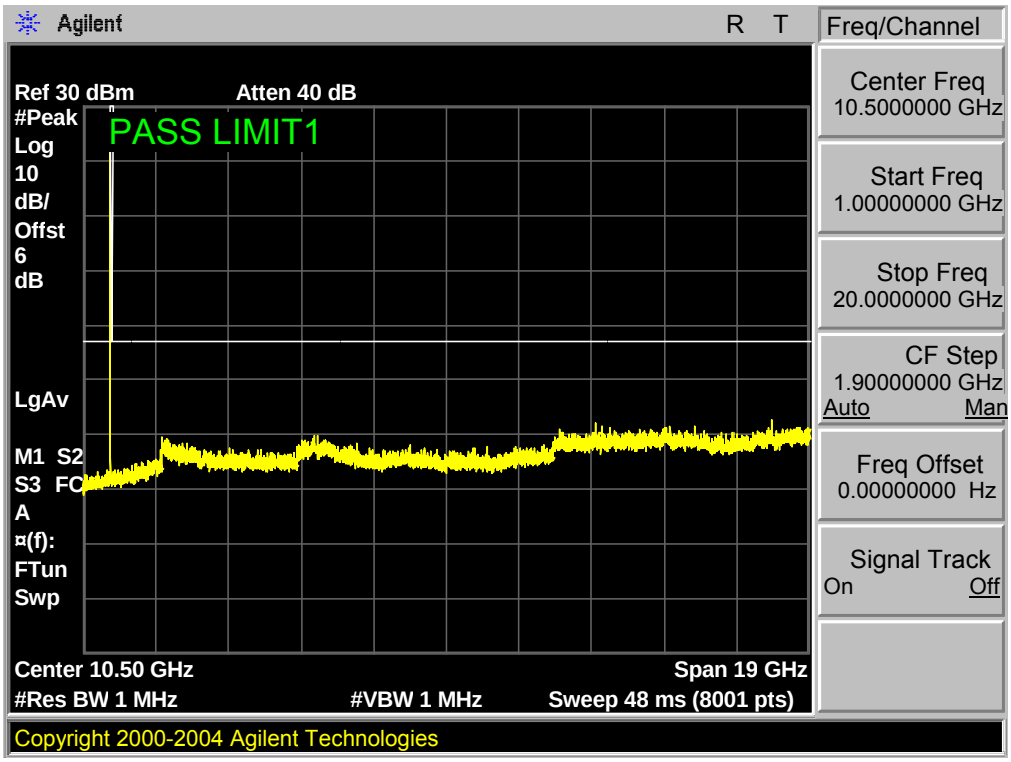
Band 4,UL Channel 19965,UL Frequency 1711.5,BW 3.0,NO. RB 1,RB POS. High,16QAM



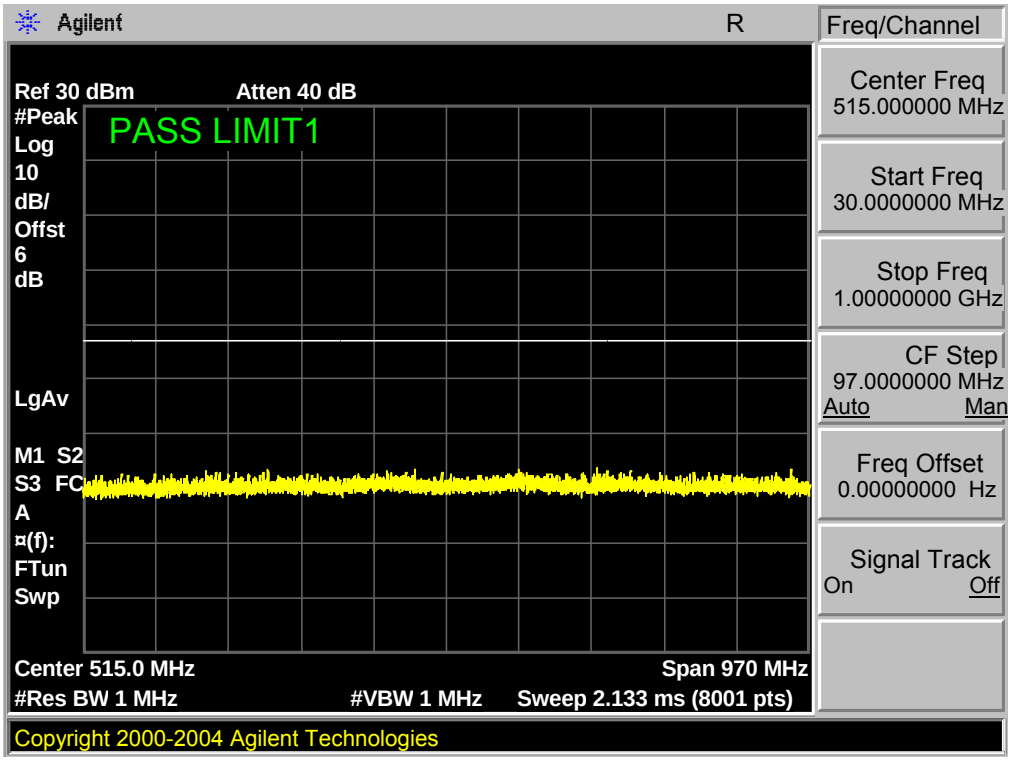
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. High,16QAM



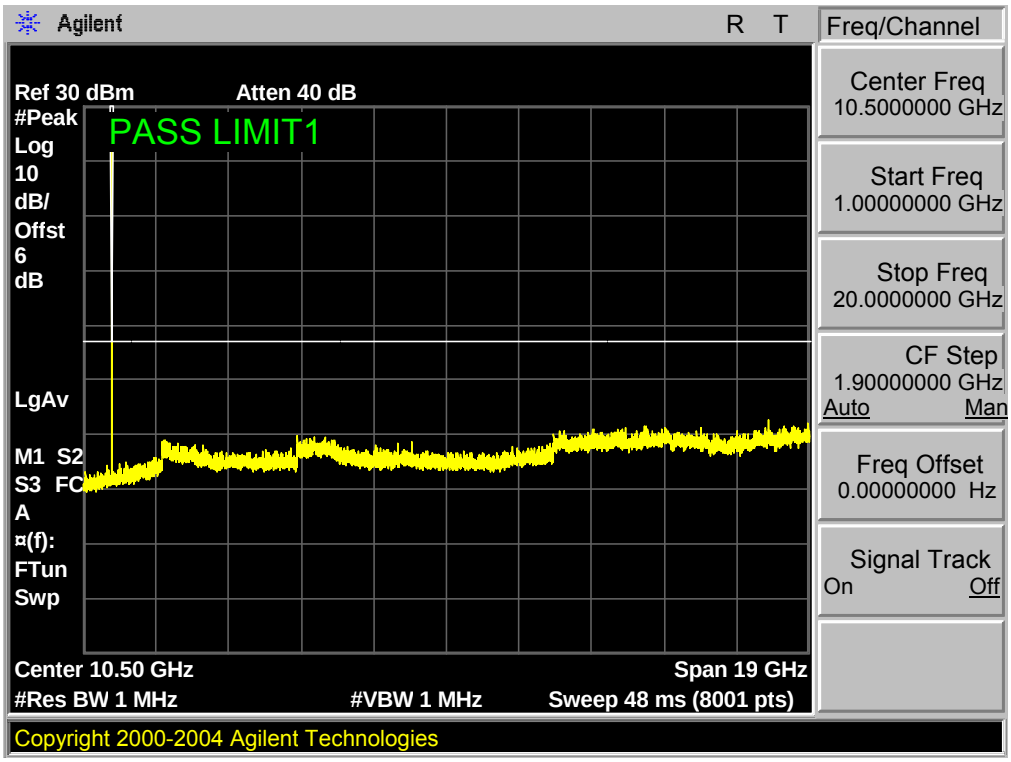
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. High,16QAM



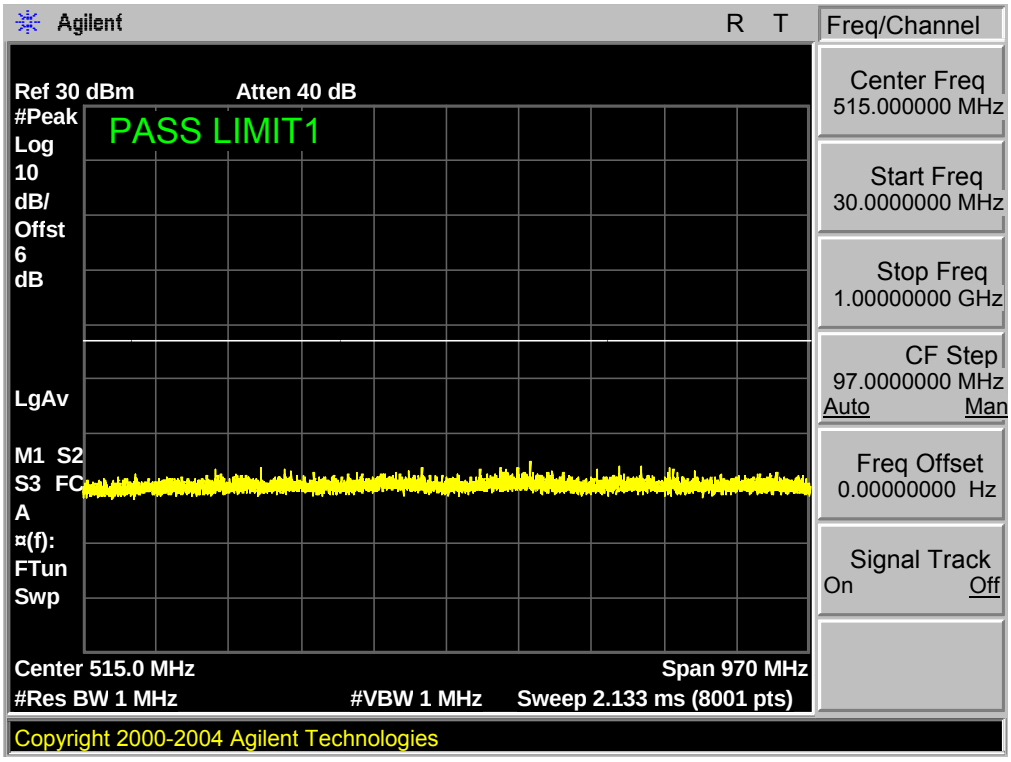
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 1,RB POS. Low,16QAM



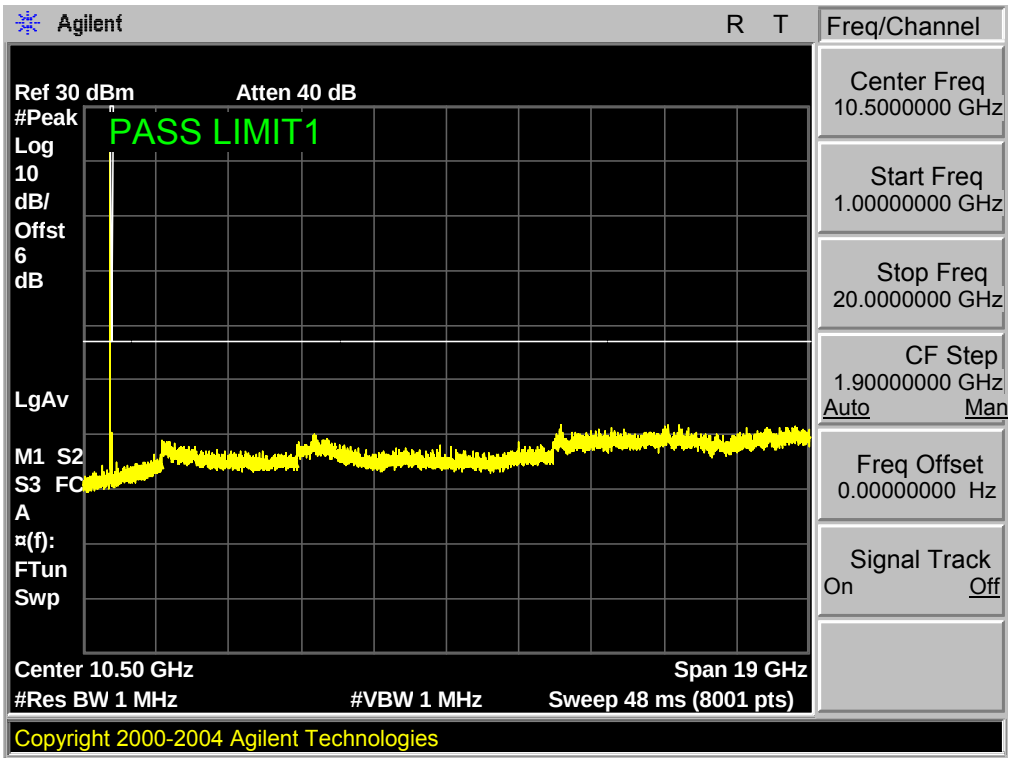
Band 4,UL Channel 20385,UL Frequency 1753.5,BW 3.0,NO. RB 1,RB POS. Low,16QAM



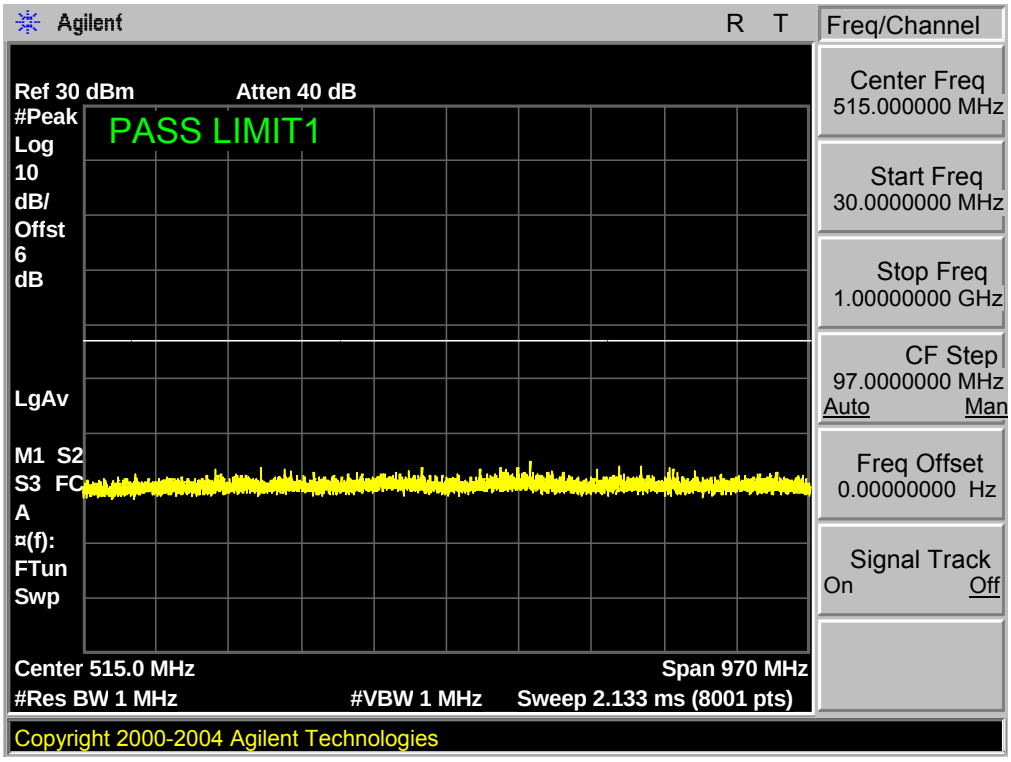
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



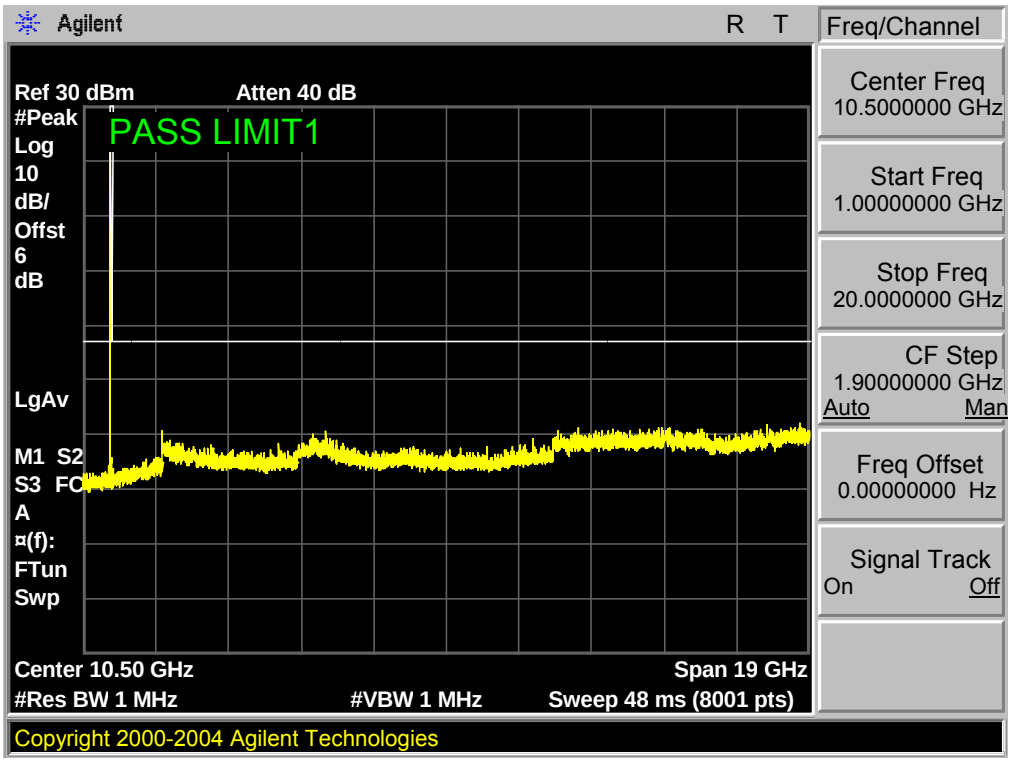
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



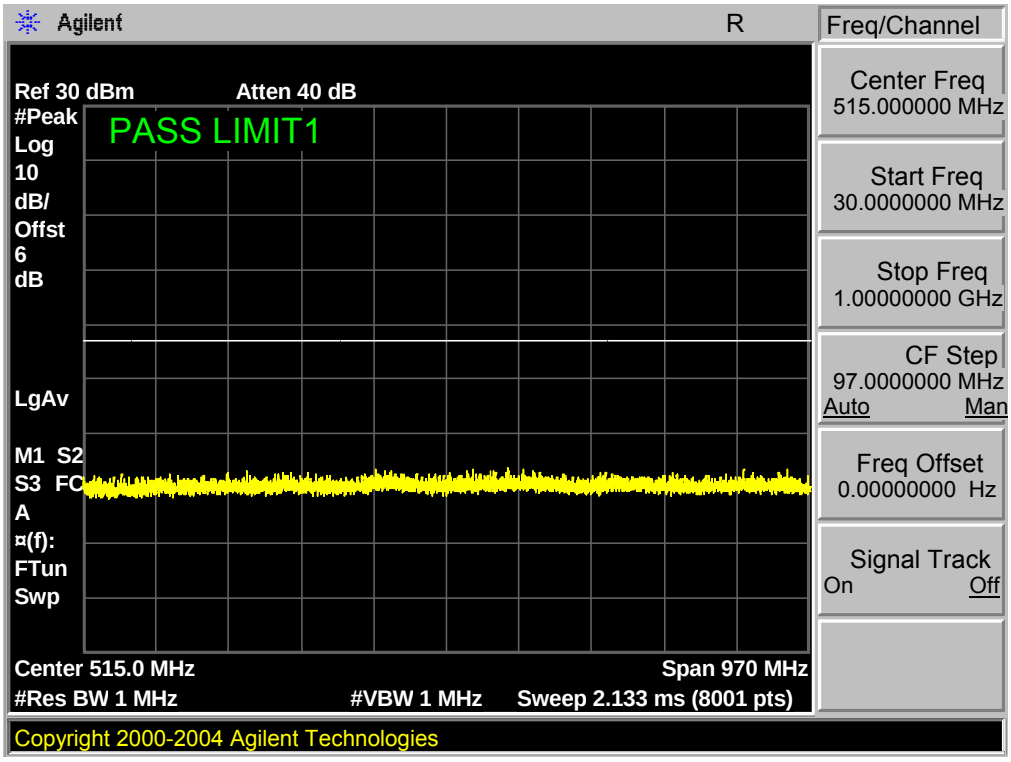
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



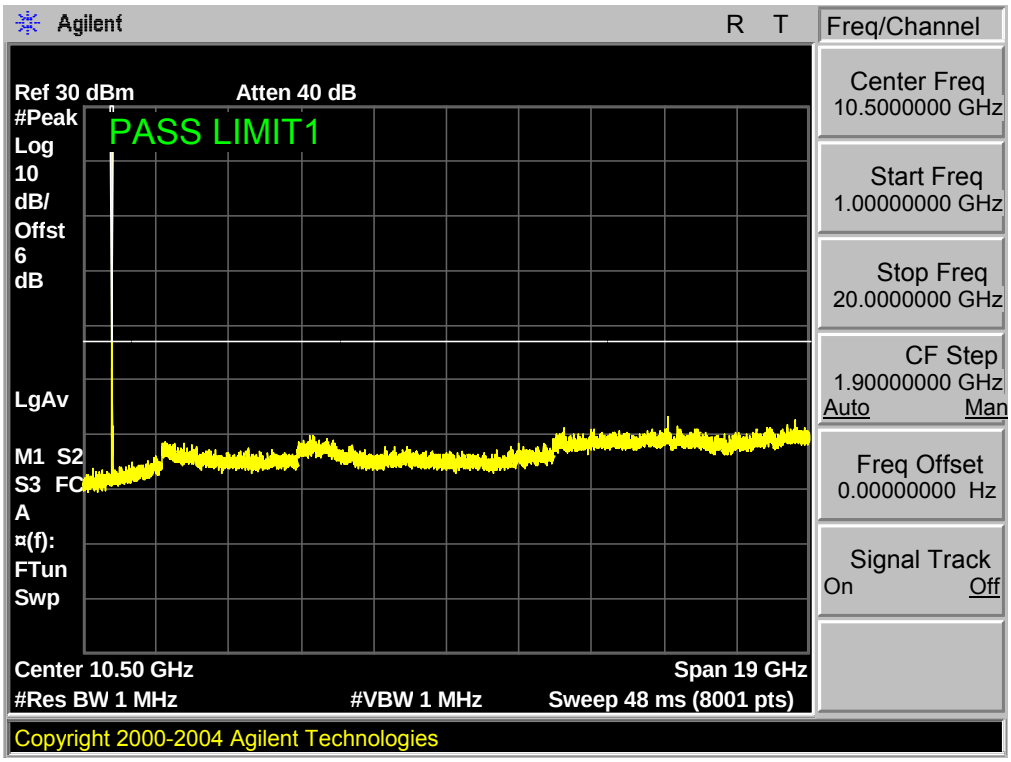
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



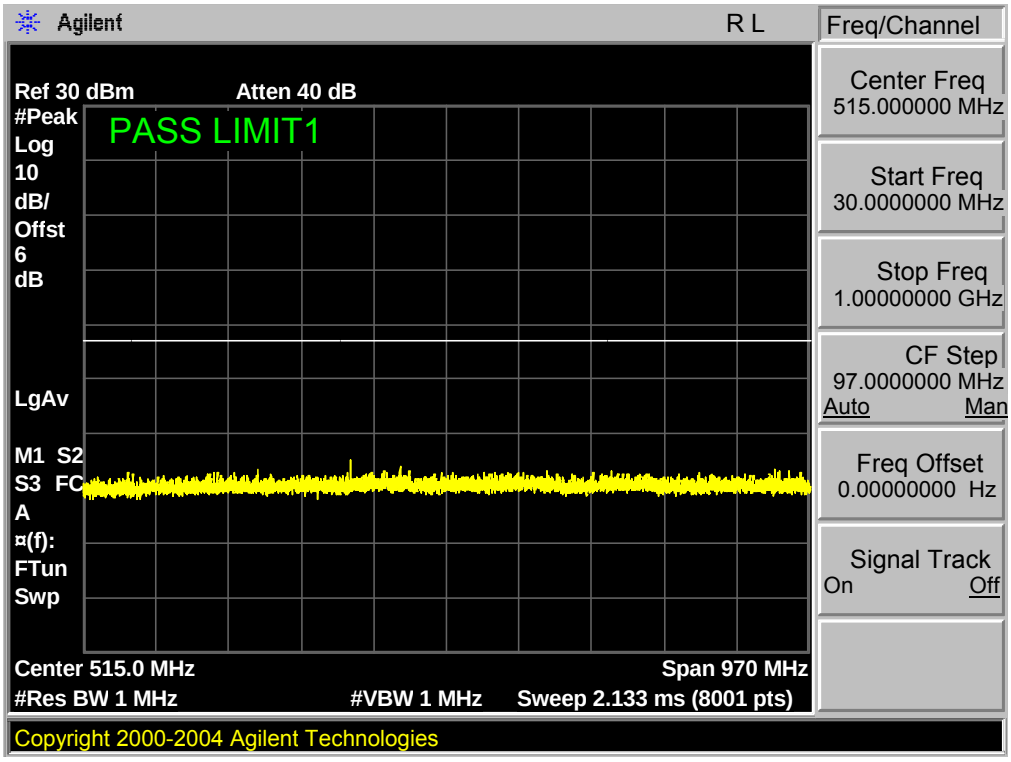
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



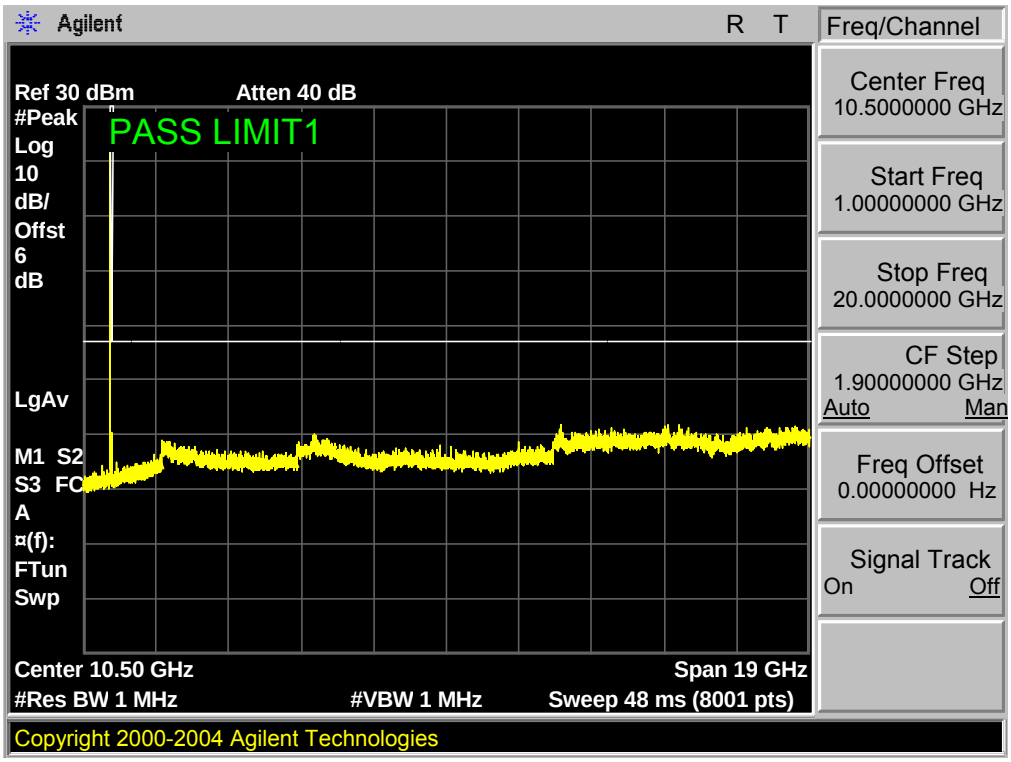
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



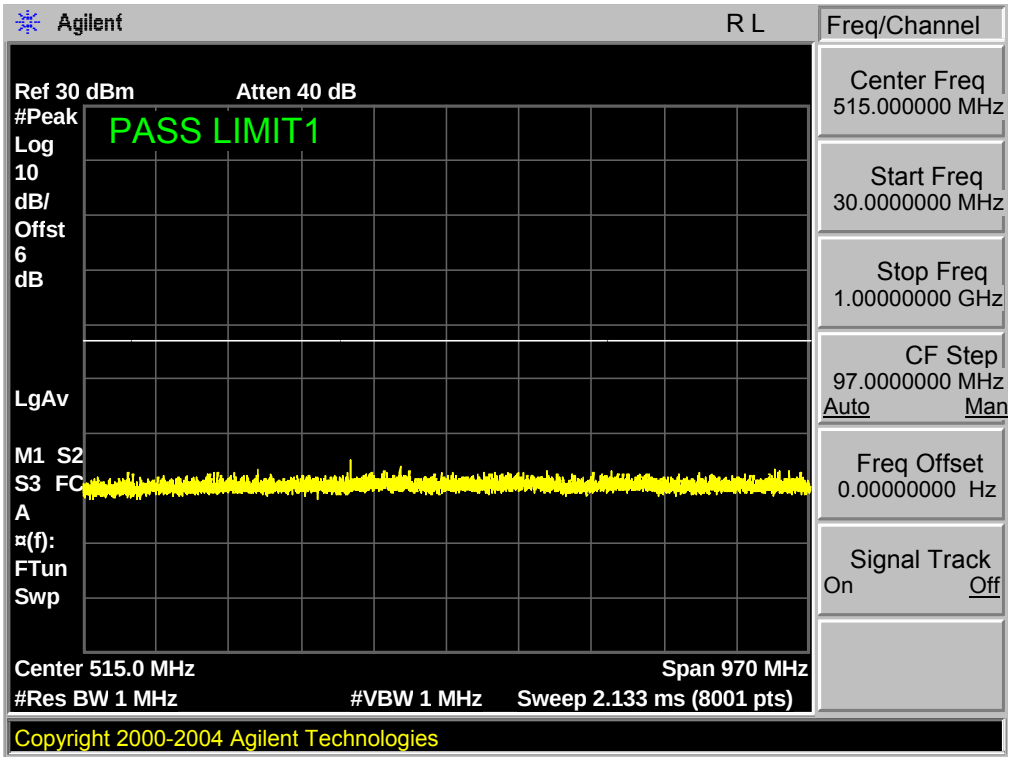
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



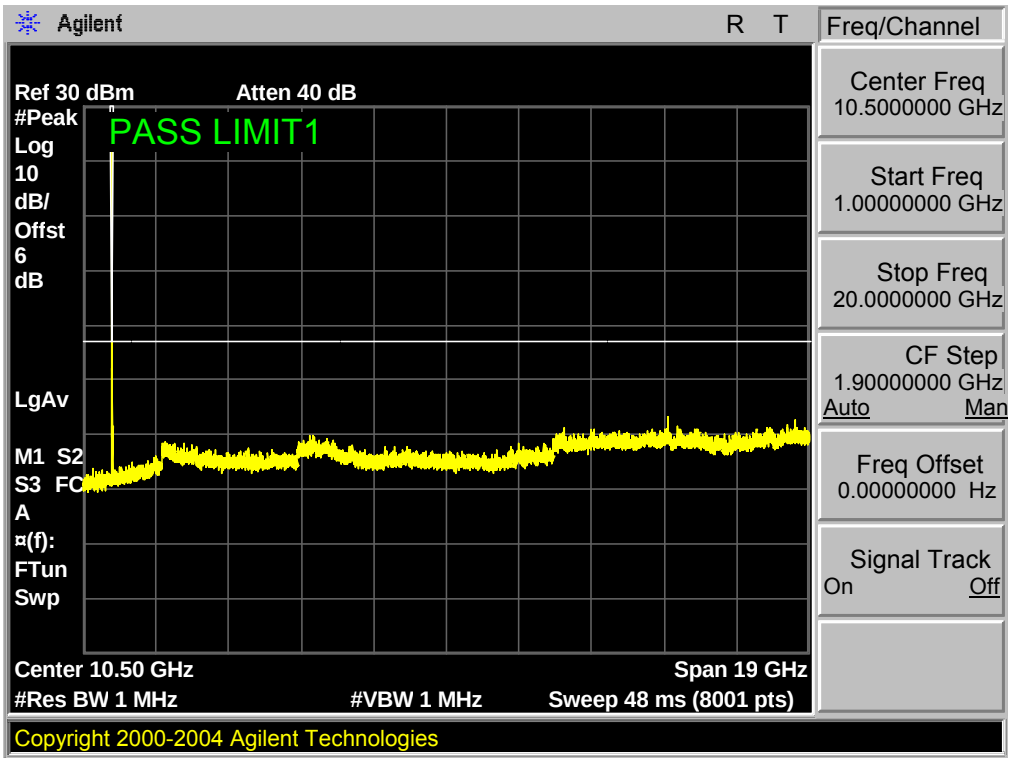
Band 4,UL Channel 19975,UL Frequency 1712.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



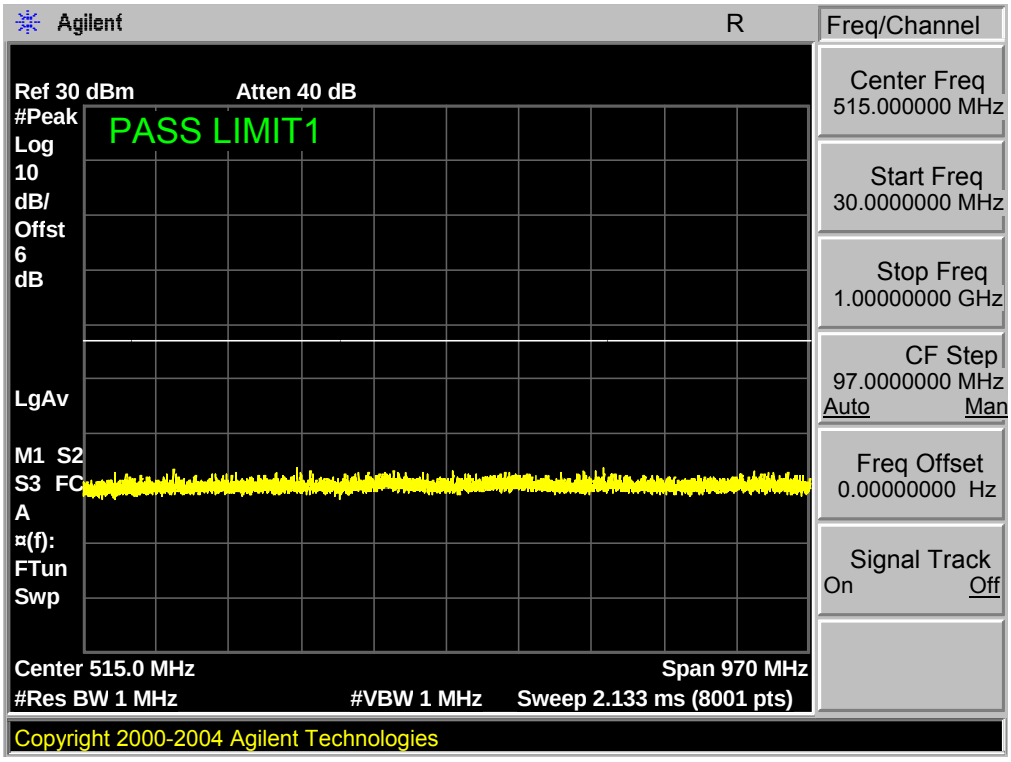
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



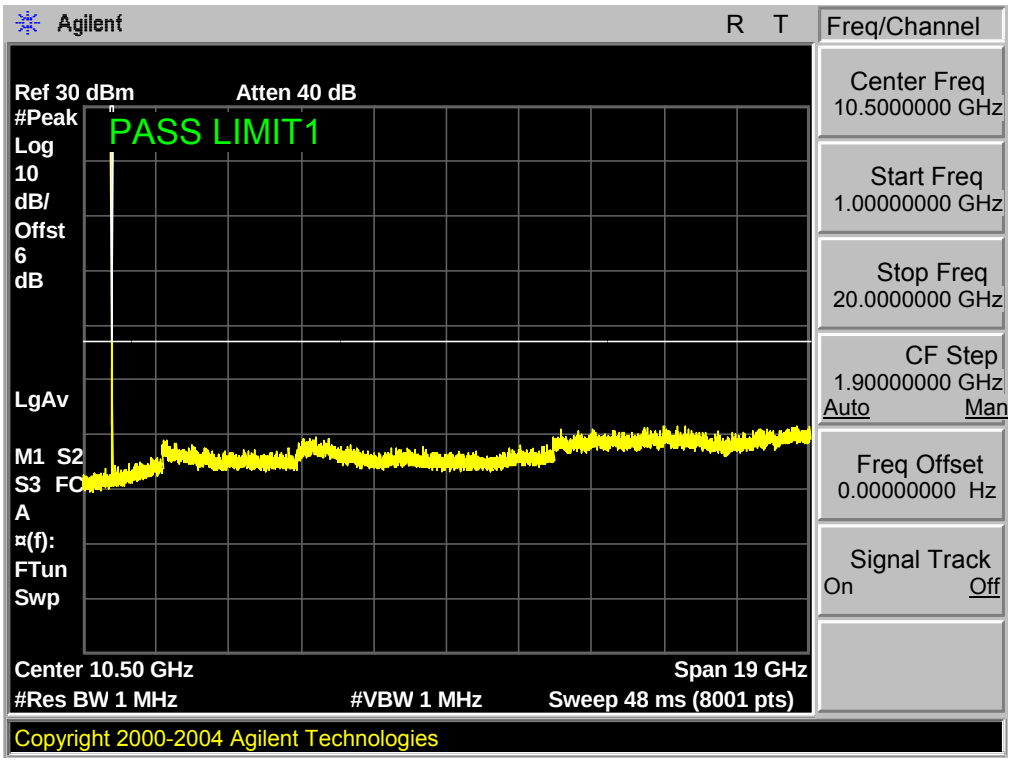
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



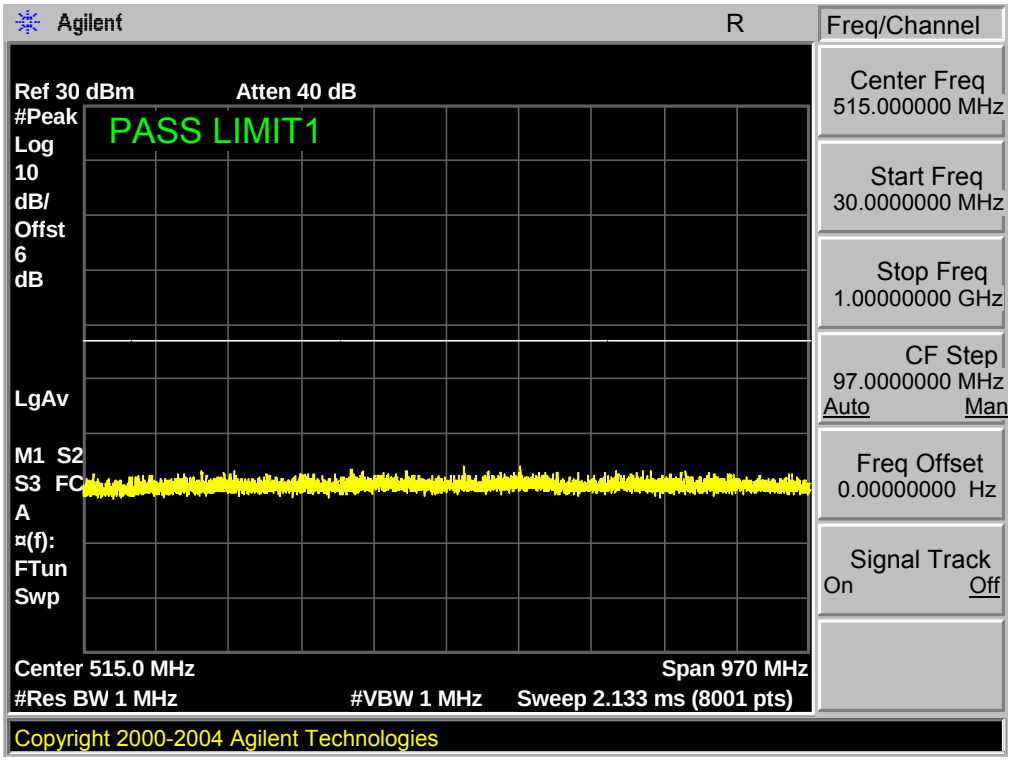
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



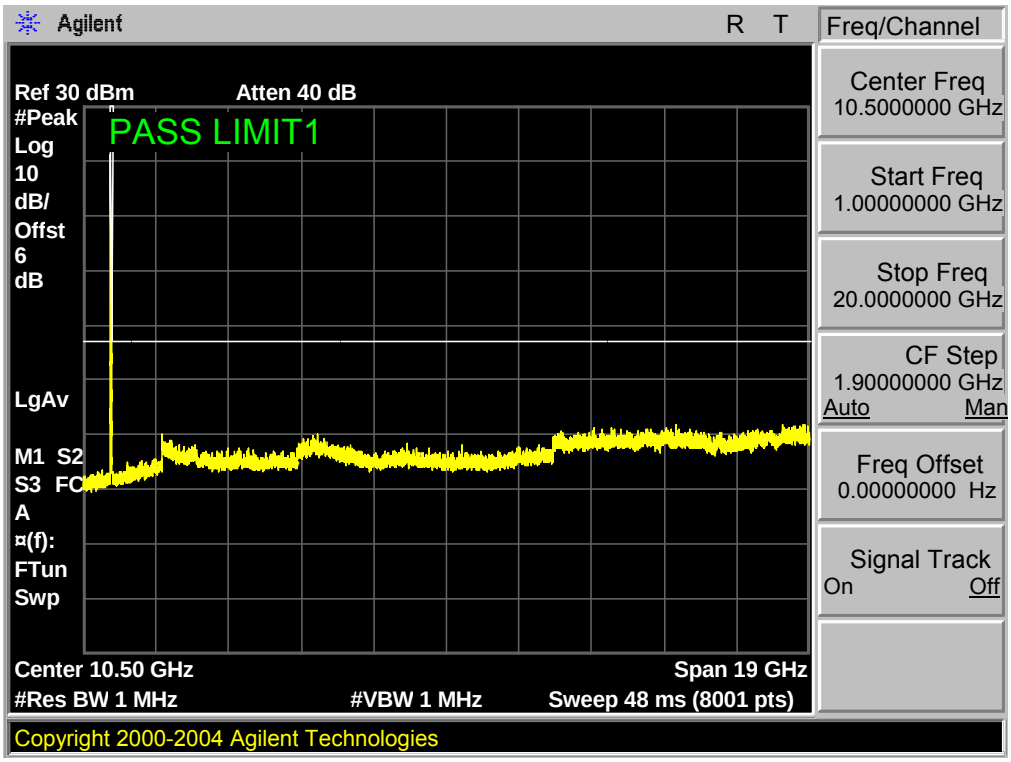
Band 4,UL Channel 20375,UL Frequency 1752.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



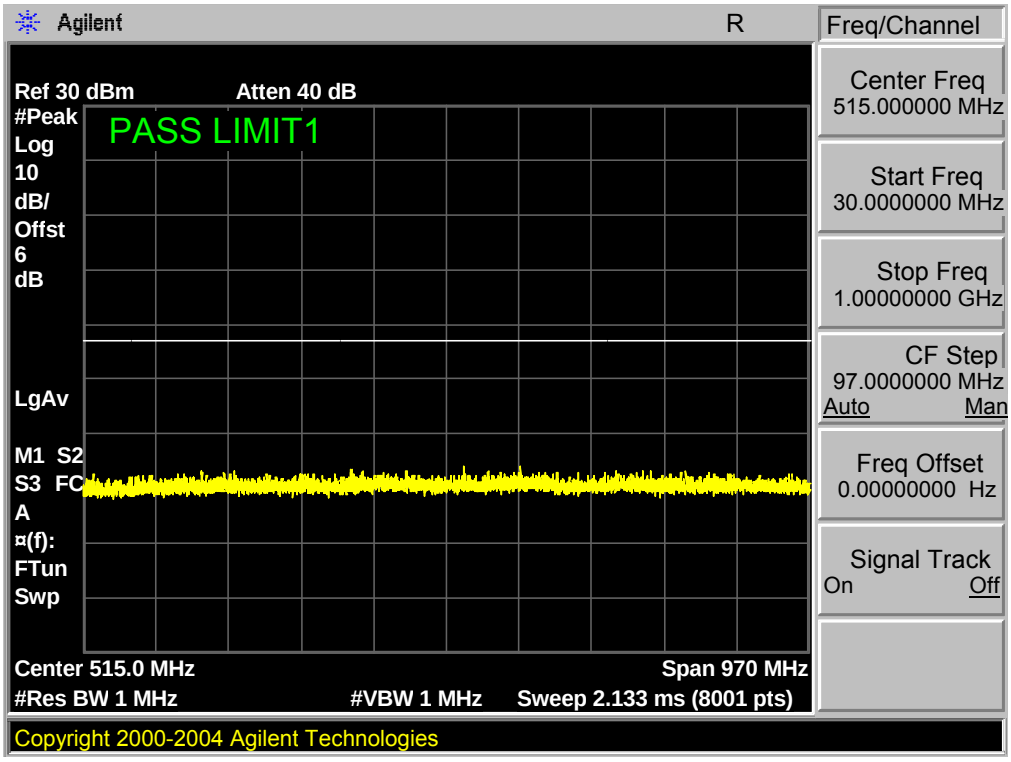
Band 4,UL Channel 20000,UL Frequency 1715.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



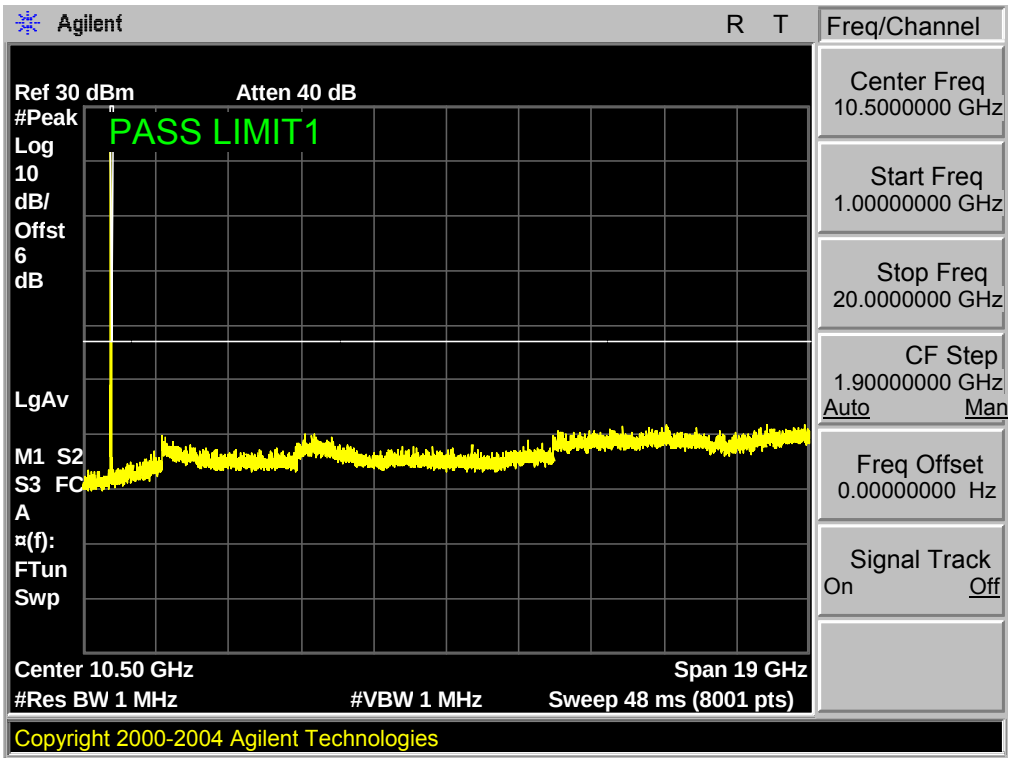
Band 4,UL Channel 20000,UL Frequency 1715.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



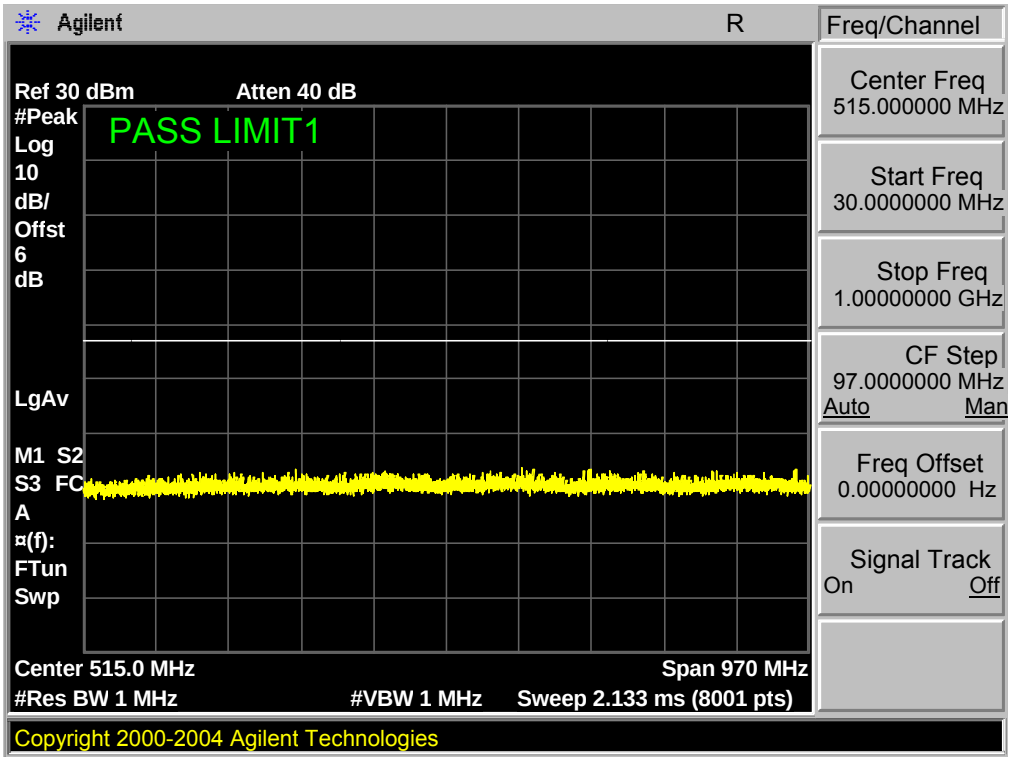
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,QPSK



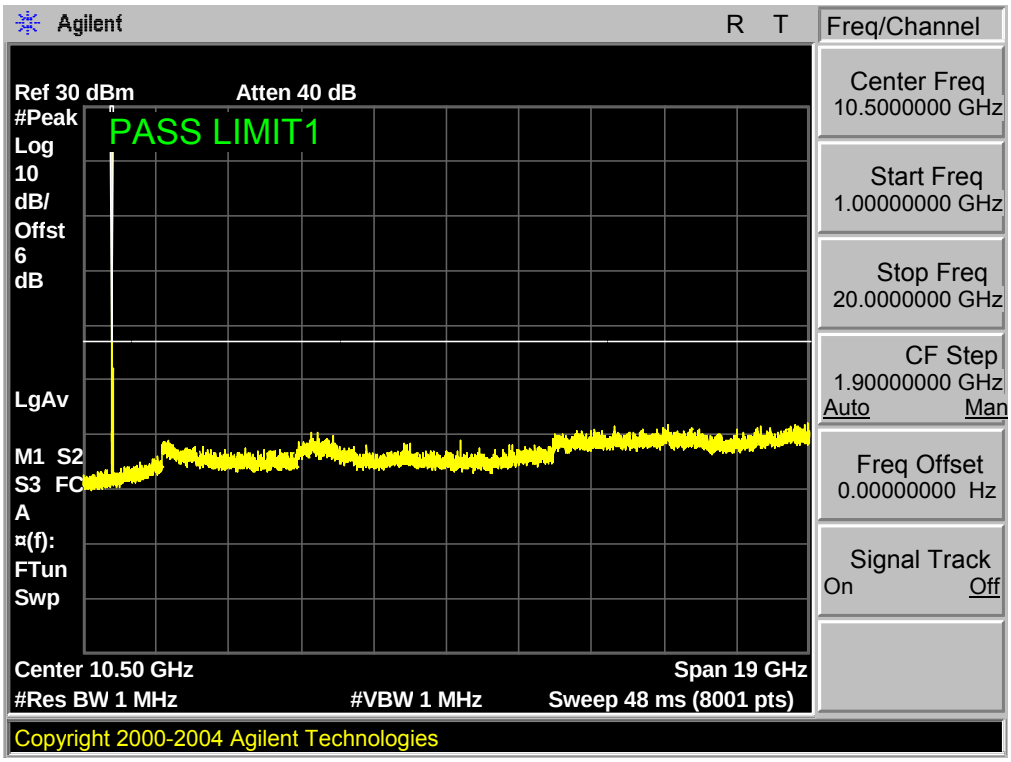
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,QPSK



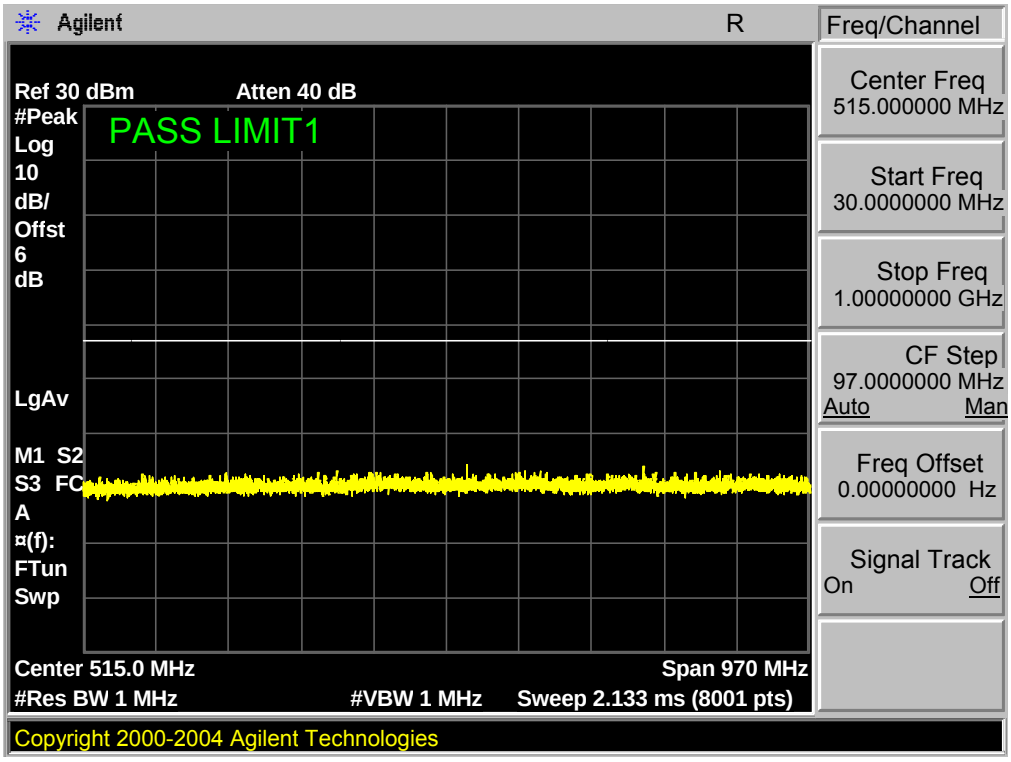
Band 4,UL Channel 20350,UL Frequency 1750.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



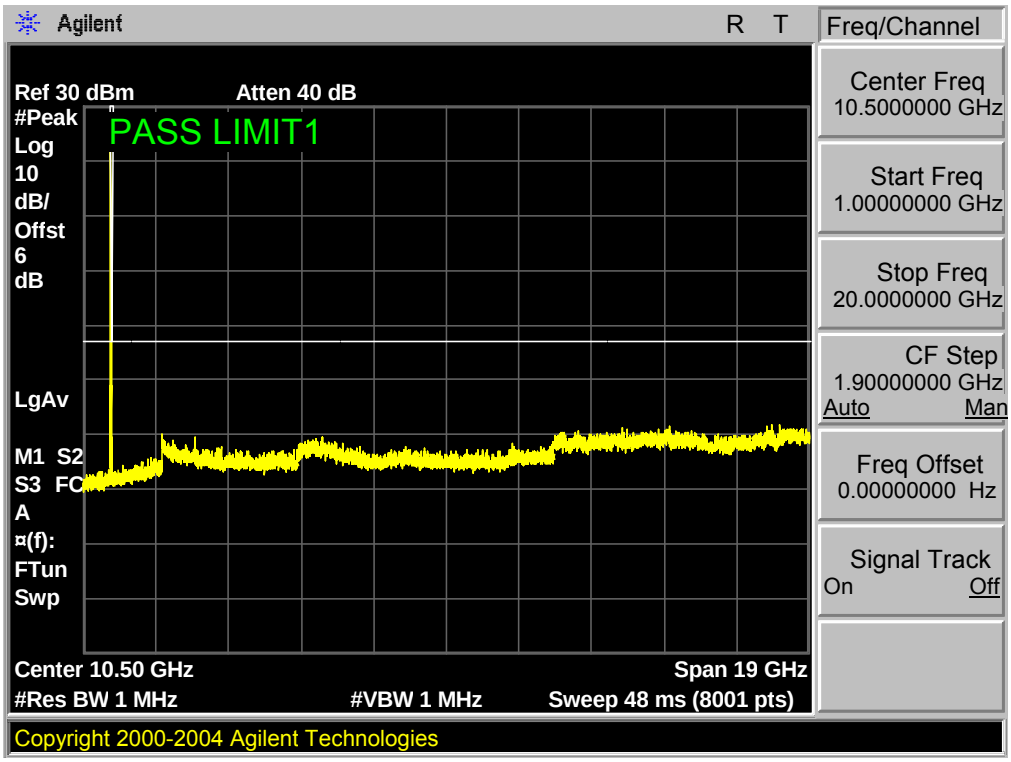
Band 4,UL Channel 20350,UL Frequency 1750.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



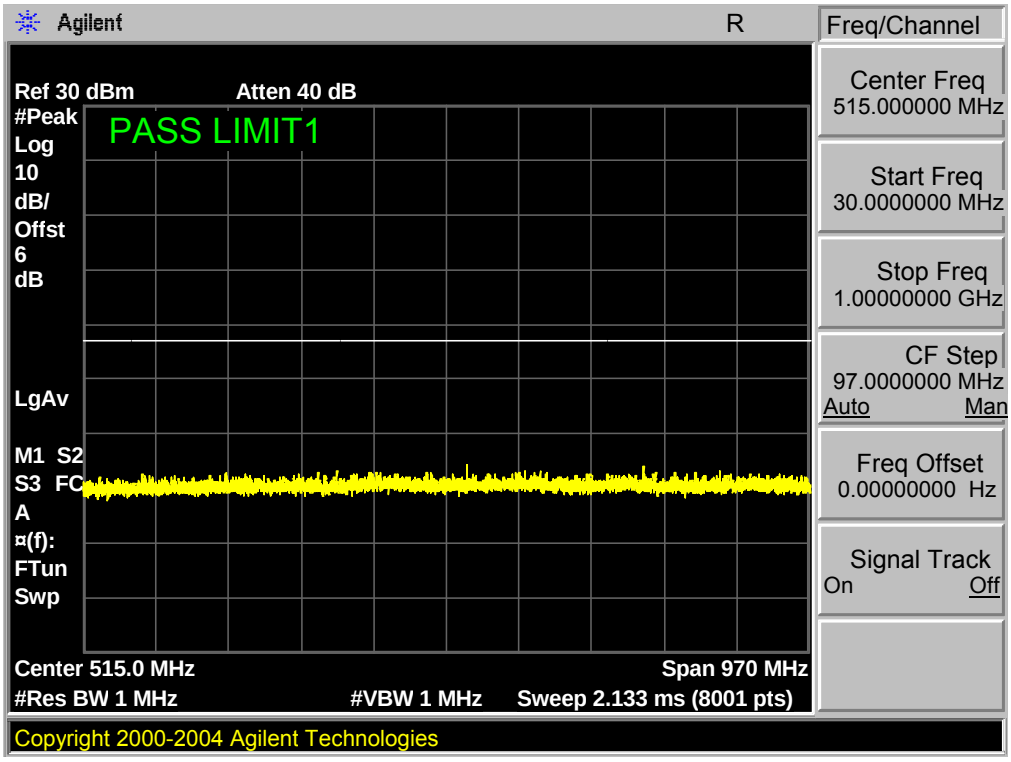
Band 4,UL Channel 20000,UL Frequency 1715.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



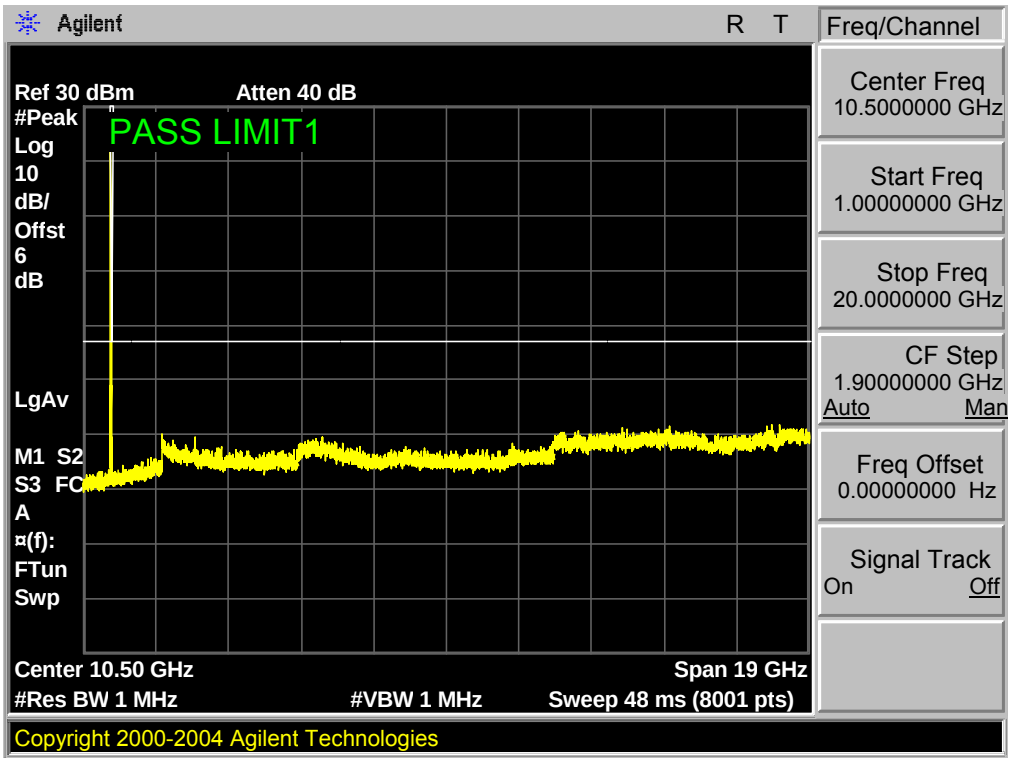
Band 4,UL Channel 20000,UL Frequency 1715.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



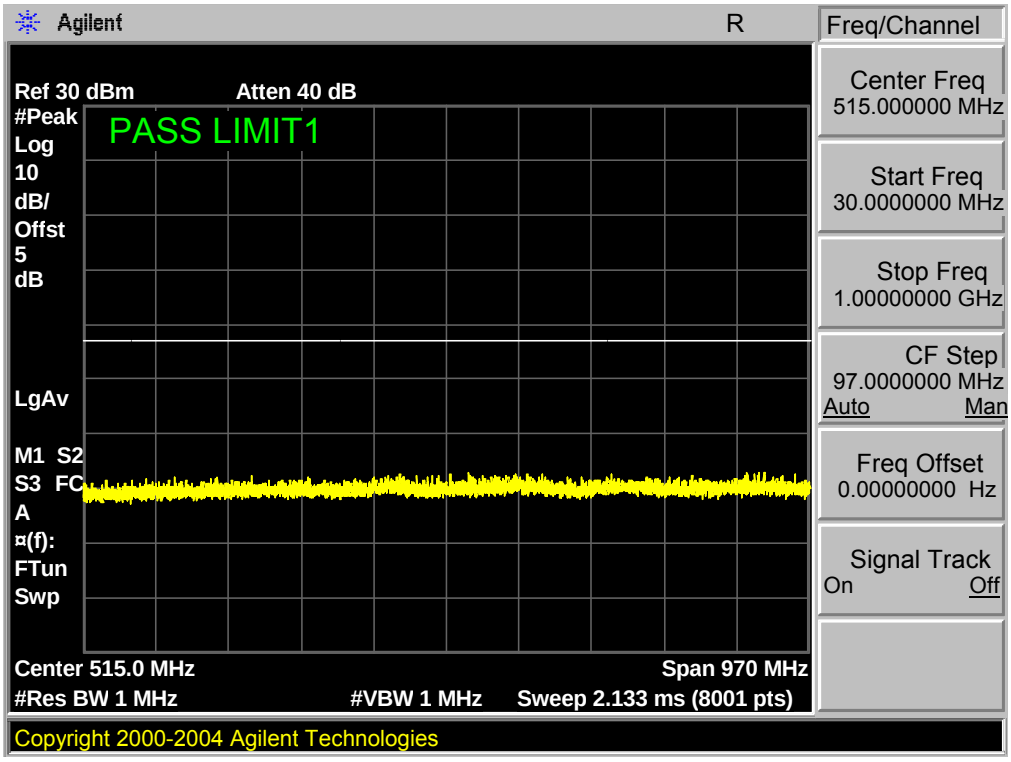
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,16QAM



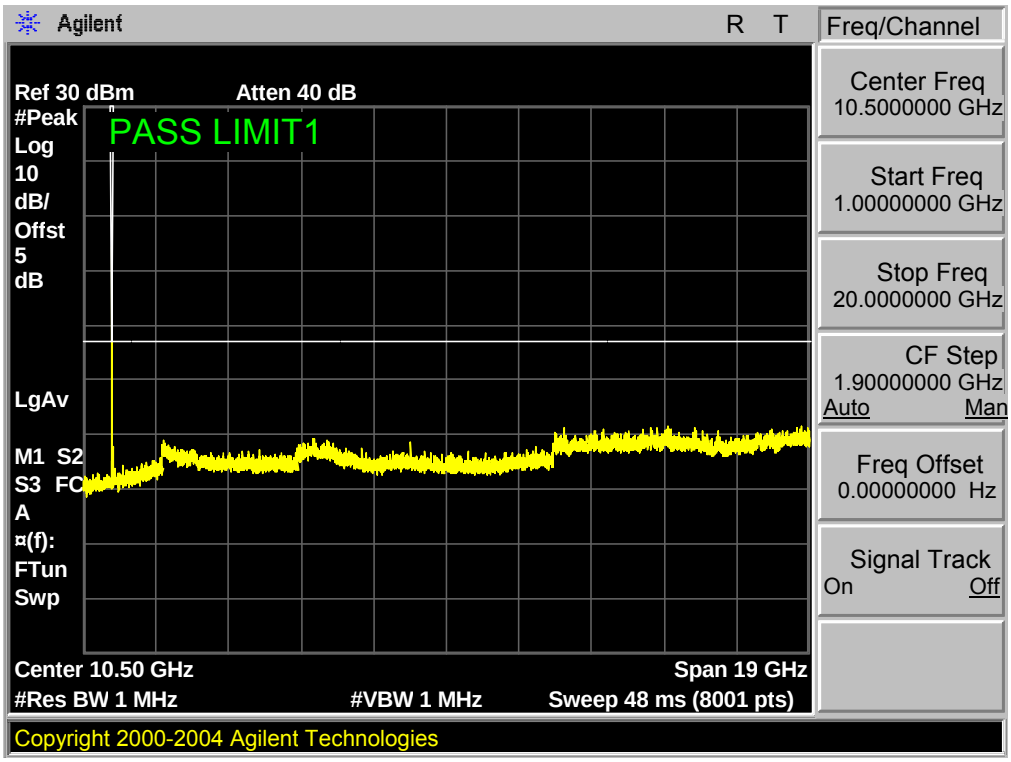
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,16QAM



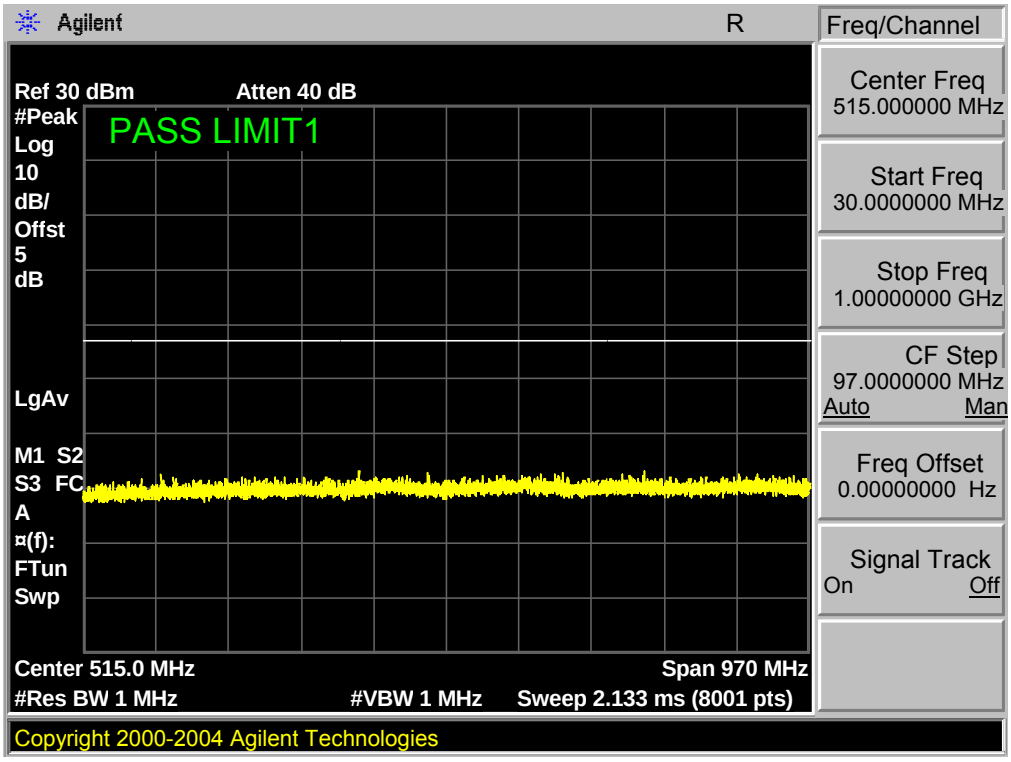
Band 4,UL Channel 20350,UL Frequency 1750.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



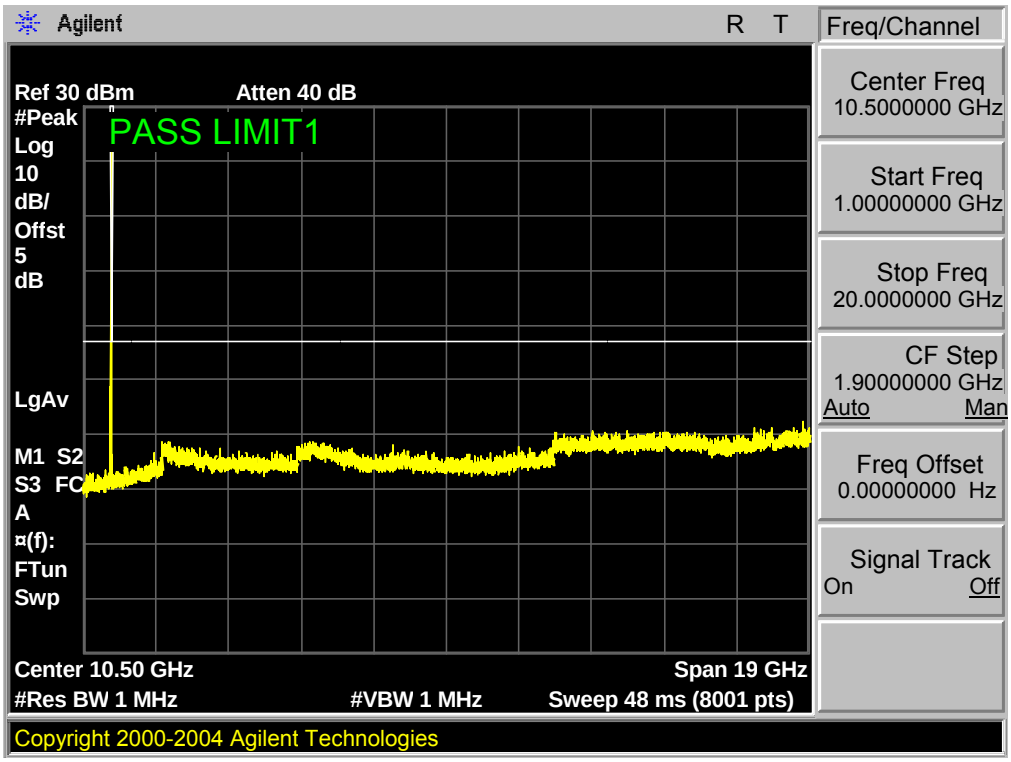
Band 4,UL Channel 20350,UL Frequency 1750.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



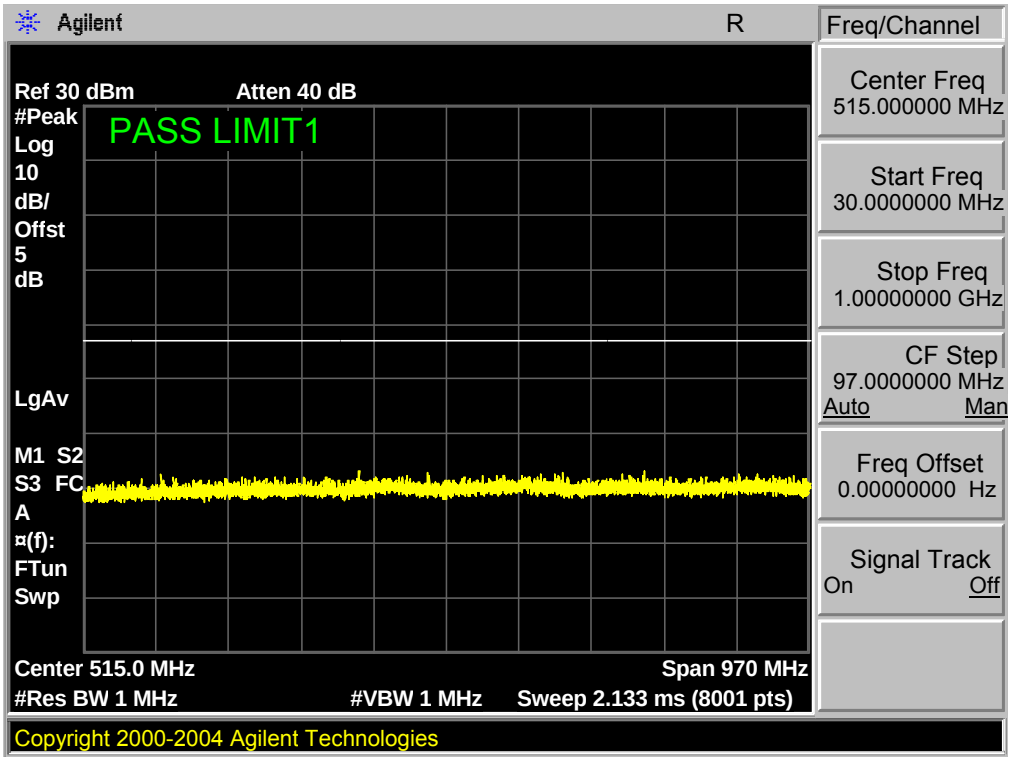
Band 4,UL Channel 20025,UL Frequency 1717.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



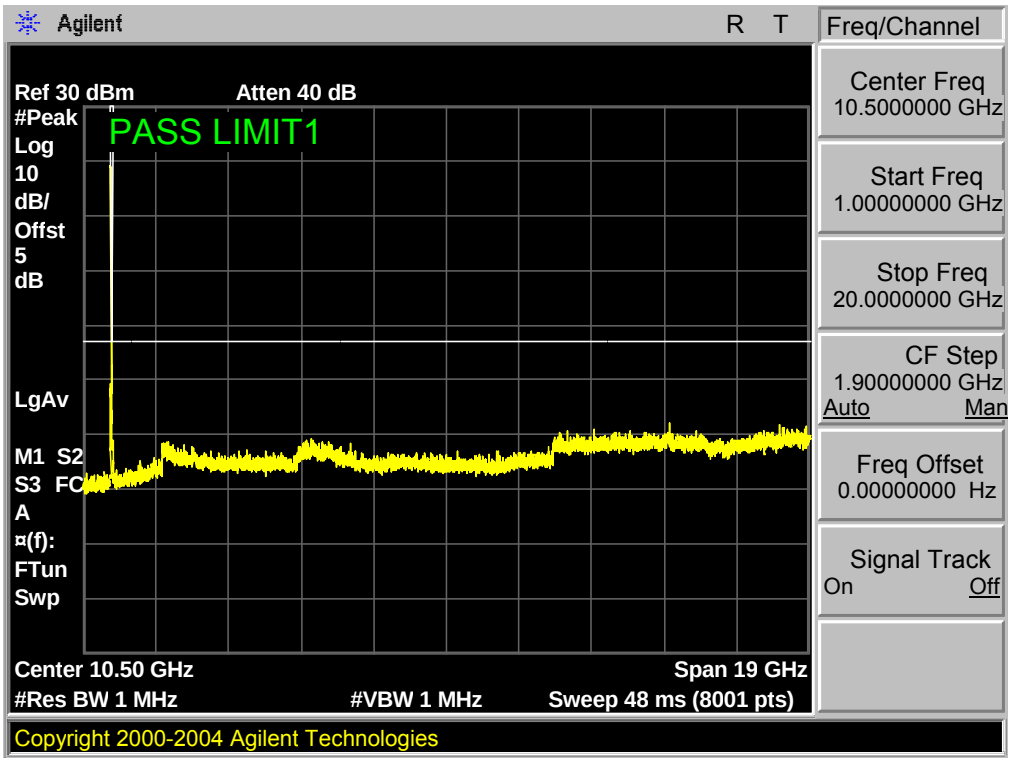
Band 4,UL Channel 20025,UL Frequency 1717.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



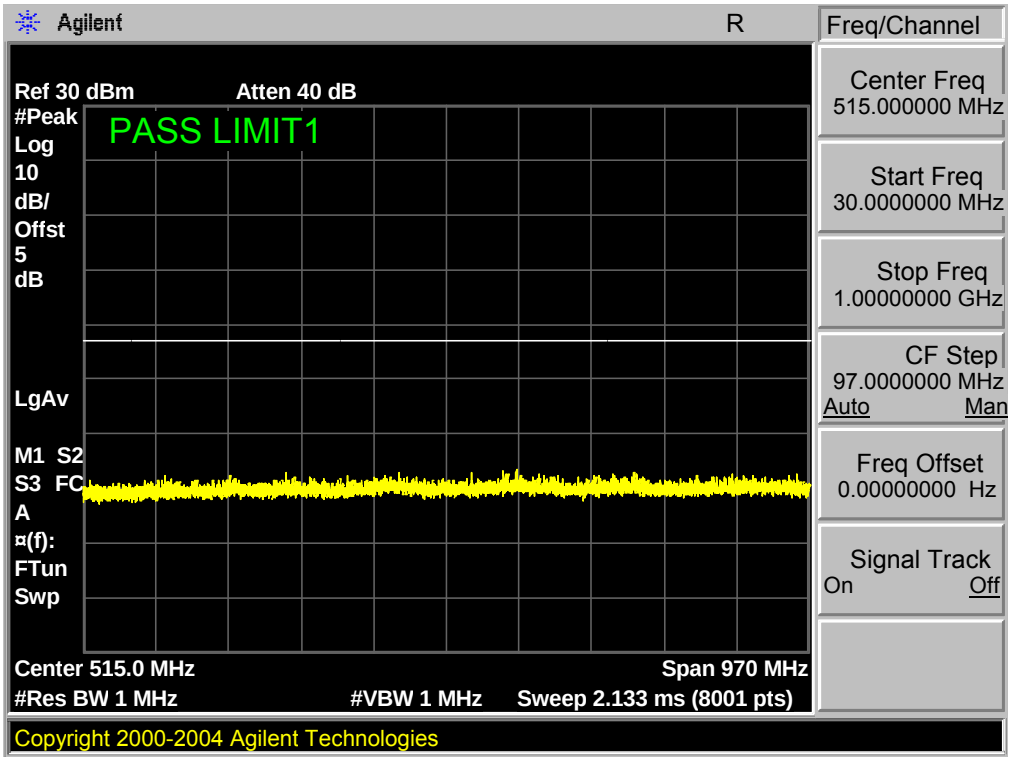
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



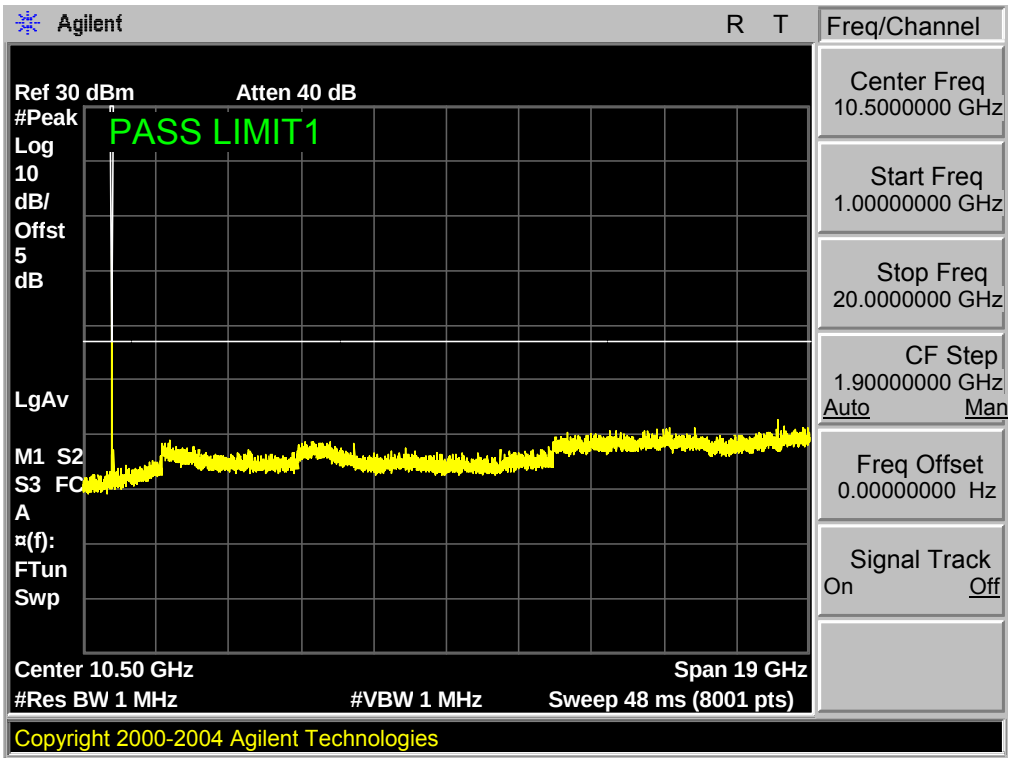
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



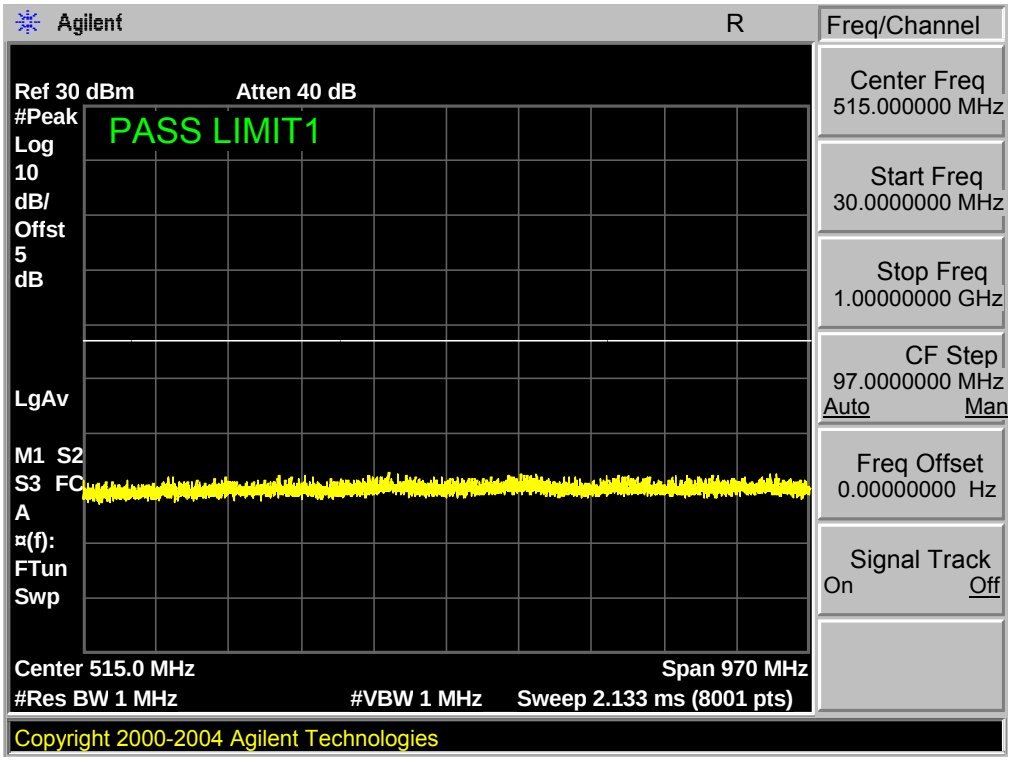
Band 4,UL Channel 20325,UL Frequency 1747.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



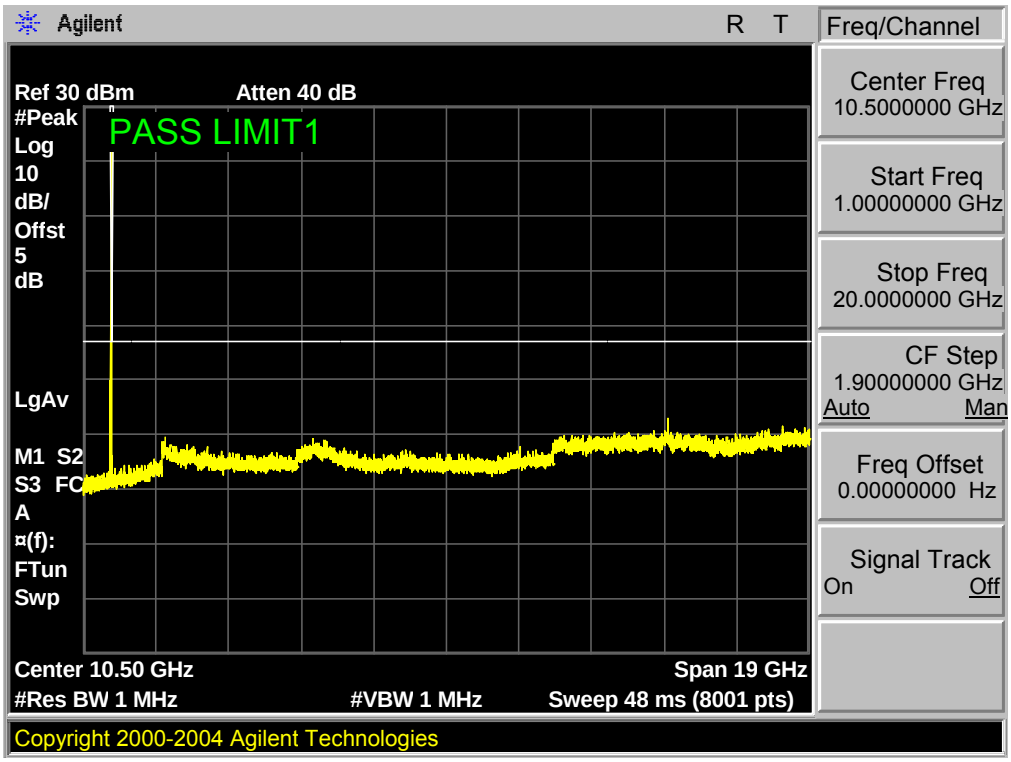
Band 4,UL Channel 20325,UL Frequency 1747.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



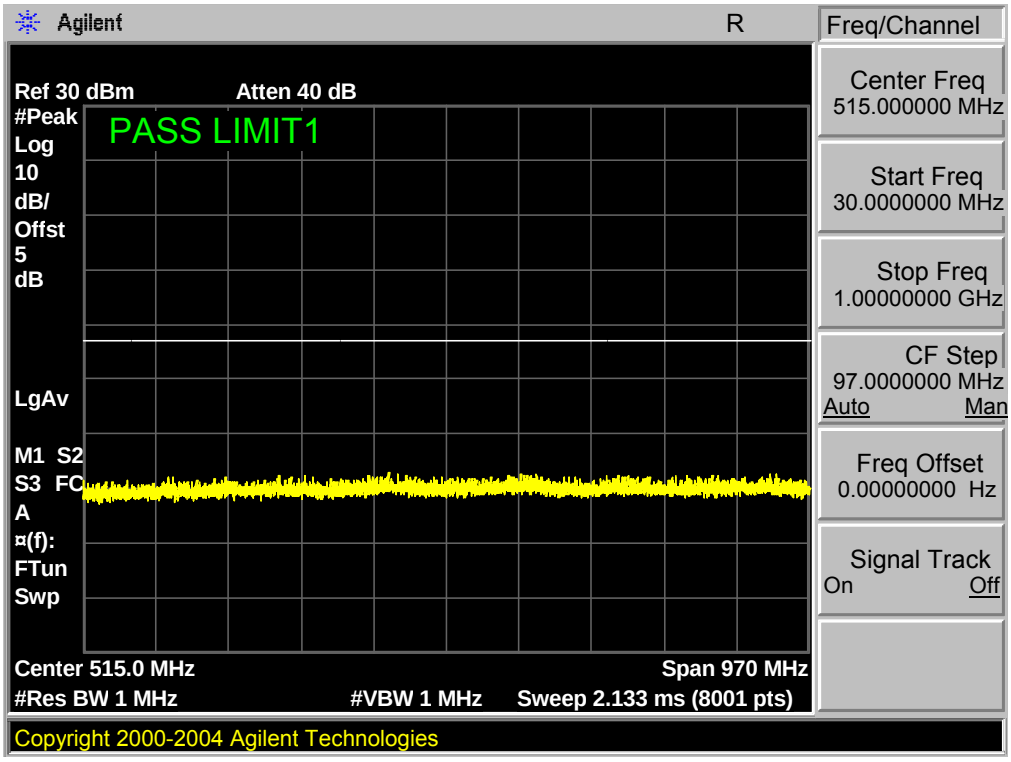
Band 4,UL Channel 20025,UL Frequency 1717.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



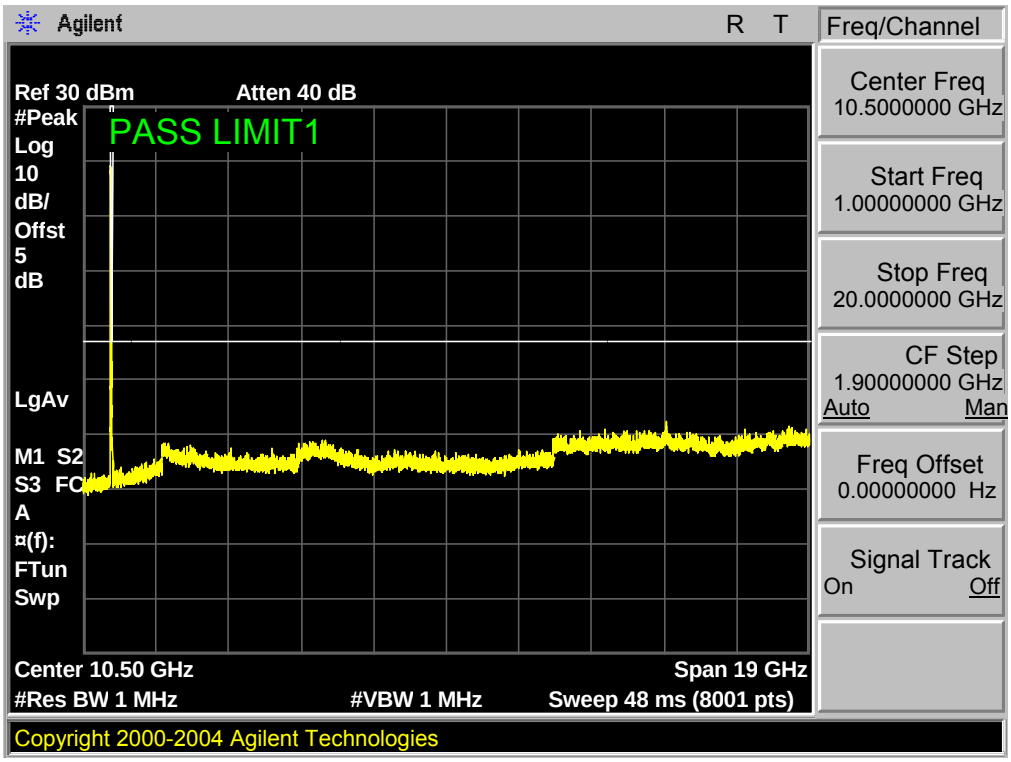
Band 4,UL Channel 20025,UL Frequency 1717.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



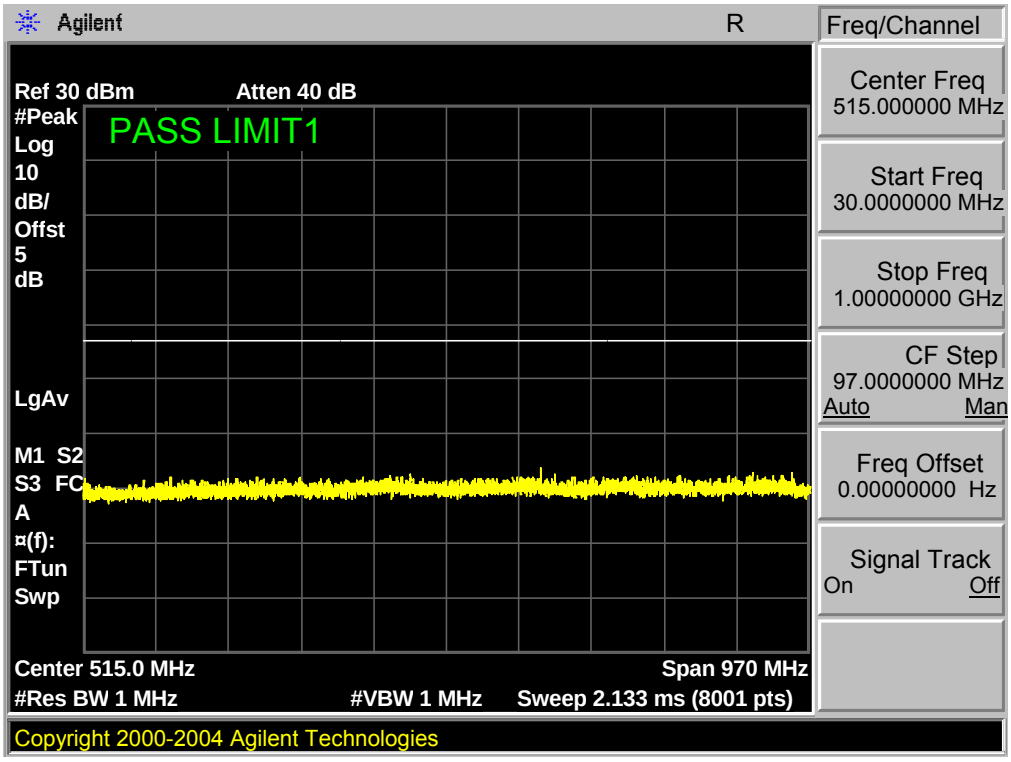
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



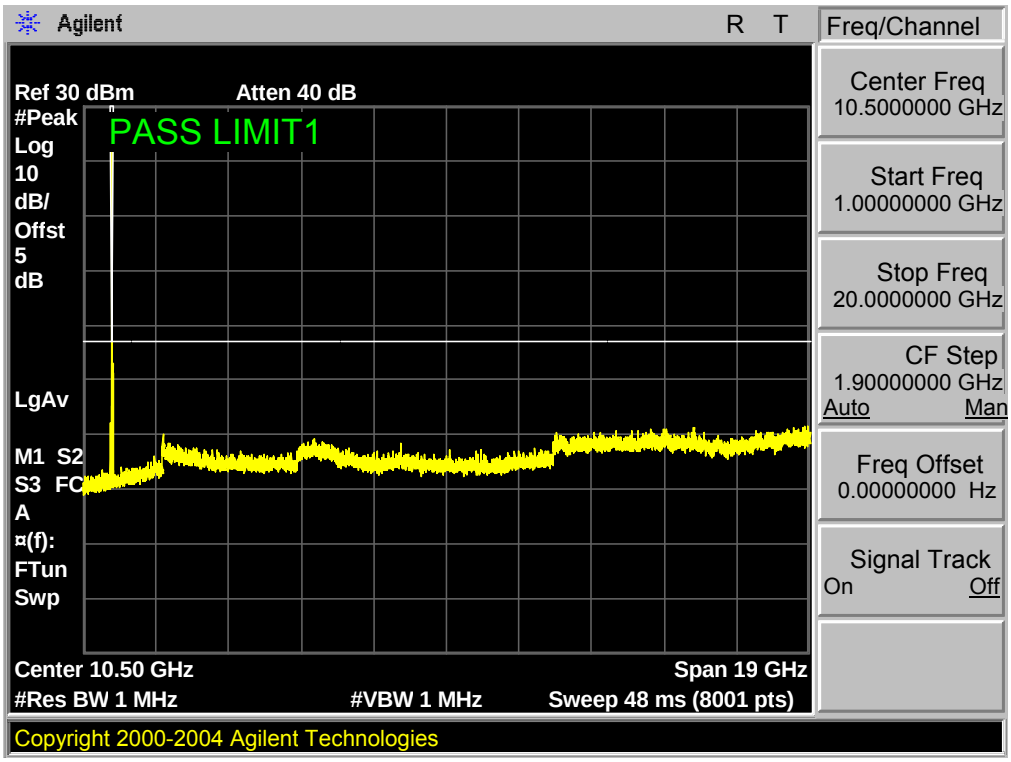
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



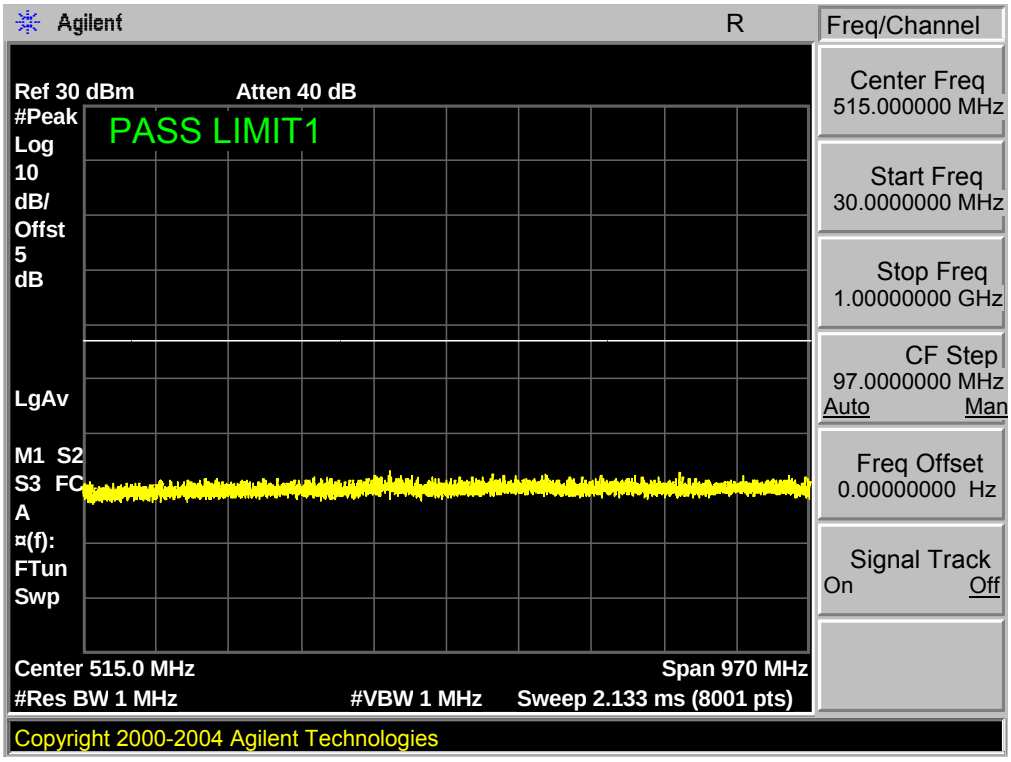
Band 4,UL Channel 20325,UL Frequency 1747.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



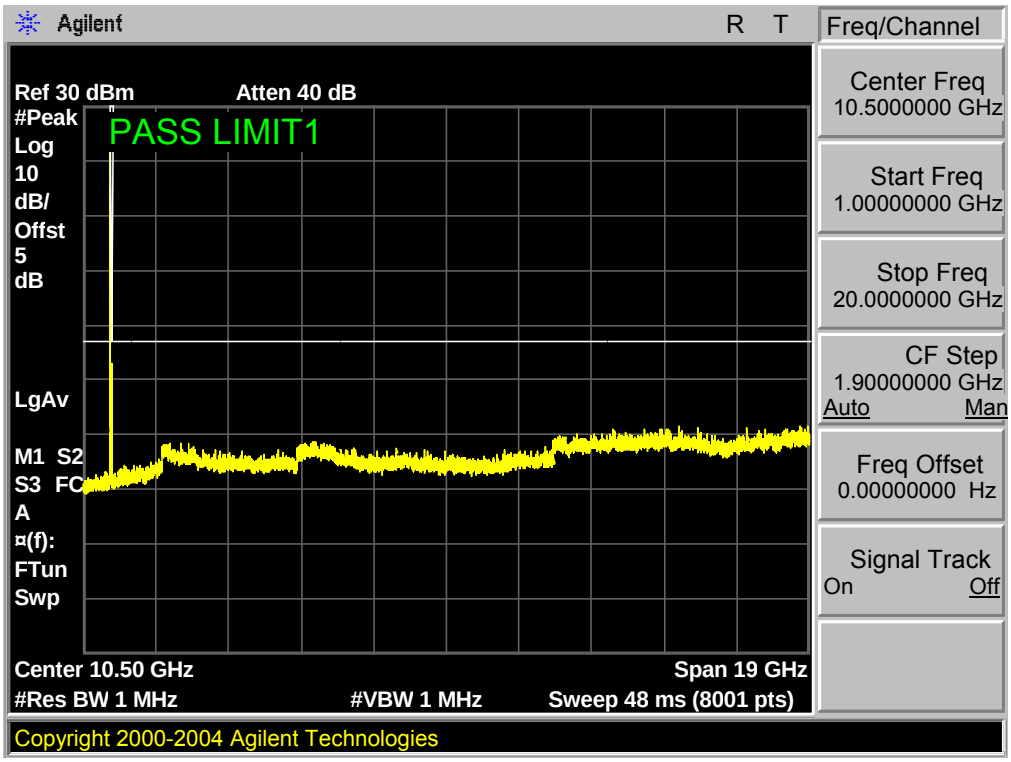
Band 4,UL Channel 20325,UL Frequency 1747.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



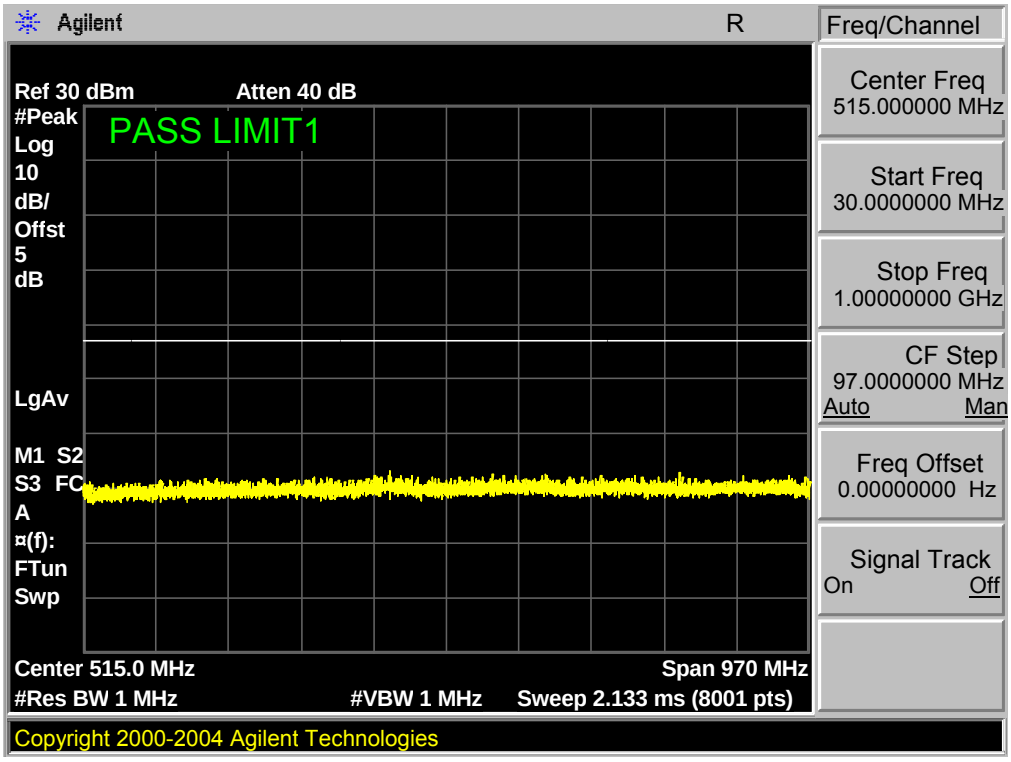
Band 4,UL Channel 20050,UL Frequency 1720.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



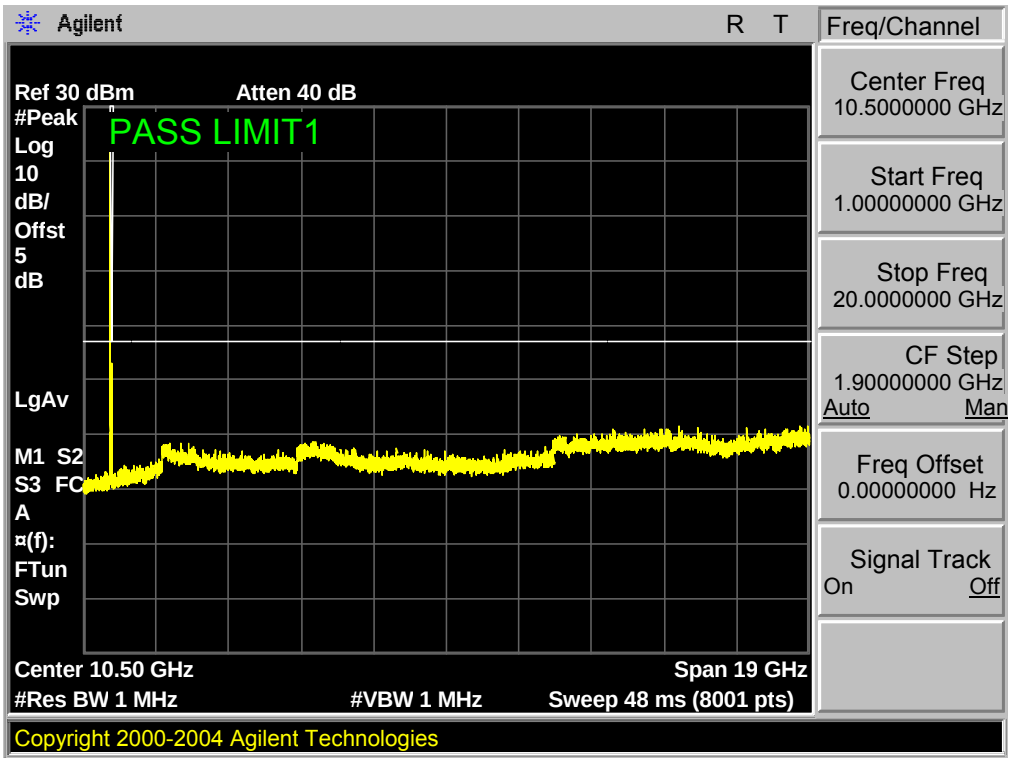
Band 4,UL Channel 20050,UL Frequency 1720.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



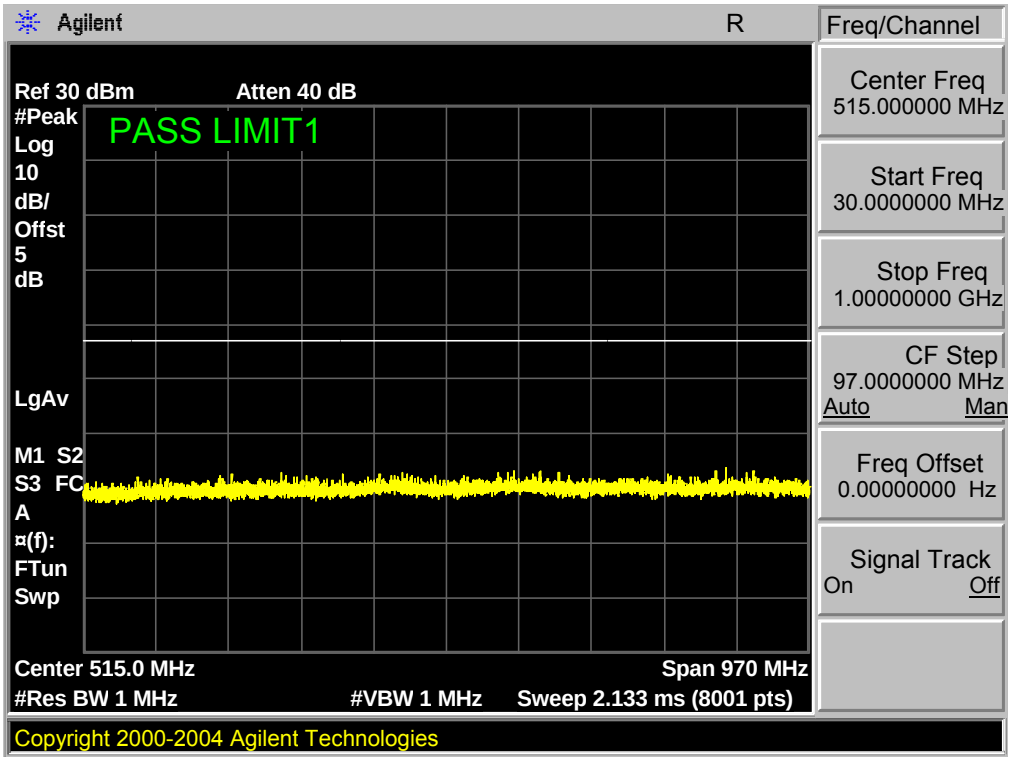
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,QPSK



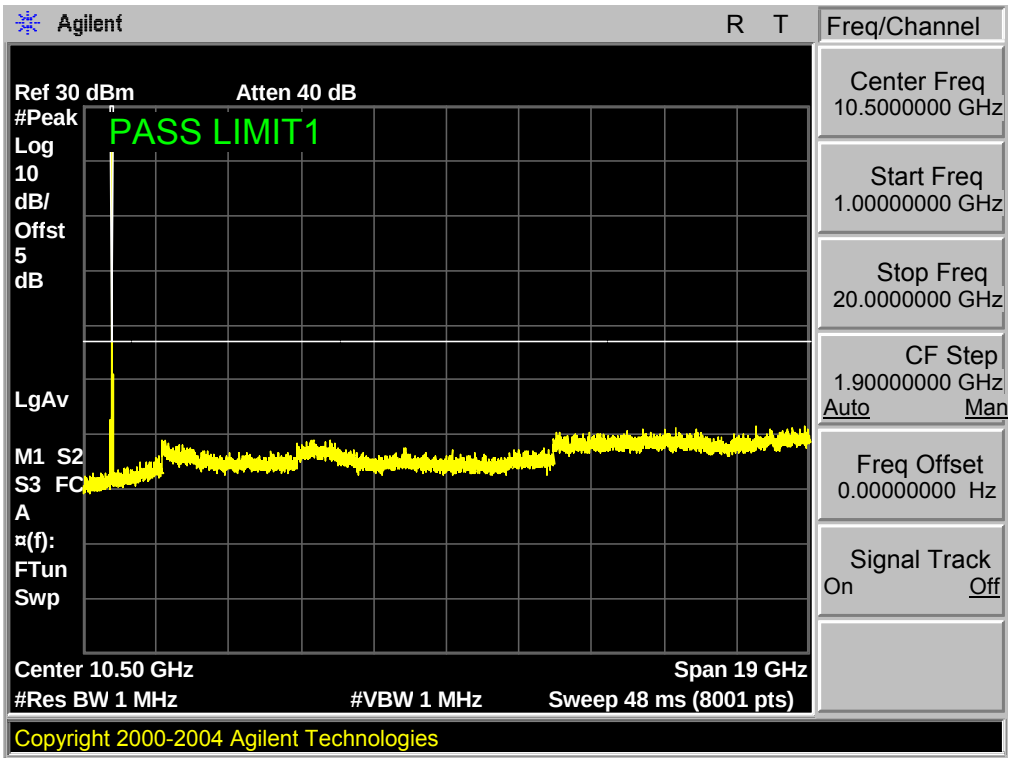
Band 4,UL Channel 20175,UL Frequency 1732.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



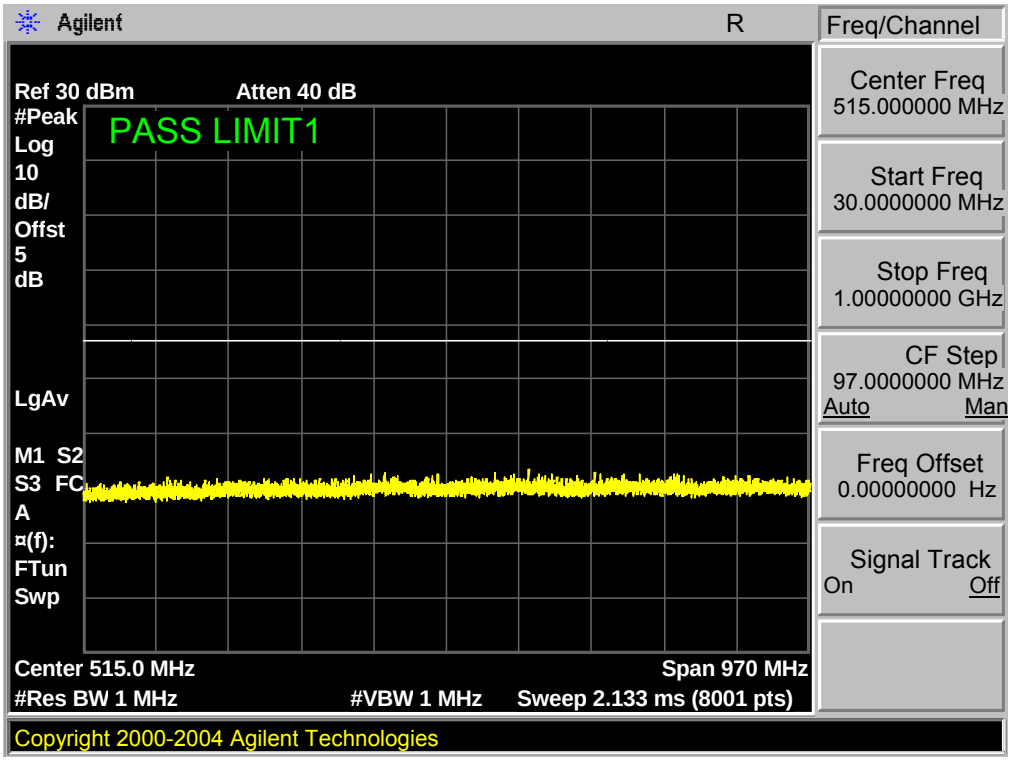
Band 4,UL Channel 20300,UL Frequency 1745.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



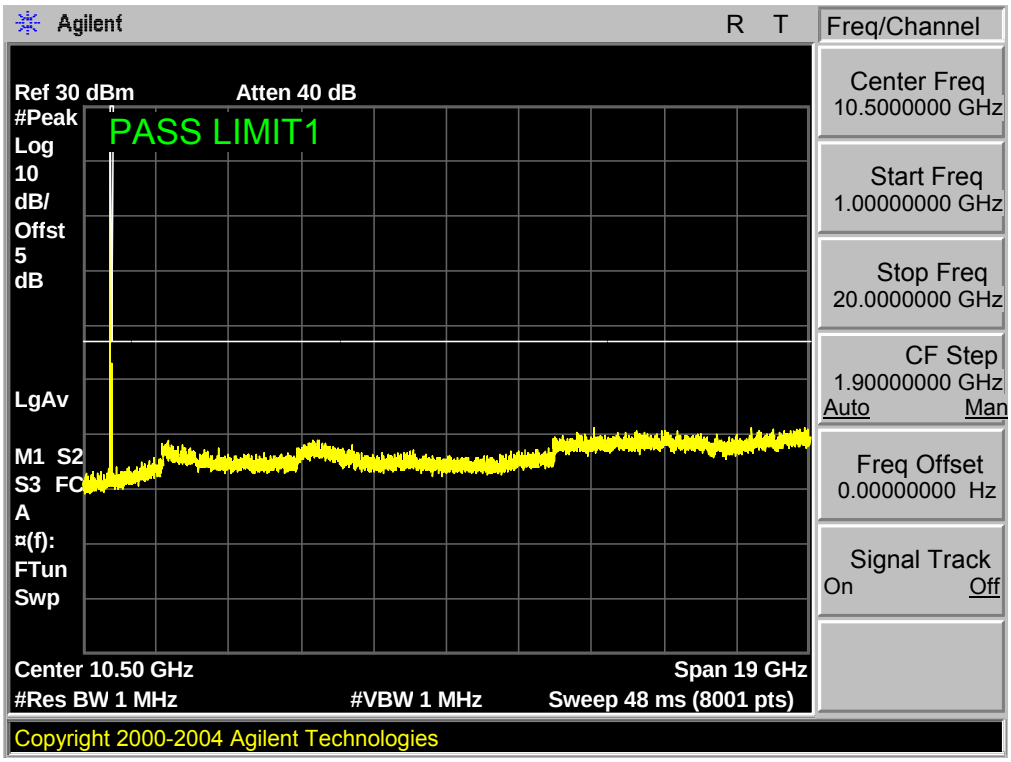
Band 4,UL Channel 20300,UL Frequency 1745.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK



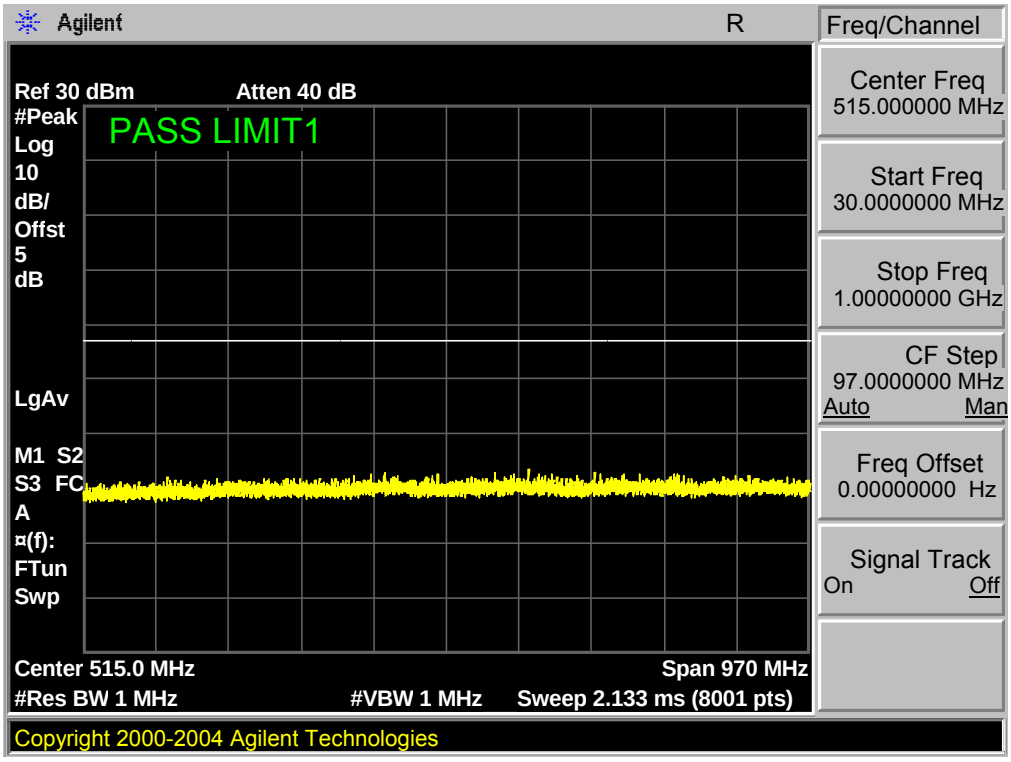
Band 4,UL Channel 20050,UL Frequency 1720.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM



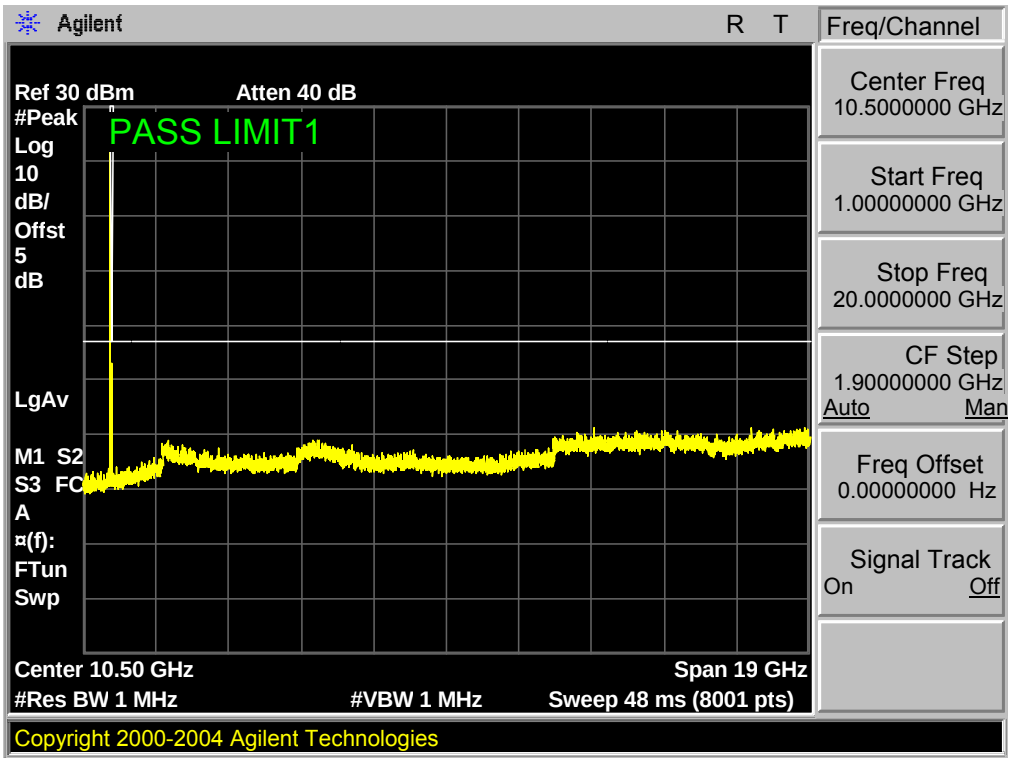
Band 4,UL Channel 20050,UL Frequency 1720.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM



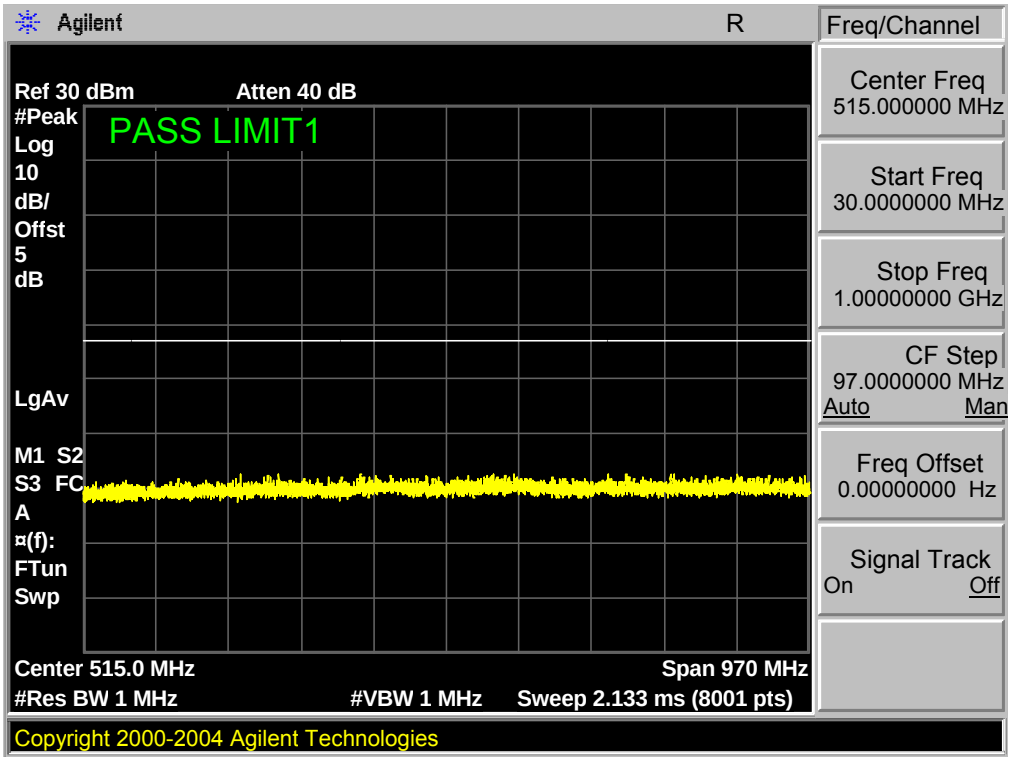
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,16QAM



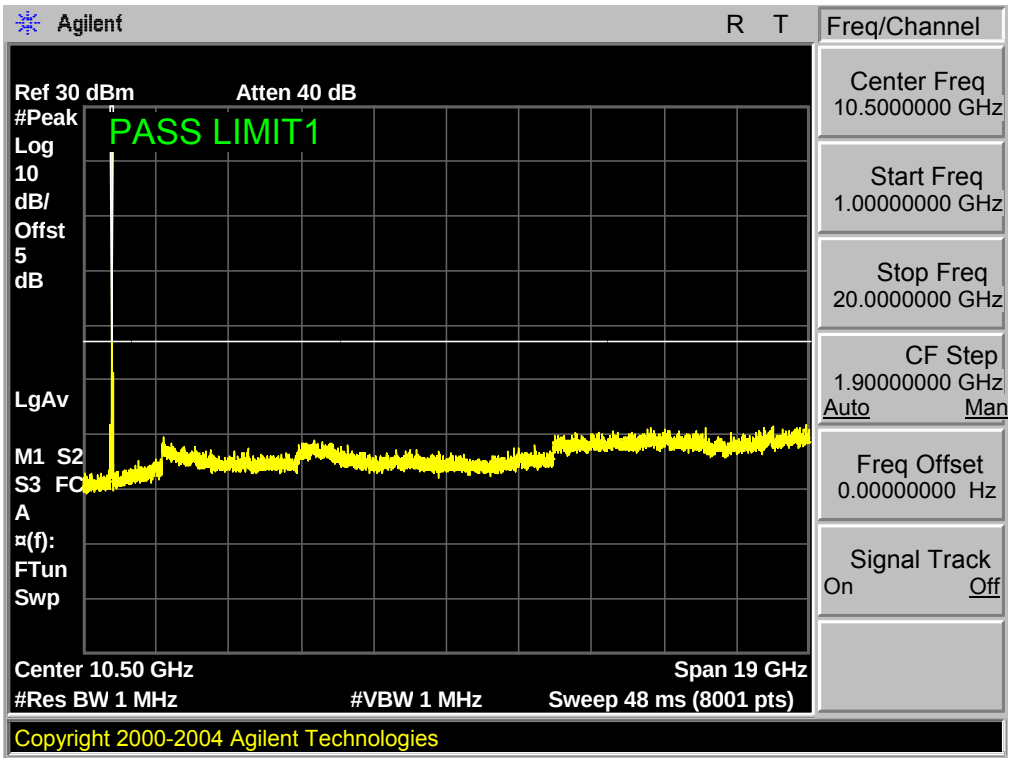
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,16QAM



Band 4,UL Channel 20300,UL Frequency 1745.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM

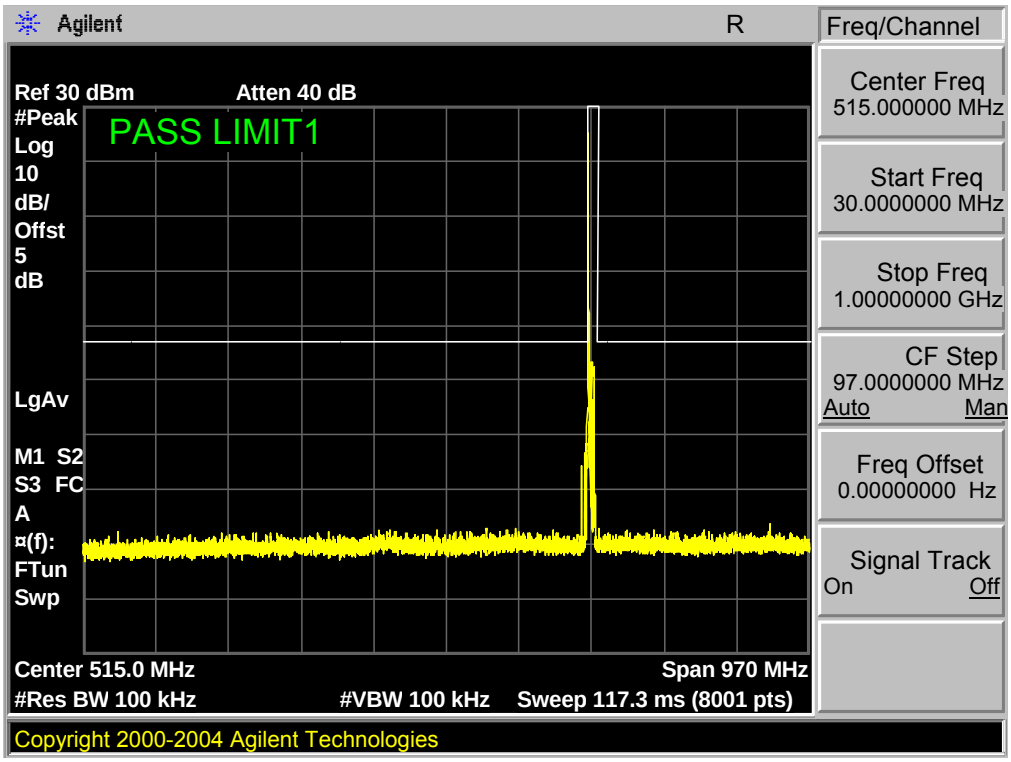


Band 4,UL Channel 20300,UL Frequency 1745.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM

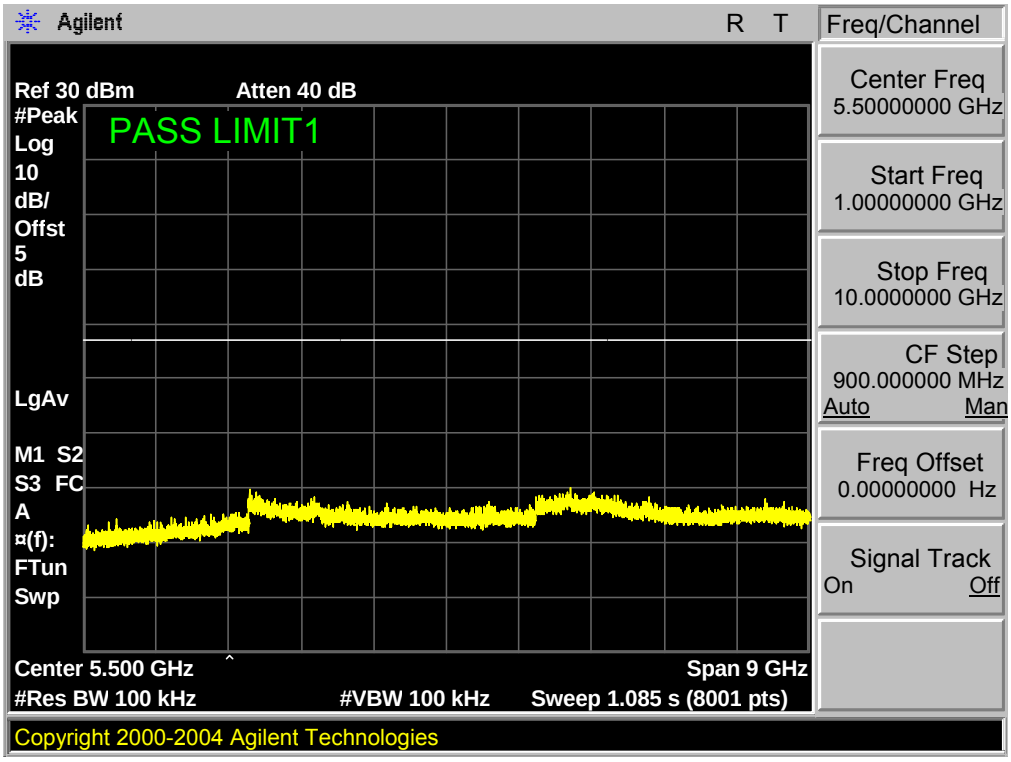


7.1.3 LTE BAND 17

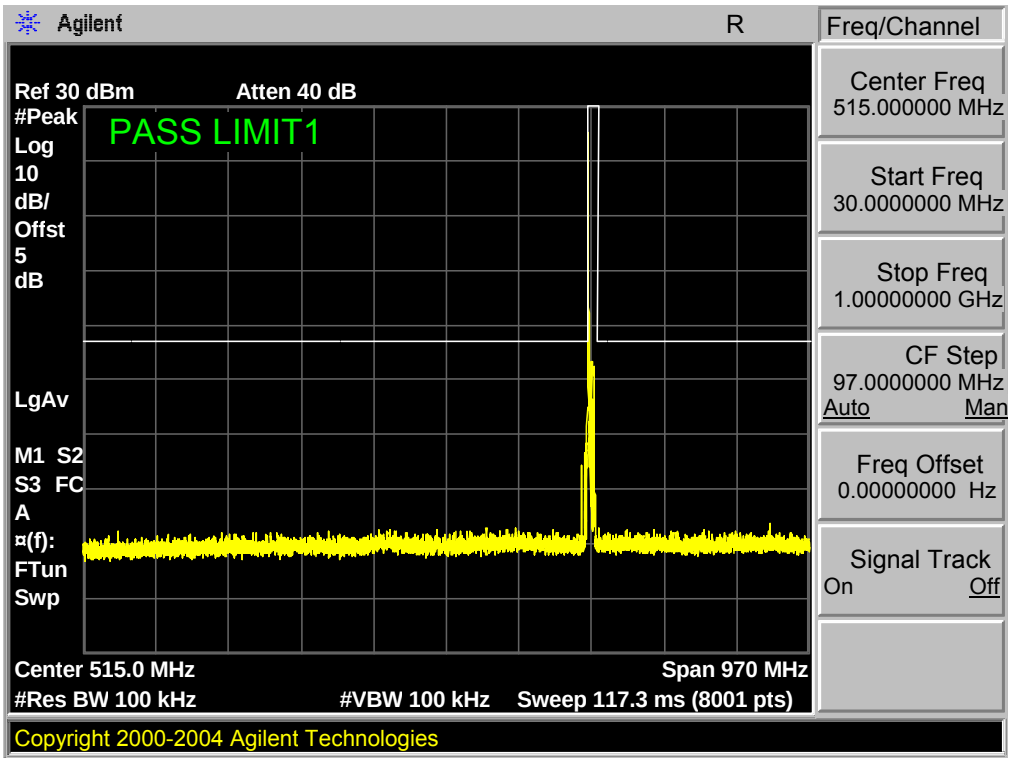
Band 17,UL Channel 23755,UL Frequency 706.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



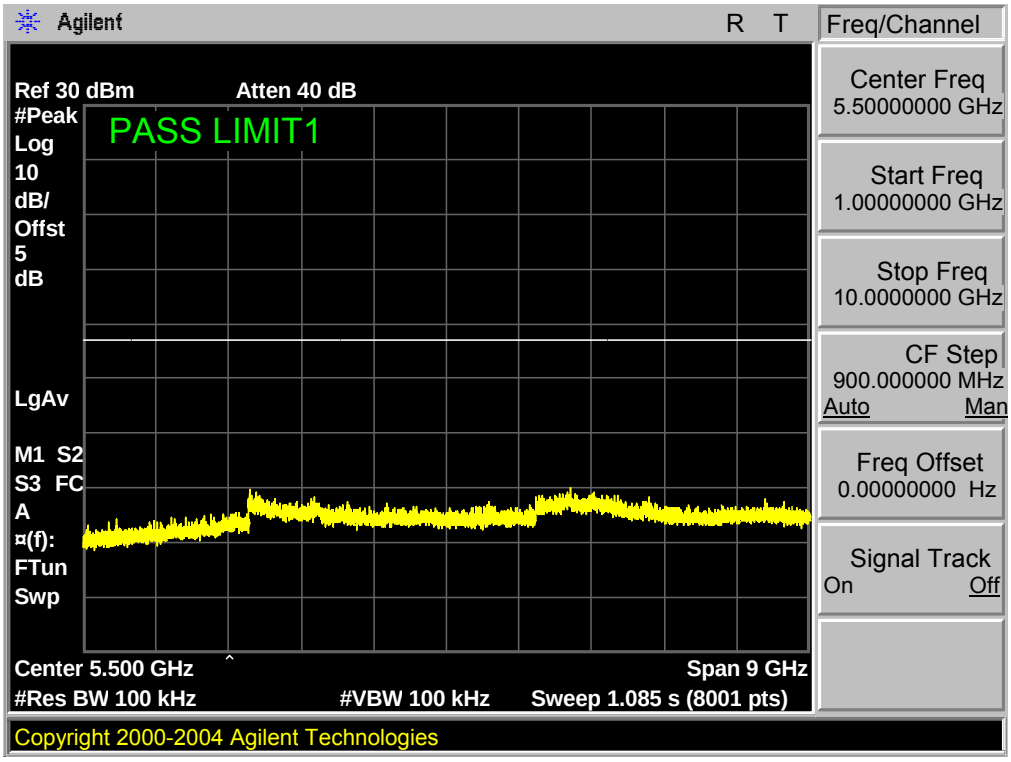
Band 17,UL Channel 23755,UL Frequency 706.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



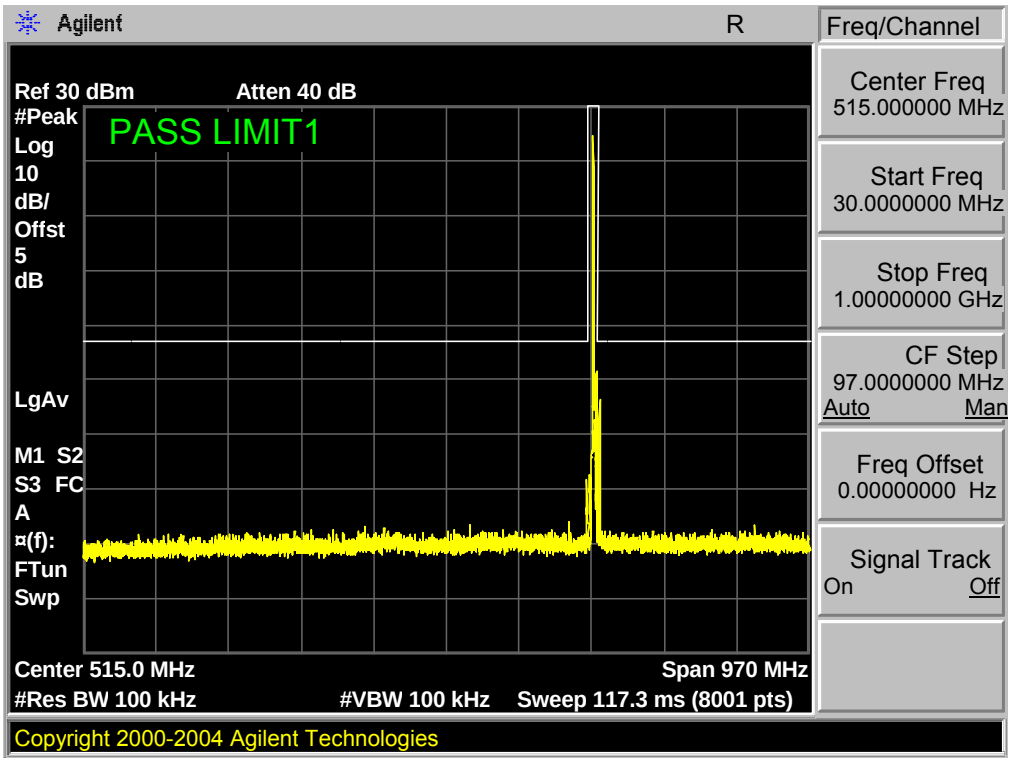
Band 17,UL Channel 23790,UL Frequency 710.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK



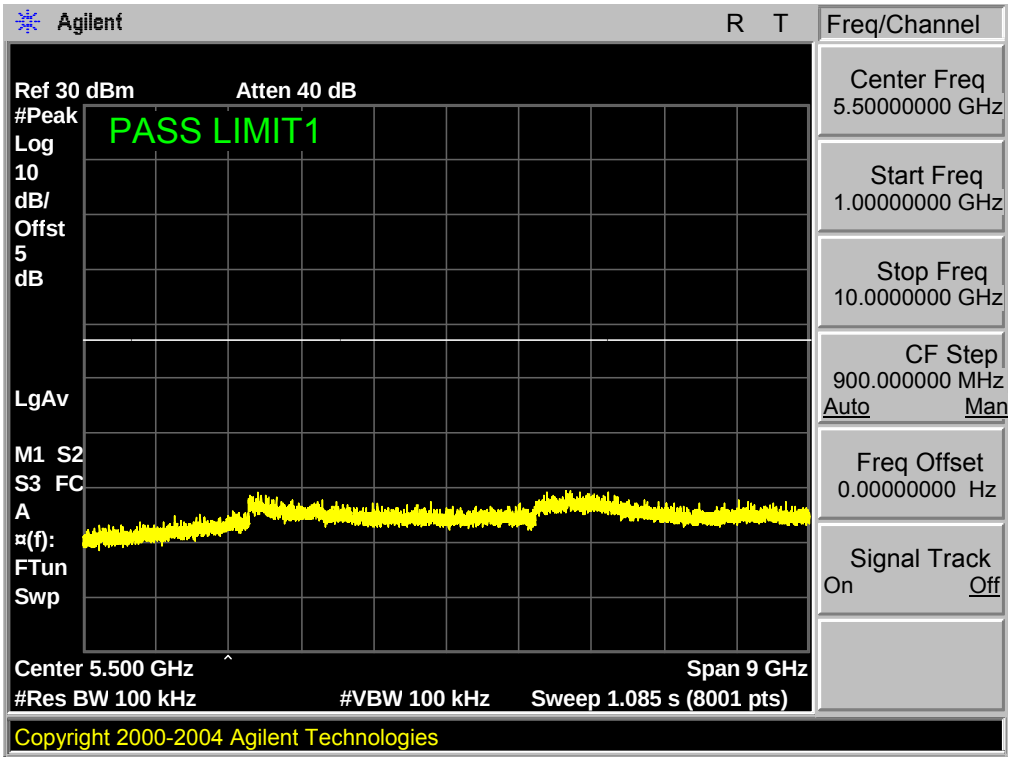
Band 17,UL Channel 23790,UL Frequency 710.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK



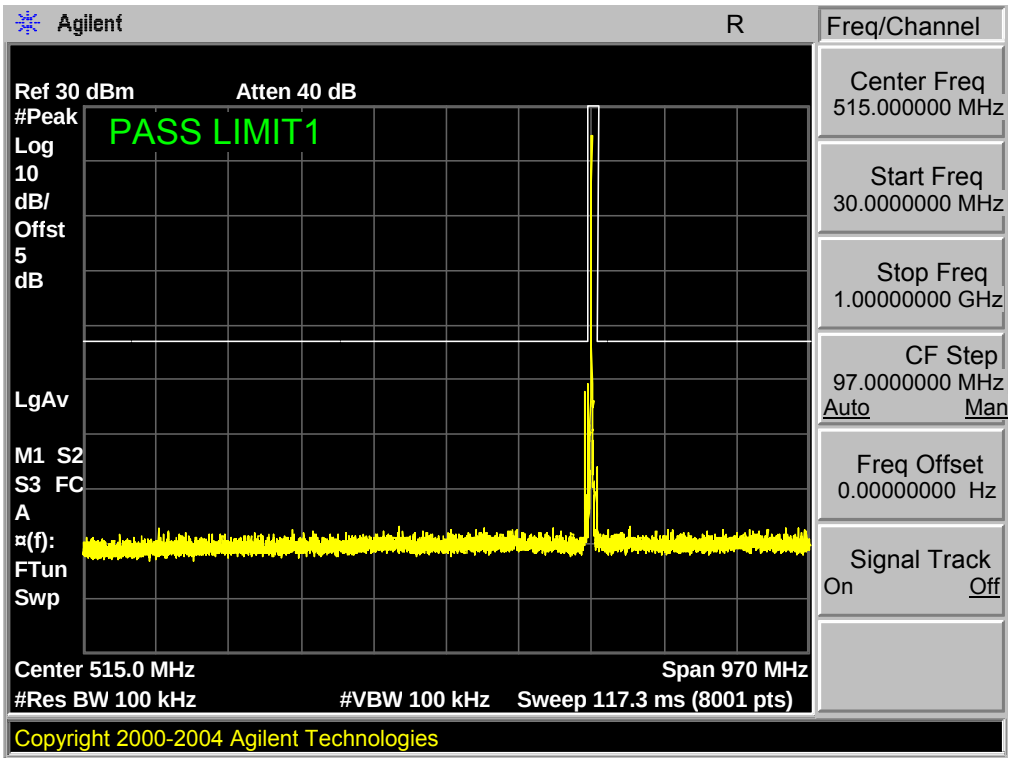
Band 17,UL Channel 23825,UL Frequency 713.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



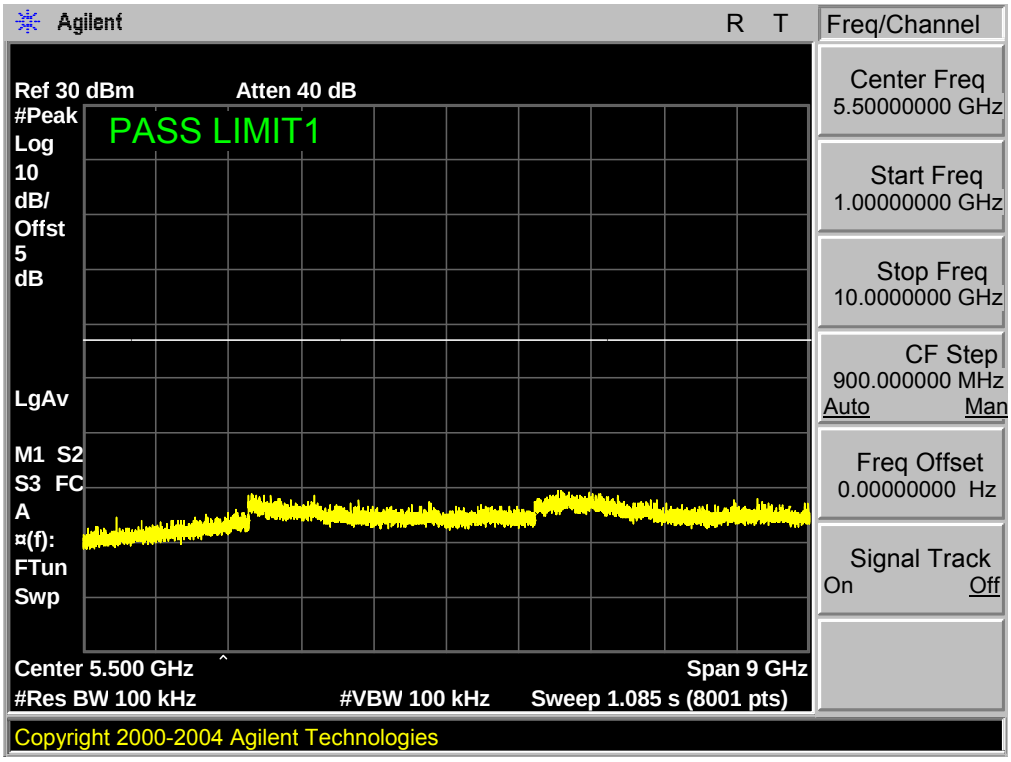
Band 17,UL Channel 23825,UL Frequency 713.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



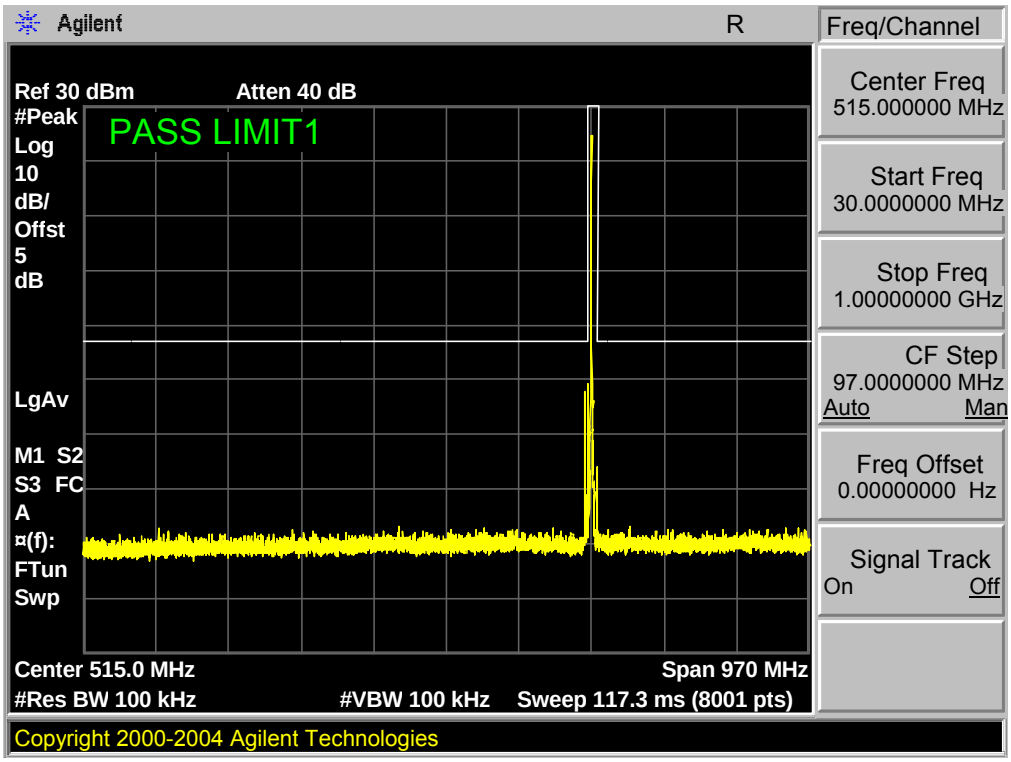
Band 17,UL Channel 23755,UL Frequency 706.5,BW 5.0,NO. RB 1,RB POS. High,16QAM



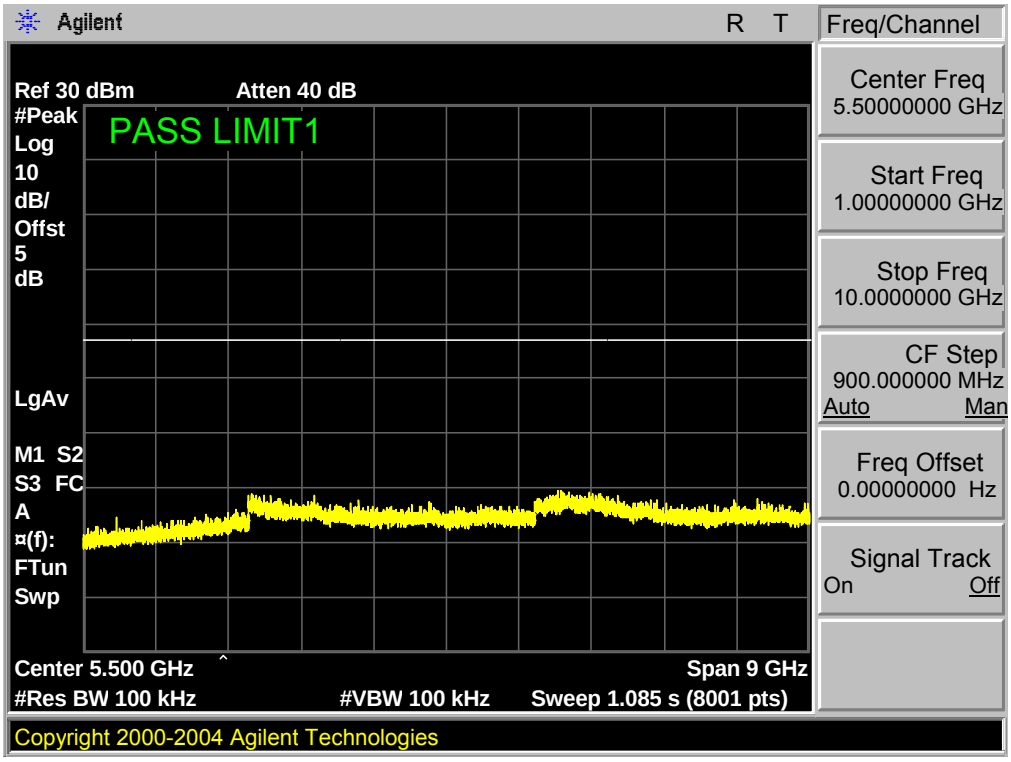
Band 17,UL Channel 23755,UL Frequency 706.5,BW 5.0,NO. RB 1,RB POS. High,16QAM



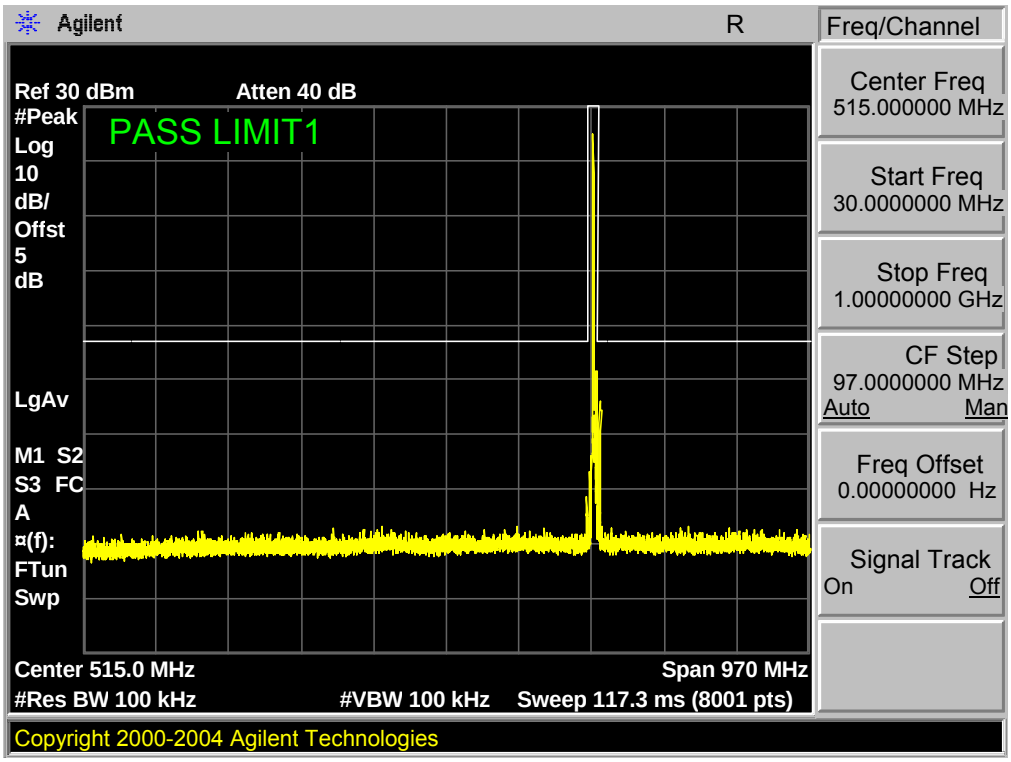
Band 17,UL Channel 23790,UL Frequency 710.0,BW 5.0,NO. RB 1,RB POS. High,16QAM



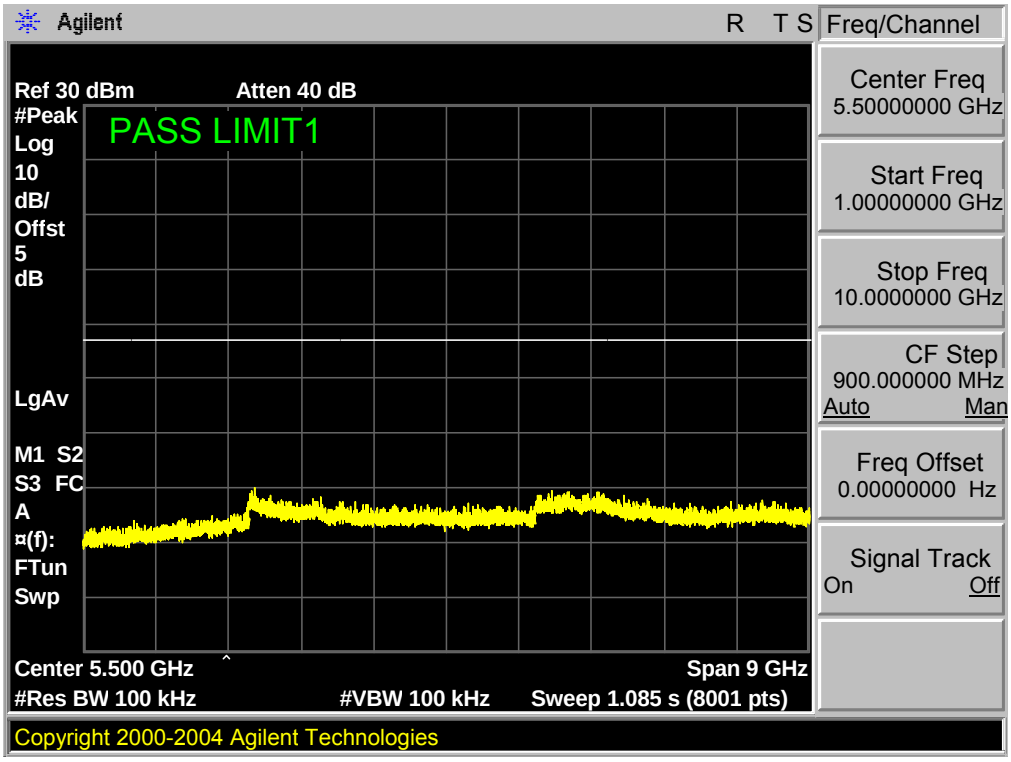
Band 17,UL Channel 23790,UL Frequency 710.0,BW 5.0,NO. RB 1,RB POS. High,16QAM



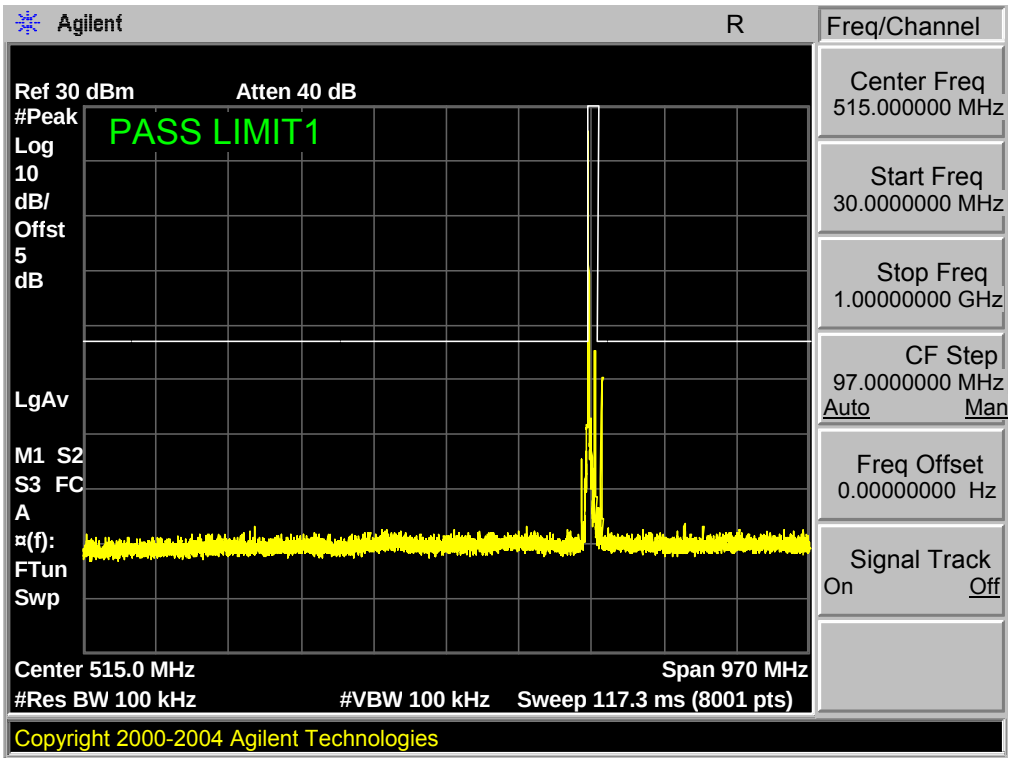
Band 17,UL Channel 23825,UL Frequency 713.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



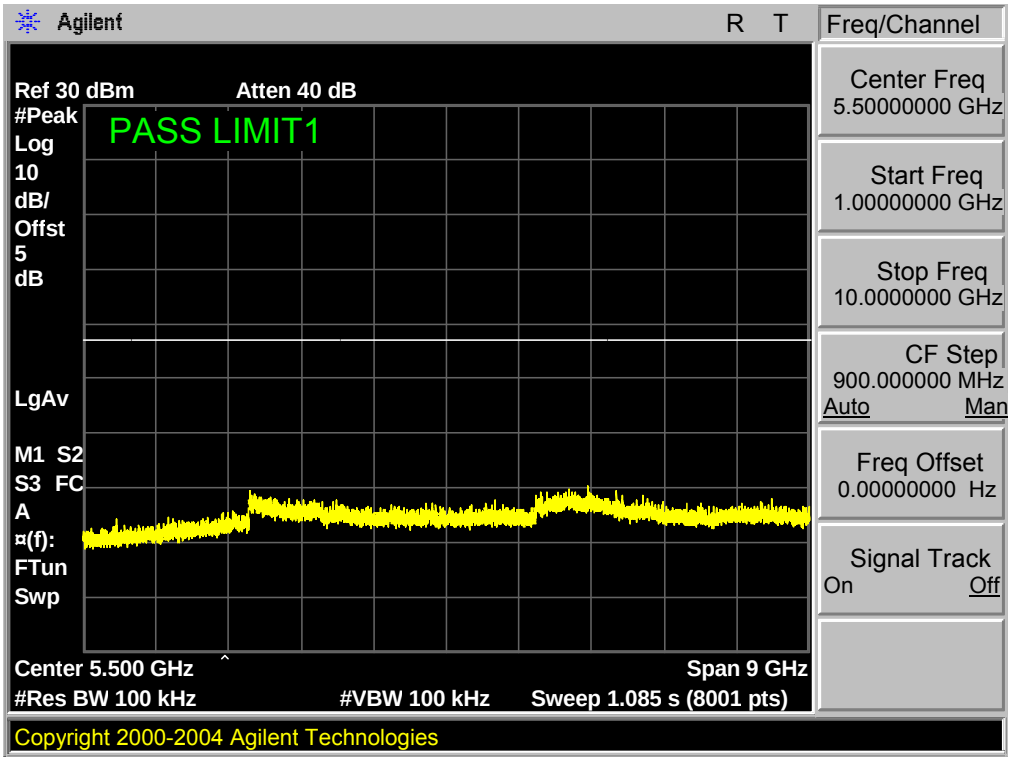
Band 17,UL Channel 23825,UL Frequency 713.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



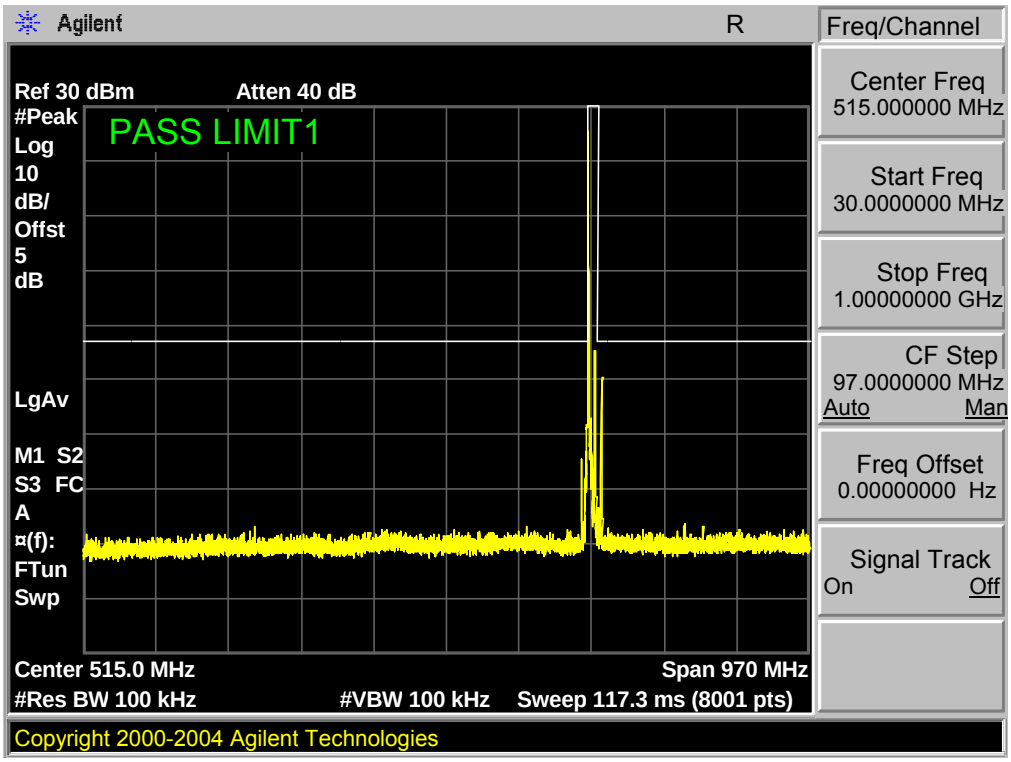
Band 17,UL Channel 23780,UL Frequency 709.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



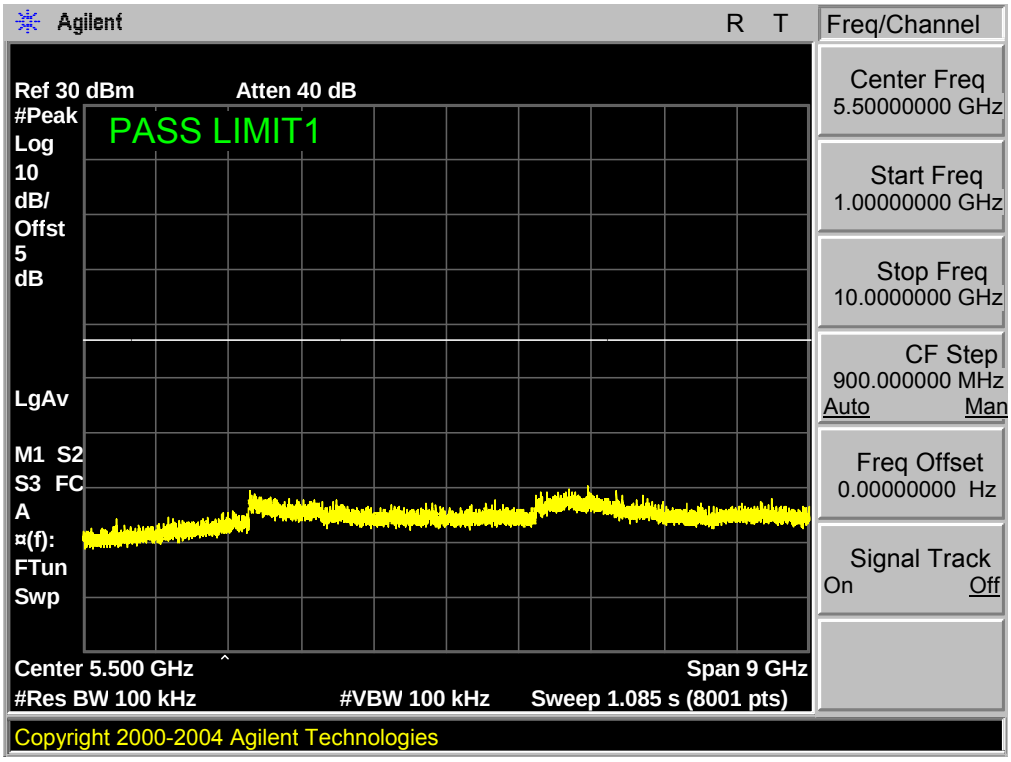
Band 17,UL Channel 23780,UL Frequency 709.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



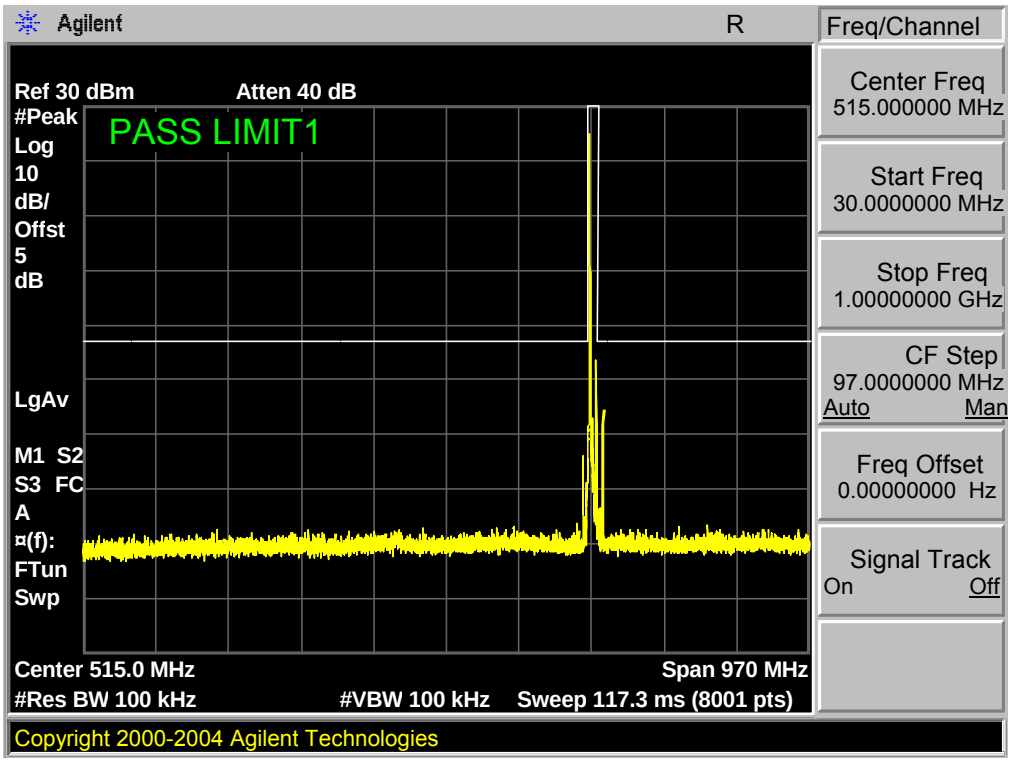
Band 17,UL Channel 23790,UL Frequency 710.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



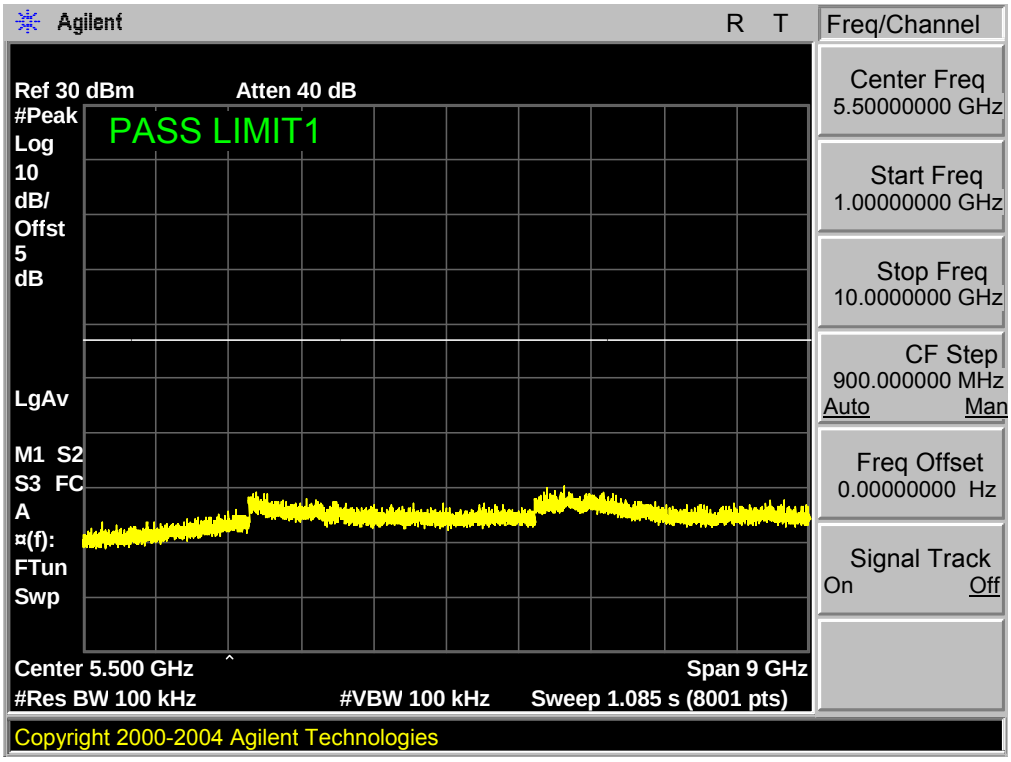
Band 17,UL Channel 23790,UL Frequency 710.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



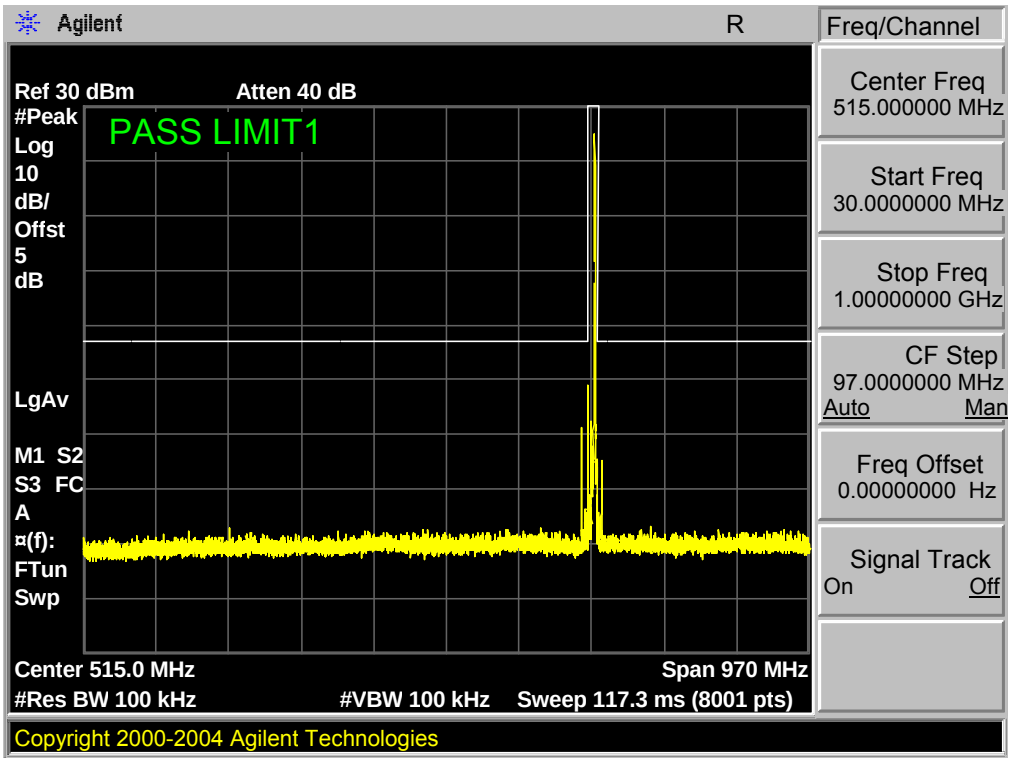
Band 17,UL Channel 23800,UL Frequency 711.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



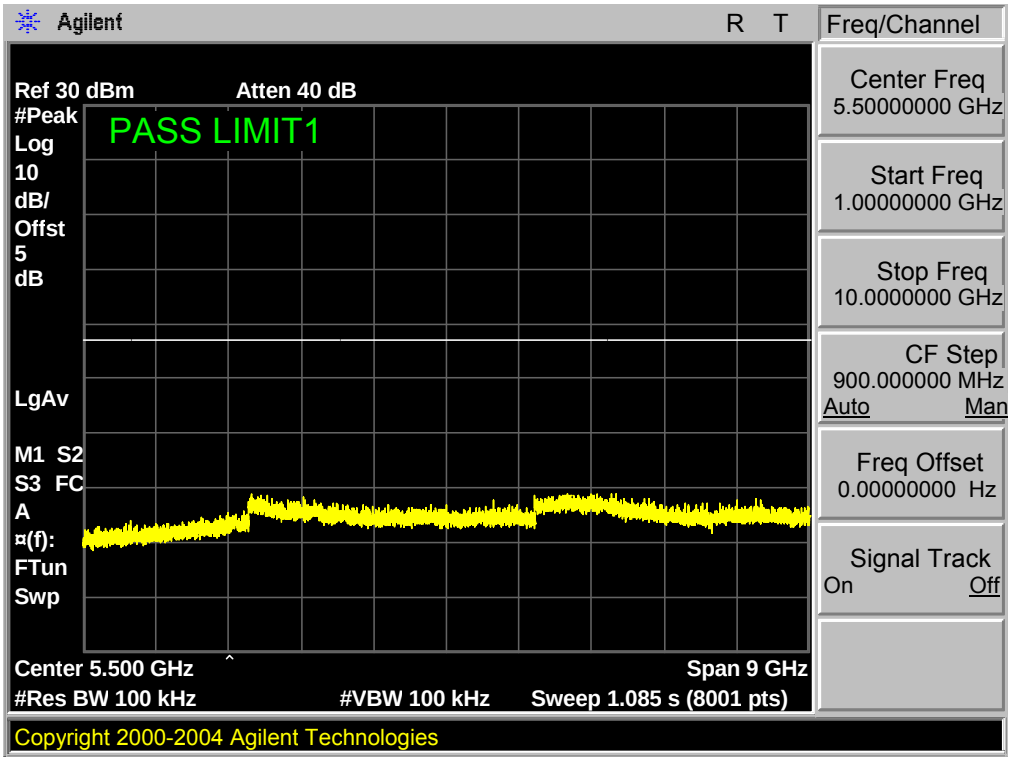
Band 17,UL Channel 23800,UL Frequency 711.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



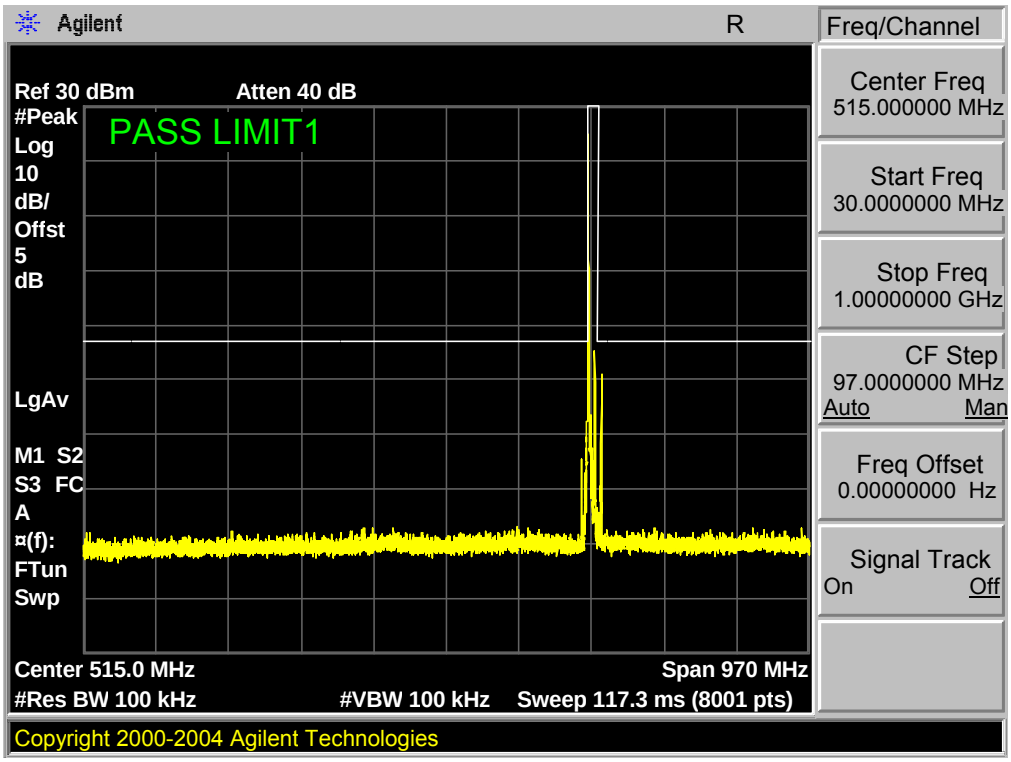
Band 17,UL Channel 23780,UL Frequency 709.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



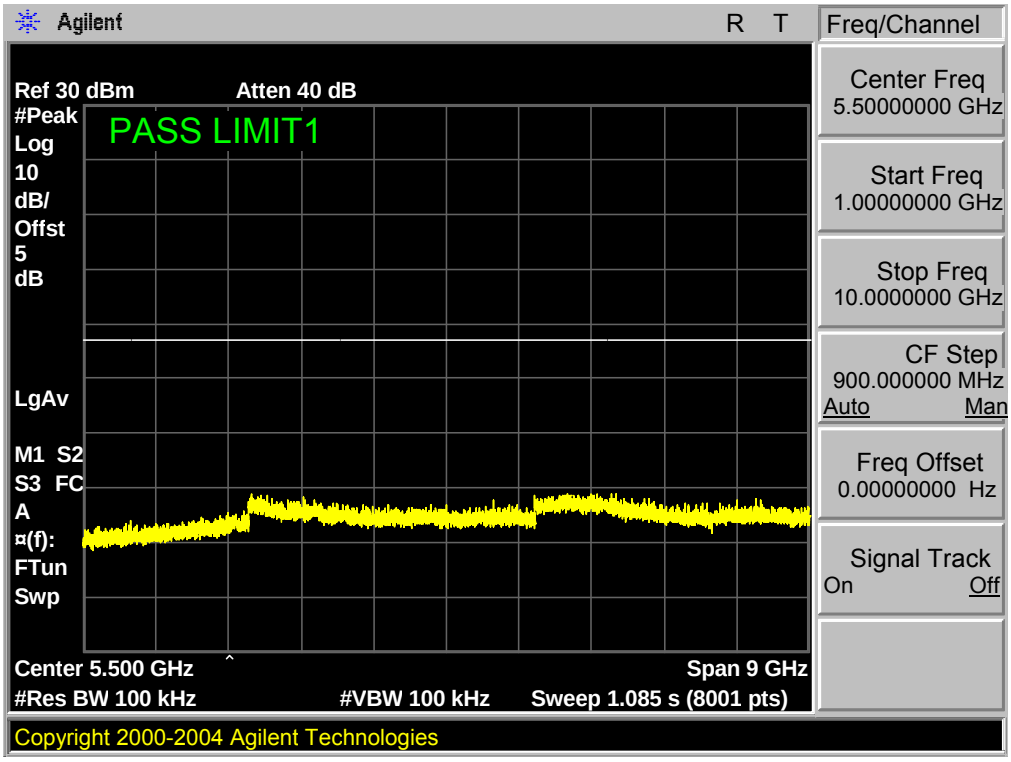
Band 17,UL Channel 23780,UL Frequency 709.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



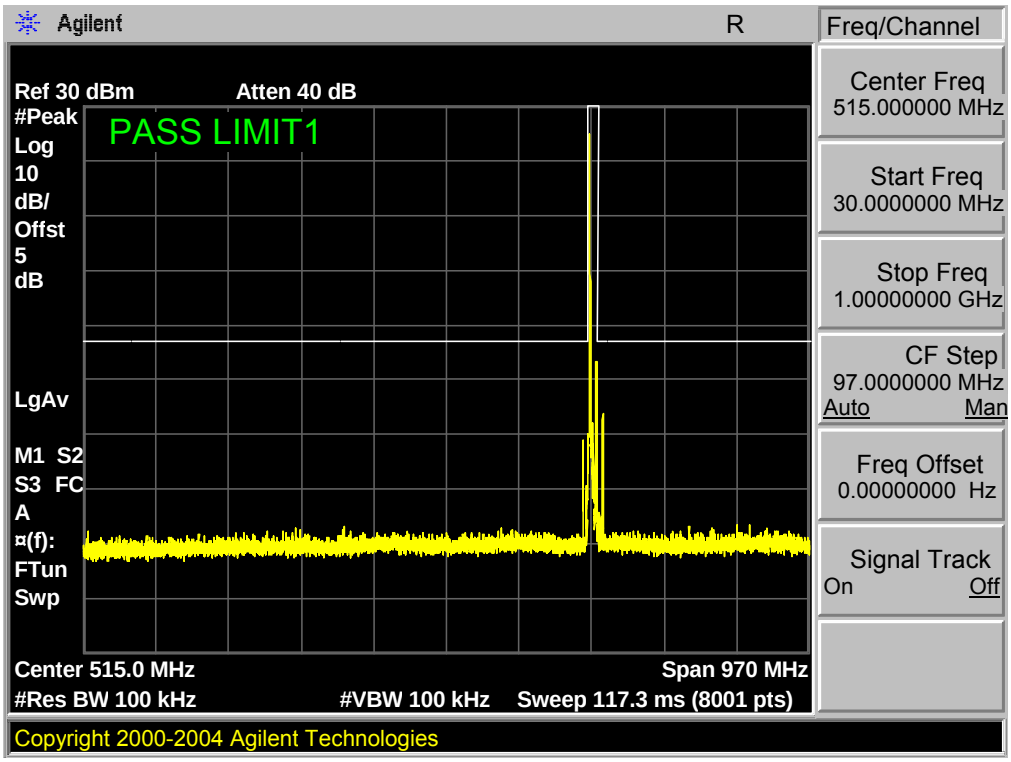
Band 17,UL Channel 23790,UL Frequency 710.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



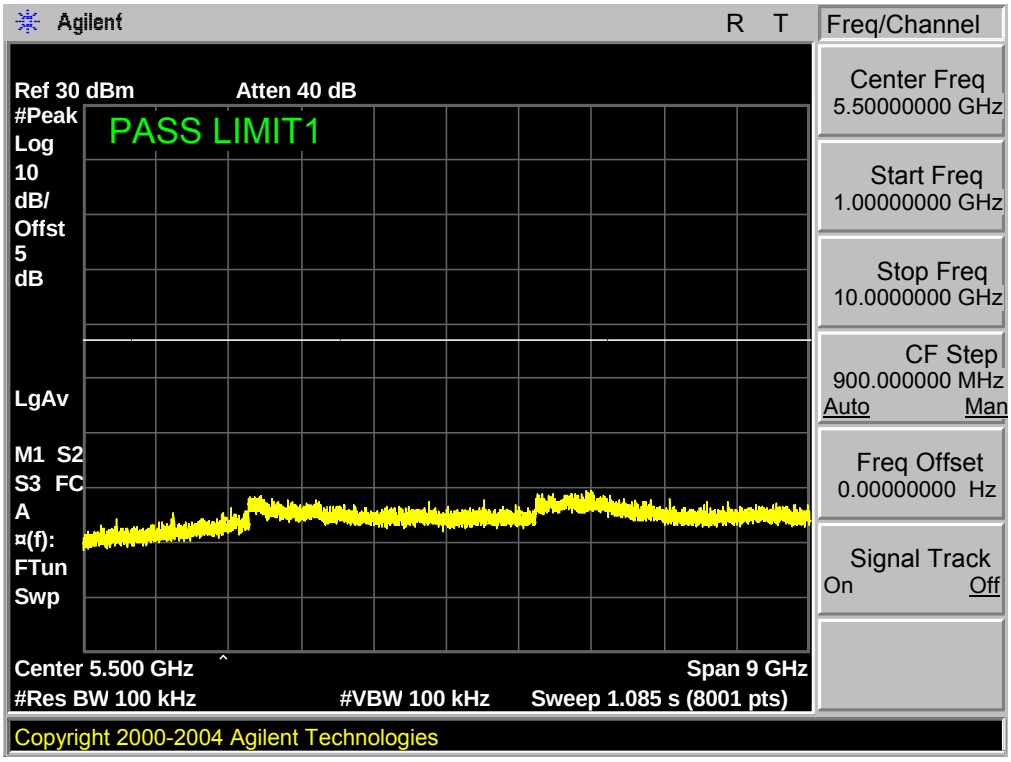
Band 17,UL Channel 23790,UL Frequency 710.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



Band 17,UL Channel 23800,UL Frequency 711.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



Band 17,UL Channel 23800,UL Frequency 711.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



9. Radiated Spurious Emission

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232 and §27.50

LIMITS:

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.
27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17
KDB 971168 v02r01 RF power output using broadband peak and average power meter method.
KDB 971168 D01 Power Meas License Digital Systems v02r01, “Measurement Guidance for Certification of Licensed Digital Transmitters”

MODES TESTED

LTE Band 2
LTE Band 4
LTE Band 17

RESULTS

9.1.1 LTE BAND 2

EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

Radiated Power (EIRP) for 1.4MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	1850.7	25.12	325.09	Horizontal	Pass
		1880.0	24.96	313.33	Vertical	Pass
		1909.3	25.05	319.89	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	1850.7	**25.84**	**383.71**	Vertical	Pass
		1880.0	24.86	306.20	Horizontal	Pass
		1909.3	24.98	314.77	Vertical	Pass

EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 3.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
3.0MHz Band QPSK	15/0	1851.5	24.12	258.23	Horizontal	Pass
		1880.0	24.96	313.33	Vertical	Pass
		1908.5	24.16	260.62	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	1851.5	**25.54**	**358.10**	Vertical	Pass
		1880.0	24.27	267.30	Horizontal	Pass
		1908.5	24.43	277.33	Vertical	Pass

EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 5.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	25/0	1851.5	24.12	258.23	Horizontal	Pass
		1880.0	24.96	313.33	Vertical	Pass
		1908.5	24.16	260.62	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	1851.5	**25.54**	**358.10**	Vertical	Pass
		1880.0	24.27	267.30	Horizontal	Pass
		1908.5	24.43	277.33	Vertical	Pass

EIRP POWER FOR LTE BAND 2 (10.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 10.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
10.0MHz Band QPSK	50/0	1855.0	25.14	326.59	Horizontal	Pass
		1880.0	25.04	319.15	Vertical	Pass
		1905.0	24.47	279.90	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	1855.0	**25.16**	**328.10**	Vertical	Pass
		1880.0	24.24	265.46	Horizontal	Pass
		1905.0	24.73	297.17	Vertical	Pass

EIRP POWER FOR LTE BAND 2 (15.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 15.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
15.0MHz Band QPSK	75/0	1857.5	25.31	339.63	Horizontal	Pass
		1880.0	24.19	262.42	Vertical	Pass
		1902.5	24.26	266.69	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	1857.5	**25.42**	**348.34**	Vertical	Pass
		1880.0	25.24	334.20	Horizontal	Pass
		1902.5	24.73	297.17	Vertical	Pass

EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 20.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
20.0MHz Band QPSK	100/0	1860.0	24.13	258.82	Horizontal	Pass
		1880.0	**24.27**	**267.30**	Vertical	Pass
		1900.0	24.33	271.02	Horizontal	Pass
20.0MHz Band 16 QAM	100/0	1860.0	24.11	257.63	Vertical	Pass
		1880.0	24.26	266.69	Horizontal	Pass
		1900.0	24.23	264.85	Vertical	Pass

9.1.2 LTE BAND 4

EIRP POWER FOR LTE BAND 4 (1.4MHZ BANDWIDTH)

Radiated Power (EIRP) for 1.4MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
1.4MHz Band QPSK	6/0	**1710.7**	**25.18**	**329.61**	Horizontal	Pass
		1732.5	24.33	271.02	Vertical	Pass
		1754.3	24.73	297.17	Horizontal	Pass
1.4MHz Band 16 QAM	6/0	**1710.7**	25.13	325.84	Vertical	Pass
		1732.5	24.54	284.45	Horizontal	Pass
		1754.3	24.15	260.02	Vertical	Pass

EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 3.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
3.0MHz Band QPSK	15/0	**1711.5**	24.32	270.40	Horizontal	Pass
		1732.5	24.52	283.14	Vertical	Pass
		1753.5	24.83	304.09	Horizontal	Pass
3.0MHz Band 16 QAM	15/0	**1711.5**	**25.11**	**324.34**	Vertical	Pass
		1732.5	24.68	293.76	Horizontal	Pass
		1753.5	24.35	272.27	Vertical	Pass

EIRP POWER FOR LTE BAND 4(5.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 5.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	25/0	**1712.5**	**25.41**	**347.54**	Horizontal	Pass
		1732.5	24.83	304.09	Vertical	Pass
		1752.5	24.51	282.49	Horizontal	Pass
5.0MHz Band 16 QAM	25/0	**1712.5**	24.59	287.74	Vertical	Pass
		1732.5	24.31	269.77	Horizontal	Pass
		1752.5	24.72	296.48	Vertical	Pass

EIRP POWER FOR LTE BAND 4 (10.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 10.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
10.0MHz Band QPSK	50/0	**1715**	**25.21**	**331.89**	Horizontal	Pass
		1732.5	24.83	304.09	Vertical	Pass
		1750	24.29	268.53	Horizontal	Pass
10.0MHz Band 16 QAM	50/0	**1715**	24.18	261.82	Vertical	Pass
		1732.5	24.32	270.40	Horizontal	Pass
		1750	24.86	306.20	Vertical	Pass

EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 15MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
15.0MHz Band QPSK	75/0	**1717.5**	**25.11**	**324.34**	Horizontal	Pass
		1732.5	24.37	273.53	Vertical	Pass
		1747.5	24.83	304.09	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	**1717.5**	24.64	291.07	Vertical	Pass
		1732.5	24.89	308.32	Horizontal	Pass
		1747.5	24.52	283.14	Vertical	Pass

EIRP POWER FOR LTE BAND 4 (20MHZ BANDWIDTH)

Radiated Power (EIRP) for 20MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
15.0MHz Band QPSK	75/0	**1720**	**25.18**	**329.61**	Horizontal	Pass
		1732.5	24.67	293.09	Vertical	Pass
		1745	24.22	264.24	Horizontal	Pass
15.0MHz Band 16 QAM	75/0	**1720**	24.37	273.53	Vertical	Pass
		1732.5	24.91	309.74	Horizontal	Pass
		1745	24.83	304.09	Vertical	Pass

9.1.3 LTE BAND 17

EIRP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 5.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
5.0MHz Band QPSK	1/0	706.5	21.12	129.42	Horizontal	Pass
		710.0	20.53	112.98	Vertical	Pass
		713.5	21.73	148.94	Horizontal	Pass
5.0MHz Band 16 QAM	1/0	706.5	21.41	138.36	Vertical	Pass
		710.0	21.05	127.35	Horizontal	Pass
		713.5	**21.84**	**152.76**	Vertical	Pass

EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

Radiated Power (EIRP) for 10.0MHz Band						
Mode	RB/RB SIZE	Frequency	Result			Conclusion
			Max. EIRP Average (dBm)	Max. EIRP Average (mW)	Polarization Of Max. ERP	
10.0MHz Band QPSK	1/0	709.0	21.53	142.23	Horizontal	Pass
		710.0	21.42	138.68	Vertical	Pass
		711.0	21.37	137.09	Horizontal	Pass
10.0MHz Band 16 QAM	1/0	709.0	21.43	139.00	Vertical	Pass
		710.0	21.53	142.23	Horizontal	Pass
		711.0	**21.82**	**152.05**	Vertical	Pass

10.0 FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238 and §27.53

LIMIT

§22.917 (e) and §24.238 (a): 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 (g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

The unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth in the 1 MHz band immediately outside and adjacent to the channel edge of the equipment. Beyond the 1 MHz band immediately outside the channel edge of the equipment, a resolution bandwidth of 1 MHz shall be employed. A narrower resolution bandwidth is allowed to be used provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz or 1% of the occupied bandwidth as applicable.

The power of any unwanted emissions measured from the channel edge of the equipment shall be attenuated below the transmitter power, P (dBW), as follows:
a. for base station and subscriber equipment, other than mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB; and
b. for mobile subscriber equipment, the attenuation shall not be less than 43 + 10 Log10 (p), dB at the channel edges and 55 + 10 Log10 (p) at 5.5 MHz away and beyond the channel edges where p in (a) and (b) is the transmitter power measured in watts.

MODES TESTED

LTE Band 2
LTE Band 4
LTE Band 17

RESULTS

10.1.1. LTE BAND 2

QPSK EIRP POWER FOR LTE BAND 2 (1.4MHZ BANDWIDTH)

Test Results for Low Channel 1850.7MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3701.4	-30.98	13.42	-23.18	-13.00	Vertical
3701.4	-31.02	13.42	-23.22	-13.00	Horizontal
5552.1	-31.66	17.12	-20.66	-13.00	Vertical
5552.1	-29.93	17.12	-18.93	-13.00	Horizontal
7402.8	-30.18	19.26	-17.88	-13.00	Horizontal
7402.8	-30.47	19.26	-18.17	-13.00	Vertical
Test Results for Mid Channel 1880.0MHz					
3760.0	-31.52	13.76	-23.52	-13.00	Vertical
3760.0	-33.96	13.76	-25.96	-13.00	Horizontal
5640.0	-30.81	17.56	-19.61	-13.00	Vertical
5640.0	-30.29	17.56	-19.09	-13.00	Horizontal
7520.0	-31.47	19.6	-18.87	-13.00	Horizontal
7520.0	-31.62	19.6	-19.02	-13.00	Vertical
Test Results for High Channel 1909.3MHz					
3818.6	-31.12	13.87	-23.02	-13.00	Vertical
3818.6	-30.69	13.87	-22.59	-13.00	Horizontal
5727.9	-29.89	17.66	-18.20	-13.00	Vertical
5727.9	-30.04	17.66	-18.35	-13.00	Horizontal
7637.2	-30.69	19.75	-17.77	-13.00	Horizontal
7637.2	-29.96	19.75	-17.04	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 2 (3.0MHZ BANDWIDTH)

Test Results for Low Channel 1851.5MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3703.0	-35.69	13.42	-22.27	-13.00	Horizontal
3703.0	-34.51	13.42	-21.09	-13.00	Vertical
5554.5	-33.58	17.12	-16.46	-13.00	Vertical
5554.5	-33.36	17.12	-16.24	-13.00	Horizontal
7406.0	-35.79	19.26	-16.53	-13.00	Horizontal
7406.0	-36.82	19.26	-17.56	-13.00	Vertical
Test Results for Mid Channel 1880.0MHz					
3760.0	-31.66	13.76	-17.90	-13.00	Horizontal
3760.0	-34.29	13.76	-20.53	-13.00	Vertical
5640.0	-35.91	17.56	-18.35	-13.00	Vertical
5640.0	-40.17	17.56	-22.61	-13.00	Horizontal
7520.0	-36.29	19.6	-16.69	-13.00	Horizontal
7520.0	-41.05	19.6	-21.45	-13.00	Vertical
Test Results for High Channel 1908.5MHz					
3817.0	-40.11	13.87	-26.24	-13.00	Horizontal
3817.0	-36.98	13.87	-23.11	-13.00	Vertical
5725.5	-37.44	17.66	-19.78	-13.00	Vertical
5725.5	-37.81	17.66	-20.15	-13.00	Horizontal
7634.0	-38.95	19.75	-19.20	-13.00	Horizontal
7634.0	-41.03	19.75	-21.28	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 2 (5.0MHZ BANDWIDTH)

Test Results for Low Channel 1852.5MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3705.0	-26.46	13.42	-18.66	-13.00	Vertical
3705.0	-33.18	13.42	-25.38	-13.00	Horizontal
5557.5	-28.46	17.12	-17.46	-13.00	Vertical
5557.5	-33.596	17.12	-22.59	-13.00	Horizontal
7410.0	-29.15	19.26	-16.85	-13.00	Horizontal
7410.0	-33.39	19.26	-21.09	-13.00	Vertical
Test Results for Mid Channel 1880.0MHz					
3760.0	-26.59	13.76	-18.59	-13.00	Vertical
3760.0	-28.75	13.76	-20.75	-13.00	Horizontal
5640.0	-27.14	17.56	-15.94	-13.00	Vertical
5640.0	-27.49	17.56	-16.29	-13.00	Horizontal
7520.0	-28.83	19.6	-16.23	-13.00	Horizontal
7520.0	-33.51	19.6	-20.91	-13.00	Vertical
Test Results for High Channel 1907.5MHz					
3815.0	-27.95	13.87	-19.85	-13.00	Vertical
3815.0	-36.48	13.87	-28.38	-13.00	Horizontal
5722.5	-27.67	17.66	-15.98	-13.00	Vertical
5722.5	-35.47	17.66	-23.78	-13.00	Horizontal
7630.0	-29.38	19.75	-16.46	-13.00	Horizontal
7630.0	-36.95	19.75	-24.03	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 2 (10.0MHZ BANDWIDTH)

Test Results for Low Channel 1855.0MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3700.4	-29.34	13.42	-15.92	-13.00	Horizontal
3700.4	-33.87	13.42	-20.45	-13.00	Vertical
5550.6	-34.75	17.12	-17.63	-13.00	Vertical
5550.6	-36.36	17.12	-19.24	-13.00	Horizontal
7400.8	-35.79	19.26	-16.53	-13.00	Horizontal
7400.8	-36.12	19.26	-16.86	-13.00	Vertical
Test Results for Mid Channel 1880.0MHz					
3760	-32.65	13.76	-18.89	-13.00	Horizontal
3760	-35.98	13.76	-22.22	-13.00	Vertical
5640	-35.64	17.56	-18.08	-13.00	Vertical
5640	-44.12	17.56	-26.56	-13.00	Horizontal
7520	-38.83	19.6	-19.23	-13.00	Horizontal
7520	-37.49	19.6	-17.89	-13.00	Vertical
Test Results for High Channel 1905.0MHz					
3819.6	-34.12	13.87	-20.25	-13.00	Horizontal
3819.6	-35.39	13.87	-21.52	-13.00	Vertical
5729.4	-39.83	17.66	-22.17	-13.00	Vertical
5729.4	-37.53	17.66	-19.87	-13.00	Horizontal
7639.2	-39.83	19.75	-20.08	-13.00	Horizontal
7639.2	-36.77	19.75	-17.02	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 2 (15.0MHZ BANDWIDTH)

Test Results for Low Channel 1857.5MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3700.4	-37.24	13.42	-23.82	-13	Horizontal
3700.4	-36.17	13.42	-22.75	-13	Vertical
5550.6	-38.02	17.12	-20.9	-13	Vertical
5550.6	-36.57	17.12	-19.45	-13	Horizontal
7400.8	-38.91	19.26	-19.65	-13	Horizontal
7400.8	-41.36	19.26	-22.1	-13	Vertical
Test Results for Mid Channel 1880.0MHz					
3760	-35.58	13.76	-21.82	-13	Horizontal
3760	-34.77	13.76	-21.01	-13	Vertical
5640	-39.67	17.56	-22.11	-13	Vertical
5640	-41.58	17.56	-24.02	-13	Horizontal
7520	-41.32	19.6	-21.72	-13	Horizontal
7520	-41.87	19.6	-22.27	-13	Vertical
Test Results for High Channel 1902.5MHz					
3819.6	-37.27	13.87	-23.4	-13	Horizontal
3819.6	-34.24	13.87	-20.37	-13	Vertical
5729.4	-37.62	17.66	-19.96	-13	Vertical
5729.4	-38.79	17.66	-21.13	-13	Horizontal
7639.2	-38.92	19.75	-19.17	-13	Horizontal
7639.2	-41.56	19.75	-21.81	-13	Vertical

QPSK EIRP POWER FOR LTE BAND 2 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 1860.0MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3700.4	-29.34	13.42	-15.92	-13.00	Horizontal
3700.4	-33.87	13.42	-20.45	-13.00	Vertical
5550.6	-34.75	17.12	-17.63	-13.00	Vertical
5550.6	-36.36	17.12	-19.24	-13.00	Horizontal
7400.8	-35.79	19.26	-16.53	-13.00	Horizontal
7400.8	-36.12	19.26	-16.86	-13.00	Vertical
Test Results for Mid Channel 1880.0MHz					
3760	-32.65	13.76	-18.89	-13.00	Horizontal
3760	-35.98	13.76	-22.22	-13.00	Vertical
5640	-35.64	17.56	-18.08	-13.00	Vertical
5640	-44.12	17.56	-26.56	-13.00	Horizontal
7520	-38.83	19.6	-19.23	-13.00	Horizontal
7520	-37.49	19.6	-17.89	-13.00	Vertical
Test Results for High Channel 1900.0MHz					
3819.6	-34.12	13.87	-20.25	-13.00	Horizontal
3819.6	-35.39	13.87	-21.52	-13.00	Vertical
5729.4	-39.83	17.66	-22.17	-13.00	Vertical
5729.4	-37.53	17.66	-19.87	-13.00	Horizontal
7639.2	-39.83	19.75	-20.08	-13.00	Horizontal
7639.2	-36.77	19.75	-17.02	-13.00	Vertical

10.1.2. LTE BAND 4

QPSK EIRP POWER FOR LTE BAND 4 (1.4.0MHZ BANDWIDTH)

Test Results for Low Channel 1710.7MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3421.4	-28.69	12.42	-16.27	-13.00	Horizontal
3421.4	-31.46	12.42	-19.04	-13.00	Vertical
5132.1	-33.85	14.12	-19.73	-13.00	Vertical
5132.1	-32.63	14.12	-18.51	-13.00	Horizontal
6842.4	-33.86	16.26	-17.6	-13.00	Horizontal
6842.4	-34.28	16.26	-18.02	-13.00	Vertical
Test Results for Mid Channel 1732.5MHz					
3760	-33.51	11.76	-21.75	-13.00	Horizontal
3760	-30.31	11.76	-18.55	-13.00	Vertical
5640	-31.83	14.56	-17.27	-13.00	Vertical
5640	-35.83	14.56	-21.27	-13.00	Horizontal
7520	-36.73	16.6	-20.13	-13.00	Horizontal
7520	-36.53	16.6	-19.93	-13.00	Vertical
Test Results for High Channel 1754.3MHz					
3508.6	-30.73	11.87	-18.86	-13.00	Horizontal
3508.6	-31.84	11.87	-19.97	-13.00	Vertical
5262.9	-36.35	14.66	-21.69	-13.00	Vertical
5262.9	-31.26	14.66	-16.6	-13.00	Horizontal
7017.2	-35.73	16.75	-18.98	-13.00	Horizontal
7017.2	-39.35	16.75	-22.6	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 4 (3.0MHZ BANDWIDTH)

Test Results for Low Channel 1711.5MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3423	-33.62	12.42	-21.2	-13.00	Horizontal
3423	-31.52	12.42	-19.1	-13.00	Vertical
5134.5	-35.28	14.12	-21.16	-13.00	Vertical
5134.5	-37.13	14.12	-23.01	-13.00	Horizontal
6846	-36.23	16.26	-19.97	-13.00	Horizontal
6846	-37.59	16.26	-21.33	-13.00	Vertical
Test Results for Mid Channel 1732.5MHz					
3760	-31.2	11.76	-19.44	-13.00	Horizontal
3760	-33.26	11.76	-21.5	-13.00	Vertical
5640	-34.18	14.56	-19.62	-13.00	Vertical
5640	-41.38	14.56	-26.82	-13.00	Horizontal
7520	-36.26	16.6	-19.66	-13.00	Horizontal
7520	-33.9	16.6	-17.3	-13.00	Vertical
Test Results for High Channel 1753.5MHz					
3507	-32.63	11.87	-20.76	-13.00	Horizontal
3507	-34.18	11.87	-22.31	-13.00	Vertical
5260.5	-35.26	14.66	-20.6	-13.00	Vertical
5260.5	-34.73	14.66	-20.07	-13.00	Horizontal
7014	-38.34	16.75	-21.59	-13.00	Horizontal
7014	-37.29	16.75	-20.54	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 4 (5.0MHZ BANDWIDTH)

Test Results for Low Channel 1712.5MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3425	-29.61	12.42	-17.19	-13.00	Horizontal
3425	-34.18	12.42	-21.76	-13.00	Vertical
5137.5	-35.26	14.12	-21.14	-13.00	Vertical
5137.5	-37.16	14.12	-23.04	-13.00	Horizontal
6850	-35.56	16.26	-19.3	-13.00	Horizontal
6850	-37.06	16.26	-20.8	-13.00	Vertical
Test Results for Mid Channel 1732.5MHz					
3760	-33.61	11.76	-21.85	-13.00	Horizontal
3760	-34.56	11.76	-22.8	-13.00	Vertical
5640	-37.26	14.56	-22.7	-13.00	Vertical
5640	-34.83	14.56	-20.27	-13.00	Horizontal
7520	-35.91	16.6	-19.31	-13.00	Horizontal
7520	-36.58	16.6	-19.98	-13.00	Vertical
Test Results for High Channel 1752.5MHz					
3465	-36.86	11.87	-24.99	-13.00	Horizontal
3465	-37.51	11.87	-25.64	-13.00	Vertical
5197.5	-41.26	14.66	-26.6	-13.00	Vertical
5197.5	-38.61	14.66	-23.95	-13.00	Horizontal
6930	-39.63	16.75	-22.88	-13.00	Horizontal
6930	-37.56	16.75	-20.81	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 4 (10.0MHZ BANDWIDTH)

Test Results for Low Channel 1715.0MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3700.4	-29.34	12.42	-16.92	-13.00	Horizontal
3700.4	-33.87	12.42	-21.45	-13.00	Vertical
5550.6	-34.75	14.12	-20.63	-13.00	Vertical
5550.6	-36.36	14.12	-22.24	-13.00	Horizontal
7400.8	-35.79	16.26	-19.53	-13.00	Horizontal
7400.8	-36.12	16.26	-19.86	-13.00	Vertical
Test Results for Mid Channel 1732.5MHz					
3760	-32.65	11.76	-20.89	-13.00	Horizontal
3760	-35.98	11.76	-24.22	-13.00	Vertical
5640	-35.64	14.56	-21.08	-13.00	Vertical
5640	-44.12	14.56	-29.56	-13.00	Horizontal
7520	-38.83	16.6	-22.23	-13.00	Horizontal
7520	-37.49	16.6	-20.89	-13.00	Vertical
Test Results for High Channel 1750.0MHz					
3819.6	-34.12	11.87	-22.25	-13.00	Horizontal
3819.6	-35.39	11.87	-23.52	-13.00	Vertical
5729.4	-39.83	14.66	-25.17	-13.00	Vertical
5729.4	-37.53	14.66	-22.87	-13.00	Horizontal
7639.2	-39.83	16.75	-23.08	-13.00	Horizontal
7639.2	-36.77	16.75	-20.02	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 4 (15.0MHZ BANDWIDTH)

Test Results for Low Channel 1717.5MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3435	-28.31	12.42	-15.89	-13.00	Horizontal
3435	-35.16	12.42	-22.74	-13.00	Vertical
5125.5	-33.72	14.12	-19.6	-13.00	Vertical
5125.5	-35.26	14.12	-21.14	-13.00	Horizontal
6870	-36.72	16.26	-20.46	-13.00	Horizontal
6870	-37.13	16.26	-20.87	-13.00	Vertical
Test Results for Mid Channel 1732.5MHz					
3760	-33.32	11.76	-21.56	-13.00	Horizontal
3760	-36.52	11.76	-24.76	-13.00	Vertical
5640	-34.19	14.56	-19.63	-13.00	Vertical
5640	-45.26	14.56	-30.7	-13.00	Horizontal
7520	-39.53	16.6	-22.93	-13.00	Horizontal
7520	-41.56	16.6	-24.96	-13.00	Vertical
Test Results for High Channel 1747.5MHz					
3495	-34.29	11.87	-22.42	-13.00	Horizontal
3495	-36.27	11.87	-24.4	-13.00	Vertical
5442.5	-41.06	14.66	-26.4	-13.00	Vertical
5442.5	-38.53	14.66	-23.87	-13.00	Horizontal
6990	-42.13	16.75	-25.38	-13.00	Horizontal
6990	-37.61	16.75	-20.86	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 4 (20.0MHZ BANDWIDTH)

Test Results for Low Channel 1720.0MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
3440	-28.31	12.42	-15.89	-13.00	Horizontal
3440	-32.53	12.42	-20.11	-13.00	Vertical
5160	-33.61	14.12	-19.49	-13.00	Vertical
5160	-37.56	14.12	-23.44	-13.00	Horizontal
6880	-36.19	16.26	-19.93	-13.00	Horizontal
6880	-37.51	16.26	-21.25	-13.00	Vertical
Test Results for Mid Channel 1732.5MHz					
3465	-33.83	11.76	-22.07	-13.00	Horizontal
3465	-36.72	11.76	-24.96	-13.00	Vertical
5197.5	-37.51	14.56	-22.95	-13.00	Vertical
5197.5	-45.86	14.56	-31.3	-13.00	Horizontal
6930	-39.16	16.6	-22.56	-13.00	Horizontal
6930	-36.51	16.6	-19.91	-13.00	Vertical
Test Results for High Channel 1745.0MHz					
3490	-35.18	11.87	-23.31	-13.00	Horizontal
3490	-36.51	11.87	-24.64	-13.00	Vertical
5235	-40.13	14.66	-25.47	-13.00	Vertical
5235	-37.52	14.66	-22.86	-13.00	Horizontal
6980	-40.26	16.75	-23.51	-13.00	Horizontal
6980	-34.13	16.75	-17.38	-13.00	Vertical

10.1.3. LTE BAND 17

QPSK EIRP POWER FOR LTE BAND 17 (5.0MHZ BANDWIDTH)

Test Results for Low Channel 706.5MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
1413.0	-24.76	8.1	-16.66	-13.00	Vertical
1413.0	-28.96	8.1	-20.86	-13.00	Horizontal
2119.5	-26.76	11.69	-15.07	-13.00	Horizontal
2119.5	-33.88	11.69	-22.19	-13.00	Vertical
2826.0	-32.58	12.92	-19.66	-13.00	Horizontal
2826.0	-45.79	12.92	-32.87	-13.00	Vertical
Test Results for Mid Channel 710.0MHz					
1420.0	-24.46	8	-16.46	-13.00	Vertical
1420.0	-29.49	8	-21.49	-13.00	Horizontal
2130.0	-23.67	11.2	-12.47	-13.00	Horizontal
2130.0	-28.14	11.2	-16.94	-13.00	Vertical
2840.0	-25.89	12.6	-13.29	-13.00	Horizontal
2840.0	-35.38	12.6	-22.78	-13.00	Vertical
Test Results for High Channel 713.5MHz					
1427.0	-26.87	7.8	-19.07	-13.00	Vertical
1427.0	-34.16	7.8	-26.36	-13.00	Horizontal
2140.5	-32.89	11	-21.89	-13.00	Horizontal
2140.5	-44.33	11	-33.33	-13.00	Vertical
2854.0	-37.59	12.3	-25.29	-13.00	Horizontal
2854.0	-44.32	12.3	-32.02	-13.00	Vertical

QPSK EIRP POWER FOR LTE BAND 17 (10.0MHZ BANDWIDTH)

Test Results for Low Channel 709.0MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit（dBm）	Polarity
1418.0	-25.32	8.1	-17.22	-13.00	Vertical
1418.0	-29.43	8.1	-21.33	-13.00	Horizontal
2127.0	-27.56	11.69	-15.87	-13.00	Horizontal
2127.0	-36.18	11.69	-24.49	-13.00	Vertical
2836.0	-33.72	12.92	-20.8	-13.00	Horizontal
2836.0	-46.25	12.92	-33.33	-13.00	Vertical
Test Results for Mid Channel 710.0MHz					
1420.0	-25.73	8	-17.73	-13.00	Vertical
1420.0	-30.25	8	-22.25	-13.00	Horizontal
2130.0	-24.51	11.2	-13.31	-13.00	Horizontal
2130.0	-29.35	11.2	-18.15	-13.00	Vertical
2840.0	-26.55	12.6	-13.95	-13.00	Horizontal
2840.0	-37.26	12.6	-24.66	-13.00	Vertical
Test Results for High Channel 711.0MHz					
1422.0	-25.16	7.8	-17.36	-13.00	Vertical
1422.0	-33.52	7.8	-25.72	-13.00	Horizontal
2133.0	-34.18	11	-23.18	-13.00	Horizontal
2133.0	-46.25	11	-35.25	-13.00	Vertical
2844.0	-37.15	12.3	-24.85	-13.00	Horizontal
2844.0	-43.29	12.3	-30.99	-13.00	Vertical

11. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

Temp. = −30° to +50°C

Voltage =low voltage, 3.4VDC, Normal, 3.8VDC and High voltage, 4.3VDC.

Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20ºC and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50ºC is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

MODES TESTED

LTE Band 2

LTE Band 4

LTE Band 17

RESULTS

See the following pages.

11.1.1. LTE BAND 2

QPSK, (10MHz BANDWIDTH)

Limit		1850	1910	Delta(Hz)	Margin(ppm)
Condition		F Low @ -13dBm (MHz)	F High @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1851.0032	1908.9923		
Extreme (50C)		1851.0032	1908.9923	-6.4	-0.003
Extreme (40C)		1851.0032	1908.9923	-7.6	-0.004
Extreme (30C)		1851.0032	1908.9923	-7.5	-0.004
Extreme (10C)		1851.0032	1908.9923	-5.6	-0.003
Extreme (0C)		1851.0032	1908.9923	-8.0	-0.004
Extreme (-10C)		1851.0032	1908.9923	-8.2	-0.004
Extreme (-20C)		1851.0032	1908.9923	-7.0	-0.004
Extreme (-30C)		1851.0032	1908.9923	-5.8	-0.003
25C	10%	1851.0032	1908.9923	-5.0	-0.003
	-10%	1851.0032	1908.9923	9.3	0.005
	End Point	1851.0032	1908.9923	8.8	0.005

16QAM, (10MHz BANDWIDTH)

Limit		1850	1910	Delta(Hz)	Margin(ppm)
Condition		F Low @ -13dBm (MHz)	F High @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1851.0120	1908.9923		
Extreme (50C)		1851.0119	1908.9923	-11.0	-0.006
Extreme (40C)		1851.0120	1908.9923	-7.0	-0.004
Extreme (30C)		1851.0120	1908.9923	-7.6	-0.004
Extreme (10C)		1851.0120	1908.9923	-7.2	-0.004
Extreme (0C)		1851.0120	1908.9923	-5.5	-0.003
Extreme (-10C)		1851.0120	1908.9923	-10.0	-0.005
Extreme (-20C)		1851.0120	1908.9923	-4.8	-0.003
Extreme (-30C)		1851.0120	1908.9923	-7.5	-0.004
25C	10%	1851.0120	1908.9923	-5.0	-0.004
	-10%	1851.0119	1908.9923	9.3	0.006
	End Point	1851.0120	1908.9923	8.8	0.005

11.1.2. LTE BAND 4

QPSK, (10MHz BANDWIDTH)

Limit		1710	1755	Delta(Hz)	Margin(ppm)
Condition		F Low @ -13dBm (MHz)	F High @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1711.0065	1753.4449		
Extreme (50C)		1711.0065	1753.4449	-8.3	-0.005
Extreme (40C)		1711.0065	1753.4449	-8.0	-0.005
Extreme (30C)		1711.0065	1753.4449	-7.1	-0.004
Extreme (10C)		1711.0065	1753.4449	-7.9	-0.005
Extreme (0C)		1711.0065	1753.4449	-7.9	-0.005
Extreme (-10C)		1711.0065	1753.4449	-5.2	-0.003
Extreme (-20C)		1711.0065	1753.4449	-6.8	-0.004
Extreme (-30C)		1711.0065	1753.4449	-5.5	-0.003
25C	10%	1711.0065	1753.4449	-6.2	-0.004
	-10%	1711.0065	1753.4449	-6.5	0.004
	End Point	1711.0065	1753.4449	-5.5	0.053

16QAM, (10MHz BANDWIDTH)

Limit		1710	1755	Delta(Hz)	Margin(ppm)
Condition		F Low @ -13dBm (MHz)	F High @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	1711.0065	1753.4449		
Extreme (50C)		1711.0065	1753.4449	-8.3	-0.005
Extreme (40C)		1711.0065	1753.4449	-8.0	-0.005
Extreme (30C)		1711.0065	1753.4449	-7.1	-0.004
Extreme (10C)		1711.0065	1753.4449	-7.9	-0.005
Extreme (0C)		1711.0065	1753.4449	-7.9	-0.005
Extreme (-10C)		1711.0065	1753.4449	-5.2	-0.003
Extreme (-20C)		1711.0065	1753.4449	-6.8	-0.004
Extreme (-30C)		1711.0065	1753.4449	-5.5	-0.003
25C	10%	1711.0065	1753.4449	-6.2	-0.004
	-10%	1711.0065	1753.4449	-6.5	0.004
	End Point	1711.0065	1753.4449	-5.5	0.003

11.1.3. LTE BAND 17

QPSK, (10MHz BANDWIDTH)

Limit		704	716	Delta(Hz)	Margin(ppm)
Condition		F Low @ -13dBm (MHz)	F High @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	704.5012	715.4976		
Extreme (50C)		704.5012	715.4976	4.7	0.007
Extreme (40C)		704.5012	715.4976	-3.7	-0.005
Extreme (30C)		704.5012	715.4976	-3.8	-0.005
Extreme (10C)		704.5012	715.4976	2.8	0.004
Extreme (0C)		704.5012	715.4976	3.8	0.005
Extreme (-10C)		704.5012	715.4976	4.2	0.007
Extreme (-20C)		704.5012	715.4976	3.0	0.004
Extreme (-30C)		704.5012	715.4976	3.3	0.005
25C	10%	704.5012	715.4976	3.7	0.006
	-10%	704.5012	715.4976	3.9	0.005
	End Point	704.5012	715.4976	3.6	0.005

16QAM, (10MHz BANDWIDTH)

Limit		704	716	Delta(Hz)	Margin(ppm)
Condition		F Low @ -13dBm (MHz)	F High @ -13dBm (MHz)		
Temperature	Voltage				
Normal (25C)	Normal	704.5036	715.5045		
Extreme (50C)		704.5036	715.5045	14.2	0.0020
Extreme (40C)		704.5036	715.5045	-2.1	-0.003
Extreme (30C)		704.5036	715.5045	3.1	0.004
Extreme (10C)		704.5036	715.5045	2.8	0.004
Extreme (0C)		704.5036	715.5045	4.0	0.006
Extreme (-10C)		704.5036	715.5045	5.1	0.007
Extreme (-20C)		704.5036	715.5045	4.3	0.006
Extreme (-30C)		704.5036	715.5045	-4.2	-0.005
25C	10%	704.5036	715.5045	5.1	0.007
	-10%	704.5036	715.5045	3.3	0.005
	End Point	704.5036	715.5045	3.4	0.005

12. Peak-to-Average Ratio

12.1.1 DESCRIPTION OF THE PAR MEASUREMENT

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

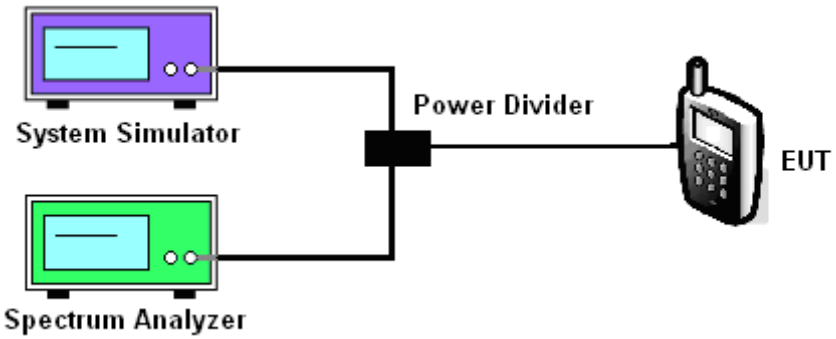
12.1.2 MEASURING INSTRUMENTS

See list of measuring instruments of this test report.

12.1.3 TEST PROCEDURES

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. For GSM/EGPRS operating modes:
   a. Set the RBW = 1MHz, VBW = 1MHz, Peak detector in spectrum analyzer.
   b. Set EUT in maximum power output, and triggered the burst signal.
   c. Measured respectively the Peak level and Mean level, and the deviation was recorded as Peak to Average Ratio.
4. For UMTS operating modes:
   a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
   b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.

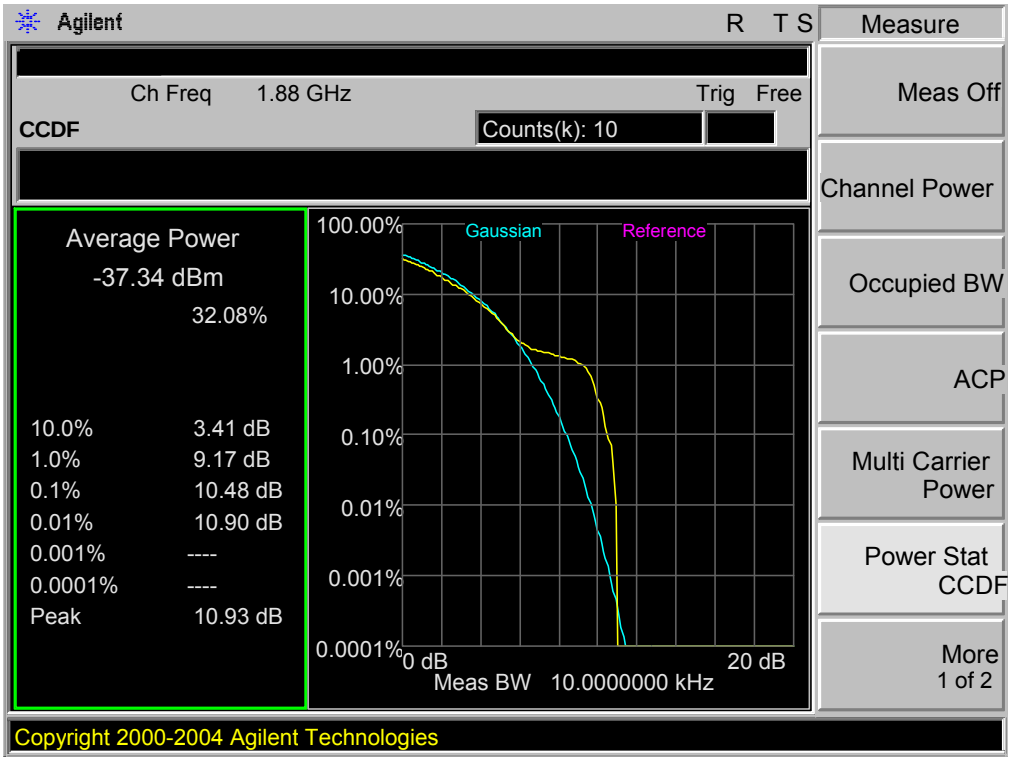
12.1.4 TEST SETUP



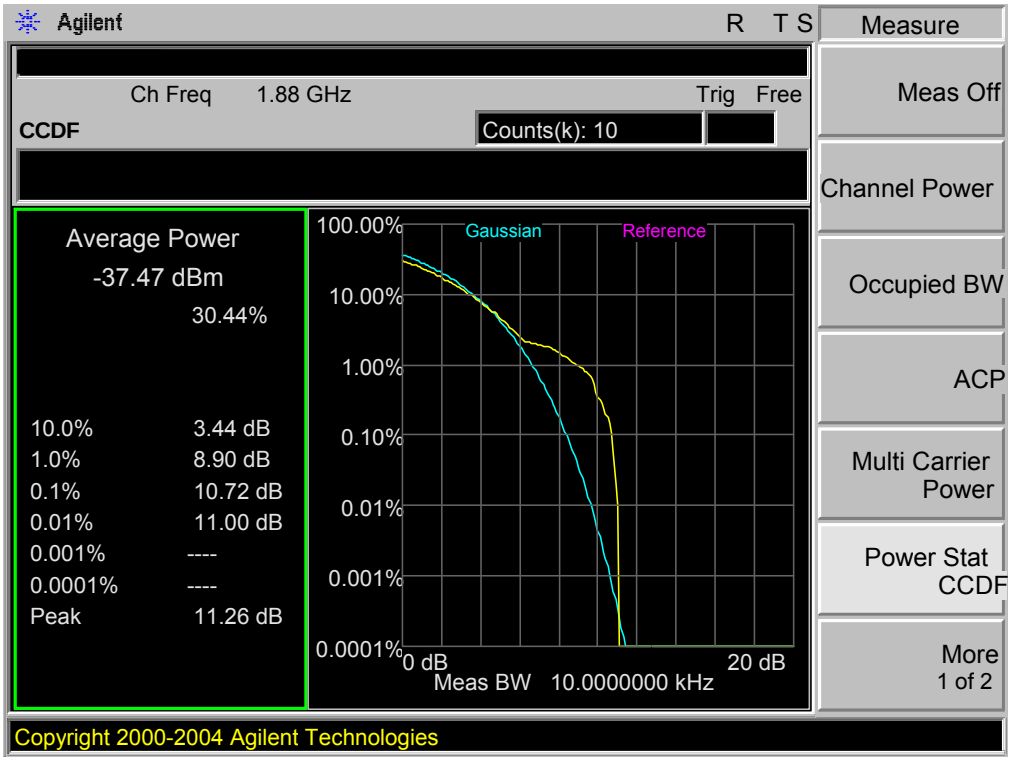
BAND	CHANNEL	Frequency [MHz]	BANDWIDTH	NO. RB	RB POS.	MODULATION	PAR [dB]
2	18900	1880.0	1.4	1	Low	QPSK	10.47
2	18900	1880.0	1.4	1	Low	16QAM	10.72
2	18900	1880.0	3.0	1	Low	QPSK	6.75
2	18900	1880.0	3.0	1	Low	16QAM	6.00
2	18900	1880.0	5.0	1	Low	QPSK	3.13
2	18900	1880.0	5.0	1	Low	16QAM	2.71
2	18900	1880.0	10.0	1	Low	QPSK	3.00
2	18900	1880.0	10.0	1	Low	16QAM	2.79
2	18900	1880.0	15.0	1	Low	QPSK	2.46
2	18900	1880.0	15.0	1	Low	16QAM	2.33
2	18900	1880.0	20.0	1	Low	QPSK	2.34
2	18900	1880.0	20.0	1	Low	16QAM	2.90
4	20175	1732.5	1.4	1	Low	QPSK	9.50
4	20175	1732.5	1.4	1	Low	16QAM	9.20
4	20175	1732.5	3.0	1	Low	QPSK	5.67
4	20175	1732.5	3.0	1	Low	16QAM	5.45
4	20175	1732.5	5.0	1	Low	QPSK	2.67
4	20175	1732.5	5.0	1	Low	16QAM	2.67
4	20175	1732.5	10.0	1	Low	QPSK	2.63
4	20175	1732.5	10.0	1	Low	16QAM	3.27
4	20175	1732.5	15.0	1	Low	QPSK	3.26
4	20175	1732.5	15.0	1	Low	16QAM	3.09
4	20175	1732.5	20.0	1	Low	QPSK	2.71
4	20175	1732.5	20.0	1	Low	16QAM	2.72
17	23790	710.0	5.0	1	Low	QPSK	1.87
17	23790	710.0	5.0	1	Low	16QAM	2.17
17	23790	710.0	10.0	1	Low	QPSK	1.83
17	23790	710.0	10.0	1	Low	16QAM	1.63

12.1.5. LTE BAND 2

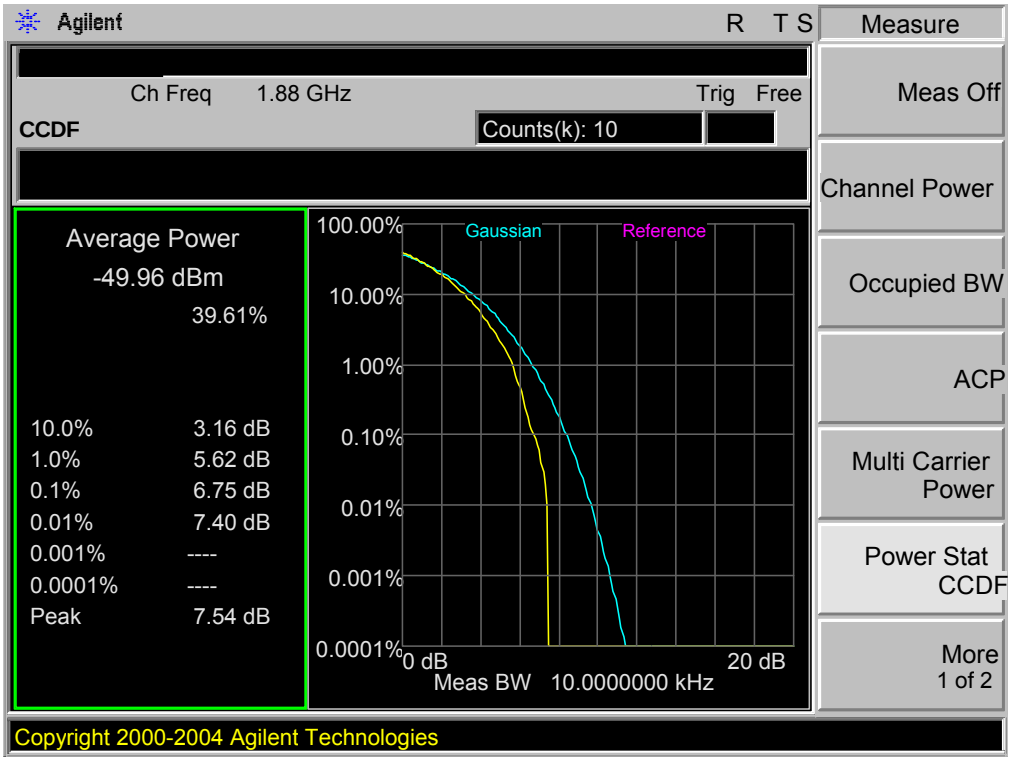
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low,QPSK



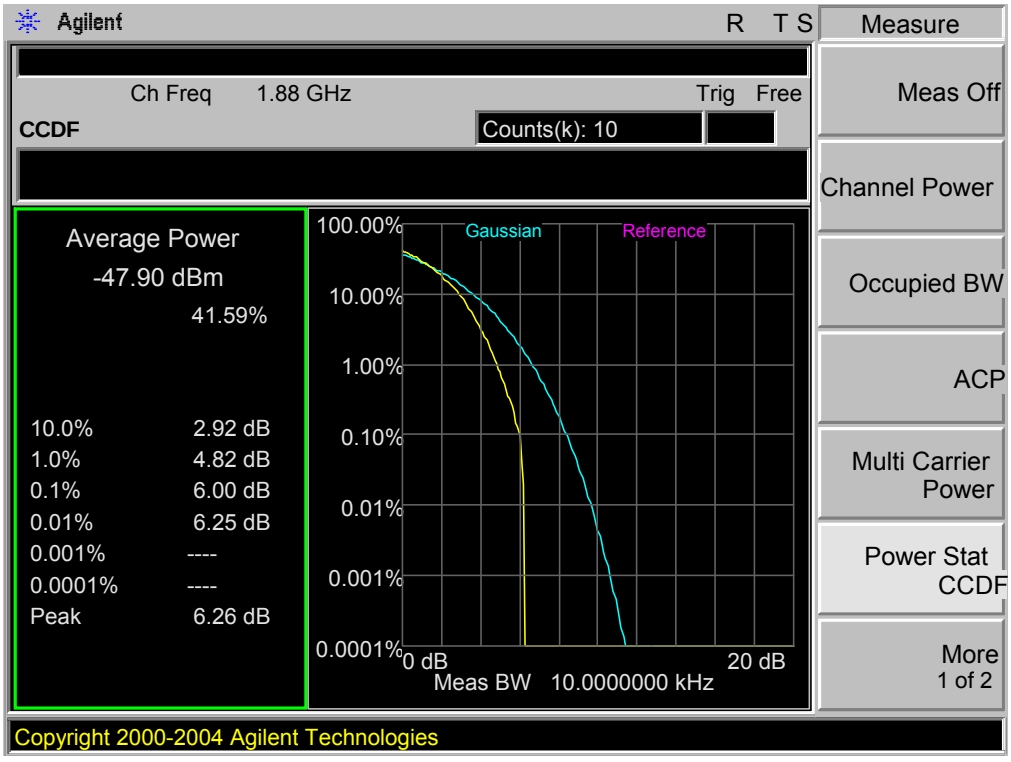
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 1.4,NO. RB 1,RB POS. Low,16QAM



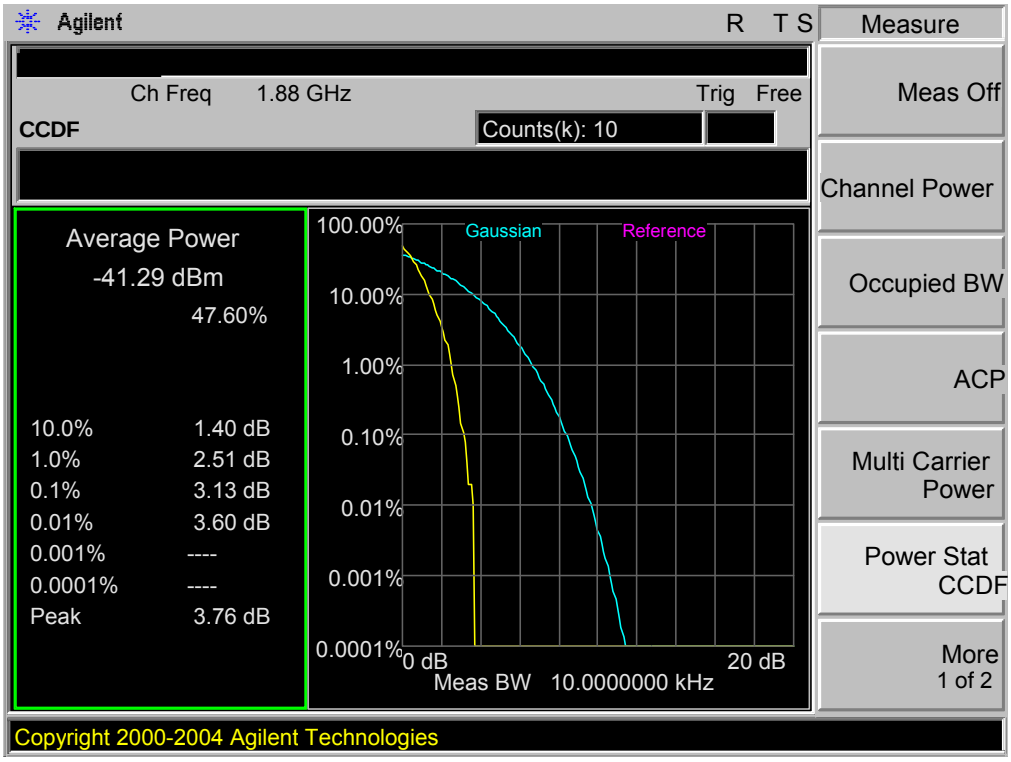
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,QPSK



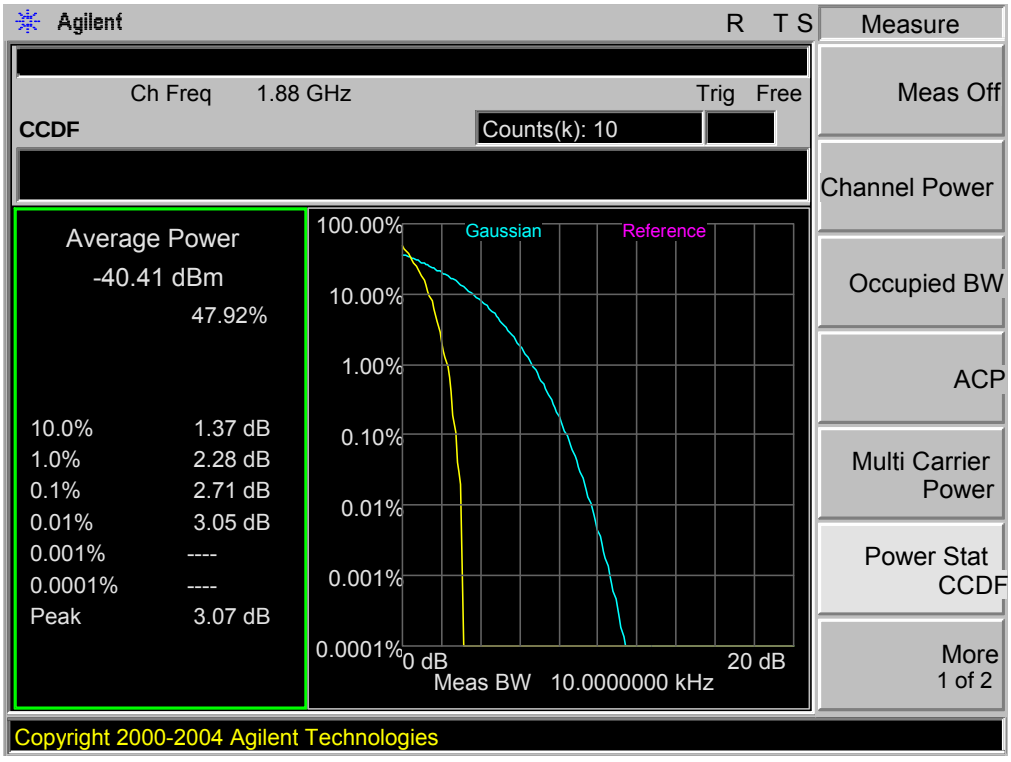
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 3.0,NO. RB 1,RB POS. Low,16QAM



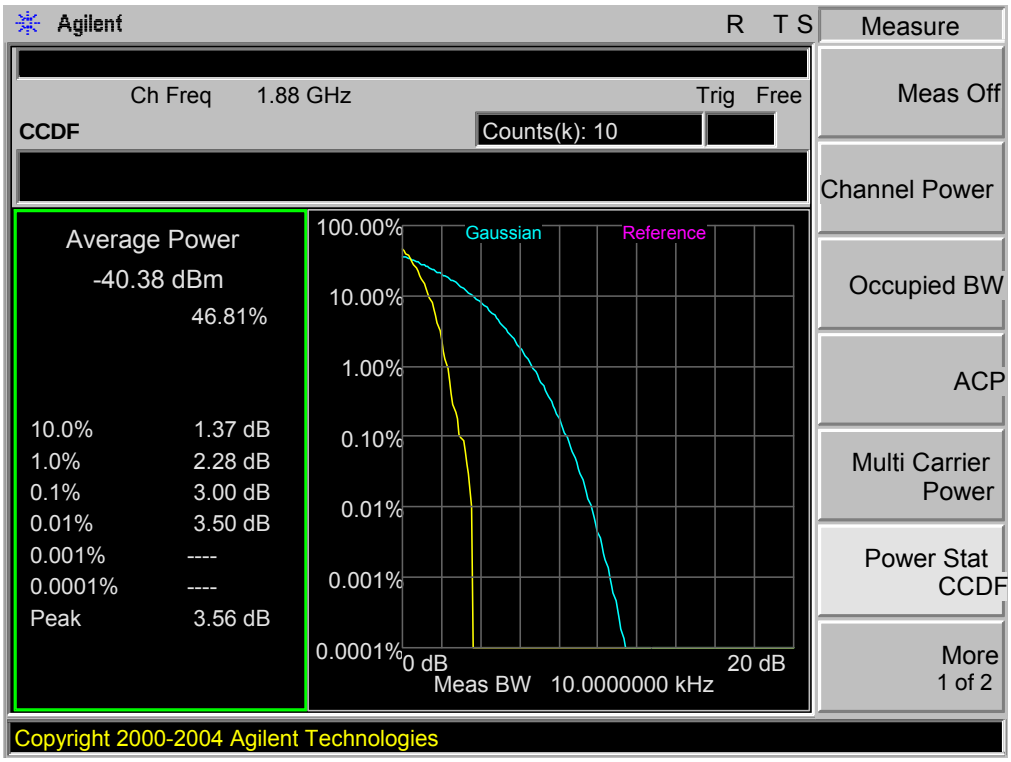
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK



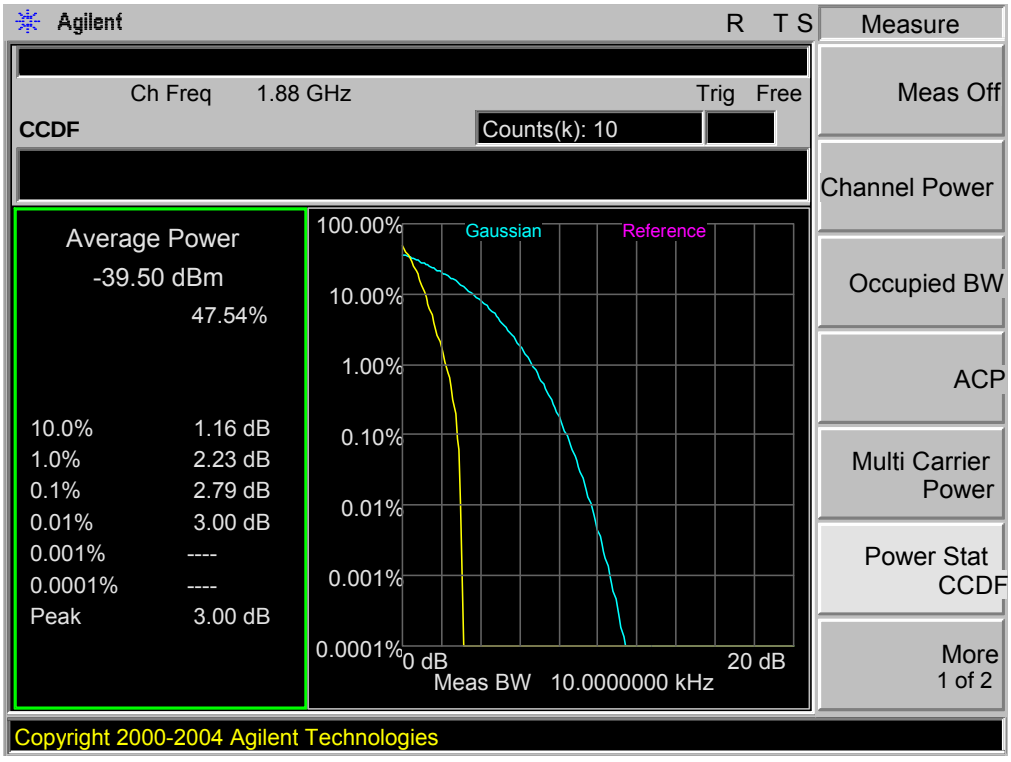
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 5.0,NO. RB 1,RB POS. Low,16QAM



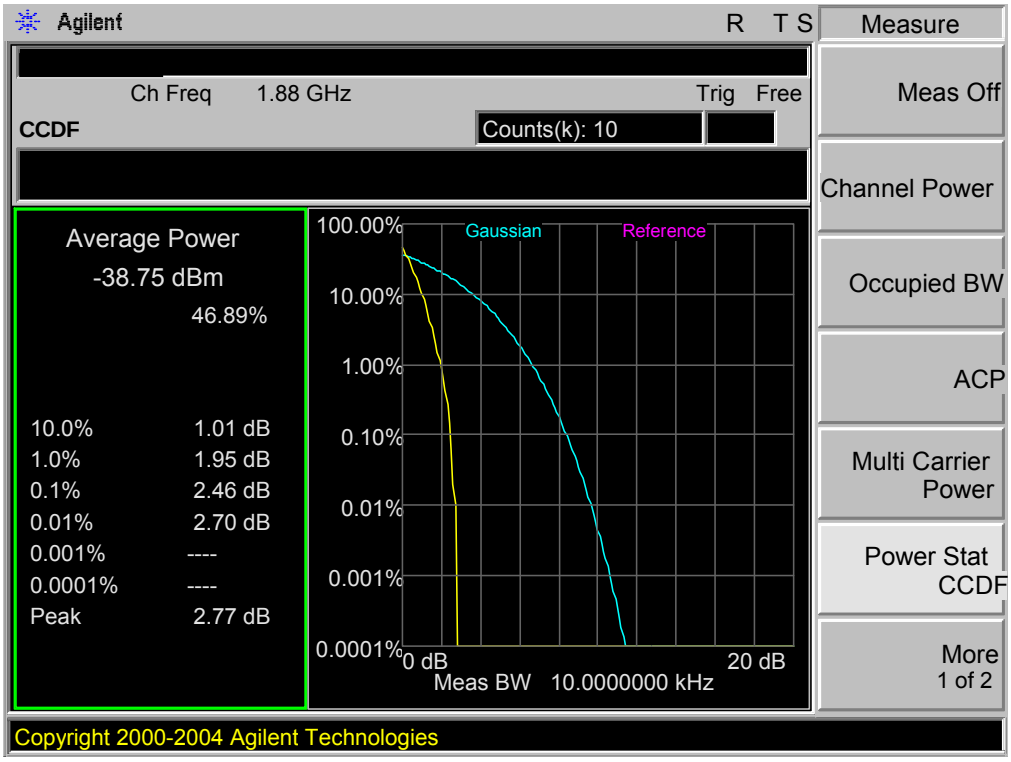
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



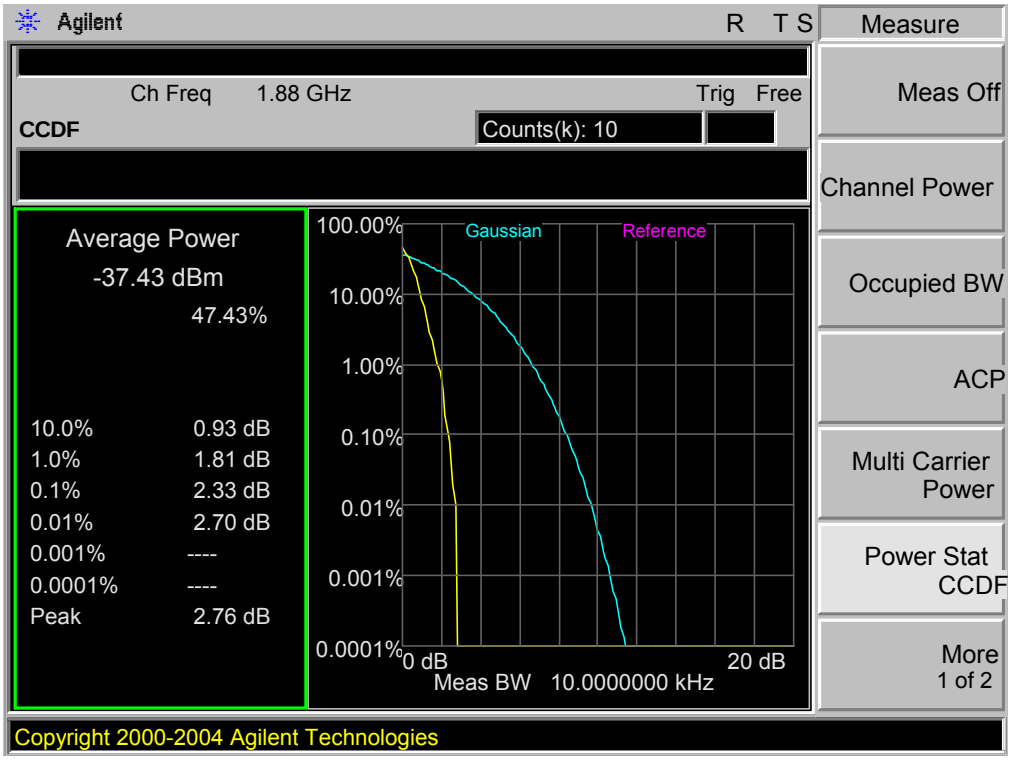
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



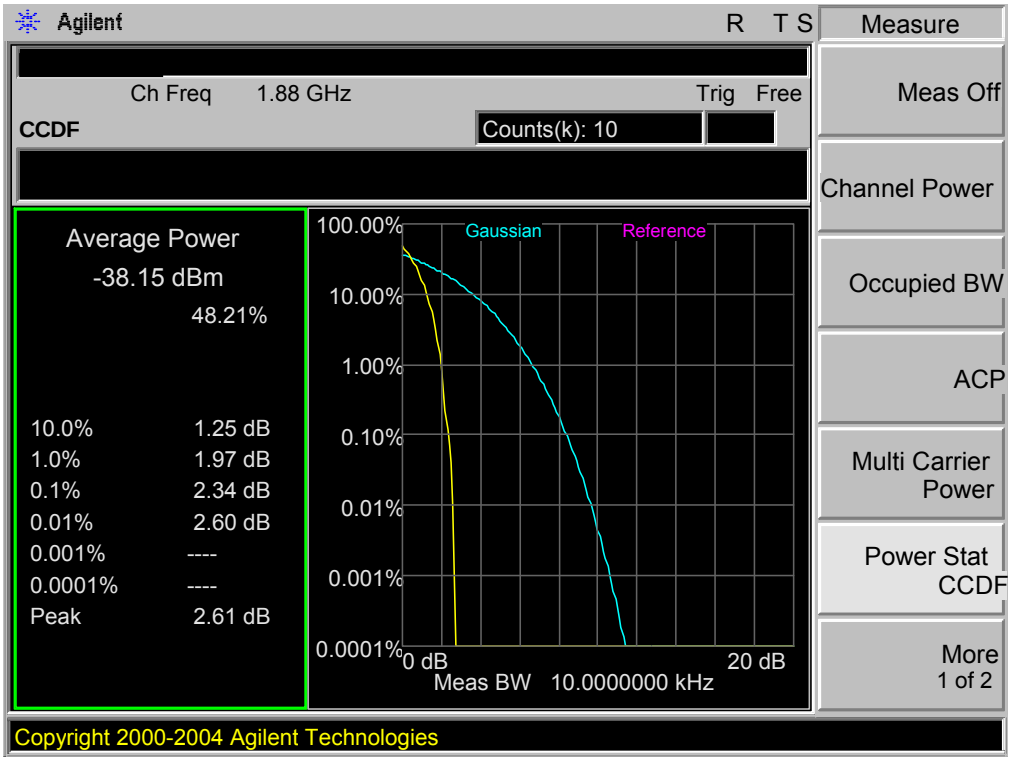
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. Low,QPSK



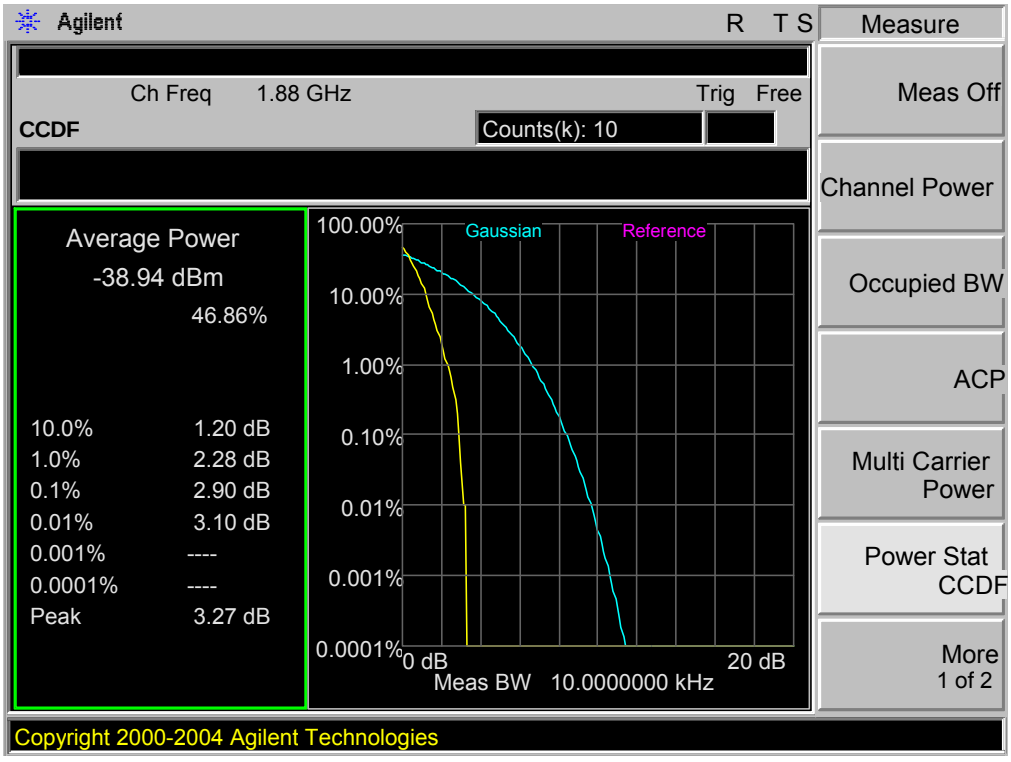
Band 2,UL Channel 18900,UL Frequency 1880.0,BW 15.0,NO. RB 1,RB POS. Low,16QAM



Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,QPSK

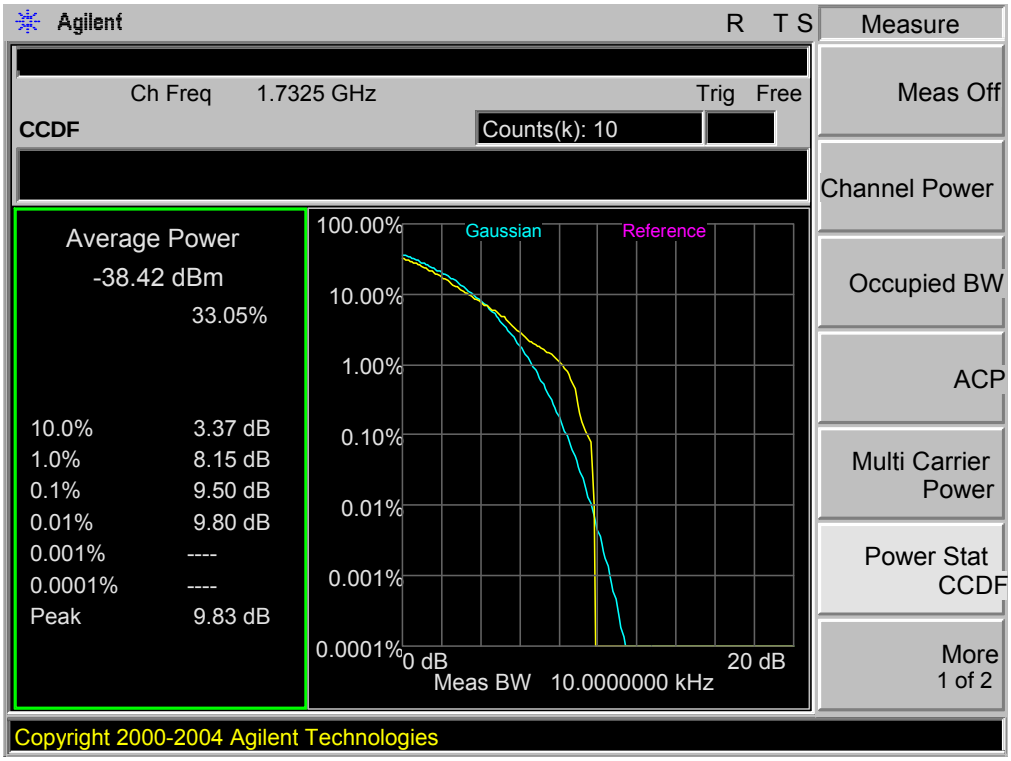


Band 2,UL Channel 18900,UL Frequency 1880.0,BW 20.0,NO. RB 1,RB POS. Low,16QAM

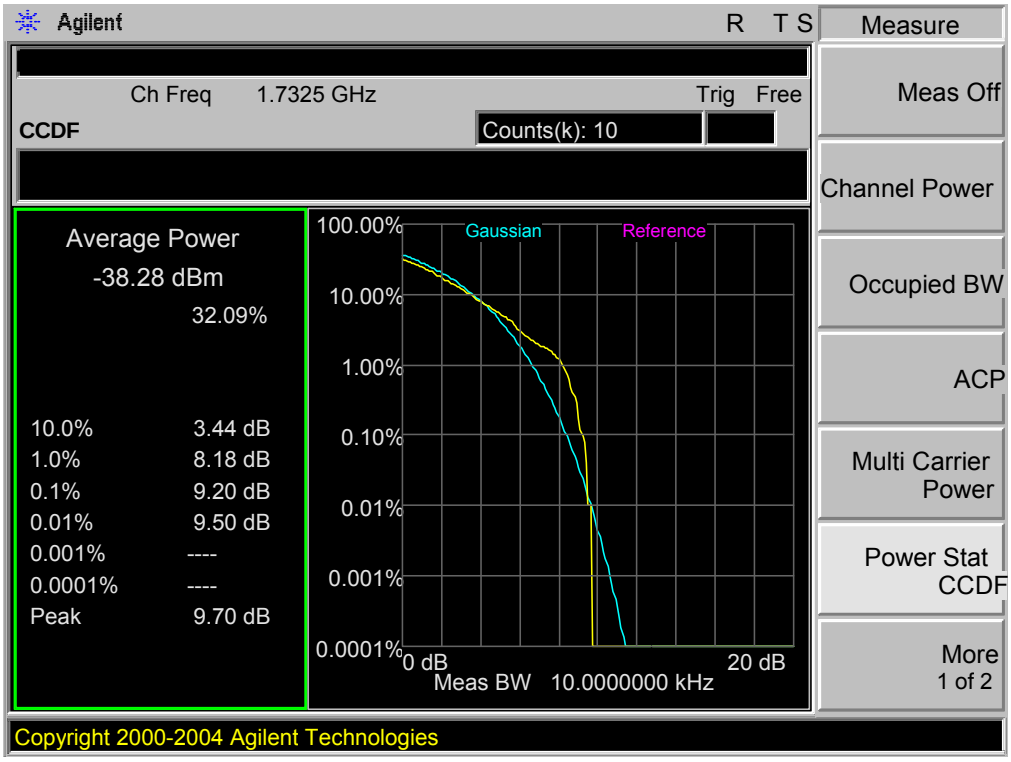


12.1.5. LTE BAND 4

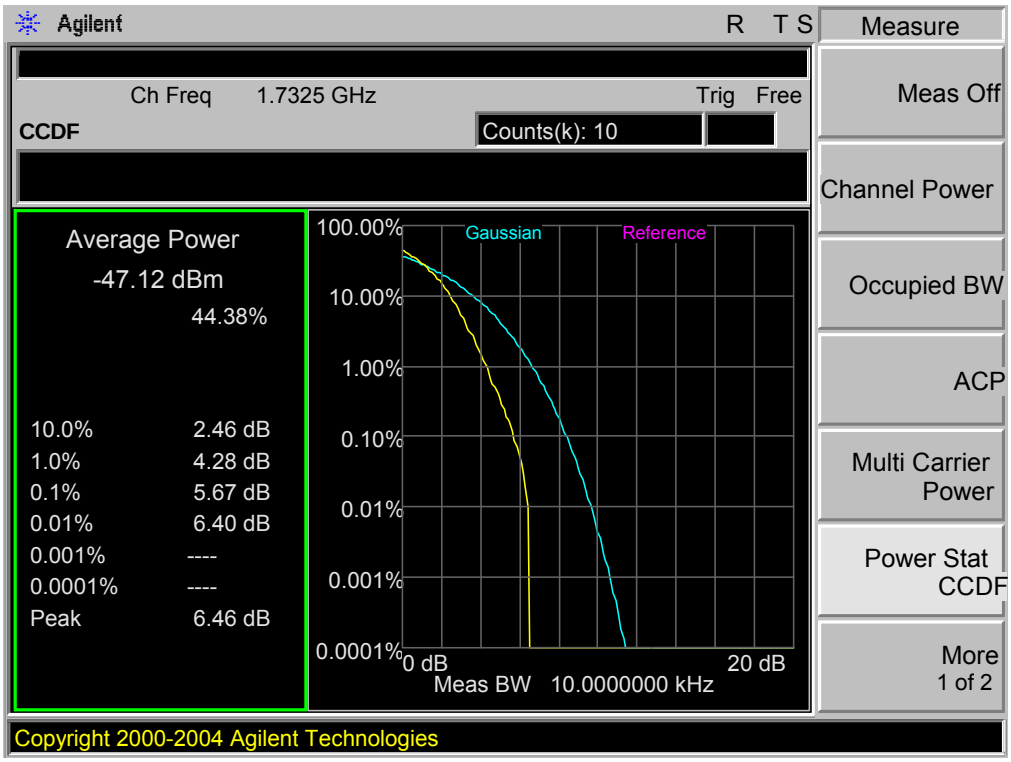
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,QPSK



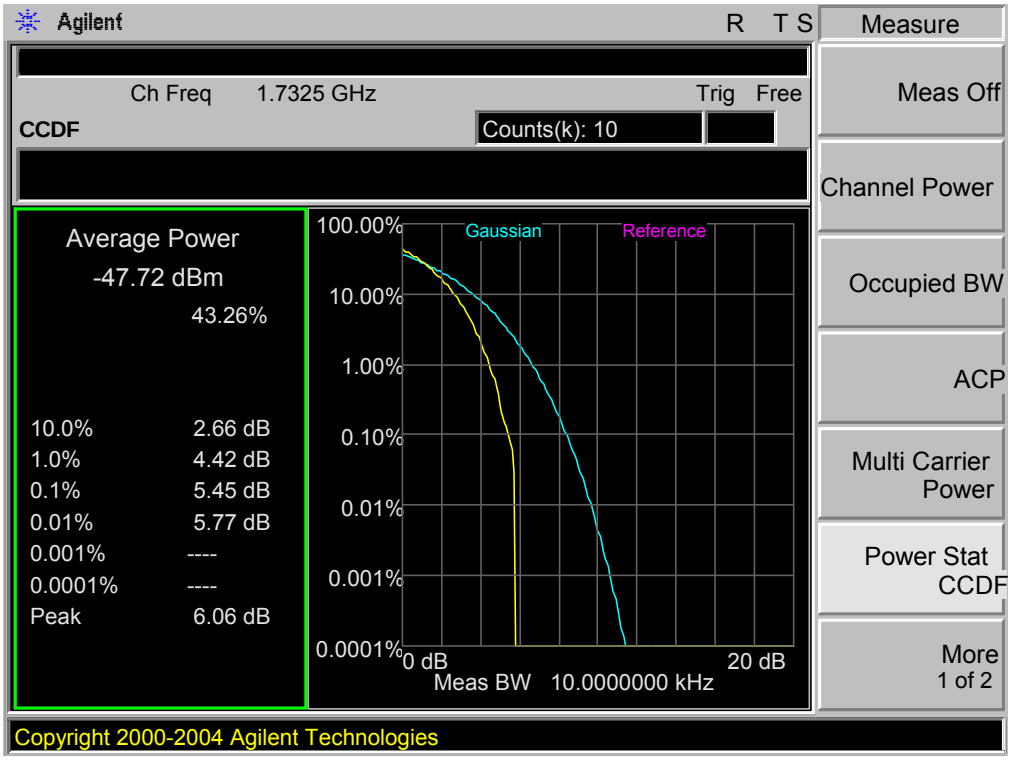
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 1.4,NO. RB 1,RB POS. Low,16QAM



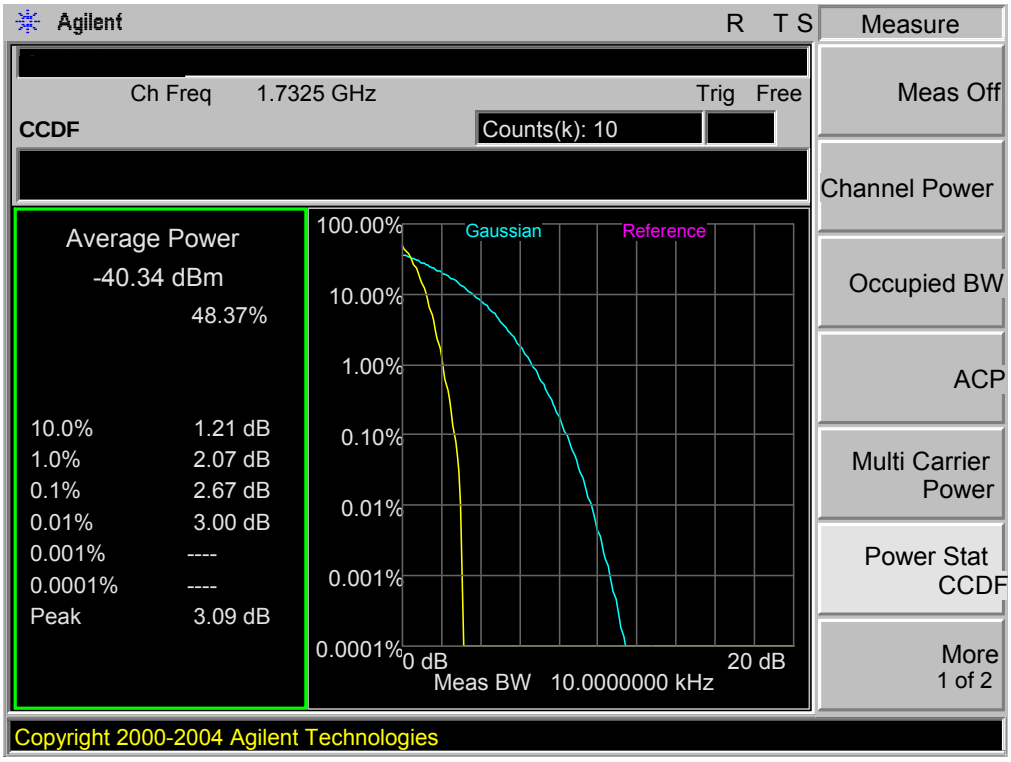
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. Low,QPSK



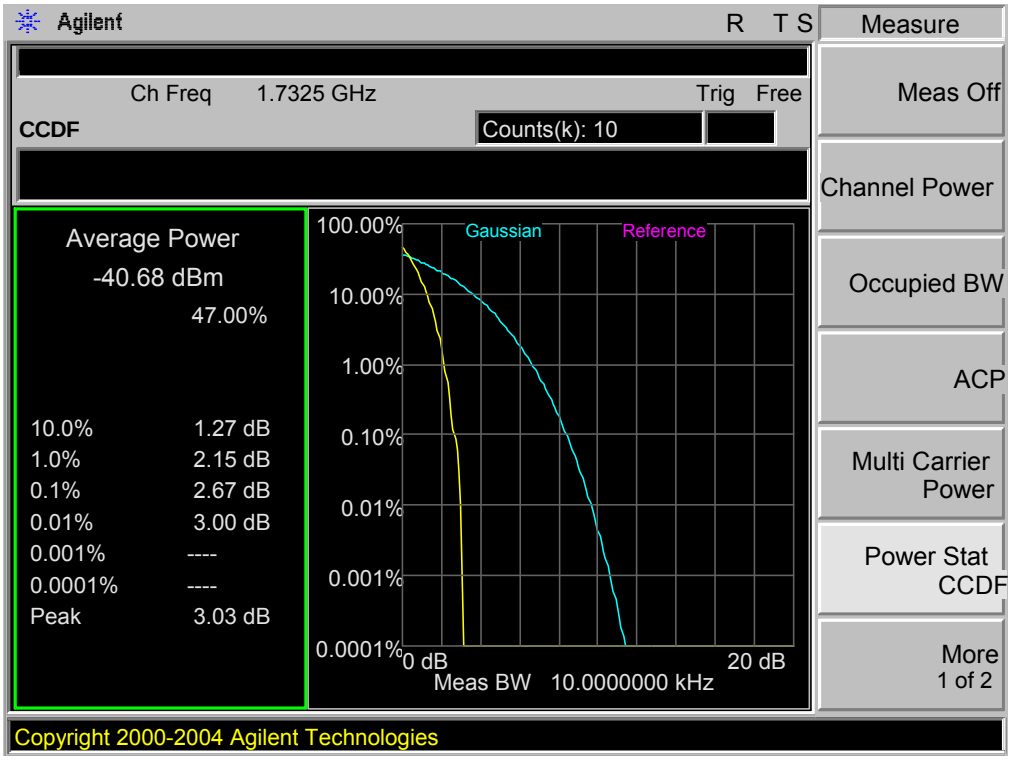
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 3.0,NO. RB 1,RB POS. Low,16QAM



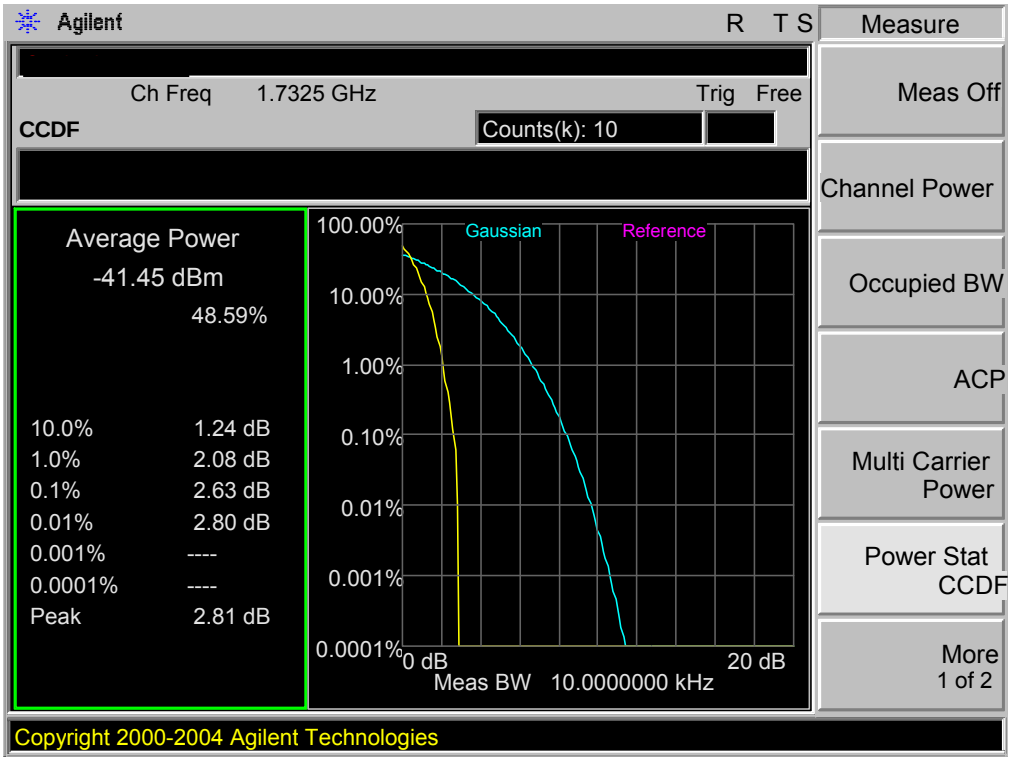
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,QPSK



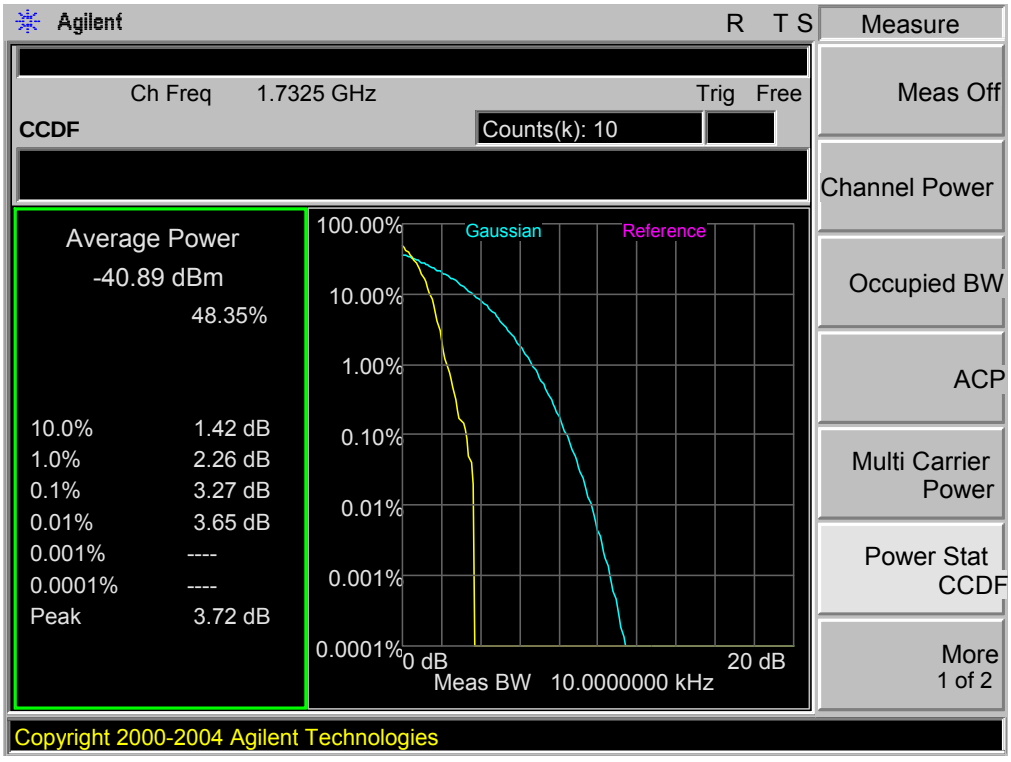
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 5.0,NO. RB 1,RB POS. Low,16QAM



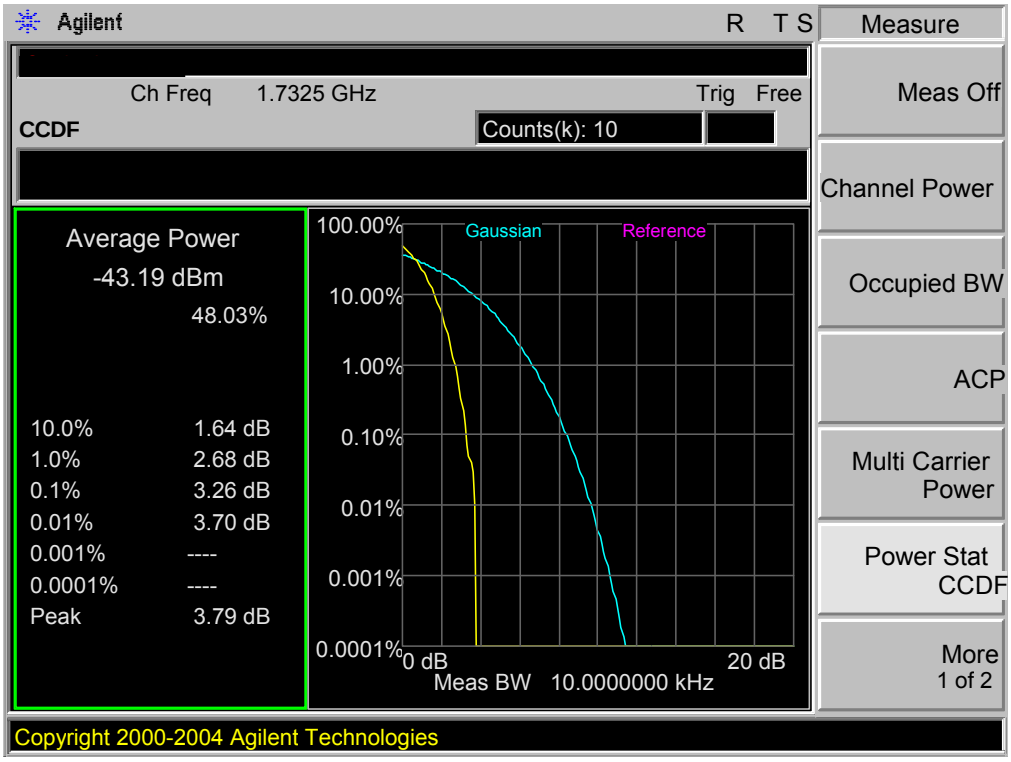
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,QPSK



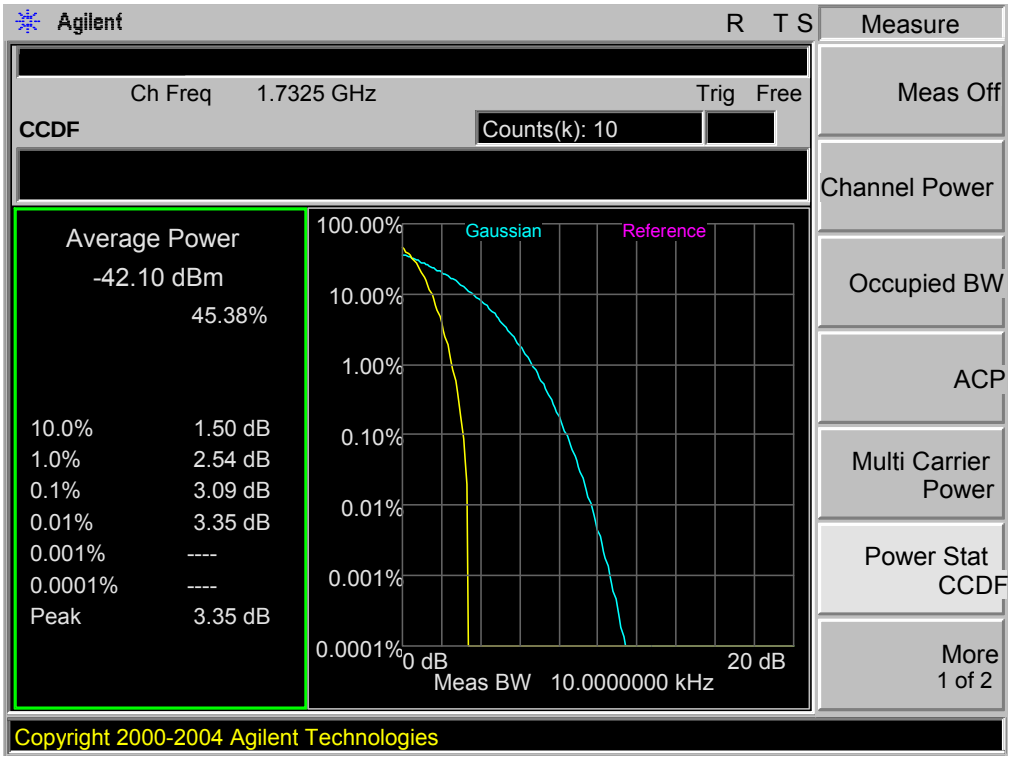
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 10.0,NO. RB 1,RB POS. Low,16QAM



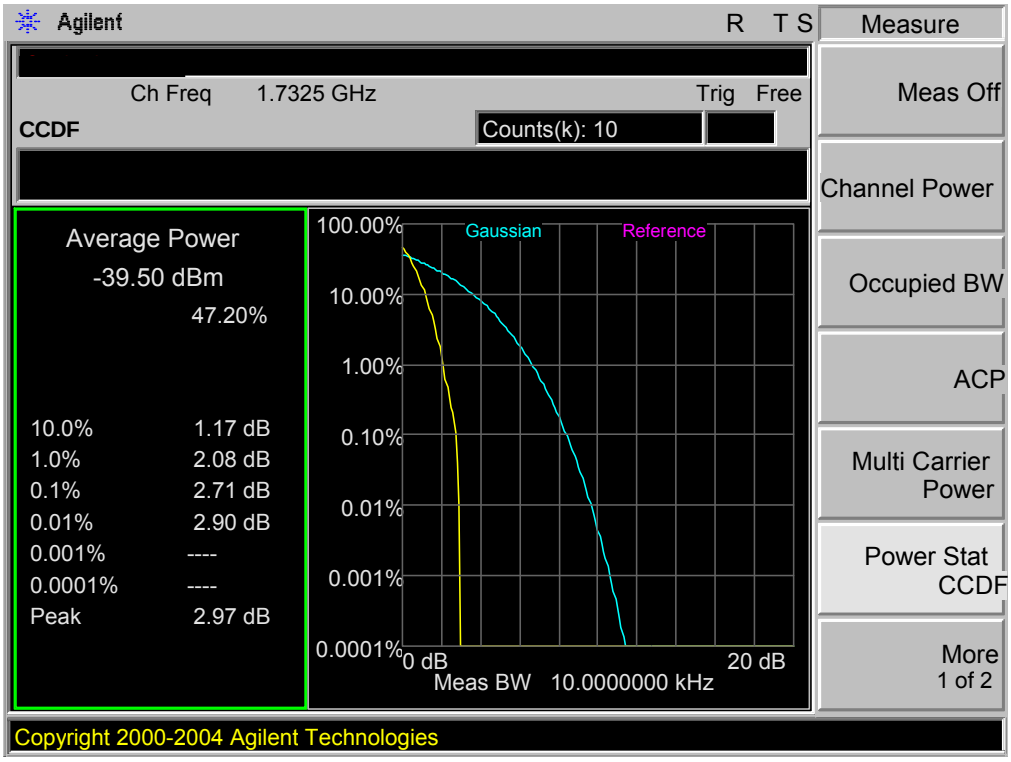
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,QPSK



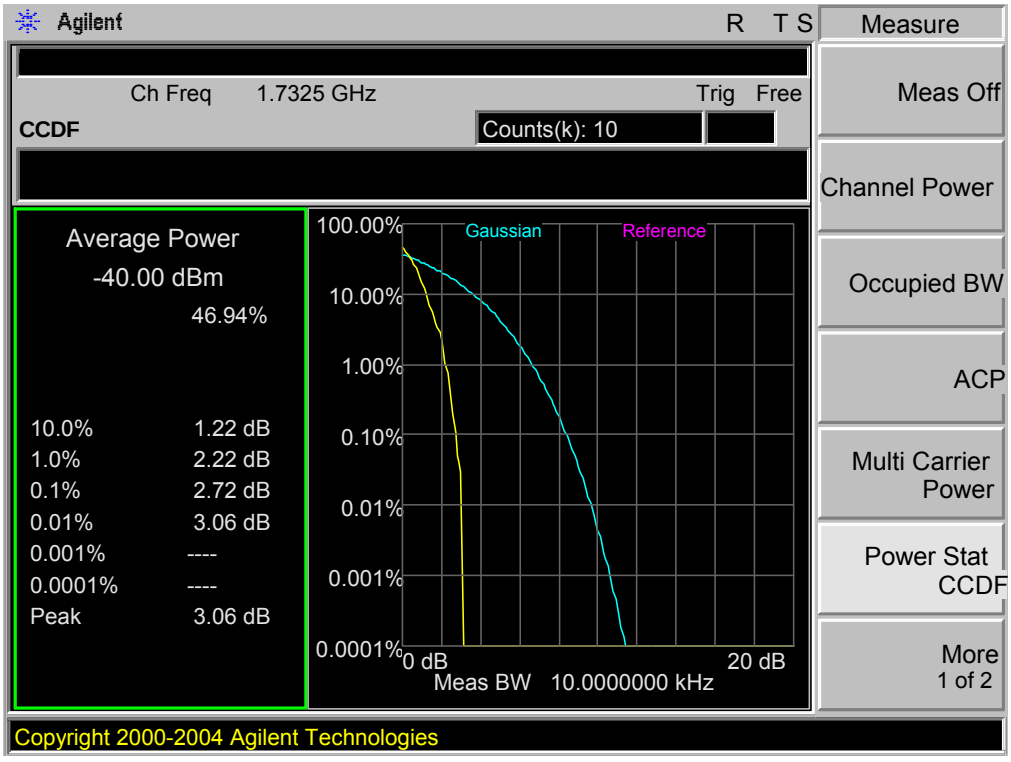
Band 4,UL Channel 20175,UL Frequency 1732.5,BW 15.0,NO. RB 1,RB POS. Low,16QAM



Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,QPSK

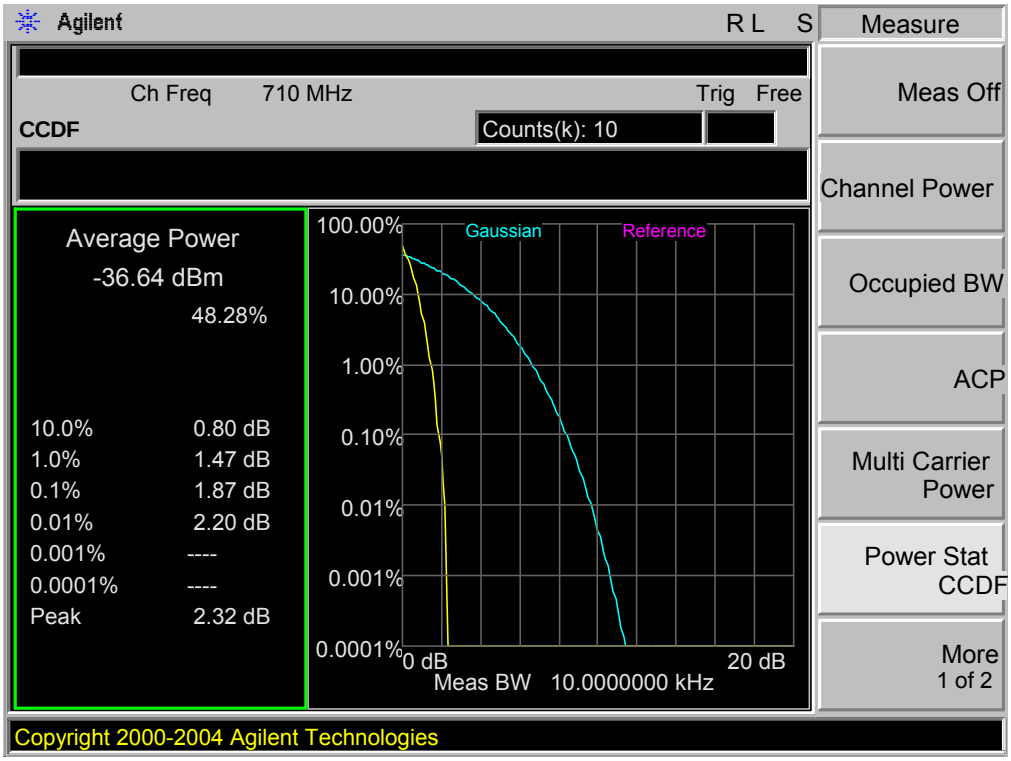


Band 4,UL Channel 20175,UL Frequency 1732.5,BW 20.0,NO. RB 1,RB POS. Low,16QAM

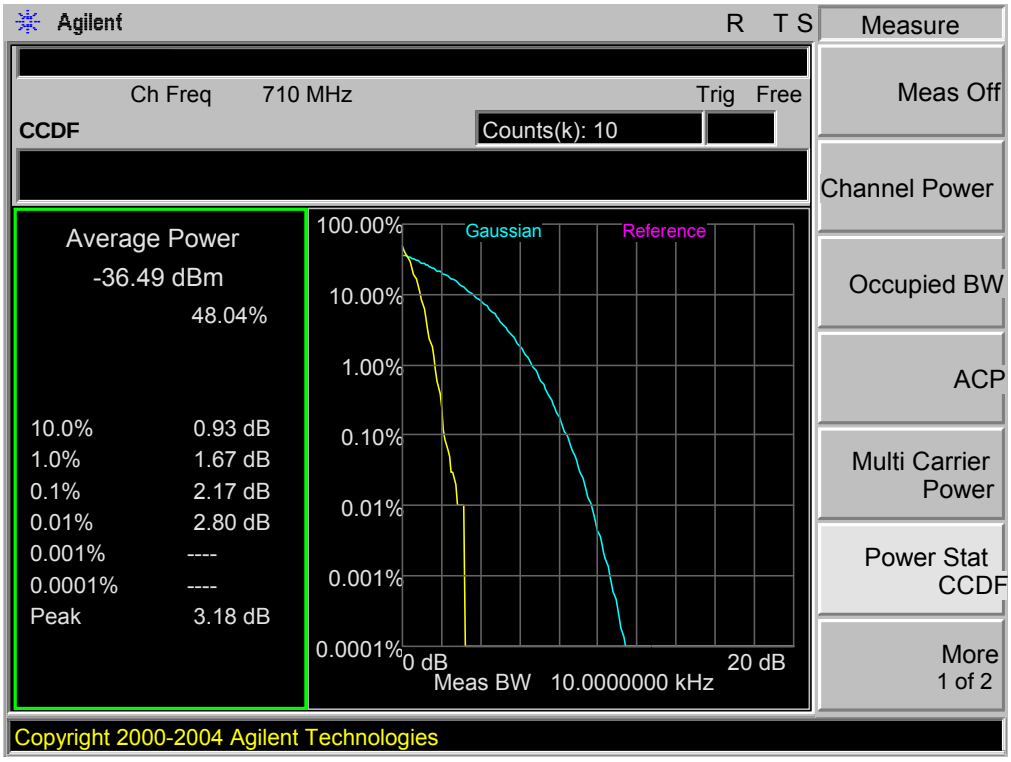


12.1.6. LTE BAND 17

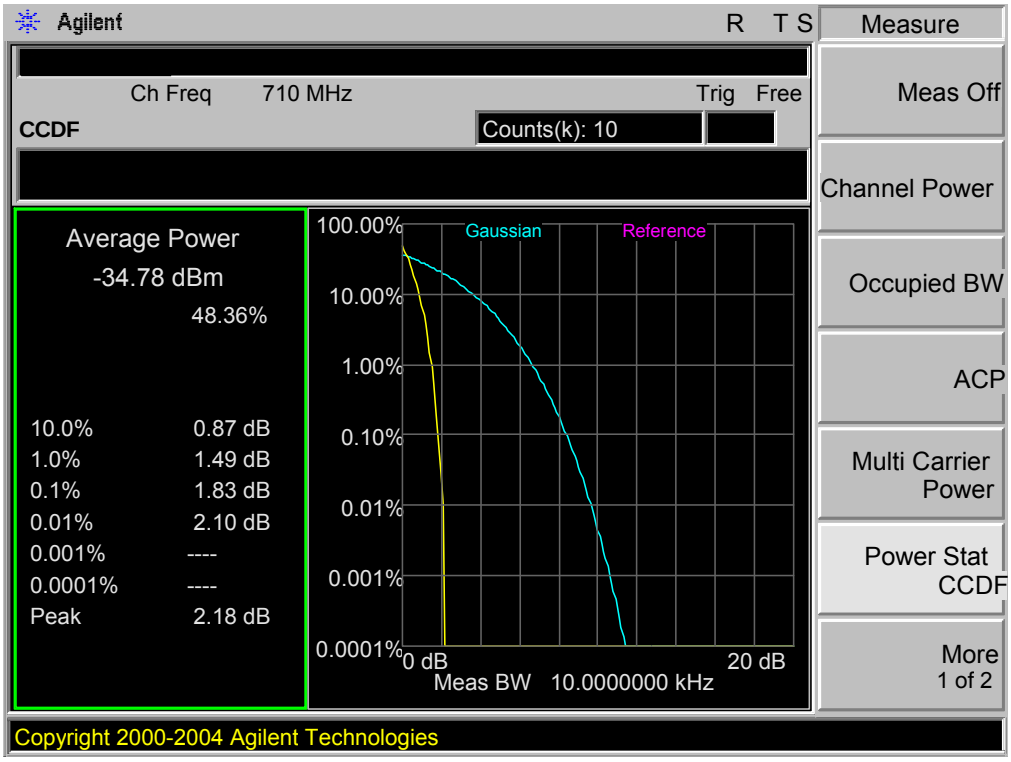
Band 17,UL Channel 23790,UL Frequency 710.0,BW 5.0,NO. RB 1,RB POS. Low,QPSK



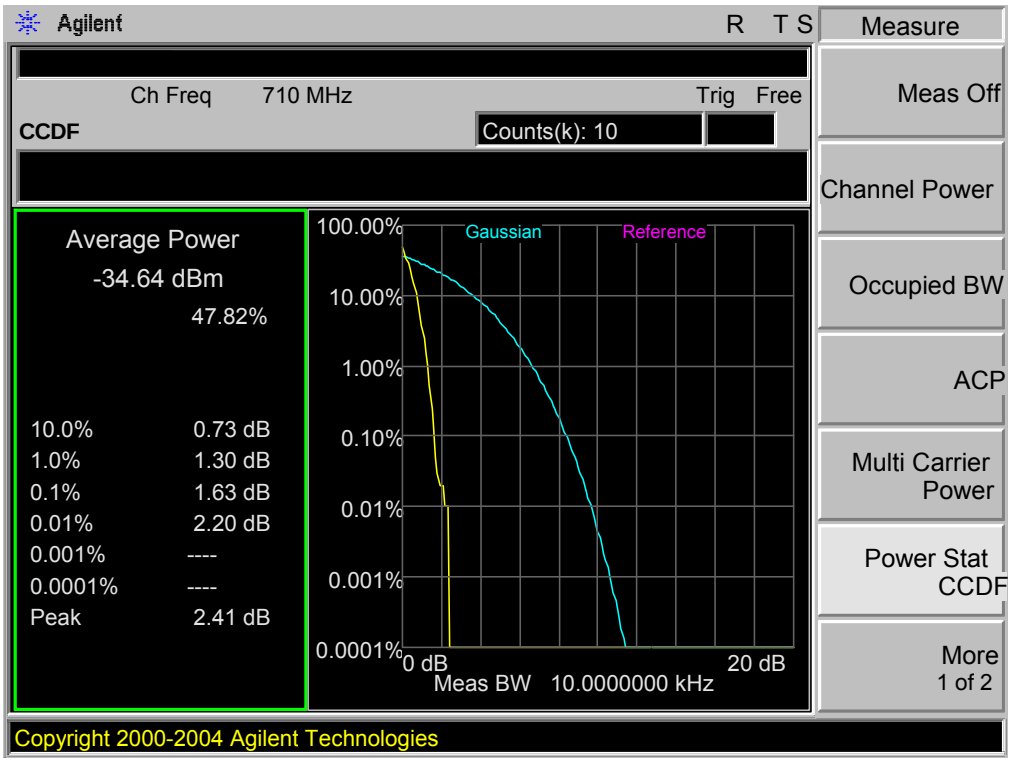
Band 17,UL Channel 23790,UL Frequency 710.0,BW 5.0,NO. RB 1,RB POS. Low,16QAM



Band 17,UL Channel 23790,UL Frequency 710.0,BW 10.0,NO. RB 1,RB POS. Low,QPSK



Band 17,UL Channel 23790,UL Frequency 710.0,BW 10.0,NO. RB 1,RB POS. Low,16QAM



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