FCC TEST REPORT

(Part 90 Subpart Z)

REPORT NO.: RF120325C01

MODEL NO.: WIXB-188

(Refer to item 3.1 for the more details)

FCC ID: MXF-WIXB-188

RECEIVED: Mar. 25, 2012

TESTED: Apr. 14 ~ May 10, 2012

ISSUED: May 11, 2012

APPLICANT: Gemtek Technology Co., Ltd.

ADDRESS: No.15-1, Zhonghua Rd, Hsinchu Industrial Park , Hsinchu County, Taiwan,R.O.C.303

ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120325C01	Original release	May 11, 2012

1 CERTIFICATION

PRODUCT: WiMAX Outdoor CPE
MODEL: WIXB-188 (Refer to item 3.1 for the more details)
BRAND: Gemtek (Refer to item 3.1 for the more details)
APPLICANT: Gemtek Technology Co., Ltd.
TESTED: Apr. 14 ~ May 10, 2012
TEST SAMPLE: ENGINEERING SAMPLE
TEST STANDARDS: **FCC Part 90, Subpart Z**

The above equipment (Model No.: WIXB-188) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch,** and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE:** May 11, 2012
Pettie Chen / Specialist

APPROVED BY : _____ , **DATE:** May 11, 2012
Gary Chang / Technical Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

STANDARD SECTION FCC Part 2& Part 90	TEST TYPE AND LIMIT	RESULT	REMARK
2.1046 90.1321	Maximum Peak Output Power	PASS	Meet the requirement of limit.
2.1055 90.213	Frequency Stability Stay with the authorized bands of operation	PASS	Meet the requirement of limit.
2.1049 90.1323	Emission Bandwidth	PASS	Meet the requirement of limit.
90.210	Emission masks	PASS	Meet the requirement of limit.
2.1051 90.1323	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 90.1323	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -28.9dB at 156.35MHz.

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.34 dB
	200MHz ~1000MHz	3.35 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	WiMAX Outdoor CPE
MODEL NO.	WIXB-188 (Refer to NOTE for the more details)
POWER SUPPLY	56Vdc from PoE
MODULATION TYPE	QPSK, 16QAM, 64QAM
MODULATION TECHNOLOGY	OFDMA
DUPLEX METHOD	TDD
OPERATING FREQUENCY	3652.5MHz ~ 3697.5MHz
CHANNEL BANDWIDTH	5.0MHz, 7.0MHz, 10.0MHz
MAX. E.I.R.P. POWER (RMS)	3.795W (5.0MHz) 5.403W (7.0MHz) 6.720W (10.0MHz)
ANTENNA TYPE	Patched antenna with 15dBi gain
ANTENNA CONNECTOR	MCX
OPERATION TEMPERATURE RANGE	-40°C ~ 55°C
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	POE

NOTE:

1. The models as below are identical to each other except for their model designation and brand name due to marketing purpose.

Brand	Model
Gemtek	WIXB-188
Alvarion	4M-CPE6000-PRO-1D-1V-3.x

2. The EUT consumes power from the following PoE.

BRAND	PHIHONG
MODEL	PSM25R-560
INPUT POWER	100-240Vac, 0.5A, 50-60Hz
OUTPUT POWER	56Vdc, 0.45A
POWER LINE	1.8m non-shielded cable with one core

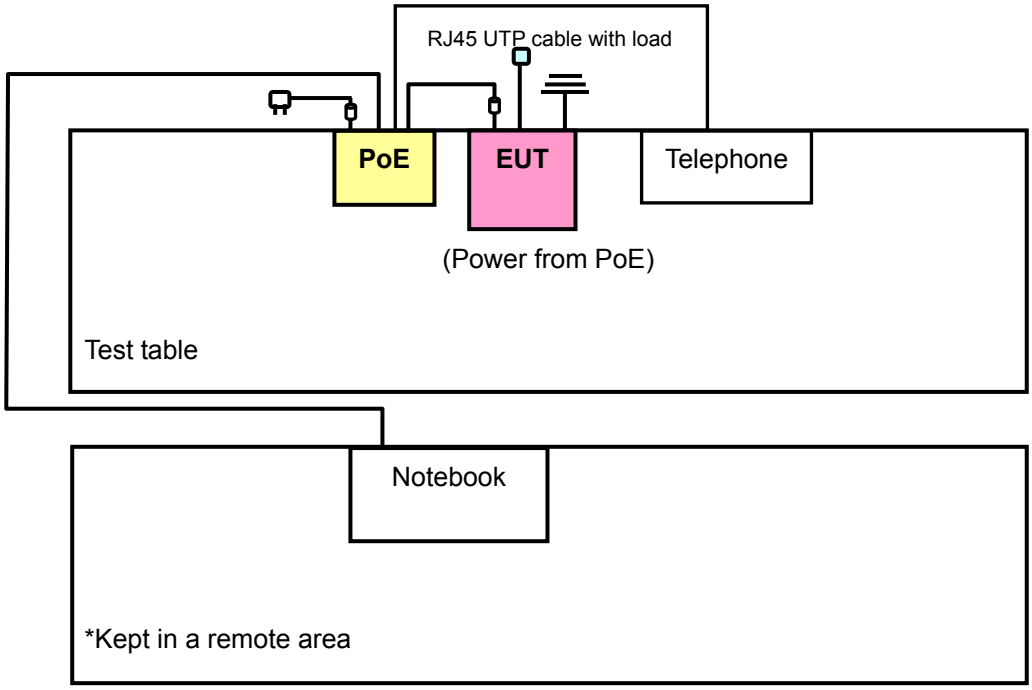
3. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Three channels of each channel bandwidth had been tested.

CHANNEL (MHz)	CHANNEL BANDWIDTH		
	5.0 MHz	7.0 MHz	10.0 MHz
LOW	3652.5	3653.5	3655.0
MIDDLE	3675.0	3675.0	3675.0
HIGH	3697.5	3696.5	3695.0

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO							DESCRIPTION
	OP	FS	EB	EM	CSE	RE<1G	RE≥1G	
-	√	√	√	√	√	√	√	-

Where **OP:** Output power **FS:** Frequency stability
EB: Emission bandwidth **EM:** Emission masks
CSE: Conducted spurious emissions **RE<1G:** Radiated emission below 1GHz
RE≥1G: Radiated emission above 1GHz

OUTPUT POWER MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE
L, M, H	OFDMA	5.0MHz	QPSK, 16QAM, 64QAM
L, M, H	OFDMA	7.0MHz	QPSK, 16QAM, 64QAM
L, M, H	OFDMA	10.0MHz	QPSK, 16QAM, 64QAM

FREQUENCY STABILITY MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE
H	OFDMA	5.0MHz	QPSK, 16QAM, 64QAM
L	OFDMA	7.0MHz	QPSK, 16QAM, 64QAM
H	OFDMA	10.0MHz	QPSK, 16QAM, 64QAM

EMISSION BANDWIDTH MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE
L, M, H	OFDMA	5.0MHz	QPSK, 16QAM, 64QAM
L, M, H	OFDMA	7.0MHz	QPSK, 16QAM, 64QAM
L, M, H	OFDMA	10.0MHz	QPSK, 16QAM, 64QAM

EMISSION MASKS MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE
L, M, H	OFDMA	5.0MHz	QPSK, 16QAM, 64QAM
L, M, H	OFDMA	7.0MHz	QPSK, 16QAM, 64QAM
L, M, H	OFDMA	10.0MHz	QPSK, 16QAM, 64QAM

CONDUCTED SPURIOUS EMISSIONS MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE
L, M, H	OFDMA	5.0MHz	QPSK, 16QAM, 64QAM
L, M, H	OFDMA	7.0MHz	QPSK, 16QAM, 64QAM
L, M, H	OFDMA	10.0MHz	QPSK, 16QAM, 64QAM

RADIATED EMISSION MEASUREMENT (BELOW 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE
H	OFDMA	5.0MHz	QPSK
H	OFDMA	7.0MHz	QPSK
H	OFDMA	10.0MHz	QPSK

RADIATED EMISSION MEASUREMENT (ABOVE 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and antenna ports (if EUT with antenna diversity architecture).
☒ Following channel(s) was (were) selected for the final test as listed below.

TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE
L, M, H	OFDMA	5.0MHz	QPSK
L, M, H	OFDMA	7.0MHz	QPSK
L, M, H	OFDMA	10.0MHz	QPSK

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
OP	24deg. C, 65%RH	120Vac, 60Hz	Mark Liao
FS	24deg. C, 65%RH	120Vac, 60Hz	Mark Liao
EB	24deg. C, 65%RH	120Vac, 60Hz	Mark Liao
EM	24deg. C, 65%RH	120Vac, 60Hz	Mark Liao
CSE	24deg. C, 65%RH	120Vac, 60Hz	Mark Liao
RE < 1G	24deg. C, 65%RH	120Vac, 60Hz	Alan Wu
RE ≥ 1G	24deg. C, 65%RH	120Vac, 60Hz	Alan Wu

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 90

ANSI/TIA/EIA-603-C-2004

965270 D01 Pwr Meas Part 90 Z Equipment v01

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	TELEPHONE	WONDER	IS-333	06026	NA
2	NOTEBOOK	DELL	PP05L	12130898320	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	0.8m RJ11cable
2	10 m shielded RJ45 cable

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Item 2 acted as a communication partner to transfer data.

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER AND POWER DENSITY MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER AND POWER DENSITY

PER FCC PART 90.1321

BASE AND FIXED STATIONS

Base and fixed stations are limited to 25 Watts/25 MHz equivalent isotropical radiated power (EIRP). In any event, the peak EIRP power density shall not exceed 1 Watt in any one-megahertz slice of spectrum.

MOBILE AND PORTABLE STATIONS

Mobile and portable stations are limited to 1 Watt/25 MHz EIRP. In any event, the peak EIRP density shall not exceed 40 milliWatts in any one-megahertz slice of spectrum.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY44360128	Feb. 20, 2012	Feb. 19, 2013
RF cable	SUCOFLEX 104	329751/4	Jan. 20, 2012	Jan. 19, 2013
DC-6GHz 20dB 50W Fixed attenuator Woken	MDC9331N-20	0724	May 13, 2011	May 12, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1.3 TEST PROCEDURES

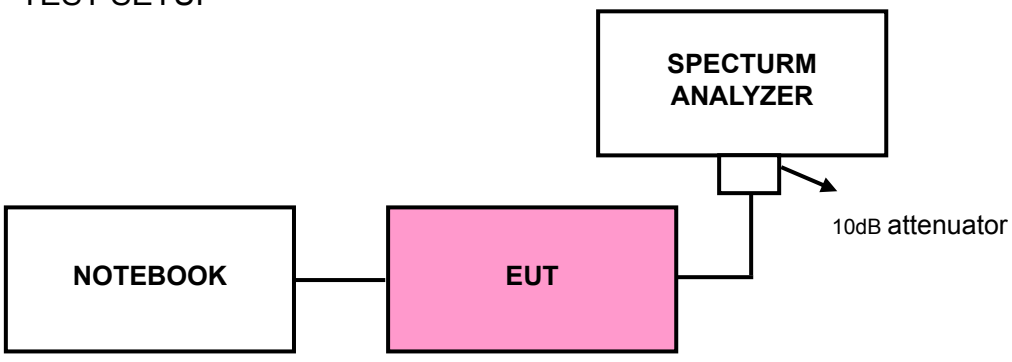
OUTPUT POWER

1. Connect the DUT transmitter output to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
2. Time the analyzer to the nominal center frequency of the emission bandwidth (EBW).
3. Set the span to twice the nominal EBW (span = 2 x EBW).
4. Set the resolution bandwidth (RBW) to approximately 1% of EBW.
5. Set the video bandwidth (VBW) to ≧ 3 x RBW
6. Select the average power (RMS) display detector.
7. Set the number of measurement points to ≧1001.
8. Use auto-coupled sweep time.
9. Perform measurement over an interval of time when the transmission is continuous and at its maximum power level.
10. Utilize trace averaging over 100 traces in the power averaging mode.
11. Use the Band/Channel Power function to determine the integrated power over the full EBW.
12. Record the band power level.
13. Adjust the recorded level by applying appropriate correction factors for the measurement set-up.
14. Determine the EIRP by adding the effective antenna gain to the adjusted power level.

POWER DENSITY

1. Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
2. Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).
3. Set the span to twice the nominal EBW (span = 2 x EBW).
4. Set the resolution bandwidth (RBW) to 1MHZ.
5. Set the video bandwidth (VBW) to ≧3 x RBW.
6. Select the average power (RMS) display detector.
7. Set the number of measurement points to ≧ 1001.
8. Use auto-coupled sweep time.
9. Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.
b. Prepared one notebook outside of testing area to act as a communication partner.
c. The communication partner connected with EUT via an RJ45 UTP cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.6 TEST RESULTS

CHANNEL BANDWIDTH: 5.0MHz / QPSK

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3652.5	20.398	15	35.398	3.466	5.00
Middle	3675.0	20.650	15	35.650	3.673	5.00
High	3697.5	20.792	15	35.792	3.795	5.00

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 5.0MHz / 16QAM

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3652.5	20.624	15	35.624	3.651	5.00
Middle	3675.0	20.770	15	35.770	3.776	5.00
High	3697.5	20.768	15	35.768	3.774	5.00

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 5.0MHz / 64QAM

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3652.5	20.582	15	35.582	3.616	5.00
Middle	3675.0	20.777	15	35.777	3.782	5.00
High	3697.5	20.787	15	35.787	3.791	5.00

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 7.0MHz / QPSK

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3653.5	21.455	15	36.455	4.421	7.00
Middle	3675.0	22.296	15	37.296	5.365	7.00
High	3696.5	21.704	15	36.704	4.682	7.00

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 7.0MHz / 16QAM

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3653.5	22.326	15	37.326	5.403	7.00
Middle	3675.0	21.581	15	36.581	4.551	7.00
High	3696.5	21.665	15	36.665	4.640	7.00

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 7.0MHz / 64QAM

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3653.5	21.555	15	36.555	4.524	7.00
Middle	3675.0	21.613	15	36.613	4.585	7.00
High	3696.5	21.662	15	36.662	4.637	7.00

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 10.0MHz / QPSK

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3655.0	23.054	15	38.054	6.389	10.00
Middle	3675.0	23.226	15	38.226	6.647	10.00
High	3695.0	23.274	15	38.274	6.720	10.00

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 10.0MHz / 16QAM

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3655.0	23.142	15	38.142	6.519	10.00
Middle	3675.0	23.085	15	38.085	6.434	10.00
High	3695.0	23.169	15	38.169	6.560	10.00

NOTE: EIRP = Conducted power + Antenna Gain

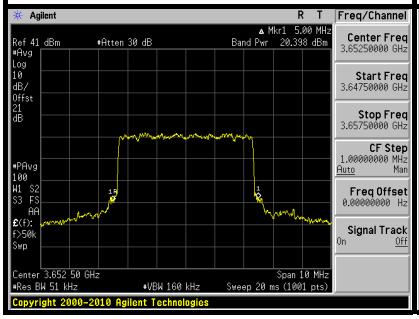
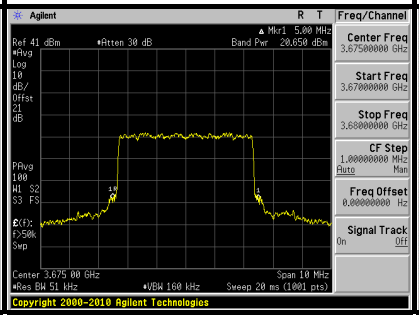
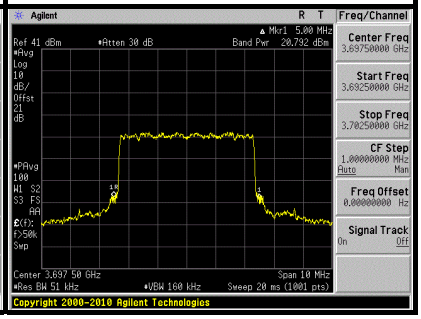
CHANNEL BANDWIDTH: 10.0MHz / 64QAM

EIRP POWER						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3655.0	23.263	15	38.263	6.703	10.00
Middle	3675.0	23.076	15	38.076	6.421	10.00
High	3695.0	23.175	15	38.175	6.569	10.00

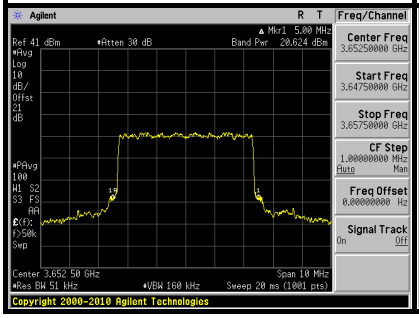
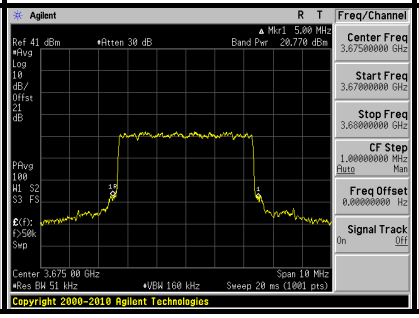
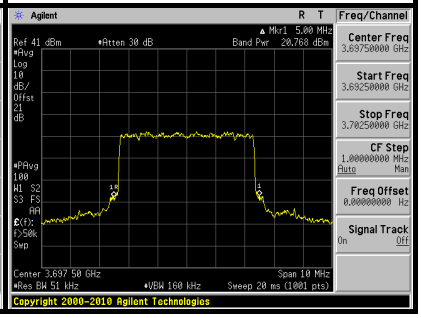
NOTE: EIRP = Conducted power + Antenna Gain

CONDUCTED POWER:

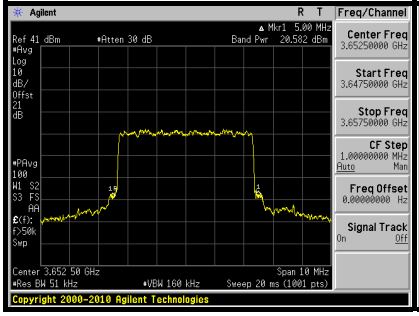
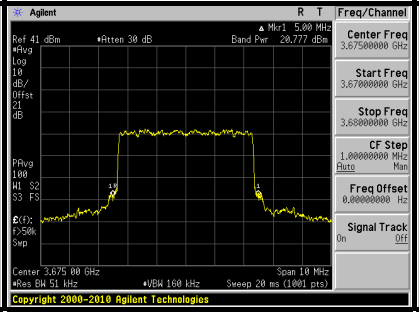
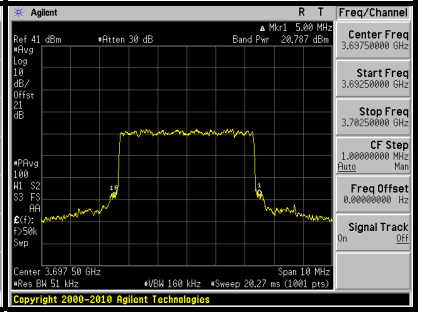
CHANNEL BANDWIDTH: 5.0MHz / QPSK

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 5.0MHz / 16QAM

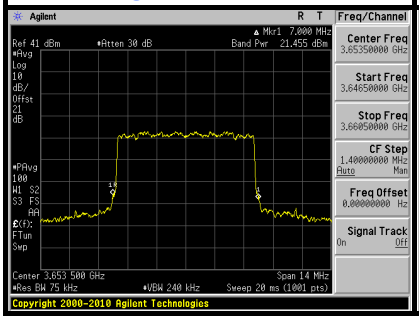
LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 5.0MHz / 64QAM

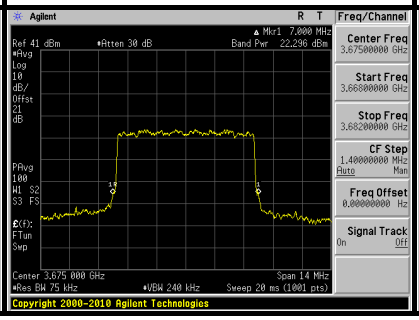
LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 7.0MHz / QPSK

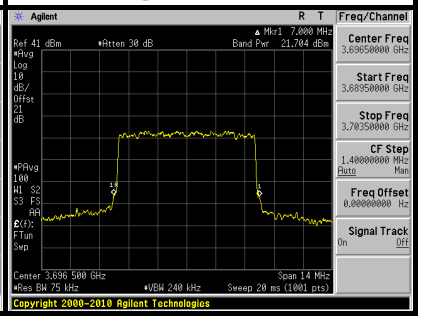
LOW CHANNEL



MIDDLE CHANNEL

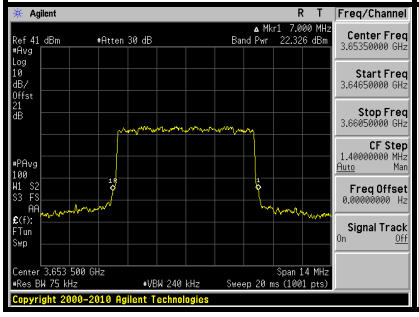


HIGH CHANNEL

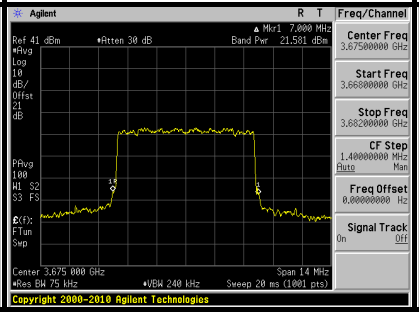


CHANNEL BANDWIDTH: 7.0MHz / 16QAM

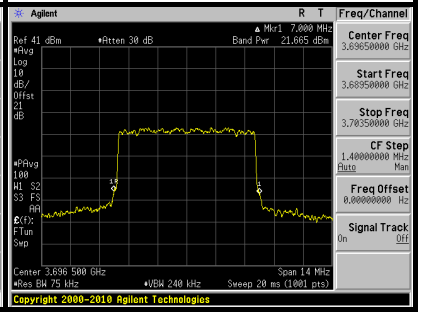
LOW CHANNEL



MIDDLE CHANNEL

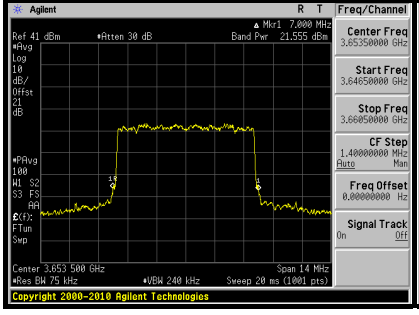


HIGH CHANNEL

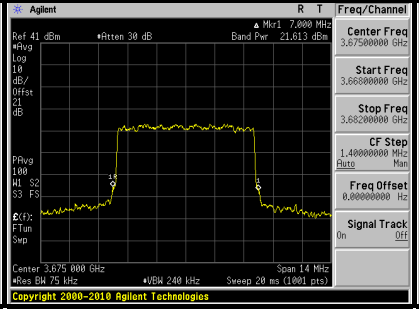


CHANNEL BANDWIDTH: 7.0MHz / 64QAM

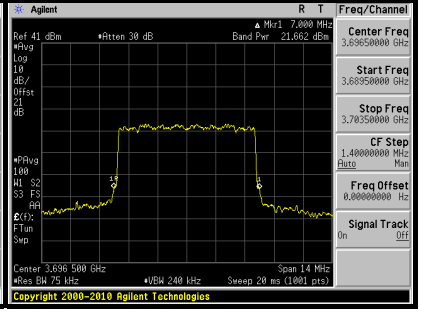
LOW CHANNEL



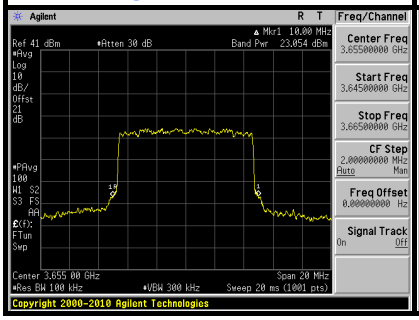
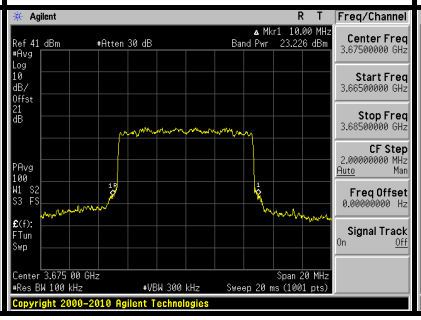
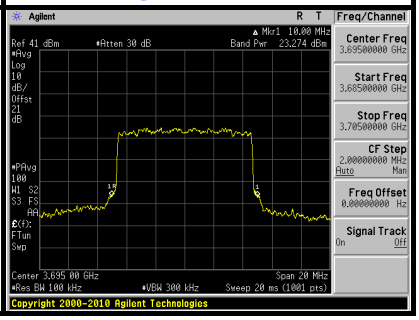
MIDDLE CHANNEL



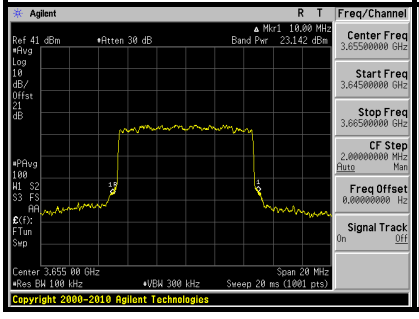
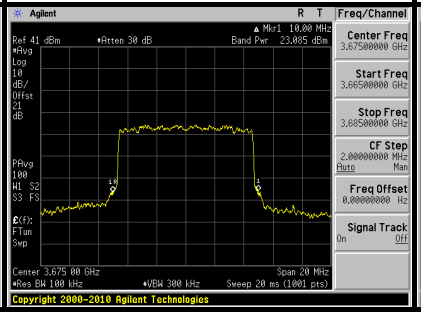
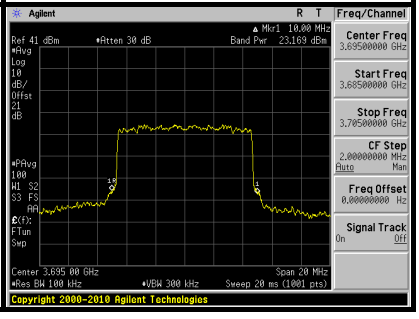
HIGH CHANNEL



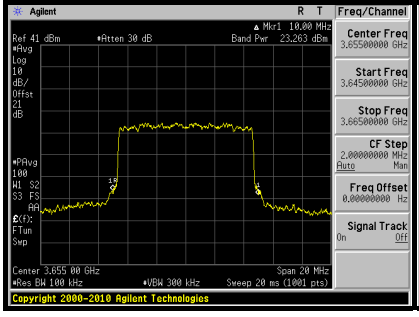
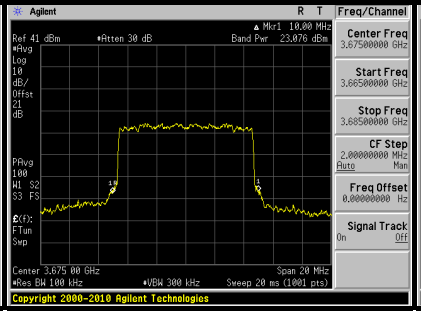
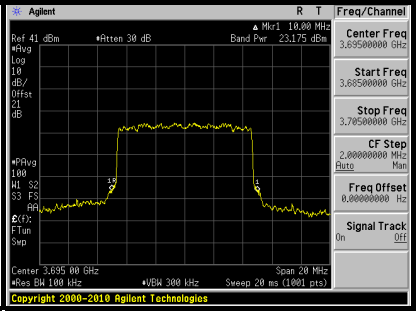
CHANNEL BANDWIDTH: 10.0MHz / QPSK

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 10.0MHz / 16QAM

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 10.0MHz / 64QAM

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 5.0MHz / QPSK

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3652.5	14.376	15	29.376	0.866	1.00
Middle	3675.0	14.580	15	29.580	0.908	1.00
High	3697.5	14.741	15	29.741	0.942	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 5.0MHz / 16QAM

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3652.5	14.364	15	29.364	0.864	1.00
Middle	3675.0	14.738	15	29.738	0.941	1.00
High	3697.5	14.678	15	29.678	0.929	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 5.0MHz / 64QAM

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3652.5	14.271	15	29.271	0.845	1.00
Middle	3675.0	14.700	15	29.700	0.933	1.00
High	3697.5	14.536	15	29.536	0.899	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 7.0MHz / QPSK

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3653.5	14.008	15	29.008	0.796	1.00
Middle	3675.0	14.794	15	29.794	0.954	1.00
High	3696.5	14.268	15	29.268	0.845	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 7.0MHz / 16QAM

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3653.5	14.861	15	29.861	0.969	1.00
Middle	3675.0	14.131	15	29.131	0.819	1.00
High	3696.5	14.032	15	29.032	0.800	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 7.0MHz / 64QAM

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3653.5	14.025	15	29.025	0.799	1.00
Middle	3675.0	14.167	15	29.167	0.825	1.00
High	3696.5	14.158	15	29.158	0.824	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 10.0MHz / QPSK

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3655.0	14.366	15	29.366	0.864	1.00
Middle	3675.0	14.574	15	29.574	0.907	1.00
High	3695.0	14.446	15	29.446	0.880	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 10.0MHz / 16QAM

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3655.0	14.314	15	29.314	0.854	1.00
Middle	3675.0	14.296	15	29.296	0.850	1.00
High	3695.0	14.366	15	29.366	0.864	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

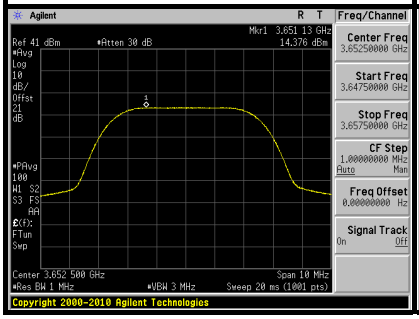
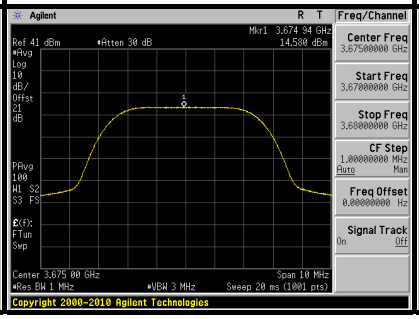
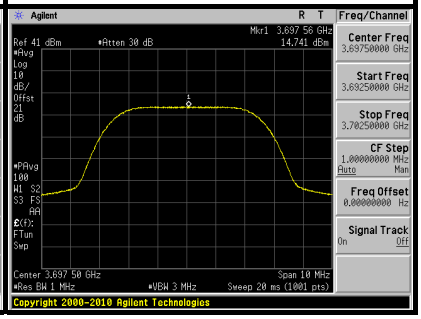
CHANNEL BANDWIDTH: 10.0MHz / 64QAM

EIRP PEAK DENSITY						
CHAN.	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3655.0	14.479	15	29.479	0.887	1.00
Middle	3675.0	14.284	15	29.284	0.848	1.00
High	3695.0	14.429	15	29.429	0.877	1.00

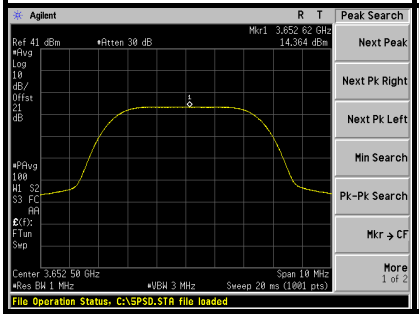
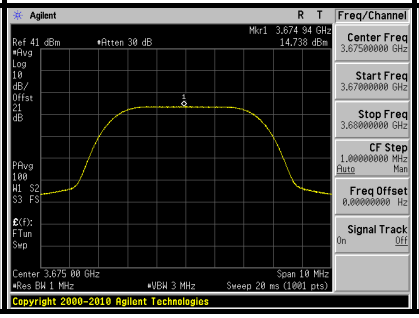
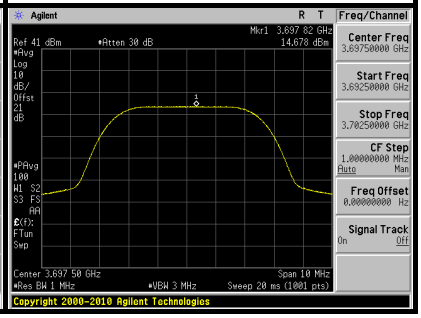
NOTE: EIRP density = Conducted power density + Antenna Gain

PEAK DENSITY:

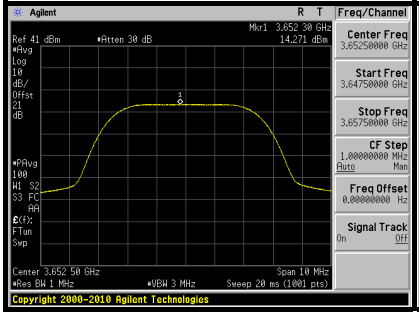
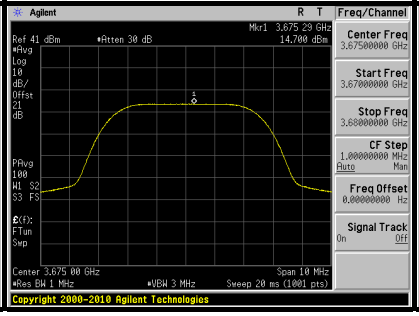
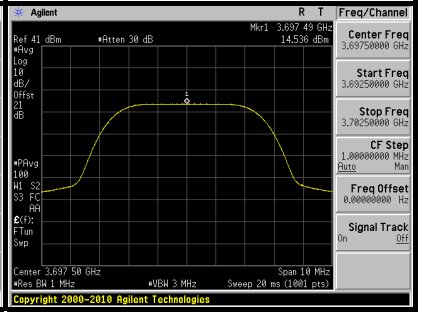
CHANNEL BANDWIDTH: 5.0MHz / QPSK

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 5.0MHz / 16QAM

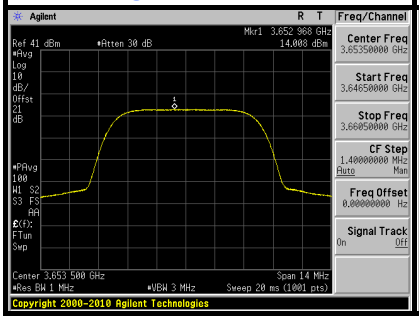
LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 5.0MHz / 64QAM

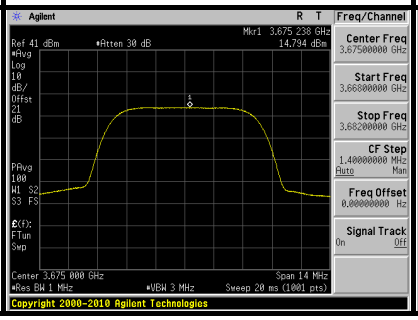
LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 7.0MHz / QPSK

LOW CHANNEL



MIDDLE CHANNEL



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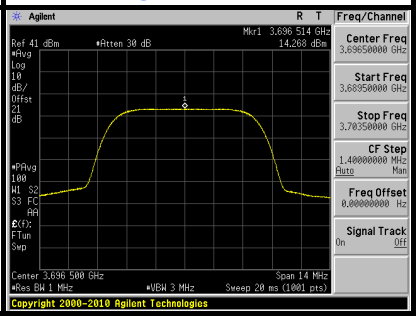
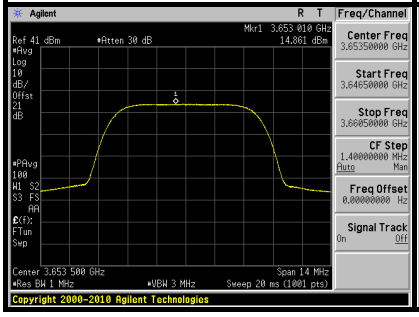
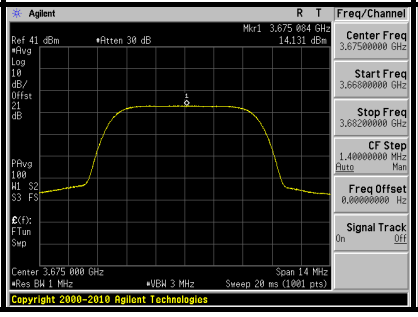


CHANNEL BANDWIDTH: 7.0MHz / 16QAM

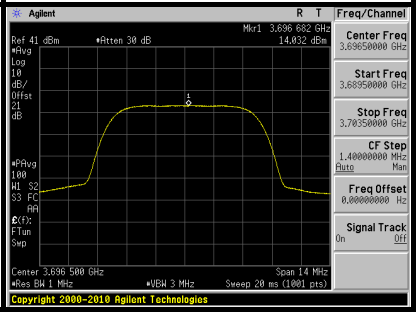
LOW CHANNEL



MIDDLE CHANNEL

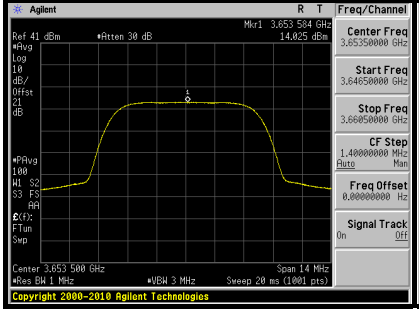


HIGH CHANNEL

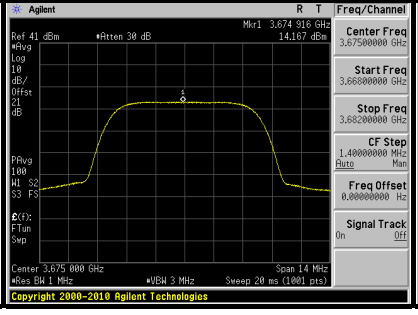


CHANNEL BANDWIDTH: 7.0MHz / 64QAM

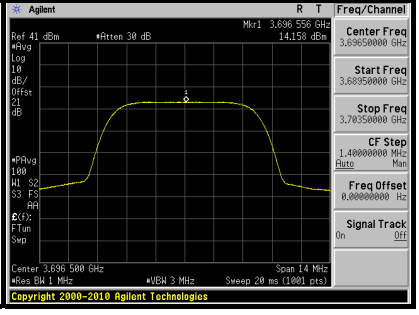
LOW CHANNEL



MIDDLE CHANNEL

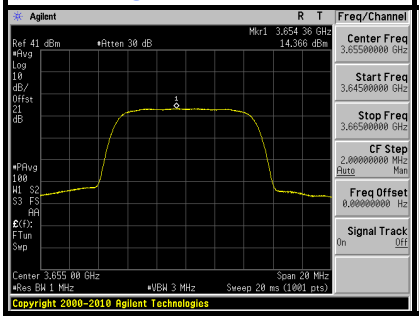


HIGH CHANNEL

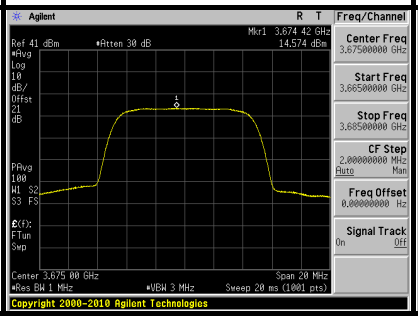


CHANNEL BANDWIDTH: 10.0MHz / QPSK

LOW CHANNEL



MIDDLE CHANNEL



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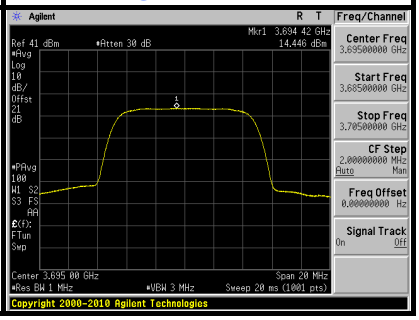
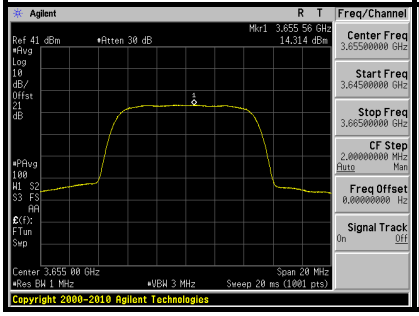
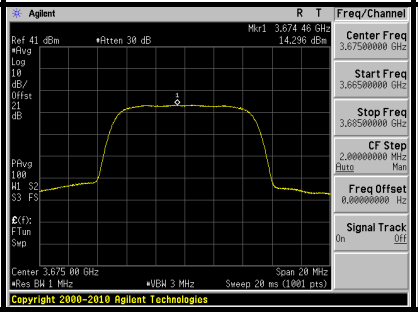


CHANNEL BANDWIDTH: 10.0MHz / 16QAM

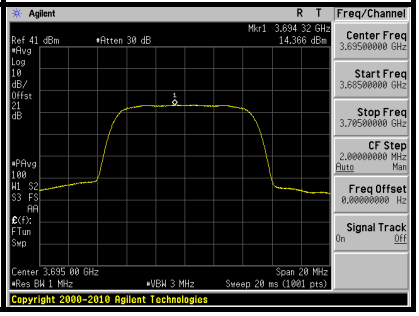
LOW CHANNEL



MIDDLE CHANNEL

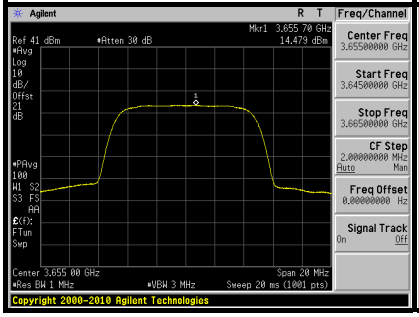


HIGH CHANNEL

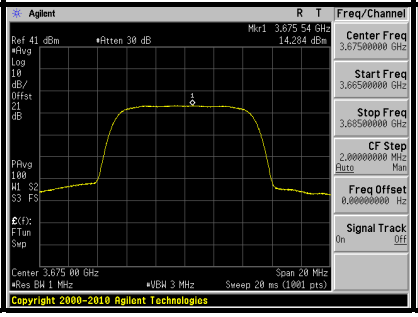


CHANNEL BANDWIDTH: 10.0MHz / 64QAM

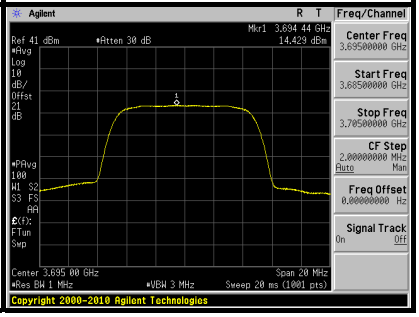
LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL



4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that" The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification of EUT -40°C ~ 55°C.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY44360128	Feb. 20, 2012	Feb. 19, 2013
RF cable	SUCOFLEX 104	329751/4	Jan. 20, 2012	Jan. 19, 2013
WIT Standard Temperature & Humidity Chamber	TH-4S-C	W981030	Jun. 15, 2011	Jun. 14, 2012

NOTE: The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

4.2.3 TEST PROCEDURE

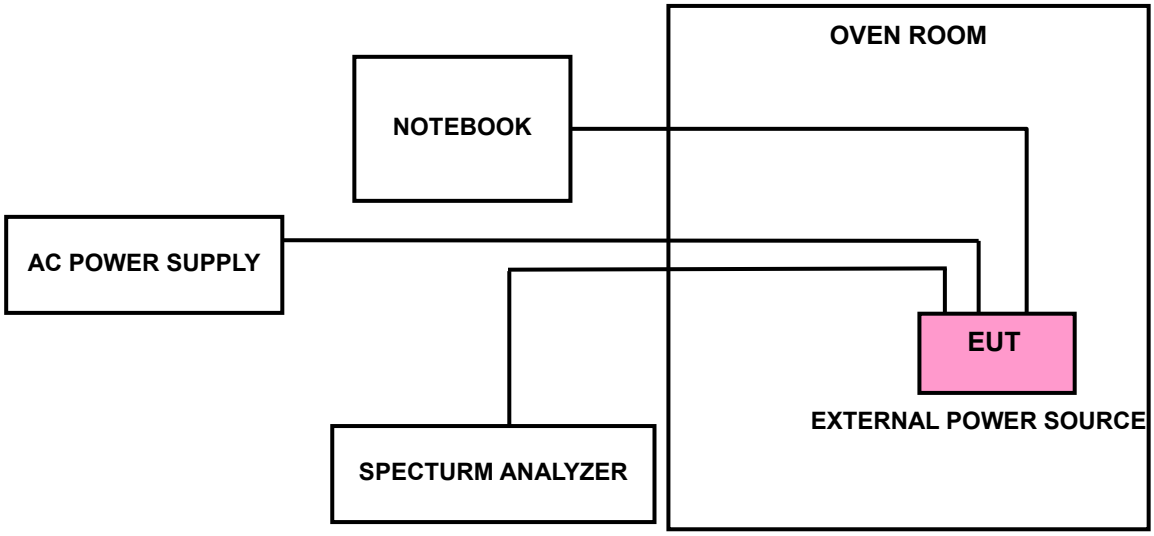
a. Power must be removed when changing from one temperature to another or one voltage to another voltage. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the AC input power. The various Volts from the minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing.

d. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

4.2.4 TEST SETUP



4.2.5 EUT OPERATING CONDITIONS

The EUT connected to the notebook. Use software to control the EUT channel and transmit a single tone.

4.2.6 TEST RESULTS

CHANNEL BANDWIDTH: 5.0MHz / QPSK

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3697.500628	0.170
110.0	3697.501784	0.482
126.5	3697.501112	0.301

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3697.502583	0.699
50	3697.501689	0.457
40	3697.502313	0.626
30	3697.500549	0.148
20	3697.501784	0.482
10	3697.500870	0.235
0	3697.502256	0.610
-10	3697.500807	0.218
-20	3697.501009	0.273
-30	3697.501500	0.406
-40	3697.501831	0.495

CHANNEL BANDWIDTH: 5.0MHz / 16QAM

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3697.500871	0.236
110.0	3697.501878	0.508
126.5	3697.501406	0.380

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3697.503045	0.824
50	3697.501854	0.501
40	3697.502057	0.556
30	3697.500705	0.191
20	3697.501878	0.508
10	3697.501313	0.355
0	3697.502517	0.681
-10	3697.501101	0.298
-20	3697.500906	0.245
-30	3697.501066	0.288
-40	3697.502502	0.677

CHANNEL BANDWIDTH: 5.0MHz / 64QAM

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3697.501869	0.505
110.0	3697.501923	0.520
126.5	3697.501672	0.452

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3697.503235	0.875
50	3697.502339	0.633
40	3697.502680	0.725
30	3697.501724	0.466
20	3697.501923	0.520
10	3697.501834	0.496
0	3697.503095	0.837
-10	3697.501369	0.370
-20	3697.500943	0.255
-30	3697.500814	0.220
-40	3697.502622	0.709

CHANNEL BANDWIDTH: 7.0MHz / QPSK

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3696.500770	0.208
110.0	3696.502010	0.544
126.5	3696.501601	0.433

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3696.503170	0.858
50	3696.502196	0.594
40	3696.502976	0.805
30	3696.500916	0.248
20	3696.502010	0.544
10	3696.501680	0.454
0	3696.502471	0.668
-10	3696.501368	0.370
-20	3696.501349	0.365
-30	3696.501822	0.493
-40	3696.502303	0.623

CHANNEL BANDWIDTH: 7.0MHz / 16QAM

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3653.500910	0.249
110.0	3653.502412	0.660
126.5	3653.502175	0.595

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3653.502992	0.819
50	3653.502513	0.688
40	3653.503763	1.030
30	3653.500870	0.238
20	3653.502412	0.660
10	3653.501883	0.515
0	3653.502369	0.648
-10	3653.501725	0.472
-20	3653.501353	0.370
-30	3653.501923	0.526
-40	3653.501847	0.506

CHANNEL BANDWIDTH: 7.0MHz / 64QAM

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3696.500947	0.256
110.0	3696.502383	0.645
126.5	3696.501961	0.531

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3696.503044	0.823
50	3696.503040	0.822
40	3696.504319	1.168
30	3696.500651	0.176
20	3696.502383	0.645
10	3696.501859	0.503
0	3696.502357	0.638
-10	3696.501791	0.485
-20	3696.502054	0.556
-30	3696.501975	0.534
-40	3696.502234	0.604

CHANNEL BANDWIDTH: 10.0MHz / QPSK

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3695.000624	0.169
110.0	3695.001735	0.470
126.5	3695.001782	0.482

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3695.003020	0.817
50	3695.002213	0.599
40	3695.002326	0.629
30	3695.000393	0.106
20	3695.001735	0.470
10	3695.001440	0.390
0	3695.003028	0.819
-10	3695.001710	0.463
-20	3695.001127	0.305
-30	3695.002505	0.678
-40	3695.002264	0.613

CHANNEL BANDWIDTH: 10.0MHz / 16QAM

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3695.001024	0.277
110.0	3695.002452	0.664
126.5	3695.002021	0.547

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3695.003438	0.930
50	3695.003182	0.861
40	3695.002511	0.680
30	3695.000677	0.183
20	3695.002452	0.664
10	3695.001711	0.463
0	3695.003287	0.890
-10	3695.001951	0.528
-20	3695.000539	0.146
-30	3695.002877	0.779
-40	3695.002872	0.777

CHANNEL BANDWIDTH: 10.0MHz / 64QAM

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
93.5	3655.000500	0.137
110.0	3655.002593	0.709
126.5	3655.001542	0.422

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (℃)	**FREQUENCY (MHz)**	**FREQUENCY ERROR (ppm)**
55	3655.003059	0.837
50	3655.003342	0.914
40	3655.002997	0.820
30	3655.000610	0.167
20	3655.002593	0.709
10	3655.001498	0.410
0	3655.003700	1.012
-10	3655.002110	0.577
-20	3655.000830	0.227
-30	3655.003029	0.829
-40	3655.003309	0.905

4.3 EMISSION BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF EMISSION BANDWIDTH MEASUREMENT

According to FCC 90.1323 specified that 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 26dB below the transmitter power.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY44360128	Feb. 20, 2012	Feb. 19, 2013
RF cable	SUCOFLEX 104	329751/4	Jan. 20, 2012	Jan. 19, 2013
DC-6GHz 20dB 50W Fixed attenuator Woken	MDC9331N-20	0724	May 13, 2011	May 12, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 51kHz (5MHz bandwidth), 75kHz (7MHz bandwidth), 100kHz (10MHz bandwidth), VBW = 160kHz (5MHz bandwidth), 240kHz (7MHz bandwidth), 300kHz (10MHz bandwidth). 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.

4.3.4 TEST SETUP

Same as 4.1.4

4.3.5 EUT OPERATING CONDITIONS

Same as 4.1.5

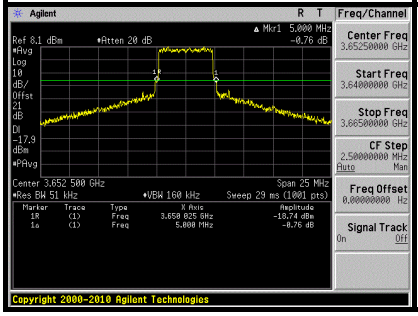
4.3.6 TEST RESULTS

CHANNEL BANDWIDTH: 5.0MHz

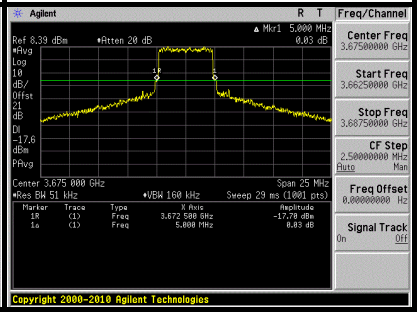
CHANNEL	-26dBc BANDWIDTH (MHz)		
	QPSK	16QAM	64QAM
Low	5.000	5.000	5.000
Middle	5.000	5.000	5.000
High	5.000	5.000	5.000

QPSK

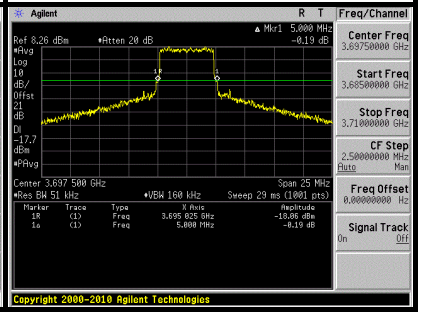
LOW CHANNEL



MIDDLE CHANNEL

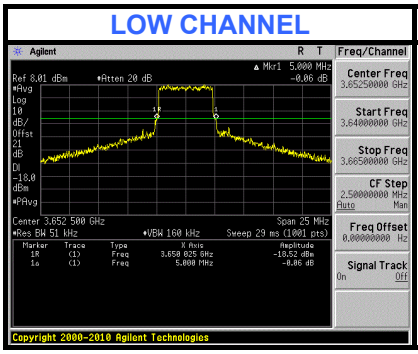


HIGH CHANNEL

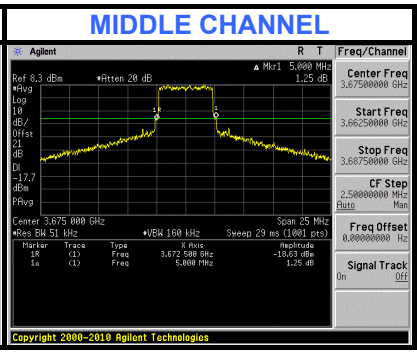


16QAM

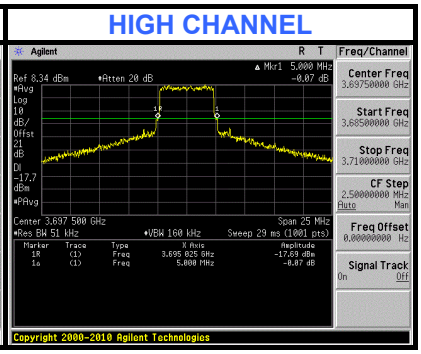
LOW CHANNEL



MIDDLE CHANNEL

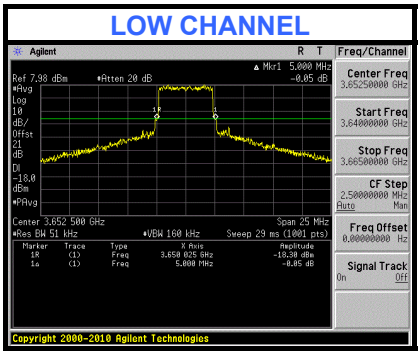


HIGH CHANNEL

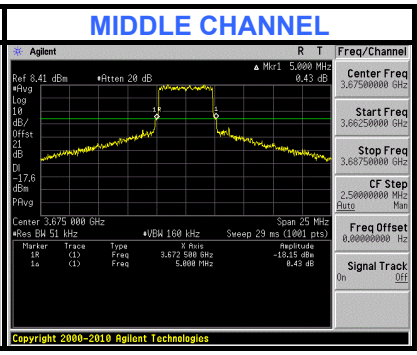


64QAM

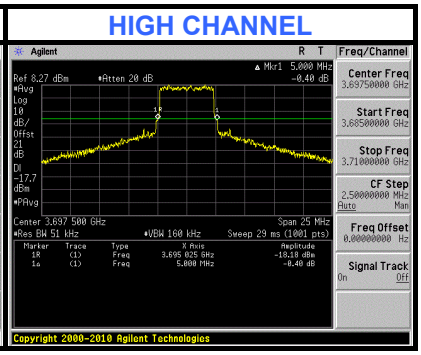
LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL

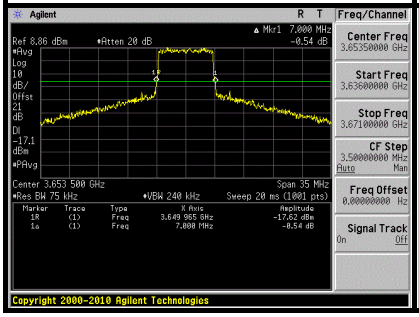


CHANNEL BANDWIDTH: 7.0MHz

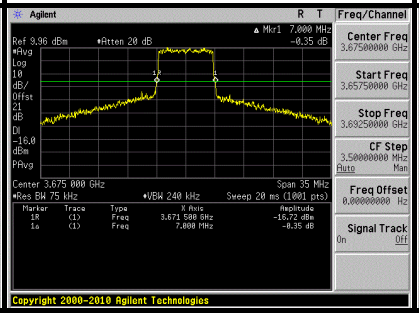
CHANNEL	-26dBc BANDWIDTH (MHz)		
	QPSK	16QAM	64QAM
Low	7.000	7.000	7.000
Middle	7.000	7.000	7.000
High	7.000	7.000	7.000

QPSK

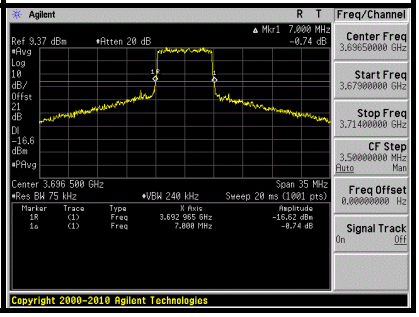
LOW CHANNEL



MIDDLE CHANNEL

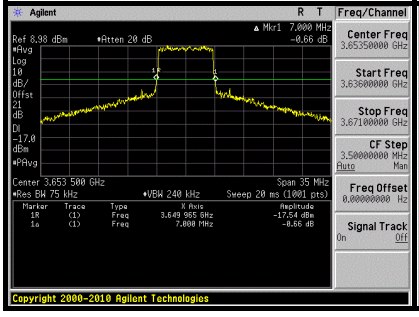


HIGH CHANNEL

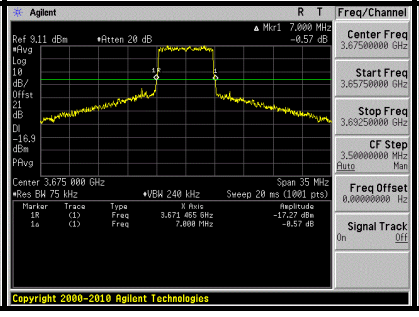


16QAM

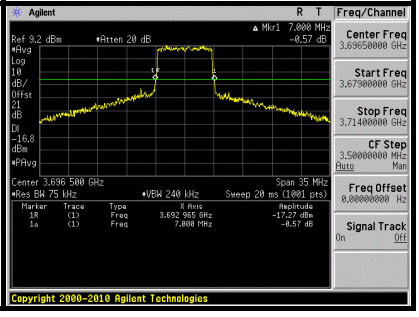
LOW CHANNEL



MIDDLE CHANNEL

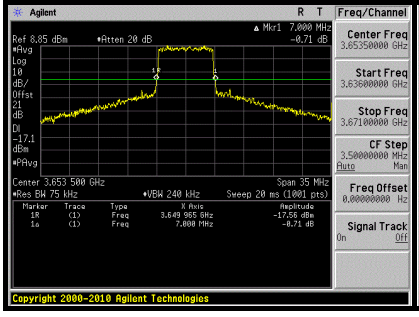


HIGH CHANNEL

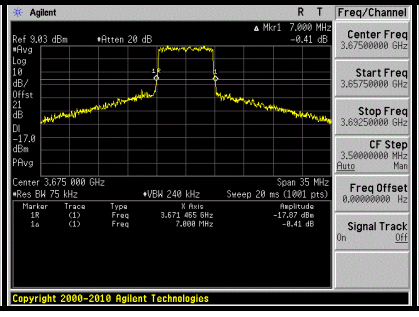


64QAM

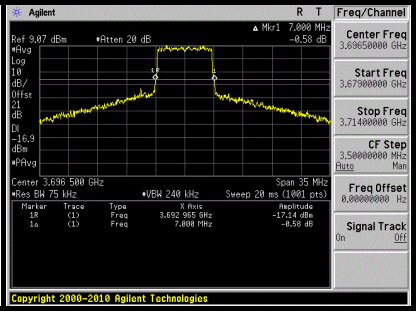
LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL

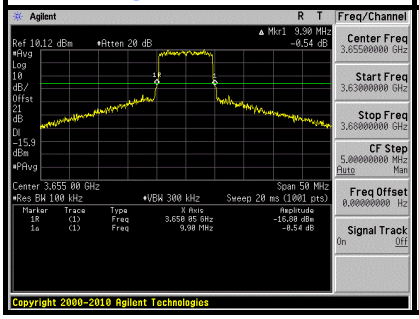


CHANNEL BANDWIDTH: 10.0MHz

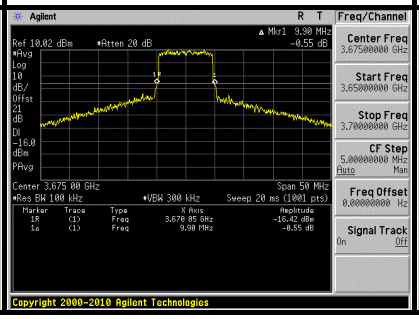
CHANNEL	-26dBc BANDWIDTH (MHz)		
	QPSK	16QAM	64QAM
Low	9.900	9.800	9.750
Middle	9.900	9.800	9.900
High	9.900	9.800	9.900

QPSK

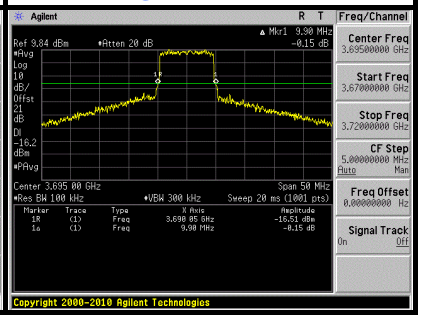
LOW CHANNEL



MIDDLE CHANNEL

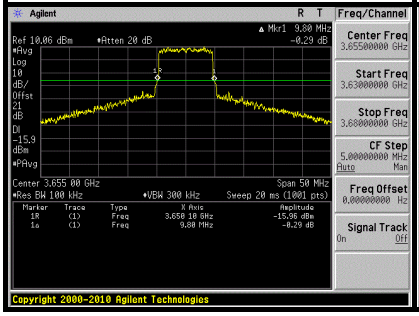


HIGH CHANNEL

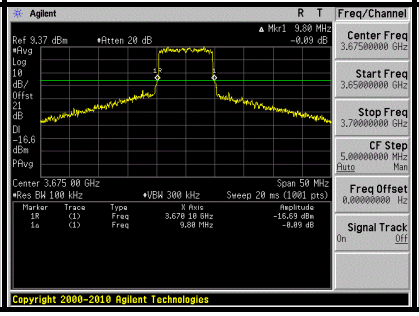


16QAM

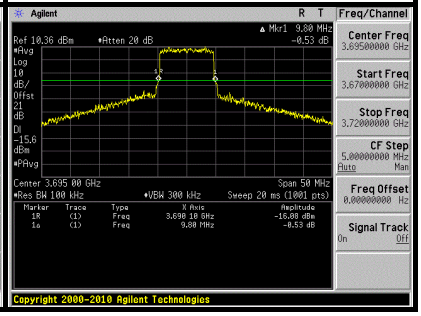
LOW CHANNEL



MIDDLE CHANNEL

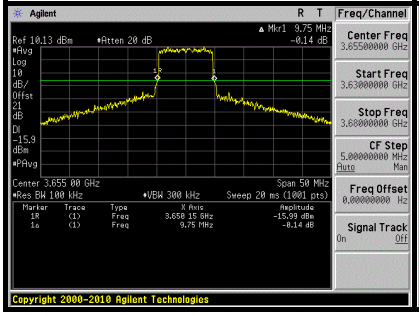


HIGH CHANNEL

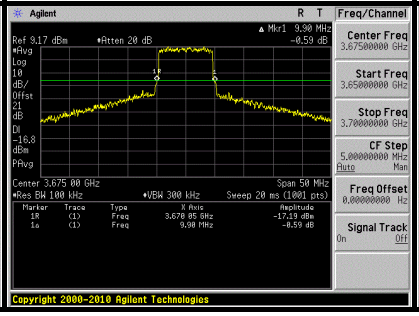


64QAM

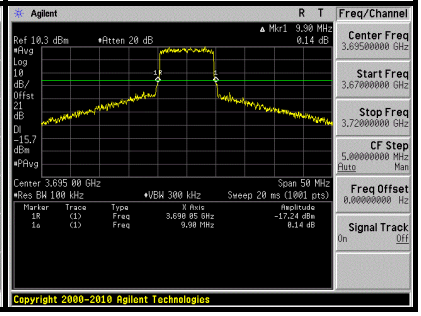
LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL



4.4 EMISSION MASKS

4.4.1 LIMITS OF EMISSION MASKS

For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the assigned frequency bymore than 50 percent, but not more than 100 percent of theauthorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency bymore than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency bymore than 250 percent of the authorized bandwidth: At least 43 + 10log (P) dB.

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY44360128	Feb. 20, 2012	Feb. 19, 2013
RF cable	SUCOFLEX 104	329751/4	Jan. 20, 2012	Jan. 19, 2013
DC-6GHz 20dB 50W Fixed attenuator Woken	MDC9331N-20	0724	May 13, 2011	May 12, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.4.3 TEST SETUP

Same as 4.1.4

4.4.4 TEST PROCEDURES

a. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 51kHz (5MHz bandwidth), 75kHz (7MHz bandwidth), 100kHz (10MHz bandwidth), VBW = 160kHz (5MHz bandwidth), 240kHz (7MHz bandwidth), 300kHz (10MHz bandwidth).

b. Build emission mask limits into spectrum analyzer.

c. EUT transmit signal to spectrum and record the test plot.

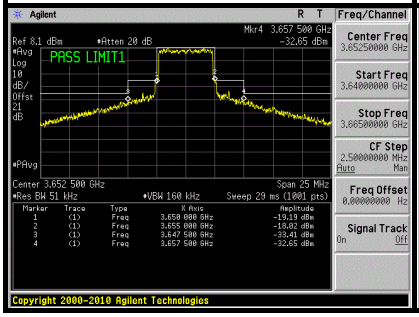
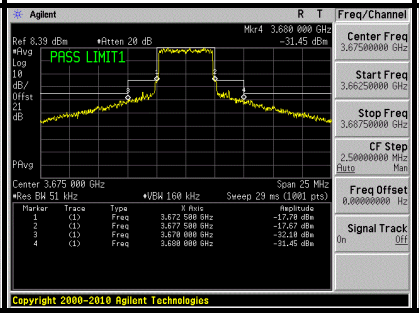
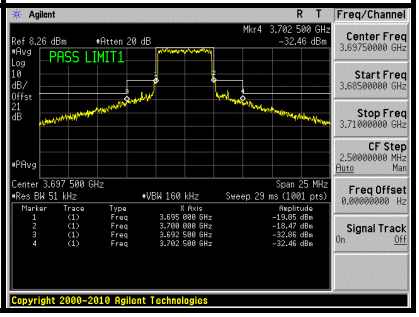
4.4.5 EUT OPERATING CONDITION

Same as 4.1.5

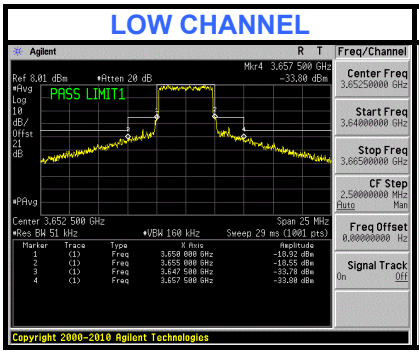
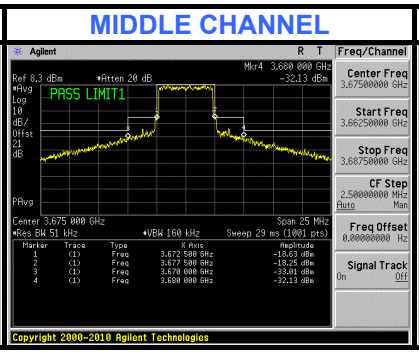
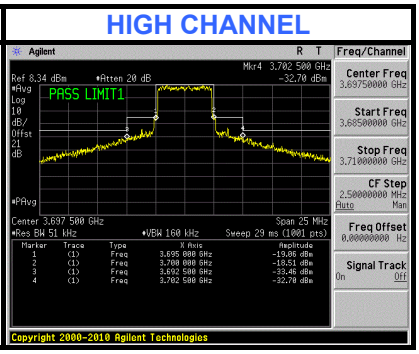
4.4.6 TEST RESULTS

CHANNEL BANDWIDTH: 5MHz

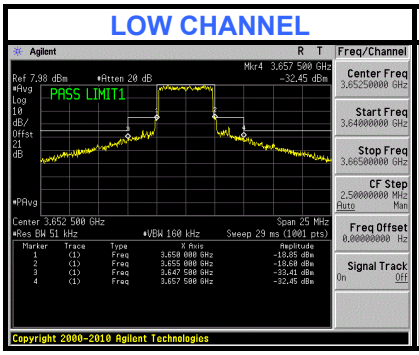
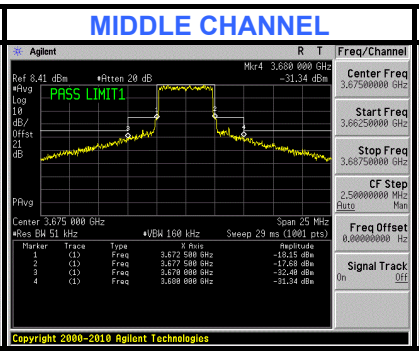
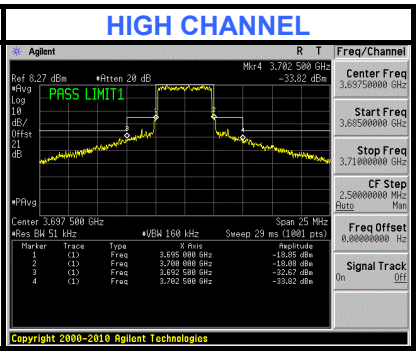
QPSK

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

16QAM

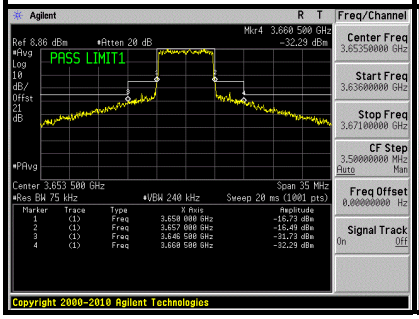
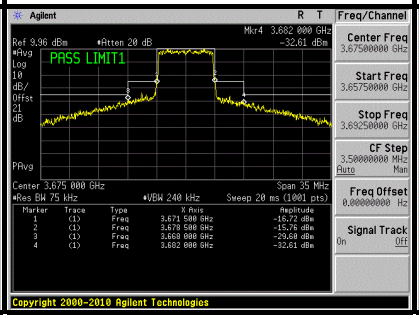
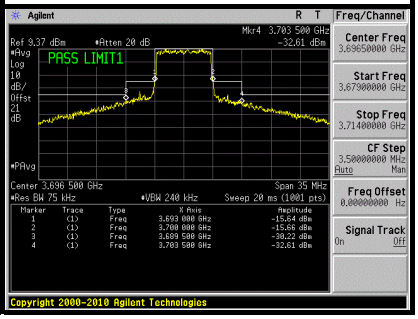
LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

64QAM

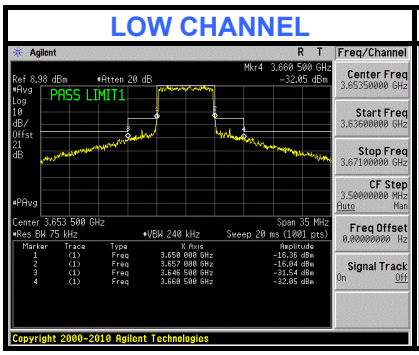
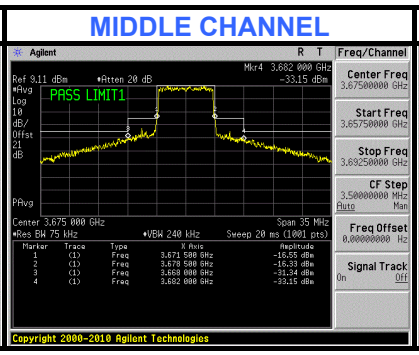
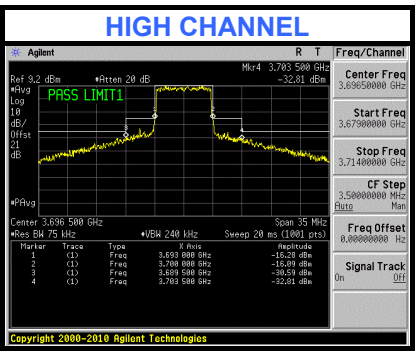
LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 7MHz

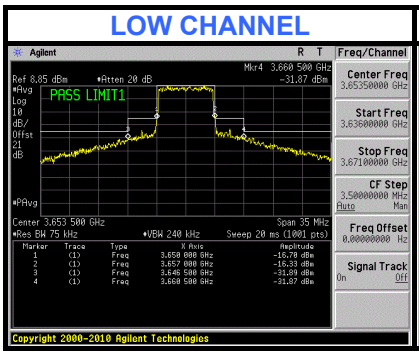
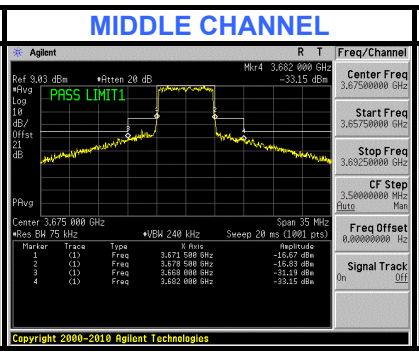
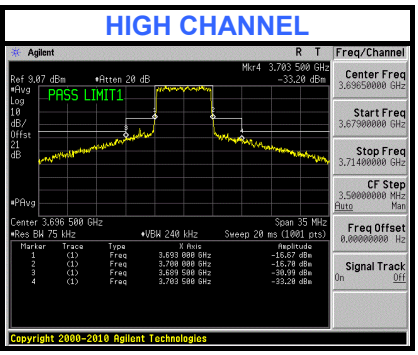
QPSK

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

16QAM

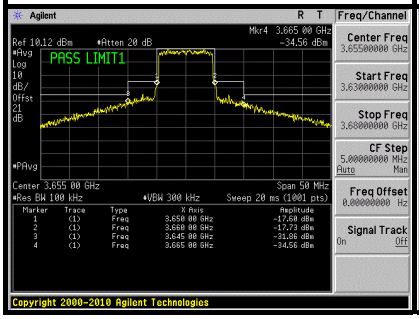
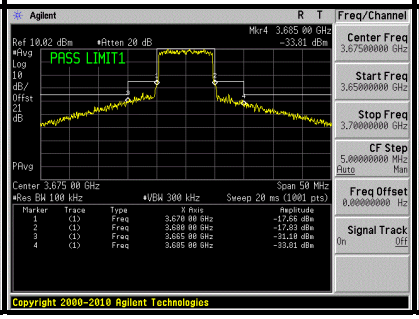
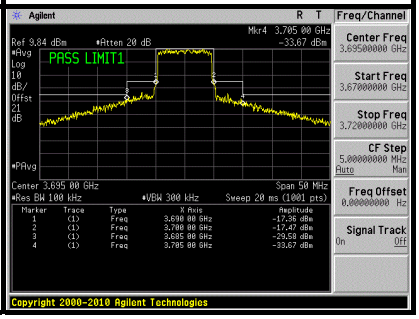
LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

64QAM

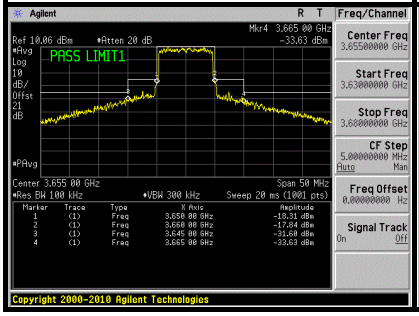
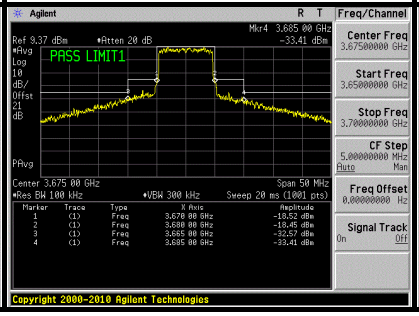
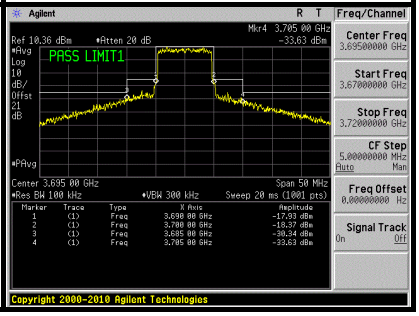
LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

CHANNEL BANDWIDTH: 10MHz

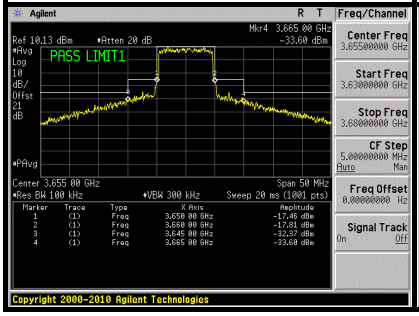
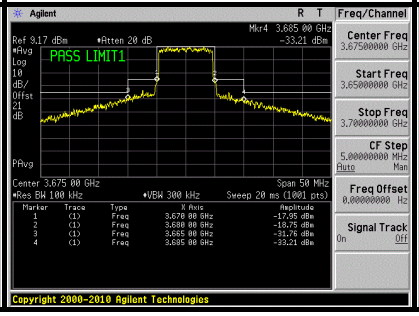
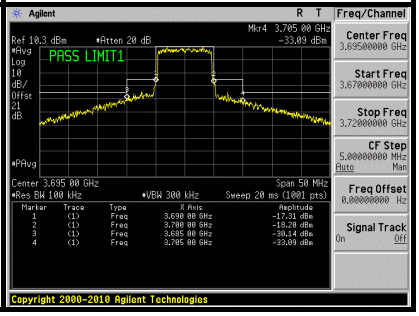
QPSK

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

16QAM

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

64QAM

LOW CHANNEL	MIDDLE CHANNEL	HIGH CHANNEL
		

4.5 CONDUCTED SPURIOUS EMISSIONS

4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

According to FCC 90.1323 specified that 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. The limit of emission equal to –13dBm Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or less, but at least one percent of the emission bandwidth of the fundamental emission of the transmitter, provided the measured energy is integrated over a 1 MHz bandwidth

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY44360128	Feb. 20, 2012	Feb. 19, 2013
RF cable	SUCOFLEX 104	329751/4	Jan. 20, 2012	Jan. 19, 2013
DC-6GHz 20dB 50W Fixed attenuator Woken	MDC9331N-20	0724	May 13, 2011	May 12, 2012
Wainwright Instruments High Pass Filter	WHKX4.5/18G -10SS	NA	NA	NA

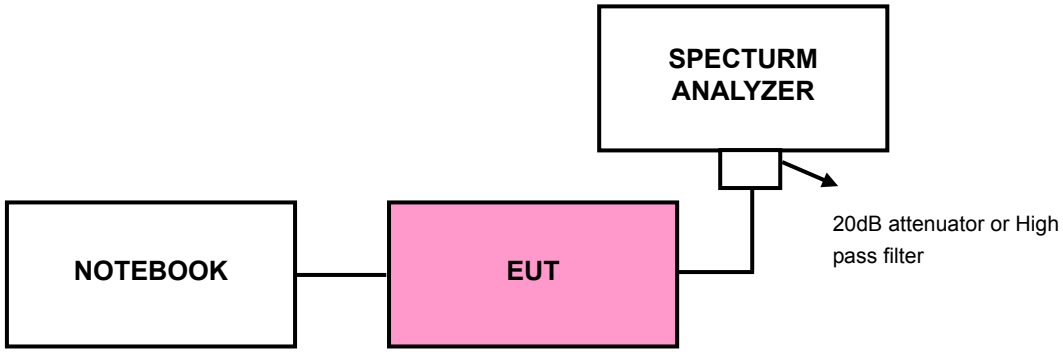
NOTE: The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.

4.5.3 TEST PROCEDURE

a. All measurements were done at 3 channels: low, middle and high operational frequency range.

b. When the spectrum scanned from 30MHz to 40GHz, it shall be connected to the 20dB pad attenuated the carried frequency. The spectrum set RBW = 1MHz, VBW= 3MHz.

4.5.4 TEST SETUP



4.5.5 EUT OPERATING CONDITIONS

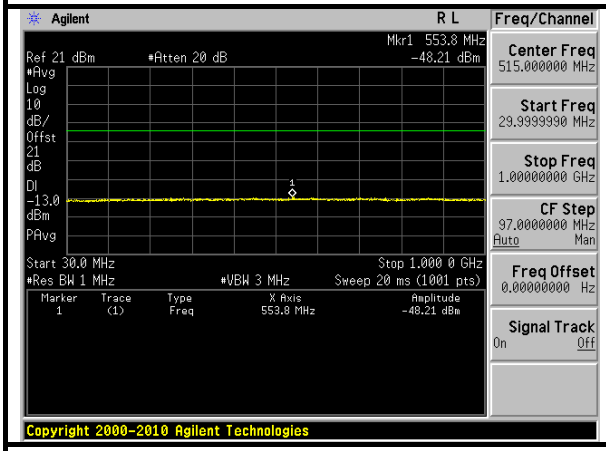
Same as 4.1.5

4.5.6 TEST RESULTS

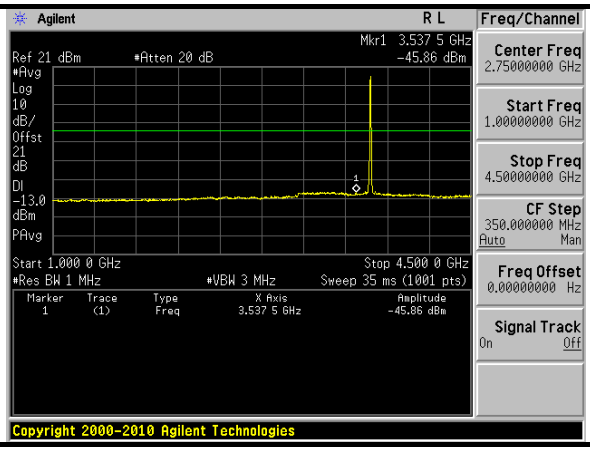
CHANNEL BANDWIDTH: 5MHz / QPSK

LOW CHANNEL

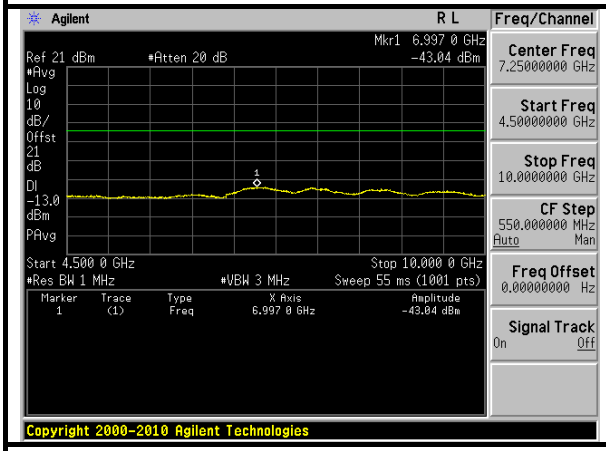
30MHz ~ 1GHz



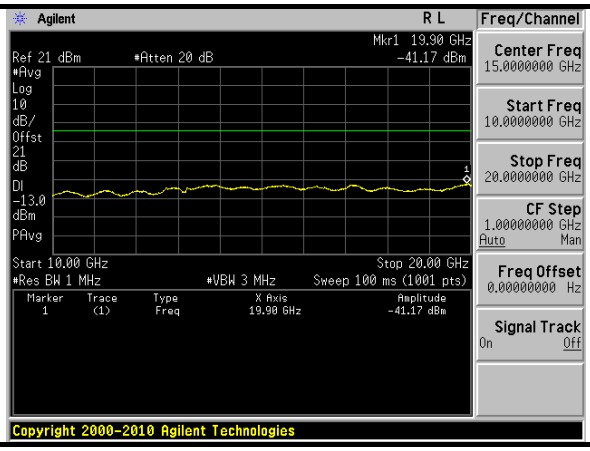
1GHz ~ 4.5GHz



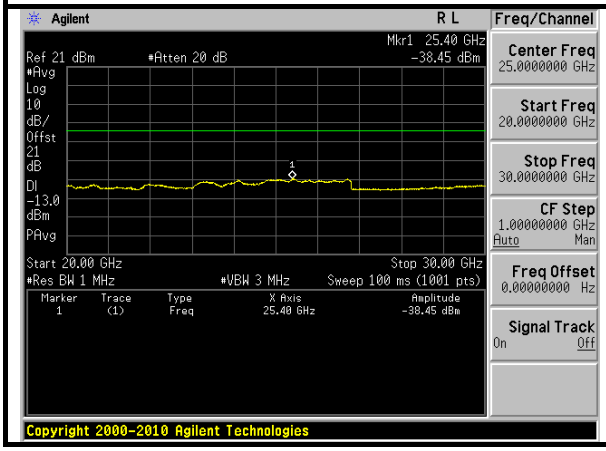
4.5GHz ~ 10GHz



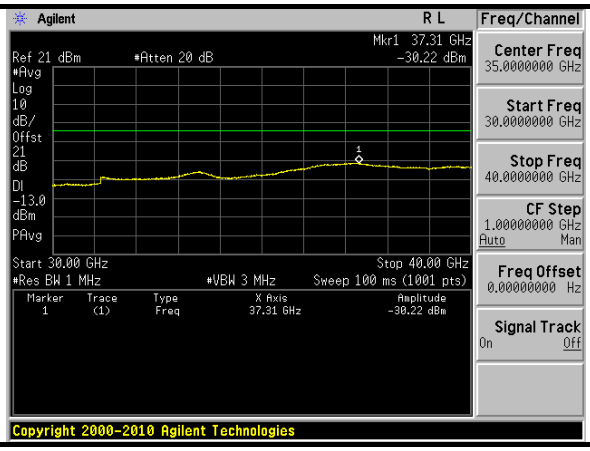
10GHz ~ 20GHz



20GHz ~ 30GHz

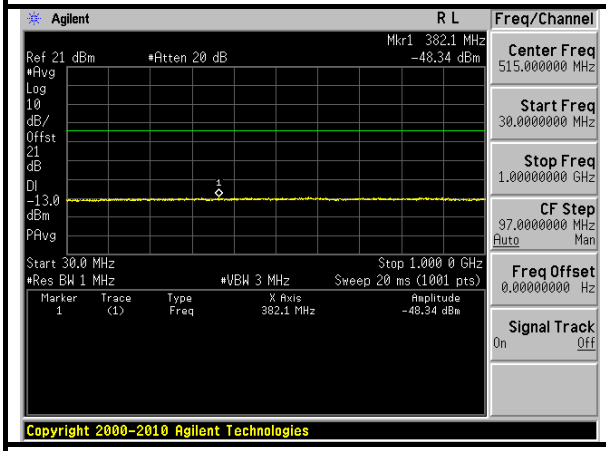


30GHz ~ 40GHz

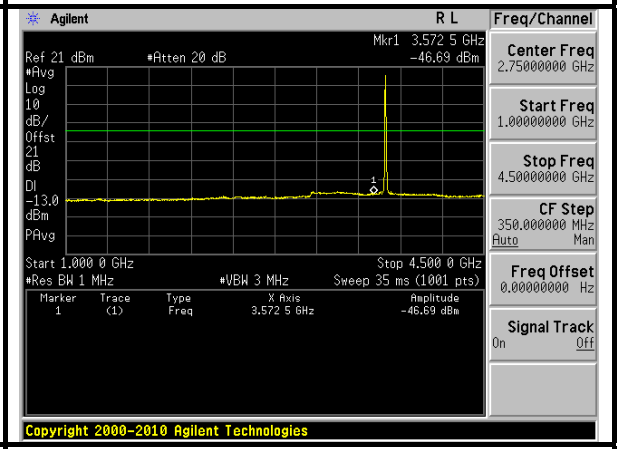


MIDDLE CHANNEL

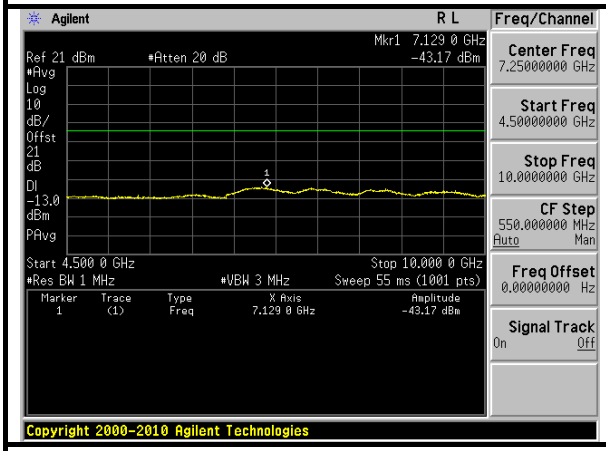
30MHz ~ 1GHz



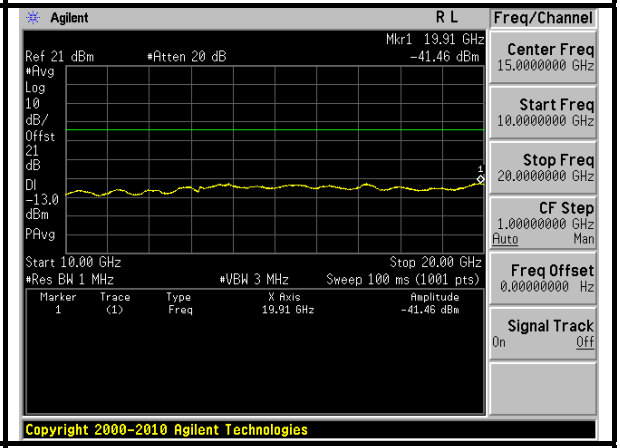
1GHz ~ 4.5GHz



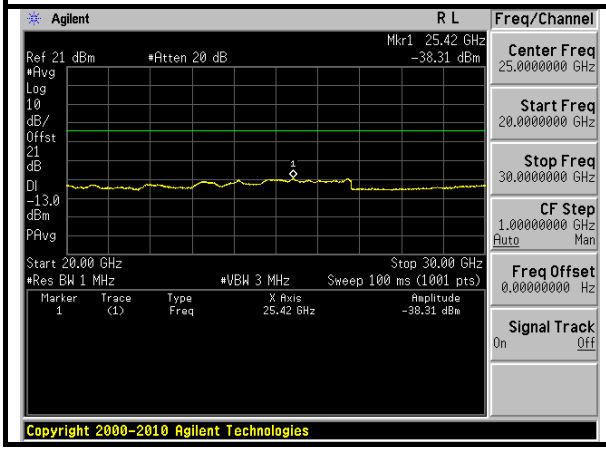
4.5GHz ~ 10GHz



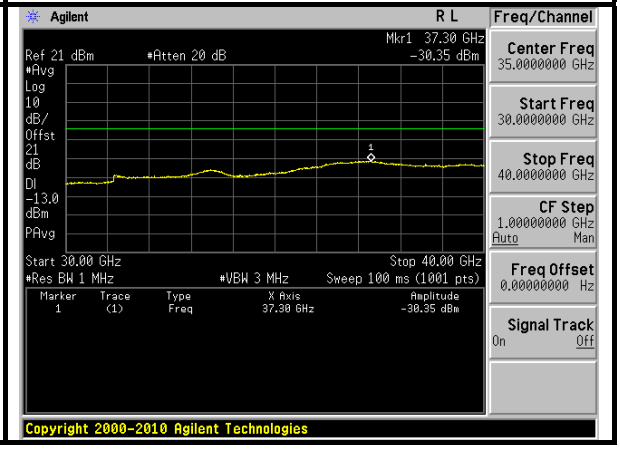
10GHz ~ 20GHz



20GHz ~ 30GHz

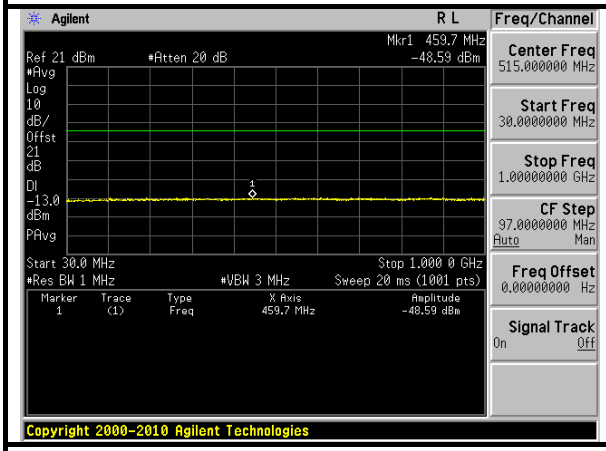


30GHz ~ 40GHz

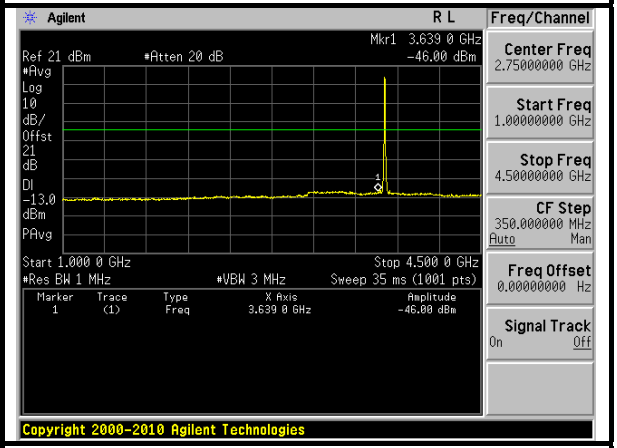


HIGH CHANNEL

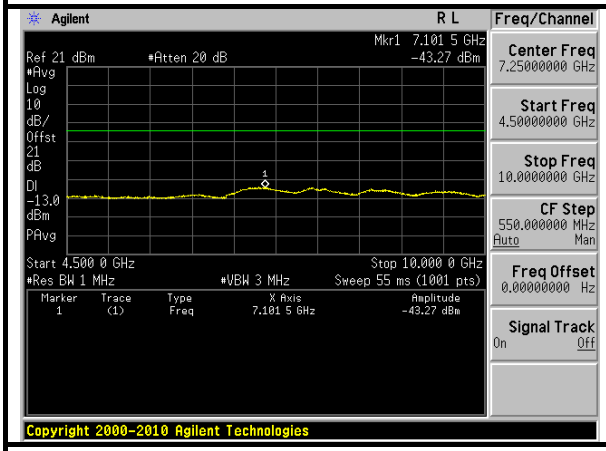
30MHz ~ 1GHz



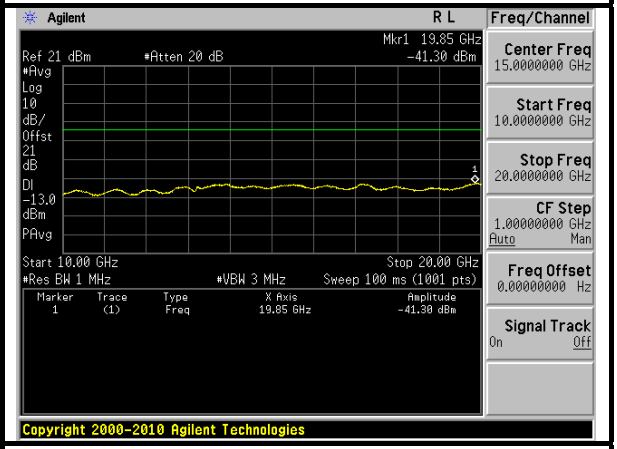
1GHz ~ 4.5GHz



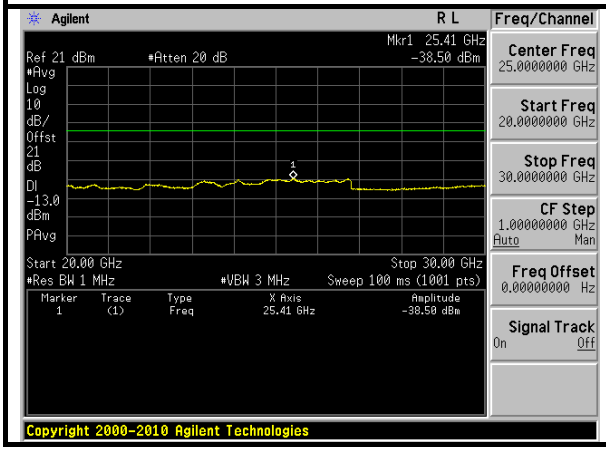
4.5GHz ~ 10GHz



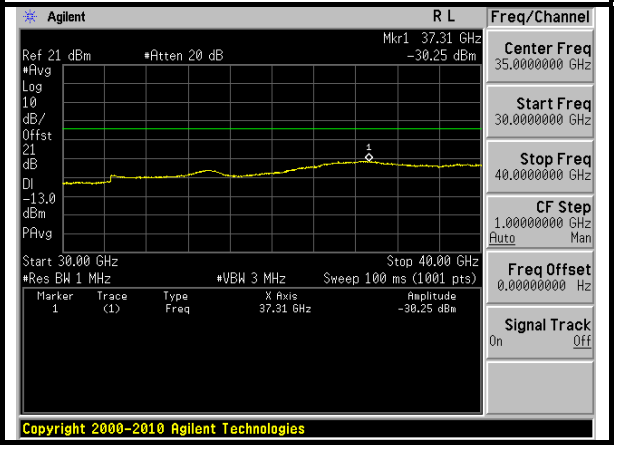
10GHz ~ 20GHz



20GHz ~ 30GHz



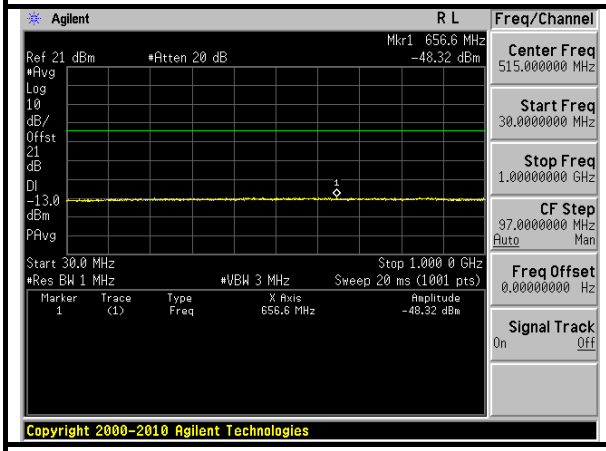
30GHz ~ 40GHz



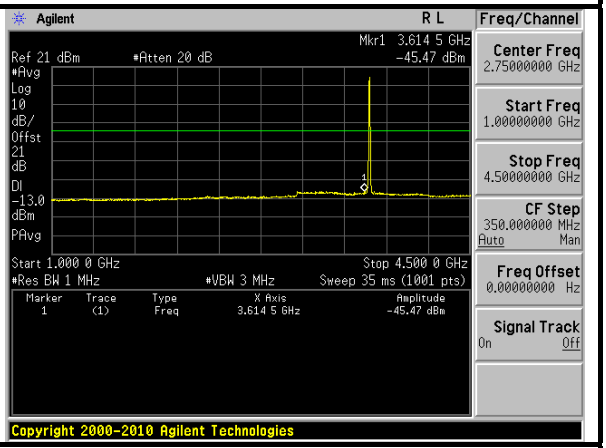
CHANNEL BANDWIDTH: 5MHz / 16QAM

LOW CHANNEL

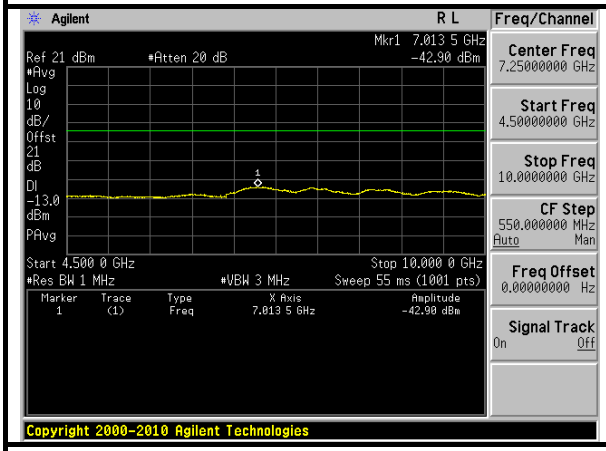
30MHz ~ 1GHz



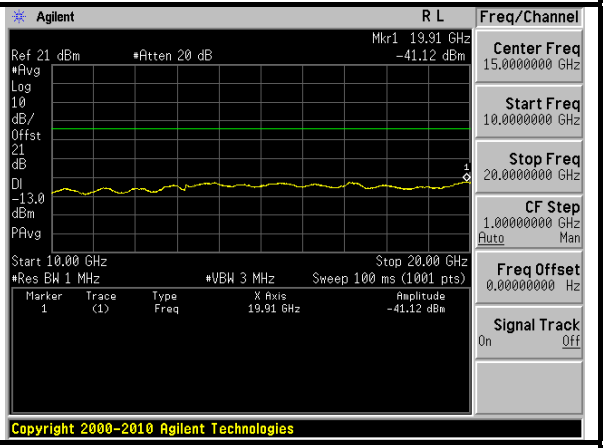
1GHz ~ 4.5GHz



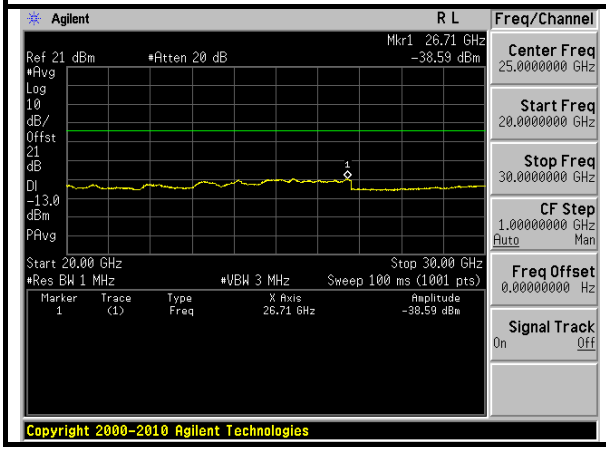
4.5GHz ~ 10GHz



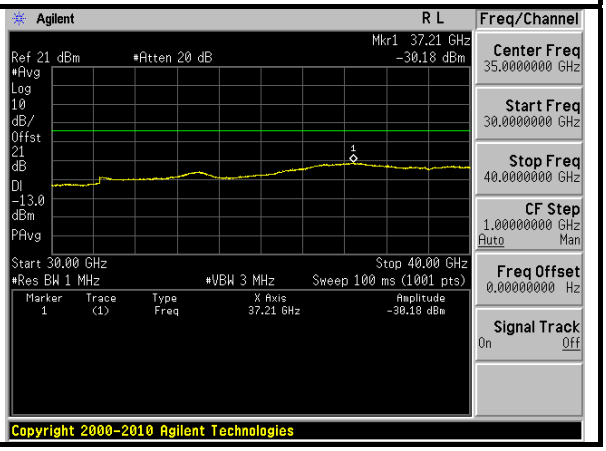
10GHz ~ 20GHz



20GHz ~ 30GHz

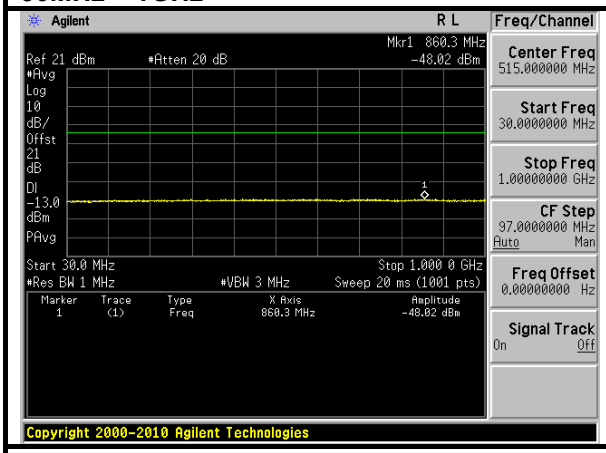


30GHz ~ 40GHz

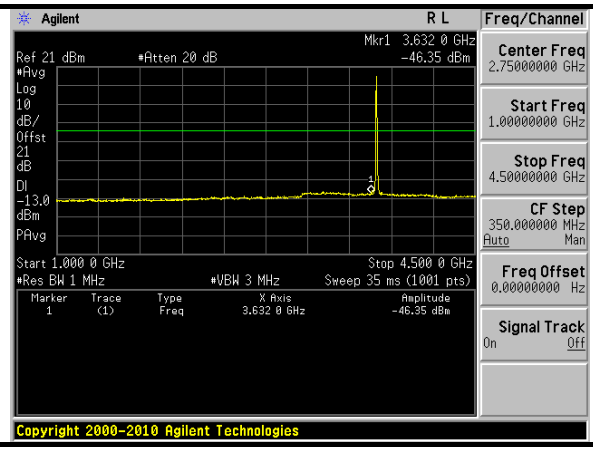


MIDDLE CHANNEL

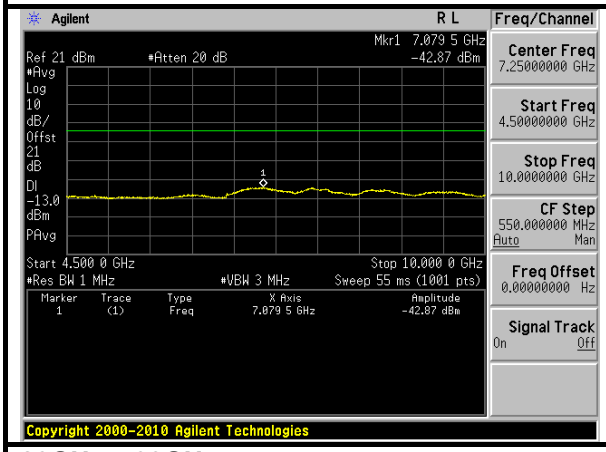
30MHz ~ 1GHz



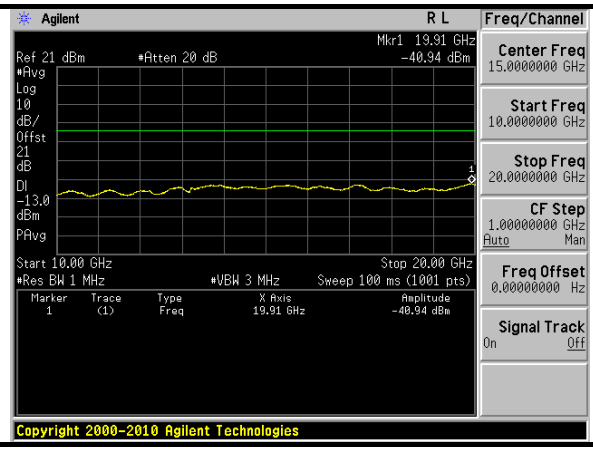
1GHz ~ 4.5GHz



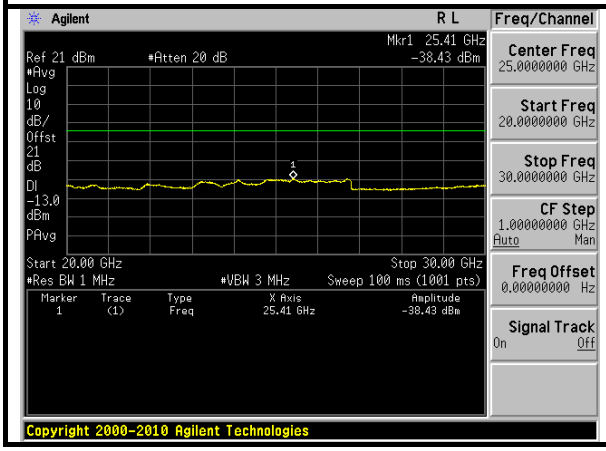
4.5GHz ~ 10GHz



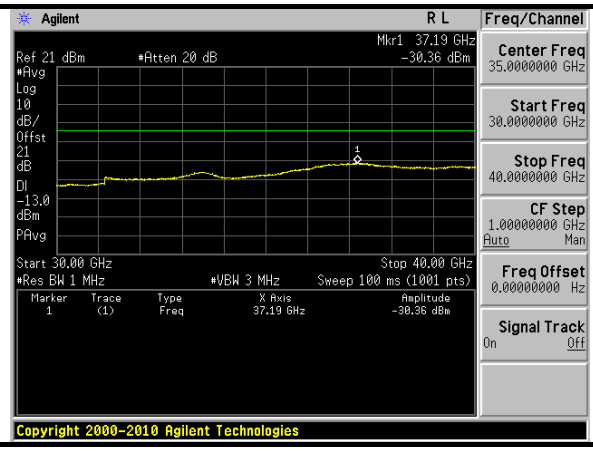
10GHz ~ 20GHz



20GHz ~ 30GHz

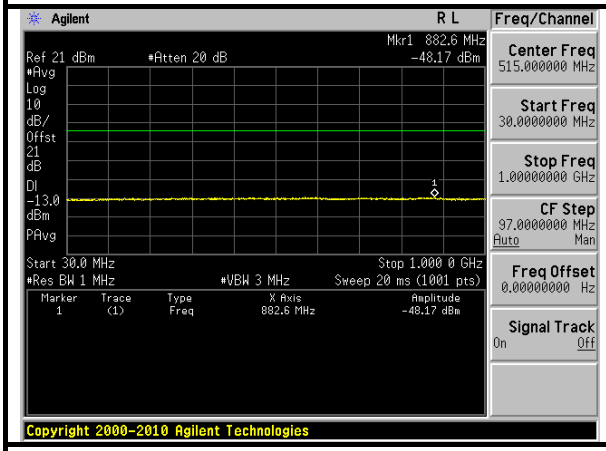


30GHz ~ 40GHz

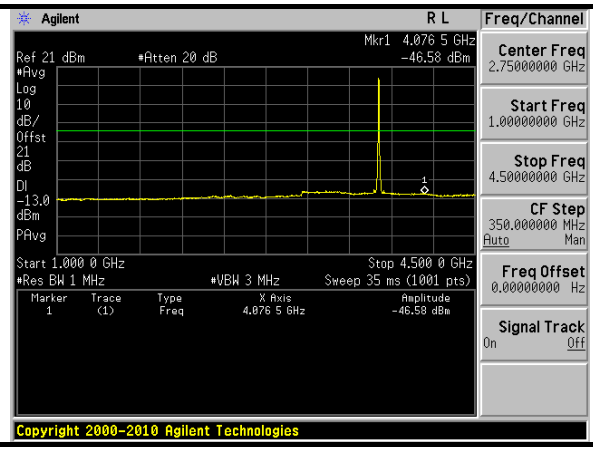


HIGH CHANNEL

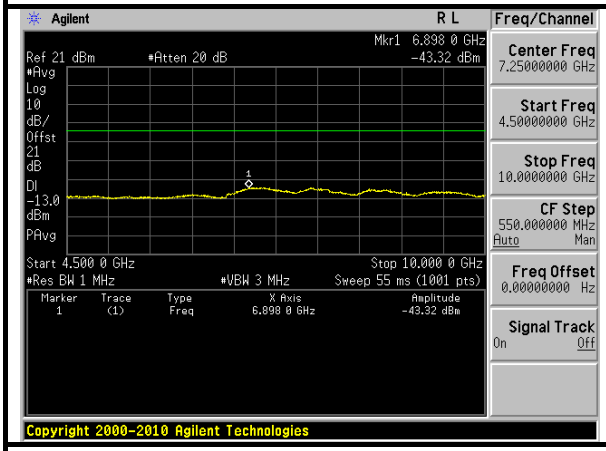
30MHz ~ 1GHz



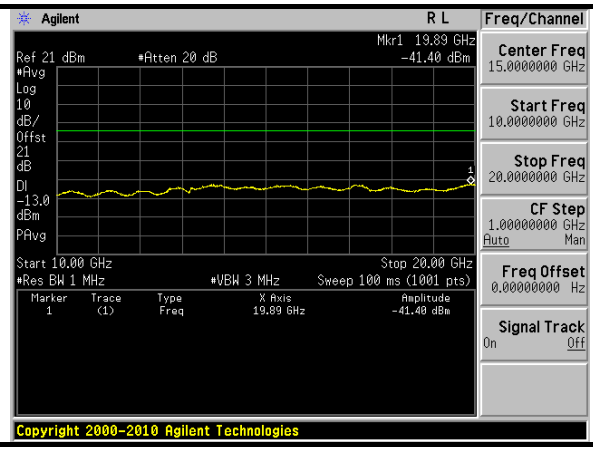
1GHz ~ 4.5GHz



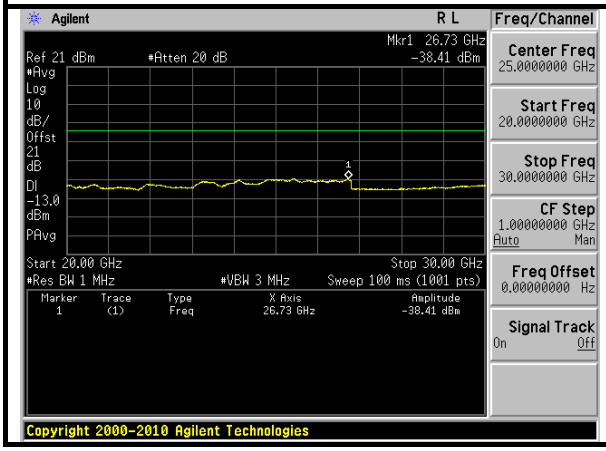
4.5GHz ~ 10GHz



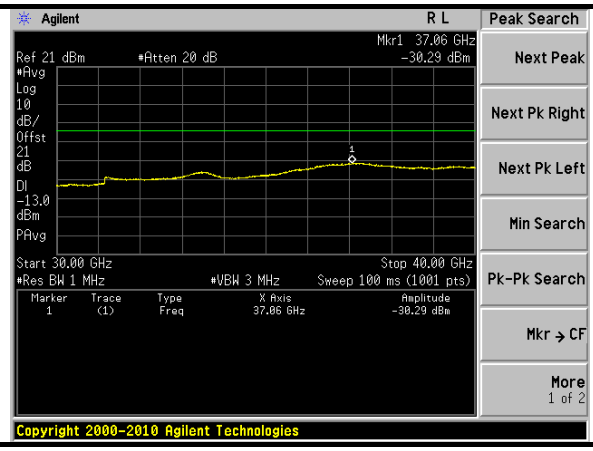
10GHz ~ 20GHz



20GHz ~ 30GHz



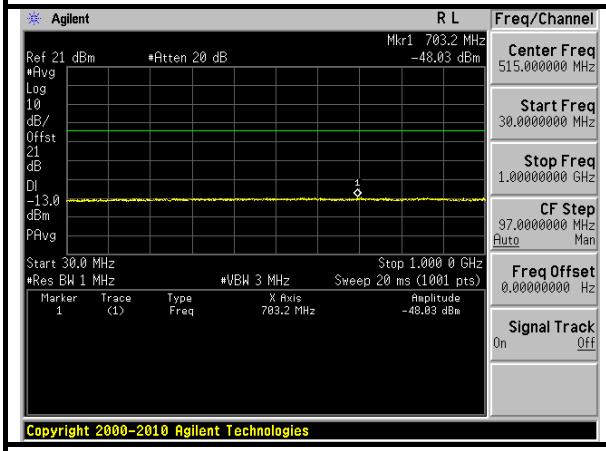
30GHz ~ 40GHz



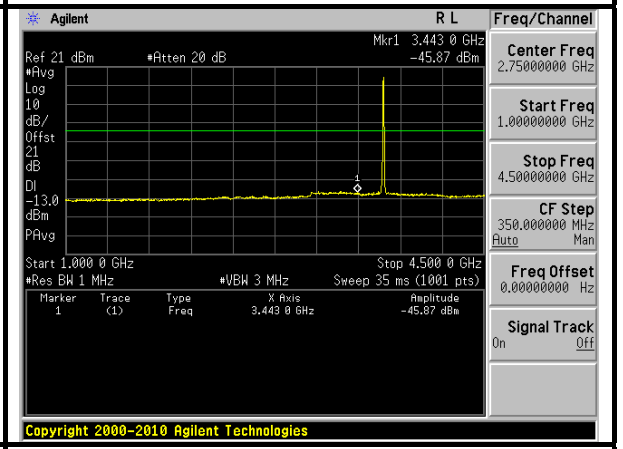
CHANNEL BANDWIDTH: 5MHz / 64QAM

LOW CHANNEL

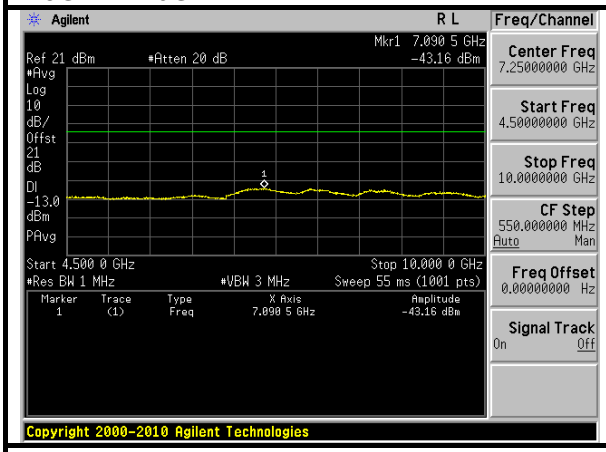
30MHz ~ 1GHz



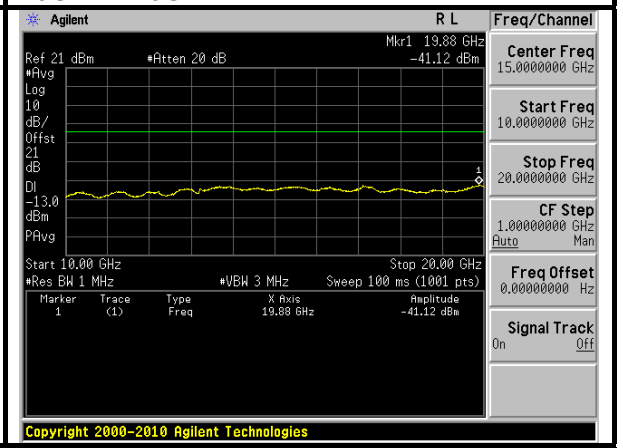
1GHz ~ 4.5GHz



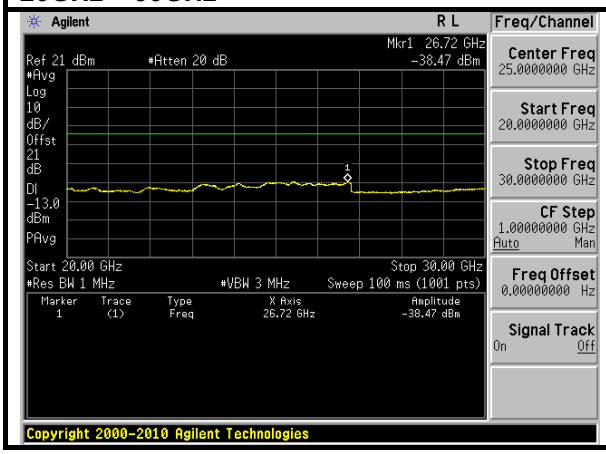
4.5GHz ~ 10GHz



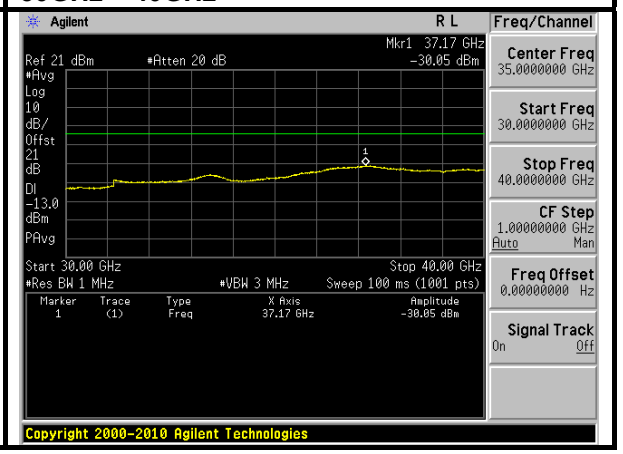
10GHz ~ 20GHz



20GHz ~ 30GHz

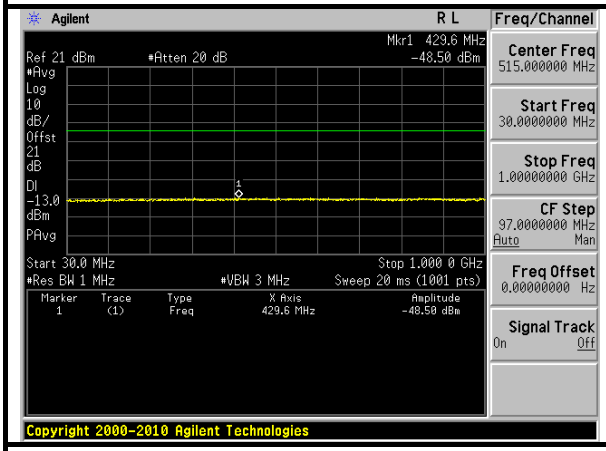


30GHz ~ 40GHz

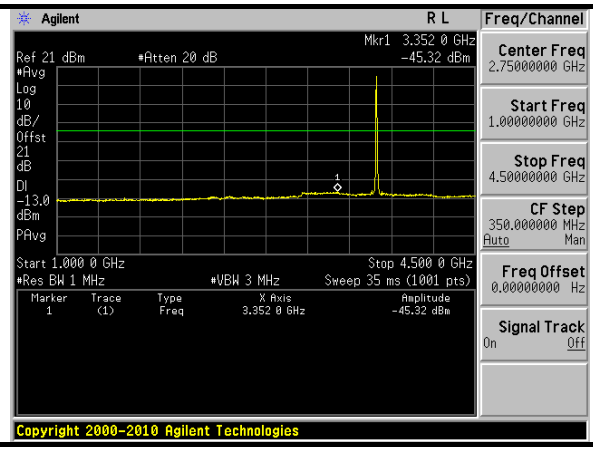


MIDDLE CHANNEL

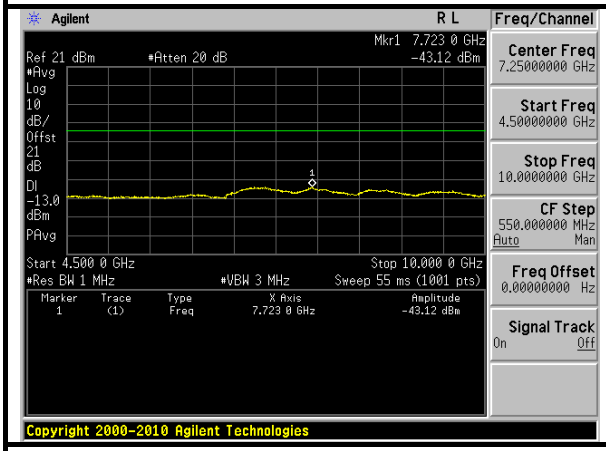
30MHz ~ 1GHz



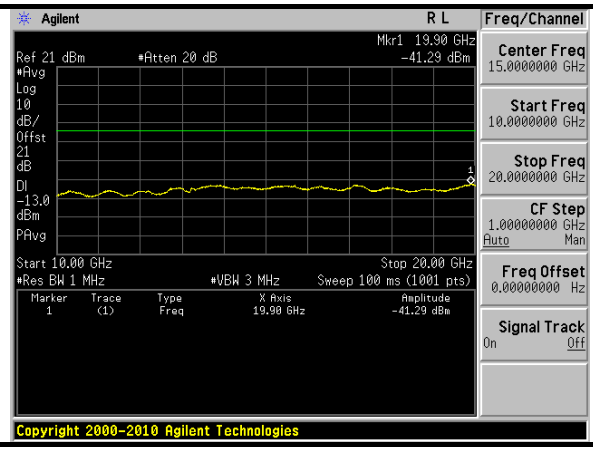
1GHz ~ 4.5GHz



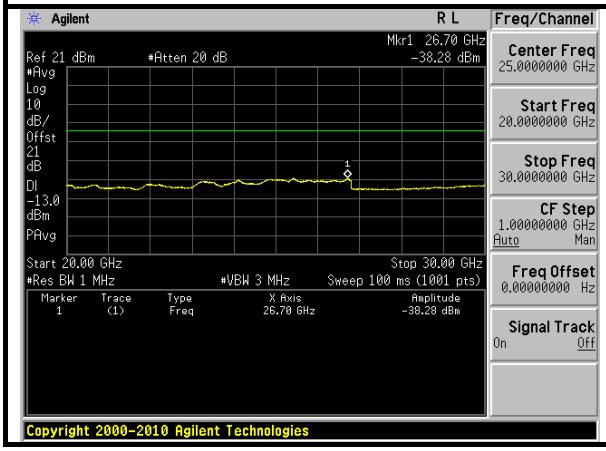
4.5GHz ~ 10GHz



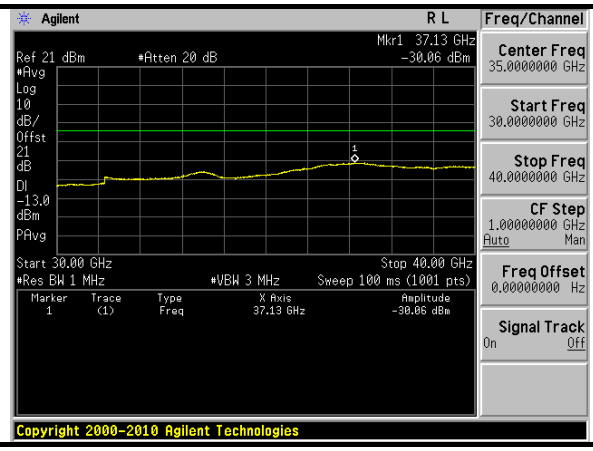
10GHz ~ 20GHz



20GHz ~ 30GHz

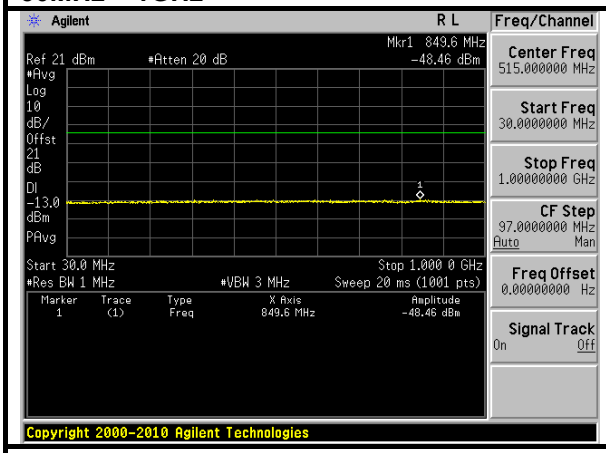


30GHz ~ 40GHz

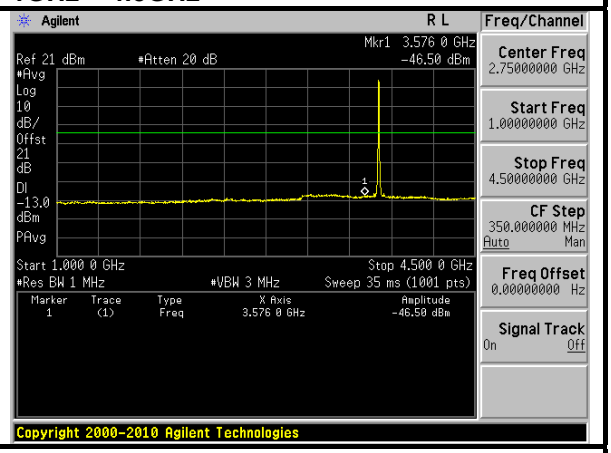


HIGH CHANNEL

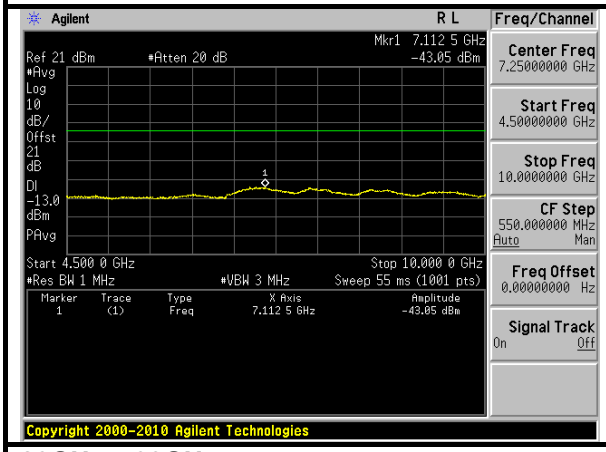
30MHz ~ 1GHz



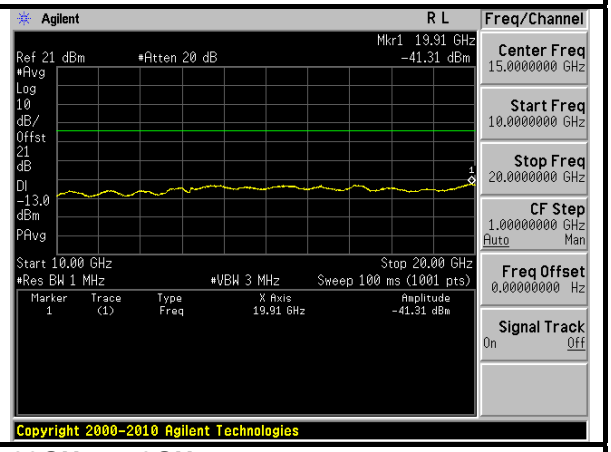
1GHz ~ 4.5GHz



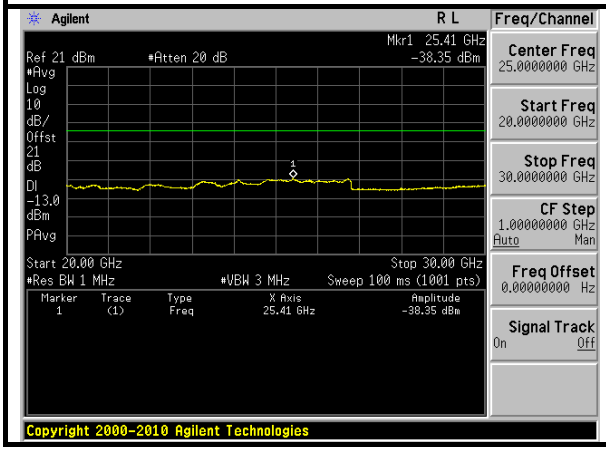
4.5GHz ~ 10GHz



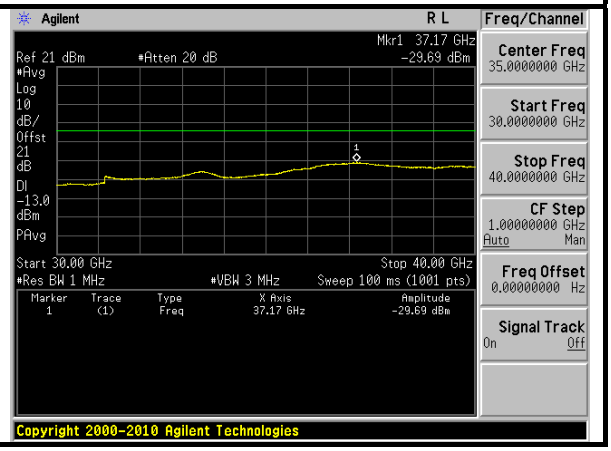
10GHz ~ 20GHz



20GHz ~ 30GHz



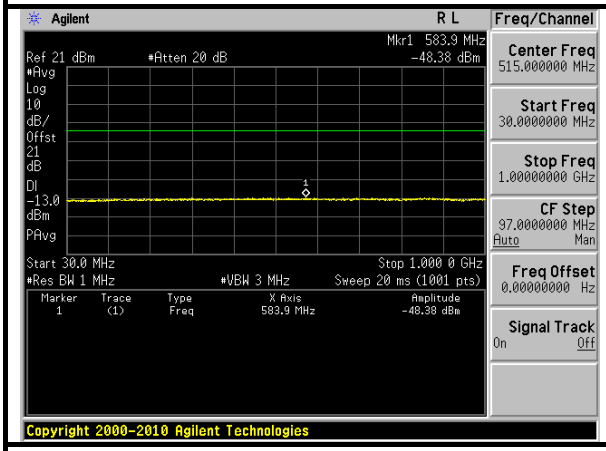
30GHz ~ 40GHz



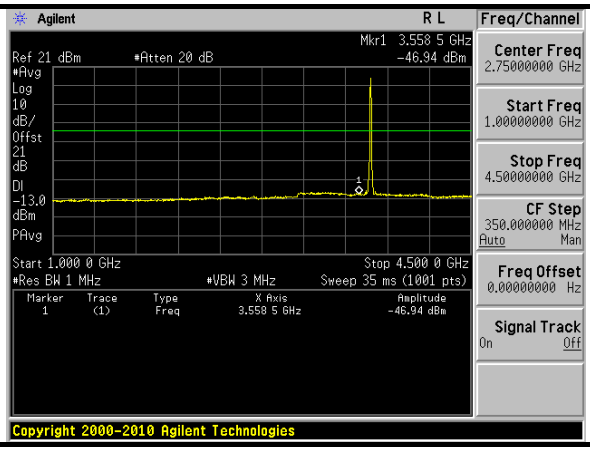
CHANNEL BANDWIDTH: 7MHz / QPSK

LOW CHANNEL

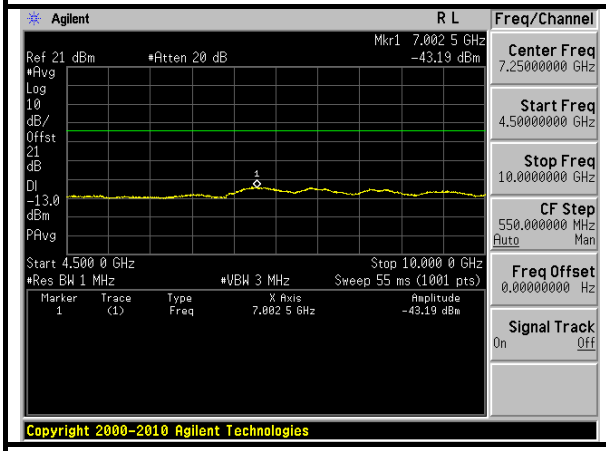
30MHz ~ 1GHz



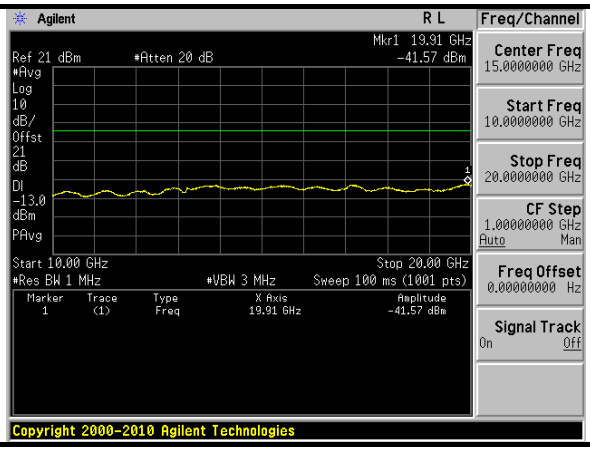
1GHz ~ 4.5GHz



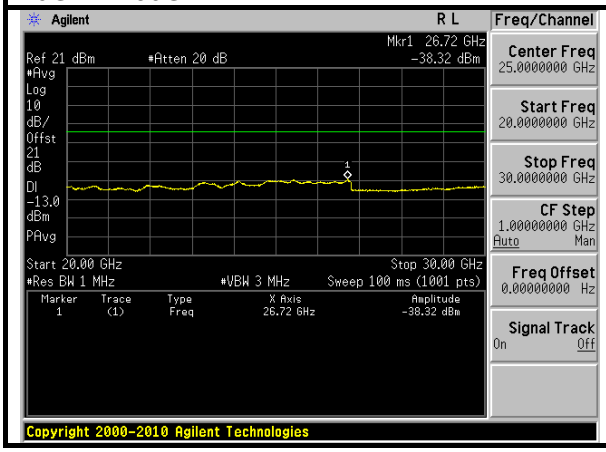
4.5GHz ~ 10GHz



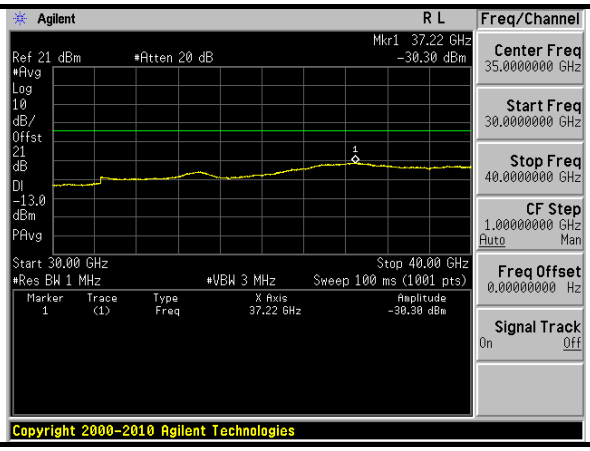
10GHz ~ 20GHz



20GHz ~ 30GHz

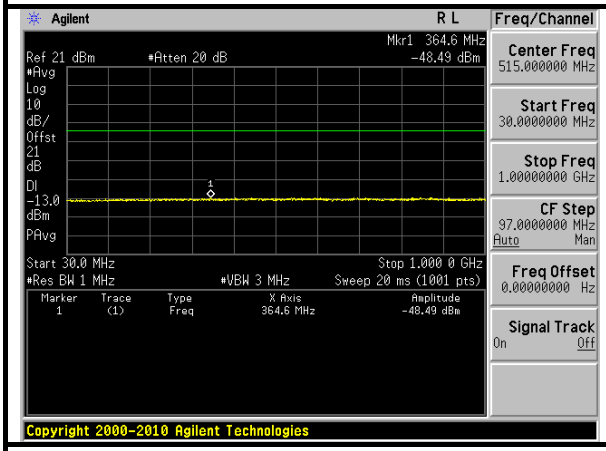


30GHz ~ 40GHz

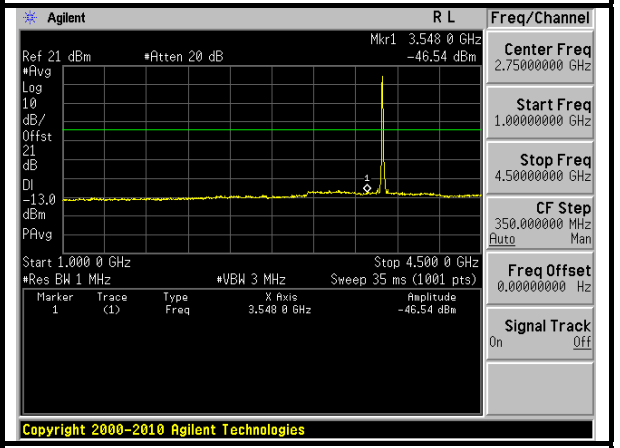


MIDDLE CHANNEL

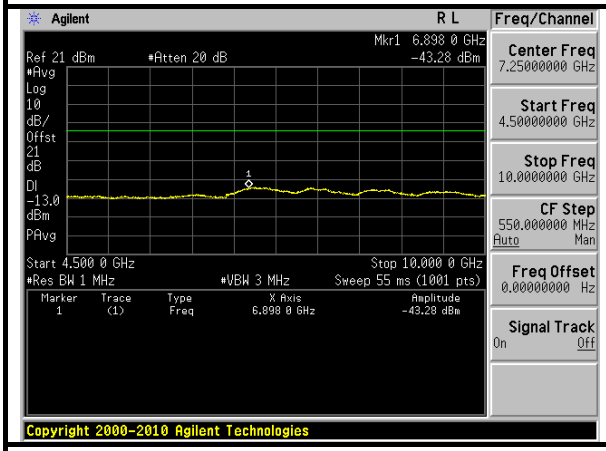
30MHz ~ 1GHz



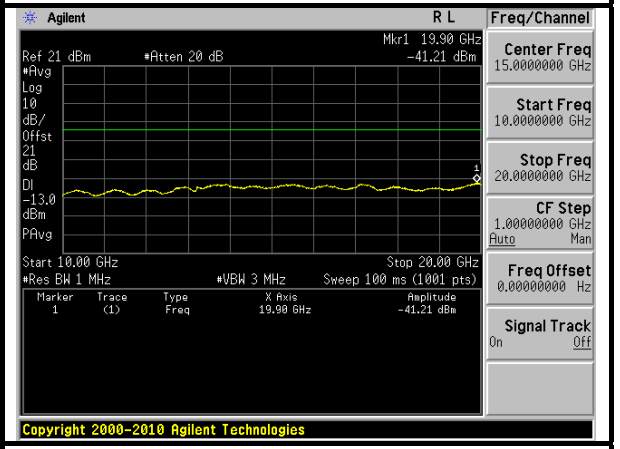
1GHz ~ 4.5GHz



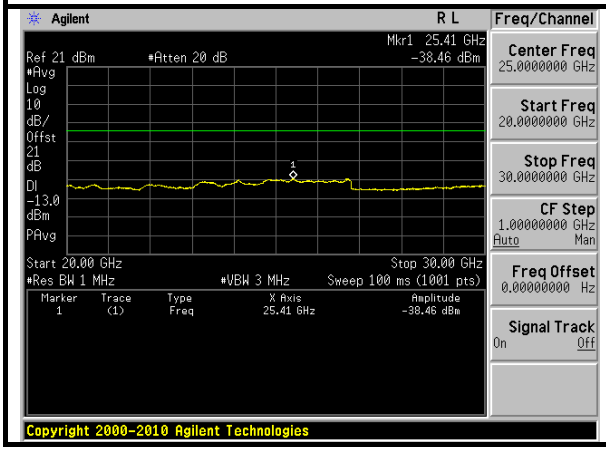
4.5GHz ~ 10GHz



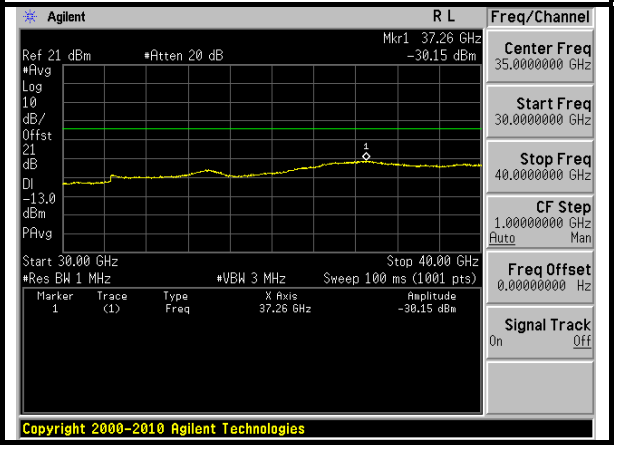
10GHz ~ 20GHz



20GHz ~ 30GHz

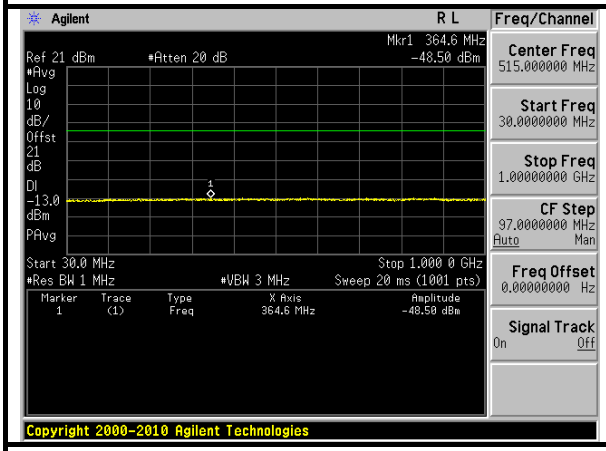


30GHz ~ 40GHz

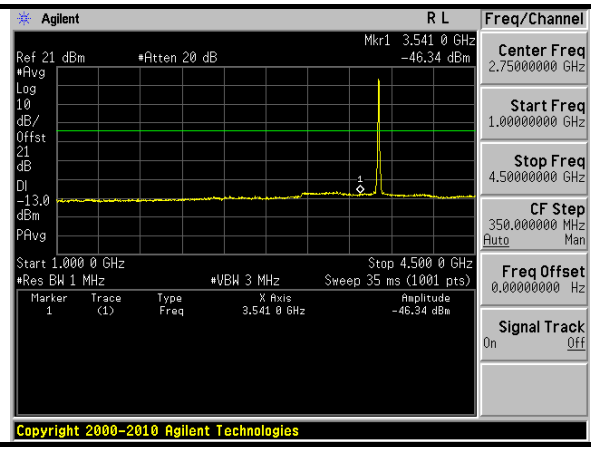


HIGH CHANNEL

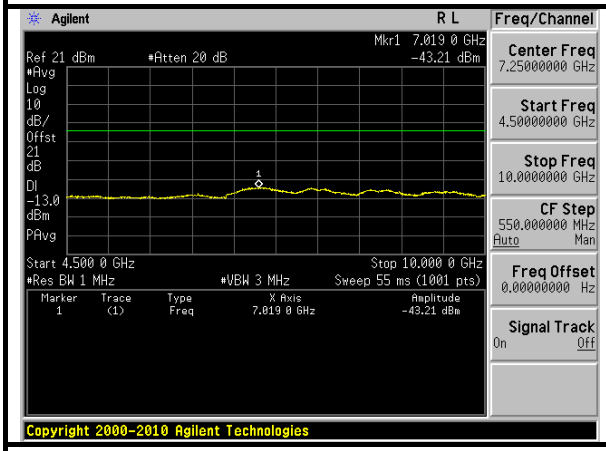
30MHz ~ 1GHz



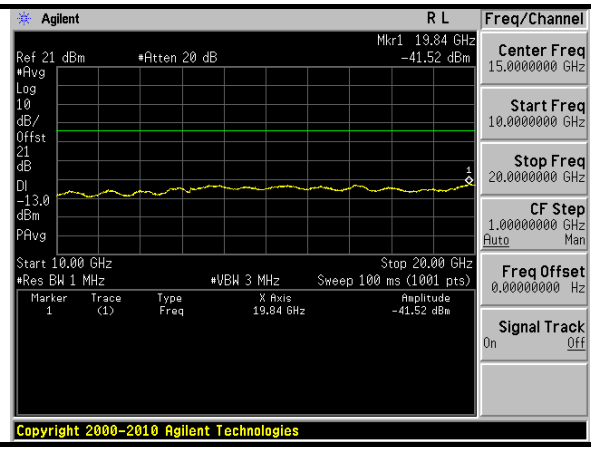
1GHz ~ 4.5GHz



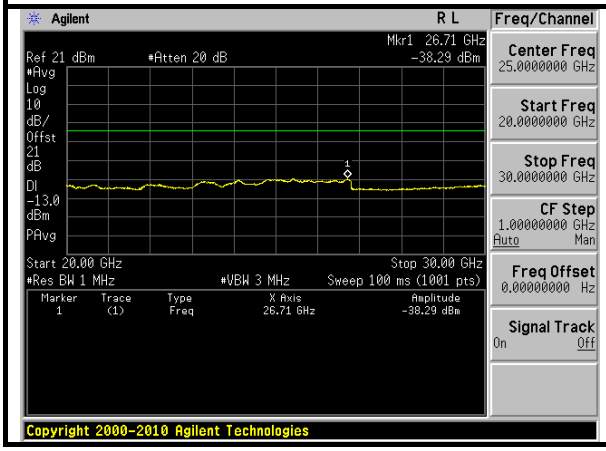
4.5GHz ~ 10GHz



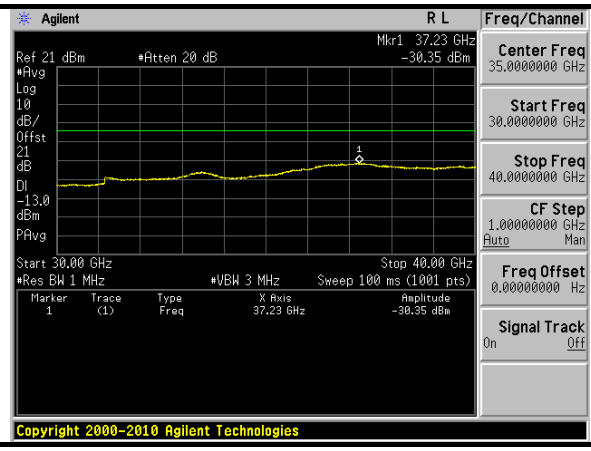
10GHz ~ 20GHz



20GHz ~ 30GHz



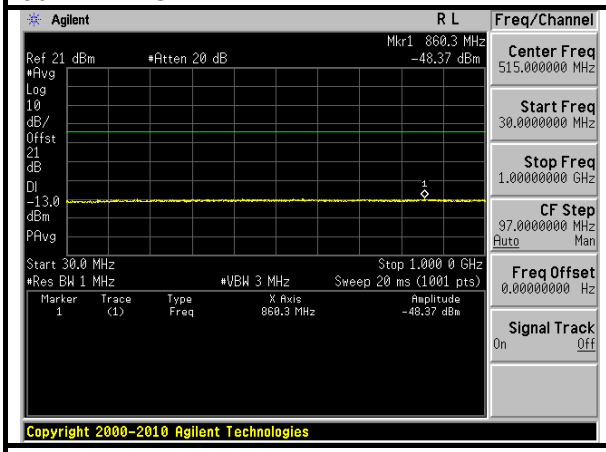
30GHz ~ 40GHz



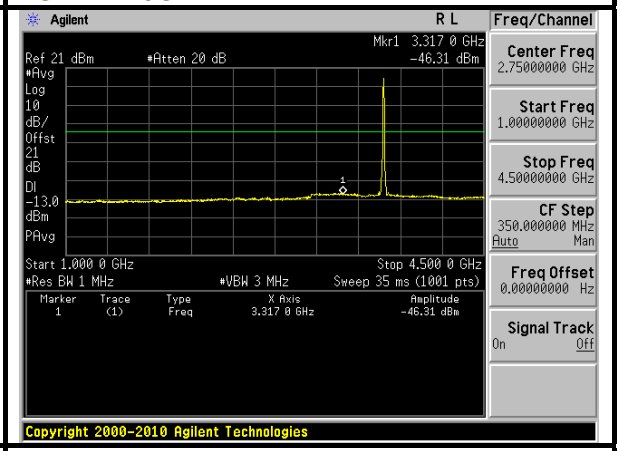
CHANNEL BANDWIDTH: 7MHz / 16QAM

LOW CHANNEL

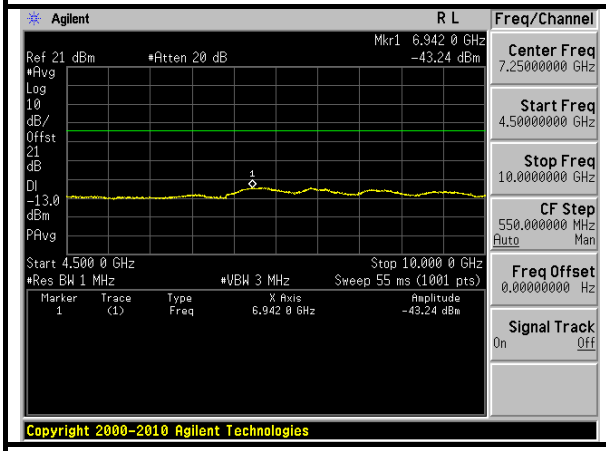
30MHz ~ 1GHz



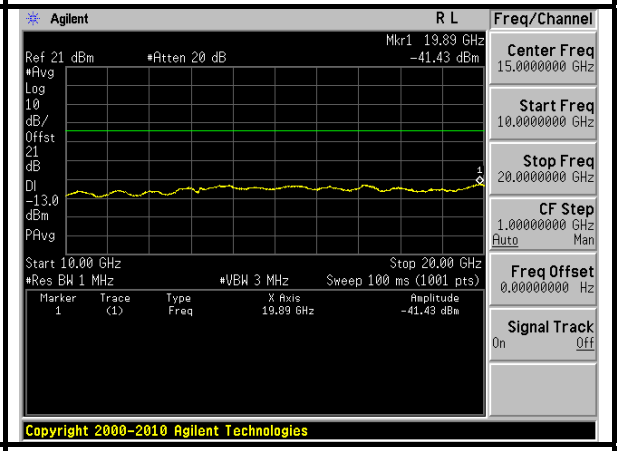
1GHz ~ 4.5GHz



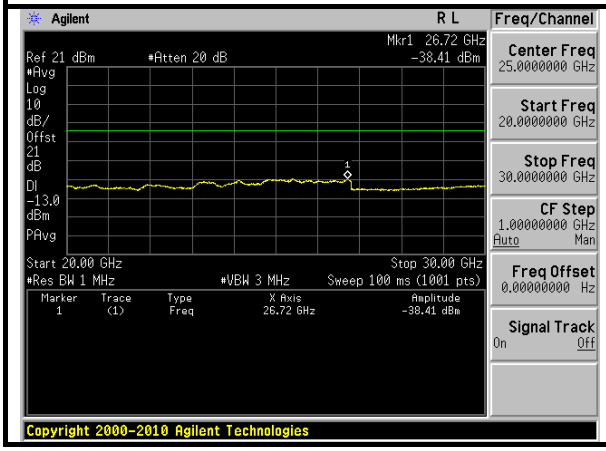
4.5GHz ~ 10GHz



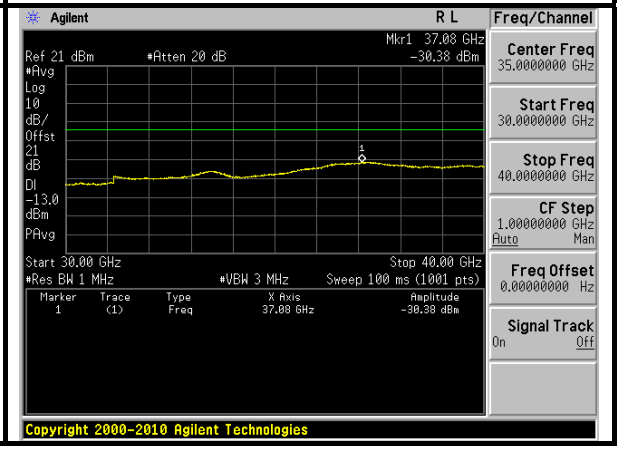
10GHz ~ 20GHz



20GHz ~ 30GHz

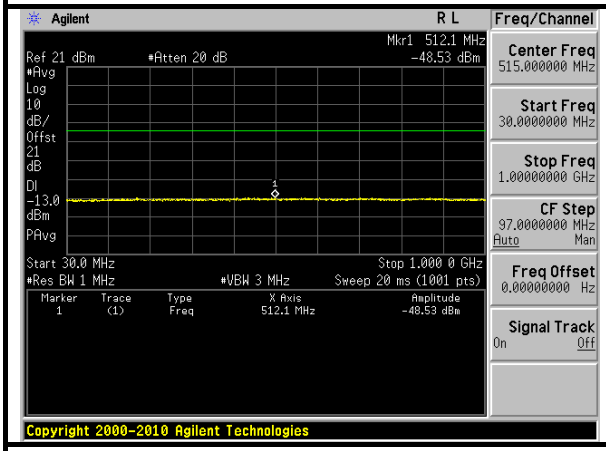


30GHz ~ 40GHz

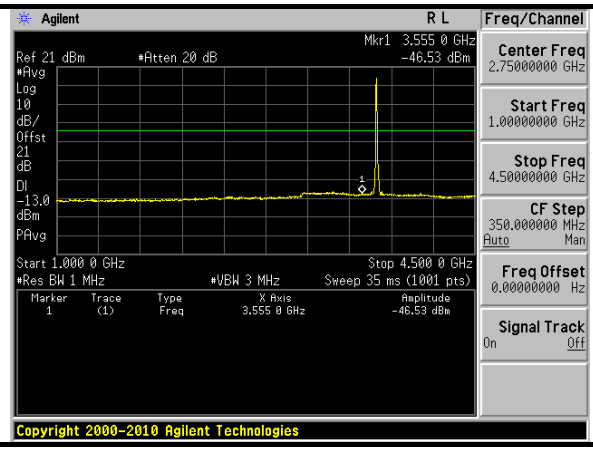


MIDDLE CHANNEL

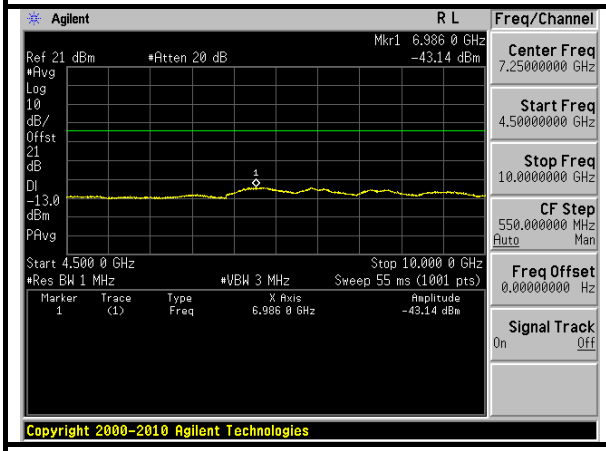
30MHz ~ 1GHz



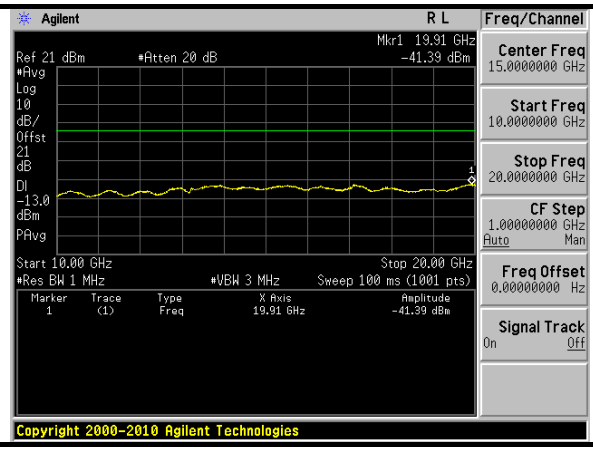
1GHz ~ 4.5GHz



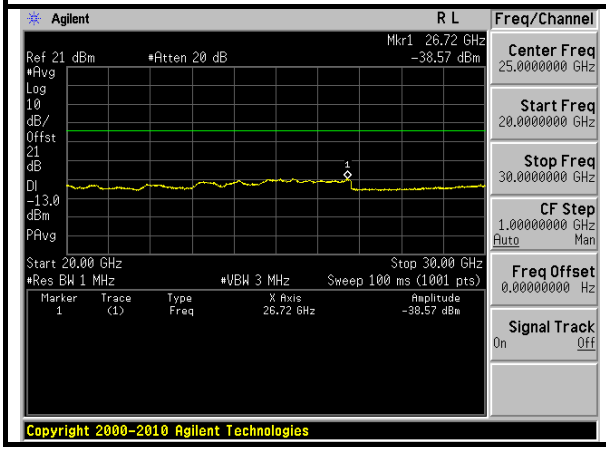
4.5GHz ~ 10GHz



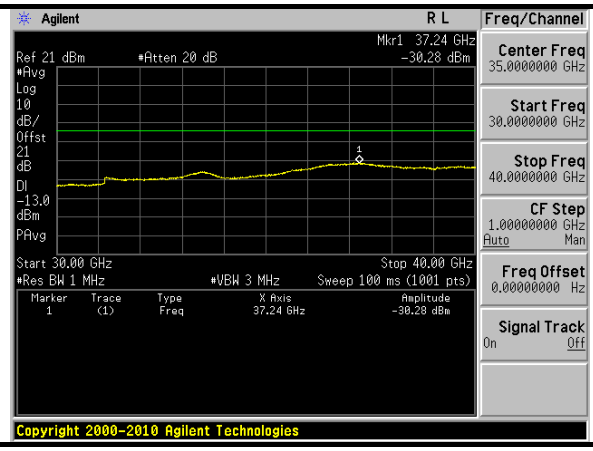
10GHz ~ 20GHz



20GHz ~ 30GHz

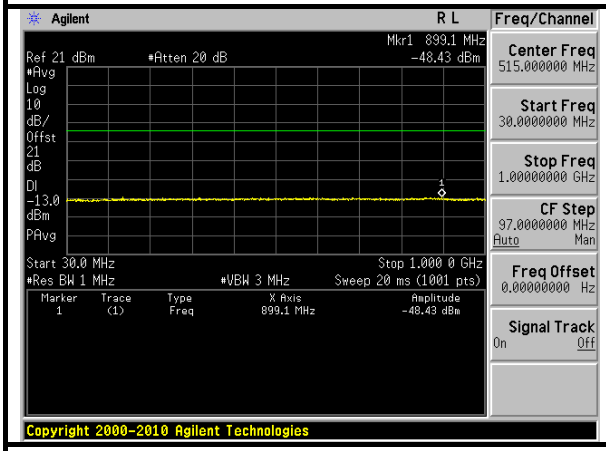


30GHz ~ 40GHz

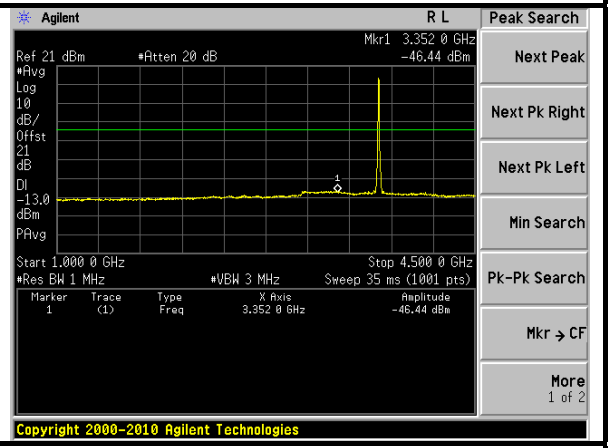


HIGH CHANNEL

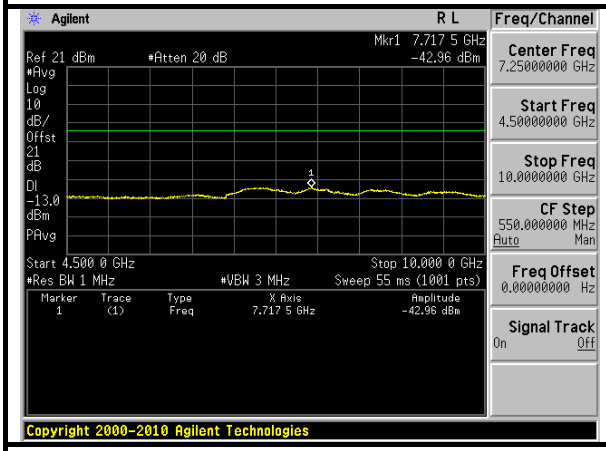
30MHz ~ 1GHz



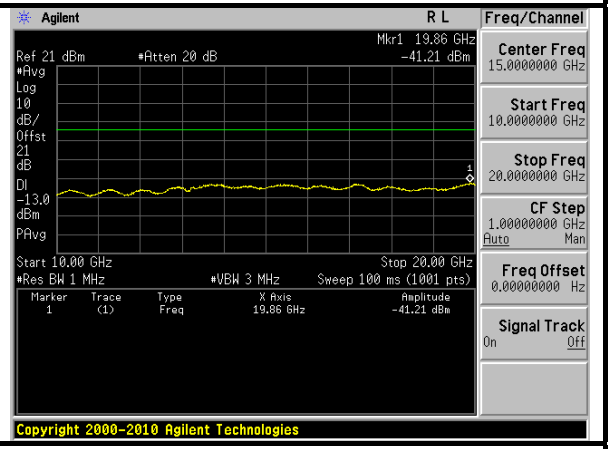
1GHz ~ 4.5GHz



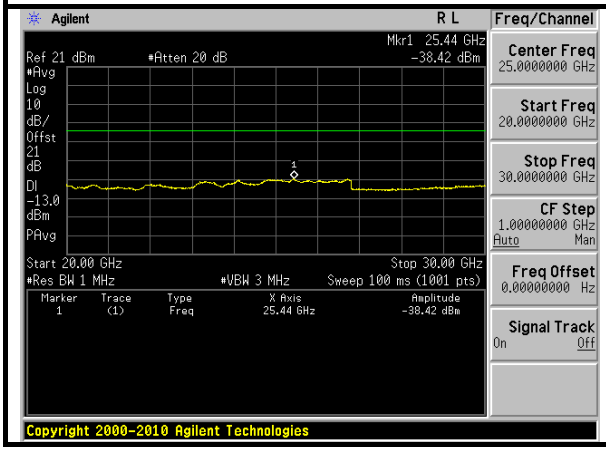
4.5GHz ~ 10GHz



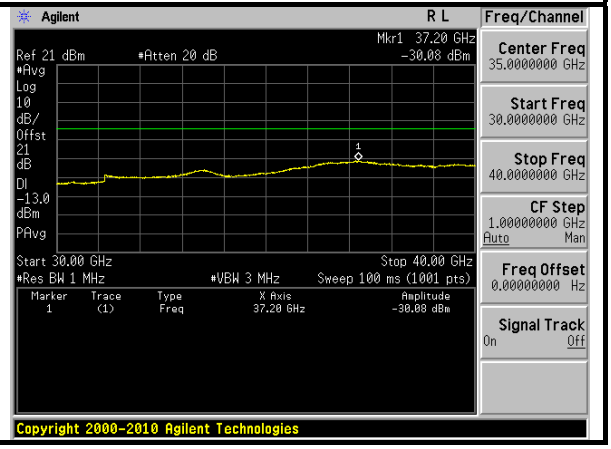
10GHz ~ 20GHz



20GHz ~ 30GHz



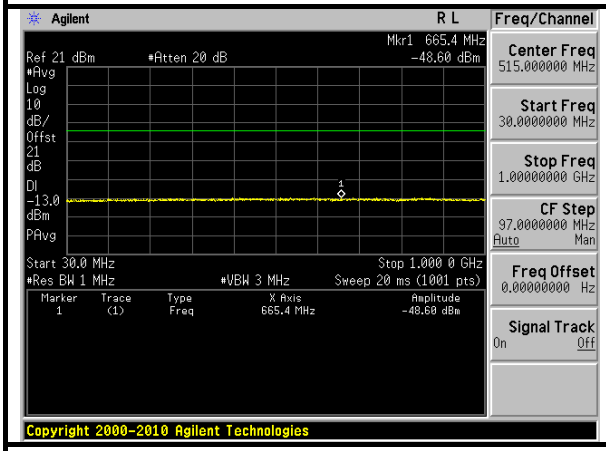
30GHz ~ 40GHz



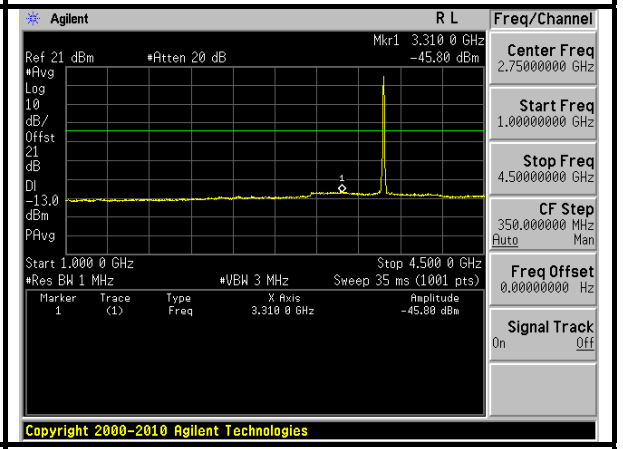
CHANNEL BANDWIDTH: 7MHz / 64QAM

LOW CHANNEL

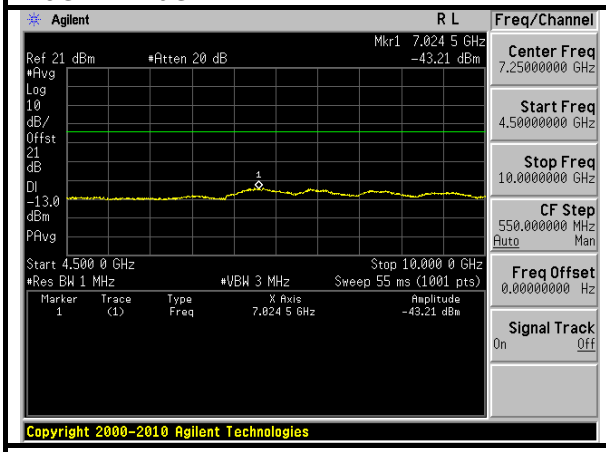
30MHz ~ 1GHz



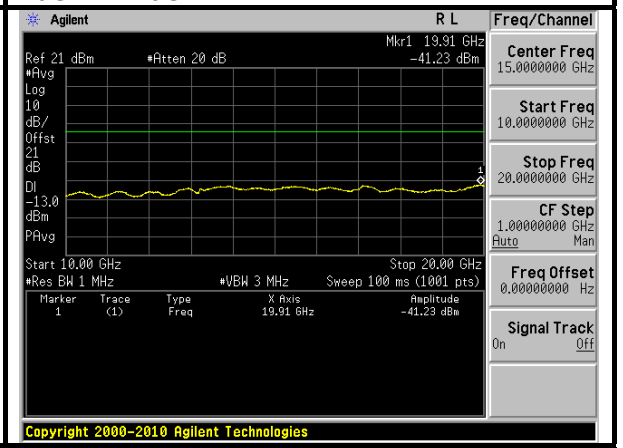
1GHz ~ 4.5GHz



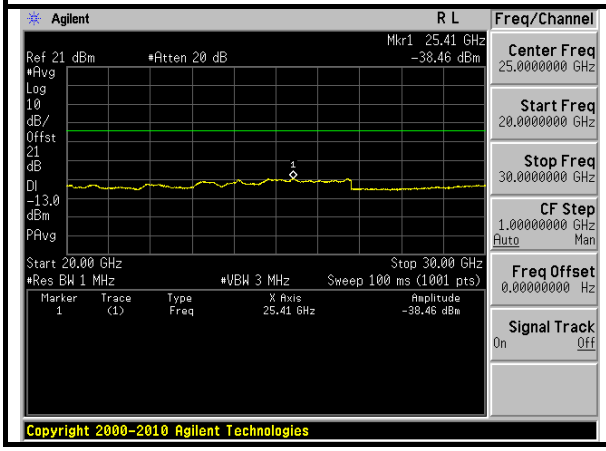
4.5GHz ~ 10GHz



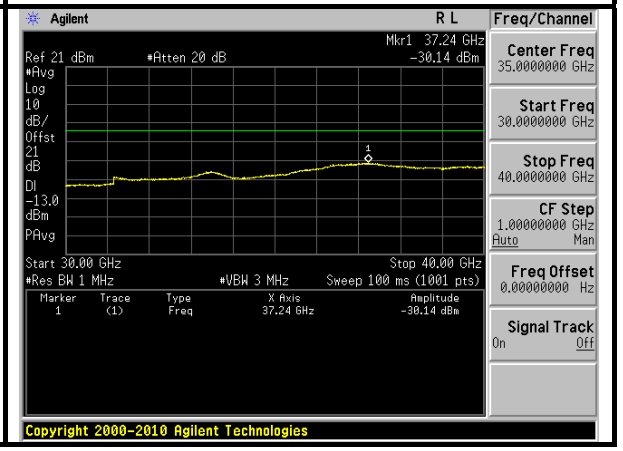
10GHz ~ 20GHz



20GHz ~ 30GHz

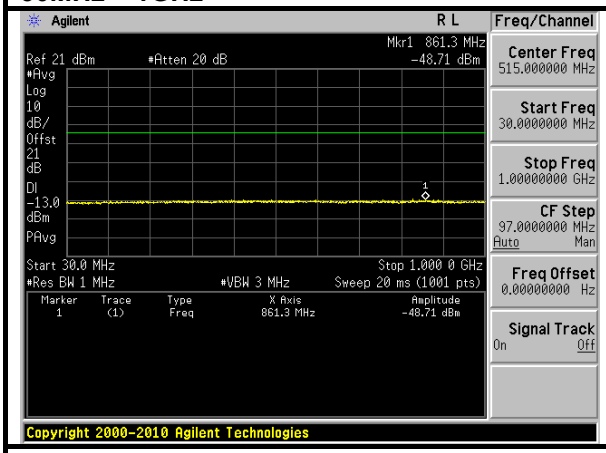


30GHz ~ 40GHz

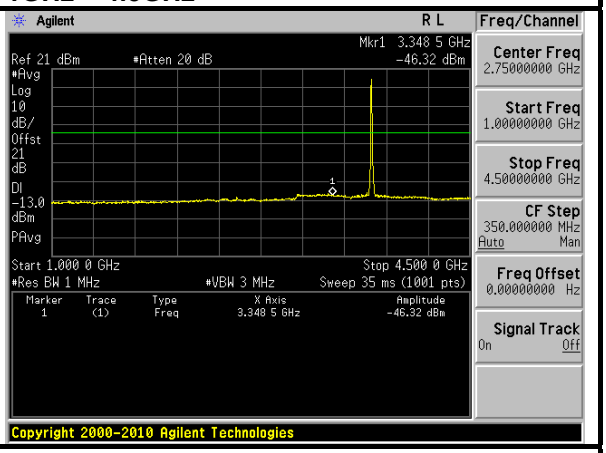


MIDDLE CHANNEL

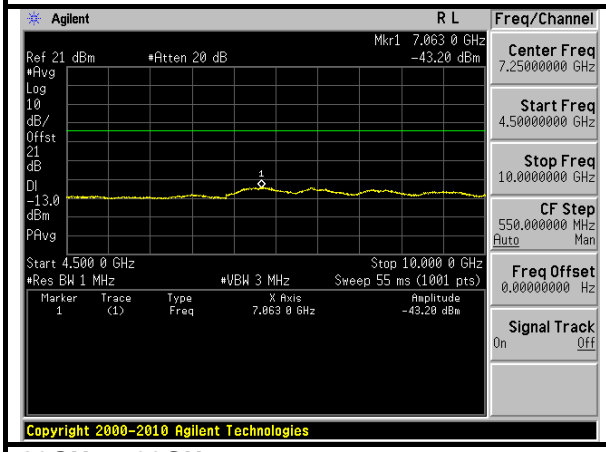
30MHz ~ 1GHz



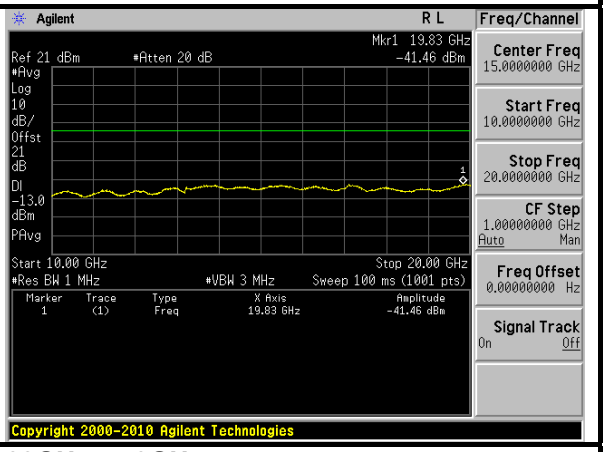
1GHz ~ 4.5GHz



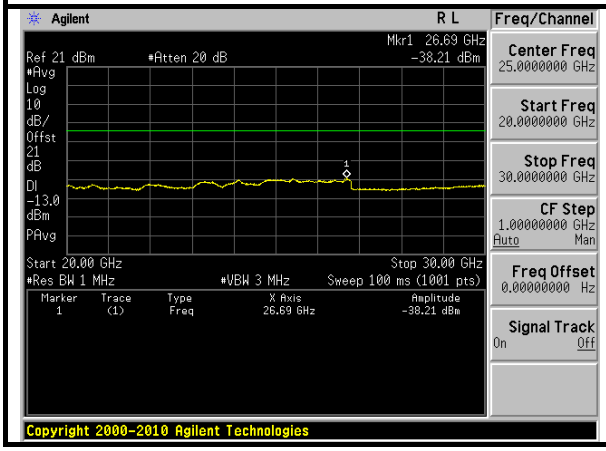
4.5GHz ~ 10GHz



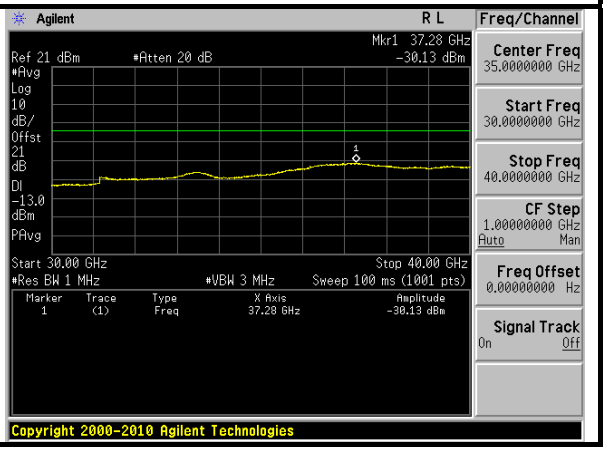
10GHz ~ 20GHz



20GHz ~ 30GHz

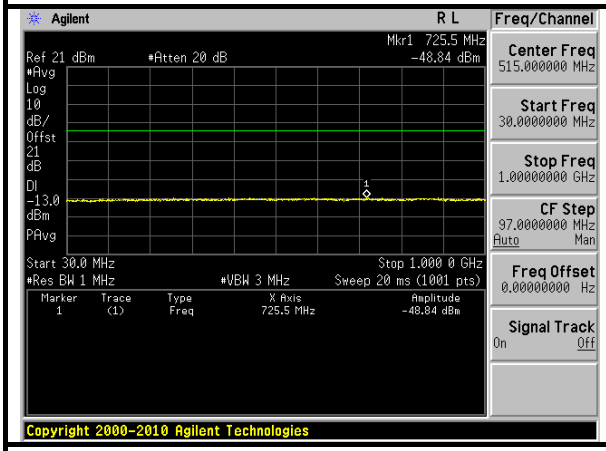


30GHz ~ 40GHz

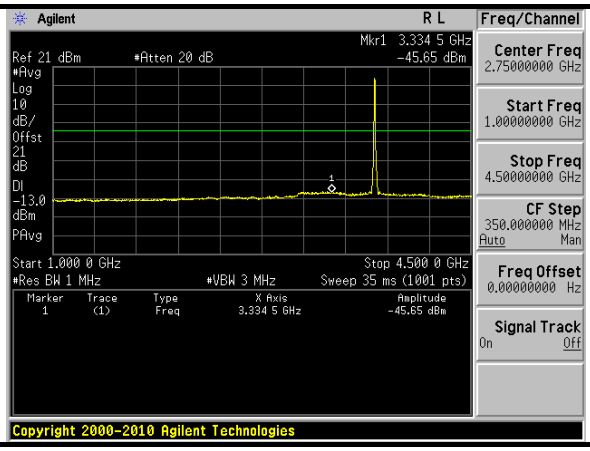


HIGH CHANNEL

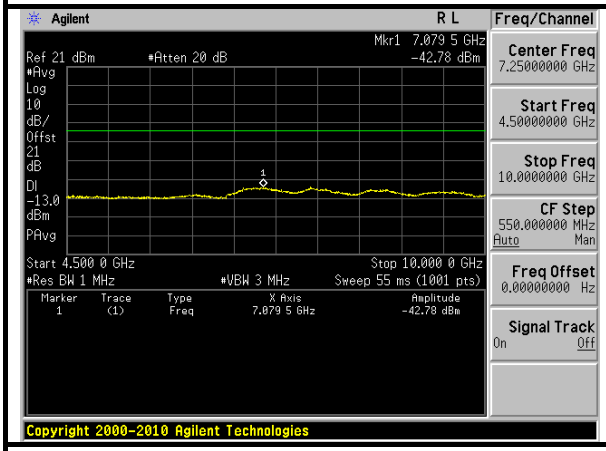
30MHz ~ 1GHz



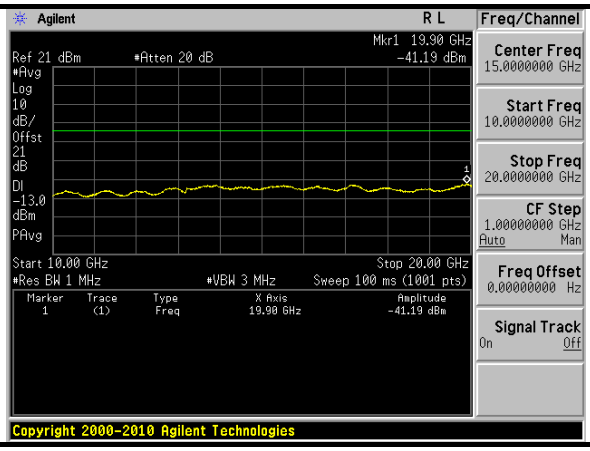
1GHz ~ 4.5GHz



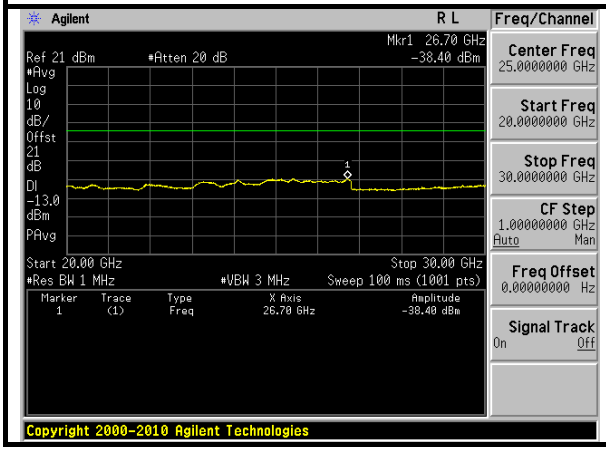
4.5GHz ~ 10GHz



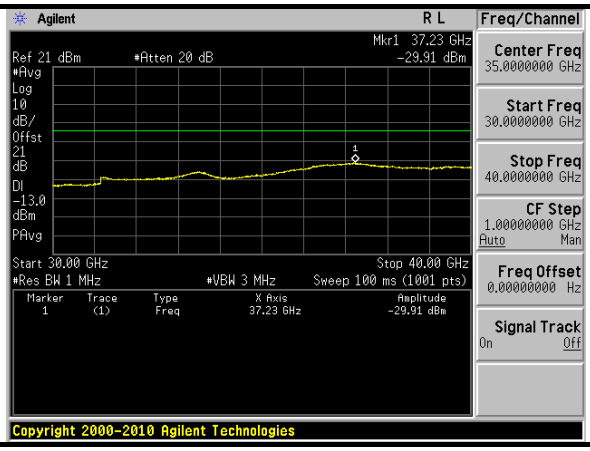
10GHz ~ 20GHz



20GHz ~ 30GHz



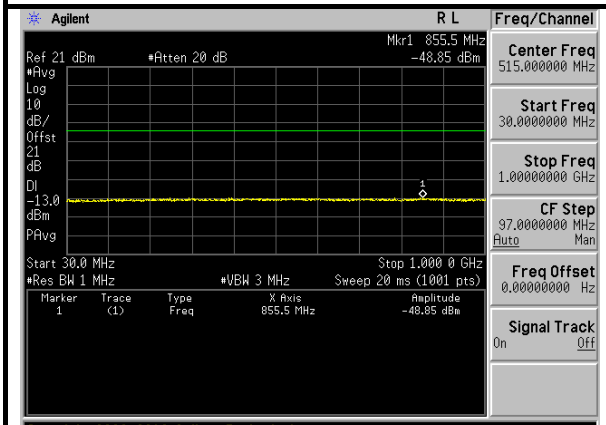
30GHz ~ 40GHz



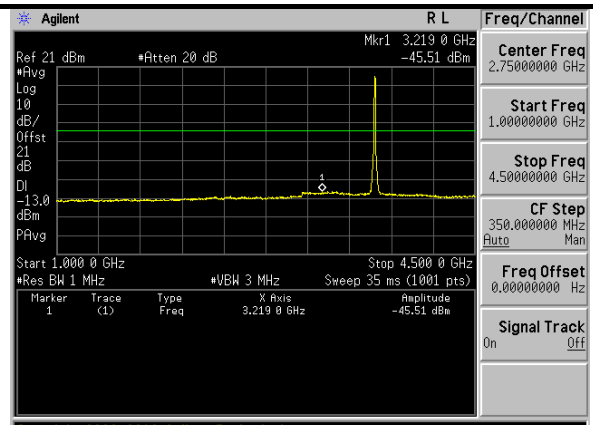
CHANNEL BANDWIDTH: 10MHz / QPSK

LOW CHANNEL

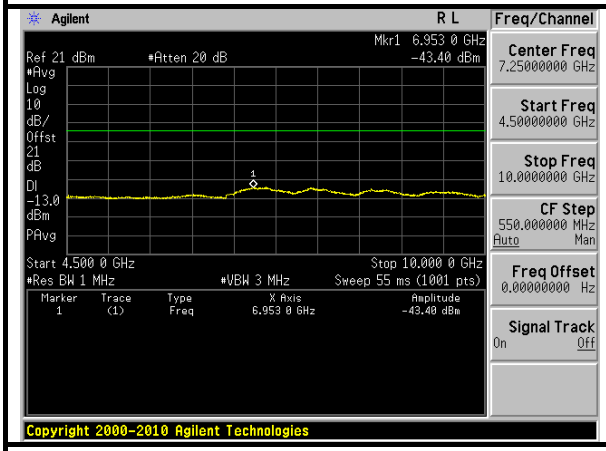
30MHz ~ 1GHz



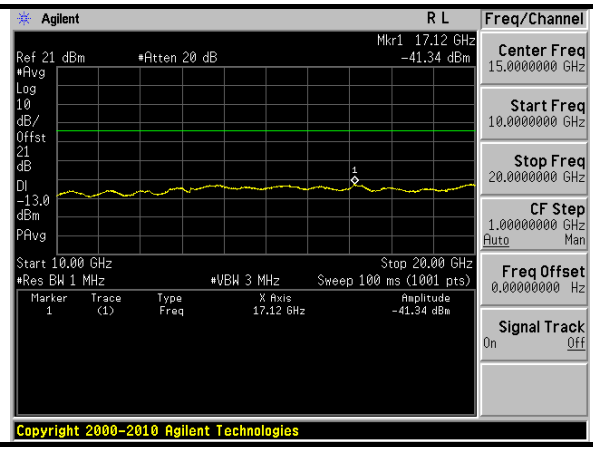
1GHz ~ 4.5GHz



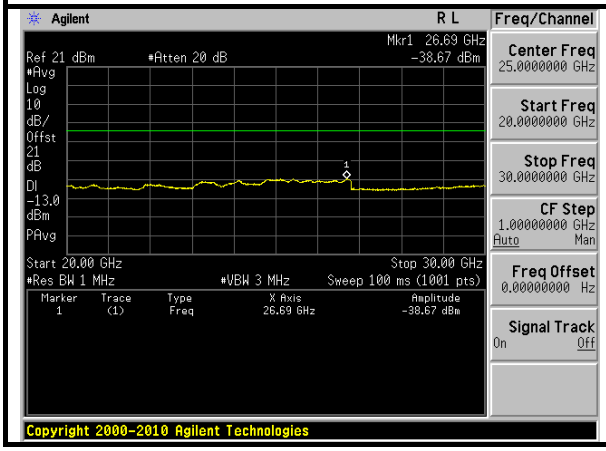
4.5GHz ~ 10GHz



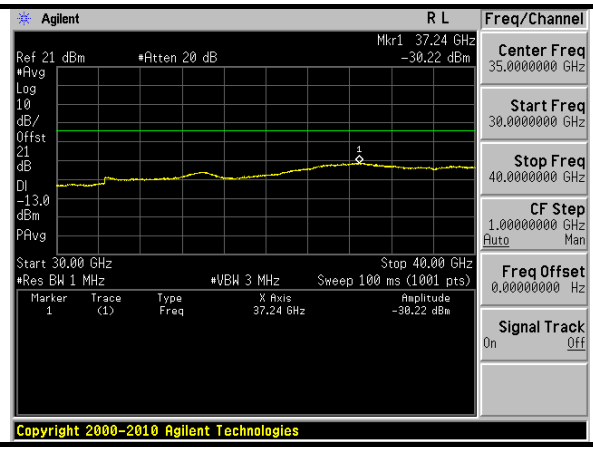
10GHz ~ 20GHz



20GHz ~ 30GHz

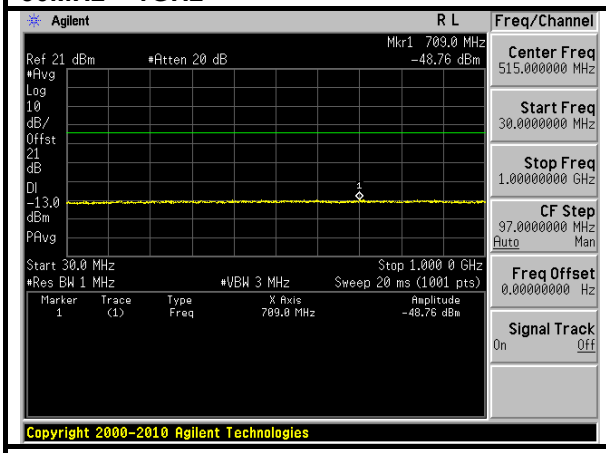


30GHz ~ 40GHz

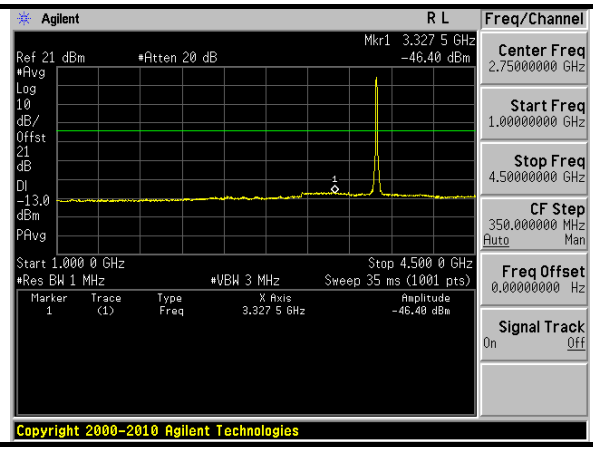


MIDDLE CHANNEL

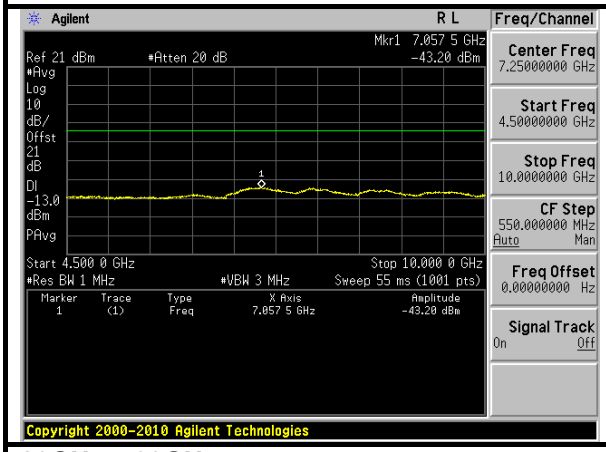
30MHz ~ 1GHz



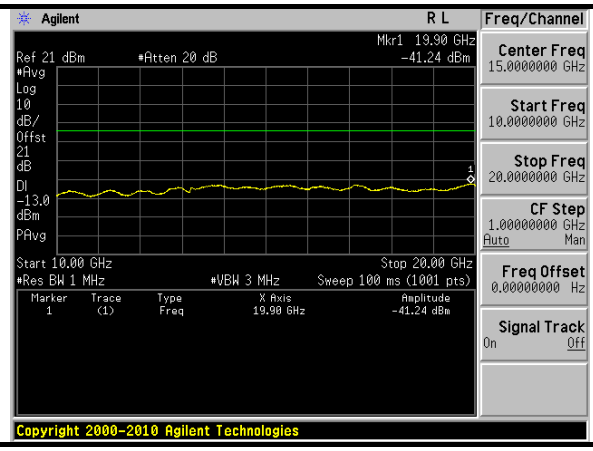
1GHz ~ 4.5GHz



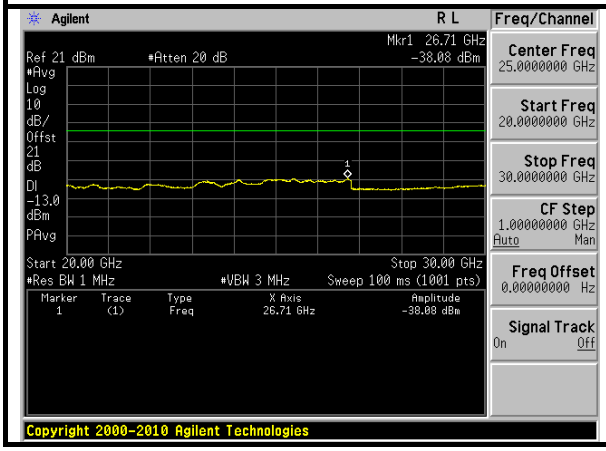
4.5GHz ~ 10GHz



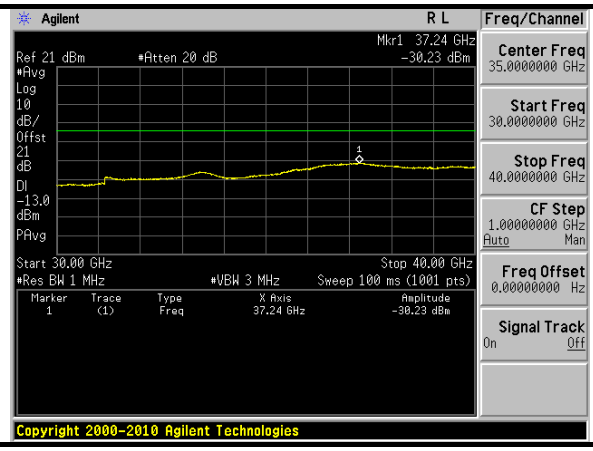
10GHz ~ 20GHz



20GHz ~ 30GHz

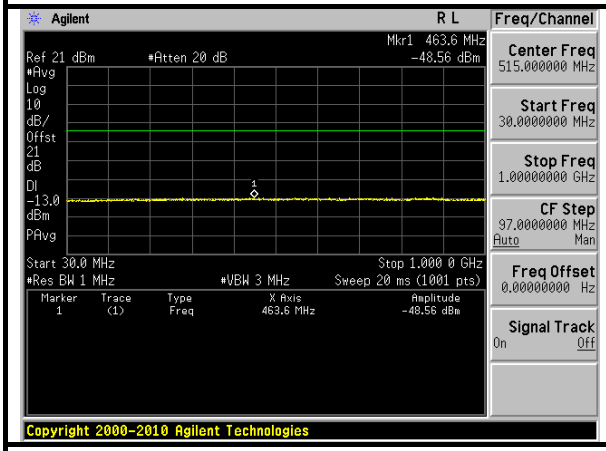


30GHz ~ 40GHz

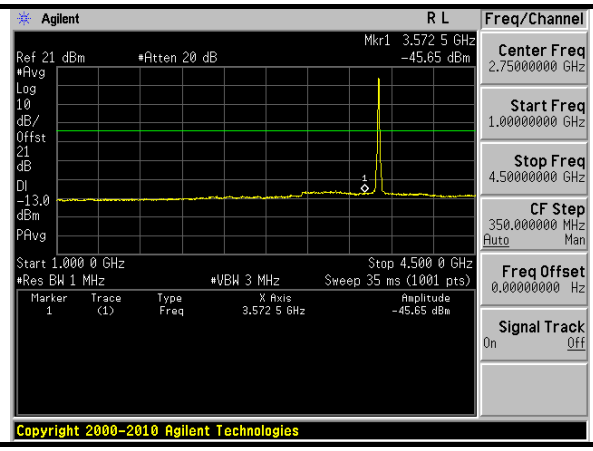


HIGH CHANNEL

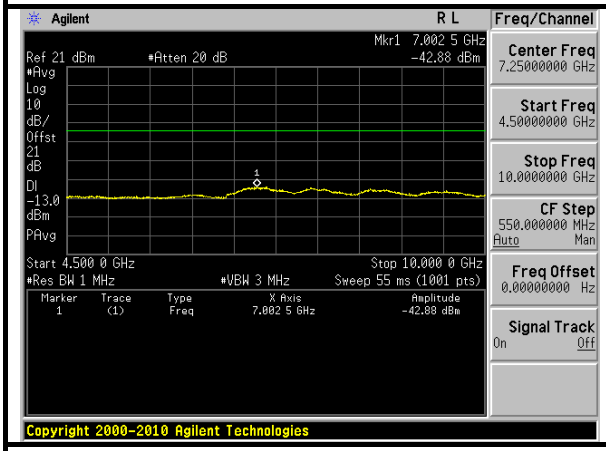
30MHz ~ 1GHz



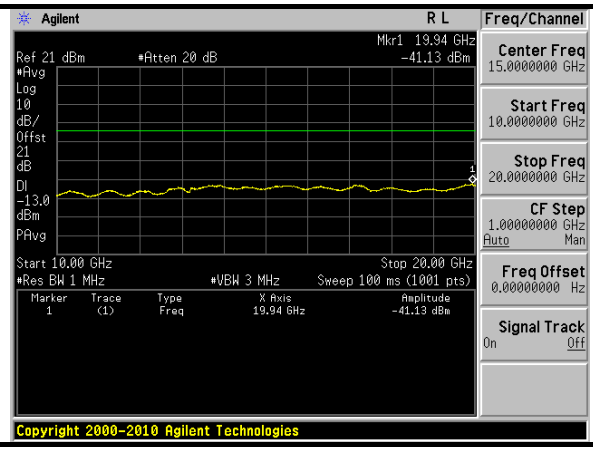
1GHz ~ 4.5GHz



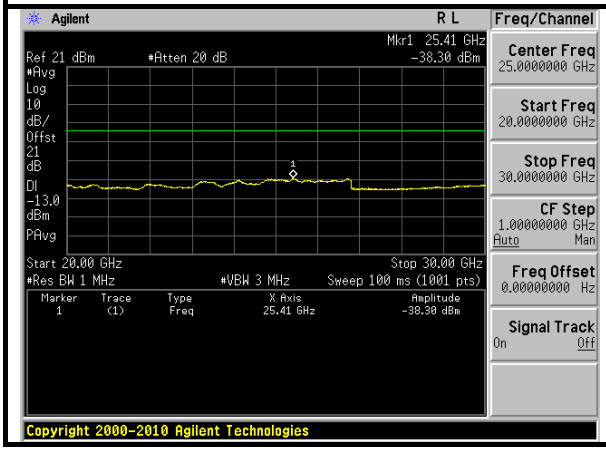
4.5GHz ~ 10GHz



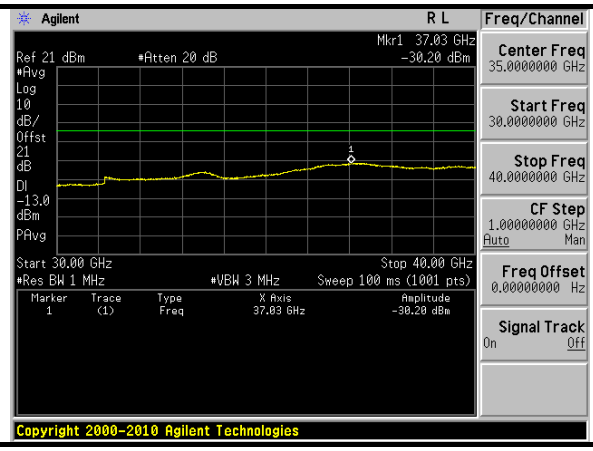
10GHz ~ 20GHz



20GHz ~ 30GHz



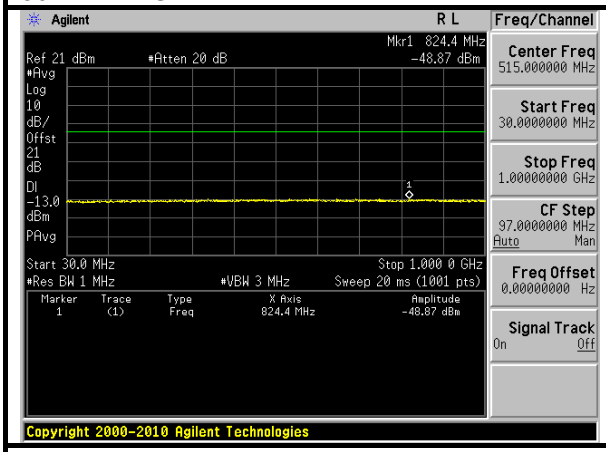
30GHz ~ 40GHz



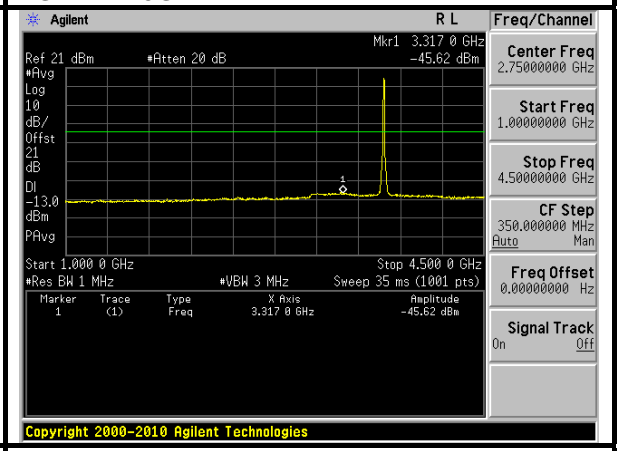
CHANNEL BANDWIDTH: 10MHz / 16QAM

LOW CHANNEL

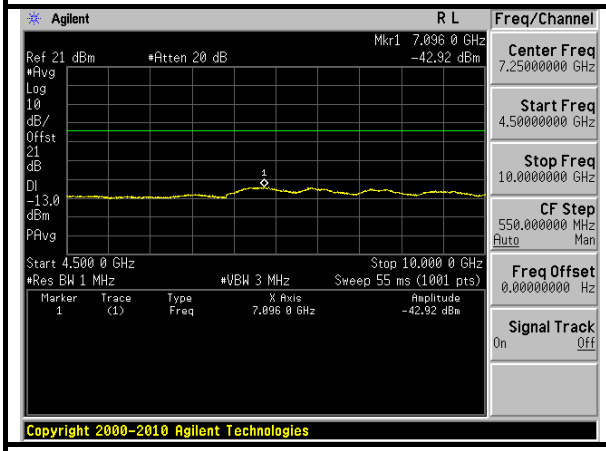
30MHz ~ 1GHz



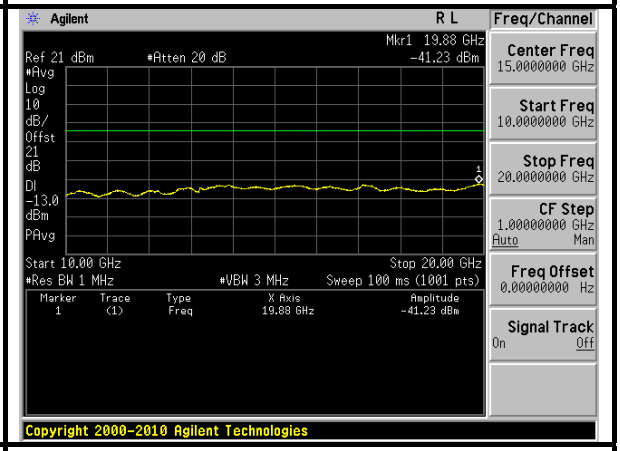
1GHz ~ 4.5GHz



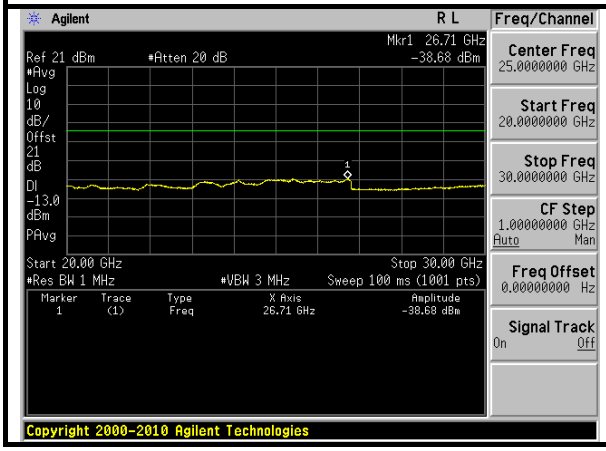
4.5GHz ~ 10GHz



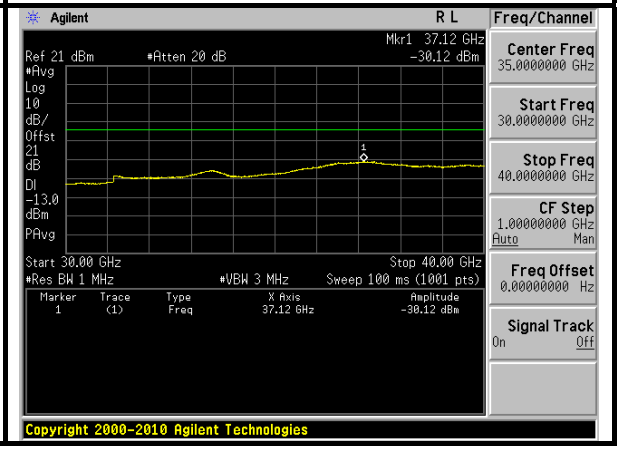
10GHz ~ 20GHz



20GHz ~ 30GHz

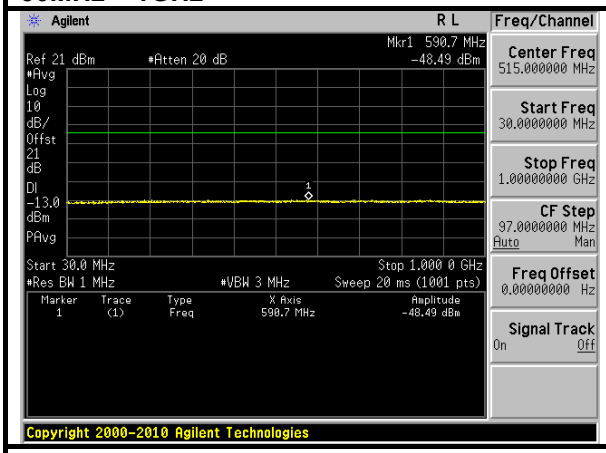


30GHz ~ 40GHz

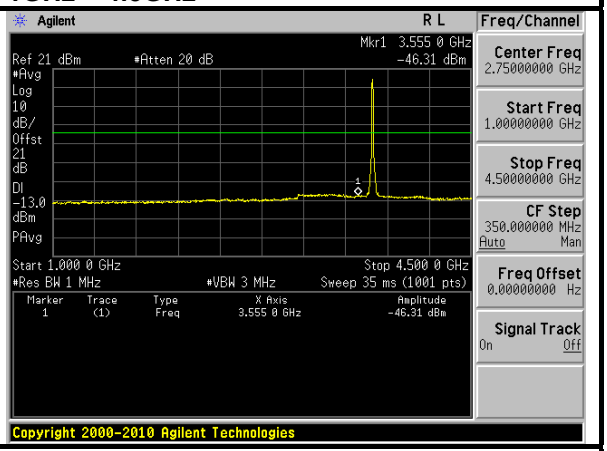


MIDDLE CHANNEL

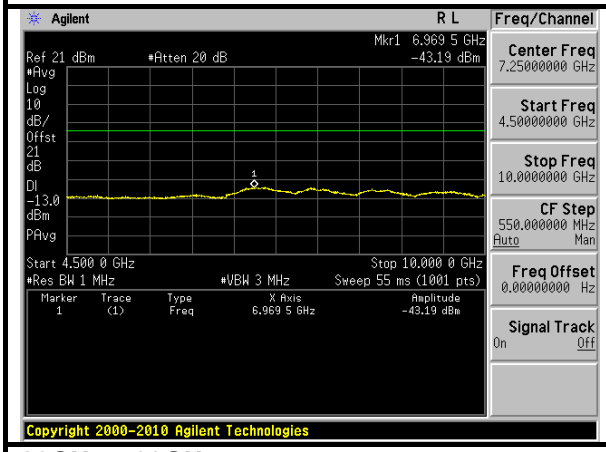
30MHz ~ 1GHz



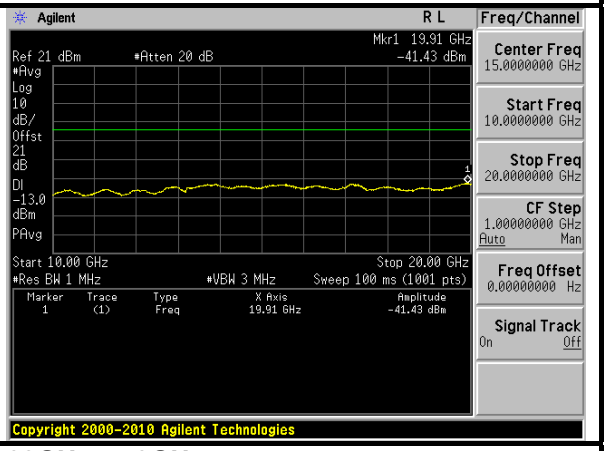
1GHz ~ 4.5GHz



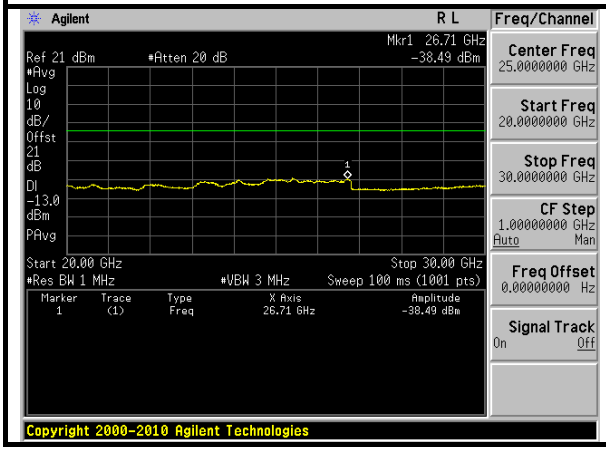
4.5GHz ~ 10GHz



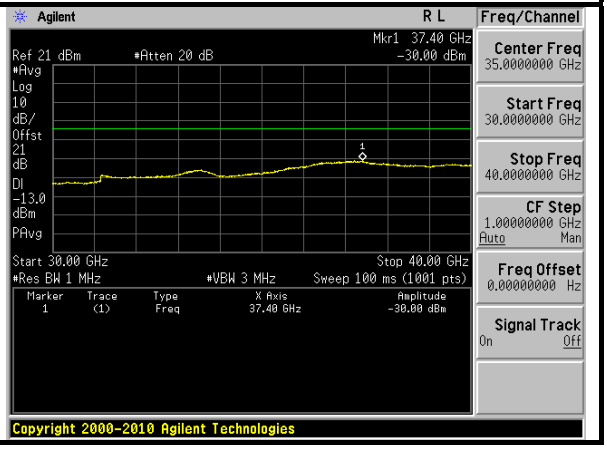
10GHz ~ 20GHz



20GHz ~ 30GHz

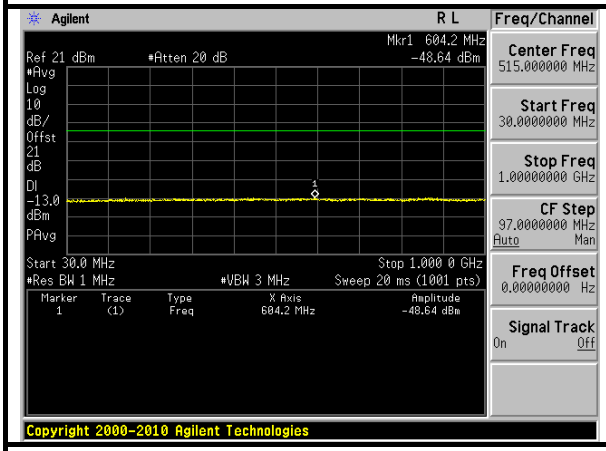


30GHz ~ 40GHz

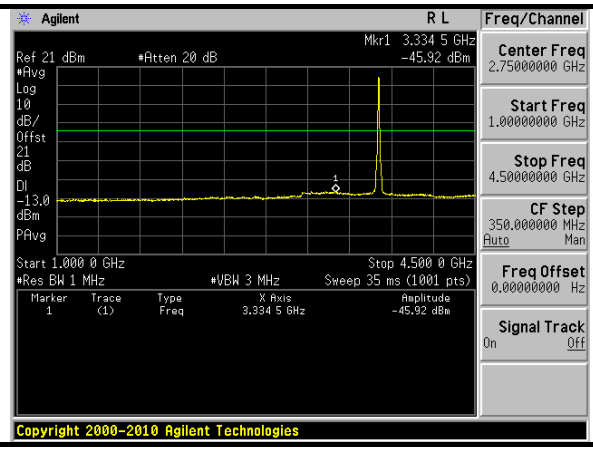


HIGH CHANNEL

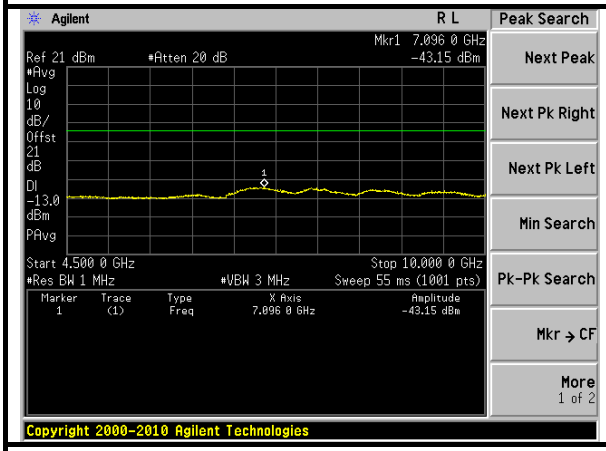
30MHz ~ 1GHz



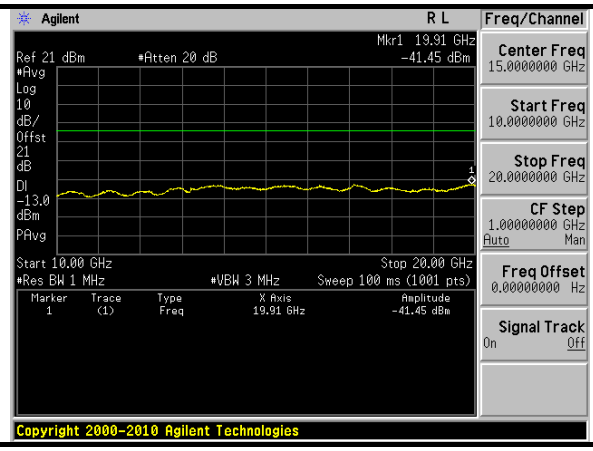
1GHz ~ 4.5GHz



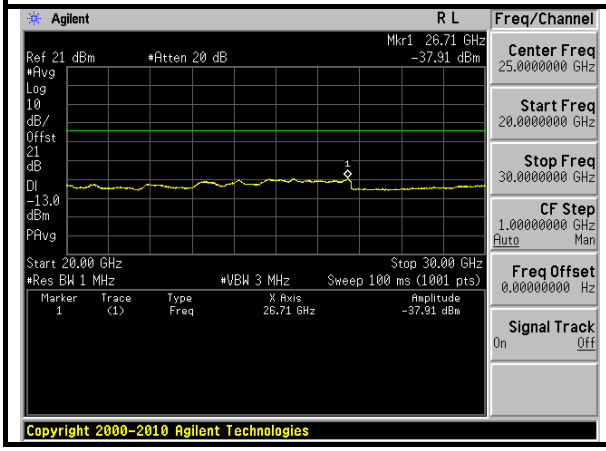
4.5GHz ~ 10GHz



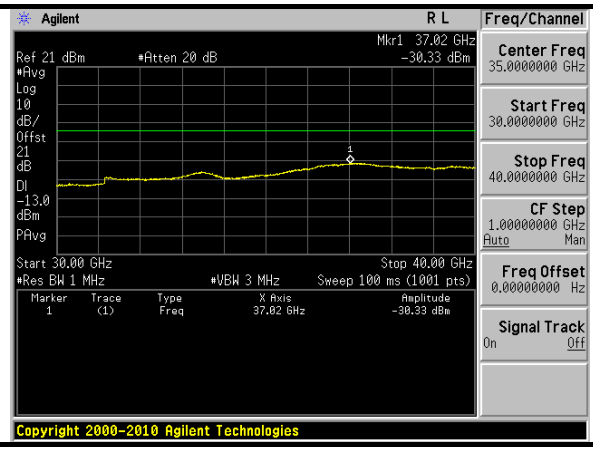
10GHz ~ 20GHz



20GHz ~ 30GHz



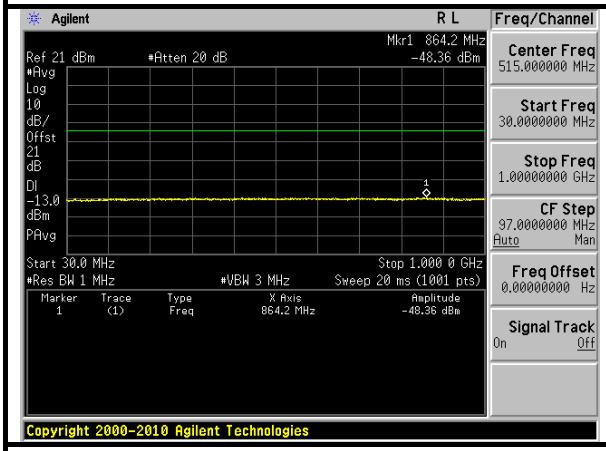
30GHz ~ 40GHz



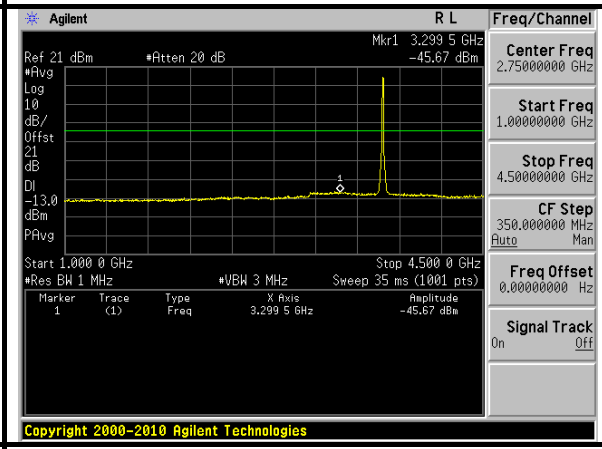
CHANNEL BANDWIDTH: 10MHz / 64QAM

LOW CHANNEL

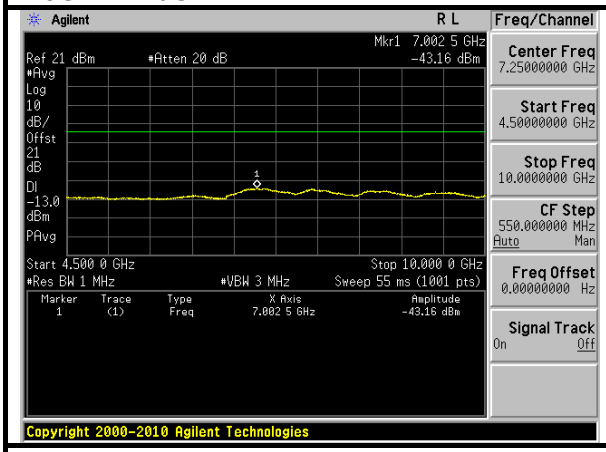
30MHz ~ 1GHz



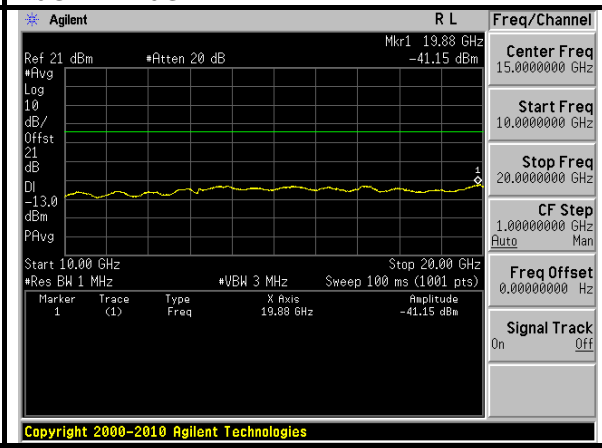
1GHz ~ 4.5GHz



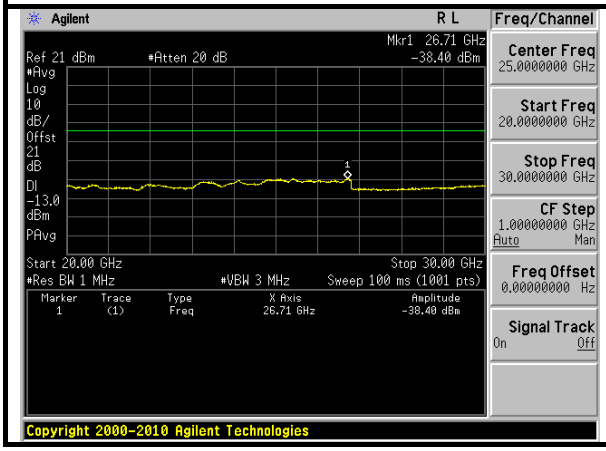
4.5GHz ~ 10GHz



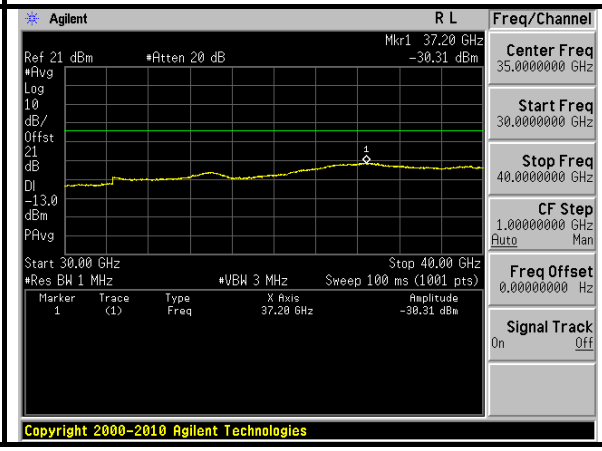
10GHz ~ 20GHz



20GHz ~ 30GHz

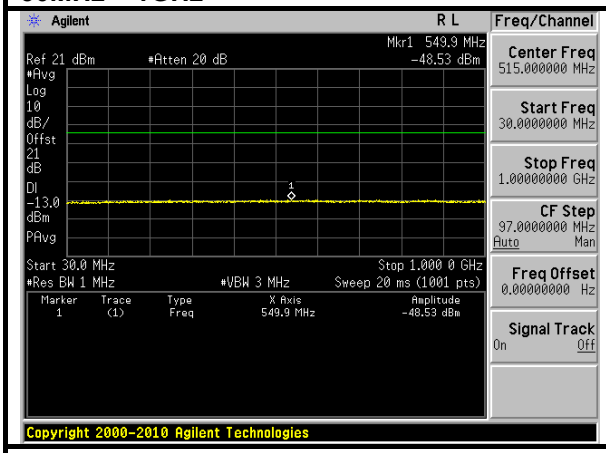


30GHz ~ 40GHz

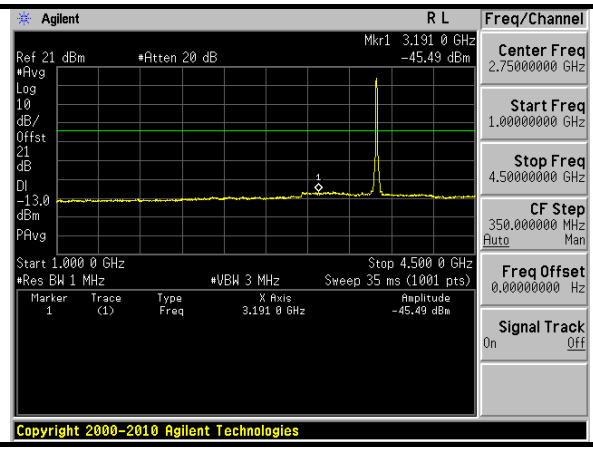


MIDDLE CHANNEL

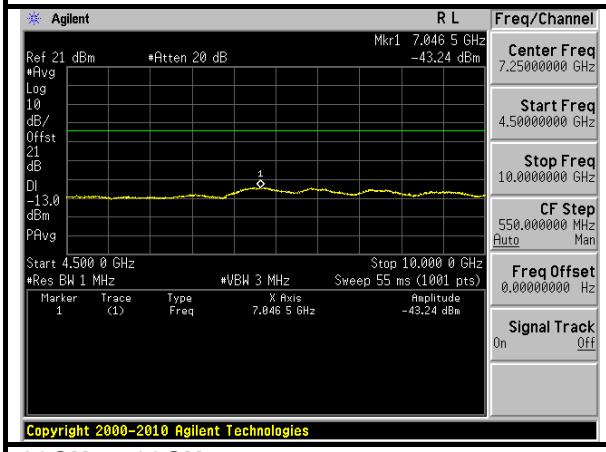
30MHz ~ 1GHz



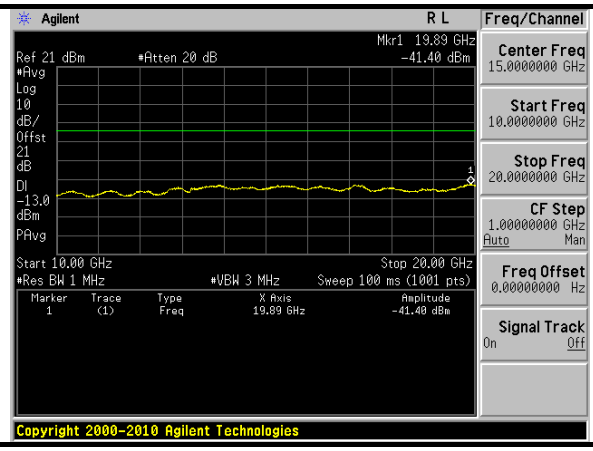
1GHz ~ 4.5GHz



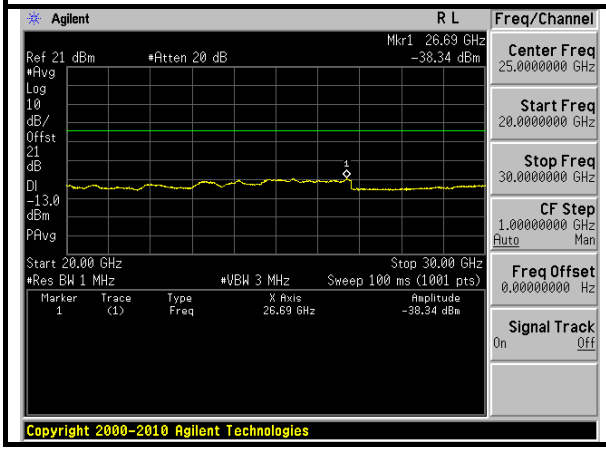
4.5GHz ~ 10GHz



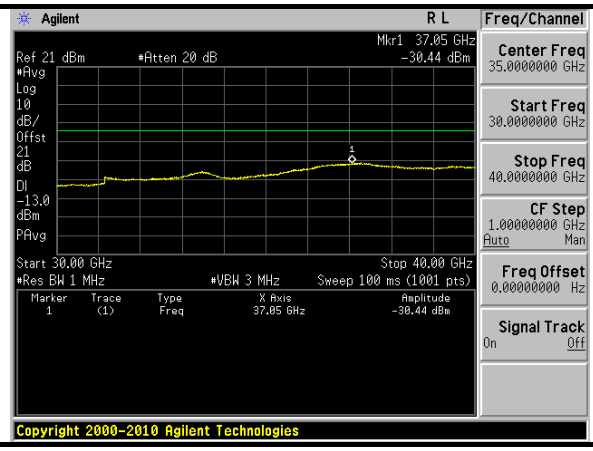
10GHz ~ 20GHz



20GHz ~ 30GHz

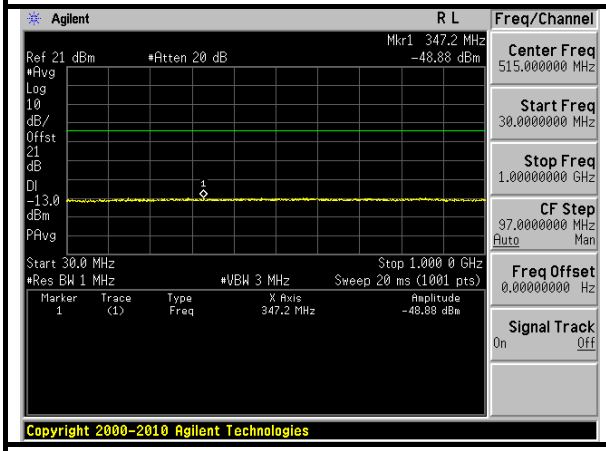


30GHz ~ 40GHz

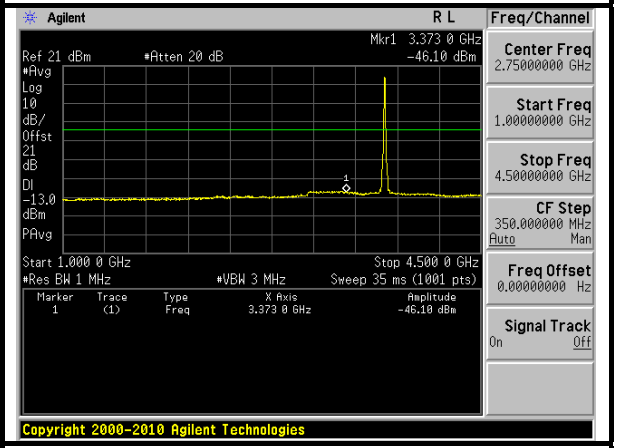


HIGH CHANNEL

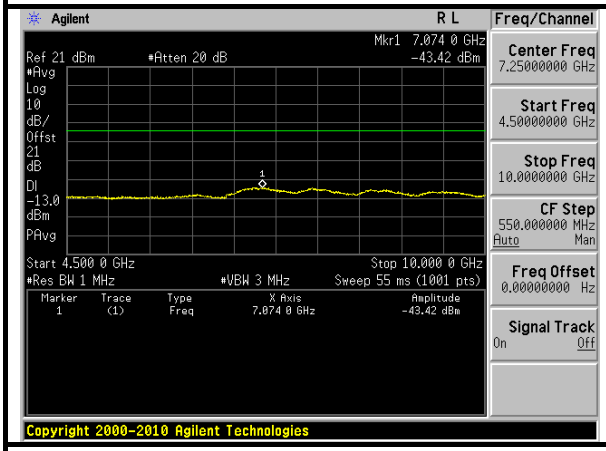
30MHz ~ 1GHz



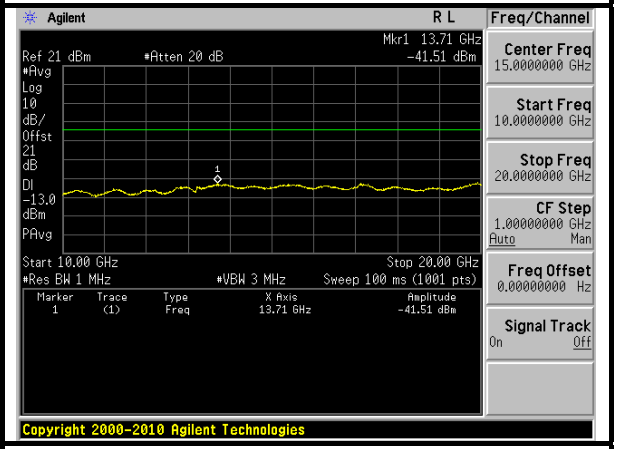
1GHz ~ 4.5GHz



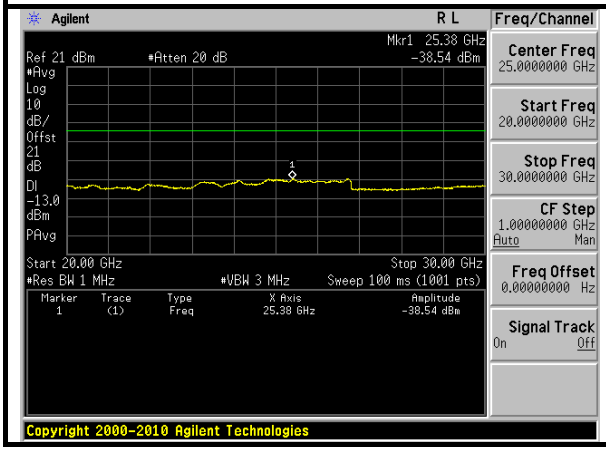
4.5GHz ~ 10GHz



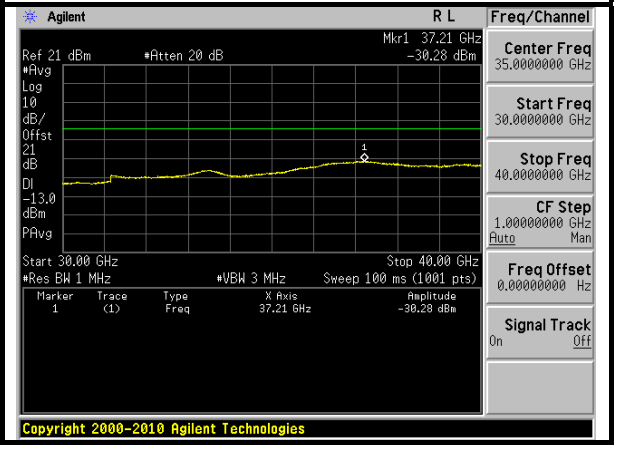
10GHz ~ 20GHz



20GHz ~ 30GHz



30GHz ~ 40GHz



4.6 RADIATED EMISSION MEASUREMENT (BELOW 1GHz)

4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to FCC 90.1323 specified that 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 least43 + 10 log (P) dB. The limit of emission equal to –13dBm Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or less, but at least one percent of the emission bandwidth of the fundamental emission of the transmitter, provided the measured energy is integrated over a 1 MHz bandwidth.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Jan. 03, 2012	Jan. 02, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jan. 30, 2012	Jan. 29, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-408	Jan. 05, 2012	Jan. 04, 2013
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Preamplifier Agilent	8449B	3008A01961	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10738	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Nov. 03, 2011	Nov. 02, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Nov. 03, 2011	Nov. 02, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Nov. 03, 2011	Nov. 02, 2012
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table ADT.	TT100.	TT93021704	NA	NA
Turn Table Controller ADT.	SC100.	SC93021704	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Chamber 4.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 460141.

5. The IC Site Registration No. is IC7450F-4.

4.6.3 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The substitution antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable . Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G

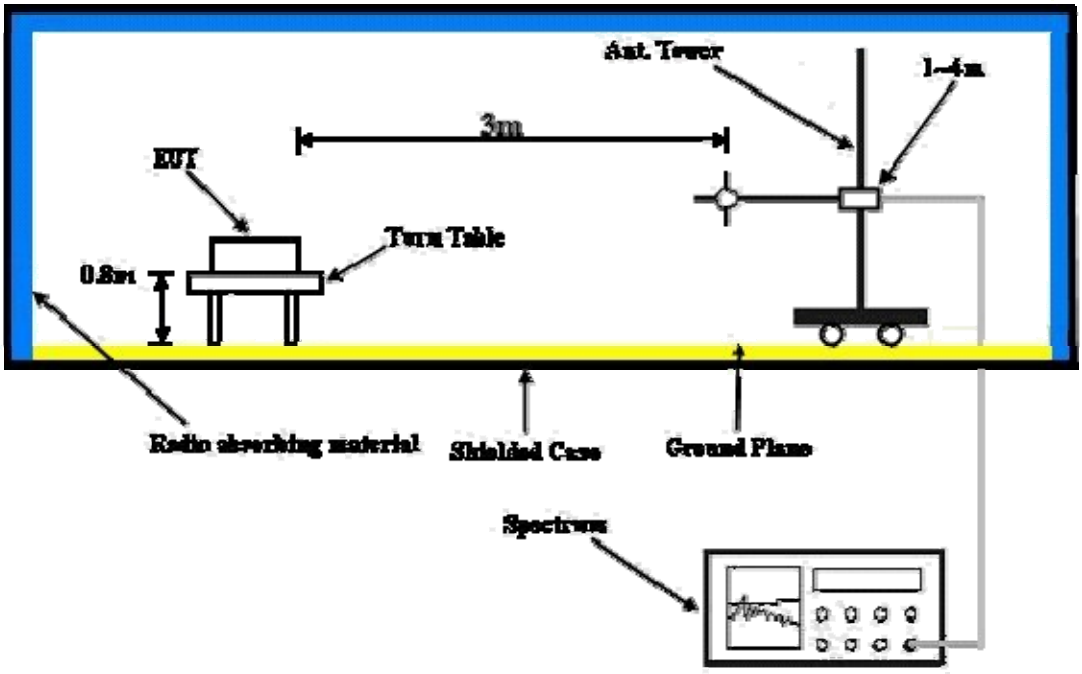
EIRP = Output power level of S.G – TX cable loss + Antenna gain of Substitution antenna

NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.6.6 EUT OPERATING CONDITIONS

Same as 4.1.5.

4.6.7 TEST RESULTS

MODE	High channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	24deg°C, 65%RH
CHANNEL BANDWIDTH	5MHz	TESTED BY	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	FREQ. (MHz)	READING (dBm)	S.G. POWER (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dBm)
1	70.82	-45.2	-46.1	-4.7	-50.8	-13.0	-37.8
2	107.76	-44.1	-50.4	0.6	-49.8	-13.0	-36.8
3	146.63	-41.4	-45.0	0.0	-45.0	-13.0	-32.0
4	239.94	-40.8	-51.4	5.4	-46.0	-13.0	-33.0
5	259.38	-46.8	-57.0	5.4	-51.6	-13.0	-38.6
6	451.82	-56.5	-60.9	5.1	-55.8	-13.0	-42.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	FREQ. (MHz)	READING (dBm)	S.G. POWER (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dBm)
1	70.82	-37.6	-39.2	-4.7	-43.9	-13.0	-30.9
2	154.41	-43.3	-42.6	0.0	-42.6	-13.0	-29.6
3	239.94	-48.6	-55.9	5.4	-50.5	-13.0	-37.5
4	319.64	-53.1	-58.1	5.1	-53.0	-13.0	-40.0
5	397.39	-55.6	-59.0	5.3	-53.7	-13.0	-40.7
6	504.31	-61.5	-63.6	4.9	-58.7	-13.0	-45.7

MODE	High channel	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg°C, 65%RH
CHANNEL BANDWIDTH	7MHz	**TESTED BY**	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	86.37	-41.7	-48.4	0.0	-48.4	-13.0	-35.4
2	154.41	-40.8	-44.4	0.0	-44.4	-13.0	-31.4
3	239.94	-42.3	-52.9	5.4	-47.5	-13.0	-34.5
4	259.38	-46.3	-56.5	5.4	-51.1	-13.0	-38.1
5	342.97	-50.4	-57.9	5.2	-52.7	-13.0	-39.7
6	395.45	-55.4	-60.1	5.3	-54.8	-13.0	-41.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	43.61	-42.20	-36.1	-10.8	-46.9	-13.0	-33.9
2	68.88	-37.6	-38.7	-5.3	-44.0	-13.0	-31.0
3	148.58	-43.6	-43.4	0.0	-43.4	-13.0	-30.4
4	**156.35**	**-42.7**	**-41.9**	**0.0**	**-41.9**	**-13.0**	**-28.9**
5	239.94	-48.9	-56.2	5.4	-50.8	-13.0	-37.8
6	397.39	-54.6	-58.0	5.3	-52.7	-13.0	-39.7

MODE	High channel	**FREQUENCY RANGE**	Below 1000MHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	24deg°C, 65%RH
CHANNEL BANDWIDTH	10MHz	**TESTED BY**	Alan Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	70.82	-44.40	-45.3	-4.7	-50.0	-13.0	-37.0
2	154.41	-40.4	-44.0	0.0	-44.0	-13.0	-31.0
3	239.94	-41.7	-52.3	5.4	-46.9	-13.0	-33.9
4	341.02	-48.4	-56.0	5.2	-50.8	-13.0	-37.8
5	368.24	-52.9	-59.3	5.2	-54.1	-13.0	-41.1
6	473.21	-57.3	-61.9	5.0	-56.9	-13.0	-43.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	70.82	-37.10	-38.7	-4.7	-43.4	-13.0	-30.4
2	84.43	-40.8	-44.6	-0.7	-45.3	-13.0	-32.3
3	154.41	-42.7	-42.0	0.0	-42.0	-13.0	-29.0
4	239.94	-47.3	-54.6	5.4	-49.2	-13.0	-36.2
5	339.08	-51.8	-57.1	5.2	-51.9	-13.0	-38.9
6	442.10	-56.5	-58.6	5.1	-53.5	-13.0	-40.5

4.7 RADIATED EMISSION MEASUREMENT (ABOVE 1GHz)

4.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to FCC 90.1323 specified that 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. The limit of emission equal to –13dBm Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or less, but at least one percent of the emission bandwidth of the fundamental emission of the transmitter, provided the measured energy is integrated over a 1 MHz bandwidth.

4.7.2 TEST INSTRUMENTS

Same as 4.6.2.

4.7.3 TEST PROCEDURES

Same as 4.6.3.

4.7.4 DEVIATION FROM TEST STANDARD

No deviation

4.7.5 TEST SETUP

Same as 4.6.5.

4.7.6 EUT OPERATING CONDITIONS

Same as 4.1.5

4.7.7 TEST RESULTS

MODE	Low channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg°C, 70%RH
TESTED BY	Alan Wu	CHANNEL BANDWIDTH	5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	FREQ. (MHz)	READING (dBm)	S.G. POWER (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dBm)
1	1351.40	-64.1	-63.0	4.5	-58.5	-13.0	-45.5
2	7305.00	-73.1	-55.7	4.4	-51.3	-13.0	-38.3
3	10957.50	-75.1	-50.9	2.2	-48.7	-13.0	-35.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	FREQ. (MHz)	READING (dBm)	S.G. POWER (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dBm)
1	1351.40	-58.6	-59.6	4.5	-55.1	-13.0	-42.1
2	7305.00	-73.2	-57.2	4.4	-52.8	-13.0	-39.8
3	10957.50	-75.1	-51.6	2.2	-49.4	-13.0	-36.4

MODE	Middle channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg°C, 70%RH
TESTED BY	Alan Wu	CHANNEL BANDWIDTH	5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	FREQ. (MHz)	READING (dBm)	S.G. POWER (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dBm)
1	1360.00	-62.4	-61.2	4.5	-56.7	-13.0	-43.7
2	7350.00	-73.6	-56.2	4.4	-51.8	-13.0	-38.8
3	11025.00	-73.4	-48.9	2.1	-46.8	-13.0	-33.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	FREQ. (MHz)	READING (dBm)	S.G. POWER (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dBm)
1	1360.00	-57.7	-58.7	4.5	-54.2	-13.0	-41.2
2	7350.00	-73.7	-57.7	4.4	-53.3	-13.0	-40.3
3	11025.00	-74.1	-50.3	2.1	-48.2	-13.0	-35.2

MODE	High channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23deg°C, 70%RH
TESTED BY	Alan Wu	**CHANNEL BANDWIDTH**	5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1368.00	-59.6	-58.2	4.5	-53.7	-13.0	-40.7
2	7395.00	-74.0	-56.4	4.3	-52.1	-13.0	-39.1
3	11092.50	-72.7	-48.2	2.2	-46.0	-13.0	-33.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1368.00	-56.2	-57.3	4.5	-52.8	-13.0	-39.8
2	7395.00	-73.3	-57.1	4.3	-52.8	-13.0	-39.8
3	11092.50	-73.3	-49.4	2.2	-47.2	-13.0	-34.2

MODE	Low channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23deg°C, 70%RH
TESTED BY	Alan Wu	**CHANNEL BANDWIDTH**	7MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1352.00	-60.20	-59.1	4.5	-54.6	-13.0	-41.6
2	7307.00	-74.8	-57.4	4.4	-53.0	-13.0	-40.0
3	10960.50	-76.0	-51.8	2.2	-49.6	-13.0	-36.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1352.00	-58.50	-59.5	4.5	-55.0	-13.0	-42.0
2	7307.00	-75.3	-59.3	4.4	-54.9	-13.0	-41.9
3	10960.50	-76.5	-52.9	2.2	-50.7	-13.0	-37.7

MODE	Middle channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23deg°C, 70%RH
TESTED BY	Alan Wu	**CHANNEL BANDWIDTH**	7MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1360.00	-59.70	-58.5	4.5	-54.0	-13.0	-41.0
2	7350.00	-73.0	-55.6	4.4	-51.2	-13.0	-38.2
3	11025.00	-72.0	-47.5	2.1	-45.4	-13.0	-32.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1360.00	-55.3	-56.3	4.5	-51.8	-13.0	-38.8
2	7350.00	-73.2	-57.2	4.4	-52.8	-13.0	-39.8
3	11025.00	-72.4	-48.6	2.1	-46.5	-13.0	-33.5

MODE	High channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23deg°C, 70%RH
TESTED BY	Alan Wu	**CHANNEL BANDWIDTH**	7MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1367.50	-59.90	-58.5	4.5	-54.0	-13.0	-41.0
2	7393.00	-72.5	-54.9	4.3	-50.6	-13.0	-37.6
3	11089.50	-72.9	-48.4	2.2	-46.2	-13.0	-33.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1367.50	-56.10	-57.2	4.5	-52.7	-13.0	-39.7
2	7393.00	-74.1	-57.9	4.3	-53.6	-13.0	-40.6
3	11089.50	-73.9	-50.0	2.2	-47.8	-13.0	-34.8

MODE	Low channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23deg°C, 70%RH
TESTED BY	Alan Wu	**CHANNEL BANDWIDTH**	10MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1356.00	-58.90	-57.7	4.5	-53.2	-13.0	-40.2
2	7310.00	-71.5	-54.1	4.4	-49.7	-13.0	-36.7
3	10965.00	-72.1	-47.8	2.1	-45.7	-13.0	-32.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1356.00	-54.10	-55.1	4.5	-50.6	-13.0	-37.6
2	7310.00	-72.3	-56.3	4.4	-51.9	-13.0	-38.9
3	10965.00	-73.3	-49.6	2.1	-47.5	-13.0	-34.5

MODE	Middle channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	23deg°C, 70%RH
TESTED BY	Alan Wu	CHANNEL BANDWIDTH	10MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	FREQ. (MHz)	READING (dBm)	S.G. POWER (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dBm)
1	1361.00	-59.10	-57.8	4.5	-53.3	-13.0	-40.3
2	7350.00	-72.1	-54.7	4.4	-50.3	-13.0	-37.3
3	11025.00	-71.2	-46.7	2.1	-44.6	-13.0	-31.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	FREQ. (MHz)	READING (dBm)	S.G. POWER (dBm)	CORRECTION FACTOR (dB)	EIRP (dBm)	LIMIT (dBm)	MARGIN (dBm)
1	1361.00	-54.50	-55.5	4.5	-51.0	-13.0	-38.0
2	7350.00	-72.8	-56.8	4.4	-52.4	-13.0	-39.4
3	11025.00	-72.2	-48.4	2.1	-46.3	-13.0	-33.3

MODE	High channel	**FREQUENCY RANGE**	Above 1000MHz
INPUT POWER	120Vac, 60Hz	**ENVIRONMENTAL CONDITIONS**	23deg°C, 70%RH
TESTED BY	Alan Wu	**CHANNEL BANDWIDTH**	10MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1367.00	-57.80	-56.4	4.5	-51.9	-13.0	-38.9
2	7390.00	-71.8	-54.2	4.3	-49.9	-13.0	-36.9
3	11085.00	-70.2	-45.7	2.2	-43.5	-13.0	-30.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m							
NO.	**FREQ. (MHz)**	**READING (dBm)**	**S.G. POWER (dBm)**	**CORRECTION FACTOR (dB)**	**EIRP (dBm)**	**LIMIT (dBm)**	**MARGIN (dBm)**
1	1367.00	-54.30	-55.4	4.5	-50.9	-13.0	-37.9
2	7390.00	-72.1	-55.9	4.3	-51.6	-13.0	-38.6
3	11085.00	-71.6	-47.7	2.2	-45.5	-13.0	-32.5

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Copies of accreditation and authorization certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3270892

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

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