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FCC TEST REPORT

(Part 90 Subpart Z)

REPORT NO.: RF980630L08B

MODEL NO.: 3630SM

RECEIVED: Sep. 02, 2009

TESTED: Oct. 06 ~ Nov. 30, 2009

ISSUED: Dec. 03, 2009

APPLICANT: Motorola Inc.

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ISSUED BY: Bureau Veritas Consumer Products Services
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1 CERTIFICATION

PRODUCT: 3630SM Outdoor Subscriber Module

MODEL: 3630SM

BRAND: Motorola

APPLICANT: Motorola Inc.

TESTED: Oct. 06 ~ Nov. 30, 2009

TEST SAMPLE: ENGINEERING SAMPLE

TEST STANDARDS: FCC Part 90, Subpart Z

The above equipment (Model No.: 3630SM) 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 : Andrea Hsia , **DATE:** Dec. 03, 2009
Andrea Hsia / Specialist

TECHNICAL
ACCEPTANCE : Long Chen , **DATE:** Dec. 03, 2009
Responsible for RF Long Chen / Senior Engineer

APPROVED BY : Gary Chang , **DATE:** Dec. 03, 2009
Gary Chang / Assistant Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
FCC Part 2& Part 90			
2.1046 90.1321	Maximum Peak Output Power Limit: max. 25Watt / 25MHz EIRP.	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 -9.0dB at 7345.00MHz.

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	150kHz~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	3630SM Outdoor Subscriber Module
MODEL NO.	3630SM
FCC ID	ABZ89FT7633
POWER SUPPLY	48 or 56Vdc from PoE
MODULATION TYPE	BPSK, QPSK, 16QAM, 64QAM (refer to NOTE for mode detail)
CODING RATE	1/2, 2/3, 3/4, 5/6 (refer to NOTE for mode detail)
MODULATION TECHNOLOGY	OFDMA
MULTIPLE ACCESS METHOD	TDMA
DUPLEX METHOD	TDD
OPERATING FREQUENCY	3651.75MHz ~ 3673.25MHz
CHANNEL BANDWIDTH	3.5MHz, 5.0MHz, 7.0MHz, 10.0MHz
MAX. E.I.R.P. POWER (RMS)	39.19dBm
ANTENNA TYPE	Patched antenna with 14.5dBi gain
OPERATION TEMPERATURE RANGE	-40°C ~ 70°C
DATA CABLE	1.7m shielded RJ45 cable without core
I/O PORTS	RJ45
ACCESSORY DEVICES	POE

NOTE:

1. This report is issued as a supplementary report of BV ADT report no.:RF980630L08A. This report is prepared for class FCC II permissive change. Difference compared with the original report is adding UP Link modulation type (64QAM) by software, therefore we re-tested all the test items and presented in the test report.
2. For the EUT with modulation type and coding rate.

DOWN LINK		UP LINK	
MODULATION	CODING RATE	MODULATION	CODING RATE
QPSK	1/2	QPSK	1/2
	3/4		3/4
16QAM	1/2	16QAM	1/2
	3/4		3/4
64QAM	1/2	64QAM	1/2
	2/3		2/3
	3/4		3/4
	5/6		5/6

3. The EUT were operated with following PoEs.

POE 1	
BRAND:	PowerDsine™ 3001
MODEL:	PD-3001/AC
INPUT:	100-250Vac, 50/60Hz, 0.5A
OUTPUT:	48Vdc, 0.35A
POWER LINE:	AC 1.8m non-shielded cable without core

POE 2	
BRAND:	PHIHONG
MODEL:	PSAA20R-560(MOT)
INPUT:	100-240Vac, 50-60Hz, 0.4A
OUTPUT:	56Vdc, 0.357A
POWER LINE:	1.6m non-shielded cable with one core

POE 3	
BRAND:	PHIHONG
MODEL:	POE16U-480
INPUT:	100-240Vac, 50-60Hz, 0.4A
OUTPUT:	48Vdc, 0.32A

4. EUT can supports different UL / DL ratio, max transmit ratio is up to 21 (UL): 26 (DL). After pretesting of output power and spurious emission, 21 (UL): 26 (DL) was found to be worst case and was selected for the final test configuration.
5. 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.

3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO							DESCRIPTION
	OP	FS	EB	EM	CSE	RE<1G	RE≥1G	
A	√	√	√	√	√	√	√	Power from POE 1
B	√	-	-	-	-	√	-	Power from POE 2
C	√	-	-	-	-	√	-	Power from POE 3

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 **NOTE**: "-": Means no effect.

OUTPUT POWER MEASUREMENT:

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

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE	CODING RATE
A, B, C	L, M, H	OFDMA	3.5MHz	64QAM	5/6
A, B, C	L, M, H	OFDMA	5.0MHz	64QAM	5/6
A, B, C	L, M, H	OFDMA	7.0MHz	64QAM	5/6
A, B, C	L, M, H	OFDMA	10.0MHz	64QAM	5/6

FREQUENCY STABILITY MEASUREMENT:

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

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE	CODING RATE
A	L	OFDMA	3.5MHz	64QAM	5/6
A	L	OFDMA	5.0MHz	64QAM	5/6
A	L	OFDMA	7.0MHz	64QAM	5/6
A	L	OFDMA	10.0MHz	64QAM	5/6



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EMISSION BANDWIDTH MEASUREMENT:

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

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE	CODING RATE
A	L, M, H	OFDMA	3.5MHz	64QAM	5/6
A	L, M, H	OFDMA	5.0MHz	64QAM	5/6
A	L, M, H	OFDMA	7.0MHz	64QAM	5/6
A	L, M, H	OFDMA	10.0MHz	64QAM	5/6

EMISSION MASKS MEASUREMENT:

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

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE	CODING RATE
A	L, M, H	OFDMA	3.5MHz	64QAM	5/6
A	L, M, H	OFDMA	5.0MHz	64QAM	5/6
A	L, M, H	OFDMA	7.0MHz	64QAM	5/6
A	L, M, H	OFDMA	10.0MHz	64QAM	5/6

CONDUCTED SPURIOUS EMISSIONS MEASUREMENT:

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

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE	CODING RATE
A	L, M, H	OFDMA	3.5MHz	64QAM	5/6
A	L, M, H	OFDMA	5.0MHz	64QAM	5/6
A	L, M, H	OFDMA	7.0MHz	64QAM	5/6
A	L, M, H	OFDMA	10.0MHz	64QAM	5/6



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RADIATED EMISSION MEASUREMENT (BELOW 1 GHz):

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

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE	CODING RATE
A, B, C	L	OFDMA	3.5MHz	64QAM	5/6
A, B, C	M	OFDMA	5.0MHz	64QAM	5/6
A, B, C	M	OFDMA	7.0MHz	64QAM	5/6
A, B, C	L	OFDMA	10.0MHz	64QAM	5/6

RADIATED EMISSION MEASUREMENT (ABOVE 1 GHz):

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

EUT CONFIGURE MODE	TESTED CHANNEL	MODULATION TECHNOLOGY	CHANNEL BANDWIDTH	MODULATION TYPE	CODING RATE
A	L, M, H	OFDMA	3.5MHz	64QAM	5/6
A	L, M, H	OFDMA	5.0MHz	64QAM	5/6
A	L, M, H	OFDMA	7.0MHz	64QAM	5/6
A	L, M, H	OFDMA	10.0MHz	64QAM	5/6

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
OP	25deg. C, 65%RH, 1008 hPa	120Vac, 60Hz	Dean Wang
FS	22deg. C, 63%RH, 1008 hPa	120Vac, 60Hz	Dean Wang
EB	22deg. C, 63%RH, 1008 hPa	120Vac, 60Hz	Dean Wang
EM	22deg. C, 63%RH, 1008 hPa	120Vac, 60Hz	Dean Wang
CSE	22deg. C, 63%RH, 1008 hPa	120Vac, 60Hz	Dean Wang
RE < 1G	25deg. C, 65%RH, 1008 hPa	120Vac, 60Hz	Brad Wu
RE ≥ 1G	25deg. C, 65%RH, 1008 hPa	120Vac, 60Hz	Brad 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

NOTE: All test items have been performed and recorded as per the above standards.

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	NOTEBOOK	DELL	D600	CN-0G5152-4864 3-49C-8226	FCC DoC Approved
2	PRINTER	EPSON	LQ-300+	DCGY054146	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008253	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.8m braid shielded wire, DB25 connector, w/o core.
3	1.2m braid shielded wire, DB25 & DB9 connector, w/o core.

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Item 1 acted as a communication partners 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	Dec. 12, 2008	Dec. 11, 2009
RF cable	SUCOFLEX 104	274403/4	Aug. 28, 2009	Aug. 27, 2010
DC-6GHz 20dB 50W Fixed attenuator Woken	MDC9331N-20	0724	May 15, 2009	May 14, 2010

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

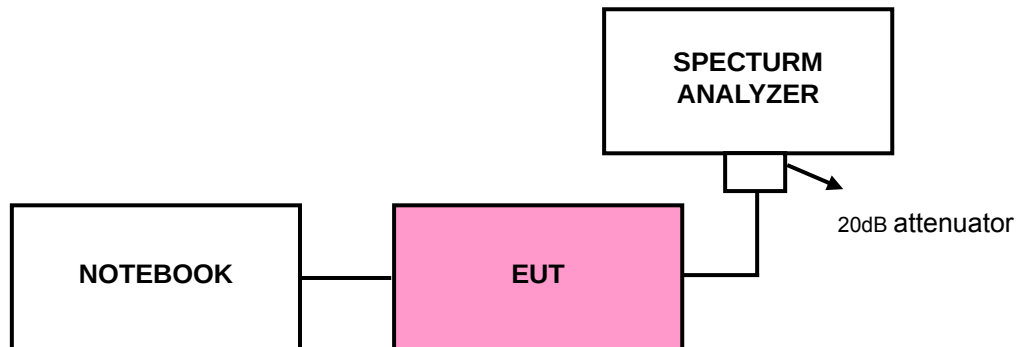
OUTPUT POWER

- The transmitter output was connected to the spectrum analyzer
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1MHz, VBW = 3MHz. Detector mode = rms.
- Compute power by integrating the spectrum across the 26dB EBW of the signal.
- Record the power level.

POWER DENSITY

- The transmitter output was connected to the spectrum analyzer.
- Set RBW = 1MHz, VBW = 3MHz. Detector mode = rms. The PPSSD is the highest level found across the emission in any 1MHz band.

4.1.4 TEST SETUP



4.1.5 EUT OPERATING CONDITIONS

TEST MODE A, C

- Placed the EUT on the testing table.
- Prepared one notebook system outside of testing area to act as a communication partners.
- 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.

TEST MODE B

- Connected EUT with a notebook system via an RJ45 cable and placed on a testing table.
- The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission continuously at specific channel frequency.
- The necessary accessories enable the system in full functions.

4.1.6 TEST RESULTS

CHANNEL BANDWIDTH: 3.5MHz

EIRP POWER						
CHANNEL	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3651.75	20.18	14.50	34.68	2.938	3.50
Middle	3662.50	20.09	14.50	34.59	2.877	3.50
High	3673.25	20.15	14.50	34.65	2.917	3.50

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 5.0MHz

EIRP POWER						
CHANNEL	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3652.50	21.61	14.50	36.11	4.083	5.0
Middle	3662.50	21.75	14.50	36.25	4.217	5.0
High	3672.50	21.59	14.50	36.09	4.064	5.0

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 7.0MHz

EIRP POWER						
CHANNEL	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3653.50	23.12	14.50	37.62	5.781	7.0
Middle	3662.50	23.16	14.50	37.66	5.835	7.0
High	3671.50	23.11	14.50	37.61	5.768	7.0

NOTE: EIRP = Conducted power + Antenna Gain

CHANNEL BANDWIDTH: 10.0MHz

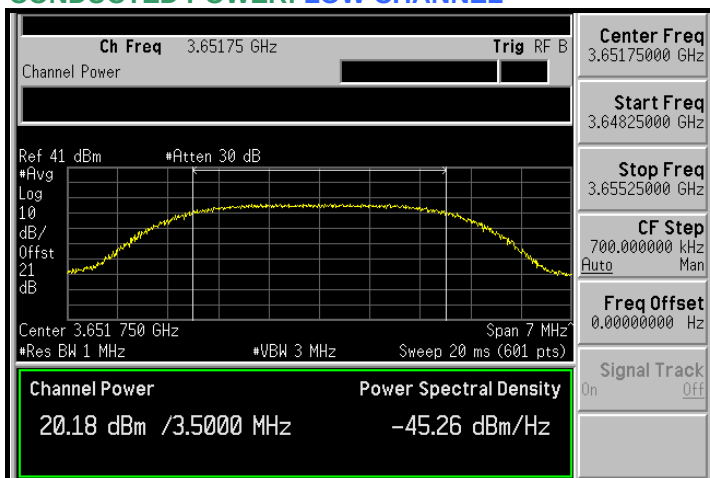
EIRP POWER						
CHANNEL	FREQUENCY (MHz)	CONDUCTED POWER (dBm)	ANTENNA GAIN (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)
Low	3655.00	24.69	14.50	39.19	8.299	10.0
Middle	3662.50	24.67	14.50	39.17	8.260	10.0
High	3670.00	24.65	14.50	39.15	8.222	10.0

NOTE: EIRP = Conducted power + Antenna Gain

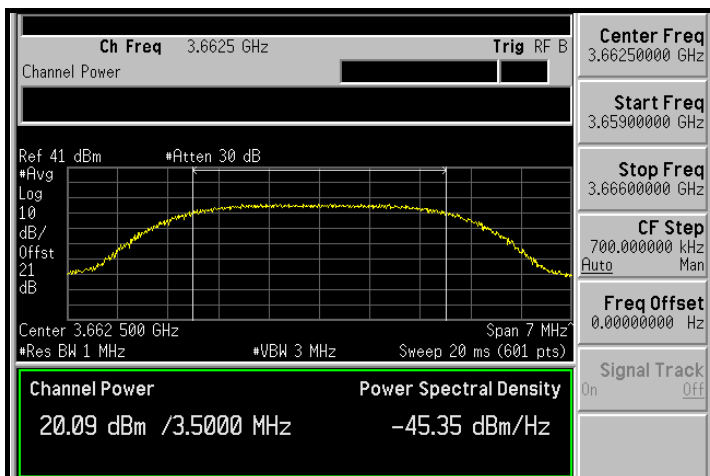


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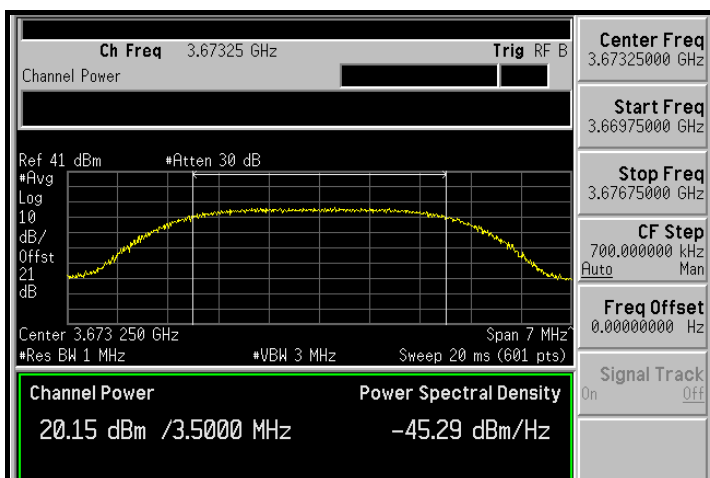
CHANNEL BANDWIDTH: 3.5MHz:
CONDUCTED POWER: LOW CHANNEL



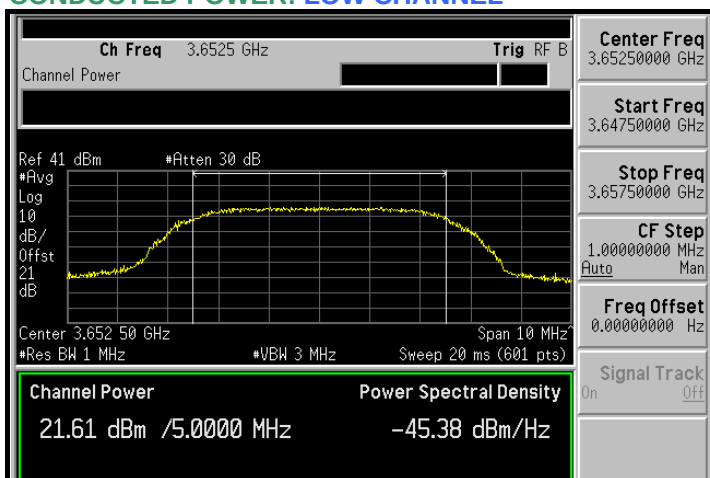
MIDDLE CHANNEL



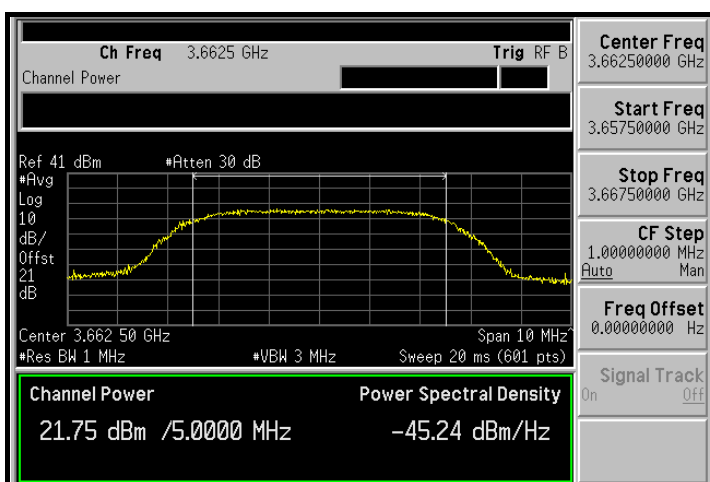
HIGH CHANNEL



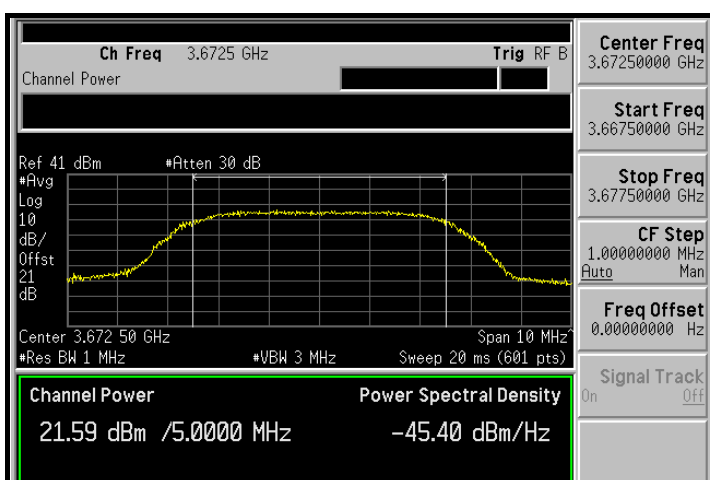
CHANNEL BANDWIDTH: 5.0MHz: CONDUCTED POWER: LOW CHANNEL



MIDDLE CHANNEL



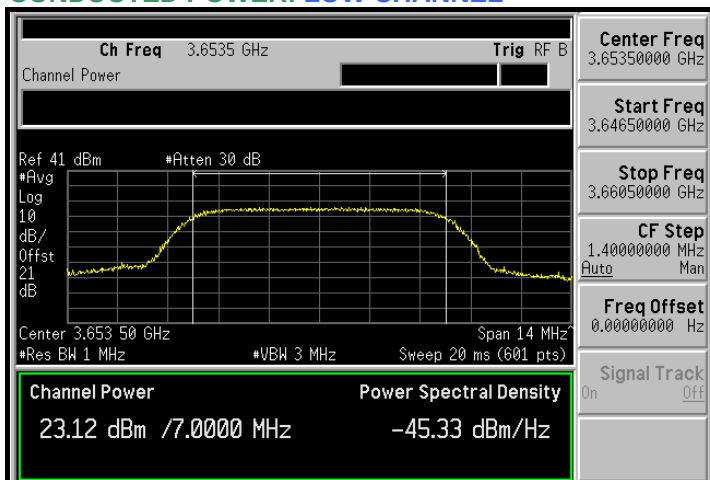
HIGH CHANNEL



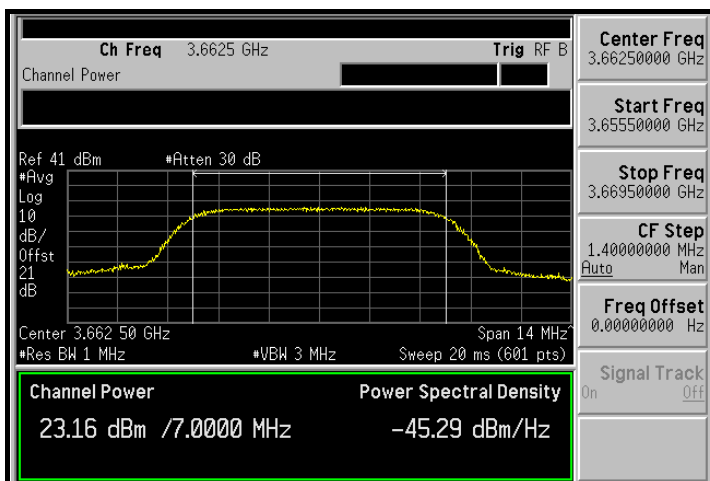


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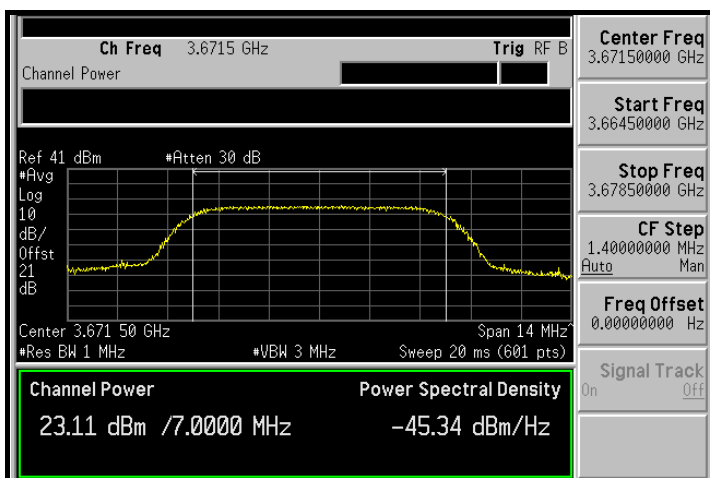
CHANNEL BANDWIDTH: 7.0MHz:
CONDUCTED POWER: LOW CHANNEL



MIDDLE CHANNEL



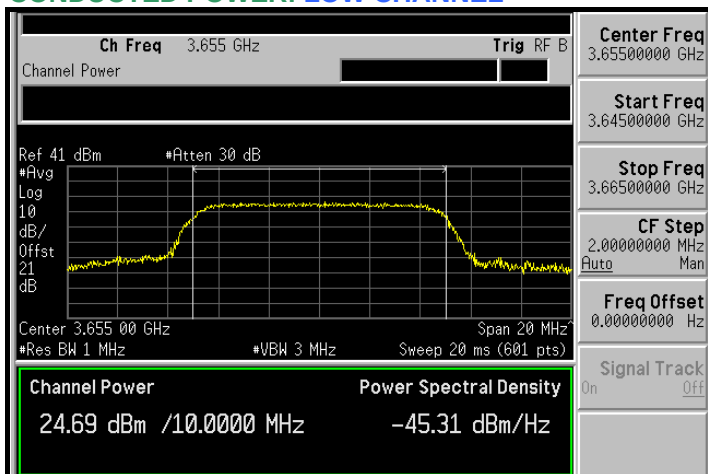
HIGH CHANNEL



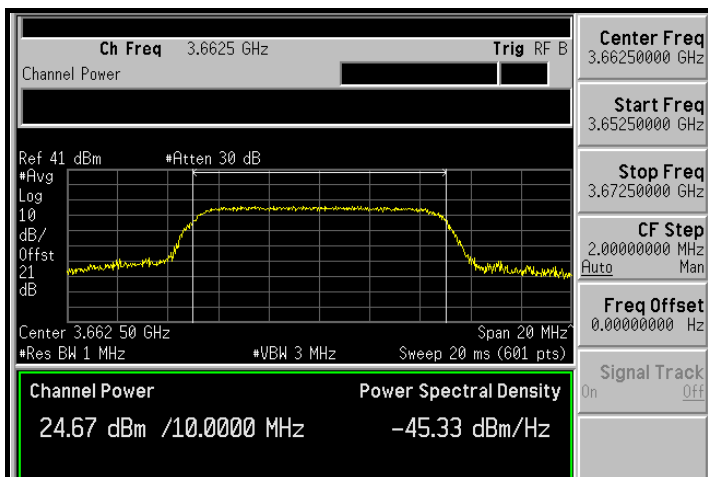


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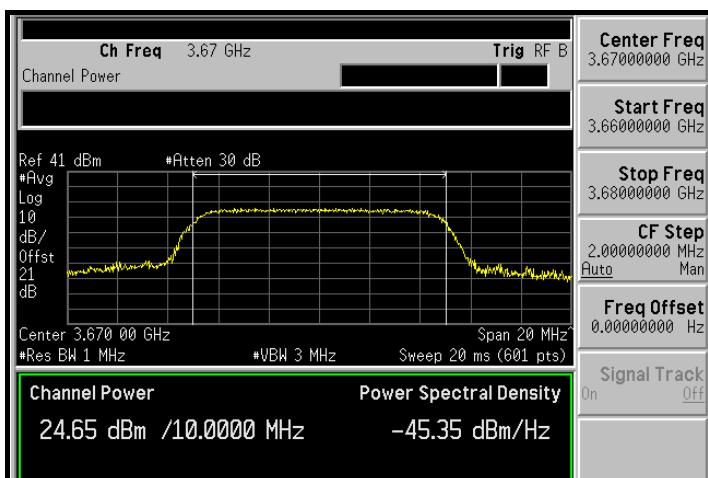
CHANNEL BANDWIDTH: 10.0MHz:
CONDUCTED POWER: LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL



CHANNEL BANDWIDTH: 3.5MHz

EIRP PEAK DENSITY						
CHANNEL	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3651.75	12.45	14.50	26.95	0.496	1.00
Middle	3662.50	12.26	14.50	26.76	0.474	1.00
High	3673.50	12.45	14.50	26.95	0.496	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 5.0MHz

EIRP PEAK DENSITY						
CHANNEL	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3652.50	12.29	14.50	26.79	0.478	1.00
Middle	3662.50	12.55	14.50	27.05	0.507	1.00
High	3672.50	12.44	14.50	26.94	0.494	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 7.0MHz

EIRP PEAK DENSITY						
CHANNEL	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3653.50	12.32	14.50	26.82	0.481	1.00
Middle	3662.50	12.42	14.50	26.92	0.492	1.00
High	3671.50	12.34	14.50	26.84	0.483	1.00

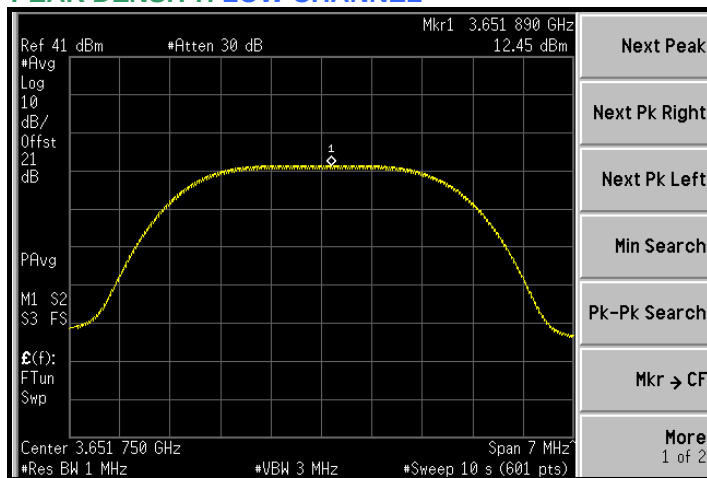
NOTE: EIRP density = Conducted power density + Antenna Gain

CHANNEL BANDWIDTH: 10.0MHz

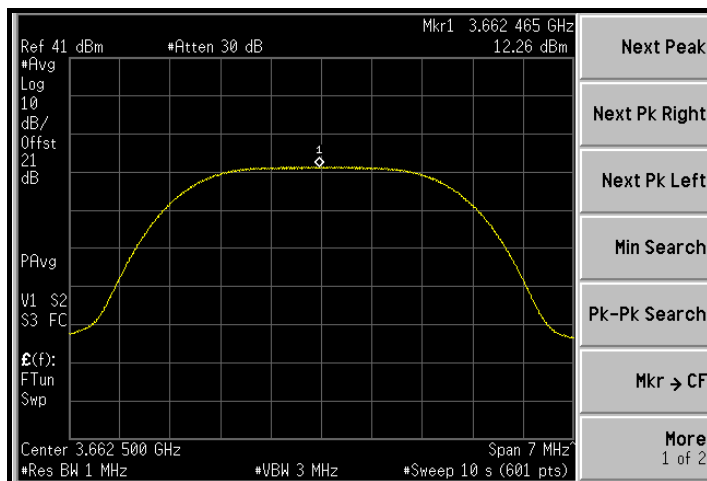
EIRP PEAK DENSITY						
CHANNEL	FREQUENCY (MHz)	CONDUCTED POWER DENSITY (dBm/MHz)	ANTENNA GAIN (dBi)	EIRP PEAK DENSITY (dBm/MHz)	EIRP PEAK DENSITY (W/MHz)	Limit (W/MHz)
Low	3655.00	12.34	14.50	26.84	0.483	1.00
Middle	3662.50	12.38	14.50	26.88	0.488	1.00
High	3670.00	12.26	14.50	26.76	0.474	1.00

NOTE: EIRP density = Conducted power density + Antenna Gain

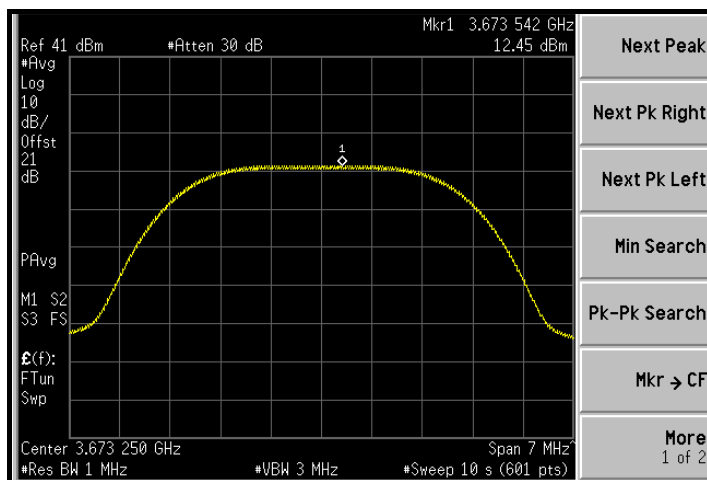
CHANNEL BANDWIDTH: 3.5MHz: PEAK DENSITY: LOW CHANNEL



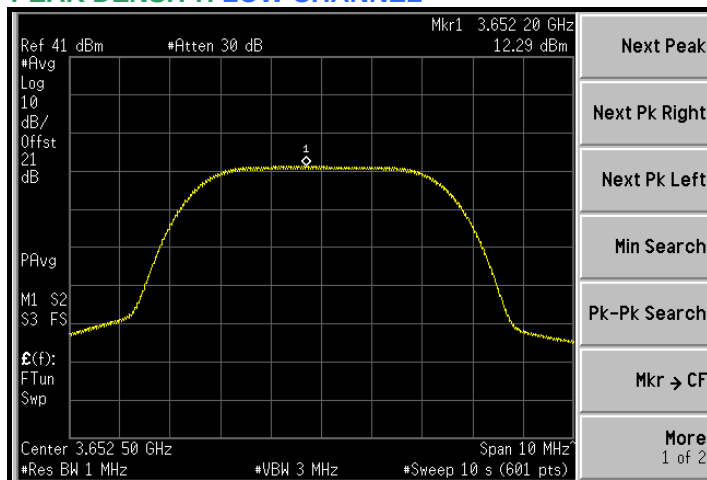
MIDDLE CHANNEL



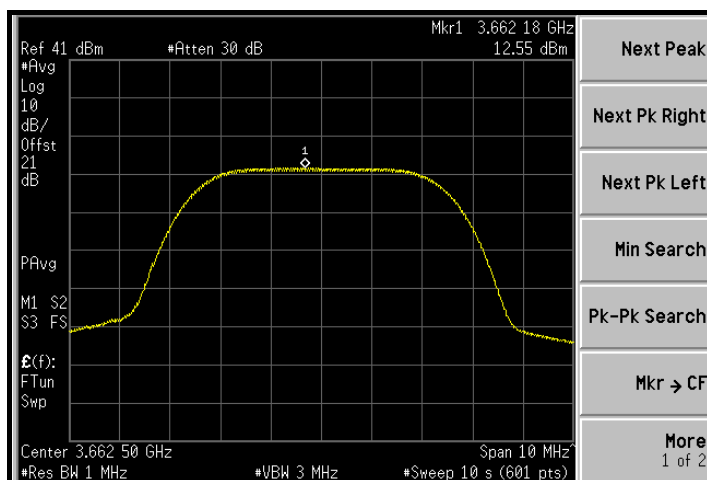
HIGH CHANNEL



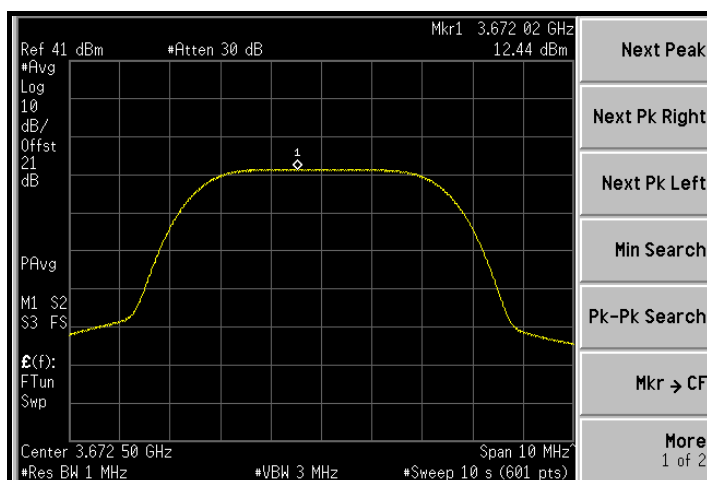
CHANNEL BANDWIDTH: 5.0MHz: PEAK DENSITY: LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL

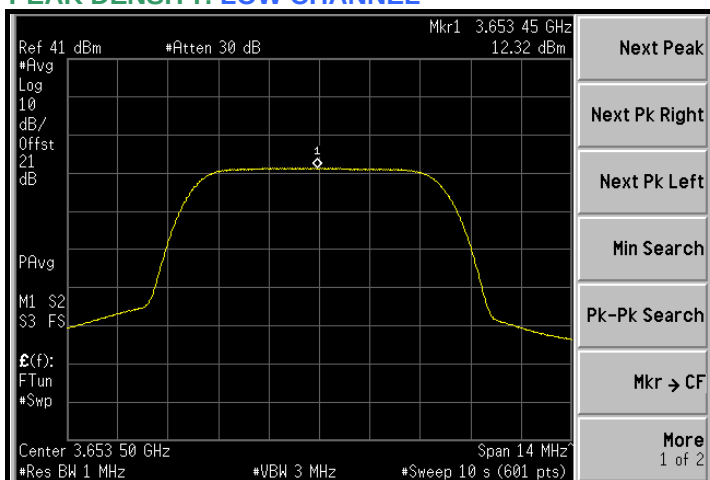




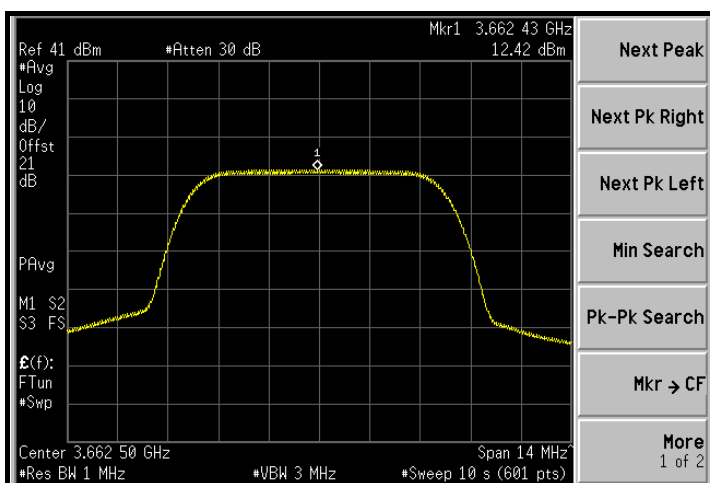
A D T

CHANNEL BANDWIDTH: 7.0MHz:

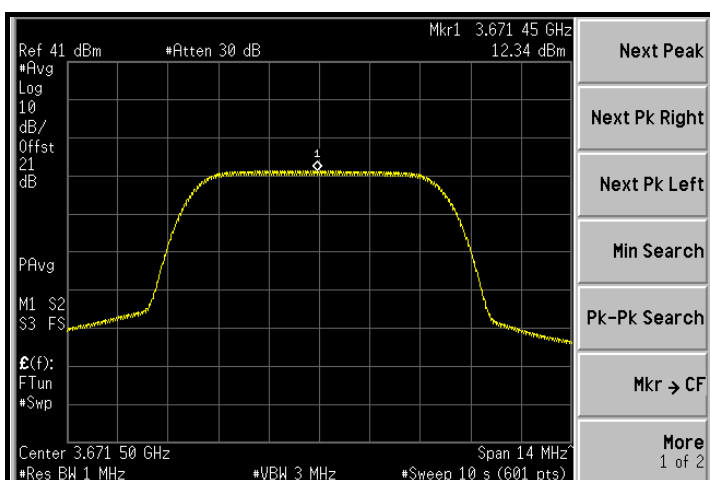
PEAK DENSITY: LOW CHANNEL



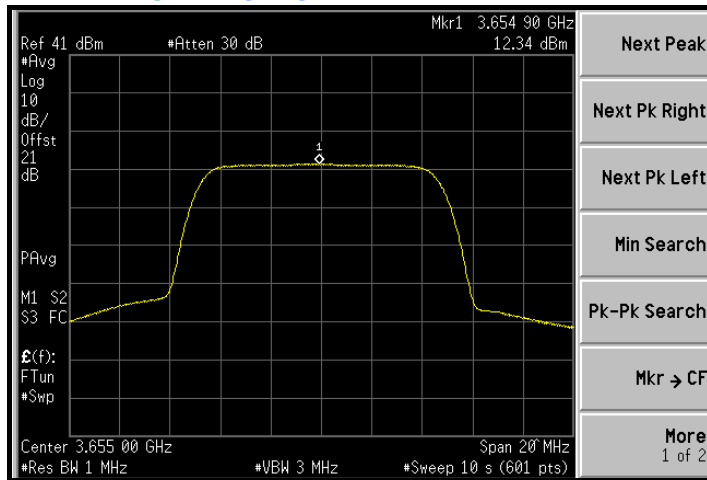
MIDDLE CHANNEL



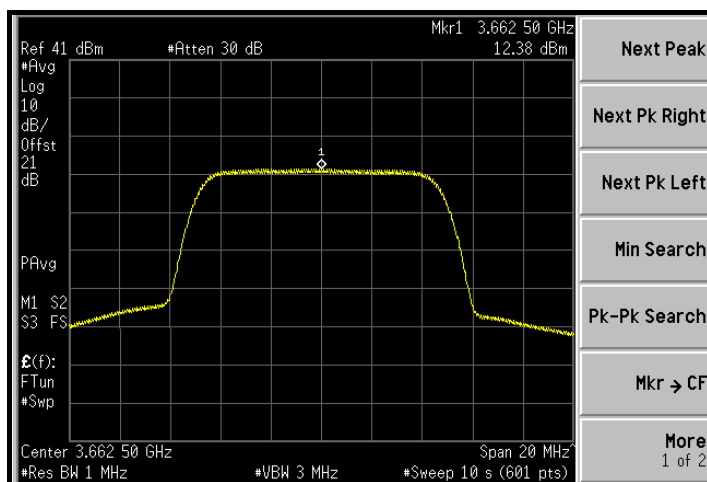
HIGH CHANNEL



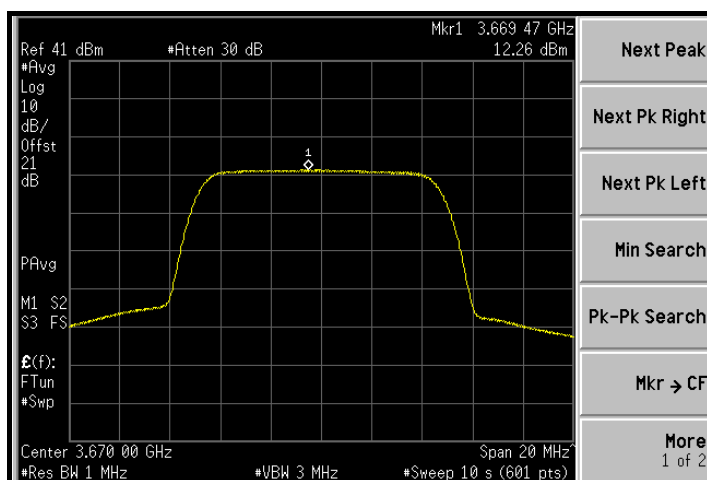
CHANNEL BANDWIDTH: 10.0MHz: PEAK DENSITY: LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL



4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILITY 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 ~ 70°C.

4.2.2 TEST INSTRUMENTS

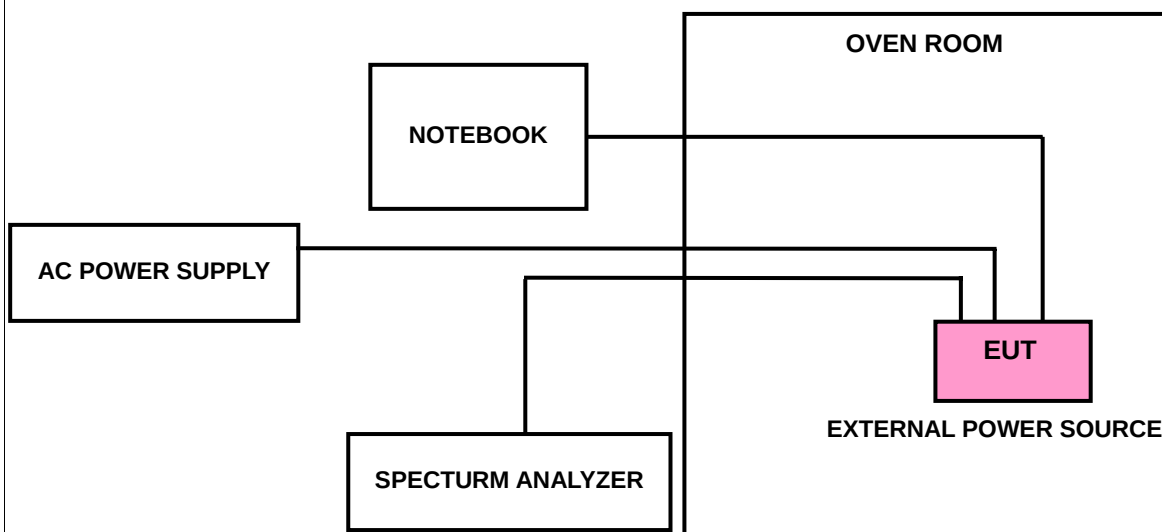
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY44360128	Dec. 12, 2008	Dec.11, 2009
RF cable	SUCOFLEX 104	274041/4	Aug. 28, 2009	Aug. 27, 2010
WIT Standard Temperature & Humidity Chamber	TH-4S-C	W981030	Jun. 24, 2009	Jun. 23, 2010

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

- 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.
- EUT is connected the external power supply to control the AC input power. The various Volts from the minimum 93.5 Volts to 126.5 Volts. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing.
- 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: 3.5MHz

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	FREQUENCY (MHz)	FREQUENCY ERROR (ppm)
93.5	3651.751736	0.475
110.0	3651.751234	0.338
126.5	3651.752403	0.658

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (°C)	FREQUENCY (MHz)	FREQUENCY ERROR (ppm)
70	3651.751762	0.483
60	3651.751115	0.305
50	3651.752006	0.549
40	3651.751304	0.357
30	3651.751834	0.502
20	3651.751234	0.338
10	3651.751721	0.471
0	3651.750794	0.217
-10	3651.751442	0.395
-20	3651.751682	0.461
-30	3651.752043	0.559
-40	3651.751646	0.451



A D T

CHANNEL BANDWIDTH: 5.0MHz

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	FREQUENCY (MHz)	FREQUENCY ERROR (ppm)
93.5	3652.503022	0.827
110.0	3652.501317	0.361
126.5	3652.502259	0.618

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (°C)	FREQUENCY (MHz)	FREQUENCY ERROR (ppm)
70	3652.502616	0.716
60	3652.501112	0.304
50	3652.502342	0.641
40	3652.501515	0.415
30	3652.501694	0.464
20	3652.501317	0.361
10	3652.502027	0.555
0	3652.500490	0.134
-10	3652.501120	0.307
-20	3652.501449	0.397
-30	3652.502302	0.630
-40	3652.502166	0.593

**A D T****CHANNEL BANDWIDTH: 7.0MHz**

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	FREQUENCY (MHz)	FREQUENCY ERROR (ppm)
93.5	3653.502068	0.566
110.0	3653.501290	0.353
126.5	3653.502760	0.755

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (°C)	FREQUENCY (MHz)	FREQUENCY ERROR (ppm)
70	3653.502585	0.708
60	3653.501297	0.355
50	3653.502232	0.611
40	3653.501980	0.542
30	3653.501853	0.507
20	3653.501290	0.353
10	3653.502560	0.701
0	3653.500844	0.231
-10	3653.501397	0.382
-20	3653.501566	0.429
-30	3653.502240	0.613
-40	3653.501598	0.437

CHANNEL BANDWIDTH: 10.0MHz

AFC FREQUENCY ERROR VS. VOLTAGE		
VOLTAGE (Volts)	FREQUENCY (MHz)	FREQUENCY ERROR (ppm)
93.5	3655.002233	0.611
110.0	3655.000797	0.218
126.5	3655.001285	0.352

AFC FREQUENCY ERROR VS. TEMP.		
TEMP. (°C)	FREQUENCY (MHz)	FREQUENCY ERROR (ppm)
70	3655.002522	0.690
60	3655.001230	0.337
50	3655.001924	0.526
40	3655.001354	0.370
30	3655.001937	0.530
20	3655.000797	0.218
10	3655.001728	0.473
0	3655.000844	0.231
-10	3655.001212	0.332
-20	3655.001182	0.323
-30	3655.002095	0.573
-40	3655.001709	0.468

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	Dec. 12, 2008	Dec.11, 2009
RF cable	SUCOFLEX 104	274041/4	Aug. 28, 2009	Aug. 27, 2010
DC-6GHz 20dB 50W Fixed attenuator Woken	MDC9331N-20	0724	May 15, 2009	May 14, 2010

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 = 36kHz (3.5MHz bandwidth), 51kHz (5MHz bandwidth), 75kHz (7MHz bandwidth), 100kHz (10MHz bandwidth), VBW = 110kHz (3.5MHz bandwidth), 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

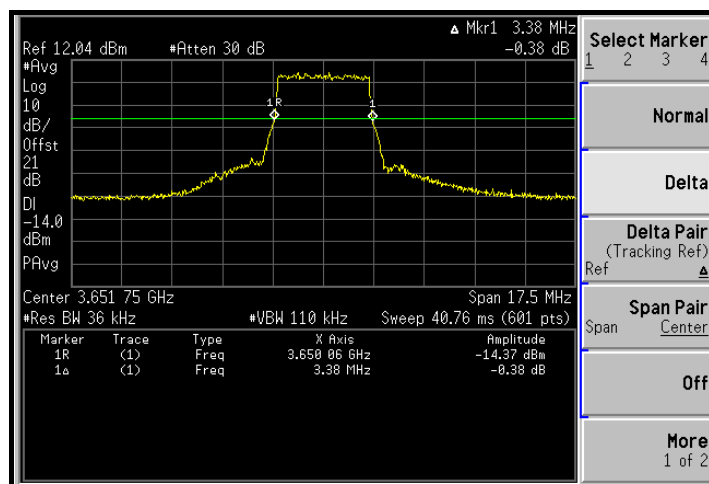
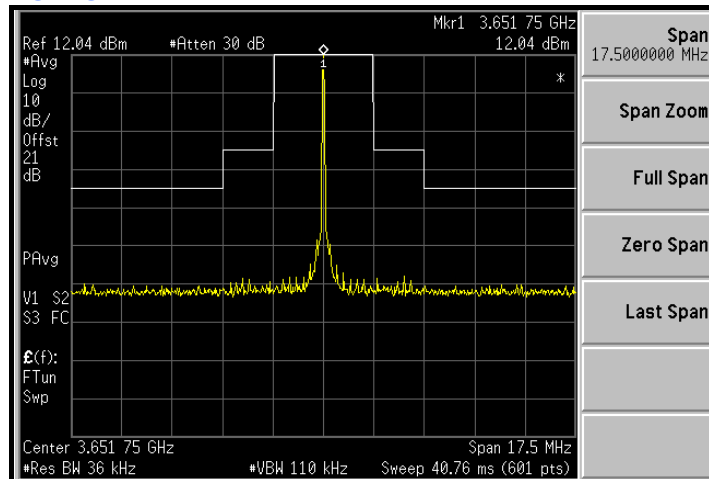
Same as 4.1.5

4.3.6 TEST RESULTS

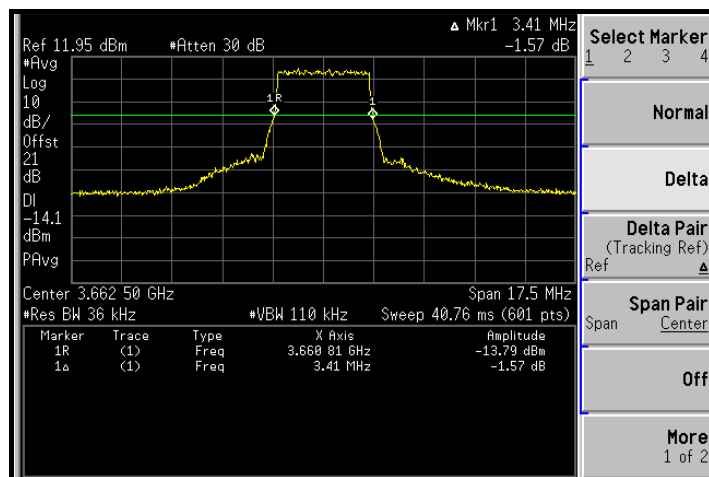
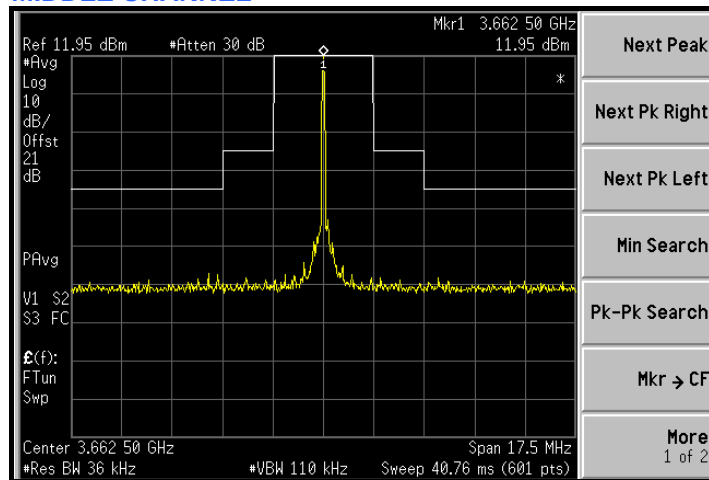
CHANNEL BANDWIDTH: 3.5MHz

CHANNEL	-26dBc BANDWIDTH (MHz)
Low	3.38
Middle	3.41
High	3.44

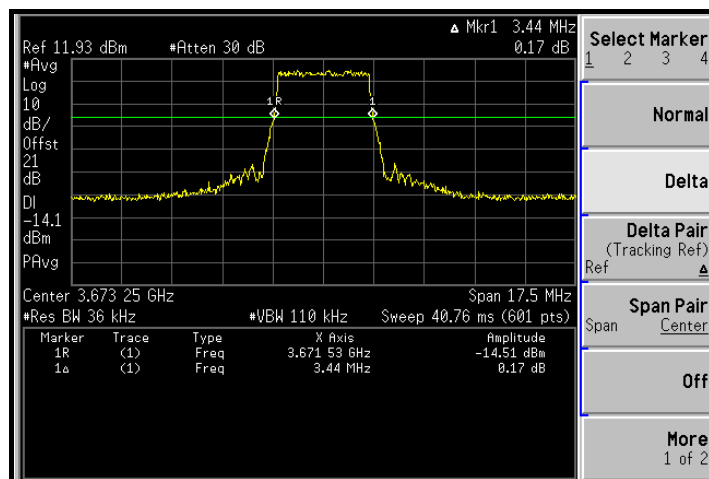
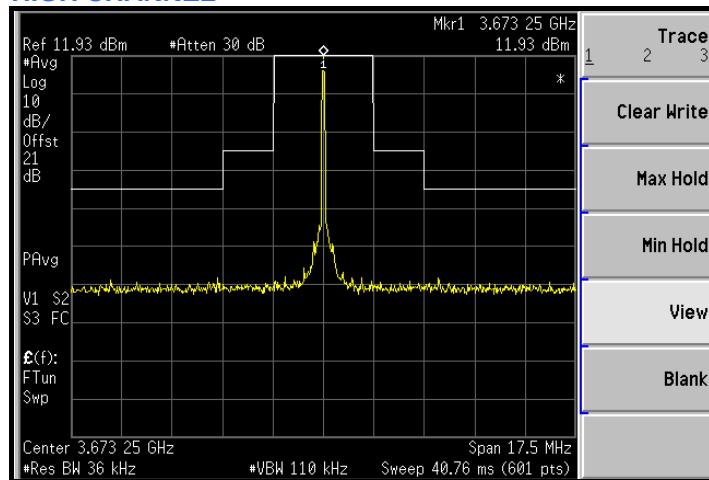
LOW CHANNEL



MIDDLE CHANNEL



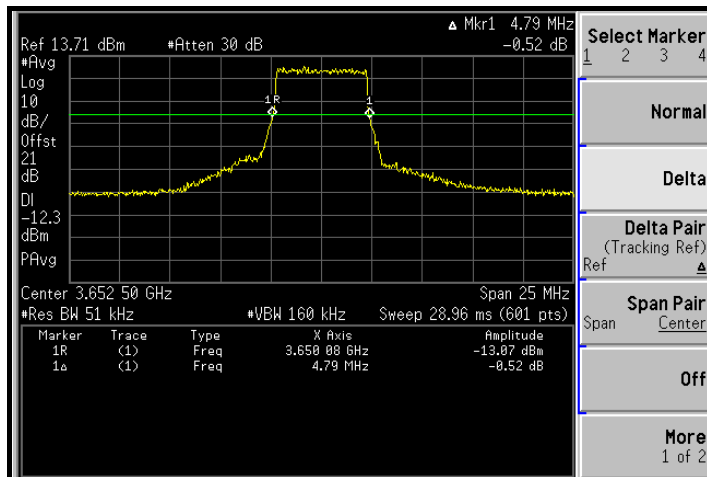
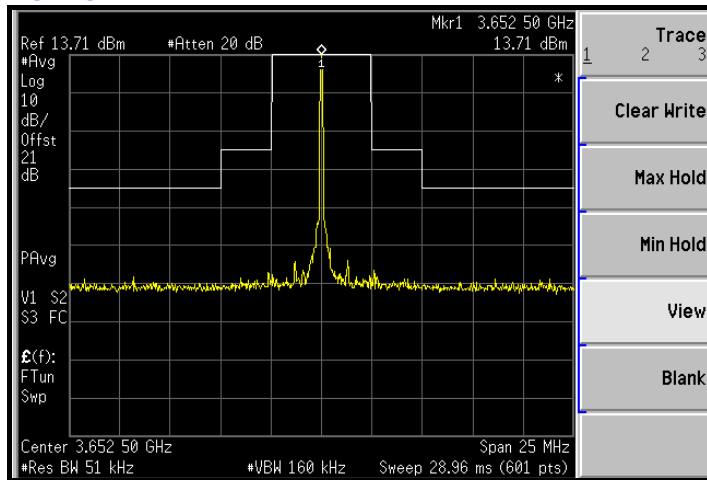
HIGH CHANNEL



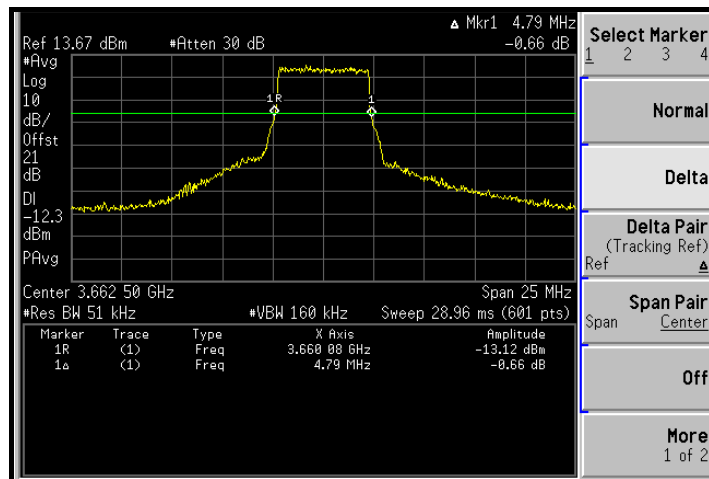
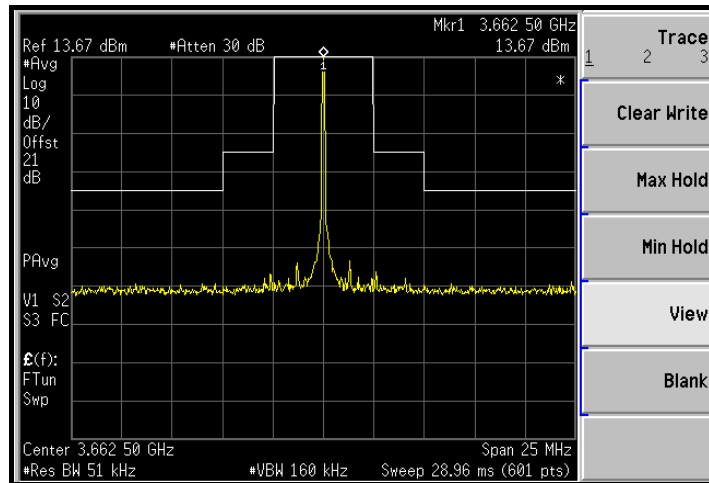
CHANNEL BANDWIDTH: 5.0MHz

CHANNEL	-26dBc BANDWIDTH (MHz)
Low	4.79
Middle	4.79
High	4.79

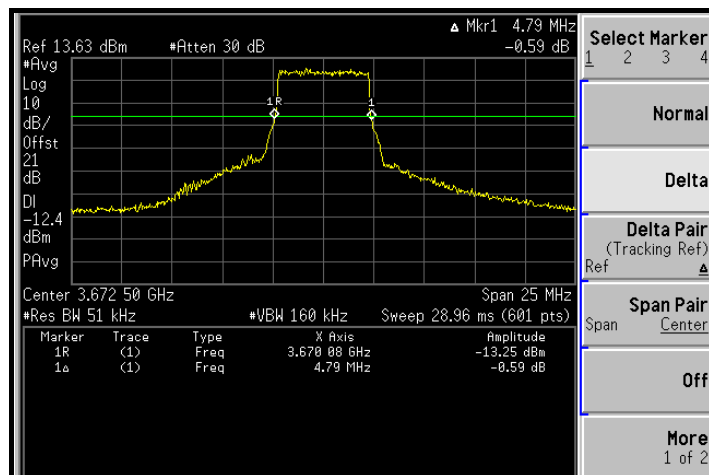
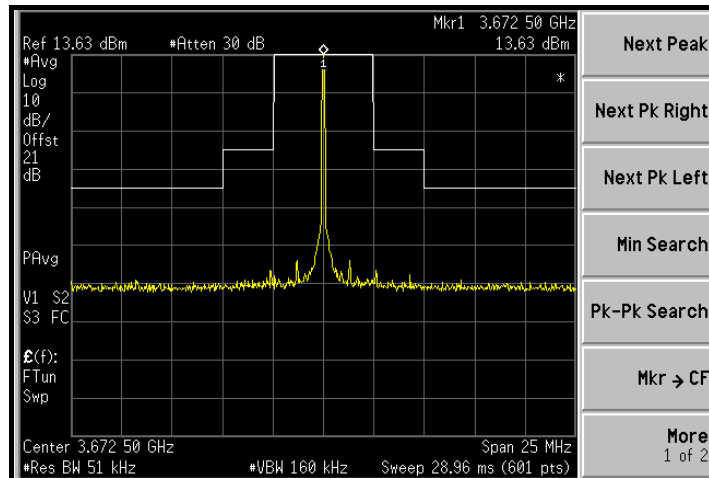
LOW CHANNEL



MIDDLE CHANNEL



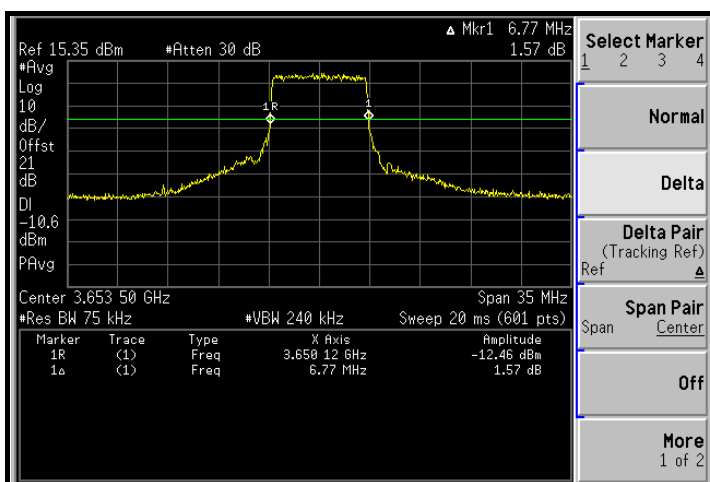
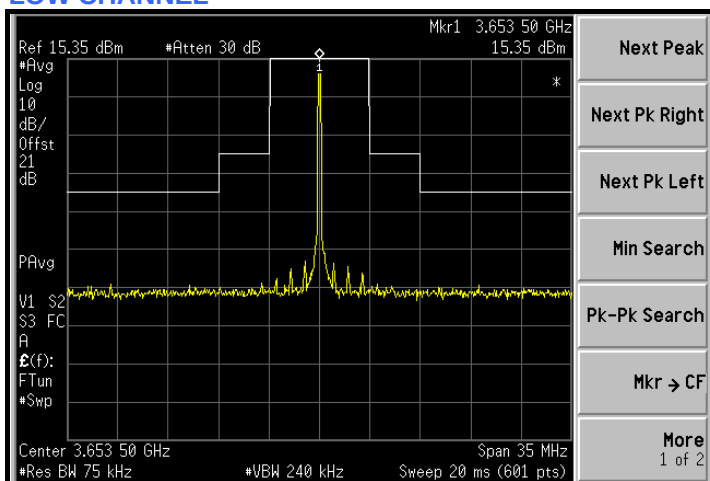
HIGH CHANNEL



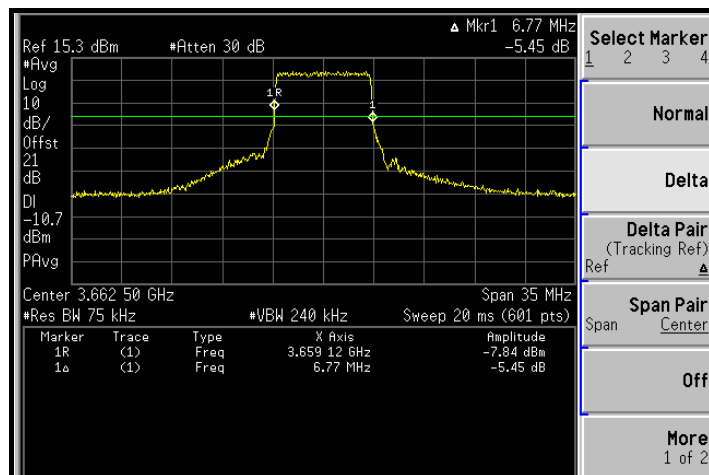
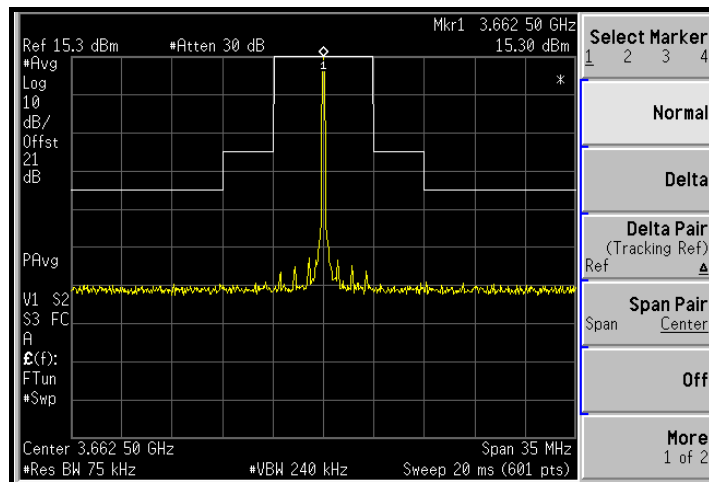
CHANNEL BANDWIDTH: 7.0MHz

CHANNEL	-26dBc BANDWIDTH (MHz)
Low	6.77
Middle	6.77
High	6.82

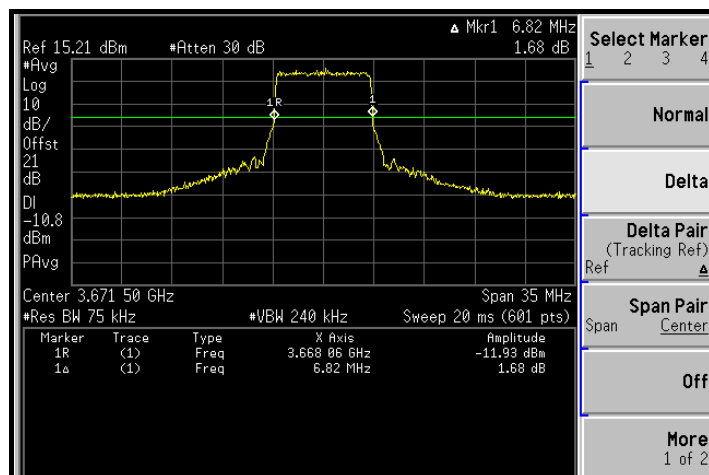
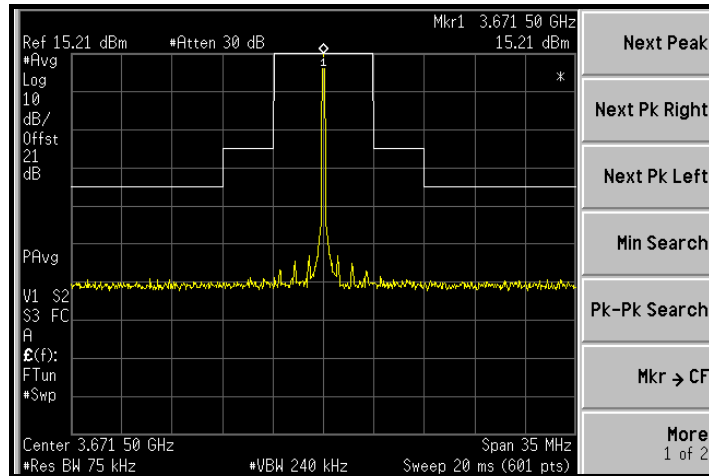
LOW CHANNEL



MIDDLE CHANNEL



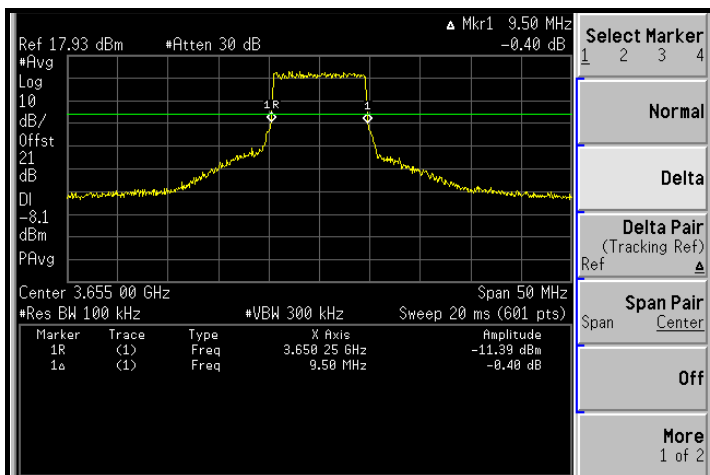
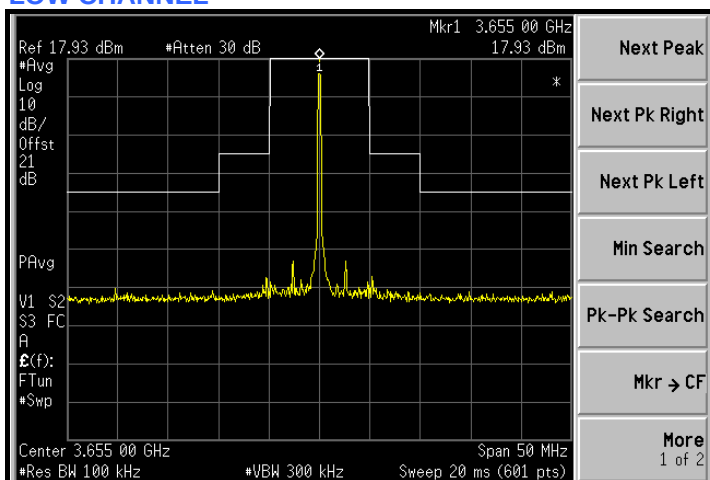
HIGH CHANNEL



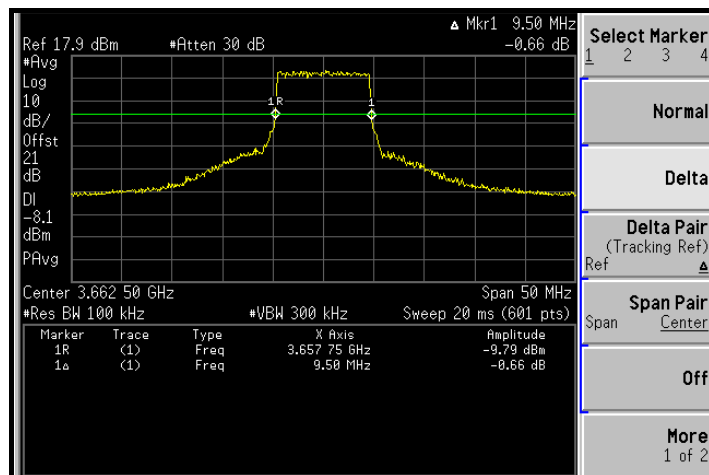
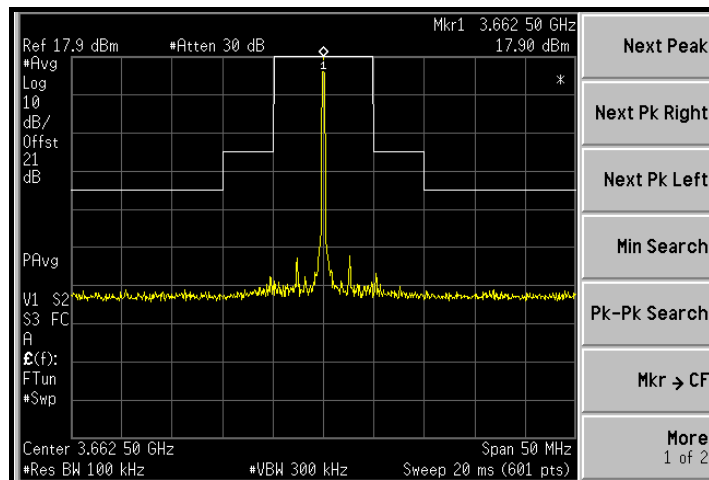
CHANNEL BANDWIDTH: 10.0MHz

CHANNEL	-26dBc BANDWIDTH (MHz)
Low	9.5
Middle	9.5
High	9.5

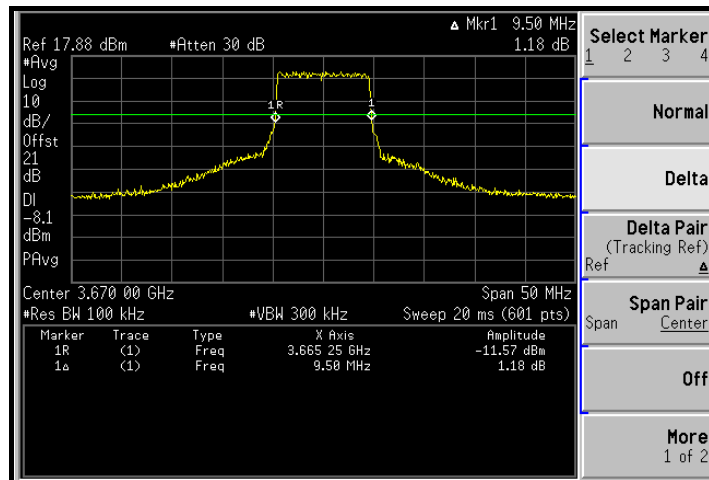
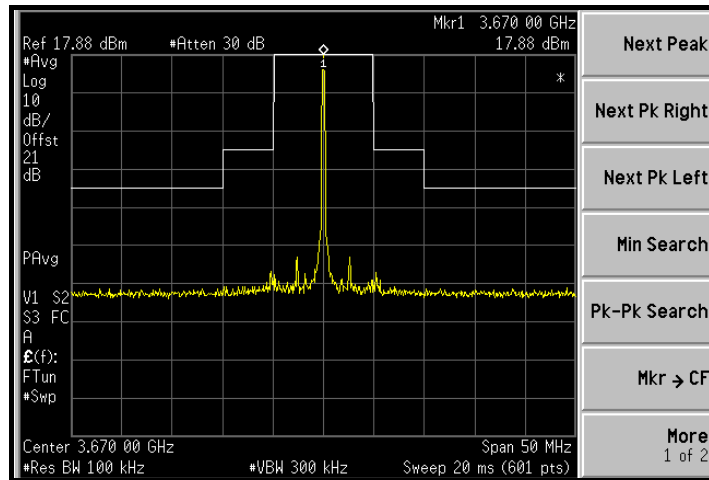
LOW CHANNEL



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 by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
- (2) On any frequency removed from the assigned frequency by more 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 by more than 250 percent of the authorized bandwidth: At least $43 + 10\log(P)$ dB.

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY44360128	Dec. 12, 2008	Dec. 11, 2009
RF cable	SUCOFLEX 104	274041/4	Aug. 28, 2009	Aug. 27, 2010
DC-6GHz 20dB 50W Fixed attenuator Woken	MDC9331N-20	0724	May 15, 2009	May 14, 2010

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 = 36kHz (3.5MHz bandwidth), 51kHz (5MHz bandwidth), 75kHz (7MHz bandwidth), 100kHz (10MHz bandwidth), VBW = 110kHz (3.5MHz bandwidth), 160kHz (5MHz bandwidth), 240kHz (7MHz bandwidth), 300kHz (10MHz bandwidth).
- b. Set EUT to transmit signal at un-modulation mode to get reference level, R_L .
- c. According R_L and Channel bandwidth to define Emission Mask range.
- d. Set EUT to transmit signal at modulation mode to check signal can comply with Emission Mask or not.

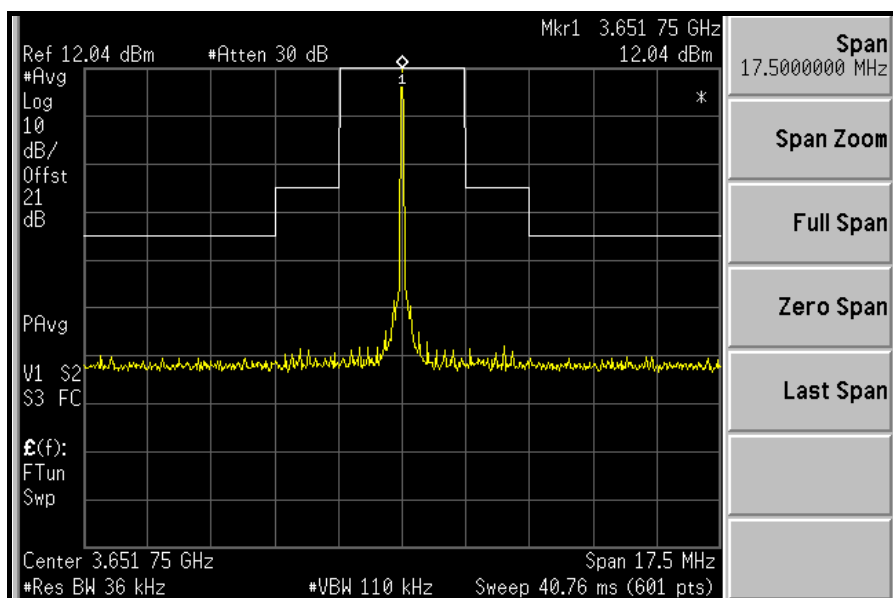
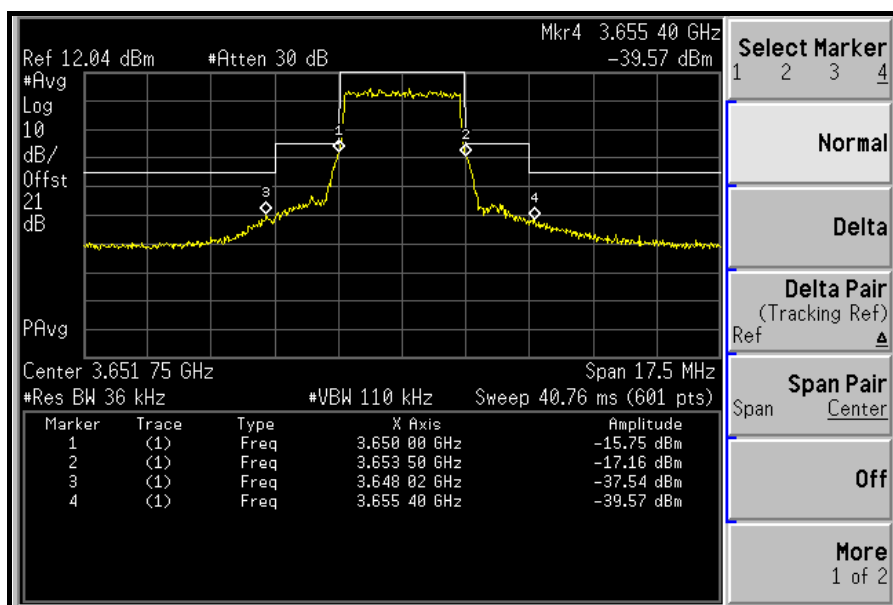
4.4.5 EUT OPERATING CONDITION

Same as 4.1.5

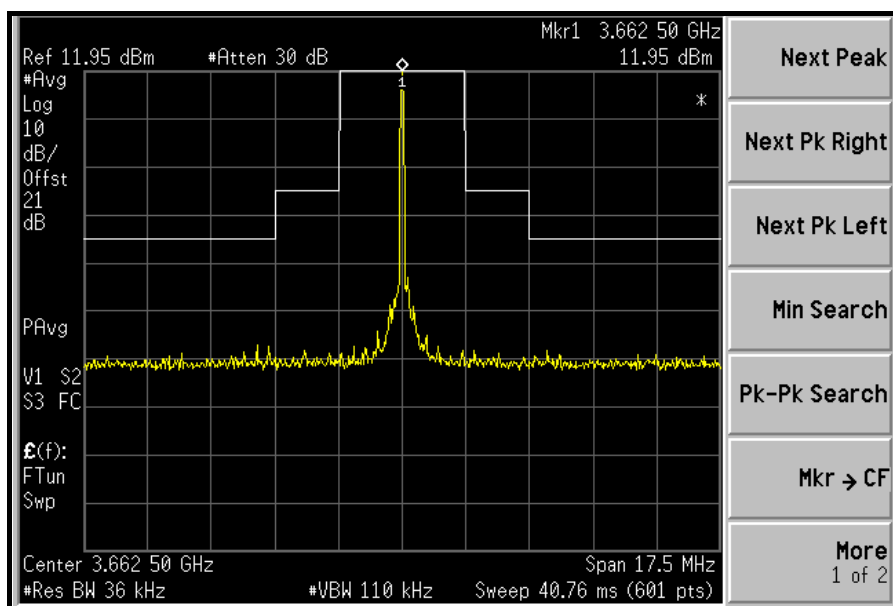
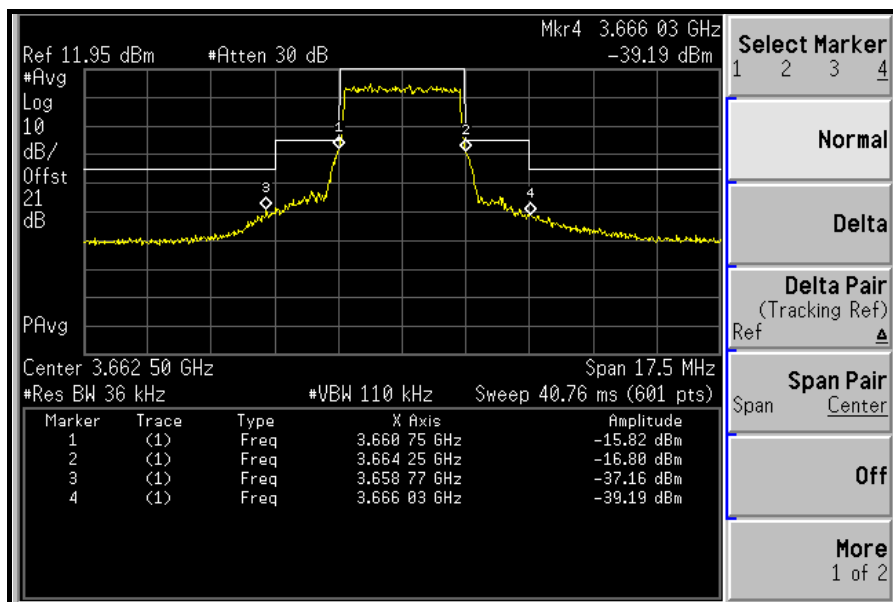
4.4.6 TEST RESULTS

CHANNEL BANDWIDTH: 3.5MHz

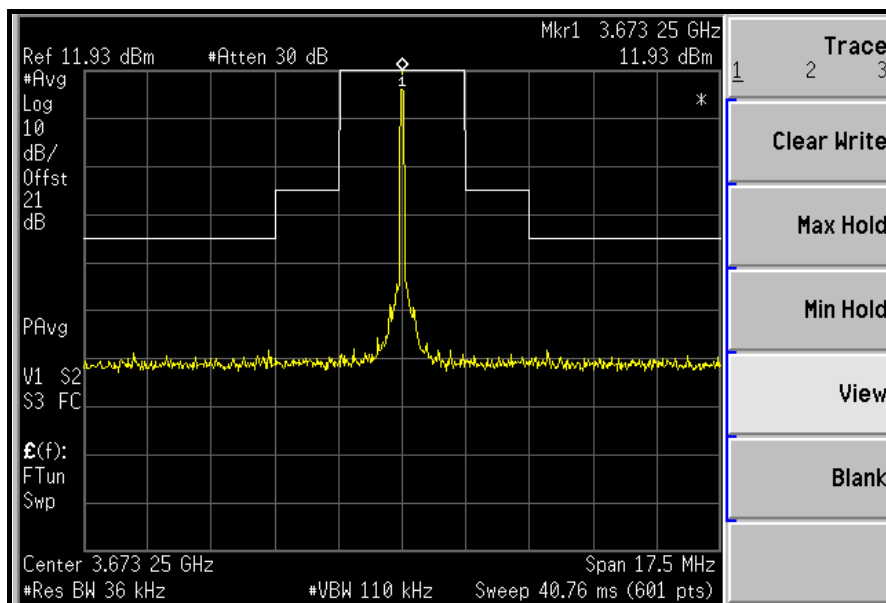
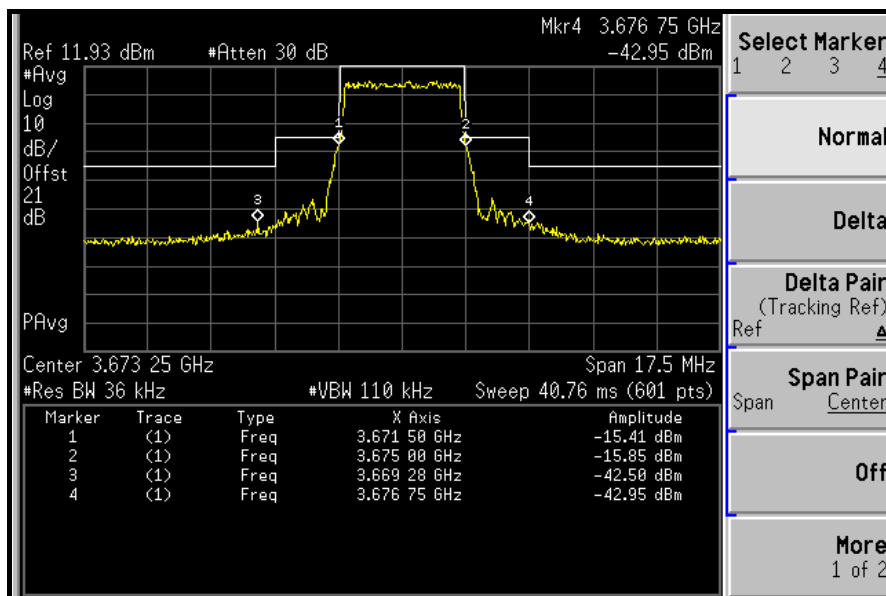
LOW CHANNEL



MIDDLE CHANNEL



HIGH CHANNEL

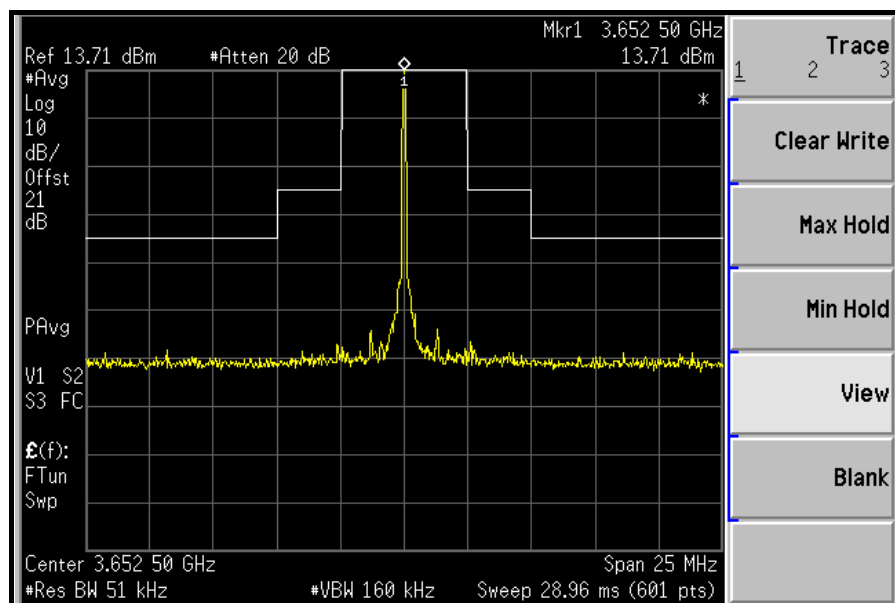
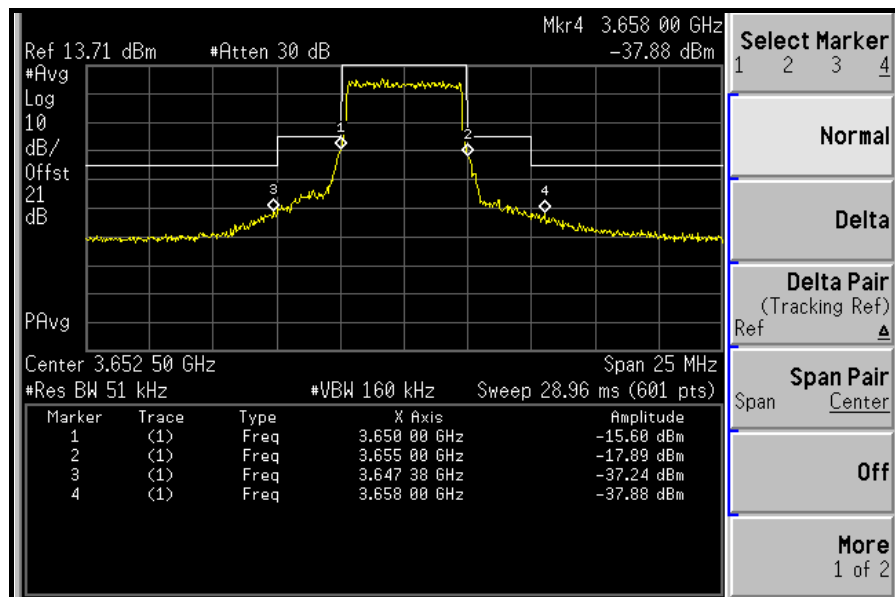




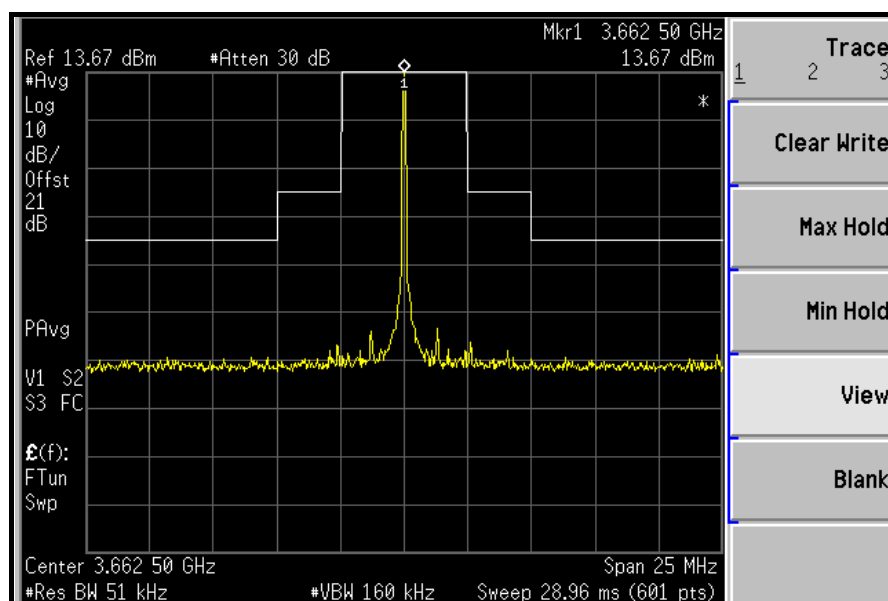
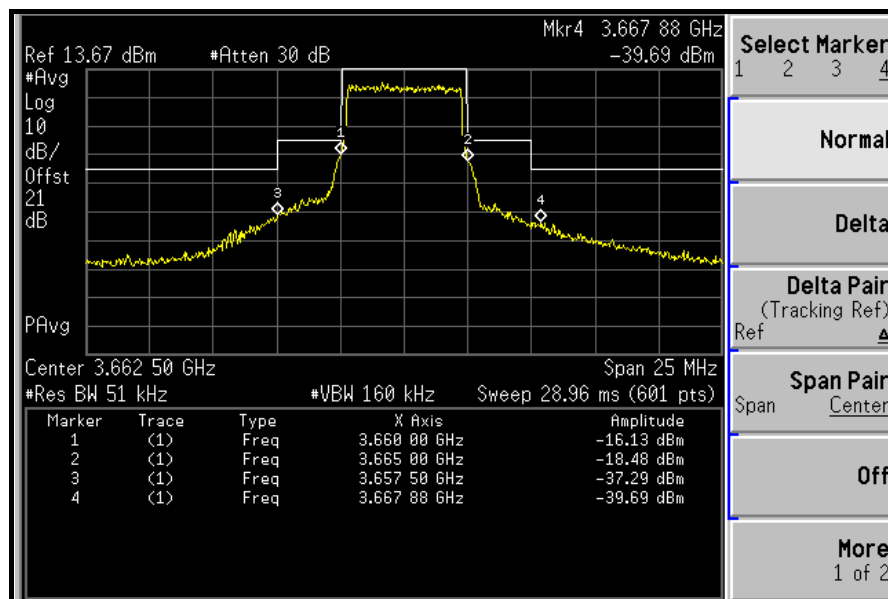
A D T

CHANNEL BANDWIDTH: 5MHz

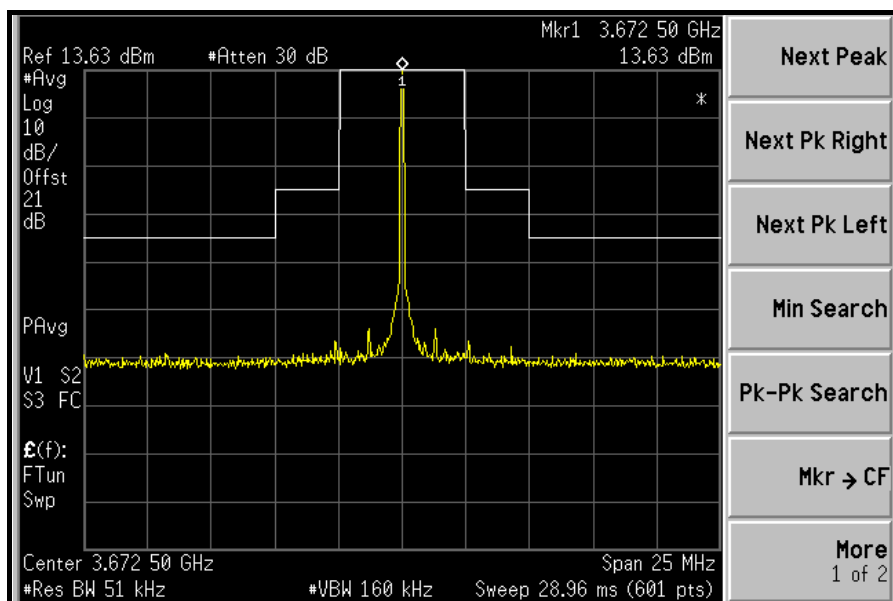
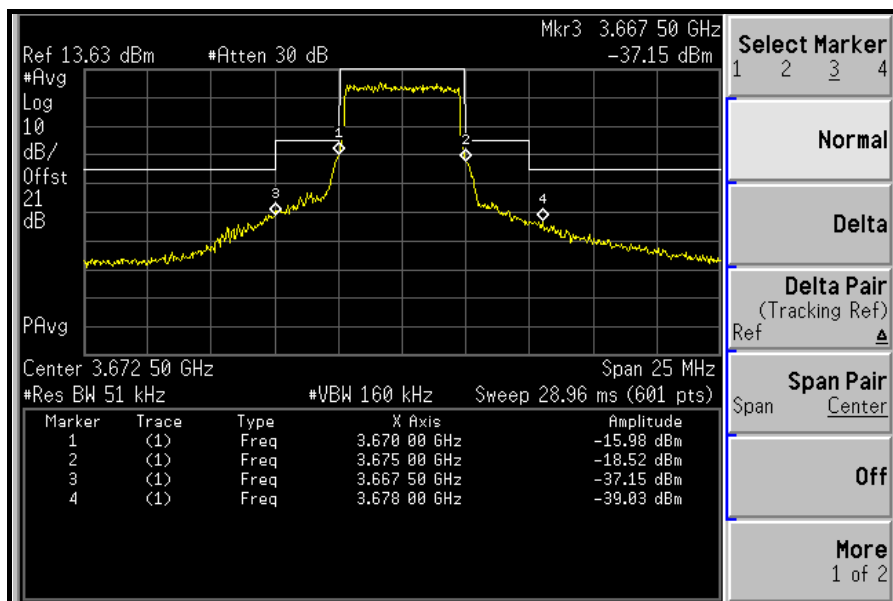
LOW CHANNEL



MIDDLE CHANNEL

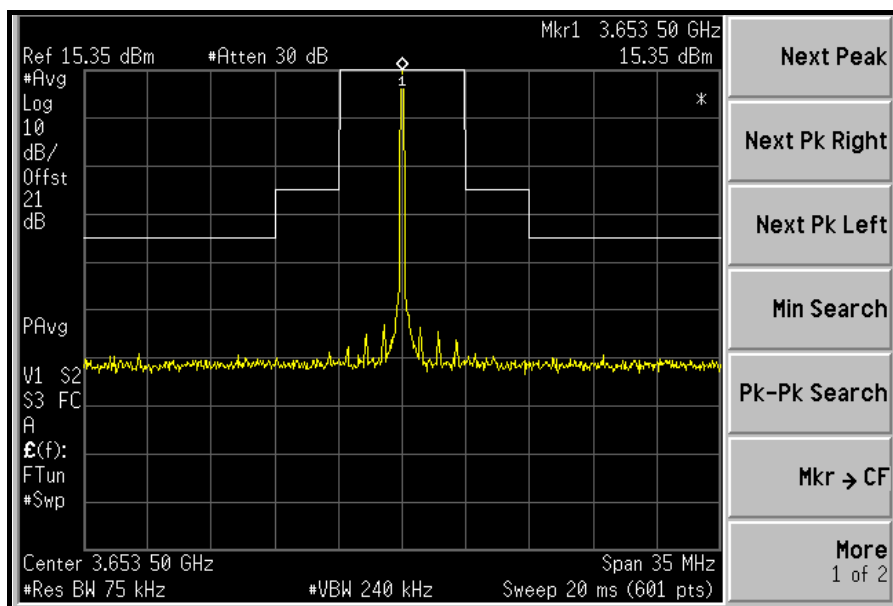
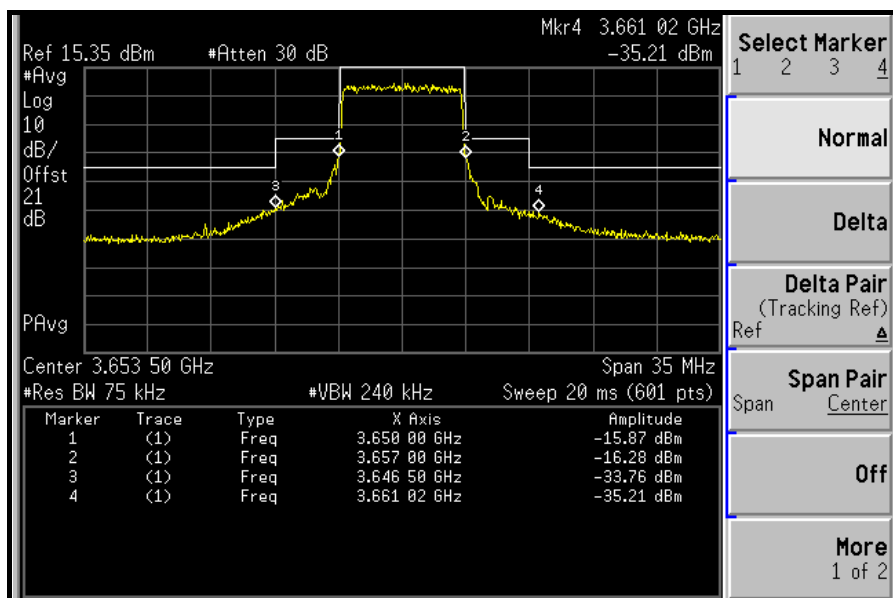


HIGH CHANNEL

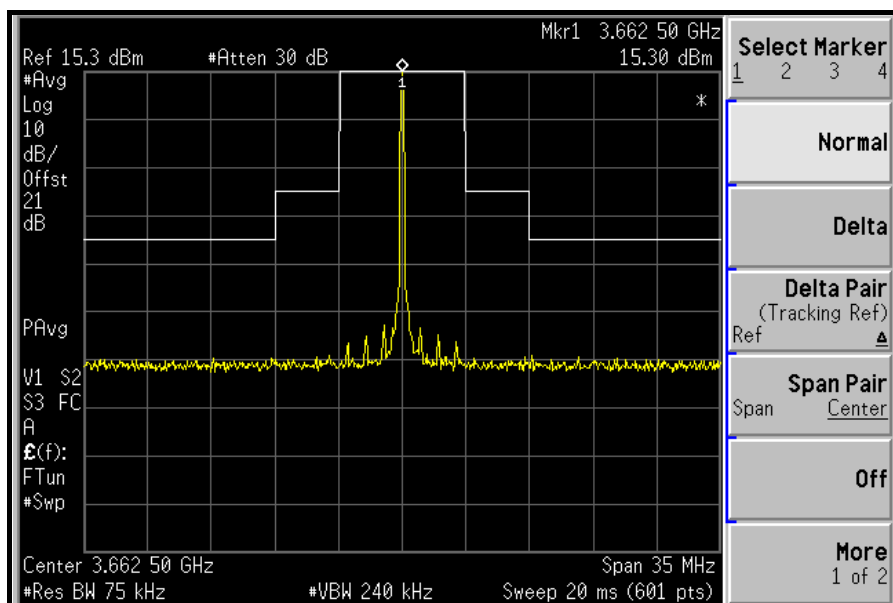
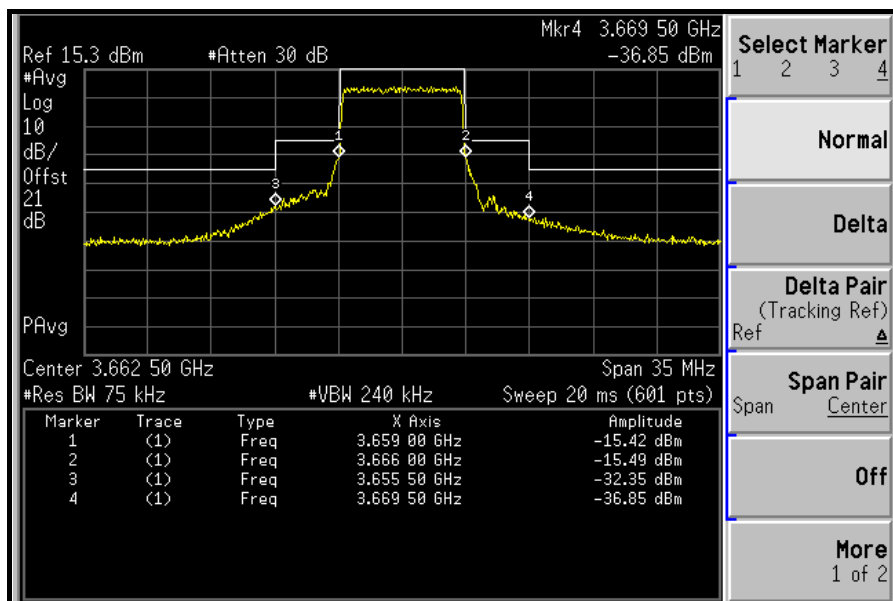


CHANNEL BANDWIDTH: 7MHz

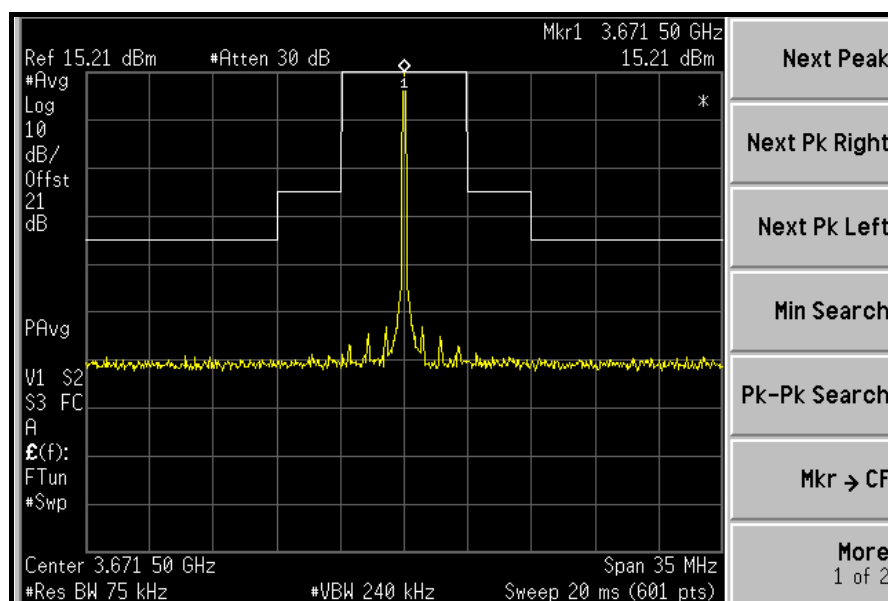
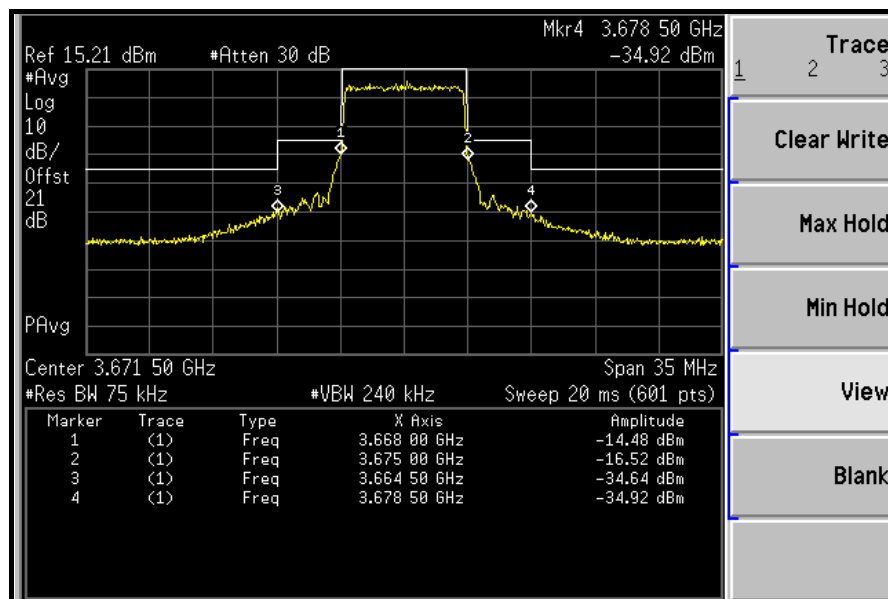
LOW CHANNEL



MIDDLE CHANNEL

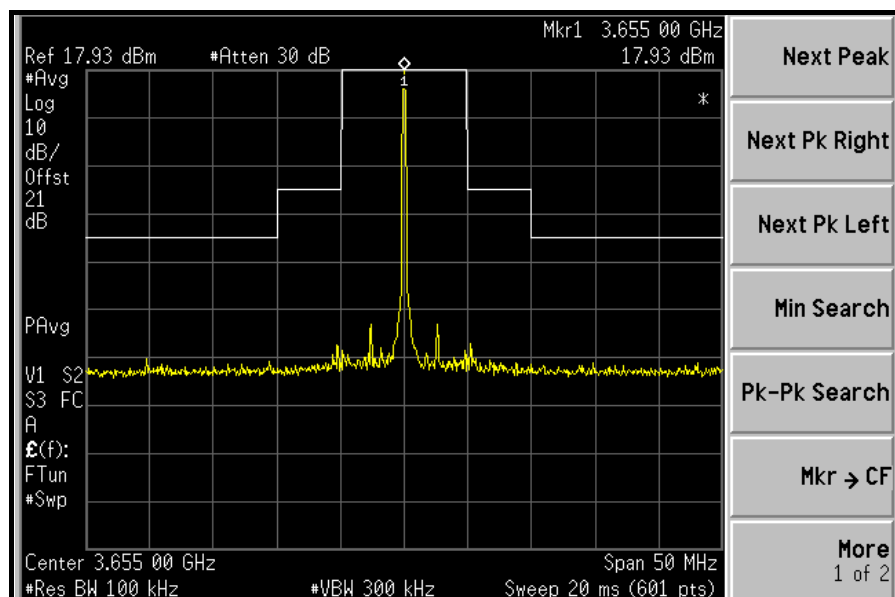
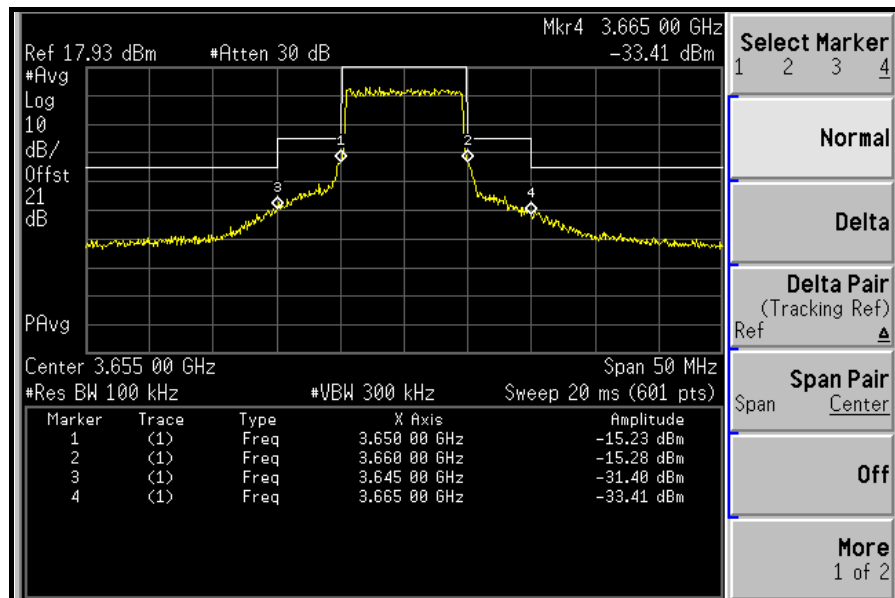


HIGH CHANNEL

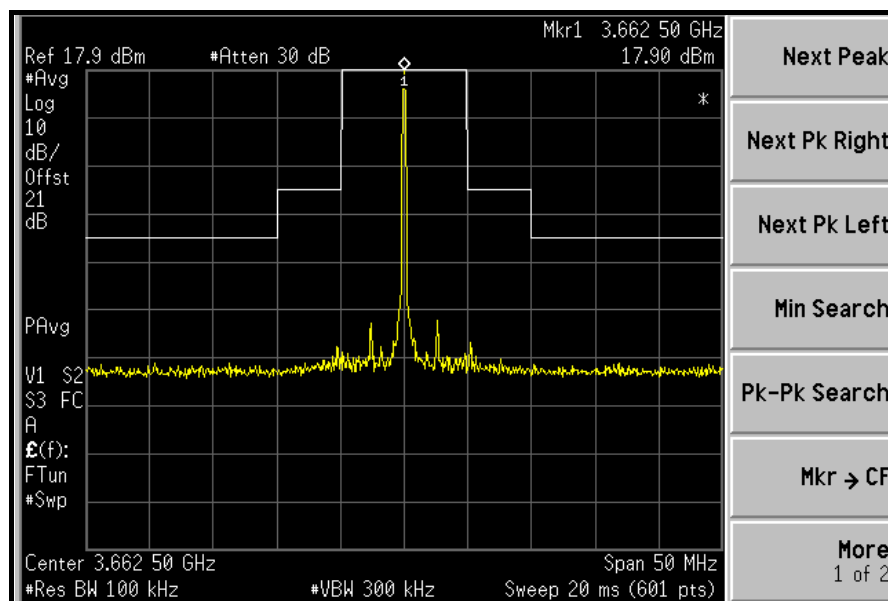
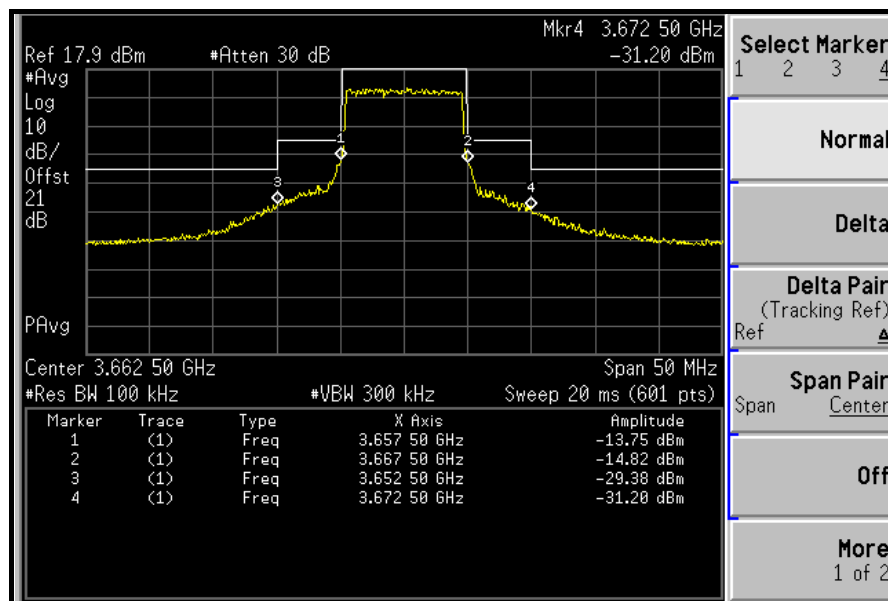


CHANNEL BANDWIDTH: 10MHz

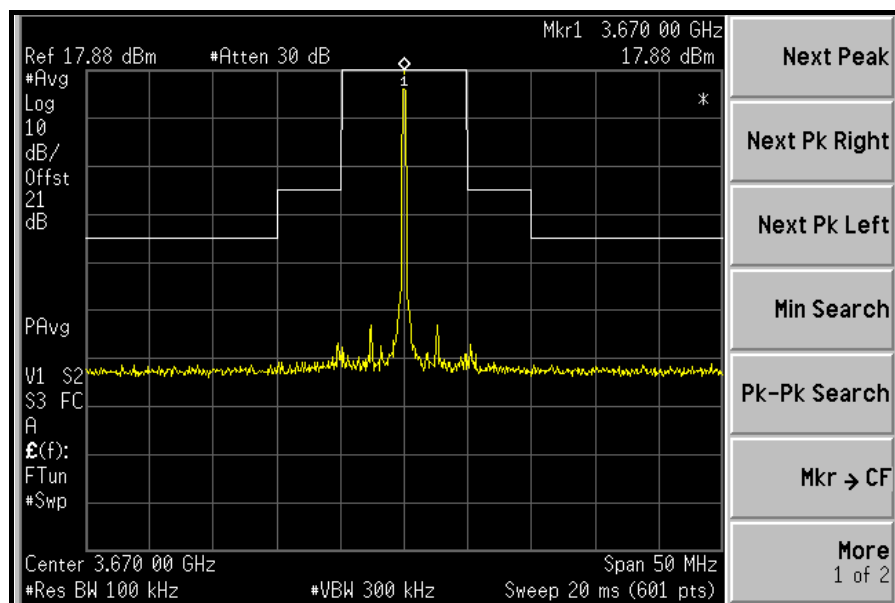
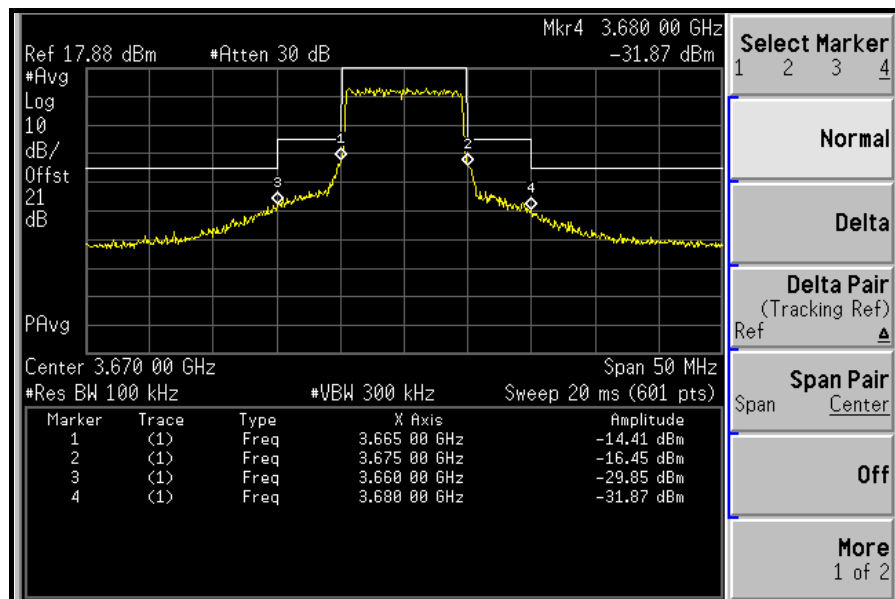
LOW CHANNEL



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

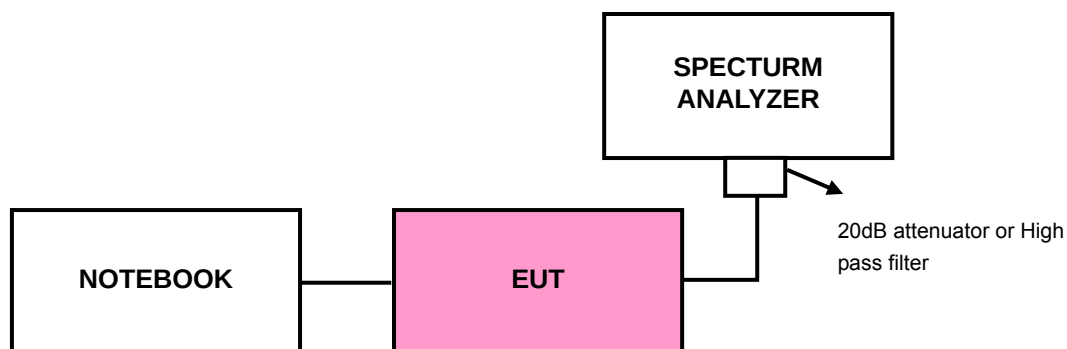
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY44360128	Dec. 12, 2008	Dec. 11, 2009
RF cable	SUCOFLEX 104	274041/4	Aug. 28, 2009	Aug. 27, 2010
DC-6GHz 20dB 50W Fixed attenuator Woken	MDC9331N-20	0724	May 15, 2009	May 14, 2010
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

- All measurements were done at 3 channels: low, middle and high operational frequency range.
- 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.
- When the spectrum scanned from 4.5GHz to 40GHz, it shall be connected to the high pass filter attenuated the carried frequency. The spectrum set RB = 1MHz, VB = 3MHz.

4.5.4 TEST SETUP



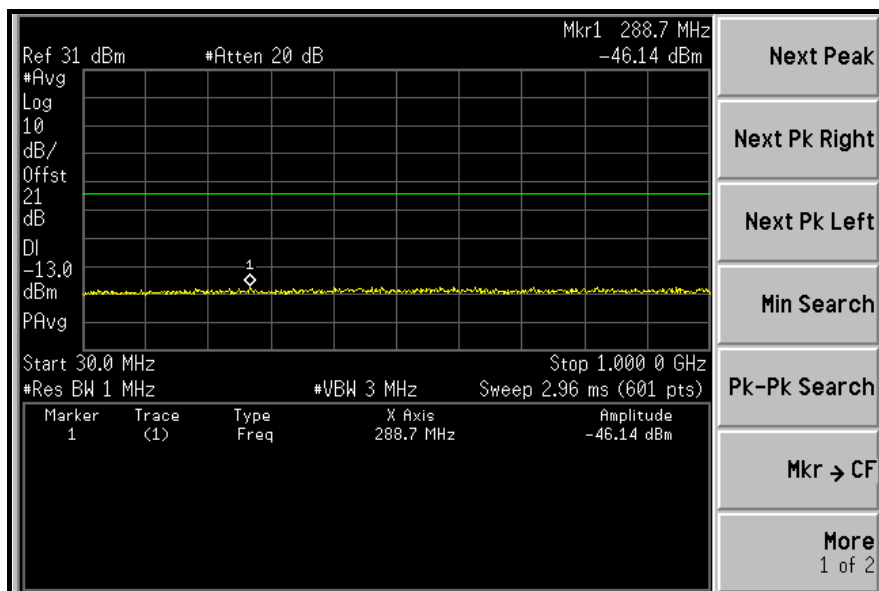
4.5.5 EUT OPERATING CONDITIONS

Same as 4.1.5

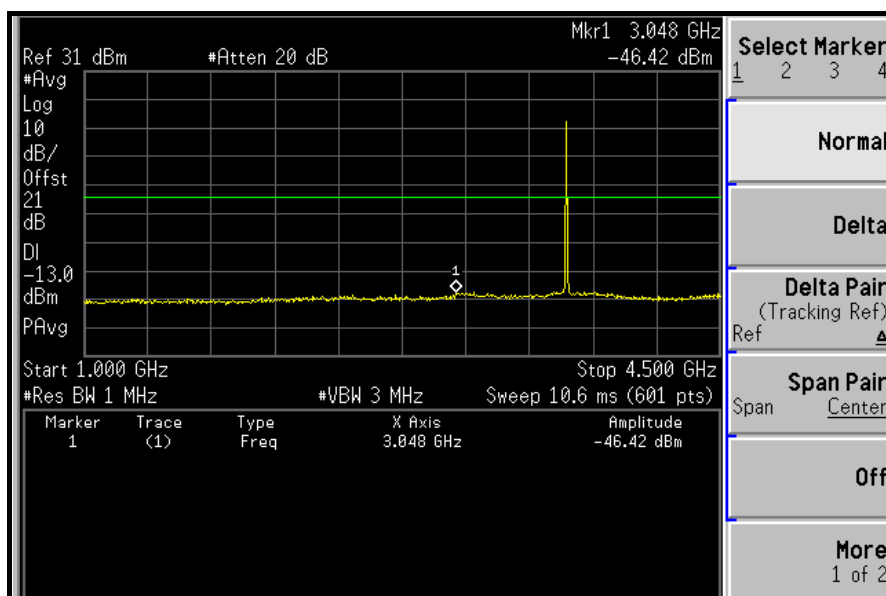
4.5.6 TEST RESULTS

CHANNEL BANDWIDTH: 3.5MHz

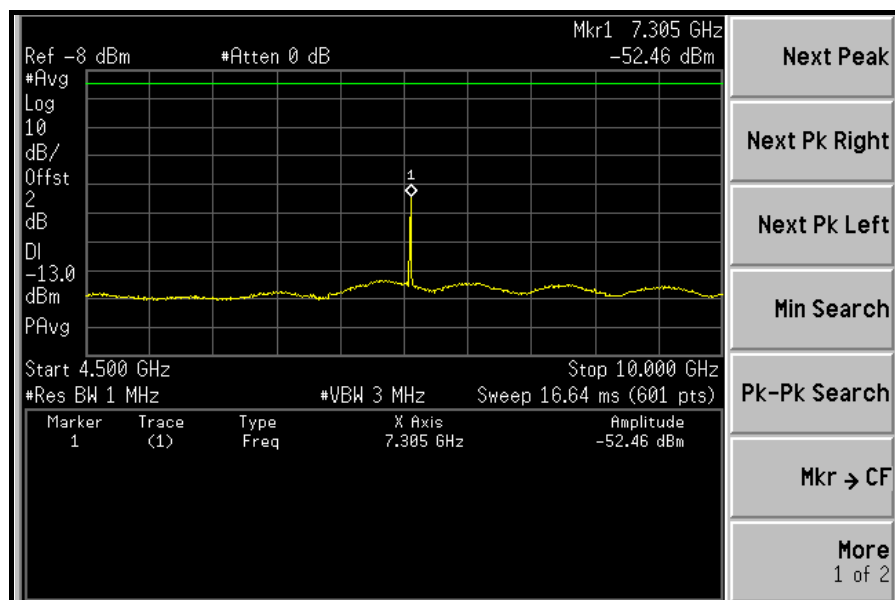
LOW CHANNEL: 30MHz ~ 1GHz:



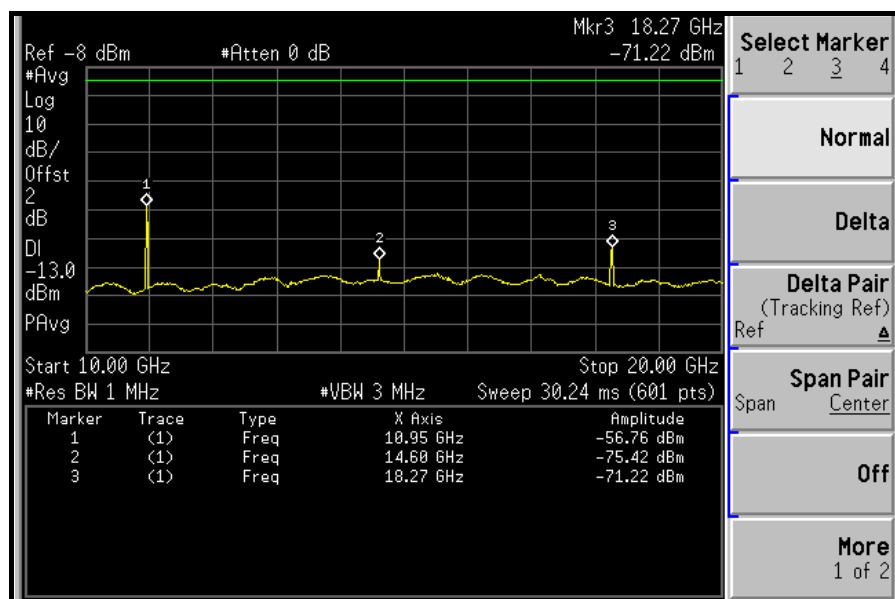
1GHz ~ 4.5GHz:



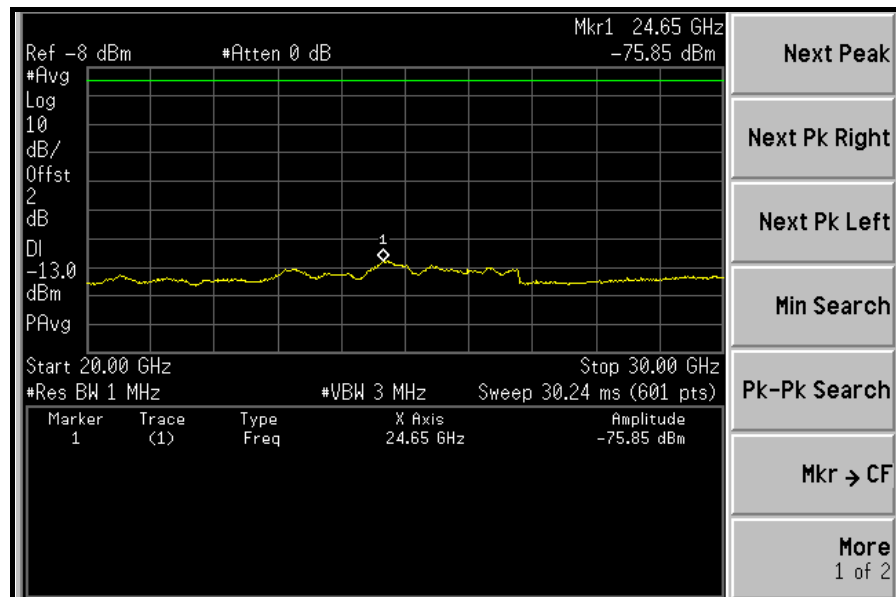
4.5GHz ~ 10GHz:



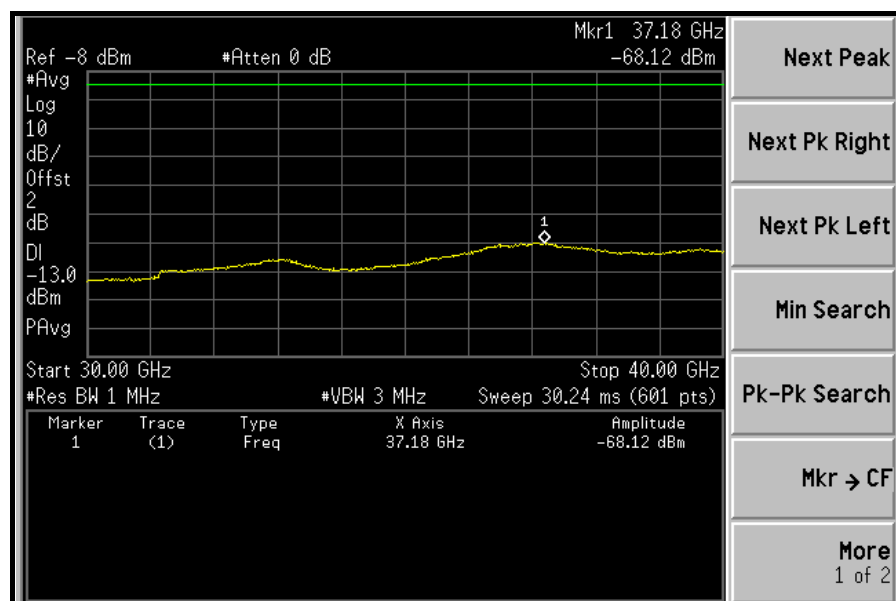
10GHz ~ 20GHz:



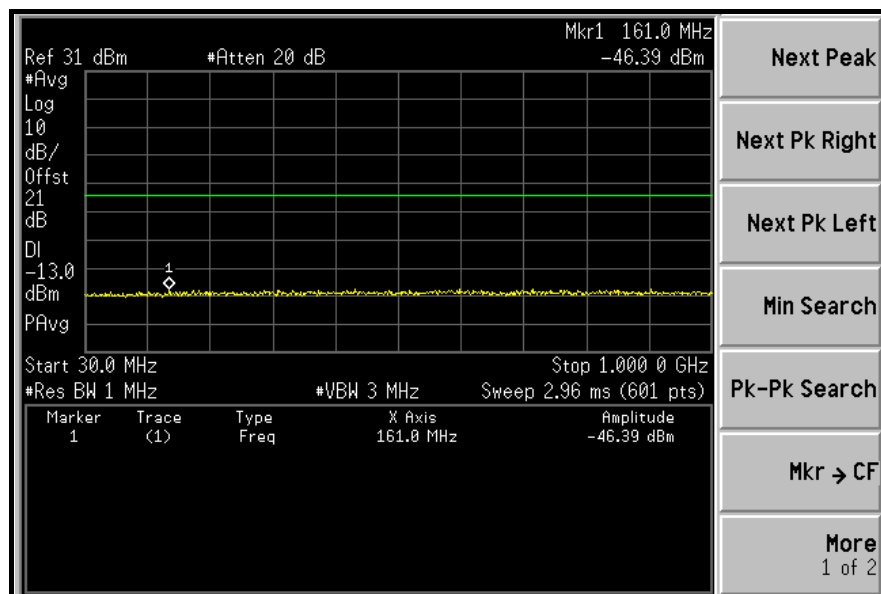
20GHz ~ 30GHz:



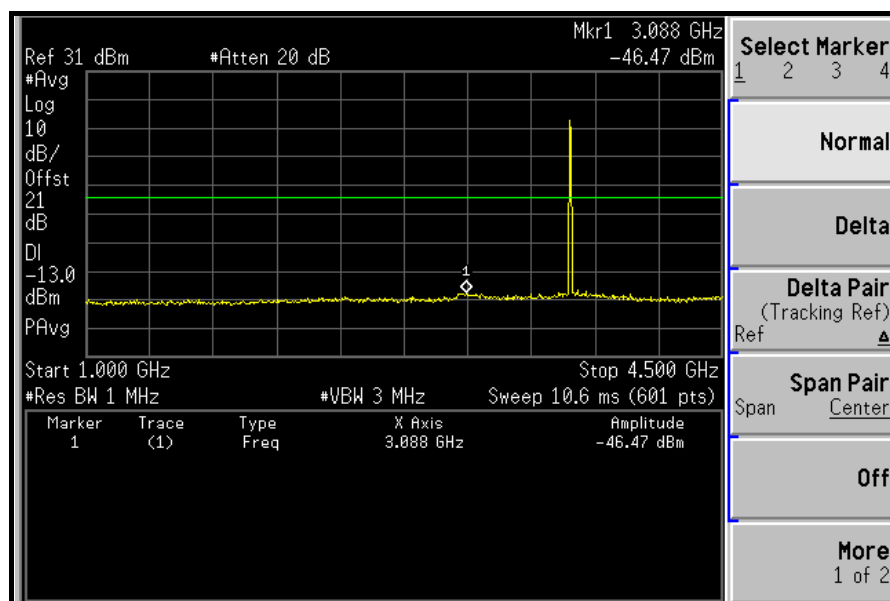
30GHz ~ 40GHz:



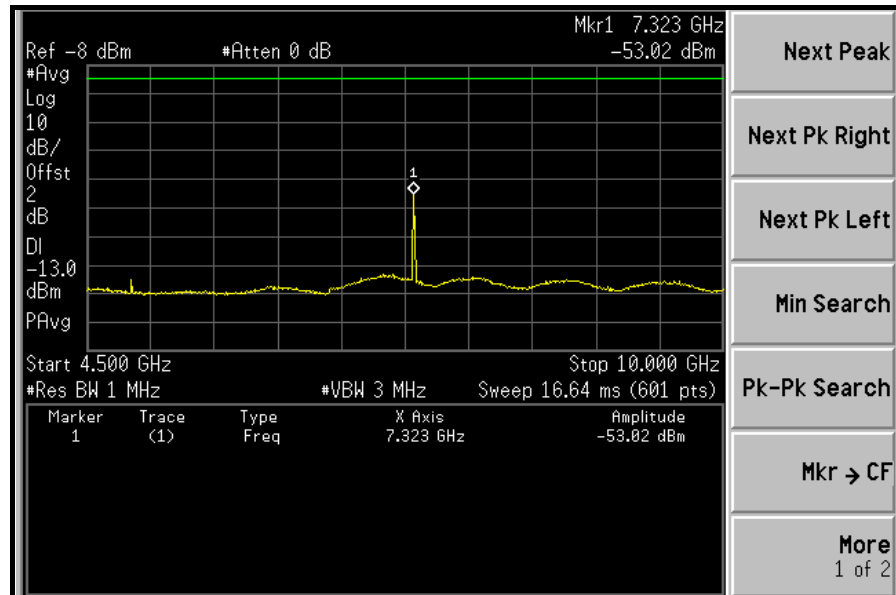
MIDDLE CHANNEL: 30MHz ~ 1GHz:



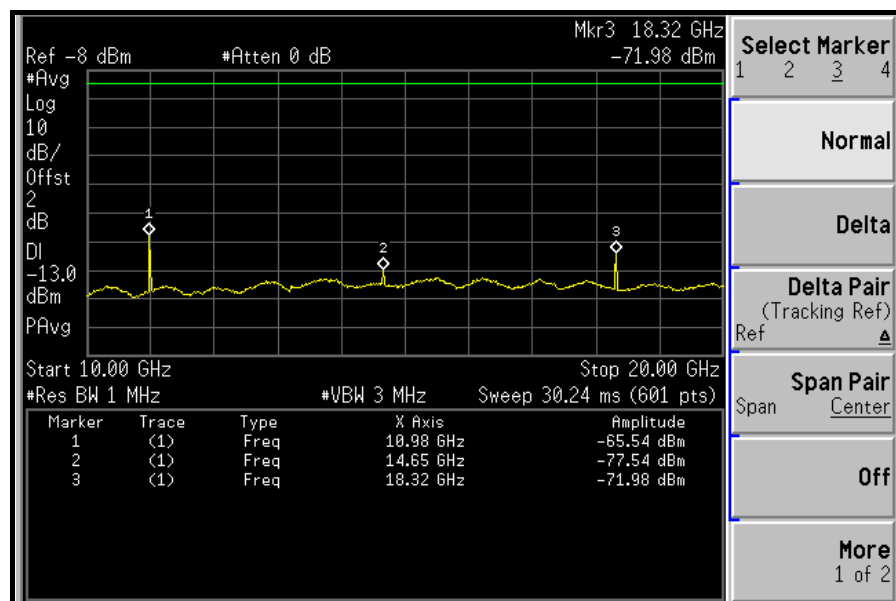
1GHz ~ 4.5GHz:



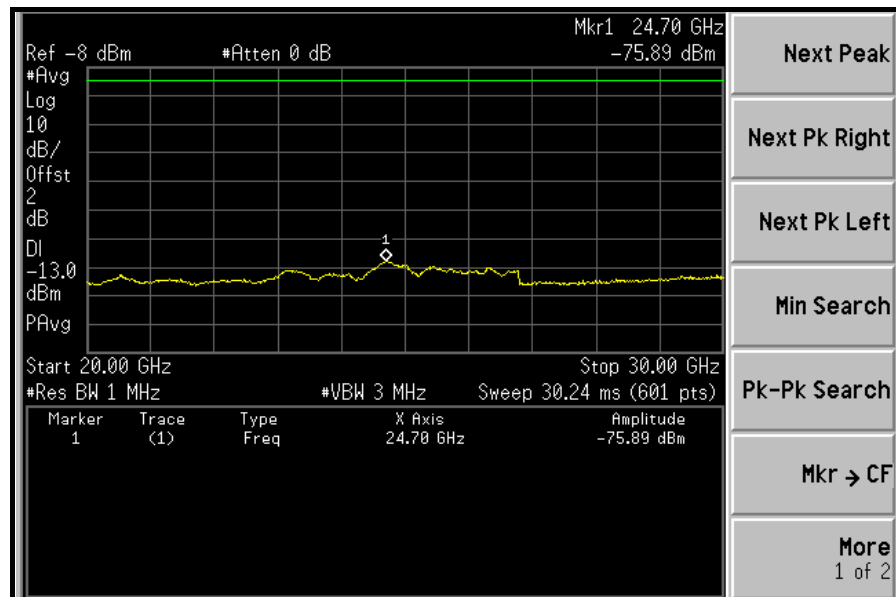
4.5GHz ~ 10GHz:



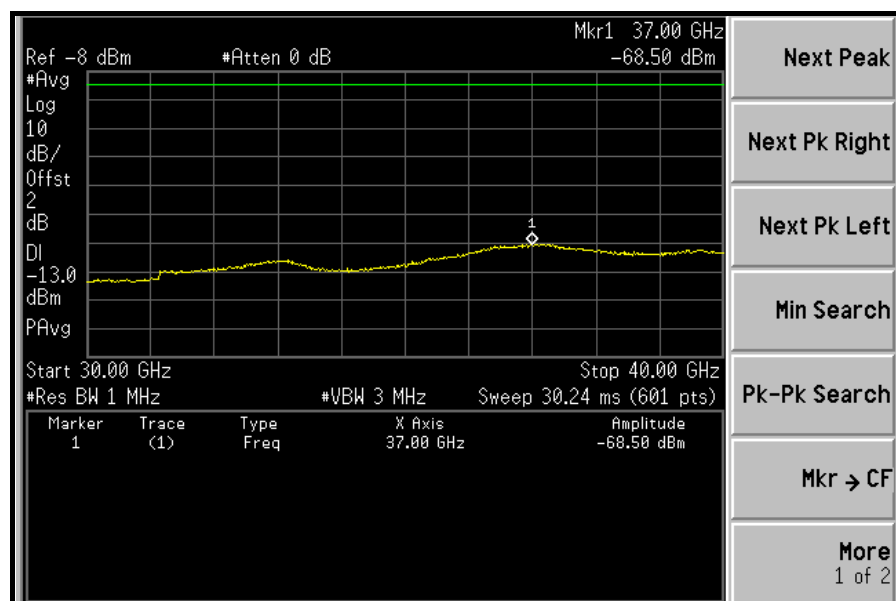
10GHz ~ 20GHz:



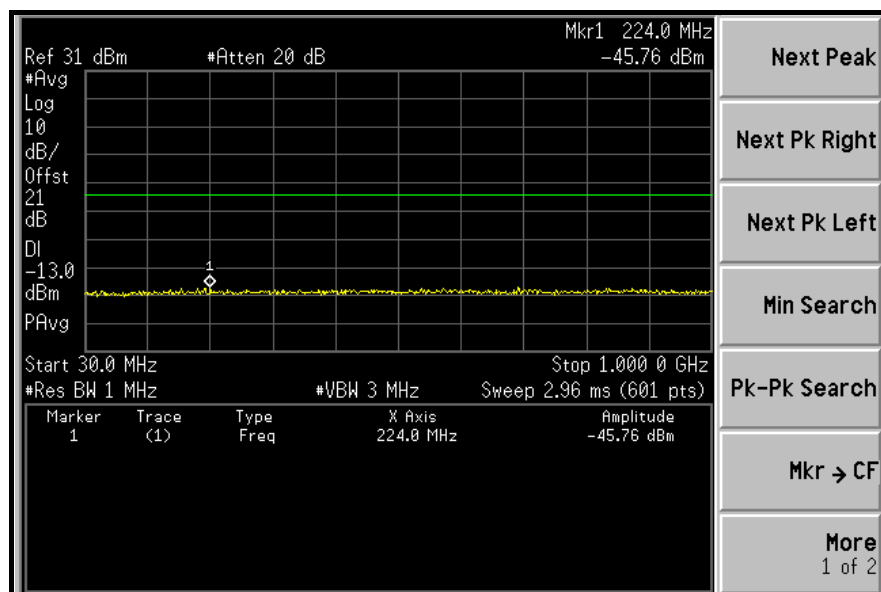
20GHz ~ 30GHz:



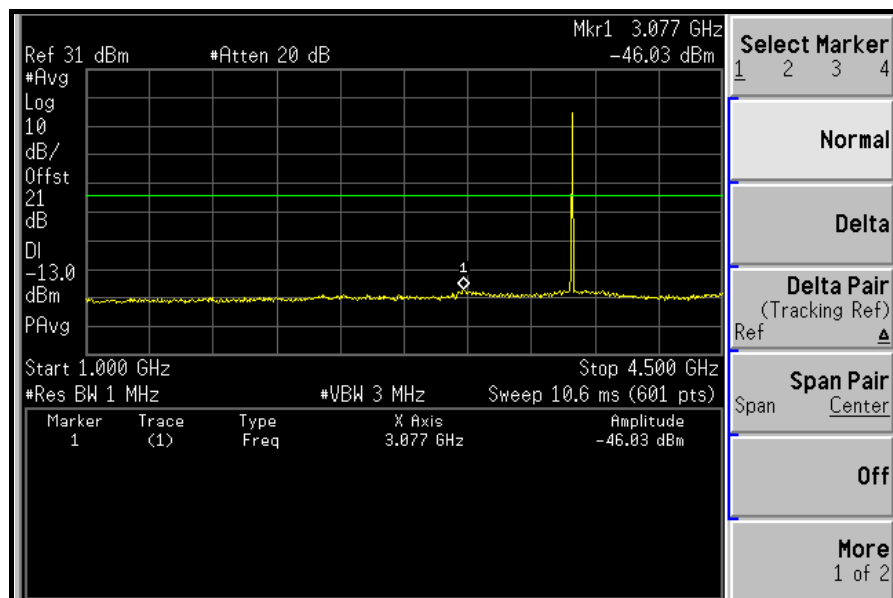
30GHz ~ 40GHz:



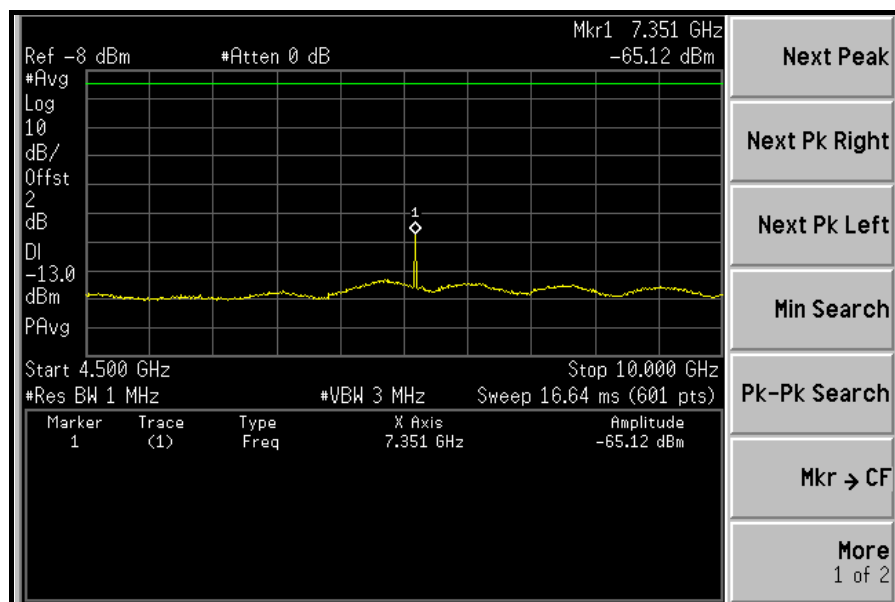
HIGH CHANNEL: 30MHz ~ 1GHz:



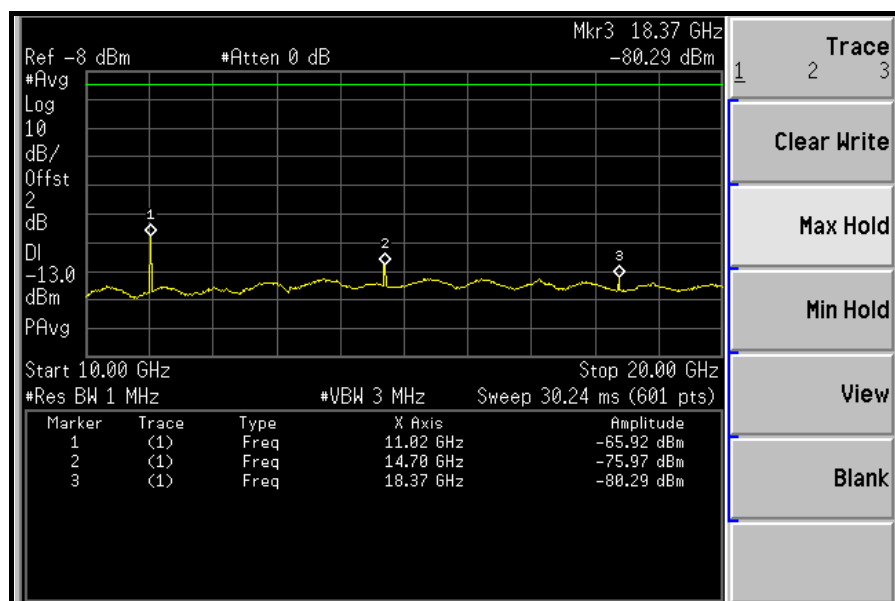
1GHz ~ 4.5GHz:



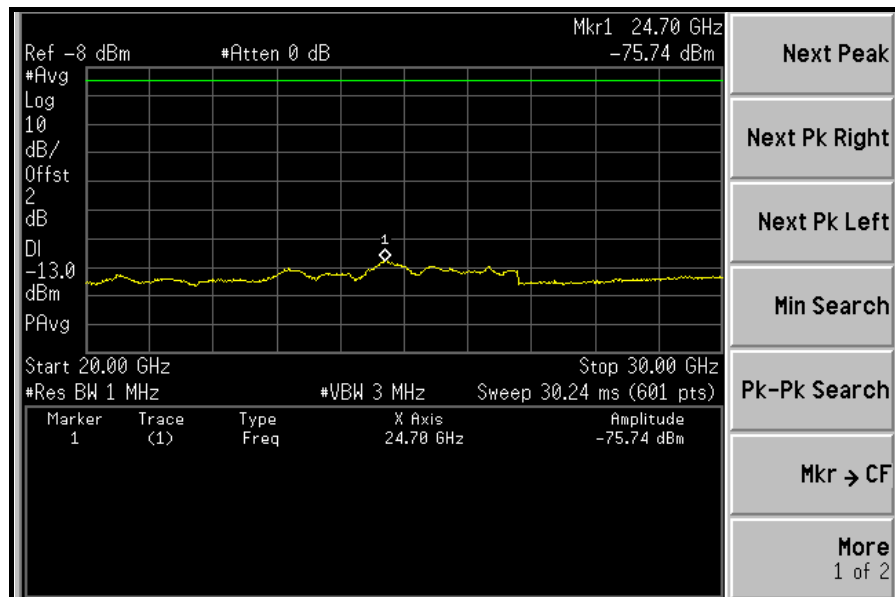
4.5GHz ~ 10GHz:



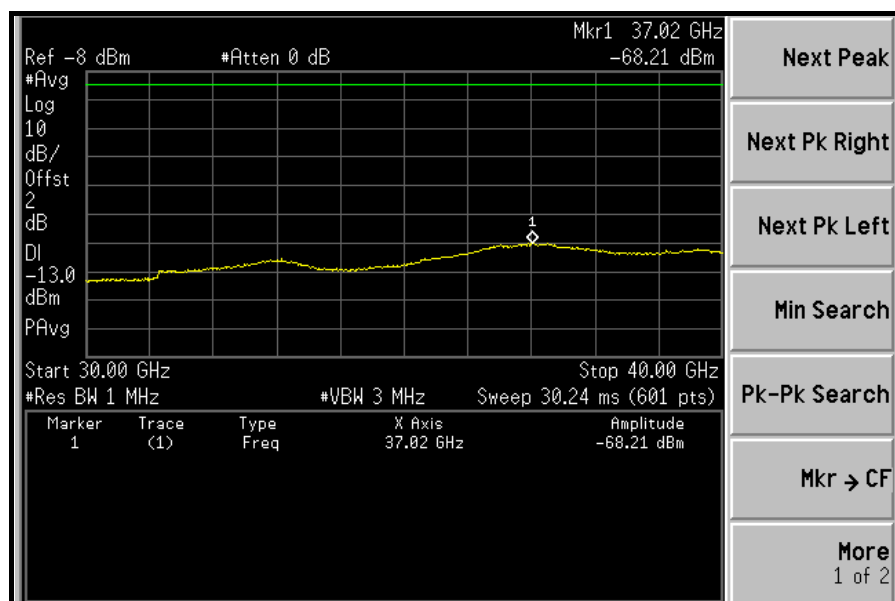
10GHz ~ 20GHz:



20GHz ~ 30GHz:

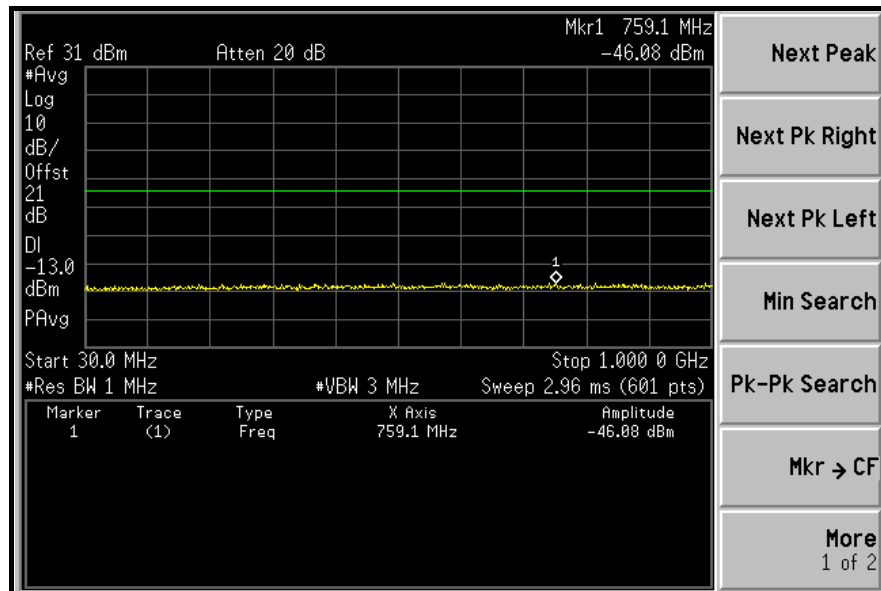


30GHz ~ 40GHz:

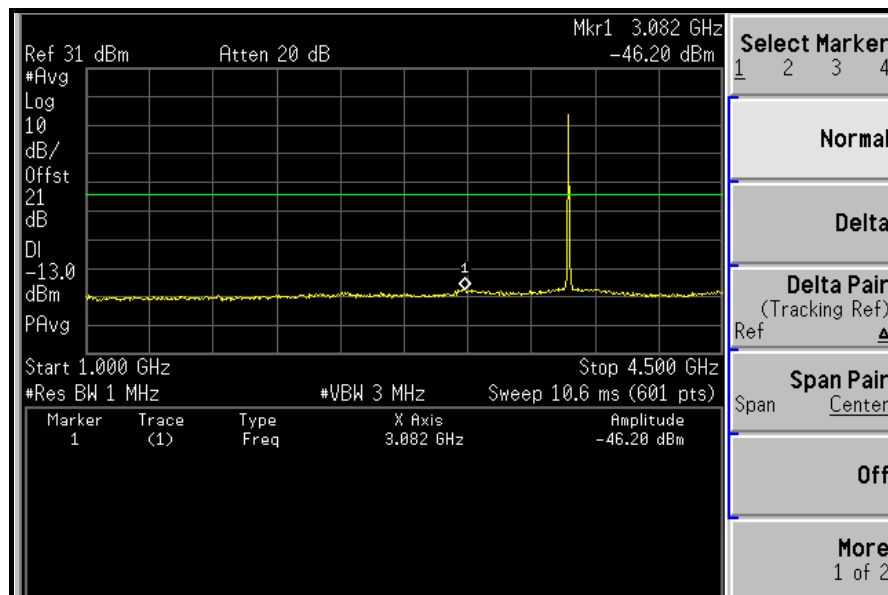


CHANNEL BANDWIDTH: 5MHz

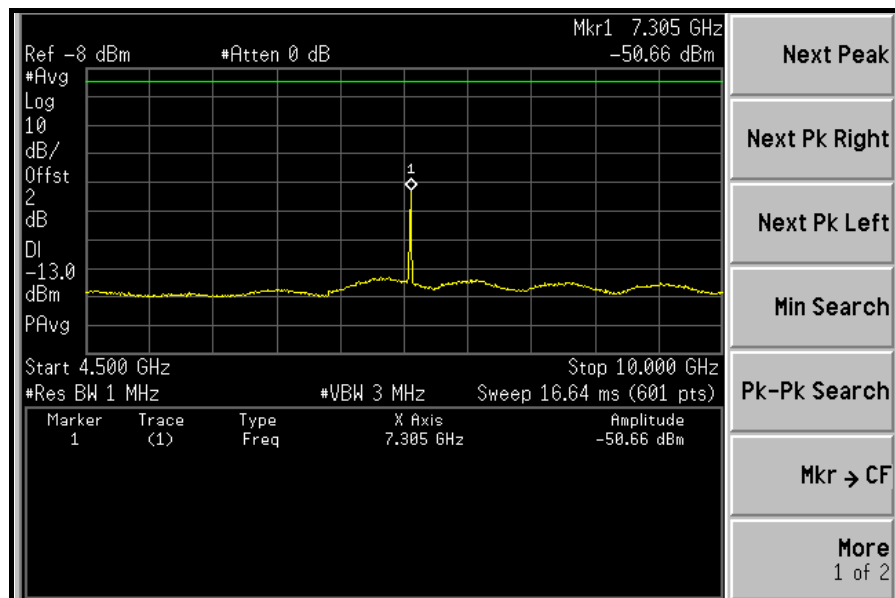
LOW CHANNEL: 30MHz ~ 1GHz:



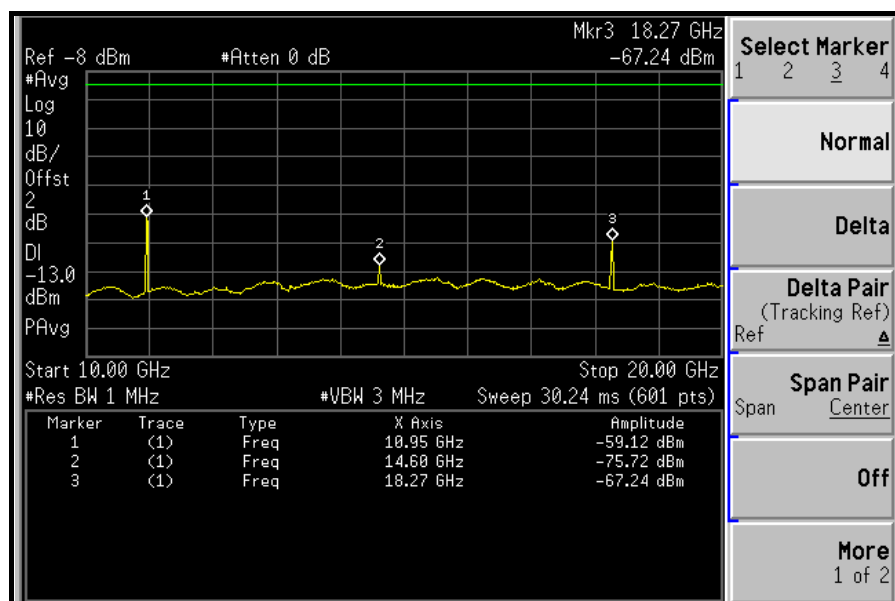
1GHz ~ 4.5GHz:



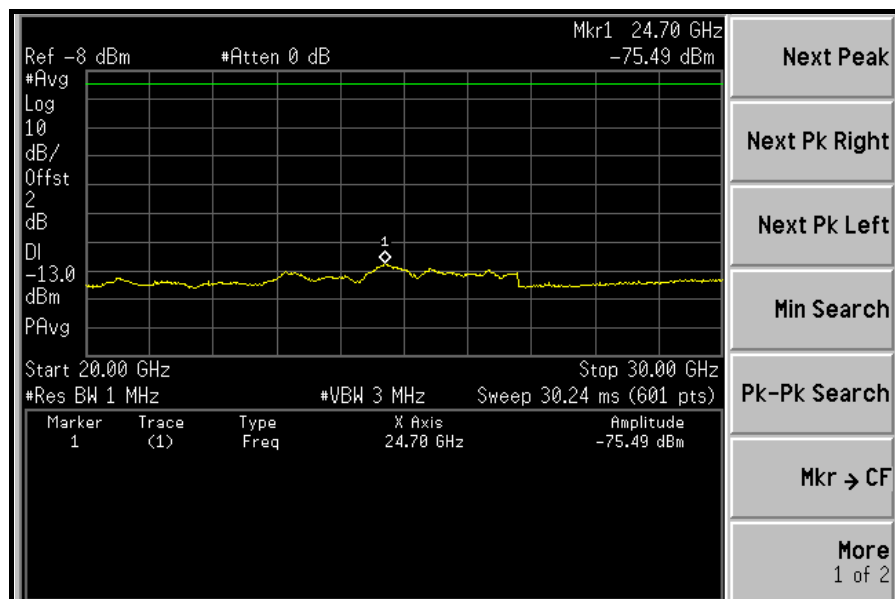
4.5GHz ~ 10GHz:



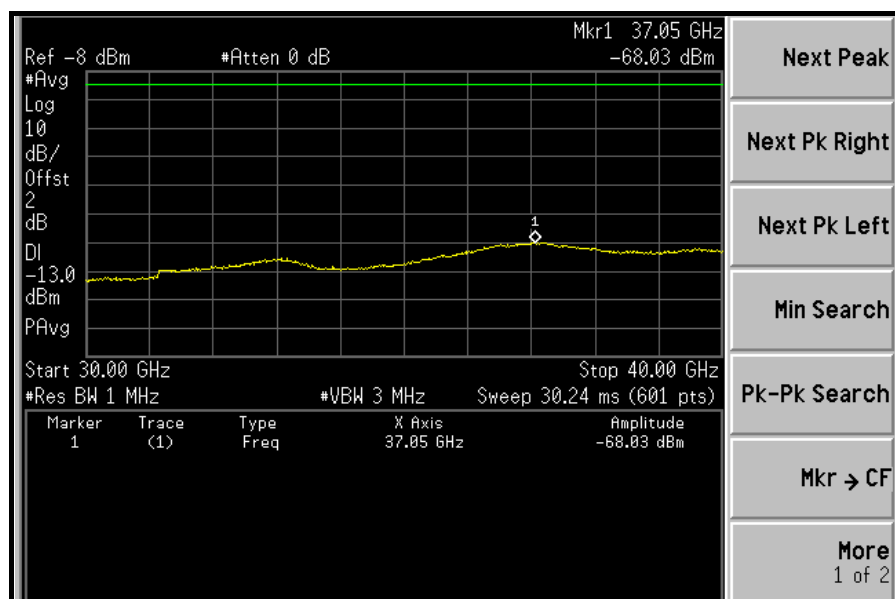
10GHz ~ 20GHz:



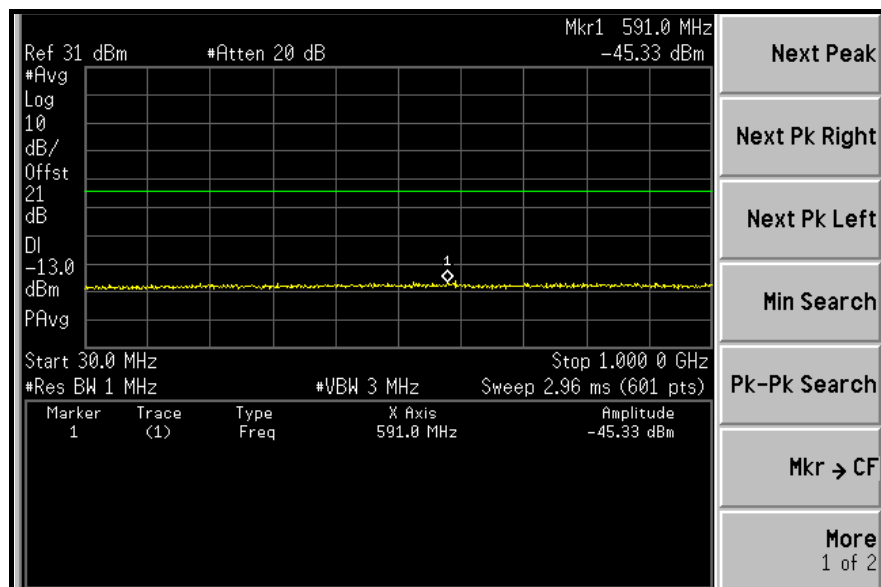
20GHz ~ 30GHz:



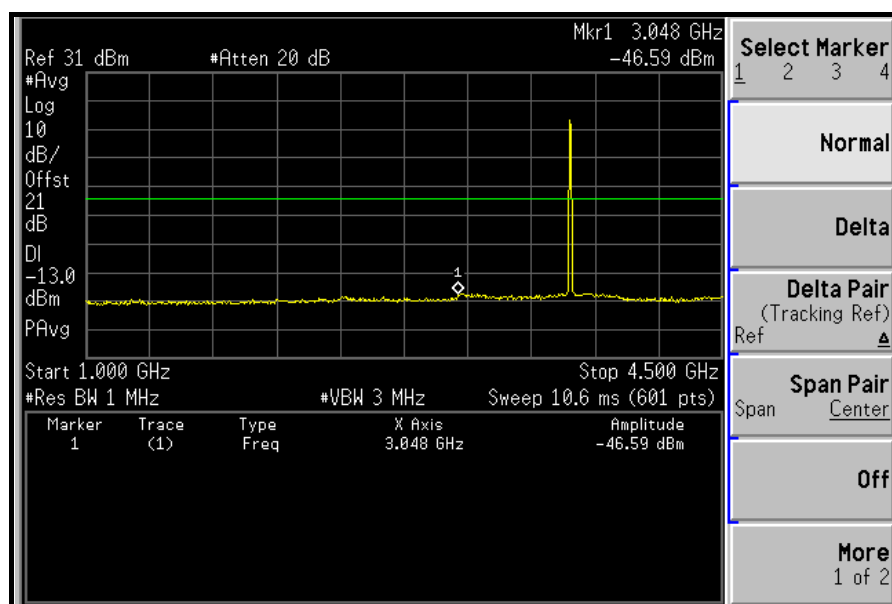
30GHz ~ 40GHz:



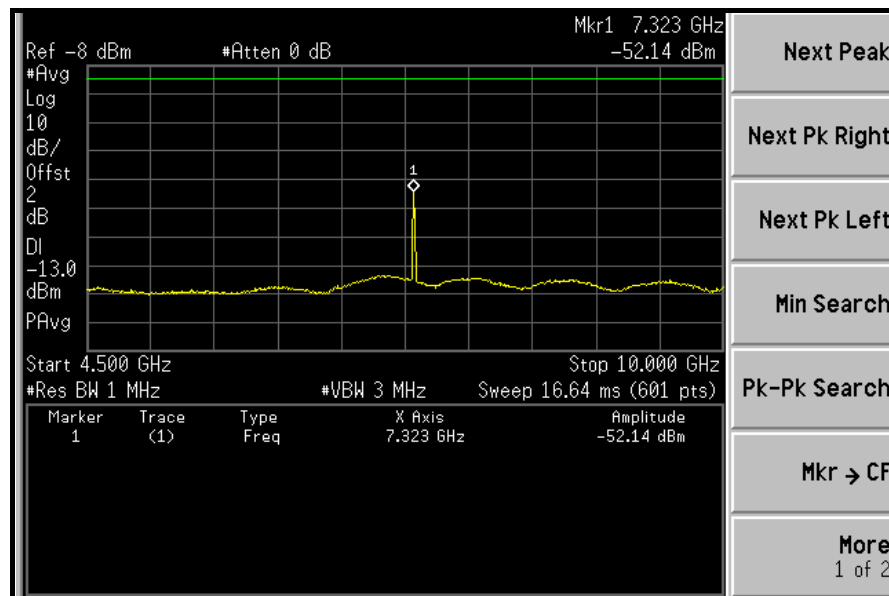
MIDDLE CHANNEL: 30MHz ~ 1GHz:



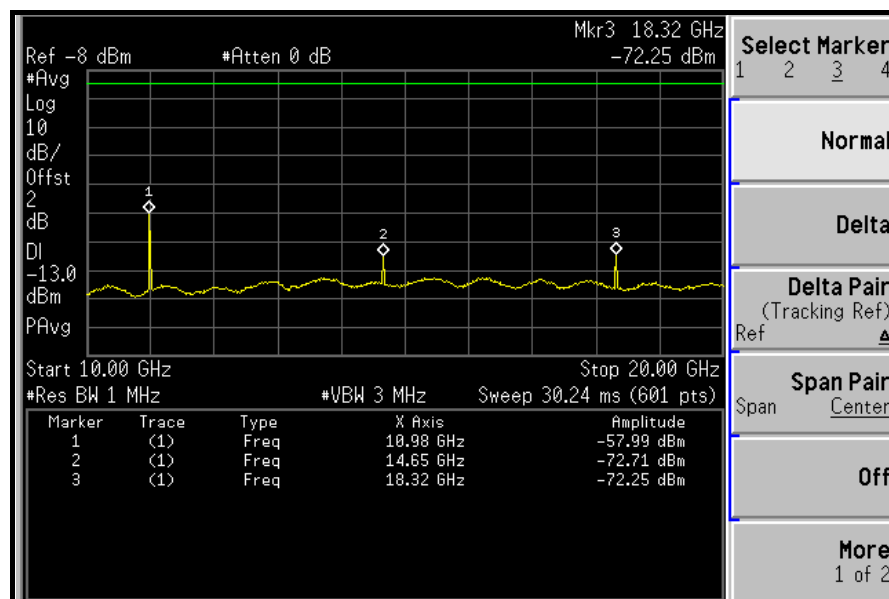
1GHz ~ 4.5GHz:



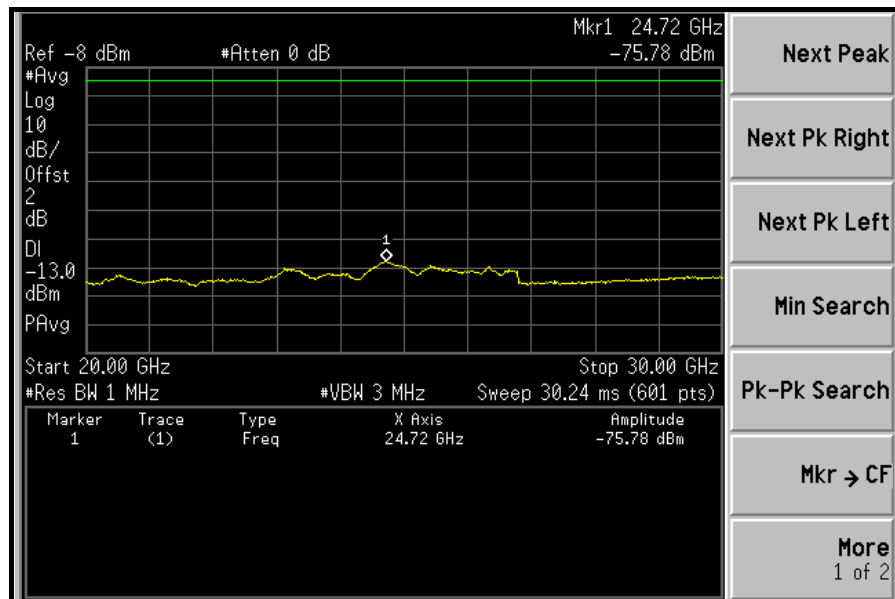
4.5GHz ~ 10GHz:



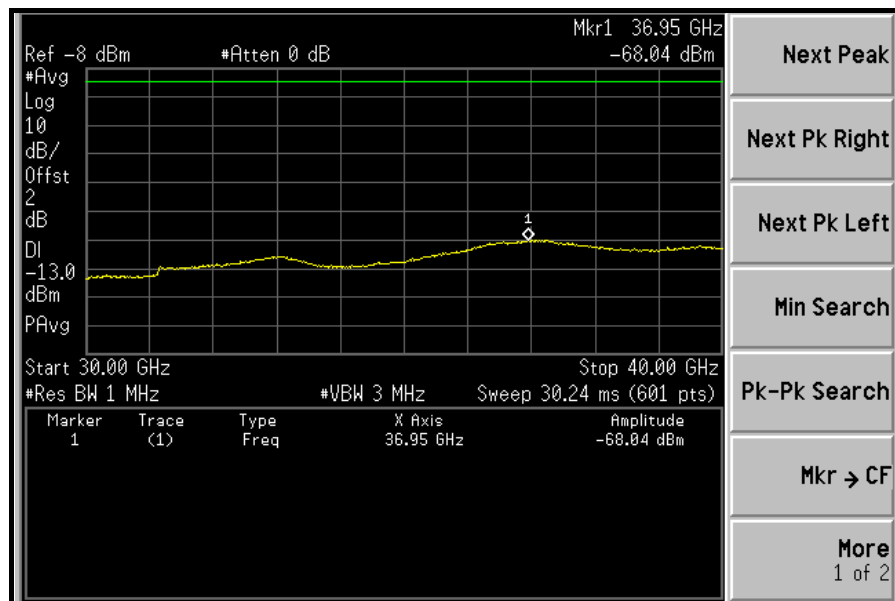
10GHz ~ 20GHz:



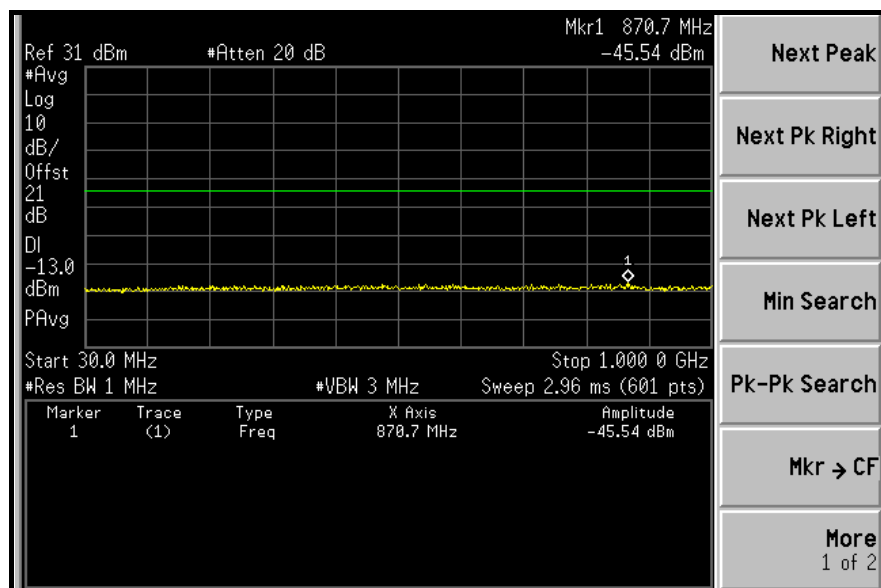
20GHz ~ 30GHz:



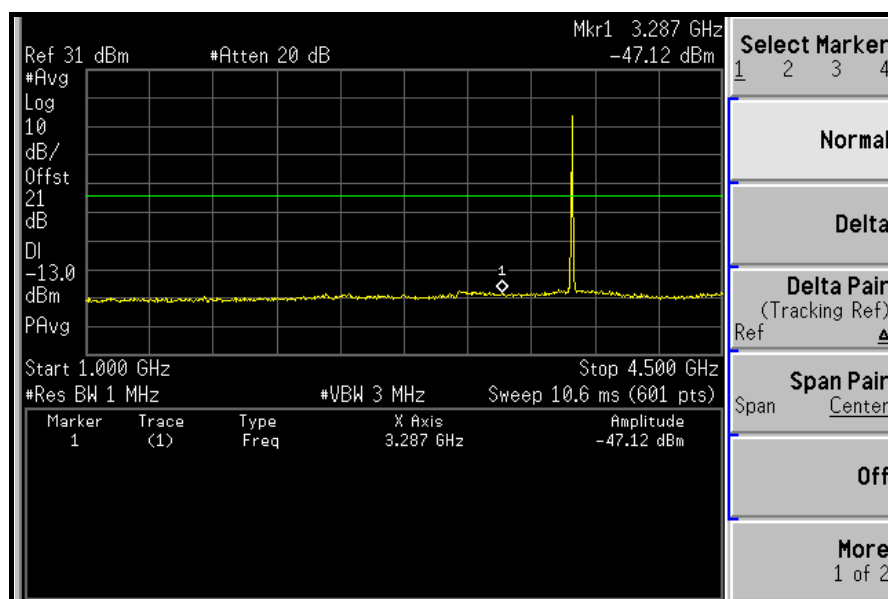
30GHz ~ 40GHz:



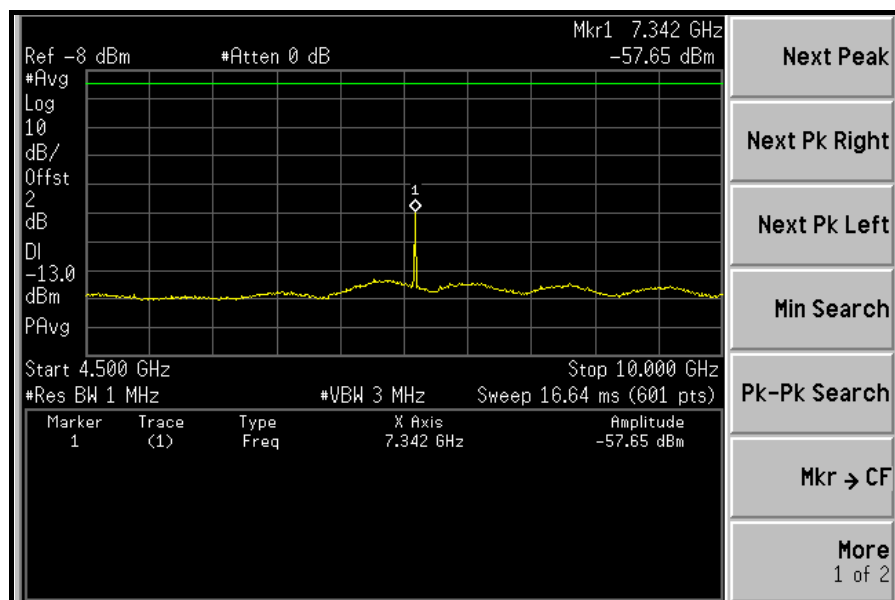
HIGH CHANNEL: 30MHz ~ 1GHz:



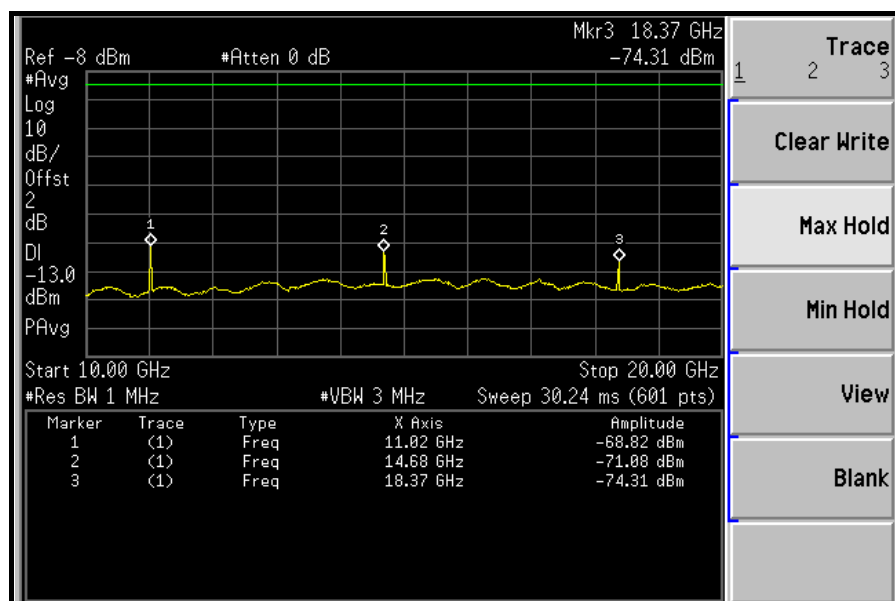
1GHz ~ 4.5GHz:



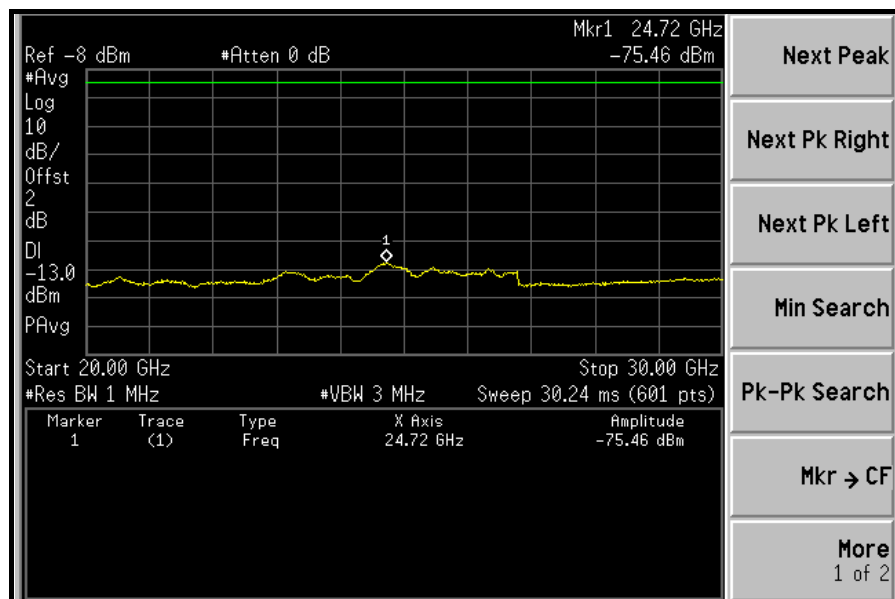
4.5GHz ~ 10GHz:



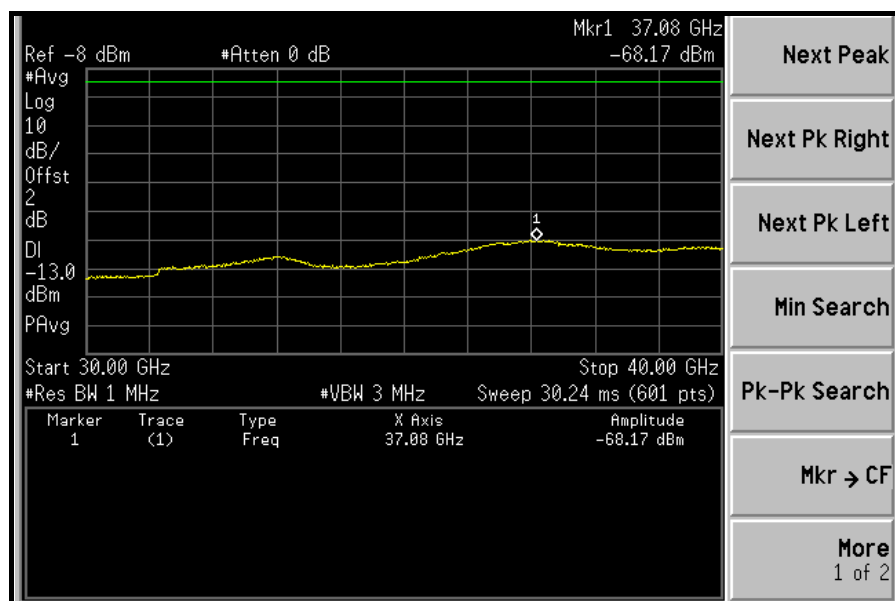
10GHz ~ 20GHz:



20GHz ~ 30GHz:

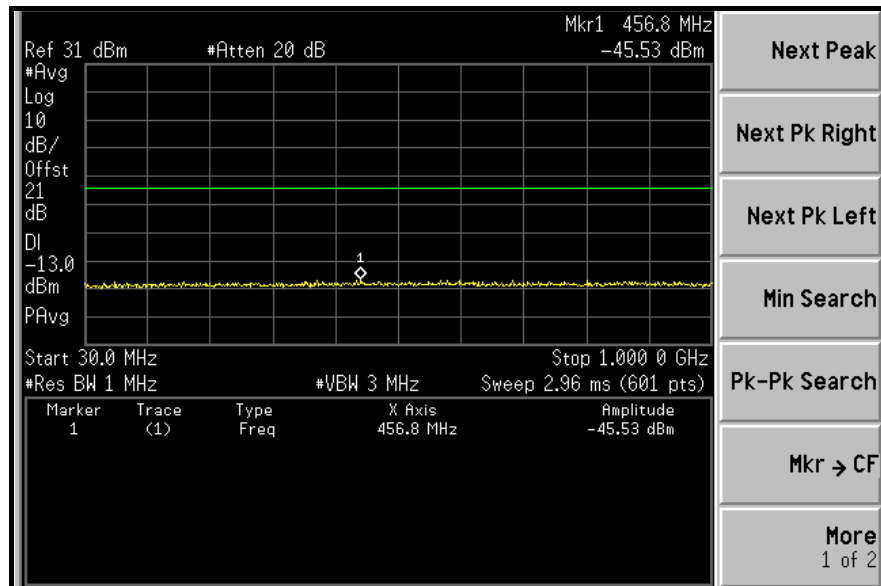


30GHz ~ 40GHz:

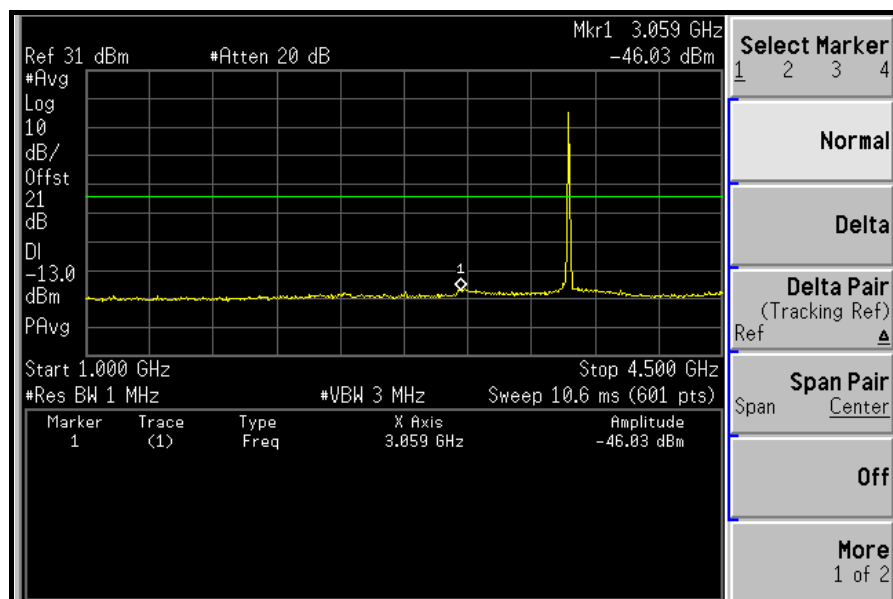


CHANNEL BANDWIDTH: 7MHz

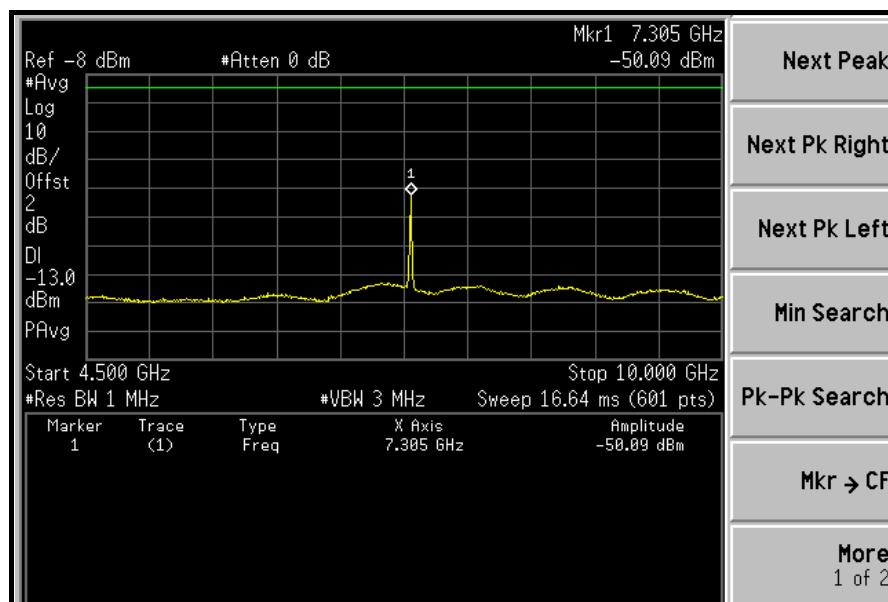
LOW CHANNEL: 30MHz ~ 1GHz:



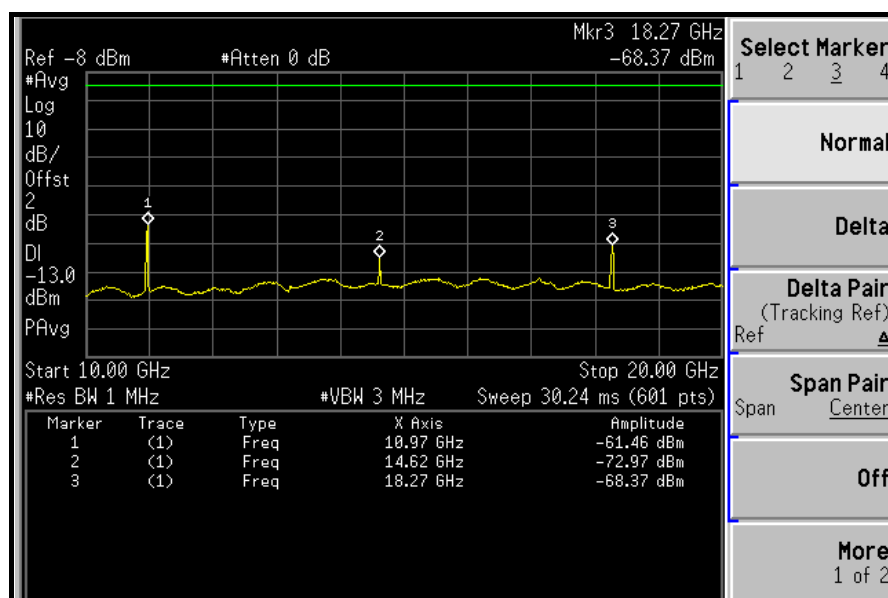
1GHz ~ 4.5GHz:



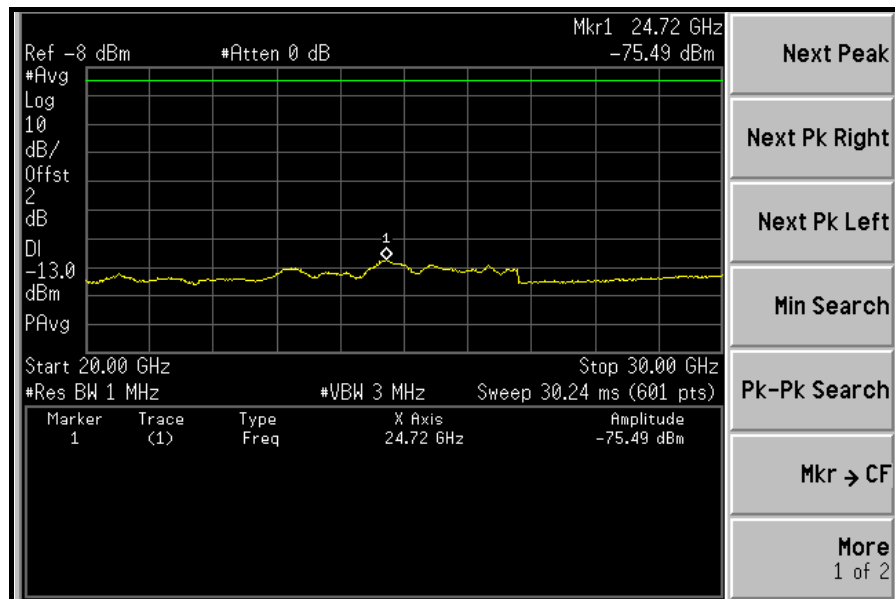
4.5GHz ~ 10GHz:



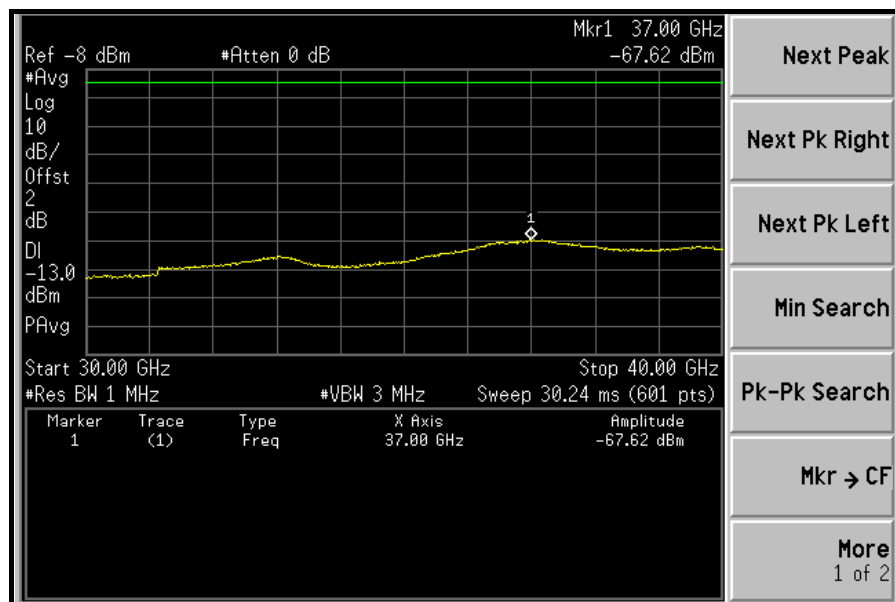
10GHz ~ 20GHz:



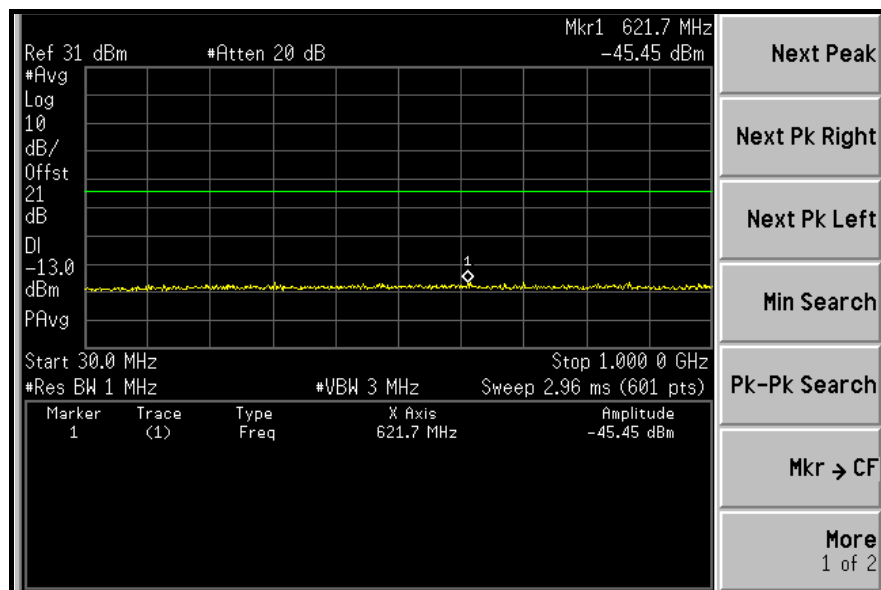
20GHz ~ 30GHz:



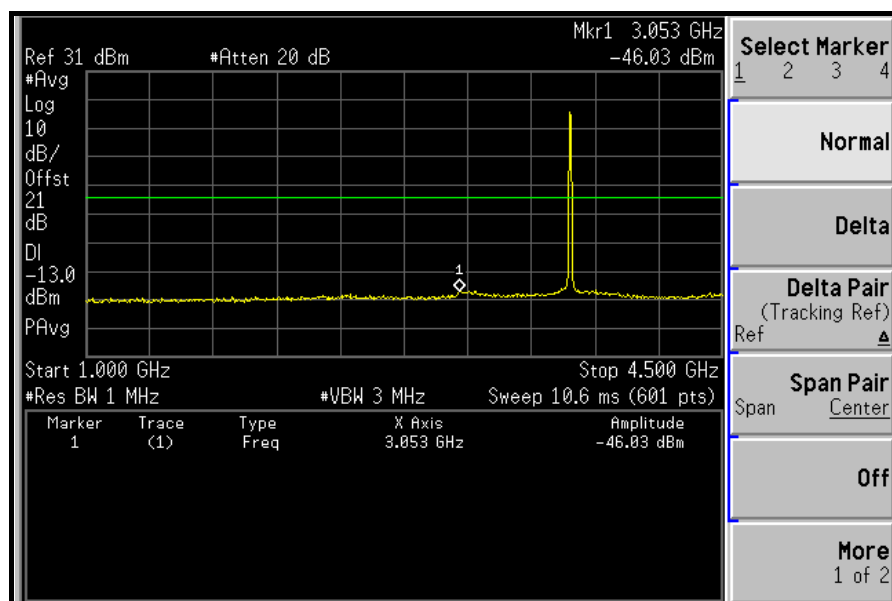
30GHz ~ 40GHz:



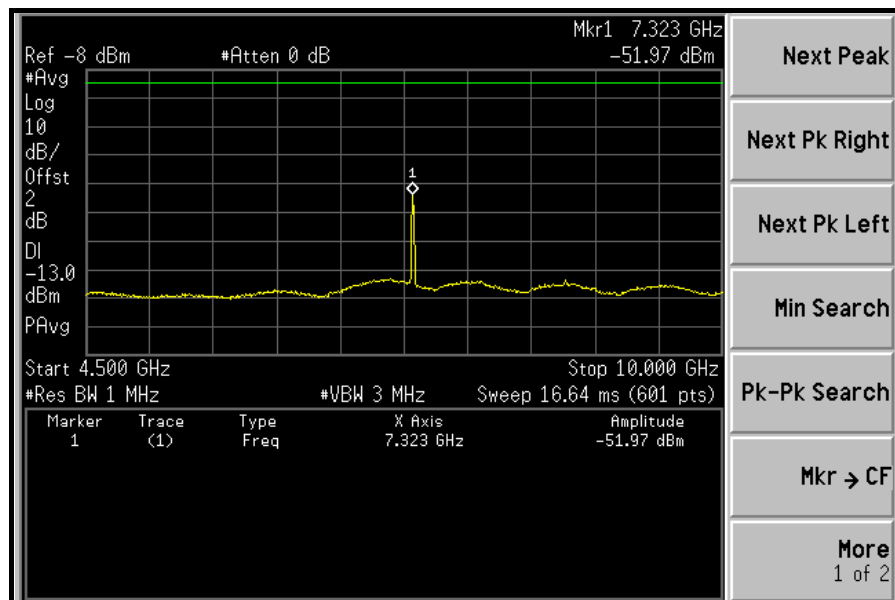
MIDDLE CHANNEL: 30MHz ~ 1GHz:



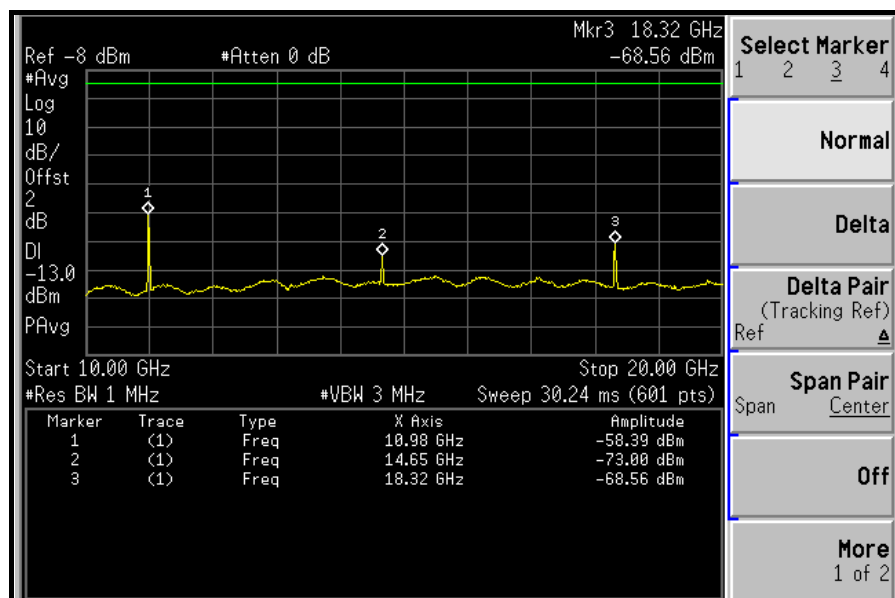
1GHz ~ 4.5GHz:



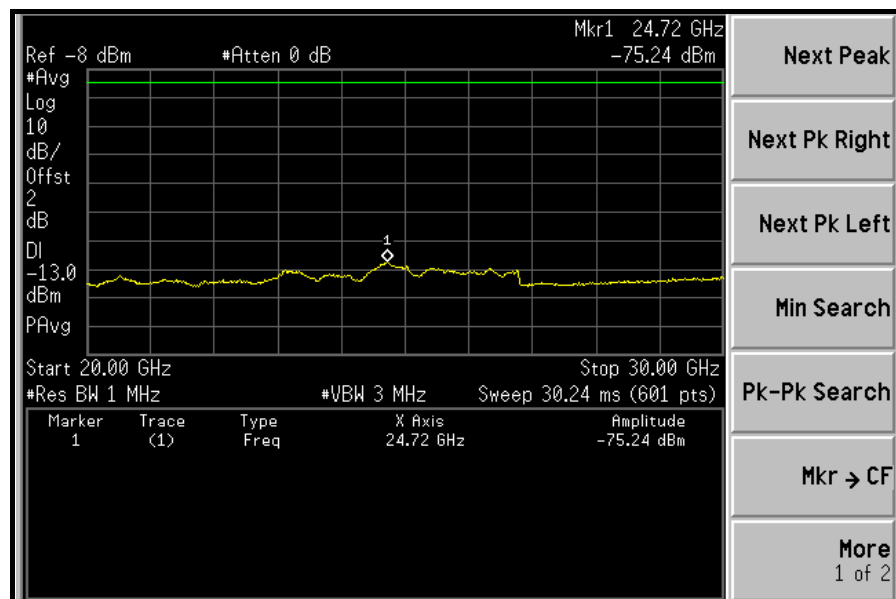
4.5GHz ~ 10GHz:



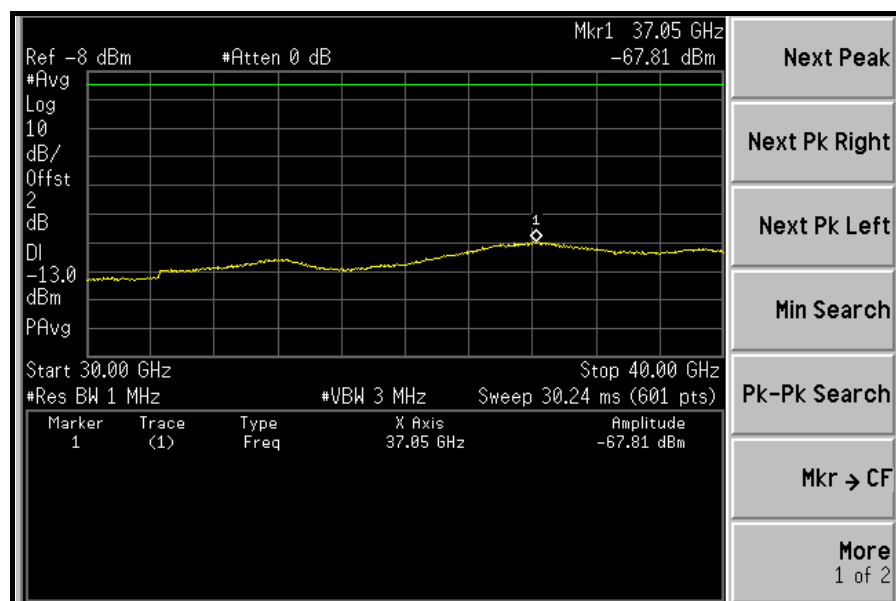
10GHz ~ 20GHz:



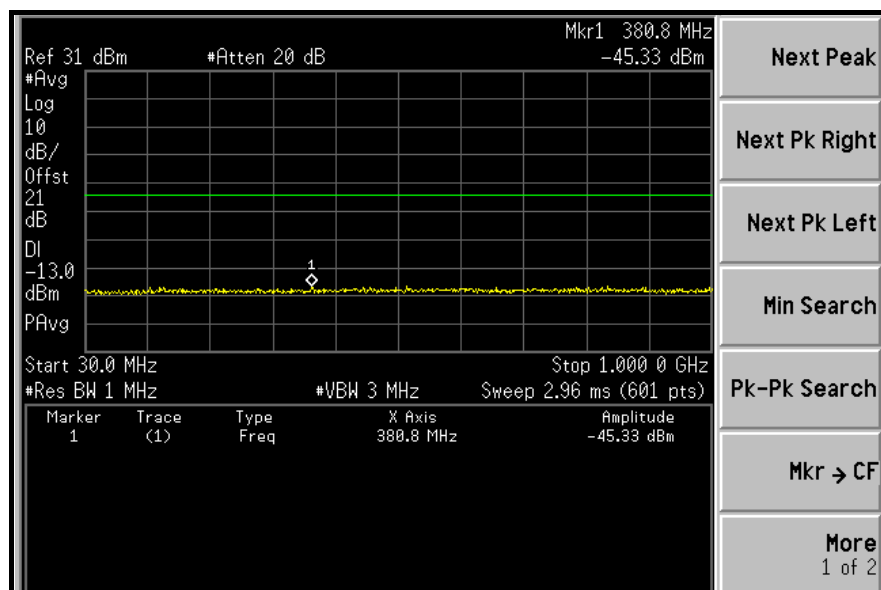
20GHz ~ 30GHz:



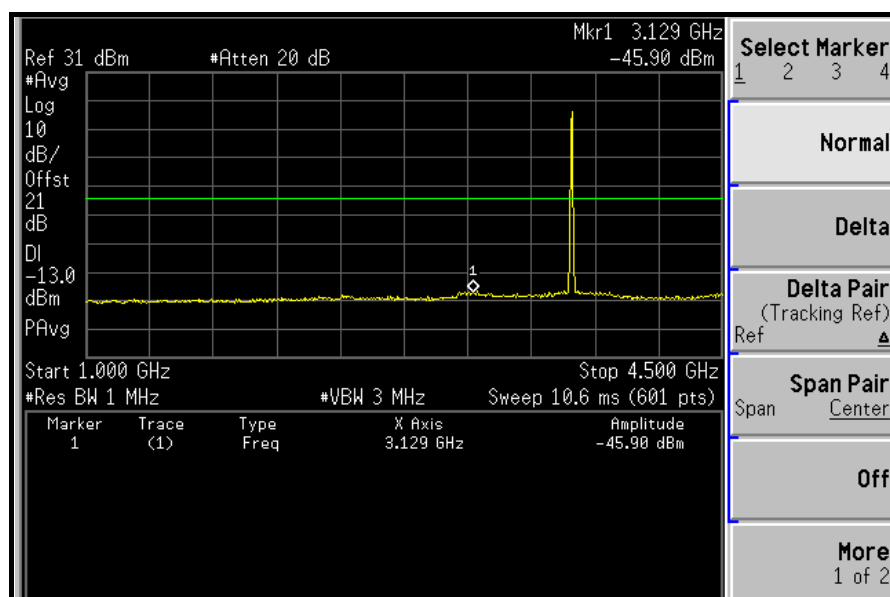
30GHz ~ 40GHz:



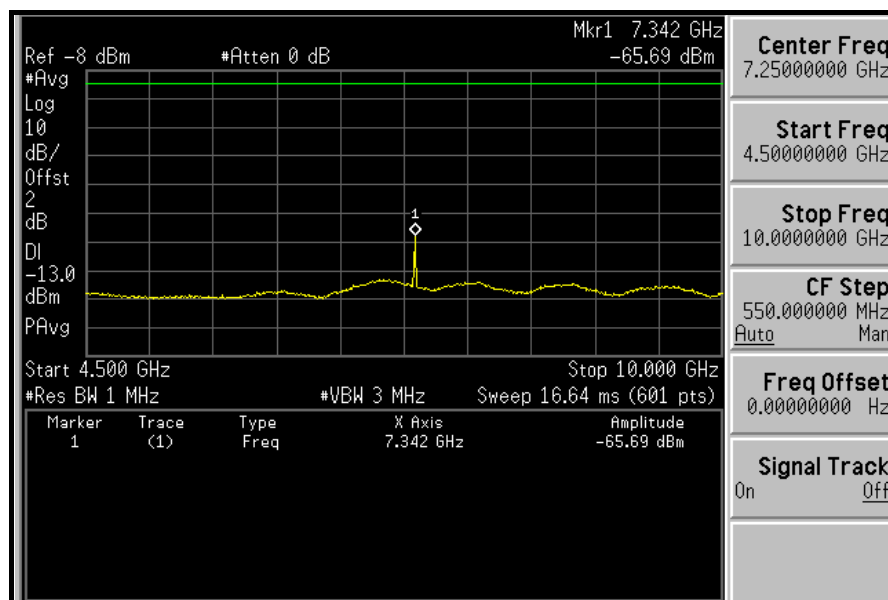
HIGH CHANNEL: 30MHz ~ 1GHz:



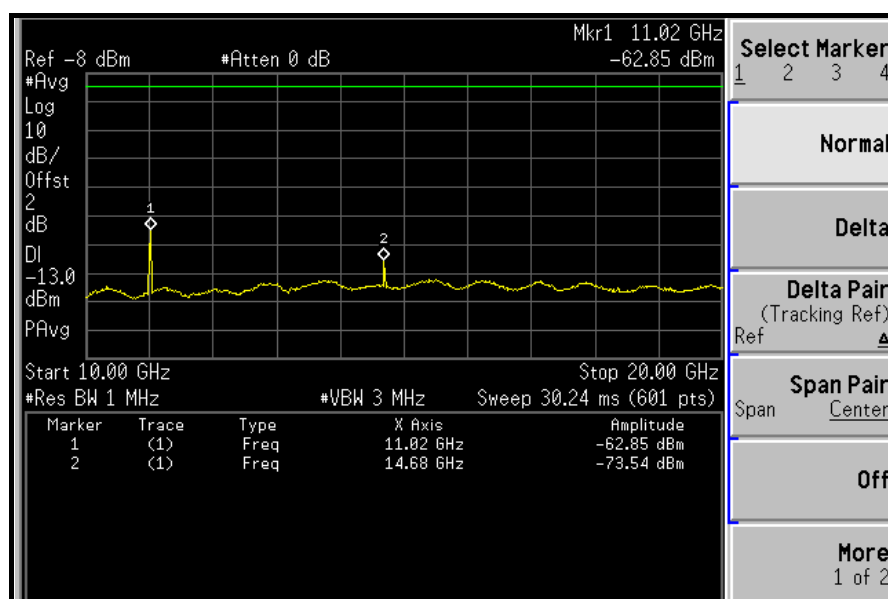
1GHz ~ 4.5GHz:



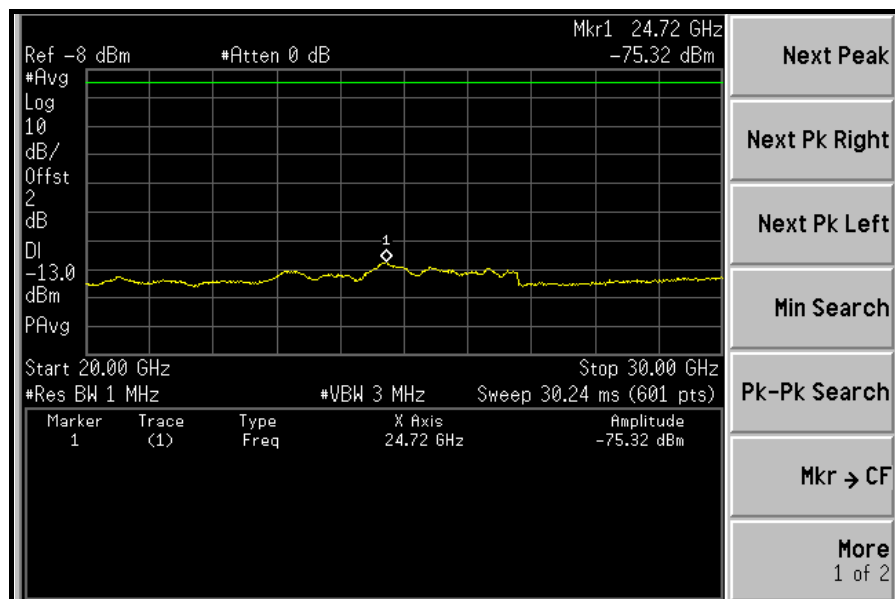
4.5GHz ~ 10GHz:



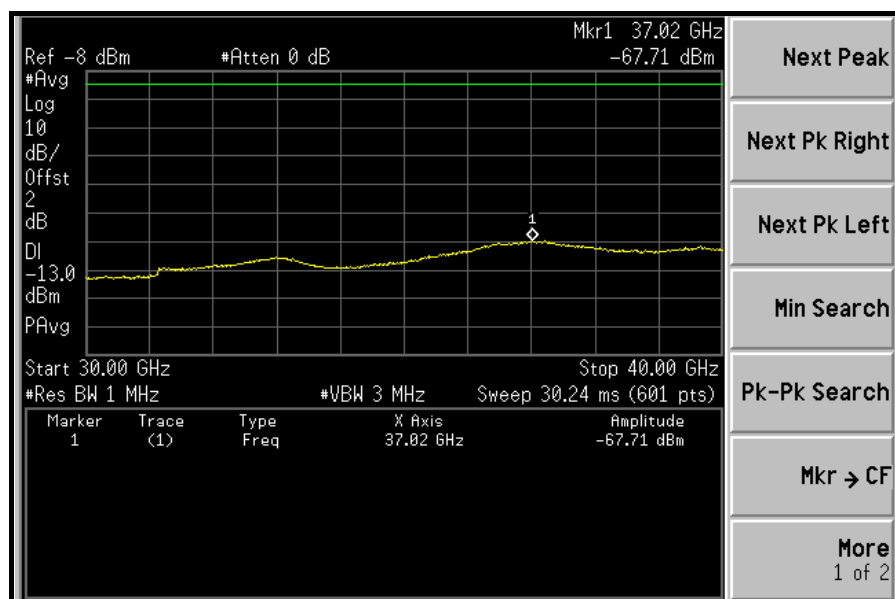
10GHz ~ 20GHz:



20GHz ~ 30GHz:

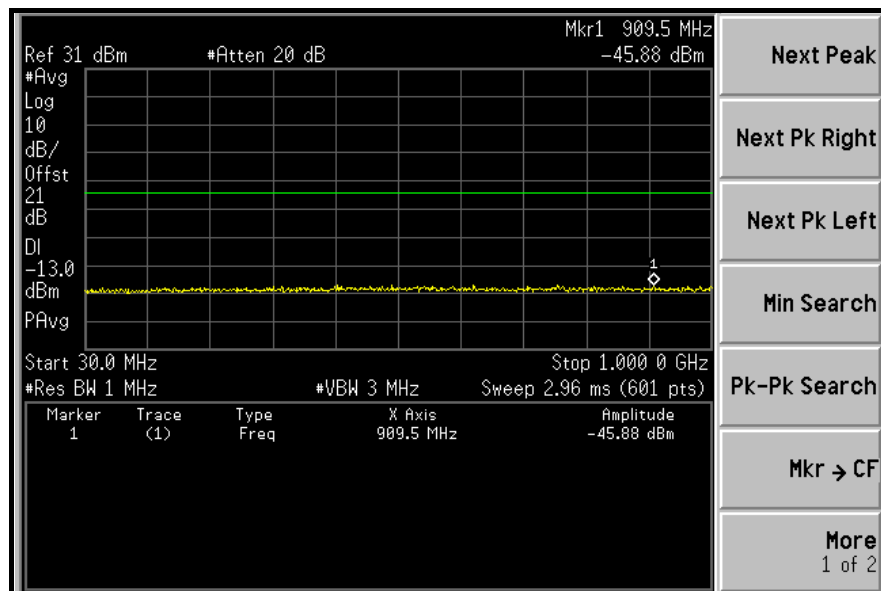


30GHz ~ 40GHz:

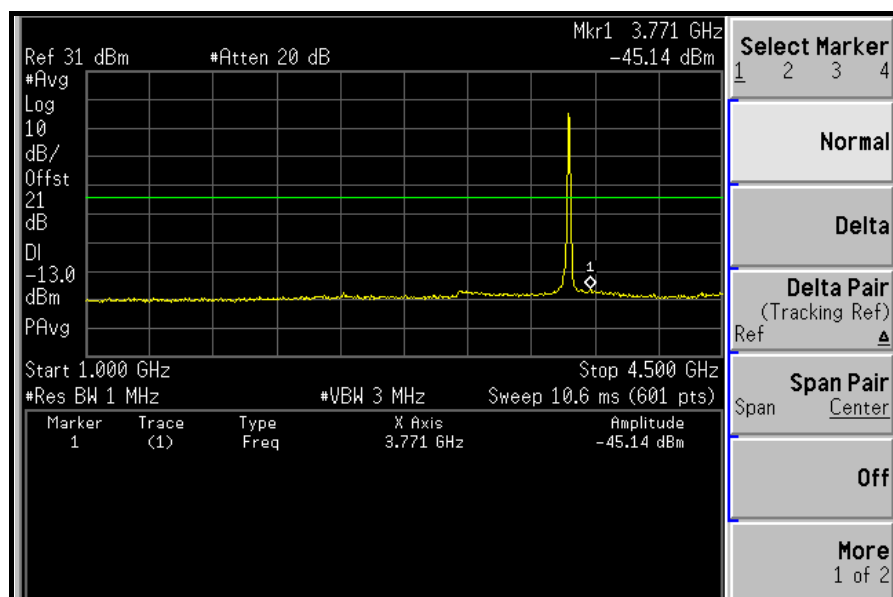


CHANNEL BANDWIDTH: 10MHz

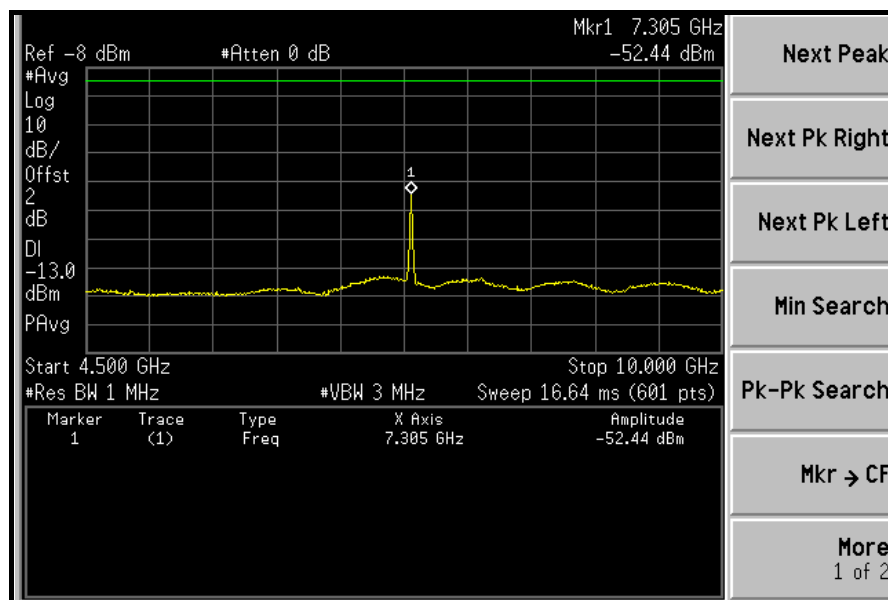
LOW CHANNEL: 30MHz ~ 1GHz:



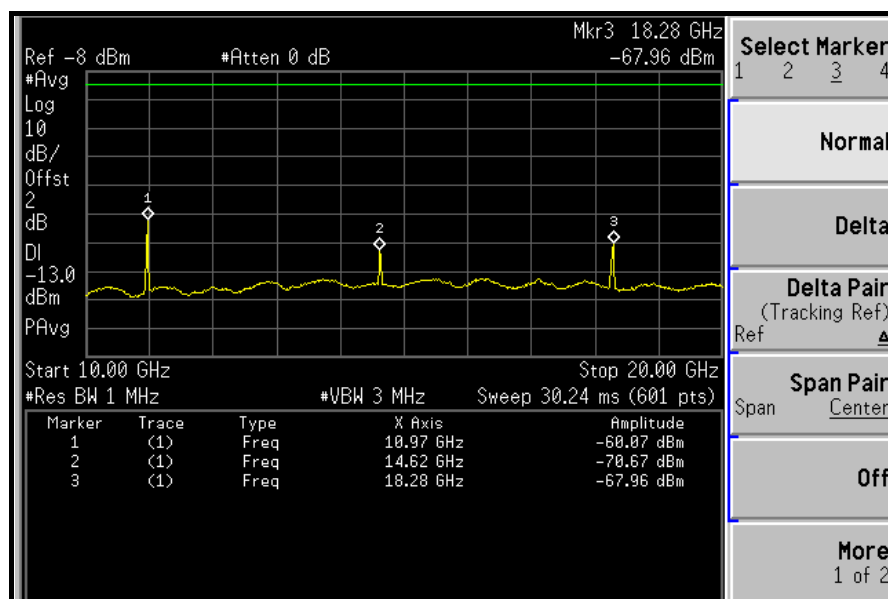
1GHz ~ 4.5GHz:



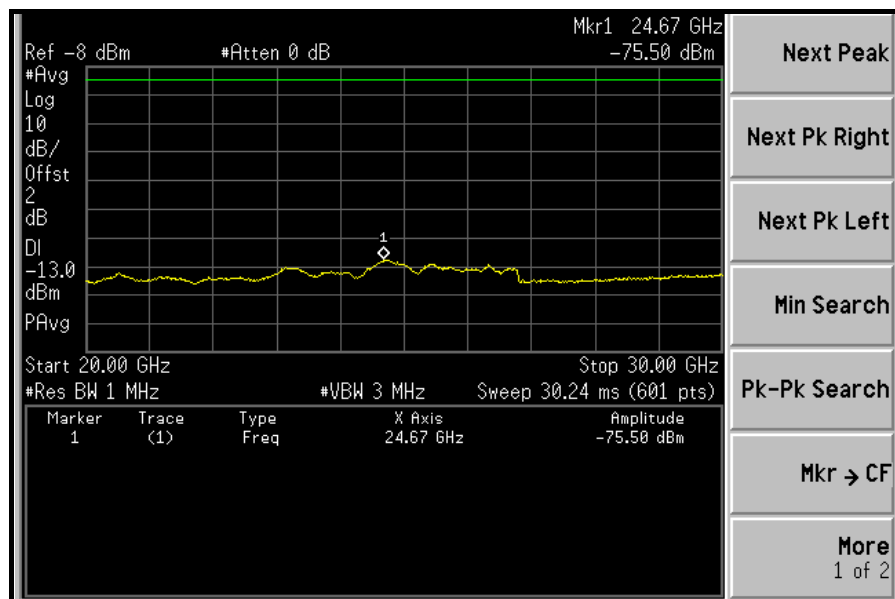
4.5GHz ~ 10GHz:



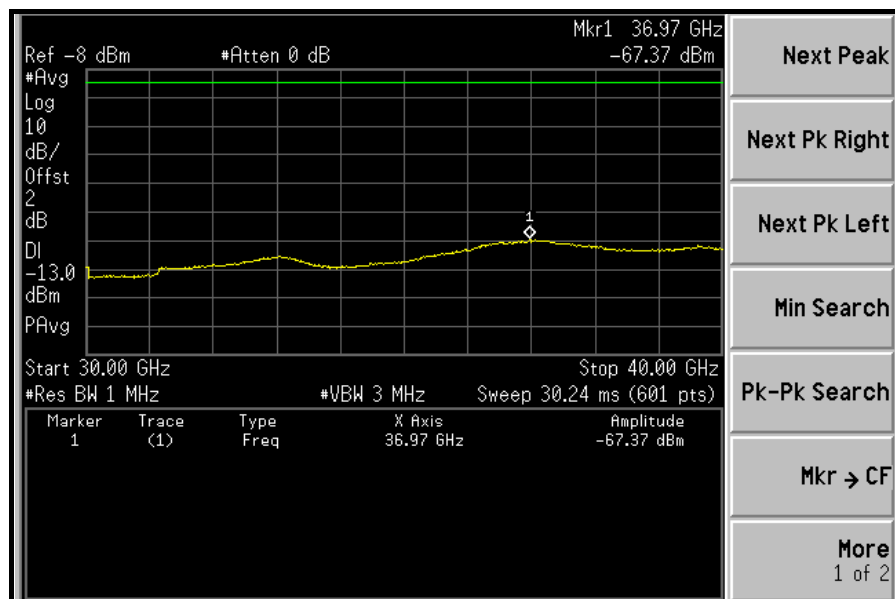
10GHz ~ 20GHz:



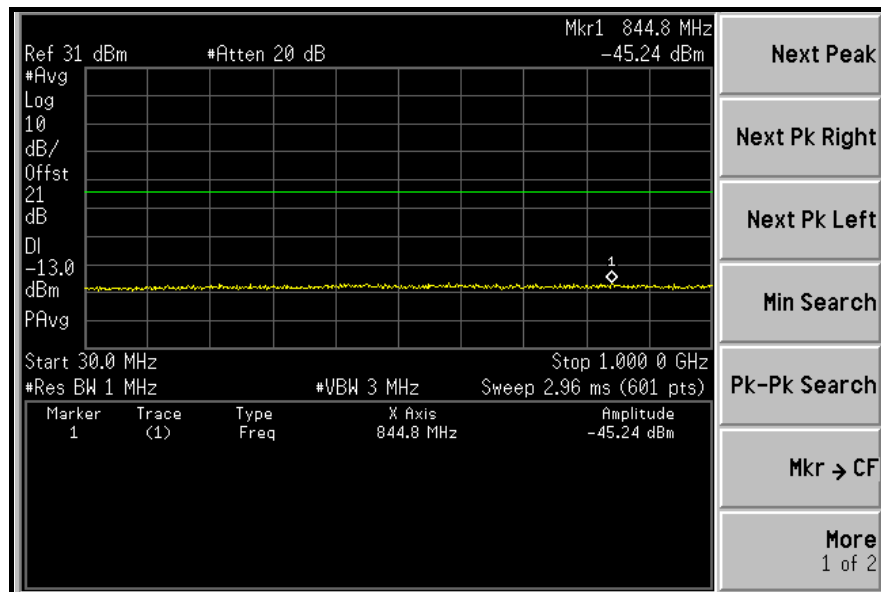
20GHz ~ 30GHz:



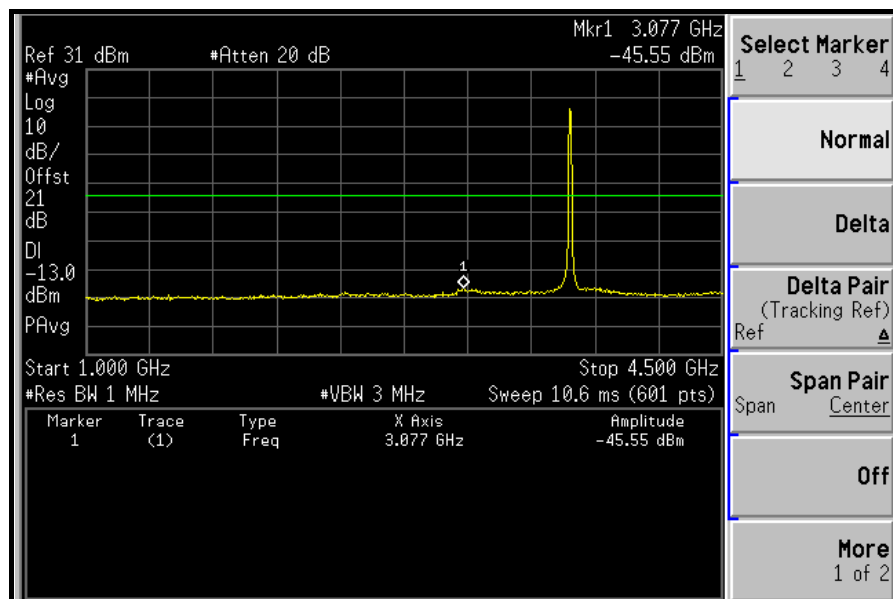
30GHz ~ 40GHz:



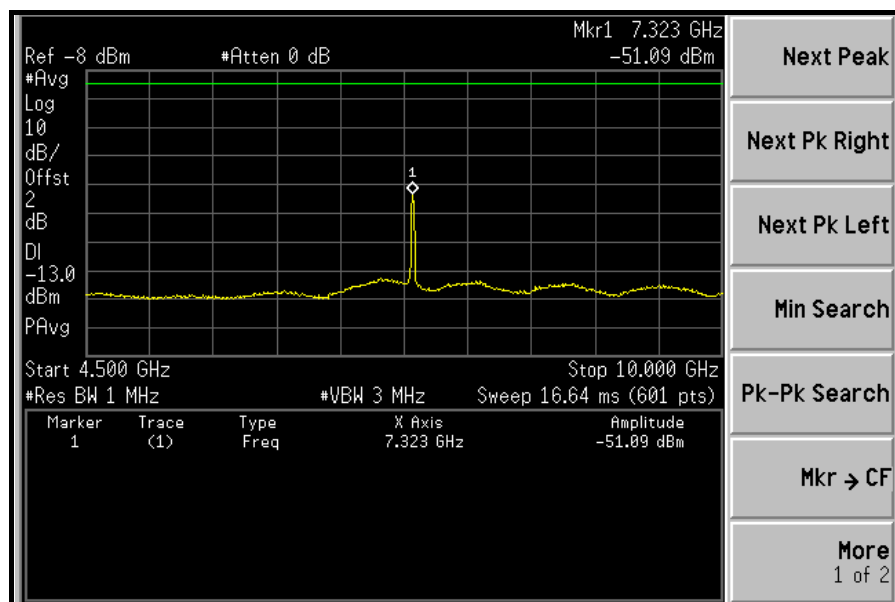
MIDDLE CHANNEL: 30MHz ~ 1GHz:



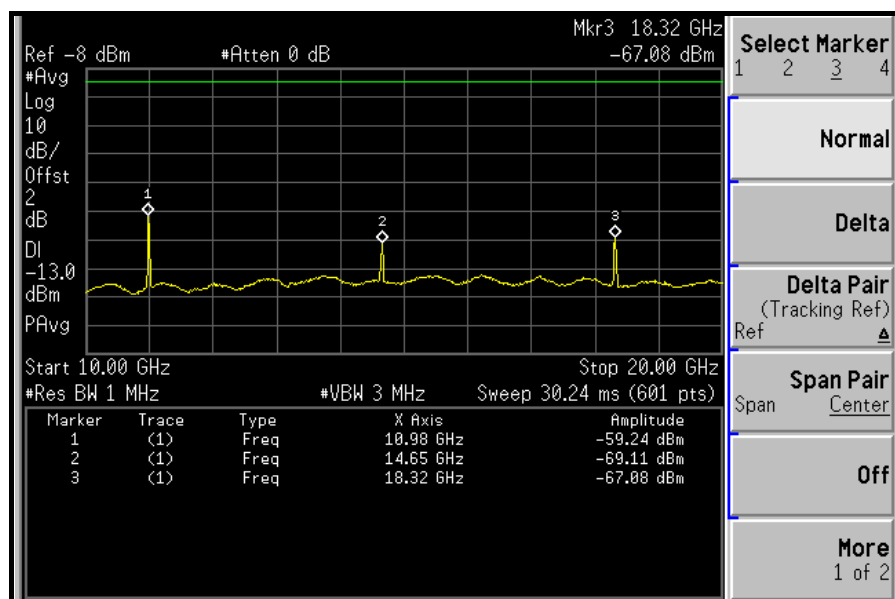
1GHz ~ 4.5GHz:



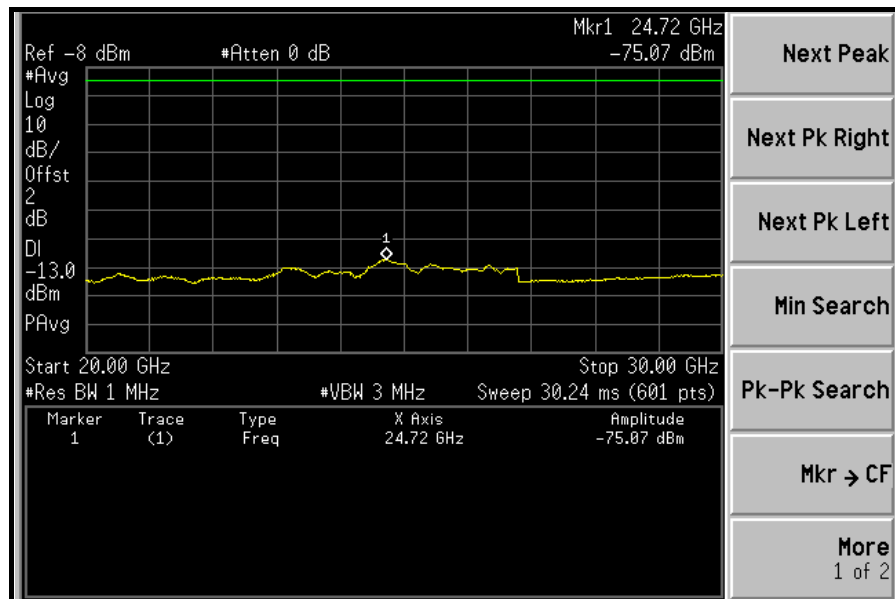
4.5GHz ~ 10GHz:



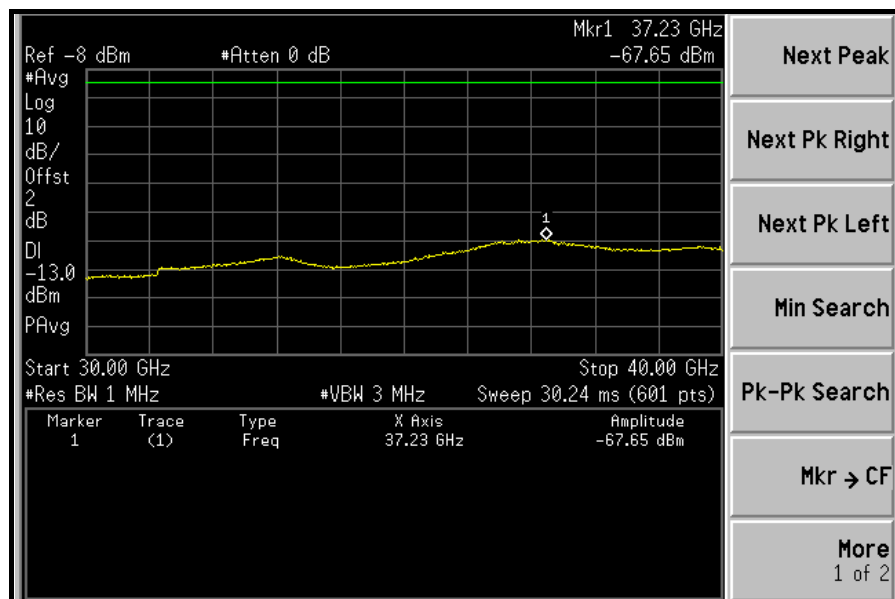
10GHz ~ 20GHz:



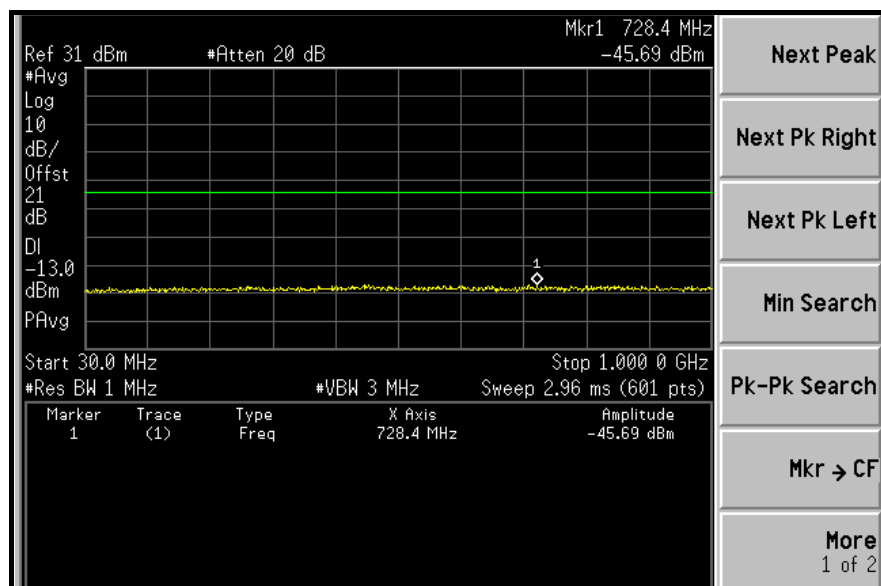
20GHz ~ 30GHz:



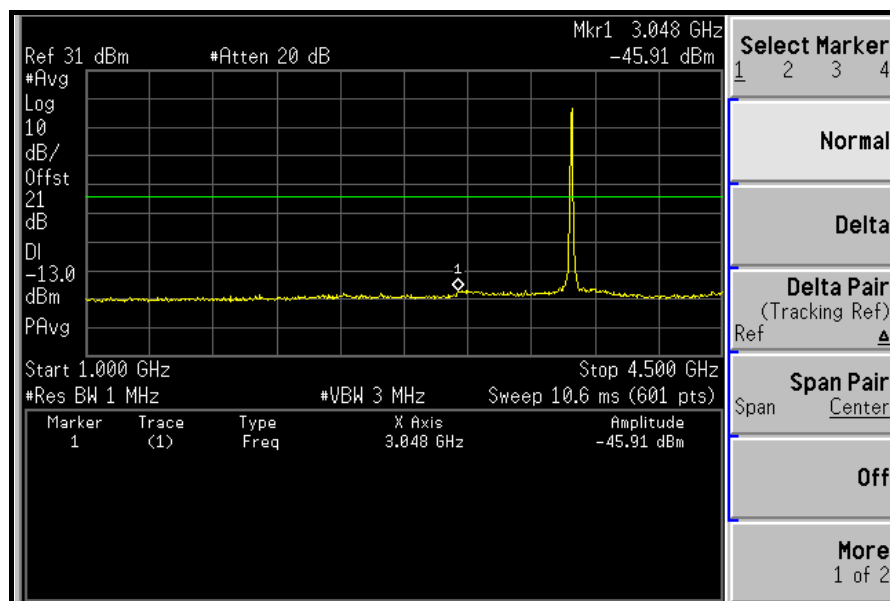
30GHz ~ 40GHz:



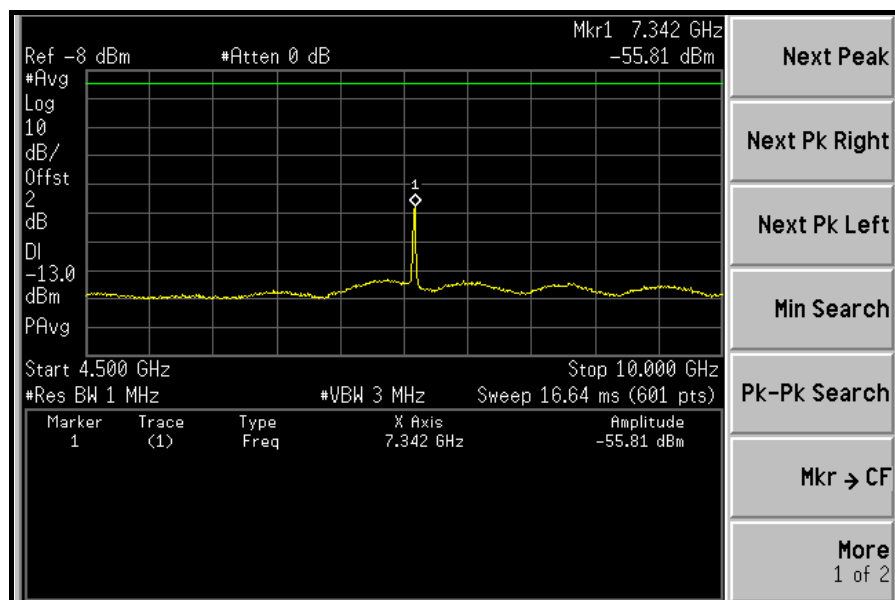
HIGH CHANNEL: 30MHz ~ 1GHz:



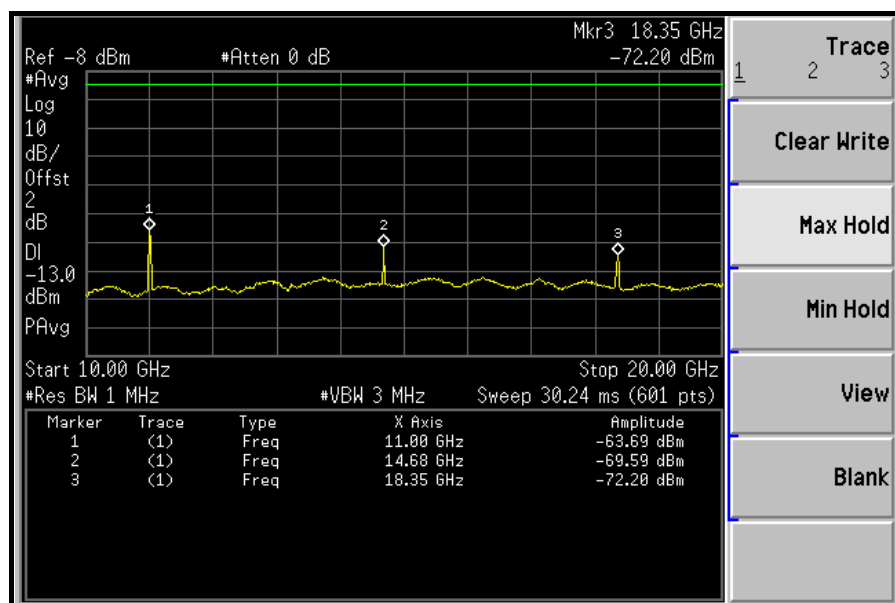
1GHz ~ 4.5GHz:



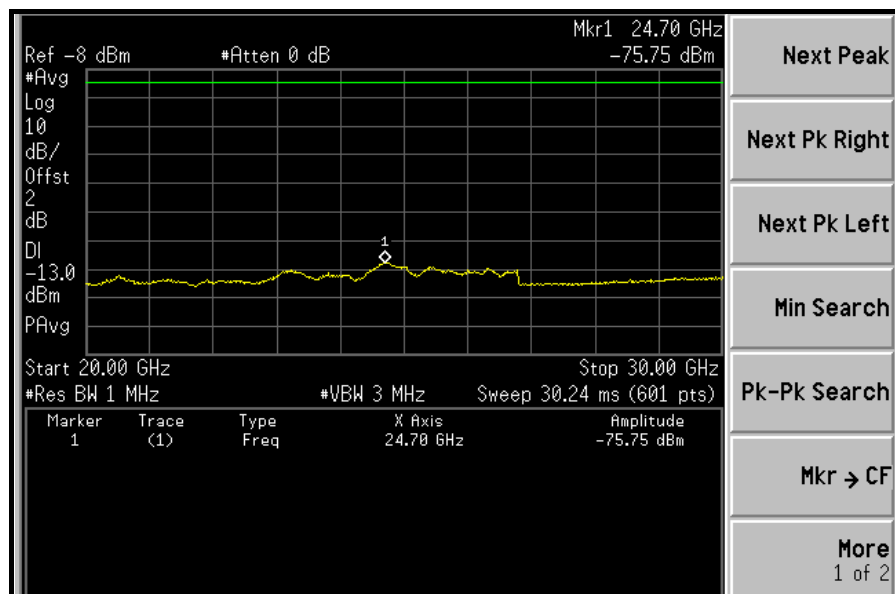
4.5GHz ~ 10GHz:



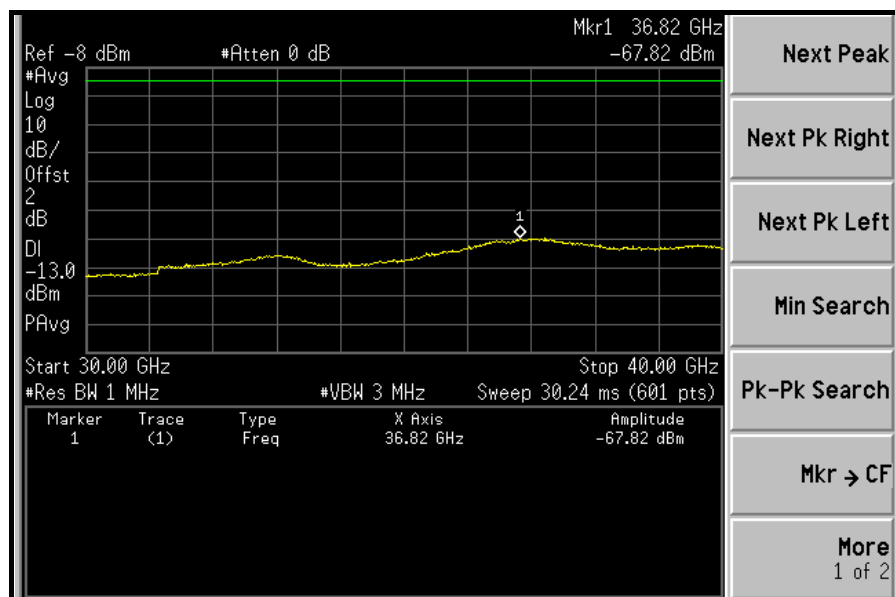
10GHz ~ 20GHz:



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 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.



A D T

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	100033	Jul. 06, 2009	Jul. 05, 2010
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100076	May 26, 2009	May 25, 2010
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 27, 2009	Apr. 26, 2010
HORN Antenna SCHWARZBECK	9120D	9120D-209	Jul. 01, 2009	Jun. 30, 2010
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 25, 2008	Dec. 24, 2009
Preamplifier Agilent	8447D	2944A10633	Nov. 10, 2009	Nov. 09, 2010
Preamplifier Agilent	8449B	3008A01964	Nov. 09, 2009	Nov. 08, 2010
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	238141/4	May 13, 2009	May 12, 2010
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	12738/6	May 13, 2009	May 12, 2010
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100.	TT93021703	NA	NA
Turn Table Controller ADT.	SC100.	SC93021703	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 3.
 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 988962.
 5. The IC Site Registration No. is IC 7450F-3.

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

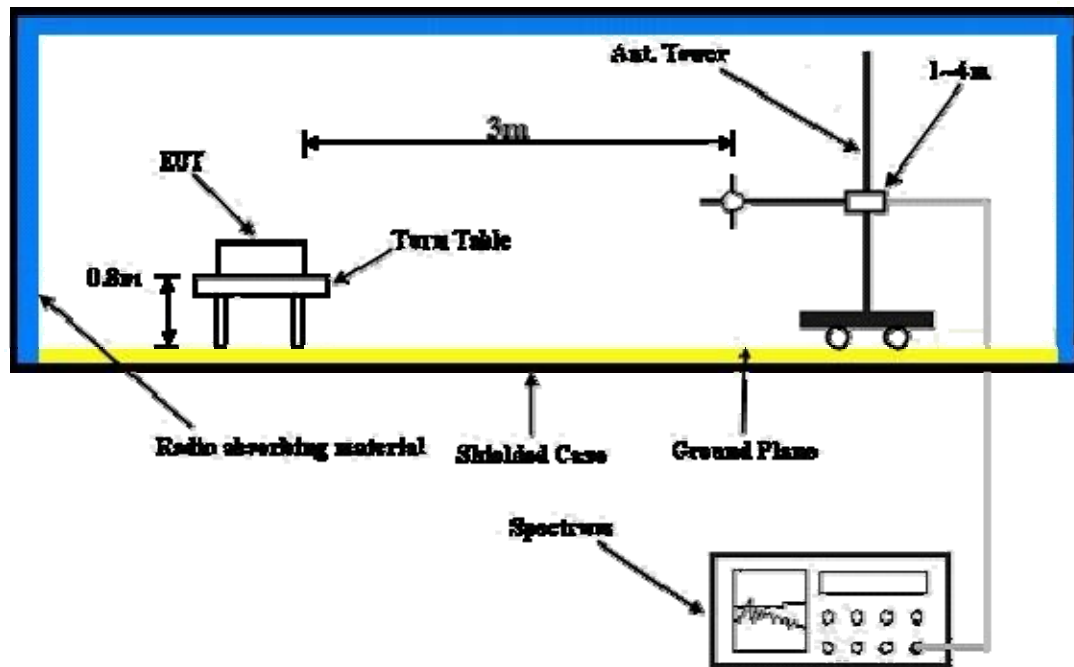
$$\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of Substitution antenna}$$

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	Low channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	3.5MHz	TEST MODE	A
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	45.45	46.1	-13.0	-40.6	-7.7	-48.3
2	98.08	49.0	-13.0	-38.4	-7.7	-46.1
3	142.65	50.7	-13.0	-36.1	-7.7	-43.8
4	168.06	49.4	-13.0	-37.3	-7.7	-45.0
5	498.42	44.4	-13.0	-42.0	-7.8	-49.8
6	706.39	38.5	-13.0	-47.9	-7.9	-55.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	41.54	56.5	-13.0	-30.1	-7.7	-37.8
2	105.73	52.0	-13.0	-34.5	-7.7	-42.2
3	152.41	53.1	-13.0	-34.1	-7.7	-41.8
4	370.07	38.4	-13.0	-47.6	-7.8	-55.4
5	500.36	36.1	-13.0	-50.2	-7.8	-58.0
6	803.56	36.4	-13.0	-50.0	-7.9	-57.9

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Low channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	3.5MHz	TEST MODE	B
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	156.27	56.1	-13.0	-30.9	-7.7	-38.6
2	374.11	41.1	-13.0	-45.6	-7.8	-53.4
3	566.48	41.6	-13.0	-44.9	-7.8	-52.7
4	624.73	41.4	-13.0	-44.7	-7.8	-52.5
5	733.58	44.6	-13.0	-42.0	-7.9	-49.9
6	799.67	43.7	-13.0	-43.0	-7.9	-50.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	68.85	54.2	-13.0	-32.6	-7.7	-40.3
2	109.56	51.6	-13.0	-35.1	-7.7	-42.8
3	168.05	53.9	-13.0	-33.1	-7.7	-40.8
4	399.25	46.0	-13.0	-40.8	-7.8	-48.6
5	535.33	43.5	-13.0	-43.3	-7.8	-51.1
6	733.58	45.1	-13.0	-41.4	-7.9	-49.3

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Low channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	3.5MHz	TEST MODE	C
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	31.46	43.1	-13.0	-43.4	-7.7	-51.1
2	68.82	42.7	-13.0	-44.4	-7.7	-52.1
3	125.12	47.6	-13.0	-39.4	-7.7	-47.1
4	142.69	48.6	-13.0	-38.5	-7.7	-46.2
5	500.32	48.7	-13.0	-37.9	-7.8	-45.7
6	525.63	41.2	-13.0	-45.8	-7.8	-53.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	31.45	57.8	-13.0	-28.7	-7.7	-36.4
2	68.82	54.8	-13.0	-32.3	-7.7	-40.0
3	96.1.5	46.9	-13.0	-39.6	-7.7	-47.3
4	142.67	47.3	-13.0	-39.4	-7.7	-47.1
5	500.34	46.2	-13.0	-40.5	-7.8	-48.3
6	525.51	43.7	-13.0	-43.1	-7.8	-50.9

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Mid. channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	5MHz	TEST MODE	A
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	45.49	45.1	-13.0	-41.6	-7.7	-49.3
2	98.14	47.9	-13.0	-38.6	-7.7	-46.3
3	142.58	49.5	-13.0	-36.9	-7.7	-44.6
4	168.04	48.1	-13.0	-38.7	-7.7	-46.4
5	497.52	43.1	-13.0	-43.8	-7.8	-51.6
6	706.27	37.2	-13.0	-49.7	-7.9	-57.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	41.58	55.5	-13.0	-31.4	-7.7	-39.1
2	105.65	51.0	-13.0	-36.0	-7.7	-43.7
3	152.36	52.1	-13.0	-34.9	-7.7	-42.6
4	370.11	37.3	-13.0	-49.0	-7.8	-56.8
5	500.44	35.0	-13.0	-51.8	-7.8	-59.6
6	803.41	36.3	-13.0	-50.5	-7.9	-58.4

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Mid. channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	5MHz	TEST MODE	B
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	109.67	52.8	-13.0	-33.8	-7.7	-41.5
2	158.24	55.8	-13.0	-30.6	-7.7	-38.3
3	257.38	43.2	-13.0	-43.9	-7.7	-51.6
4	457.62	44.4	-13.0	-42.0	-7.8	-49.8
5	568.39	42.8	-13.0	-43.9	-7.8	-51.7
6	795.81	42.8	-13.0	-43.4	-7.9	-51.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	68.85	52.6	-13.0	-34.4	-7.7	-42.1
2	127.14	52.0	-13.0	-34.5	-7.7	-42.2
3	168.11	53.1	-13.0	-34.1	-7.7	-41.8
4	374.15	41.1	-13.0	-45.5	-7.8	-53.3
5	799.69	43.0	-13.0	-43.7	-7.9	-51.6
6	865.79	41.5	-13.0	-45.5	-7.9	-53.4

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Mid. channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	5MHz	TEST MODE	C
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	113.55	57.6	-13.0	-29.0	-7.7	-36.7
2	142.68	49.2	-13.0	-37.4	-7.7	-45.1
3	191.26	43.6	-13.0	-43.2	-7.7	-50.9
4	245.65	42.6	-13.0	-44.3	-7.7	-52.0
5	475.09	43.1	-13.0	-43.7	-7.8	-51.5
6	500.38	51.0	-13.0	-36.1	-7.8	-43.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	30.01	53.2	-13.0	-33.2	-7.7	-40.9
2	64.95	49.4	-13.0	-37.4	-7.7	-45.1
3	113.49	55.5	-13.0	-31.2	-7.7	-38.9
4	475.02	45.0	-13.0	-41.4	-7.8	-49.2
5	500.36	48.6	-13.0	-38.2	-7.8	-46.0
6	751.06	38.9	-13.0	-47.6	-7.9	-55.5

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Mid. channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	7MHz	TEST MODE	A
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	43.52	47.6	-13.0	-39.2	-7.7	-46.9
2	70.75	47.8	-13.0	-39.2	-7.7	-46.9
3	150.66	51.3	-13.0	-35.4	-7.7	-43.1
4	257.35	41.6	-13.0	-44.9	-7.7	-52.6
5	356.49	37.8	-13.0	-49.5	-7.8	-57.3
6	550.91	34.8	-13.0	-51.3	-7.8	-59.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	43.55	57.6	-13.0	-28.8	-7.7	-36.5
2	107.62	51.4	-13.0	-35.7	-7.7	-43.4
3	150.46	51.2	-13.0	-35.1	-7.7	-42.8
4	234.05	36.6	-13.0	-50.5	-7.7	-58.2
5	368.16	38.1	-13.0	-48.6	-7.8	-56.4
6	626.68	34.6	-13.0	-51.6	-7.8	-59.4

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Mid. channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	7MHz	TEST MODE	B
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	109.65	52.7	-13.0	-34.4	-7.7	-42.1
2	156.29	55.1	-13.0	-31.0	-7.7	-38.7
3	374.09	42.1	-13.0	-45.2	-7.8	-53.0
4	449.82	43.7	-13.0	-42.8	-7.8	-50.6
5	626.72	41.5	-13.0	-44.6	-7.8	-52.4
6	733.64	44.1	-13.0	-42.7	-7.9	-50.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	68.85	52.9	-13.0	-34.4	-7.7	-42.1
2	111.58	51.8	-13.0	-34.5	-7.7	-42.2
3	152.42	52.6	-13.0	-34.5	-7.7	-42.2
4	465.38	44.7	-13.0	-41.5	-7.8	-49.3
5	729.78	44.3	-13.0	-42.2	-7.9	-50.1
6	803.62	42.0	-13.0	-44.8	-7.9	-52.7

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Mid. channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	7MHz	TEST MODE	C
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	31.47	44.0	-13.0	-42.8	-7.7	-50.5
2	90.21	43.5	-13.0	-43.3	-7.7	-51.0
3	103.73	47.5	-13.0	-39.7	-7.7	-47.4
4	142.55	48.6	-13.0	-38.0	-7.7	-45.7
5	500.31	49.1	-13.0	-37.7	-7.8	-45.5
6	525.53	40.8	-13.0	-45.9	-7.8	-53.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	31.48	58.2	-13.0	-28.4	-7.7	-36.1
2	68.84	54.0	-13.0	-32.9	-7.7	-40.6
3	96.12	46.5	-13.0	-40.1	-7.7	-47.8
4	142.71	47.5	-13.0	-38.8	-7.7	-46.5
5	500.38	45.2	-13.0	-41.3	-7.8	-49.1
6	525.63	42.8	-13.0	-44.2	-7.8	-52.0

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Low channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	10MHz	TEST MODE	A
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	45.48	45.1	-13.0	-41.4	-7.7	-49.1
2	98.12	47.8	-13.0	-38.9	-7.7	-46.6
3	142.68	49.6	-13.0	-37.2	-7.7	-44.9
4	167.50	48.4	-13.0	-38.7	-7.7	-46.4
5	498.49	43.4	-13.0	-43.0	-7.8	-50.8
6	706.33	37.4	-13.0	-48.8	-7.9	-56.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	41.58	55.4	-13.0	-31.1	-7.7	-38.8
2	105.67	51.0	-13.0	-35.8	-7.7	-43.5
3	152.36	52.1	-13.0	-34.8	-7.7	-42.5
4	370.12	37.3	-13.0	-49.9	-7.8	-57.7
5	500.38	35.1	-13.0	-51.5	-7.8	-59.3
6	803.42	35.2	-13.0	-51.7	-7.9	-59.6

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Low channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	10MHz	TEST MODE	B
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	43.16	48.6	-13.0	-38.1	-7.7	-45.8
2	70.36	37.0	-13.0	-49.7	-7.7	-57.4
3	100.15	42.9	-13.0	-43.7	-7.7	-51.4
4	150.35	52.6	-13.0	-34.3	-7.7	-42.0
5	211.78	41.9	-13.0	-44.8	-7.7	-52.5
6	625.06	35.6	-13.0	-50.9	-7.8	-58.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	43.08	57.1	-13.0	-30.0	-7.7	-37.7
2	107.02	52.6	-13.0	-34.1	-7.7	-41.8
3	151.39	52.9	-13.0	-33.7	-7.7	-41.4
4	257.36	35.9	-13.0	-51.1	-7.8	-58.9
5	351.73	36.4	-13.0	-49.8	-7.8	-57.6
6	450.25	34.3	-13.0	-52.4	-7.8	-60.2

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Low channel	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 66%RH 991hPa
CHANNEL BANDWIDTH	10MHz	TEST MODE	C
TESTED BY	Dean Wang		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	109.63	51.8	-13.0	-35.4	-7.7	-43.1
2	158.28	54.7	-13.0	-32.4	-7.7	-40.1
3	374.11	41.4	-13.0	-45.5	-7.8	-53.3
4	457.58	43.8	-13.0	-43.1	-7.8	-50.9
5	624.85	40.9	-13.0	-46.5	-7.8	-54.3
6	733.58	45.2	-13.0	-41.3	-7.9	-49.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	57.13	53.5	-13.0	-33.1	-7.7	-40.8
2	152.41	55.0	-13.0	-31.2	-7.7	-38.9
3	399.28	44.4	-13.0	-42.4	-7.8	-50.2
4	457.58	47.5	-13.0	-39.2	-7.8	-47.0
5	626.73	40.0	-13.0	-46.6	-7.8	-54.4
6	729.75	44.2	-13.0	-42.5	-7.9	-50.4

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).

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



A D T

4.7.7 TEST RESULTS

MODE	Low channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	3.5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7303.50	52.0	-13.0	-7.8	9.5	-42.9
2	10955.25	50.5	-13.0	-7.5	7.8	-44.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7303.50	53.0	-13.0	-7.8	9.5	-41.5
2	10955.25	50.6	-13.0	-7.5	7.8	-43.5

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Middle channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	3.5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7325.00	52.4	-13.0	-7.8	9.7	-42.1
2	10987.50	50.5	-13.0	-7.4	7.8	-43.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7325.00	53.3	-13.0	-7.8	9.7	-41.1
2	10987.50	51.7	-13.0	-7.4	7.8	-42.7

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	High channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	3.5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7346.50	53.4	-13.0	-7.8	9.7	-40.5
2	11019.75	52.0	-13.0	-7.4	7.8	-42.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7346.50	54.5	-13.0	-7.8	9.7	-39.7
2	11019.75	52.9	-13.0	-7.4	7.8	-41.7

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Low channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7305.00	66.0	-13.0	-7.8	9.5	-28.5
2	10957.50	58.2	-13.0	-7.5	7.8	-36.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7305.00	65.2	-13.0	-7.8	9.5	-29.6
2	10957.50	58.2	-13.0	-7.5	7.8	-36.3

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Middle channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7325.00	70.4	-13.0	-7.8	9.7	-24.1
2	10987.50	60.7	-13.0	-7.4	7.8	-33.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7325.00	66.6	-13.0	-7.8	9.7	-27.9
2	10987.50	59.3	-13.0	-7.4	7.8	-35.5

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	High channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	5MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7345.00	71.9	-13.0	-7.8	9.7	-22.0
2	11017.50	59.4	-13.0	-7.4	7.8	-35.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7345.00	66.1	-13.0	-7.8	9.7	-28.3
2	11017.50	59.5	-13.0	-7.4	7.8	-35.6

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Low channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	7MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7307.00	59.1	-13.0	-7.8	9.5	-34.9
2	10960.50	61.1	-13.0	-7.5	7.8	-33.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7307.00	60.2	-13.0	-7.8	9.5	-34.8
2	10960.50	63.2	-13.0	-7.5	7.8	-31.1

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Middle channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	7MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7325.00	60.3	-13.0	-7.8	9.7	-34.0
2	10980.50	62.5	-13.0	-7.4	7.8	-31.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7325.00	61.4	-13.0	-7.8	9.7	-33.0
2	10987.50	63.9	-13.0	-7.4	7.8	-31.0

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	High channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	7MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7343.00	58.9	-13.0	-7.8	9.7	-35.5
2	11014.50	61.6	-13.0	-7.4	7.8	-32.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7343.00	60.1	-13.0	-7.8	9.7	-34.3
2	11014.50	62.7	-13.0	-7.4	7.8	-31.6

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Low channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	10MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7310.00	64.2	-13.0	-7.8	9.5	-30.9
2	10965.00	56.7	-13.0	-7.5	7.8	-37.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7310.00	63.2	-13.0	-7.8	9.5	-31.6
2	10965.00	58.4	-13.0	-7.5	7.8	-36.4

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	Middle channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	10MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7325.00	67.4	-13.0	-7.8	9.7	-27.5
2	10987.50	57.8	-13.0	-7.4	7.8	-36.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7325.00	61.4	-13.0	-7.8	9.7	-33.0
2	10987.50	55.4	-13.0	-7.4	7.8	-38.9

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).



A D T

MODE	High channel	FREQUENCY RANGE	Above 1000MHz
INPUT POWER	120Vac, 60Hz	ENVIRONMENTAL CONDITIONS	25deg°C, 63%RH 991hPa
TESTED BY	Dean Wang	CHANNEL BANDWIDTH	10MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7340.00	66.6	-13.0	-7.8	9.7	-28.1
2	11010.00	56.3	-13.0	-7.4	7.8	-38.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3m						
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBm)	S.G POWER VALUE (dBm)	CORRECTION FACTOR (dB)	POWER VALUE (dBm)
1	7340.00	58.7	-13.0	-7.8	9.7	-35.3
2	11010.00	57.7	-13.0	-7.4	7.8	-36.6

NOTE: Power Value (dBum) = S.G Power Value (dBm) + Correction Factor (dB).

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.

USA	FCC, NVLAP
GERMANY	TUV Rheinland
JAPAN	VCCI
NORWAY	NEMKO
CANADA	INDUSTRY CANADA, CSA
R.O.C.	TAF, BSMI, NCC
NETHERLANDS	Telefication
SINGAPORE	GOST-ASIA (MOU)
RUSSIA	CERTIS (MOU)

Copies of accreditation 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: Web Site: www.adt.com.tw

Tel: 886-3-3183232

Fax: 886-3-3185050

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

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