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FEDERAL COMMUNICATIONS COMMISSION
Registration number: 282399

TEST REPORT

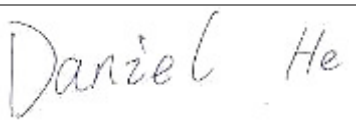
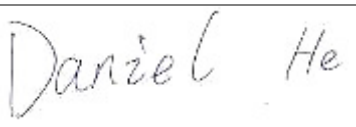
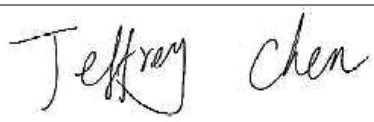
Application No.:	GZEM1204001373RF
Applicant:	Corning MobileAccess
FCC ID:	OJF-GX-CLA40
Product Name:	Multi-Band High Power DAS Remote Unit
Model No.:	GX-C85L70A17-40
Trade Mark:	GX
Standards:	FCC Part 22, FCC Part 27, FCC Part 2
Date of Receipt:	2012-05-02
Date of Test:	2012-05-02 to 2012-05-15
Date of Issue:	2012-05-30
Test Result :	**Pass***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above. Please refer to section 3 of this report for further details.

Strong Yao
Manager

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00		2012-05-30		Original

Authorized for issue by:				
Tested By		 **(Daniel Hew) /Project Engineer**		2012-05-02 to 2012-05-15 **Date**
Prepared By		 **(Daniel Hew) /Clerk**		2012-05-30 **Date**
Checked By		 **(Jeffrey Chen) /Reviewer**		2012-05-30 **Date**

3 Test Summary

Test Item	Test Requirement	Test Method	Result
Output Power	FCC part 22.913 FCC part 27.50	FCC part 2.1046 2-11-04/EAB/RF	PASS
Conducted Spurious Emissions	FCC part 22.917 FCC part 27.53	FCC part 2.1051 2-11-04/EAB/RF	PASS
Band Edge& Intermodulation	FCC part 22.917 FCC part 27.53	FCC part 2.1051 2-11-04/EAB/RF	PASS
Radiated Spurious Emissions	FCC part 22.917 FCC part 27.53	FCC part 2.1053 2-11-04/EAB/RF	PASS
Occupied Bandwidth	FCC part 2.1049	FCC part 2.1049 2-11-04/EAB/RF	PASS
Out of Band Rejection	2-11-04/EAB/RF	2-11-04/EAB/RF	PASS
Frequency Stablility	FCC part 22.355 FCC part 27.54	FCC part 2.1055	PASS
Remark: Tx: In this whole report Tx (or tx) means Transmitter. Rx: In this whole report Rx (or rx) means Receiver.			
No need to implement uplink test as it is cable connect to BTS (No air radiation), then the test about Uplink would be ignored.			

4 Contents

5 General Information

5.1 Client Information

Applicant Name:	Corning MobileAccess
Applicant Address:	8391 Old Courthouse Rd., suite #300, Vienna Virginia, 22182 United States
Manufacturer:	Comba Telecom Inc
Address of Manufacturer:	2390 Bering Drive, San Jose, CA 95131
Factory:	Comba Telecom Inc
Address of Factory:	6 Jinbi Road, Guangzhou Economic and Technological Development District, Guangzhou, China

5.2 General Description of E.U.T.

Product Name:	Multi-Band High Power DAS Remote Unit
Model No.:	GX-C85L70A17-40
Power Supply:	AC 100-240V 50/60Hz
Test power:	AC 120V 60Hz
Operating Temperature:	-40 °C to +50°C
Operating Humidity:	≤ 95%

5.3 Details of E.U.T.

Type of Modulation	CDMA & WCDMA & GSM & LTE
Emission Designator:	F9W(CDMA), F9W (WCDMA) GXW(GSM) G7D（LTE）
Frequency Band:	CDMA Band: Downlink: 869MHz to 894MHz WCDMA Band: Downlink: 869MHz to 894MHz & 2110MHz to 2155MHz GSM Band: Downlink: 869MHz to 894MHz LTE Band: Downlink:728MHz to 757MHz& 869MHz to 894MHz & 2110MHz to 2155MHz
Nominal Power Output:	46dBm for downlink
Nominal System Gain:	68dB for downlink

5.4 Product Description

MobileAccessGX offers a scalable, cost-effective 20/40W (43/46dBm) high power remote outdoor coverage solution for Corning MobileAccess Distributed Antenna Systems (DAS). It is a fiber-fed, compact, multi-service, multi-operator remote designed to complement the MobileAccess1000 and MobileAccess2000 lower power, standard remotes or installable as a dedicated deployment solution in a new site, providing complete RF coverage options for open indoor, tunnel and adjacent outdoor spaces in larger venues such as stadiums, convention centers, metro-rails and malls.

5.5 Standards Applicable for Testing

The standard used was FCC part 2 & FCC part 22 & FCC part 27

5.6 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory,
198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663
Tel: +86 20 82155555 Fax: +86 20 82075059
No tests were sub-contracted.

5.7 Other Information Requested by the Customer

None.

5.8 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP (Lab Code: 200611-0)**

  SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **ACMA**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

  Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

- **FCC (Registration No.: 282399)**

  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002.

- **Industry Canada (Registration No.: 4620B-1)**

  The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

- **VCCI (Registration No.: R-2460, C-2584, G-449 and T-1179)**

  The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460, C-2584，G-449 and T-1179 respectively.

- **CBTL (Lab Code: TL129)**

  SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IECEE 01:2006-10 and Rules of procedure IECEE 02:2006-10, and the relevant IECEE CB-Scheme Operational documents.

6 Equipment Used during Test

RE in Chamber						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date (YYYY-MM-DD)	Calibration Interval
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	2012-09-06	2Y
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100283	2012-11-11	1Y
EMC0056	EMI Test Receiver	Rohde & Schwarz	ESCI	10036	2013-03-12	1Y
EMC0528	RI High frequency Cable	SGS	20 m	N/A	2012-06-09	1Y
EMC2025	Trilog Broadband Antenna 30-3000MHz	SCHWARZBECK MESS-ELEKTRONIK	VULB 9163	9163-450	2012-10-20	1Y
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	2012-11-28	1Y
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	2012-11-28	1Y
EMC2026	Horn Antenna 1-18GHz	R&S	BBHA 9120D	9120D-841	2012-10-20	1Y
EMC0518	Horn Antenna	Rohde & Schwarz	HF906	100096	2012-08-29	1Y
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	2012-08-29	1Y
EMC0049	Amplifier	Agilent	8447D	2944A10862	2013-03-12	1Y
EMC0075	310N Amplifier	Sonama	310N	272683	2012-08-29	1Y
EMC0523	Active Loop Antenna	EMCO	6502	42963	2012-11-17	1Y
EMC2041	Broad-Band Horn Antenna (14)15-26.5(40)GHz	SCHWARZBECK MESS-ELEKTRONI	BBHA 9170	9170-375	2014-06-01	3Y
EMC0530	10m Semi-Anechoic Chamber	ETS	N/A	N/A	2014-04-27	2Y

Conducted Emission						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Due date (YYYY-MM-DD)	Calibration Interval
EMC0306	Shielding Room	Zhong Yu	8 x 3 x 3.8 m^3	N/A	N/A	N/A
EMC0118	Two-line v-netwok	R&S	ENV216	100359	2012-08-29	1Y
EMC0102	LISN	SCHAFFNER CHASE	MN2050D/1	1421	2012-11-23	1Y
EMC2046	Artificial Mains Network (LISN)	AFJ Instruments	LT32C	S.N.32031120150	2013-03-12	1Y
EMC0506	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	2012-11-24	1Y
EMC0107	Coaxial Cable	SGS	2m	N/A	2012-07-18	1Y
EMC0106	Voltage Probe	SGS	N/A	N/A	N/A	1Y
EMC0120	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	20550	2012-11-11	1Y
EMC0121	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	20549	2012-11-11	1Y
EMC0122	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	20548	2012-11-11	1Y
EMC167	Conical metal housing	SGS-EMC	N/A	N/A	2013-02-16	1Y

	Other equipment					
No:	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (dd-mm-yy)**	**Cal. Due Date (dd-mm-yy)**
NA	Power Meter	Agilent	E4419B	MY45100856	2011.6.12	2012.6.11
NA	Signal Generator	Agilent	E4437B	US39260800	2011.6.17	2012.6.16
NA	Signal Generator	Agilent	E4438C	US39260800	2011.6.14	2012.6.14
NA	Spectrum Analyzer	Agilent	N9020A	MY48011385	2011.6.14	2012.6.14
NA	Spectrum Analyzer	Rohde&Schwarz	FSQ 8	SN0805772	2011.6.14	2012.6.14
NA	Attenuator	SHX manufacturer	30dB/50W	09031816	----	----
NA	Attenuator	SHX manufacturer	40dB/50W	09031312	----	----
NA	Attenuator	SHX manufacturer	50dB/50W	09053023	----	----
NA	Signal Generator	Rohde&Schwarz	SMU 200A	08103303	2011.6.12	2012.6.11

General used equipment						
No.	**Test Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Cal.Due date (YYYY-MM-DD)**	**Calibration Interval**
EMC0006	DMM	Fluke	73	70681569	2012-11-14	1Y
EMC0007	DMM	Fluke	73	70671122	2012-11-14	1Y

7 Test Results

7.1 E.U.T. test conditions

Input voltage:	AC 120V
Operating Environment:	
Temperature:	22°C ~26°C
Humidity:	46%~56% RH
Atmospheric Pressure:	990~1005mbar
Test Requirement:	The RF output power of the EUT was measured at the antenna port, by adjusting the input power of signal generter to drive the EUT to get to maximum output power point and keep the EUT at maximum gain setteing for all tests. The device should be tested on downlink. For detail test Modulation and Frequency, please refer to 7.2.

Remark:

FIBER-OPTIC AND OTHER SIMILAR RF DISTRIBUTION SYSTEMS

Fiber-optic distribution systems are a type of in-building radiation system that receives RF signals from an antenna, distributes the signal over fiber-optic cable, and then retransmits at another location for example within a building or tunnel. Most fiber-optic systems are signal boosters; however, some may be repeaters. These systems generally have two enclosures typically called host (or local or donor unit) and remote. Some systems may also have an optional expander box for fan-out to multiple remotes. The system transmits downlink signals from the remote unit to handsets, portables, or clients, and transmits uplink signals via from the host unit. Usually but not always the uplink goes through an intermediate amplifier to a “donor” antenna. Therefore both uplink and downlink must be tested, unless filing effectively documents how connection of uplink to donor antenna with or without an intermediate amplifier will be prevented, such as for always only a cabled connection to a base station. Fiber-optic systems are not amplifiers (AMP equipment class) – they are equipment class TNB or PCB. The same approval procedures also apply for multiple-enclosure systems connected by coax cable.

Synonyms and related terms: in-building radiation system, coverage enhancer, distributed antenna system, fiber-optic distribution system, converter, donor anten

Typical in-building or distributed antenna systems can consist of five different components (enclosures), not counting antennas:

1) host unit

a) transmits uplink to base station via antenna thru coax, ***passive interface unit*** , or ***active interface unit*** (amplifier)

b) sends base-station downlink via fiber-optic or coax to ***remote***

c) receives handset uplink via fiber-optic or coax from ***remote***

d) optional connection to ***expansion unit*** via fiber-optic

e) separate FCC ID from ***remote***, unless electrically identical

f) ***non-transmitting host unit***

i) connects directly to a base station via coax cable but does not connect to antenna or amplifier

ii) Part 15 digital device subject to Verification, no FCC ID

2) remote unit

a) receives base-station downlink via fiber-optic or coax from ***host***, transmits via antenna to handsets

b) returns handset uplink via fiber-optic or coax to ***host***

c) separate FCC ID from ***remote***, unless electrically identical

3) expansion unit
a) fiber-optic or coax from ***host***
b) fiber-optic or coax fan-out to ***remote(s)***
c) Part 15 digital device subject to Verification, no FCC ID
4) *passive interface unit*
a) contains attenuators, splitters, combiners
b) coax cable connection between ***host*** and base-station
c) passive device, no FCC ID
5) *active interface unit*
a) amplifies uplink signal from ***host unit*** for transmit by donor antenna
b) attenuates downlink from donor antenna
c) coax cable connection between ***host*** and ***active interface unit***
d) usually has separate FCC ID; in some cases could be combined/included with ***host*** as one enclosure

GENERAL DEFINITIONS FOR CERTIFICATION PURPOSES:
The following three general definitions follow from those stated in the Part 22, 24, and 90 rule sections as listed above. Two of the definitions replace previous EAB internal definitions given for booster, repeater and extender. The general term “extender” is the same as booster, but booster should be used rather than extender. The general term “translator” is the same as repeater, but repeater should be used rather than translator.
External radio frequency power amplifier (ERFPA) - any device which, (1) when used in conjunction with a radio transmitter signal source, is capable of amplification of that signal, and (2) is not an integral part of a radio transmitter as manufactured. The EAS equipment class AMP is used only for an ERFPA device inserted between a transmitter (TNB/PCB) and an antenna (has only one antenna port)
Booster is a device that automatically reradiates signals from base transmitters without channel translation, for the purpose of improving the reliability of existing service by increasing the signal strength in dead spots. An “in-building radiation system” is a signal booster. These devices are not intended to extend the size of coverage from the originating base station. A booster can be either single or multiple channels***.***
Repeater is a device that retransmits the signals of other stations. Repeaters are different from boosters in that they can include frequency translation and can extend coverage beyond the design of the original base station. A repeater is typically single channel but can also be multiple channels.
ERFPA (AMP) and boosters/repeaters (TNB/PCB) can generally be authorized for all rule parts except 15 and 18.
Tests should be done with each typical signal. e.g., for F3E emissions use 2500 Hz with 2.5 or 5 kHz deviation. Use of CW signal for some tests is acceptable in lieu of actual emission, in some cases when CW signal gives worst case.
The GX system working principle: the RF signal coupled from BTS is transferred into optical signal, and then transmitted via a fiber to remote unit.the remote re-transfers the optical signal back to RF signal, through the frequency translation and after power amplifiers,can extend the BTS coverage to another desired area, the GX system is compliant with the description about repeater in FCC rules, So **the Equipment belongs to the repeater and TNB class.**

7.2 Test **Procedure** & Measurement Data

Test Modulation and Frequency
CDMA Band:

Modulation	Lowest frequency	Middle frequency	Highest frequency
Downlink: 869MHz to 894MHz			
CDMA	871	881.5	892

WCDMA Band:

Modulation	Lowest frequency	Middle frequency	Highest frequency
Downlink: 869MHz to 894MHz			
WCDMA	872	881.5	891
Downlink: 2110 MHzto 2155MHz			
WCDMA	2113	2132.5	2152

GSM Band:

Modulation	Lowest frequency	Middle frequency	Highest frequency
Downlink: 869MHz to 894MHz			
GSM	869.6	881.5	893.4

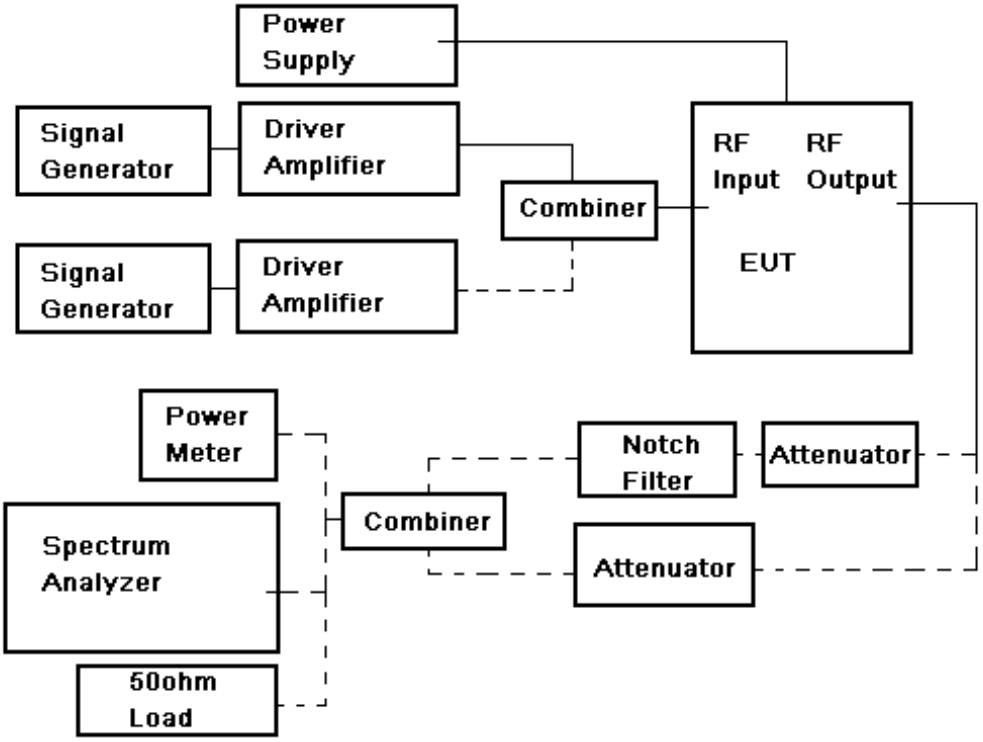
LTE Band:

Modulation	Lowest frequency	Middle frequency	Highest frequency
Downlink: 728MHz to 757MHz			
LTE	733	742.5	752
Downlink: 869MHz to 894MHz			
LTE	874	881.5	889
Downlink: 2110MHzto 2155MHz			
LTE	2115	2132.5	2150

Remark:

1) We test the downlink in the lowest band; the middle band; the hightest band and test the respective frequency as above table;

General Test Setup:



7.2.1 RF Output Power

Test Date: 2012-05-09

Test Requirement: FCC part 22.913(a) & FCC part 27.50(d)

22.913(a):Maximum ERP. In general, the effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts.

Para. No.27.50(b)(2), (c)(1)(3)

(b) The following power and antenna height limits apply to transmitters operating in the 746-763 MHz, 775–793 MHz and 805–806 MHz bands:

(2) Fixed and base stations transmitting a signal in the 746–757 MHz, 758–763 MHz, 776–787 MHz, and 788–793 MHz bands with an emission bandwidth of 1 MHz or less must not exceed an ERP of 1000 watts and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section.

(c) The following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band:

(1) Fixed and base stations transmitting a signal with an emission bandwidth of 1 MHz or less must not exceed an effective radiated power (ERP) of 1000 watts and an antenna height of 305 m height above average terrain (HAAT), except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section;

(3) Fixed and base stations transmitting a signal with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP in

accordance with Table 3 of this section;

Para. No.27.50(d)(1). The power of each fixed or base station transmitting in the 2110-2155 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to a peak equivalent isotropically radiated power (EIRP) of 3280 watts. The power of each fixed or base station transmitting in the 2110-2155 MHz band from any other

location is limited to a peak EIRP of 1640 watts. A licensee operating a base or

fixed station utilizing a power of more than 1640 watts EIRP must coordinate such operations in advance with all Government and non-Government satellite entities in the 2025-2110 MHz band. Operations above 1640 watts EIRP must also be coordinated in advance with the following licensees within 120 kilometers (75 miles) of the base or fixed station: all Broadband Radio Service (BRS) licensees authorized under Part 27 in the 2155-2160 MHz band and all AWS licensees in the 2110-2155 MHz band.

Test Method: FCC part 2.1046

EUT Operation:

Status: Drive the EUT to maximum output power.

Conditions: Normal conditions

Application: Cellular Band RF output ports

Test Configuration:

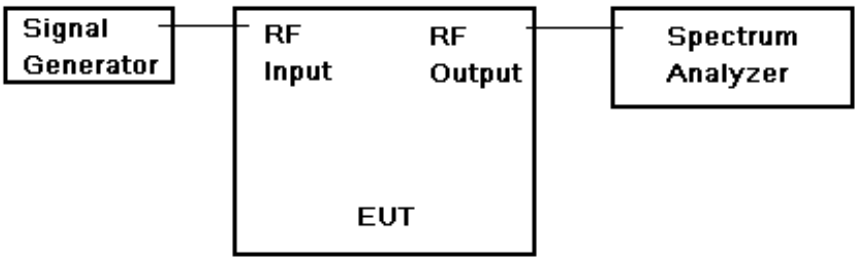


Fig.1 RF Output Power test configuration

Test Procedure:	RF output power test procedure: 1. a) Connect the equipment as illustrated, when the output power is over the max value of the Spectrum Analyzer, add the attenuator to avoid destroying the facility. b) Set the center frequency of the spectrum analyzer to the assigned transmitter frequency, key the transmitter, and set the level of the carrier to the full scale reference line. c) do not apply any tone to modulate the EUT. d1) Adjust the spectrum analyzer for the following settings: 1) Resolution Bandwidth >> the carrier bandwidth, 2) Video Bandwidth refer to standard requirement. d2) Use spectrum analyzer channel power measurement function; e) Record the frequencies and levels of carrier power; f) Calculate the signal link way loss and final power value. Or 2. a) Connect the equipment as illustrated; b) Read the value from the power meter; c) Calculate the signal link way loss and final power value.
Remark:	Output power – . Power on Form 731 should be clearly understood as either composite of multichannels or per carrier. If power is composite include in comments field: "Power output listed is composite for multi-channel operation." . Check that the input drive level is at maximum input rating and maximum gain settings for all tests. Check both uplink and downlink input levels. See manual or brochures/technical description for maximum rating. May need to check FCC identifier of transmitter used for tests. . Confirm device can not operate in saturation. Are there means to control maximum power and to assure linear operation (use in system configuration may be necessary)? How is saturation or over-modulation prevented for pulsed signal inputs?

7.2.1.1 Measurement Record:

CDMA Band:

Per channel Power, Input=-20dBm for downlink			
Modulation	**Lowest frequency**	**Middle frequency**	**Highest frequency**
Downlink: Working Band(869MHz ~ 894MHz),Measure Maximum Output power			
CDMA	45.88dBm(38.725W)	45.98dBm(39.627W)	45.68dBm(36.983W)

WCDMA Band:

Per channel Power, Input=-20dBm for downlink			
Modulation	**Lowest frequency**	**Middle frequency**	**Highest frequency**
Downlink: Working Band(869MHz ~ 894MHz),Measure Maximum Output power			
WCDMA	46.07dBm(40.457W)	46.05dBm(40.271W)	45.82dBm(38.194W)
Downlink: Working Band(2110MHz ~ 2155MHz),Measure Maximum Output power			
WCDMA	45.81dBm(38.107W)	45.86dBm(38.548W)	45.81dBm(38.107W)

GSM Band:

Per channel Power, Input=-20dBm for downlink			
Modulation	**Lowest frequency**	**Middle frequency**	**Highest frequency**
Downlink: Working Band(869MHz ~ 894MHz),Measure Maximum Output power			
GSM	45.72dBm(37.325W)	45.82dBm(38.194W)	45.51dBm(35.563W)

LTE Band:

Per channel Power, Input=-20dBm for downlink			
Modulation	**Lowest frequency**	**Middle frequency**	**Highest frequency**
Downlink: Working Band(728MHz ~ 757MHz),Measure Maximum Output power			
LTE	45.61 dBm(36.392W)	45.51 dBm(35.563W)	45.92 dBm(39.084W)
Downlink: Working Band(869MHz ~ 894MHz),Measure Maximum Output power			
LTE	46.18 dBm(41.495W)	45.72 dBm(37.325W)	45.52 dBm(35.645W)
Downlink: Working Band(2110MHz ~2155MHz),Measure Maximum Output power			
LTE	45.67 dBm(36.898W)	45.78 dBm(37.844W)	45.60 dBm(36.308W)

Remark: test in single channel status, output power is tested in full amplifying status.

Kept the EUT working in maximum gain, adjusted the input power until to get the EUT to maximum output power.

Note: Conducted output power tested. EIRP was not tested because the amplifier does not come with an antenna.

7.2.2 Conducted Spurious Emissions

Test Date: 2012-05-02

Test Requirement: FCC part 22.917(a) & FCC part 27.53(h)

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

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

Test Method: FCC part 2.1051

EUT Operation:

Status: Drive the EUT to maximum output power.

Conditions: Normal conditions

Application: Cellular Band RF output ports

Test Configuration:

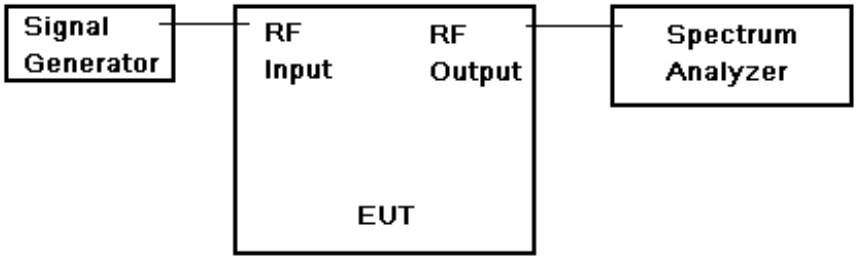
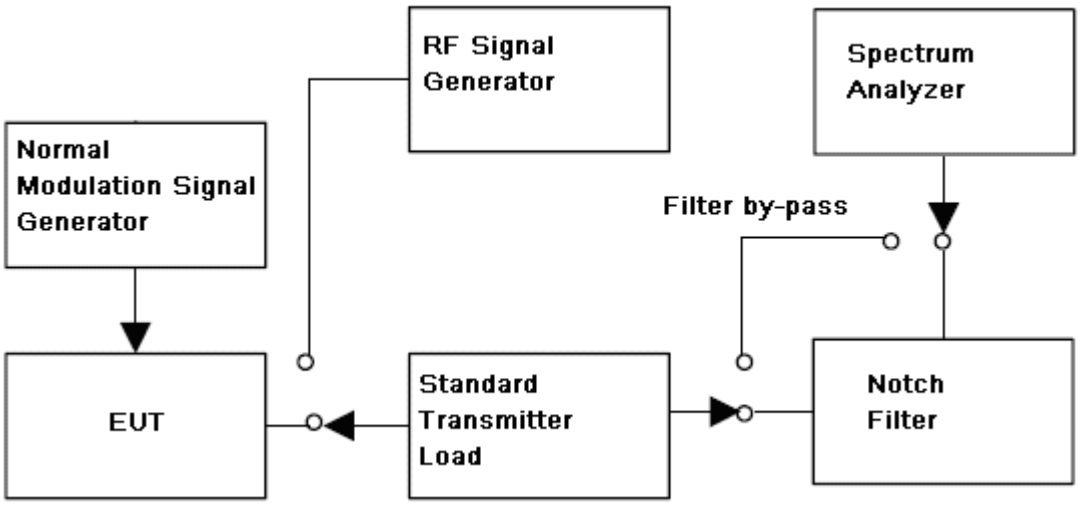


Fig.2. Conducted Spurious Emissions test configuration



Test Procedure:

Conducted Emissions test procedure:

a) Connect the equipment as illustrated, with the notch filter by-passed, when the output power is over the max value of the Spectrum Analyzer, add the attenuator to avoid destroying the facility.

b) Set the center frequency of the spectrum analyzer to the assigned transmitter frequency, key the transmitter, and set the level of the carrier to the full scale reference line.

c) do not apply any tone to modulate the EUT.

d) Adjust the spectrum analyzer for the following settings:

1) Resolution Bandwidth,(base the standard, apply the different set),her is 100KHz for frequency band less than 1GHz, 1MHz for frequency over 1GHz;

2) Video Bandwidth refer to standard requirement.

e) Adjust the center frequency of the spectrum analyzer for incremental coverage of the range from:

1) the lowest radio frequency generated in the equipment, it can be 9KHz base the test method, here select 30MHz as lowest frequency start point;

2) the highest radion frequency shall higher than 10 times of carrier frequency;

f) Record the frequencies and levels of spurious emissions from step e)

Remark:

The notch filter is used for avoid the EUT fundamental carrier output power making the spectrum overload and the harmonic spurious brought by it.

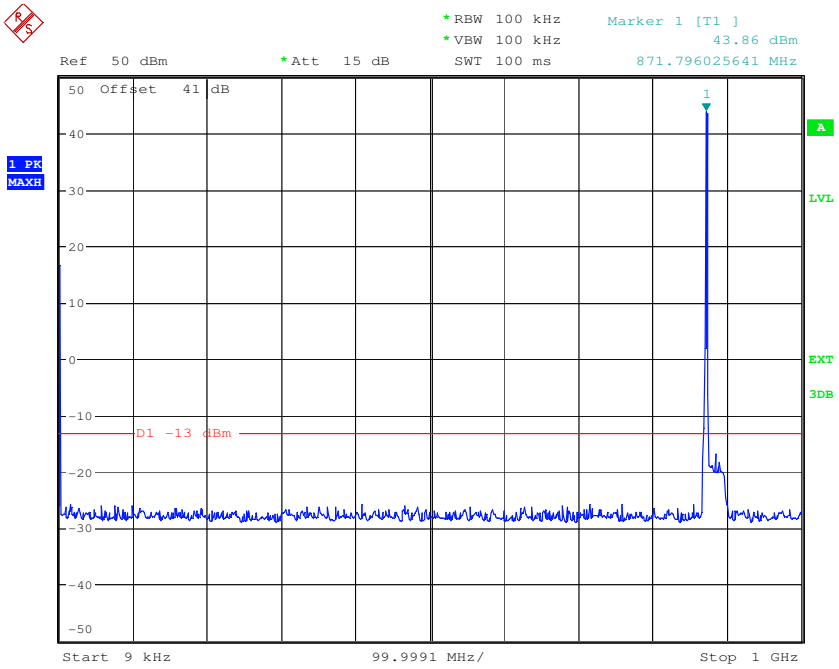
When the EUT fundamental carrier is not enough to make the status, the notch filter could be not used.

7.2.2.1 Measurement Record:

1.Test for CDMA:

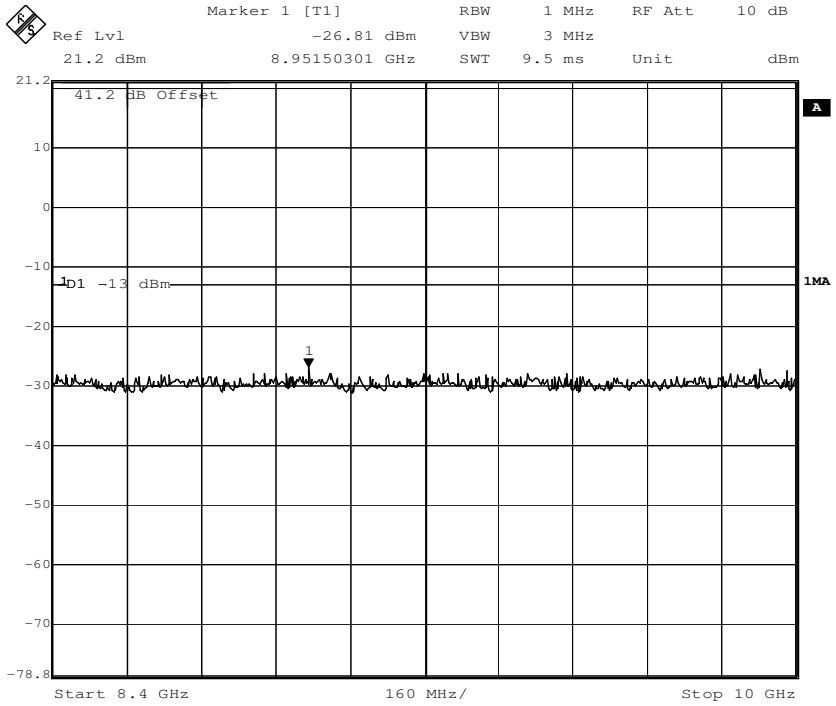
1.1 Downlink: 869MHz ~ 894MHz (lowest frequency)

9KHz to 1GHz



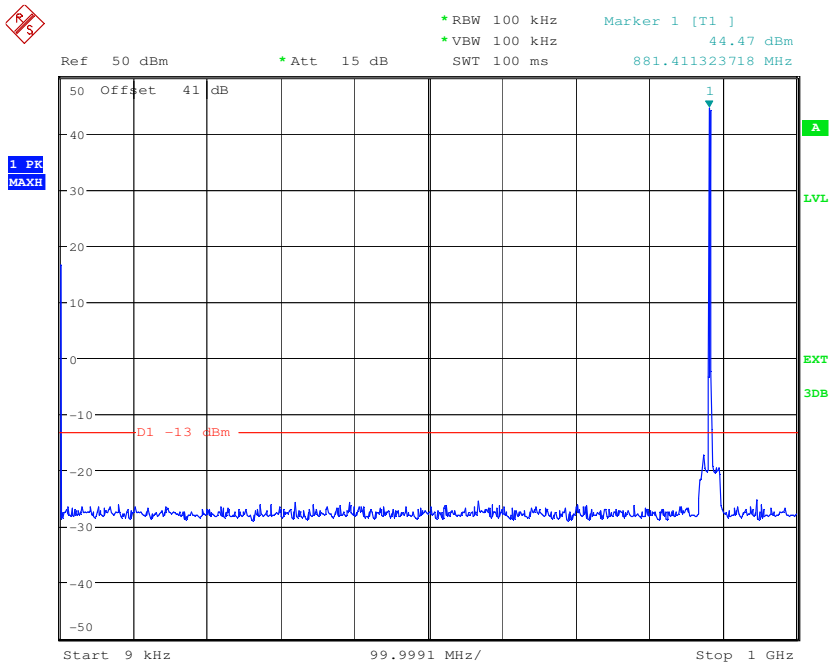
1GHz to 8.4GHz

8.4GHz to 10GHz



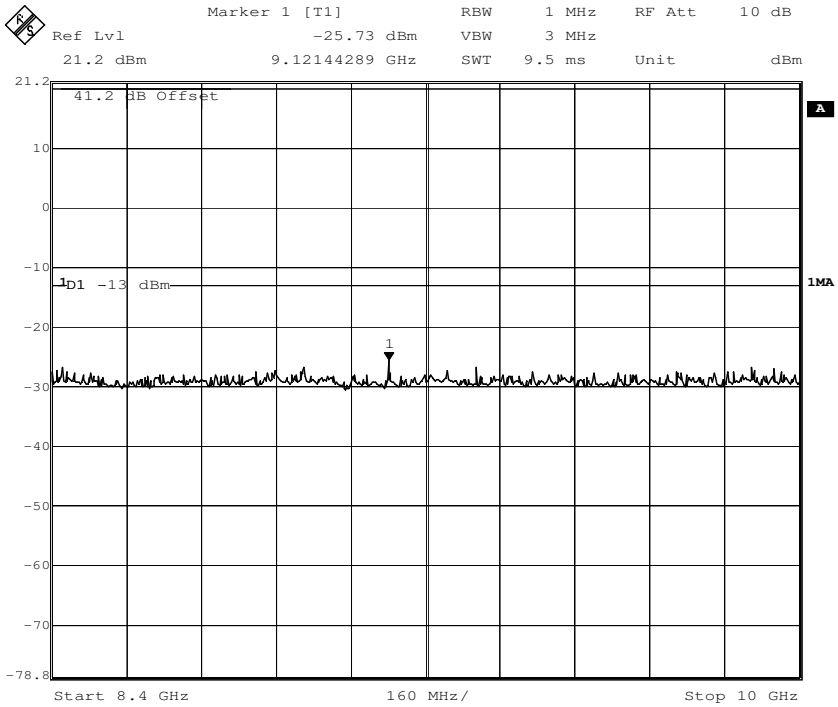
1.2 Downlink: 869MHz ~ 894MHz (Middle frequency)

9KHz to 1GHz



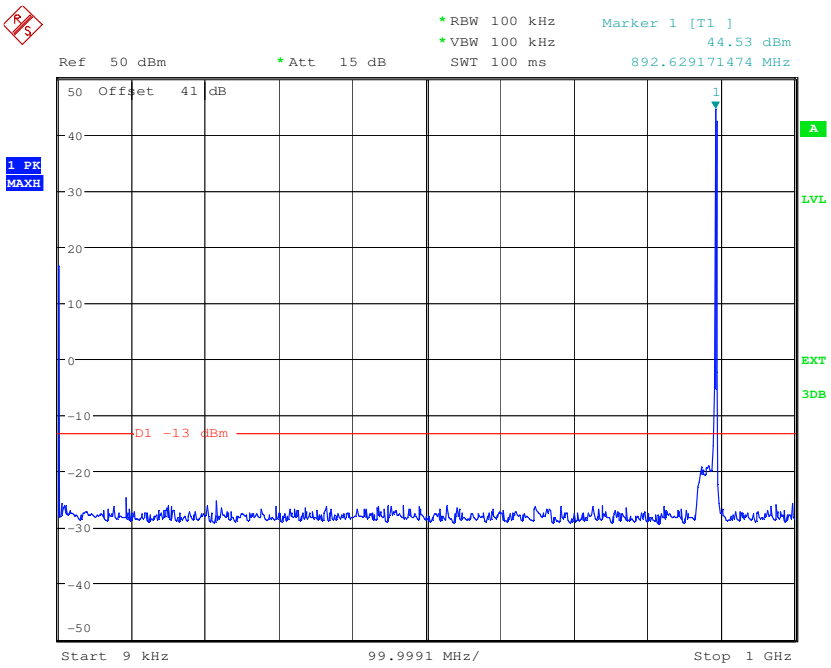
1GHz to 8.4GHz

8.4GHz to 10GHz

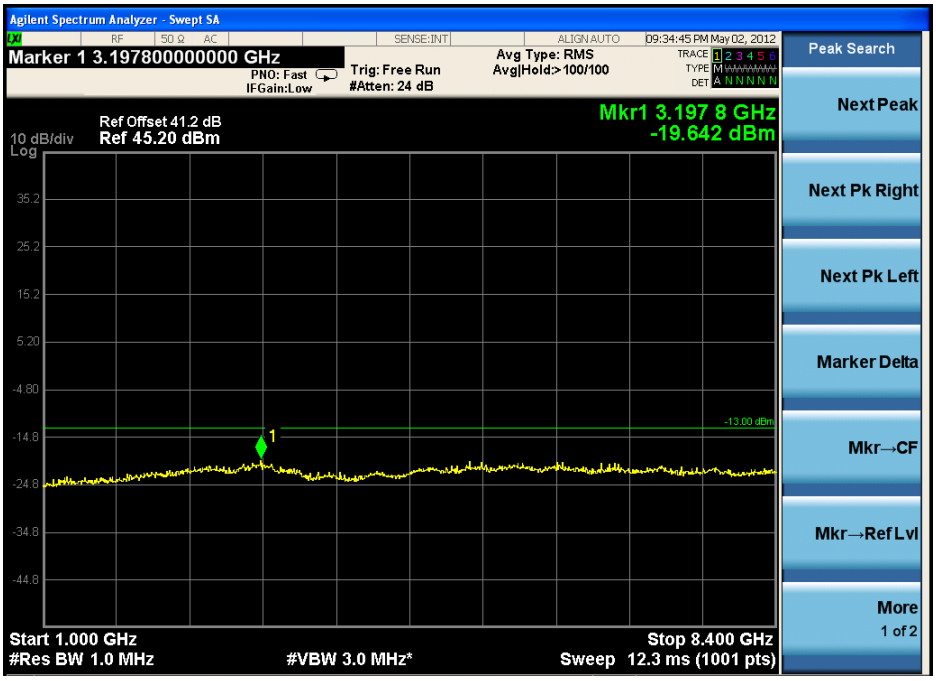


1.3 Downlink: 869MHz ~ 894MHz (highest frequency)

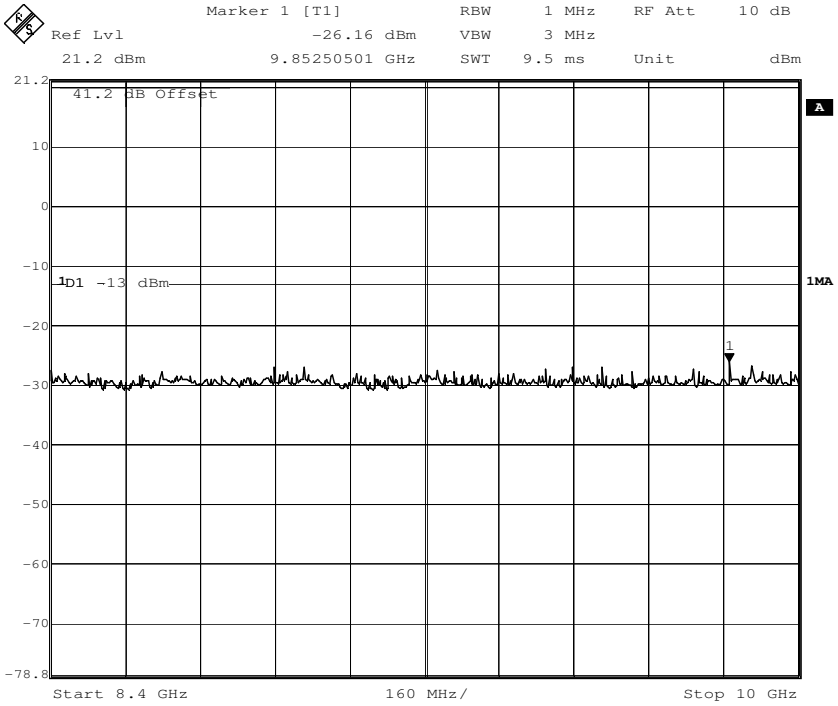
9KHz to 1GHz



1GHz to 8.4GHz



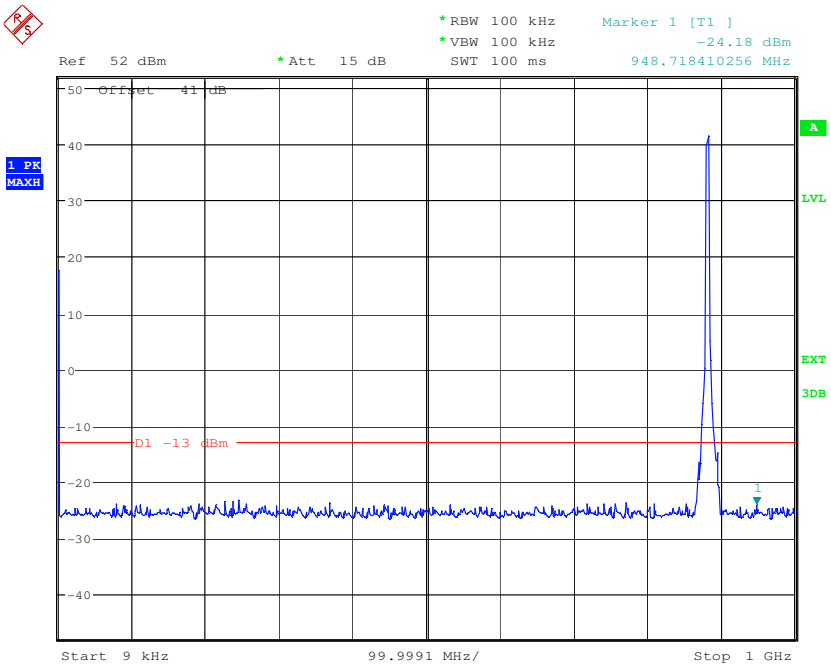
8.4GHz to 10GHz



2.Test for WCDMA:

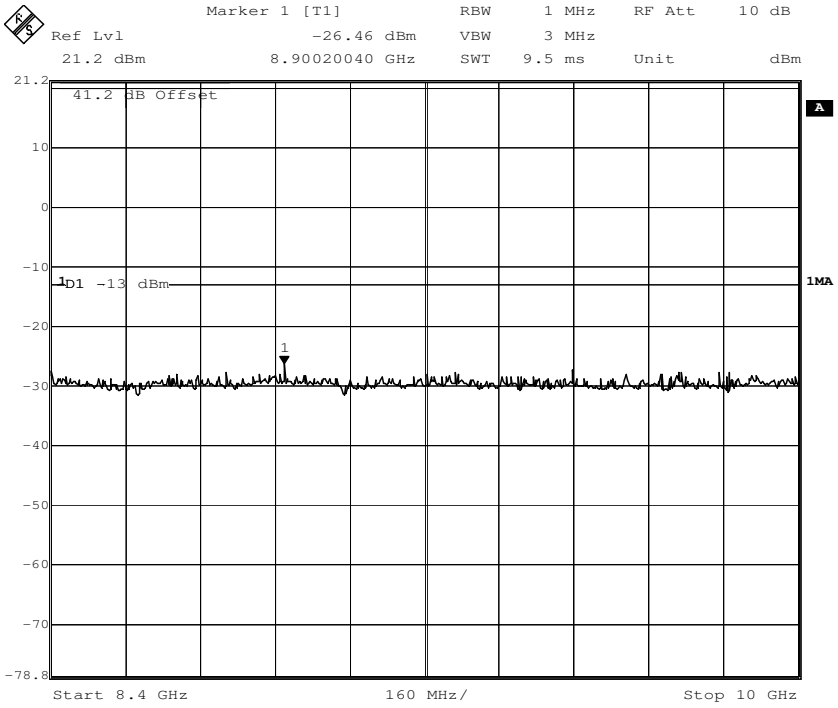
2.1 Downlink: 869MHz ~ 894MHz (lowest frequency)

9KHz to 1GHz



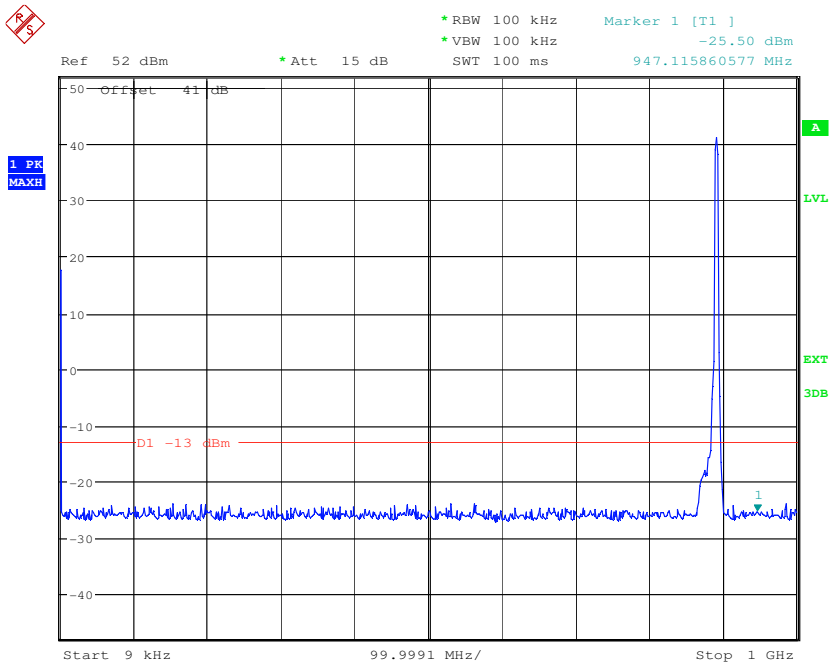
1GHz to 8.4GHz

8.4GHz to 10GHz



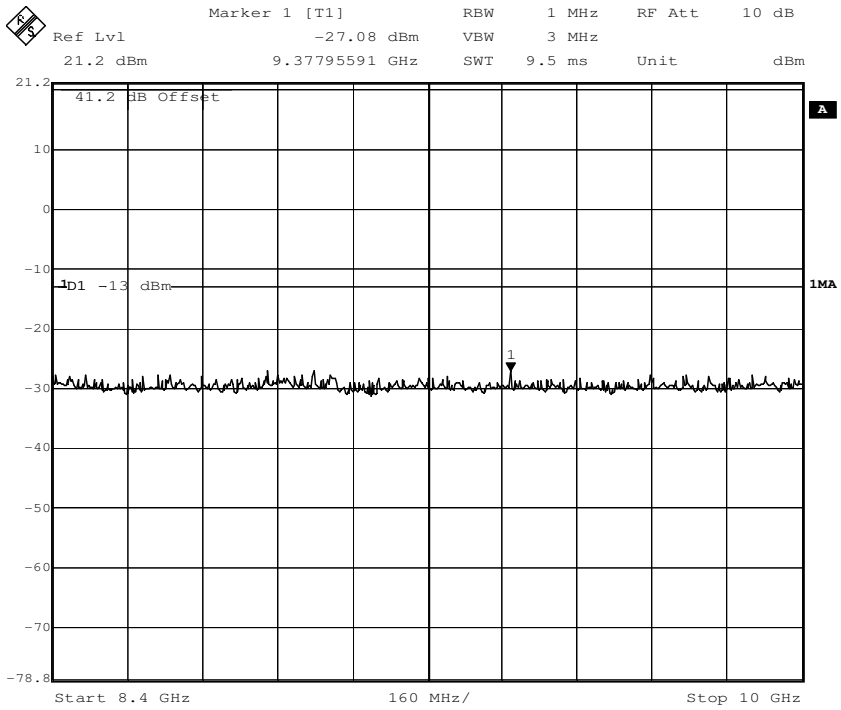
2.2 Downlink: 869MHz ~ 894MHz (Middle frequency)

9KHz to 1GHz



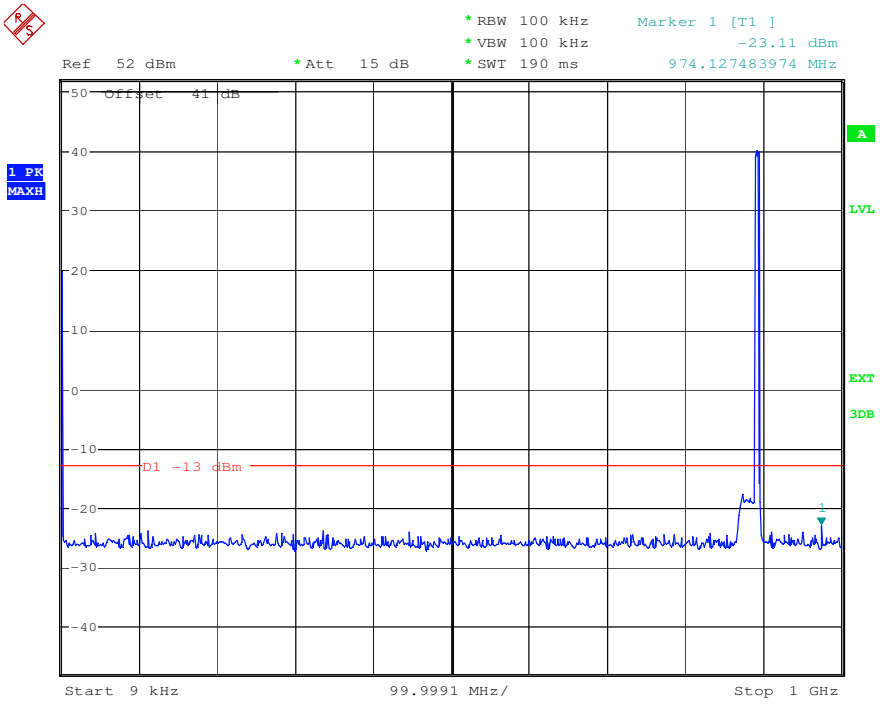
1GHz to 8.4GHz

8.4GHz to 10GHz



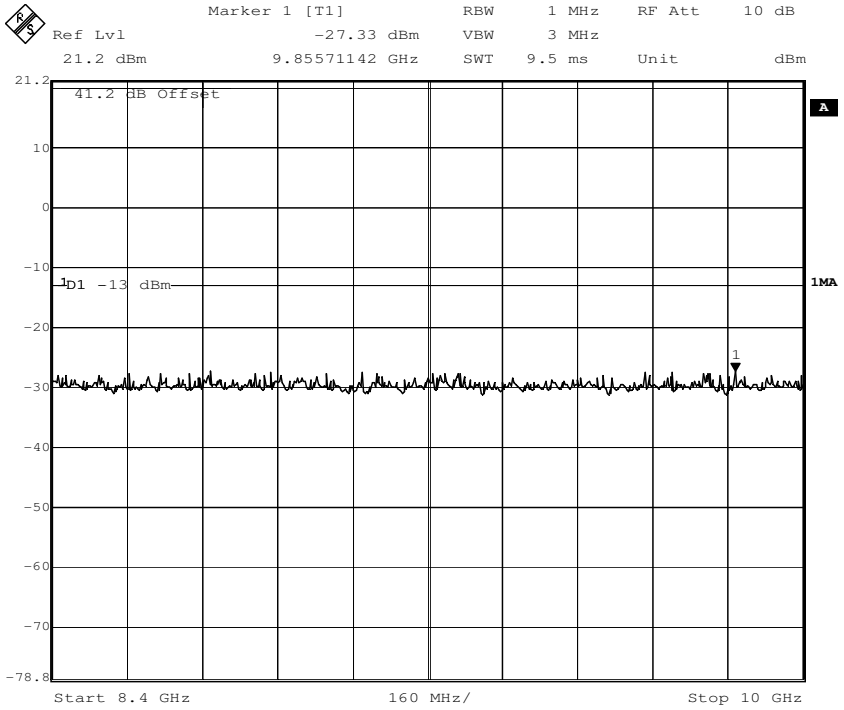
2.3 Downlink: 869MHz ~ 894MHz (highest frequency)

9KHz to 1GHz



1GHz to 8.4GHz

8.4GHz to 10GHz

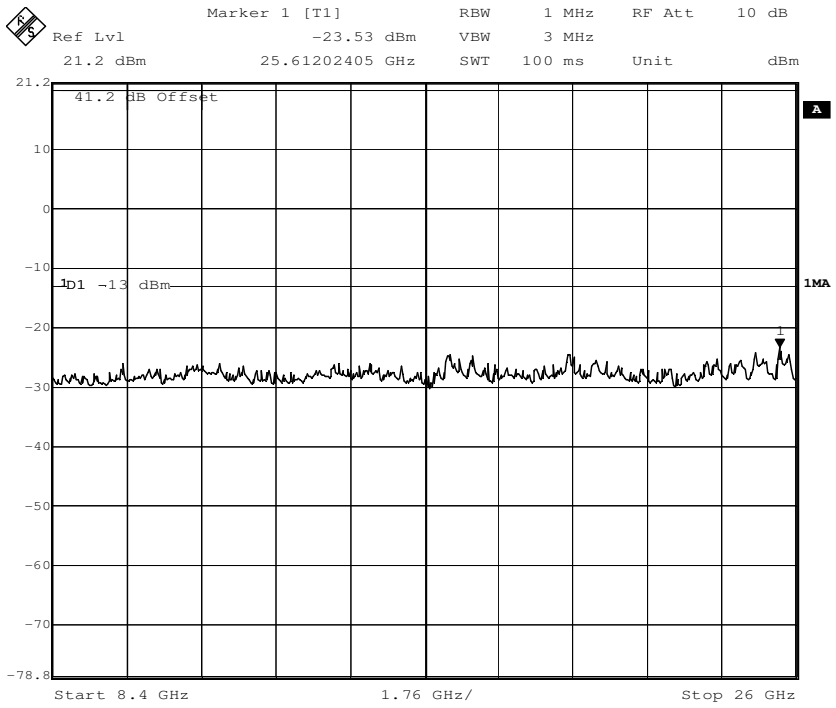


2.4 Downlink: 2110MHz ~ 2155MHz (lowest frequency)

9KHz to 1GHz

1GHz to 8.4GHz

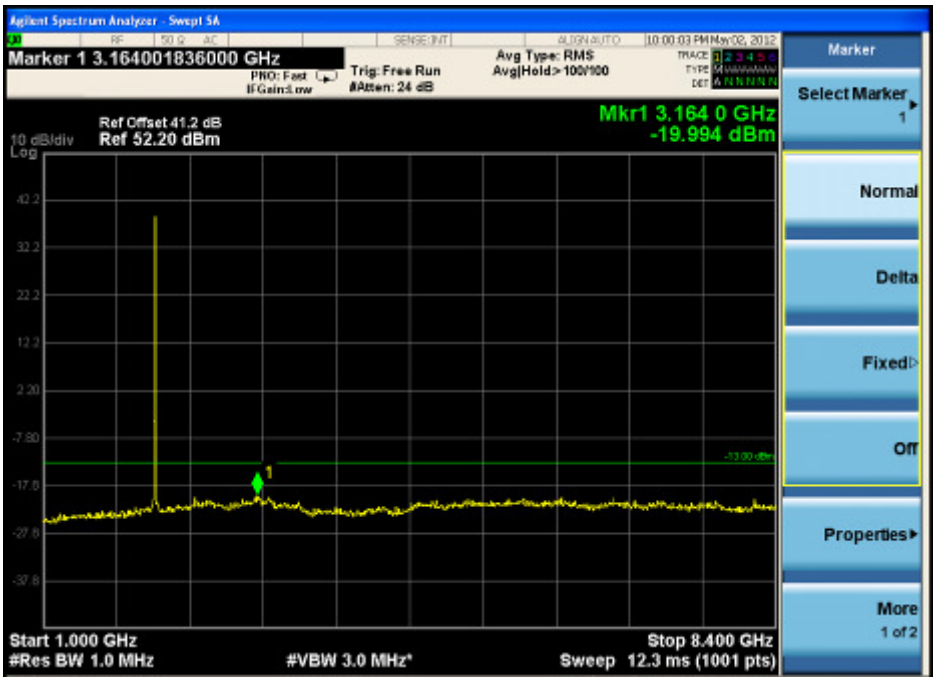
8.4GHz to 26GHz



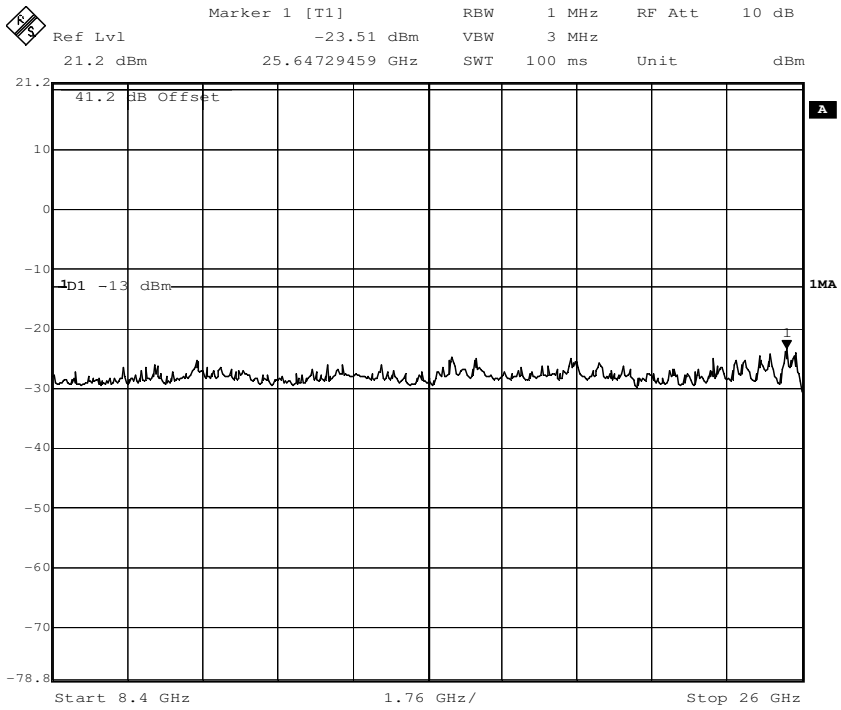
2.5 Downlink: 2110MHz ~ 2155MHz (Middle frequency)

9KHz to 1GHz

1GHz to 8.4GHz

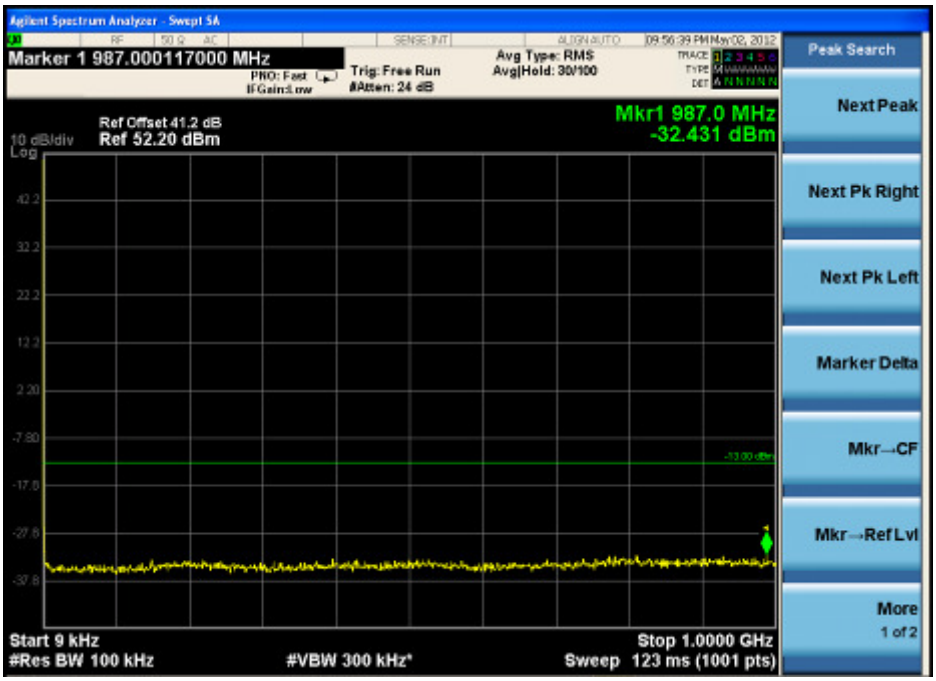


8.4GHz to 26GHz

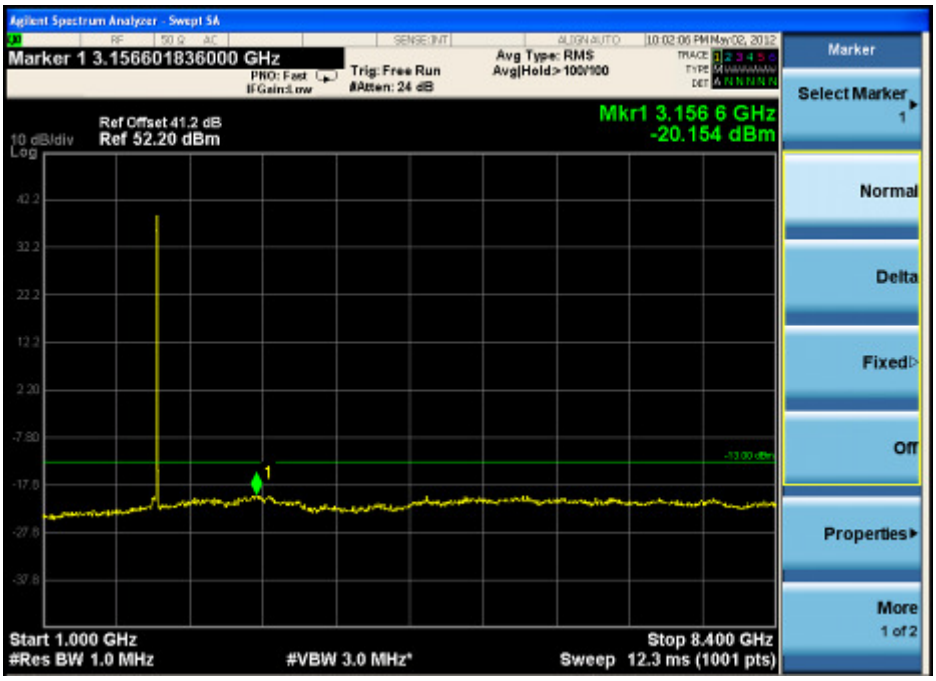


2.6 Downlink: 2110MHz ~ 2155MHz (highest frequency)

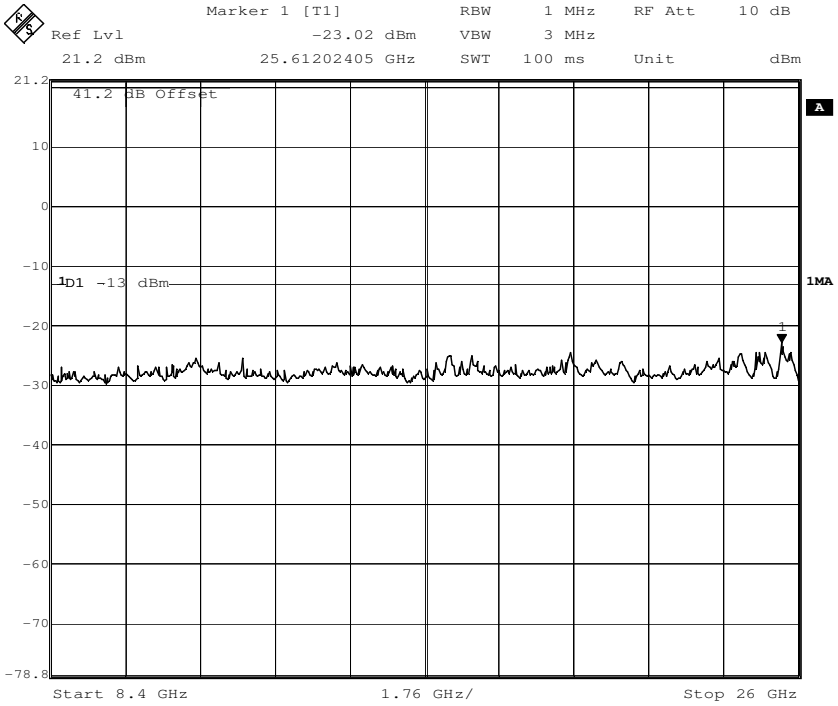
9KHz to 1GHz



1GHz to 8.4GHz



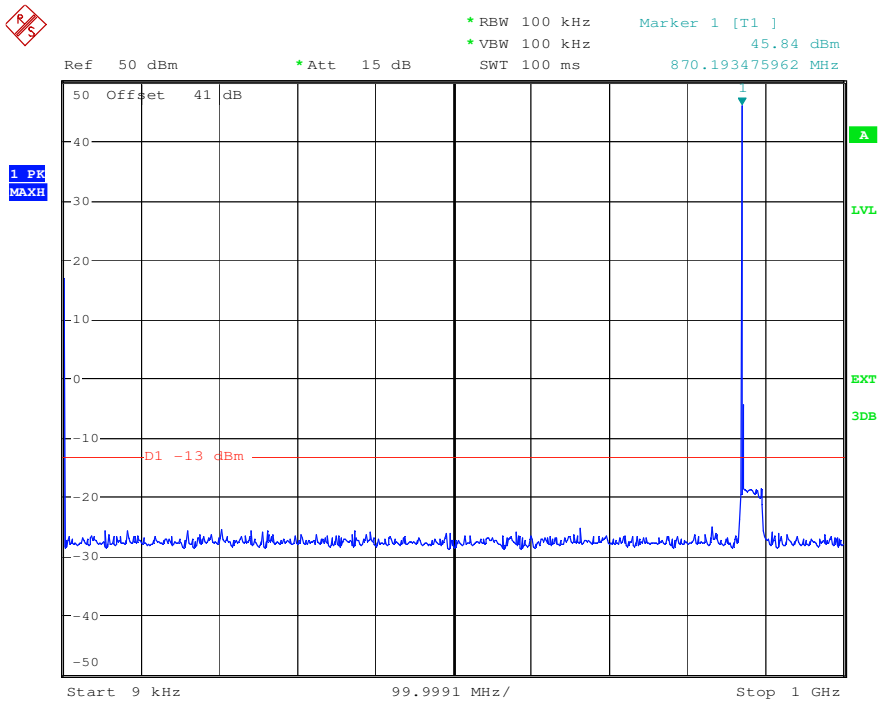
8.4GHz to 26GHz



3.Test for GSM:

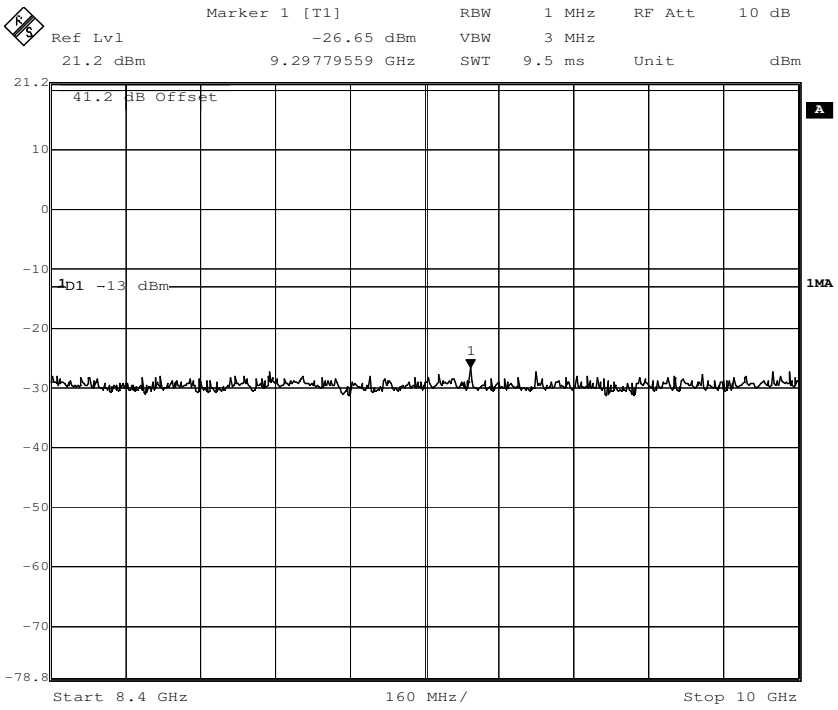
3.1 Downlink: 869MHz ~ 894MHz (lowest frequency)

9KHz to 1GHz



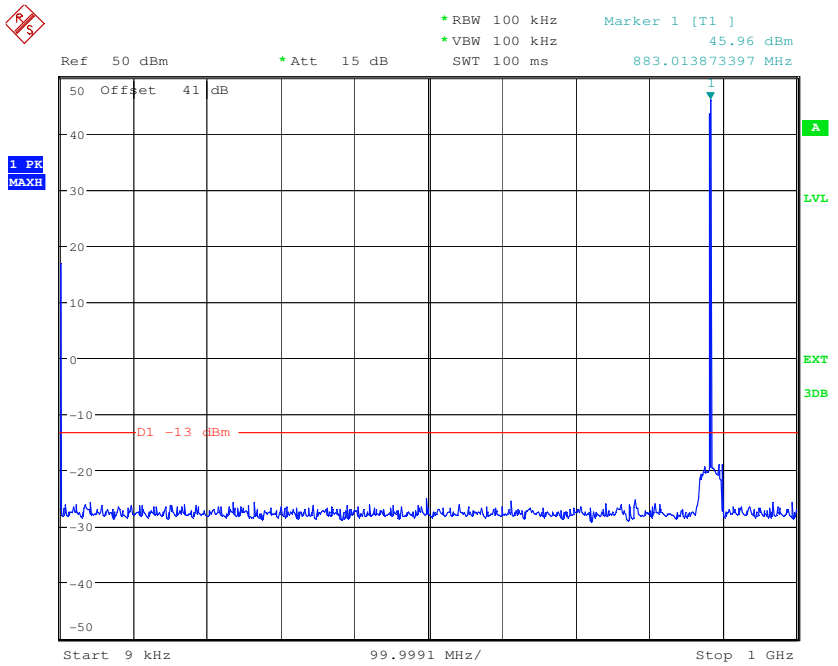
1GHz to 8.4GHz

8.4GHz to 10GHz

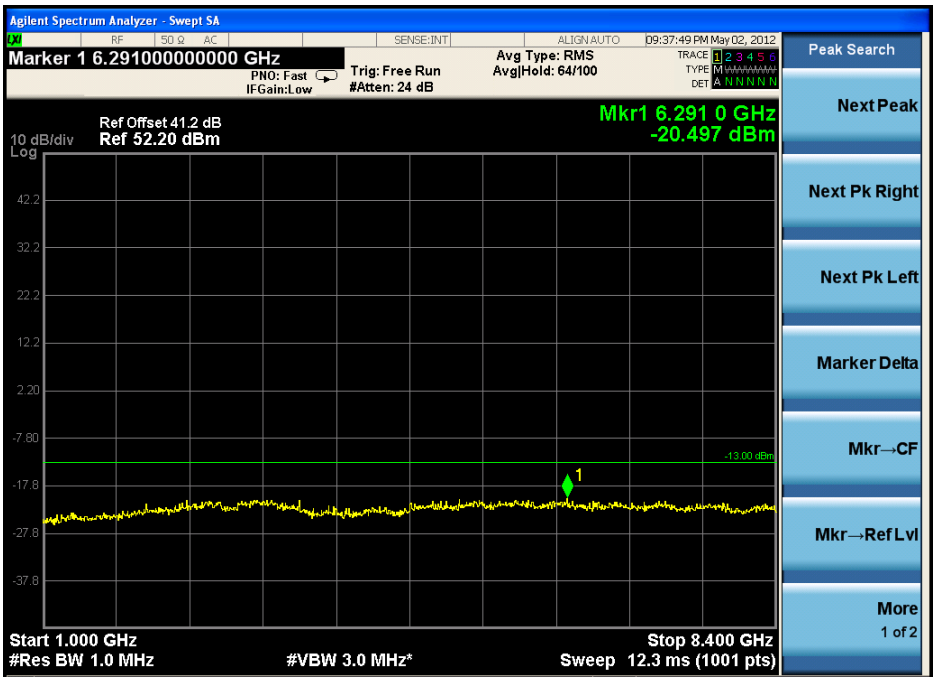


3.2 Downlink: 869MHz ~ 894MHz (Middle frequency)

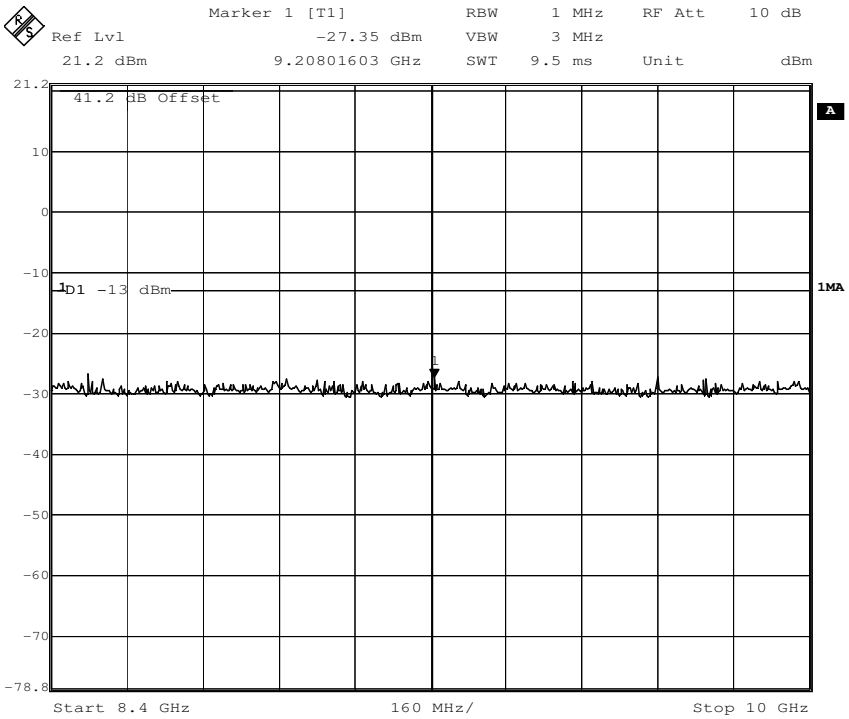
9KHz to 1GHz



1GHz to 8.4GHz

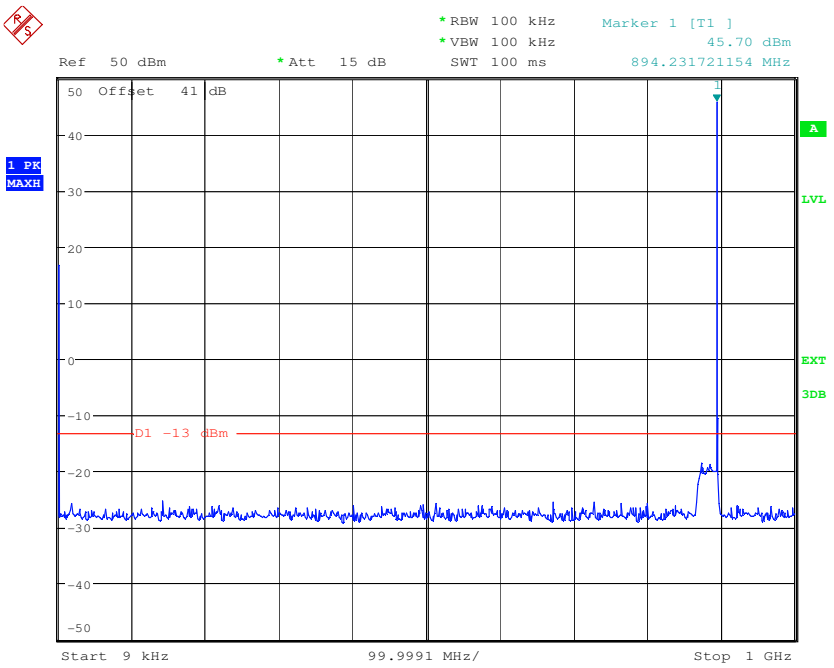


8.4GHz to 10GHz

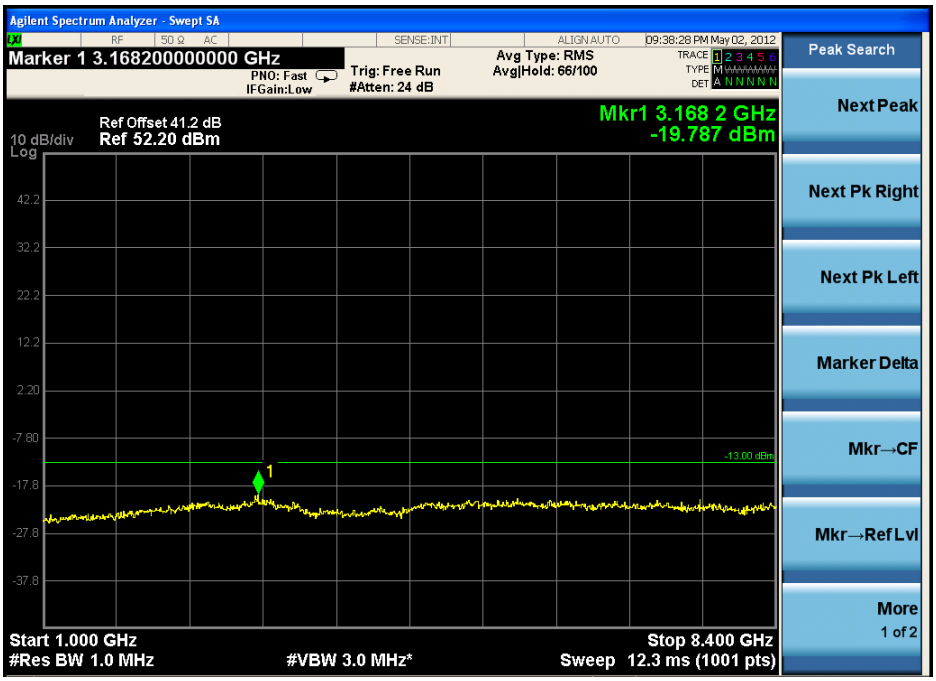


3.3 Downlink: 869MHz ~ 894MHz (highest frequency)

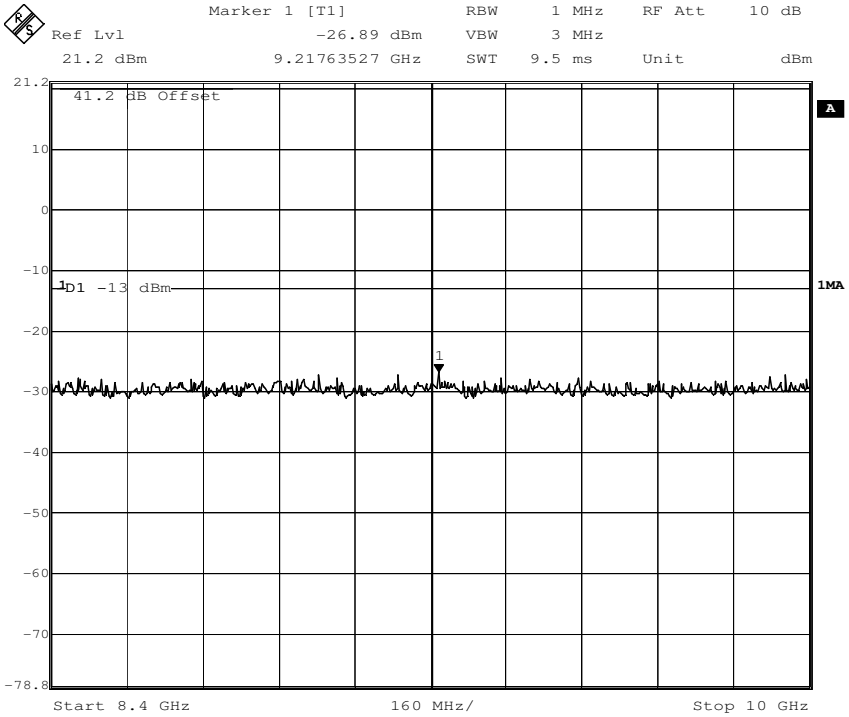
9KHz to 1GHz



1GHz to 8.4GHz



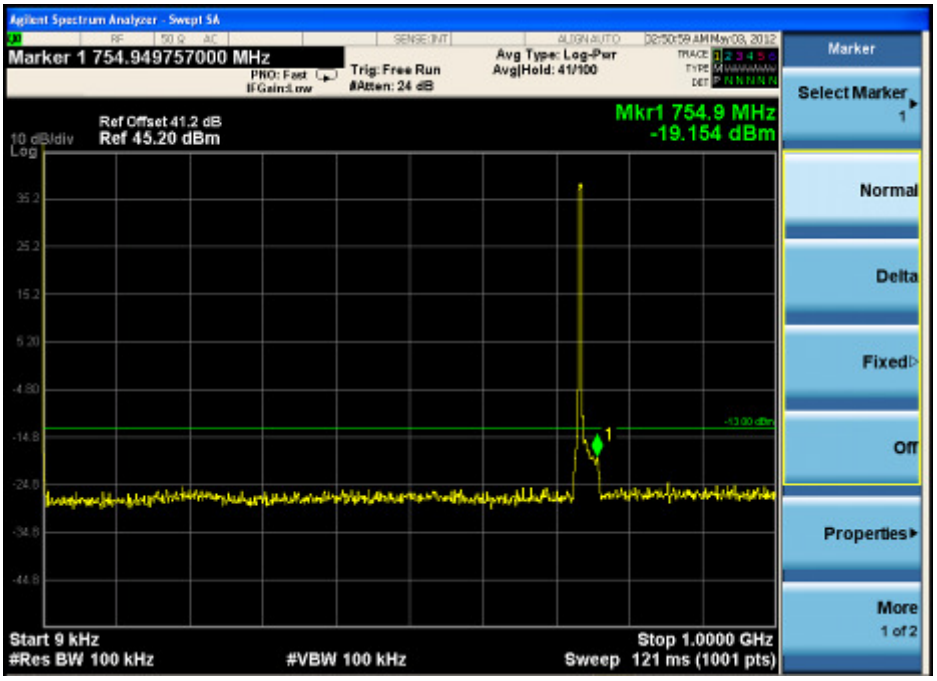
8.4GHz to 10GHz



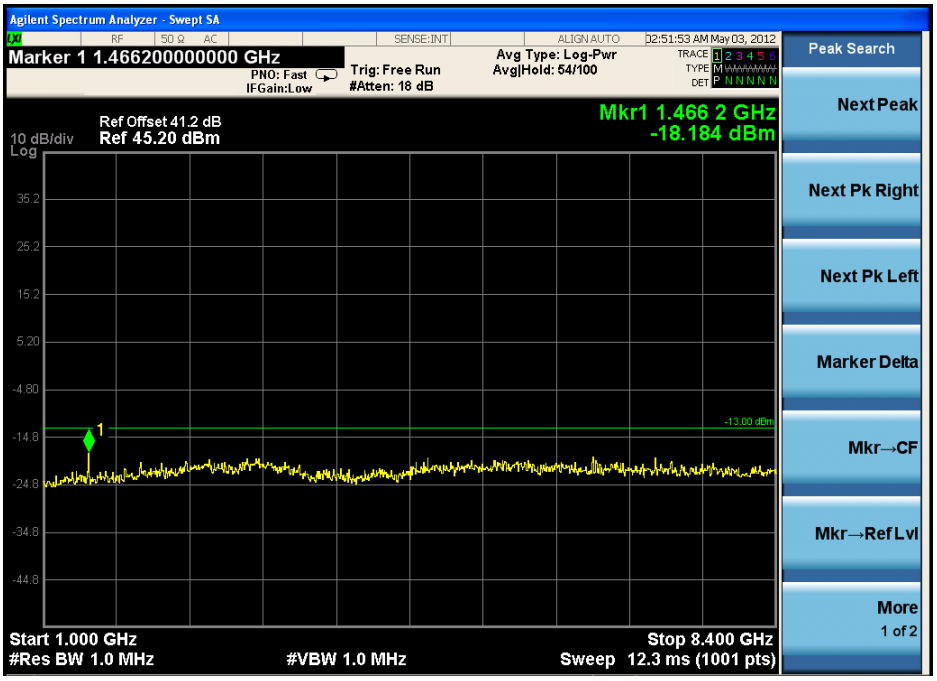
4.Test for LTE:

4.1 Downlink: 728MHz ~ 757MHz (lowest frequency)

9KHz to 1GHz

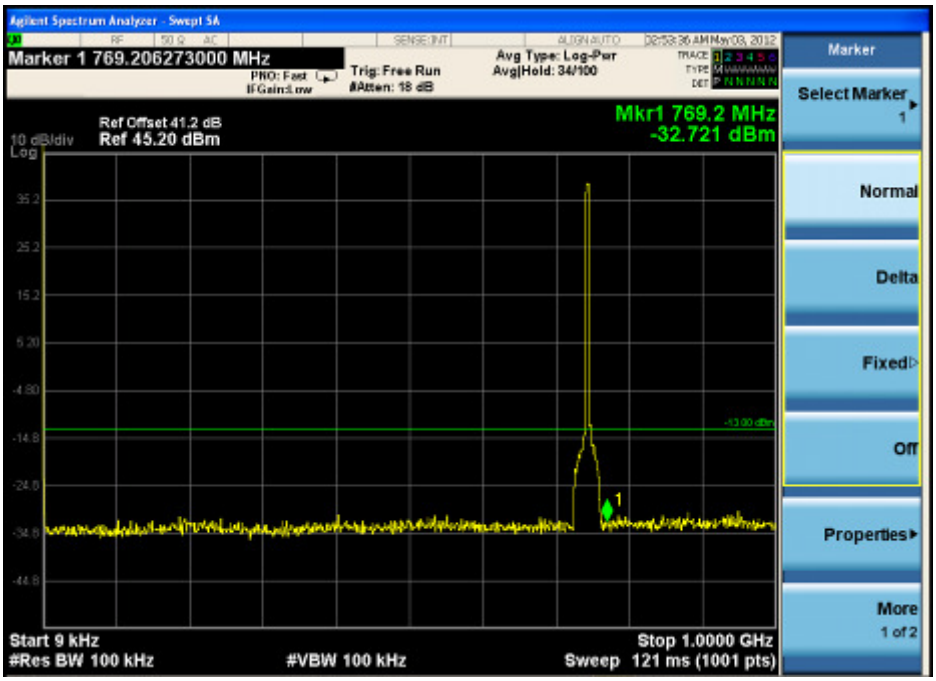


1GHz to 8.4GHz

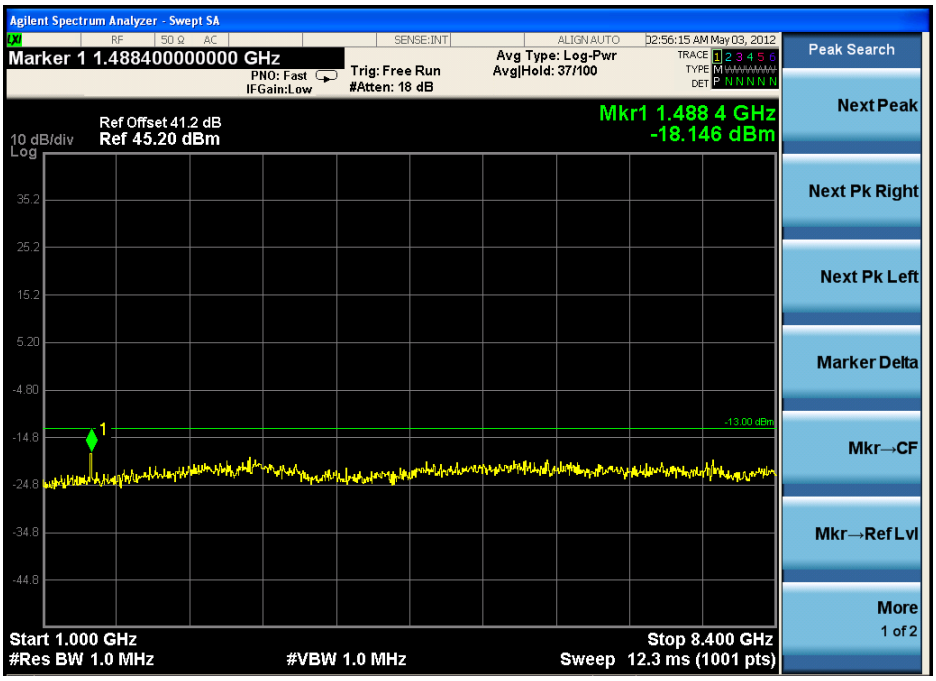


4.2 Downlink: 728MHz ~ 757MHz (Middle frequency)

9KHz to 1GHz

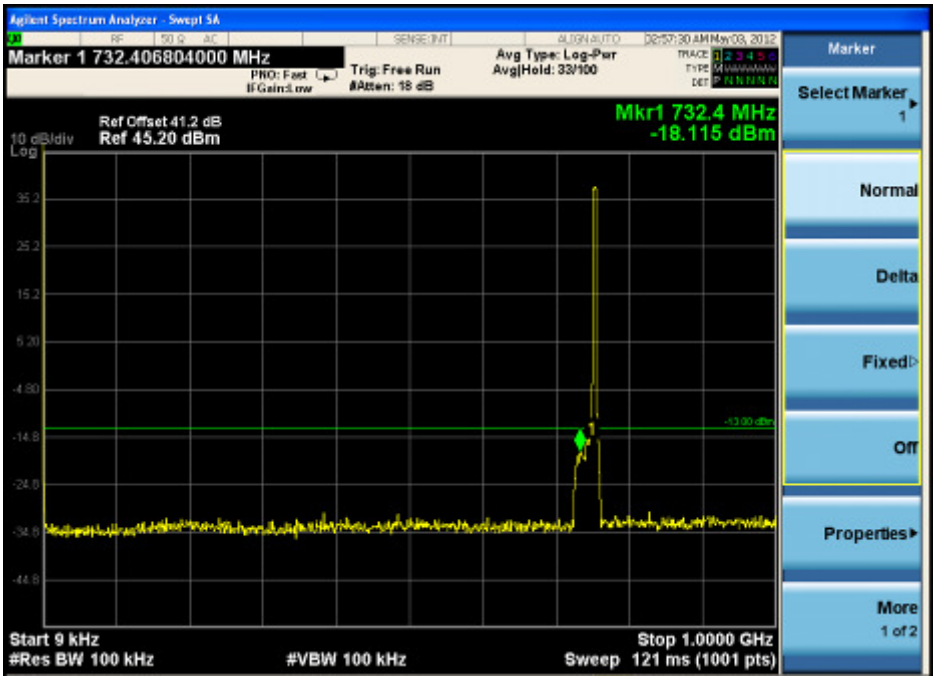


1GHz to 8.4GHz

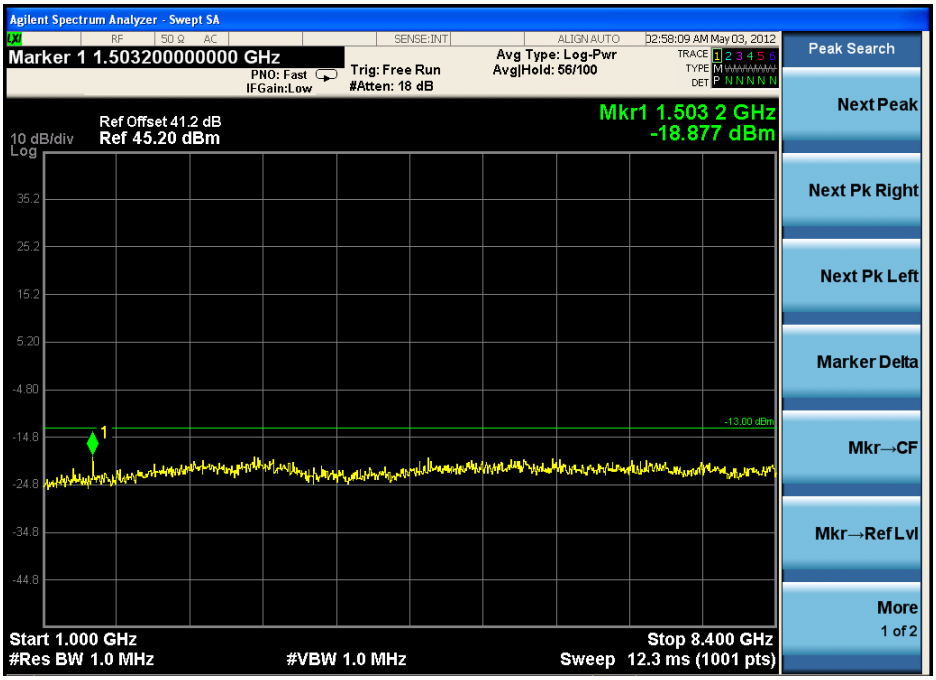


4.3 Downlink: 728MHz ~ 757MHz (highest frequency)

9KHz to 1GHz

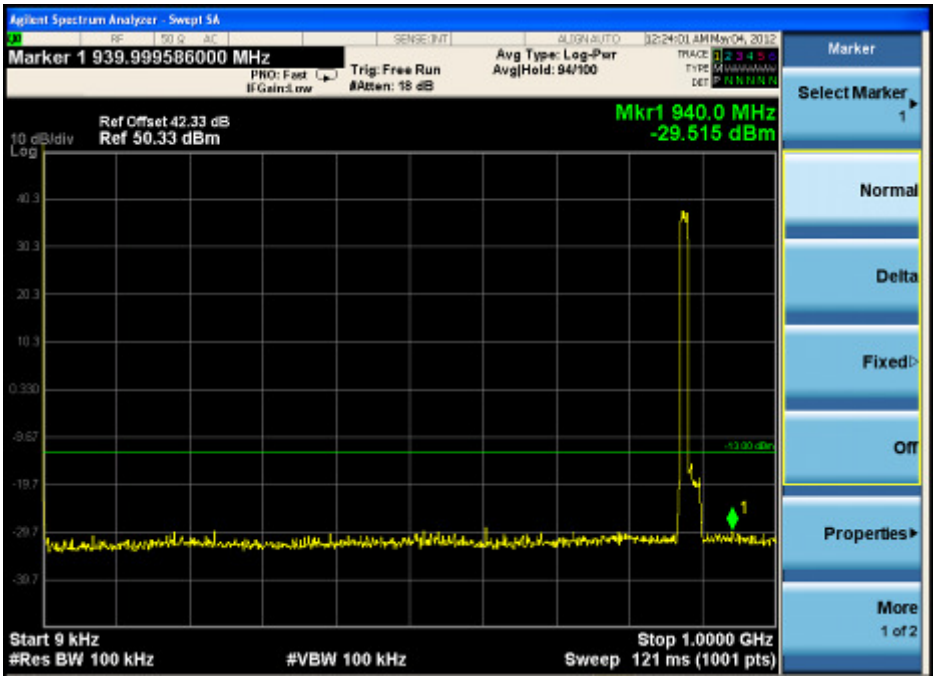


1GHz to 8.4GHz

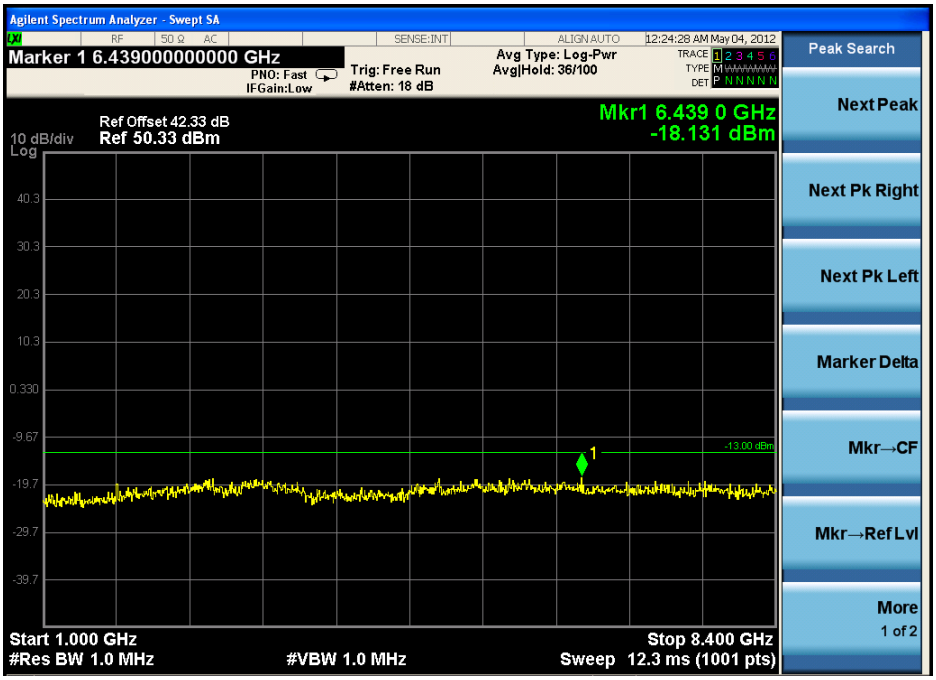


4.4 Downlink: 869MHz ~ 894MHz (lowest frequency)

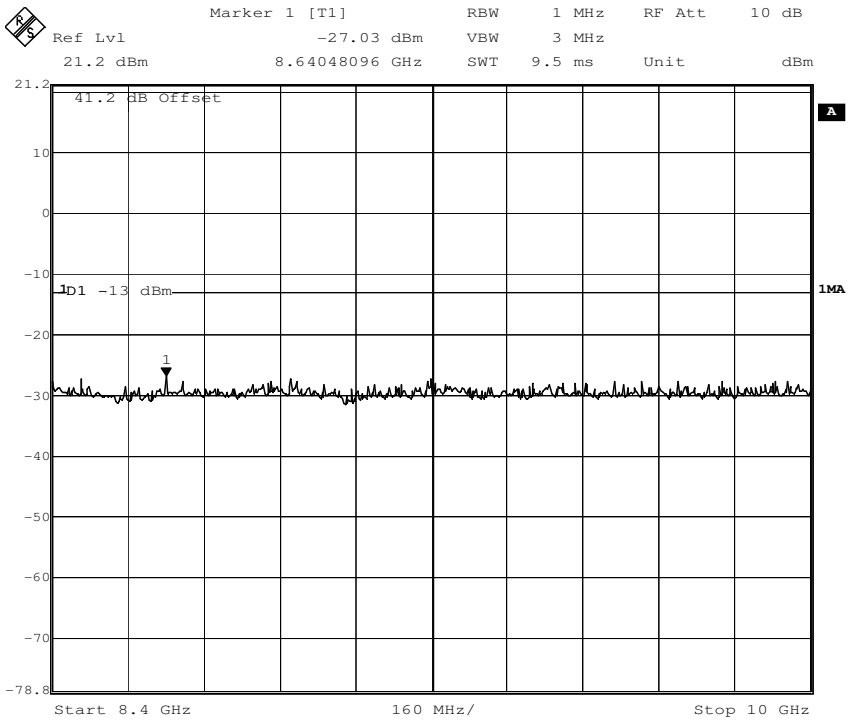
9KHz to 1GHz



1GHz to 8.4GHz

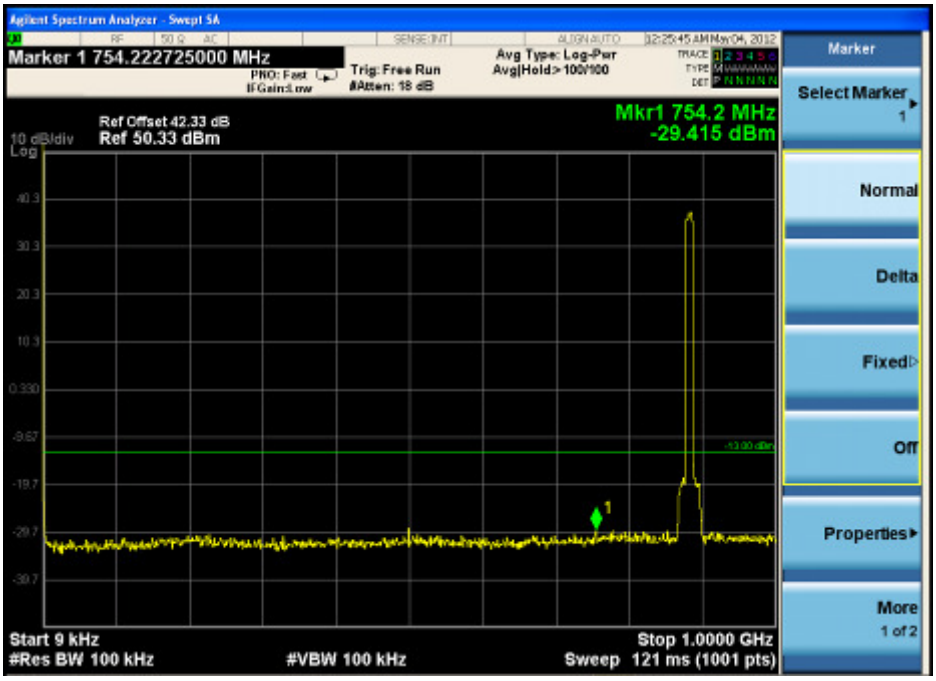


8.4GHz to 10GHz

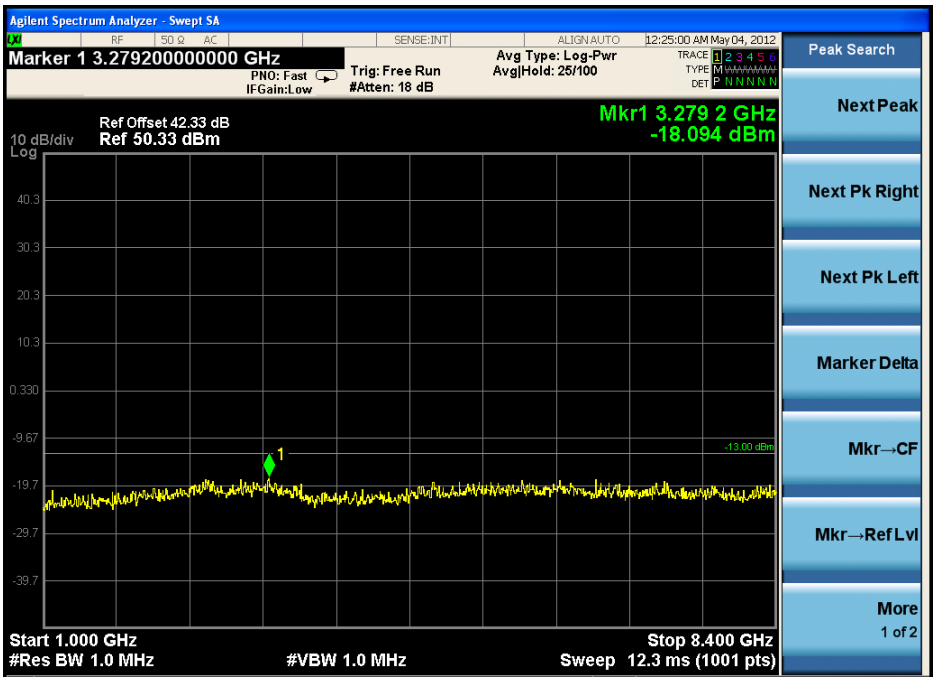


4.5 Downlink: 869MHz ~ 894MHz (Middle frequency)

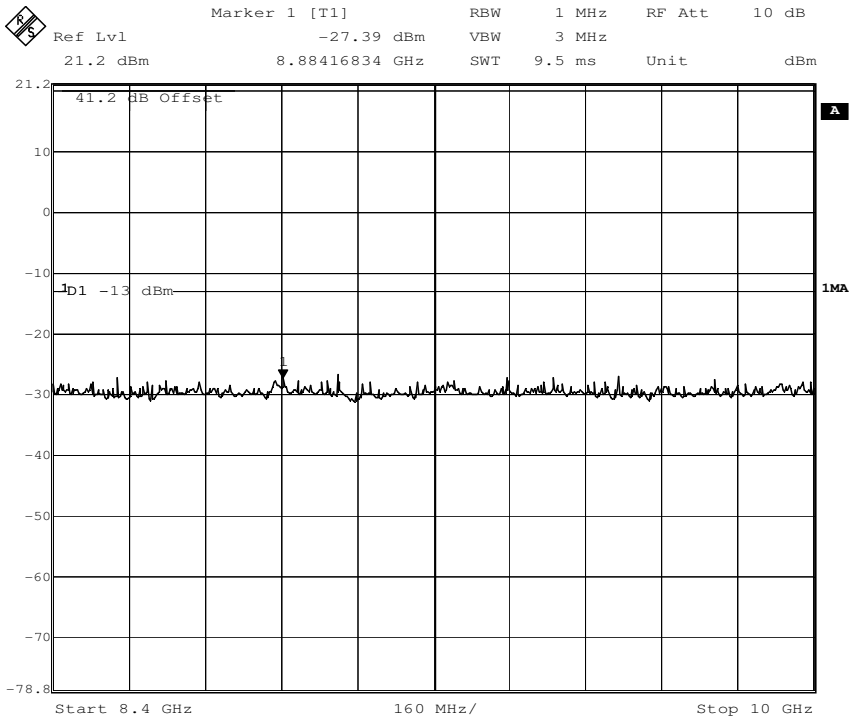
9KHz to 1GHz



1GHz to 8.4GHz

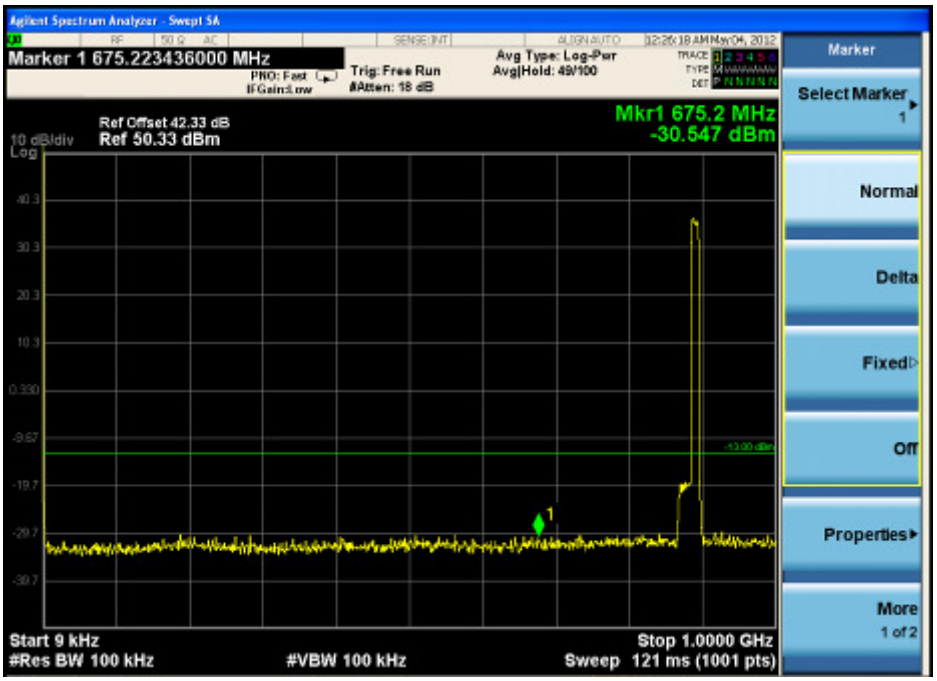


8.4GHz to 10GHz

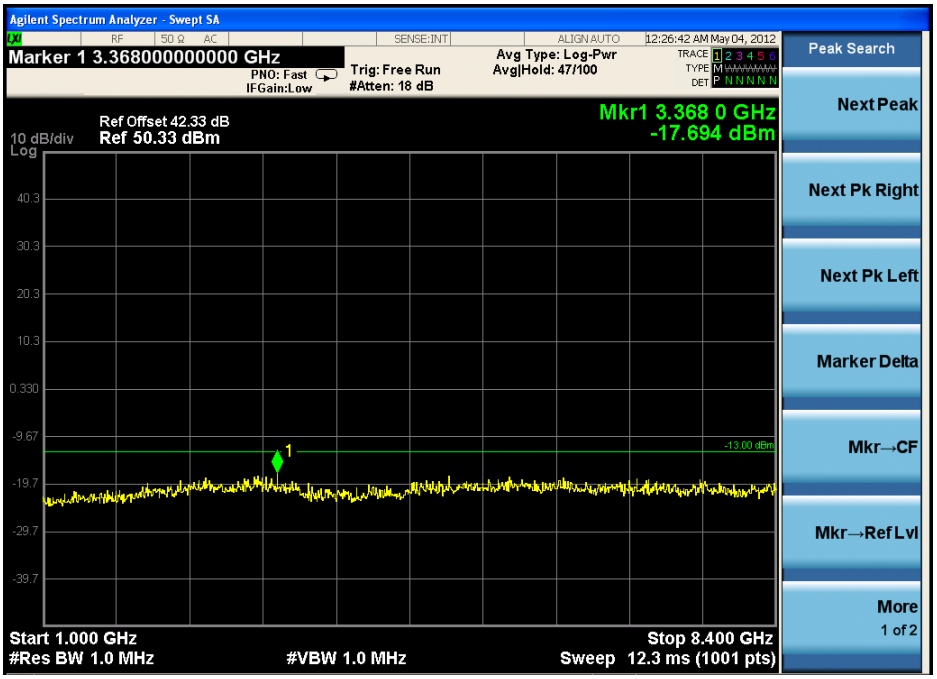


4.6 Downlink: 869MHz ~ 894MHz (highest frequency)

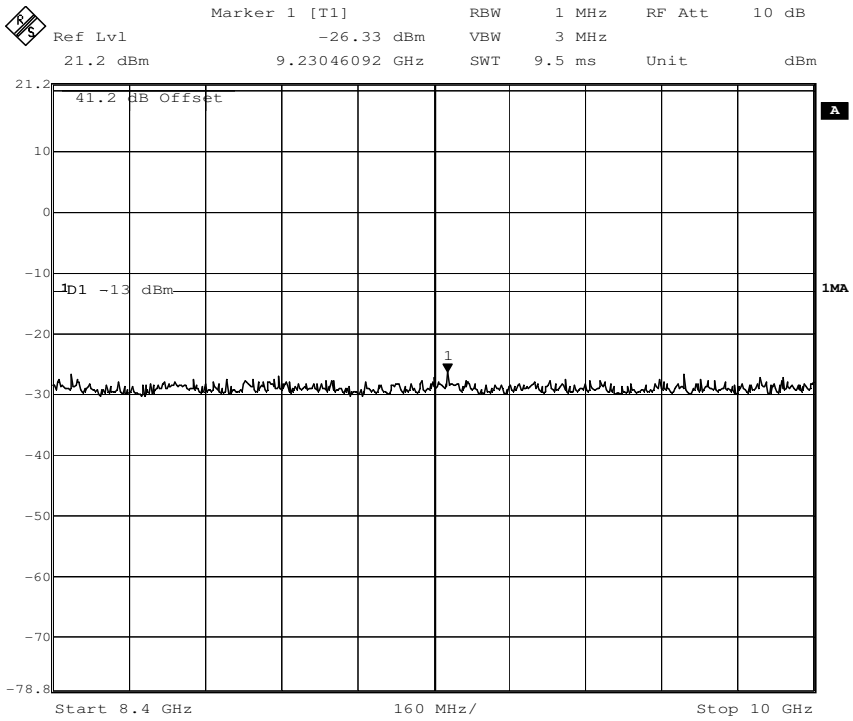
9KHz to 1GHz



1GHz to 8.4GHz

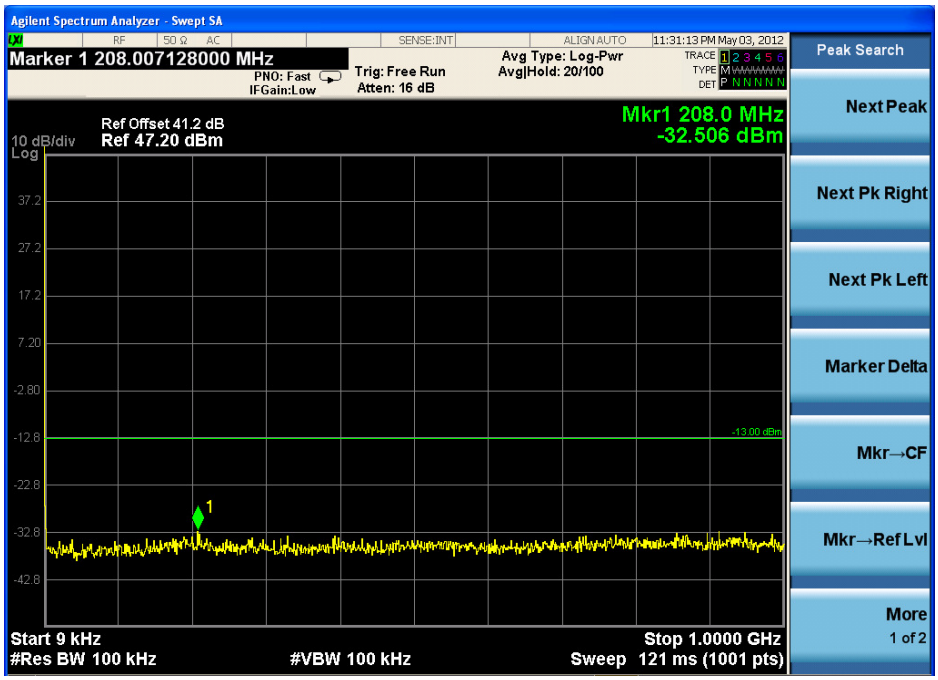


8.4GHz to 26GHz

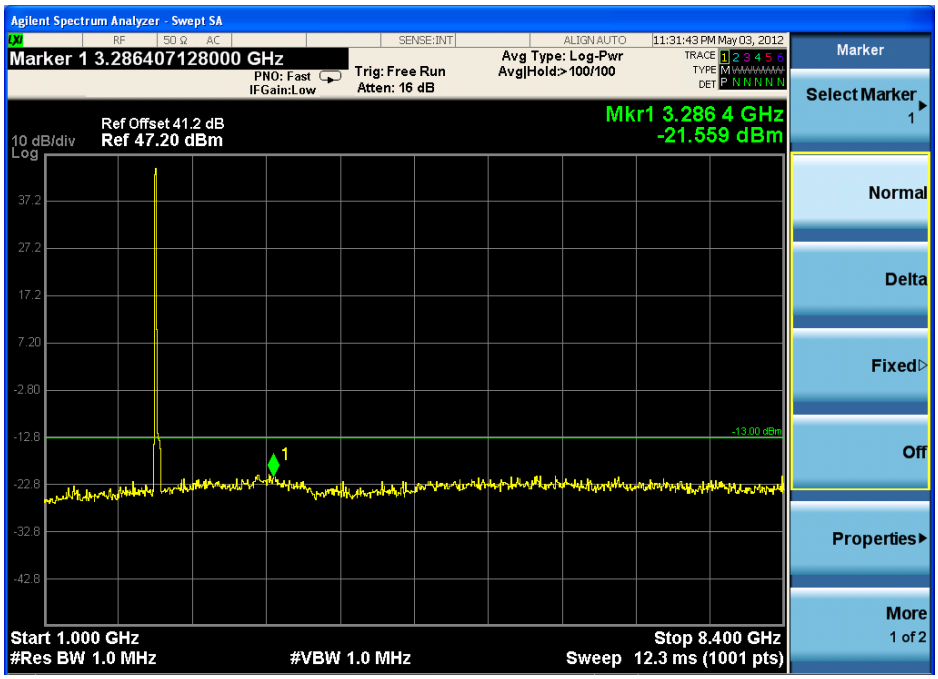


4.7 Downlink: 2110MHz ~ 2155MHz (lowest frequency)

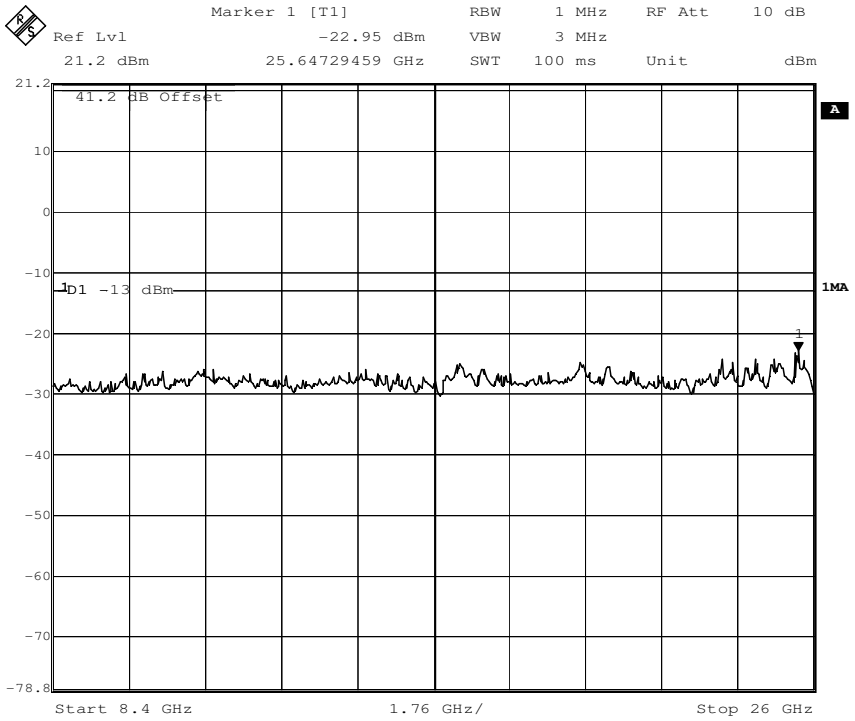
9KHz to 1GHz



1GHz to 8.4GHz

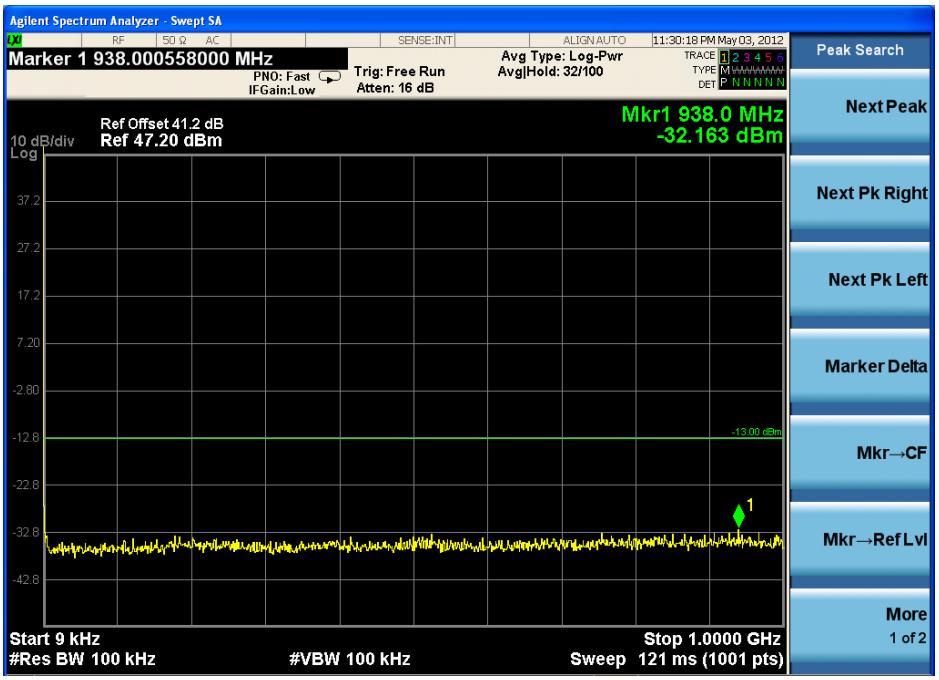


8.4GHz to 26GHz

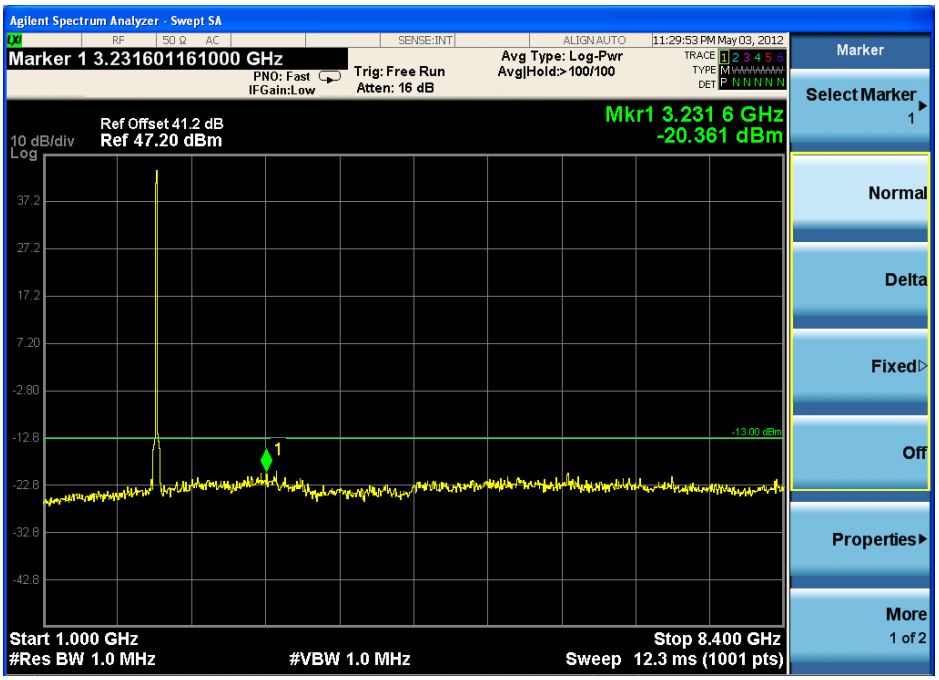


4.8 Downlink: 2110MHz ~ 2155MHz (Middle frequency)

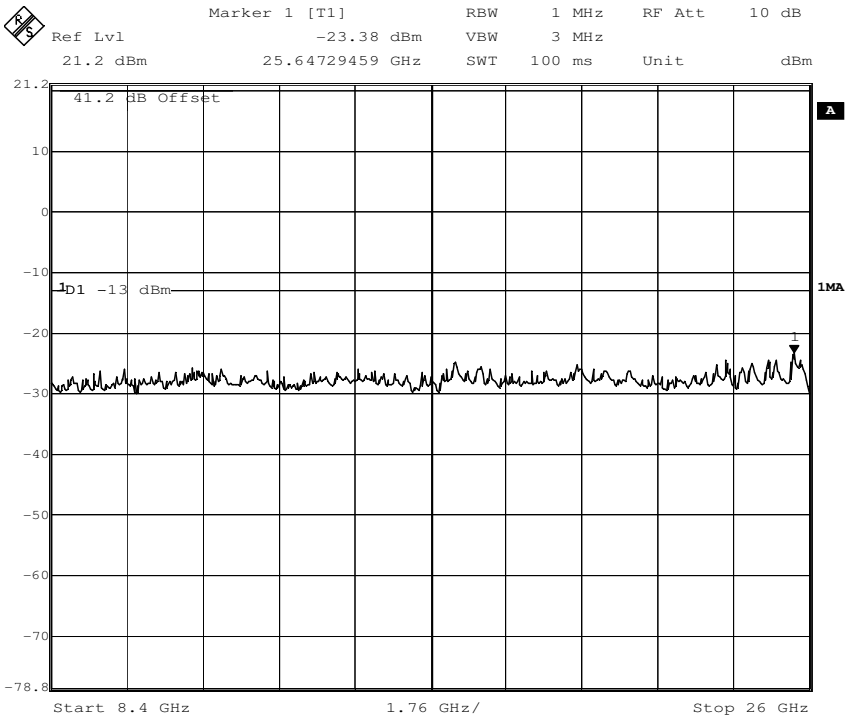
9KHz to 1GHz



1GHz to 8.4GHz

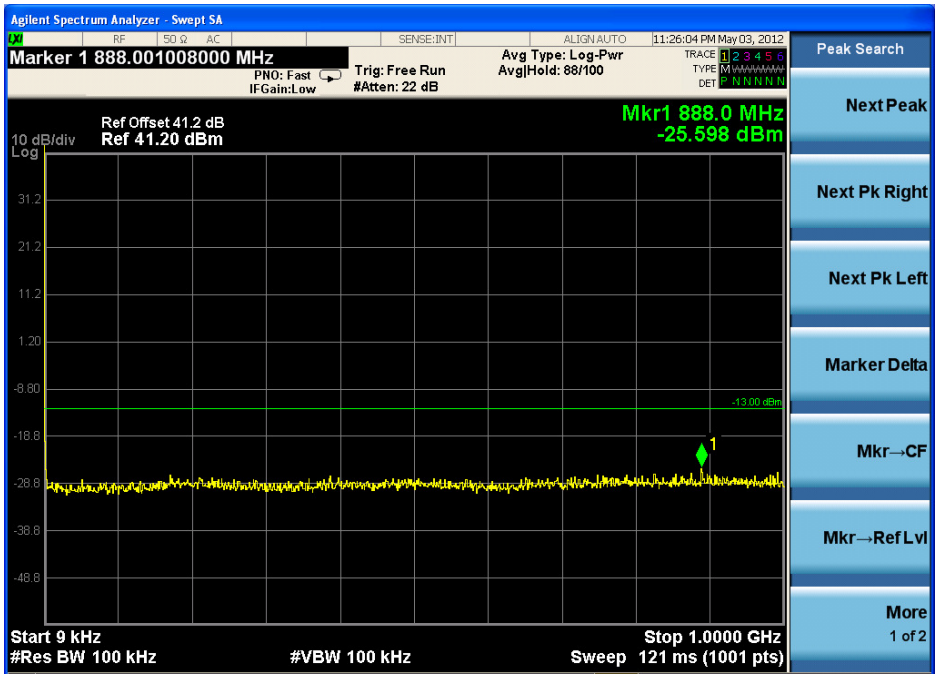


8.4GHz to 26GHz

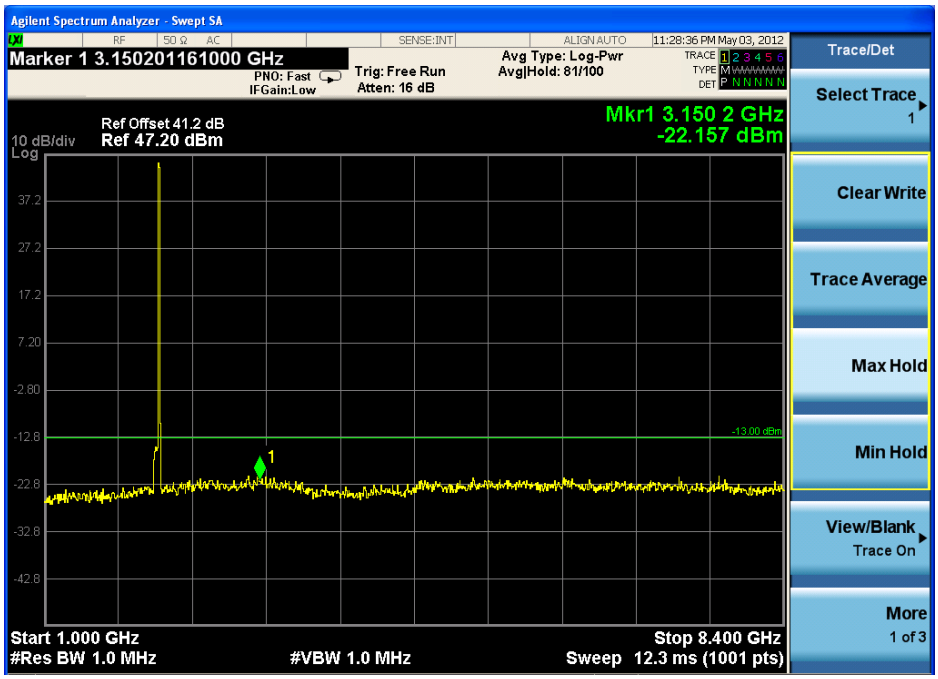


4.9 Downlink: 2110MHz ~ 2155MHz (highest frequency)

9KHz to 1GHz



1GHz to 8.4GHz



8.4GHz to 26GHz