ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR PCS LICENSED TRANSMITTER

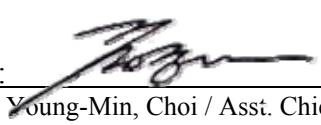
Test Report No.	**: E108R-021**
AGR No.	**: A107A-143**
Applicant	**: SOLiD Technologies, Inc.**
Address	**: 18Fl, KINS Tower, 25-1 Jeongja-Dong, Bundang-Gu, Seongnam-Si, Gyeonggi-Do, 463-847, Korea**
Manufacturer	**: SOLiD Technologies, Inc.**
Address	**: 18Fl, KINS Tower, 25-1 Jeongja-Dong, Bundang-Gu, Seongnam-Si, Gyeonggi-Do 463-847, Korea**
Type of Equipment	**: RDU MODULE(850C/700LTEC)**
FCC ID.	**: W6U850C700LTEC**
Model Name	**: RDU 850C+700LTEC**
Serial number	**: N/A**
Total page of Report	**: 149 pages (including this page)**
Date of Incoming	**: July 21, 2010**
Date of issue	**: August 16, 2010**

SUMMARY

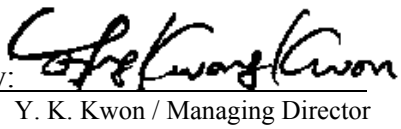
The equipment complies with the regulation; **FCC Part 22 Subpart H and Part 27 Subpart C.**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

Prepared by: 

Young-Min, Choi / Asst. Chief Engineer
EMC/RF Center
ONETECH Corp.

Reviewed by: 

Y. K. Kwon / Managing Director
EMC/RF Center
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1. VERIFICATION OF COMPLIANCE

APPLICANT : SOLiD Technologies, Inc.
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CONTACT PERSON : Mr. Kangyeob, Bae / Director
TELEPHONE NO : +82-31-784-8557
FCC ID : W6U850C700LTEC
MODEL NAME : RDU 850C+700LTEC
SERIAL NUMBER : N/A
DATE : August 16, 2010

EQUIPMENT CLASS	PCB - PCS Licensed Transmitter
EQUIPMENT DESCRIPTION	RDU MODULE(850C/700LTEC)
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.4: 2009, EIA/TIA-603-C
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	PART 22 Subpart H and PART 27 Subpart C
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 m open area test site

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. TEST SUMMARY

2.1 Test items and results

SECTION	TEST ITEMS	RESULTS
2.1046(a), 22.913(a), 27.50(c)	RF Power Output at Antenna Terminals	Met the Limit / PASS
2.1047	Modulation Characteristics	PASS (See Note 1)
2.1049	Occupied Bandwidth, Bandwidth Limitation	Met the Limit / PASS
2.1049, 22.917	Band Edge	Met the Limit / PASS
2.1051, 22.917, 27.53(c)	Spurious Emissions at Antenna Terminals	Met the Limit / PASS
2.1053, 22.917, 27.53(c)	Field strength of Spurious Radiation	Met the Limit / PASS
2.1055, 22.355, 27.54	Frequency Stability with Temperature variation	Met the requirement / PASS
2.1055, 22.355, 27.54	Frequency stability with primary voltage variation	Met the requirement / PASS
2.1093	RF Exposure	See Note 2

Note 1: The Equipment under Test (EUT) is a repeater which reproduces the modulated input signal, so the EUT meets the requirement

Note 2: End users and installers must be provided with an antenna installation instructions and for meeting the transmitter operating conditions for satisfying RF exposure compliance, because the applicant does not provide an antenna with the EUT.

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Related Submittal(s) / Grant(s)

Original Grant

2.4 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in section 2.1.

2.5 Test Methodology

Radiated testing was performed according to the procedures in ANSI C63.4: 2009 and was performed at a distance of 3 m from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 307-51 Daessangryung-ri, Chowol-eup, Gwangju-si, Gyeonggi-do, 464-862, Korea. Description details of test facilities were submitted to the Commission on August 21, 2008. (Registration Number: 340658)

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3. GENERAL INFORMATION

3.1 Product Description

The SOLiD Technologies, Inc., Model RDU 850C+700LTEC (referred to as the EUT in this report) is a RDU MODULE(850C/700LTEC) that shall be plugged in ROU (Remote Optic Unit). The ROU can be equipped with up to 3 RDUs (Remote Drive Unit), a RPSU (Remote Power Supply Unit), a RCPU (Remote Central Processor Unit), a R-Optic (Remote Optic), a SIU (System Interface Unit) and a Multiplexer. The System, SMDR-NH124 consists of ROU, BIU (BTS Interface Unit), ODU (Optic Distribution Unit), and OEU (Optic Expansion Unit). Except for ROU, the RF output ports of other units are connected to coaxial cable each other. ROU receives TX optical signals from ODU or OEU and converts them into RF signals. The converted RF signals are amplified through High Power Amp in a corresponding RDU, combined with multiplexer module and then radiated to the antenna port.

When receiving RX signals through the antenna port, this unit filters out-of-band signals in a corresponding RDU and sends the results to Remote Optic Module to make electronic-optical conversion of them. After converted, the signals are sent to an upper device of ODU or OEU. ROU can be equipped with up to three RDUs (Remote Drive Unit) and the module is composed of maximal Dual Band, but this report only covers RDU 850C+700LTEC, FCC ID: W6U850C700LTEC and other modules shall be issued with other test report number. The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE		RDU MODULE(850C/700LTEC)
LIST OF EACH OSC. or CRY. FREQ.(FREQ.>=1 MHz)		14.74 MHz
EMISSION DESIGNATOR		F9W(CDMA, EVDO, WCDMA), DXW(TDMA), G7W(GSM, EDGE), G7D(QPSK),D7W(16QAM, 64QAM)
OPERATING FREQUENCY	850C	Tx: 869 MHz ~ 894 MHz, Rx: 824 MHz ~ 849 MHz
	700LTE_C	Tx: 746 MHz ~ 756 MHz, Rx: 777 MHz ~ 787 MHz
RF OUTPUT POWER		23 dBm
CHANNEL SEPARATION		TDMA(30 kHz), GSM(200 kHz), EDGE(200 kHz), CDMA(1.25 MHz) EVDO(1.25 MHz), WCDMA(5 MHz)
DC VOLTAGE & CURRENT INTO FINAL AMPLIFIER		DC 27 V, 2 A, DC 9 V, 1 A, DC 6 V, 2.5 A
ELECTRICAL RATING		AC 120 V, 0.97 A and DC -48 V
OPERATING TEMPERATURE		-10 °C ~ 50 °C

3.2 Alternative type(s)/model(s); also covered by this test report.

-. None

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3.3 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

Model	Manufacturer	FCC ID	Description	Connected to
RDU 850C+700LTEC	SOLiD Technologies, Inc.	W6U850C700LTEC	RDU MODULE(850C/700LTEC) (EUT)	-
SMJ100A	Rohde & Schwarz	N/A	Signal Generator	EUT

3.4 Mode of operation during the test

The EUT was received signal form signal generator and then each modulation, TDMA, CDMA, GSM, EDGE, EVDO, WCDMA and LTE was configured for maximum signal gain and bandwidth. The EUT was operated in a manner representative of the typical usage of the equipment. During all testing, system components were manipulated within the confines of typical usage to maximize each emission. The applicant does not supply antenna(s) with the system, so the dummy loads were connected to the RF output ports on the EUT for radiated spurious emission testing.

4. EUT MODIFICATIONS

-. None

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5. RF POWER OUTPUT at ANTENNA TERMINAL

5.1 Operating environment

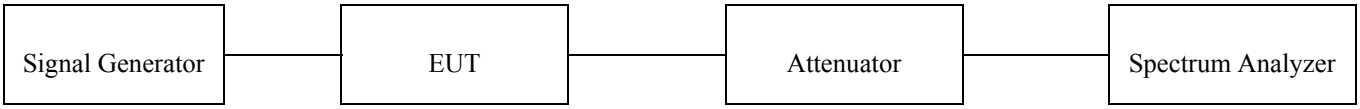
Temperature : 24 °C

Relative humidity : 48 % R.H.

5.2 Test set-up

The RF signal from the signal generator(s) was injected to the EUT and the amplified RF signal at the output of the EUT was connected to the power meter or spectrum analyzer. The test was performed at three frequencies (low, middle, and high channels) at each band using all applicable modulation.

RF output power was measured by channel power measurement function of the spectrum analyzer with rms detector mode.



5.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	E4432B	HP	Signal Generator	US38440950	June 10, 2010
■ -	SMJ100A	R/S	Signal Generator	101038	Feb. 04, 2010
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 16, 2010
□ -	8564E	HP	Spectrum Analyzer	3650A00756	June 10, 2010

All test equipment used is calibrated on a regular basis.

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5.4 Test data

5.4.1 Test Result for Part 22 H

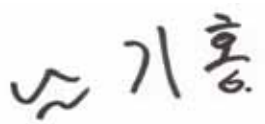
-. Test Date : August 05 ~ 09, 2010

-. Measurement Function : Channel Power

-. Detector Mode : RMS detector

-. Test Result : Pass

Modulation	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
TDMA	Low	869.03	-9.50	23.00	0.199 526	500.00
	Middle	881.50	-9.33	23.00		
	High	893.97	-9.67	23.00		
GSM	Low	869.20	-9.67	23.00	0.199 526	
	Middle	881.60	-9.50	23.00		
	High	893.80	-9.40	23.00		
EDGE	Low	869.20	-9.45	23.00	0.199 526	
	Middle	881.60	-9.55	23.00		
	High	893.80	-9.67	23.00		
CDMA	Low	870.25	-9.33	23.00	0.199 526	500.00
	Middle	881.50	-9.50	23.00		
	High	892.75	-9.67	23.00		
1xEVDO	Low	870.25	-9.45	23.00	0.199 526	
	Middle	881.50	-9.40	23.00		
	High	892.75	-9.50	23.00		
WCDMA	Low	871.40	-9.42	23.00	0.199 526	500.00
	Middle	881.00	-9.50	23.00		
	High	891.60	-9.33	23.00		



Tested by: Ki-Hong, Nam / Project Engineer

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5.4.2 Test Result for Part 27 C

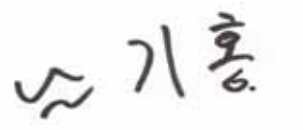
-. Test Date : August 05 ~ 09, 2010

-. Measurement Function : Channel Power

-. Detector Mode : RMS detector

-. Test Result : Pass

Modulation	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
QPSK	751.00	-9.50	23.00	0.199 526	1 000.00
16QAM	751.00	-9.60	23.00		
64QAM	751.00	-9.35	23.00		



Tested by: Ki-Hong, Nam / Project Engineer

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6. OCCUPIED BANDWIDTH

6.1 Operating environment

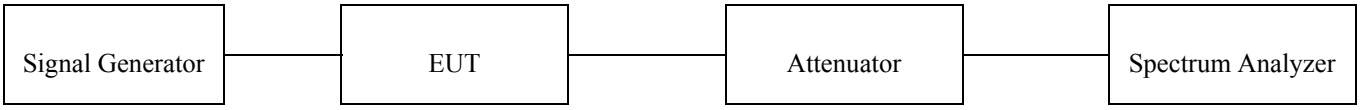
Temperature : 24 °C

Relative humidity : 48 % R.H.

6.2 Test set-up

The RF signal from the signal generator(s) was injected to the EUT and the amplified RF signal at the output of the EUT was connected to the power meter or spectrum analyzer. The test was performed at three frequencies (low, middle, and high channels) at each band using all applicable modulation.

For the testing, the RBW was set to 1 % to 3 % of the - 20 dB bandwidth. The VBW is set to 3 times the RBW and sweep time is coupled.



6.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	8564E	HP	Spectrum Analyzer	3650A00756	June 10, 2010
■ -	E4432B	HP	Signal Generator	US38440950	June 10, 2010
■ -	SMJ100A	R/S	Signal Generator	101038	Feb. 04, 2010
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 16, 2010

All test equipment used is calibrated on a regular basis.

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6.4 Test data

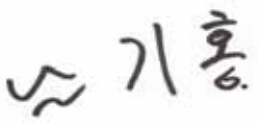
6.4.1 Test Result for Part 22 H

-. Test Date : August 05 ~ 09, 2010

-. Test Result : Pass

Modulation	Channel	20 dB Bandwidth (kHz)	99 % Occupied Bandwidth (kHz)
TDMA	Low	35.30	29.00
	Middle	35.30	29.00
	High	35.30	29.00
GSM	Low	345.0	253.3
	Middle	347.0	253.3
	High	345.0	253.3
EDGE	Low	335.0	253.3
	Middle	335.0	253.3
	High	335.0	253.3
CDMA	Low	1592	1 333
	Middle	1592	1 333
	High	1592	1 333
1xEVDO	Low	1592	1 333
	Middle	1592	1 333
	High	1592	1 333
WCDMA	Low	4700	4 183
	Middle	4700	4 183
	High	4700	4 150

Remark: According to above result, the carrier frequency shall be within the frequency block edges.



Tested by: Ki-Hong, Nam / Project Engineer

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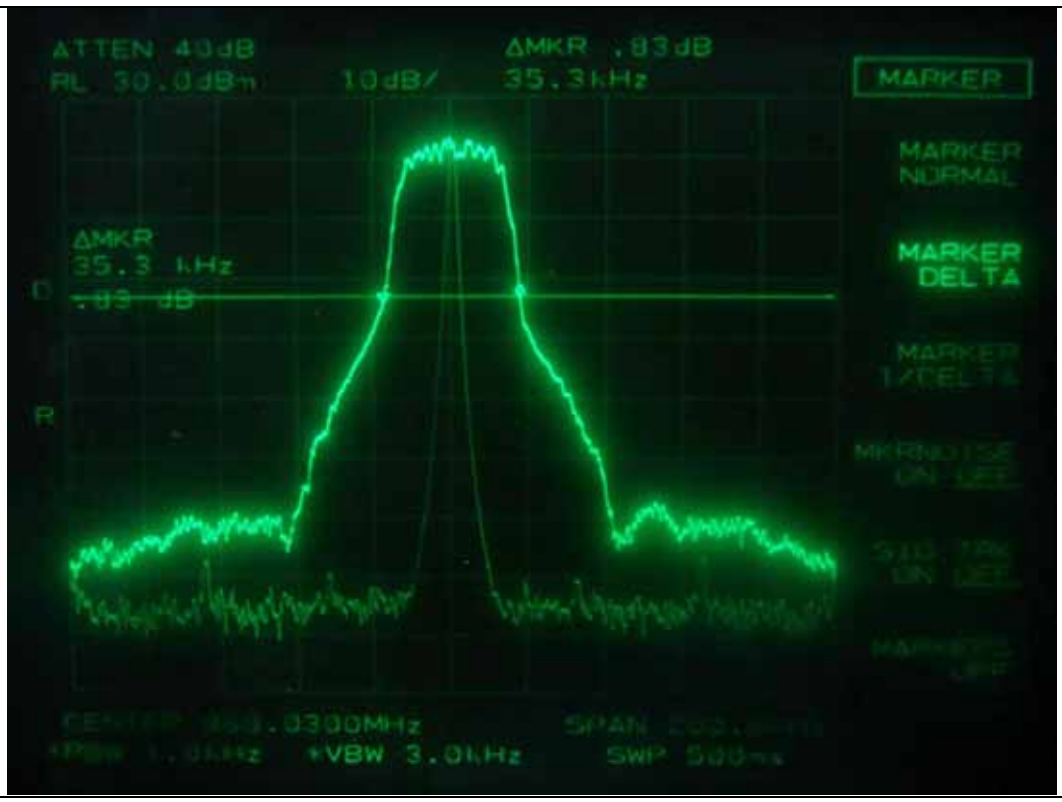
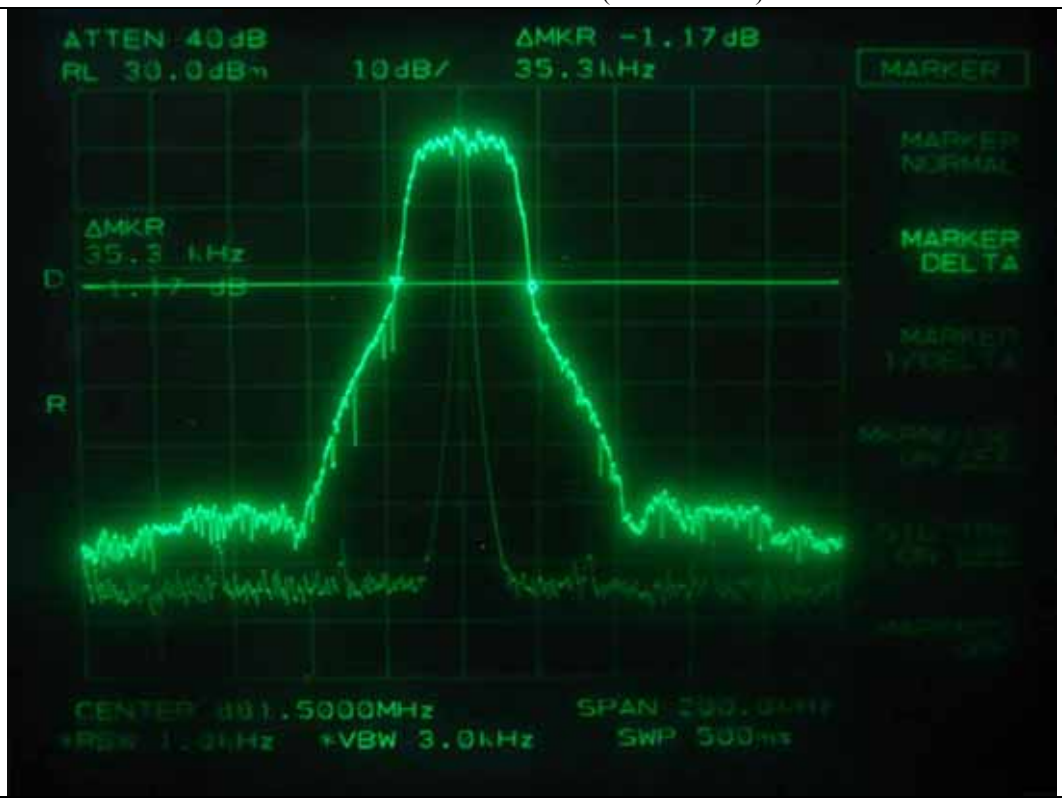


TDMA – 20 dB Bandwidth (Low Channel)



TDMA – 20 dB Bandwidth (Middle Channel)

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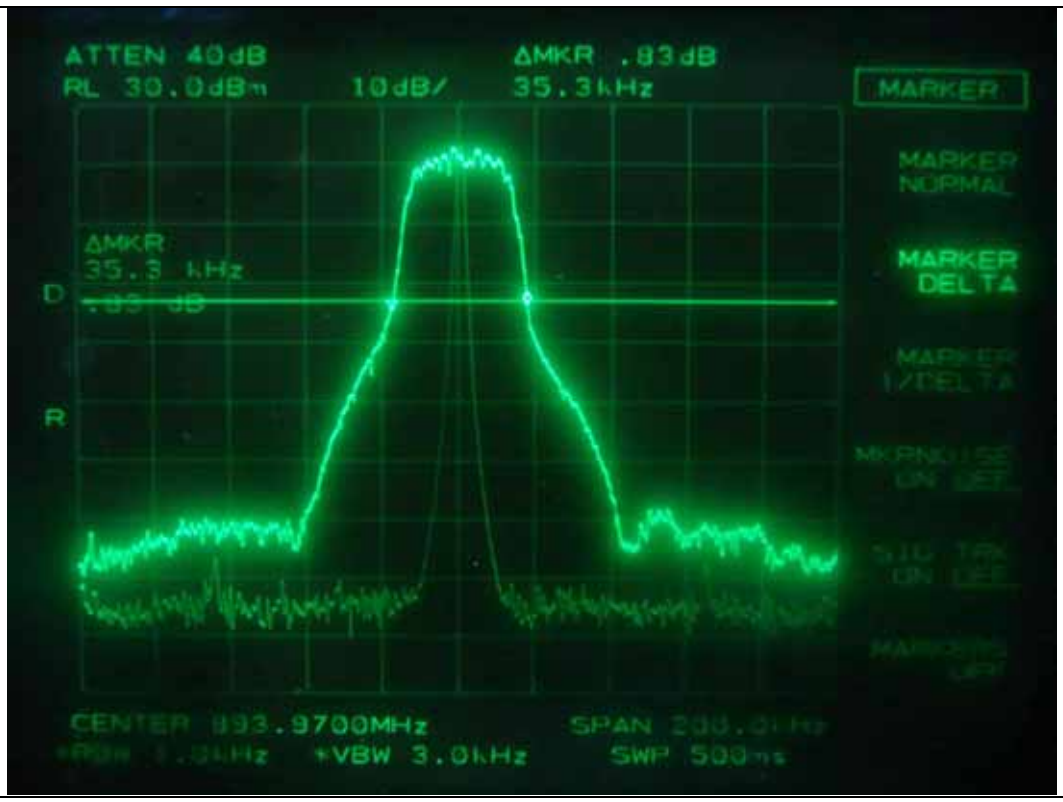

TDMA – 20 dB Bandwidth (High Channel)

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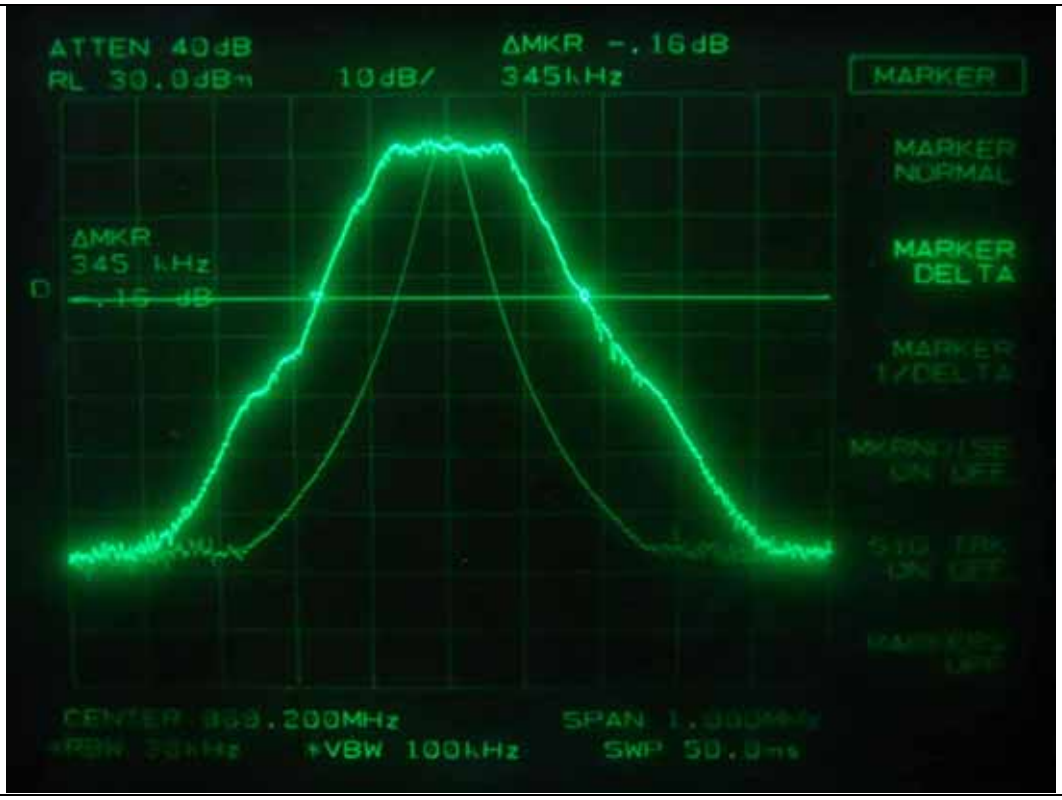
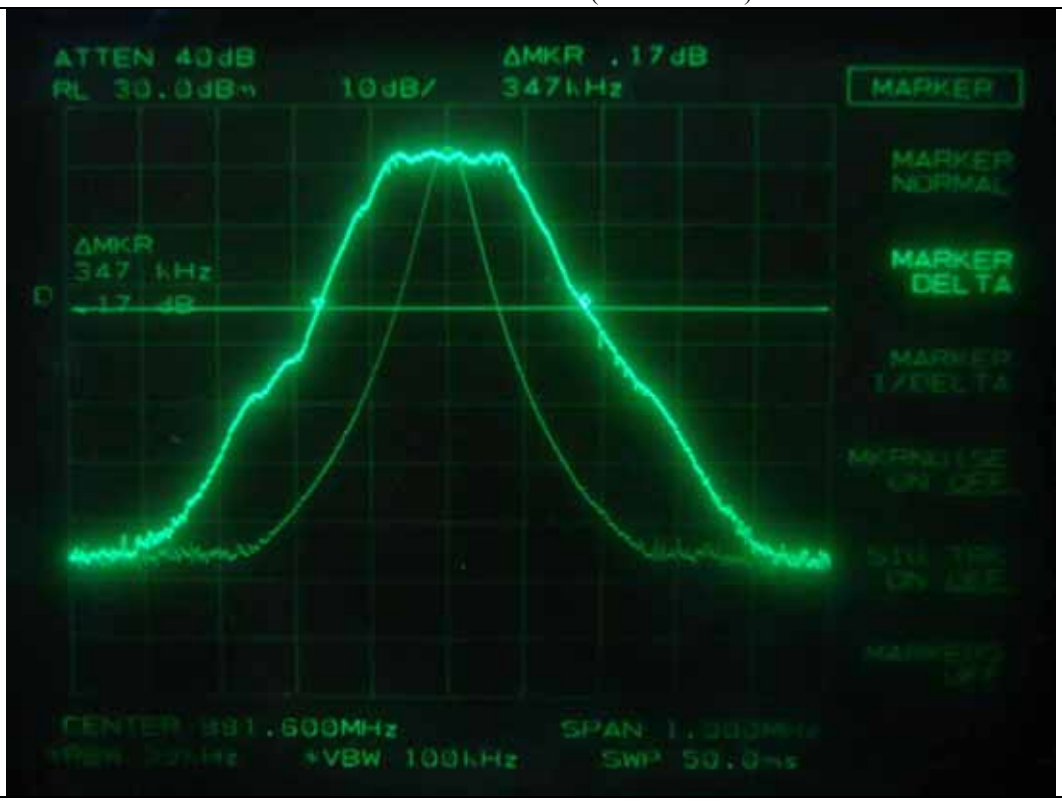


GSM – 20 dB Bandwidth (Low Channel)



GSM – 20 dB Bandwidth (Middle Channel)

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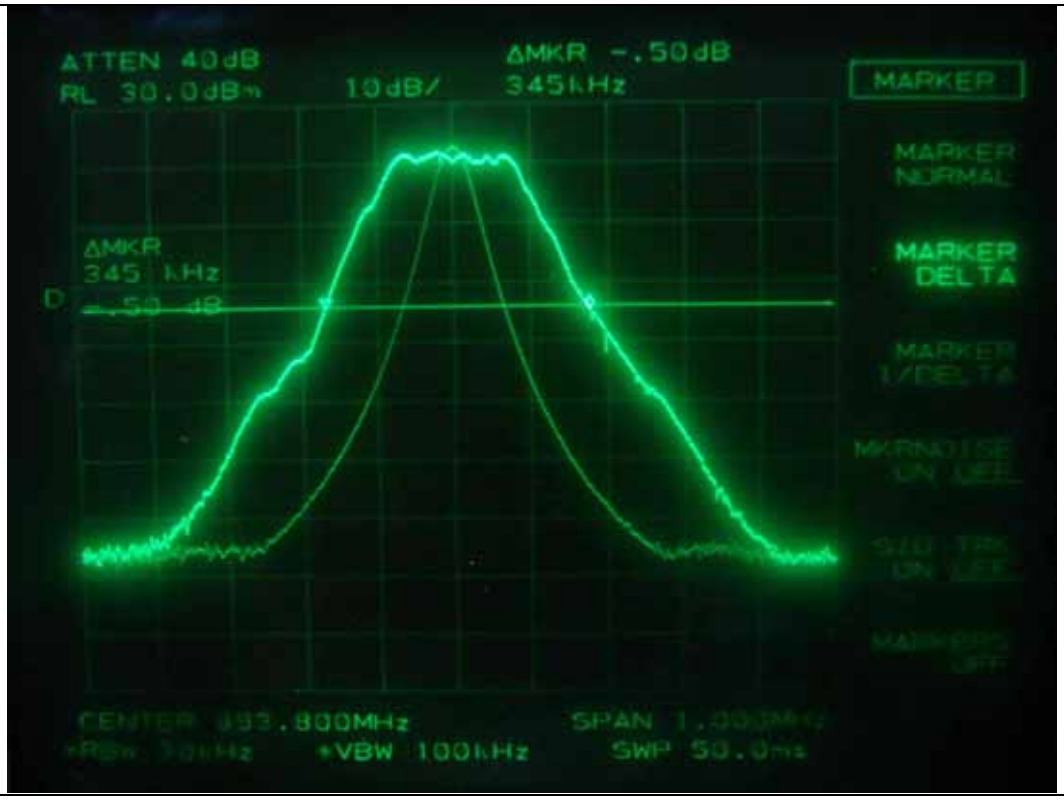

GSM – 20 dB Bandwidth (High Channel)

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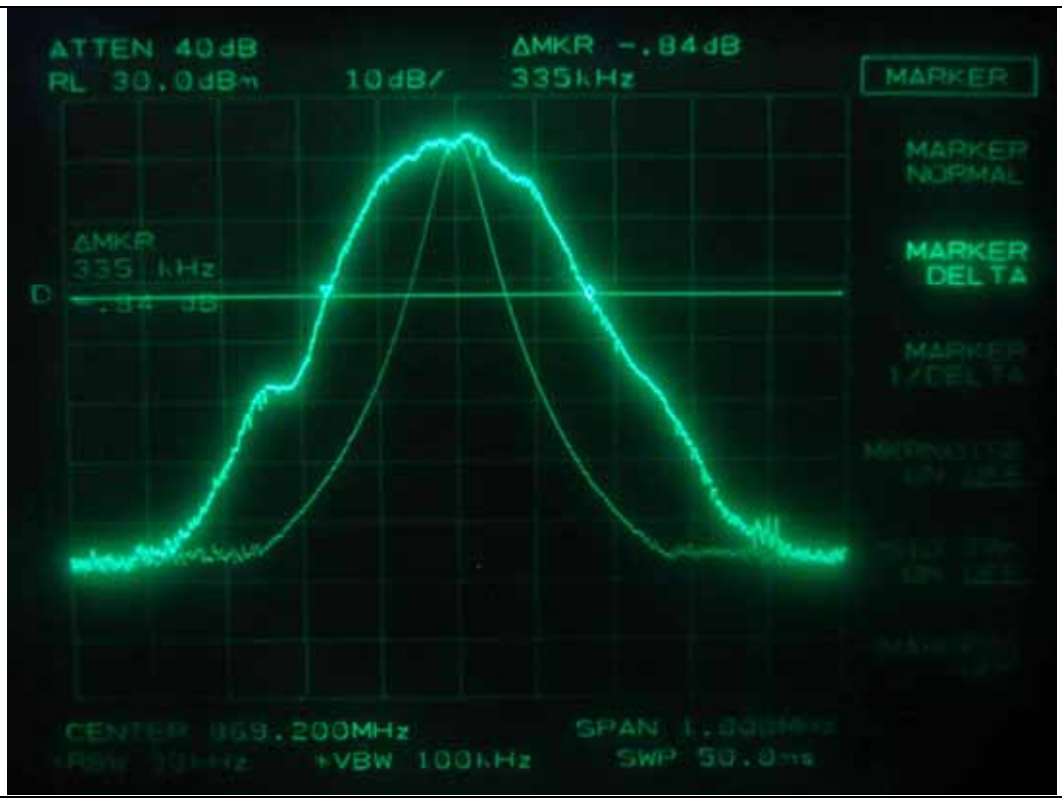
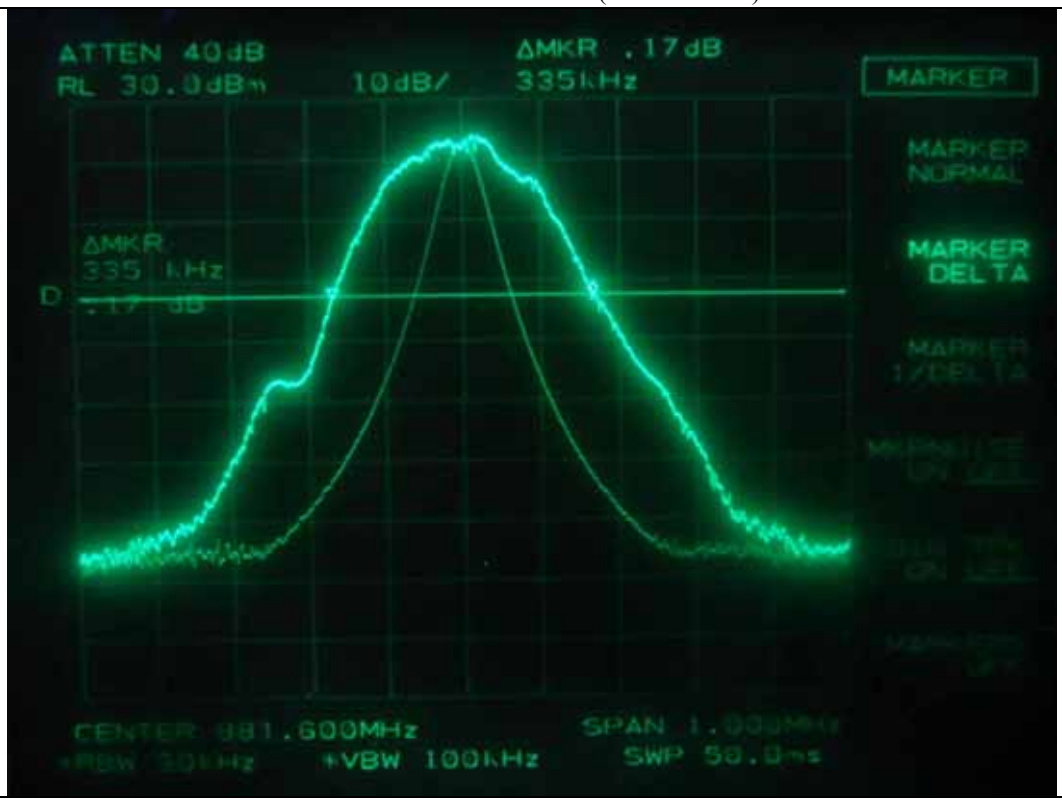


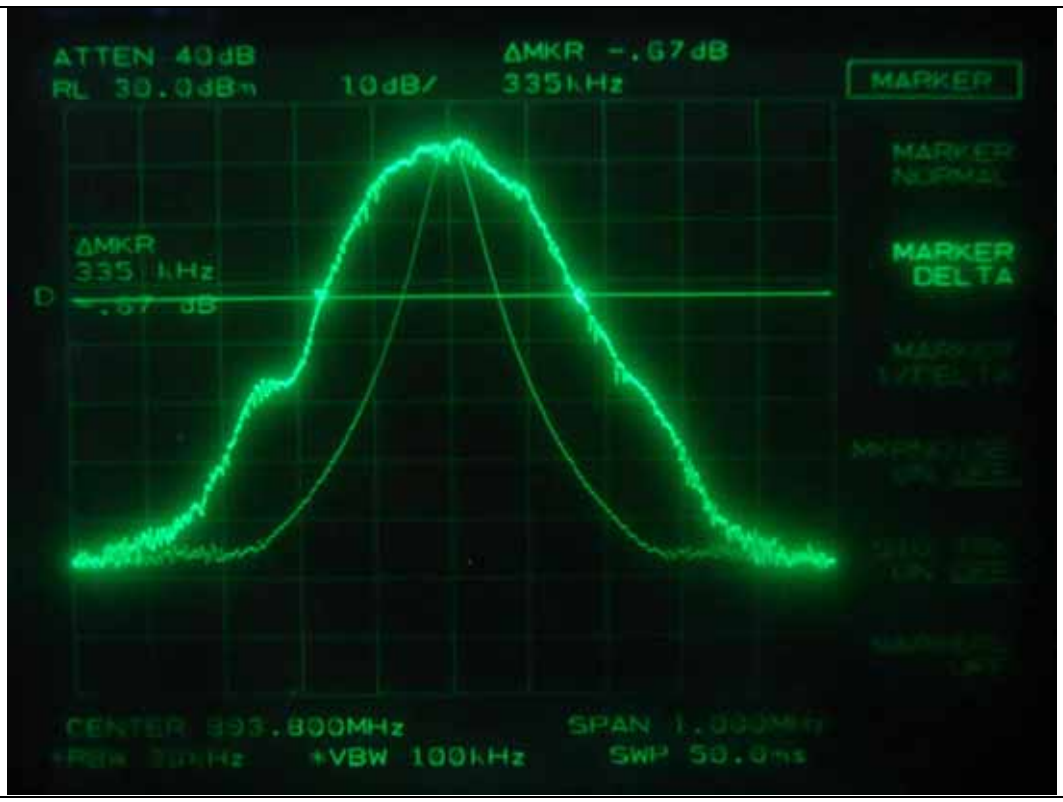
EDGE – 20 dB Bandwidth (Low Channel)



EDGE – 20 dB Bandwidth (Middle Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

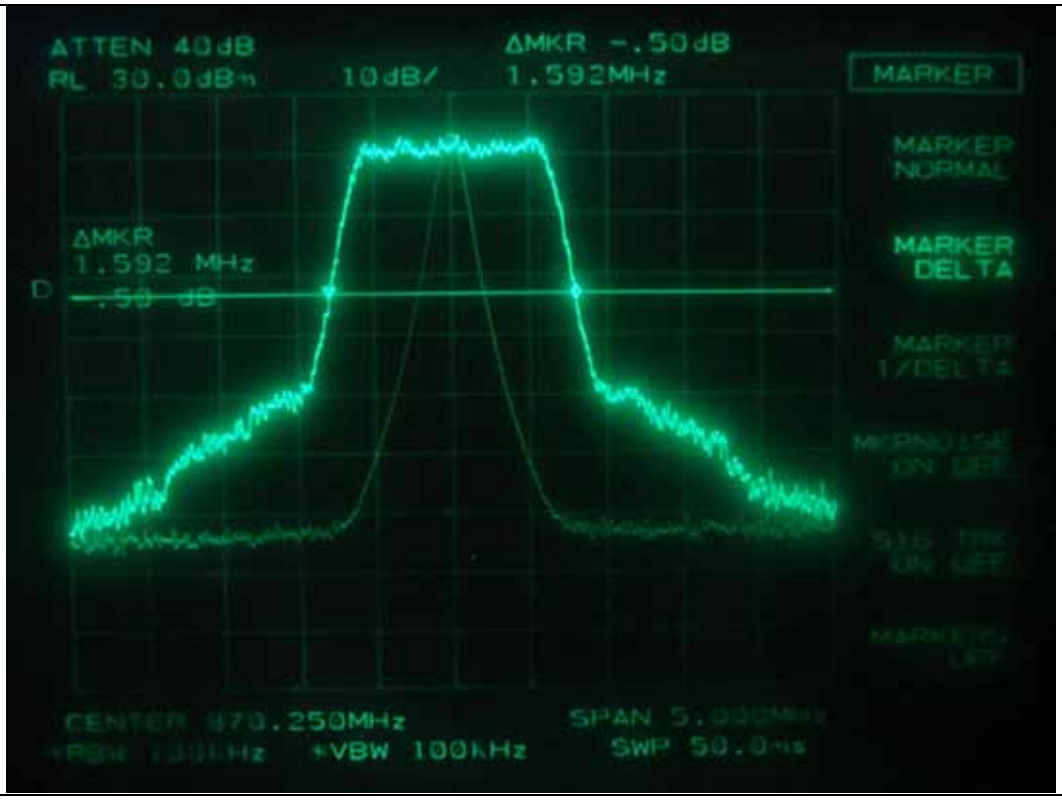
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



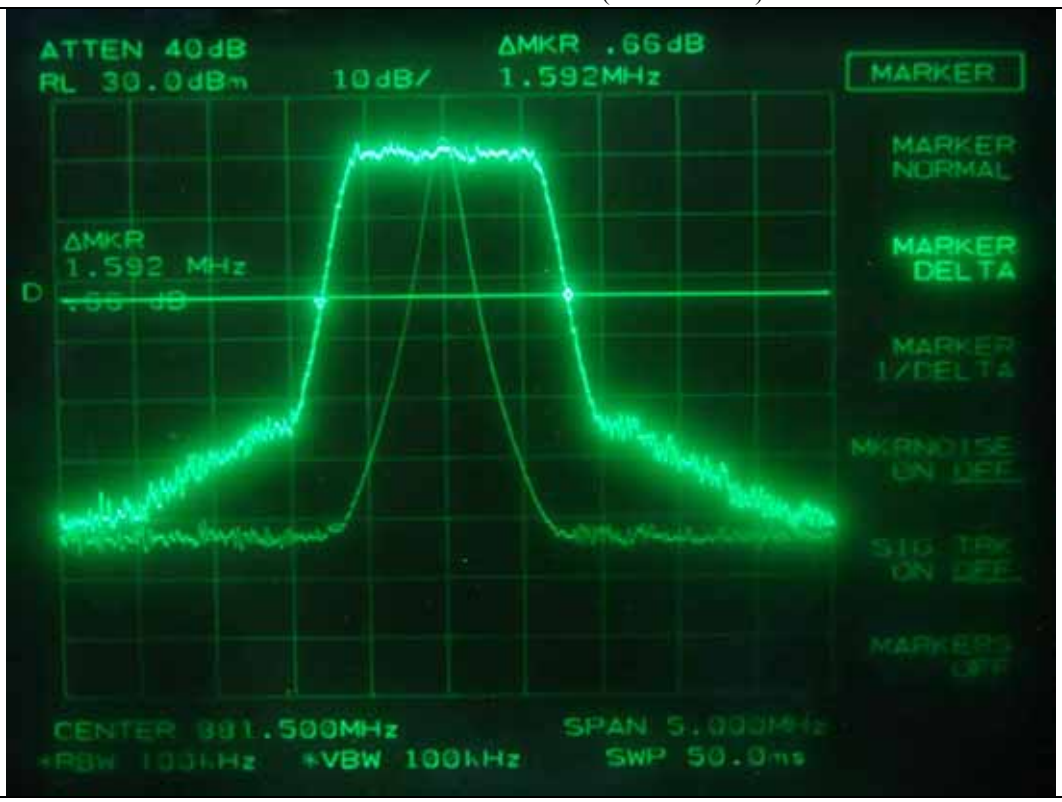
EDGE – 20 dB Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



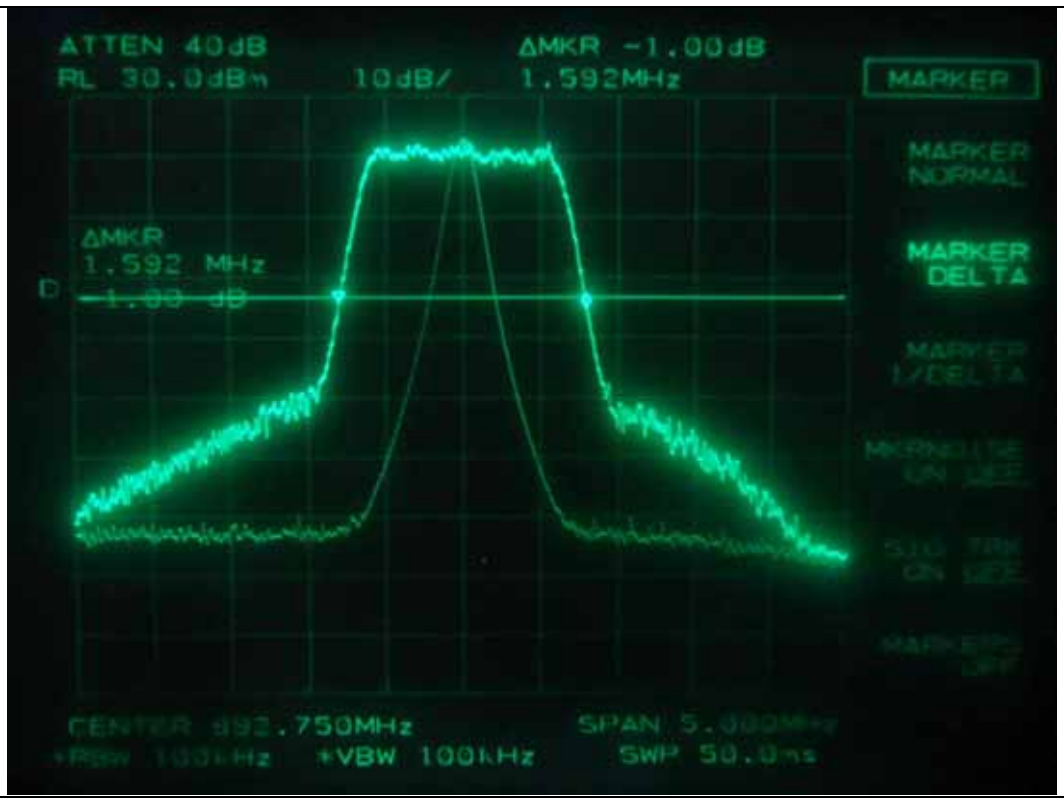
CDMA – 20 dB Bandwidth (Low Channel)



CDMA – 20 dB Bandwidth (Middle Channel)

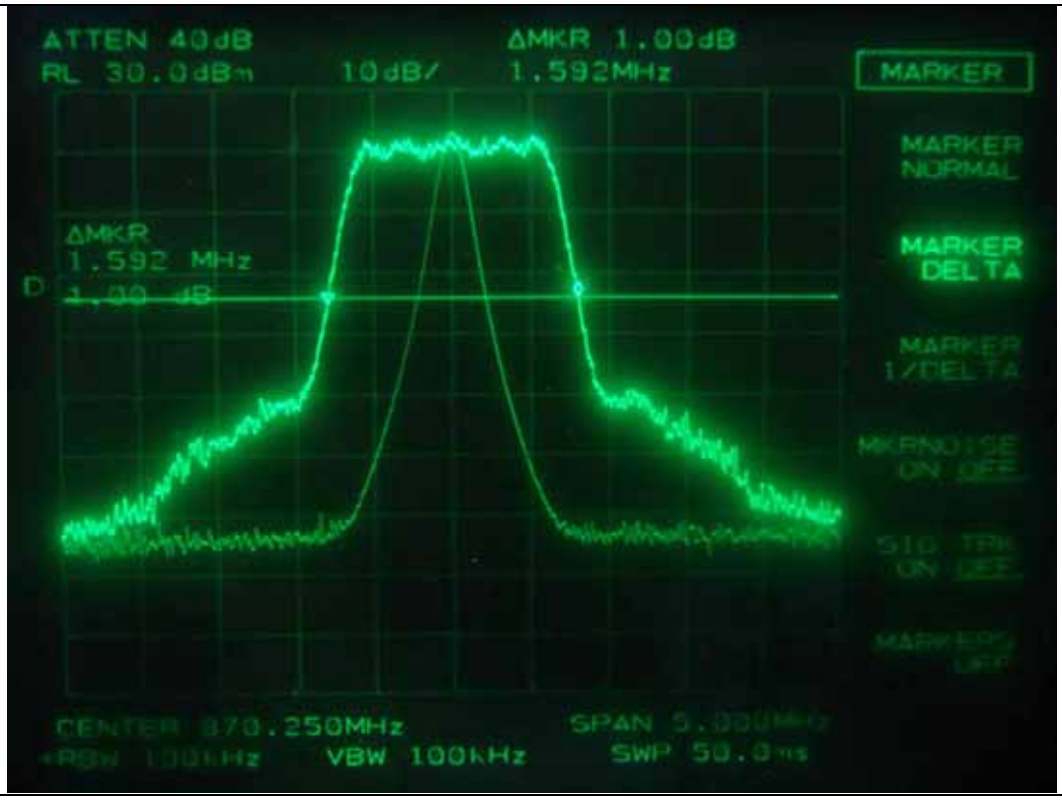
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

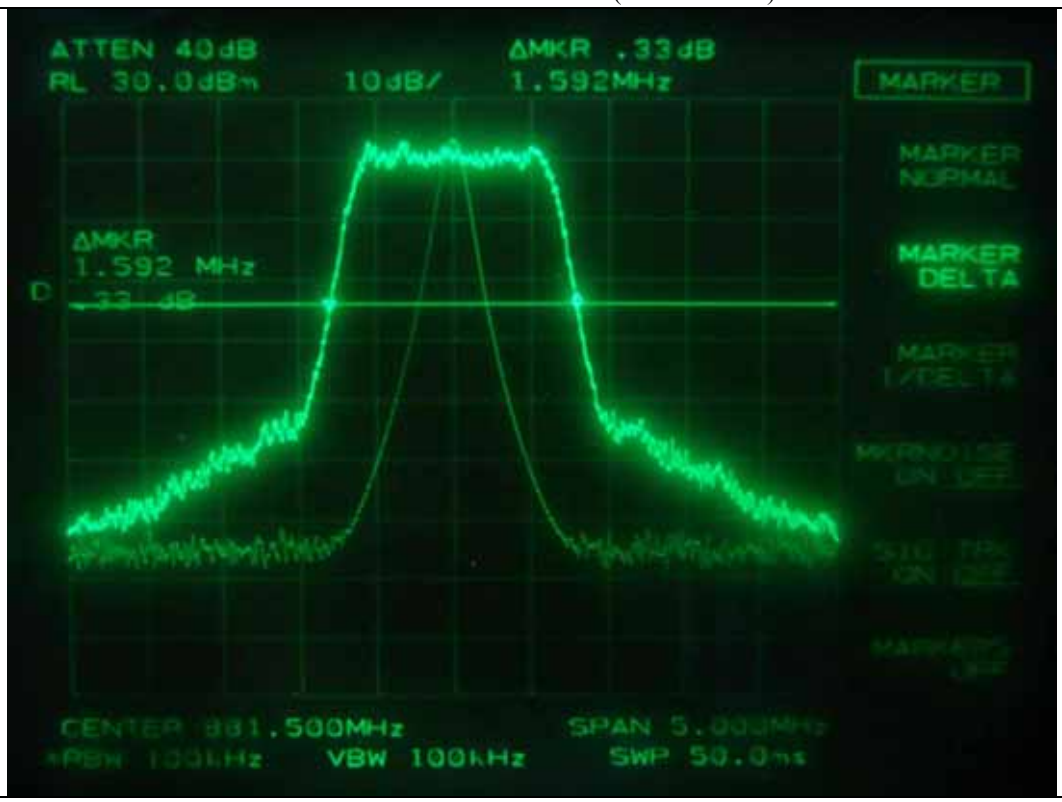


CDMA – 20 dB Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

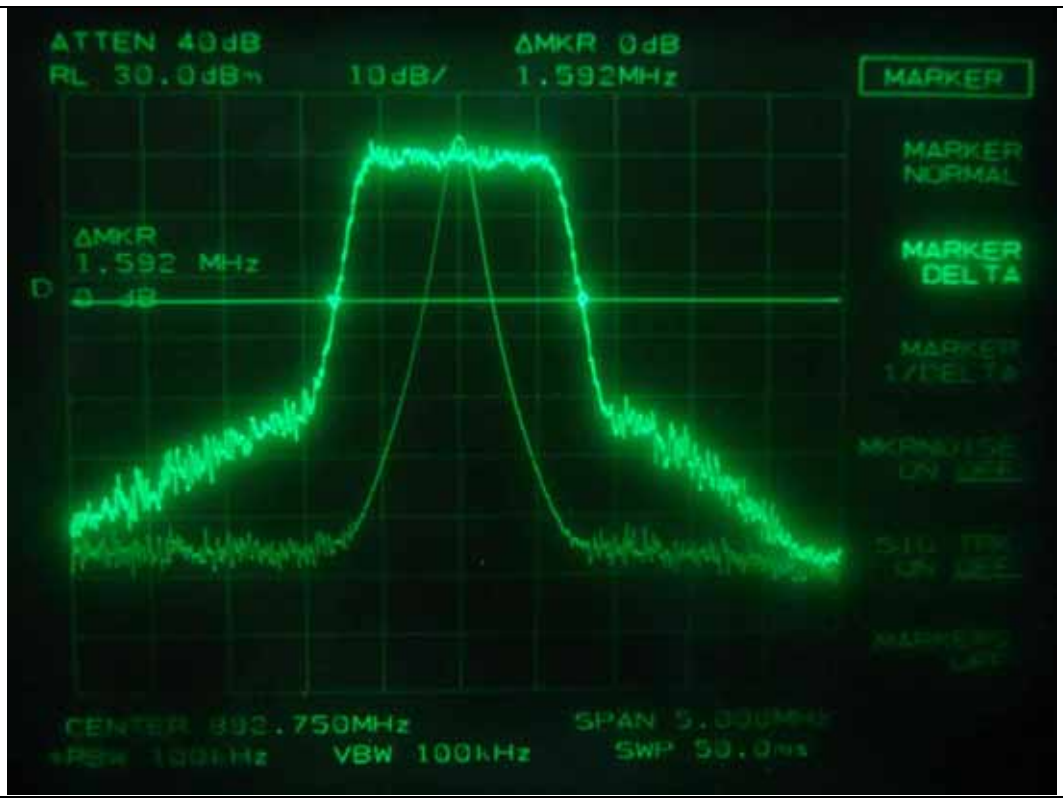


1xEVDO – 20 dB Bandwidth (Low Channel)



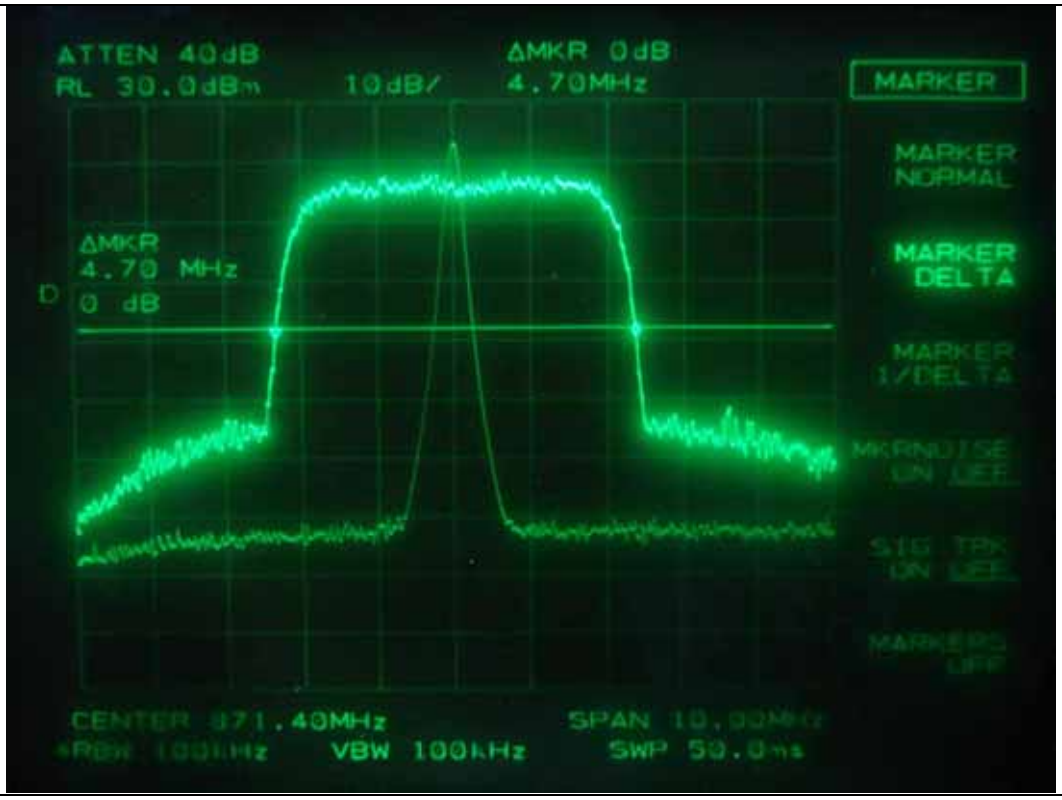
1xEVDO – 20 dB Bandwidth (Middle Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

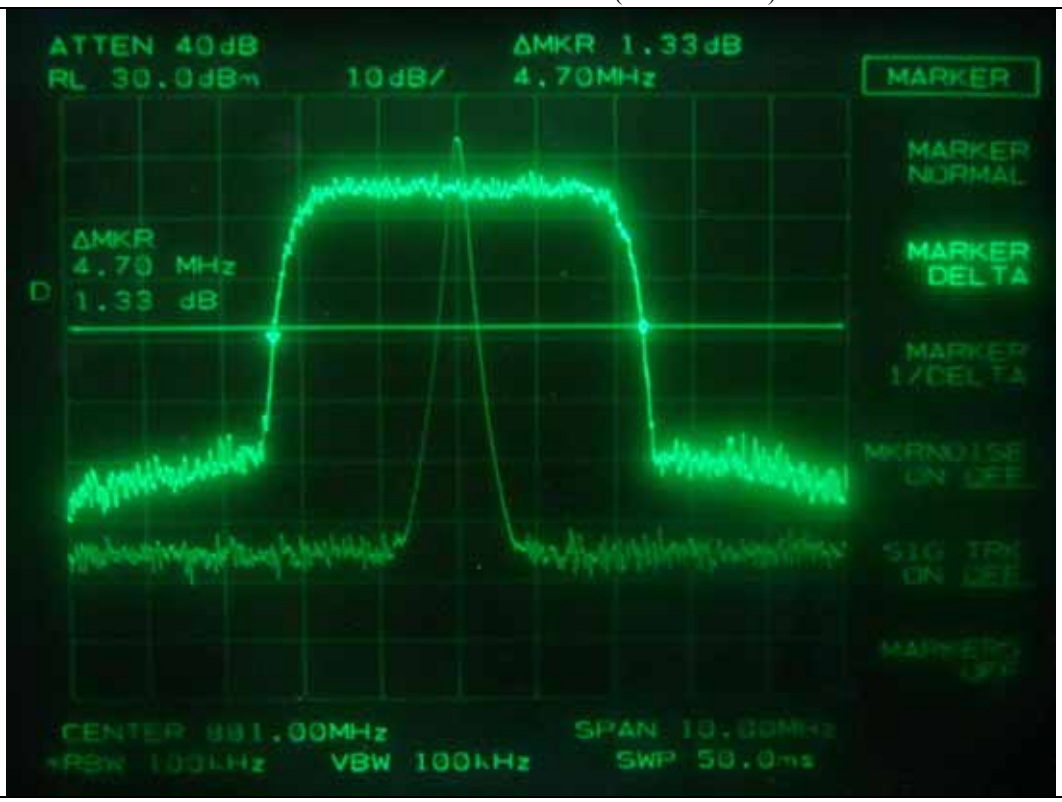


1xEVDO – 20 dB Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



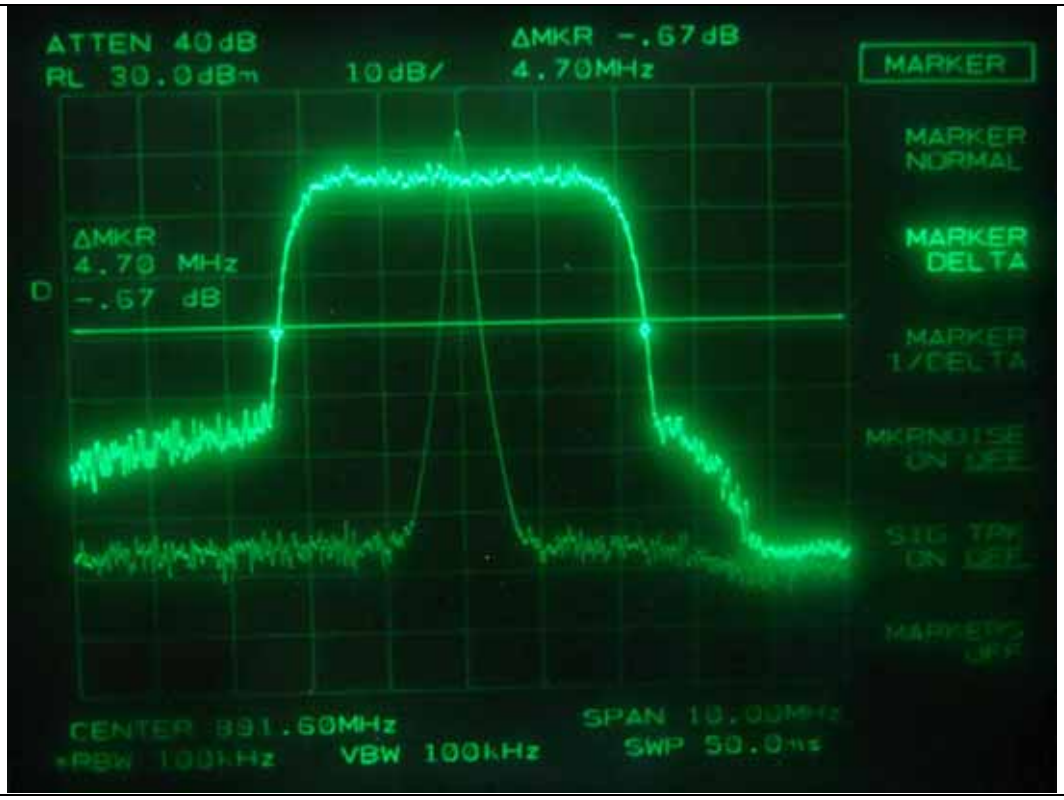
WCDMA – 20 dB Bandwidth (Low Channel)



WCDMA – 20 dB Bandwidth (Middle Channel)

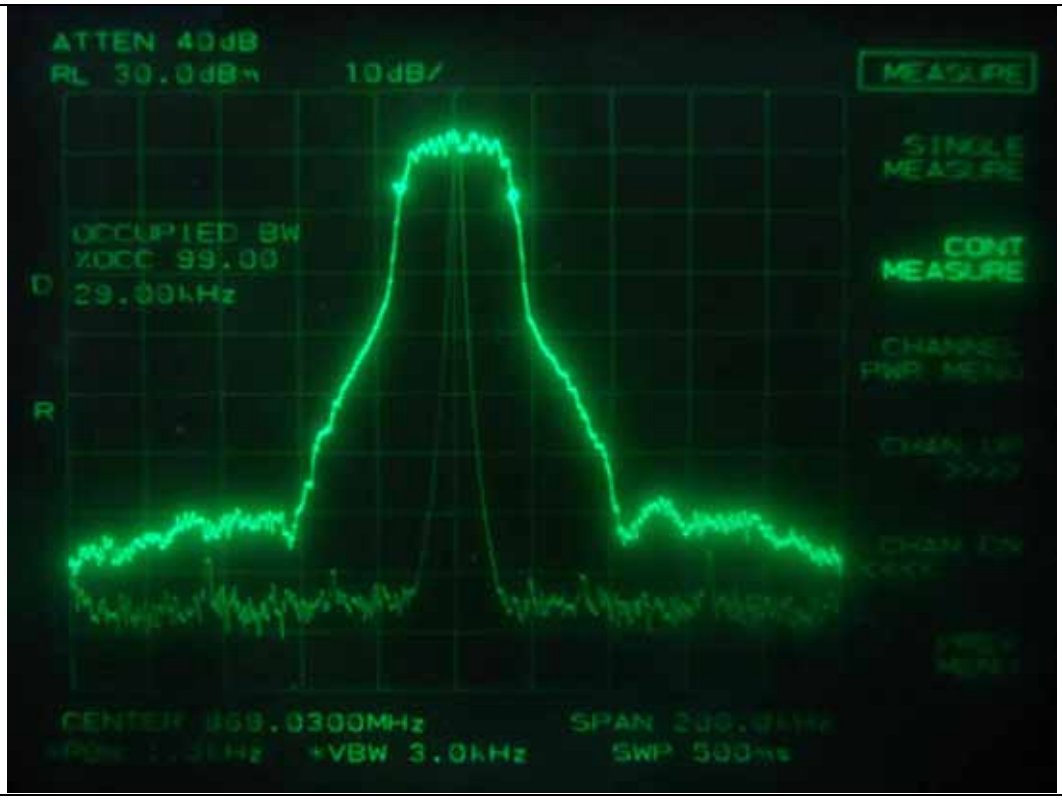
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

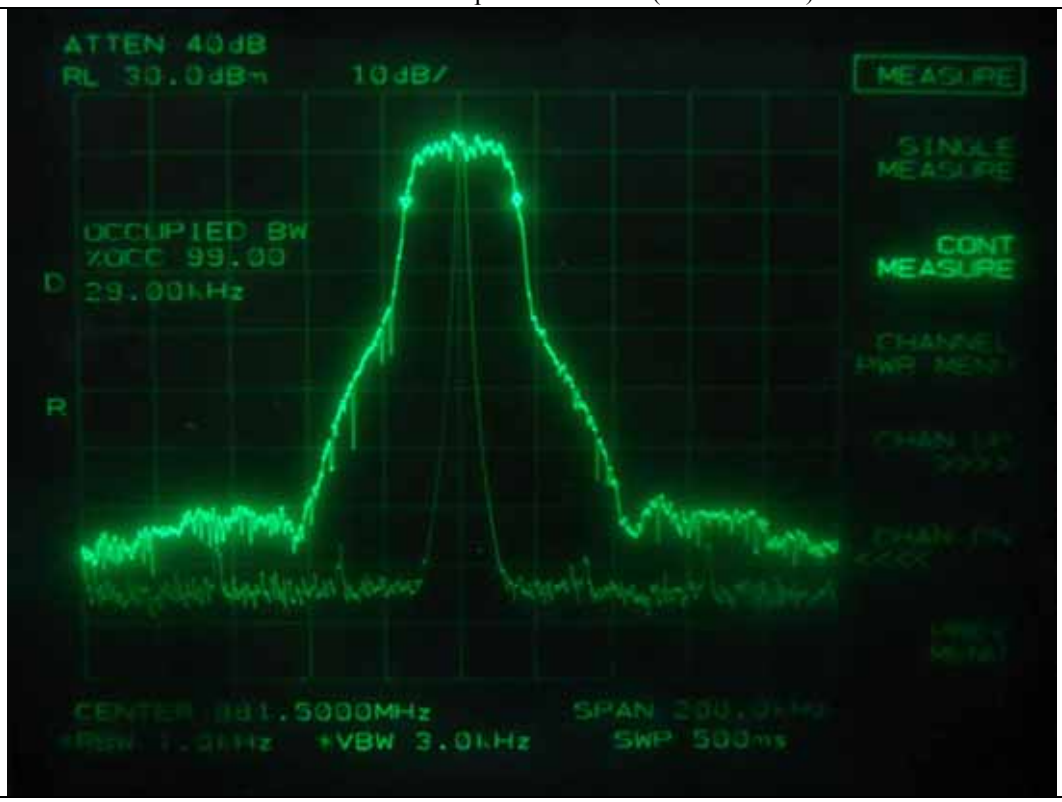


WCDMA – 20 dB Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

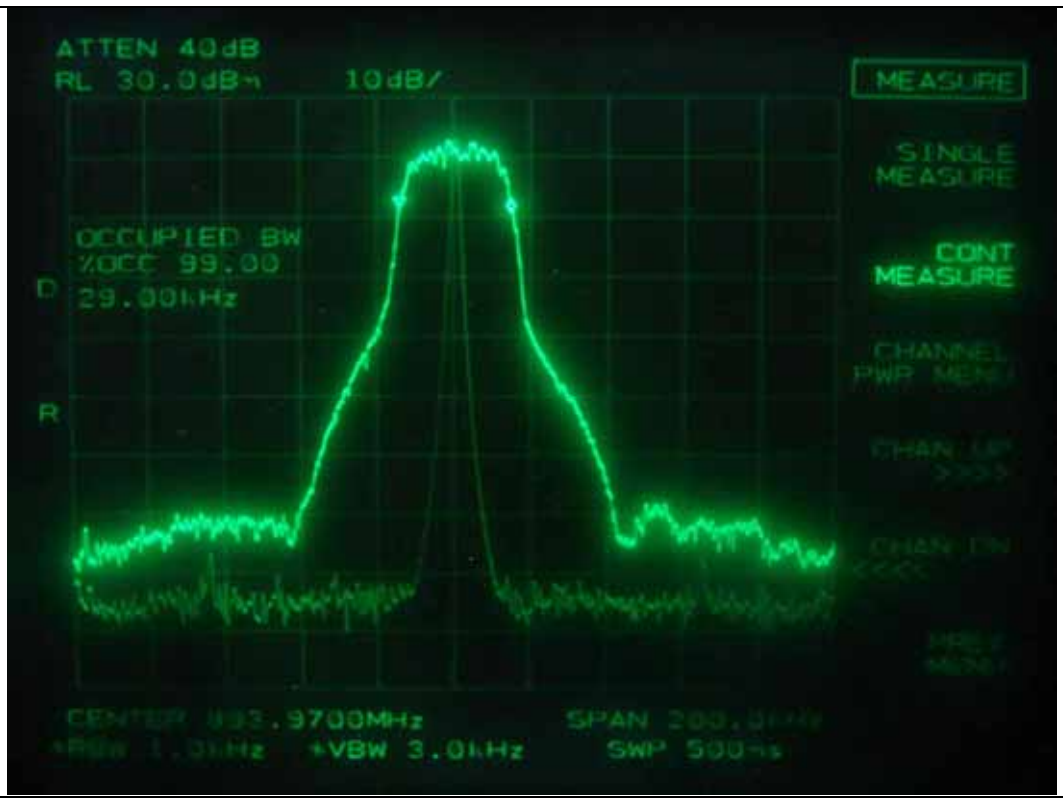


TDMA – 99 % Occupied Bandwidth (Low Channel)



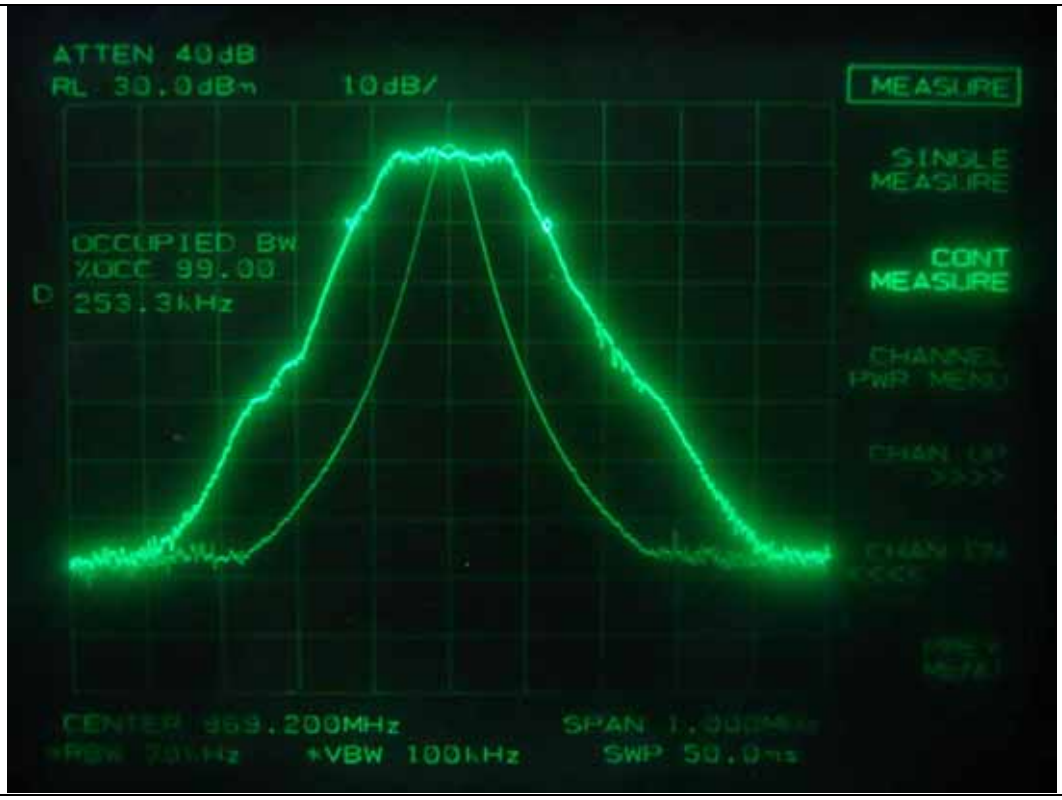
TDMA – 99 % Occupied Bandwidth (Middle Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

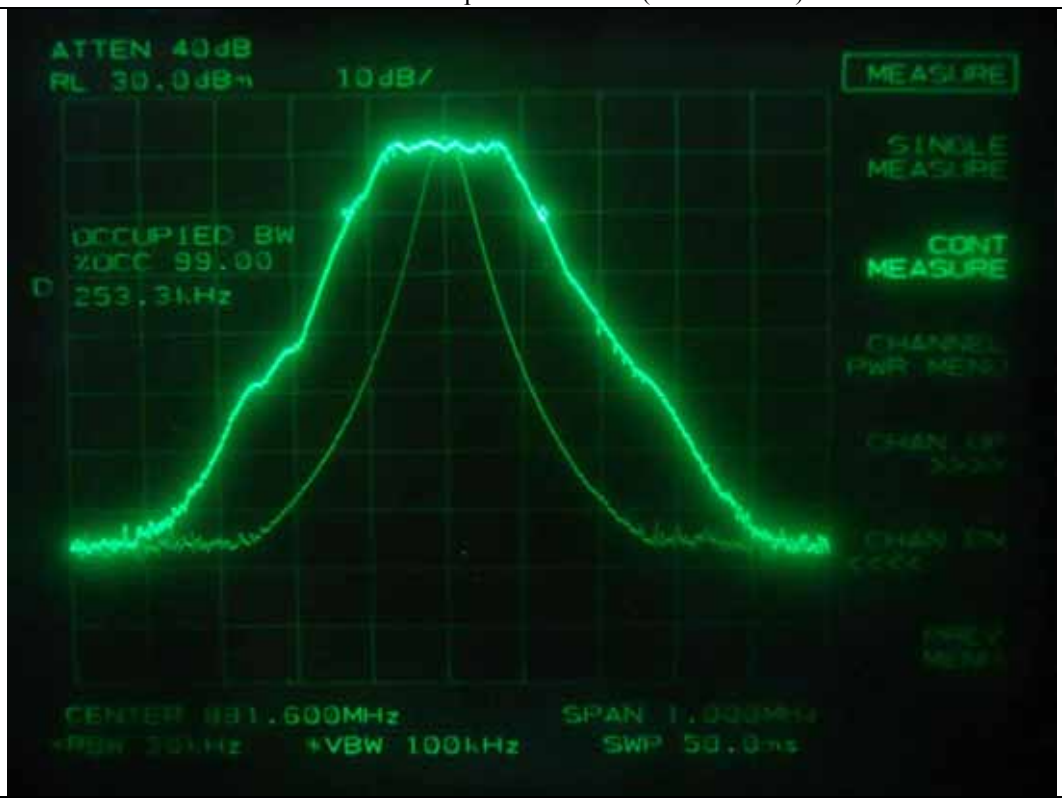


TDMA – 99 % Occupied Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



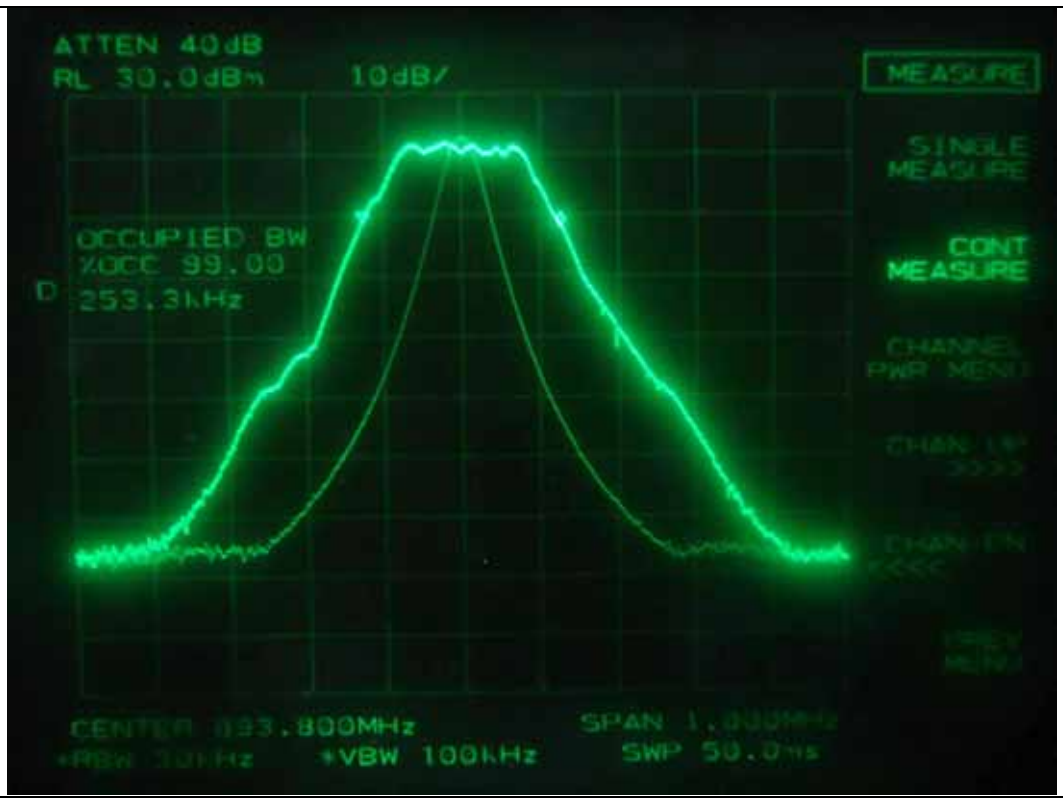
GSM – 99 % Occupied Bandwidth (Low Channel)



GSM – 99 % Occupied Bandwidth (Middle Channel)

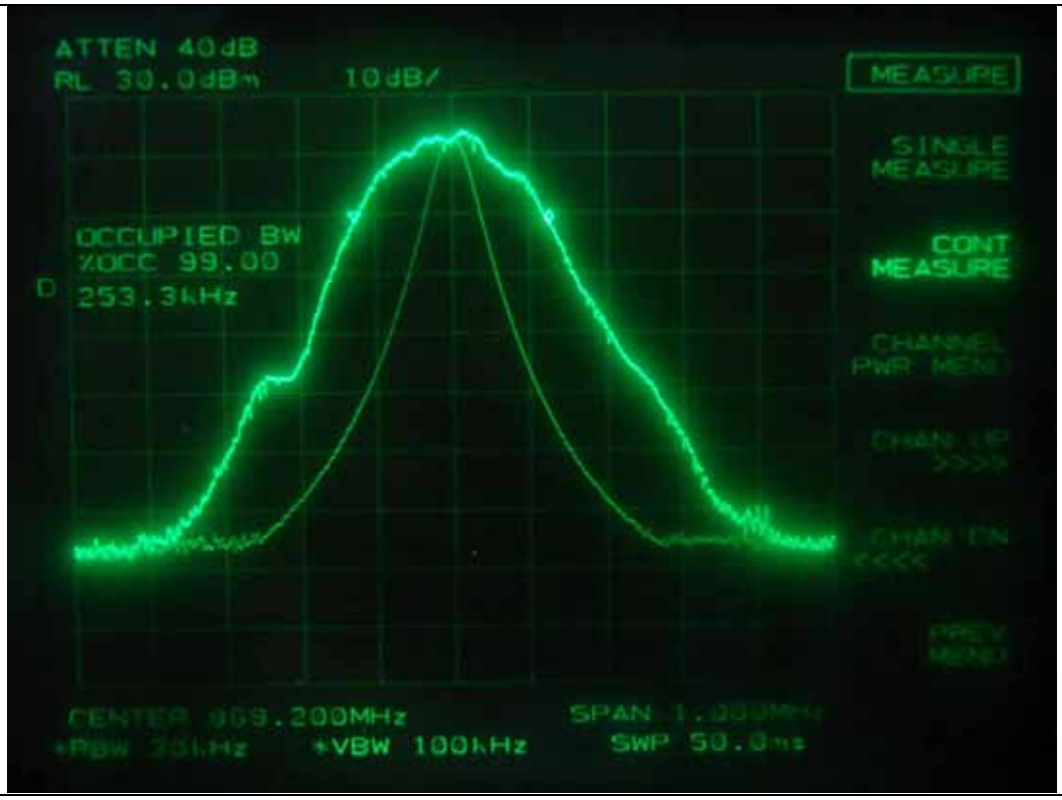
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

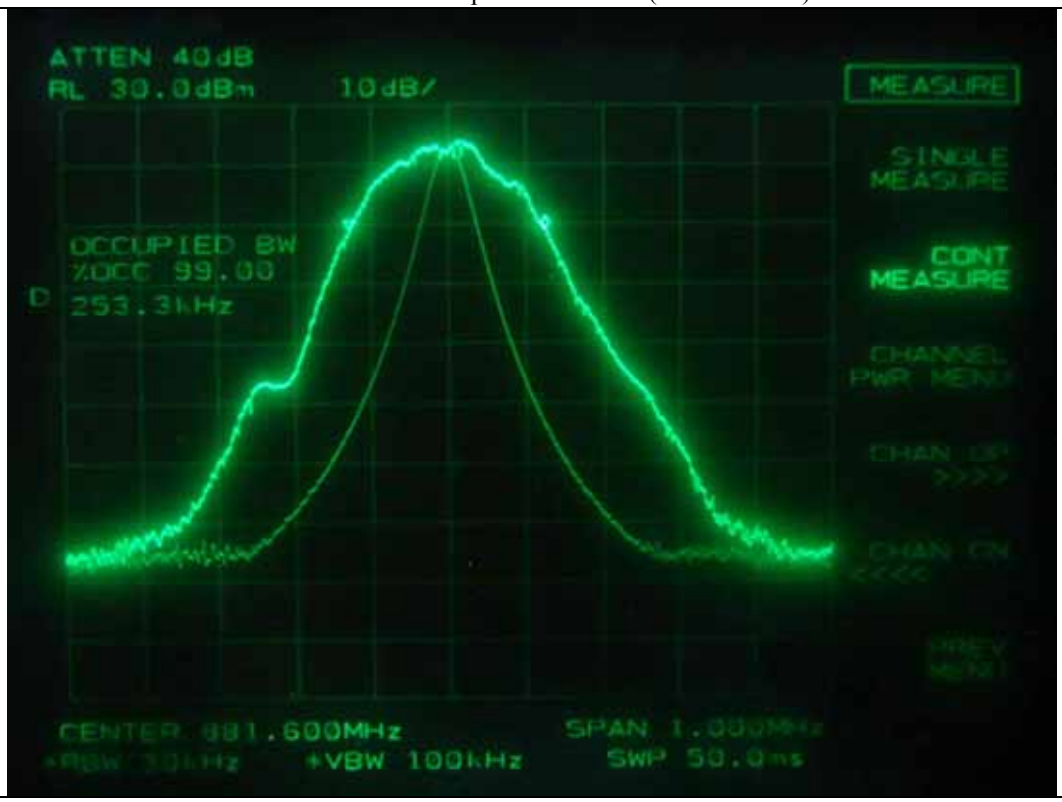


GSM – 99 % Occupied Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



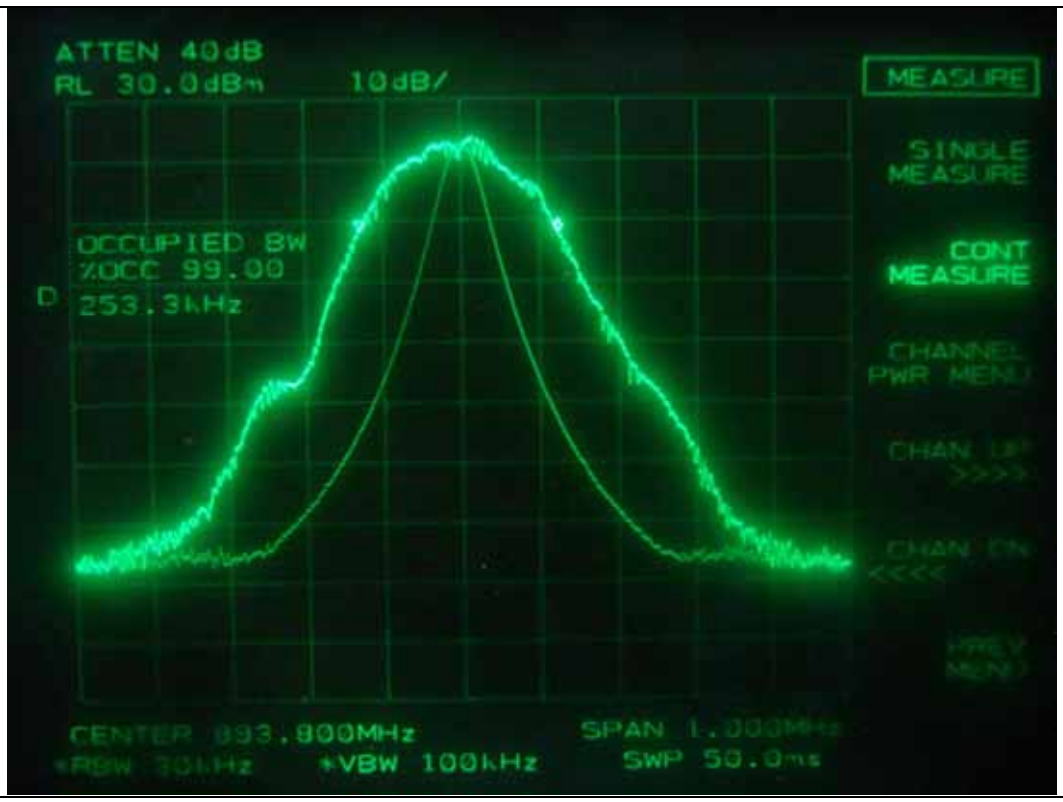
EDGE – 99 % Occupied Bandwidth (Low Channel)



EDGE – 99 % Occupied Bandwidth (Middle Channel)

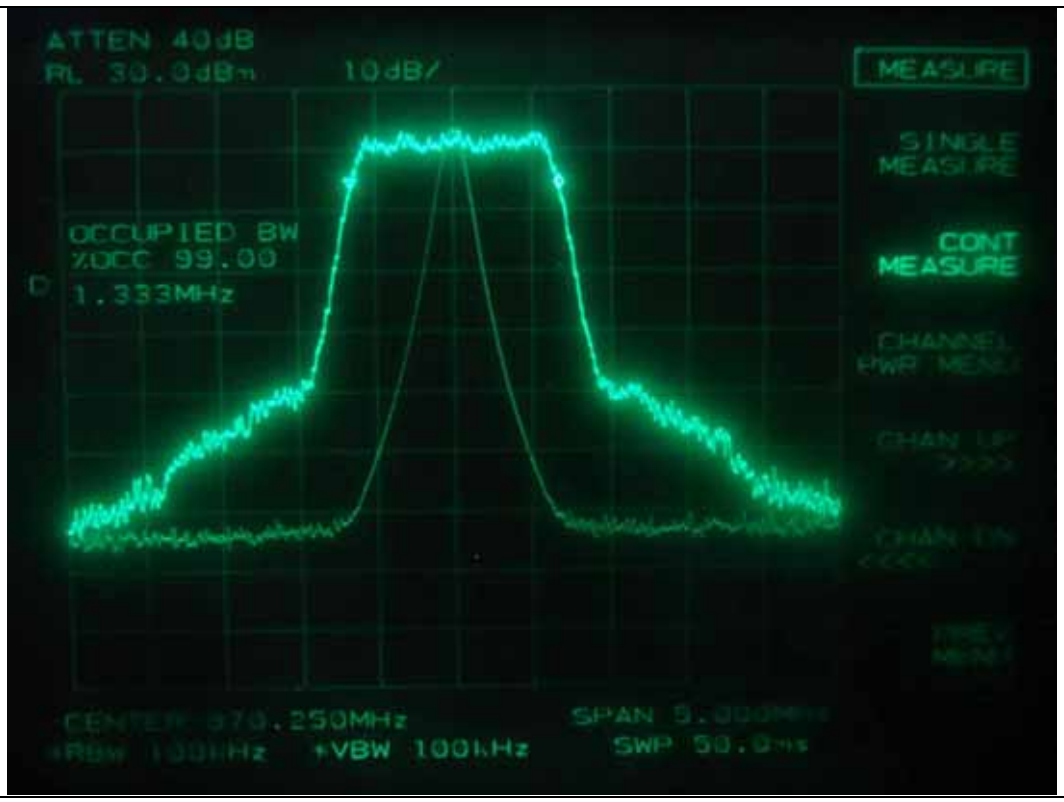
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

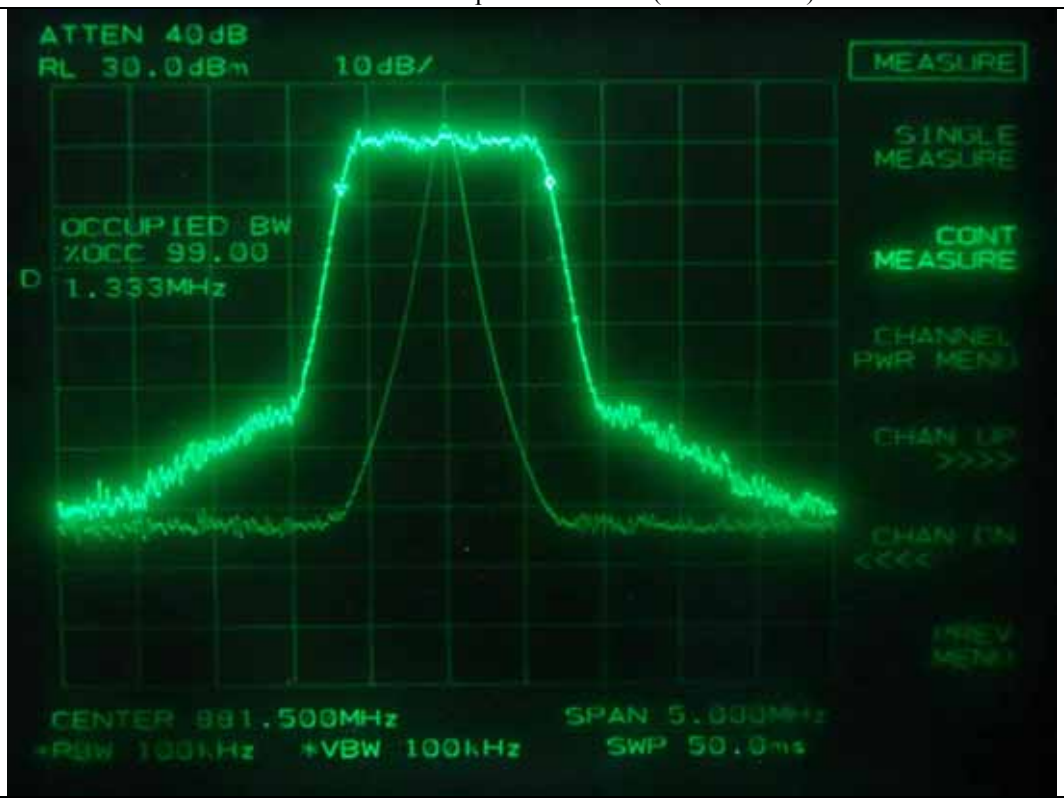


EDGE – 99 % Occupied Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



CDMA – 99 % Occupied Bandwidth (Low Channel)



CDMA – 99 % Occupied Bandwidth (Middle Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

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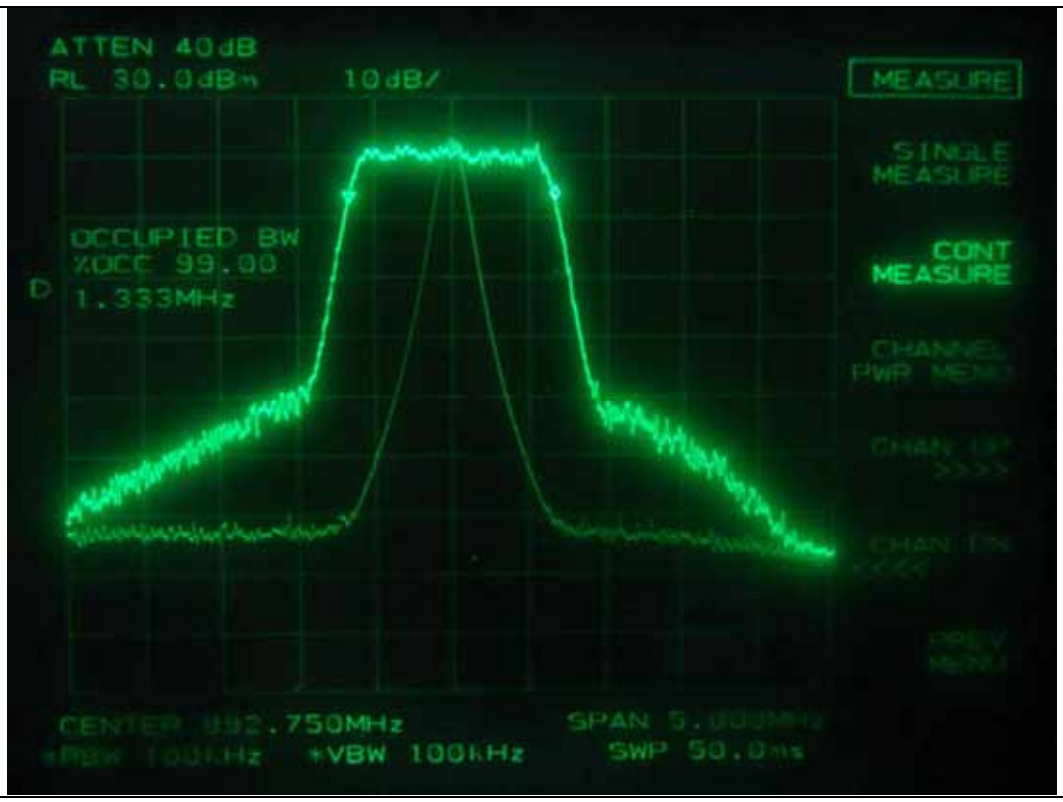
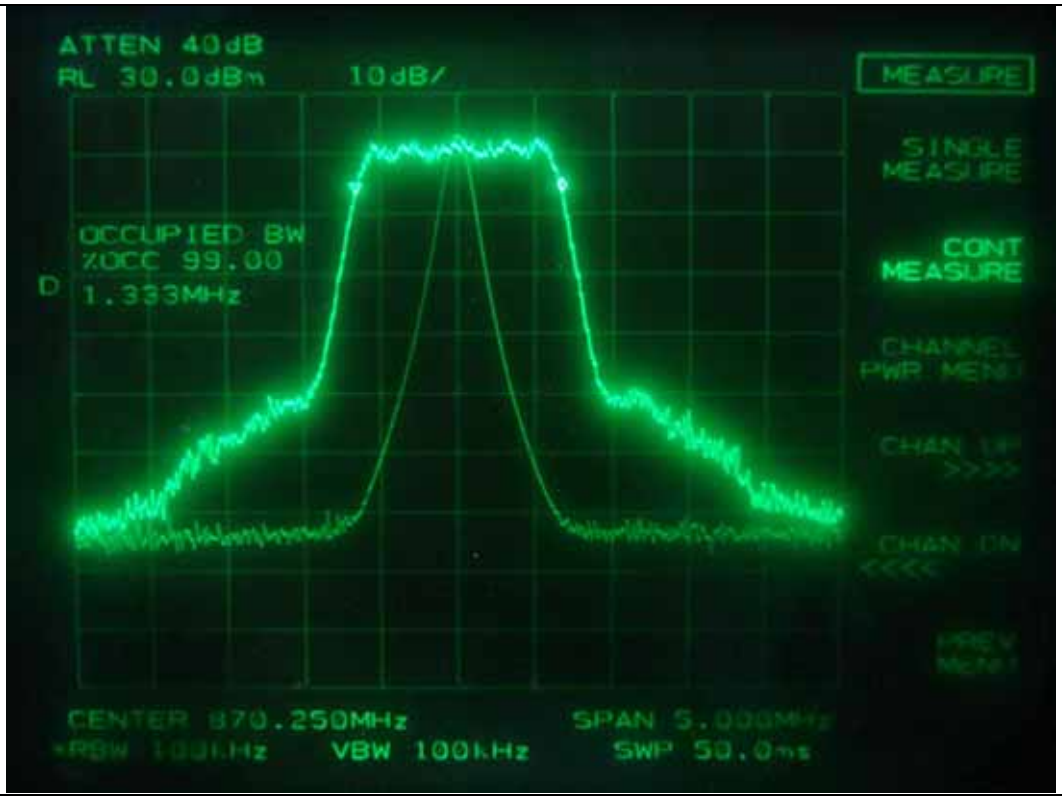
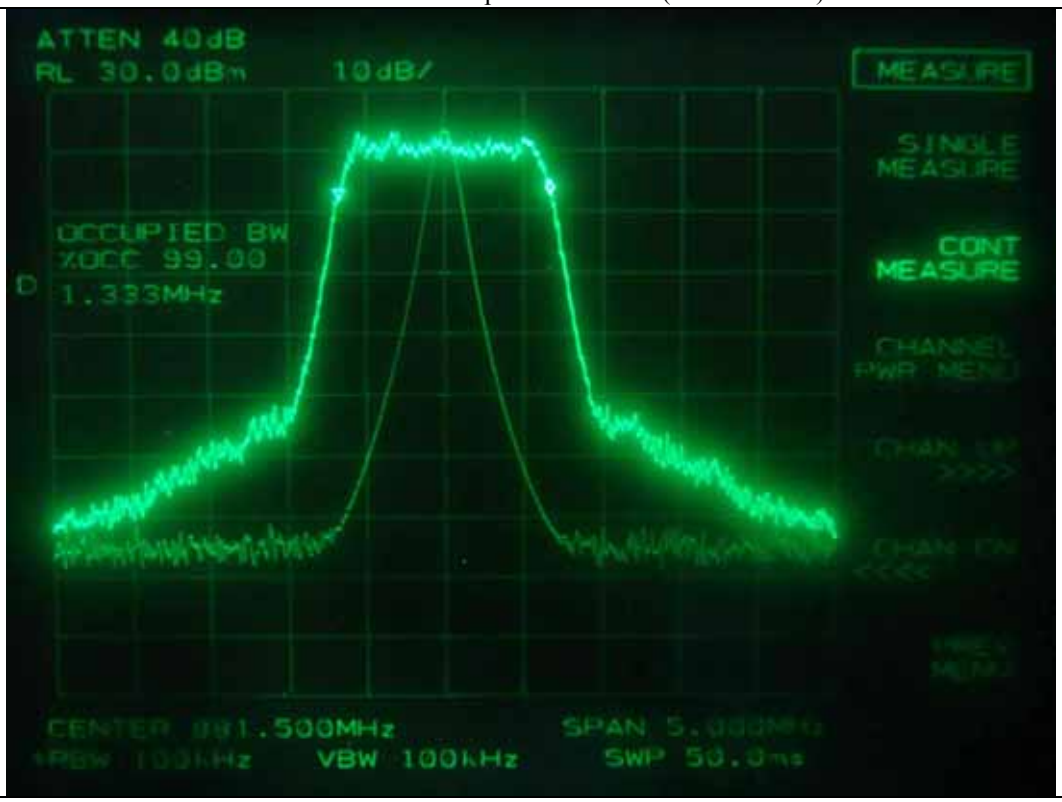


CDMA – 99 % Occupied Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



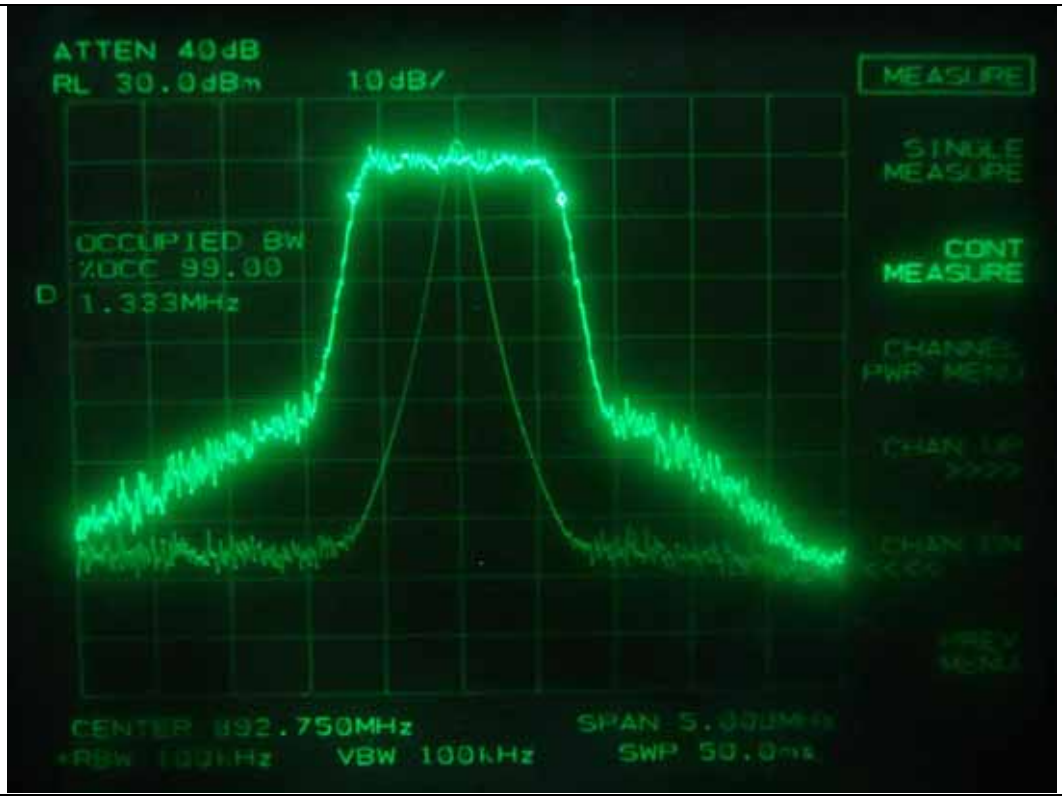
1xEVDO – 99 % Occupied Bandwidth (Low Channel)



1xEVDO – 99 % Occupied Bandwidth (Middle Channel)

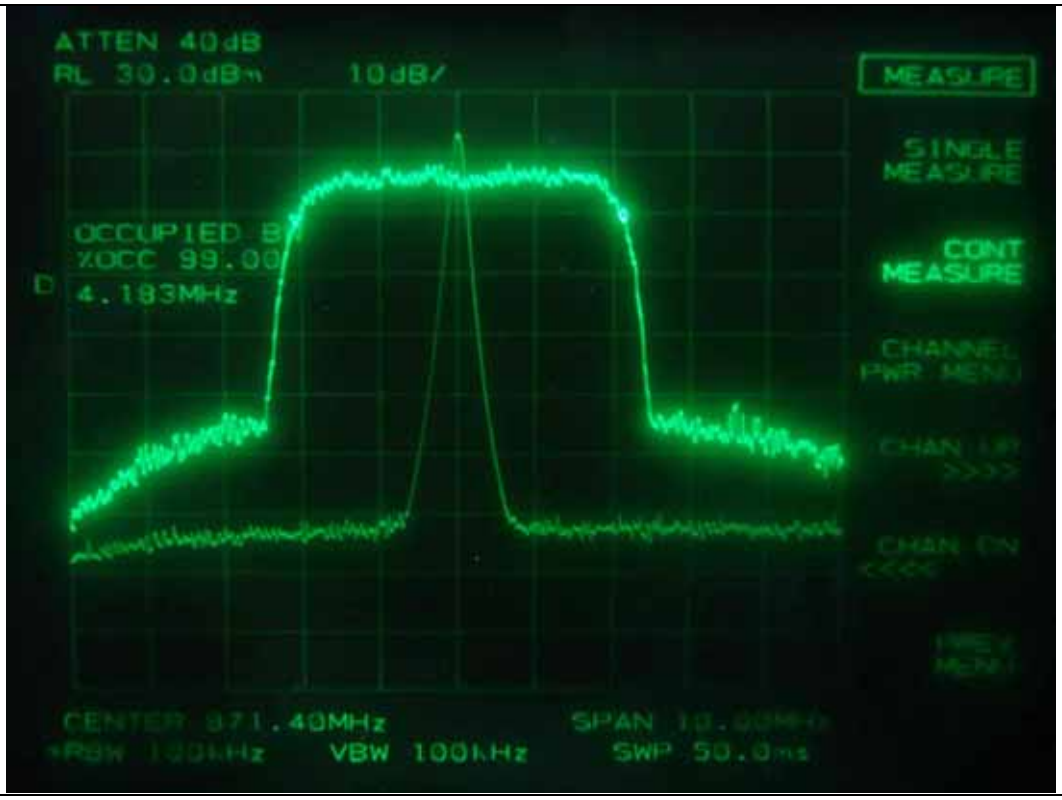
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

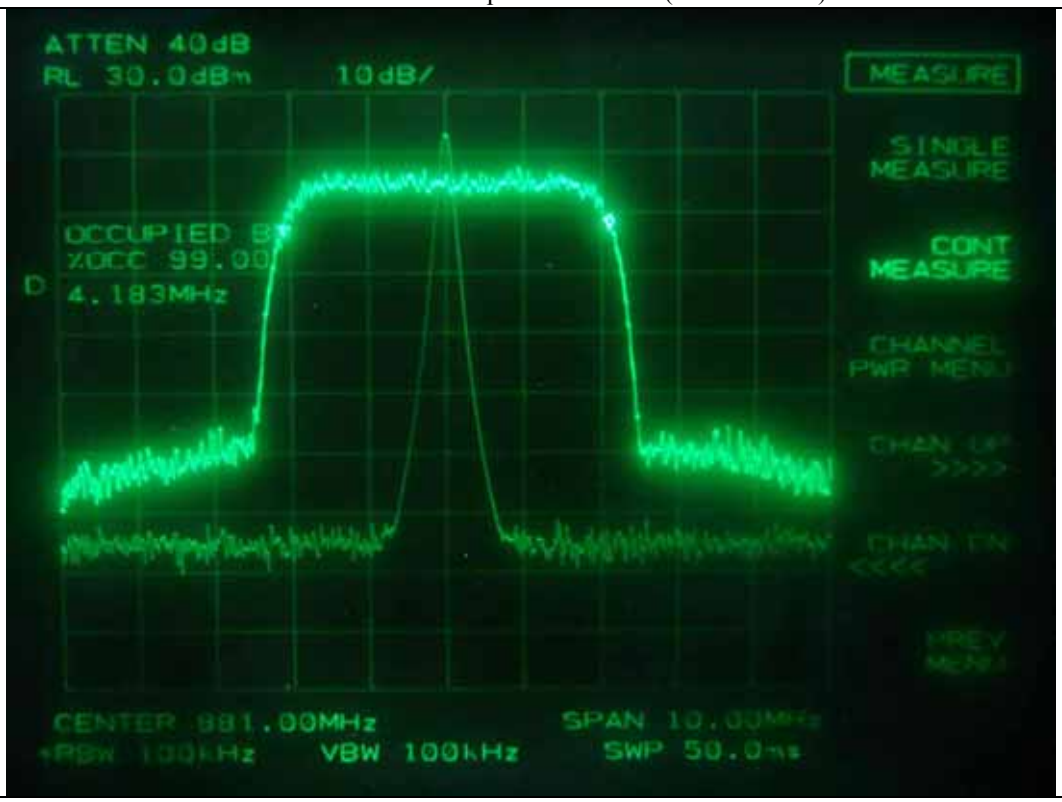


1xEVDO – 99 % Occupied Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

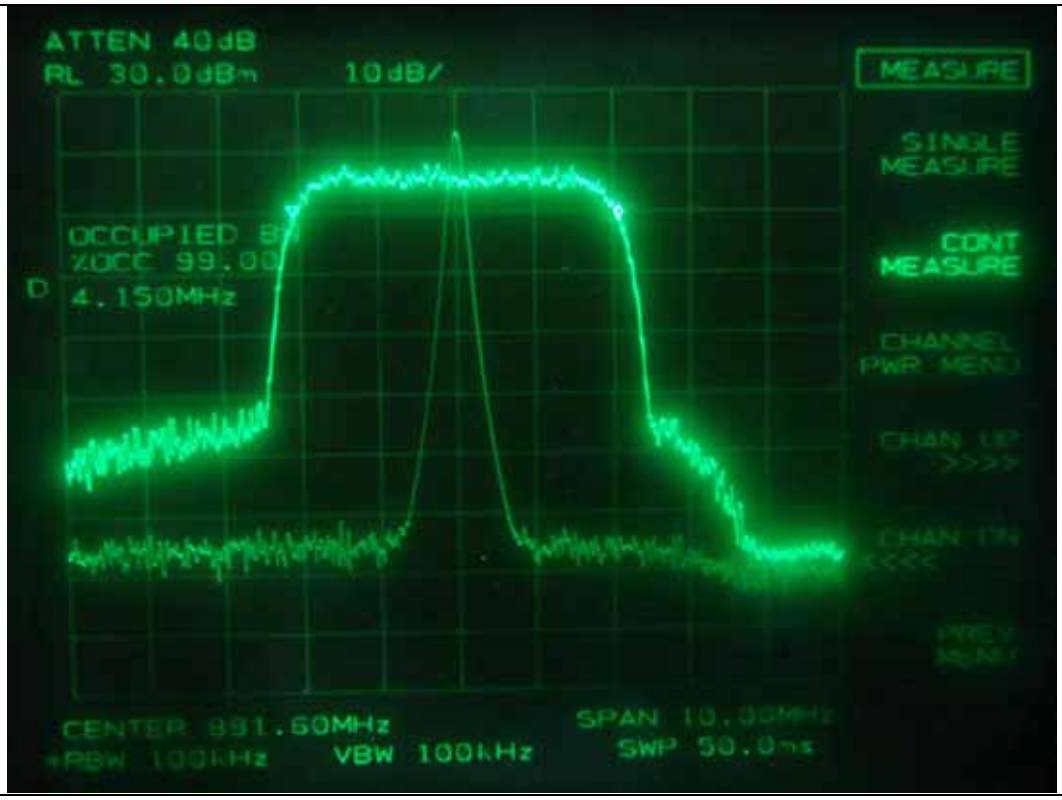


WCDMA – 99 % Occupied Bandwidth (Low Channel)



WCDMA – 99 % Occupied Bandwidth (Middle Channel)

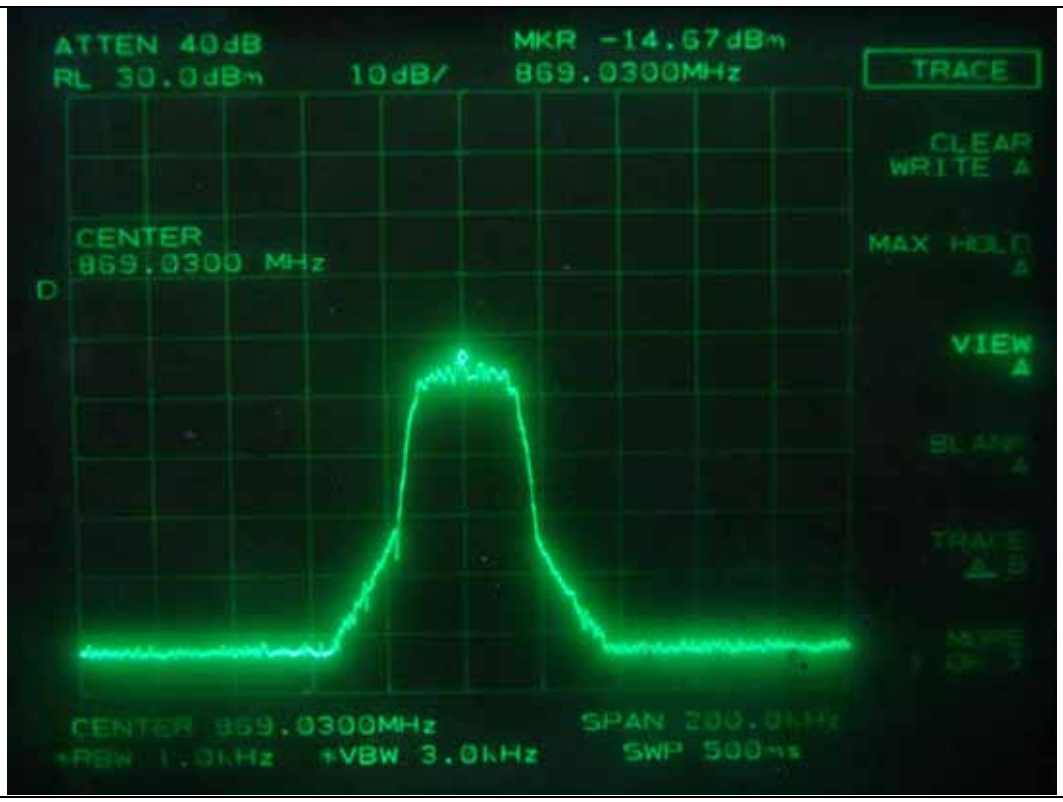
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



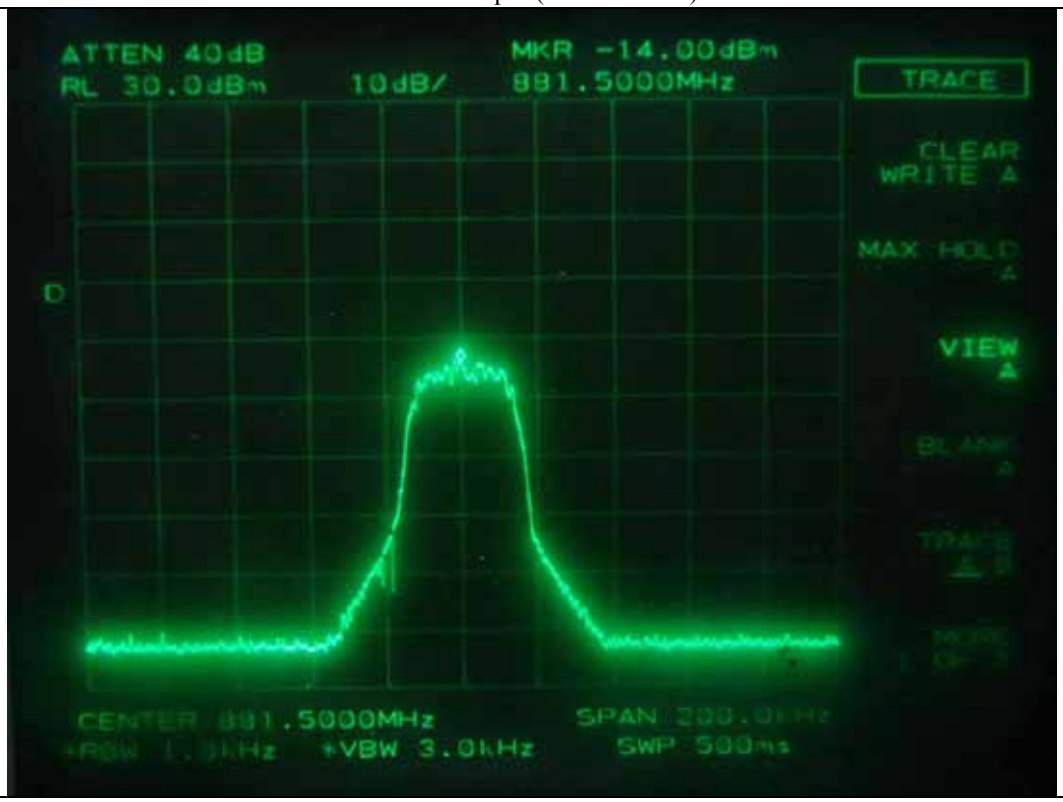
WCDMA – 99 % Occupied Bandwidth (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



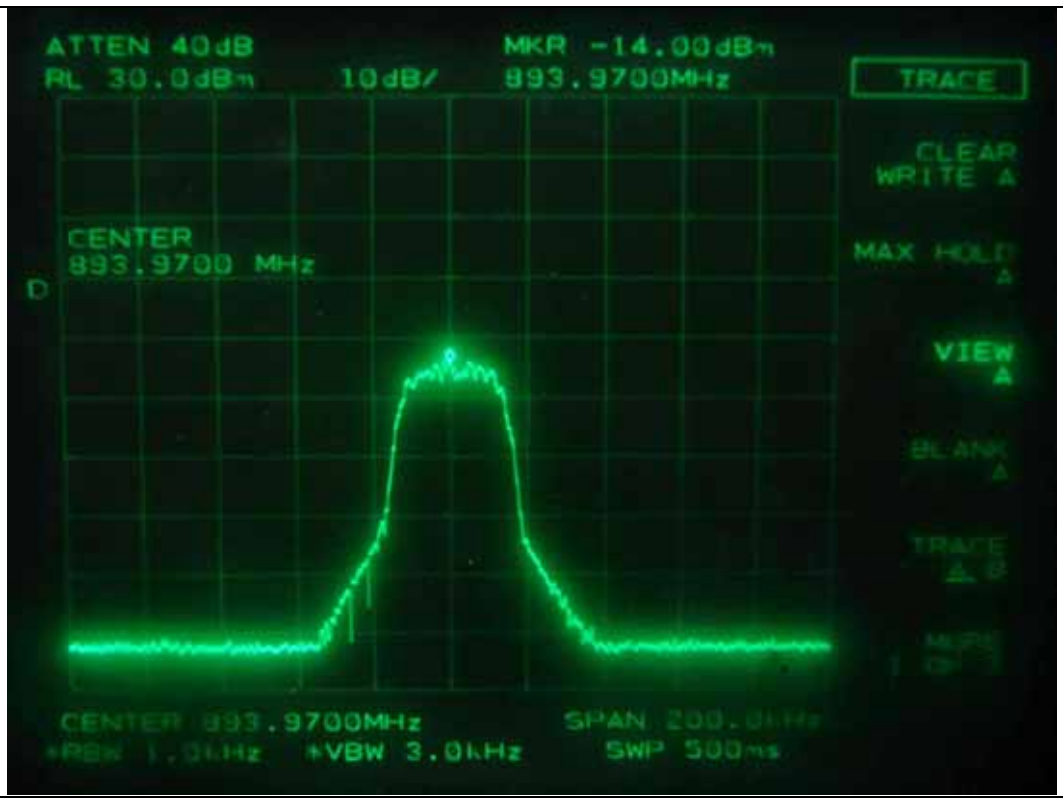
TDMA – Input (Low Channel)



TDMA – Input (Middle Channel)

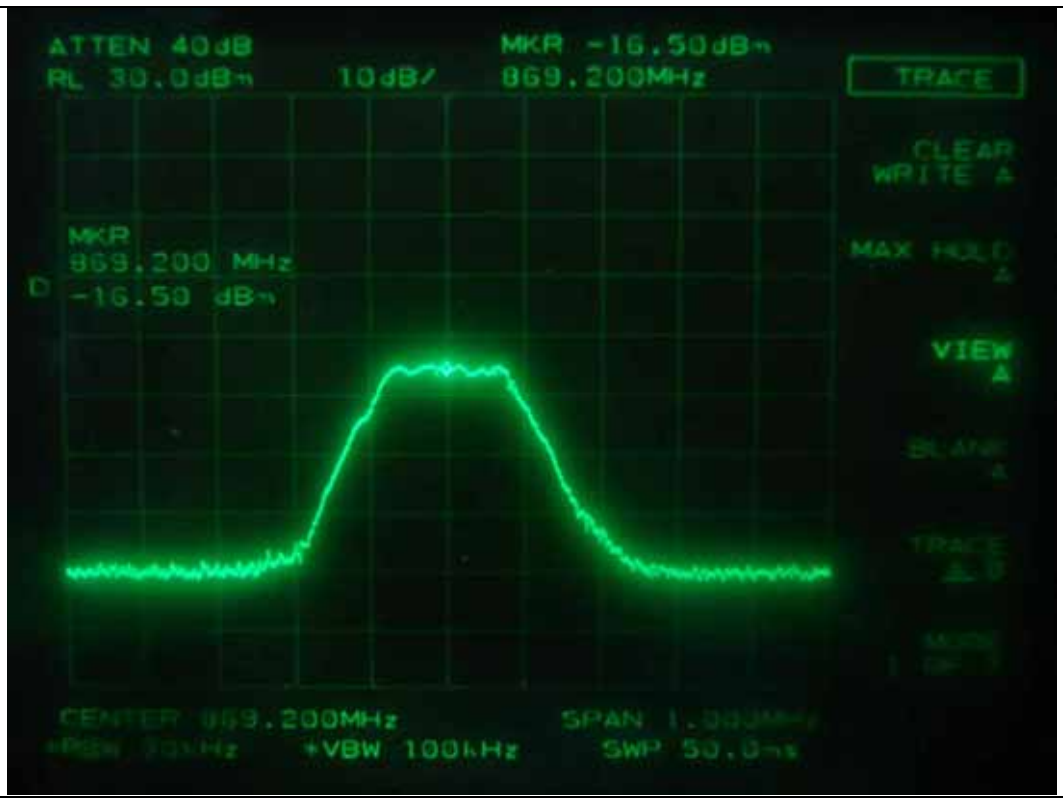
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

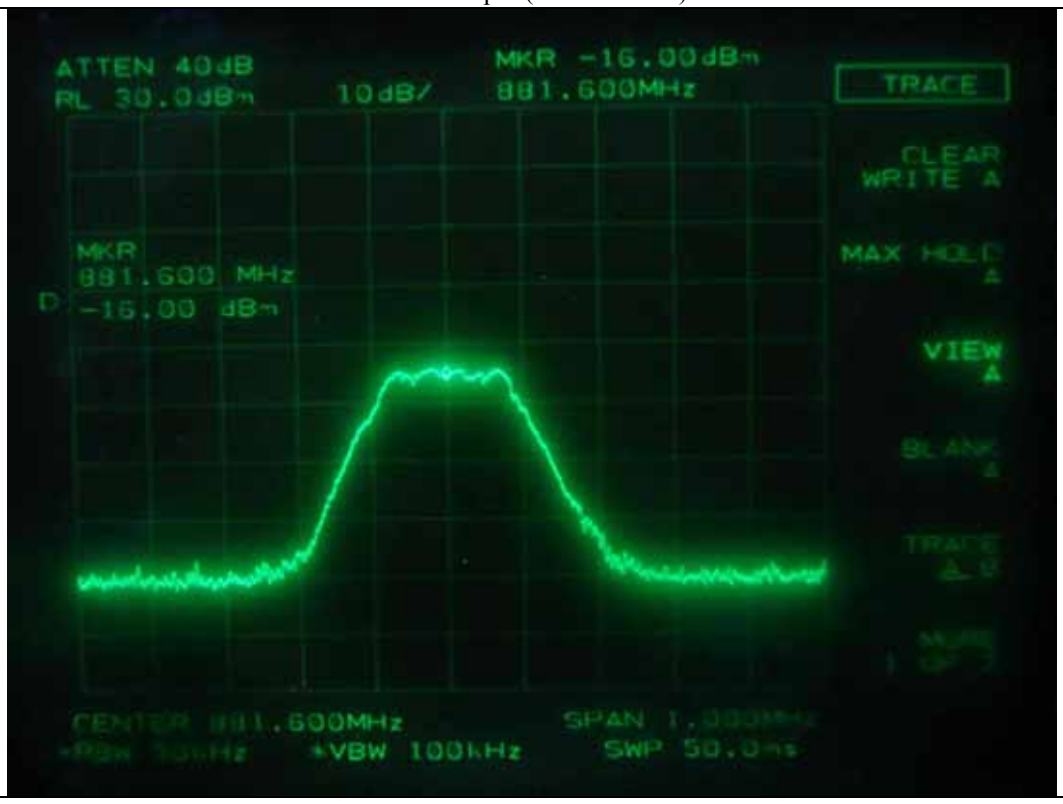


TDMA – Input (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



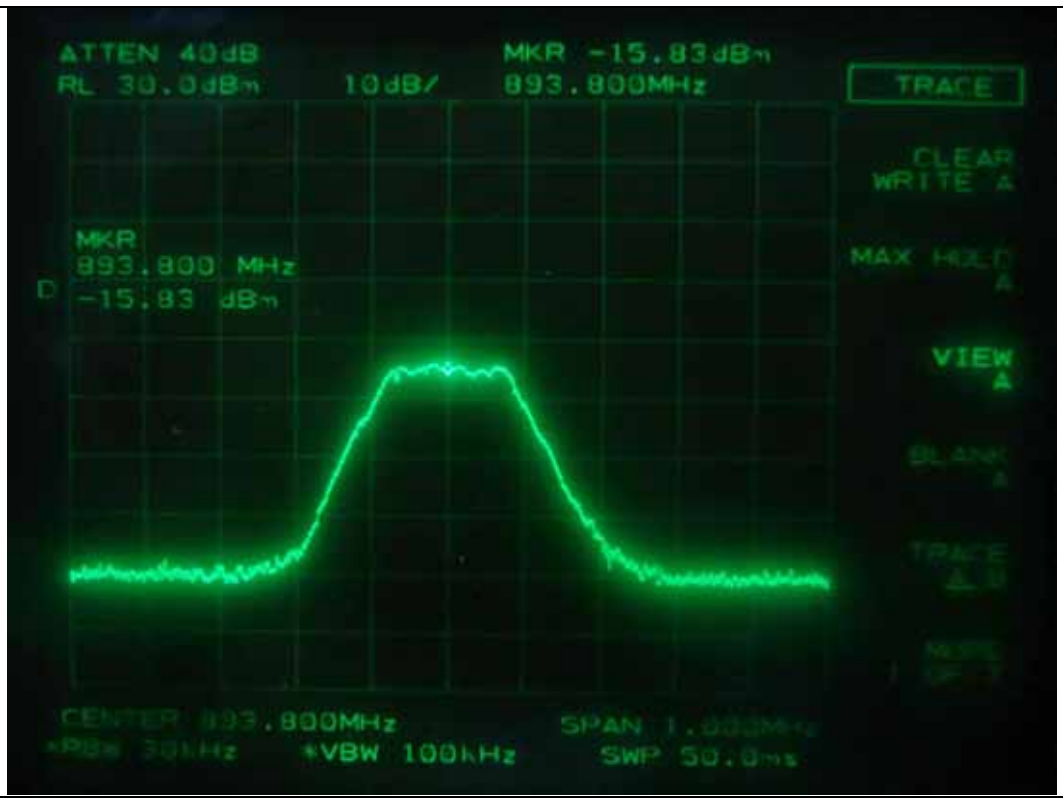
GSM – Input (Low Channel)



GSM – Input (Middle Channel)

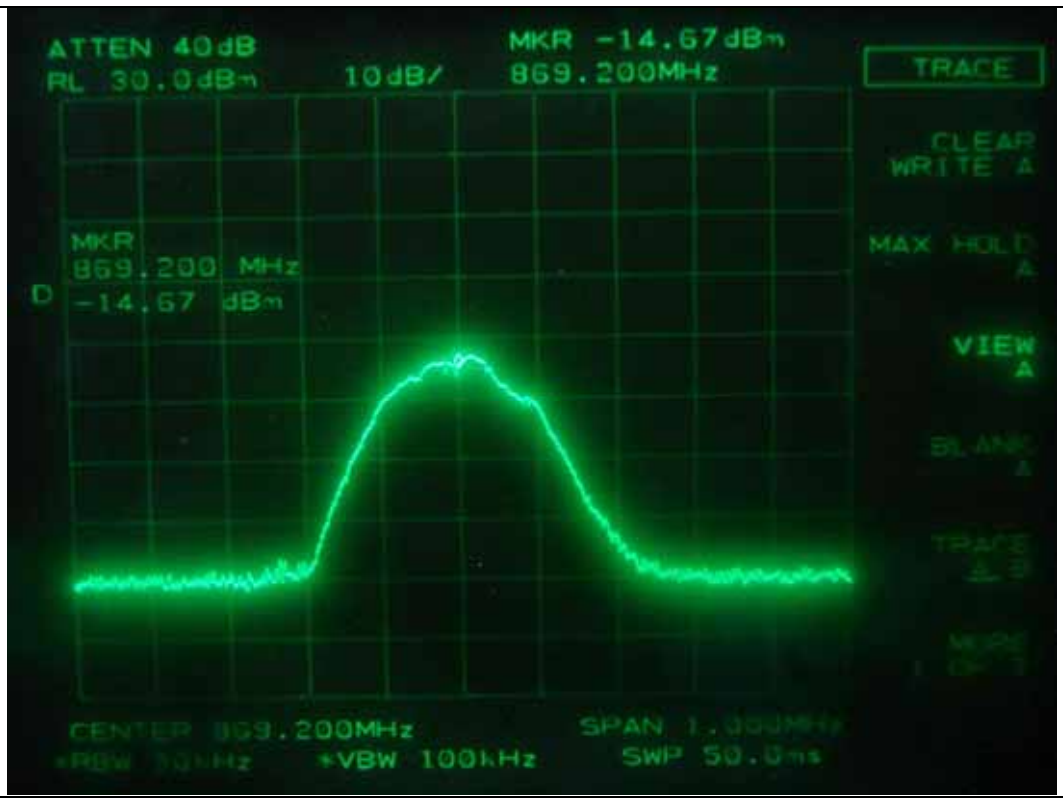
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

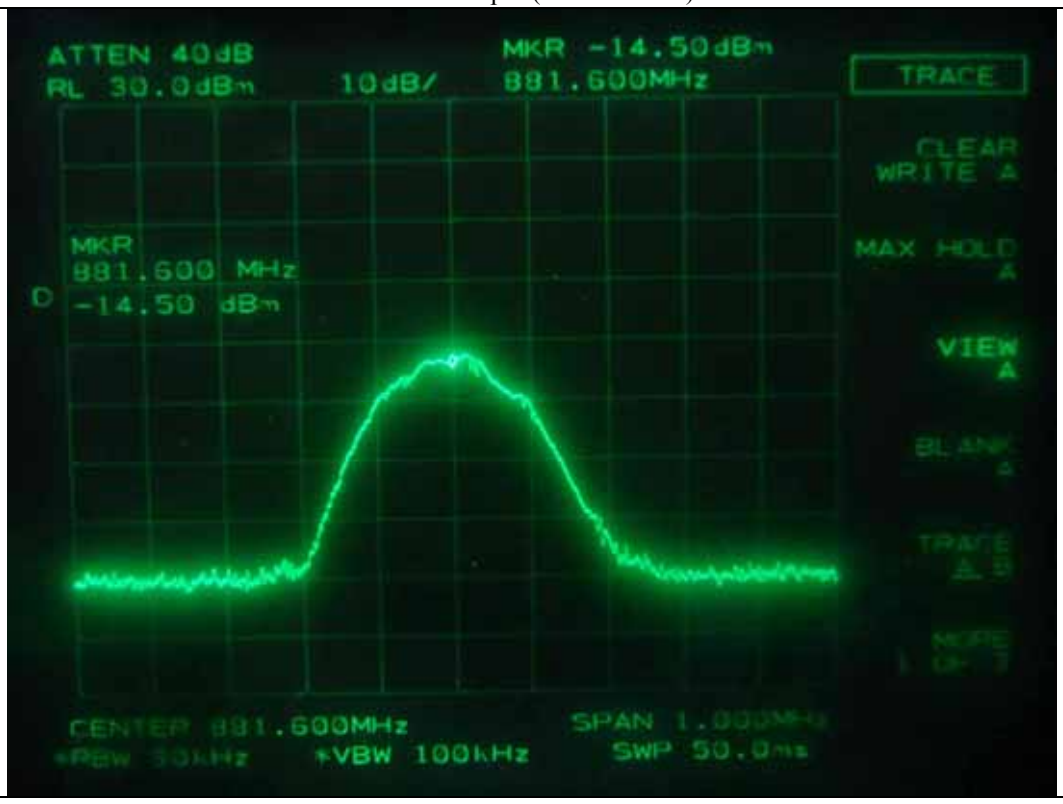


GSM – Input (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

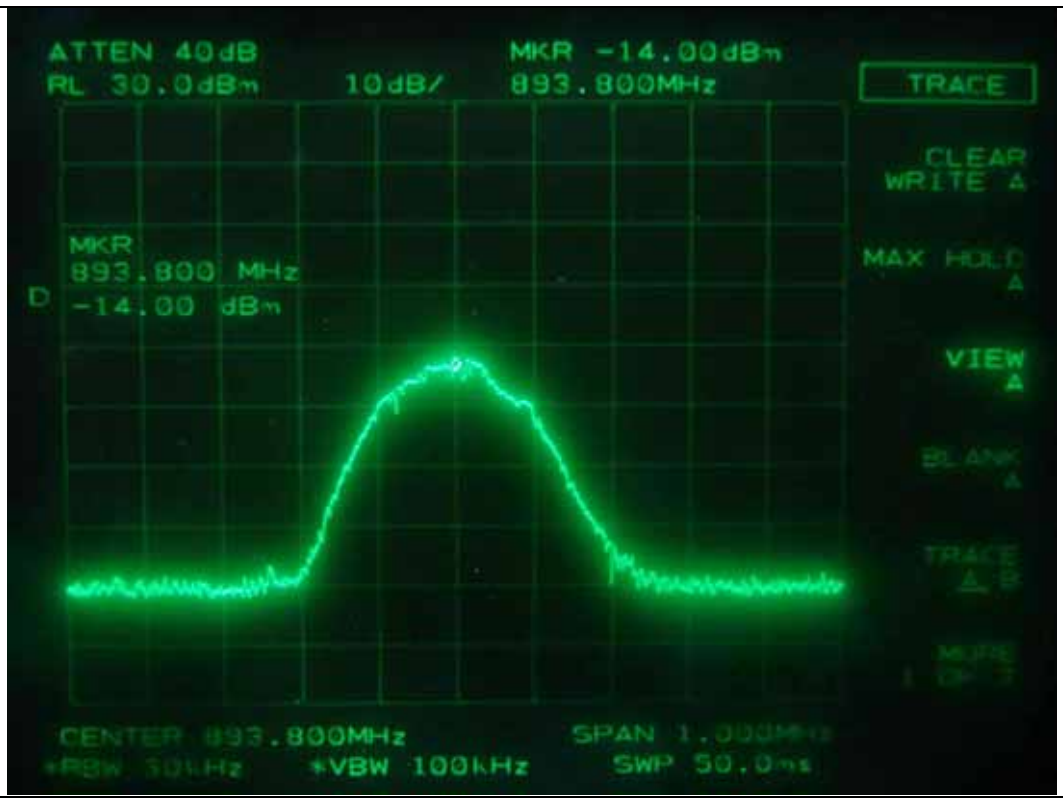


EDGE – Input (Low Channel)



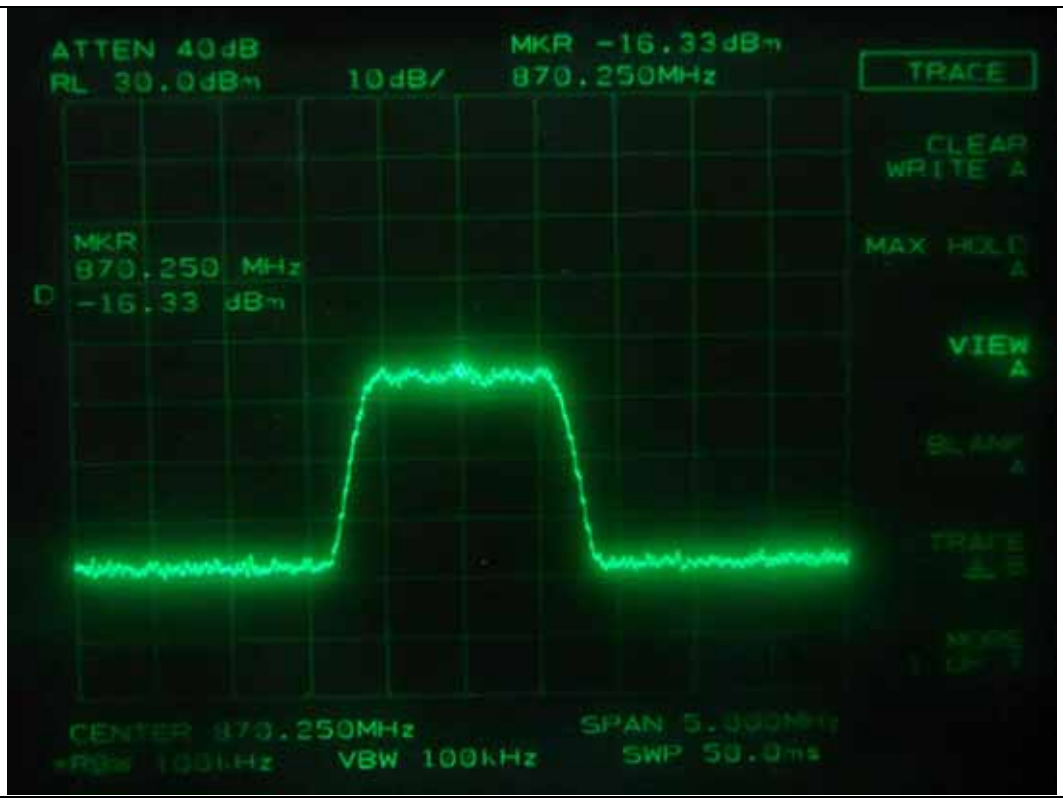
EDGE – Input (Middle Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

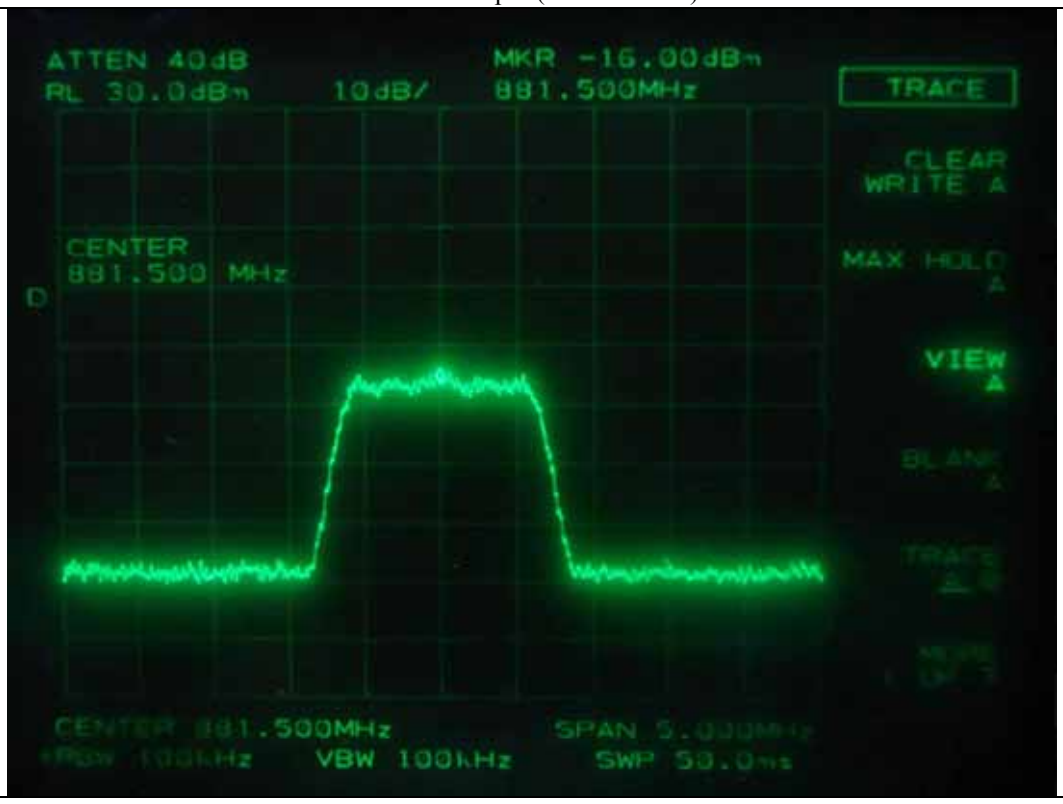


EDGE – Input (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



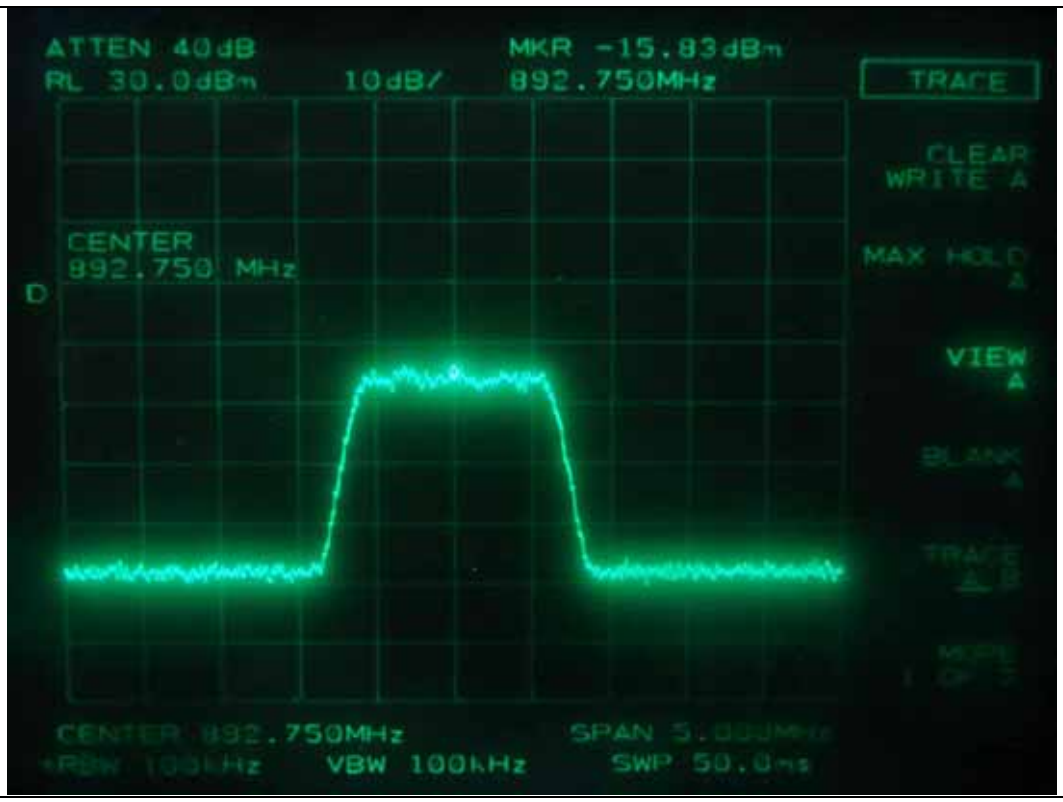
CDMA – Input (Low Channel)



CDMA – Input (Middle Channel)

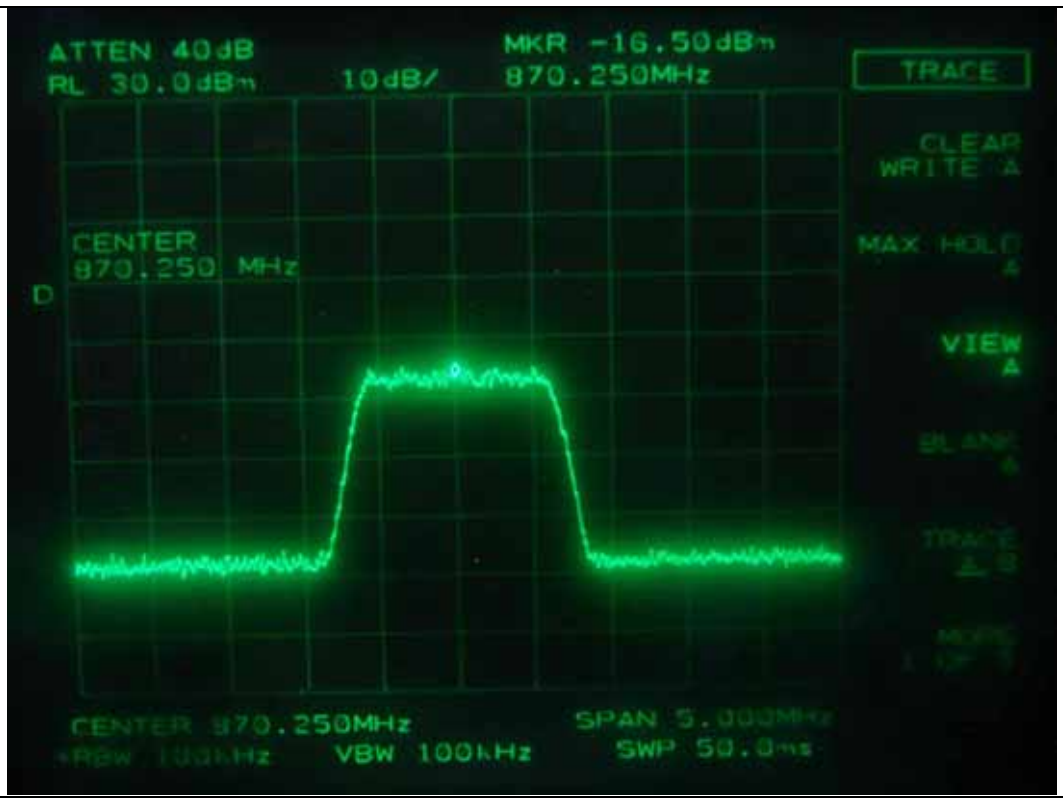
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

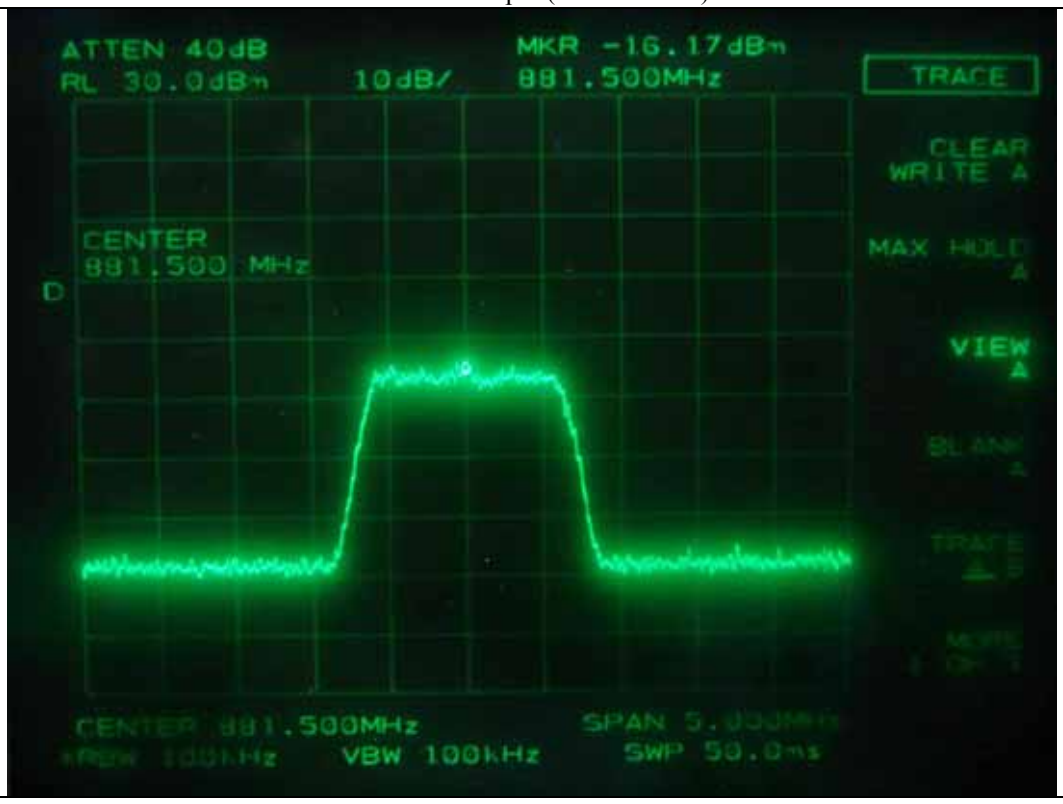


CDMA – Input (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



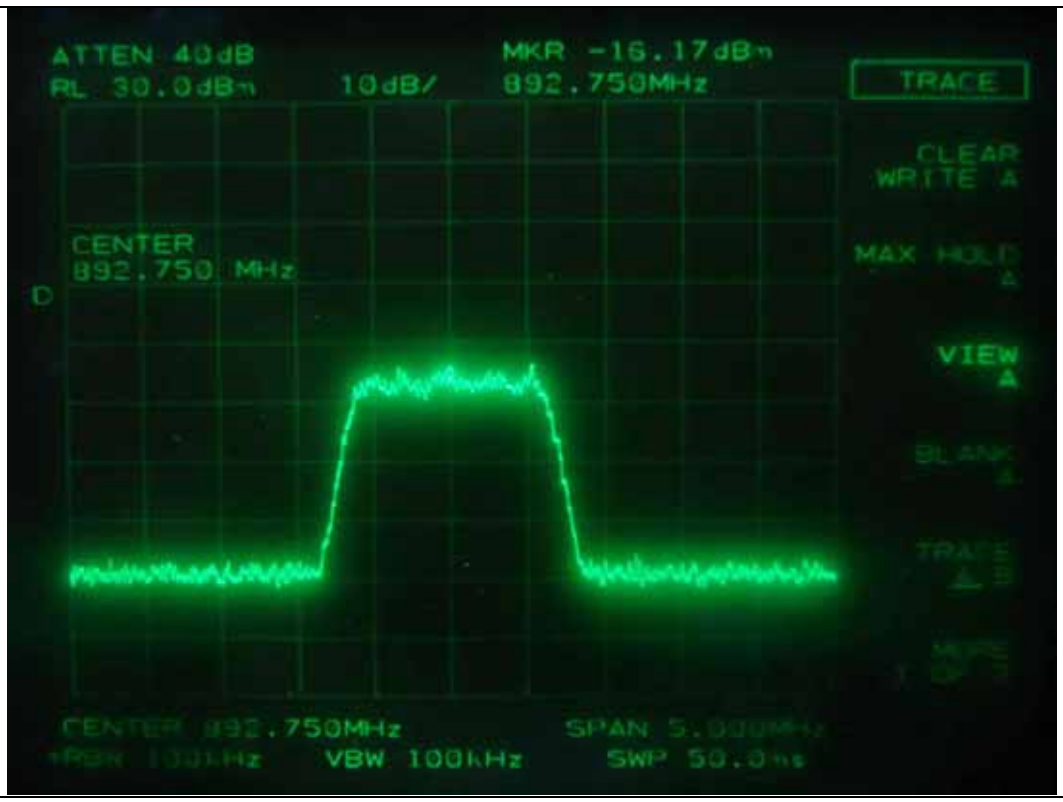
1xEVDO – Input (Low Channel)



1xEVDO – Input (Middle Channel)

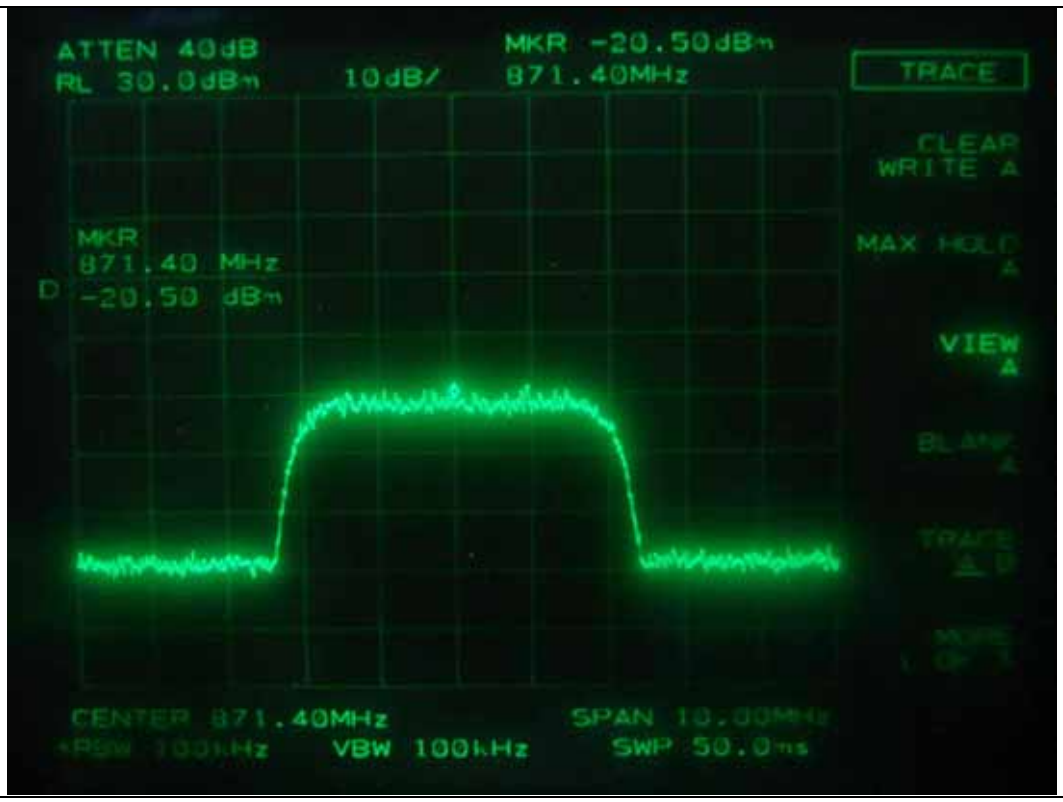
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

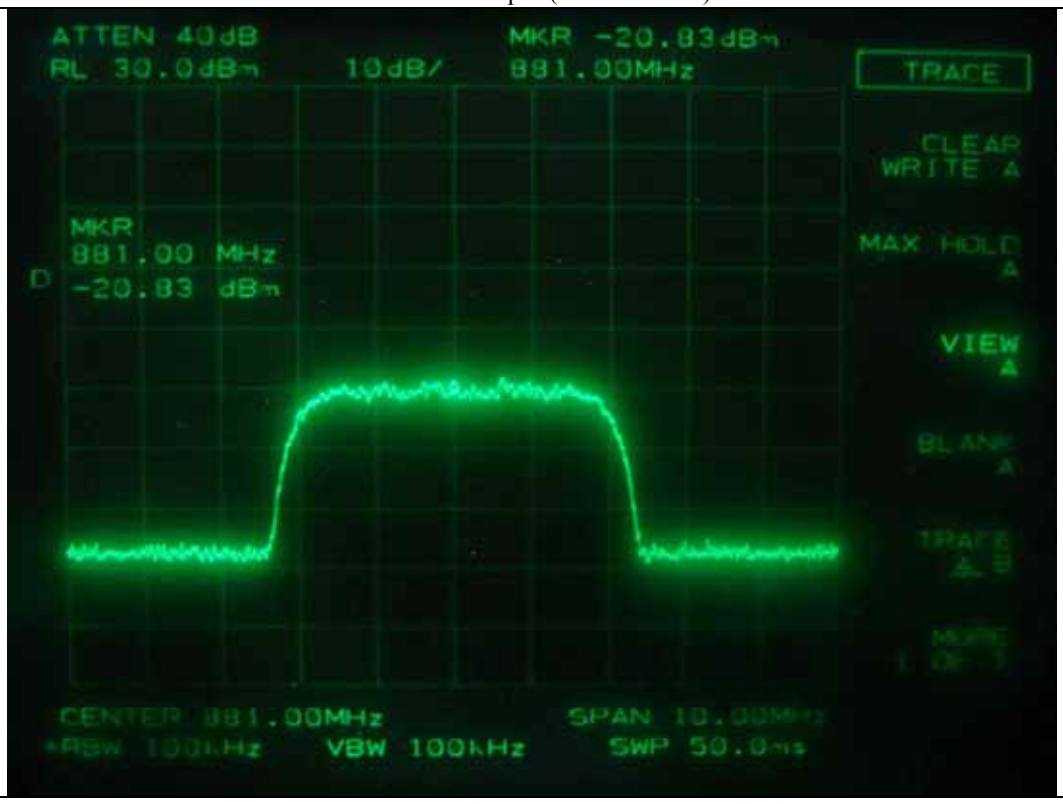


1xEVDO – Input (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



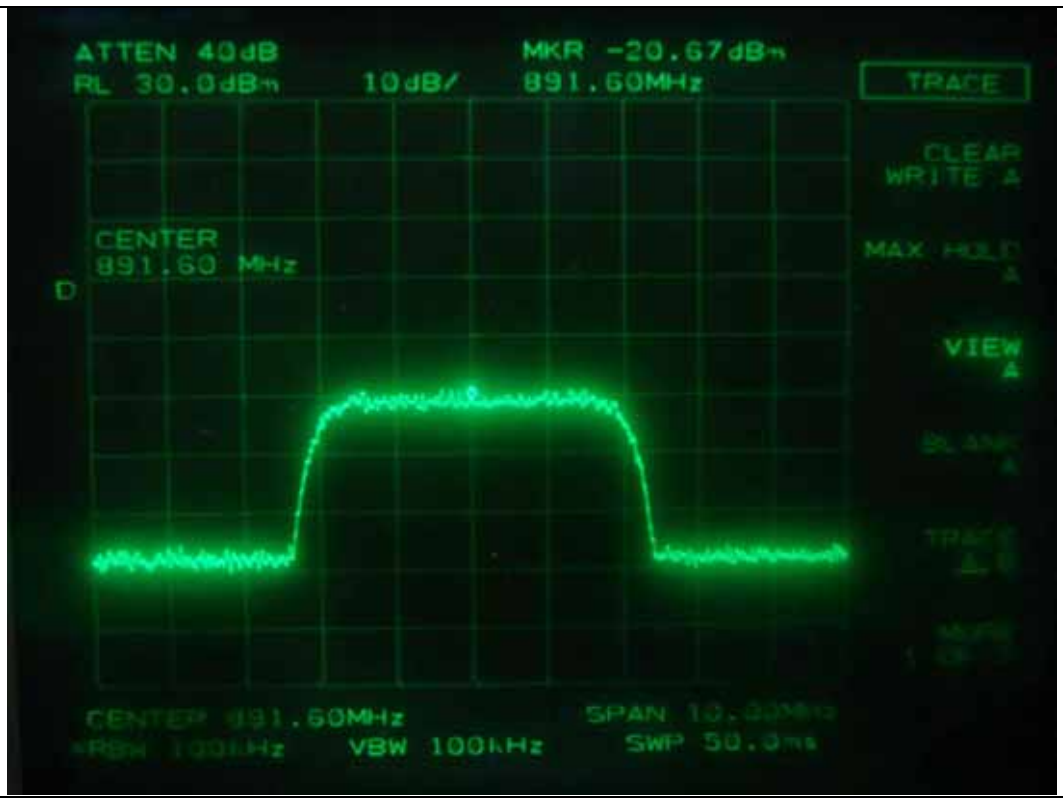
WCDMA – Input (Low Channel)



WCDMA – Input (Middle Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



WCDMA – Input (High Channel)

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

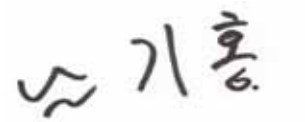
6.4.2 Test Result for Part 27 C

-. Test Date : August 05 ~ 09, 2010

-. Test Result : Pass

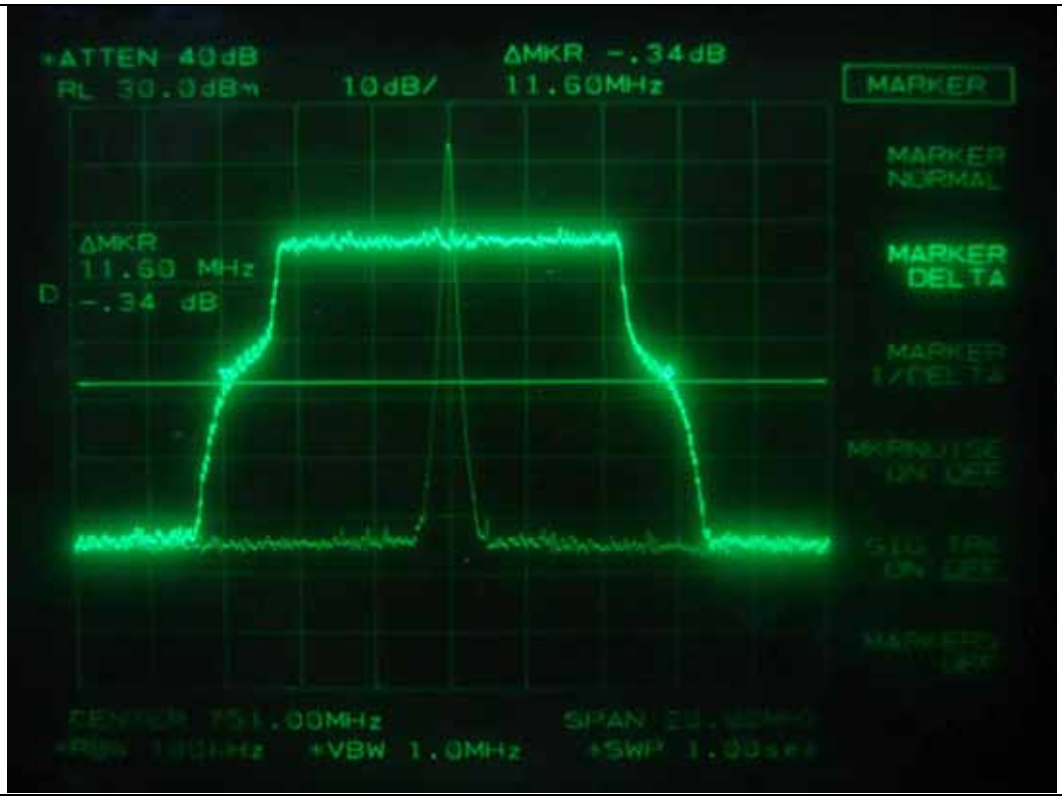
Modulation	20 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)
QPSK	11.600	9.000
16QAM	11.600	9.000
64QAM	11.600	8.967

Remark: According to above result, the carrier frequency shall be within the frequency block edges.

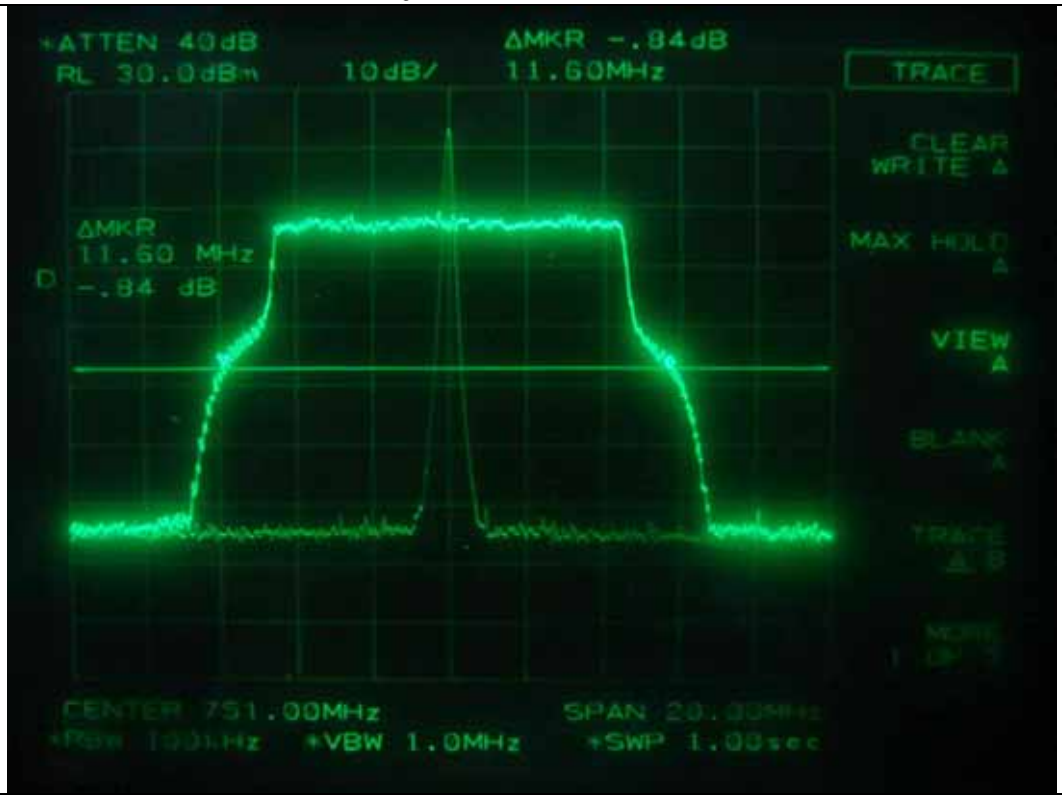


Tested by: Ki-Hong, Nam / Project Engineer

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



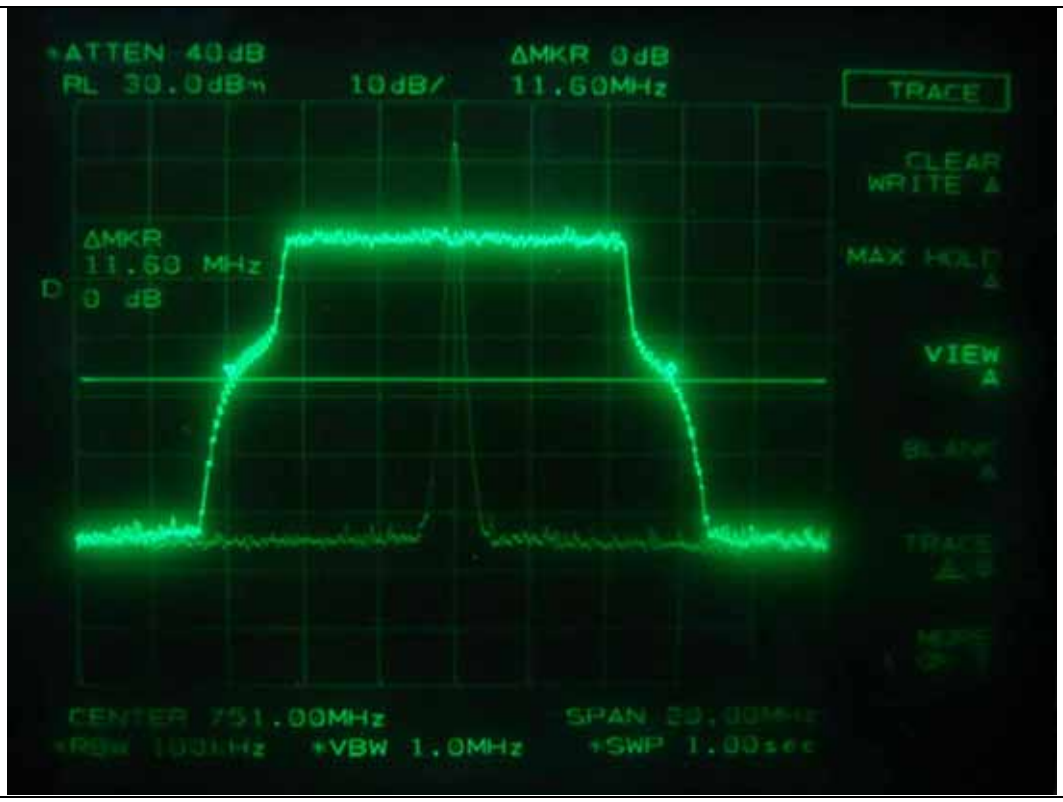
QPSK – 20 dB Bandwidth



16QAM – 20 dB Bandwidth

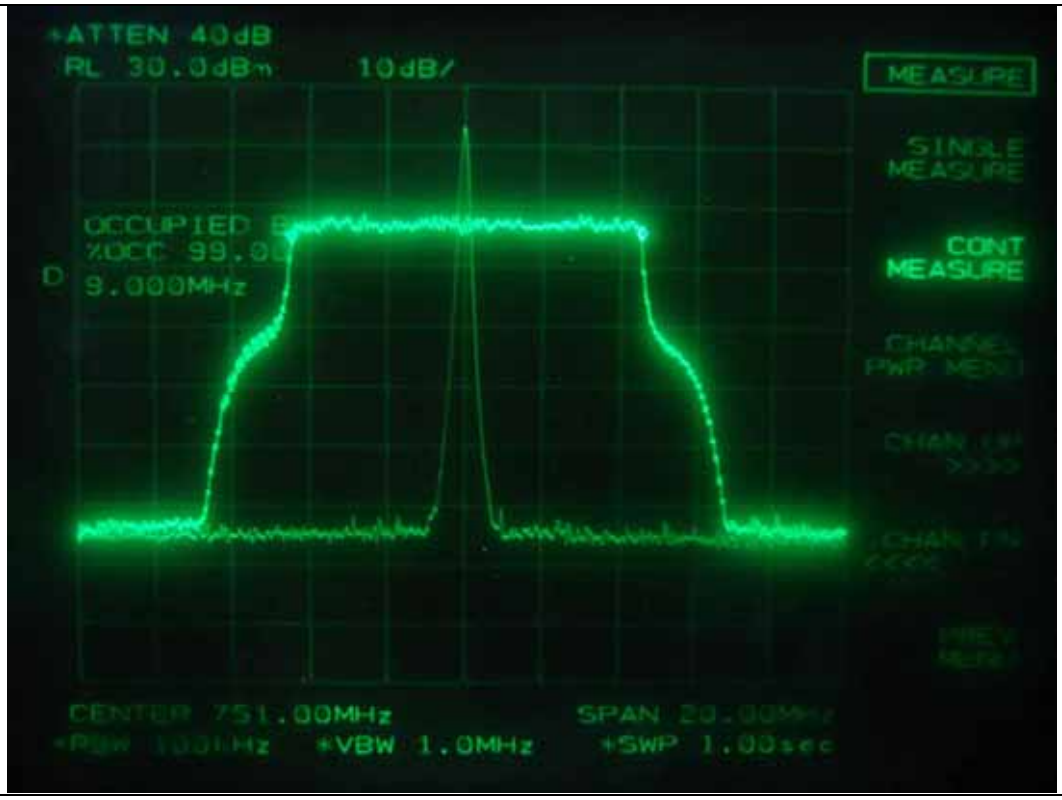
HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

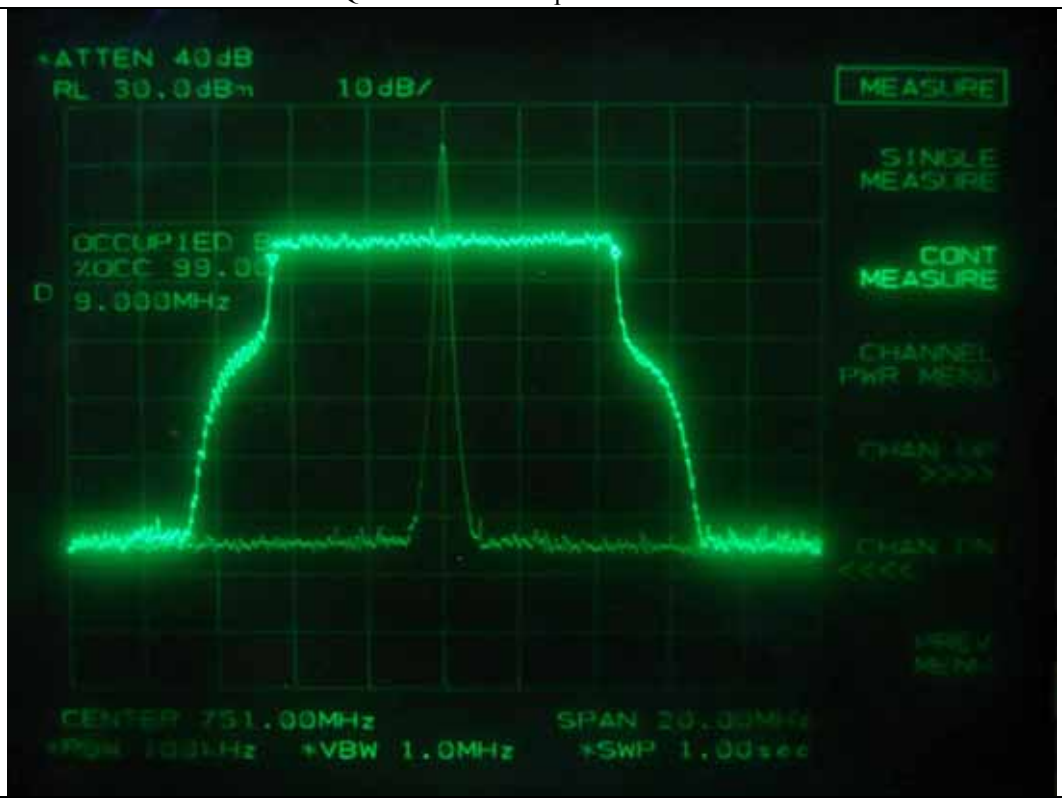


64QAM – 20 dB Bandwidth

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



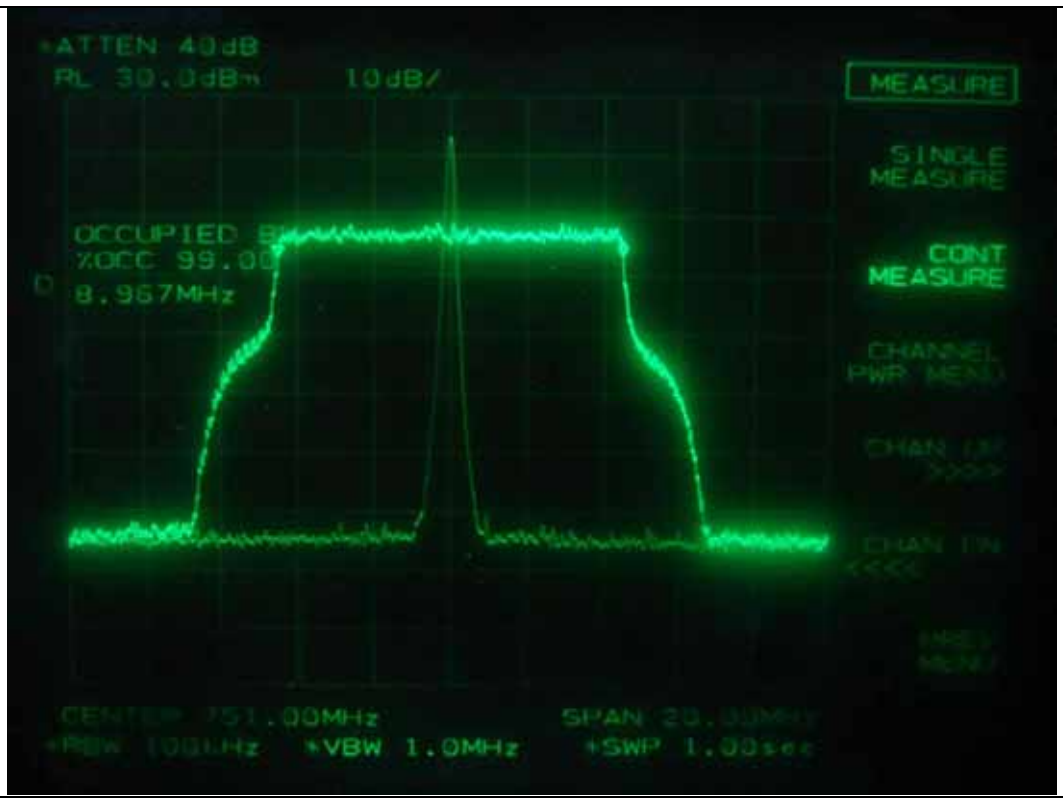
QPSK – 99 % Occupied Bandwidth



16QAM – 99 % Occupied Bandwidth

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



64QAM – 99 % Occupied Bandwidth

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

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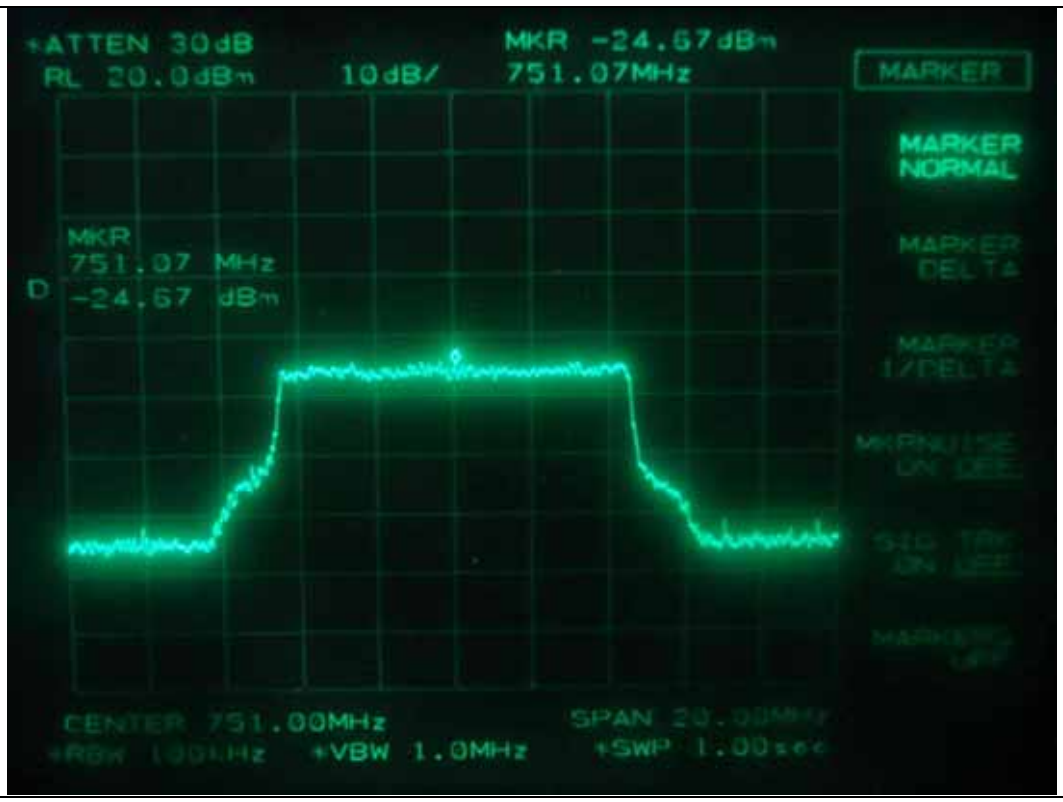
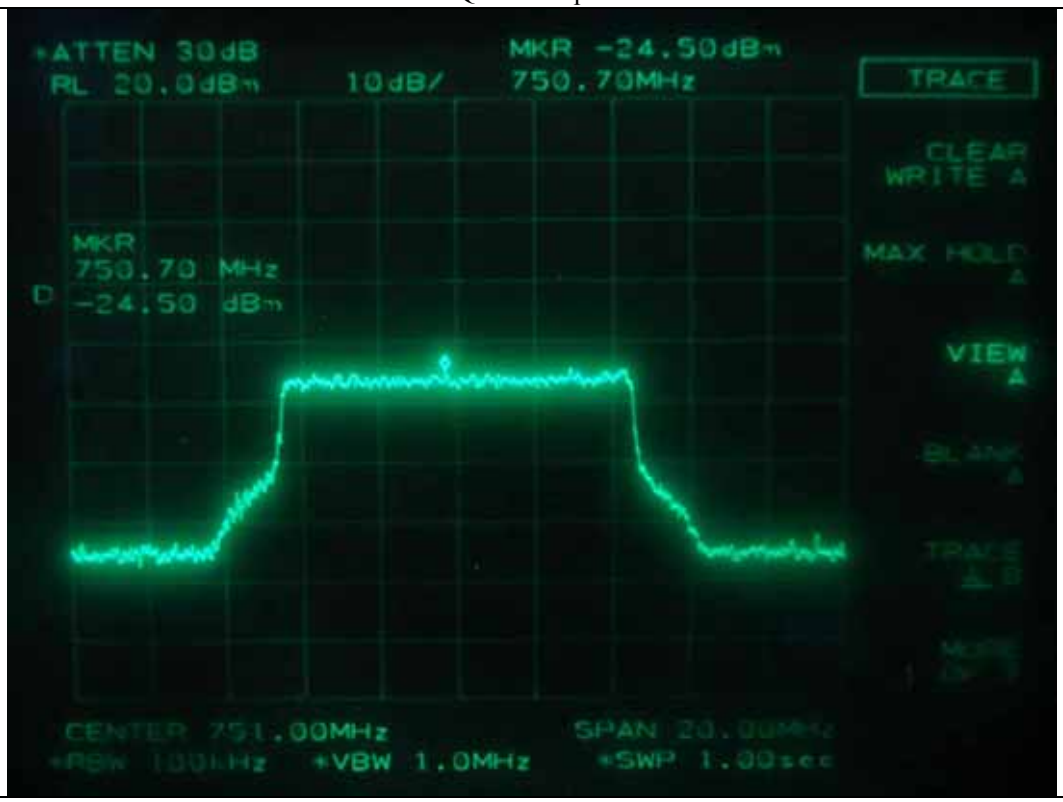


QPSK – Input



16QAM – Input

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

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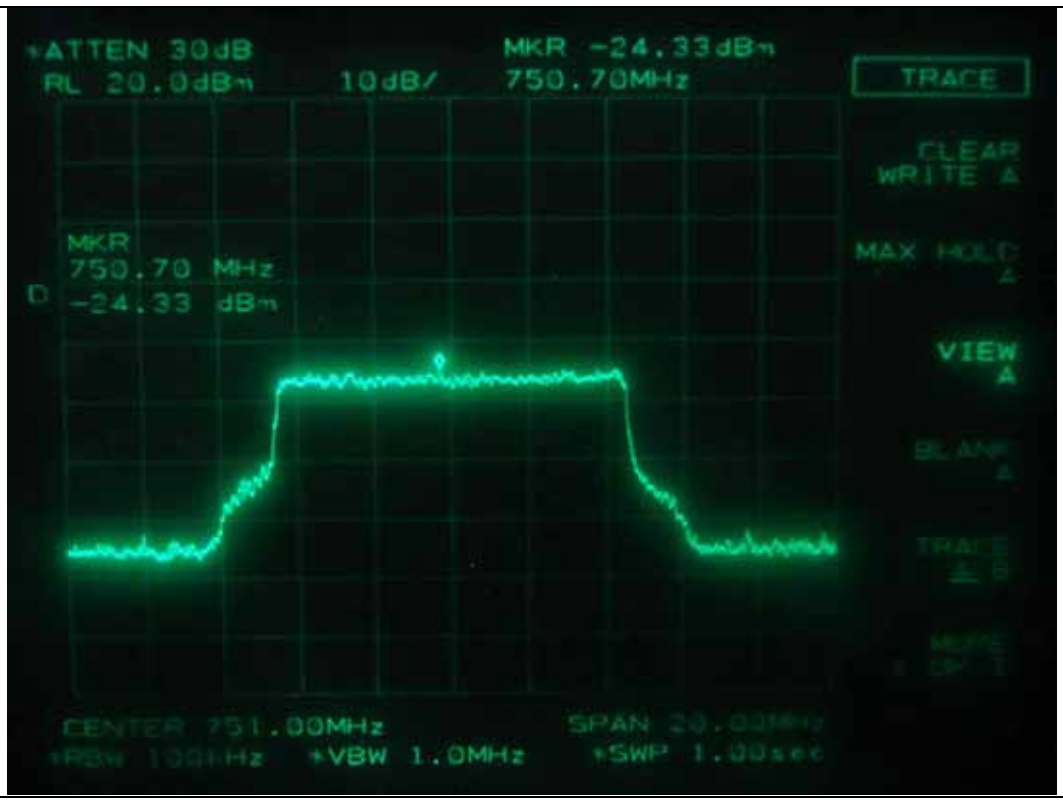

64QAM – Input

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
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7. SPURIOUS EMISSION AT ANTENNA TERMINAL

7.1 Operating environment

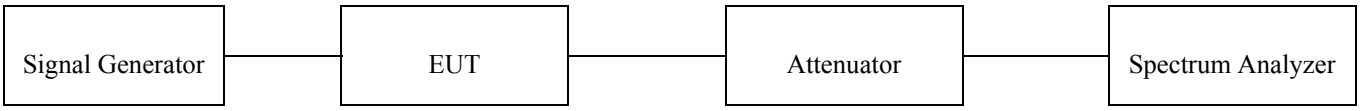
Temperature : 24 °C

Relative humidity : 48 % R.H.

7.2 Test set-up for conducted measurement

The RF signal from the signal generator(s) was injected to the EUT and the amplified RF signal at the output of the EUT was connected to the power meter or spectrum analyzer. The test was performed at three frequencies (low, middle, and high channels) at each band using all applicable modulation.

The resolution bandwidth and video bandwidth of the spectrum analyzer was set at 1 MHz and sufficient scans were taken to show any out of band emissions up to 20 GHz.



7.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	8564E	HP	Spectrum Analyzer	3650A00756	June 10, 2010
■ -	E4432B	HP	Signal Generator	US38440950	June 10, 2010
■ -	SMJ100A	R/S	Signal Generator	101038	Feb. 04, 2010
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 16, 2010

All test equipment used is calibrated on a regular basis.

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7.4 Test data

7.4.1 Test Result for Part 22 H

-. Test Date : August 05 ~ 09, 2010

-. Frequency range : 30 MHz ~ 15 GHz

-. Result : PASSED BY –16.17 dB at TDMA, GSM, EDGE and WCDMA Modes

Modulation	Harmonic Frequency (MHz)		Measured Value (dBm)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
TDMA	Low	718.70	-45.33	0.67	-44.66	-13.00	-31.66
		7 490.00	-32.17	2.83	-29.34		-16.34
	Middle	582.90	-45.50	0.67	-44.83		-31.83
		7 230.00	-33.00	2.83	-30.17		-17.17
	High	631.40	-46.33	0.67	-45.66		-32.66
		7 440.00	-32.00	2.83	-29.17		-16.17
GSM	Low	455.20	-45.83	0.67	-45.16	-13.00	-32.16
		7 460.00	-32.33	2.83	-29.50		-16.50
	Middle	440.60	-45.50	0.67	-44.83		-31.83
		7 560.00	-32.00	2.83	-29.17		-16.17
	High	437.40	-44.67	0.67	-44.00		-31.00
		7 560.00	-32.50	2.83	-29.67		-16.67
EDGE	Low	579.70	-45.83	0.67	-45.16	-13.00	-32.16
		7 670.00	-32.17	2.83	-29.34		-16.34
	Middle	479.40	-45.00	0.67	-44.33		-31.33
		7 440.00	-32.00	2.83	-29.17		-16.17
	High	342.00	-45.33	0.67	-44.66		-31.66
		7 230.00	-32.33	2.83	-29.50		-16.50
CDMA	Low	579.70	-45.00	0.67	-44.33	-13.00	-31.33
		7 580.00	-32.67	2.83	-29.84		-16.84
	Middle	327.50	-45.67	0.67	-45.00		-32.00
		7 210.00	-32.50	2.83	-29.67		-16.67
	High	405.10	-45.67	0.67	-45.00		-32.00
		7 460.00	-32.50	2.83	-29.67		-16.67

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Modulation	Harmonic Frequency (MHz)		Measured Value (dBm)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
1xEVDO	Low	618.50	-45.67	0.67	-45.00	-13.00	-32.00
		7 530.00	-32.33	2.83	-29.50		-16.50
	Middle	519.90	-45.67	0.67	-45.00		-32.00
		7 390.00	-32.83	2.83	-30.00		-17.00
	High	515.00	-45.50	0.67	-44.83		-31.83
		7 420.00	-32.67	2.83	-29.84		-16.84
WCDMA	Low	558.70	-45.00	0.67	-44.33	-13.00	-31.33
		7 390.00	-32.00	2.83	-29.17		-16.17
	Middle	618.50	-46.33	0.67	-45.66		-32.66
		7 440.00	-32.50	2.83	-29.67		-16.67
	High	312.90	-46.00	0.67	-45.33		-32.33
		7 600.00	-32.17	2.83	-29.34		-16.34
Other frequencies up to 15 GHz have margin more than 20 dB.							

According to Part 22H, out of band emission shall be attenuated by 43 + 10 log (P) dBc, equates to -13.0 dBm.

Tested by: Ki-Hong, Nam / Project Engineer

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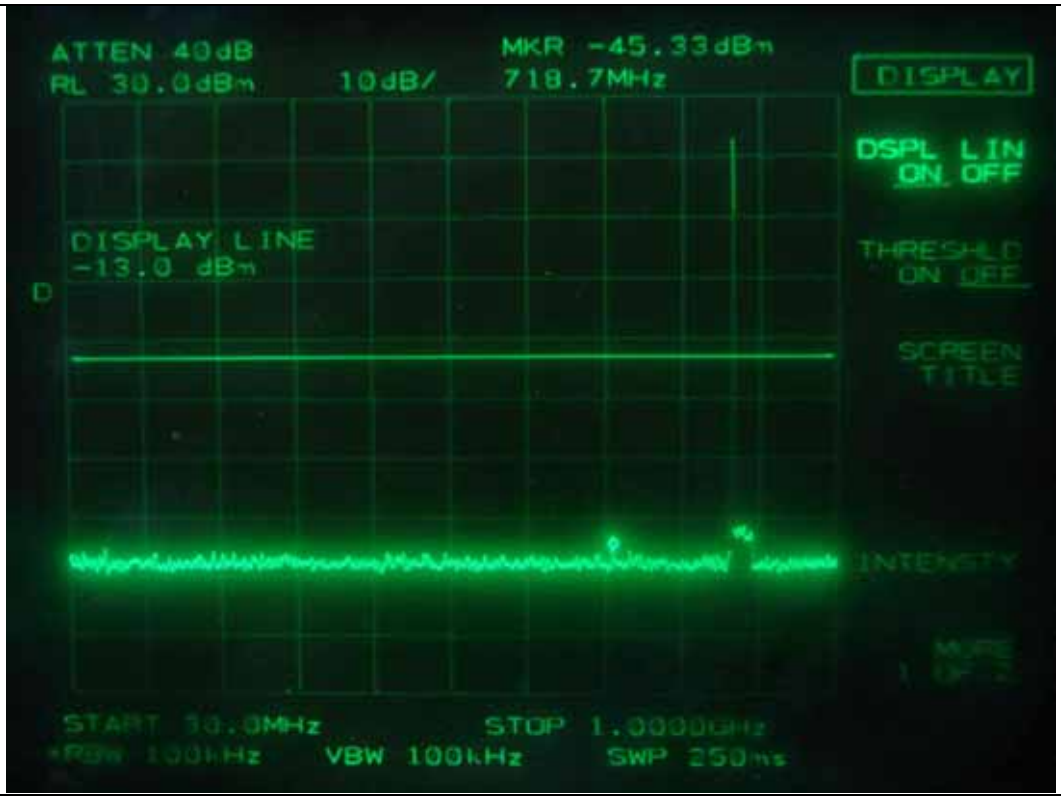
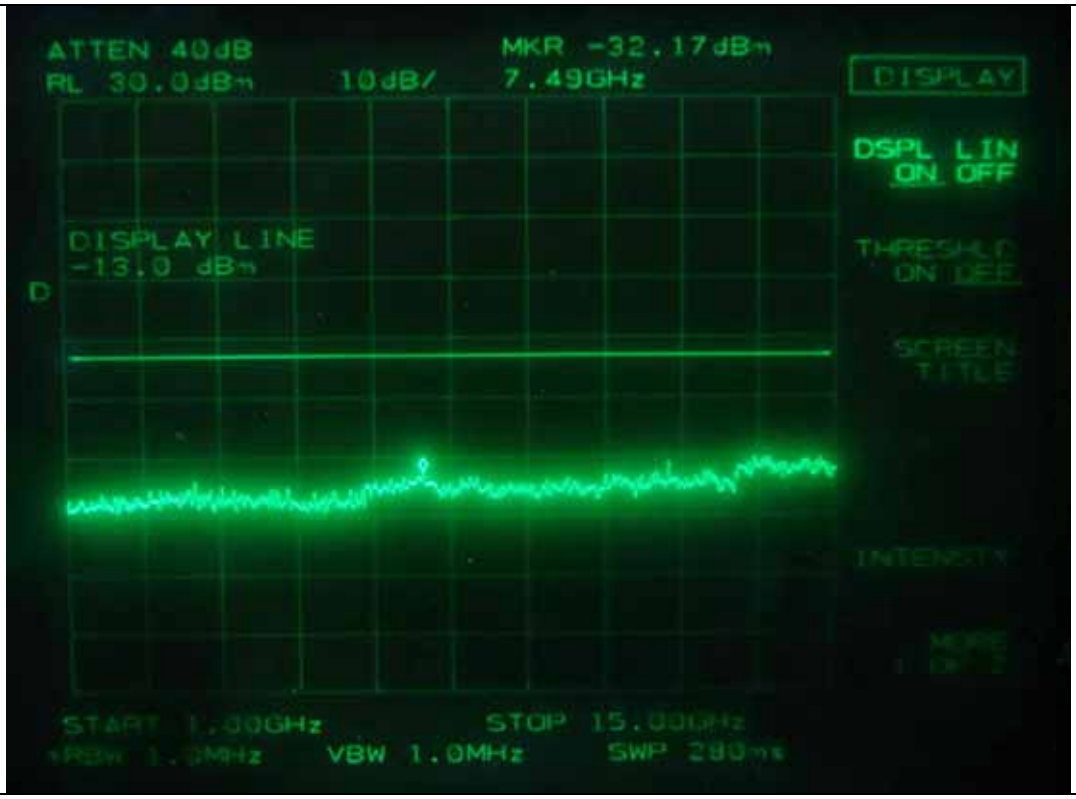


TDMA – Low Channel



TDMA – Low Channel

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
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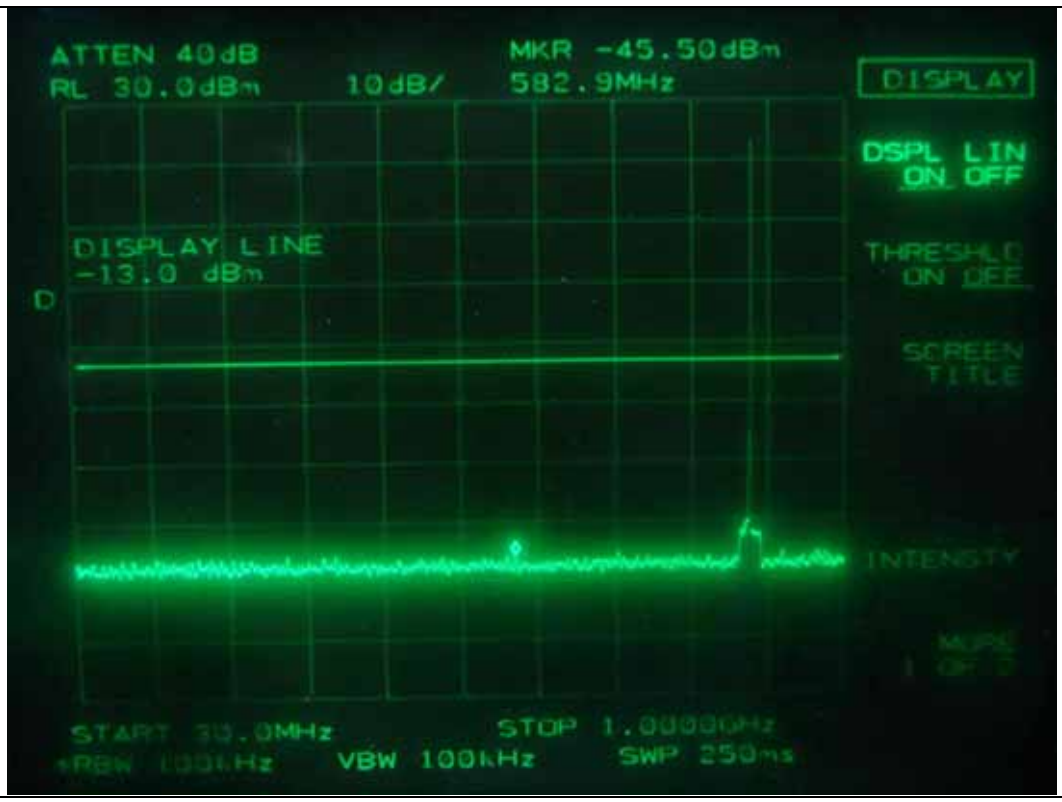
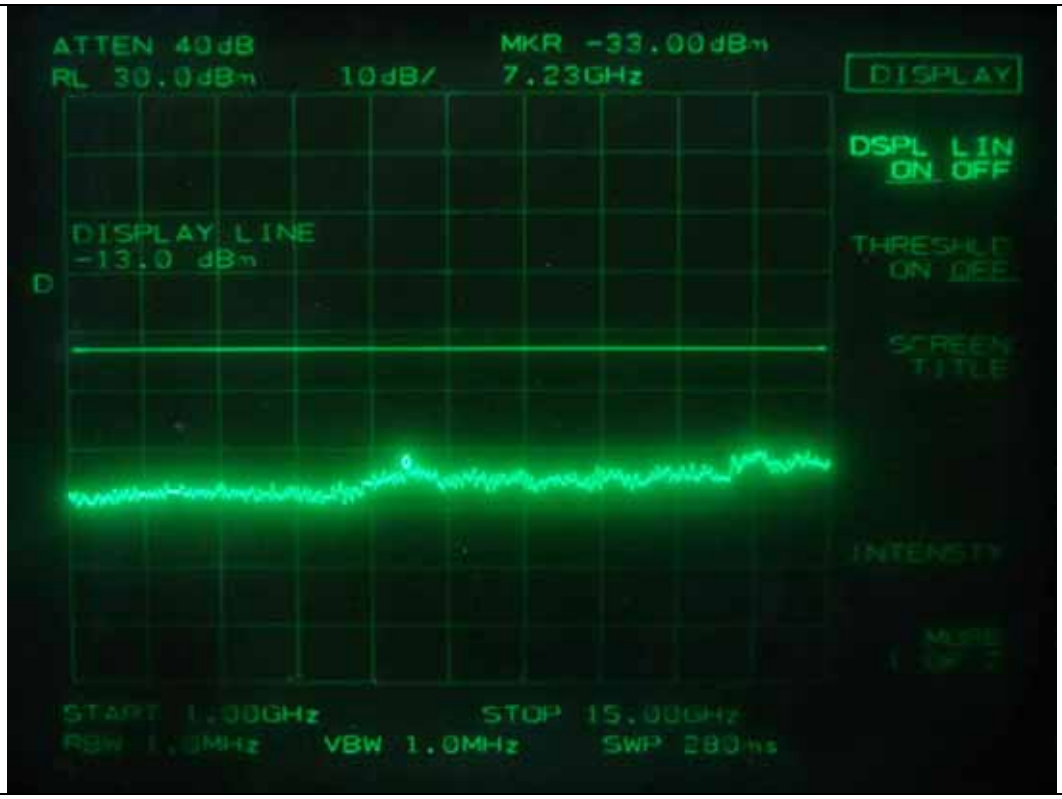


TDMA – Middle Channel



TDMA – Middle Channel

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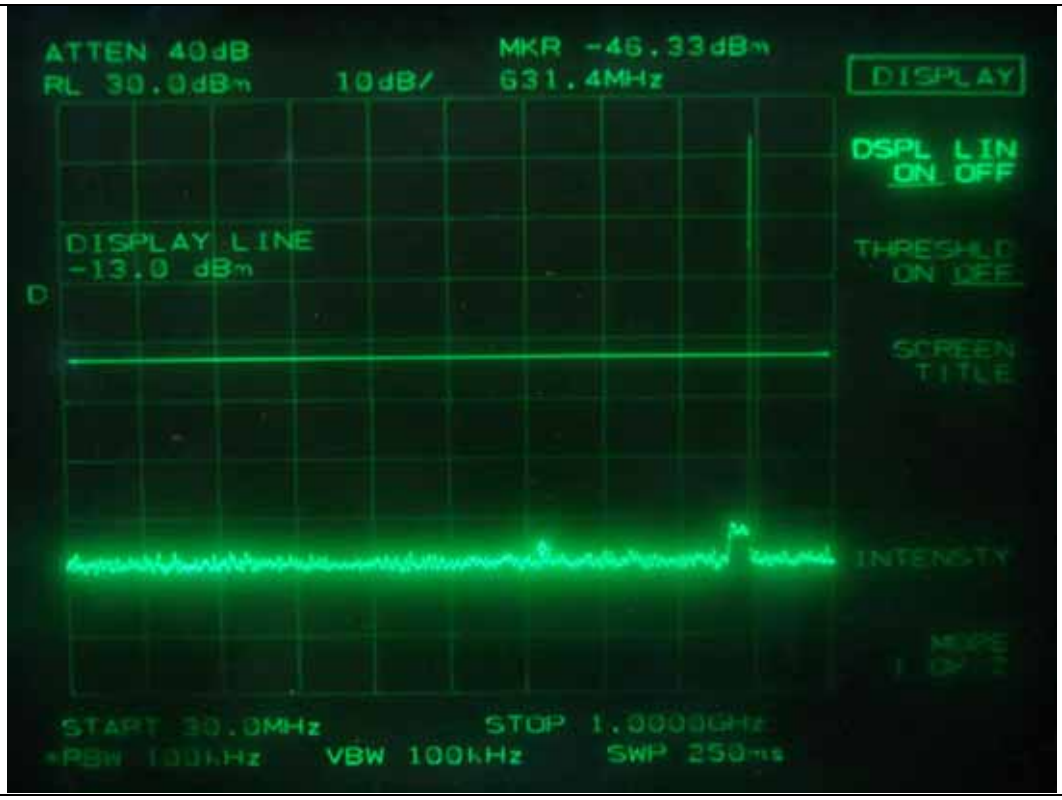
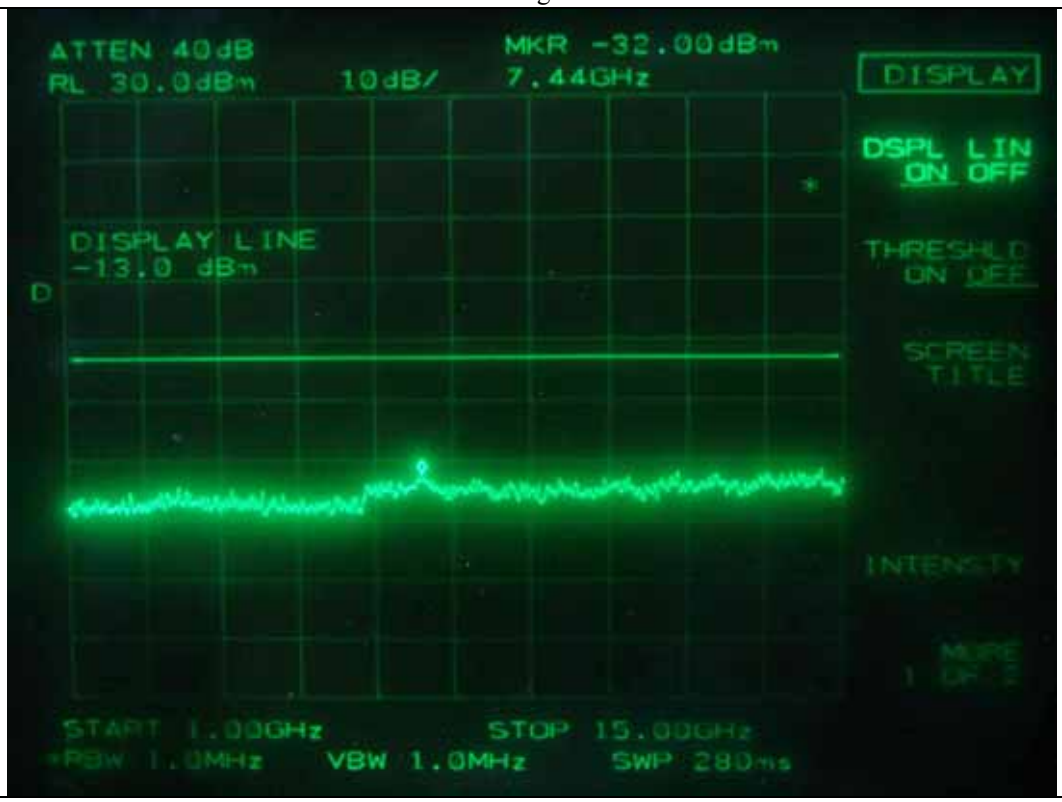


TDMA – High Channel



TDMA – High Channel

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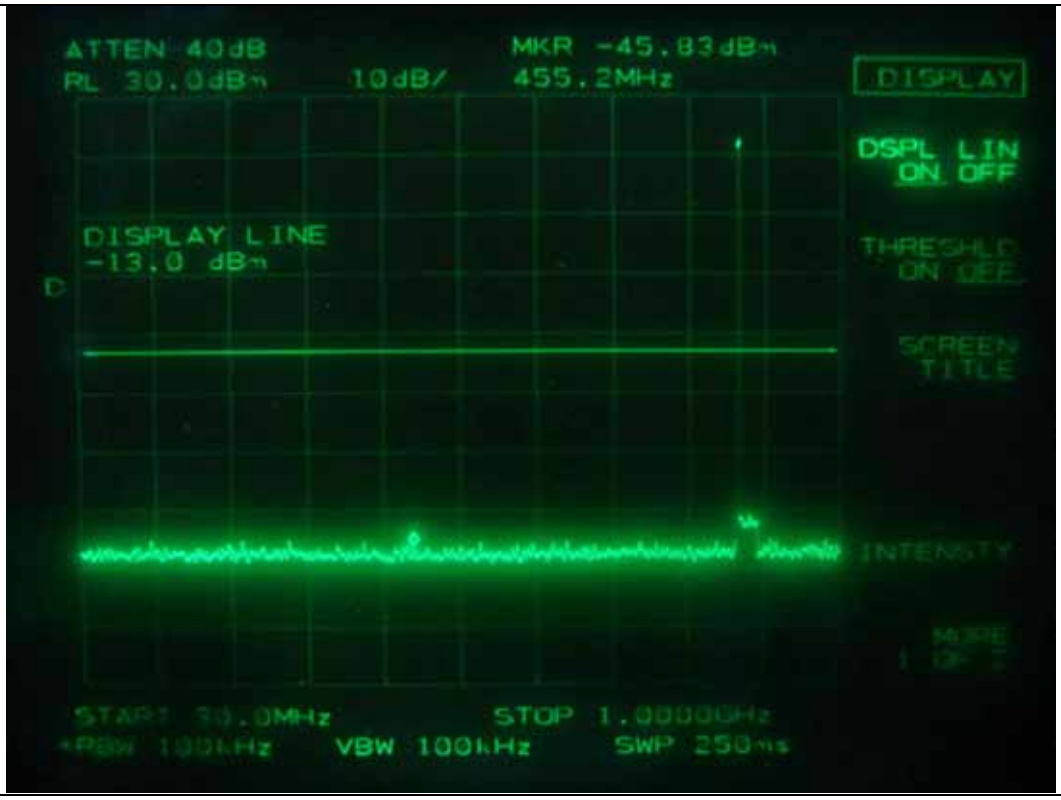
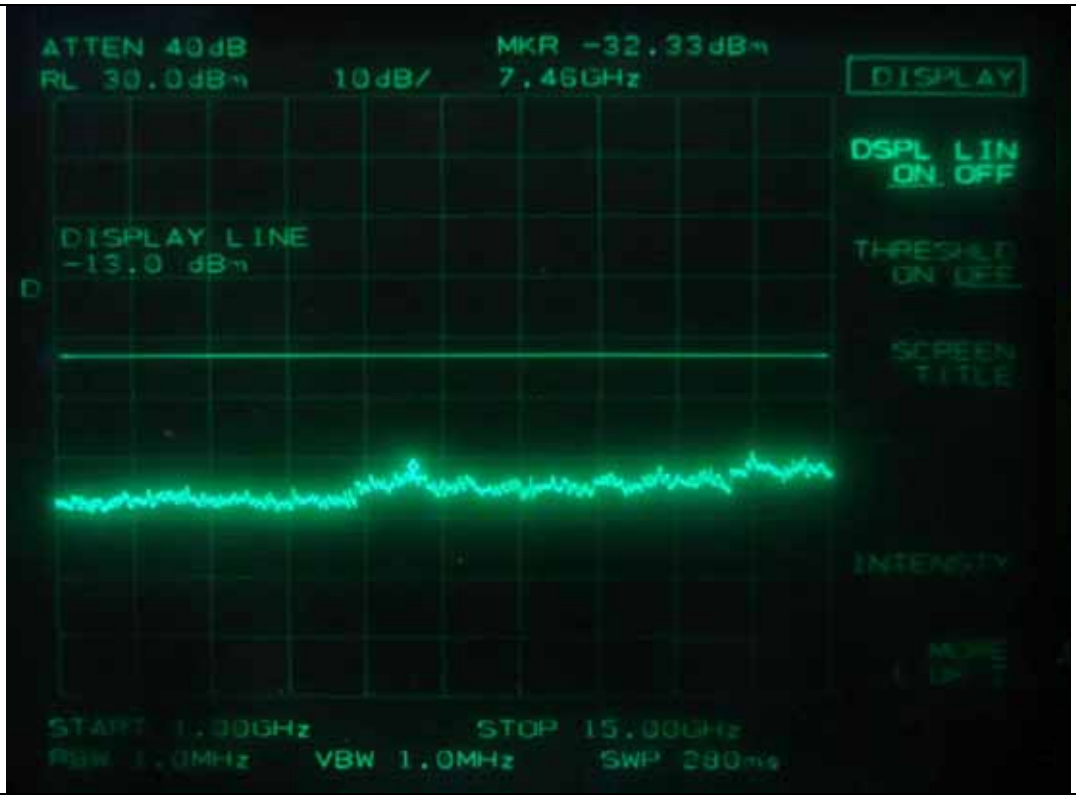


GSM – Low Channel



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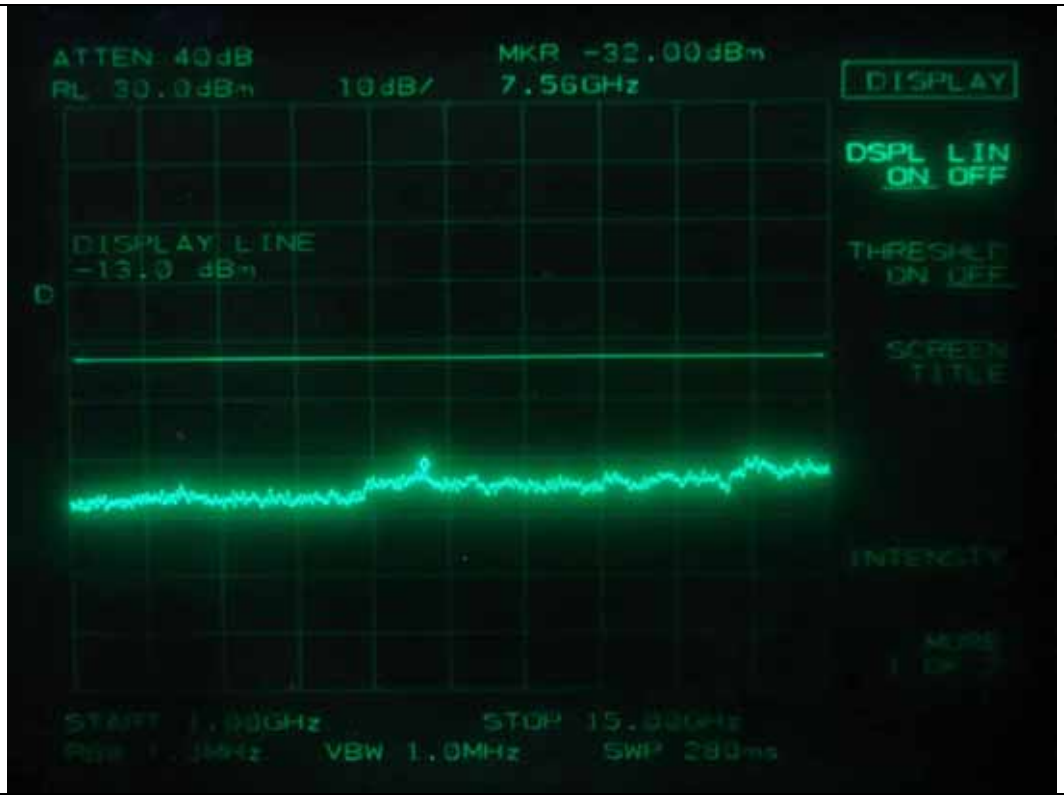
GSM – Middle Channel



GSM – Middle Channel

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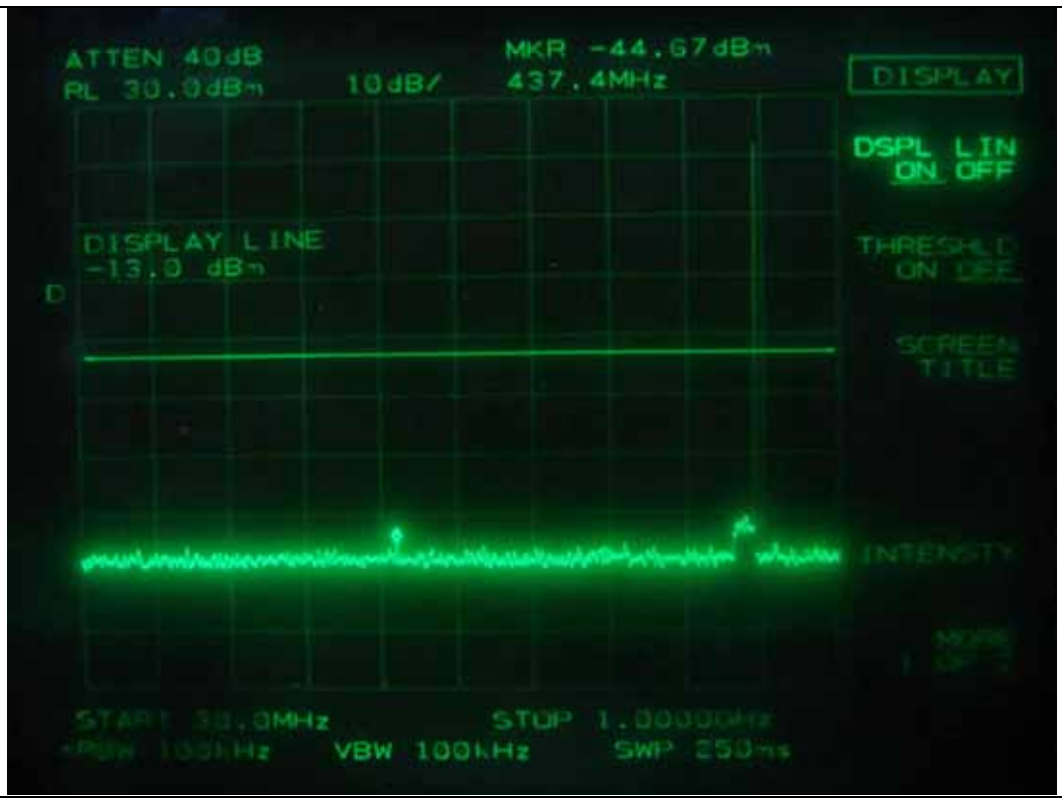
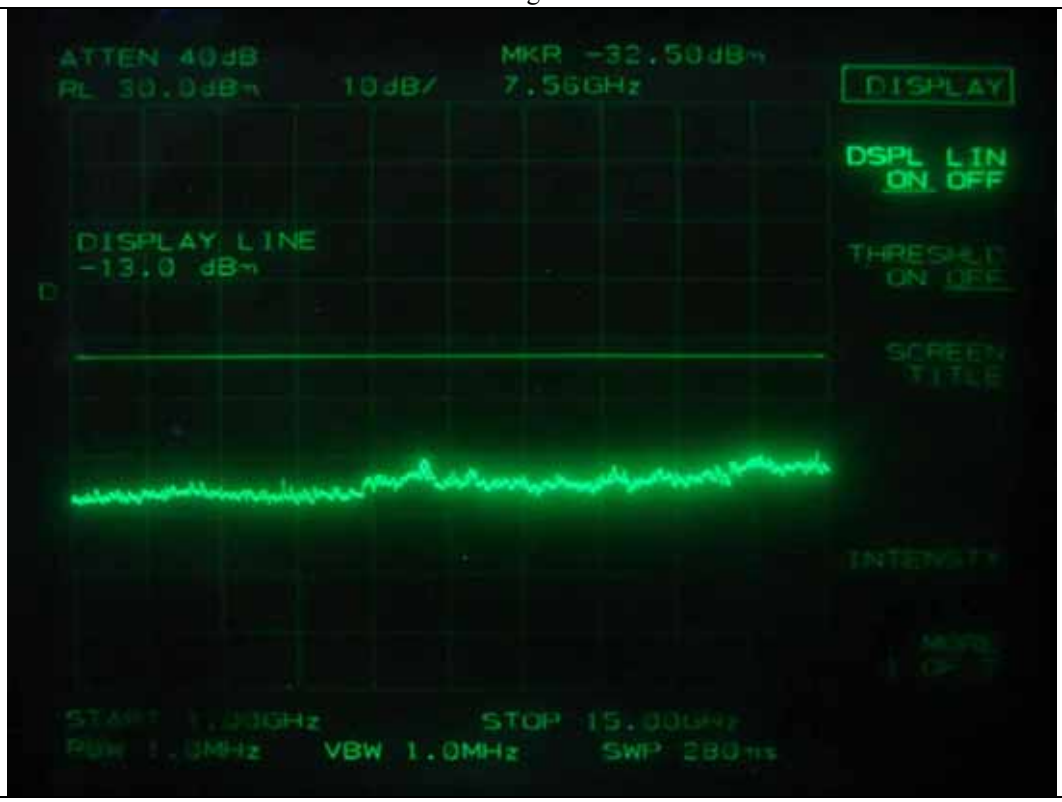


GSM – High Channel



GSM – High Channel

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)

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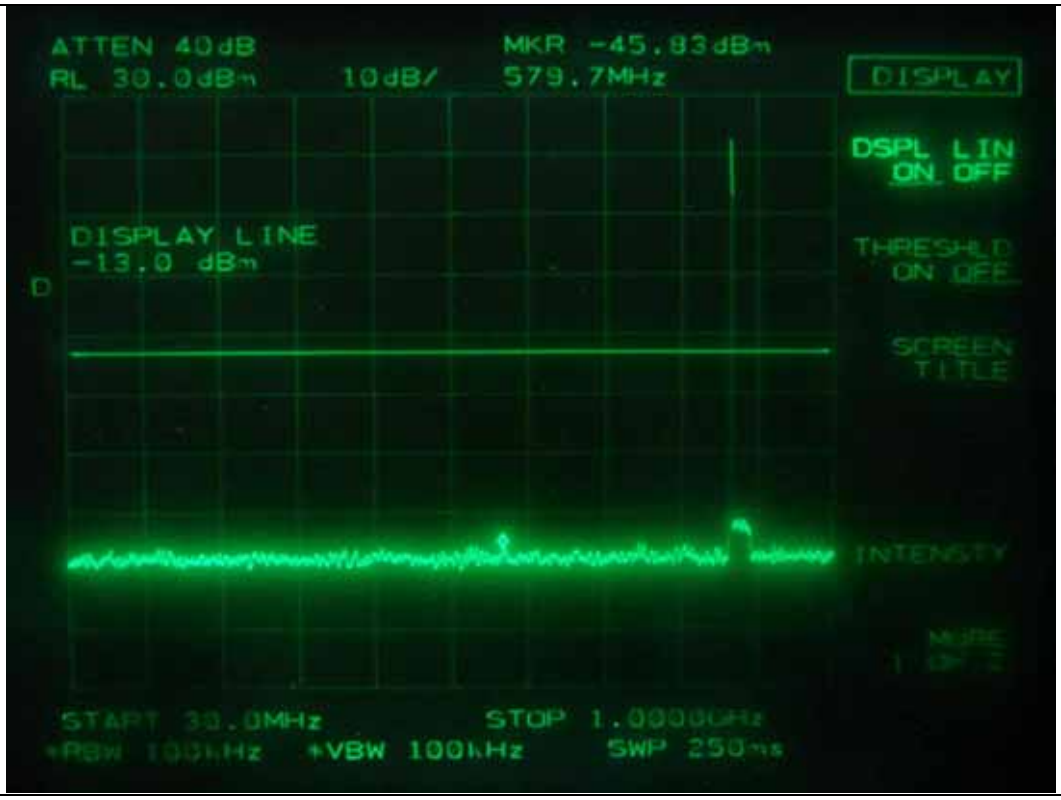
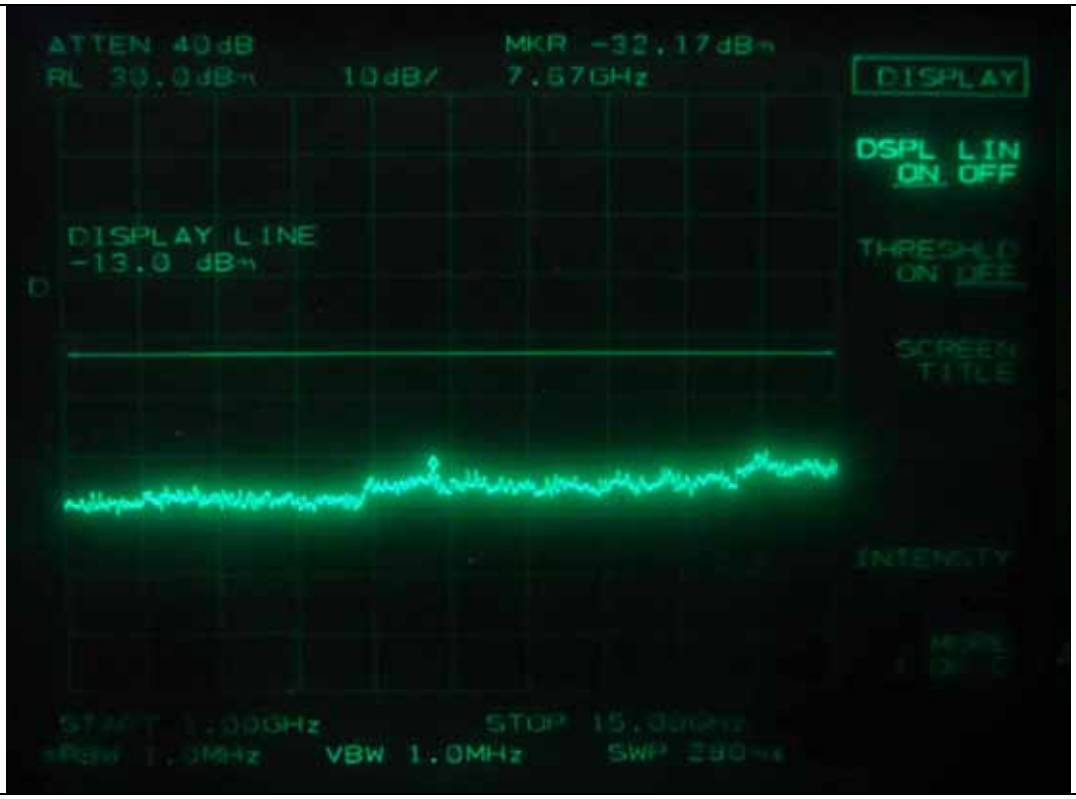


EDGE – Low Channel



EDGE – Low Channel

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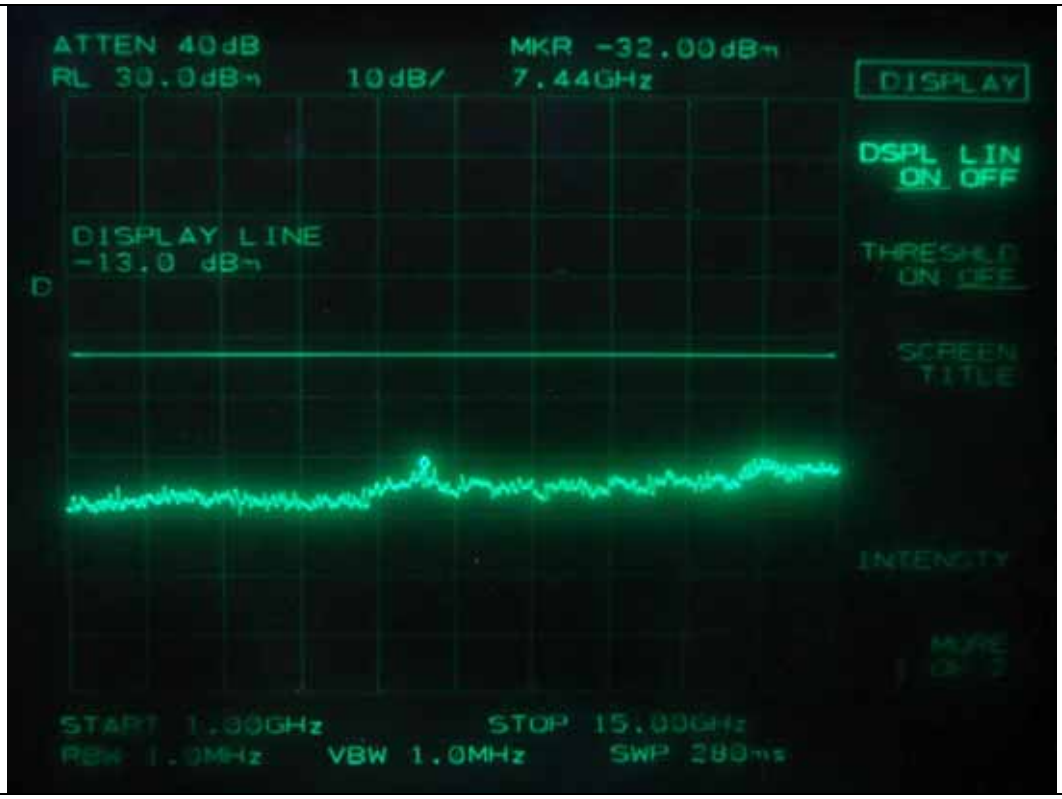
EDGE – Middle Channel



EDGE – Middle Channel

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EDGE – High Channel

EDGE – High Channel

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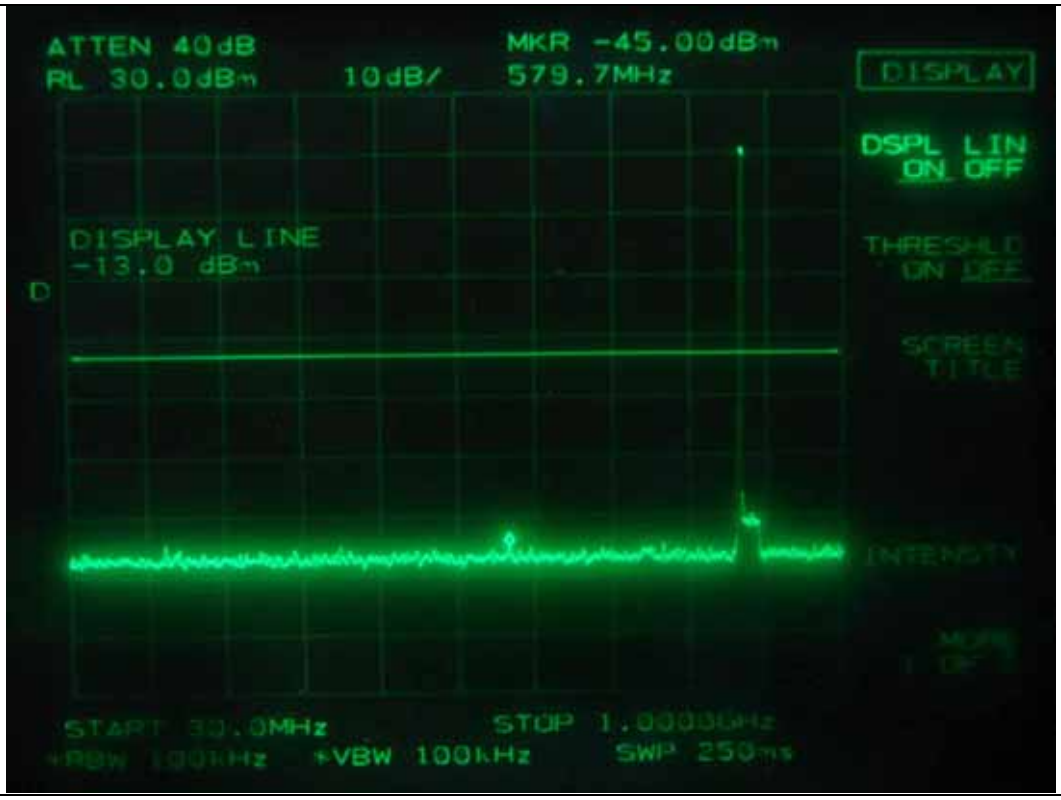
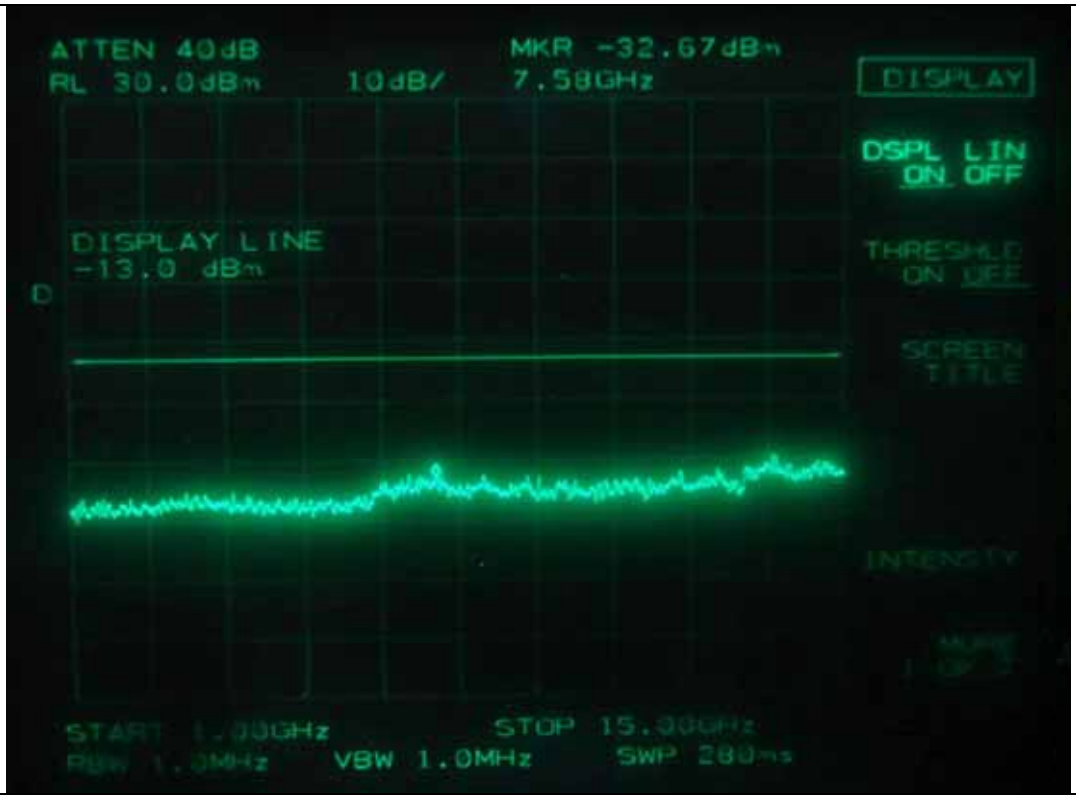


CDMA – Low Channel



CDMA – Low Channel

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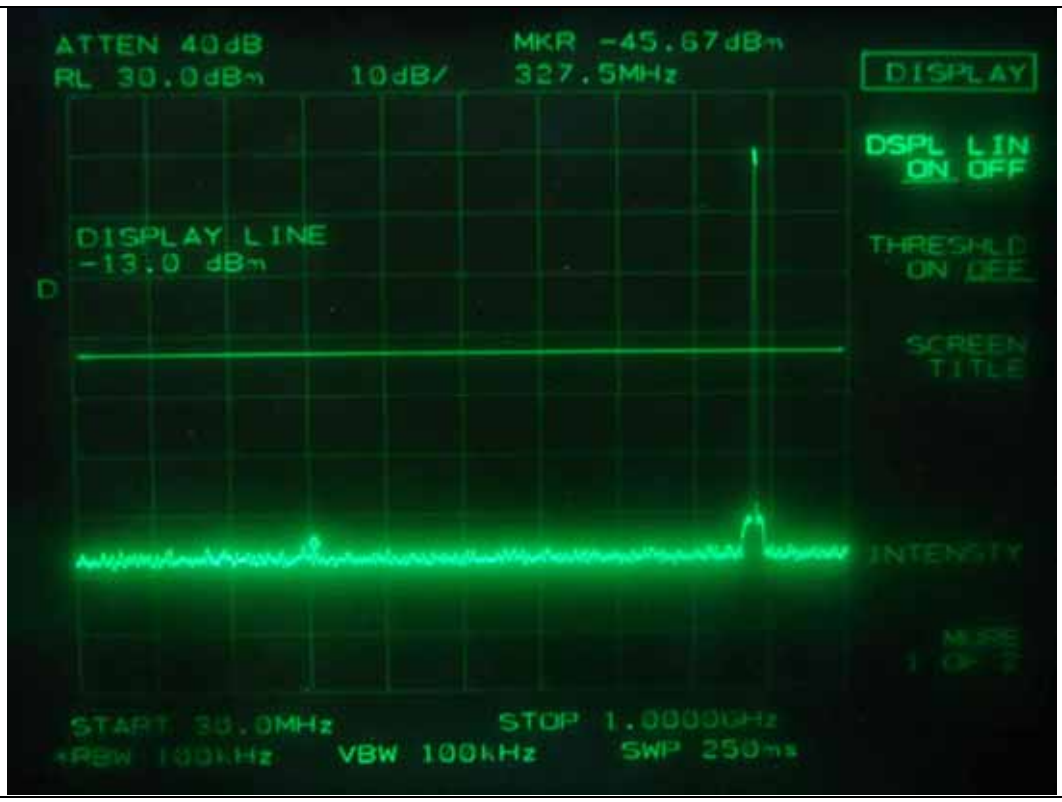
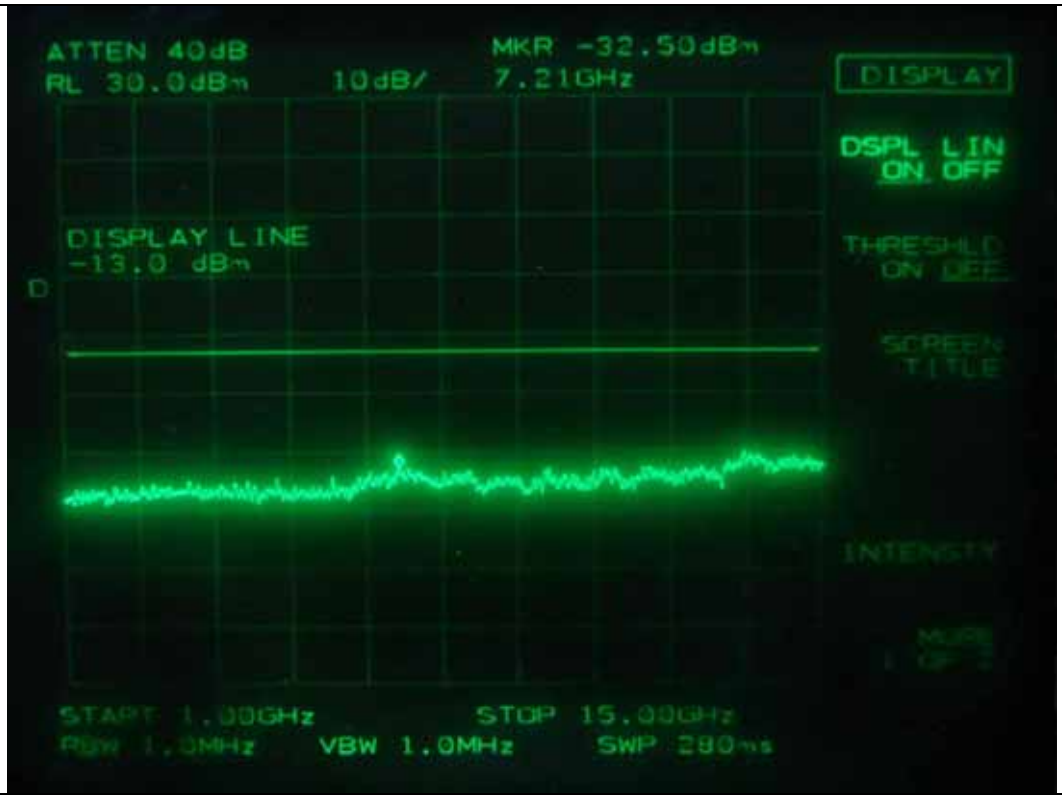


CDMA – Middle Channel



CDMA – Middle Channel

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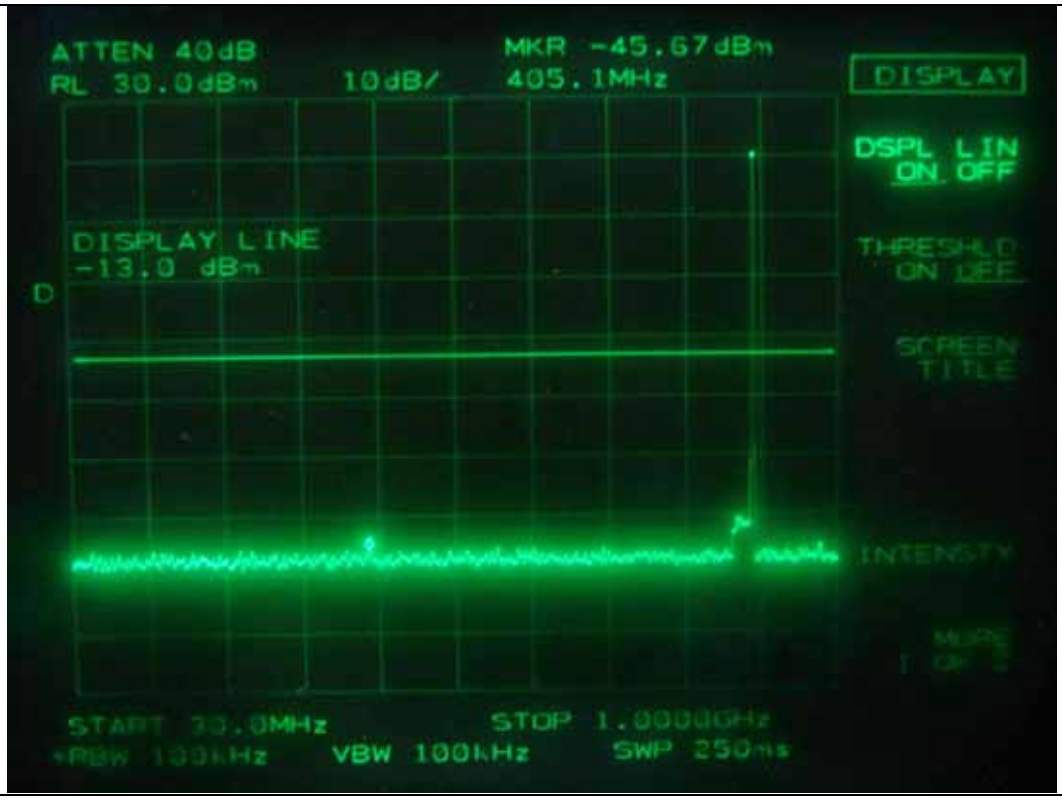
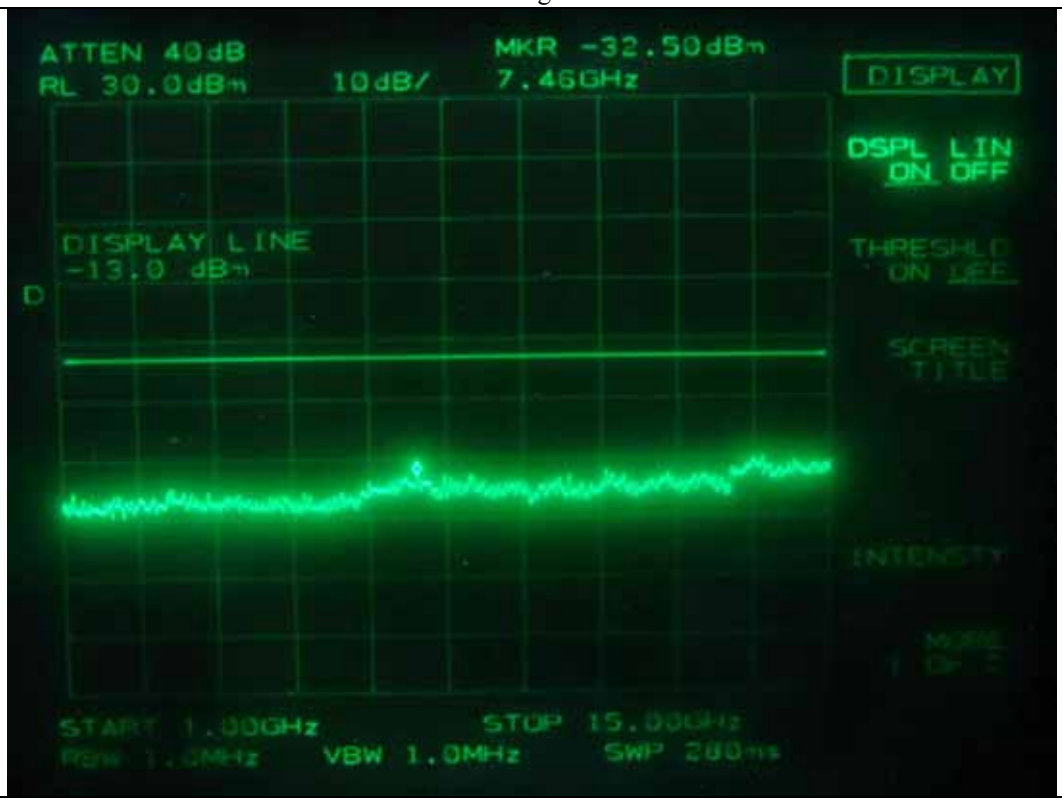


CDMA – High Channel



CDMA – High Channel

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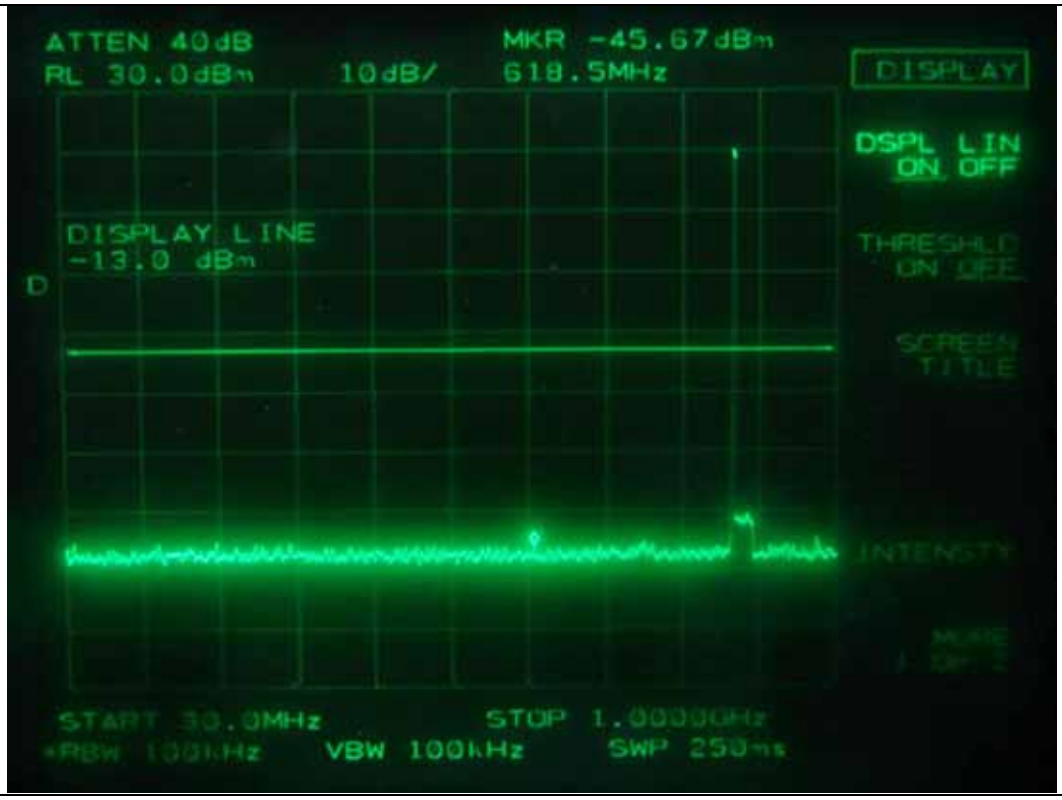
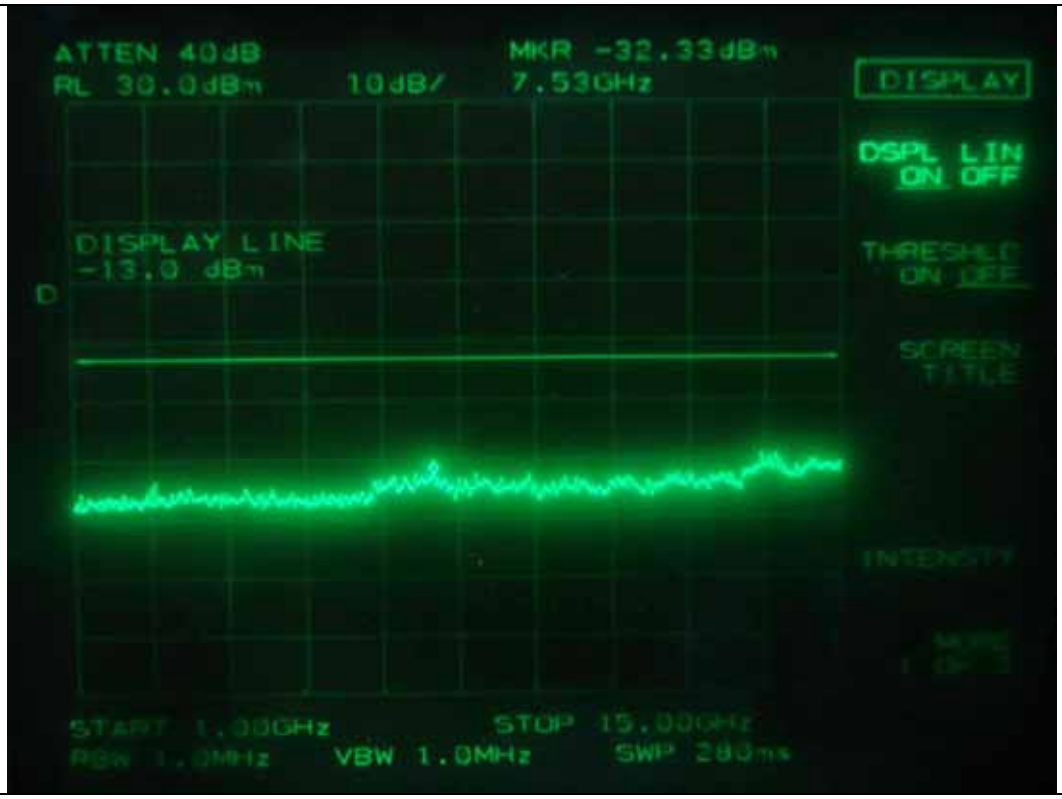


1xEVDO – Low Channel



1xEVDO – Low Channel

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
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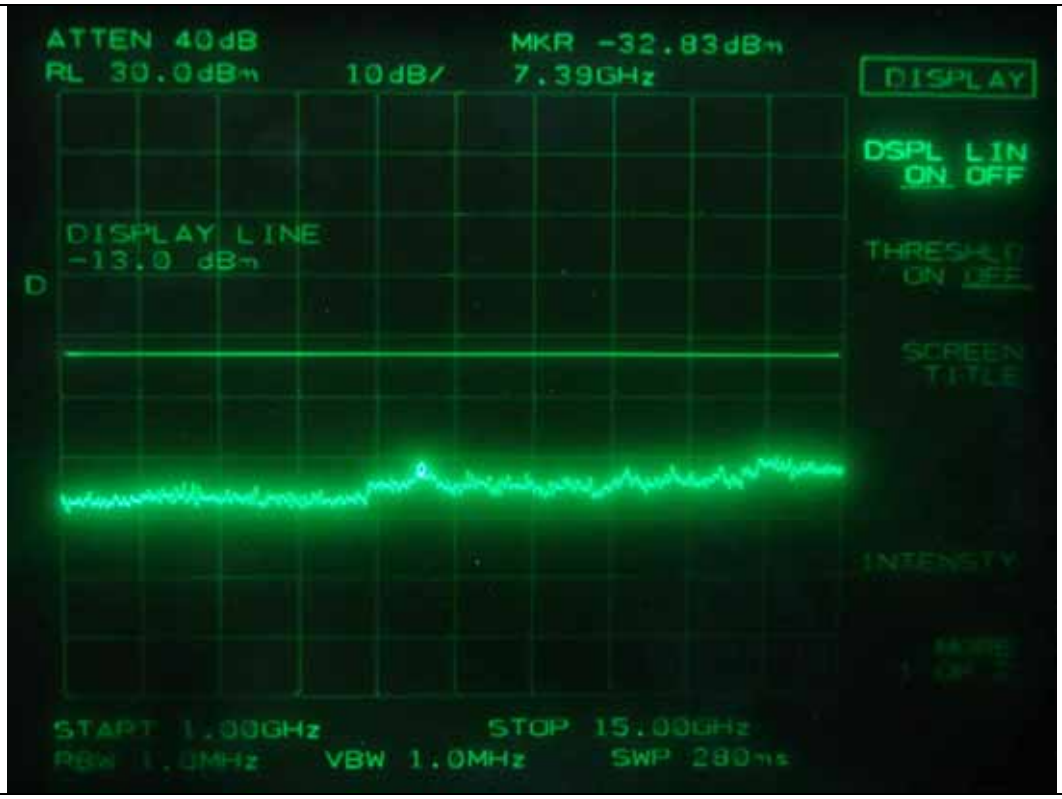
1xEVDO – Middle Channel



1xEVDO – Middle Channel

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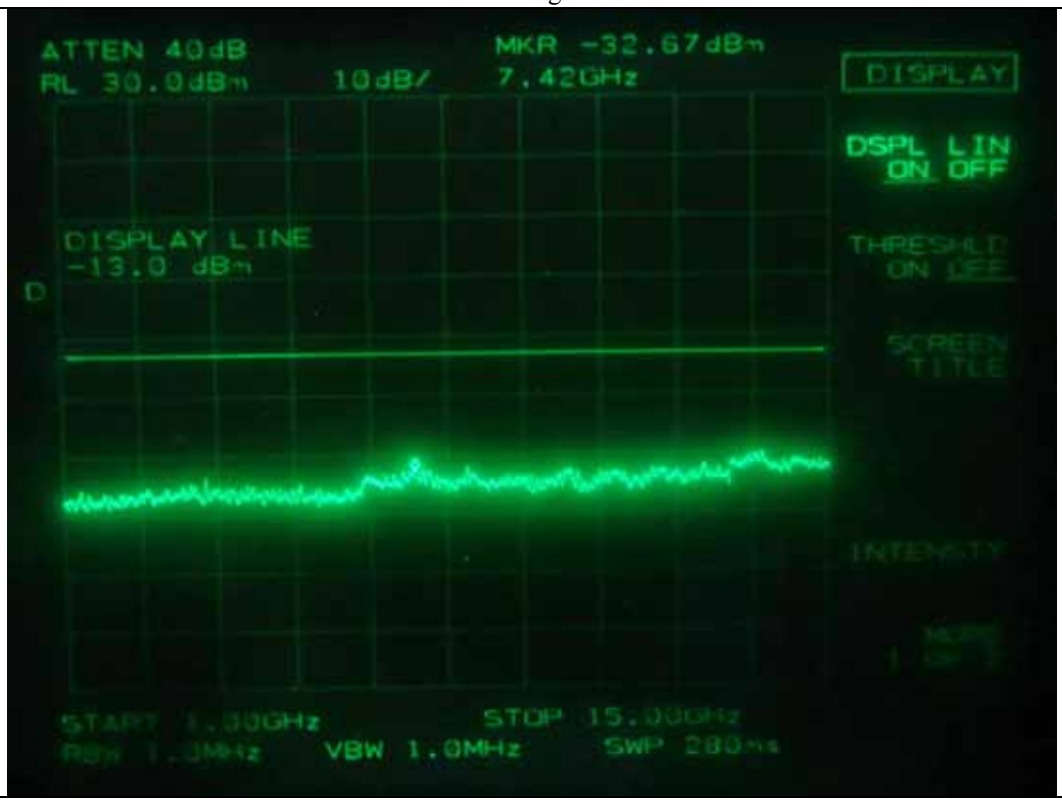
1xEVDO – High Channel



1xEVDO – High Channel

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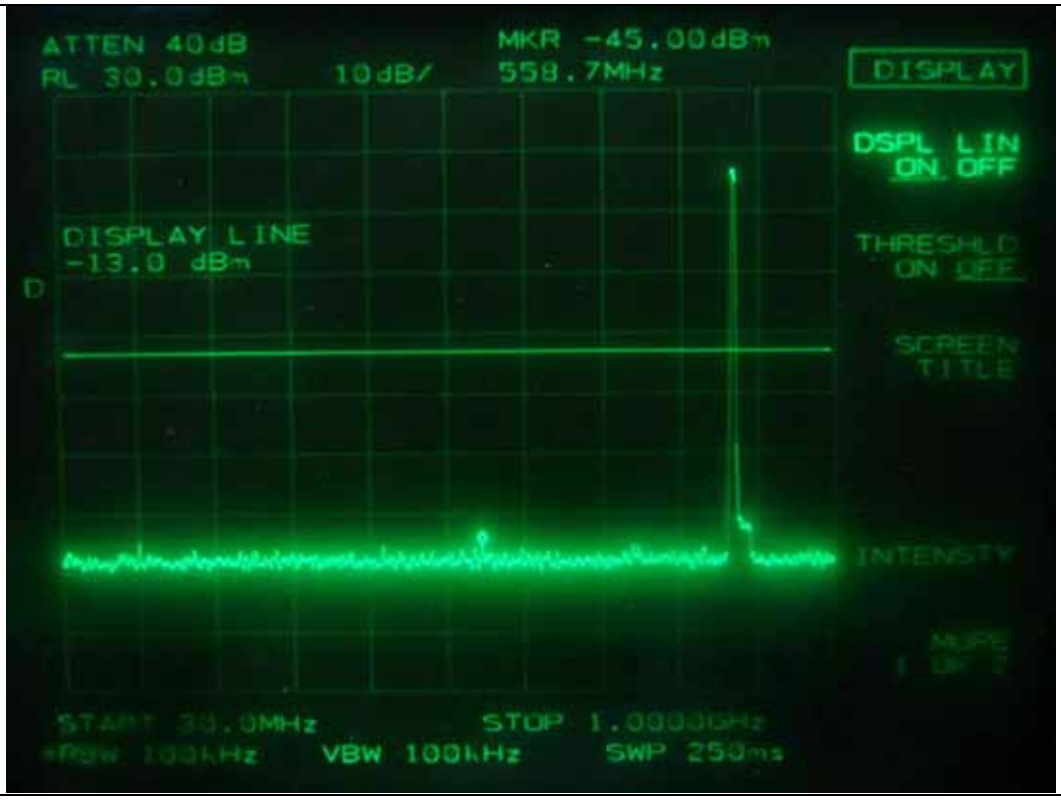
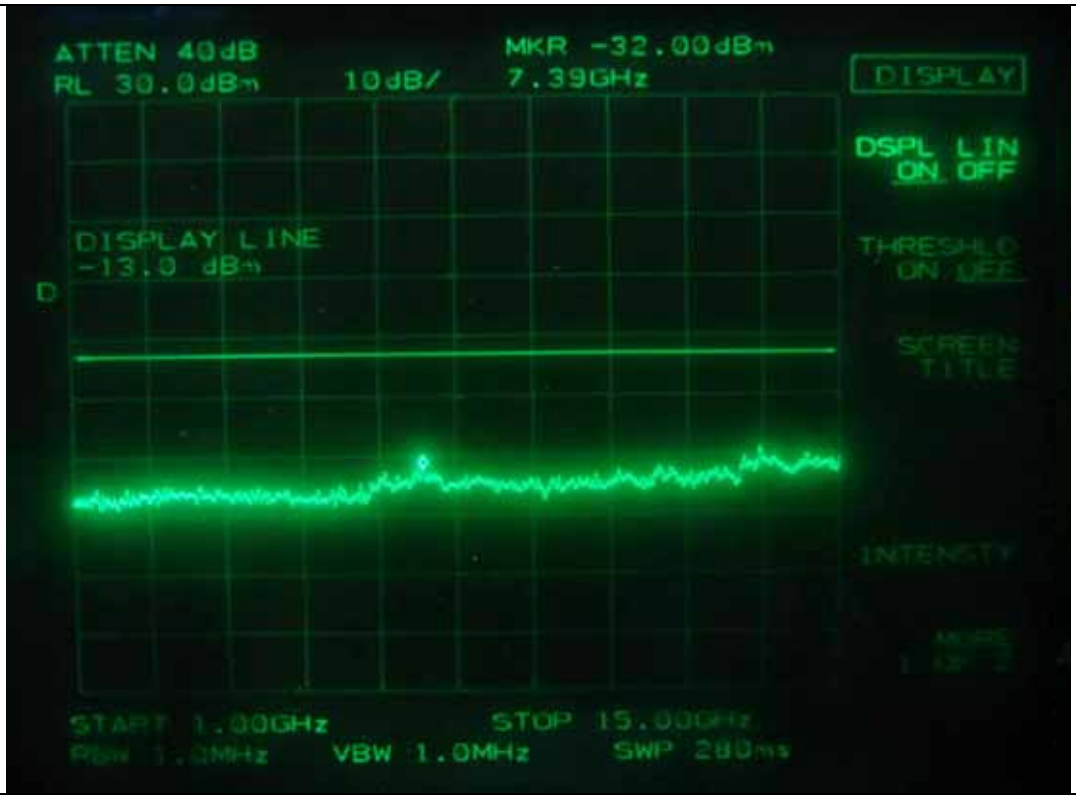


WCDMA – Low Channel



WCDMA – Low Channel

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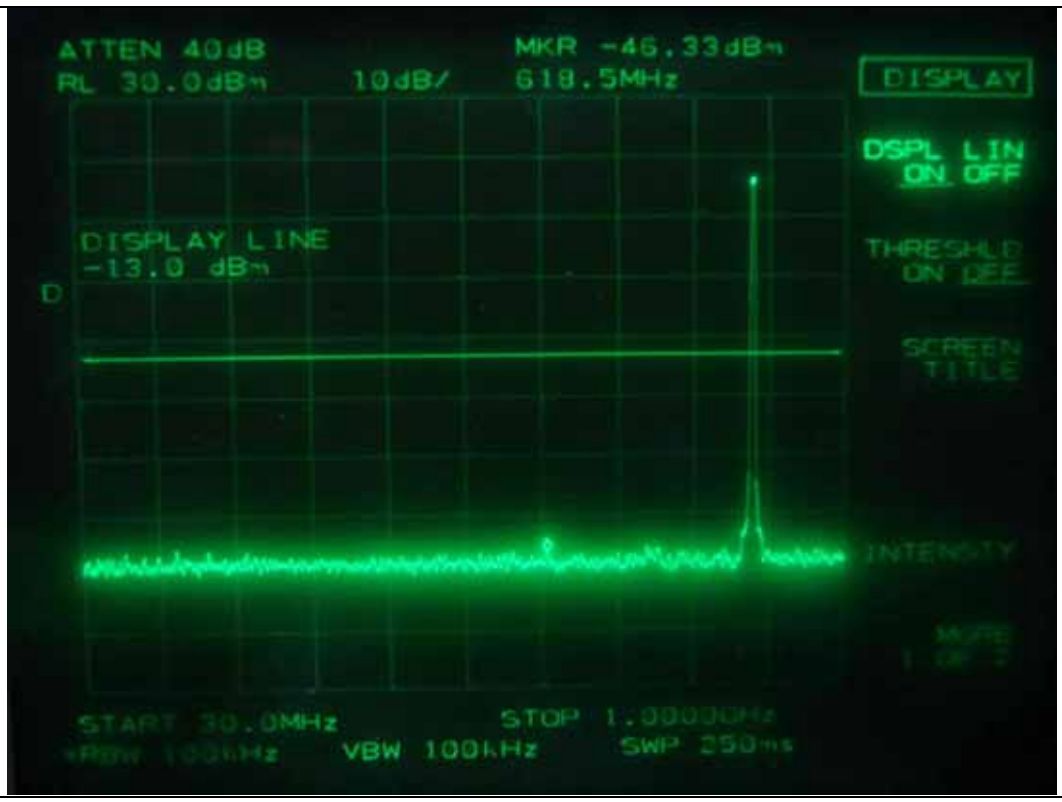
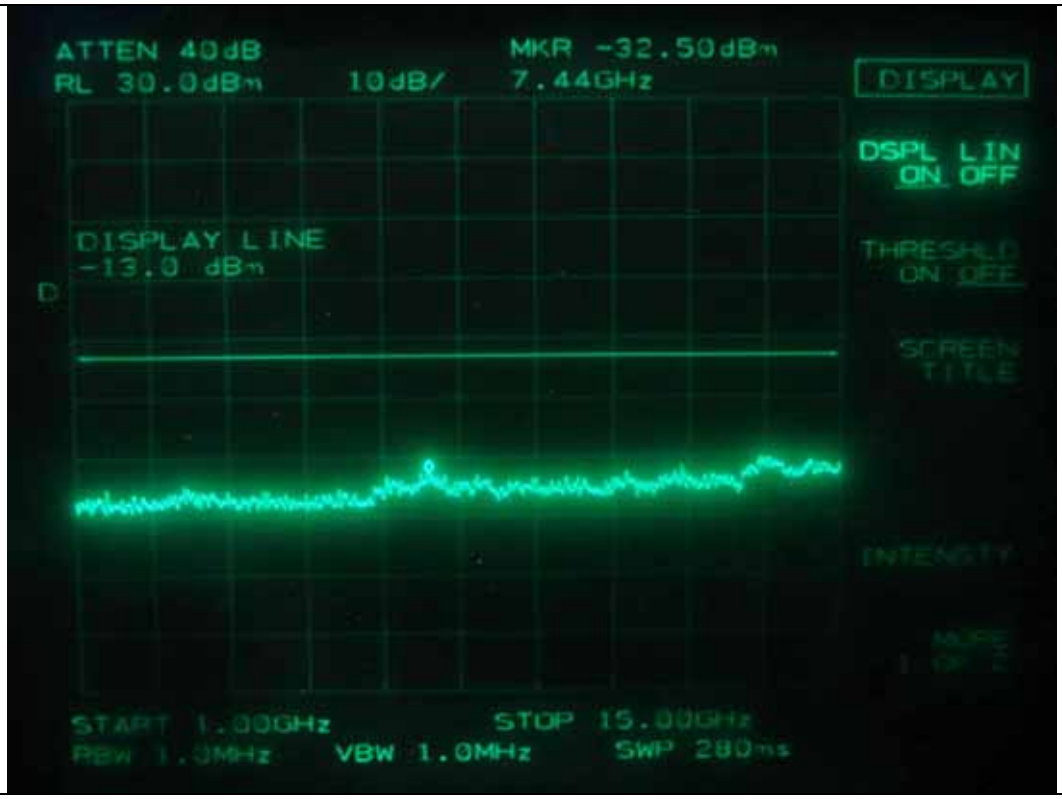


WCDMA – Middle Channel



WCDMA – Middle Channel

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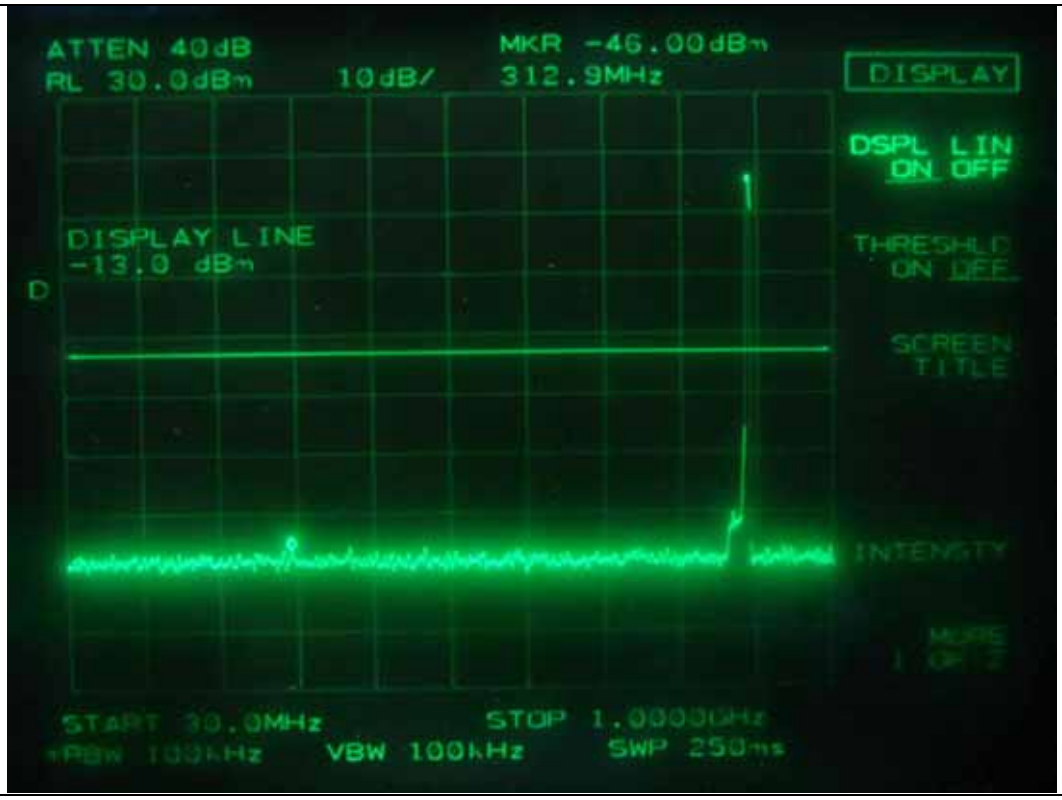
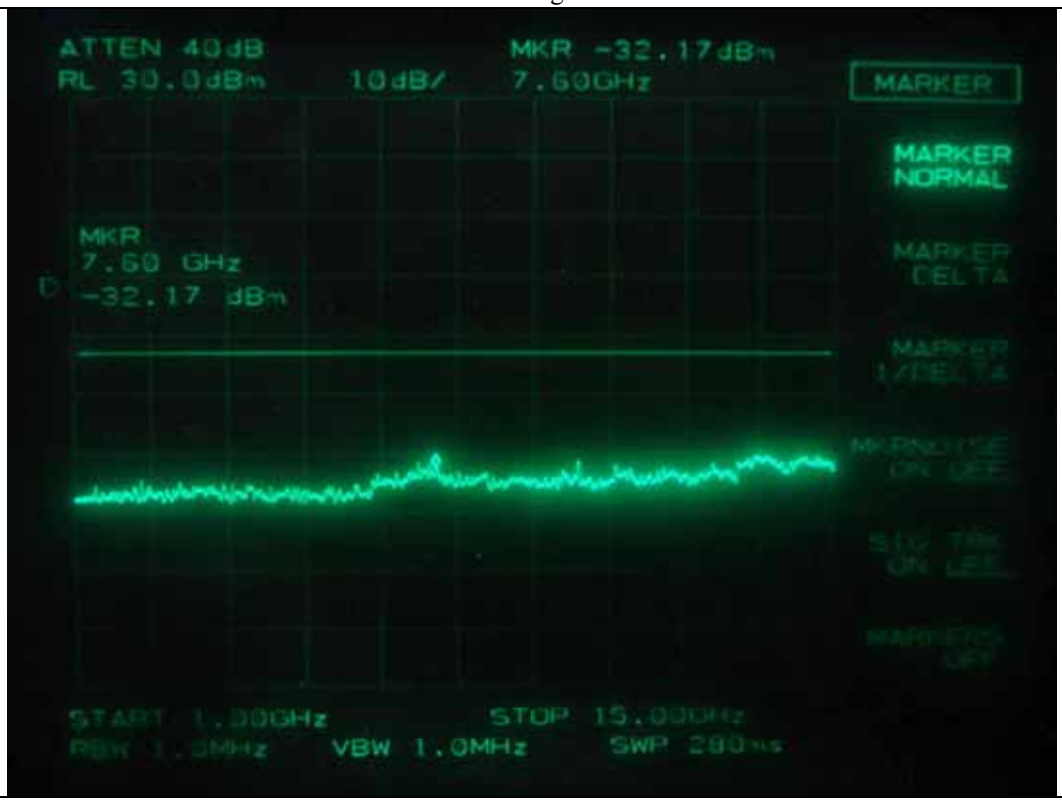


WCDMA – High Channel



WCDMA – High Channel

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7.4.2 Test Result for Part 27 Subpart C §27.53 (c)(1)

-. Test Date : August 05 ~ 09, 2010

-. Frequency range : 30 MHz ~ 15 GHz

-. Result : PASSED BY –26.84 dB at 64QAM Mode

Modulation	Measured Frequency (MHz)	Measured Value (dBm)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
QPSK	869.10	-41.50	0.67	-40.83	-13.00	-27.83
	7 670.00	-43.33	2.83	-40.50		-27.50
16QAM	872.30	-41.33	0.67	-40.66		-27.66
	7 180.00	-43.17	2.83	-40.34		-27.34
64QAM	875.50	-41.50	0.67	-40.83		-27.83
	7 460.00	-42.67	2.83	-39.84		-26.84
Other frequencies up to 15 GHz have margin more than 20 dB.						

From CFR 27.53(c)(1): On any frequency outside the 746 MHz ~ 758 MHz band, the power of any emission shall be attenuated out side the band below the transmitter power (P) by at least 43 + 10log(P) dB, resulting in a limit of -13 dBm.

Tested by: Ki-Hong, Nam / Project Engineer

HEAD OFFICE : #505 SK Apt. Factory, 223-28 Sangdaewon1-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do 462-705 Korea (TEL: +82-31-746-8500, FAX: +82-31-746-8700)
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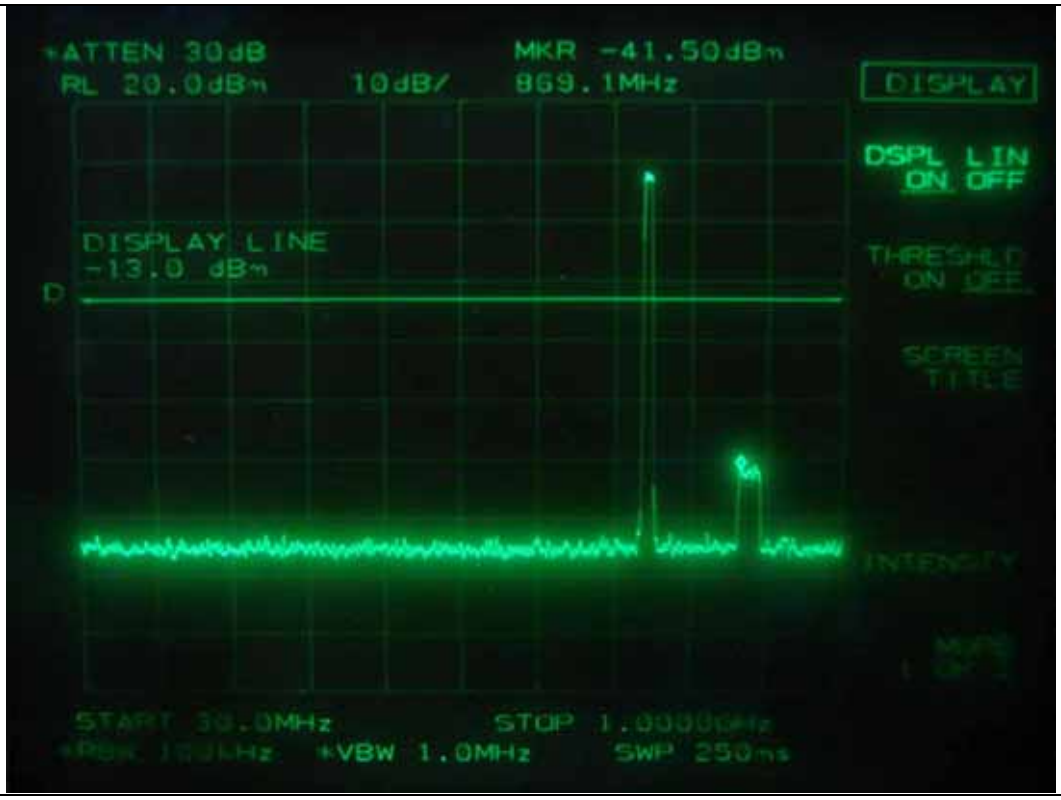
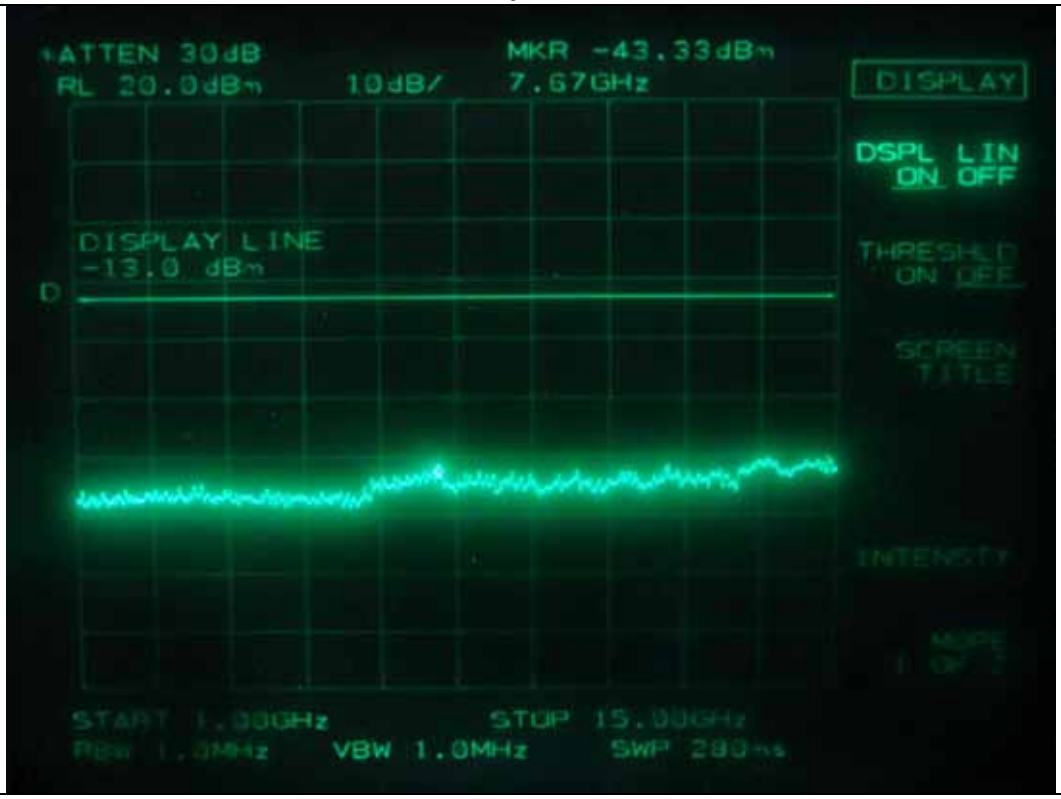


QPSK



QPSK

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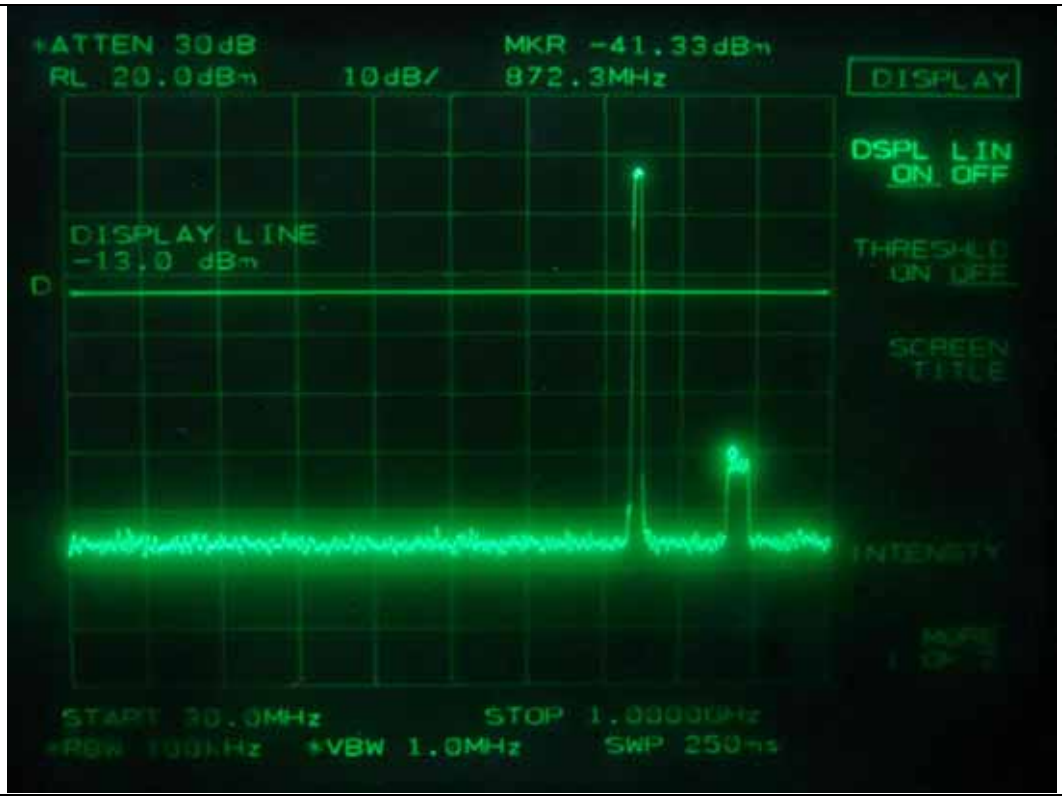
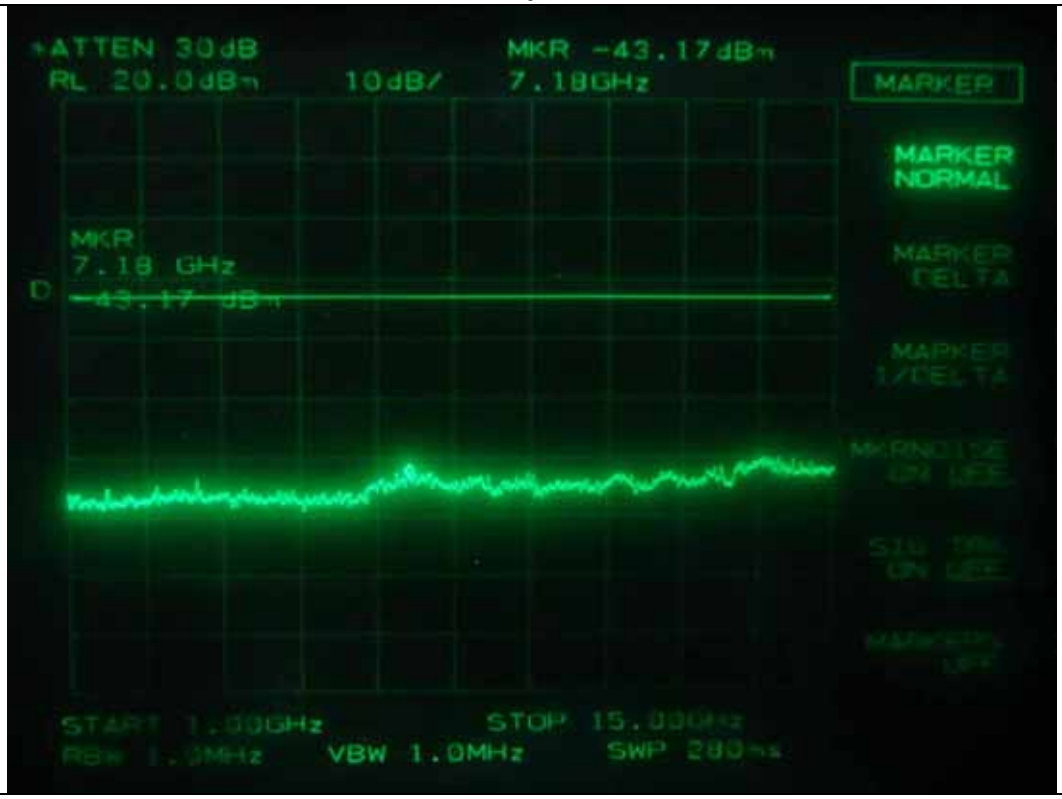


16QAM



16QAM

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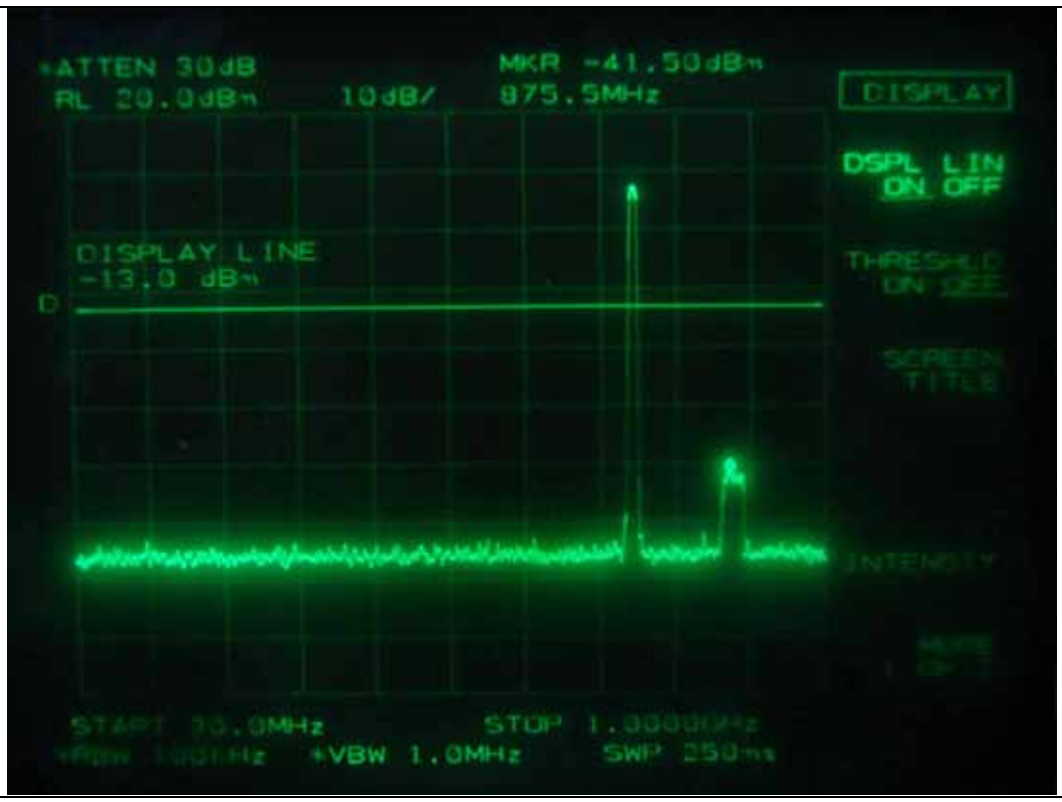
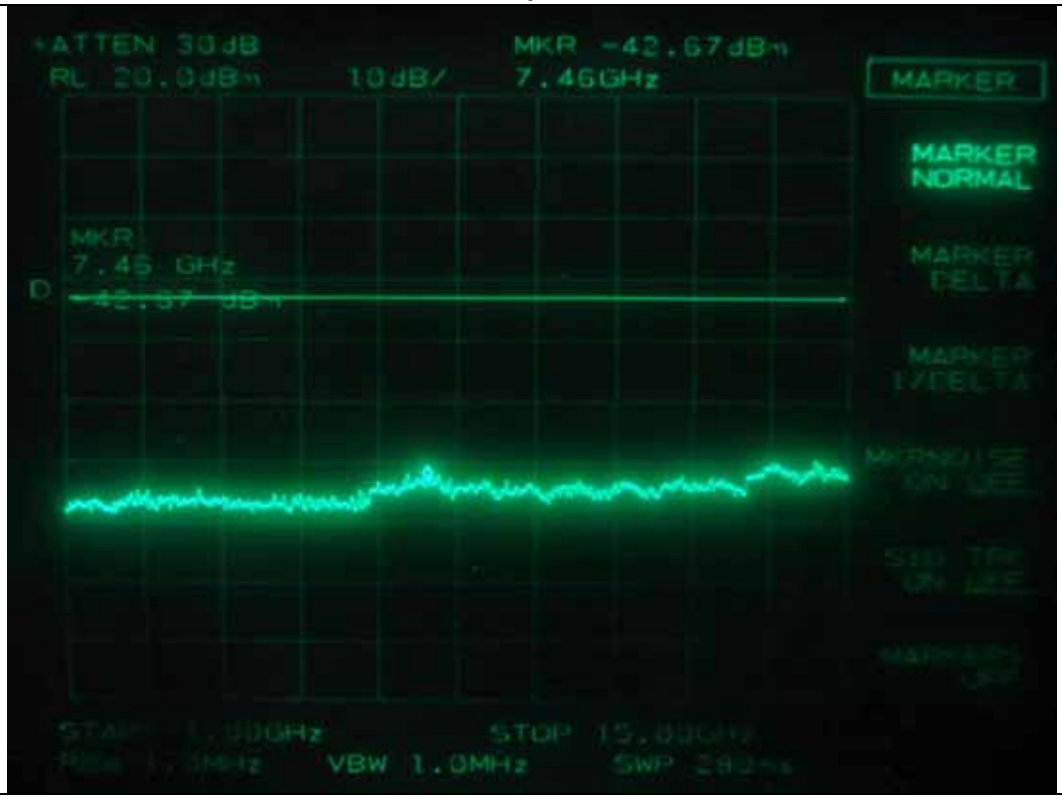


64QAM



64QAM

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7.4.3 Test Result for Part 27 Subpart C §27.53 (c)(3)

-. Test Date : August 05 ~ 09, 2010

-. Frequency range : 763 MHz ~ 775 MHz and 793 MHz ~ 805 MHz

-. Result : PASSED BY –12.67 dB at QPSK and 16QAM Mode

Modulation	Measured Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
QPSK	763.00	-58.67	-46.00	-12.67
16QAM	763.00	-58.67		-12.67
64QAM	763.00	-58.68		-12.68

From CFR 27.53(c)(3)&(c)(6): On all frequency between the 763 MHz ~ 775 MHz and 793 MHz ~ 805 MHz, by a factor not less than 76 + 10log(P) dB in a 6.25 kHz band segment, for base and fixed stations, resulting in a limit of -46 dBm (per 6.25 kHz measurement bandwidth)

Tested by: Ki-Hong, Nam / Project Engineer

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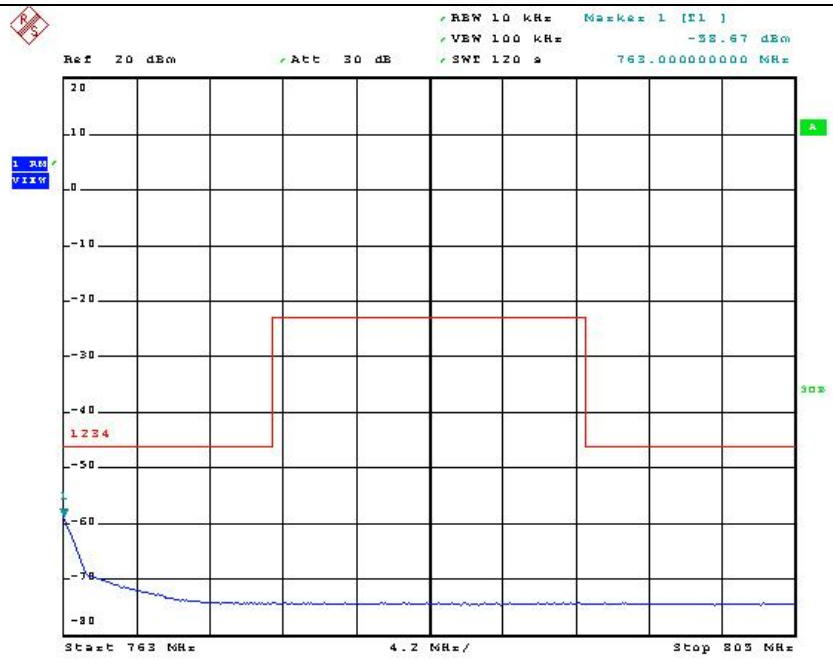
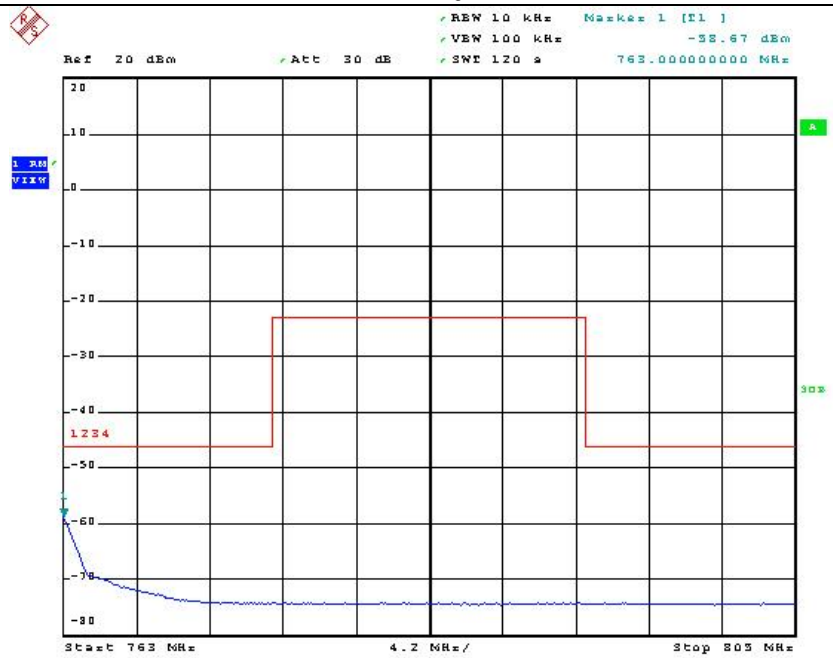


QPSK



16QAM

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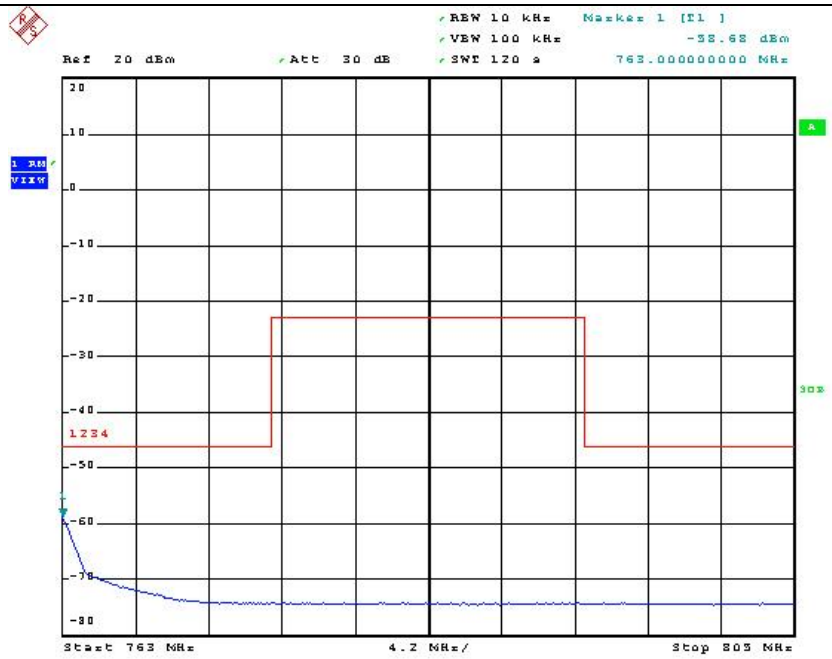

64QAM

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7.4.4 Test Result for Part 27 Subpart C §27.53 (f)

-. Test Date : August 05 ~ 09, 2010

-. Frequency range : 1 559 MHz ~ 1 610 MHz

-. Result : PASSED BY –23.58 dB at QPSK and 16QAM Mode

Modulation	Measured Frequency (MHz)	Measured Value (dBm)	Limit (dBm)	Margin (dB)
QPSK	1 605.61	-63.58	-40.00	-23.58
16QAM	1 608.47	-63.58		-23.58
64QAM	1 602.35	-63.59		-23.59

From CFR 27.53(f): For operations in the 746 MHz ~ 763 MHz, 775 MHz ~ 793 MHz, and 805 MHz ~ 806 MHz bands, emissions in the band 1 559 MHz ~ 1 610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

Tested by: Ki-Hong, Nam / Project Engineer

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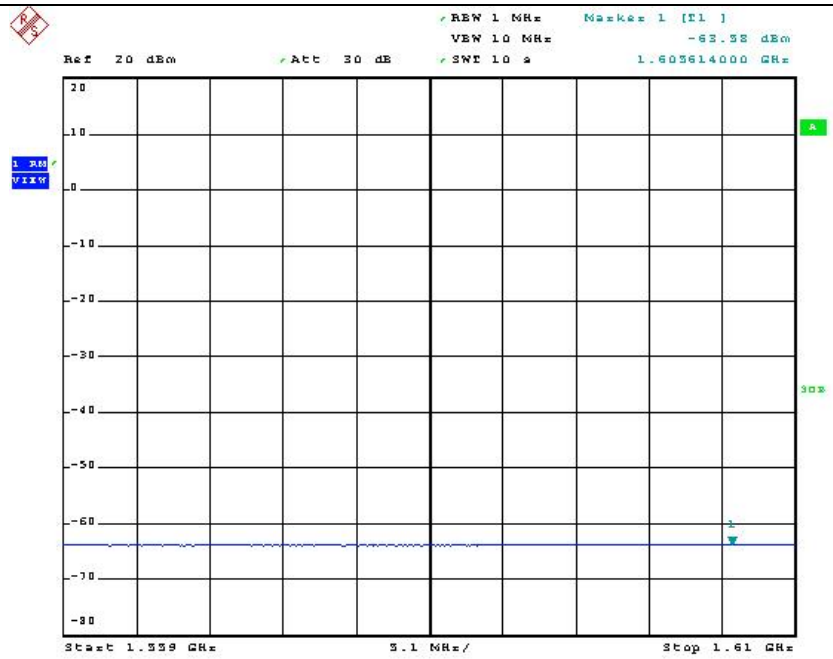
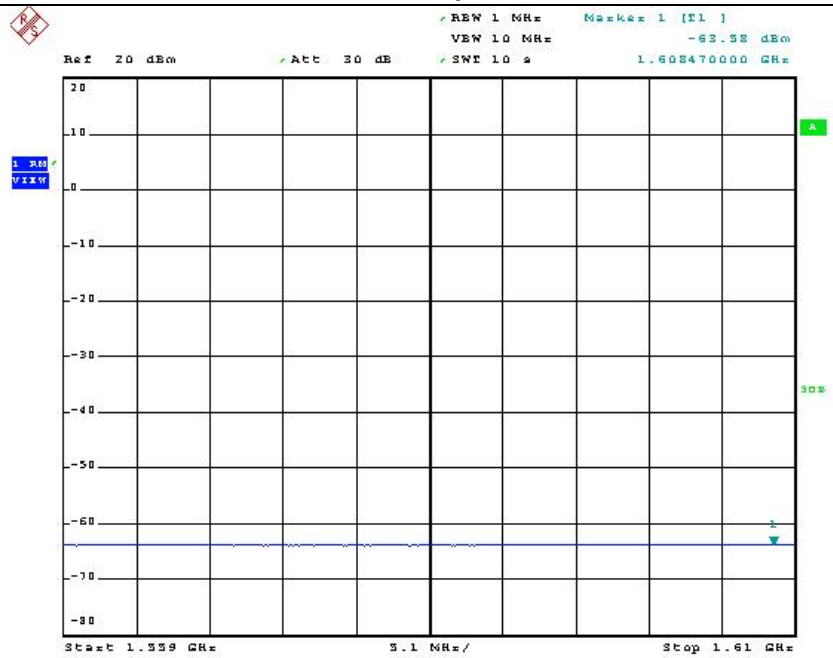


QPSK



16QAM

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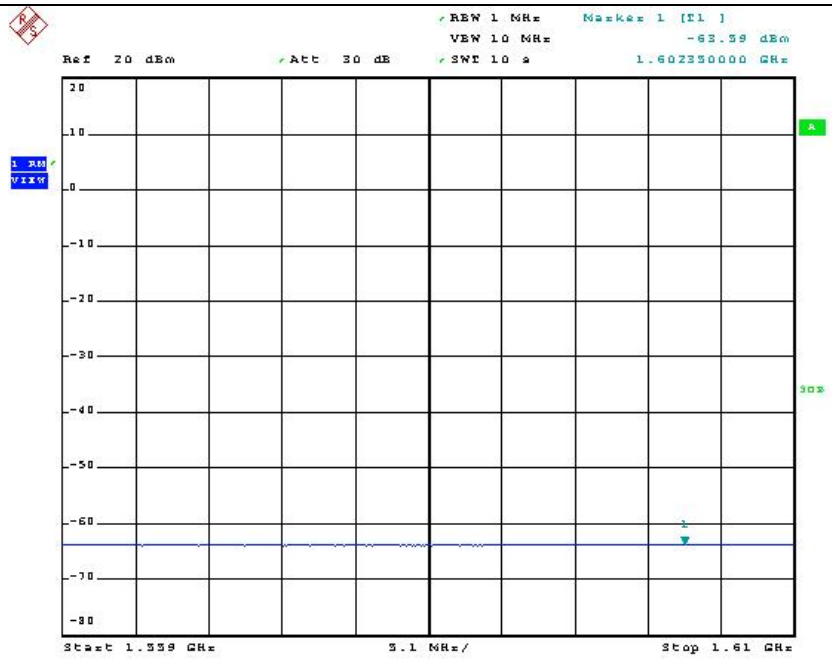

64QAM

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