ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR PCS LICENSED TRANSMITTER

Test Report No.	**: E093R-031**
AGR No.	**: A092A-147**
Applicant	**: SOLiD Technologies, Inc.**
Address	**: 18th Floor, KINS Tower, 25-1 Jeongja-Dong, Bundang-Gu, Seongnam-Si, Gyeonggi-Do 463-811, Korea**
Manufacturer	**: SOLiD Technologies, Inc.**
Address	**: 18th Floor, KINS Tower, 25-1 Jeongja-Dong, Bundang-Gu, Seongnam-Si, Gyeonggi-Do 463-811, Korea**
Type of Equipment	**: RDU MODULE(850C/700PS)**
FCC ID.	**: W6U850C700PS**
Model Name	**: RDU 850C+700PS**
Serial number	**: N/A**
Total page of Report	**: 163 pages (including this page)**
Date of Incoming	**: February 20, 2009**
Date of issue	**: March 13, 2009**

SUMMARY

The equipment complies with the regulation; **FCC Part 22 Subpart H and Part 90 Subpart I.**

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:
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ONETECH Corp.

Reviewed by:
Y. K. Kwon / Managing Director
EMC/RF Center
ONETECH Corp.

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1. VERIFICATION OF COMPLIANCE

APPLICANT	: SOLiD Technologies, Inc.
ADDRESS	: 18th Floor, KINS Tower, 25-1 Jeongja-Dong, Bundang-Gu, Seongnam-Si, Gyeonggi-Do 463-811, Korea
CONTACT PERSON	: Mr. Kangyeob, Bae / Director
TELEPHONE NO	: +82-31-784-8585
FCC ID	: W6U850C700PS
MODEL NAME	: RDU 850C+700PS
SERIAL NUMBER	: N/A
DATE	: March 13, 2009

EQUIPMENT CLASS	PCB - PCS Licensed Transmitter
EQUIPMENT DESCRIPTION	RDU MODULE(850C/700PS)
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.4: 2003, EIA/TAI-603B
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 90 Subpart I
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER(S) 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), 90.205	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, 90.210	Spurious Emissions at Antenna Terminals	Met the Limit / PASS
2.1053, 22.917, 90.210	Field strength of Spurious Radiation	Met the Limit / PASS
2.1055, 22.355, 90.213	Frequency Stability with Temperature variation	Met the requirement / PASS
2.1055, 22.355, 90.213	Frequency stability with primary voltage variation	Met the requirement / PASS
2.1093	RF Exposure	See Note

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 antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance, because the applicant does not provide an antenna for sale 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: 2003. Radiated testing was performed at a distance of 3 meters 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+700PS (referred to as the EUT in this report) is a RDU MODULE(850C/700PS) 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+700PS, FCC ID: W6U850C700PS 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/700PS)
LIST OF EACH OSC. or CRY. FREQ.(FREQ.>=1 MHz)		14.74 MHz
EMISSION DESIGNATOR		F9W(CDMA, EVDO, WCDMA), DXW(TDMA), G7W(GSM, EDGE), D7W(iDEN), APCO25(F8W, F1D)
OPERATING FREQUENCY	850C	869 MHz ~ 894 MHz
	700PS	764 MHz ~ 776 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), iDEN(25 kHz)
DC VOLTAGE & CURRENT INTO FINAL AMPLIFIER		DC 27 V, 2 A
ELECTRICAL RATING		AC 120 V, 0.97 A, DC – 48 V
OPERATING TEMPERATURE		-10 °C ~ 50 °C

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

-. None

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+700PS	SOLiD Technologies, Inc.	W6U850C700PS	RDU MODULE(850C/700PS) (EUT)	-
SMJ100A	Rohde & Schwarz	N/A	Vector Signal Generator	EUT
SMDR-NH124	SOLiD Technologies, Inc.	N/A	ODU (Optic Distribution Unit)	EUT
SMDR-NH124	SOLiD Technologies, Inc.	N/A	BIU (BTS Interface Unit)	EUT
105-10ST	Dong Yang	N/A	DC Power Supply	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 and WCDMA 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

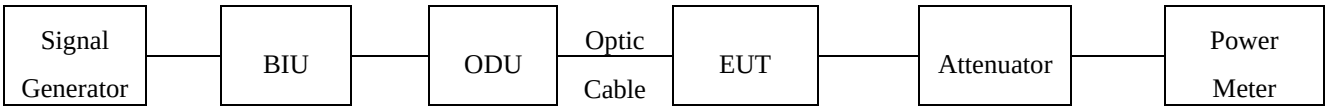
Temperature : 22 °C

Relative humidity : 47.6 %R.H.

5.2 Test set-up

The RF signal from the signal generator(s) was injected to BIU (BTS Interface Unit) and then output signal from the BIU was injected to the input of ODU (Optic Distribution Unit) by coaxial cable and then the output port of the ODU was connected to the input of the EUT by optic cable. 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



5.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	E4432B	HP	Signal Generator	US38440950	June 16, 2008
■ -	SMJ100A	R/S	Vector Signal Generator	100698	June 16, 2008
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 11, 2008
□ -	8564E	HP	Spectrum Analyzer	3650A00756	June 16, 2008

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 : February 27 ~ March 02, 2009

-. Test Result : Pass

Modulation	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
TDMA	Low	869.03	-18.80	23.00	0.199 526	100.00
	Middle	881.50	-18.80	23.00		
	High	893.97	-18.90	23.00		
GSM	Low	869.20	-18.70	23.00	0.199 526	
	Middle	881.60	-18.90	23.00		
	High	893.80	-18.80	23.00		
EDGE	Low	869.20	-18.90	23.00	0.199 526	
	Middle	881.60	-18.90	23.00		
	High	893.80	-18.80	23.00		
CDMA	Low	870.25	-18.70	23.00	0.199 526	100.00
	Middle	881.50	-18.90	23.00		
	High	892.75	-18.70	23.00		
1xEVDO	Low	870.25	-18.80	23.00	0.199 526	
	Middle	881.50	-18.80	23.00		
	High	892.75	-18.90	23.00		
WCDMA	Low	871.40	-18.80	23.00	0.199 526	100.00
	Middle	881.00	-18.70	23.00		
	High	891.60	-18.70	23.00		

Tested by: Ki-Hong, Nam / Project Engineer

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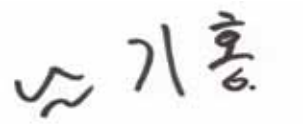
5.4.2 Test Result for Part 90 I

-. Test Date : February 27 ~ March 02, 2009

-. Test Result : Pass

Modulation	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
iDEN	Low	764.025 0	-18.90	23.00	0.199 526	100.00
	Middle	770.000 0	-18.70	23.00		
	High	775.975 0	-18.90	23.00		
SMR	Low	764.012 5	-18.80	23.00	0.199 526	
	Middle	770.000 0	-18.70	23.00		
	High	775.987 5	-18.70	23.00		



Tested by: Ki-Hong, Nam / Project Engineer

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6. OCCUPIED BANDWIDTH

6.1 Operating environment

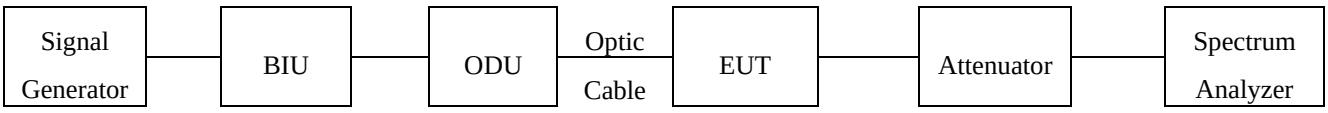
Temperature : 22 °C

Relative humidity : 47.6 %R.H.

6.2 Test set-up

The RF signal from the signal generator(s) was injected to BIU (BTS Interface Unit) and then output signal from the BIU was injected to the input of ODU (Optic Distribution Unit) by coaxial cable and then the output port of the ODU was connected to the input of the EUT by optic cable. 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 -26 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 16, 2008
■ -	E4432B	HP	Signal Generator	US38440950	June 16, 2008
■ -	SMJ100A	R/S	Vecter Signal Generator	100698	June 16, 2008
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 11, 2008

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 : February 27 ~ March 02, 2009

-. Test Result : Pass

Modulation	Channel	26 dB Bandwidth (kHz)	99 % Occupied Bandwidth (kHz)
TDMA	Low	35.3	29
	Middle	35.7	29
	High	35.3	29.33
GSM	Low	347	253.3
	Middle	347	255
	High	347	253.3
EDGE	Low	335	251.7
	Middle	333	253.3
	High	333	253.3
CDMA	Low	1 592	1 333
	Middle	1 592	1 333
	High	1 592	1 333
1xEVDO	Low	1 583	1 342
	Middle	1 583	1 333
	High	1 583	1 342
WCDMA	Low	4 670	4 167
	Middle	4 680	4 167
	High	4 680	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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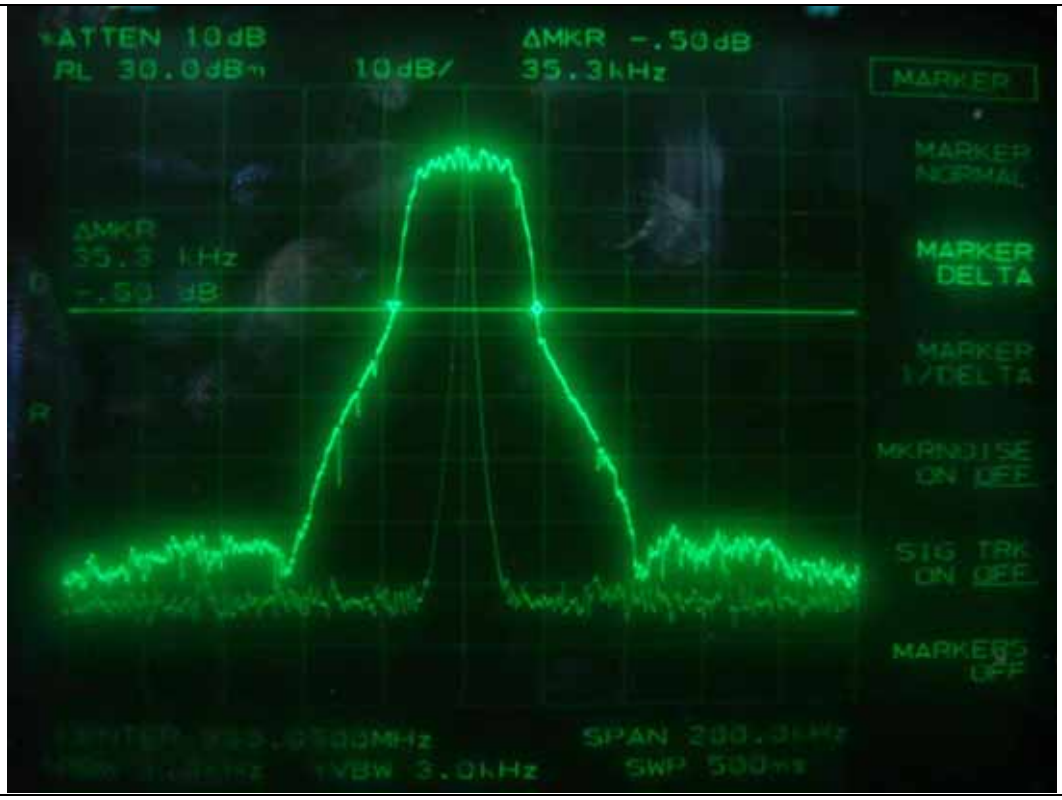
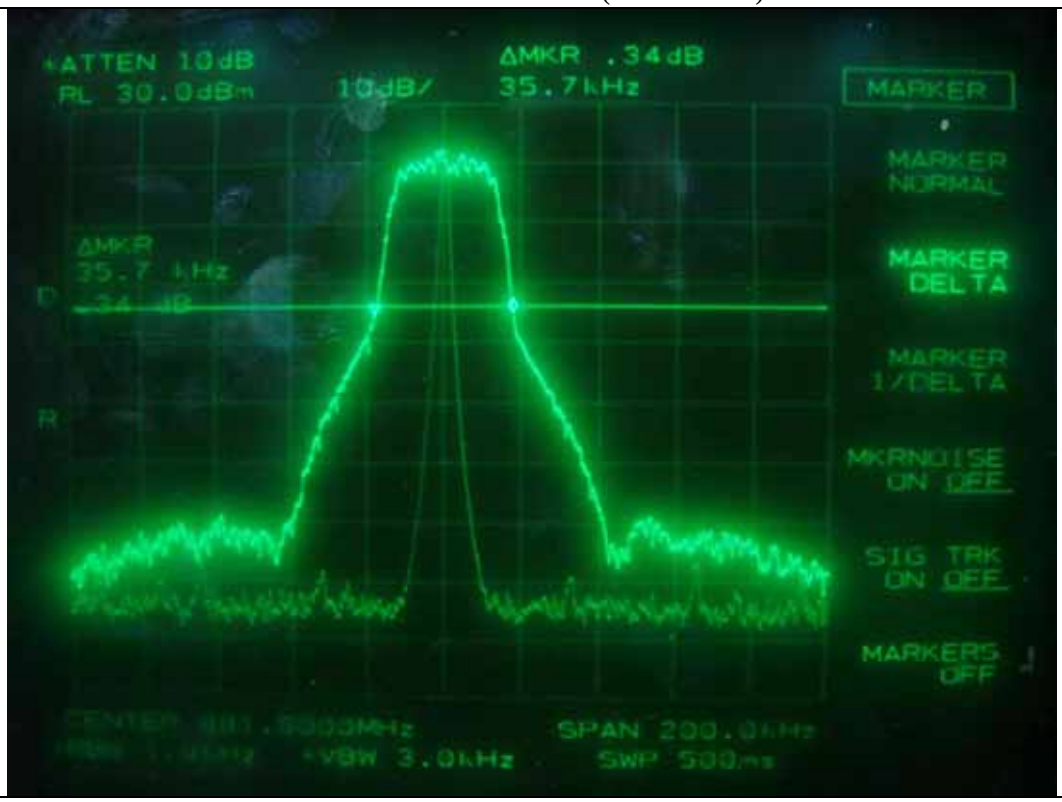


TDMA – 26 dB Bandwidth (Low Channel)



TDMA – 26 dB Bandwidth (Middle Channel)

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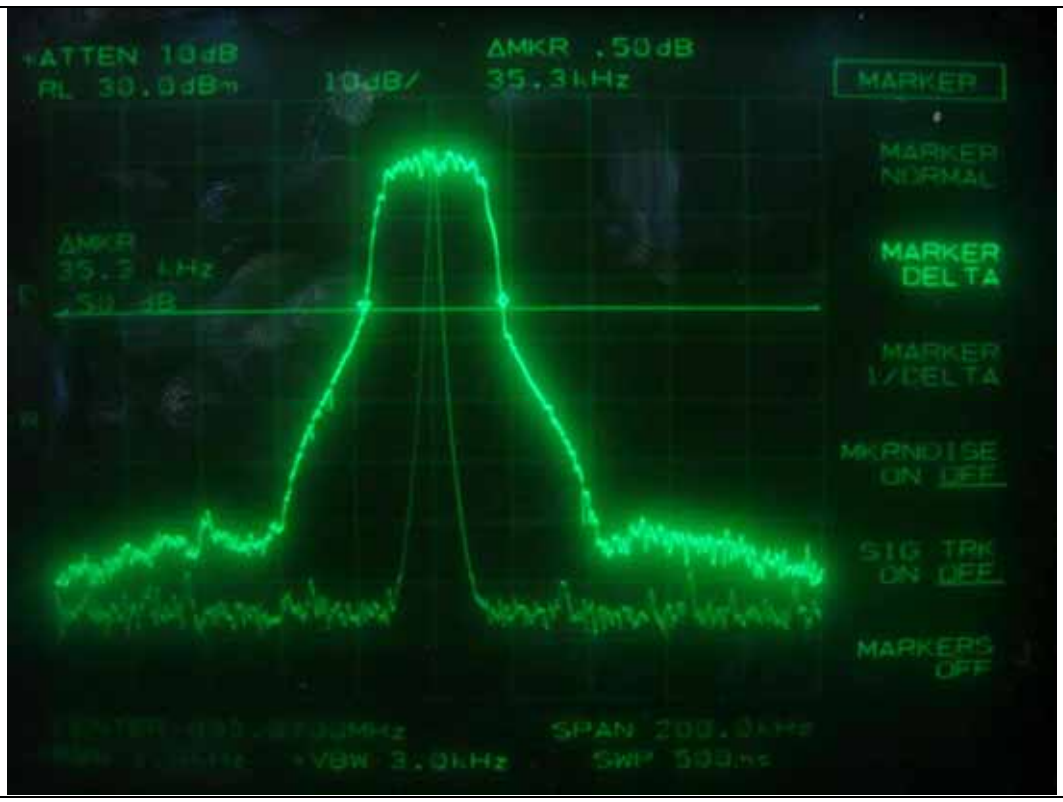

TDMA – 26 dB Bandwidth (High Channel)

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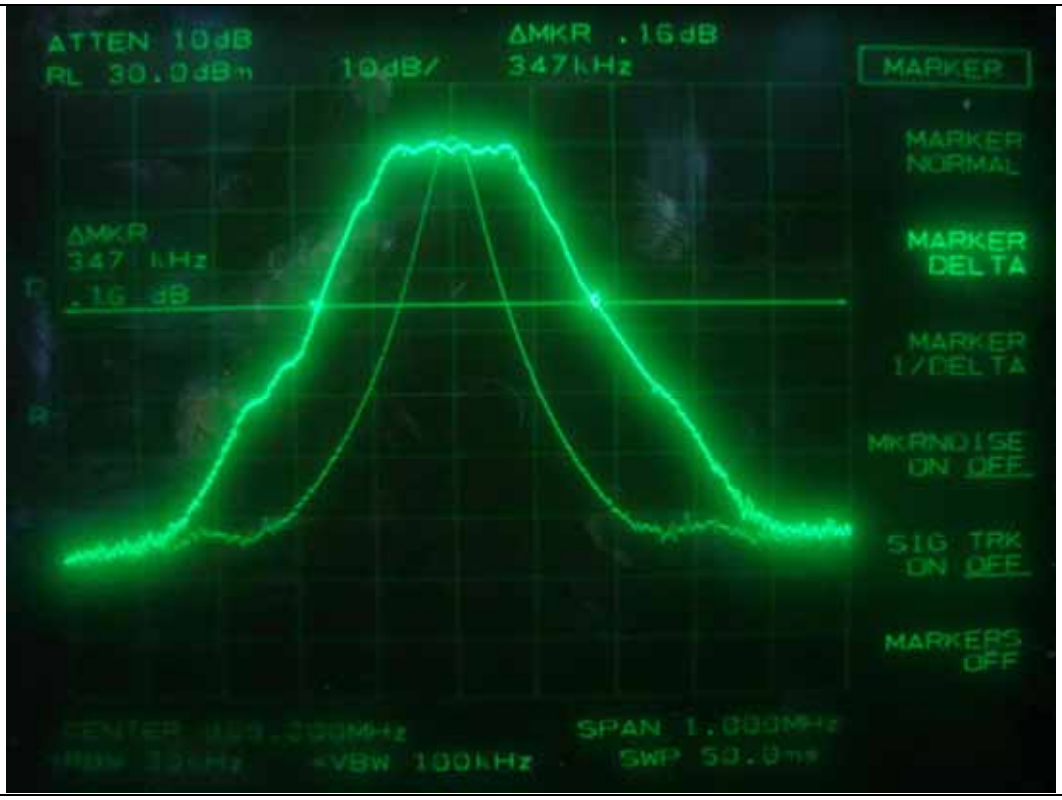
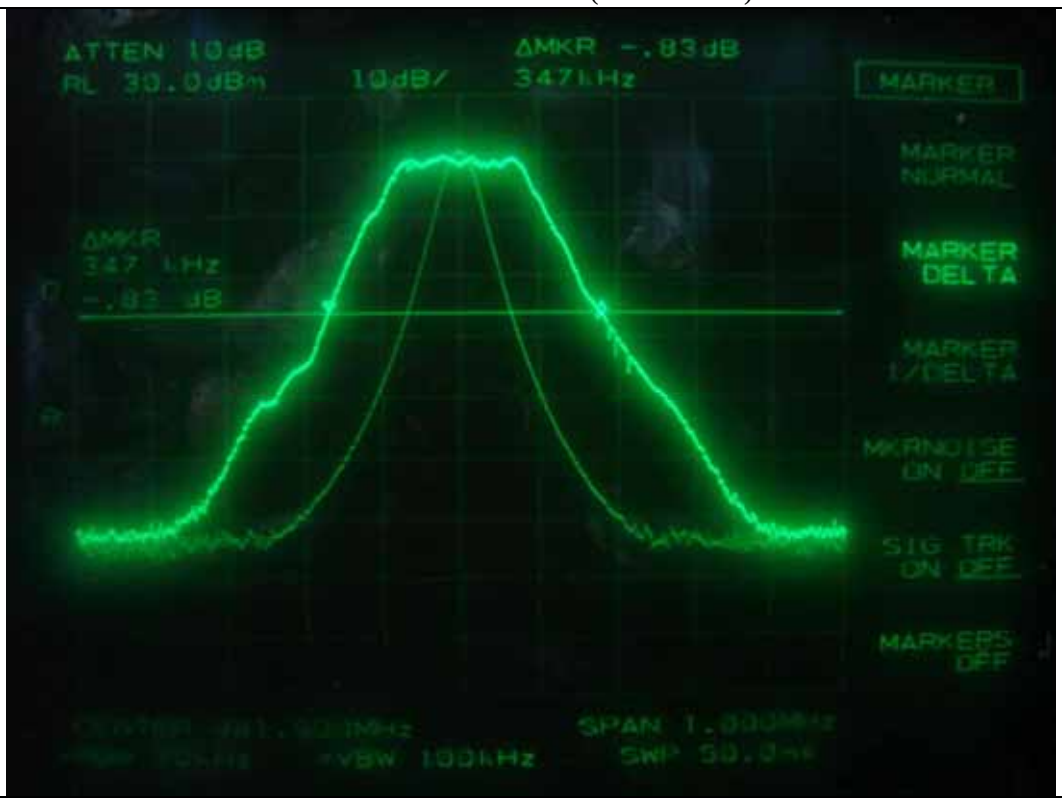


GSM – 26 dB Bandwidth (Low Channel)



GSM – 26 dB Bandwidth (Middle Channel)

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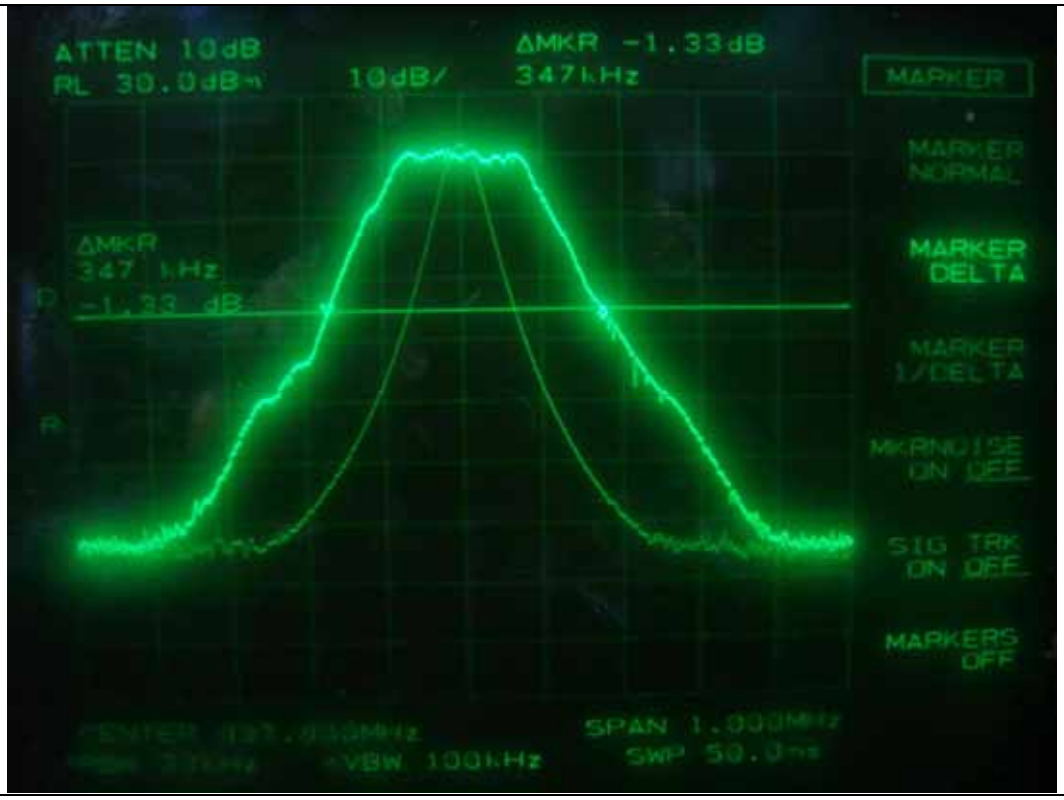

GSM – 26 dB Bandwidth (High Channel)

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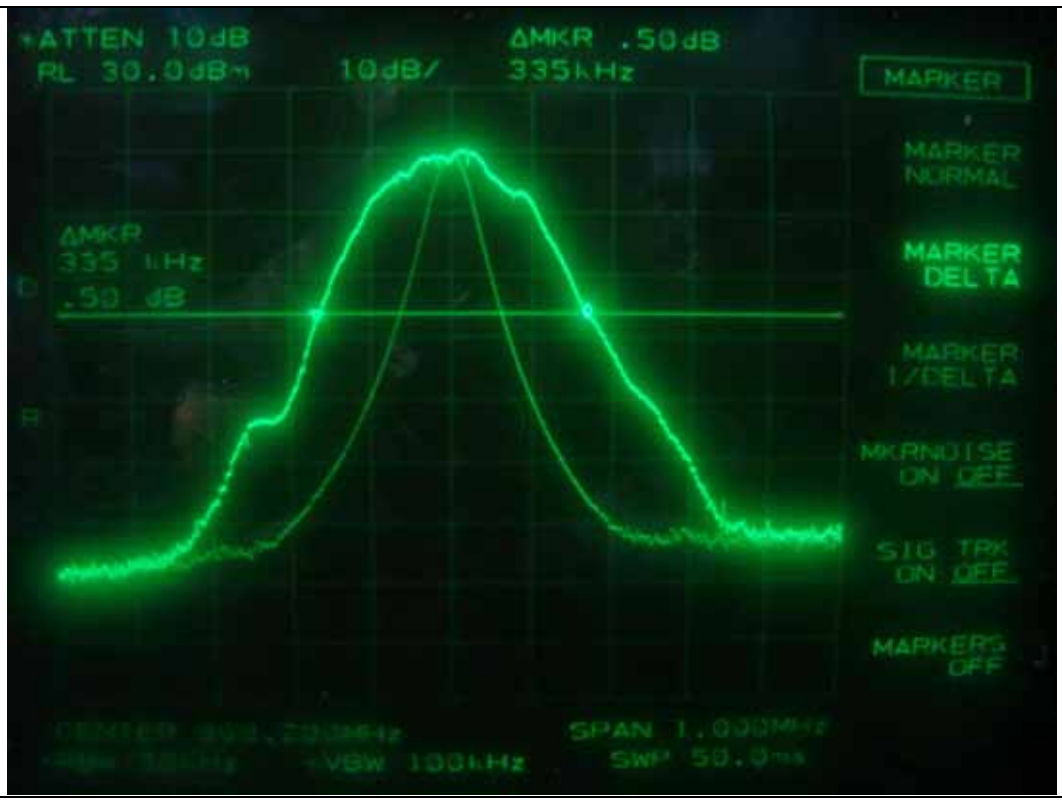
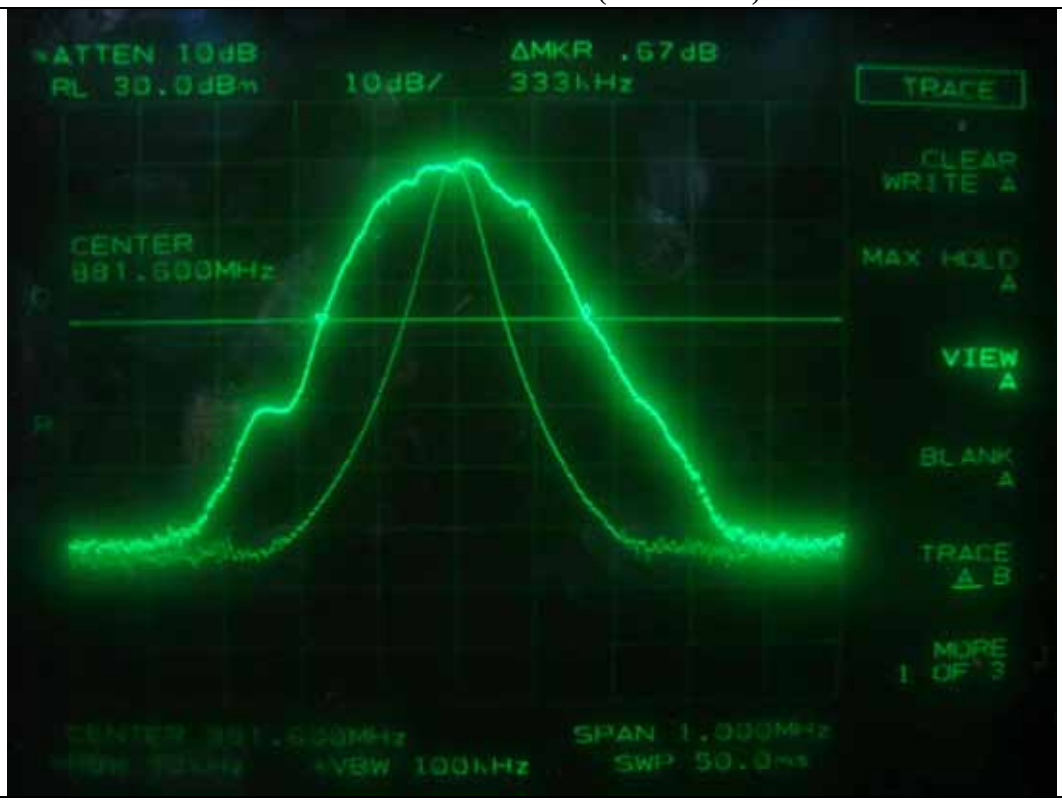


EDGE – 26 dB Bandwidth (Low Channel)



EDGE – 26 dB Bandwidth (Middle Channel)

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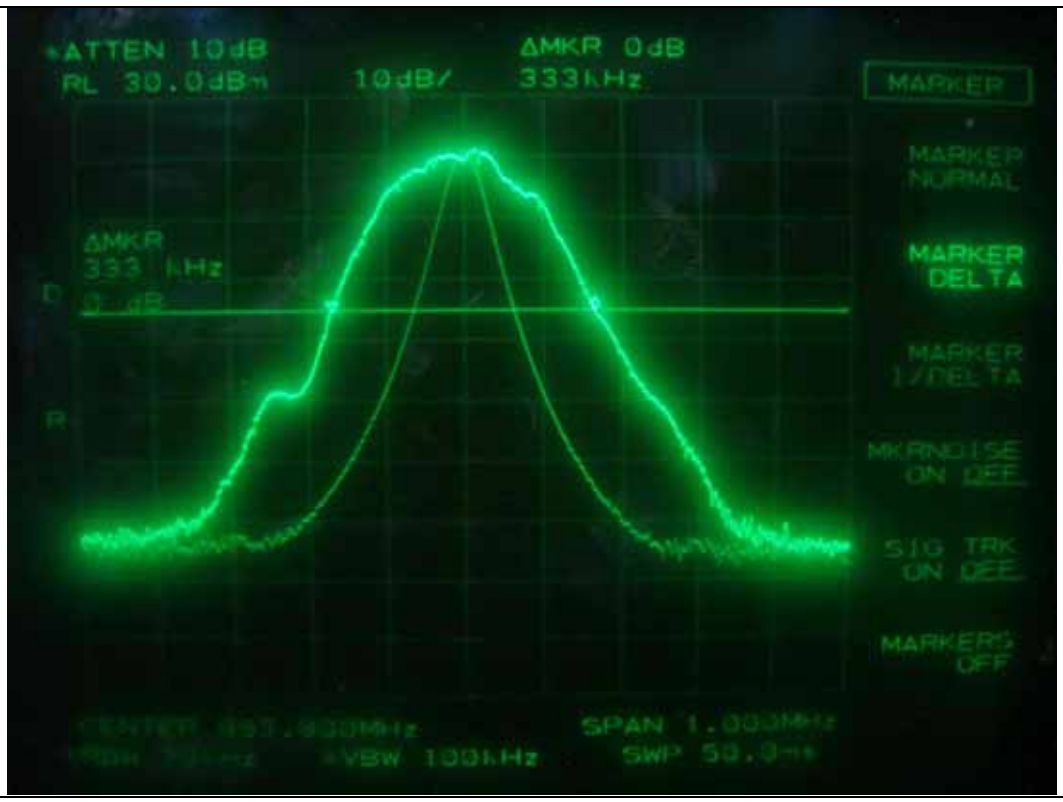

EDGE – 26 dB Bandwidth (High Channel)

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)
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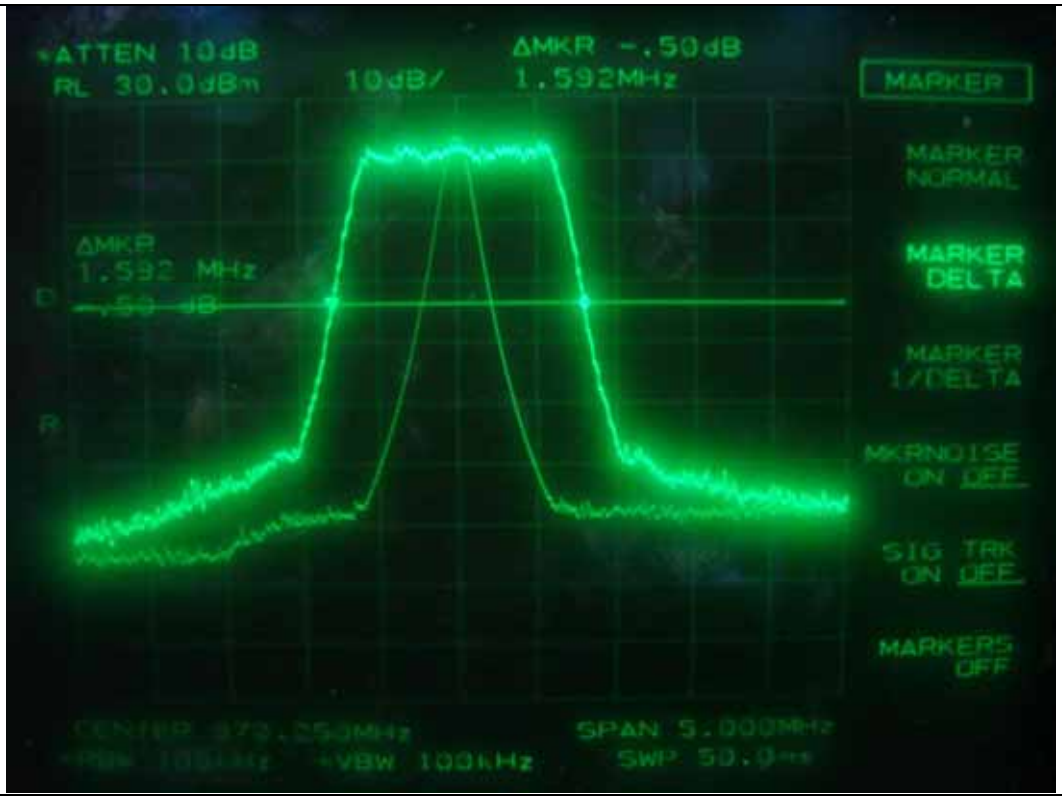
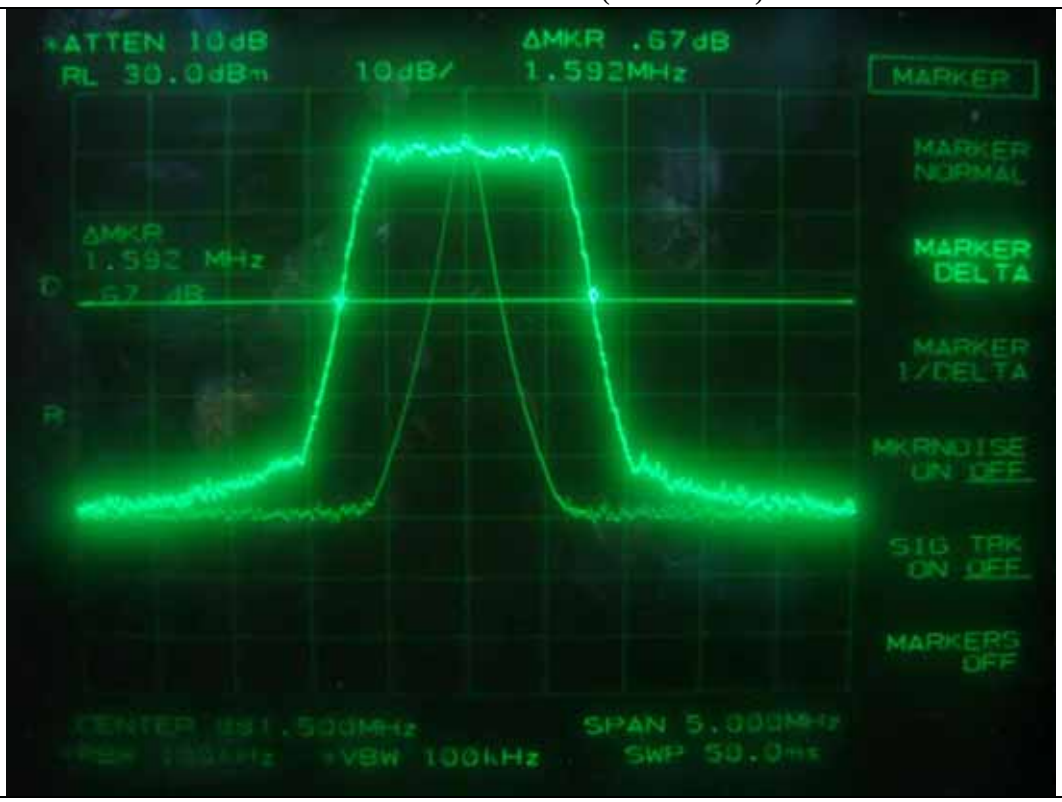


CDMA – 26 dB Bandwidth (Low Channel)



CDMA – 26 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)

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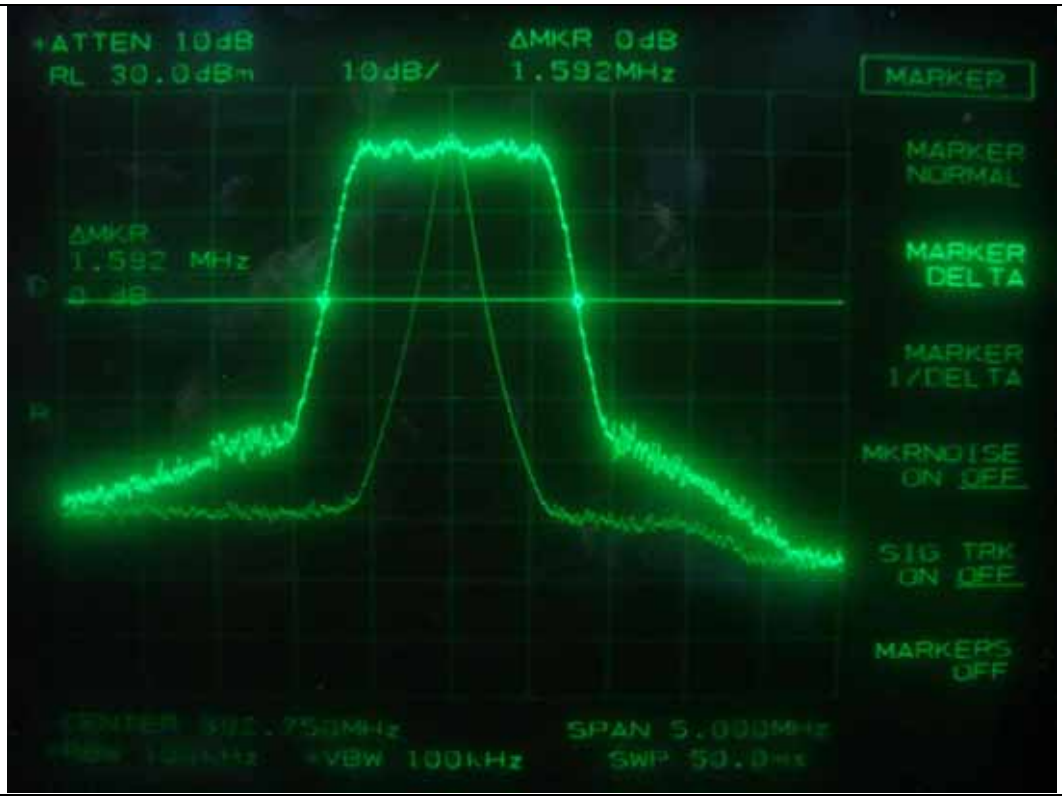

CDMA – 26 dB Bandwidth (High Channel)

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)
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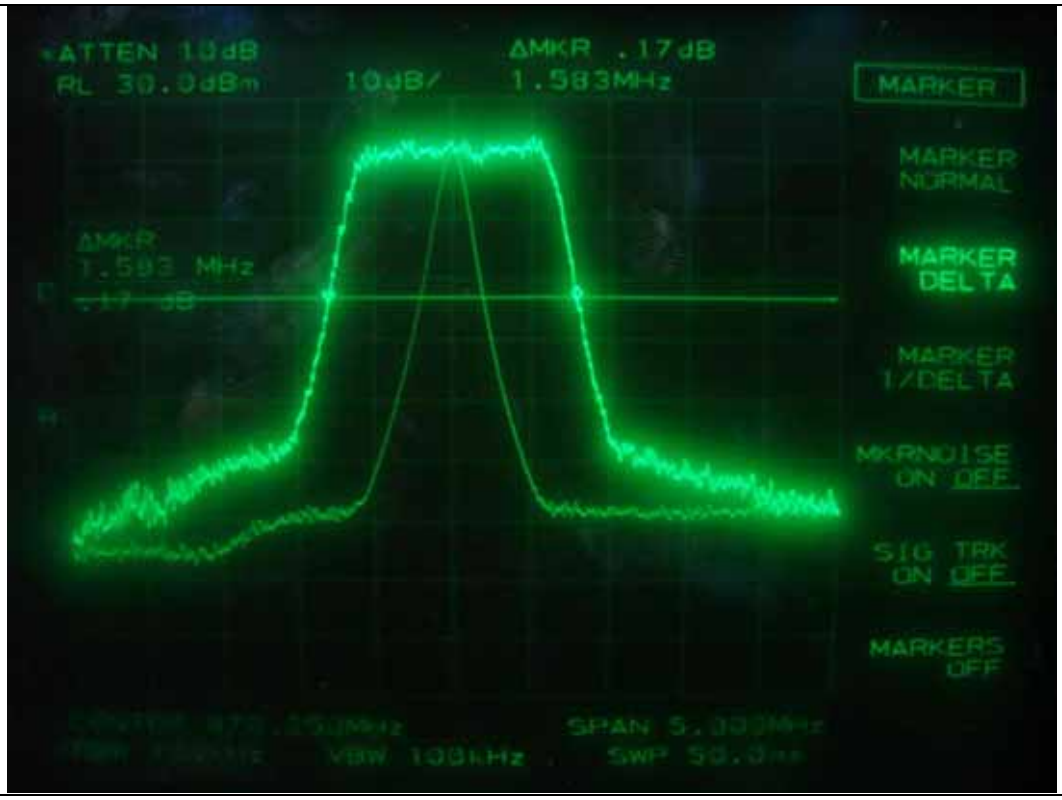
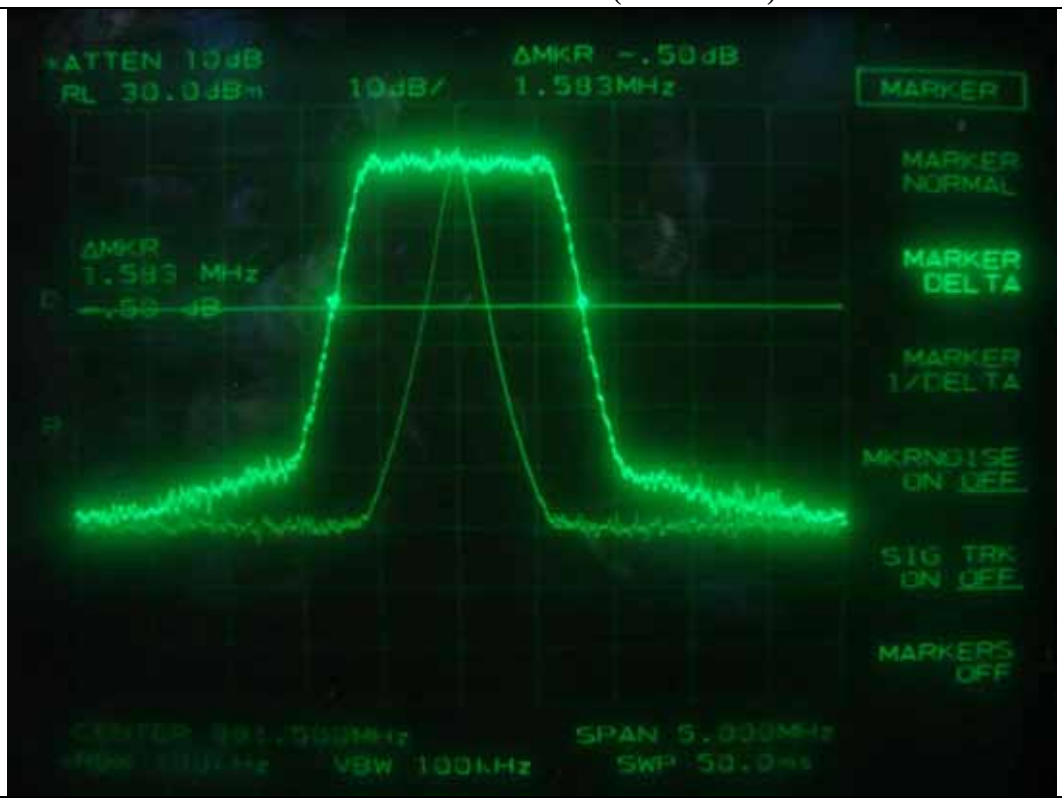


1xEVDO – 26 dB Bandwidth (Low Channel)



1xEVDO – 26 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)

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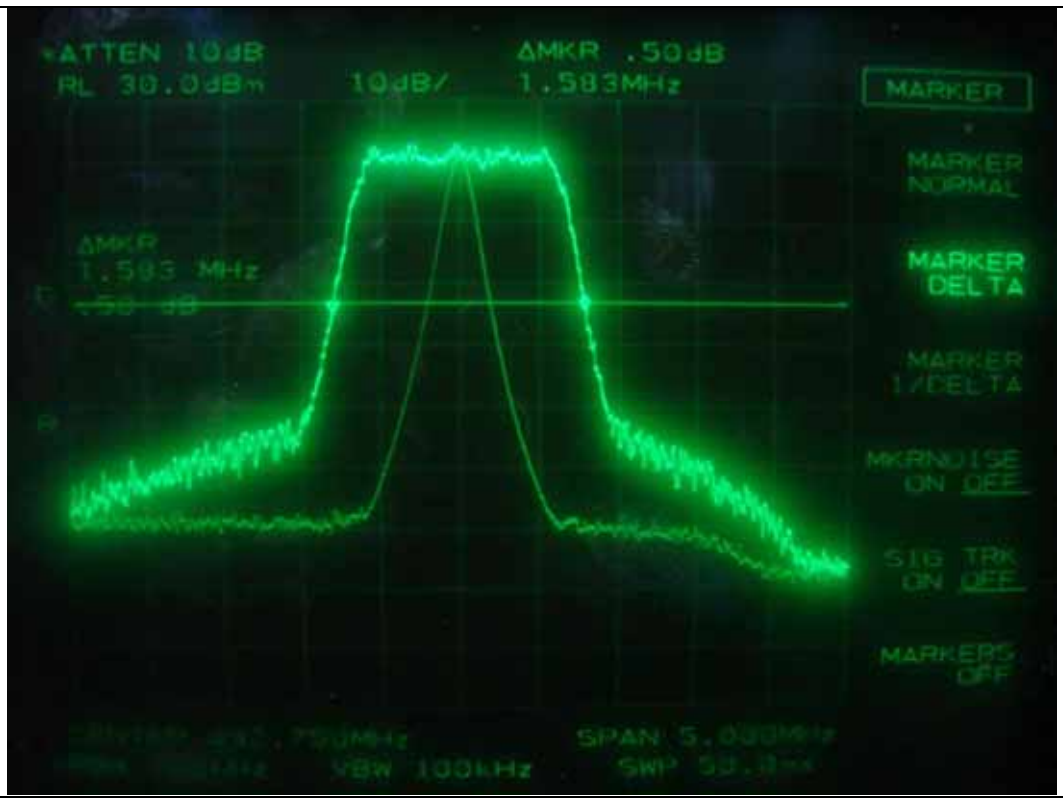

1xEVDO – 26 dB Bandwidth (High Channel)

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)
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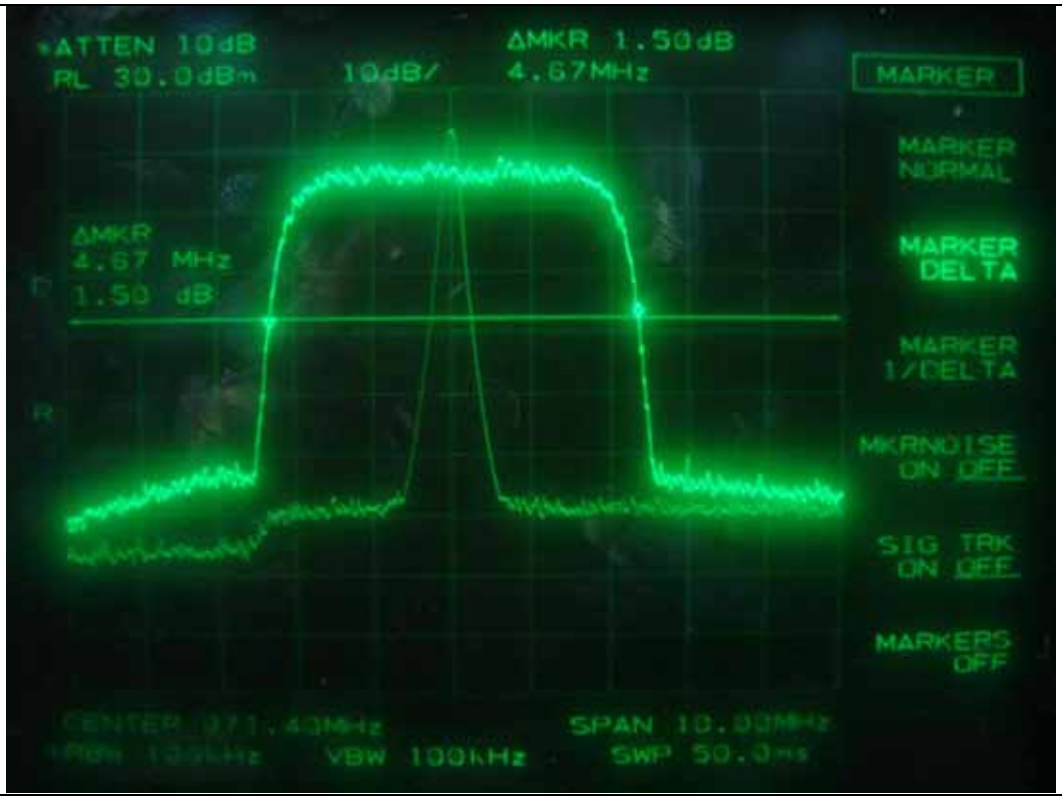
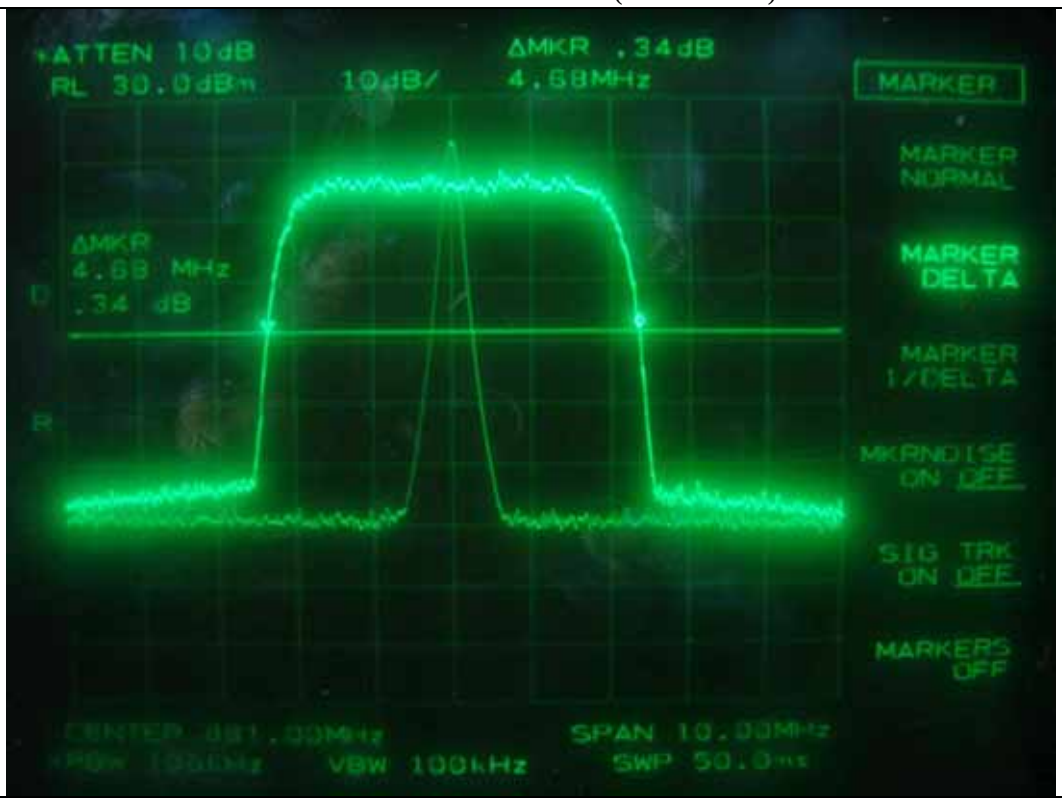


WCDMA – 26 dB Bandwidth (Low Channel)



WCDMA – 26 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)
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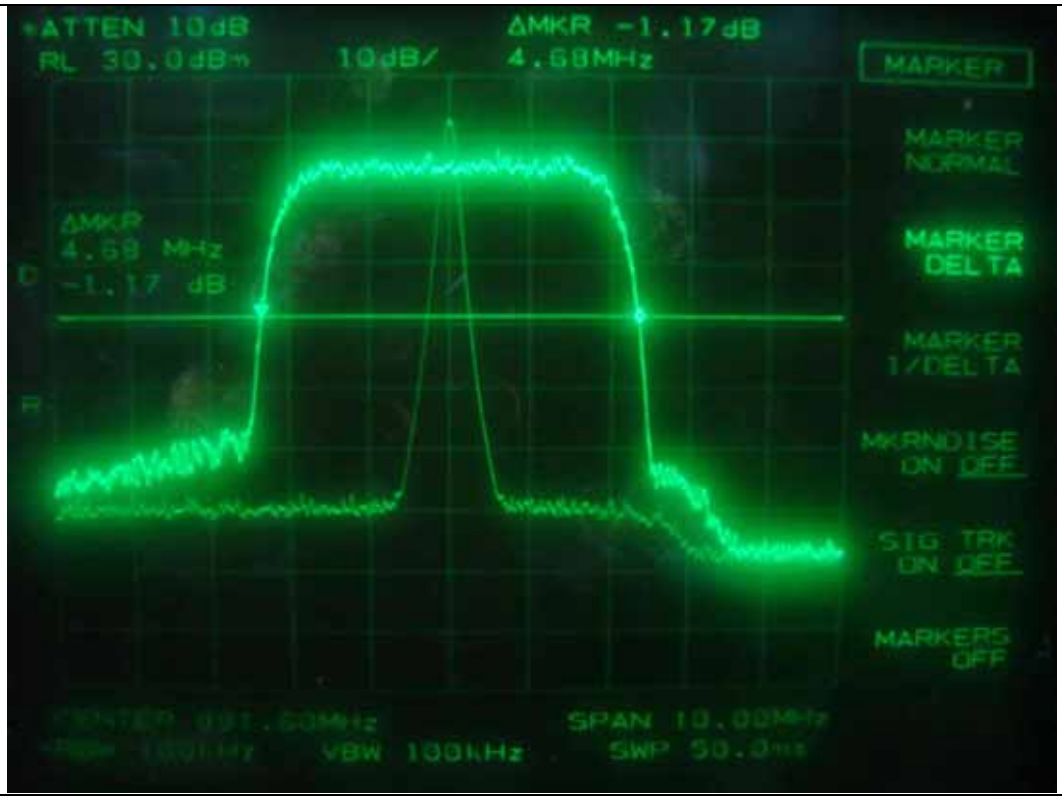

WCDMA – 26 dB Bandwidth (High Channel)

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)
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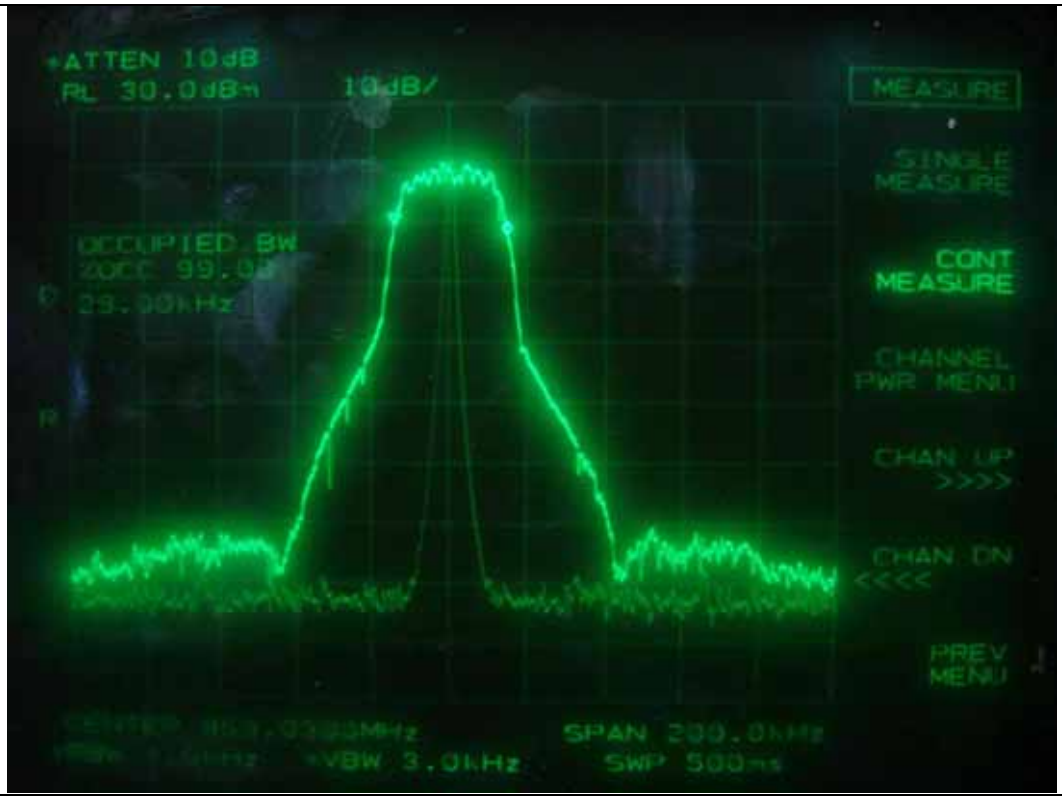
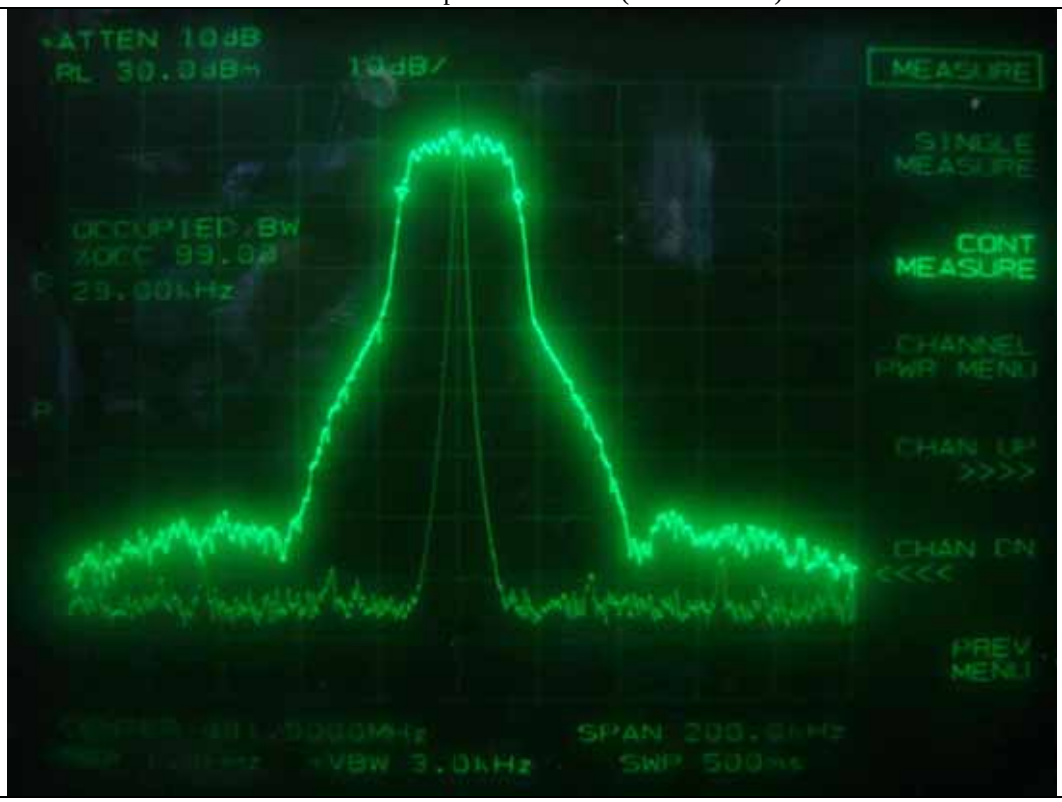
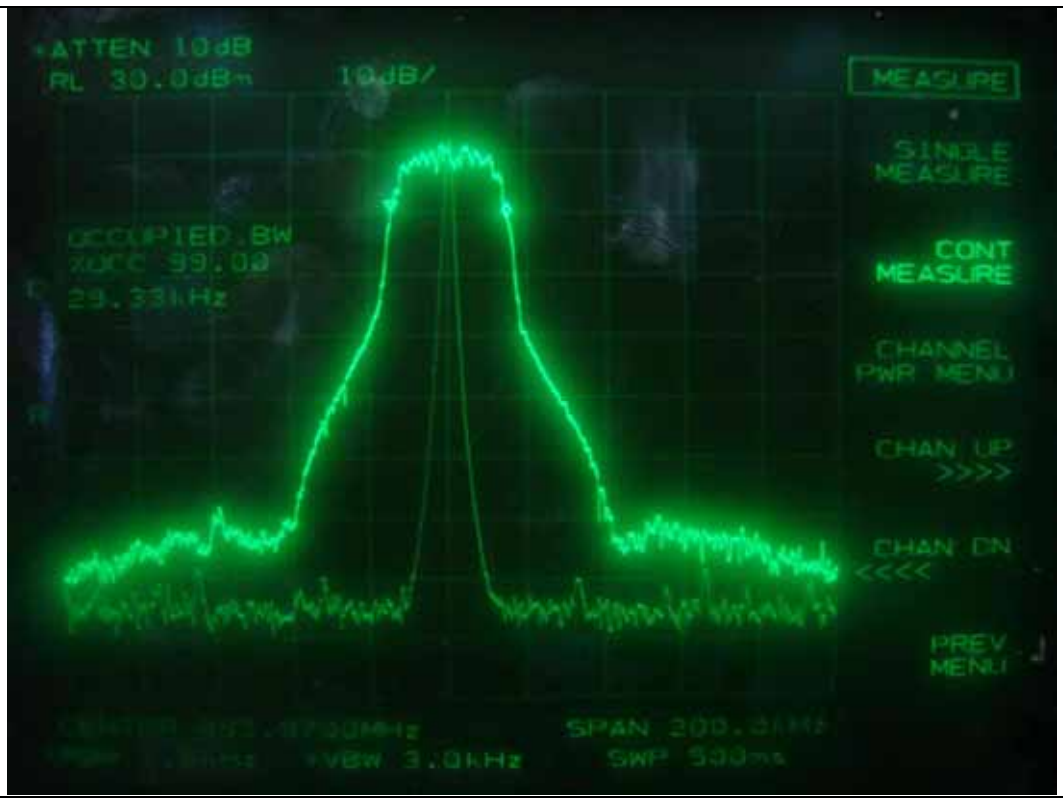


TDMA – Occupied Bandwidth (Low Channel)



TDMA – Occupied Bandwidth (Middle Channel)



TDMA – Occupied Bandwidth (High Channel)

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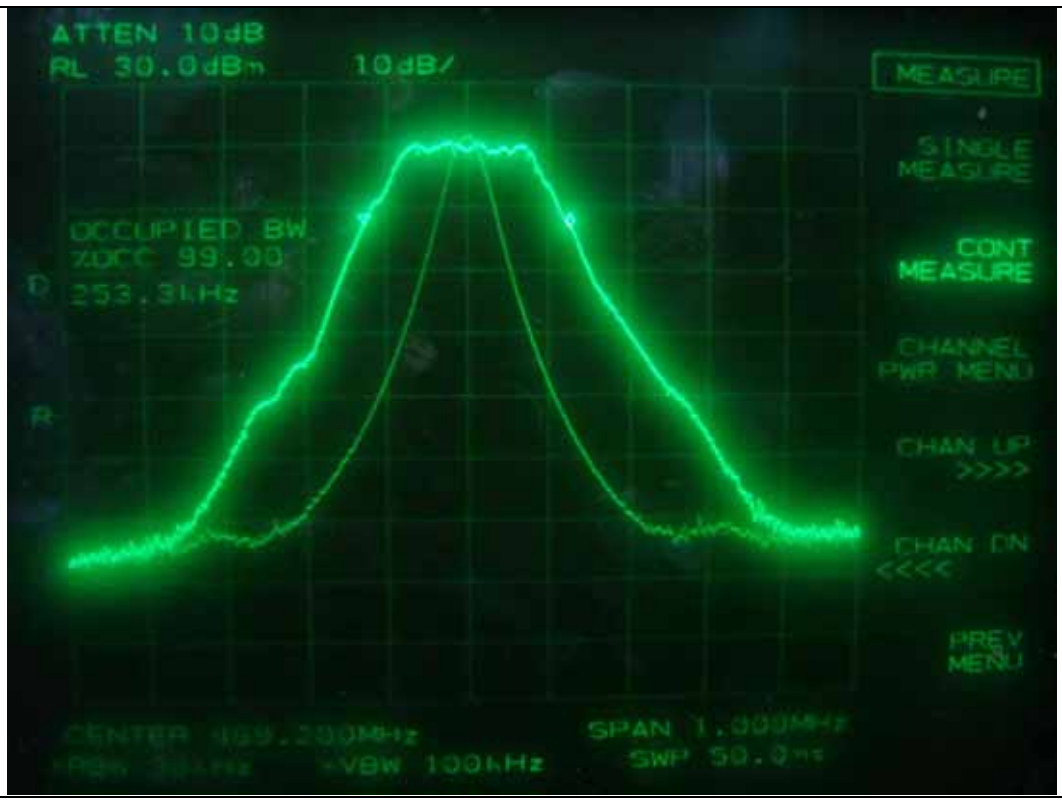
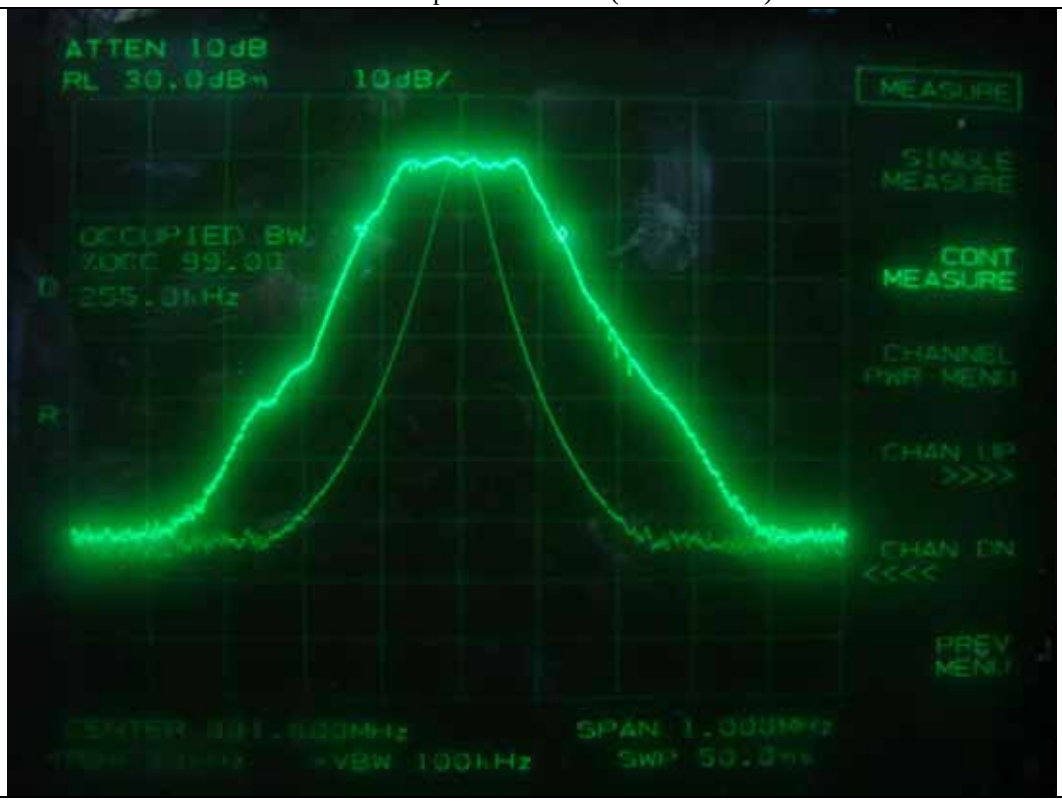


GSM – Occupied Bandwidth (Low Channel)



GSM – Occupied Bandwidth (Middle Channel)

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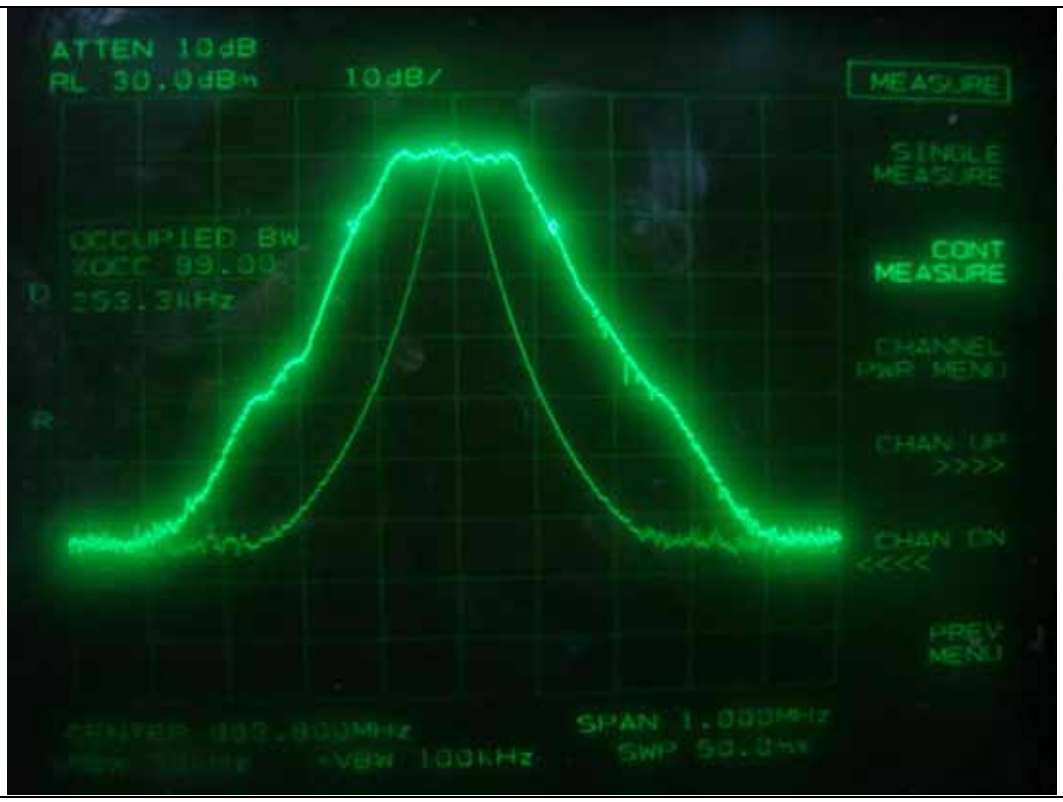

GSM – Occupied Bandwidth (High Channel)

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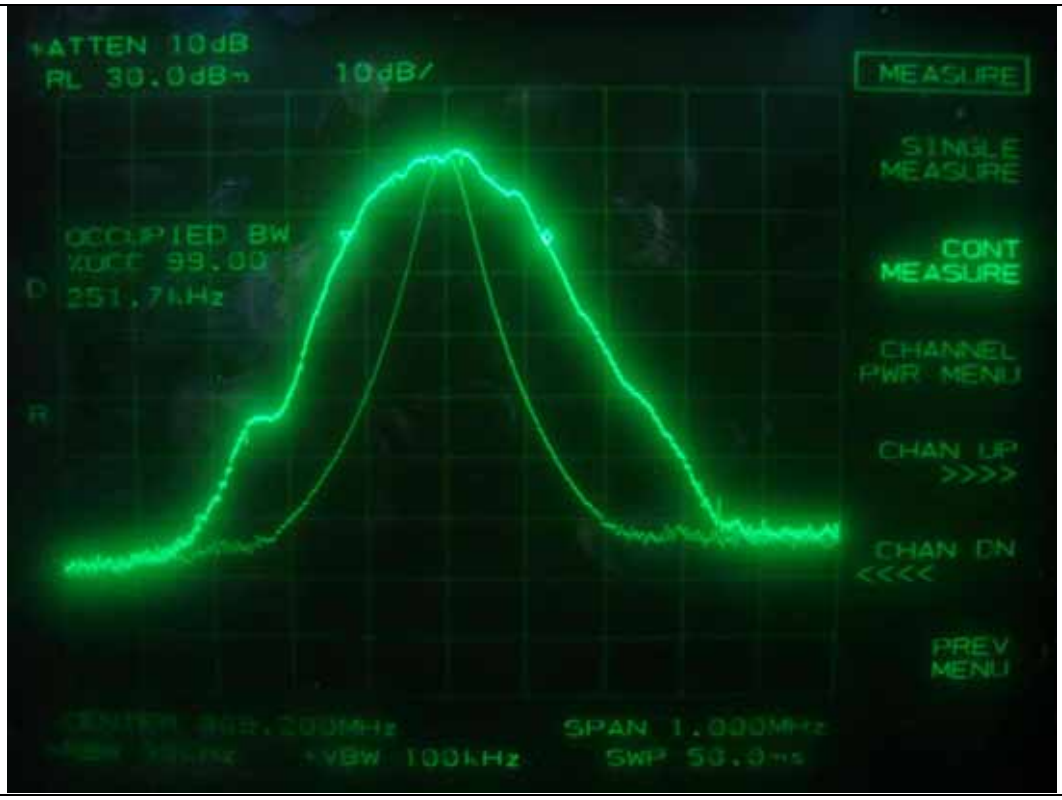
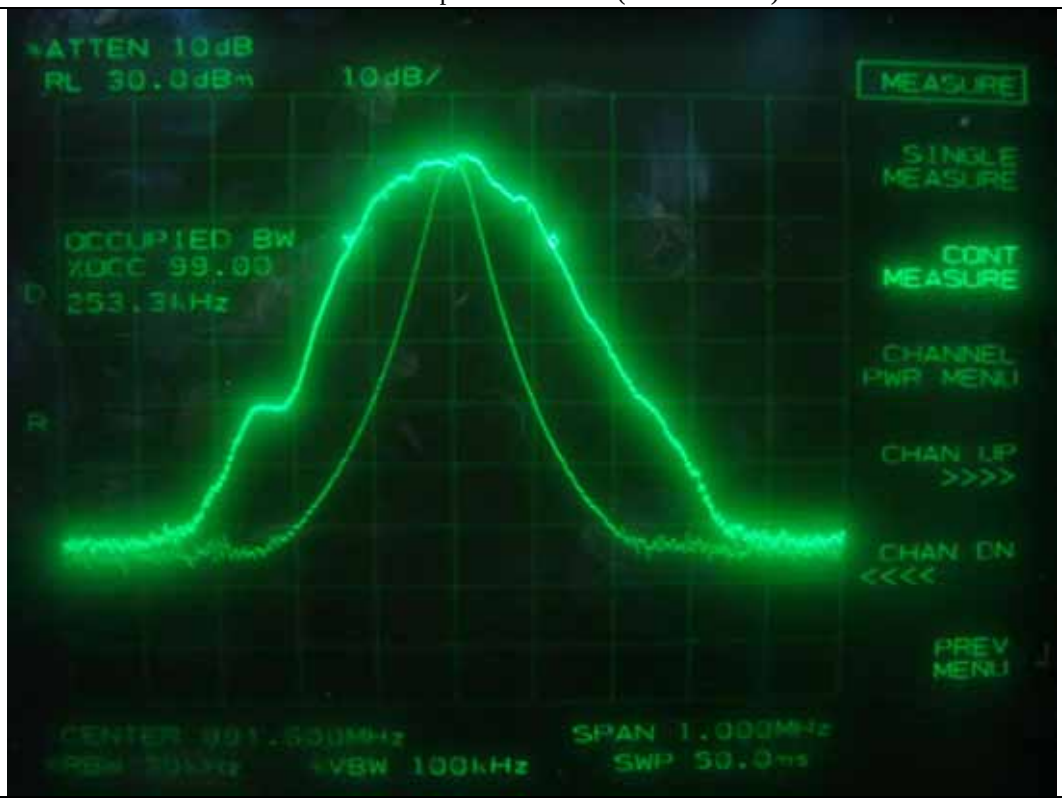


EDGE – Occupied Bandwidth (Low Channel)



EDGE – Occupied Bandwidth (Middle Channel)

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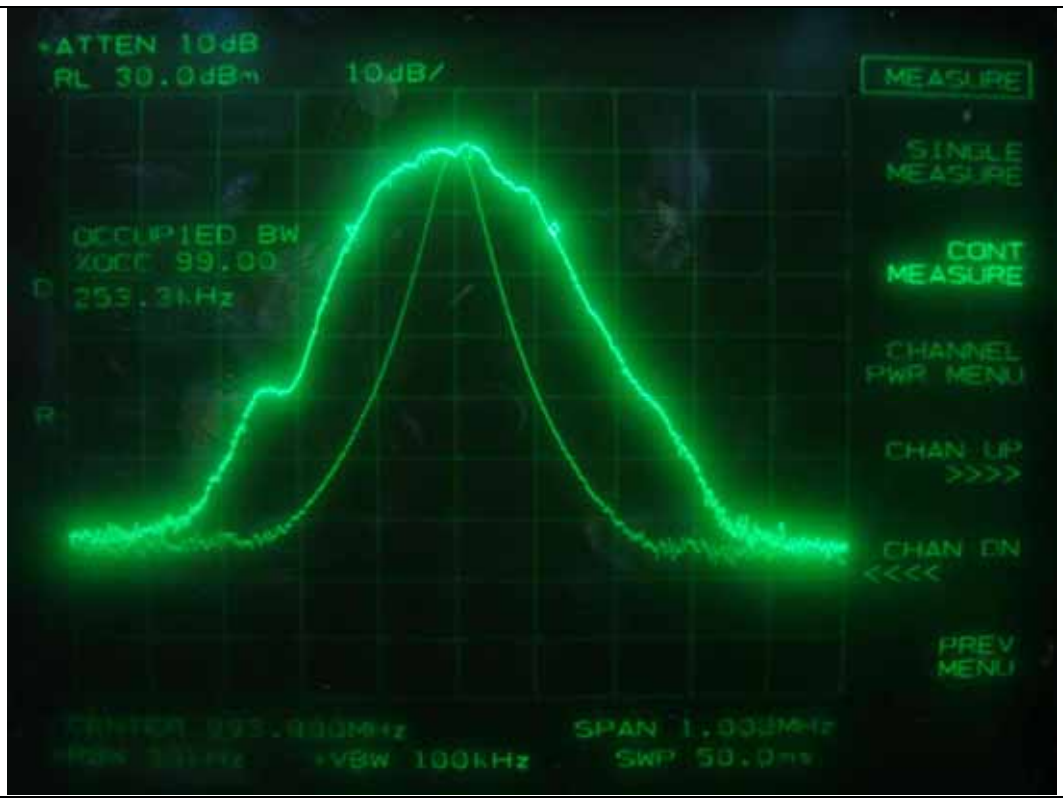

EDGE – Occupied Bandwidth (High Channel)

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)
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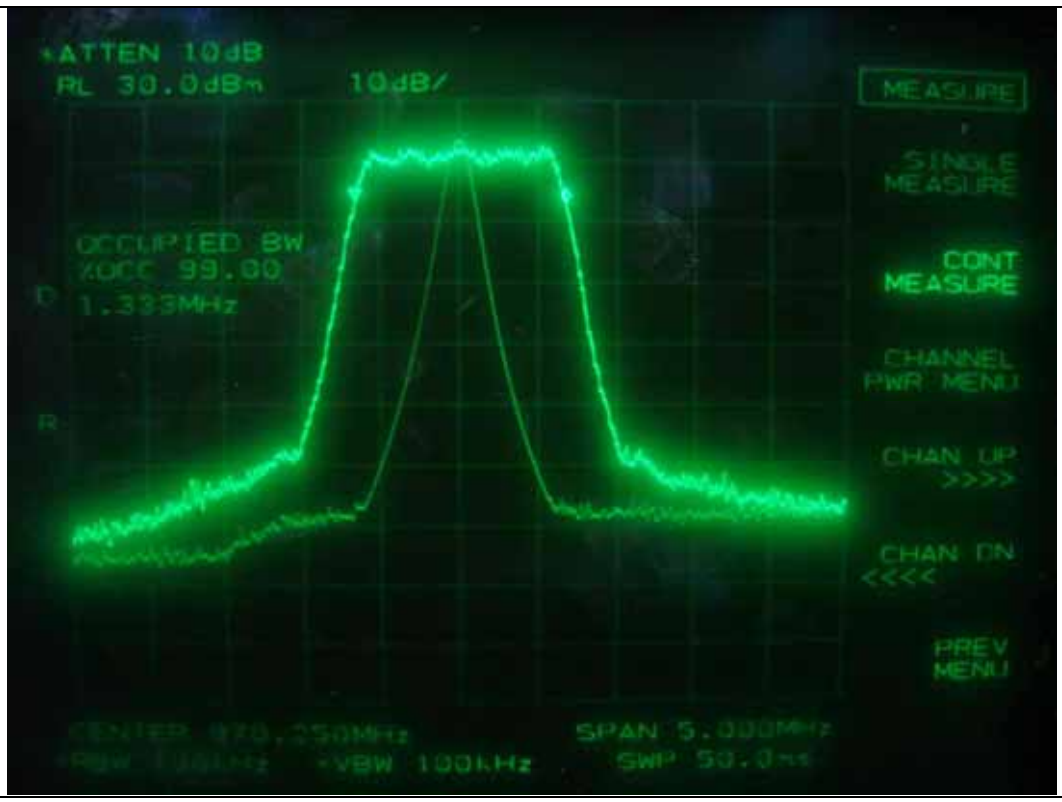
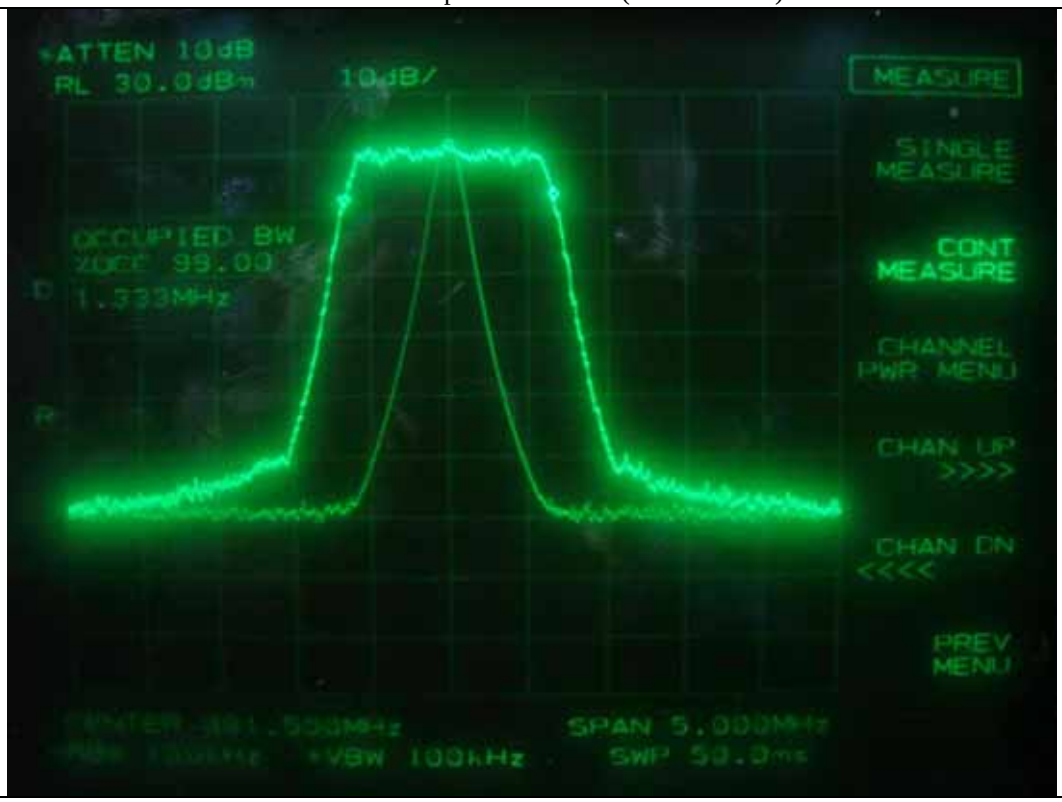


CDMA – Occupied Bandwidth (Low Channel)



CDMA – Occupied Bandwidth (Middle Channel)

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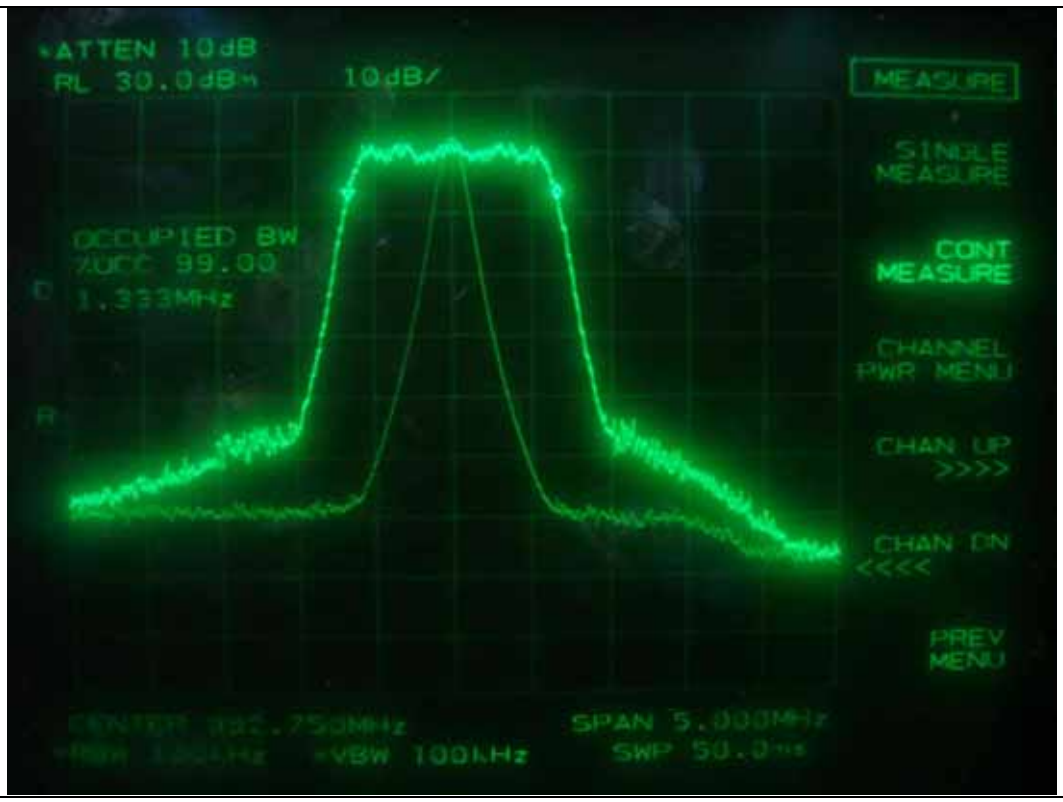

CDMA – Occupied Bandwidth (High Channel)

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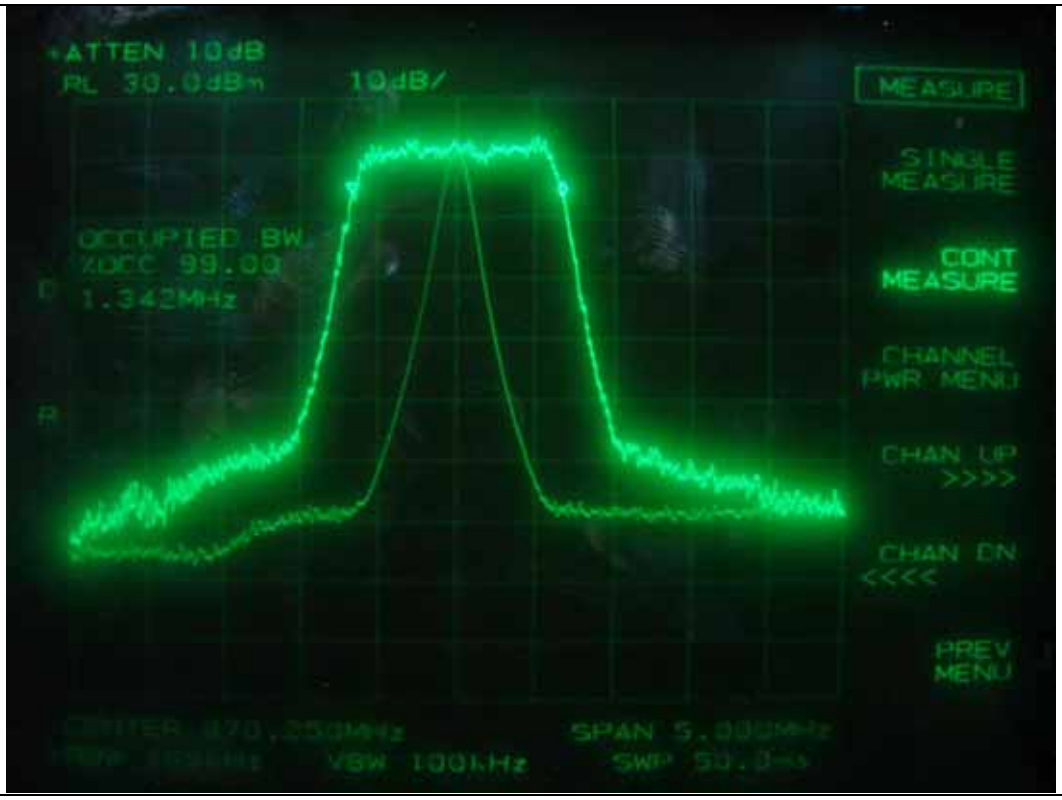
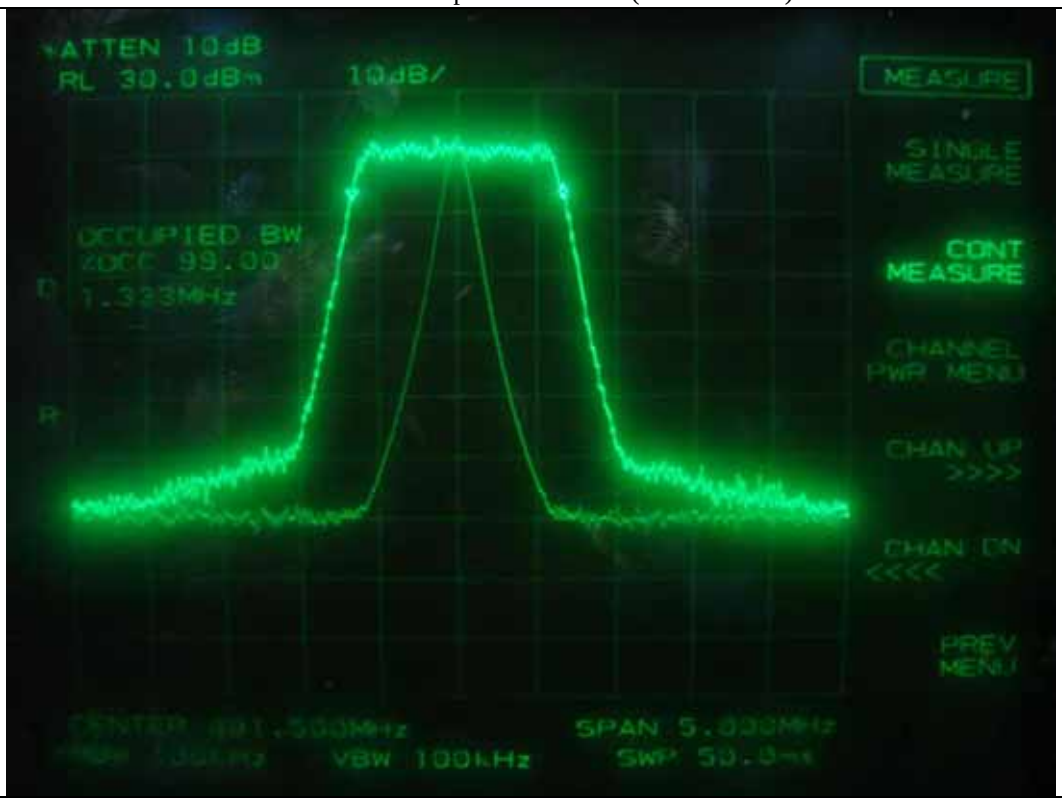


1xEVDO – Occupied Bandwidth (Low Channel)



1xEVDO – 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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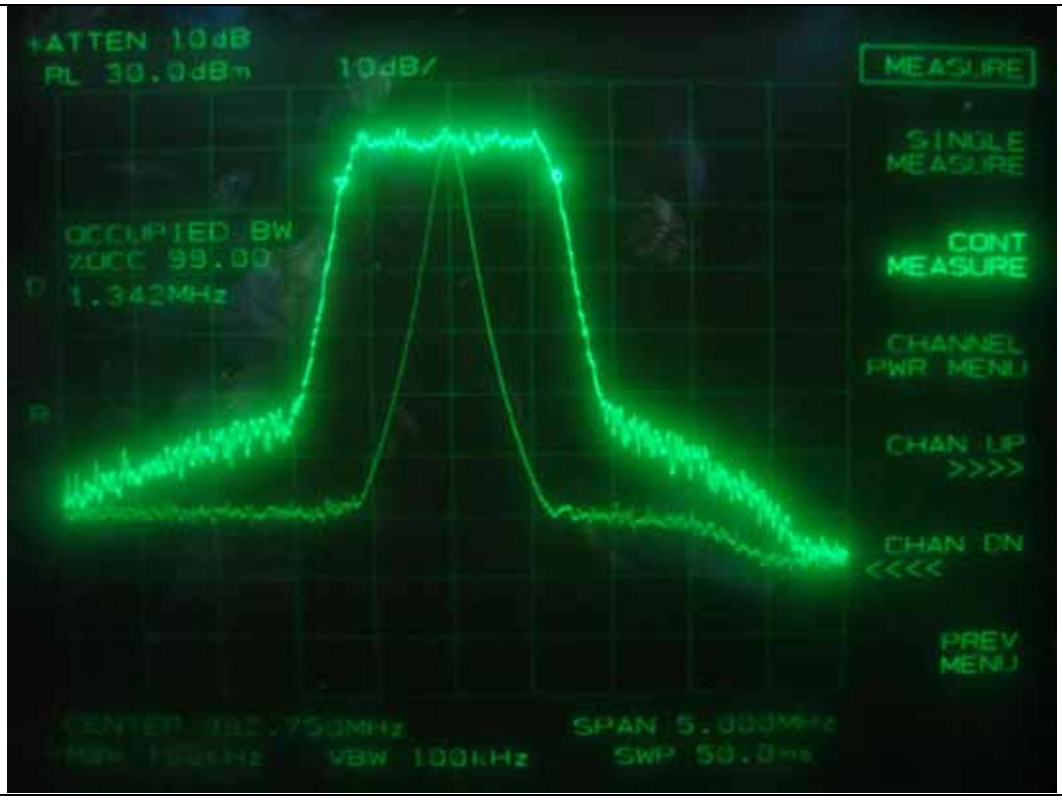

1xEVDO – Occupied Bandwidth (High Channel)

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)
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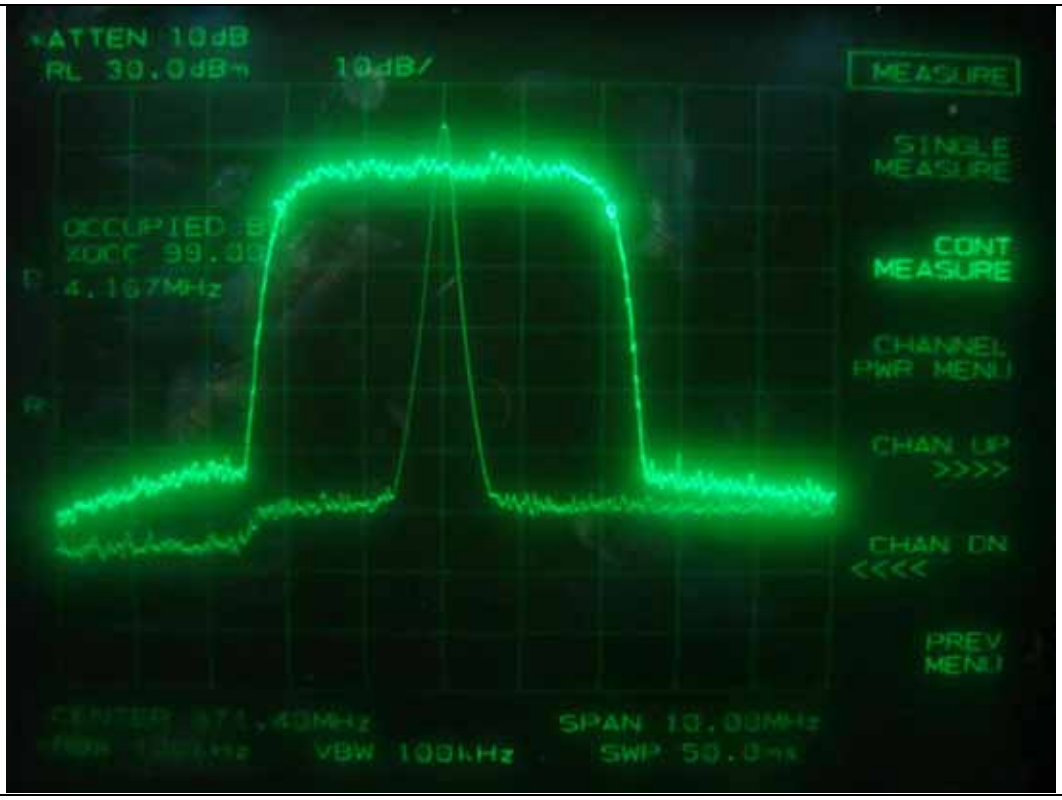
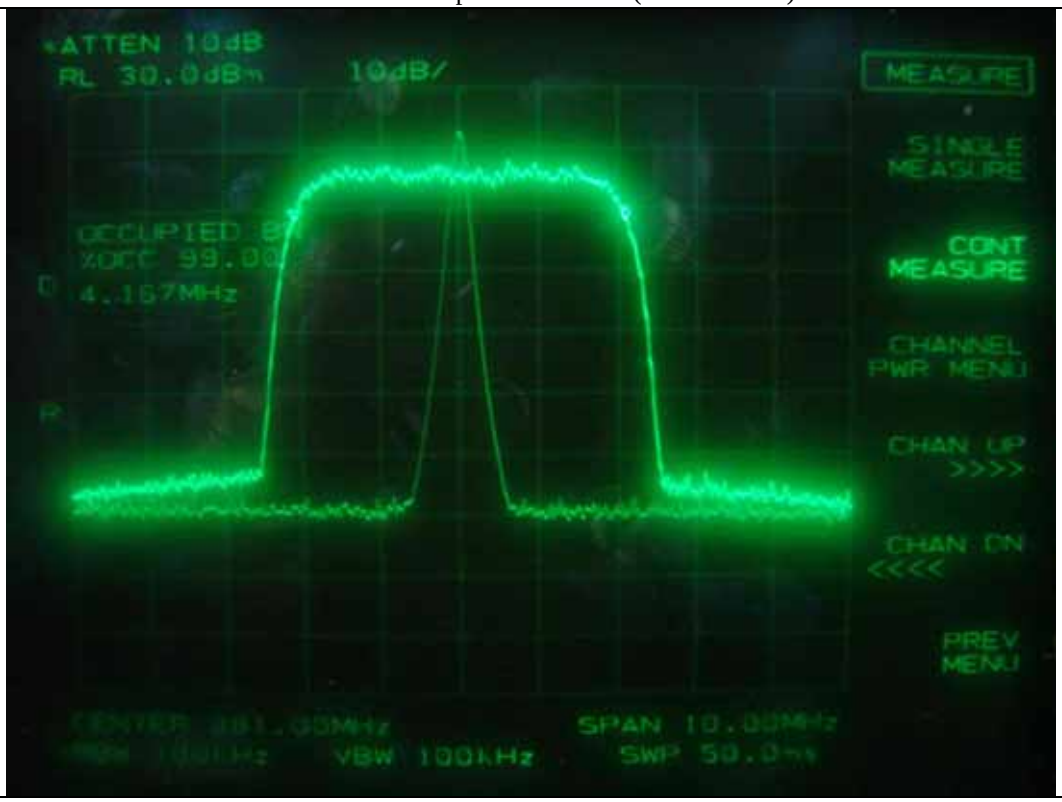


WCDMA – Occupied Bandwidth (Low Channel)



WCDMA – Occupied Bandwidth (Middle Channel)

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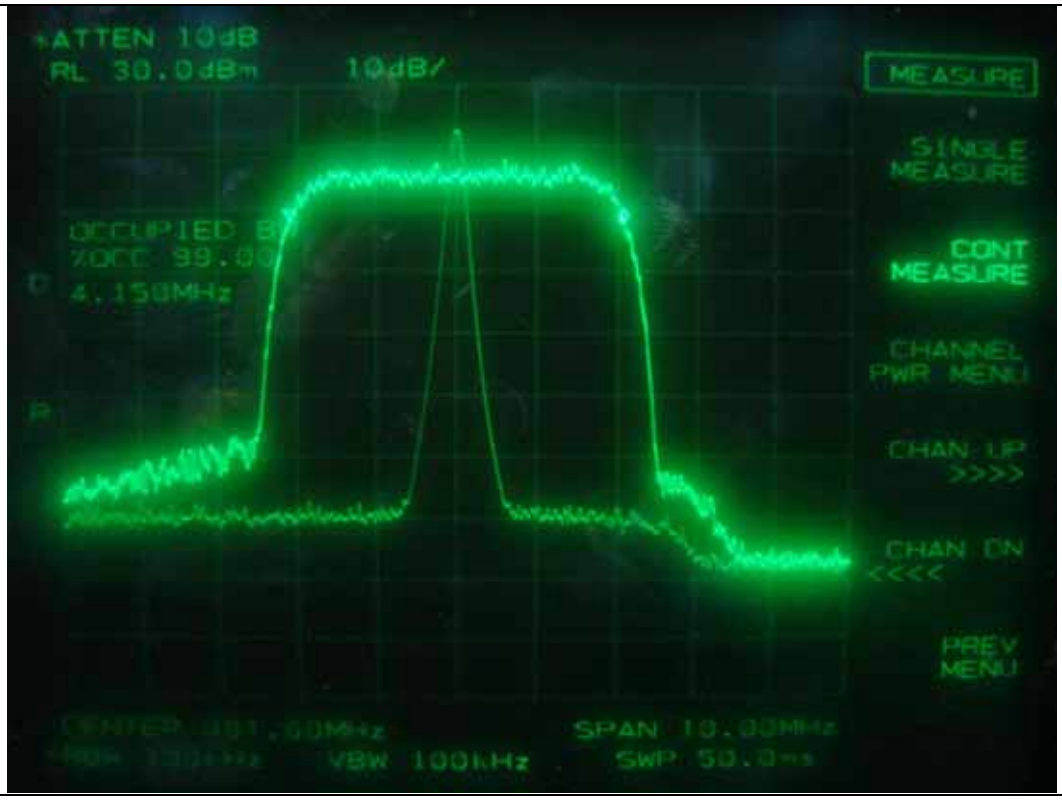

WCDMA – Occupied Bandwidth (High Channel)

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)
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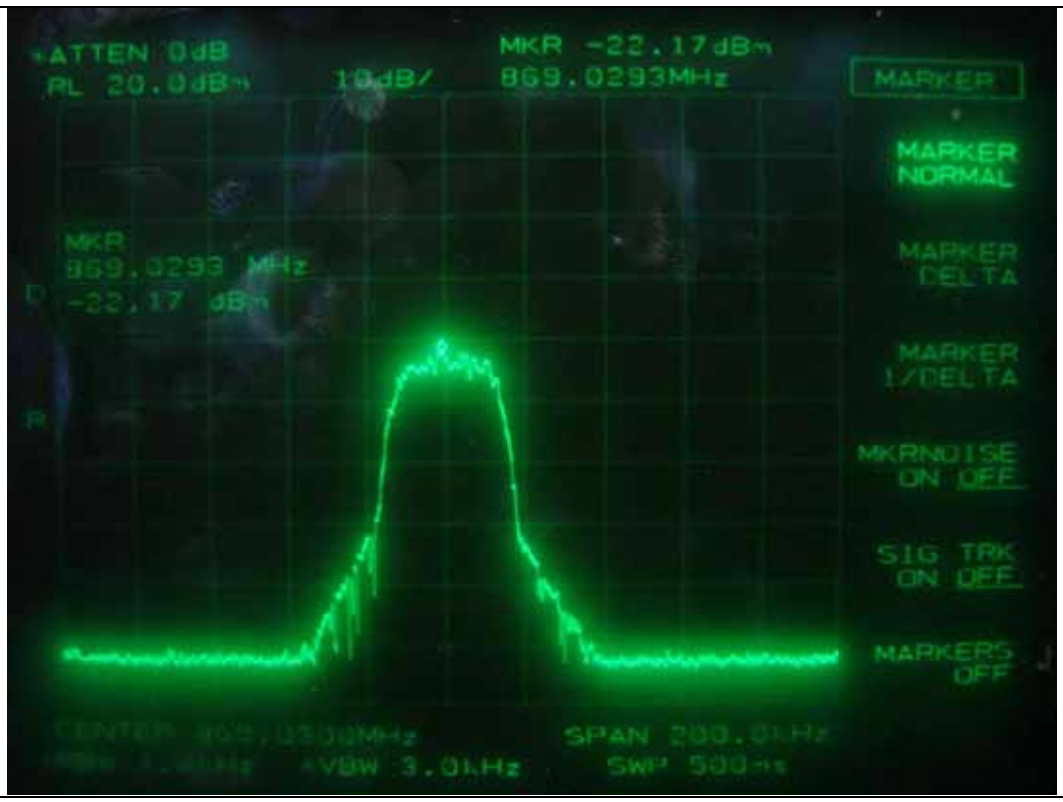
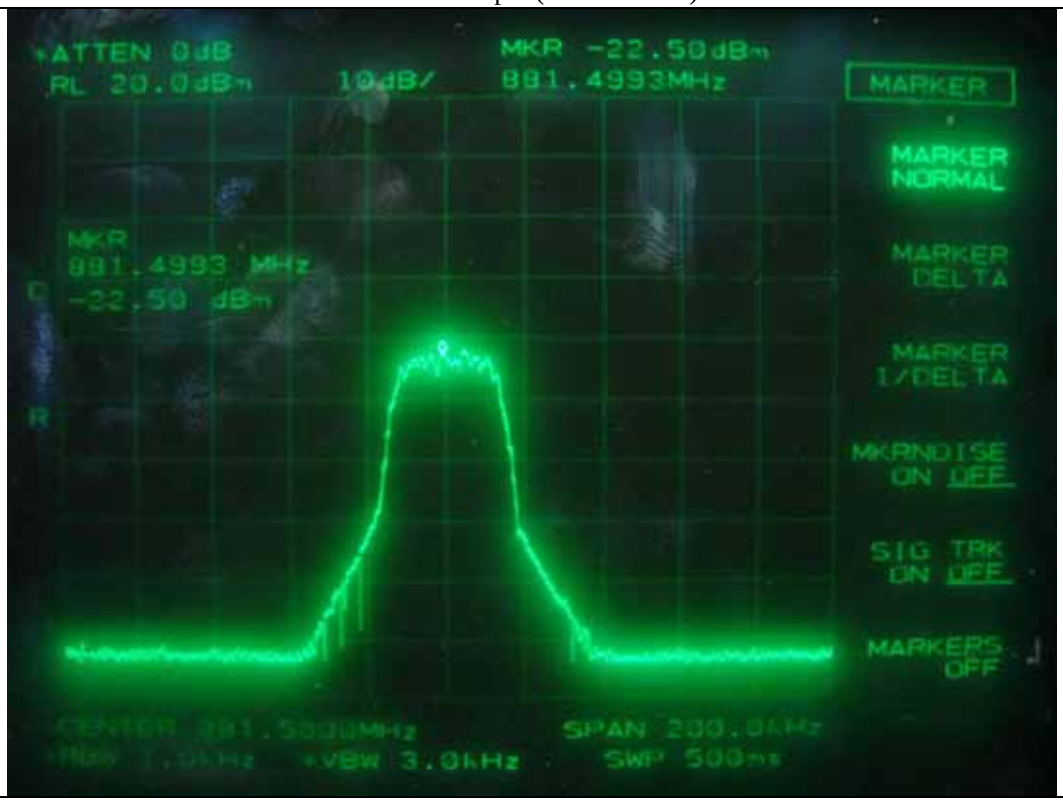


TDMA – Input (Low Channel)



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)

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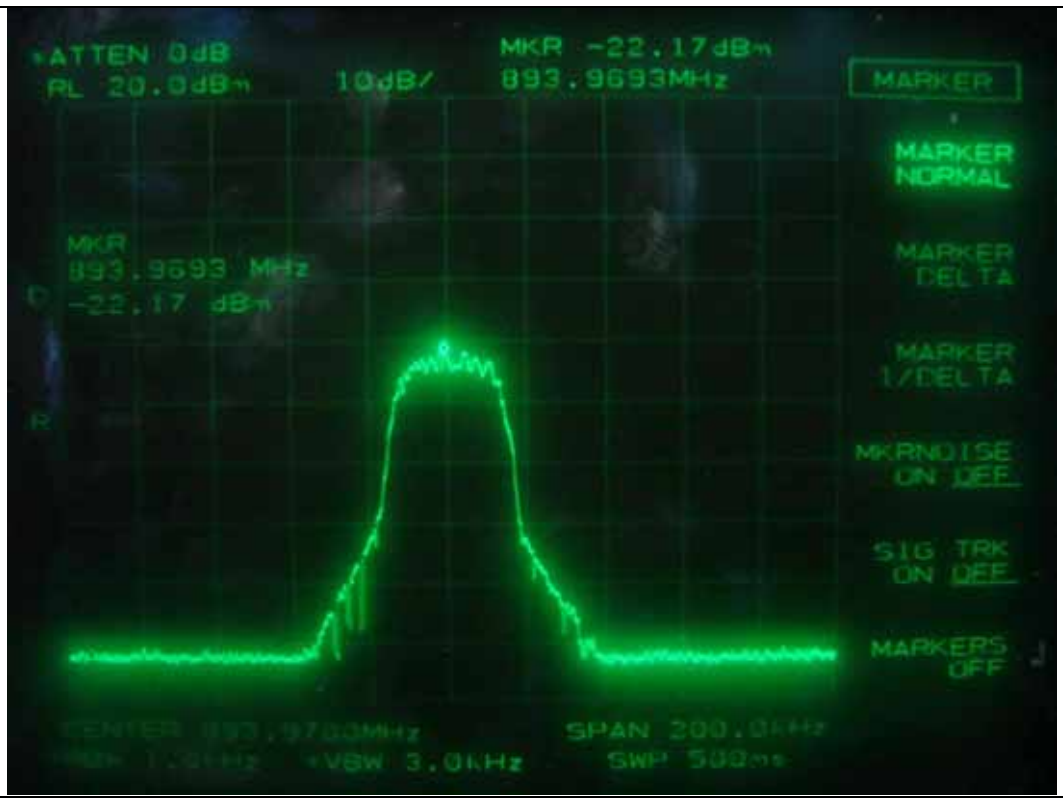

TDMA – Input (High Channel)

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)
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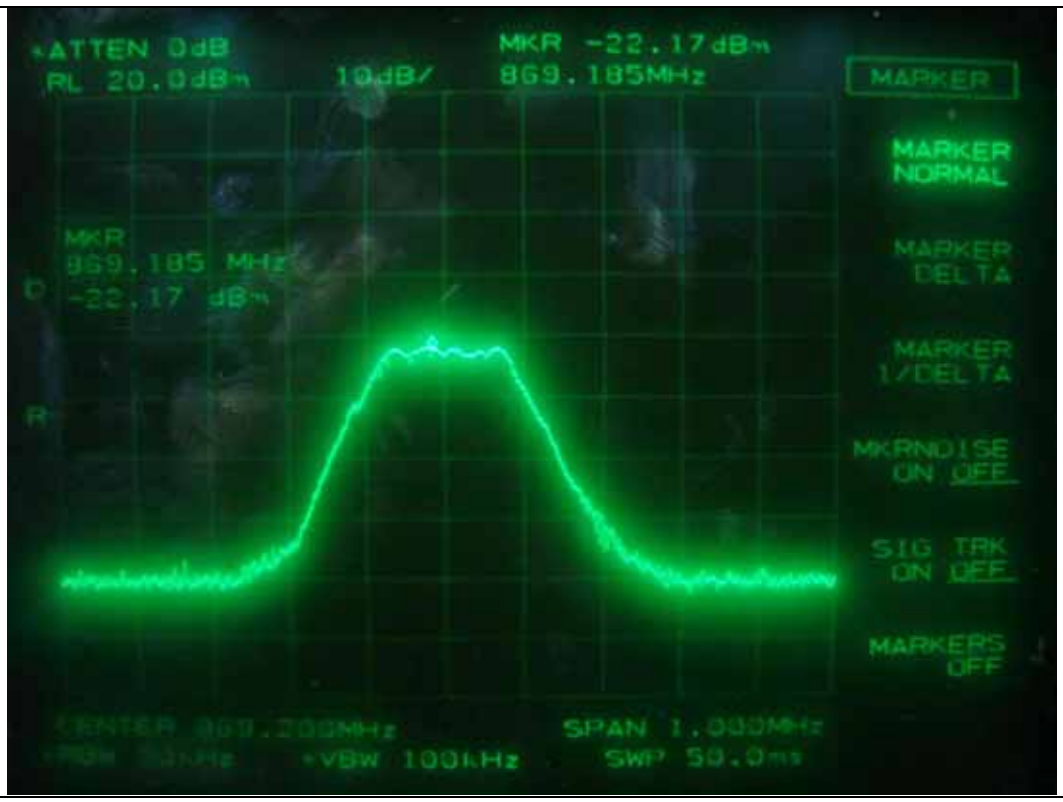
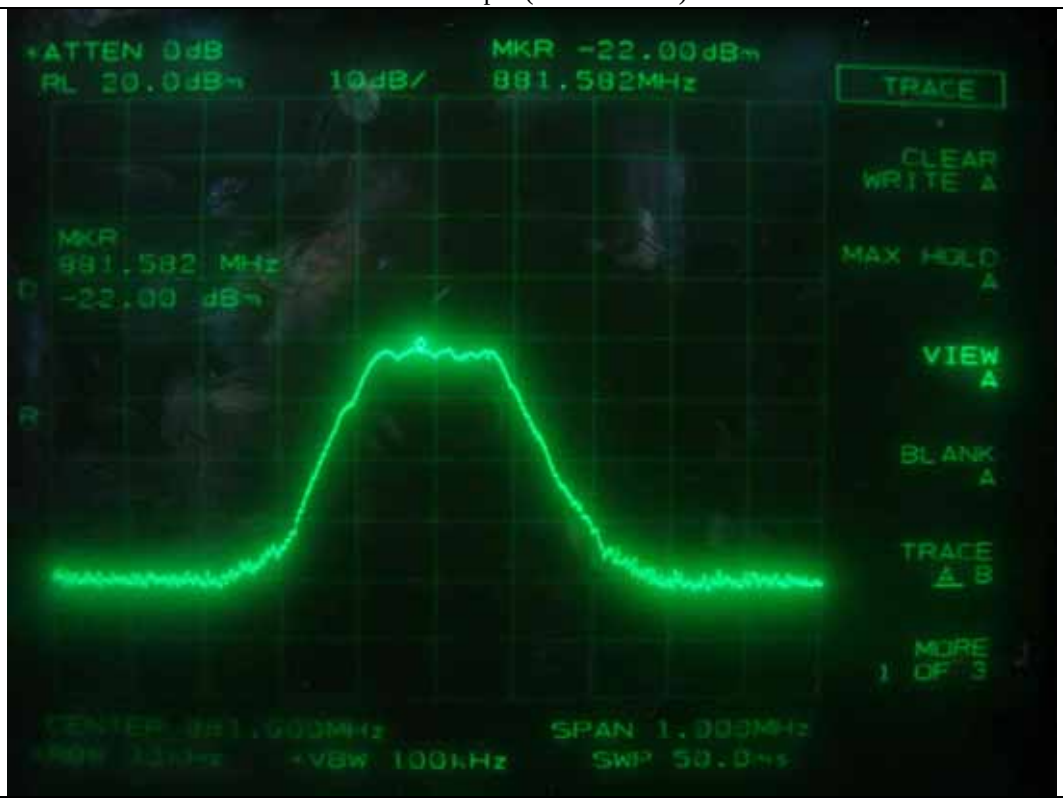


GSM – Input (Low Channel)



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)
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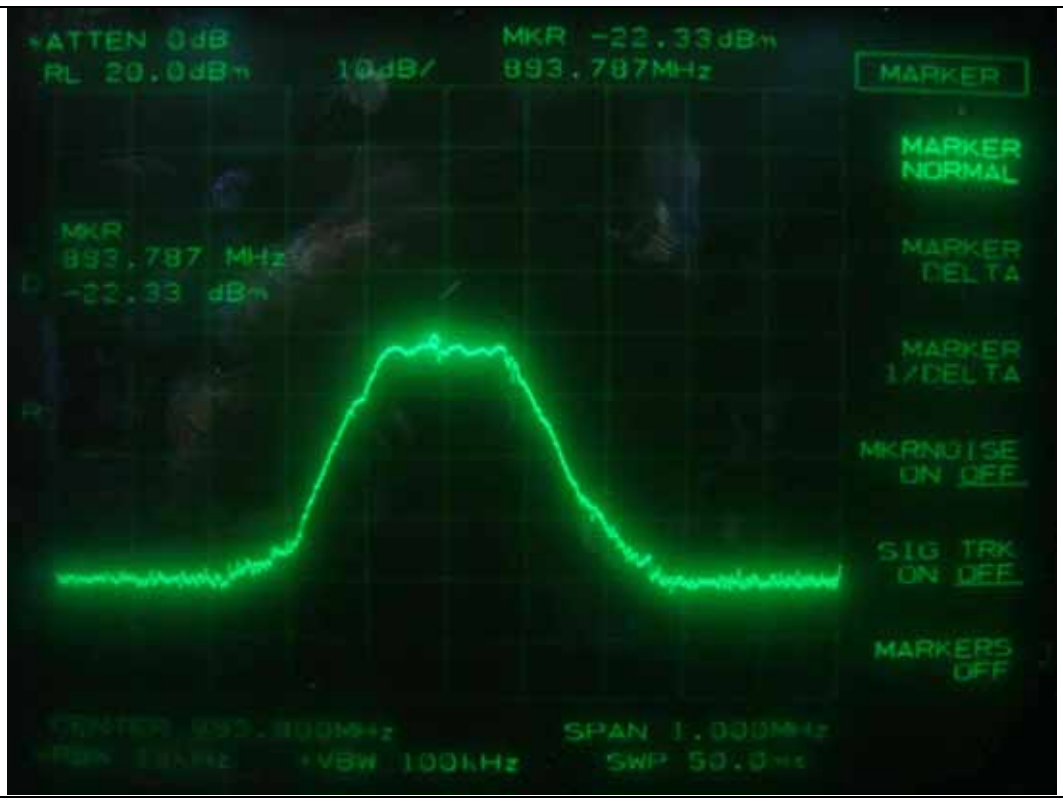

GSM – Input (High Channel)

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)
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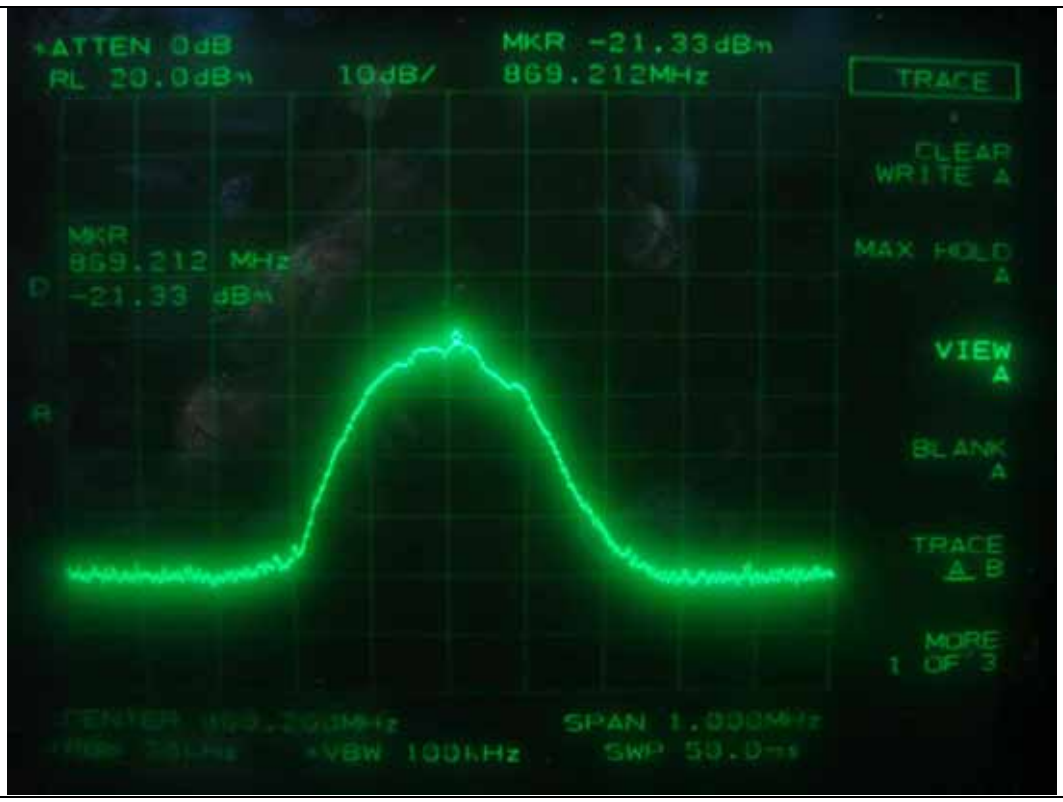
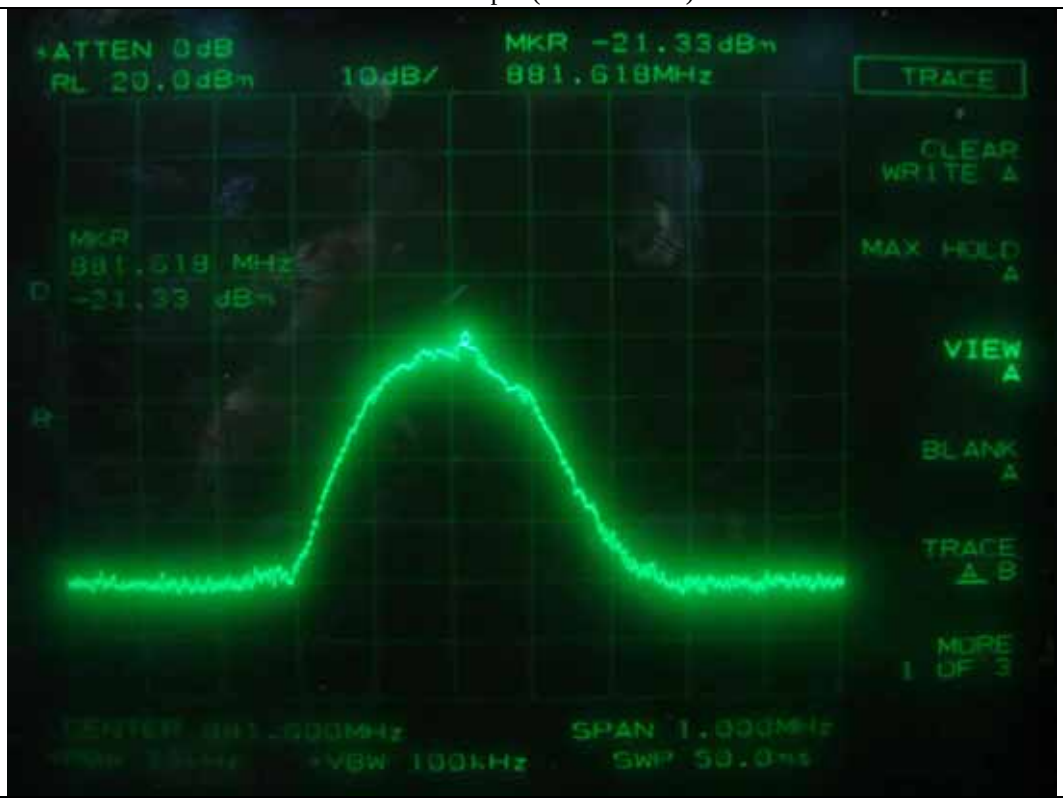


EDGE – Input (Low Channel)



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)

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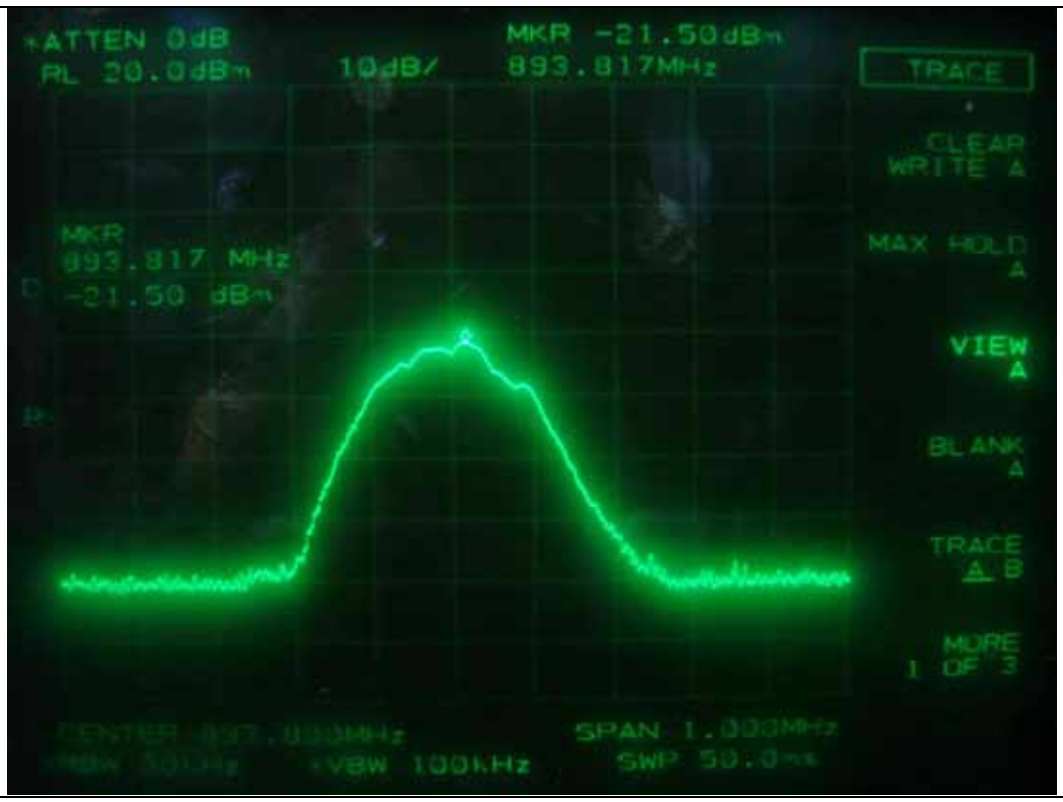
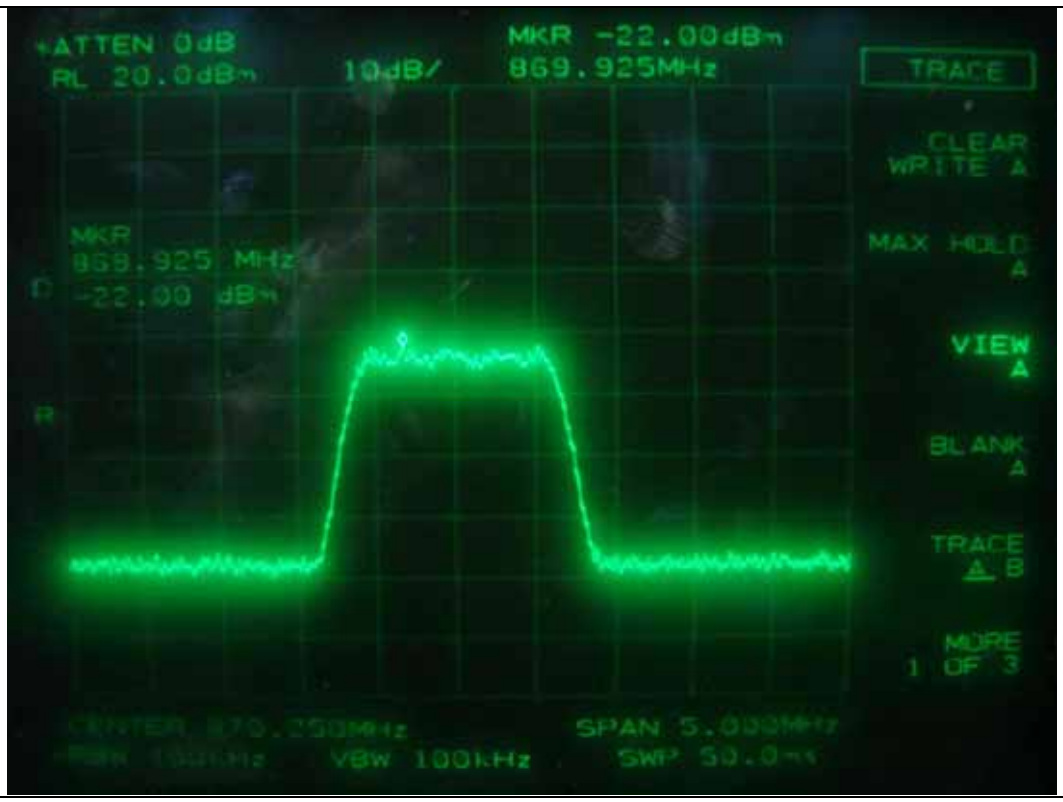
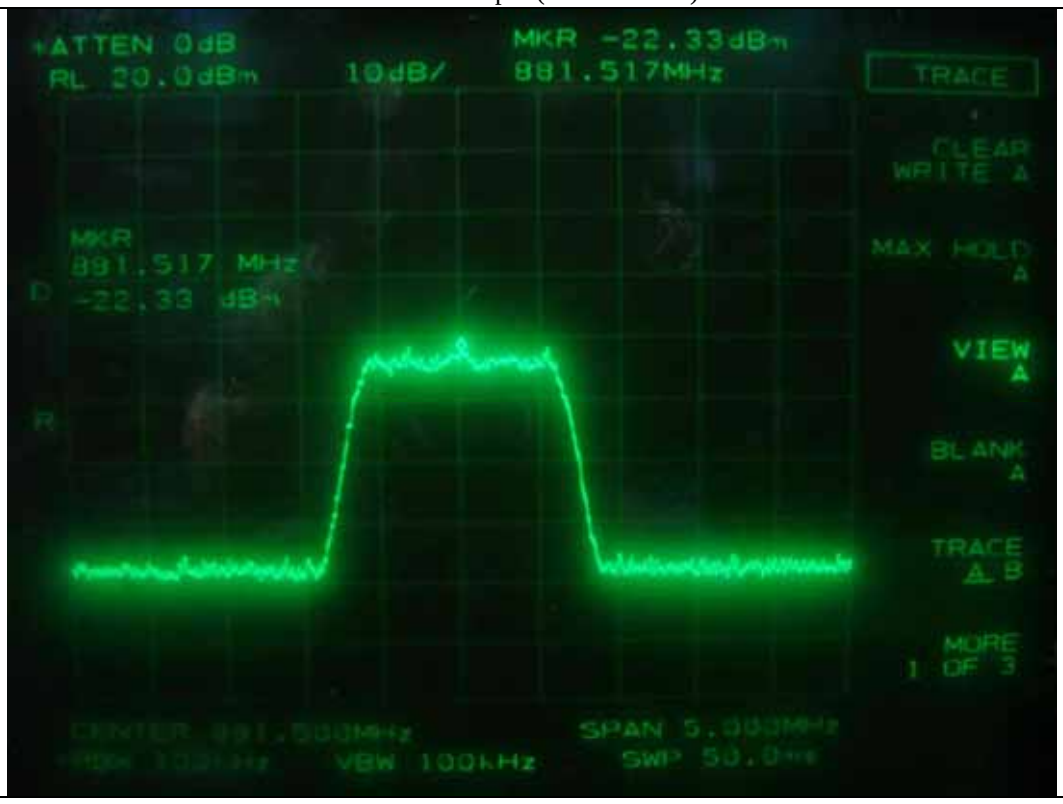


EDGE – Input (High Channel)

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)

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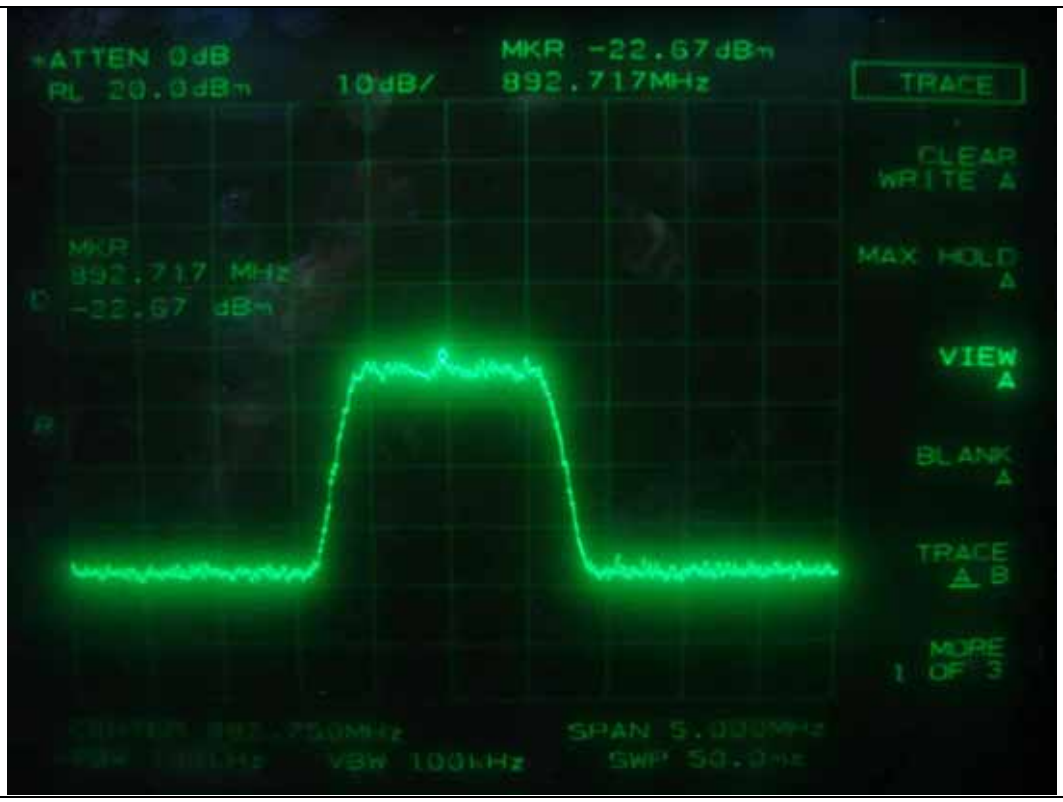

CDMA – Input (High Channel)

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)

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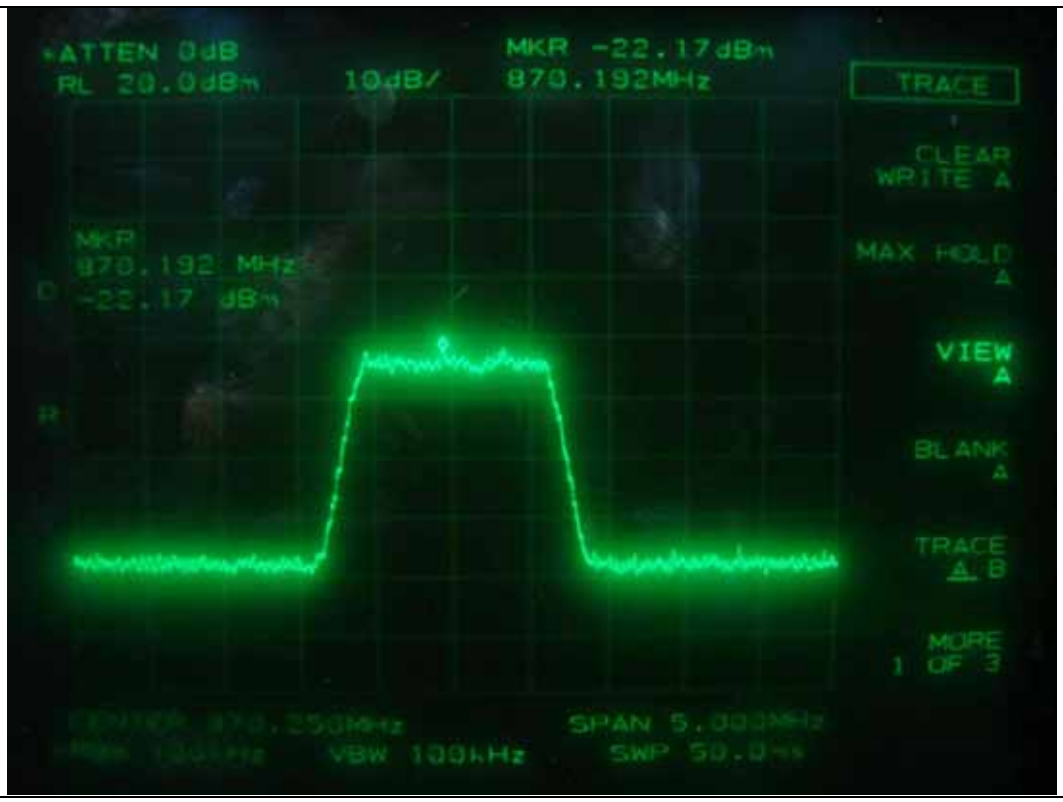
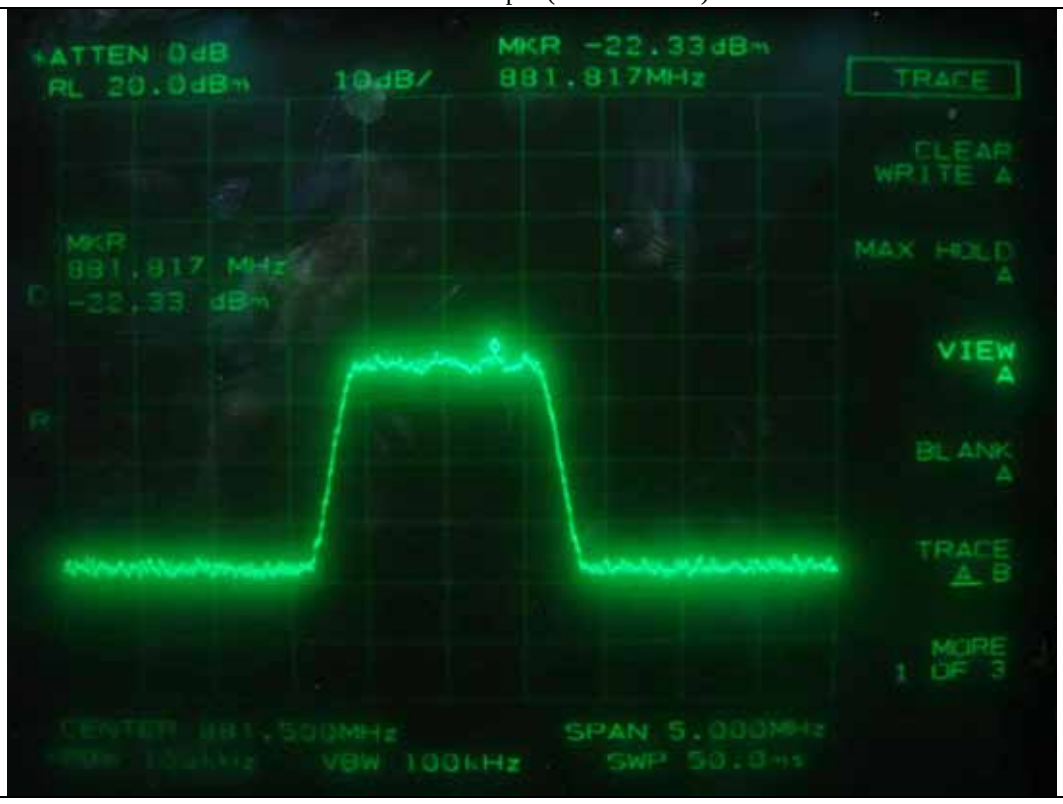


1xEVDO – Input (Low Channel)



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)
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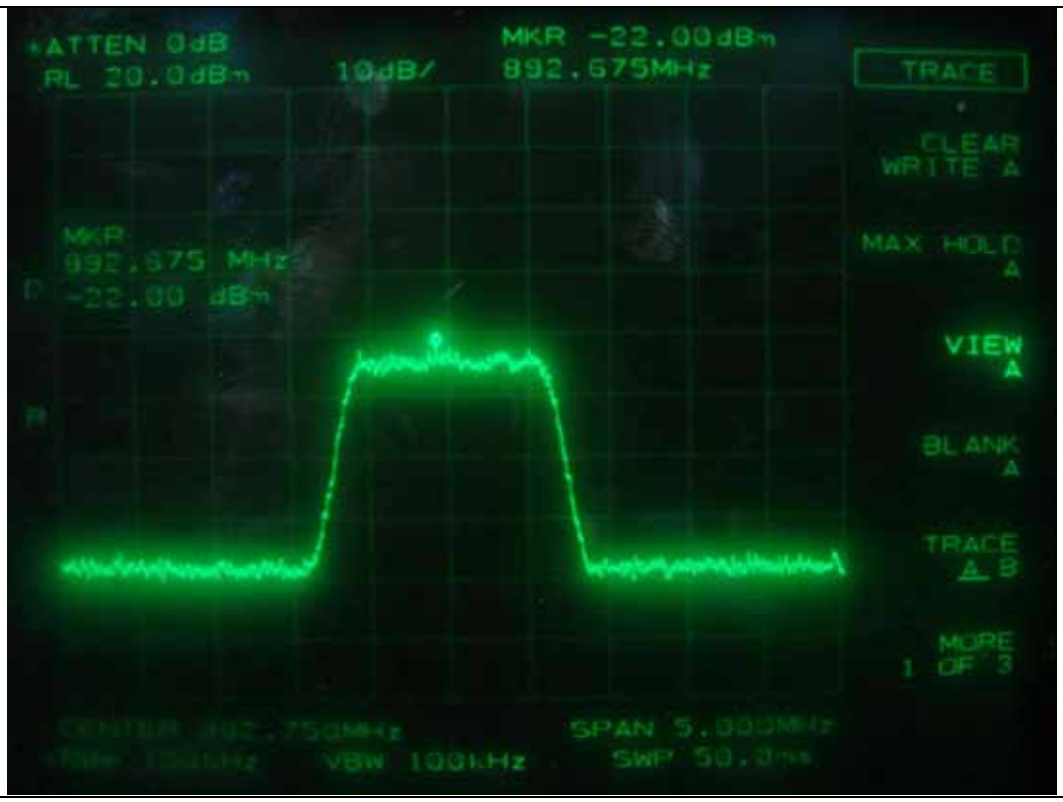
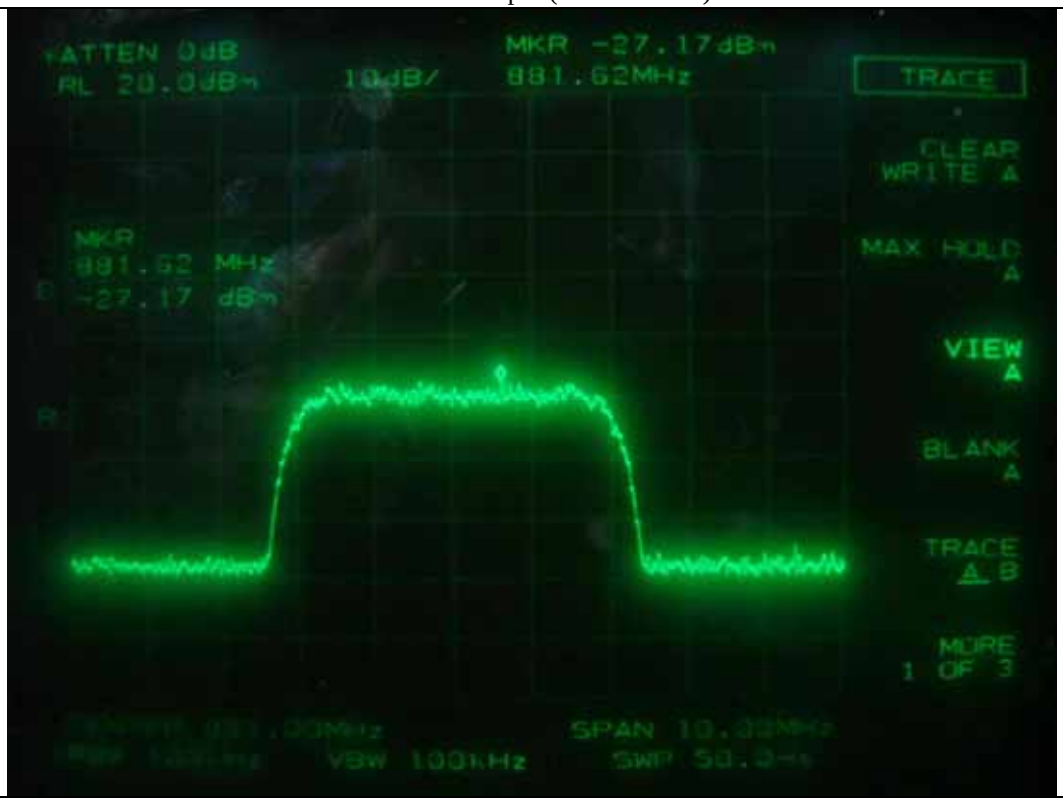


1xEVDO – Input (High Channel)

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)
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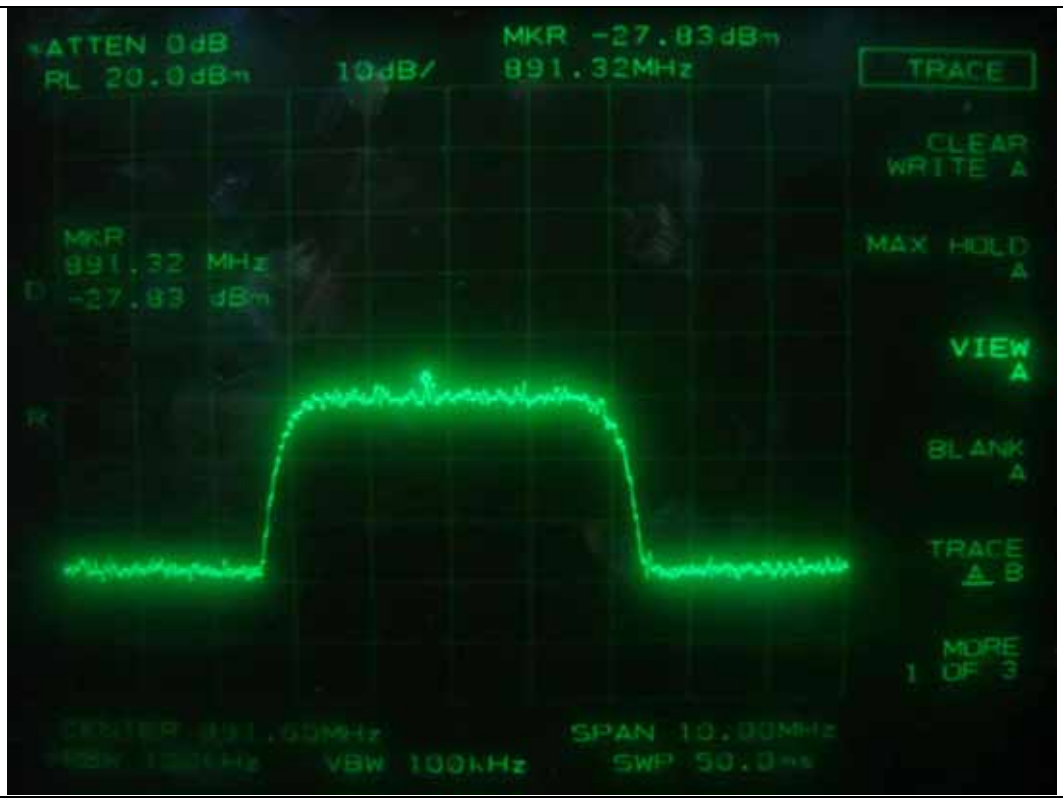


WCDMA – Input (High Channel)

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)

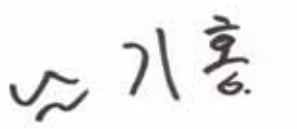
6.4.2 Test Result for Part 90 I

-. Test Date : February 27 ~ March 02, 2009

-. Test Result : Pass

Modulation	Channel	26 dB Bandwidth (kHz)	99 % Occupied Bandwidth (kHz)
iDEN	Low	21.17	18.33
	Middle	21.17	18.25
	High	21.08	18.42
SMR	Low	14.67	12.50
	Middle	14.67	12.50
	High	14.67	12.50

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)
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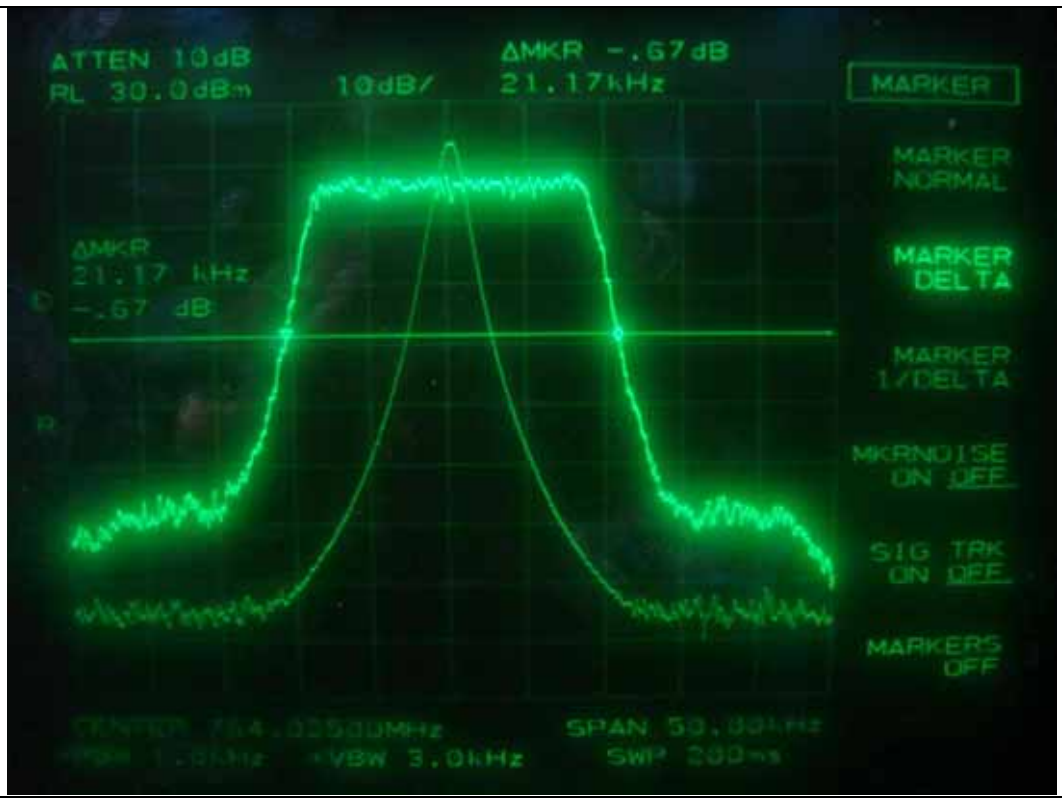
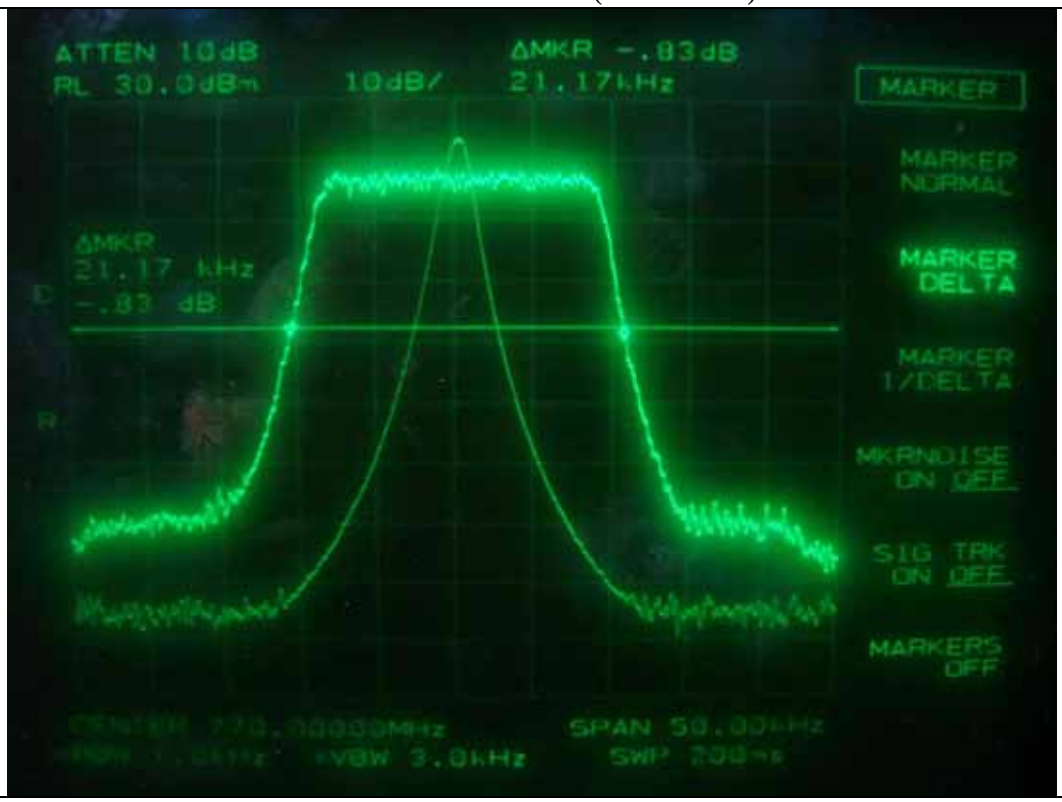
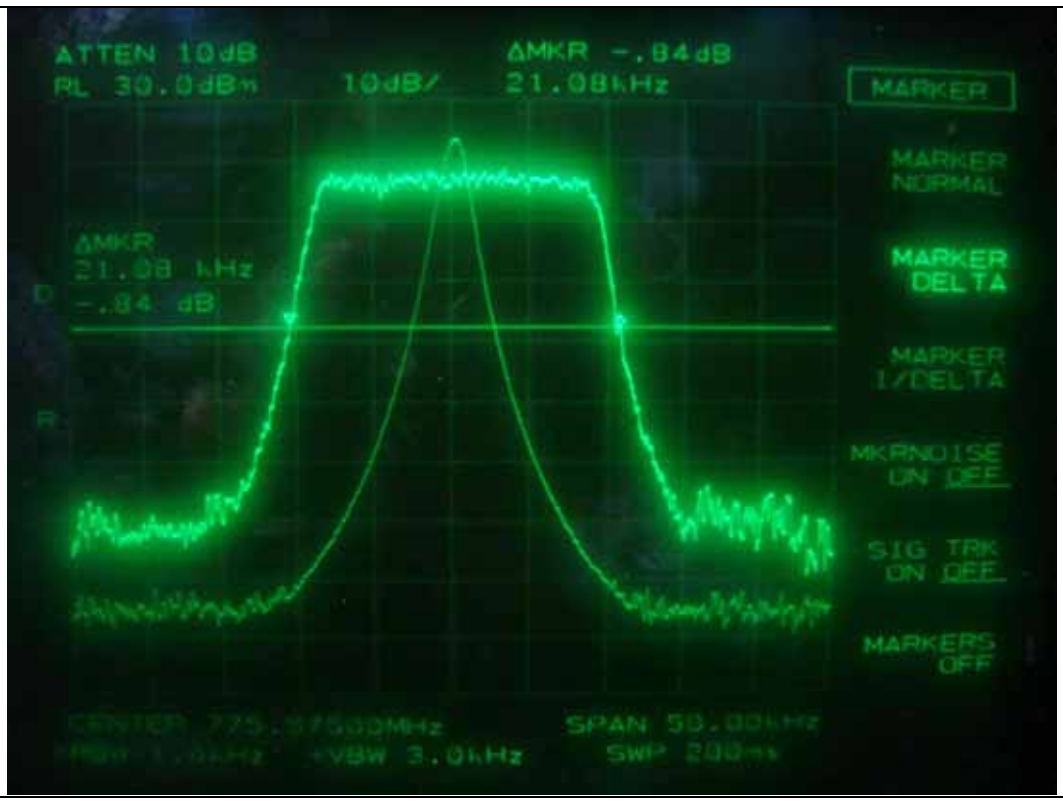


iDEN – 26 dB Bandwidth (Low Channel)



iDEN – 26 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)



iDEN – 26 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)
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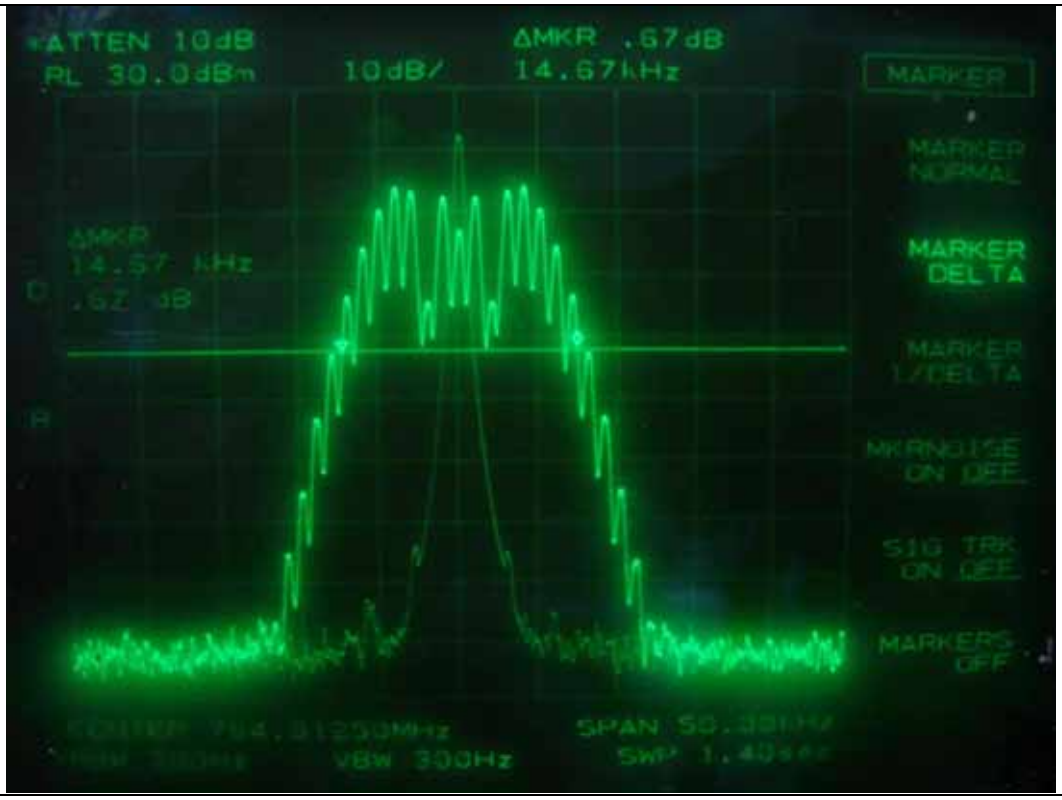
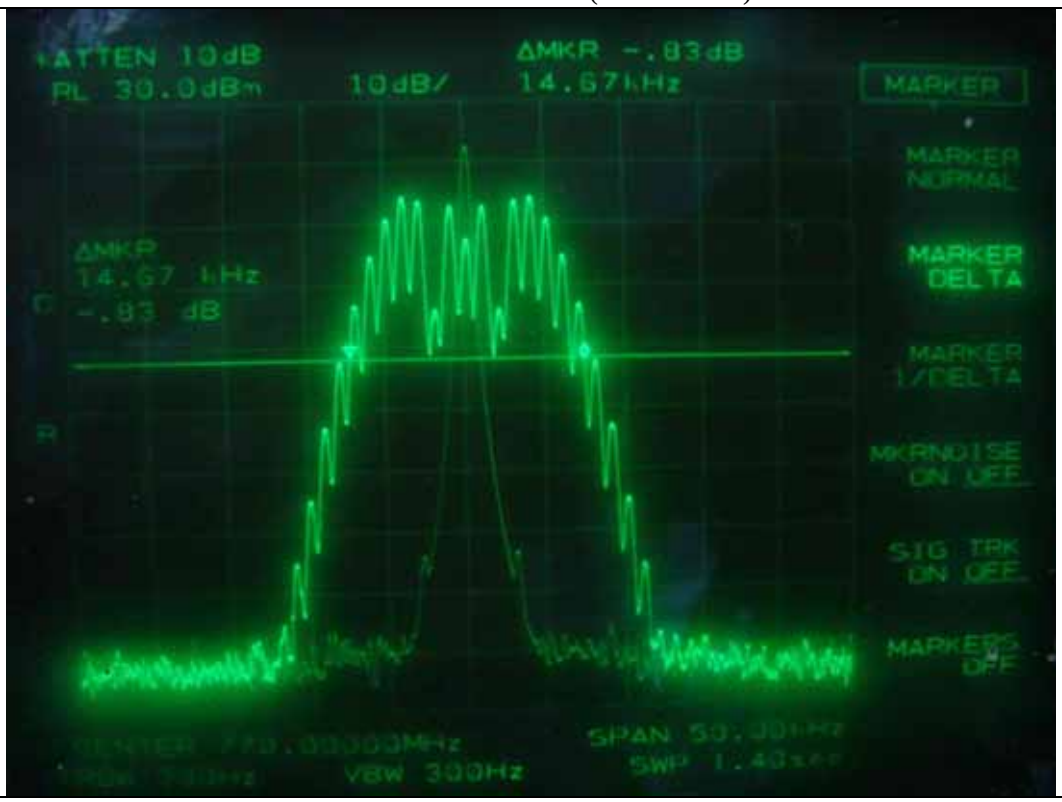


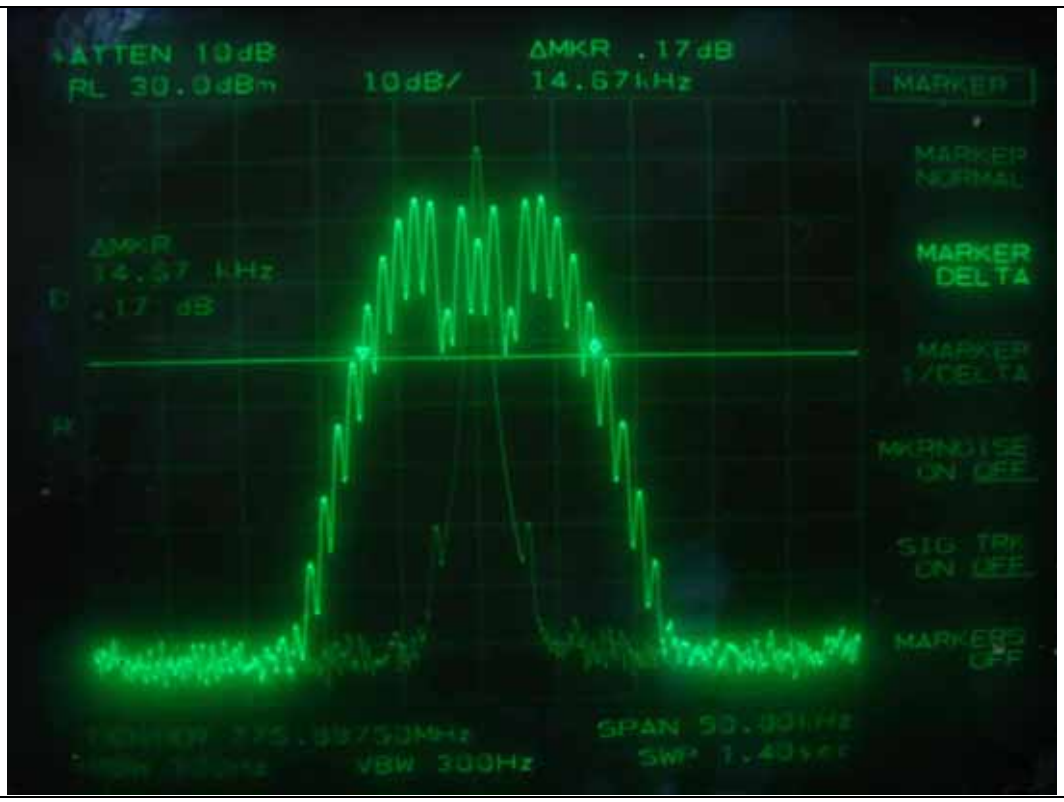
SMR – 26 dB Bandwidth (Low Channel)



SMR – 26 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)



SMR – 26 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)

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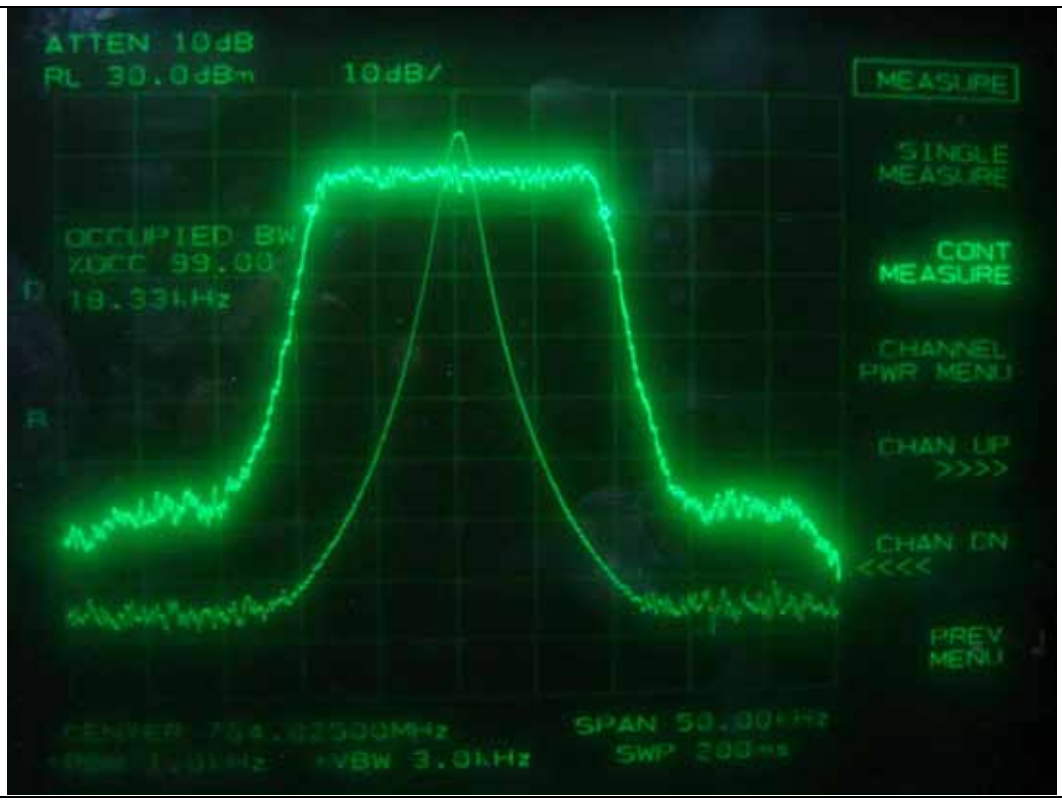
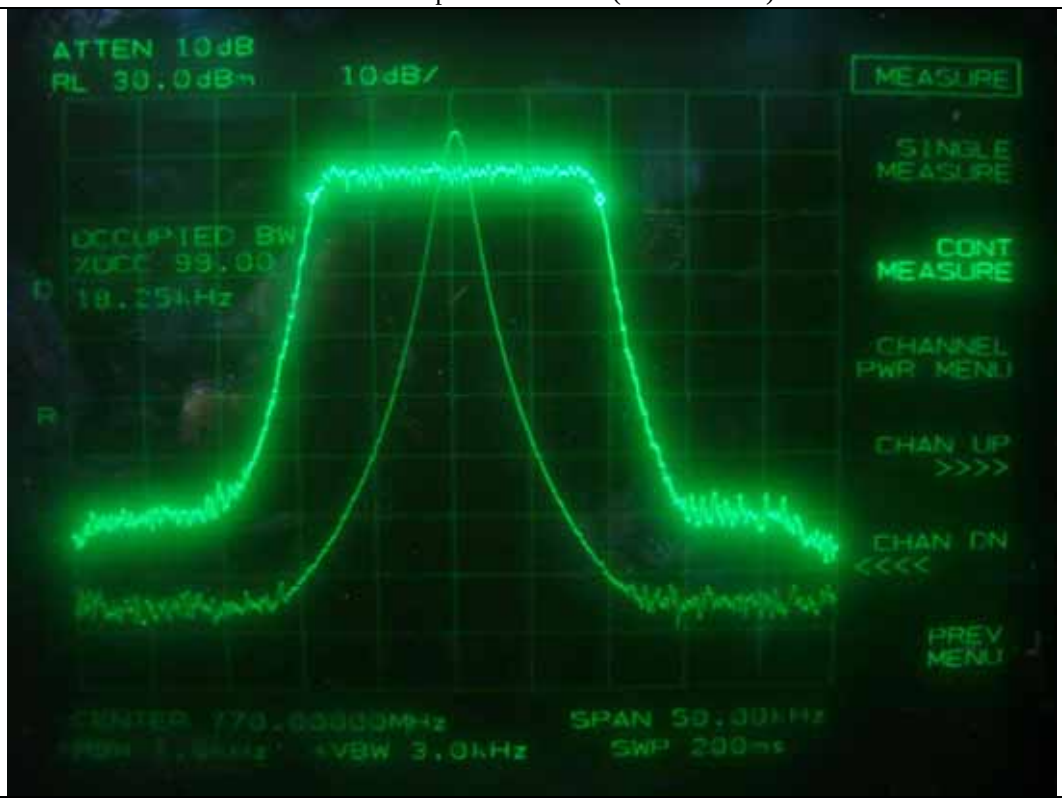


iDEN – Occupied Bandwidth (Low Channel)



iDEN – 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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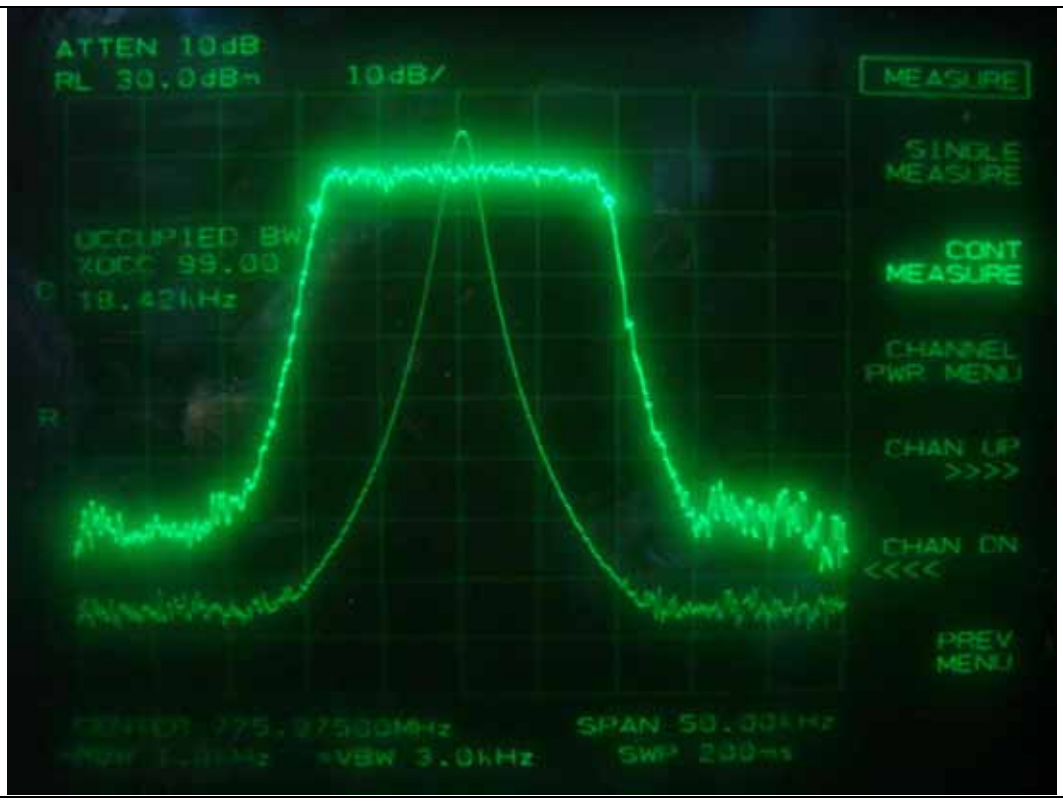

iDEN – Occupied Bandwidth (High Channel)

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)
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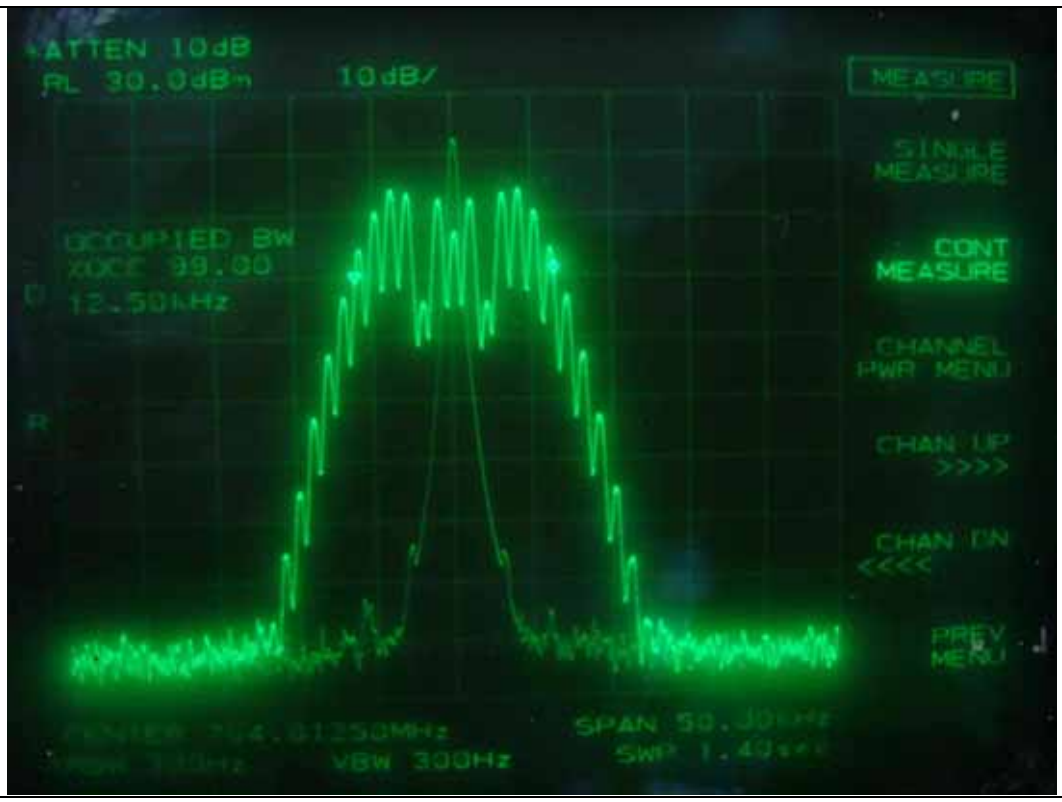
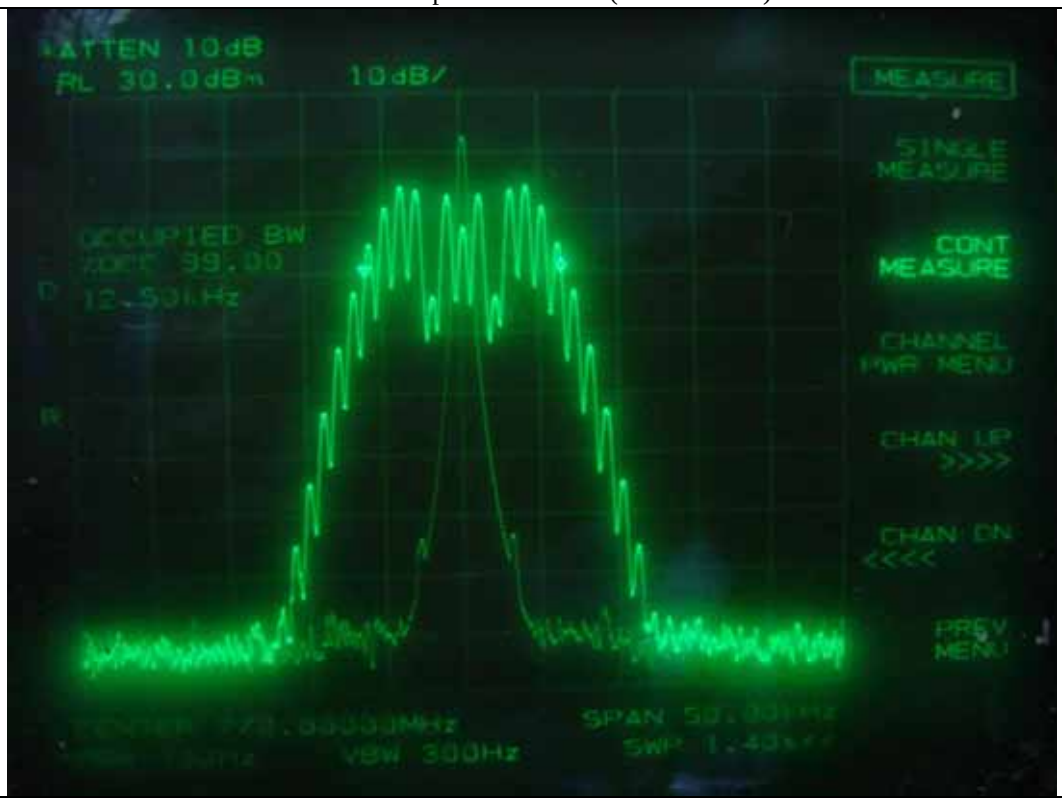


SMR – Occupied Bandwidth (Low Channel)



SMR – 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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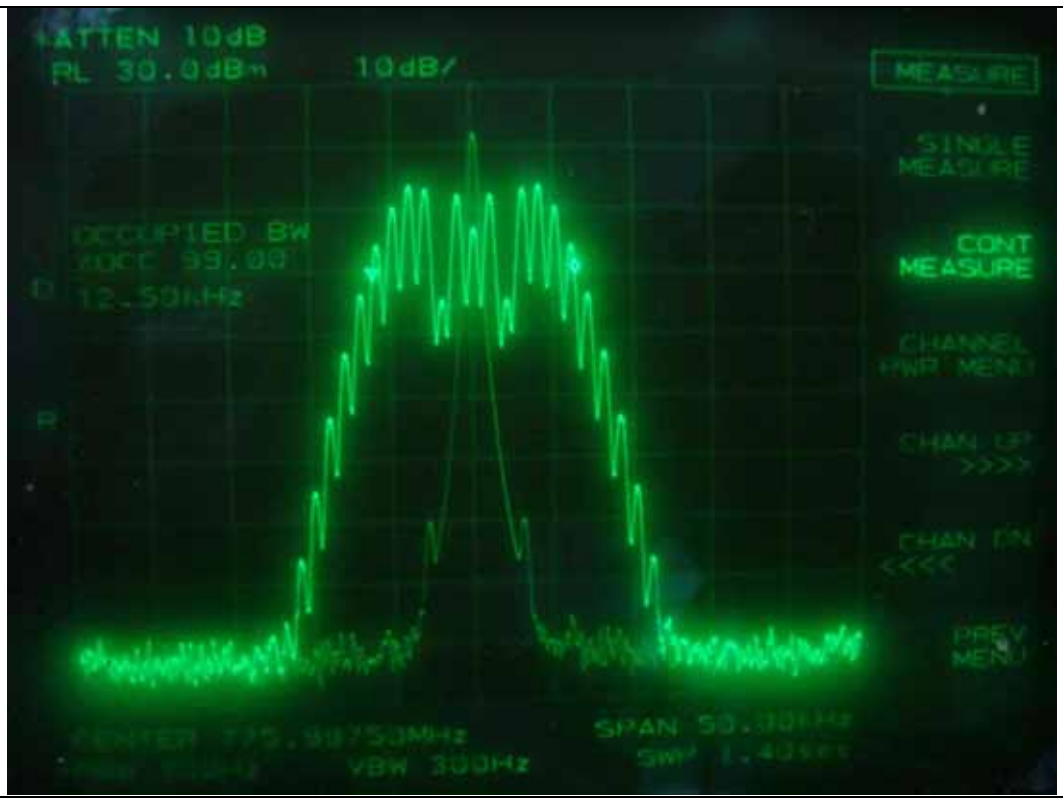

SMR – Occupied Bandwidth (High Channel)

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)
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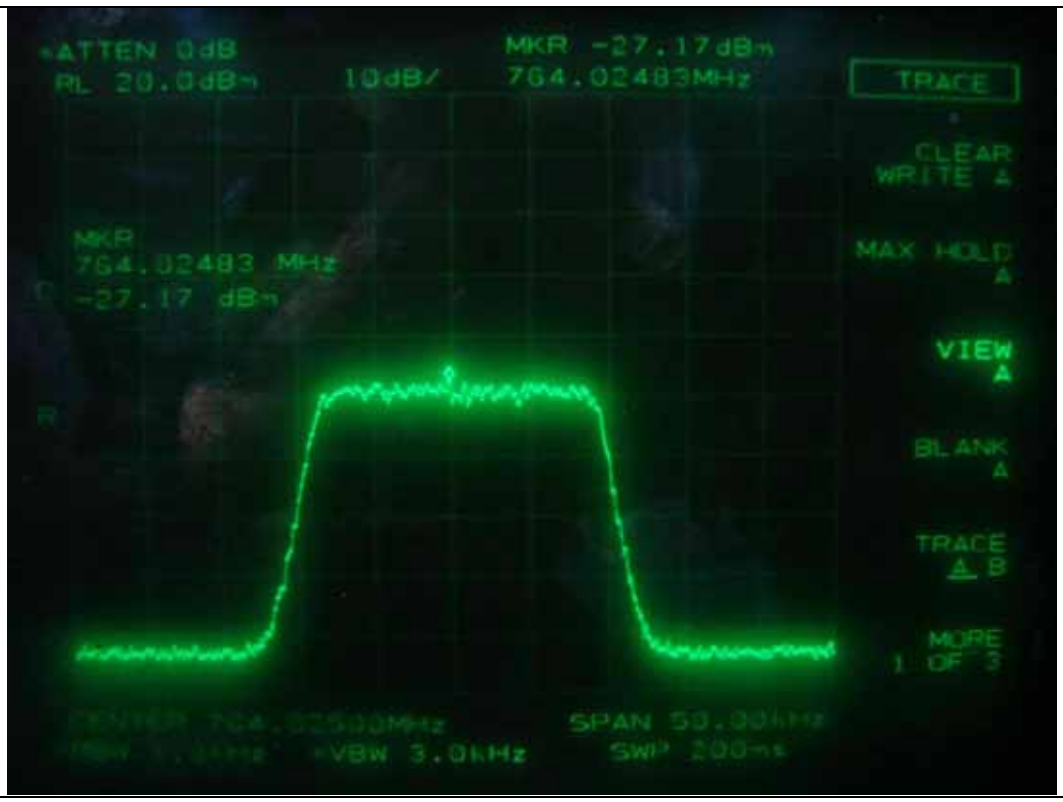
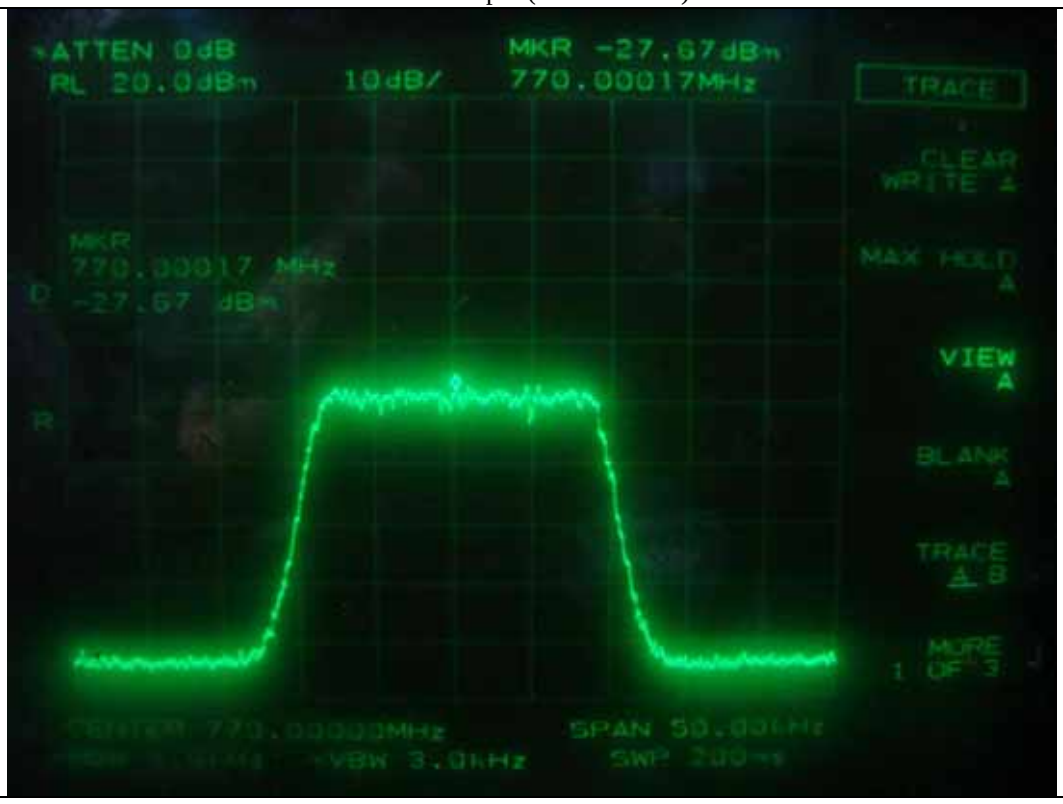


iDEN – Input (Low Channel)



iDEN – 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)

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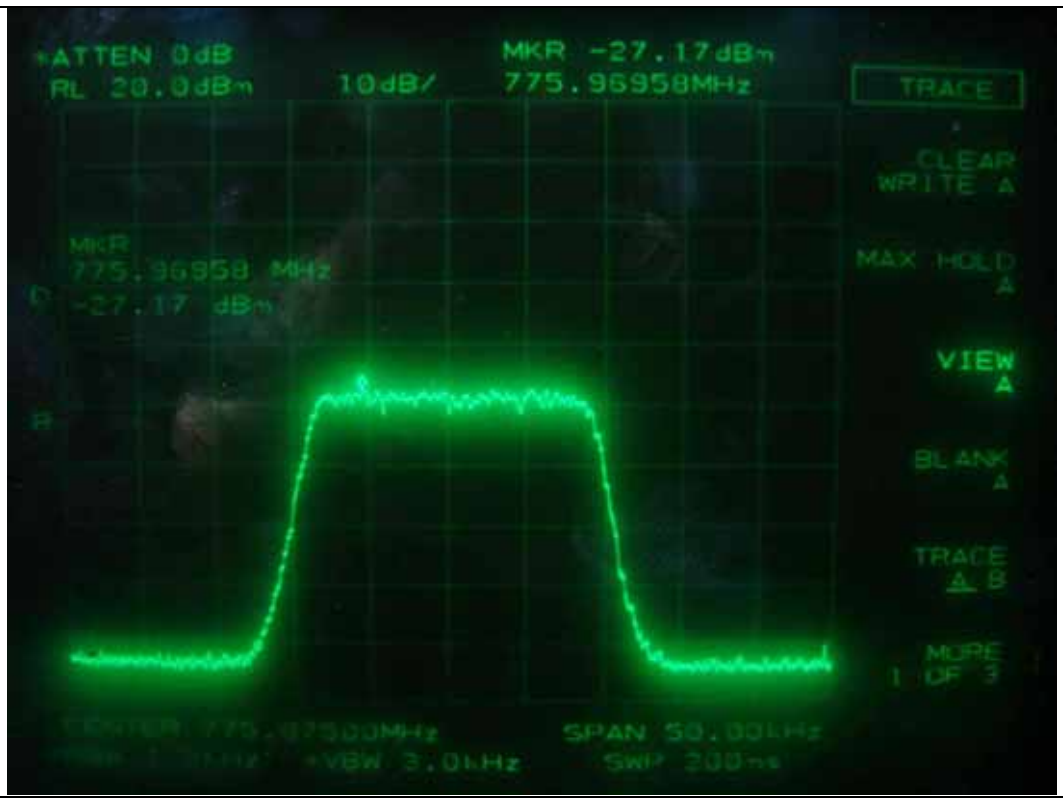

iDEN – Input (High Channel)

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)
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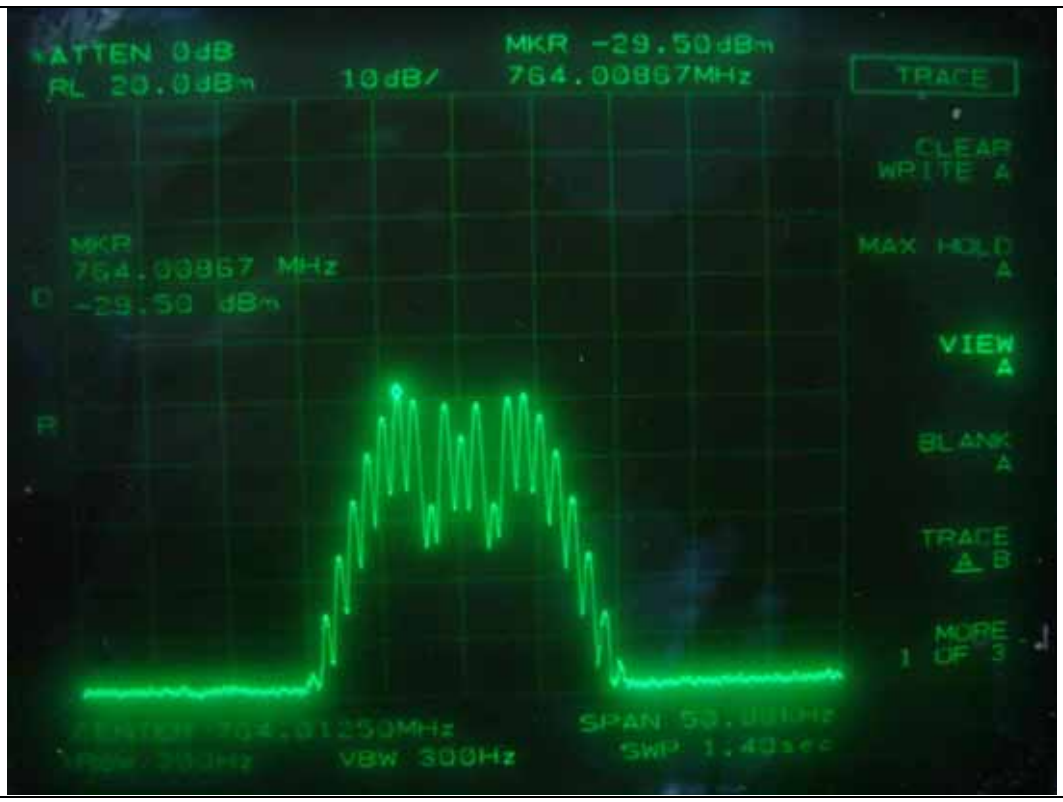

SMR – Input (Low Channel)

SMR – 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)

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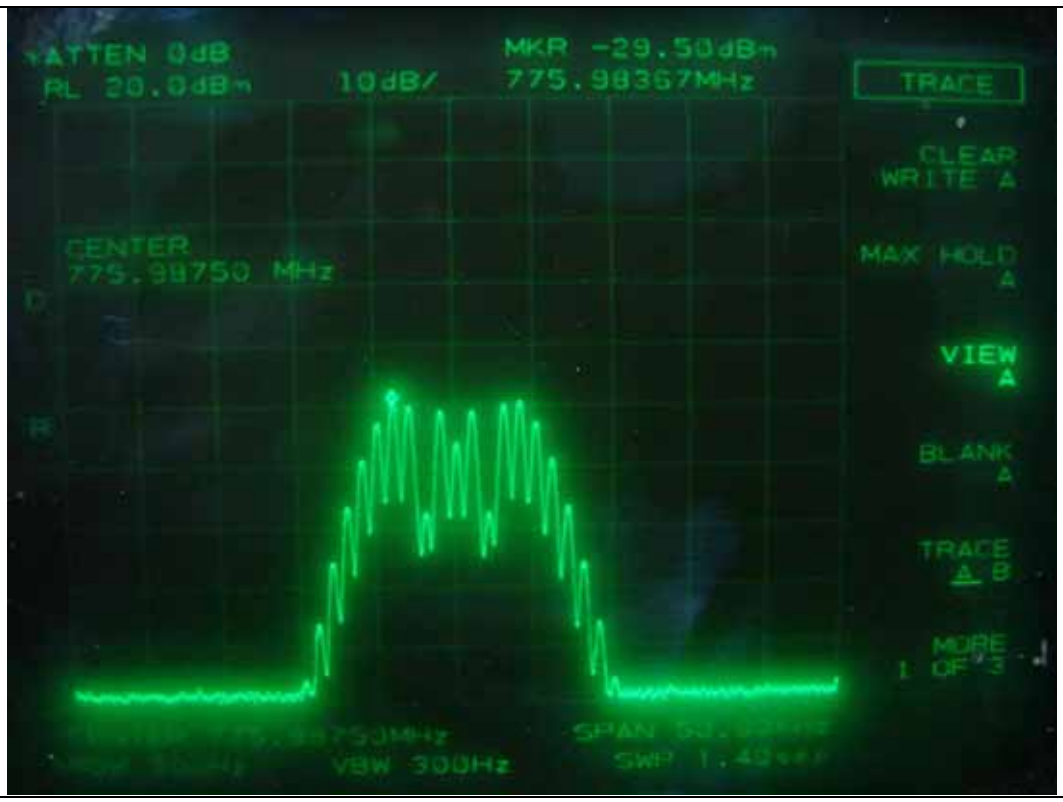

SMR – Input (High Channel)

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)

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7. SPURIOUS EMISSION AT ANTENNA TERMINAL

7.1 Operating environment

Temperature : 22 °C

Relative humidity : 47.6 %R.H.

7.2 Test set-up for conducted measurement

The RF signal from the signal generator(s) was injected to BIU (BTS Interface Unit) and then output signal from the BIU was injected to the input of ODU (Optic Distribution Unit) by coaxial cable and then the output port of the ODU was connected to the input of the EUT by optic cable. The amplified RF signal at the output of the EUT was connected to the 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.

Signal Generator		BIU		ODU	Optic	EUT		Attenuator		Spectrum Analyzer

7.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	8564E	HP	Spectrum Analyzer	3650A00756	June 16, 2008
■ -	E4432B	HP	Signal Generator	US38440950	June 16, 2008
■ -	SMJ100A	R/S	Vecter Signal Generator	100698	June 16, 2008
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 11, 2008

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 : February 27 ~ March 02, 2009

-. Frequency range : 30 MHz ~ 20 GHz

-. Result : PASSED BY –11.49 dB at middle channel of TDMA Mode

Modulation	Harmonic Frequency (MHz)		Measured Value (dBm)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
TDMA	Low	776.90	-40.17	0.50	-39.67	-13.00	-26.67
		2 110.00	-26.50	0.84	-25.66		-12.66
	Middle	772.10	-39.00	0.50	-38.50		-25.50
		2 060.00	-25.33	0.84	-24.49		-11.49
	High	773.70	-40.17	0.50	-39.67		-26.67
		2 060.00	-26.33	0.84	-25.49		-12.49
GSM	Low	764.00	-39.00	0.50	-38.50	-13.00	-25.50
		2 110.00	-28.33	0.84	-27.49		-14.49
	Middle	762.40	-39.67	0.50	-39.17		-26.17
		2 110.00	-28.17	0.84	-27.33		-14.33
	High	768.80	-38.50	0.50	-38.00		-25.00
		2 110.00	-29.00	0.84	-28.16		-15.16
EDGE	Low	773.70	-29.33	0.50	-28.83	-13.00	-15.83
		2 110.00	-29.33	0.84	-28.49		-15.49
	Middle	773.70	-39.67	0.50	-39.17		-26.17
		2 110.00	-29.67	0.84	-28.83		-15.83
	High	767.20	-38.83	0.50	-38.33		-25.33
		2 110.00	-28.33	0.84	-27.49		-14.49
CDMA	Low	768.80	-39.00	0.50	-38.50	-13.00	-25.50
		2 110.00	-28.83	0.84	-27.99		-14.99
	Middle	764.00	-39.00	0.50	-38.50		-25.50
		2 110.00	-28.17	0.84	-27.33		-14.33
	High	765.60	-38.83	0.50	-38.33		-25.33
		2 110.00	-29.00	0.84	-28.16		-15.16

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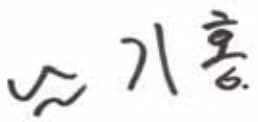
Modulation	Harmonic Frequency (MHz)		Measured Value (dBm)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
1xEVDO	Low	768.80	-39.50	0.50	-39.00	-13.00	-26.00
		2 110.00	-29.17	0.84	-28.33		-15.33
	Middle	775.30	-39.00	0.50	-38.50		-25.50
		2 110.00	-29.67	0.84	-28.83		-15.83
	High	764.00	-39.00	0.50	-38.50		-25.50
		2 060.00	-28.83	0.84	-27.99		-14.99
WCDMA	Low	772.10	-39.00	0.50	-38.50	-13.00	-25.50
		2 060.00	-28.50	0.84	-27.66		-14.66
	Middle	767.20	-39.00	0.50	-38.50		-25.50
		2 110.00	-28.83	0.84	-27.99		-14.99
	High	765.60	-39.33	0.50	-38.83		-25.83
		2 110.00	-28.17	0.84	-27.33		-14.33

According to Part 22H & 90I, 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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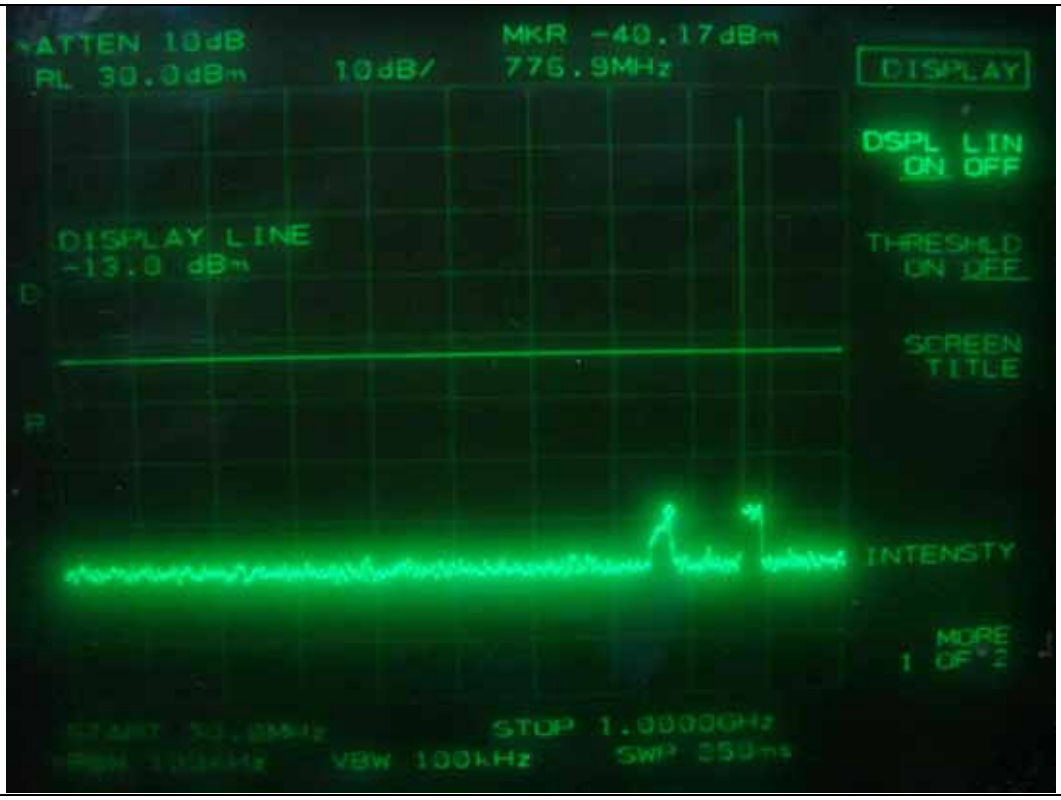
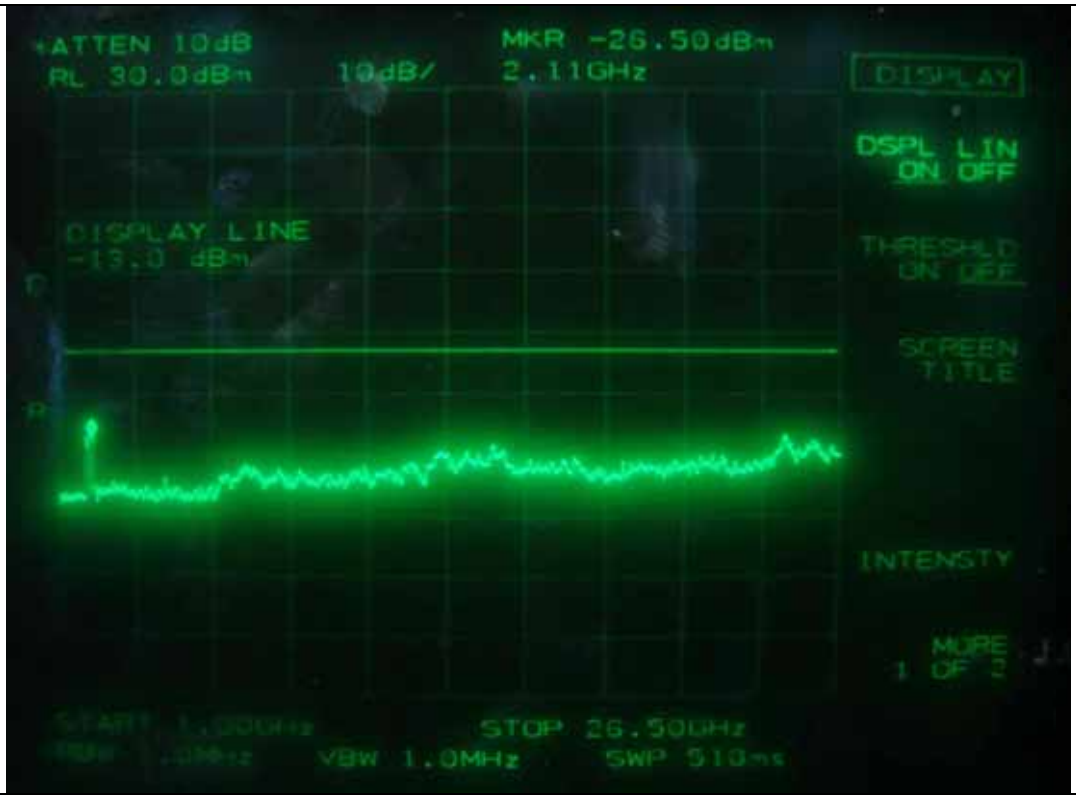


TDMA – Low Channel



TDMA – Low Channel

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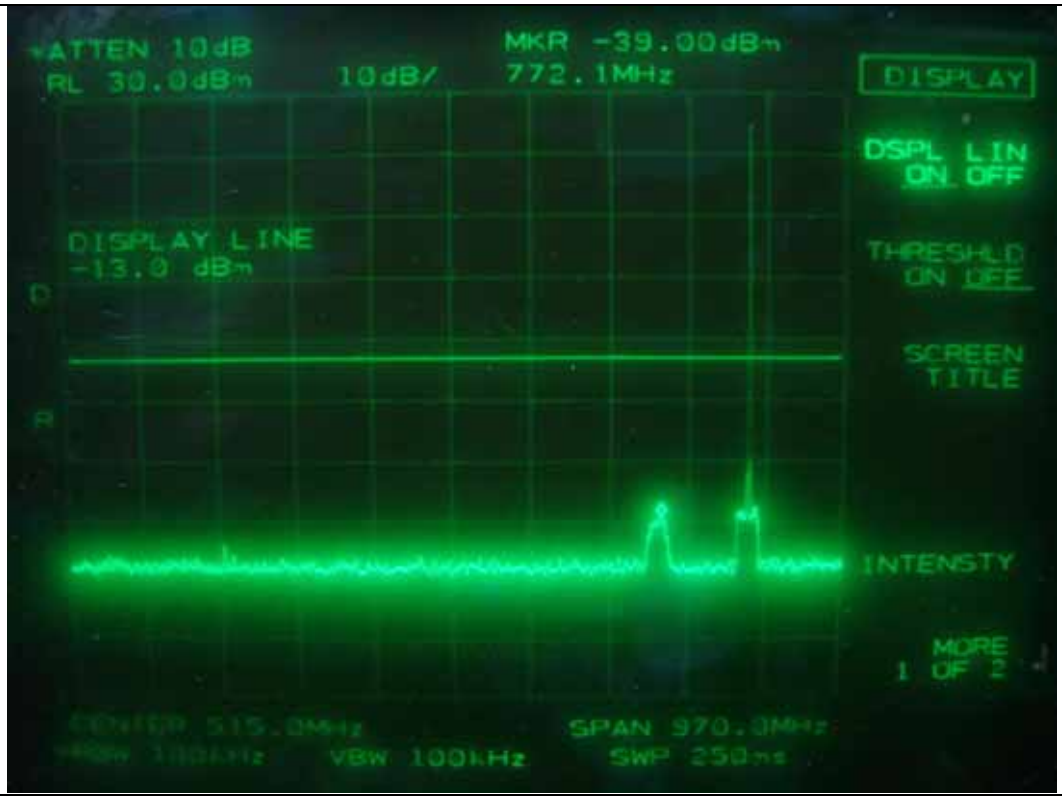

TDMA – Middle Channel

TDMA – Middle Channel

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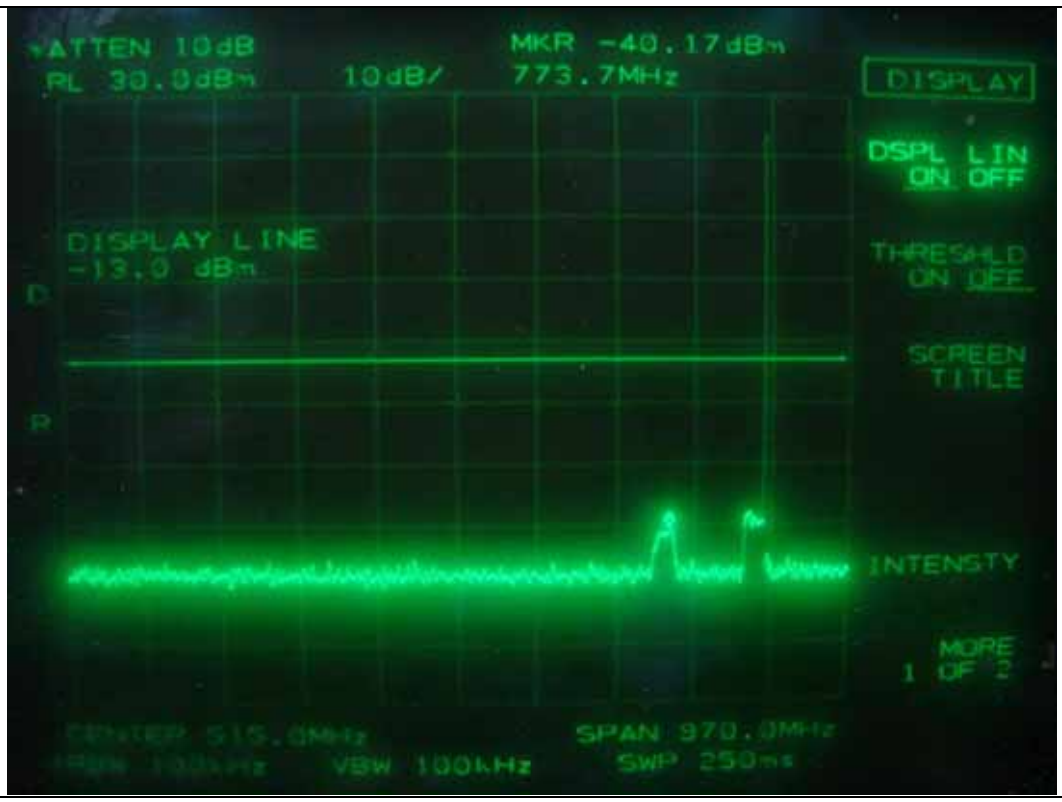
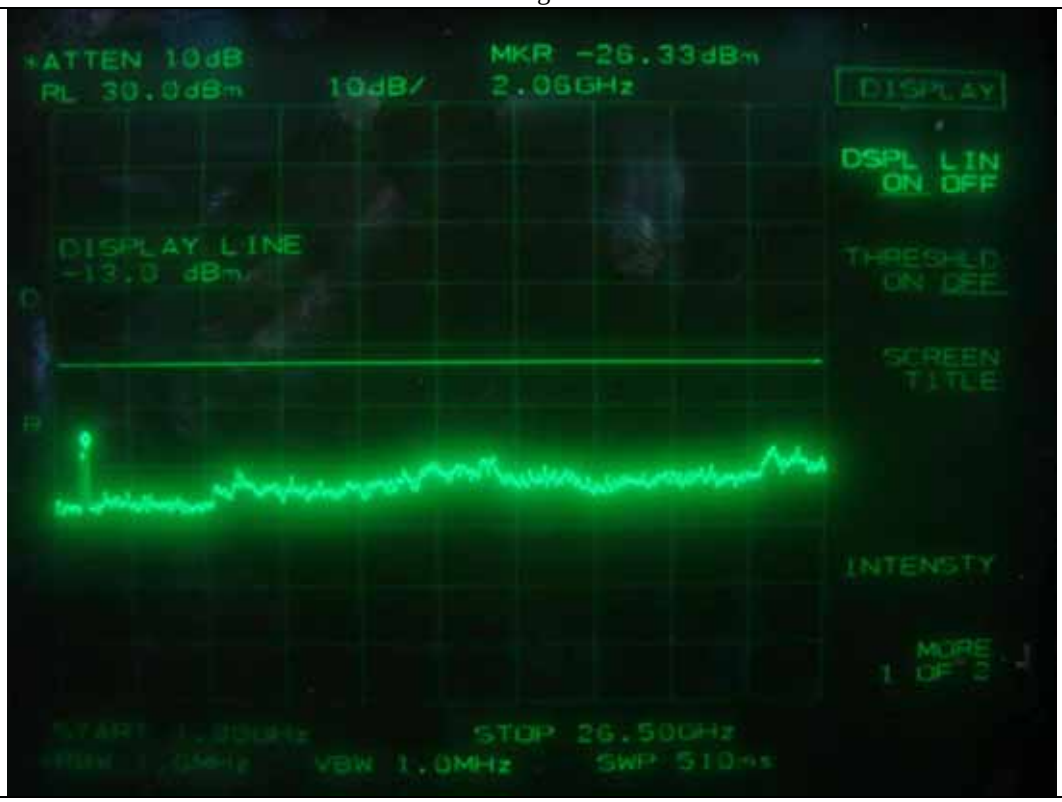


TDMA – High Channel



TDMA – High Channel

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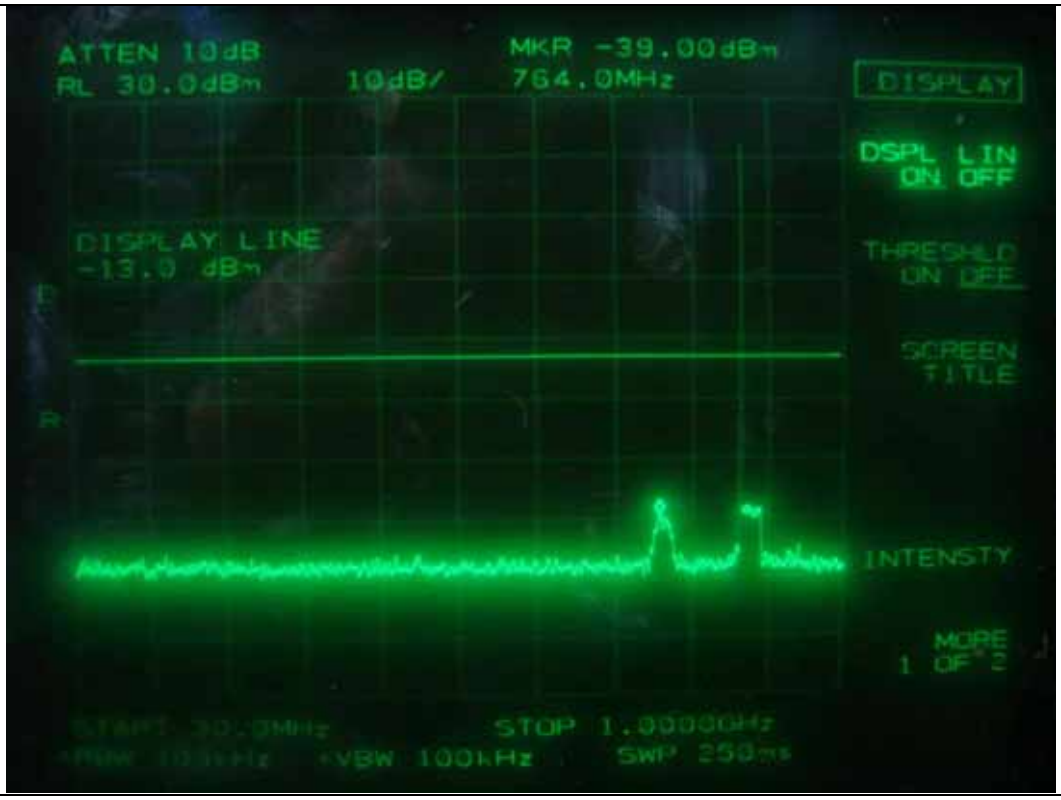
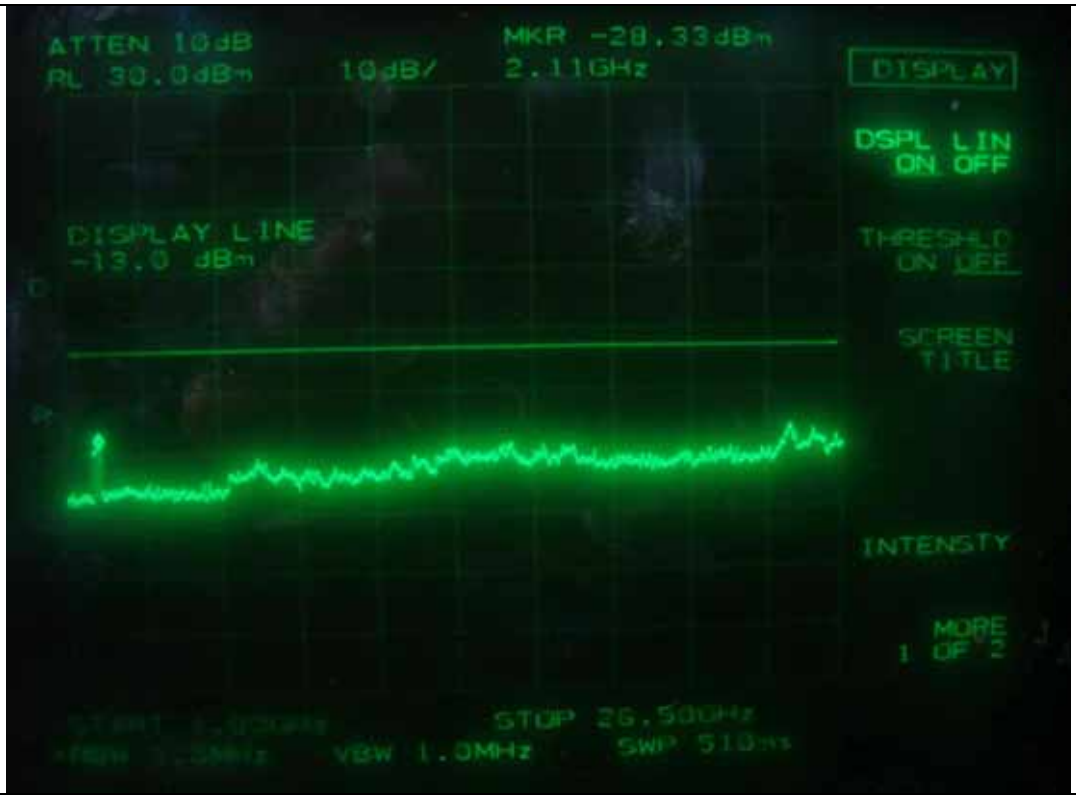


GSM – Low Channel



GSM – Low Channel

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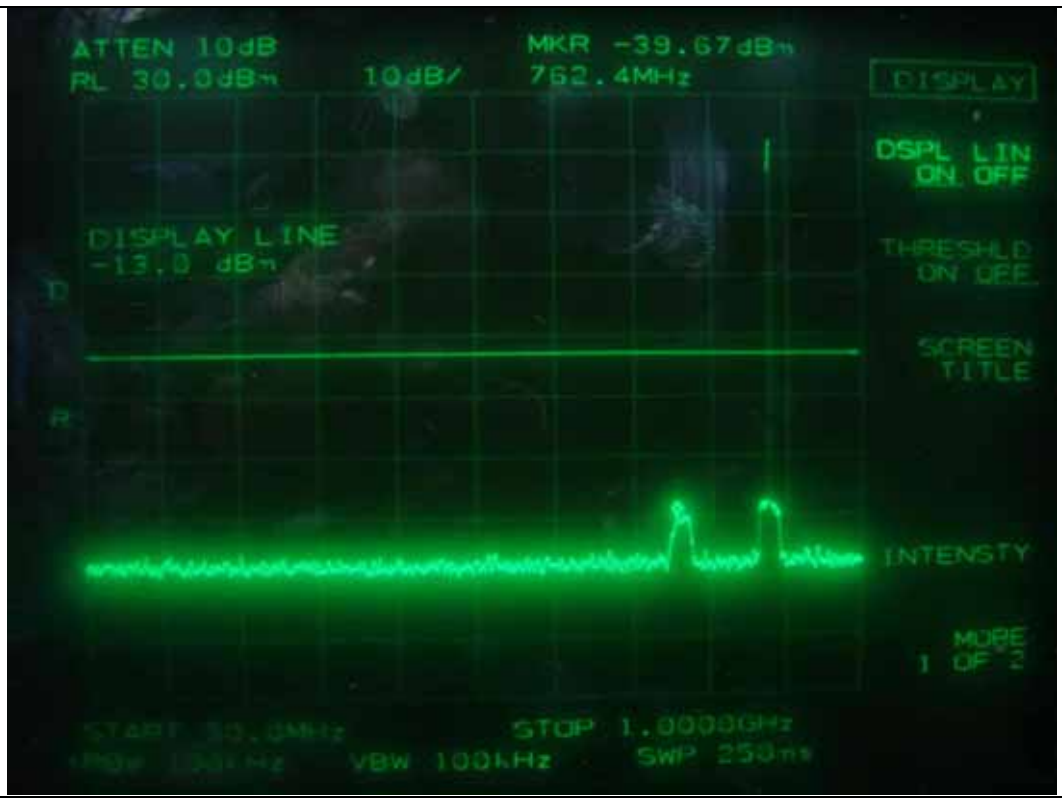
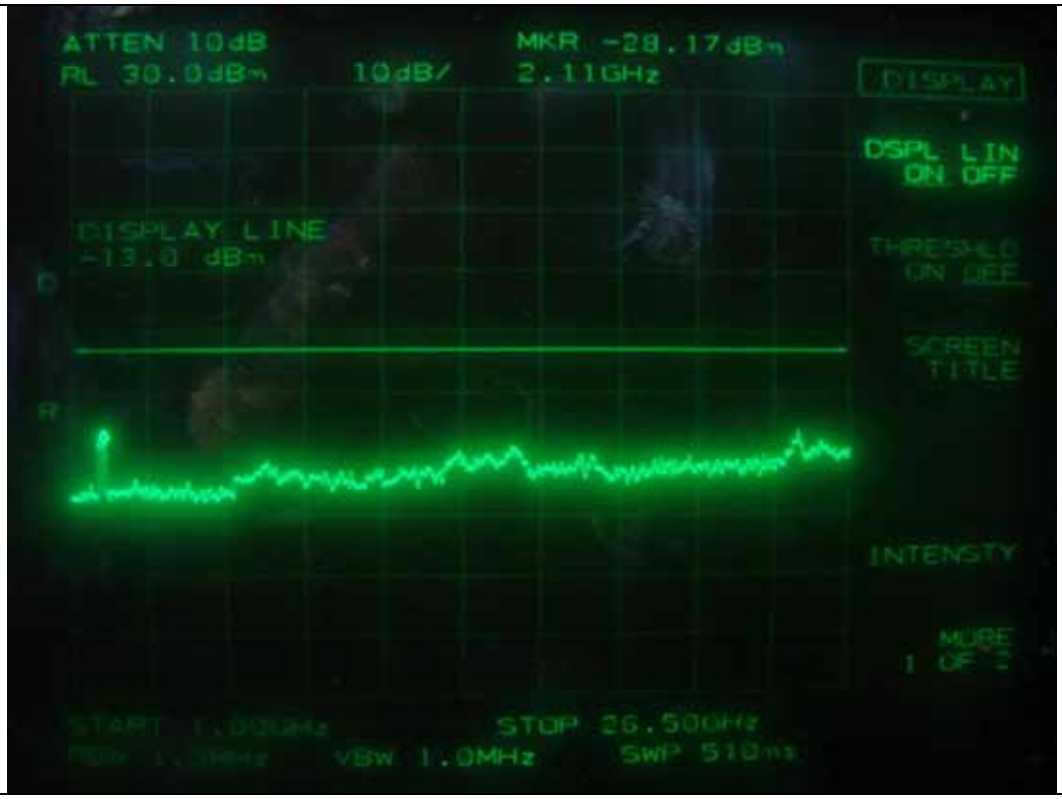


GSM – Middle Channel



GSM – Middle Channel

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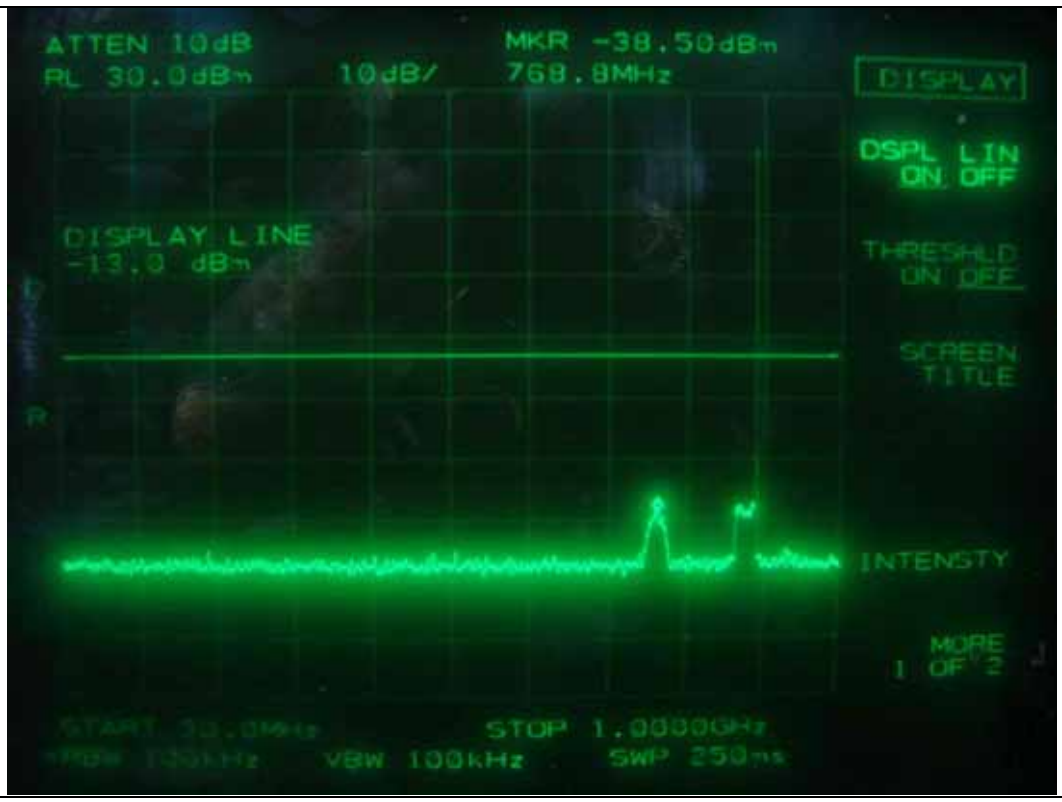
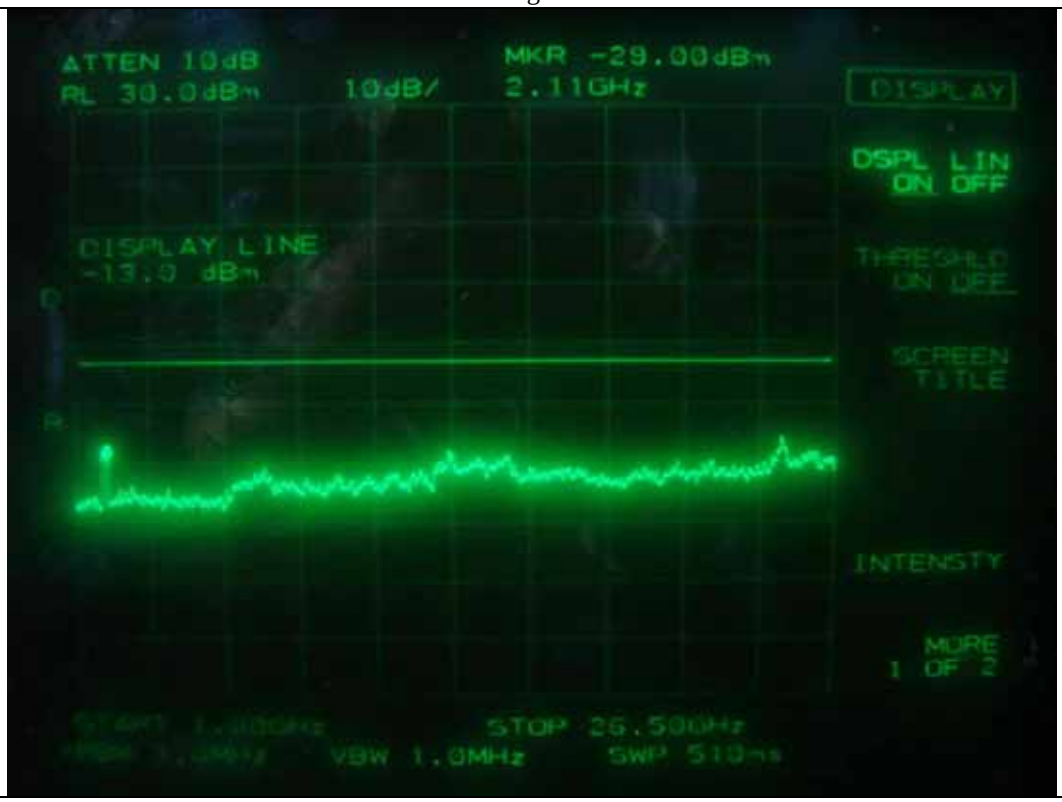


GSM – High Channel



GSM – High Channel

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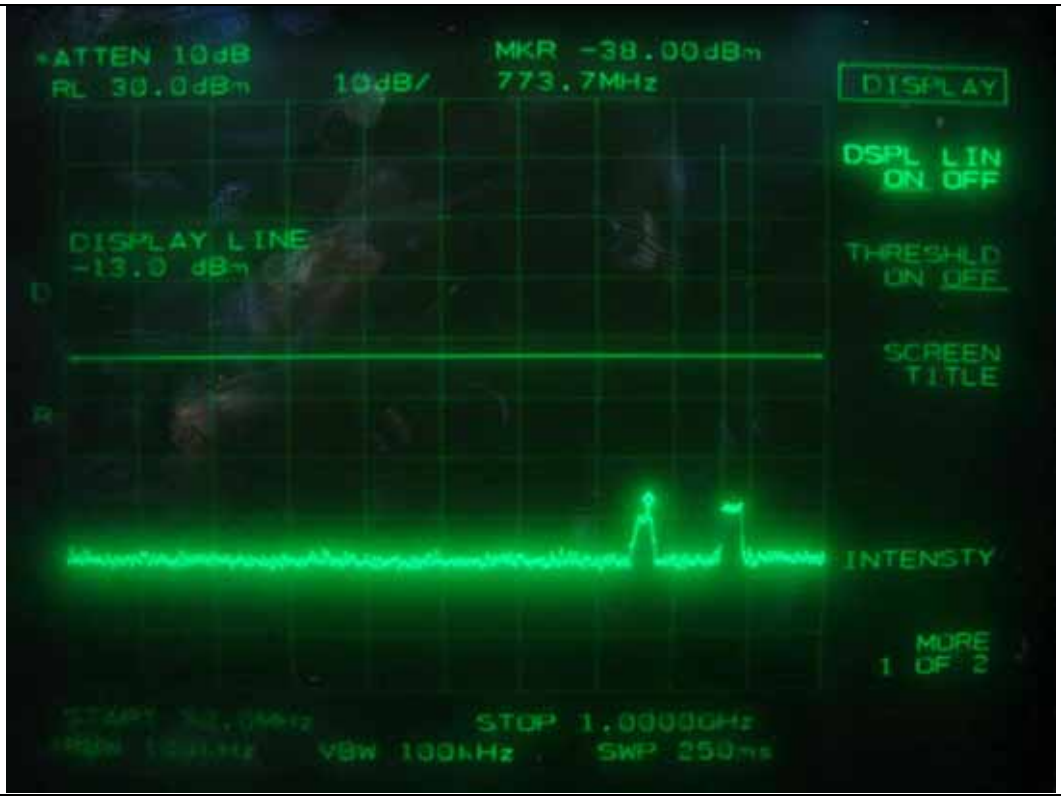
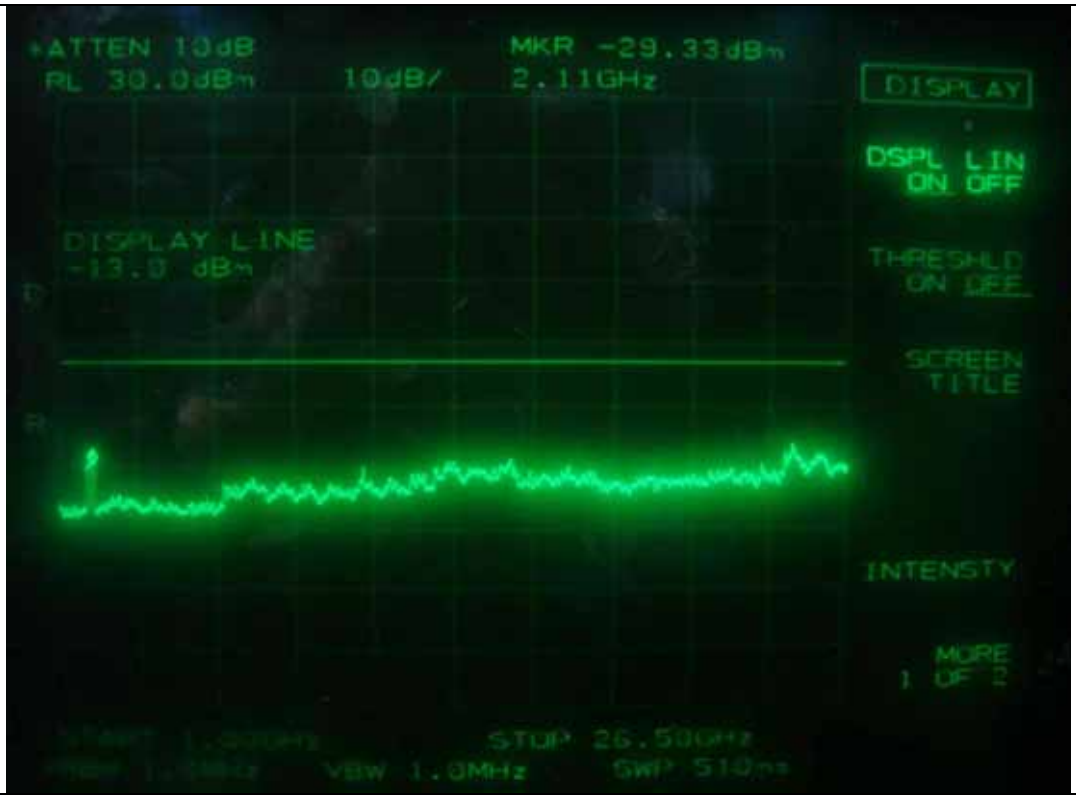


EDGE – Low Channel



EDGE – Low Channel

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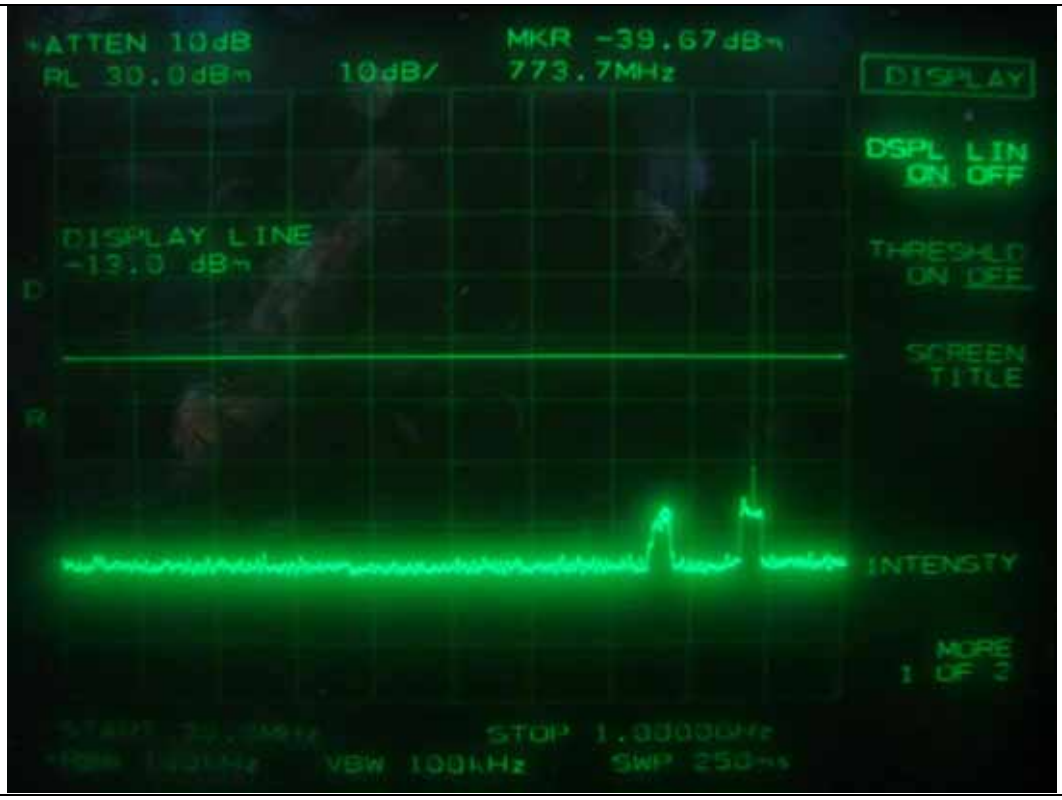
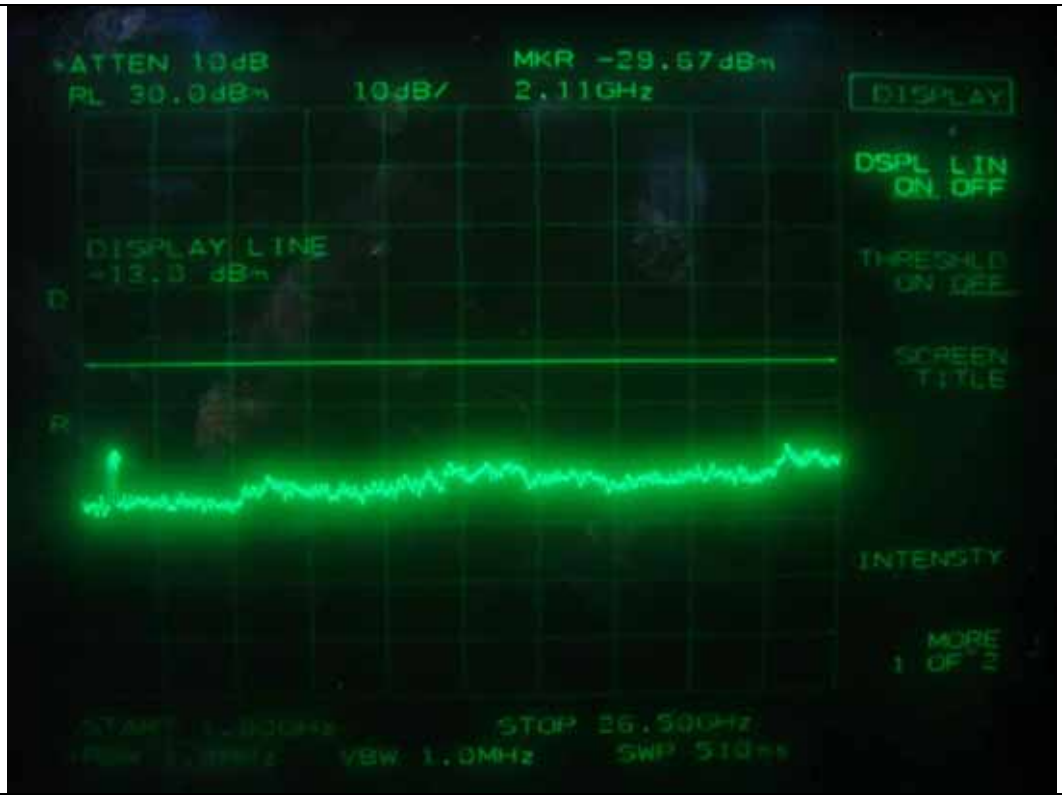


EDGE – Middle Channel



EDGE – Middle Channel

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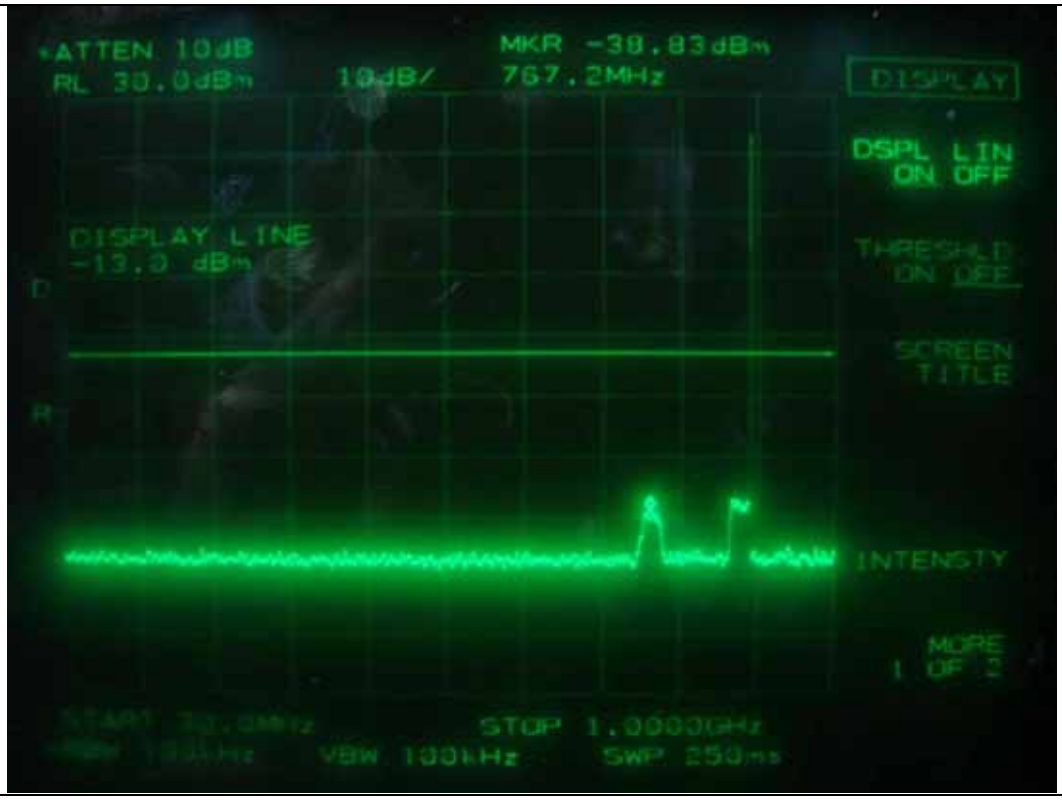

EDGE – High Channel

EDGE – High Channel

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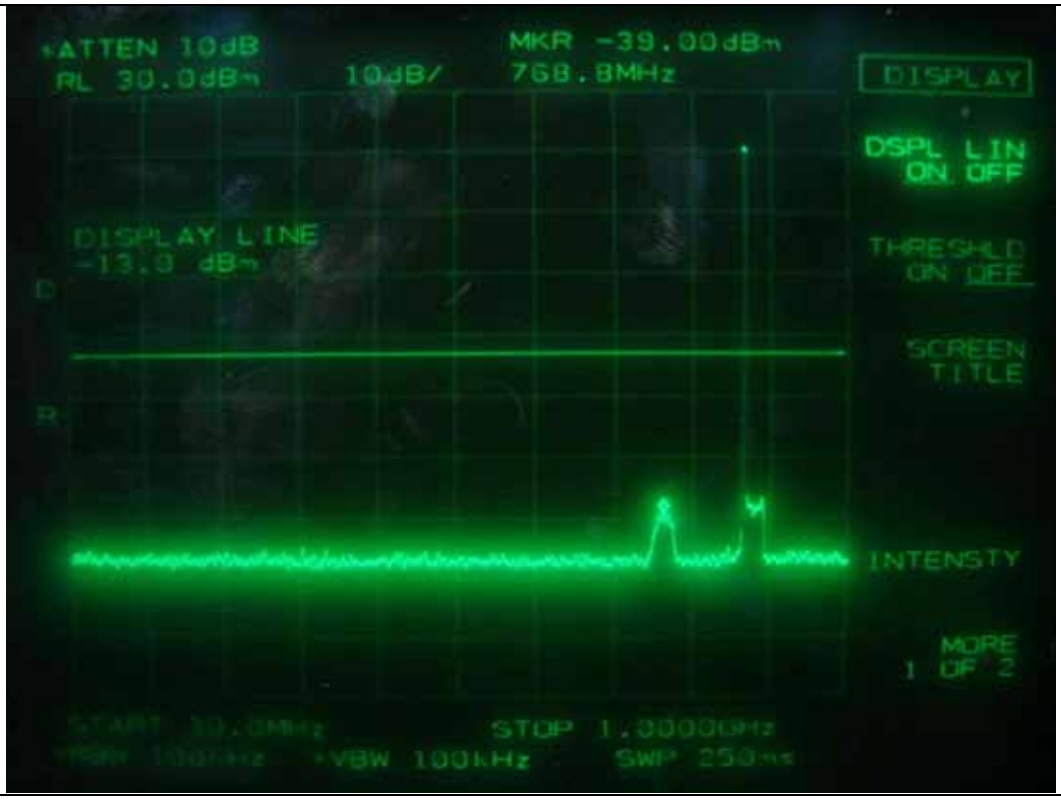

CDMA – Low Channel

CDMA – Low Channel

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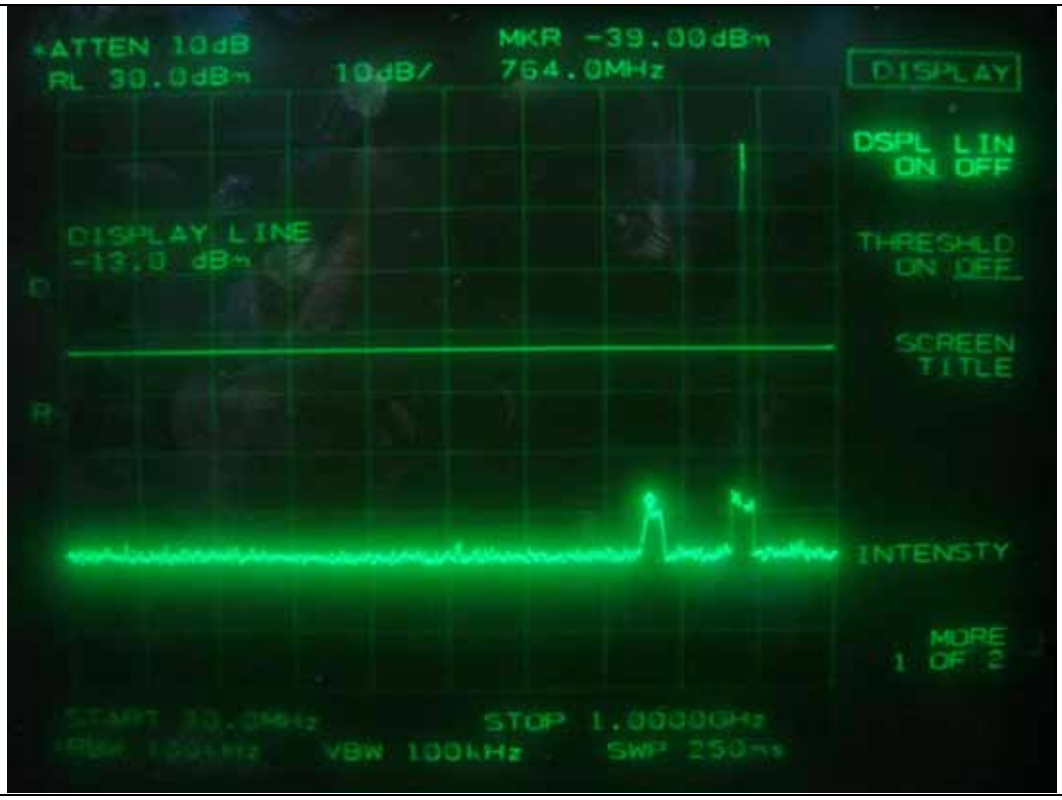

CDMA – Middle Channel

CDMA – Middle Channel

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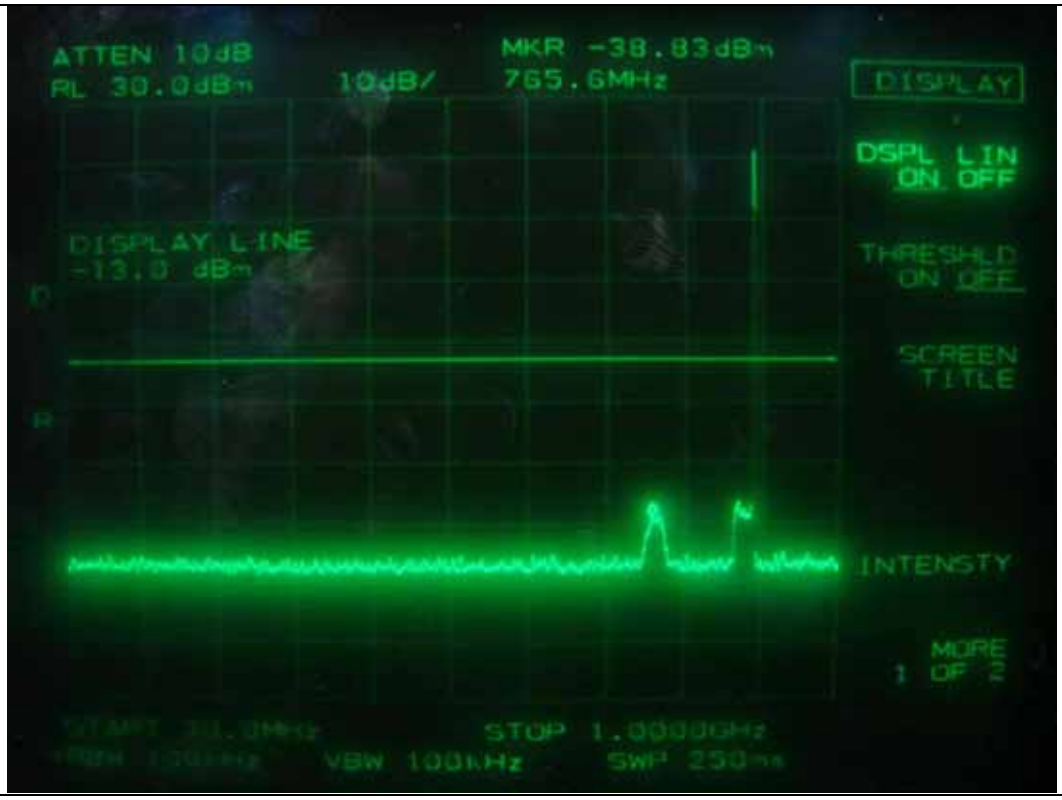
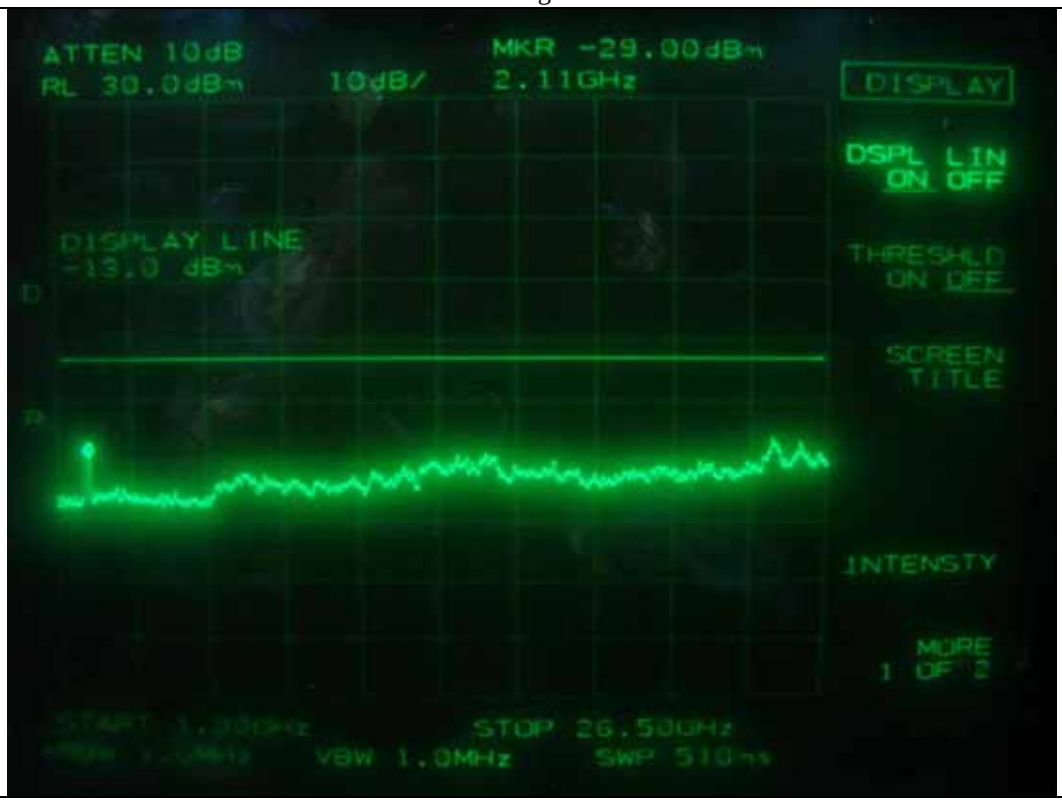


CDMA – High Channel



CDMA – High Channel

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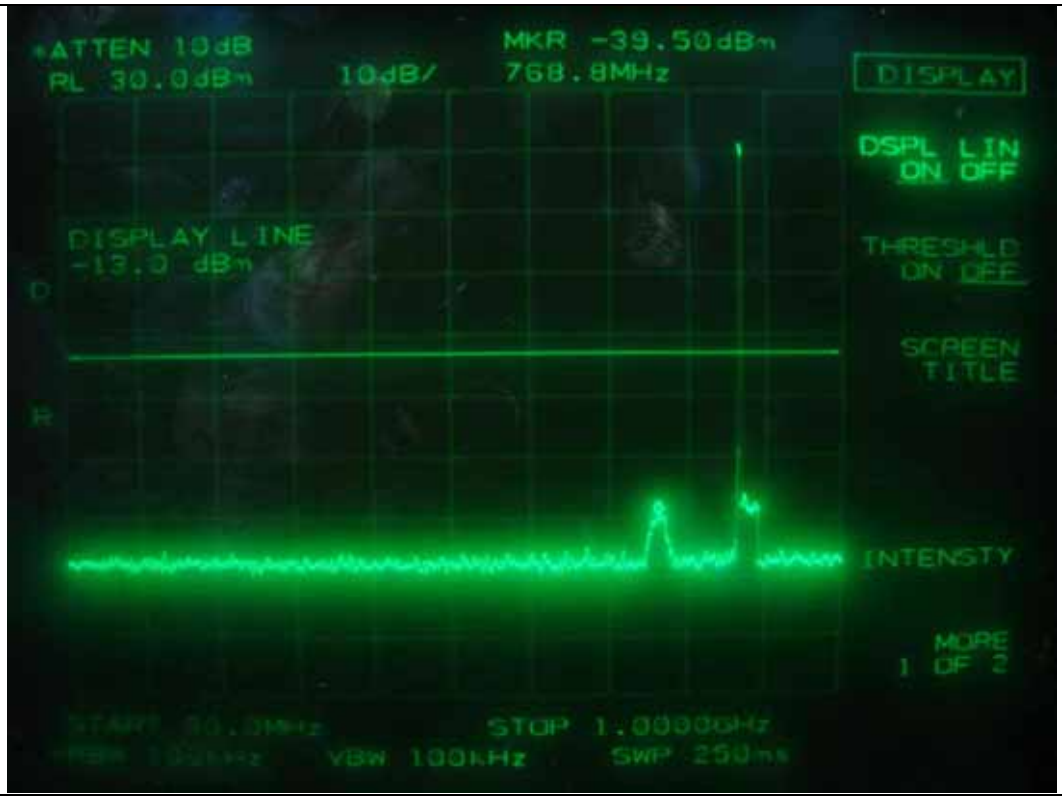
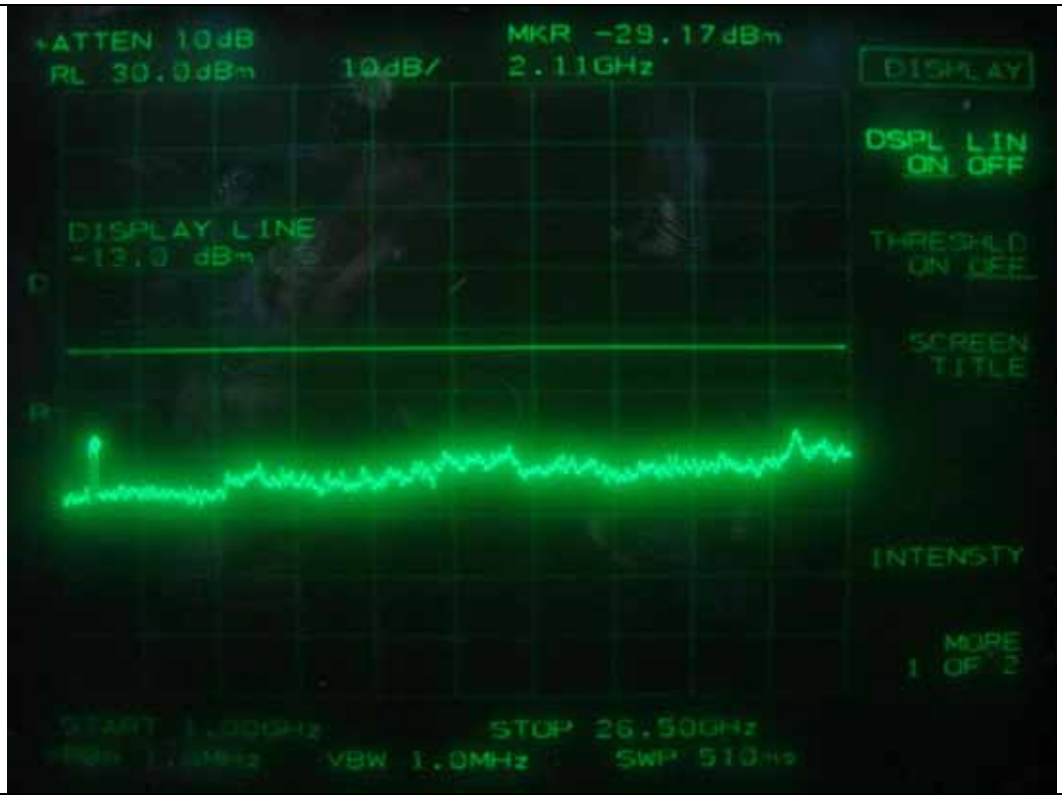


1xEVDO – Low Channel



1xEVDO – Low Channel

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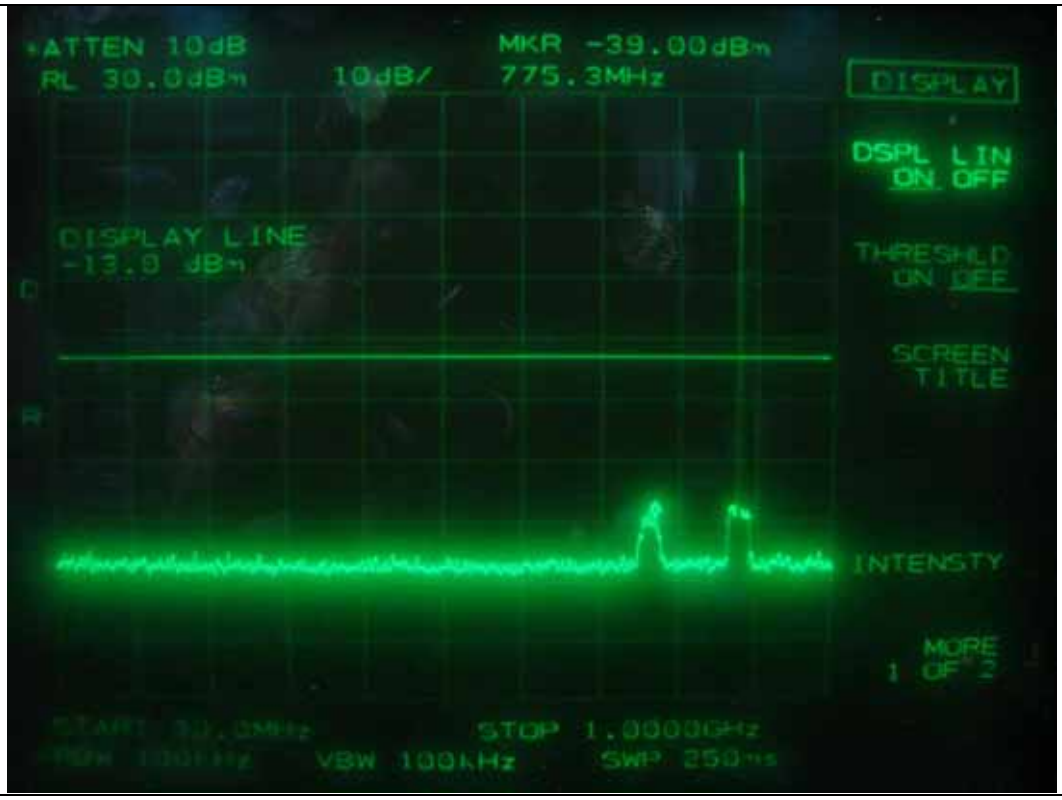

1xEVDO – Middle Channel

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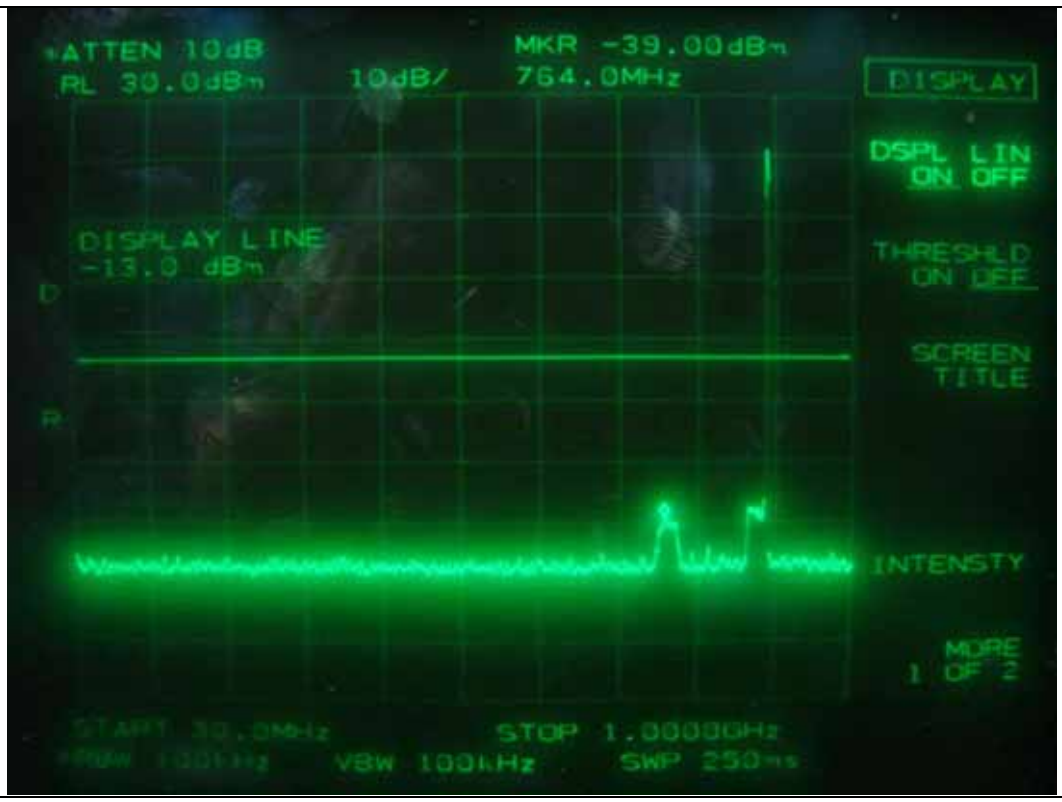

1xEVDO – High Channel

1xEVDO – High Channel

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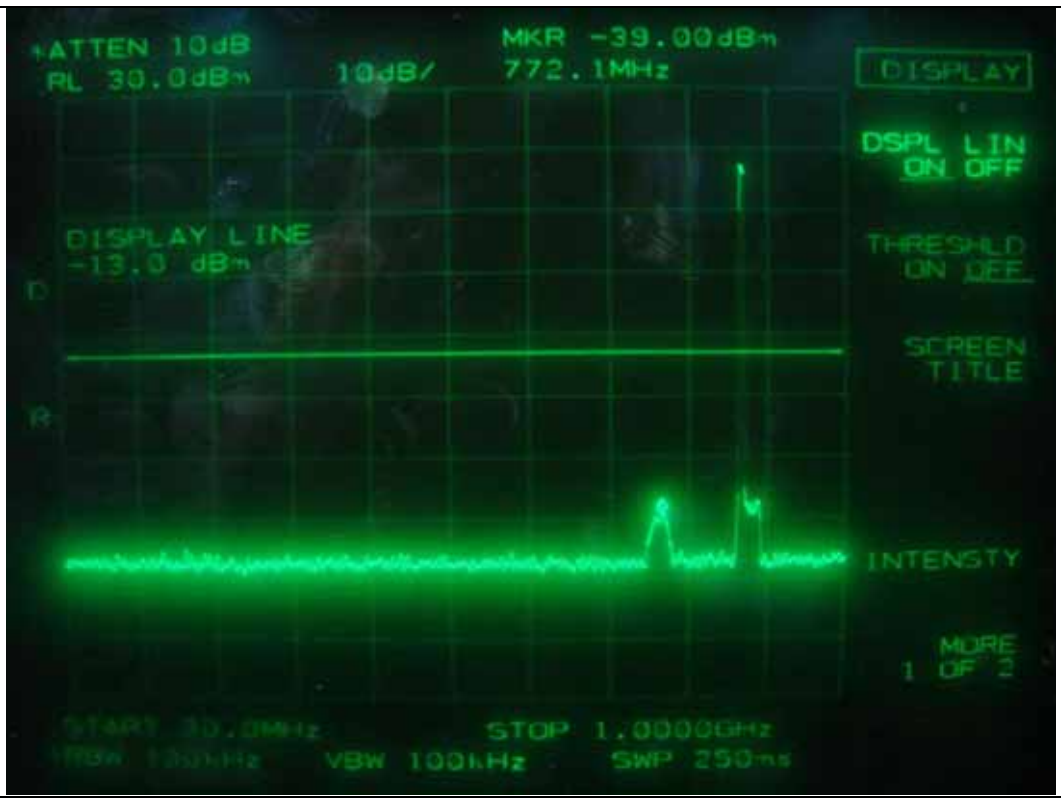

WCDMA – Low Channel

WCDMA – Low Channel

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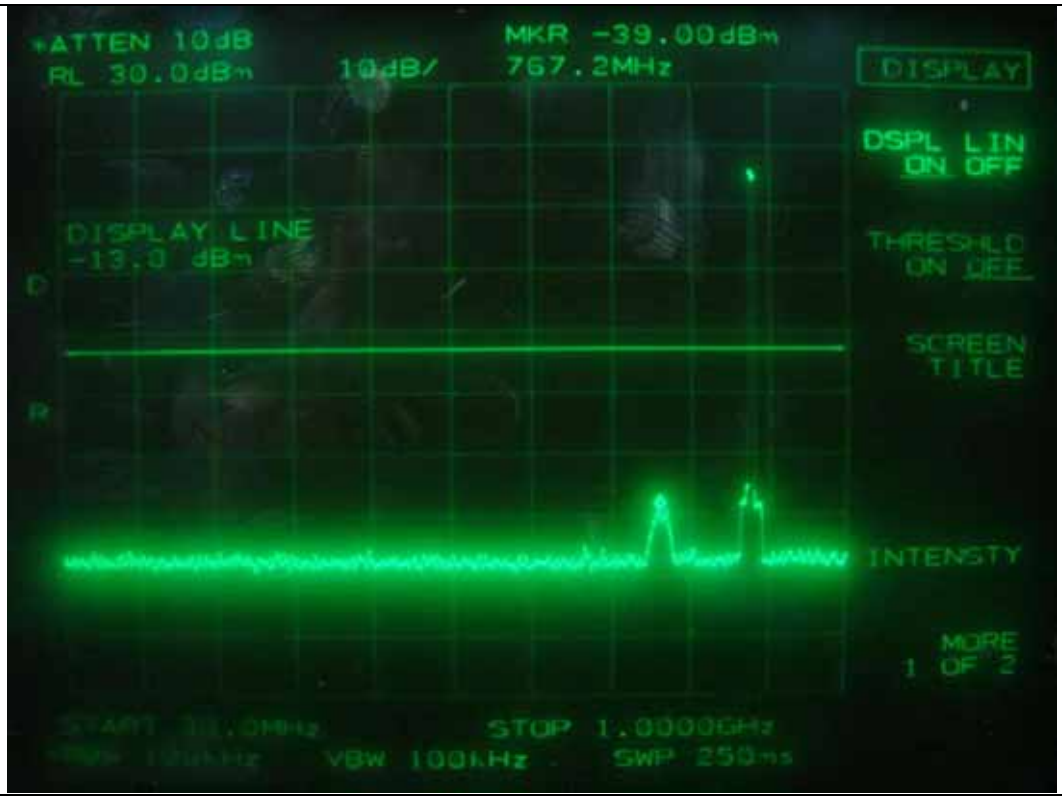
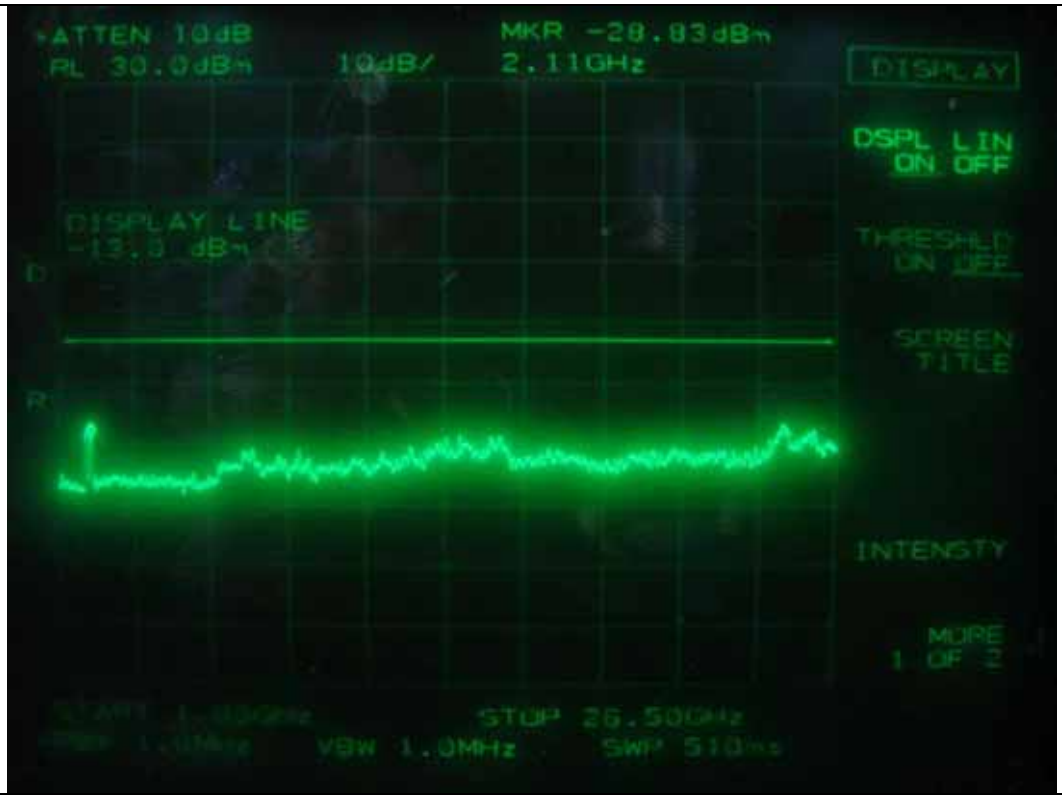


WCDMA – Middle Channel



WCDMA – Middle Channel

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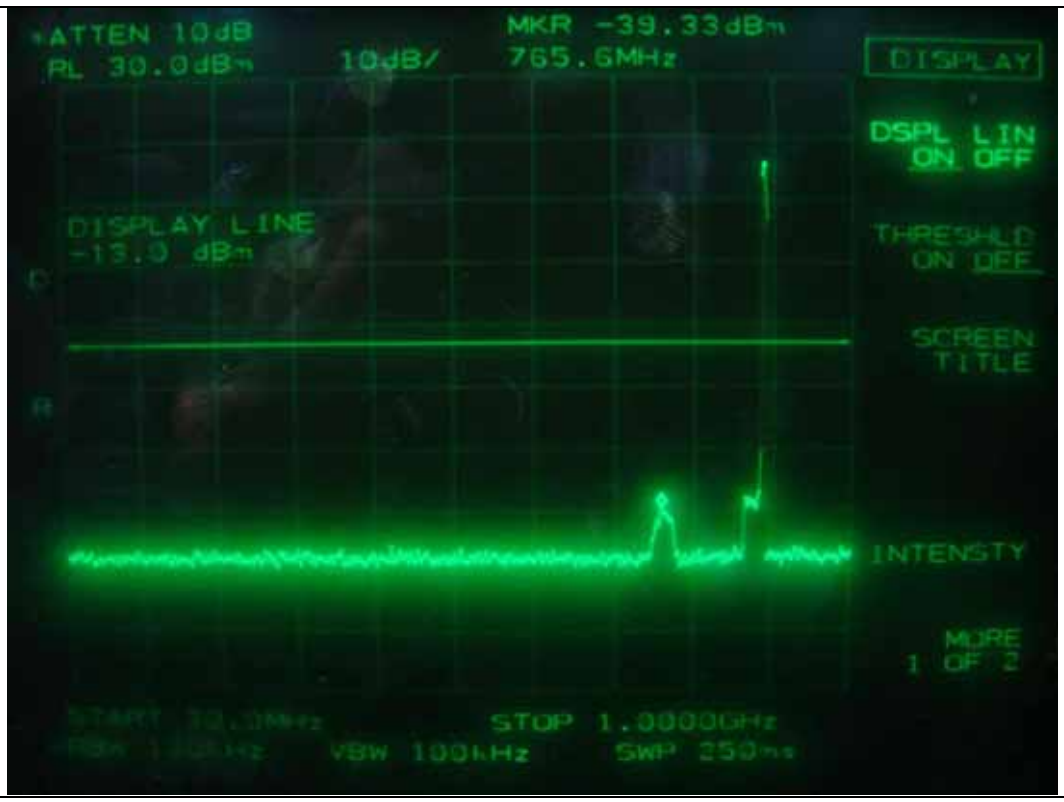
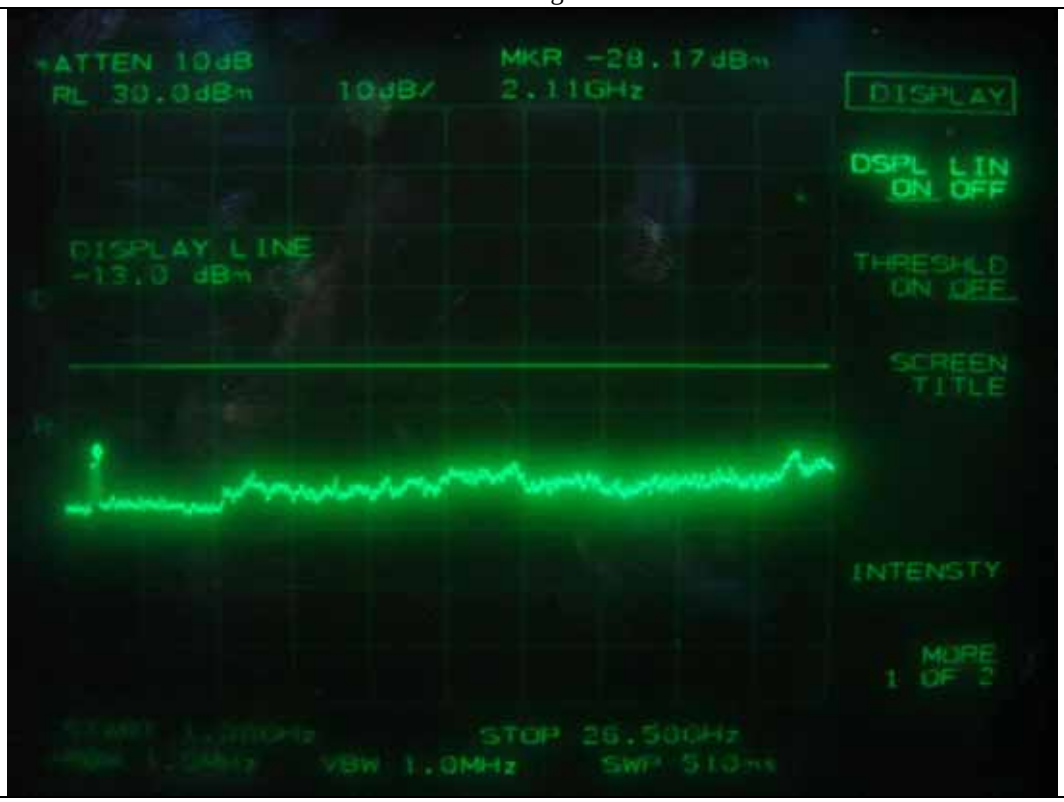


WCDMA – High Channel



WCDMA – High Channel

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7.4.2 Test Result for Part 90 I

-. Test Date : February 27 ~ March 02, 2009

-. Frequency range : 30 MHz ~ 20 GHz

-. Result : PASSED BY –14.83 dB at low and high channels of iDEN Mode

Modulation	Harmonic Frequency (MHz)		Measured Value (dBm)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
iDEN	Low	872.30	-37.83	0.50	-37.33	-13.00	-24.33
		2 110.00	-28.67	0.84	-27.83		-14.83
	Middle	869.10	-39.33	0.50	-38.83		-25.83
		2 110.00	-29.00	0.84	-28.16		-15.16
	High	872.30	-37.50	0.50	-37.00		-24.00
		2 110.00	-28.67	0.84	-27.83		-14.83
SMR	Low	877.10	-38.50	0.50	-38.00	-13.00	-25.00
		2 110.00	-29.83	0.84	-28.99		-15.99
	Middle	877.10	-38.00	0.50	-37.50		-24.50
		2 110.00	-30.00	0.84	-29.16		-16.16
	High	870.70	-38.83	0.50	-38.33		-25.33
		2 110.00	-29.50	0.84	-28.66		-15.66

According to Part 22H & 90I, 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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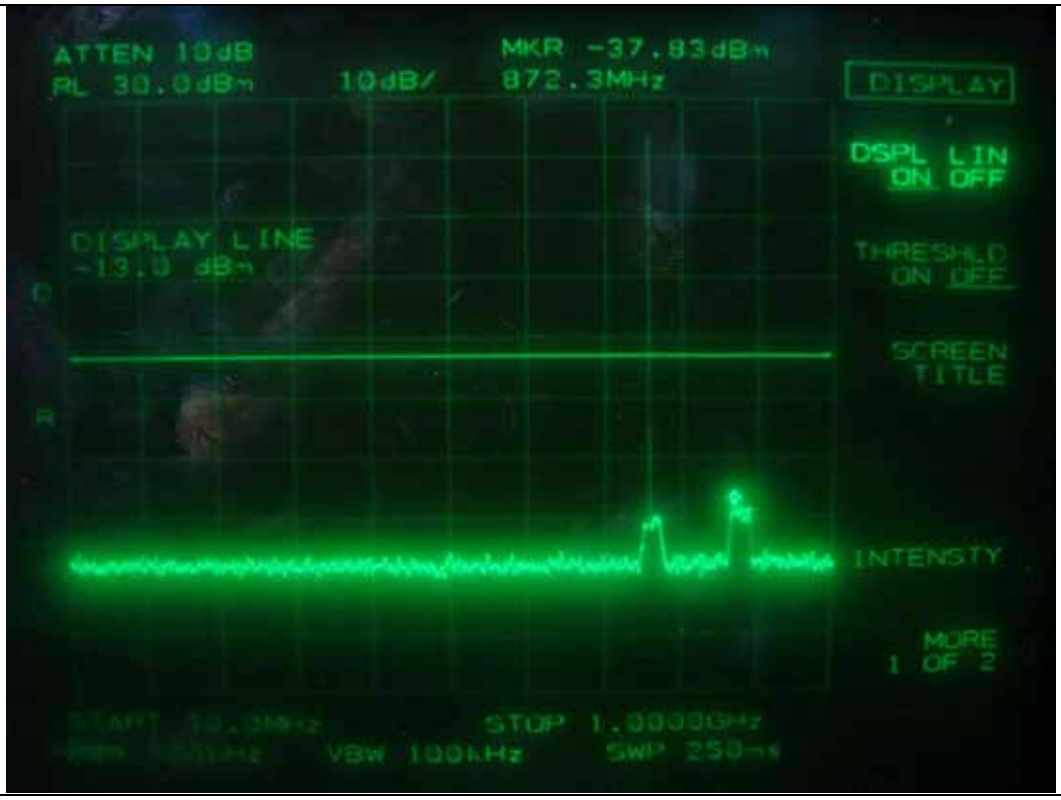
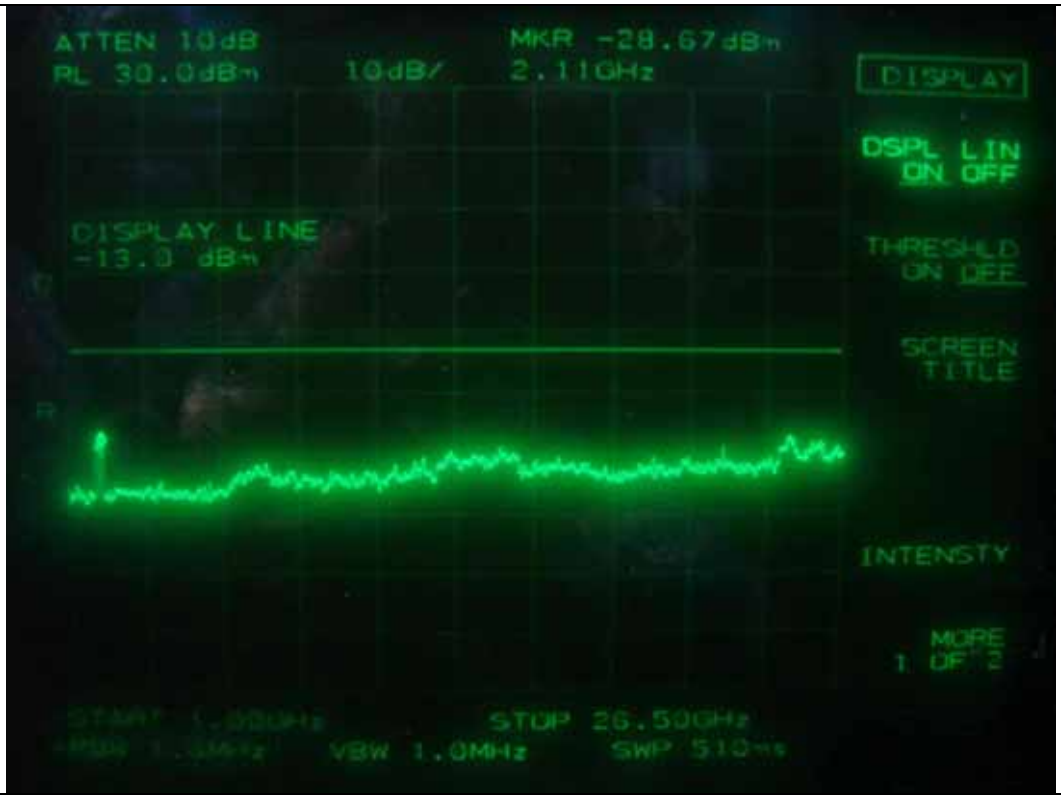


iDEN – Low Channel



iDEN – Low Channel

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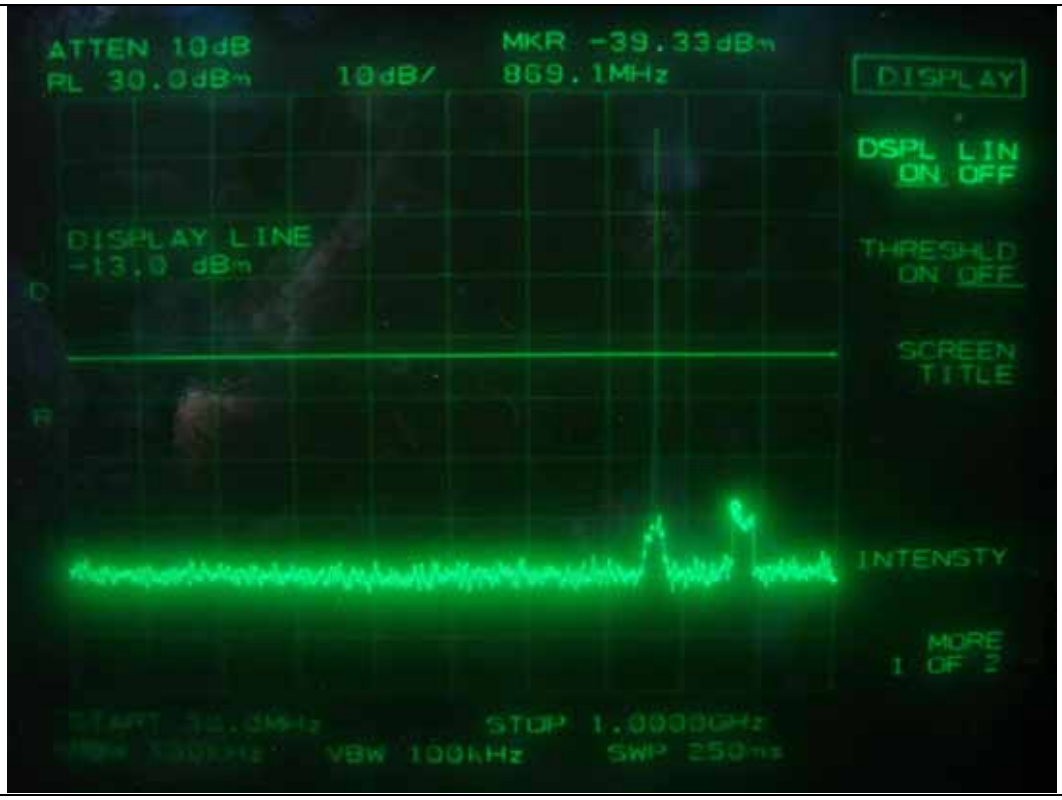
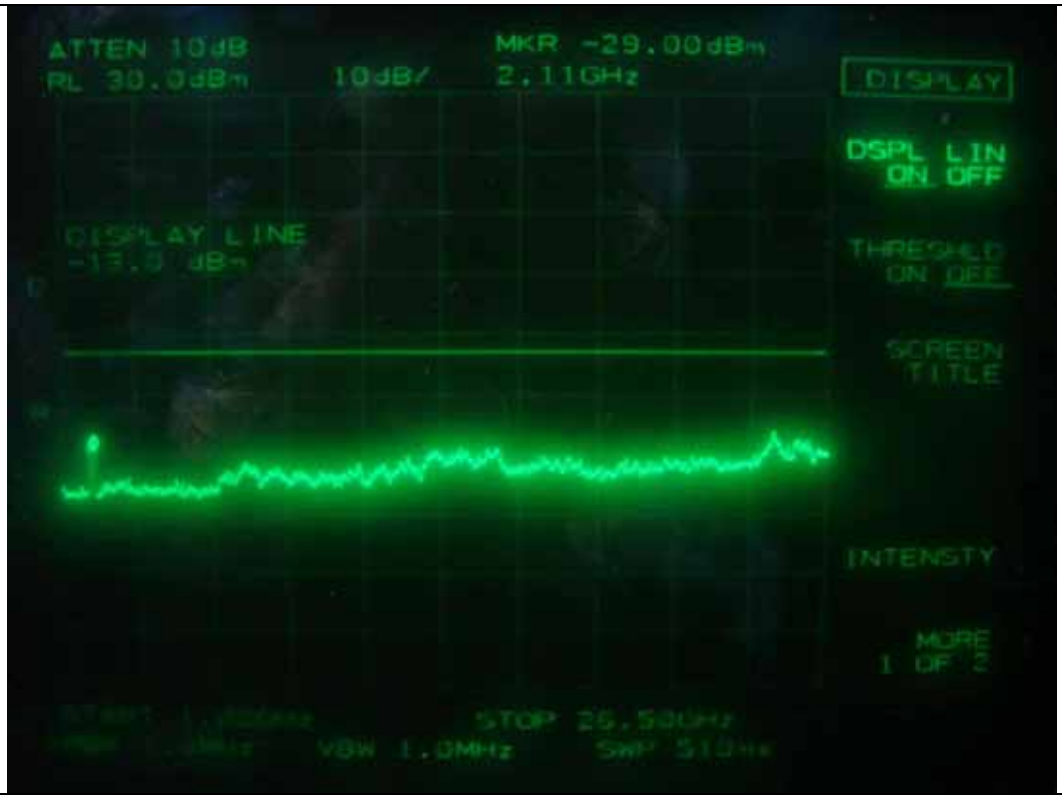


iDEN – Middle Channel



iDEN – Middle Channel

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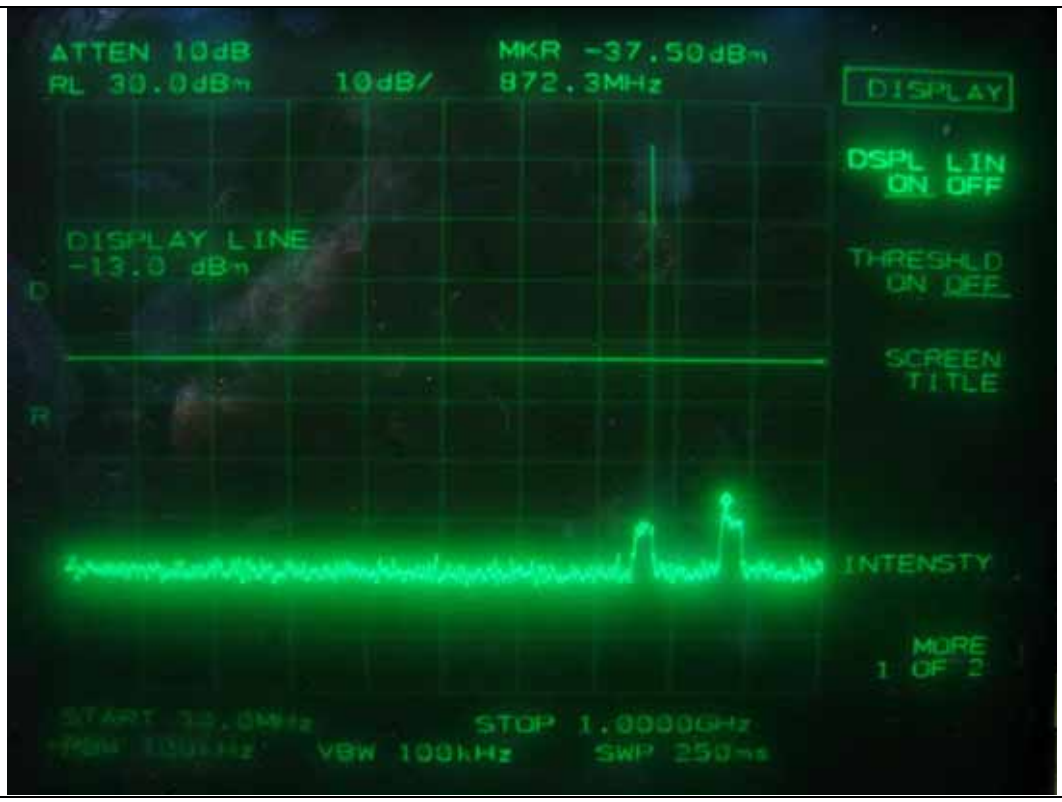
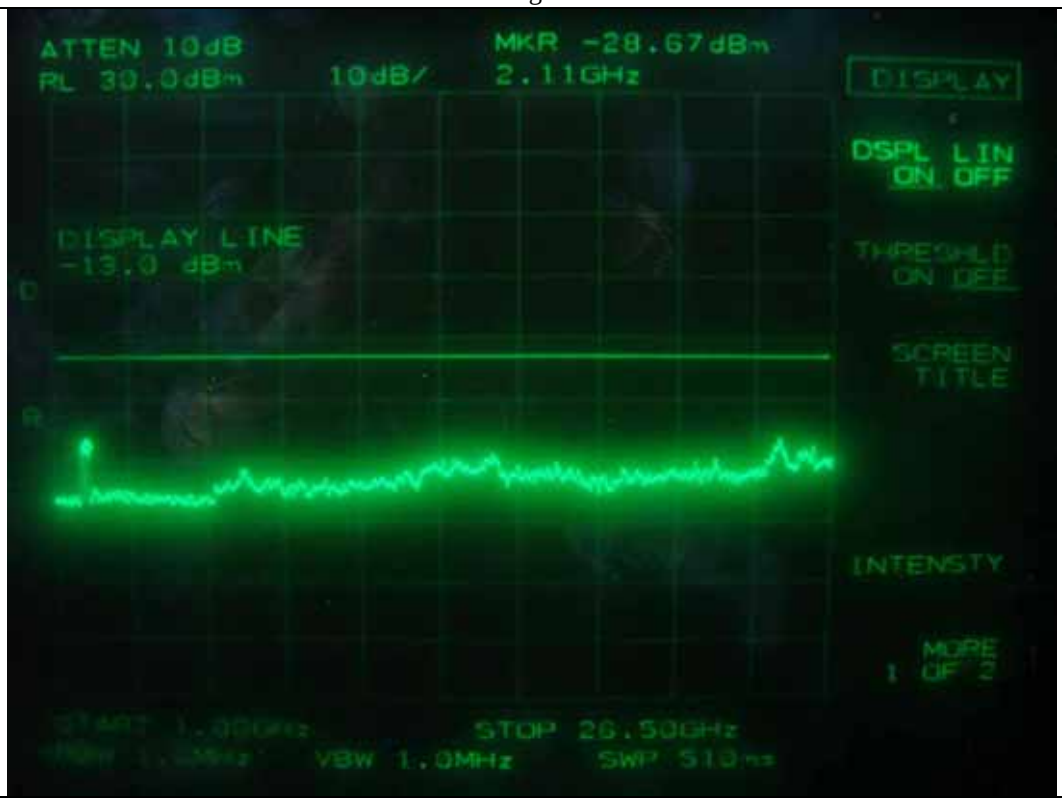


iDEN – High Channel



iDEN – High Channel

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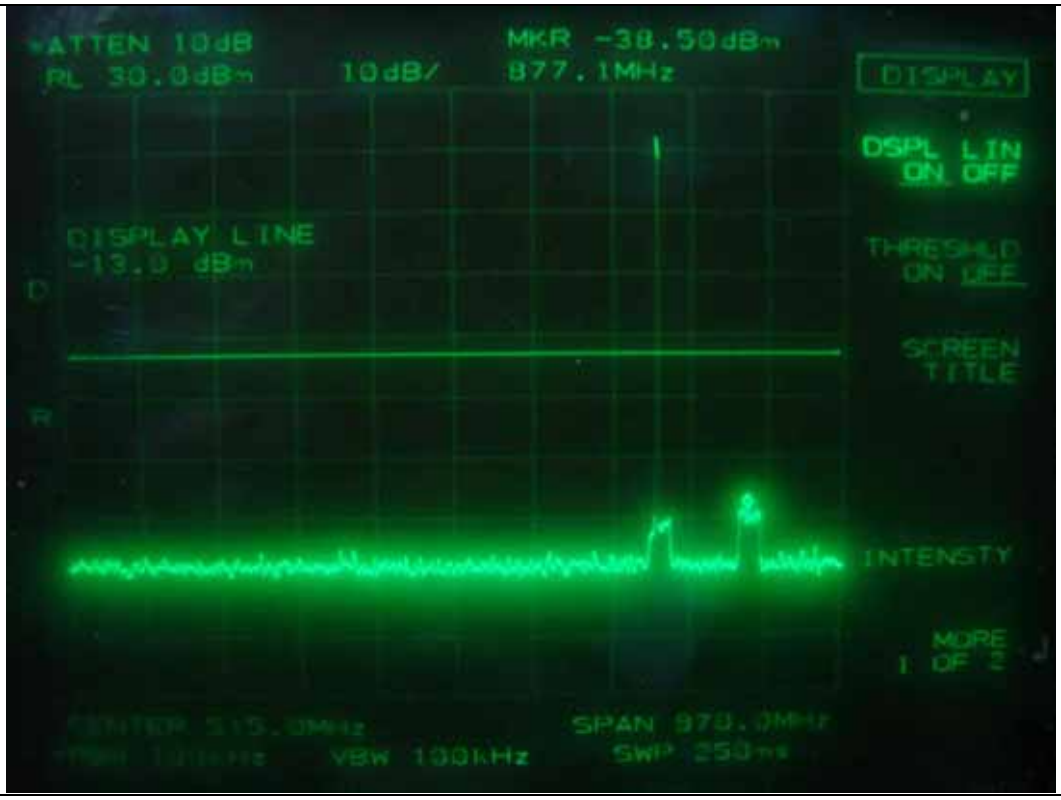
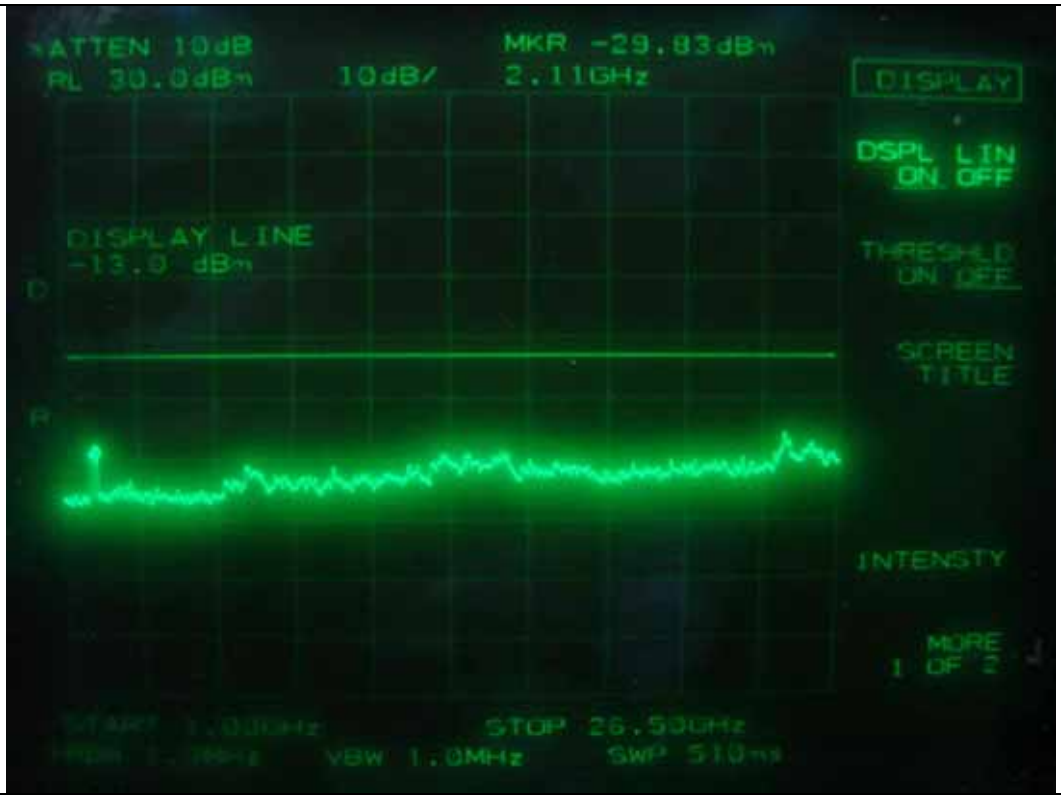


SMR – Low Channel



SMR – Low Channel

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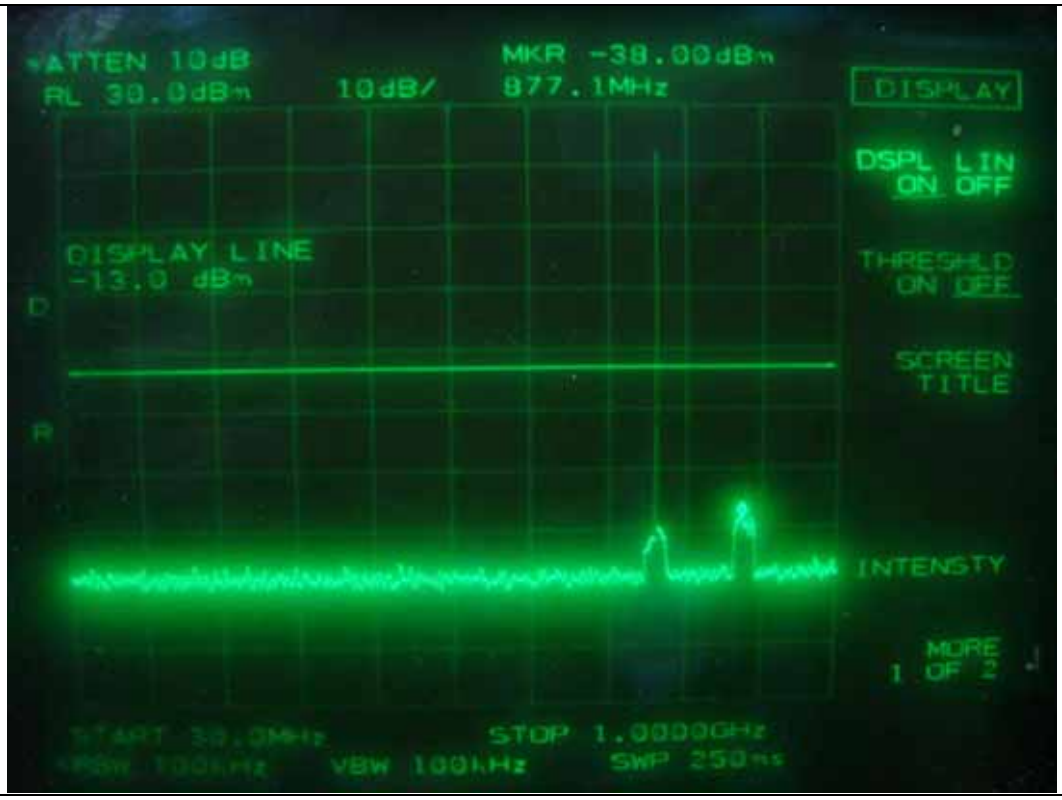
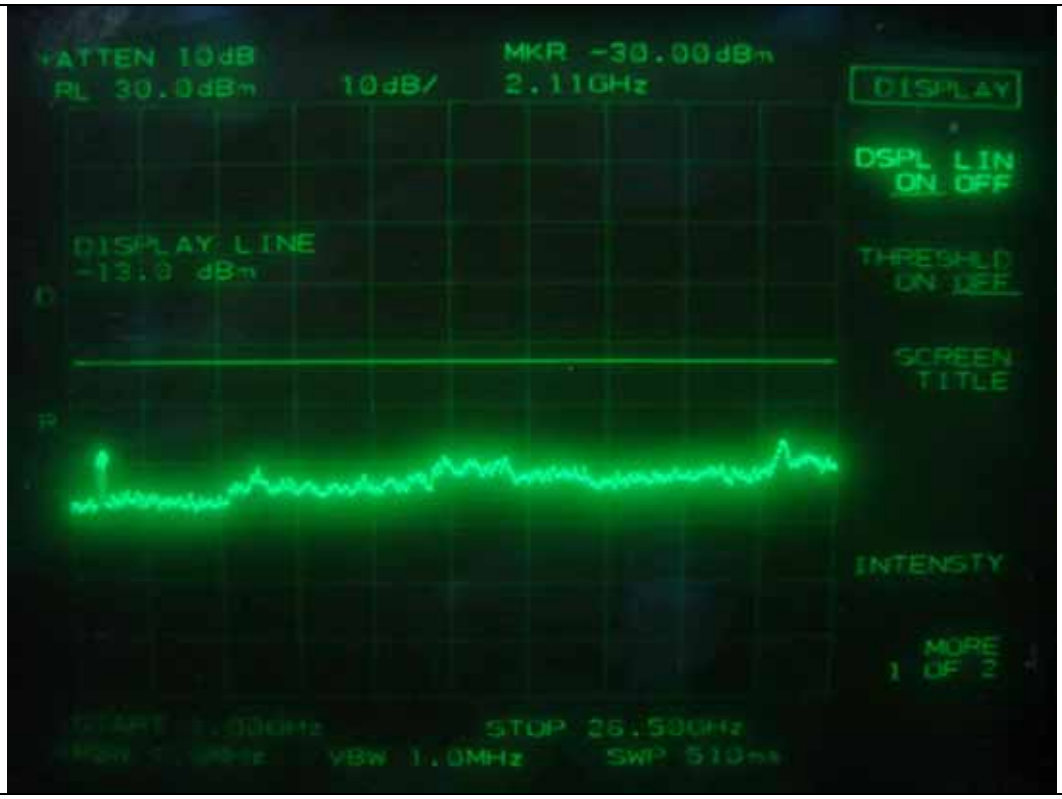


SMR – Middle Channel



SMR – Middle Channel

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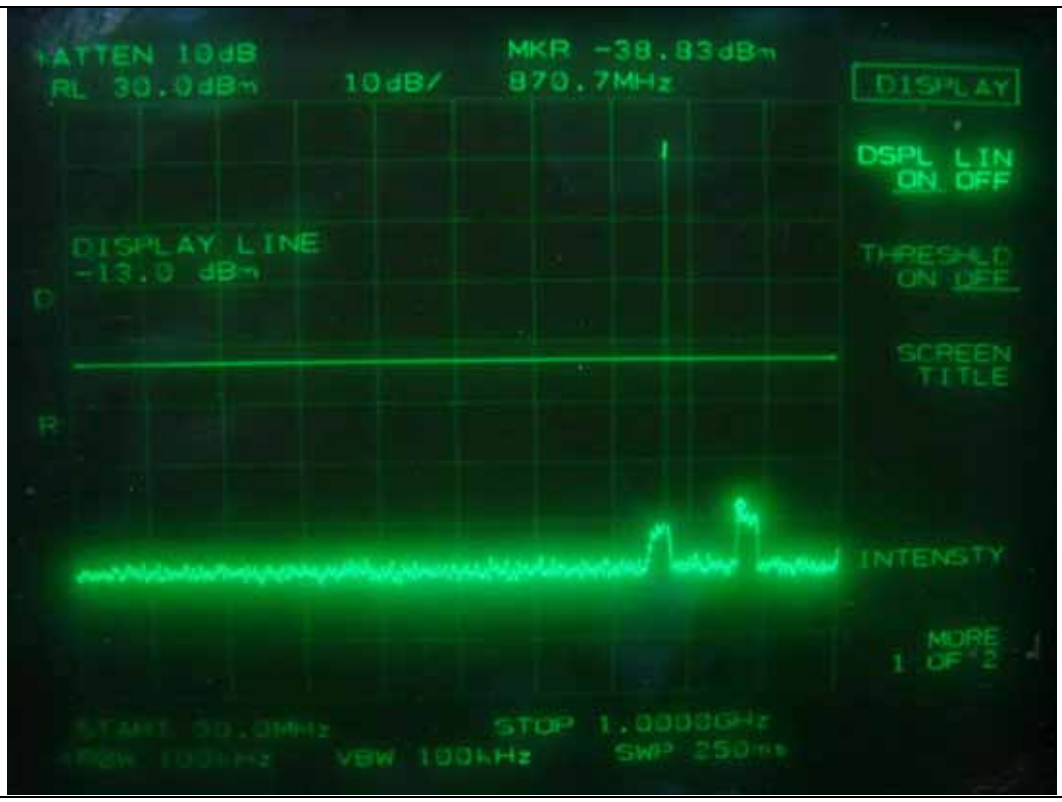
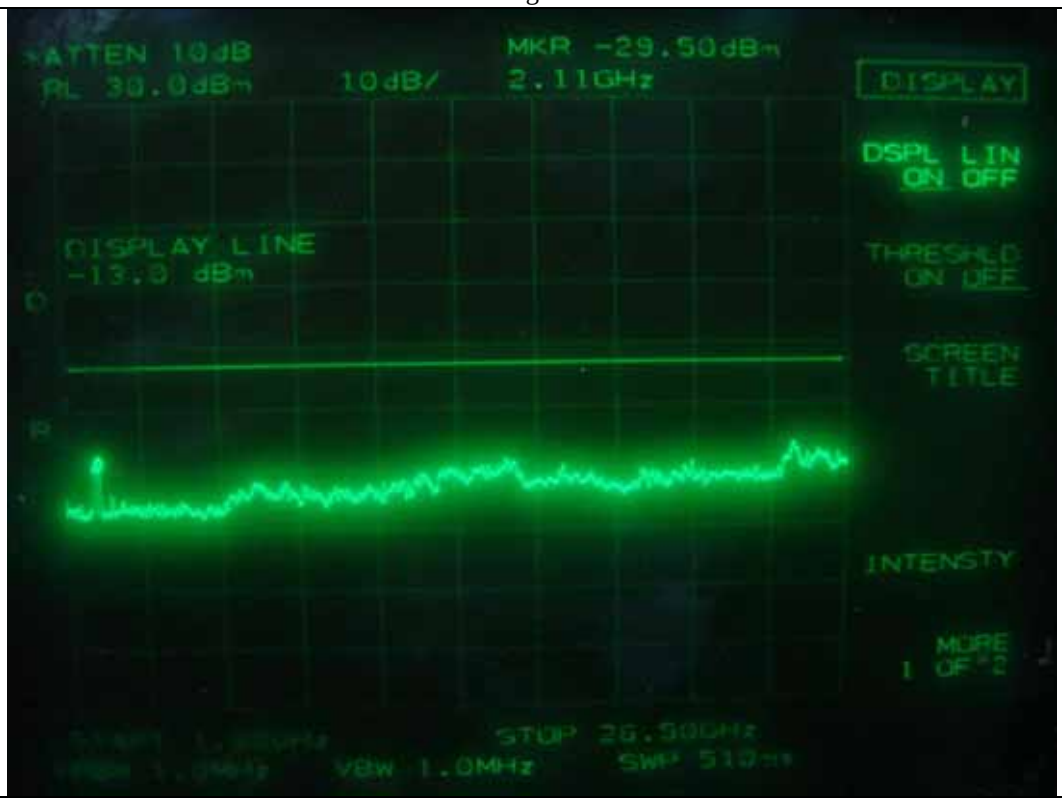


SMR – High Channel



SMR – High Channel

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8. SPURIOUS EMISSION AT ANTENNA TERMINAL AT BLOCK EDGES ± 1 MHZ

8.1 Operating environment

Temperature : 22 °C

Relative humidity : 47.6 %R.H.

8.2 Test set-up for conducted measurement

The RF signal from the signal generator(s) was injected to BIU (BTS Interface Unit) and then output signal from the BIU was injected to the input of ODU (Optic Distribution Unit) by coaxial cable and then the output port of the ODU was connected to the input of the EUT by optic cable. The amplified RF signal at the output of the EUT was connected to the spectrum analyzer. The test was performed at three frequencies (low, middle, and high channels) at each band using all applicable modulation.

Signal Generator		BIU		ODU	Optic	EUT		Attenuator		Spectrum Analyzer

8.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	8564E	HP	Spectrum Analyzer	3650A00756	June 16, 2008
■ -	E4432B	HP	Signal Generator	US38440950	June 16, 2008
■ -	SMJ100A	R/S	Vecter Signal Generator	100698	June 16, 2008
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 11, 2008

All test equipment used is calibrated on a regular basis.

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8.4 Test data

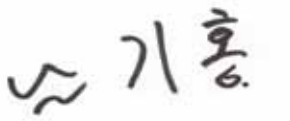
8.4.1 Test Result for Part 22 H

-. Test Date : February 27 ~ March 02, 2009

-. Result : PASSED BY –17.24 dB at high channel of WCDMA Mode

Modulation	Channel	Measured Frequency (MHz)	Max. Measured Value (dBm)	Limit (dBm)
TDMA	Low	869.00	-31.92	-13.00
	High	894.00	-32.90	
GSM	Low	869.00	-36.20	
	High	894.02	-34.19	
EDGE	Low	868.97	-37.70	-13.00
	High	894.02	-35.16	
CDMA	Low	869.00	-40.35	
	High	894.00	-41.42	
1xEVDO	Low	869.00	-38.68	-13.00
	High	894.00	-40.83	
WCDMA	Low	869.00	-30.24	
	High	894.00	-30.28	

According to Part 22H & 90I, out of band emission shall be attenuated by 43 + 10 log (P) dBc, equates to -13.0dBm.



Tested by: Ki-Hong, Nam / Project Engineer

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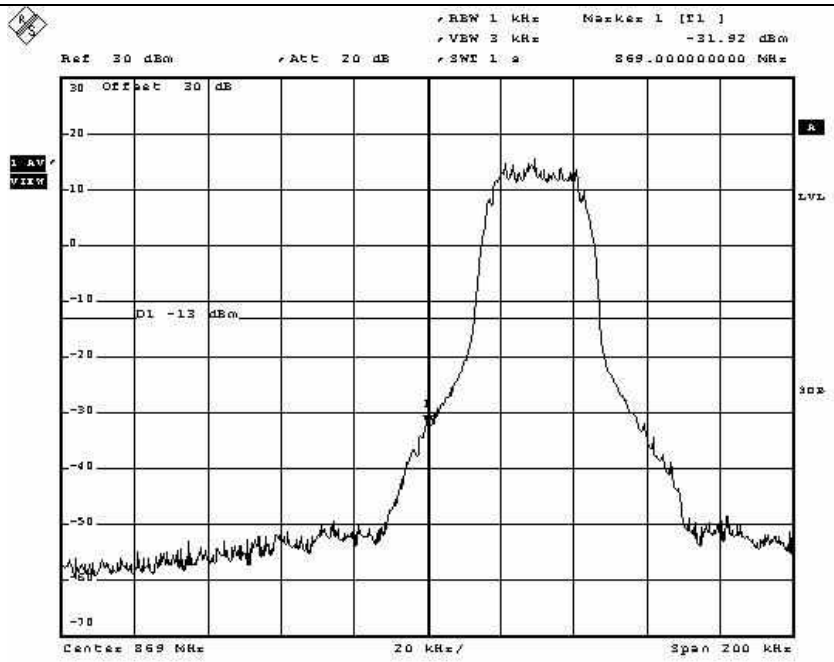
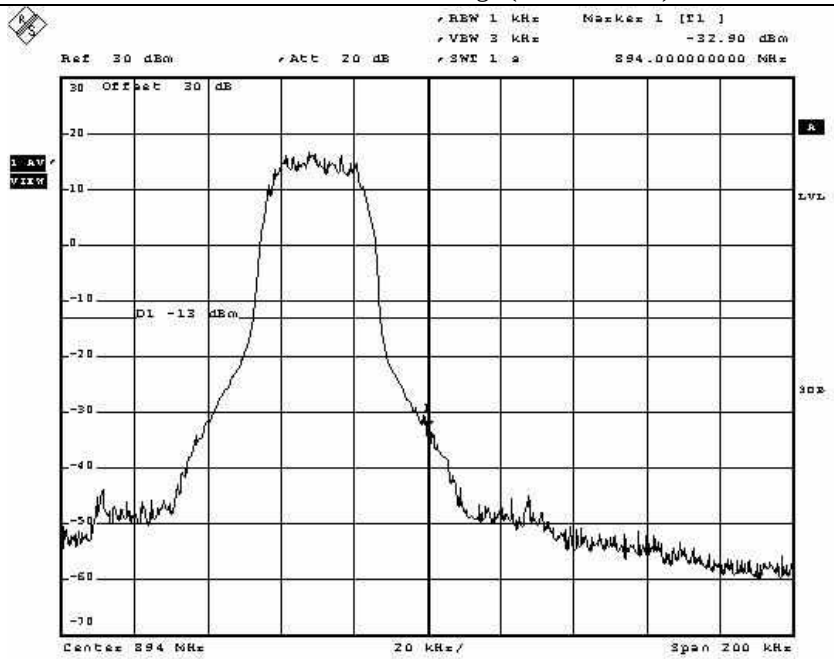


TDMA – Band Edge (Low Channel)



TDMA – Band Edge (High Channel)

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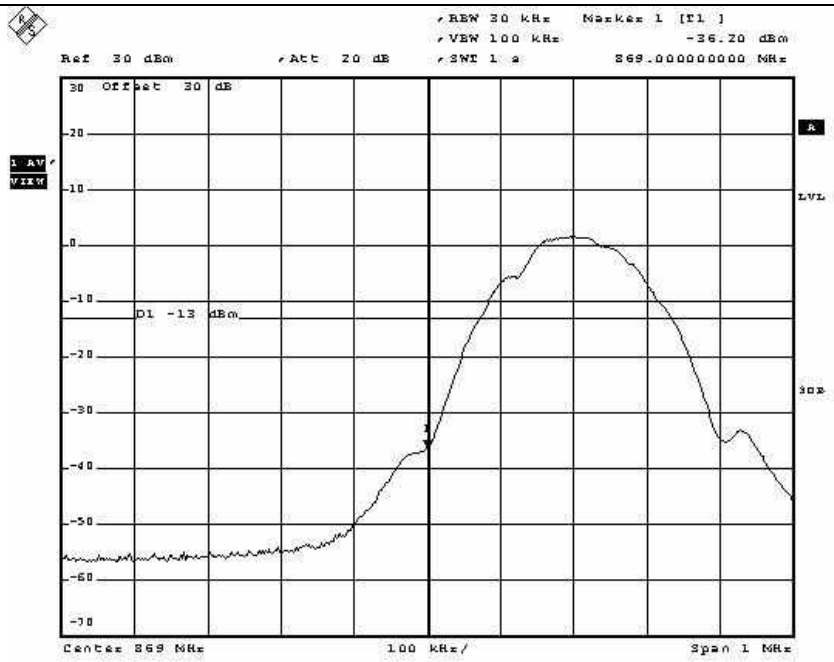
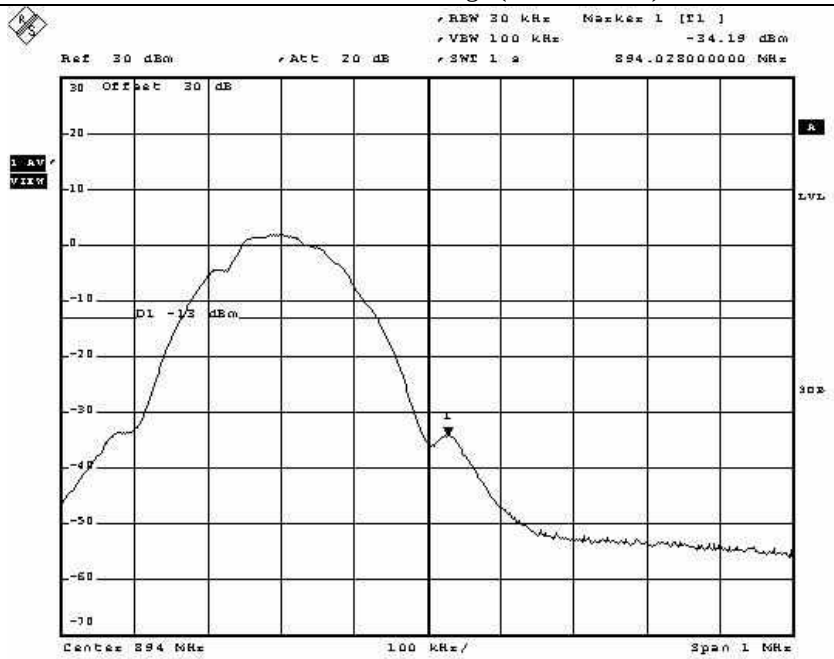


GSM – Band Edge (Low Channel)



GSM – Band Edge (High Channel)

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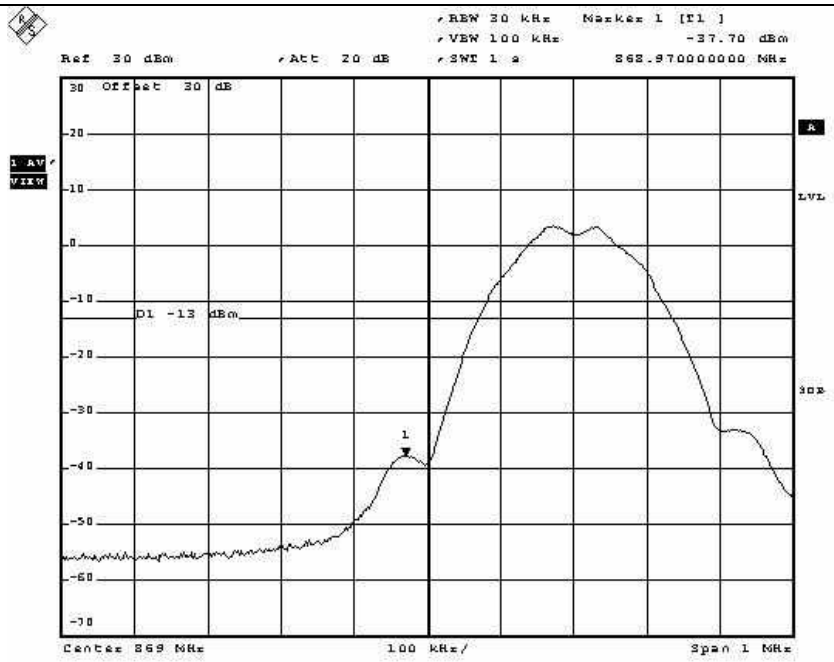
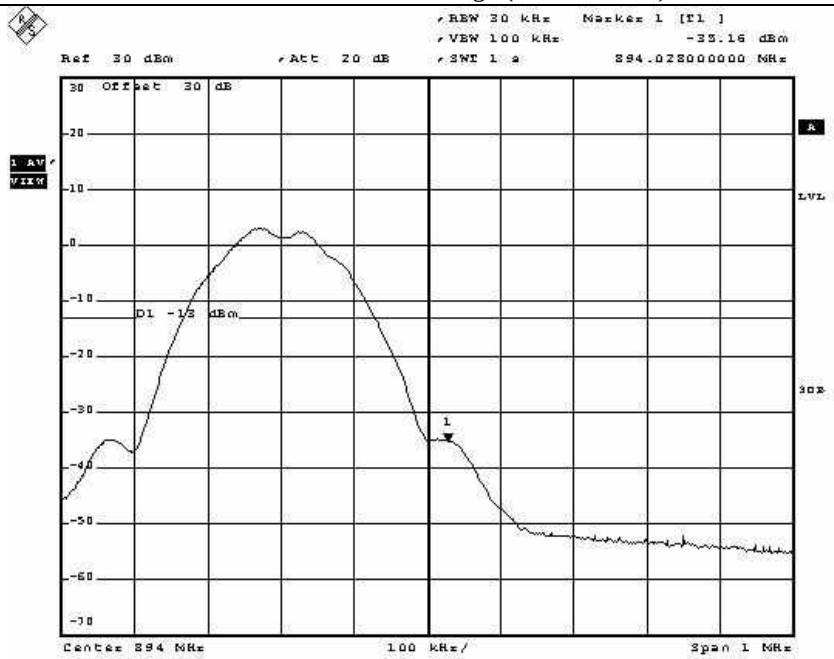


EDGE – Band Edge (Low Channel)



EDGE – Band Edge (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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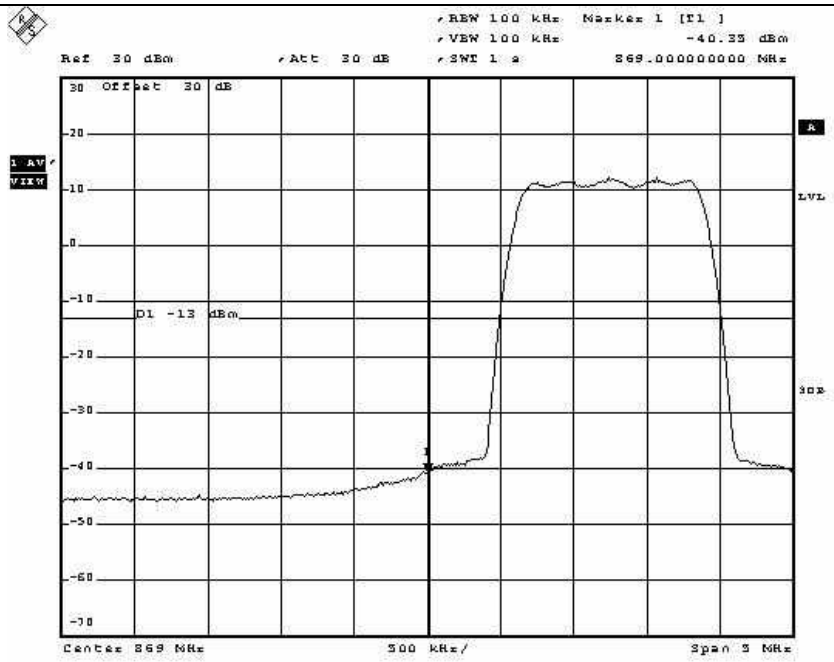
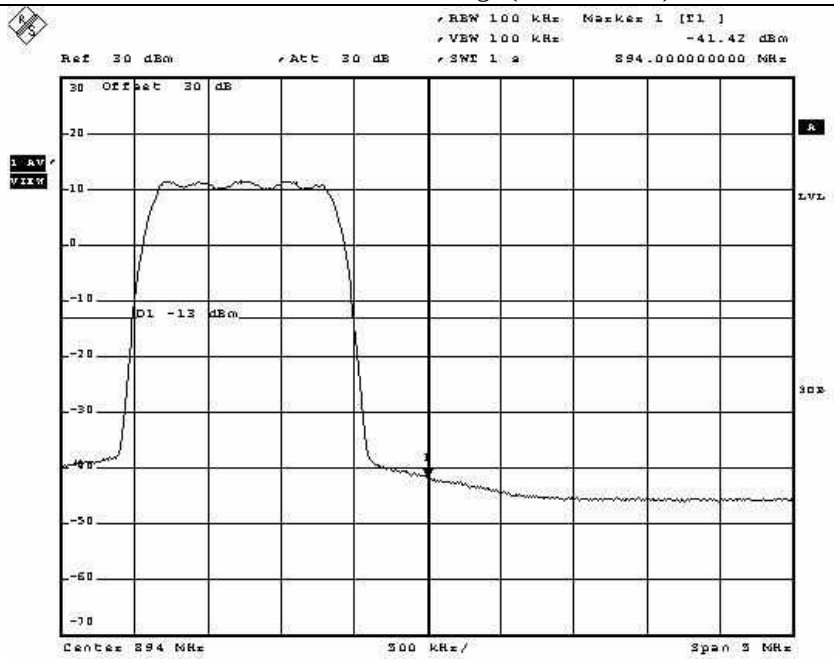


CDMA – Band Edge (Low Channel)



CDMA – Band Edge (High Channel)

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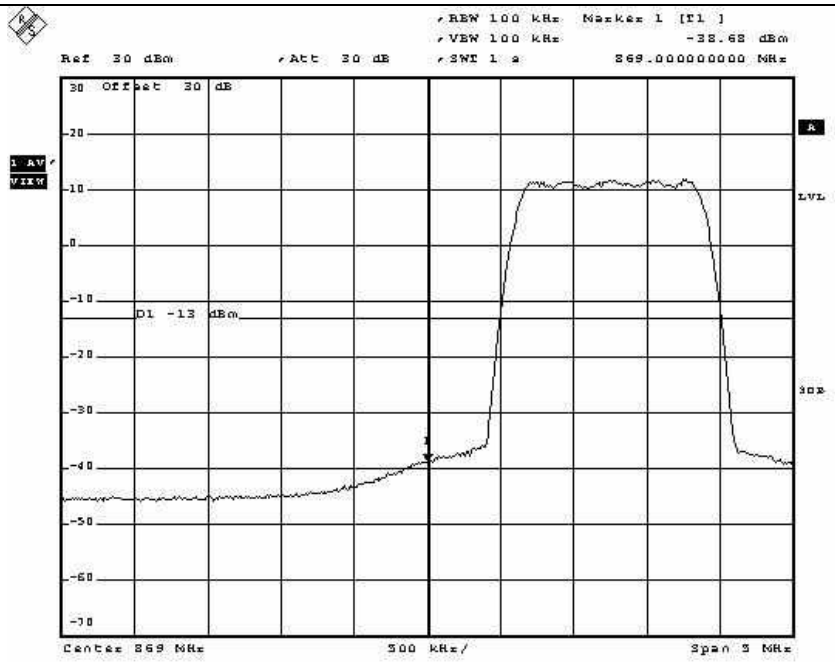
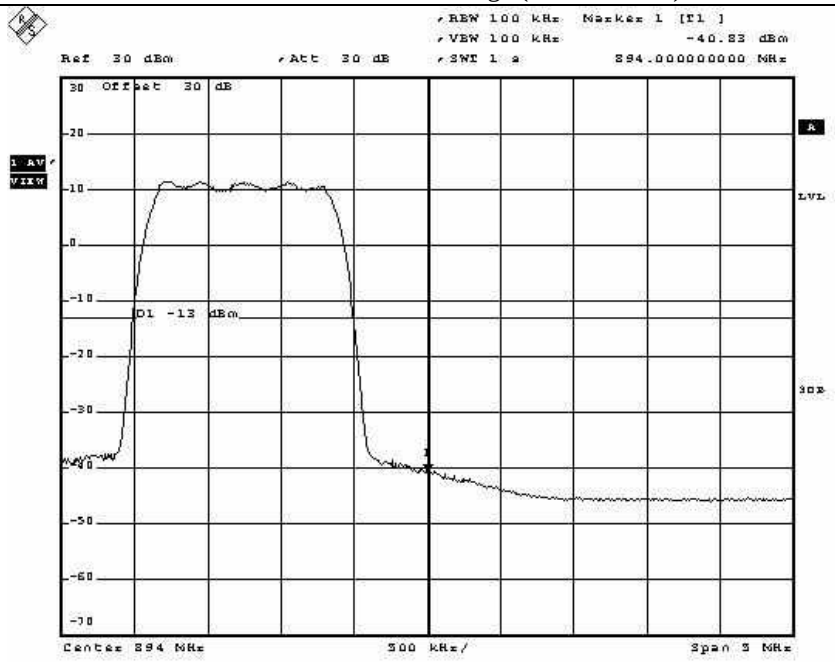


1xEVDO – Band Edge (Low Channel)



1xEVDO – Band Edge (High Channel)

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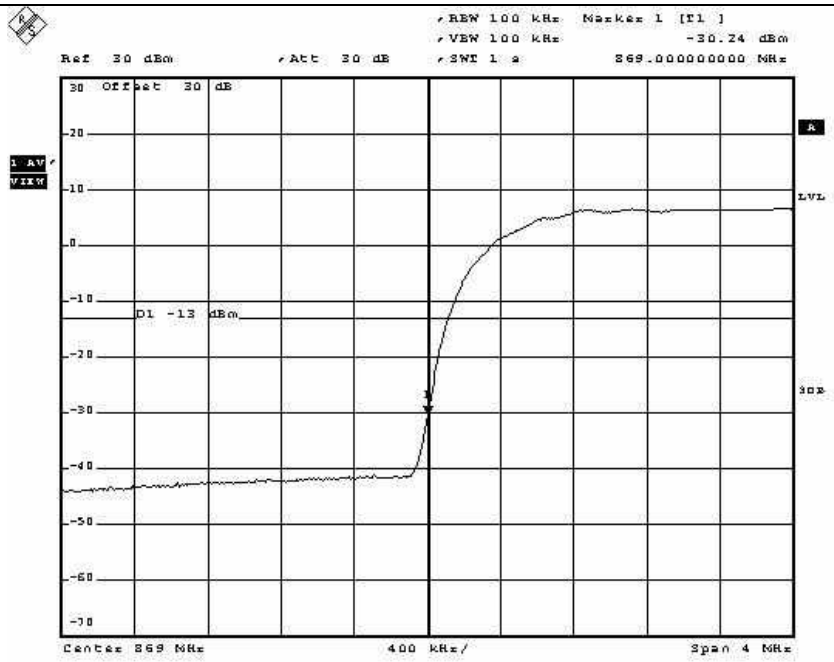
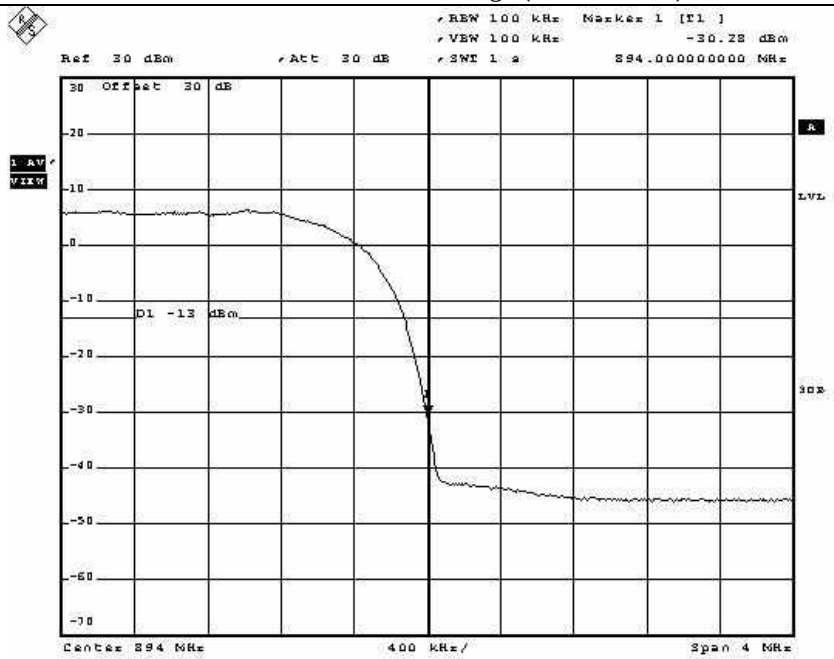


WCDMA – Band Edge (Low Channel)



WCDMA – Band Edge (High Channel)

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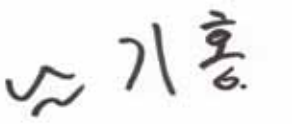
8.4.2 Test Result for Part 90 I

-. Test Date : February 27 ~ March 02, 2009

-. Result : PASSED BY –30.92 dB at low channel of iDEN Mode

Modulation	Channel	Measured Frequency (MHz)	Max. Measured Value (dBm)	Limit (dBm)
iDEN	Low	764.00	-43.92	-13.00
	High	776.00	-48.24	
SMR	Low	764.00	-61.02	
	High	776.00	-58.37	

According to Part 22H & 90I, out of band emission shall be attenuated by 43 + 10 log (P) dBc, equates to -13.0dBm.



Tested by: Ki-Hong, Nam / Project Engineer

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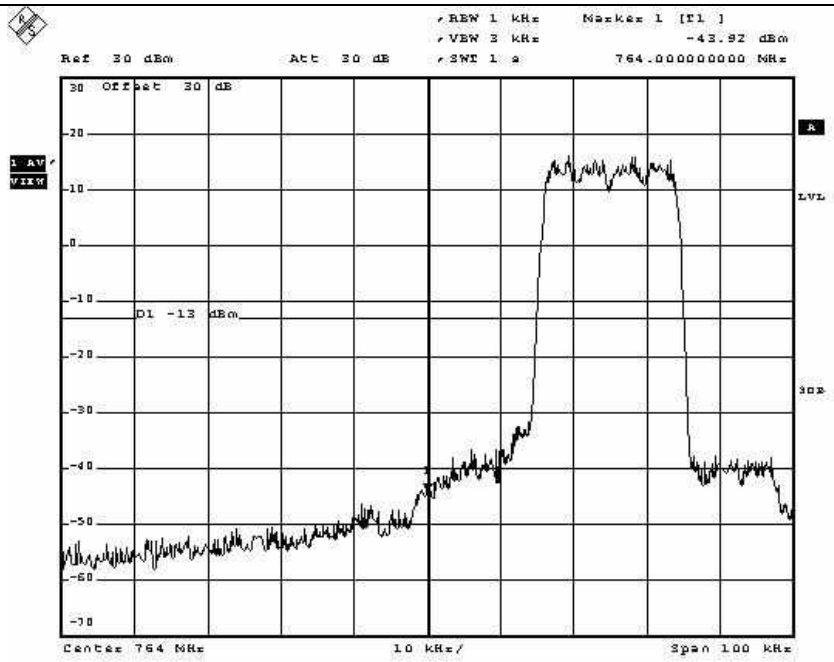
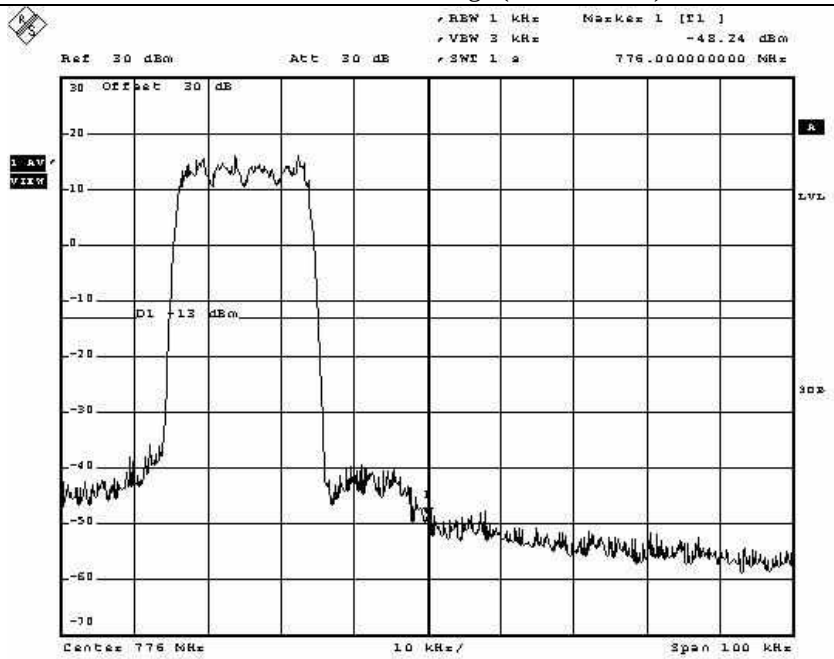


iDEN – Band Edge (Low Channel)



iDEN – Band Edge (High Channel)

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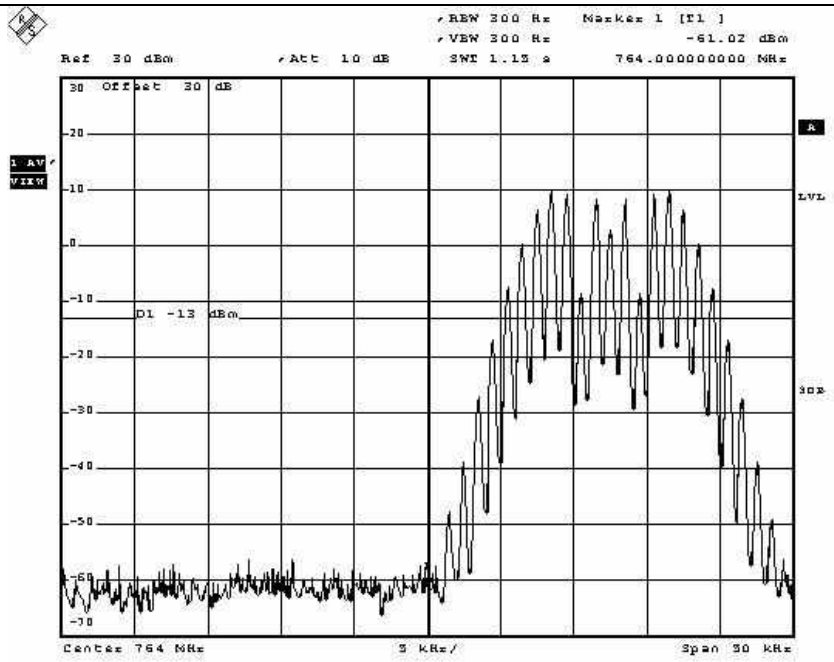
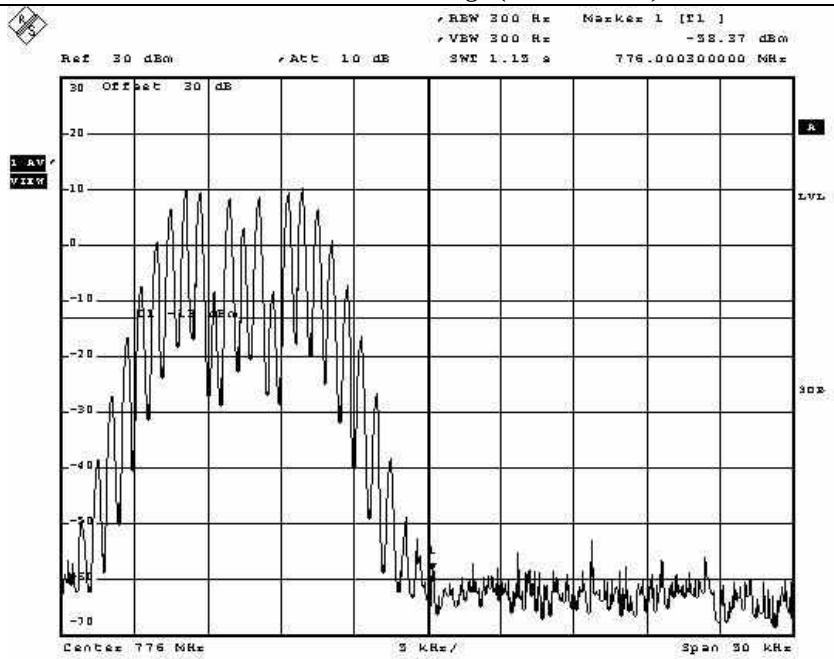


SMR – Band Edge (Low Channel)



SMR – Band Edge (High Channel)

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9. INTERMODULATION TEST

9.1 Operating environment

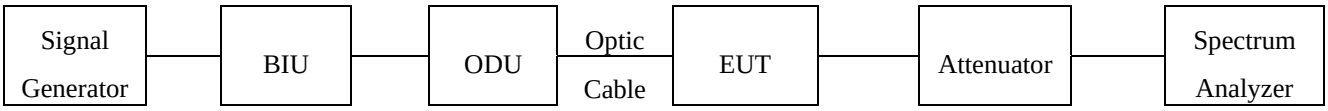
Temperature : 22 °C

Relative humidity : 47.6 %R.H.

9.2 Test set-up

The RF signal from the signal generator(s) was injected to BIU (BTS Interface Unit) and then output signal from the BIU was injected to the input of ODU (Optic Distribution Unit) by coaxial cable and then the output port of the ODU was connected to the input of the EUT by optic cable. The amplified RF signal at the output of the EUT was connected to the spectrum analyzer. The test was performed at three frequencies (low, middle, and high channels) at each band using all applicable modulation.

Two input signals are equal in level and were sent to the input of the EUT.



9.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	8564E	HP	Spectrum Analyzer	3650A00756	June 16, 2008
■ -	E4432B	HP	Signal Generator	US38440950	June 16, 2008
■ -	SMJ100A	R/S	Vecter Signal Generator	100698	June 16, 2008
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 11, 2008

All test equipment used is calibrated on a regular basis.

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9.4 Test data

9.4.1 Test data for Part 22 H

-. Test Date : February 27 ~ March 02, 2009

-. Test Result : Pass

Modulation	Channel	Measured
TDMA	Low	< -13 dBm
	High	< -13 dBm
GSM	Low	< -13 dBm
	High	< -13 dBm
EDGE	Low	< -13 dBm
	High	< -13 dBm
CDMA	Low	< -13 dBm
	High	< -13 dBm
WCDMA	Low	< -13 dBm
	High	< -13 dBm
WCDMA	Low	< -13 dBm
	High	< -13 dBm

Remark: Intermodulation products must be attenuated below the rated power of the EUT at least 43 + 10log (Pw), equivalent to -13 dBm. Please refer to test data hereinafter.

Tested by: Ki-Hong, Nam / Project Engineer

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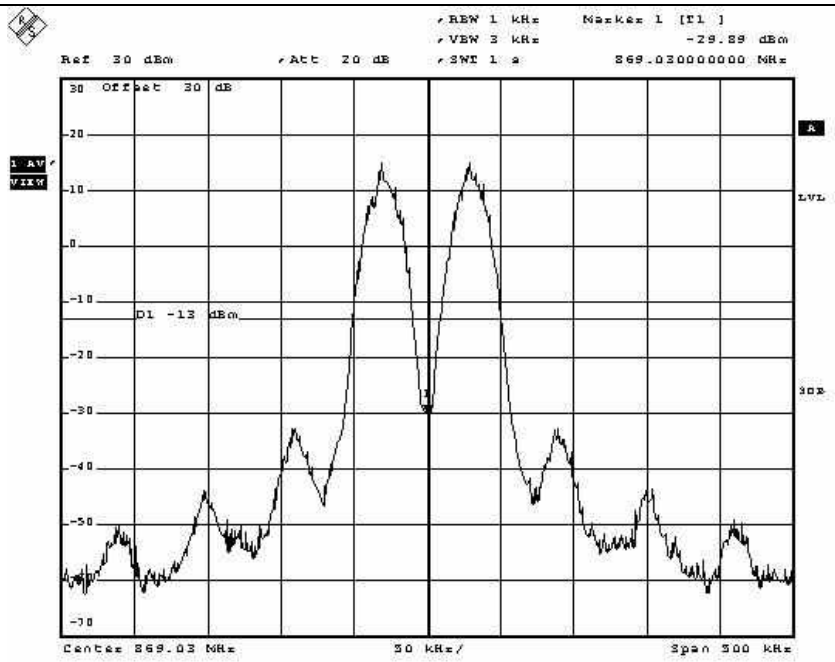
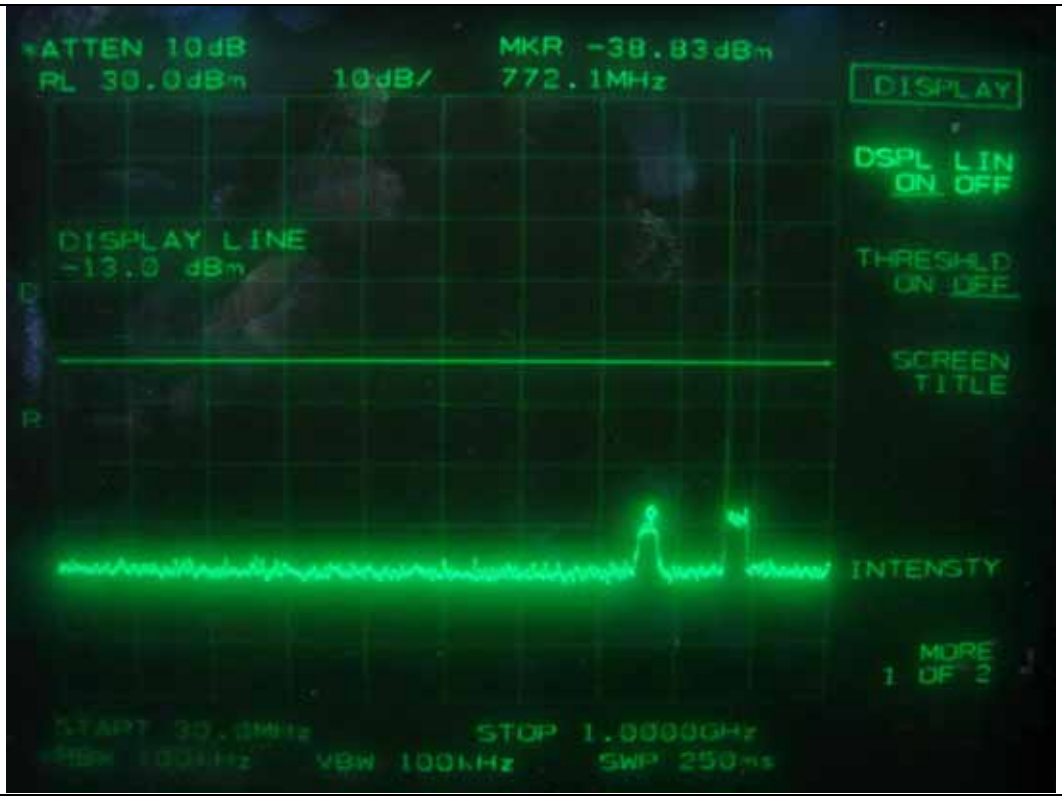


TDMA – Low Channel



TDMA – Low Channel

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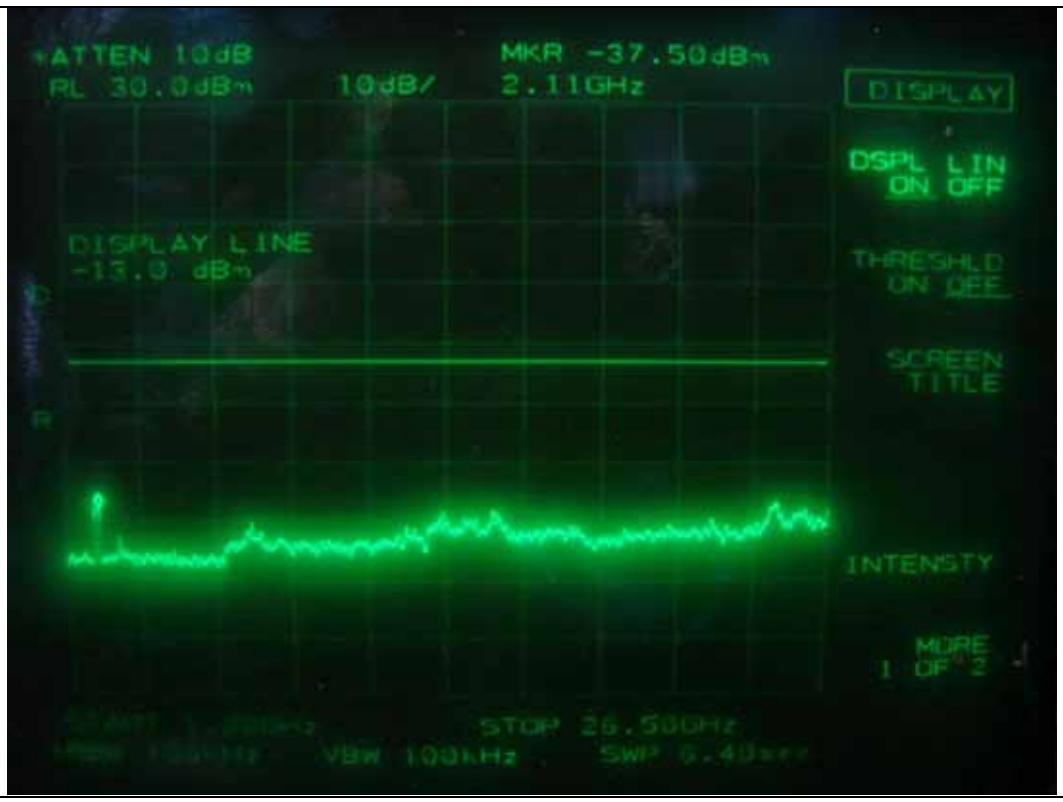

TDMA – Low Channel

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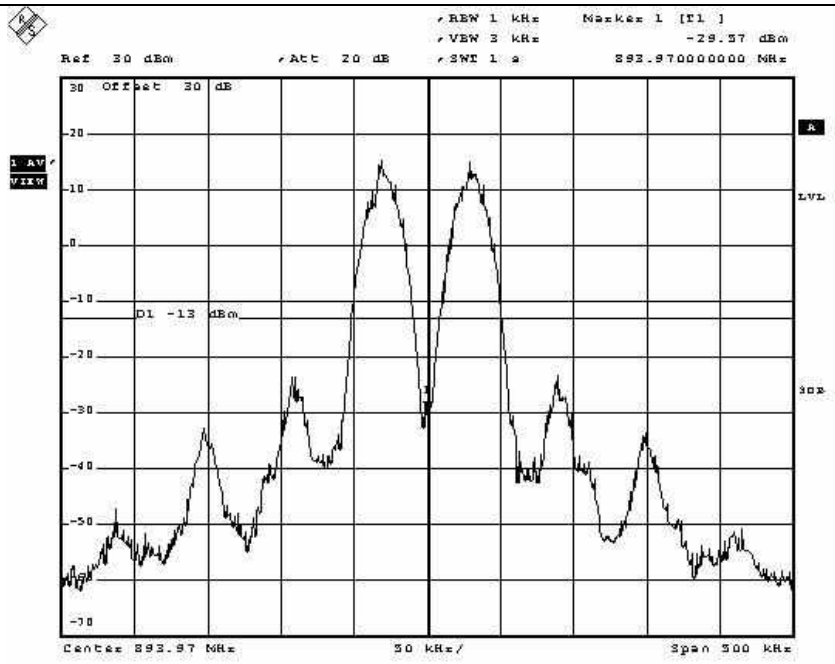
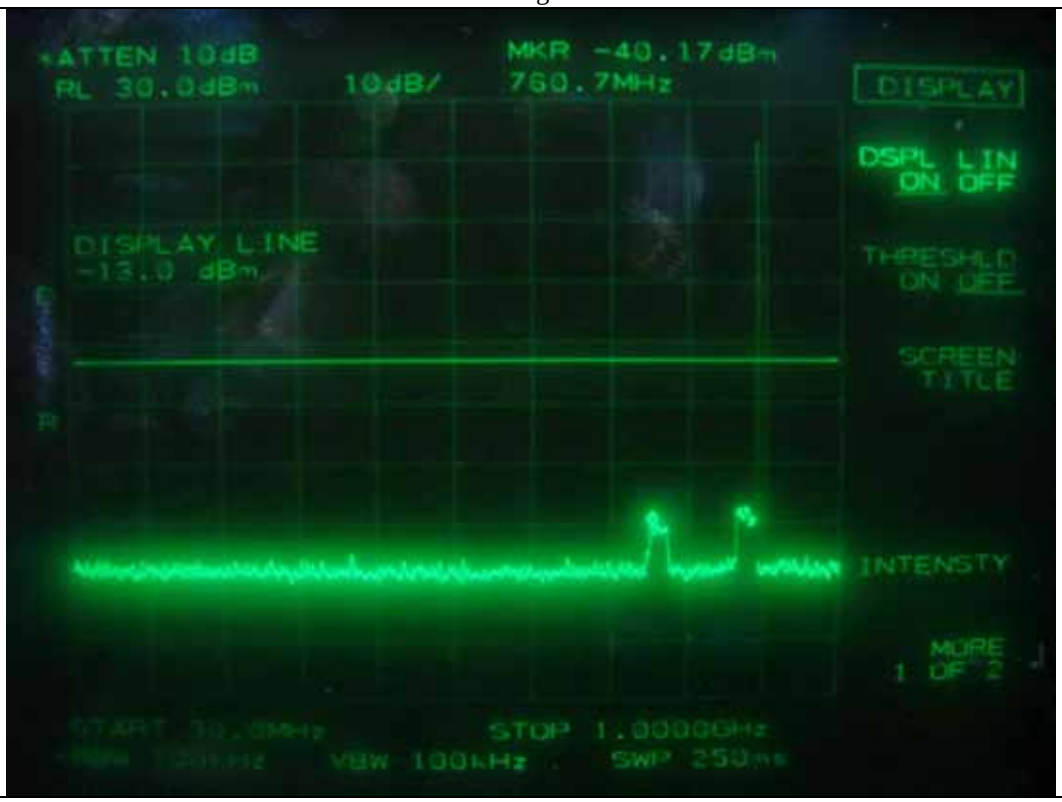


TDMA – High Channel



TDMA – High Channel

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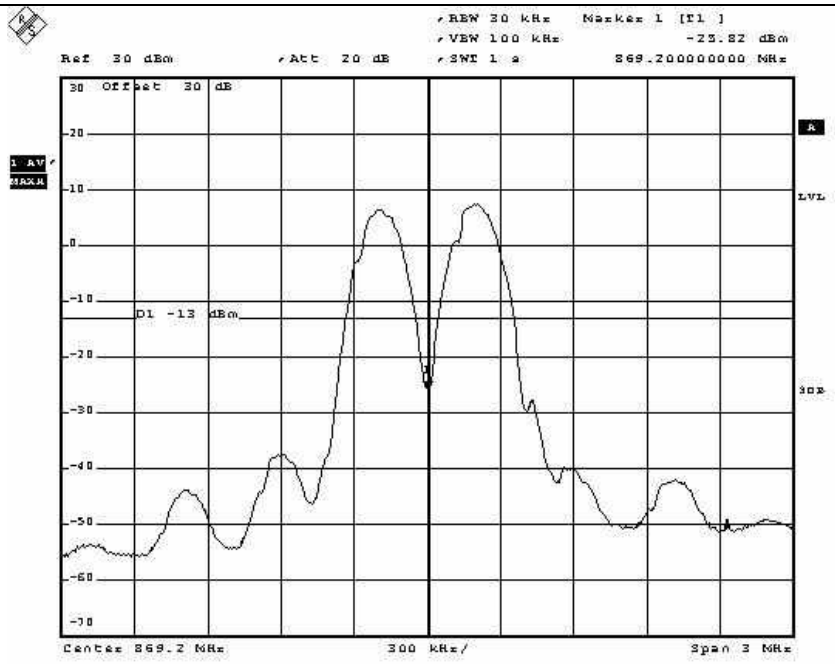
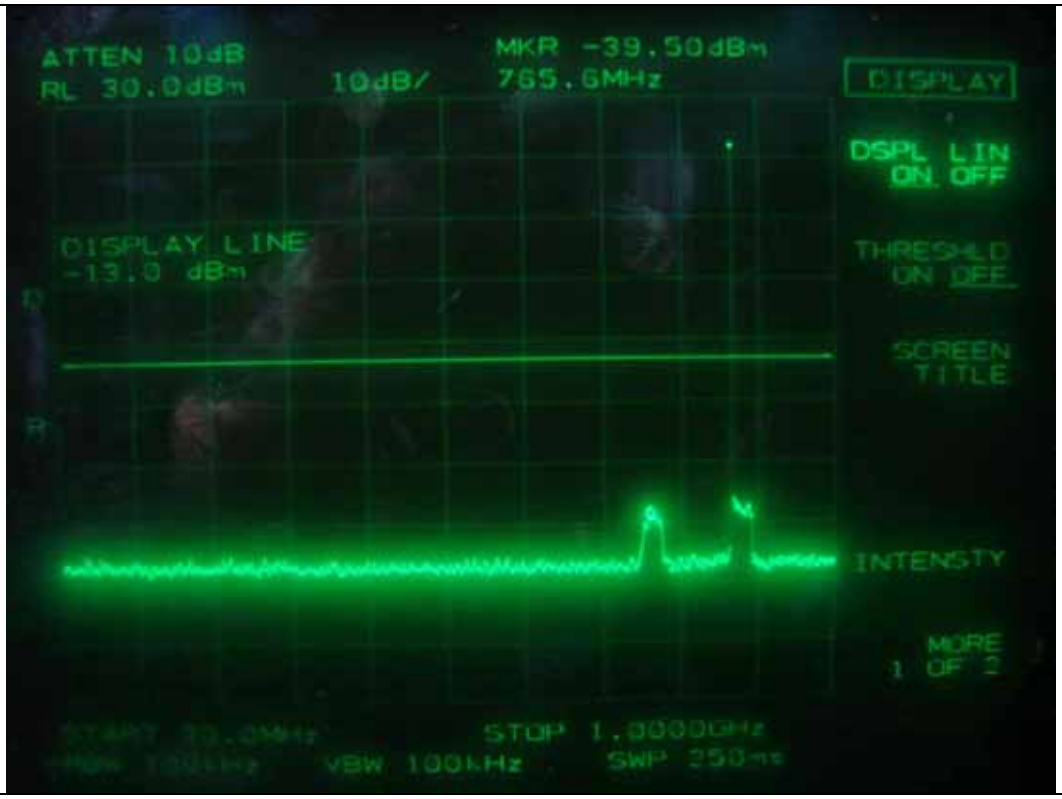


GSM – Low Channel



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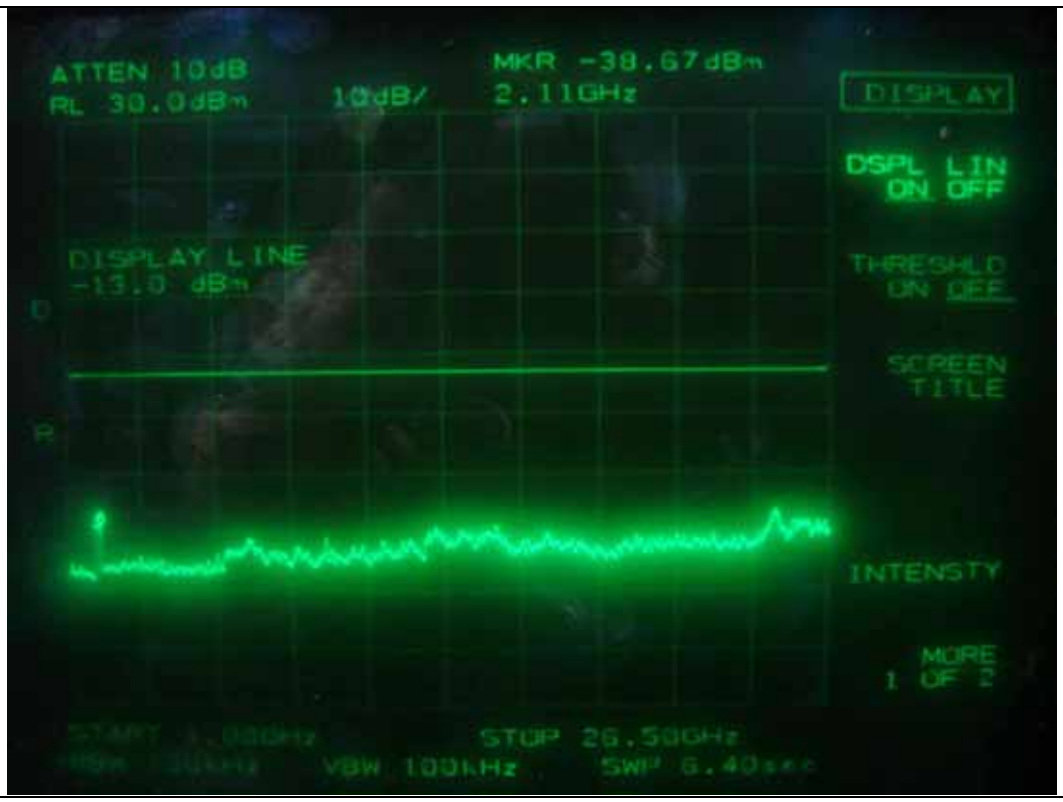

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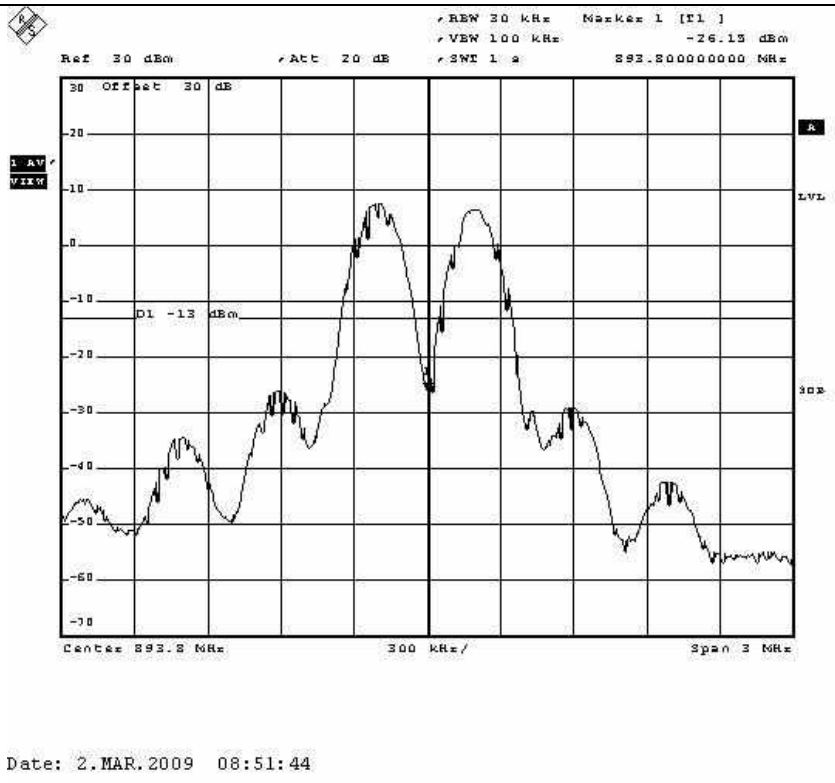

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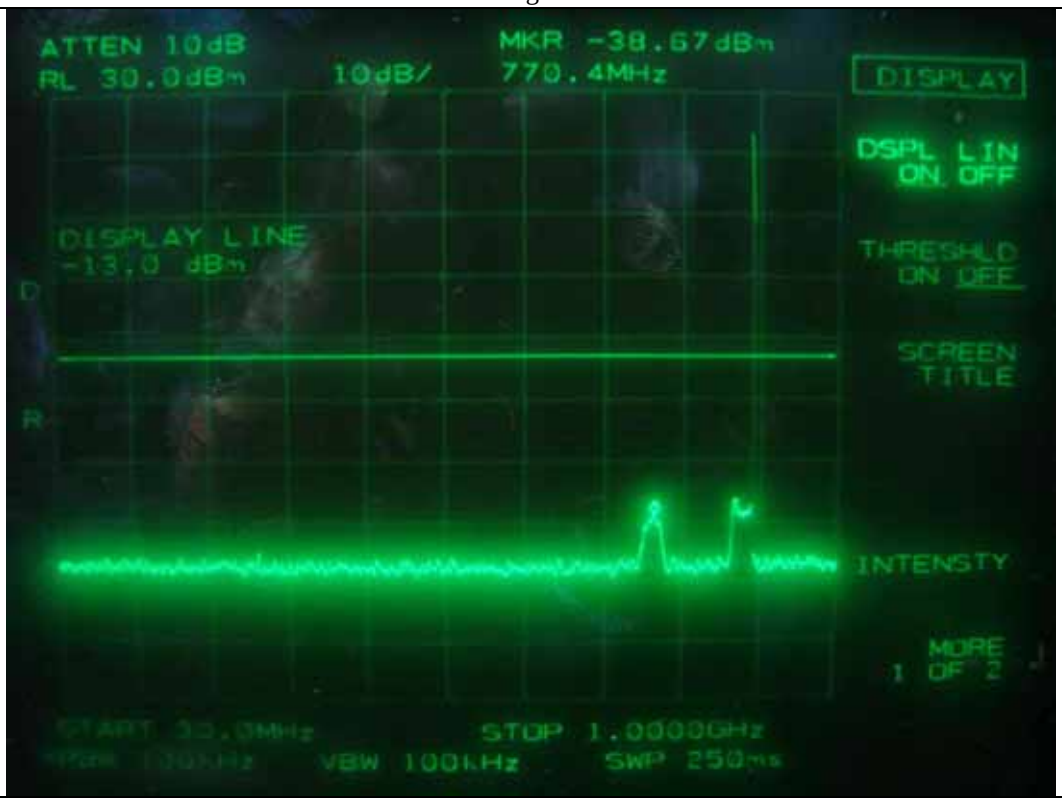

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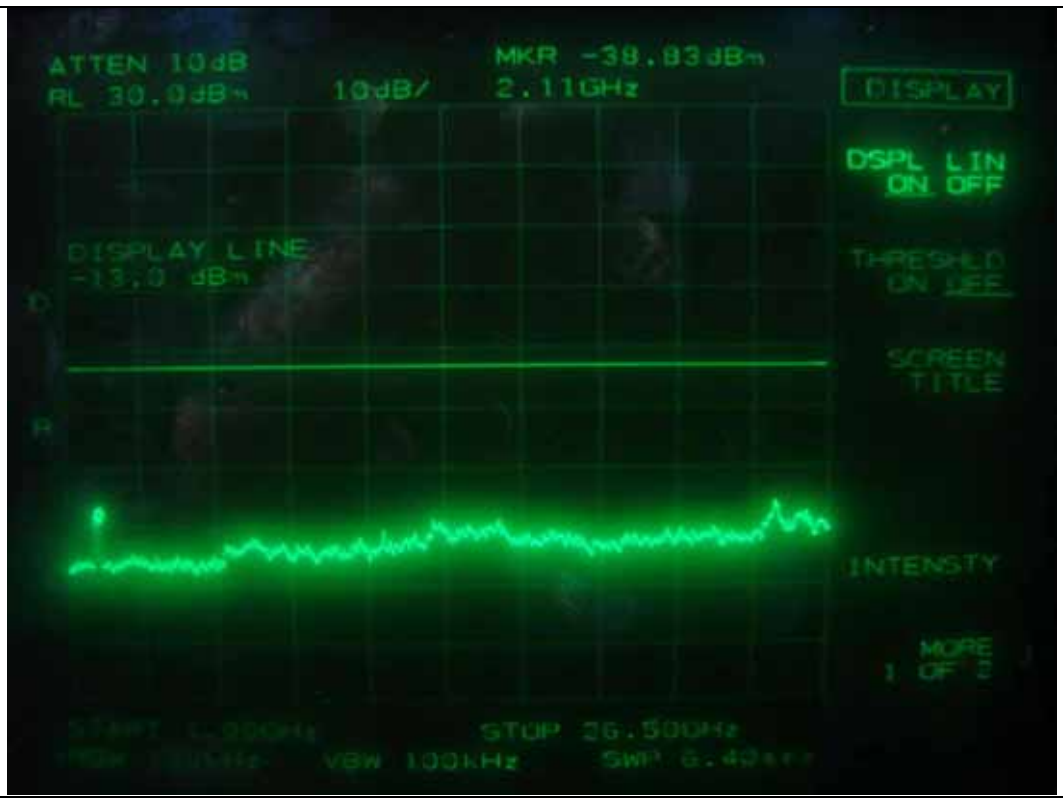

GSM – High Channel

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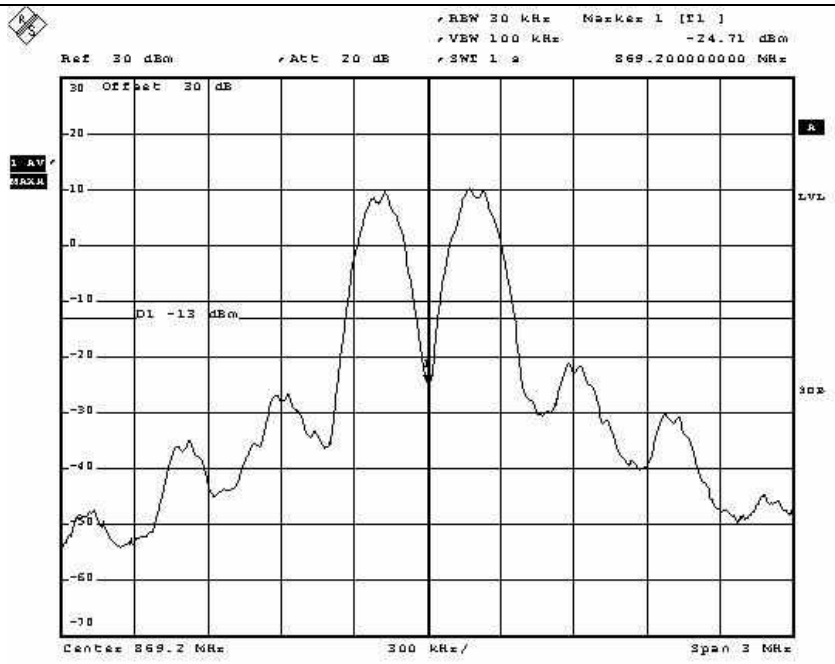
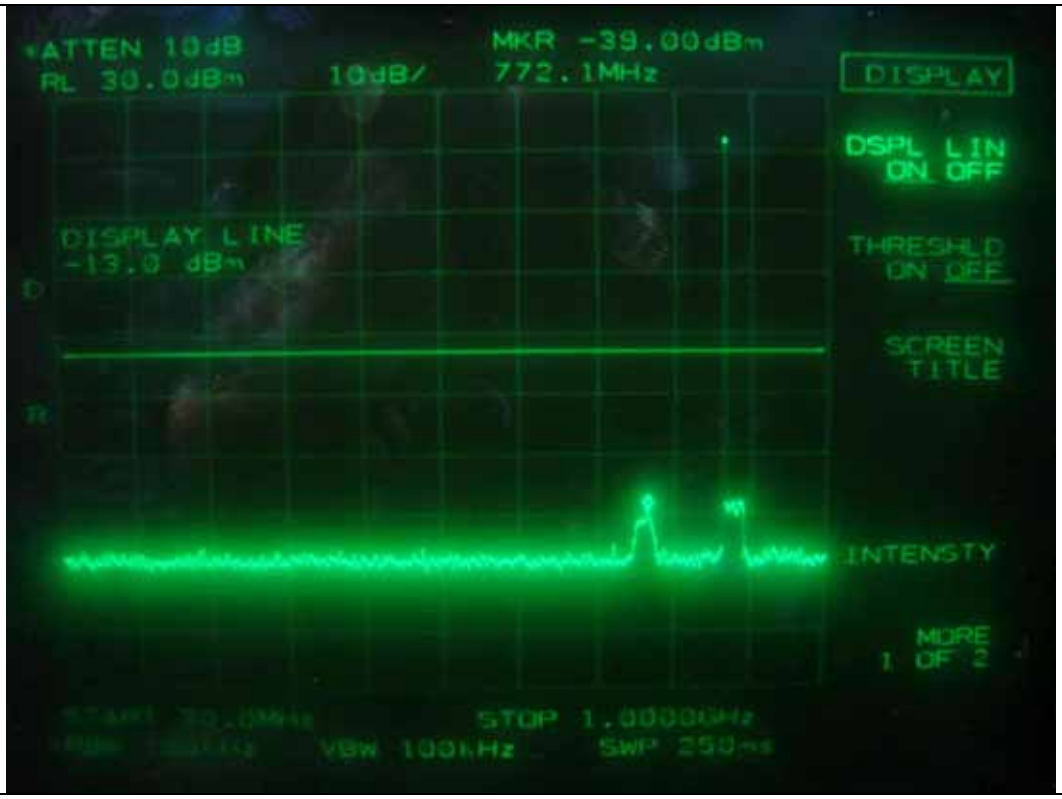


EDGE – Low Channel



EDGE – Low Channel

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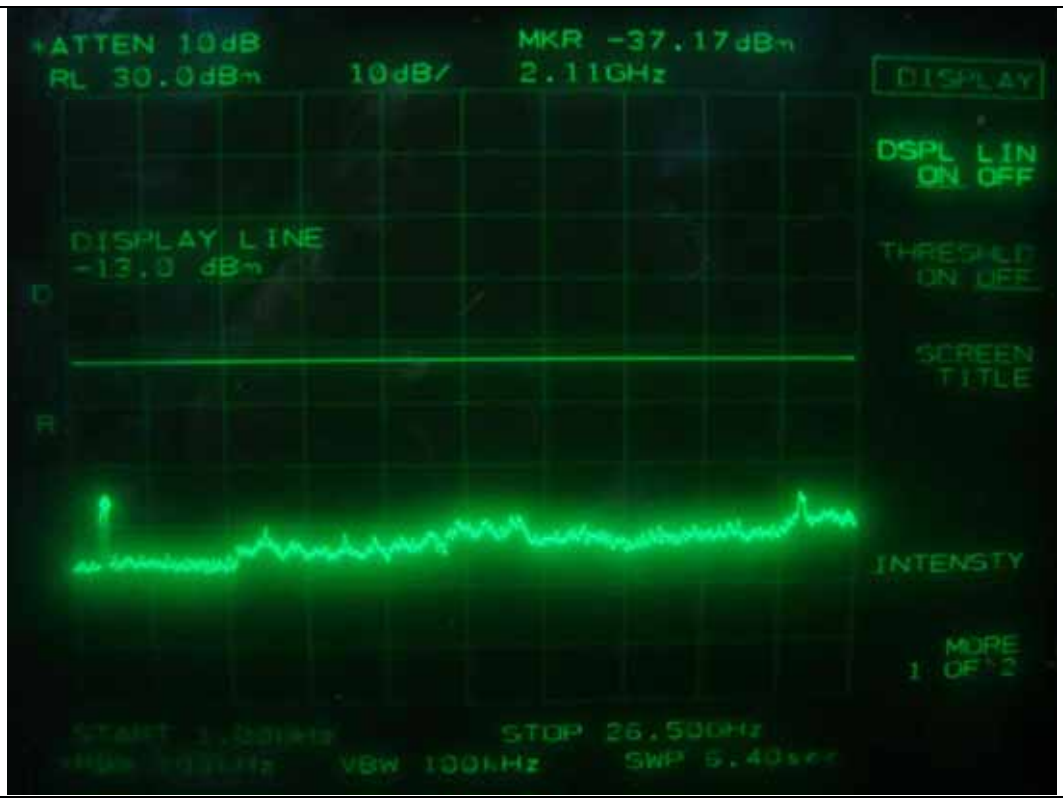

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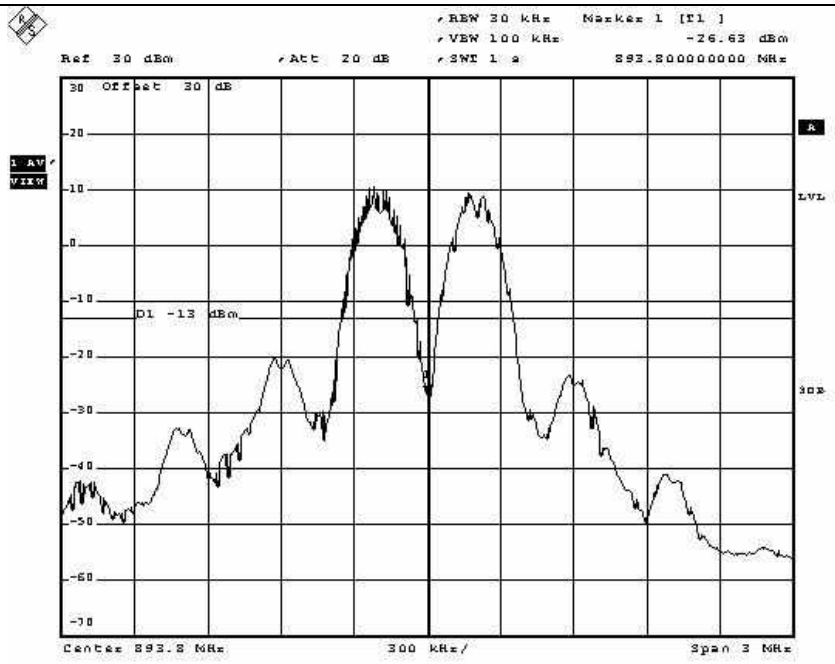
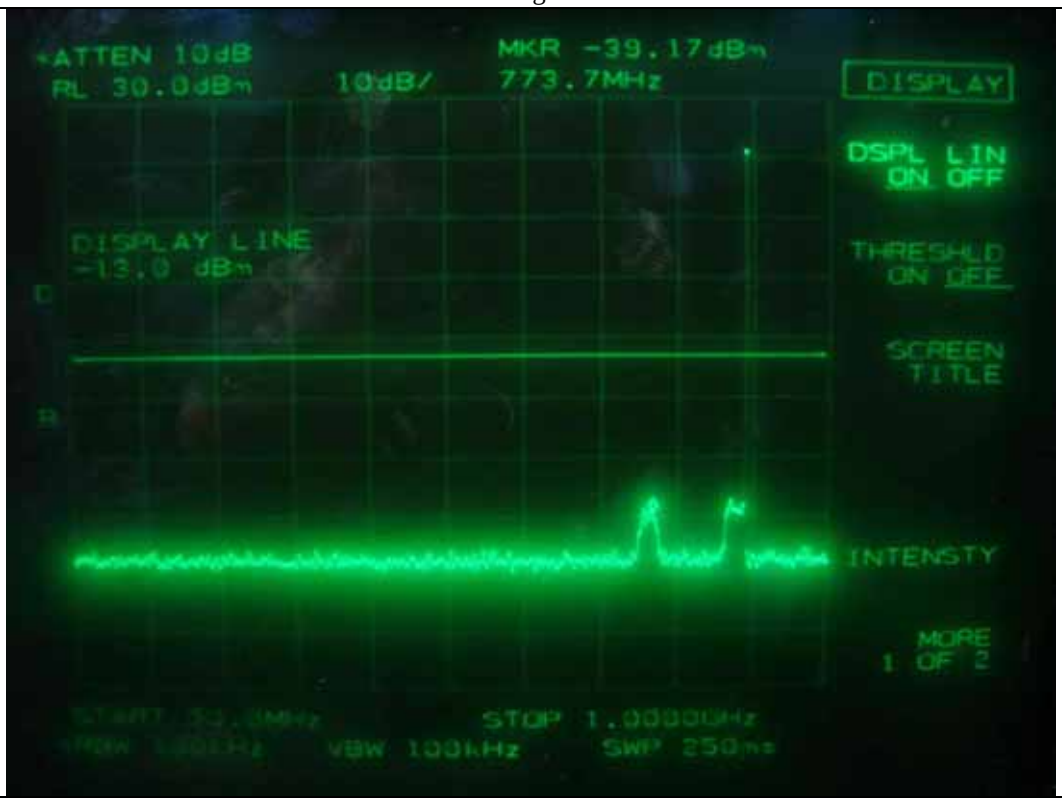


EDGE – High Channel



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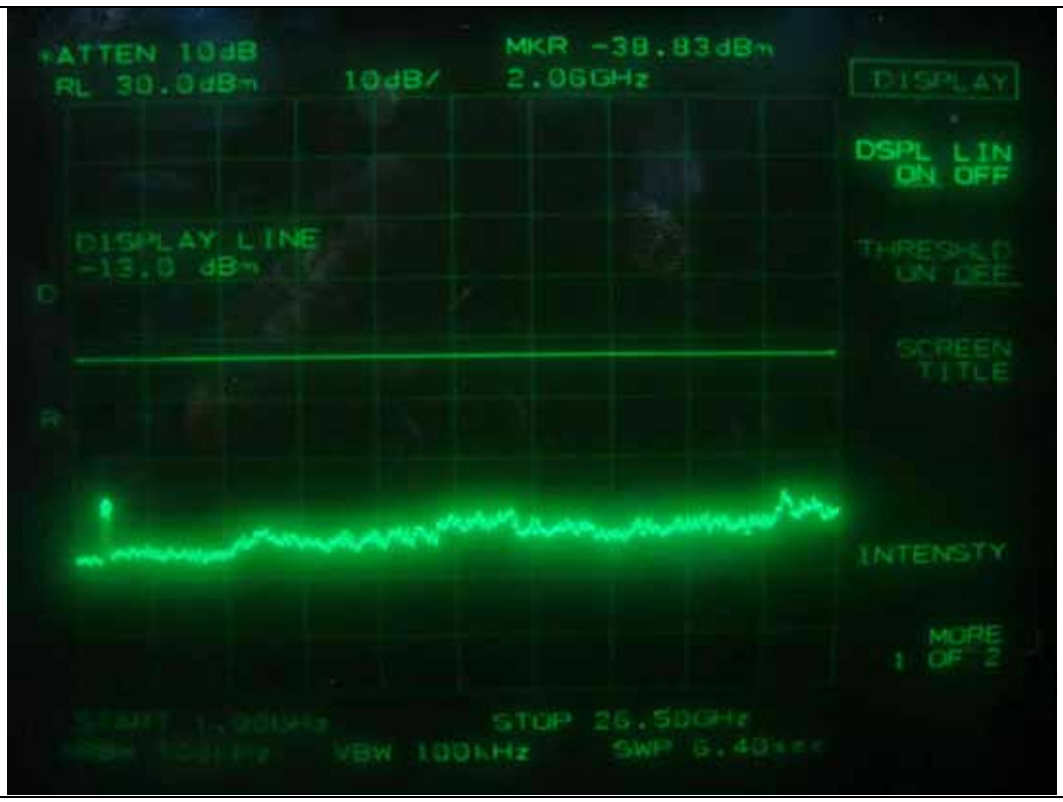

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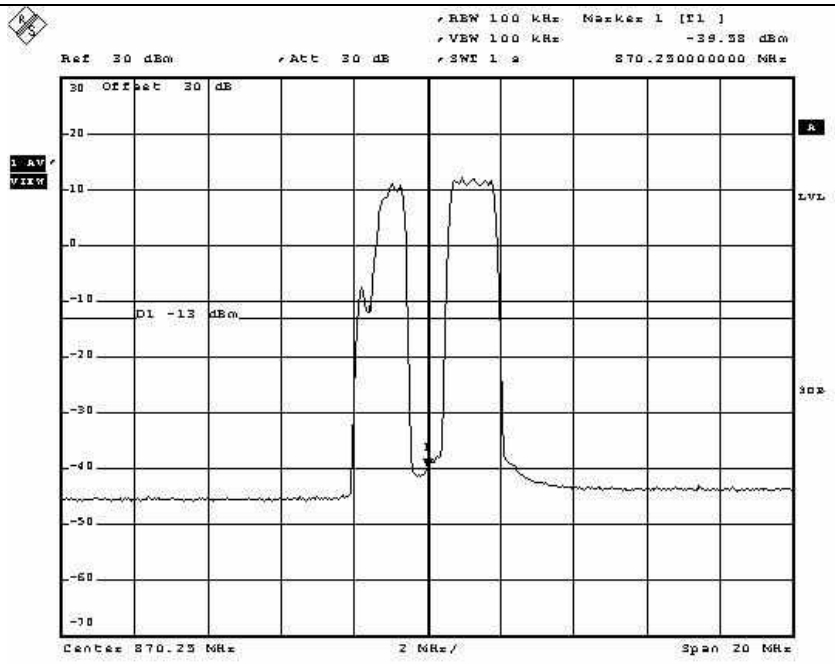
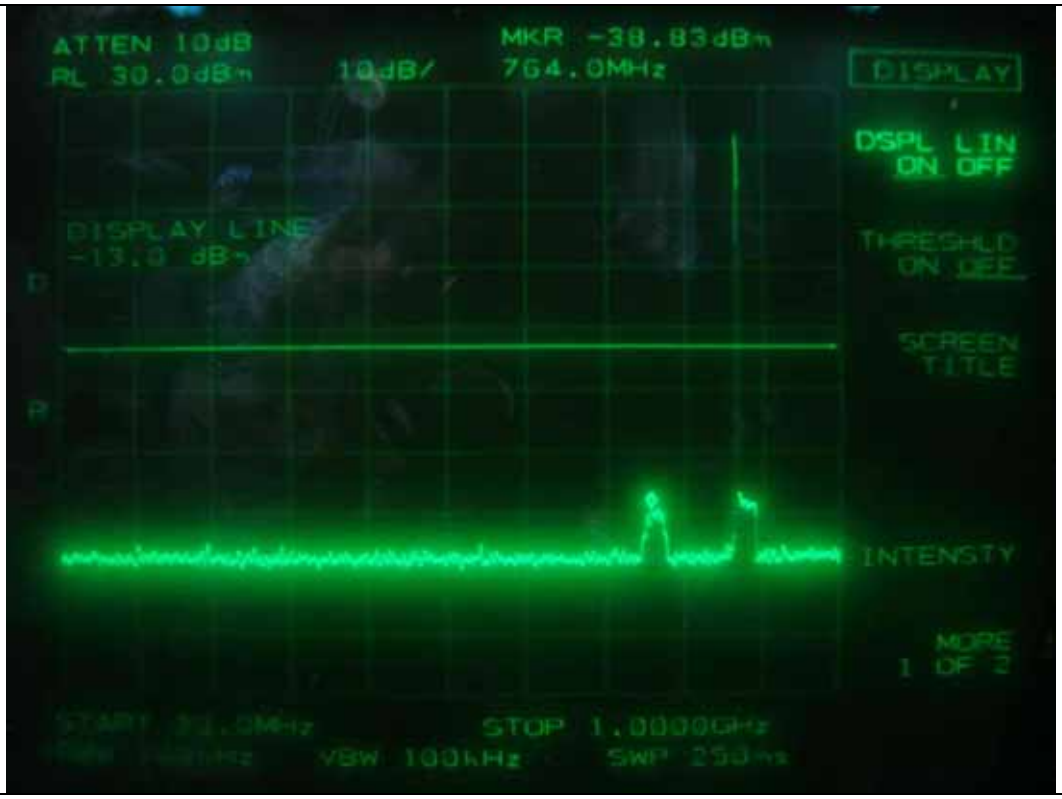


CDMA – Low Channel



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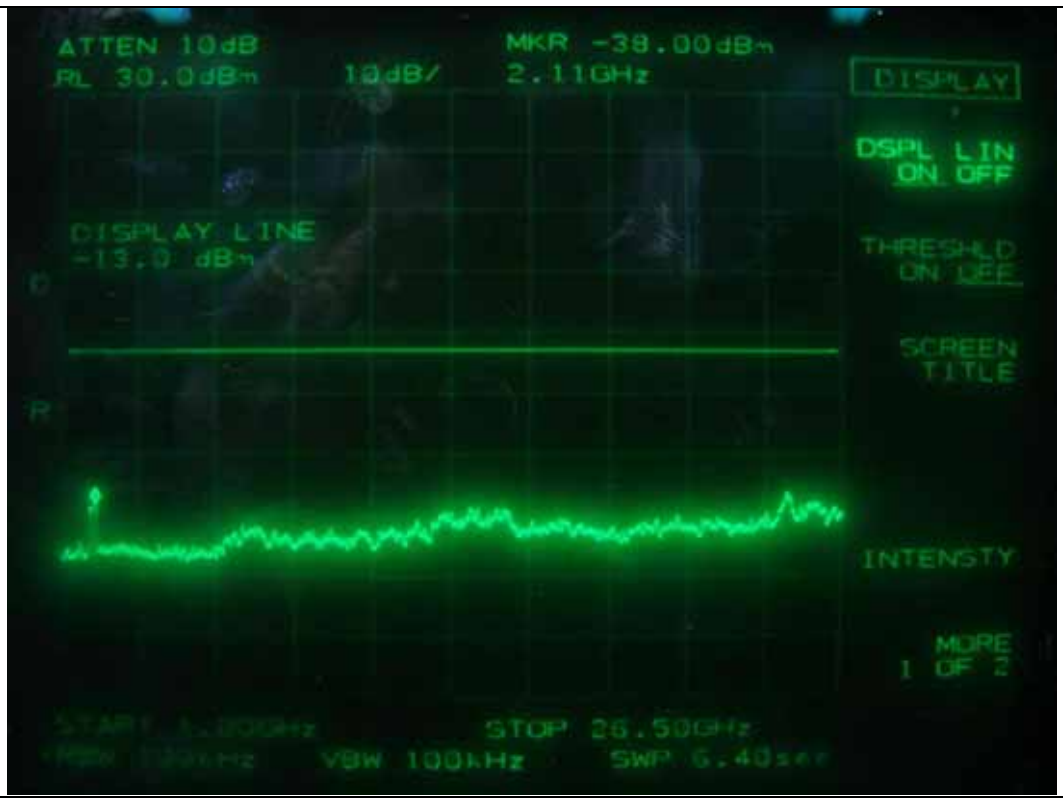

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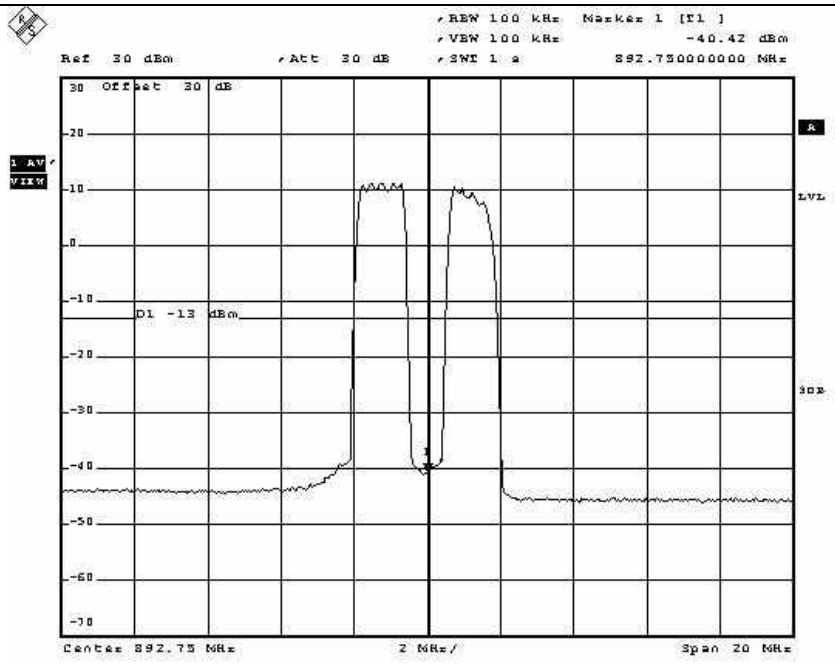
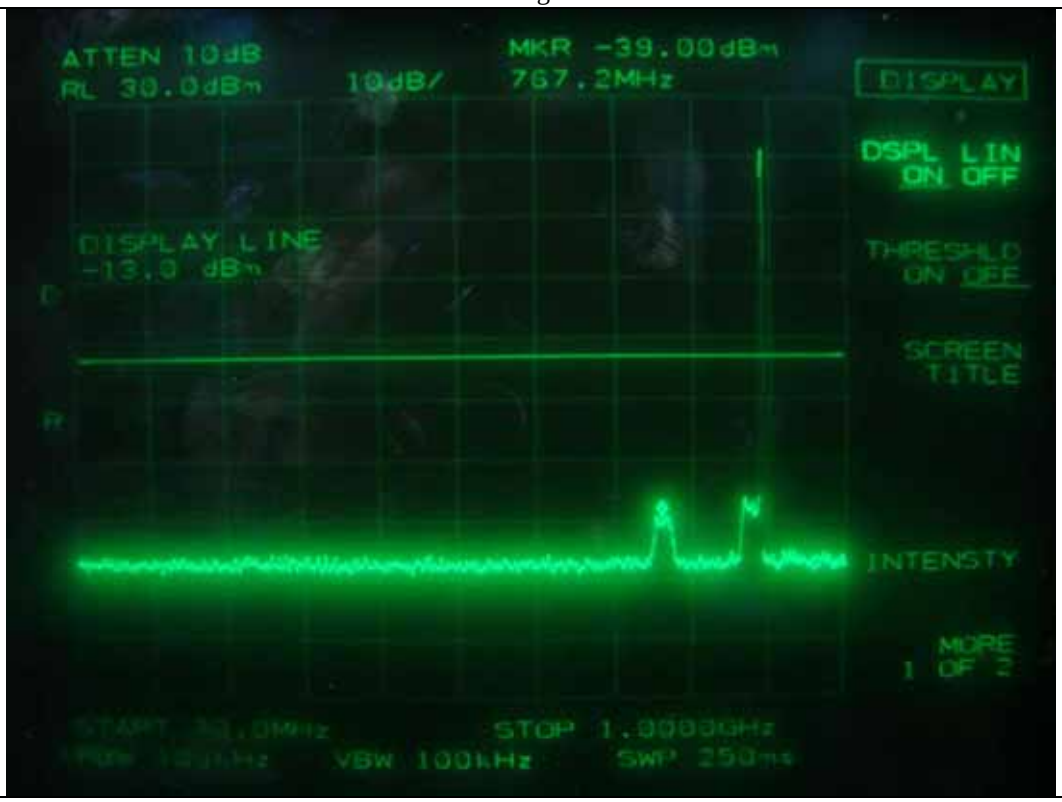


CDMA – High Channel



CDMA – High Channel

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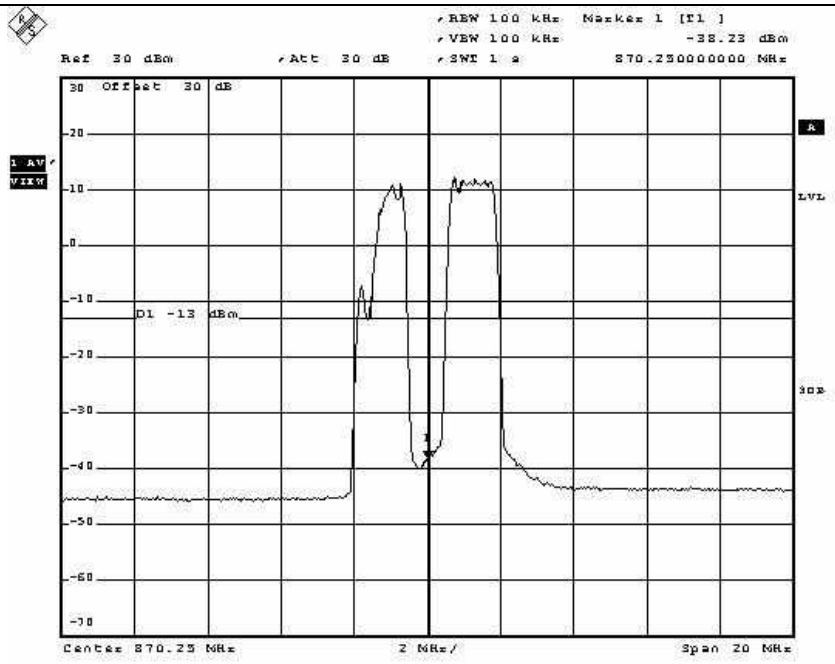
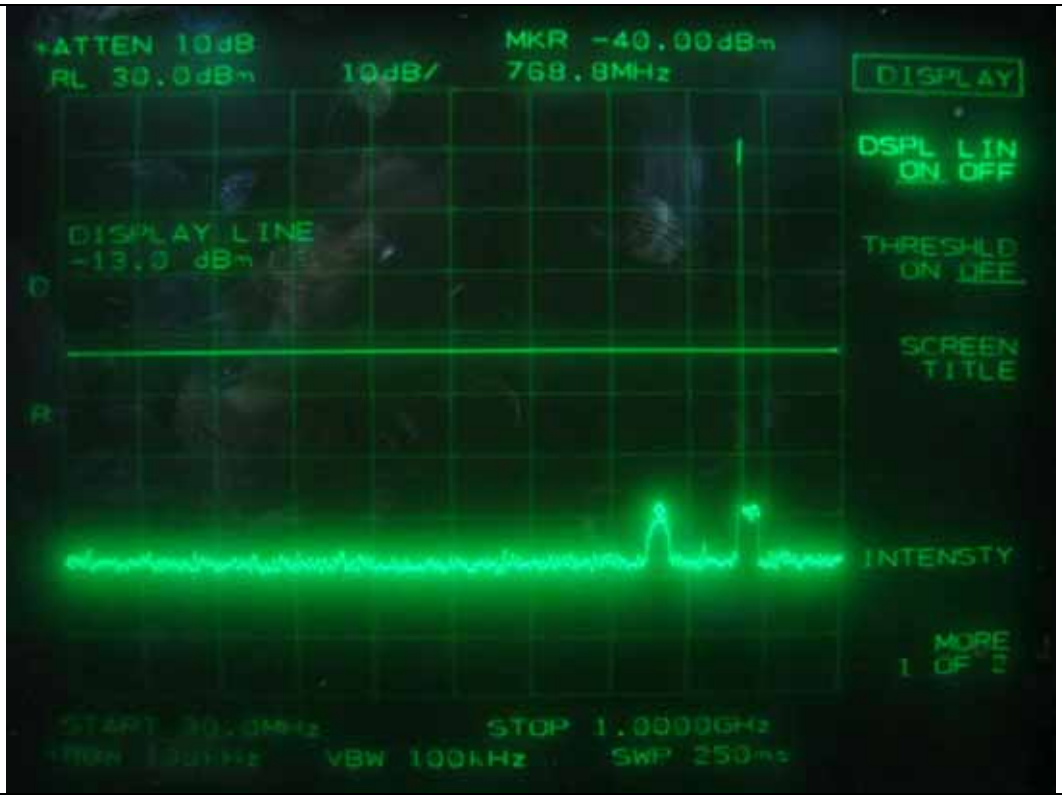


1xEVDO – Low Channel



1xEVDO – Low Channel

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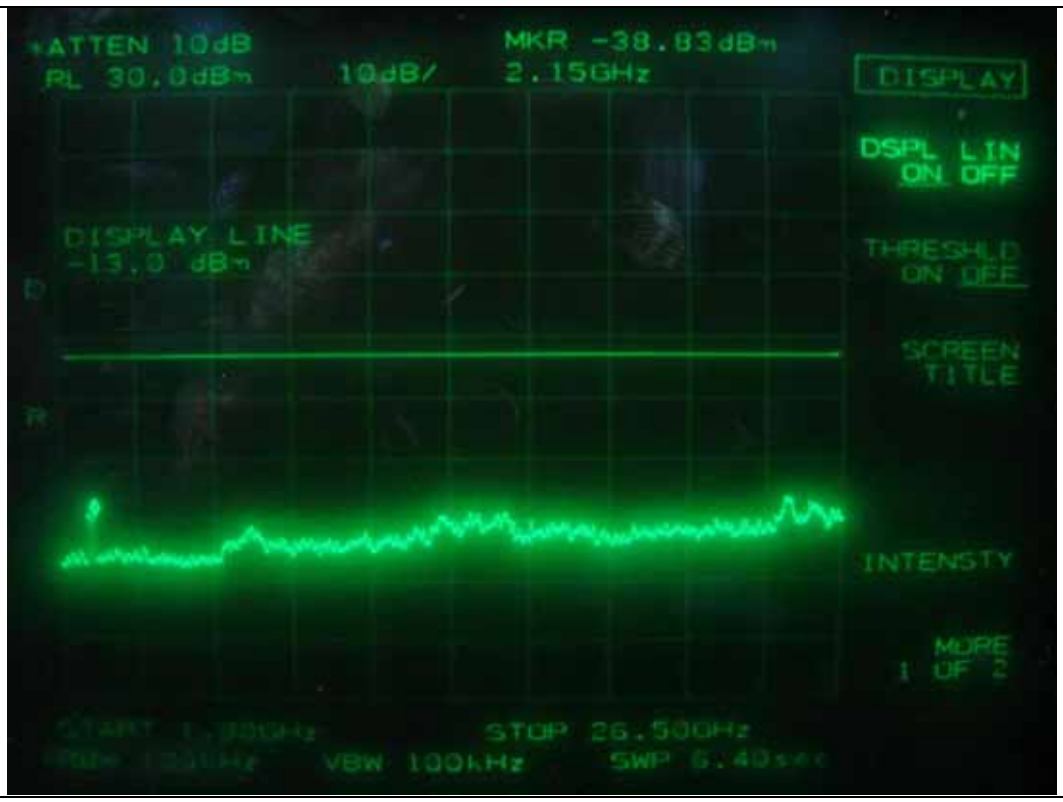

1xEVDO – Low Channel

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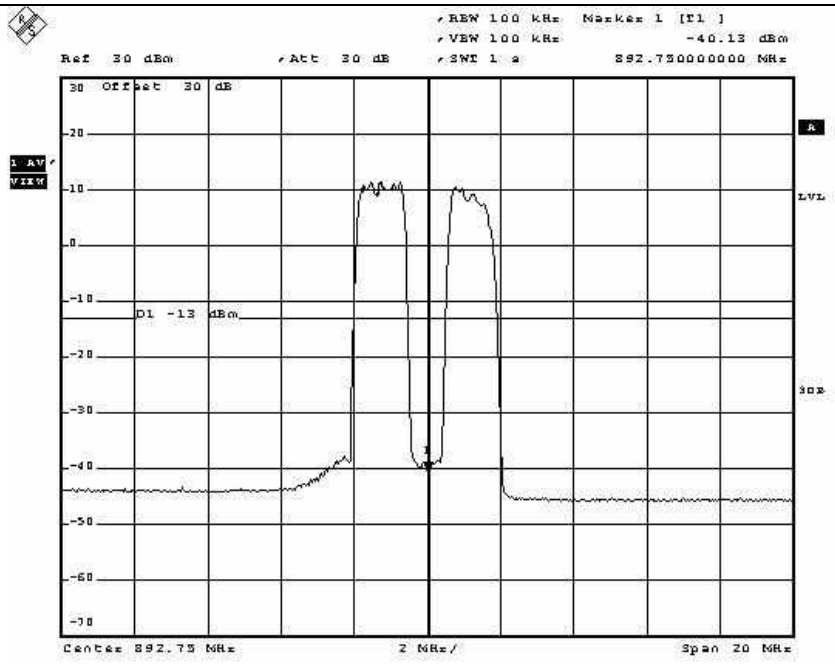
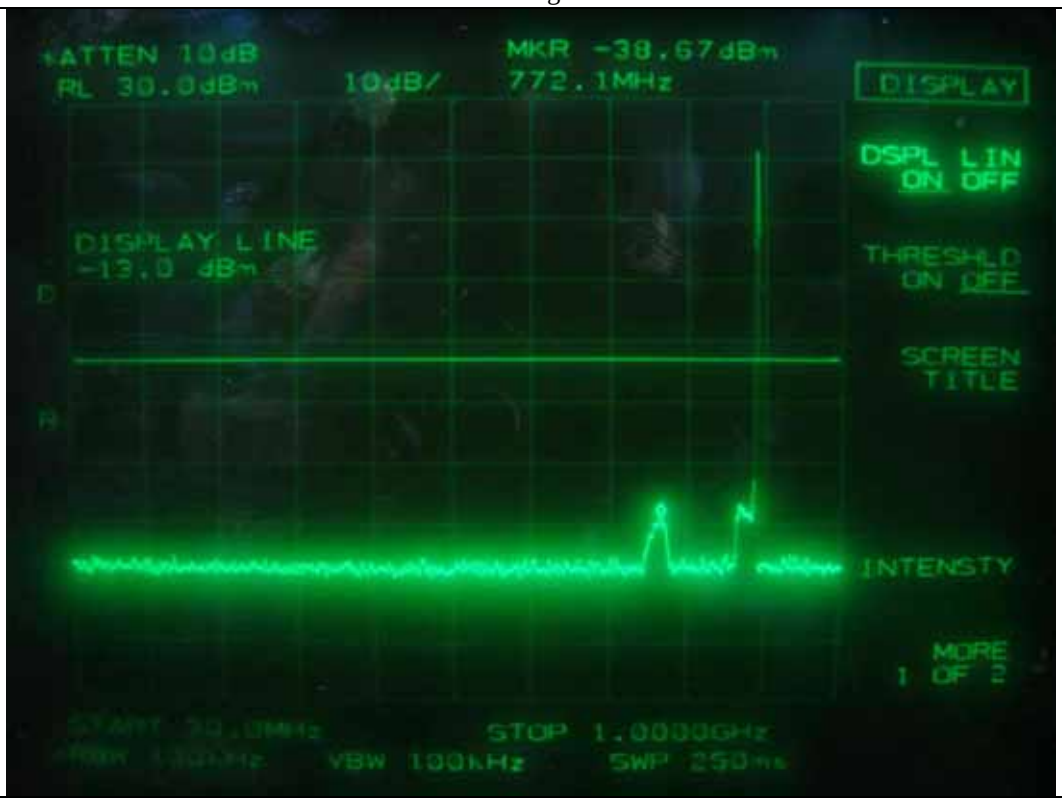


1xEVDO – High Channel



1xEVDO – High Channel

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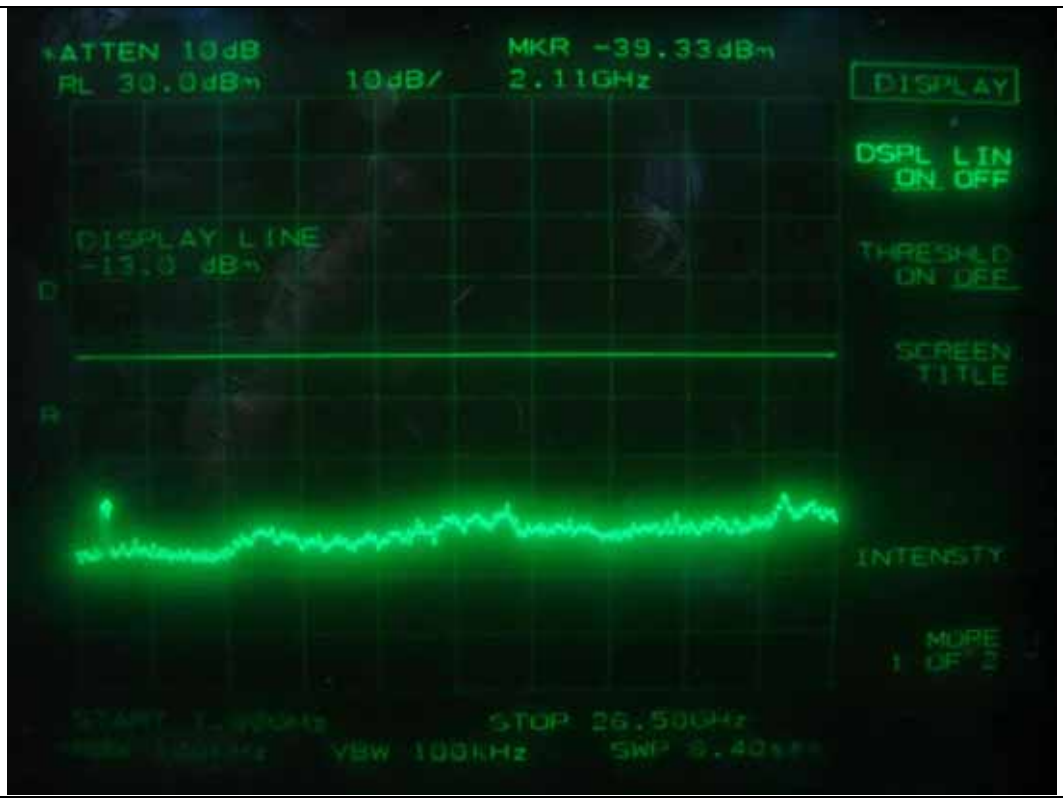

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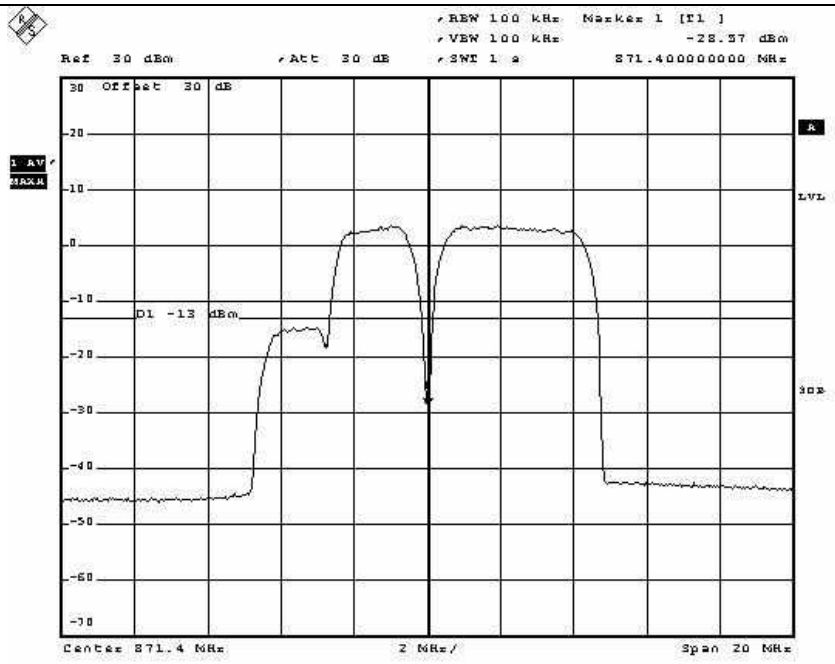
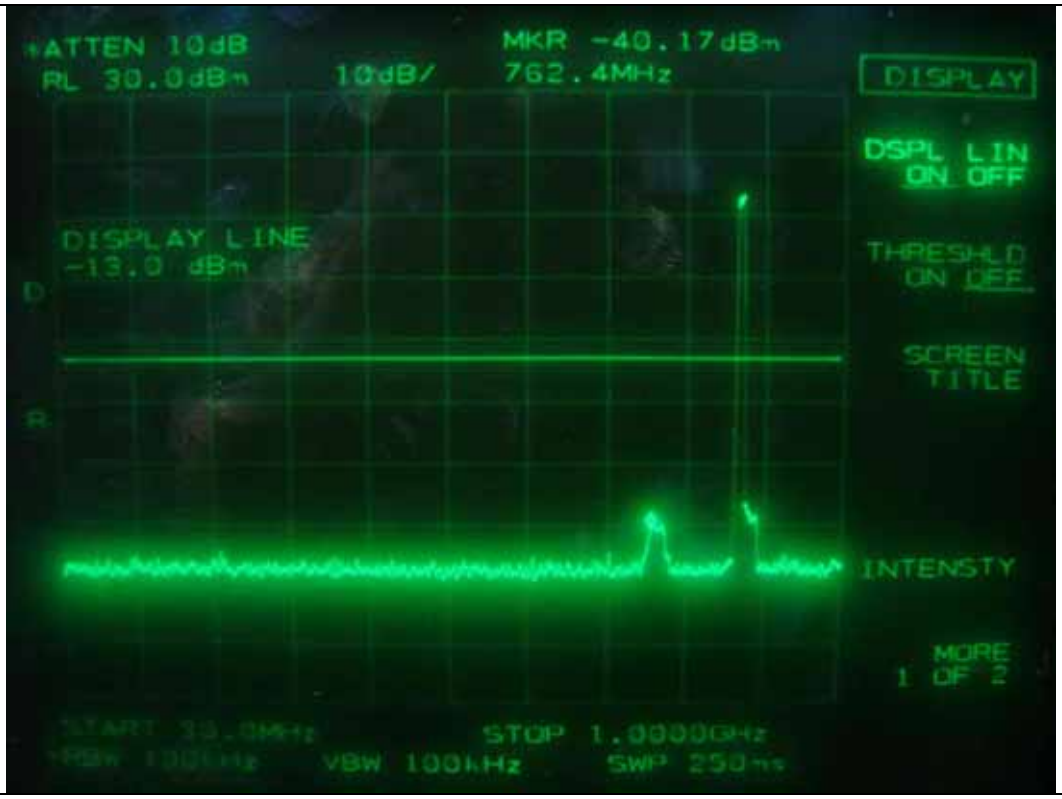


WCDMA – Low Channel



WCDMA – Low Channel

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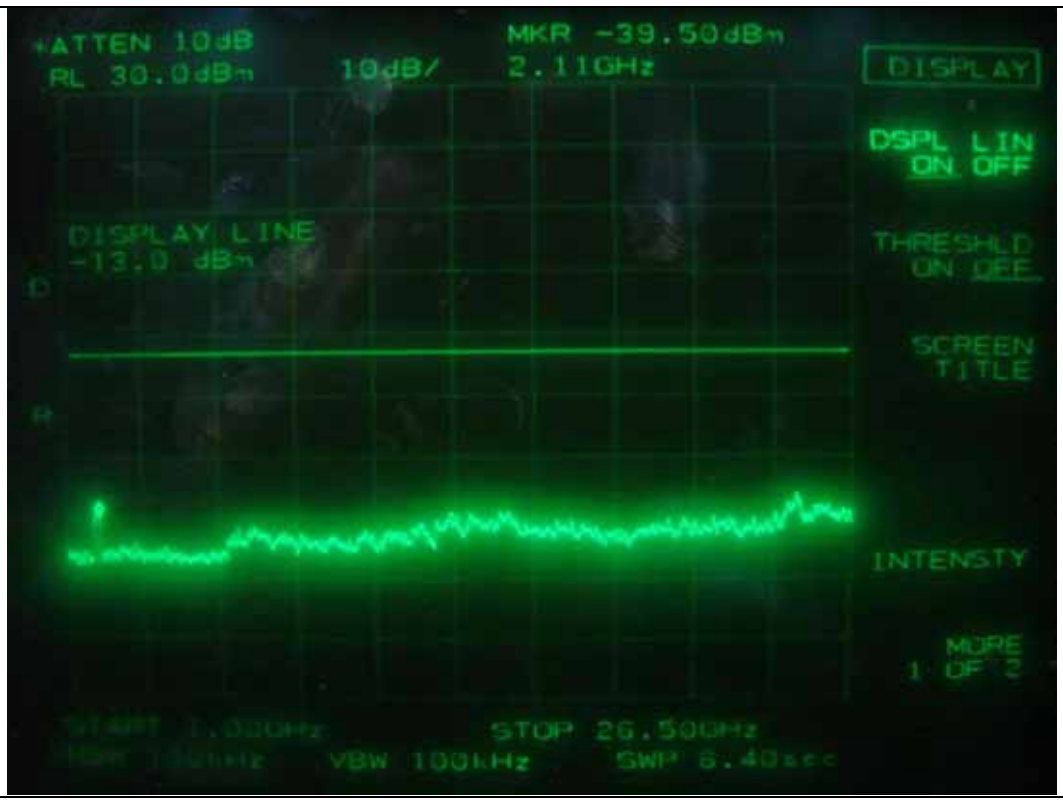

WCDMA – Low Channel

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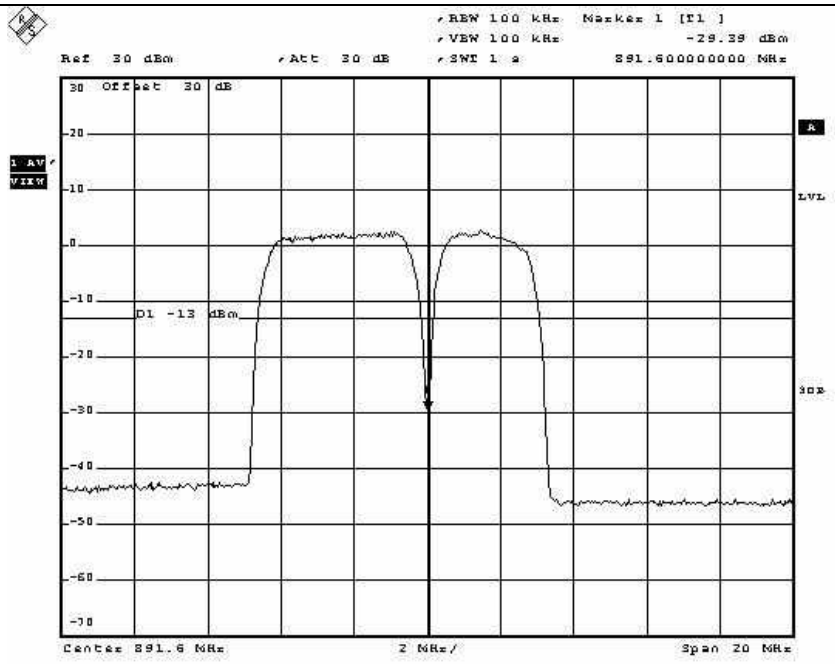
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



WCDMA – High Channel

WCDMA – High Channel

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WCDMA – High Channel

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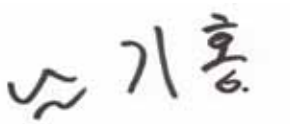
9.4.2 Test data for Part 90 I

-. Test Date : February 27 ~ March 02, 2009

-. Test Result : Pass

Modulation	Channel	Measured
iDEN	Low	< -13 dBm
	High	< -13 dBm
SMR	Low	< -13 dBm
	High	< -13 dBm

Remark: Intermodulation products must be attenuated below the rated power of the EUT at least 43 + 10log (Pw), equivalent to -13 dBm. Please refer to test data hereinafter.



Tested by: Ki-Hong, Nam / Project Engineer

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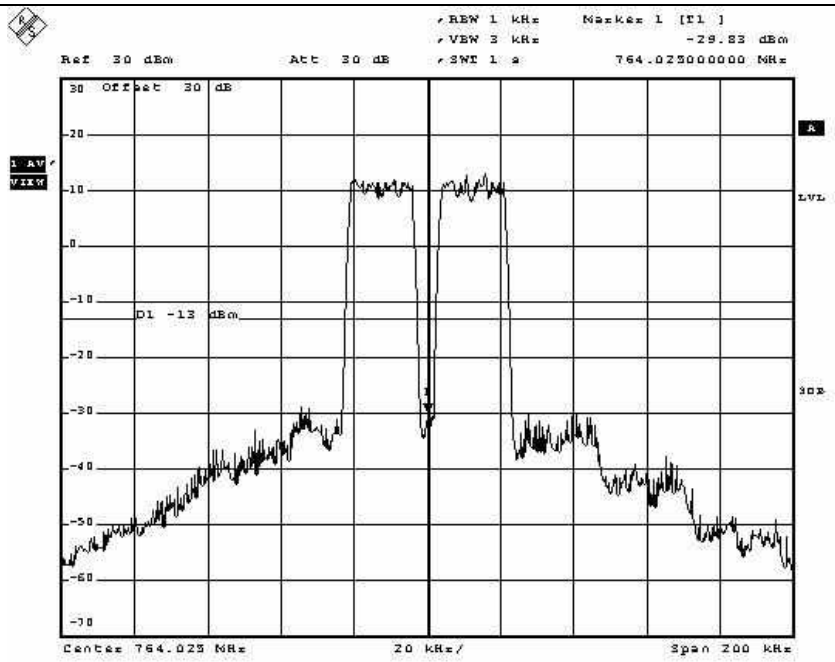
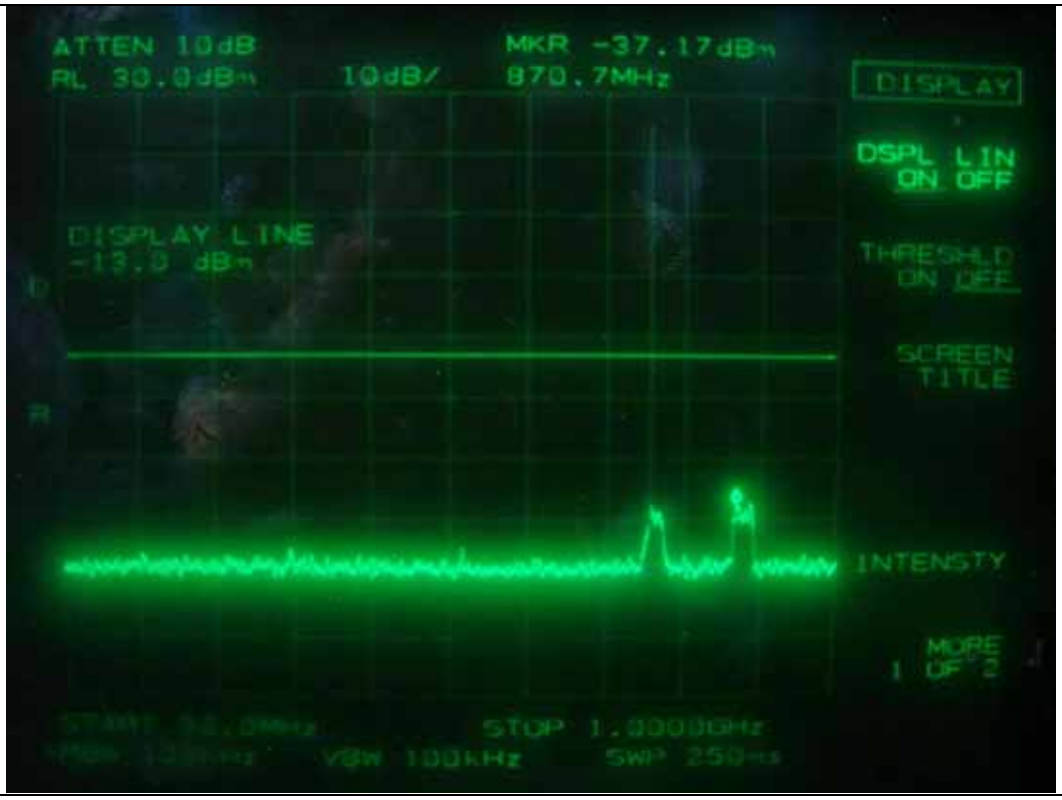


iDEN – Low Channel



iDEN – Low Channel

iDEN – Low Channel

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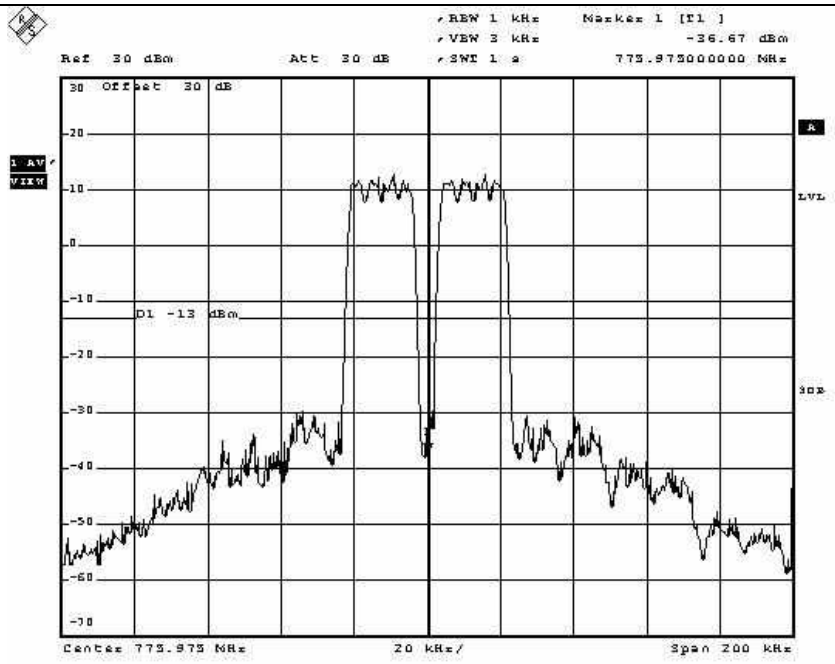
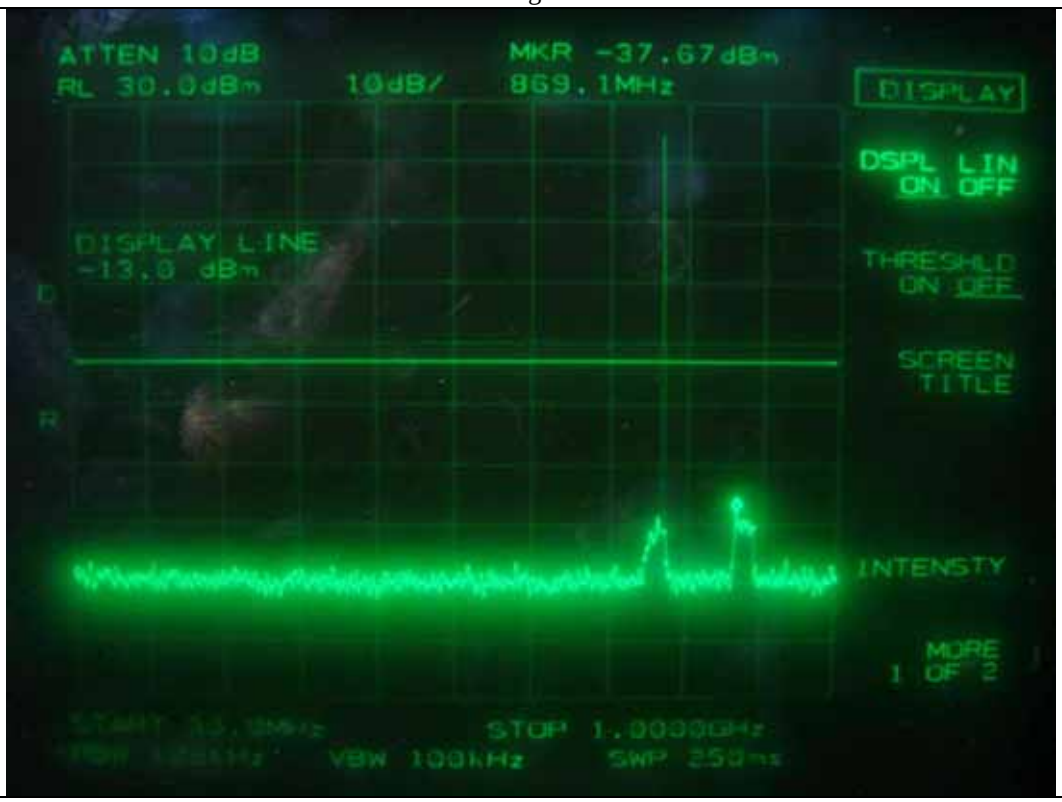


iDEN – High Channel



iDEN – High Channel

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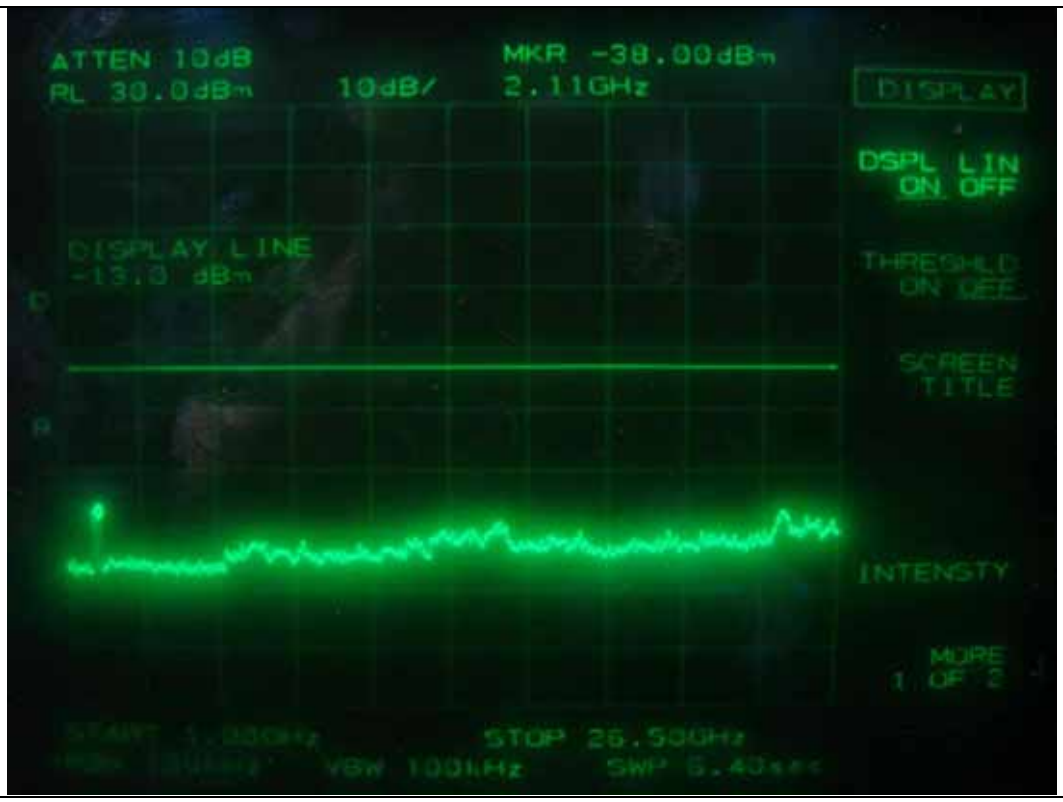
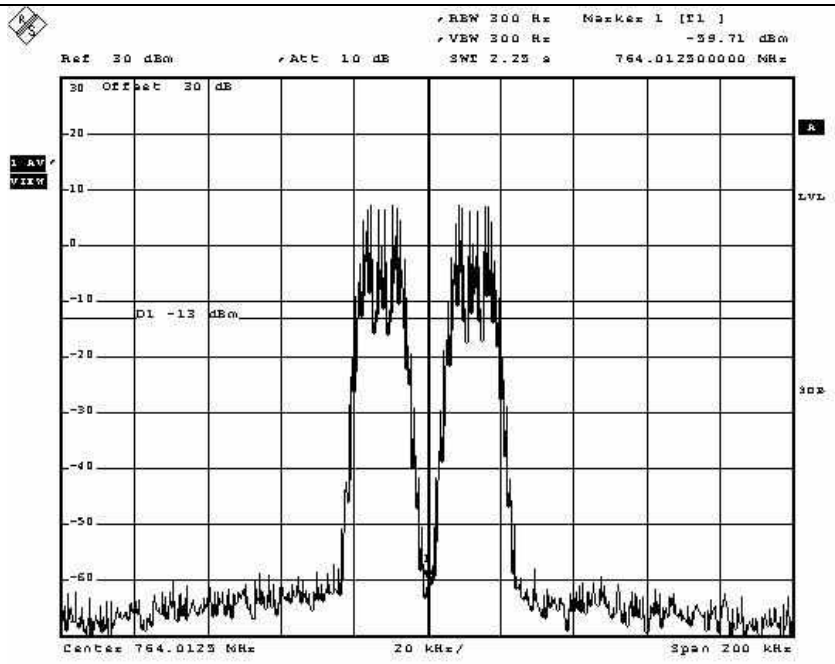
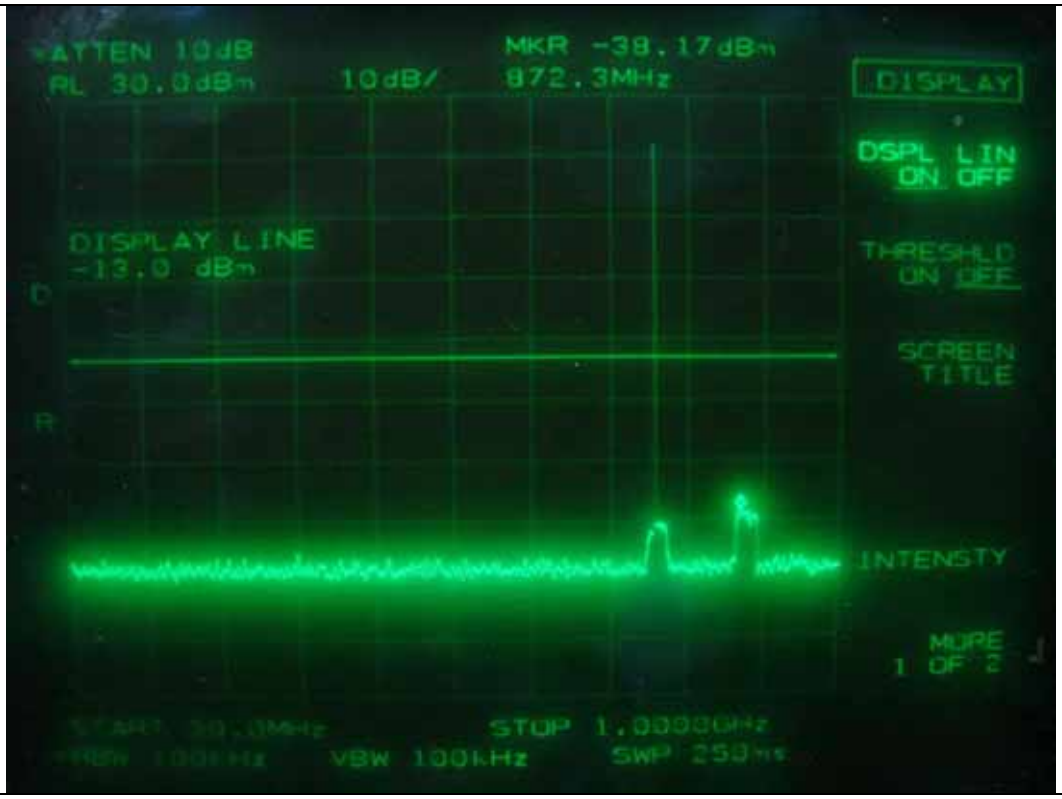


iDEN – High Channel



SMR – Low Channel



SMR – Low Channel

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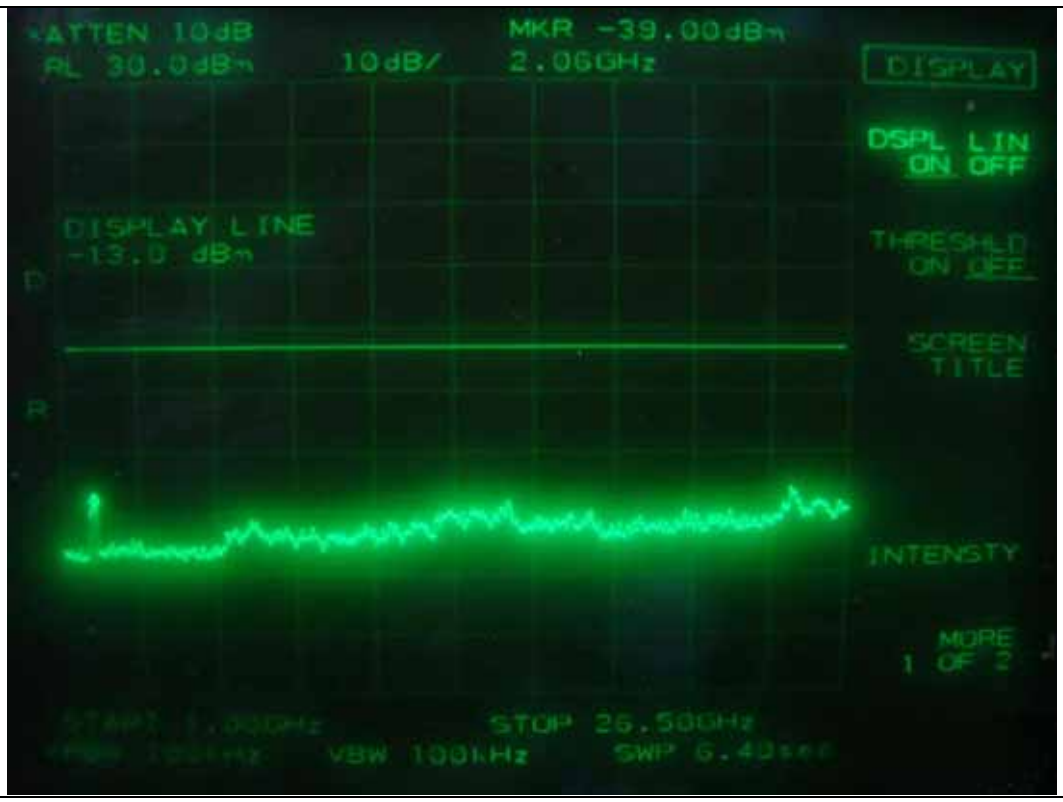

SMR – Low Channel

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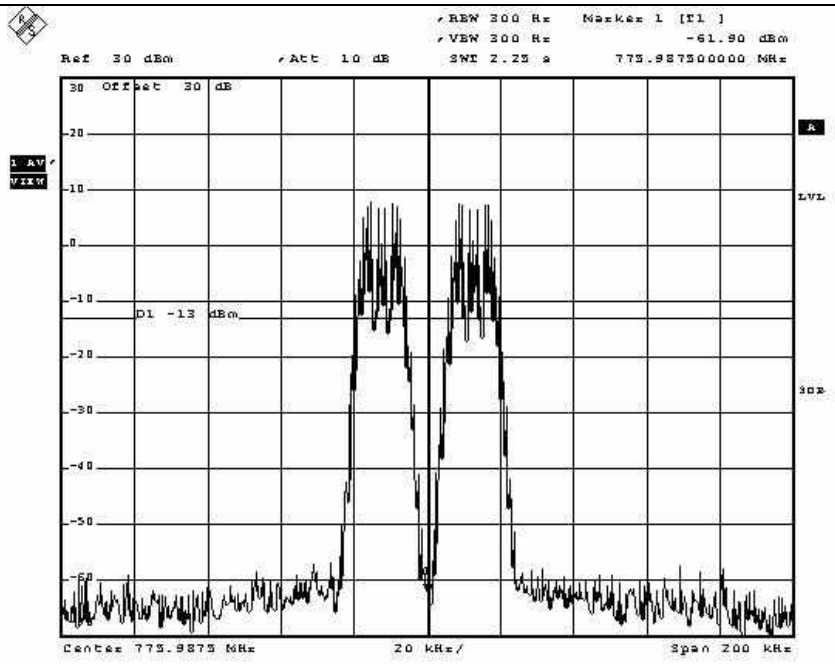
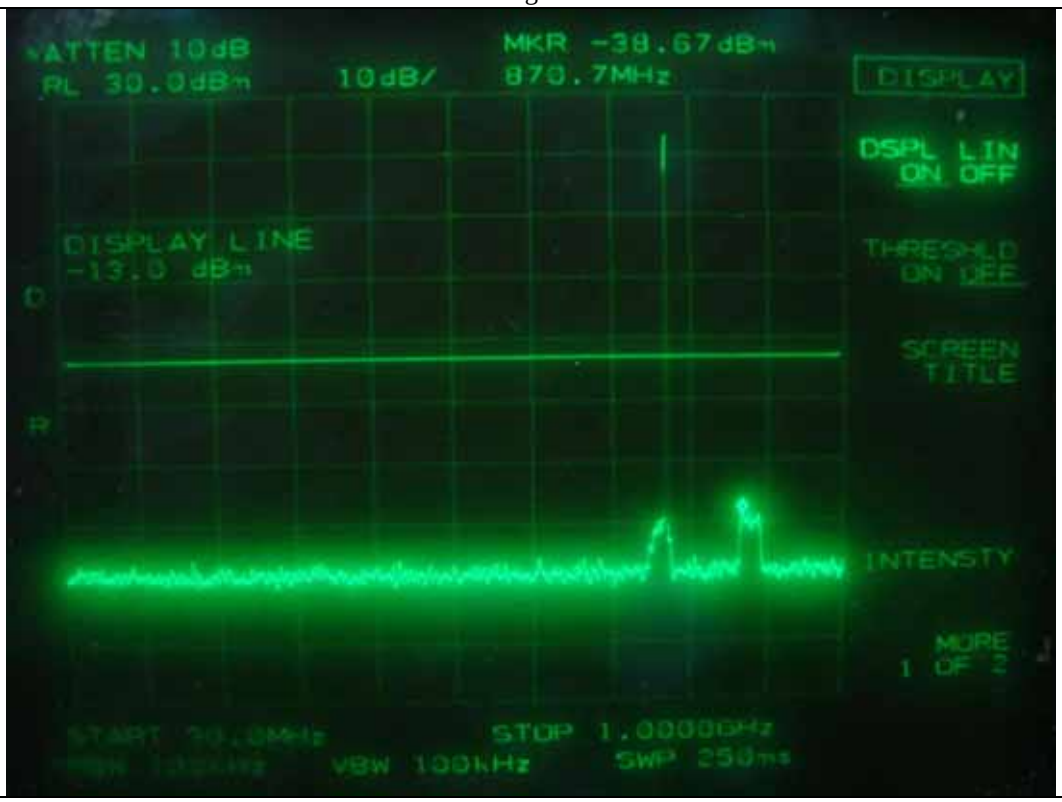


SMR – High Channel



SMR – High Channel

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SMR – High Channel

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10. FIELD STRENGTH OF SPURIOUS RADIATION

10.1 Operating environment

Temperature	:	12.8 °C
Relative humidity	:	40 %R.H.

10.2 Test set-up

The radiated emissions measurements were on the 3 meters, open-field test site. The EUT and other support equipment were placed on a non-conductive turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

The frequency spectrum from 30 MHz to up to 10th harmonic of the fundamental frequency was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 and 4.0 meters in order to determine the maximum emission levels. The test was performed by placing the EUT on 3-orthogonal axis. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

The maximum radiated emission was recorded and used as reference for the effective radiated power measurement. The EUT was then replaced by a tuned dipole antenna or Horn antenna and was oriented for vertical polarization and then the length was adjusted to correspond to the frequency of the transmitter. The substitution antenna was connected to a signal generator with a coaxial cable. The receiving antenna height was raised and lowered again through the specified range of height until maximum signal level is detected by the measuring receiver. The signal to the substitution antenna was adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the EUT radiated power measured, corrected for the change of input attenuation setting of the measuring receiver. The signal generator level was recorded and corrected by the power loss in the cable between the signal generator and substitution antenna and further corrected for the gain of the dipole antenna or horn antenna used relative to an ideal tuned dipole antenna. The measurement was repeated with the test antenna and the substitution antenna oriented for horizontal polarization. The measure of the effective radiated power is the larger of the two levels recorded.

10.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	ESVD	Rohde & Schwarz	EMI Test Receiver	838453/018	Nov. 06, 2008
■ -	8564E	Hewlett-Packard	Spectrum Analyzer	3650A00756	June 16, 2008
■ -	83051A	Agilent	Preamplifier	3950M00201	June 16, 2008
■ -	E4432B	Hewlett-Packard	Signal Generator	US38440950	June 16, 2008
■ -	83650L	Hewlett-Packard	Signal Generator	3844A00415	June 16, 2008
■ -	BBHA9120D	Schwarzbeck	Horn Antenna	BBHA9120D294	July 03, 2006(3Y)
■ -	BBHA9120D	Schwarzbeck	Horn Antenna	BBHA9120D295	July 04, 2006(3Y)
■ -	SMJ100A	R/S	Vecter Signal Generator	100698	June 16, 2008
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 11, 2008

All test equipment used is calibrated on a regular basis.

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10.4 Test data for radiated emission

10.4.1 Test result for Part 22 H with AC 120V Power Supply

10.4.1.1 Operating Mode: TDMA

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –45.04 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
869.03	61.38	-4.29	-0.18	H	1.62	-6.09	-	-
	61.50	-3.33		V		-5.13	-	-
Test Data for Middle Channel								
881.50	61.24	-4.55	-0.36	H	1.64	-6.55	-	-
	61.45	-3.14		V		-5.14	-	-
Test Data for High Channel								
893.97	61.73	-3.97	-0.53	H	1.66	-6.16	-	-
	61.83	-2.97		V		-5.16	-	-
100.10	26.17	-59.31	1.60	V	0.33	-58.04	-13.00	-45.04
110.40	24.83	-61.00	1.55	H	0.33	-59.12	-13.00	-46.12
262.20	22.50	-62.43	1.66	H	0.50	-60.27	-13.00	-47.27
858.10	23.78	-63.09	0.03	V	0.67	-62.39	-13.00	-49.39

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Tested by: Ki-Hong, Nam / Project Engineer

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10.4.1.2 Operating Mode: GSM

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.88 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
869.20	61.25	-4.42	-0.19	H	1.62	-6.23	-	-
	61.42	-3.41		V		-5.22	-	-
Test Data for Middle Channel								
881.60	61.10	-4.69	-0.36	H	1.64	-6.69	-	-
	61.33	-3.26		V		-5.26	-	-
Test Data for High Channel								
893.80	61.58	-4.12	-0.52	H	1.66	-6.30	-	-
	61.72	-3.08		V		-5.26	-	-
100.10	26.33	-59.15	1.60	V	0.33	-57.88	-13.00	-44.88
110.40	24.72	-61.11	1.55	H	0.33	-59.89	-13.00	-46.89
262.20	22.33	-62.60	1.66	H	0.50	-61.44	-13.00	-48.44
858.10	23.50	-63.37	0.03	V	0.67	-64.01	-13.00	-51.01

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Tested by: Ki-Hong, Nam / Project Engineer

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10.4.1.3 Operating Mode: EDGE

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

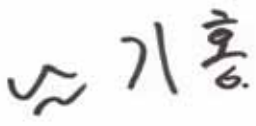
-. Measurement distance : 3 m

-. Result : PASSED BY –44.71 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
869.20	61.33	-4.34	-0.19	H	1.62	-5.20	-	-
	61.55	-3.28		V		-4.07	-	-
Test Data for Middle Channel								
881.60	61.42	-4.37	-0.36	H	1.64	-4.90	-	-
	61.67	-2.92		V		-3.73	-	-
Test Data for High Channel								
893.80	61.12	-4.58	-0.52	H	1.66	-4.63	-	-
	61.38	-3.42		V		-3.96	-	-
100.10	26.50	-58.98	1.60	V	0.33	-57.71	-13.00	-44.71
110.40	24.33	-61.50	1.55	H	0.33	-60.28	-13.00	-47.28
262.20	22.52	-62.41	1.66	H	0.50	-61.25	-13.00	-48.25
858.10	23.38	-63.49	0.03	V	0.67	-64.13	-13.00	-51.13

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical



Tested by: Ki-Hong, Nam / Project Engineer

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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)

10.4.1.4 Operating Mode: CDMA

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.43 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
870.25	61.50	-4.17	-0.20	H	1.62	-5.99	-	-
	61.71	-3.12		V		-4.94	-	-
Test Data for Middle Channel								
881.50	61.39	-4.40	-0.36	H	1.64	-6.40	-	-
	61.50	-3.09		V		-5.09	-	-
Test Data for High Channel								
892.75	61.21	-4.49	-0.51	H	1.66	-6.66	-	-
	61.45	-3.35		V		-5.52	-	-
100.10	26.78	-58.70	1.60	V	0.33	-57.43	-13.00	-44.43
110.40	24.56	-61.27	1.55	H	0.33	-60.05	-13.00	-47.05
262.20	22.33	-62.60	1.66	H	0.50	-61.44	-13.00	-48.44
858.10	23.75	-63.12	0.03	V	0.67	-63.76	-13.00	-50.76

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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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10.4.1.5 Operating Mode: 1xEVDO

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.88 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
870.25	61.42	-4.25	-0.20	H	1.62	-6.07	-	-
	61.67	-3.16		V		-4.98	-	-
Test Data for Middle Channel								
881.50	61.25	-4.54	-0.36	H	1.64	-6.54	-	-
	61.50	-3.09		V		-5.09	-	-
Test Data for High Channel								
892.75	61.33	-4.37	-0.51	H	1.66	-6.54	-	-
	61.62	-3.18		V		-5.35	-	-
100.10	26.33	-59.15	1.60	V	0.33	-57.88	-13.00	-44.88
110.40	24.83	-61.00	1.55	H	0.33	-59.78	-13.00	-46.78
262.20	22.50	-62.43	1.66	H	0.50	-61.27	-13.00	-48.27
858.10	23.42	-63.45	0.03	V	0.67	-64.09	-13.00	-51.09

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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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10.4.1.6 Operating Mode: WCDMA

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.94 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
871.40	61.58	-4.09	-0.22	H	1.62	-5.93	-	-
	61.83	-3.00		V		-4.84	-	-
Test Data for Middle Channel								
881.00	61.22	-4.57	-0.35	H	1.64	-6.56	-	-
	61.50	-3.09		V		-5.08	-	-
Test Data for High Channel								
891.60	61.53	-4.17	-0.49	H	1.66	-6.32	-	-
	61.71	-3.09		V		-5.24	-	-
100.10	26.27	-59.21	1.60	V	0.33	-57.94	-13.00	-44.94
110.40	24.17	-61.66	1.55	H	0.33	-60.44	-13.00	-47.44
262.20	22.72	-62.21	1.66	H	0.50	-61.05	-13.00	-48.05
858.10	23.54	-63.33	0.03	V	0.67	-63.97	-13.00	-50.97

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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)

10.4.2 Test Result for Part 22 H with DC - 48 V Power Supply

10.4.2.1 Operating Mode: TDMA

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.42 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
869.03	61.33	-4.34	-0.18	H	1.62	-6.14	-	-
	61.62	-3.21		V		-5.01	-	-
Test Data for Middle Channel								
881.50	61.25	-4.54	-0.36	H	1.64	-6.54	-	-
	61.41	-3.48		V		-5.48	-	-
Test Data for High Channel								
893.97	61.71	-3.99	-0.53	H	1.66	-6.18	-	-
	61.88	-2.92		V		-5.11	-	-
100.10	26.79	-58.69	1.60	V	0.33	-57.42	-13.00	-44.42
110.40	24.59	-61.24	1.55	H	0.33	-60.02	-13.00	-47.02
262.20	22.35	-62.58	1.66	H	0.50	-61.42	-13.00	-48.42
858.10	23.67	-63.20	0.03	V	0.67	-63.84	-13.00	-50.84

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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)

10.4.2.2 Operating Mode: GSM

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.30 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
869.20	61.17	-4.50	-0.19	H	1.62	-6.31	-	-
	61.33	-3.50		V		-5.31	-	-
Test Data for Middle Channel								
881.60	61.39	-4.40	-0.36	H	1.64	-6.40	-	-
	61.51	-3.08		V		-5.08	-	-
Test Data for High Channel								
893.80	61.44	-4.26	-0.52	H	1.66	-6.44	-	-
	61.68	-3.12		V		-5.30	-	-
100.10	26.91	-58.57	1.60	V	0.33	-57.30	-13.00	-44.30
110.40	24.33	-61.50	1.55	H	0.33	-60.28	-13.00	-47.28
262.20	22.67	-62.26	1.66	H	0.50	-61.10	-13.00	-48.10
858.10	23.45	-63.42	0.03	V	0.67	-64.06	-13.00	-51.06

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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)

10.4.2.3 Operating Mode: EDGE

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.71 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
869.20	61.50	-4.17	-0.19	H	1.62	-5.98	-	-
	61.70	-3.13		V		-4.94	-	-
Test Data for Middle Channel								
881.60	61.30	-4.49	-0.36	H	1.64	-6.49	-	-
	61.42	-3.17		V		-5.17	-	-
Test Data for High Channel								
893.80	61.50	-4.20	-0.52	H	1.66	-6.38	-	-
	61.83	-2.97		V		-5.15	-	-
100.10	26.50	-58.98	1.60	V	0.33	-57.71	-13.00	-44.71
110.40	24.92	-60.91	1.55	H	0.33	-59.69	-13.00	-46.69
262.20	22.50	-62.43	1.66	H	0.50	-61.27	-13.00	-48.27
858.10	23.78	-63.09	0.03	V	0.67	-63.73	-13.00	-50.73

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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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10.4.2.4 Operating Mode: CDMA

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.61 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
870.25	61.38	-4.29	-0.20	H	1.62	-6.11	-	-
	61.50	-3.33		V		-5.15	-	-
Test Data for Middle Channel								
881.50	61.41	-4.38	-0.36	H	1.64	-6.38	-	-
	61.66	-2.93		V		-4.93	-	-
Test Data for High Channel								
892.75	61.32	-4.38	-0.51	H	1.66	-6.55	-	-
	61.49	-3.31		V		-5.48	-	-
100.10	26.60	-58.88	1.60	V	0.33	-57.61	-13.00	-44.61
110.40	24.45	-61.38	1.55	H	0.33	-60.16	-13.00	-47.16
262.20	22.17	-62.76	1.66	H	0.50	-61.60	-13.00	-48.60
858.10	23.83	-63.04	0.03	V	0.67	-63.68	-13.00	-50.68

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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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10.4.2.5 Operating Mode: 1xEVDO

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.88 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
870.25	61.48	-4.19	-0.20	H	1.62	-6.01	-	-
	61.72	-3.11		V		-4.93	-	-
Test Data for Middle Channel								
881.50	61.24	-4.55	-0.36	H	1.64	-6.55	-	-
	61.45	-3.14		V		-5.14	-	-
Test Data for High Channel								
892.75	61.72	-3.98	-0.51	H	1.66	-6.15	-	-
	61.83	-2.97		V		-5.14	-	-
100.10	26.33	-59.15	1.60	V	0.33	-57.88	-13.00	-44.88
110.40	24.50	-61.33	1.55	H	0.33	-60.11	-13.00	-47.11
262.20	22.72	-62.21	1.66	H	0.50	-61.05	-13.00	-48.05
858.10	23.67	-63.20	0.03	V	0.67	-63.84	-13.00	-50.84

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Tested by: Ki-Hong, Nam / Project Engineer

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10.4.2.6 Operating Mode: WCDMA

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.59 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
871.40	61.42	-4.25	-0.22	H	1.62	-6.09	-	-
	61.55	-3.28		V		-5.12	-	-
Test Data for Middle Channel								
881.00	61.39	-4.40	-0.35	H	1.64	-6.39	-	-
	61.54	-3.05		V		-5.04	-	-
Test Data for High Channel								
891.60	61.27	-4.43	-0.49	H	1.66	-6.58	-	-
	61.50	-3.30		V		-5.45	-	-
100.10	26.62	-58.86	1.60	V	0.33	-57.59	-13.00	-44.59
110.40	24.38	-61.45	1.55	H	0.33	-60.23	-13.00	-47.23
262.20	22.50	-62.43	1.66	H	0.50	-61.27	-13.00	-48.27
858.10	23.48	-63.39	0.03	V	0.67	-64.03	-13.00	-51.03

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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)

10.4.3 Test Result for Part 90 I with AC 120 V Power Supply

10.4.3.1 Operating Mode: iDEN

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –45.04 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
764.025 0	62.33	-7.08	0.93	H	1.44	-7.59	-	-
	61.67	-6.30		V		-6.81	-	-
Test Data for Middle Channel								
770.000 0	62.16	-7.17	0.91	H	1.45	-7.71	-	-
	61.50	-6.33		V		-6.87	-	-
Test Data for High Channel								
775.975 0	62.25	-7.12	0.88	H	1.46	-7.70	-	-
	61.48	-6.20		V		-6.78	-	-
100.100 0	26.17	-59.31	1.60	V	0.33	-58.04	-13.00	-45.04
110.400 0	24.83	-61.00	1.55	H	0.33	-59.12	-13.00	-46.12
262.200 0	22.72	-62.21	1.66	H	0.50	-60.05	-13.00	-47.05
858.100 0	23.83	-63.04	0.03	V	0.67	-62.34	-13.00	-49.34

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

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)

10.4.3.2 Operating Mode: SMR

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

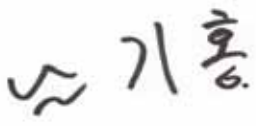
-. Measurement distance : 3 m

-. Result : PASSED BY –44.59 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
764.012 5	62.33	-7.08	0.93	H	1.44	-7.59	-	-
	61.67	-6.30		V		-6.81	-	-
Test Data for Middle Channel								
770.000 0	62.52	-6.81	0.91	H	1.45	-7.35	-	-
	61.78	-6.05		V		-6.59	-	-
Test Data for High Channel								
775.987 5	62.48	-6.89	0.88	H	1.46	-7.47	-	-
	61.83	-5.85		V		-6.43	-	-
100.100 0	26.62	-58.86	1.60	V	0.33	-57.59	-13.00	-44.59
110.400 0	24.50	-61.33	1.55	H	0.33	-59.45	-13.00	-46.45
262.200 0	22.74	-62.19	1.66	H	0.50	-60.03	-13.00	-47.03
858.100 0	23.61	-63.26	0.03	V	0.67	-62.56	-13.00	-49.56

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical



Tested by: Ki-Hong, Nam / Project Engineer

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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)

10.4.4 Test Result for Part 90 I with DC - 48 V Power Supply

10.4.4.1 Operating Mode: iDEN

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.79dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
764.025 0	62.50	-6.91	0.93	H	1.44	-7.42	-	-
	61.83	-6.14		V		-6.65	-	-
Test Data for Middle Channel								
770.000 0	62.33	-7.00	0.91	H	1.45	-7.54	-	-
	61.72	-6.11		V		-6.65	-	-
Test Data for High Channel								
775.975 0	62.33	-7.04	0.88	H	1.46	-7.62	-	-
	61.60	-6.08		V		-6.66	-	-
100.100 0	26.42	-59.06	1.60	V	0.33	-57.79	-13.00	-44.79
110.400 0	24.78	-61.05	1.55	H	0.33	-59.83	-13.00	-46.83
262.200 0	22.50	-62.43	1.66	H	0.50	-61.27	-13.00	-48.27
858.100 0	23.42	-63.45	0.03	V	0.67	-64.09	-13.00	-51.09

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Tested by: Ki-Hong, Nam / Project Engineer

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10.4.4.2 Operating Mode: SMR

-. Test Date : March 09, 2009

-. Resolution bandwidth : 1 MHz

-. Video bandwidth : 1 MHz

-. Frequency range : 1 GHz ~ 20 GHz

-. Measurement distance : 3 m

-. Result : PASSED BY –44.71 dB at 100.10 MHz

Frequency (MHz)	Spectrum Reading (dBμV)	Generator Reading (dBm)	Ant. Gain (dBi)	Ant. Pol. (H/V)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
Test Data for Low Channel								
764.012 5	62.25	-7.16	0.93	H	1.44	-7.67	-	-
	61.50	-6.47		V		-6.98	-	-
Test Data for Middle Channel								
770.000 0	62.72	-6.61	0.91	H	1.45	-7.15	-	-
	61.83	-6.00		V		-6.54	-	-
Test Data for High Channel								
775.987 5	62.35	-7.02	0.88	H	1.46	-7.60	-	-
	61.67	-6.01		V		-6.59	-	-
100.100 0	26.50	-58.98	1.60	V	0.33	-57.71	-13.00	-44.71
110.400 0	24.25	-61.58	1.55	H	0.33	-60.36	-13.00	-47.36
262.200 0	22.83	-62.10	1.66	H	0.50	-60.94	-13.00	-47.94
858.100 0	23.48	-63.39	0.03	V	0.67	-64.03	-13.00	-51.03

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical

Tested by: Ki-Hong, Nam / Project Engineer

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11. FREQUENCY STABILITY WITH TEMPERATURE VARIATION

11.1 Operating environment

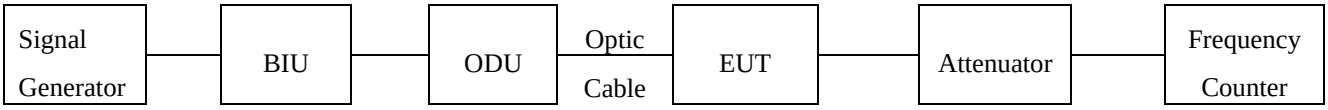
Temperature : 22 °C

Relative humidity : 47.6 %R.H.

11.2 Test set-up

The RF signal from the signal generator(s) was injected to BIU (BTS Interface Unit) and then output signal from the BIU was injected to the input of ODU (Optic Distribution Unit) by coaxial cable and then the output port of the ODU was connected to the input of the EUT by optic cable. The amplified RF signal at the output of the EUT was connected to the spectrum analyzer. The test was performed at three frequencies (low, middle, and high channels) at each band using all applicable modulation.

Turn EUT off and set chamber temperature to -30 °C and then allow sufficient time (approximately 20 to 30 minutes after chamber reach the assigned temperature) for EUT to stabilize. Turn ON EUT and measure the EUT operating frequency and then turn off the EUT after the measurement. The temperature in the chamber was raised 10 °C step from -30 °C to +50 °C. Repeat above method for frequency measurements every 10 °C step and then record all measured frequencies on each temperature step.



11.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	8564E	HP	Spectrum Analyzer	3650A00756	June 16, 2008
■ -	53152A	HP	Frequency Counter	US39270295	Dec. 05, 2008
■ -	RO-23	Samkun	Chamber	-	Aug. 12, 2008
■ -	SMJ100A	R/S	Vecter Signal Generator	100698	June 16, 2008
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 11, 2008

All test equipment used is calibrated on a regular basis.

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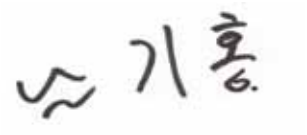
11.4 Test data

11.4.1 Test Result for Part 22 H with AC 120 V Power Supply

-. Test Date : February 27 ~ March 02, 2009

-. Result : PASSED

Temperature (˚C)	Input Freq. (Hz)	Measured Freq. (Hz)	Result (PPM)	Limit
-30	881 500 000	881 500 031	0.035 2	Within the Authorized Frequency block
-20		881 500 032	0.036 3	
-10		881 500 030	0.034 0	
0		881 500 032	0.036 3	
10		881 500 032	0.036 3	
20		881 500 030	0.034 0	
30		881 500 031	0.035 2	
40		881 500 029	0.032 9	
50		881 500 030	0.034 0	



Tested by: Ki-Hong, Nam / Project Engineer

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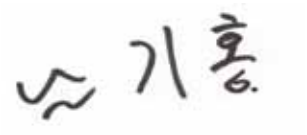
11.4.2 Test Result for Part 22 H with DC – 48 V Power Supply

-. Test Date : February 27 ~ March 02, 2009

-. Result : PASSED

Temperature (˚C)	Input Freq. (Hz)	Measured Freq. (Hz)	Result (PPM)	Limit
-30	881 500 000	881 500 030	0.034 0	Within the Authorized Frequency block
-20		881 500 029	0.032 9	
-10		881 500 030	0.034 0	
0		881 500 031	0.035 2	
10		881 500 030	0.034 0	
20		881 500 029	0.032 9	
30		881 500 031	0.035 2	
40		881 500 029	0.032 9	
50		881 500 029	0.032 9	



Tested by: Ki-Hong, Nam / Project Engineer

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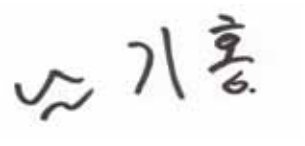
11.4.3 Test Result for Part 90 I with AC 120 V Power Supply

-. Test Date : February 27 ~ March 02, 2009

-. Result : PASSED

Temperature (˚C)	Input Freq. (Hz)	Measured Freq. (Hz)	Result (PPM)	Limit
-30	770 000 000	770 000 018	0.023 4	Within the Authorized Frequency block
-20		770 000 018	0.023 4	
-10		770 000 020	0.026 0	
0		770 000 019	0.024 7	
10		770 000 020	0.026 0	
20		770 000 020	0.026 0	
30		770 000 019	0.024 7	
40		770 000 019	0.024 7	
50		770 000 020	0.026 0	



Tested by: Ki-Hong, Nam / Project Engineer

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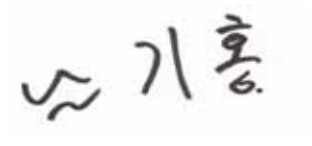
11.4.4 Test Result for Part 90 I with DC – 48 V Power Supply

-. Test Date : February 27 ~ March 02, 2009

-. Result : PASSED

Temperature (˚C)	Input Freq. (Hz)	Measured Freq. (Hz)	Result (PPM)	Limit
-30	770 000 000	770 000 019	0.024 7	Within the Authorized Frequency block
-20		770 000 018	0.023 4	
-10		770 000 018	0.023 4	
0		770 000 019	0.024 7	
10		770 000 020	0.026 0	
20		770 000 020	0.026 0	
30		770 000 018	0.023 4	
40		770 000 020	0.026 0	
50		770 000 019	0.024 7	



Tested by: Ki-Hong, Nam / Project Engineer

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12. FREQUENCY STABILITY WITH VOLTAGE VARIATION

12.1 Operating environment

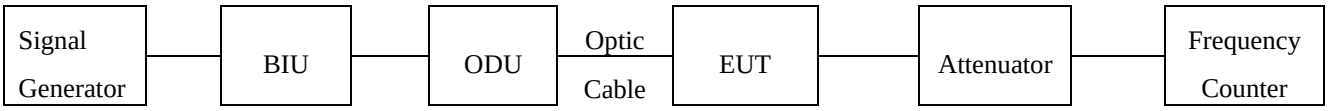
Temperature : 22 °C

Relative humidity : 47.6 %R.H.

12.2 Test set-up

The RF signal from the signal generator(s) was injected to BIU (BTS Interface Unit) and then output signal from the BIU was injected to the input of ODU (Optic Distribution Unit) by coaxial cable and then the output port of the ODU was connected to the input of the EUT by optic cable. The amplified RF signal at the output of the EUT was connected to the spectrum analyzer. The test was performed at three frequencies (low, middle, and high channels) at each band using all applicable modulation.

The RF output port of the EUT was connected to the input of the spectrum analyzer. The signal generator was set to center frequency for each band with an un-modulated signal. The voltage of EUT set to 115 % of the nominal value and then was reduced to 85% of nominal voltage. The output frequency was recorded at each step.



12.3 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal.
■ -	8564E	HP	Spectrum Analyzer	3650A00756	June 16, 2008
■ -	53152A	HP	Frequency Counter	US39270295	Dec. 05, 2008
■ -	2350A	HP	30 dB Attenuator Assembly	2350A03133	June 16, 2008
■ -	SMJ100A	R/S	Vecter Signal Generator	100698	June 16, 2008
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 11, 2008

All test equipment used is calibrated on a regular basis.

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12.4 Test data

12.4.1 Test Result for Part 22 H with AC 120 V Power Supply

-. Test Date : February 27 ~ March 02, 2009

-. Rated Supply Voltage : 120 Vac

-. Result : PASSED

Voltage (Vac)	Input Freq. (Hz)	Measured Freq. (Hz)	Result (PPM)	Limit
138 (115 %)	881 500 000	881 500 029	0.032 9	Within the Authorized Frequency block
120 (100 %)		881 500 030	0.034 0	
102 (85 %)		881 500 030	0.034 0	

Tested by: Ki-Hong, Nam / Project Engineer

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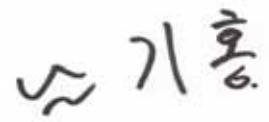
12.4.2 Test Result for Part 22 H with DC – 48 V Power Supply

-. Test Date : February 27 ~ March 02, 2009

-. Rated Supply Voltage : - 48 Vdc

-. Result : PASSED

Voltage (Vdc)	Input Freq. (Hz)	Measured Freq. (Hz)	Result (PPM)	Limit
- 55.2 (115 %)	881 500 000	881 500 030	0.034 0	Within the Authorized Frequency block
- 48 (100 %)		881 500 029	0.032 9	
- 40.8 (85 %)		881 500 031	0.035 2	



Tested by: Ki-Hong, Nam / Project Engineer

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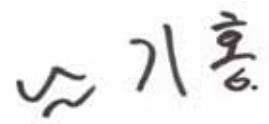
12.4.3 Test Result for Part 90 I with AC 120 V Power Supply

-. Test Date : February 27 ~ March 02, 2009

-. Rated Supply Voltage : 120 Vac

-. Result : PASSED

Voltage (Vac)	Input Freq. (Hz)	Measured Freq. (Hz)	Result (PPM)	Limit
138 (115 %)	770 000 000	770 000 019	0.024 7	Within the Authorized Frequency block
120 (100 %)		770 000 020	0.026 0	
102 (85 %)		770 000 020	0.026 0	



Tested by: Ki-Hong, Nam / Project Engineer

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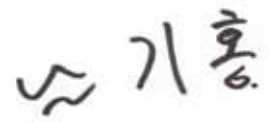
12.4.4 Test Result for Part 90 I with DC – 48 V Power Supply

-. Test Date : February 27 ~ March 02, 2009

-. Rated Supply Voltage : 48 Vdc

-. Result : PASSED

Voltage (Vdc)	Input Freq. (Hz)	Measured Freq. (Hz)	Result (PPM)	Limit
- 55.2 (115 %)	770 000 000	770 000 020	0.026 0	Within the Authorized Frequency block
- 48 (100 %)		770 000 020	0.026 0	
- 40.8 (85 %)		770 000 018	0.023 4	



Tested by: Ki-Hong, Nam / Project Engineer

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