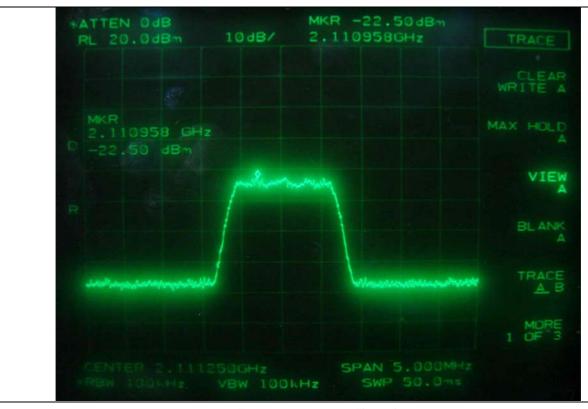
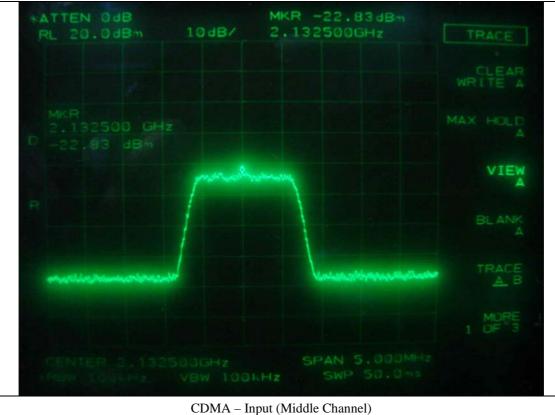
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Report No. : E093R-029



CDMA – Input (Low Channel)



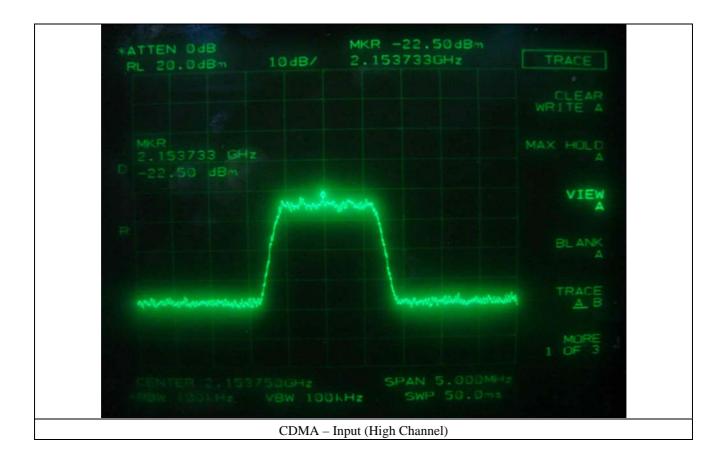
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1xEVDO – Input (Low Channel)

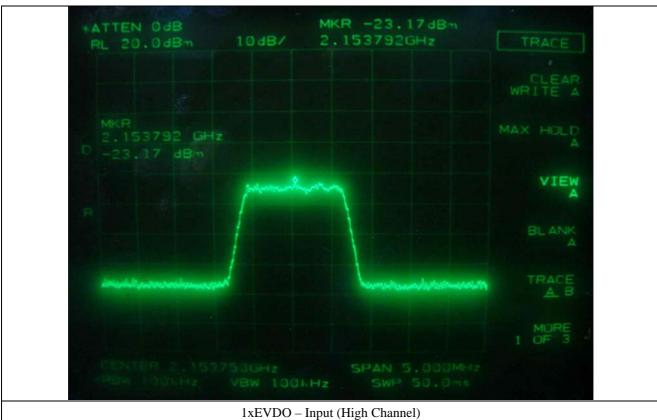


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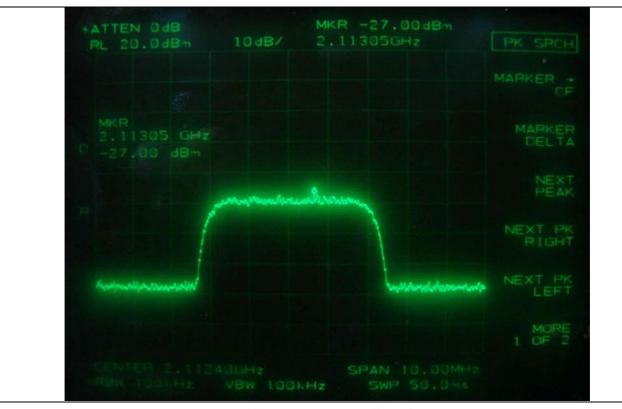
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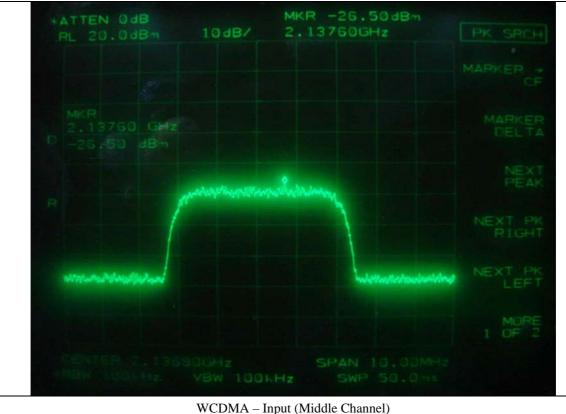




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WCDMA - Input (Low Channel)



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MKR -26.67 dBm

MKR 2.15328 GHz

MARKER
2.15328 GHz

MARKER
DELTA

MEXT
PEAK

NEXT PK
RIGHT

NEXT PK
RIGHT

NEXT PK
LEFT

MORE
1 OF 2

WCDMA - Input (High Channel)



FCC ID. : W6U1900PAWS1 Page 87 of 227 Report No. : E093R-029

# 7. SPURIOUS EMISSION AT ANTENNA TERMINAL

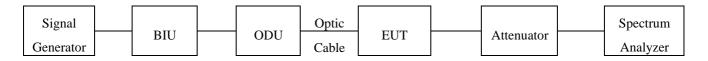
### 7.1 Operating environment

Temperature :  $21.8 \,^{\circ}\text{C}$ Relative humidity :  $47 \,^{\circ}\text{R.H.}$ 

# 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.



#### 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 24E

-. Test Date : February 25~26, 2009-. Frequency range : 30 MHz ~ 20 GHz

-. Result : <u>PASSED BY -13.83 dB at low channel of GSM Mode</u>

Modulation	Harmonic Frequency		Measured Value	Cable Loss	Total	Limit	Margin
	(MHz)		(dBm)	(dB)	(dBm)	(dBm)	(dB)
	Low	867.40	-37.50	0.50	-37.00	-13.00	-24.00
	LOW	2 110.00	-29.17	0.84	-28.33		-15.33
TDMA	Middle	867.40	-36.67	0.50	-36.17		-23.17
1DWI	Middle	2 110.00	-27.83	0.84	-26.99		-13.99
	III: -1-	862.60	-37.67	0.50	-37.17		-24.17
	High	2 110.00	-28.83	0.84	-27.99		-14.99
	T	882.00	-37.50	0.50	-37.00		-24.00
	Low	2 110.00	-27.67	0.84	-26.83		-13.83
GSM	NC 111	867.40	-36.83	0.50	-36.33	-13.00	-23.33
GSM	Middle	2 110.00	-29.83	0.84	-28.99		-15.99
	High	867.40	-37.50	0.50	-37.00		-24.00
		2 110.00	-28.83	0.84	-27.99		-14.99
		865.80	-37.50	0.50	-37.00	-13.00	-24.00
	Low	2 110.00	-28.50	0.84	-27.66		-14.66
EDGE	NC 111	870.70	-37.17	0.50	-36.67		-23.67
EDGE	Middle	2 110.00	-28.50	0.84	-27.66		-14.66
	77' 1	867.40	-37.17	0.50	-36.67		-23.67
	High	2 110.00	-29.17	0.84	-28.33		-15.33
		867.40	-34.33	0.50	-33.83	-13.00	-20.83
	Low	2 110.00	-28.83	0.84	-27.99		-14.99
CDMA	Middle	861.00	-37.17	0.50	-36.67		-23.67
CDMA		2 110.00	-28.67	0.84	-27.83		-14.83
	17. 1	864.20	-37.33	0.50	-36.83		-23.83
	High	2 110.00	-29.50	0.84	-28.66		-15.66

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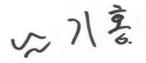
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Modulation	Harmonic Frequency (MHz)		Measured Value (dBm)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
	Low	860.00	-37.67	0.50	-37.17		-24.17
		2 110.00	-28.83	0.84	-27.99		-14.99
1EVDO	Middle	864.20	-37.33	0.50	-36.83	-13.00	-23.83
1xEVDO		2 110.00	-29.17	0.84	-28.33		-15.33
	High	865.80	-37.70	0.50	-37.20		-24.20
		2 110.00	-27.83	0.84	-26.99		-13.99
	Low	873.90	-36.17	0.50	-35.67		-22.67
		2 110.00	-28.83	0.84	-27.99		-14.99
****	Middle	883.60	-36.83	0.50	-36.33	-13.00	-23.33
WCDMA		2 110.00	-28.67	0.84	-27.83		-14.83
		873.90	-37.17	0.50	-36.67		-23.67
	High	2 110.00	-28.83	0.84	-27.99		-14.99

According to Part 24E, out of band emission shall be attenuated by 43 + 10 log (P) dBc, equates to -13.0 dBm.



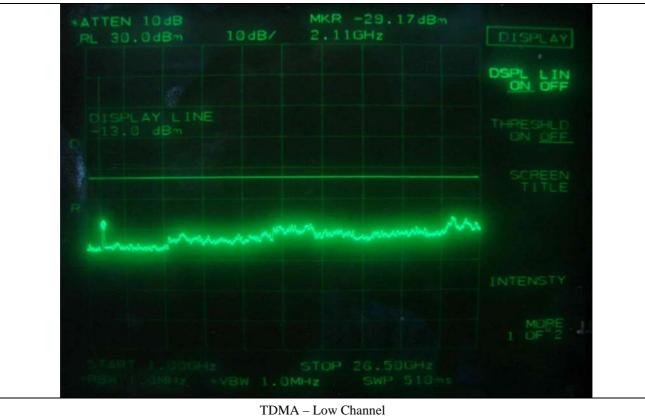
Tested by: Ki-Hong, Nam / Project Engineer



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TDMA – Low Channel



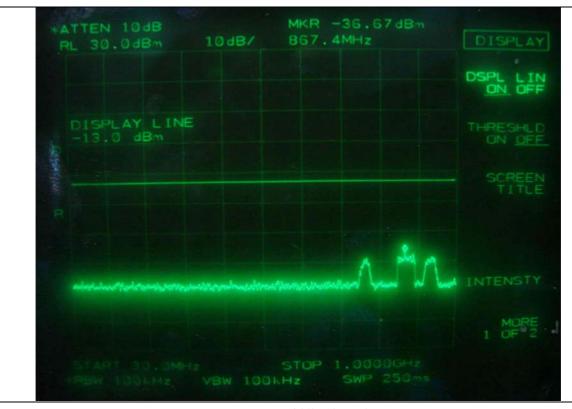
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TDMA – Middle Channel



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TDMA - High Channel



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GSM – Low Channel



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GSM – Middle Channel



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GSM - High Channel



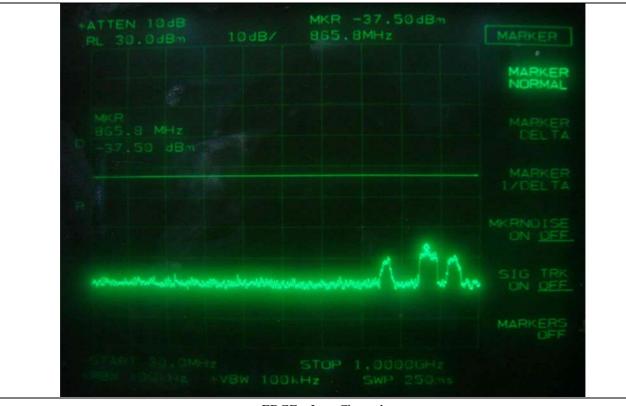
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EDGE – Low Channel



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MKR -37.17 dBm
RL 30.0dBm 10 dB/ 870.7MHz

DISPLAY

DISPLAY

DISPLAY

THRESHLD
ON OFF

SCREEN
TITLE

MORE
1 OF 2

EDGE – Middle Channel



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EDGE – High Channel



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10dB/ 861.0MHz



CDMA – Middle Channel



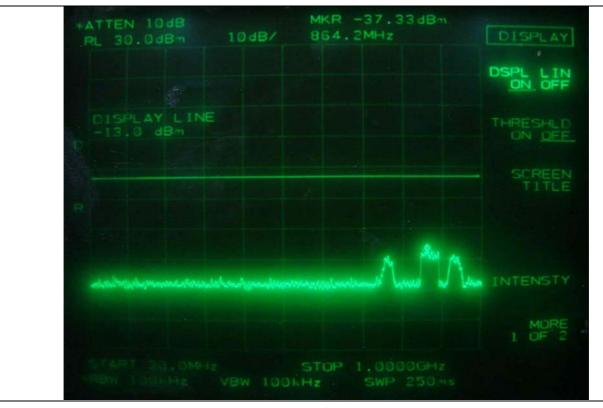
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CDMA – High Channel



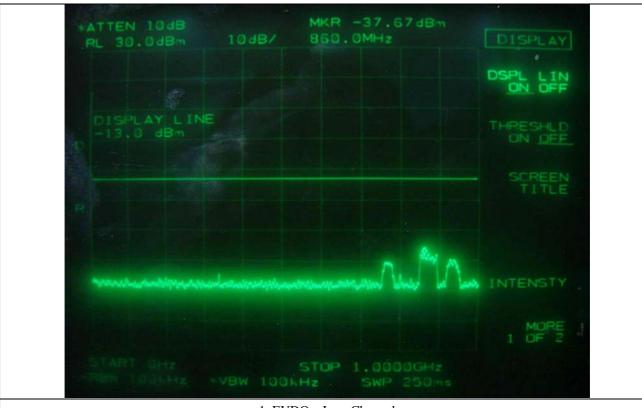
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1xEVDO – Low Channel



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1xEVDO – Middle Channel



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1xEVDO – High Channel



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WCDMA - Low Channel



WCDMA – Low Channel

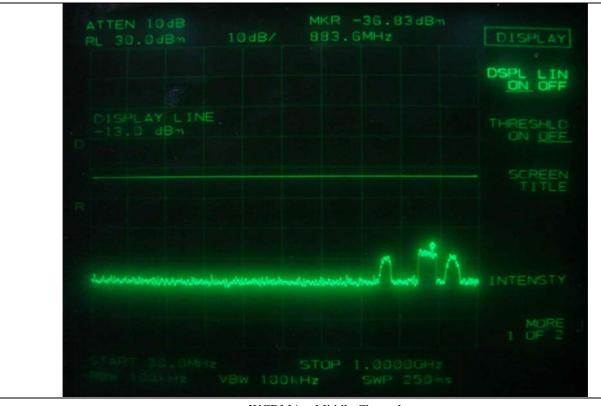
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WCDMA - Middle Channel



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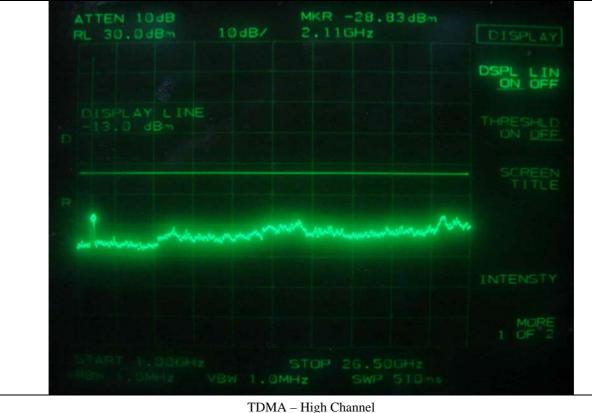
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TDMA – High Channel



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# 7.4.2 Test Result for Part 27

-. Test Date : February 25~26, 2009 -. Frequency range : 30 MHz ~ 20 GHz

-. Result : <u>PASSED BY -14.83 dB at middle channel of 1xEVDO Mode</u>

Modulation	Harmonic Frequency		Measured Value	Cable Loss	Total	Limit	Margin
	(MHz)		(dBm)	(dB)	(dBm)	(dBm)	(dB)
	Low	875.50	-38.17	0.50	-37.67	-13.00	-24.67
	Low	1 940.00	-29.33	0.84	-28.49		-15.49
TDMA	Middle	865.80	-38.83	0.50	-38.33		-25.33
IDWA	Middle	1 980.00	-29.00	0.84	-28.16		-15.16
	II: -1.	862.60	-38.67	0.50	-38.17		-25.17
	High	1 940.00	-29.17	0.84	-28.33		-15.33
	T	873.90	-40.00	0.50	-39.50		-26.50
	Low	1 940.00	-29.33	0.84	-28.49		-15.49
GSM	NC 111	862.60	-40.50	0.50	-40.00	-13.00	-27.00
OSM	Middle	1 940.00	-30.00	0.84	-29.16		-16.16
	TT: .1.	867.40	-40.00	0.50	-39.50		-26.50
	High	1 940.00	-30.17	0.84	-29.33		-16.33
	T	883.60	-38.67	0.50	-38.17	-13.00	-25.17
	Low	1 890.00	-30.33	0.84	-29.49		-16.49
EDGE	MC 1.II.	872.30	-37.50	0.50	-37.00		-24.00
EDGE	Middle	1 940.00	-29.17	0.84	-28.33		-15.33
	11' 1	867.40	-38.50	0.50	-38.00		-25.00
	High	1 940.00	-29.33	0.84	-28.49		-15.49
	т	862.60	-38.00	0.50	-37.50	-13.00	-24.50
	Low	1 890.00	-29.33	0.84	-28.49		-15.49
CDMA	N. 1.11	851.30	-37.67	0.50	-37.17		-24.17
CDMA	Middle	1 890.00	-30.67	0.84	-29.83		-16.83
	11. 1	869.10	-38.17	0.50	-37.67		-24.67
	High 1 94	1 940.00	-29.50	0.84	-28.66		-15.66

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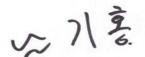
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Modulation	Harmonic Frequency (MHz)		Measured Value (dBm)	Cable Loss (dB)	Total (dBm)	Limit (dBm)	Margin (dB)
	Low	867.40	-37.67	0.50	-37.17	-13.00	-24.17
		1 940.00	-29.17	0.84	-28.33		-15.33
1EVDO	Middle	872.30	-37.17	0.50	-36.67		-23.67
1xEVDO		1 940.00	-28.67	0.84	-27.83		-14.83
	High	875.50	-37.33	0.50	-36.83		-23.83
		1 940.00	-29.67	0.84	-28.83		-15.83
	Low	867.40	-38.33	0.50	-37.83	-13.00	-24.83
		1 940.00	-29.17	0.84	-28.33		-15.33
WGDM	Middle	867.40	-37.33	0.50	-36.83		-23.83
WCDMA		1 940.00	-29.00	0.84	-28.16		-15.16
	High	869.10	-37.67	0.50	-37.17		-24.17
İ		1 940.00	-29.83	0.84	-28.99		-15.99

According to Part 27, 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



FCC ID. : W6U1900PAWS1

Report No. : E093R-029



TDMA – Low Channel

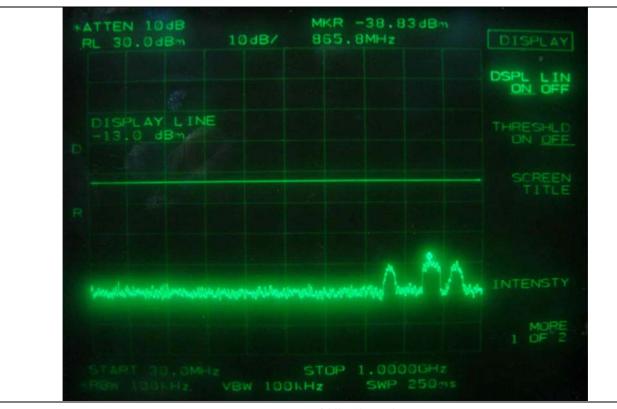


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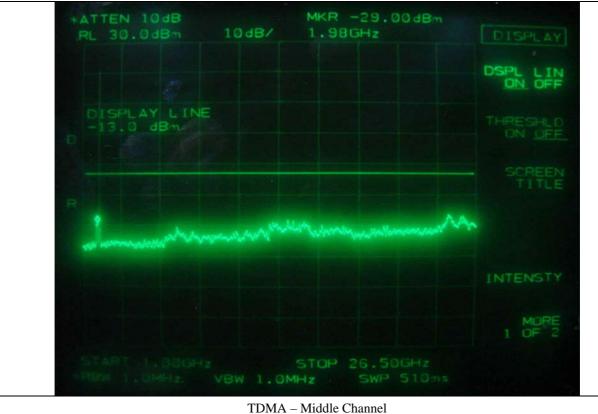
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TDMA – Middle Channel



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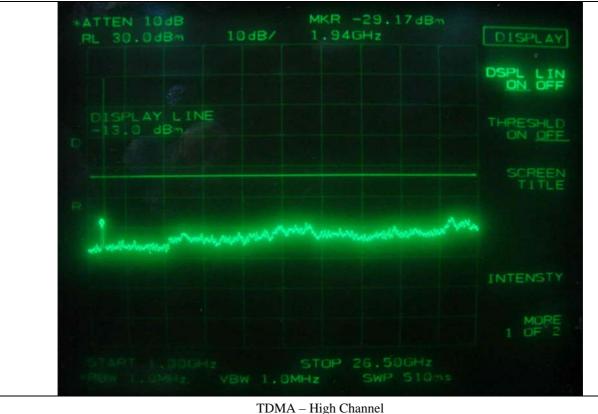
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TDMA – High Channel



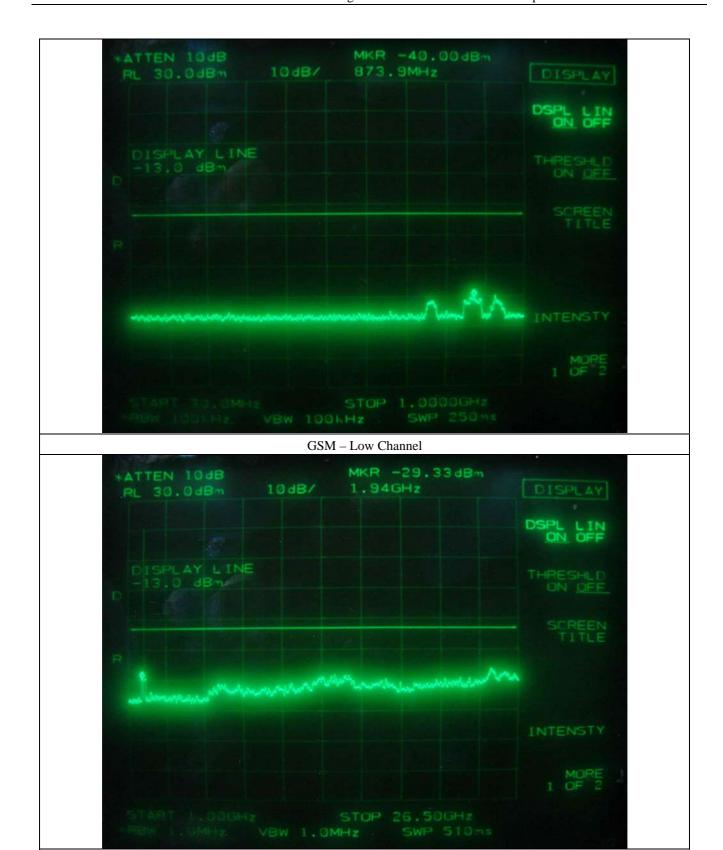
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GSM - Low Channel



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GSM – Middle Channel



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GSM - High Channel



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EDGE – Middle Channel



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(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)



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EDGE – High Channel



EDGE - High Channel

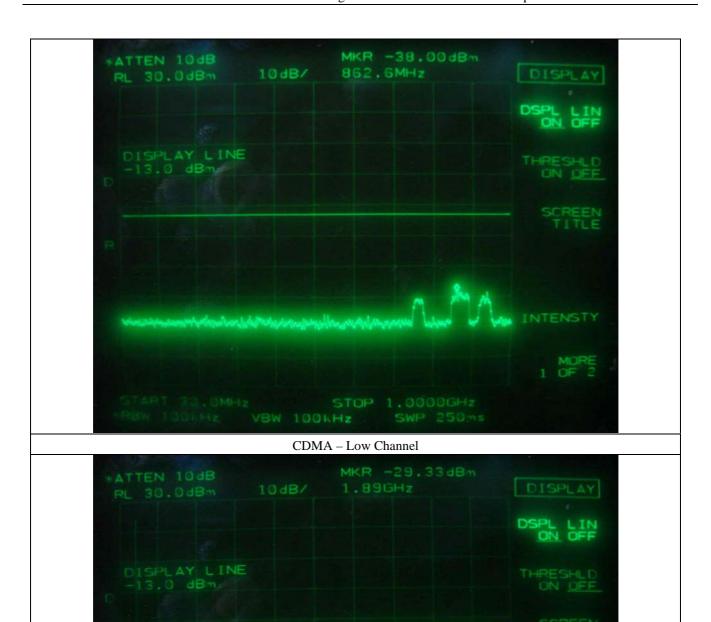
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CDMA - Low Channel

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CDMA – Middle Channel



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CDMA – High Channel



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1xEVDO – Low Channel



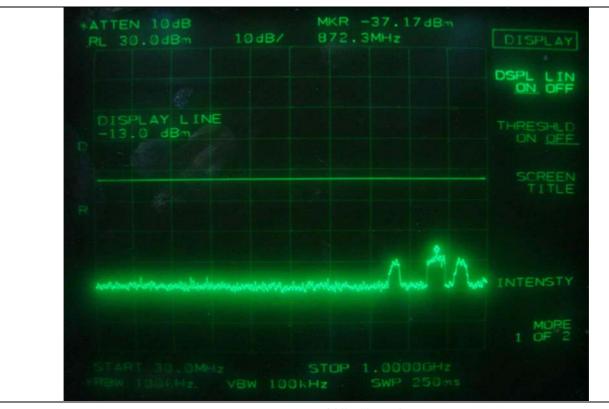
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1xEVDO – Middle Channel



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1xEVDO – High Channel



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WCDMA – Middle Channel



WCDMA - Middle Channel

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WCDMA – High Channel



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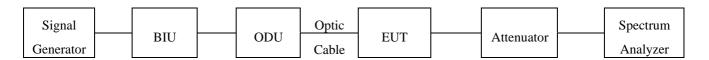
## 8. SPURIOUS EMISSION AT ANTENNA TERMINAL AT BLOCK EDGES ± 1 MHz

## 8.1 Operating environment

Temperature :  $21.8 \,^{\circ}\text{C}$ Relative humidity :  $47 \,^{\circ}\text{R.H.}$ 

# 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.



## 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 24E

-. Test Date : February 25~26, 2009

-. Result : PASSED BY -14.52 dB at high channel of WCDMA Mode

Modulation	Channel	Measured Frequency (MHz)	Max. Measured Value (dBm)	Limit (dBm)
TDMA	Low	1 930.00	-31.10	-13.00
IDMA	High	1 995.00	-33.33	
CCM	Low	1 929.98	-34.61	
GSM	High	1 950.28	-33.38	
EDGE	Low	1 929.96	-37.12	-13.00
EDGE	High	1 995.02	-35.49	
CDMA	Low	1 930.00	-42.18	
CDMA	High	1 995.00	-43.97	
1 5400	Low	1 930.00	-42.77	-13.00
1xEVDO	High	1 995.00	-43.40	
WCDMA	Low	1 930.00	-28.22	
WCDMA	High	1 995.00	-27.52	

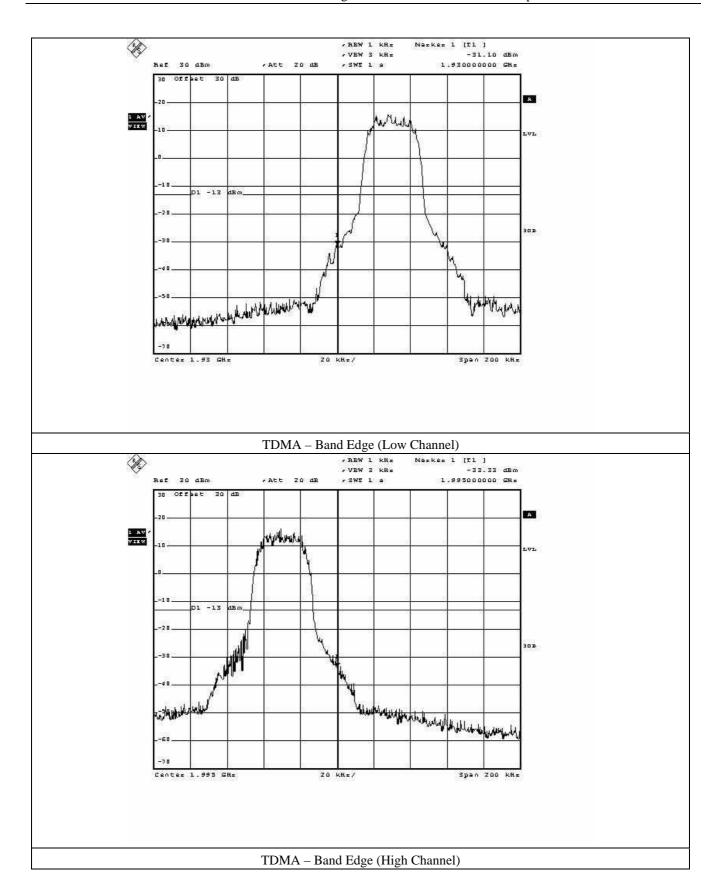
According to Part 24E, out of band emission shall be attenuated by 43 + 10 log (P) dBc, equates to -13.0dBm.

公八喜

Tested by: Ki-Hong, Nam / Project Engineer



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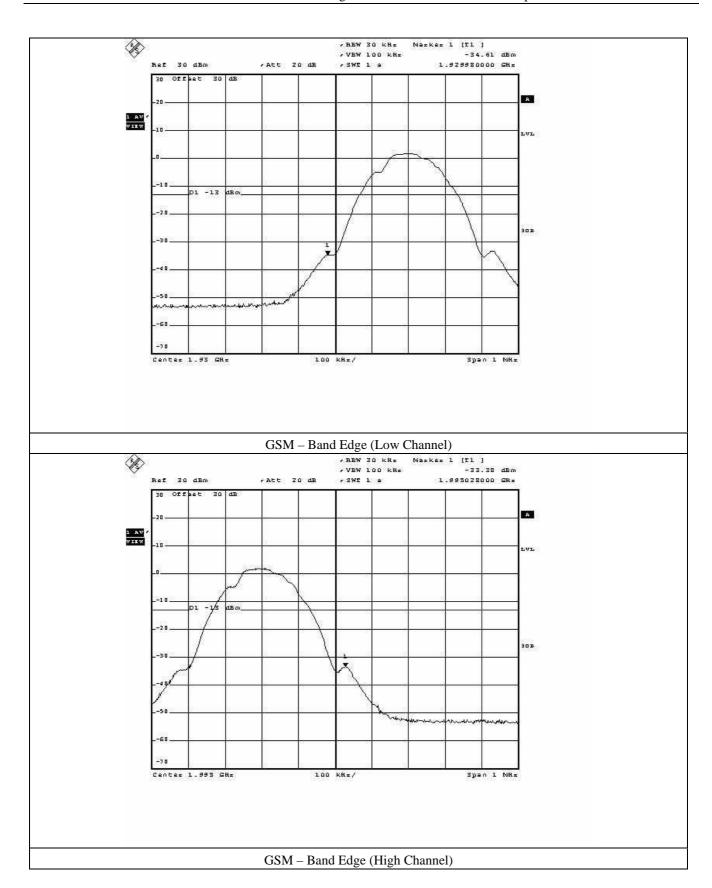
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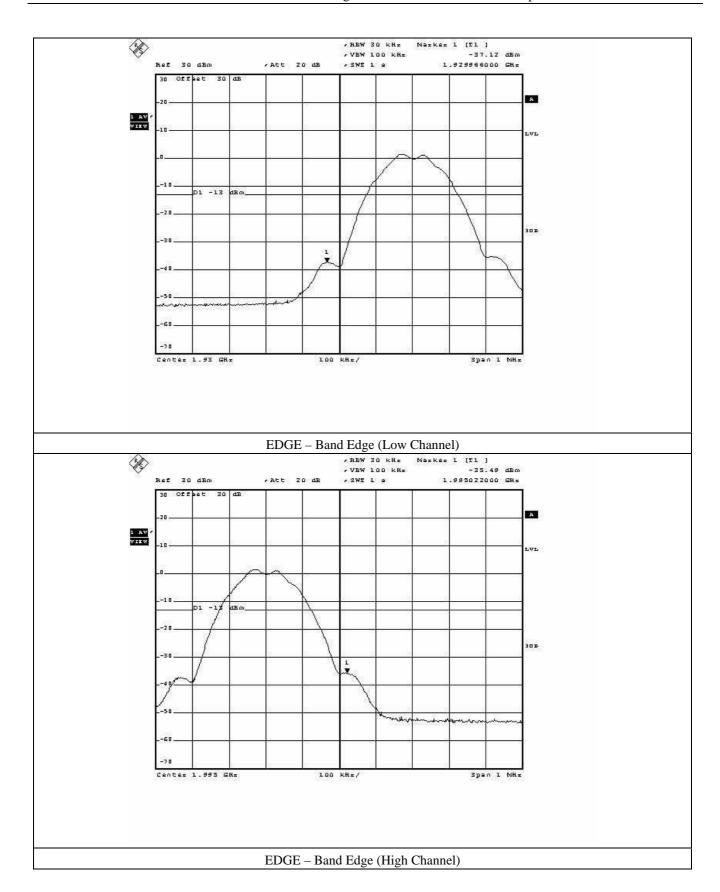
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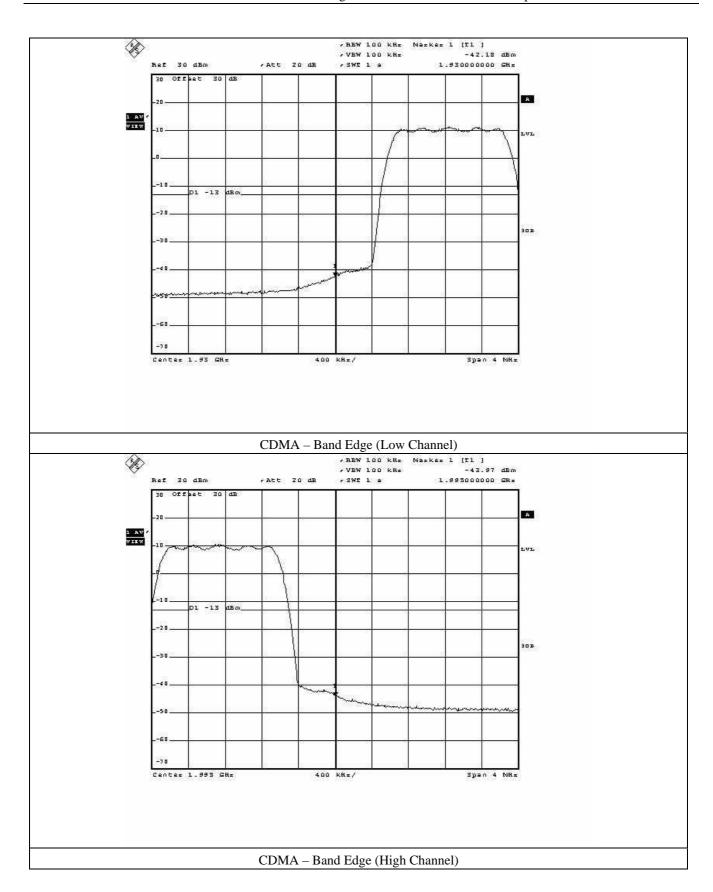
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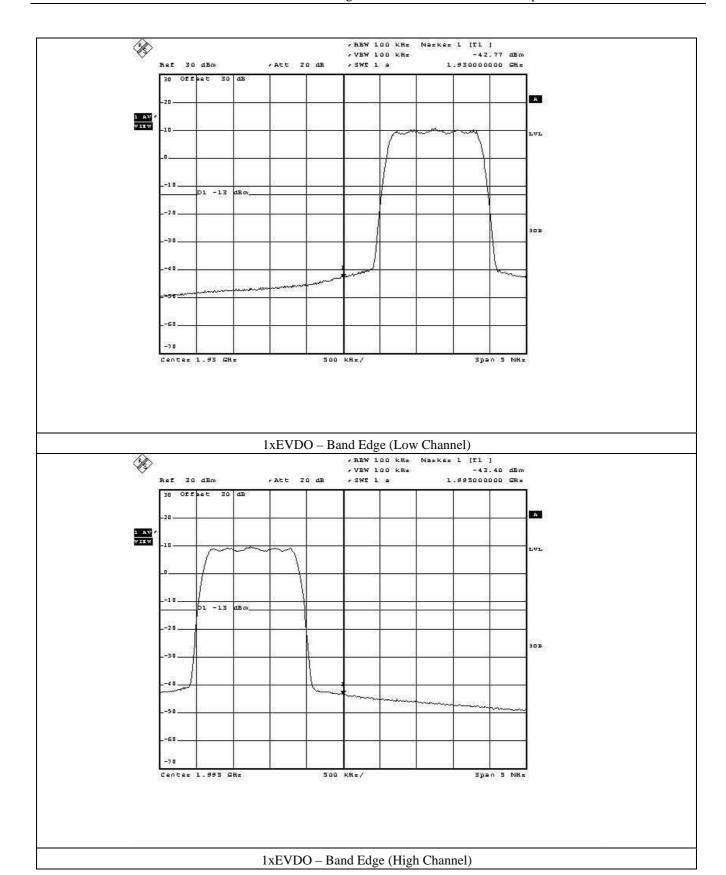
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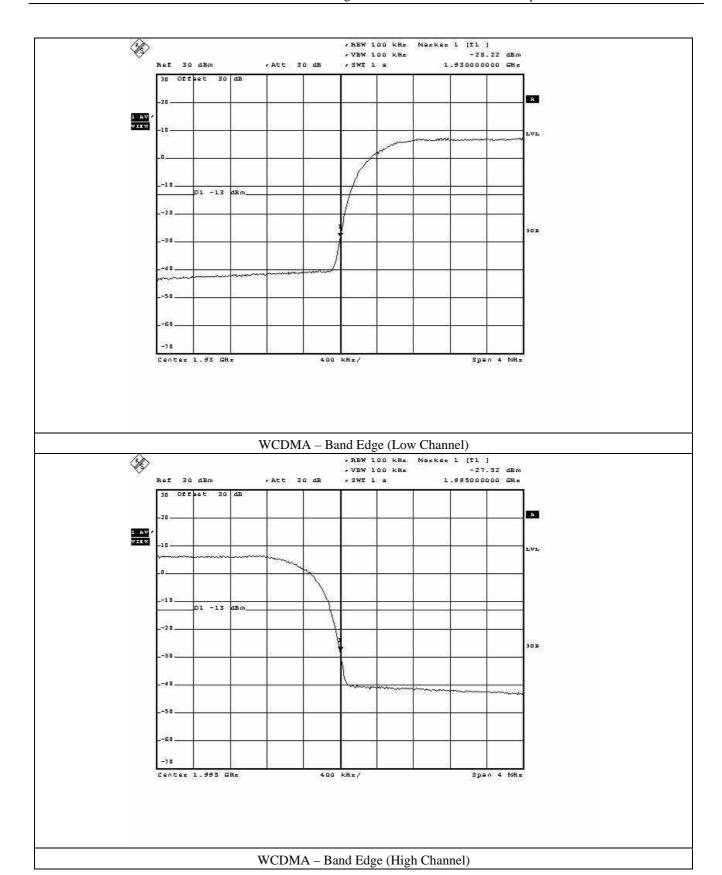


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## 8.4.2 Test Result for Part 27

-. Test Date : February 25~26, 2009

-. Result : PASSED BY -15.61 dB at low channel of WCDMA Mode

Modulation	Channel	Measured Frequency (MHz)	Max. Measured Value (dBm)	Limit (dBm)
TDMA	Low	2 110.00	-31.54	-13.00
IDMA	High	2 155.00	-33.65	
GSM	Low	2 109.98	-33.37	
GSM	High	2 155.02	-33.12	
EDGE	Low	2 109.96	-35.62	-13.00
EDGE	High	2 155.01	-34.68	
CDMA	Low	2 110.00	-45.88	
CDMA	High	2 155.00	-46.83	
1-EVD0	Low	2 110.00	-43.12	-13.00
1xEVDO	High	2 155.00	-44.35	
WCDMA	Low	2 110.00	-28.61	
WCDMA	High	2 155.00	-28.77	

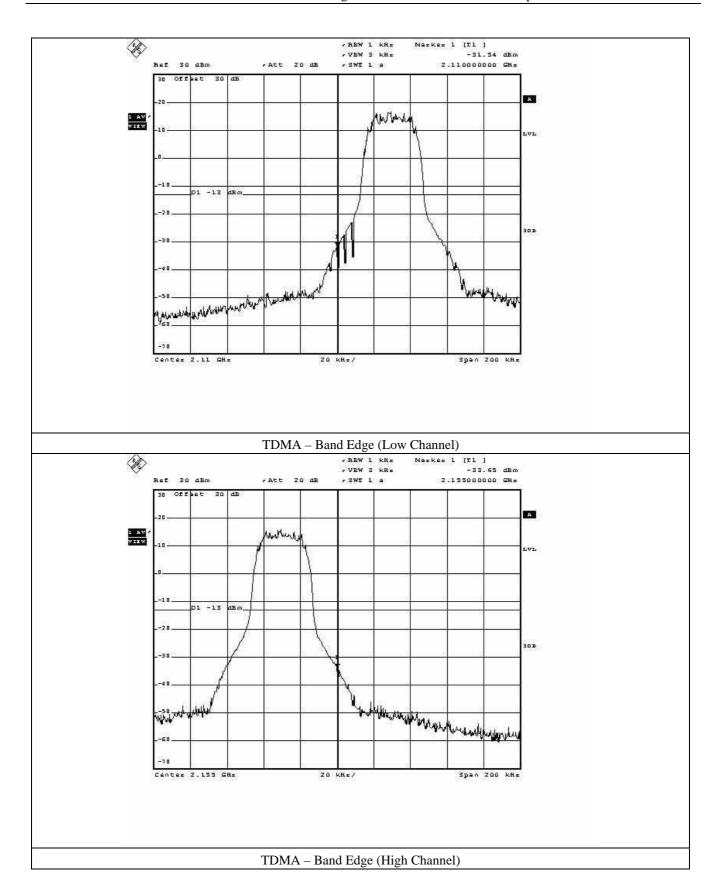
According to Part 27, out of band emission shall be attenuated by 43 + 10 log (P) dBc, equates to -13.0dBm.

公八喜

Tested by: Ki-Hong, Nam / Project Engineer



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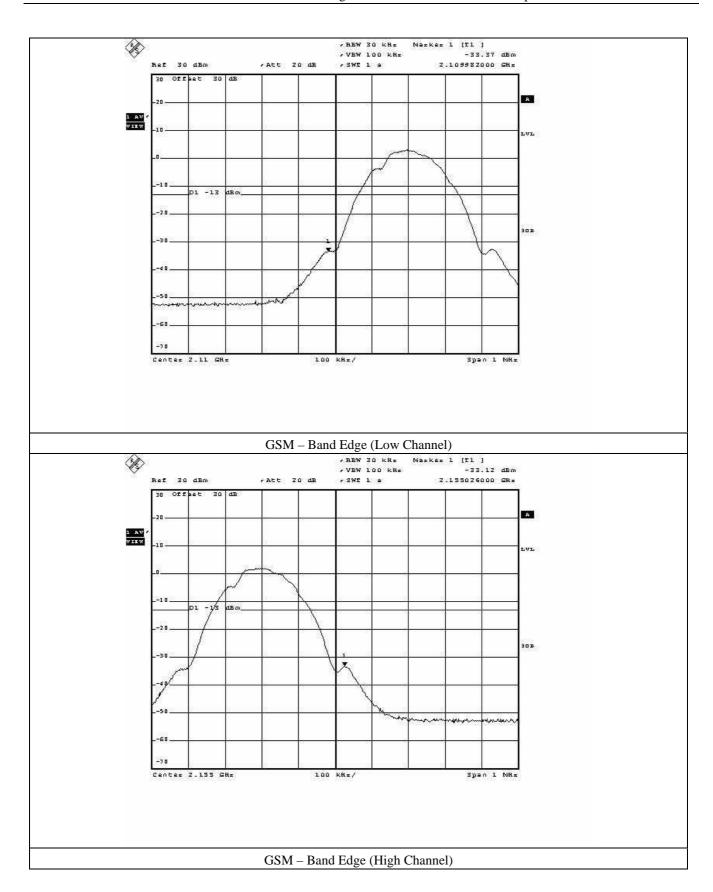
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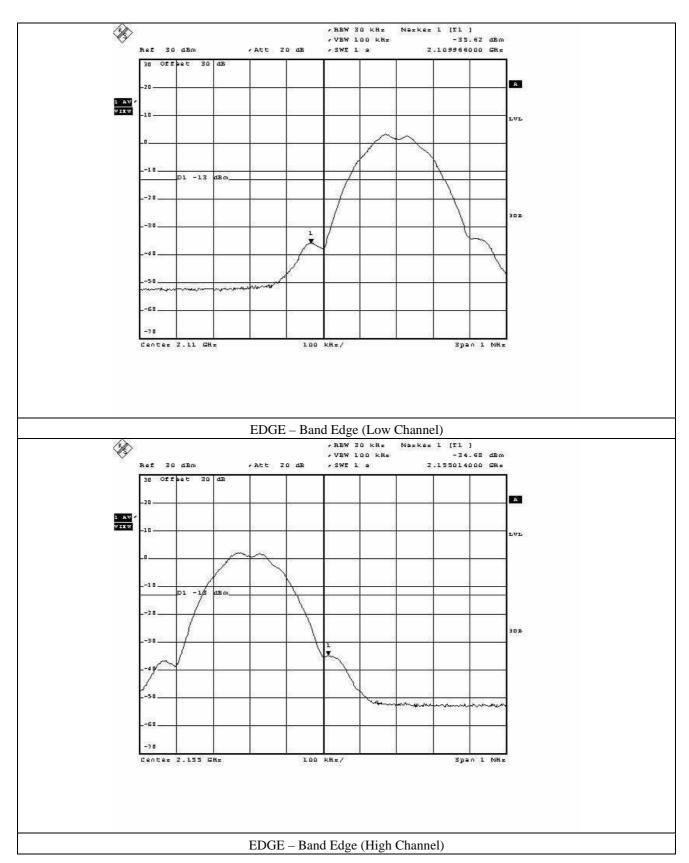
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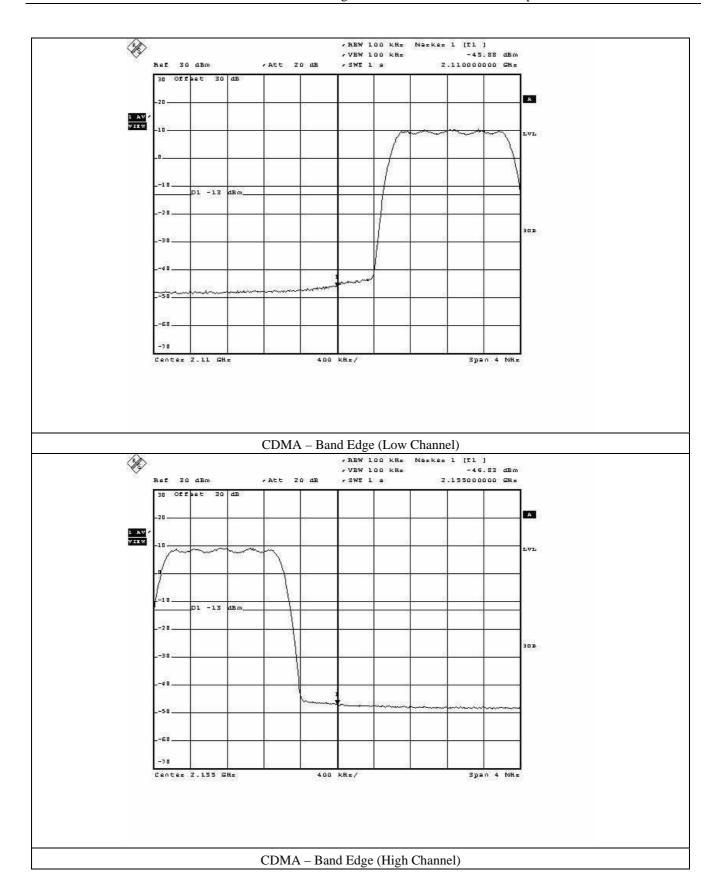
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