

ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR TNB LICENSED TRANSMITTER

Test Report No. : E10DR-029
AGR No. : A10NA-182
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(E-VHF/UHF)
FCC ID. : W6UEVHFUHF
Model Name : RDU E-VHF+UHF
Serial number : N/A
Total page of Report : 235 pages (including this page)
Date of Incoming : November 25, 2010
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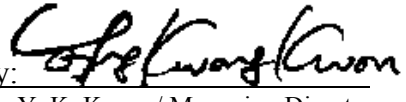
SUMMARY

The equipment complies with the regulation; **FCC 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.

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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
E10DR-029	December 13, 2010	Initial Issue	All

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 : +82-31-784-8668
FCC ID : W6UEVHFUHF
MODEL NAME : RDU E-VHF+UHF
SERIAL NUMBER : N/A
DATE : December 13, 2010

EQUIPMENT CLASS	TNB – Licensed Non-Broadcast Station Transmitter
KIND OF EQUIPMENT	SIGNAL BOOSTER
EQUIPMENT DESCRIPTION	RDU MODULE(E-VHF/UHF)
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.4: 2009, EIA/TIA-603C:2004
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	PART 90 Subpart I
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 m(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.

2. TEST SUMMARY

2.1 Test items and results

SECTION	TEST ITEMS	RESULTS
2.1046(a), 90.205, & 90.219	RF Power Output at Antenna Terminals	Met the Limit / PASS
2.1047	Modulation Characteristics	PASS (See Note 1)
2.1049, 90.210, & 90.219	Occupied Bandwidth, Bandwidth Limitation	Met the Limit / PASS
90.210, & 90.219	Emission Mask	Met the Limit / PASS
2.1051, 90.210, & 90.219	Spurious Emissions at Antenna Terminals	Met the Limit / PASS
2.1053, 90.210, & 90.219	Field strength of Spurious Radiation	Met the Limit / PASS
2.1055, 90.213	Frequency Stability with Temperature variation	Met the requirement / PASS
2.1055, 90.213	Frequency stability with primary voltage variation	Met the requirement / PASS
2.1093	RF Exposure	See Note 2

Note1: The Equipment under Test (EUT) is a signal booster which reproduces the modulated input signal, which was received by optic cable, so the EUT meets the requirement.,

Note2: 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

Conducted emission testing was performed according to the procedures in ANSI C63.4: 2009 and additionally required testing was performed according to the procedure in EIA/TIA 603C and radiating test was performed at 3 m from the EUT to the receiving 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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EMC-003 (Rev.1)

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3. GENERAL INFORMATION

3.1 Product Description

The SOLiD Technologies, Inc., Model RDU E-VHF+UHF (referred to as the EUT in this report) is a RDU MODULE(E-VHF/UHF) that shall be plugged in AOR (Add V/UHF ROU). The AOR can be equipped with up to RDU (Remote Drive Unit). The System, Model No: SMDR-NH124 consists of AOR(Add V/UHF ROU), ROU(Remote Optic Unit), 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 RDU (Remote Drive Unit) and the module is composed of maximal Dual Band, but this report only covers RDU E-VHF+UHF, FCC ID: W6UEVHFUHF.

The product specification described herein was obtained from product data sheet or user’s manual.

DEVICE TYPE		RDU MODULE(E-VHF/UHF)
LIST OF EACH OSC. or CRY. FREQ.(FREQ. >= 1 MHz)		14.74 MHz
EMISSION DESIGNATOR		VHF: F1D, F3E, UHF: F1D, F1E, F3E
OPERATING FREQUENCY	VHF	136 MHz ~ 174 MHz
	UHF-B1	380 MHz ~ 434 MHz
	UHF-B2	434 MHz ~ 496 MHz
SYSTEM GAIN	VHF	39 dB
	UHF	39 dB
RF OUTPUT POWER		24 dBm (251.2 mW)
DECLARED ANTENNA GAIN		Less than 2 dBi
DC VOLTAGE & CURRENT INTO FINAL AMPLIFIER		VHF: 27 V, 1 A, UHF-B1/-B2: 27 V, 1 A
ELECTRICAL RATING		AC 120 V, 3.5 A and DC - 48 V, 5.5 A
NUMBER OF LAYERS		4 Layer
OPERATING TEMPERATURE		-10 °C ~ 50 °C

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

-. None

3.3 Mode of operation during the test

The EUT was received signal form signal generator and then each frequency band, VHF and UHF were 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.

3.4 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 E-VHF+UHF	SOLiD Technologies, Inc.	W6UEVHFUHF	RDU MODULE(E-VHF/UHF) (EUT)	-
SMJ100A	Rohde & Schwarz	N/A	Vector Signal Generator	ODU
SMDR-NH124	SOLiD Technologies, Inc.	N/A	ODU (Optic Distribution Unit)	BIU
SMDR-NH124	SOLiD Technologies, Inc.	N/A	BIU (BTS Interface Unit)	ROU
SMDR-NH124	SOLiD Technologies, Inc.	N/A	ROU (Remote Optic Unit)	EUT
PAN35-20A	KIKUSUI ELECTRONICS CORP.	N/A	DC Power Supply	EUT

4. EUT MODIFICATIONS

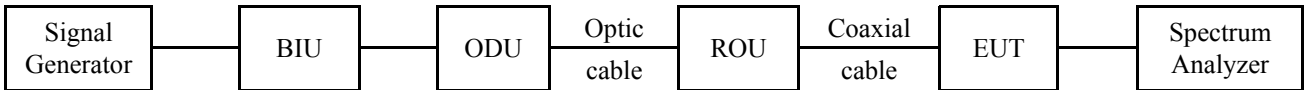
-. None

5. RF POWER OUTPUT at ANTENNA TERMINAL

5.1 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 ROU (Remote Optic Unit) by optic cable and then the coaxial output port of the ROU was connected to the input of the EUT By coaxial 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.



5.2 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal. (Interval)
■ -	E4432B	HP	Signal Generator	US38440950	Jun. 10, 2010 (1Y)
■ -	SMJ100A	R/S	Signal Generator	101038	Feb. 04, 2010 (1Y)
■ -	FSP	R/S	Spectrum Analyzer	100017	Mar. 16, 2010 (1Y)
□ -	8564E	HP	Spectrum Analyzer	3650A00756	Jun 10, 2010 (1Y)

All test equipment used is calibrated on a regular basis.

5.3 Test data

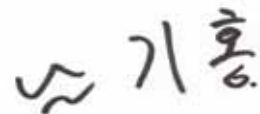
5.3.1 Test Result for VHF

- . Test Date : November 29, 2010
- . Temperature : 22 °C
- . Relative humidity : 45 % R.H.
- . Test Result : Pass
- . Modulation : FM with 2.5 kHz sine wave signal

Channel Spacing (kHz)	Modulation (kHz)	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
25	2.5	Low	136.000 0	-15.00	24.00	0.251 189	5.0
		Middle	155.000 0	-15.10	24.00		
		High	174.000 0	-15.30	24.00		
12.5	2.5	Low	136.000 0	-15.20	24.00	0.251 189	
		Middle	155.000 0	-15.30	24.00		
		High	174.000 0	-15.00	24.00		

- . Modulation : FM with an external 9 600 b/s random data source

Channel Spacing (kHz)	Modulation (b/s)	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
25	9 600	Low	136.000 0	-15.20	24.00	0.251 189	5.0
		Middle	155.000 0	-15.00	24.00		
		High	174.000 0	-15.50	24.00		
12.5	9 600	Low	136.000 0	-15.50	24.00	0.251 189	
		Middle	155.000 0	-15.30	24.00		
		High	174.000 0	-15.30	24.00		



Tested by: Ki-Hong, Nam / Senior Engineer

5.3.2 Test Result for UHF-B1

- . Test Date : December 01, 2010
- . Temperature : 22 °C
- . Relative humidity : 45 % R.H.
- . Test Result : Pass
- . Modulation : FM with 2.5 kHz sine wave signal

Channel Spacing (kHz)	Modulation (kHz)	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
25	2.5	Low	380.000 0	-15.10	24.00	0.251 189	5.0
		Middle	407.000 0	-15.00	24.00		
		High	434.000 0	-15.30	24.00		
12.5	2.5	Low	380.000 0	-15.20	24.00	0.251 189	
		Middle	407.000 0	-15.30	24.00		
		High	434.000 0	-15.30	24.00		
6.25	0.8	Low	380.000 0	-15.20	24.00	0.251 189	
		Middle	407.000 0	-15.00	24.00		
		High	434.000 0	-15.30	24.00		

- . Modulation : FM with an external 9 600 b/s random data source

Channel Spacing (kHz)	Modulation (b/s)	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
25	9 600	Low	380.000 0	-15.30	24.00	0.251 189	5.0
		Middle	407.000 0	-15.20	24.00		
		High	434.000 0	-15.00	24.00		
12.5	9 600	Low	380.000 0	-15.40	24.00	0.251 189	
		Middle	407.000 0	-15.30	24.00		
		High	434.000 0	-15.10	24.00		
6.25	4 800	Low	380.000 0	-15.00	24.00	0.251 189	
		Middle	407.000 0	-15.30	24.00		
		High	434.000 0	-15.10	24.00		

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5.3.3 Test Result for UHF-B2

- . Test Date : December 03, 2010
- . Temperature : 24 °C
- . Relative humidity : 47 % R.H.
- . Test Result : Pass
- . Modulation : FM with 2.5 kHz sine wave signal

Channel Spacing (kHz)	Modulation (kHz)	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
25	2.5	Low	434.000 0	-15.10	24.00	0.251 189	5.0
		Middle	465.000 0	-15.30	24.00		
		High	496.000 0	-15.10	24.00		
12.5	2.5	Low	434.000 0	-15.00	24.00	0.251 189	
		Middle	465.000 0	-15.20	24.00		
		High	496.000 0	-15.30	24.00		
6.25	0.8	Low	434.000 0	-15.10	24.00	0.251 189	
		Middle	465.000 0	-14.90	24.00		
		High	496.000 0	-15.00	24.00		

- . Modulation : FM with an external 9 600 b/s random data source

Channel Spacing (kHz)	Modulation (b/s)	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Output Power (W)	Limit (W)
25	9 600	Low	434.000 0	-15.00	24.00	0.251 189	5.0
		Middle	465.000 0	-15.10	24.00		
		High	496.000 0	-15.30	24.00		
12.5	9 600	Low	434.000 0	-14.90	24.00	0.251 189	
		Middle	465.000 0	-15.10	24.00		
		High	496.000 0	-15.10	24.00		
6.25	4 800	Low	434.000 0	-15.20	24.00	0.251 189	
		Middle	465.000 0	-15.00	24.00		
		High	496.000 0	-14.90	24.00		

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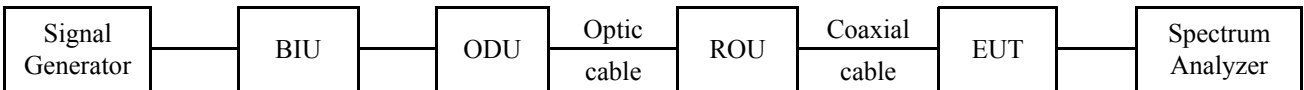
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6. OCCUPIED BANDWIDTH AND EMISSION MASK

6.1 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 ROU (Remote Optic Unit) by optic cable and then the coaxial output port of the ROU was connected to the input of the EUT By coaxial 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 99 % Occupied bandwidth. The VBW is set to 3 times the RBW and sweep time is coupled.



6.2 Test equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal. (Interval)
■ -	E4432B	HP	Signal Generator	US38440950	Jun. 10, 2010 (1Y)
■ -	SMJ100A	R/S	Signal Generator	101038	Feb. 04, 2010 (1Y)
■ -	8564E	HP	Spectrum Analyzer	3650A00756	Mar. 16, 2010 (1Y)
□ -	FSP	R/S	Spectrum Analyzer	100017	Jun 10, 2010 (1Y)

All test equipment used is calibrated on a regular basis.

6.3 Test data for Occupied Bandwidth

6.3.1 Test Result for VHF

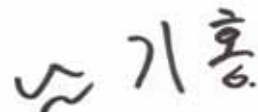
- Test Date : November 29, 2010
- Temperature : 22 °C
- Relative humidity : 45 % R.H.
- Test Result : Pass
- Modulation : FM with 2.5 kHz sine wave signal

Channel Spacing (kHz)	Modulation (kHz)	Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	Limit (kHz)
25	2.5	Low	136.000 0	15.170	20.00
		Middle	155.000 0	15.170	
		High	174.000 0	15.170	
12.5	2.5	Low	136.000 0	10.170	11.25
		Middle	155.000 0	10.170	
		High	174.000 0	10.170	

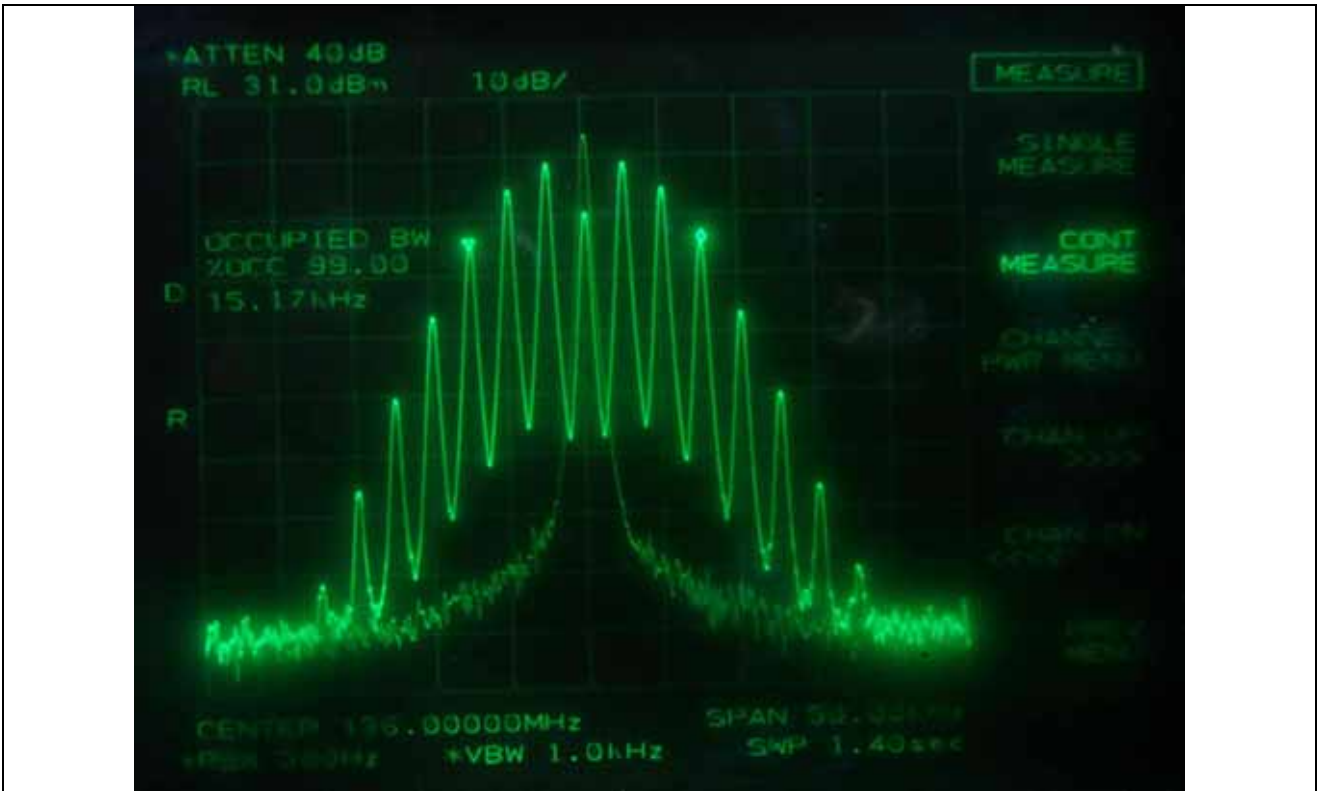
- Modulation : FM with an external 9 600 b/s random data source

Channel Spacing (kHz)	Modulation (b/s)	Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	Limit (kHz)
25	9 600	Low	136.000 0	16.420	20.00
		Middle	155.000 0	16.330	
		High	174.000 0	16.420	
12.5	9 600	Low	136.000 0	9.917	11.25
		Middle	155.000 0	9.917	
		High	174.000 0	9.917	

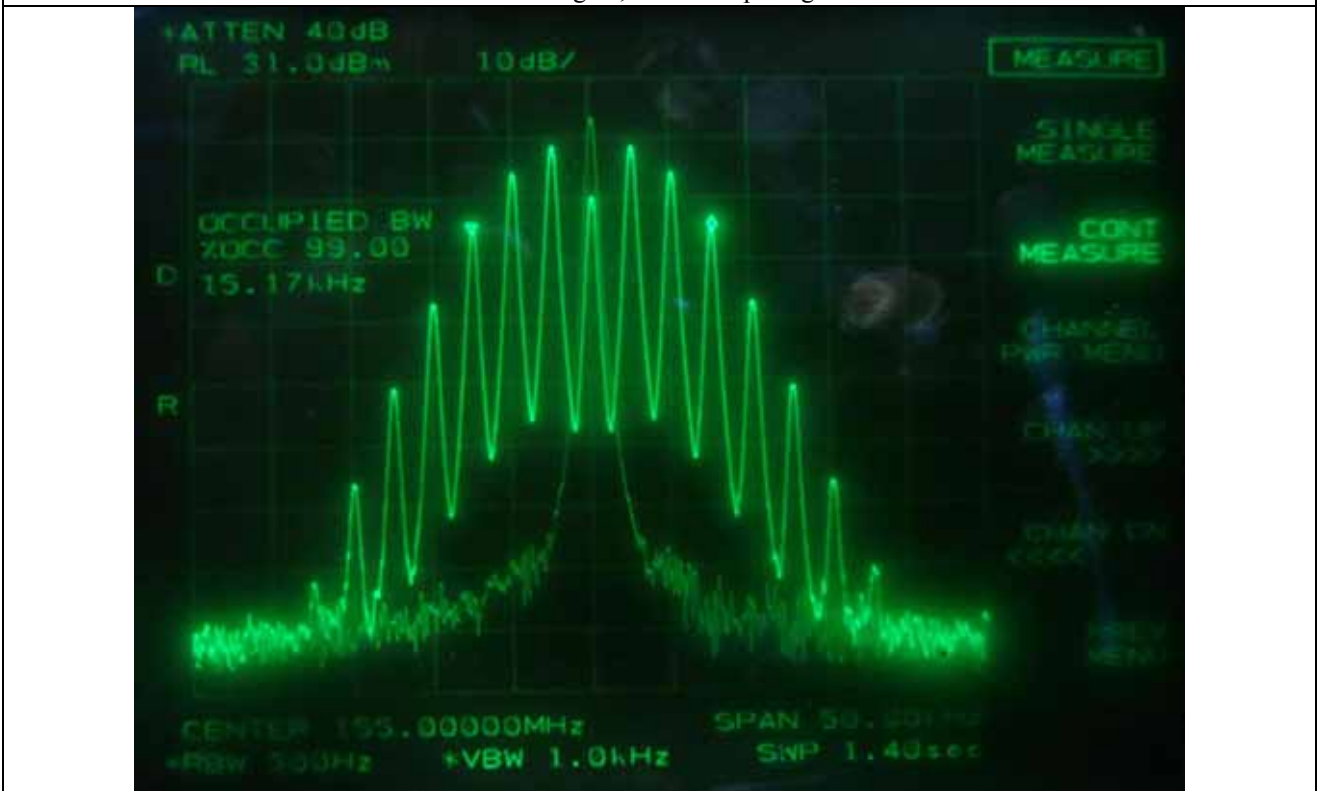
Remark: According to above result, the carrier frequency shall be within the frequency block edges.



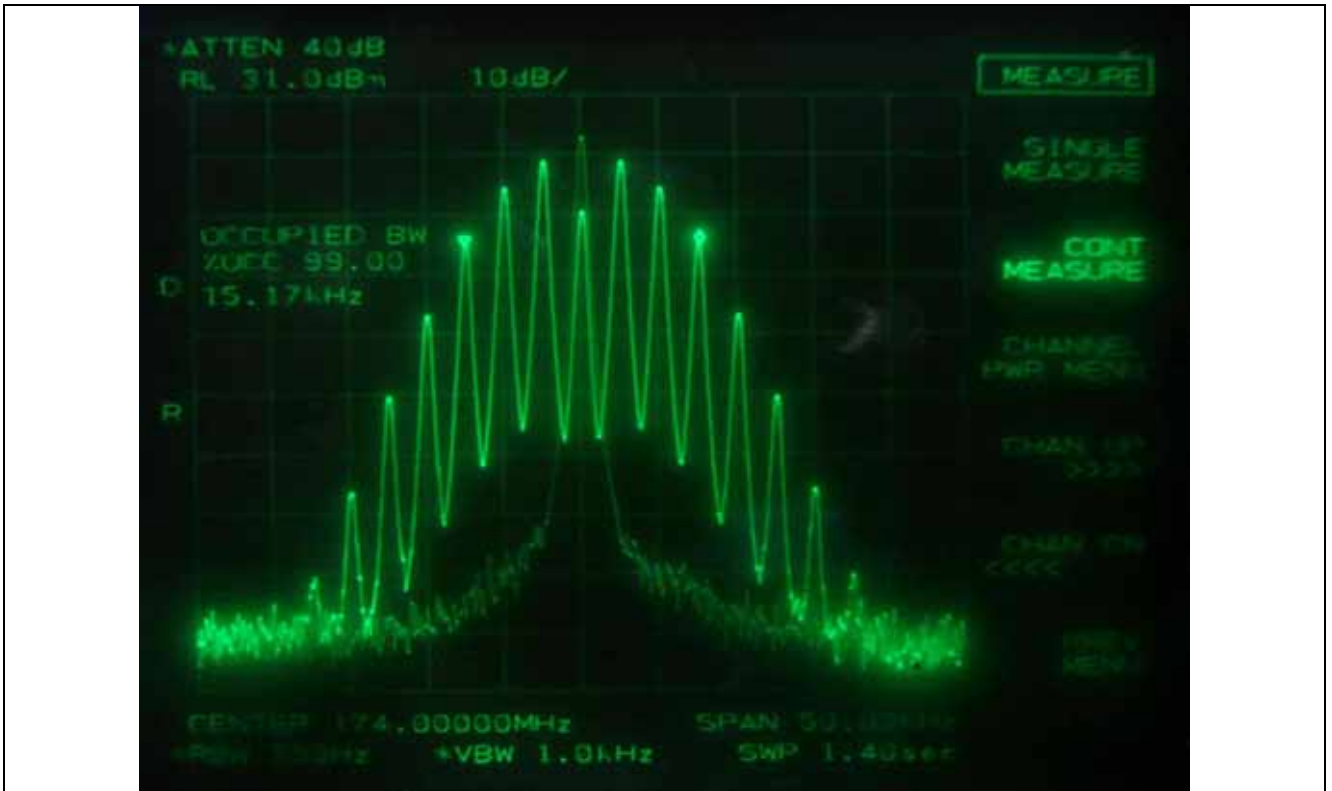
Tested by: Ki-Hong, Nam / Senior Engineer



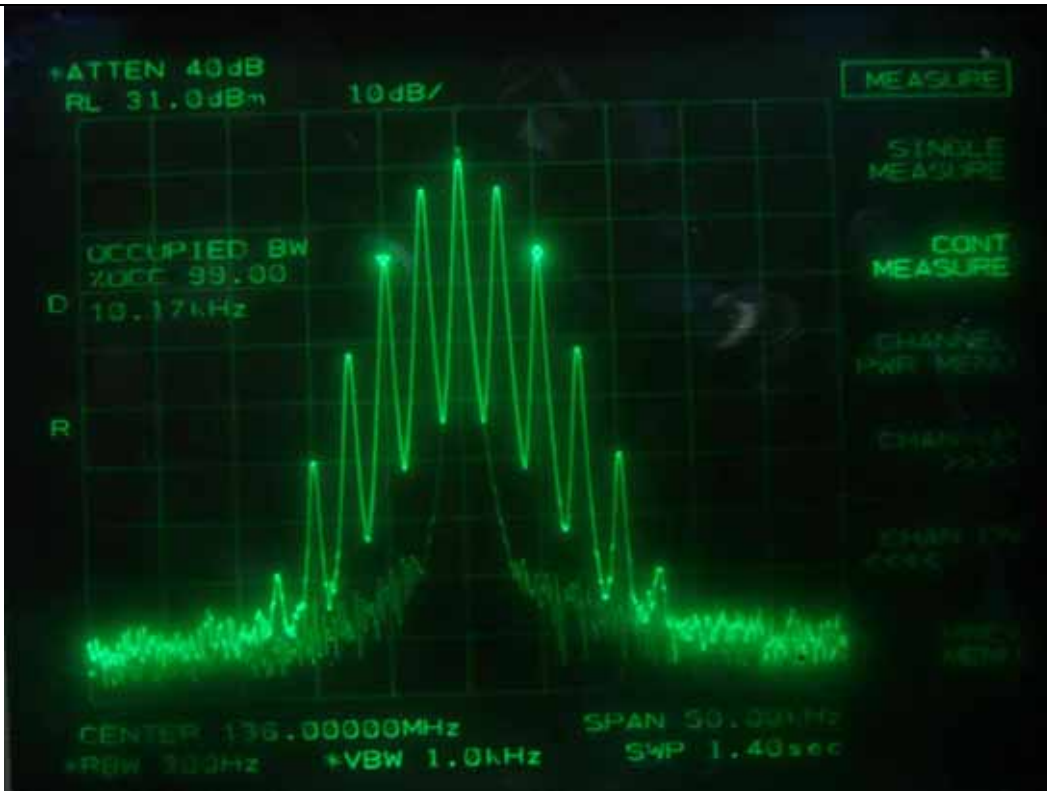
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Low Channel



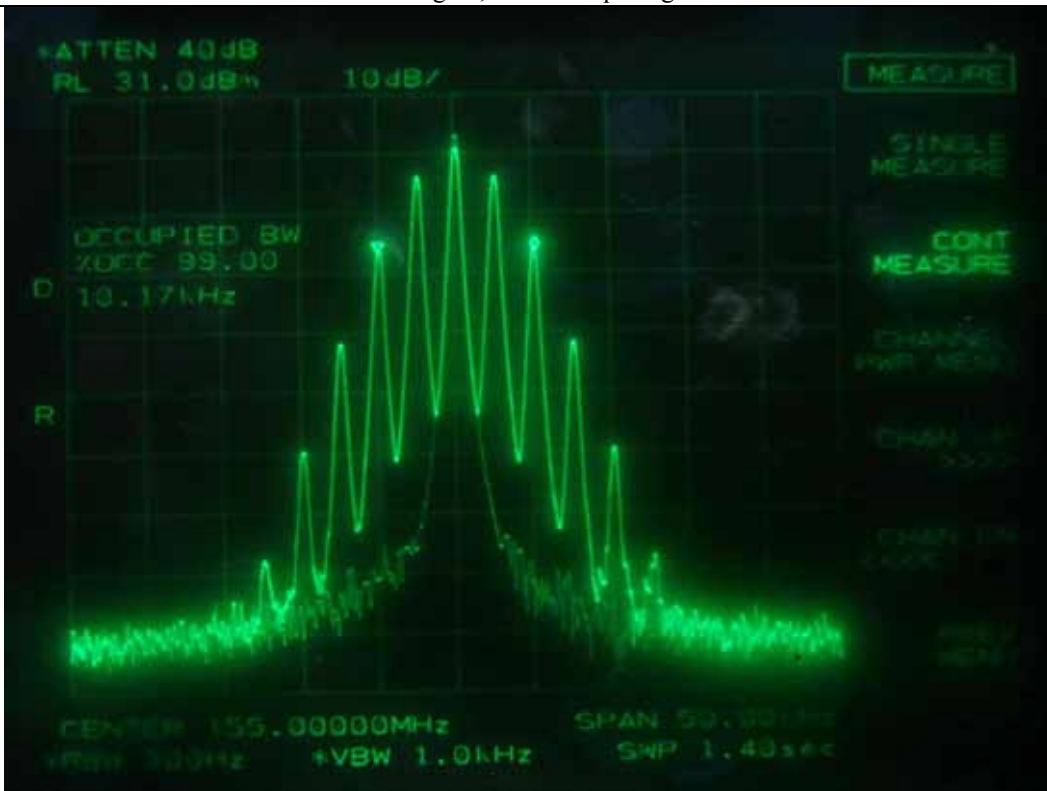
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Middle Channel



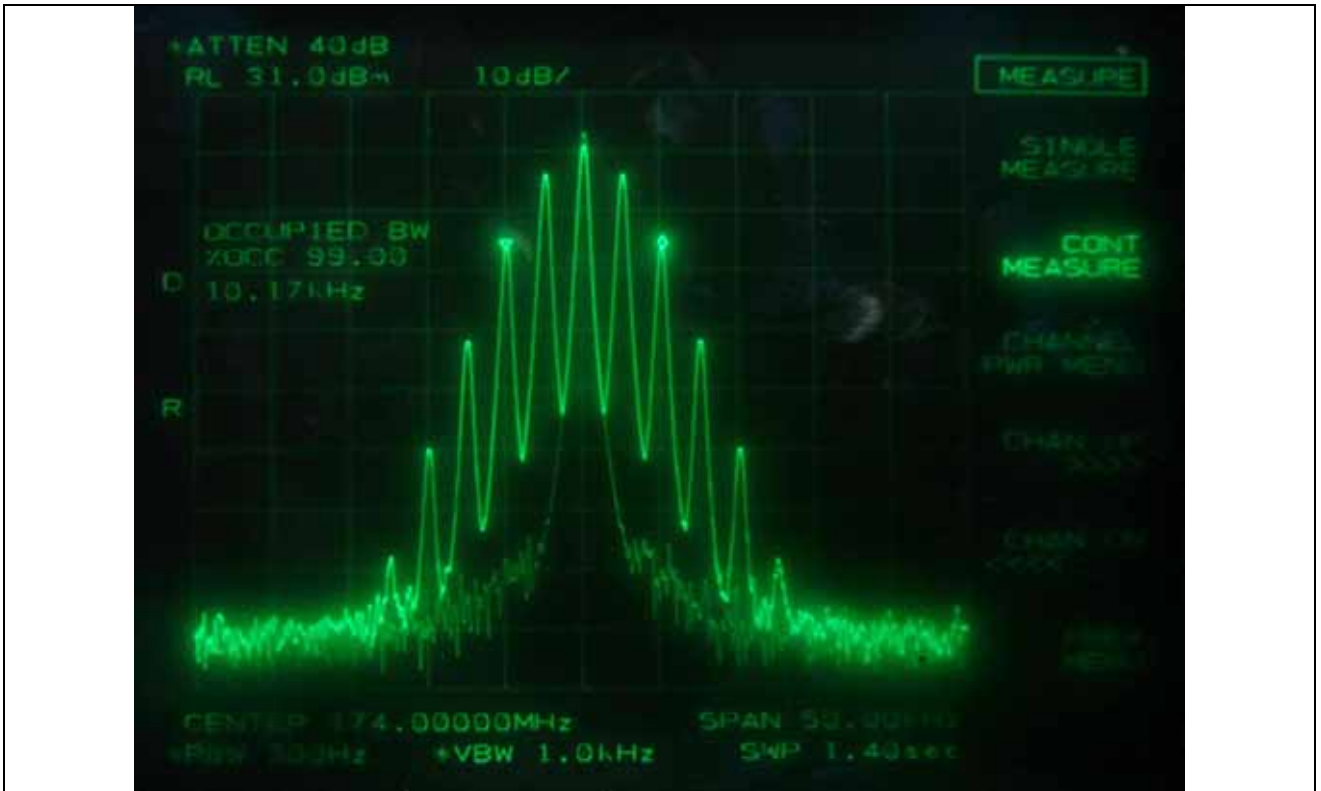
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - High Channel



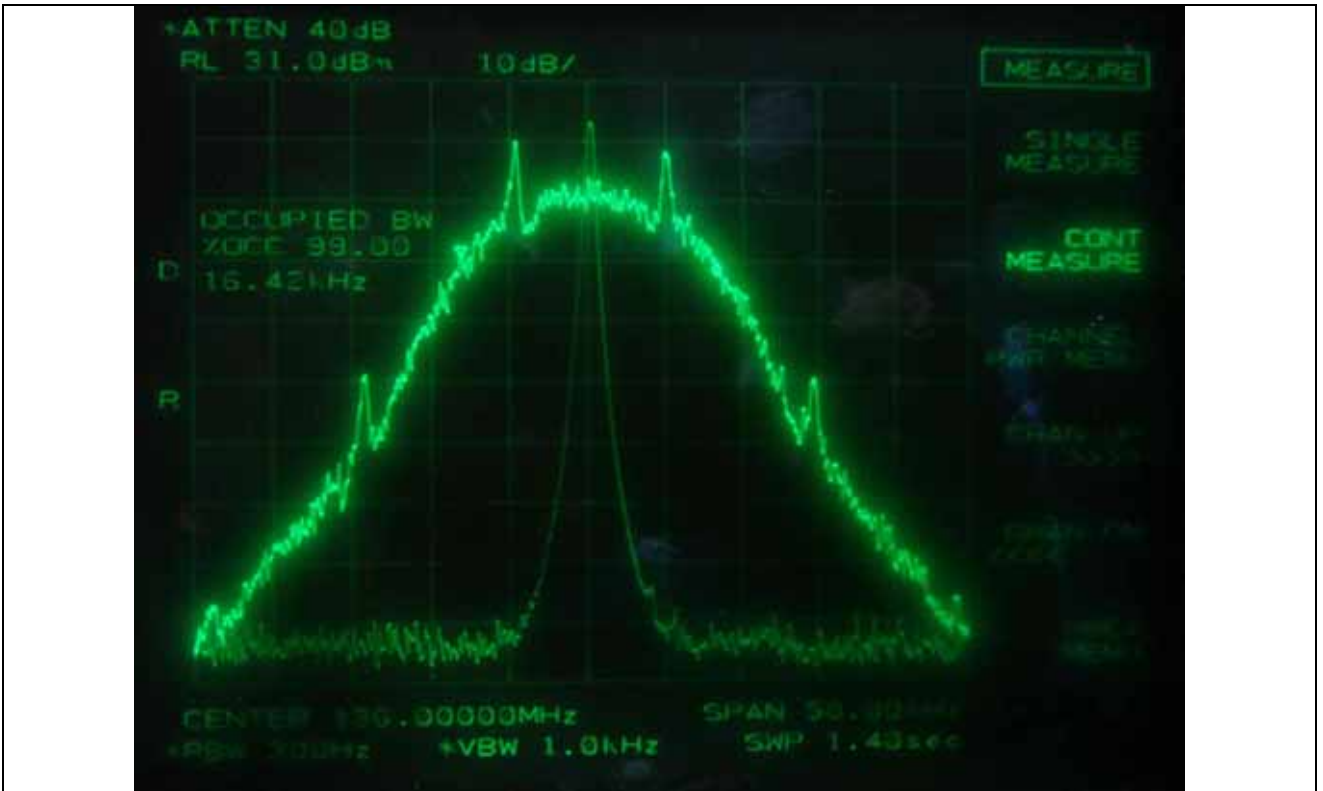
FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Low Channel



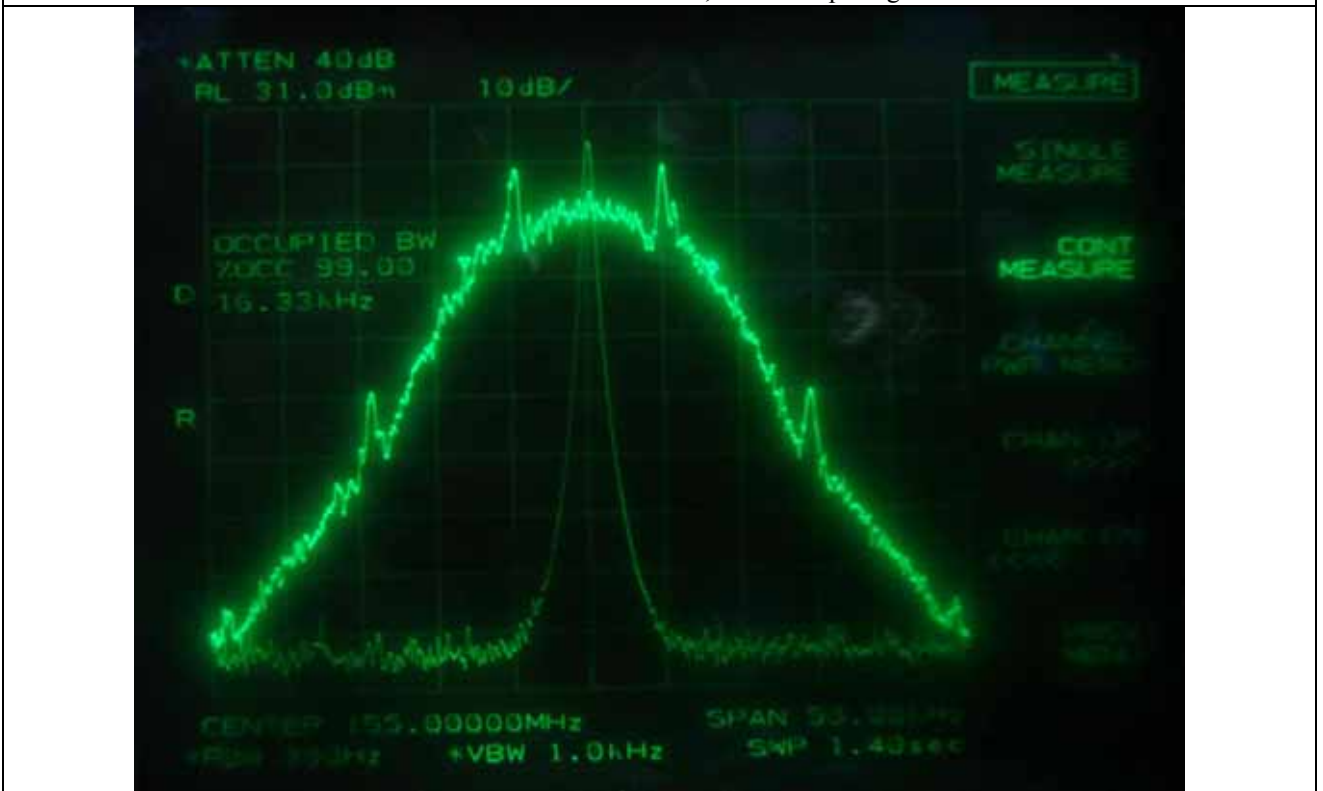
FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Middle Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - High Channel



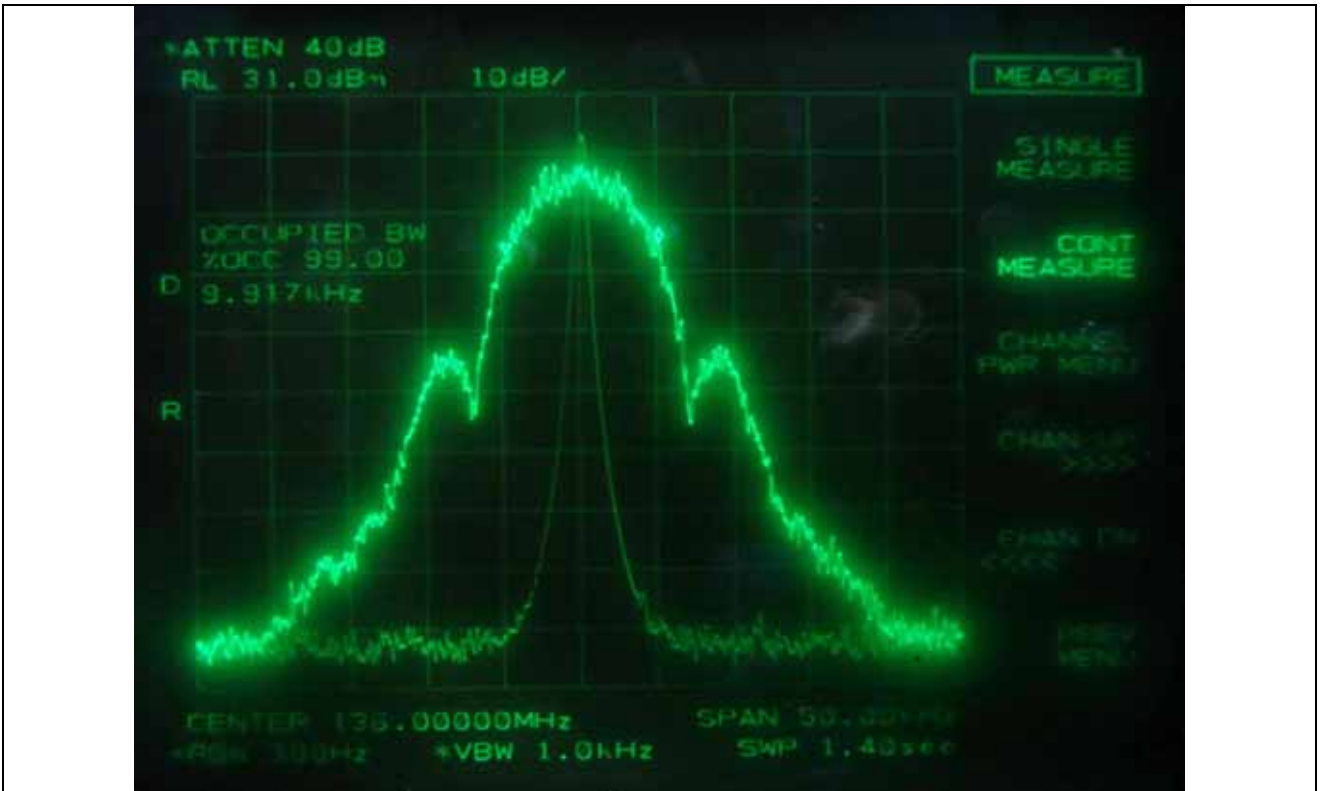
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Low Channel



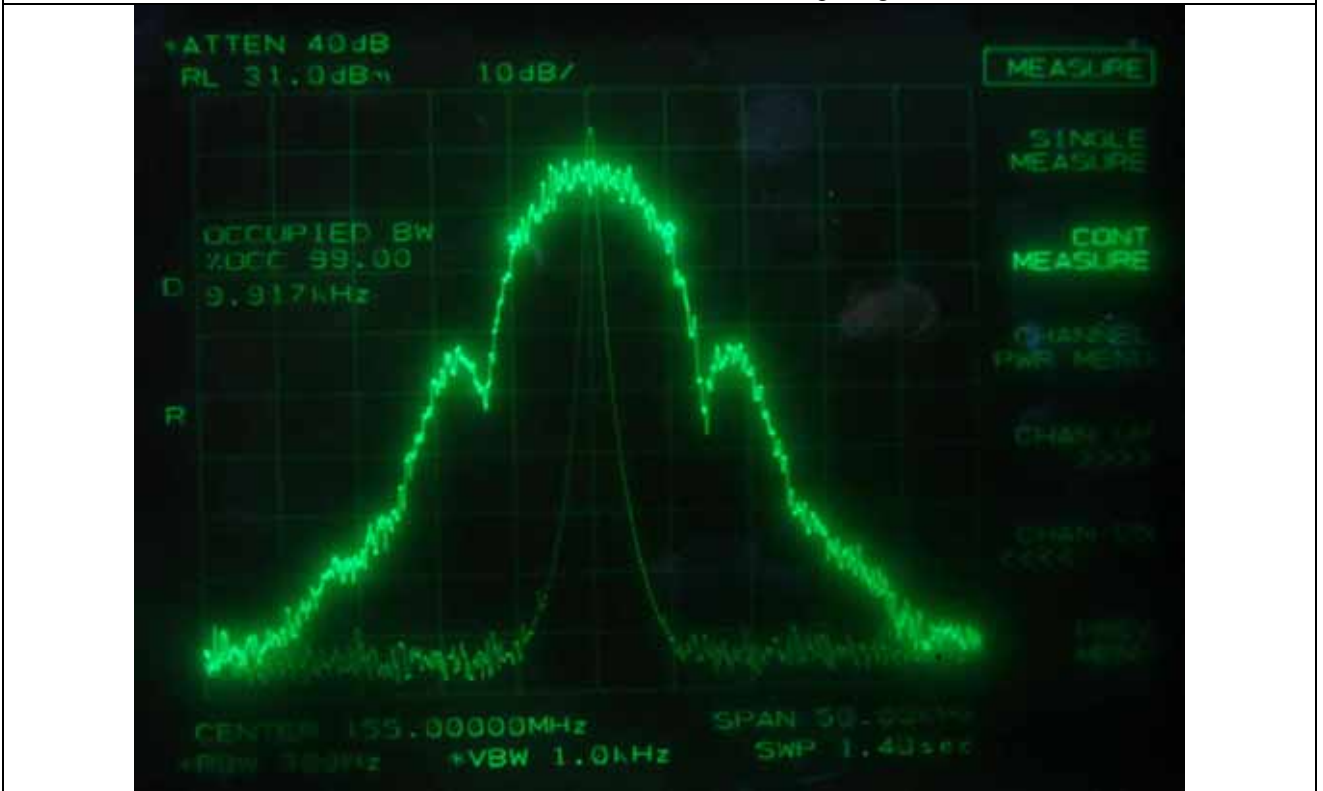
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Middle Channel



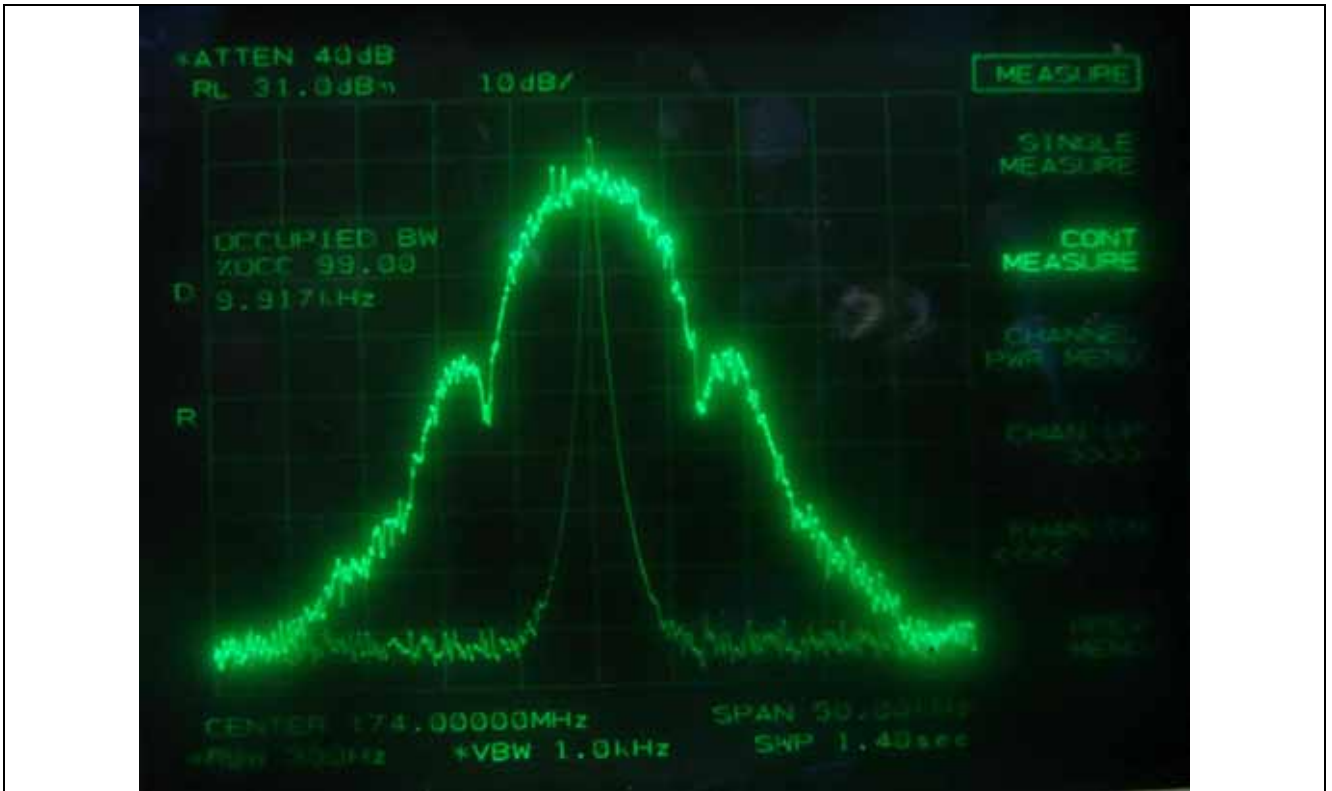
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - High Channel



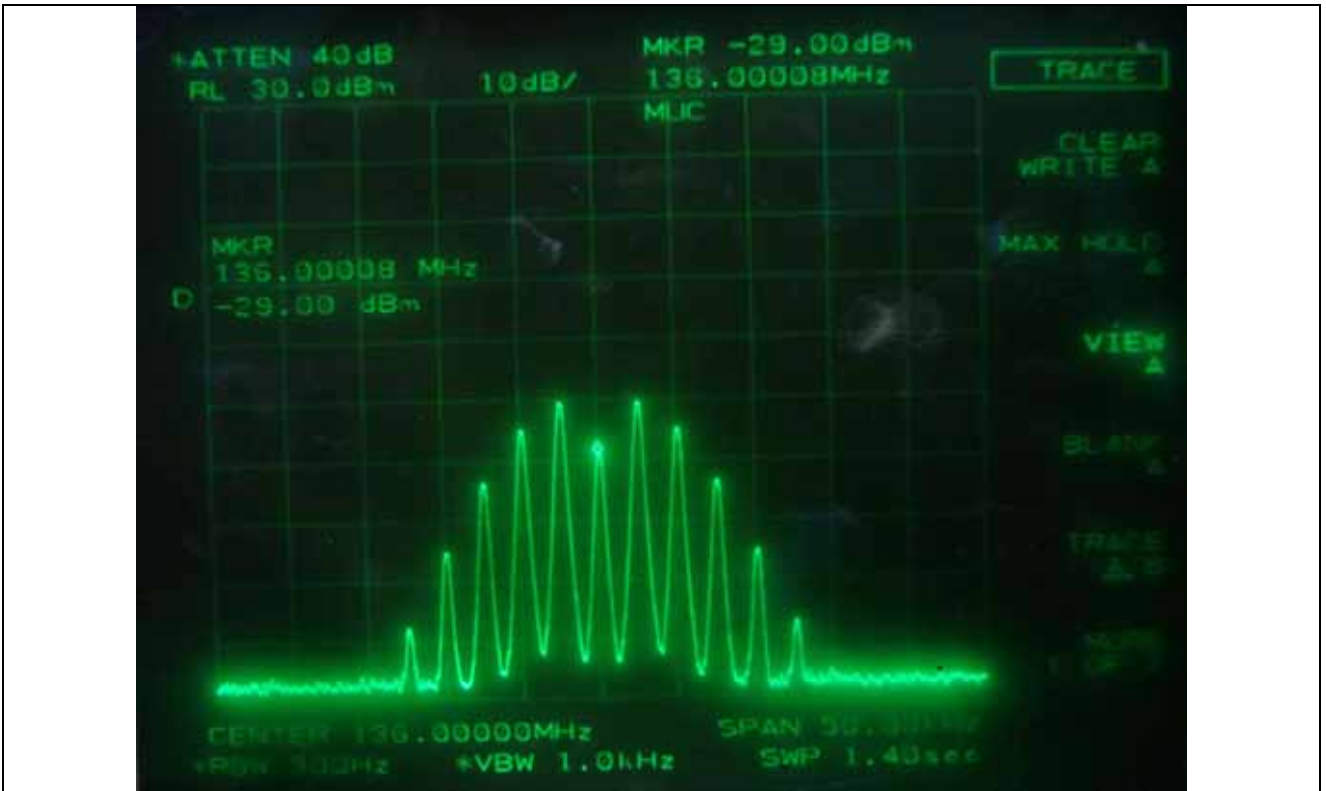
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Low Channel



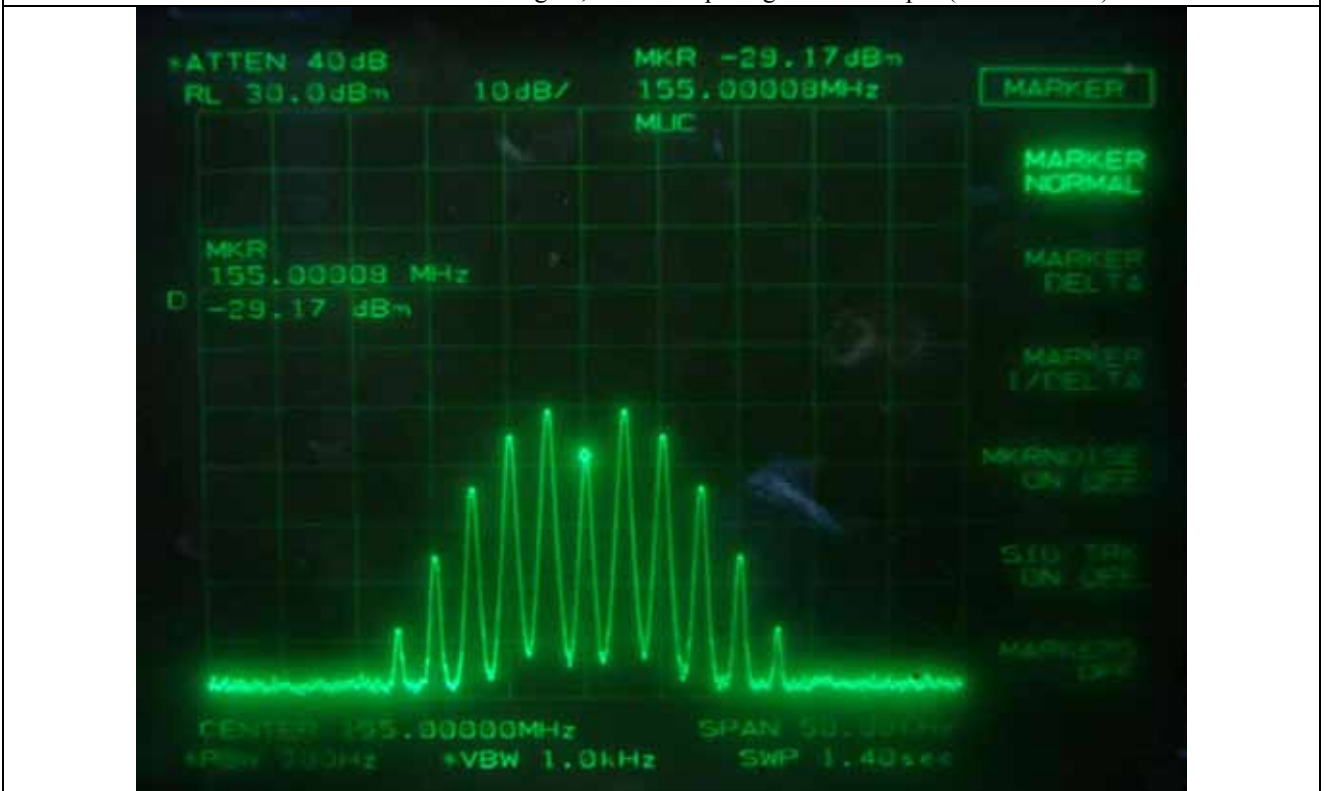
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Middle Channel



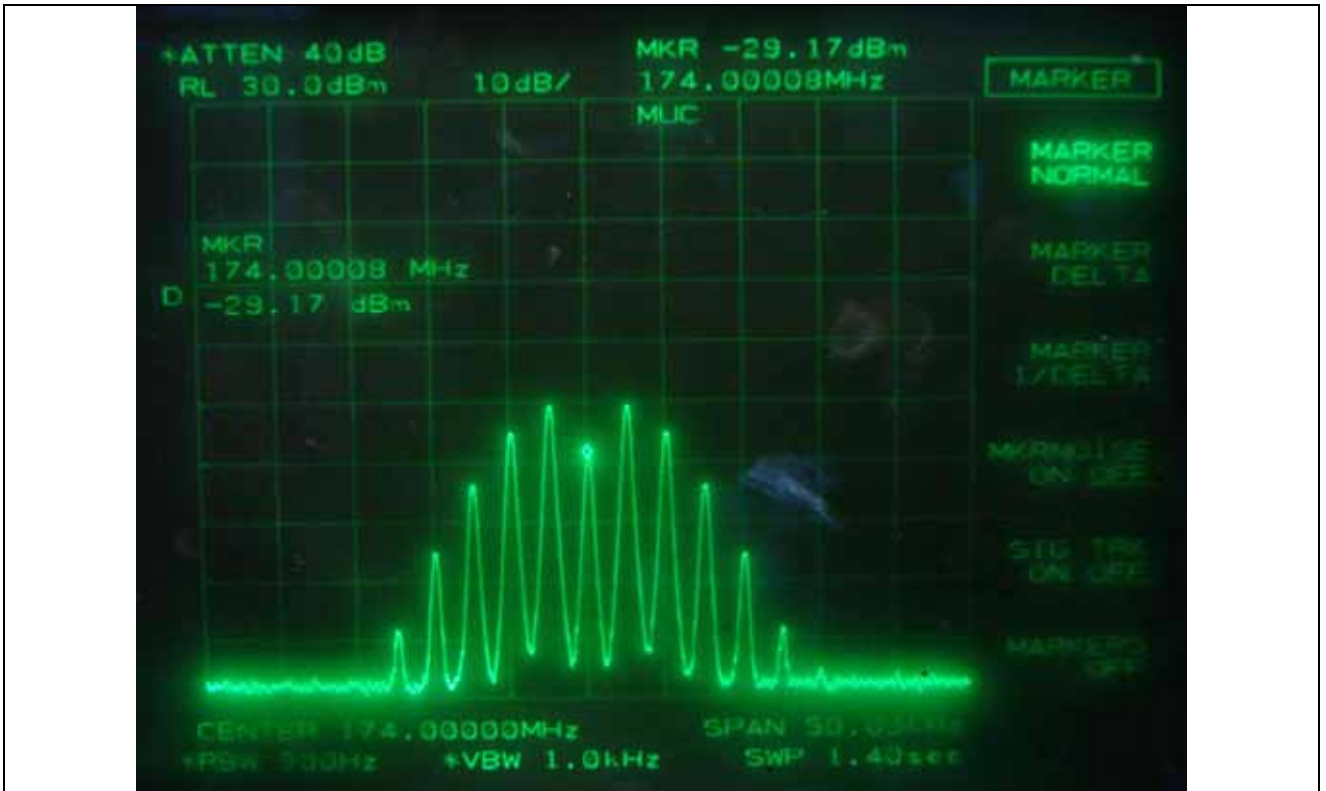
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - High Channel



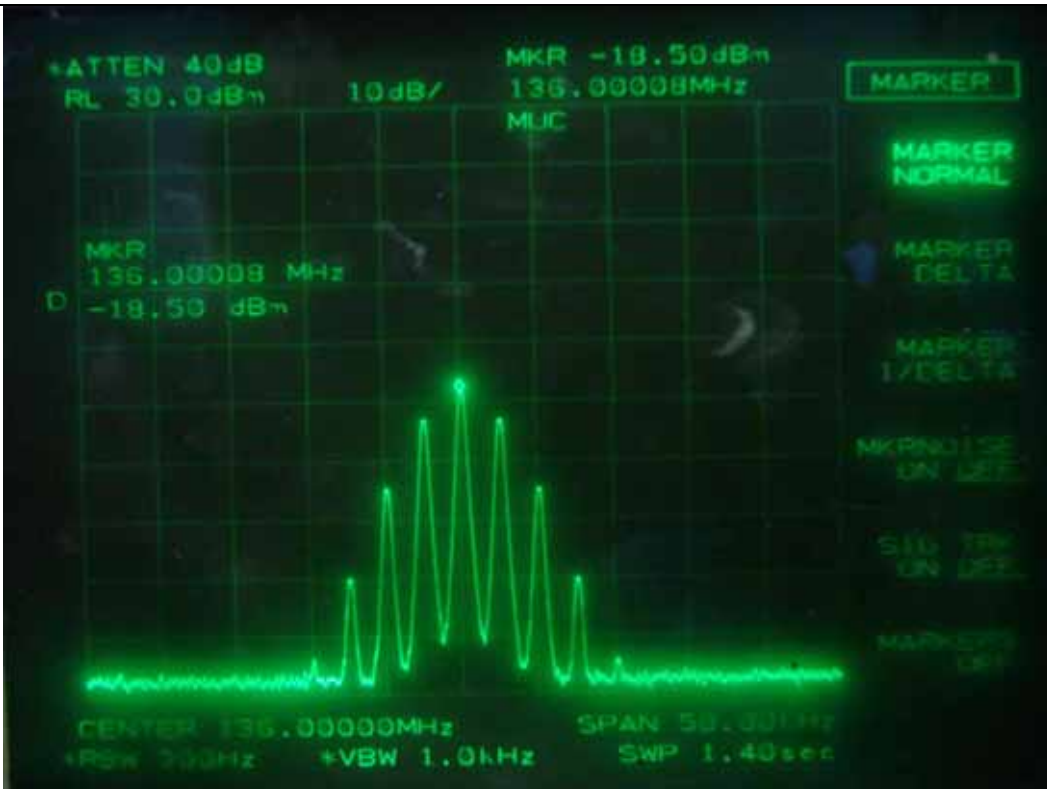
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (Low Channel)



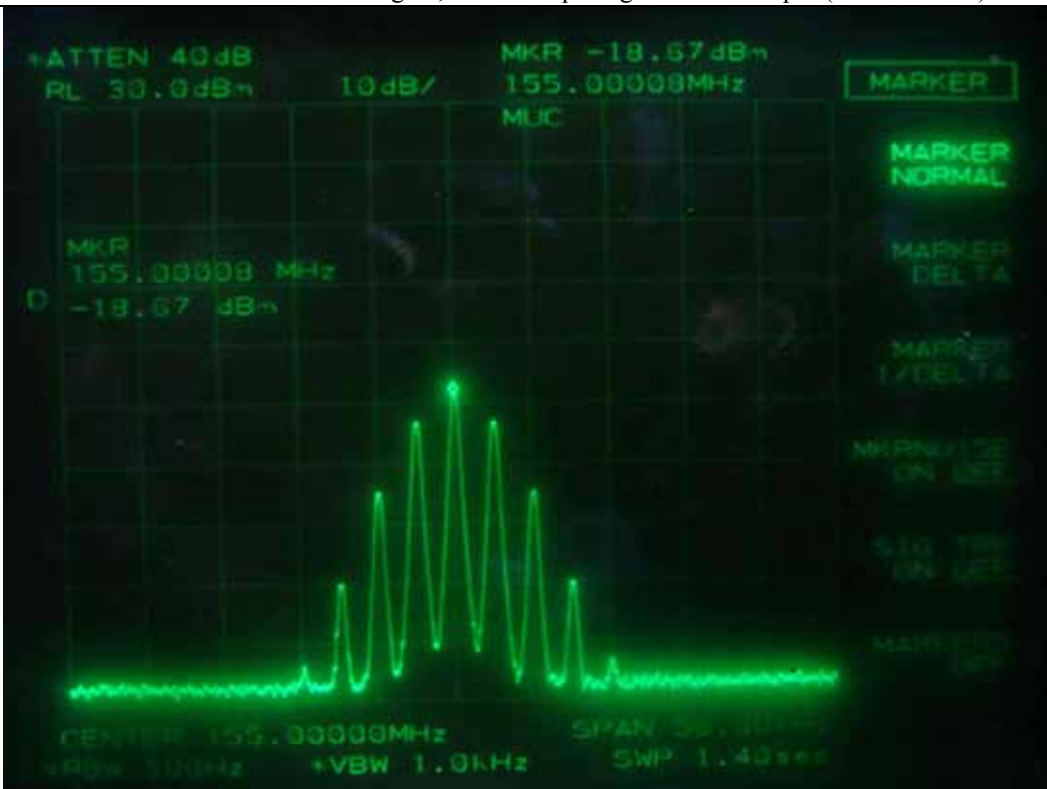
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (Middle Channel)



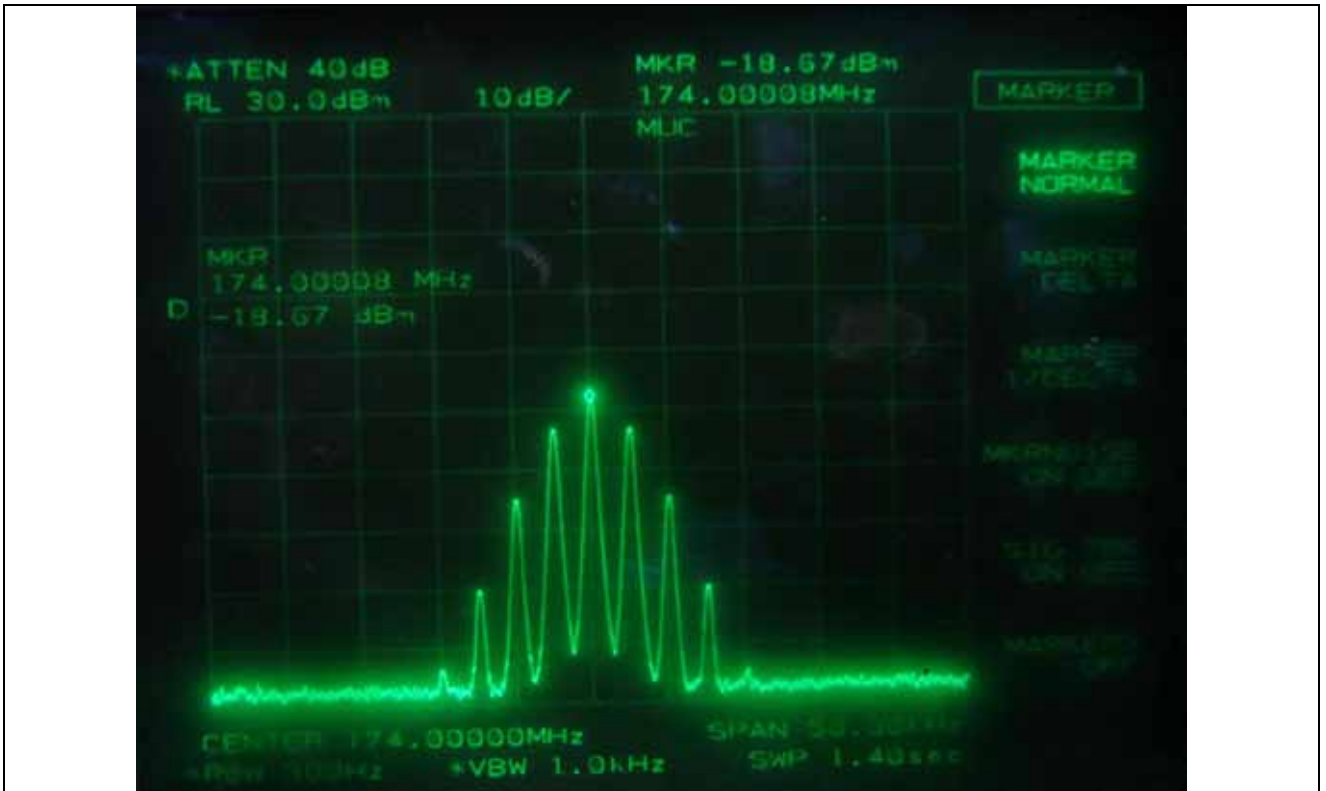
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (High Channel)



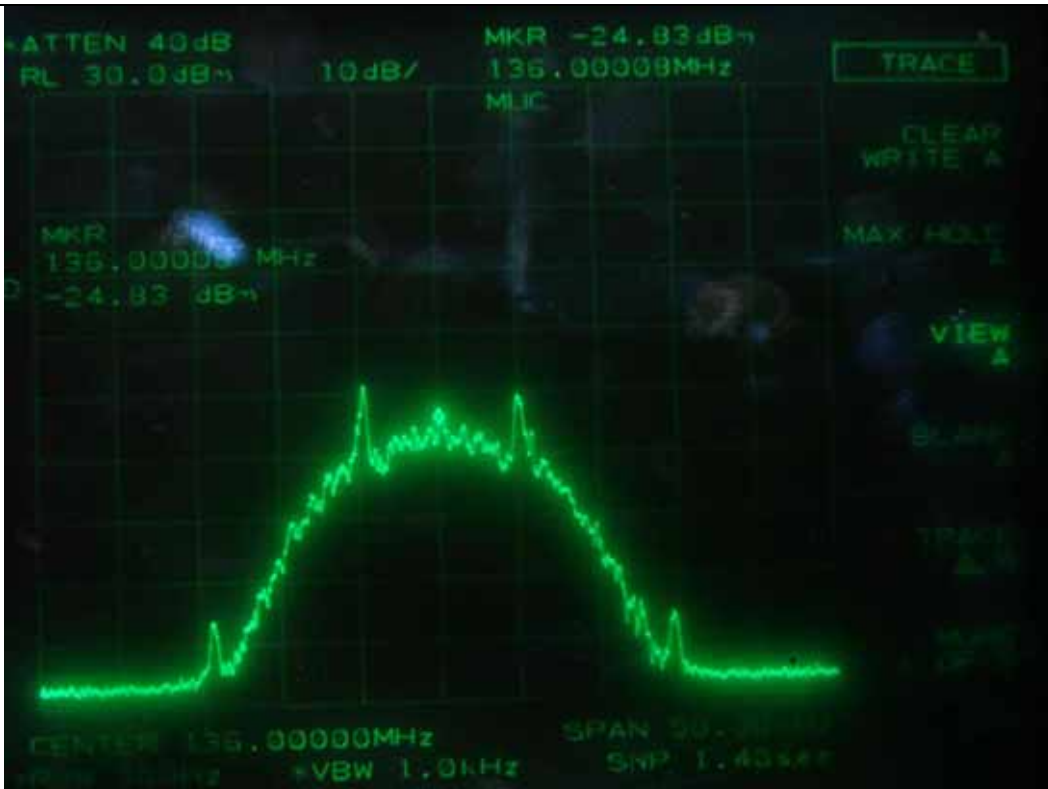
FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (Low Channel)



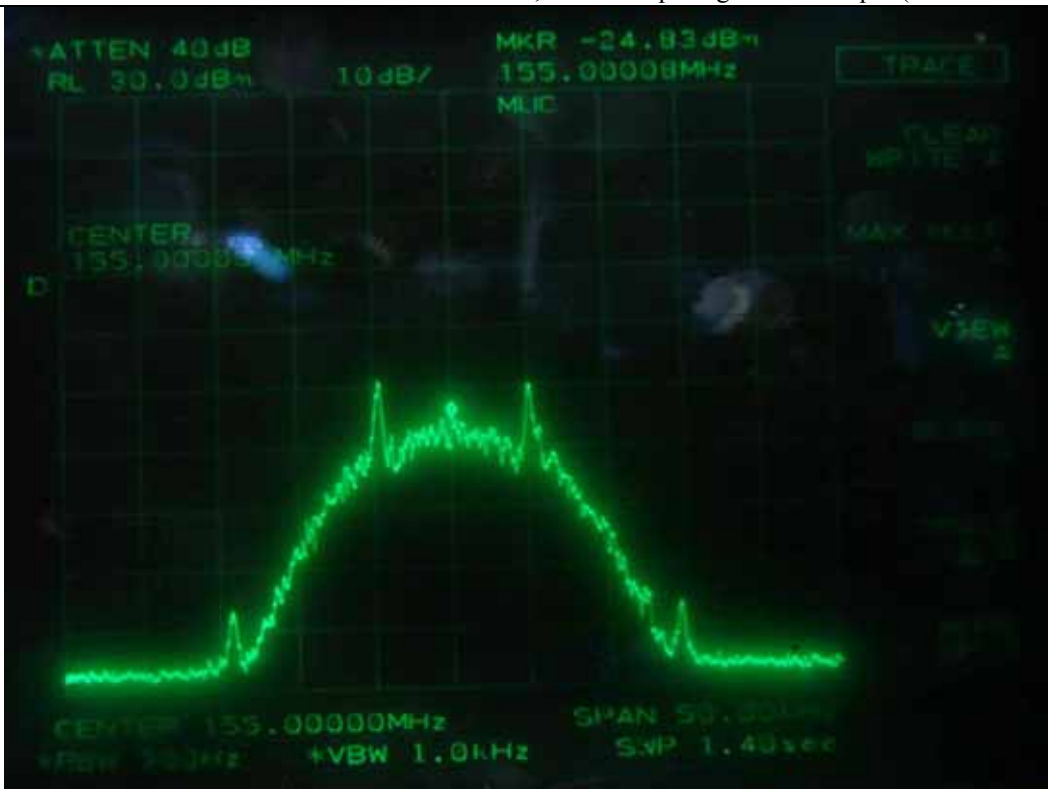
FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (Middle Channel)



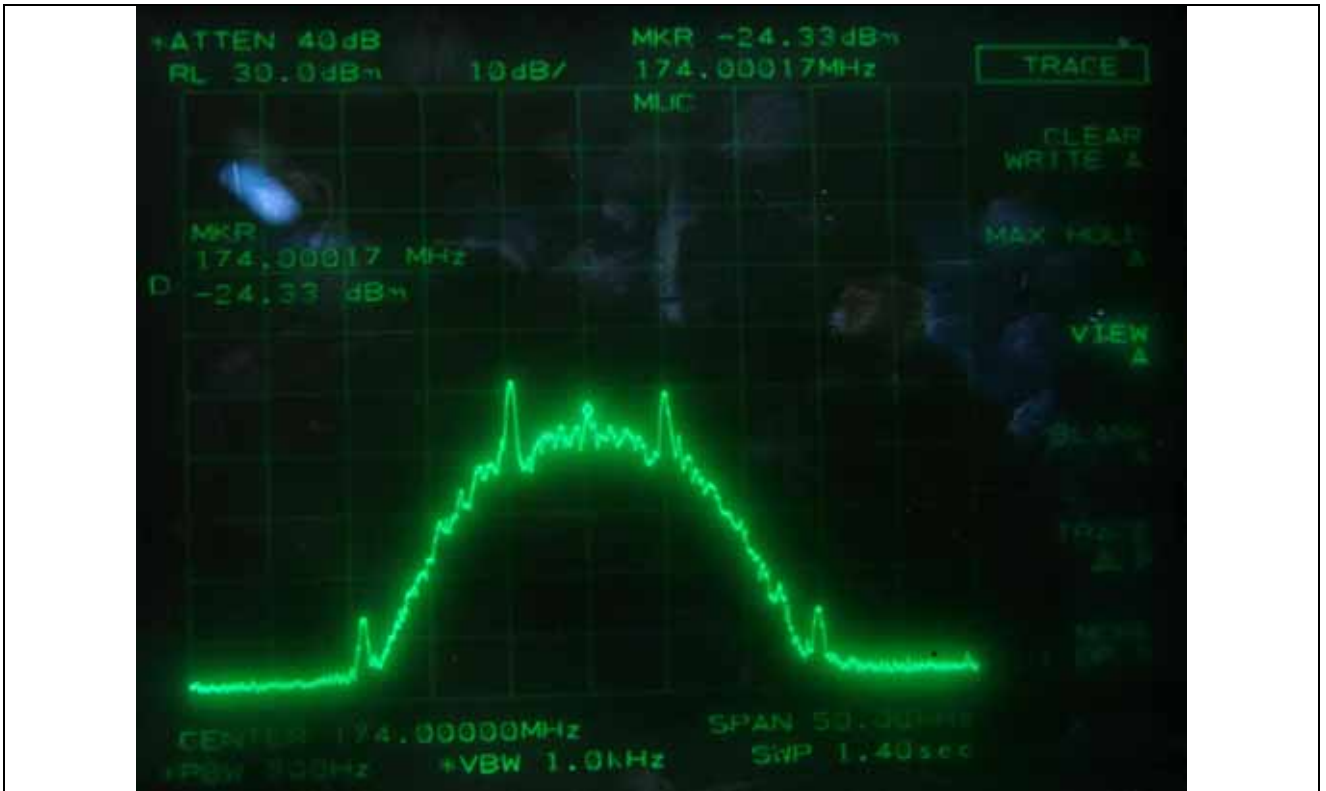
FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (High Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (Low Channel)



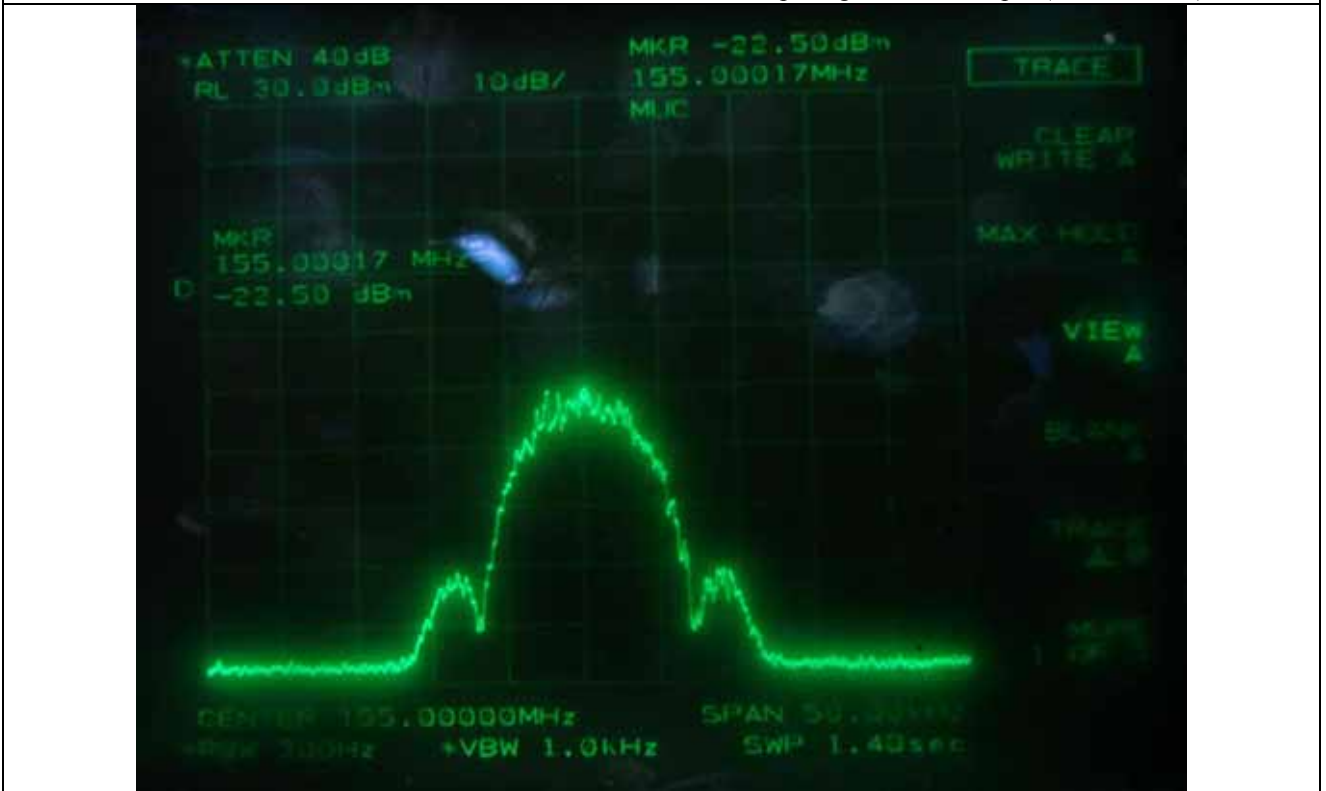
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (Middle Channel)



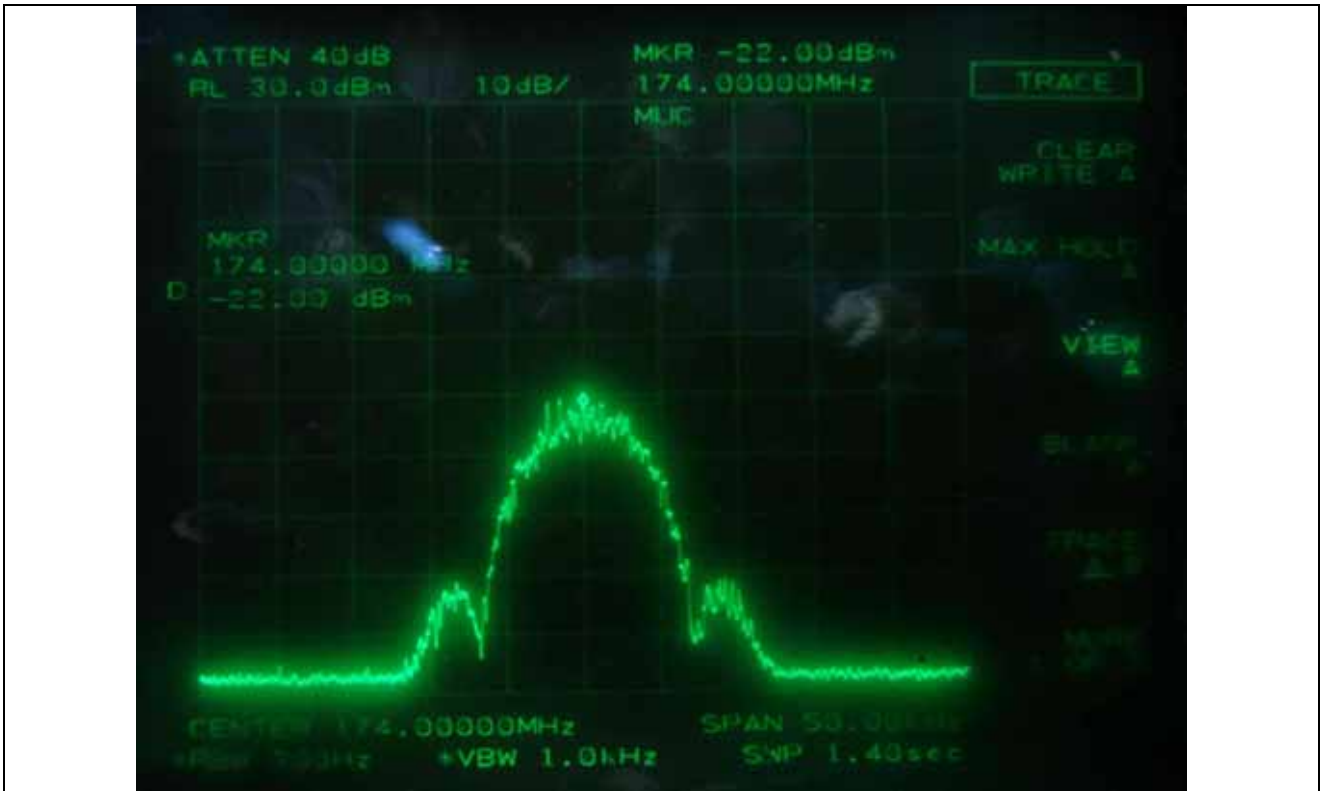
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (High Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Input (Low Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz- Input (Middle Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Input (High Channel)

6.3.2 Test Result for UHF-B1

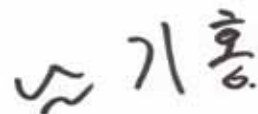
- . Test Date : December 01, 2010
- . Temperature : 22 °C
- . Relative humidity : 45 % R.H.
- . Test Result : Pass
- . Modulation : FM with 2.5 kHz sine wave signal

Channel Spacing (kHz)	Modulation (kHz)	Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	Limit (kHz)
25	2.5	Low	380.000 0	15.170	20.00
		Middle	407.000 0	15.250	
		High	434.000 0	15.250	
12.5	2.5	Low	380.000 0	10.170	11.25
		Middle	407.000 0	10.170	
		High	434.000 0	10.170	
6.25	0.8	Low	380.000 0	2.725	6.00
		Middle	407.000 0	2.750	
		High	434.000 0	2.725	

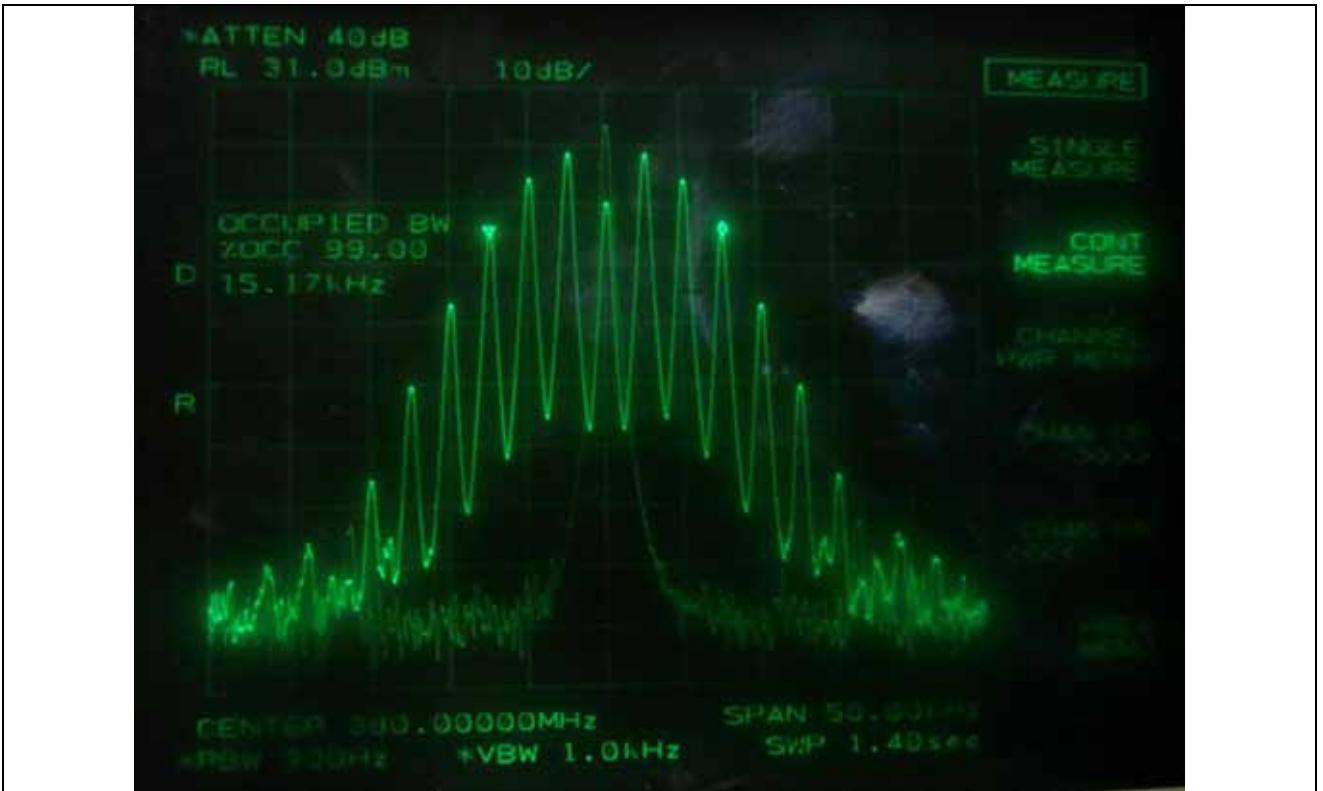
- . Modulation : FM with an external 9 600 b/s random data source

Channel Spacing (kHz)	Modulation (b/s)	Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	Limit (kHz)
25	9 600	Low	380.000 0	16.420	20.00
		Middle	407.000 0	16.250	
		High	434.000 0	16.330	
12.5	9 600	Low	380.000 0	9.833	11.25
		Middle	407.000 0	9.917	
		High	434.000 0	9.917	
6.25	4 800	Low	380.000 0	3.750	6.00
		Middle	407.000 0	3.750	
		High	434.000 0	3.750	

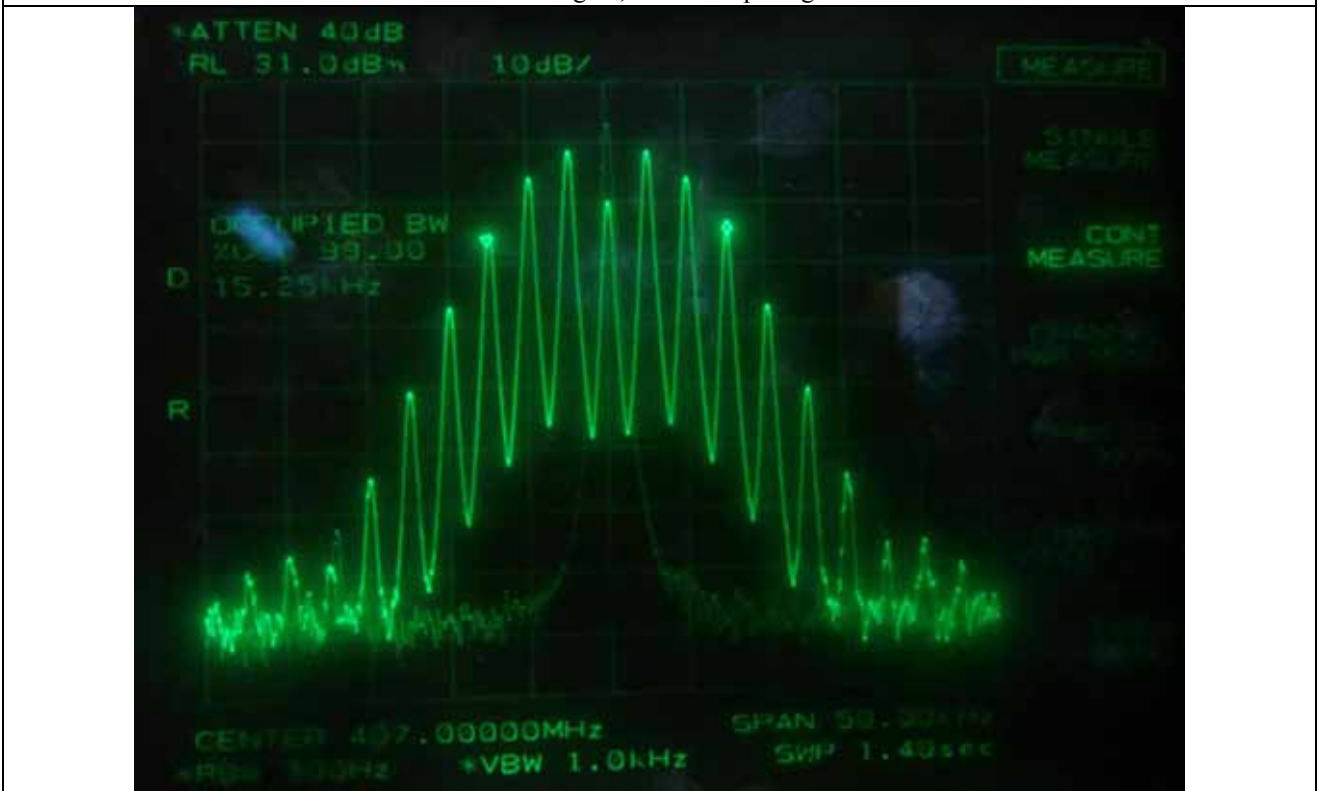
Remark: According to above result, the carrier frequency shall be within the frequency block edges.



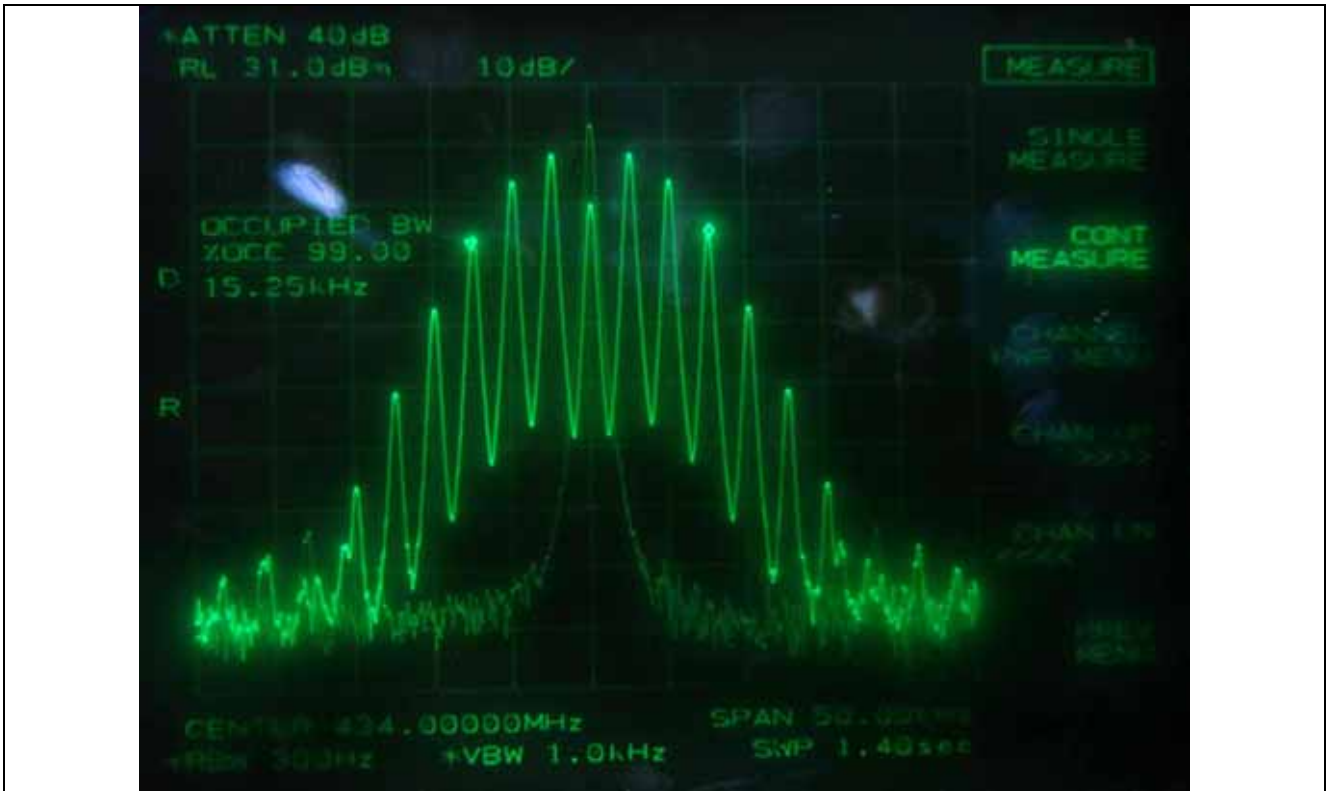
Tested by: Ki-Hong, Nam / Senior Engineer



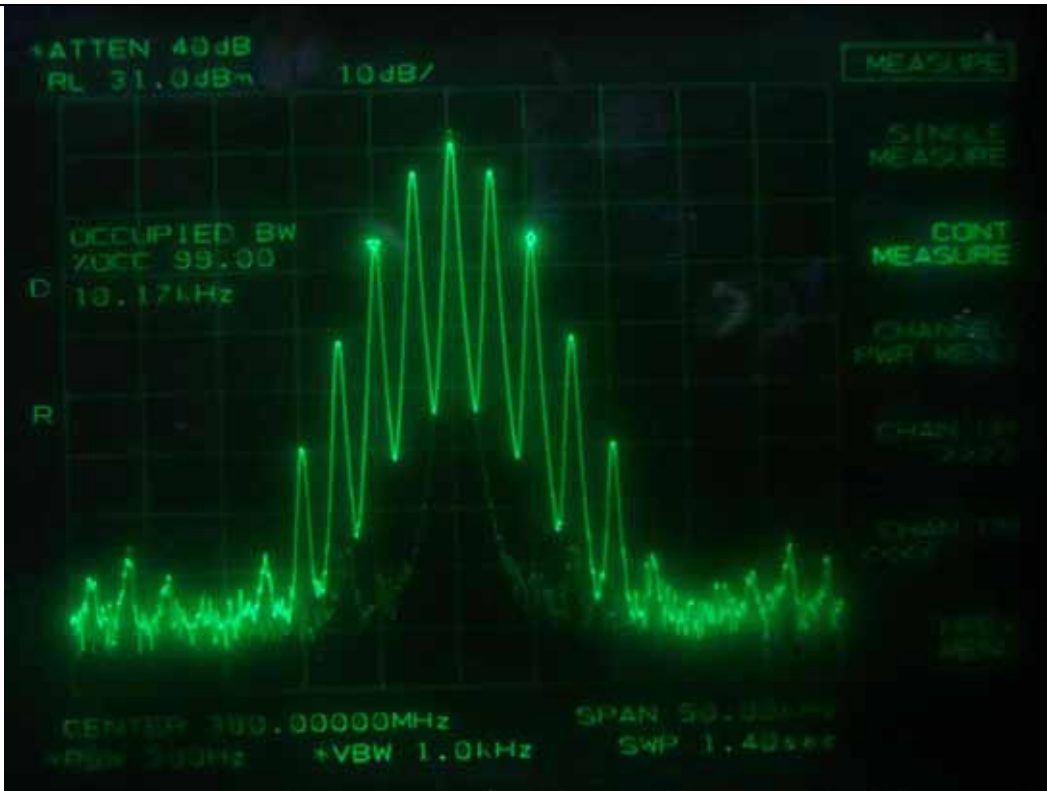
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Low Channel



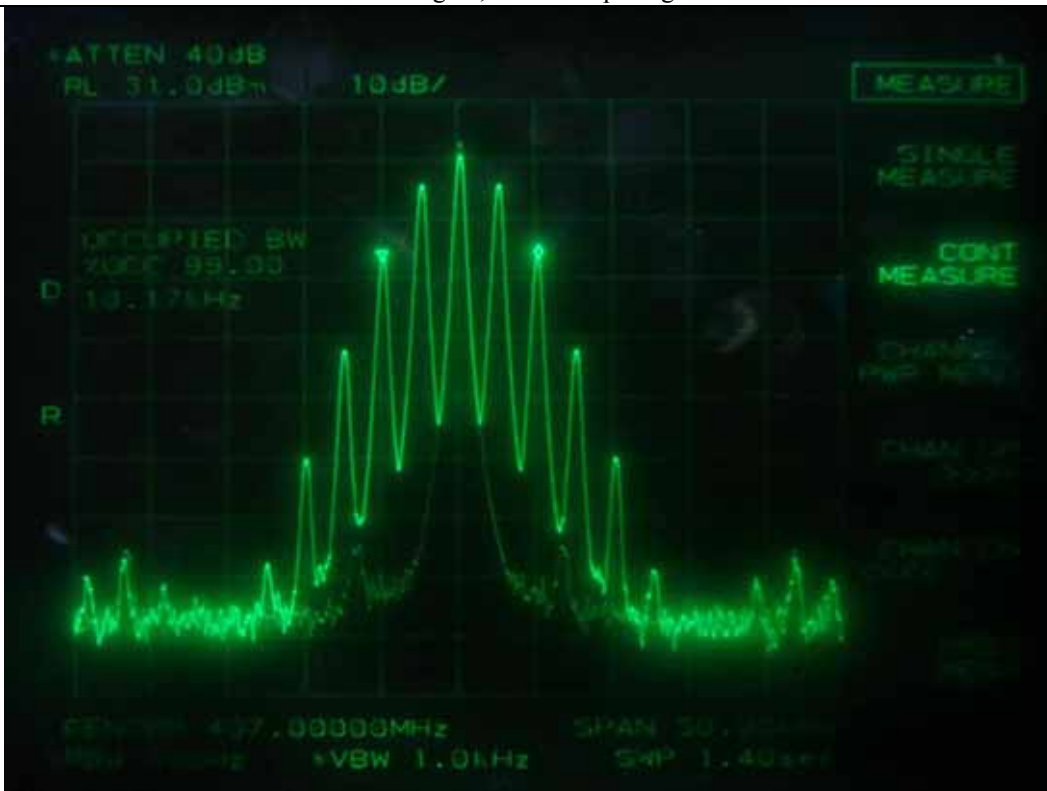
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Middle Channel



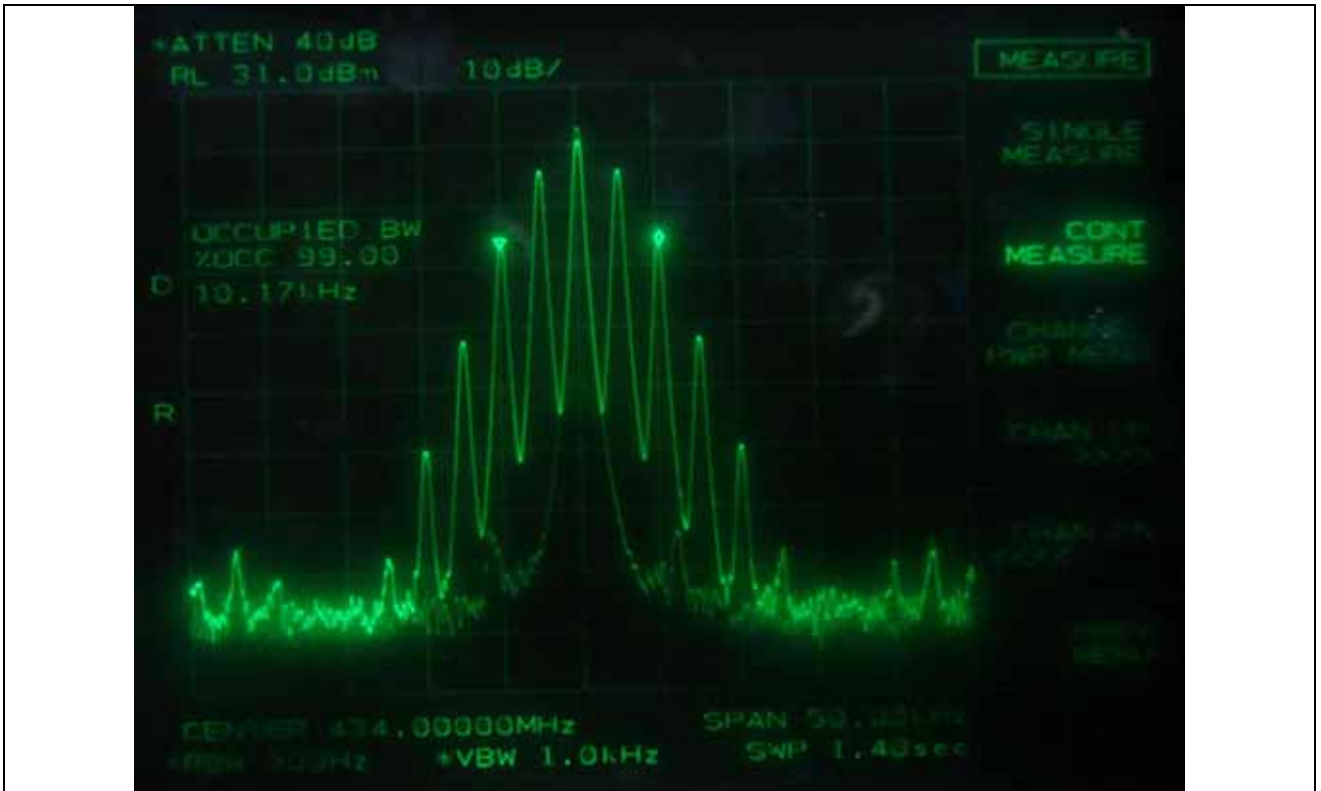
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - High Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Low Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Middle Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - High Channel



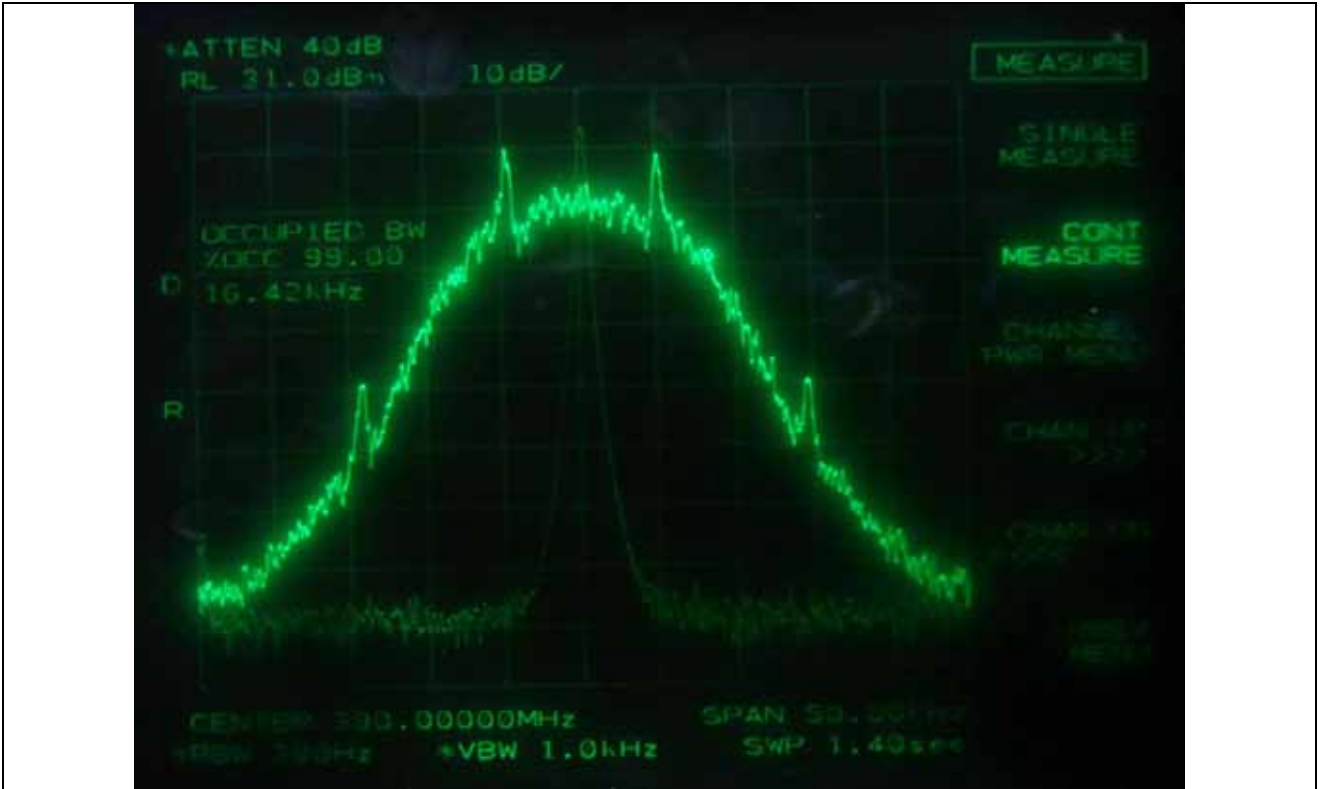
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Low Channel



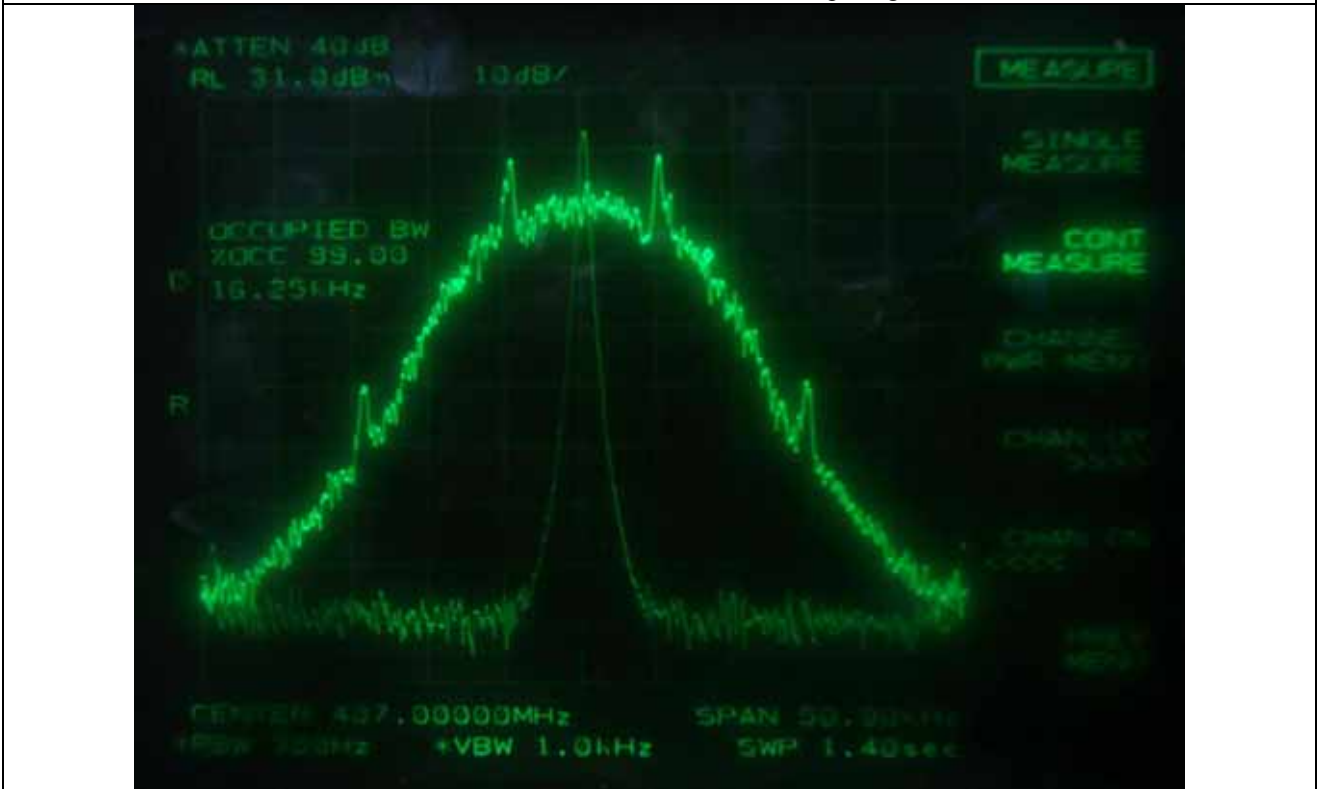
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Middle Channel



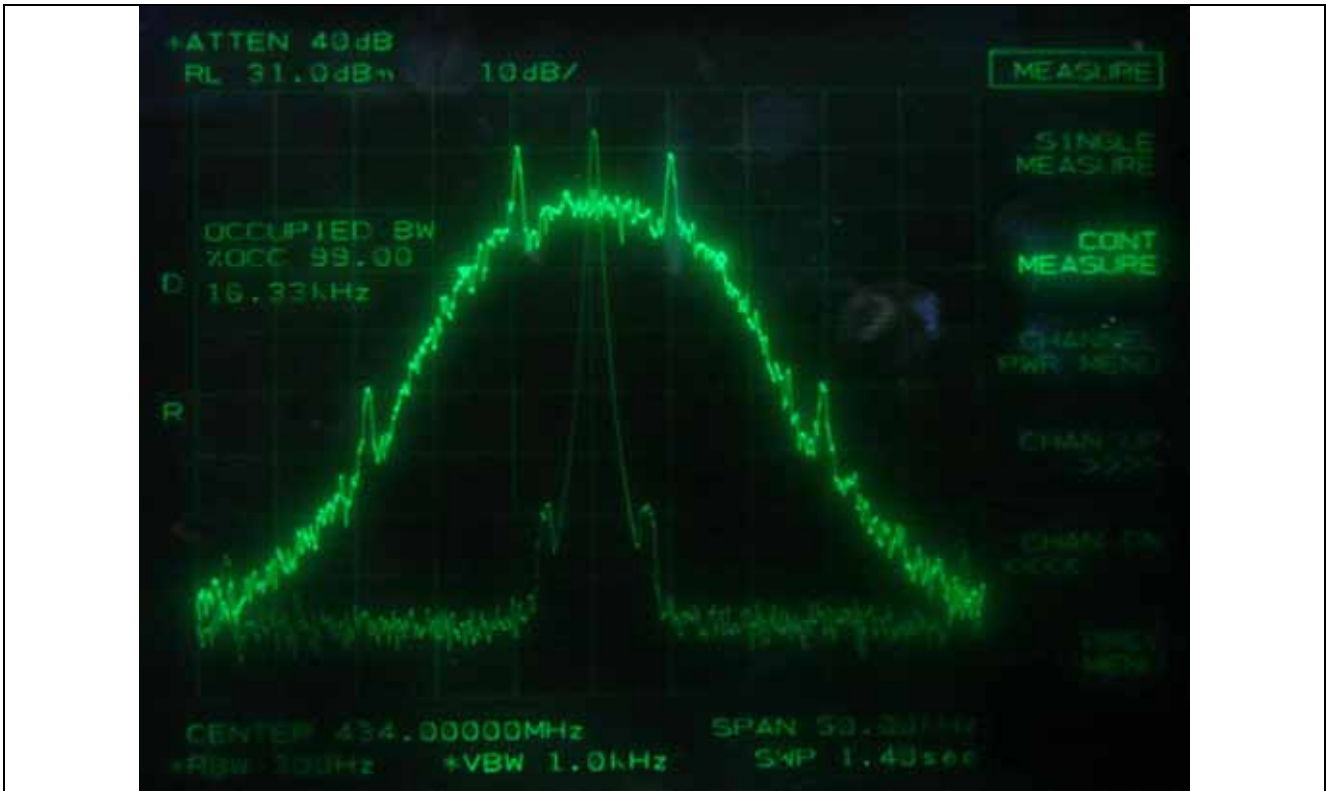
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - High Channel



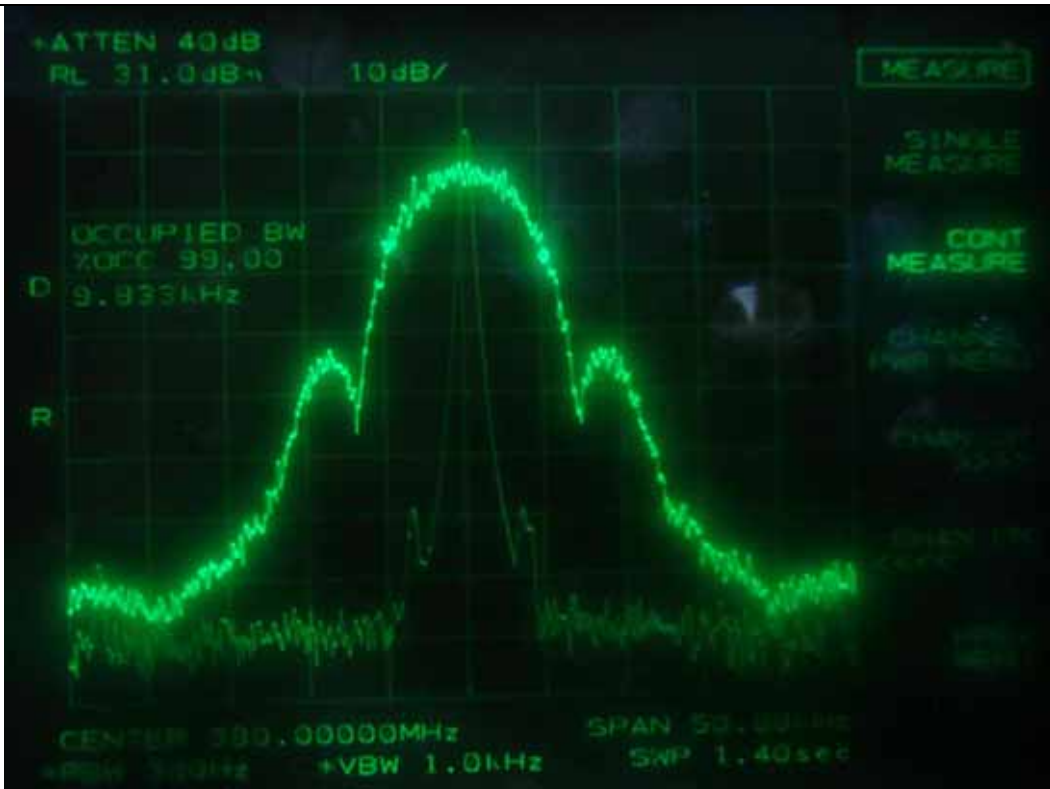
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Low Channel



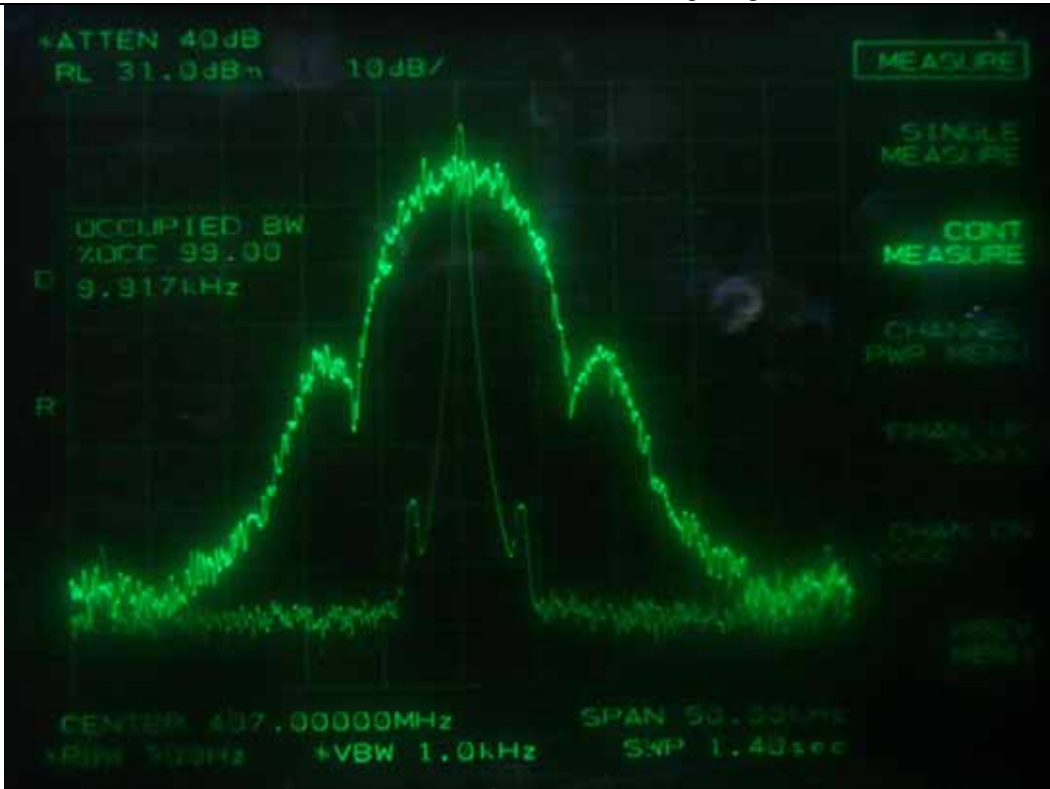
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Middle Channel



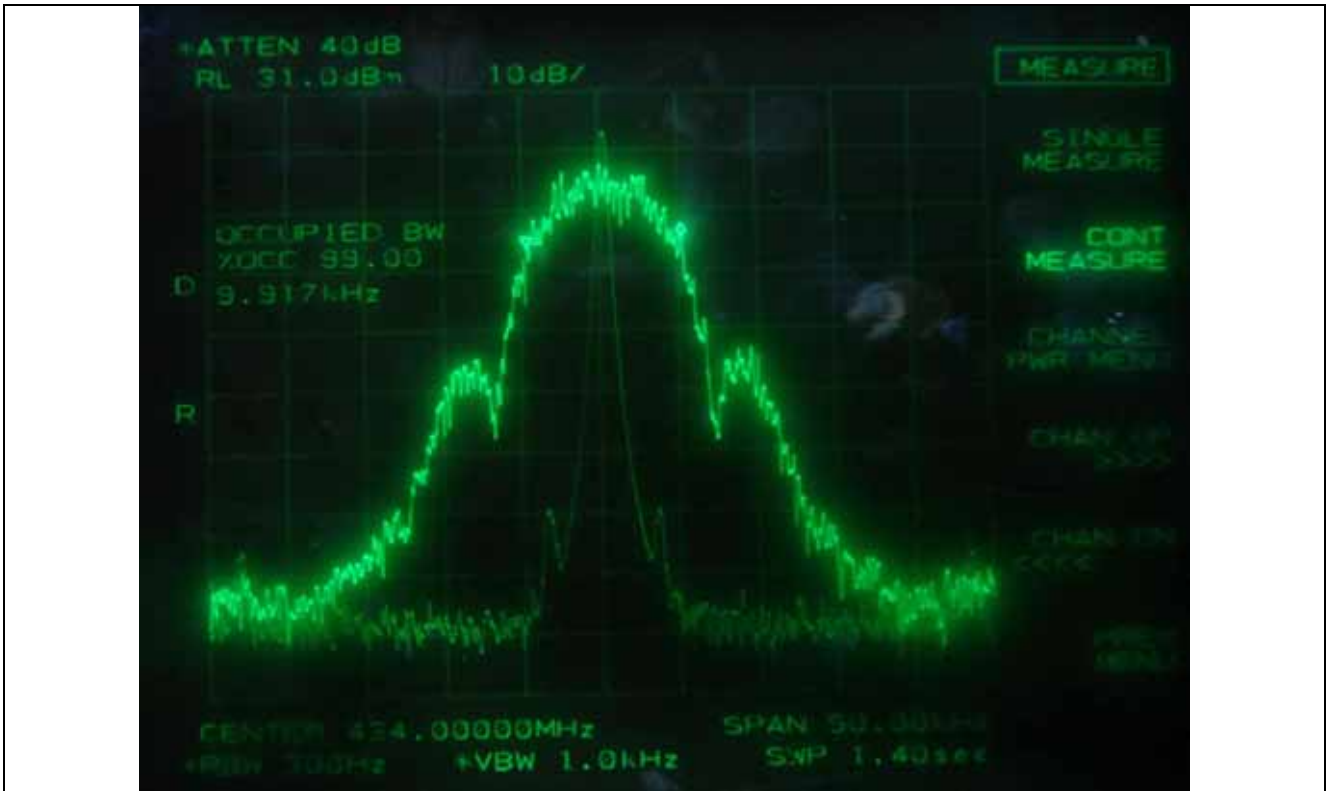
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - High Channel



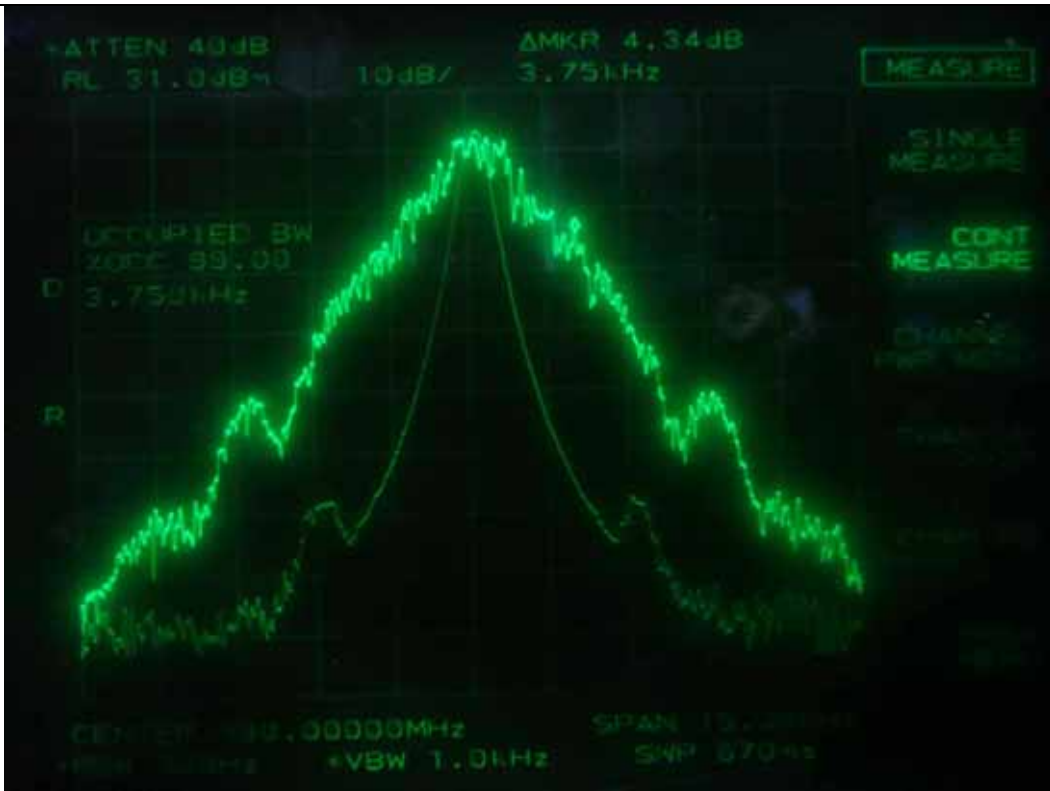
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Low Channel



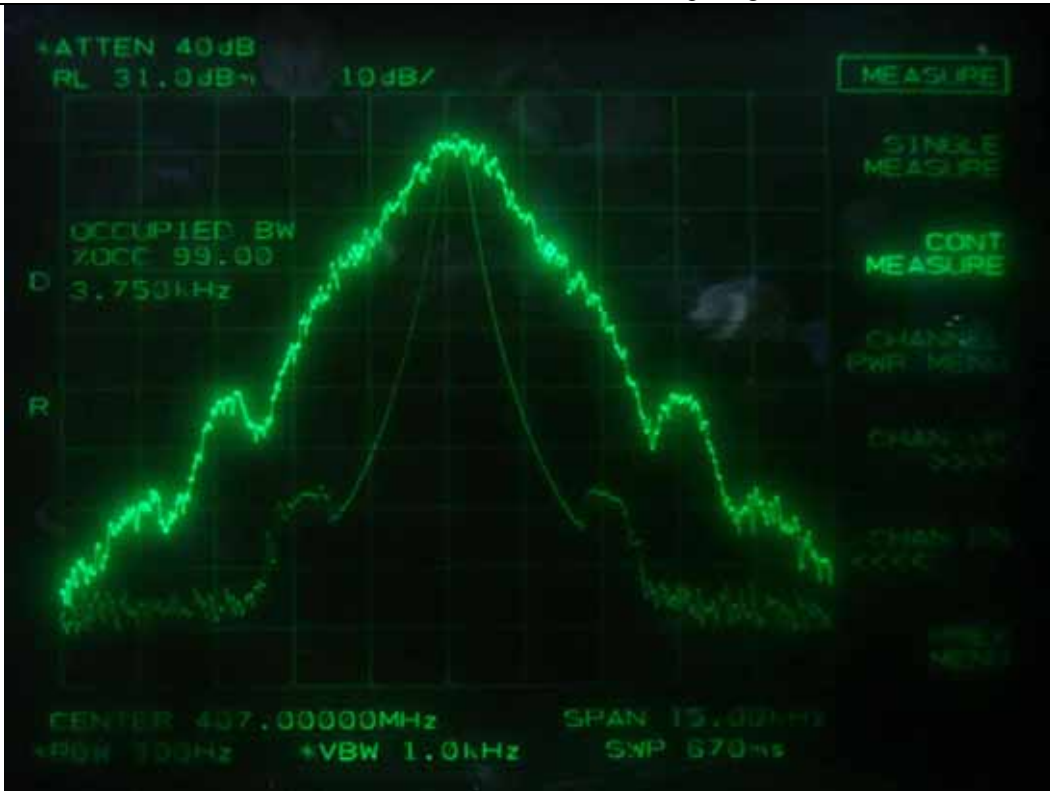
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Middle Channel



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz- High Channel



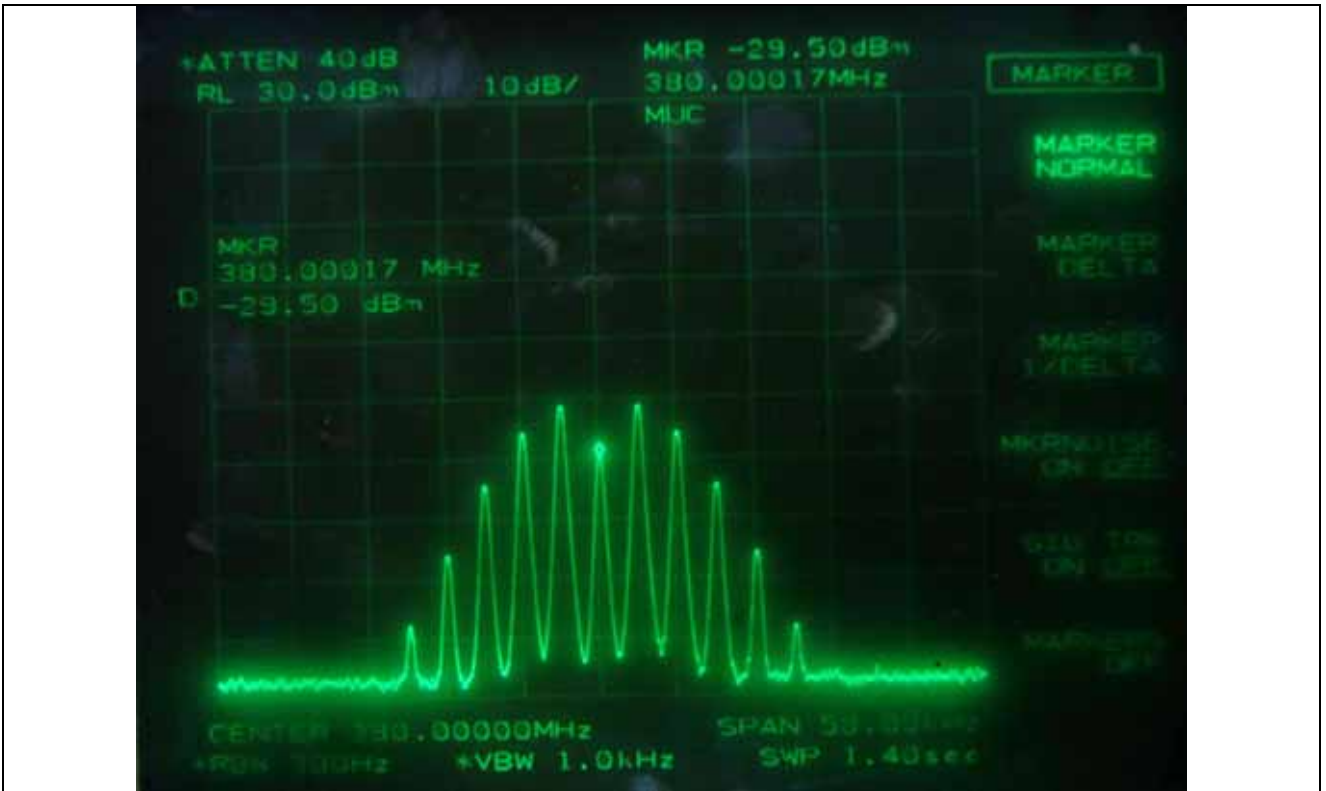
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Low Channel



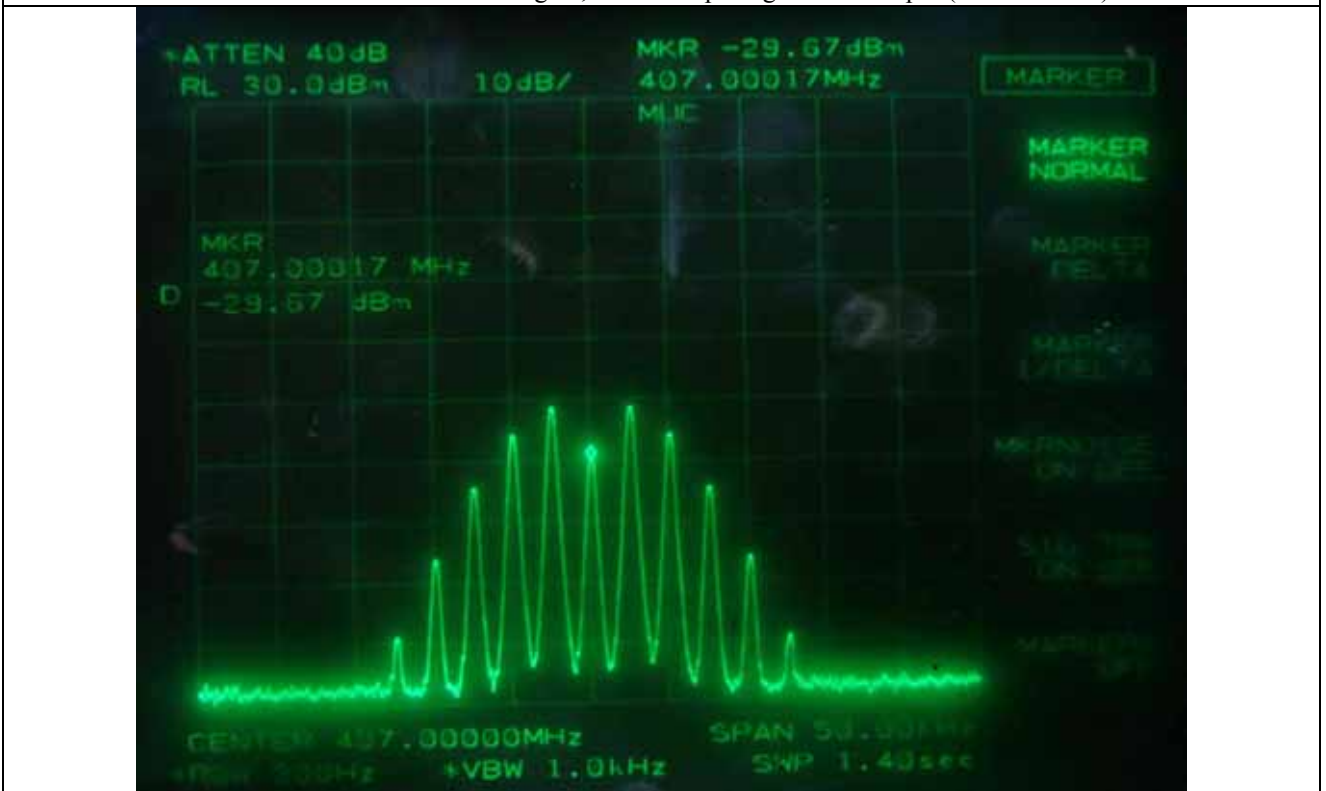
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Middle Channel



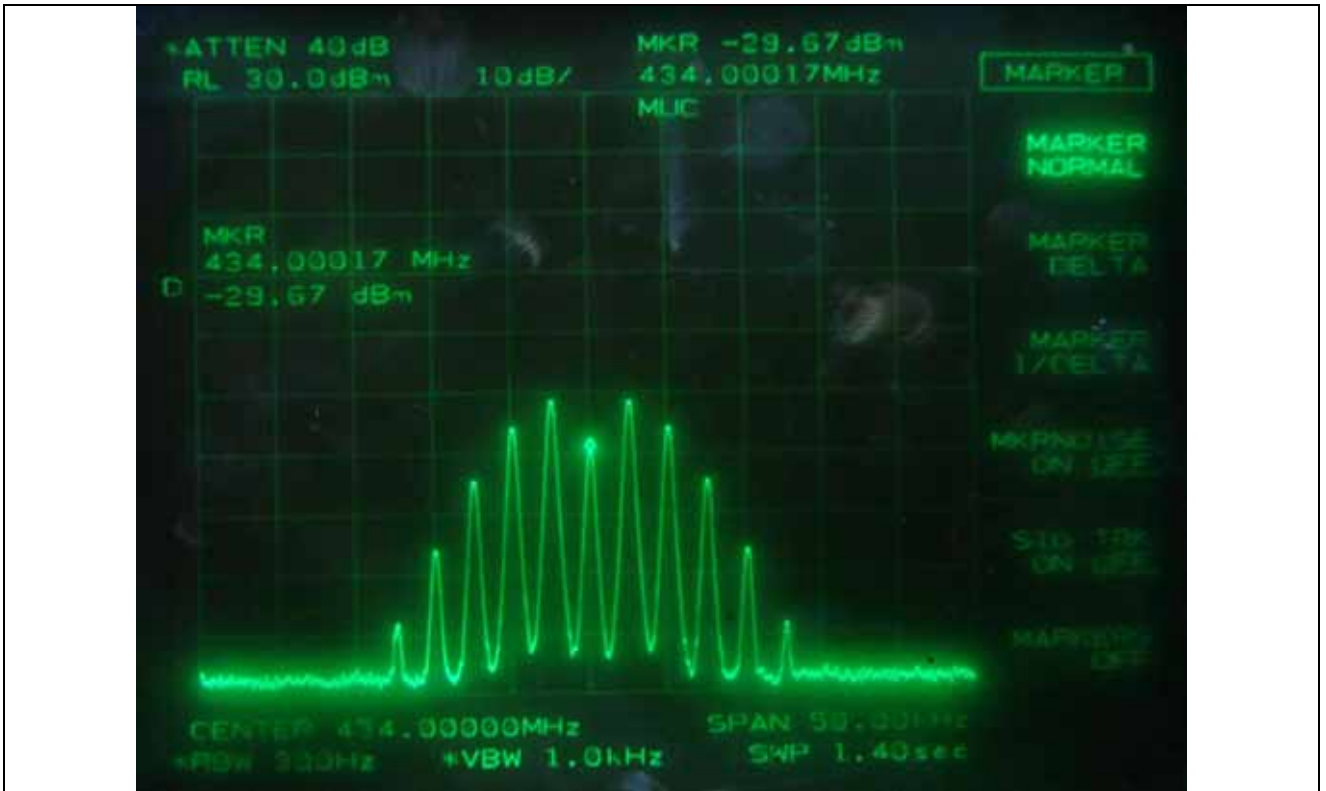
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - High Channel



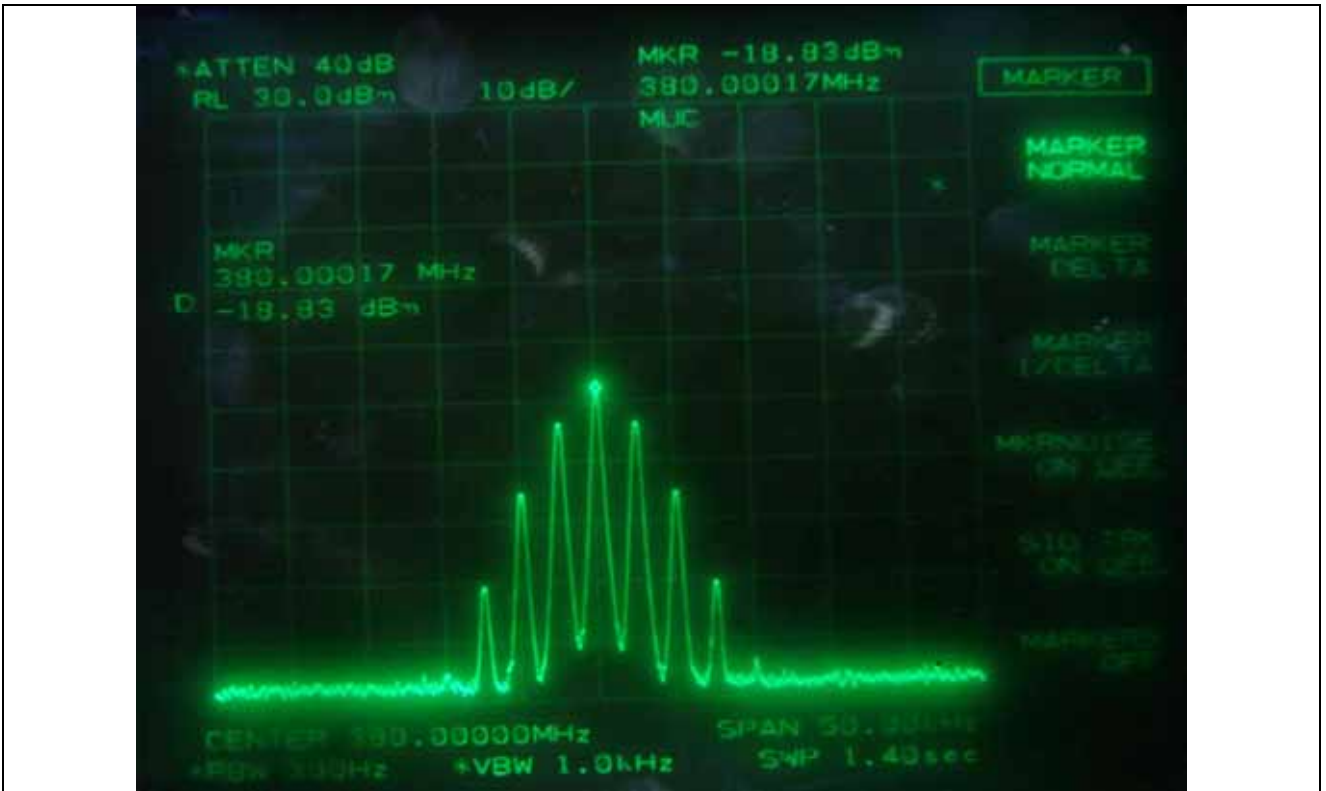
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (Low Channel)



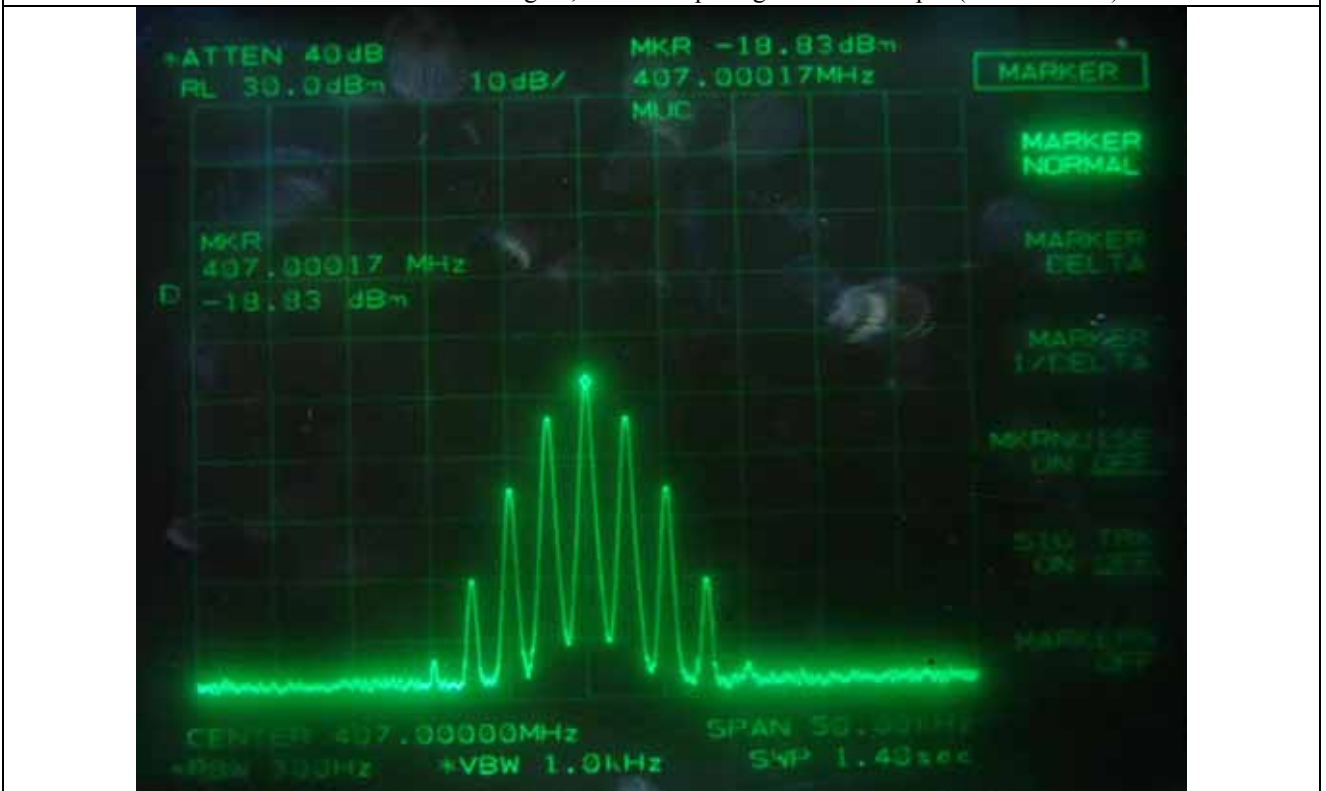
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (Middle Channel)



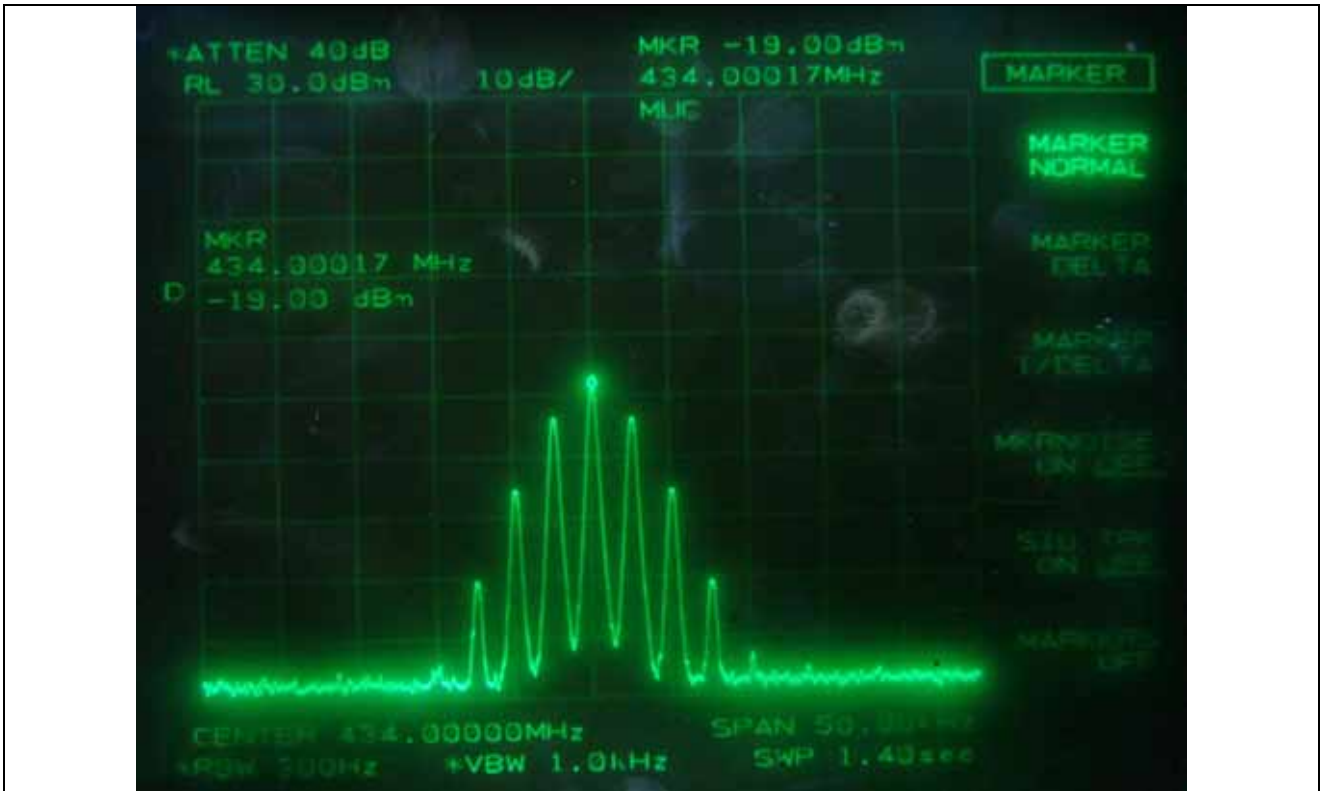
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (High Channel)



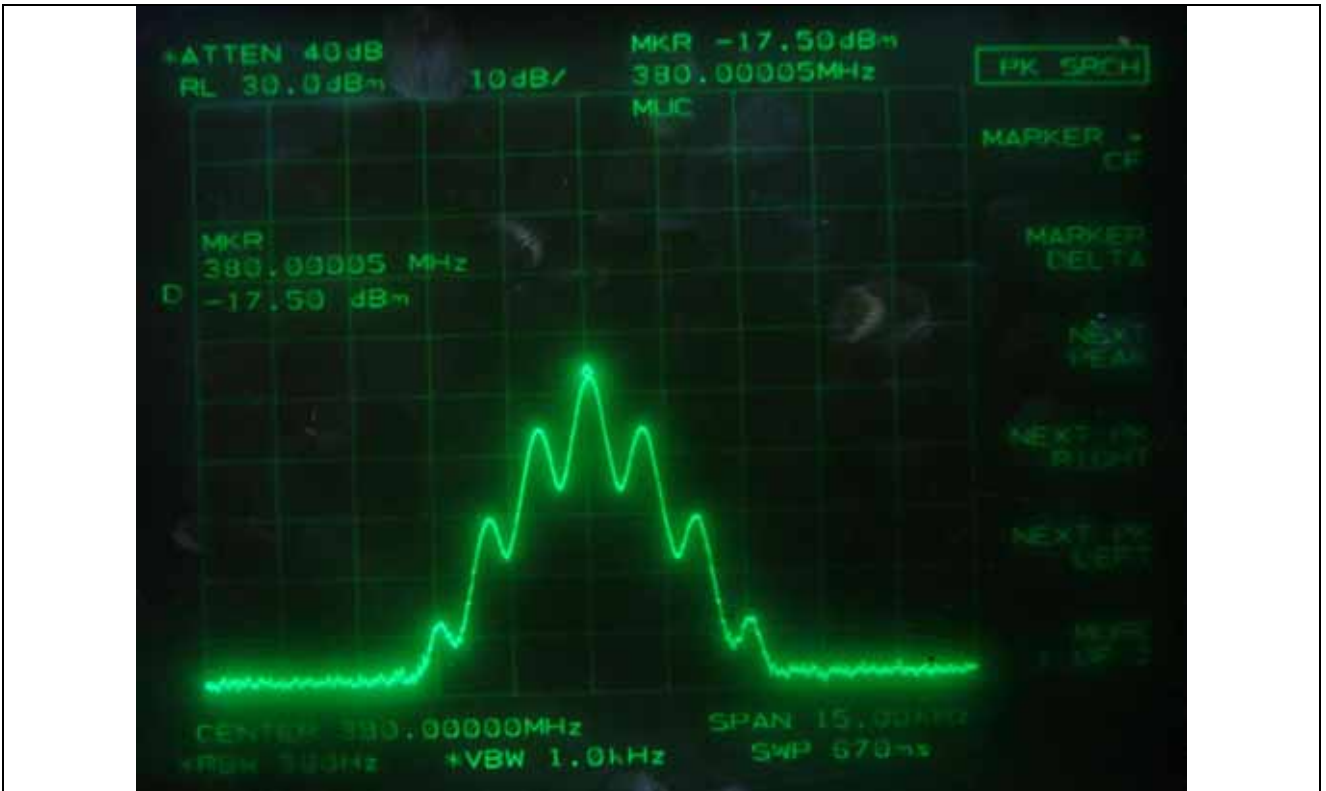
FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (Low Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (Middle Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (High Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Input (Low Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Input (Middle Channel)



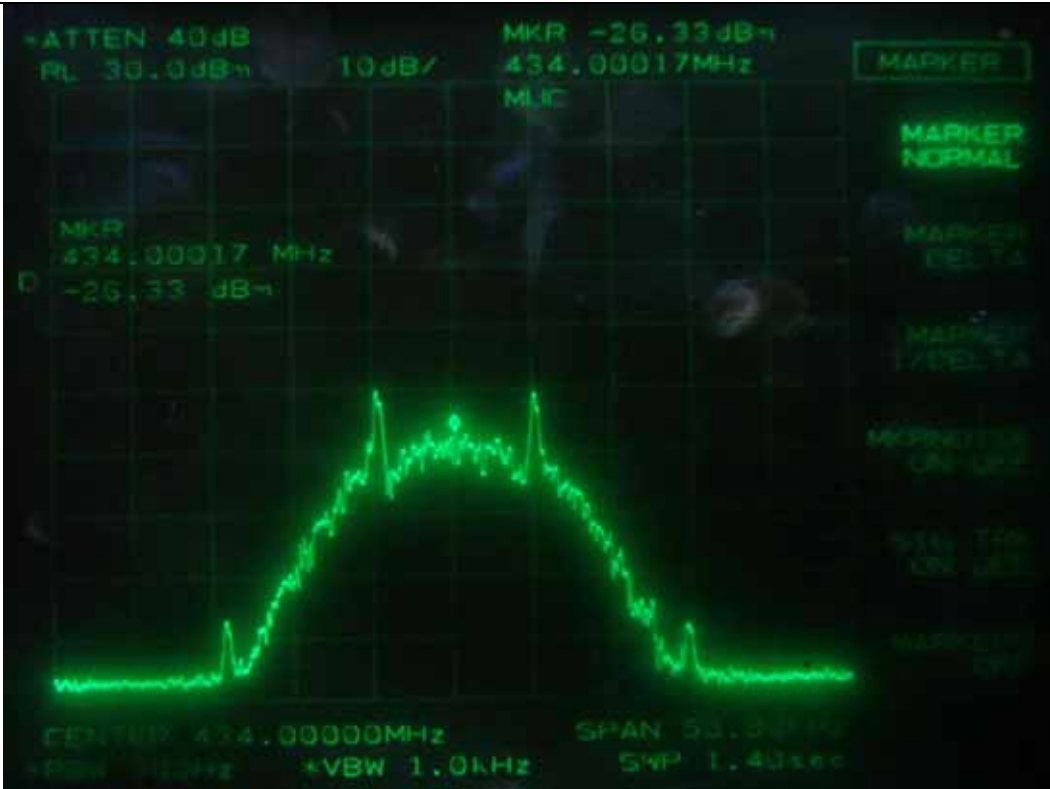
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Input (High Channel)



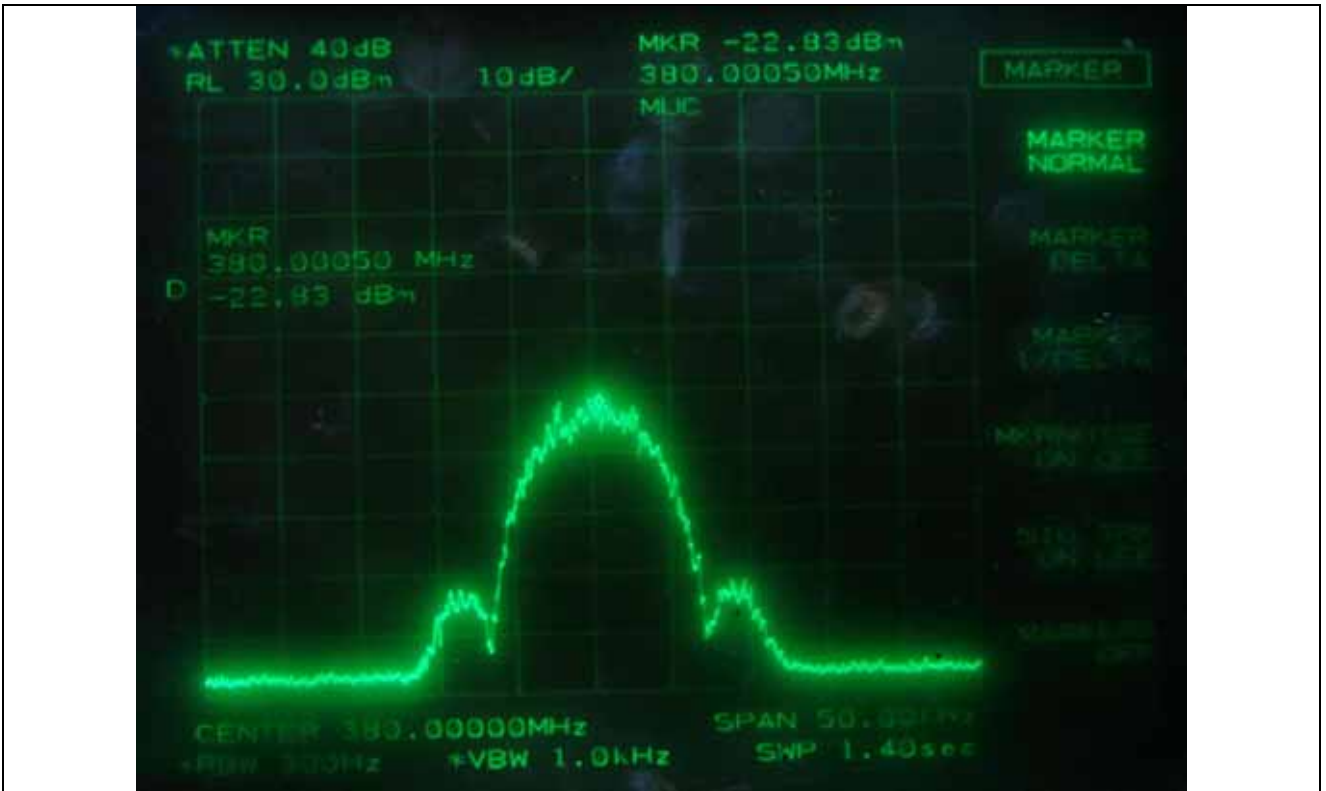
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (Low Channel)



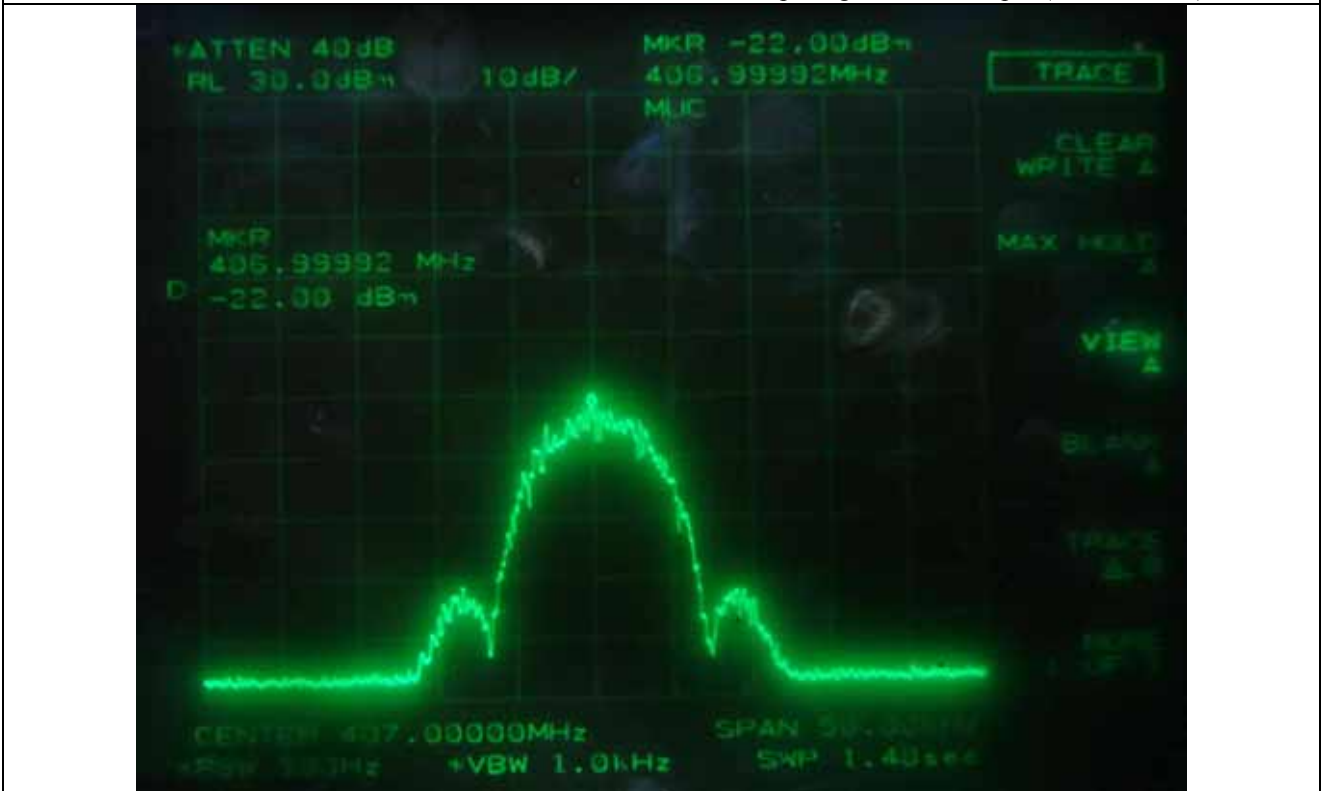
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (Middle Channel)



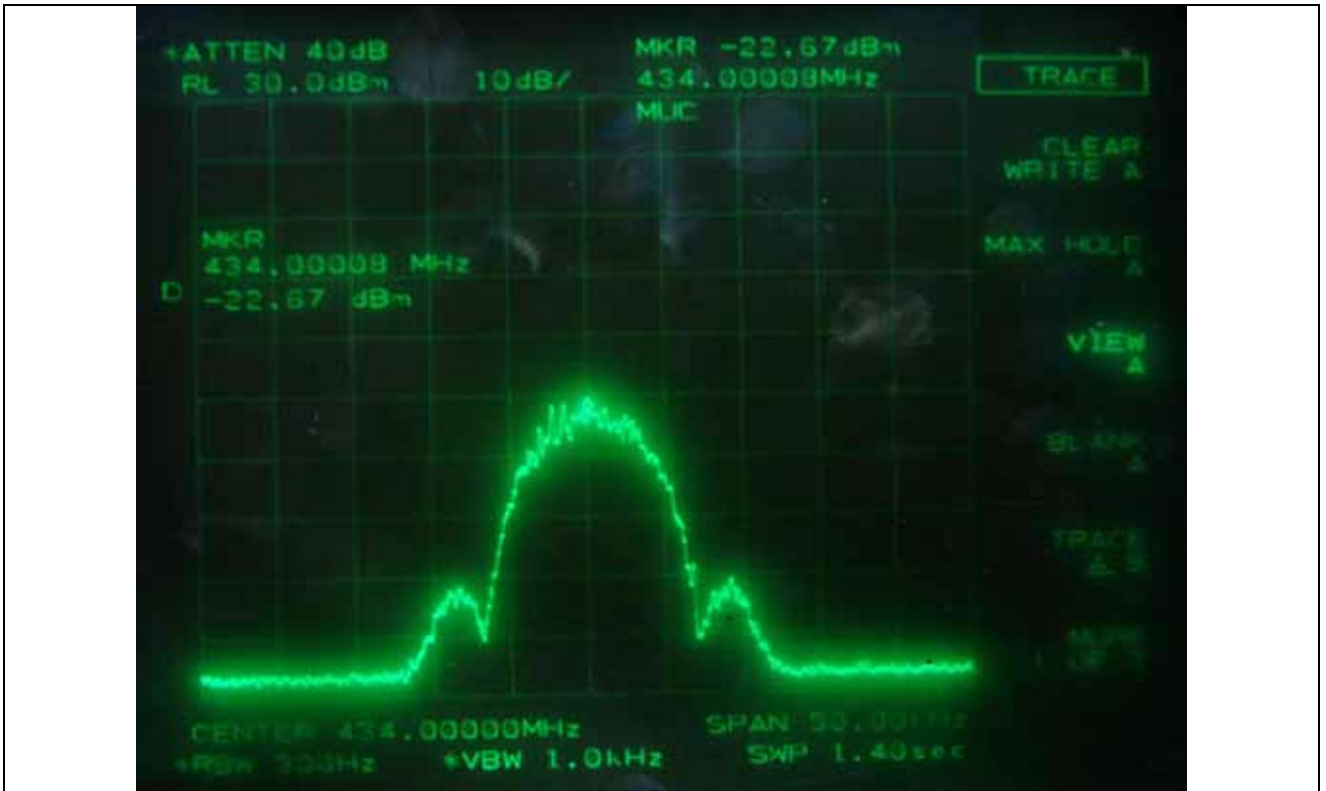
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (High Channel)



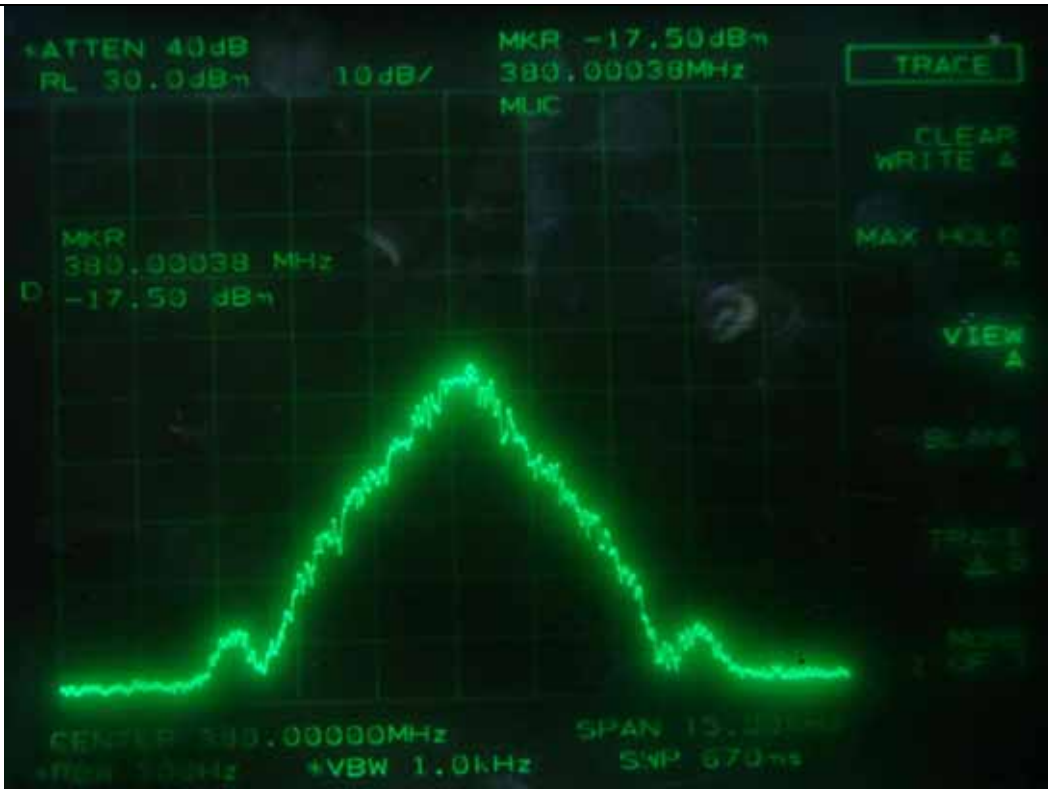
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Input (Low Channel)



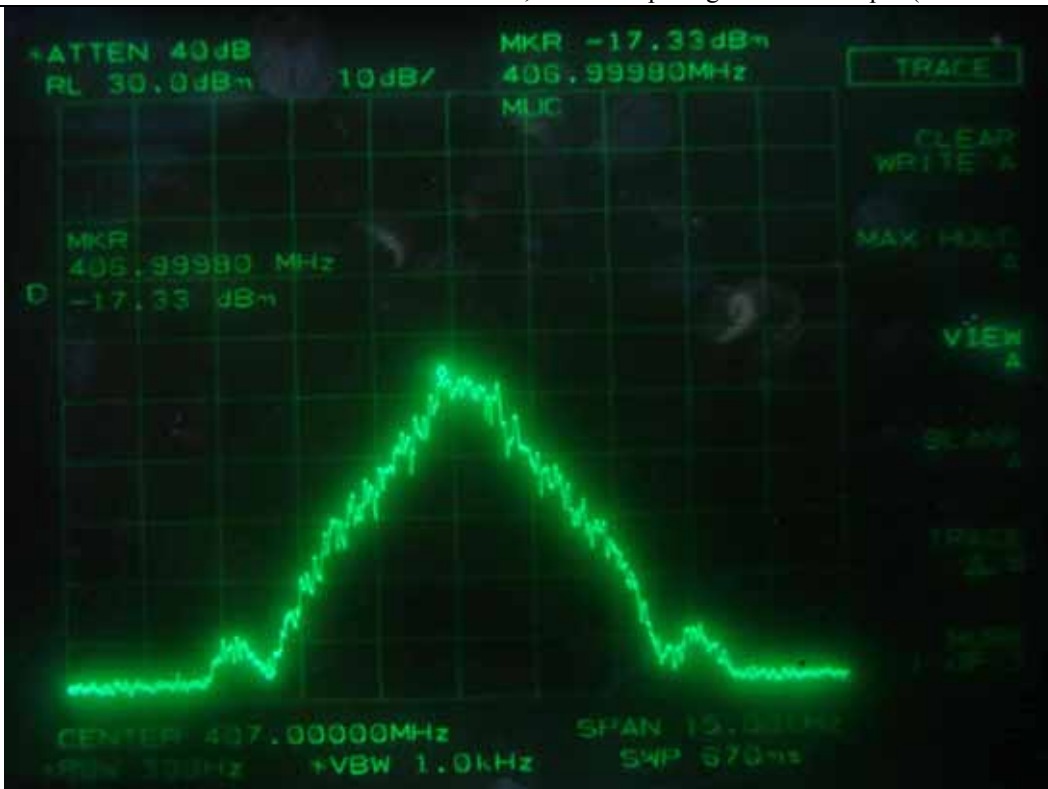
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Input (Middle Channel)



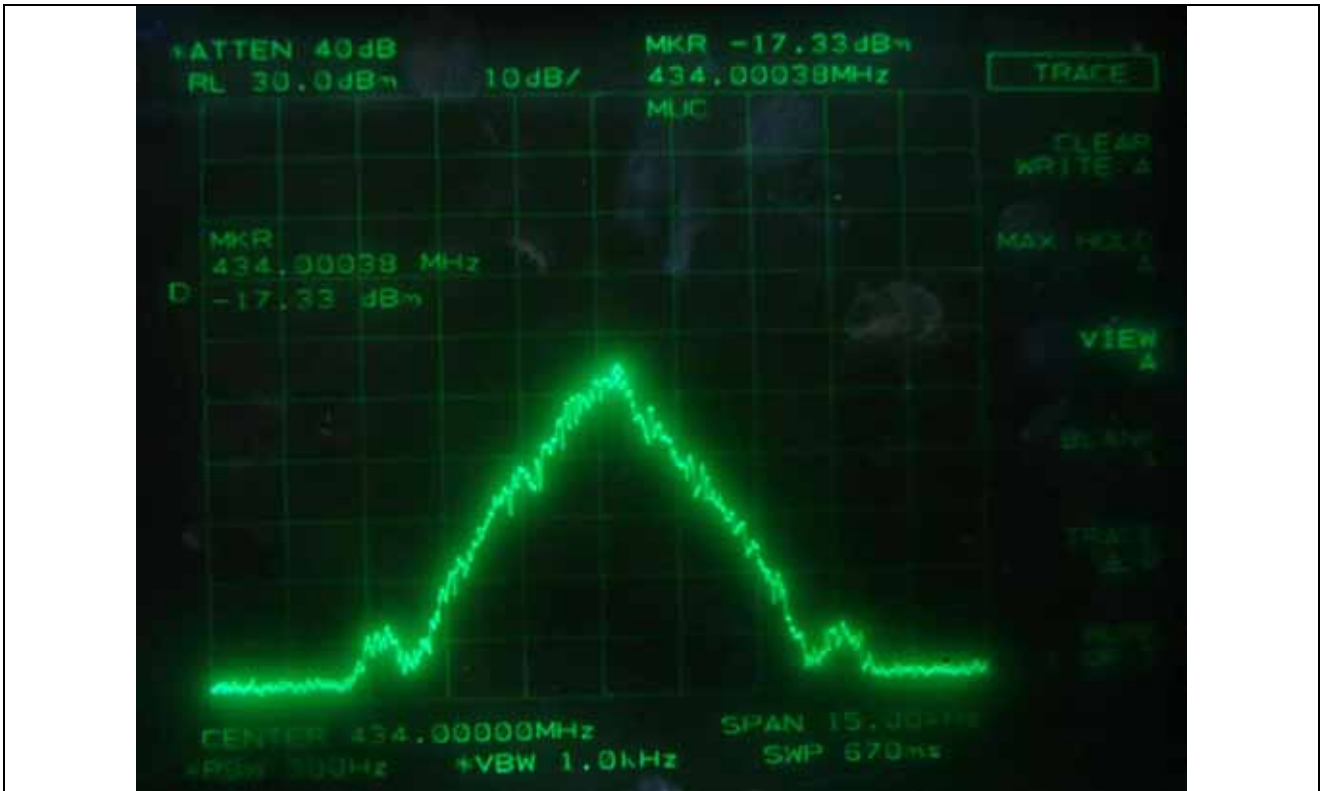
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Input (High Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Input (Low Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Input (Middle Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Input (High Channel)

6.3.3 Test Result for UHF-B2

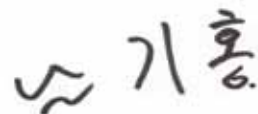
- Test Date : December 03, 2010
- Temperature : 24 °C
- Relative humidity : 47 % R.H.
- Test Result : Pass
- Modulation : FM with 2.5 kHz sine wave signal

Channel Spacing (kHz)	Modulation (kHz)	Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	Limit (kHz)
25	2.5	Low	434.000 0	15.170	20.00
		Middle	465.000 0	15.170	
		High	496.000 0	15.250	
12.5	2.5	Low	434.000 0	10.170	11.25
		Middle	465.000 0	10.170	
		High	496.000 0	10.080	
6.25	0.8	Low	434.000 0	2.750	6.00
		Middle	465.000 0	2.750	
		High	496.000 0	2.725	

- Modulation : FM with an external 9 600 b/s random data source

Channel Spacing (kHz)	Modulation (bps)	Channel	Frequency (MHz)	99 % Occupied Bandwidth (kHz)	Limit (kHz)
25	9 600	Low	434.000 0	16.500	20.00
		Middle	465.000 0	16.250	
		High	496.000 0	16.500	
12.5	9 600	Low	434.000 0	9.917	11.25
		Middle	465.000 0	9.917	
		High	496.000 0	9.917	
6.25	4 800	Low	434.000 0	3.775	6.00
		Middle	465.000 0	3.750	
		High	496.000 0	3.750	

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



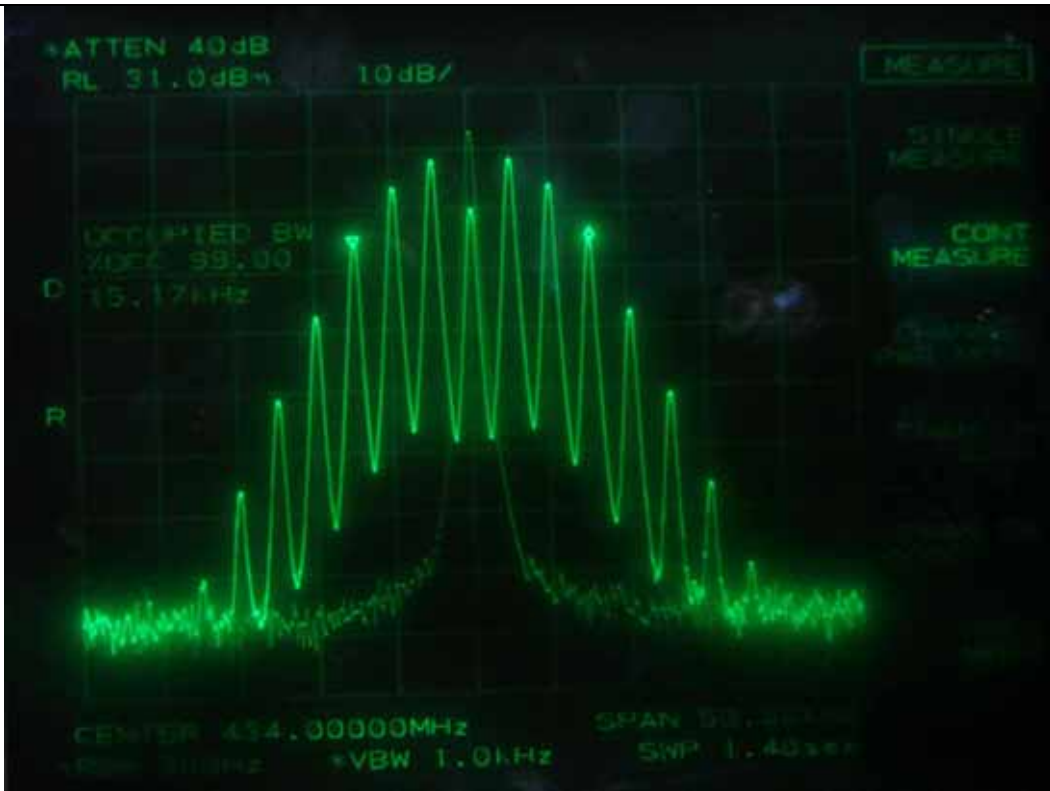
Tested by: Ki-Hong, Nam / Senior Engineer

It should not be reproduced except in full, without the written approval of ONETECH.

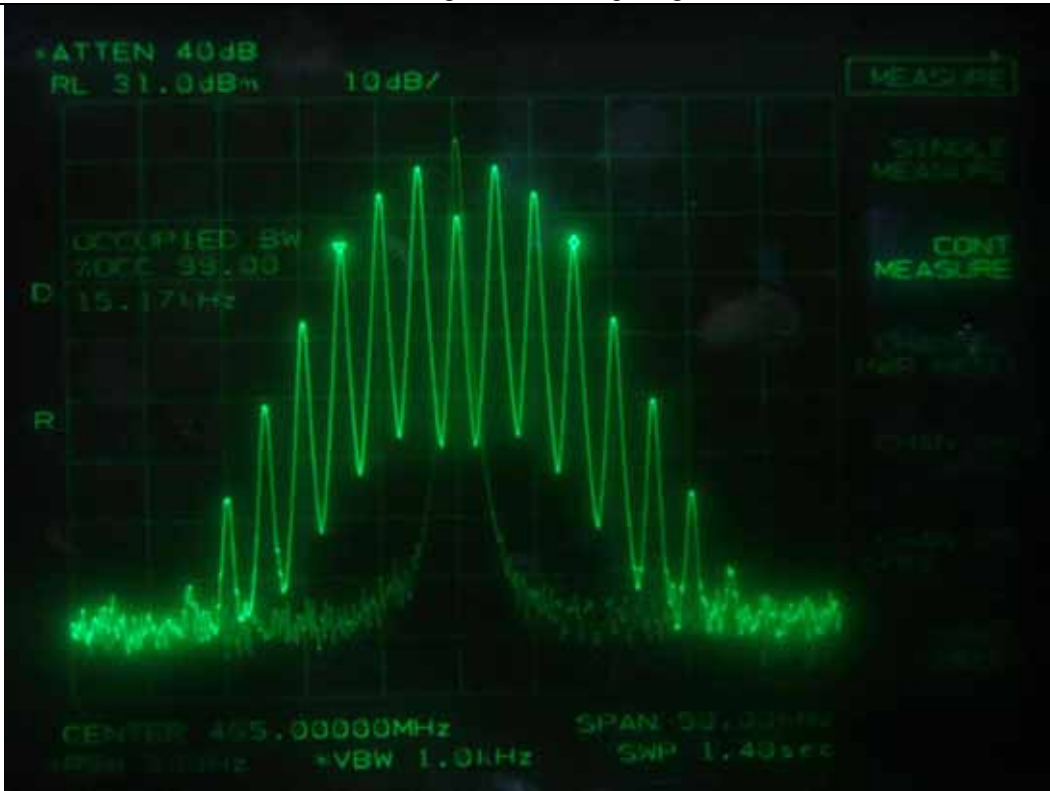
EMC-003 (Rev.1)

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

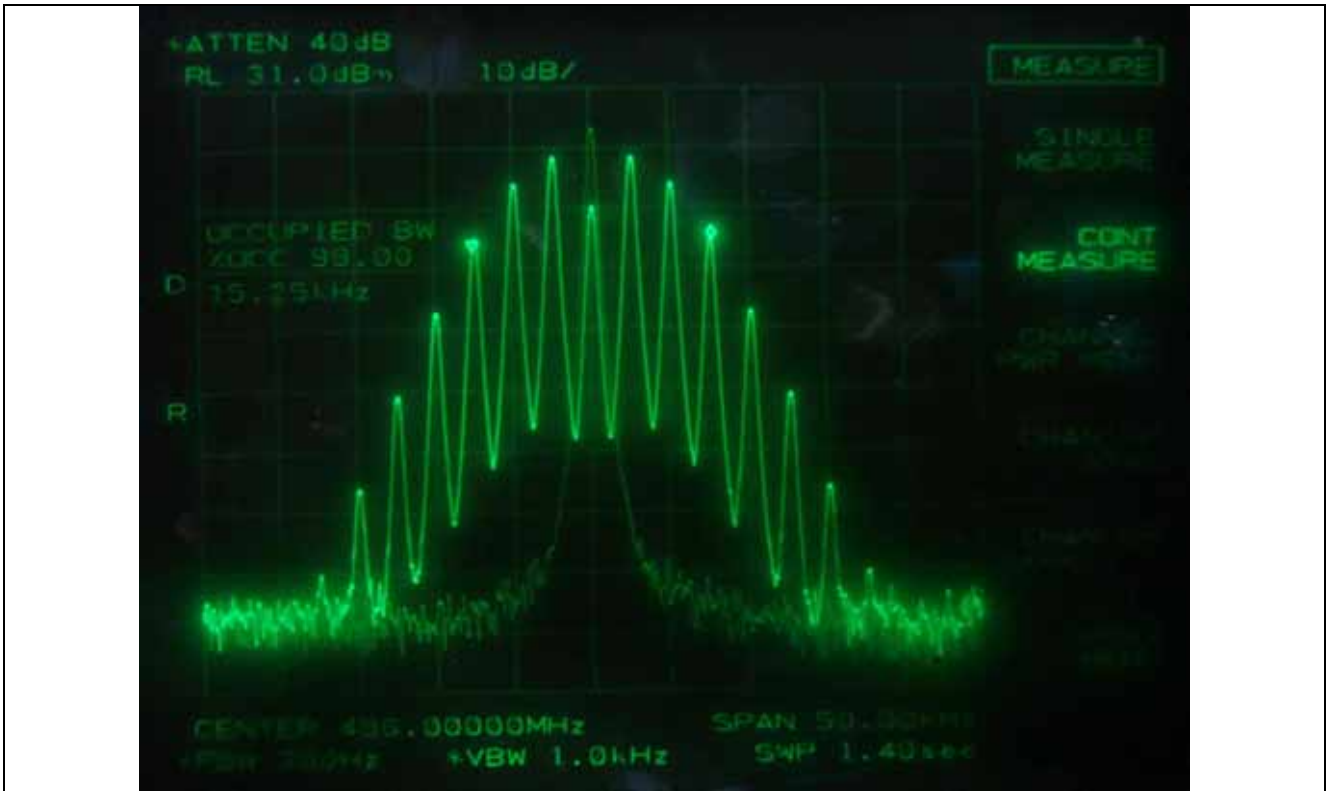
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



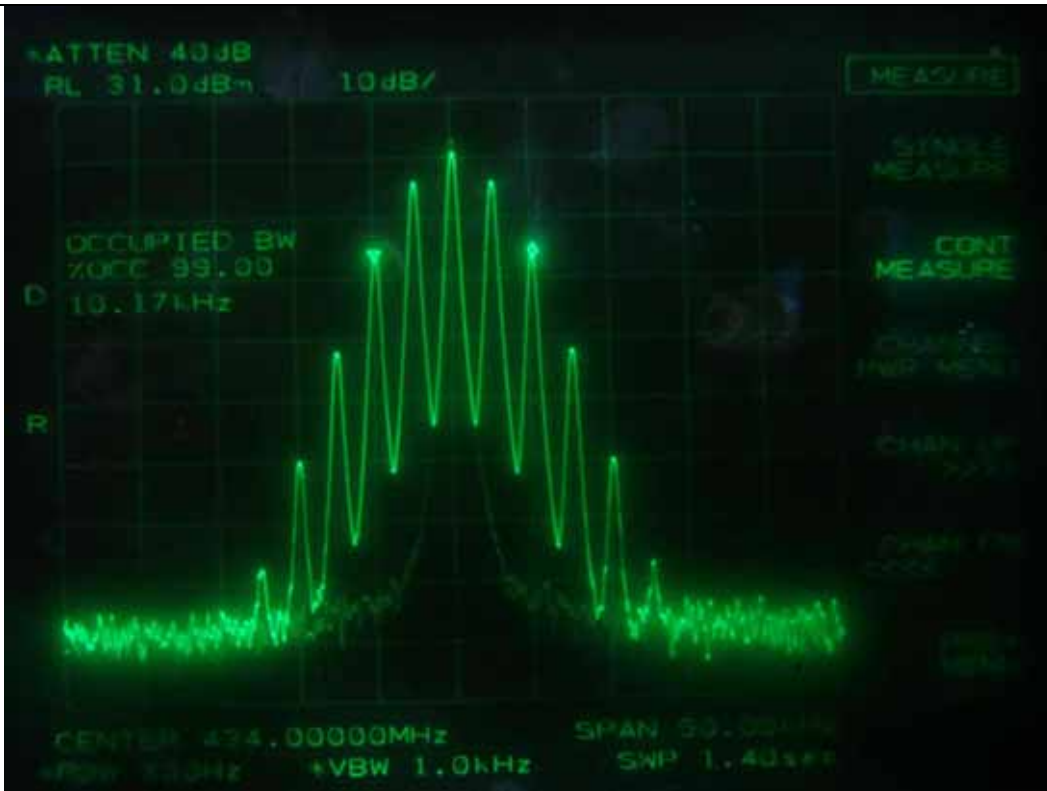
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Low Channel



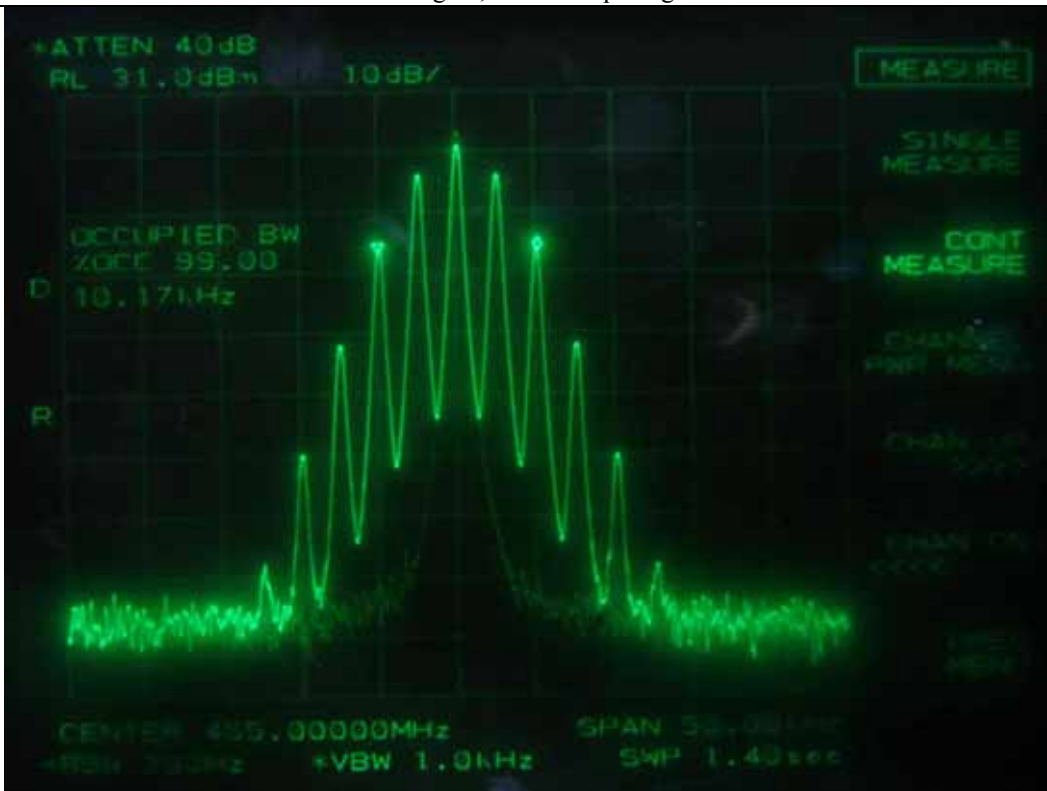
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Middle Channel



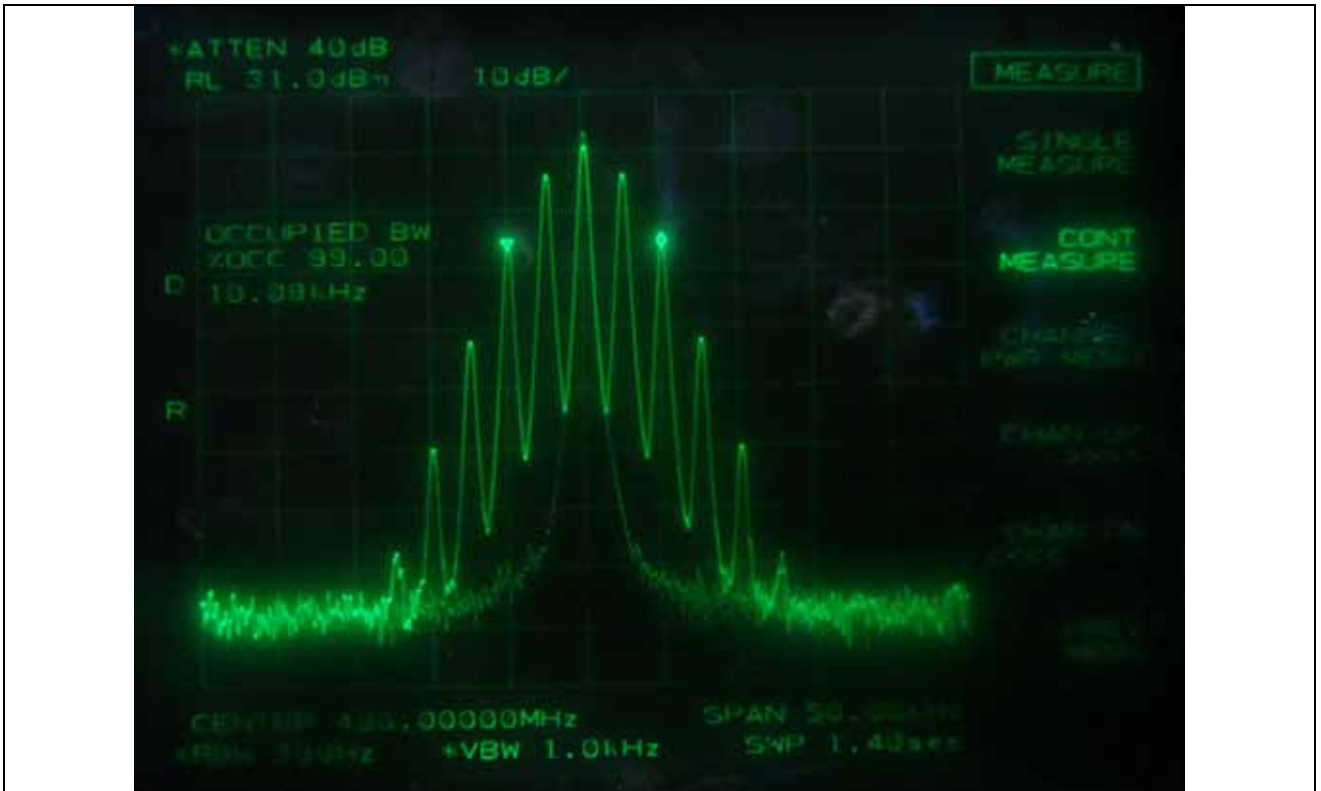
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - High Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Low Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Middle Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - High Channel



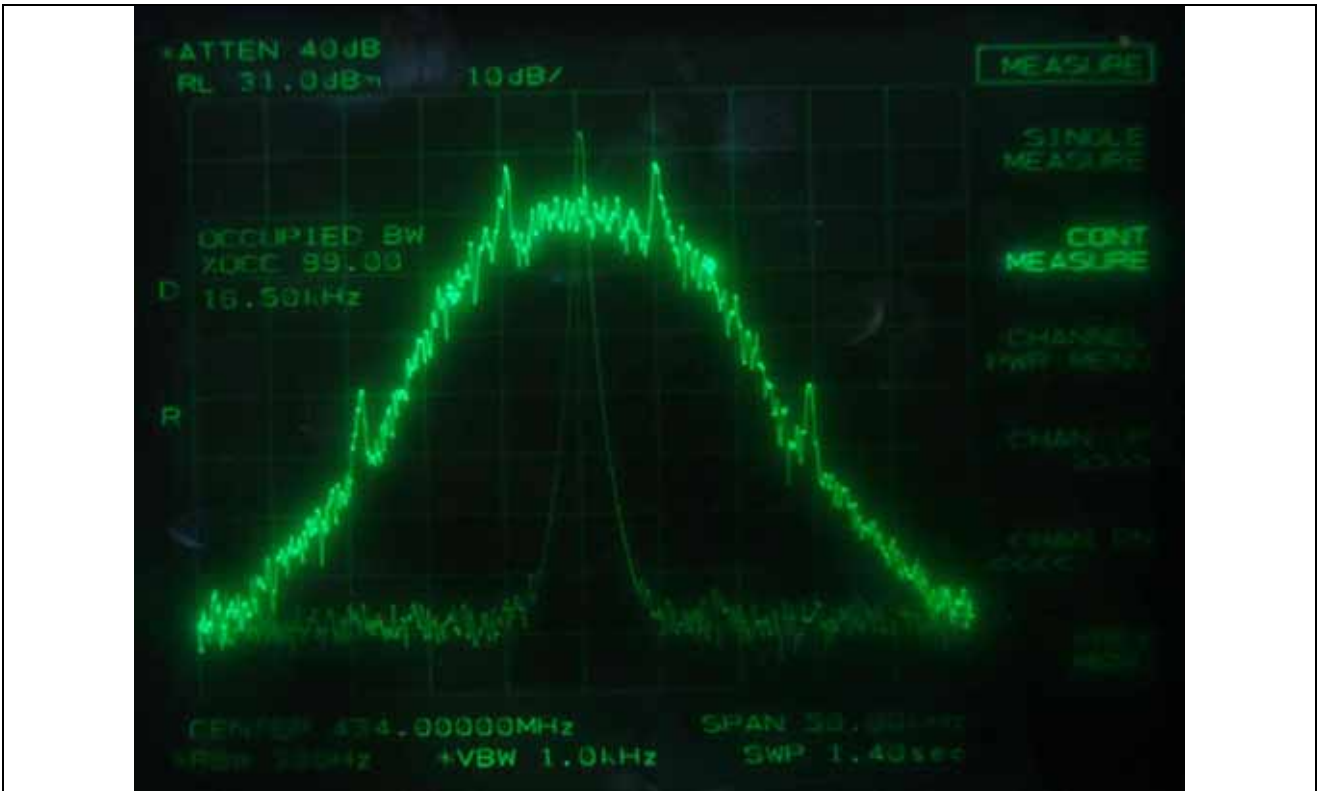
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Low Channel



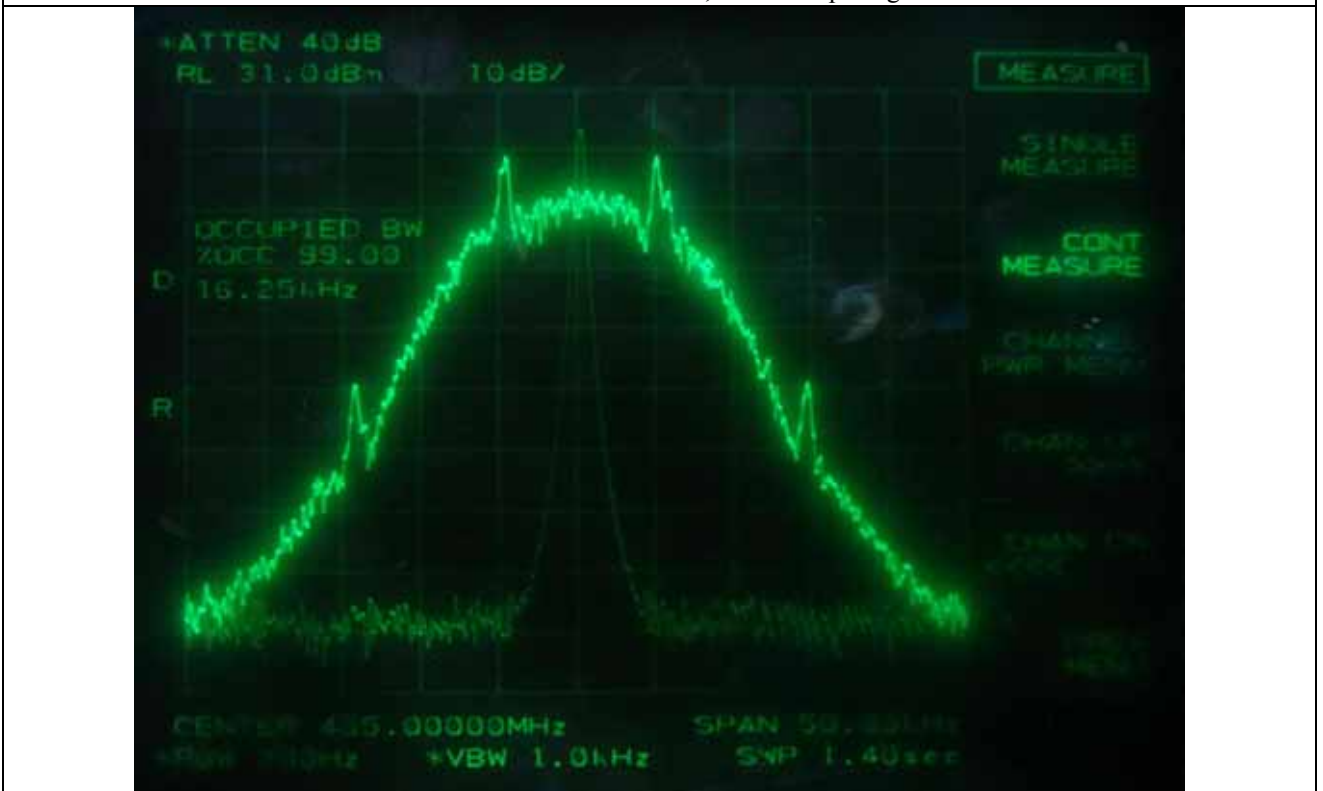
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Middle Channel



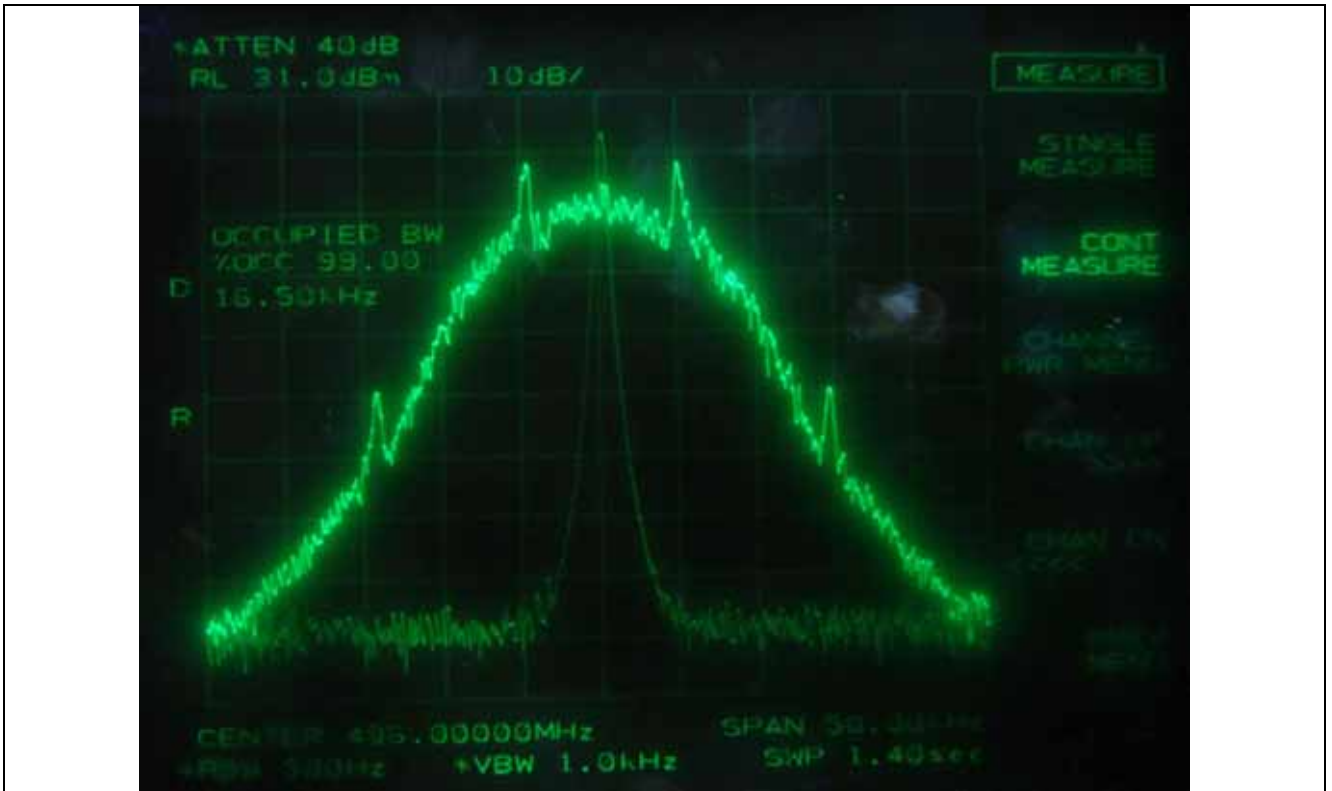
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - High Channel



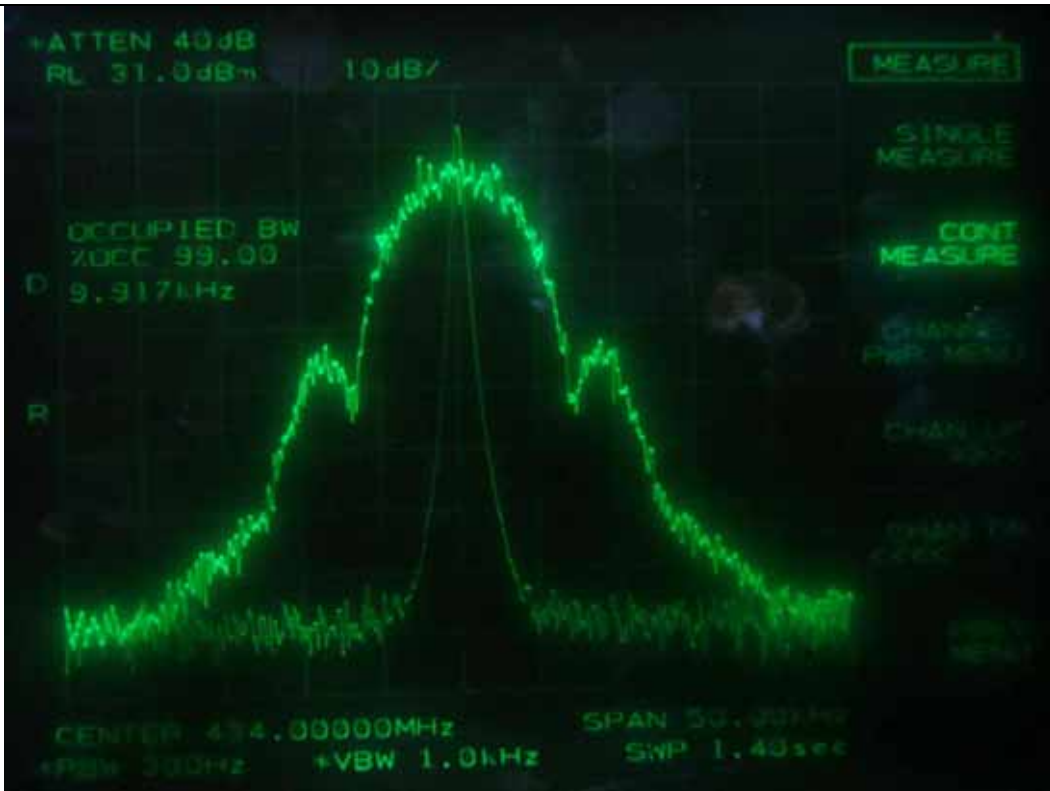
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Low Channel



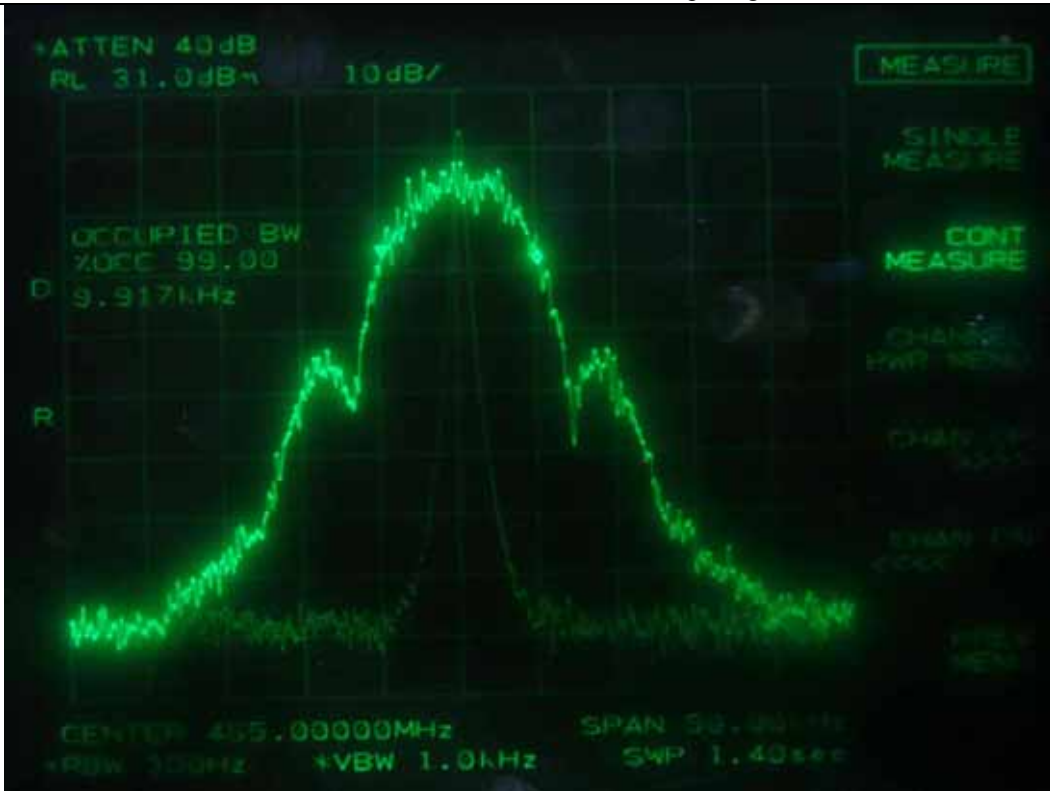
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Middle Channel



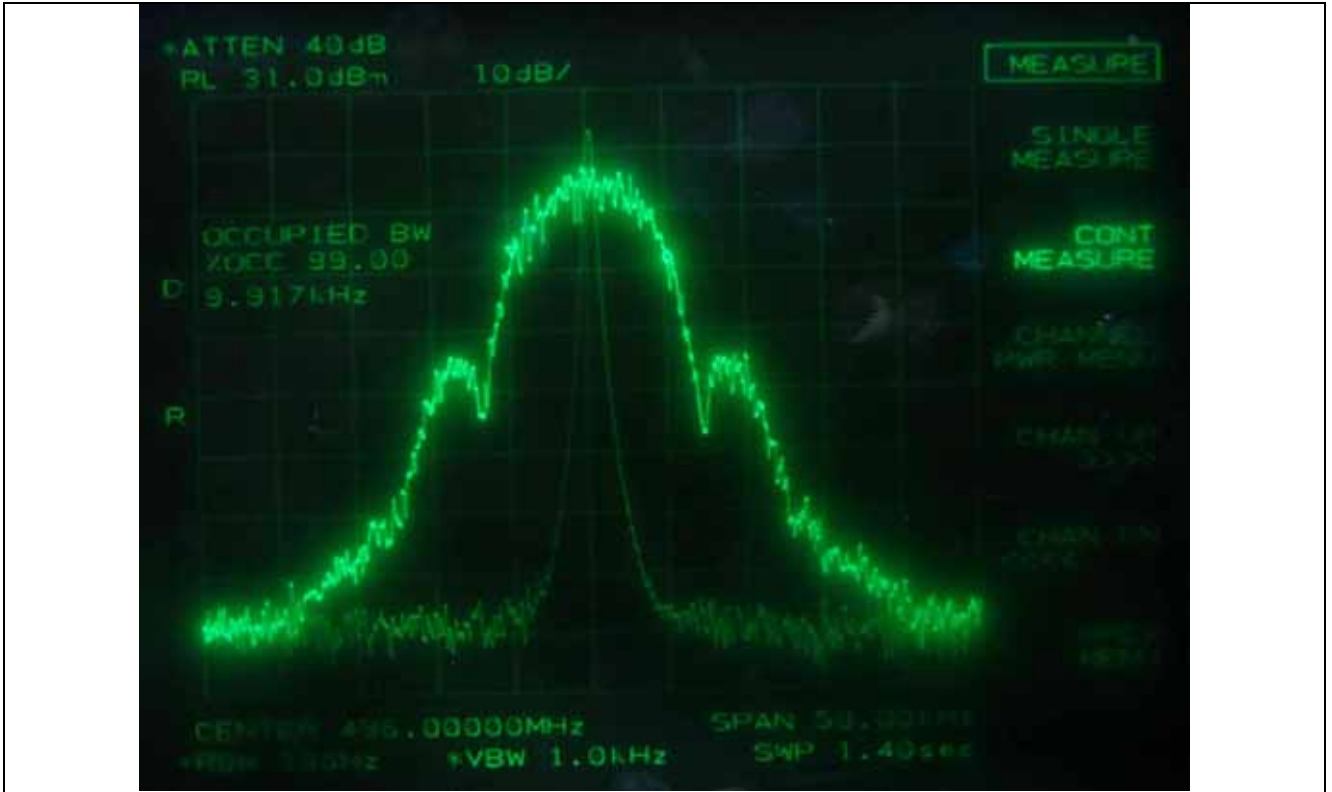
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - High Channel



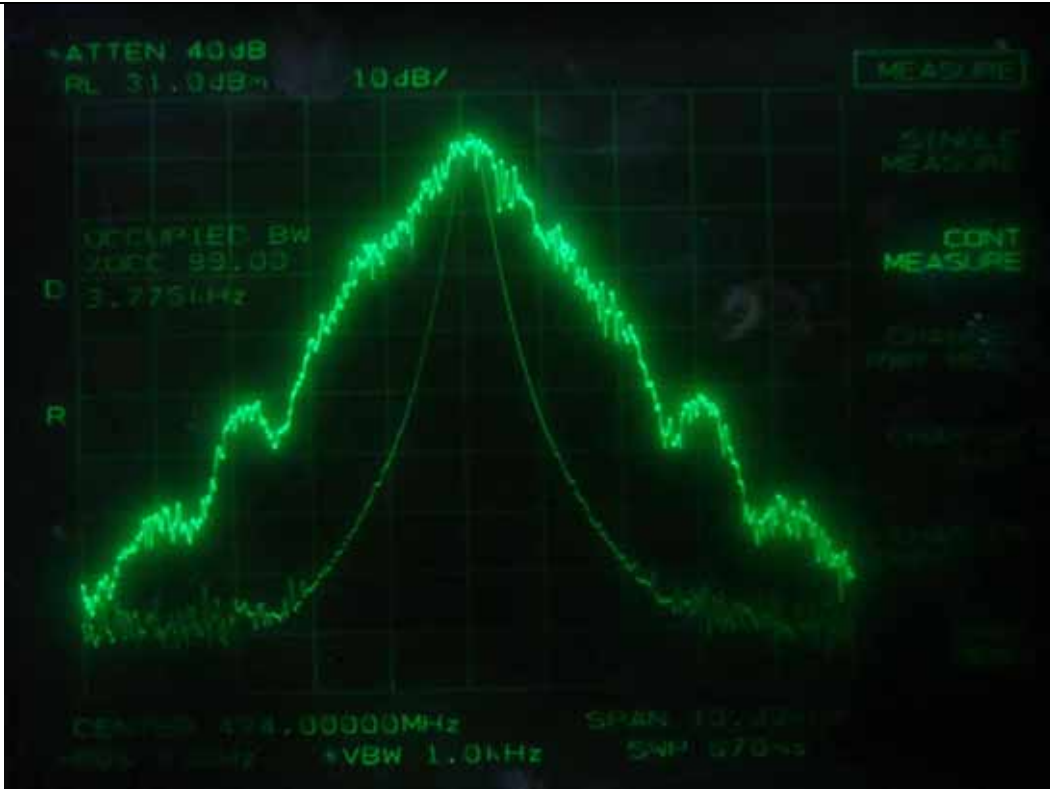
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Low Channel



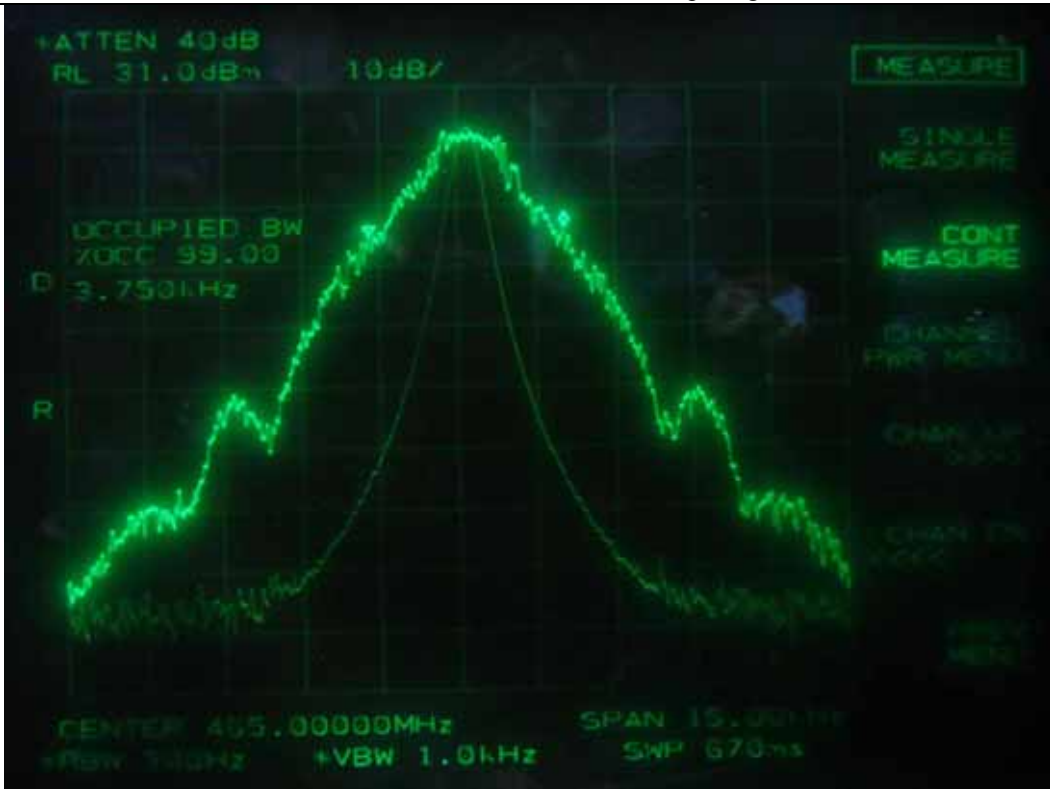
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Middle Channel



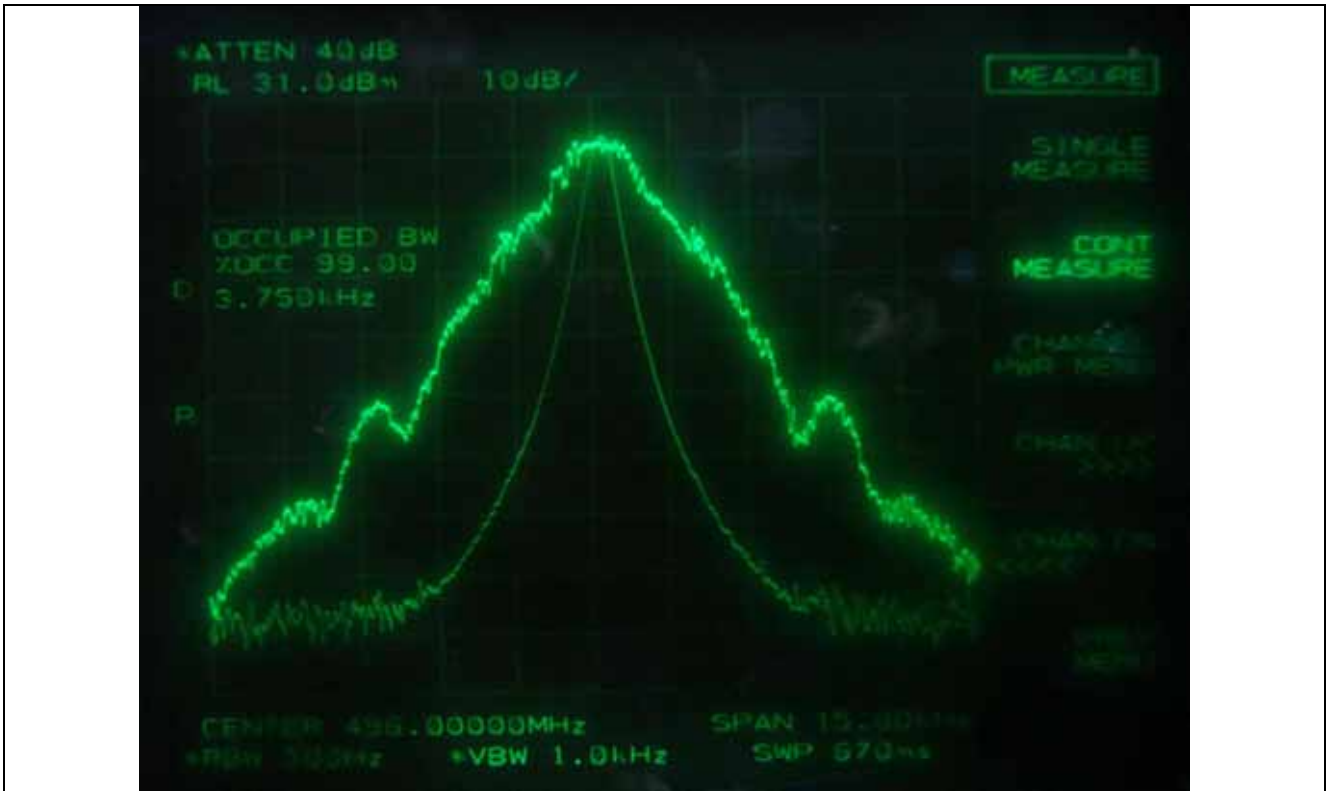
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - High Channel



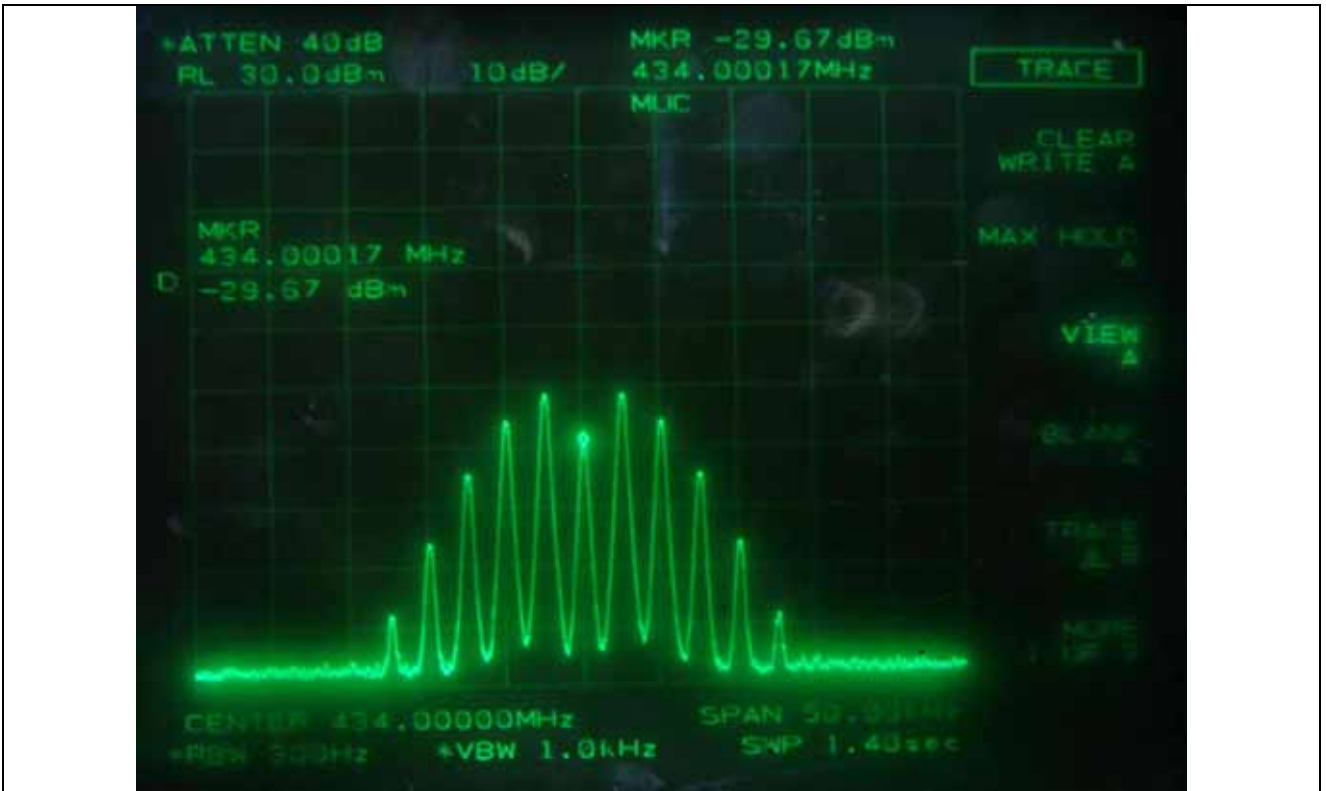
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Low Channel



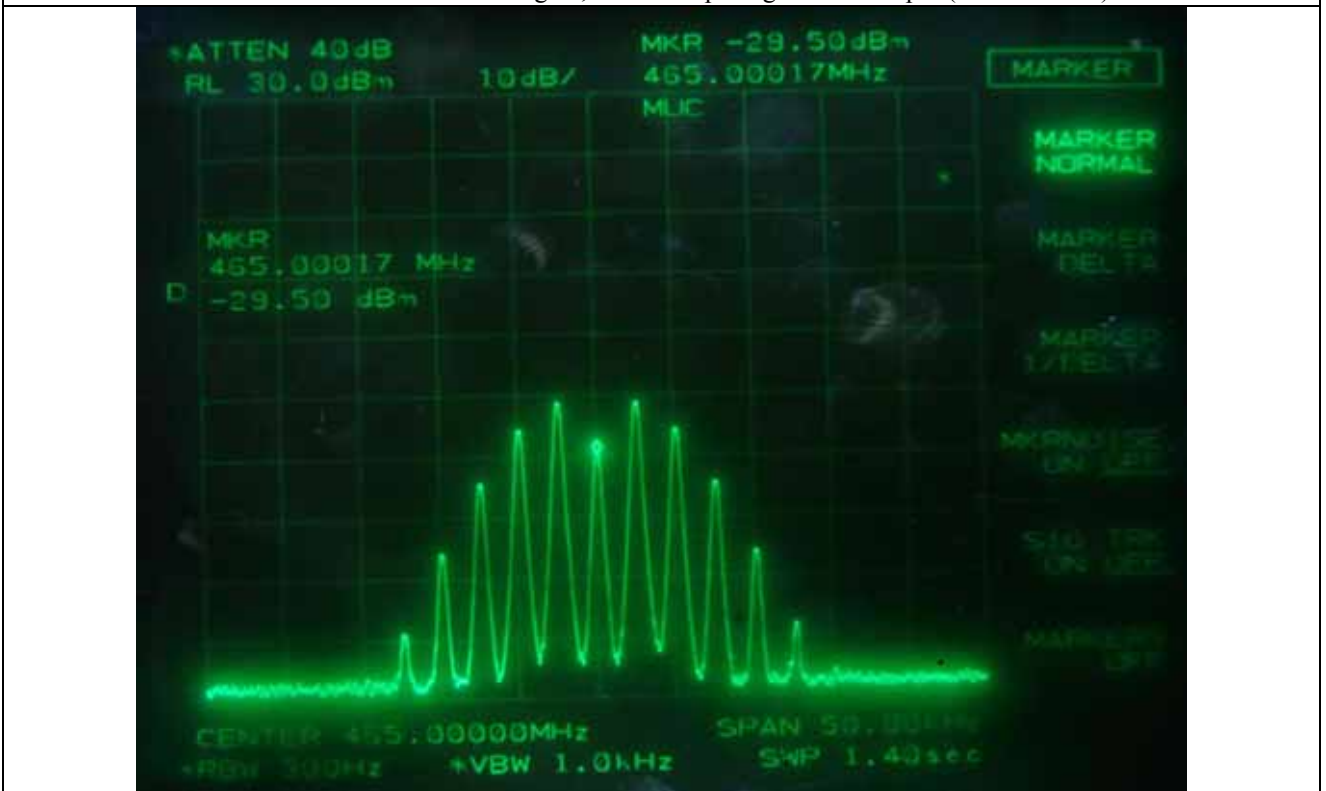
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Middle Channel



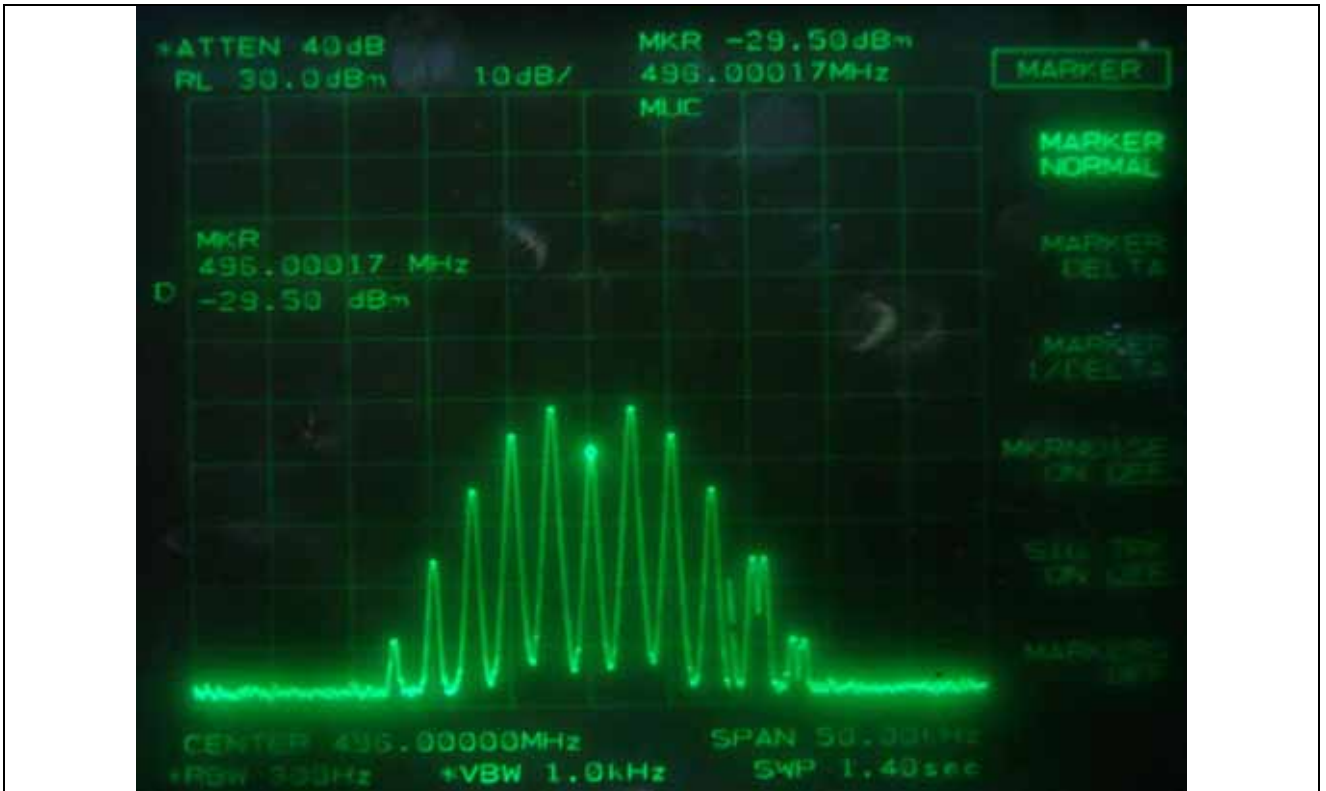
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - High Channel



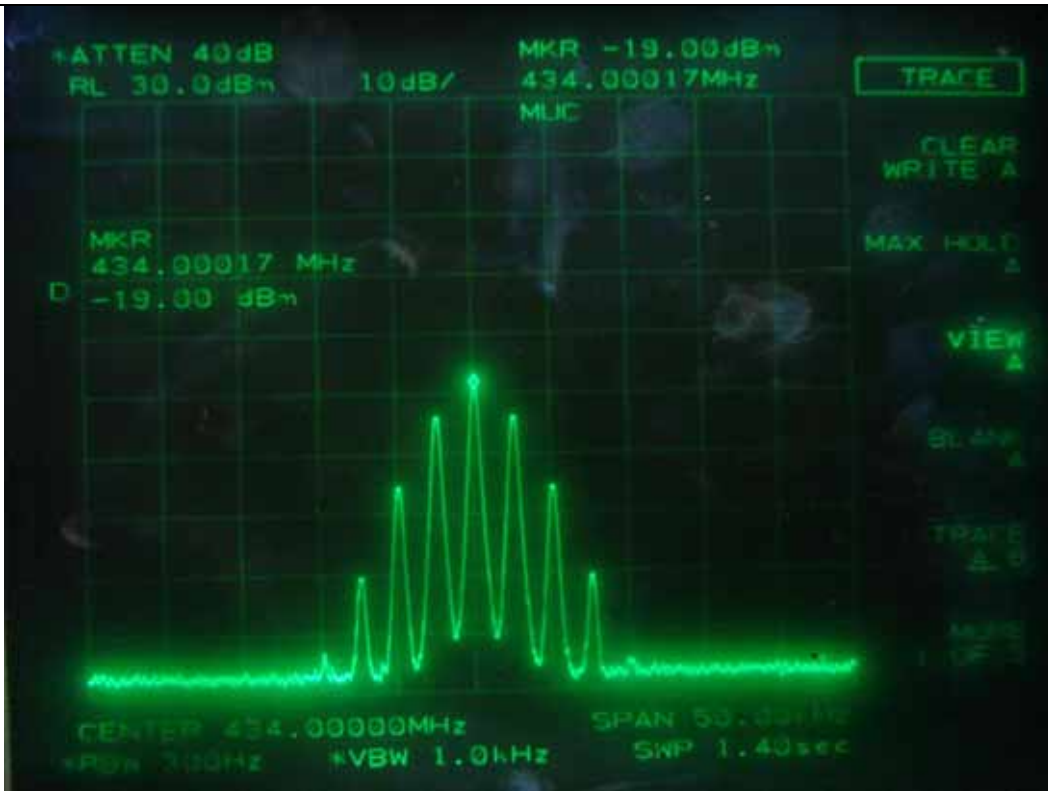
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (Low Channel)



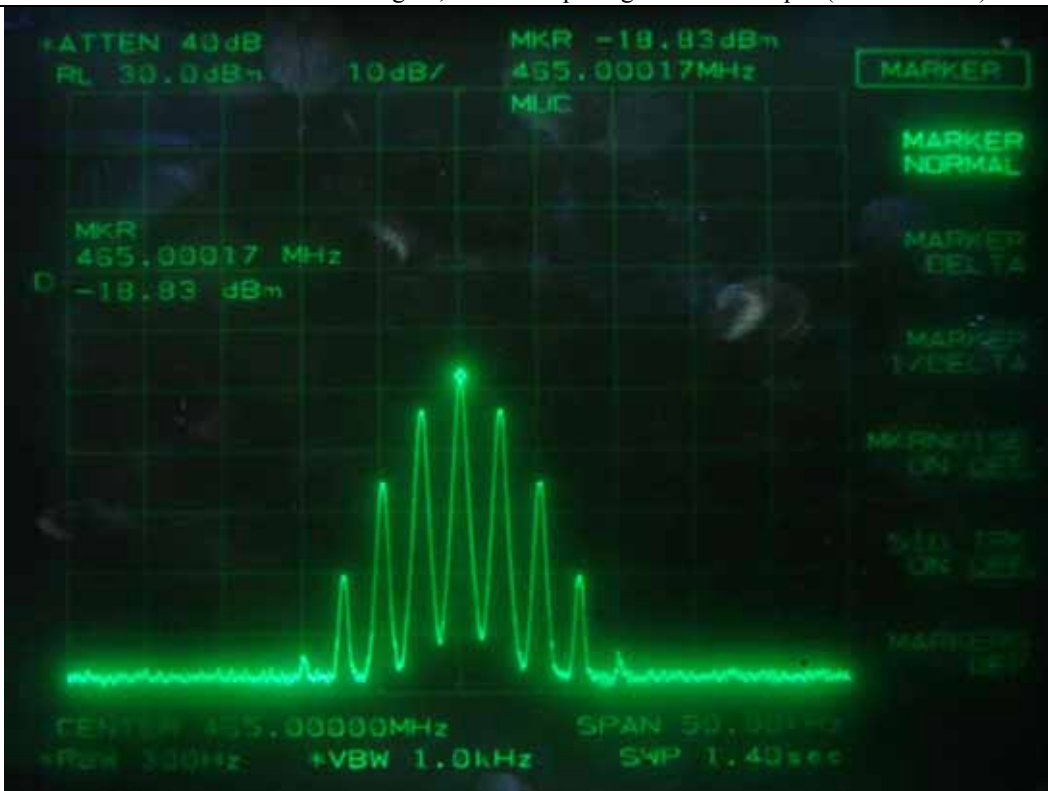
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (Middle Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Input (High Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (Low Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (Middle Channel)



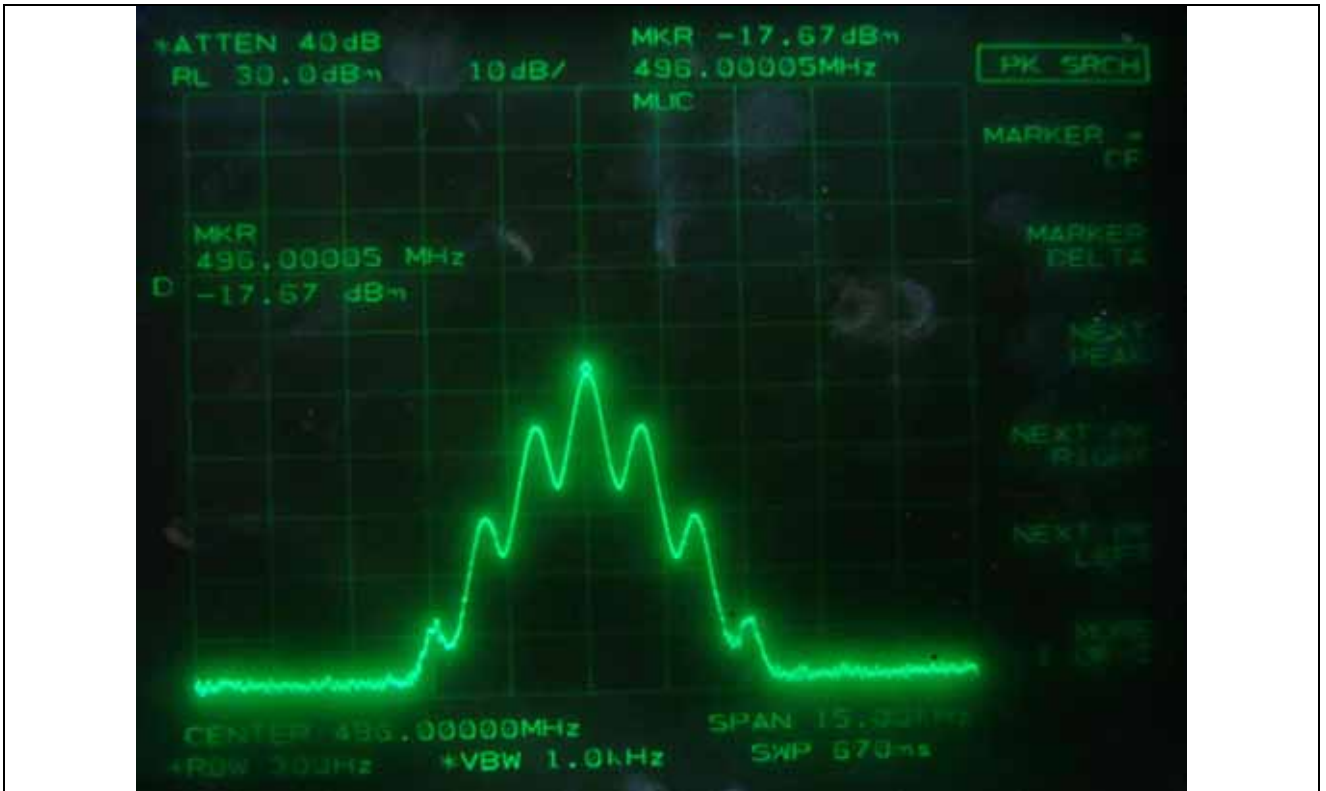
FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Input (High Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Input (Low Channel)



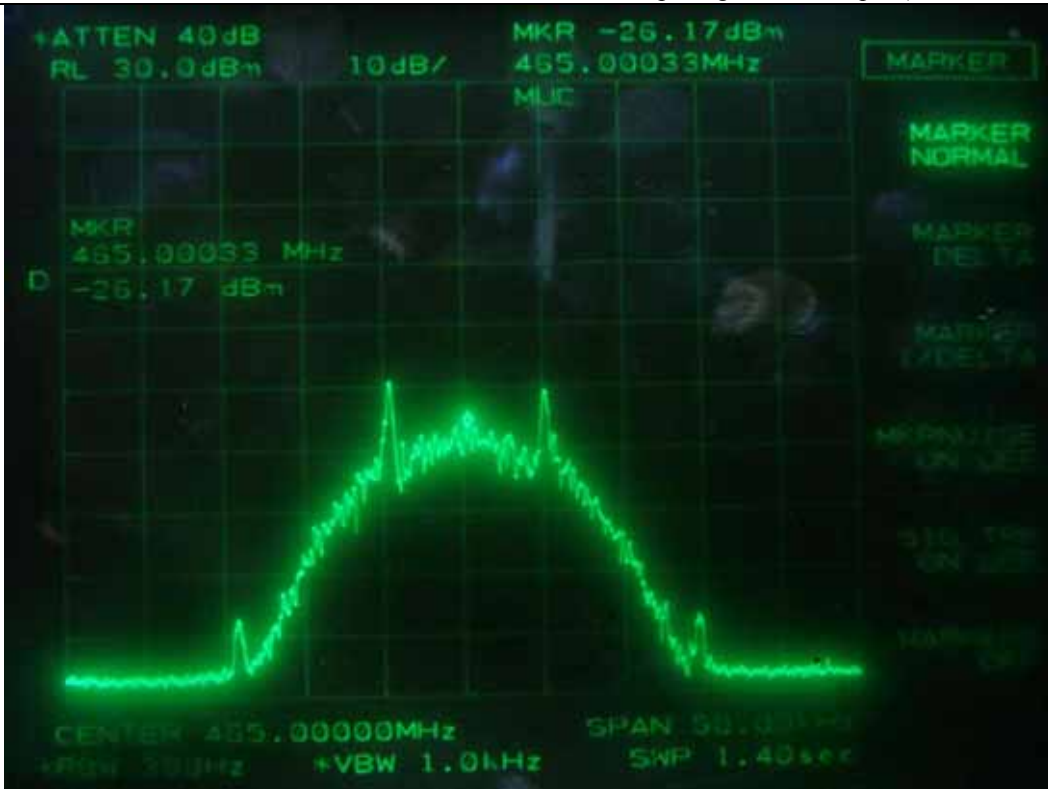
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Input (Middle Channel)



FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Input (High Channel)



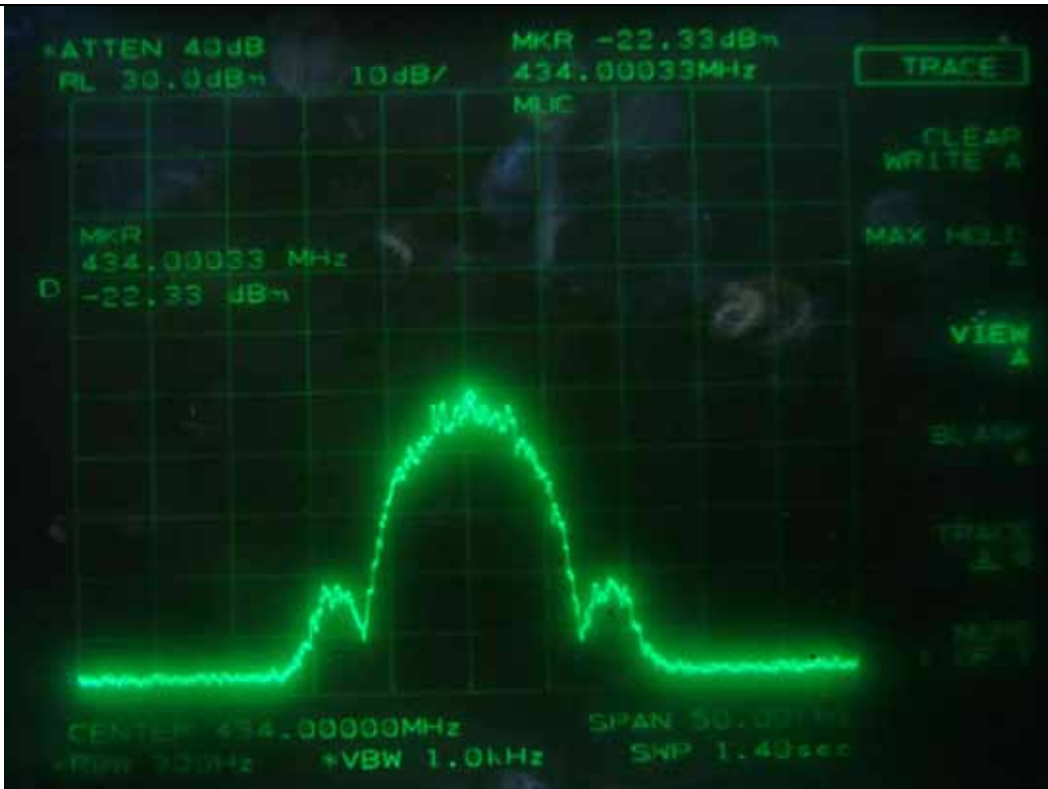
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (Low Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (Middle Channel)



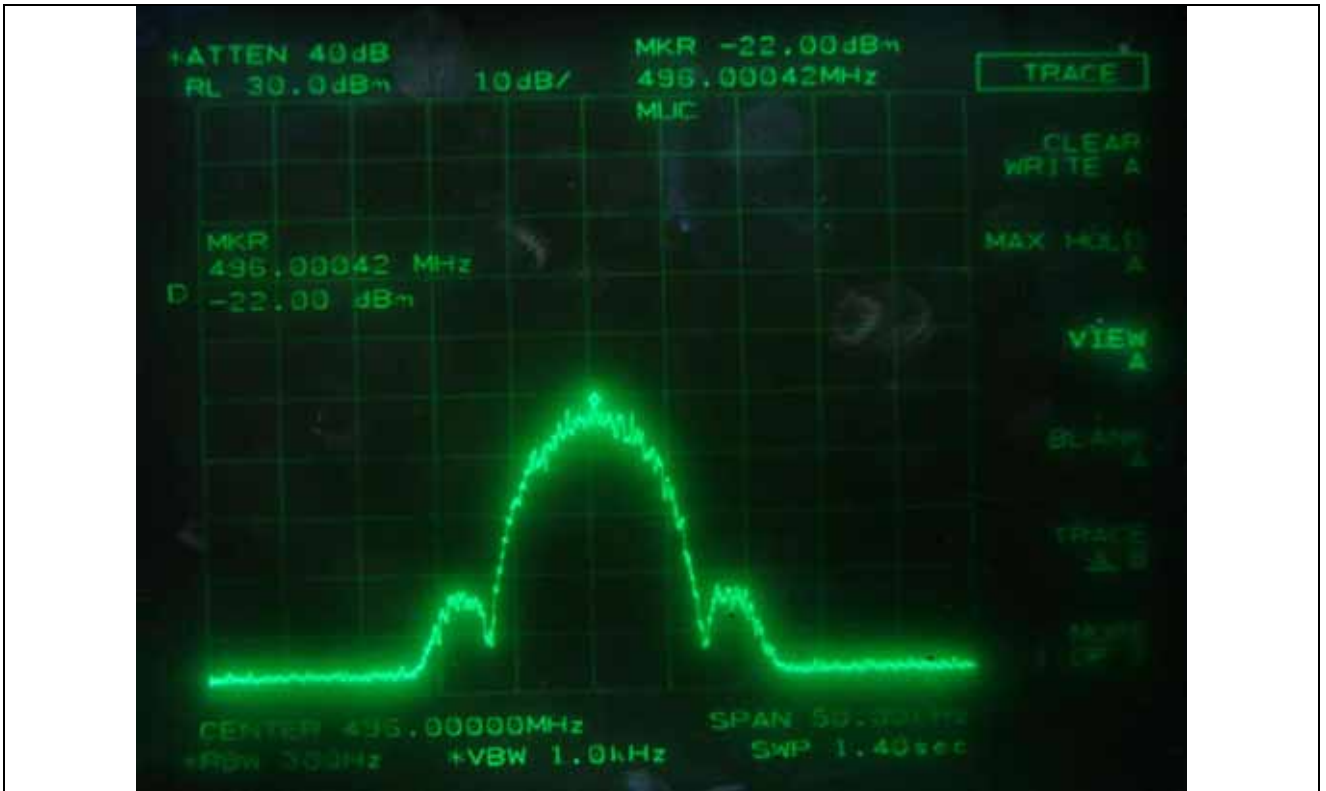
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Input (High Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Input (Low Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Input (Middle Channel)



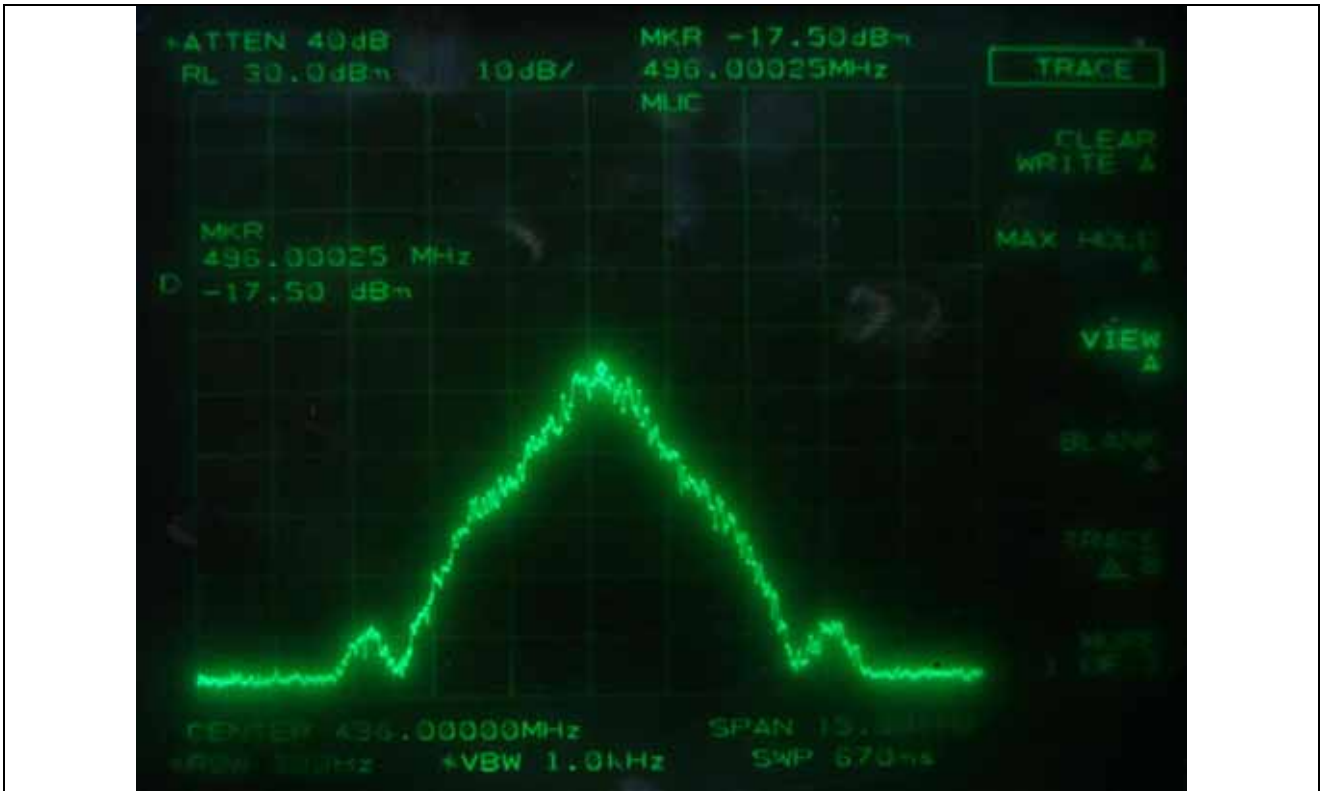
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Input (High Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Input (Low Channel)



FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Input (Middle Channel)

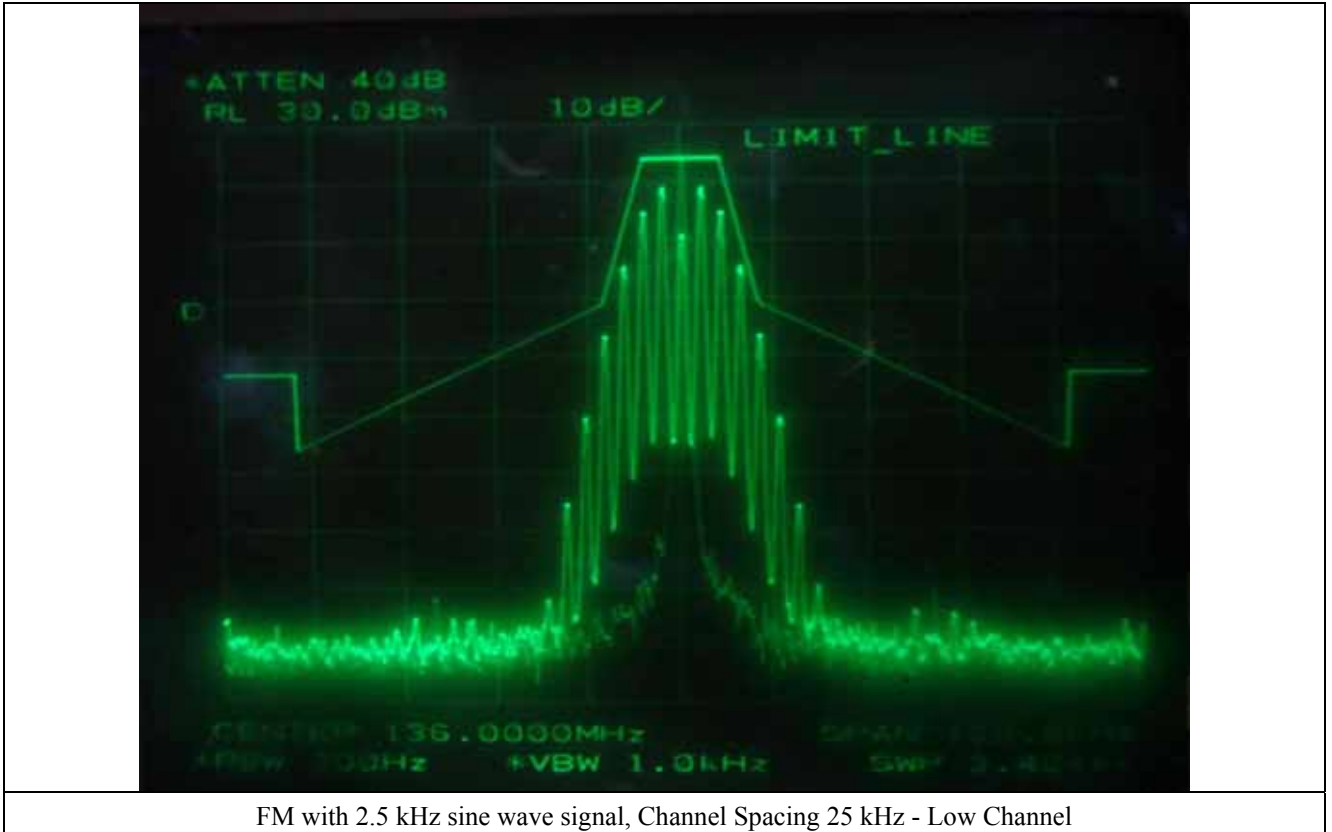


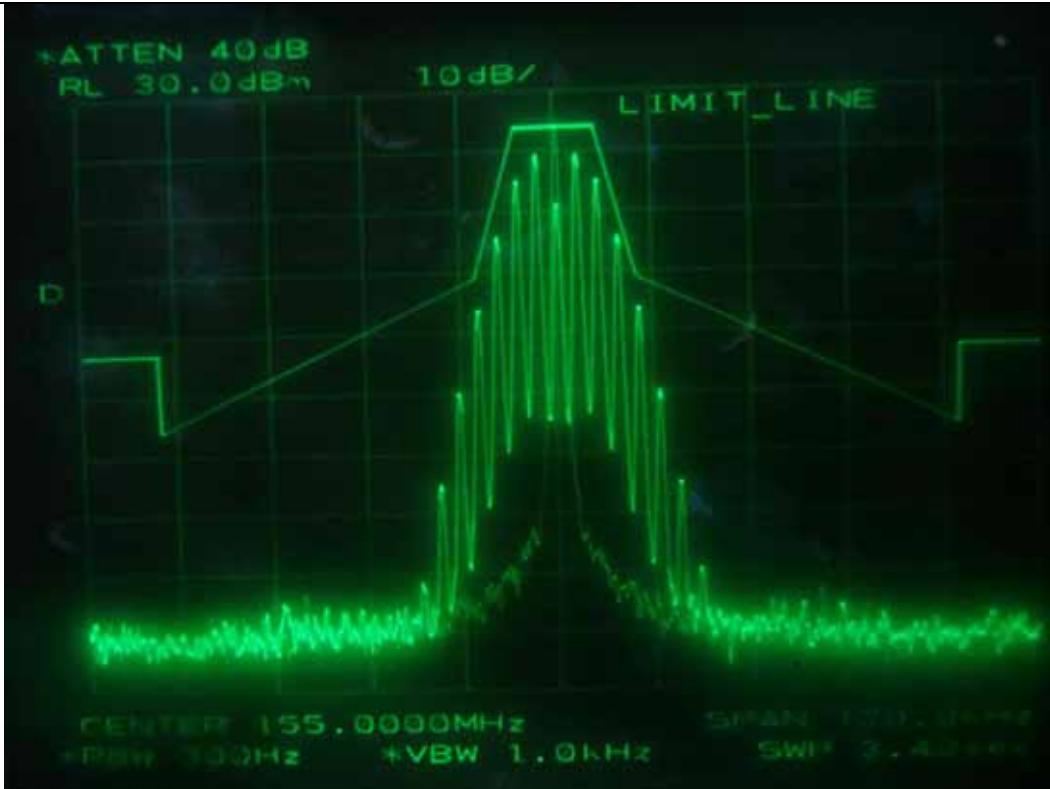
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Input (High Channel)

6.4 Test data for Emission Mask

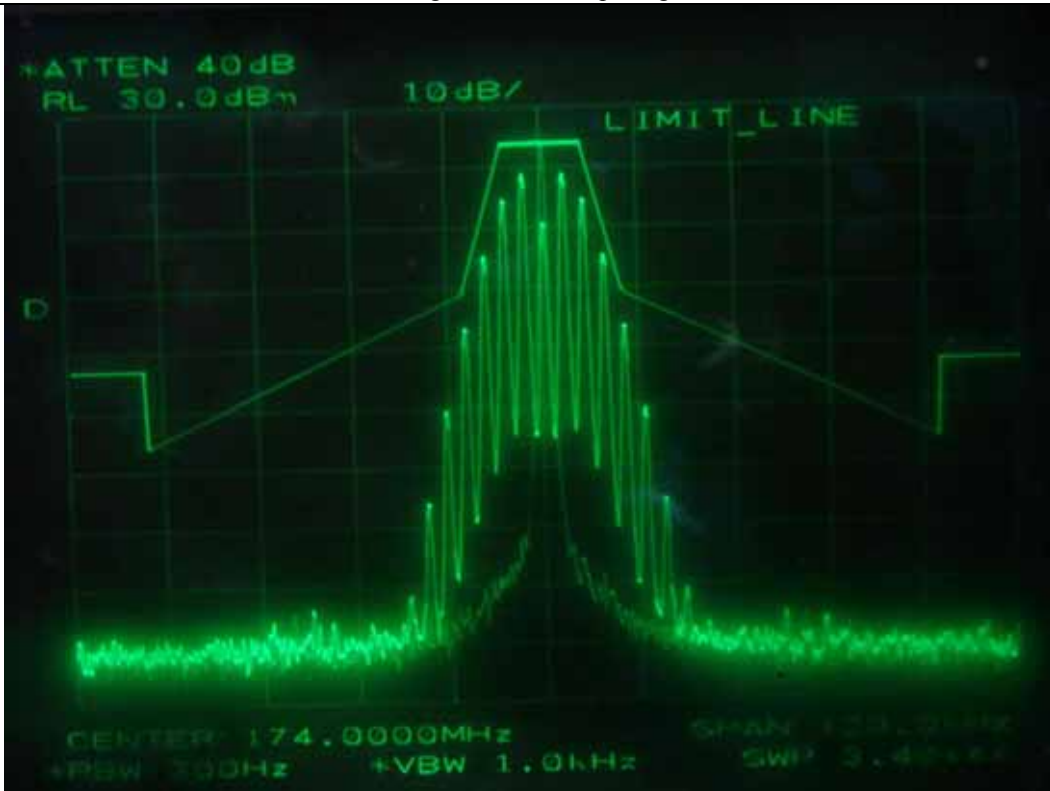
6.4.1 Test Result for VHF

- Test Date : November 29, 2010
- Temperature : 22 °C
- Relative humidity : 45 % R.H.
- Test Result : Pass

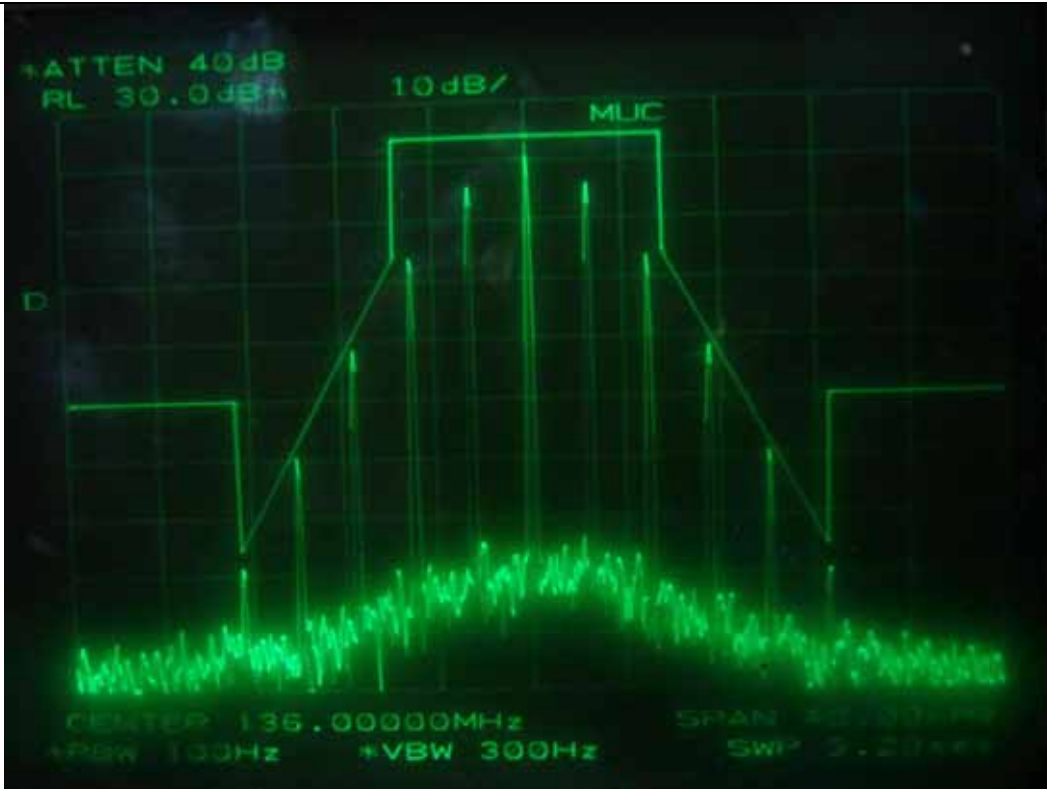




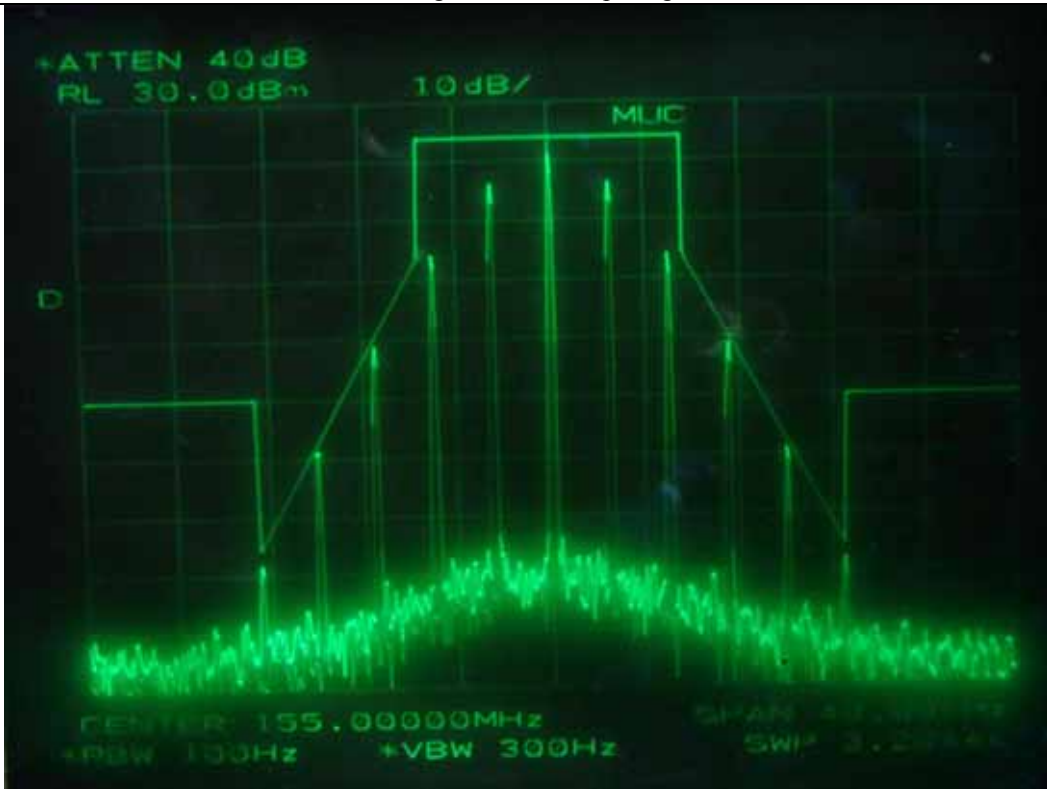
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Middle Channel



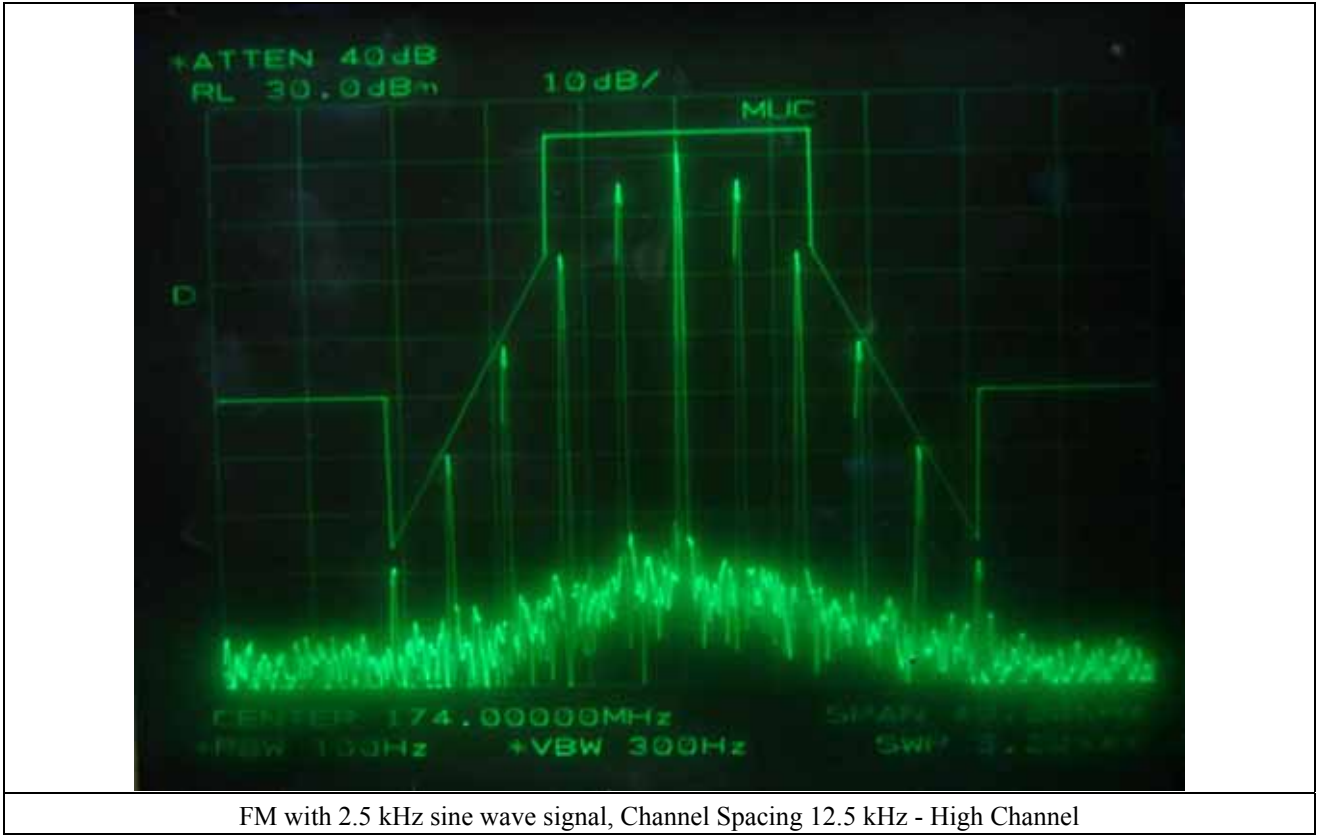
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - High Channel

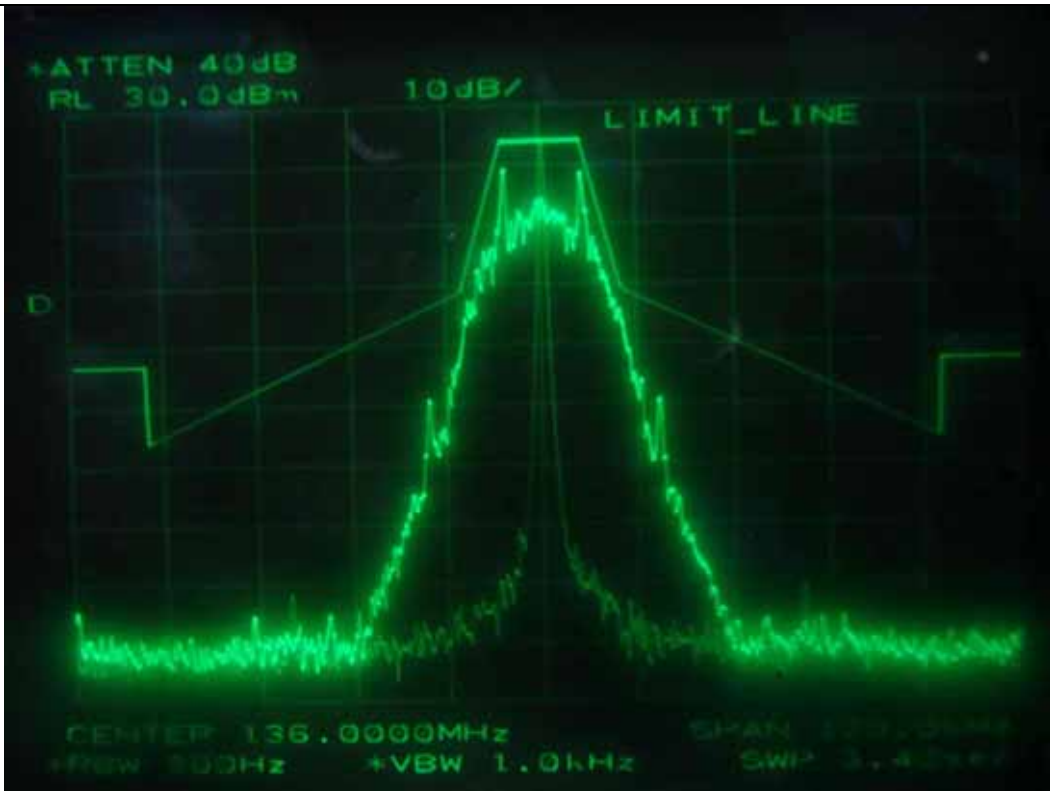


FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Low Channel

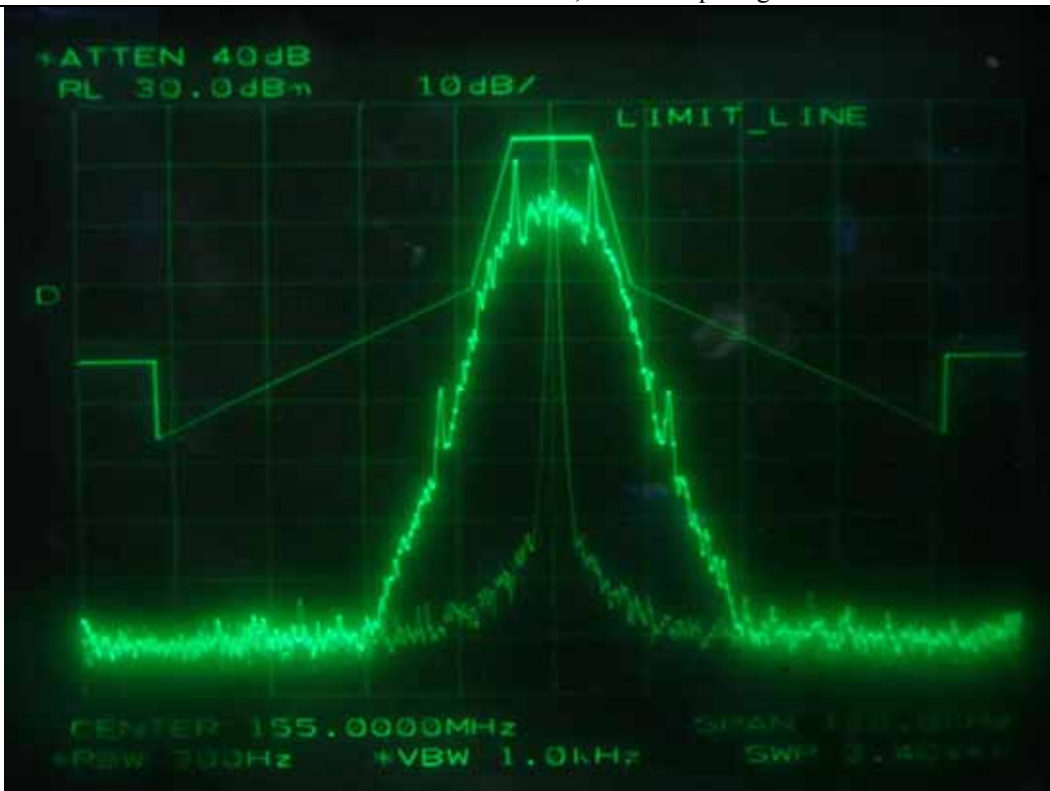


FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Middle Channel

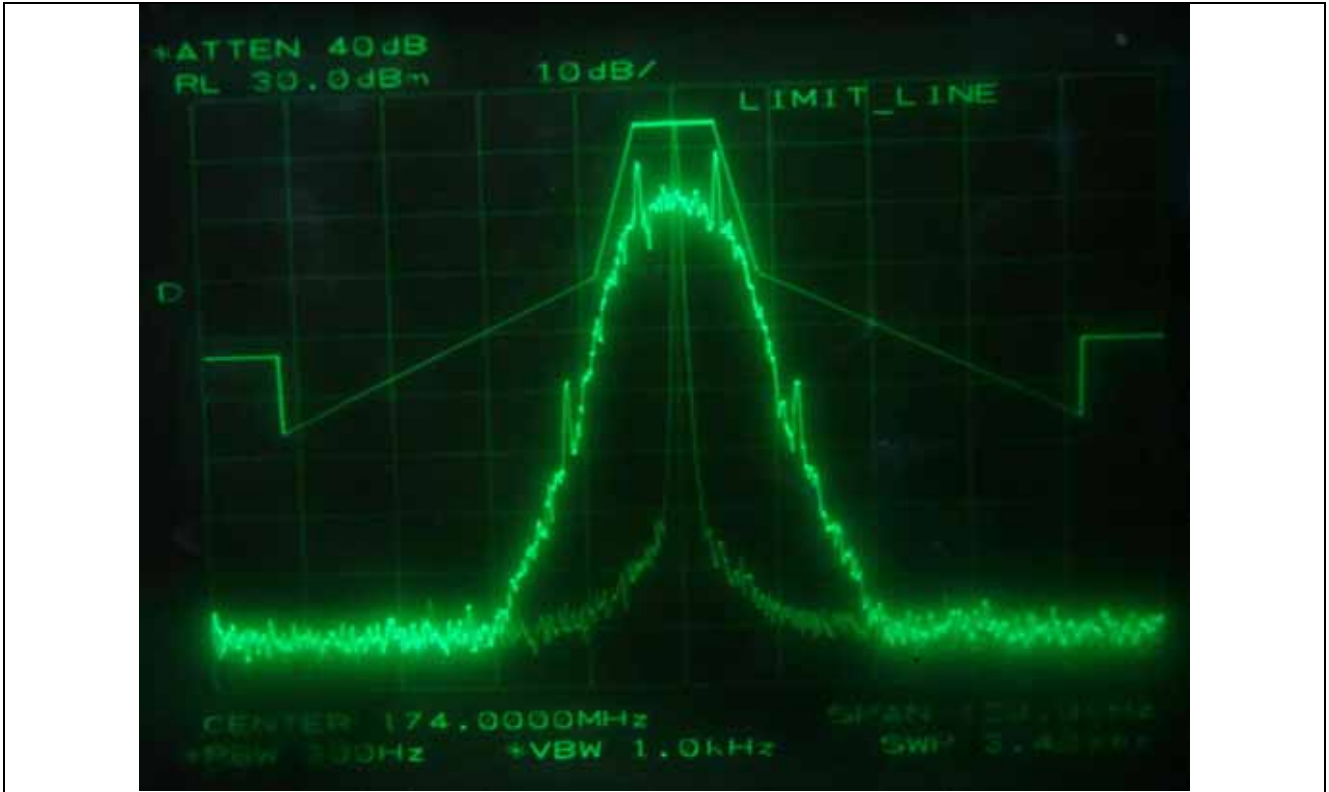




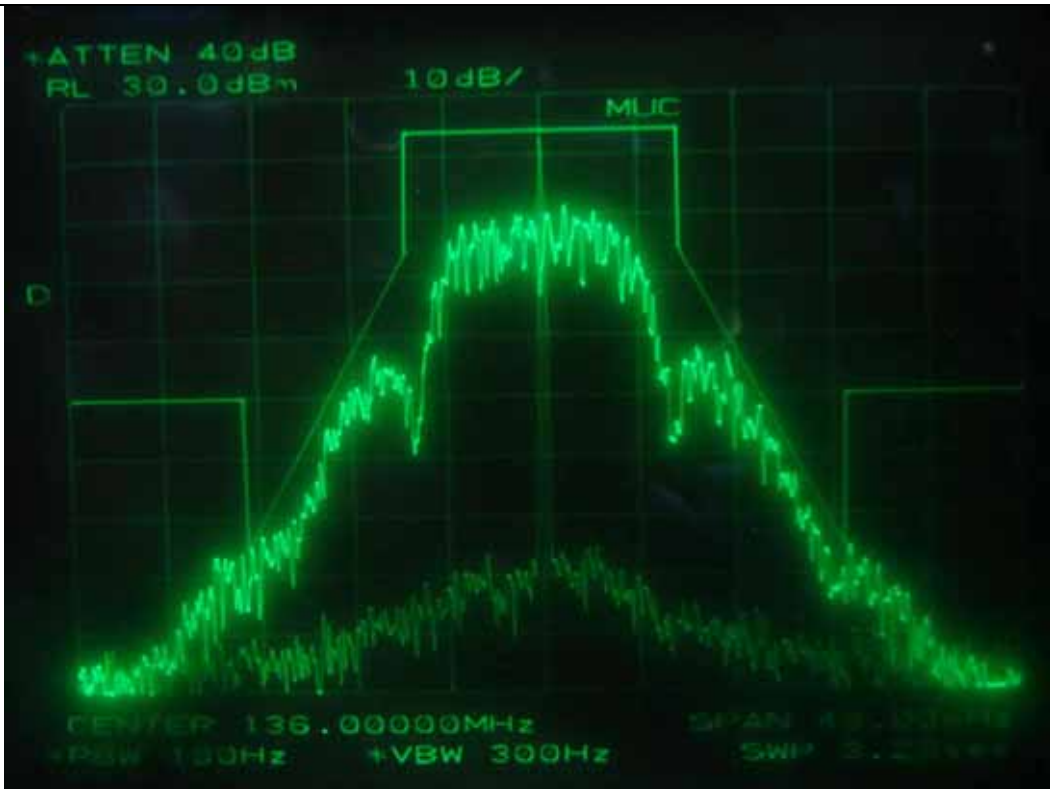
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Low Channel



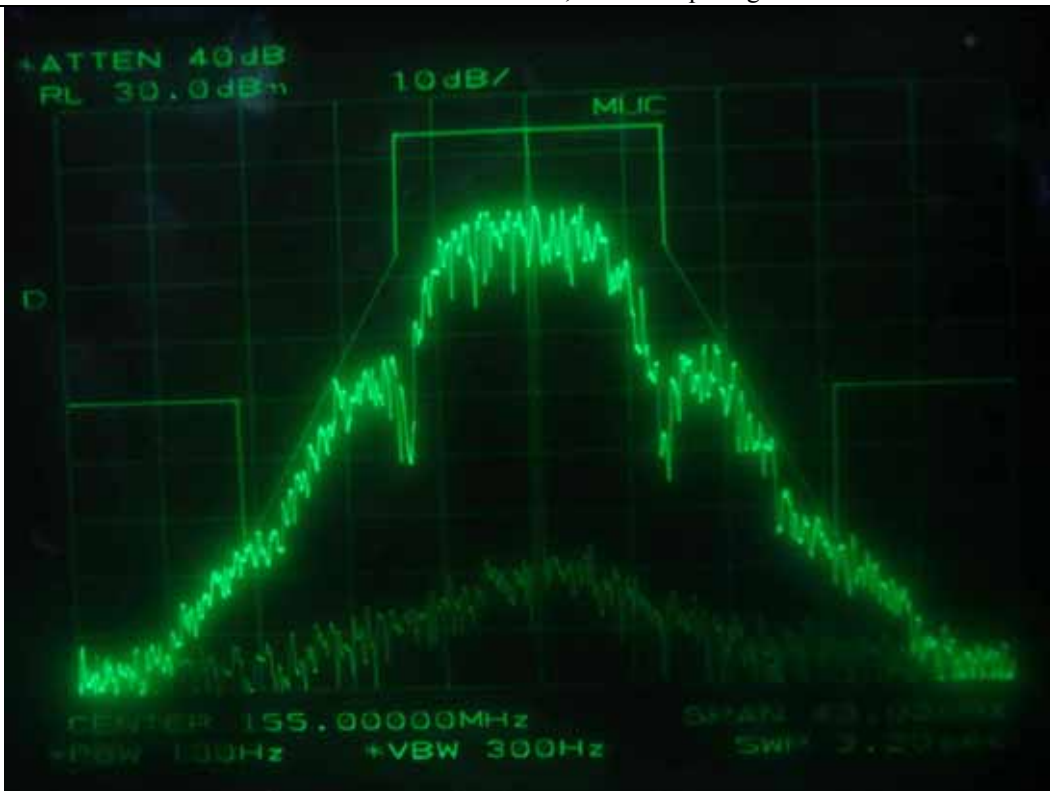
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Middle Channel



FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - High Channel



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Low Channel



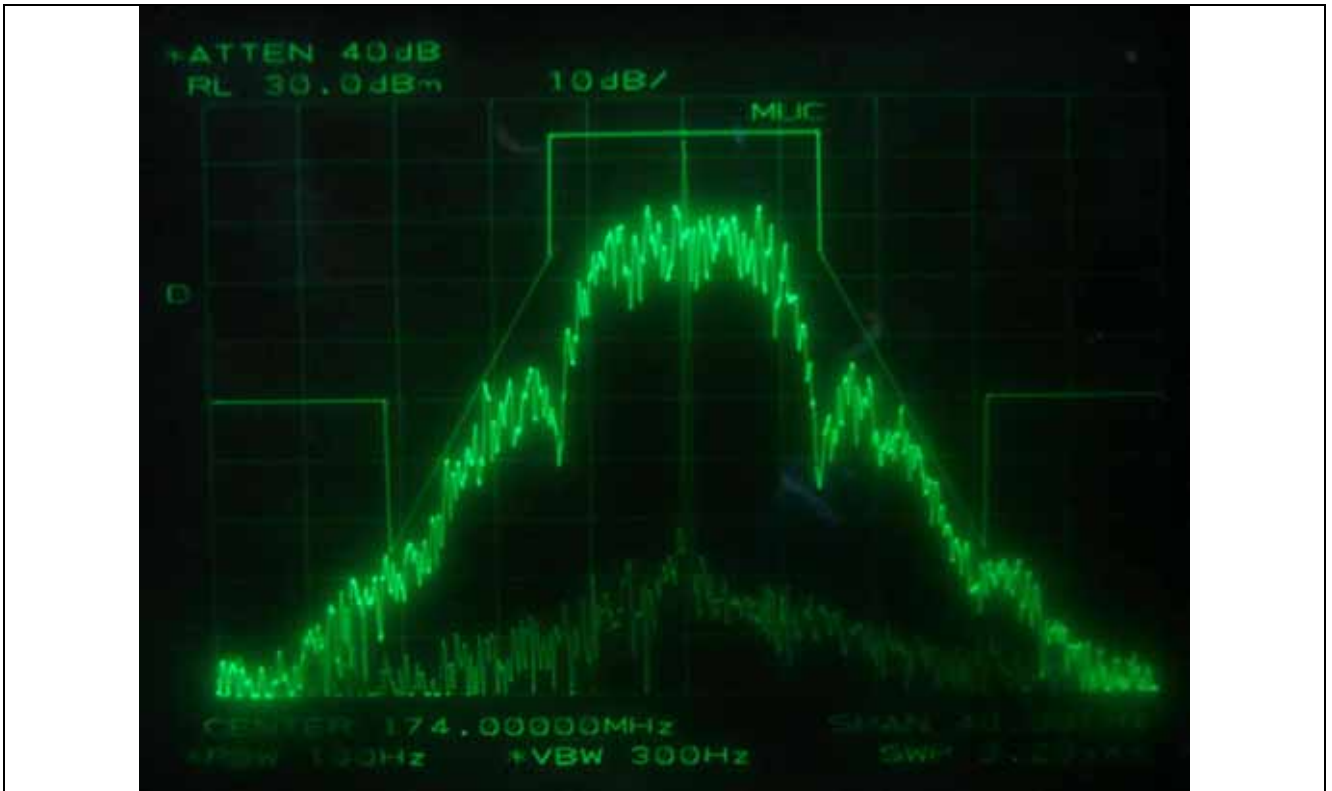
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Middle Channel

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(TEL: +82-31-746-8500, FAX: +82-31-746-8700)

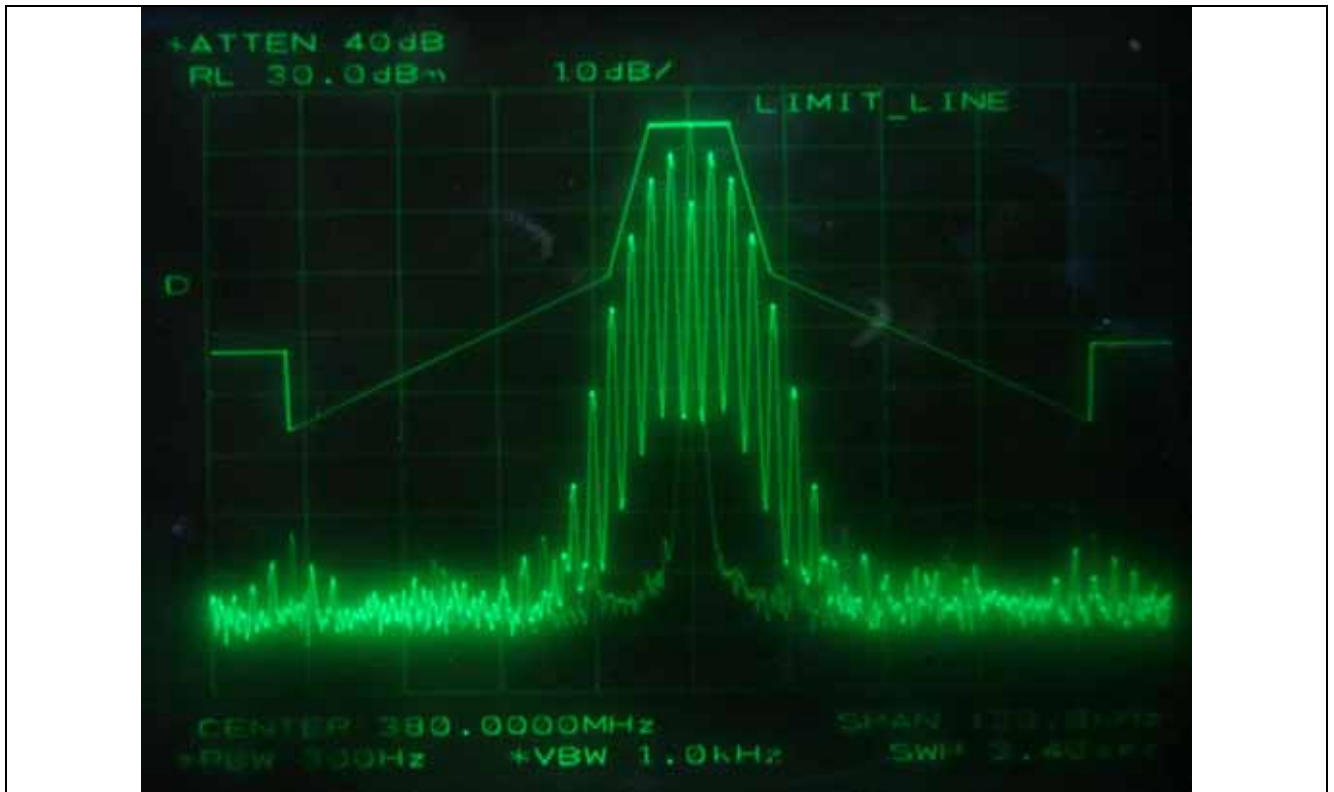
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



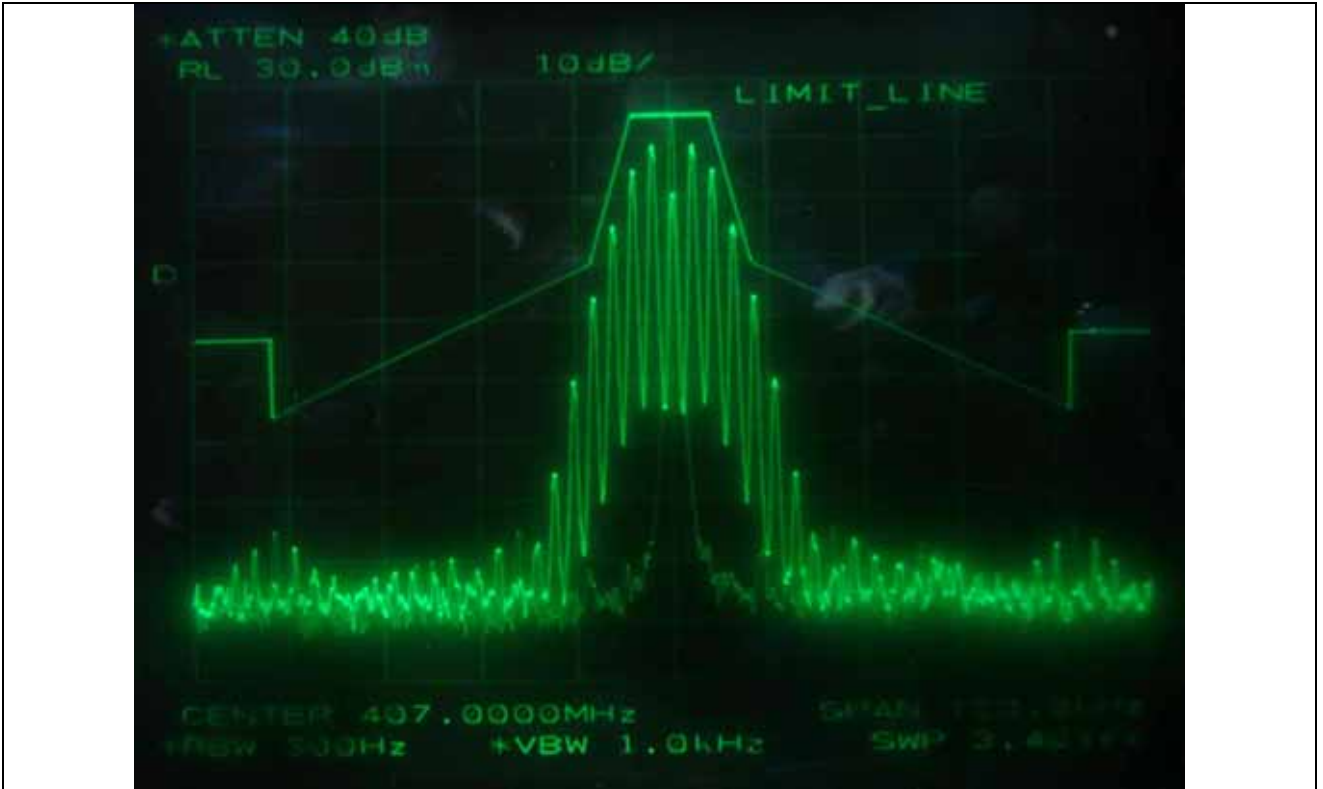
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - High Channel

6.4.2 Test Result for UHF-B1

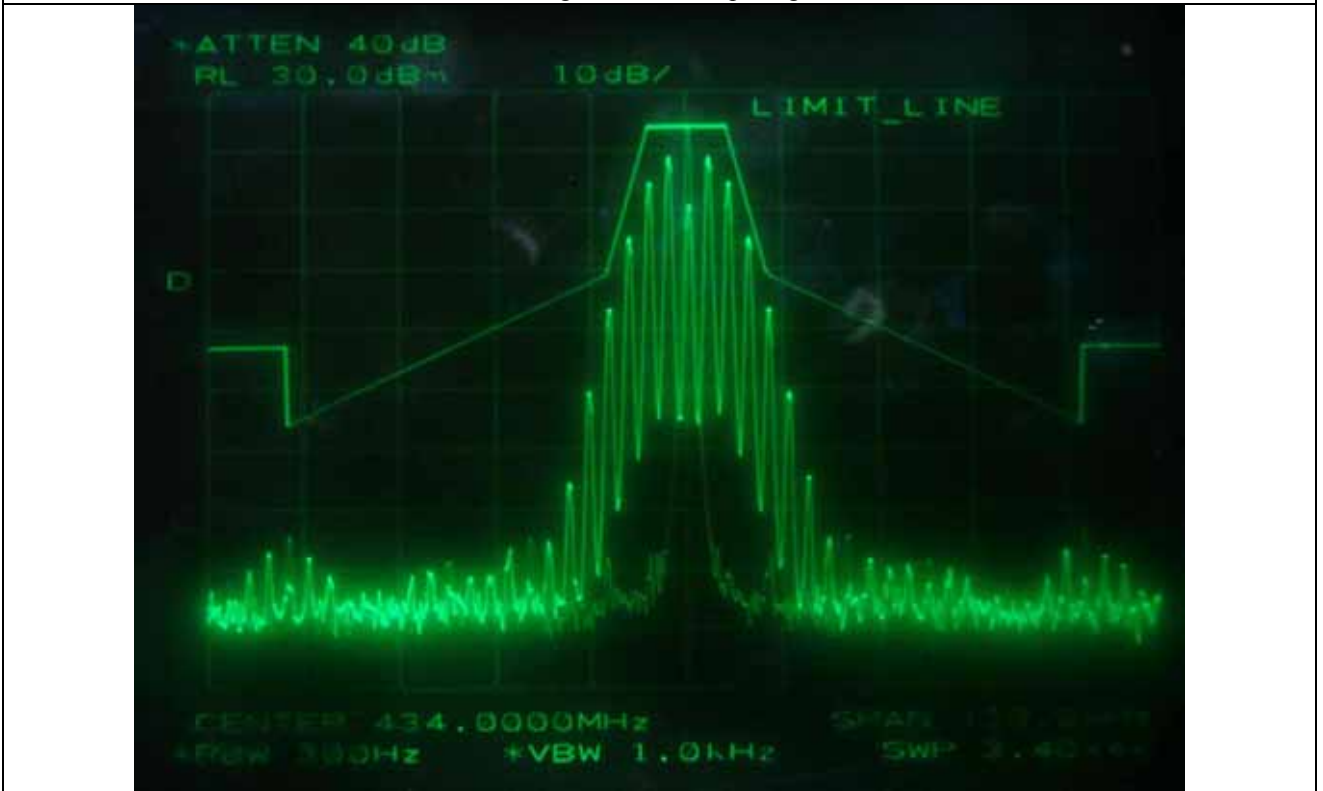
- Test Date : December 01, 2010
- Temperature : 22 °C
- Relative humidity : 45 % R.H.
- Test Result : Pass



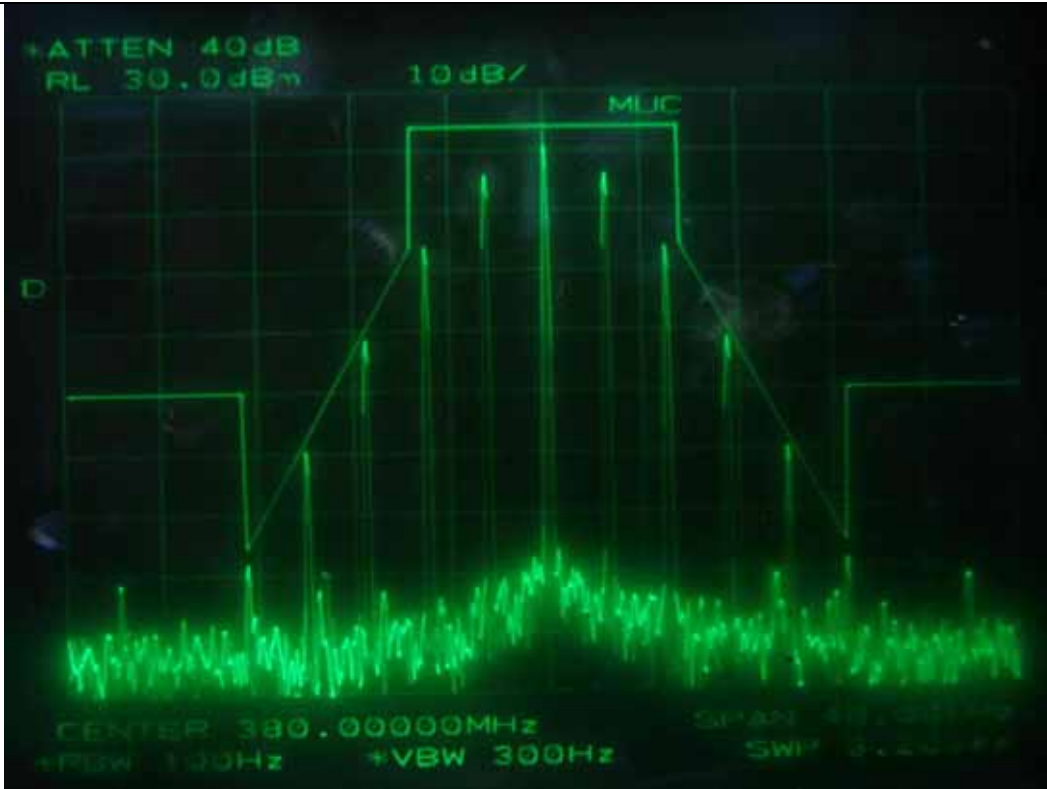
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Low Channel



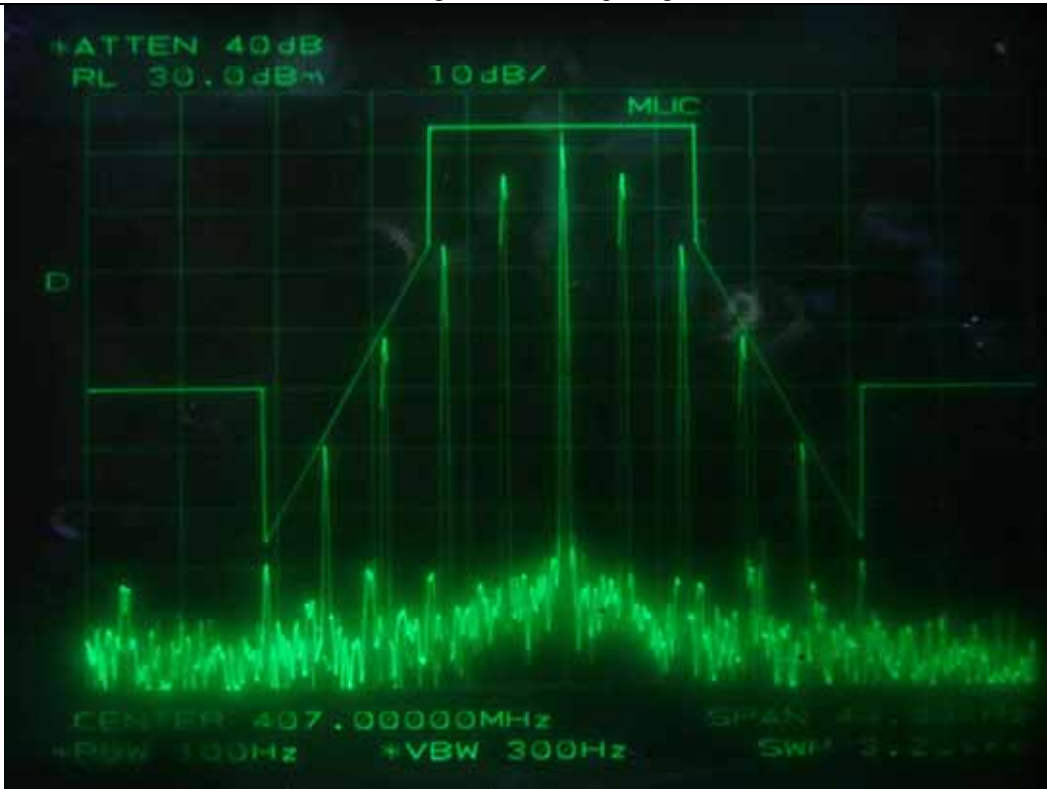
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Middle Channel



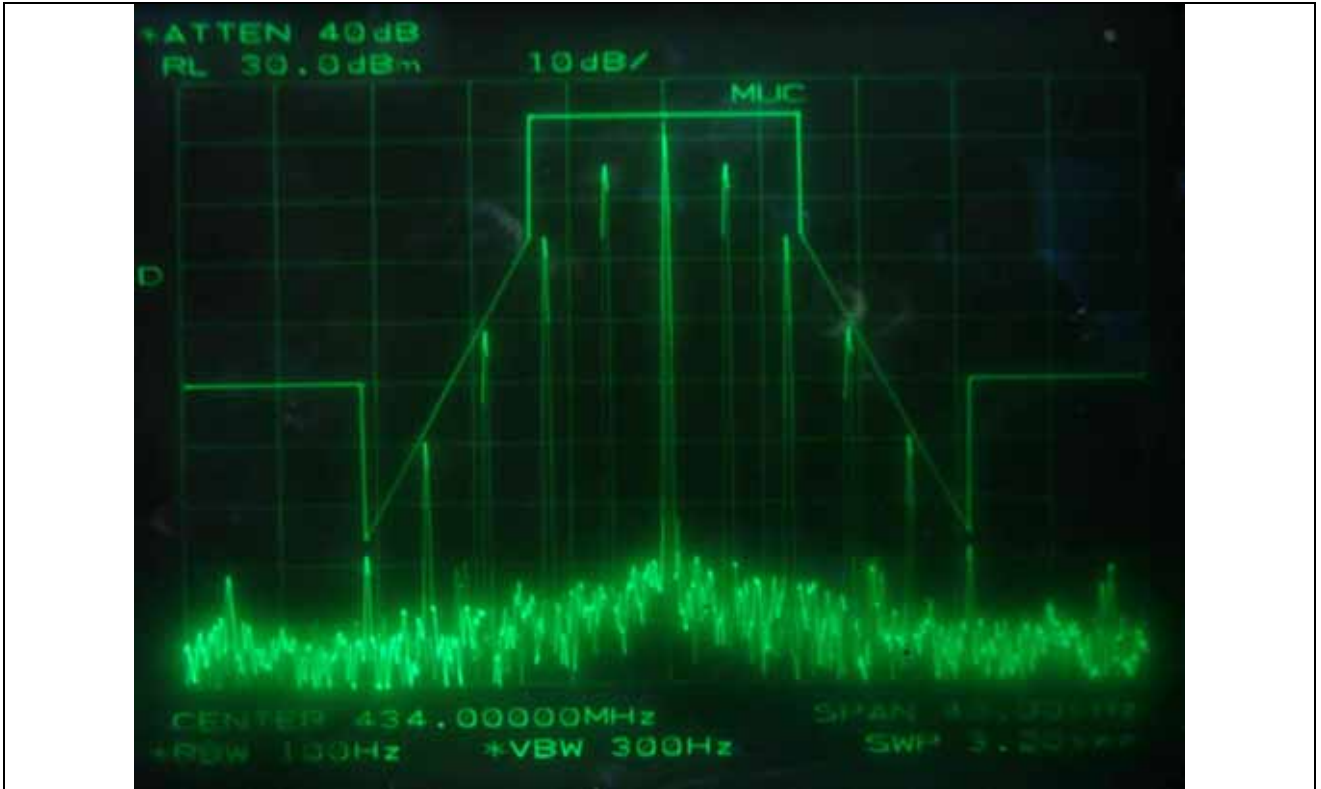
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - High Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Low Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Middle Channel



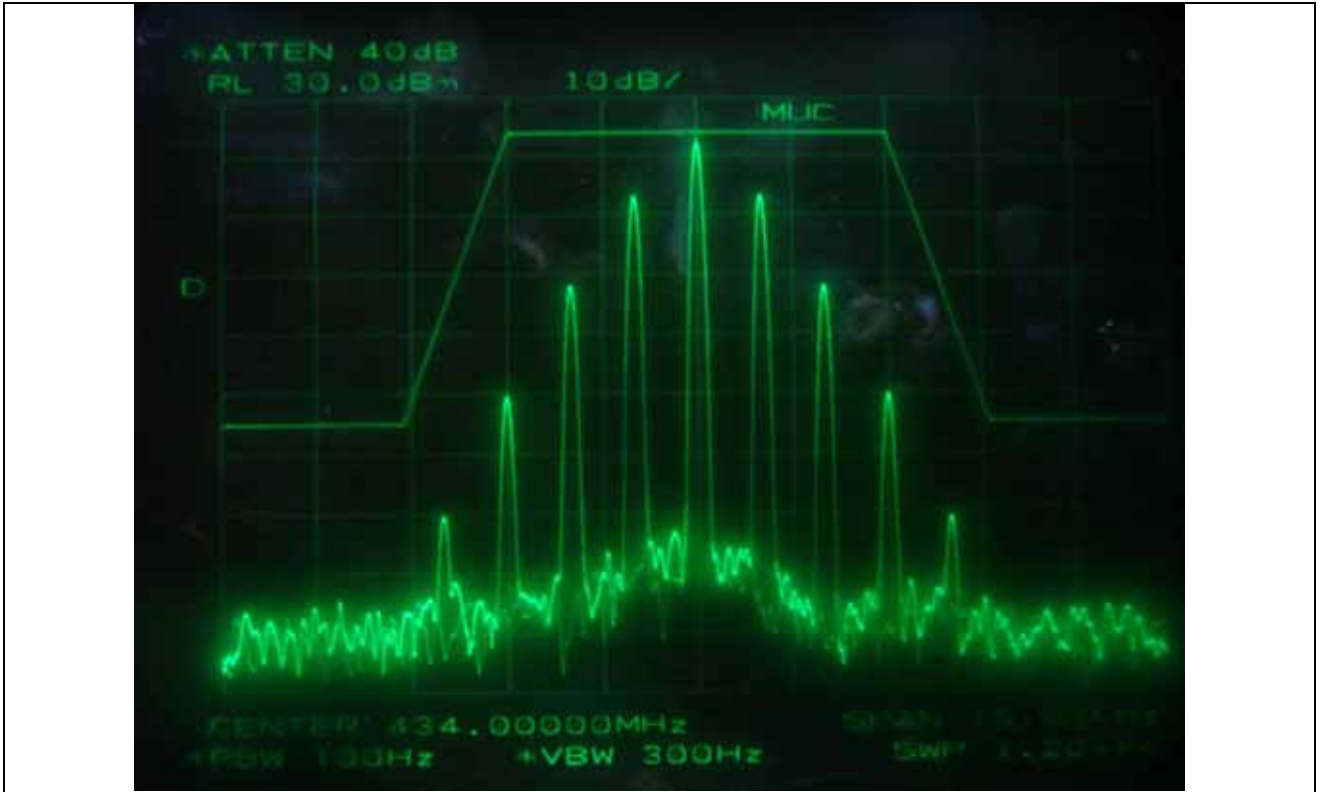
FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - High Channel



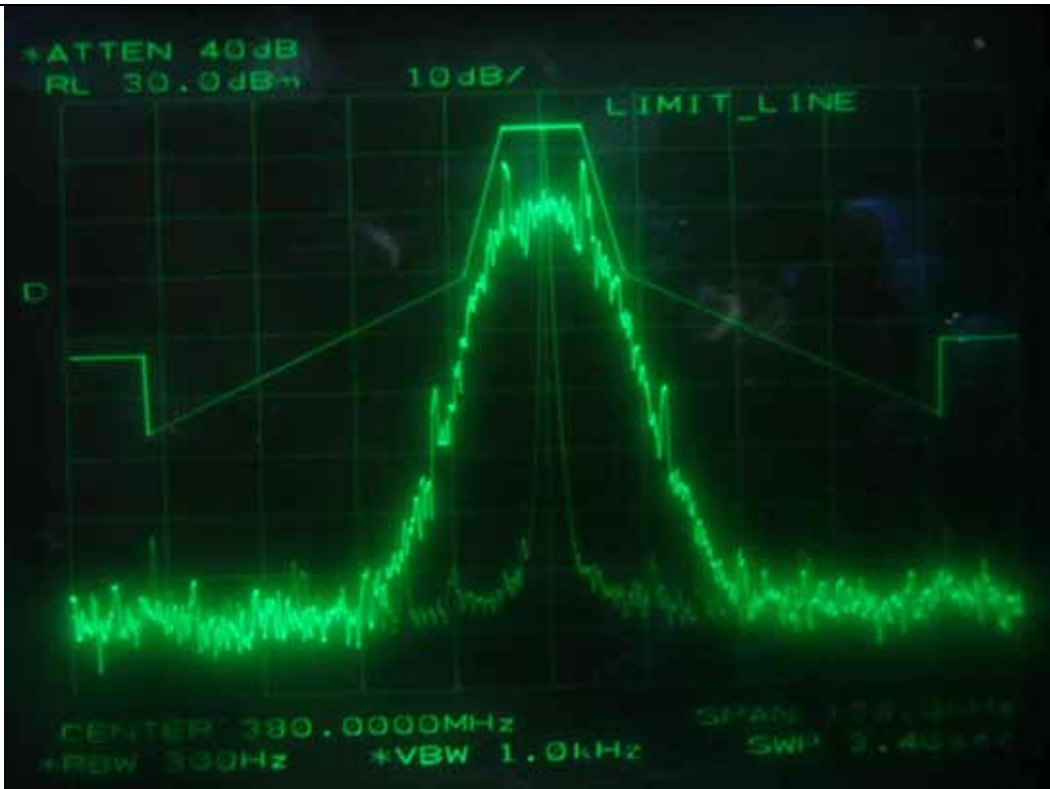
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Low Channel



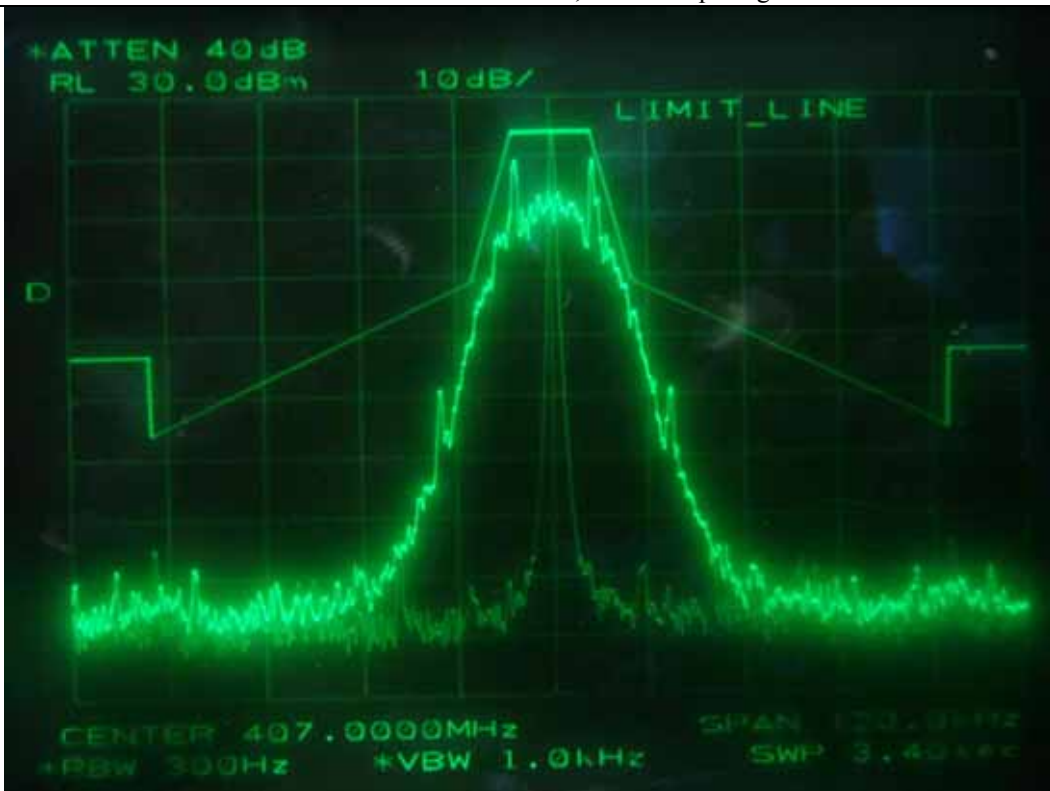
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Middle Channel



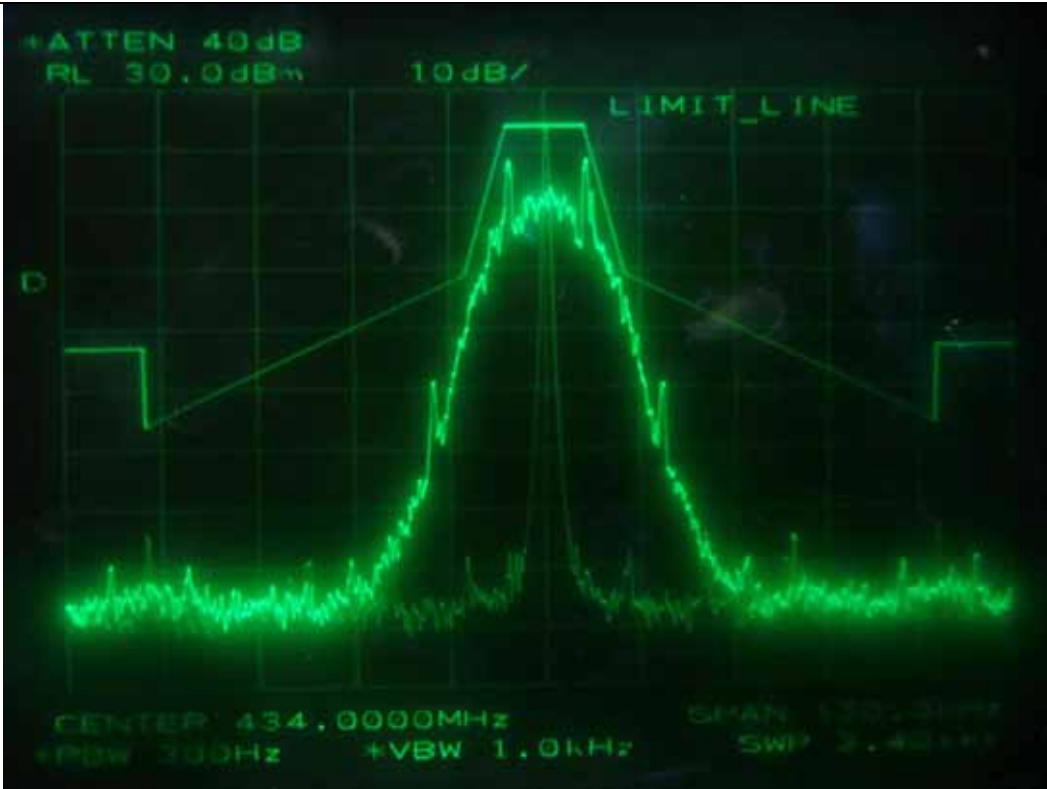
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - High Channel



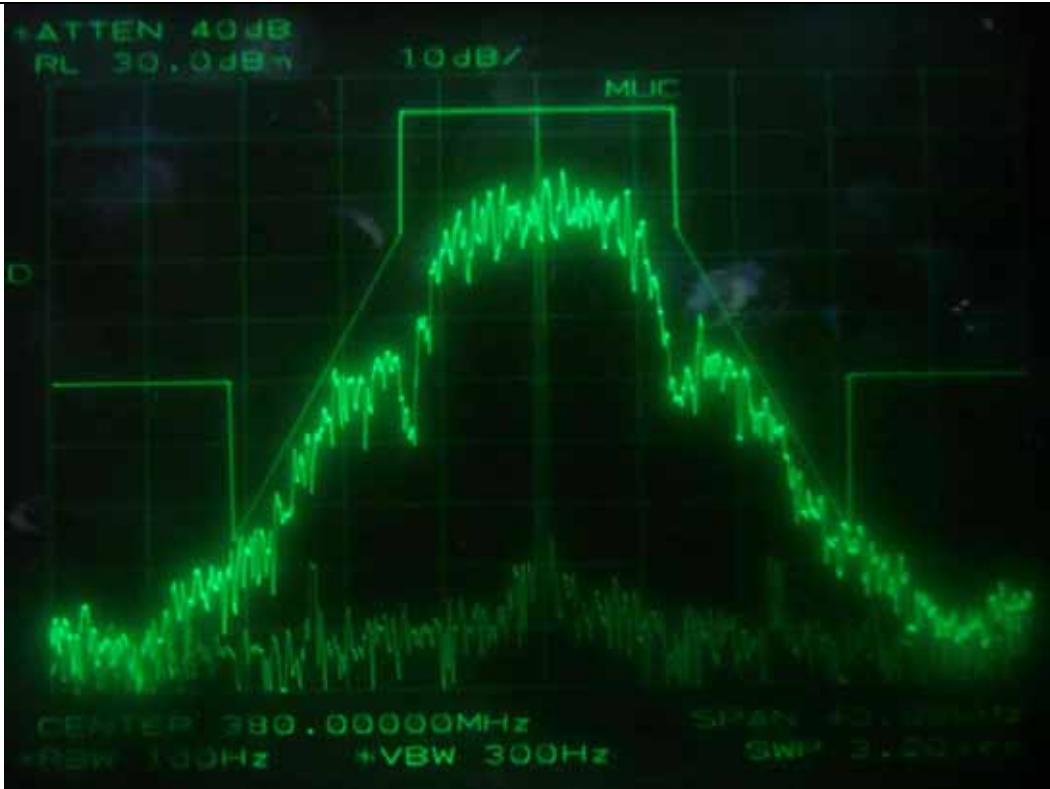
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Low Channel



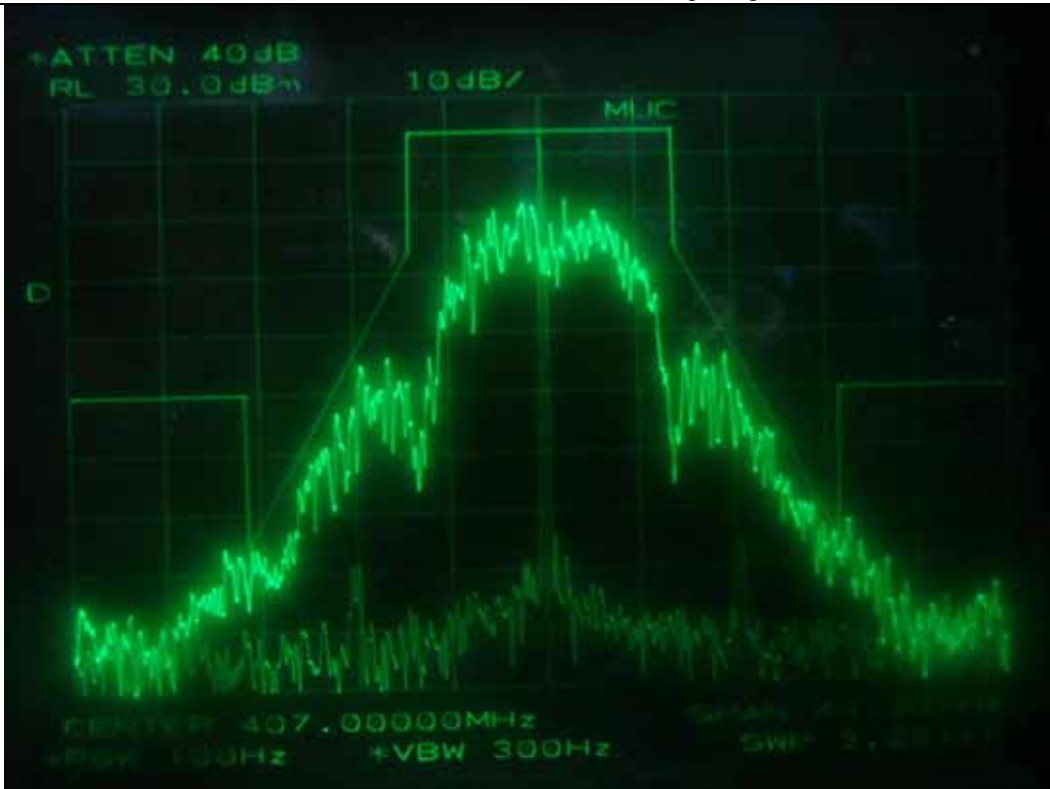
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Middle Channel



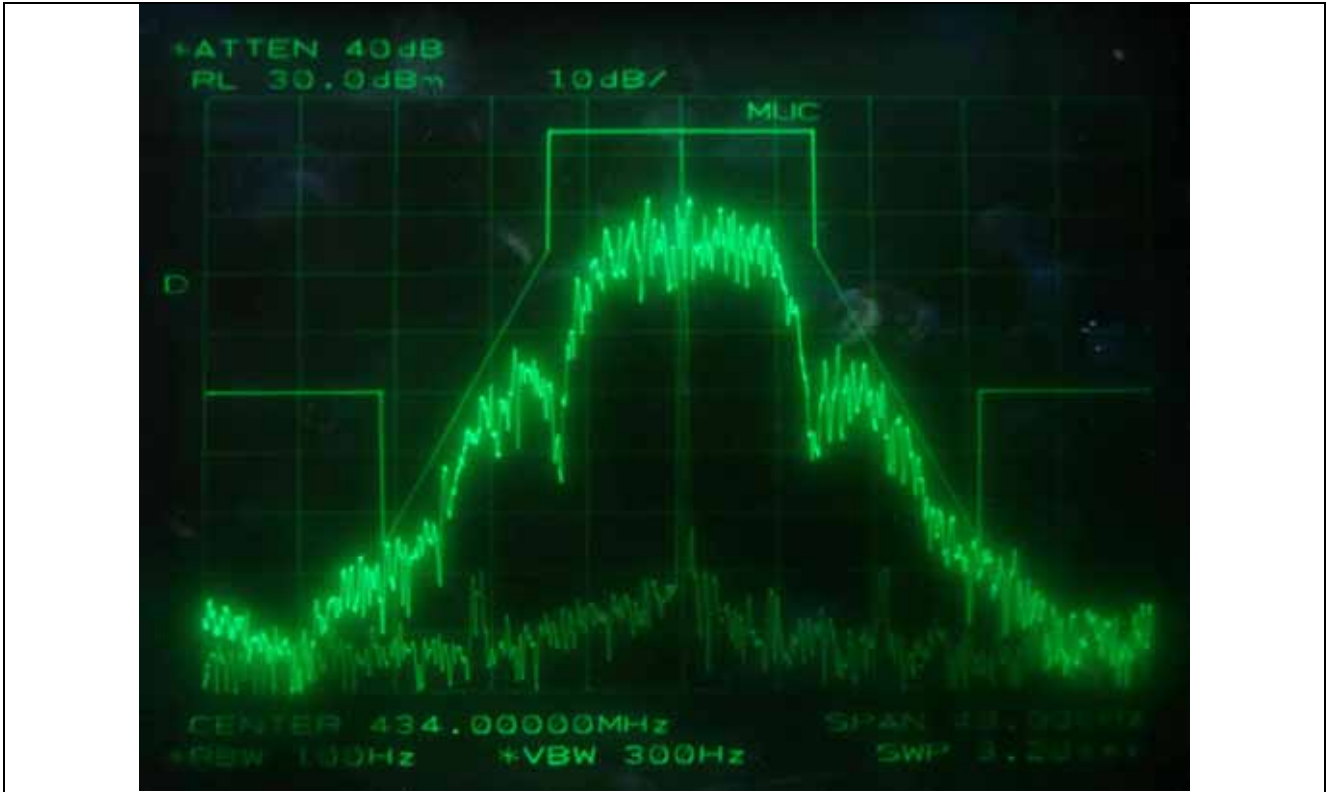
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - High Channel



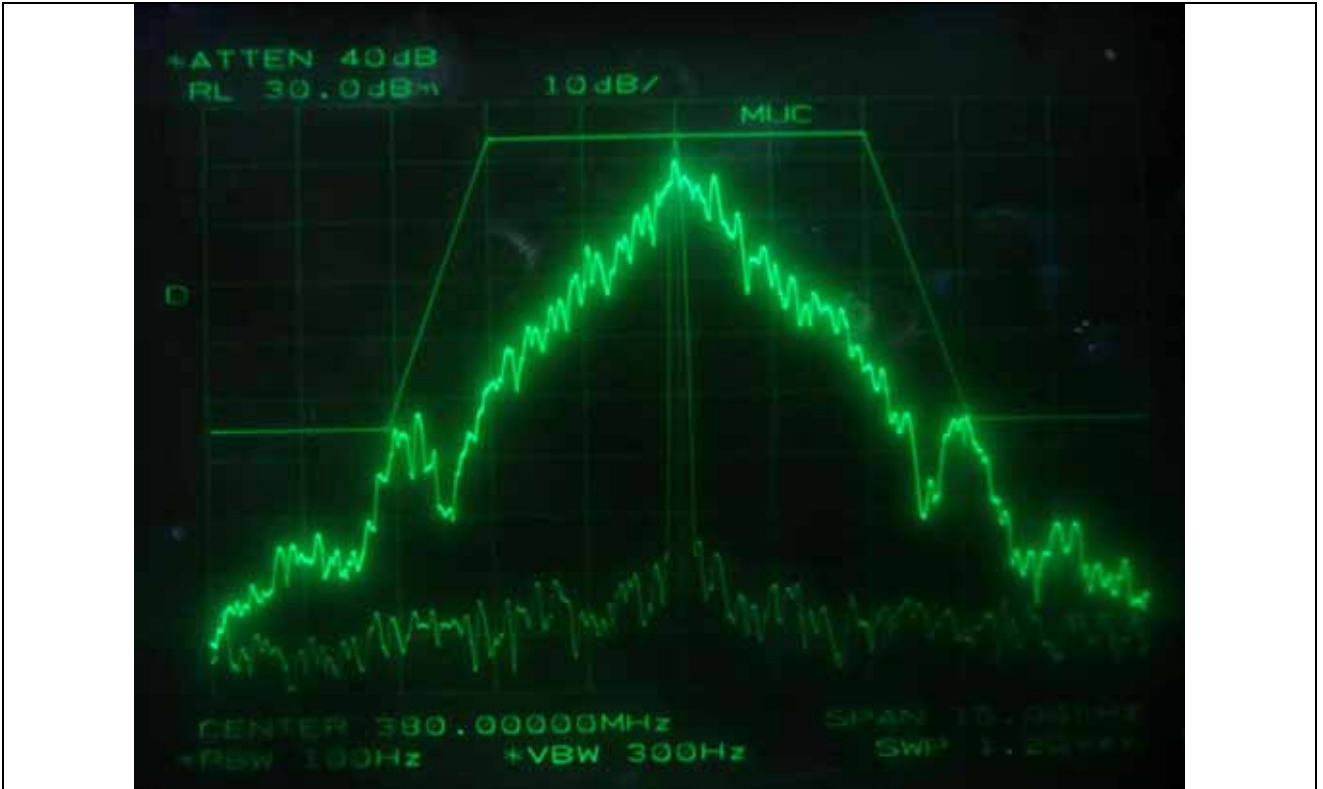
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Low Channel



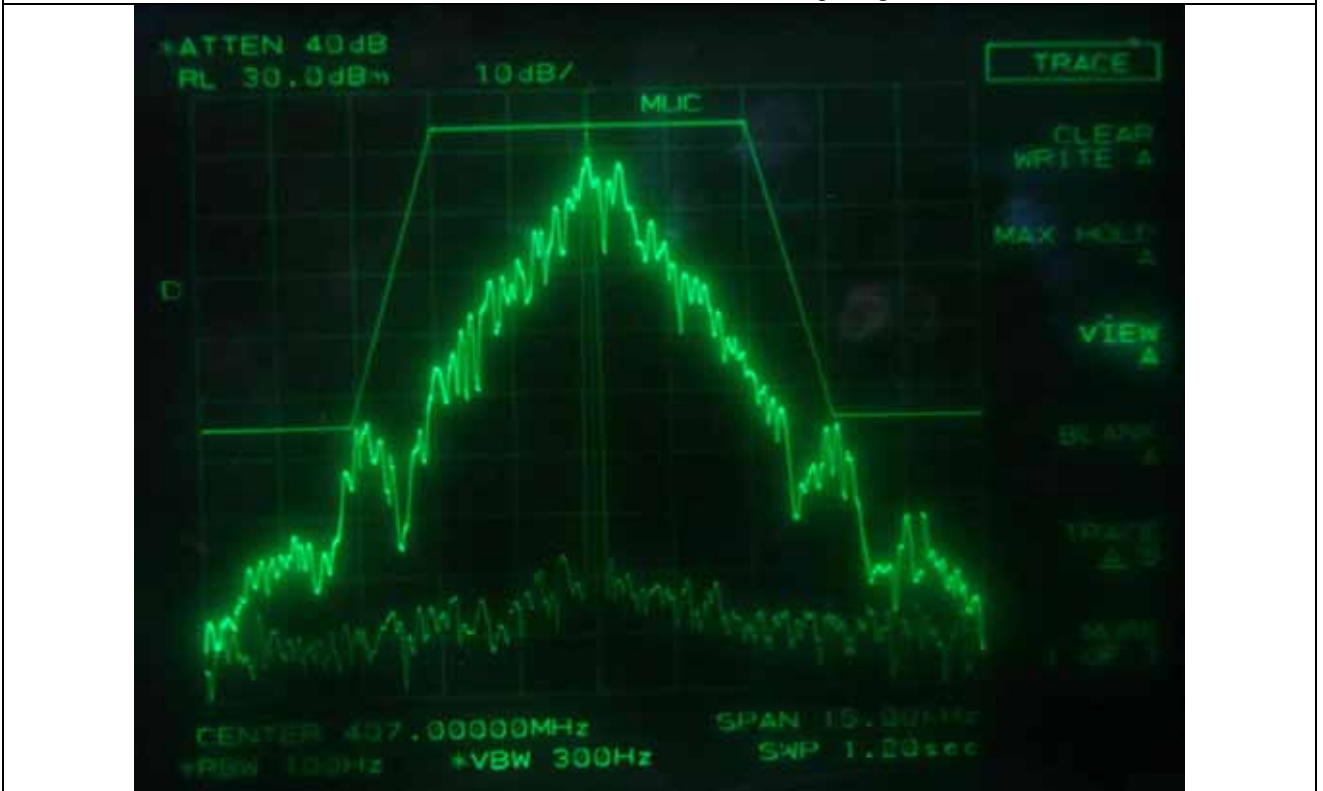
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Middle Channel



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - High Channel



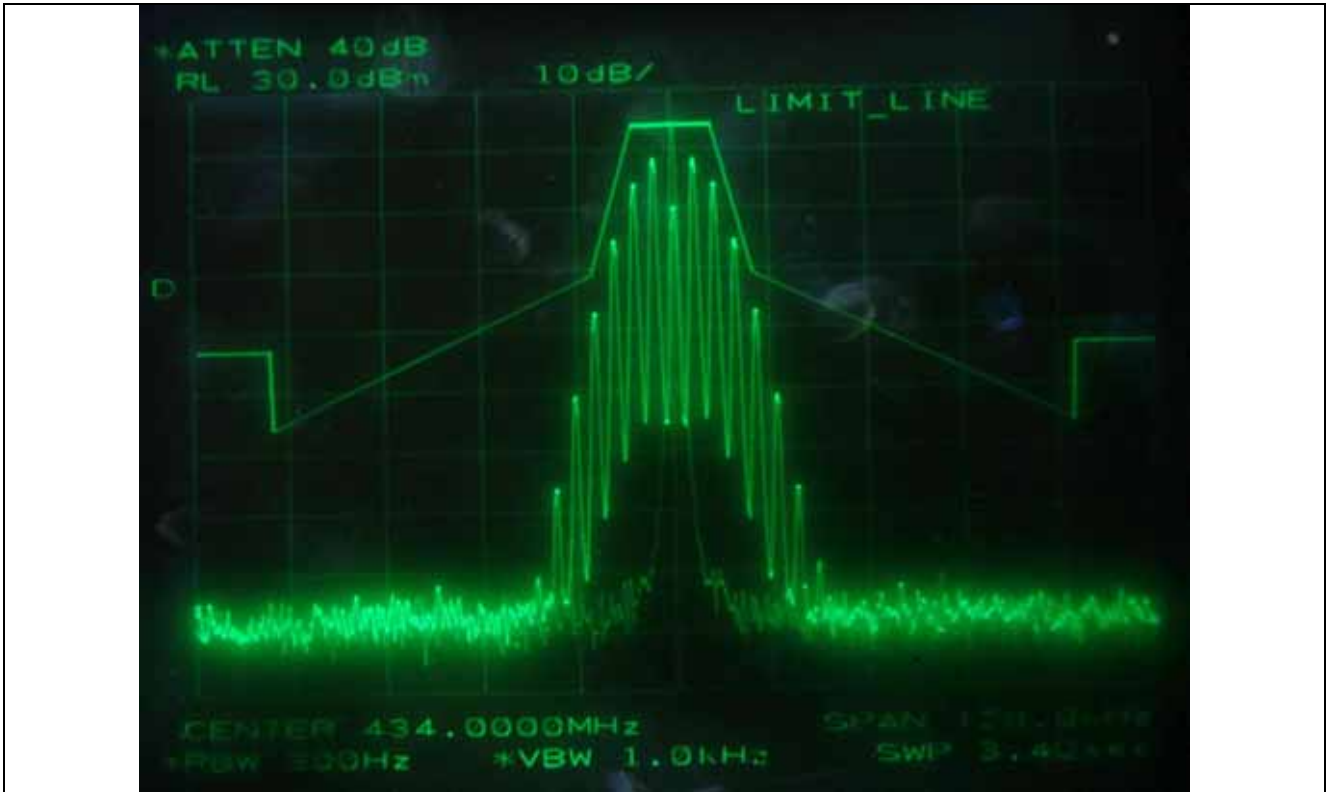
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Low Channel



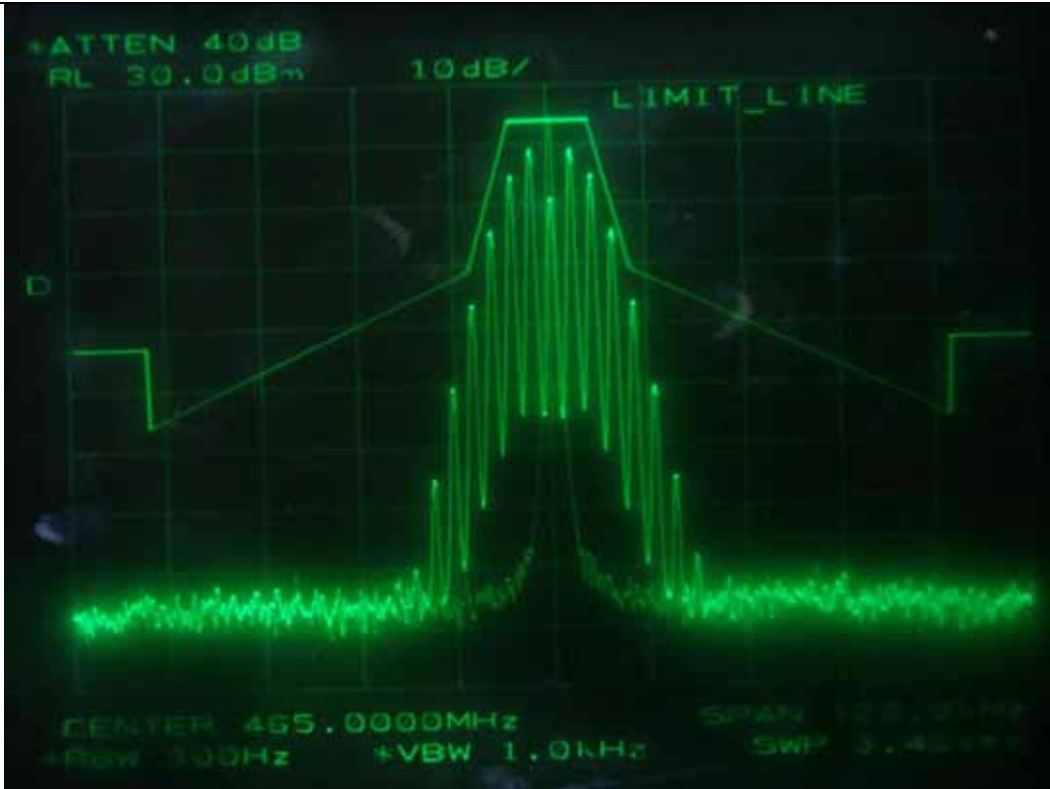
FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Middle Channel

6.4.3 Test Result for UHF-B2

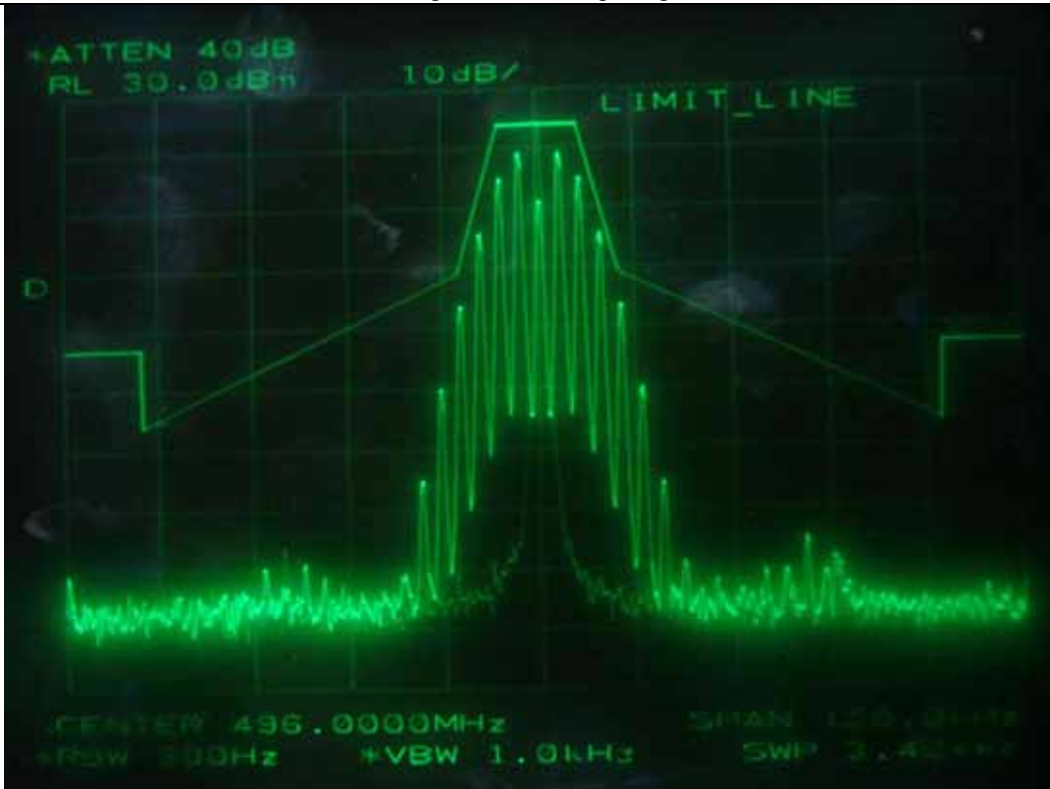
- Test Date : December 03, 2010
- Temperature : 24 °C
- Relative humidity : 47 % R.H.
- Test Result : Pass



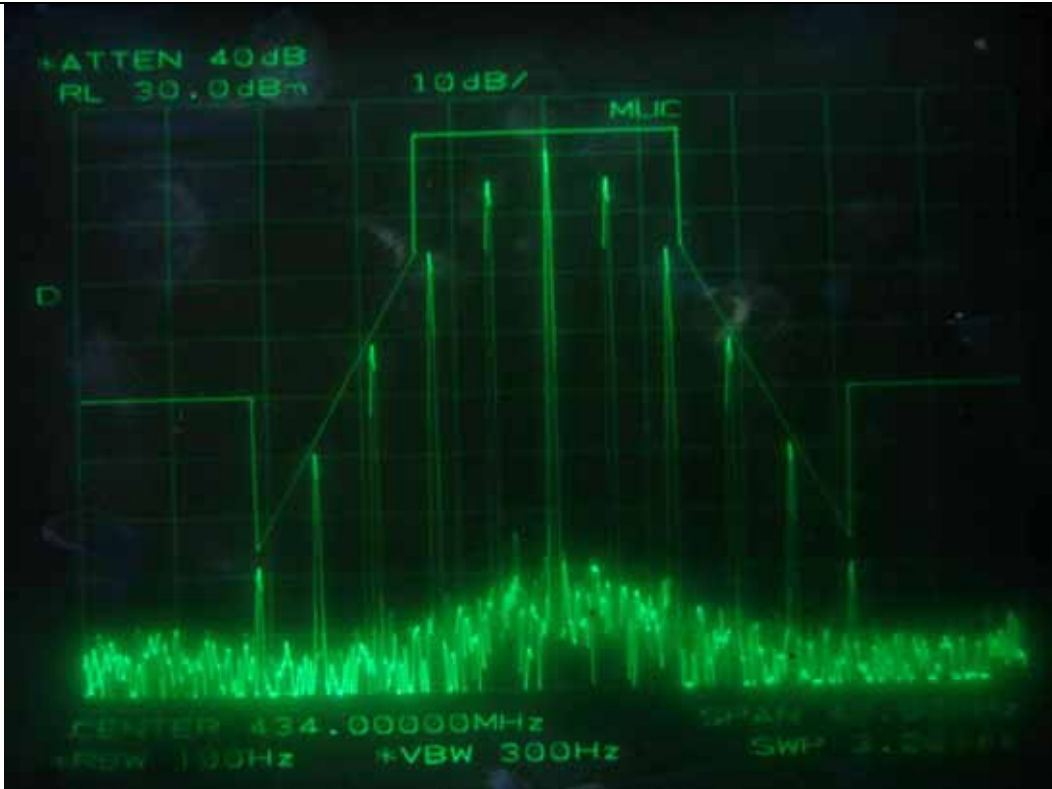
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Low Channel



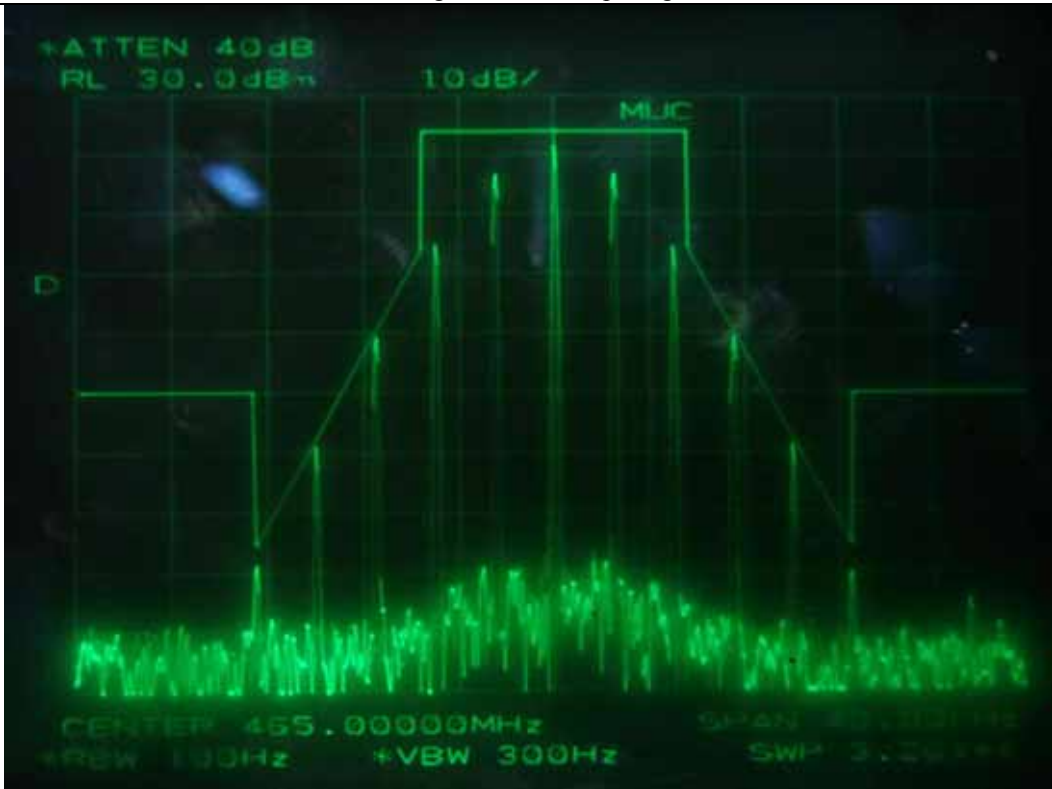
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - Middle Channel



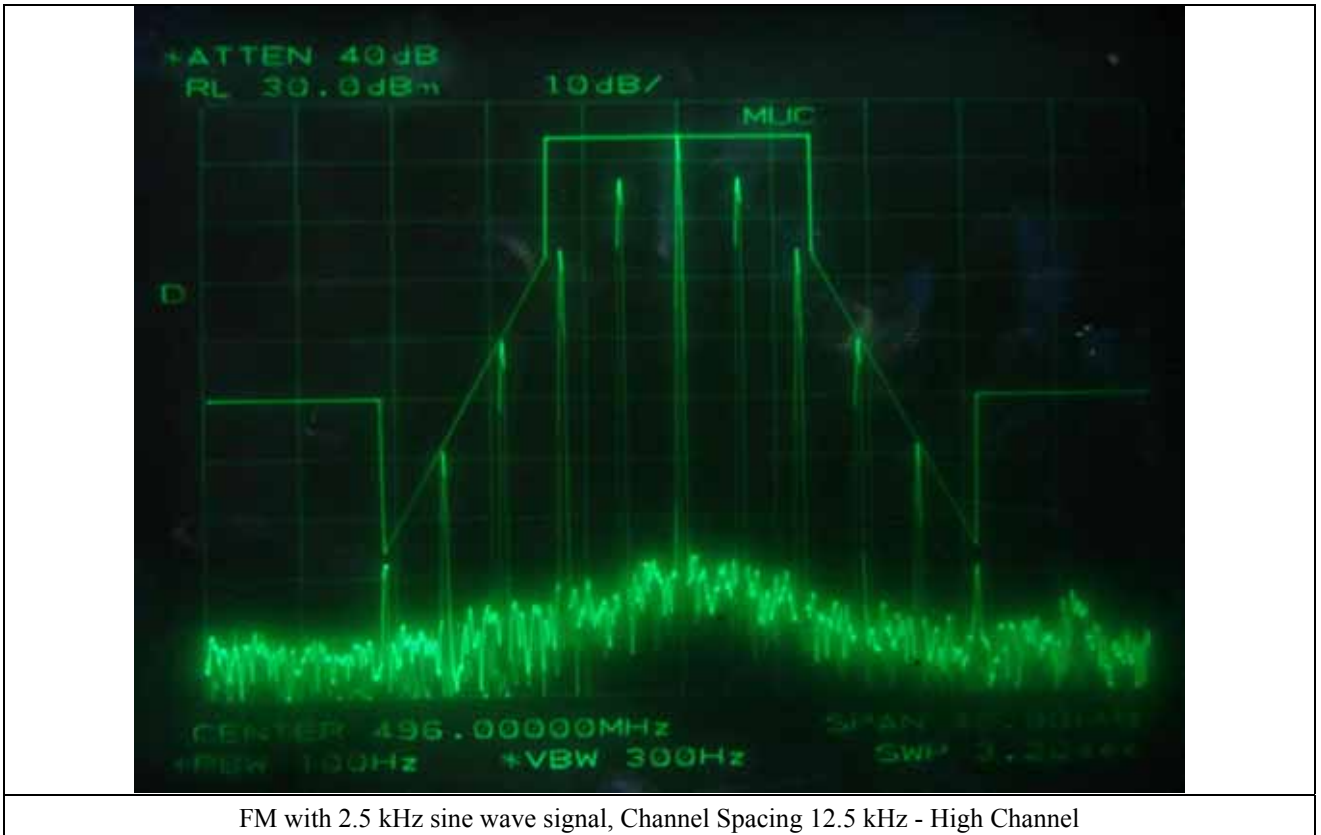
FM with 2.5 kHz sine wave signal, Channel Spacing 25 kHz - High Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Low Channel

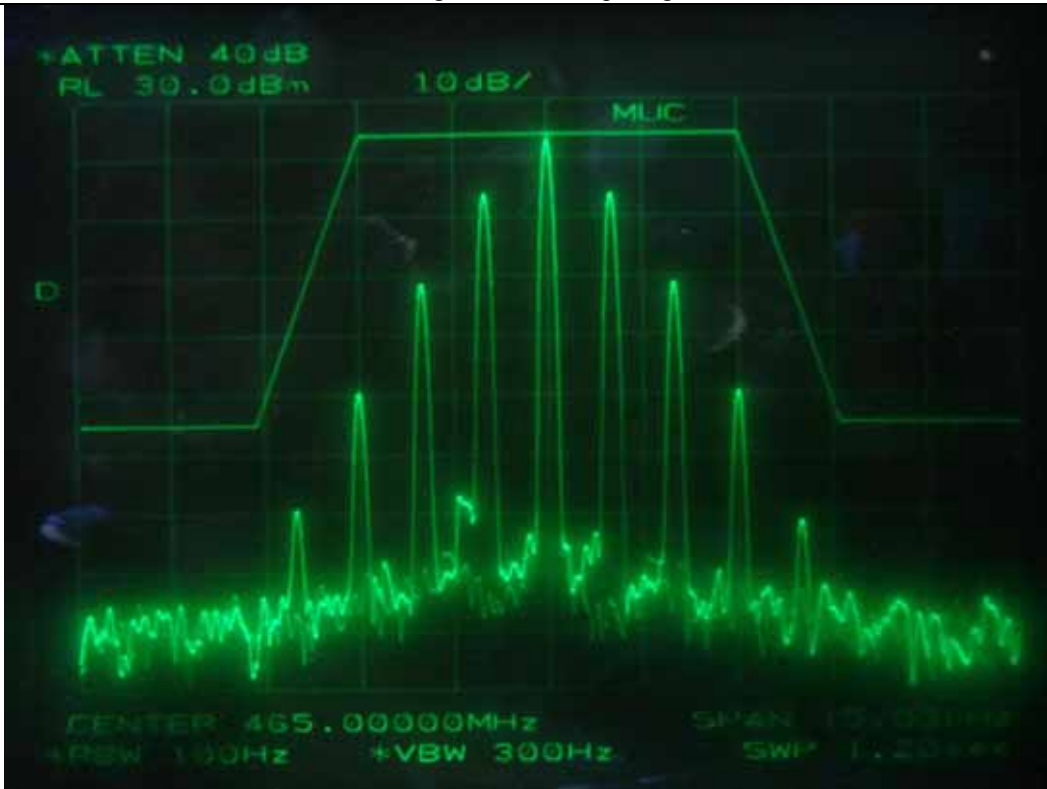


FM with 2.5 kHz sine wave signal, Channel Spacing 12.5 kHz - Middle Channel





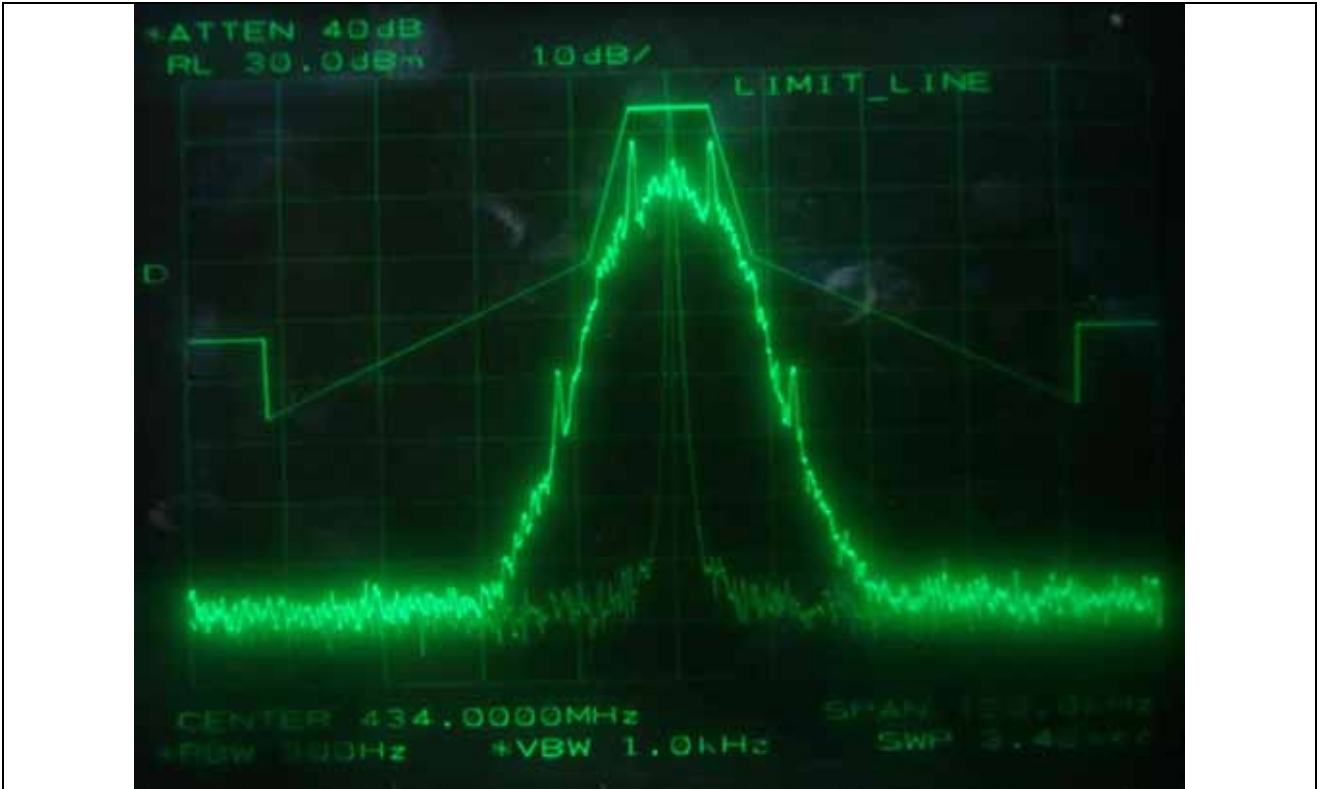
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Low Channel



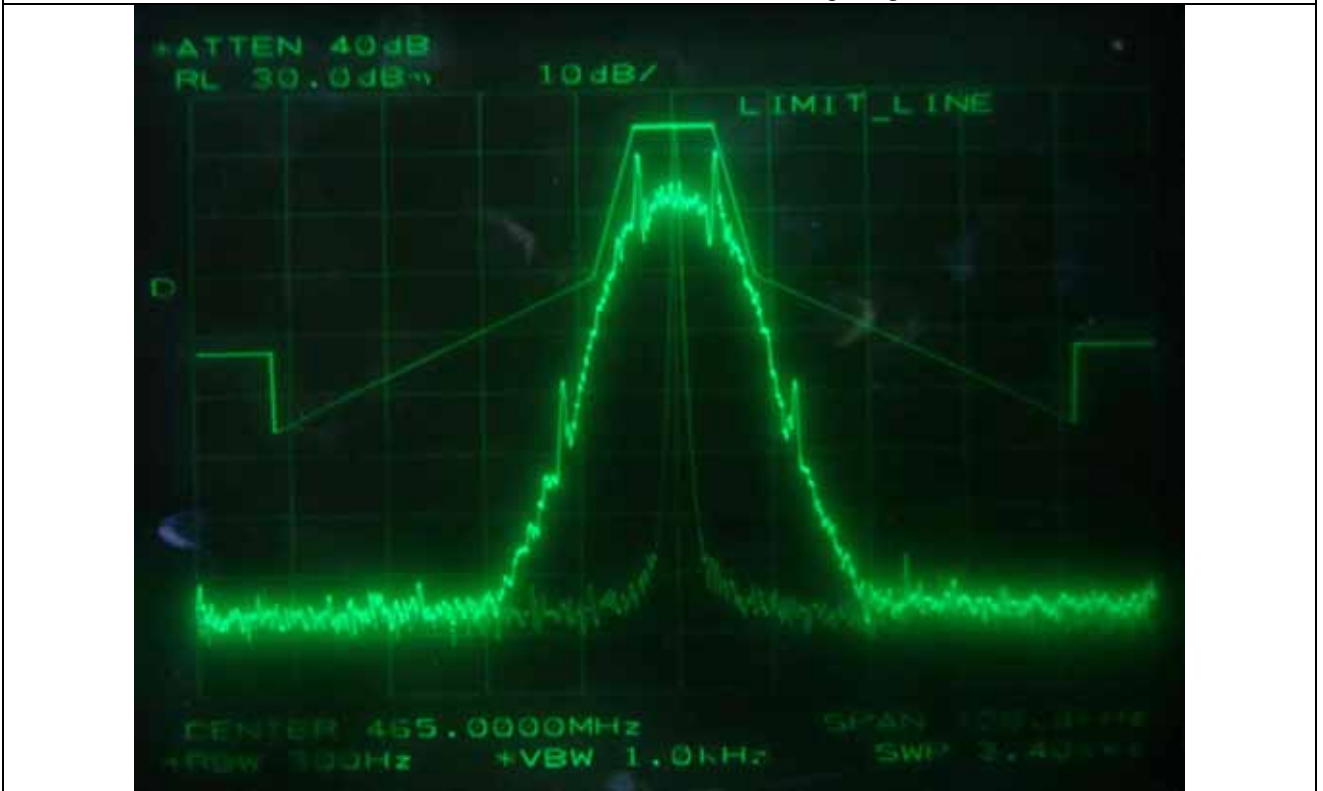
FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - Middle Channel



FM with 2.5 kHz sine wave signal, Channel Spacing 6.25 kHz - High Channel



FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Low Channel



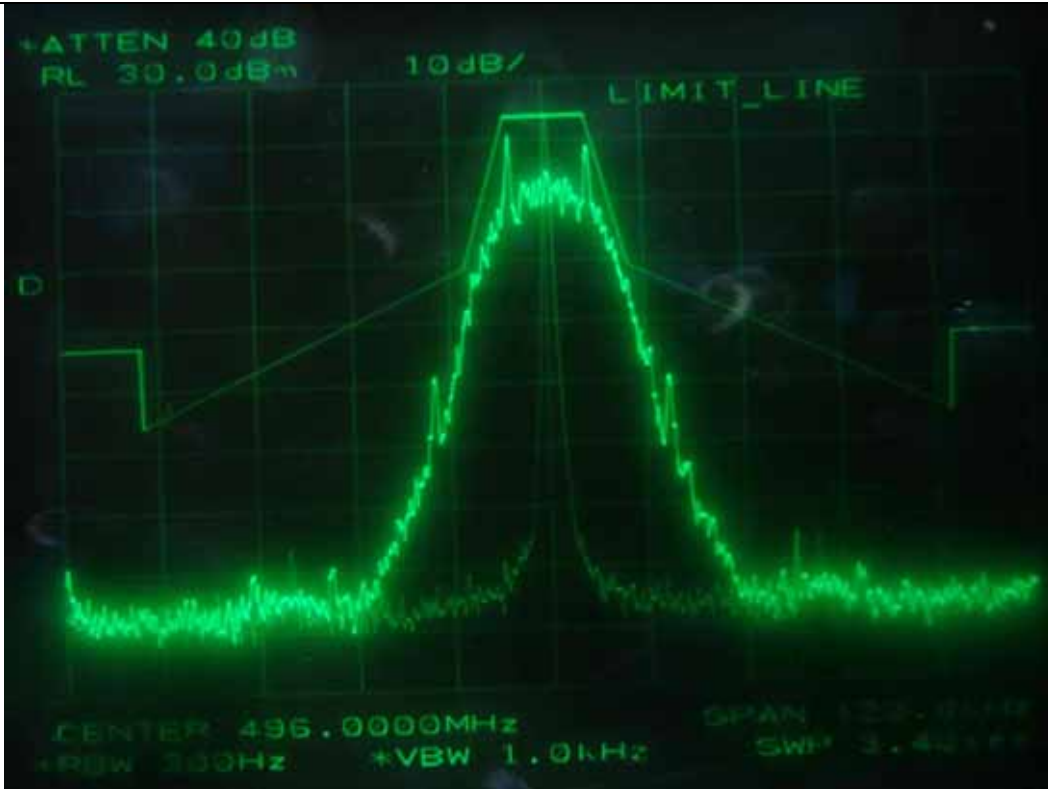
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - Middle Channel

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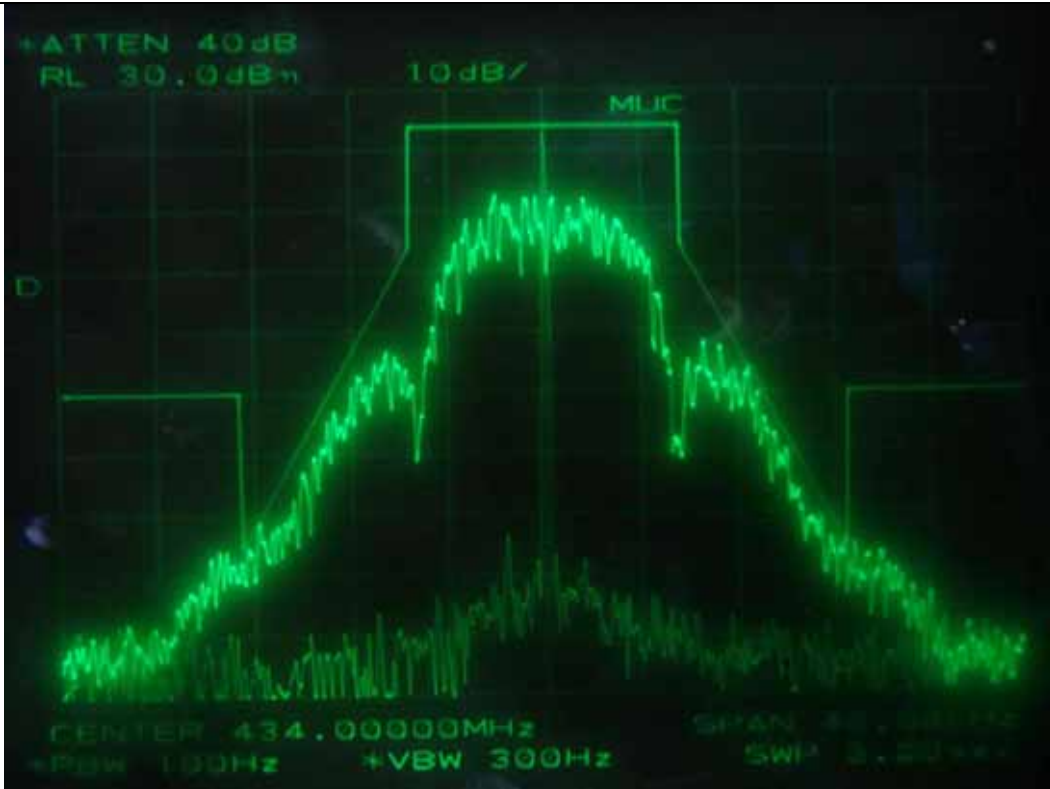
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(TEL: +82-31-746-8500, FAX: +82-31-746-8700)

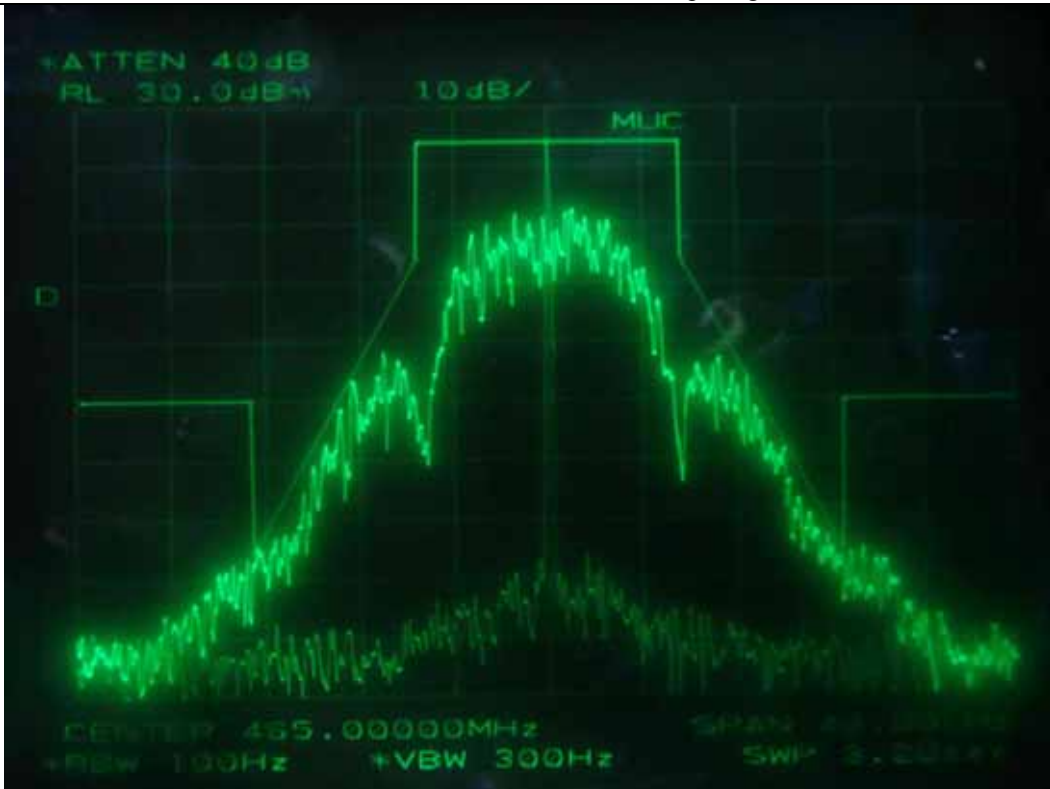
EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



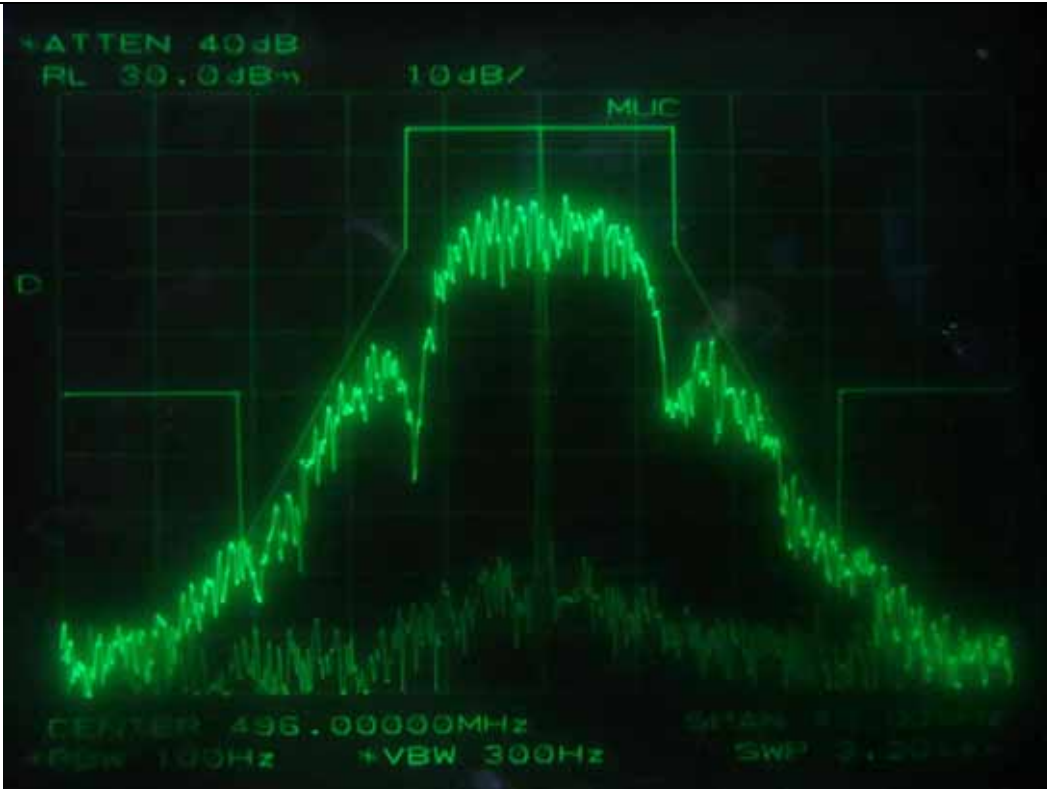
FM with an external 9 600 b/s random data source, Channel Spacing 25 kHz - High Channel



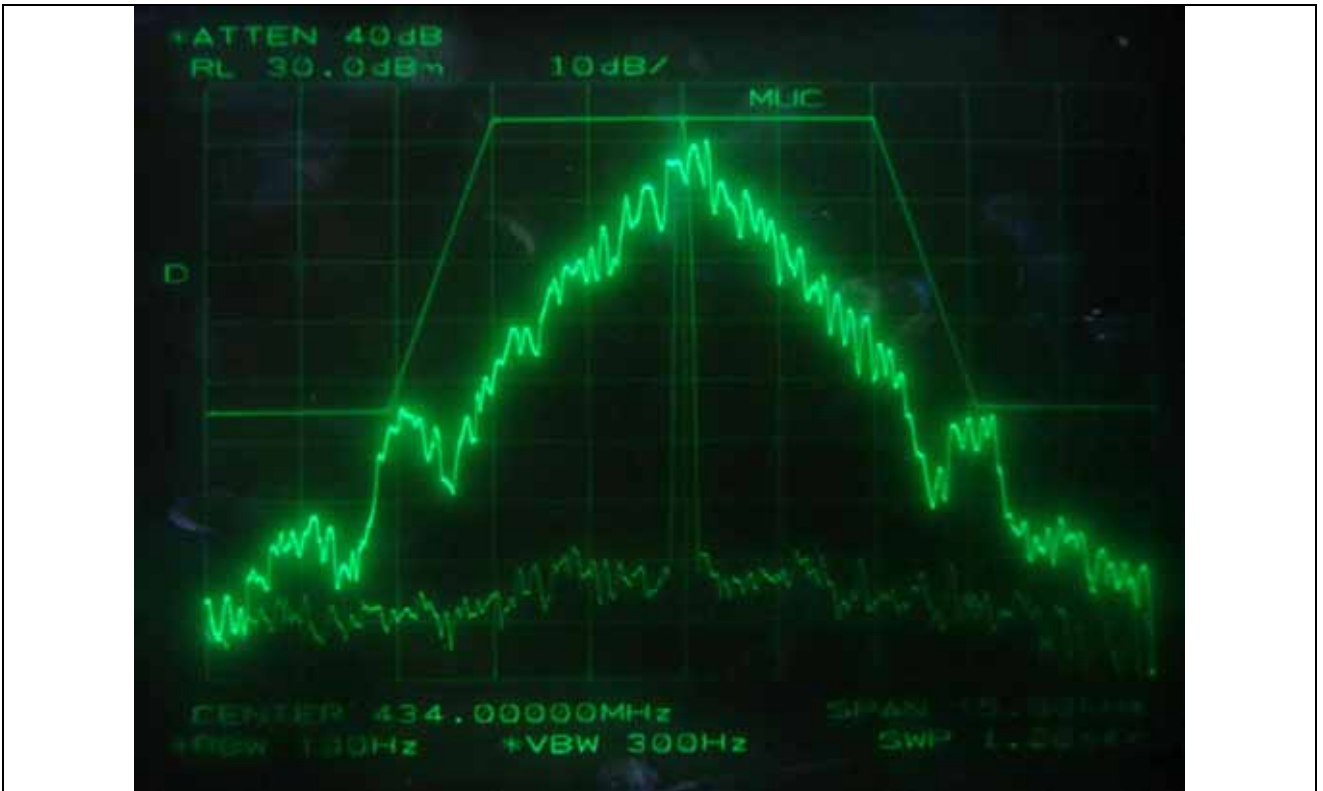
FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Low Channel



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - Middle Channel



FM with an external 9 600 b/s random data source, Channel Spacing 12.5 kHz - High Channel



FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Low Channel



FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - Middle Channel



FM with an external 9 600 b/s random data source, Channel Spacing 6.25 kHz - High Channel