Elliott

EMC Test Data

Client:	OTC Telecom	Job Number:	J37735
Model:	AirEZY2462-TRX	T-Log Number:	T37750
		Proj Eng:	David Bare
Contact:	Ray Negron		
Emissions Spec:	FCC 15.247 C	Class:	B
Immunity Spec:	N/A	Environment:	N/A

EMC Test Data

For The

OTC Telecom

Model

AirEZY2462-TRX

Client:	OTC Telecom	Job Number:	J37735
Model:	AirEZY2462-TRX	T-Log Number:	T37750
		Proj Eng:	David Bare
Contact:	Ray Negron		
Emissions Spec:	FCC 15.247 C	Class:	B
Immunity Spec:	N/A	Environment:	N/A

EUT INFORMATION

General Description

The EUT is a wire less ethernet transceiver which is designed to transmitting data. Normally, the EUT would be placed on a table top during operation. The EUT was, therefore, placed in this position during emissions testing to simulate the end user environment. The electrical rating of the EUT is 120/60 Hz.

Equipment Under Test

Manufacturer	Model	Description	Serial Number	FCC ID
OTC Telecom	AirEZY 2462-TRX	Wireless ethernet transceiver	2W10502470	MKZAZY2462TRX

Other EUT Details

EUT Enclosure

The EUT enclosure is primarily constructed of fabricated sheet steel. It measures approximately10cm wide by 16 cm deep by 0.4 cm high.

Modification History

Mod. #	Test	Date	Modificaiton
1	None		

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Contact:	Ray Negron		
Emissions Spec:	FCC 15.247 C	Class:	B
Immunity Spec:	N/A	Environment:	N/A

Test Configuration Information (1)

Local Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
HP	Pavilion	Computer	None	None
Gateway	EV500	Monitor	15009A804758	BEJCS592
HP	M-S34	Mouse	LZB82407215	DZL211029
Gateway	E06350US001-C	Keyboard	J8293M2815	None
OTC Telecom	None	Omni drictional antenna	None	None
OTC Telecom	None	Parabolic antenna	None	None

Remote Support Equipment

Manufacturer	Model	Description	Serial Number	FCC ID
None	None	None	None	None

EUT Interface Ports

		Cable(s)		
EUT Port	Connected To	Description	Shielded or Unshielded	Length(m)
Ethernet output	PC ethernet input	Ethernet Port	Unshielded	2m
BSMA input	IS-MT10LN output, IS-MT50LN input to polyphase output to receiver antenna	Antenna cable	Shielded	10m

EUT Operation During Emissions

Transmitting 2M/bit data to antenna.

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		Proj Eng:	David Bare
Contact:	Ray Negron		
Spec:	FCC 15.247 C	Class:	B

Radiated Emissions

Test Specifics

Objective: The objective of this test session is to perform final qualification testing the EUT relative to the specification(s) defined above.

Date of Test: 05/26/2000
Test Engineer: Keith Han
Test Location: SVOATS #2

Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

For radiated emissions testing between 1000 and 24000 MHz, the measurement antenna was located at 3 meters distance from the EUT.

Ambient Conditions:

Temperature: 22°C
Rel. Humidity: 61%

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	1000 - 24000MHz - Maximized Emissions	FCC	Pass	-10.8dB@1447.1 MHz
2	1000 - 24000MHz - Maximized Emissions	FCC B	Pass	-10.6dB@1447.1 MHz

Modifications Made During Testing: None

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EMC Test Data

Client:	OTC Telecom	Job Number:	J37735
Model:	AirEZY2462-TRX	T-Log Number:	T37750
		Proj Eng:	David Bare
Contact:	Ray Negron		
Spec:	FCC 15.247 C	Class:	B

Run #1: Radiated emissions, 1000-24000 MHz at 3m, Transmitting on Low Channel

Measurements made at 3m per FCC requirements. **With Omni Dirctional Antenna**

10dB duty cycle correction factor was applied to Avg. measurement.

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1447.100	63.2	h	74.0	-10.8	PK	188	1.4	
1688.300	62.9	v	74.0	-11.1	PK	210	1.0	
1447.100	62.5	v	74.0	-11.5	PK	132	1.3	
1688.300	62.0	h	74.0	-12.0	PK	157	1.5	
1447.100	40.0	h	54.0	-14.0	Avg	188	1.4	
1447.100	39.9	v	54.0	-14.1	Avg	132	1.3	
1688.300	39.6	h	54.0	-14.4	Avg	157	1.5	
1688.300	39.6	v	54.0	-14.4	Avg	210	1.0	
4824.000	38.6	h	54.0	-15.4	Avg	144	1.2	
1205.900	58.5	h	74.0	-15.5	PK	91	1.0	
1205.900	57.8	v	74.0	-16.2	PK	159	2.0	
4824.000	37.0	v	54.0	-17.0	Avg	170	2.0	
1205.900	35.7	h	54.0	-18.3	Avg	91	1.0	
1205.900	35.0	v	54.0	-19.0	Avg	159	2.0	
4824.000	54.5	h	74.0	-19.5	PK	144	1.2	
4824.000	53.9	v	74.0	-20.1	PK	170	2.0	
9647.000	53.3	h	74.0	-20.7	PK	162	1.0	
9647.000	52.9	v	74.0	-21.1	PK	150	1.0	
7235.000	51.6	h	74.0	-22.4	PK	185	1.3	
7235.000	51.3	v	74.0	-22.7	PK	208	1.1	
9647.000	30.6	v	54.0	-23.4	Avg	150	1.0	
9647.000	30.0	h	54.0	-24.0	Avg	162	1.0	
7235.000	29.0	h	54.0	-25.0	Avg	185	1.3	
7235.000	28.0	v	54.0	-26.0	Avg	208	1.1	
2390.000	54.0	h	54.0	0.0	Avg	178	1.0	See Note 1
2390.000	66.9	h	74.0	-7.1	PK	178	1.0	See Note 1
2390.000	54.0	v	54.0	0.0	Avg	178	1.0	See Note 1
2390.000	66.9	v	74.0	-7.1	PK	178	1.0	See Note 1

Note 1:	Measured at band edge.
Note 2:	

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EMC Test Data

Client:	OTC Telecom	Job Number:	J37735
Model:	AirEZY2462-TRX	T-Log Number:	T37750
		Proj Eng:	David Bare
Contact:	Ray Negron		
Spec:	FCC 15.247 C	Class:	B

Run #2: Radiated emissions, 1000-24000 MHz at 3m, Transmitting on Low Channel

Measurements made at 3m per FCC requirements. **With Parabolic Antenna**

10dB duty cycle correction factor was applied to Avg. measurement.

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBuV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
1447.100	63.4	h	74.0	-10.6	PK	169	1.1	
4824.000	42.8	v	54.0	-11.2	Avg	203	1.0	
1688.300	62.8	v	74.0	-11.2	PK	67	1.0	
1447.100	62.3	v	74.0	-11.7	PK	156	1.0	
1688.300	62.2	h	74.0	-11.8	PK	137	1.1	
1447.100	40.2	h	54.0	-13.8	Avg	169	1.1	
1447.100	40.0	v	54.0	-14.0	Avg	156	1.0	
1688.300	39.7	v	54.0	-14.3	Avg	67	1.0	
1688.300	39.6	h	54.0	-14.4	Avg	137	1.1	
4824.000	58.8	v	74.0	-15.2	PK	203	1.0	
1205.900	58.6	h	74.0	-15.4	PK	213	1.2	
1205.900	58.1	v	74.0	-15.9	PK	175	1.2	
1205.900	36.0	h	54.0	-18.0	Avg	213	1.2	
4824.000	35.8	h	54.0	-18.2	Avg	160	2.0	
1205.900	35.0	v	54.0	-19.0	Avg	175	1.2	
4824.000	53.7	h	74.0	-20.3	PK	160	2.0	
9647.000	52.9	h	74.0	-21.1	PK	211	1.0	
9647.000	52.9	v	74.0	-21.1	PK	178	1.0	
7235.000	52.2	v	74.0	-21.8	PK	258	1.0	
7235.000	51.5	h	74.0	-22.5	PK	188	1.1	
9647.000	30.6	v	54.0	-23.4	Avg	178	1.0	
9647.000	30.2	h	54.0	-23.8	Avg	211	1.0	
7235.000	29.0	h	54.0	-25.0	Avg	188	1.1	
7235.000	28.7	v	54.0	-25.3	Avg	258	1.0	
2390.000	54.0	h	54.0	0.0	Avg	178	1.0	See Note 1
2390.000	66.9	h	74.0	-7.1	PK	178	1.0	See Note 1
2390.000	54.0	v	54.0	0.0	Avg	178	1.0	See Note 1
2390.000	66.9	v	74.0	-7.1	PK	178	1.0	See Note 1

Note 1:	Measured at band edge.
Note 2:	

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EMC Test Data

Client:	OTC Telecom	Job Number:	J37735
Model:	AirEZY2462-TRX	T-Log Number:	T37750
		Proj Eng:	David Bare
Contact:	Ray Negron		
Spec:	FCC 15.247 C	Class:	N/A

Conducted Antenna Port Emissions

Test Specifics

Objective: The objective of this test session is to perform final qualification testing the EUT relative to the specification(s) defined above.

Date of Test: 06/02/2000
Test Engineer: Pamela Galvan
Test Location: Chamber #2 and SVOATS #2

Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.

For radiated emissions testing the measurement antenna was located 3 meters from the EUT.

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators used.

Ambient Conditions:

Temperature: 17°C
Rel. Humidity: 70%

Summary of Results

Run #	Test Performed	Limit	Result	Margin
1	RE, 30 - 25000 MHz - Spurious Emissions In Restricted Bands	FCC Part 15.209 / 15.247(c)	Pass	
2	6dB Bandwidth	15.247(a)	Pass	Measured B/W
3	Output Power	15.247(b)	Pass	
4	Power Spectral Density (PSD)	15.247(d)	Pass	

Modifications Made During Testing: None

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EMC Test Data

Client:	OTC Telecom	Job Number:	J37735
Model:	AirEZY2462-TRX	T-Log Number:	T37750
		Proj Eng:	David Bare
Contact:	Ray Negron		
Spec:	FCC 15.247 C	Class:	N/A

Run #1: Radiated Spurious Emissions, 30-25000 MHz. Low Channel @ 2412 MHz

10dB duty cycle correction factor was applied to Average measurements.

	H	V
Fundamental emission level @ 3m in 100kHz RBW:		
Limit for emissions outside of restricted bands:	-20 dBµV/m	

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4824.047	63.4	h	74.0	-10.6	Pk	350	1.0	
4824.047	50.4	h	54.0	-3.6	Avg	350	1.0	
7236.100	56.2	h	74.0	-17.8	Pk	180	1.1	
7236.100	35.4	h	54.0	-18.6	Avg	180	1.1	
9648.000	49.7	h	74.0	-24.3	Pk	180	1.1	
9648.000	30.5	h	54.0	-23.5	Avg	180	1.1	
1662.780	63.9	h	74.0	-10.1	Pk	270	1.0	
1662.780	44.8	h	54.0	-9.2	Avg	270	1.0	
1662.780	67.8	v	74.0	-6.2	Pk	270	1.0	
1662.780	46.7	v	54.0	-7.3	Avg	270	1.0	
4824.047	59.4	v	74.0	-14.6	Pk	270	1.0	
4824.047	46.9	v	54.0	-7.1	Avg	270	1.0	
7236.100	50.4	v	74.0	-23.6	Pk	180	1.0	
7236.100	31.8	v	54.0	-22.2	Avg	180	1.0	
9648.000	51.5	v	74.0	-22.5	Pk	180	1.0	
9648.000	29.8	v	54.0	-24.2	Avg	180	1.0	

Note 1: For emissions in restricted bands, the limit of 15.209 was used. For all other emissions, the limit was set 20dB below the level of the fundamental.

Run #2: Signal Bandwidth

Channel	Frequency (MHz)	Resolution Bandwidth	6dB Signal Bandwidth	Graph reference #
Low	2412	100kHz	8.73 MHz	Graph #2

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EMC Test Data

Client:	OTC Telecom	Job Number:	J37735
Model:	AirEZY2462-TRX	T-Log Number:	T37750
		Proj Eng:	David Bare
Contact:	Ray Negron		
Spec:	FCC 15.247 C	Class:	N/A

Run #3: Output Power

Channel	Frequency (MHz)	Res BW	Output Power	Graph reference #
Low	2412	Power Meter	17dBm	N/A

Run #4: Power Spectral Density

Channel	Frequency (MHz)	Res BW	P.S.D. (averaged over 1 second in a 3kHz bandwidth)	Graph reference #
Low	2412	3kHz	0 dBm	Graph #4a and #4b

Radiated Emissions, 1 - 6.5 GHz, 26-May-00 06:19 PM
Engineer: Khan

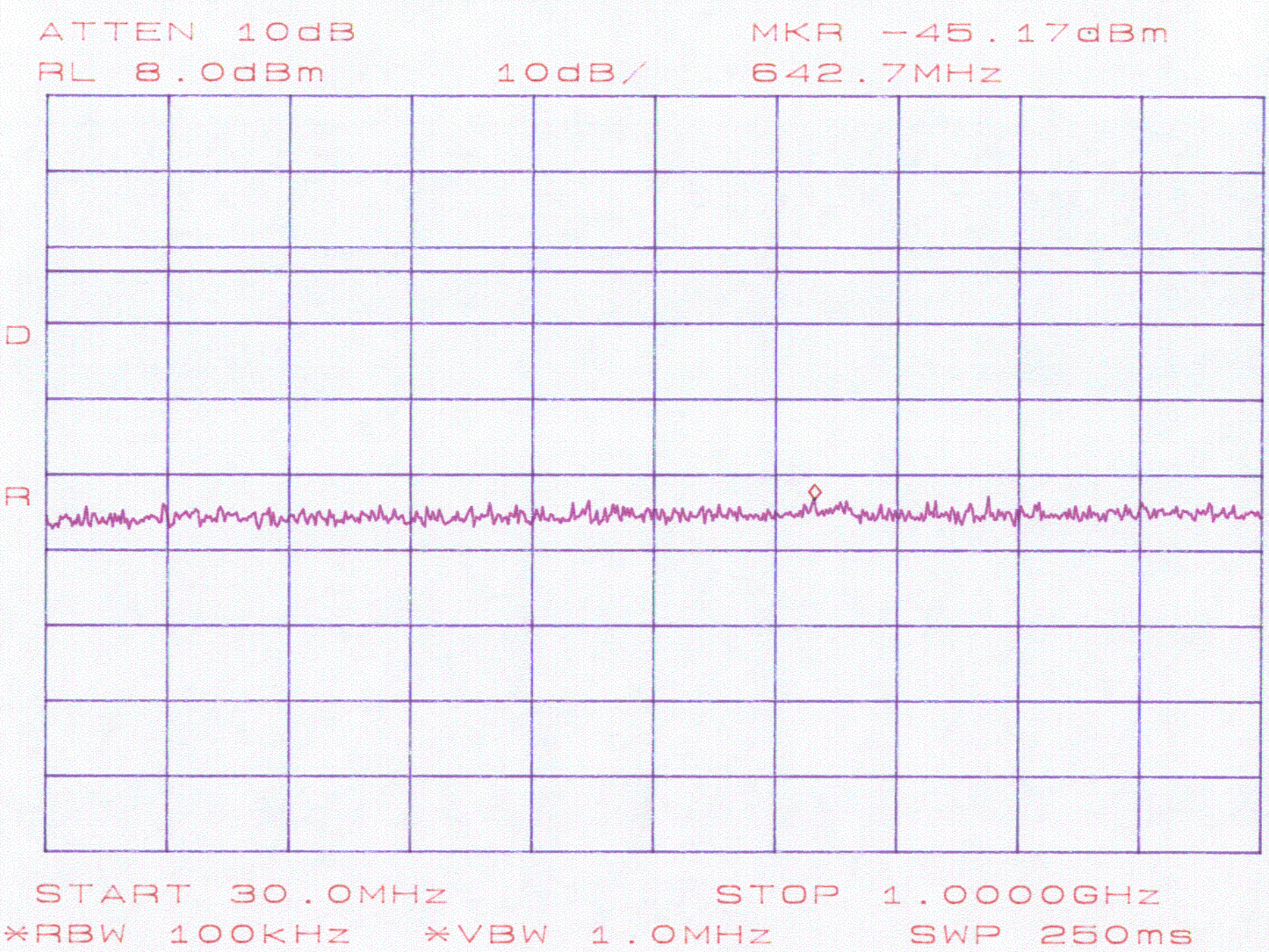
Manufacturer	Description	Model #	Assett #	Cal interval	Last Calibrated	Cal Due
EMCO	D. Ridge Horn Antenna, 1-18GHz	3115	868	12	09/25/1999	09/25/2000
Hewlett Packard	EMC Spectrum Analyzer, Opt. 026 ¸9 KHz -26.5GHz	8593EM	1141	12	12/22/1999	12/22/2000
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	870	12	11/15/1999	11/15/2000

Radiated Emissions, 30 - 25000 MHz, 03-Jun-00 01:22 AM
Engineer: Pamela

Manufacturer	Description	Model #	Assett #	Cal interval	Last Calibrated	Cal Due
EMCO	D. Ridge Horn Antenna, 1-18GHz	3115	487	12	03/24/2000	03/24/2001
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	263, (F303)	12	08/03/1999	08/03/2000
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz		284			
Filtek	Filter		957			
Narda West	Filter		247			
Narda West	30 dB pad					
SHF Cables			257 and 258			

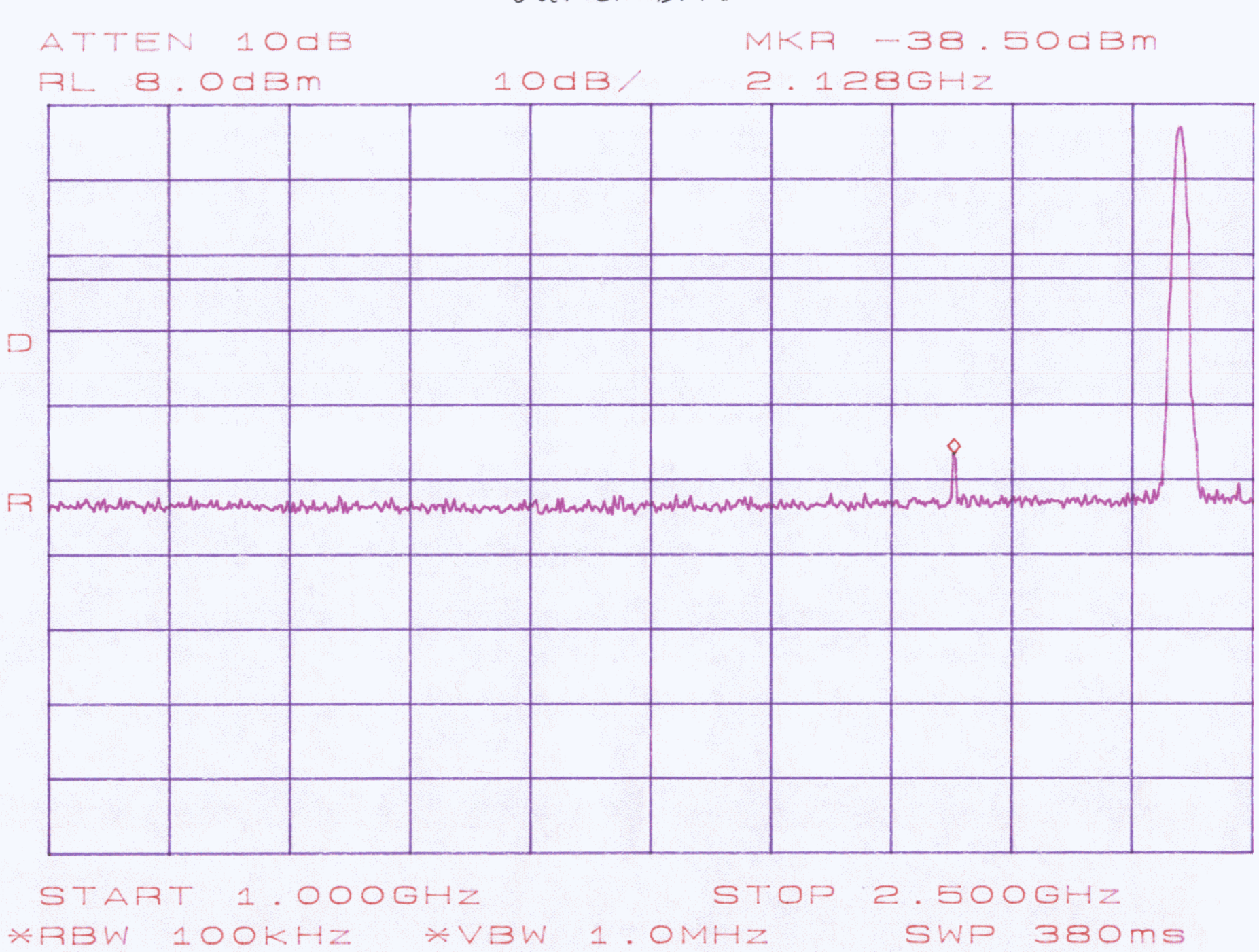
Graph #1a

OUT-OF-BAND



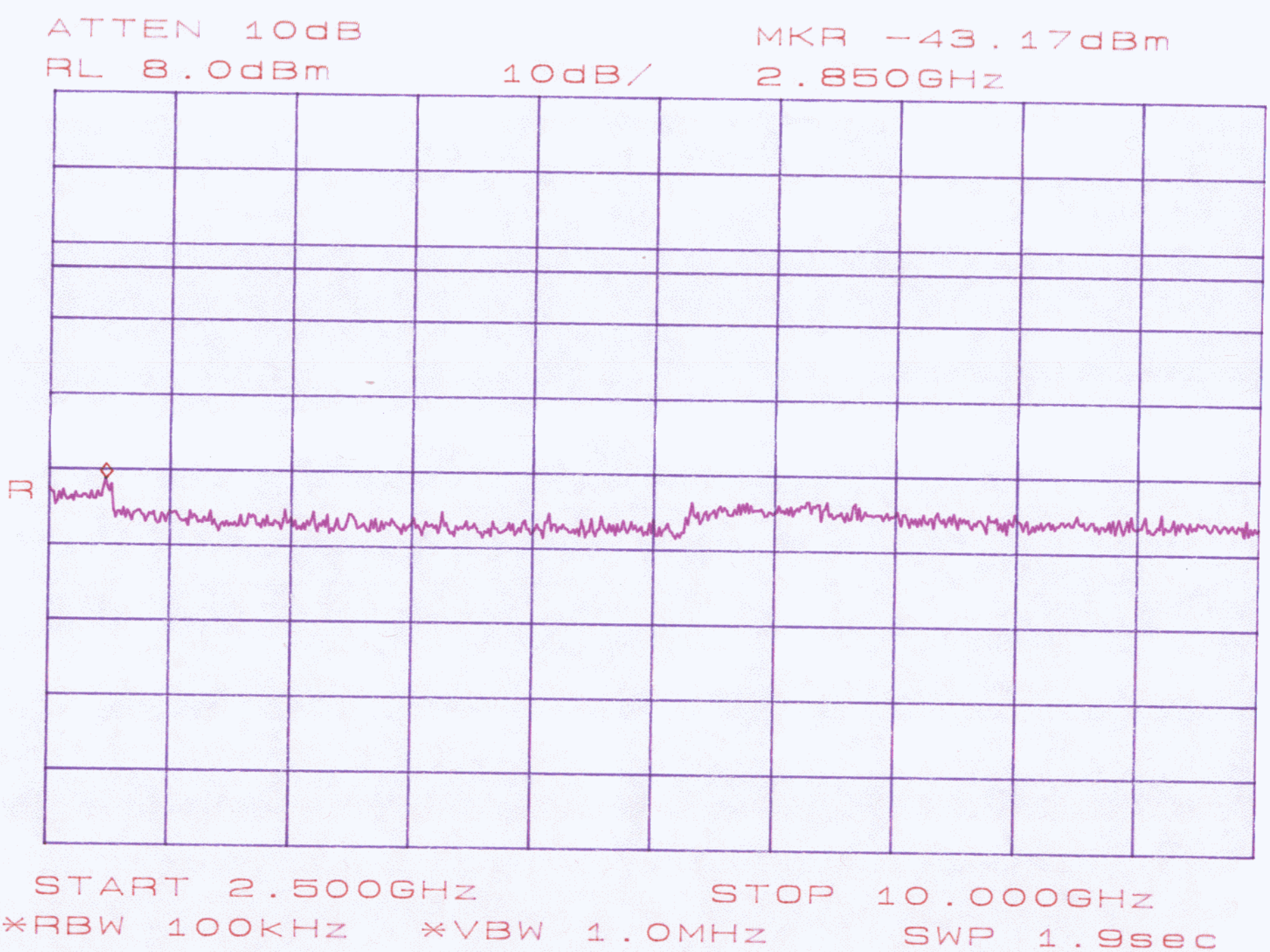
Graph #16

OUT-OF-BAND



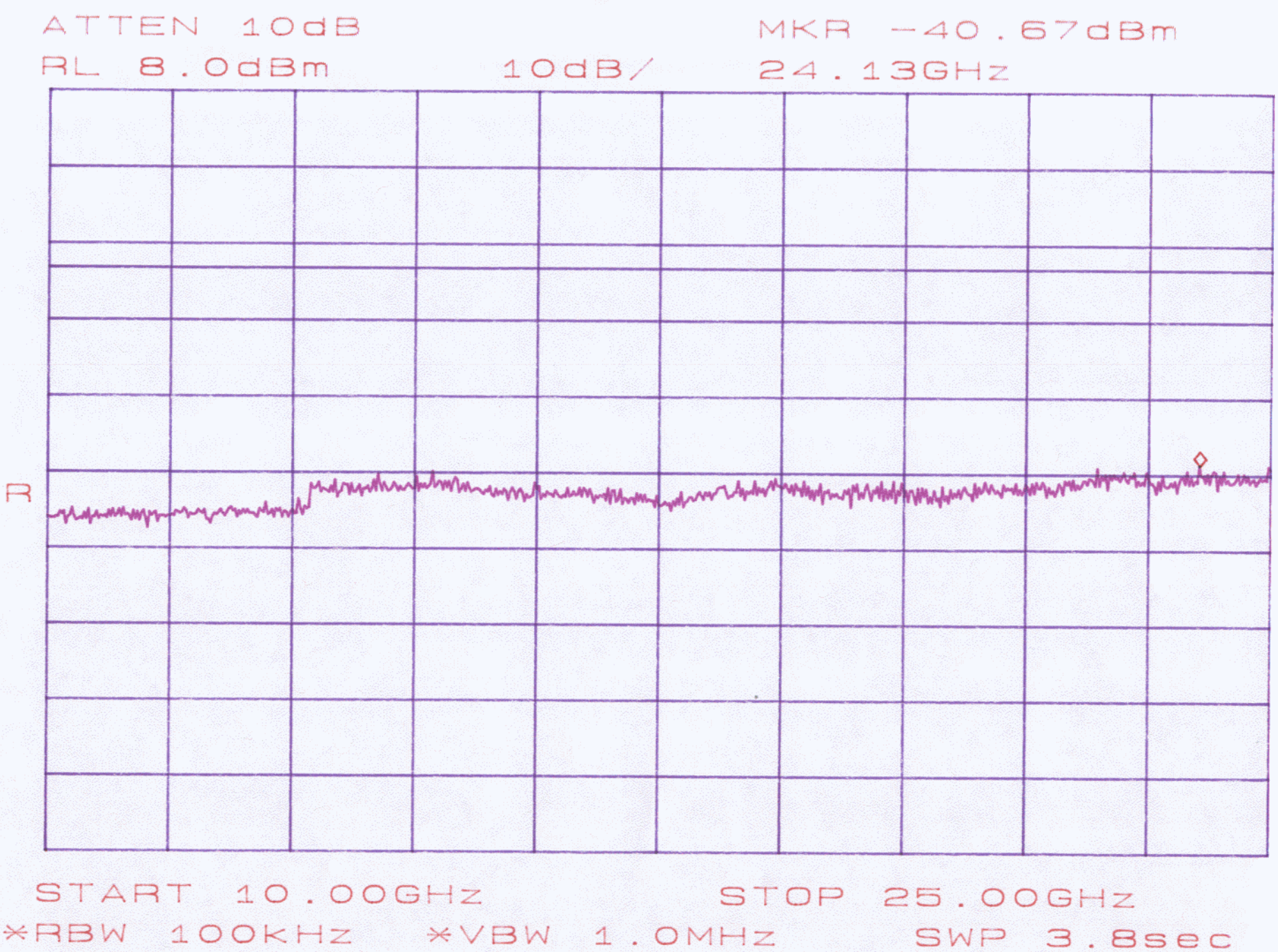
Graph #1c

OUT-OF-BAND



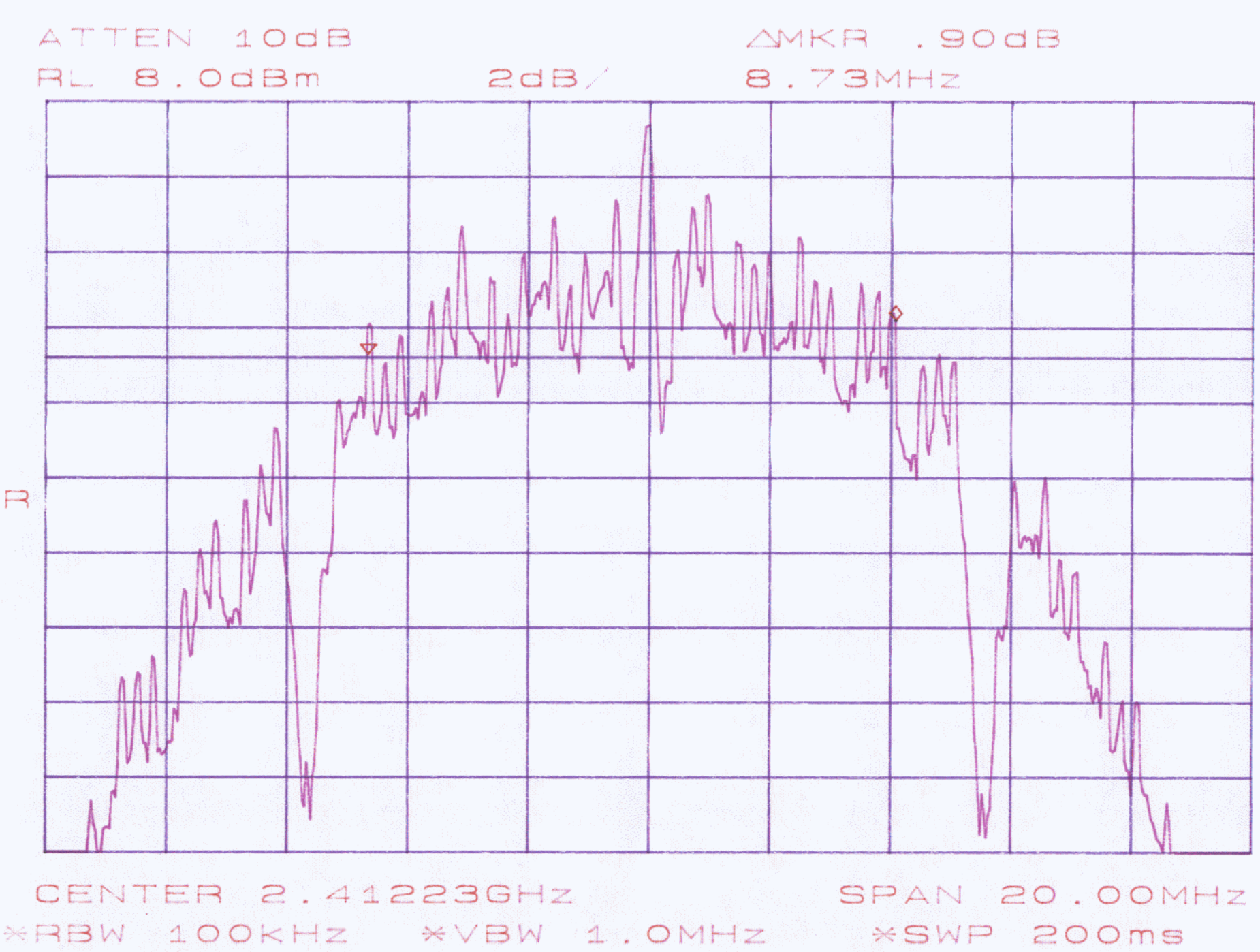
Graph #1d

OUT-OF-BAND

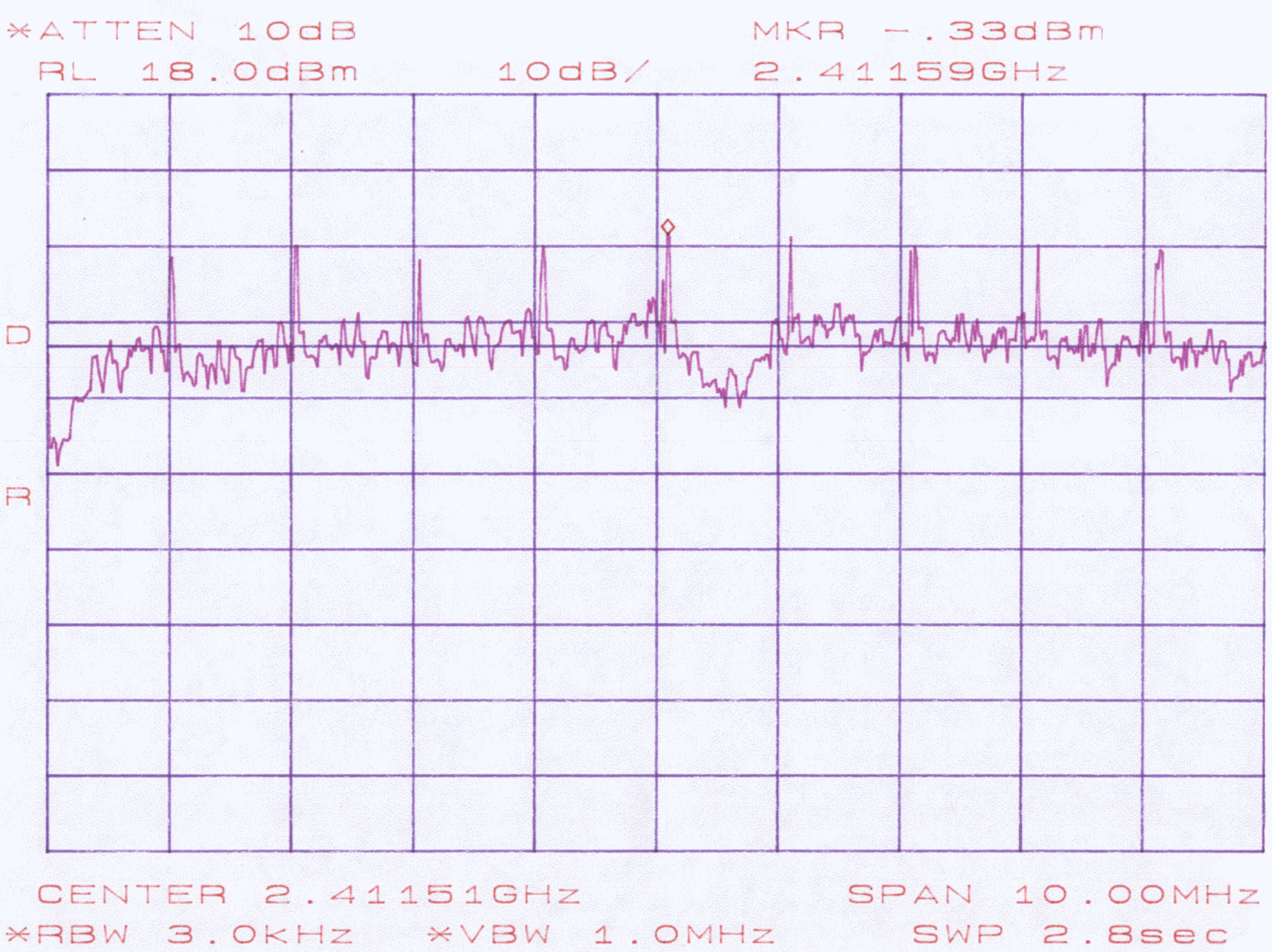


6dB

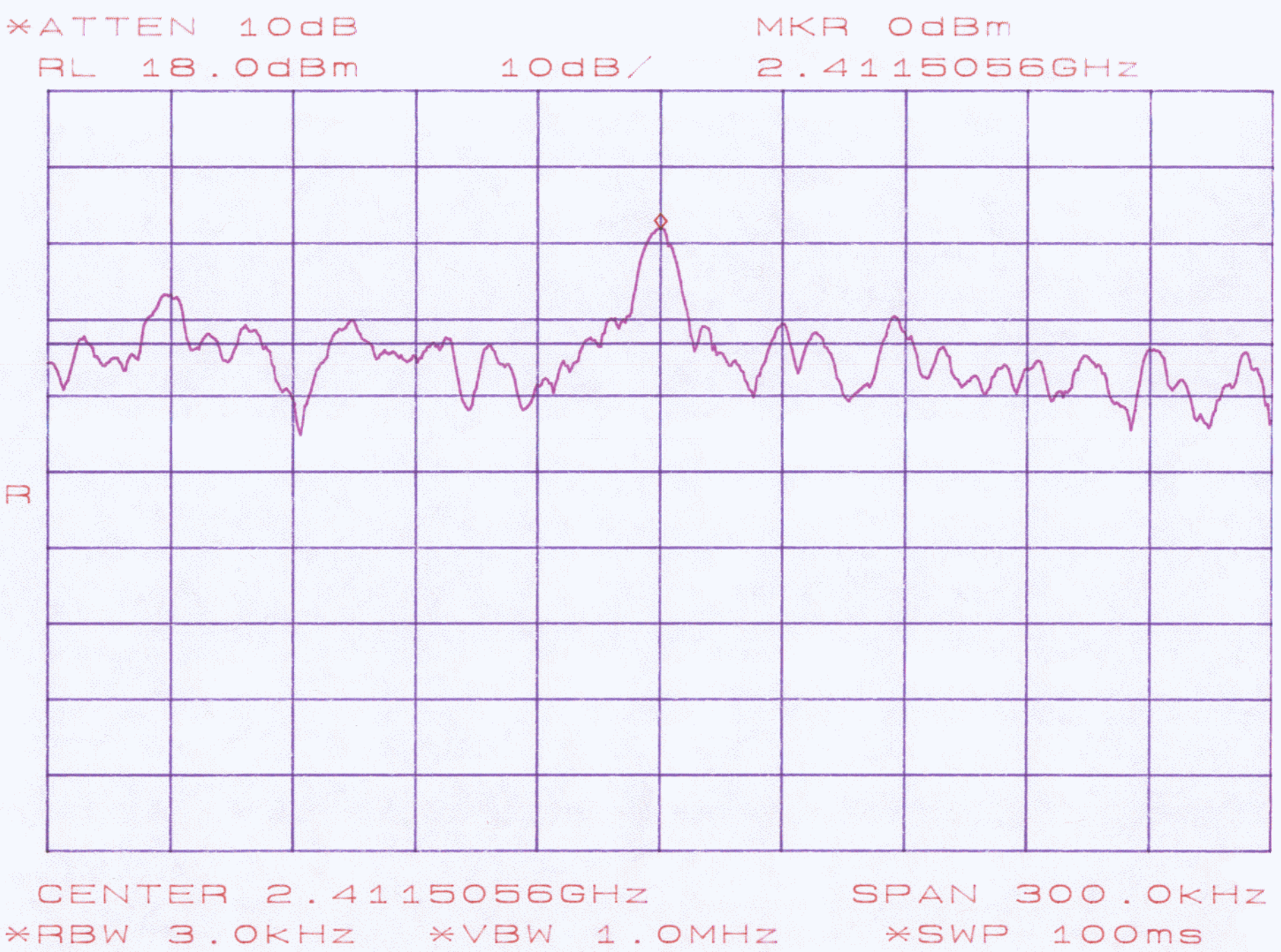
Graph #2


ATTEN 10dB
RL 8.0dBm
2dB/
ΔMKR .90dB
8.73MHz
R
CENTER 2.41223GHz
SPAN 20.00MHz
*RBW 100KHz
*VBW 1.0MHz
*SWP 200ms

Graph #4a


*ATTEN 10dB
MKR -.33dBm
RL 18.0dBm
10dB/
2.41159GHz
D
R
CENTER 2.41151GHz
SPAN 10.00MHz
*RBW 3.0KHz
*VBW 1.0MHz
SWP 2.8sec

Graph #4b


*ATTEN 10dB
MKR 0dBm
RL 18.0dBm
10dB/
2.4115056GHz
R
CENTER 2.4115056GHz
SPAN 300.0kHz
*RBW 3.0kHz
*VBW 1.0MHz
*SWP 100ms