



Most Technology Service Co., Ltd.  
Tel:(86) 755-26825180 Fax:(86) 755-86170310  
Http:// www. szmost.com Email: szmost@szmost.com

## Test Report

Product Name: GPS PORTABLE NAVIGATION DEVICE

FCC ID: VUP-G84A001

MODEL NO. : 84A-2/84A-1/84A-3/84A-4/84A-5/84A-6/  
84A-7/84A-8/84A-9/84A-51/84A-52/84A-53/  
84A-54/84A-55/84A-56/84-57/84A-58/84A-59

Applicant:

YF INTERNATIONAL LIMITED  
7TH FL., CHINA ACADEMY OF SCIENCE&TECHNOLOGY DEV.,  
HIGH TECH SOUTH STREET 1, CHINA

**Date Received: 06/23/2009**

**Date Tested: 06/21-22/2009**

APPLICANT: YF INTERNATIONAL LIMITED  
FCC ID: VUP-G84A001

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**FCC ID:** VUP-G84A001

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## EMC Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100492	Mar 10,2009	1 Year
LISN	ROHDE&SCHWARZ	ENV216	100093	Mar 10,2009	1Year
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101202	Mar 10,2009	1 Year
Spectrum Analyzer	ANRITSU	MS2651B	6200238316	Mar 10,2009	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10,2009	1 Year
Bilog Antenna	Sunol	JB3	A121206	Mar 10,2009	1 Year
Horn Antenna	EMCO	3115	640201028-06	Mar 10,2009	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10,2009	1 Year
Cable	Resenberger	N/A	NO.1	Mar 10,2009	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 10,2009	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 10,2009	1 Year
Single Phase Power Line Filter	Kikusui	LIN40MA-PC R-L	LM002352	Mar 10,2009	1Year
AC Power Source	Kikusui	AC40MA	LM003232	Mar 10,2009	1Year
Test analyzer	Kikusui	KHA1000	LM003720	Mar 10,2009	1Year
ESD Tester	Kikusui	KES4021	LM003537	Mar 10,2009	1 Year
Signal Generator	IFR	2032	203002/100	Mar 10,2009	1 Year
Amplifier	A&R	150W1000	301584	NCR	NCR
Dual Directional Coupler	A&R	DC6080	301508	Mar 10,2009	1 Year
Power Head	A&R	PH2000	301193	Mar 10,2009	1 Year
Power Meter	A&R	PM2002	302799	Mar 10,2009	1 Year
Field Monitor	A&R	FM5004	300329	Mar 10,2009	1 Year
Field Probe	A&R	FP5000	300221	Mar 10,2009	1 Year
EMC PRO System	EM Test	UCS-500-M4	V0648102026	Mar 10,2009	1 Year
EMC PRO System	EM Test	UCS-500-M4	V0648102026	Mar 10,2009	1 Year

Remark:

Test Firm Name: Most Technology Service Co., Ltd.

Test Firm Address:

No. 5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China

FCC Registered Test Site Number: 490827

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## TEST PROCEDURE

**GENERAL:** This report shall NOT be reproduced except in full without the written approval of MOST TECHNOLOGY SERVICE CO., LTD. The EUT was transmitting a test signal during the testing.

**POWER LINE CONDUCTED INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a 50 UH LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25 with a humidity of 58%.

**RADIATION INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. The ambient temperature of the EUT was 25 with a humidity of 58%.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF + CABLE = FS  
33                      20 dBuV + 10.36 dB + 0.9 dB= 31.26 dBuV/m @ 3m

**ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES:** The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings were converted to average readings based on the duration of "ON" time.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.



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**APPLICANT:** YF INTERNATIONAL LIMITED  
**FCC ID:** VUP-G84A001  
**NAME OF TEST:** POWER LINE CONDUCTED INTERFERENCE  
**RULES PART NUMBER:** 15.207

**REQUIREMENTS:**

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

**TEST PROCEDURE:** ANSI STANDARD C63.4-2003

THE HIGHEST EMISSION READ FOR LINE 1 WAS 54.79dBuV @ 0.234MHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 55.11dBuV @ 0.234MHz.

THE PLOTS ON THE NEXT PAGE REPRESENT THE EMISSIONS READ FOR POWER LINE CONDUCTED FOR THIS DEVICE.

## Conducted Emission Measurement

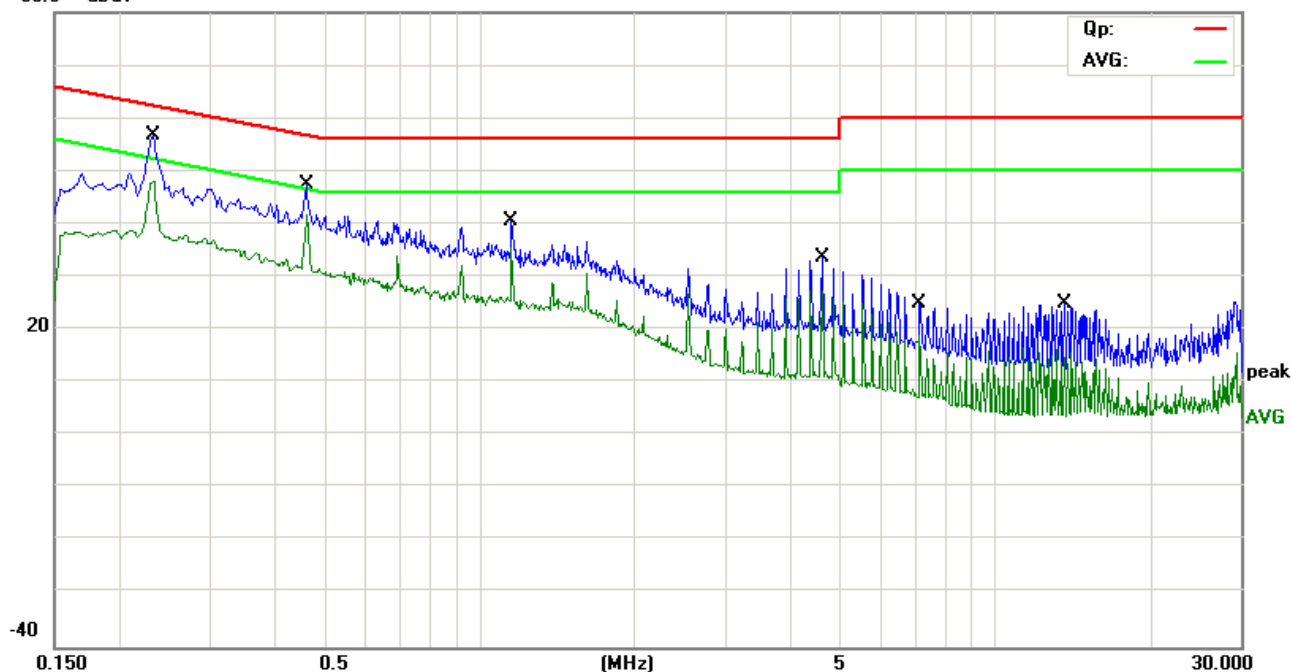
File : 84A-2

Data : #1

Date: 09/06/22/

Time: 8/40/25

80.0 dBuV



Site site #1

Phase: **L1**

Temperature: 26

Limit: FCC Part 15C QP

Power: DC 5V Adaptor AC 120V/60Hz

Humidity: 60 %

EUT: GPS PORTABLE NAVIGATION DEVICE

M/N: 84A-2

Mode: Running(FM Mode)

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.2340	43.02	11.77	54.79	62.31	-7.52	QP	
2		0.4620	35.27	10.25	45.52	56.66	-11.1	QP	
3		1.1580	30.72	9.84	40.56	56.00	-15.44	QP	
4		4.6300	22.10	11.63	33.73	56.00	-22.27	QP	
5		7.1700	14.31	10.70	25.01	60.00	-34.99	QP	
6		13.6460	15.91	9.00	24.91	60.00	-35.09	QP	

\*:Maximum data x:Over limit !:over margin

## Conducted Emission Measurement

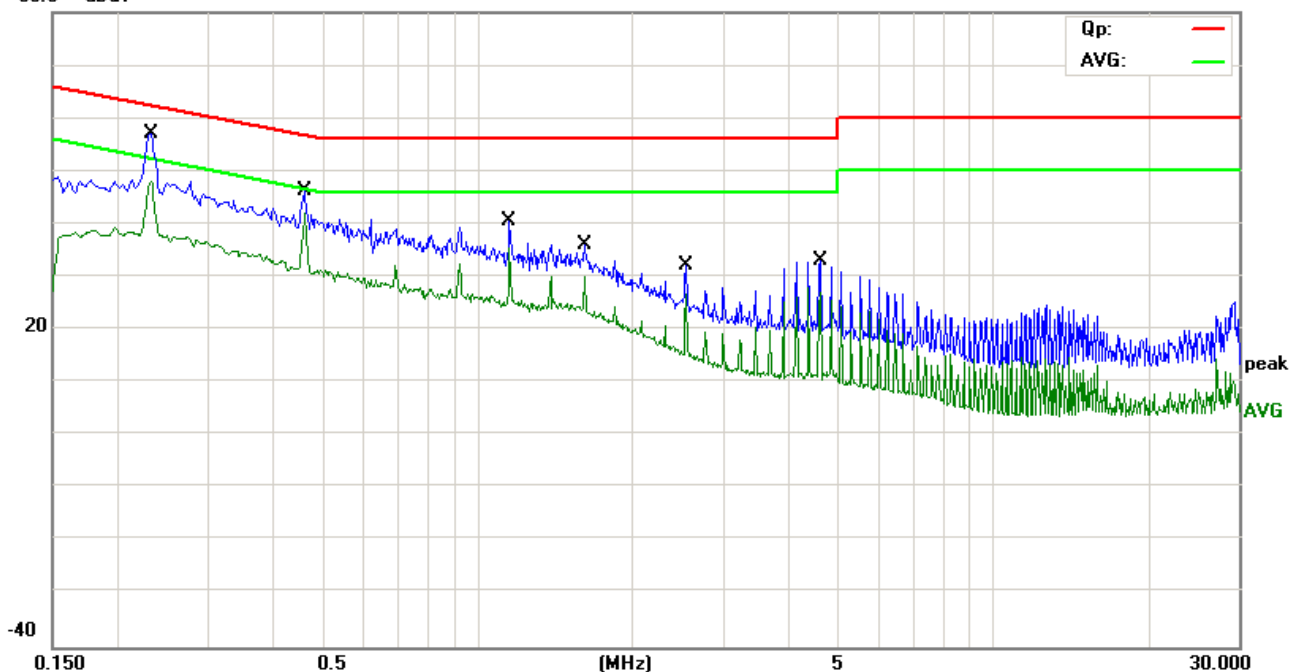
File : 84A-2

Data : #2

Date: 09/06/22/

Time: 8/45/14

80.0 dBuV



Site site #1

Phase: **N**

Temperature: 26

Limit: FCC Part 15C QP

Power: DC 5V Adaptor AC 120V/60Hz

Humidity: 60 %

EUT: GPS PORTABLE NAVIGATION DEVICE

M/N: 84A-2

Mode: Running(FM Mode)

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.2340	43.34	11.77	55.11	62.31	-7.20	QP	
2		0.4620	35.06	10.25	45.31	56.66	-11.35	QP	
3		1.1580	30.56	9.84	40.40	56.00	-15.60	QP	
4		1.6180	26.67	9.38	36.05	56.00	-19.95	QP	
5		2.5460	22.60	9.55	32.15	56.00	-23.85	QP	
6		4.6260	21.57	11.63	33.20	56.00	-22.80	QP	

\*:Maximum data x:Over limit !:over margin



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**APPLICANT:** YF INTERNATIONAL LIMITED

**FCC ID:** VUP-G84A001

**NAME OF TEST:** RADIATION INTERFERENCE

**RULES PART NUMBER:** 15.239, 15.209

**REQUIREMENTS:**

FIELD STRENGTH of S15.209  
Fundamental:

88-108 MHZ 30 -88 MHz 40 dBuV/m @3M  
88 - 216 MHz 43.5  
216 - 960 MHz 46  
47.96 dBuV/m @3m ABOVE 960 MHz 54dBuV/m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

**REMARK: Emissions attenuated more than 20 dB below the permissible value are not reported.**

Fundamental Radiation Interference Data:

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart C Limit (dBuV/m)	
		Avg	QP	Peak	AV	Peak
88.1MHz						
88.100	Vertical	40.52	--	41.45	47.96	67.96
88.100	Horizontal	42.11	--	43.87	47.96	67.96
98.1MHz						
98.100	Vertical	39.95	--	41.39	47.96	67.96
98.100	Horizontal	43.20	--	44.07	47.96	67.96
107.9MHz						
107.900	Vertical	40.80	--	41.23	47.96	67.96
107.900	Horizontal	42.67	--	43.93	47.96	67.96

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**FCC ID:** VUP-G84A001

**NAME OF TEST:** RADIATION INTERFERENCE

**RULES PART NUMBER:** 15.239, 15.209

**REQUIREMENTS:**

FIELD STRENGTH of S15.209  
Fundamental:

88-108 MHZ 30 -88 MHz 40 dBuV/m @3M  
88 - 216 MHz 43.5  
216 - 960 MHz 46  
47.96 dBuV/m @3m ABOVE 960 MHz 54 dBuV/m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

**Continued:**

General Radiation Interference Data:

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart C Limit (dBuV/m)
		Avg	QP	Peak	
30.000	Horizontal	--	--	25.67	40.0
144.46	Horizontal	--	--	24.63	43.5
247.28	Horizontal	--	--	30.29	46.0
429.64	Horizontal	--	--	27.68	46.0
41.64	Vertical	--	33.27	36.66	40.0
55.22	Vertical	--	35.01	38.09	40.0
134.76	Vertical	--	--	30.73	43.5
247.28	Vertical	--	--	27.52	46.0

TEST PROCEDURE: ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector and an appropriate antenna. The resolution bandwidth of spectrum analyzer was 100 kHz below 1 GHz and 1 MHz above 1 GHz. An appropriate sweep speed was used. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.

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**APPLICANT:** YF INTERNATIONAL LIMITED

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**NAME OF TEST:** Occupied Bandwidth Compliance

**RULES PART NUMBER:** 15.239, 15.209

**REQUIREMENTS:** Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

**METHOD OF MEASUREMENT:** A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. The vertical scale is set to 10 dB per division.

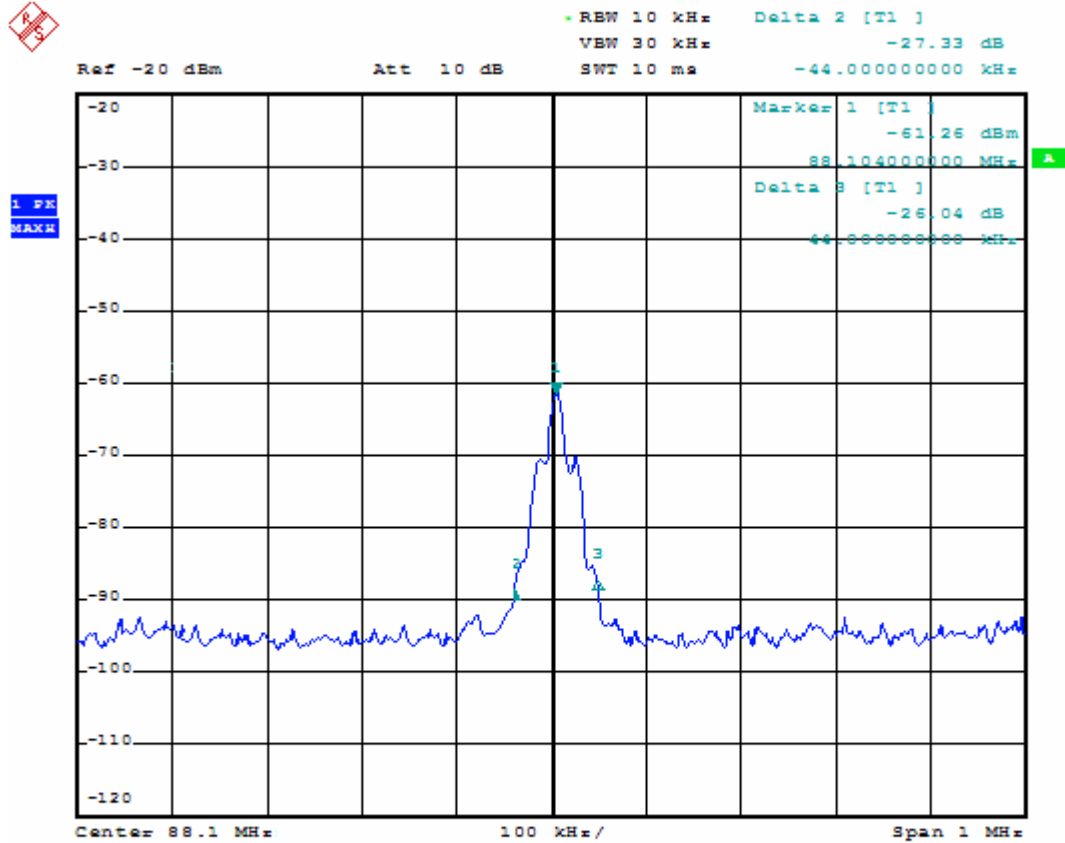
**TEST RESULTS:** The unit DOES meet the FCC requirements.



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When the EUT transmits the real MP3 file max volume level.

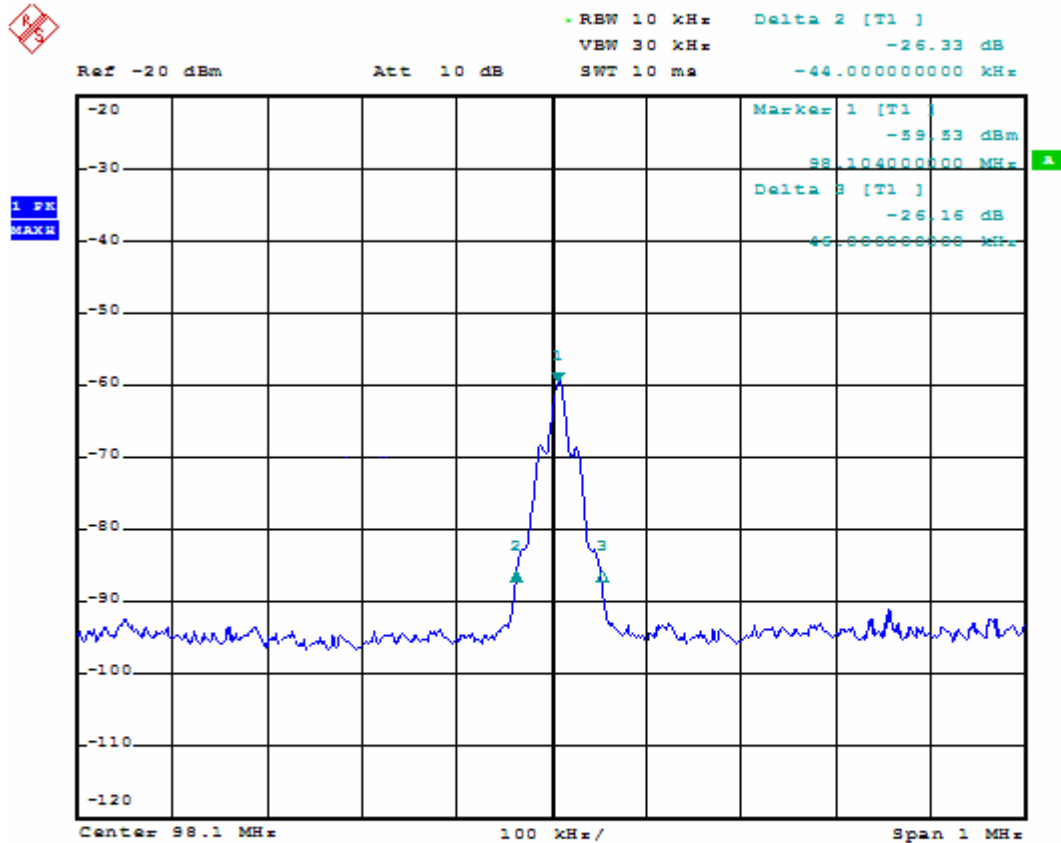
88.1MHz





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98.1MHz





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107.9MHz

