FCC PART 15.249

EMI MEASUREMENT AND TEST REPORT

FOR

GUILLEMOT CORPORATION S.A

Place du Granier BP 97143 35571 Chantepie Cedex France

FCC ID: NAM4780432

Product Name:	Mobile DJ MP3
Model No:	4780432
Sample Received Date:	Jan 03 2007
Test Performed Date:	Jan 20-30, 2007
Test Engineer:	Paul Tan
Reviewed By:	Chris Zeng
Prepared By:	BEST Test Service (Shenzhen) Co., Ltd Flat 11E, Xinhaofang Building, 11018, Shennan Road, Nanshan District, Shenzhen, 518057, China Tel: +86-755-86182350 Fax: +86-755-86182353

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GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

The *GUILLEMOT CORPORATION S.A.'s* Model: 4780432or the "EUT" as referred to in this report is a Mobile DJ MP3 which measures approximately 165mmL x 142mmW x44mmH, powered by DC 2*1.5V LR14 battery

The EUT operates from 2412MHz to 2475MHz and have ten channels for use.

**The test data gathered are from production sample serial number 0701145 provided by the manufacturer.*

Objective

This document is a test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 - 2003.

The tests were performed in order to determine compliance with Part 2, Subpart J, FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209, and 15.249 rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

Test Facility

All measurement facilities used to collect the data are located at Huatongwei Building , Keji Rd, 12 S, high-Tech Park, Nanshan District, Shenzhen, China.
The sites are constructed in conformance with the requirements of ANSI C63.7/634 and CISPR 22, The site was accredited by FCC(662850), A2LA(2243.01) and CNAL (L1225)

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

Special Accessories

N/A

Block Diagram

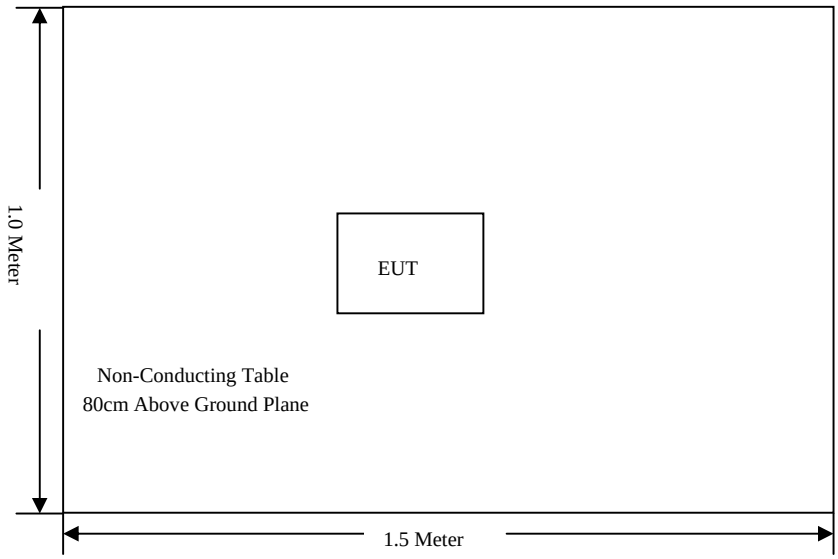
Please refer to the Appendix D.

Equipment Modifications

No modifications were made by BEST Test Service (Shenzhen) Co., Ltd. to ensure EUT to comply with the applicable limits and requirements.

Test Setup Block Diagram

The EUT is Lie/ Stand/ Side on the table , Lie is the worst mode and the worst data was included in this report.



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 15.203	Antenna Requirements	Compliant
§ 15.205	Restricted Bands of Operation	Compliant
§ 15.207	Conducted Emission	N/A
§ 15.209 (a) § 15.249(a)	Radiated Emission	Compliant
§ 15.249(c)	Band Edge Testing	Compliant

§ 15.203 – Antenna Requirements

Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Connected Construction

The antenna connector is designed with permanent attachment and no consideration of replacement.

Test Result: Pass

§ 15.207 – CONDUCTED LIMITS

Standard Applicable

According to §15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequencies ranges.

The EUT is battery operated, can not be connected to public utility power line, so this test is omitted

§ 15.209(a) and § 15.249(a) - RADIATED EMISSION

Standard Applicable

According to §15.209 and 15.249, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency Range(MHz)	Limit	
	Quais-Peak(uV)	Quais-Peak (dBuV)
15.209(a)		
30-88	100	40.0
88-216	150	43.5
216-960	200	46.5
960-1000	500	54.0
15.249(a)		
Frequency Range(MHz)	Field Strength of Fundamental	Field Strength of Harmonic
902 - 928	94.0	54.0
2400 - 2483.5	94.0	54.0
5725 - 5875	94.0	54.0
24000 – 24250	108.0	68.0

According to FCC 15.249(c) Field strength limits are specified at a distance of 3 meters.

(d) 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.

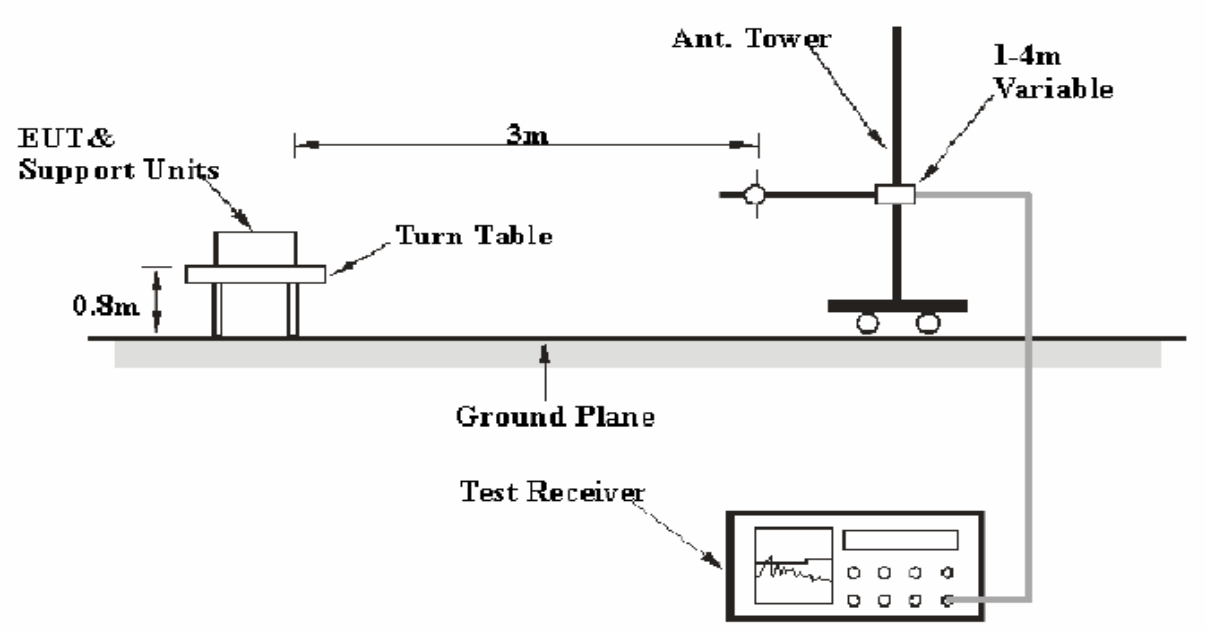
(e) As shown in §15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b) of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is $\pm$3.6 dB.

EUT Setup



The radiated emission tests were performed in 3-meter standard chamber, using the setup accordance with the ANSI C63.4 - 2003. The specification used was the FCC Part 15 .209(a) and 45.249(a) limits.

The EUT was placed on the center of the test table.

Test apparatus

Manufacturer	Description	Model	Serial Number	Cal. Date	Cal Due Date
ROHDE & SCHWARZ	ULTRA-BROADBAND ANTENNA	HL562	100015	08/05/2006	08/05/2007
ROHDE & SCHWARZ	EMI TEST RECEIVER	ESI 26	100009	08/05/2006	08/05/2007
ROHDE & SCHWARZ	RF TEST PANEL	TS / RSP	335015/ 0017	N/A	
ETS	TURNTABLE	2088	2149	N/A	
ETS	ANTENNA MAST	2075	2346	N/A	
ROHDE & SCHWARZ	EMI TEST SOFTWARE	ES-K1 V1.71	NA	N/A	
SUNOL SCIENCE	Horn Antenna	DRH-118	A052605	08/05/2006	08/05/2007
SUNOL SCIENCE	Horn Antenna	DRH-118	A052607	08/05/2006	08/05/2007

Statement of Traceability: BEST attests that all calibrations have been performed per the CNAL /A2LA requirements, traceable to NIM China.

Test Procedure

For the radiated emissions test, the EUT was place on the center of test table, lie/stand/side to check the max emission, lie is max emission mode. Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -4 dBμV of specification limits), and are distinguished with a "**Qp**" in the data table.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dBμV means the emission is 7dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl - FCC Class B Limit

Summary of Test Results

The spectrum scan from 30MHz to 25GHz, emission from 30MHz to 1GHz and above 3 th harmonic of fundamental is lower 20 Db than limit, so the test data was omitted.

According to the data in section 4.7, the EUT complied with the FCC Part 15.209(a) and 15.249(a) standards, and had the worst margin of:

-5.31dBμV at **7321.458MHz** in the Horizontal polarization, **3 meters(High Channel).**

Radiated Emissions Test data

INDICATED			TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC 15.209&249	
Frequency MHz	Ampl. dBμV/m	Detector	Angle Degree	Height Meter	Polar H/ V	Antenna dBμV/m	Cable dB	Amp. dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
Unintentional Radiation (30MHz-1GHz)											
The emission is Lower than 20 dB below the limit, the result data is omitted											
/	/	/	/	/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/	/	/	/
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/	/	/	/	/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/	/	/	/

INDICATED			TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC 15.209&249	
Frequency MHz	Ampl. dBμV/m	Detector	Angle Degree	Height Meter	Polar H/ V	Antenna dBμV/m	Cable dB	Amp. dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
Low Channel (1GHz-25GHz)											
2412.76	79.21	Peak/Fund	0	1.2	H	28.70	3.50	28.70	82.71	114.00	-31.29
2412.76	78.08	AV/Fund	0	1.2	H	28.70	3.50	28.70	81.58	94.00	-12.42
2412.76	81.19	Peak/Fund	0	1.2	V	28.70	3.50	28.70	84.69	114.00	-29.31
2412.76	80.04	AV/Fund	0	1.2	V	28.70	3.50	28.70	83.54	94.00	-10.46
4825.52	39.29	Peak	0	1.2	H	32.50	4.90	30.40	46.29	74.00	-27.71
4825.52	38.57	Average	0	1.2	H	32.50	4.90	30.40	45.57	54.00	-8.43
4825.52	40.65	Peak	0	1.2	V	32.50	4.90	30.40	47.65	74.00	-26.35
4825.52	39.64	Average	0	1.2	V	32.50	4.90	30.40	46.64	54.00	-7.36
7238.28	38.25	Peak	0	1.2	H	36.30	6.00	31.60	48.95	74.00	-25.05
7238.28	36.69	Average	0	1.2	H	36.30	6.00	31.60	47.39	54.00	-6.61
7238.28	37.06	Peak	0	1.2	V	36.30	6.00	31.60	47.76	74.00	-26.24
7238.28	36.88	Average	0	1.2	V	36.30	6.00	31.60	47.58	54.00	-6.42
The emission is Lower than 20 dB below the limit from 7.239GHz to 25GHz, the result data is omitted											

INDICATED			TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC 15.209&249	
Frequency MHz	Ampl. dBμV/m	Detector	Angle Degree	Height Meter	Polar H/ V	Antenna dBμV/m	Cable dB	Amp. dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
Middle Channel (1GHz-25GHz)											
2440.486	77.58	Peak/Fund	0	1.2	H	28.70	3.56	28.81	81.03	114.00	-32.97
2440.486	76.64	AV/Fund	0	1.2	H	28.70	3.56	28.81	80.09	94.00	-13.91
2440.486	82.27	Peak/Fund	0	1.0	V	28.70	3.56	28.81	85.72	114.00	-28.28
2440.486	81.12	AV/Fund	0	1.0	V	28.70	3.56	28.81	84.57	94.00	-9.43
4880.972	40.83	Peak	0	1.2	H	32.50	5.02	30.45	47.90	74.00	-26.10
4880.972	40.02	Average	0	1.2	H	32.50	5.02	30.45	47.09	54.00	-6.91
4880.972	41.77	Peak	0	1.0	V	32.50	5.02	30.45	48.84	74.00	-25.16
4880.972	40.82	Average	0	1.0	V	32.50	5.02	30.45	47.89	54.00	-6.11
7321.458	39.28	Peak	0	1.2	H	36.30	6.13	31.74	49.97	74.00	-24.03
7321.458	38.00	Average	0	1.2	H	36.30	6.13	31.74	48.69	54.00	-5.31
7321.458	35.52	Peak	0	1.0	V	36.30	6.13	31.74	46.21	74.00	-27.79
7321.458	33.86	Average	0	1.0	V	36.30	6.13	31.74	44.55	54.00	-9.45
The emission is Lower than 20 dB below the limit from 7.321GHz to 25GHz, the result data is omitted											

INDICATED			TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC 15.209&249	
Frequency MHz	Ampl. dBμV/m	Detector	Angle Degree	Height Meter	Polar H/ V	Antenna dBμV/m	Cable dB	Amp. dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
High Channel (30MHz-25GHz)											
2475.054	78.31	Peak/Fund	0	1.2	H	28.81	3.62	28.89	81.85	114.00	-32.15
2475.054	77.47	AV/Fund	0	1.2	H	28.81	3.62	28.89	81.01	94.00	-12.99
2475.054	82.26	Peak/Fund	0	1.2	V	28.81	3.62	28.89	85.80	114.00	-28.20
2475.054	81.82	AV/Fund	0	1.2	V	28.81	3.62	28.89	85.36	94.00	-8.64
4950.108	41.16	Peak	0	1.2	H	32.62	5.11	30.58	48.31	74.00	-25.69
4950.108	40.67	Average	0	1.2	H	32.62	5.11	30.58	47.82	54.00	-6.18
4950.108	39.55	Peak	0	1.2	V	32.62	5.11	30.58	46.70	74.00	-27.30
4950.108	39.10	Average	0	1.2	V	32.62	5.11	30.58	46.25	54.00	-7.75
7425.162	38.26	Peak	0	1.2	H	36.48	6.19	31.88	49.05	74.00	-24.95
7425.162	37.42	Average	0	1.2	H	36.48	6.19	31.88	48.21	54.00	-5.79
7425.162	36.21	Peak	0	1.2	V	36.48	6.19	31.88	47.00	74.00	-27.00
7425.162	35.33	Average	0	1.2	V	36.48	6.19	31.88	46.12	54.00	-7.88
The emission is Lower than 20 dB below the limit from 7.426GHz to 25GHz, the result data is omitted											

§ 15.249(c) - BANDEDGE

Standard Applicable

Requirements: FCC 15.249 (c), the emission power at the START and STOP frequencies shall be at least 50 dB below the level of the fundamental or to the general radiated emission limits in FCC 15.209, whichever is the lesser attenuation.

Test Procedure

Same as radiation emission section

Test apparatus

Manufacturer	Description	Model	Serial Number	Cal. Date	Cal Due Date
ROHDE & SCHWARZ	ULTRA-BROADBAND ANTENNA	HL562	100015	08/05/2006	08/05/2007
ROHDE & SCHWARZ	EMI TEST RECEIVER	ESI 26	100009	08/05/2006	08/05/2007
ROHDE & SCHWARZ	RF TEST PANEL	TS / RSP	335015/ 0017	N/A	
ETS	TURNTABLE	2088	2149	N/A	
ETS	ANTENNA MAST	2075	2346	N/A	
ROHDE & SCHWARZ	EMI TEST SOFTWARE	ES-K1 V1.71	NA	N/A	
SUNOL SCIENCE	Horn Antenna	DRH-118	A052605	08/05/2006	08/05/2007
SUNOL SCIENCE	Horn Antenna	DRH-118	A052607	08/05/2006	08/05/2007

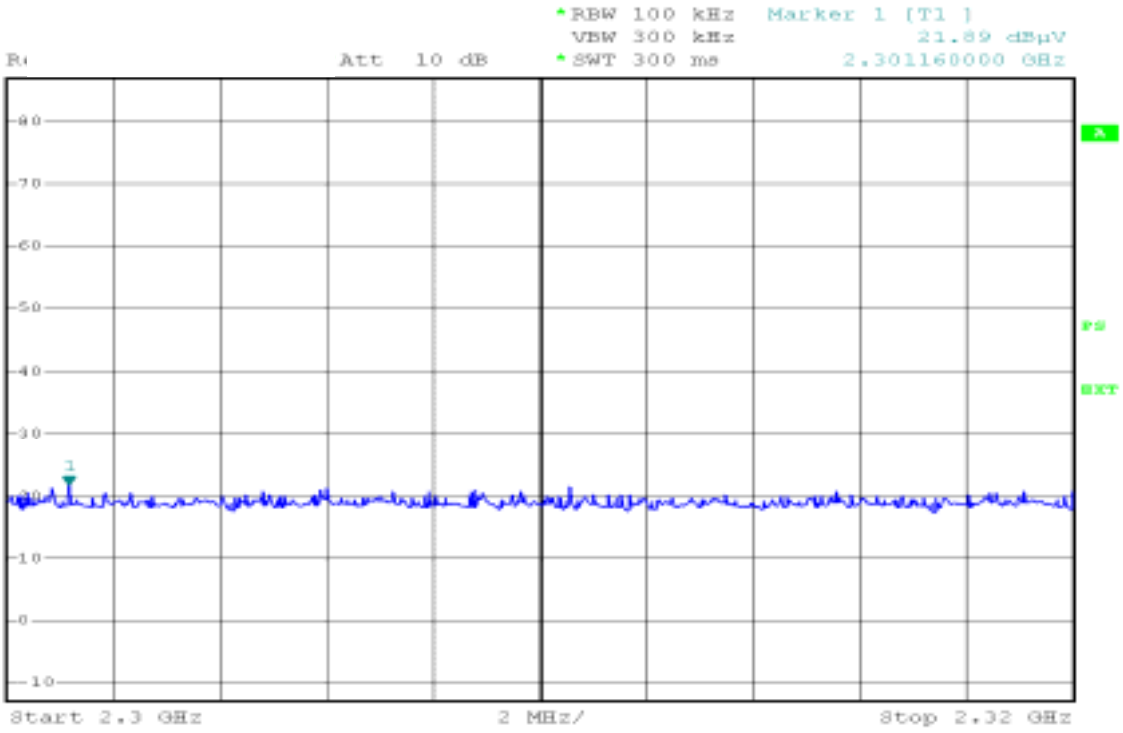
Environmental Conditions

Temperature:	22℃
Relative Humidity:	39%
ATM Pressure:	1012Mbar

Test Result: PASS

The emission is lower than limit of 15.209 at edge frequency.

Low Channel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2.301160000 GHz
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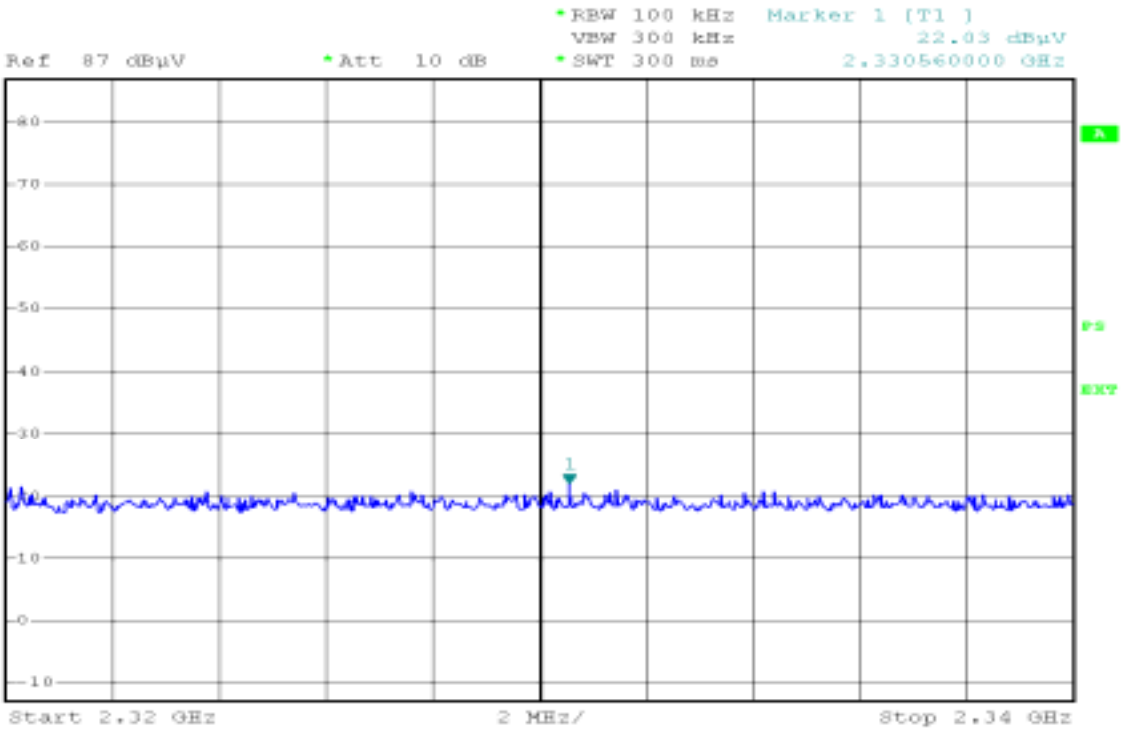
2 MHz/
Stop 2.32 GHz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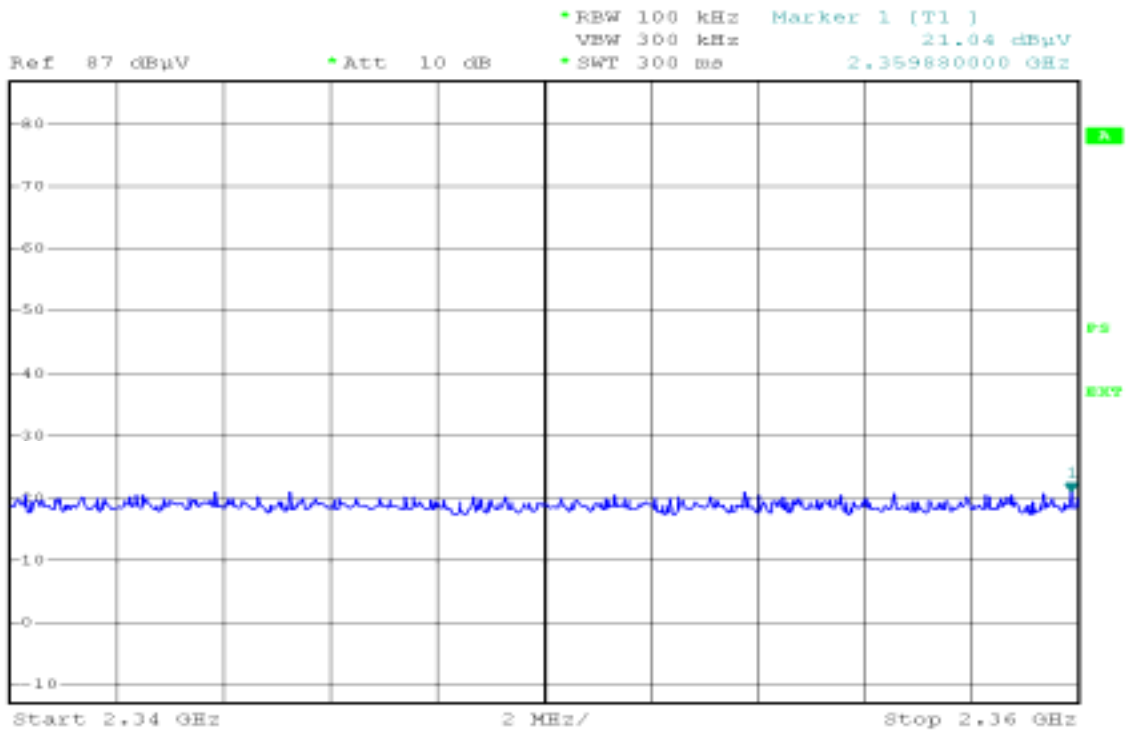
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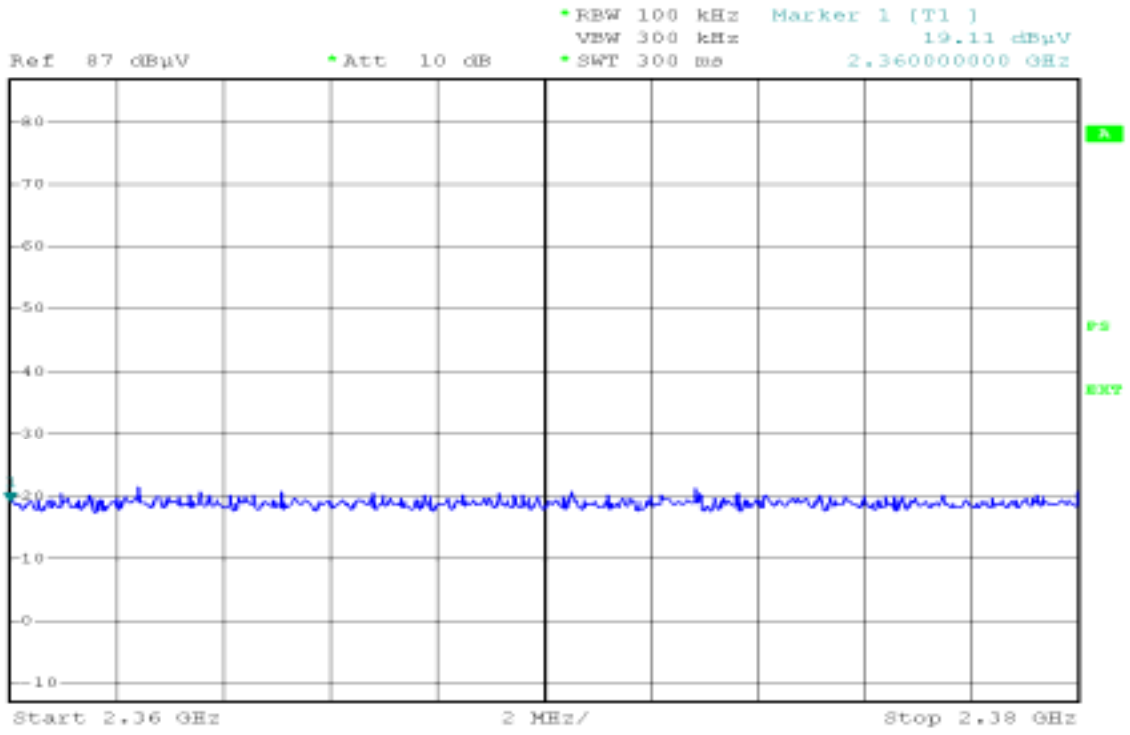
2.359830000 GHz
Ref 87 dBµV
Att 10 dB
80
70
60
50
40
30
20
10
0
-10
A
PS
EXT
Start 2.34 GHz
2 MHz/
Stop 2.36 GHz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VBW 300 kHz
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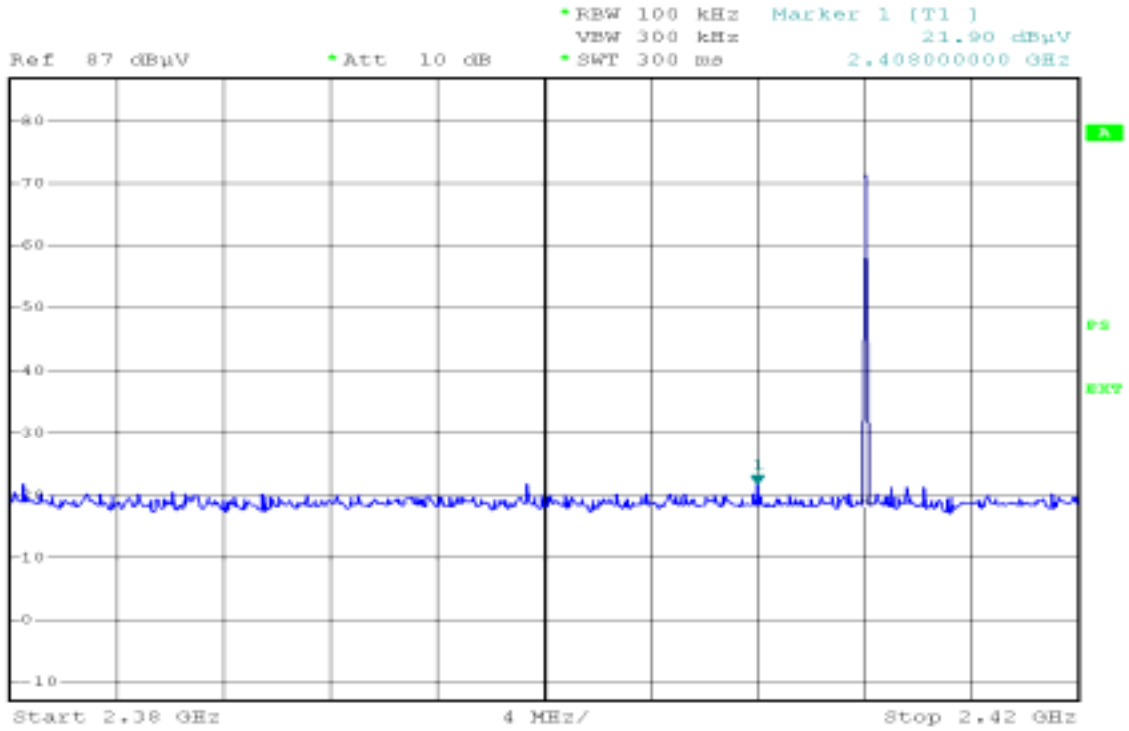
19.11 dBµV
2.360000000 GHz
Ref 87 dBµV
Att 10 dB
80
70
60
50
40
30
20
10
0
-10
A
PS
EXT
Start 2.36 GHz
2 MHz/
Stop 2.38 GHz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VBW 300 kHz
SWT 300 ms
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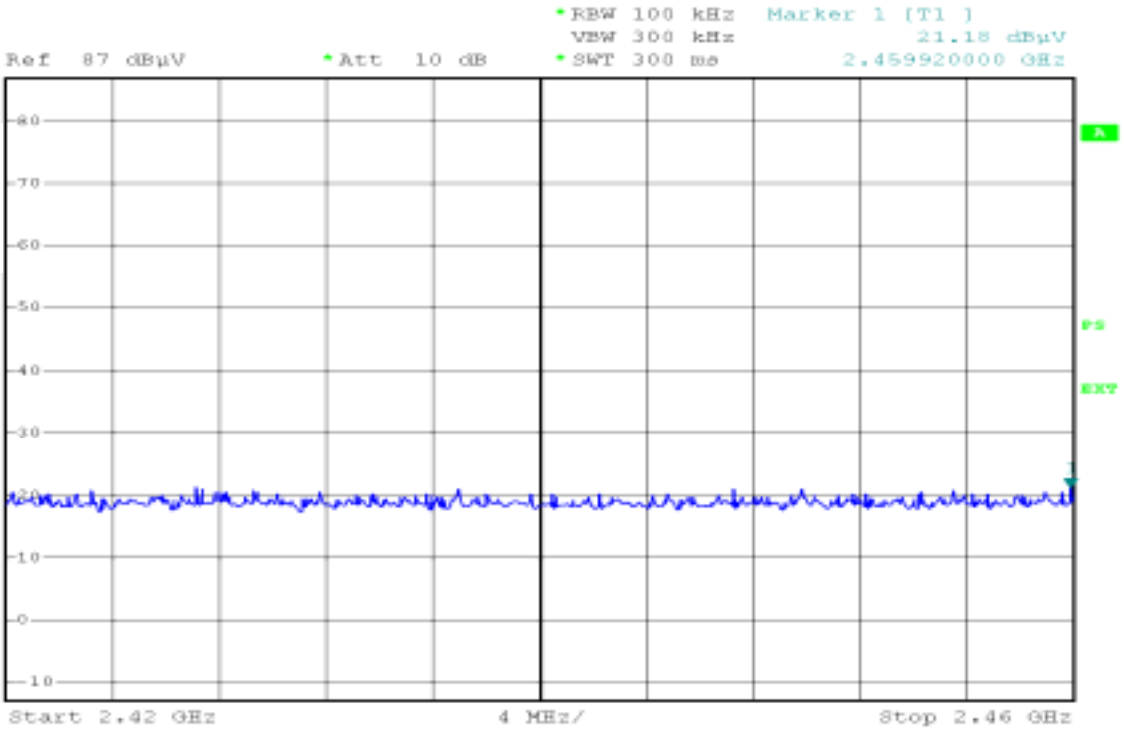
21.90 dBµV
2.408000000 GHz
Ref 87 dBµV
Att 10 dB
80
70
60
50
40
30
20
10
0
-10
A
RS
EXT
Start 2.38 GHz
4 MHz/
Stop 2.42 GHz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VBW 300 kHz
SWT 300 ms
Marker 1 [T1]
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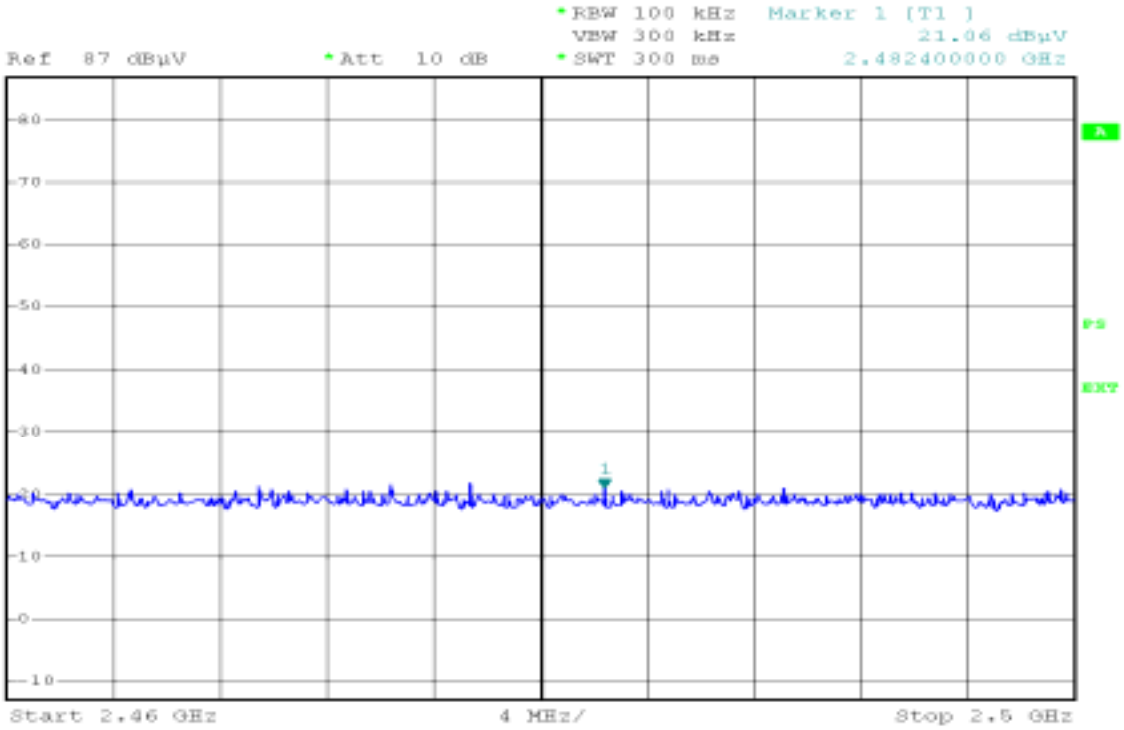
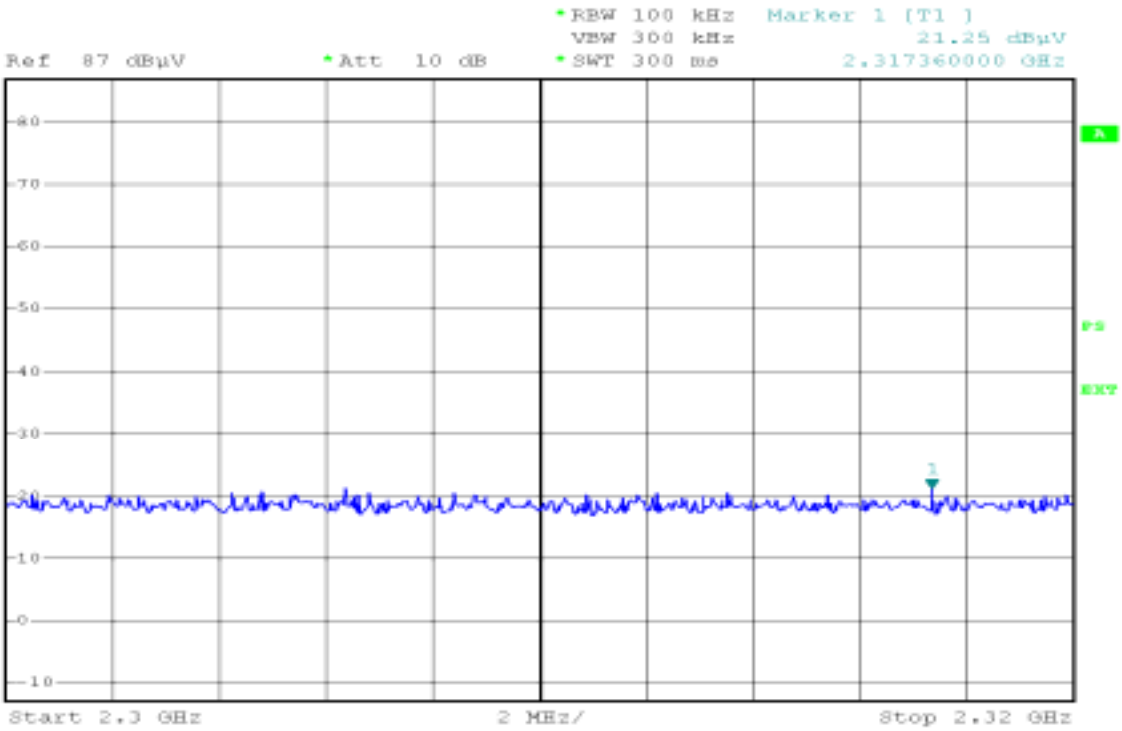
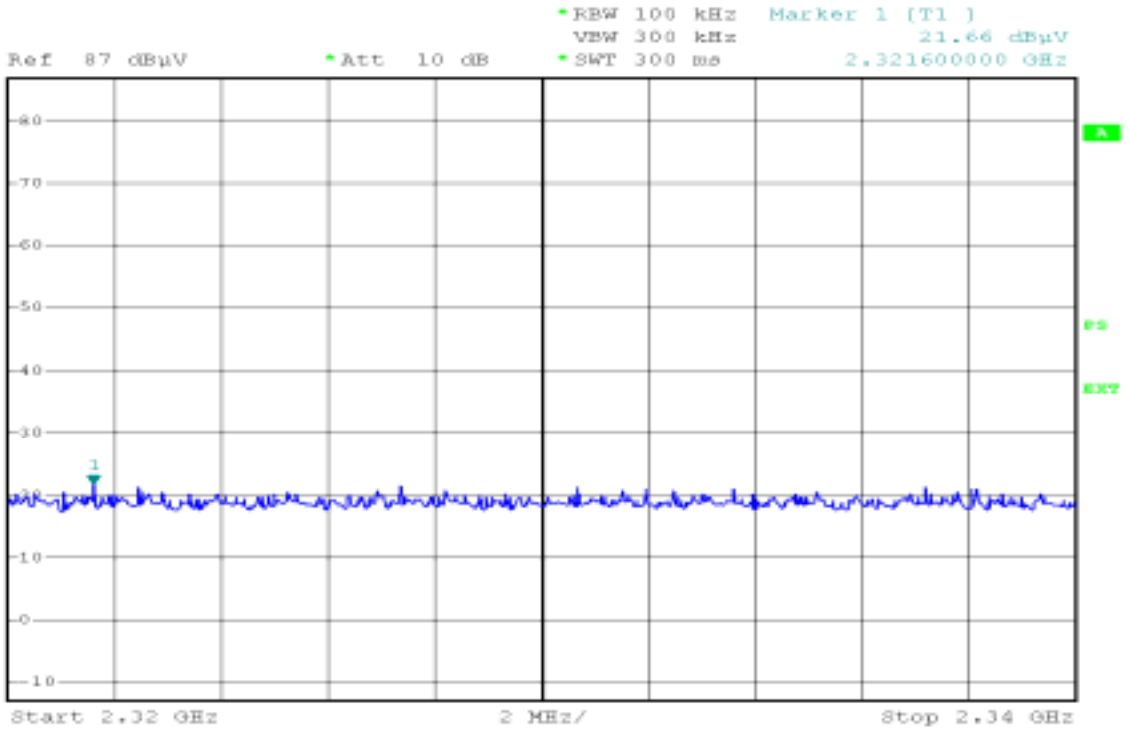
2.459920000 GHz
Ref 87 dBµV
Att 10 dB
80
70
60
50
40
30
20
10
0
-10
A
RS
EXT
Start 2.42 GHz
4 MHz/
Stop 2.46 GHz



High Channe 了

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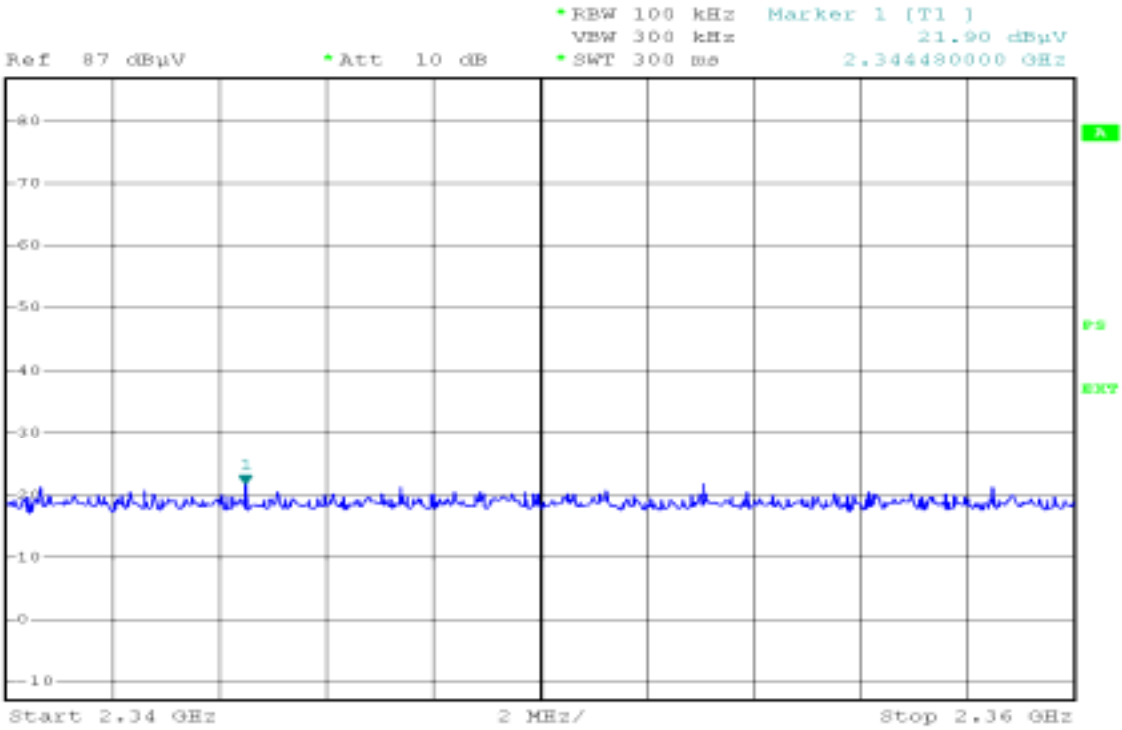
2.321600000 GHz
Ref 87 dBµV
Att 10 dB
Start 2.32 GHz
2 MHz/
Stop 2.34 GHz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VBW 300 kHz
SWT 300 ms
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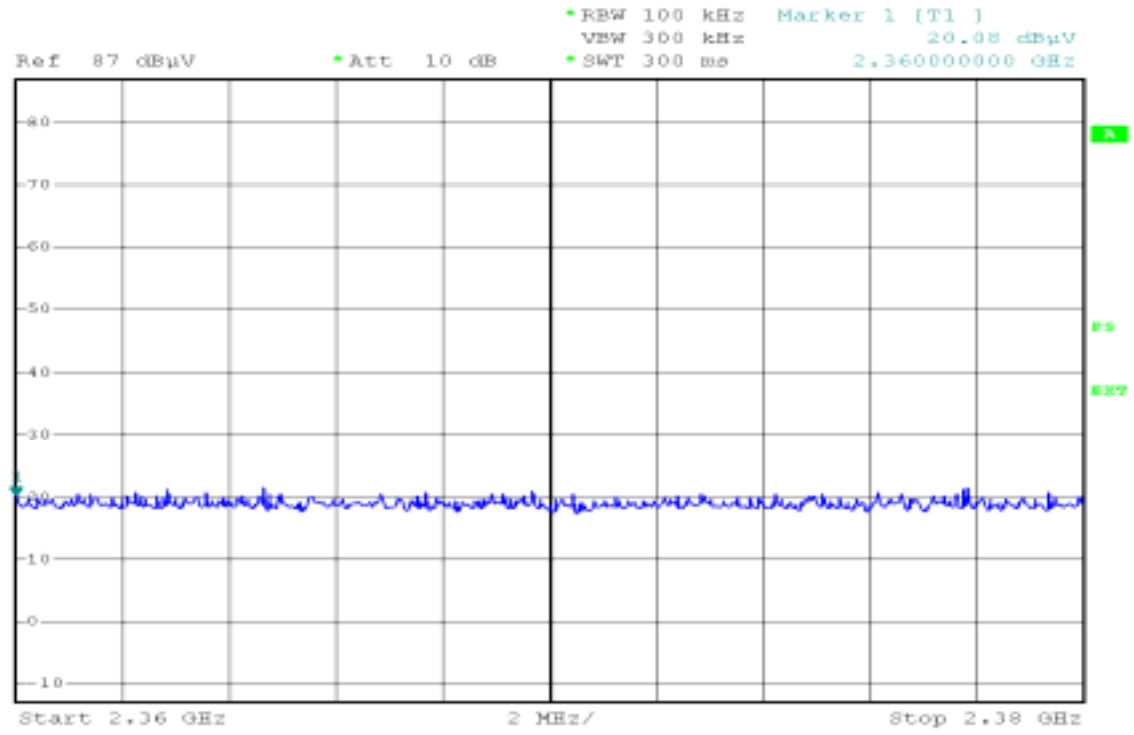
2.344480000 GHz
Ref 87 dBµV
Att 10 dB
Start 2.34 GHz
2 MHz/
Stop 2.36 GHz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VBW 300 kHz
SWT 300 ms
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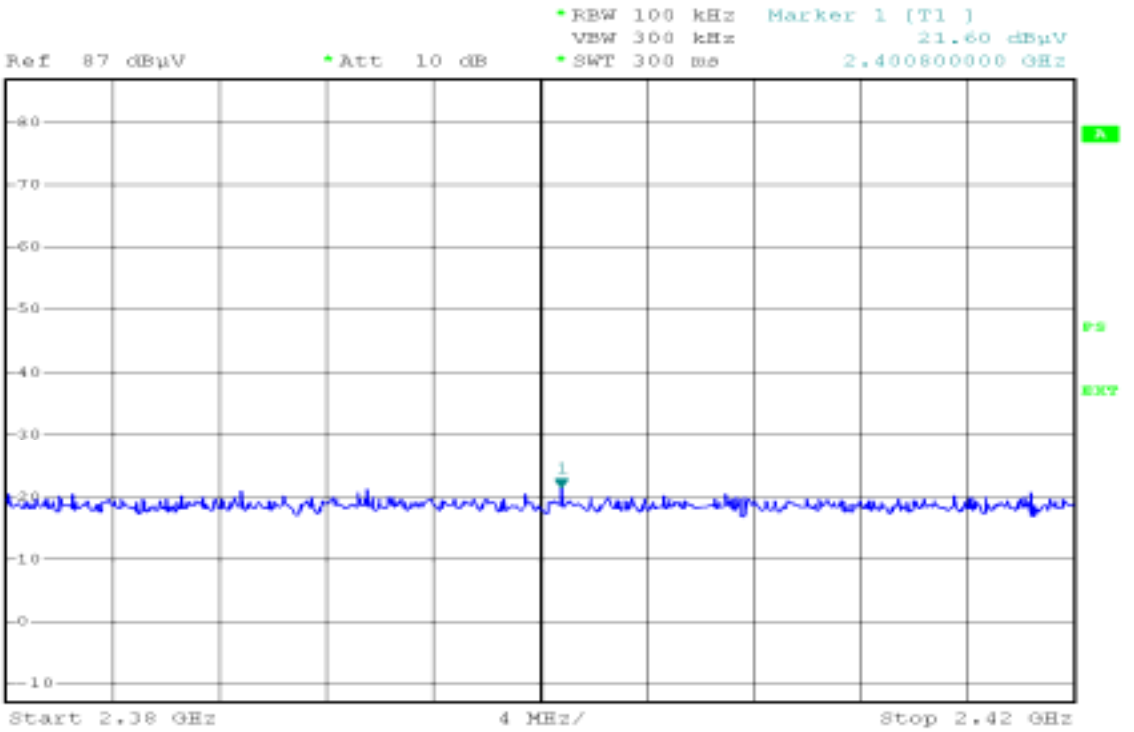
2.360000000 GHz
Ref 87 dBµV
Att 10 dB
Start 2.36 GHz
2 MHz/
Stop 2.38 GHz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VBW 300 kHz
SWT 300 ms
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2.400800000 GHz
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Att 10 dB
Start 2.38 GHz
4 MHz/
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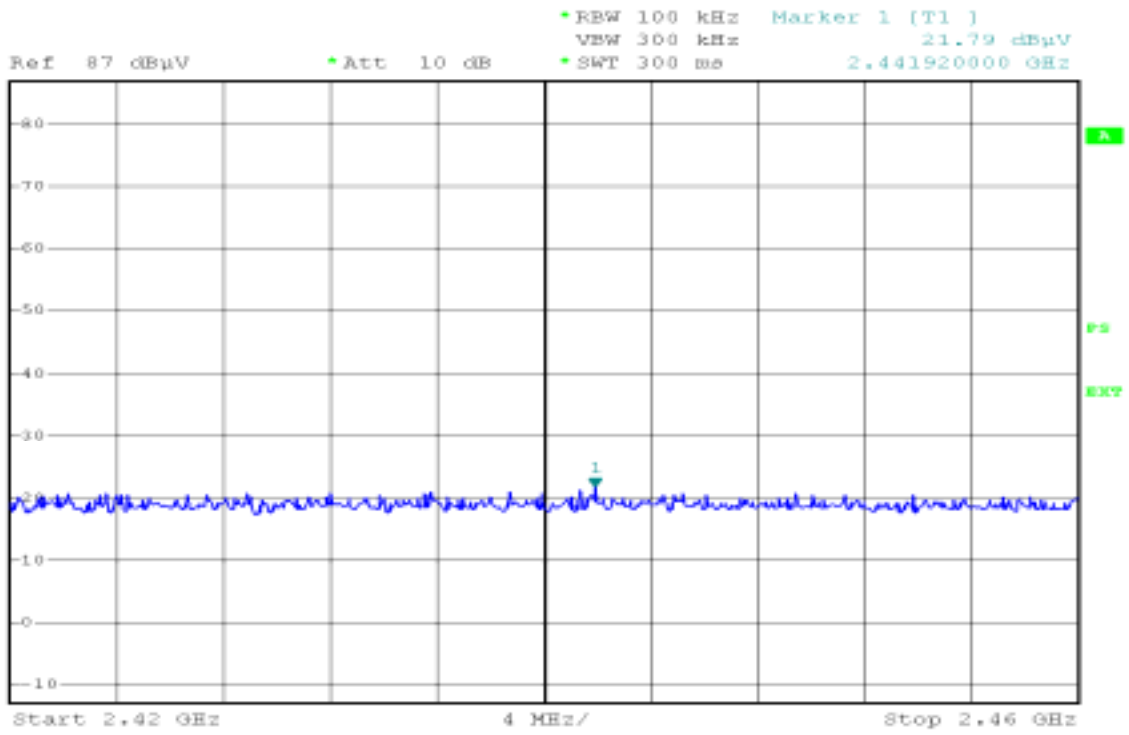
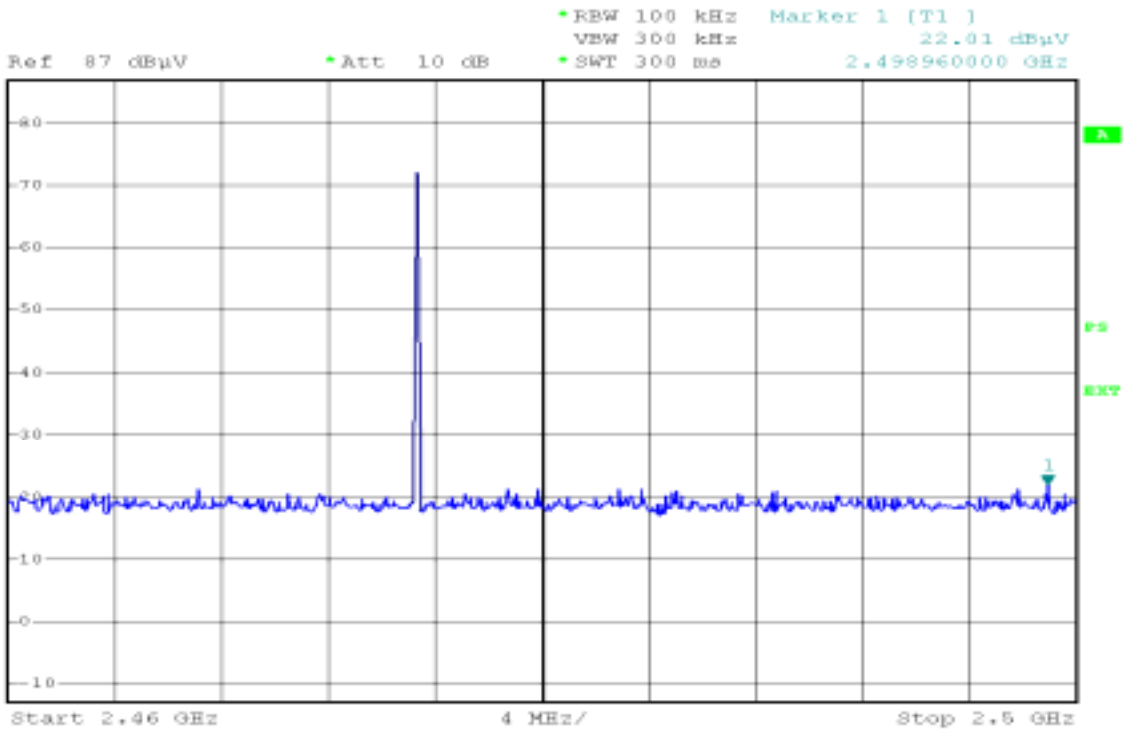

RBW 100 kHz
VBW 300 kHz
SWT 300 ms
Marker 1 [T1]
21.79 dBµV
2.441920000 GHz
Ref 87 dBµV
Att 10 dB
Start 2.42 GHz
4 MHz/
Stop 2.46 GHz


RBW 100 kHz
VBW 300 kHz
SWT 300 ms
Marker 1 [T1]
22.01 dBµV
2.498960000 GHz
Ref 87 dBµV
Att 10 dB
Start 2.46 GHz
4 MHz/
Stop 2.5 GHz