ACCREDITED
TESTING LABORATORY
CERTIFICATE # 4821.01

BACL
Bay Area Compliance Labs Corp.

FCC PART 15B, CLASS B

TEST REPORT

For

Velong Enterprises Co.,Ltd

No.3-7 west of 5th Najin Rd., North of 4th, Huoda Rd., Nahou Industrial Zone, Yangdong District, Yangjiang City, China

FCC ID: 2AJUYGT003803

Report Type:	**Product Type:**
Original Report	Wireless thermometer

Report Number:	RSZ180928001-00
Report Date:	2018-10-11
Reviewed By:	Rocky Kang RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

Note: This report must not be used by the customer to claim product certification, approval, or endorsement by A2LA* or any agency of the Federal Government. * This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*".

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Velong Enterprises Co.,Ltd's* product, model number: *VL-140 (FCC ID: 2AJUYGT003803)* or the "EUT" in this report was a *Wireless thermometer,* which was measured approximately: 10.6 cm (L) * 6.6 cm (W) *3.2 cm (H), rated with input voltage: DC 3.0 V. The highest operating frequency is 433.92 MHz.

**All measurement and test data in this report was gathered from production sample serial number: 180928001 (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2018-09-19.*

Objective

This test report is prepared on behalf of *Velong Enterprises Co.,Ltd* in accordance with Part 2-Subpart J, Part 15-Subparts A, B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of the EUT with FCC Part 15 B.

Related Submittal(s)/Grant(s)

FCC Part 15.231 DSC submissions with FCC ID: 2AJUYGT003804.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, 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.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		uncertainty
Conducted Emissions		±1.95dB
Emissions, radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a manufacturer testing fashion.

EUT operation mode: receiving

EUT Exercise Software

No exercise software was used.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

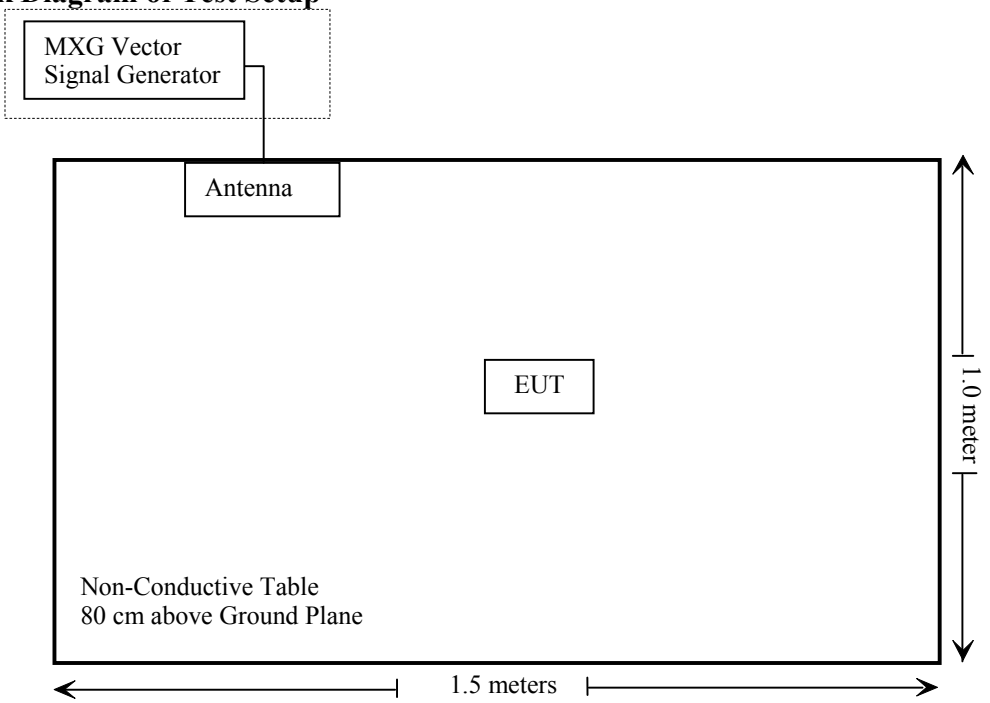
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Agilent	MXG Vector Signal Generator	N5182B	MY53051503

External I/O Cable

Cable Description	Length (m)	From / Port	To
/	/	/	/

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Not Applicable
§15.109	Radiated Spurious Emissions	Compliance

Note: The EUT is power by battery.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
A.H. System	Horn Antenna	SAS-200/571	135	2018-09-01	2021-08-31
Rohde & Schwarz	Signal Analyzer	FSEM	845987/005	2018-06-23	2019-06-23
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017-12-22	2020-12-21
COM-POWER	Pre-amplifier	PA-122	181919	2018-05-22	2018-11-22
Sonoma instrument	Amplifier	310N	186238	2018-05-12	2018-11-12
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2018-01-11	2019-01-11
Ducommun technologies	RF Cable	UFA147A-2362-100100	MFR64639 231029-003	2018-08-01	2019-02-01
Ducommun technologies	RF Cable	104PEA	218124002	2018-05-21	2018-11-21
Ducommun technologies	RF Cable	RG-214	1	2018-05-21	2018-11-19
Ducommun technologies	RF Cable	RG-214	2	2018-05-22	2018-11-22
Heatsink Required	Amplifier	QLW-18405536-J0	15964001002	2018-08-01	2019-02-01
Rohde & Schwarz	Auto test software	EMC 32	V9.10	NCR	NCR

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

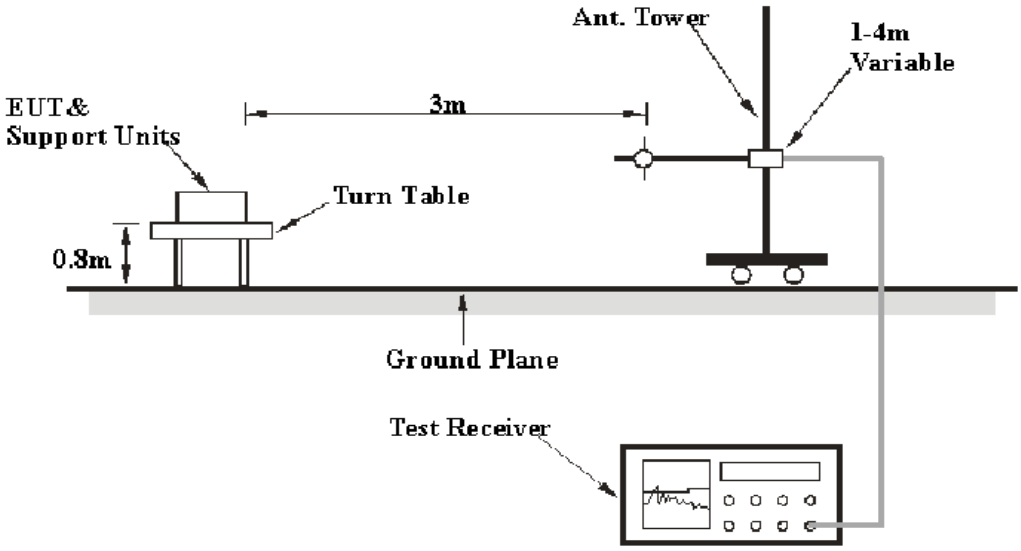
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Applicable Standard

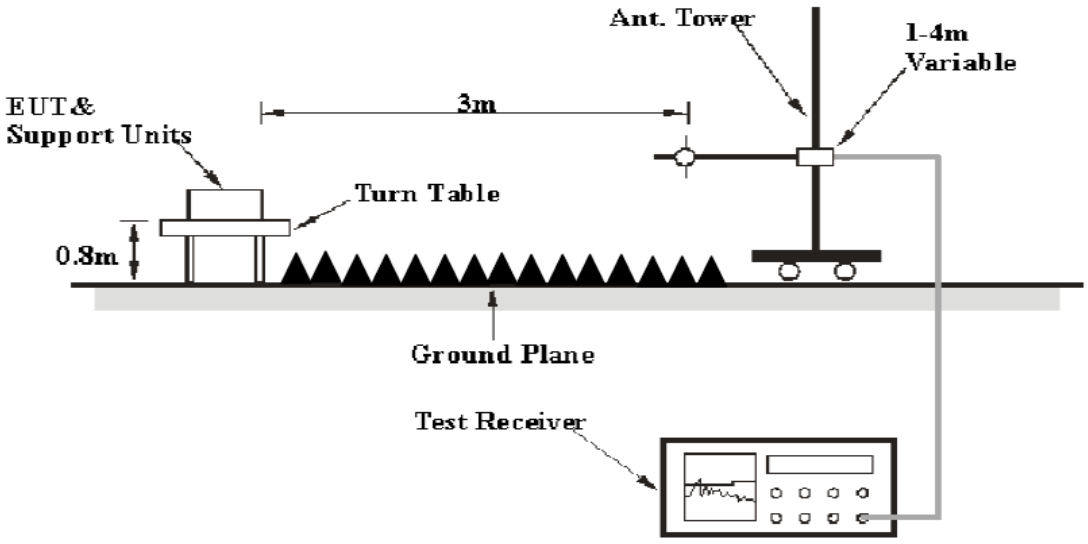
FCC §15.109

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 2 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurment
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

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

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B,

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

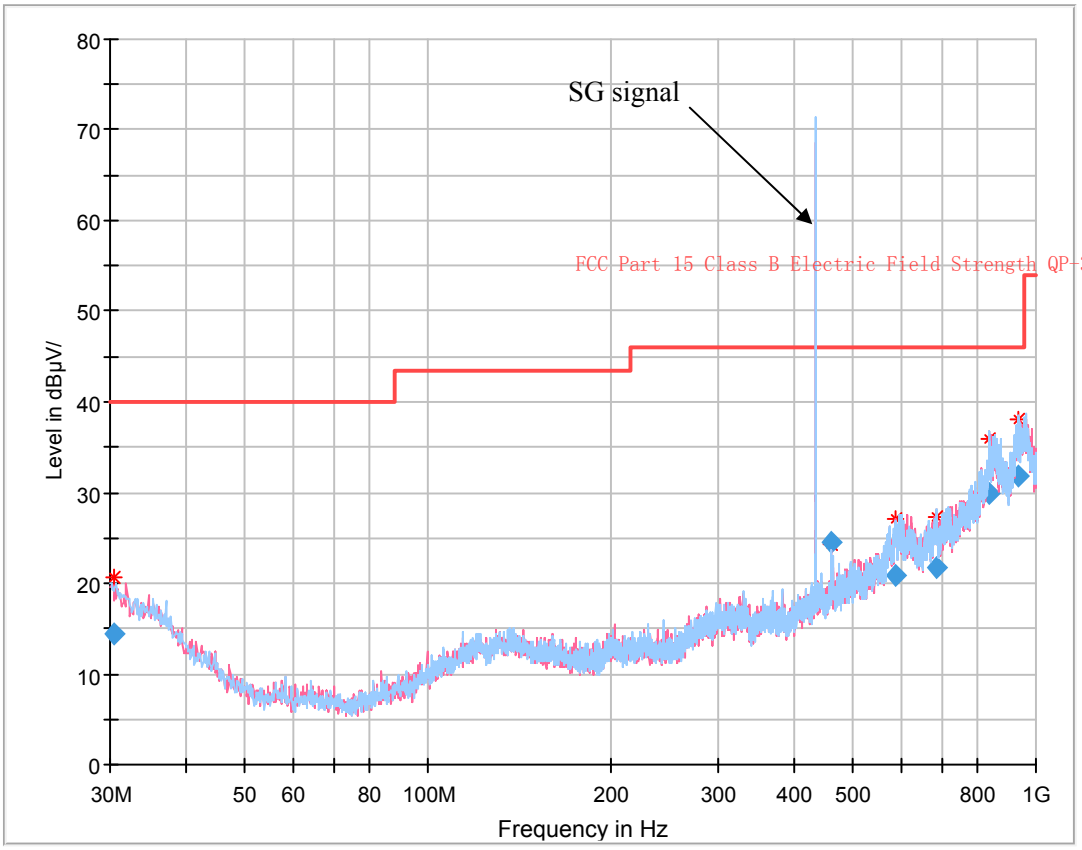
Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	53 %
ATM Pressure:	100.1 kPa

The testing was performed by Shawn Xiao on 2018-09-26.

EUT Operation Mode: receiving

30 MHz~1 GHz:



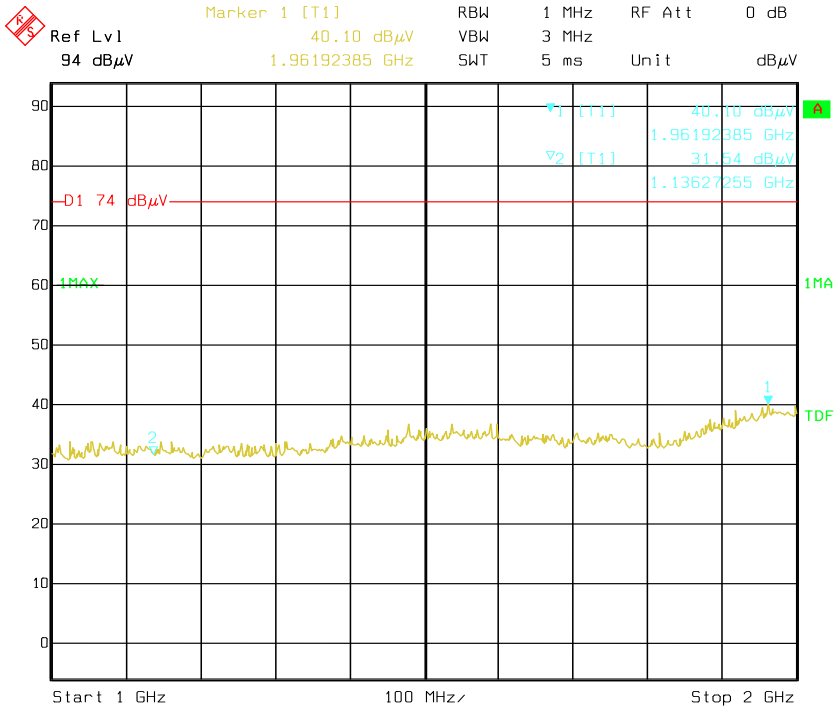
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
30.413125	14.43	163.0	H	204.0	-7.9	40.00	25.57
461.534750	24.43	390.0	V	15.0	-8.0	46.00	21.57
586.956625	20.91	222.0	V	92.0	-2.6	46.00	25.09
683.971500	21.70	339.0	H	280.0	-2.0	46.00	24.30
837.859625	29.88	153.0	H	272.0	5.7	46.00	16.12
938.272125	31.77	248.0	H	0.0	8.6	46.00	14.23

1 GHz – 2 GHz:

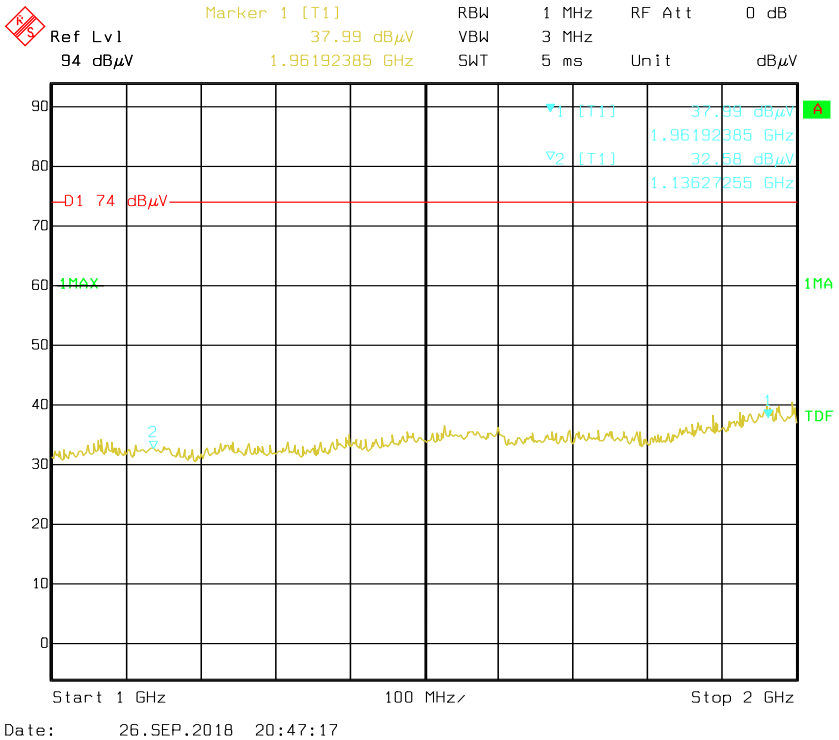
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBuV/m)	FCC Part 15B	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBuV/m)	Margin (dB)
1136.20	35.65	PK	208	1.8	H	-4.39	31.26	74	42.74
1136.20	28.16	Ave.	208	1.8	H	-4.39	23.77	54	30.23
1136.20	37.01	PK	81	1.9	V	-4.39	32.62	74	41.38
1136.20	28.30	Ave.	81	1.9	V	-4.39	23.91	54	30.09
1996.34	40.56	PK	260	2.2	H	-1.50	39.06	74	34.94
1996.34	28.74	Ave.	260	2.2	H	-1.50	27.24	54	26.76
1996.34	40.89	PK	266	2.0	V	-1.50	39.39	74	34.61
1996.34	28.50	Ave.	266	2.0	V	-1.50	27.00	54	27.00

Note:
1) Correction Factor=Antenna factor (RX) + cable loss – amplifier factor
2) Corrected Amplitude = Correction Factor + Reading
3) Margin = Limit - Corrected Amplitude

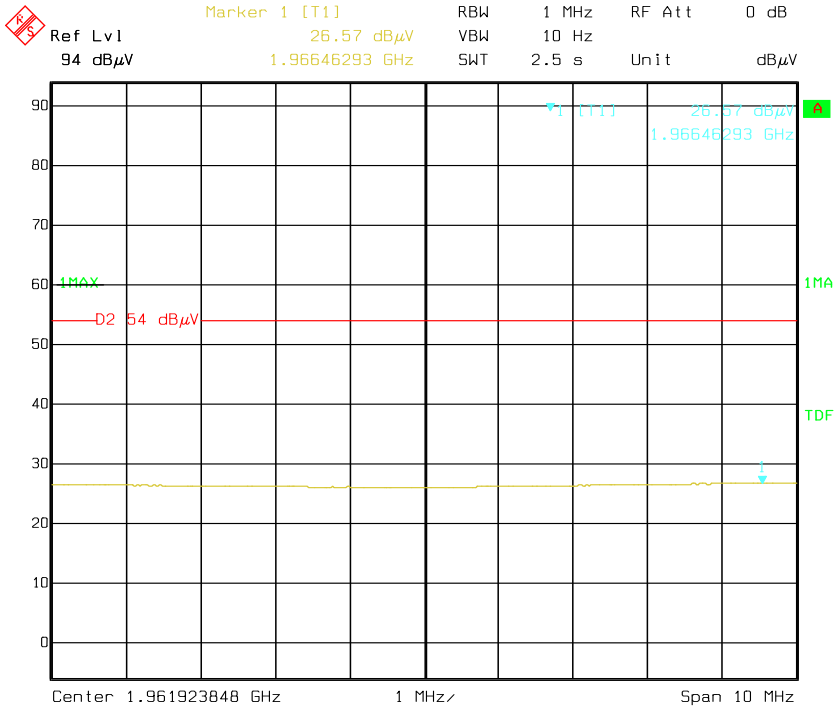
Pre-scan for peak
Horizontal – Peak (1-2 GHz)



Vertical - Peak (1-2 GHz)



Horizontal – Average



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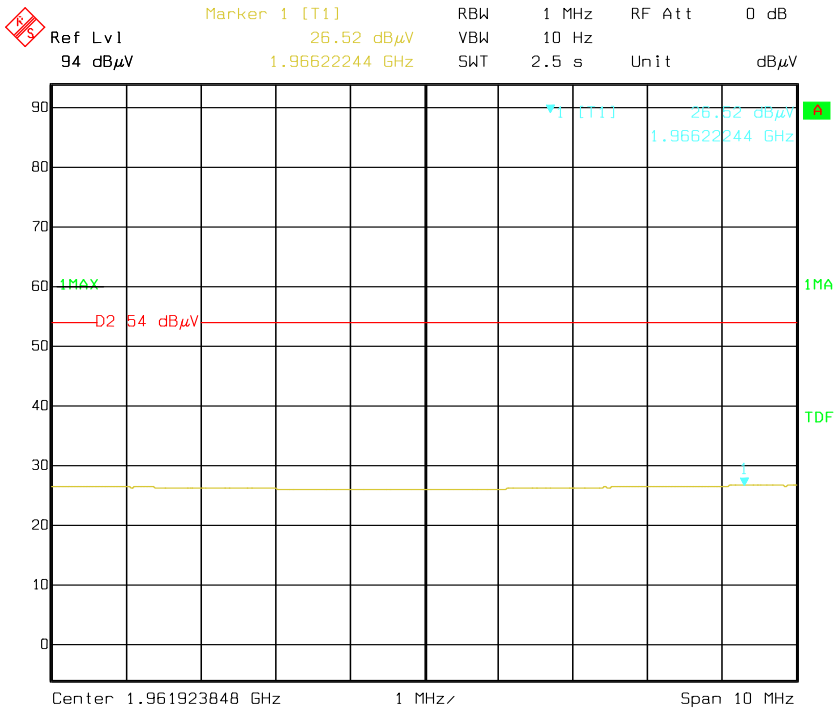
Vertical - Average



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