

TECHNICAL CONSULTING CO., LTD



卓時檢測



ISO/IEC17025 Accredited Lab.

Report No: FCC 1312137-03

File reference No: 2014-01-15

Applicant: TD Semi, Inc.

Product: Tron Tab Mega

Model No: T4238

Trademark: N/A

Test Standards: FCC Part 15 Subpart B: 2012

Test result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.4&FCC Part 15 regulations for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: Jan 15, 2014

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD

East 5/Block 4, Anhua Industrial Zone, No.8, Tairan Rd. Chegongmiao, FuTian District, Shenzhen, CHINA.

Tel (755) 83448688 Fax (755) 83442996



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

IC- Registration No.: IC5205A-02

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-02.

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Test Report Conclusion

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1.0 General Details

1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD
Address: East 5/Block 4, Anhua Industrial Zone, No.8,Tairan Rd. CheGongMiao, FuTian District, Shenzhen, CHINA.
Telephone: (755) 83448688
Fax: (755) 83442996

1.2 Applicant Details

Applicant: TD Semi, Inc.
Address: 3704 Marlborough Ct., Plano, TX 75075, USA
Telephone: (972) 346-1201
Fax: (972) 810-4326

1.3 Description of EUT

Product: Tron Tab Mega
Manufacturer: Shenzhen Jizhao Information Technology Co., Ltd
Address: 4th Floor, Yuxing Sanwei Tech Park, HangKong Road, Xixiang Town, Bao'an, Shenzhen, China.
Brand Name: N/A
Model Number: T4238
Additional Model Number: N/A

1.4 Submitted Sample: 2 Sample

1.5 Test Duration: 2014-01-04 to 2014-01-14

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB
Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer

The sample tested by

Print Name: Terry Tong

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2.0 List of Measurement Equipment

2.1 Conducted Emission Test

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
EMI Test Receiver	ESH3	860905/006	RS	2013-08-23	1Year
Spectrum Analyzer	ESA-L1500A	US37451154	HP	2013-08-23	1Year
PULSE LIMITER	ESH3-Z2	100281	RS	2013-08-23	1Year
LISN	ESH3-Z5	100294	RS	2013-08-23	1Year
LISN	ESH3-Z5	100253	RS	2013-08-23	1Year
LISN	LS16C	10010947251	AFJ	2013-08-23	1Year
LISN (Three Phase)	NSLK 8126	8126453	Schwarebeck	2013-08-23	1Year

2.2 Radiated electromagnetic disturbance test

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
EMI Test Receiver	ESVD	100008	RS	2013-08-23	1Year
Coaxial Switch	MP59B	M70585	ANRITSU	2013-08-23	1Year
Test Receiver	ESI26	838786/013	RS	2013-08-23	1Year
Amplifier	8447D	2727A05017	HP	2013-07-24	1Year
Bilog Antenna	VULB9163	9163/340	Schwarebeck	2013-08-24	1Year
Horn Antenna	BBHA 9120D	9120D-631	Schwarebeck	2013-08-23	1Year

2.3 Auxiliary Equipment

Name	Model No.	Serial No.	Manufacturer	Cable	FCC DOC/ ID
U-disk	U208	--	Netac	--	FCC DOC
SD	--	--	Kingston	--	--
PC	R400	--	IBM	--	FCC DOC
Mouse	M-F105	--	L.SEletron	--	FCC DOC
TF	--	--	--	--	--
Monitor	IN1920c		DELL		DOC

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3.0 Technical Details

3.1 Investigations Requested

Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

3.2 Test Standards

FCC Part 15 Subpart B: 2012

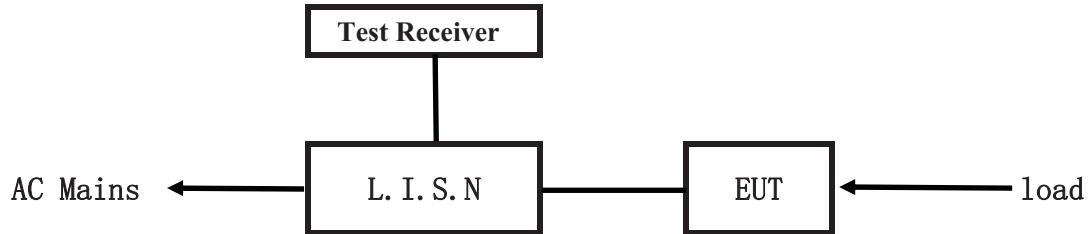
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4.0 Conducted Power line Test

4.1 Schematics of the test



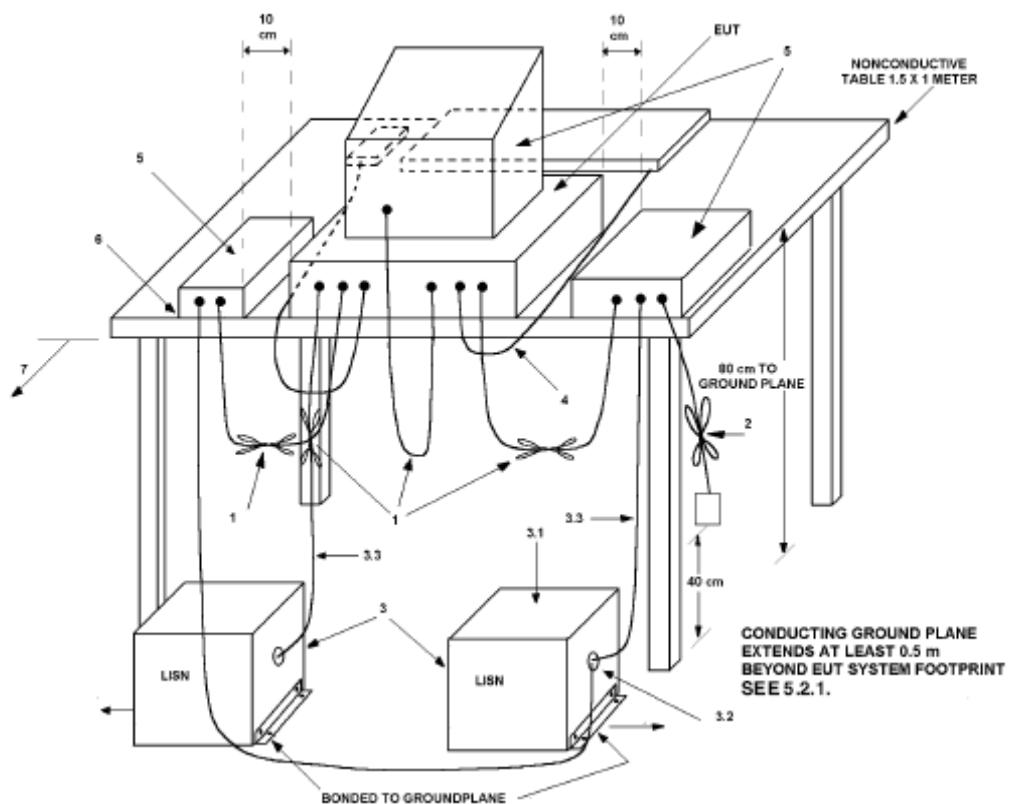
EUT: Equipment Under Test

4.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2009. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2009. Cables and peripherals were moved to find the maximum emission levels for each frequency.

Actual Working Voltage and Frequency: 120V~, 60Hz

Block diagram of Test setup



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4.3 Power line conducted Emission Limit

Frequency(MHz)	Class A Limits dB(μV)		Class B Limits dB(μV)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.00	66.00	66.00~56.00*	56.00~46.00*
0.50 ~ 5.00	73.00	60.00	56.00	46.00
5.00 ~ 30.00	73.00	60.00	60.00	50.00

Notes: 1. *decreasing linearly with logarithm of frequency.
2. The tighter limit shall apply at the transition frequencies

4.4 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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A: Conducted Emission on Live Terminal (150kHz to 30MHz)

EUT Operating Environment

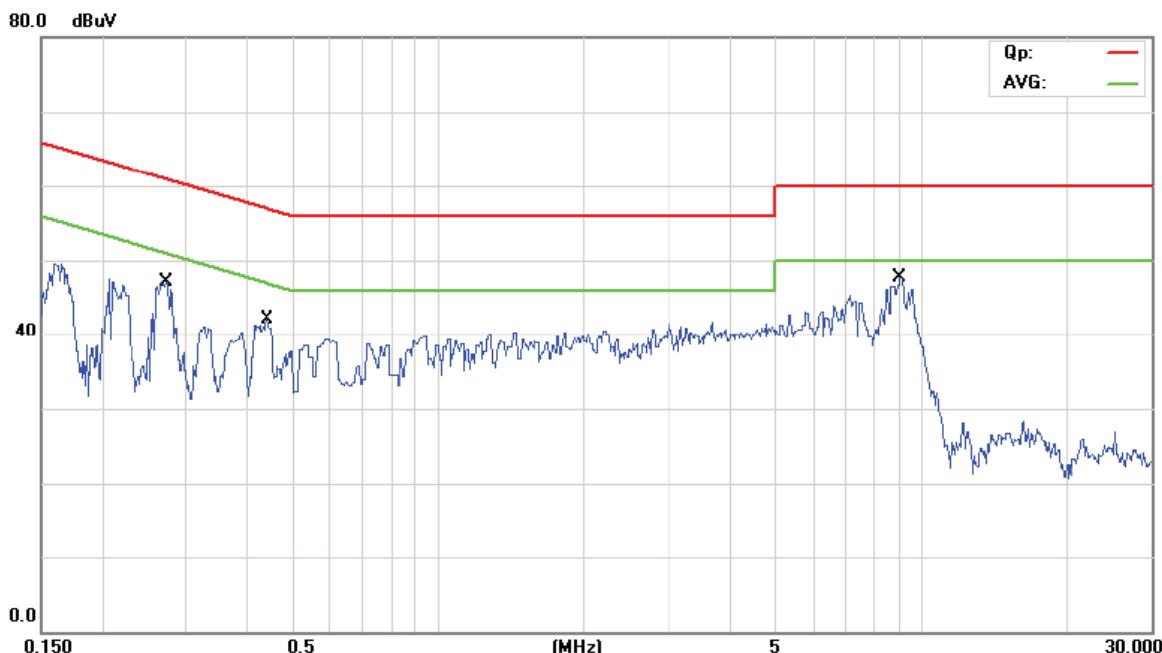
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: data communicate with PC by USB port

Equipment Level: Class B

Results: PASS

Please refer to following diagram for individual



Frequency (MHz)	Line	Reading(dB μ V)		Limit(dB μ V)	
		Quasi-peak	Average	Quasi-peak	Average
0.270	Live	45.24	30.18	61.11	51.11
0.436	Live	39.55	24.00	57.14	47.14
9.045	Live	41.81	30.91	60.00	50.00

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B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

EUT Operating Environment

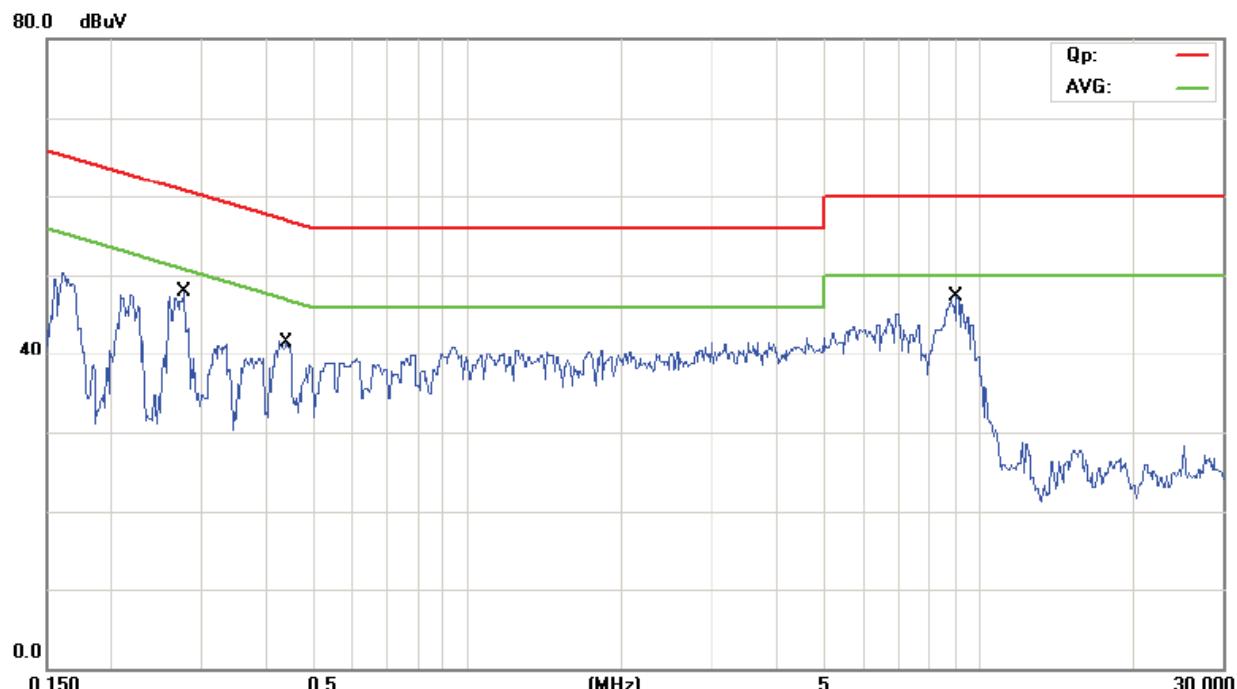
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: data communicate with PC by USB port

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



Frequency (MHz)	Line	Reading(dB μ V)		Limit(dB μ V)	
		Quasi-peak	Average	Quasi-peak	Average
0.277	Neutral	43.61	27.44	60.88	50.91
0.443	Neutral	40.51	24.73	57.01	47.01
9.013	Neutral	34.72	29.67	60.00	50.00

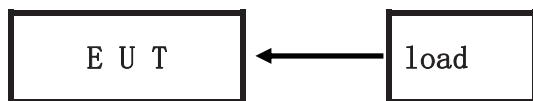
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5.0 Radiated Disturbance Test

5.1 Schematics of the test

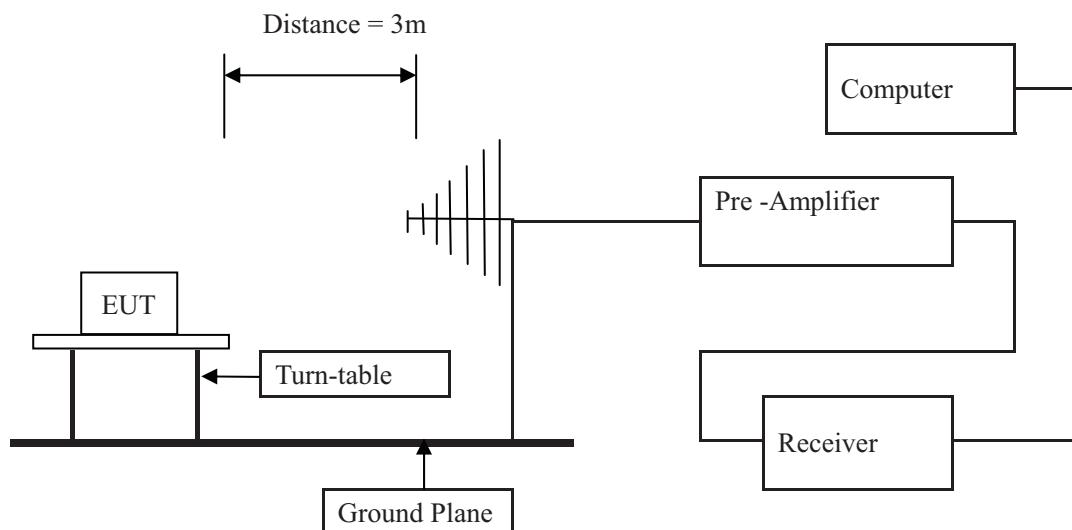


5.2 Test Method and test Procedure:

The EUT was tested according to ANSI C63.4 –2009; The frequency spectrum from 30MHz to 18GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK dectector

Actual Working Voltage and Frequency: 120V~, 60Hz

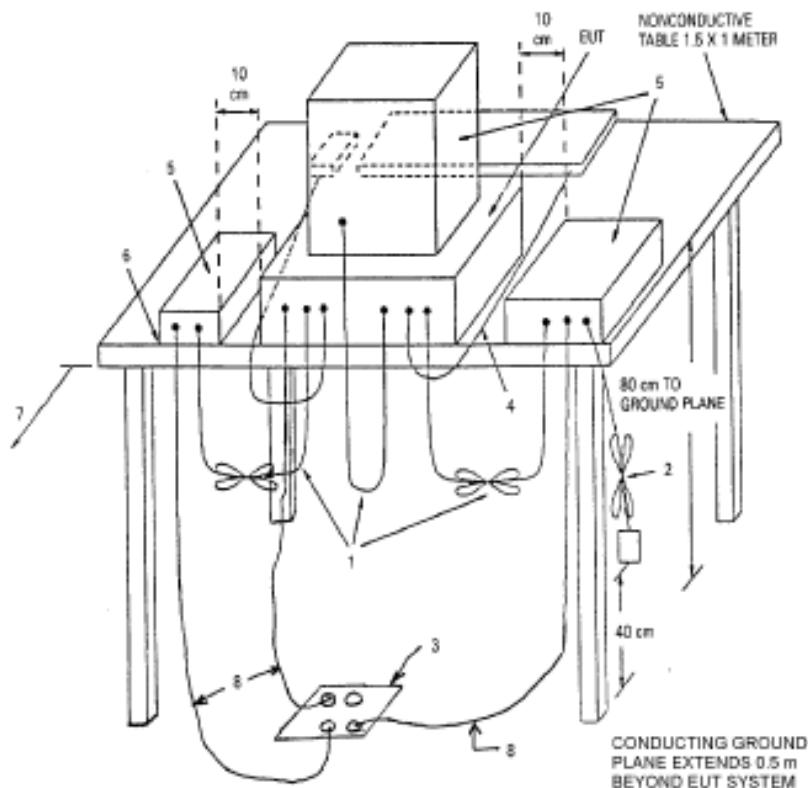
Block diagram of Test setup



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5.3 Radiated Emission Limit

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.00
88-216	3	43.50
216-960	3	46.00
Above 960	3	54.00

Note: 1. The lower limit shall apply at the transition frequencies

2. This is a handheld device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand). After pre-test. It was found that the worse radiated emission was get at the lying position.

5.4 Test result

The frequency spectrum from 30MHz to 18GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector. Measurements were made at 3 meters.

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Test result

General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal/ In Vertical (30MHz----1000MHz)

EUT set Condition: data communicate with PC by USB port

Results: **Pass**

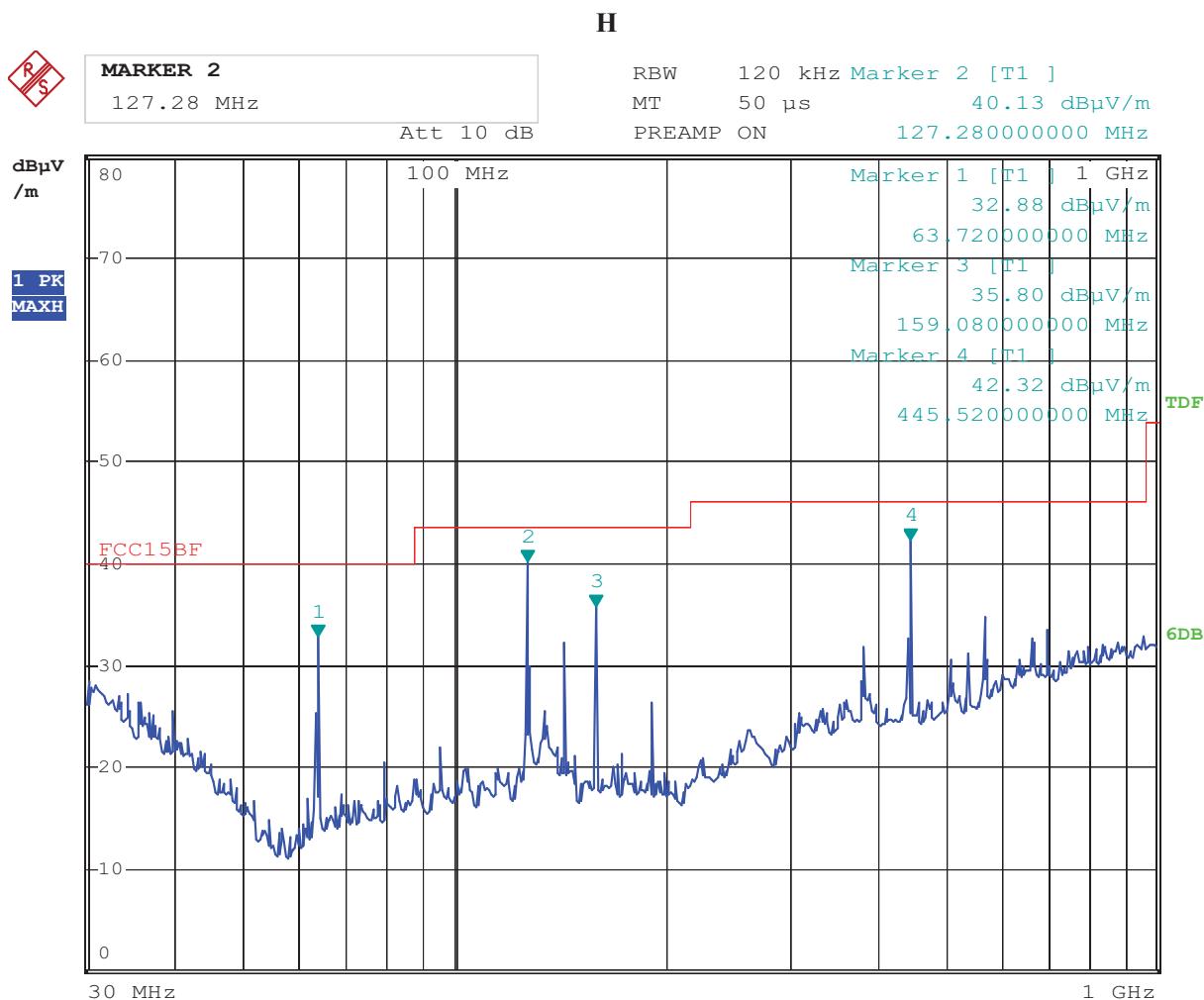
Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
63.720	32.88	H	40.00
127.280	40.13	H	43.50
159.080	35.80	H	43.50
445.520	42.32	H	46.00
63.640	33.69	V	40.00
95.400	34.26	V	43.50
158.960	30.05	V	43.50
445.560	43.86	V	46.00

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Test Figure:



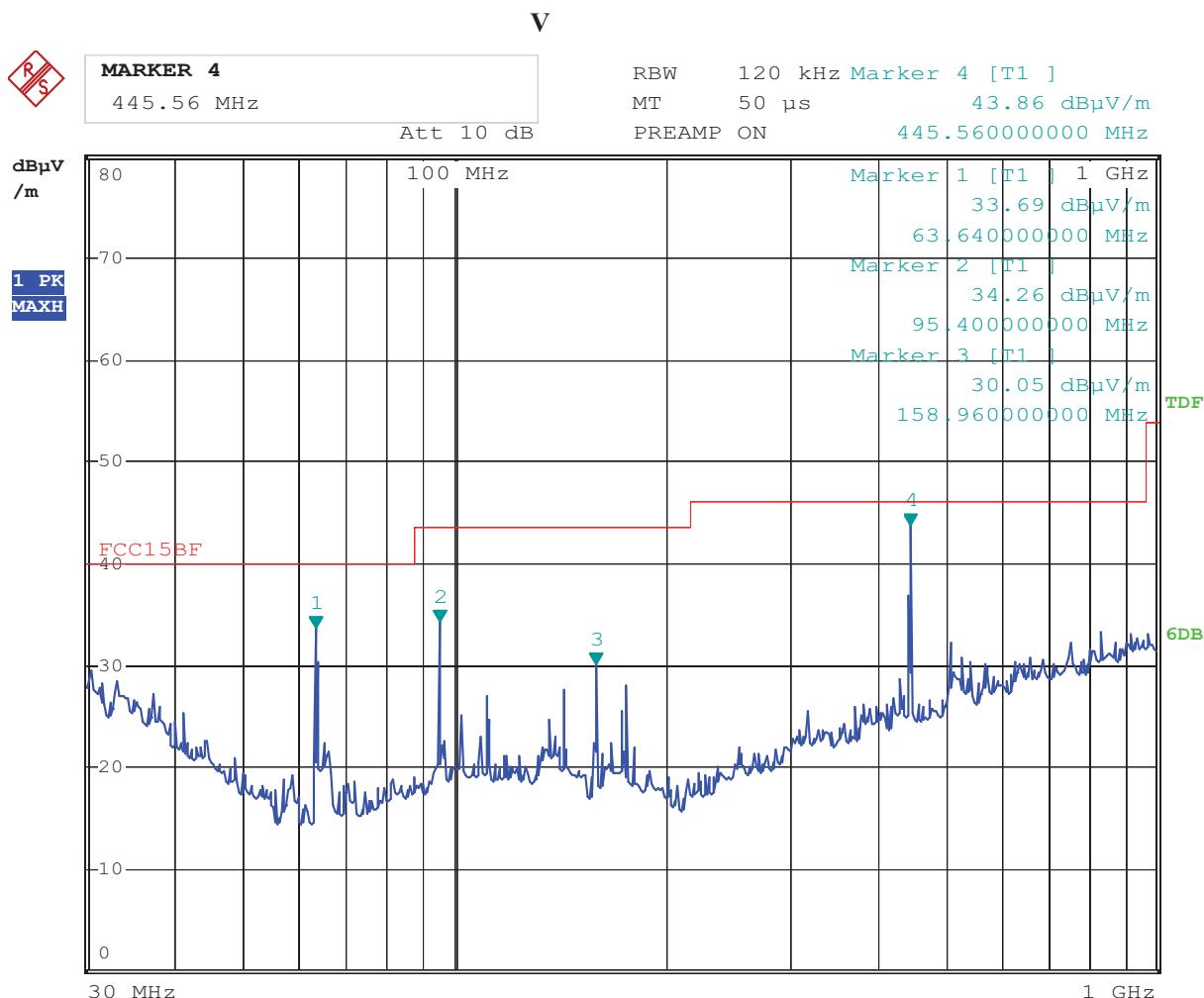
Date: 13.JAN.2014 15:54:40

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Test Figure:



Date: 13.JAN.2014 15:50:35

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Radiated Disturbance (1000MHz----18000MHz)

EUT Operating Environment

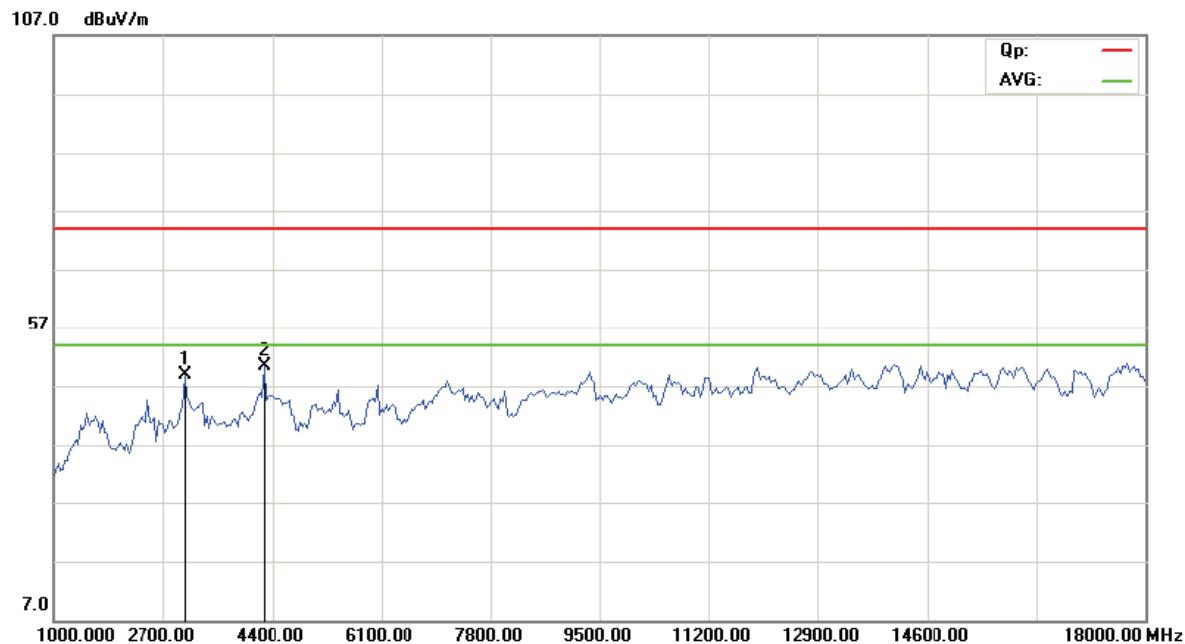
Temperature: 25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: data communicate with PC by USB port

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
3044.088	48.96 (PK)	H	54(AV)
4270.541	50.26 (PK)	H	54(AV)

Note: Due to the final PK measurement level much less than the AV limit, so no necessary to take down final AV measurement level.

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Radiated Disturbance (1000MHz----18000MHz)

EUT Operating Environment

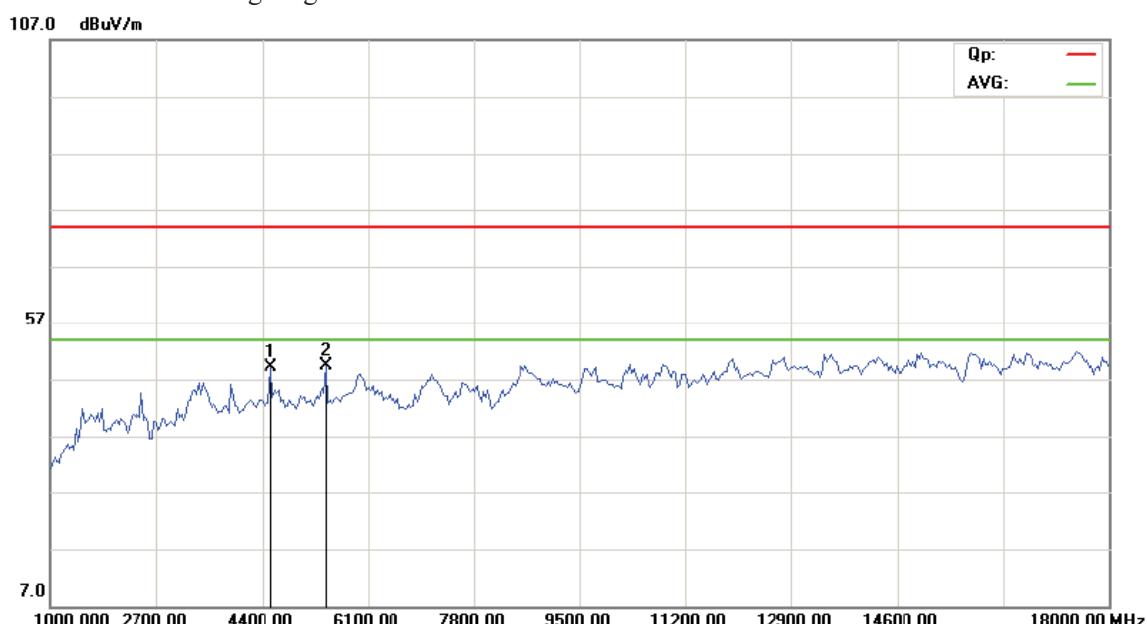
Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: data communicate with PC by USB port

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)
4543.086	49.01 (PK)	V	54(AV)
5428.858	49.41 (PK)	V	54(AV)

Note: Due to the final PK measurement level much less than the AV limit, so no necessary to take down final AV measurement level.

--End of the Report--

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