TEST REPORT

Product	:	Tintag (charger)
Trade mark	:	TINTAG
Model/Type reference	:	Tintag
Serial number	:	N/A
Ratings	:	Input: 5V⎓
FCC ID	:	2AFRO-TINTAGWPC
Report number	:	EED32H000910-2
Date	:	Jun. 15, 2015
Regulations	:	See below

Test Standards	Results
☒ 47 CFR FCC Part 15 Subpart C: 2014	PASS

Prepared for:

Tintag Electronics
Strada Traian nr 9 ap 19 Cluj Napoca, Romania

Prepared by:

Centre Testing International Group Co., Ltd.
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Tested by: Wave Xin Reviewed by: Kevin Lan

Approved by: Sheek Luo Date: Aug. 14, 2015

Sheek Luo
Lab supervisor

Check No.: 1996258675

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1. GENERAL INFORMATION

Applicant: Tintag Electronics
Strada Traian nr 9 ap 19 Cluj Napoca, Romania

Manufacturer: Cicor Systronics
Zona Industriala Arad Vest, nr 10 Arad Romania

Factory: Cicor Systronics
Zona Industriala Arad Vest, nr 10 Arad Romania

FCC ID:

Product: Tintag (charger)

Trade mark: TINTAG

Model/Type reference: Tintag

Serial Number: N/A

Report Number: EED32H000910-2

Sample Received Date: Jul.10, 2015

Sample tested Date: Jul. 10, 2015 to Aug. 14, 2015

The above equipment was tested by Centre Testing International (Shenzhen) Corporation for compliance with the requirements set forth in the FCC Rules and the measurement procedure according to ANSI C63.10-2013.

2. TEST SUMMARY

No.	Test Item	Rule	Test Result
1	Conducted Emission	FCC 15.207	**PASS**
2	Radiated Emission	FCC 15.209	**PASS**

3. PRODUCT INFORMATION

Items	Description
Rating	Input: 5V⎓
Antenna Type	Coil antenna
Operated frequency	205kHz

4. TEST EQUIPMENT LIST

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber	TDK	SAC-3	---	06-02-2013	06-01-2016
TRILOG Broadband Antenna	schwarzbeck	VULB9163	9163-617	07-14-2015	07-13-2016
Microwave Preamplifier	Agilent	8449B	3008A02425	02-05-2015	02-04-2016
Horn Antenna	ETS-LINDGREN	3117	00057410	07-08-2015	07-07-2016
Loop Antenna	ETS	6502	00071730	07-23-2015	07-22-2016
Spectrum Analyzer	R&S	FSP40	100416	07-09-2015	07-08-2016
Receiver	R&S	ESCI	100435	07-09-2015	07-08-2016
Multi device Controller	maturo	NCD/070/10711112	---	01-13-2015	01-12-2016
LISN	schwarzbeck	NNBM8125	81251547	07-09-2015	07-08-2016
LISN	schwarzbeck	NNBM8125	81251546	07-09-2015	07-08-2016
Signal Generator	Agilent	E4438C	MY45095744	04-19-2015	04-18-2016
Signal Generator	Keysight	E8257D	MY53401106	04-14-2015	04-13-2016
Temperature/ Humidity Indicator	TAYLOR	1451	5190	07-10-2015	07-09-2016
Communication test set	Agilent	E5515C	GB47050533	01-13-2015	01-12-2016
Cable line	Fulai(7M)	SF106	5219/6A	01-13-2015	01-12-2016
Cable line	Fulai(6M)	SF106	5220/6A	01-13-2015	01-12-2016
Cable line	Fulai(3M)	SF106	5216/6A	01-13-2015	01-12-2016
Cable line	Fulai(3M)	SF106	5217/6A	01-13-2015	01-12-2016
Communication test set	R&S	CMW500	152394	04-19-2015	04-18-2016
High-pass filter(3-18GHz)	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-13-2015	01-12-2016
High-pass filter(5-18GHz)	MICRO-TRONICS	SPA-F-63029-4	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-13-2015	01-12-2016

Shielding Room No. 1 – Conduction Emission Test					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Receiver	R&S	ESCI	100009	06-30-2015	06-28-2016
LISN	R&S	ENV216	100098	11-12-2014	11-13-2015

5. MEASUREMENT UNCERTAINTY

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement items	Uncertainty
Conducted Emission Test	3.2 dB
Radiated Emissions / Bandedge Emission	4.5 dB

6. SUPPORT EQUIPMENT LIST

Device Type	Brand	Model	Data Cable	Remark
Notebook	HP	G3	N/A	FCC DOC
Mouse	L.Selectron	M004	Un-shielded 1.2M	FCC DOC

7. AC CONDUCTED EMISSION TEST

7.1. LIMITS

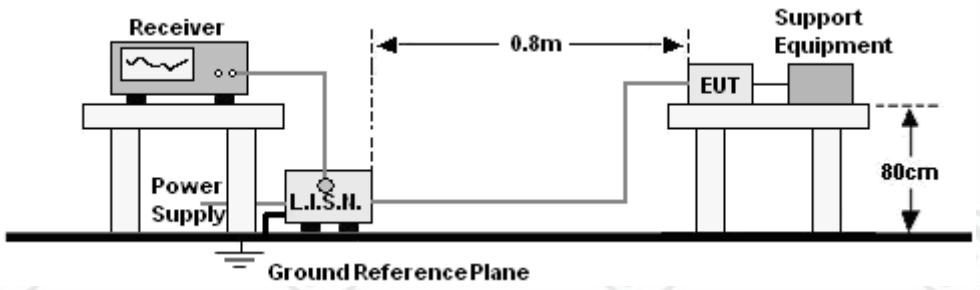
Limits for Class B digital devices

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

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

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

7.2. BLOCK DIAGRAM OF TEST SETUP



7.3. PROCEDURE OF CONDUCTED EMISSION TEST

a. The Product was placed on a nonconductive table above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

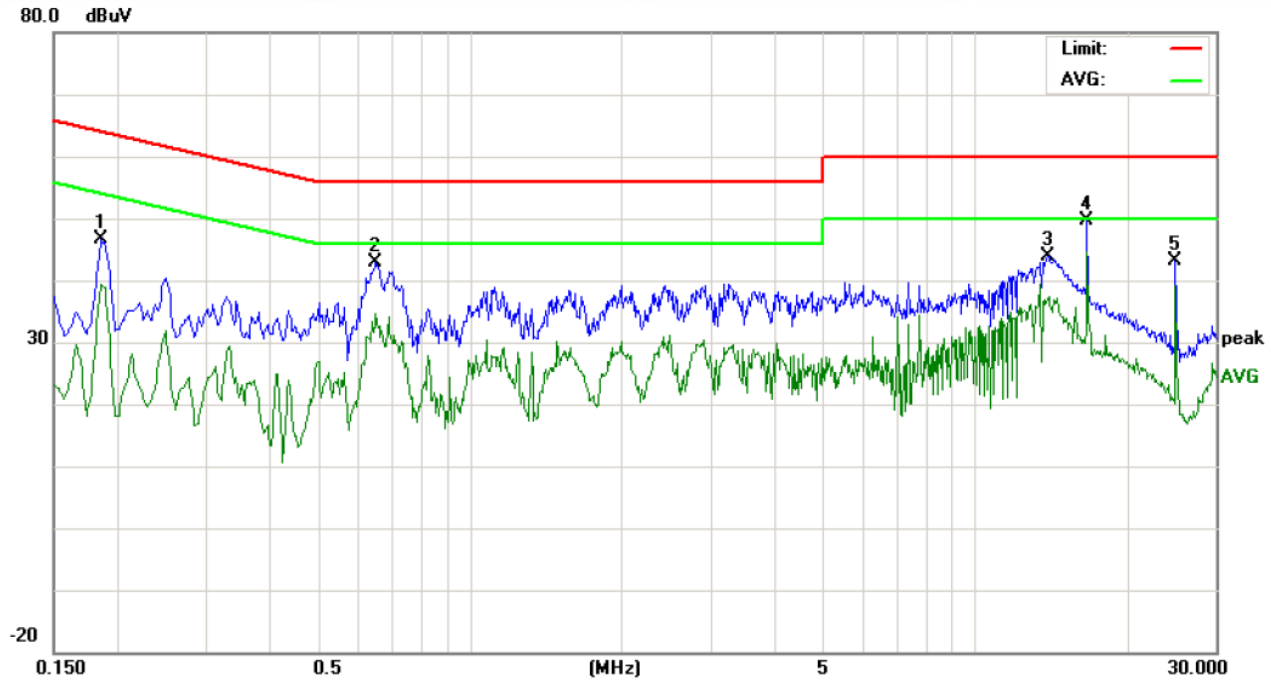
b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

7.4. GRAPHS AND DATA

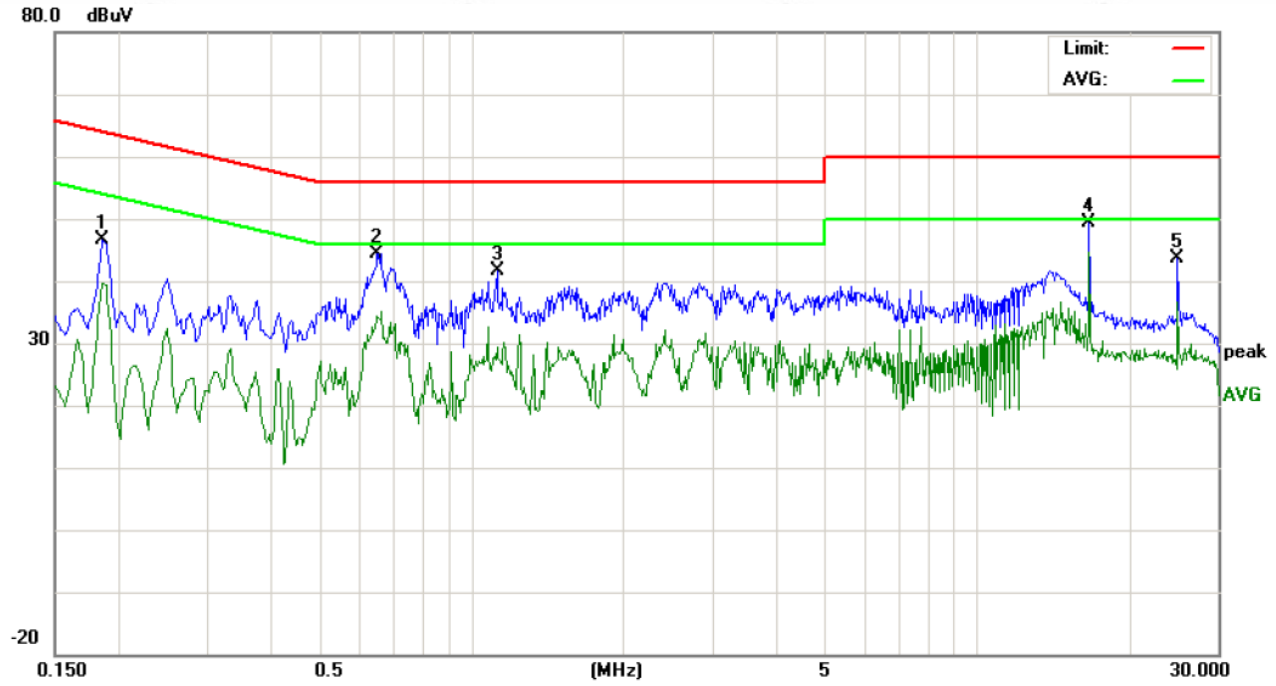
Product	:	Tintag (charger)	**Model/Type reference**	:	Tintag
Power	:	AC 120V/60Hz	**Temperature**	:	22℃
Mode	:	Charging	**Humidity**	:	52%

L:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1860	36.63		29.57	9.90	46.53		39.47	64.21	54.21	-17.68	-14.74	P	
2	0.6540	32.89		24.69	9.90	42.79		34.59	56.00	46.00	-13.21	-11.41	P	
3	13.9620	34.04		27.24	9.92	43.96		37.16	60.00	50.00	-16.04	-12.84	P	
4	16.7020	39.53		34.54	10.07	49.60		44.61	60.00	50.00	-10.40	-5.39	P	
5	25.0500	32.92		28.70	10.30	43.22		39.00	60.00	50.00	-16.78	-11.00	P	

N:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1860	36.66		29.77	9.90	46.56		39.67	64.21	54.21	-17.65	-14.54	P	
2	0.6540	34.58		24.46	9.90	44.48		34.36	56.00	46.00	-11.52	-11.64	P	
3	1.1260	31.85		19.53	9.90	41.75		29.43	56.00	46.00	-14.25	-16.57	P	
4	16.6980	39.38	38.27	33.58	10.07	49.45	48.34	43.65	60.00	50.00	-11.66	-6.35	P	
5	25.0500	33.22		26.43	10.30	43.52		36.73	60.00	50.00	-16.48	-13.27	P	

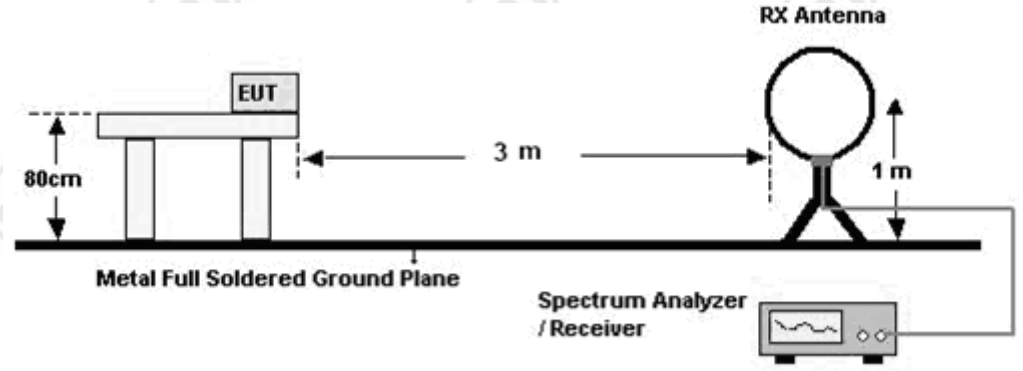
8. RADIATED EMISSION MEASUREMENT

8.1. LIMITS

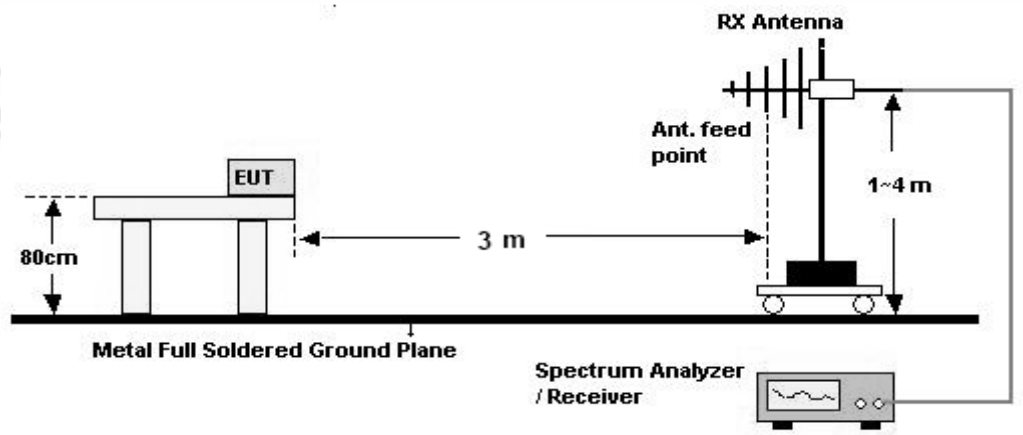
Frequency (MHz)	Field strength (μV/m)	Distance (m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

8.2. BLOCK DIAGRAM OF TEST SETUP

For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz - 1000MHz



8.3. TEST PROCEDURE

Below 30MHz

a. The Product is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The maximum values of the field strength are recorded by adjusting the polarizations of the test antenna and rotating the turntable.

b. For each suspected emission, the Product was arranged to its worst case and then turn table was turned from 0 degrees to 360 degrees to find the maximum reading.

c. The test frequency analyzer system was set to Peak Detect (300Hz RBW in 9kHz to 150kHz and 10kHz RBW in 150kHz to 30MHz) Function and Specified Bandwidth with Maximum Hold Mode.

30MHz ~ 1GHz:

a. The Product was placed on the non-conductive turntable 0.8m above the ground at a chamber.

b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.

c. For each frequency whose maximum record was higher or close to limit, measure its QP value (120 kHz RBW): vary the antenna’s height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

8.4. TEST RESULT

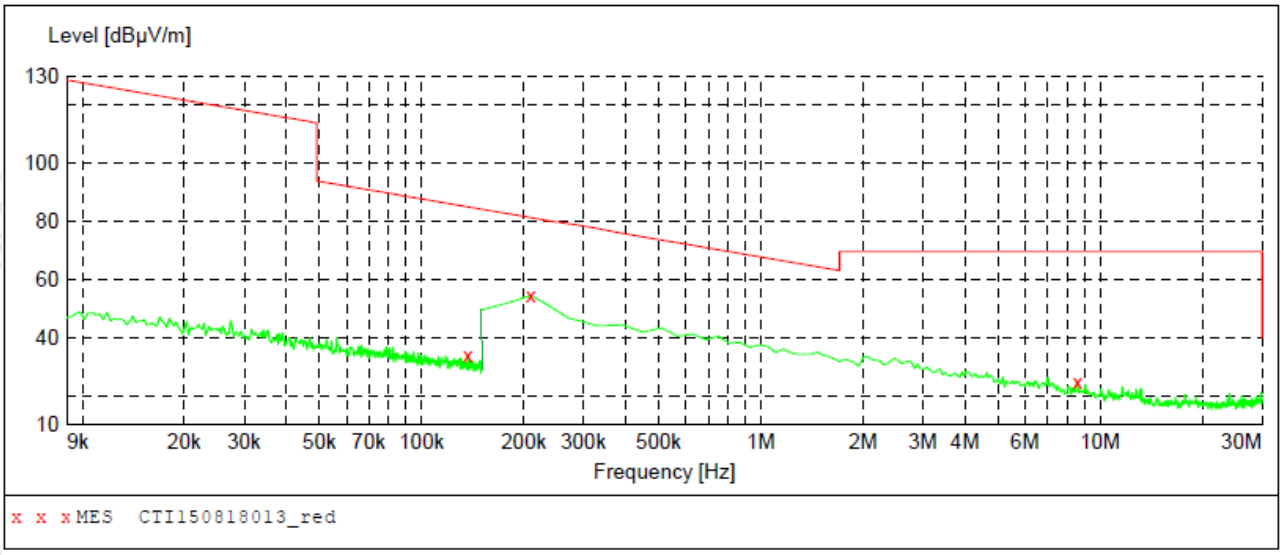
The TX operated frequency is 205kHz.

A. Below 30MHz:

The radiation measurements are performed in X, Y, Z axis positioning. And worst case mode is recorded in the report.

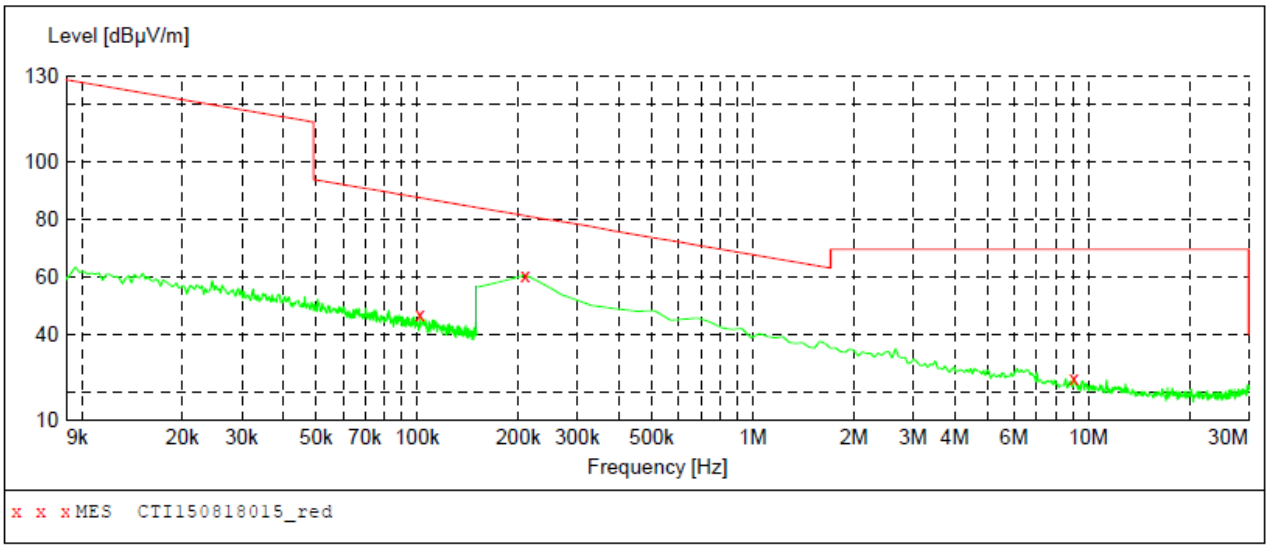
Product	:	Tintag (charger)	**Model/Type reference**	:	Tintag
Power	:	AC 120V/60Hz	**Temperature**	:	22℃
Mode	:	Charging	**Humidity**	:	52%

X:



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.137028	33.80	-19.6	84.9	51.1	AV	100.0	283.00	HORIZONTAL
0.205000	54.40	-19.8	81.4	26.8	AV	100.0	283.00	HORIZONTAL
8.567700	24.70	-20.1	69.5	44.8	QP	100.0	307.00	HORIZONTAL

Y:

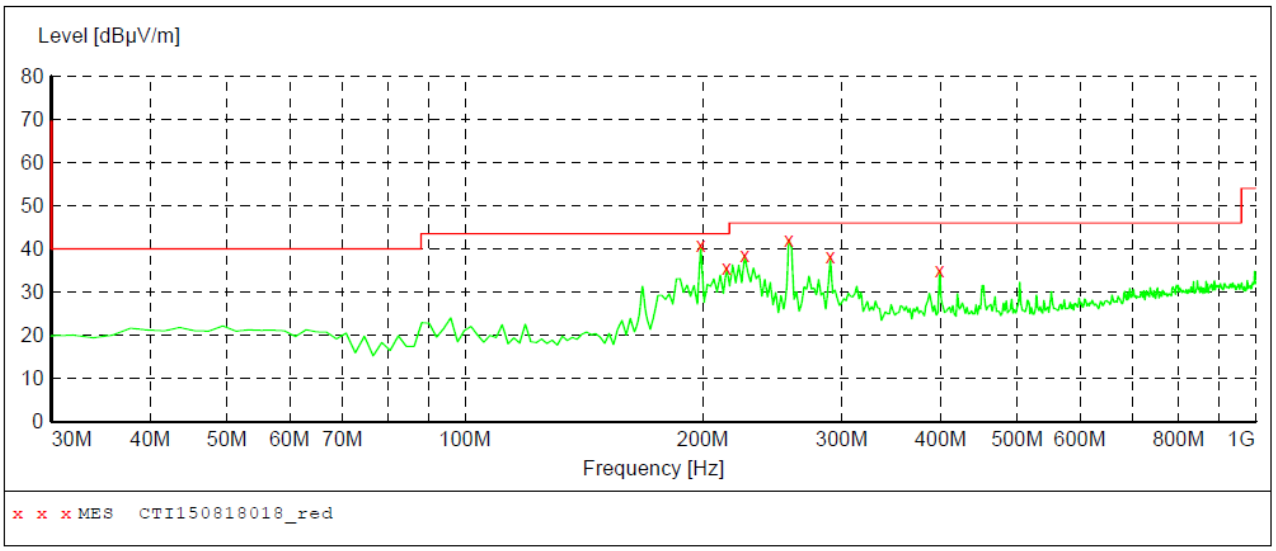


Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
0.101778	46.80	14.1	87.5	40.7	QP	100.0	289.00	VERTICAL
0.205000	60.60	13.7	81.4	20.6	AV	100.0	48.00	VERTICAL
9.045300	24.80	13.6	69.5	44.7	QP	100.0	101.00	VERTICAL

B. 30MHz ～ 1GHz:

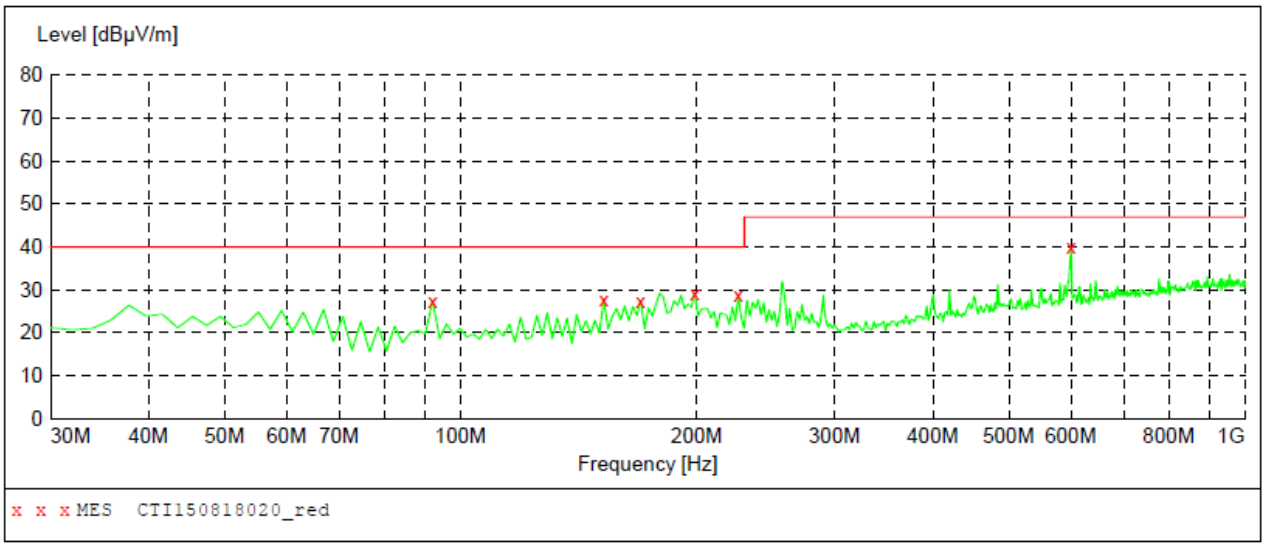
Product	:	Tintag (charger)	**Model/Type reference**	:	Tintag
Power	:	AC 120V/60Hz	**Temperature**	:	22℃
Mode	:	Charging	**Humidity**	:	52%

H:



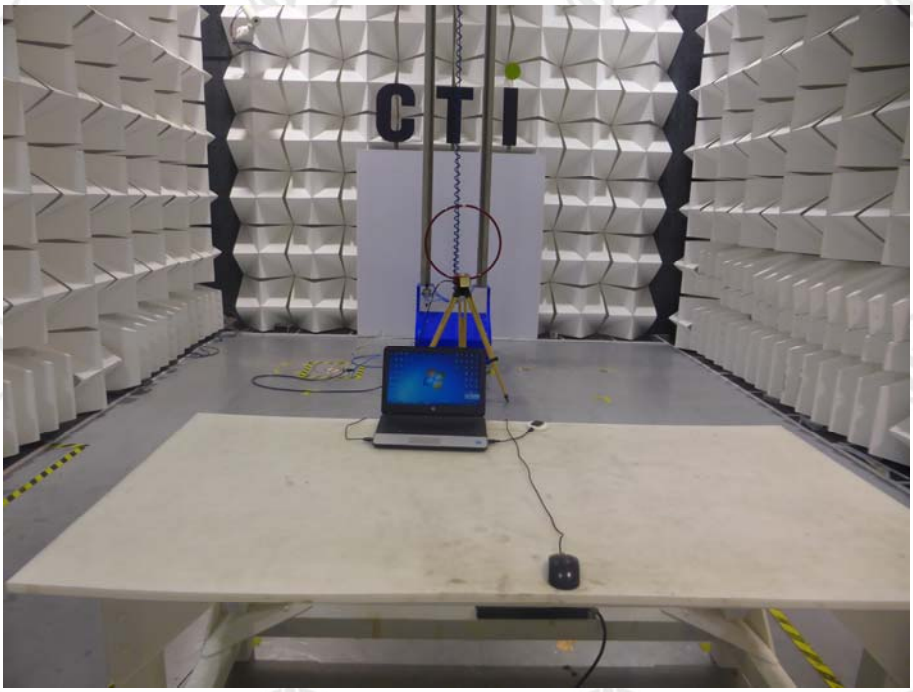
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
198.780000	40.80	13.8	43.5	2.7	QP	100.0	180.00	HORIZONTAL
214.300000	35.70	14.1	43.5	7.8	QP	100.0	37.00	HORIZONTAL
225.940000	38.50	14.3	46.0	7.5	QP	100.0	12.00	HORIZONTAL
256.980000	42.20	14.9	46.0	3.8	QP	100.0	21.00	HORIZONTAL
289.960000	38.20	15.7	46.0	7.8	QP	100.0	48.00	HORIZONTAL
398.600000	35.00	19.1	46.0	11.0	QP	100.0	180.00	HORIZONTAL

V:

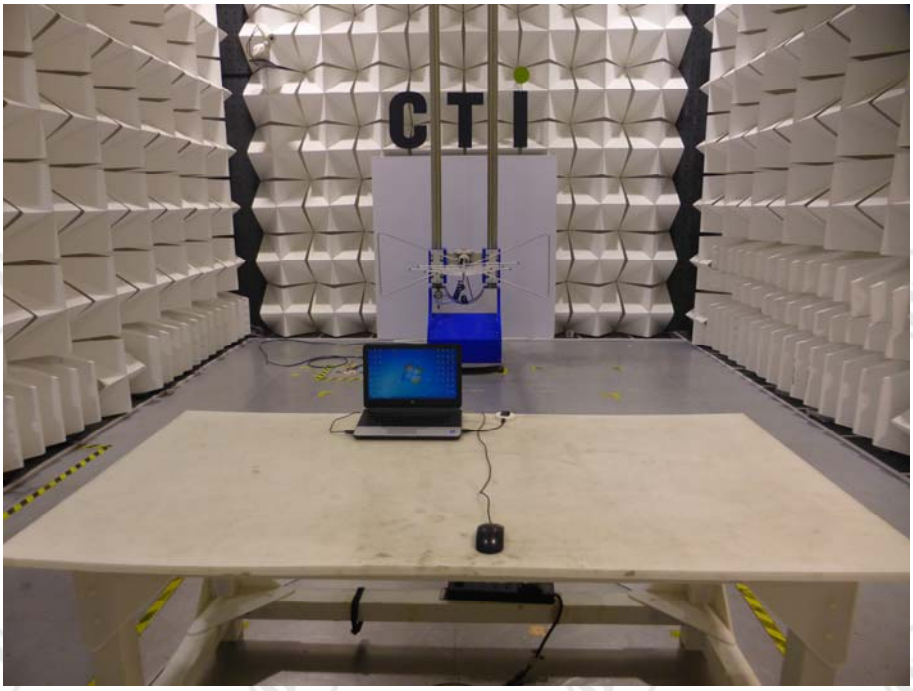


Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
92.080000	27.50	13.2	40.0	12.5	QP	100.0	59.00	VERTICAL
152.220000	27.80	11.4	40.0	12.2	QP	100.0	48.00	VERTICAL
169.680000	27.50	12.4	40.0	12.5	QP	100.0	11.00	VERTICAL
198.780000	29.30	13.8	40.0	10.7	QP	100.0	208.00	VERTICAL
225.940000	28.70	14.3	40.0	11.3	QP	100.0	140.00	VERTICAL
600.360000	39.90	22.3	47.0	7.1	QP	100.0	59.00	VERTICAL

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP



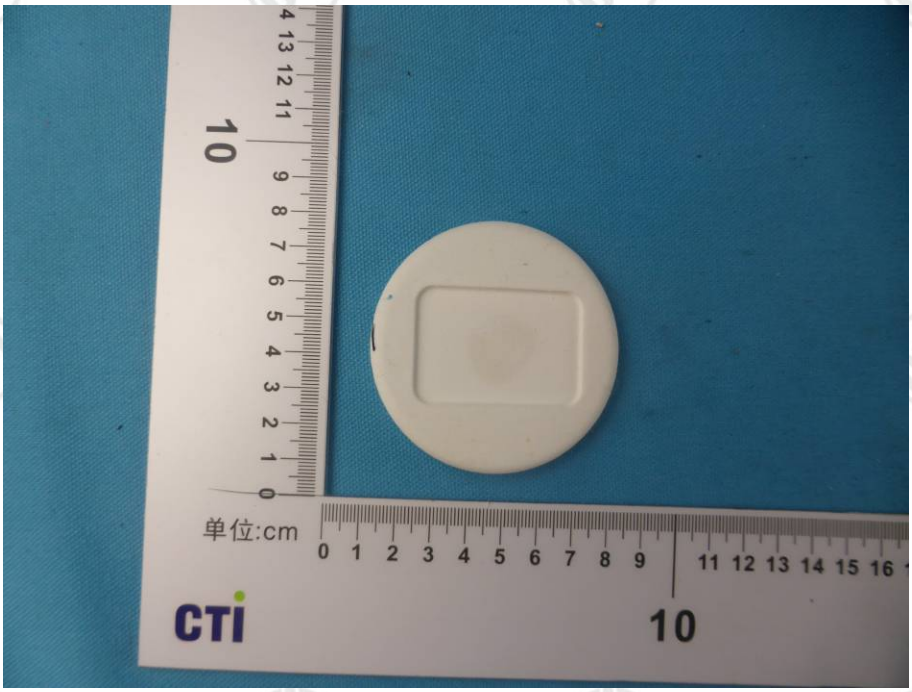
TEST SETUP OF RADIATED EMISSION (9kHz-30MHz)



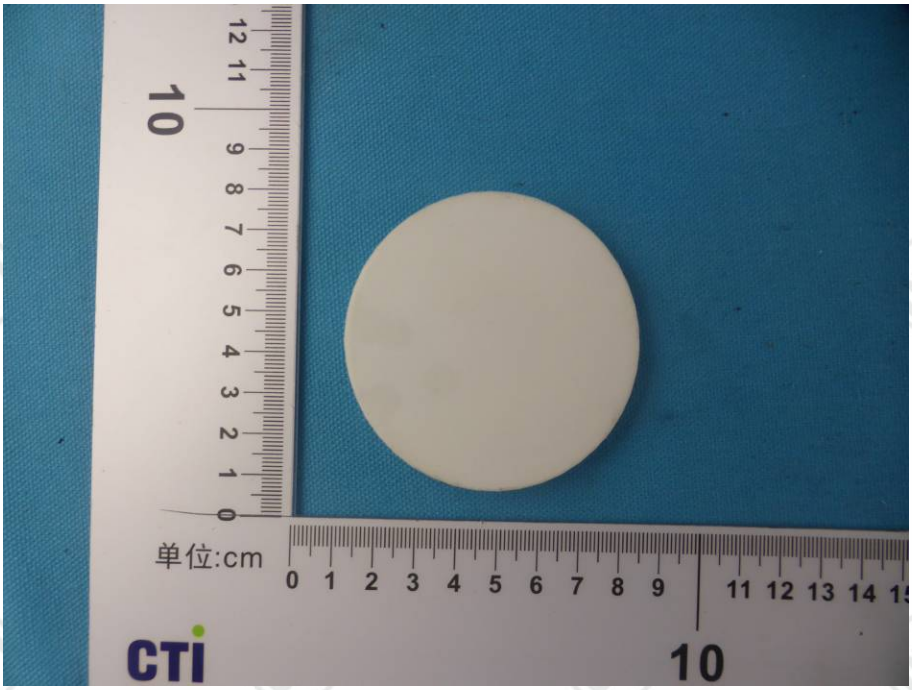
TEST SETUP OF RADIATED EMISSION (30MHz-1GHz)

TEST SETUP OF CONDUCTED EMISSION

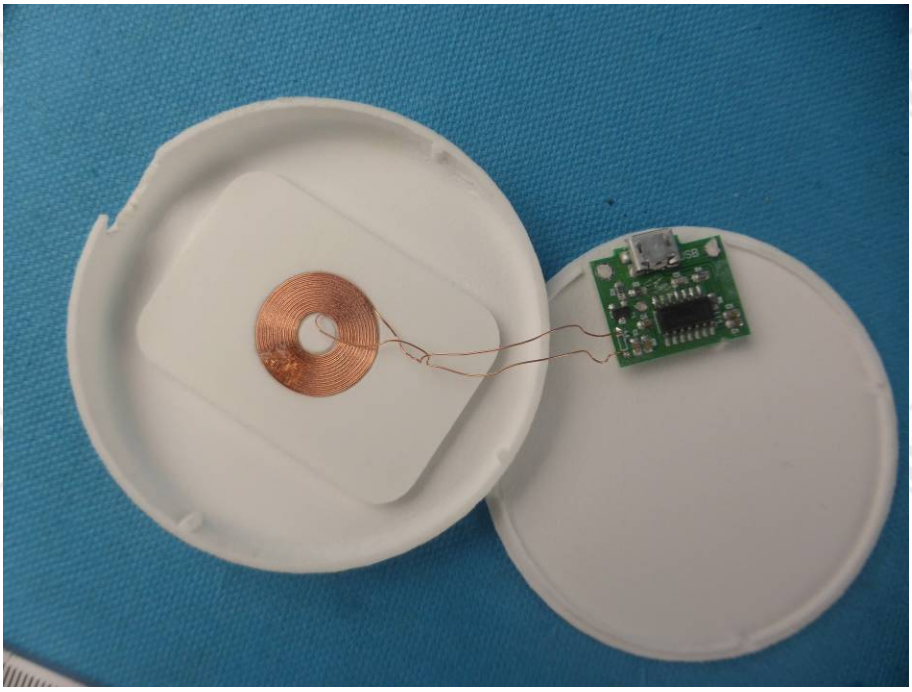
APPENDIX 2 PHOTOGRAPHS OF PRODUCT



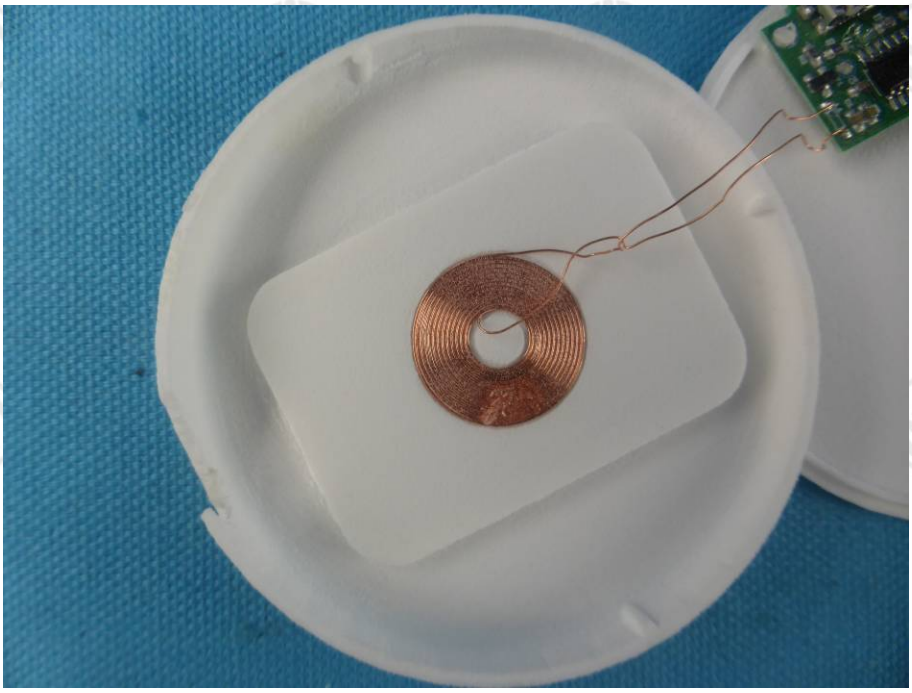
View of Product-1



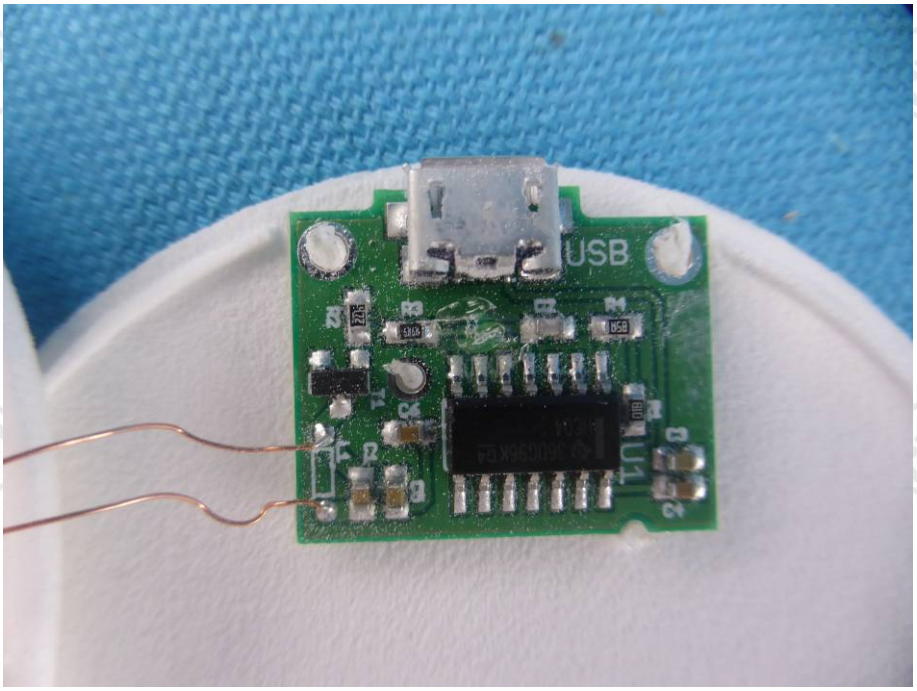
View of Product-2



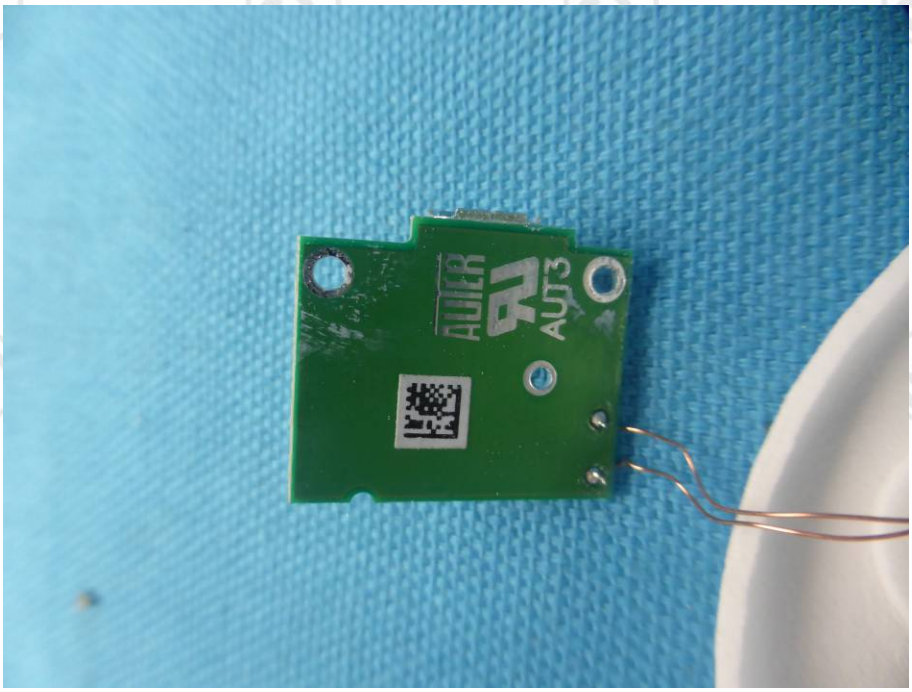
View of Product-3



View of Product-4



View of Product-5



View of Product-6

*** End of Report ***