FCC TEST REPORT

Product	:	Thermal Receipt Printer
Trade mark	:	RONGTA
Model/Type reference	:	See Clause 1
Serial Number	:	N/A
Ratings	:	DC 24V
FCC ID	:	2AD6G-RP400-USEP
Report Number	:	EED32I003022
Date	:	Dec. 07, 2016
Regulations	:	See below

Test Standards	Results
☒ 47 CFR FCC Part 15 Subpart B:2015	PASS

Prepared for:

XIAMEN RONGTA TECHNOLOGY CO., LTD.
3F-1/E Building No. 195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xianmen City

Prepared by:

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Tested by: Jackson Wu Reviewed by: Mark Chen

Approved by: Christy Chen Date: Dec. 07, 2016

Christy Chen
Lab supervisor

Check No.: 2392180562

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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant:	XIAMEN RONGTA TECHNOLOGY CO., LTD. 3F-1/E Building No. 195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xianmen City
Manufacturer:	XIAMEN RONGTA TECHNOLOGY CO., LTD. 3F-1/E Building No. 195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xianmen City
Equipment Authorization:	Certification
FCC ID:	2AD6G-RP400-USEP
Product:	Thermal Receipt Printer
Trade mark:	RONGTA
Model/Type reference:	RP400H-USEP, RP400A-USEP-USEP, RP500-USEP
Model difference:	All models are identical except appearance and model. The test model RP400A-USEP-USEP and the test results are applicable t the others.
Serial Number:	Not Applicable
Report Number:	EED32I003022
Sample Received Date:	Nov. 22, 2016
Sample tested Date:	Nov. 22, 2016 to Dec. 01, 2016

The tested sample(s) and the sample information are provided by the client.

2. TEST SUMMARY

The Product has been tested according to the following specifications:

Standard	Test Item	Test
FCC 15.107	Conducted Emission	Yes
FCC 15.109	Radiated Emission	Yes

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Value (dB)
Conducted disturbance	3.4
Radiated disturbance (30MHz to 1GHz)	5.3

4. PRODUCT INFORMATION AND TEST SETUP

4.1. PRODUCT INFORMATION

Ratings: DC 24V

Adapter information: Manufacture: GUANGZHOU DAJING SCIENCE AND TECHNOLOGY CO.,LTD
Model No. : DJ-240250-SA
Input : 100-240V~, 50/60Hz 1.5 MAX
Output: +24V⎓ 2.5 MAX

4.2. TEST SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between Product and support equipment.

4.3. SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.	Notebook	LENOVO	E42L	R36037B10223	---	Detachable
2	Mouse	L.selection	OP-200	B1005023926IYNB	Shielded 1.5m	---

Notes:
1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5. FACILITIES AND ACCREDITATIONS

5.1 TEST FACILITY

All test facilities used to collect the test data are located at Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4, CISPR 16-1-1 and other equivalent standards.

5.2 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipments used at CTI for testing.
The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

Equipment used during the tests:

Shielding Room No. 1 - Conducted Emission Test					
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. Date**	**Cal. Due Date**
Receiver	R&S	ESCI	100435	06/15/2016	06/15/2017
LISN	R&S	ENV216	100098	06/15/2016	06/15/2017

10M Semi-anechoic Chamber - Radiated Emission Test					
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. Date**	**Cal. Due Date**
10M Chamber & Accessory Equipment	Rainford	--	--	06/16/2015	06/16/2018
Spectrum Analyzer	R&S	FSP40	100416	06/15/2016	06/15/2017
EMI test receiver	R&S	ESIB40	2023282915	06/15/2016	06/15/2017
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	617	05/15/2016	05/15/2017
Microwave Preamplifier	HP	HP 8447F	2805A03379	06/15/2016	06/15/2017

6. SYSTEM TEST CONFIGURATION

6.1. JUSTIFICATION

The system was configured for testing in a typical fashion (as a customer would normally use it), The Product was placed on a turn table, which enabled the engineer to maximize emissions through its placement as outlined in ANSI C63.4 (2009).

The Product was powered by 120VAC/ 60Hz & 240VAC/ 50Hz during conducted emission test.
The Product was powered by 120VAC/ 60Hz during radiated emission test.

For maximizing emissions, the Product was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. The rear of unit shall be flushed with the rear of the table.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

7. CONDUCTED EMISSION TEST

7.1. LIMITS

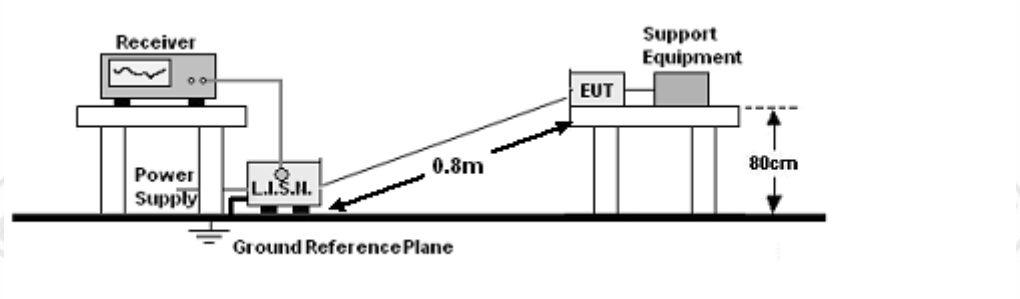
Limits for Class B digital devices

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

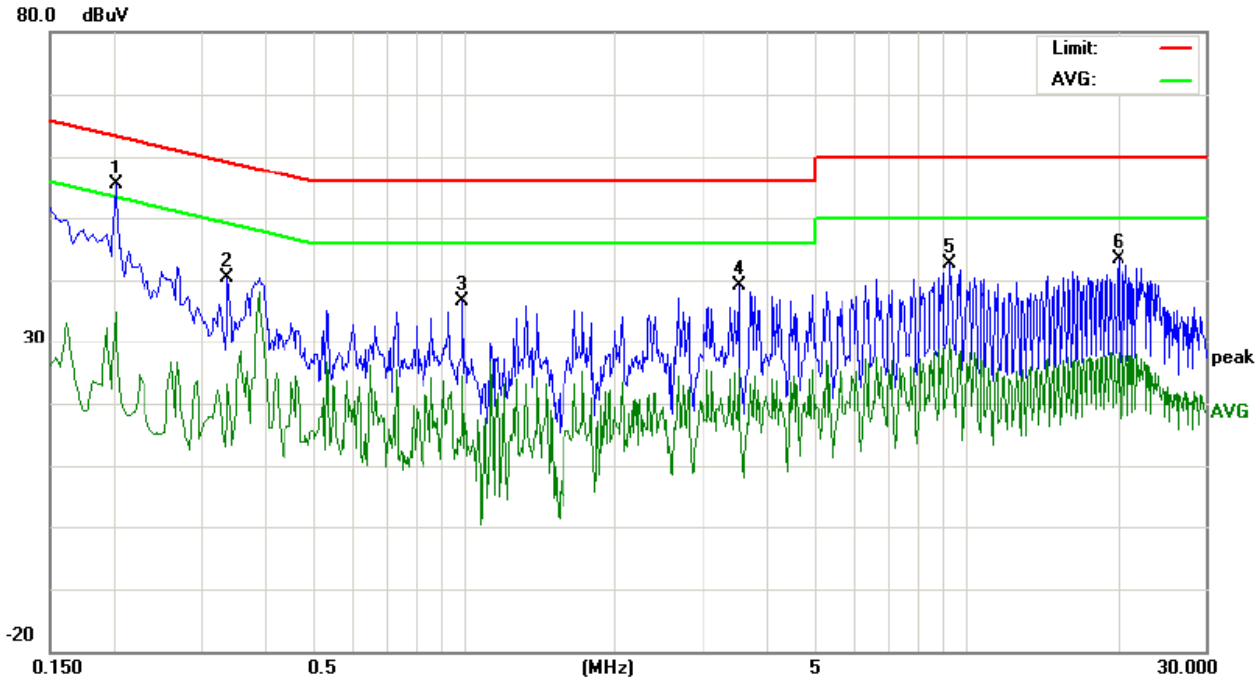
a. The Product was placed on a nonconductive table above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

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.

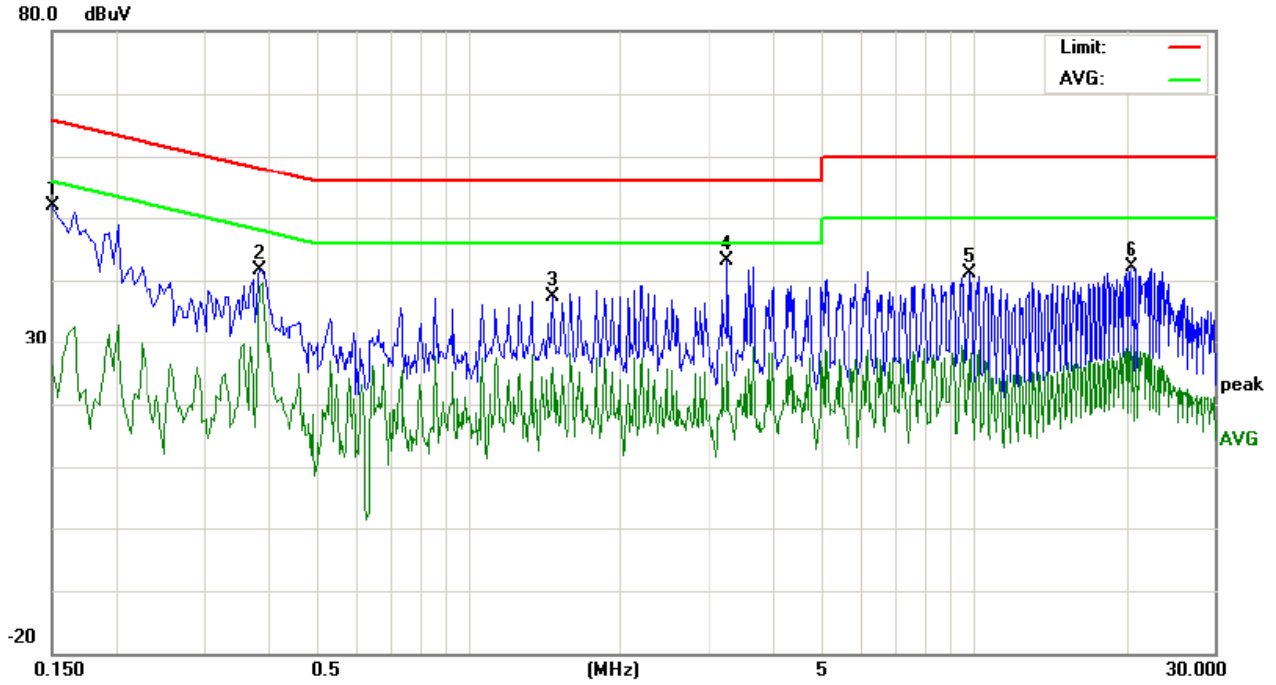
7.4. WORST CASE TEST GRAPHS AND TEST DATA

Product	:	Thermal Receipt Printer	**Model/Type reference**	:	RP400A-USEP
Power	:	AC 120V/60Hz	**Temperature**	:	22℃
Mode	:	Print H character	**Humidity**	:	53%
Phase	:	L			



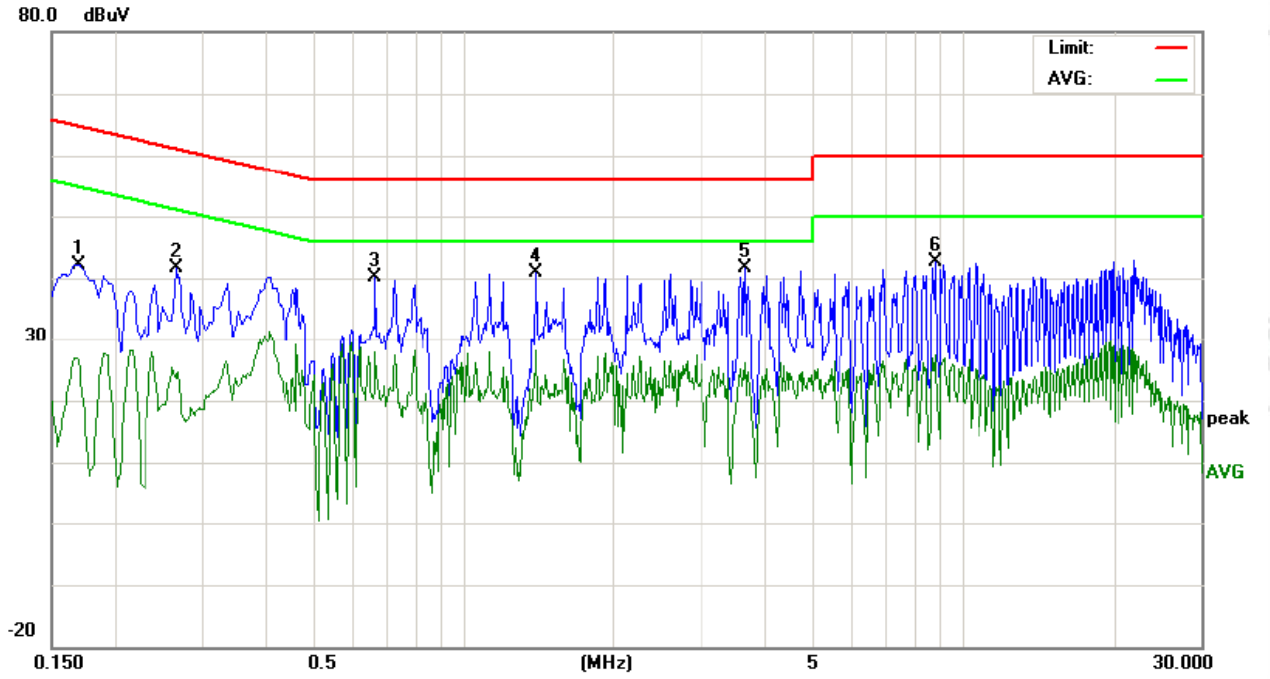
No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.2020	45.51		24.96	9.80	55.31		34.76	63.52	53.52	-8.21	-18.76	P	
2	0.3379	30.59		13.22	9.84	40.43		23.06	59.25	49.25	-18.82	-26.19	P	
3	0.9980	26.98		14.77	9.70	36.68		24.47	56.00	46.00	-19.32	-21.53	P	
4	3.5300	29.09		15.63	10.00	39.09		25.63	56.00	46.00	-16.91	-20.37	P	
5	9.2580	32.69		20.74	10.00	42.69		30.74	60.00	50.00	-17.31	-19.26	P	
6	20.1100	33.59		18.29	9.80	43.39		28.09	60.00	50.00	-16.61	-21.91	P	

Product	:	Thermal Receipt Printer	**Model/Type reference**	:	RP400A-USEP
Power	:	AC 120V/60Hz	**Temperature**	:	22℃
Mode	:	Print H character	**Humidity**	:	53%
Phase	:	N			



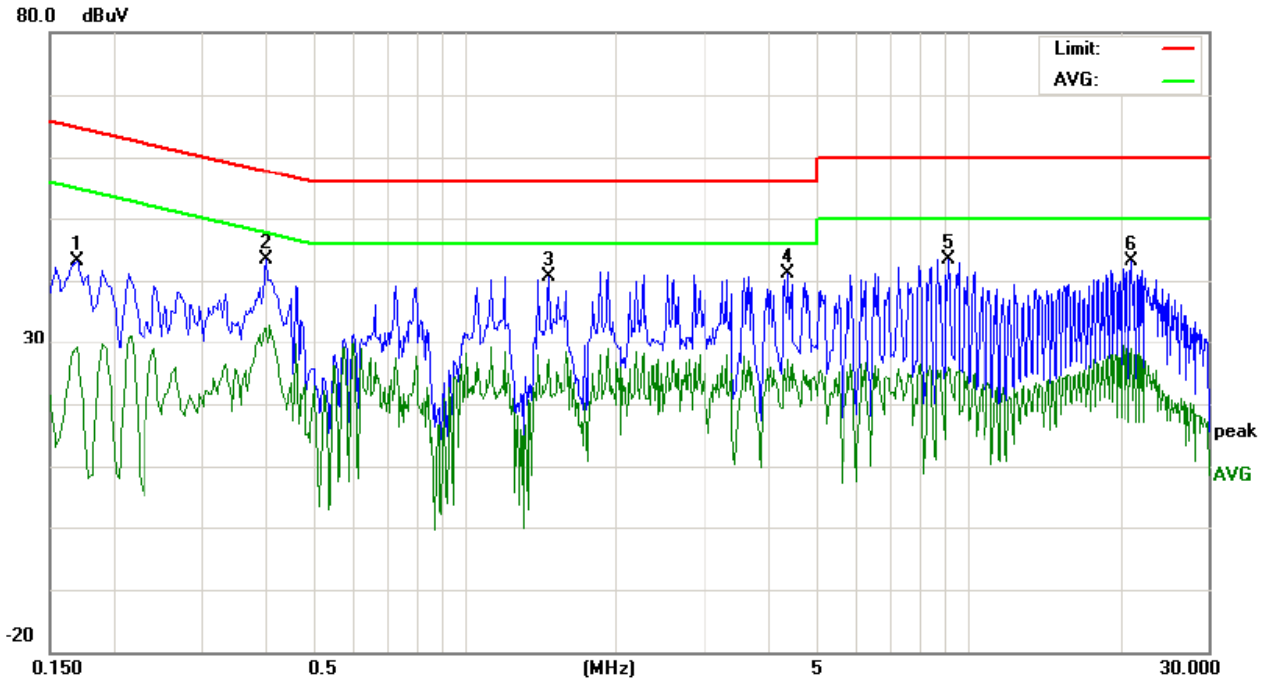
No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1500	42.17		16.25	9.80	51.97		26.05	65.99	55.99	-14.02	-29.94	P	
2	0.3860	31.63		29.03	9.89	41.52		38.92	58.15	48.15	-16.63	-9.23	P	
3	1.4700	27.55		15.97	9.84	37.39		25.81	56.00	46.00	-18.61	-20.19	P	
4	3.2659	33.19		18.26	10.00	43.19		28.26	56.00	46.00	-12.81	-17.74	P	
5	9.7940	31.18		17.14	10.00	41.18		27.14	60.00	50.00	-18.82	-22.86	P	
6	20.5860	32.36		19.55	9.80	42.16		29.35	60.00	50.00	-17.84	-20.65	P	

Product	:	Thermal Receipt Printer	**Model/Type reference**	:	RP400A-USEP
Power	:	AC 240V/50Hz	**Temperature**	:	22℃
Mode	:	Print H character	**Humidity**	:	53%
Phase	:	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	0.1700	32.34		16.94	9.80	42.14		26.74	64.96	54.96	-22.82	-28.22	P	
2	0.2660	31.94		13.86	9.80	41.74		23.66	61.24	51.24	-19.50	-27.58	P	
3	0.6660	30.16		17.89	9.90	40.06		27.79	56.00	46.00	-15.94	-18.21	P	
4	1.3980	31.16		18.29	9.82	40.98		28.11	56.00	46.00	-15.02	-17.89	P	
5	3.6620	31.69		16.05	10.00	41.69		26.05	56.00	46.00	-14.31	-19.95	P	
6	8.7900	32.64		17.35	10.00	42.64		27.35	60.00	50.00	-17.36	-22.65	P	

Product	:	Thermal Receipt Printer	**Model/Type reference**	:	RP400A-USEP
Power	:	AC 240V/50Hz	**Temperature**	:	22℃
Mode	:	Print H character	**Humidity**	:	53%
Phase	:	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	0.1700	33.34		19.35	9.80	43.14		29.15	64.96	54.96	-21.82	-25.81	P	
2	0.4020	33.41		22.42	9.90	43.31		32.32	57.81	47.81	-14.50	-15.49	P	
3	1.4660	30.84		17.24	9.84	40.68		27.08	56.00	46.00	-15.32	-18.92	P	
4	4.3940	31.18		17.12	10.00	41.18		27.12	56.00	46.00	-14.82	-18.88	P	
5	9.1180	33.42		16.00	10.00	43.42		26.00	60.00	50.00	-16.58	-24.00	P	
6	21.1580	33.33		19.06	9.80	43.13		28.86	60.00	50.00	-16.87	-21.14	P	

8. RADIATED EMISSION TEST

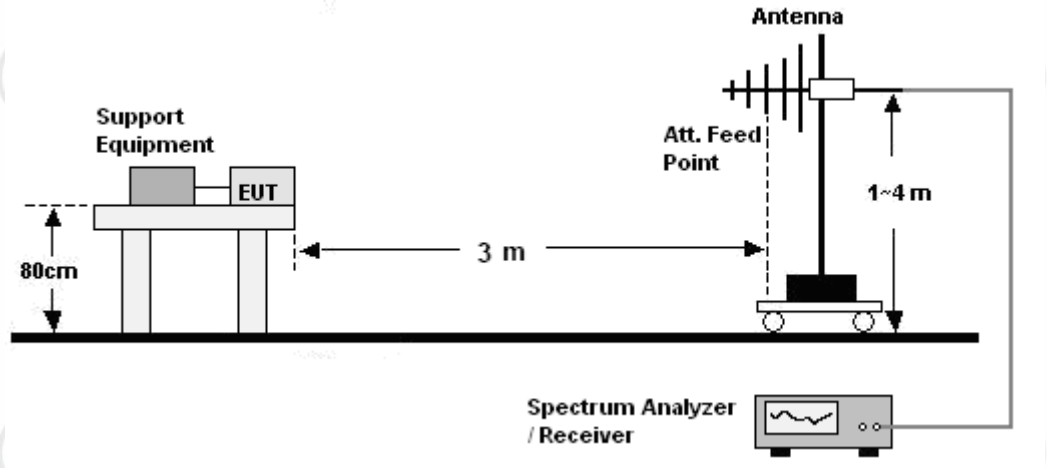
8.1. LIMITS

Limits for Class B digital devices

Frequency (MHz)	limits at 3m dB(μV/m)
30-88	40.0
88-216	43.5
216-960	46.0
Above 960	54.0

NOTE: 1. The lower limit shall apply at the transition frequency.
2. The limits shown above are based on measuring equipment employing a CISPR quasi-peak detector function for frequencies below or equal to 1000MHz.
3. The limits shown above are based on measuring equipment employing an average detector function for frequencies above 1000MHz.

8.2. BLOCK DIAGRAM OF TEST SETUP



8.3. PROCEDURE OF RADIATED EMISSION TEST

30MHz ~ 1GHz:

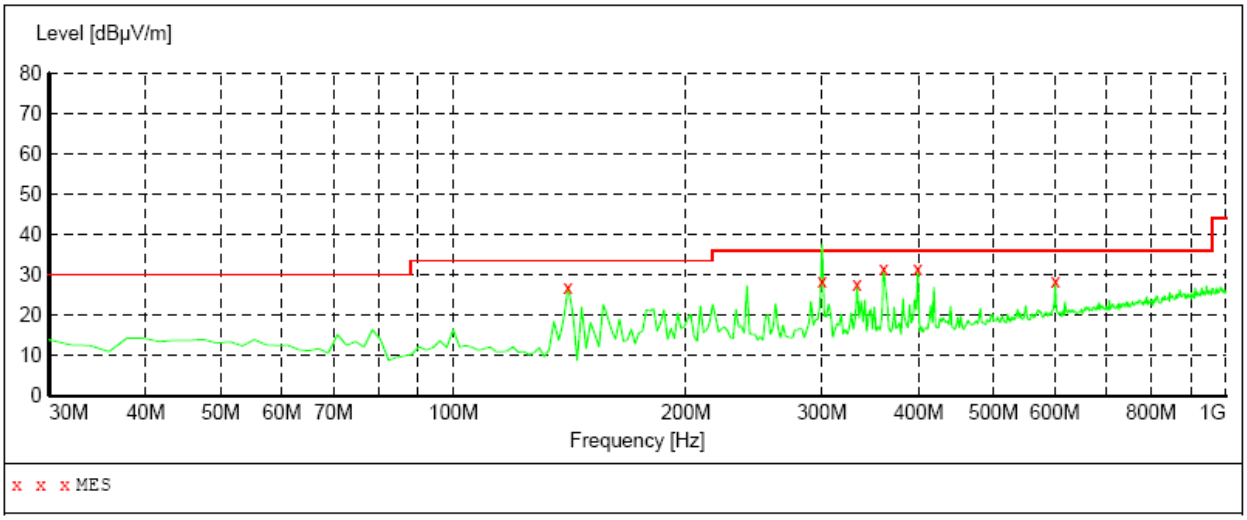
a. The Product was placed on the non-conductive turntable 0.8m above the ground at a chamber.

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: 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. WORST CASE TEST GRAPHS AND TEST DATA

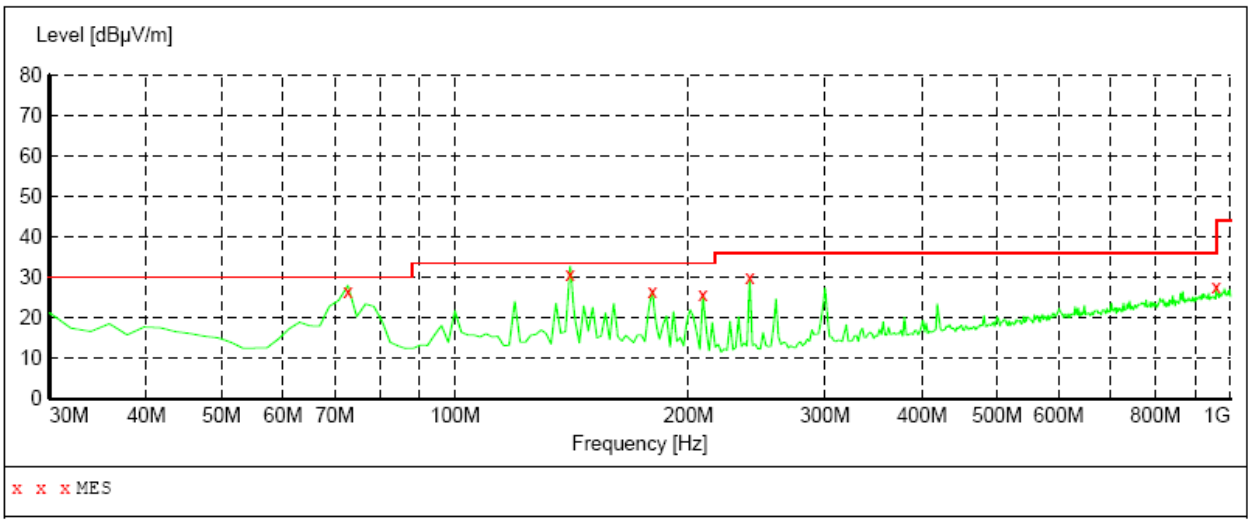
Product	:	Thermal Receipt Printer	**Model/Type reference**	:	RP400A-USEP
Power	:	AC 120V/60Hz	**Temperature**	:	22℃
Mode	:	Print H character	**Humidity**	:	53%
			Polarization	:	Horizontal



MEASUREMENT RESULT:

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
140.801603	26.90	-16.3	33.5	6.6	QP	400.0	348.00	HORIZONTAL
300.200401	30.50	-9.4	36.0	5.5	QP	300.0	153.00	HORIZONTAL
333.246493	27.60	-8.2	36.0	8.4	QP	300.0	358.00	HORIZONTAL
360.460922	31.50	-7.5	36.0	4.5	QP	200.0	312.00	HORIZONTAL
399.338677	31.40	-7.3	36.0	4.6	QP	400.0	348.00	HORIZONTAL
601.503006	28.60	-4.1	36.0	7.4	QP	100.0	10.00	HORIZONTAL

Product	:	Thermal Receipt Printer	**Model/Type reference**	:	RP400A-USEP
Power	:	AC 120V/60Hz	**Temperature**	:	22℃
Mode	:	Print H character	**Humidity**	:	53%
			Polarization	:	Vertical



MEASUREMENT RESULT:

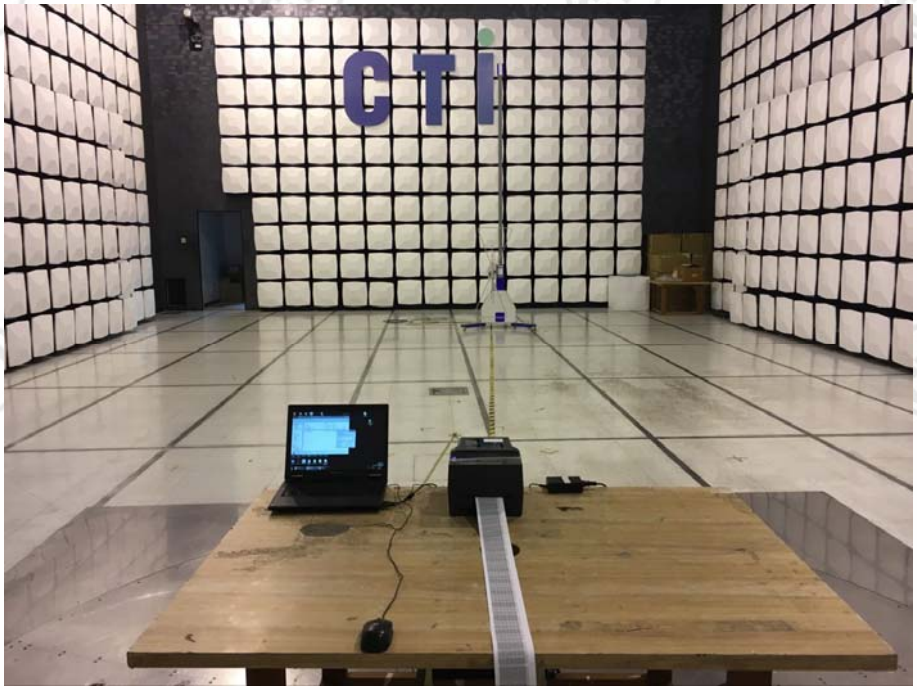
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
72.765531	25.00	-16.4	30.0	5.0	QP	200.0	99.00	VERTICAL
140.801603	29.70	-16.3	33.5	3.8	QP	200.0	360.00	VERTICAL
179.679359	26.70	-14.3	33.5	6.8	QP	400.0	136.00	VERTICAL
208.837675	25.70	-12.1	33.5	7.8	QP	100.0	74.00	VERTICAL
239.939880	29.90	-10.9	36.0	6.1	QP	100.0	44.00	VERTICAL
959.178357	27.60	0.7	36.0	8.4	QP	100.0	10.00	VERTICAL

Remark:

The highest frequency of the internal sources of the EUT is 100 MHz, so the measurement shall only be made up to 1 GHz.

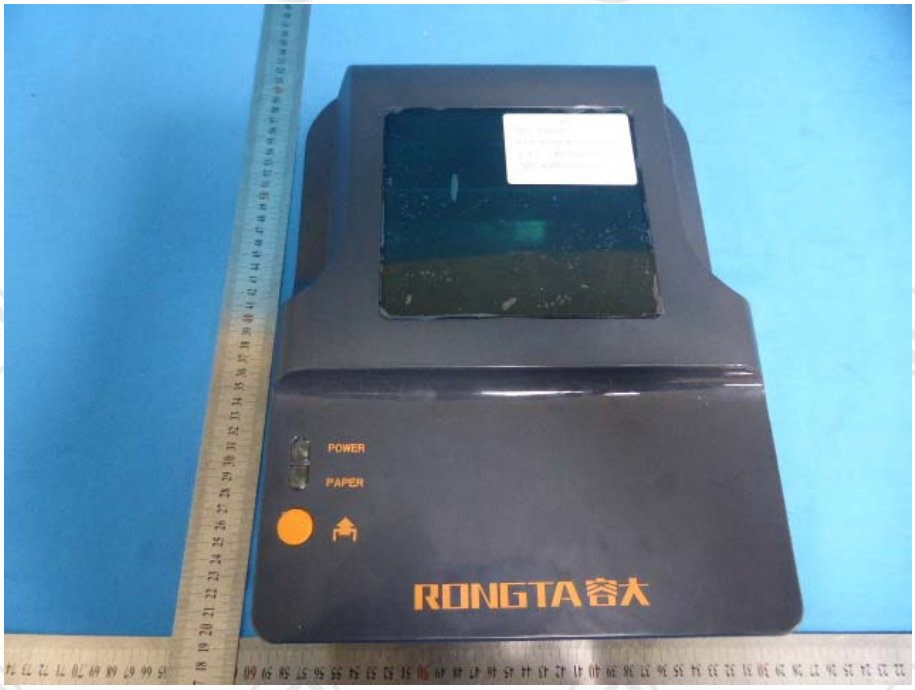
APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

CONDUCTED EMISSION TEST SETUP



RADIATED EMISSION TEST SETUP

APPENDIX 2 EXTERNAL PHOTOGRAPHS OF PRODUCT



External View of Product-1

External View of Product-2

External View of Product-3

External View of Product-4

External View of Product-5

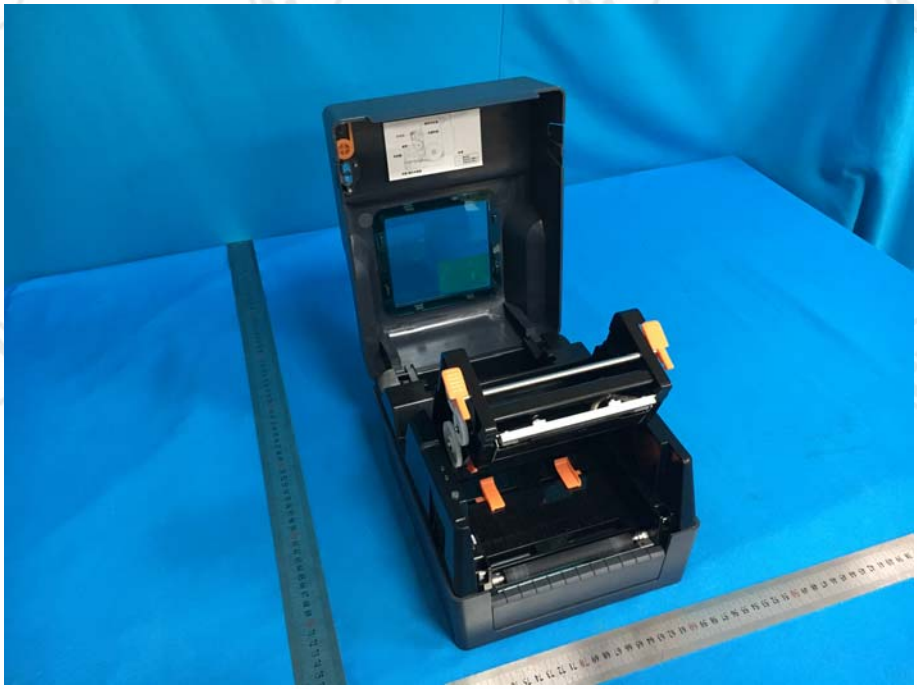
External View of Product-6

External View of Product-7

External View of Product-8

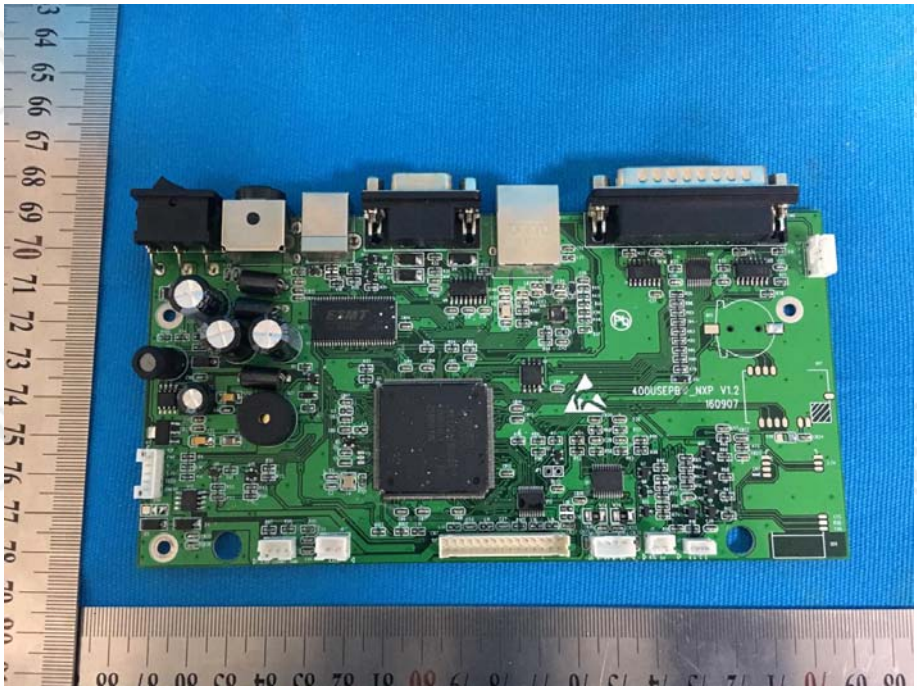
External View of Product-9

APPENDIX 3 INTERNAL PHOTOGRAPHS OF PRODUCT

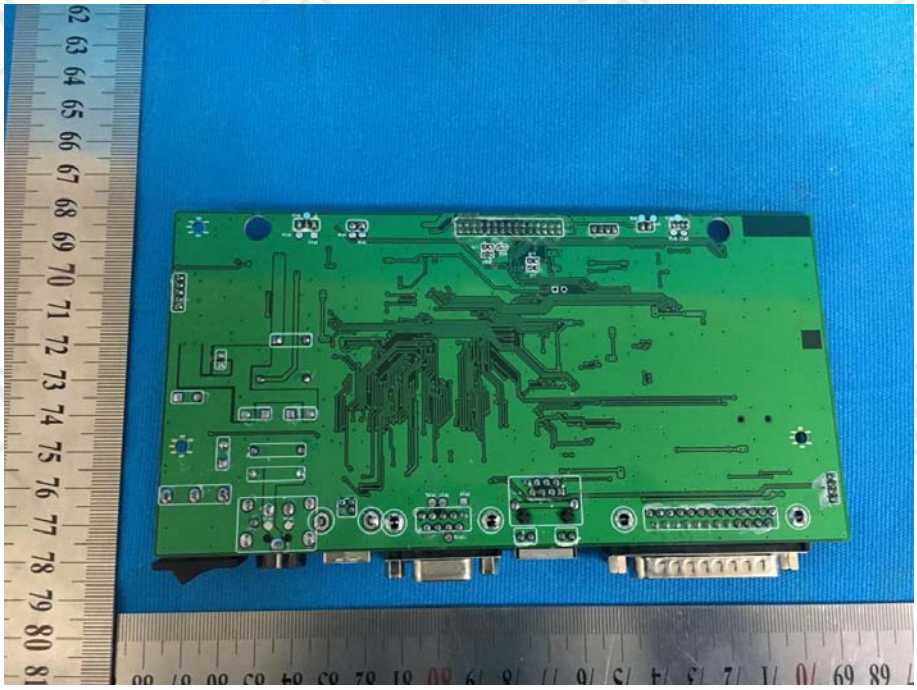


Internal View of Product-1

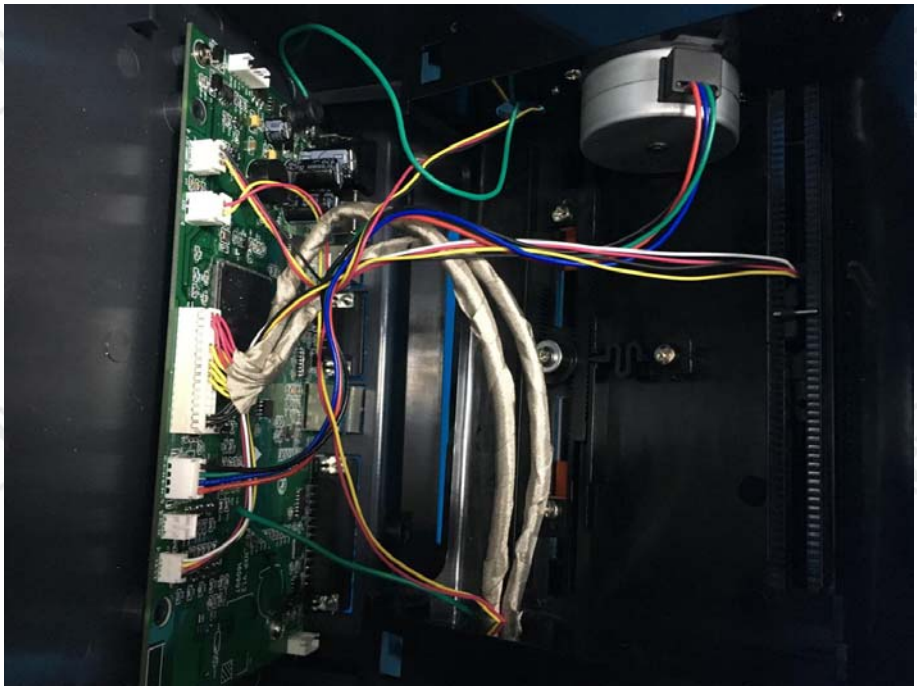
Internal View of Product-2



Internal View of Product-3



Internal View of Product-4



Internal View of Product-5

*** End of Report ***