FCC TEST REPORT

Product	:	USB Drive
Trade mark	:	N/A
Model/Type reference	:	Verbatim Pinstripe USB drive, UM526, UM515
Serial Number	:	N/A
Ratings	:	DC 5V by PC
FCC ID	:	R5RUM906
Report Number	:	EESZE11130001-1
Date	:	Nov. 27, 2012
Regulations	:	See below

Test Standards	Results
☒ 47 CFR FCC Part 15 Subpart B: 2011	PASS

Prepared for:

Shenzhen Truth Digital Technology Co., Ltd
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Prepared by:

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Tested by: Yaping Shen Reviewed by:

Approved by: Date: Nov. 27, 2012

Jimmy Li
Lab manager

Check No.: 11511739

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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant:	Shenzhen Truth Digital Technology Co., Ltd Floor 8, building 3, jiaan Technology zone, liuxian Road 1, Baoan District Shenzhen China
Manufacturer:	Shenzhen Truth Digital Technology Co., Ltd Floor 8, building 3, jiaan Technology zone, liuxian Road 1, Baoan District Shenzhen China
Equipment Authorization:	Certification
FCC ID:	R5RUM906
Product:	USB Drive
Trade mark:	N/A
Model/Type reference:	Verbatim Pinstripe USB drive (4GB, 8GB, 16GB, 32GB, 64GB), UM526(4GB, 8GB, 16GB, 32GB, 64GB), UM515(4GB, 8GB, 16GB, 32GB, 64GB)
Serial Number:	N/A
Report Number:	EESZE11130001-1
Sample Received Date:	Nov. 13, 2012
Sample tested Date:	Nov. 13, 2012 to Nov. 27, 2012

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	3.2
Radiated disturbance (30MHz to 1GHz)	4.5
Radiated disturbance (1GHz to 6GHz)	4.8

4. PRODUCT INFORMATION AND TEST SETUP

4.1. PRODUCT INFORMATION

Ratings: DC 5V by PC

Model difference: All models are identical in all aspect except for appearance and capacity.

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	FCC Approval
1.	PC	DELL	380MT	06054E	N/A	Unshielded 1.4m	DOC
2.	Monitor	DELL	3100C	CN-OHD5WY-74261 -167-14KC	VGA: Unshielded	Unshielded 1.4m	DOC
3.	Keyboard	Lselection	KB-101A	B0829008487LEXL	Unshielded	N/A	DOC
4.	Mouse	Lselection	OP-200	B0820010665DBDN	Unshielded	N/A	DOC
5.	Printer	HP	Q5911A	CNCK766629	Unshielded 1.2m	Unshielded 1.2m	DOC

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.**	**Due Date**
Receiver	R&S	ESCI	100009	07/19/2013
LISN	R&S	ENV216	100098	07/19/2013

3M Semi-anechoic Chamber - Radiated Emission Test				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
3M Chamber & Accessory Equipment	ETS-LINDGREN	FACT-3	3510	07/09/2013
Spectrum Analyzer	Agilent	E4440A	MY46185649	03/07/2013
Receiver	R&S	ESCI	100435	07/19/2013
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	401	07/21/2013
Multi device Controller	ETS-LINGREN	2090	00057230	N/A

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 (2003).

The Product was powered by DC 5V during 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.

6.2. PRODUCT EXERCISING SOFTWARE

WINTHRAX was used during testing.

7. CONDUCTED EMISSION TEST

7.1. LIMITS

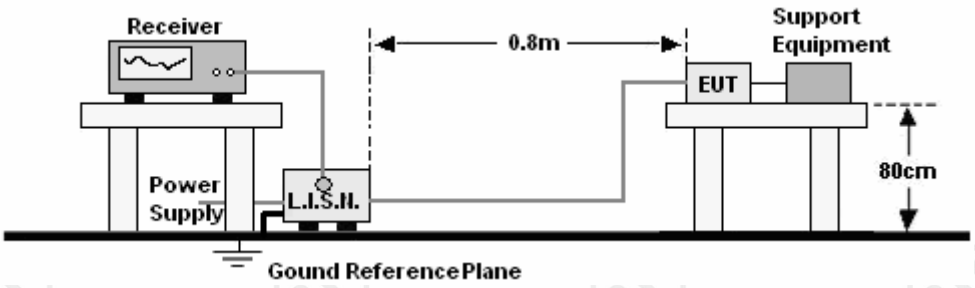
Limits for Class B digital devices

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



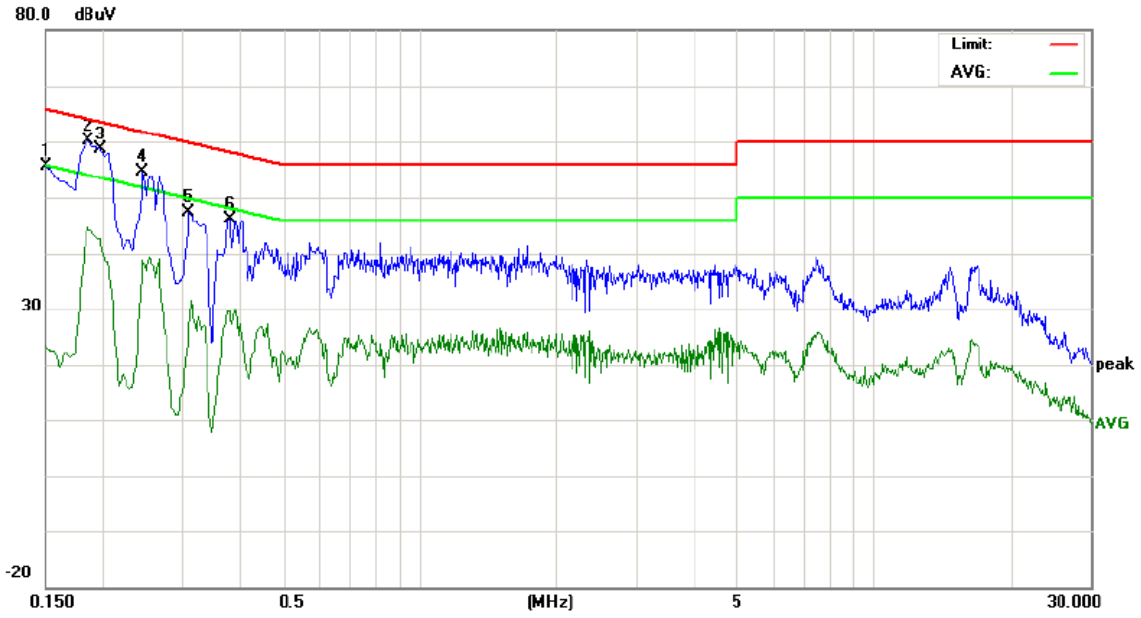
7.3. PROCEDURE OF CONDUCTED EMISSION TEST

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.

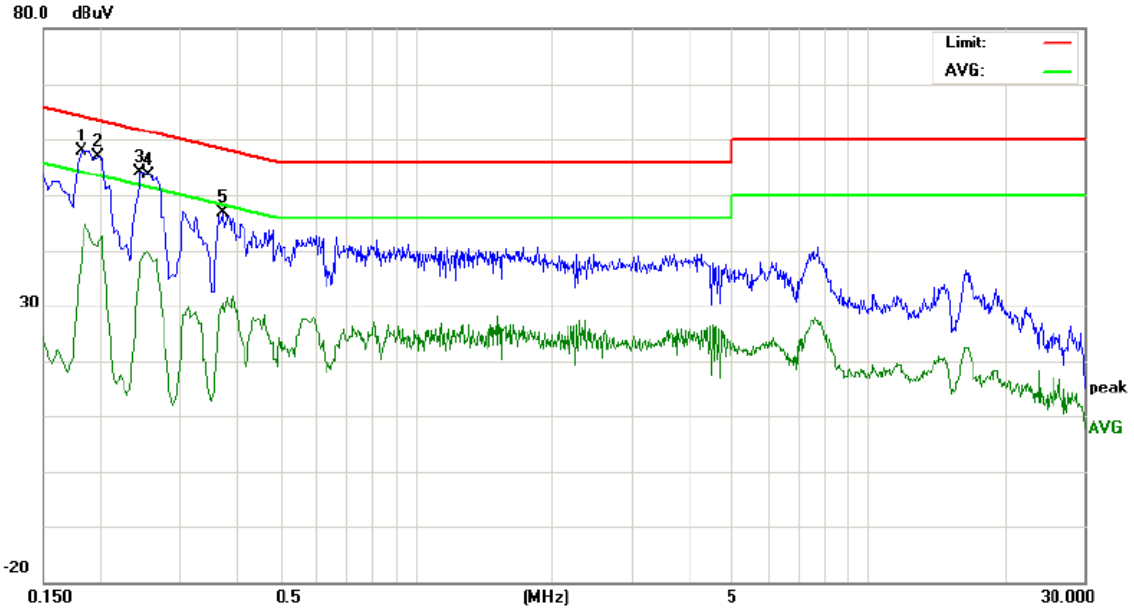
c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

7.4. TEST GRAPHS AND TEST DATA



Site site #1 Phase: L1 Temperature: 25
Limit: FCC Class B CE (QP) Power: AC 120V/60Hz Humidity: 56 %
EUT: USB Drive
M/N: Verbatim Pinstripe USB Drive
Mode: Data Exchange
Note:

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	0.1516	45.76	36.91	11.53	9.90	55.66	46.81	21.43	65.91	55.91	-19.10	-34.48	P	
2	0.1860	50.22	46.76	30.95	9.90	60.12	56.66	40.85	64.21	54.21	-7.55	-13.36	P	
3	0.1997	45.76	44.88	29.07	9.90	55.66	54.78	38.97	63.62	53.62	-8.84	-14.65	P	
4	0.2460	44.76	40.57	25.39	9.90	54.66	50.47	35.29	61.89	51.89	-11.42	-16.60	P	
5	0.3100	37.37	32.37	16.13	9.90	47.27	42.27	26.03	59.97	49.97	-17.70	-23.94	P	
6	0.3820	36.29	31.57	19.52	9.90	46.19	41.47	29.42	58.23	48.23	-16.76	-18.81	P	



Site site #1 Phase: N Temperature: 25
Limit: FCC Class B CE (QP) Power: AC 120V/60Hz Humidity: 56 %
EUT: USB Drive
M/N: Verbatim Pinstripe USB Drive
Mode: Data Exchange
Note:

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	0.1819	48.09	43.81	25.10	9.90	57.99	53.71	35.00	64.39	54.39	-10.68	-19.39	P	
2	0.1980	46.92	43.73	30.25	9.90	56.82	53.63	40.15	63.69	53.69	-10.06	-13.54	P	
3	0.2460	44.27	39.43	24.35	9.90	54.17	49.33	34.25	61.89	51.89	-12.56	-17.64	P	
4	0.2589	43.95	39.53	26.82	9.90	53.85	49.43	36.72	61.46	51.46	-12.03	-14.74	P	
5	0.3740	37.05	32.71	19.43	9.90	46.95	42.61	29.33	58.41	48.41	-15.80	-19.08	P	

8. RADIATED EMISSION TEST

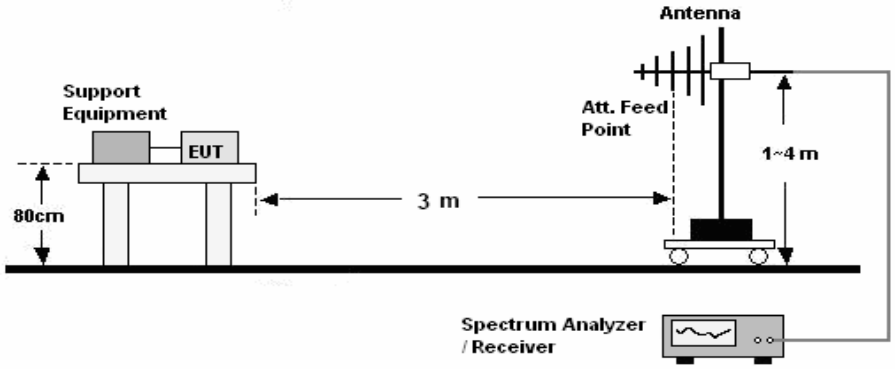
8.1. LIMITS

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

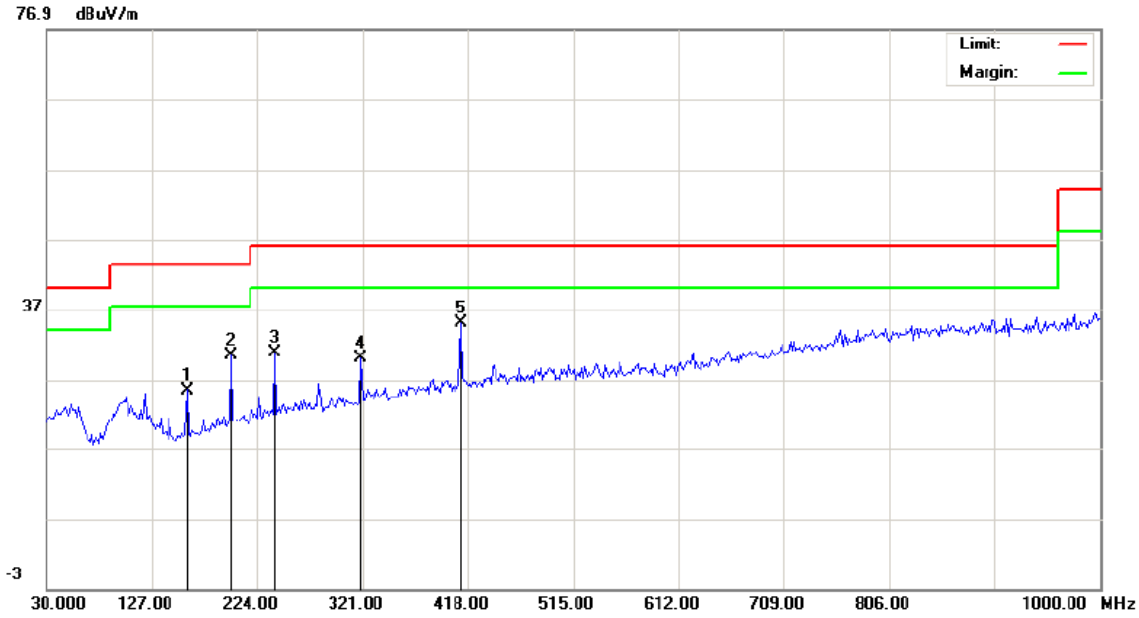
30MHz ~ 1GHz:

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. TEST GRAPHS AND TEST DATA

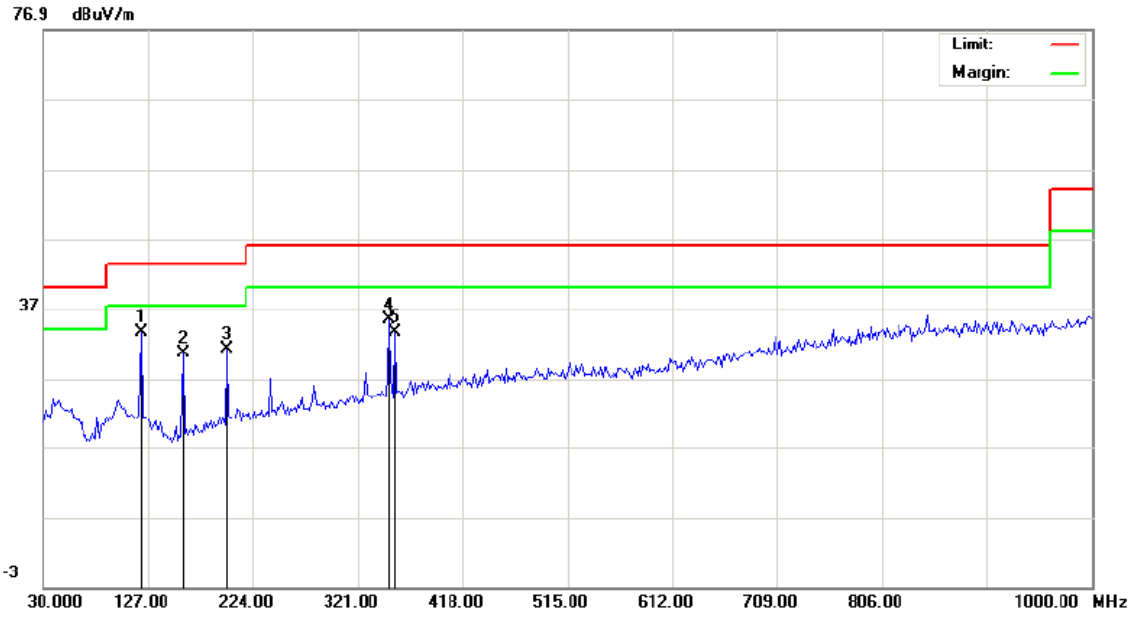


Site site #1
Limit: FCC PART15 B
EUT: USB Drive
M/N: Verbatim Pinstripe USB Drive
Mode: Data Exchange
Note:

Polarization: ***Horizontal***
Power: DC 5V

Temperature: 24
Humidity: 59 %

No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F Comment
1	159.3333	14.02			11.48	25.50			43.50		-18.00		P
2	199.7500	16.82			13.54	30.36			43.50		-13.14		P
3	240.1667	16.10			14.62	30.72			46.00		-15.28		P
4	319.3833	13.49			16.44	29.93			46.00		-16.07		P
5	411.5333	16.59			18.46	35.05			46.00		-10.95		P



Site site #1
Limit: FCC PART15 B
EUT: USB Drive
M/N: Verbatim Pinstripe USB Drive
Mode: Data Exchange
Note:

Polarization: *Vertical*
Power: DC 5V

Temperature: 24
Humidity: 59 %

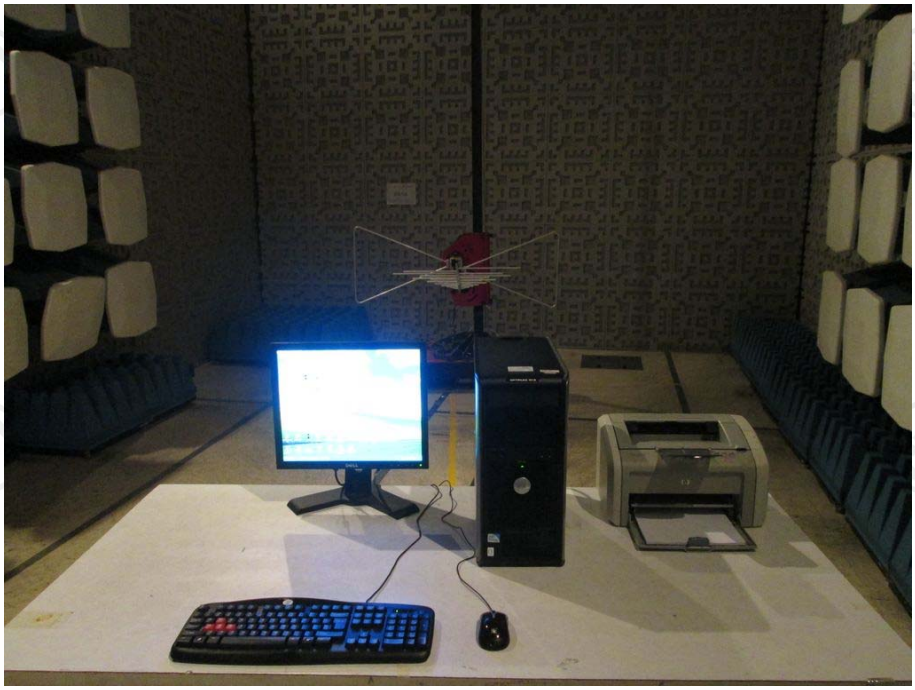
No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	120.5333	19.74			13.92	33.66			43.50		-9.84		P	
2	159.3333	19.17			11.48	30.65			43.50		-12.85		P	
3	199.7500	17.68			13.54	31.22			43.50		-12.28		P	
4	350.1000	18.13			17.34	35.47			46.00		-10.53		P	
5	354.9500	16.24			17.43	33.67			46.00		-12.33		P	

Note: The highest frequency of the internal sources of the EUT is less than 108 MHz, so the measurement shall only be made up to 1 GHz.

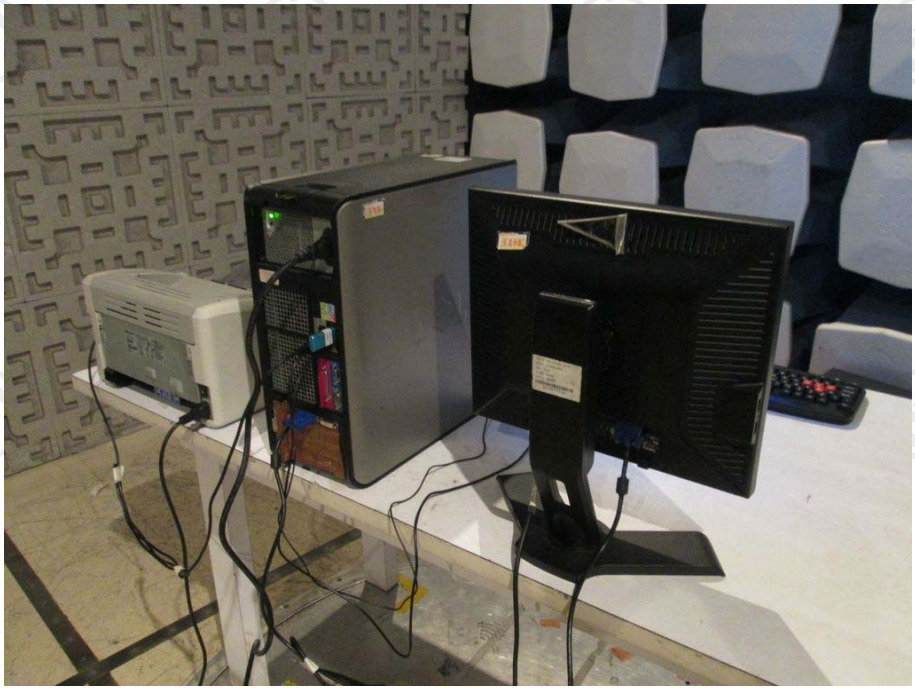
APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

CONDUCTED EMISSION TEST SETUP-1

CONDUCTED EMISSION TEST SETUP-2

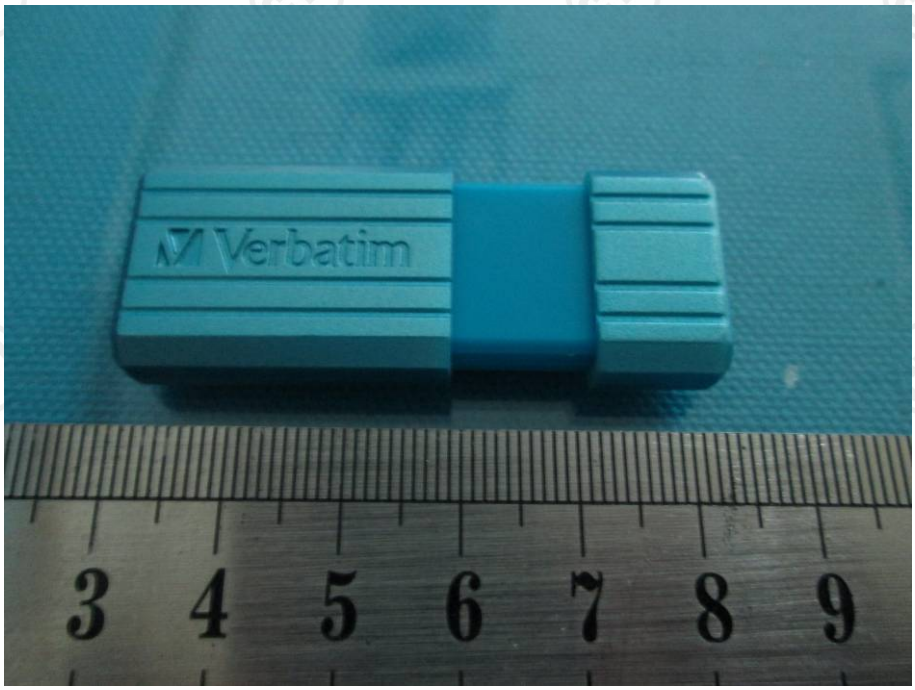


RADIATED EMISSION TEST SETUP-1

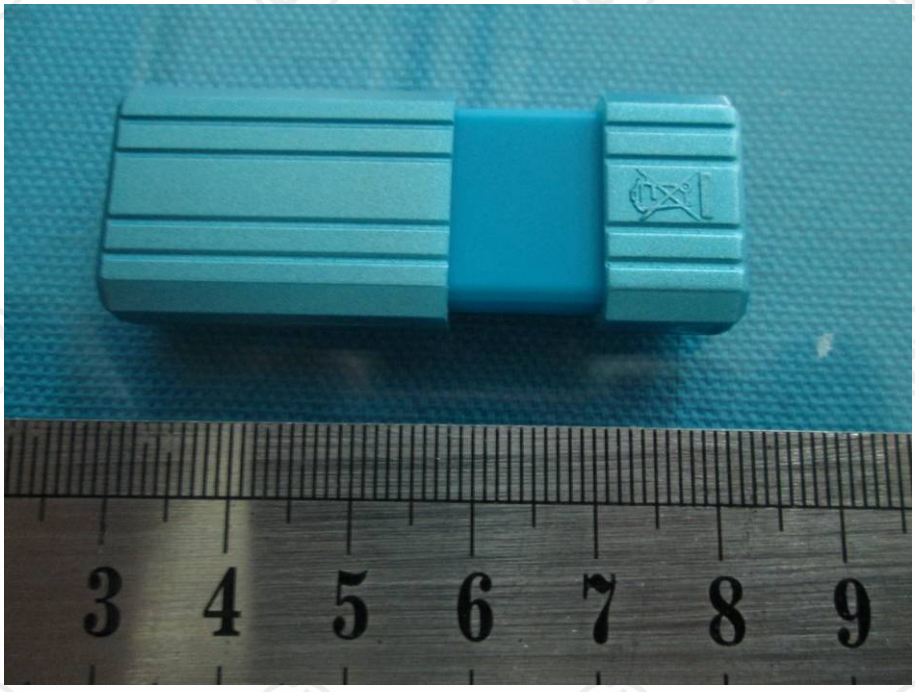


RADIATED EMISSION TEST SETUP-2

APPENDIX 2 EXTERNAL PHOTOGRAPHS OF PRODUCT



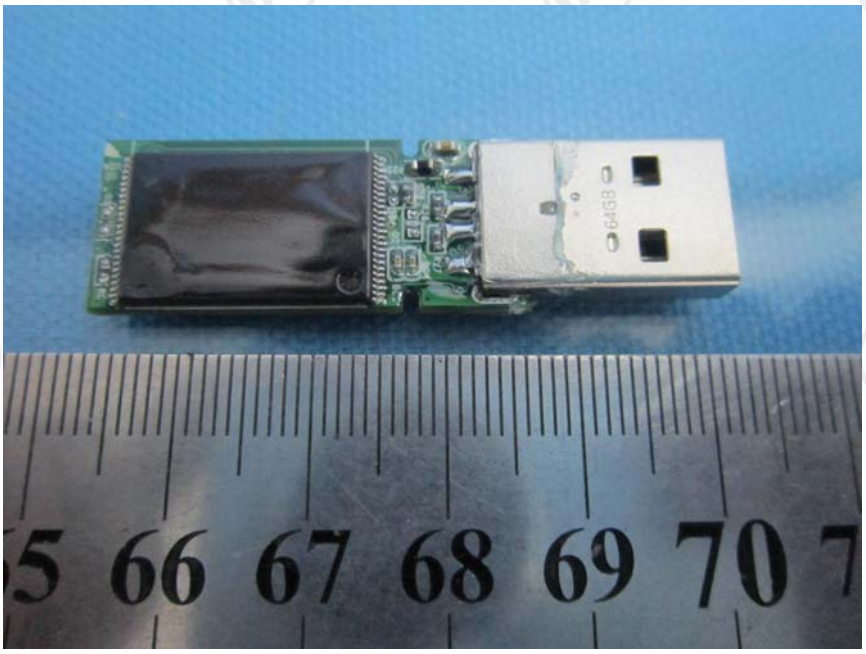
External View of Product-1



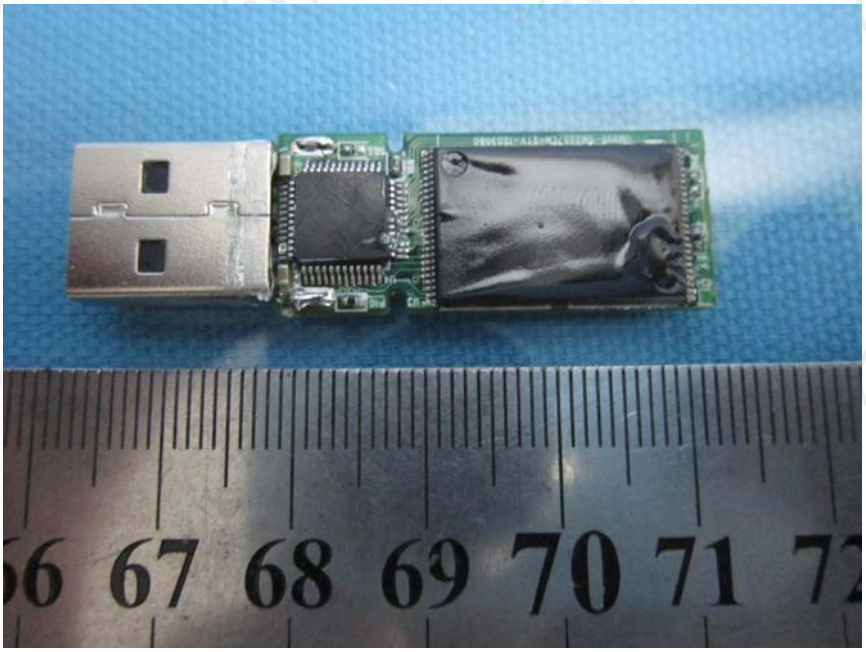
External View of Product-2

External View of Product-3

APPENDIX 3 INTERNAL PHOTOGRAPHS OF PRODUCT



Internal View of Product-1



Internal View of Product-2

*** End of report ***

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