

Prüfbericht-Nr.: <i>Test Report No.:</i>	50050477 007	Auftrags-Nr.: <i>Order No.:</i>	164058674	Seite 1 von 10 <i>Page 1 of 10</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	22.03.2016	
Auftraggeber: <i>Client:</i>	Lenovo Information Products (Shenzhen) Co., Ltd., Futian free trade zone, 3 Guang Lan RD, Shenzhen, Guangdong 518038, P.R. China			
Prüfgegenstand: <i>Test item:</i>	ThinkVision X24 Pro Wireless Charging Stand			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	HH-1601			
Auftrags-Inhalt: <i>Order content:</i>	RF Exposure report			
Prüfgrundlage: <i>Test specification:</i>	FCC Part 1.1310 Industry Canada Safety Code 6			
Wareneingangsdatum: <i>Date of receipt:</i>	05.05.2016			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000355351-002, A000355351-003			
Prüfzeitraum: <i>Testing period:</i>	10.05.2016 - 22.07.2016			
Ort der Prüfung: <i>Place of testing:</i>	Shenzhen Academy of Metrology and Quality Inspection			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
19.07.2016 Sam Lin / Assistant Manager		28.07.2016 Winnie Hou / Technical Certifier		
Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name / Stellung <i>Name / Position</i>
Sonstiges / Other: This report for A4WP wireless charging function.				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet				
Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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TEST SUMMARY

5.1.1 ELECTROMAGNETIC FIELDS

RESULT: Pass

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1. General Remarks

1.1 Complementary Materials

None.

2. Test Sites

2.1 Test Facilities

Test Facilities 1: Shenzhen Academy of Metrology and Quality Inspection

Address:

Test Facilities 1: No. 4 Tongfa Rd., Nanshan, Shenzhen, China

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Radio Frequency Electromagnetic Field (SMQ)				
Electric Field Meter	NARDA	NBM-520	D-0830	Sep. 5, 2016
E-Field Probe	NARDA	EF-0391	D-0710	Sep. 5, 2016

3. General Product Information

3.1 Product Function and Intended Use

The EUT is wireless charging stand which is only can be used for the specified display by connected with Type C connector. And the product also can be used as a transmitter of wireless charger. The product also contains Mini DP connector and USB 3.0 port.

It supports Bluetooth Low Energy and A4WP technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

Technical Specification	Value
Kind of Equipment:	ThinkVision X24 Pro Wireless Charging Stand
Type Designation:	HH-1601
Type of Equipment:	Stand-alone equipment
Wireless Technology:	A4WP Wireless Charging
Operating Frequency Range:	6.78 MHz
Operating Voltage:	DC 20V via marketed AC/DC adapter
Operating Temperature Range:	0°C to 35°C

3.3 Independent Operation Modes

The basic operation modes are:

- A. A4WP wireless charging
 - 1. Charging
 - i. Minimum load
 - ii. Medium load
 - iii. Maximum load
- B. Bluetooth Low Energy operating
 - 1. Transmitting
 - i. Low channel
 - ii. Middle channel
 - iii. High channel
 - 2. Receiving
 - i. Low channel
 - ii. Middle channel
 - iii. High channel
- C. USB 3.0 connect to PC with data transferring
- D. Mini Display port connect to PC with data transferring
- E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- | | |
|---|--|
| ☒ - Block Diagram | ☒ - Circuit Diagram |
| ☒ - PCB Layout | ☒ - Bill of Material |
| ☒ - Rating Label | ☒ - Instruction Manual |
| ☒ - Photo Documentation | |

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5.

4.3 Special Accessories and Auxiliary Equipment

The EUT was tested together with the following accessories:

Table 3: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Notebook PC	Lenovo	ThinkPad X240	SL10F31638
Mobile Phone	Apple	MG4J2 CH/A	F17NTK2QG5MV
Display	LENOVO	ThinkVision X24 Pro	--

Table 4: List of Cable

Interface(s)/Port(s):	Max. cable length, shielding	Cable classification
USB port	Shielded, 170cm	USB cable
Mini-Display port	Shielded, 170cm	Mini-Display cable

4.4 Countermeasures to Achieve ERM Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF). No additional measures were employed to achieve compliance.

5. Test Results

5.1 Test Requirements & Test Suites

5.1.1 Electromagnetic Fields

RESULT:
Pass

Test standard : FCC Part 1.1310
 Health Canada's Safety Code 6
 Measure distance : 10cm
 Limits : Table 1 of FCC Part 1.1310
 Table 3 of Safety Code 6
 Kind of test site : Shielded room

Test setup:

Date of testing : 2016-05-10 to 2016-07-22
 Input Voltage : DC 20V via AC/DC adapter
 Operation mode : A+B
 Ambient temperature : 22°C
 Relative humidity : 51%
 Atmospheric pressure : 101.0 kPa

Table 5: Test result of Electromagnetic Fields

Measure Position	Front	Left	Right	Rear
Max. Measure E-field (V/m)	5.55	6.27	5.58	5.97
FCC E-field Limit (V/m)	121.53	121.53	121.53	121.53
IC E-field Limit (V/m)	33.46	33.46	33.46	33.46
Conclusion	Pass	Pass	Pass	Pass

Note:

- 1) FCC E-field Limit = $824/f$, f in MHz
- 2) IC E-field Limit = $87/f^{1/2}$, f in MHz
- 3) Measurement was made from all sides with 10cm measure from the center of the probe to the edge of the device. The maximum level was recorded.

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