

Prüfbericht-Nr.: Test Report No.:	50086251 001	Auftrags-Nr.: Order No.:	164094535	Seite 1 von 14 Page 1 of 14
Kunden-Referenz-Nr.: Client Reference No.:	N/A	Auftragsdatum: Order date:	24.05.2017	
Auftraggeber: Client:	Sanford, L.P. dba Dymo 3 Glenlake Parkway, NE Atlanta GA 30328, USA			
Prüfgegenstand: Test item:	Label maker			
Bezeichnung / Typ-Nr.: Identification / Type No.:	LabelWriter Wireless			
Auftrags-Inhalt: Order content:	FCC & IC			
Prüfgrundlage: Test specification:	CFR47 FCC Part15: Subpart B Section 15.107 CFR47 FCC Part15: Subpart B Section 15.109 ICES-003 Issue 6			
Wareneingangsdatum: Date of receipt:	24.05.2017	Refer to Photo Document		
Prüfmuster-Nr.: Test sample No.:	A000537002-0001 A000537002-0002			
Prüfzeitraum: Testing period:	24.05.2017 - 28.06.2017			
Ort der Prüfung: Place of testing:	EMTEK (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	PASS			
geprüft von / tested by: 12.07.2017 Lin Lin / Project Manager 		kontrolliert von / reviewed by: 12.07.2017 Owen Tian / Technical Certifier 		
Datum Date	Name / Stellung Name / Position	Unterschrift Signature	Datum Date	Name / Stellung Name / Position
Sonstiges / Other: FCC ID: RGD LWW IC ID: 11034A-LWW				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* 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. 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.				

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TEST SUMMARY

5.1.1 RADIATED EMISSIONS

RESULT: Pass

5.1.2 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

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1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendixes:
Appendix A: EMC test data.

2. Test Sites

2.1 Test Facilities

EMTEK (Shenzhen) Co., Ltd.

Address: Bldg. 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China.

FCC Registration No.: 406365

IC Registration No.: 4480A-2

Note: The tests at the test site have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of EMC Test and Measurement Equipment

Radiated Emissions						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	101414	May 27, 2017	1 Year
2.	Pre-Amplifier	LUNAR-EM	LNA30M3G-25	J10100000 071	May 27, 2017	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	660	May 28, 2017	1 Year
4.	Cable	H+B	NmSm-05-C15052	-	May 28, 2017	1 Year
5.	Cable	H+B	NmSm-2-C15201	-	May 28, 2017	1 Year
6.	Cable	H+B	NmNm-7-C15702	-	May 28, 2017	1 Year
Conducted Emissions						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	26115-010- 0027	May 27, 2017	1 Year
2.	L.I.S.N.	Rohde & Schwarz	ENV216	101161	May 27, 2017	1 Year

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Uncertainty of Measurement

The value of the measurement uncertainty of each parameter is listed as below:

Table 2: Measurement Uncertainty

Test Item	Uncertainty
Radiated Emissions	±3.78dB (30M~1GHz Polarize: H)
	±4.27dB (30M~1GHz Polarize: V)
Conducted Emissions	±2.96dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The EMTEK (Shenzhen) Co., Ltd. Test facility located at Bldg. 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. General Product Information

3.1 Product Function and Intended Use

The EUT is a Wireless Label printer which that support IEEE 802.11 a/b/g/n protocols.

For details refer to user manual and circuit diagram.

3.2 Ratings and System Details

Table 3: Technical Specification

Technical Specification	Value
Product Name	Label maker
Model	LabelWriter Wireless
Frequency Bandwidth	2400-2483.5MHz 5150-5350MHz 5470-5725MHz for FCC 5470-5600MHz and 5650-5725MHz for IC 5725-5850MHz
Operating Frequency/Channels/Protocol	2412-2462MHz/11CH/802.11b/g/n-HT20 5180-5320MHz/8CH/802.11a/n-HT20 5500-5700MHz/11CH/802.11a/n-HT20 for FCC 5500-5580MHz/5CH/802.11a/n-HT20 for IC 5660-5700MHz/3CH/802.11a/n-HT20 for IC 5745-5825MHz/5CH/802.11a/n-HT20
Channel Spacing	5 MHz
Extreme Temperature Range	0~+40 °C
Type of Product	Slave device without Radar detection
TX Power Control (TPC)	Not Supported
Modulation	CCK, DSSS, OFDM
Antenna Number	1
Antenna Type	Internal antenna
Antenna Gain	2.4GHz band: 2.27dBi 5GHz bands: 5.18dBi
Operation Voltage	AC/DC Adapter operated Model: DYS602-240250W Input: 100-240Vac, 50/60Hz; Output: 24Vdc, 2.5A

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Print (USB operated)
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Application Form
- Circuit Diagram
- Instruction Manual
- Photo Documents
- Technical Description
- Bill of Material
- Rating Label

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emissions: 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

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4:2014.

4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Notebook	LENOVO	WB0205140E	WB06355728
USB Cable	Dymo	Shielded, Length: 100cm	--
Wireless Access Point	Cisco	AIR-CAP3702E-A-K9	FTX182276QD FCC ID: LDK102087 IC ID: 2461B-102087

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.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

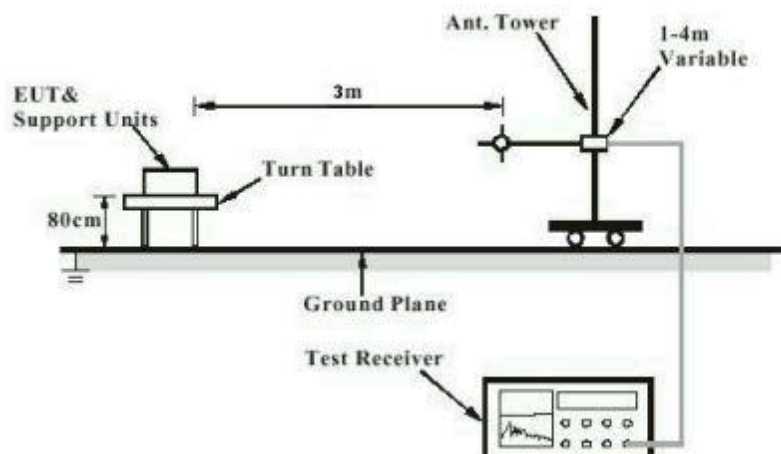
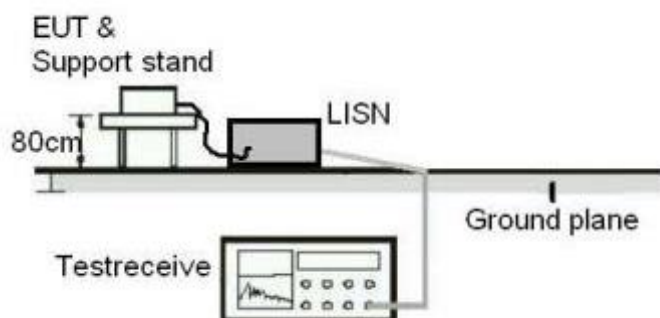


Diagram of Measurement Configuration for Mains Conduction Measurement



5. Test Results

5.1 Radio Test Requirement & Test Suites

5.1.1 Radiated Emissions

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.109
	:	ICES-003 Issue 6
Basic standard	:	ANSI C63.4:2014
Frequency range	:	*30 - 1000MHz
Limits	:	Refer to 15.109
	:	Clause 6.2 of ICES-003
Kind of test site	:	3m Semi-Anechoic Chamber

Test Setup

Date of testing	:	2017-06-07
Input voltage	:	120Vac, 60Hz
Operation mode	:	A
Ambient temperature	:	25 °C
Relative humidity	:	55 %
Atmospheric pressure	:	101 kPa

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

Refer to attached Appendix A for details of test data.

5.1.2 Conducted Emission on AC Mains**RESULT:****Pass****Test Specification**

Test standard	:	FCC Part 15.107
	:	ICES-003 Issue 6
Basic standard	:	ANSI C63.4:2014
Frequency range	:	0.15 - 30MHz
Limits	:	FCC Part 15.107
	:	Clause 6.1 of ICES-003
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2017-06-07
Input voltage	:	120Vac, 60Hz
Operation mode	:	A
Ambient temperature	:	25 °C
Relative humidity	:	55 %
Atmospheric pressure	:	101 kPa

Refer to attached Appendix A for details of test data.