

	<b>ESTECH Co., Ltd.</b> Rm 1015, World Venture Center 11, 426-5 Gasan-dong, Guro-gu, Seoul, 158-803, Korea	   	<b>Electromagnetic Interference Test Report</b>
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## Test Report for FCC

FCC ID:VH9-KDC300

Report Number		ESTF150903-004						
Applicant	Company name	AISOLUTION CO., LTD.						
	Address	148-3 Gwangjangdong, Gwangjingu, Seoul, Korea						
	Telephone	82-2-2201-3721						
Product	Product name	Barcode Reader						
	Model No.	KDC300	Manufacturer	AISOLUTION CO., LTD.				
	Serial No.	NONE	Country of origin	KOREA				
Test date	2009-02-19		Date of issue	3-Mar-09				
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea							
Standard	FCC PART 15 2007 , ANSI C 63.4 2003							
Test item	Conducted Emission	Class A	Class B	Test result	OK			
	Radiated Emission	Class A	Class B	Test result	OK			
Measurement facility registration number	94696							
Tested by	Senior Engineer H.H.Lee		(Signature)					
Reviewed by	Engineering Manager J.M.Yang		(Signature)					
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable							
* Note - This test report is not permitted to copy partly without our permission - This test result is dependent on only equipment to be used - This test result based on a single evaluation of one sample of the above mentioned								



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## Appendix 1. Spectral diagram

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## 1. Laboratory Information

### 1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.

ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.

ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

### 1.2 Test Lab.

Corporation Name : ESTECH Co. Ltd

Head Office : Rm 1015, World Venture Center II, 426-5, Gasan-dong, Geumcheon-gu, Seoul, Korea  
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea  
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

### 1.3 Official Qualification(s)

KCC : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication

KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements

FCC : Filed Laboratory at Federal Communications Commission

VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE



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## 2. Description of EUT

### 2.1 Summary of Equipment Under Test

Product name : Barcode Reader  
Model Number : KDC300  
Serial Number : NONE  
Manufacturer : AISOLUTION CO., LTD.  
Country of origin : KOREA  
Rating : Battery :Lithium-Ion rechargeable(3.7V DC, 600mAh)  
Receipt Date : 9-Feb-09  
X-tail list(s) : 32.77KHz x 2, 18.32MHz

### 2.2 General descriptions of EUT

#### Physical Characteristics

Size: 37mm x 83mm x 21mm

Weight: 52g

#### Electrical Characteristics

Battery: Lithium-Ion rechargeable (3.7V DC, 600mAh)

Charging: Via USB connector

Typical Operating Current: 500mA@3.3V

#### Scanning Performance

Image Sensor: 752 x 480 CMOS sensor

Scan Range: 5cm ~ 33cm

#### Temperature

Operating: -10°C ~ 50°C

Storage: -20°C ~ 60°C

#### Humidity

5% ~ 90% (non condensing)

#### Interface

Bluetooth V2.0+EDR, Class2, SPP

USB (Ultra mini USB port)

Serial (Ultra mini USB port)

#### Functionality

Memory FlashROM: 200KB(Optional 2MB) Data Storage

Microprocessor: ARM9, 32 bits

Keyboard: 1 scan button, 2 scroll buttons

Realtime Clock: Quartz RTC for time stamp

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### 3. Test Standards

#### Test Standard : FCC PART 15 (2007)

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

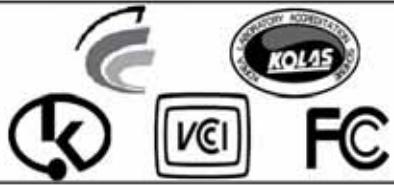
#### Test Method : ANSI C 63.4 (2003)

This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain devices that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment. These methods apply to the measurement of individual units or systems comprised of multiple units.



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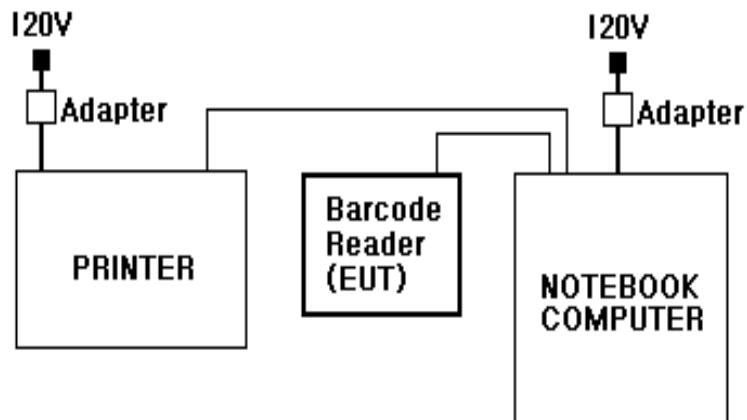
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## 4. Measurement Condition

### 4.1 EUT Operation.

1. Check to normal mode operation
2. The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected highest level of emission.
3. Connect EUT to PC USB port
4. Copy the "KTSync.exe" program from the CD
5. The scanned barcode will be displayed, along with barcode type and time stamp
6. Use the included Synchronization program to upload barcode data from EUT to PC.

### 4.2 Configuration and Peripherals



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#### 4.3 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
Barcode Reader	KDC300	NONE	AISOLUTION CO., LTD.	EUT
Notebook Computer	PP11L	GF7XD1S	Dell Asia Pacific Sdn.	
Adapter	DA90PS0-00	713-001M	DELTA ELECTRONICS (JIANG SU),LTD	
Printer	MJC-5750	NA34BFFP313402V	SAMSUNG ELECTRONICS(SHANDONG )DIGITAL PRINTING CO.,LTD	
Adapter	PA8040WB	0703016518	Bestec Electronics (Dongguan) Co.,Ltd.	

#### 4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Barcode Reader	USB	Notebook Computer	USB	2	Yes	
Notebook Computer	POWER	Adapter	-	2	No	
Notebook Computer	USB	Printer	USB	2	Yes	
Printer	POWER	Adapter	-	2	No	



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## 5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2007) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2007) & ANSI C 63.4 (2003) on an open test site, which allows a 3m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test setup.

### 5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESVS10	Rohde & Schwarz	838562/002	29 - Jan - 10
Spectrum Analyzer	R3273	ADVANTEST	110600592	9 - Jun - 09
LogBicon Antenna	VULB 9160	Schwarzbeck	3142	15 - May - 09
Amplifier	8447F	HP	2805A02972	26 - Jun - 09
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

### 5.2 Environmental Condition

Test Place : Open site(3m)  
Temperature (°C) : 9  
Humidity (%) : 39 %



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### 5.3 Test data

Test Date : 19-Feb-09

Measurement Distance : 3 m



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## 6. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 to 30 MHz was measured in accordance to FCC Part 15 (2007) & ANSI C 63.4 (2003). The test setup was made according to FCC Part 15 (2007) & ANSI C 63.4 (2003) in a shielded Room. The EUT was placed on a non-conductive table at least 80 above the ground plan. A grounded vertical reference plane was positioned in a distance of 40cm from the EUT. The distance from the EUT to other metal surfaces was at least 0.8m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0m.. The test receiver with Quasi Peak detector complies with CISPR 16.

### 6.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Schwarzbeck	838979/010	28-Feb-09
LISN	NNLA8120A	Schwarzbeck	8120161	28-Feb-09
TEST Receiver	ESPI7	Rohde & Schwarz	100185	27-Aug-09
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	10-Sep-09

### 6.2 Environmental Condition

Test Place : Shielded Room

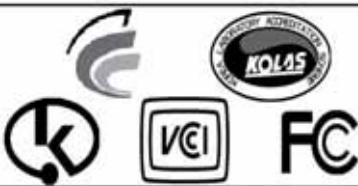
Temperature (°C) : 21

Humidity (%) : 47 %



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### 6.3 Test data

Test Date : 19-Feb-09



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## 7. Photographs of test setup

### 7.1 Setup for Radiated Test : 30 ~ 1000 MHz

[ Front ]



[ Rear ]





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## 7.2 Setup for Conducted Test : 0.15 ~ 30 MHz

[ Front ]



[ Rear ]





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## 8. Photographs of EUT

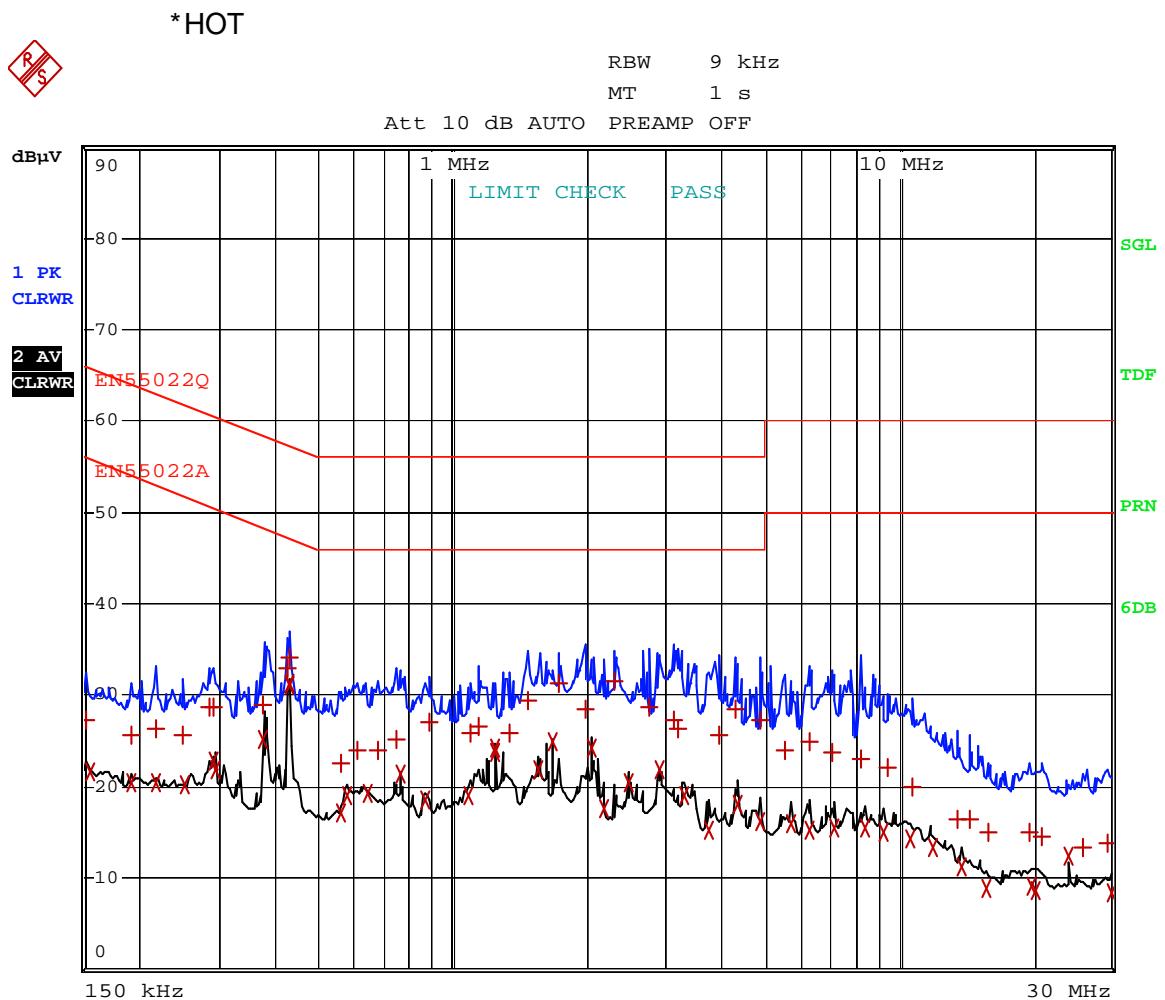
[ Front ]



[ Rear ]



## Appendix 1. Spectral diagram



Comment: KDC300\_HOT  
Date: 19.FEB.2009 16:29:58

\*NEUTRAL

