



FCC - TEST REPORT

Report Number	: 68.720.15.524.01	Date of Issue: <u>Sep 01, 2015</u>
Model	: D8	
Product Type	: SmartCard Reader	
Applicant	: SHENZHEN DECARD SMARTCARD TECH CO.,LTD.	
Address	: F4 Bldg 17 Wenguang Industrial Zone Chaguang Rd Nanshan District, 518055 Shenzhen, China	
Production Facility	: SHENZHEN DECARD SMARTCARD TECH CO.,LTD.	
Address	: F4 Bldg 17 Wenguang Industrial Zone Chaguang Rd Nanshan District, 518055 Shenzhen, China	
Test Result	: <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Negative	
Total pages including Appendices	: <u>15</u>	

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1 Table of Contents

1 Table of Contents	2
2 Details about the Test Laboratory.....	3
3 Description of the Equipment Under Test	4
4 Summary of Test Standards	5
5 Summary of Test Results.....	6
6 General Remarks.....	7
7 Technical Requirement	8
7.1 Conducted Emission Test.....	8
7.2 Radiated Emission Test 30MHz – 1000MHz	12
7 System Measurement Uncertainty	15

2 Details about the Test Laboratory

Details about the Test Laboratory

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
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Shenzhen City, 518052,
P. R. China

FCC Registration Number: 502708

Telephone: 86 755 8828 6998
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3 Description of the Equipment Under Test

Product: SmartCard Reader

Model no.: D8

Brand Name: D&C

Options and accessories: NIL

Rating: 5VDC

RF Transmission Frequency: 13.56MHz

No. of Operated Channel: 1

Modulation: RFID

Antenna Type: PCB Antenna

Antenna Gain: 0dBi

Description of the EUT: The Equipment Under Test (EUT) is a SmartCard Reader with RFID function operating at 13.56MHz.

4 Summary of Test Standards

Test Standards	
FCC Part 15 Subpart B 10-1-14 Edition	Unintentional Radiators

5 Summary of Test Results

Emission Tests				
FCC Part 15 Subpart B 10-1-14 Edition		Test Result		
Test Condition	Pages	Pass	Fail	N/A
Conducted Emission on AC 150kHz to 30MHz	8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiated Emission 30MHz to 1000MHz	12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6 General Remarks

Remarks

The EUT is an SmartCard Reader with RFID function.

SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed

- **Not** Performed

The Equipment under Test

- **Fulfills** the general approval requirements.

- **Does not** fulfill the general approval requirements.

Sample Received Date: Aug 13, 2015

Testing Start Date: Aug 14, 2015

Testing End Date: Sep 01, 2015

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:



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EMC Project Manager

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EMC Project Engineer

7 Technical Requirement

7.1 Conducted Emission Test

Test Method

1. The EUT was placed on a table, which is 0.8m above ground plane
2. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
3. Maximum procedure was performed to ensure EUT compliance
4. A EMI test receiver is used to test the emissions from both sides of AC line

Limit

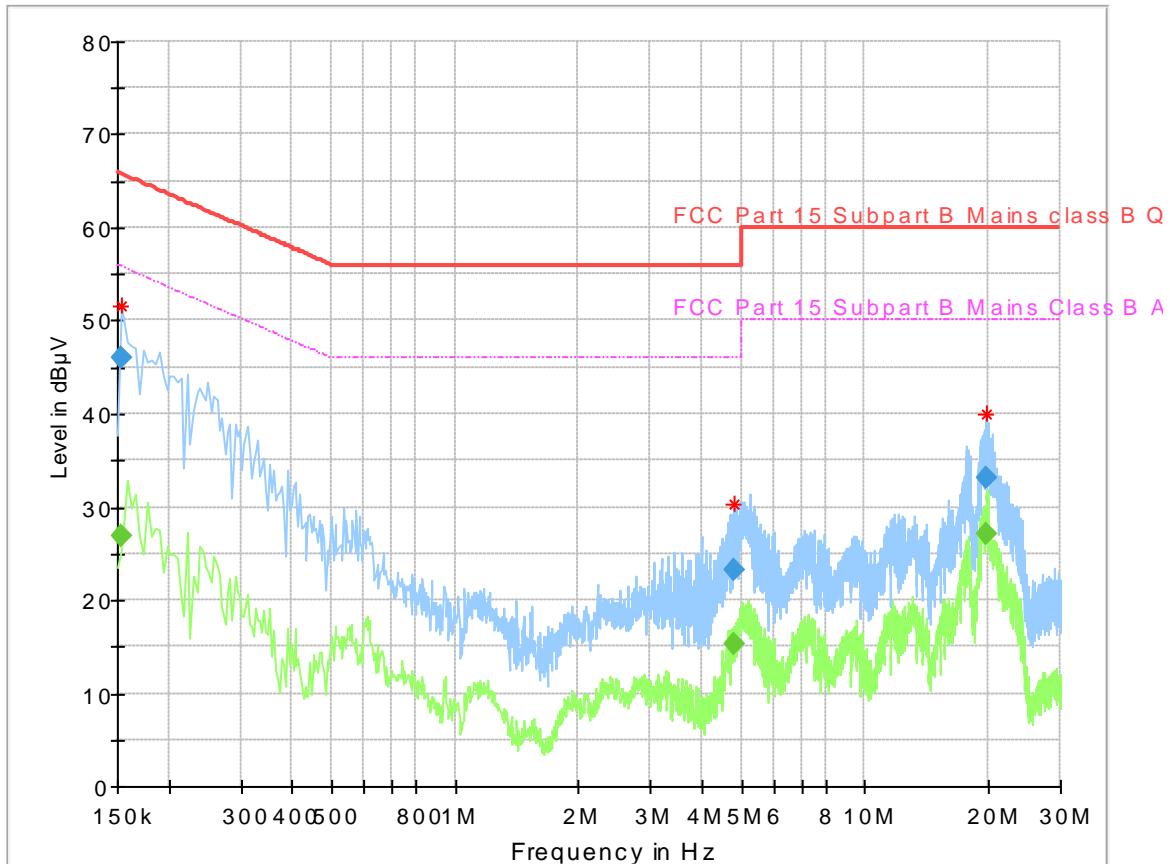
According to §15.107, conducted emissions limit as below:

Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linearly with logarithm of the frequency

Conducted Emission

Product Type : SMARTCARD READER
 M/N : D8
 Operating Condition : Standby
 Test Specification : Line
 Comment : AC 120V/60Hz



Final Result

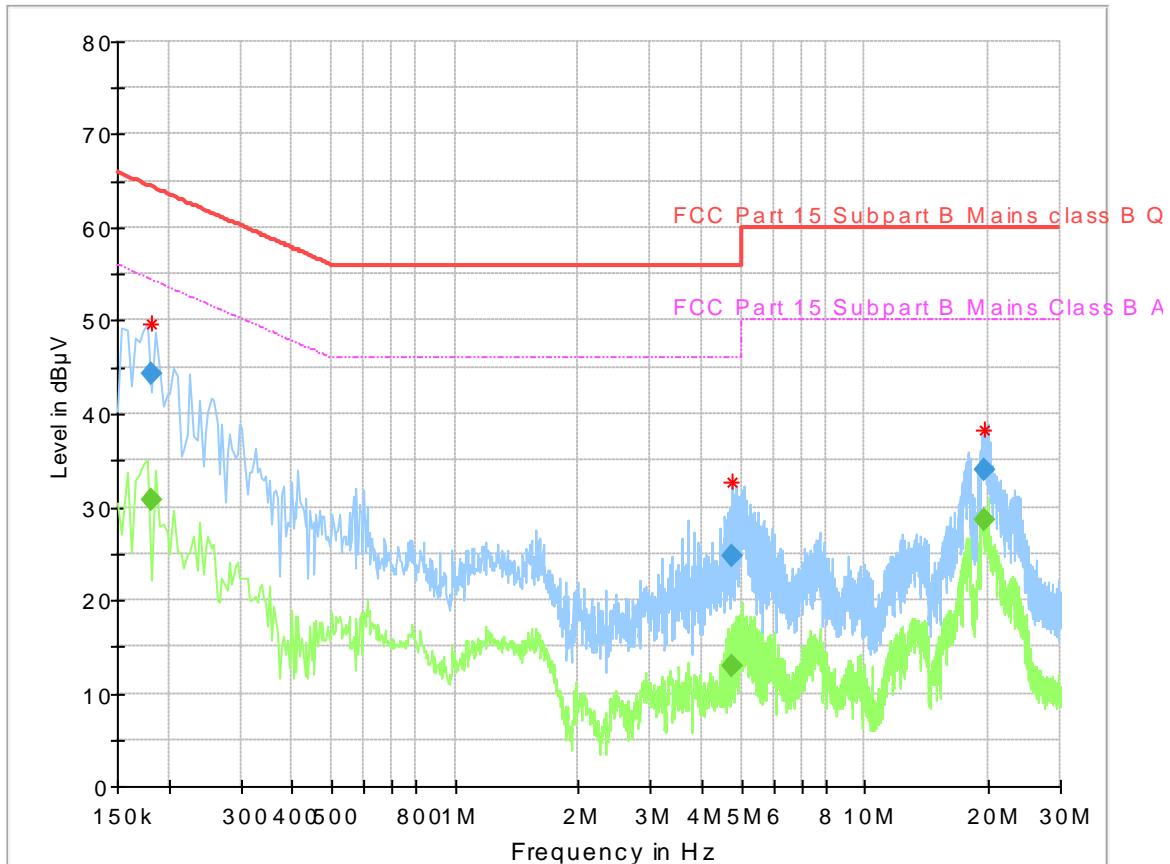
Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.154000	---	26.91	55.78	28.87	L1	9.6
0.154000	46.01	---	65.78	19.77	L1	9.6
4.777500	---	15.21	46.00	30.79	L1	9.9
4.777500	23.24	---	56.00	32.76	L1	9.9
19.894500	---	27.17	50.00	22.83	L1	10.2
19.894500	33.07	---	60.00	26.93	L1	10.2

Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.154000	51.53	65.78	14.25	L1	9.6
4.777500	30.24	56.00	25.76	L1	9.9
19.894500	39.99	60.00	20.01	L1	10.2

Conducted Emission

Product Type : SMARTCARD READER
 M/N : D8
 Operating Condition : Standby
 Test Specification : Neutral
 Comment : AC 120V/60Hz



Final Result

Frequency (MHz)	QuasiPeak (dB μ V)	Average (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Corr. (dB)
0.181500	---	30.75	54.42	23.67	N	9.7
0.181500	44.37	---	64.42	20.05	N	9.7
4.749500	---	12.90	46.00	33.10	N	9.8
4.749500	24.76	---	56.00	31.24	N	9.8
19.533500	---	28.65	50.00	21.35	N	10.1
19.533500	34.07	---	60.00	25.93	N	10.1

Critical Freqs

Frequency (MHz)	MaxPeak (dB μ V)	Limit (dB μ V)	Margin (dB)	Line	Corr. (dB)
0.181500	49.72	64.58	14.86	N	9.7
4.749500	32.76	56.00	23.24	N	9.8
19.533500	38.33	60.00	21.67	N	10.1

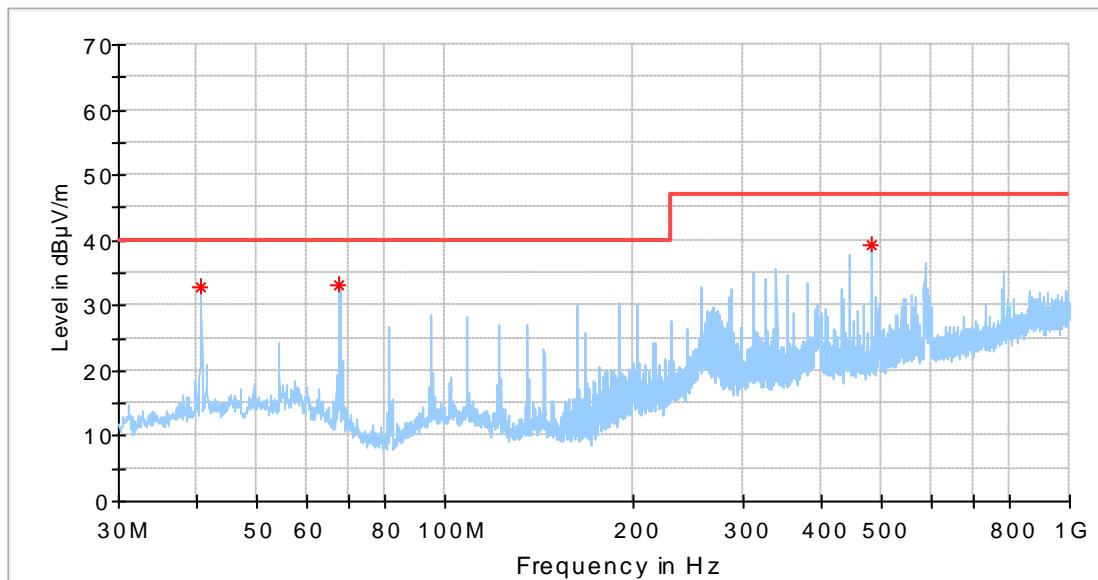
Test Equipment List

Conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Cal. due. date
EMI Test Receiver	Rohde & Schwarz	ESR 3	101782	2016-7-24
LISN	Rohde & Schwarz	ENV216	100326	2016-7-24

7.2 Radiated Emission Test 30MHz – 1000MHz

Product Type : SMARTCARD READER
 M/N : D8
 Operating Condition : Standby
 Ant. Polarity : Horizontal
 Comment : 30-1000MHz



Critical_Freqs

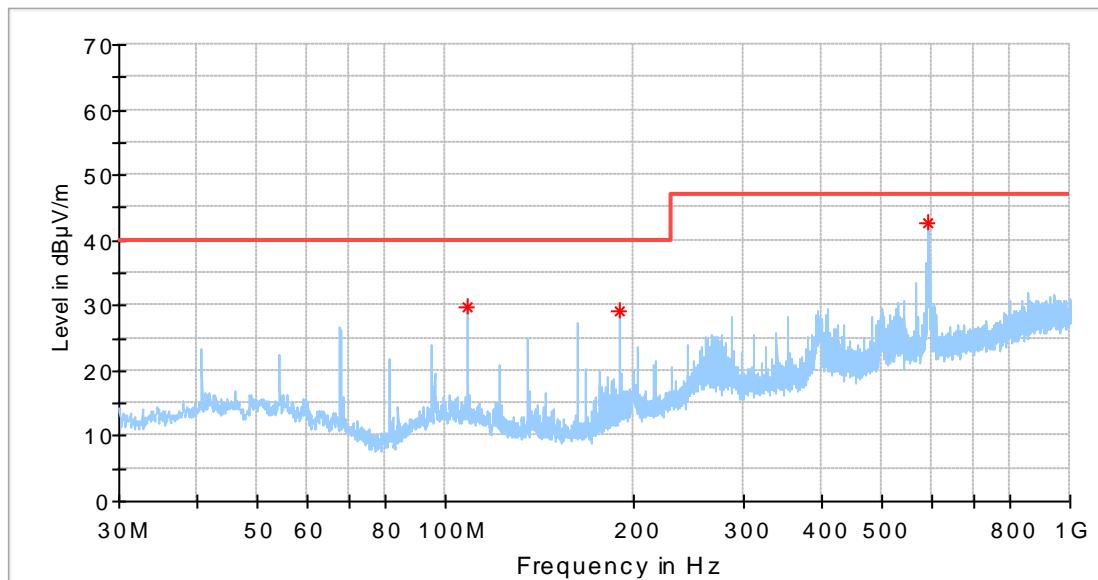
Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
40.670000	32.78	40.00	7.22	200.0	H	12.0
67.769375	33.05	40.00	6.95	200.0	H	0.0
480.019375	39.30	47.00	7.70	100.0	H	197.0

Final_Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
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7.2 Radiated Emission Test 30MHz – 1000MHz

Product Type : SMARTCARD READER
 M/N : D8
 Operating Condition : Standby
 Ant. Polarity : Vertical
 Comment : 30-1000MHz



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
108.448750	29.76	40.00	10.24	100.0	V	9.0
189.807500	29.02	40.00	10.98	100.0	V	105.0
593.812500	42.76	47.00	4.24	100.0	V	240.0

Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
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Test Equipment List

Radiated Emission Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2016-7-24
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2016-8-14
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2016-7-24
3m Semi-anechoic chamber	TDK	9X6X6	----	2019-5-29

7 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

System Measurement Uncertainty	
Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.83dB; Vertical: 4.91dB;
Uncertainty for Radiated Emission in 3m chamber 1000MHz-18000MHz	Horizontal: 4.89dB; Vertical: 4.88dB;
Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV216 or ENV4200)	3.50dB