

**FCC - TEST REPORT**Report Number : **68.720.15.524.01** Date of Issue: Sep 01, 2015Model : D8Product Type : SmartCard ReaderApplicant : SHENZHEN DECARD SMARTCARD TECH CO.,LTD.Address : F4 Bldg 17 Wenguang Industrial Zone Chaguang Rd Nanshan  
District, 518055 Shenzhen, ChinaProduction Facility : SHENZHEN DECARD SMARTCARD TECH CO.,LTD.Address : F4 Bldg 17 Wenguang Industrial Zone Chaguang Rd Nanshan  
District, 518055 Shenzhen, ChinaTest Result : ☒ **Positive** ☐ **Negative**Total pages including  
Appendices : 15

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## 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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FCC Registration Number: 502708

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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 Condition	Pages	Test Result		
		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

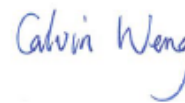
- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch -

Reviewed by:



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EMC Project Manager

Prepared by:



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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

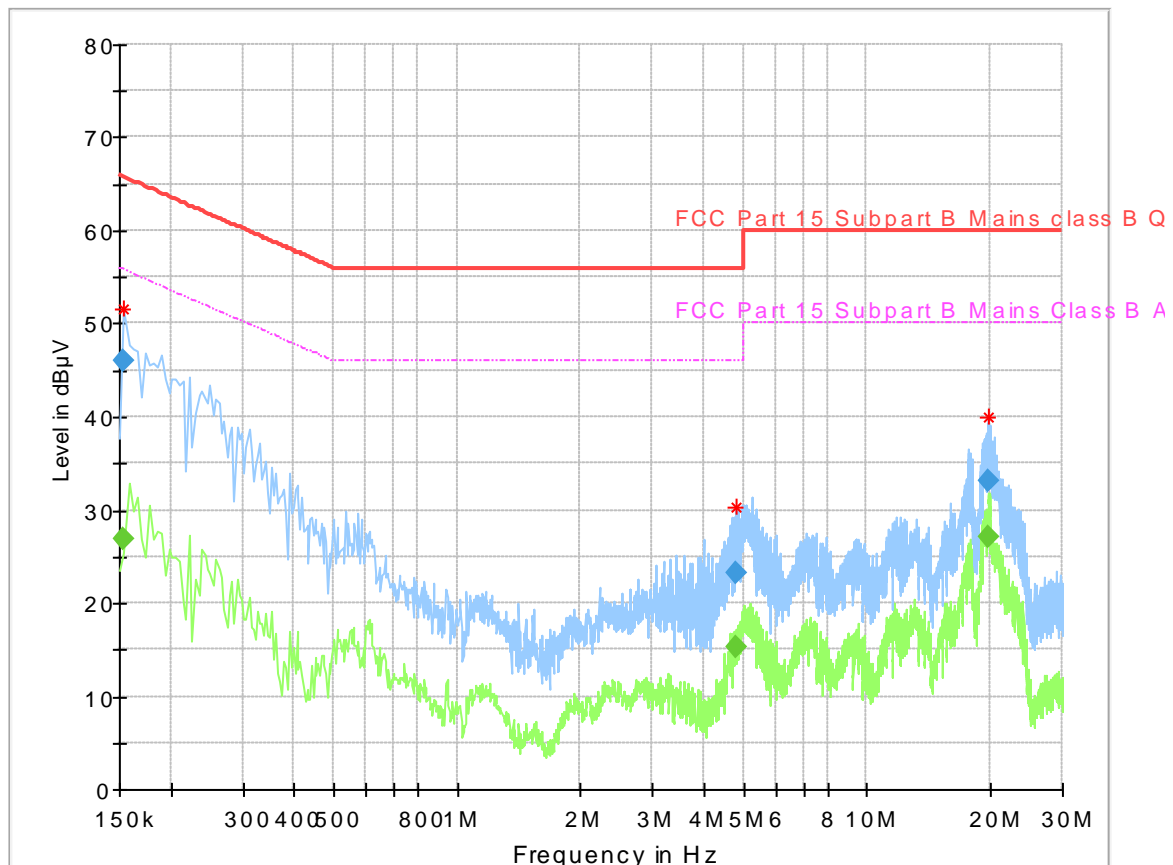
According to §15.107, conducted emissions limit as below:

Frequency MHz	QP Limit dB $\mu$ V	AV Limit dB $\mu$ 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

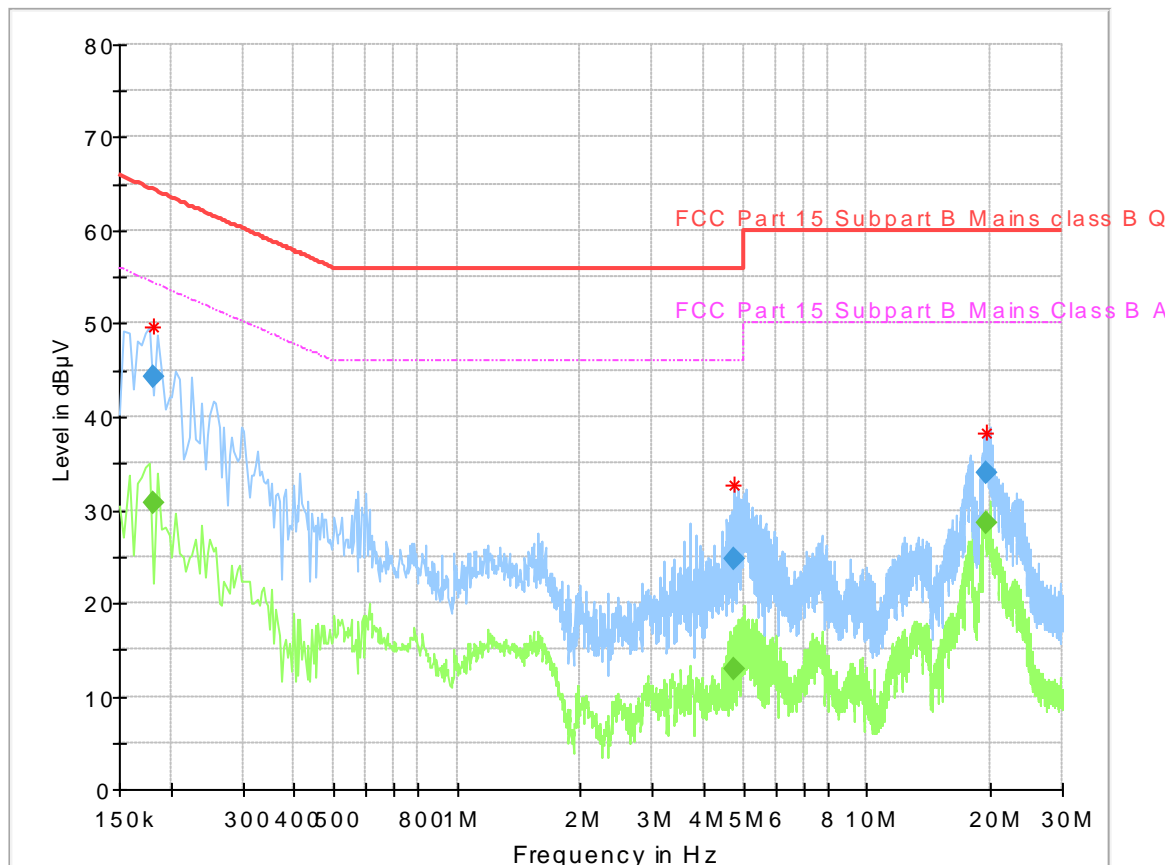
Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)
0.154000	---	26.91	55.78	28.87	L1	9.6
0.154000	46.01	---	65.78	19.77	L1	9.6
4.777500	---	15.21	46.00	30.79	L1	9.9
4.777500	23.24	---	56.00	32.76	L1	9.9
19.894500	---	27.17	50.00	22.83	L1	10.2
19.894500	33.07	---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

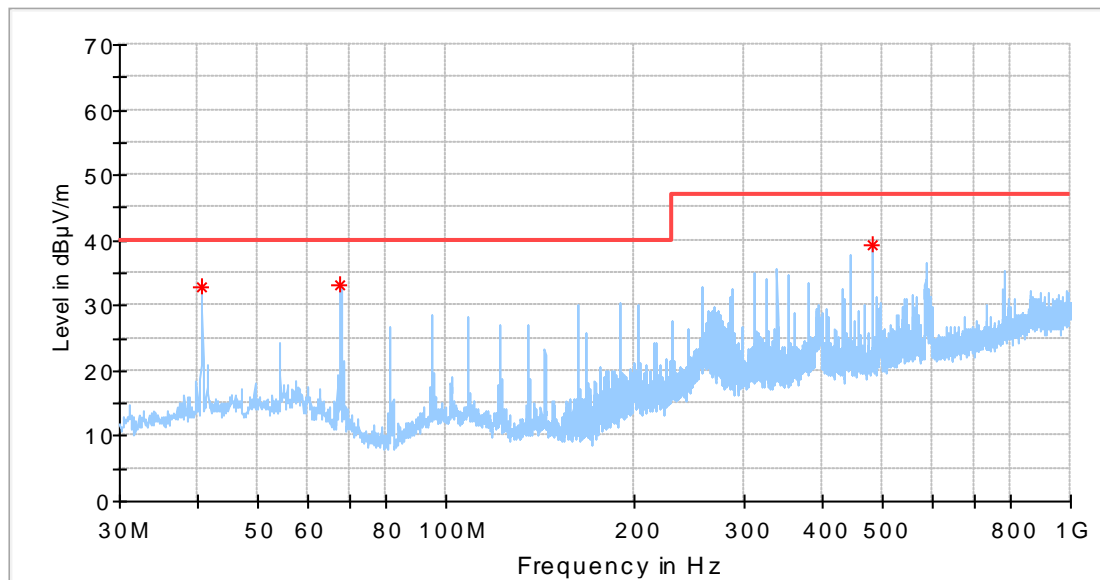
Frequency (MHz)	MaxPeak (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.181500	49.72	64.58	14.86	N	9.7
4.749500	32.76	56.00	23.24	N	9.8
19.533500	38.33	60.00	21.67	N	10.1

**Test Equipment List****Conducted emission test**

<b>Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Serial No.</b>	<b>Cal. due. date</b>
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

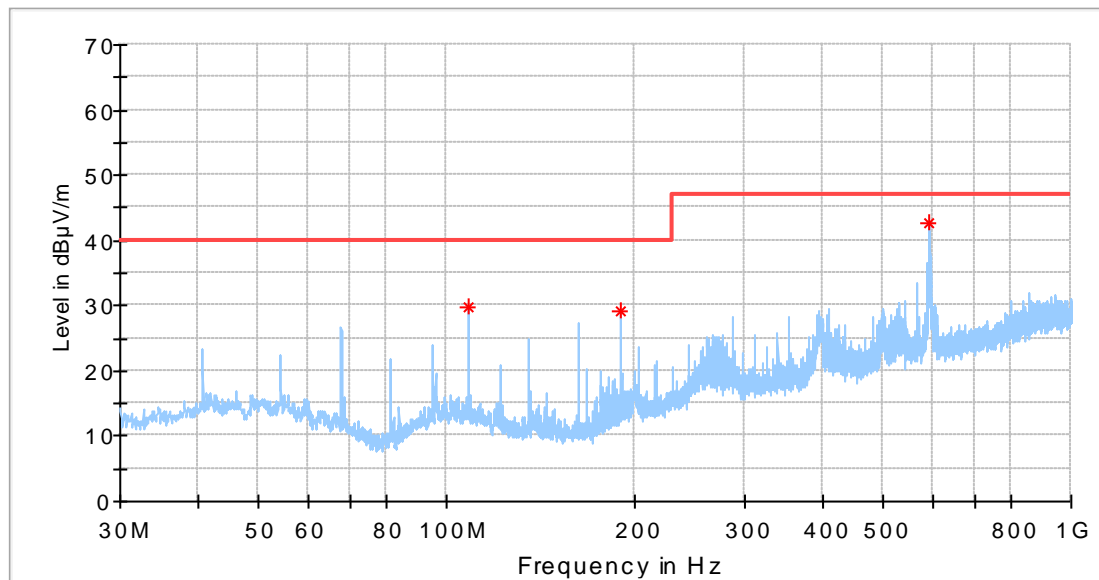
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
40.670000	32.78	40.00	7.22	200.0	H	12.0
67.769375	33.05	40.00	6.95	200.0	H	0.0
480.019375	39.30	47.00	7.70	100.0	H	197.0

### Final\_Result

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

## 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