

# EMC TEST Report

## FCC ID: TFJUIC681

This report concerns (check one) :  Original Grant  Class II Change

**Issued Date :** Oct. 31, 2006

**Report No. :** 0606133

**Equipment :** Contactless Card Reader

**Model No. :** UIC681 Series

**Applicant :** Uniform Industrial Corp.

**Address :** 47709 Fremont Blvd., Fremont, California,  
United States 94539

**Tested by:**

Neutron Engineering Inc. EMC Laboratory

**Data of Test:**

Jul. 14, 2006 ~ Oct. 26, 2006

Testing Engineer : Alan Liu  
(Alan Liu)

Technical Manager : Jeff Yang  
(Jeff Yang)

Authorized Signatory : Andy Chiu  
(Andy Chiu)

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**Declaration**

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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## **1. CERTIFICATION**

Equipment : Contactless Card Reader  
Trade Name : Uniform  
Model No. : UIC681 Series  
Applicant : Uniform Industrial Corp.  
Data of Test : Jul. 14, 2006 ~ Oct. 26, 2006  
Test Item : ENGINEERING SAMPLE  
Standards : FCC Part15, Subpart C / RSS-210: 2004/ ANCI C63.4 : 2003

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-0606133) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and CNLA according to the ISO-17025 quality assessment standard and technical standard(s).

**2. SUMMARY OF TEST RESULTS**

Test procedures according to the technical standards: (Antenna to EUT distance is 3 m)

<b>FCC Part15, Subpart C</b>		
<b>Standard</b>	<b>Test Item</b>	<b>Judgment</b>
15.207	Conducted Emission	PASS
15.35 / 15.205 / 15.209 / 15.225	Radiated Emission	PASS
15.225(e)	Frequency Stability	PASS
15.203	Antenna Requirement	PASS

**NOTE:**

(1) "N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **OS02** at the location of No.132-1, Lane 329, Sec. 2, Palain Road, Shijr City, Taipei, Taiwan.

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95 %**.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
OS-01	ANSI	30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
OS-02	ANSI	30MHz ~ 200MHz	V	2.48	
		30MHz ~ 200MHz	H	2.16	
		200MHz ~ 1,000MHz	V	2.50	
		200MHz ~ 1,000MHz	H	2.66	

### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

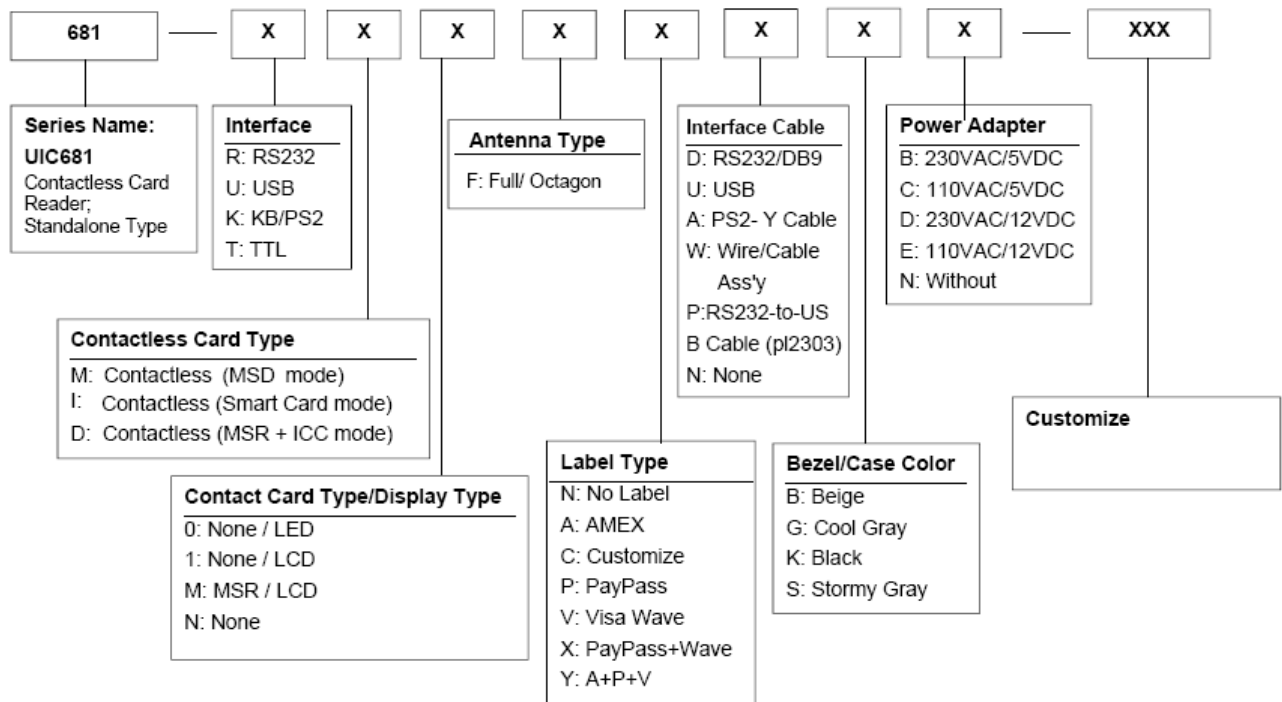
Equipment	Contactless Card Reader						
Trade Name	Uniform						
Model No.	UIC681 Series						
OEM Brand/Model No.	N/A						
Model Difference	Please refer to next page the Part Number Description of UIC681 Series. All the models were tested, and the model: UIC681-KM0FYASN-XXX, UIC681-RM0FYDSE-XXX, and UIC681-RM1FYDSC-XXX were found to be the worst case during the pr-scanning test. These models of the worst case were used for final testing and collecting test data included in this report.						
Product Description	The EUT is a Contactless Card Reader. <table border="1" data-bbox="624 965 1406 1088"> <tr> <td>A. Operation Frequency</td> <td>13.56 MHz</td> </tr> <tr> <td>B. Modulation Type</td> <td>FSK</td> </tr> <tr> <td>C. Antenna Designation</td> <td>Integral Antenna / Octagon</td> </tr> </table> <p>Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</p>	A. Operation Frequency	13.56 MHz	B. Modulation Type	FSK	C. Antenna Designation	Integral Antenna / Octagon
A. Operation Frequency	13.56 MHz						
B. Modulation Type	FSK						
C. Antenna Designation	Integral Antenna / Octagon						
Power Source	Supplied from PC PS/2 port. / DC Voltage supplied from power adapter.						
Power Rating	DC I/P 12V or 5V.						
Connecting I/O Port(s)	Please refer to the User's Manual						
Products Covered	Power adapter: HAPU05F2: AC I/P 100-240V, 50/60Hz, 0.5A DC O/P 12V, 1.25A. PA1010-050DUB: AC I/P 100-240V, 50-60Hz, 0.4A DC O/P 5V, 2.0A 10W Max. DCU050050: AC I/P 120V, 60Hz, 8W DC O/P 5V, 500mA.						

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



**Part Number Description of UIC681 Series**



### 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

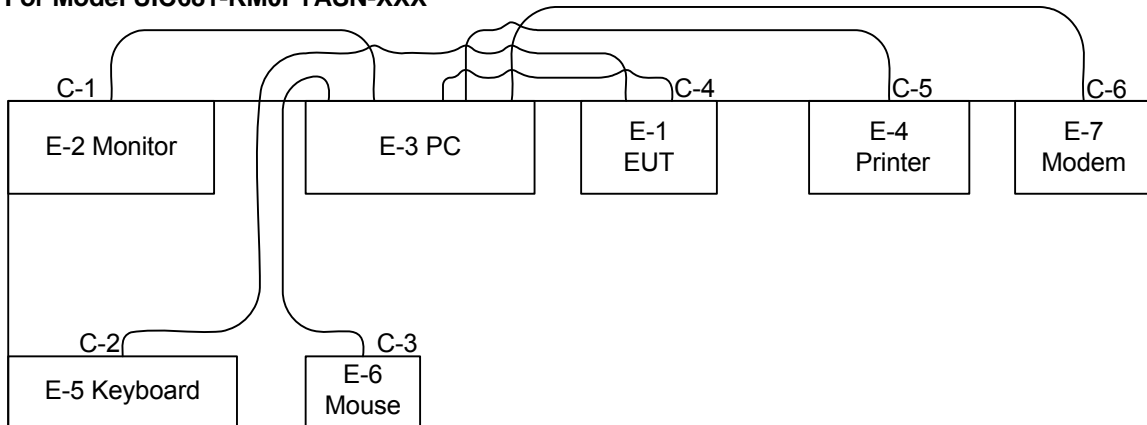
Pretest Test Mode	Description
Mode 1	Normal

For Conducted Test	
Final Test Mode	Description
Mode 1	Normal

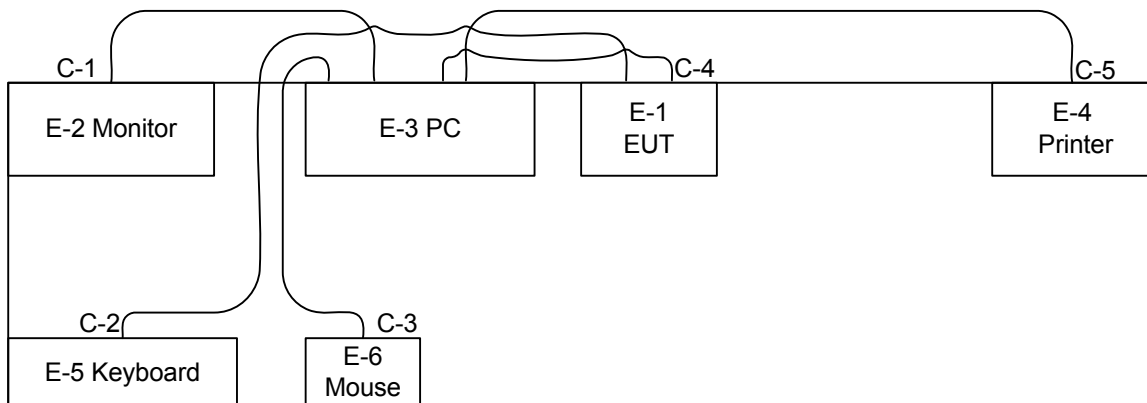
For Radiated Test	
Final Test Mode	Description
Mode 1	Normal

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

For Model UIC681-KM0FYASN-XXX



For Model UIC681-RM0FYDSE-XXX, and UIC681-RM1FYDSC-XXX



- C-1 VGA Cable
- C-2 Data Cable
- C-3 Data Cable
- C-4 Data Cable
- C-5 Centronics Cable
- C-6 Interface Cable

**3.4 DESCRIPTION OF SUPPORT UNITS**

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Contactless Card Reader	Uniform	UIC681-KM0FYASN-XXX UIC681-RM0FYDSE-XXX UIC681-RM1FYDSC-XXX	TFJUIC681	N/A	EUT
E-2	19" LCD Monitor	Samsung	SyncMaster 193P	GH19PH	DI19H4JXC05517A	
E-3	PC	IBM	8434-INV	DOC	99FCL27	
E-4	Printer	SII	DPU-414	DOC	1045105A	
E-5	PS/2 K/B	Logitech	Y-SJ17(ACK260A)	DOC	SYU44664880	
E-6	PS/2 Mouse	Logitech	M-SBF69	DOC	HCA44601156	
E-7	Modem	ACEEX	DM-1414V	DOC	8041708	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	YES	1.8M	
C-2	YES	NO	1.5M	
C-3	YES	NO	1.5M	
C-4	YES	NO	1.5M	
C-5	YES	NO	1.8M	
C-6	YES	NO	1.5M	

**Note:**

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

**4. EMC EMISSION TEST**

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	Rolf Heine	NNB-2/16Z	98053	Dec. 19, 2006
2	4L-V-LISN	Rolf Heine	NNB-4/63TL	02/10040	Apr. 06, 2007
3	Pulse Limiter	Electro-Metrics	EM-7600	112644	Nov. 29, 2006
4	50Ω Terminator	N/A	N/A	N/A	May.11, 2007
5	Test Cable	N/A	C01	N/A	Nov. 29, 2006
6	EMI Test Receiver	R&S	ESCI	100082	Feb. 01, 2007

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

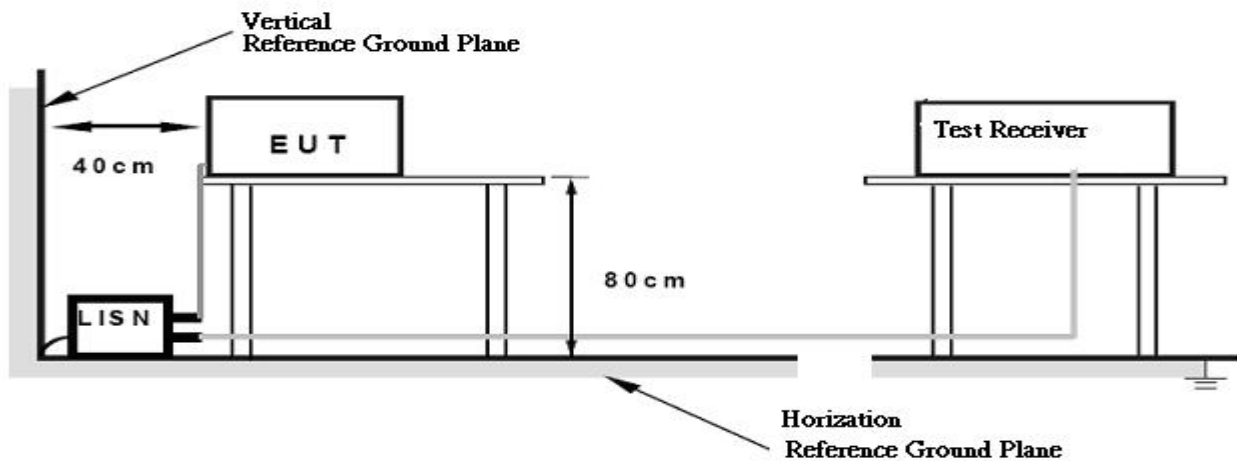
#### 4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.5 TEST SETUP



#### 4.1.6 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The program contained on a PC hard disk and is auto-starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is:

1. Read (write) from (to) mass storage device (Disk).
2. Send "H" pattern to video port device (Monitor).
3. Send " H " pattern to parallel port device (Printer).
4. Send " H " pattern to serial port device (Modem).
5. The EUT has been programmed to continuously transmit during test.
6. Repeated from 2 to 5 continuously.

As the keyboard and mouse are strictly input devices, no data is transmitted to (from) them during test. They are, however, continuously scanned for data input activity.

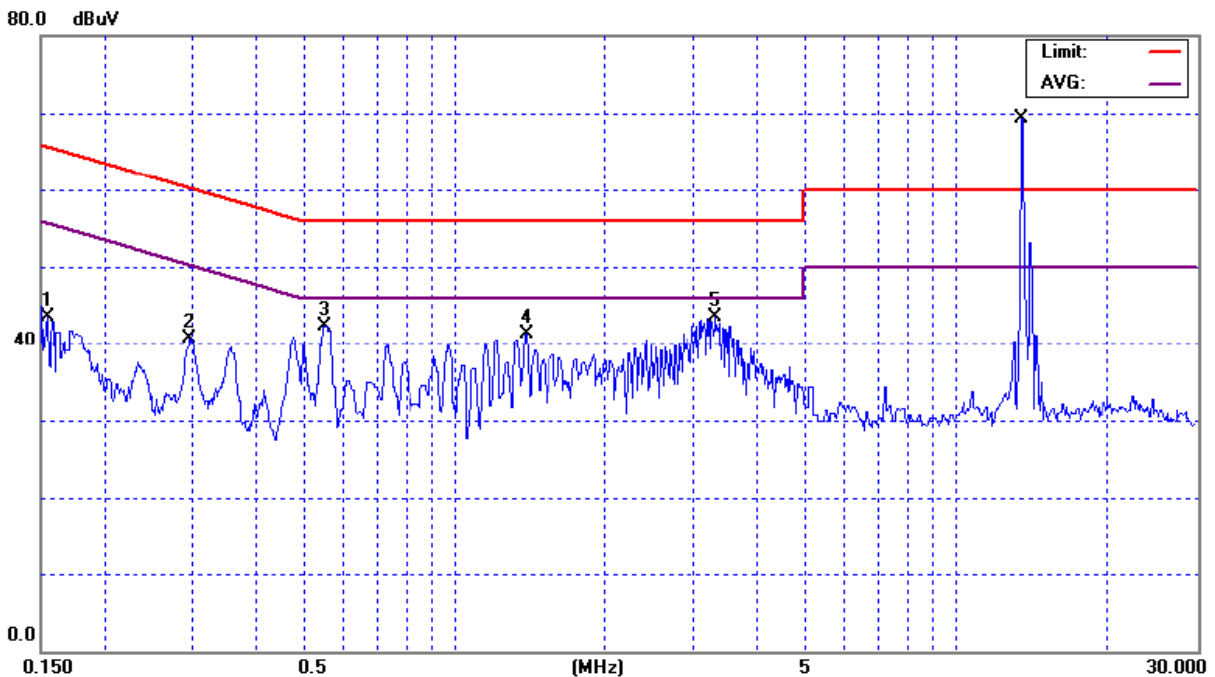
4.1.7 TEST RESULTS

EUT :	Contactless Card Reader	Model No. :	UIC681-KM0FYASN-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-without power adapter		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.15	Line	43.48	*	65.75	55.75	-22.27	(QP)
0.30	Line	40.69	*	60.34	50.34	-19.65	(QP)
0.55	Line	42.32	*	56.00	46.00	-13.68	(QP)
1.39	Line	41.27	*	56.00	46.00	-14.73	(QP)
3.32	Line	43.58	*	56.00	46.00	-12.42	(QP)
13.57	Line	68.76	68.15	60.00	50.00	18.15	Note(3)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Tx Fundamental, For reference only. Please refer to the next page.**



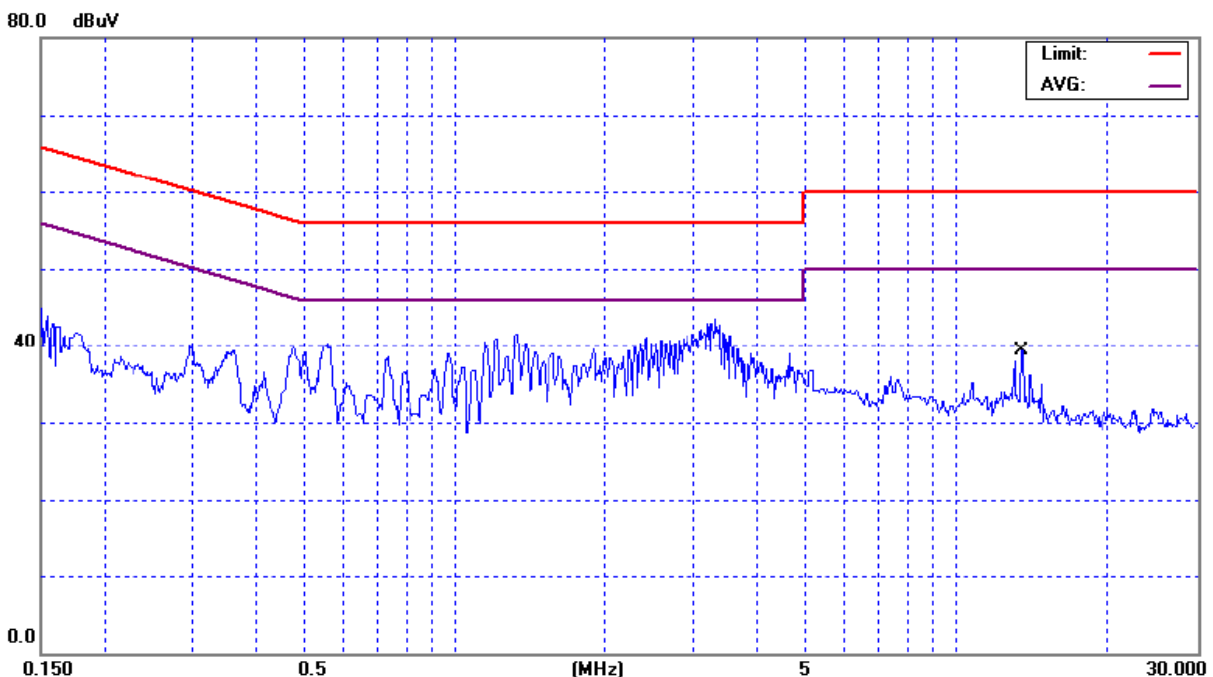


EUT :	Contactless Card Reader	Model No. :	UIC681-KM0FYASN-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-without power adapter		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
13.57	Line	38.71	37.95	60.00	50.00	-12.05	(AV)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦  
Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of "Note". If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) FCC May 2005 TCB Conference notes :**  
Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56MHz transmitter done with a dummy load under the following conditions :  
1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.  
2) Second, retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. Only the fundamental TX emission band needs to be retested.

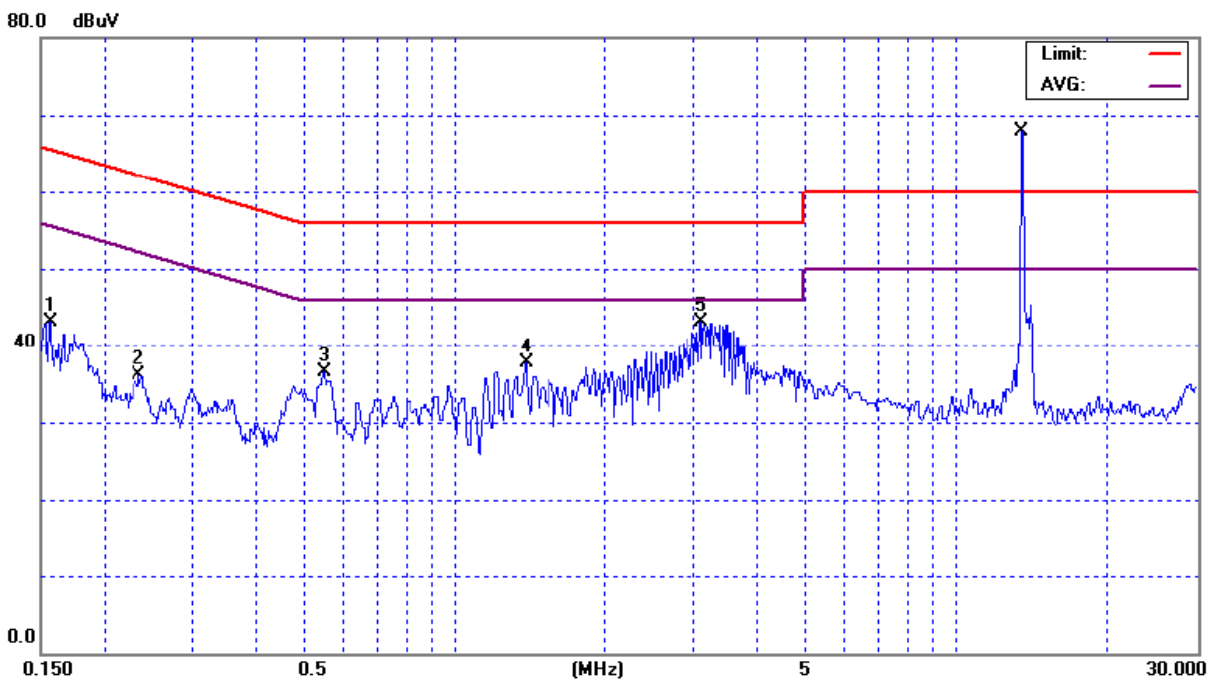


EUT :	Contactless Card Reader	Model No. :	UIC681-KM0FYASN-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-without power adapter		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.16	Neutral	43.08	*	65.67	55.67	-22.59	(QP)
0.24	Neutral	36.07	*	62.27	52.27	-26.20	(QP)
0.55	Neutral	36.52	*	56.00	46.00	-19.48	(QP)
1.39	Neutral	37.65	*	56.00	46.00	-18.35	(QP)
3.09	Neutral	43.16	*	56.00	46.00	-12.84	(QP)
13.57	Neutral	67.45	66.87	60.00	50.00	16.87	Note(3)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a “ \* ” marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Tx Fundamental, For reference only. Please refer to the next page.**

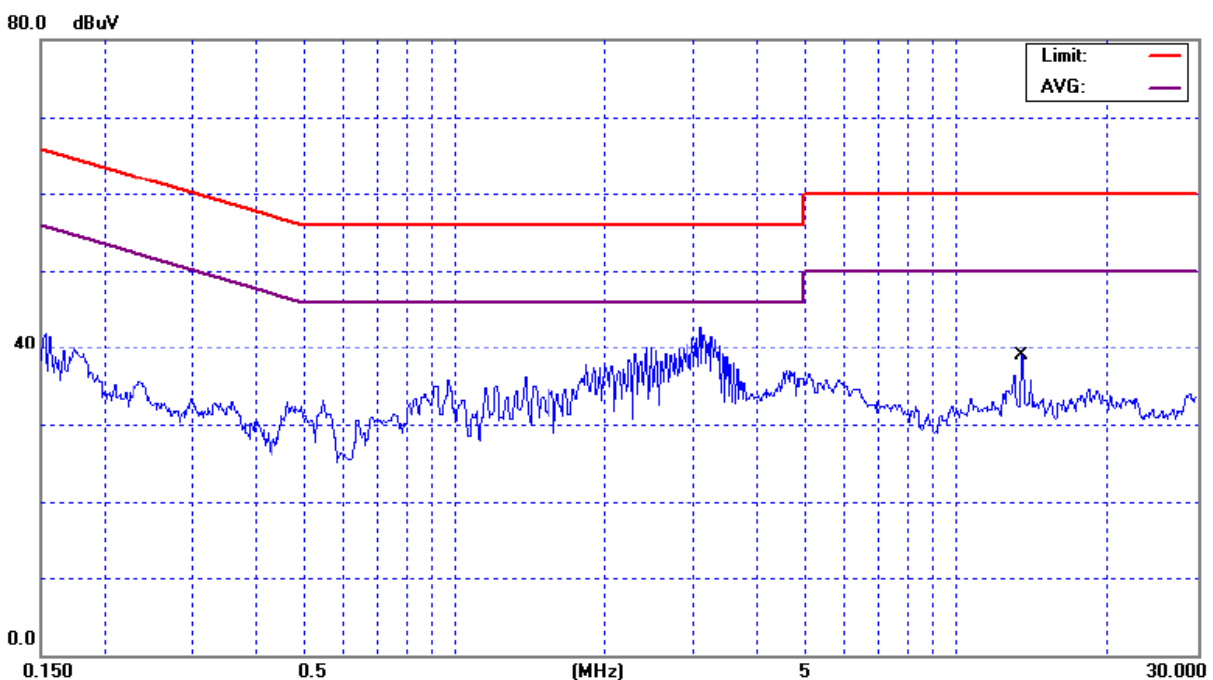


EUT :	Contactless Card Reader	Model No. :	UIC681-KM0FYASN-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-without power adapter		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
13.57	Neutral	38.52	37.91	60.00	50.00	-12.09	(AV)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) **FCC May 2005 TCB Conference notes :**  
 Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56MHz transmitter done with a dummy load under the following conditions :  
 1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.  
 2) Second, retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. Only the fundamental TX emission band needs to be retested.

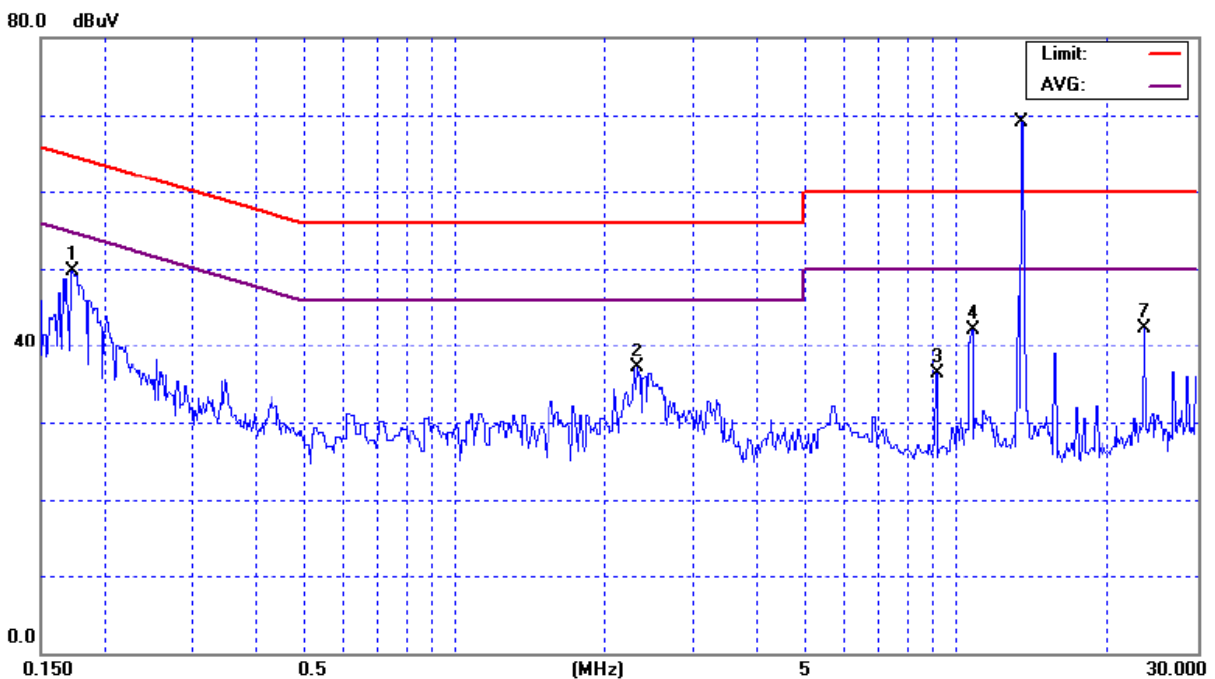


EUT :	Contactless Card Reader	Model No. :	UIC681-RM0FYDSE-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter HAPU05F2		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.17	Line	49.68	*	64.84	54.84	-15.16	(QP)
2.31	Line	37.13	*	56.00	46.00	-18.87	(QP)
9.14	Line	36.38	*	60.00	50.00	-23.62	(QP)
10.82	Line	42.09	*	60.00	50.00	-17.91	(QP)
13.57	Line	70.15	69.55	60.00	50.00	19.55	Note(3)
23.79	Line	42.32	*	60.00	50.00	-17.68	(QP)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Tx Fundamental, For reference only. Please refer to the next page.**

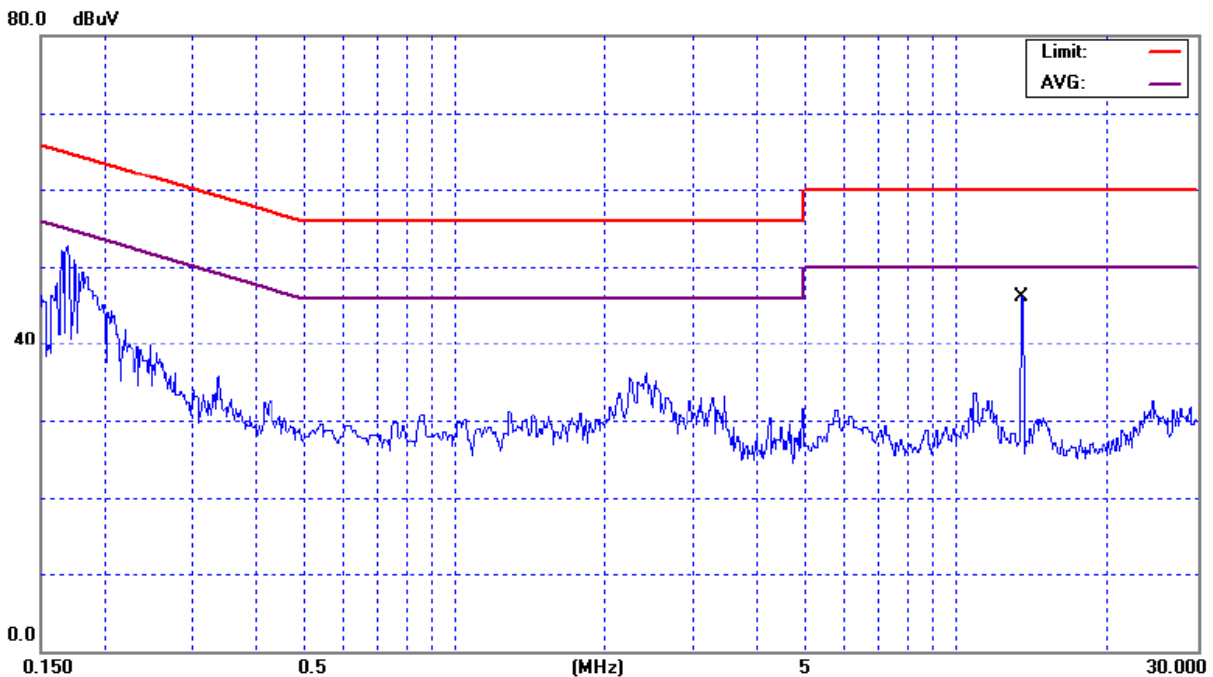


EUT :	Contactless Card Reader	Model No. :	UIC681-RM0FYDSE-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter HAPU05F2		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
13.56	Line	46.95	46.05	60.00	50.00	-3.95	(AV)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of "Note". If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) FCC May 2005 TCB Conference notes :**  
 Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56MHz transmitter done with a dummy load under the following conditions :  
 1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.  
 2) Second, retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. Only the fundamental TX emission band needs to be retested.

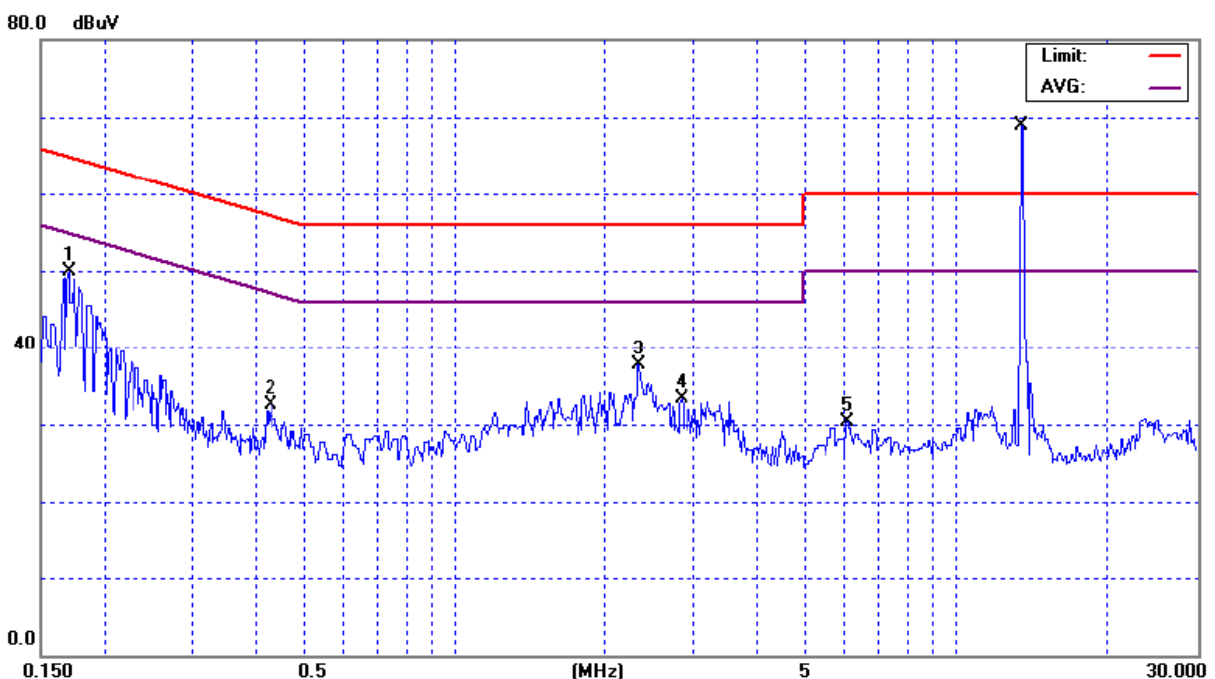


EUT :	Contactless Card Reader	Model No. :	UIC681-RM0FYDSE-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter HAPU05F2		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.17	Neutral	49.88	*	64.96	54.96	-15.08	(QP)
0.43	Neutral	32.51	*	57.25	47.25	-24.74	(QP)
2.33	Neutral	37.73	*	56.00	46.00	-18.27	(QP)
2.83	Neutral	33.35	*	56.00	46.00	-22.65	(QP)
6.07	Neutral	30.33	*	60.00	50.00	-29.67	(QP)
13.57	Neutral	69.47	68.57	60.00	50.00	18.57	Note(3)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Tx Fundamental, For reference only. Please refer to the next page.**

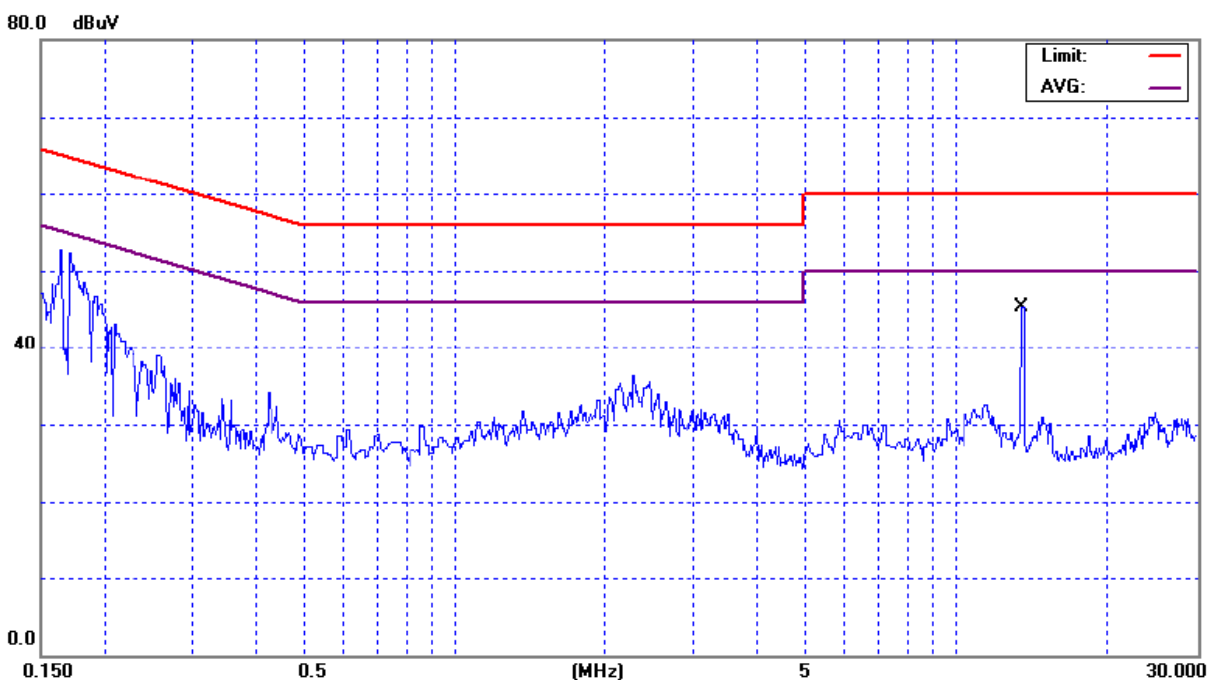


EUT :	Contactless Card Reader	Model No. :	UIC681-RM0FYDSE-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter HAPU05F2		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
13.56	Neutral	46.77	45.87	60.00	50.00	-4.13	(AV)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) **FCC May 2005 TCB Conference notes :**  
 Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56MHz transmitter done with a dummy load under the following conditions :  
 1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.  
 2) Second, retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. Only the fundamental TX emission band needs to be retested.

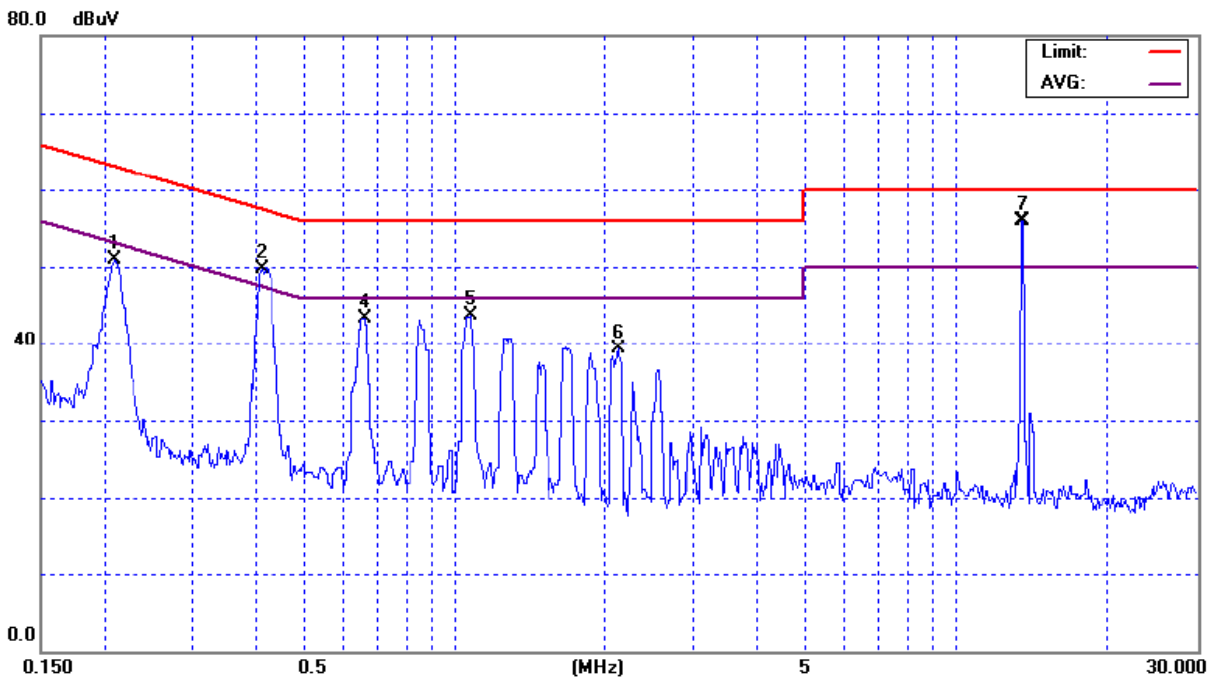


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter PA1010-050DUB		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.21	Line	50.88	*	63.27	53.27	-12.39	(QP)
0.41	Line	49.73	39.06	57.61	47.61	-7.88	(QP)
0.66	Line	43.25	*	56.00	46.00	-12.75	(QP)
1.08	Line	43.64	*	56.00	46.00	-12.36	(QP)
2.12	Line	39.33	*	56.00	46.00	-16.67	(QP)
13.57	Line	55.95	54.64	60.00	50.00	4.64	Note(3)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Tx Fundamental, For reference only. Please refer to the next page.



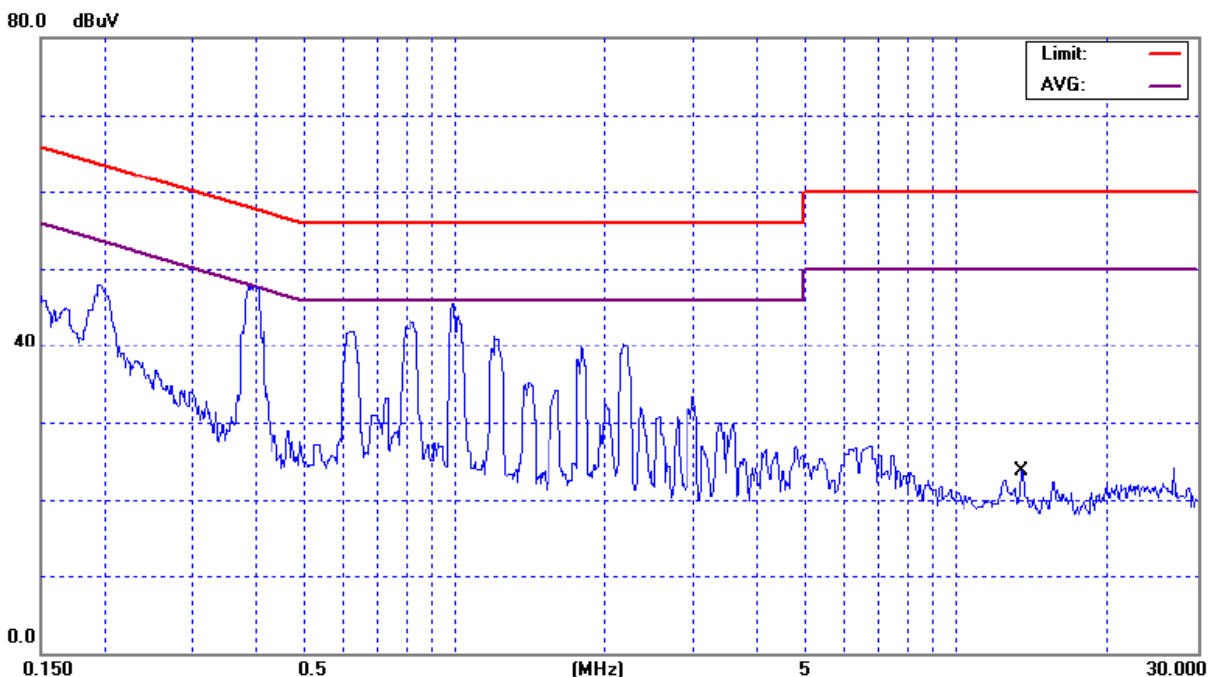


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter PA1010-050DUB		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
13.57	Line	23.30	22.85	60.00	50.00	-27.15	(AV)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a “ \* ” marked in AVG Mode column of Interference Voltage Measured ◦
- (3) FCC May 2005 TCB Conference notes :**  
 Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56MHz transmitter done with a dummy load under the following conditions :  
 1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.  
 2) Second, retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. Only the fundamental TX emission band needs to be retested.

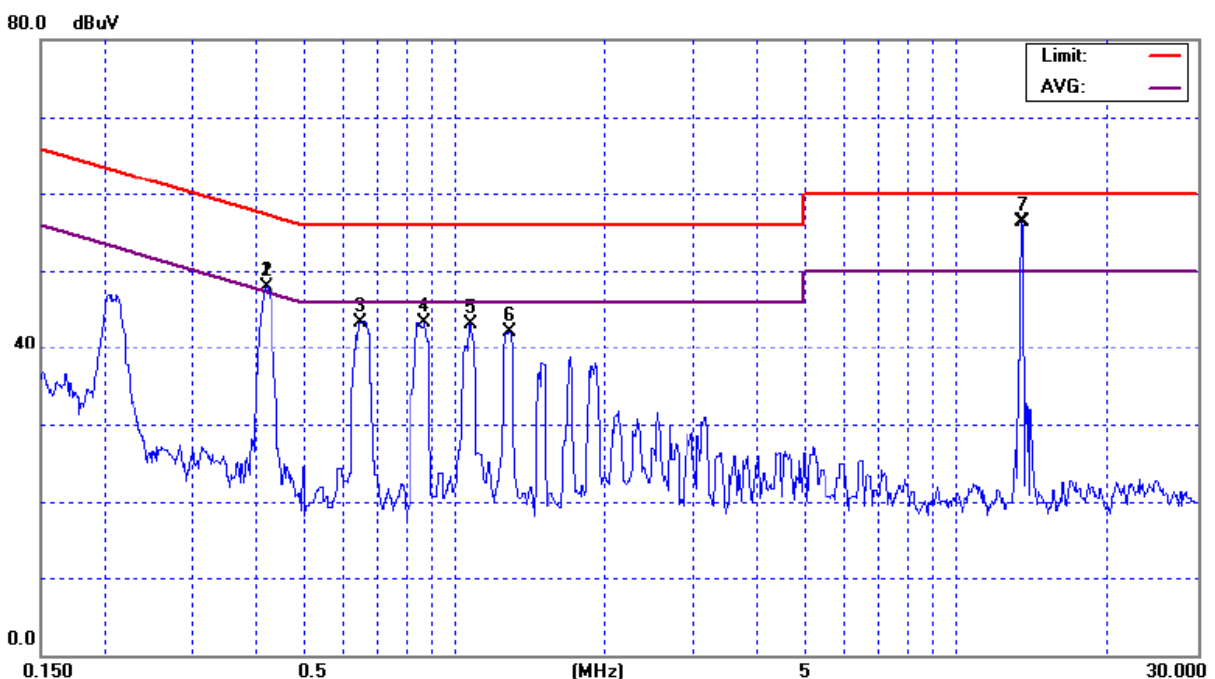


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter PA1010-050DUB		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.42	Neutral	47.82	*	57.46	47.46	-9.64	(QP)
0.65	Neutral	43.34	*	56.00	46.00	-12.66	(QP)
0.87	Neutral	43.39	*	56.00	46.00	-12.61	(QP)
1.07	Neutral	43.03	*	56.00	46.00	-12.97	(QP)
1.28	Neutral	42.05	*	56.00	46.00	-13.95	(QP)
13.57	Neutral	56.27	55.74	60.00	50.00	5.74	Note(3)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Tx Fundamental, For reference only. Please refer to the next page.**

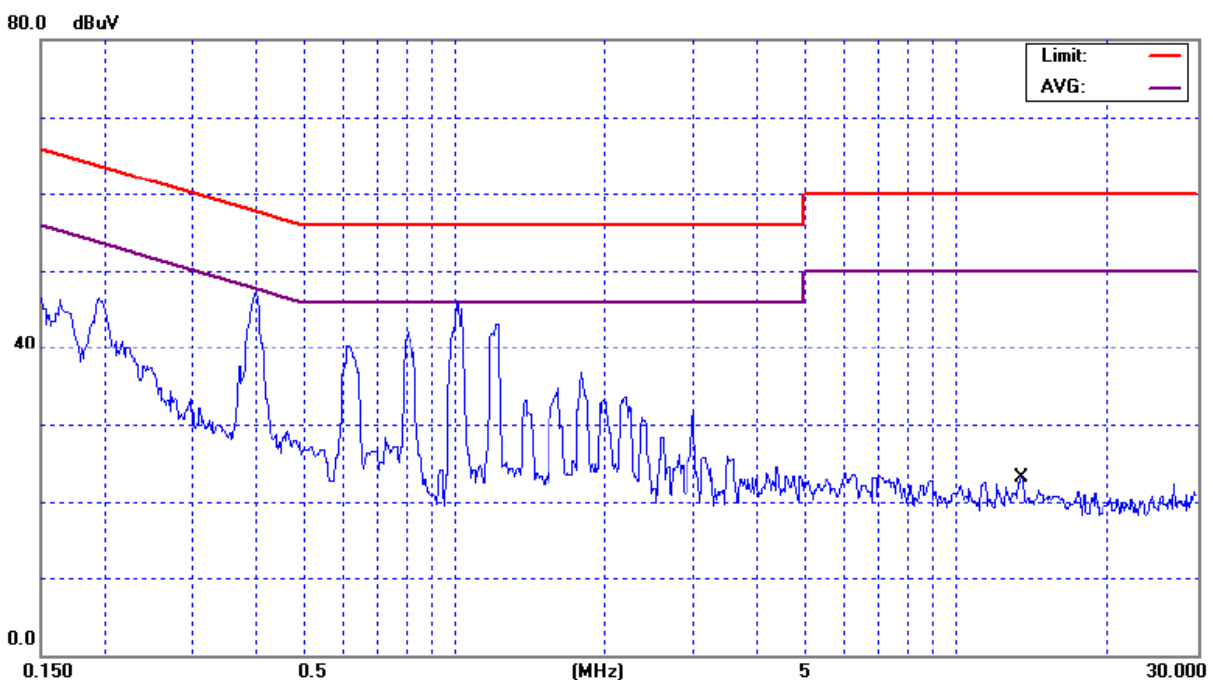


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter PA1010-050DUB		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
13.57	Neutral	22.83	22.21	60.00	50.00	-27.79	(AV)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) **FCC May 2005 TCB Conference notes :**  
 Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56MHz transmitter done with a dummy load under the following conditions :  
 1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.  
 2) Second, retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. Only the fundamental TX emission band needs to be retested.

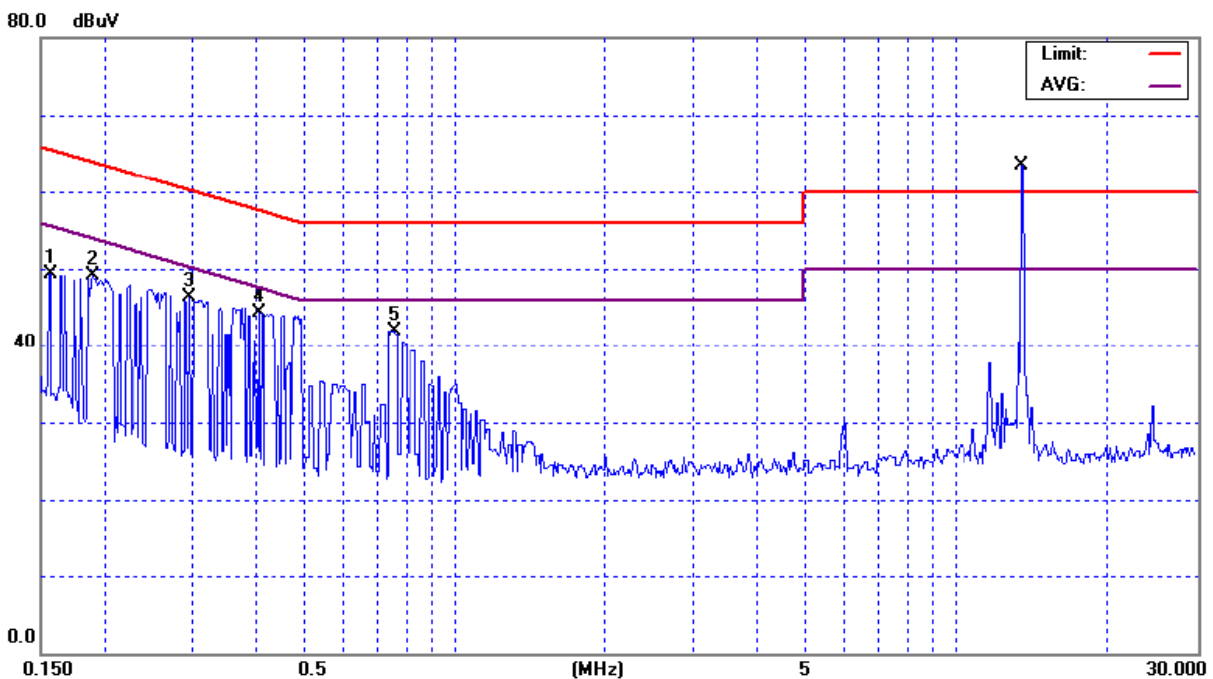


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter DCU050050		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.16	Line	49.28	*	65.67	55.67	-16.39	(QP)
0.19	Line	49.08	*	64.06	54.06	-14.98	(QP)
0.30	Line	46.29	*	60.37	50.37	-14.08	(QP)
0.41	Line	44.33	*	57.73	47.73	-13.40	(QP)
0.76	Line	41.97	*	56.00	46.00	-14.03	(QP)
13.57	Line	64.65	64.25	60.00	50.00	14.25	Note(3)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Tx Fundamental, For reference only. Please refer to the next page.**

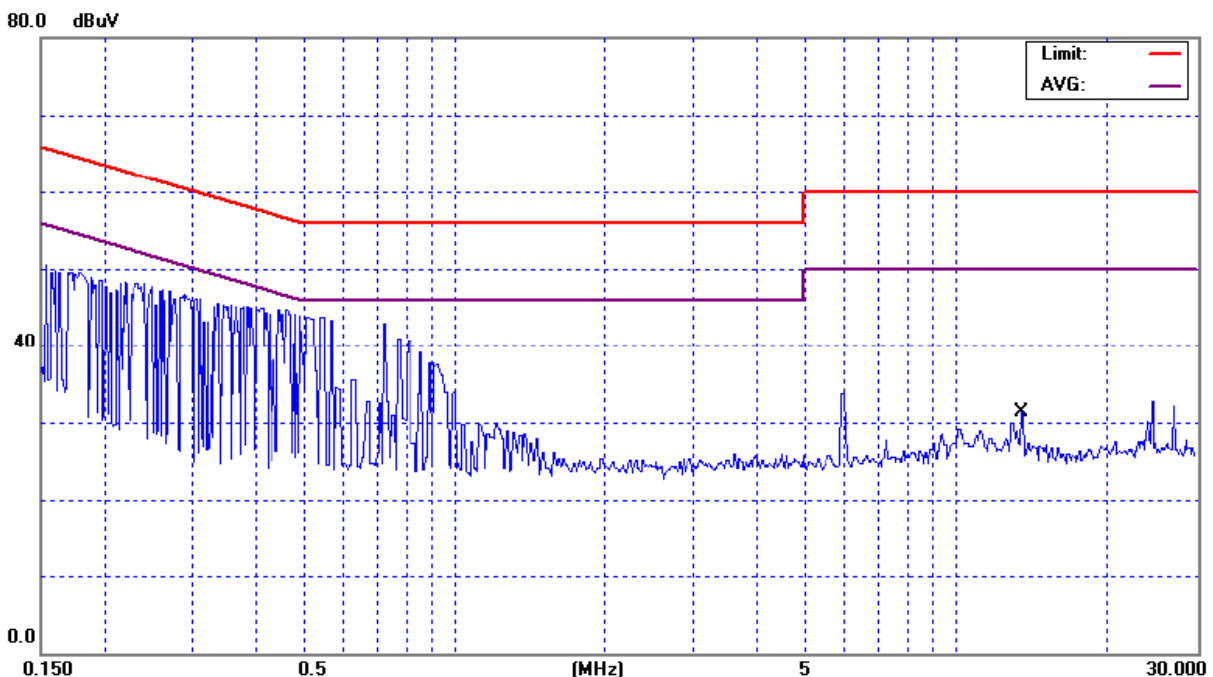


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter DCU050050		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
13.56	Line	29.85	28.15	60.00	50.00	-21.85	(AV)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of "Note". If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
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 Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56MHz transmitter done with a dummy load under the following conditions :  
 1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.  
 2) Second, retest with a dummy load to make sure the device complies with the 15.207 limits inside the transmitter's fundamental emission band. Only the fundamental TX emission band needs to be retested.

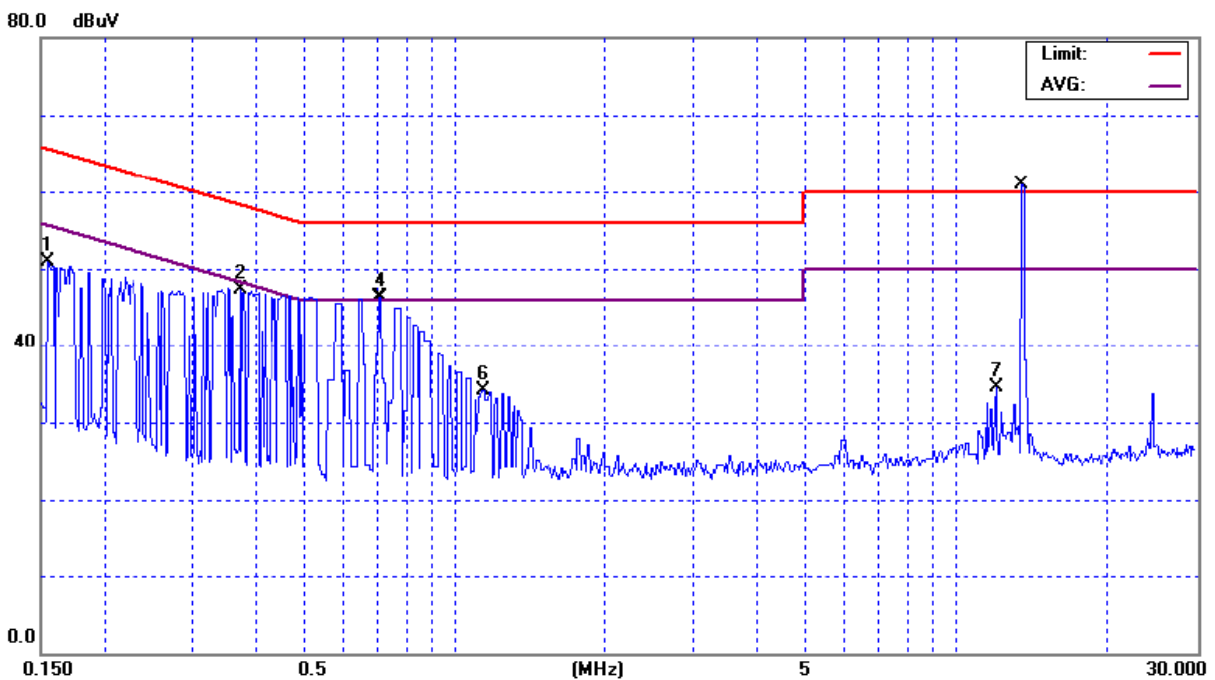


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter DCU050050		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.15	Neutral	50.88	*	65.75	55.75	-14.87	(QP)
0.37	Neutral	47.31	35.91	58.45	48.45	-11.14	(QP)
0.71	Neutral	46.36	34.16	56.00	46.00	-9.64	(QP)
1.14	Neutral	34.03	*	56.00	46.00	-21.97	(QP)
12.04	Neutral	34.53	*	60.00	50.00	-25.47	(QP)
13.57	Neutral	63.27	62.87	60.00	50.00	12.87	Note(3)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a “ \* ” marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Tx Fundamental, For reference only. Please refer to the next page.**

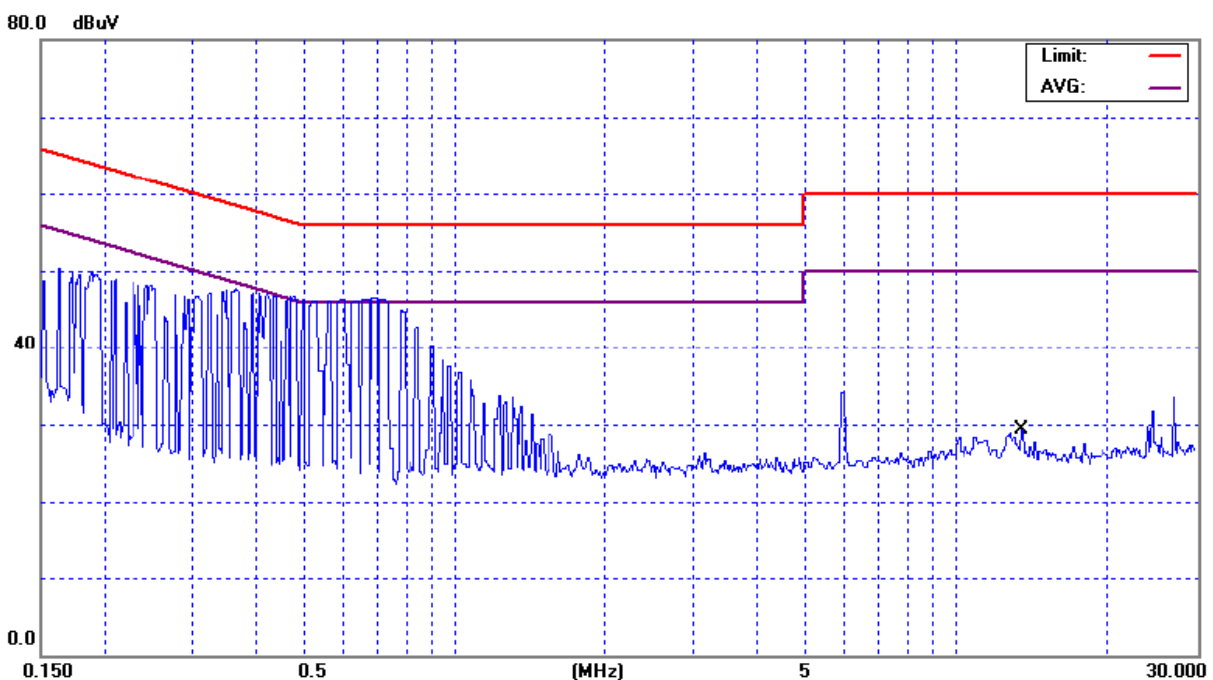


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	25 °C	Relative Humidity :	58 %
Pressure :	1013 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter DCU050050		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
13.56	Neutral	28.27	26.57	60.00	50.00	-23.43	(AV)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) **FCC May 2005 TCB Conference notes :**  
 Although C63.4 is designed for Part 15 transmitters that operate above 30 MHz with a detachable antenna, we are willing to accept measurements on a 13.56MHz transmitter done with a dummy load under the following conditions :  
 1) First, perform the AC line conducted tests with the antenna attached to make sure the device complies with the 15.207 limits outside the transmitter's fundamental emission band.  
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**4.2 RADIATED EMISSION MEASUREMENT**

**4.2.1 RADIATED EMISSION LIMITS (Frequency Range 30MHz-1000MHz)**

<b>FCC Part 15.209</b>				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500
<b>FCC Part 15.225(a)/(b)/(c)</b>				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
13.553 – 13.567	15,848	30 m	15,848*100	124
13.567 – 13.710	334	30 m	334*100	90.5
13.110 – 13.410	106	30 m	106*100	80.5
13.710 – 14.010				

**Notes:**

- (1) The tighter limit shall apply at the boundary between two frequency range.
  - (2) Limitation expressed in dBuV/m is calculated by 20log Emission Level (uV/m).
  - (3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of  $L_{d1} = L_{d2} * (d_2/d_1)^2$ .
- Example:  
 F.S Limit at 30m distance is 30uV/m , then F.S Limitation at 3m distance is adjusted as  $L_{d1} = L_1 = 30uV/m * (10)^2 = 100 * 30 uV/m$



**4.2.2 MEASUREMENT INSTRUMENTS LIST**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	Schwarzbeck	VULB 9160	3058	Nov. 29, 2006
2	Test Cable	N/A	10M_OS02	N/A	Nov. 29, 2006
3	Test Cable	N/A	OS02-1/-2/-3	N/A	Nov. 29, 2006
4	Pre-Amplifier	Anritsu	MH648A	M09961	Nov. 29, 2006
5	EMI Test Receiver	R&S	ESCI	100082	Feb. 01, 2007
6	Antenna Mast	Chance Most	CMTB-1.5	N/A	N/A
7	Turn Table	Chance Most	CMTB-1.5	N/A	N/A
8	Loop Ant	EMCO	6502	00042960	Jan. 13, 2008

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

**4.2.3 TEST PROCEDURE**

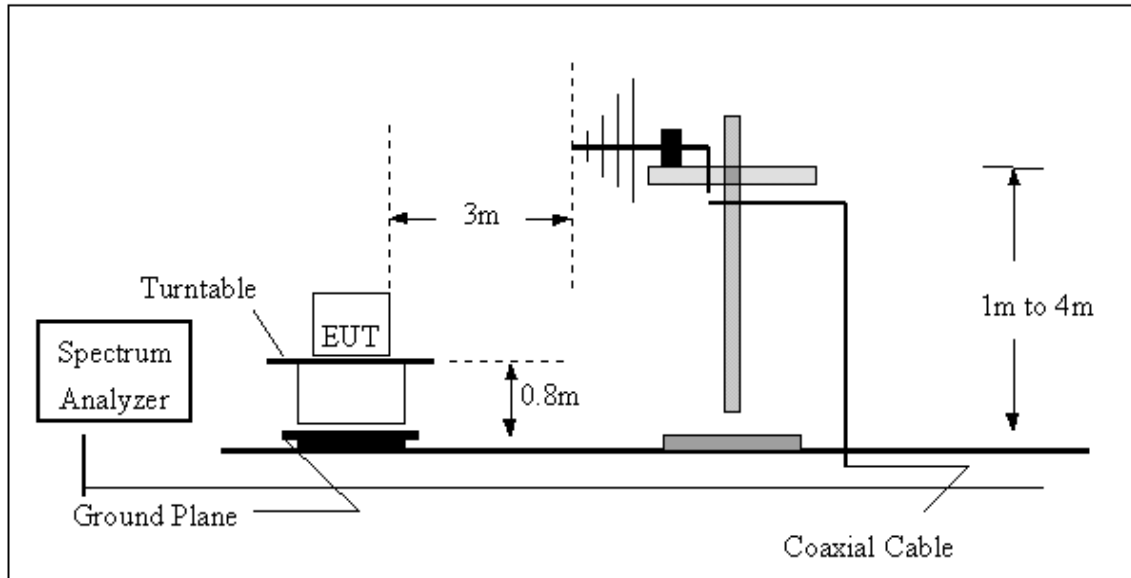
- a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m or 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

**4.2.4 DEVIATION FROM TEST STANDARD**

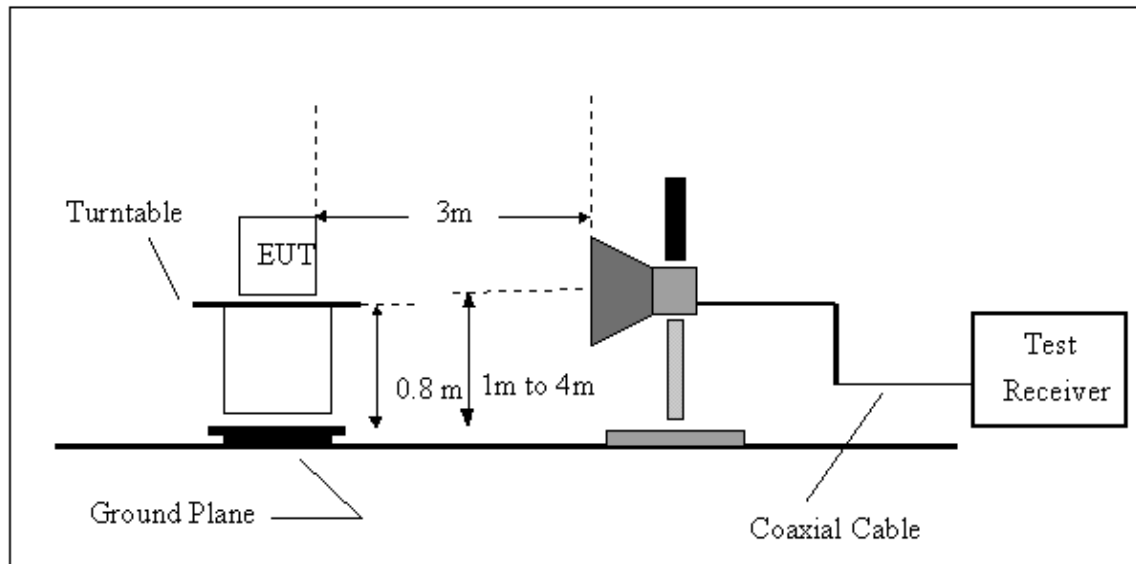
No deviation

#### 4.2.5 TEST SETUP

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



#### 4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

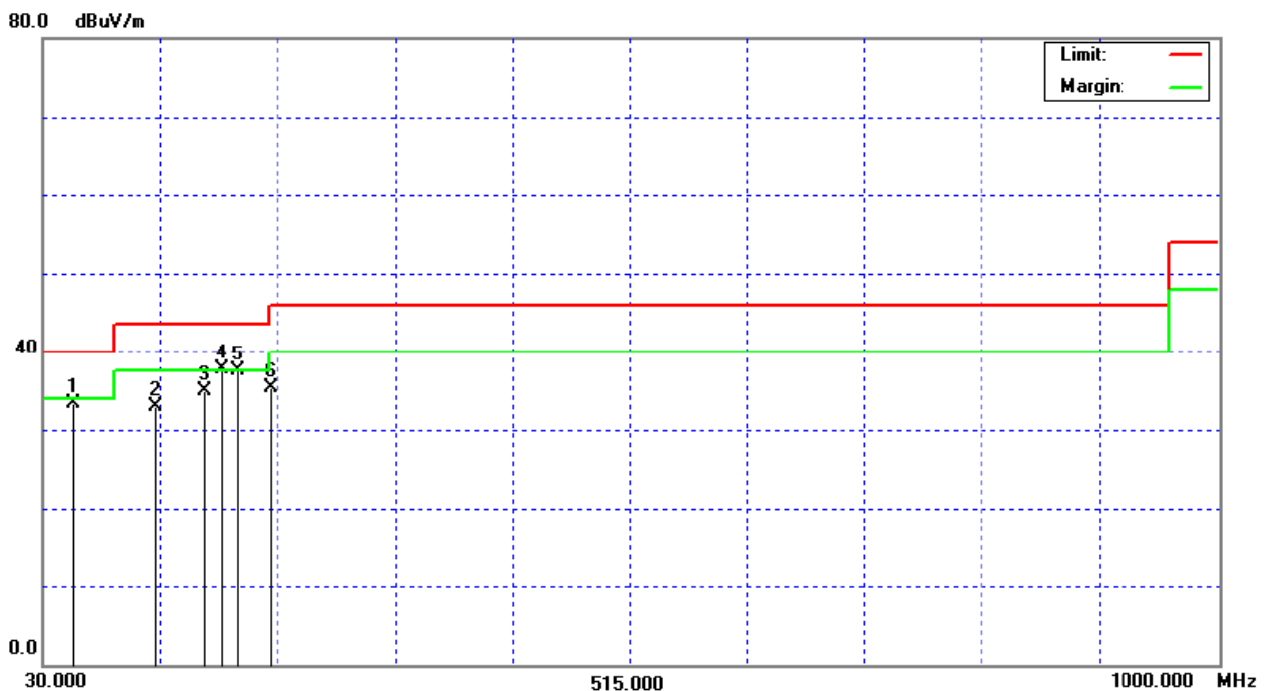
4.2.7 TEST RESULTS FCC Part 15.209

EUT :	Contactless Card Reader	Model No. :	UIC681-KM0FYASN-XXX
Temperature :	30 °C	Relative Humidity :	73 %
Pressure :	1001 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-without power adapter		

Freq. (MHz)	Ant. Pol. H/V	Detector Mode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
54.00	V	Peak	40.30	- 6.91	33.39	40.00	- 6.61	
122.05	V	Peak	39.39	- 6.58	32.81	43.50	- 10.69	
162.73	V	Peak	40.47	- 5.57	34.90	43.50	- 8.60	
176.28	V	Peak	44.02	- 6.23	37.79	43.50	- 5.71	QP
189.84	V	Peak	45.70	- 8.28	37.42	43.50	- 6.08	QP
216.97	V	Peak	43.62	- 8.28	35.34	46.00	- 10.66	

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

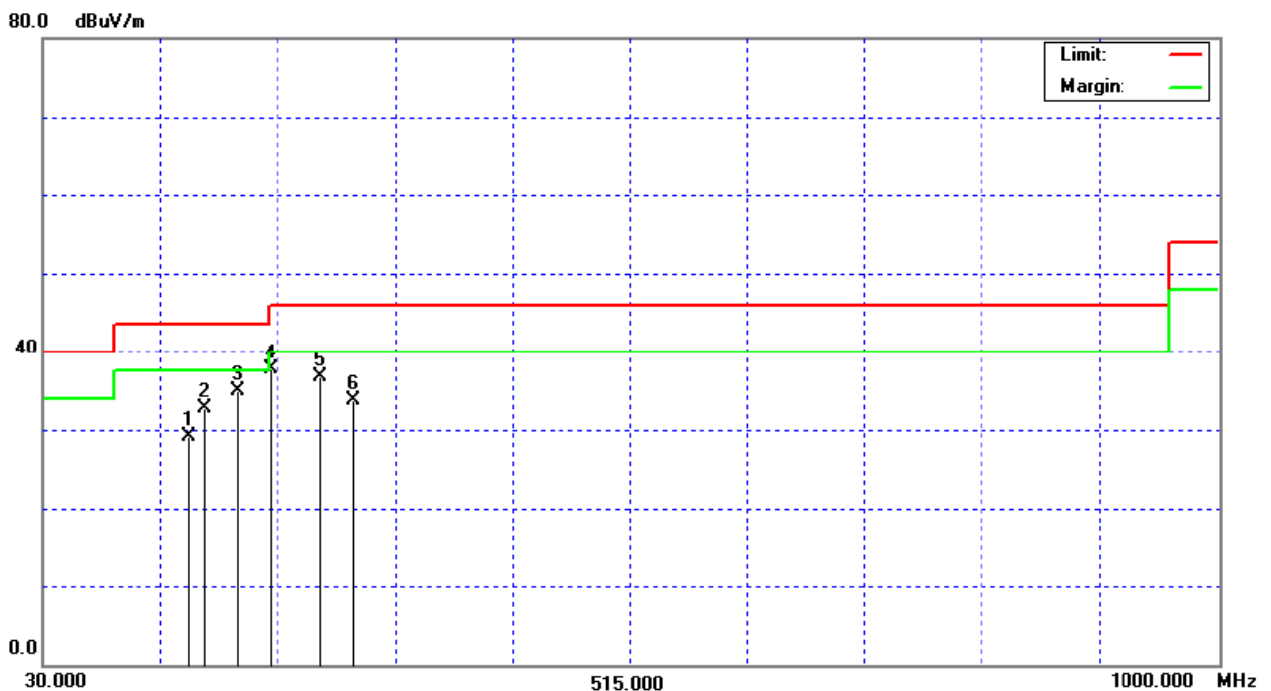


EUT :	Contactless Card Reader	Model No. :	UIC681-KM0FYASN-XXX
Temperature :	30 °C	Relative Humidity :	73 %
Pressure :	1001 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-without power adapter		

Freq. (MHz)	Ant. Pol. H/V	Detector Mode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
149.17	H	Peak	34.59	- 5.48	29.11	43.50	- 14.39	
162.73	H	Peak	38.35	- 5.57	32.78	43.50	- 10.72	
189.85	H	Peak	43.24	- 8.28	34.96	43.50	- 8.54	
216.96	H	Peak	45.90	- 8.28	37.62	46.00	- 8.38	QP
257.65	H	Peak	42.92	- 6.16	36.76	46.00	- 9.24	
284.76	H	Peak	39.20	- 5.43	33.77	46.00	- 12.23	

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

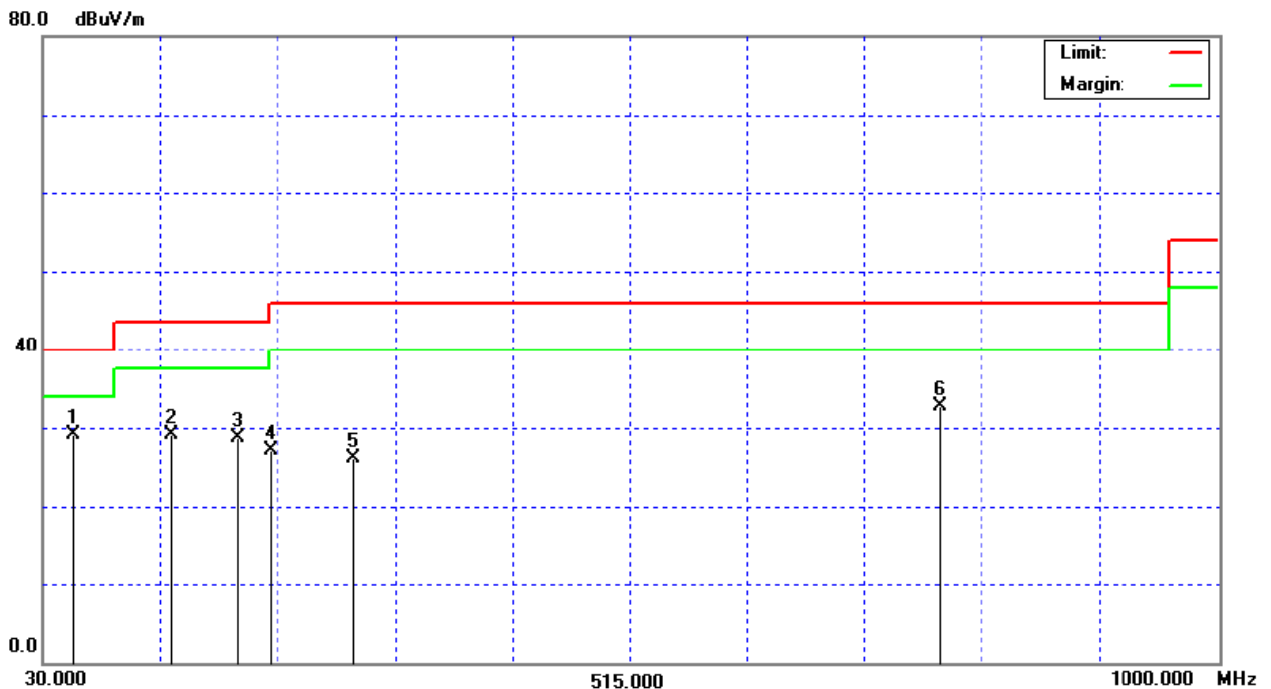


EUT :	Contactless Card Reader	Model No. :	UIC681-RM0FYDSE-XXX
Temperature :	30 °C	Relative Humidity :	73 %
Pressure :	1001 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter HAPU05F2		

Freq. (MHz)	Ant. Pol. H/V	Detector Mode (PK/AV)	Reading (dBUV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBUV/m)	Limit-3m (dBUV/m)	Safe Margins (dBUV/m)	Note
54.00	V	Peak	36.10	- 6.91	29.19	40.00	- 10.81	
135.73	V	Peak	35.00	- 5.84	29.16	43.50	- 14.34	
189.87	V	Peak	37.06	- 8.28	28.78	43.50	- 14.72	
216.99	V	Peak	35.46	- 8.28	27.18	46.00	- 18.82	
284.78	V	Peak	31.44	- 5.43	26.01	46.00	- 19.99	
770.23	V	Peak	26.90	5.79	32.69	46.00	- 13.31	

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

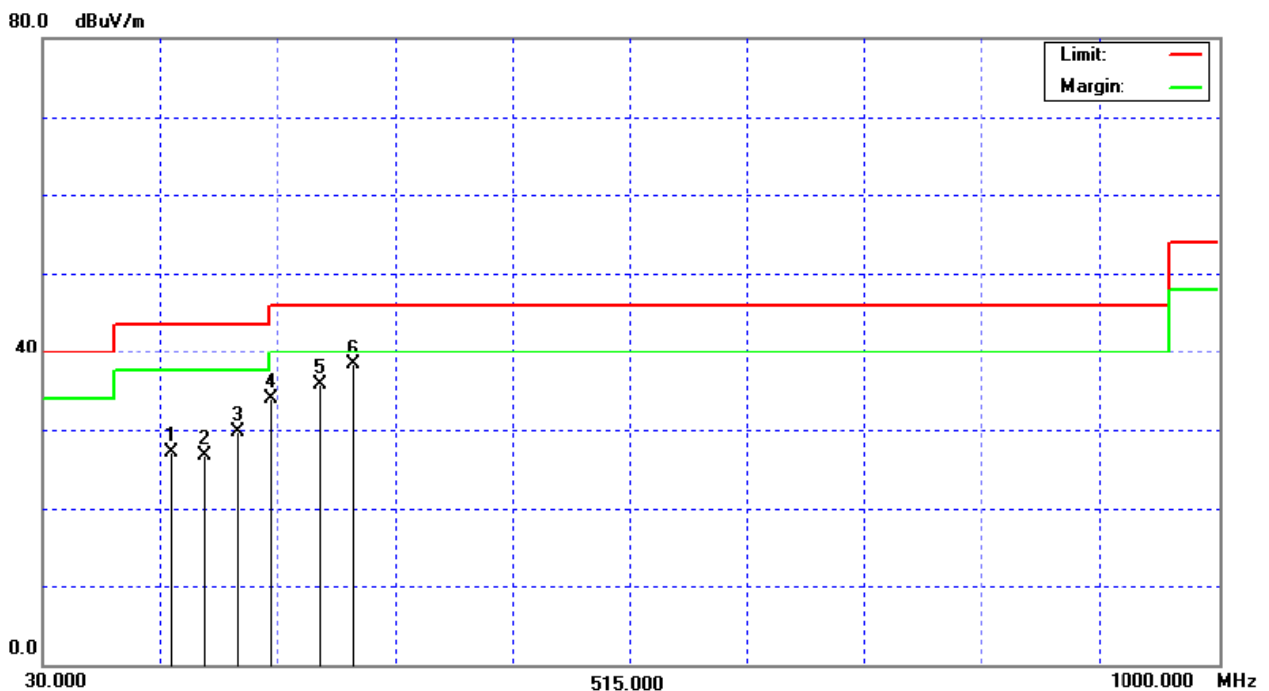


EUT :	Contactless Card Reader	Model No. :	UIC681-RM0FYDSE-XXX
Temperature :	30 °C	Relative Humidity :	73 %
Pressure :	1001 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter HAPU05F2		

Freq. (MHz)	Ant. Pol. H/V	Detector Mode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
135.64	H	Peak	32.87	- 5.84	27.03	43.50	- 16.47	
162.73	H	Peak	32.34	- 5.57	26.77	43.50	- 16.73	
189.89	H	Peak	37.90	- 8.28	29.62	43.50	- 13.88	
216.96	H	Peak	42.10	- 8.28	33.82	46.00	- 12.18	
257.62	H	Peak	41.87	- 6.16	35.71	46.00	- 10.29	
284.76	H	Peak	43.77	- 5.43	38.34	46.00	- 7.66	

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

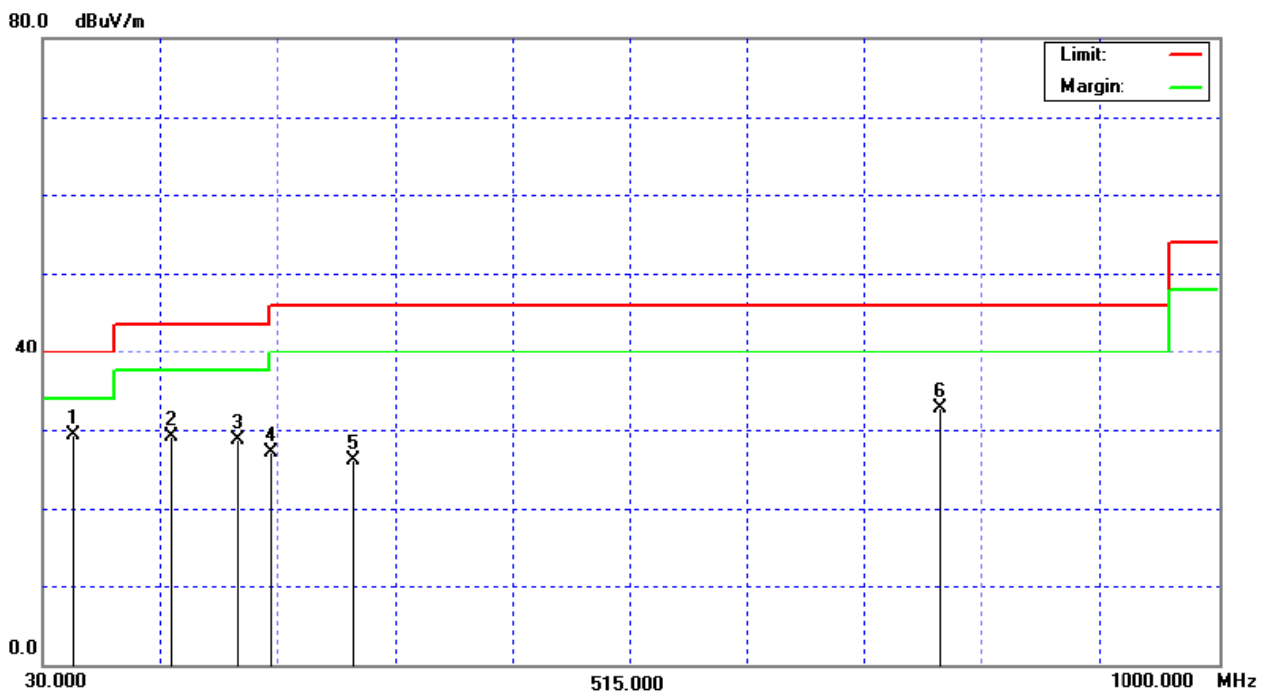


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	30 °C	Relative Humidity :	73 %
Pressure :	1001 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter PA1010-050DUB		

Freq. (MHz)	Ant. Pol. H/V	Detector Mode (PK/AV)	Reading (dBUV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBUV/m)	Limit-3m (dBUV/m)	Safe Margins (dBUV/m)	Note
54.22	V	Peak	36.30	- 6.91	29.39	40.00	- 10.61	
135.76	V	Peak	35.00	- 5.84	29.16	43.50	- 14.34	
189.87	V	Peak	37.06	- 8.28	28.78	43.50	- 14.72	
216.99	V	Peak	35.46	- 8.28	27.18	46.00	- 18.82	
284.78	V	Peak	31.44	- 5.43	26.01	46.00	- 19.99	
770.23	V	Peak	26.90	5.79	32.69	46.00	- 13.31	

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦



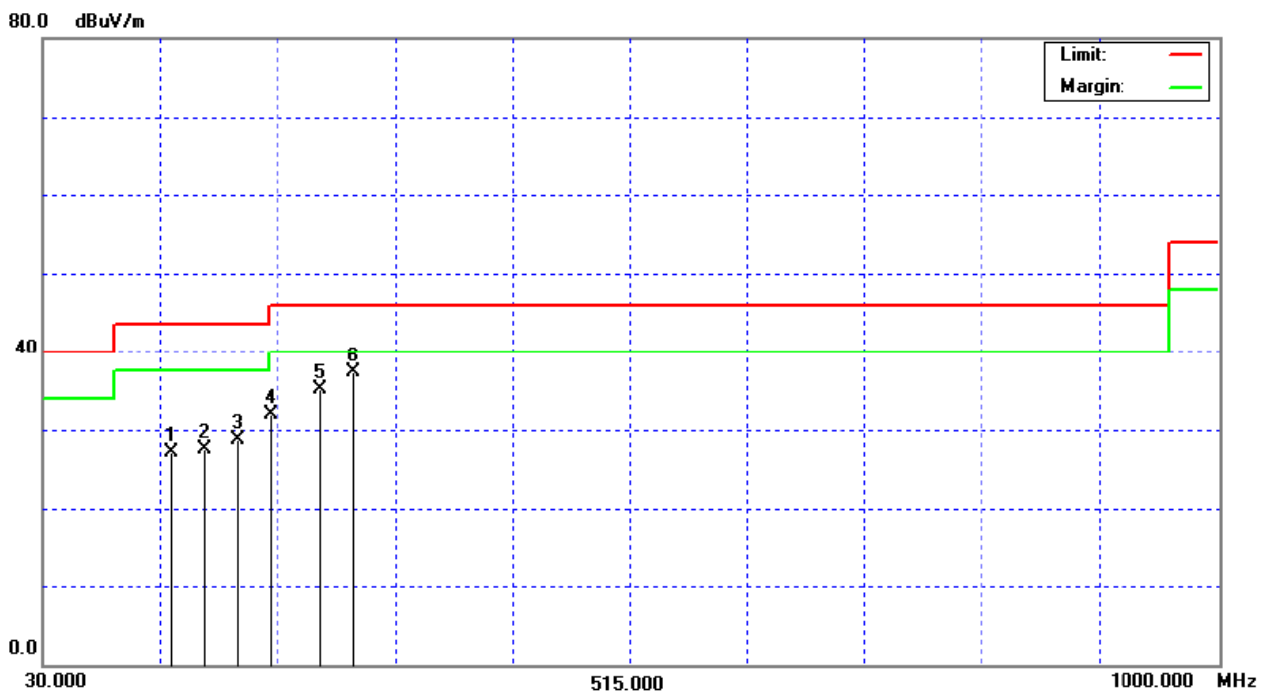


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	30 °C	Relative Humidity :	73 %
Pressure :	1001 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter PA1010-050DUB		

Freq. (MHz)	Ant. Pol. H/V	Detector Mode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
135.64	H	Peak	32.87	- 5.84	27.03	43.50	- 16.47	
162.75	H	Peak	32.98	- 5.57	27.41	43.50	- 16.09	
189.81	H	Peak	36.93	- 8.28	28.65	43.50	- 14.85	
216.95	H	Peak	40.22	- 8.28	31.94	46.00	- 14.06	
257.66	H	Peak	41.20	- 6.16	35.04	46.00	- 10.96	
284.78	H	Peak	42.80	- 5.43	37.37	46.00	- 8.63	

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

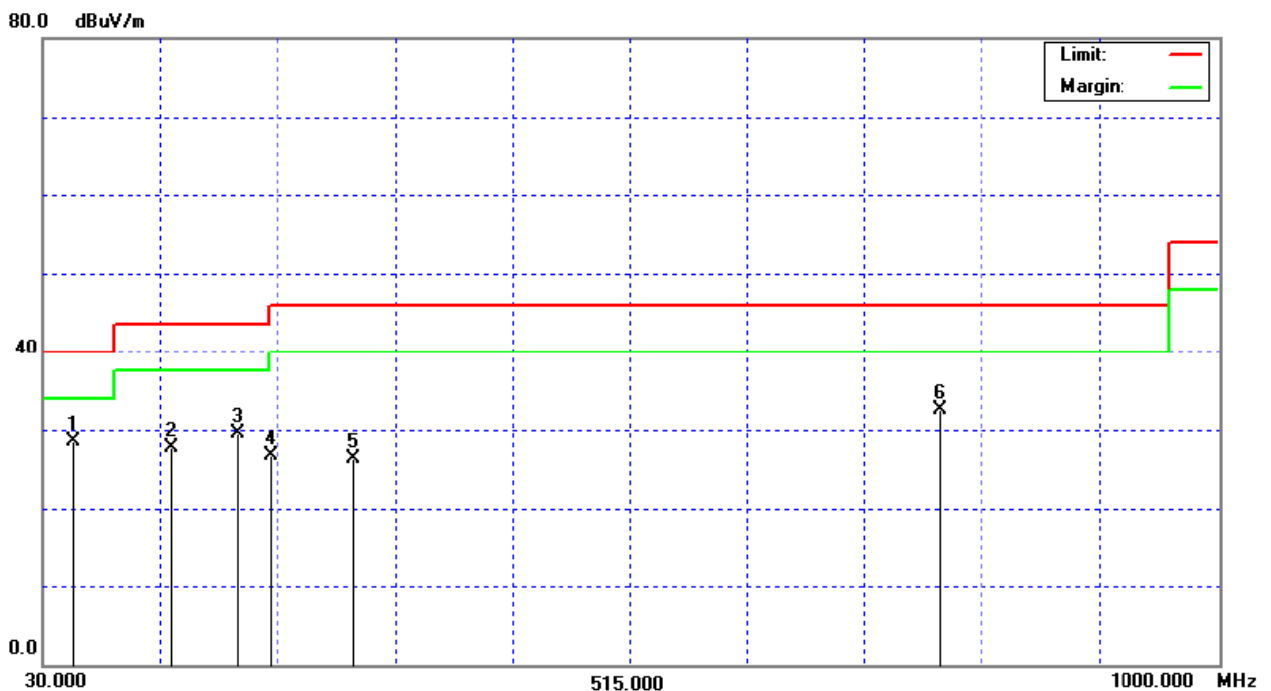


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	30 °C	Relative Humidity :	73 %
Pressure :	1001 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter DCU050050		

Freq. (MHz)	Ant. Pol. H/V	Detector Mode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
54.24	V	Peak	35.50	- 6.91	28.59	40.00	- 11.41	
135.61	V	Peak	33.52	- 5.84	27.68	43.50	- 15.82	
189.84	V	Peak	37.82	- 8.28	29.54	43.50	- 13.96	
216.97	V	Peak	35.02	- 8.28	26.74	46.00	- 19.26	
284.76	V	Peak	31.82	- 5.43	26.39	46.00	- 19.61	
770.07	V	Peak	26.70	5.79	32.49	46.00	- 13.51	

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

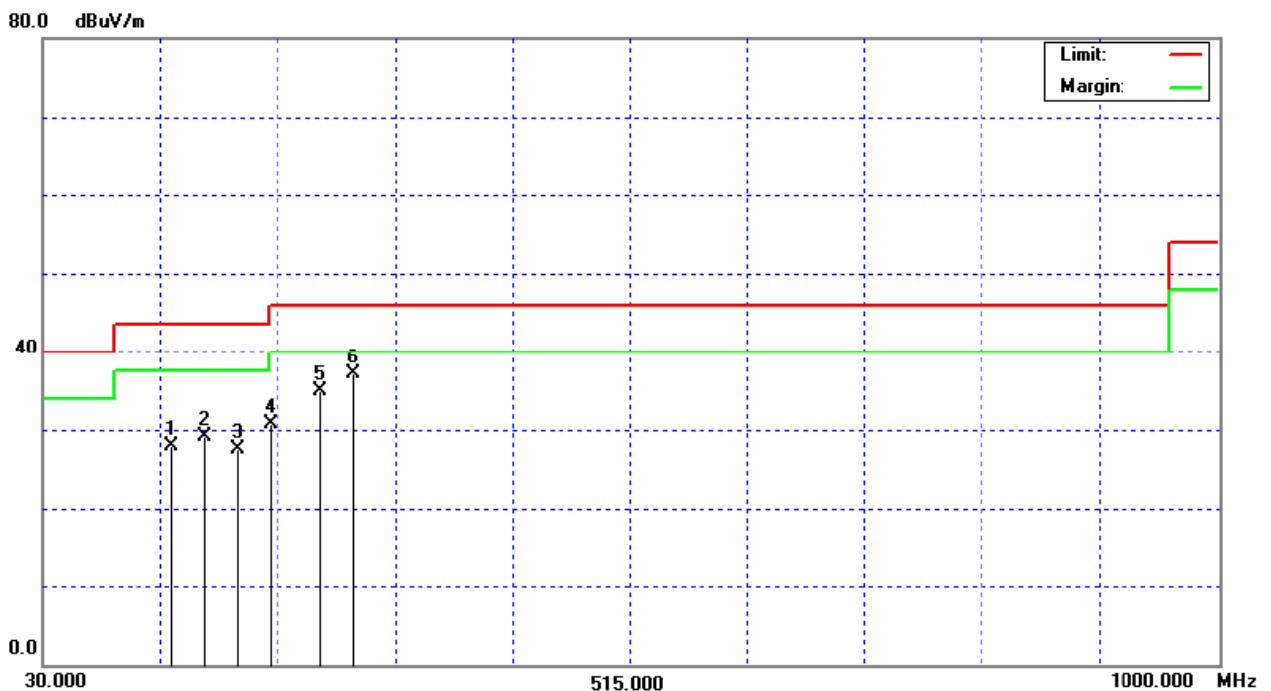


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	30 °C	Relative Humidity :	73 %
Pressure :	1001 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter DCU050050		

Freq. (MHz)	Ant. Pol. H/V	Detector Mode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
135.60	H	Peak	33.72	- 5.84	27.88	43.50	- 15.62	
162.73	H	Peak	34.71	- 5.57	29.14	43.50	- 14.36	
189.85	H	Peak	35.71	- 8.28	27.43	43.50	- 16.07	
216.97	H	Peak	39.03	- 8.28	30.75	46.00	- 15.25	
257.65	H	Peak	41.00	- 6.16	34.84	46.00	- 11.16	
284.76	H	Peak	42.50	- 5.43	37.07	46.00	- 8.93	

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦



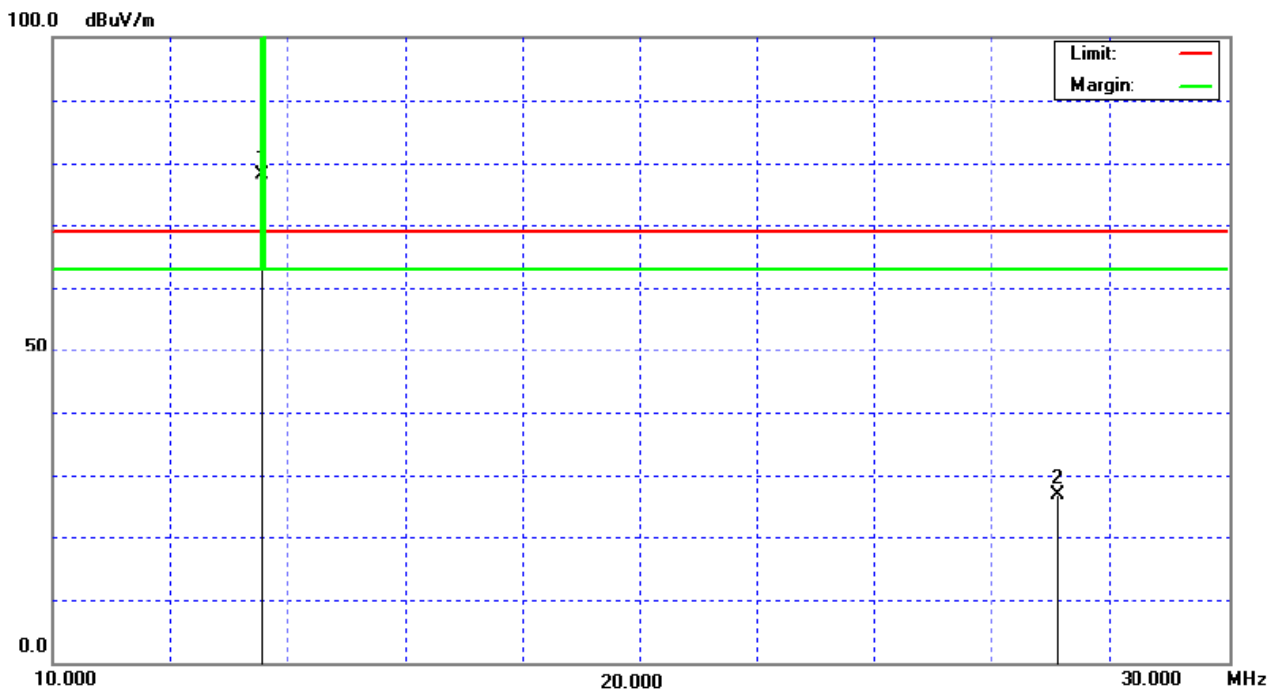
4.2.8 TEST RESULTS FCC Part 15.225

EUT :	Contactless Card Reader	Model No. :	UIC681-KM0FYASN-XXX
Temperature :	20.2 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-without power adapter		

Freq. (MHz)	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
13.56	Peak	67.47	10.62	78.09	124.00	- 45.91	QP
27.12	Peak	18.12	8.78	26.90	69.00	- 42.10	QP

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

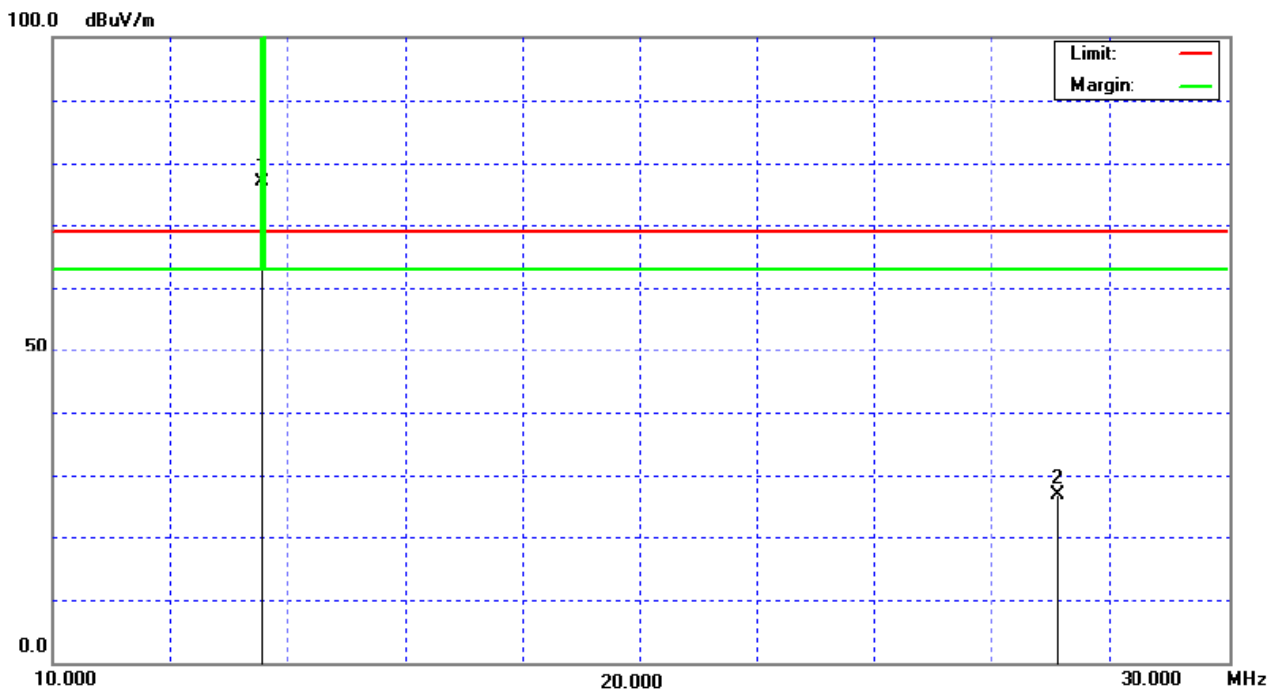


EUT :	Contactless Card Reader	Model No. :	UIC681-RM0FYDSE-XXX
Temperature :	20.2 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter HAPU05F2		

Freq. (MHz)	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
13.56	Peak	66.30	10.62	76.92	124.00	- 47.08	QP
27.12	Peak	18.10	8.78	26.88	69.00	- 42.12	QP

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

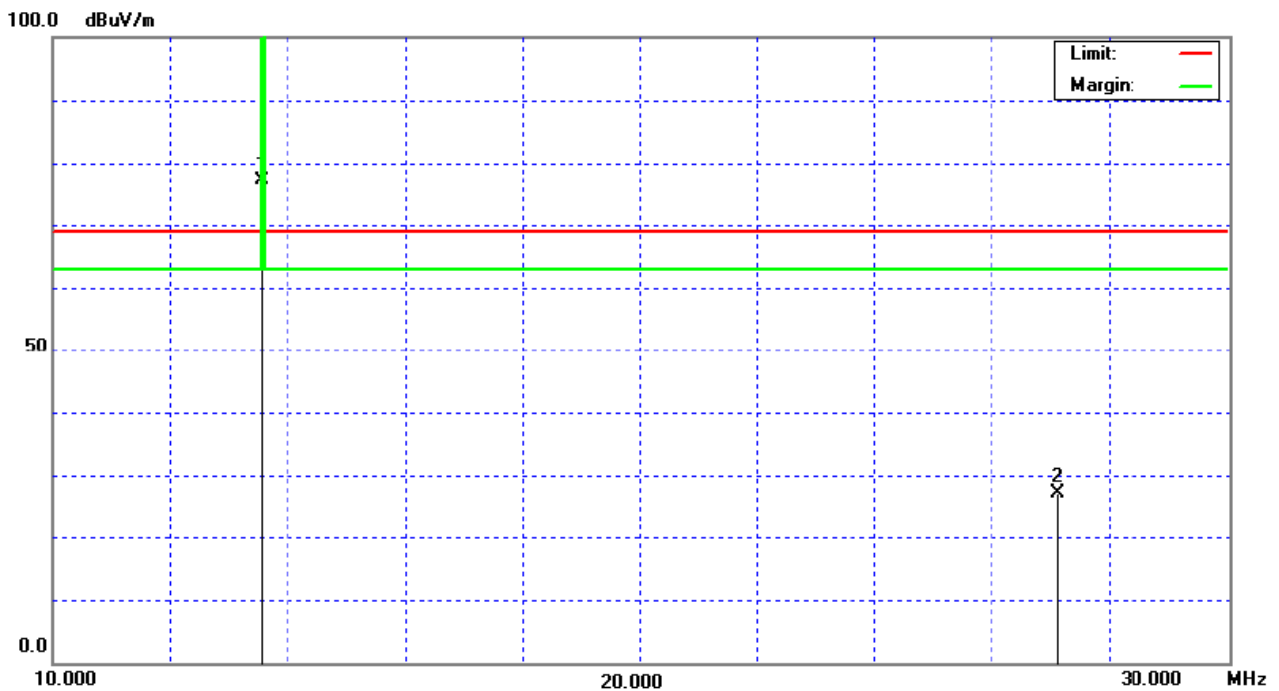


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	20.2 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter PA1010-050DUB		

Freq. (MHz)	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
13.56	Peak	66.44	10.62	77.06	124.00	- 46.94	QP
27.12	Peak	18.25	8.78	27.03	69.00	- 41.97	QP

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦

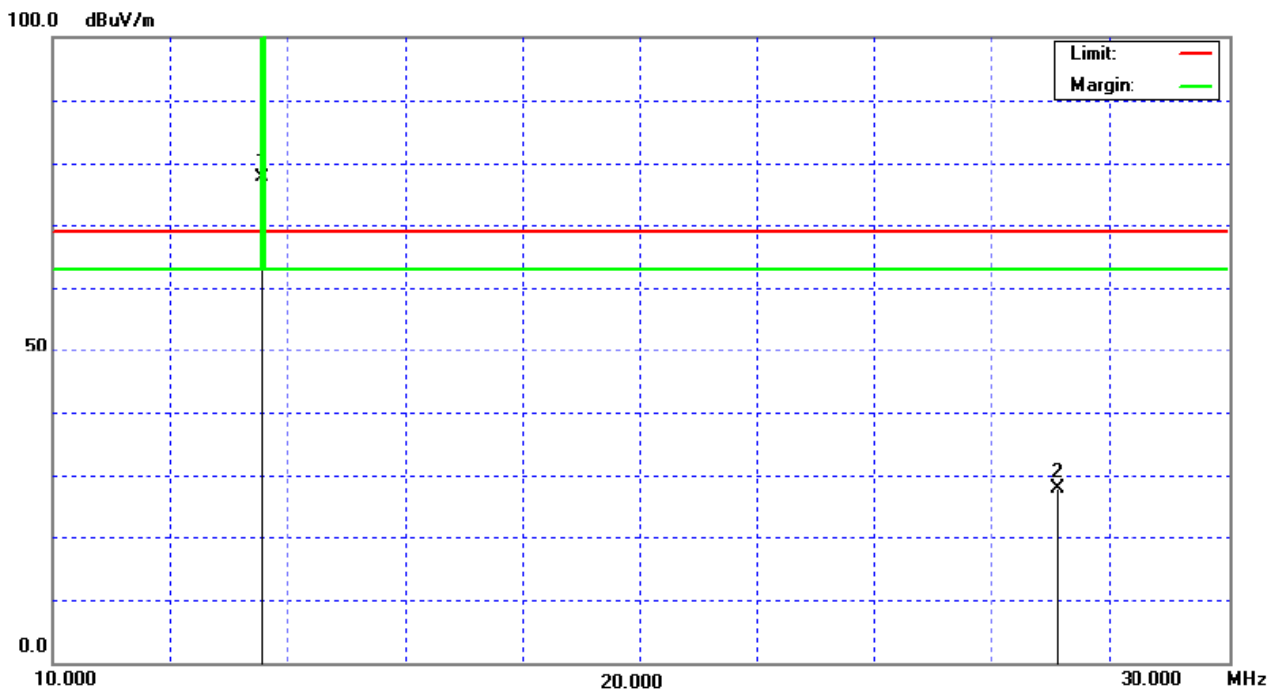


EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	20.2 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter DCU050050		

Freq. (MHz)	DetectorMode (PK/AV)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit-3m (dBuV/m)	Safe Margins (dBuV/m)	Note
13.56	Peak	66.94	10.62	77.56	124.00	- 46.44	QP
27.12	Peak	19.22	8.78	28.00	69.00	- 41.00	QP

Remark :

- (1) Spectrum Setting:  
 9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.  
 150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.  
 30 MHz – 1000 MHz, RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not how in table ◦



#### 4.3 FREQUENCY STABILITY MEASUREMENT

##### 4.3.1 FREQUENCY STABILITY LIMITS

###### FCC Part 15.225(e)

the frequency tolerance of the carrier signal shall be maintained within +/-0.01% of the operating frequency over a temperature variation of -20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

##### 4.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100082	Feb. 01, 2007
2	Loop Ant	EMCO	6502	00042960	Jan. 13, 2008
3	AC Power Source	APE	APW-130	883755	N/A
4	Temperature & Humidity Chamber	GIANT FORCE	GTH-056P	GF-94454-1	Jul. 14, 2007

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

##### 4.3.3 TEST PROCEDURE

- a. The equipment under test was connected to an external AC power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber.  
After the temperature stabilized for approximately 20 minutes, the frequency of the output signal was recorded from the counter.
- b. At room temperature ( $25\pm 5^{\circ}\text{C}$ ), an external variable DC power supply was connected to the EUT. The frequency of the transmitter was measured for 115%, 100% and 85% of the nominal operating input voltage.
- c. For the actual test configuration, please refer to the related Item –EUT Test Photos.

##### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

##### 4.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.



4.3.6 TEST RESULTS

EUT :	Contactless Card Reader	Model No. :	UIC681-KM0FYASN-XXX
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-without power adapter		

Frequency Stability Versus Environmental Temperature						
	Temperature (°C)	Voltage (Vac)	Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
	20	120V	13.56045			
<b>0 min</b>	50	120V	13.56047	0.020	+/- 1.356	<b>PASS</b>
	-20	120V	13.56047	0.020	+/- 1.356	<b>PASS</b>
<b>2 min</b>	50	120V	13.56048	0.030	+/- 1.356	<b>PASS</b>
	-20	120V	13.56049	0.040	+/- 1.356	<b>PASS</b>
<b>5 min</b>	50	120V	13.56049	0.040	+/- 1.356	<b>PASS</b>
	-20	120V	13.56046	0.010	+/- 1.356	<b>PASS</b>
<b>10 min</b>	50	120V	13.56048	0.030	+/- 1.356	<b>PASS</b>
	-20	120V	13.56047	0.020	+/- 1.356	<b>PASS</b>

Frequency Stability Versus Input Voltage						
Temperature(°C)	Voltage (Vac)		Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
20	V-nom	120	13.56045			
20	V-min	102	13.56048	0.03	+/- 1.356	<b>PASS</b>
20	V-max	138	13.56046	0.01	+/- 1.356	<b>PASS</b>

EUT :	Contactless Card Reader	Model No. :	UIC681-RM0FYDSE-XXX
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter HAPU05F2		

**Frequency Stability Versus Environmental Temperature**

	Temperature (°C)	Voltage (Vac)	Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
	20	120V	13.56046			
<b>0 min</b>	50	120V	13.56045	-0.010	+/- 1.356	<b>PASS</b>
	-20	120V	13.56047	0.010	+/- 1.356	<b>PASS</b>
<b>2 min</b>	50	120V	13.56047	0.010	+/- 1.356	<b>PASS</b>
	-20	120V	13.56048	0.020	+/- 1.356	<b>PASS</b>
<b>5 min</b>	50	120V	13.56045	-0.010	+/- 1.356	<b>PASS</b>
	-20	120V	13.56046	0.000	+/- 1.356	<b>PASS</b>
<b>10 min</b>	50	120V	13.56047	0.010	+/- 1.356	<b>PASS</b>
	-20	120V	13.56046	0.000	+/- 1.356	<b>PASS</b>

**Frequency Stability Versus Input Voltage**

Temperature(°C)	Voltage (Vac)		Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
20	V-nom	120	13.56046			
20	V-min	102	13.56047	0.01	+/- 1.356	<b>PASS</b>
20	V-max	138	13.56048	0.02	+/- 1.356	<b>PASS</b>

4.3.7 TEST RESULTS

EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter PA1010-050DUB		

Frequency Stability Versus Environmental Temperature						
	Temperature (°C)	Voltage (Vac)	Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
	20	120V	13.56048			
<b>0 min</b>	50	120V	13.56048	0.000	+/- 1.356	<b>PASS</b>
	-20	120V	13.56047	-0.010	+/- 1.356	<b>PASS</b>
<b>2 min</b>	50	120V	13.56049	0.010	+/- 1.356	<b>PASS</b>
	-20	120V	13.56048	0.000	+/- 1.356	<b>PASS</b>
<b>5 min</b>	50	120V	13.56048	0.000	+/- 1.356	<b>PASS</b>
	-20	120V	13.56049	0.010	+/- 1.356	<b>PASS</b>
<b>10 min</b>	50	120V	13.56049	0.010	+/- 1.356	<b>PASS</b>
	-20	120V	13.56048	0.000	+/- 1.356	<b>PASS</b>

Frequency Stability Versus Input Voltage						
Temperature(°C)	Voltage (Vac)		Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
20	V-nom	120	13.56049			
20	V-min	102	13.56048	-0.01	+/- 1.356	<b>PASS</b>
20	V-max	138	13.56049	0.00	+/- 1.356	<b>PASS</b>

4.3.8 TEST RESULTS

EUT :	Contactless Card Reader	Model No. :	UIC681-RM1FYDSC-XXX
Temperature :	26 °C	Relative Humidity :	60 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal-with power adapter DCU050050		

Frequency Stability Versus Environmental Temperature						
	Temperature (°C)	Voltage (Vac)	Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
	20	120V	13.56046			
<b>0 min</b>	50	120V	13.56047	0.010	+/- 1.356	<b>PASS</b>
	-20	120V	13.56048	0.020	+/- 1.356	<b>PASS</b>
<b>2 min</b>	50	120V	13.56048	0.020	+/- 1.356	<b>PASS</b>
	-20	120V	13.56049	0.030	+/- 1.356	<b>PASS</b>
<b>5 min</b>	50	120V	13.56047	0.010	+/- 1.356	<b>PASS</b>
	-20	120V	13.56046	0.000	+/- 1.356	<b>PASS</b>
<b>10 min</b>	50	120V	13.56049	0.030	+/- 1.356	<b>PASS</b>
	-20	120V	13.56046	0.000	+/- 1.356	<b>PASS</b>

Frequency Stability Versus Input Voltage						
Temperature(°C)	Voltage (Vac)		Frequency (MHz)	Freq Error (KHz)	Limit (KHz)	Results
20	V-nom	120	13.56046			
20	V-min	102	13.56048	0.02	+/- 1.356	<b>PASS</b>
20	V-max	138	13.56047	0.01	+/- 1.356	<b>PASS</b>