

FCC RF Test Report

(NFC)

Applicant: Aratek Biometrics Co., Ltd.

Address of Applicant: 2F, T2-A Building, ShenZhen Software Park South Area, Hi-Tech Park

Equipment Under Test (EUT)

Product Name: Face Recognition Terminal

Model No.: BA8300, BA8300-T, P80

Trade Mark: ARATEK

FCC ID: 2AGUJBA8300

Applicable Standards: FCC CFR Title 47 Part 15C (§15.225)

Date of Sample Receipt: 07 Mar., 2022

Date of Test: 08 Mar., to 06 May., 2022

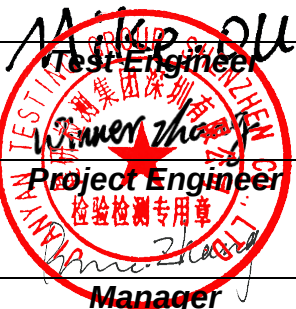
Date of Report Issue: 07 May., 2022

Test Result: PASS

Tested by:  **Date:** 07 May., 2022

Reviewed by:  **Date:** 07 May., 2022

Approved by:  **Date:** 07 May., 2022



This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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2 Version

Version No.	Date	Description
00	24 Apr., 2022	Original
01	07 May., 2022	1. Updated Instruments List on page 7. 2. Updated test setup on page 8. 3. Updated test data on page 17/18.

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4 General Information

4.1 Client Information

Applicant:	Aratek Biometrics Co., Ltd.
Address:	2F, T2-A Building, ShenZhen Software Park South Area, Hi-Tech Park
Manufacturer:	Aratek Biometrics Co., Ltd.
Address:	2F, T2-A building, Shenzhen Hi-tech Industrial Park, 518057, Shenzhen, China
Factory:	Aratek Biometrics Co., Ltd.
Address:	4F, 2th building, Nangang first industrial park, Baimang Songbai Road #1029, Nanshan district, Shenzhen, Guangdong, China.

4.2 General Description of E.U.T.

Product Name:	Face Recognition Terminal
Model No.:	BA8300, BA8300-T, P80
Operation Frequency:	13.56MHz
Channel Numbers:	1
Modulation Type:	ASK
Antenna Type:	Induction Coil Antenna
AC Adapter:	Model: GJ27WE-1200200U Input: AC100-240V, 50/60Hz, 0.8A Output: DC 12V, 2A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	Model No.: BA8300, BA8300-T, P80 were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name.

4.3 Test Mode and Environment

Test Mode:	
Transmitting mode:	Keep the EUT in transmitting mode with modulation
Remark: Pre-scan The EUT was placed on three different polar directions tested: i.e. X axis, Y axis, Z axis, and found Y axis was worse case, so the report only reflects the worse axis tested data.	
Operating Environment:	
Temperature:	15°C ~ 35°C
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1010 mbar

4.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
SHENZHEN HONOR ELECTRONIC CO., LTD.	AC ADAPTER	ADS-65H1-19A-2	200310110000128	N/A

4.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Conducted Emission for LISN (9kHz ~ 150kHz)	±3.11 dB
Conducted Emission for LISN (150kHz ~ 30MHz)	±2.62 dB
Radiated Emission (9kHz ~ 30MHz) (3m SAC)	±3.13 dB
Radiated Emission (30MHz ~ 1GHz) (3m SAC)	±4.45 dB
Radiated Emission (1GHz ~ 18GHz) (3m SAC)	±5.34 dB
Radiated Emission (18GHz ~ 40GHz) (3m SAC)	±5.34 dB
Radiated Emission (30MHz ~ 1GHz) (10m SAC)	±4.32 dB

Note: All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

4.6 Additions to, Deviations, or Exclusions From the Method

No

4.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

4.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

4.9 Test Instruments List

Radiated Emission(3m SAC):					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal.Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	WXJ001-1	01-19-2021	01-18-2024
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	02-17-2022	02-16-2023
Biconical Antenna	Schwarzbeck	VUBA9117	WXJ002-1	02-17-2022	02-16-2023
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-2	02-17-2022	02-16-2023
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-3	02-17-2022	02-16-2023
Loop Antenna	Schwarzbeck	FMZB 1519 B	WXJ002-4	02-17-2022	02-16-2023
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXG001-7	02-17-2022	02-16-2023
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXG001-3	02-17-2022	02-16-2023
Pre-amplifier (18GHz ~ 40GHz)	RF System	TRLA-180400G45B	WXG001-9	02-17-2022	02-16-2023
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	02-17-2022	02-16-2023
Spectrum Analyzer	KEYSIGHT	N9010B	WXJ004-2	11-27-2021	11-26-2022
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	02-17-2022	02-16-2023
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN-8M	WXG001-5	02-17-2022	02-16-2023
Coaxial Cable (18GHz ~ 40GHz)	JYTSZ	JYT3M-40G-SS-8M	WXG001-7	02-17-2022	02-16-2023
Coaxial Cable (9kHz ~ 30MHz)	JYT	JYT3M-1G-BB-5M	WXG001-6	02-17-2022	02-16-2023
Test Software	Tonscend	TS+	Version: 3.0.0.1		

Radiated Emission(10m SAC):					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
10m SAC	ETS	RFSD-100-F/A	WXJ090	04-28-2021	04-27-2024
BiConiLog Antenna	SCHWARZBECK	VULB 9168	WXJ090-1	04-02-2021	04-01-2022
				03-30-2022	03-29-2023
BiConiLog Antenna	SCHWARZBECK	VULB 9168	WXJ090-2	04-02-2021	04-01-2022
				03-30-2022	03-29-2023
EMI Test Receiver	R&S	ESR 3	WXJ090-3	04-08-2021	04-07-2022
				03-30-2022	03-29-2023
EMI Test Receiver	R&S	ESR 3	WXJ090-4	04-08-2021	04-07-2022
				03-30-2022	03-29-2023
Low Pre-amplifier	Bost	LNA 0920N	WXG002-3	04-06-2021	04-05-2022
				03-30-2022	03-29-2023
Low Pre-amplifier	Bost	LNA 0920N	WXG002-4	04-06-2021	04-05-2022
				03-30-2022	03-29-2023
Cable	Bost	JYT10M-1G-NN-10M	XG002-7	04-02-2021	04-01-2022
				03-30-2022	03-29-2023
Cable	Bost	JYT10M-1G-NN-10M	XG002-8	04-02-2021	04-01-2022
				03-30-2022	03-29-2023
Test Software	R&S	EMC32	Version: 10.50.40		

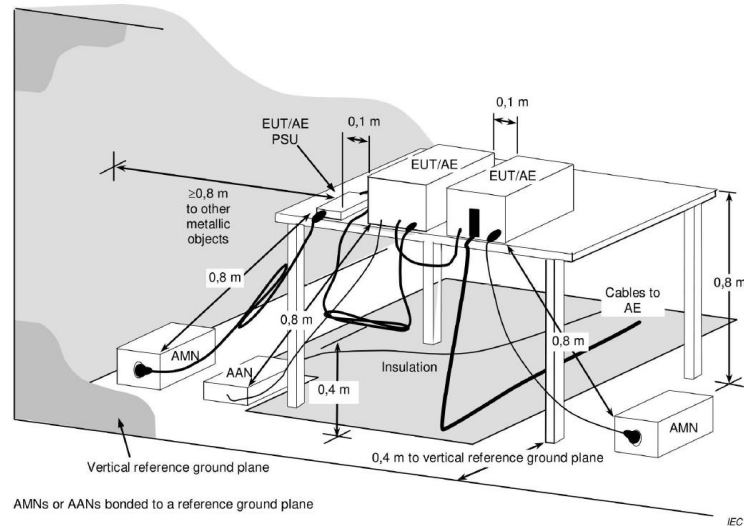
Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal.Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI 3	WXJ003	02-17-2022	02-16-2023
RF Switch	TOP PRECISION	RSU0301	WXG003	02-17-2022	02-16-2023
LISN	Rohde & Schwarz	ENV432	WXJ005-2	02-17-2022	02-16-2023
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	06-18-2021	06-17-2022
LISN Coaxial Cable (9kHz ~ 30MHz)	JYTSZ	JYTCE-1G-NN-2M	WXG003-1	02-17-2022	02-16-2023
Test Software	AUDIX	E3	Version: 6.110919b		

Conducted method:					
Test Equipment	Manufacturer	Model No.	Manage No.	Cal.Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	FSP 30	WXJ004	01-20-2022	01-19-2023

5 Measurement Setup and Procedure

5.1 Test Setup

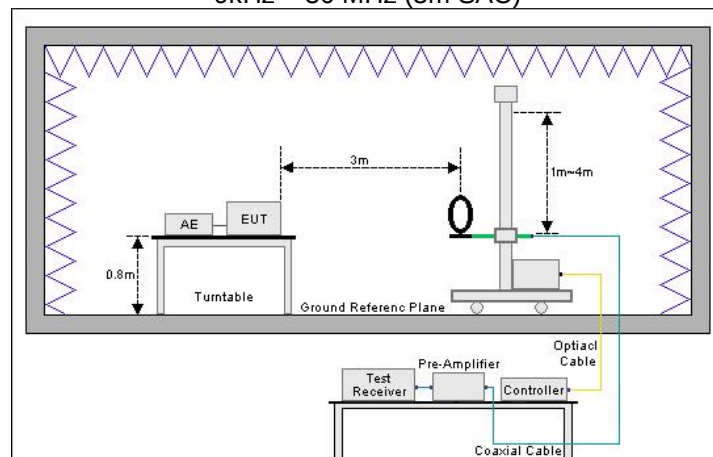
1) Conducted emission measurement:



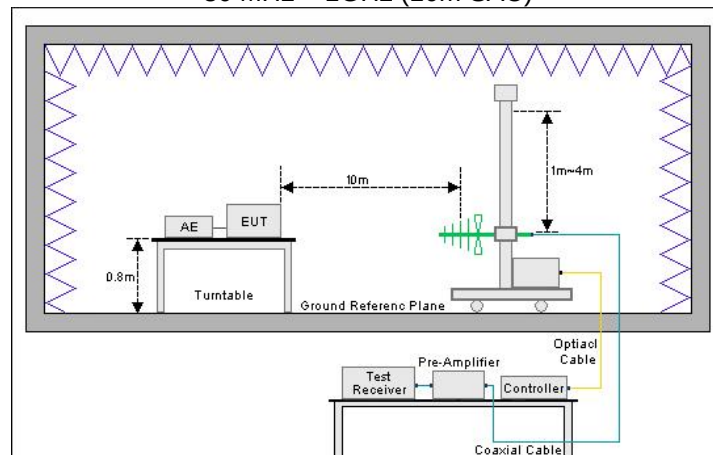
Note: The 0.8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be >0.8 m.

2) Radiated emission measurement:

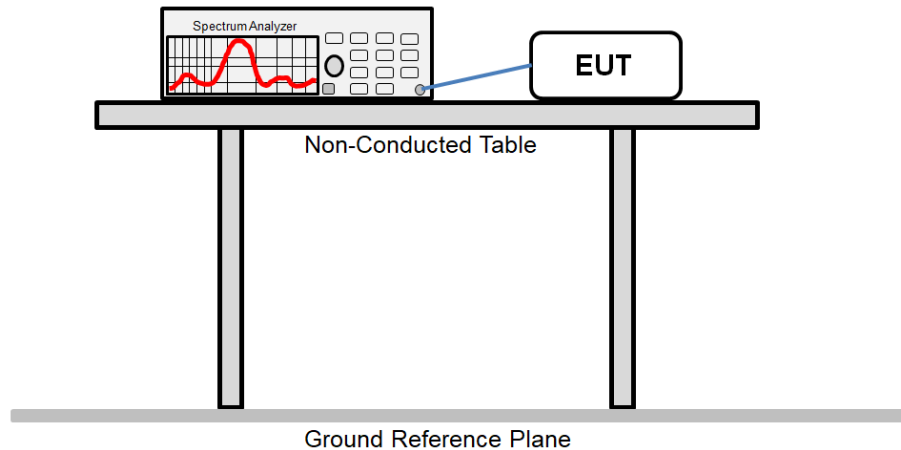
9kHz ~ 30 MHz (3m SAC)



30 MHz ~ 1GHz (10m SAC)



Conducted test method:



5.2 Test Procedure

Test method	Test step
Conducted emission	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Radiated emission	1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3m or 10m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3m or 10m. 2. EUT works in each mode of operation that needs to be tested, and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
Conducted test method	1. The antenna port of EUT was connected to the RF port of the spectrum analyzer through an RF cable. 2. The EUT is keeping in continuous transmission mode and tested in all modulation modes. 3. The test data is saved by the screenshot function of the spectrum analyzer.

6 Test Results

6.1 Summary

6.1.1 Clause and Data Summary

Test items	Standard clause	Test data	Result
Antenna Requirement	15.203	See Section 6.2	Pass
AC Power Line Conducted Emission	15.207	See Section 6.3	Pass
20dB Bandwidth	15.215(c)	See Section 6.4	Pass
Field Strength of Fundamental	15.225 (a)(b)(c)	See Section 6.5	Pass
Field Strength of Spurious Emissions	15.209 15.225 (d)	See Section 6.6	Pass
Frequency Tolerance	15.225 (e)	See Section 6.7	Pass
Remark: 1. Pass: The EUT complies with the essential requirements in the standard. 2. N/A: Not Applicable.			
Test Method:	ANSI C63.4-2014 ANSI C63.10-2013		

6.1.2 Test Limit

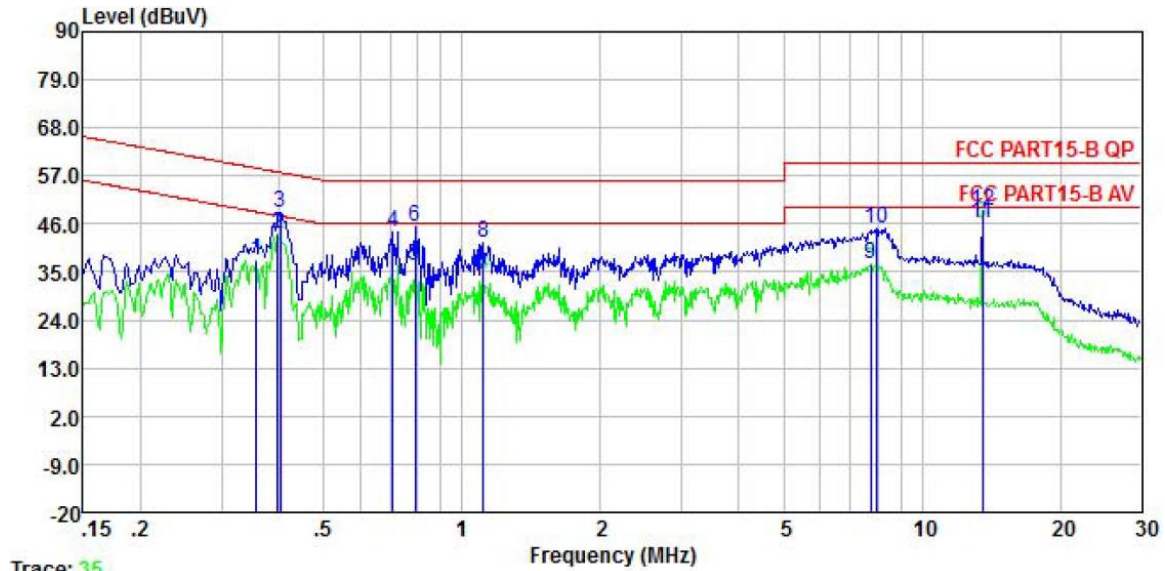
Items	Limit																								
AC Power Line Conducted Emission	<table><tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Limit (dBμV)</th></tr><tr><th>Quasi-Peak</th><th>Average</th></tr><tr><td>0.15 – 0.5</td><td>66 to 56 Note 1</td><td>56 to 46 Note 1</td></tr><tr><td>0.5 – 5</td><td>56</td><td>46</td></tr><tr><td>5 – 30</td><td>60</td><td>50</td></tr></table> Note 1: The limit level in dBμV decreases linearly with the logarithm of frequency. Note 2: The more stringent limit applies at transition frequencies.	Frequency (MHz)	Limit (dBμV)		Quasi-Peak	Average	0.15 – 0.5	66 to 56 Note 1	56 to 46 Note 1	0.5 – 5	56	46	5 – 30	60	50										
Frequency (MHz)	Limit (dBμV)																								
	Quasi-Peak	Average																							
0.15 – 0.5	66 to 56 Note 1	56 to 46 Note 1																							
0.5 – 5	56	46																							
5 – 30	60	50																							
20dB Bandwidth	N/A																								
Field Strength of Fundamental Field Strength of Spurious Emissions	(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters. (b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters. (c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters. (d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209. <table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009 – 0.490</td><td>2400/F (kHz)</td><td>300</td></tr><tr><td>0.490 – 1.705</td><td>24000/F (kHz)</td><td>30</td></tr><tr><td>1.705 – 30.0</td><td>30</td><td>30</td></tr><tr><td>30 – 88</td><td>100**</td><td>3</td></tr><tr><td>88 – 216</td><td>150**</td><td>3</td></tr><tr><td>216 – 960</td><td>200**</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	0.009 – 0.490	2400/F (kHz)	300	0.490 – 1.705	24000/F (kHz)	30	1.705 – 30.0	30	30	30 – 88	100**	3	88 – 216	150**	3	216 – 960	200**	3	Above 960	500	3
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)																							
0.009 – 0.490	2400/F (kHz)	300																							
0.490 – 1.705	24000/F (kHz)	30																							
1.705 – 30.0	30	30																							
30 – 88	100**	3																							
88 – 216	150**	3																							
216 – 960	200**	3																							
Above 960	500	3																							
Frequency Tolerance	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.																								

6.2 Antenna Requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement:	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
E.U.T Antenna:	The EUT make use of an induction coil antenna.

6.3 AC Power Line Conducted Emission

Product name:	Face Recognition Terminal	Product model:	BA8300
Test by:	Mike	Test mode:	RFID mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz		

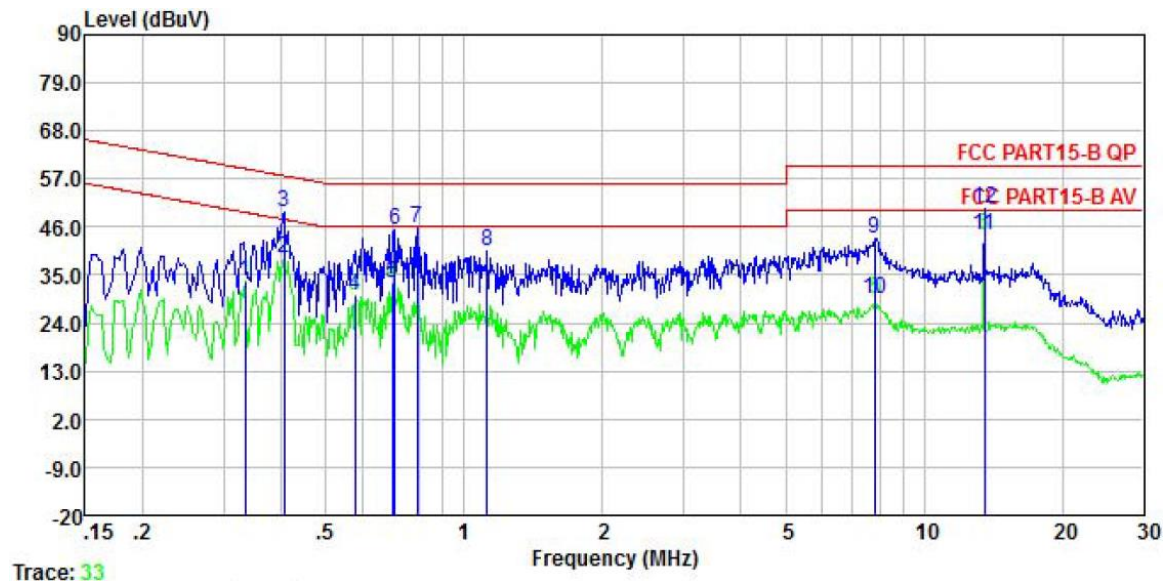


	Freq	Read	LISN	Cable	Level	Limit	Over	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.358	37.54	0.04	0.02	37.60	48.78	-11.18	Average
2	0.398	43.63	0.04	0.04	43.71	47.90	-4.19	Average
3	0.402	48.34	0.04	0.04	48.42	57.81	-9.39	QP
4	0.708	44.14	0.04	0.03	44.21	56.00	-11.79	QP
5	0.792	36.55	0.04	0.03	36.62	46.00	-9.38	Average
6	0.792	45.16	0.04	0.03	45.23	56.00	-10.77	QP
7	1.111	34.14	0.05	0.07	34.26	46.00	-11.74	Average
8	1.111	41.70	0.05	0.07	41.82	56.00	-14.18	QP
9	7.728	36.75	0.17	0.10	37.02	50.00	-12.98	Average
10	7.935	44.84	0.17	0.10	45.11	60.00	-14.89	QP
11	13.551	45.82	0.25	0.12	46.19	50.00	-3.81	Average
12	13.551	48.75	0.25	0.12	49.12	60.00	-10.88	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

Product name:	Face Recognition Terminal	Product model:	BA8300
Test by:	Mike	Test mode:	RFID mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz		



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.334	33.42	0.04	0.02	33.48	49.35	-15.87	Average
2	0.406	38.66	0.04	0.04	38.74	47.73	-8.99	Average
3	0.406	49.28	0.04	0.04	49.36	57.73	-8.37	QP
4	0.579	30.28	0.04	0.02	30.34	46.00	-15.66	Average
5	0.697	33.06	0.04	0.03	33.13	46.00	-12.87	Average
6	0.708	45.28	0.04	0.03	45.35	56.00	-10.65	QP
7	0.792	45.89	0.04	0.03	45.96	56.00	-10.04	QP
8	1.123	40.49	0.05	0.08	40.62	56.00	-15.38	QP
9	7.810	43.21	0.15	0.10	43.46	60.00	-16.54	QP
10	7.852	29.17	0.16	0.10	29.43	50.00	-20.57	Average
11	13.551	43.95	0.23	0.12	44.30	50.00	-5.70	Average
12	13.551	49.77	0.23	0.12	50.12	60.00	-9.88	QP

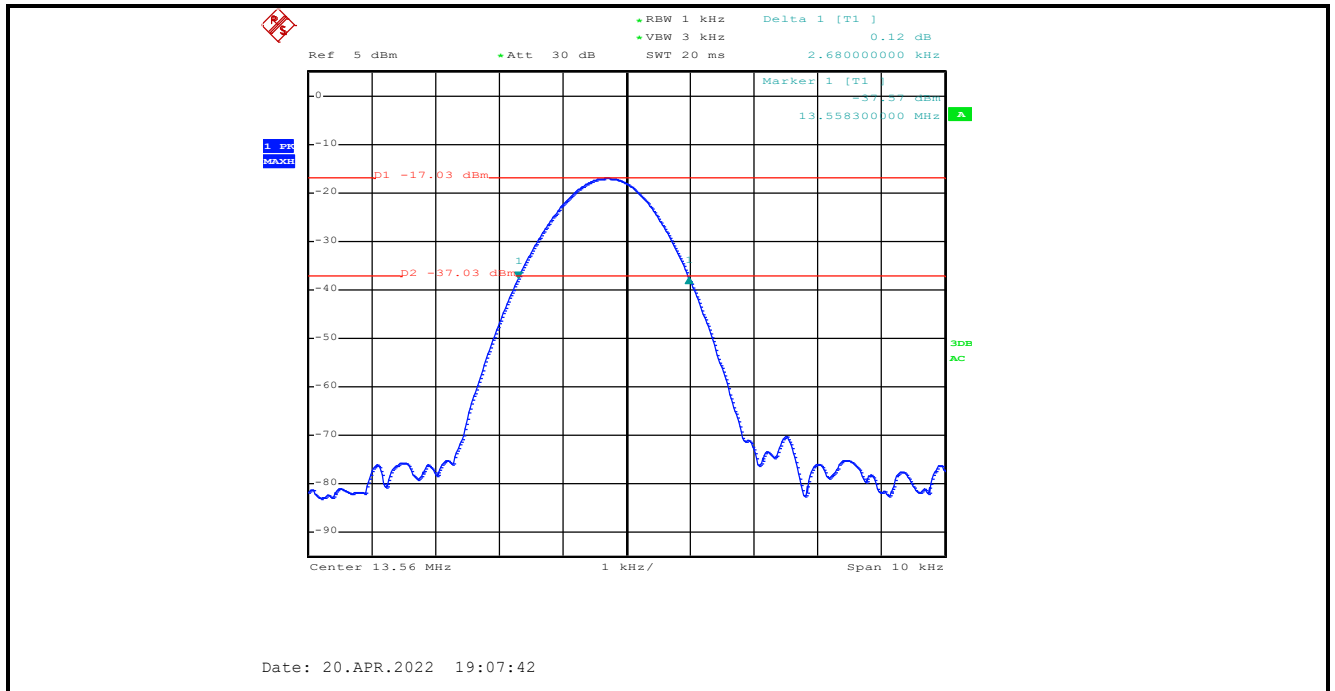
Remark:

1. Level = Read level + LISN Factor + Cable Loss.

6.4 20dB Bandwidth

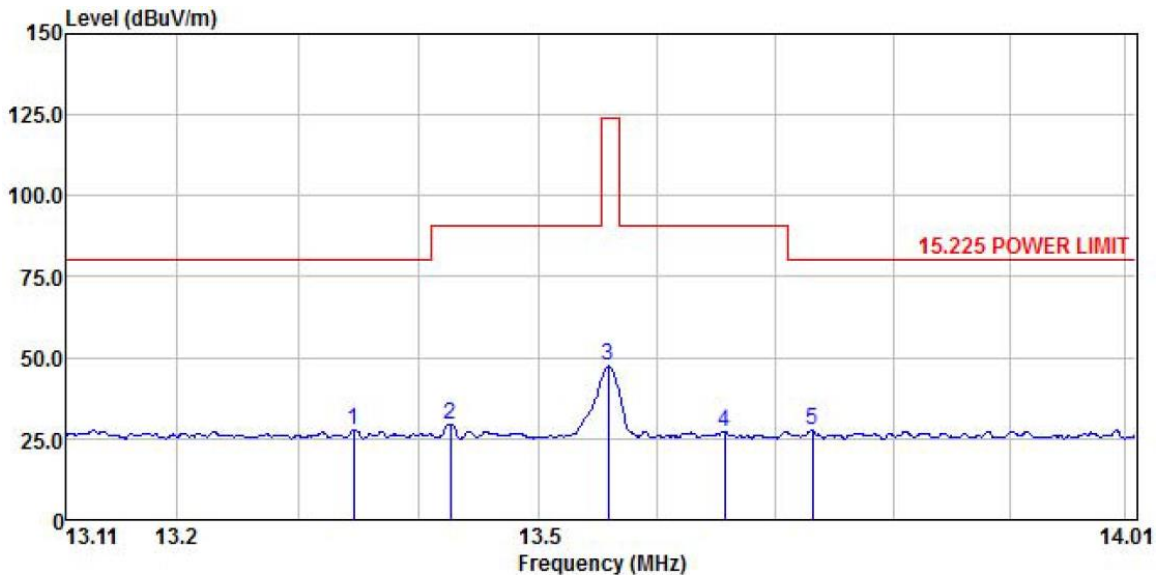
20dB bandwidth (kHz)	Limit (kHz)	Results
2.68	11.2	Passed
Note: For 13.56MHz, permitted Band is 14 kHz, so the Limit is 11.2 kHz.		

Test plot as follows:



6.5 Field Strength of Fundamental

Product Name:	Face Recognition Terminal	Product Model:	BA8300
Test By:	Mike	Test mode:	RFID Tx mode
Test Voltage:	AC 120/60Hz		

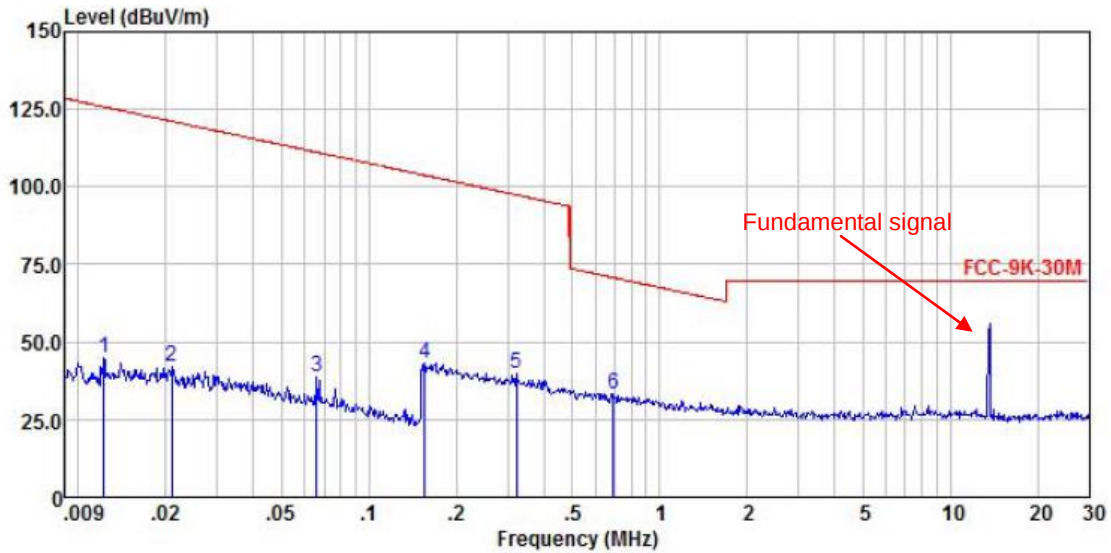


	Read	Antenna	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	13.345	7.79	19.63	0.40	0.00	27.82	80.50	-52.68 Peak
2	13.426	9.53	19.61	0.41	0.00	29.55	90.50	-60.95 Peak
3	13.558	27.43	19.59	0.41	0.00	47.43	124.00	-76.57 Peak
4	13.656	7.34	19.57	0.42	0.00	27.33	90.50	-63.17 Peak
5	13.731	7.56	19.54	0.43	0.00	27.53	80.50	-52.97 Peak

Remark:
1. Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

6.6 Field Strength of Spurious Emissions

Product Name:	Face Recognition Terminal	Product Model:	BA8300
Test By:	Mike	Test mode:	NFC Tx mode
Test Frequency:	150 kHz – 30 MHz	Polarization:	Coxial
Test Voltage:	AC 120/60Hz		

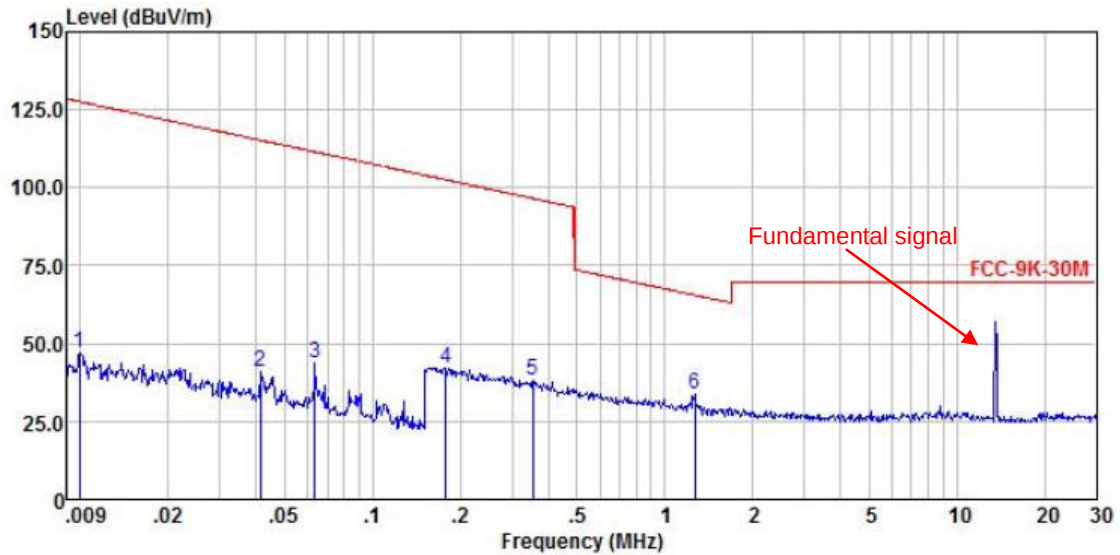


	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.012	24.28	20.44	0.01	0.00	44.73	125.82	-81.09	
2	0.021	21.67	20.30	0.01	0.00	41.98	121.17	-79.19	
3	0.066	17.98	20.52	0.02	0.00	38.52	111.17	-72.65	
4	0.155	23.02	20.22	0.03	0.00	43.27	103.81	-60.54	
5	0.322	19.02	20.58	0.06	0.00	39.66	97.45	-57.79	
6	0.696	12.59	20.66	0.10	0.00	33.35	70.76	-37.41	

Remark:

- Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of 9 kHz~150 kHz are background noise and very lower than the limit, so not show in test report.

Product Name:	Face Recognition Terminal	Product Model:	BA8300
Test By:	Mike	Test mode:	NFC Tx mode
Test Frequency:	150 kHz – 30 MHz	Polarization:	Coplanar
Test Voltage:	AC 120/60Hz		



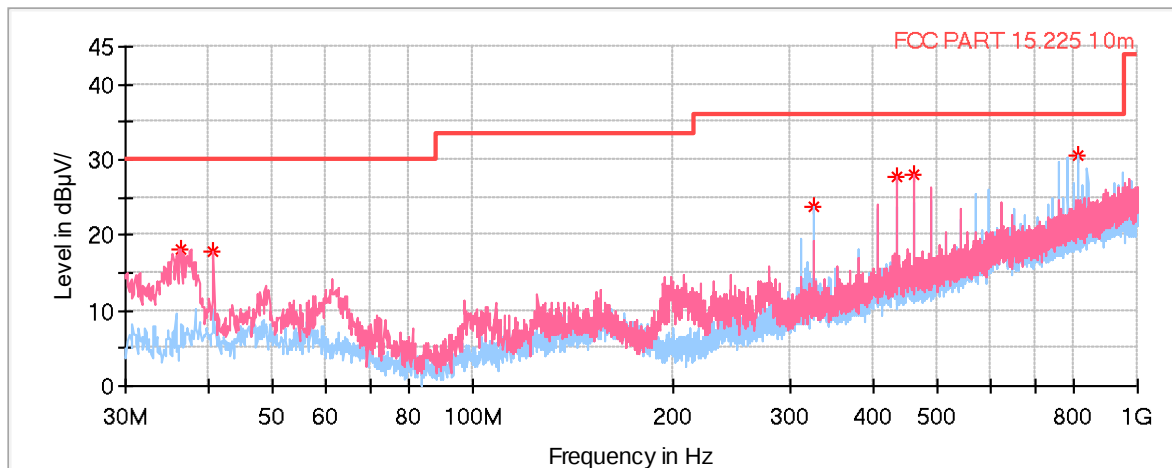
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	0.010	26.83	20.48	0.01	0.00	47.32	127.65	-80.33	Peak
2	0.041	20.24	20.45	0.02	0.00	40.71	115.25	-74.54	Peak
3	0.064	22.95	20.53	0.02	0.00	43.50	111.52	-68.02	Peak
4	0.178	21.99	20.29	0.04	0.00	42.32	102.61	-60.29	Peak
5	0.355	17.41	20.63	0.06	0.00	38.10	96.61	-58.51	Peak
6	1.268	12.91	20.48	0.17	0.00	33.56	65.56	-32.00	Peak

Remark:

- Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of 9 kHz~150 kHz are background noise and very lower than the limit, so not show in test report.

Product Name:	Face Recognition Terminal	Product Model:	BA8300
Test By:	Mike	Test mode:	NFC Tx mode
Test Frequency:	30 MHz – 1000 MHz	Polarization:	Vertical & Horizontal
Test Voltage:	AC 120/60Hz		

Full Spectrum



* Critical_Freqs PK+
◆ Final_Result QPK
— Preview Result 1V-PK+
— FCC PART 15 Class B 10m
— Preview Result 1H-PK+

Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
36.305000	18.23	30.00	11.77	100.0	V	0.0	-16.4
40.670000	17.73	30.00	12.27	100.0	V	118.0	-15.6
325.365000	23.73	36.00	12.27	100.0	H	243.0	-13.9
433.908000	27.78	36.00	8.22	100.0	V	222.0	-10.3
461.068000	28.10	36.00	7.90	100.0	V	206.0	-9.6
813.566000	30.53	36.00	5.47	100.0	H	1.0	-2.9

Remark:

1. Level = Read level + Antenna Factor + Cable Loss – Preamplifier Factor.

6.7 Frequency Tolerance

Frequency Stability V.S. Temperature Measurement:

Voltage (Vdc)	Temperature (°C)	Frequency Tolerance (kHz)	Frequency Error (%)	Limit (%)	Results
12.0	-20	-0.00032	-0.0024	±0.01	Pass
	-10	-0.00019	-0.0014	±0.01	Pass
	0	0.00026	0.0019	±0.01	Pass
	+10	0.00029	0.0021	±0.01	Pass
	+20	-0.00032	-0.0024	±0.01	Pass
	+30	-0.00030	-0.0022	±0.01	Pass
	+40	0.00016	0.0012	±0.01	Pass
	+50	0.00024	0.0018	±0.01	Pass

Frequency Stability V.S. Voltage Measurement:

Temperature (°C)	Voltage (Vdc)	Frequency Tolerance (kHz)	Frequency Error (%)	Limit (%)	Results
25.0	10.2	0.00025	0.0018	±0.01	Pass
	12.0	-0.00023	-0.0017	±0.01	Pass
	13.8	-0.00015	-0.0011	±0.01	Pass

-----End of report-----