

EMF TEST REPORT

Test Report No. : OT-200-RWD-029

Reception No. : 2010003957

Applicant : Asterisk, Inc.

Address : Shin-Osaka Dainichi Bldg. 201, 5-6-16, Nishinakajima, Yodogawa-ku, Osaka, Japan

Manufacturer : Asterisk, Inc.

Address : Shin-Osaka Dainichi Bldg. 201, 5-6-16, Nishinakajima, Yodogawa-ku, Osaka, Japan

Type of Equipment : AsLock RFID

FCC ID. : 2AJXE-ASR-L70D

Model Name : ASR-L70D

Multiple Model Name : ASR-L71D, ASR-L30D, ASR-L31D

Serial number : N/A

Total page of Report : 9 pages (including this page)

Date of Incoming : October 15, 2020

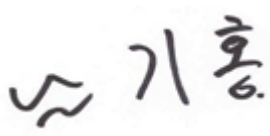
Date of issue : October 23, 2020

SUMMARY

The equipment complies with the regulation; **FCC CFR 47 PART 1.1310**

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

		
Tested by / Youngyong Kim/ Assistant Manager ONETECH Corp.	Reviewed by / Ha-Ram Lee / Manager ONETECH Corp.	Approved by / Ki-Hong, Nam / General Manager ONETECH Corp.

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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-20O-RWD-029	October 23, 2020	Initial Issue	All

1. VERIFICATION OF COMPLIANCE

Applicant : Asterisk, Inc.
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 Contact Person : Naoki Kumamoto / Chief Technical Officer
 Telephone No. : +81-50-5536-1185
 FCC ID : 2AJXE-ASR-L70D
 Model Name : ASR-L70D
 Serial Number : N/A
 Date : October 23, 2020

EQUIPMENT CLASS	DCD – Part 15 Low Power Transmitter Below 1 705 kHz
E.U.T. DESCRIPTION	AsLock RFID
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2013
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED UNDER IC RULES PART(S)	FCC CFR 47 PART 1.1310
Modifications on the Equipment to Achieve Compliance	None
Final Test was Conducted On	3 m, Semi Anechoic Chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. GENERAL INFORMATION

2.1 Product Description

The Asterisk, Inc., Model: ASR-L70D (referred to as the EUT in this report) is a Transmitter that it controls locking and unlocking the door of a vehicle. Product specification information described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	AsLock RFID
OPERATING FREQUENCY	134.20 kHz
RATED RF OUTPUT POWER	72.9 dB μ V/m
ANTENNA TYPE	Coil Antenna
MODULATION	AM/PSK
RATED SUPPLY VOLTAGE	DC 5.0 V

2.2 Alternative type(s)/model(s); also covered by this test report.

-. The following lists consist of the added model and their differences.

Model Name	Differences	Tested
ASR-L70D	Basic Model	☒
ASR-L71D	This model is identical to the basic model except for the end customer and color of product.	☐
ASR-L30D		☐
ASR-L31D		☐

Note: 1. Applicant consigns only basic model to test. Therefore, this test report just guarantees the units, which have been tested.

2. The Applicant/manufacture is responsible for the compliance of all variants.

3. EUT MODIFICATIONS

-. None

4. RADIO FREQUENCY EXPOSURE

4.1 Environmental evaluation and exposure limit

According to FCC 1.1310 : The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter

Frequency Range [MHz]	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density [mW/cm ²]	Average Time [minutes]
(A) Limits for Occupational / Control Exposures				
0.3 – 3.0	614	1.63	*(100)	6
3.0 – 30	1 842/f	4.89/f	*(900/f ²)	6
30 – 300	61.4	0.163	1.0	6
300 – 1 500			f/300	6
1 500 – 100 000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3 – 3.0	614	1.63	*(100)	30
3.0 – 30	824/f	2.19/f	*(180/f ²)	30
30 – 300	27.5	0.073	0.2	30
300 – 1 500			f/1 500	30
1 500 – 100 000			1.0	30

f = frequency in MHz

* = Plane wave equivalent power density

Note 1 to Table 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

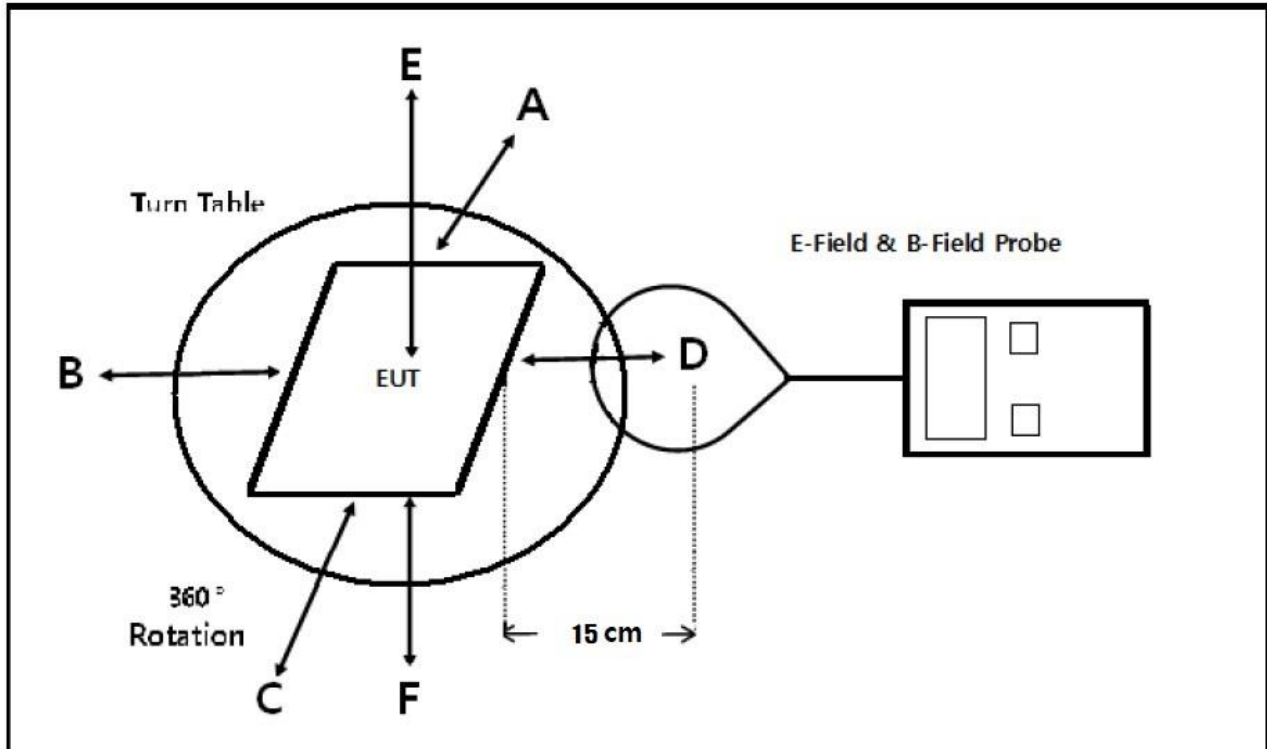
Note 2 to Table 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The EUT does meet the requirement of section 5. b) of KDB 680106 D01 RF Exposure Wireless Charging Apps v03

1. Power transfer frequency is less than 1MHz
2. Output power from each primary coil is less than 15 watts.
3. The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
4. Client devices is inserted in or placed directly in contact with the transmitter.
5. Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
6. The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

4.2 E / H field strength

4.2.1 EUT Operating condition



4.2.2 Measurement procedure

- 1) The RF exposure test was performed in anechoic chamber.
- 2) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface.
- 3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F) were completed.
- 4) The EUT was measured according to the dictates of KDB 680106 D01 v03.

Remark: The EUT's test position A, B, C, D, E and F is valid for the E and H field measurements.

4.2.3 E - field strength

Position A [V/m]	Position B [V/m]	Position C [V/m]	Position D [V/m]	Position E [V/m]	Position F [V/m]	50% Limits [V/m]	Limits [V/m]
65.23	86.48	70.92	76.01	158.89	108.32	307.00	614.00

4.2.4 H - field strength

Position A [A/m]	Position B [A/m]	Position C [A/m]	Position D [A/m]	Position E [A/m]	Position F [A/m]	50% Limits [A/m]	Limits [A/m]
0.174	0.230	0.189	0.202	0.423	0.288	0.815	1.630