

Certificate of Test

NCT CO., LTD. 211-71, Geumgok-ro, Hwaseong-si, Gyeonggi-do, 18511, Republic of Korea (Tel: +82-31-323-6070 / Fax: +82-31-323-6071)	Report No.: NW2410-F003 Page (1) / (9)	NCT
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- Client**
 - o Name : CMITECH Co.,Ltd.
 - o Address : 4th floor office#417-419, 136, LS-ro, Dongan-gu, Anyang-si Gyeonggi-do Republic of Korea 14118
 - o Date of Receipt : 2024-10-28
- Use of Report** : FCC Approval
- Test Sample**
 - o Description / Model : IRIS CAMERA / EF-70-PI
 - o FCC ID : 2AJY5-EF-70-PI
- Place of Test** : ☒ Fixed test ☐ Field test
(Address:211-71, Geumgok-ro, Hwaseong-si, Gyeonggi-do, 18511, Republic of Korea)
- Date of Test** : 2024-10-28
- Test method used** : FCC Part 1.1310
- Testing Environment** :
 - o Temperature: (25 ± 5) °C, Humidity: Less than 75 % R.H.
 - * Unless specified otherwise in the individual methods, the tests were conducted on ambient conditions.
- Test Results** : Refer to the test results

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This Test Report cannot be reproduced, except in full
This test report is not related to KOLAS recognition and RRA designation.

Affirmation	Tested by Jiwon, Hong 	Technical Manager Il-shin, Kim 
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Oct 28, 2024

NCT CO., LTD.



Contact us at report@nct.re.kr to confirm the authenticity of this report

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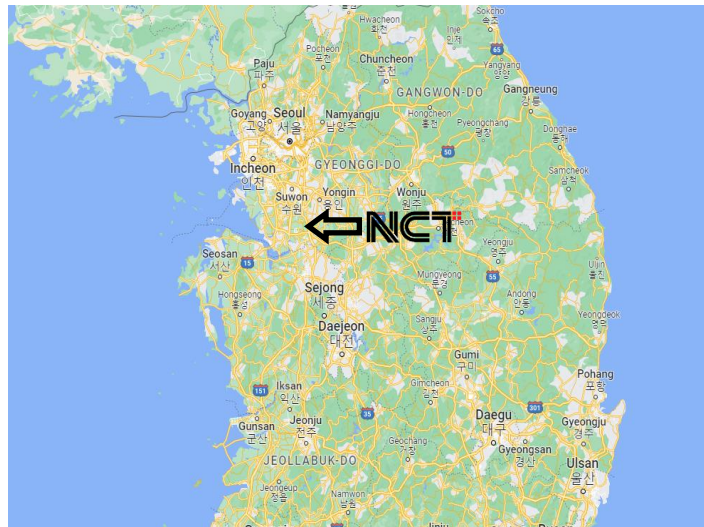
211-71, Geumgok-ro, Hwaseong-si, Gyeonggi-do, Korea 18511
www.nct.re.kr TEL: +82-31-323-6070 FAX: +82-31-323-6071

1. General Information's

1.1 Test Performed

Laboratory : NCT Co., Ltd.
 Address : 211-71, Geumgok-ro, Hwaseong-si, Gyeonggi-do, 18511, Korea
 Telephone : +82-31-323-6070
 Facsimile : +82-31-323-6071
 FCC Designation No. : KR0166
 FCC Registration Number : 409631

1.2 Site Map



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2. Information's about Test Item

2.1 Applicant Information

Company name : CMITECH Co.,Ltd.
Address : 4th floor office#417-419, 136, LS-ro, Dongan-gu, Anyang-si Gyeonggi-do
Republic of Korea 14118
Telephone : +82-70-8633-8459
Facsimile : +82-31-624-4490

2.2 Equipment Information

Equipment description	IRIS CAMERA
Model and/or type reference	EF-70-PI
Additional model name ^{see section 2.3}	EF-70-P, EF-70-I, FXT, EF-70
Serial number	Prototype
EUT condition	Pre-production, not damaged
Number of channels	Bluetooth LE:40 ch 13.56 MHz RFID: 1 ch
Modulation type	Bluetooth LE: GFSK 13.56 MHz RFID: ASK
EUT power source	DC 15.0 V(Adaptor) / DC 48.0 V(PoE)
Hardware version	V 1.0
Software version	V 1.00
Test software name(version)	-

2.3 Antenna Information

Type	Model name	Gain	Note.
Chip antenna	AT3216-B2R7HAAT/LF	0.5 dBi	for LE 1M
PCB Loop Antenna	-	-	for RFID

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2.4 Model different description

Model Name		Difference
Basic Model	EF-70-PI	Include BLE/NFC/USIM/POE/HID HW License
Family Model ①	EF-70-P	Include BLE/NFC/USIM/POE Exclude HID HW License
Family Model ②	EF-70-I	Include BLE/NFC/USIM/HID HW License Exclude POE
Family Model ③	FXT	Eye Lock OEM Model It is identical to the EF-70-I model
Family Model ④	EF-70	Include BLE/NFC/USIM Exclude POE/HID HW License

2.5 Tested Frequency

RFID	Low frequency	Middle frequency	High frequency
Frequency (MHz)	-	13.56	-

LE 1M	Low frequency	Middle frequency	High frequency
Frequency (MHz)	2 402	2 442	2 480

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3. Test Report

3.1 Test Report Version

Test Report No.	Date	Description
NW2410-F003	2024-10-28	Initial issue

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3.2 RF Exposure evaluation

- **MPE Calculations : RFID 13.56 MHz**

According to §15.225, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

See § 1.1307(b)(1) of this Chapter.

Frequency Range	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density [mW/cm ²]	Averaging Time [minute]
Limits for General Population / Uncontrolled Exposure				
0.3 ~ 1.34	614	1.63	*(100)	< 30
<u>1.34 ~ 30</u>	<u>824/f</u>	2.19/f	*(180/f ²)	< 30
30 ~ 300	27.5	0.073	0.2	< 30
300 ~ 1 500	/	/	f/1 500	< 30
<u>1 500 ~ 15 000</u>	/	/	<u>1.0</u>	< 30

f=frequency in MHz, *= plane-wave equivalent power density

Frequency(MHz)	Field Strength (dBuV/m)	Field Strength (V/m)	Limit (V/m)	Result
13.56	46.68	0.00022	61	PASS

Note : Field Strength (dBuV/m) = Field Strength (dBuV/m) @ 3m – 9.54

$$\text{Field Strength (V/m)} = 10^{\frac{\text{dBuV} - 120}{20}}$$

● **MPE Calculations : Bluetooth LE 1M**

Calculations can be made to predict RF field strength and power density levels around typical RF sources. For example, in the case of a single radiating antenna, a prediction for power density in the far-field of the antenna can be made by use of the general Equations below. This equation is generally accurate in the far-field of an antenna but will over-predict power density in the near field, where they could be used for making a "worst case" or conservative prediction.

$$Power\ Density(S) = \frac{PG}{4\pi R^2}$$

Where,

S = Power Density, unit in mW/cm²

P = Power input to the antenna, unit in mW

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna, unit in cm

PG = Output Power including antenna gain

Modulation	Frequency (MHz)	Measured Output power	Tune-up tolerance	Max. Power with tune-up tolerance (P)		Antenna Gain (G)		Power Density(S)	Limit of Power Density (S)	Result
		(dBm)		(dBm)	(mW)	(dBi)	(numeric)	(mW/cm ²)	(mW/cm ²)	
Bluetooth LE 1M	2402	4.49	± 1.00	5.49	3.54	0.50	1.12	0.0008	1.00	PASS
	2442	4.49		5.49	3.54	0.50	1.12	0.0008	1.00	PASS
	2480	4.23		5.23	3.33	0.50	1.12	0.0007	1.00	PASS

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- **MPE Calculations : RFID 13.56 MHz + Bluetooth LE 1M**

- simultaneous

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

- Total

= [(Bluetooth LE Result / Bluetooth LE Limit) + (RFID 13.56 MHz Result / RFID 13.56 MHz Limit)] * 100

= $\left(\frac{0.00022}{61}\right) + \left(\frac{0.0008}{1}\right)$

= 0.0008 ≤ 1

According to the above calculations, it can be concluded that the Total calculation result of all simultaneous transmission possibilities is less than 1, so it is into compliance.