

Test Report No.:
FCC2021-0025-EMF

EMC Test Report

EUT : **AI Vision Sensor**
MODEL : **VS121-915M**
BRAND NAME : **Milesight**
APPLICANT : **Xiamen Milesight IoT Co., Ltd.**
Classification Of Test : **N/A**

CVC Testing Technology Co., Ltd.



CVC Testing Technology Co., Ltd.

Test Report No.: FCC2021-0025-EMF		Page 2 of 8	
Client		Name : Xiamen Milesight IoT Co., Ltd. Address : Building C09, Software Park Phase III, Xiamen 361024, Fujian, China	
Manufacturer		Name : Xiamen Milesight IoT Co., Ltd. Address : Building C09, Software Park Phase III, Xiamen 361024, Fujian, China	
Equipment Under Test		Name : AI Vision Sensor Model/Type: VS121-915M Trade mark : Milesight Serial NO.:N/A Sample NO.:6-1	
Date of Receipt.	2021.09.08	Date of Testing	2021.09.08~2022.04.14
Test Specification		Test Result	
FCC Part 2 (Section 2.1091) KDB 447498 D01 IEEE C95.1		PASS	
Evaluation of Test Result		The equipment under test was found to comply with the requirements of the standards applied. Issue Date: 2022.04.14	
Tested by: Xu ZhenFei Name Signature		Reviewed by: Liu YongHai Name Signature	Approved by: Chen HuaWen Name Signature
Other Aspects: NONE.			
Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			
This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.			



TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1. GERTIFICATION	5
2. RF EXPOSURE LIMIT	5
3. MPE CALCULATION FORMULA	5
4. CLASSIFICATION	6
5. ANTENNA GAIN	6
6. CALCULATION RESULT OF MAXIMUM CONDUCTED AV POWER	6



RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2021-0025-EMF	Original release	2022.04.14



1. GERTIFICATION

PRODUCT	AI Vision Sensor
BRAND	Milesight
MODEL	VS121-915M
ADDITIONAL MODEL	N/A
FCC ID	2AYHY-VS121
STANDARDS	FCC Part 2 (Section 2.1091)
	KDB 447498 D01
	IEEE C95.1
Remark:	
1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.	
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.	
3. EUT photo refer to the report (Report NO.: FCC2021-0025-E).	

2. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm ²)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	F/1500	30
1500-100,000	1.0	30

F = Frequency in MHz

3. MPE CALCULATION FORMULA

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm



4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Transmitter Circuit	Peak Gain (dBi)	Antenna Type
2.4G WIFI	1	PCB Antenna
LORA	1	Spring Antenna

6. CALCULATION RESULT OF MAXIMUM CONDUCTED AV POWER

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
LORA DR0	902.3-927.6	6	+ -1	5	7
LORA DR8	903-927.5	5	+ -1	4	6
802.11b	2412-2462	15	+ -1	14	16
802.11g	2412-2462	14	+ -1	13	15
802.11n HT20	2412-2462	14	+ -1	13	15
802.11n HT40	2422-2452	14	+ -1	13	15



The measured conducted Average Power(worse case)

Mode	Frequency (MHz)	Averaged Power (dBm)
LORA DR0	902.3	6.22
LORA DR8	903.0	5.37
802.11b	2462	15.29
802.11g	2412	14.58
802.11n HT20	2412	14.37
802.11n HT40	2422	14.16

FREQUENCY BAND (MHz)	MAX AVERAGE POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
902.3-927.6	7	1	20	0.0013	0.602
2412-2462	16	1	20	0.0100	1.0

CONCLUSION:

The LORA and WLAN can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 +etc. < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$(0.0013/0.602)+(0.0100/1) = 0.01215 < 1, \text{ which is less than the "1" limit.}$$

--- END ---



Important

- (1) The test report is valid with the official seal of the laboratory and the signatures of Test engineer, Author and Reviewer simultaneously.
- (2) The test report is invalid if altered.
- (3) Any photocopies or part photocopies in the test report are forbidden without the written permission from the laboratory.
- (4) Objections to the test report must be submitted to the laboratory within 15 days.
- (5) Generally, commission test is responsible for the tested samples only.
- (6) Any photocopies or part photocopies of the test report are forbidden without the written permission from CVC;

Address of the laboratory:

CVC Testing Technology Co., Ltd.

Address: No.3,TiantaiyiRoad,KaitaiAvenue,ScienceCity,Guangzhou,China

Post Code: 510663 Tel: 020-32293888

FAX: 020-32293889 E-mail: office@cvc.org.cn