

Radio Test Report

Report No.: STS2310075H01

Issued for

Zhejiang Hyxi Technology Co., Ltd.

9-10F, Building 3, Jiuyao Commercial Center, Zhuantang
Street, Xihu District, Hangzhou, Zhejiang, China

Product Name: Data Management Unit

Brand Name: N/A

Model Name: HYX-DMU-4G

Series Model(s): N/A

FCC ID: 2BDBN-DMU4GG1

Test Standard: FCC 47CFR §2.1091

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name: Zhejiang Hyxi Technology Co., Ltd.
Address: 9-10F, Building 3, Jiuyao Commercial Center, Zhuantang Street,
Xihu District, Hangzhou, Zhejiang, China
Manufacturer's Name: Zhejiang Hyxi Technology Co., Ltd.
Address: 9-10F, Building 3, Jiuyao Commercial Center, Zhuantang Street,
Xihu District, Hangzhou, Zhejiang, China

Product Description

Product Name: Data Management Unit
Brand Name: N/A
Model Name: HYX-DMU-4G
Series Model(s): N/A

Test Standards: FCC 47CFR §2.1091
447498 D01 Interim General RF Exposure Guidance v06

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

Date of Test

Date of receipt of test item: 24 Oct. 2023
Date (s) of performance of tests: 24 Oct. 2023 ~12 Mar. 2024
Date of Issue: 12 Mar. 2024
Test Result: Pass

Testing Engineer :

(Aaron Bu)

Technical Manager :

(Chris Chen)

Authorized Signatory :

(Bovey Yang)





TABLE OF CONTENTS

1. GENERAL INFORMATION	5
1.1 GENERAL DESCRIPTION OF THE EUT	5
1.2 TEST FACTORY	5
2. FCC 47CFR §2.1091 REQUIREMENT	6
2.1 TEST STANDARDS	6
2.2 LIMIT	6
2.3 TEST RESULT	7



Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	12 Mar. 2024	STS2310075H01	ALL	Initial Issue



1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Data Management Unit
Brand Name	N/A
Model Name	HYX-DMU-4G
Series Model(s)	N/A
Model Difference	N/A
Product Description	The EUT is Data Management Unit
	Operation Frequency: SRD:433.35-434.6MHz WCDMA B2: 1850-1910MHz WCDMA B5: 824-849MHz WCDMA B4: 1710-1755MHz LTE Band 2:1850~1910MHz LTE Band 4:1710~1755MHz LTE Band 5:824~849MHz LTE Band 12:699~716MHz LTE Band 13:777~787MHz LTE Band 17: 704-716MHz LTE Band 66:1710~1780MHz LTE Band 71: 663-698MHz
	Modulation Type: SRD:FSK WCDMA:QPSK;HSDPA:QPSK/16QAM; HSUPA:BPSK LTE: QPSK /16QAM
	Antenna gain: SRD:0.5 dBi WCDMA B2/4:3.37 dBi WCDMA B5:2.26 dBi LTE Band 2/4/66:3.77 dBi LTE Band 5/12/13/17/71:2.26 dBi
	Antenna Designation: SRD:Spring WCDMA / LTE:PIFA
Rating	Input: AC 100~240V, 50/60Hz Output: DC 12V/1A
Hardware Version	V1.0
Software Version	V01.00.02

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

$\pi = 3.1416$

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

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.



2.3 TEST RESULT

Turn up

Mode	Detector	Turn up Power
SRD	AV	-24±1dBm
WCDMA Band 2	AV	23±1dBm
WCDMA Band 4	AV	23±1dBm
WCDMA Band 5	AV	23±1dBm
LTE Band 2	AV	23±1dBm
LTE Band 4	AV	23±1dBm
LTE Band 5	AV	23±1dBm
LTE Band 12	AV	23±1dBm
LTE Band 13	AV	23±1dBm
LTE Band 17	AV	23±1dBm
LTE Band 66	AV	23±1dBm
LTE Band 71	AV	23±1dBm

Protocol	Fre. (MHz)	Separati on distance (cm)	Max Turn up power (dBm)	Max EIRP (dBm)	Max EIRP (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Ratio	Result
SRD	434.6	20	-23	-23	0.005	0.000001	0.28973333	0.0000 034	Pass
WCDMA Band 2	1850	20	24.00	27.77	598.41	0.119	1	0.1190	Pass
WCDMA Band 4	1710	20	24.00	27.77	598.41	0.119	1	0.1190	Pass
WCDMA Band 5	824	20	24.00	26.26	422.67	0.084	0.5493	0.1531	Pass
LTE Band 2	1850	20	24.00	27.77	598.41	0.119	1	0.1190	Pass
LTE Band 4	1710	20	24.00	27.77	598.41	0.119	1	0.1190	Pass
LTE Band 5	824	20	24.00	26.26	422.67	0.084	0.5493	0.1531	Pass
LTE Band 12	699	20	24.00	26.26	422.67	0.084	0.466	0.1804	Pass
LTE Band 13	777	20	24.00	26.26	422.67	0.084	0.518	0.1623	Pass
LTE Band 17	704	20	24.00	26.26	422.67	0.084	0.4693333	0.1792	Pass
LTE Band 66	1710	20	24.00	27.77	598.41	0.119	1	0.1190	Pass
LTE Band 71	663	20	24.00	26.26	422.67	0.084	0.442	0.1902	Pass



Note: 1. The Maximum power is less than the limit, complies with the exemption requirements.

2. $ERP = EIRP - 2.15$

3. Calculated formula: $EIRP(dBm) = 71.11(dBuV/m) - 95.2$

*****END OF THE REPORT*****