REPORT No. : SZ16050106S03

RF EXPOSURE EVALUATION REPORT

APPLICANT	:	HARXON CORPORATION
PRODUCT NAME	:	Wireless Data Transceiver
MODEL NAME	:	HX-DU8608D HX-DU86XXD series: From HX-DU8670D to HX-DU8679D HX-DU86XXT series: From HX-DU8670T to HX-DU8679T
TRADE NAME	:	HARXON
BRAND NAME	:	HARXON
FCC ID	:	2ACRAHX-DU8608D
STANDARD(S)	:	47CFR 2.1091 KDB 447498 D01 General RF Exposure Guidance v06
ISSUE DATE	:	2016-07-28

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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Change History		
Issue	Date	Reason for change
1.0	2016-07-28	First edition

TEST REPORT DECLARATION

Applicant	HARXON CORPORATION
Applicant Address	6/F, Block B, D3 Building, TCL International E City, No. 1001 Zhongshanyuan Road, Nanshan District, Shenzhen , 518055，PRC
Manufacturer	HARXON CORPORATION
Manufacturer Address	6/F, Block B, D3 Building, TCL International E City, No. 1001 Zhongshanyuan Road, Nanshan District, Shenzhen , 518055，PRC
Product Name	Wireless Data Transceiver
Model Name	HX-DU8608D HX-DU86XXD series: From HX-DU8670D to HX-DU8679D HX-DU86XXT series: From HX-DU8670T to HX-DU8679T
Brand Name	HARXON
HW Version	V1R0
SW Version	E006.00.03
Test Standards	47CFR 2.1091; KDB 447498 D01 General RF Exposure Guidance v06
Issue Date	2016-07-28
SAR Evaluation	Not Required

Tested by : Chen Shengkui
Chen Shengkui

Reviewed by : Liu Jun
Liu Jun

Approved by : Zeng Dexin
Zeng Dexin

1. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

1.1. Identification of Applicant

Company Name:	HARXON CORPORATION
Address:	6/F, Block B, D3 Building, TCL International E City, No. 1001 Zhongshanyuan Road, Nanshan District, Shenzhen, 518055, PRC

1.2. Identification of Manufacturer

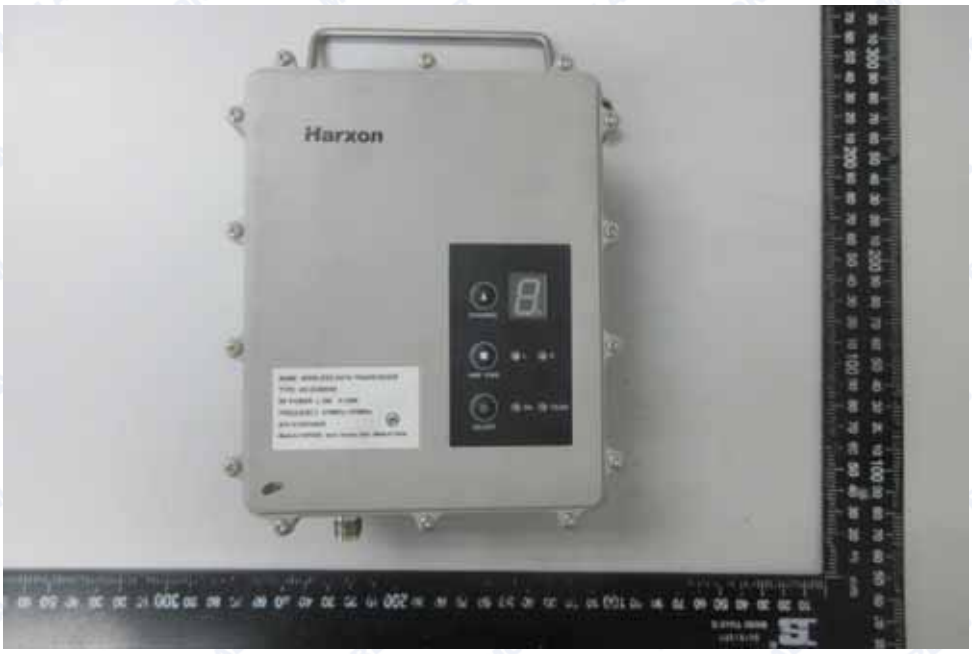
Company Name:	HARXON CORPORATION
Address:	6/F, Block B, D3 Building, TCL International E City, No. 1001 Zhongshanyuan Road, Nanshan District, Shenzhen, 518055, PRC

1.3. Equipment Under Test (EUT)

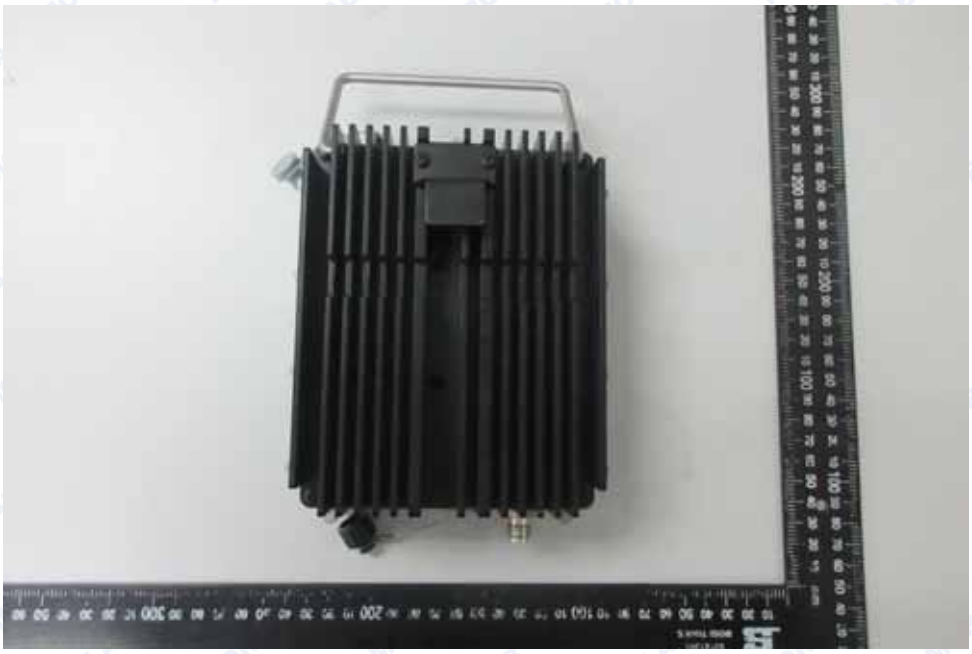
Model Name:	HX-DU8608D HX-DU86XXD series: From HX-DU8670D to HX-DU8679D HX-DU86XXT series: From HX-DU8670T to HX-DU8679T
Trade Name:	HARXON
Brand Name:	HARXON
Hardware Version:	V1R0
Software Version:	E006.00.03
Frequency Bands:	410MHz - 470MHz.;
Modulation Mode:	GMSK/4FSK;
Antenna type:	Detachable Antenna
Antenna Gain:	5.5dBi

1.3.1. Photographs of the EUT

1. EUT front view



2. EUT rear view



1.3.2. Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	V1R0	E006.00.03

1.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	**47 CFR§2.1091**	Radiofrequency Radiation Exposure Evaluation: mobile devices
2	**KDB 447498 D01v06**	General RF Exposure Guidance

2. DEVICE CATEGORY AND RF EXPOSURE LIMIT

Per user manual. Based on 47CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

Mobile Devices:

47CFR 2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term “fixed location” means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

GENERAL POPULATION / UNCONTROLLED EXPOSURE

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

3. MEASUREMENT OF CONDUCTED PEAK OUTPUT POWER

1. Average output power

5W Power Mode：

Band	Channel	Frequency (MHz)	Output Power(dBm)
GMSK	1	450.125	37.56
	39	457.125	37.12
	36	462.125	36.96
4FSK	1	450.125	37.73
	39	457.125	37.17
	36	462.125	37.05

10W Power Mode：

Band	Channel	Frequency (MHz)	Output Power(dBm)
GMSK	1	450.125	40.05
	39	457.125	39.65
	36	462.125	39.54
4FSK	1	450.125	39.96
	39	457.125	39.54
	36	462.125	39.52

15W Power Mode：

Band	Channel	Frequency (MHz)	Output Power(dBm)
GMSK	1	450.125	41.81
	39	457.125	41.47
	36	462.125	41.52
4FSK	1	450.125	41.82
	39	457.125	41.44
	36	462.125	41.34

20W Power Mode：

Band	Channel	Frequency (MHz)	Output Power(dBm)
GMSK	1	450.125	43.89
	39	457.125	43.65
	36	462.125	43.70
4FSK	1	450.125	43.66
	39	457.125	43.36
	36	462.125	43.47

30W Power Mode：

Band	Channel	Frequency (MHz)	Output Power(dBm)
GMSK	1	450.125	44.82
	39	457.125	44.71
	36	462.125	44.73
4FSK	1	450.125	44.62
	39	457.125	44.50
	36	462.125	44.62

35W Power Mode：

Band	Channel	Frequency (MHz)	Output Power(dBm)
GMSK	1	450.125	45.13
	39	457.125	45.21
	36	462.125	45.07
4FSK	1	450.125	45.38
	39	457.125	45.41
	36	462.125	45.32

4. RF EXPOSURE EVALUATION

Standalone transmission MPE evaluation

Bands	Frequency (MHz)	Antenna Gain (dBi)	Conducted Power (dBm)	Time-averaging EIRP (mW)	Power density (mW/cm²)	Limit for MPE (mW/cm²)
4FSK	457.125	5.5	45.41	123310.5	0.109	0.305

Note:

1. MPE calculation method

$$\text{Power Density} = EIRP/4\pi R^2$$

Where: EIRP = P·G

P = Peak out power

G = Antenna gain

R = Separation distance (300cm)

ANNEX A GENERAL INFORMATION

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

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