

Brand Name (Trade Name) : HOKUYO

DM-RF01

User Manual

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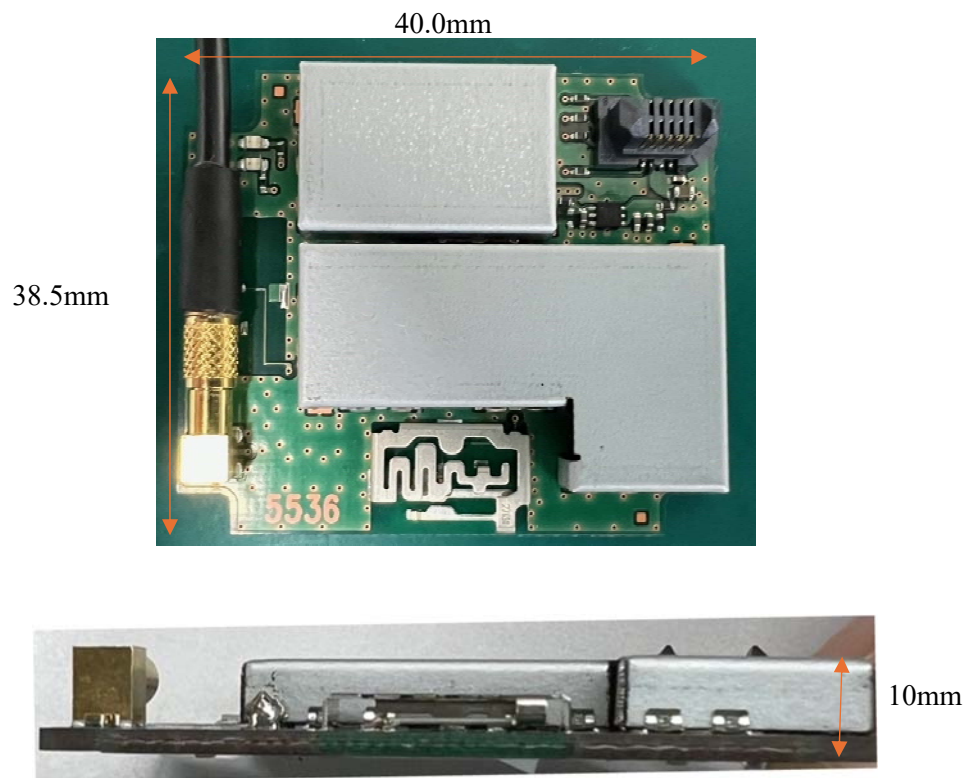
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1. Specification

The specifications for this product are listed in the table below.

Items		Specifications
General	Product Name	ISM Band Data Transmission Device
	Model Name	DM-RF01
Interface	Serial Port	UART
	Modulation	GFSK
	Frequency Band	2.4G:2.404~2.480GHz 5.8G:5.728~5.847GHz(FHSS)
	Data Rate	1Mbps
	Symbol Rate	1Msps
	Antenna	internal antenna External Antenna (with MMCX connector for connection)
CPU		R7FA4E2B93CNE
Input Voltage		DC5V±5%
Power Consumption		10mW or less
Board Outline (L x W x H)mm		38.5 x 45.5 x 10
Operating Environment		-10°C~60°C

2. Dimensions



3. FCC statement

15.19

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) this device may not cause harmful interference and
- 2) this device must accept any interference received, including interference that may cause undesired operation.

15.105(b)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment."

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

NOTICE

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as shown in User manual.

Unlicensed radiator / License-exempt radiator

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- 1) this device may not cause harmful interference and
- 2) this device must accept any interference received, including interference that may cause undesired operation.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

List of applicable FCC rules

This module has been tested and found to comply with the following requirements for Modular Approval.

- 47 CFR Part 15 Subpart C Intentional Radiators

RF exposure considerations

1. The host product operating conditions must be such that there is a minimum separation distance of 20 cm (or possibly greater than 20 cm) between the antenna radiating structures and nearby persons. The host manufacturer is obligated to confirm the use conditions of the host product to ensure that the distance specified in the instructions is met. In this case the host product is classified as either a mobile device or a fixed device for RF exposure purposes.
2. If the modular transmitter to be used in a specific type of host platform and installed such that it can be operated at closer than 20 cm to users or nearby persons, please follow below guidance.
 - a. For the host product integrated with this modular transmitter as a stand-alone configuration, the maximum conducted power from the original grant shall be retained in order to meet SAR exemption requirements.
 - b. For configuration with multiple transmitters in the same host, routine evaluation or SAR testing for the simultaneous transmission of the co-located transmitters according to KDB 447498 is required. The portable host product shall be evaluated for ensuring to continue compliance FCC rule part 2.1093 & part 1.1310 by C2PC. The additional guidance for the portable host products is provided in KDB Publication 996369 D02 and D04.

- c. For the host product is not installed according to this guide, the module certification will be invalid, and a new grant certification will be required for the host product.

ANTENNAS

This radio transmitter has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

	Frequency (MHz)	Antenna	
		Type	Gain(dBi)
Internal	2402~2480	Split Ring	1.50
	5725~5850		0.53
External	2402~2480	Dipole	4.59
	5725~5850		2.73

Label and compliance information

The host device integrating this module must be labeled with the following regulatory identifiers to ensure compliance with regulations, these labels must be clearly visible on the exterior of the host device's enclosure as required by applicable regulatory guidelines.

Contains FCC ID: 2BTNJ-DM-RF01

Information on test modes and additional testing requirements

The module can be configured to continuously transmit on a specific frequency with a fixed modulation pattern. This allows evaluation of radiated emissions and spurious emissions in a controlled condition.

These test modes are intended for compliance testing only and must not be enabled during normal operation of the final product.

For more detailed information, please contact the grantee for assistance with test modes needed for module/host compliance test requirements.

Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC transmitter rules) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

Note EMI Considerations

Note that a host manufacture is recommended to use KDB996369 D04 Module Integration Guide recommending as "best practice" RF design engineering testing and evaluation in case non-linear interactions generate additional non-compliant limits due to module placement to host components or properties.

For standalone mode, reference the guidance in KDB996369 D04 Module Integration Guide and for simultaneous mode; see KDB996369 D02 Module Q&A Question 12, which permits the host manufacturer to confirm compliance.

How to make changes

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Only Grantees are permitted to make permissive changes, if the module will be used differently than granted conditions, please contact us to ensure modifications will not affect compliance.

4. NCC statement

根據 NCC LP0002 低功率射頻器材技術規範_章節 3.8.2：

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前述合法通信，指依電信管理法規定作業之無線電通信。

低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

此模組於取得認證後將依規定於模組本體標示審驗合格標籤，並要求平台廠商於平台上標示

『內含發射器模組：  CCXXxxLPyyyZzW』

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