



INTRODUCTION

The **QD60** is a OEM read/write module with antenna designed for simple integration. The typical reading range of the module is up to 20~40mm depending on the antenna and TAG.

The **QD60** is a RFID Module for 125KHz EM and all popular 13.56-MHz RFID/contactless standard protocols.

The **QD60** supports and compatibles with all major global secured baseband ISO standards including ISO14443 Type A, Type B, and Smartlabel ISO15693.

The **QD60** also support a plug-and-play USB device with CCID and PC/SC compliance, ensuring interoperability with different systems and applications. It is ideal for secure personal identity verification and online micro-payment transactions, including computer log-on, e-payment, home banking and network authentication.

The **QD60** is well suited for mobile devices due to its low power consumption and low operating voltage from 5V. The on-chip 3.3V regulators are provided to stabilize the chip's power, and simultaneously supply the power to the external companion microcontroller up to 150 mA.

The **QD60** support the DLL and easy to control this module, The ActiveX Control can be using any terminal program (VB .NET , C#...etc)

FEATURES

- **Supported Interface**
USB 2.0 Full Speed
- **CCID Compliance**
Supports PC/SC
- **Supported Protocols**
ISO14443A, all bit rates : up to 848 Kbps
ISO15693, all modes
Downlink 1 of 4 and 1 of 256
Uplink 6.6/13/26/53 kbps with 1 & 2 sub-carrier
- **Card Compatibilities**
13.56MHZ
NFC 1~4 TAGs
ISO14443A / B
ISO15693
ISO14443-4 T=CL
125KHZ
EM compatible
- **Ultra small outline 60x30x12 mm**
- **Information Support**
Visual C# demonstration Software
Protocol Information
- **Low power, low profile for portable designed**
- **Plug-in fitting for 13.56Mhz**
- **Power supply Active 170mA @5VDC**
- **Firmware Update**

Standard Configurations:

- ✓ **QD60---- USB Interface**

※ Specification is subject to change without notice.

- ✓ We welcome OEM inquiries
- ✓ Custom device programming is available

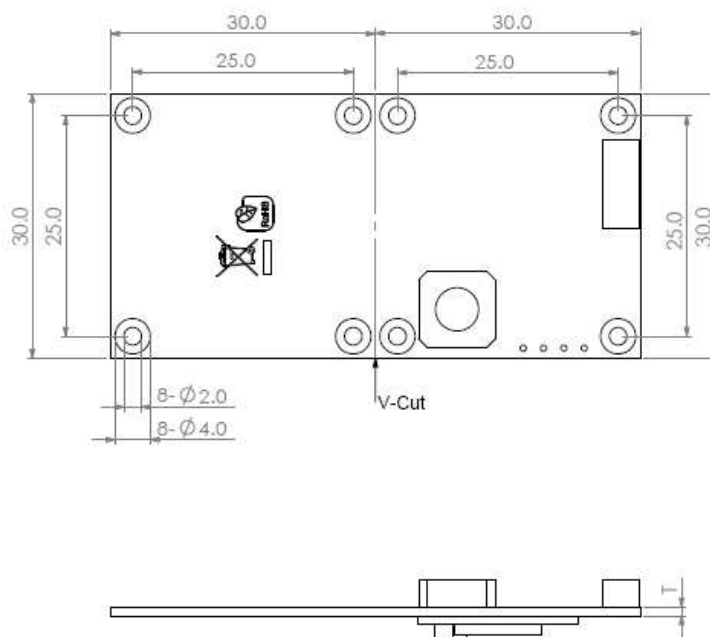
 **集佳股份有限公司**
GIGA-TMS INC.
新北市汐止區康寧街 169 巷 31 號 8 樓

TEL: +886-2-26954214
FAX: +886-2-26954213
e-mail: sales@gigatms.com.tw
http://www.gigatms.com.tw

SPECIFICATIONS:

POWER REQUIREMENT	5V regulated for Operate Voltage . A linear regulator is recommended.
CURRENT REQUIREMENTS	Active 180mA @5VDC
INTERFACE	USB HID / USB CCID / USB Keyboard Interface
SUPPORTED PROTOCOLS	ISO14443A, all bit rates : 106 kbps , 212 kbps , 424 kbps , 848 kbps ISO15693, all modes Downlink 1 of 4 and 1 of 256 Uplink 6.6/13/26/53 kbps with 1 & 2 sub-carrier
CARD TYPE	125KHZ EM compatible 13.56MHZ ISO 14443A MIFARE™Standard, MIFARE 4k, MIFARE Ultralight, MIFARE Ultralight C, MIFARE DESFireR, MIFARE DESFire EV1, DESFire EV2, DESFire EV3 ISO 14443B Smartcard ISO14443B, SRI4K, SRI512 ISO 15693 SIC5600, ICODE-SLI, ICODE-SLI-L, ICODE-SLIS Read payware and paypass and E-passport ISO7816 T=CL NFC TAG 1~4 supportive ISO18092 Felica READ UID
FERQUENCY	125KHZ & 13.56MHz standard.
READ RANGE	Mifare : 1~3 cm ISO 15693 : 2~4 cm EM: 1~3 cm
TRANSPONDER	Read / Write
BAUD RATE	19200,N,8,1
DIMENSIONS	60(L) x 30(W) x 12(H) mm
WEIGHT	1.1g
ENVIRONMENT	Operating Temp : -0°C ~ +50°C Humidity : 10 ~ 90 % relative

PACKAGE DESCRIPTION



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QD60-00	
Description	USB
Pin Numbers	8
Connector	JST SH 1.0mm
PIN#	
1	+5 VDD
2	D-
3	D+
4	GND
5	SHIELD
6	--
7	--
8	--

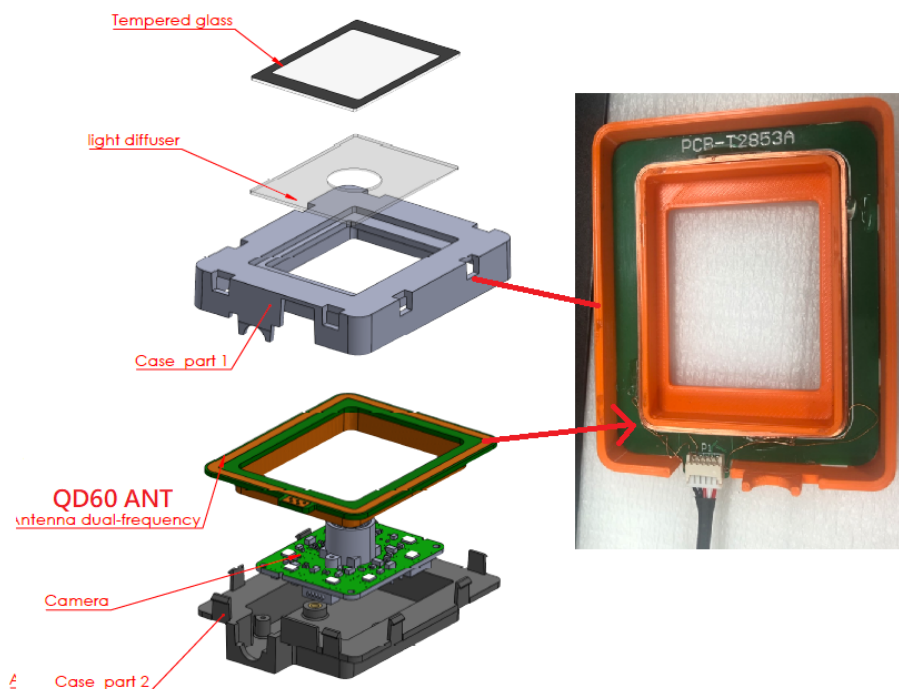
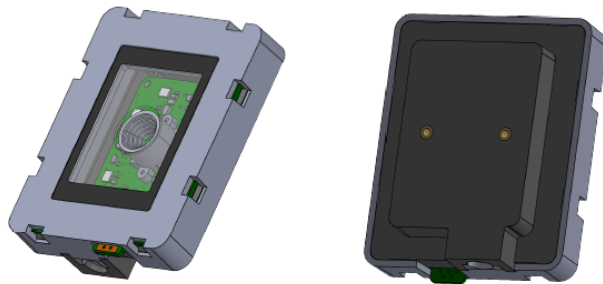
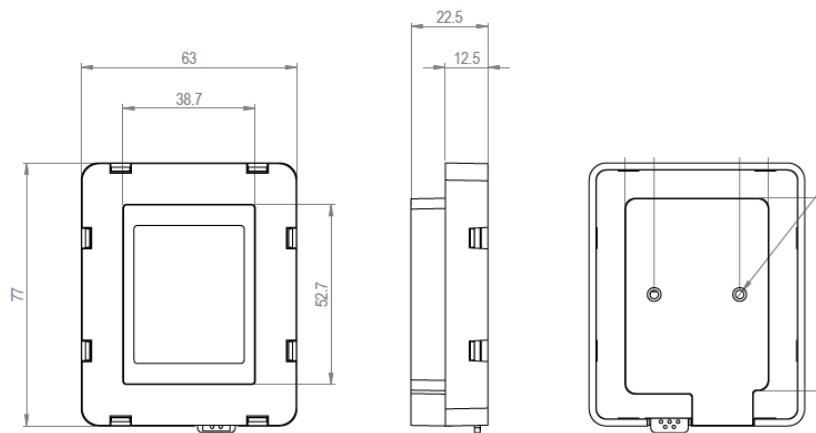
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Antennas installation

Abridged general view QD60 ANT



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INTEGRATION INSTRUCTIONS

1. General:

Sections 2 through 10 describe the items that must be provided in the integration instructions for host product manufacturers(e.g., OEM instruction manual) to use when integrating a module in a host product. This Modular transmitter applicant(GIGATMS) should include information in their instructions for all these items indicating clearly when they are not applicable.

2. List of Applicable FCC Rules:

The product complies with the following FCC rules:

- FCC Part 15B (EMC): Electromagnetic compatibility requirements.
- FCCID: WXAQD60
- FCC Part 15.225: RF power requirements for induction-type wireless systems using the 13.56MHz frequency.
- FCC Part 15.209: RF power requirements for intentional radiators operating in the 125KHz frequency range.

3. Summarize the Specific Operational Use Conditions:

This module needs to supply a regulated voltage from host device.

The QD60 module is designed for mounting inside the end product by our professional team. Therefore, it complies with the antenna and transmission system requirements of § 15.203. Follow the specific operational use conditions provided by GIGATMS for the proper integration and usage of the module.

4. Limited Module Procedures:

To ensure proper operation, the QD60 module requires a regulated voltage supply from the host device. Typically, the host device should provide a power supply within the range of 5V, with 5V being the recommended voltage for this module.

5. Trace Antenna Designs:

The QD60 module comes with a built-in antenna. It is important to note that using antennas from other brands or making modifications to the antenna is not allowed. Follow the antenna integration guidelines provided by GIGATMS to ensure proper performance and FCC compliance.

6. RF Exposure Considerations:

This product, being a low-power consumption consumer wireless device, follows FCC regulations regarding RF exposure. Please note the following guidelines:

a. Specific Absorption Rate (SAR) Testing:

- The product has undergone SAR testing to determine the amount of RF energy absorbed by the human body at various distances.
- The test results ensure that the product operates within FCC limits to prevent excessive RF exposure to users.

b. RF Exposure Distance:

- The product is designed to comply with FCC regulations regarding RF exposure limits at a safe distance from the human body.
- Ensure that users maintain a distance of at least 20 centimeters or more from the product's radiator during installation and operation.

Warning:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. It also complies with the FCC's radio frequency (RF) exposure guidelines. To ensure compliance, the radiator of this equipment should be installed and operated with a minimum distance of at least 20 centimeters from the human body.

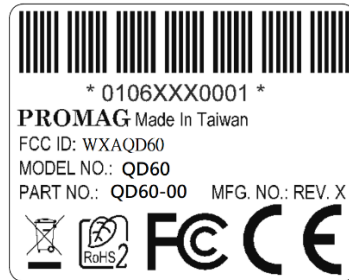
7. Antennas:

Antenna Port	Antenna model Name	Antenna Type	Properties
Chain0	PCB-T2853A	13.56MHz	L=3.4uH
Chain1	ANT-T044	125KHz	L=750uH

Specify that the QD60 module is equipped with its own antenna and emphasize that using other brand antennas or modifying the antenna is strictly prohibited.

8. Label and Compliance Information:

Contains Transmitter Module FCC ID: WXAQD60 or Contains FCC ID: WXAQD60



Include labeling requirements and compliance information as specified by GIGATMS.
Ensure that the product is appropriately labeled with the necessary FCC information and compliance statements.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
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.
The module must be installed in RFID Multi-ISO Protocol Modules.
This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

9. Information on Test Modes and Additional Testing Requirements:

Please check the installation manual first.
Please contact GIGATMS (www.gigatms.com.tw) if you have any questions when conducting the RF certification test on the host.
We (GIGATMS) are ready to present the control manual and others for the RF certification test.

10. Additional Testing, Part 15 Subpart B Disclaimer:

Follow any additional testing procedures and requirements specified by GIGATMS to ensure compliance with FCC Part 15 Subpart B. Include a disclaimer stating that the product complies with the specified requirements.

11. Note EMI Considerations:

Note that a host manufacture is recommended to use KDB 996369 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 D04 Module Integration Guide and for simultaneous mode7; see D02 Module Q&A Question 12, which permits the host manufacturer to confirm compliance.

12. How to Make Changes:

If any changes or modifications need to be made to the integrated product, such as adding or adjusting the antennas or cable, follow the guidelines provided by GIGATMS. Ensure that the changes comply with the original antenna model specifications.

For further assistance or to submit reports/documentation, please contact GIGATMS using the following information:

- Contact: GIGATMS
- Email: [Insert GIGATMS contact email]
- Applicant: GIGATMS
- Address: [Insert GIGATMS address]
- Phone: [Insert GIGATMS contact number]

Note: The integration instructions should be tailored to your specific product and compliance requirements as guided by GIGATMS.

LIMITED WARRANTY

Giga-Tms warrants that the products sold pursuant to this Agreement will perform in accordance with Giga-Tms's published specifications. This warranty shall be provided only for a period of one year from the date of the shipment of the product from Giga-Tms (the "Warranty Period"). This warranty shall apply only to the "Buyer" (the original purchaser, unless that entity resells the product as authorized by Giga-Tms, in which event this warranty shall apply only to the first re-purchaser).

During the Warranty Period, should this product fail to conform to Giga-Tms's specifications, Giga-Tms will, at its option, repair or replace this product at no additional charge except as set forth below. Repair parts and replacement products will be furnished on an exchange basis and will be either reconditioned or new. All replaced parts and products become the property of Giga-Tms. This limited warranty does not include service to repair damage to the product resulting from accident, disaster, unreasonable use, misuse, abuse, negligence, or modification of the product not authorized by Giga-Tms. Giga-Tms reserves the right to examine the alleged defective goods to determine whether the warranty is applicable. Without limiting the generality of the foregoing, Giga-Tms specifically disclaims any liability or warranty for goods resold in other than Giga-Tms's original packages, and for goods modified, altered, or treated without authorization by Giga-Tms.

Service may be obtained by delivering the product during the warranty period to Giga-Tms (8F No. 31 Lane 169, Kang Ning Street, Hsi Chih Dist New Taipei City, Taiwan). If this product is delivered by mail or by an equivalent shipping carrier, the customer agrees to insure the product or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or equivalent. Giga-Tms will return the product, prepaid, via a three (3) day shipping service. A Return Material Authorization ("RMA") number must accompany all returns. Buyers may obtain an RMA number by contacting with sales@gigatms.com.tw

EACH BUYER UNDERSTANDS THAT THIS GIGA-TMS PRODUCT IS OFFERED AS IS. GIGA-TMS MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND GIGA-TMS DISCLAIMS ANY WARRANTY OF ANY OTHER KIND, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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LIMITATION ON LIABILITY

EXCEPT AS PROVIDED IN THE SECTIONS RELATING TO GIGA-TMS'S LIMITED WARRANTY, GIGA-TMS'S LIABILITY UNDER THIS AGREEMENT IS LIMITED TO THE CONTRACT PRICE OF THIS PRODUCT.

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Federal Communication Commission Interference Statement

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 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.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

The module must be installed in RFID Multi-ISO Protocol Modules.

IMPORTANT NOTE:

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

The final end product must be labeled in a visible area with the following: "Contains FCC ID: WXAQD60

Manual Information to the End User

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.

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