Nidec
All for dreams

Product Manual

Type Name :

ICM0M0-209

Spec. No.	ASR-NP-40951-21

Notes :

No. of sheet

		Sym.	Revision		Page	Cha. No.	Date	By	Appr.
				Reference Document					

Custody

Type	Name	Appro.	J.Takeuchi	2025.04.18

NIDEC INSTRUMENTS CORPORATION

Contents

Revision History

Rev.	Date	Editor	Description	page
A	2025.04.18	J.Takeuchi	Draft	—

1   Model Name

ICM0M0-209

2   Introduction

This model operates in response to commands via the HOST and serial interface, and responds with operation results in response.
This model can handle contactless IC cards.
In addition to relaying commands received from the HOST to the NFC module, the card reader also executes the DUKPT function and notifies the HOST.

3   Function

3.1 Proximity contactless IC card communication
ISO/IEC 14443   (Part1:2018,Part2:2016,Part3:2018,Part4:2018)
- TypeA
- TypeB
EMV Ver 3.1

3.2 Carrier frequency
13.56MHz

3.3 LED indication
EMV : Ready / Process / Complete / Error

3.4 SAM

ISO/IEC 7816   (Part1:2011,Part2:2007,Part3:2006)

3.5 Host Interface

USB 2.0 HID class

4   Useable Card

ISO/IEC 14443 TypeA,TypeB

5   Specification

5.1 USB interface

USB Type Mini-B
  Ready : Less than 200mA (Excluding inrush current)
  Run : Less than 500mA (Excluding inrush current)

5.2 SAM Socket

Micro SIM (3FF) 6 pin ×1

5.3 Weight

Approx 60 g

5.4 Certification

EMV
  Contactless Terminal Level 1, Level 2

6   Environmental Conditions

6.1 Operating temperature and humidity
     -10~+60 degrees, 30%~80%RH
     Note) The highest wet bulb temperature is +29 degrees, no dewing

6.2 Storage temperature and humidity
     -20~+70 degrees, 30%~80%RH
     Note) Storing this product for 12 hours at the normal conditions
         without any operation after keeping it at this condition without operation,
         no functional failure is found.

6.3 RoHS DIRECTIVE
     RoHS compliance

7   EMC

7.1 FCC Part15 compliance
     FCC ID: 2BOKGICM0M0005
     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.

     Nidec Instruments (America) Corporation
     Address: 275 Northridge Drive, Shelbyville, IN 46176 United States
     TEL: +1 317 421-2220

     FCC CAUTION
     Changes or modifications not expressly approved by the party responsible for
     compliance could void the user's authority to operate the equipment.

     Note:
     This equipment has been tested and found to comply with for a Class A
     digital device,pursuant to part 15 of the FCC Rules.
     These limits are designed to provide reasonable protection against harmful
     interference when the equipment is operated in a commercial environment.
     This equipment generates, uses, and can radiate radio frequency energy and,
     if not installed and used in accordance with the instruction manual,
     may cause harmful interference to radio communications.
     Operation of this equipment in a residential area is likely to cause harmful
     interference in which case the user will be required to correct the interference
     at his own expense.

This transmitter must not be co-located or operated in conjunctiion with any other antenna or transmitter.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines.

This equipment must be installed and operated keeping the radiator at least 20 cm or more away from person's body.
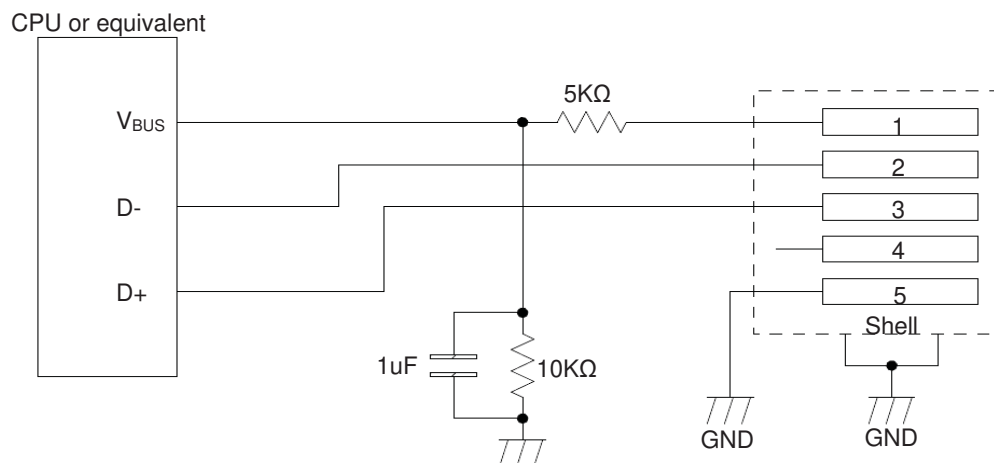

7.2   IEC/EN 61000-4-2
        (Electrostatic Discharge immunity)

7.3   IEC/EN 61000-4-4
        (Electrrical fast transient/ burst immunity)

7.4   IEC/EN 61000-4-6
        (Conducted disturbances induced by radio-freq.fields)

7.5   IEC/EN 61000-4-8
        (Electrrical Discharge)

8   Interface Specifications

8.1 USB I/F Connecter (USB:Mini-B)
            USB2.0 Full-Speed (12Mbps)

        USB Input / Output

8.2 Power requirement

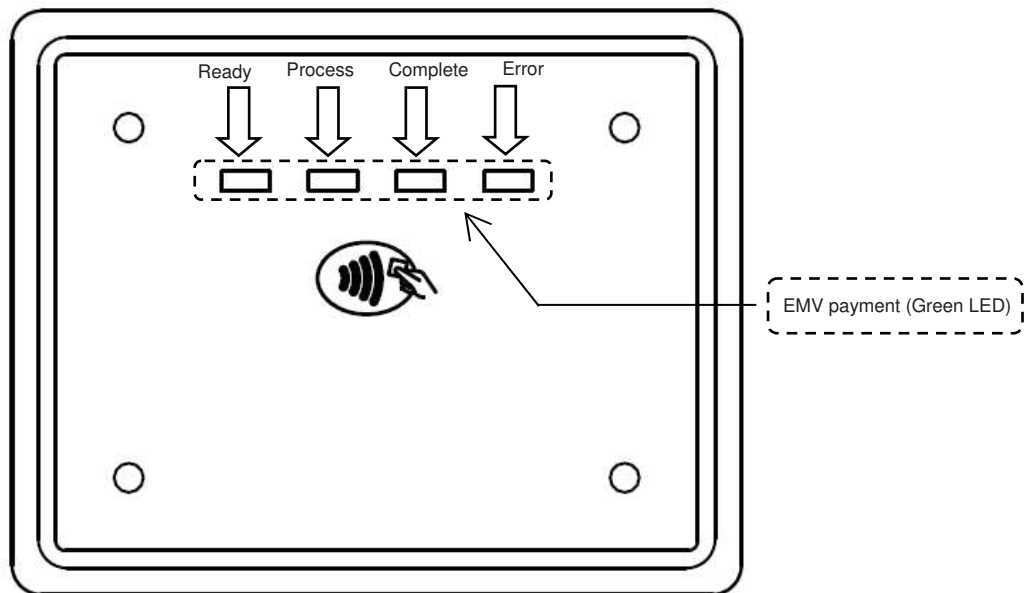   USB (High power device)

        D.C. +5V (+4.75~+5.25V)

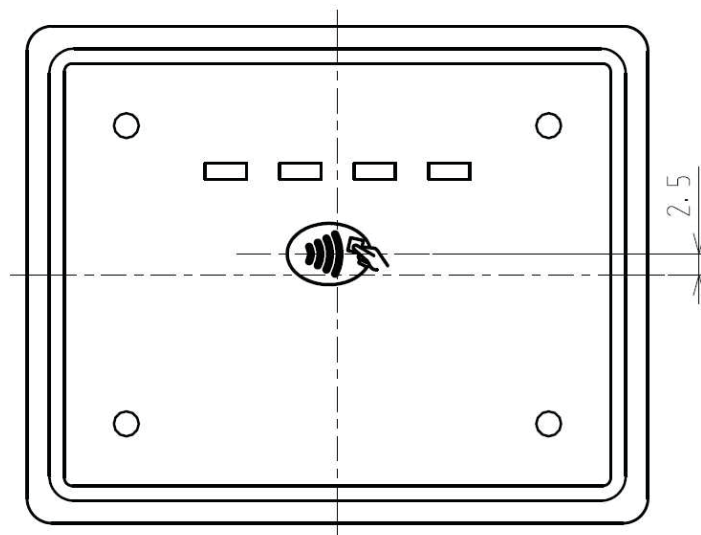   Ripple: Max.100mVp-p

8.3 USB Signal level

PARAMETER	H	L	CONDITIONS
Output	2.8 V min	0.3 V max	Voh:RL=15KΩ to GND Vol:RL=1.5KΩ to 3.6V
Input	2.0 V min	0.8 V max	RL=1.5KΩ to 3.6V

9 LED

9.1 LED indicator

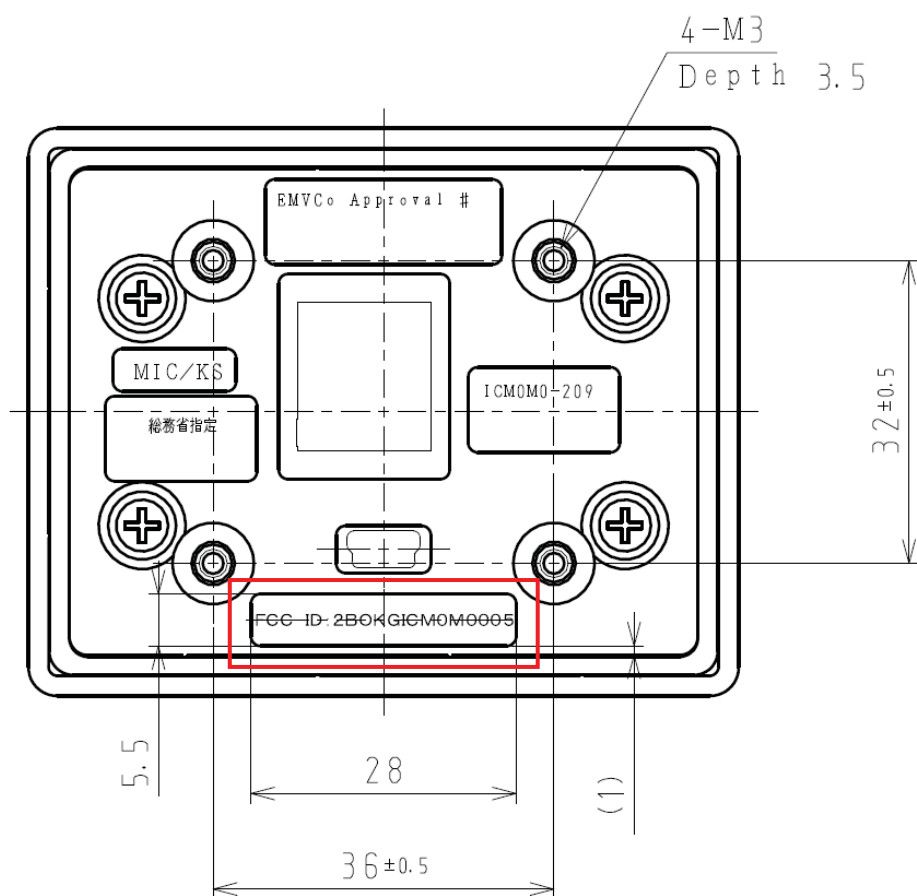Ready   Process   Complete   Error

EMV payment (Green LED)

9.2 Symbol mark position (EMVCo)

2.5

※ The product is installed in the orientation shown in the above figure
     when viewed from the user's perspective.

10 LABEL

The labels are applied below (Red frame)

FCC ID character size is 1.5 [mm]

11 Notes

11.1   Standard Condition
     Temperature :23±3 degrees (EMVCo Test condition)
     Humidity   :40%~60% RH
     Posture :Horizontal

11.2   Specific evaluation methods, standards, quality assurance, etc. for characteristics will be determined in a separate contract.

11.3   Generally, NFC device is products that is susceptible to external influences.
    Therefore, careful attention must be paid to the installation location.
    - A placement that is not affected by metal is recommended.
    - A placement that is not affected by external noise is recommended.

11.4   Agreements regarding industrial property rights, know-how, etc. are stipulated in the general sales contract.

11.5   In principle, maintenance is carried out by the supplier. However, if a collaborator is needed due to an emergency, we will discuss separately.

11.6   Confirmation before operation
Before using this product, please confirm that there are no problems with its operation under the expected conditions at the installation location (actual use card/contaminated environment, etc.)

11.7   What to do if the returned item cannot be recovered
If the returned item cannot be recovered, the encryption key will be deleted and the item will be disposed of.

12 Trademark

- EMV is a registered trademark of EMVCo, LLC, registered in the United States and other countries.
- The R mark (Registration Symbol) is not specified in the text.