

TENTATIVE

User manual
For WPS NFC READER/WRITER
ICT-3153

FUJIFILM Imaging Systems Co., Ltd.

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TENTATIVE

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1 . Scope

This document applies to the user manual for the contactless IC card reader/writer ICT-3153.

2 . Overview

The product is a compact, low-power-consumption reader/writer with USB interface.

The product is provided with a USB interface; through control from a host controller, it can transmit and receive data to and from many types of contactless IC cards and tags.

3 . Company name

Company name: FUJIFILM Imaging Systems Co., Ltd.

4 . Model name

Model name: ICT-3153

5 . How to use for normal operation

5-1. Installation of a device driver

When you use this product for the first time, it is necessary to install required software, such as a device driver, in PC used.

Please install in the following procedures.

Installation procedure

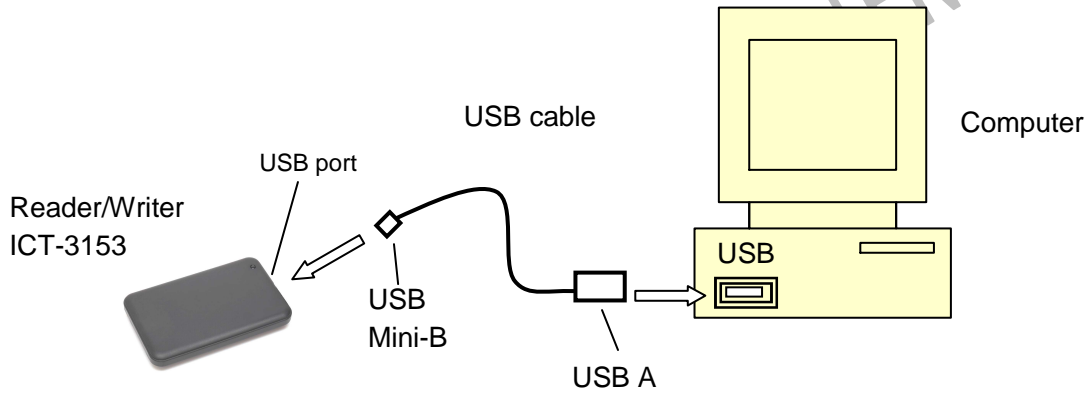
- 1) Start a computer.
- 2) Log on by account with administrator authority (Administrators).
- 3) Terminate all other applications under starting.
When virus checking software etc. have started, it may be unable to install correctly.
- 4) Start an installer from the folder in software CD-ROM.
 - * Computer OS is 32bit OS:
Double click "setup.exe" in "x86" folder.
 - * Computer OS is 64bit OS:
Double click "setup.exe" in "x64" folder.
- 5) After processing of an installer is completed, connect this product to the USB port of a computer with the USB cable of appended goods.

Installation of a device driver is completion in the above operation.

For details, please refer to "ZSD300-004 NFC reader writer setup procedure" in attached CD-ROM.

5-2. Connect product to computer

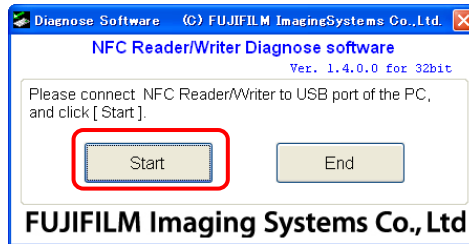
- 1) Connect USB mini-B connector of an attached USB cable to USB port of product.
- 2) Connect USB A connector of an attached USB cable to USB port of computer.



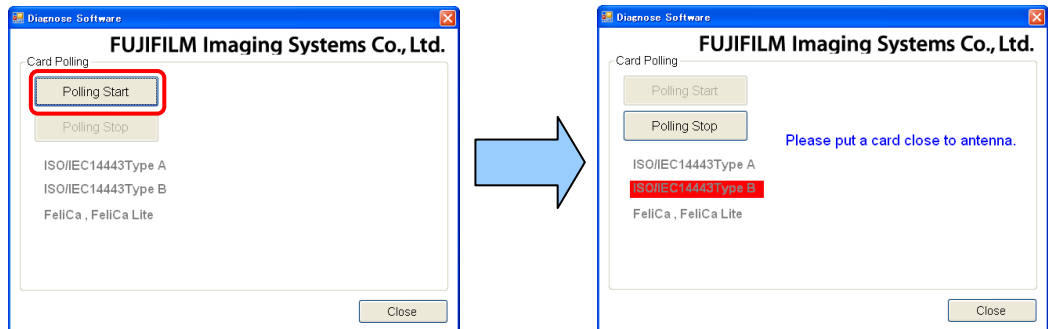
5-3. Checking of operations of a product

- 1) Start a diagnose software.
Double click "Diagnose_Software.exe".

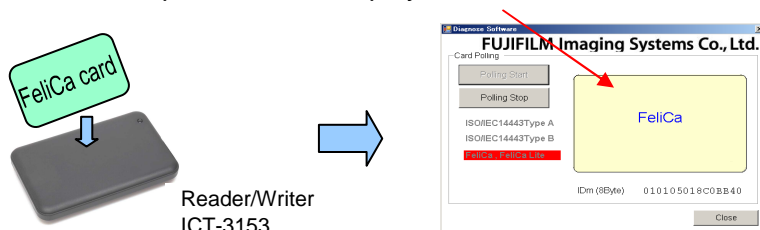
- 2) Click "Start" button.



- 3) Click "Polling Start" button.



- 4) Set "FeliCa card" on a product, then display "FeliCa" .



6 . Safety instruction (Caution & warning confirmation)

- 6-1. The product must be evaluated and verified in the final use environment as operationally required. The product uses a high-frequency magnetic field to communicate with contactless IC cards. This means that the characteristics of the communication with cards depend on the ambient noise and/or electromagnetic environment including metals.
- 6-2. The product must be evaluated and verified in the final use environment as operationally required. A transceiver, motor, monitor, power supply or any other device, which generates noise if located near the product, may affect operation of the product.
- 6-3. As communication equipment, the product uses 13.56 MHz radio waves, which are within the ISM (Industrial Scientific Medical) band for public use. For this reason, it may cause interference depending on how and/or where it is used. To reduce the effect of interference, the installation must be mutually checked to a sufficient degree before it is used. If precision equipment, or the like, which is susceptible to radio waves is brought close to the product, then such equipment may malfunction or suffer a breakdown. In actual use, such equipment should not be brought close to the product or it should be shielded, for example, so that it is ensured that it is not adversely affected by radio waves. The product may affect radio astronomy, medical devices, and other sensitive equipment; if the product is used for these purposes, particular attention must be paid.
- 6-4. The product is a board-type module intended to be embedded into other devices. It must be safeguarded by installing a protective cover to ensure that no electronic part comes in contact with the human body.
- If an electronic part of the product is touched by human hands or the like, an electric shock, burn, or failure may be caused.
- 6-5. The product is a board-type module. In an environment where static electricity may be applied, the product must be safeguarded by covering it with an insulating sheet to avoid static electricity application. Static electricity, if applied to the product, may cause a breakdown or the like.
- 6-6. To connect power or a host controller to the product, it must be properly connected in accordance with this specification. Incorrect product connection wiring or power supply voltage causes a breakdown, fire, electric shock, or the like.
- 6-7. To prevent static electricity from being applied to the product, the electricity must be removed from charged workers before the product is installed and cabling is carried out. Static electricity, if applied to the product, may cause a breakdown or the like.
- 6-8. The connector of the product must be inserted or removed with power turned off. Inserting or removing the connector of the product with power turned on causes an electric shock, malfunction, breakdown, or the like.

- 6-9. The product is a board-type module. It must be safeguarded by installing a protective cover before it is used to prevent dirt, moisture, metal, or the like from adhering to the product. Dirt, moisture, metals, or the like, if adhered to the product, causes a breakdown, fire, or electric shock.
- 6-10. Attention should be paid to ensure that the product is not used in a place where the difference between the highest and lowest temperatures is large and that it is not exposed to steam or the like. Failure to observe this causes product failure, electric shock, or the like.
- 6-11. The product must not be used in an environment where it is exposed to organic solvents, oils, water, or the like. Failure to observe this causes product failure, ignition accident, or the like.
- 6-12. The product must not be used in an environment where a corrosive, noxious, or flammable gas or the like exists. Failure to observe this causes product failure, ignition accident, or the like.
- 6-13. Although we strive to increase the quality and reliability, system measures, including a fail-safe mechanism, must be implemented to ensure that no product failure or operation directly threatens lives, does harm to the human body, or leads to a large loss of property.
- 6-14. It should be noted that if, for example, production of an electronic part mounted on the product is ceased, then the product specifications may be changed or the production of it may be discontinued.
- 6-15. It should be noted that in no case will we be liable for direct and indirect losses or influences (including losses of business profits and losses caused by disruption to operations, etc.) resulting from the use of this specification and product.

12-16. FCC NOTICE

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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

7 . Specification

7-1. Hardware Specification

7-1-1. Appearance	See Attached Drawing 1
7-1-2. Dimensions	97 +/- 0.5 x 60 +/- 0.5 x 12.5 +/- 0.5 mm (Not including protrusion)
7-1-3. Weight	Approximately 35 grams
7-1-4. Power Supply Voltage	USB Bus-powered +5 VDC +/- 5% (with a ripple voltage of 50 mV or less)
7-1-5. Consumption Current	1) During a carrier halt: 50 mA (max.) 2) During carrier output: 250 mA (max.) 3) In energy saving mode: 0.5mA (max)
7-1-6. Temperatures	1) Operating temperature range: 0 ~ +40 °C 2) Storage temperature range: -20 ~ +60 °C
7-1-7. Humidity	1) Operating humidity range: 20 ~ 85%RH (Non Condensing) 2) Storage humidity range: 20 ~ 85%RH (Non Condensing)
7-1-8. Resistance to Vibration	Vibration frequency: 10 ~ 55 Hz Cycle: 20 cycles Sweep speed: 1 octave/min Amplitude or Acceleration: 0.35 mm (half-amplitude) or 50 m/s ² Direction x, y, z : 3 direction No part breakage, dropping, or the like that impairs functionality must be detected.
7-1-9. Resistance to Impact	Peak acceleration: 500 m/s ² Time: 11 ms Pulse shape: Sine half wave Direction: +/-x, +/-y, +/-z (6 times in total) No part breakage, dropping, or the like that impairs functionality must be detected.

7-1-10. Approvals

Radio Act for Japan

Internal reader/writer module: Type Certification No.: AC-14051
FCC

This product is conform to the FCC standards.

FCC Rules (Federal Communications Commission)

This product complies with Part 15 Subpart C of the FCC Rules.

FCC ID : W2Z-03000001

FCC NOTICE

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.

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7-1-11. RoHS

Compatible with RoHS (Restriction of Hazardous Substances)
(2002/95/EC)

7-2. USB Interface

1) Interface

Universal Serial Bus Specification Revision 2.0

2) Data Flow Types

Controlled Transfer / Bulk Transfer

3) Transfer rate

12 Mbps

4) Power Supply

USB Bus-powered

5) Connector

* Model No.: 10057202-R01LF

* Supplier: FCI

6) Connector Pin assigns

Pin #	Signal Name	Remarks
1	VBUS	Power (+5 V +/- 5%)
2	D-	Data signal
3	D+	Data signal
4	GND	Ground
5	Reserved	Not to be connected
6	GND	Ground

7) Control Library and Device Driver

A purpose-built device driver and library are used to exercise control.
The details are defined in the API specification.

7-3. Communication Method

		ISO/IEC 14443 Type A	ISO/IEC 14443 Type B	ISO/IEC 18092 FeliCa
Bit coding	Transmit	Modified Miller	NRZ	Manchester
	Receive	Manchester	NRZ	Manchester
Modulation type	Transmit	ASK 100%	ASK 10%	ASK 10%
	Receive	OOK	BPSK	ASK
Carrier frequency		fc=13.56MHz Subcarrier fc/16=847kHz	fc=13.56MHz Subcarrier fc/16=847kHz	fc=13.56MHz
Data speed		106kbps(fc/128)	106kbps(fc/128) 212kbps(fc/64) 424kbps(fc/32) 847kbps(fc/16)	212kbps(fc/64) 424kbps(fc/32)

7-4. Supported contactless IC card types

- 1) ISO/IEC14443 Type A
 - MIFARE DESFire
 - MIFARE Classic1K/4K
 - MIFARE Ultralight
 - MIFARE Ultralight C
 - my-d move
- 2) ISO/IEC14443 Type B
 - FUJIFILM Imaging Systems Co., Ltd. original Type B card
- 3) ISO/IEC18092
 - FeliCa
 - FeliCa Lite
 - FeliCa Lite-S- FeSCa Series (FeliCa Lite-S)

Notes:

- 1) In some cases, even the cards shown above are incapable of providing proper or stable communications. It must be completely ensured in advance that the desired IC card works properly in the environment where it will be embedded.
- 2) Some types of IC cards may be incapable of providing proper communications near the antenna surface. If this is the case, possible attempts must be made to achieve proper communications, perhaps by separating the control panel on the mounting case from the antenna surface.

- * MIFARE is a registered trademark of NXP Semiconductors.
- * FeliCa is a registered trademark of Sony Corporation.
- * FeliCa is a technique developed by Sony Corporation for contactless IC cards.
- * My-d is a trademark or a registered trademark of Infineon Technologies.
- * FeSCa is a registered trademark of FUJIFILM Imaging Systems Co., Ltd.

8 . Warranty

8-1. Warranty

The warranty period shall be 15 months after delivery; provided that the product is used under normal conditions according to this specification. Should a failure occur under normal use during the period, the product will be replaced at no charge. Even during the warranty period, the following problems shall be remedied at cost.

- 1) Failures caused by improper handling or use not compliant with this specification.
- 2) Problems caused by an undue repair or modification not conducted by us.
- 3) Failures and/or damage caused by transportation, dropping, or the like after the delivery
- 4) Failures and/or damage resulting from a fire, earthquake, abnormal voltage, or any other act of God
- 5) Other failures and/or damage that are not considered attributable to us.

9 . Attached goods and packing

9-1. Attached goods

Attached goods are as follows.

No.	Item	Qty	Comment
1	USB cable	1	Approximately 1m length
2	IC Card Holder	1	
3	Manual	1	
4	CD-ROM	1	Include Device Driver, etc.

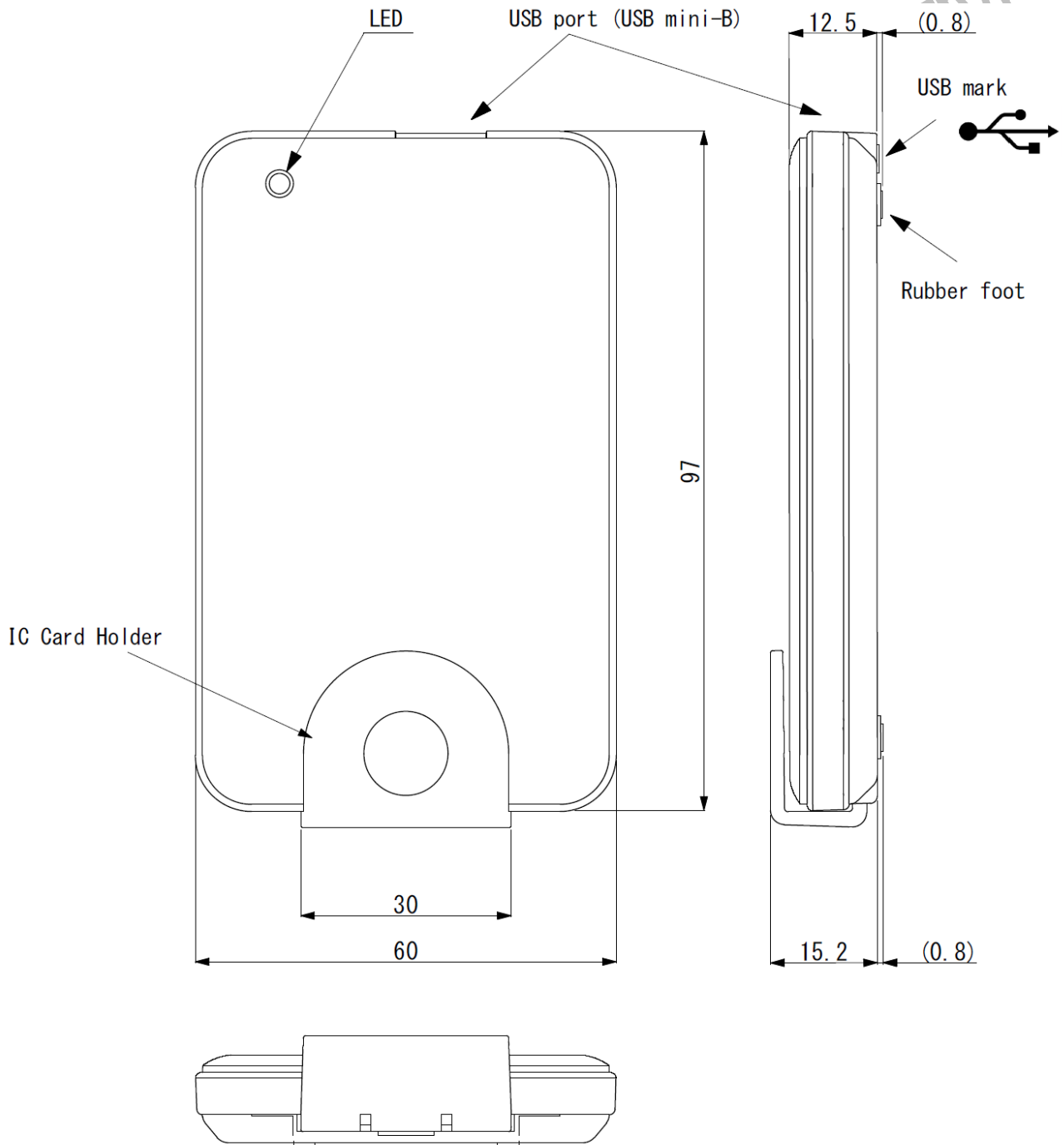
9-2. Packing


See Attached Drawing 2 and Drawing 3.

10 . Other

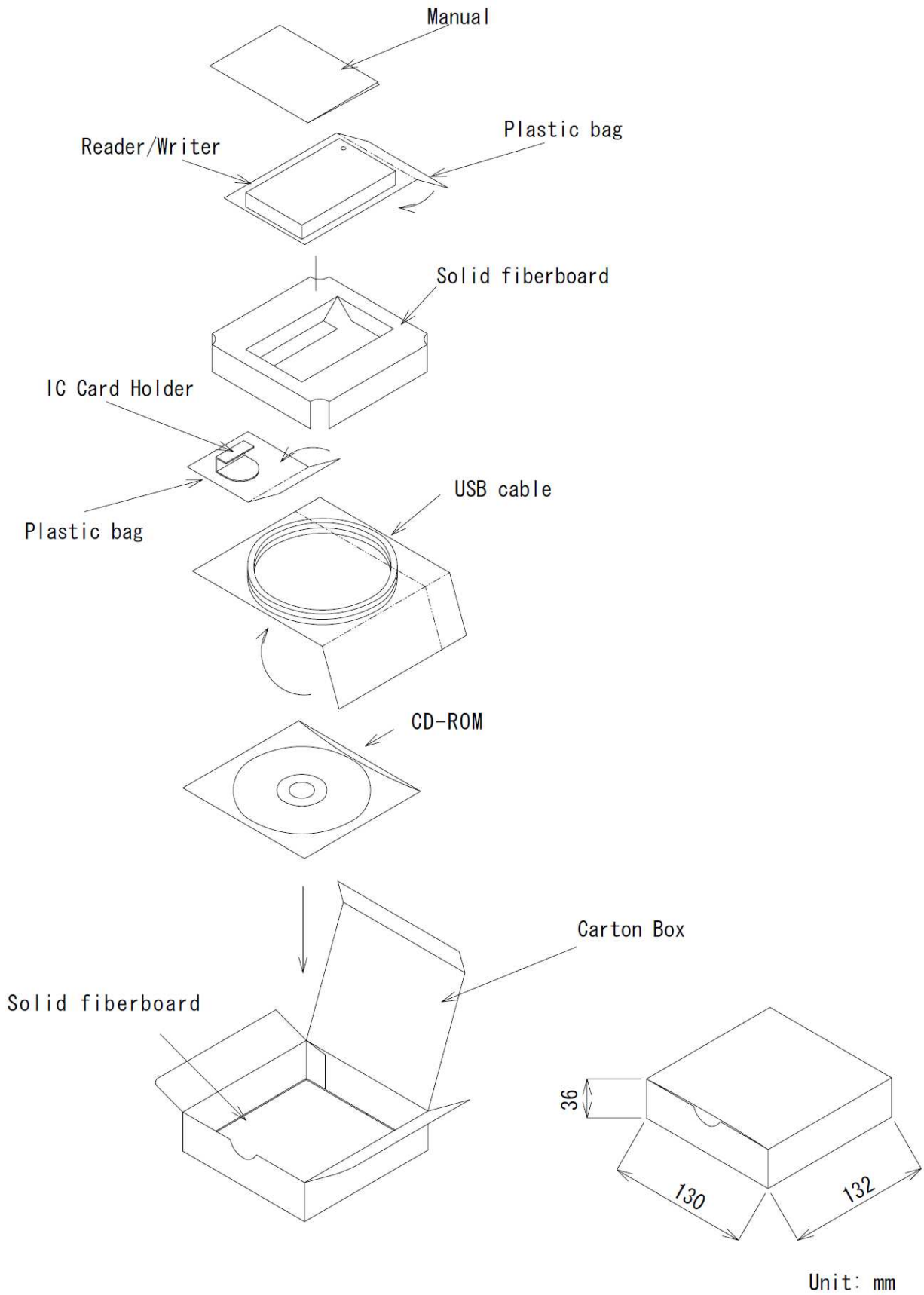
If a question arises in regard to this specification, it shall be promptly solved by mutual consultation.

Attached Drawing 1: Reader/Writer Appearance



NOTE
 Unit : mm
 General tolerance : +/- 0.5
 figure in parenthesis : reference dimension
 THIRD ANGLE PROJECTION 

Attached Drawing 2: Unitary Packing



Attached Drawing 3: Packing

