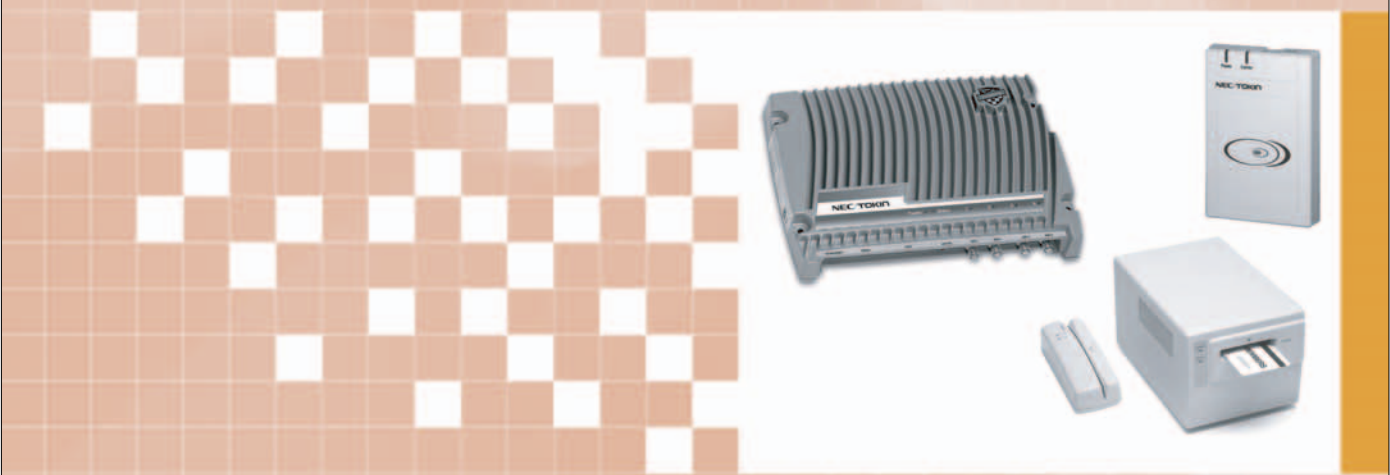


IC Card / Tag & Magnetic Card Reader Writer Terminals

IC Card Reader



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- Before using the product in this catalog, please read "Precautions" and other safety precautions listed in the printed version catalog.

Precautions Before Use

1. General

To obtain optimum performance from this unit, please read the catalog, specification sheet, and operation manual thoroughly prior to installation and use.

2. Safety Precautions

- (1) DO NOT remove the cover as the unit contains sharp blades and injury may result.
- (2) DO NOT install the unit in dusty, humid locations, or where the unit might be exposed to water soot or direct sunlight. This may result in fire and malfunction.
- (3) Should foreign bodies (metal fragments, water, liquids) enter the unit, pull out the interface connector and contact your NEC TOKIN representative. Continued use of the unit may result in fire.
- (4) Should abnormalities occur, e.g. unusual heat generation, smoke, or foul smells, immediately pull out the interface connector and contact your NEC TOKIN

representative. Continued use of the unit may result in fire.

- (5) DO NOT power the unit at voltages other than those specified.
- (6) DO NOT perform any modification on the unit as this may result in fire and malfunction.
- (7) Collisions and falls may result in damage to parts. Use special care during transfer.

3. Repair

You will be charged for all repairs on products whose warranty period has expired.

4. Handling of Magnetic Cards

DO NOT damage, soil or transform magnetic cards, or bring a card near a magnetic source as this may impair the card's reading capability.

5. RoHS

Please contact NEC TOKIN for individual card reader's RoHS compliance.



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Products Lineup

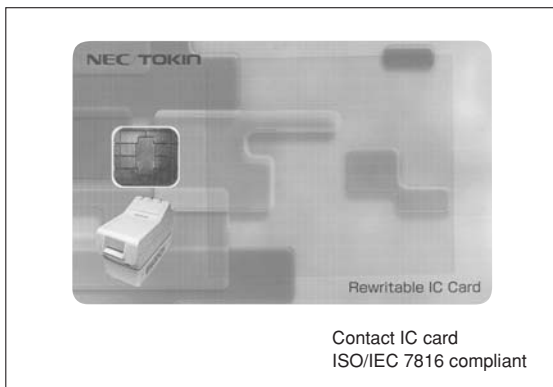
Magnetic Card Readers Terminals

Model	Cards Operating	Usable Cards				Interface	Power Supply	Features
		JIS II	JIS I (ISO)					
			TRACK-1	TRACK-2	TRACK-3			
MCT-6501	Auto	R/W				RS-232C	AC 100V	RoHS Compliant
MCT-5501		R						
MCT-1800	Manual	R				RS-232C	AC 100V (AC Adapter) or PC (Keyboard/Mouse) * MCT-1600:PC (Keyboard/Mouse)	
MCT-1970		R	R	R				
MCT-1808		R				USB	USB	
MCT-1778		R	R	R				

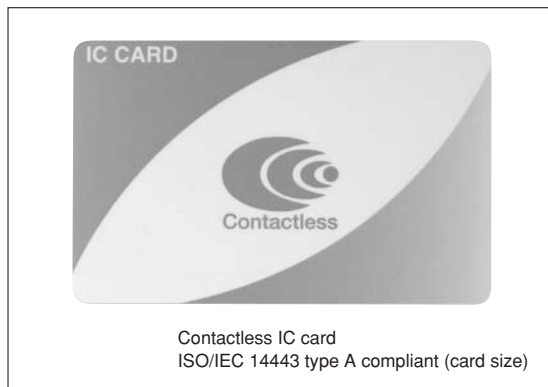
* R:Read W:Write



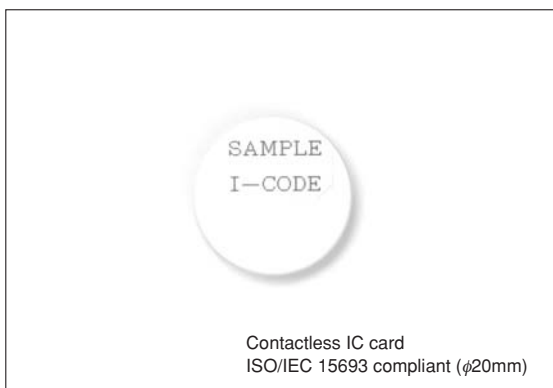
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Contact IC card
ISO/IEC 7816 compliant



Contactless IC card
ISO/IEC 14443 type A compliant (card size)



Contactless IC card
ISO/IEC 15693 compliant (φ20mm)



Contactless IC tag
ISO/IEC 15693 compliant (sticker size)

IC Cards

System	Conformity standard	Frequency	CPU	Memory capacity	Shape	Part number
Contact	ISO/IEC7816	3.57MHz	Available	4k byte	Card size	CCI504S
Dual Interface	ISO/IEC7816, Conform for ISO/IEC 14443 Type B	3.57MHz 13.56MHz	Available	8k byte	Card size	Dual Interface card

RFID

System	Conformity standard	Frequency	CPU	Memory capacity	Shape	Part number
Contactless		125kHz	Available	140 byte	Coin type	LCS3 Series
	Conform for ISO/IEC 14443 Type B	13.56MHz	Available	8k byte	Card size	TypeB
	Conform for ISO/IEC 14443 Type A	13.56MHz	Not available	1024 byte	Card size, Half, Mini Seal, 20φ, etc, Various kinds	MIFARE
	Conform for ISO/IEC 15693	13.56MHz	Not available	128 byte 320 byte / 1280 byte		I-CODE SLI
	HITAG1	125kHz	Not available	256 byte	Card size, 20φ, etc.	HITAG1
	HITAG2			32 byte		HITAG2

*We can also custom-make card dimensions and specifications. For details, consult your NEC TOKIN sales representative.

Note 1 : I-CODE SLI®, MIFARE®, HITAG™1, HITAG™2 are trademarks of Koninklijke Philips Electronics N.V.

Note 2 : my-d is the registered trademarks of Infineon Technologies AG.



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RFID Reader Writer ICT-3036-1



Features

- Single unit supports four different card standards.
 1. ISO14443 Type A (mifare®)
 2. ISO14443 Type B (NEC TOKIN standard card)
 3. ISO15693
 4. FeliCa® (planned)
- Thin and lightweight.
- USB interface.
- Power source not required (supplied via USB bus).

Applications

- Room access control
- Employee identification/presence management
- Conference-room reservation/cafeteria payment
- Security (PC login, personal identification, access restrictions, card keys)

Brief product specifications

ICT-3036-1	
Support IC card standards	1. ISO14443TypeA (mifare®) 2. ISO14443 Type B (NEC TOKIN standard card) 3. ISO15693 4. FeliCa® (planned)
Carrier frequency	13.56 MHz
Communication range (reference)	1. ISO14443TypeA (mifare®) : About 20 mm 2. ISO14443 Type B (NEC TOKIN standard card) : About 10 mm 3. ISO15693 : About 50 mm 4. FeliCa® : About 20 mm (planned)
Interface module	USB 2.0 Communication speed: 12 Mbps (full speed) Connector: USB mini B
Applicable standard	Radio Law (inductive reader/writer communications equipment)
External dimensions	120(H) x 80(W) x 14(D) mm
Weight (main unit)	Approx. 120 g
Power voltage	+5 V DC ±5% (ripple no greater than 50 mV) USB bus power
Current consumption	1. Carrier stopped: 100 mA (max.) 2. Carrier output: 250 mA (max.) 3. Sleep mode: 50 mA (max.)
Environmental parameters	0-40°C, 20-85% RH (no condensation)
Supplied parts	1. One (1) USB cable (approx. 1 m) 2. CD-ROM (USB driver) * Only when specified

This product is classified as inductive reader/writer communications equipment under the High Frequency Equipment section of Japan's Radio Law. It has a built-in reader/writer module* approved by the Ministry of Internal Affairs and Communications. * Built-in reader/writer module: ICM-3014-B (certification number: IC-05004)

Note 1: The reference communication ranges are measurements using our standard IC cards in a standard environment, with normal temperature and humidity, and using rated voltage. These values are not guaranteed. You should fully test your cards in the environment where they will be used.

Note 2: Although we have confirmed operation, we do not guarantee that the USB interface will work with all personal-computer environments. You should test it with your system environment.

* mifare® is a registered trademark of Royal Philips Electronics. * FeliCa® is a registered trademark of Sony Corporation



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Contactless IC Card Room Entry / Exit Control System ISZ-0031



ICT-3036-1



ICZ-0030

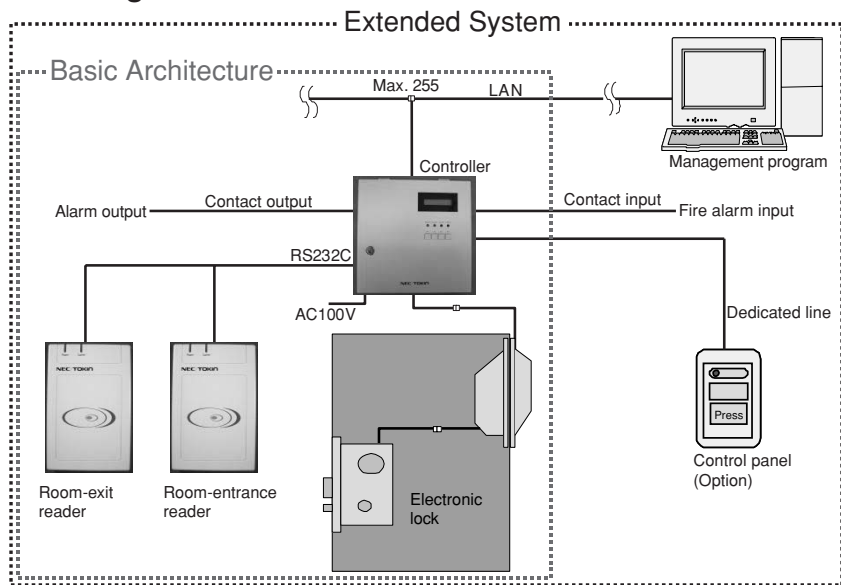
Features

- Controls room access by authenticating information registered on IC card with information registered on controller, and engaging/disengaging electronic lock.

Applications

- Use of IC cards makes it possible to provide highly secure systems.
- Supported IC card standards: ISO/IEC14443 Type A (mifare®)/TypeB, ISO/IEC15693, FeliCa® (planned).
- System can be extended through connection of optional devices to controller.
- Use PC management program (sold separately/under development) to control access status of all rooms from a single computer via LAN connection.
- Maximum number of accounts: 5,000;
- Maximum control log size: 100,000 entries.

Product Image

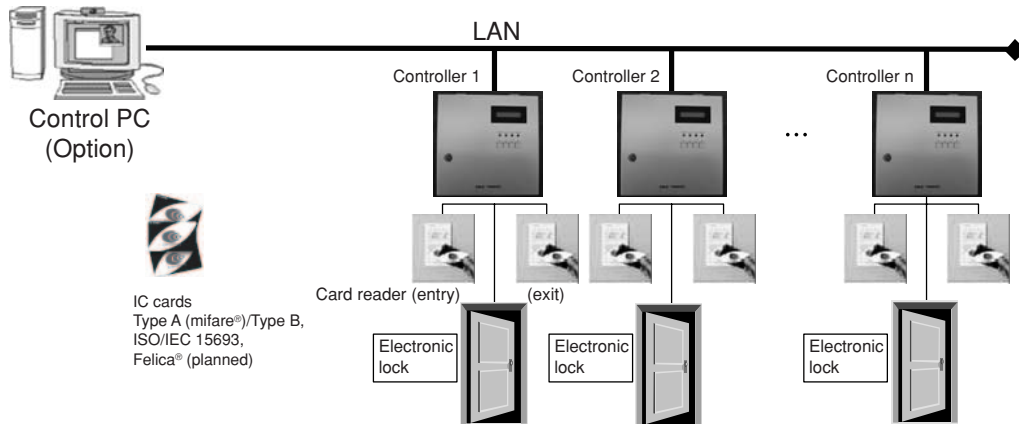


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Brief product specifications

Controller: ICZ-0030	
Number of connected card readers	2 (one each for entry/exit) * ICT-3036
Maximum gates controlled	255
Maximum number of accounts	5,000
Maximum control-log size	100,000 entries
Electronic lock	Lockset that is opened/closed when power is ON Lockset that is activated by momentary-current Motorized lockset
Host interface	LAN (10BASE-T) 1 ch
Control panel connection	1 ch
External contact I/O	Fire alarm input (1 ch); alarm output (1 ch)
Biometric authenticator connection	RS232C, 1 ch (option)
External dimensions	250(H) x 250(W) x 50(D)mm
Power source	AC 100 V
Environmental parameters	0-45°C, 20-85% RH (no condensation)

Schematic of system architecture



Notes:

- 1. This catalog shows artists' renderings of products currently under development. They may differ from mass-produced products.
- * mifare® is a registered trademark of Royal Philips Electronics.
- * Felica® is a registered trademark of Sony Corporation

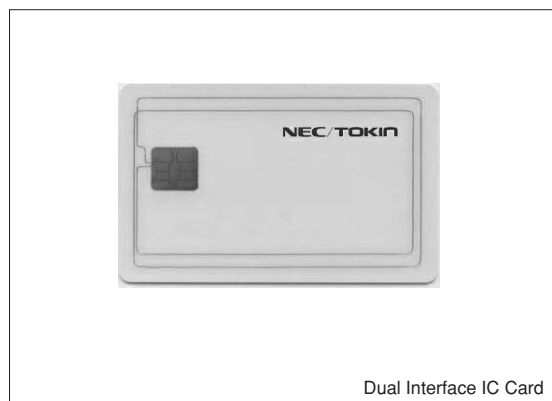


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IC Card



Contact IC Card



Dual Interface IC Card

Specifications

● Contact IC Card

CCI504-S	
Compliant Standard	ISO / IEC7816 JICSAP
CPU	included
Memory capacity	4k byte
Features	<ul style="list-style-type: none"> • ISO / IEC7816 Contact type • DES coding algorithm hardware built in.

● Dual Interface IC Card

Dual interface card	
Compliant Standard	ISO / IEC7816 ISO / IEC14443 TypeB compliant
CPU	included
Memory capacity	8k byte
Features	<ul style="list-style-type: none"> • ISO / IEC14443 TypeB • DES coding algorithm hardware built in.

*We can also custom-make card dimensions and specifications.
For details, consult your NEC TOKIN sales representative.



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RFID



Features

- Various size and shape available besides card size such as small tag, coin shape and sticker size.
- High security is achieved by built in DES coding algorithm hardware. (type B)
- Food hygiene law of Japan compliant (LCS3 series)

Applications

- Security system, ID certification, customer control, logistics and restaurant payment system.

Specifications

● RFID

	LCS3 Series	Type B	MIFARE®	I-CODE SLI®	HITAG™1 / HITAG™2
Compliant standard	Original	ISO/IEC14443 Type B	ISO/IEC 14443	ISO/IEC 15693	Original
CPU	equipped	equipped	not equipped	not equipped	not equipped
Memory size	140 byte	8k byte	1024 byte	1024 bits	256 byte / 32 byte
Transmission distance	6cm	up to 5cm *2	up to 5cm *2	up to 8cm *2	up to 3.5cm *2
Dimensions (mm)	φ30 × t2.1	card size	*1	*1	*1
Material	PPS resin (compliant to food hygiene law of Japan)	PVC/PET-G	PVC/PET-G	PVC/PET-G	PVC/PET-G

- *1 Card size : 85×54mm (ISO7816 Compliant size)
 Half size : 43×54mm
 Mini size : 31×23mm
 φ20 size : φ20mm
 Sticker size : 22×12mm

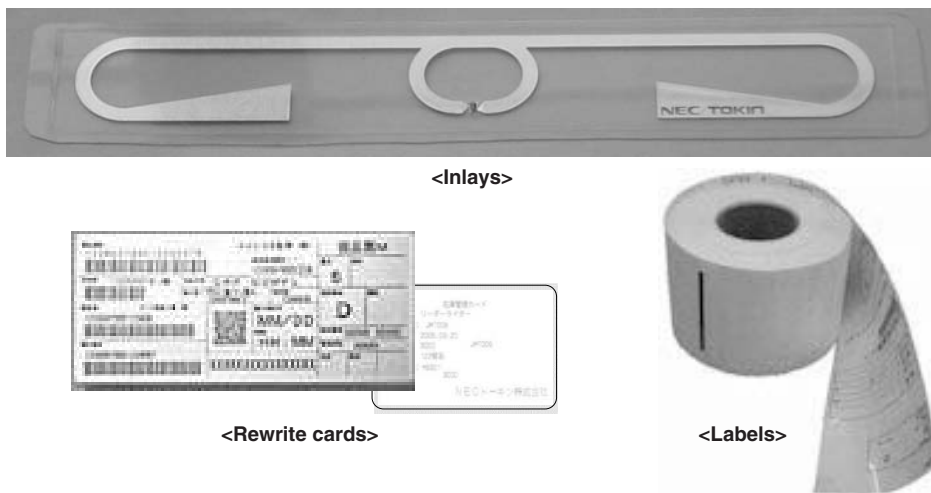
- *2 Transmission distance is measured using NEC TOKIN designated reader / writer.

We can also custom-make card dimensions and specifications. For details, consult your NEC TOKIN sales representative.
 I-CODE SLI®, MIFARE®, HITAG™1 and HITAG™2 are trademarks of koninklijke Philips Electronics N.V.



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RFID Tags (Inlays, Labels, and Cards) Supporting EPCglobal UHF Gen2 Global Standard



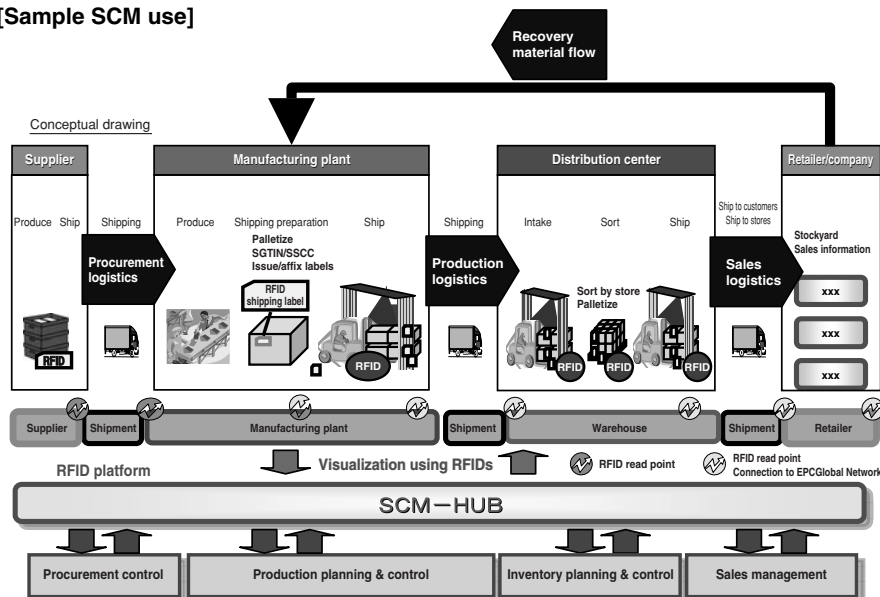
Features

- Supports EPCglobal UHF Class1 Gen2 standard.
- Antenna features broad bandwidth spectrum enabling worldwide use (Japan, United States, Europe, and other countries).
- Simulation technologies used in antenna design, enabling support for customization.

Applications

- SCM workflow streamlining (procurement – production – distribution – sales – recycling)
- Streamlining of shipping inspections, inventory visualization, and other benefits for distribution and logistics processes
- Managing distribution, production, materials, pharmaceuticals, location, assets, inventories, and more

[Sample SCM use]

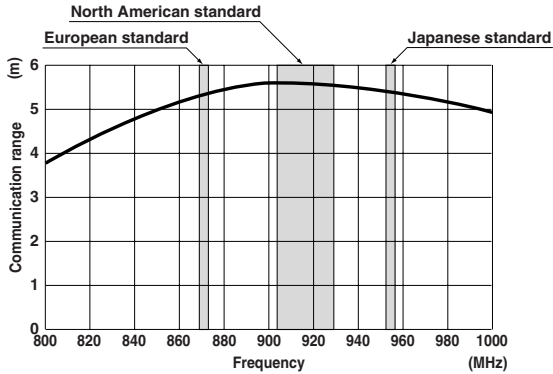


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Brief product specifications

Supported standard	EPCglobal UHF Class1 Gen2
Frequency	860–960 MHz (Japan, United States, Europe, and other countries)
IC chip used	EPCglobal UHF Class1 Gen2 MONZA™/Impinj
Memory	User area: 96-bit NVM
External dimensions	93 x 11 mm (inlay)

Frequency characteristics



<UHF-band reader/writer>

RFID frequency characteristics (design simulation)

Notes:

- 1: Products listed in this catalog may differ slightly from mass-produced products in design and other aspects.
- 2: EPCglobal is a non-profit organization promoting global standards for systems using RFID technologies.
RFID Manager® is a registered trademark of NEC Corporation.



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Manual Type Magnetic Card Reader Terminals

MCT-1800



Features

- Miniaturized to the smallest limit for card operation.
- Can be used in all systems that use ID cards.
- Both-way slide readout system.
- Light weight and low price.
- Comply with RoHS.
- Transmission mode can be changed by command

Applications

- Patient registration cards, student cards, customer cards, ID cards, time cards, membership cards, operation card systems (authentication, ID control, security, or settlement of accounts)

Specifications

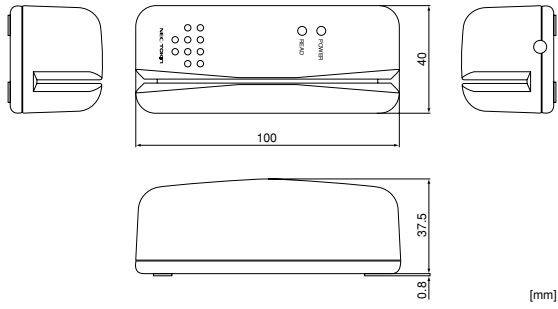
		MCT-1800	
Interface	Communication standards	EIA/TIA-232E, RS-232C ($\pm 10V$ level)	
	Communication method	Half-duplex start/stop sync. system (Full-duplex for connection)	
	Transmission speed (bps)	1200/2400/4800/9600/19200 (Factory setting: 9600) (can be changed by command)	
	Communication format	Start bit	1 bit
		Data bit	8 bits
Parity		1-bit (even number), 1-bit (odd number) or none (Factory setting: 1-bit (even)) (can be changed by command)	
	Stop bit	1-bit or 2-bit (Factory setting: 1-bit) (can be changed by command)	
Magnetic cards	Usable cards	JIS X 6301, 6302-II	
	Record/ playback (start/stop codes excluding horizontal parity)	Playback only Front: 69 characters max.	
	Recording density (bpi)	Front: 210	
	Card travel speed (mm/sec)	100~1200	
	Card transport method	Manual	
Power supply		Voltage: +5.0VDC \pm 5%, Current consumption: Less than 80mA (ripple 100mVp-p) (Power is supplied by the keyboard interface of a personal computer.)	
Display (LED)		POWER, READ	
Dimensions (mm)		37.5(H) x 40 (W) x100 (D) (excluding protrusions)	
Weight (g)		Approx. 250	
Case color		Beige-white	
Operating temperature/humidity ($^{\circ}C$) / (%)		0-40 / 20-85 RH, no condensation	
Storage temperature/humidity ($^{\circ}C$) / (%)		-20-75 / 20-95 RH, no condensation	
Accessories		Interface cable*, D sub 9-pin connector (length 1.3m) +6-pin mini DIN connector, operation manual cleaning card	

Note 1: Please consult us separately for a product applicable to cards for financial purposes.

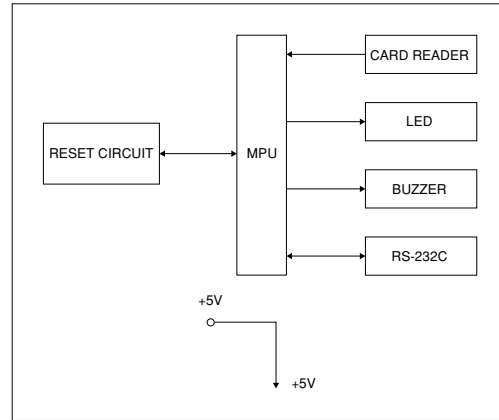


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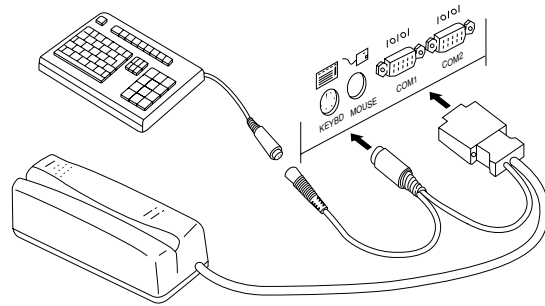
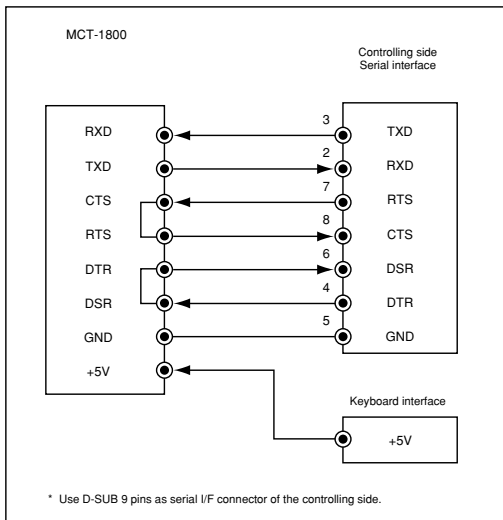
Shapes and Dimensions



Block Diagram



Connection



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Manual Type Magnetic Card Reader Terminals

MCT-1970



Features

- Compatible with magnetic striped cards conforming to JIS and ISO standards.
- Can be used in all systems that use ID cards.
- Powered by a personal computer connected to an AC adapter.
- Light weight and low price.
- Comply with RoHS.
- Transmission mode can be changed by command

Applications

- Patient registration cards, student cards, customer cards, ID cards, time cards, membership cards, operation card systems (authentication, ID control, security, or settlement of accounts)

Specifications

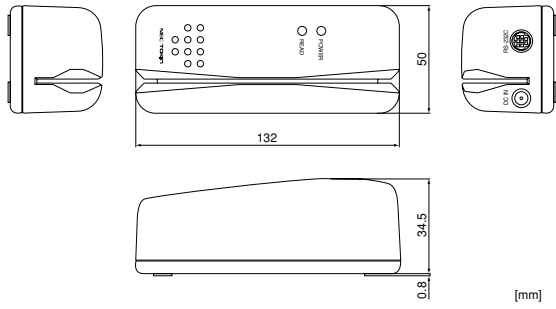
		MCT-1970	
Interface	Communication standards	EIA/TIA-232E, RS-232C ($\pm 10V$ level)	
	Communication method	Half-duplex start/stop sync. system (Full-duplex for connection)	
	Transmission speed (bps)	1200/2400/4800/9600/19200 (Factory setting: 9600) (can be changed by command)	
	Communication format	Start bit	1 bit
		Data bit	8 or 7 bits (Factory setting: 8 bits) (can be changed by command)
Parity		1-bit (even number), or none (Factory setting: 1-bit (even)) (can be changed by command)	
	Stop bit	1 or 2 bits (Factory setting: 1 bit) (can be changed by command)	
Magnetic cards	Usable cards	See Table 1.	
	Playback	See Table 1.	
	Recording density (bpi)	See Table 1.	
	Card travel speed (mm/sec)	100-1200	
	Card transport method	Manual	
Power supply	AC adapter	Voltage: 100VAC \pm 10%; Frequency: 50/60Hz; Current consumption: Less than 50mA	
	DC	Voltage: +5.0VDC \pm 5%, Current consumption: Less than 130mA (ripple 100mVp-p) (Power is supplied by the keyboard interface of a personal computer.)	
Display (LED)		POWER, READ	
Dimensions (mm)		34.5 (H) x 50 (W) x 132 (D) (excluding protrusions)	
Weight (g)		Approx. 460 (including AC adapter)	
Case color		Beige-white	
Operating temperature/humidity (°C) / (%)		0-40 / 20-85 RH, no condensation	
Storage temperature/humidity (°C) / (%)		-20-75 / 20-95 RH, no condensation	
Accessories		D sub 9-pin connector (length 1.4m) + AC adapter or D sub 9-pin connector (length 1.3m) + 6-pin mini DIN connector operation manual, cleaning card	

Note 1: Please consult us separately for a product applicable to cards for financial purposes.

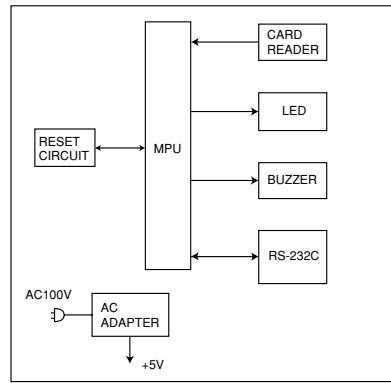


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Shapes and Dimensions



Block Diagram



Connection

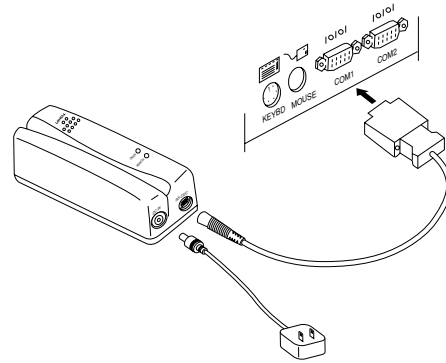
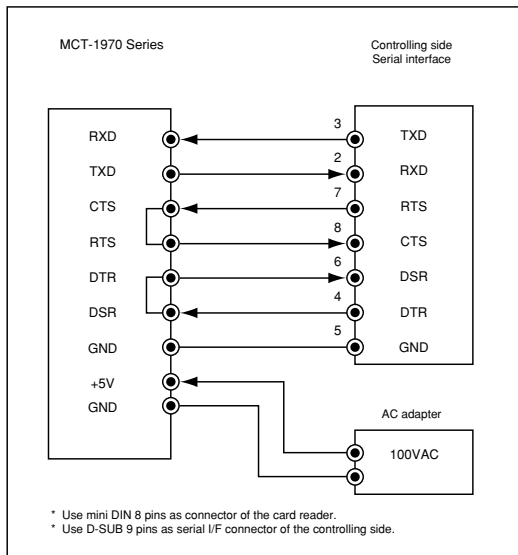


Table 1

	Usable Cards		Playback (start/stop codes excluding horizontal parity)	Recording Density (bpi)	Number of Tracks
MCT-1970	Front	JIS X 6301, 6302-II type	Max. 69 characters (available)	210	3
	Rear	JIS X 6301, 6302-I type (ISO 7811)			
		First track	Max. 76 characters (available)	210	
	Second track	Max. 37 characters (available)	75		



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USB Interface Magnetic Card Reader Terminals

MCT-1808



MCT-1808

Features

- USB(Universal Serial Bus) Interface.
- Operates on Windows Xp and Windows 2000.
- Bus-powered so an AC adapter or other external power source is unnecessary.
- Easy connection with only cable.
- USB Hub allows easy port expansion .
- Uses a low current of 500uA or less when the computer is in sleep mode.
- A case color is white.
- Because of its minimum size for card operation, it can be set up anywhere.
- RoHS Compliant.

Applications

- Patient registration cards, student cards, customer cards, ID cards, time cards, membership cards, operation card systems (authentication, ID control, security, or settlement of accounts)

Outline

MCT-1808
<ul style="list-style-type: none"> • Magnetic card reader operated by commands. Various commands are available for reading, buzzers, LED lights, etc. • Includes DLL (Dynamic Link Library) files for drivers and application development. The DLL can be used with Microsoft Visual Basic and Visual C++. • Suitable for fields requiring security since it cannot be operated without a special application.

Note 1: Windows Xp, Windows 2000, Microsoft Visual Basic and Microsoft C++ are registered trademarks of Microsoft Corporation.



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Specifications

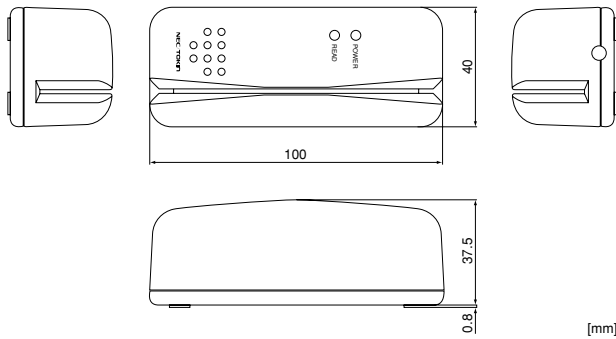
		MCT-1808
Interface	Communication standards	Universal Serial Bus Specification Revision 1.1
	Transmission speed (bps)	1.2Mbps (High speed)
Magnetic cards	Usable cards	JIS X 6301-II, JIS X 6302-II
	Record/Playback (start/stop codes excluding horizontal parity)	Playback Only Front : 69 characters max.
	Recording density (bpi)	Front : 210
	Card travel speed (mm/sec)	100-1200
	Card transport method	Manual
Power supply		Bus powered (Supplied via USB interface DC+5v Less than 100mA)
Display		Power, Busy LED
Dimensions (mm)		37.5(H)x40(W)x100(L) (Excluding protrusions)
Weight (g)		Approx.250
Case color		Beige-white
Operating temperature/humidity (°C) / (%)		0-40/20-85RH, no condensation
Storage temperature/humidity (°C) / (%)		-20-75 / 20-95 RH, no condensation
Accessories		Interface cable (1.2m), operation manual, cleaning card, CD-ROM

Note1: Please consult us separately for a product applicable to cards for financial purposes.

Note2: Please inquire about the types that can be connected, conditions of use, etc.

Shapes and Dimensions

- MCT-1808



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USB Interface Magnetic Card Reader Terminals

MCT-1778



Features

- USB(Universal Serial Bus) Interface.
- Operates on Windows Xp and Windows 2000.
- Bus-powered so an AC adapter or other external power source is unnecessary.
- Easy connection with only cable.
- USB Hub allows easy port expansion .
- Uses a low current of 500uA or less when the computer is in sleep mode.
- RoHS Compliant.

Applications

- Patient registration cards, student cards, customer cards, ID cards, time cards, membership cards, operation card systems (authentication, ID control, security, or settlement of accounts)

Outline

MCT-1778
<ul style="list-style-type: none"> • Magnetic card reader operated by commands. Various commands are available for reading, buzzers, LED lights, etc. • Includes DLL (Dynamic Link Library) files for drivers and application development. The DLL can be used with Microsoft Visual Basic and Visual C++. • Suitable for fields requiring security since it cannot be operated without a special application.

Note 1: Windows Xp, Windows 2000, Microsoft Visual Basic and Microsoft C++ are registered trademarks of Microsoft Corporation.



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Specifications

		MCT-1778
Interface	Communication standards	Universal Serial Bus Specification Revision 1.1
	Transmission speed (bps)	12Mbps (High speed)
Magnetic cards	Usable cards	See Table 1
	Playback (start/stop codes excluding horizontal parity)	See Table 1
	Recording density (bpi)	See Table 1
	Card travel speed (mm/sec)	100–1200
	Card transport method	Manual
Power supply	Bus powered (Supplied via USB interface DC+5v Less than 100mA)	
Display	Power, READ	
Dimensions (mm)	34.5(H)x50.0(W)x132.0(L) (Excluding protrusions)	
Weight (g)	Approx.150	
Cascolor	Beige-white	
Operating temperature/humidity (°C) / (%)	0–40/20–85 RH, no condensation	
Storage temperature/humidity (°C) / (%)	–20–65 / 40–95 RH, no condensation	
Accessories	Interface cable, operation manual, cleaning card, CD-ROM	

Note1:Please consult us separately for a product applicable to cards for financial purposes.

Note2:Please inquire about the types that can be connented, conditions of use,etc.

Note3:Windows Xp, Windows 2000, Microsoft Visual Basic and Microsoft C++ are registered trademarks of Microsoft Corporation.

Shapes and Dimensions

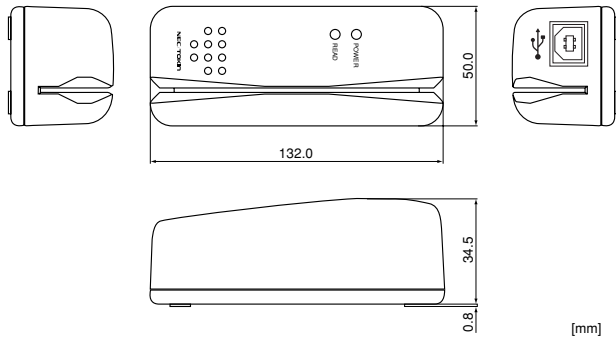


Table 1

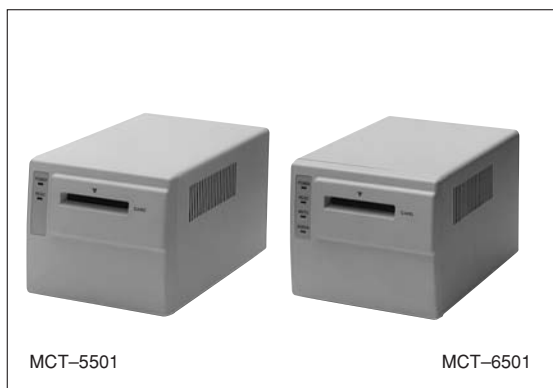
		Usable Cards	Playback (start/stop codes excluding horizontal parity)	Recording Density (bpi)	Number of Tracks
MCT-1778	Front	JIS X 6301, 6302-II type	Max. 69 characters (available)	210	3
	Rear	JIS X 6301, 6302-I type (ISO 7811)			
		First track	Max. 76 characters (available)	210	
		Second track	Max. 37 characters (available)	75	



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Auto Type Magnetic Card Reader / Writer Terminals

MCT-5501/MCT-6501



Features

- Economically priced, auto card reader terminal.
- Hook up to various ID-card applied systems.
- Comprehensive control commands and parameter setting.

Applications

- Patient registration cards, student cards, customer cards, ID cards, time cards, membership cards, operation card systems (authentication, ID control, security, or settlement of accounts)

Specifications

		MCT-5501	MCT-6501	
Interface	Communication standards	EIA/TIA-232E, RS-232C (±10V level)		
	Communication method	Full-duplex start/stop sync. system (Half-duplex control possible at the controlling side)		
	Transmission speed (bps)	1200/2400/4800/9600/19200 (Factory preset 9600)(Via the setting switch on the back)		
	Communication format	Start bit 1 bit	Fixed	
		Data bit 8 or 7 bits	Setting controllable by DIP switch	
Parity 1 bit (even number) or none		Setting controllable by DIP switch		
Stop bit 1 bit		Setting controllable by DIP switch		
Magnetic cards	Usable cards	JIS X 6301, 6302-II	JIS X 6301, 6302-II	
	Record/ playback (start/stop codes excluding horizontal parity)	Playback only Front: 69 characters max.	Record/playback Front: 69 characters max.	
	Recording density (bpi)	Front: 210	Front: 210	
	Card travel speed (mm/sec)	Approx. 200 ±20%	Approx. 200 ±20%	
	Card transport method	Auto	Auto	
Power supply	Voltage: 100VAC ±10%, Frequency: 50/60 Hz, Power consumption: Less than 30 VA			
Display (LED)	POWER, READ	POWER, READ, WRITE, ERROR		
Dimensions (mm)	115 (H) x 135 (W) x 209 (D) (excluding protrusions)			
Weight (kg)	Approx. 3			
Case color	Beige-white			
Operating temperature/humidity (°C) / (%)	5-40 / 20-80 RH, no condensation			
Storage temperature/humidity (°C) / (%)	-20-70 / 20-80 RH, no condensation			
Accessories	Power cord; operation manual; cleaning card	Power cord; operation manual; test card; cleaning card		

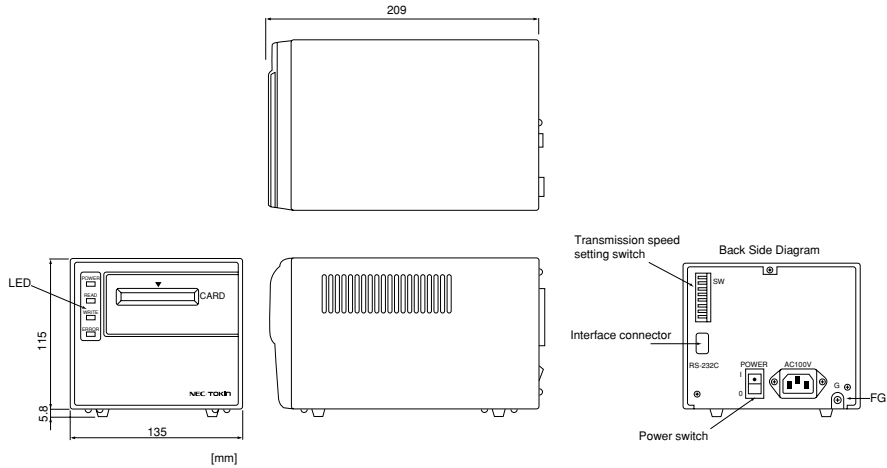
Note 1: Please consult us separately for a product applicable to cards for financial purposes.

Note 2: Interface cable optional.

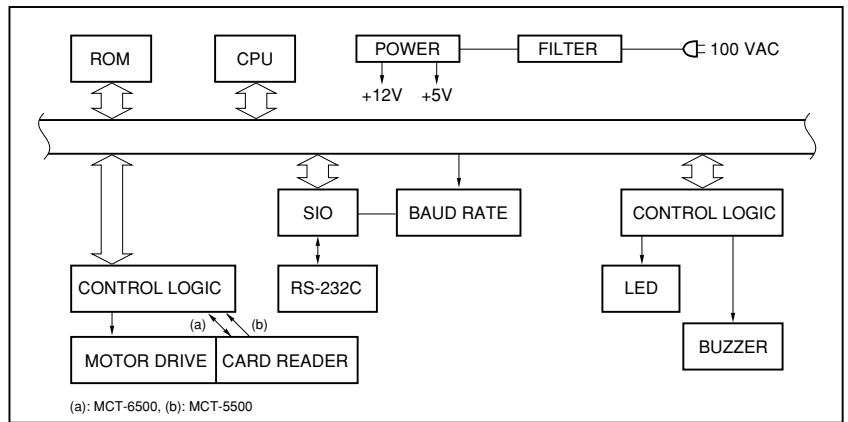


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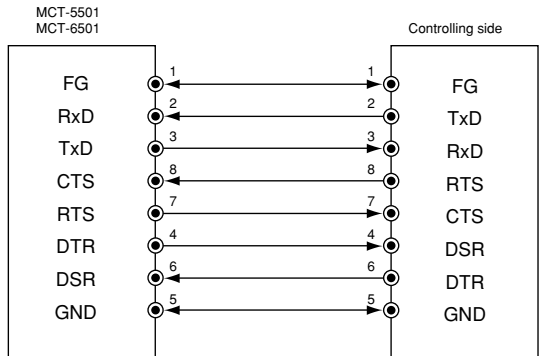
Shapes and Dimensions



Block Diagram



Connection



- * Use female D-SUB 9 pins as connectors of the card reader.
- * Use D-SUB 9-pins as serial I/F connector of the controlling side.



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Utility Software

MCZ-300

Outline

- The MCZ-300 is software for controlling NEC TOKIN's MCT-6501 magnetic card reader/writer terminals and terminals with compatible communication protocols.
- Allows encoding of magnetic cards and reading them using a personal computer.

Features

- User-friendly Windows operating environment.
- A rich array of functions, controllable by setting parameters and modes.
- Applicable magnetic cards: JIS II type.

Software Provided

- One installation disk (CD-ROM)

Operating Environment

- Compatible with Windows 98/Me or Windows NT 4.0/2000/Xp (with CD-ROM Drive)
Memory required: at least 16MB of RAM
Notes: Some models may not run this software.

Window Display (Start-up)

The screenshot shows the 'Utility Ver 2.00' window with the following components:

- Write Section:** A table for entering hex data (0000-0040) across columns +0 to +F.
- Write mode control commands:**

STX	CMD	PARA	DATA	MSG	ETX	BCC	CR	LF
02H	57H	1FH	Write	3BH	03H	50	0DH	0AH
- PARA_W Section:**
 - B0 : Data Only
 - B1 : [CR/LF] ON
 - B2 : LED/BUZZ ON
 - B3 : BCC SEND ON
 - B4 : Always ON
- Writing details:**

LRC	Start	Number of cards	Word
20	FF	1	69
- Read Section:** A table for entering hex data (0000-0040) across columns +0 to +F.
- Read mode control commands:**

STX	CMD	PARA	ETX	CR	LF
02H	52H	07H	03H	0DH	0AH
- PARA_R Section:**
 - B0 : Parity Check
 - B1 : [CR/LF] ON
 - B2 : LED/BUZZ ON
 - B3 : Card Stop ON
 - B4 : One Time R/W
- Test mode:** Buttons for Write, Read, Cleaning, and Reset.
- Bottom Row:** Buttons for Write, Read, Eject, LED-BUZZ, Initialize, Communication setting, and End.



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Magnetic Cards

Physical characteristics Front surface JIS X 6301- II
 Front surface JIS X 6301- I (ISO7811/2)

Recording technical Front surface JIS X 6302- II
 Front surface JIS X 6302- I (ISO7811/2)

				JIS- II
	Recording density	bit consists	Date capacity	
TRACK	210 bpi	8 bit/Character	72 Character	

				JIS- I (ISO7811/2)
	Recording density	bit consists	Date capacity	
TRACK1	210 bpi	7 bit/Character	79 Character	
TRACK2	75 bpi	5 bit/Character	40 Character	
TRACK3	210 bpi	5 bit/Character	107 Character	



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Precautions



- The names of the products and the specifications in this catalog are subject to change without notice for the sake of improvement. The manufacturer also reserves the right to discontinue any of these products. At the time of delivery, please ask for specification sheets to check the contents before use.
- Descriptions in this catalog regarding product characteristics and quality are based solely on discrete components. When using these units configured within a system or installing them into a product, be sure to evaluate and confirm the specifications with full considerations to particular applications.
- The manufacturer's warranty will not cover any disadvantage or damage caused by improper use of the products, deviating from the characteristics, specifications, or conditions for use described in this catalog.
- When constructing a financial card reader system using these units, the manufacturer will not take any responsibility for improper actions such as the forgery of magnetic cards that may occur during the management and administration of the system.
- Please be advised that the manufacturer accepts no responsibility for any infraction on third party patents or industrial copyrights by users of the manufacturer's products. The manufacturer is responsible only when such infractions are attributable to the structural design of the product and its manufacturing process.
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