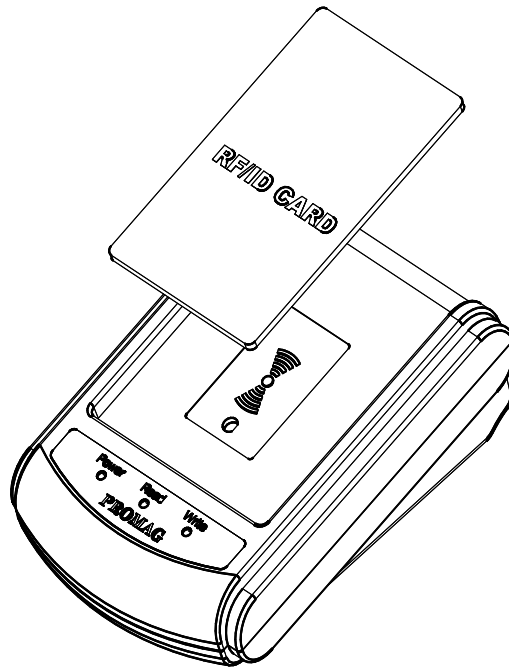


PCR340 Series



Dual Frequency RFID Reader

Manual Part Number: TM951119 REV.D

SEP 2013

GIGA-TMS

REGISTERED TO ISO 9001:2000

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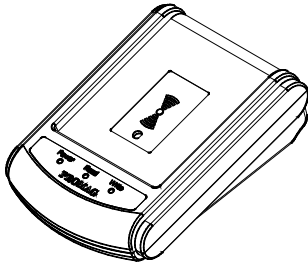
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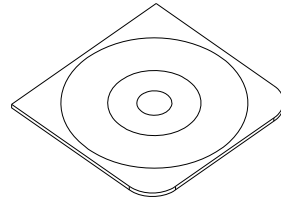
Specification

Card types		1. EM compatible 64 bits, ASK Manchester coding 2. ISO 14443A Mifare® MF1 1K&4K / Ultralight / DESFire *Read Only (For Unique Serial Number / Unique Identifier)
Frequency		125KHz, 13.56MHz
Reading distance		50 mm @ 125KHz 40 mm @ 13.56MHz
Baud rate		19200, 14400, 9600, 4800, 2400 bps (Settings N,8,1)
Interface	PCR340-00	USB (USB-HID Keyboard), PS/2, RS232
	PCR340-VC	USB (USB-RS232, the virtual serial port), PS/2, RS232
Power requirement		DC 5V / 150mA 、 Standby 70mA
Certificate		CE 、 FCC
Dimension		120(L) x 86(W) x 42(H) mm
Weight		150g
Operating temperature		0 to 50 degree C
Storage temperature		-10 to 60 degree C
Humidity		10 ~ 90%

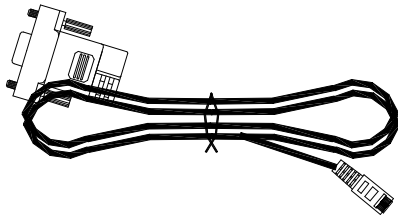
Accessories



**Main Unit
(PCR340)**



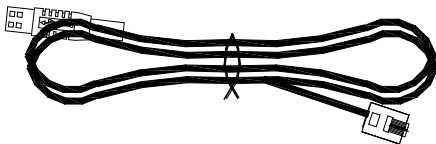
**Configuration Software
(DISK5274)**



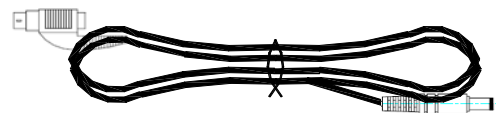
**RS232 Cable
(WAS-T0042)**



**PS/2 Cable
(WAS-T0044)**



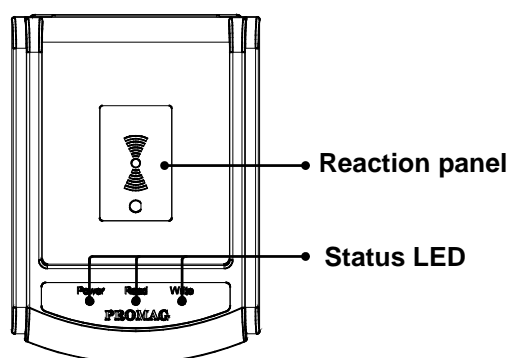
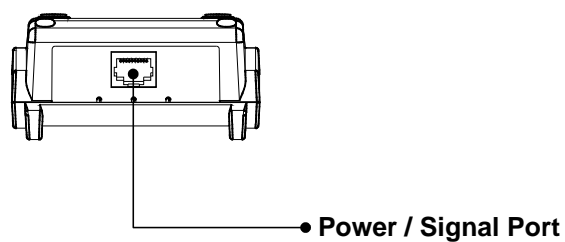
**USB Cable
(WAS-T0043)**



**Mini Din Power Cable
(WAS-1536A)**

Note: When WAS-T0043 is connected to PCR340-00, the interface will work as USB-HID Keyboard; when WAS-T0043 is connected to PCR340-VC, the interface will work as USB-RS232 (the virtual serial port) and it needs to install USB driver (see p.10).

Getting Started



Power / Signal port

The power is from USB or PS/2 connection or you can use the external power supply (DC5V) for RS232 connection.

Reaction panel

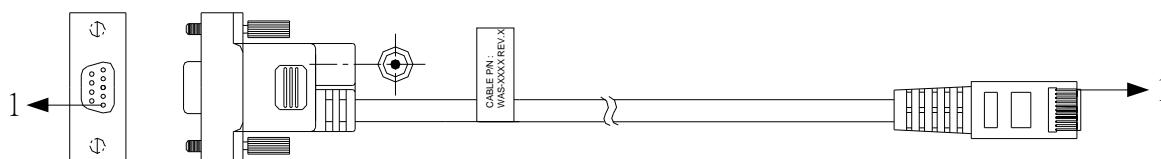
Put the card on reaction panel to read the card information.

Status LED

Status	Green LED	Red LED	Yellow LED	Read Card
Power on	Blink twice	Blink twice	Blink twice	X
Ready	Off	On	Off	X
Read ok	Blink once	On	Off	O
Firmware Management mode	Off	Off	On	X

Pin Assignment and Connection

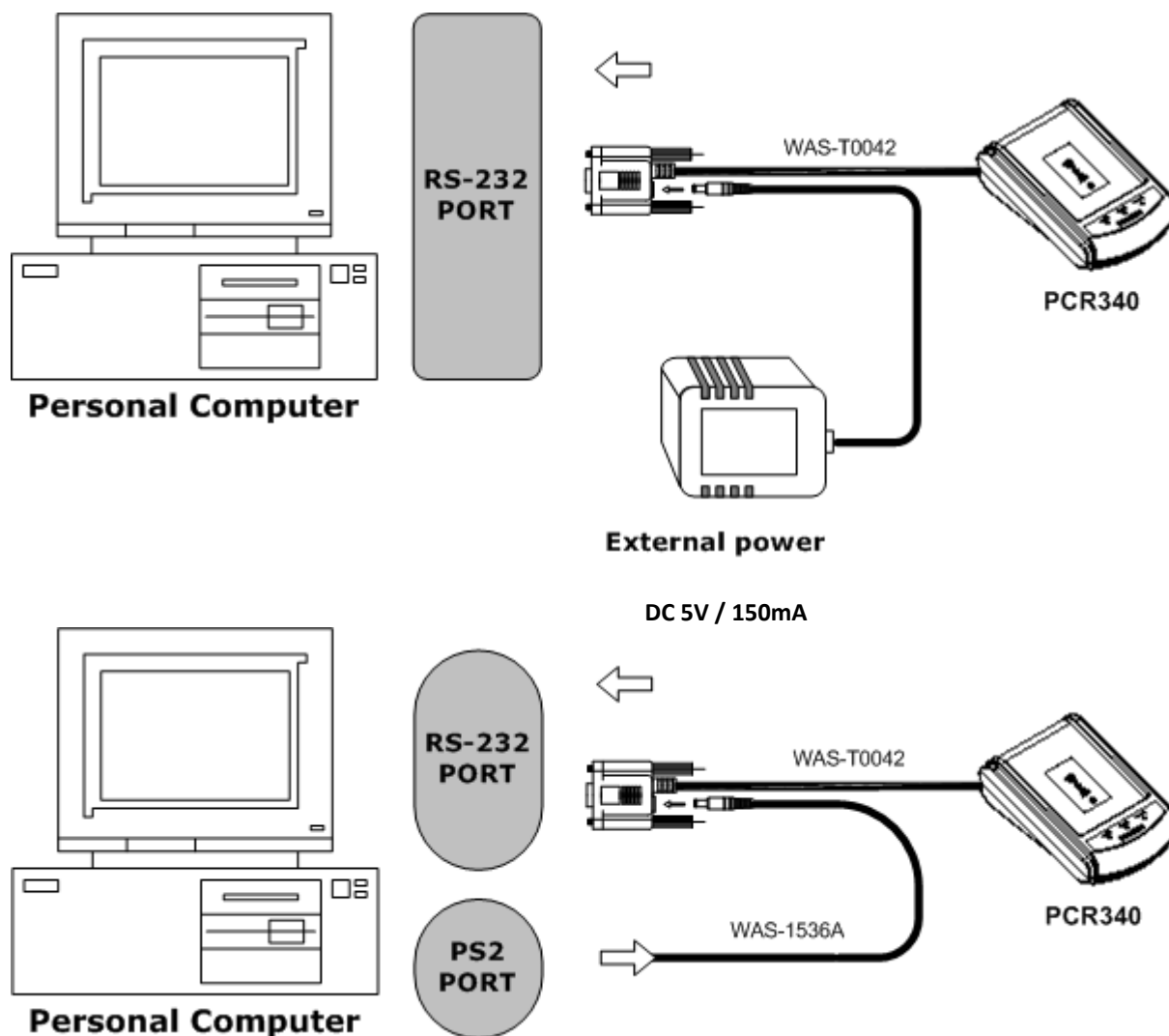
WAS-T0042 pin assignment



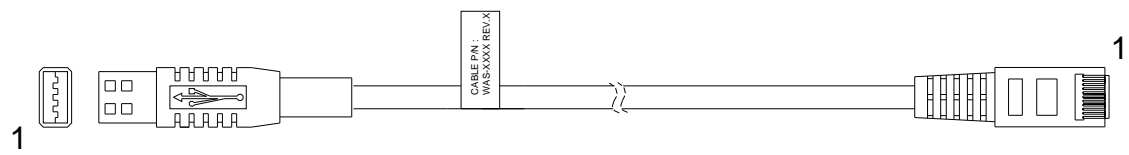
DB9 FEMALE PIN	FUNCTION
PIN2	RX
PIN3	TX
--	--
PIN5	GND

PHONE PLUG PIN	FUNCTION
PIN5	TX
PIN6	RX
PIN7	VDD
PIN10	GND

Connection



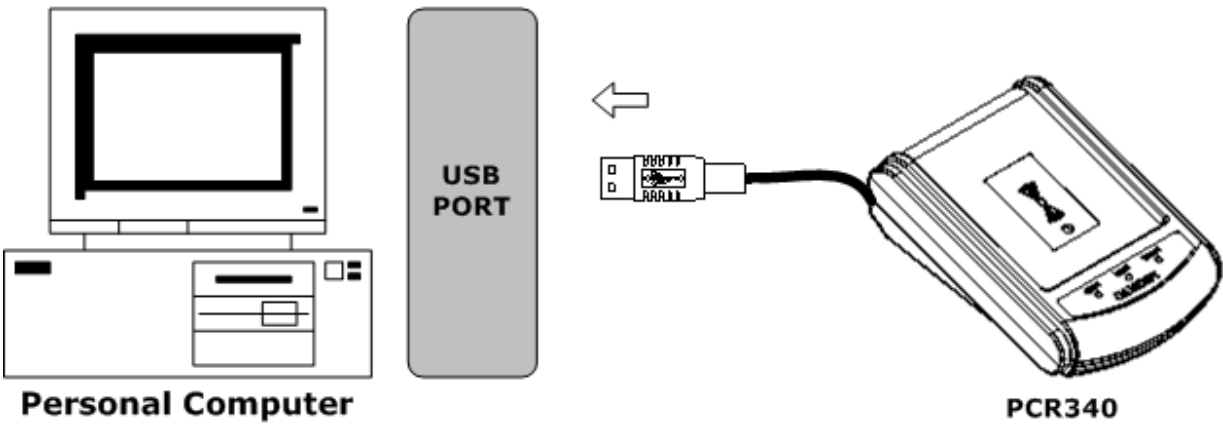
WAS-T0043 pin assignment



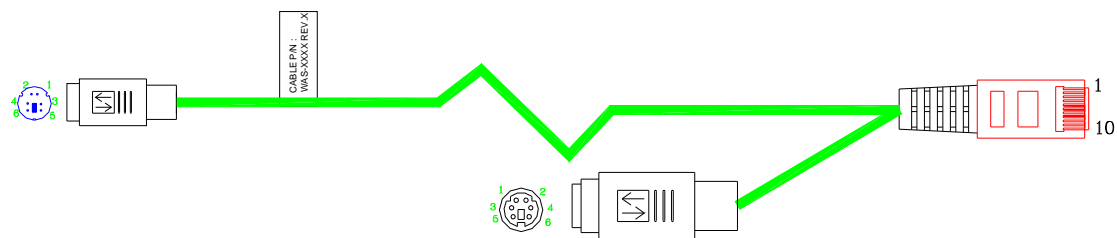
USB PLUG PIN	FUNCTION
PIN1	VDD
PIN2	D+
PIN3	D-
PIN4	GND

PHONE PLUG PIN	FUNCTION
PIN7	VDD
PIN8	D+
PIN9	D-
PIN10	GND

Connection

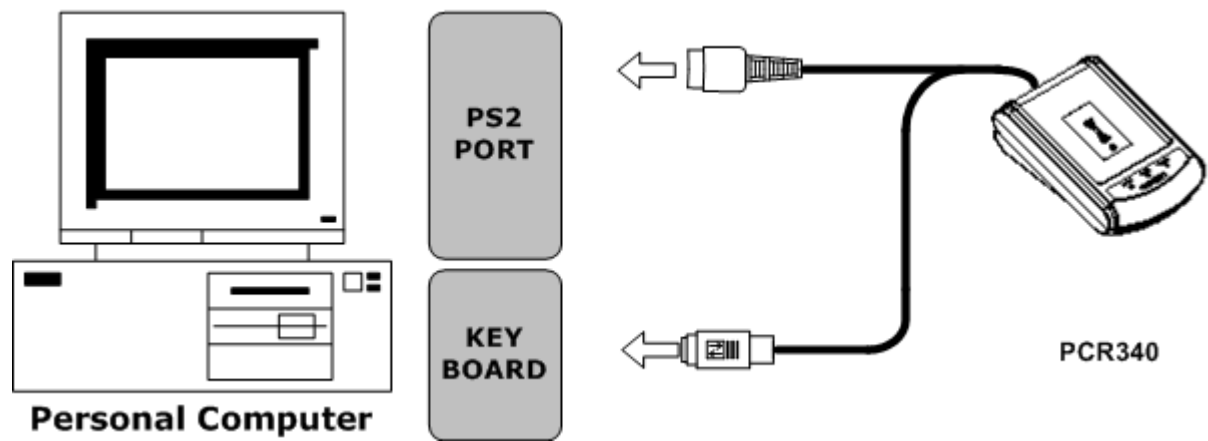


WAS-T0044 pin assignment



PIN NUMBER	PHONE PLUG PIN	MINI DIN MALE PIN	KB FEMALE PIN
PIN1	KB_CLOCK	--	CLOCK (PIN5)
PIN2	PC_CLOCK	CLOCK (PIN5)	--
PIN3	PC_DATA	DATA (PIN1)	--
PIN4	KB_DATA	--	DATA (PIN1)
PIN5	--	--	--
PIN6	--	--	--
PIN7	+5V	+5V (PIN4)	+5V (PIN4)
PIN8	--	--	--
PIN9	--	--	--
PIN10	GND	GND (PIN3)	GND (PIN3)

Connection



Important Instructions

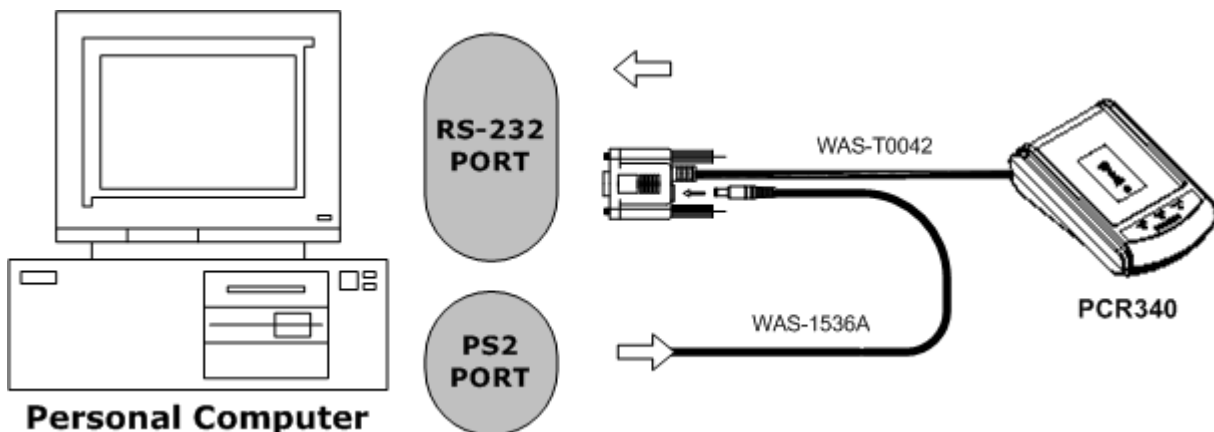
- 1. To reach the ideal performance, please keep PCR340 away from the other RFID readers at about 50 cm while PCR340 is under the operation to avoid the interference.**
- 2. Once continuous card reading is completed, wait for a while until Green LED goes off to access the next card reading.**
- 3. Before starting your computer, do not put RFID card on the reaction panel to avoid the error.**

Installing USB Driver (for PCR340-VC)

If you have PCR340-VC and you are ready to use its USB cable (WAS-T0043), you need to install USB driver before connecting it with your computer. The USB driver file (SetupSel.exe) is in the bundled disk. You can double-click "SetupSel.exe" to install USB driver. (If you have PCR340-00 and you are ready to use its USB cable, you don't need to install USB driver.)

Configuring PCR340 with the Configuration Software

The configuration software (PCR340Setup_version_PSW00058.exe) is in the bundled disk. Install the software first. Connect PCR340 with your computer through RS232 port and then run the software.



Note: (1) To connect PCR340-00 with our software, it allows you to use RS232 cable only. If you use USB cable or PS/2 cable, the software will not be able to detect PCR340-00. (2) To connect PCR340-VC with our software, it allows you to use RS232 cable or USB cable. If you use PS/2 cable, the software will not be able to detect PCR340-VC.

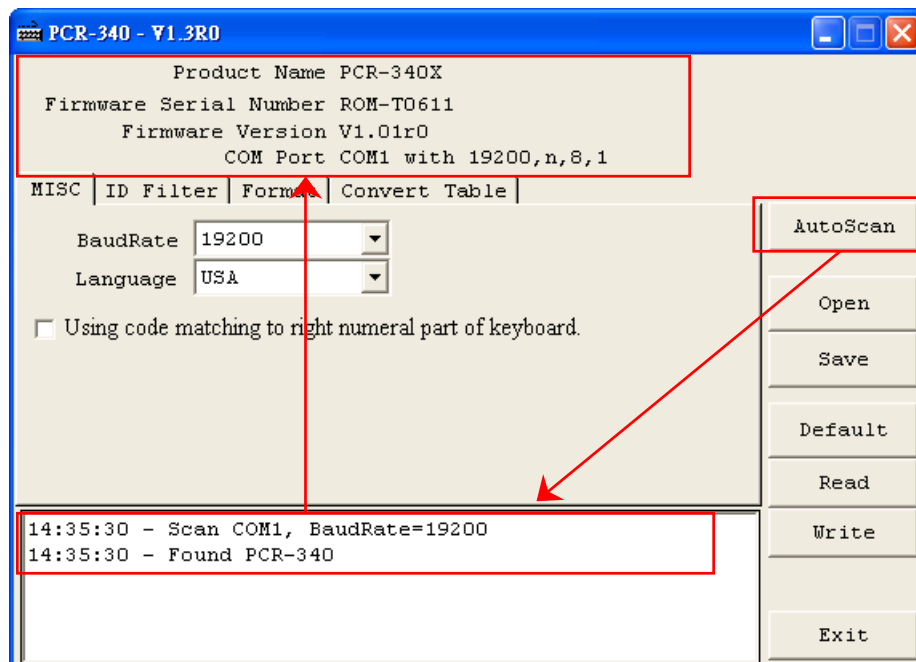
The main page of the configuration software

The screenshot shows the main window of the configuration software, titled "PCR-340 - V1.3R0". The interface is divided into several sections:

- Product information:** A section at the top left containing labels for "Product Name", "Firmware Serial Number", "Firmware Version", and "COM Port".
- Functional setting tabs:** A row of tabs below the product information, including "MISC" (which is selected), "ID Filter", "Format", and "Convert Table".
- Function keys:** A vertical column of buttons on the right side, including "AutoScan", "Open", "Save", "Default", "Read", "Write", and "Exit".
- Information display area:** A large empty rectangular box at the bottom left, intended for displaying information.
- Settings:** In the "MISC" tab, there are settings for "BaudRate" (set to 19200) and "Language" (set to USA). Below these is a checkbox labeled "Using code matching to right numeral part of keyboard." which is currently unchecked.

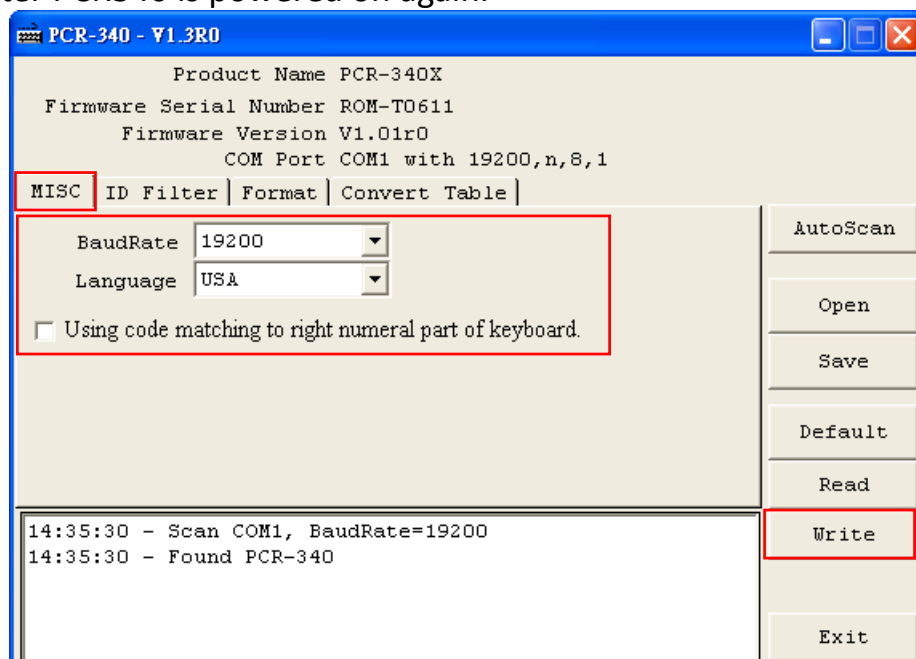
Step 1. Auto Scan

Click [AutoScan] to connect PCR340 with your computer. If the connection is successful, it will show "Found PCR-340" message and the product information as below.



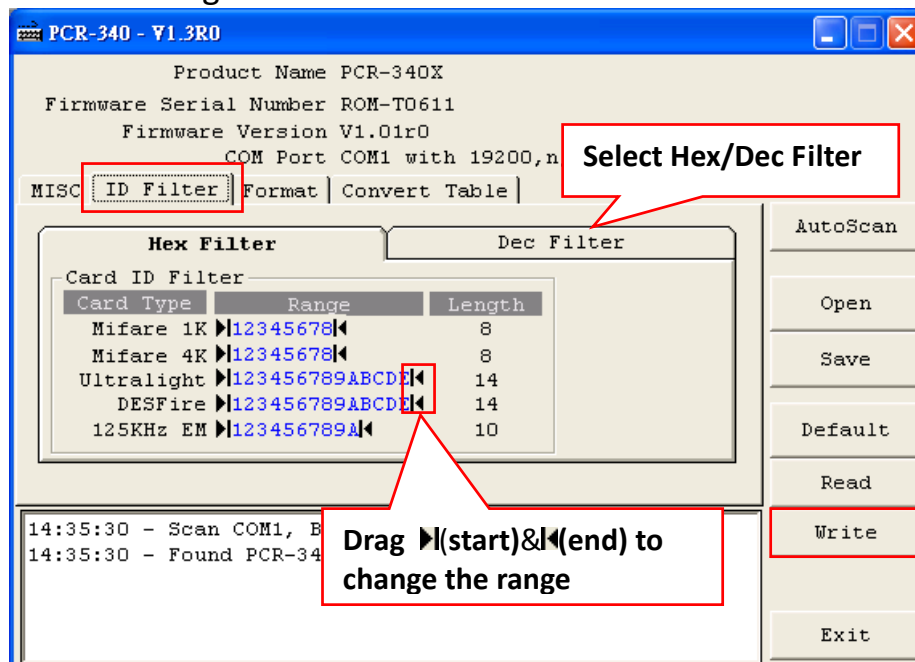
Step 2. MISC

Click [MISC]. Set [BaudRate], [Language] (Keyboard type) and [Using code matching to right numeral part of keyboard] if necessary. Then click [Write] to save the settings to PCR340. If the baudrate is changed, power off PCR340 first and the new baudrate will work after PCR340 is powered on again.



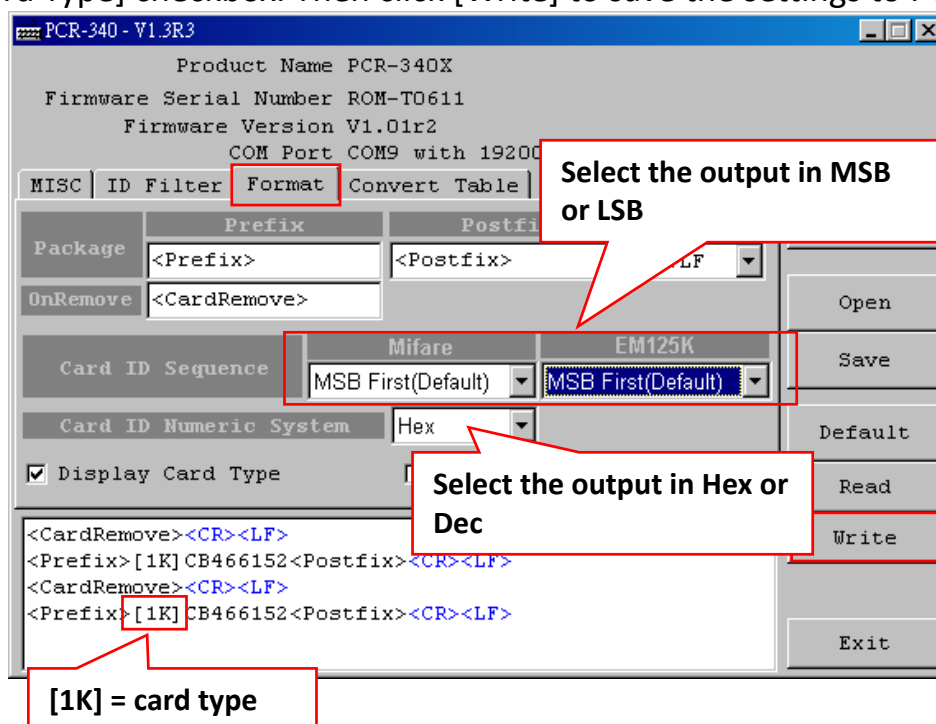
Step 3. ID Filter

Click [ID Filter] to set the card format of data output that you want PCR340 to send. Select the [Card Type] and set [Range] and [Length] of data information. Then click [Write] to save the settings to PCR340.



Step 4. Format

Click [Format]. Set [Prefix] code, [Postfix] code, [OnRemove] message and [Delimiter] if necessary. If you want PCR340 to send the card type when the card is read, check [Display Card Type] checkbox. Then click [Write] to save the settings to PCR340.



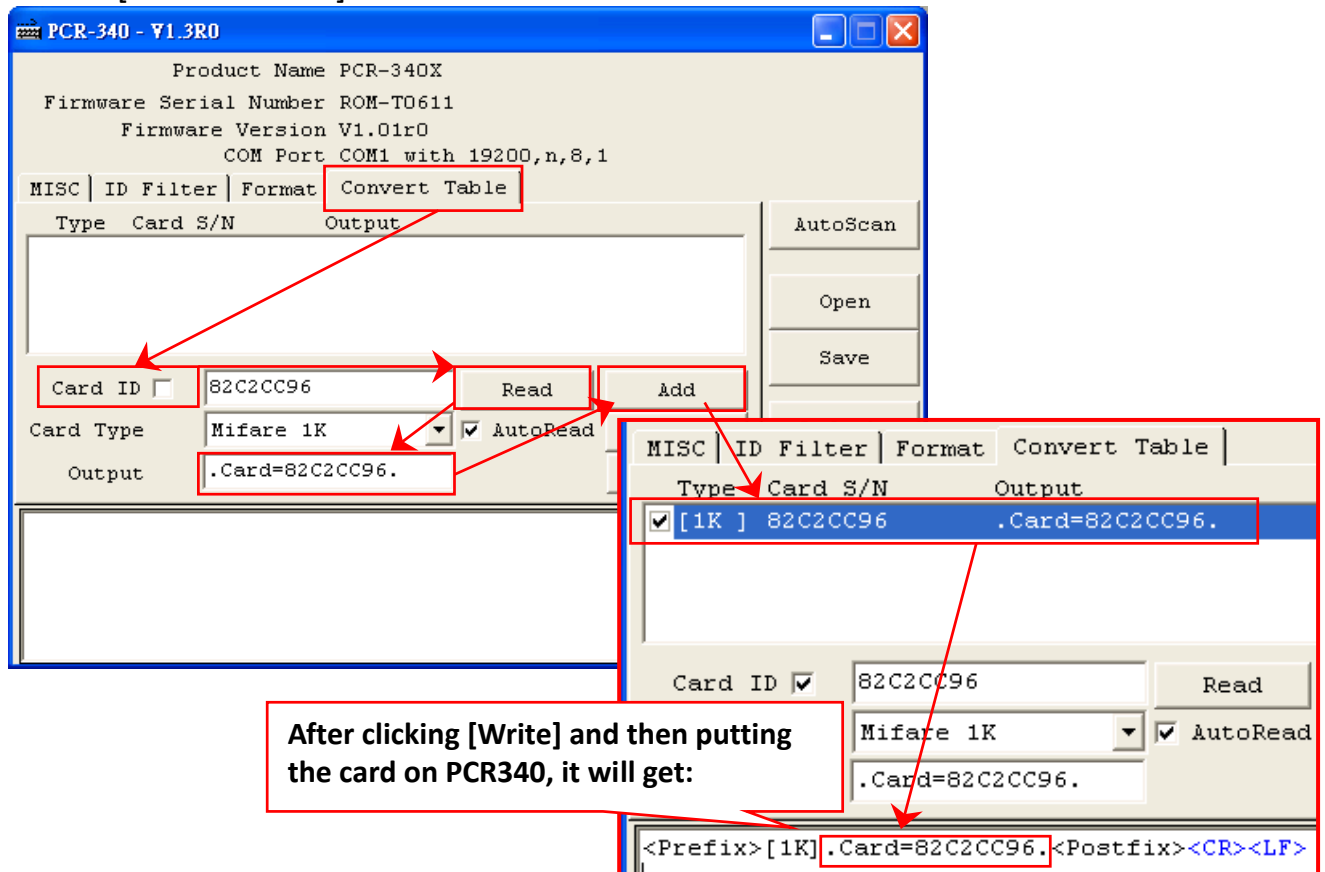
Step 5. Convert Table

If you want PCR340 to show alphabetical string instead of card number, click [Convert Table] to edit the message you like by the following procedures.

1. Click [Format] and check [Output by String Table] checkbox.

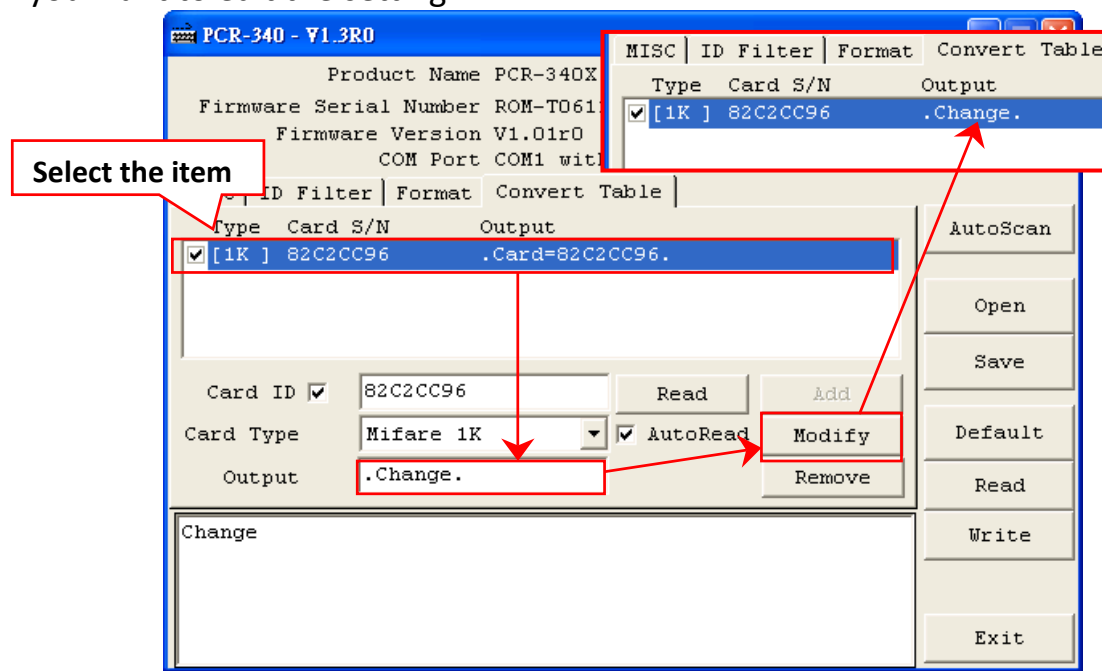
The screenshot shows the 'PCR-340 - V1.3R3' software window. The 'Format' tab is selected and highlighted with a red box. The interface includes fields for Product Name (PCR-340X), Firmware Serial Number (ROM-T0611), Firmware Version (V1.01r2), and COM Port (COM9 with 19200,n,8,1). Below these are tabs for MISC, ID Filter, Format, and Convert Table. The Format tab contains several settings: Package (Prefix), OnRemove (CardRemove), Card ID Sequence (Mifare and EM125K, both set to MSB First(Default)), Card ID Numeric System (Hex), and a checked 'Display Card Type' checkbox. The 'Output by String Table' checkbox is also checked and highlighted with a red box. The bottom of the window shows a preview of the output string: <CardRemove><CR><LF> <Prefix>[1K] CB466152<Postfix><CR><LF> <CardRemove><CR><LF> <Prefix>[1K] CB466152<Postfix><CR><LF>. On the right side, there are buttons for AutoScan, Open, Save, Default, Read, Write, and Exit.

2. Click [Convert Table] and add a card to the table.

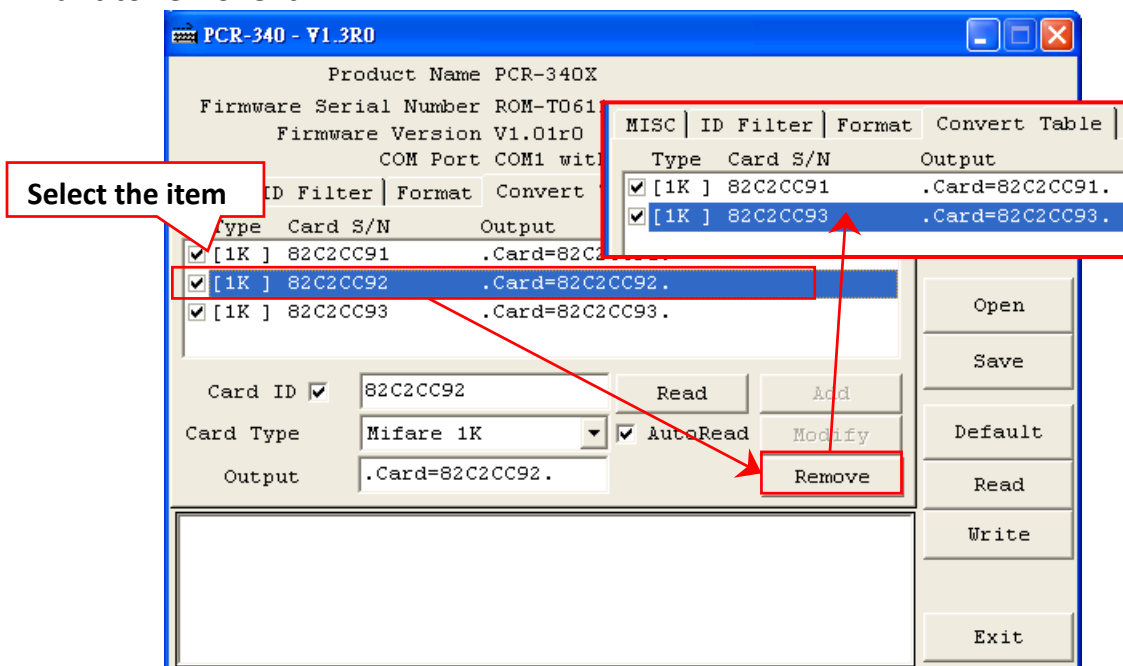


- ♦ **Card ID:** If [Card ID] checkbox is checked, it indicates the card number will be converted to the string you set. If [Card ID] checkbox is unchecked, it indicates the card number will not be converted.
- ♦ **Read:** When you put a card on PCR340, the card number and card type will be shown in the boxes if you click [Read].
- ♦ **AutoRead:** If [AutoRead] checkbox is checked, when you put a card on PCR340, the card number and card type will be shown in the boxes automatically.
- ♦ You can enter the card number and select [Card Type] manually without putting the card on PCR340.
- ♦ **Output:** Enter the string you want the card number to be converted in [Output] box.
- ♦ **Add:** Click [Add] to add the setting for the card number to the table.

3. Select the item you want to edit and change the setting and then click [Modify] if you want to edit the setting.

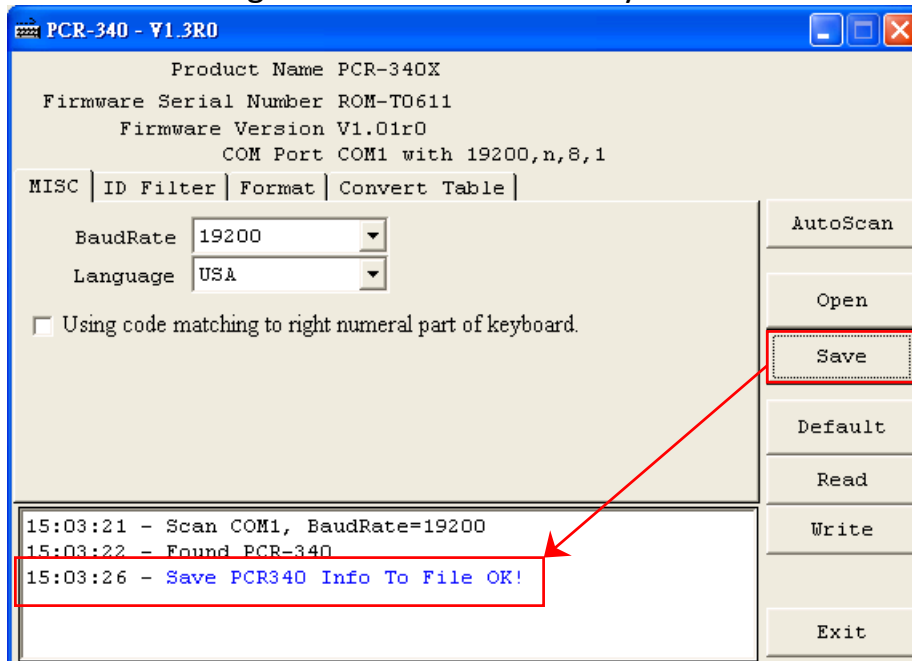


4. Select the item you want to delete from the table and then click [Remove] if you want to remove it.



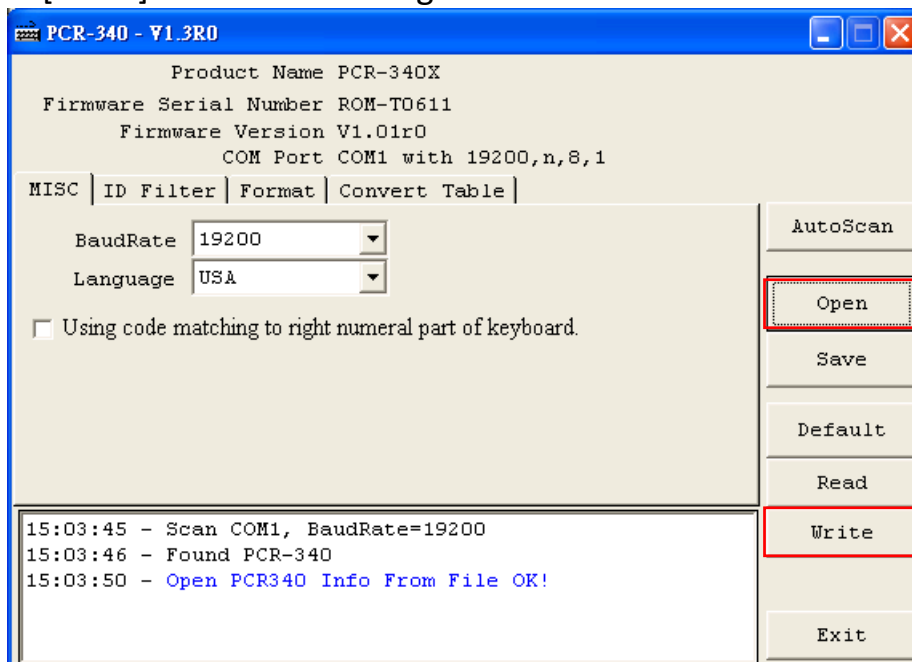
Step 6. Save

Click [Save] to save all settings as a txt file if necessary.



Step 7. Open

If you want to load the settings from the file to PCR340, click [Open] to open the file and then click [Write] to load the settings to PCR340.



Step 8. Read

Click [Read] if you want to know the current settings of PCR340. The settings will be gotten and shown in the software window.

Step 9. Default

Click [Default] to reset PCR340 if necessary. The followings are the default values.

Default Values				
Item	Description			
Baud Rate	19200 bps (Settings N,8,1)			
Language	USA			
Using code matching to right numeral part of keyboard	Disable			
Prefix	Empty			
Postfix	Empty			
OnRemove	Empty			
Delimiter	CR+LF			
Display Card Type	Disable			
Output by String Table	Disable			
Card ID Filter	Card Type	Numeric System	From Character	Number of Characters
	Mifare 1K	HEX	1	8
		DEC	1	10
	Mifare 4K	HEX	1	8
		DEC	1	10
	UltraLight	HEX	1	14
		DEC	1	18
	DesFire	HEX	1	14
		DEC	1	18
	125KHz EM	HEX	1	10
		DEC	1	14

Command and Packet Format

Packet format

PC → PCR340

STX	CMD	CONTENTS	CHECKSUM	CR
1 character	1 character	3 character	1 character	1 character

PC ← PCR340

STX	REPLY	CONTENTS	CHECKSUM	CR
1 character	1 character	3 character	1 character	1 character

Functional command

ITEM	Dec	Hex	Function
STX	2	02	Start for test
CMD	ASCII	ASCII	Command code
CONTENTS	ASCII	ASCII	Contents data
CHECKSUM	ASCII	ASCII	Check sum
REPLY	65	41	Acknowledge
CR	13	0D	Carriage return

Instruction command

Command	ASCII	Description
C	43H	Set Register
B	42H	Get Register
V	56H	Get Firmware Version
D	44H	Get Product Name
X	58H	ISP Mode
Y	59H	Show Memory Data

Ack command

Command	ASCII	Contents	Description
A	41H	Reply information	ACK + Information
N	4EH	ERROR Index Table	NCK + Information

Error index

Topic	Error index	Description
Access LEVEL	00	Access Denied or Password Error
COMMAND CODE	01	Command packet is too long
	02	Command packet is empty
	03	Command code is out of range
	04	Illegal Command or Data
DATABASE	05	Database and Register is Empty
	06	Record number is out of range
	07	Check Sum Error
	08	Memory Not Enough
	09	Action Failure
FILE	0A	File Not Exist

Command notation

Write to register ('C', 43H)

PC→PCR340	STX + ' C ' + Register address + ' ' + Write parameter + CHECKSUM + CR
PC←PCR340	STX + ACK + CR

For Instance:

PC→PCR340	02 + C + 00 + ' ' + FF + 5B + 0D
PC←PCR340	02 + A + 0D

Read from register ('B', 42H)

PC→PCR340	STX + ' B ' + Register address + CR
PC←PCR340	STX + ACK + Read parameter + Checksum + CR

For Instance:

PC→PCR340	02 + ' B ' + 00 + 0D
PC←PCR340	02 + A + FF + CD + 0D

Get F/W version ('V', 56H)

PC→PCR340	STX + ' V ' + CR
PC←PCR340	STX + ACK + Firmware number + Firmware version + CR

Firmware number: ROM-Txxxx

Firmware version: Vx.xxrm , Vx.xx: Firmware version rm: Modification frequency

For Instance:

PC→PCR340	02 + ' V ' + 0D
PC←PCR340	02 + A + ROM-T0611 + V1.00R2 + 0D

Get Product name ('D', 56H)

PC→PCR340	STX + ' D ' + CR
PC←PCR340	STX + ACK + Product name + Keyboard language + CR

Product: PCR-340X

Keyboard language: USA

For Instance:

PC→PCR340	02 + ' V ' + 0D
PC←PCR340	02 + A + PCR-340X + ' ' + USA + 0D

Control mode ('X', 58H)

PC→PCR340	STX + X + CR
PC←PCR340	STX + A + CR

For Instance:

PC→PCR340	02 + X + 0D
PC←PCR340	02 + A + 0D

Show memory data ('Y', 59H)

PC→PCR340	STX + Y + CR
PC←PCR340	STX + Register Table + CR

For Instance:

PC→PCR340	02 + Y + 0D
PC←PCR340	02 + Register Table + 0D

Register table

Register Address	Function	Description
000h ~ 07Fh	Set Corresponding Card ID	16 Characters
100h ~ 1FFh	Set Output Characters	16 Characters
080h ~ 09Fh	*	*
0A0h ~ 0AFh	Prefix up	16 Characters
0B0h ~ 0BFh	Postfix up	16 Characters
0C0h ~ 0CFh	OnRemove up	16 Characters
0D0h	Delimiter	000h: CR 001h: LF 002h: TAB Other Parameter or 0xFF: CR + LF
0D1h	Baudrate	004h: 2400 005h: 4800 006h: 9600 007h: 14400 Other Parameter or 0xFF: 19200
0D2h	Language (Keyboard type)	000h: Japan 001h: France 002h: German 003h: UK 004h: Spain Other Parameter: US
0D4h	Display Card Type	0FFh: NO Display Other Parameter: Display
0D5h	Output by String Table	0FFh: Card ID Other Parameter: String
0D6h	Using code matching to right numeral part of keyboard	000h: Enable Other Parameter: Disable
0E0h~0E1h	Mifare standard MF1 ICS50 Card ID Filter	Register 0E0h: Start Register 0E1h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 8$
0E2h~0E3h	Mifare 4K MF1 ICS70 Card ID Filter	Register 0E2h: Start Register 0E3h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 8$
0E4h~0E5h	Mifare Ultralight MF0 ICS70 Card ID Filter	Register 0E4h: Start Register 0E5h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 14$
0E6h~0E7h	Mifare DESFire MF3 ICD40 Card ID Filter	Register 0E6h: Start Register 0E7h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 14$
0E8h~0E9h	125KHZ EM Card Card ID Filter	Register 0E8h: Start Register 0E9h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 10$

New added functions of the latest version V1.01R0

Register Address	Function	Description
0D7h	Output Card Format	000h: Output Card Number in Dec. Other Parameter: Output Card Number in Hex
090h~091h	Mifare standard MF1 ICS50 Card ID Filter	Register 090h: Start Register 091h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 8$
092h~093h	Mifare 4K MF1 ICS70 Card ID Filter	Register 092h: Start Register 093h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 8$
094h~095h	Mifare Ultralight MF0 ICS70 Card ID Filter	Register 094h: Start Register 095h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 14$
096h~097h	Mifare DESFire MF3 ICD40 Card ID Filter	Register 096h: Start Register 097h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 14$
098h~099h	125KHZ EM Card Card ID Filter	Register 098h: Start Register 099h: Length ID Filter Range: $1 \geq (\text{Start} + \text{Length} - 1) \leq 10$

New added functions of the latest version V1.01R2

Register Address	Function	Description
088h	Mifare Card ID Sequence	FFh : Output Card ID in MSB first sequence. 00~FEh : Output Card ID in LSB first sequence.
089h	125KHZ EM Card ID Sequence	FFh : Output Card ID in MSB first sequence. 00~FEh : Output Card ID in LSB first sequence.

New added functions of the latest version V1.01R7

Register Address	Function	Description
0D0h	Delimiter	000h: CR 001h: LF 002h: TAB 003h: None (New, Disable output delimiter) Other Parameter or 0xFF: CR + LF