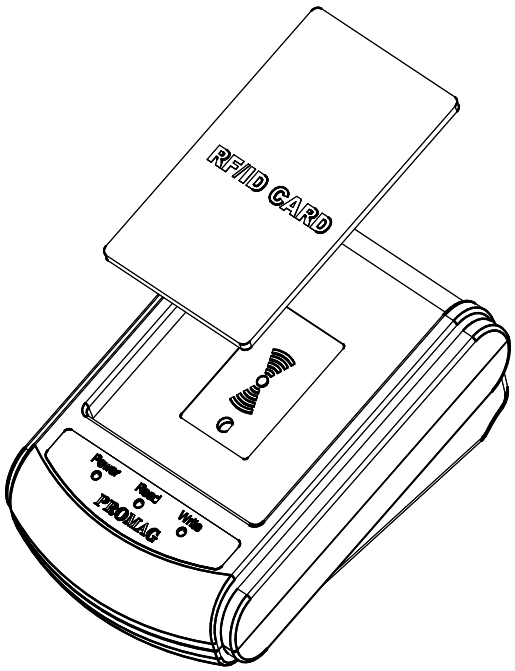
PCR340 Series



Dual Frequency RFID Reader

Manual Part Number: TM951119 REV: C JAN 2008

GIGA-TMS

REGISTERED TO ISO 9001:2000

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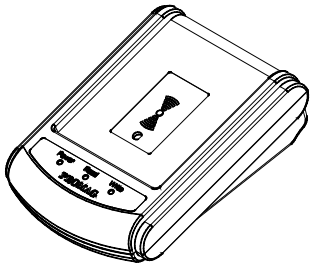
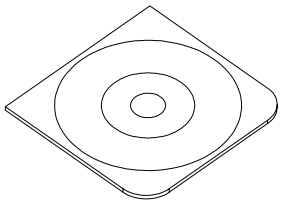
Specification

Card types	1. EM compatible64 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
Interface	PS2、USB(Human interface for PS2)、 RS232(n、8、1)
Power requirement	DC 5V / 150mA、Standby 70mA
Certificate	CE、FCC
Dimension	120(L) x 86(W) x 42(H) mm
Weight	150g
Operating Temp	-0 to 50 Deg C
Storage Temp	-10 to 60 Deg C
Humidity	10 ~ 90%

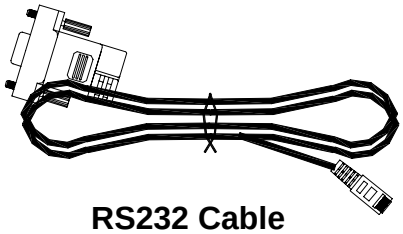
Accessory



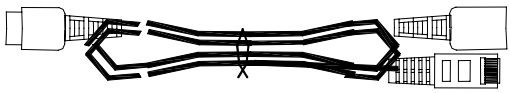
Main Unit
(PCR340)



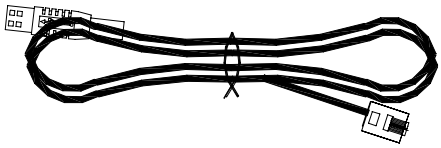
Configure Software
(DISK5274)



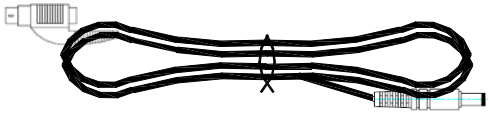
RS232 Cable
(WAS-T0042)



PS2 Cable
(WAS-T0044)

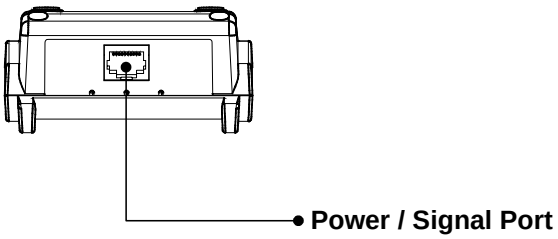


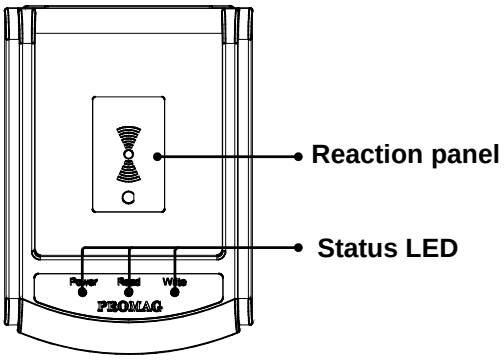
USB Cable
(WAS-T0043)



Mini Din Power Cable
(WAS-1536A)

Technical & Operational Description





Power / Signal port:

Direct power from USB and PS2 connection or use external power supply for RS-232 connection.

Reaction Panel

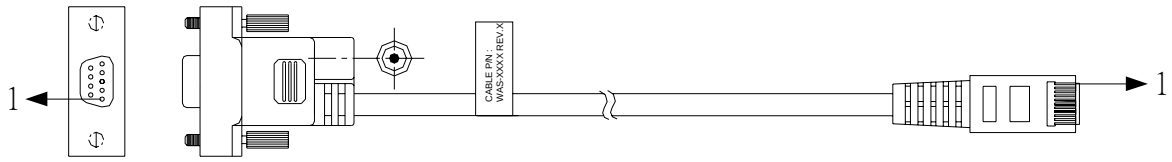
Put the card on reaction panel to read the card information.

Status LED

Status	Green LED	Red LED	Yellow LED	Read Card
Power on	Blink 2 times	Blink 2 times	Blink 2 times	X
Ready	OFF	ON	OFF	X
Read ok	Blink 1 times	ON	OFF	O
Firmware Management mode	OFF	OFF	ON	X

Pin Assignment & Connection

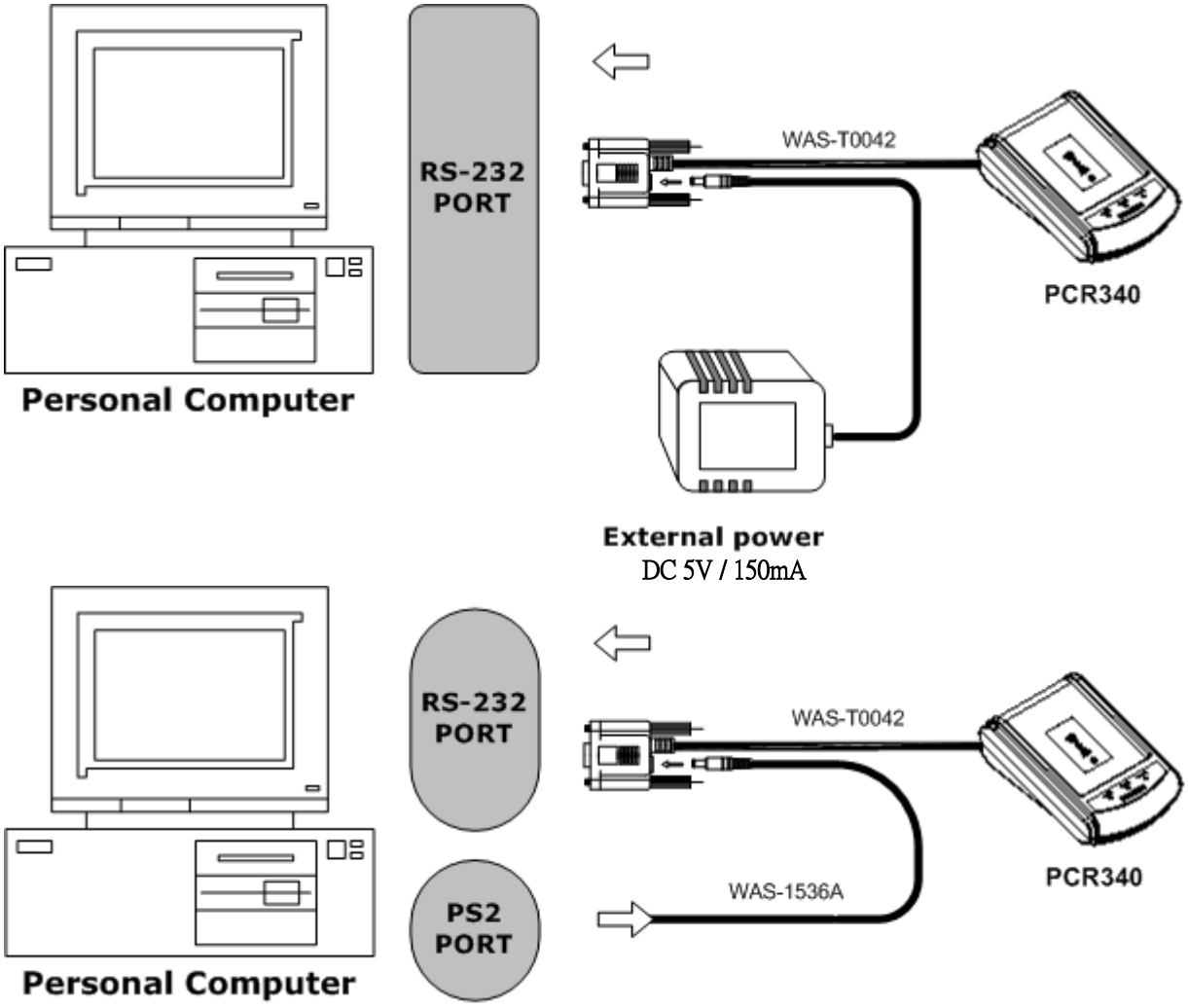
WAS-T0042 pin assignment:



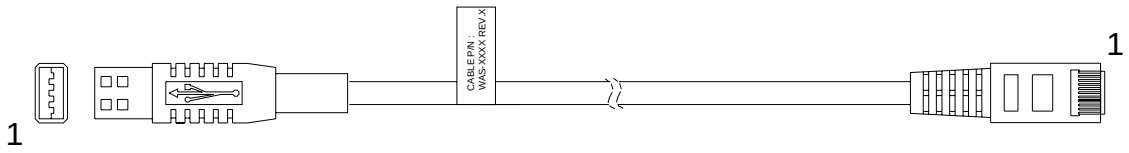
DB9 FEMALE PIN	FUNCATION
PIN2	RX
PIN3	TX
--	--
PIN5	GND

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

Connection:



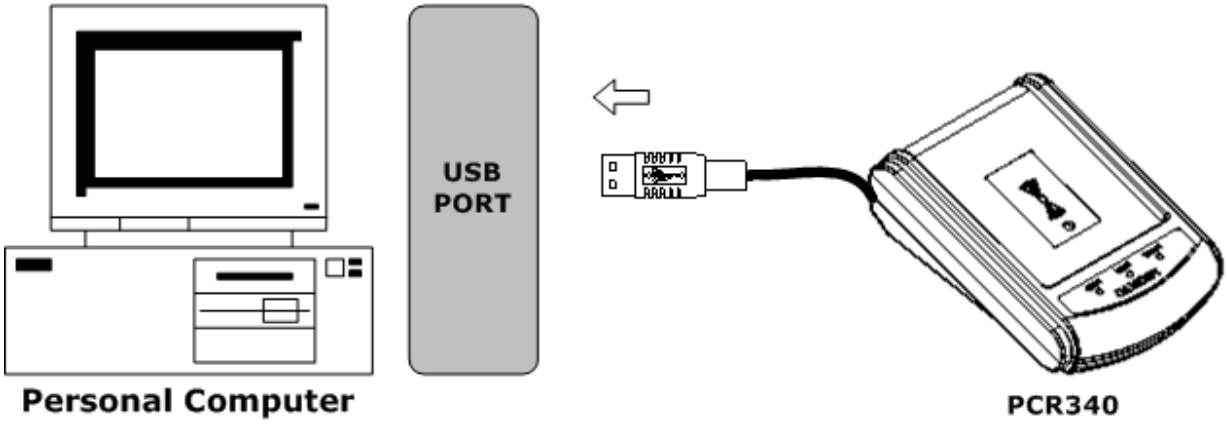
WAS-T0043 pin assignment:



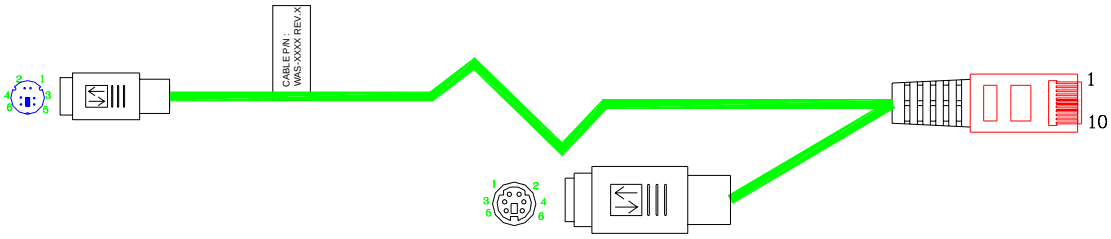
USB PLUG PIN	FUNCTION
PIN1	VDD
PIN2	D+
PIN3	D-
PIN4	GND

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

Connection:

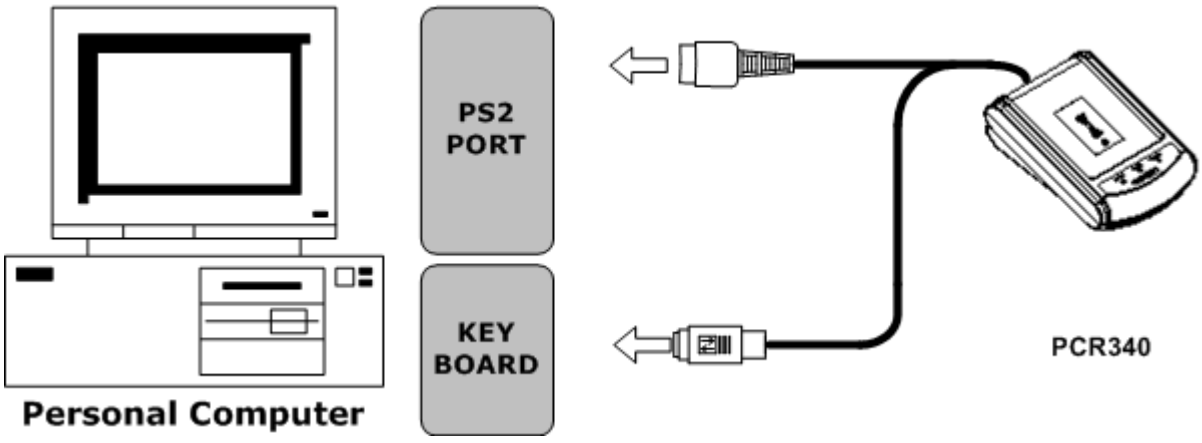


WAS-T0044 pin assignment:



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:



Importance notice of PCR340 operation

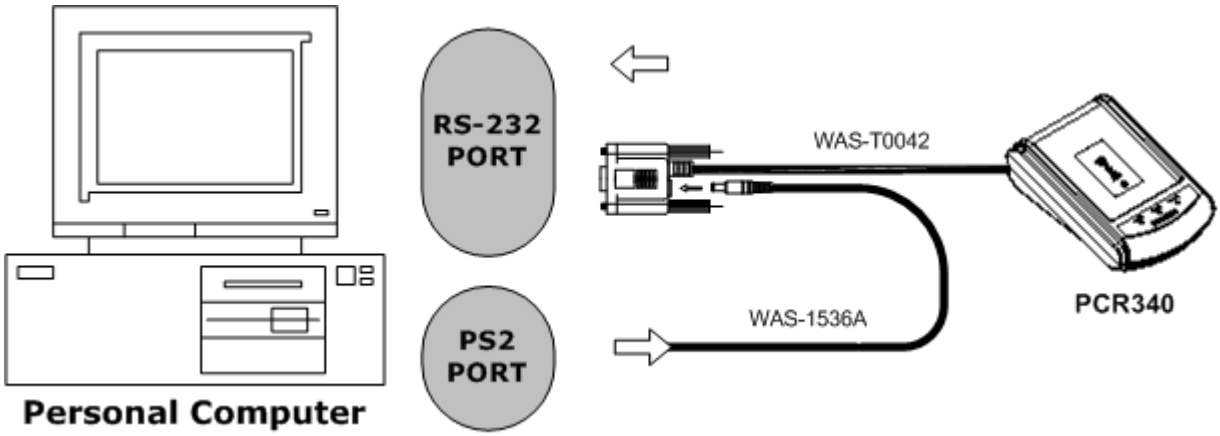
1. **To reach the ideal performance, please keep away from the other RFID readers at about 50 cm distance while the PCR340 is in operation to avoid the interference**

2. **Once continuous card reading is completed, hold for a while for Green LED goes off to access the next card reading.**

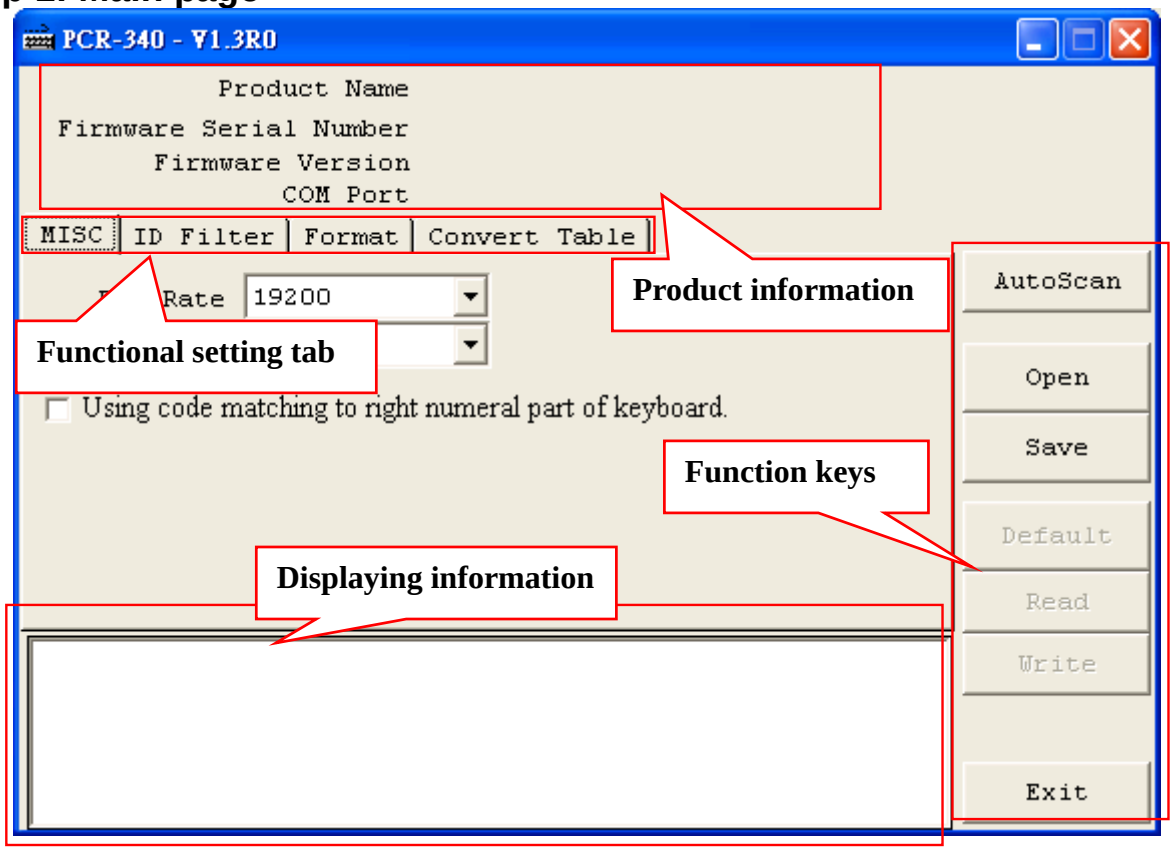
3. **When the PC is powered on, do not put the RFID card on the reaction panel to avoid an error message occurs.**

Software Operation

First connect PCR340 with PC through RS-232 port , then run demo software on the disk.

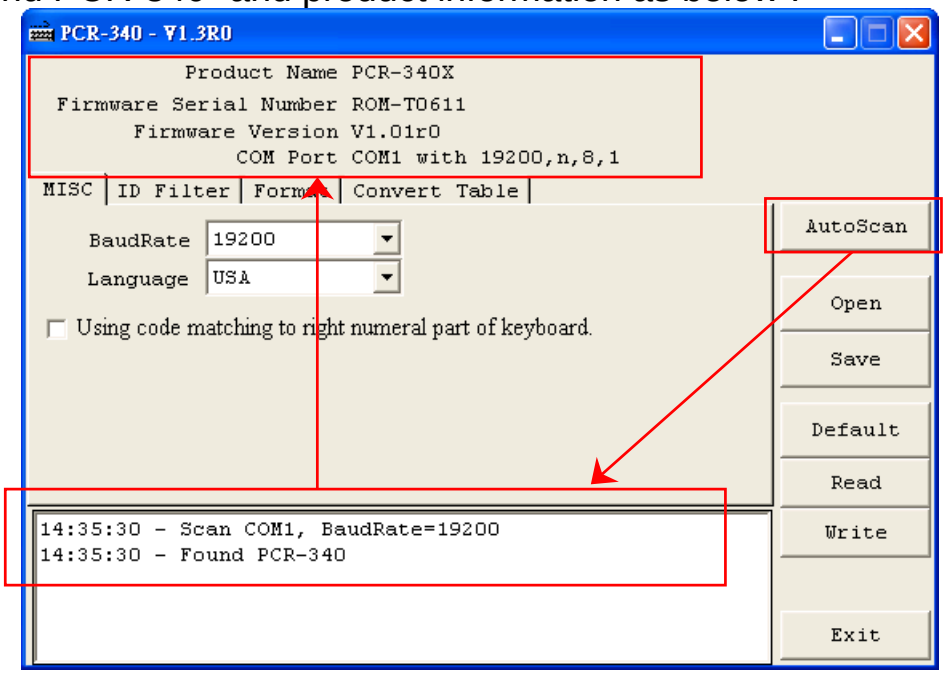


Step 1: Main page



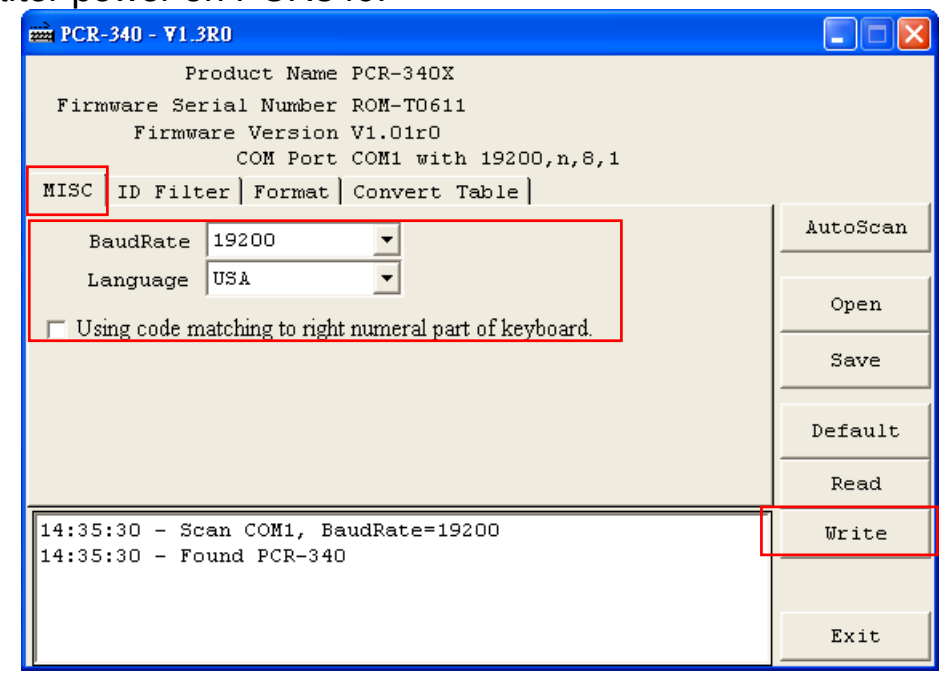
Step 2: Auto Scan

Click"AUTO SCAN" to communicate with PC. The software will detect PCR340 and related setting. If the communication is successful, it will show"Found PCR-340" and product information as below :



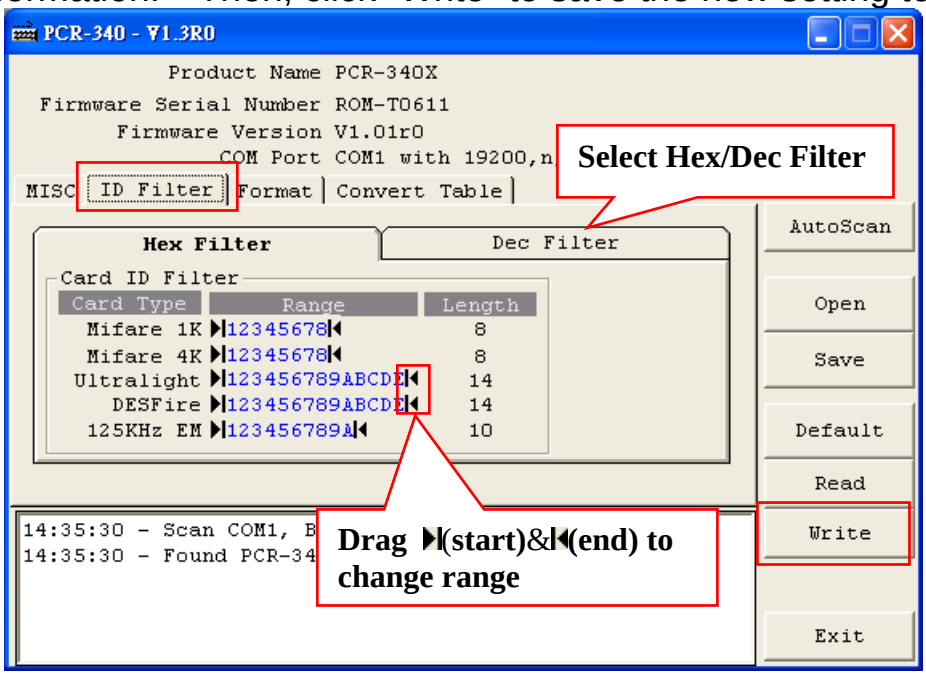
Step 3: MISC Settings

Click MISC to set "Baudrate", "Language (Keyboard type)" & "Using code matching to right numeral part of keyboard" if necessary and click "Write" to save the new settings to PCR340. If baudrate is changed, please turn off PCR340 and then you will get new baudrate after power on PCR340.



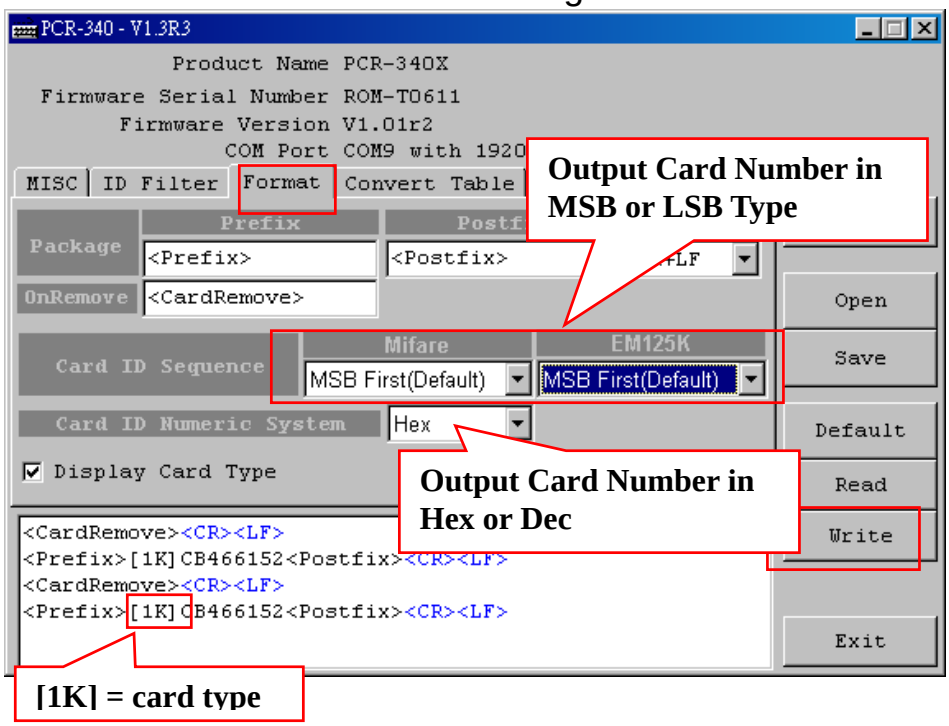
Step 4: ID Filter

Click “ID Filter” to set different card formats for data output after reading. Choose the card type and set the range/length of data information. Then, click “Write” to save the new setting to PCR340.



Step 5: Format

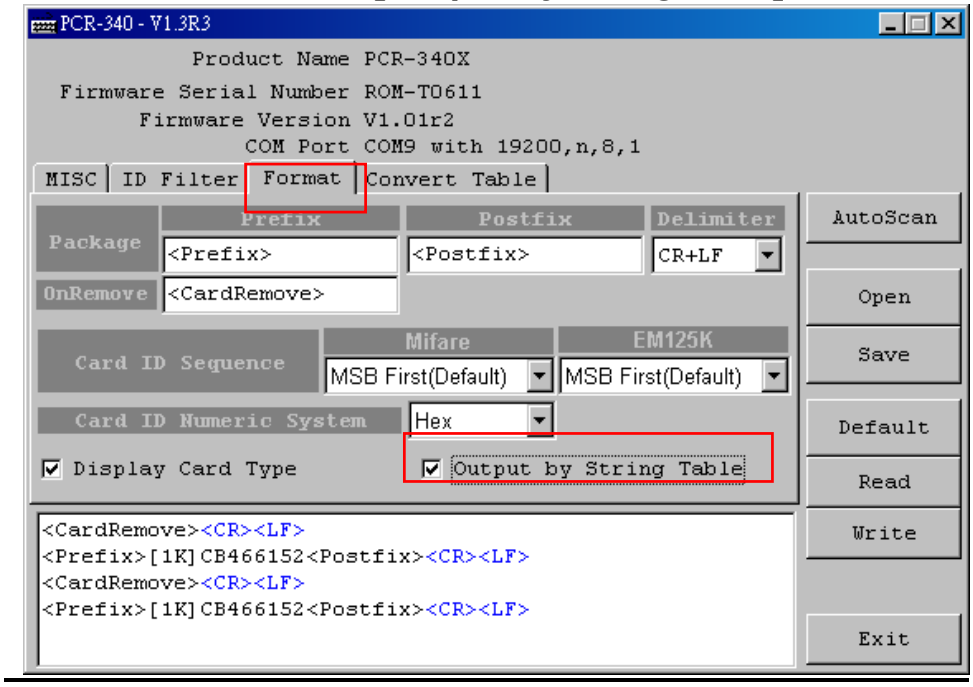
Click “Format” to set Prefix code, Postfix code and OnRemove message and Delimiter if necessary. If you want to show the card type when you read a card, click to enable “Display Card Type”. Then click “Write” to finish the setting and save it to PCR340.



Step 6: Convert Table

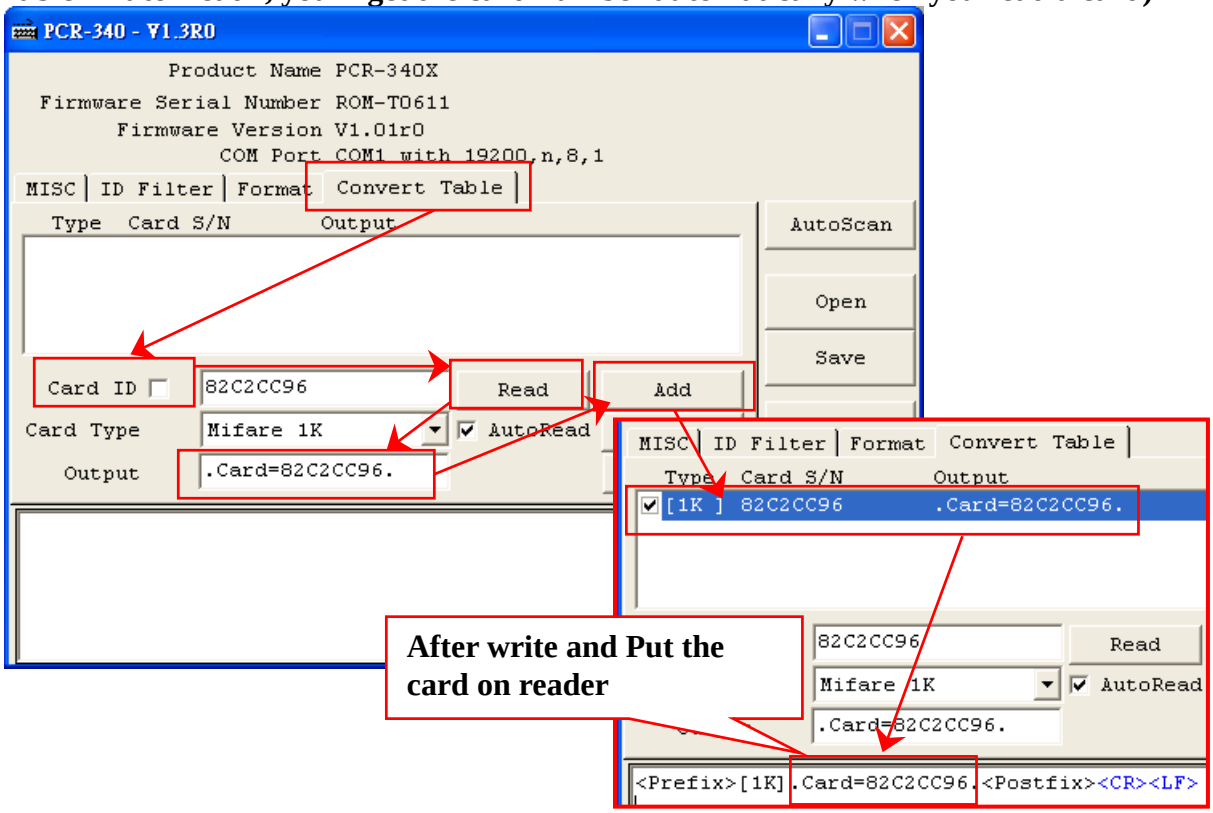
If you want to show alphabetical string instead of showing card number, click “Convert Table” to edit the message with the following processes:

A) Click “Format” and enable [Output by string table]

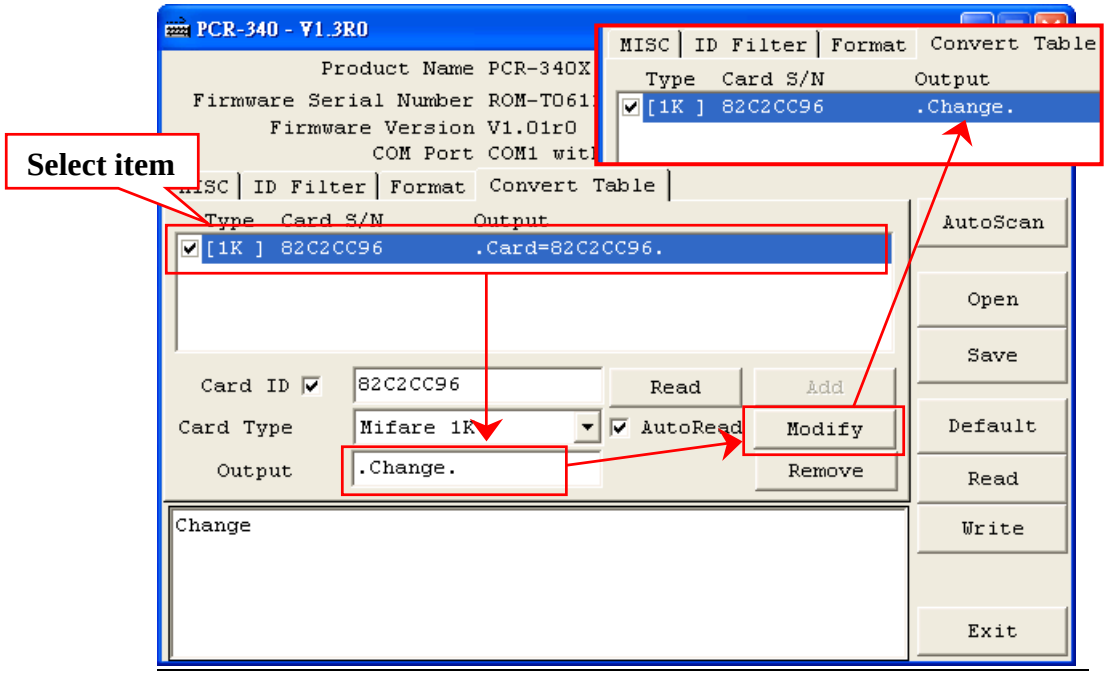


B) Then click “Convert Table” and add a card to table

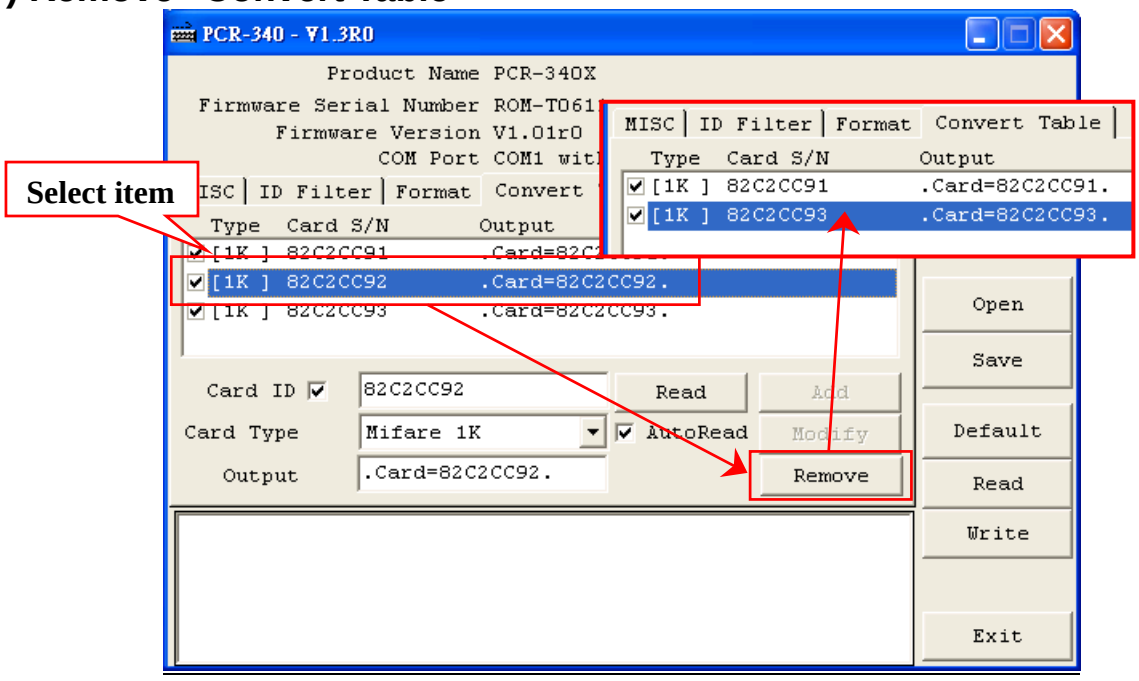
Click the “Card ID” to enable/disable the ID & click the “Read” to get the card ID (After enable "Auto Read", you’ll get the card number automatically when you read a card)



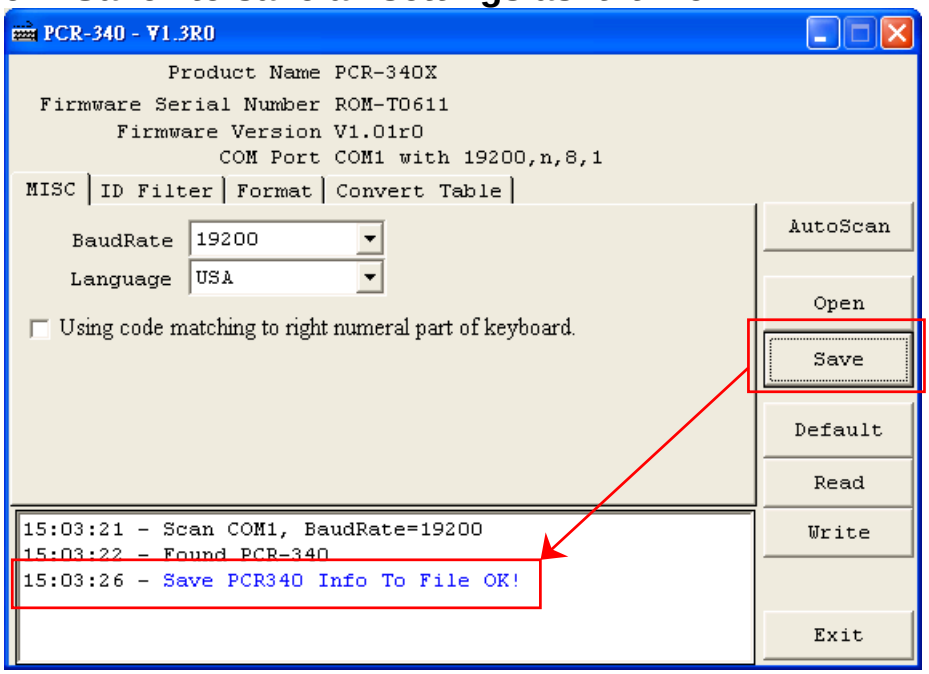
C) Modify “Convert Table”



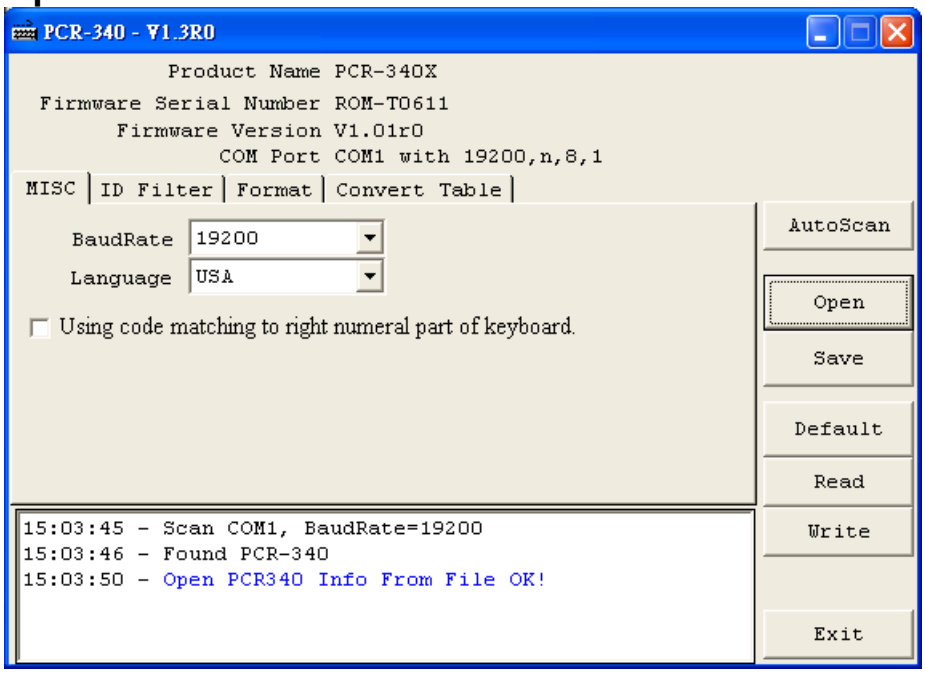
D) Remove “Convert Table”



Step 7: Click “Save” to save all settings as .txt file.



Step 8: If you want to download the settings form the file, click “Open” to open the file and click “Write” to download the settings.



Step 9: If you want to know the default setting of PCR340, click ”Read” and download the file to show it on display area.

Step 10: Click “Default” to reset PCR340 and get default setting if necessary. Default values are as below (red –lined area).

Default

Baud Rate	19200 (8, N, 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	Mifare 1K:	From Character = 1, Number of Characters = 8
	Mifare 4K:	From Character = 1, Number of Characters = 8
	UltraLight:	From Character = 1, Number of Characters = 14
	DesFire:	From Character = 1, Number of Characters = 14
	125KHz EM:	From Character = 1, Number of Characters = 10

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≥(Start+Length-1)≤8
0E2h~0E3h	Mifare 4K MF1 ICS70 Card ID Filter	Register 0E2h: Start Register 0E3h: Length ID Filter Range: 1≥(Start+Length-1)≤8
0E4h~0E5h	Mifare Ultralight MF0 ICS70 Card ID Filter	Register 0E4h: Start Register 0E5h: Length ID Filter Range: 1≥(Start+Length-1)≤14
0E6h~0E7h	Mifare DESFire MF3 ICD40 Card ID Filter	Register 0E6h: Start Register 0E7h: Length ID Filter Range: 1≥(Start+Length-1)≤14
0E8h~0E9h	125KHZ EM Card Card ID Filter	Register 0E8h: Start Register 0E9h: Length ID Filter Range: 1≥(Start+Length-1)≤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≥(Start+Length-1)≤8
092h~093h	Mifare 4K MF1 ICS70 Card ID Filter	Register 092h: Start Register 093h: Length ID Filter Range: 1≥(Start+Length-1)≤8
094h~095h	Mifare Ultralight MF0 ICS70 Card ID Filter	Register 094h: Start Register 095h: Length ID Filter Range: 1≥(Start+Length-1)≤14
096h~097h	Mifare DESFire MF3 ICD40 Card ID Filter	Register 096h: Start Register 097h: Length ID Filter Range: 1≥(Start+Length-1)≤14
098h~099h	125KHZ EM Card Card ID Filter	Register 098h: Start Register 099h: Length ID Filter Range: 1≥(Start+Length-1)≤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.