A068-Creating Custom encryption card with XSMART readers using PROS CS Software

This guidance describes how to configure the XSMARTreaders and how to create Custom Encryption user cards with protected identification ID.

Required items:

- 1. XSMART readers
- 2. Latest version of PROS CS Software <u>https://software.xprgroup.com/Software/PROS%20CS/Last%20version/PROS%20CS%20setup%</u> <u>206.1.1.exe</u>
- 3. Micro USB cable. Make sure the cable supports data transfer. If the PC cannot establish theconnection with the reader, change the cable.



- 4. PROX-USB-X desktop reader
- 5. Mifare Desfire cards for creating Custom Encryption cards.
- 6. Separate Mifare Desfire card if you want to configure the reader with card.

1. Firmware update XSMART reader at PROS Client

- 1. Install the latest version of PROS CS Software.
- 2. Run the PROS Client
- 3. Click on reader witch need to be configured to read custom encryption cards and select **"Properties".**



4. At section "Basic" click on "Configure Reader" tab.

Portals\Technical Support Portal 1\192_168_1_1	60_Slave\Door 1 XSecure\XS-K-MF-WO		×
📕 Basic 🔮 Free Access Time Zones	Display		
Reader	1		
Name	XS-K-MF-WO		666
Туре	XS-K-MF-WO	•	888
Entry Mode	Card or Access Code	•	This reader has to be configured before it
Door	Door 1 XSecure	•	is mounted.
Wiegand type	Wiegand34	•	Configuration process: 1. Set the reader basic parameters.
Enable access by time zones 🔽			2. Click on "Configure reader"
Bypass Antipassback 「			button to open configuration window
Exit from	Outside	•	
Entry to	Inside	•	I X5-K-ME-WO
Antipassback reset time	00:00	*	Configure Reader Firmware Update
Free access 24/7			Senal port (COM) COM4 Reader Config
If 0 illegal attempt, disable for 0	minutes		Change the Reader Configuration password Configuration Con
Required number of valid users for access	1	•	13.5 MHz Settings ISO14443-A (Mifare, N
C	News		125 KHz Settings Disabled
Camera	INone		Backlight 🛛
	Configure Reader		Green 74 %
			Red 90 %
			Buzzer level 100 %
			Enable buzzer Kevlenoth 5
			EXPORT CONFIGURATION TO FILE IMPORT C
			CONFIGURE READER READ CONFIGURATION F
			Product Web Page
?		Save & Exit	

- 5. Connect the reader to the PC using a micro USB cable.
- 6. If the reader is recognized by the PC, the field "Serial Port (COM)" will show the communication port where the reader is connected, like "COM3". If there is no value in the "Serial Port (COM)" field, change the USB cable.

- 7. Select "Firmware Update".
- 8. Connect the USB cable to the PC.
- 9. Select the correct COM port.
- 10. Select the latest available firmware (2.18 or newer).
- 11. Click on **"Update firmware"** button.

erial port (COM) COM4 Reader Co	onfiguration password ***** CONNECT TO READER Disconnect	ed
Firmware file	Firmware undate manual	
Version : 2.18 Release date : 12.10.2023 changes : Improved handling of 13.5 MHZ credentials. changes : added XSecure card option and Custom encryption. changes : Added option to configure the reader with Configuration card.	 Connect the USB cable with the device micro USB connector Select the firmware version to upload Connect the USB cable to the PC Select the correct COM port Click on "Update firmware" button Nait until update is finished DO NOT DISCONNECT THE DEVICE UNTIL UPDATE IS FINISHED! 	

12. Wait until update is finished.

Configure Reader	Firmware Update	Password				^
Serial port (COM) COM4	 Reader Config 	uration password	*****	CONNECT TO REAL	DER Disconnected	
Firmware file	2.18	•				
Revision history		Firmware upda	te manual			
Version : 2.18 Release date : 12.10.2023 changes : Improved handlin	g of 13.5 MHZ credentials.	1. Connect the USB connector 2. Select the f	USB cable with	the device micro		
encryption. changes : Added option to c Configuration card.	Warning: configure the r Device will be rea Please wait 14 sr	et, please wait to finish.		Canal		
CANCEL	-			5656		

13. After Firmware update success click on **"OK'** tab.



2. Creating the Custom Desfire encryption settings at PROS Client

- 1. Install the latest version of PROS CS Software.
- 2. Run the PROS Client
- 3. Select "Settings/System Parameters".



- 4. Select "Desfire custom encoding".
- 5. Set the encryption settings items in the table. If the cards will be encoded with PROX-USB desktop reader, keep the value for **"Key number"** to zero.
- 6. Click on **"Save&Exit"** tab.

		setungs		
Application Key	CCDFEC26AA0D	BCF62E719F50CF251331	ø	
Application ID (000001 - FFFFFF)	FF1512		ø	
File ID	3 🔹			
Key number	0 •			
Offset (bytes, 0-255)	5			
ID length (bytes)	5 🔹			
Data encryption	Encyphered (AES)			
Key type	AES	•		
		Update Desktop	reader	
Data encryption Key type	Encyphered (AES)	Update Desktop	reader	

3. Select the Default Card type for PROX-USB-X Desktop

- 1. Select "Settings/System Parameters".
- 2. Select "USB Desktop Readers".
- 3. Set the default card type to "Desfire custom encoding".
- 4. Click on **"Save&Exit"** tab.

Jetault card type	Desfire custom encoding
Convert 7 bytes Mifare UID to 4 byte NUID using NXP co	nversion algorithm. 🔽
his is the default card type setting when reading a card s present and can be changed there temporary for read	from an USB desktop reader. It is shown in the Users window when the read ing a different card type than the default one.

4. Configure the XSMART Readers to read custom encryption card at PROS Client

1. Click on reader need to be configured to read custom encryption cards and select "Properties".



- 2. Select correct reader type.
- 3. Select Entry mode if you use reader with keypad.
- 4. Set Wiegand type to Wiegand 34.
- 5. Click on "Configure Reader" tab.

💀 Portals\Technical Support Portal 1\192_168_1_1	60_Slave\Door 1 XSecure\XS-K-MF-WO			×
Basic Pree Access Time Zones	Display			
Reader	1			
Name	XS-K-MF-WO		6	10
Туре	XS-K-MF-WO	-		6
Entry Mode	Card or Access Code	*	This reader has to be co	
Door	Door 1 XSecure	-	is mounted.	inigured before it
Wiegand type 🧲	Wiegand34	-	Configuration process:	hasic harameters
Enable access by time zones 🔽			2. Click on "Config	gure reader"
Bypass Antipassback 🔽			button to open window.	configuration
Exit from	Outside	_		
Entry to	Inside	•	E XS-K-MF-WO	
Antipassback reset time	00:00	<u>.</u>	Configure Reader	Firmware Update
Free access 24/7			Senal port (COM) COM4	Reader Config
If 0 illegal attempt, disable for 0	minutes		Change the Reader Configuration password	Confirm password
Required number of valid users for access	1	•	13.5 MHz Settings	ISO14443-A (Mifare, N
Camera	None	•	120 Knz Settings	Disabled
e	Configure Reader		Backlight	v
	Configure i Veader		Green	74%
			Red	90 %
			Buzzer level	100 %
			Keylength	5
			EXPORT CONFIGURATIO	N TO FILE
			CONFIGURE READER	READ CONFIGURATION F
		1	Product web Page	
?		Save & Exit		

- 6. Connect the reader to the PC using a micro USB cable.
- 7. If the reader is recognized by the PC, the field "Serial Port (COM)" will show the communication port where the reader is connected, like "COM3". If there is no value in the "Serial Port (COM)" field, change the USB cable.
- 8. Select "ISO 14443-A(Mifare,NTAG)" and select "Custom encryption(Desfire only)".

🔛 XS-K-MF-WO	- 🗆 X
Configure Reader	Firmware Update Password
Serial port (COM) COM4	Reader Configuration password CONNECT TO READER Disconnected
Change the Reader Configuration password	New password Password length is 6 characters. Use letters, numbers and special characters like @#\$%^*)
13.5 MHz Settings	ISO14443-A (Mifare, NTAG)
125 KHz Settings	Disabled Base frequency 132.23 (EM4100 default) KHz
Backlight	S
Green	74 %
Red	90 %
Buzzer level	100 %
Enable buzzer	
Keylength	5
EXPORT CONFIGURATIO	ON TO FILE IMPORT CONFIGURATION FROM FILE
CONFIGURE READER	READ CONFIGURATION FROM READER 0
CREATE CONFIGURATIO	N CARD ERASE CONFIG CARD

9. If micro USB is used for configuring the reader click on "Configure Reader" tab.



10. If Configuration card is used for reader configuration, place the configuration card on your desktop reader and click on **"Erase Config Card"** if card is previously used for configuration and then create new Configuration Card using **"Create Configuration card"** tab. Keep the configuration card 5 to 10 seconds on the reader until you hear short and long beep. After this the reader is configured. If you have more readers just use the same configuration card for all readers.



11. Connect the reader to the Controller.

5. Assigning the Custom encryption credential to user with desktop reader PROX-USB-X.

1. Make sure that card type is set to "Desfire custom encoding".

	PROX-USB-X	Setup PROX-USB-X
Card Ty	pe	mencoding Read Card Details

- 2. Configure the desktop reader PROX-USB-X to read the Custom encryption credentials.
- 3. Connect the desktop reader PROX-USB-X to PC
- 4. Open Users management window.
- 5. Click on "Setup PROX-USB-X" tab.



6. Set the values as in image bellow and click on **"Configure reader"** tab. Now reader will read Custom encryption(Desfire only) cards.

🛃 PROX-USB-X				1.55	×
Device configuration	Card Type		ISO 14443-A (Mi	ifare)	•
Basic	Entry mode		Custom oncounti	on (Dosfiro or	
Commands			Custom encrypti		
Properties					
	ID bit count		From card		 -
	Configure reader				
	Serial port (COM)	COM5			

- 7. Place the Mifare Desfire card at PROX-USB-X reader.
- 8. If card is already programmed select the icon to get the User ID(Card number).



9. If card is not programmed, type the User ID you want and click on icon" Encrypt card".



10. After Encryption is completed message will appear "Card is encrypted".

PROS Client	×
Card is encrypted	
ОК	

11. Click on "Save new" tab.

