ET-9-USB-1

USB Micro Reader Developer's Kit



User Guide



Secura Key ET-9-USB-1 USB Micro Reader Developer's Kit - User Guide

The Secura Key USB Micro Reader (Model ET9-USB-1) can read and write to 13.56MHz RFID transponders that meet the ISO 15693, 14443A and 14443B standards. The USB Micro Reader is designed to plug into a USB port on a PC running Windows XP or Vista. The reader is powered by the USB Port, and communicates with the PC via a Virtual COM Port.



The ET9-USB reader is available in three model variations

- ET9-USB-1 switchable for internal or external antenna
- ET9-USB-1E external antenna only; no switch
- ET9-USB-11 –internal antenna only; no switch, no MMCX jack

The USB Micro Reader has a USB plug on one end and an MMCX mini-coaxial jack on the other end. The MMCX connector allows the 1 x 4" external antenna to be plugged into the reader.

A recessed sliding switch on the side of the reader body allows you to switch between the internal and external antennas. If you slide the switch toward the USB jack, the internal antenna is connected, and if you slide the switch toward the MMCX jack, the external antenna is connected.

Typically, the internal antenna will provide about 1" of read distance using a CR80-sized RFID card, and the external antenna will provide 3-4" of read range.

Secura Key USB Micro Reader Developers Kit Contents:

- USB Micro Reader
- 1" x 4" printed circuit antenna with MMCX cable
- CD-ROM with Windows Drivers and documentation.

On the following pages, this guide explains:

- How to install the USB Micro Reader on your PC
- How to use the USB Micro Reader with HyperTerminal
- How to use the USB Micro Reader with e*Tag® Host

Installing the USB Micro Reader on your PC

- 1. Install the Secura Key driver disk in your PC's CD Drive.
- 2. Plug the USB Micro Reader into a USB Port.
- 3. The PC will display the message: New Hardware Found and then the New Hardware Wizard will start.



- 4. Click on the radio button labeled No, not this time, and then click Next. You are then prompted to select an installation method.
- 5. Click on Install from a list or specific location.



You will be prompted to choose your search and installation options. Click on **Include this location in the search** and then click **Browse**, and look for the file on the driver disk.

For XP Machines, select: drivers\XP\iarvircomport.inf For Vista Machines, select: drivers\Vista\iarvirportVista.inf Then click **Next**

Please choo	se your search and installation options.	
 Search 	for the best driver in these locations.	
Use th paths a	scheck boxes below to limit or expand the default search, which includes local and removable media. The best driver found will be installed.	
	Search removable media (floppy, CD-ROM)	
	nclude this location in the search:	
	Browse	
O Don't : Choose the driv	earch. I will choose the driver to install. s this option to select the device driver from a list. Windows does not guarantee er you choose will be the best match for your hardware.	e tha
		2

6. If you are running XP, your computer will display the following message about Windows Logo Testing – click Continue Anyway.



The Wizard will install the software.



Click Finish to close the wizard, and your PC will display the prompt: Found New Hardware - ready to use



To determine which COM port Windows has assigned to your USB Micro Reader, use the following procedure:

- 7. Click Start, Control Panel, and then select the System Icon. (On some PCs with XP, select Performance and Maintenance, then the System Icon).
- 8. Then select the Hardware tab and press the Device Manager button. Your PC will display the screen shown below.
- 9. To view where the USB reader has been assigned, click on **Ports**, and look for IAR Virtual COM Port. In the example, the reader is assigned to COM4.



Changing the COM port assigned to the Reader

Windows will normally select a virtual COM port when the reader is installed. If you need to change or manually select the virtual COM port used by the reader, use the following procedure:

- 1. Click on Start, Control Panel, System. (On some PCs with XP, select Performance and Maintenance, then the System icon).
- 2. Select the Hardware tab, then click on the Device Manager button.
- 3. On the Device Manager tree, click on Ports, and then double click on IAR Virtual Port to display its properties.
- 4. Click on the **Port Settings** tab, and then click on the **Advanced** button. Change the COM Port Number setting by selecting a new port from the drop down box and then click **OK**, **OK**, and exit.

📙 Device Manage	IAR Virtual COM port, LPC214x board (COM4) Properties ? 🛛 🔳 🔳 💽	
File Action View	Advanced Settings for COM4	? 🛛
BHOLLAND BHOLLAND BHOLLAND Bisk drives Disk drives Di	Use FIFD buffers (requires 16550 compatible UART) Select lower settings to correct connection problems. Select higher settings for faster performance. Receive Buffer: Low (1) Transmit Buffer: Low (1) High (14) (14) Transmit Buffer: Low (1) COM Port Number: CDM4	OK Cancel Defaults
 Printer Processors Sound, vic System de Universal 5 	OK Cancel	

Using the Reader with HyperTerminal

Once the reader has been installed on your PC, you can use it with HyperTerminal, which is a Windows Accessory, already installed on your PC as part of Windows XP or Windows Vista.

To configure HyperTerminal for your USB Micro Reader:

Click on Start, All Programs, Accessories, Communications, then HyperTerminal.

The Connection Description screen is displayed. Type in **COMx_38400**, using the COM port previously selected by Windows (x represents the COM port number - COM4 was selected in our example), then click **OK**.

Connection Description	? 🛛
New Connection	
Enter a name and choose an icon for the connection:	
Name:	
COM4_38400	
lcon:	
	2
OK Car	ncel

The Connect To screen is displayed. Select the assigned COM port using the dropdown box and click **OK**.

Connect To	? 🛛
🦓 сом4_3	8400
Enter details for	the phone number that you want to dial:
Country/region:	United States (1)
Area code:	
Phone number:	
Connect using:	СОМ4
	OK Cancel

Use the next screen to define COMx Properties as shown, then click OK.

COM4 Properties		? 🛛
Port Settings		
Bits per second:	38400	v
Data bits:	8	~
Parity:	None	~
Stop bits:	1	~
Flow control:	None	
	Restore D	efaults
	K Cancel	Apply

Then, present a tag to the reader, and the UID will display on the screen.

🍓 COM4_38400 - Hyper	Terminal						
ile Edit View Call Transfer Help							
) 🖨 🖉 🖧 🛍 🎦 🖀							
1234567 E0070	0000076A09B7						
Connected 0:00:30 Au	to detect 38400 8-N-1	SCROLL CAPS	NUM Captu	re Print echo			

Using the Reader with e*Tag® Host

The reader can also be used with e*Tag Host, which is a Windows test application for e*Tag[®] readers developed by Secura Key. To configure the reader for communications with e*Tag[®] Host:

- 1. Select Settings, Reader Interface, and click on COM Port.
 - 🧐 Secura Key eTag Host File Configuration Settings Tools Help Reader Interface 🔸 3 Þ ✓ Com Port Repeat Go USB Port ISO/IEC 15693 | ISI Baud Rate Þ 16:2 Command Type ✓ View Messages View One Block Use UID Hex O View Many Blocks Block Number 0 C View Factory Data
- 2. Select Settings, Port, and click on COMx. (x represents the selected port COM4 in our example)

🚳 Secura Key -	eTag Host		
File Configuration	Settings Tools Help	_	
D 🕄	Reader Interface 🔸	2	٥
Go Repeat	🖉 Port 🔷 🔸	COM1	Popdor Pr
Command Type	Baud Rate 🕨	🖌 COM4 😽	16:29:0
 View One Block 	✓ View Messages Use UID		
C View Many Bloc	sks Block Number	Hex	

3. To verify communications, click on **Version** in the icon menu at the top of the screen, and the reader version should display in the Reader Response dialog box.

🥸 Secura Key - eTag Host							
Fix Configuration Settings Tools Help							
🕩 🚷 🏕 Go Repeat Versi	on Weigand Setup	o Cjear	🕚 Test	<u>∧</u> Reset			
ISO/IEC 15693 ISO/IEC	4443-A Tag-it		Reader	Response			
Command Type View One Block View Many Blocks	Options UID Use UID Block Number	Hex	16:31 Se 6.	l:02 - erial nu .05 L	Reader Version: eTag Quasar mber: oaded Reader Version		
C Program One Block							

4. To send the inventory command, click on the **Inventory** radio button in the left-hand column, place an e*Tag[®] card near the reader antenna, and then click on **Go** in the icon menu. The reader will read the tag and display UID data in the Reader Response dialog box.

🥸 Secura Key - eTag Host							
File Configuration Settings Tools Help							
Go Repeat Versi	on Weigand Setup	🥢 Cjear	🕚 Test	A Reset			
ISO/IEC 15693 ISO/IEC 1	4443-A Tag-it		Reader	Response			
Command Type View One Block View Many Blocks	Options AFI Use AFI 0: All families	Ţ	16:38 # 01	3:13 - UID L E007	ISO Inventory: 0000076A0A66		
C View Factory Data		TIEA					

5. To view one data block, click the **View One Block** radio button in the left-hand column, place an e*Tag[®] card near the reader, then click on **Go** in the icon menu and one data block will be displayed in the Reader Response dialog box.

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	File Configuration Settin	gs Tools Help						
	🕩 🚷 🏕 Go Repeat Versi	ion Weigand Setup	🌌 Clear	() Test	A Reset			
1	ISO/IEC 15693 ISO/IEC	14443-A Tag-it		Reader	Response			
	Command Type • View One Block • View Many Blocks	Options Block Number UID UID Use UID	Hex	16:42 B1 B1	:05 - F ock Numbe ock Data:	Read Tag Block: er: 0 : 00002020		
	View Factory Data							



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