3M Security Systems Division

Trusted Technology
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3M™ RTE5000 e-ID Pad

Getting Started Guide

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Contents   Page

1   Introduction

1.1   Warnings, Cautions and Notes

This manual contains important information regarding the operation of the 3M™ RTE5000 e-ID Pad. For safe and reliable operation of the scanners all users must ensure that they are familiar with and fully understand all instructions contained herein.

Warnings provide information which is important for your health or for preventing personal injury, property damage, or endanger life.

Cautions provide information to prevent damage to the equipment, other systems or loss of data.

Notes indicate important information that ensures the tests are carried out correctly. Failure to comply will cause the product to perform outside of its specification and may result in rework and rejected product.

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1.2   Notices

The company reserves the right to make changes to its products at any time and without notice. The information furnished by the company in this manual is believed to be accurate and reliable. The material contained herein is supplied without any representation or warranty of any kind. The company therefore assumes no responsibility, consequential or otherwise, of any kind arising from the use of this product.

1.3   Disposal - European Directive 2002/96/EC

Do not dispose of this equipment in domestic or general waste. These devices can be recycled and should be disposed of in accordance with your local and national regulations.

1.4   Restriction of the use of Hazardous Substances - European Directive 2002/95/EC

The RTE5000 complies with the above directive.

1.5   Electromagnetic compatibility (EMC)

These units are designed to be immune to levels of interference generated within an office environment and not to interfere with other equipment. In order to provide this level of compatibility the unit, its cabling and PSU or its installations, must not be modified in any way.

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Security Systems Division

CAUTION — **Modifications or changes to this equipment, the interface cables or the power supply not expressly approved by the manufacturer could void the user's authority to operate the equipment and/or break local laws or regulations.**

For further regulatory information or copies of certificates contact your local 3M representative or the manufacturer at 3M-AiT-gcs@mmm.com

EMC Compliance Europe

CE — This equipment meets the following European Council Directives:

Scanner: EMC (2004/108/EC), RE&TTE (1999/5/EC)

PSU: EMC (2004/108/EC), LVD (2006/95/EC)

EMC Notices (U.S. and Canada only)

FCC/Canada Radio Frequency Rules and Regulations

CAUTION — **Caution:** For FCC compliance the supplied USB cable with a ferrite must be used. Substitution of this cable with any other will invalidate the FCC certification.

US FCC ID: To be completed

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada ID: To be completed
Cet appareil….

1.6   Trademarks & Acknowledgements

3M, Confirm and Scotch-Brite are trademarks of 3M.

All trademarks are acknowledged.

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1.7   Office Locations

Europe, Middle East and Africa
3M United Kingdom PLC
3M Centre Cain Road
Bracknell, Berkshire
UNITED KINGDOM
RG12 8HT
telephone: +44 (0) 1344 858 000
fax: +44 (0) 1344 857 865

North America and Asia Pacific
1545 Carling Avenue
Suite 700
Ottawa, Ontario
CANADA
K1Z 8P9
telephone: +1 613 722 2070
fax: +1 613 722 2063
web: http://www.3m.com/security/en

1.8   Global Technical Services

North America
direct line: +1 613-722-3629
main number: +1 613-722-2070
fax: +1 613-722-2063
email: 3M-AiT-gcs@mmm.com

United Kingdom
direct line: +44 (0) 1344 858 371
main number: +44 (0) 1344 858 000
fax: +44 (0) 1344 858 792

1.9   Revision History

Version	Date	Description
V1.00	June 2009	Original

2 The 3M™ RTE5000 e-ID Pad

The 3M™ RTE5000 e-ID Pad is a multi-function document reader that provides accurate and reliable OCR accuracy combined with contact and contactless smartcard readers capable of encoding and decoding data from both contactless smartcards and contact cards. It is an ideal device for issuance and processing of ePassports and other identity documents.

It contains a USB hub and has two auxiliary USB ports on the rear panel, along with a Kensington lock slot.

The 3M RTE5000 has a slot at the rear for OCR swipe, an RFID antenna under the top surface and two contact smart cards slots to the right.

2.1 References

Description	3M Part No.

2.2 Applications

- ePassport document issuance
- Border control
- APIS data capture with cross checking of FAA watch lists
- ePassport reading and authentication
- Hotel check-in and reporting
- ID checks

2.3 Features

- OCR data capture using ICAO compliant IR light

- ICAO LDS compatible ISO14443 contactless RFID reader/writer

- 1 or 2 contact smartcard ISO 7816 reader/writers

- Complete access to all OCR and RFID data captured via Software Development Kit (SDK)

- OCR data is automatically used to open ePassports using BAC with manual data entry and correction

- Auto-triggering of document capture – presence of document is automatically detected

- Windows® 2000-SP4, XP or Vista® compatible

- USB 2.0 high speed compatible

- Integrated USB 2.0 Hub – 2 ports for external peripherals (e.g. fingerprint capture, magnetic strip reader, 2D barcode gun)

- No moving parts

- Contact or Contactless IC reading and writing capability

- Active and Passive authentication of ePassports

- Basic Access Control and Extended Access Control of ePassports

- All hashing and digital signature algorithms for ICAO PKI standards (RSA, DSA, ECDSA, all SHA Hash lengths)

- Comprehensive Certificate handling to enable verification of EF.SOD signature and Document Signer Certificate signature

- Full SDK including DLLs, OCXs and demonstration programs. Support for Visual C++, Visual Basic, Borland Builder

3   Starting your evaluation

3.1   Installation

STOP

Warning: The Evaluator's Guide describes how to install the 3M RTE5000 reader to ensure it meets safety and regulatory standards. This manual outlines the installation procedure for straightforward installations.

CAUTION

Do not plug the reader in before installing the 3M RTE5000 drivers.

You must install the drivers first.

For the latest information on installation use the "**View Documentation**" option from 3M RTE5000 SDK CD launcher, however for the experienced user the process can be summarised as follows:

- Install the device drivers (do not plug the scanner in first).
- Ensure DirectX 9 (for Windows XP) or DirectX10 for Vista is loaded and up to date.
- Install the Demonstration programs from the 3M RTE5000 SDK CD on to the PC which will be connected to the scanner.
- Connect the scanner to the PC and follow the instructions when the "driver install" windows appear.

The unit does not have a power switch and would usually be left on. Power can be confirmed by checking that the power-on LED on top of the unit is green.

If the power-on LED is off or red then the unit has failed self test and is unserviceable.

For the system requirements of the PC you are installing the reader on to refer to the appendixes in the Evaluator's Guide.

Once the software is installed, use this manual to help with the set up, running and control of the scanner. The next section explains how to start using the scanner.

To uninstall the software use the Windows Control Panel component "**Add or Remove Programs**". To remove the drivers click on the item "**3M RTE5000 Device Drivers**" and select "Change/Remove". To remove the software package and SDK click on the item "**3M RTE5000**" and select "Change/Remove". Then follow the instructions on the pop-up windows.

If you are having trouble installing the software or the scanner, see the Troubleshooting section of the Evaluator's Guide for more details.

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3.2 Checking the Scanner is plugged in and working

- **Windows 2000 and XP**

1. Go to the "**Control Panel**" from the Start Menu and Select "**System**", "**Hardware**" and "**Device Manager**".
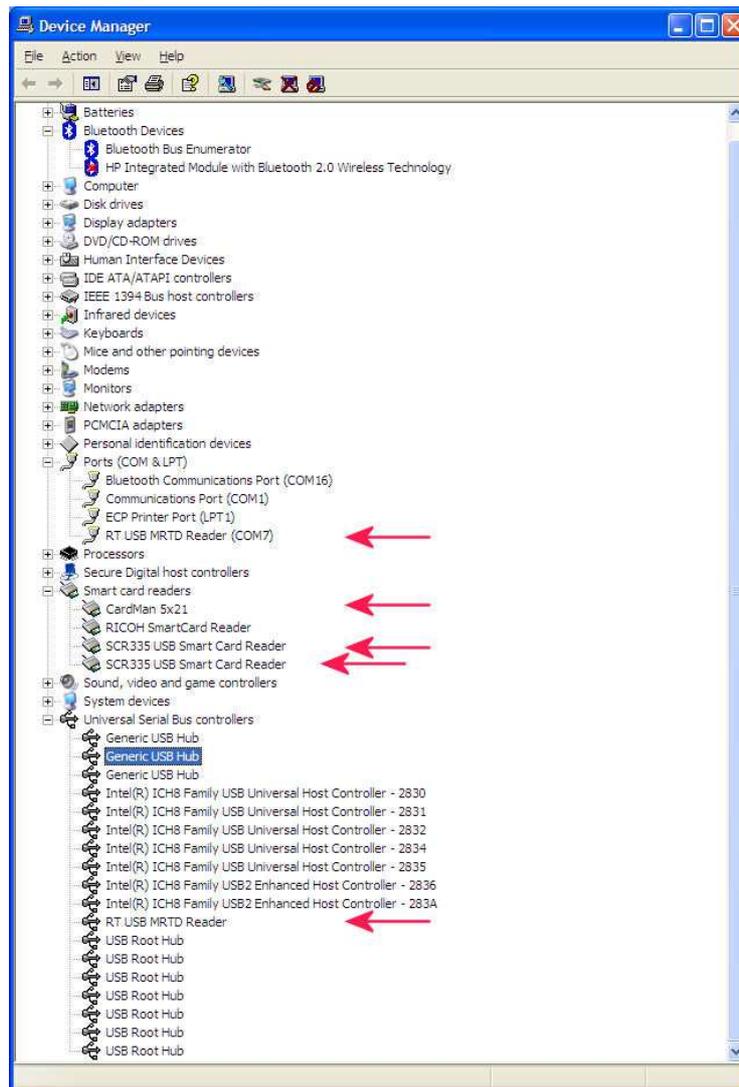
2. Check that you see all of the arrowed devices shown above.

   If you cannot see these then consult section 4 Troubleshooting.

3.3   Evaluating your Scanner

3M Security Systems Division supplies a number of demonstration programs, however, we recommend that you start with the RTE5000 ePassport Demo program that you will find as a shortcut on your desktop. Double click the link to start the program and select one of the schemes. Then you can test the appropriate documents. Try other document types with other schemes. Documents can be scanned by simply inserting them as shown below.

The reader incorporates has one slot for reading the codeline data off travel documents, an RFID reader is located on the main flat surface under the ePassport symbol and there are two contact smartcard slots on the right hand side of the unit.

1.   For all documents, identify the correct slot/surface as described above.
2.   Orientate the document.
            For machine readable travel documents, OCRB and E13B documents the codelines should be towards the bottom and facing towards you.
3.   Swipe the document briskly, yet smoothly, from left to right, through the appropriate slot. It will also work from right to left.
            Ensure that the bottom edge of the document remains in contact with the base of the reader slot and the movement is continuous.
4.   When an OCR document is swiped the right hand LED usually turns red to show a bad read and the buzzer sounds or the LED turns green and the buzzer stays quiet for a good read.
            However the use of LEDs and buzzer may be under host control (that is your Departure Control System (DCS) or other computer) and the audible and visual feedback will be different for your application. You should ensure you understand your company's local operating procedures covering the order of swiping documents and the meaning of the feedback from your DCS and the 3M RTE5000.
5.   For RFID documents such as ePassports, swipe the OCR first and then place the passport central and flat on the read surface. For US passports the document must be presented open and with the chip side against the surface.
6.   Contact smartcards can be simply inserted into the slot with the chip uppermost and entering into the slot first.

4   Troubleshooting

If you do not receive any data at all then carry out the tests in section 4.1 otherwise if you receive some data but some features do not work go to section 4.2.

See the Troubleshooting section of the Evaluator's Guide for more complex troubleshooting tasks.

4.1   Scanner does not appear to work

This section describes some basic troubleshooting information designed to check whether the scanner is working and connected to the test software.

1.   Connect the scanner and check that there is a green LED on the reader (rear left side). If this is flashing or is not lit there is a power supply problem, the USB cable is not connected, the USB hub does not support USB2.0 or the scanner is defective.

2.   Check that all the devices are visible as shown in section 3.2 above. If they are not visible use device manager to remove any entries which have errored (check also the Universal Serial Bus Controllers section), unplug the scanner from the PSU and the USB cable and reconnect. If this does not work, then repeat and re-install the 3M RTE5000 device driver package.

3.   Start the RTE5000 ePassport Demo program. Check for error messages displayed either in a box or on the status line at the bottom right of the screen. If you receive errors, then go to the Setting tab and select Logging. Check the log file SwipeReader.log in the same directory as the executable.

4.   If data arrives from the scanner but is wrong, then check the placement of the document on the scanner and also that the document type is correct and of good quality.

5.   Check other document types using the various different reader devices.

4.2   The scanner connects but does not decode all data correctly

If the scanner reads certain documents correctly but does not decode either certain types of documents (e.g. Visas) or an RFID data group or validation then the problem is most likely that the required feature has not been enabled.

If errors randomly affect the same document or document type then either clean the scanner or check the quality of the document printing.

5   Cleaning

For optimum performance the reader should be kept clean at all times. Under normal use it is recommended that the reader is cleaned every two weeks.

Cleaning of the reader is extremely straightforward and no disassembly of the unit is required. Pre-saturated disposable cleaning cards are provided to keep the reader in perfect condition, these are available directly from 3M or your distributor.

When ordering please quote **80-0057-99** for order quantities of 25, 50 or 100 cards.

CAUTION

Caution: When cleaning the reader:

Never use strong detergents or solvent based cleaners other than those supplied by 3M.

Never push sharp or metallic objects into the reader as this may result in damage to the optical and magnetic systems.

- **Outer Casing**

The outer casing should be cleaned first. Gently wipe the casing with a soft lint free cloth.

- **Optical Reader Slot**

To clean the optical reader slot take out the cleaning card from it's packaging and fold it in half (such that the length of the card is halved but the width is the same). Swipe the card slowly backwards and forwards through the read slot several times. Open the card out again. Wait several seconds for the card to dry. Fold the card again but in the opposite direction. Swipe the card again several times to dry the read slot. Discard the used cleaning card.