3M Rochford Thompson
Advanced Solutions

RTE8000

RFID e-Passport Option

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By the end of 2007 it is estimated that more than 55 million e-Passports will be in circulation, issued by over 30 countries. To take advantage of the biometric security features stored in these documents, governments are turning to the RTE8000 full page scanner with integral RF reader.

e-Passports use a secure messaging scheme called Basic Access Control to prevent skimming and eavesdropping of chip data by using a key generated from the MRZ to unlock the chip. This means that the MRZ codeline must be read before the chip data can be accessed. The RTE8000 performs both these operations automatically when a passport is laid on the scanner glass and regardless of where the chip has been embedded in the book. This simplicity of use, combined with fast performance and small footprint, makes the RTE8000 invaluable in any situation requiring e Passport reading, for example border control, commercial identity checks and hotel, airline or ferry check-in.

The e-Passport contains a contactless RFID chip and an aerial embedded in one of its pages. This chip contains an operating system, application program and a set of Data Groups conforming to the ICAO Logical Data Structure. The application provides security access and encryption, Data Group 1 (DG1) contains a copy of the optical Machine Readable Zone data, Data Group 2 (DG2) contains the facial image (in jpeg or jpeg2000 format), EF.COM contains the data group presence map, and EF.SOD contains the Data Group hashes, Signed Attributes, Signature and optional Document Signer Certificate. These are the four mandatory files according the ICAO LDS Technical Report v1.7. Optional fingerprint and iris biometric information will be stored in Data Groups 3 (DG3) and 4 (DG4) respectively.

The RTE8000 RFID option uses an aerial mounted under the glass reading surface of the scanner to power and communicate with the contactless chip in the e-Passport. The aerial along with the associated electronics is mounted entirely within the scanner's case and uses the scanner's single USB connection.

At the immigration booth the RTE8000 can speedily capture the images and data from both the optical data page and the chip. The OCR data page can be checked using differing light sources and the data validated whilst in parallel the chip data can have its Data Group hashes and digital signatures checked. This data can then be sent to a host for cross checking against watch lists and issuance databases. The printed facial image and OCR codeline data can be compared with the versions on the chip. Finally there is the potential for automatically matching the person presenting himself with the facial image and fingerprints stored on the chip.

The RTE8000 RFID option is designed to ISO 14443, supporting type A and B contactless smart cards and is compliant with the ICAO LDS and PKI Technical Reports including Annexes I and K. The RTE8000 SDK will be upgraded to adhere to any future ICAO e-Passport standards, and already implements Extended Access Control as specified by the BSI Technical Guideline TR-03110.

Adding the RFID option to the RTE8000 will significantly increase the efficiency of any immigration, customs or check-in process whilst performing enhanced ID verification and document validity checks.

Technical Specifications:

- 13.56MHz RF ISO 14443-2 Type A and B compliant.
- ISO 14443/3-4 protocol part A and B.
- Reads all Data Groups (DG1 – DG16), EF.COM and EF.SOD.
- Supports 106, 212, 424 and 848 kBits/s over-air data rates.
- Read distance up to 2 cm.
- Fully compliant with ICAO's Technical Reports for PKI v1.1 and LDS v1.7.
- Supports Passive Authentication, Active Authentication, Basic Access Control and Extended Access Control
- 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.
- Totally integrated inside the RTE8000 and requires virtually no additional power.
- Utilises the RTE8000's USB port for all communications. No additional ports required.
- The RTE8000 command and control protocol presents chip data directly to your application, you don't have to learn how to communicate directly with the contactless card.
- The RTE8000 SDK programming interface provides a quick and powerful method of integrating the RTE8000 into any application.
- Standards UL, CE, FCC, EN60950, RF to EN 300 330.
- Optional support for MIFARE and other non-ICAO tags and cards for access control, ticketing, etc. (contact factory).

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