

MULTIQ[®]

Version 4.2

QILIUM MULTI-APPLICATIVE INTEGRATED CIRCUIT



MULTIQ[®] secure people IDentity

Payment and e-service access in a single solution



Advanced
access control



ICAO
identification



EMV CPA
payment



NFC
NDEF type 4



Close-loop
payment



MNO
SIM M2M eUICC

MULTIQ is a card operating system (COS) providing a large set of configurations in contact, contactless and dual interface. Complying with ISO/IEC 7816-3 and ISO/IEC 14443 A/B standards, MULTIQ allows to address multiple projects with a single micro-controller. Offering best-in-class technology in terms of data transfer rates (up to 848 Kbps), anti-tearing and transaction protection mechanism, MULTIQ characterises QILIUM state-of-the-art Integrated Circuit (IC) technology.

Embedded into smart card, ticket, label or object, MULTIQ let access to various configurations such as ICAO for Identity or EMV CPA for payment. Its 4-stages lifecycle and several configurations confers to MULTIQ a true flexibility permitting to manage a single chip environment while addressing different markets following diverse standards.

From *Advanced Access Control systems* verifying Biometrics (Finger prints, Iris or Face) with Match-on-Device to *electronic voting systems* requiring anonymous card authentication, MULTIQ provides an easy-to-integrate ISO/IEC 7816-4 compliant solution. Featuring best-in-class security with secure messaging and mutual authentication, MULTIQ provides several possibilities in term of Data structure creation and Access conditions definition.

MAIN FEATURES

- Adaptable and flexible file structure
- File system based on ISO/IEC 7816-4
- No restriction in the number of applications
- Delete of file without memory loss
- Transport key protection
- Customizable ATR
- Anti-tearing system
- Transaction protection system
- Detection of Fraudulent chips
- Anti-collision
- Memory Sizes:

Contact: Up to 72 Kb EEPROM

Contactless: Up to 160 kB EEPROM

Dual Interface: Up to 160 kB EEPROM

SECTORS

- **GOVERNMENT**
 - E-ID | E-Passport | E-Driving Licence
 - E-Health
- **ENTERPRISE SECURITY**
 - Physical & Logical Access Control
- **PUBLIC TRANSPORTATION**
 - Ticketing
- **BANKING & PAYMENT**
 - Debit/Credit
 - Pre-/-Post Paid
 - Close-loop money
- **MARKETING**
 - Gift | Loyalty | Member card
- **TELECOMMUNICATION**

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SECURITY

- PIN CODE
 - at card level
 - at application Level
- KEY FILE
 - at card level
 - at application Level
- SECURE MESSAGING
 - MAC
 - MAC + ENC
- MSE (Manage security environment)

CRYPTOGRAPHIC ALGORITHMS

- DES/3DES
- AES (up to 256-bit)*
- SHA 1 & 2
- RSA (up to 4096-bit)*
- ECC (up to 521-bit)*

* Depends on semiconductor and its cryptographic library.

COMMUNICATION PROTOCOLS

Contact

- ISO/IEC 7816-3 | T=0 / T=1
- High speed data transfer up to 215 Kbits/s

Contactless

- ISO/IEC 14443 | A/B
- High speed data transfer up to 848 Kbits/s

Dual interface

- ISO/IEC 7816-3 | T=0 / T=1
- ISO/IEC 14443 | A / B

CONFIGURATIONS

- | | |
|---------------|---------------------|
| ➤ MULTIQ | ISO/IEC 7816-4 |
| ➤ ICAO / MRTD | ICAO DOC 9303 |
| ➤ NFC | NDEF SECURE NDEF |
| ➤ CIPURSE™ ** | OSPT CIPURSE™ |
| ➤ EMV** | EMV 4.2 CPA SDA |
| ➤ SAM** | |

**With this configuration solely ISO/IEC 7816-4 File Structure can be added.

PACKAGING

- | | | |
|------------------|----------------------|------------------------|
| ➤ Sawn wafer | ➤ Contactless module | ➤ Inductive technology |
| ➤ Contact module | ➤ Prelaminates | ○ Infineon |
| ○ 8 pins | ○ PVC | ○ SPS |
| ○ 6 pins | ○ Polycarbonate | |

TECHNOLOGY

Packaging	Contact	Contactless	Dual Interface
Standard	Up to 72 kB	Up to 74 kB	Up to 74 kB
Certified***	-	Up to 160 kB	Up to 160 kB
Advanced cryptography	-	Up to 100 kB	Up to 100 kB

*** Common Criteria EAL5+ high HW