



Infineon Chip Card & Security ICs Portfolio

Security for the connected world

www.infineon.com/ccs





The Integrity Guard concept marks the dawn of the Digital Security Era. The SLE 78 controller family with Integrity Guard radicalizes design-in by easing software implementation so designers can bring secure products to market faster than ever.

Infineon's security controllers with Integrity Guard allow meeting the requirements for truly long lasting security. With its unique encrypted CPU, Integrity Guard already became the standard for long-lasting secure Government Identification applications such as for electronic travel documents that are in use for more than ten years.

INTEGRITY GUARD comprises the following unique features

- Fully encrypted data path leaving no plaintext on the chip
- Calculation with encrypted data in the CPU itself
- Comprehensive digital error detection
- Self-checking dual CPUs



SOLID FLASH™ – leading the industry trend towards flexible memory based on Infineon's unique quality track record and outstanding security expertise.

The flexibility of Flash memory is a must and a clear trend in the chip card industry moving away from outdated ROM products. Combining Infineon's Automotive Flash leadership with its unrivalled security expertise, SOLID FLASH™ products are certified according to EMVCo as well as Common Criteria EAL6+ (high) and offer the advantages of a flexible memory for the whole value chain.

Highlights of SOLID FLASH™

- Flexibility combined with highest quality and security
- Shorter software development cycles
- Quick reaction to market requirements



CIPURSE™ – a truly open security standard for public transportation that enables a projectable investment for the ecosystem and a long term competitive market environment.





The CIPURSE™ open standard

- Is built on proven standards such as ISO/IEC 7816, AES-128 and ISO/IEC 14443-4
- Provides a single, consistent set of security, personalization, administration and life cycle management functions
- Includes advanced security mechanisms such as a unique cryptographic protocol for inherent protection against differential power analysis (DPA) and differential fault attacks (DFA)
- Offers three distinctive development profiles enabling a complete range of products suitable for tickets, cards and mobile phones







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Payment





	Dual-interface & Contactless Security Controller ¹⁾			
Product name	SLE 77CLFX1367P(M)  SOLID FLASH™	SLE 77CLFX1567P(M)  SOLID FLASH™	SLE 77CLFX1847P(M)  SOLID FLASH™	SLE 77CLFX2007P(M)  SOLID FLASH™
Product description	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller
Interfaces	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Optimized for sub-ID1	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Optimized for sub-ID1	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Optimized for sub-ID1	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Optimized for sub-ID1
Memory	136kByte SOLID FLASH™, 6kByte RAM	156kByte SOLID FLASH™, 6kByte RAM	184kByte SOLID FLASH™, 6kByte RAM	200kByte SOLID FLASH™, 6kByte RAM
CPU	16-bit	16-bit	16-bit	16-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	Dual interface module, MCC8, Coil on Module, Wafer sawn	Dual interface module, MCC8, Coil on Module, Wafer sawn	Dual interface module, MCC8, Coil on Module, Wafer sawn	Dual interface module, MCC8, Coil on Module, Wafer sawn
Typical applications	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse
Certification level	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo

¹⁾ Supporting CIPURSE™ for all contactless and NFC applications

			Contact-based Security Controller	
SLE 77CLFX2407P(M)  SOLID FLASH™	SLE 78CLX360P(M)  INTEGRITY GUARD	SLE 78CLFX3006P(M) new  INTEGRITY GUARD  SOLID FLASH™	SLE 77CF800S  SOLID FLASH™	SLE 77CF1000S  SOLID FLASH™
Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Security Controller	Security Controller
ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Optimized for sub-ID1	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Optimized for sub-ID1	ISO 7816	ISO 7816
240kByte SOLID FLASH™, 6kByte RAM	36kByte EEPROM, 280kByte ROM, 8kByte RAM	300kByte SOLID FLASH™, 6kByte RAM	80kByte SOLID FLASH™, 4kByte RAM	100kByte SOLID FLASH™, 4kByte RAM
16-bit	Dual 16-bit	Dual 16-bit	16-bit	16-bit
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, AES	DES, AES
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	–	–
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Dual interface module, MCC8, Coil on Module, Wafer sawn	Dual interface module, Wafer sawn	Dual interface module, Coil on Module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn
EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse, eSignature	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse, eSignature	EMV SDA, Loyalty	EMV SDA, Loyalty
CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL6+ high/ EMVCo	EMVCo	EMVCo

Payment

	Contact-based Security Controller			
Product name	SLE 77CF1200S  SOLID FLASH™	SLE 77CFX1360P  SOLID FLASH™	SLE 77CFX1560P  SOLID FLASH™	SLE 77CFX1840P  SOLID FLASH™
Product description	Security Controller	Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller
Interfaces	ISO 7816	ISO 7816	ISO 7816	ISO 7816
Memory	120kByte SOLID FLASH™, 4kByte RAM	136kByte SOLID FLASH™, 6kByte RAM	156kByte SOLID FLASH™, 6kByte RAM	184kByte SOLID FLASH™, 6kByte RAM
CPU	16-bit	16-bit	16-bit	16-bit
Crypto coprocessor symmetrical	DES, AES	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	–	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn
Typical applications	EMV SDA, Loyalty	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse
Certification level	EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo

SLE 77CFX2000P  SOLID FLASH™	SLE 77CFX2400P  SOLID FLASH™	SLE 78CX360P  INTEGRITY GUARD	SLE 78CX480P  INTEGRITY GUARD
Security Cryptocontroller	Security Cryptocontroller	DDA contact-based controller	Security Cryptocontroller
ISO 7816	ISO 7816	ISO 7816	ISO 7816
200kByte SOLID FLASH™, 6kByte RAM	240kByte SOLID FLASH™, 6kByte RAM	36kByte EEPROM, 224kByte ROM, 8kByte RAM	48kByte EEPROM, 224kByte ROM, 8kByte RAM
16-bit	16-bit	Dual 16-bit	Dual 16-bit
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn
EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse, eSignature	EMV DDA, EMV CDA, Global Platform/ Java, Loyalty, ePurse, eSignature
CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo







Mobile Communication

	SIM & UICCs			
Product name	SLC 14MCO256	SLC 14MCO288	SLC 14MCO312	SLC 14MCO340
Product description	32-bit SIM-card controller	32-bit SIM-card controller	32-bit SIM-card controller	32-bit SIM-card controller
Interfaces	ISO 7816	ISO 7816	ISO 7816	ISO 7816
Memory	256kByte FLASH, 10kByte RAM	288kByte FLASH, 10kByte RAM	312kByte FLASH, 10kByte RAM	340kByte FLASH, 10kByte RAM
CPU	32-bit	32-bit	32-bit	32-bit
Crypto coprocessor symmetrical	-	-	-	-
Crypto coprocessor asymmetrical	-	-	-	-
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	FCOS™ module, Wafer sawn	FCOS™ module, Wafer sawn	FCOS™ module, Wafer sawn	FCOS™ module, Wafer sawn
Typical applications	SIM & UICC	SIM & UICC	SIM & UICC	SIM & UICC
Certification level	-	-	-	-





SLC 14MCO384	SLC 14MCO420	SLC 14MCO480	SLE 76CF2564P	SLE 76CF2962P
32-bit SIM-card controller	32-bit SIM-card controller	32-bit SIM-card controller	16-bit SIM-card controller	16-bit SIM-card controller
ISO 7816	ISO 7816	ISO 7816	ISO 7816	ISO 7816
384kByte FLASH, 12kByte RAM	420kByte FLASH, 12kByte RAM	480kByte FLASH, 12kByte RAM	256kByte FLASH, 9kByte RAM	296kByte FLASH, 9kByte RAM
32-bit	32-bit	32-bit	16-bit	16-bit
-	-	-	-	-
-	-	-	-	-
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
FCOS™ module, Wafer sawn	FCOS™ module, Wafer sawn	FCOS™ module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn
SIM & UICC	SIM & UICC	SIM & UICC	SIM & UICC	SIM & UICC
-	-	-	-	-








Mobile Communication

	SIM & UICCs			
Product name	SLE 76CF3202P	SLE 76CF3442P	SLE 76CF3602P	SLE 76CF4002P
Product description	16-bit SIM-card controller	16-bit SIM-card controller	16-bit SIM-card controller	16-bit SIM-card controller
Interfaces	ISO 7816	ISO 7816	ISO 7816	ISO 7816
Memory	320kByte FLASH, 9kByte RAM	344kByte FLASH, 9kByte RAM	360kByte FLASH, 9kByte RAM	400kByte FLASH, 12kByte RAM
CPU	16-bit	16-bit	16-bit	16-bit
Crypto coprocessor symmetrical	-	-	-	-
Crypto coprocessor asymmetrical	-	-	-	-
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn
Typical applications	SIM & UICC	SIM & UICC	SIM & UICC	SIM & UICC
Certification level	-	-	-	-





SLE 76CF4480P	SLE 76CF5120P	SLE 97CNFX8000PE	SLE 97CNFX1M00PE	SLE 97CNFX1M30PE new
		 Optimized  SOLID FLASH™	 Optimized  SOLID FLASH™	 Optimized  SOLID FLASH™
16-bit SIM-card controller	16-bit SIM-card controller	32-bit SWP SIM-card Security Cryptocontroller	32-bit SWP SIM-card Security Cryptocontroller	32-bit SWP SIM-card Security Cryptocontroller
ISO 7816	ISO 7816	ISO 7816, SWP (Mifare compatible)	ISO 7816, SWP (Mifare compatible)	ISO 7816, SWP (Mifare compatible)
448kByte FLASH, 12kByte RAM	504kByte FLASH, 12kByte RAM	800kByte SOLID FLASH™, 32kByte RAM	1MByte SOLID FLASH™, 32kByte RAM	1.3MByte SOLID FLASH™, 32kByte RAM
16-bit	16-bit	32-bit	32-bit	32-bit
3DES, AES up to 256-bit	3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
–	–	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn
SIM & UICC	SIM & UICC	SWP SIM/UICC (NFC)	SWP SIM/UICC (NFC)	SWP SIM/UICC (NFC)
–	–	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo






Mobile Communication

SIM & UICCs				
Product name	SLE 97CUNFX1M50PE   NFC Optimized  SOLID FLASH™	SLE 97CUNFX8000PE  SOLID FLASH™	SLE 97CUNFX1M00PE  SOLID FLASH™	SLE 97CUNFX1M30PE   SOLID FLASH™
Product description	32-bit SWP SIM-card Security Cryptocontroller	32-bit USB and SWP SIM-card Security Cryptocontroller	32-bit USB and SWP SIM-card Security Cryptocontroller	32-bit USB and SWP SIM-card Security Cryptocontroller
Interfaces	ISO 7816, SWP (Mifare compatible)	ISO 7816, SWP (Mifare compatible), USB	ISO 7816, SWP (Mifare compatible), USB	ISO 7816, SWP (Mifare compatible), USB
Memory	1.5MByte SOLID FLASH™, 32kByte RAM	800kByte SOLID FLASH™, 32kByte RAM	1MByte SOLID FLASH™, 32kByte RAM	1.3MByte SOLID FLASH™, 32kByte RAM
CPU	32-bit	32-bit	32-bit	32-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn
Typical applications	SWP SIM/UICC (NFC)	USB SIM/UICC	USB SIM/UICC	USB SIM/UICC
Certification level	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo











		Machine-to-Machine (M2M) Cellular		
SLE 97CUNFX1M50PE new  SOLID FLASH™	SLE 78CLFX4000P(M)  INTEGRITY GUARD  Optimized  SOLID FLASH™	SLM 76CF2561P  SOLID FLASH™	SLM 76CF3201P  SOLID FLASH™	SLM 76CF3601P  SOLID FLASH™
32-bit USB and SWP SIM-card Security Cryptocontroller	Dual-interface SIM Security Cryptocontroller	Security Controller optimized for industrial M2M applications	Security Controller optimized for industrial M2M applications	Security Controller optimized for industrial M2M applications
ISO 7816, SWP (Mifare compatible), USB	ISO 18092 passive mode, ISO 14443 A/B, ISO 7816, Mifare compatible interface	ISO 7816	ISO 7816	ISO 7816
1.5MByte SOLID FLASH™, 32kByte RAM	404kByte SOLID FLASH™, 8kByte RAM	256kByte SOLID FLASH™, 8kByte RAM	320kByte SOLID FLASH™, 8kByte RAM	360kByte SOLID FLASH™, 8kByte RAM
32-bit	Dual 16-bit	16-bit	16-bit	16-bit
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	–	–	–
-25 to +85°C	-25 to +85°C	-40 to +105°C	-40 to +105°C	-40 to +105°C
FCOS™ module, Wirebond module, Wafer sawn	Dual interface module, Wafer sawn	Wafer sawn, P-M2M4.7, MFF2	Wafer sawn, P-M2M4.7, MFF2	Wafer sawn, P-M2M4.7, MFF2
USB SIM/UICC	SIMpass™, Dual I/F NFC SIM	Industrial M2M, Consumer M2M	Industrial M2M, Consumer M2M	Industrial M2M, Consumer M2M
CC EAL5+ high/ EMVCo	CC EAL6+ high/ EMVCo	–	–	–

Mobile Communication









	Machine-to-Machine (M2M) Cellular			
Product name	SLM 76CF5120P  SOLID FLASH™	SLI 76CF3600P  SOLID FLASH™	SLI 76CF5120P  SOLID FLASH™	SLM 97CNFX6000PE  SOLID FLASH™ new
Product description	Security Controller optimized for industrial M2M applications	Security Controller optimized for automotive M2M applications	Security Controller optimized for automotive M2M applications	Security Controller optimized for industrial M2M applications
Interfaces	ISO 7816	ISO 7816	ISO 7816	ISO 7816, SWP
Memory	504kByte SOLID FLASH™, 12kByte RAM	360kByte SOLID FLASH™, 8kByte RAM	504kByte SOLID FLASH™, 12kByte RAM	608kByte SOLID FLASH™, 32kByte RAM
CPU	16-bit	16-bit	16-bit	32-bit
Crypto coprocessor symmetrical	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	–	–	–	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-40 to +105°C	-40 to +105°C	-40 to +105°C	-40 to +105°C
Delivery forms	Wafer sawn, P-M2M4.7, MFF2	MFF2	MFF2	Wafer sawn, P-M2M4.7, MFF2
Typical applications	Industrial M2M, Consumer M2M	Specialized Electronic Equipment, Automotive M2M	Specialized Electronic Equipment, Automotive M2M	Industrial M2M
Certification level	–	–	–	CC EAL5+ high

SLM 97CNFX8000PE  new	SLM 97CNFX1M00PE  new	SLI 97CNFX6000PE  new	SLI 97CNFX8000PE  new	SLI 97CNFX1M00PE  new
Security Controller optimized for industrial M2M applications	Security Controller optimized for industrial M2M applications	Security Controller optimized for automotive M2M applications	Security Controller optimized for automotive M2M applications	Security Controller optimized for automotive M2M applications
ISO 7816, SWP	ISO 7816, SWP	ISO 7816, SWP	ISO 7816, SWP	ISO 7816, SWP
800kByte SOLID FLASH™, 32kByte RAM	1MByte SOLID FLASH™, 32kByte RAM	608kByte SOLID FLASH™, 32kByte RAM	800kByte SOLID FLASH™, 32kByte RAM	1MByte SOLID FLASH™, 32kByte RAM
32-bit	32-bit	32-bit	32-bit	32-bit
3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-40 to +105°C	-40 to +105°C	-40 to +105°C	-40 to +105°C	-40 to +105°C
Wafer sawn, P-M2M4.7, MFF2	Wafer sawn, P-M2M4.7, MFF2	MFF2	MFF2	MFF2
Industrial M2M	Industrial M2M	Automotive M2M	Automotive M2M	Automotive M2M
CC EAL5+ high	CC EAL5+ high	CC EAL5+ high	CC EAL5+ high	CC EAL5+ high










Near-Field-Communication

	SWP UICCs ¹⁾			
Product name	SLE 97CNFX8000PE  SOLID FLASH™  Optimized	SLE 97CNFX1M00PE  SOLID FLASH™  Optimized	SLE 97CNFX1M30PE   SOLID FLASH™  Optimized	SLE 97CNFX1M50PE   SOLID FLASH™  Optimized
Product description	32-bit SWP SIM-card Security Cryptocontroller	32-bit SWP SIM-card Security Cryptocontroller	32-bit SWP SIM-card Security Cryptocontroller	32-bit SWP SIM-card Security Cryptocontroller
Interfaces	ISO 7816, SWP (Mifare compatible)	ISO 7816, SWP (Mifare compatible)	ISO 7816, SWP (Mifare compatible)	ISO 7816, SWP (Mifare compatible)
Memory	800kByte SOLID FLASH™, 32kByte RAM	1MByte SOLID FLASH™, 32kByte RAM	1.3MByte SOLID FLASH™, 32kByte RAM	1.5MByte SOLID FLASH™, 32kByte RAM
CPU	32-bit	32-bit	32-bit	32-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn	FCOS™ module, Wirebond module, Wafer sawn
Typical applications	SWP Micro SD, SWP SIM & UICC (NFC), Mobile Payment	SWP Micro SD, SWP SIM & UICC (NFC), Mobile Payment	SWP Micro SD, SWP SIM & UICC (NFC), Mobile Payment	SWP Micro SD, SWP SIM & UICC (NFC), Mobile Payment
Certification level	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo

¹⁾ Supporting CIPURSE™ for all contactless and NFC applications









Embedded Secure Elements - IC ¹⁾			
SLE 97CNFX8000PE  SOLID FLASH™  NFC Optimized	SLE 97CNFX1M00PE  SOLID FLASH™  NFC Optimized	SLE 97CNFX8004PE  SOLID FLASH™  NFC Optimized	SLE 97CNFX1M04PE  SOLID FLASH™  NFC Optimized
32-bit SWP Security Cryptocontroller designed for Embedded Secure Element	32-bit SWP Security Cryptocontroller designed for Embedded Secure Element	32-bit SWP Security Cryptocontroller designed for Embedded Secure Element	32-bit SWP Security Cryptocontroller designed for Embedded Secure Element
ISO 7816, SWP (Mifare compatible)	ISO 7816, SWP (Mifare compatible)	ISO 7816, SWP (Mifare compatible), GPIOs	ISO 7816, SWP (Mifare compatible), GPIOs
800kByte SOLID FLASH™, 32kByte RAM	1 MByte SOLID FLASH™, 32kByte RAM	800kByte SOLID FLASH™, 32kByte RAM	1 MByte SOLID FLASH™, 32kByte RAM
32-bit	32-bit	32-bit	32-bit
3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
SMD, Chip Scale Package, Wafer sawn	SMD, Chip Scale Package, Wafer sawn	SMD, Chip Scale Package, Wafer sawn	SMD, Chip Scale Package, Wafer sawn
Embedded Secure Element, Mobile Payment	Embedded Secure Element, Mobile Payment	Embedded Secure Element, Mobile Payment	Embedded Secure Element, Mobile Payment
CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo

Near-Field-Communication




	Embedded Secure Elements - IC ¹⁾	Embedded Secure Elements - Turnkey solutions		
Product name	SLE 97CSNFX1M00PE  SOLID FLASH™  NFC Optimized	SLE97144SE ²⁾  INTEGRITY GUARD	SLE97400SE ²⁾   INTEGRITY GUARD  NFC Optimized  SOLID FLASH™	SLE97144SD ²⁾  INTEGRITY GUARD  NFC Optimized
Product description	32-bit SWP Security Cryptocontroller designed for Embedded Secure Element	Security Controller (DCLB Interface) incl. OS	Security Controller (DCLB Interface) incl. OS	Security Controller (ISO7816 & Contactless Interface) incl. OS
Interfaces	ISO 7816, SWP (Mifare compatible), SPI	ISO 7816, DCLB	ISO 7816, DCLB	ISO 7816, Contactless Interface
Memory	1 MByte SOLID FLASH™, 32kByte RAM	144kByte EEPROM, 288kByte ROM, 8kByte RAM	400kByte SOLID FLASH™, 8kByte RAM	144kByte EEPROM, 280kByte ROM, 8kByte RAM
CPU	32-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit
Crypto coprocessor symmetrical	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 2048-bit, ECC up to 521-bit	RSA up to 2048-bit, ECC up to 521-bit	RSA up to 2048-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	SMD, Chip Scale Package, Wafer sawn	Wafer sawn	SMD, Wafer sawn	SMD, Wafer sawn
Typical applications	Embedded Secure Element, Mobile Payment, NFC SD	Embedded Secure Element	Embedded Secure Element, Mobile Payment	Embedded Secure Element, NFC SD
Certification level	CC EAL5+ high/ EMVCo	EMVCo	EMVCo, Global Platform	EMVCo

¹⁾ Supporting CIPURSE™ for all contactless and NFC applications





²⁾ JavaCard & GP OS

	Boosted NFC Secure Elements ¹⁾	
SLE97400SD ²⁾  INTEGRITY GUARD  Optimized  SOLID FLASH™ new	SLE 77CAFX2400P(M)  SOLID FLASH™  Optimized	SLE 78CAFX4000P(M)  INTEGRITY GUARD  Optimized  SOLID FLASH™
Security Controller (ISO7816 & Contactless Interface) incl. OS	16-bit Security Cryptocotroller designed for Boosted NFC	Dual 16-bit Security Cryptocontroller designed for Boosted NFC
ISO 7816, Contactless Interface	ISO 7816, ACLB, Mifare compatible interface	ISO 7816, ACLB, Mifare compatible interface
400kByte SOLID FLASH™, 8kByte RAM	240kByte SOLID FLASH™, 6kByte RAM	400kByte SOLID FLASH™, 8kByte RAM
Dual 16-bit	16-bit	Dual 16-bit
3DES, AES up to 256-bit	3DES	3DES
RSA up to 2048-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C	-25 to +85°C
SMD, Wafer sawn	Wafer sawn	Wafer sawn
Embedded Secure Element, NFC SD, Mobile Payment	Boosted NFC MicroSD, Mobile Payment	Boosted NFC MicroSD, Boosted NFC SIM, Mobile Payment
EMVCo, Global Platform	CC EAL5+ high/ EMVCo	CC EAL6+ high/ EMVCo

Near-Field-Communication





	NFC Tags		
Product name	SLE 66R32P my-d™ NFC  Ready	SLE 66R01PN my-d™ move NFC  Ready	SLE 66R16P my-d™ NFC  Ready
Product description	Intelligent 5120Byte EEPROM with pre-configured NFC memory	Intelligent 1216bit EEPROM with pre-configured NFC memory	Intelligent 2560Byte EEPROM with pre-configured NFC memory
Interface	ISO/ IEC 14443-3 Type A, NFC Forum Type 2 Tag operation	ISO/ IEC 14443-3 Type A, NFC Forum Type 2 Tag operation	ISO/ IEC 14443-3 Type A, NFC Forum Type 2 Tag operation
Memory organization	1 fixed sector T2T sector (up to 1kByte), pre-configured NFC memory	1 fixed sector	1 fixed sector T2T sector (up to 1kByte), pre-configured NFC memory
Counter	16-bit counter with anti-tearing support	16-bit counter with anti-tearing support	16-bit counter with anti-tearing support
EEPROM - user	4072Byte	128Byte	2024Byte
EEPROM - administration	1048Byte	24Byte	536Byte
Security features	Unique serial number, Individual page locking, Unique serial number	Unique serial number, 32-bit password protection for read and/ or write access, Block locking, Individual page locking, Password retry counter, Unique serial number	Unique serial number, Individual page locking, Unique serial number
Distance (read/write)	Typically up to 10cm and above	Typically up to 10cm and above	Typically up to 10cm and above
Data rate	106kbit/s to card up to 848kbit/s to reader	106kbit/s	106kbit/s
Endurance	100,000	10,000	100,000
Retention time, minimum	10 years	5 years	10 years
Delivery forms	NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump	NiAu-bump, MCC2, MCC8
Tools	Evaluation Kit Contactless	Evaluation Kit Contactless	Evaluation Kit Contactless
Typical applications	Device Pairing, Smart Posters, Consumer Good Information	Device Pairing, Smart Posters, Consumer Good Information	Device Pairing, Smart Posters, Consumer Good Information

Government Identification













	Dual-interface & Contactless Security Controller ¹⁾			
Product name	SLE 78CLX360P  INTEGRITY GUARD	SLE 78CLX800P  INTEGRITY GUARD	SLE 78CLX1280P  INTEGRITY GUARD	SLE 78CLX1440P  INTEGRITY GUARD
Product description	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller
Interfaces	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface
Memory	36kByte EEPROM, 280kByte ROM, 8kByte RAM	80kByte EEPROM, 280kByte ROM, 8kByte RAM	128kByte EEPROM, 280kByte ROM, 8kByte RAM	144kByte EEPROM, 280kByte ROM, 8kByte RAM
CPU	Dual 16-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn
Typical applications	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eVehicle Registration Card/ eCar Registration, eSignature
Certification level	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo

¹⁾ Supporting CIPURSE™ for all contactless and NFC applications








Government Identification

Dual-interface & Contactless Security Controller ¹⁾				
Product name	SLE 78CLX1600P  INTEGRITY GUARD	SLE 77CLF1001P  SOLID FLASH™ new	SLE 77CLFX2000P  SOLID FLASH™	SLE 77CLFX2400P  SOLID FLASH™
Product description	Dual-interface and Contactless Security Cryptocontroller	Contactless Security Controller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller
Interfaces	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface
Memory	160kByte EEPROM, 280kByte ROM, 8kByte RAM	100kByte SOLID FLASH™, 4kByte RAM	200kByte SOLID FLASH™, 6kByte RAM	240kByte SOLID FLASH™, 6kByte RAM
CPU	Dual 16-bit	16-bit	16-bit	16-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	-	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	Dual interface module, Contactless module, Wafer sawn	Contactless module, Bumped wafer, Wafer sawn	Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn
Typical applications	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card, eDriver's License, eVehicle Registration Card/ eCar Registration	National eID, eHealth card/ eSocial card, eDriver's License	National eID, eHealth card/ eSocial card, eDriver's License
Certification level	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo






¹⁾ Supporting CIPURSE™ for all contactless and NFC applications

SLE 78CLFX2400P  INTEGRITY GUARD  SOLID FLASH™	SLE 78CLFX3000P  INTEGRITY GUARD  SOLID FLASH™	SLE 78CLFX300VP  INTEGRITY GUARD  VHBR  SOLID FLASH™	SLE 78CLFX4000P  INTEGRITY GUARD  SOLID FLASH™	SLE 78CLFX400VP  INTEGRITY GUARD  VHBR  SOLID FLASH™
Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller
ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Very High Bit Rates (VHBR) with up to 6.8Mbit/sec	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Very High Bit Rates (VHBR) with up to 6.8Mbit/sec
240kByte SOLID FLASH™, 8kByte RAM	300kByte SOLID FLASH™, 8kByte RAM	300kByte SOLID FLASH™, 8kByte RAM	404kByte SOLID FLASH™, 8kByte RAM	404kByte SOLID FLASH™, 8kByte RAM
Dual 16-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn
National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature
CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo





Government Identification









	Dual-interface & Contactless Security Controller ¹⁾		Contact-based Security Controller	
Product name	SLE 78CLFX5000PH  INTEGRITY GUARD  SOLID FLASH™	SLE 78CLFX500VPH  INTEGRITY GUARD  VHBR  SOLID FLASH™	SLE 77CF1000S  SOLID FLASH™	SLE 77CF1200S  SOLID FLASH™
Product description	Dual-interface and Contactless Security Cryptocontroller	Dual-interface and Contactless Security Cryptocontroller	Security Controller	Security Controller
Interfaces	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 7816, ISO 14443 A/B, Mifare compatible interface, Very High Bit Rates (VHBR) with up to 6.8Mbit/sec, ISO 18092 passive mode	ISO 7816	ISO 7816
Memory	500kByte SOLID FLASH™, 12kByte RAM	500kByte SOLID FLASH™, 12kByte RAM	100kByte SOLID FLASH™, 4kByte RAM	120kByte SOLID FLASH™, 4kByte RAM
CPU	Dual 16-bit	Dual 16-bit	16-bit	16-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, AES	DES, AES
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	-	-
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	Dual interface module, Contactless module, Wafer sawn	Dual interface module, Contactless module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn
Typical applications	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card	National eID, eHealth card/ eSocial card
Certification level	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	EMVCo	EMVCo

¹⁾ Supporting CIPURSE™ for all contactless and NFC applications






SLE 77CFX1560P  SOLID FLASH™	SLE 77CFX1840P  SOLID FLASH™	SLE 77CFX2000P  SOLID FLASH™	SLE 77CFX2400P  SOLID FLASH™	SLE 78CX360P  INTEGRITY GUARD
Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller
ISO 7816	ISO 7816	ISO 7816	ISO 7816	ISO 7816
156kByte SOLID FLASH™, 6kByte RAM	184kByte SOLID FLASH™, 6kByte RAM	200kByte SOLID FLASH™, 6kByte RAM	240kByte SOLID FLASH™, 6kByte RAM	36kByte EEPROM, 224kByte ROM, 8kByte RAM
16-bit	16-bit	16-bit	16-bit	Dual 16-bit
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn
National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature
CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo



Government Identification

	Contact-based Security Controller			
Product name	SLE 78CX800P  INTEGRITY GUARD	SLE 78CX1280P  INTEGRITY GUARD	SLE 78CX1440P  INTEGRITY GUARD	SLE 78CX1600P  INTEGRITY GUARD
Product description	Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller
Interfaces	ISO 7816	ISO 7816	ISO 7816	ISO 7816
Memory	80kByte EEPROM, 288kByte ROM, 8kByte RAM	128kByte EEPROM, 288kByte ROM, 8kByte RAM	144kByte EEPROM, 288kByte ROM, 8kByte RAM	160kByte EEPROM, 288kByte ROM, 8kByte RAM
CPU	Dual 16-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit
Crypto coprocessor symmetrical	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn
Typical applications	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature
Certification level	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo









SLE 78CFX2400P	SLE 78CFX3000P	SLE 78CFX4000P	SLE 78CFX5000PH
 INTEGRITY GUARD  SOLID FLASH™	 INTEGRITY GUARD  SOLID FLASH™	 INTEGRITY GUARD  SOLID FLASH™	 INTEGRITY GUARD  SOLID FLASH™
Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller
ISO 7816	ISO 7816	ISO 7816	ISO 7816
240kByte SOLID FLASH™, 8kByte RAM	300kByte SOLID FLASH™, 8kByte RAM	404kByte SOLID FLASH™, 8kByte RAM	500kByte SOLID FLASH™, 12kByte RAM
Dual 16-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn
National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card, eDriver's License, eTachograph, eVehicle Registration Card/ eCar Registration, eSignature
CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo

Government Identification











	Government ID Bundles		
Product name	SLJ 52GDA080DR  INTEGRITY GUARD  VHBR  SOLID FLASH™	SLN 52GDA128DM  INTEGRITY GUARD	SLJ 52GDL128DL  INTEGRITY GUARD
Product description	JavaCard Platform, including ePassport & eSign Applet	Native Generic ID Platform with embedded ePassport & eSign	JavaCard Platform, including ePassport & eSign Applet
Communication Interfaces	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Very High Bit Rates (VHBR) with up to 6.8Mbit/sec, Mifare compatible interface	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface
Supported Standards	JC 3.0, GP 2.2, ICAO BAC, SAC, AA, BSI-TR03110 v1.11 and v2.10 EAC, ISO 7816-4, 8, 9, ISO 18013 BAP, EAP config 1-4, PKCS#15, ISO 19794-2 Match on Card	ICAO BAC, SAC, AA, BSI-TR03110 v1.11 and v2.10 EAC, ISO 7816-4, 8, 9, ISO 18013 BAP, EAP config 1-4, PKCS#15	JC 3.0, GP 2.2, ICAO BAC, SAC, AA, BSI-TR03110 v1.11 EAC, ISO 18013 BAP, EAP config 1-4, PKCS#15
User Memory	36, 80, 128kByte EEPROM	36, 80, 128kByte EEPROM	36, 80, 128kByte EEPROM
OS Provider	Oracle - Oracle Java Card	Masktech - MTCOS	Trusted Logic - jTOP
Symmetrical Cryptography	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Asymmetrical Cryptography	RSA up to 3072-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Typical applications	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eVehicle Registration Card/ eCar Registration, eSignature	National eID, ePassport, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eVehicle Registration Card/ eCar Registration, eSignature
Certification level	CC EAL5+ high, FIPS 140-2 Level3	CC EAL4+ high	CC EAL5+ high

SLN 32GDA064DM new  SOLID FLASH™	SLJ 32GDA064CL new  SOLID FLASH™
Native ID Flex Platform with embedded eID & eSign	JavaCard ID Flex Platform
ISO 7816, ISO 14443 A, ISO 18092 passive mode	ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface
ICAO BAC, SAC, ISO 7816-4, 8, 9, ISO 18013 BAP, EAP config 1-4, PKCS#15	JC 3.0, GP 2.1.1, Mifare1/4k opt
36, 64kByte EEPROM	36, 64kByte EEPROM
Masktech - MTCOS	Trusted Logic - jTOP
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
RSA up to 2048-bit, ECC up to 384-bit	RSA up to 2048-bit
National eID, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eVehicle Registration Card/ eCar Registration, eSignature	National eID, eHealth card/ eSocial card, eDriver's License, eVisa, eResidence Permit, eVehicle Registration Card/ eCar Registration, eSignature
-	-



USB Tokens



	USB Tokens (16-bit)			
Product name	SLE 78CUFX3000PH ¹⁾  INTEGRITY GUARD  SOLID FLASH™	SLE 78CUFX3009PH  INTEGRITY GUARD  SOLID FLASH™	SLE 78CUFX500FPH  INTEGRITY GUARD  SOLID FLASH™	SLE 78CUFX5000PH ¹⁾  INTEGRITY GUARD  SOLID FLASH™
Product description	USB-Security Cryptocontroller	USB-Security Cryptocontroller for use in chipcard formfactor	USB-Security Cryptocontroller for use in chipcard formfactor	Multi-Interface USB-Security Cryptocontroller
Interfaces	USB 2.0, ISO 7816	USB 2.0, ISO 7816	USB 2.0, ISO 7816	USB 2.0, GPIO, I2C, SPI, ISO 7816
Memory	300kByte SOLID FLASH™, 12kByte RAM	300kByte SOLID FLASH™, 12kByte RAM	500kByte SOLID FLASH™, 12kByte RAM	500kByte SOLID FLASH™, 16kByte RAM
CPU	Dual 16-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	VQFN32-13, Wafer sawn	Contact-based module, Wafer sawn	Contact-based module, Wafer sawn	VQFN32-13, Wafer sawn
Typical applications	USB Tokens	USB Tokens	USB Tokens	USB Tokens
Certification level	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo

¹⁾ Supporting CIPURSE™ for all contactless and NFC applications

SLE 78CLUFX3000PH	SLE 78CLUFX5000PH	SLE 78CLUFX5007PH ¹⁾	SLE 78CLUX5000PH ¹⁾	SLE 78CLUX5007PH ¹⁾
 INTEGRITY GUARD  SOLID FLASH™	 INTEGRITY GUARD  SOLID FLASH™	 INTEGRITY GUARD  SOLID FLASH™	 INTEGRITY GUARD  SOLID FLASH™	 INTEGRITY GUARD  SOLID FLASH™
Multi-Interface USB-Security Cryptocontroller with a contactless interface	Multi-Interface USB-Security Cryptocontroller with a contactless interface	Multi-Interface USB-Security Cryptocontroller with a contactless interface	Multi-Interface USB-Security Cryptocontroller with a contactless interface	Multi-Interface USB-Security Cryptocontroller with a contactless interface
USB 2.0, GPIO, ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	USB 2.0, GPIO, SPI, ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	USB 2.0, GPIO, I2C, SPI, ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Sub-ID1 optimized product	USB 2.0, GPIO, I2C, SPI, ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	USB 2.0, GPIO, I2C, SPI, ISO 7816, ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface, Sub-ID1 optimized product
300kByte SOLID FLASH™, 12kByte RAM	500kByte SOLID FLASH™, 16kByte RAM	500kByte SOLID FLASH™, 16kByte RAM	500kByte SOLID FLASH™, 182kByte ROM, 16kByte RAM	500kByte SOLID FLASH™, 182kByte ROM, 16kByte RAM
Dual 16-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit	Dual 16-bit
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
VQFN32-13, Wafer sawn	VQFN32-13, Wafer sawn	VQFN32-13, Wafer sawn	VQFN32-13, Wafer sawn	VQFN32-13, Wafer sawn
USB Tokens	USB Tokens	USB Tokens	USB Tokens	USB Tokens
CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo	CC EAL6+ high/ EMVCo

USB Tokens

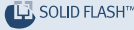

	USB Tokens (32-bit)		
Product name	SLE 97CUXF5000PH  SOLID FLASH™	SLE 97CUXF500FPH  SOLID FLASH™	SLE 97CUSIFX5000PH  SOLID FLASH™
Product description	USB-Security Cryptocontroller	USB-Security Cryptocontroller for use in a chipcard formfactor	Multi-Interface USB-Security Cryptocontroller
Interfaces	USB 2.0, ISO 7816	USB 2.0, ISO 7816	USB 2.0, GPIO, I2C, SPI, ISO 7816
Memory	504kByte SOLID FLASH™, 20kByte RAM	504kByte SOLID FLASH™, 20kByte RAM	504kByte SOLID FLASH™, 24kByte RAM
CPU	32-bit	32-bit	32-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	VQFN32-13, Wafer sawn	Contact-based module, Wafer sawn	VQFN32-13, Wafer sawn
Typical applications	USB Tokens	USB Tokens	USB Tokens
Certification level	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo

SLE 97CUSIFX8000PH  SOLID FLASH™	SLE 97CUSIFX1M00PH  SOLID FLASH™
Multi-Interface USB-Security Cryptocontroller	High Density Multi-Interface USB-Security Cryptocontroller
USB 2.0, GPIO, I2C, SPI, ISO 7816	USB 2.0, GPIO, I2C, SPI, ISO 7816
792kByte SOLID FLASH™, 24kByte RAM	1MB SOLID FLASH™, 32kByte RAM
32-bit	32-bit
DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
-25 to +85°C	-25 to +85°C
VQFN32-13, Wafer sawn	VQFN32-13, Wafer sawn
USB Tokens	USB Tokens
CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo

Transport Ticketing

	Security Products with integrated CIPURSE™ functionality		
Product name	SLS 32TLC100(M) CIPURSE™ Security Controller	SLS 32TLC004S(M) CIPURSE™4move new	SLM 10TLC002L CIPURSE™ move new
Product description	Contactless Security Controller featuring CIPURSE™ functionality and Mifare compatibility	Contactless Security Controller featuring CIPURSE™ functionality and Mifare compatibility	Contactless Security Memory featuring CIPURSE™ functionality
Interfaces	ISO/ IEC 14443-3 Type A, ISO/ IEC 14443-4 Transmission Protocol, Mifare compatibility optional, NFC Forum Type 4 Tag configurable	ISO/ IEC 14443-3 Type A, ISO/ IEC 14443-4 Transmission Protocol, Mifare compatibility optional, NFC Forum Type 4 Tag configurable	ISO/ IEC 14443-3 Type A, ISO/ IEC 14443-4 Transmission Protocol, NFC Forum Type 4 Tag configurable
Integrated CIPURSE™ functionality	Security Architecture of CIPURSE™, Built-in command set based on ISO 7816-4/-9, Fully configurable file system based on ISO/ IEC 7816-4	Security Architecture of CIPURSE™, Built-in command set based on ISO 7816-4/-9, Fully configurable file system based on ISO/ IEC 7816-4	Security Architecture of CIPURSE™, Built-in command set based on ISO 7816-4/-9, Fully configurable file system based on ISO/ IEC 7816-4
Supported profiles	CIPURSE™V2, CIPURSE™T with consistent transaction mechanism	CIPURSE™V2, CIPURSE™S	CIPURSE™V2, CIPURSE™L
Capabilities	Up to 8 CIPURSE™ applications configurable, Mifare 1K/4K compatible emulation optional	Up to 4 CIPURSE™ applications configurable, Mifare 1K/4K compatible emulation optional	1 CIPURSE™ application
User memory	8kByte	4kByte	256Byte
Personalization	File system oriented personalization interface	File system oriented personalization interface	File system oriented personalization interface
Cryptography	AES 128-bit	AES 128-bit	AES 128-bit
Delivery forms	Wafer sawn, NiAu-bump, MCC8, MCS8	Wafer sawn, NiAu-bump, MCC8, MCS8	Wafer sawn, NiAu-bump, MCC8
Tools	CIPURSE™ Development Kit	CIPURSE™ Development Kit	CIPURSE™ Development Kit
Typical applications	Public Transport, Ticketing, Access Management, Micropayment	Public Transport, Ticketing, Access Management, Micropayment	Public Transport, Ticketing, Access Management, Micropayment
Certification level	CIPURSE™ Certification, CC EAL5+ high	CIPURSE™ Certification, CC EAL5+ high	CIPURSE™ Certification

Transport Ticketing

	Contactless Security Controller ¹⁾	
Product name	SLE 77CLF601P(M) 	SLE 77CLF1001P(M) 
Product description	Contactless Security Controller	Contactless Security Controller
Interfaces	ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface	ISO 14443 A/B, ISO 18092 passive mode, Mifare compatible interface
Memory	60kByte SOLID FLASH™, 4kByte RAM	100kByte SOLID FLASH™, 4kByte RAM
CPU	16-bit	16-bit
Crypto coprocessor symmetrical	DES, 3DES, AES up to 256-bit	DES, 3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	–	–
Delivery forms	Wafer sawn, NiAu-bump, MCC8, MCS8	Wafer sawn, NiAu-bump, MCC8, MCS8
Typical applications	Public Transport, Ticketing	Public Transport, Ticketing
Certification level	CC EAL5+ high/ EMVCo	CC EAL5+ high/ EMVCo

¹⁾ Supporting CIPURSE™ for all contactless and NFC applications

Transport Ticketing

	Mifare compatible, my-d™ proximity and ticketing products			
Product name	SLE 66R16S my-d™ proximity	SLE 66R32S my-d™ proximity	SLE 66R04S my-d™ proximity	SLE 66R35(I)(R)(E7) - Fully Mifare Compatible
Product description	Security memory with authentication, 2560Byte EEPROM	Security memory with authentication, 5120Byte EEPROM	Security memory with authentication, 770Byte EEPROM	Intelligent 1kByte EEPROM using Mifare technologies, (I) = Supporting 4-byte fixed number, non unique ID (R) = Supporting 4-byte reused ID, (E7) = Supporting 7-byte UID
Interface	ISO/ IEC 14443-3 Type A	ISO/ IEC 14443-3 Type A	ISO/ IEC 14443-3 Type A	ISO/ IEC 14443-3 Type A
Memory organization	Up to 15 sectors fully configurable (14 secure, 1 plain)	Up to 15 sectors fully configurable (14 secure, 1 plain)	Up to 15 sectors fully configurable (14 secure, 1 plain)	16 fixed sectors
Counter	Up to 65,536 units, support of anti-tearing	Up to 65,536 units, support of anti-tearing	Up to 65,536 units, support of anti-tearing	-
EEPROM - user	2008Byte	4056Byte	576Byte	768Byte
EEPROM - administration	552Byte	1064Byte	194Byte	256Byte
Security features	Transport key, Unique serial number, Mutual authentication with 64-bit keys, Hierarchical key management, Unique serial number	Transport key, Unique serial number, Mutual authentication with 64-bit keys, Hierarchical key management, Unique serial number	Transport key, Unique serial number, Mutual authentication with 64-bit keys, Hierarchical key management, Unique serial number	Transport key, Mutual three pass authentication with 48-bit keys
Distance (read/write)	Typically up to 10cm and above	Typically up to 10cm and above	Typically up to 10cm and above	Typically up to 10cm and above
Data rate	106kbit/s to card up to 848kbit/s to reader	106kbit/s to card up to 848kbit/s to reader	106kbit/s to card up to 848kbit/s to reader	106kbit/s
Endurance	100,000	100,000	100,000	100,000
Retention time, minimum	10 years	10 years	10 years	10 years
Delivery forms	Wafer sawn, NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump, MCC2, MCC8
Tools	Evaluation Kit Contactless	Evaluation Kit Contactless	Evaluation Kit Contactless	Evaluation Kit Contactless
Typical applications	Public Transport, Ticketing	Public Transport, Ticketing	Public Transport, Ticketing	Public Transport, Ticketing, Access Management

SLE 66R01P my-d™ move	SLE 66R01L my-d™ move lean
Intelligent 1216-bit EEPROM	Intelligent 576-bit EEPROM
ISO/ IEC 14443-3 Type A, NFC Forum Type 2 Tag operation	ISO/ IEC 14443-3 Type A, NFC Forum Type 2 Tag operation
1 fixed sector	1 fixed sector
16-bit counter with anti-tearing support	-
128Byte	48Byte
24Byte	24Byte
Unique serial number, 32-bit password protection for read and/ or write access, Block locking, Individual page locking, Password retry counter, Unique serial number	Unique serial number, Block locking, Individual page locking, Unique serial number
Typically up to 10cm and above	Typically up to 10cm and above
106kbit/s to card up to 848kbit/s to reader	106kbit/s
10,000	10,000
5 years	5 years
Wafer sawn, NiAu-bump	Wafer sawn, NiAu-bump
Evaluation Kit Contactless	Evaluation Kit Contactless
Public Transport, Ticketing, Access Management	Public Transport, Ticketing, Access Management

Components for Terminals

	EasySAM
Product name	SLF 9620
Product description	Secure access module for Mifare compatible interface, my-d™ algorithm, 3DES and AES128. Enables secured authentication between the reader and my-d™ chip cards or cards using Mifare technology, AES128-based authentication schemes. It features a dedicated key management system including key derivation and key upload.
Interface	ISO/ IEC 7816-3 T=1
Memory organization	Fixed pre-defined file system.
Security features	Mifare compatible encryption, my-d™ encryption schemes, 3DES and AES128, Online and offline modes, Secured key loading
Data rate	High baud rate up to 1.25Mbit/s
Anticollision	-
Delivery forms	ID-1/000 card (SIM format), M5.1, VQFN-8
Typical applications	Security applications with key-based authentication, Public Transport, Ticketing, Access Management
Tools	Evaluation Kit Contactless

	CIPURSE™SAM
Product name	SLF 9630 new
Product description	CIPURSE™ secure access module with Mifare compatible interface. Enables secured authentication between the reader and CIPURSE™ chip cards or cards using Mifare technology, AES128-based authentication schemes. It features a dedicated key management system including key derivation and key upload.
Interface	ISO/ IEC 7816-3 T=1, USB, SPI, I2C
Memory organization	Fully configurable, multi-application file system.
Security features	CIPURSE™ and Mifare compatible encryption, 3DES and AES128, Online and offline modes, Secured key loading
Data rate	Subject to the active interface
Delivery forms	ID-1/000 card (SIM format), MFC6.8, VQFN-8, VQFN-32
Typical applications	Security applications with key-based authentication, Public Transport, Ticketing, Access Management, Micropayment
Tools	CIPURSE™ Development Kit
Certification level	CIPURSE™ Certification, Hardware: CC EAL6+ high

Authentication

	Turnkey Solution	
Product name	OPTIGA™ Trust SLS 10ERE	OPTIGA™ Trust P SLJ 52ACA new
Product description	Original Product Authentication and Brand Protection Solution	Programmable solution for improved security of electronic devices in connected systems
Interfaces	SWI	ISO 7816
Memory	3.5kbit EEPROM	160kByte EEPROM, 8kByte RAM
CPU	nDSP	8-bit/ 16-bit
Crypto coprocessor symmetrical	–	3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	ECC 163-bit	RSA up to 2048-bit, ECC up to 521-bit
Ambient temperature	-30 to +85°C	-25 to +85°C
Delivery forms	USON-3	VQFN-32
Typical applications	Printer Cartridges, Authentication of System Services, Accessories, Original Replacement Parts, Functionalities and Parts in Networked Systems	Authentication of System Services, Accessories, Functionalities and Parts in Networked Systems, M2M Communication, Smart Metering, System Configuration Management
Certification level	–	CC EAL5+ high

Authentication

	Contact-based Security Controller		
Product name	SLE 97CSFX1M00PE  SOLID FLASH™ new	SLE 97CIFX1M00PE  SOLID FLASH™ new	SLC 52EIA500  INTEGRITY GUARD  SOLID FLASH™ new
Product description	Security Controller	Security Controller	Security Controller
Interfaces	SPI, ISO 7816	ISO 7816, I2C	I2C
Memory	1MByte SOLID FLASH™, 32kByte RAM	1MByte SOLID FLASH™, 32kByte RAM	500kByte SOLID FLASH™, 182kByte ROM, 16kByte RAM
CPU	32-bit	32-bit	Dual 16-bit
Crypto coprocessor symmetrical	3DES, AES up to 256-bit	3DES, AES up to 256-bit	3DES, AES up to 256-bit
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	SMD, Wafer sawn	SMD, Wafer sawn	VQFN-32, Wafer sawn
Typical applications	Authentication of System Services, Printers, System Configuration Management	Authentication of System Services, Printers, System Configuration Management	Authentication of System Services, Printers, System Configuration Management
Certification level	CC EAL5+ high	CC EAL5+ high	CC EAL6+ high

Trusted Computing

	Trusted Platform Module (TPM)			
Product name	OPTIGA™ TPM SLB 9645 ¹⁾²⁾	OPTIGA™ TPM SLB 9660	OPTIGA™ TPM SLB 9665 ¹⁾²⁾³⁾	OPTIGA™ TPM SLB 9670
Product description	Security Cryptocontroller for Trusted Platform Modules	Security Cryptocontroller for Trusted Platform Modules	Security Cryptocontroller for Trusted Platform Modules	Security Cryptocontroller for Trusted Platform Modules
Interfaces	I2C	LPC Bus	LPC Bus	SPI
CPU	16-bit	16-bit	16-bit	16-bit
Crypto coprocessor symmetrical	Acc. to TCG standard	Acc. to TCG standard	Acc. to TCG standard	Acc. to TCG standard
Crypto coprocessor asymmetrical	Acc. to TCG standard	Acc. to TCG standard	Acc. to TCG standard	Acc. to TCG standard
Ambient temperature	-20°C to +85°C, -40°C to +85°C	-20°C to +85°C, -40°C to +85°C	-20°C to +85°C, -40°C to +85°C	-20°C to +85°C, -40°C to +85°C
Delivery forms	TSSOP-28, VQFN-32	TSSOP-28, VQFN-32	TSSOP-28, VQFN-32	VQFN-32
Typical applications	Industrial embedded computing, Google Chromebook on ARM, Notebooks, Desktops, Tablets on Windows 8 RT/ Linux	Industrial embedded computing on x86, Google Chromebook on x86, Notebook, Desktops, Tablets on x86, Smart Home	Notebooks, Desktop, Tablet on Windows 8.x on x86	Industrial embedded computing on all micro architectures/ all operating systems, Notebook, Desktops, Tablets on all micro architectures/ all operating systems, Smart Home
Certification level	-	CC EAL4+ moderate	CC EAL4+ moderate	CC EAL4+ moderate
Standard	TPM (1.2)	TPM (1.2)	TPM (1.2)/ TPM (2.0)	TPM (1.2)/ TPM (2.0)

¹⁾ Additional SKUs for Google Chrome Books available

²⁾ Notebooks, Desktops, Tablets on Windows 10 (target 2015)

³⁾ Compliant to Microsoft and Intel logo

	Contact-based Security Controller			
Product name	SLE 88CFX2921P	SLE 88CFX3521P	SLE 88CFX4001P	SLE 88CFX4003P
Product description	Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller	Security Cryptocontroller
Interfaces	ISO 7816	ISO 7816	ISO 7816	ISO 7816
Memory	292kByte FLASH, 16kByte + 880Byte crypto RAM	352kByte FLASH, 16kByte + 880Byte crypto RAM	400kByte FLASH, 16kByte + 880Byte crypto RAM	400kByte FLASH, Up to 168kByte ROM, 16kByte + 880Byte crypto RAM
CPU	32-bit	32-bit	32-bit	32-bit
Crypto coprocessor symmetrical	3DES	3DES	3DES	3DES
Crypto coprocessor asymmetrical	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit	RSA up to 4096-bit, ECC up to 521-bit
Ambient temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Delivery forms	Wirebond module, DSO-20, TSSOP-20, VQFN-10, Wafer sawn	Wirebond module, DSO-20, TSSOP-20, VQFN-10, Wafer sawn	Wirebond module, DSO-20, TSSOP-20, VQFN-10, Wafer sawn	Wirebond module, DSO-20, TSSOP-20, VQFN-10, Wafer sawn
Typical applications	Conditional Access	Conditional Access	Conditional Access	Conditional Access
Certification level	CC EAL5+ high	CC EAL5+ high	CC EAL5+ high	CC EAL5+ high

Object Identification





	PJM Stack Tag	my-d™ vicinity plain		
Product name	SRF66V10ST	SRF 55V02P	SRF 55V02P HC	SRF 55V10P
Product description	Plain memory, zero separation stackability, 10kBit EEPROM	Plain memory, 2.5kbit EEPROM	Plain memory, 2.5kbit EEPROM	Plain memory, 10kbit EEPROM
Interface	ISO/ IEC 18000-3 mode 2	ISO/ IEC 18000-3 mode 1	ISO/ IEC 18000-3 mode 1	ISO/ IEC 18000-3 mode 1
Memory organization	1 fixed sector	1 fixed sector	1 fixed sector	1 fixed sector
Counter	-	Up to 65,536 units, support of anti-tearing	Up to 65,536 units, support of anti-tearing	Up to 65,536 units, support of anti-tearing
EEPROM - user	1016Byte	224Byte	224Byte	992Byte
EEPROM - administration	14Byte	64Byte	64Byte	256Byte
Security features	Unique serial number, 48-bit write password, Lock pointer, Unique serial number	Unique serial number, Individual page locking, Unique serial number	Unique serial number, Individual page locking, Unique serial number	Unique serial number, Individual page locking, Unique serial number
Distance (read/write)	Typically up to 1m	Typically up to 1.5m	Typically up to 1.5m	Typically up to 1.5m
Data rate	423.75kbit/s to card. 105.94kbit/s to reader @ 8 channels	26.48kbit/s	26.48kbit/s	26.48kbit/s
Endurance	100,000	100,000	100,000	100,000
Retention time, minimum	10 years	10 years	10 years	10 years
Delivery forms	Wafer sawn, NiAu-bump	Wafer sawn, NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump, MCC2, MCC8
Tools	Evaluation Kit PJM	Evaluation Kit Contactless	Evaluation Kit Contactless	Evaluation Kit Contactless
Typical applications	Document Logistics	Inventory Control, Libraries	CD Inlays, Laundry	Inventory Control, Libraries




Object Identification

	my-d™ vicinity plain	my-d™ vicinity secure	
Product name	SRF 55V10P HC	SRF 55V02S	SRF 55V02S HC
Product description	Plain memory, 10kbit EEPROM	Security memory with authentication, 2.5kbit EEPROM	Security memory with authentication, 2.5kbit EEPROM
Interface	ISO/ IEC 18000-3 mode 1	ISO/ IEC 18000-3 mode 1	ISO/ IEC 18000-3 mode 1
Memory organization	1 fixed sector	Up to 15 sectors fully configurable (14 secure, 1 plain)	Up to 15 sectors fully configurable (14 secure, 1 plain)
Counter	Up to 65,536 units, support of anti-tearing	Up to 65,536 units, support of anti-tearing	Up to 65,536 units, support of anti-tearing
EEPROM - user	992Byte	224Byte	224Byte
EEPROM - administration	256Byte	64Byte	64Byte
Security features	Unique serial number, Individual page locking, Unique serial number	Transport key, Unique serial number, Mutual authentication with 64-bit keys, Hierarchical key management, Unique serial number	Transport key, Unique serial number, Mutual authentication with 64-bit keys, Hierarchical key management, Unique serial number
Distance (read/write)	Typically up to 1.5m	Typically up to 1.5m	Typically up to 1.5m
Data rate	26.48kbit/s	26.48kbit/s	26.48kbit/s
Endurance	100,000	100,000	100,000
Retention time, minimum	10 years	10 years	10 years
Delivery forms	Wafer sawn, NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump, MCC2, MCC8
Tools	Evaluation Kit Contactless	Evaluation Kit Contactless	Evaluation Kit Contactless
Typical applications	Factory Automation, Inventory Control	Ticketing, Brand Protection	Ticketing, Brand Protection

SRF 55V10S	SRF 55V10S HC
Security memory with authentication, 10kbit EEPROM	Security memory with authentication, 10kbit EEPROM
ISO/ IEC 18000-3 mode 1	ISO/ IEC 18000-3 mode 1
Up to 15 sectors fully configurable (14 secure, 1 plain)	Up to 15 sectors fully configurable (14 secure, 1 plain)
Up to 65,536 units, support of anti-tearing	Up to 65,536 units, support of anti-tearing
992Byte	992Byte
256Byte	256Byte
Transport key, Unique serial number, Mutual authentication with 64-bit keys, Hierarchical key management, Unique serial number	Transport key, Unique serial number, Mutual authentication with 64-bit keys, Hierarchical key management, Unique serial number
Typically up to 1.5m	Typically up to 1.5m
26.48kbit/s	26.48kbit/s
100,000	100,000
10 years	10 years
Wafer sawn, NiAu-bump, MCC2, MCC8	Wafer sawn, NiAu-bump, MCC2, MCC8
Evaluation Kit Contactless	Evaluation Kit Contactless
Ticketing, Brand Protection	Ticketing, Brand Protection




Modules

	Contact-based Controller Modules			
Product name	S-MFC5.6	S-MFC5.4	S-MFC6.8	S-MFC6.6
Picture				
Product description	Contact-based module, 6 Contacts, FCOS™ technology, transparent PET Tape	Contact-based module, 6 Contacts, FCOS™ technology, transparent PET Tape	Black lined contact-based module, 8 contacts	Black lined contact based module, 6 contacts
Pitch	500µm	9.5mm	14.25mm	9.5mm
Dimensions	11 x 8.3mm	10.4 x 7.6mm	13 x 11.8mm	11 x 8.3mm
Thickness	max. 500 µm	max. 420µm	max. 470µm	max. 470µm
Contact Surface	NiAu	Ag	NiAu	NiAu
ISO - reference	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3
Derivatives	Au surface, S-MFC5.6-6-1	Au surface, S-MFC5.4-6-1	Au surface, Pd surface, S-MFC6.8-8-1, S-MFC6.8-8-3	Au surface, Pd surface, S-MFC6.6-6-1, S-MFC6.6-6-3
Delivery form	Tape on reel	Tape on reel	Tape on reel	Tape on reel
Main applications	SIM & UICC	SIM & UICC	Payment, Government Identification	Payment, Government Identification





P-M2M4.7	T-M5.1	P-M4.8	T-M4.8	S-MFC1.6-6-1
				
Contact-based module, 8 contacts, Epoxy Tape, Wire Bond, Mold	Contact-based module, 8 contacts, Epoxy Tape, Wire Bond, Glob Top	Contact-based module, 8 contacts, Epoxy Tape, Wire Bond, Mold	Contact-based module, 8 contacts, Epoxy Tape, Wire Bond, Glob Top	Contact-based module, 6 Contacts, FCOS technology, transparent PET Tape
14.25mm	14.25mm	14.25mm	14.25mm	9.5mm
12.8 x 10.8mm	13 x 11.8mm	13 x 11.8mm	13 x 11.8mm	11 x 8.3mm
max. 600µm	max. 580µm	max. 600µm	max. 580µm	max. 500µm
CIN+	CIN+	CIN	CIN	Ni Coating
ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3
Au surface	Au surface, Pd surface, T-M5.1-8-1, T-M5.1-8-2	Au surface, Pd surface	Au surface, Pd surface, T-M4.8-8-1, T-M4.8-8-2	Ni coating
Tape on reel	Tape on reel	Tape on reel	Tape on reel	Tape on reel
Industrial M2M, Consumer M2M	Payment, Government Identification	Payment, Government Identification	Payment, Government Identification, Pay-TV	SIM & UICC




Modules

Contactless Controller & Memory Modules				
Product name	P-MCS8-2-1 new	P-MCC8-2-6	P-MCC2-2-1	P-FTM8-2-1
Picture				
Product description	Thin contactless mold module	Optimized standard contactless mold module, successor of P-MCC8-2-3	2 Antenna Contacts, Wire Bond, Mold, Leadframe	High end contactless mold module, Epoxy Tape
Pitch	9.5mm	9.5mm	4.75mm	9.5mm
Dimensions	8.1 x 5.15mm	8.1 x 5.15mm	10.3 x 2.9mm	8.2 x 5.7mm
Thickness	max. 250µm	max. 340µm	max. 330µm	max. 260µm
Contact Surface	Ag	Ag	Ag	Au
ISO - reference	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3
Derivatives	-	-	-	-
Delivery form	Tape on Reel	Tape on Reel	Tape on Reel	Tape on Reel
Main applications	Payment, Government Identification	Payment, Government Identification, Transport Ticketing	Access Control, Transport Ticketing	Government Identification


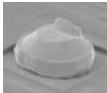

Dual Interface Modules		
T-M8.4	P-M8.4	S-COM8.6
		
Dual Interface Module, 8 contacts CB, 2 Antenna Contacts, Epoxy Tape, Wire Bond, Glob Top	Dual Interface Module, 8 contacts CB, 2 Antenna Contacts, Epoxy Tape, Wire Bond, Mold	Black lined dual interface module, 6 CB contacts and Coil on Module, Inductive coupling
14.25mm	14.25mm	14.25mm
13 x 11.8mm	13 x 11.8mm	13 x 11.8mm
max. 580µm	max. 620µm	max. 470µm
CIN	CIN	NiAu
ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3	ISO 7816-1, ISO 7810, ISO 10373-1/-3
Au surface, C4/ C8, La/ Lb to, Pd surface, T-M8.4-8-1, T-M8.4-8-2, T-M8.4-8-8	Au surface	Au surface, Pd surface
Tape on Reel	Tape on Reel	Tape on Reel
Payment, Government Identification	Payment, Government Identification	Payment

Modules

	SMD Packages			
Product name	DSO-8-2	DSO-20-2	TSSOP-28-2	USON-10-1
Picture				
Product description	Lead	Lead	Lead	Small Outline, No-Lead, Exposed pad
Pitch	1.27mm	1.27mm	0.65mm	0.5mm
Dimensions	4.93 x 3.94mm	12.8 x 7.6mm	9.7 x 4.4mm	3 x 3mm
Thickness	max. 1.75mm	max. 2.64mm	max. 1.1mm	max. 600µm
Contact Surface	Sn	Sn	Sn	NiPd-AuAg
ISO - reference	-	-	-	-
Derivatives	-	-	-	-
Delivery form	Tape on Reel	Tape on Reel	Tape on Reel	Tape on Reel
Main applications	Authentication, Pay-TV	Authentication, Pay-TV	Trusted Computing	Authentication

VQFN-8-1,-2,-4	VQFN-10-2	VQFN-32-13
		
Small Outline, No-Lead, Exposed pad	Small Outline, No-Lead, Exposed pad	Small Outline, No-Lead, Exposed pad
1.27mm	1.27mm	0.5mm
5 x 6mm	6 x 5mm	5 x 5mm
max. 900µm	max. 900µm	max. 0.9mm
NiPd-AuAg	NiPd-AuAg	NiPd-AuAg
-	-	-
-	-	-
Tape on Reel	Tape on Reel	Tape on Reel
Industrial M2M, Consumer M2M, Trusted Computing, Authentication	Trusted Computing, Authentication, Pay-TV	Embedded Secure Element, USB Tokens

Preassembly

	Preassembly		
Product name	Bumping NiAu	Stud Bump	Wafer Thinning and Dicing
Picture			
Product description	NiAu bump on the pad: typical h=30μm	Gold bump on the pad: typical h=30μm	Standard thinning and dicing or DBG (Dicing Before Grinding) depending on final thickness
Thickness	-	-	50μm, 150μm other thicknesses on request
Inking	Optional	Optional	Optional
Mapping	Standard	Standard	Standard
Delivery form	Wafer frame	Wafer frame	Wafer sawn on UV foil
Documents	Specification NiAu Bumping, Chip Delivery Specification for 8"/12" Wafer, General Issue and Product Specific Issue	Specification Stud Bumping, Chip Delivery Specification for 8"/12" Wafer, General Issue and Product Specific Issue	Chip Delivery Specification for 8"/12" Wafer, General Issue and Product Specific Issue

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