The FeliCa™ Lite-S: RC-S966 product is a small-size contactless IC chip with streamlined security function and an optimized file system.

FeliCa Lite-S can be used for any NFC Forum Type 3 Tag solution, such as handover connection and smart poster, in combination with any NFC device.

Small & Thin   Mutual authentication   NFC Type 3 Tag

SONY

FeliCa

The image printed on this card is only a sample.

FEATURES

• Mutual authentication utilizing MAC[1]

FeliCa Lite-S has read-access control and write-access control functionality due to the use of MAC to prevent any unauthorized access. The function to generate a MAC on FeliCa Lite-S makes it possible to carry out streamlined mutual authentication between the product and the reader, supporting secure application development.

[1] MAC: Message Authentication Code

• NFC Forum Type 3 Tag

FeliCa Lite-S supports Type 3 Tag operation, as defined by the NFC Forum. Therefore, the chip can communicate with standard NFC smartphones and readers. The user memory of 224 bytes is sufficient for most NFC-tag applications and usages.

• Several access attributes on a simple file system

The chip uses a simple file structure that has no hierarchical structure. It supports the following access attributes for each user block separately.

- Read Only Access
- Read / Write Access
- Read After Authentication
- Write After Authentication
- Write With MAC

• Fast transaction speed

The RC-S966 product supports simultaneous 64-byte data-read and simultaneous 16-byte data-write operations, together with a 212- / 424-kbps data-transfer rate.

• Anti-tearing transaction function and data integrity-check function

FeliCa Lite-S has anti-tearing transaction functionality to prevent incomplete data update. Even if a data error occurs in the chip, there is CRC data check code for every data block (16 bytes), so the data error can be detected.

• A software development kit, SDK for NFC, is available

Software Development Kit SDK for NFC is available to develop applications for FeliCa Lite-S and Sony NFC readers. The technical documents of FeliCa Lite-S for application development are also downloadable from the website at sony.net/Products/felica/business/tech-support/.

APPLICATIONS

NFC handover
Bluetooth, Wi-Fi, etc

ID
Company ID, Student card, etc

Loyalty program
Loyalty points, Gift card

Transportation
Single-journey ticket
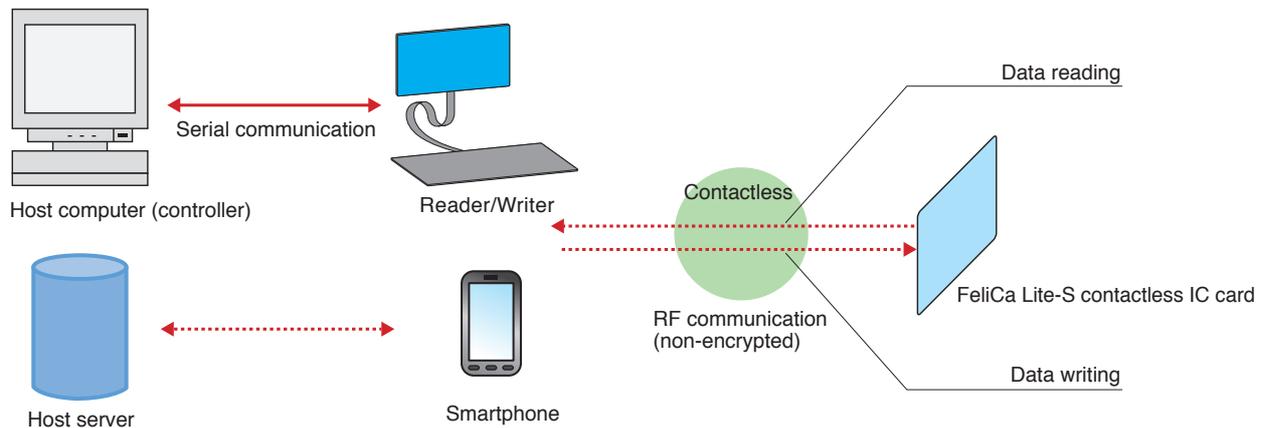
Entertainment
Event ticket, Game card

	FeliCa Lite-S IC chip (RC-S966)
Communication method	Conforms to ISO/IEC 18092 (212 kbps / 424 kbps passive communication mode)
Operating frequency / Modulation/Bit coding	13.56 MHz / ASK modulation / Manchester encoding system
Communication speed	Supports automatic 212 / 424 kbps switching
Memory size	14 blocks + 1 subtraction block (1 block=16 byte)
Card segmentation	No
Authentication method between card and reader / writer	Streamlined mutual authentication[1] with T-DES
Channel encryption	No
Read access control	Yes
Write access control	Yes
Supported commands	Non encryption commands (Polling, Read Without Encryption, Write Without Encryption)
Operating temperature	-25 °C to +100 °C (Quality and reliability are assured when the operating temperature is within the range of -25 °C to + 85°C.)
Storage temperature	-55 °C to +125 °C

[1] Different from mutual authentication used for FeliCa Standard IC chip

● For technical documents about this product, see "Technical Information" on the FeliCa website:
sony.net/Products/felica/business/tech-support/

TYPICAL SYSTEM LAYOUT

Host computer (controller) — Serial communication — Reader/Writer — Contactless — RF communication (non-encrypted) — Data reading / Data writing — FeliCa Lite-S contactless IC card
Host server — Smartphone