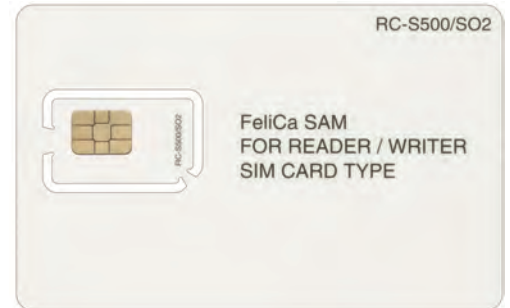


The RC-S500 series is the FeliCa™SAM for readers that support AES and DES encryption systems. This product enables various terminals to utilize FeliCa security functions for a wide range of applications. In addition, RC-S500/SO2 supports FeliCa Lite-S card.

# RC-S500 RC-S500/SO2

- AES support
- High security
- FeliCa Lite-S support\*

\*RC-S500/SO2 only



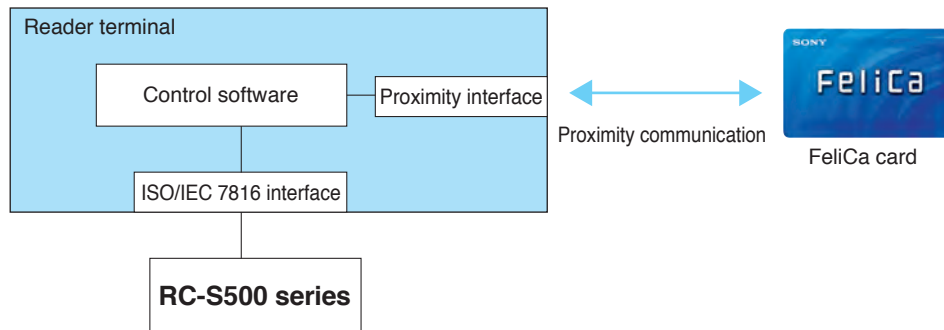
## FEATURES

### [Common]

#### •Offering secure access functionality to FeliCa cards using AES/DES encryption

The RC-S500 product is a Secure Application Module (FeliCa SAM) for readers that provides the necessary functionality for secure access to FeliCa Standard cards with AES/DES encryption systems. To develop a FeliCa secure reader system, simply insert this product into the SIM card slot of the reader terminal.

### Configuration example of the reader using RC-S500 series



#### •High level of security / Fast data communication

The security IC chip mounted in this product has obtained Common Criteria (ISO/IEC 15408) EAL5+ certification. By storing the encryption keys and security algorithm in the IC chip, it is possible to create a high-security system with this product.

Furthermore, this product can communicate with a reader, in which this product is inserted, at a maximum data transfer speed of 1.25 Mbps\*, suitable for systems that require fast processing.

\* With the input clock running at 10 MHz.

### [RC-S500/SO2]

#### • FeliCa Lite-S support

RC-S500/SO2 supports authentication between FeliCa Lite-S card and the reader, and read/write with MAC\*. In addition, it supports the FeliCa Lite-S Diversified Card Key standard generation algorithm for authentication by using an individualized Card Key.

\* MAC: Message Authentication Code

## MAIN FUNCTIONALITY

	RC-S500	RC-S500/SO2
<b>Communication method</b>	• RC-S500 command transmitted and received on the Command / Response APDU conforming to ISO/IEC 7816.	
<b>Security</b>	• Encrypted communication between RC-S500 series and reader • Encrypted communication between RC-S500 series and FeliCa card	
<b>Key management</b>	• Managing System Key, Area Key, Service Key and Group Key for the FeliCa card	
<b>Access to FeliCa card</b>	<ul style="list-style-type: none"> <li>• Mutual authentication with FeliCa Standard card</li> <li>• Encryption of card command packet</li> <li>• Decryption of card response packet</li> <li>• Calculation of card response time-out time</li> <li>• Generation of command package</li> <li>• Generation of Group Key</li> </ul>	<ul style="list-style-type: none"> <li>• Mutual authentication with FeliCa Standard Card</li> <li>• Encryption of card command packet</li> <li>• Decryption of card response packet</li> <li>• Calculation of card response time-out time</li> <li>• Generation of command package</li> <li>• Generation of Group Key</li> <li>• Authentication with FeliCa Lite-S card</li> <li>• Read/write to FeliCa Lite-S card with MAC</li> </ul>

## PRODUCT SPECIFICATIONS

		RC-S500 Series Common
<b>External interface / transmission method</b>		Conforms to ISO/IEC 7816 (T=1 protocol)
<b>Input clock</b>		1 to 10 MHz
<b>Communication speed</b>		Max. 1.25 Mbps (Input clock: 10 MHz)
<b>Operating temperature / humidity</b>		-25 °C to +85 °C (10% RH to 90% RH)
<b>Card external dimensions (plug section)</b>		ISO/IEC 7810 ID-1/000 card (25 mm × 15 mm)
<b>Non-volatile memory</b>	<b>Write endurance</b>	100,000 times
	<b>Maximum key registration</b>	512 (System/Area/Service Key, DES/AES total) , 32 (Group Key,DES/AES total) , 32 (FeliCa Lite-S Key) *
<b>Operating voltage / consumption</b>		Support ISO/IEC 7816 Class A (5 V) , Class B (3 V)

\*RC-S500/SO2 only

• Specifications and external appearance are subject to change without prior notice for the purpose of improvement.  
 • FeliCa is a trademark of Sony Corporation. FeliCa is a contactless IC card technology developed by Sony Corporation.  
 • Other system names and product names described in this catalog are generally registered trademarks or trademarks belonging to their respective development manufacturers.  
 Note that the ™ and ® symbols are intentionally omitted from the rest of this document.

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