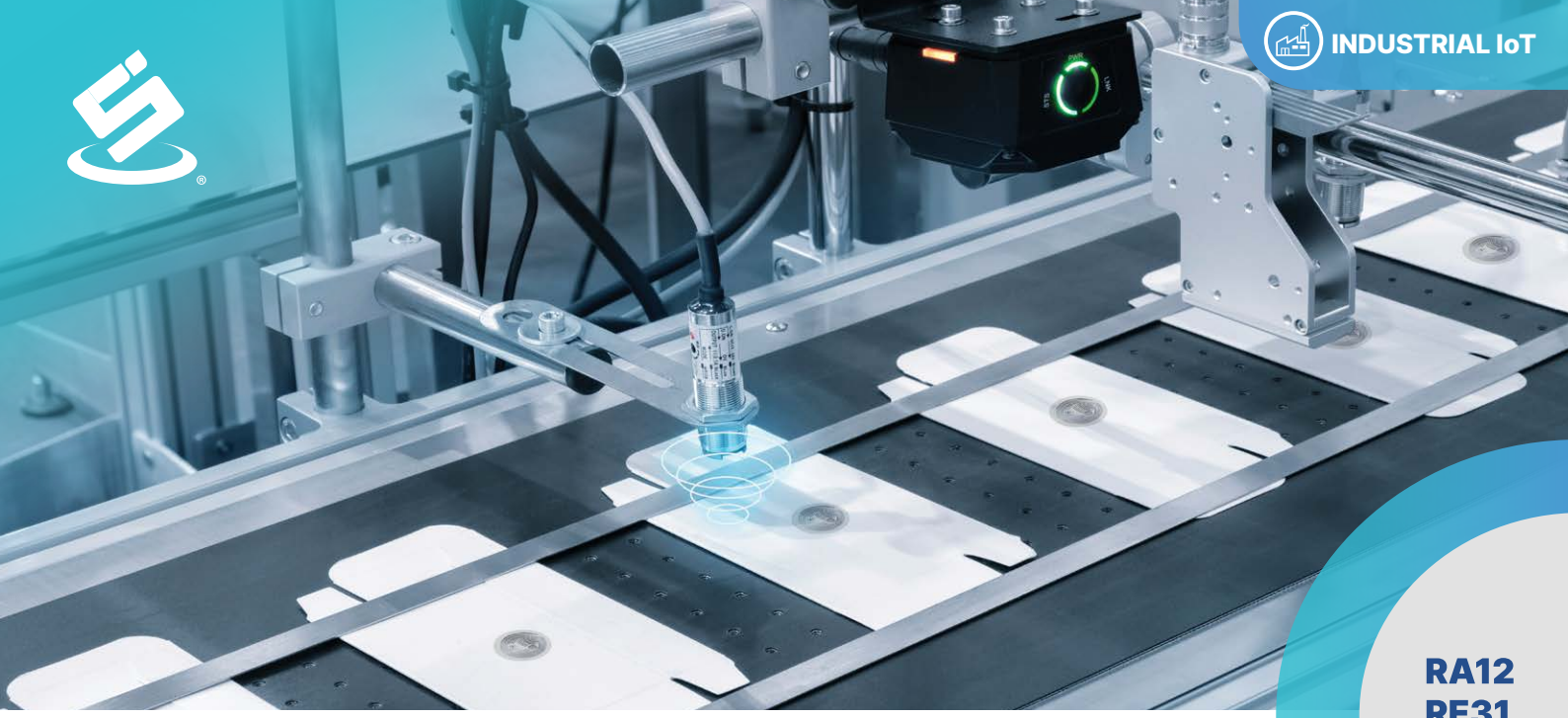
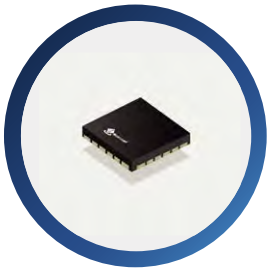


INDUSTRIAL IoT

RA12
RE31
RE41



HF RFID READER ICs

Silicon Craft's 13.56MHz RFID reader/writer ICs are single-chip ASICs designed. Our products adhere to major global standards, including ISO/IEC 14443A/B, ISO/IEC 15693, and JIS-X-6319-4, ensuring compatibility and reliability across diverse applications.

Harnessing the power of contactless communication through HF RFID technology, our ICs enable wireless identification regardless of external lighting conditions and without the need for line-of-sight. This allows effective detection across various mechanical constraints or vision-blocking obstacles, both indoors and outdoors. This robust technology is ideal for operation in dirty and harsh industrial settings, making it perfect for identifying and monitoring products, carriers, or machine conditions on the production line. It enhances operational efficiency, accuracy, safety, and traceability, while reducing downtime and maintenance costs.

HIGHLIGHT FEATURES

- Support Standard HF RFID Protocols
  - ISO/IEC 14443A
  - ISO/IEC 14443B
  - ISO/IEC 15693
  - JIS-X-6319-4
- SPI Interface
- Power-Down Mode Consumption:
  - 0.6 µA (RA12)
  - 1.0 µA (RE31, RE41)
- Low-Power Card Detection Mode Consumption:
  - 4.7 µA (RA12)

APPLICATIONS

- Production Line Automation
- Supply Chain Management
- Asset Tracking
- Tool and Equipment Tracking
- Quality Control
- Predictive Maintenance & Monitoring

HF READER ICs FAMILY

RE31

ISO/IEC 14443A
ISO/IEC 14443B
ISO/IEC 15693
Support 7V TVDD

RE41

ISO/IEC 14443A
ISO/IEC 14443B
ISO/IEC 15693
JIS-X-6319-4
Support 7V TVDD

RA12

ISO/IEC 14443A
ISO/IEC 14443B
ISO/IEC 15693
with Low-Power
Card Detection

SPECIFICATION TABLE

SPECIFICATION	RE31	RE41	RA12
Ordering Part Number	PI5AVQO7P20UT3101E1	PI5AVQO7P20UT3201E1	PI6BVQL5P60UT1201T1
Protocol			
ISO/IEC 14443A, up to 848 kbps (NFC Type 1,2,4A Tag)	●	●	●
ISO/IEC 14443B, up to 848 kbps (NFC Type 4B Tag)	●	●	●
ISO/IEC 15693, 1 and 2 Subcarrier (NFC Type 5 Tag)	●	●	●
JIS-X-6319-4 (NFC Type 3 Tag)	Unsecured Memory Only (Need MCU to Decoder)	Unsecured Memory Only (On-Chip HW Decoder)	Unsecured Memory Only (Need MCU to Decoder)
Operating Condition			
Receiver Voltage	2.7 – 3.6 V		
Transmitter Voltage	2.7-7.0 V	2.7-7.0 V	2.7-5.5 V
Operating Temperature	-40 - 85 °C		
Maximum Driving Current	300 mA @ 5 V TVDD 400 mA @ 7 V TVDD	300 mA @ 5 V TVDD 400 mA @ 7 V TVDD	250 mA @ 5 V TVDD
Other Features			
Interface	SPI		
EEPROM	256 bytes	256 bytes	-
IRQ Pin	●	●	●
Low-Power Card Detection Mode	-	-	●
Low-Power Consumption on Power-Down Mode	1 µA	1 µA	0.6 µA
Packages	QFN32 (5×5)	QFN32 (5×5)	QFN24 (4×4)

DEVELOPMENT KITS

- RA12 Development Kit
- RE31 Development Kit
- RE41 Development Kit

SUPPORT MATERIALS

- Firmware Source Code with Command-Line Instruction via UART
- Demo PC Software (Windows Based)
- Reference PCB Design and Schematic Diagram
- Reference Antenna and Antenna Design Tool

Silicon Craft Technology PLC
40 Thetsaban Rangsan Nua RD., Lat Yao,
Chatuchak, Bangkok 10900 Thailand.

+66 2 589 9991
+66 2 589 8881

info@sic.co.th
www.sic.co.th