# Semiconductor Review

DECEMBER - 15 - 2021
SEMICONDUCTORREVIEW.COM

**Tech Edition**
APAC SPECIAL

Dr. Bodin Kasemset,
*CEO*

# SILICON CRAFT TECHNOLOGY

## REVOLUTIONIZING RFID AND NFC APPLICATIONS

$15

# Silicon Craft Technology


The annual listing of 20 companies in APAC that are at the forefront of providing Semiconductor solutions and transforming businesses in the region

**Dr. Bodin Kasemset,**
*CEO*

**“Silicon Craft augments its roadmap in lockstep with a client’s prevalent challenges, meaning our product line is constantly inspired by hard-to-crack customer issues that we have resolved**

Semiconductor Review
TOP 10
SEMICONDUCTOR TECH
COMPANIES IN APAC - 2021

# SILICON CRAFT TECHNOLOGY

## REVOLUTIONIZING RFID AND NFC APPLICATIONS

*By Richmond smith*

Today, RFID technology is empowering a smarter life in the business world by enabling improved data accuracy, faster data collection, enhanced inventory/asset tracking, and reduced labor costs. However, for a technology that was introduced almost a century ago, RFID applications are still in their infancy. A key reason behind this latency is the lack of robust, high-performance integrated circuits (ICs) that can cope with the signal and application requirements of the evolving RFID space. Additionally, the scarcity of talented hardware and software developers who can design ICs that accurately align with the complex requirements of modern-day businesses is also hindering firms across multiple markets from successfully implementing an RFID system. So, the one question that has been revolving around for several years is how can organizations tap into the complete potential of RFID technology in a simple and inexpensive manner?

Turning Experience to Innovation

Thailand-based Silicon Craft Technology PLC (SIC) answers this with its comprehensive RFID solutions portfolio and a seasoned team of highly competent IC developers. The company offers novel, custom, and standard design microchips for RFID applications and delivers robust RFID-driven products integrated with value-added features. Founded in 2002, SIC has a proven track record of designing and developing world-class ICs for

linear and mixed signals. “We leverage our two-decade experience and laser-focus on RFID innovations to understand our client needs and subsequently design robust solutions with high-quality and superior performance,” says Dr. Bodin Kasemset, CEO of SIC.

Currently, the company provides standard and ASIC designs for RFID tags as well as RFID readers under its low frequency (LF) and high frequency (HF) product lines. The HF line also includes an NFC tag IC and reader, which has wide range of applications in anti-counterfeiting, tamper detection, health and environment monitoring, among other processes. “Our products are integrated with a UART interface, which enables smoother transmission of signals to and from the ICs in our sensors,” states Dr. Kasemset. SIC also has patented RFID and NFC sensor technologies that the company utilizes to facilitate innovative RFID applications in access control, animal identification, immobilizer, healthcare, smart home, smart packaging, and other markets. With such strong competencies, the company has strived to become a world leader when it comes to offering microchips for RFID and NFC applications.

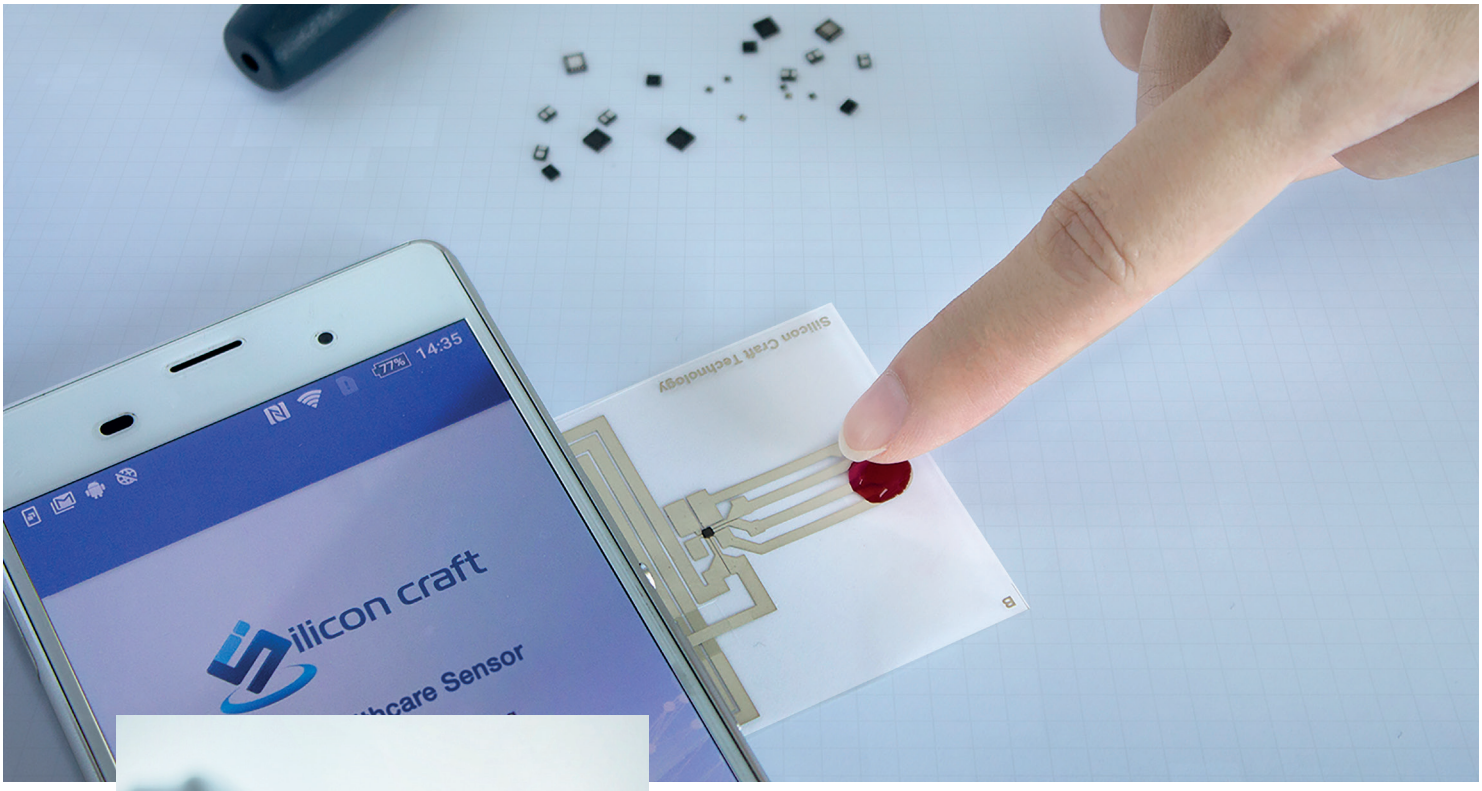
Expanding RFID Applications with Customer Excellence

A key facet of SIC’s approach to its customer engagements is the company’s ability to mold itself into becoming a partner that guides a business’s RFID implementation all the way from ideation to final deployment and maintenance. Dr. Kasemset also mentions how his company always strives to learn from each project and leverages that experience to enhance the time-to-market for similar collaborations in the future. “Silicon Craft augments its roadmap in lockstep with clients’ prevalent challenges, meaning our product line is constantly inspired by hard-to-crack customer issues that we have resolved,” adds Dr. Kasemset. SIC boasts holistic capabilities developed over the years to precisely fine-tune the development of an RFID solution that meets all the electronic, mechanical, and operational specifications. The company also adds information learned from its long track record as a custom RFID device manufacturer to its ever-growing collection of interesting customer challenges.

Apart from its customer-centric onboarding process, SIC also has a unique prototyping methodology allowing SIC to confirm customer requirements on product functionality on a demo system. “Once the prototype is verified, we quickly move to client demonstration and reproduce small sets of demo kits for application testing and commercial purpose,” Explains Dr. Kasemset. Alternatively, when the initial prototype does not meet the specifications, SIC reworks the larger IC and aligns its power and performance specifications to client needs, which is significantly cost-effective than working on a microscopic IC.


## Carving a Niche in the RFID Space

As an example of SIC’s pioneering work, Dr. Kasemset elaborates how his company is currently researching and developing RFID technology that





will allow farm owners to go beyond animal ID and monitor the health of their herds in real-time. Dr. Kasemset emphasizes, "With the consumer market's rising demands for transparency into where and how their food products are produced and packaged, RFID applications, in remote health monitoring for animals, is a huge market waiting to be tapped."

An interesting success story that SIC has ignited is an instance where the company assisted a client in the fashion industry detect and resolve the counterfeiting of their products. Initially, due to the outsourced production of their clothing lines, the customer witnessed the emergence of multiple design copies in the market. To counter this, the client approached SIC, who, after an initial meeting, decided to design NFC tags that would be placed within the clothes, which the consumer can scan with their mobile phones and ensure authenticity. SIC also developed NFC-driven solutions for the luxury item delivery market to help consumers authenticate their packages using tags. Since then, SIC has developed a dedicated anti-counterfeiting product to help retail and supply chain firms minimize product loss and inefficient delivery.

## Ushering an RFID-Driven Future

Moving forward, SIC plans to expand its RFID frequency spectrum and develop new solutions with more high and ultra-high ranges. By achieving this, the company aims to build tools in the energy-harvesting sector, which is geared to save costs associated with operating and maintaining physical assets by enabling 24/7 RFID-driven monitoring capable of notifying relevant personnel in case of breakdowns. Concurrently, SIC is working toward developing additional products that leverage NFC sensors to detect electrochemical and biochemical changes with applications in water quality management, drug discovery, biomedicine, and more. Backing this development is a plethora of technology labs across the U.S., U.K., France, and Germany that have been continually working to improve the applicability of RFID and NFC systems across all markets. To conclude, Dr. Kasemset reiterates the ethos of SIC, "We will continue to design and develop high-quality ICs to solve the prevalent customer challenges with our unique blend of long-standing RFID industry experience, product development prowess, and customer-centric innovation strategies." SR

SEMICONDUCTORREVIEW.COM

# Semiconductor Review

APAC SPECIAL

SEMICONDUCTOR
EDITION