

NEXTY ELECTRONICS WORLD

vol.174 JAN 2019



Partners with 15 Years of Growing Together

Infineon Technologies × NEXTY Electronics



Infineon Technologies Japan K.K.
Director, Distribution Management

Hakuen Koh

NEXTY Advanced Technology Company
Company President

Shinichi Hosoda

NEXTY Electronics Corporation ("NEXTY"), formed in April 2017 by the merger of Tomen Electronics and Toyota Tsusho Electronics, is ranked as Infineon Technologies' ("Infineon") fourth largest global distributor. Meanwhile, NEXTY has also launched the NEXTY Advanced Technology Company ("NAT"), an internal company that specialized in Infineon products and solutions. Through this, both companies are building a relationship that goes beyond simply a semiconductor company and distributor. How do these two companies plan to survive in today's era of rapid change including the growing trend towards electrification and IoT in every market from vehicles to industrial and consumer equipment? Now that a year-and-a-half has passed since NAT was launched, we interviewed Infineon's Distribution Management Director, Hakuen Koh, and NAT's Company President, Shinichi Hosoda, on the relationship between both companies as well as their current status and future outlook.

Q : What kind of year was 2018 for Infineon and NEXTY?

Koh : In 2018, the Distribution Management achieved a significant year-on-year sales increase, making it a year that marked a big leap forward for us. Key factors behind this growth were the acceleration of vehicle electrification, a shift to inverters — especially in major household appliances, and an increase in power demand from servers handling big data. Although we have been making ongoing capital investments to respond to increased demand, the demand last fiscal year greatly exceeded our expectations, making it a tough year to keep the delivery schedule. Amid these circumstances we depended heavily on NEXTY's strong support, for which we are truly grateful. We expect this situation to continue well past 2019, but we are also investing more aggressively in production capacity, especially our pre-processing plant.

Hosoda : For us as well, it was a year of drawn-out lead time from demand increase caused by the same factors. That being said, this situation was not unique to Infineon, but rather was experienced across the entire semiconductor industry. However, the time has come to distinguish products whose demand is going to continue outstripping supply from products whose supply and demand are in balance. Therefore, we think it is important to respond flexibly from here out. In 2018, Infineon opened a new Tokyo Technology Center ("TTC"), but perhaps you could better explain its purpose.

Koh : That's right. We opened TTC in October of 2018. Its purpose is to enhance support for cutting-edge technologies in both automotive and industrial applications.

For automotive applications, TTC enhances support for ADAS-controlling sensor technology (radar etc.) and AURIX™*, an automotive microcontroller. Sensors and microcontrollers are core technologies in the shift to electric vehicles and automated driving, while the microcomputer is especially critical component for vehicles. In order to build a strong relationship with auto makers and Tier 1 suppliers, we feel it is important to focus efforts on power semiconductors, which act as the system's appendages, as well as microcontrollers, which act as the system's brain, and we intend to continue expanding efforts in this direction. We have great expectations towards NEXTY's support in this field and look forward to its active cooperation.

Meanwhile, with regard to industrial equipment applications, we plan to strengthen support for iMOTION™*, which is an

integrated combination of microcontrollers, drivers and MOSFETs specialized for motor applications. Support that was previously handled by overseas support centers is now handled by TTC, but in an even faster and more individualized manner, which enables us to respond to the needs of customers in Japan better than ever before.

※AURIX™ and iMOTION™ are trademarks of Infineon Technologies AG.

Hosoda : Our customers and we have high hopes towards AURIX™ and iMOTION™ technologies and we are really looking forward to them.



Q : What do Infineon and NEXTY hope to achieve for 2019, and what are some specific services that will help achieve this?

Koh : Infineon is focused on three major areas: automotive technology, power and security; and we plan to continue focusing efforts on these areas in the Japanese market in 2019 as well. Of these, however, we are especially interested in working on applications that connect with ADAS motor control and embedded security.

The reason behind our focus on ADAS is because we expect sensors (millimeter-wave radar, LIDAR, etc.) capable of recognizing the surrounding area to become critical technologies in step with the shift to automated vehicles. Among the various control devices related to these, our

automotive products are expected to be in high demand, so we want to pursue this proactively and efficiently.

With regard to motor control applications, amidst a rapid move towards electrification and inverters in every market, there is a high affinity for the Infineon lineup in this field, especially our microcontrollers, drivers, MOSFET, and IGBT. Since this field also requires advanced technical support, we plan to continue working to improve it.

As for embedded security, IoT is expected to continue growing in the years to come, including for vehicles, industrial equipment, home appliances, and servers, it is also expected that each of all the devices will be placed under a network environment. Under such conditions, it's expected that ensuring hardware security will be critical.

In addition, in 2019 we intend to boost our sales efforts to a broader range of customers. Under Infineon's slogan, "Go Wide, Wider," we aim to increase sales by attracting a new customer base on top of the customers we have focused on thus far.

This is a field in which we are really counting on the cooperation of NEXTY and other distributors, so we very much look forward to working with you.



Hosoda : NEXTY launched "e-NEXTY," an online design support tool at the end of July 2018.

e-NEXTY offers the ability to search for parts online, recommend and edit reference block diagrams, and even convert circuit diagrams. Integrated with "NEXTY Chip One Stop," an online retailer of electronic components and semiconductors operated under a partnership with Chip One Stop, Inc., this tool offers a one-stop solution that handles every stage from block diagram creation to parts purchase. Many customers already registered with the service in 2018, but we intend to greatly increase the number of e-NEXTY users in 2019 while continuing to improve services and usability.

Koh : At Infineon, we also plan to improve "myInfineon," our digital tool for supporting sales expansion efforts. This is a site for registered users on our company homepage which not only introduces new products, but also offers a wealth of information and tools for our distributors to make effective use of, such as the "Cross Selling Assistant Tool," "Simulation Tool," and "Infineon Designer." To ensure users can take full advantage of the tools, we plan to expand the amount of Japanese content and also improve convenience. We invite everyone to proactively use the site and share their feedback on it.

Hosoda : In July, NEXTY established a new ODM/EMS Promotion Department to provide customers with solutions at a whole new level of speed. This department responds to the needs of customers in virtually any situation by teaming up with domestic development, design, and manufacturing partner companies with proven track records in each market; getting deeply involved in customers' manufacturing through ODM business; and combining their strengths in functionality and technology. Continuing into 2019, we intend to provide customers with more of Infineon's extensive range of products and technologies than ever by accelerating these efforts and getting better acquainted with our customers' manufacturing processes.

NEXTY also provides global quality support through TAQS, a quality support team set up in Japan, Thailand, China and the US. We believe that local quality support is essential in launching an ODM/EMS business, and TAQS provides indispensable help in this area.

Q : What are the benefits of Infineon's business?

Hosoda : Infineon has an initiative known as DDG (Digital Demand Generation). Its purpose is to support the development efforts of customers in part by providing extensive information on the registered-user site "myInfineon," supplying the latest information in a timely manner, and offering subscriptions to its newsletter. In fact, our e-NEXTY service was launched based on the same concept. This site actively promotes Infineon products and introduces customers to all aspects of using its services including product comparisons, reviews, sample procurement and small-lot sales. We believe that we can provide even more opportunities for people to learn about Infineon products by getting as many people as possible to use myInfineon and e-NEXTY.

One of the benefits of enhancing ODM/EMS business is that it allows us to clearly understand the customer's application as a whole, which in turn allows us to recommend additional solutions to improve customer satisfaction.

Infineon uses an approach called "P2S"(Product to System), a system designed to solve customer problems by providing recommendations from among Infineon's wide range of products based on a thorough understanding of the customer's system. By strengthening ODM/EMS business, NEXTY also believes it can coordinate with Infineon to provide customers with even better suggestions.

Q : Any final words?

Koh : Infineon is committed to making major investment while also actively focusing efforts on development and technical support-so we invite you to look forward to more great things to come.

The help of NEXTY is absolutely vital achieving further growth in the future, and meeting the expectations of customers who continue to increase by the year. We look forward to continuing to work together.





Hosoda : In every business category, Infineon has been developing products that each have their own unique advantages, which has let to capturing top market share worldwide.

In order to further capitalize on Infineon's strengths, we are dedicated to offering additional features while refining our support and ability to propose solutions that provide even better service to customers.

Overview of Infineon Technologies

Headquarters : Infineon Technologies AG
 Headquarters location : Neubiberg, Germany
 Established : April 1, 1999
 Sales : 7.599 billion euros, 2018 fiscal year
 Number of employees : 40,100 (worldwide)
 Japanese subsidiary : Infineon Technologies Japan K.K.
 Headquarters location : Tokyo / Sales Offices: Nagoya and Osaka
 Established : February 1, 1980
 President, Representative Director Ikuya Kawasaki
 Director, Distribution Management Hakuenn Koh
 Official website : <https://www.infineon.com/jp>

Global market share ranking in the below 4 industries

| | |
|--|---|
| <p>→P.5  2nd</p> <p>Automotive semiconductor market 10.8% Source: ※1</p> | <p>→P.6  1st</p> <p>Power supply - MOSFET power semiconductors 26.3% Source: ※2</p> |
| <p>→P.7  1st</p> <p>Entire market of discrete power semiconductors and modules 18.6% Source: ※3</p> | <p>→P.8  1st</p> <p>Smart cards and security IC 24.2% Source: ※4</p> |

※1 Strategy Analytics, April 2018

※2-3 IHS Market Technology

Information based on the "Power Semiconductor Annual Market Share Report" dated September 2018 issued by the Technology Group of IHS Market. The information provided by IHS Market and used by Infineon in no way represents a judgment or endorsement of Infineon by IHS Market. Similarly, IHS Market assumes no liability for the information in question. For more details, visit www.technology.ihs.com.

※4 ABI Research, October 2018

Overview of NEXTY Advanced Technology Company

Established: April 1, 2017 within NEXTY Electronics Corporation
 Company President: Shinichi Hosoda
 (Director, NEXTY Electronics Corporation)
 Official site: <http://www.nexty-ele.com/nat/>

Automotive Business

Achieving Further Growth through Automated Driving and Other Opportunities

Overview : Broad lineup of MOSFET, power supply ICs, transceiver ICs, sensor ICs, microcontrollers, etc.

Able to propose system solutions for virtually any automotive application

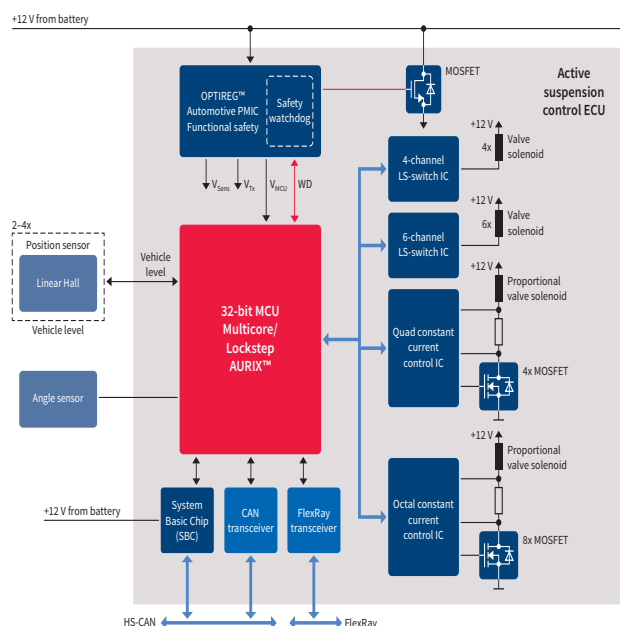
Scale : Sales of 3.284 billion euros worldwide, 2018 fiscal year

Second largest share* of automotive semiconductor market (10.8%), comprising roughly 40% of all Infineon sales

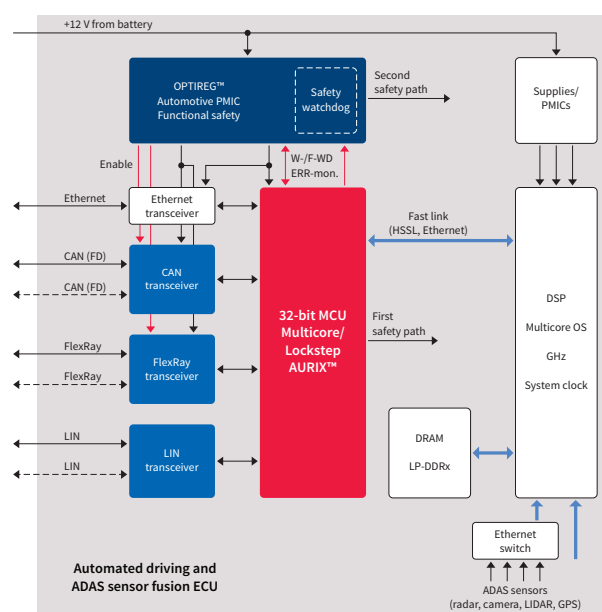
- Features :
- Develops semiconductors for various applications related to conventional combustion engine/ hybrid/electric powered vehicles, and proposes solutions
 - Power semiconductors dramatically improve operating efficiency and reduce emissions
 - ATV-developed microcontrollers and sensors are used in Advanced Driver Assistance Systems (ADAS)
 - We offer the highest quality semiconductors for ADAS applications through a wide range of products, allowing customers to choose components that best support their design

※Source: Strategy Analytics, April 2018

Active Suspension Control - Block Diagram



Sensor Fusion - Block Diagram



Recommended products

| Product | Details |
|--------------------|--------------------------------------|
| Microcontroller | 32-bit AURIX™ series |
| Power supply IC | OPTIREG™ Automotive PMIC |
| Switch IC | 6/4 channel low side switch |
| Driver IC | Current control driver |
| Transceiver IC | CAN transceiver, FlexRay transceiver |
| Magnetic sensor IC | XENSIV™ linear Hall effect sensor |

Recommended products

| Product | Details |
|-----------------|---|
| Microcontroller | 32-bit AURIX™ series |
| Power supply IC | OPTIREG™ Automotive PMIC |
| Transceiver IC | CAN transceiver, FlexRay transceiver LIN transceiver |

Power Management & Multimarket Business

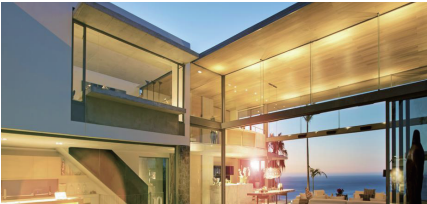

The Challenge of Realizing Power Management & Sensor Technology

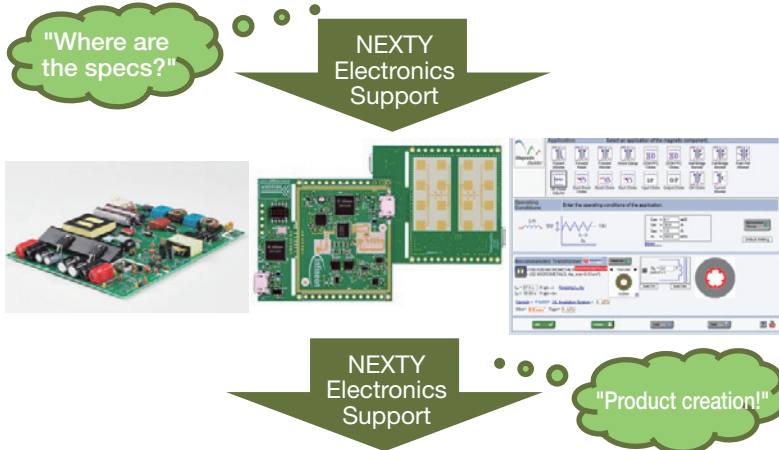
Overview : Sales of MOSFET (high voltage + low voltage), PFC/PWM controllers, RF products, silicon microphones, various sensors (24 GHz radar, pressure sensor, ToF)

Scale : Sales of 2.318 billion euros worldwide, 2018 fiscal year

- Features :
- World leader in discreet power + extensive product lineup
 - Among the world's first producers of MOSFET in 300 mm technology
 - Enhanced compound semiconductor lineup, including SiC/GaN
 - Offers modular and other systems that incorporate various sensor products (24 GHz radar, pressure sensor, ToF)

Power Management & Multimarket (Target Markets and Applications)

| | | | | | | |
|---|-----------------|----------|--|-------------------------|-----------------|----------------|
|  <p>Energy Efficiency</p> | | |  <p>IoT & Big Data</p> | | | |
| Charging | Battery powered | Lighting | Data Centers | Cellular infrastructure | Ambient Sensing | Mobile devices |
| <ul style="list-style-type: none"> > MOSFETs > Power ICs > Medium voltage drives > Servo drives | | | <ul style="list-style-type: none"> > SMPS > RF switches > Si-Mics > Environmental Sensors > Time of Flight | | | |




| | | | | |
|-------------|-----------------|----------------------|----------|------------|
| SMPS | Audio Amplifier | Major home appliance | Lighting | Automation |
| EV-Charging | Motor Control | Multicopter | Radar | eMobility |

NEXTY Electronics Support

- Support from our technical experts on all power supply, RF and sensor technologies
- Support for virtually all types of quality data
- Custom support for demo boards, etc., also available

Create block diagrams from item searches
Several simulations are available



<https://www.e-nexty.com/>







Successful realization of products through ODM/EMS services tailored for product creation

NEXTY Advanced Technology Company / URL: <http://www.nexty-ele.com/nat/>

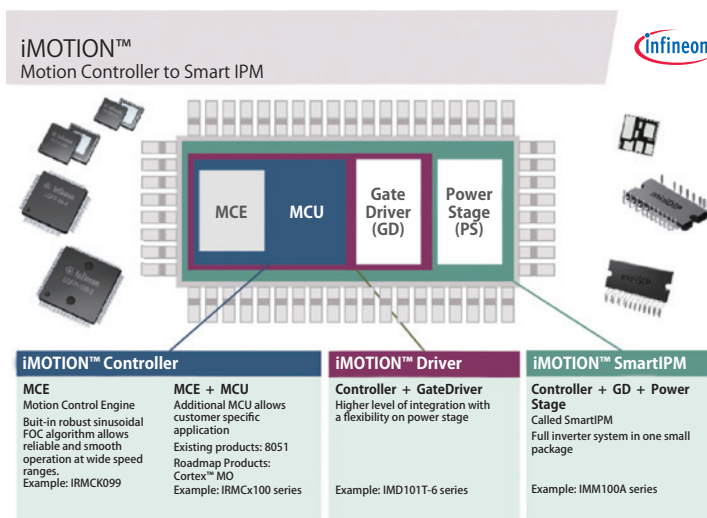
Industrial Power Control Business Promoting the Efficient Use of Energy

Overview : Bare die, discrete IGBT, driver IC, IGBT modules (high, medium and low output)
 Sales of IGBT module solutions (IGBT stack), discrete and modular silicon carbide (SiC) IPMs
 Scale : Sales of 1.323 billion euros worldwide, 2018 fiscal year
 Features : • A variety customization options is available for modules (efficiency, size, etc.)
 • Product lineup features a broad range of gate drivers
 • World leader in power modules + extensive product lineup
 • Among the world's first producers of modular/discreet IGBT in 300 mm technology
 • Enhanced lineup of SiC compound semiconductors

Promoting a World of Limitless Energy (Target Markets and Applications)

| | | | | |
|--|--|---|--|---|
|  |  |  |  |  |
| Drives | Household appliances | Renewable energy | Public transportation | Industrial power control |
| <ul style="list-style-type: none"> > Generic drives > Medium voltage drives > Servo drives > Elevators | <ul style="list-style-type: none"> > Refrigerators > Air conditioners > Washing machines | <ul style="list-style-type: none"> > Wind power plants > Solar power plants > High voltage DC transmission (HVDC) | <ul style="list-style-type: none"> > High-speed rail > Locomotives > Subway > Next-gen trams | <ul style="list-style-type: none"> > Bare Die business > Discreet IGBT > Driver IC > IGBT modules (high, medium and low output) > IGBT module solutions (IGBT stack) > Discrete and modular silicon carbide (SiC) |
|  | | | | |

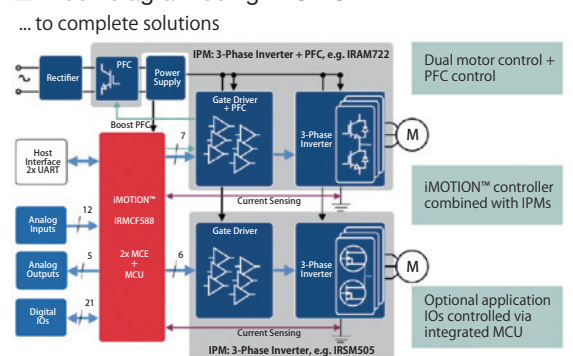
Overview of SmartIPM "iMOTION™"



Provides the following 3 advantages:

- Reduced system cost
- Fast time-to-market that prevents missing business opportunities
- System benefit

Block diagram using iMOTION™



Using e-NEXTY makes it possible to create block diagrams with Infineon products and run a variety of simulations

NEXTY Advanced Technology Company / URL: <http://www.nexty-ele.com/nat/>

Digital Security Solutions Business

Embedded Security Solutions Aimed at Achieving an IoT Society

Overview : Security product system proposals and chip sales

Scale : Sales of 664 million euros worldwide, 2018 fiscal year

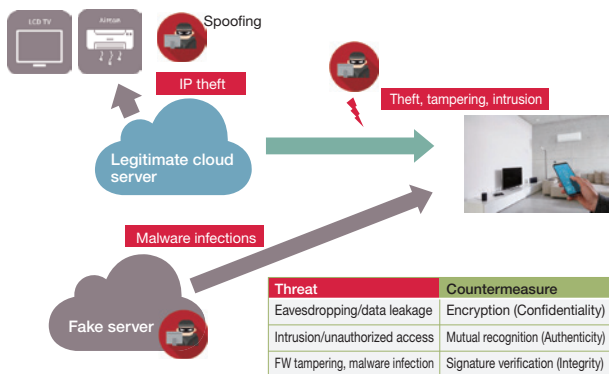
Features : • Leader in security solutions

- No.1 market share* in security IC and smart cards including credit cards and passports
- Releases security products for IoT devices
- Develops Infineon specific security technology with a focus on authentication ICs for determining authenticity
- Ensures the security of connected devices used in smart homes, smart cities, Industry 4.0, and automated driving through innovations such as smart cards, ID cards, and computer security

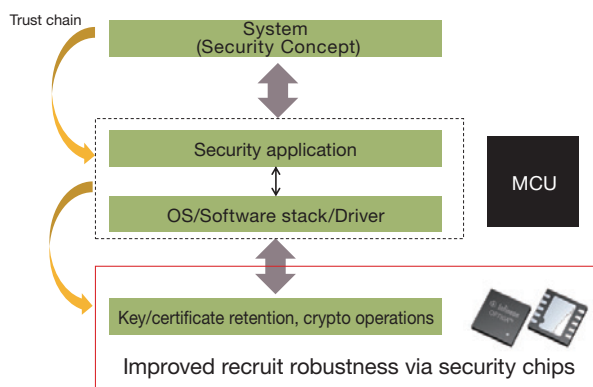
*Source: ABI Research, October 2018

Proposing Solutions that Utilize Security Products to Provide Systematic Protection

Responds to anticipated threats play updating firmware through wireless networks

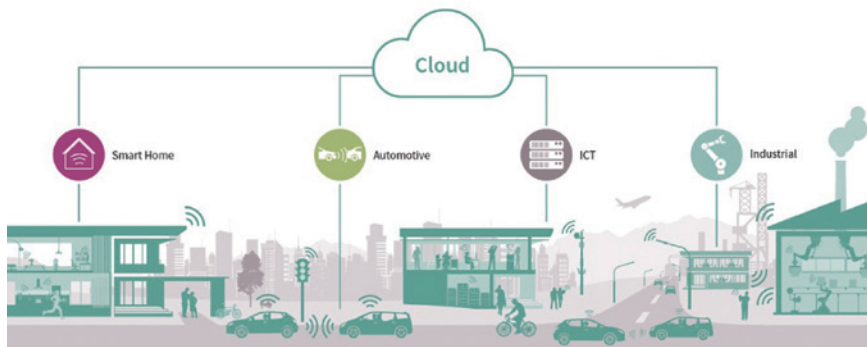


Proposes security solutions to protect against data leakage, unauthorized access, and malware infections

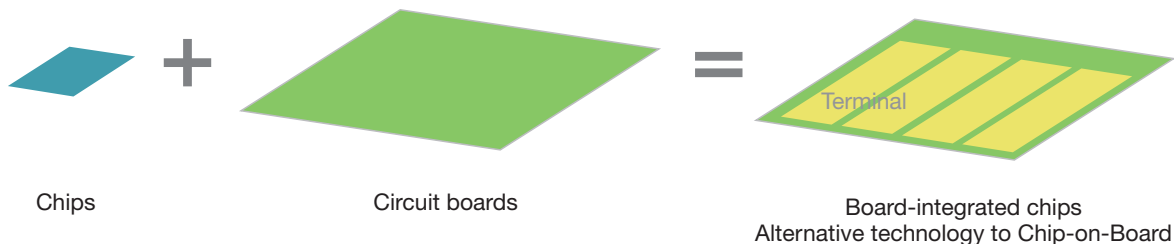


Support for a Broad Range of Use Cases

- Secure retention of authentication info (keys, certificates, passwords)
- ID verification
- Secure communication
- Secure updates of software and firmware
- Integrity checks



NEXTY Electronics and Taiyo Yuden Partner to Deliver Board-mounted Security Products



NEXTY Advanced Technology Company / URL: <http://www.nexty-ele.com/nat/>