

# Introduction to Engineering Services in the Upstream Development Process

- Cooperation with Ultimate Technologies Inc. (UTI) -

We realize innovation as “Innovation Designers” in one stop, taking into account the perspectives of society and customers.

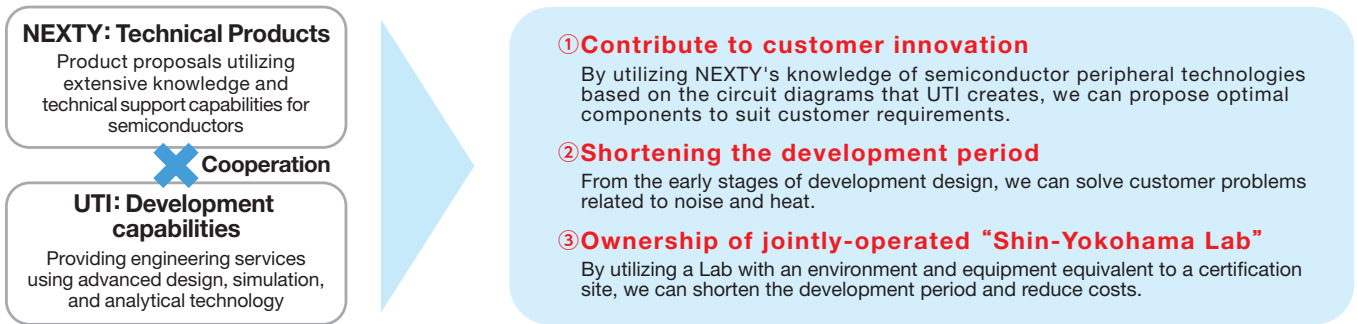
## Do you have these kinds of problems?

- ✓ You have an urgent need to adopt advanced technologies (**high-frequency communication, image processing, high-density**)
- ✓ You want to use simulation for **thermal** and **noise control**, but you have not established a front-loading\*<sup>1</sup> development system
- ✓ You want to make the product **more compact**, but it doesn't meet customer specifications
- ✓ You are having difficulty in **designing an optimal power circuit** that maximizes the performance of various LSIs such as SoC, MCU, and FPGA

\*1 =Invest resources at the early stage of the design and bring forward work that was previously performed at a later stage

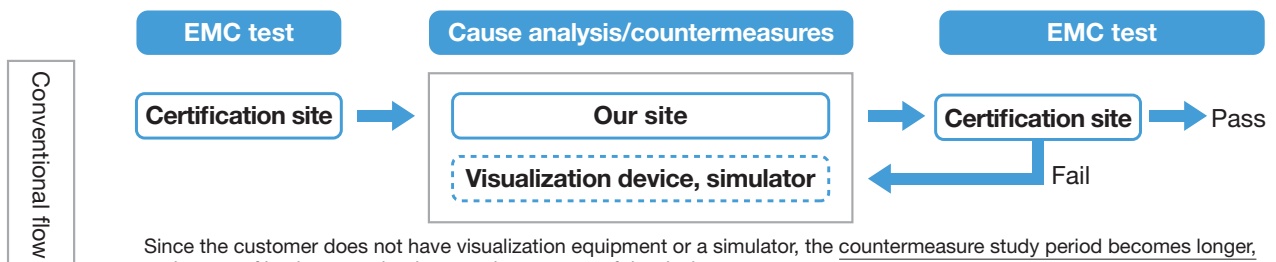
If you have any of these problems, please contact NEXTY Electronics.

## Strengths of NEXTY Electronics × Ultimate Technologies

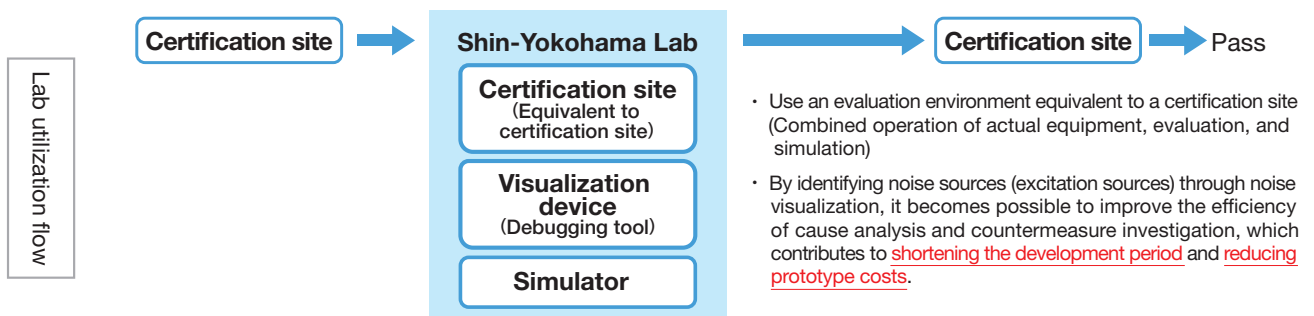


## Benefits of using the “Shin-Yokohama Lab”

At the “Shin-Yokohama Lab”, we can **visualize noise** and trace and analyze the causes of noise problems. Since our lab has an evaluation environment equivalent to a certification site, we can eliminate cases of having to go back to previous steps of development, **reducing the development period and cost** for customers. In addition, UTI engineers can consult on noise control using our semiconductor product reference and model information to quickly solve problems.



Since the customer does not have visualization equipment or a simulator, the countermeasure study period becomes longer, and cases of having to go back to previous stages of the design occur



## List of Services Provided

### Conduction immunity evaluation/diagnosis

- BCI level evaluation (Applied probe, SG with built-in amplifier)
- Pin direct voltage measurement (Photo-isolation probe, SG with built-in amplifier)
- Noise intrusion path exploration (Applied probe, TG spectrum analyzer, scanner)

### Electrostatic test evaluation/diagnosis

- ESD level measurement (Electrostatic tester)
- Pin direct voltage measurement (Photo-isolation probe, electrostatic tester)

### Conduction emission evaluation/diagnosis

- Level measurement (Current clamp, LISN, terminal voltage, spectrum analyzer 1)
- Noise source exploration (Near field scanner, spectrum analyzer 2)
- Common mode voltage measurement (Photo-isolation probe, oscilloscope/spectrum analyzer)

### Radiated emission evaluation/diagnosis

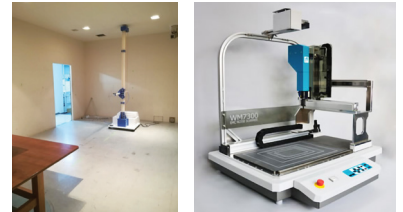
- Level measurement (Antenna 1, Antenna 2, Spectrum Analyzer 1)
- Wave source exploration (Directional Antenna, Spectrum Analyzer 1)

### Operation check

- Waveform observation (differential probe, oscilloscope)

### IC Level Test (BISS Compliant)

- VDE method (tool board, spectrum analyzer 1)
- DPI test (Tool board, SG with built-in amplifier)



Example of lab environment facilities

## Service Case Study

- Design of reference board for latest IC using SI<sup>\*2</sup>, PI<sup>\*3</sup>, EMC simulation
  - Provision of optimal power supply circuit design to make the most of the IC, and BISS compliant VDE testing<sup>\*4</sup> at Shin-Yokohama Lab.
  - Heat dissipation measures with thermal design on heat dissipation material
  - Compact board design with high-density technology such as board embedding and narrow pitch support
- <sup>\*2</sup> = Signal Integrity <sup>\*3</sup> = Power Integrity <sup>\*4</sup> = Conduction test compliant with BISS, which is a standard for noise

## UTI Corporate Profile

■ **Corporate name** : Ultimate Technologies Inc.

■ **Established** : February 2000

■ **Executive** :

CEO	Satoshi Utsumi
CTO	Atsushi Nakamura
Director	Harumi Murakami
Executive Officer	Daisuke Masaki
Executive Officer	Teppei Ikeda
Auditor	Toru Kunizane

### Office locations

Head Office (Nagano) : Design, Simulations, R&D 21 employees  
 Yokohama Satellite & Lab : Measurement R&D 11 employees  
 Nagoya Satellite : Design, Simulations 5 employees  
 Malaysia : Simulations 11 employees

### Business Lineup

UTI is an engineering service provider with advanced design, simulation and analytical technology in a wide range of fields. By pursuing advanced technology, it can meet the difficult specifications required by the market.

For more details, please visit the website <https://www.uti2k.com/>

