

Printed Circuit Board (PCB) Layout Services from TOYOTA TSUSHO NEXTY ELECTRONICS THAILAND

Today, embedded systems have permeated virtually every field and play a key role in supporting our everyday lives. However, in order to respond to the CASE field, system development in the automotive field where Japan excels, continues to grow in scale and complexity, making it difficult to design and develop systems efficiently. Therefore, from the standpoint of risk diversification and cost, offshoring to India and ASEAN region has emerged as the chosen solution. In addition to its core business of developing embedded software, TOYOTA TSUSHO NEXTY ELECTRONICS THAILAND CO., LTD. (hereinafter referred to as NEXTY ELECTRONICS THAILAND) has established a PCB Operations Office to support the activities of Japanese companies operating locally. This has allowed the company to offer and expand PCB layout services, especially for local Japanese automotive OEMs.

Is your company experiencing any of the following problems?



- Confusing interaction between Japanese board designers and local circuit designers when localizing Japanese-developed products to comply with regulations of the target country.
- You are looking for a local co-development partner to ensure you meet country-specific specifications for an instrument panel ECU, body ECU, etc.
- Before finalizing a product for mass production, you want to handle the frequently occurring minor revisions and small-scale prototyping near the mass-production plant, since constantly sending this work to Japan each time is inefficient. Also, you want support for procuring materials for these situations.

About our PCB Layout Services in Thailand

Overview

This initiative was launched in 2016 ahead of Japanese customers entering the ASEAN market with the aim of providing services to Japanese vehicle-mounted technology manufacturers, who are expected to accelerate their entry into the ASEAN region to establish development bases. The PCB layout service is one of the functions created as an extension of our existing electronic parts distribution business in anticipation of increased 'local production for local consumption', starting with the localization of Japanese products, and the shift of development bases which will follow this trend.

In Thailand and Malaysia, including through government support measures, the localization of specifications and early prototypes is progressing in both consumer electronics and automotive industries, especially for info systems such as instrument panels, and body applications such as interior/exterior illumination. Drawing on its locational advantage as a major production base for automotive and air conditioning systems, Thailand is providing support to various air conditioner companies and OEMs (which include GPS trackers, vehicle air conditioner peripherals, prototype instrument panel ECUs for motorcycles, etc.).

Features and Strengths

The company has established quality control methods comparable to Japan and realizes outputs using local resources

① High Quality

- Extensive experience in PCB design for major Japanese automotive Tier 1 and consumer electronics customers
- Senior engineers from a Japanese PCB manufacturer are always on hand to ensure product quality
- Quality control system for design conforms to Japanese PCB design standards

② Wealth of Human Resources

- Development that incorporates a circuit designer's perspective is made possible by sharing facilities with our R&D team
- A high level of technical competence is ensured by having experienced technical guidance experts on site
- An in-house Japanese language training department has been established and support is available in English or Japanese

③ Self-sufficient Equipment Facilities

- Company has its own standard automotive/industrial tools (Zuken CR-5K/8K, Altium)
- Data can be easily converted to other CAD systems (GERBER, Mentor, PADS, OrCAD)
- Facilitate lower costs in creating customer prototypes since all production is handled in-house



Services

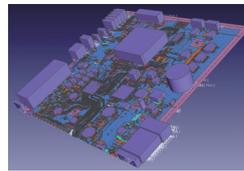
■ Entire design process handled locally in Thailand

- All PCB design processes are produced locally in Thailand
- Board design (CR-5000/8000), library work



■ Support for high-density PCB

- Through-hole PCB: Support for 2- to 14-layer boards
- Build-up PCB: 4, 6, and 8 layer build-up PCB

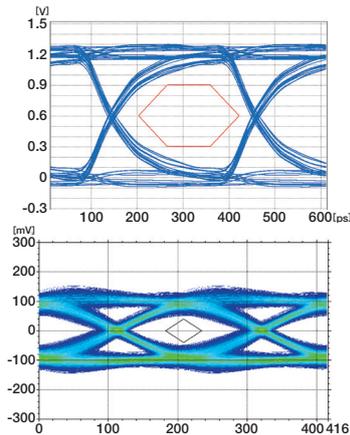


■ Support for simulations

- System capable of power/signal noise measurement and evaluation

① Signal Integrity

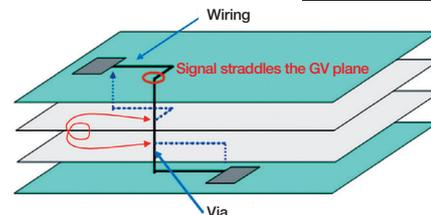
- Memory I/F
DDR-SDRAM
Local Bus



- Serial I/F
LVDS
HDMI
Serial ATA etc

② Power Integrity

- Power supply, GND pattern
- Frequency response
- Current/voltage distribution



Implemented Work

■ Vehicle-mounted Technology

LED light ECU for a foreign light manufacturer
Instrument panel ECU for Japanese cluster manufacturer
Car Nav system ECU for Thai manufacturer

■ Non-Vehicle-Mounted Technology

Prototype support for local Japanese air conditioner manufacturer
Health care field ECU for Japanese consumer electronics manufacturer
LCD TV ECU for Japanese consumer electronics manufacturer

■ Local Development Projects

Connected ECU for IoT product for an agricultural-industry customer
Connected ECU for multifunction device
GPS ECU for asset management

■ PCB Configuration

Twenty-nine projects successfully delivered per month (FY2019 results)
Average working lead time: three to four days (*depending on number of components)



[FPGA-based vehicle-mounted LCD driver]



[Tracker for refrigerated vehicles]

Corporate Profile

[Trade Name] TOYOTA TSUSHO NEXTY ELECTRONICS (THAILAND) CO., LTD.

[Established] October 2017 as TOYOTA TSUSHO NEXTY ELECTRONICS (THAILAND) CO., LTD.

[Primary Business Activities] 1) Embedded software for vehicle-mounted technology
2) Sales of electronic components/semiconductors and system development
3) Content for ITS Telematics

[Number of Employees] Approx. 330

Corporate business activities are focused on software development and include hardware setting, content development, data analysis, etc. The company also owns TAQS ASIA (Bangkok), a quality lab from which it provides initial analysis, inspection, and ROM writing for local projects.

NEXTY Thailand provides business support for Japanese companies in Thailand, and also handles a wide range of local requests including from ASEAN countries. Please do not hesitate to contact us.

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