

COM Design-in Services 3.0

50% Faster Time-to-Market Services

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ADVANTECH

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COM Design-in Services 3.0 Introduction

Overview

Advantech, a global embedded computing leader providing Computer-On-Module solutions across multiple vertical markets, is pleased to announce Advantech COM Design-in Services 3.0. The COM team focuses mainly on design and manufacturing services for “Board to Board Applications” in support of our customers and market needs. The focus platform includes COMexpress, ETX, and Q7 (modules), and Custom Carrier Board. Our goals in COM Design-in Services 3.0 are to help customers to increase their market shares and profits through a design/manufacture service that delivers top quality products with fast time- to-market.

Why do you need COM Design-in Services 3.0

Developing a new product in a complex market is like navigating in a minefield where filled with uncertainty. Without help, it tends to lead to fail and waste money, time and resources. With Advantech COM Design-in Services 3.0 solution, customers can save more time and cost to develop their core business and better meet new market challenges.

Benefits of COM Design-in Services 3.0

Advantech has rich experience in product development and project management; we clearly understand the needs and expectation of our customers. With the comprehensive COM Design-in Services 3.0, customers can save 50% time of schedule development and module design, 20 % production cost and 30% workforce which ensure customers meet time-to-market expectation.

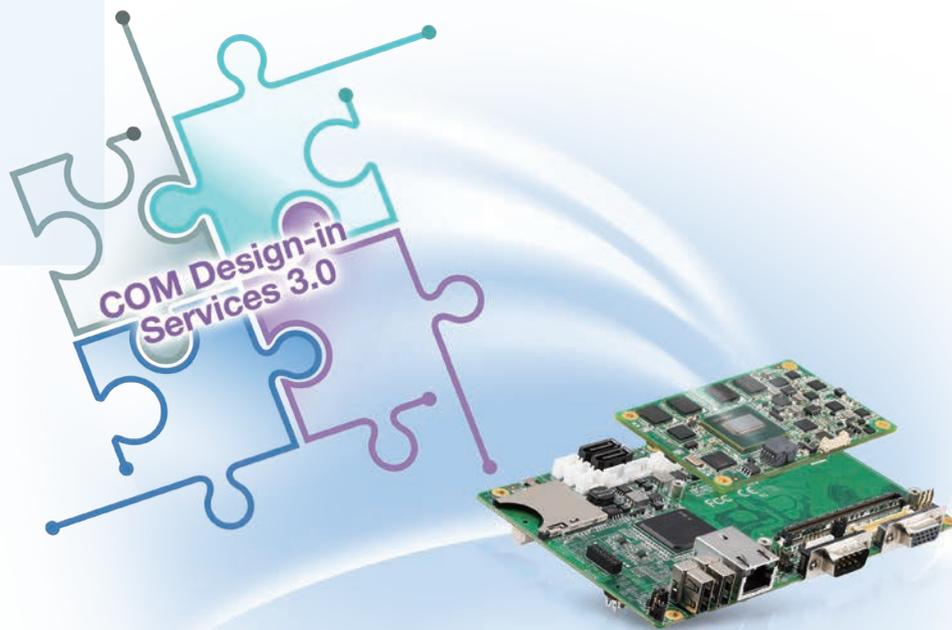
COM Design-in Services 3.0 provide flexible integration and customized services including COM module customization, carrier board design and production, and semi-system integration services. Except for dedicated design-in services, COM Design-in Services 3.0 also include manufacturing services that help customers save their time and resources. The four key solutions - COM module customization, carrier board design and production , semi-system integration, and manufacturing service make up COM Design-in Services 3.0 that benefits our customers by 50% faster time-to-market achievement. Without wasting time on collecting resources and stock management, customers can focus on their own products and business.

Benefits:

- Win-win Aspect: Customers can focus on their own products and rely on our design-in services
- Cooperation with a reliable partner: Experienced COM Design-in Service team
- Customized validation: Save efforts and cost on production and validation
- Good project and product management: Ensure time-to-market expectation.
- Reliable RMA services: Global location providing quickly and timely RMA services to worldwide customers.
- Longevity product and component support
- Effective stock management



COM Design-in Services 3.0 4 Key Solutions



COM Module Customization Service

As an industry leader, Advantech has provided a wide range of COM modules and design-in services to customers for years.

Services include:

- Advantech proven design IPs
- Design and project management
- Prototype validation
- Strict revision controls
- Advanced testing and inspection
- Certified quality assurance systems

Semi-system Integration Service

Most customers face the problem of “LCD, storage device and Wi-Fi modules” integration. COM Design-in Services team focuses on helping customers to adapt certify devices with longevity support.

Services include:

- Validated “LCD, storage with longevity support
- Certifying Wi-Fi, 3G, and Bluetooth modules
- Assembly devices on carrier board and performance testing

Carrier Board Design and Production Services

COM Design-in Services 3.0 provides customers comprehensive solutions of carrier board. Either designing a customize carrier board (ODM) base on customer’s needs or providing a carrier board (OEM) production service with efficient cost.

Services include:

- Longevity components support
- SI, PWR, QE+QA testing of module + carrier board
- Accessory integration and assembly (LCD, Wi-Fi module and Storage)
- Module + carrier board functionality testing

Manufacturing Service

To ensure products meet customers’ requirements and budget, COM Design-in Services 3.0 specialize in project management to deliver cost-effective manufacturing services on time and within budget.

Services include:

- Highly effective production system
- Flexible high temperature burn-in testing Service
- Advanced testing and inspection
- Shop-Flow control system
- Certified quality assurance systems
- Extended life cycles
- Globe RMA service

Faster Time-to-Market Integration Capability

Ensuring Design Quality - Board 2 Board

Our COM Design-in Services team has long experience working with customers in integrating their proprietary-designed carrier boards with particular features, and ensuring design quality right at the development phase. Since ensuring design quality is critical, COM Design-in Services 3.0 provides a complete signal and power integrity service for customer-designed carrier boards.

Digital Signal Integrity

Digital signal analysis (frequency, spreading, amplitude, rise and fall time, hold time, timing, etc.), to ensure the quality of high-speed signals

Power Integrity

Analysis of all power supply noise, to ensure that the design can meet the needs of the circuit and operate stably

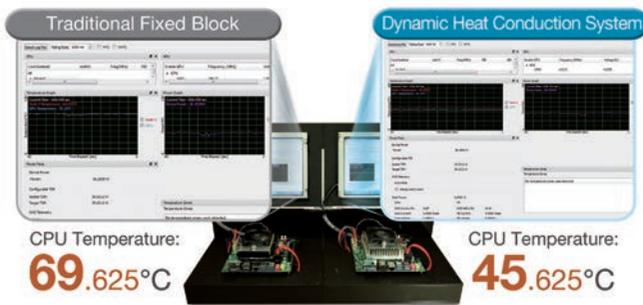
Advanced Thermal Solution

Simulation Design

Our thermal design team can optimize system size, power consumption, and noise and vibration to extend product longevity. The design team utilizes the Computer Aided Design tool Flotherm to simulate and analyze hot-spots and air flow conditions. This provides a scientifically based scheme optimum thermal solution before the system is physically built or tooled.

Thermal Testing

- IR Monitoring: Infrared Rays
IR analysis monitors a variety of processors and chipsets for significantly different heat loads across time
- Strain Gage
Takes the biggest value as the result and follows strain limits from Intel® BFI report 450 & 500 micro strain. Process included in heatsink module and assembly PCBA.



New Thermal Solution - 20°C save

Advantech has developed a highly efficient thermal solution—the Dynamic Heat Conduction System (DHCS). The advanced DHCS technology effectively improves heat transfer performance, which solves the heat dissipation problem that develops when a high performance CPU generates massive heat. With the help of the devices and systems run smoothly and reduce their chances of breakdown or data loss.

Customized Software Solutions

With Advantech software support, customers can save 50% time in developing their own software system.

Windows Embedded OS image customization

Device driver SUSI API support for various OS platforms (Windows, Linux, QNX, VxWorks, etc.) on request

Advantages:

Multiple applications

- Web-Service SDK
- Sensor/ Device/ Cloud APIs

Software Integration

- Vertical integration: Sensor → Gateway → Server system → Cloud → Integration AP/Product
- Build links from remote devices to WISE cloud.
- SUSIAccess: The integrated API can take care of monitoring, recovery, and configuration

Case Study: Medical

SOM-5892 (Intel® 3rd Generation Platform) Powers Up Ultrasound Devices (OEM Carrier Board)

Introduction

Ultrasound devices are widely used for medical imaging, detection and measurement. Such applications require multi-channel data acquisition boards based on high-speed serial buses compliant with strict medical regulations. COM Express design flexibility makes it an ideal solution that meets all the challenges required in developing ultrasound devices.



Application Requirements

An ultrasound device consists of a transducer, a central processing unit or computer connected to a display, an imaging recorder, keyboard, and power. The transducer sends sound waves which are reflected back to the transducer after they bounce off whatever target structures are being inspected. The central processing unit converts the echo intensities and speeds into electronic images that appear on the display. The application requirements were:

- Supports high-speed serial bus. I.E., PCIe x16 expansion for data acquisition
- Supports multiple displays. I.E., HDMI/ DVI/ DisplayPort
- High computing power with low power consumption
- Standards-compliant migration for extended product lifecycle

Solutions

The SOM-5892 in COM Express basic form factor was adopted to assist the OEM development of ultrasound devices.

Benefits

1. Design: Experienced engineer assisted customer to design own carrier board.
2. Quality Control: Performed testing on Module + Carrier Board together and thermal solution testing
3. Customized BIOS with security features and iManager intelligent self-management tool
4. Maintained ongoing material lifecycle management and supply-chain management
5. Service:
 - Quality Assurance, delivers consistent fulfillment
 - Technical support
 - Local service and RMA
 - Material EOL notices





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