

Medical Electronics Solutions

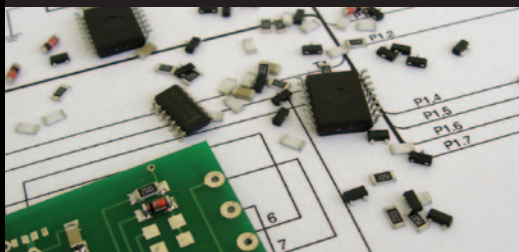


**MEETING THE UNIQUE
REQUIREMENTS OF THE
MEDICAL DEVICE OEM**



Medical Electronics Solutions

DESIGN CHAIN SERVICES



SUPPLY CHAIN SERVICES

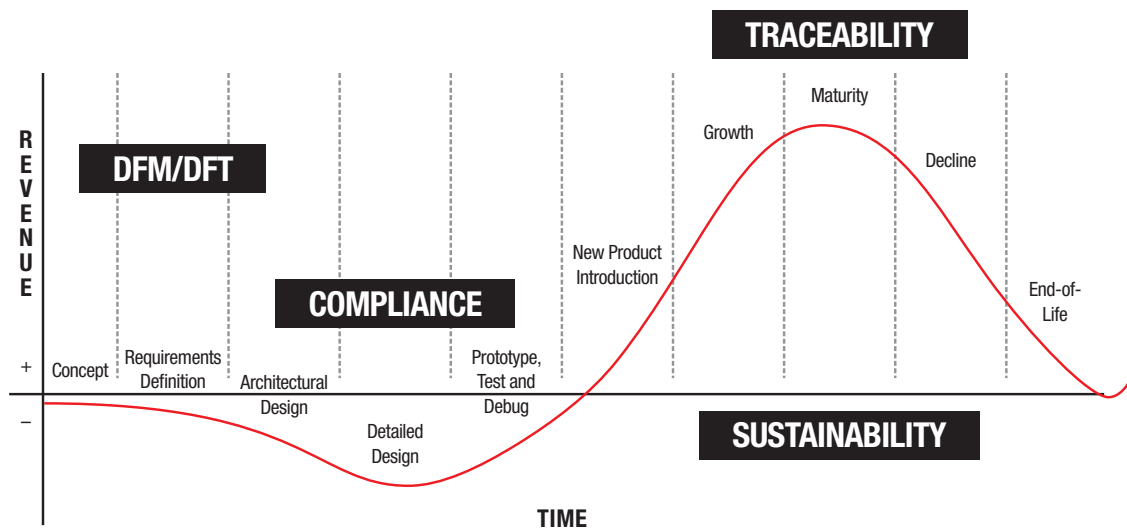


VALUE-ADD SERVICES



SOLUTIONS FOR THE UNIQUE REQUIREMENTS OF THE MEDICAL DEVICE OEM

As most medical device Original Equipment Manufacturers (OEMs) are keenly aware, every design presents unique sets of challenges as well as opportunities. To ensure success with the definition, design, development, validation, compliance and long-term sustainability requirements of a medical device, designers and manufacturers must partner with a component and supply chain resource that understands the unique product and lifecycle requirements of the medical OEM.



ACCELERATING YOUR SUCCESS

Building on an in-depth understanding of the critical issues confronting medical device OEMs, Avnet markets, distributes and adds value to leading-edge products available from the world's leading electronic component and enterprise computing manufacturers as well as embedded subsystem providers, serving both established and emerging medical device manufacturers and ISO 13485 compliant contract manufacturers. The products we sell are backed by a host of supply chain, design chain and physical value-add services.

DESIGN CHAIN SERVICES	SUPPLY CHAIN SERVICES	VALUE-ADD SERVICES
ASIC Design Solutions	Bill of Material (BOM) Analysis	Commercial Interconnect
FPGA Design Solutions	Component Lifetime Predictive Modeling	Custom Cable Assembly
Board-level Solutions	Bonded Inventory Planning Program	High-reliability Interconnect
Field Applications Engineers	Electronic Data Interchange	Motor Modification
Technical Consultation	In-plant Stores	Power Supply Modification
Technical Education	Obsolescence Services	Thermal Management
Design Tools	Point-of-Use Replenishment Program	Device Programming
LCD Display Solutions	Supply Chain Assessment	Tape and Reel
Integration Services	Vendor Managed Inventory	Customized Packaging

AVNET LOGISTICS & INTEGRATION SERVICES



Avnet also specializes in computer system configuration as well as logistic and integration solutions. These specialized services and solution centers provide cost and time-to-market advantages that allow medical device OEMs to concentrate on the aspects of their business that provide the most return.

- » 48 specialized logistics centers are positioned around the globe
- » All centers are registered to the ISO 9001:2000 standard and are ESD compliant per the JESD625 JEDEC standard
- » Large distribution centers in Europe and the Americas are registered to the ISO 14001:2004 environmental standard
- » Some centers are also registered to ISO/TS 16949:2001 and ISO 13485:2003 standards when appropriate

AVNET EXPRESS

The power of Avnet is conveniently online at AvnetExpress.com. Avnet Express offers more than four million parts online, with more than 1.3 million available in quantities of one, including cut reels. On AvnetExpress.com, you can do a parametric search, cross reference parts, and upload a bill of material (BOM) for small quantity pricing and delivery status. You can also learn more about lifecycle management tools that can help you fulfill specific compliance requirements and meet critical materials management objectives.

The combination of tools, services and support offered by Avnet, coupled with an innovative and entrepreneurial spirit and a passion for customer service, assures customers and suppliers that they have chosen the right partner to accelerate their success.

DIFFERENTIATING TECHNOLOGIES

Differentiating technologies leverage readily available components and subsystems, allowing new products to be quickly introduced by streamlining the design process and enabling sustainability throughout a desired lifecycle. Avnet specializes in facilitating development of complete design solutions that feature the following technologies.

ACTIVE AND PASSIVE COMPONENTS

Devices targeted to medical applications that offer extended product life cycle support and meet quality standards

CABLING AND HARNESSSES

Custom and standard product wiring harnesses with a variety of interconnect and interface options

EMBEDDED SYSTEMS

A full range of ISO 60601-1/UL2601 certified medical computing products and application-ready embedded platforms

THERMAL MANAGEMENT

Board, box and rack cooling system options

POWER MANAGEMENT

UL approved and medical application specific power supply and filtering solutions over a wide array of size, voltage and current requirements

HUMAN INTERFACE

Display and front panel technology customized to meet specific requirements for fast and easy product implementation

MOTORS

Flexible solutions for critical power, performance and reliability requirements as well as customization and engineering expertise for hard wired and portable applications

WIRELESS & RFID

Module and chip-level solutions for Bluetooth®, ZigBee®, mesh networking and proprietary point-to-point plus tracking, security and authentication for medical disposables with ISO compliant RFID solutions

HIGH BRIGHTNESS LEDs

Enabling technology and engineering services for next-generation medical applications

High Frequency RFID Closed Loop Embedded Systems



Avnet Electronics Marketing has collaborated with Texas Instruments (TI), FCI and Staples Print Solutions to provide developers of medical device and instrumentation products with RFID design solutions that accelerate time-to-market and lower system costs. Whether you require standard off the shelf inlay technology, custom form factor transponders, or labels fully converted to smart tags, Avnet melds complementary products from TI and FCI and leverages the label conversion services of Staples Print Solutions to meet an array of application requirements. The resulting end-to-end RFID solution can be consolidated on a single purchase order, allowing for quick and efficient implementation.

FCI SMARTAG

- » RFID design & manufacturing
- » Antenna design optimization
- » HF & UHF read range testing
- » On demand chip assembly
- » Label conversion
- » Quick turn prototyping

RFID ANTENNA AND LABEL DESIGN

- » Inlay antenna design
- » Choice of RFID chip
- » Copper & aluminum antennas
- » Inlay assembly
- » Prototype samples

RFID TAGS AND INLAYS

» Smart Tags & Labels:

- » Pharmaceutical
- » Miniaturized Tags
- » Tokens
- » Surgical Instruments
- » Clinical Labs
- » Medical Devices

» Standard Line:

- » 82 x 45 mm
- » 76 x 43 mm
- » 39 x 39 mm
- » 60 x 20 mm
- » Dia. 34 mm
- » Many others

» Miniature Line:

- » 30 x 7 mm
- » 15 x 15 mm
- » 10 x 20 mm
- » Dia. 13 mm
- » Dia. 22 mm
- » Many others

STAPLES PRINT SOLUTIONS

Staples Print Solutions is among the largest and most innovative label converters in the United States, recognized in the industry for quality products and creative solutions.

- » High-speed, high-quality and high-capacity operation
- » Flexibility – multiple adhesives and facestocks
- » Custom inlay, size and printed images
- » Custom products for:
 - » Heat, cold, metal and liquids
 - » Harsh environment applications

TEXAS INSTRUMENTS

TI RFID products supply the technology base for the most flexible and sophisticated systems available. TI is the only semiconductor company that delivers the highest level of quality by maintaining control of the entire design and manufacturing process for RFID chips and inlay antennas.

RFID CAPABILITIES

- » **Package Authentication** – This method makes it extremely difficult to counterfeit the data on RFID tags, because this data acts as an electronic security marker to automatically authenticate genuine product packaging.
- » **PKI Encryption** – Using PKI encryption, TI's RFID chips can authenticate a package with only the encrypted information on the chip.
- » **NDC Encryption or Decommissioning** – The National Drug Code product information on a medication package can be encrypted or securely removed by persons with the proper security clearances prior to being given to a patient.
- » **Factory-locked Code** – Because TI controls its entire manufacturing process, including chips and antennas, it can accommodate customized information to be securely embedded in the chip when specified by the user.
- » **HF Reader ICs** – TI's reader ICs offer a high level of integration, performance, low power, small size, configurability and flexibility. In combination with the ultra low power MSP430 microcontroller offering, these features not only simplify the hardware design but the small size and high integration shrinks the circuit board area required in the development of an HF reader. Available devices include the TRF7960/61 multi-protocol RFID transceiver; an integrated analog front end and data framing system for a 13.56 MHz RFID reader system. Built-in programming options make it suitable for use in proximity and vicinity RFID systems. The TRF7960 evaluation module (EVM) helps designers evaluate the performance of this transceiver chip, which supports the ISO 15693 and ISO 14443A/B protocols, as well as the Texas Instruments Tag-it™ standard.

