

Custom Cabling — Let us build the cable you need!

Bioconnect manufactures custom, standard, and molded cable assemblies and wiring harnesses serving the medical and OEM markets.

- We build every custom assembly and wire harness to customer specifications.
- Every assembly is 100% electrically tested and inspected.
- Bioconnect technicians have extensive cable assembly experience and our engineering staff has strong application knowledge.
- Bioconnect builds it right – the first time and every time!
- Bioconnect has earned a reputation for resourcefulness, ingenuity, reliability and outstanding customer service.



FDA Bioconnect is an FDA Registered Manufacturer.

Your Bioconnection

A Letter of News and New Products for Medical Professionals Volume 3 / No. 2

How Bioconnect develops your OEM product From Concept to Reality

When a customer needs specialized or non-standard products, the Bioconnect team kicks off the product development cycle of customer contact, research, requirements evaluation, drawings and design, model prototyping, tooling design and prototyping, first article fabrication and, on to actual product production. This was the process followed when the medical division of a large conglomerate approached us to develop this specialized cable and connector required for a newly designed event recorder. (continued inside)



BIOCONNECT is the medical device manufacturing division of RF Industries, specializing in the design and manufacture of medical cable and wire products. Areas of experience include EEG, ECG, EMG, TENS, and event recorders of various design. Bioconnect also has available a line of ECG cables and leadwires of its own design that are superior to many available on the market today.

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SPECIAL OEM ISSUE

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Linda Heida, Editor

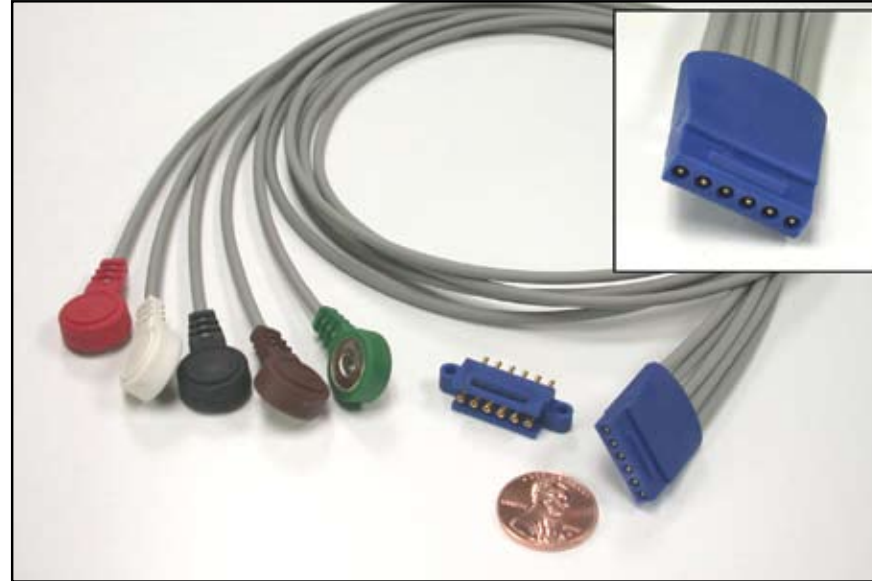
From Concept to Reality — continued

Customer Contact and Research

In discussion with the customer, we learned that size was the most critical criteria for the cable, but the connector had to accommodate six pins and five shielded leads. The team conducted market research to determine if any commercially available components could be incorporated into the design while meeting all necessary performance specifications.

Requirements Evaluation

Research determined that a new connector system, cable termination and PCB connector must be developed to meet the customer's needs. Simple as it may seem at times, the design process is quite complicated and requires constant evaluation and modification from the Engineering, Marketing, and Quality departments of both the vendor and the customer. When designing a new device, there are many ways to "skin" the proverbial cat, but usually very few are agreeable to all parties involved.



Drawings and Design

The Design Process

1. Part design
2. Tool design
3. The Manufacturing Process

The design process can be broken into three areas: part design, tooling design and design of the manufacturing process. All components of the device are identified, sourced, and/or manufactured by Bioconnect. Part design is the design of the device to be created during the manufacturing process. Tool design encompasses the design of the mold tooling, fixtures, and all other related hardware items required during the manufacturing process. The manufacturing process is the creation of specifications, procedures, processes, materials requirements and related support criteria, such as testing and manufacturing monitoring.

3D Model and Prototyping

Preliminary sketches were evaluated by the design team and a few were rendered in 3D format. This 3D model is an ideal environment to determine required dimensions and verify clearances and mate-ability. The cable connector and PCB connector had to have a minimal insertion force, but have adequate retention to prevent disconnection during the course of normal daily activities by the patient wearing the device. This was a challenge.

After the electronic 3D model approval, a physical prototype of each component was created to test function and fit. This process revealed that the original design was too small to accommodate optimum soldering of the device. The design was changed, a new model was rapid prototyped, drawings were revised and the go-ahead was given to develop the necessary tooling.

Tooling Design and Production Prototyping

Drawings were then generated for the design of the two sets of tooling: mold cavities, bars, inserts, bases and related devices that will be used to create the molded parts. These designs were submitted to a tool shop and after further evaluation by the toolmaker, the 3D drawings were used to program CNC equipment to create the tooling.

Device Prototyping and Fine Tuning

Using the new tools, prototype parts were molded, fabricated, evaluated and inspected for adherence to the original model specifications. As is typical, the new tooling required several small adjustments and modifications before it performed correctly. Prototypes were carefully evaluated by members of the design team and potential users and noted their feedback. Several dozen first run devices were manufactured and sent to the customer in time to preview their new device at a major medical show. Everyone, including the customer, had rave reviews for the finished device.

The device is now in production.

NEW CAPABILITIES

Cost Savings: Machine custom-designed for Bioconnect keeps prices low

BIOCONNECT COMMISSIONED an automated wire cutting machine that ensures repeatable accuracy and speed. The Primo XLT was designed specifically for Bioconnect in Wisconsin by Shafer-MEGOMAT for the purpose of cutting, trimming, and attaching sockets or pins to small diameter wire. The Wirestar software controls the entire operation once setup is completed. It will monitor wire length and cutting specifications while in operation and halt if an anomaly occurs. The slide collector tray holds the finished product until the run is completed. The precision of the machine allows parts to bypass three operations and head straight to the molding operation saving time and money. Capacity, depending on length, is around 3600 parts per hour opposed to 900 per hour using the old method. The capabilities and volume capacity of this machine allows it to forego numerous steps in the manufacturing process, yielding cost savings.



Ribbon Cable: Another product we can produce to your specifications

- Quantity of leads
- Termination styles
- Marking
- Bundling with clips
- Colors
- Cable lengths



Value-Added Service: Custom pad printing available

Bioconnect offers custom pad printing on your OEM products or other products of your choice. Contact us to discuss details!

Your choice of ink color!



Giveaway items with your company logo.



Labeled sockets



Device faceplates



Custom printing on vinyl cases

