



Engineering & Manufacturing

U.S.A. location

Design & factory under one roof

VAR & OEM solutions

Satisfied customers worldwide

Does Your Application Need a V.A.P. Modified Solution?

“Value Added Product”

What is a Value Added Product Modification?

By Definition: A product solution that is designed or modified to meet an individual or organization’s specification because their unique application or use case is not being met by a standard, mass-produced product.

Benefits of a V.A.P Solution for You

- 1.) When standard products won’t work, B&B Electronics can engineer the solution.
- 2.) Tailored solutions are available on a low-volume basis.
- 3.) In-house design, engineering and manufacturing in Ottawa, IL USA
- 4.) Customer can focus on their expertise and not on data communications, which is B&B’s Electronics’ expertise.

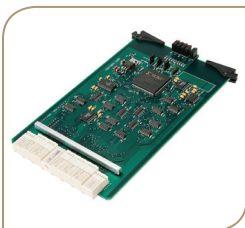
“We’re very pleased with the response time and quality of the B&B Electronics’ components. That’s one area of our systems we don’t have to worry about.”

**Jack Marino,
Sunhillo**

Signals that a V.A.P. is Needed

If you find yourself saying any of these, you may need a custom product solution:

- 1.) “We’d like to use this in our kit, but would like it look like one of our own products.”
- 2.) “B&B Electronics has a product that does this. I wish it could do that.”
- 3.) “This product is perfect for our application, I just wish it came with this out of the box.”
- 4.) “These (3) B&B Electronics parts satisfy my application need, but I’d like to have them shipped to all of these project sites already pre-wired and mounted on a panel.”



Air Traffic Control
Serial modem splitter



Medical
Optical isolator & cable



Retail/Pos
CL to Ethernet, power



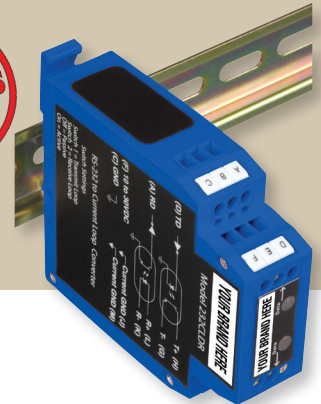
Mining
Fleet diagnostics data



Medical
Serial converter

Unique Solutions for Unique Applications

Product design has always been a core service of B&B Electronics. With expertise in data communication technologies and protocol conversion, we have customized OEM and application solutions for air traffic control systems, automotive control panels, yachting navigation systems, Wi-Fi video security, mining, and more.



Product design – Teaming in-house design engineering with on-site manufacturing, B&B Electronics can build the product needed for your unique application. Services include hardware/software engineering, prototypes, production, documentation, and testing. A few of the many design options available include connector types, wide range power inputs, rugged connectors, isolation, wide-temperature, mounting options, and more. High volume quantities not required.

Variations of standard products – Need a pin-out change or an extra LED? Because we engineer and manufacture in-house, these minor types of changes to B&B standard products can be done quickly and economically. Quantities as low as 50 pieces.

OEM private labeling – Expand your product offering instantly - from a simple label change to a complete make-over with label, case color, documentation and packaging. We do this all the time for companies whose names you'd instantly recognize.

Cable assemblies – Quality custom cabling and wiring harnesses made to your specifications. UL, CSA and TUV tested. We can also recommend upgrades or redesigns of your existing cable assemblies to improve performance or reduce manufacturing and installation costs. As low as 100 pieces.

“I'm so glad that I came to B&B for the manufacturing and assembly of the turn-key protocol conversion enclosure... What you are providing is EXTREMELY valuable”.

**Brian Parry,
Harris Nuclear**



HVAC
ComBus field tester



Elevators/Escalators
Serial converter & cable



Building Automation
Moisture monitor system



Heavy-duty Vehicles
Data streamer



Medical
Serial/Ethernet converter

Engineering | In-house

B&B Electronics has designed and built data connectivity products for more than three decades, starting with an RS-232 tester back in 1981. B&B data networking products include emerging technologies as well as connectivity solutions that link legacy equipment to modern networks.



“Of course I can help you with that – I designed it.”

B&B Electronics is committed to and continually invests in R&D. We have design teams located at our company headquarters in Ottawa IL USA as well as Lake Forest California USA, Galway Ireland, and the Czech Republic. From board design to the manufacturing floor, we understand our products from the inside out.

Technologies – Technologies – Wi-Fi, Cellular, Proprietary RF, Ethernet, USB, Fiber Optic, and Serial technologies.

Expert Team - Project managers, hardware, embedded and software engineers, PCB designers plus manufacturing and quality control engineers take the product from concept through design to prototype, testing, compliance and production.

Development Process - Robust development processes from concept to launch - with quality checks along the way - ensure products meet the intended application's requirements.

Testing - Experienced test engineers and on-site EMC facilities qualify products for FCC and CE regulatory compliances and also for the standards and requirements of harsh industrial applications.

CONCEPT



DESIGN



PROTOTYPE



PRODUCTION



1

Technical support helps customers identify and install the best product solution.



2

Engineers develop, design and verify specifications for standard and custom products.



3

CAD (Computer Aided Drafting) schematic design and prototype verification.



4

Computer Aided Drafting (CAD) PCB board engineering.



5

Product planning engineering design, material ordering, and manufacturing preparations.

Manufacturing | In-house

B&B's manufacturing facilities in the United States and the European Union are ISO9001:2008 Standards Certified. On-site manufacturing ensures that quality control processes, component selection, testing procedures, production lines, and final packaging meet our exacting standards.



In 2014, B&B Electronics built more than 93% of the products offered to customers.

Precision Production

Products are built with leading-edge, up-to-date manufacturing processes and equipment by detail-minded people. We strive to ensure that products meet the most demanding aspects of the customer's application.

- High variety, low to high volume production quantities
- Short lead times
- Efficient build processes
- Automated surface mount technology as well as hand soldering and assembly
- On time delivery

Testing

- 100% functionality testing
- In process inspection (AOI, automated optical inspection)
- Calibrated test and rework tools (traceable to international standards)

Regulatory Compliance & Certification

B&B Electronics delivers quality products following Stringent regulatory processes. We offer compliance with the following standards:

Product:

- FCC
- CE
- UL, UL508
- NEMA TS1 & TS2
- IEEE 1613
- IEC 61850-3
- HAZLOC
- RoHS & RoHS II Compliant (Directive 2002/95/EC)

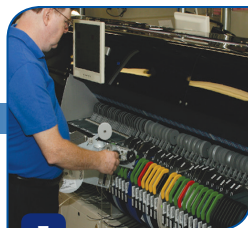
Manufacturing:

- ISO9001:2008
- IPC Standards Certified:
 - ANSI/J-STD-001D, Requirements for Soldered Electrical and Electronic Assemblies
 - IPC-A-610 C, Acceptability of Electronic Assemblies, Class 3
 - IPC-7721, Repair and Modifications of Printed Boards and Electronic Assemblies
- REACH EU (Directive 1907/2006)
- SMTA (Surface-Mount Technology Association) member



6

Checking manufacturing processes during production runs.



7

State-of-the-art surface mount component placement.



8

Components are soldered by trained personnel.



9

Covering and labeling of finished products.



10

Final packaging and review before shipping to customer.

#1. Package Modification

A quick product change can be as simple as applying a different label to a standard product, rebranding documents with your company's name and logo - instantly adding value to an off-the-shelf product.

Examples:

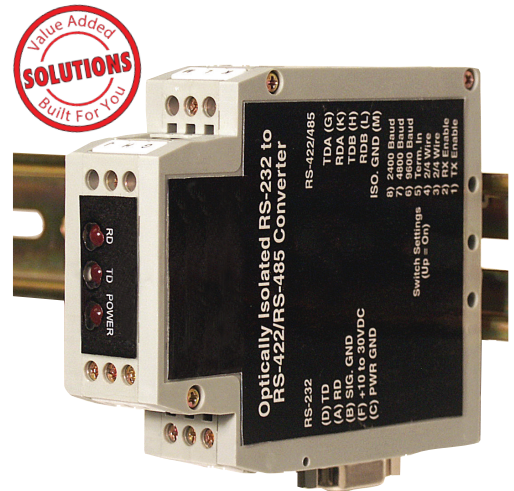
- Private labeling
- Client's logo
- Enclosure color
- Branded documentation
- Packaging
- Training

Customer Benefits:

- Instant product
- Leverage existing designs
- Protect their market

Typical Timeframe:

- Minimum units: 50
- Turnaround: 4-6 weeks
- Compliances:
FCC & CE (board spins)...Add 2+ weeks
UL...Add 2+ months
FCC = USA requirement.
CE = Europe requirement.
RoHS II = B&B requirement.
(FCC & CE cover most needs. Other certifications available for Japan, Mexico, Canada, etc.)



#2. Kitting or Bundling

When you do not have data communications expertise or the time to hassle with it, B&B Electronics can “kit” or “bundle” off-the-shelf technology products that work together for your convenience.

Examples

- Standard products
- Cables
- Power supplies
- Packaging
- Documentation

Customer Benefits

- Ease of ordering
- Application specific
- Easy field installation
- Reduces installation errors

Typical Timeframe:

- Minimum units: 50
- Turnaround: 4-6 weeks
- Compliances:
FCC & CE (board spins)...Add 2+ weeks
UL...Add 2+ months
FCC = USA requirement.
CE = Europe requirement.
RoHS II = B&B requirement.
(FCC & CE cover most needs. Other certifications available for Japan, Mexico, Canada, etc.)

Challenge

A medical technology customer did not want to source the individual components required for a 3D mapping system that combines magnetic location technology and visualization data. B&B Electronics was able to bundle the necessary components, cables and documentation into a single package under a single part number.

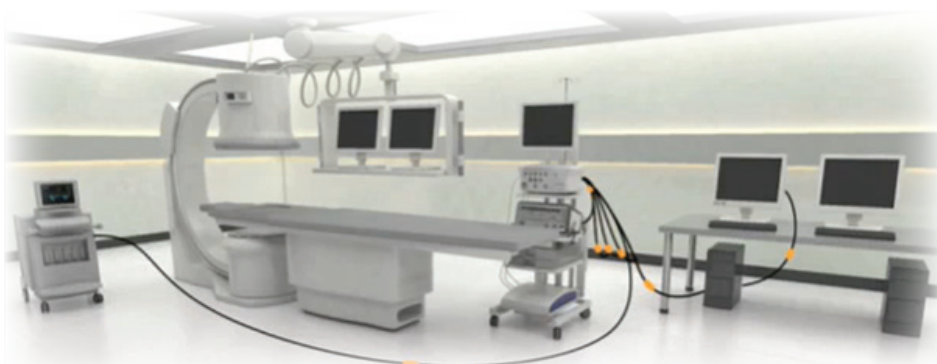
Solution

Components were sourced and packaged together creating a convenient kit solution not available on the market.

Installation instructions were developed in the customer’s language for easy installation.



- Standard RS-232 serial/fiber modem
- Standard serial cable
- Standard fiber cable
- Packaging - box, bags, ID labels, documents



#3. Design Modifications

Clients often have unique cabling infrastructure requirements that don't match a standard product or anything available on the market. B&B Electronics can easily and quickly change our product to match the customer's system.

Examples

- Connector changes
- Unique cabling situation
- Preconfigurations
- Pinouts
- Gender changes
- Biasing or termination
- Hardwiring
- Board design
- Specifications (UL, NEMA, C1D2, others)

Customer Benefits

- Saves assembly time
- Saves cabling costs
- Increased quality
- Simplify installation
- Reduces installation error

Typical Timeframe

- Minimum units: 100-150*
(With board spin; lower qtys possible without)
- Turnaround: 6-8 weeks
- Compliances:
FCC & CE (board spins)...Add 2+ weeks
UL...Add 2+ months
FCC = USA requirement.
CE = Europe requirement.
RoHS II = B&B requirement.
(FCC & CE cover most needs. Other certifications available for Japan, Mexico, Canada, etc.)

Challenge

A Midwest convenience store chain was having problems maintaining serial communications from outside gas pumps to inside PoS computers. Rogue currents caused by lightning continually took down data communications and disabled gas pumps, destroying costly equipment and causing revenue loss.

Repair teams were dispatched to restore communications and get pumps back online adding more cost. They initially tried commercial-grade surge protectors, but these failed to provide the protection they needed. Downtime continued.

Solution

The customer had two different types of monitoring systems installed at various locations. B&B re-engineered two standard products for the two systems - Model 9POP4 2kV isolator and Model 232SPH14 4kV isolator.

The two optical isolators were modified with custom pinouts to provide isolation and equipment protection from lightning surges, high voltage shorts, and ground loops. Installation was also simplified to save time and cost.



#4. Private Labeling & Branded Driver

B&B Electronics can also modify existing standard product drivers, software, disks, and supporting documentation. Private labeling can include customer's name, logo, etc. Software can also be created from scratch.

Examples

- Software
- Drivers
- Operating Systems
- Documentation

Customer Benefits

- O/S upgrades
- Network upgrades
- Current technology
- Protect their market

Typical Timeframe

- Minimum units: 100-150
- Turnaround: 8 weeks
(Driver WHQL certification through Microsoft)
- Compliances:
FCC & CE (board spins)...Add 2+ weeks
UL...Add 2+ months
FCC = USA requirement.
CE = Europe requirement.
RoHS II = B&B requirement.
(FCC & CE cover most needs. Other certifications available for Japan, Mexico, Canada, etc.)

Challenge

A customer provides devices that control gas burner flames for industrial applications, kilns, refineries, ovens, etc.

Solution

B&B Electronics provides a version of Model USOPTL4 with specific drivers dedicated to their specific USB converter.

Repeat business with this 10-year customer has included: upgrades to USB and software drivers, O/S's, and documentation; company name change; redesigned company logo. In June 2014, B&B's engineering team completed a third upgrade of software (requiring approval from Microsoft).

Rebranded CDs with branded software, drivers

Rebranded label with customer's logo and colors

Rebranded documentation

Customer specified enclosure color



#5. Complete Solutions

Sometimes, the solution that's required calls upon all of the engineering team's skills – from understanding the customer's application to PC board design, software, quality/testing, all the way to the prototype and final production run on the manufacturing floor.

Complex Assemblies of

- Products
- Software
- Cables
- Panels
- Enclosures
- Private labeling
- Specialized documentation

Customer Benefits

- Saves assembly time
- Saves cabling costs
- Increased quality
- Saves installation time
- Reduce installation error

Typical Timeframe

- Minimum units: *[dependent]*
- Turnaround: *[dependent]*
- Compliances:
FCC & CE (board spins)...Add +2 weeks
UL...Add +2 months
FCC = USA requirement.
CE = Europe requirement.
RoHS II = B&B requirement.
(FCC & CE cover most needs. Other certifications available for Japan, Mexico, Canada, etc.)

Challenge

A global supplier of temporary power generator installations needed a SCADA system to monitor and control diesel engine sets, generator & transformer I/O and serial fire safety systems. Some of the protocols used included AB-PLC, Modbus/TCP, and serial.

Solution

B&B provided two panel assemblies with industrial Ethernet serial servers converting serial devices to an Ethernet-based SCADA system and conversion to Modbus/TCP protocol.

Inside each transformer unit is a NEMA-rated panel kit with 2 RS-485 data acquisition modules for I/O, a Modbus Ethernet serial server, power supply, relays, wiring, etc.

Mounted *outside* each transformer unit, another NEMA panel houses an unmanaged Ethernet switch, power supply/battery charger, 2 12V batteries, plus connectors and Ethernet cable lengths. This panel is connected to each of the six generators and transformer sets and then connected back to the SCADA Master. IP67-rated Ethernet cables run between the transformer and generator units. IP67 Ethernet pass-through receptacles connect the cabling in and out of the panel enclosures.



- NEMA rated enclosures
- Modbus gateways
- RS-485 DAQ modules
- Relays
- Ethernet unmanaged switches
- Power supplies
- Ethernet managed switches
- IP67 Ethernet cables
- Ethernet DAQ modules
- IP67 pass-through receptacles
- Ethernet serial servers





Challenge

A communications solution was needed for air traffic control to connect one device to multiple processors. Redundancy and reliability were critical.

Solution

B&B Electronics designed a 8-port serial modem data splitter card for the client that provided a reliable communications bridge between equipment.



Challenge

A well known chain of gas stations wanted to Ethernet enable its card readers and key pads which used current loop and serial communications.

Solution

B&B Electronics developed an Ethernet serial server that converts and transmits current loop and serial data to the controlling computer.



Challenge

A nuclear power plant wanted to upgrade data communications for nearly a hundred costly radiation monitors that used current loop technology.

Solution

B&B Electronics developed a pre-wired, pre-tested panel assembly that converted current loop to Ethernet and included dual fiber system redundancy.



Challenge

A global manufacturer of heavy mining equipment needed to wirelessly access vehicle diagnostics while avoiding satellite license/availability and keeping service technicians safely out of the work zone.

Solution

B&B Electronics developed a heavy-duty WiFi to Ethernet bridge with shock, vibration and temperature specified connectors to remotely access fleet diagnostics and also eliminate satellite dependencies.



Challenge

A company that builds remote-control first responder robots needed a real-time wireless communication system to tie together onboard sensors and IP cameras with laptops of multiple operators and response teams.

Solution

B&B Electronics provided wireless device server modules that are built into OEM equipment and provide RF technology, networking stacks, and advanced security in a compact, single-board package.

*“Let’s discuss your product modification,
private-labeling, or OEM needs.”*

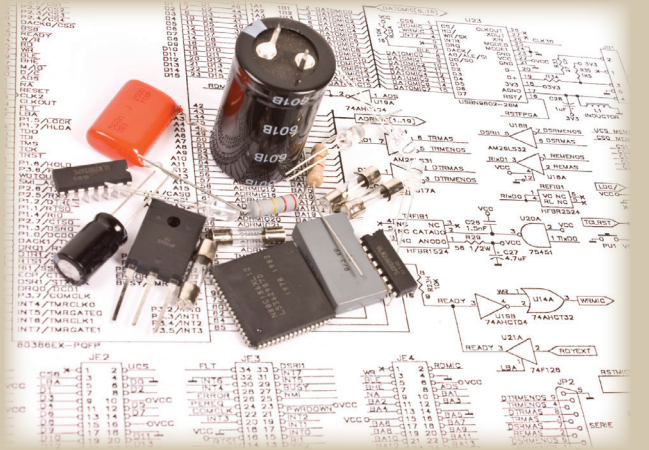
We can provide specialized wireless, cellular, Ethernet, USB and serial solutions for your data communication problems. We will work with you from building a product specification through design and manufacturing.

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