Engineering \ Manufacturing Development & Production

Unified Business Technologies, Inc.
Engineering \ Manufacturing Development and Production
emd.ubtus.com | (248) 677-9550 | 315 Indusco Ct., Troy MI 48083
Built from the ground up to leverage the most advanced manufacturing technologies
Over 25 years of industry experience with strong financial backing.

- 10,000 Ft² Administrative Center
- 24,000 Ft² Manufacturing and Engineering Facility
- 5,000 Ft² Circuit Board Assembly Manufacturing Area
  - Class 100,000 (ISO 8) Clean Room
  - ESD Controlled Per ANSI/ESD S20.20-20007
  - Temperature / Humidity closed loop process controlled
- 5,500 Ft² Office Area with Systems Integration Laboratory
- 13,500 Ft² General Manufacturing Area
  - Secured Inventory controlled stores area
  - First in North America Space-Grade PCB Production Line
- Focused on formalized quality. ISO 9001:2015 and CMMI Level III Certified
- AS9100 implementation in process

UBT possesses the following certifications:
Manufacturing Services

Engineering and Design Services
End-to-end product development, design, and testing services including:
- Software/Firmware Engineering
- Mechanical Engineering
- Sustainment/DMSMS
- Hardware/Electrical Engineering
- Validation and Verification

Printed Circuit Board Assembly
- Fully automated inline PCB assembly
- ESD protected facility
- 100% process and material traceability
- Process panel sizes up to 18" x 24"
- Placement of up to 87,400 parts per hour
- Placement of 348 unique components in a single set up

Cable & Wire Harness Assembly
Design and assembly of custom cables of all configurations, complexities, and lengths.
- Non-contact removal of wire insulation and jacket slitting
- Automated cut/strip system
- Semi-automated rotary wire strip
- 100% electrical testing

Fiber Optic Cable Assembly
Design and assembly of custom Fiber Optic cables of all configurations, complexities, and lengths.
- Single and multimode options
- Fusion splicing capability
- Full optical inspection and 100% performance testing

Mechatronics
Comprehensive assemblies unifying electrical, electronic and mechanical skillsets for various applications such as:
- Industrial Automation
- Test Stands
- Computer/Control Systems
- Robotics
- Display Systems
- Sensors
- Consumer Electronics
- Building Automation
Manufacturing electronic products with uncompromised quality
Engineering support from initial product realization through sustainment, end of life, and obsolescence management
Service Details
Unified Business Technologies, Inc. provides complete Engineering and design services to support our customers from initial product realization through sustainment, end of life, and obsolescence management.

Software / Firmware:
- Embedded ANSI / MISRA C
- Custom RTOS Development
- Microcontroller / Microprocessor Firmware
- SoC, FPGA, and CPLD
- Application Software and OS Drivers

Hardware / Electrical Engineering:
- Schematic Capture and Circuit Simulation
- PCB Layout
- Mixed Signal, High Speed Digital
- Embedded MCU, CPU, SoC
- FMECA, MTBF / MTTR Analysis
- Power Supplies, Data Acquisition, HMI, and Custom Displays

Sustainment / DMSMS:
- Calibration and Repair Services
- Design Maintenance for Obsolete Component Replacement
- Counterfeit Component Mitigation Strategies Compliant with MIL-STD-11991A
- Reverse Engineering of Mechanical Components and PCB Assemblies

Mechanical Engineering:
- Enclosures (Molded, Cast, Formed, Machined)
- Interconnect (Cables / Harness, Fiber Optic, Flex PCBA)
- Thermal and FEA Modeling
- Custom Packaging

Validation and Verification:
- Functional Test Development, DV Plans
- Hardware in the Loop Test Automation
- Test Harnesses, Bench Test Systems
- EMI/EMC (FCC, MIL-STD-461, EN/IEC)
- Environmental Testing (Thermal, Shake/Vibe, AST, etc.)
- Regulatory Compliance Testing (FCC, UL/ETL, CE, MIL, etc.)

CAGE Code:
- 3XMH1

NAICS Code:
- 541330
- 541340
- 541380
- 541490
- 541511
- 541712
- 541990
Designed to support flexibility, efficiency, and component variety
Unified Business Technologies, Inc. Engineering\Manufacturing Development and Production (EMD&P) division has been created from the ground up to leverage the most advanced manufacturing technologies in support of our core mission; to manufacture electronic products with uncompromised quality for the most demanding applications.

Our fully automated inline circuit board assembly work cell is designed to support flexibility, efficiency, and component variety best serving low volume, high mix, prototype, and production manufacturing. We can process PCBs with panel sizes up to 18”x 24”, handle components as small as 01005 to as large as 2in², and support complex assemblies with up to 355 unique components in a single setup.

Automated placement and AOI systems ensure all assemblies are built to the most stringent workmanship standards with 100% traceability of all materials used. Integration with our ERP system yields traceability of materials, operators, and processes down to the serial number and component as demanded by higher level quality directives.

Throughout our manufacturing process, we utilize innovative technologies; vacuum based reflow soldering for superior void-free solder joints, 3D Solder Paste Inspection, Automated Optical Inspection, Selective Soldering, and X-Ray with 3D CT. UBT’s assembly process offers the highest level of assurance that your assemblies will work the first time, every time.

Quality Assurance
We can manufacture compliant to the following quality and workmanship standards:
- ISO-9001:2015
- NASA-STD-8739
- J-STD-001 Class II, III, and ES Addendum
- IPC-A610 Class II or III
- ANSI/ESD S20.20

CAGE Code:
- 3XMH1

NAICS Codes:
- 334111 336413
- 334290 336992
- 334418 541330
- 334419 811219
- 334511 541712
- 335999
- 336320
UBT is your source for high quality custom cable prototyping and production
Our Capabilities Include:
- Laser wire stripping for non-contact removal of wire insulation and jacket slitting
- Automated cut / strip system for automated processing of wire / cables up to 13mm in diameter
- Semi-automated rotary wire strip for mechanical strip of wire and coaxial cables from 12-28 AWG
- High intensity light heat shrinking system for uniform, rapid reduction of boots and outer jacket materials
- Variety of termination dies, presses, crimpers for terminal application
- Automated cable scan for 100% electrical testing of continuity, shorts, and dielectric breakdown

Service Details
Cable assembly is both a science and a craft. UBT utilizes a mix of automated wire processing equipment and hand assembly to produce consistently high quality cable assemblies. In addition to manufacturing, we offer in-house cable engineering and design solutions. Utilizing an experienced manufacturer to assist in cable design yields a product optimized for price and quality.

We are committed to ensuring our cables are compliant to workmanship standards and crafted to serve their intended use. Regardless of production quantity, we manufacture to the same process controls and with the attention to detail demanded of high reliability applications. UBT cables are 100% electrically tested to verify functionality prior to customer delivery.


CAGE Code:
- 3XMH1

NAICS Codes:
- 335921
- 335931
- 335931
- 335999
- 332618
- 334290
- 334515
UBT produces fiber cable assemblies in all configurations, complexities, and lengths
Fiber Optic Cable Assembly

Service Details
Fiber Optic cables are often used in high complexity, mission critical systems. These systems demand durability and unwavering performance. Whether you are looking to optimize an existing product or are in the early stages of product development, we can assist with your fiber optic cable requirements definition, design, and production.

We manufacture custom fiber optic cable assemblies in all configurations, complexities, and lengths utilizing the most popular industry standard terminations such as ST, FC, LC, SC, MT, and 38999. UBT utilizes a variety of purpose-built fiber optic processing equipment to produce cable assemblies with consistently high quality.

CAGE Code:
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NAICS Codes:
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- 335921
- 335931
- 335999

Our Capabilities Include:
- Schleuniger Rotary Strip 2400 and CLC Wire Master Laser Strippers for removal of GOF Jacket
- Schleuniger 7030 Fiber Optic Buffer / Coating Stripper
- Schleuniger 7010 Kevlar Removal System
- Ultratec CLC Benchtop Fiber Polishing System
- Fusion Splicing capability using INNO View 5 Core Alignment Splicer
- Full optical inspection and 100% performance testing using JDSU Smartclass Inspection System
Unifying electrical, electronic, and mechanical skillsets
Mechatronic Assembly

Service Details
In support of UBT’s PCB and cable assembly services, we offer comprehensive mechatronic assembly unifying electrical, electronic, and mechanical assembly skills.

Combining mechanical components that are of dissimilar material and manufacturing methods requires understanding of proper handling and assembly methods. Our team has extensive experience in assembly of complex mechanical systems that require knowledge of engineering tolerances and proper use of mechanical tools and gauges.

Mechatronic assembly commonly involves wire and cable interconnection. This can be achieved by way of prefabricated harnesses or point to point wiring. This interconnect often requires critical routing to coexist with mechanically moving parts.

Helping to simplify your complex production needs

Using UBT’s mechatronic assembly capabilities in conjunction with our other manufacturing services can help to simplify your complex acquisition process. Utilizing a single, customer-centric source for turn-key product builds can reduce delivery time, minimize cost, and provide a single point of accountability to your organization.

Types of Assemblies:
- Industrial Automation
- Test Stands
- Computer / Control Systems
- Display Systems
- Sensors
- Consumer Electronics
- Building Automation