

Military & Aerospace Electronic Solutions

Amphenol Borisch Technologies

THE AMPHENOL ADVANTAGE

Why choose Amphenol Borisch Technologies?:

Amphenol Borisch Technologies (ABT) is a vertically integrated electronics contract manufacturer that prides itself on superior service. Our experience and expertise in electronics design, design-for-manufacturer, assembly and test are second-to-none in the industry. As an integral part of Amphenol's Military and Aerospace group, ABT is your complete supply chain solution provider.



Amphenol advantage

Technological Expertise:

We apply over 80 years of industry-leading knowledge and experience in all markets to design the right solution for you.

Manufacturing Versatility:

We utilize the latest manufacturing and process technologies to support our extensive dual production and off-set options around the world.

Superior Customer Engagement & Support:

We constantly focus on continuous improvements, from management to local customer support, to build the highest quality, on-time products.

One Company, One Solution

We provide a complete, integrated solution for all system needs, from concept and design to manufacturing and sourcing.

Amphenol Military & Aerospace Operations is perfectly aligned to provide the latest technologies, cost-effective manufacturing and supply chain management, and local support to solve any military and aerospace interconnect need.

OUR CORE VALUES

The Non-Negotiable Guardrails Guiding our Decisions

ENTREPRENEURIAL SPIRIT

- We empower team members
- We learn from our mistakes
- We respond quickly to business opportunities

ACCOUNTABILITY

- We keep commitments
- We demand excellence
- Obstacles do not stop us

GEEKINESS

- We love to learn
- We are intellectually curious
- We enjoy what we do

WE VS. ME

- We are team players
- We solve problems together
- We show mutual respect to each other

PASSION

- We are inspired by success
- We go the extra mile
- We drive to win

GENUINE

- We are trustworthy
- We do not play politics
- We communicate candidly

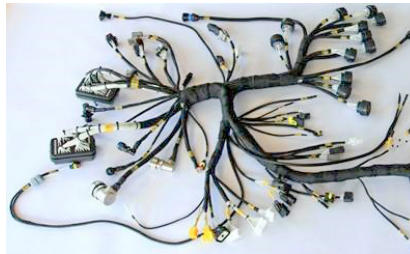
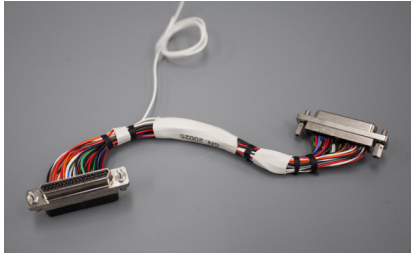
Technology Value Proposition:



CAPABILITIES

Cable and Wire Harness Assembly

Amphenol Borisch Technologies has a strong history of designing wire harnesses and point-to-point cables for a broad range of Defense and Aerospace applications. We rely on highly automated equipment, built-in test and highly skilled operators to ensure product is of the highest quality. We inspect our cables 100% electrically, visually and mechanically.



- Mixed Interconnect and Wire Technologies
- MIL-DTL-83513/3/4 Qualified (Micro-D)
- Harsh-Environment
- Turbine Engines & APU's
- Amphibious Military Vehicles
- Missiles
- Custom Backshells
- Poka-Yoke Systems
- Overmolding and Encapsulation
- Overbraiding
- Highly Automated Equipment
- Electrical & Environmental Test Capability
- IPC 620/ Nadcap

Cable Harness Capabilities

Overmolding/Injection Molding



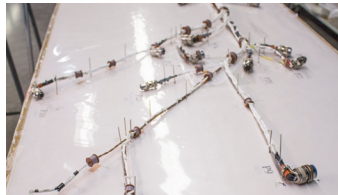
Multi-Cable Overmold



On Board Cable Testing



Live Layup



Automated Testing



Integrated Harness Layouts



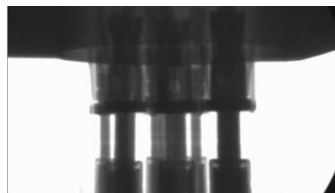
Contact Crimping



Braiding



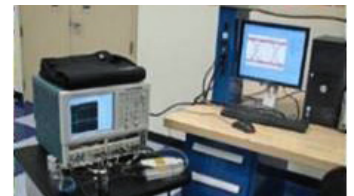
X-Ray Verification



Cable Assembly



Signal Integrity Valuation



Injection/Pour Mold Potting



Cable and Harness Braiding

Materials	Stainless Steel	Nylon	Nomex	Kevlar
Purpose	EMI/Lightning Protection	Anti-Fretting	High Temp/ Fire Resistant	Strength rMember
Application	Aircraft, Ground Vehicles, Radar	High Vibration Environments, Rotorcraft, Wings	Engine	Audio Cables, Soldier Worn, Interiors
Visual				

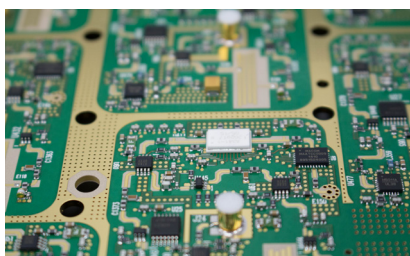
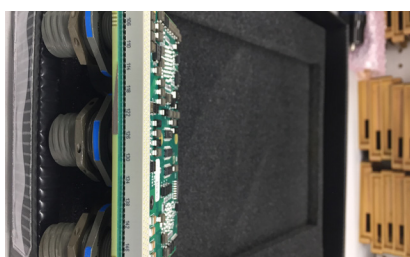
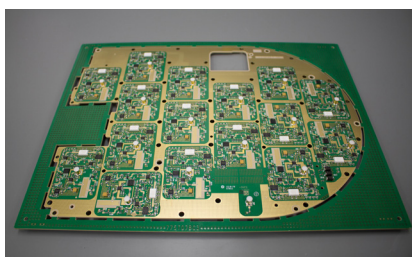
Komax Automation

- Cuts, Strips, Crimps, and Laser Marks Wires 12-24 AWG
- Constant Crimp Force Monitoring



Circuit Card Assembly

At Amphenol Borisch Technologies we understand that high reliability electronics requires state-of-the-art equipment, experienced and passionate people, and rigorous process validation. We work closely with our customers to ensure that products meet or exceeds all requirements and expectations right from the very start of the project.

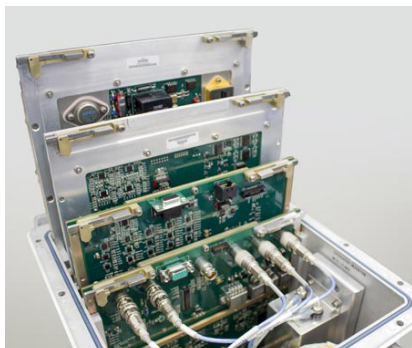


- Rigid, Rigid Flex, Flex Assemblies
- IPC 610/ 620/ 7711/7721 /600
- 100,000+ CCA's Yearly Volume
- High Mix –Low to Medium Volume
- Demonstrated 500,000+ capability
- In-House Coating: Conformal SR, AR, UR, & Parylene Capabilities
- Laser Marking/ Select Solder/ X-Ray

CAPABILITIES

LRU Assembly

At Amphenol Borisch Technologies we understand that building complex assemblies requires a robust quality system, strong engineering support and world class operators. ABT will provide you with a dedicated Program Manager that has the resources and expertise to ensure you will receive excellent service throughout the LRU build process.



- Enclosures (single and multiple), rack and panel assemblies, suitcase testers, box builds, etc.
- Instrumentation and Control systems
- Associated harnessing and cable systems and breakout boxes
- ESD controlled environment for Circuit Card Assembly
- In-house machine and sheet metal shop to support panels, brackets, tooling, jigs general assembly
- IPC-620

Testing

Our vertical integration of our process relies on in house testing capabilities. Everything from electronic fixture design, environmental to shock and vibration testing is offered by ABT.

- Extensive experience in testing, troubleshooting, and repairing cables, circuit cards and electronic assemblies
- Repair & overhaul - team members average 20 years electrical assembly experience
- Design and development of test equipment
- Quick turn around on all repairs
- Strong test and electrical engineering support

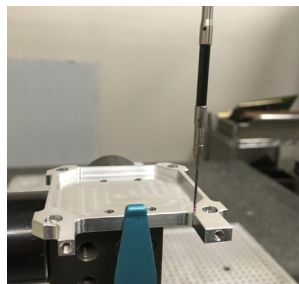
Test Capabilities

- ESS Testing: Temperature, Humidity, Random-Axis Vibration, Shock and Leak
- Full Functional Testing to exercise components (automated/manual)
- In-Circuit Testing with JTAG and Software Development Capabilities
- EMI/EMC Testing
- Continuity and Isolation Testing for Cable Harnesses
- Automated (CIRRIS and VJ2000) and Hand Test
 - Continuity
 - Shorts
 - Dielectric Strength
 - Insulation Resistance
- Bond Testing
- Tensile Testing using an automated tester
- Contact Retention
- Varistor Testing
- Dynamic Diode Testing
- Switch Assembly Testing



Precision Machining

The state-of-the-art Machine Shop is a key asset to our value-chain. Our ability to machine, coat, inspect and assemble mechanical solutions for our internal and external customers really sets us apart.

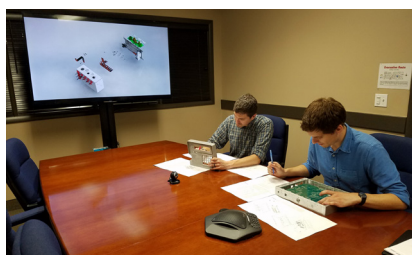
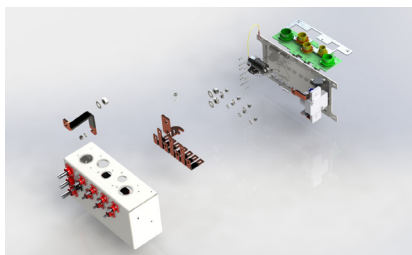


Mazak	Six Mazak HNC 5000 4-Axis Horizontal Machining Centers w/ 44 Pallet Pallettech System	25" Dia. x 25" H Working Envelope
		18,000 RPM High Speed Spindles
		Reinshaw Park Probing & Vacuum Work Holding Technology
DMG MORI	DMG Mori NHX4000 4 Axis Horizontal with Pallet Changes	22" x 22" Work Envelope
		20,000 RPM High Speed Spindle
		2360 IPM Feed and Rapid Acceleration
HURCO	Two Hurco 4-Axis VMX 42" Vert. Mills w/ Rotaties	Reinshaw Part Probing
		Work Envelope 42" (X) 24" (Y) 24" (Z)
		Vacuum Work Holding Technology
Mazak	Mazak Integrex 5-Axis 200 IVS Machining Center	8" Swing x 12" Cutting Length
		20,000 RPM Big Plus Milling Spindle
		Reinshaw Part Probing
	Software	SolidWorks & Gibbs Cam CAD/CAM Software
		Accept All Major File Formats
		ProLink Statistical Process Control Software (SPC)
ZEISS	Zeiss Accura CMM	Accurate to +/-0.0002"
		CAD Measurement Capability with offline programming (CURVE)
Mitutoyo	Mitutoyo Bright 710 CMM	MCOSMOS Software w/ C2 CAD
		Accurate to +/-0.0005"
MICRO-VU	Micro VU Excel 1054CU Vision Inspection System	Probing Capabilities
		Accurate to +/-0.0005"
Flow	Flow Mach 2 Water Jet	52,000 PSI: Up to 10" Material
		4'x4' Work Envelope
AMADA	Amada CNC 50 Ton Hydraulic Brake Press	3-Axis CNC Controls
		+/-0.010" Bend Length Accuracy
		+/-1 Degree Bend Accuracy

CAPABILITIES

Design Engineering

Amphenol Borisch Technologies is a full-service, vertically integrated electronics designer and manufacturer. Subject matter experts from our engineering, manufacturing and design departments will work together with you to help solve virtually any electronics manufacturing or integration challenge. ABT prides itself on supply chain management offering solutions for design for manufacturing obsolescence and end of life components.



- SolidWorks
 - 3D Design
 - Simulation
 - Electrical Design
- Cadence OrCAD Capture
 - PCB Design



Design Engineering Examples

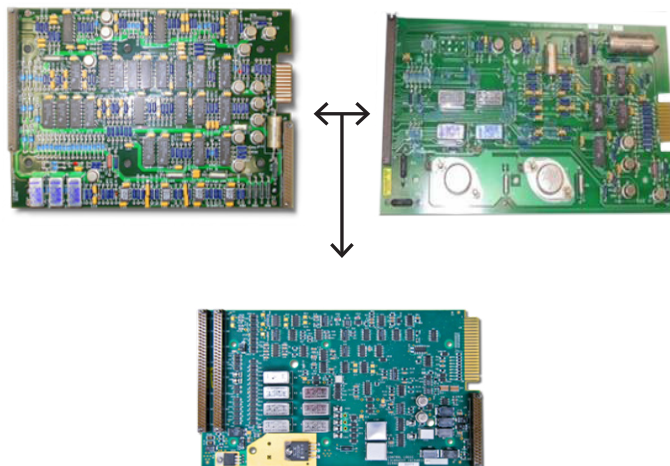
- CCA Redesign
- Cable/ Wiring-Harness Design
- Test Development and Implementation
- Obsolescence Management



Prototype



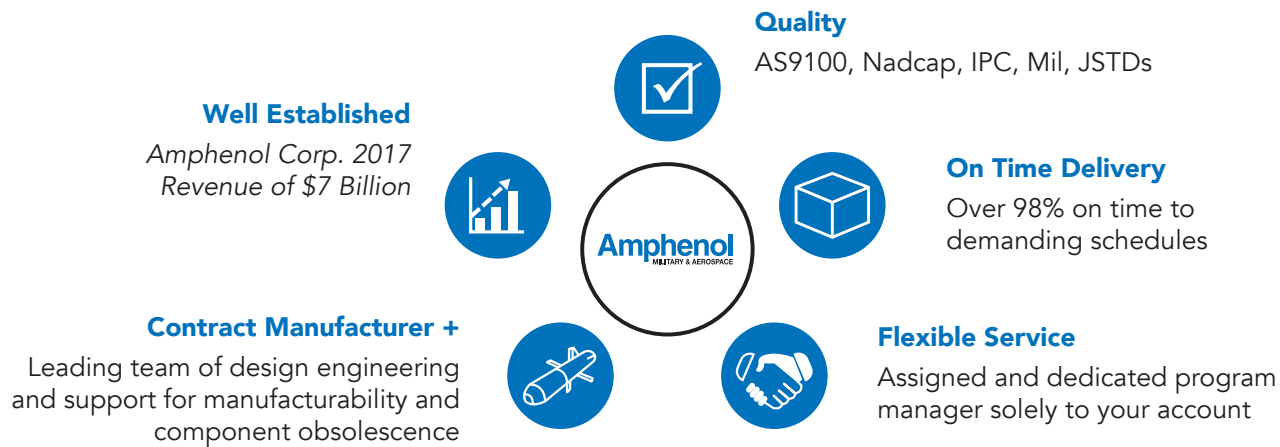
Production



Redesign of 2 CCAs into one without obsolete components

TOTAL SUPPLY CHAIN SOLUTION & LAUNCH PROCESS

Total Supply Chain Solution:



Proactive Approach:

We work closely with customers using a Program Management approach, stressing DFM solutions, and incorporating BOM and obsolescence management.

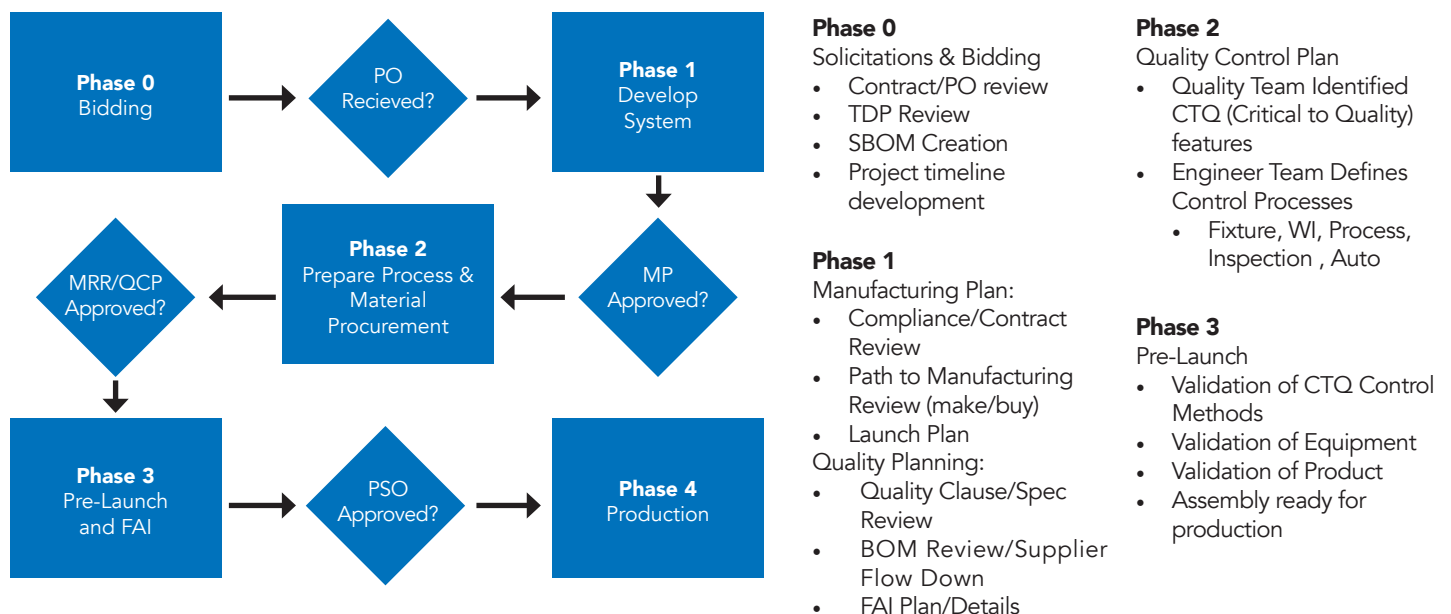
Vertical Integration:

We are a vertically integrated manufacturer from the design engineering phase through multiple manufacturing competencies.

Strength of Amphenol:

We are part of the Amphenol Military and Aerospace group which allows us access to a broad array of technologies and manufacturing partners around the globe.

Launch Process



Summary of Acronyms:

PO - Purchase Order
QCP - Quality Control Plan

MP - Manufacturing Plan
FAI - First Article Inspection

MRR - Manufacturing Readiness Review
PSO - Process Sign Off

U.S. LOCATIONS

Grand Rapids, MI



Amphenol Borisch Technologies has a US location, 2 Mexico facilities and 1 Canadian location to meet all of your ITAR, low cost and geographically-efficient needs.

- Headquartered in Grand Rapids, MI 80,000 sq. ft.
- ITAR Approved Manufacturing in Grand Rapids, MI; Nogales, MX; and London, ON, Canada
- ISO9001:2008, AS9100C:2009, and NADCAP certified
- Space Approved and FAA Approved Repair Facility
- Service-Oriented, Vertically-Integrated Electronics Manufacturer: Contract Manufacturer +
- High-Mix, Various Volumes
- Aerospace and Military Markets
- Full Design Service Capabilities
- Customer-Dedicated Program Managers

Mesa, AZ



Amphenol Borisch Technologies' mission is to provide aerospace, defense, and aviation industry customers with high quality, failure-proof, mission-critical wire harnesses and components.

- Located in Mesa, AZ
- Domestic Wire Harness Center-of-Excellence
- 20,000 sq. ft. of manufacturing space
- 50 Employees
- FAA Certified Repair Facility
- NADCAP, AS9100 and ISO9001:2008 certified

INTERNATIONAL LOCATIONS

Nogales, Sonora - Mexico



With 2 distinct locations in Mexico all on the same campus, ABT can meet your cable and CCA needs in the most cost efficient manner.

- 200 Employees
- 40,000 sq. ft. of standalone cable facility
- Wire Harness Center-of-Excellence
- Dual SMT Lines (exact copy of Grand Rapids)
- Coating: AR, SR, UR, & Parylene
- Automated Select Solder & Hand
- Solder
- Flying Probe, ICT, & MPT
- IPC Class 3 Trainers

London, ON - Canada



Located just miles from the London, Ontario airport, ABT's Canadian location is positioned with many of our large OEM customers. Offering both turn key assemblies and repair services, our London team is ready to serve.

- London Airport Authority –5,000 sq. ft. CGD Approved Facility
- AS9100
- Testing, Troubleshooting, and Repairing Cables, Circuit Cards, and Electronic Assemblies
- Field Returns: Repair and Upgrade
- Quick Turn
- Test and Electrical Engineering Support

Manufacturing Contact Information:

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Sidney, NY 13838
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Amphenol Commercial Air Division

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Amphenol Nexus Technologies

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Stamford, CT 06902
203-327-7300

Amphenol PCD

72 Cherry Hill Drive
Beverly, MA 01915
978-624-3400

Amphenol SV Microwave

2400 Centrepark West Drive
West Palm Beach, FL
561-840-1800

Amphenol Times Microwave, Inc.

358 Hall Avenue
Wallingford, CT 06492
800-867-2629

Amphenol Fiber Systems International

1300 Central Expressway North, Suite 100
Allen, TX 75013
214-547-2400

Amphenol Printed Circuit Board Technology

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Nashua, NH 03062
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Amphenol
MILITARY & AEROSPACE

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