



Microtech, Inc.

World's Largest Producer of Flexible Waveguide

We are a designer and full-capability manufacturer of flexible and rigid waveguide assemblies as well as passive microwave components.



ISO-9001:2008 and AS-9100 Rev. C REGISTERED

60 Years Of Experience

- Microtech, Inc. has enjoyed a long and proud history of serving its loyal military and commercial customers since first opening its doors in 1954.
- We are a world leader in the design and manufacturing of flexible and rigid waveguide assemblies and passive microwave components for the Microwave Industry.
- Microtech products are found under the sea, on land, in the air, and in space. They are used in radar, satellites and communications applications just to name a few...



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Product Applications

Land

Radar systems on land such as Air Traffic Control Radar, as well as Cell Phone Tower applications and Satcom stations across the world.



Sea

Microwave communication is used in weapons on board ships to protect our country, and also in Counter Measure applications. The Phalanx system has been supported by Micotech since its conception many years ago.



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Product Applications

Air

Microtech communication Weather Radar is used in F15 Military fighter planes, as well as, many other Military and Commercial aircraft.



Space

Microwave currently designs and manufactures lightweight waveguide for space satellites. Microtech is a proud supplier to Loral Space Systems, MDA, and Boeing Space, just to name a few.



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Designer & Full-Capability Manufacturer

- Microtech produces product to the quality expectations of our customers, on time and at a competitive price.
- We do this by providing the incentive and the means for continuous improvement in our processes, technology, products and services.
- In this endeavor, we are committed to working with the highest standards of ethics in a team environment, bringing credit to ourselves, our families, our community, and our industry.
- Microtech's 90 plus employees with a combined and unmatched work experience of over 1000 man-years strive to produce the highest quality products.
- They perform at this very high level of craftsmanship with one of the most complete and up-to-date vertically integrated manufacturing design and process facilities.

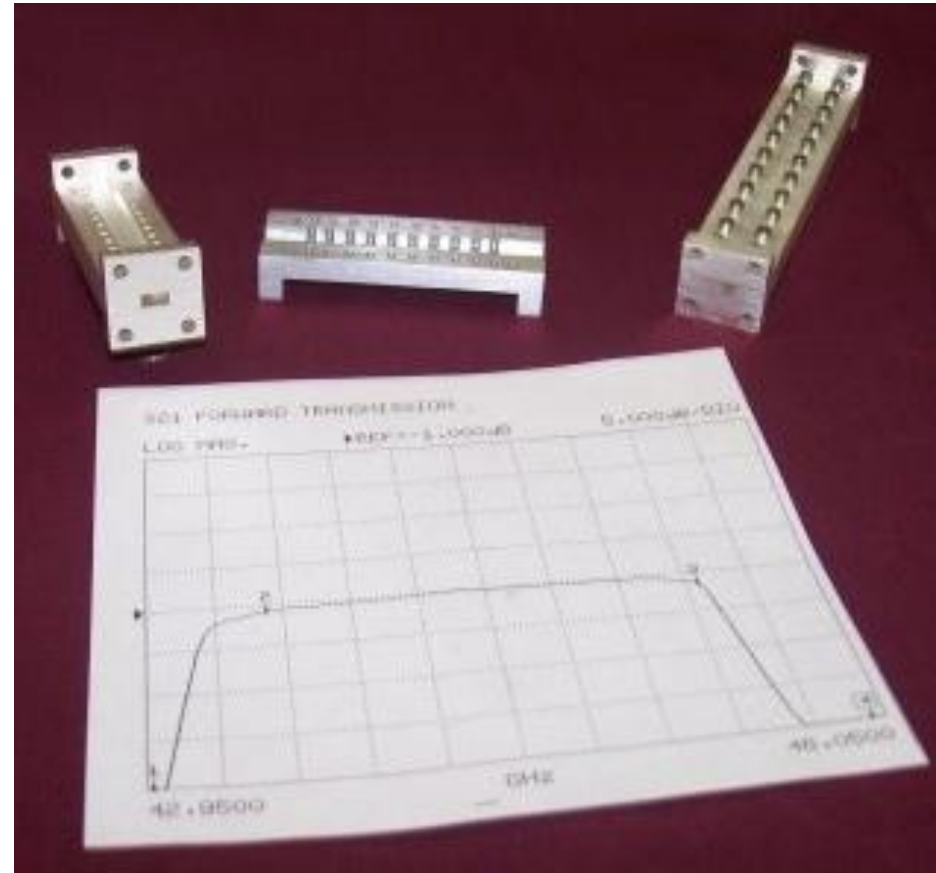


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Custom SATCOM Filter

Microtech has developed a 10-cavity Filter with sharp skirts and a low pass-band insertion loss of only 1 dB maximum in WR-22 (WG-23) waveguide. Due to the high-power requirement, design for and tested to 125 watts CW, this filter contains NO TUNING SCREWS or sharp internal objects and is ideal for high power applications where passive inter-modulation is a concern. With a pass band that is 3 GHz wide and stop bands only 500 MHz away, spurious components are completely attenuated to > 40 dB.



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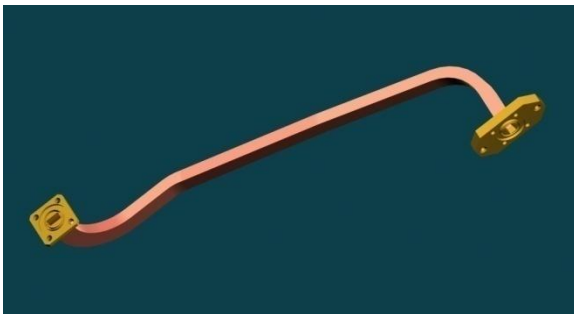
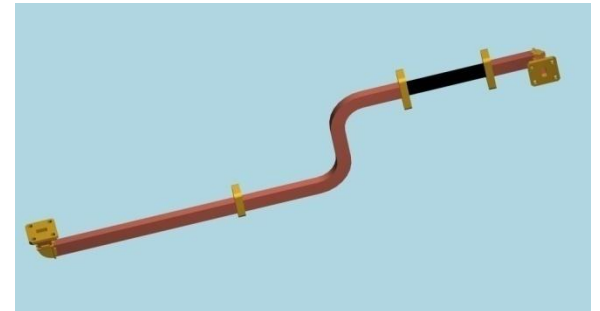
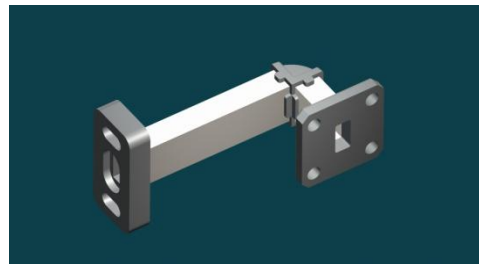
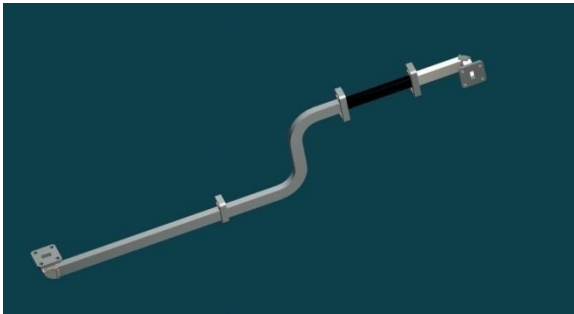
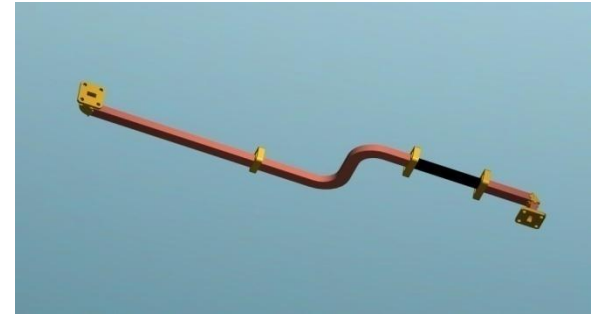
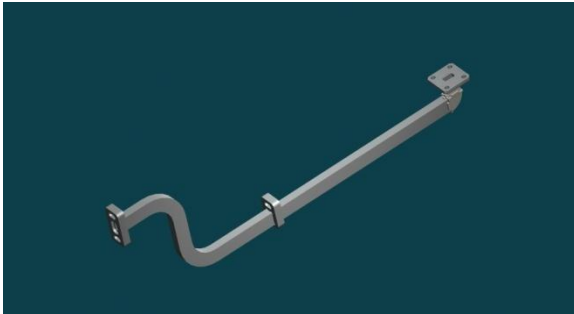
Microtech Product Capability



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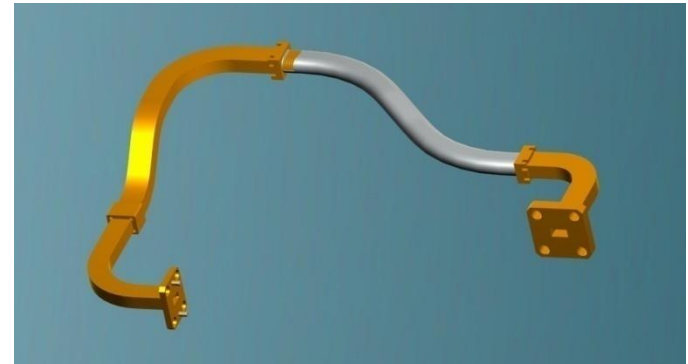
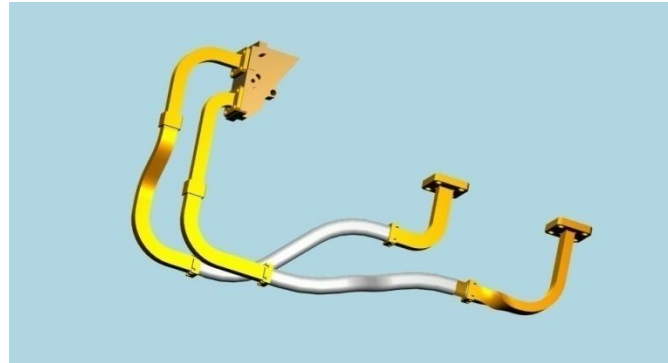
Flight Program Waveguide



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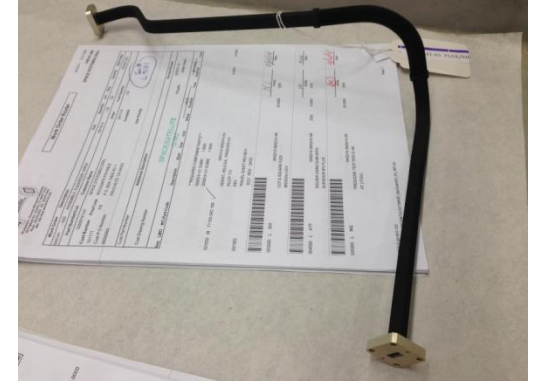
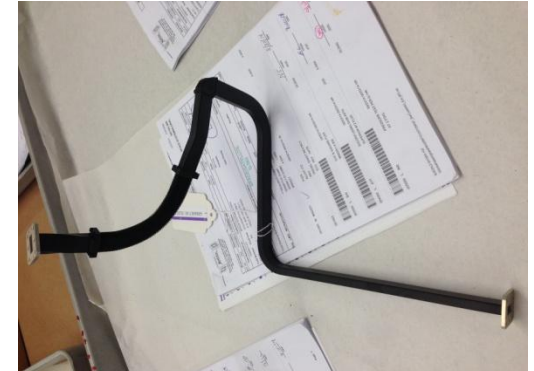
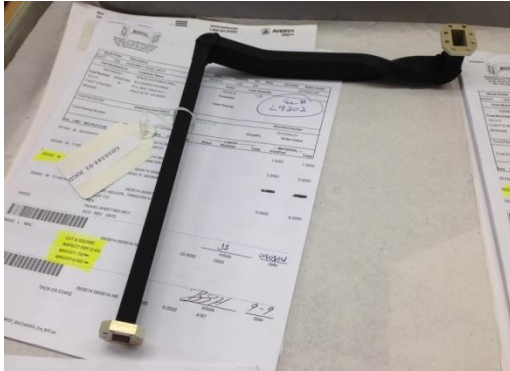
Flight Program Waveguide



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Space Program Waveguide



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Space Program Waveguide



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Our In-House Capabilities Include:

- **Computer-Aided Design Engineering**

Our engineering department uses the latest software and technology workstations for the creation of all new jobs as well as the maintenance of existing jobs. We are fully capable of complex design in a 3D solid model environment.

- **Quality Assurance**

Microtech operates under a Quality Management System which is AS-9100 Rev. C / ISO-9001:2008 registered. Our experienced technical staff and state-of-the-art testing lab have RF sweep capability from 10 MHz to 60 GHz to ensure conformance to your functional test specifications. An experienced and well-equipped metrology department ensures conformance to your dimensional requirements.

- **Flexible Waveguide**

Microtech's Seamless (MSB, MSD) as well as our Flexible/Twistable (MTP) and Flexible/Non-Twistable (MCK) are manufactured completely at our facilities. We produce waveguide sizes from WR650 to WR22 and double ridged. We also produce millimeter sizes from WR22 and WR10. Microtech's Seamless waveguide is lightweight, durable and has no RF leakage.

- **Molding**

Microtech features a full rubber jacket vulcanizing department that is one of the largest in the industry. Microtech is able to mold flexible waveguide assemblies in almost any length.



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Our In-House Capabilities Include:

- **CAM/CNC Machining**

We have a complete machine shop with the capacity to respond from smallest to largest volume orders. Our Computer Aided Manufacturing (CAM), combined with our Computer Aided Design (CAD) and Computer Numerical Control (CNC), are second to none.

- **Brazing**

Microtech's dip-brazing oven and induction brazing is used for both aluminum and copper alloys, as well as silver brazing of copper alloys.

- **Plating**

Microtech has complete plating capabilities including:

- ◆ Silver (QQ-S-365)
- ◆ Nickel (QQ-N-290)
- ◆ Copper (MIL-C-14550)
- ◆ Gold (MIL-G-45204)
- ◆ Tin (MIL-T-10727)
- ◆ Cadmium (QQ-P-416)
- ◆ Rhodium (MIL-R-46085)
- ◆ Aluminum and Brass chromate conversions

- **Painting**

Microtech offers MIL SPEC painting and has just completed construction of a new 468 square foot "State of the Art" paint booth to compliment other production improvements in our manufacturing capabilities

Microtech also maintains an extensive raw material stock area and offers additional capabilities such as casting impregnation, marking, and MIL packaging. Our 36,000 square-foot facility houses the whole gamut of capabilities.



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Computer Aided Engineering



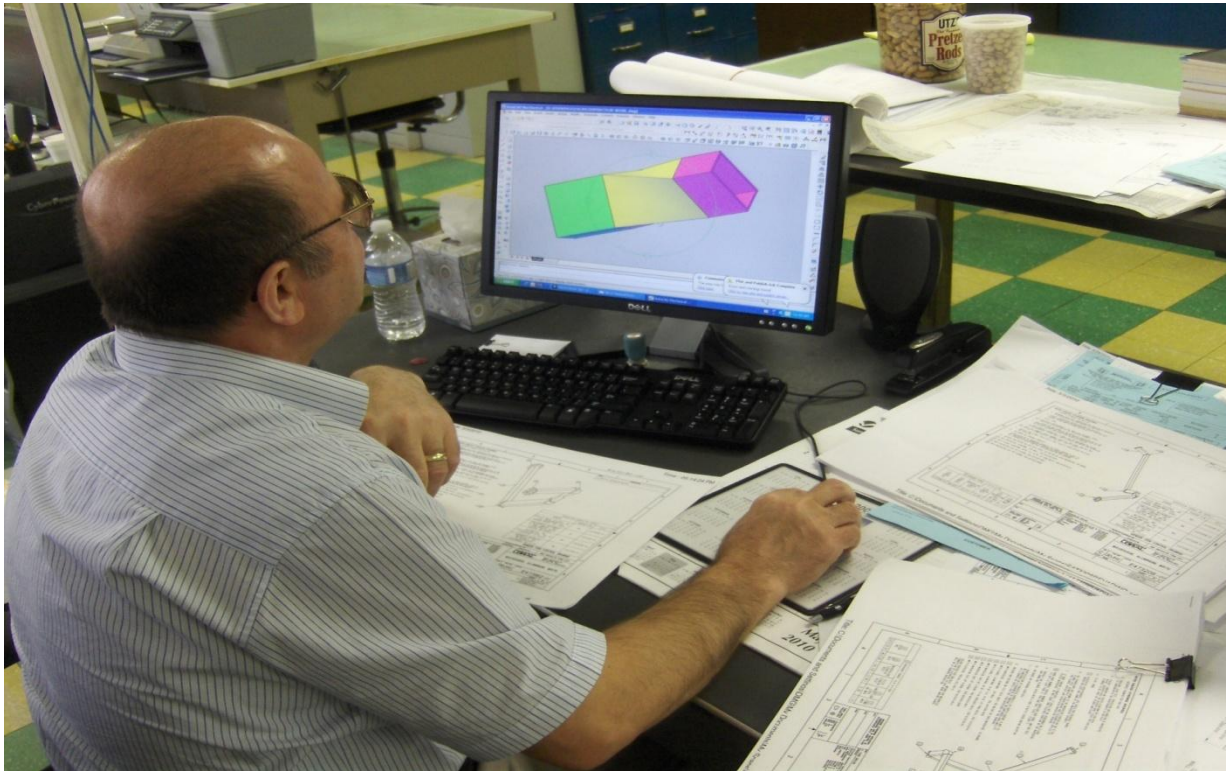
Engineering begins design utilizing ANSYS HFSS v15 with Optimetrics to create 3D electromagnetic field models and simulate performance.



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Computer Aided Design



Microtech's Engineering department is capable of transferring customer ideas, as well as, partial assembly drawings into full manufacturing drawings. Our Engineers provide design and drawing services utilizing Creo 1 (Pro-E), AutoCAD software and HFSS simulation software. Conversion of 3D models (STEP, IGES or native Creo 1 / Pro-E files) to 2D manufacturing drawings.



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Computer Aided Manufacturing (CAM)



MASTERCAM X is utilized by Microtech's Machine Shop to run CNC machines and enhance our capabilities of using customer supplied CAD files to shorten lead-time from design / concept to production.



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In-House Production



Microtech's Seamless Flexible (MSB, MSD), Flexible/Twistable (MTPS) and Flexible/Non-Twistable (MCKS) are manufactured completely at our facility. We produce waveguide sizes from WR650 to WR22, and double ridged. We also produce millimeter sizes from WR22 to WR10.



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Seamless Flexible Waveguide



Microtech's Seamless Flexible Waveguide fabricating machines are capable of producing waveguide sizes as small as WR28 and as large as WR284. Microtech's Seamless Flexible Waveguide (MSB, MSD) is lightweight, durable and has no RF leakage.



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Precision Bending Of Waveguide



Microtech provides the highest precision bending capabilities in the RF industry. We specialize in bending E-plane and H-plane bends as well as Twist configurations. Microtech also offers bends in Double Ridged waveguide, which is extremely difficult and highly specialized.



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CNC Machining



Using MASTERCAM X precision machining responds to both small and large orders with superior products that fully satisfy customer requirements.



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Waveguide Molding



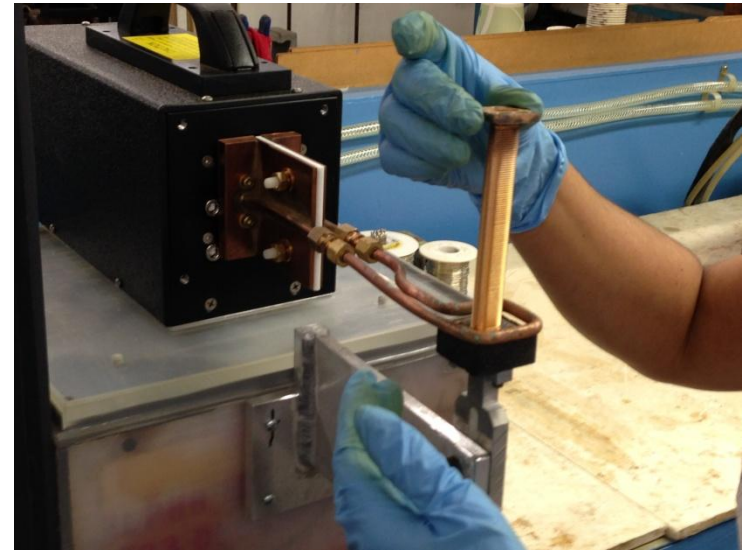
A full rubber jacket vulcanizing department is among the largest and most complete in the industry. Microtech is able to mold waveguide assemblies of virtually any length.



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Induction Brazing



Induction Brazing helps to control any inconsistencies or variation associated with open flame, torch heating and other methods. The heating pattern is properly calibrated, repeatable and consistent. Precise closed loop temperature control provides uniform results, and gives Microtech the capability to measure the temperature of each individual part.



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Dip-Brazing & Torch Brazing



Our dip-brazing pot is used for aluminum alloys and torch brazing is used for both aluminum and copper alloys as well as silver brazing for thin wall space qualified assemblies.



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Plating



Microtech's complete in-house plating capabilities include silver, gold, nickel, copper, tin, cadmium, rhodium, and aluminum & brass conversions.



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Microtech offers MIL SPEC painting and has just completed construction of a new 468 square foot "State of the Art" paint booth to compliment other production improvements in our manufacturing capabilities.



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Electrostatic Painting



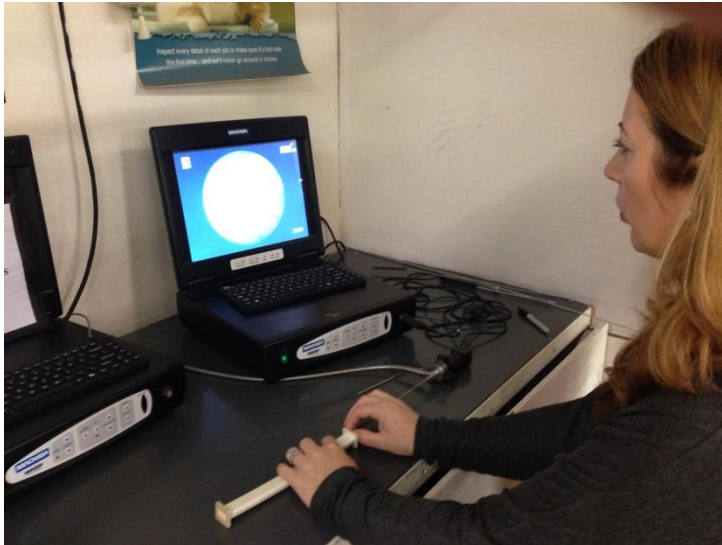
Electrostatic painting employs charged particles to more efficiently paint a waveguide or component. Paint is initially projected towards a conductive part using normal spraying methods, and is then accelerated toward the part by a powerful electrostatic charge.



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Borescope



Microtech has several video scopes. A 2.5 mm right angle flexible and a 2.5 mm right angle rigid. A 3mm flexible forward viewing and a .25 diameter 60" flexible borescope. These scopes aid in the inspection of interior waveguide plated surfaces and solder/ braze joints.



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State-of-the-Art Measurement Technology



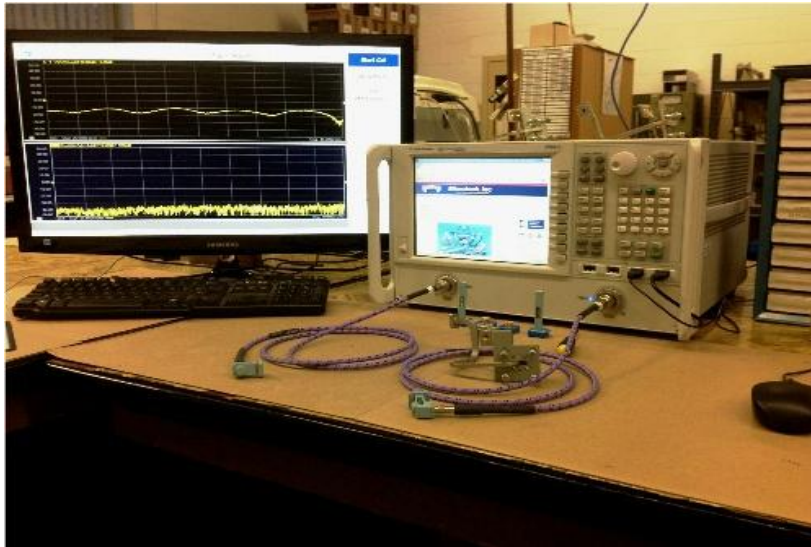
The nine-foot laser FARO “Edge” 7-axis measurement arm is the most advanced FaroArm available, allowing easy and accurate verification of product quality by inspecting tooling, CAD analysis and reverse engineering. FARO “Edge” takes portable metrology to the next level.



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World Class Test Equipment



A vector network analyzer, the Agilent N5235A PNA, measures parameters, including VSWR, insertion loss, coupling and directivity from 10MHz to 50GHz. A -110 dB noise floor and 33,000 data point capacity offers signal sensitivity and data resolution, allowing the convenience and flexibility of digital data in a variety of formats.



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Quality Management System

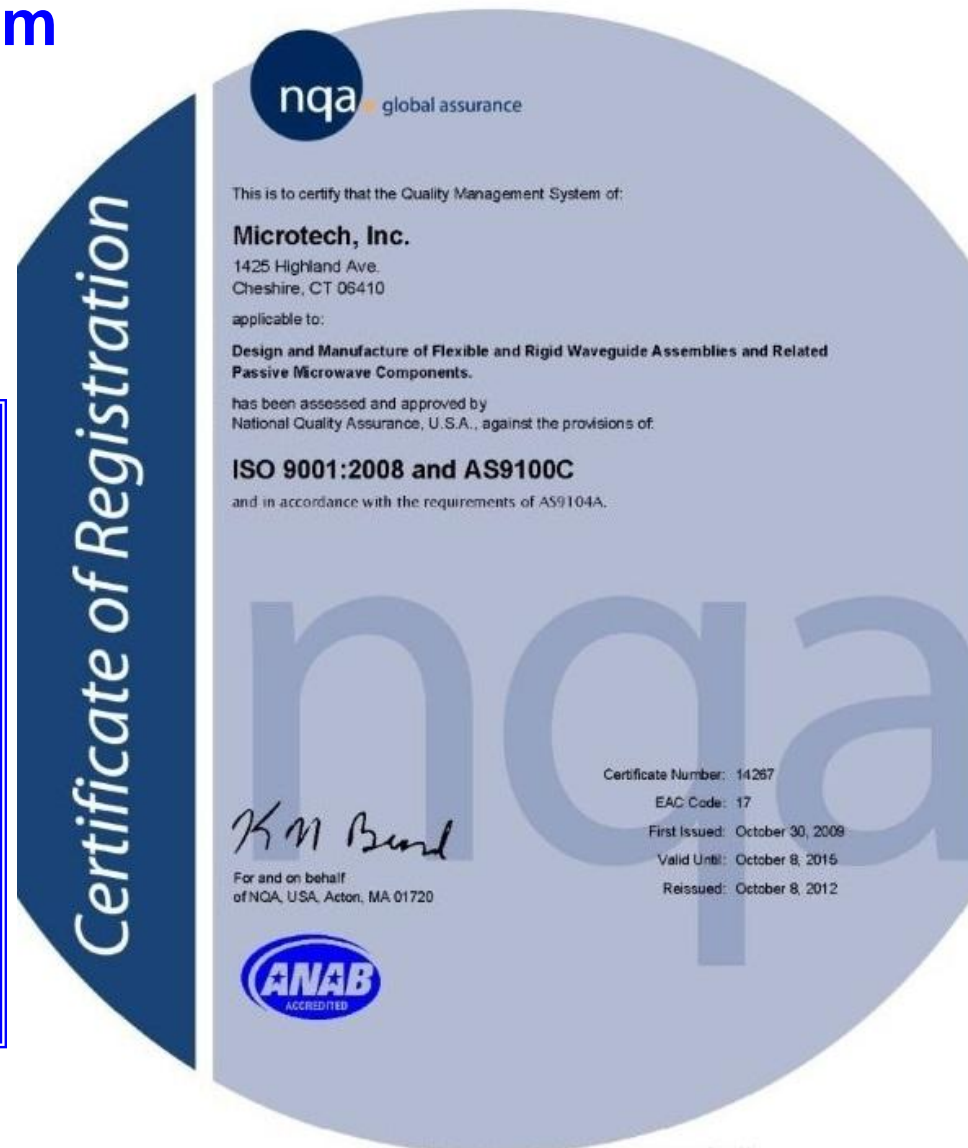
**ISO-9001:2008 and
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Quality Policy

Provide products which meet or exceed customer requirements for quality and reliability.

Delivering defect free products on time at competitive prices.

We achieve this through continually improving our processes, training, and work environment.



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Customer Awards & Recognitions

The Boeing Company
P.O. Box 3707
Seattle, WA 98124-2207

BMA-JS13-004
03 April 2013

Microtech, Inc.
425 Highland Ave
Cheshire, CT 06410

Attention: Darrin Wood

Subject: **Exceptional Delivery Performance**



The P-8 Program thanks Microtech, Inc. and everyone on its team for Microtech, Inc.'s exceptional quality and delivery performance throughout the last reporting period. Our data shows Microtech, Inc. had 100% (Gold BEST rating) for quality and on time delivery to the P-8 Program.

As you know, on-time performance is critical to the entire value stream, and 100% quality and on-time delivery helps ensure the P-8 Program's continued success. As we move to Full Rate Production with our Navy Customer, continue deliveries to our India Customer, and develop future international sales, Microtech, Inc. support is key.

Microtech, Inc.'s continued partnership and commitment to 100% quality and on-time delivery will lead to flawless execution, greater affordability, increased customer satisfaction and further growth opportunities.

Please extend our thanks to the entire Microtech, Inc. team.

Regards,

Jason Stone
Supplier Management
P-8A Poseidon Program
Phone: 206-544-7513
E-mail: jason.t.stone@boeing.com



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