

# AFT PRESENCE WORLDWIDE

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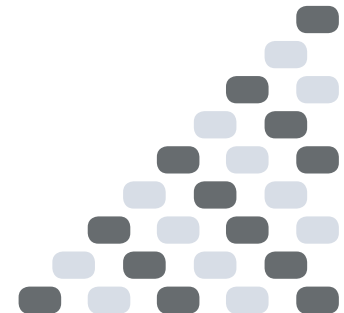
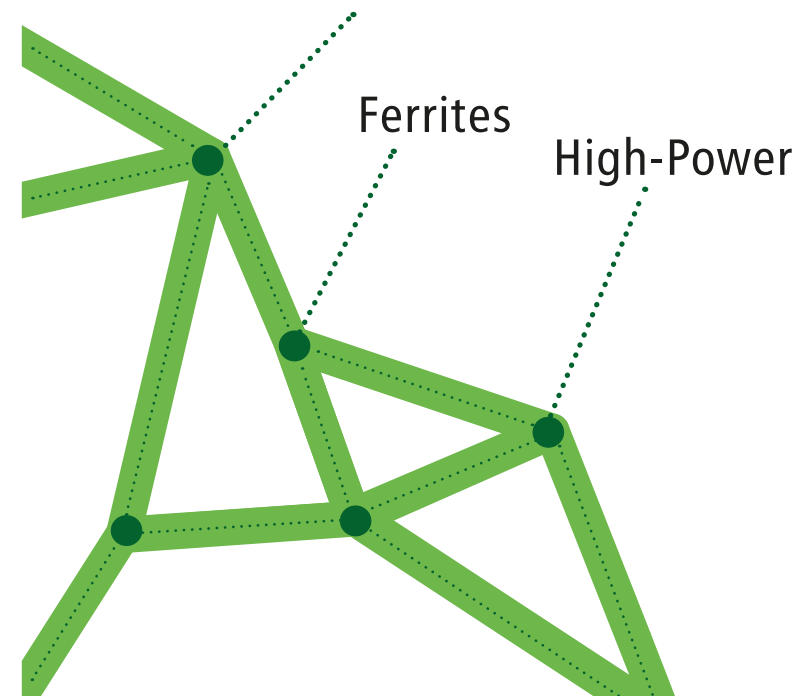


From milliwatt to Megawatt



Version 1.0

## Thin-Film Technology



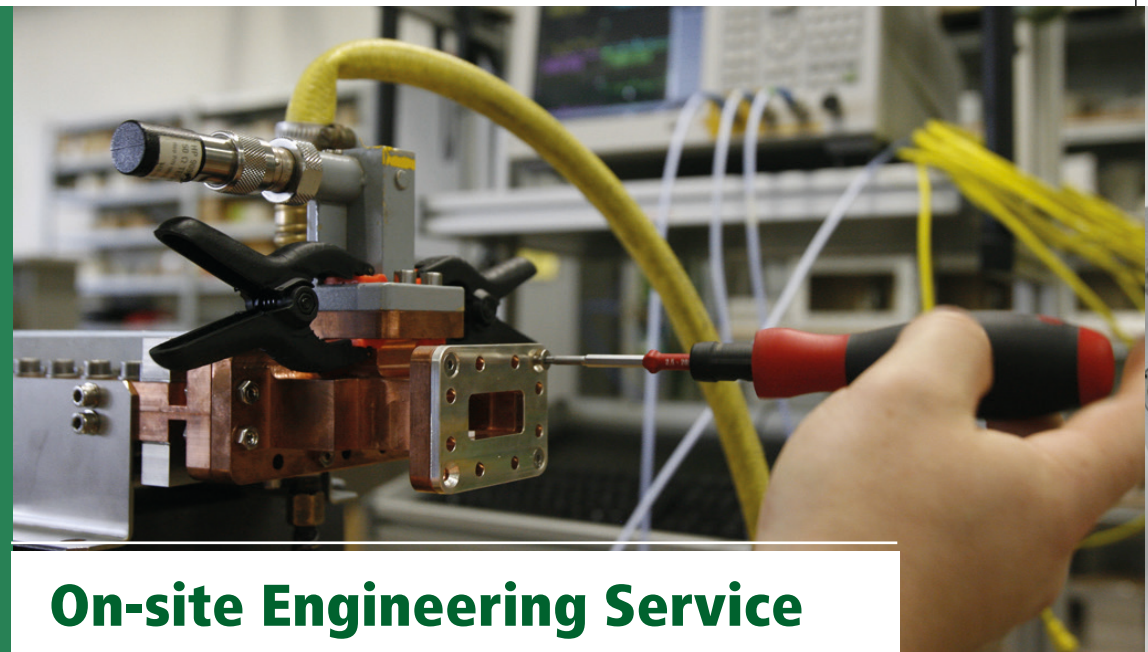


**Your partner in  
advanced microwave  
technology.**

## About

For more than 40 years AFT has been offering successful advice and execution as far as microwave technology is concerned.

Our company is based in Backnang, in the technology hub of greater Stuttgart, Germany. Our product series cover a vast range of microwave components, thin-film technology, electronic devices as well as in-house ferrite ceramic production. Thus, our performance ranges from material to components up to complete system solutions.



## On-site Engineering Service

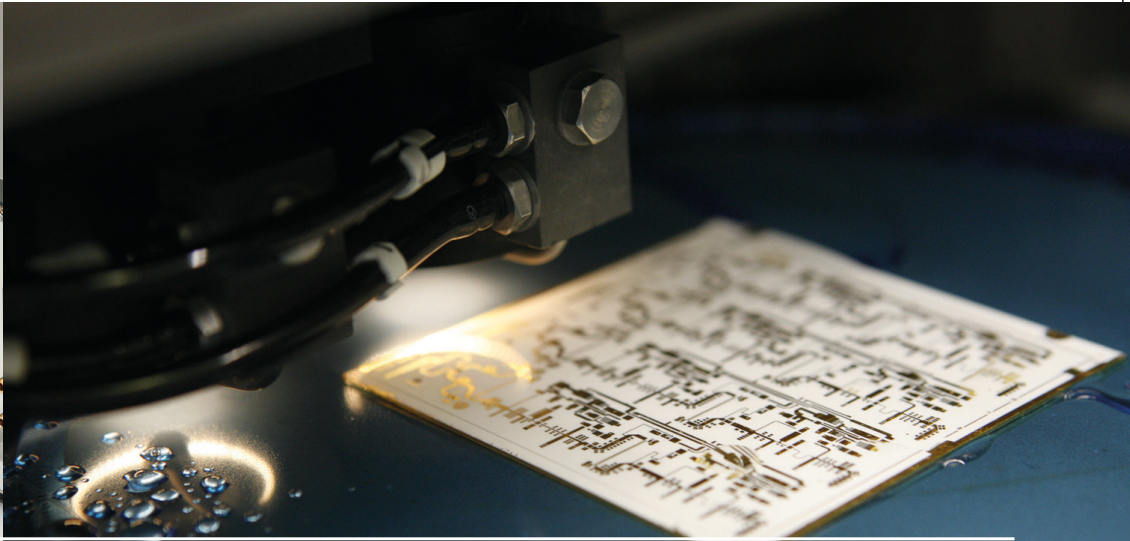
Get the optimum performance out of your devices and benefit from our long experience in high-power microwave engineering.

In addition, ensure the best protection of your high-power RF system and a stable operation.

AFT provides customized on-site service to your specific requirements.

### Scope of Supply:

- Commissioning
- TCU high-power tuning
- Upgrade campaigns including inspection, maintenance and replacement
- Consulting, training and engineering services
- Installation assistance



## High-Power Components

We have the creative technical expertise and synergy of being a manufacturer as well as user of high-quality low-loss ferrites. We have done pioneer developments for basic science research institutions and the medical industry among others, dealing with Megawatt power from VHF- to X-Band frequencies.

### Our high-power product portfolio covers:

- Circulators and isolators
- Ferrite loads
- Water loads
- Dry loads
- Fast Ferrite Tuners (FFT)
- Phase shifters
- Tunable power variators
- Directional couplers
- Waveguide components
- Passive subsystems

## Electronic Devices

**ARC1 and ARC4:** Our highly sensitive optical Arc Detectors Systems are designed to protect high-power RF components and systems from damage due to arcing by providing very fast interlocking.

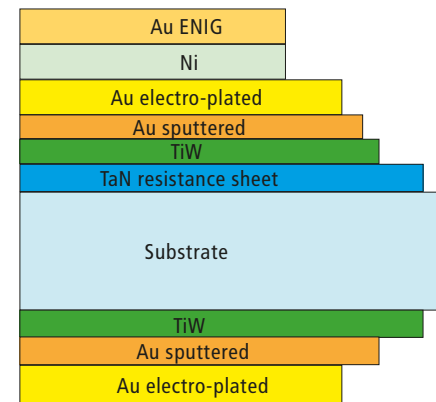
**TCU6:** Our digital Temperature Compensating Unit (TCU), optionally assisted by an RF feedback control, stabilizes the circulator bias operation point by providing a compensating coil current for the circulators electromagnet.

**AFC:** Our compact Automatic Frequency Control (AFC) modules designed for LINAC's. They feature tunability by manual mechanical phase tuning or electrical phase tuning by remote control.

## Thin-Film Technology

Our area of expertise is gold based thin-film technology on ceramics substrates for microwave applications. For your specific layout you profit from a technology offering enormous benefits for microwave applications.

### Gold technology



### Our process covers:

- Conductor lines bondable
- Conductor lines solderable ENIG
- Vias
- Resistors incl. laser trimming
- Polyimide bridges & capacitors
- Air bridges
- Laser milled internal and external contours

Take advantage of our know-how for your prototyping, small series and large scale production.



## Microwave Ferrites

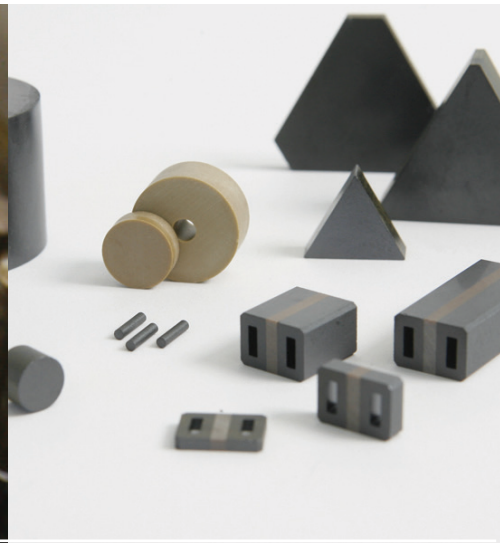
All our ferrites are dense, polycrystalline ceramics, fabricated in-house by powder processing, pressing, sintering and final machining.

We offer a wide portfolio of microwave ferrite materials, covering a broad range of operating frequencies. Our materials are specially designed for high-performance applications requiring high-power capability, low losses and/or high temperature stability among others.

- Low-loss garnets (YIG-based)
- Temperature compensated garnets (YIG-based)
- Spinels

**AFT can produce a large choice of shapes and dimensions according to our customer's needs, such as:**

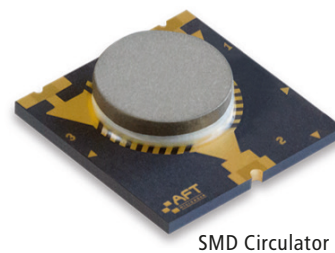
- Rectangles
- Triangles
- Disks and rods
- Toroids
- Substrates for thin-film processing



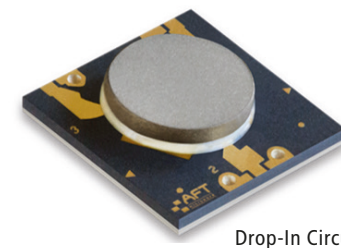
## Compact Circulators

We design and produce compact circulators and isolators ranging from about 30MHz to 40GHz. AFT circulators are characterized by low insertion loss, high isolation and high reliability. Our customized solutions are designed to exceed military and space environmental requirements.

AFT's specialty are most compact thin-film substrate based circulators and isolators in microstrip technology, realized as drop-in or SMD devices. From the in-house material to RF design, thin-film manufacturing and testing, we can guarantee highest quality and reliability of the final product.



SMD Circulator



Drop-In Circulator

Stripline and coaxial circulators complement the portfolio.