WERLATONE

WIDE BANDWIDTH, HIGH POWER RF DEVICES | SINCE 1965

About Werlatone

Founded in 1965, Werlatone, Inc. is a leading supplier of high power broadband passive components to include, RF Directional Couplers and Combiners / Dividers to customers worldwide. Our commitment to the highest quality, best performance, and on-time delivery places us among the most respected suppliers in the industry.

WE EXCEL when your specification requires a custom, high power, broadband solution. As year-to-year product sales consist of 65% custom passive components and 35% catalog items, our entire staff is dedicated to your individual specifications. Like most companies, we first address a customer's application with a similar design and then modify as necessary. Our true expertise becomes evident, however, when working with us on a unique application. Our extensive research and development program insures a comprehensive dialogue with respect to the latest high power, broadband techniques.

WE DESIGN our Directional Couplers, Combiners and Dividers to meet the most stringent operating conditions:

Our Directional Couplers, Combiners and Dividers may operate into high load VSWR conditions, for extended periods, without damage.

When specified, we design our High Power RF Combiners to tolerate input transmitter failure(s). This insures that remaining transmitter(s) may continue to operate until the system can be properly shut down for maintenance.

Our ***Mismatch Tolerant®*** RF Directional Couplers and Combiners / Dividers allow continuous operation into open and short conditions.

For Non-Coherent Combining applications (combining two or more signals with different frequency, power, and/or phase onto a single run of coax), we provide designs which ensure proven heat dissipation techniques.

Products

Werlatone designs wideband, high power devices operating between 10 kHz and 4 GHz, at power levels from 10W CW to 25 kW CW. Our product line includes:

Mismatch Tolerant® Combiners/Dividers
(0° , 90°, 180°)

Mismatch Tolerant® Directional Couplers
(Uni, Bi, and Dual)

Non-Magnetic Combiners and Couplers

Wideband Dividers and Power Taps
(For Distributed Communications Systems)

RF Transformers

Markets

WE SERVE the following amplifier and antenna markets worldwide:

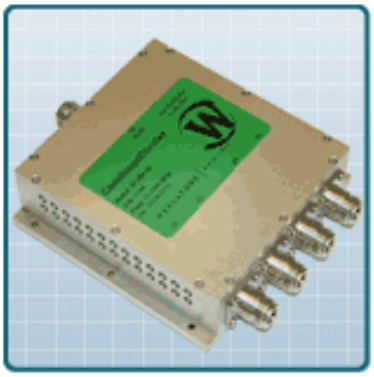
Military Communications and EW
HF, VHF, UHF, S Band
Ground Based, Shipboard, Aircraft

Commercial Communications
AM, FM, VHF, UHF, Digital UHF, Satellite Radio

Distributed Communications Systems
Tunnel, In-Building, Subway, Shipboard

Industrial
EMC, Semiconductor, Medical

Research and Development
University and Government Test Laboratories



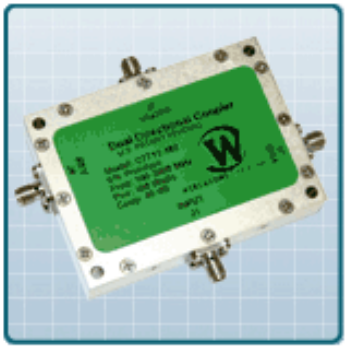
In Phase (0°) Combiners / Dividers

Werlatone ***Mismatch Tolerant***® 0 Degree High Power Broadband RF Combiners and Dividers will operate into High Load VSWR Conditions, for extended periods, without damage.

For broadband Non-Coherent Combining applications, (combining two or more signals of differing power, frequency and/or phase onto a single output), Werlatone provides Non-Coherent RF Combiner designs with proven heat dissipation techniques. When specified, we design our 0 Degree and N-Way High Power Combiners / Dividers to tolerate full input failures on adjacent ports(s). This insures that remaining transmitter(s) may continue to operate until the amplifier system can be properly shut down for maintenance.

Choose your specific connector configuration from a list of options. Additional connector configurations for our High Power 0 Degree RF Combiners / Dividers, Non-Coherent RF Combiners and N-Way Combiners are available upon request.

With extensive experience as a supplier to military platforms worldwide, Werlatone designs its High Power Broadband 0 Degree RF Combiners, Dividers, and N-Way Combiners for duty in the most stringent operating conditions.

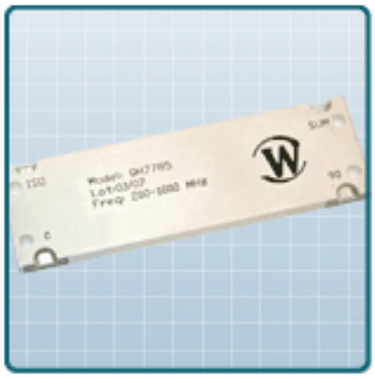


Dual, Uni, Bi Directional Couplers

Werlatone Broadband Dual, Uni, and Bi Directional RF Couplers are designed to tolerate the most stringent operating conditions associated with military and EMC testing environments. Many of our RF Directional Couplers, designated ***Mismatch Tolerant***®, will operate continuously, at rated power, into an Infinite VSWR. Once again, the ***Mismatch Tolerant***® capability is extremely valuable in military and EMC testing environments. Our extensive line of multi-octave Directional Coupler designs achieves up to 1000:1 bandwidths, while maintaining exceptional coupling flatness, directivity, VSWR, and insertion loss.

Our patented line of High Power Broadband, 10:1 Bandwidth Bi and Uni Directional RF Couplers achieves very tight coupling values (6-20 dB), at very low insertion loss. These stripline coupler designs are electrically shorter and physically smaller than traditional coupler designs. Werlatone is currently introducing a line of Multi-Octave Drop-In and Surface Mount Couplers, designed for placement within the amplifier module. Please contact us with your specific bandwidth so that we can discuss our current capabilities.

Connectorized Dual, Uni, and Bi Directional RF Couplers are available with an array of standard connector options. Please provide your connector configuration so that we can build the RF Coupler to your requirements. Additional connector options may be available and may affect the cost of the Coupler. Please contact our sales department for more information.



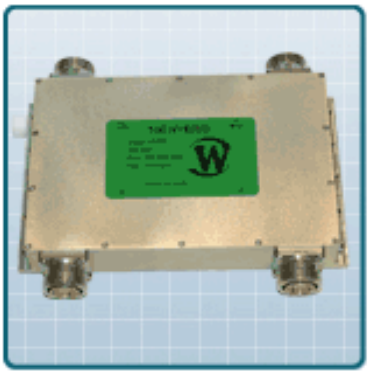
3dB 90° Hybrid Couplers

Werlatone's breakthrough technology allows us to build on our existing line of Broadband 3dB High Power 90 Degree Hybrid Couplers.

• Several of our existing High Power 3dB 90 Degree Hybrid RF Couplers are three port designs, wherein the difference port is internally terminated with a high power termination. This eliminates the need for a customer supplied external load.
• Connectorized 3dB 90 Degree Hybrid RF Couplers are available with a choice of standard connectors.

Our newly patented 3dB Hybrid Combiners and Dividers provide:

• Superior component performance starting at 3:1 Bandwidth.
• 10:1 Broadband Quadrature designs.
• Bonded structures which eliminate any air gaps between substrates.
• More sections per bandwidth for better coupling flatness.
• Thicker center boards for high power and increased repeatability.
• Electrically shorter and physically smaller RF Components.
• Connectorized, Drop-In, and Surface Mount Quadrature Combiners and Dividers available.
• Our list of 90 Degree Hybrid Combiners and Dividers continues to grow in order to meet your broadband Quadrature RF component requirements.



180° Hybrid Combiners/ Dividers

Werlatone High Power 180 Degree RF Hybrid Combiners / Dividers balance traditional technologies with disruptive microwave techniques. The outcome is a microwave component which provides an order of magnitude improvement over current capabilities.

Werlatone's standard line of High Power 180 Degree RF Hybrid Combiners / Dividers covers multiple octaves within a microwave device. Low frequency 180 Degree Hybrid Combiners / Dividers employ proprietary ferrite transmission line techniques, similar to our 0 Degree Combiners / Dividers. Insertion loss in both sum and difference ports is minimal, allowing the hybrid to handle high power over its frequency range.

Werlatone's newest line of high power, patented stripline 180° RF Hybrid Combiners / Dividers provides an incredible 5:1 bandwidth, while exhibiting exceptionally low loss and superior port-to-port isolation.

Custom requirements are always welcome. Please email us your specifications using the link below.

Even & Uneven Broadband Power Dividers & Power Splitters for Distributed Communications Systems

Applications include:

- Shipboard
- In-Building
- Tunnels
- Subways

Werlatone's Multi-Carrier Broadband Power Dividers & Power Splitters allow you to split one run of 50 Ohm cable, simultaneously carrying multiple service bands, without the requirement to first separate the bands from one another.

- Our Broadband Power Dividers & Power Splitters cover multiple carriers between 80 and 2400 MHz.
- All Broadband Power Dividers & Power Splitters simultaneously transmit and receive.
- Even and uneven Broadband Power Dividers & Power Splitters available.
- Available with IP65 rating.
- Available with N Female Connectors. (7/16 DIN on a case by case basis)