



RF power-handling, performance and reliability

HUBER+SUHNER RF-Energy products are designed for handling high power levels at lowest possible losses. Elimination of mechanical stress allows for a simple assembly process at high reliability.

Direct integration in amplifier housing

The RFEX connector has a direct interface with the PCB and is integrated in the amplifier housing. This allows reducing cost, minimizing EMC issues and allows for a compact design.

Antenna positioning

The RFEX connector is designed for direct antenna integration. Options allow mounting the amplifiers to hollow waveguides, and polymer supported waveguides, as well as direct mounting to the application. Cables are not required any more.

Compatibility with traditional components and products

All HUBER+SUHNER RF-Energy products can also be used independently from each other or in conjunction with all standard connectors and cables. For instance, in the MHz-frequency range, a coaxial cable maybe used instead of a polymer supported waveguide.

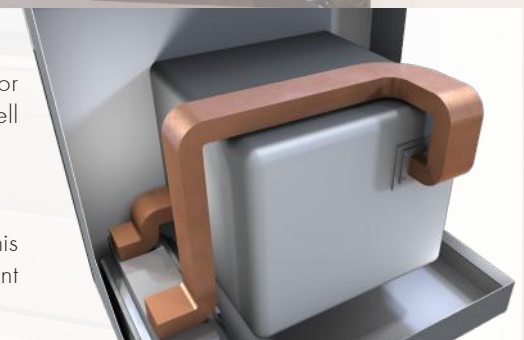


Power combining

The HUBER+SUHNER technology used for polymer supported waveguides is prepared for realizing power combiners, which helps to save PCB-space and further reduce cost, as well as losses, size and weight.

High design-flexibility

Polymer supported waveguides largely increase the design-freedom in applications. This way, energy distribution of multi-amplifier systems becomes much more efficient at significant reduced space requirements.



Connectivity Solutions for RF-Energy

RFEX connectors and polymer supported waveguides

RFEX connector

Features

- Connector dedicated for RF-Energy applications
- Supports direct integrated into power amplifier housing
- Compensates mechanical tolerances between housing and PCB
- Reduces mechanical stress between mechanical parts to a minimum
- High power capability
- Cost efficient
- Supports direct integration with hollow waveguides, and polymer supported waveguides as well as direct antenna implementation



Technical Specification

Electrical Data

Impedance	50 Ω ⁽¹⁾
Frequency	2.4-2.5 GHz
Power rating @ 25°C	500W (1.5 kW) ⁽²⁾
Insertion Loss	0.15 dB
Return Loss	25 dB

⁽¹⁾ Alternative solutions based on lower impedance available on request
⁽²⁾ Power levels > 500W only with tested PCB material

Mechanical Data

Required space for PCB foot-print	14 mm in diameter
Min. height of housing (PCB to housing)	4 mm

Environmental Data

Operational temperature	150°C ⁽¹⁾
2011/65/EU, RoHS	Compliant

⁽¹⁾ Temperature limited by PCB

Order Information

The RFEX connector is available for design-ins. The antenna will be adjusted based on the needs in the target application. PCB-footprint will be provided based on used PCB-material. For details, please contact your HUBER+SUHNER sales representative.

Polymer supported waveguides for RF-Energy applications

Features

- Compatible with RFEX connectors
- High design flexibility
- Supports direct integration of power combiners and splitters
- High power capability
- Smaller size than rectangular waveguides
- Light weight
- Cost efficient



Technical Specification

Electrical Data

Frequency	2.4 – 2.5 GHz ⁽¹⁾⁽²⁾
Power rating @ 25°C	1.5 kW ⁽³⁾
Losses	0.14 dB/m ⁽³⁾

⁽¹⁾ The waveguide in combination with RFEX connectors is intended for use in the 2.45-GHz ISM-band. For other applications, achievable bandwidth is significantly higher.
⁽²⁾ Waveguides for other frequency bands are available on request.
⁽³⁾ Values for fully dielectric loaded waveguide. Losses change depending on dielectric loading and used material.

Mechanical Data

Dimensions (cross section)	56 x 28 mm ⁽³⁾
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Environmental Data

Operational temperature	80°C (120°C) ⁽⁴⁾
2011/65/EU, RoHS	Compliant

⁽⁴⁾ Higher temperatures possible with other dielectric filler materials.

Order Information

Polymer supported waveguides are available for customer specific design-ins. Product is also available as hollow waveguide, providing the same level of flexibility, allowing for higher power levels, but have a larger cross section. For details, please contact your HUBER+SUHNER sales representative.