

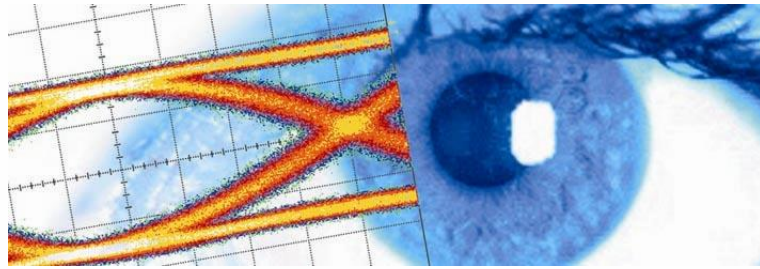


## SHF Communication Technologies AG

Wilhelm-von-Siemens-Str. 23D • 12277 Berlin • Germany

Phone +49 30 772 051-0 • Fax +49 30 753 10 78

E-Mail: [sales@shf-communication.com](mailto:sales@shf-communication.com) • Web: [www.shf-communication.com](http://www.shf-communication.com)



# Datasheet

## SHF ATT110 A

### 110 GHz Attenuator





## Description

The SHF ATT110 A is a compact, high-performance attenuator with a bandwidth exceeding 110 GHz and a very flat frequency response.

Its small footprint makes it particularly suitable for differential applications, where signals entering or leaving close-spaced connectors need to be attenuated simultaneously. Furthermore, dedicated screw holes on the back side allow secure installation on a mounting plate for stable system integration.

Fully customizable 1.0 mm connector configurations as well as between series (1.0 mm ↔ 1.85 mm) configurations are available to meet individual requirements of the customer and to avoid additional adapters in the setup.

A broad range of attenuation values are available within the same series (ATT110 A | xx dB).

## Applications

- Optical Communications
- High-Speed Pulse Experiments
- Research and Development
- Test Instrumentation
- 5G
- Automotive
- System Integration

## Configurations

- WFWM - 1.0 mm female to 1.0 mm male
- WFWF - 1.0 mm female to 1.0 mm female
- WMWM - 1.0 mm male to 1.0 mm male
- WFVM - 1.0 mm female to 1.85 mm male
- VFWM - 1.85 mm female to 1.0 mm male
- VFWF - 1.85 mm female to 1.0 mm female
- WMVM - 1.0 mm male to 1.85 mm male



## Product Code Example

- SHF ATT110 A | 20 dB | WFWM
- Brand: SHF  
 Type: 110 GHz Attenuator  
 Revision: A  
 Typ. Insertion loss: 20 dB  
 Connector Configuration:  
 1.0 mm female to 1.0 mm male

## Specifications - SHF ATT110 A<sup>1</sup>

Parameter	Unit	Symbol	Min	Typ	Max	Conditions
<b>Absolute Maximum Ratings</b>						
Maximum RF Input	W	$P_{in,max}$			1	
Operating Temperature	°C	$T_{case}$	10		50	
<b>Mechanical Characteristics</b>						
Connectors						1.0 mm or 1.85 mm
Dimensions	mm			18 42.1 9		Width Length Height
Weight	g			12.5		

<sup>1</sup> These specifications are valid for the WFWM configuration.

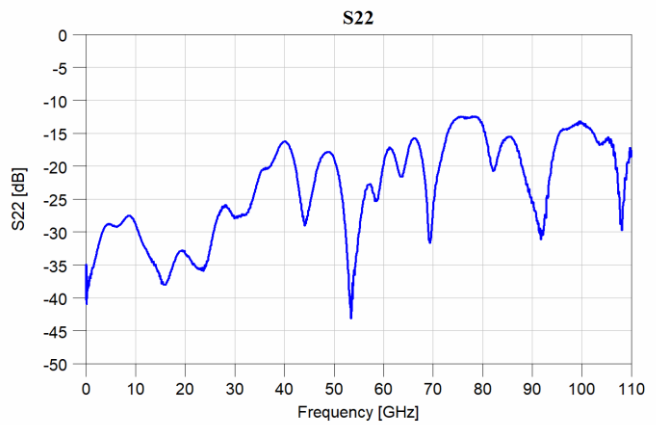
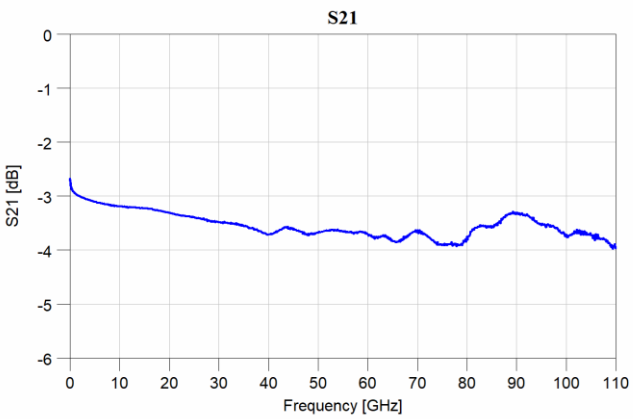
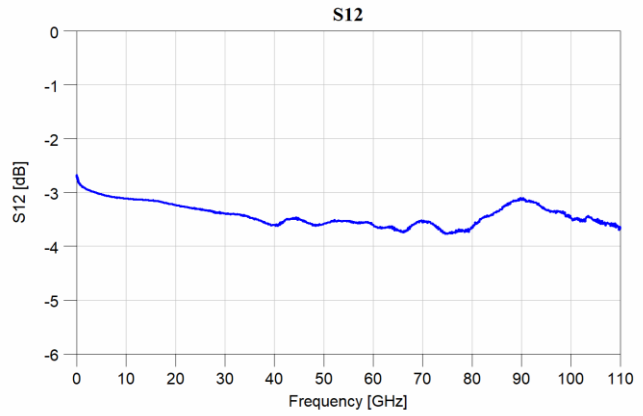
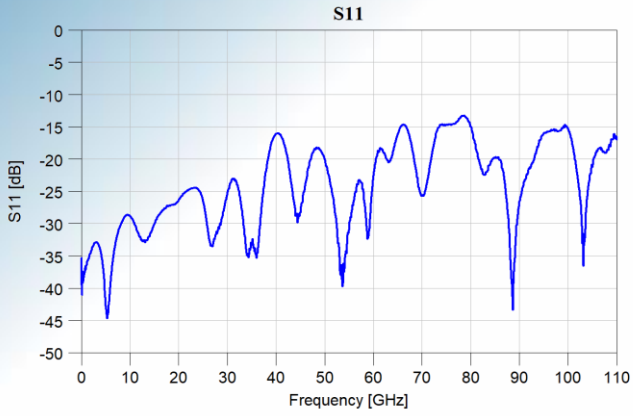


Parameter	Unit	Symbol	Min	Typ	Max	Conditions
<b>Electrical Characteristics</b> (At 25°C case temperature, unless otherwise specified)						
Frequency Range	GHz	f	DC		110	
<b>SHF ATT110 A   3 dB</b>						
Insertion Loss	dB	IL	2	3	4 4.5	f < 50 GHz 50 GHz < f < 110 GHz
Return Loss	dB	RL	20 15 12 9			f < 15 GHz 15 GHz < f < 35 GHz 35 GHz < f < 65 GHz 65 GHz < f < 110 GHz
<b>SHF ATT110 A   6 dB</b>						
Insertion Loss	dB	IL	5	6	7 7.5	f < 50 GHz 50 GHz < f < 110 GHz
Return Loss	dB	RL	20 15 12 9			f < 15 GHz 15 GHz < f < 35 GHz 35 GHz < f < 65 GHz 65 GHz < f < 110 GHz
<b>SHF ATT110 A   10 dB</b>						
Insertion Loss	dB	IL	9	10	11	f < 110 GHz
Return Loss	dB	RL	20 15 12 9			f < 15 GHz 15 GHz < f < 35 GHz 35 GHz < f < 65 GHz 65 GHz < f < 110 GHz
<b>SHF ATT110 A   20 dB</b>						
Insertion Loss	dB	IL	19	20	21	f < 110 GHz
Return Loss	dB	RL	20 15 12 9			f < 15 GHz 15 GHz < f < 35 GHz 35 GHz < f < 65 GHz 65 GHz < f < 110 GHz



# Typical S-Parameters<sup>2</sup>

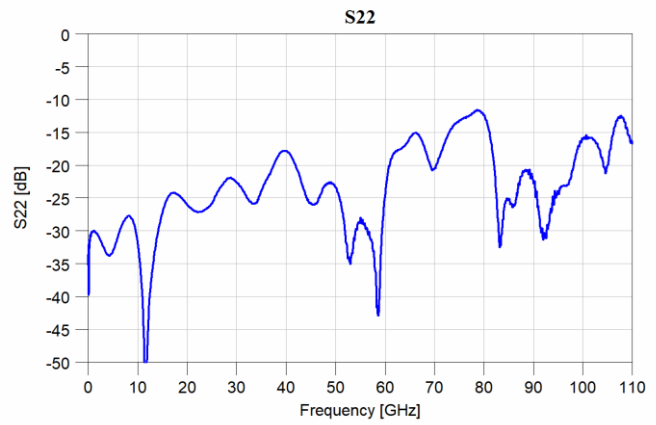
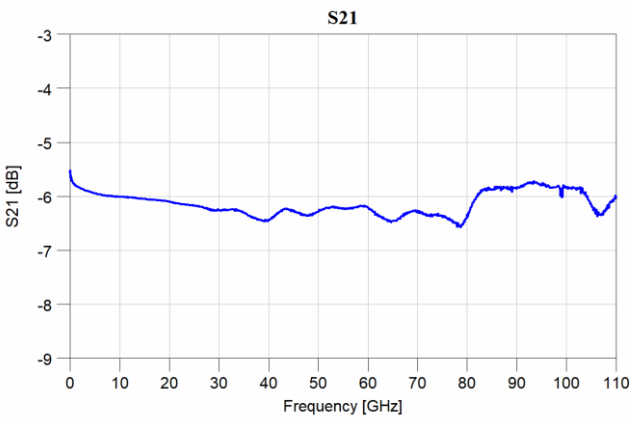
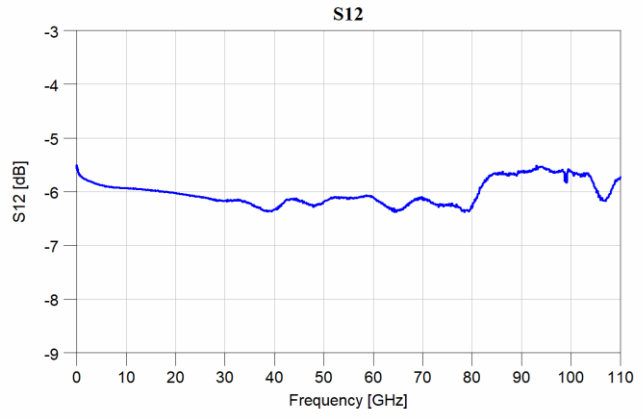
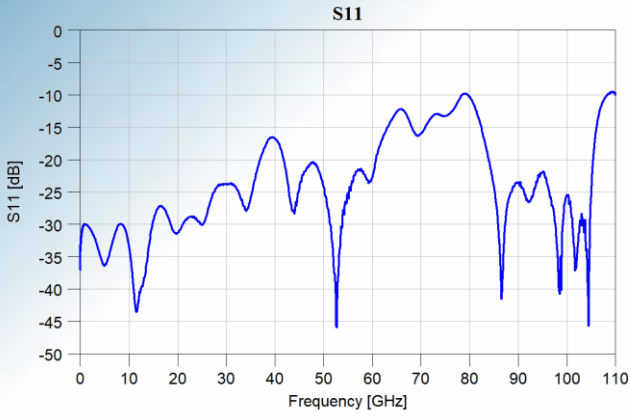
## SHF ATT110 A | 3 dB



<sup>2</sup> These typical S-Parameters are valid for the WFWM configuration: 1.0 mm female to 1.0 mm male.

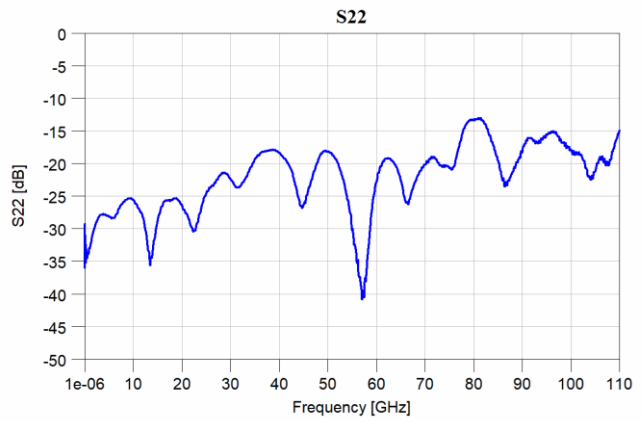
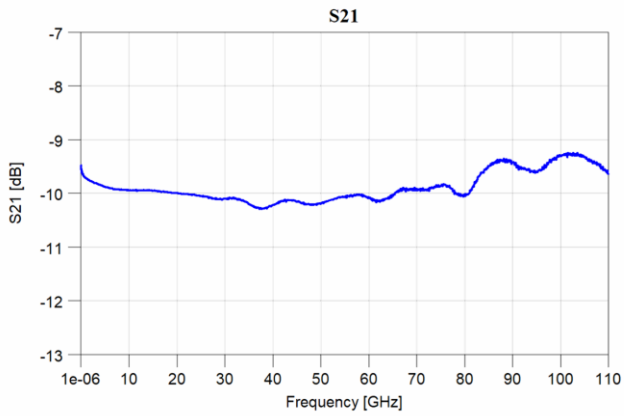
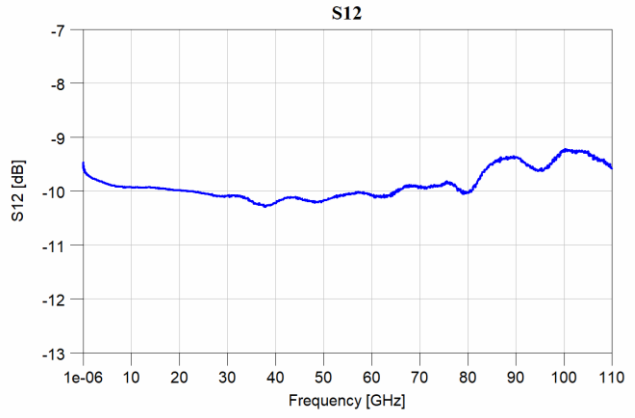
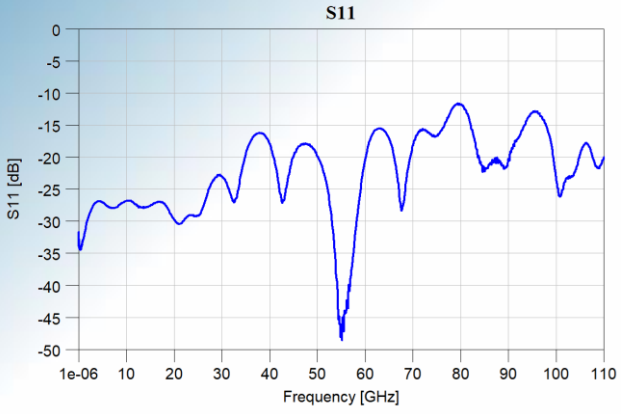


### SHF ATT110 A | 6 dB



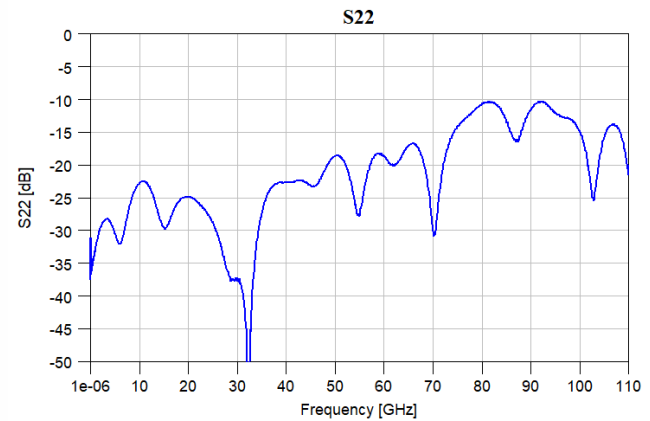
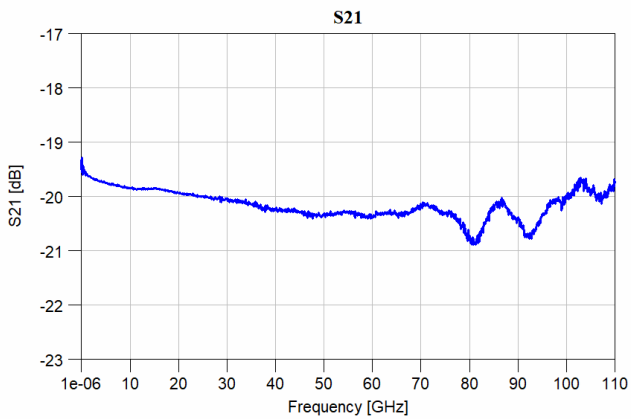
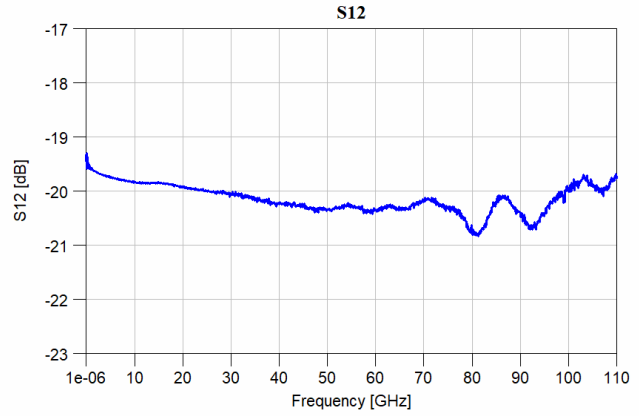
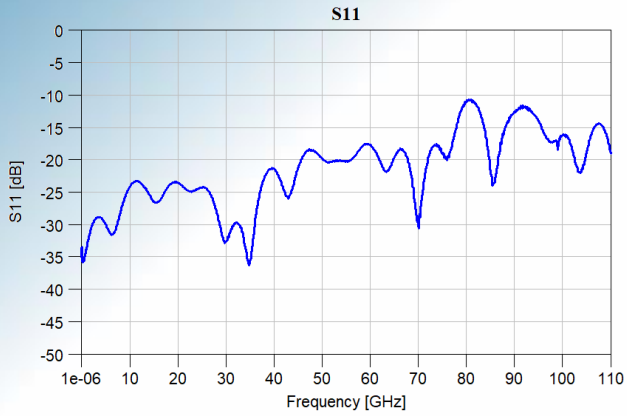


### SHF ATT110 A | 10 dB





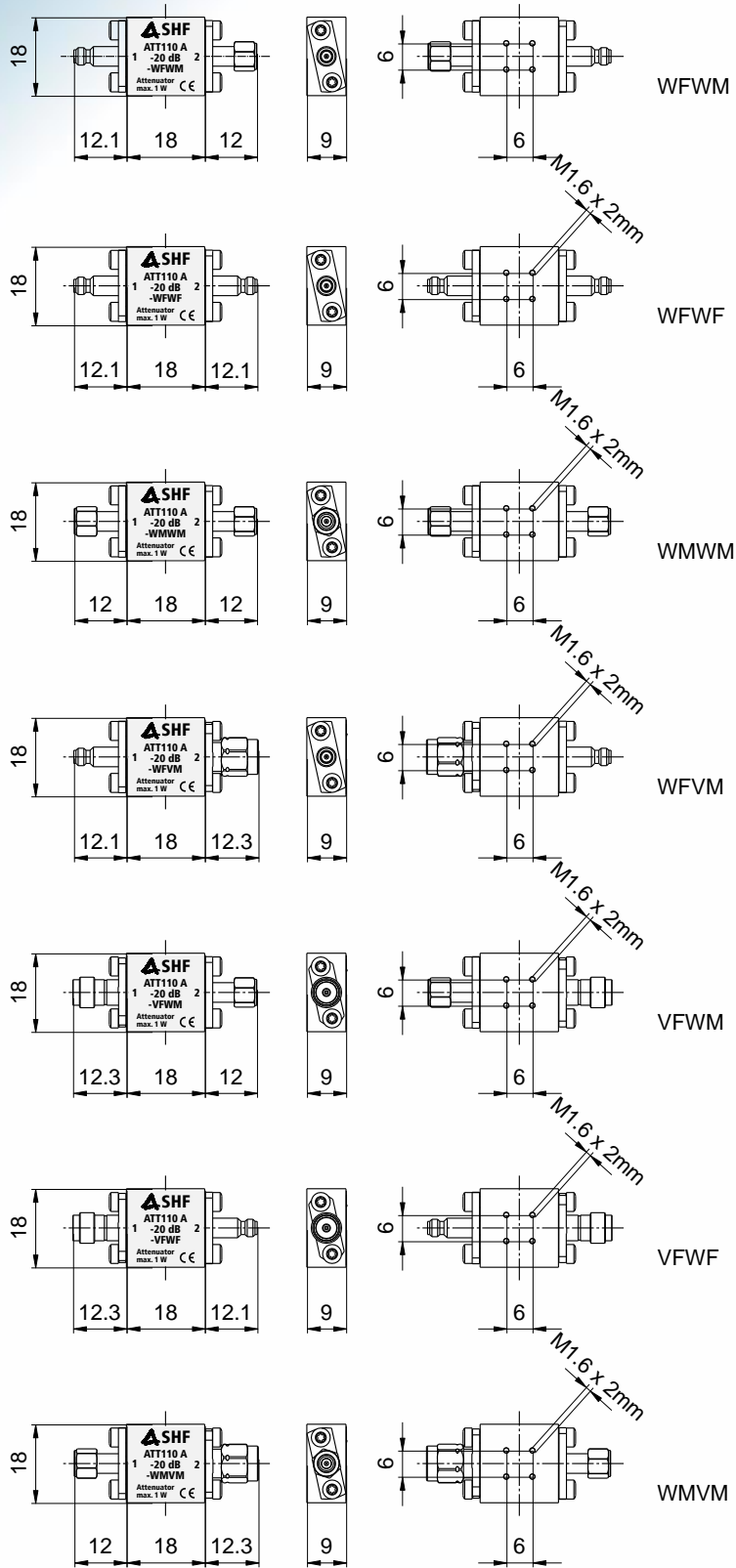
### SHF ATT110 A | 20 dB







# Mechanical Drawings



All dimensions in mm