

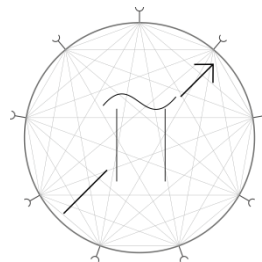
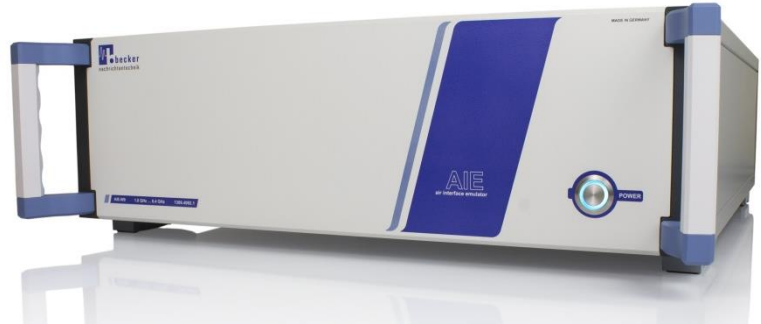
9 Port Air Interface Emulator 1800 ... 6400 MHz, 50 Ω

Features

- wideband
- optimized for Wi-Fi IEEE 802.11 a/h, ac, b,g,n,
- up to 2 W RF input level
- 95.25 dB attenuation range LAN and USB Remote Interface
- <1ms attenuator response time

Applications

- wireless network testing
- coexistence testing



At a Glance

The AIE-W9 air interface emulator system enables real emulation of RF levels with up to 9 nodes for radio communication between wireless network devices.

Omnidirectional

The structure of AIE-W9 allows the direct connection to every other signal node. Therefore 36 attenuator paths can be adjusted.

Efficient Testing

With AIE-W9, it is possible to generate reproducible fading and coexistence scenarios in a laboratory or in a test environment without influence of the live net. This saves time and cost in product development and verification. With an attenuator response time of less than 1 ms, the device is the efficient and fast solution for automatic testing systems.

Remote Control

The system can be controlled remotely via USB, and LAN interfaces with simple, SCPI-based ASCII control commands. This enables an easy integration into existing test systems. The device is also available in a touchscreen variant. Furthermore, the device is equipped with a web interface.

High Dynamic

The setting range of the digitally controlled attenuators covers 95.25 dB and is adjustable in 0.25 dB steps. This allows test scenarios with highest requirements for dynamics and accuracy. The device is optimized for operation with 2.4 and 5.8 GHz signals.

Robust

All RF-ports of the air interface emulation system allow up to 2 watts RF input signal power.

The system is based on a universal and robust modular concept.

Other variants (number of nodes, etc.) on request.

RF Specifications

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|----------------------------------|--------------------|----------|------------|------------|---------|----------------------------------|
| impedance | Z_{in} / Z_{out} | | 50 | | Ohm | |
| low frequency | f_{min} | | | 1800 | MHz | |
| high frequency | f_{max} | 6400 | | | MHz | |
| number of RF Ports | n | 9 | | | | |
| connector type | | N female | | | | |
| maximum input power | $P_{in\ max}$ | | | +33 | dBm | |
| input return loss | S_{11} | | -14 | -10 | | |
| insertion loss | S_{21} | -29 | -26 | | dB | @ 2.4 GHz |
| | S_{21} | -34 | -31 | | dB | @ 5.8 GHz |
| attenuation setting range | ΔS_{21} | 0 | | 95.25 | dB | In 0.25 dB steps |
| attenuator settling time | t_{set} | | 1 | | μ s | rise/fall time between ATT steps |
| attenuator response time | t_r | | 0.8 | 1 | ms | after <CR> received |
| attenuator accuracy ¹ | | | ± 0.10 | ± 0.60 | dB | 0 – 20 dB @ 2.4 GHz |
| | | | ± 0.10 | ± 0.70 | dB | 20 – 40 dB @ 2.4 GHz |
| | | | ± 0.20 | ± 0.90 | dB | 40 – 60 dB @ 2.4 GHz |
| | | | ± 0.20 | ± 1.20 | dB | 60 – 70 dB @ 2.4 GHz |
| | | | ± 0.60 | ± 2.75 | dB | 70 – 80 dB @ 2.4 GHz |
| | | | ± 0.30 | ± 1.20 | dB | 0 – 20 dB @ 5.8 GHz |
| | | | ± 0.50 | ± 1.20 | dB | 20 – 40 dB @ 5.8 GHz |
| | | | ± 0.60 | ± 1.75 | dB | 40 – 60 dB @ 5.8 GHz |
| | | | ± 0.70 | ± 2.25 | dB | 60 – 75 dB @ 5.8 GHz |
| | | | ± 1.10 | ± 2.75 | dB | 70 – 80 dB @ 5.8 GHz |

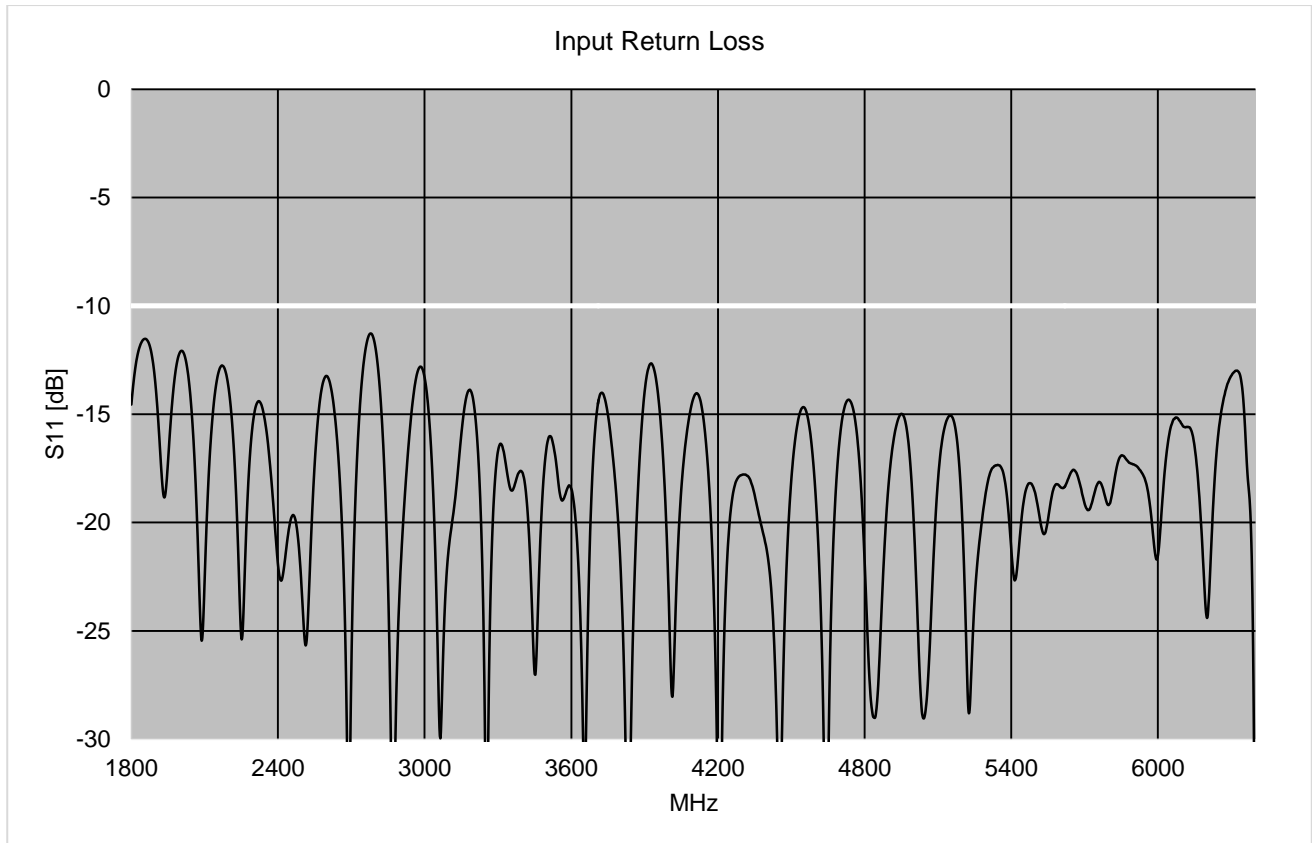
Note 1: unused ports terminated with 50 Ohm, other paths set to maximum attenuation

Common Specifications

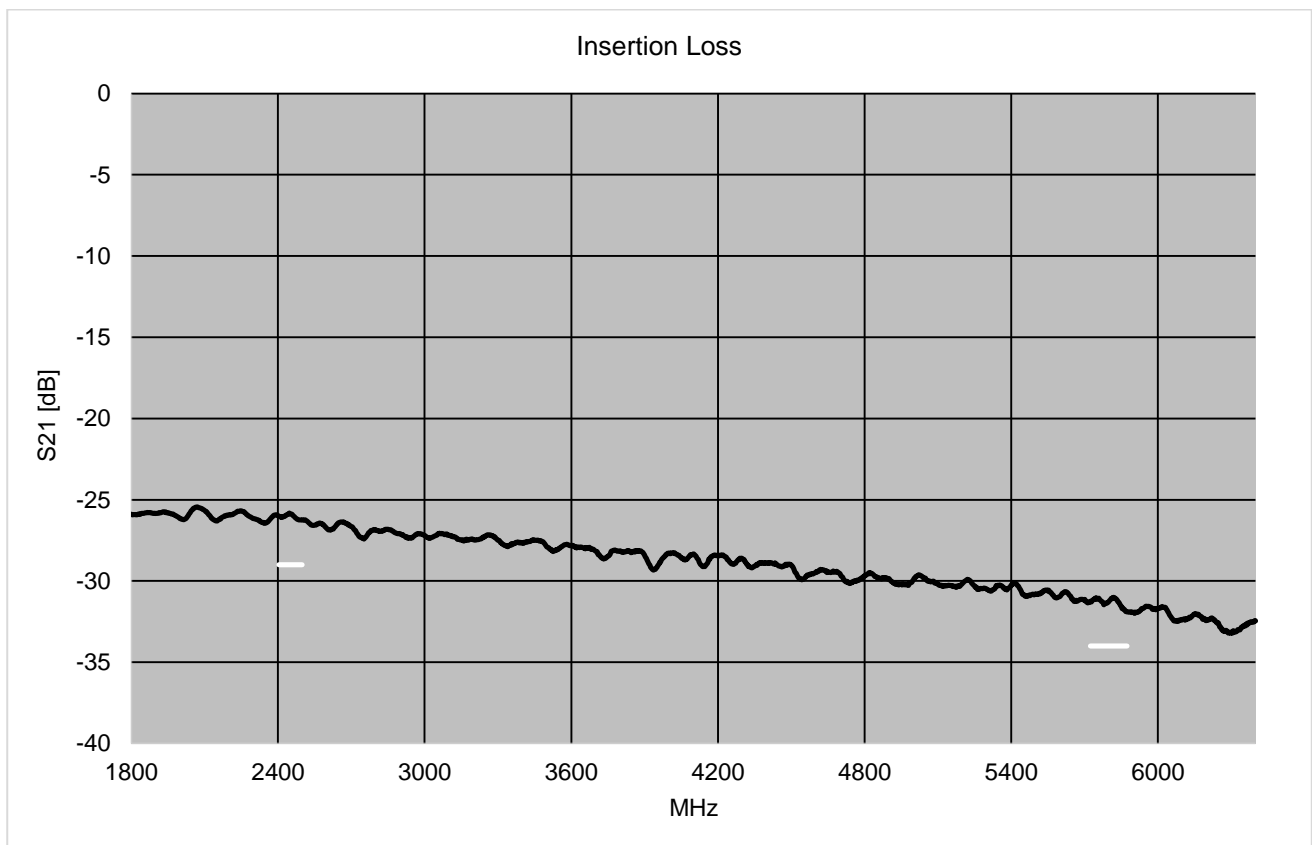
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|----------------------------------|-----------|-------------------------|------------------|------|------|----------------------------------|
| supply voltage | U_{AC} | 90 | 230 | 260 | V | 50/60 Hz |
| power consumption | P_{AC} | | 12 | | W | |
| | P_{AC} | | | 80 | VA | |
| dimensions | L x W x H | approx. 450 x 515 x 150 | | | mm | 19" 3 U, without handles |
| weight | | | 17 | | kg | |
| operating temp. range | T_o | +5 | | +40 | °C | |
| storage temp. range | T_s | -40 | | +70 | °C | |
| remote control interfaces | | | | | | |
| Ethernet / LAN | | | 10/100 Base-T | | | RJ 45 |
| USB | | | 2.0 (high speed) | | | USB connector type B |
| ordering information | P/N | | 1309.4092.1 | | | AIE-W9 |
| | P/N | | 1309.4092.2 | | | AIE-W9 with touchscreen MMI |
| | P/N | | 1309.4092.R | | | brackets for 19" rack mount |
| accessories | P/N | | 1007.0418.1 | | | 50 Ohm termination (N connector) |



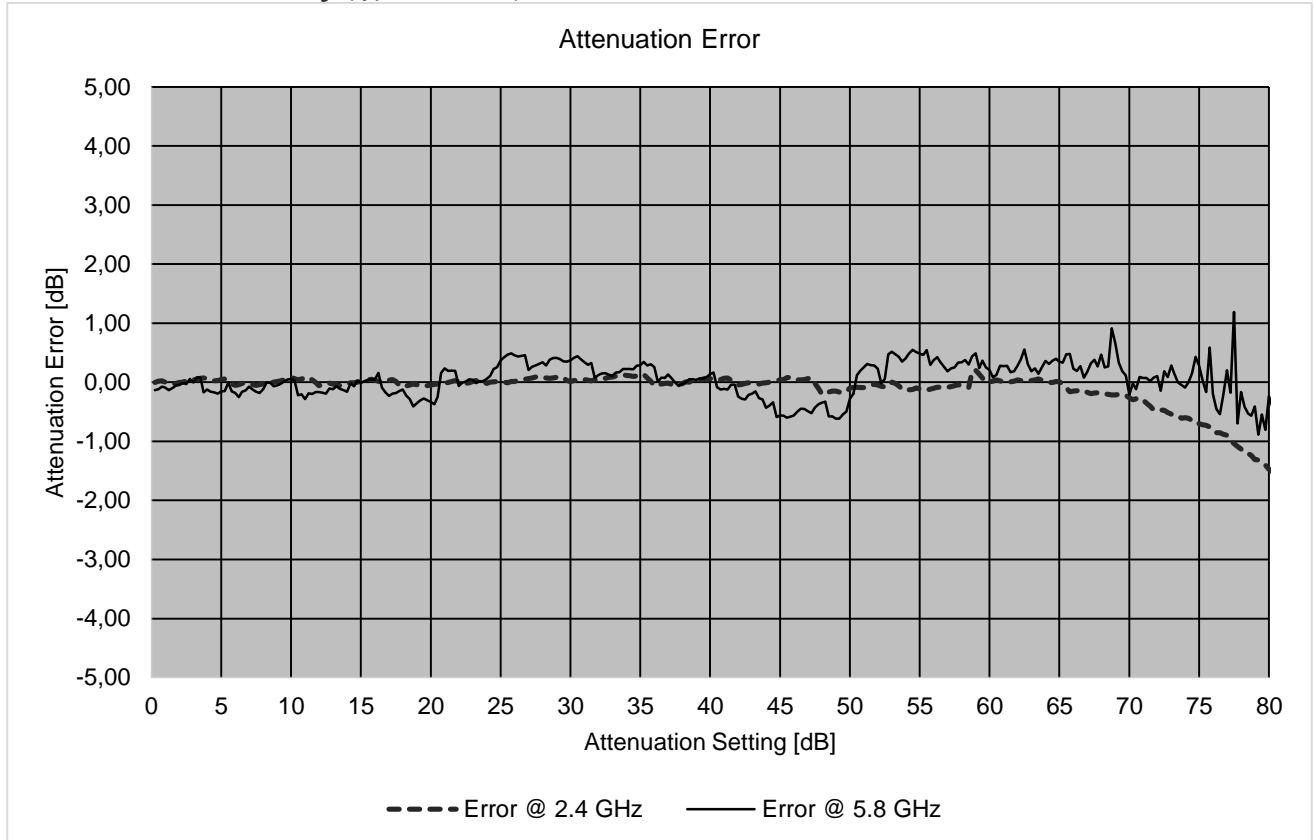
S-Parameters (typical values)



Input Return Loss @ 0 dB attenuation; other ports terminated with 50 Ohms and set to maximum attenuation



Attenuation Accuracy (typical values)



unused ports terminated with 50 Ohms and other paths set to maximum attenuation

Front View (1309.4092.1)



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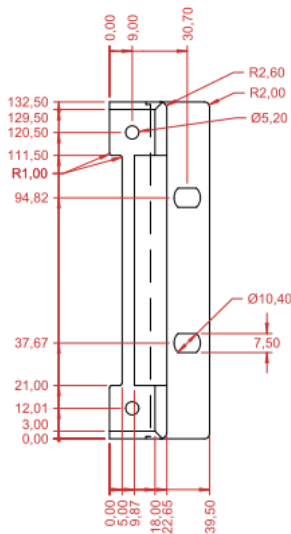


RoHS compliant in accordance
with EU Directive 2011/65/EU

Rear View (1309.4092)



Option 1309.4092.R (brackets for 19" rack mount)



Related Products

| Product | Description | P/N |
|-------------|---|-------------|
| AIE4X4 | 4 Channel Air Interface Emulation System 500 ... 3000 MHz | 1201.4002.1 |
| AIE4X4-MIMO | 4 Channel Air Interface Emulation System 250 ... 4000 MHz | 1308.4502.1 |
| QATT | 4 Channel Step Attenuator 100 kHz ... 4000 MHz | 1302.4002.1 |
| QATT-7G | 4 Channel Step Attenuator 100 kHz ... 7000 MHz | 1302.4702.1 |
| QDLL | 4 Channel Programmable Delay Line 250 ... 4000 MHz | 1303.4002.1 |

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