

3-dB Coupler (90° Hybrid) 800 – 2200 MHz

The 3-dB coupler can be used:

- as a decoupled power splitter with a ratio of 1 : 1,
- for the decoupled combining of two transmitters with frequency spacing as narrow as desired (at 3 dB loss),
- for the decoupled combining of two receivers with frequency spacing as narrow as desired,
- for the decoupled combining of two transmitter/ receiver units whose integrated duplexers are within the same frequency range,
- as a frequency-independent 90° phase shifter,
- as a combiner component.



Function:

The 3-dB coupler has four ports, two of which are decoupled from each other. For example effective power entering into port 1 is distributed into the ports 2 and 3. Port 4 is decoupled and without power if ports 2 and 3 are ideally matched. In practice an absorber of suitable power at port 4 is to be planned for according to the mismatch of ports 2 and 3.

Decoupled combining can be achieved via the diagonally opposite ports 2 and 3 respectively 1 and 4.

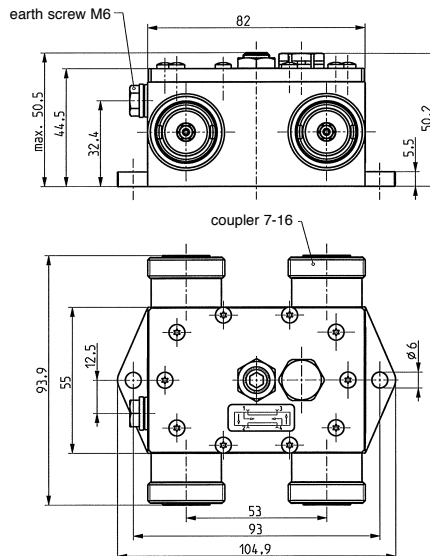
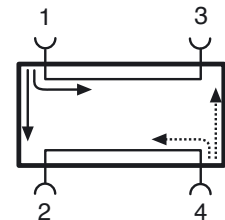
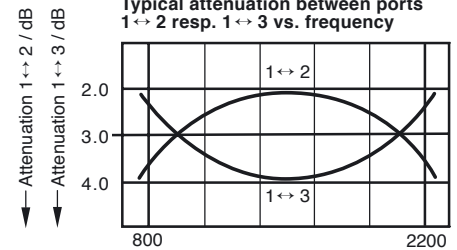


Diagram I

Typical attenuation between ports 1 ↔ 2 resp. 1 ↔ 3 vs. frequency

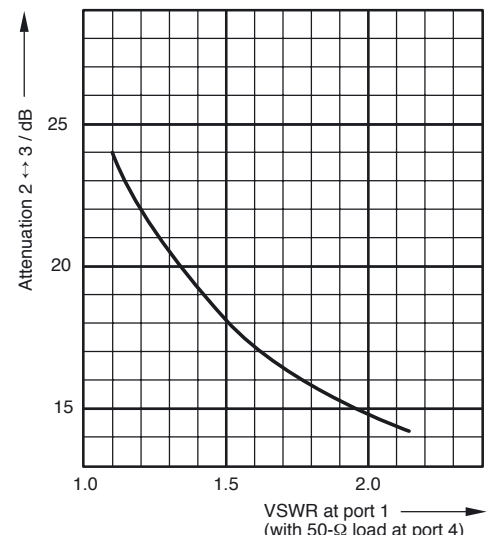


Technical Data

Type No.	793 554
Frequency range	800 – 2200 MHz
Attenuation 1 ↔ 2 / 1 ↔ 3	3 ±1.2 dB (see diagram I)
Attenuation 2 ↔ 3	See diagram II
Directivity	> 20 dB
VSWR	< 1.2
Impedance	50 Ω
Input power	< 300 W total power at <i>two</i> inputs, with max. 200 W at <i>one</i> input
Intermodulation products	< -160 dBc (3 rd order; with 2 x 20 W)
Temperatur range	-30 ... +70 °C
Connectors	7-16 female
Application	Indoor or outdoor (IP66)
Mounting	With 2 screws (max. 5.5 mm diameter)
Weight	1.3 kg
Packing size	160 mm x 95 mm x 65 mm
Dimensions (w x h x d)	104.9 x 50.2 x 93.9 mm (including connectors)

Diagram II

Typical attenuation 2 ↔ 3 vs. VSWR at port 1



Note: VSWR and attenuation values are measured when the remaining ports are terminated with 50-Ω loads.