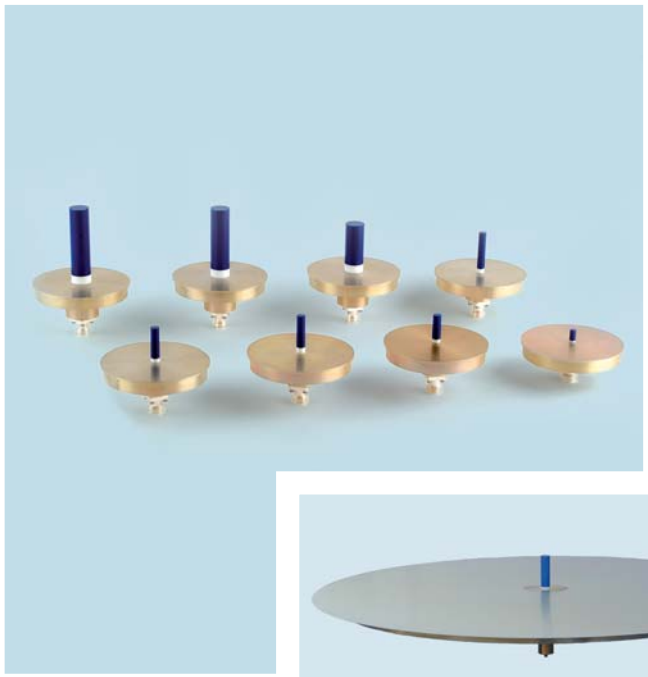
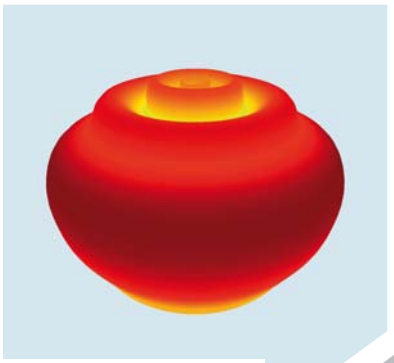
# Monopoles





Typical 3D radiation pattern



## REFERENCE ANTENNAS

### Main use:

- **Gain reference**
- **Particularly suited for automotive test ranges**

### Delivered documents:

- **Typical performance data (TYMEDA™)**
- **Measured return loss data**

### Surface treatment:

- **Alodine 1200 according to MIL-C 5541E class 3**
- **Blue paint**

### Included equipment:

- **Ground plane GP 100 or GP 400**

### Optional equipment:

- **Ground plane GP 40 or GP 60**

### Related services:

- **Calibration and maintenance**
- **Customization**

### ❶ TECHNICAL PERFORMANCE

- Low loss and high efficiency
- Azimuth pattern symmetry

### ❷ DESIGN

- Antennas mounted on a circular ground plane, fitted with a standard SATIMO flange
- The circular ground plane is made of a lightweight aluminum foam composite for high structural strength, low weight and easy handling

### ❸ REPEATABILITY

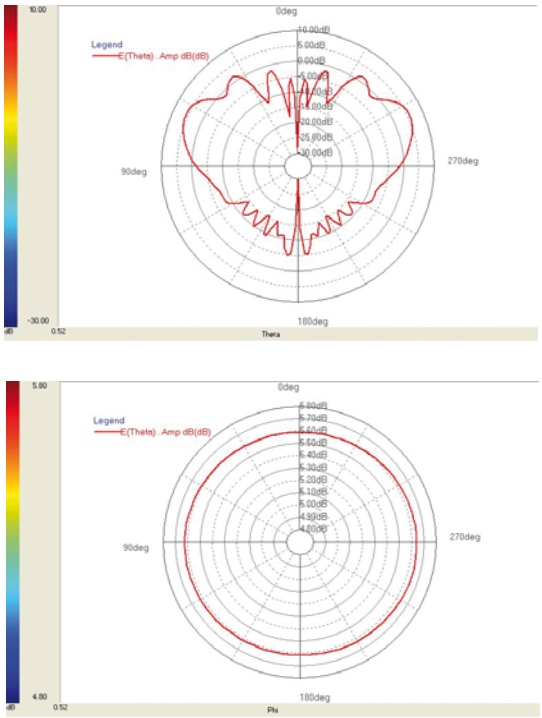
- Stiff and robust mechanical design
- Precision machined
- High reliability connectors

## Electrical characteristics

| Part number | SM |
|---|---|
| Type of antenna | Monopole |
| Available frequencies | 76 MHz – 18 GHz |
| Gain variation over azimuth | <± 0.1 dB |
| VSWR(1) | 1.92:1 (RL < -10dB) |
| Return loss(1) | < -20 dB |
| Impedance | 50 Ohms |
| Efficiency(1) | 92 % (Typ) |
| Frequency BW (Ret. Loss <15 dB) | 10 % (Typ) |

(1) at the labeled center frequency

**SM Typical elevation and azimuth radiation pattern**




"A" = Antenna diameter
"B" = Antenna height
"C" = Connector length
"D" = Interface diameter

## Mechanical characteristics

| Part number | Frequency range | A ± 0.05 mm | B ± 0.05 mm | C ± 0.1 mm | D ± 0.02 mm | Connector type | Recommended ground plane |
|---|---|---|---|---|---|---|---|
| SM 80 | 76 – 83 MHz | 50 | 855 | 40 | 100 | N Female(1) | GP 400(3) |
| SM 85 | 82 – 90 MHz | 50 | 804 | 40 | 100 | N Female(1) | GP 400(3) |
| SM 90 | 87 – 98 MHz | 50 | 760 | 40 | 100 | N Female(1) | GP 400(3) |
| SM 100 | 97 – 108 MHz | 50 | 684 | 40 | 100 | N Female(1) | GP 400(3) |
| SM 180 | 170 – 198 MHz | 30 | 380 | 40 | 100 | N Female(1) | GP 400(3) |
| SM 210 | 198 – 230 MHz | 30 | 325 | 40 | 100 | N Female(1) | GP 400(3) |
| SM 315 | 295 – 340 MHz | 30 | 217 | 40 | 100 | N Female(1) | GP 400(3) |
| SM 433 | 408 – 463 MHz | 20 | 157 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 470 | 440 – 500 MHz | 20 | 145 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 540 | 500 – 582 MHz | 20 | 126 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 630 | 582 – 680 MHz | 20 | 108 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 740 | 680 – 800 MHz | 20 | 92 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 850 | 800 – 900 MHz | 20 | 80 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 920 | 850 – 1000 MHz | 20 | 74 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 1220 | 1150 – 1300 MHz | 20 | 56 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 1500 | 1400 – 1600 MHz | 8 | 45 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 1800 | 1700 – 1900 MHz | 8 | 38 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 2000 | 1850 – 2150 MHz | 8 | 34 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 2300 | 2100 – 2500 MHz | 8 | 29 | 40 | 100 | N Female(1) | GP 100(4) |
| SM 3000 | 3000 – 9000 MHz | 12 | 20 | 30 | 100 | PC 3.5 Female(2) | GP 40(5) |
| SM 5800 | 5700 – 5900 MHz | 6 | 10 | 40 | 100 | N Female(1) | GP 40(5) |
| SM 6000 | 6000 – 18000 MHz | 6 | 10 | 30 | 100 | PC 3.5 Female(2) | GP 40(5) |

(1) SPINNER ref # BN058739 and BN133670
(2) Huber+Suhner type 23 PC35-50-0-51/199UE
(3) 4 m diameter
(4) 1 m diameter
(5) 0.4 m diameter