REFERENCE ANTENNAS

Monocones

SOLUTION FOR

- **Wideband gain reference**
- **Particularly suitable for automotive test ranges**

MAIN FEATURES

Technical performance

- Low loss and high efficiency
- Azimuth pattern symmetry
- Wide bandwidth

Design

- Precision circular flange to mate with MVG ground planes
- Axially symmetrical design

Surface treatment

- Surtec 650 according to MIL-C 5541E class 3
- Polyurethane paint

Repeatability

- Stiff and robust mechanical design
- Minimum use of dielectric material
- Precision machined
- High-reliability connector

Delivered documents

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

PRODUCT CONFIGURATION

Equipment

□ High precision circular ground plane

Related services

□ Calibration and maintenance
□ Customization

■ Included □ Optional

Electrical characteristics

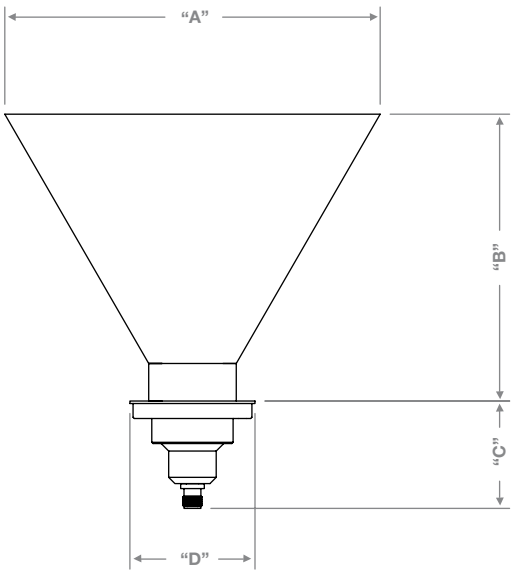
Part number	SMC70	SMC220	SMC700	SMC2200	SMC6000
Type of antenna	Monocone	Monocone	Monocone	Monocone	Monocone
Frequency range	70 – 220 MHz	220 – 700 MHz	700 – 2200 MHz	2200 – 6000 MHz	6000 – 18000 MHz
Gain variation over azimuth	<± 0.1 dB	<± 0.1 dB	<± 0.1 dB	<± 0.1 dB	<± 0.1 dB
Efficiency	> 80%	> 80%	> 80%	> 80%	> 80%
VSWR	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9
Return loss	< -10 dB	< -10 dB	< -10 dB	< -10 dB	< -10 dB
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms

Mechanical characteristics

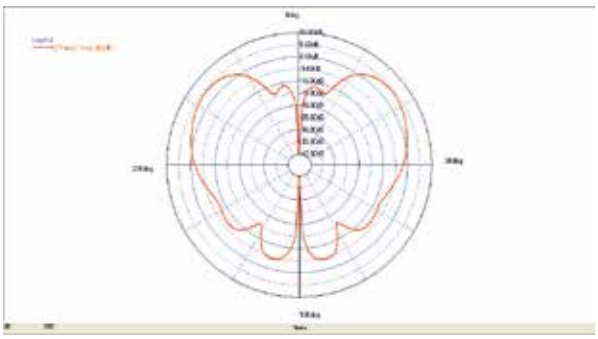
Part number	Frequency range	Dimensions [mm] A	B	C	D	Weight (approx.) [Kg]	RF connector	Recommended ground plane
SMC70	70 – 220 MHz	795	638	106	100	9	N-type Female(1)	GP400
SMC220	220 – 700 MHz	300	229	86	100	2.5	N-type Female(1)	GP400 [220 – 400 MHz] GP100 [400 – 700 MHz]
SMC700	700 – 2200 MHz	79.5	64	34	100	0.3	N-type Female(1)	GP100
SMC2200	2200 – 6000 MHz	30	23	34	100	0.25	N-type Female(1)	GP100
SMC6000	6000 – 18000 MHz	6	10	30	100	0.25	3.5mm Female(2)	GP40, GP50, GP60, GP100

(1) Southwest 312-04SF
(2) Huber+Suhner type 23 PC35-50-0-51/199UE

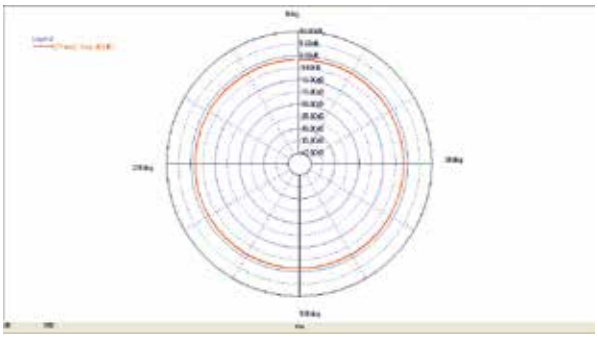
Monocones mechanical drawing



SMC700 typical elevation pattern at 700 MHz



SMC700 typical azimuth pattern at 700 MHz



Ground planes

Main Features

- High surface flatness
- Well-defined electrical continuity between coupled parts
- Precise mechanical alignments
- Easy mounting procedure

Equipment

GP100

- Lightweight aluminum sandwich panel
- Tripod with adjustable height (1.5 m – 2.1 m wrt ground)

GP400

- Lightweight aluminum sandwich panel
- Stowable/deployable for fast installation and compact storage
- Integrated wheeled support structure

Mechanical characteristics

Part number	GP40	GP50	GP60	GP100	GP400
Weight (approx)	100 g	200 g	200 g	2.5 Kg	220 Kg
Diameter	40 cm	50 cm	60 cm	1 m	4 m
Material	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Treatment	Surtec 650(1)	Surtec 650(1)	Surtec 650(1)	Surtec 650(1)	Surtec 650(1)

(1) According to MIL-C 5541E class 3

GP100

GP100 on tripod

GP400 deployed and stowed positions

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The Microwave Vision Group offers cutting-edge technologies for the visualization of electromagnetic waves. Enhancing the speed and accuracy of wireless connectivity testing, as well as the performance and reliability of anechoic and EMC technologies, our systems are integral to meeting the testing challenges of a fully connected world.

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