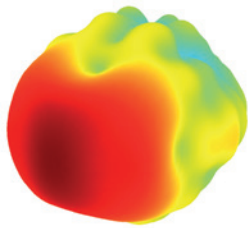


Dual-Ridge Horns

Typical 3D radiation pattern



SOLUTION FOR

- Gain reference
- Far-field test ranges
- Reflector feeds for high gain applications

Main features

Technical performance

- Stable gain with frequency
- Low return loss / VSWR
- Wide bandwidth

Design

- Unique design preventing the excitation of unwanted higher order modes in the aperture
- Well-defined smooth radiation pattern throughout the operational bandwidth
- Lightweight for easy handling

Surface treatment

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

Repeatability

- Stiff and robust mechanical design
- Standard MVG circular interface for precision centering
- Precision pin for accurate polarization alignment
- Precision machined
- High reliability coaxial connector

Delivered documents

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

Product configuration

Equipment

- Mounting flange
- Integrated coaxial transition with high precision connector
- Protective radome for outdoor installation

Related services

- Calibration and maintenance
- Customization

■ Included □ Optional



The MVG dual-ridge horns have been selected as high reliability reference antennas in international measurement facility comparison campaigns*.

* L.J. Foged, B. Bencivenga, L. Scialacqua, S. Pivnenko, O. Breinbjerg, M. Sierra-Castañer, P.C. Almena, E. Seguenot, C. Sabatier, M. Bottcher, E. Arnaud, T. Monediere, H. Garcia, D. Allenic, G. Hampton, A. Daya, "Facility comparison and evaluation using dual ridge horns", EuCAP 2009, Berlin

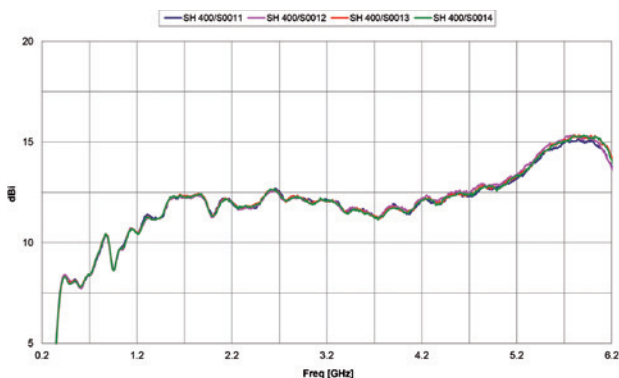
Electrical characteristics

Part number	SH68	SH100	SH200	SH400	SH600	/.../
Type of antenna	Dual-ridge horn	Dual-ridge horn	Dual-ridge horn	Dual-ridge horn	Dual-ridge horn	
Frequency range	68 – 1020 MHz	0.1 – 1.5 GHz	0.2 – 3 GHz	0.4 – 6.0 GHz	0.6 – 9.0 GHz	
Gain	5 – 15 dBi	5 – 15 dBi	6 – 15 dBi	6 – 15 dBi	6 – 15 dBi	
VSWR	< 2.5	< 2.5	< 1.9	< 1.9	< 1.9	
Return loss	< -7.5 dB	< -7.5 dB	< -10 dB	< -10 dB	< -10 dB	
Polarization	Single linear	Single linear	Single linear	Single linear	Single linear	
Cross-polar discrimination	> 45 dB	> 45 dB	> 45 dB	> 45 dB	> 45 dB	
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	

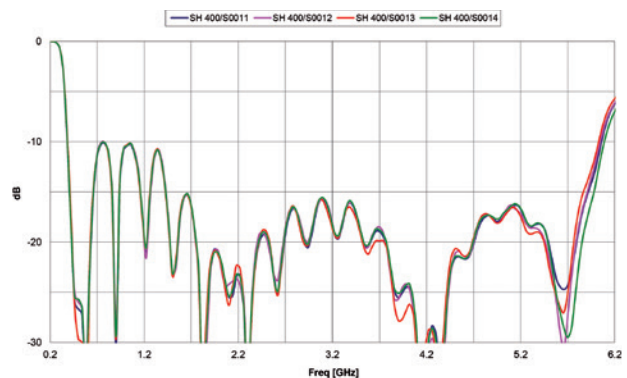
/.../	SH800	SH1000	SH1200	SH2000	SH4000
Type of antenna	Dual-ridge horn	Dual-ridge horn	Dual-ridge horn	Dual-ridge horn	Dual-ridge horn
Frequency range	0.8 – 12 GHz	1 – 18 GHz	1.2 – 18 GHz	2.0 – 32 GHz	4.0 – 40 GHz
Gain	6 – 15 dBi	5.5 – 17 dBi	6 – 15 dBi	3 – 17 dBi	3 – 14 dBi
VSWR	< 1.9	< 2.2 [1 – 2.8 GHz] < 1.9 [2.8 – 18 GHz]	< 1.9	< 2.3 [2 – 6 GHz] < 1.9 [6 – 31 GHz] < 2.3 [31 – 32 GHz]	< 2.3 [4 – 10 GHz] < 1.9 [10 – 37 GHz] < 2.3 [37 – 40 GHz]
Return loss	< -10 dB	< -8.5 [1 – 2.8 GHz] < -10 [2.8 – 18 GHz]	< -10 dB	< -8 dB [2 – 6 GHz] < -10 dB [6 – 31 GHz] < -8 dB [31 – 32 GHz]	< -8 dB [4 – 10 GHz] < -10 dB [10 – 37 GHz] < -8 dB [37 – 40 GHz]
Polarization	Single linear	Single linear	Single linear	Single linear	Single linear
Cross-polar discrimination	> 45 dB	> 45 dB	> 45 dB	> 45 dB	> 45 dB
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms

Performance repeatability

SH400 measured boresight realized gain



SH400 measured return loss



Mechanical characteristics

Part number	SH68	SH100	SH200	SH400	SH600	/.../
Dimensions (H x W x L) [mm]	2982.8 x 1615.6 x 2505	2100 x 1170 x 1925	1068 x 585 x 870	540 x 292.3 x 435	355.9 x 198.7 x 294.6	
Weight (approx.) [Kg]	180	85	25	4.1	1.8	
Connector	N-type Female ⁽¹⁾	N-type Female ⁽¹⁾	N-type Female ⁽¹⁾	N-type Female ⁽¹⁾	PC 3.5 Female ⁽²⁾ (N-type ⁽³⁾ optional)	
Material	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum	
Treatment	Alodine 1200 ⁽⁵⁾	Alodine 1200 ⁽⁵⁾	Alodine 1200 ⁽⁵⁾	Alodine 1200 ⁽⁵⁾	Alodine 1200 ⁽⁵⁾	
Interface	Circular Ø 700 mm	Circular Ø 500 mm	Circular Ø 222 mm	Circular Ø 110 mm	Circular Ø 110 mm	

/.../	SH800	SH1000	SH1200	SH2000	SH4000
Dimensions (H x W x L) [mm]	270 x 149.1 x 225	243 x 134 x 262	176.6 x 100.3 x 149.3	105 x 61 x 104.3	51.6 x 34 x 104.3
Weight (approx.) [Kg]	1.2	1.8	0.5	0.3	0.2
Connector	PC 3.5 Female ⁽²⁾	SMA Female ^(*)	PC 3.5 Female ⁽²⁾	PC 3.5 Female ⁽²⁾	K Female ⁽⁴⁾
Material	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Treatment	Alodine 1200 ⁽⁵⁾	Surtec 650	Alodine 1200 ⁽⁵⁾	Alodine 1200 ⁽⁵⁾	Alodine 1200 ⁽⁵⁾
Interface	Circular Ø 110 mm	Circular Ø 110 mm	Circular Ø 60 mm	Circular Ø 60 mm	Circular Ø 60 mm

(1) SPINNER ref. # BN058739 and BN133670

(2) Huber & Suhner type 23 PC35-50-0-51/199 UE

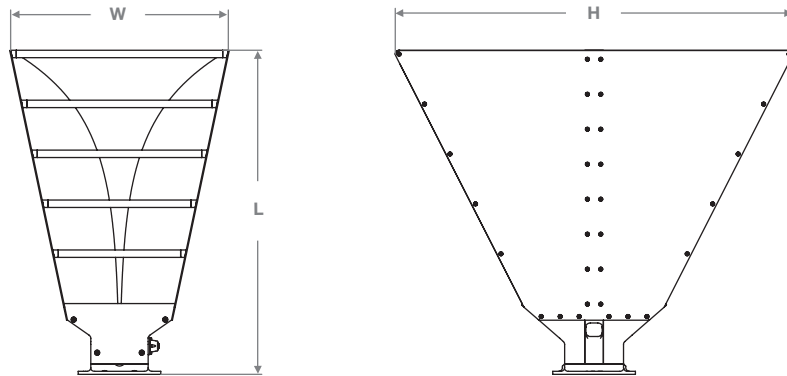
(3) Southwest 312-14 SF

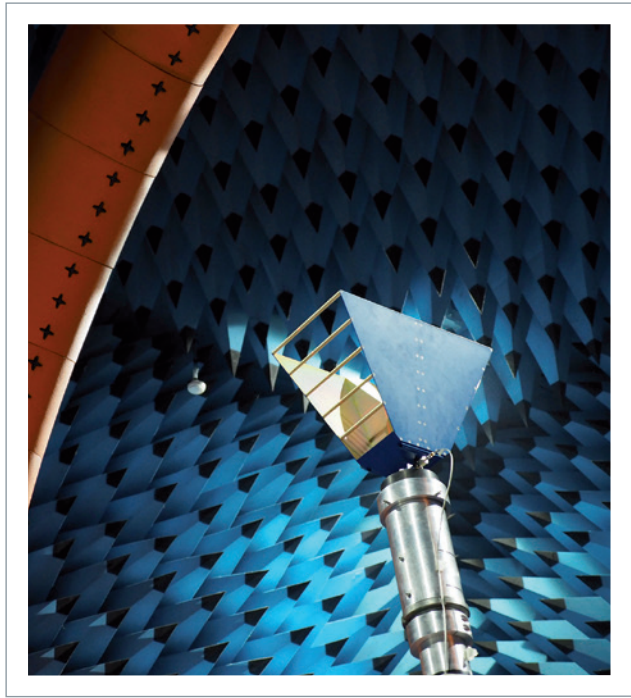
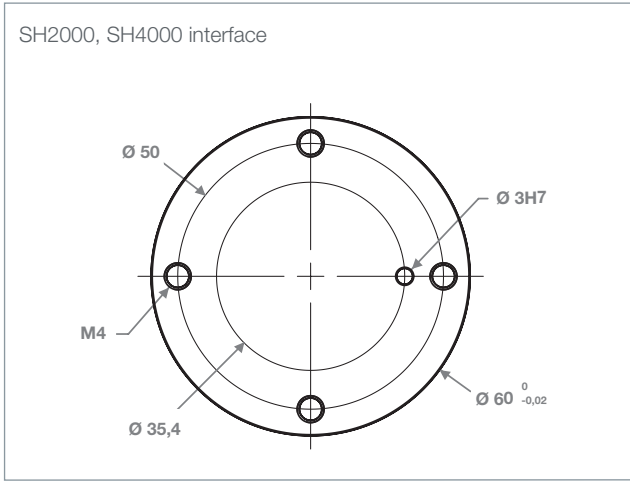
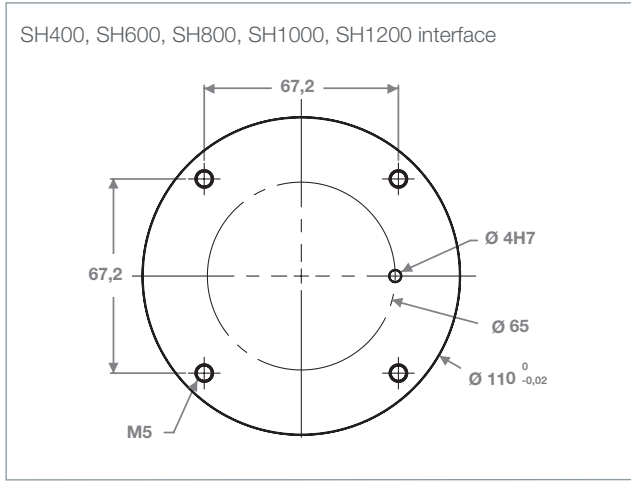
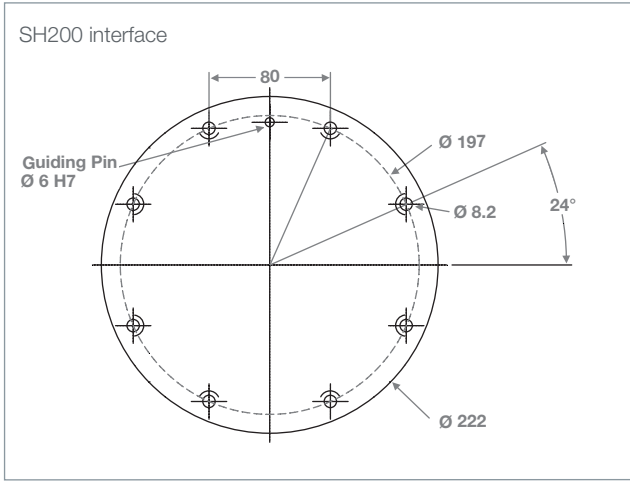
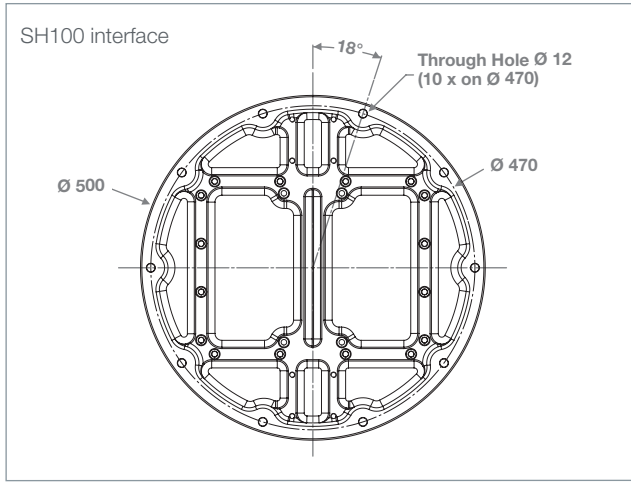
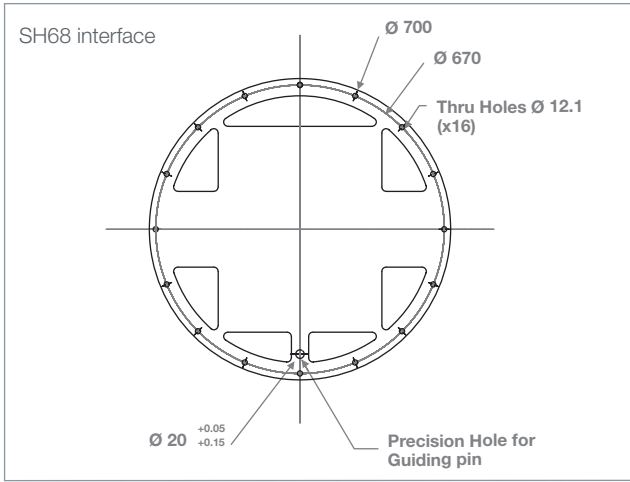
(4) Anritsu K103F + Southwest 1030-10SF

(5) Equivalent to MIL-C 5541E class 3

(*) Southwest 212-503SF

Dimensional drawing

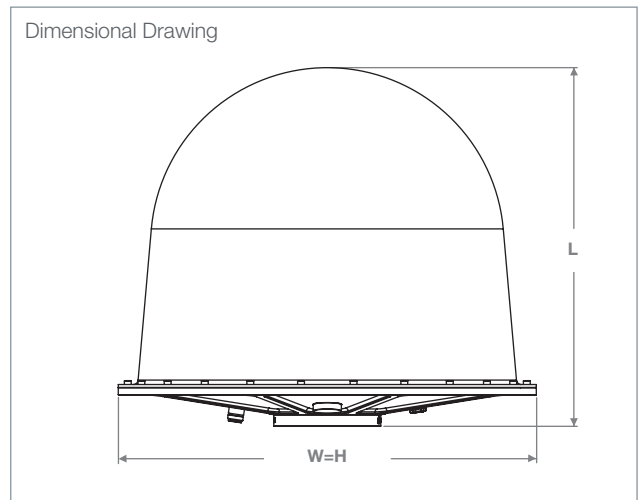




Solutions For Outdoor Installation



The MVG protective radomes are designed to fit Dual Ridge Horns, allowing outdoor installation with minimum impact on electrical performance. The materials and coating employed provide hydrophobic properties and good UV stability, low relative permittivity and low dielectric loss, therefore offering an effective protection in outdoor conditions and good RF transparency. The radome enclosures are also equipped with pressure equalizing vents to reduce condensation caused by rapid changes in temperature, while preventing water and dust ingress.



Mechanical characteristics

Part number	R430	R175
Featured dual-ridge horn	SH800	SH2000, SH4000
Dimensions (H x W x L)	430 x 430 x 369 mm	199 x 199 x 190 mm
Weight (approx.)	4 Kg	0.9 Kg
Materials	Aluminum, PVC, GFRP	Aluminum, Dyneema™
Color	White	White
Connector	N-type Female – sealed ⁽¹⁾	PC 3.5 ⁽²⁾
Interface	Circular Ø 110 mm	Circular Ø 60 mm
Ingress protection	IP67	IP67
Wind rating ⁽³⁾	160 km/h	160 km/h

(1) Inmet/Aeroflex 5217

(2) H&S 34-SK-50-0-54-199_N_BIS

(3) Based on FE (Finite Element) analysis in accordance to UNI EN 1991-1-4 EUROCODE 1