

Cassegrain Antennas, SAY Series

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FEATURES:

- ◆ Frequency coverage: 18 to 110 GHz
- ◆ Rugged configuration and low profile
- ◆ Low loss and high gain
- ◆ Low VSWR



APPLICATIONS:

- ◆ Communication systems
- ◆ Radar systems
- ◆ EW systems

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DESCRIPTION:

SAY series Cassegrain antennas are offered with a 6", 12", 18", 24", 36" and 48" diameter main reflector dish. These antennas are designed and manufactured with the highest performance and quality. The main advantages of the Cassegrain antenna are its low loss, low profile and light weight compared to other high gain antennas, such as prime focus and lens corrected antennas. As a downside, this antenna has relatively high side lobe levels compared to other antennas due to the interference of the sub-reflector's supporting structure. To ensure good performance, the supporting structures are specially designed to keep side lobe levels under 18 dB for narrow band operations and under 16 dB for broadband operation.

The standard offering covers the frequency range of 18 to 110 GHz, but custom frequencies can be requested. The operating bandwidth of these antennas is mainly limited by the circular waveguide's dominant mode operation. While standard models are equipped with a circular waveguide interface, a rectangular waveguide interface is also available. Check the website for detailed models.

ELECTRICAL SPECIFICATIONS:

Parameters	Specifications	Technical Remarks
Frequency Range	18.0 to 110.0 GHz	Other frequency ranges are available upon request.
Interface	Circular or Rectangular	Specify when ordering.
Main Reflector Diameter	6", 12", 18", 24", 36" and 48"	Other diameters are available upon request.
3 dB Beamwidth	0.3 to 8.0 Degrees	Related to the dish diameter.
Antenna Gain Range	25 to 50 dB	Related to the operation frequency and dish diameter.
Operating Bandwidth	Up to Full Circular Waveguide Bandwidth	Performance degradation is expected for broadband operation.
Side Lobe Level	16 dB	Related to the diameter and feed structure.
Return Loss (Typical)	20 dB	Dependent on the operating bandwidth.

MODEL NUMBERS:

SAGE Millimeter's Cassegrain antenna model numbers are configured per the following format. Customers may refer to the format and specify their own model numbers accordingly when placing an order.

SAY - F1N F2N GG BW - DDD - XY OR SAY - F1N F2N GG BW - WG - XY

F1N is the start frequency in MHz x 10N. For example: 26.0 GHz = 263

F2N is the stop frequency in MHz x 10N. For example: 30.0 GHz = 303

GG is the linear gain in dB. For example: 40 dB = 40

BW is the 3 dB beamwidth in 1/10 degrees. For example: 0.7 degree = 07

DDD is the diameter of the input connector, in mils, for circular waveguides or **WG** is the waveguide size for rectangular waveguides.

X is the antenna type. "S" is for a standard package and finish and "C" is for a custom design.

Y is for factory reserve.

Example: SAY-3433634020-28-C1 is a custom Cassegrain antenna with a frequency range of 34 to 36 GHz, a gain of 40 dB and a 3 dB beamwidth of 2 degrees. The antenna has a WR-28 waveguide at the input port. "1" is a factory assigned number.