

Microstrip Patch Array Antennas, SAM Series

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FEATURES:

- ◆ Frequency coverage: 18 to 110 GHz
- ◆ Coaxial and rectangular WG interfaces
- ◆ Compact size and center fed
- ◆ Various beamwidth and low side lobe levels
- ◆ Low cost with volume



APPLICATIONS:

- ◆ Communication systems
- ◆ Radar systems
- ◆ Sensor heads

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DESCRIPTION:

SAM series microstrip patch array antennas are offered with either a coaxial interface that can support linear and circular polarization or a rectangular waveguide interface that can support linear polarization. These antennas are constructed with high performing, low loss soft microwave substrates. Various power distributions, such as corporate-fed or series-fed, are implemented to achieve the best aperture efficiency and antenna performance. These patch array antennas offer high gain and low side lobes. While weather resistant designs that incorporate a radome are available, the standard microstrip patch arrays are offered without a radome to allow users to integrate them into their own enclosures. Check the website for models and details.

ELECTRICAL SPECIFICATIONS:

Parameters	Specifications	Technical Remarks
Frequency Range	18.0 to 110.0 GHz	Other frequency ranges are available upon request.
Interface	Coax or Rectangular	Specify when ordering.
Number of Elements, Horizontal	4 to 16	Determines beamwidth.
Number of Elements, Vertical	4 to 16	Determines beamwidth.
Operating Bandwidth (Typical)	2% of the Center Operation Frequency	Most microstrip patch array antennas can operate at a wider bandwidth with minor performance degradation.
3 dB Beamwidth, Horizontal	4 to 30 Degrees	Related to the number of elements.
3 dB Beamwidth, Vertical	4 to 30 Degrees	Related to the number of elements.
Antenna Gain Range	14 to 30 dB	Related to the number of elements.
Side Lobe Level (Typical)	20 dB	Related to the number of elements and feed structure.
Cross Polarization (Typical)	20 dB	Related to the feed structure.
Return Loss (Typical)	15 dB	Dependent on the operating bandwidth.

MODEL NUMBERS:

SAGE Millimeter's microstrip patch array 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.

SAM - F1N F2N GG BW - CO - XY OR SAM - 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: 28.0 GHz = 283

GG is the linear gain in dB. For example: 25 dB = 25

BW is the 3 dB beamwidth in degrees. For example: 12 degrees = 12

CO is the input coaxial connector type or **WG** is the waveguide size for rectangular waveguides.

X is the polarization type. "L" is for linear polarized and "C" is for circular polarized.

Y is for factory reserve.

Example: SAM-3433632012-28-L1 is a linear polarized microstrip patch array antenna with a frequency range of 34 to 36 GHz, a gain of 20 dB and a 3 dB beamwidth of 12 degrees. The antenna has a WR-28 waveguide at the input port.. "1" is a factory assigned number.