MCA120

Product Brief

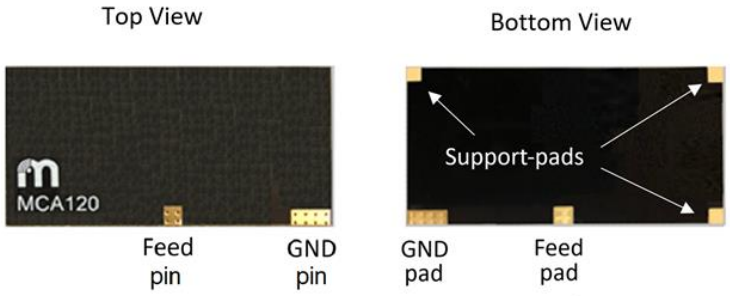
July 14, 2021

Multi-Band 5GNR-FR1 / Wi-Fi 6E / Wi-Fi 6 Chip Antenna

Dimensions and Package View

Package Size:

39 mm x 19.5 mm x 0.852 mm



Applications

- Access Points
- Routers
- Gateways
- Set-Top Box
- Bluetooth, BLE, GPS, ZigBee
- Multi-Band Wi-Fi Equipment
- Appliances
- Other wireless devices

Key Features

- Wideband SMT Chip Antenna
- Frequency Range: 1.427 GHz to 7.125 GHz
- Feed trace Impedance: 50 Ω
- Omni-directional Radiation and Coverage
- Realized Peak Gain: 0.8 to + 5.93 dBi
- Return Loss: < -6 dB
- Average Total Efficiency: > 80 %
- Small Dimension and Low Profile

Description

The MCA120 is a multi-band SMT antenna for 5GNR-FR1, Wi-Fi 6E, LTE, Wi-Fi 2/5GHz, Bluetooth, and ZigBee applications. Its wide operating frequency range starts at 1.427 GHz and includes the new Wi-Fi 6E band up to 7.125 GHz. Additionally, the MCA120 eliminates the need for multiple antennas by covering all standards within its frequency range. The antenna has an omni-directional radiation pattern that allows maximum coverage which makes this product an ideal surface mount solution for multi-band devices. The high total efficiency of the MCA120 extends battery life as it utilizes less power to cover a given distance. With its small form factor and low profile, the MCA120 is the ideal cost-efficient chip antenna for the design of a large selection of end products operating in various frequency bands.

Specifications and Measured Performance (typ.)

Parameter	f Min	f	f Max
Frequency	1.427 GHz	2.45 GHz	7.125 GHz
Peak Gain	+ 0.8 dBi	+ 1.69 dBi	+ 4.45 dBi
Total Efficiency	60.3 %	93.4%	79.7 %
Return Loss	- 6 dB	- 20 dB	- 15 dB

Power Handling	33 dBm
Feed Trace Impedance	50 Ω
Dimensions L x W x H	39 mm x 19.5 mm x 0.852 mm
Operating Humidity, non-condensing	0 % to 95 %
Storage Humidity, non-condensing	0 % to 95 %
Operating Temperature	- 40°C (- 40° F) to + 75° C (+ 167° F)
Storage Temperature	- 40°C (- 40° F) to + 85° C (+ 185° F)

Typical Performance versus frequency at 25°C

Frequency	Peak Realized Gain	Directivity	Total Efficiency
GHz	dBi	dB	%
1.427	0.80	3.0	60.3
1.518	1.37	3.2	65.6
1.5742	1.81	3.36	70.0
1.71	2.40	3.29	81.5
1.85	2.55	3.09	88.4
1.99	2.97	3.17	95.4
2.17	2.42	2.67	94.5
2.45	1.69	1.98	93.4
2.69	2.64	3.06	90.7
3.1	4.42	5.26	82.5
3.5	5.93	7.15	75.5
4.2	5.78	6.70	80.8
4.9	3.84	5.70	65.1
5.15	5.07	5.99	80.9
5.5	4.49	5.29	83.2
5.85	4.26	4.91	86.2
5.925	4.56	5.26	85.1
7.125	4.45	5.44	79.7
Average	4.82	4.36	81.0