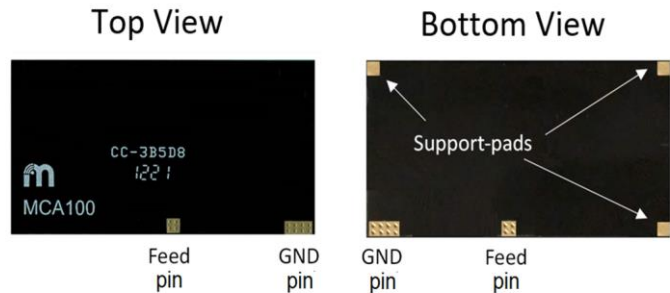


### Ultra-Wideband 5GNR-FR1 / Wi-Fi 6E / Wi-Fi 6 Chip Antenna

#### Dimensions and Package View

Package Size:

49 mm x 25.5 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

- Ultra-Wide Bandwidth
- Multi-Band Surface Mount Chip Antenna
- Frequency Range: 617 MHz to 7.125 GHz
- Feed trace Impedance: 50  $\Omega$
- Omni-directional Radiation and Coverage
- Realized Peak Gain: + 0.03 dBi to + 5.3 dBi
- Return Loss: < -6 dB
- Average Total Efficiency: > 75 %
- Small Dimension and Low Profile

#### Description

The MCA100 is an ultra-wideband SMT antenna for 5GNR-FR1, Wi-Fi 6E, Bluetooth, LTE, 5G, and ZigBee applications. Its wide operating frequency range starts at 617MHz and includes the new Wi-Fi band up to 7.125 GHz. The MCA100 has an omni-directional radiation pattern that allows maximum coverage. The MCA100 is an effective surface mount solution for multi-band devices. The high total efficiency of the MCA100 extends battery life as it utilizes less power to cover the same distance. Additionally, the MCA100 eliminates the need for multiple antennas by covering all standards within its wide frequency range. With its small form factor and low profile, the MCA100 is the ideal cost-efficient chip antenna for the design of a large selection of end products operating in any frequency band from 617 MHz to 7.125 GHz.

### Specifications and Measured Performance (typ.)

Parameter	f Min	f	f Max
Frequency	617 MHz	2.45 GHz	7.125 GHz
Peak Gain	+ 1.18 dBi	+ 4.1 dBi	+ 5.17 dBi
Total Efficiency	67 %	81.9 %	79.6 %
Return Loss	- 6 dB	- 8 dB	- 15 dB
<b>Power Handling</b>	33 dBm		
<b>Feed Trace Impedance</b>	50 Ω		
<b>Dimensions L x W x H</b>	49 x 25.5 x 0.852 mm		
<b>Operating Humidity, non-condensing</b>	0 % to 95 %		
<b>Storage Humidity, non-condensing</b>	0 % to 95 %		
<b>Operating Temperature</b>	- 40°C (- 40° F) to + 75° C (+ 167° F)		
<b>Storage Temperature</b>	- 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	%
0.617	1.18	2.92	67.0
0.698	1.24	2.76	70.4
0.748	0.22	2.62	57.6
0.824	0.03	2.66	54.5
0.892	0.45	2.57	61.3
0.960	0.92	2.46	70.2
1.427	2.25	2.80	88.2
1.518	2.66	3.00	92.4
1.574	2.78	3.15	91.9
1.710	2.95	3.19	94.7
1.850	2.67	3.04	91.8
1.990	3.08	3.54	90.0
2.170	3.24	4.03	83.3
2.450	4.10	4.97	81.9
2.690	5.30	6.33	80.0
3.500	4.63	5.85	75.6
4.200	4.72	5.27	88.1
4.900	4.44	5.19	84.1
5.500	4.36	5.47	77.4
5.850	4.76	5.56	83.2
5.925	4.84	5.64	83.2
6.525	4.74	5.69	80.4
7.125	5.17	6.17	79.6
Average	3.08	4.13	79.4