Product portfolio
**Part Number**

<table>
<thead>
<tr>
<th>Chip Type</th>
<th>Description</th>
<th>Dimensions (L x W x H) mm</th>
<th>Number of Antenna Ports</th>
<th>Operating Range (MHz)</th>
<th>Best for (MHz)</th>
<th>Weight (g) approx.</th>
<th>Reference Design Frequencies (MHz)</th>
<th>Efficiency Range (%)</th>
<th>Peak Gain (dBi)</th>
<th>VSWR</th>
<th>Ref. Design Part Number</th>
<th>Examples of wireless service applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>NANO</td>
<td>mXTEND™</td>
<td>NN02-101</td>
<td>3.0 x 2.0 x 0.8</td>
<td>1 port solution</td>
<td>2400 - 8000</td>
<td>0.01</td>
<td>2400 - 2500</td>
<td>&gt;70</td>
<td>2.4</td>
<td>&lt;2.5:1</td>
<td>EB_NN02-101-c-BT</td>
<td>BLUETOOTH, WI-Fi, 2G, 3G, 4G, 5G, NB-IoT, LTE CAT-M, CELLULAR IoT, BLUETOOTH, WI-FI DUAL BAND, WI-FI 6, WI-FI 6E, CBR8</td>
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<tr>
<td>ONE</td>
<td>mXTEND™</td>
<td>NN02-201</td>
<td>7.0 x 3.0 x 1.0</td>
<td>1 port solution</td>
<td>1560 - 1600</td>
<td>0.11</td>
<td>824 - 7125</td>
<td>&gt;70</td>
<td>4.1</td>
<td>&lt;2.5:1</td>
<td>EB_NN02-201-5G</td>
<td>BLUETOOTH, WI-FI DUAL BAND, UWB, CBR8, CBR8, 5G, NB-IoT, LTE CAT-M</td>
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<tr>
<td>DUO</td>
<td>mXTEND™</td>
<td>NN03-320</td>
<td>7.0 x 3.0 x 2.0</td>
<td>1-2 port solution</td>
<td>800 - 10600</td>
<td>0.25</td>
<td>698 - 3800</td>
<td>&gt;55</td>
<td>1.1</td>
<td>&lt;3:1</td>
<td>EB_NN03-320-1B</td>
<td>BLUETOOTH, WI-FI DUAL BAND, UWB, CBR8, CBR8, NB-IoT, LTE CAT-M, GNSS, ISM, CBR8, LORA, SIGFOX, ZIGBEE, RFI, GNSS, ISM, BLUETOOTH, CBR8</td>
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<tr>
<td>TRIO</td>
<td>mXTEND™</td>
<td>NN03-310</td>
<td>30.0 x 30 x 1.0</td>
<td>1-3 port solution</td>
<td>1560 - 1600</td>
<td>1.23</td>
<td>698 - 3800</td>
<td>&gt;55</td>
<td>2.3</td>
<td>&lt;3:1</td>
<td>EB_NN03-310-M</td>
<td>BLUETOOTH, WI-FI DUAL BAND, UWB, CBR8, CBR8, 5G, NB-IoT, LTE CAT-M, GNSS, ISM, CBR8, LORA, SIGFOX, ZIGBEE, RFI, GNSS, ISM, BLUETOOTH, CBR8</td>
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<tr>
<td>ALL</td>
<td>mXTEND™</td>
<td>NN02-220</td>
<td>12.0 x 3.0 x 2.4</td>
<td>1 port solution</td>
<td>2400 - 2500</td>
<td>0.19</td>
<td>698 - 2690</td>
<td>&gt;70</td>
<td>2.8</td>
<td>&lt;2.5:1</td>
<td>EB_NN02-220-1B-2R-1P</td>
<td>WI-FI DUAL BAND, UWB, CBR8, CBR8, CBR8, NB-IoT, LTE CAT-M, LORA, SIGFOX, ZIGBEE, RFI, GNSS, ISM, BLUETOOTH, CBR8</td>
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<tr>
<td>RUN</td>
<td>mXTEND™</td>
<td>NN02-224</td>
<td>10.0 x 3.2 x 3.2</td>
<td>1 port solution</td>
<td>1560 - 1600</td>
<td>0.21</td>
<td>698 - 2690</td>
<td>&gt;60</td>
<td>1.3</td>
<td>&lt;3:1</td>
<td>EB_NN02-224-5G</td>
<td>BLUETOOTH, WI-FI DUAL BAND, UWB, CBR8, CBR8, 5G, NB-IoT, LTE CAT-M, LORA, SIGFOX, ZIGBEE, RFI, GNSS, ISM, BLUETOOTH, CBR8</td>
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<tr>
<td>BAR</td>
<td>mXTEND™</td>
<td>NN02-232</td>
<td>5.0 x 5.0 x 6.0</td>
<td>1 port solution</td>
<td>1560 - 1600</td>
<td>0.25</td>
<td>698 - 2690</td>
<td>&gt;50</td>
<td>7.0</td>
<td>&lt;3:1</td>
<td>EB_NN02-232-1B</td>
<td>BLUETOOTH, WI-FI DUAL BAND, UWB, CBR8, CBR8, 5G, NB-IoT, LTE CAT-M, LORA, SIGFOX, ZIGBEE, RFI, GNSS, ISM, BLUETOOTH, CBR8</td>
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<tr>
<td>CUBE</td>
<td>mXTEND™</td>
<td>NN02-250</td>
<td>24.0 x 12.0 x 2.0</td>
<td>1 port solution</td>
<td>698 - 2690</td>
<td>0.21</td>
<td>698 - 2690</td>
<td>&gt;50</td>
<td>7.0</td>
<td>&lt;3:1</td>
<td>EB_NN02-250-1B-2R-1P</td>
<td>BLUETOOTH, WI-FI DUAL BAND, UWB, CBR8, CBR8, 5G, NB-IoT, LTE CAT-M, LORA, SIGFOX, ZIGBEE, RFI, GNSS, ISM, BLUETOOTH, CBR8</td>
</tr>
</tbody>
</table>

All Virtual Antenna™ chips are omnidirectional, 50 Ω, linear (polarization), SMT (mounting) and suitable for temperatures from -40 to +125ºC.

All above antenna specs have been measured using a corresponding evaluation board. Additional Evaluations Boards for assessing the operation of the product in other supported communication standards (such as LTE, UMTS, GSM, GPRS, BT, WI-FI, GNSS, ISM) are available along with the associated product User Manuals and Application Notes. More information about Ignion products or services please visit ignion.io.
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Contact us.

BARCELONA
- info@ignion.io
- +34 935 660 710

SHANGHAI
- Shanghai Bund Center 18 / F Bund Center, 222 Yan'an Road East, Huangpu District Shanghai, 200002, China
- info@ignion.io
- +86 188 6111 9987

TAMPA
- 8875 Hidden River Parkway Suite 300 Tampa, FL 33637 USA
- info@ignion.io
- +1 888 726 8366