**High Frequency Ceramic Solutions**

5.1 to 5.9 GHz, micro antenna optimized for PCB edge mount. Great for WiFi and V2V (Vehicle to Vehicle communications)

P/N 5500AT07A0900

**General Specifications**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>5500AT07A0900*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (MHz)</td>
<td>5150 ~ 5850</td>
</tr>
<tr>
<td>Peak Gain (dBi typ.)</td>
<td>0.0 (YZ-Total)</td>
</tr>
<tr>
<td>Average Gain (dBi typ.)</td>
<td>-3.0 (YZ-Total)</td>
</tr>
<tr>
<td>Return Loss</td>
<td>6.0 dB max.</td>
</tr>
<tr>
<td>Power Capacity</td>
<td>2W max. (CW)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40 ~ +85 °C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 ~ +85 °C</td>
</tr>
<tr>
<td>Q'ty/Reel (pcs)</td>
<td>10,000 pcs</td>
</tr>
<tr>
<td>Storage Period</td>
<td>18 months max.</td>
</tr>
</tbody>
</table>

**Part Number Explanation**

<table>
<thead>
<tr>
<th>P/N Suffix</th>
<th>Packaging Style</th>
<th>Termination</th>
<th>Evaluation Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>5500AT07A0900-EB1SMA</td>
<td>Bulk (loose)</td>
<td>100% Tin</td>
<td>5500AT07A0900-EB1SMA (pre-tuned 50ohms with female SMA connector)</td>
</tr>
<tr>
<td>T &amp; R (1000pcs)</td>
<td>Suffix = T</td>
<td>Suffix = None</td>
<td>Eg. 5500AT07A0900(T or S)</td>
</tr>
<tr>
<td>Suffix = S</td>
<td>Eg. 5500AT07A0900S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>In</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>0.039 ± 0.004</td>
<td>1.00 ± 0.10</td>
</tr>
<tr>
<td>W</td>
<td>0.020 ± 0.004</td>
<td>0.50 ± 0.10</td>
</tr>
<tr>
<td>T</td>
<td>0.014 Max.</td>
<td>0.37 Max.</td>
</tr>
<tr>
<td>a</td>
<td>0.006 +0.004/-0.006</td>
<td>0.15 +0.1/-0.05</td>
</tr>
<tr>
<td>b</td>
<td>0.010 +0.004/-0.006</td>
<td>0.25 +0.1/-0.05</td>
</tr>
<tr>
<td>c</td>
<td>0.003 +0.004/-0.006</td>
<td>0.08 +0.1/-0.05</td>
</tr>
</tbody>
</table>

**Terminal Configuration**

<table>
<thead>
<tr>
<th>No.</th>
<th>Function</th>
<th>No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Feed</td>
<td>3</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
<td>4</td>
<td>Feed</td>
</tr>
</tbody>
</table>

**Recommended PCB Pattern**

- Attention: Matching circuits and component values will be different on the client's design, depending on PCB layout, geometry, etc. It is recommended that the designer leave available slots for a "pi" (or shunt-series-shunt) network. The antenna matching network values you see here are used when antenna is mounted on Johanson's evaluation board.
- Need help laying out the antenna, want us to review the design (free!), require the Gerber files for this EVB, or would like us to obtain the new tuning values of your PCB (fee may apply)? Go to: www.johansontechnology.com/component/techquestion
- More antenna support info at: www.johansontechnology.com/ipcantennaservices

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.

www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver 1.0 2014 Johanson Technology, Inc. All Rights Reserved
"High Frequency Ceramic Solutions"

5.1 to 5.9 GHz, micro antenna optimized for PCB edge mount. Great for WiFi and V2V (Vehicle to Vehicle communications)

Johanson Evaluation Board Dimension and Characteristics of the antenna design

Test Board-Top View (Unit in mm)

Antenna

50 CPWG Feedline

No Ground (Yellow area)

Matching circuits

Ground

EVB Orderable p/n:

5500AT07A0900-EB1SMA

• This antenna thrives in edge mount, middle of the PCB placements. It may also be placed at corners, the operation won't be at its full potential though. We have corner-specific 5GHz antennas here: www.johansontechnology.com/antennas

Test Board-Bottom View (Units in mm)

No Ground (Yellow area)

5500AT07A0900-EB1SMA

Ground

EVB Orderable p/n:

5500AT07A0900-EB1SMA

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.

www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver 1.0 2014 Johanson Technology, Inc. All Rights Reserved
Typical Radiation Patterns @25°C

XY-V/XY-H

XY-cut scanning direction

XY cut @5.5GHz
- Vertical
- Horizontal

XZ cut @5.5GHz
- Vertical
- Horizontal

XZ-cut scanning direction

XZ cut @5.5GHz
- Vertical
- Horizontal

YZ-cut scanning direction

XZ cut @5.5GHz
- Vertical
- Horizontal

XY cut @5.5GHz
- Vertical
- Horizontal
"High Frequency Ceramic Solutions"

5.1 to 5.9 GHz, micro antenna optimized for PCB edge mount. Great for WiFi and V2V (Vehicle to Vehicle communications)

Typical Electrical Performance (T=25°C)

Return Loss / With Matching Circuits

| m1 | freq=5.150GHz  
|    | dB(S(1,1))=-4.236 |
| m2 | freq=5.500GHz  
|    | dB(S(1,1))=-14.267 |
| m3 | freq=5.850GHz  
|    | dB(S(1,1))=-4.945 |

Packaging information

www.johansontechnology.com/ipcpackaging.html

Soldering Information

www.johansontechnology.com/ipcsoldering-profile

Antenna layout and tuning techniques (How to obtain the new antenna matching values)

www.johansontechnology.com/tuning

Antenna layout review, tuning, and characterization services

www.johansontechnology.com/ipcantennaservices

For layout review contact our Applications Team at:

www.johansontechnology.com/component/techquestion

RoHS Compliance

www.johansontechnology.com/technical-notes/rohs-compliance.html

MSL Info

www.johansontechnology.com/technical-notes/msl-rating.html

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.