Telecom-Cellular Antenna Solutions

Laird designs and manufactures customized, performance-critical products for wireless and other advanced electronics applications.
About Laird

Laird provides systems, components and solutions that protect electronics from electromagnetic interference and heat, which enables connectivity in mission critical systems through wireless applications and antenna systems. We are a leader in the design, development and delivery of innovative technologies that enable people, organisations and applications to connect efficiently and effectively. Our reputation has been built on three guiding principles:

- Innovation - putting our in-depth knowledge of the latest materials and processes to work in creating outstanding products for our customers.
- Reliable fulfillment - delivering what our customers need to their exact specifications, on time and on budget, and in the quantities required.
- Speed - rationalizing the design and delivery cycle to minimize the time from initial concept to final implementation.

A Brief Introduction to Telecom-Cellular

Cellular antennas eliminate the “last wire” going to the workstation. This reduces or eliminates cabling and increases user mobility throughout the facility. Cellular antennas also eliminate signal dead spots or shadows, allowing users to be reached anywhere inside or outside a building.

Depend on Laird

Laird’s Telecom-Cellular wireless antennas are particularly applicable for environments where aesthetics and wide-angle coverage are necessary for successful wireless deployment. Their surprisingly small size allows the antennas to be hidden almost anywhere, providing an invisible solution for most applications.

Benefits of Telecom-Cellular Technology

Some benefits of using Laird’s Telecom-Cellular antennas include:

- Tight antenna pattern control
- Uniformity of wireless signal
- Multi-band operation
- Narrow or wide band per port
- Small, aesthetic packaging
Cellular - External Antennas

Directional Base Station
Antennas suited for long-range applications that provide directional pattern coverage. The products feature:

• Vertically polarized radiators with a maximum VSWR <1.5
• UltraLink pigtail’s Type N(f) connector configured to application
• UV Stable housing
• One-piece brass radiator
• Advance microwave substrate
• Stainless steel hardware
• PC series 200 watt power rating
• YA series 100 watt power rating
• DC ground for lightning protection

Directional Indoor/Outdoor Panels
Antennas that offer high gain in a thin low profile package, and provide directional pattern coverage in indoor or outdoor environments. The products feature:

• Low profile designs
• UV stabilized radomes
• Integrated coaxial pigtail’s can be customized in length and connector for the app
• Vertically polarized design with VSWR <2:1

DirectLink™ Series Indoor/Outdoor Panels
Antennas designed to meet the most demanding needs of the contemporary wireless environment, and are well suited for both indoor and outdoor wall or mast applications. The products feature:

• Low profile designs
• UV stabilized radomes
• Integrated coaxial pigtail’s can be customized in length and connector for the app
• VSWR <2:1 with a 75 watt power rating

Directional Indoor/Outdoor Sectors
Antennas comprising of a directional antenna array with a radiation pattern that is shaped to cover a specified beamwidth. They are used when wide angle coverage is required, and concentrate applied power towards a specified area at the exclusion of other areas. The products feature:

• Low profile vertically polarized designs
• Integrated coaxial pigtail’s can be customized in length and connector for the app
• SR-series 25 watt power rating
• S-series 50 watt power rating

![Image](image_url)
Directional Indoor Multi-polarity Panels

Directional dual port multi-polarization panel antennas that are well suited for indoor applications where multipath is a concern. The products feature:

- Low profile designs
- HVP & SLP models offer polarization diversity
- A minimum of 18 dB isolation and max VSWR of 1.5
- Integrated coaxial pigtails can be customized in length and connector for the app
- 25 watt power rating

Squint™ Directional Indoor Panels

Antennas that offer high gain in a thin low profile package, and provide directional pattern coverage in indoor or outdoor environments. The products feature:

- Low profile designs
- UV stabilized radomes
- Integrated coaxial pigtails can be customized in length and connector for the app
- Vertically polarized design with VSWR < 2:1

Squint™ Omnidirectional Indoor Panels

Antennas that feature an omnidirectional pattern while focusing energy where it is most desired. Unique pattern characteristics mitigate multipath issues. The products feature:

- Ceiling mount vertically polarized
- Omnidirectional while focusing energy where it is most desired.
- Unique pattern characteristics mitigate multi-path issues
- Single and multi-band models
- Integrated coaxial pigtails can be customized in length and connector for the app
- 50 watt power rating

Omnidirectional Indoor Panels

Omnidirectional single and dual port panel antennas that are well suited for indoor applications where a small foot print is required. The products feature:

- Low profile designs
- Single and multi-band models
- Extremely uniform and symmetrical pattern characteristics
- Integrated coaxial pigtails can be customized in length and connector for the app

---

**Part Numbers and Specifications**

### Omnidirectional Indoor Panels

**Squint™ Directional Indoor Panels**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>FREQUENCY (MHz)</th>
<th>BEAMWIDTH (DEG)</th>
<th>GAIN (dBi)</th>
<th>DIMENSIONS (mm)</th>
<th>PATTERN TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ1715DD12NF</td>
<td>1710-1880</td>
<td>65 70</td>
<td>5.0</td>
<td>152 152</td>
<td>Dual Directional</td>
</tr>
<tr>
<td>SQ1855DD12NF</td>
<td>1850-1990</td>
<td>65 70</td>
<td>5.0</td>
<td>152 152</td>
<td>Dual Directional</td>
</tr>
</tbody>
</table>

**Squint™ Omnidirectional Indoor Panels**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>FREQUENCY (MHz)</th>
<th>BEAMWIDTH (DEG)</th>
<th>GAIN (dBi)</th>
<th>DIMENSIONS (mm)</th>
<th>PART NUMBER</th>
<th>FREQUENCY (MHz)</th>
<th>BEAMWIDTH (DEG)</th>
<th>GAIN (dBi)</th>
<th>DIMENSIONS (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ2450DD12NF</td>
<td>2400-2500</td>
<td>60 65</td>
<td>2.0</td>
<td>352 352</td>
<td>SQ1857HVP/SLP</td>
<td>1850-1990</td>
<td>65 65</td>
<td>2.0</td>
<td>352 352</td>
</tr>
</tbody>
</table>

---

**Part Numbers and Specifications**

**Omnidirectional Indoor Panels**

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>FREQUENCY (MHz)</th>
<th>BEAMWIDTH (DEG)</th>
<th>VSIR</th>
<th>GAIN (dBi)</th>
<th>DIMENSIONS (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL8064P</td>
<td>806-866</td>
<td>100 350</td>
<td>2.0</td>
<td>4.0</td>
<td>155 155</td>
</tr>
<tr>
<td>SL8244P</td>
<td>824-896</td>
<td>100 350</td>
<td>2.0</td>
<td>4.0</td>
<td>152.4 152.4</td>
</tr>
<tr>
<td>SL8844P</td>
<td>880-960</td>
<td>100 350</td>
<td>2.0</td>
<td>4.0</td>
<td>152.4 152.4</td>
</tr>
<tr>
<td>SL1852P</td>
<td>1850-1990</td>
<td>100 350</td>
<td>1.7</td>
<td>2.0</td>
<td>63.5 63.5</td>
</tr>
</tbody>
</table>

---

**Part Numbers and Specifications**

**Squint™ Directional Indoor Panels**

1. Part numbers above are completed with the addition of the cable length and connector (e.g. SQ2450DD12NF implies 12” of cable terminated in a SMA male connector)
2. Connector/cable configurations can be customized to meet requirements
Microsphere™

Antennas that feature an omnidirectional pattern, and suited to a variety of uses including handheld devices, in-building systems, or other applications where mobility is a factor. The products feature:

- Surprisingly small size allows for an invisible solution for most apps
- The field pattern is vertically polarized and toroidal, providing omnidirectional coverage in any plane around the long axis of the antenna
- 50 watt power rating

Sphere™

Wireless antennas that offer considerable gain improvement over traditional dipole antennas, are particularly applicable in environments where aesthetics and wide angle coverage are necessary for successful wireless deployment. The products feature:

- Omnidirectional pattern provides optimal in-building coverage
- Quick installation with a standard ceiling tile frame metal clip
- Considerable gain improvement over traditional dipole solutions
- Gain 3 dBi with VSWR < 2.0
- 50 watt power rating

Fiberglass Omnidirectional Sticks

Traditional antennas that provide a 360 degree transmission pattern, and are used when coverage in all directions is required. The products feature:

- Vertically polarized collinear design with a max VSWR of 2:1
- Protective UV inhibiting coating
- Radiating elements are made from high efficiency copper and are carefully phased to provide maximum gain in the horizontal plane
- 100 watt power rating

Omnidirectional Sticks

Traditional antennas that provide a 360 degree transmission pattern, and are used when coverage in all directions is required. The products feature:

- Vertically polarized collinear design
- Protective UV inhibiting coating
- Radiating elements are made from high efficiency copper and are carefully phased to provide maximum gain in the horizontal plane
- Type N(f) connector but other connectors available on selected models
- VSWR < 2:1 with 100 watt power rating

---

### MICROSPHERE™ ANTENNAS

- **VSWR < 2:1 with 100 watt power rating** on selected models
- Type N(f) connector but other connectors available

### SPHERE™ ANTENNAS

- **Vertically polarized collinear design with a max VSWR of 2:1**
- Protective UV inhibiting coating
- Radiating elements are made from high efficiency copper and are carefully phased to provide maximum gain in the horizontal plane
- 50 watt power rating

### FIBERGLASS OMNIDIRECTIONAL STICKS

- **Gain 3 dBi with VSWR < 2.0**
- 50 watt power rating

### OMNIDIRECTIONAL STICKS

- **Vertically polarized collinear design**
- Protective UV inhibiting coating
- Radiating elements are made from high efficiency copper and are carefully phased to provide maximum gain in the horizontal plane
- Type N(f) connector but other connectors available on selected models
- VSWR < 2:1 with 100 watt power rating
Phantom Antennas

Antennas that provide true field diversity design which ensures uninterrupted video and data transmissions in urban canyons and rural drop off areas. The products feature:

- True field diversity performance
- 3.0 dBi gain with a VSWR < 2.0
- Mechanically robust for both indoor and outdoor applications
- Ideal for both Cellular and M2M
- NMO mount standard
- 150 watt power rating

Low Profile Antennas

Unique, patented low profile antennas that are ideal where space is a concern in both indoor and outdoor applications. The products feature:

- The Phantoms yield true field diversity performance
- Mechanically robust for both indoor and outdoor applications
- 150 /100 watt power rating for the Phantoms/Discadoo® antennas
- 3.0 dBi gain with a VSWR < 2.0
- Ideal for both Cellular and M2M
- Discadoo® antenna requires a ground plane

Cellular Internal Antennas

Revie Series

Printed circuit board (PCB) antennas that are embedded inside devices for aesthetically pleasing integration with high durability. The products feature:

- Wide bandwidth
- RoHS compliant
- Ground plane independence
- Omnidirectional Vertically Polarized radiators

Heptaband-dipole Series

Portable wireless antennas that provide excellent radio transmission characteristics while offering the ultra flexibility of seven bands in one profile. The products feature:

- Wide bandwidth: 824-960/1575/1710-2170/2400-2500
- Gain of 1-3 dBi with max VSWR of 2.5:1
- Low profile blade style
- Available in black or gray
- Snap in or connectorized

Rubber Duck Series

Portable wireless antennas that provide excellent radio transmission characteristics while offering a robust mechanical design capable of surviving the harshest environments. The product features:

- Omnidirectional vertically polarized dipole design
- Maximum VSWR of 1.5
Cellular Special Applications

Healthcare

Low profile antennas that provide maximum performance for critical hospital monitoring, featuring single or dual ISM frequency bands along with both horizontal and vertical polarization components to improve overall signal integrity in RF cluttered environments. The products feature:

- Single or dual ISM frequency bands.
- The SL60144PF model offers both horizontal and vertical polarization components to improve overall signal integrity in RF cluttered environments.
- Maximum VSWR of 2.0
- Low profile ceiling mount designs

LTE Devices

Products that provide broadband global and localized solutions for devices, in-building Wireless (IBW), and base station applications. The products cover:

- Broadband global solutions (698-2700 MHz)
- Localized solutions that operate in the 698-806 band
- Localized solutions that cover the 2500-2695 band

LTE In Building Wireless

Antennas applicable for environments where aesthetics and wide angle coverage are necessary for successful wireless deployment. Their surprisingly small size allow the antennas to be hidden almost anywhere, providing an invisible solution for most applications. The products cover:

- Broadband global solutions (698-2700 MHz)
- Localized solutions that operate in the 698-806 band
- Localized solutions that cover the 2500-2695 band

LTE Base Station

Antennas that deliver broadband service through a wireless connection, and utilize a cellular frequency that can be used in indoor and outdoor environments.