Laird™

Smart Technology. Delivered.™

# Public Safety & Land/Private Mobile Radio Solutions

*Laird designs and manufactures performance engineered antenna and reception solutions for mission and operational critical wireless applications.*



Laird™

Smart Technology. Delivered.™

## 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.

## Introduction to Public Safety & Land/Private Mobile Radio Solutions Antennas

Public Safety & LMR/PMR (Land/Private Mobile Radio Solutions) antennas ensure interoperable communications in situations like emergencies, where the user can either be in a vehicle (mobile) or on foot (portable). These antennas operate over a wide range of frequencies, and are ideal for simultaneous data transmission to the connected networks of multiple users in government, public safety, and commercial applications.

Laird Public Safety & LMR/PMR antennas are the industry standard for public safety agencies, fleet, and transportation networks. Established in-market presence and innovative molding techniques, with verified platforms and a variety of connection options adds to the reputation for rugged reliability in hazardous situations and harsh environments for these antennas.

## World-Leading Solutions

As the industry leader in antenna products, Laird produces antennas in a diverse number of styles while ensuring maximum efficiency, power handling, and high-performance. To meet customer requirements, select antennas can be individually tuned to a specific frequency.

Laird engineers have end-to-end system knowledge and employ advanced, proprietary design tools to bring new thinking and creative designs to market with unrivalled performance that adds value in every application, including best-in-class antenna solutions for fixed and mobile clients, base stations, wireless backhaul, portable radios, telematics and many other applications.

# Portable Radio Antennas

Portable radio antennas are used for wireless two-way communication by civil service, military, construction, and transportation organizations, with many custom applications.

Laird portable radio antennas are the world standard for reliable, flexible antennas. Each antenna can be individually tuned to frequency to ensure optimum performance.

As the industry leader in radio antenna products, Laird produces antennas in a diverse number of styles. To ensure maximum performance, radio antennas can be individually tuned to frequency, while delivering highperformance in any environment

• EXL Series • A Series

## Low-band 27 to 88 MHz

| FAMILY | FREQUENCY RANGES* | BANDWIDTH | BN | BNX | HT | KR | MD | MX | MXI | PL | SF | SFJ | SFU | SM | SMI | SMV | TN | TNX | LENGTH* | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A Series | 27- 88 MHz | 6- 12 MHz * | • | | • | • | | • | | • | | | | | | | • | | 6"- 10" * | Lower cost than other low band antennas, uses rugged heat shrink tubing for radome |
| EXL Series | 25- 88 MHz | 4- 12 MHz * | | • | • | • | | • | | | | | | | | | | • | 10.75"-11.1" * | Field tunable, more robust than A Series (used molded/machined radome) |
| EXW Series | 30- 88 MHz | 58 MHz | | • | | | | | | | | | | | | | | • | 12" | Broadbanded, most robust of the low band portable radio antennas |

• EXR Series • EXB Series

## VHF 118 to 225 MHz

| FAMILY | FREQUENCY RANGES* | BANDWIDTH | BN | BNX | HT | KR | MD | MX | MXI | PL | SF | SFJ | SFU | SM | SMI | SMV | TN | TNX | LENGTH* | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DR Series | 118- 225 MHz | 107 MHz | • | | | | | • | | | • | | | | | | | | 19" | Broadbanded, uses rugged heat shrink tubing for radome, very flexible |
| EXB Series | 118- 225 MHz | 4- 13 MHz * | • | • | • | • | • | • | • | • | • | • | • | • | | | • | • | 4.1"- 7.8" * | Industry standard, wide range of connector options available |
| SXB Series | 136- 174 MHz | 11- 13 MHz * | | | | | | • | | | • | | • | | | | | | 5.5" | Lowest cost of the VHF antennas, rigid (uses sheath) |
| EXH Series | 145- 175 MHz | 10 MHz | • | | | • | • | • | • | | • | | • | • | • | • | • | | 10.5" | High gain |
| EXR Series | 136- 225 MHz | 10 MHz | • | • | | | | • | • | | | | • | | • | • | | | 7"- 8" | Flexible, rugged |
| EXS Series | 118- 225 MHz | 4- 15 MHz* | • | • | • | • | | • | • | | • | • | • | • | • | • | • | • | 3.3"- 5.10" | Shorter, less performance |
| EXW Series | 136- 240 MHz | 5- 26 MHz* | | • | | | | • | | | | | | | | | | • | 8.75" | High gain, flexible, low cost |
| TS Series | 118- 174 MHz | 56 MHz | • | | • | • | | • | | | | | | | | | • | | 17" | High gain, broadbanded |
| V Series | 118- 225 MHz | 4- 15 MHz* | • | | • | • | | • | | | | | | | | | • | | 17" | Low cost, flexible |

• G Series

## UHF 300 to 512 MHz

| FAMILY | FREQUENCY RANGES* | BANDWIDTH | BN | BNX | HT | KR | MD | MX | MXI | PL | SF | SFJ | SFU | SM | SMI | SMV | TN | TNX | LENGTH* | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXC Series | 308- 512 MHz | 6- 42 MHz* | • | • | | • | • | • | • | | • | | • | • | • | • | • | • | 5.9"- 7" | Low cost, flexible |
| EXD Series | 308- 512 MHz | 6- 42 MHz* | • | • | • | • | • | • | • | | • | • | • | • | • | • | • | • | 2.8"- 4.1" | Shorter, less performance |
| EXR Series | 308- 512 MHz | 6- 42 MHz* | • | | | • | | • | | | | | | | | | • | | 6.62"- 6.95" | High gain, flexible |
| EXW Series | 400- 512 MHz | 12 MHz | | • | | | | | | | | | | | | | | • | 9" | High gain, flexible, low cost |
| G Series | 400- 512 MHz | 20- 42 MHz* | • | | | | | | | | | | | | | | • | | 10" | High gain, flexible, broadbanded |
| SXD Series | 420- 470 MHz | 30 MHz | | | | | | • | | | • | | • | | | | | | 3.5" | Low profile, rigid (uses sheath), low cost |

• EXS Series • EXP Series

## Trunking and SMR Apps 806 to 960 MHz

| FAMILY | FREQUENCY RANGES* | BANDWIDTH | BN | BNX | HT | KR | MD | MX | MXI | PL | SF | SFJ | SFU | SM | SMI | SMV | TN | TNX | LENGTH* | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXC Series 806 | 806- 866 MHz | 60 MHz | • | • | • | • | • | • | • | | • | | • | • | • | • | • | | 3.7"- 4.6" | Low cost, rugged, flexible |
| EXC Series 821 | 821- 902 MHz | 81 MHz | • | • | | | • | | | | | | | | | | | • | 3.7"- 4.6" | Low cost, rugged, flexible |
| EXC Series 902 | 902- 960 MHz | 58 MHz | | | | | | | | | • | • | • | • | • | • | • | | 3.5"- 3.65" | Low cost, rugged, flexible |
| EXE Series | 806- 960 MHz | 19- 58 MHz* | • | • | | | • | | | | • | | • | • | | | • | • | 8"- 8.9" | High gain, rigid |
| EXP Series 806 | 806- 869 MHz | 63 MHz | | | | | • | | | | • | • | • | | | | | | 6.9" | High gain, flexible, rugged |
| EXP Series 902 | 896- 940 MHz | 44 MHz | | | | | • | | | | • | • | • | | | | | | 6.9" | High gain, flexible, rugged, *SMS Connector |
| EXR Series | 806- 960 MHz | 58- 81 MHz* | • | | | | | | | | | | | | | | • | | 9.16"- 9.5" | High gain, flexible |
| EXR Series 1850 | 1850- 1970 MHz | 120 MHz | • | | | | | | | | | | | | | | • | | 9.25"- 9.5" | High gain, flexible |
| EXS Series | 806- 960 MHz | 58- 60 MHz* | | | | | • | | | | • | • | • | • | | | • | | 2.25" | *SMS connector |

• WRX Series • EXE Series

## 2.4 GHz

| FAMILY | FREQUENCY RANGES* | BANDWIDTH | LENGTH* | NOTES |
|---|---|---|---|---|
| EXE Series | 2400- 2500 MHz | 100 MHz | 8" | Covered TNX- 1/2 wave, high gain, rigid, broadbanded |
| EXC Series | 2400- 2500 MHz | 100 MHz | 2.5"- 4" | SMA, Rev Pol TNC, TNC- 1/4 wave, rigid, low cost, broad-banded |
| EXR Series | 2400- 2500 MHz | 100 MHz | Right Angle | Rev Pol SMA, SMA, Rev Pol BNC- 1/2 wave, broadbanded |
| EXR Series | 2400- 2500 MHz | 100 MHz | Right Angle | Rev Pol TNC- 1/4 wave, broadbanded, high gain |
| EXS Series | 2400- 2500 MHz | 100 MHz | 4" | Rev Pol SMA- 1/4 wave, lower gain, low cost, low profile |
| WRX Series | 2400- 2500 MHz | 100 MHz | 4" | TNC- 1/2 wave |

RoHS

* varies by specific PN's

# Mobile Radio Antennas

Mobile radio antennas are used for wireless two-way communication with taxi dispatch, police, municipal, etc.; with many custom applications. Along with the use of mounting kits, these antennas can be mounted to any vehicle that is in any environment.

Laird's mobile radio antennas are the industry standard for public safety agencies, fleet and transportation networks. The company designs and manufactures a wide variety of mobile antennas with a multitude of mounting options.

As the industry leader in mobile radio antenna products, Laird produces antennas in a diverse number of styles that can be mounted to any vehicle for any use. To ensure maximum performance, mobile radio antennas can be individually tuned to frequency, while delivering high-performance in any environment.

• C-Coil

• Phantom® – Tunable

• ULTRA Phantom®

• Phantom®

• Phantom Elite®

• Survivor™

• Dual-band & Tri-band GPS AVL

## Low Band

| CATEGORY | FAMILY | ITEM | FREQUENCY RANGES | BANDWIDTH | LENGTH | NOTES |
|---|---|---|---|---|---|---|
| Whip | C-Coil | C(B)**(S) | 26.75- 50 MHz | 3- 7 MHz * | 52.5"- 67.5"* | Available in white or black, with or without shock spring |
| | Genesis™ | CW(B)**(S) | 26.75- 48 MHz | 3- 9 MHz * | 54"- 68" * | |

## VHF

| CATEGORY | FAMILY | ITEM | FREQUENCY RANGES | BANDWIDTH | LENGTH | NOTES |
|---|---|---|---|---|---|---|
| Low Profile | Phantom® | TRA(B)2100 | 210- 225 MHz | 15 MHz | 2.9" | NMO only |
| | Phantom® – Tunable | TRA(B)T****(P) | 142- 225 MHz | 15- 18 MHz* | 2.9"- 3.5"* | NMO or permanent mount (P-mount only available on select models) |
| | Phantom Elite® | ETRA(B)**** | 144- 225 MHz | 4- 15 MHz* | 2.375" | NMO only (with NMO adaptor); available in black or white |
| Whip | A-Base | A(B)***(S) | 118- 896 MHz | Single Frequency | – | Available with spring, field tunable, dual-band available |
| | QW (Quarterwave) | QW(B)*** | 136- 970 MHz | 8- 15 MHz* | 12.5"- 22"* | Available in field tunable model |
| | B-Coil | B(B)****(W)(N)(S)(SG) | 66- 225 MHz | 4- 15 MHz* | 23"- 59"* | Tunable, available with spring, certain frequencies available in no ground plane or wideband |
| | C-Coil | C(B)****(S)(SG) | 27- 50 MHz | 3- 7 MHz* | 52.5"- 67.5"* | Available in chrome or black; available as field tunable; available with spring and spring guard |
| | Genesis™ | CW(B)****(S)(SG) | 27- 470 MHz | 3- 30 MHz * | 18"- 68" * | |
| GPS-based | Survivor™ | GPSD(L)(S)****(PL)P | 137- 170 MHz | 10- 24 MHz | 7.25"- 22.4"* | Available with magnetic base |

## UHF & SHF

| CATEGORY | FAMILY | ITEM | FREQUENCY RANGES | BANDWIDTH * | LENGTH | NOTES |
|---|---|---|---|---|---|---|
| Low Profile | Phantom® – AVL Style | DTRA****(P) | 806- 960 MHz | 26- 75 MHz* | 1.25" | Available in P-mount |
| | Phantom® | TRA(B)****(N)(P) | 300- 6.0 GHz | Varies by specific PN | 3.4" or 2.7" | Available as NMO or P-mount; available in black or white; some models available with no ground plane, some frequencies available as dual-band; other options may be available (wall/ceiling mount) |
| | Phantom Elite® | ETRA(B)****(N)(P) | 410- 2500 MHz | 15- 110 MHz* | 2.7"- 4.025"* | |
| | Discadoo® | DISC(W)****(M)(PNSM) | 760- 2500 MHz | 60 MHz- 1 GHz | 0.75" | Available as NMO or P-mount w/ adhesive |
| GPS | GPS only | GPS********* † | 1575.42 MHz | Single Frequency | 0.43"- 1.875"* | Various form factors available; available in NMO mount, trunk mount, add on bracket, magnetic mount, adhesive mount, and standard AVL |
| | Dual-band & Tri-band GPS AVL | GPS(D)(T)****P | 450- 2500 MHz | 20- 100 MHz* | 1.25"- 4.125"* | – |
| | Survivor™ | GPSDS****(P)(LP)(G) | 380- 960 MHz | 60- 110 MHz * | 6"- 26.9"* | Available with SS rod or "rubber duck" style antenna; available with mag mount option |
| | Internal Mercury™ | GPST(3/5)I***/***** | 824- 960 MHz / 1710- 1990 MHz/ 1575.42 MHz | 72- 80 MHz*/ 130- 170 MHz*/ Single Frequency | – | – |
| | External Mercury™ | GPST3E824/18503 | 824- 896 MHz/1850 - 1990 MHz/1575.42 MHz | 72 MHz / 140 MHz/Single Frequency | – | – |
| | Roof Mount Tri-band | GPSTR***/***** | 824- 896 MHz/ 1850- 1990 MHz/ 1575.42 MHz | 72 MHz/140 MHz/Single Frequency | – | Available in most connector options |
| Whip | A-Base | A(B)****C(S) | 450- 2500 MHz | 20- 110 MHz* | – | Available with spring and close coil collinear, dual-band available |
| | QW (Quarterwave) | QW(B)*** | 406- 970 MHz | 20- 110 MHz* | 3"- 24"* | Available in field tunable model, 806 to 970 MHz model available with open coil flexible |
| | B-Coil | B(B)****(N)(S) | 406- 970 MHz | 20- 110 MHz* | 4.875"- 39.5"* | Tunable, available with spring, available with closed coil collinear, certain frequencies available in no ground plane |
| | C-Coil | C(B)***/***C(S) | 144- 174/ 440- 470 MHz | 24- 30 MHz* | 35.5"- 37.5"* | Closed coil collinear, available with spring, dual-band or single band available |
| | Elevated Feed | E(B)****(C) | 450- 970 MHz | 20- 110 MHz* | 25.375"- 40.25"* | – |
| MIMO | 3-Port | – | 2.4/5.0 GHz | – | 1.5" height | Available as either dual band element or single band; also various cable and connector configs available |
| | 2-Port w/ GPS | – | 2.4/5.0 GHz | – | | |
| | 1-Port w/ GPS | – | 2.4/5.0 GHz | – | | |

* varies by specific PN's  † Inquire about various models/options available

# Special Application

Laird special application antennas are designed to provide superior performance and reliability with unparalleled durability and design craftsmanship. With decades of market application experience and proprietary designs our industry leading special application antennas are second-to-none. These antennas are used mostly for public safety applications or private networks.

Laird world class engineering teams utilize proprietary,state-of-the-art design tools to create public safety antenna solutions that maximize total system performance and user satisfaction. These antennas consistently offer the industry's best value proposition and support mission and operational critical communication applications.

## Public Safety DAS

- Indoor RF signal strength and the associated in building two way radio coverage is critical to help emergency responders work safer, smarter and enables improved real-time decision-making capabilities that save lives and property.
- The CMS Public Safety Low PIM and Standard DAS antennas are designed to deliver existing single frequency or multiple frequency wide area network signals into a building where adequate signal strength is not present for emergency communications.

| PARAMETER | PERFORMANCE |
|---|---|
| Model Number | CMS38606-30NF Standard |
| | CMS38606P-30NF Low PIM (<150dBc) |
| Frequency | 380-520 MHz<br>698-960 MHz<br>1710-4300 MHz<br>4300-6000 MHz |
| VSWR 380-520 MHz | 3.0:1 Max |
| VSWR 698-960 / 1710-6000 MHz | 2.0:1 Max |
| Typical Max Gain | 2 dBi @ 380-520 MHz<br>2 dBi @ 698-960 MHz<br>6 dBi @ 1710-6000 MHz |
| Water / Foreign Body Ingress | IP67 Compliant |
| Antenna Weight | 0.8 kg (1.76 lbs) |
| Dimensions (Diameter x Height) | 298 mm x 133 mm ( 11.7" x 5.2") |

## Phantom-Fin Roof Mount Antenna

| MODEL NUMBER | CONFIGURATION | PORT 1 | PORT CONNECTOR | PORT 2 | PORT CONNECTOR | PORT 3 (EXTERNAL) | PORT 3 CONNECTOR | PORT 4 | PORT 4 CONNECTOR |
|---|---|---|---|---|---|---|---|---|---|
| FHQ38024CA-518VC1 | 1.1 | WiFi | SMA Male | UHF 1 | Mini UHF | VHF 1 (EXB) | Mini UHF | GPS | SMA Male |
| FHQ38024CA-518VC2 | 1.2 | WiFi | SMA Male | UHF 1 | PL259 | VHF 1 (EXB) | PL259 | GPS | SMA Male |
| FHQ43023CB-518VC2 | 2.1 | WiFi | SMA Male | UHF 2 | Mini UHF | VHF 2 (EXB) | Mini UHF | GPS | SMA Male |
| FHQ43023CB-518VC2 | 2.2 | WiFi | SMA Male | UHF 2 | PL259 | VHF 2 (EXB) | PL259 | GPS | SMA Male |

- UHF 1 (380-430 MHz) UHF 2 (430-520 MHz) VHF 1 (EXB) (136-147 MHz VHF 2 (EXB) (147-163 MHz)
- FAKRA and other connector configurations are available upon request.

# Dispatch Basestation

Dispatch basestation antennas offer unmatched, maximum null fill to ensure consistent gain close to the tower and extend out toward the horizon. These antennas are used mostly for public safety applications or private networks. The dispatch center coordinates and controls the dispatch units and tracks the location and ID of the dispatched units.

Laird's world class engineering teams utilize proprietary, state-of-the-art design tools to create dispatch base station antenna products that maximize total system performance and user satisfaction. These antennas consistently offer the industry's best value proposition.

• Fiberglass Omnidirectional

## VHF

| CATEGORY | FAMILY | ITEM | FREQUENCY RANGES* | BANDWIDTH* | GAIN (dBi) | LENGTH* | MAXIMUM POWER (WATTS) | NOTES |
|---|---|---|---|---|---|---|---|---|
| Omnidirectional | Fiberglass | FG**** | 140- 260 MHz | 4- 6 MHz* | 2-7 | 68"- 107"* | 150-200 | – |
| | Voyager® | VG**** | 132- 225 MHz | 18- 25 MHz* | 4-8 | 55"- 102" | 150-200 | – |
| | Ringo | CR(S)(X)*** | 150- 222 MHz | 2- 24 MHz* | 4-9 | 30"- 162"* | 150-200 | – |
| Directional Yagis | Gold/Black Series (Rugged) | Y(B)**** | 136- 250 MHz | 14- 30 MHz* | 11-13 | 41.5"- 72"* | 150-200 | – |
| | Silver Series (Economy) | YS**** | 136- 250 MHz | 9- 30 MHz* | 11-13 | 41.5"- 72"* | 150-200 | – |
| | Heavy Duty PLC | PLC****(N) | 129- 220 MHz | 2- 8 MHz* | 11-13 | 48"- 161"* | 400 | – |
| | Economy P | P**** | 130- 222 MHz | 2- 4.5 MHz* | 10 | 36"- 44"* | 400 | – |
| | Lowband | PLHC***(N) | 30- 75 MHz | 45 MHz | 7-11 | 42"- 136"* | – | – |
| Dipole Arrays | 2 Bays | YDA***2 | 150- 174 MHz | 24 MHz | 7 | – | – | Single or replacement dipoles available |
| | 4 Bays | YDA***4 | 136- 174 MHz | 14- 24 MHz* | 10-13 | – | – | Single or replacement dipoles available |
| | Broadband Arrays | ****S | 140- 222 MHz | 10- 12 MHz* | 7-13 | 132"- 504" | 500 | – |

## UHF & SHF

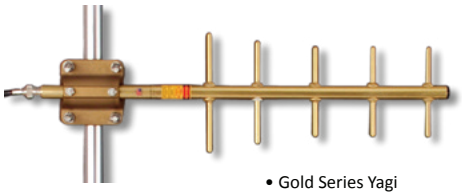
| CATEGORY | FAMILY | ITEM | FREQUENCY RANGES* | BANDWIDTH* | GAIN (dBi) | LENGTH* | MAXIMUM POWER (WATTS) | NOTES |
|---|---|---|---|---|---|---|---|---|
| Omnidirectional | Fiberglass | FG**** | 360- 2400 MHz | 10- 90 MHz* | 2-11 | 15"- 107"* | 200 | Dual-band also available |
| | FR Series | FR(X)*** | 380- 512 MHz | 20- 24 MHz* | 5-7 | 77.79"- 118.75"* | 150 | – |
| | Voyager® | VG**** | 406- 512 MHz | 44-62 MHz* | 7-8 | 25"- 35" | 200 | – |
| | Ringo | CR(S)(X)***(B) | 406- 512 MHz | 14- 22 MHz* | 4-9 | 17"- 54"* | 250 | – |
| Yagis | Gold/Black Series (Rugged) | Y(B)**** | 406- 970 MHz | 20- 90 MHz* | 11-15 | 16.75"- 68.0625"* | 150-200 | – |
| | Silver Series (Economy) | YS**** | 406- 970 MHz | 20- 90 MHz* | 10-15 | 16.75"- 72"* | 150-200 | – |
| | Heavy Duty PLC | PLC****(N) | 300- 512 MHz | 14- 22 MHz* | 11-15 | 31.25"- 66"* | 250 | – |
| | Economy P and PE | P(E)**** | 406-495 MHz | 20- 55 MHz* | 10-12 | 15.25"- 36"* | 250 | – |
| | Enclosed Yagi | YE****** | 2.4- 5.8 GHz | 100- 900 MHz | - | – | – | – |
| Dipole Arrays | 2 Bays | YDA***2 | 450- 470 MHz | 20 MHz | 7-10 | – | – | Single or replacement dipoles available |
| | 4 Bays | YDA***4 | 450- 512 MHz | 20- 22 MHz* | 10-13 | – | – | Single or replacement dipoles available |
| | Broadband Arrays | ****(S)(P) | 350- 512 MHz | 10- 22 MHz* | 8-13 | 50.4 "- 288"* | 500 | – |

* varies by specific PN's

• 4 Bay Dipole Array

• Voyager®

• Enclosed Yagi



• Gold Series Yagi

# What Sets Us Apart

## MISSION

***A trusted partner*** *delivering technology to the world through innovation, speed, & reliable fulfillment.*

## VISION

***A world where smart technology enables virtually everything*** *to sense, think and communicate; transforming our way of life and empowering us to do more than we can imagine*

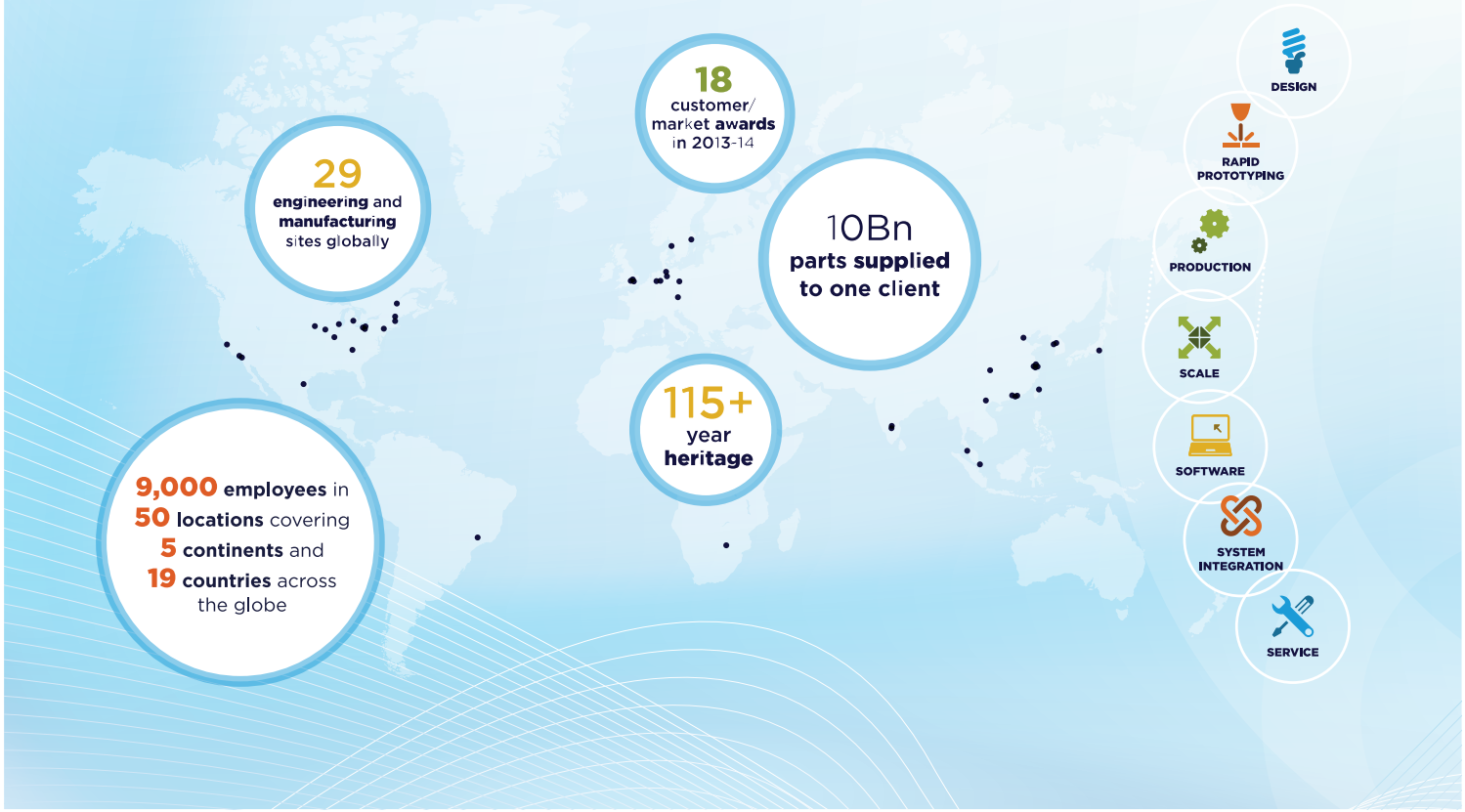
## CULTURE

***Working as a global team*** *of talented individuals to make a difference for our employees, business partners and our world*

*We have an unwavering commitment to being honest and ethical in all situations and treating each other with dignity and respect.*

*We create an open and engaging environment that thrives on high energy, adaptability and delivering on our commitments.*

*Laird is a place with great opportunities for personal and professional growth for those who work hard, are willing to learn and deliver results.*




Laird™

Smart Technology. Delivered.™

## www.lairdtech.com

Americas: +1.847.839.6907
Europe: +44.1628.858941
Asia: +86.21.5855.0827.127


IAS-BRO-PUBLIC-SAFETY-LMR-PMR 072815