Alien EPC Gen 2 RFID
Reference Designs

Alien Technology® manufactures some of the worlds best performing EPC Gen 2 inlays, some of which are available as **Reference Designs** for qualified partners.

Reference Designs are offered by Alien under a special license with certain business commitments such as a minimal annual chip purchase and certain other commitments. Only Alien RFID chips may be used with these reference designs. The license is revocable.

Reference Designs are practically identical to their Alien equivalent but visually distinct when viewed close up. Given high quality manufacturing, test and quality control, these tags are designed to offer similar performance to the equivalent Alien tag.

Not all Alien tags are available as reference designs. Those that are available are listed in this document.

All Alien reference designs are:

- World Tag compliant, enabling operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.
- Suitable for use with Higgs™3 or Higgs™4
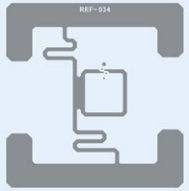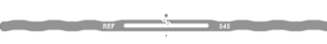
Reference Designs: Squiggle Family

	Model	Antenna Size[1]	Application	Features	Benefits
Squiggle	REF-040	3.732″ x 0.319″ 94.8mm x 8.1mm	Item/asset tracking including: pallet placards, cases, baggage, denim, poly bags, electronics, apparel tags and boxed items.	Squiggle is one of the most widely used general purpose tags. Family extends the Squiggle features into different form-factors. One of the best performing general purpose tag family on the market. Designed to work well in challenging environments.	Well proven design for a broad range of worldwide applications. **All Alien tags are world-tags and work well in all regions.** A very robust general purpose tag (for ultimate robustness in high dielectric environments - see Aliens "G" or "Bat" tags).
Squiglette	REF-030	2.756″ x 0.374″ 70mm x 9.5mm			
Short	REF-062	2.756″ x 0.669″ 70mm x 17mm			
Squig	REF-010	1.752″ x 0.409″ 44.5mm x 10.4mm			

Reference Designs: High Dielectric Family

	Model	Antenna Size[1]	Application	Features	Benefits
G Tag	REF-054	3.66″ x 0.748″ 93mm x 19mm	High density plastic totes, windshields, batteries etc.	Exceptional performance for high dielectric mounting.	Designed for use on glass, plastics, wood or other materials normally challenging for RF.

[1] Sizes are approximate. **These are inlay <u>antenna</u> sizes**. Tags and labels will be larger.

Reference Designs: Form-factor/Orientation Family

	Model	Antenna Size[1]	Application	Features	Benefits
2x2	REF-034	1.73″ x 1.81″ 44mm x 46mm	Large items, baggage tagging, apparel and pharmaceutical bottles.	Highest performance in a 2″ form factor.	A square form-factor for tracking of larger items. Multiple-frequency sensitivity optimized for high performance in all world regions.
Square	REF-029	0.89″ x 0.89″ 22.5mm x 22.5mm	Item level tagging, apparel, pharmaceutical bottles and other high value consumables.	High performance when a longer tag form-factor is inappropriate.	The Square provides performance close to the 2x2 in a smaller form-factor.
SIT	REF-013	0.472″ x 0.354″ 12mm x 9mm	Jewelry, pharma, bottles, liquids, foods, DVD's, access control, loyalty cards, and other anti-counterfeiting applications.	Ultra Compact.	Fits very small objects normally challenging for RFID.
				Near field access only.	Close proximity read zone for added security.
				Can be used adjacent to metallic objects.	Extended read range enabled through appropriate placement to conductive surfaces.
Slimline	REF-045	3.701″ x 0.228″** 94mm x 5.8mm** **3.701″ x 0.12″ / 94mm x 3.05mm without inlay chip targets (not electrically significant - used for chip mounting only).	Book spines, door edges, cigarette boxes, small package labels, narrow form factor assets.	Ultra slim form-factor at 5.8mm or 3.05mm thin (3.05mm without inlay targets).	Extremely narrow form-factor enabling use where RFID is normally not possible. Approaches the well regarded Squiggle/ Squiglette performance in an ultra narrow form-factor.
H Tag	REF-027	1.18″ x 1.77″ 30mm x 45mm	Labels of all kinds for hang-tags, cases, pallets etc	High performance 90° rotated dipole tag that fits the common 30 x 50mm hang-tag form-factor	For use in less expensive label machines to avoid 90° rotation of the label during production. Fits the 30 x 50mm garment hang tag form factor.

[1] Sizes are approximate. **These are inlay antenna sizes**. Tags and labels will be larger.