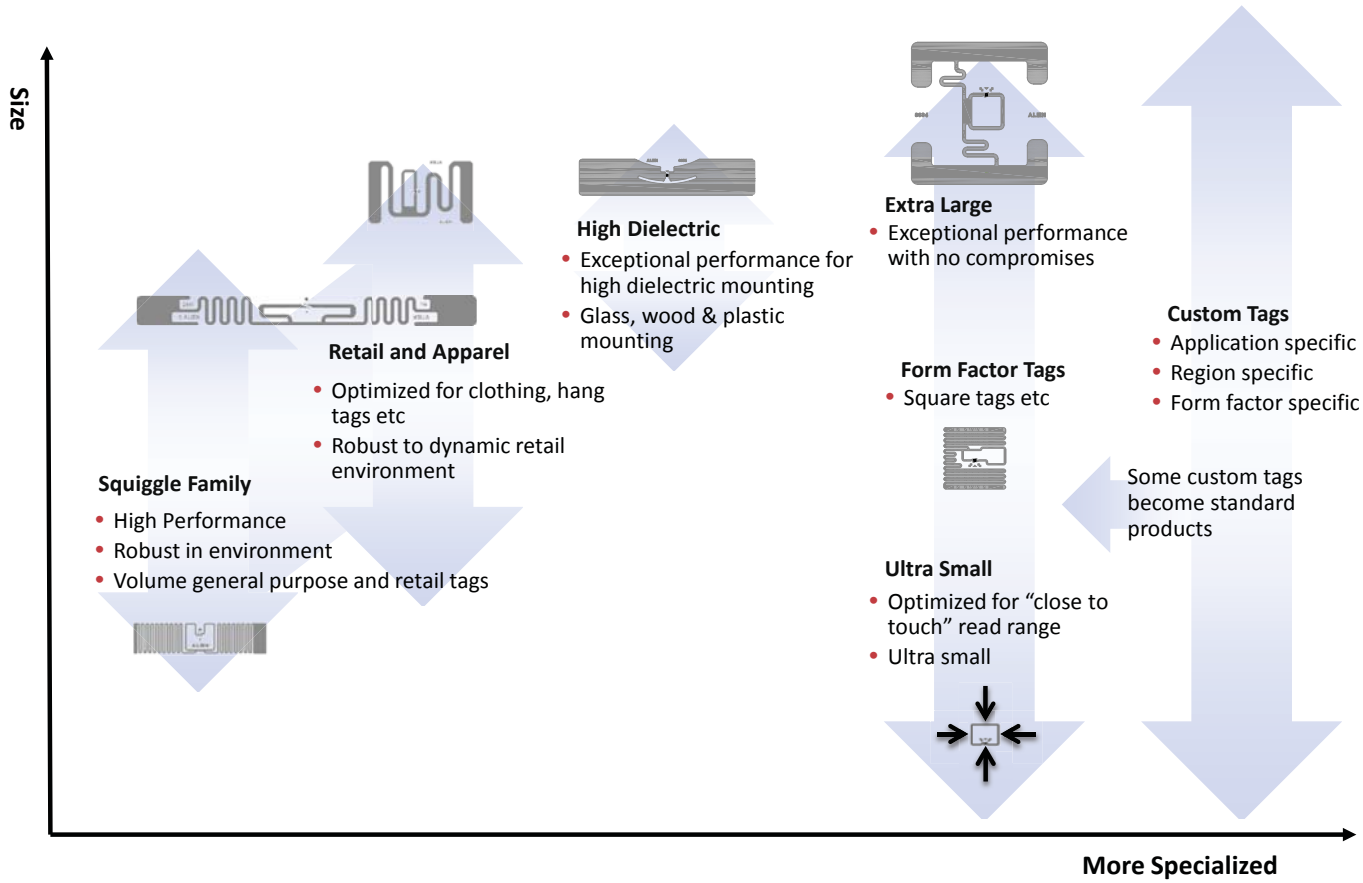
Alien Family of EPC Gen 2 RFID Inlays

Alien Technology® manufactures a range of EPC Gen 2 inlays designed to deliver optimal performance in a variety of applications.

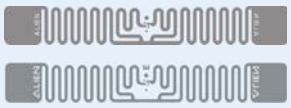
Powered either by the larger memory **Higgs™3 UHF RFID IC** or the volume focused **Higgs™4 UHF RFID IC**, Alien® offers a range of RFID inlays that fit a wide variety of sizes, applications, characteristics and needs.



All Alien inlays are World Tag compliant, enabling operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa. Some tags are world tags with specially tuned performance for optimal behavior in certain regions. See the tag matrix on the following pages. Please refer to Alien's Higgs-3 and Higgs-4 product overviews for details on the RFID IC capabilities.

Alien has the capability to design custom tags for appropriate volume applications (under appropriate business terms) and can offer reference designs under license.

Inlays: Squiggle Family

	Higgs-3	Higgs-4	Antenna Size[1]	Application	Features	Benefits
Squiggle 	ALN-9640	ALN-9740	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.** Tags denoted with an "E" on the model number (and name) are ***specially*** tuned for optimal performance in Europe (but are still world tags). A very robust general purpose tag (for ultimate robustness in high dielectric environments - see Aliens "G" or "Bat" tags).
Squiglette and Squiglette-E 	ALN-9630	ALN-9730 **ALN-9730-E[2] (NEW)** new	2.756" x 0.374" 70mm x 9.5mm			
Short 	ALN-9662	ALN-9762	2.756" x 0.669" 70mm x 17mm			
Squig 	ALN-9610	ALN-9710	1.752" x 0.409" 44.5mm x 10.4mm			
HiScan (HS) new 	N/A	ALN-9720	1.57" x 0.61" 40mm x 15.5mm		Tuned for high-performance reading in lower-power reading environments.	Extremely high read-rates in real-life, every day retail environments (e.g. rapid handheld movement, many tags close to each other etc). Especially effective with handheld RFID readers that have low transmit power.

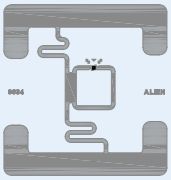
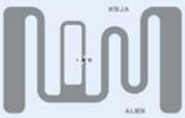
Inlays: High Dielectric Family

	Higgs-3	Higgs-4	Antenna Size[1]	Application	Features	Benefits
G Tag 	ALN-9654	N/A	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.
BAT new 	N/A	ALN-9770	3.25" x 1.25" 82.5mm x 32mm	Automotive batteries, fluid filled objects, plastic containers and metal filled objects.	Highly tuned for read rates and distances when amongst metal/water based objects contained in plastics, glass etc	Designed for high read and write performance when applied to thin high-dielectric materials especially when these dielectrics contain challenging materials like metal and water based fluids.

[1] Sizes are approximate. **These are inlay <u>antenna</u> sizes**. Tags and labels will be larger. Please refer to specific product details available on Alien's website for exact measurements - www.alientechnology.com

[2] All Alien tags are world-tags and work well in all regions. However, tags denoted "E" are specially tuned for optimal performance in Europe.

Inlays: Form-factor/Orientation Family

	Higgs-3	Higgs-4	Antenna Size[1]	Application	Features	Benefits
2x2 	ALN-9634	N/A	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 	ALN-9629	N/A	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.
Garment Tag (GT)  	N/A	ALN-9728	1.97" x 1.18" 50mm x 30mm **aka "30 x 50"**	Retail, apparel, hang-tags, joker tags, labels and document tracking.	30x50mm form-factor and tuned for use in retail with packed shelves or hanging garments.	Extremely high read performance (distance/ rates) in real-life, every day retail environments. Specifically designed and tested with stacked and hanging goods.
SIT 	ALN-9613	N/A	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 (SL) 	N/A	ALN-9745	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/ Squigglette performance in an ultra narrow form-factor.

[1] Sizes are approximate. **These are inlay antenna sizes**. Tags and labels will be larger. Please refer to specific product details available on Alien's website for exact measurements - www.alientechnology.com

[2] All Alien tags are world-tags and work well in all regions. However, tags denoted "E" are specially tuned for optimal performance in Europe.

Inlay Application Guide:

This table is a guide to assist narrowing the inlay types that may be relevant in your application. Tags should always be tested in their application but this table should help narrow that initial selection.

	Squiggle Family				Specialized Retail		High-Dielectric		Form-factor			
	Squiggle®	Short	Squiglette	Squig	HiScan	GT-Tag	BAT-Tag	G-Tag	SlimLine	2×2	Square	SIT
Higgs™4 Model #	ALN-9740	ALN-9762	ALN-9730 ALN-9730-E	ALN-9710	ALN-9720	ALN-9728	ALN-9770	N/A	ALN-9745	N/A	N/A	N/A
Higgs™3 Model #	ALN-9640	ALN-9662	ALN-9630	ALN-9610	N/A	N/A	N/A	ALN-9654	N/A	ALN-9634	ALN-9629	ALN-9613
Retail												
Pharma												
Ultra compact												
Wood/ Plastic/ Glass												
General Purpose												
Custom tags	*Contact us*											

University of Arkansas Approved Tags:

The University of Arkansas, Walton College, Radio Compliance Lab provides an independent test facility that reviews and approves tags under the most stringent conditions. The main objective of these tests is to provide an approved list of UHF RFID inlays that the largest retailers can rely upon to meet an aggressive set of performance metrics. This allows these well known retailers to acquire tags with the confidence that the performance will meet their needs in their real retail environment.

The tags labeled "Yes" below have been submitted and approved to the Arkansas Radio Compliance "ARC" test facility.

Tag Name	Part Number		U of A Approval						
	Higgs-3	Higgs-4	Cat A: Denim	Cat B: Polybag	Cat C: Electronics	Cat D: Hanging	Cat E: Large Box	Cat I	Cat K
Squiggle	ALN-9640	ALN-9740	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Squiglette	ALN-9630	ALN-9730	Yes	Yes	Yes	Yes		Yes (9630)	Yes (9630)
		ALN-9730-E	Yes	Yes		Yes		Yes	Yes
Short	ALN-9662	ALN-9762	Yes	Yes	Yes	Yes			
GT tag	N/A	ALN-9728	Yes	Yes		Yes			

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