

# Embeddable RFID

Low, high and ultrahigh-frequency transponders for enclosure into virtually any form factor



Embeddable RFID transponders allow manufacturers to integrate HID Global electronic components seamlessly into tag designs optimized for any application.

Leveraging HID experience, manufacturers and integrators can combine their specialized market expertise to deliver optimized tagging solutions for custom automation applications. Manufacturers can save the time and expense of electronics design and production, and better focus resources on providing customer solutions.

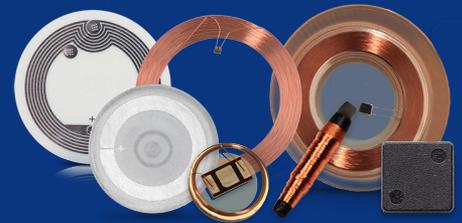
With a variety of integrated chips, HID offers a range of Embeddable RFID components various operating frequencies, and form factors for incorporation into finished tagging solutions.

## Choose from:

- **E-Unit Disc transponders** – low frequency HID coils and chips, ideal for keyfobs and similar simple applications.
- **Inlays & Labels** – NFC or UHF inlays or printable labels are easy to apply via glue to smart posters etc.

- **Logi Tag™ 180** – UHF near-field transponders, small and robust.
- **MuTRAK™** – UHF ultra-small and robust transponders, ideal to identify small items.
- **Clear Disc transponders** – low and high frequency electronics sealed in a transparent plastic coating that provides resistance to chemical exposure, shock, vibration and thermal fluctuations, both during and after production.
- **Piccolino Tag transponders** – for space-constrained applications, our smallest disc-shaped units deliver high frequency performance and up to a 16 kbit read-write memory.
- **E-Unit Rod transponders** – provide the same high-performance coil design at the heart of the HID Glass Tag family, for embedding into your preferred housing. Rod-shaped units may be preferred when a more precisely directed radio frequency field is needed or a linear form factor is required.
- **Sentry PCB tags** – highly durable, small transponders suitable for embedding, see separate Sentry PCB datasheet for details.

If a standard configuration does not fulfill your needs, HID engineers can customize a transponder unit to meet your requirements.



## KEY BENEFITS

- **Customizable** – choose a size, chip and a disc or rod to fit any custom enclosure
- **Unsurpassed quality** – fully automated manufacturing and innovative DBond™ technology ensure tag reliability
- **Reliable operation** – built to withstand the rigors of tag processing, including plastic injection molding

## TECHNOLOGY HIGHLIGHTS:

- A selection of housing materials to meet a variety of production process demands
- A multitude of available integrated chip options
- Embeddable in a broad spectrum of materials
- LF, HF and RAIN UHF Options

For more information, contact [tagsales@hidglobal.com](mailto:tagsales@hidglobal.com)

Embeddable RFID						
Clear Disc						
	Hitag S	Q5		Unique		MIFARE DESFire EV1 4K
	20 mm	22 mm	30 mm	20 mm	30 mm	25 mm
						
Base Model Number	624116	612116	612117	601116	601117	7A1119
<b>ELECTRONIC</b>						
Operating Frequency	125 kHz					13.56 MHz
Chip Type	HITAG S	Q5		Unique		MIFARE DESFire EV1
Memory	2048 bit EEPROM	256 bit EEPROM		64 bit read-only		4 KB EEPROM
Anti-collision	Yes	Yes				Yes
Reading Distance	Dependent upon reader, environment and application					
<b>PHYSICAL</b>						
Outer Coil Diameter	Ø 0.79 in (20 mm)	Ø 0.87 in (22 mm)	Ø 1.18 in (30 mm)	Ø 0.79 in (20 mm)	Ø 1.18 in (30 mm)	Ø 0.98 in (25 mm)
Inner Coil Diameter	0.02 in (0.6 mm)					
Thickness	0.02 in (0.6 mm)					0.03 in (0.75mm)
Mounting Method	Embed, glue					
Housing Material	Polyethylen + Polyester (outside)					
<b>CHEMICAL AND MECHANICAL</b>						
Water	Depends on finished product					
Withstands Exposure To	Depends on finished product					
Vibration	Depends on finished product					
Shock	Depends on finished product					
<b>THERMAL</b>						
Storage	-4° to +140° F (-20° to +60° C)					
Operating	-4° to +140° F (-20° to +60° C)					
<b>OTHER</b>						
Standards						
Box Size	5000 pcs	5000 pcs	2000 pcs	5000 pcs	2000 pcs	500 pcs
Options	Alternative sizes and chips (e.g. HDX). See separate datasheet for inlays & labels.					
Warranty	2 Years					

### APPLICATION AREAS:

- Asset tracking and logistics
- Gas bottles
- Utility lines

### AUTOMATION AND MANUFACTURING

- Tool maintenance
- Process accountability

### MEDICAL AND HEALTH

- Consumables
- Instruments

Embeddable RFID																
E-Unit Disc				E-Unit Rod	Piccolino Tag				Logi Tag	MuTRAK						
EM4305 / HITAG S				HITAG S	ICODE SLIX2		ICODE DNA	Vigo™	F-Mem	Monza R6-P	M730					
24 mm		28 mm		15 mm	7.5 mm	9.5 mm		6/9.5 mm	6/9.5 mm	18 mm	7 mm					
																
Base Model Number	684620 (EM4305)	684680 (EM4305)	623620 (HITAG S)	623610 (HITAG S)	201045	629191-012	629190-012 (OM)	629190-312 (OM)	6K3190	6B0192 (6mm)	6C9192 (6mm)	6A9190 (9mm)	634190 (9mm)	6H2112	TM730E01	
ELECTRONIC																
Operating Frequency	134.2 kHz				13.56 MHz				860-960 MHz (Worldwide)							
Chip Type	EM4305/HITAG S				HITAG S	ICODE SLIX2		ICODE DNA	Vigo	F-Mem	Monza R6-P	M730				
Memory	512 bit EEPROM (EM4305)		256 bit EEPROM (HITAG S)		256 bit EEPROM	2560 Bit UM		2016 Bit UM	1664 bit (6mm)	1024 bit (9mm)	EEPROM	2 kbit (6mm)	16 kbit (9mm)	FRAM	28/96 bit EPC, 32/64 bit UM	128 bits EPC
Anti-collision	Yes															
Reading Distance	Dependent upon reader, environment and application															
PHYSICAL																
Outer Coil Diameter	Ø0.97 in (Ø24.3mm)	Ø1.09 in (Ø27.8mm)	Ø0.97 in (Ø24.3mm)	Ø1.09 in (Ø27.8mm)		Ø0.30 in (Ø7.5mm)	Ø0.37 in (Ø9.5mm)		Ø0.23/0.37 in (Ø6/9.5mm)	Ø0.6 in (18mm)	0.27 x 0.27 in (7 x 7 mm)					
Inner Coil Diameter	Ø0.79 in (Ø20mm)	Ø0.93 in (Ø23.5mm)	Ø0.79 in (Ø20mm)	Ø0.93 in (Ø23.5mm)												
Thickness	0.03 in (0.85 mm)	0.09 in (2.2 mm)	0.03 in (0.85 mm)	0.09 in (2.2 mm)	Ø0.07 x 0.59 in (Ø1.8x15mm)	0.04 in (1 mm) / 0.03 in (0.8 mm) for 6 mm Piccolino				0.1 in (3 mm)	0.05 in (1.4 mm)					
Mounting Method	Embed, glue											Sew into hem or pouch or heat seal under a patch for textile applications. Embed, glue for other applications.				
Housing Material	Depends on finished product				Epoxy				Polycarbonate				Epoxy			
CHEMICAL AND MECHANICAL																
Water	Depends on finished product				IP67, 68° F (20° C), 3.3 ft (1 m) x 1 h				IP68, 6.6 ft (2 m) x 24 h							
Withstands Exposure To	Depends on finished product								Impact IEC 62262-IK07, 100 drops 5.9 ft (1.8 m), Axial/radial force 1000N							
Vibration	Depends on finished product				IEC 68.2.6 [10 g, 10 to 2000 Hz, 3 axis, 2.5 h]											
Shock	Depends on finished product				IEC 68.2.29 [40 g, 18 ms, 6 axis, 2000 times]											
THERMAL																
Storage	-40° to +140° F (-40° to +60° C)				-40° to +185° F (-40° to 85° C), 1000 h											
Operating	-13° to +140° F (-25° to +60° C)				-40° to +185° F (-40° to 85° C)				-4° to +185° F (-20° to 85° C)	-40° to +185° F (-40° to 85° C)	Peak: Up to 284° F (140° C), 100 h	-40° to +185° F (-40° to 85° C)	Peak: Up to 392° F (200° C), 15 sec*			
OTHER																
Standards	ISO 11784, ISO 11785				ISO 15693, ISO 18000-3				ISO 15693	UHF EPC Class 1 Gen 2, ISO 18000-63						
Box Size	1250 pcs	1000 pcs	1250 pcs	1000 pcs	39 912 pcs	2000 pcs										
Options	Alternative sizes and chips (e.g. HDX). See separate datasheet for inlays & labels.											Chip reference and date code laser-engraved on transponder housing				
Warranty	2 Years															



hidglobal.com

North America: +1 512 776 9000

Toll Free: 1 800 237 7769

Europe, Middle East, Africa: +44 1440 714 850

Asia Pacific: +852 3160 9800

Latin America: +52 (55) 9171-1108

**For more global phone numbers click here**

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2022-08-31-idt-rfid-embeddable-family-ds-en  
PLT-00272

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