





PLASTIC BOLTABLE TAG

CONTENTS

TMT-3

1	Pro	duct	description	2
	1.1	Spe	ecificationS	2
	1.2	dim	ensions	3
	1.3	RE	AD RANGE	3
	1.4	env	rironmental SPECIFICATIONS	4
	1.5	sup	porting components	5
	1.5	.1	TMT-3 Gluing, Bolting or Banding	5
	1.6	sup	ported services	5
	1.7	pos	sible applications	5
2	inst	allati	ion instructions	5
	2.1	tag	placement	5
	2.2	tag	attaching methods	6
	2.2	.1	Gluing (epoxy) the tag to the metal surface	6
	2.2	.2	Pressure-sensitive adhesive	6
	2.2	.3	Bolting the tag to the metal surface	6
	2.2	.4	Banding the tag to the metal surface	7
3	Con	itactir	ng AbleID Ltd	7

T: +44 (0)845 474 2001 F: +44 (0)845 474 2006



1 PRODUCT DESCRIPTION

The patent-pending **TROI TMT-3 Plastic Boltable Tag** provides identification and tracking capabilities never-before available in such a tiny plastic package designed for rugged or hazardous use-areas. Not only can the tag be mounted to any metallic surface by either gluing or bolting the tag, but it can withstand unprecedented temperature (consistent temperatures of 200 degrees Centigrade), pressure and environmental conditions.

1.1 SPECIFICATIONS

Device type Passive RFID tag	Standard : Optional: Optional:	UHF HF LF	(Ultra High Frequency band) (High Frequency band) (Low Frequency band)		
Air interface protocol	UHF: EPCGlobal Class1Gen2 / ISO/IEC 18000-6C HF: ISO/IEC 15963, ISO/IEC 14443 LF: ISO/IEC 18000-2				
Operational frequency	Standard : Optional: Optional:	UHF LF HF	865-869 MHz (EU), 902-928 MHz (US) 125 KHz 13.56 MHz		
IC options - UHF	Standard : Alien Higgs 3 (others on request) Optional: EM, Fujitsu, Impinj, NXP (others on request)				
EPC memory - UHF	Standard : 128 bit Optional: Up to 240 bit				
EPC memory content	Unique 96-bit number encoded				
Extended memory - UHF	Standard: 512 bit				
HF EEPROM	ISO/IEC 15693, 64 Bit UID; 512 bit & 1024 bit ISO/IEC 14443 A, 7 Byte UID; 512 bit & 1024 bit				
LF EEPROM	Standard : 512 bit & 256 bit				
TID - UHF	Factory-programmed, non-changeable, unique 64-bit ID.				
Read range - UHF	Real-world: 1 – 2 meters, depending on attachment Lab environment: 7 meters				
Applicable surfaces	Any material, including sub-surface (back-filled with epoxy [non- metallic materials]). Surface mounting on metal surfaces, both ferrous and non-ferrous.				
Material	High temperature plastic - GE Noryl				
Weight	0.5 oz 14 grams				
Standards compliancy	ISO 17665 – Sterilization of Health Care Products – Moist Steam ISO 11135 - Sterilization of Health Care Products – Ethylene Oxide ATEX-compliant				
Product RoHS compliant?	Yes				

T: +44 (0)845 474 2001 F: +44 (0)845 474 2006



*The read range listed above was obtained from a lab test environment **using an FCC (US) Reader, test results may be different for an ETSI (EU) reader**. Actual test results may be different. Testing in actual use environments is strongly recommended.

Able ID Ltd, Maghull Business Centre, Red Lion Building, 1 Liverpool Road North, Maghull, L31 2HB, UK. T: +44 (0)845 474 2001 F: +44 (0)845 474 2006



1.4 ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-50°C to +200°C*		
operating temperature	-50°F to +392 °F*		
Temperature Cycling Test	200 deg C continuous, for 30-days		
	IP68:		
ID classification	- Complete protection against dust		
II classification	- Protection against continuous immersion in water		
	(Tested for 5 hours in 1 m [3.3 ft] depth)		
Weather ability	Excellent, including UV-resistance and sea water immersion		
Pressure resistance	Embedded RFID tag tested to 30,000 PSI for 30 days		
Chemical resistance	No physical or performance changes in: - Salt water - NaOH (depending on concentration) - Sulfuric acid (depending on concentration) - Motor oil (tested in 168 hour exposure) Generally good against: - Most solvents - Most acids and bases		

* NOTE:

The RFID tag will not be functional if it is left at the maximum indicated temperatures such that the internal soak temperature exceeds +80 deg C. The RFID tag itself will function between -50 deg C and +80 deg C.

T: +44 (0)845 474 2001 F: +44 (0)845 474 2006



Information has

etched onto the

been laser-

1.5 SUPPORTING COMPONENTS.

1.5.1 TMT-3 Gluing, Bolting or Banding

See Section 2 Installation Instructions for further details and pictures

Purpose	Glue, adhesive, bolts or bands used to attach TMT-3 to metal surface
Advantages	 Glue: Permanent epoxy. No need to drill holes in mounting surface. Adhesive: Pressure-sensitive adhesive film applied to the tag by TROI LLC. Bolt: Secure attachment that is easier to remove than gluing (adhesive_paint). Band: Rugged - easy-on, easy-off.

1.6 SUPPORTED SERVICES

Several options are available:

- Tag pre-encoding
- Laser engraving on tags surface

For further details, please contact TROI LLC.



1.7 POSSIBLE APPLICATIONS

Metal surfaces

Metal returnable containers, metal canisters, metal pallets, high value metal items, aerospace applications, military applications, etc.

WF 081412

Balance of page left blank

2 INSTALLATION INSTRUCTIONS

2.1 TAG PLACEMENT

The **TMT-3** tag must be mounted to the metal surface with the metal "cup" pointed up and with no metal covering the tag.

When selecting the mounting location, ensure the following:

T: +44 (0)845 474 2001 F: +44 (0)845 474 2006



- Select an even metal surface so that the entire base of the TMT-3 is in contact with the mounting surface.
- Place the tag in the middle of the largest metal mounting surface available.
- It is recommended that the tag be taped to the metal surface before bolting the tag, to check orientation and performance.

The **TMT-3**'s performance depends on the shape of the metal object and the tags placement on that surface. The above recommendations are valid for flat surfaces. Testing is recommended to verify performance in each use-case.

2.2 TAG ATTACHING METHODS

The tag can be either glued (epoxyed), bolted or banded to the metal surface.

2.2.1 Gluing (epoxy) the tag to the metal surface

It is strongly recommended that **TROI's AP-1** adhesive_paint be used when gluing tags.

(See **TROI's AP-1** adhesive_paint datasheet for details).

Whichever epoxy is used, make sure that the mounting surface is clean and free of debris before gluing the tag to the surface.

2.2.2 Pressure-sensitive adhesive

The quickest method of attachment; peel the liner from the adhesive and press to the cleaned mounting surface.

2.2.3 Bolting the tag to the metal surface

Bolting achieves effective mounting and retention in various use conditions. The **TMT-3** can be mechanically attached using;

- Screws (size M4)
- Pop rivets (size 4 mm)

Balance of page left blank



2.2.4 Banding the tag to the metal surface

Banding is an effective mounting and retention method.

bleID Ltd offers a number of banding options: Contact us for more details / options.

- **TMT-3-B1**; metal banding riveted to tag (other banding material can be used)
- **TMT-3-B2**; metal banding looped through the mounting holes and over the tag (other banding material can be used)



3 CONTACTING ABLEID LTD

For additional information and technical support contact:

AbleID Ltd

Maghull Business Centre, Red Lion Building, 1 Liverpool Road North, Maghull, L31 2HB, UK. T: +44 (0)845 474 2001 F: +44 (0)845 474 2006 E: <u>info@ableid.com</u> W: <u>www.ableid.com</u>

ADVISORY

Although any information, recommendations, or advice contained herein is given in good faith, **Troi LLC or AbleID Ltd** makes no warranty or guarantee, express or implied, (i) that the results described herein will be obtained under end-use conditions, or (ii) as to the effectiveness or safety of any design incorporating its products, materials, services, recommendations or advice. Except as provided in **Troi LLC or AbleID Ltd** standard conditions of sale, **Troi LLC or AbleID Ltd** and its representatives shall in no event be responsible for any loss resulting from any use of its materials, products or services described herein.

_END _

T: +44 (0)845 474 2001 F: +44 (0)845 474 2006