



# CC-102

## Embeddable Tag

TECHNOLOGIES ROI, LLC



### CONTENTS

1	PRODUCT DESCRIPTION .....	2
1.1	Specifications.....	2
1.2	Dimensions .....	3
1.3	Read Range.....	4
1.4	Environmental Specifications .....	4
1.5	Supported Services.....	5
1.6	Possible Applications .....	5
2	INSTALLATION INSTRUCTIONS.....	5
3	CONTACTING TROI LLC .....	5



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### 1 PRODUCT DESCRIPTION

The patented (US Patent # 7,928,922) **TROI CC-102 Embeddable** RFID tag provides automatic identification and tracking capabilities never-before available in such a unique package designed for rugged or hazardous use-areas. It can withstand unprecedented high temperature (consistent temperatures of 200 degrees Centigrade), high pressure and severe environmental conditions.

#### 1.1 SPECIFICATIONS

<b>Device type</b>	Passive RFID tag
<b>Air interface protocol</b>	<b>UHF:</b> EPCGlobal Class1Gen2 / ISO/IEC 18000-6C
<b>Operational frequency</b>	<b>Standard:</b> UHF (865-869 MHz (EU), 902-928 MHz (US))
<b>IC options - UHF</b>	<b>Standard:</b> Alien Higgs 3 (others on request) Optional: EM, Fujitsu, Impinj, NXP (others on request)
<b>EPC memory - UHF</b>	<b>Standard:</b> 128 bit Optional: Up to 240 bit
<b>EPC memory content</b>	Unique 96-bit number encoded
<b>Extended memory - UHF</b>	<b>Standard:</b> 512 bit
<b>TID - UHF</b>	Factory-programmed, non-changeable, unique 64-bit ID.
<b>Read range - UHF</b>	Real-world: 4.9 meters air; 4.3 meters rubber
<b>Size</b>	Length: 143 mm Diameter: 4 mm NOTE: The wire diameter in the center 25mm chip-area is 4mm
<b>Tag cover material</b>	Polyolefin thermoplastic
<b>Tensile strength</b>	2500 psi minimum
<b>Applicable surfaces</b>	Any material
<b>Product RoHS compliant?</b>	Yes
<b>Standards compliancy</b>	ATEX-compliant
<b>US Patent Number</b>	7,928,922

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### 1.2 DIMENSIONS

**Length:** 143 mm

**Wire Diameter:** 4 mm

NOTE: Picture is not to scale

PLAN VIEW



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### 1.3 READ RANGE

	UHF max read-range on metal with 4W EIRP
<b>CC-102</b> 915 MHz test (same full range 860 – 960 MHz)	4.9 meters air 4.3 meters rubber

The read range listed above was obtained from a lab test environment. Actual test results may be different. Testing in actual use environments is strongly recommended.

### 1.4 ENVIRONMENTAL SPECIFICATIONS

<b>Operating temperature</b>	-50°C to +200°C*
<b>Temperature Cycling Test</b>	200 deg C, continuous for 30-days
<b>IP classification</b>	IP69K
<b>Weather resistance</b>	Excellent, including UV-resistance and sea water immersion
<b>Chemical resistance</b>	No physical or performance changes in: <ul style="list-style-type: none"> <li>- Salt water</li> <li>- NaOH (depending on concentration)</li> <li>- Sulfuric acid (depending on concentration)</li> <li>- Motor oil (tested in 168 hour exposure)</li> </ul> Generally good against: <ul style="list-style-type: none"> <li>- Most solvents</li> <li>- Most acids and bases</li> </ul>

\* **NOTE:** The RFID tag will not be functional if the CC-102 tag is left at the maximum indicated temperatures such that the internal soak temperature exceeds +80 deg C. The RFID tag itself will (resume) function between -50 deg C and +80 deg C.

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### 1.5 SUPPORTED SERVICES

- Tag pre-encoding

For further details, please contact **TROI LLC**.

### 1.6 POSSIBLE APPLICATIONS

<b>Embeddable applications</b>	Concrete, industrial garments, molded thermoplastics, compression and injection molding, high value items, aerospace applications, military applications, etc.
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## 2 INSTALLATION INSTRUCTIONS

The **CC-102** can be embedded into mold- or assembly-processes, and can be attached by clips, bands or adhesive.

## 3 CONTACTING TROI LLC

For additional information and technical support contact:

### **TROI LLC**

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