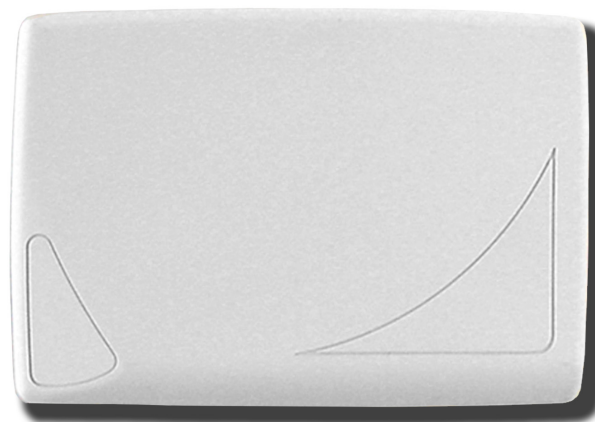


IT2221 Tag

Features

- ▶ Title 21 compliant
- ▶ High-speed two-way communications
- ▶ Memory with configuration control page plus two 128-bit general data pages
- ▶ General data pages programmable as fixed or variable (locked or unlocked)
- ▶ All data pages can be factory-programmed to customer specifications
- ▶ Security features
- ▶ Audio indicator
- ▶ Interior windshield mounting with hook and loop strips



The IT2221 Tag is a radio frequency (RF)-programmable, battery-powered field disturbance device designed for electronic toll collection.

The IT2221 Tag operation is based on a flexible open protocol that calls for the tag to be activated by a trigger signal from a reader. The reader then broadcasts a polling message with operating instructions that direct the IT2221 Tag's response. The IT2221 Tag uses a modulated backscatter technique to reflect an encoded signal back to the reader.

The IT2221 Tag memory has a configuration control page plus two general data pages of 128 bits each that are programmed as fixed or variable depending on the application. Fixed and variable data pages can be programmed and initialized at the factory to customer specifications. Once programmed, all data pages can be locked so that they cannot be modified during normal operations.

The IT2221 Tag has a compatibility mode for use with systems complying with the specifications for automatic vehicle identification in the California State Code of Regulations, Title 21, Chapter 16. An extended command mode provides access to multiple secure data pages and many additional capabilities.

Several security features, including unique tag identification (ID) addressing and data page locking, ensure that a given data message properly affects the designated tag and provide for off-line authentication.

The IT2221 Tag is designed for mounting to a vehicle's interior windshield surface using hook-and-loop strips, which offers easy mounting and removal for portability.

IT2221 Tag

COMMUNICATIONS

Frequency Range

902 to 928 MHz

Working Range

Set by reader

Polarization

Horizontal

SOFTWARE FEATURES

Data Memory

968 bits (2 general data pages, 256 bits, are customer programmable)

Downlink Data Rate

Encoded: 300 kHz Manchester

Decoded: 300 kbps

Uplink Data Rate

Encoded: 600/1200 kHz FSK

Decoded: 300 kbps

POWER REQUIREMENTS

Power Source

The IT2221 Tag is powered by a non-replaceable lithium battery that is compliant with United States DOT 49 CFR § 173.185 and safety standards for unrestricted shipment.

Service Life

MIL-STD-810, Method 109: 8 years under typical conditions

PHYSICAL

Dimensions

Size: 4.5 x 2.9 x 0.8 in. (11.4 x 6.4 x 2.0 cm)

Weight: 3.0 oz (86.1 g)

Case

The plastic case is UV stable. Operation not affected by temperature extremes or severe conditions typical of this environment. The IT2221 Tag is shock and vibration resistant.

Mounting Surface

Interior: nonmetallic windshield

Mounting Method

Hook-and-loop

ENVIRONMENTAL

Operating Temperature

-40°F to +185°F (-40°C to +85°C)

Storage Temperature

MIL-STD-810, Method 501: -40°F to +212°F (-40°C to +100°C), 1000 hours, each temperature extreme

Thermal Shock

MIL-STD-810, Method 210

Humidity

MIL-STD-810, Method 507.2, Procedure III, Aggravated Screening: 80% RH for 500 hours @+140°F (60°C)

Vibration Tolerance (logarithmic)

MIL-STD-810, Method 514.40: 10 g peak, 10 to 500 Hz

Shock Tolerance

MIL-STD-810, Method 516.3: 30 G, 10-ms duration, 1/2 sine pulse, 3 axes, 6 shocks per axis

STANDARDS

Compatibility

The IT2221 Tag is compliant with the California State Code of Regulations, Title 21, Chapter 16.

AUDIO INDICATOR

The IT2221 Tag has a dual-tone audio indicator for communicating the current transaction status.

PROGRAMMING

The IT2221 Tag is factory-programmed.

LABELING

An adhesive label containing all required ID information including barcode is attached to the IT2221 Tag.

OPTIONAL PRINTING/LABELING

- ▶ Limited ID information can be laser etched into the IT2221 Tag case.
- ▶ Custom molding into IT2221 Tag case
- ▶ Custom pad printing of tag base and/or radome

For more information:

Call **800.923.4824** (Sales Support) **505.856.8007** (Technical Support)

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