

## JANUS DRIVER FEEDBACK TRANSPONDER

The world's most popular toll transponder – now featuring driver feedback

### Overview

MARK IV's JANUS Driver Feedback Transponder improves upon the powerful flexibility and functionality of MARK IV's IAG interior FPT, the world's most popular toll transponder. Now in a small sleek package and with driver feedback lights and sounds, toll patrons can get on-board feedback when they travel through toll lanes. The JANUS Driver Feedback Transponder is designed for mounting inside the vehicle using the same Dual-Lock™ installation as used for all MARK IV FPT Transponders, allowing for easy replacement. There are 17 million transponders in service on E-ZPass® supplied by MARK IV.

### Driver Feedback

The driver feedback is achieved using Light Emitting Diode (LED) technology, with green, amber and red lights available. There is also a buzzer that provides beeps or buzzes corresponding to the visual indications. The signals can be activated in a number of ways depending upon the applications built into the roadside. For example, the green signal can be triggered simply upon a successful write to the toll portion of the transponder's memory. Alternatively, if the reader has the account status, then the signals can be sent accordingly. Programming for the transponder signals requires non-recurring engineering for initial set up.

### Durability, Longevity & Value

JANUS Driver Feedback Transponders are designed for high performance in both lane-based and open-road toll collection environments, enabling agencies to migrate seamlessly to open road applications as resources permit.

### Multiple Applications

- ❖ Electronic toll collection (especially suited to Open Road Tolling (ORT))
- ❖ Parking payment
- ❖ Traffic monitoring
- ❖ Access control
- ❖ Any ITS application enabled by location-based vehicle identification

### Reliability

JANUS Driver Feedback transponders are designed to deliver unparalleled performance under the most challenging of circumstances:

- ❖ Vehicle speeds up to 100 MPH
- ❖ Multiple lane, open road applications
- ❖ Stop and go bumper to bumper traffic
- ❖ Snow, rain, and fog



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## Technical Specifications

### Key Benefits

- ✦ Built-in driver feedback for in-vehicle signaling.
- ✦ IAG interoperable for function, performance and mounting
- ✦ Designed for lane-based and open road toll collection
- ✦ Lower lifecycle costs than one-use permanently mounted tags
- ✦ Recyclable to new accounts
- ✦ Portability between vehicles
- ✦ Green, Amber and Red LED's visible through translucent case.
- ✦ Buzzer that is factory programmable for a variety of beep/buzz sound combinations
- ✦ Available in waterproof format
- ✦ Read/write capabilities; fixed and variable data fields
- ✦ Half duplex, using the same frequency and modulation for up and down links
- ✦ Compatibility with the IAG protocol using active Type II read/write technology
- ✦ Information transmitted in 256 bit packets at a nominal rate of 500 kbps
- ✦ Operates in NMLMS band (909.75 MHz – 921.75 MHz)
- ✦ FCC and Industry Canada approved

### JANUS Driver Feedback Transponder

<b>Dimensions</b>	3.7" x 1.9" x 0.9"
<b>Weight</b>	1.87 ounces (53 grams)
<b>Available Case Colors</b>	Front surface: Translucent brown-black Rear surface: White, Blue, Orange, Yellow and Green
<b>Driver Feedback Signals</b>	Visual: Red, Amber, Green LEDs. Audible: Buzzer
<b>Data Capacity</b>	256 bits (including control bits for driver feedback)
<b>Data Format</b>	Manchester Keyed Carrier
<b>Error Checking</b>	16-bit Cyclic Redundancy Check (CRC)
<b>Data Rate</b>	500 kbps ± 10% (uplink/downlink)
<b>Operating Frequency</b>	915 MHz Nominal Center
<b>Mean Radiated Power</b>	1 mW nominal
<b>Operating Temperature Range</b>	-40 deg C to +85 deg C
<b>Power Source</b>	Internal lithium battery