

# 4. Transponder Usage

## Metal-Oxide in Windshields

Metal Oxide is commonly used as a tinting agent in windshield glass. Some vehicle models equipped with metal-oxide windshields can decrease the transmission of radio frequency (RF) energy through the glass and may inhibit or affect the performance of such devices as cell phones, garage door openers and in-vehicle transponders. Metal-oxide windshields can affect any RF transmission.

Should the transponder be affected by the metal-oxide windshields, SIRIT recommends either relocating the internal transponder or utilizing its exterior-mounted license plate transponders that are unaffected by windshield content. Both interior (*IDentity Flex*) and exterior (T-21 readable) transponders are available from SIRIT.

## Transponder Testing

SIRIT recommends that **prior to affixing the transponder** to the windshield, that resellers/users test the transponder to determine if the windshield contains metal-oxides by following these steps:



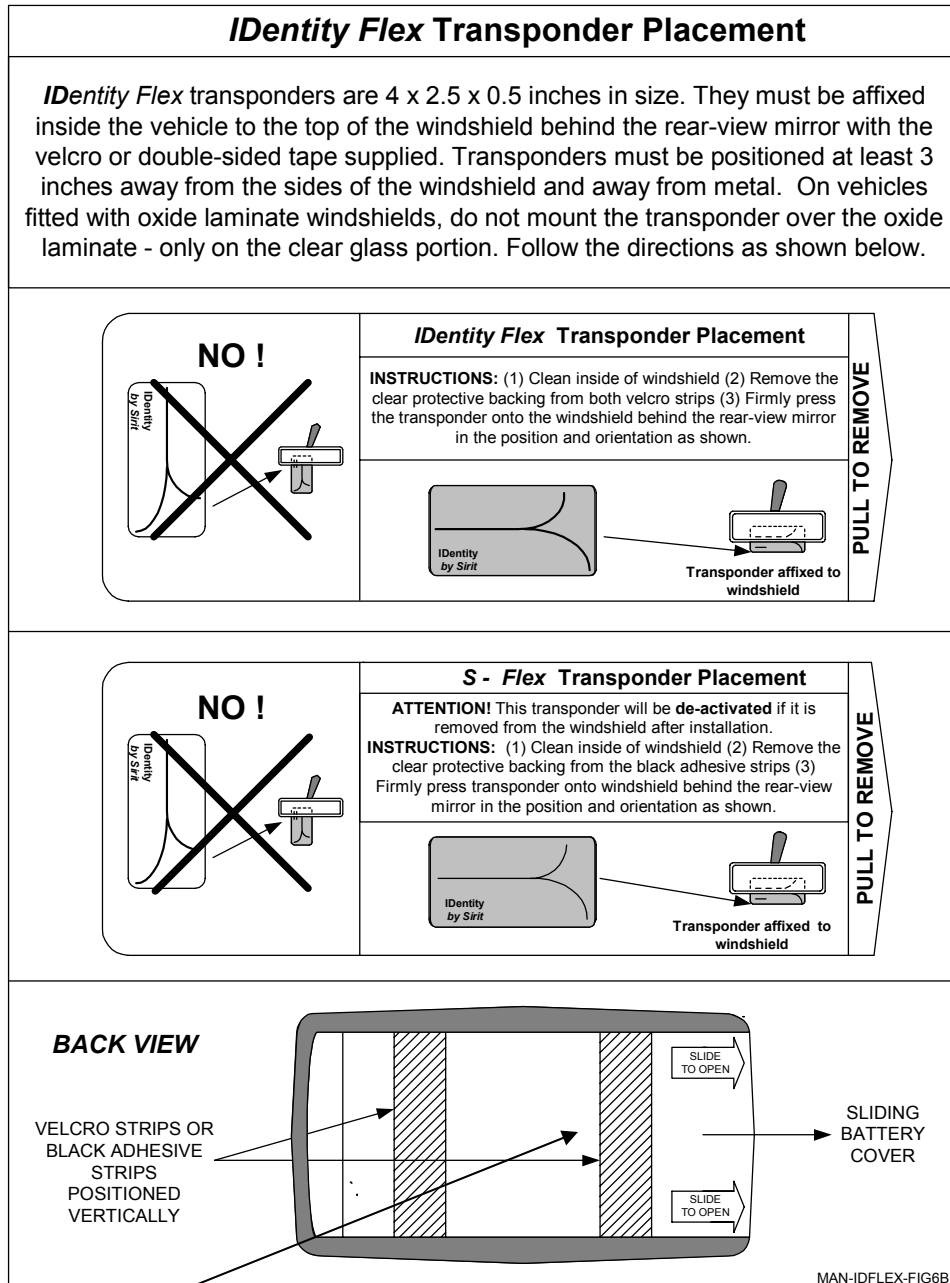
- Hold the transponder by hand on the **inside** of the windshield in the position and orientation shown in the mounting instructions.
- Drive the vehicle through the appropriate lane under the antenna.
- A good read will be indicated by the gate opening or the antenna LED illuminating (if this option is installed). If the system registers a good read then your vehicle's windshield does not contain RF-inhibiting content and you can proceed with transponder mounting as described in the mounting instruction sheet.
- If the system does not read your transponder (the gate does not open or the antenna LED does not illuminate), then your vehicle's windshield may contain metal-oxide and **the transponder should not be mounted** to the windshield.
- To confirm that the metal-oxide windshield was the reason the system did not read the transponder, hold the transponder outside the vehicle, overhead, on the driver's side, in the orientation shown on the mounting instructions. Drive through the lane under the SIRIT antenna. If the gate opens, the windshield most likely contains metal-oxide or other RF-inhibiting material.
- Users should contact their reseller/administration who will locate another windshield location or replace the transponder with an exterior-mount license plate transponder.



# Transponder Mounting

## IDENTITY FLEX & S-FLEX TRANSPONDER

Follow the mounting instructions on the card attached to the transponder :



**\*\*Placement for SFlex adhesive is similar (utilizes 3 pieces of adhesive) PLEASE ENSURE WINDSHIELD IS CLEAN AND FREE OF DIRT.**

Figure 4.1 – Identity Flex Transponder Installation

## EXTERNAL MOUNT TRANSPONDER

Follow the mounting instructions below for the external mount transponder.

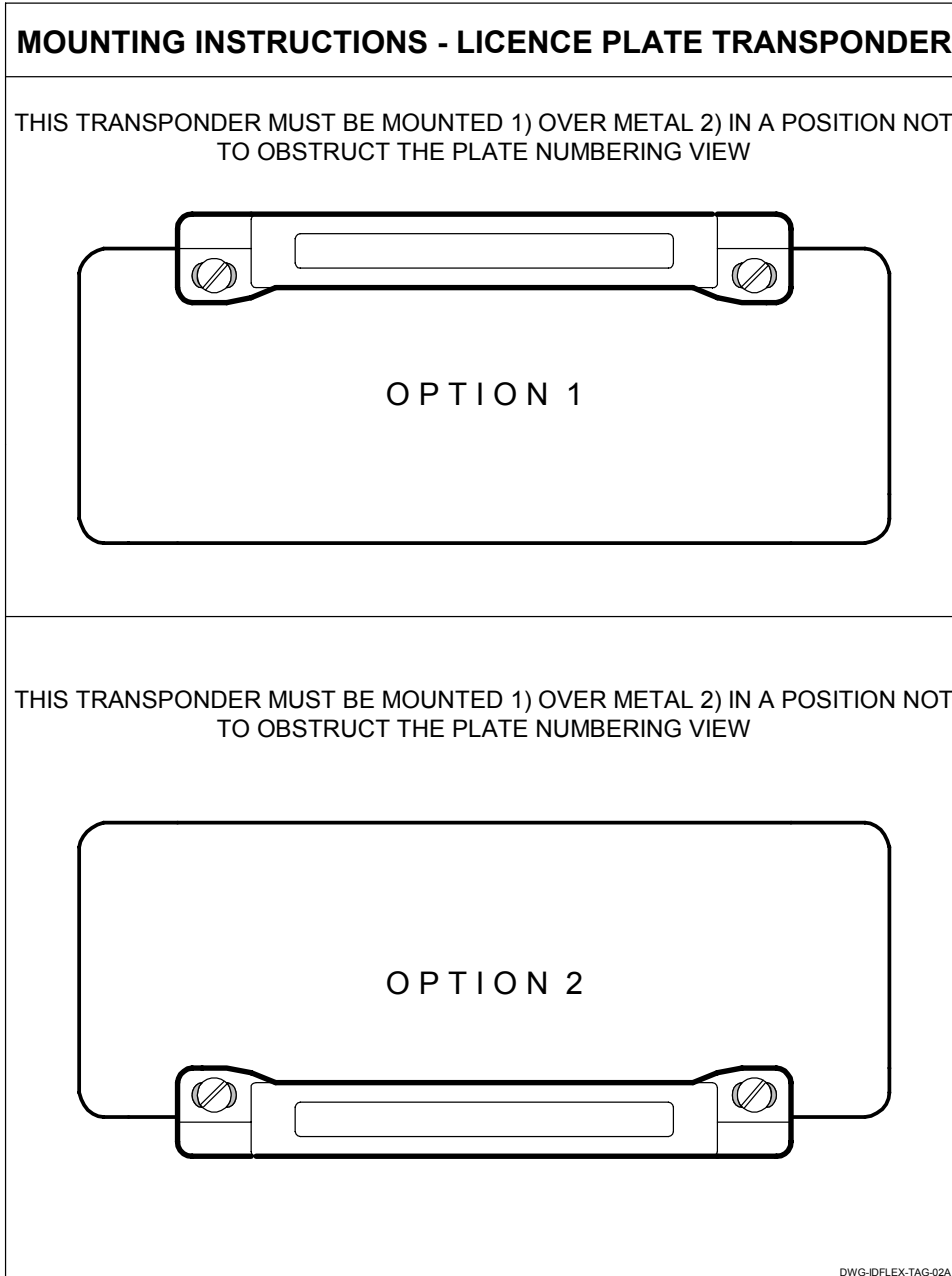
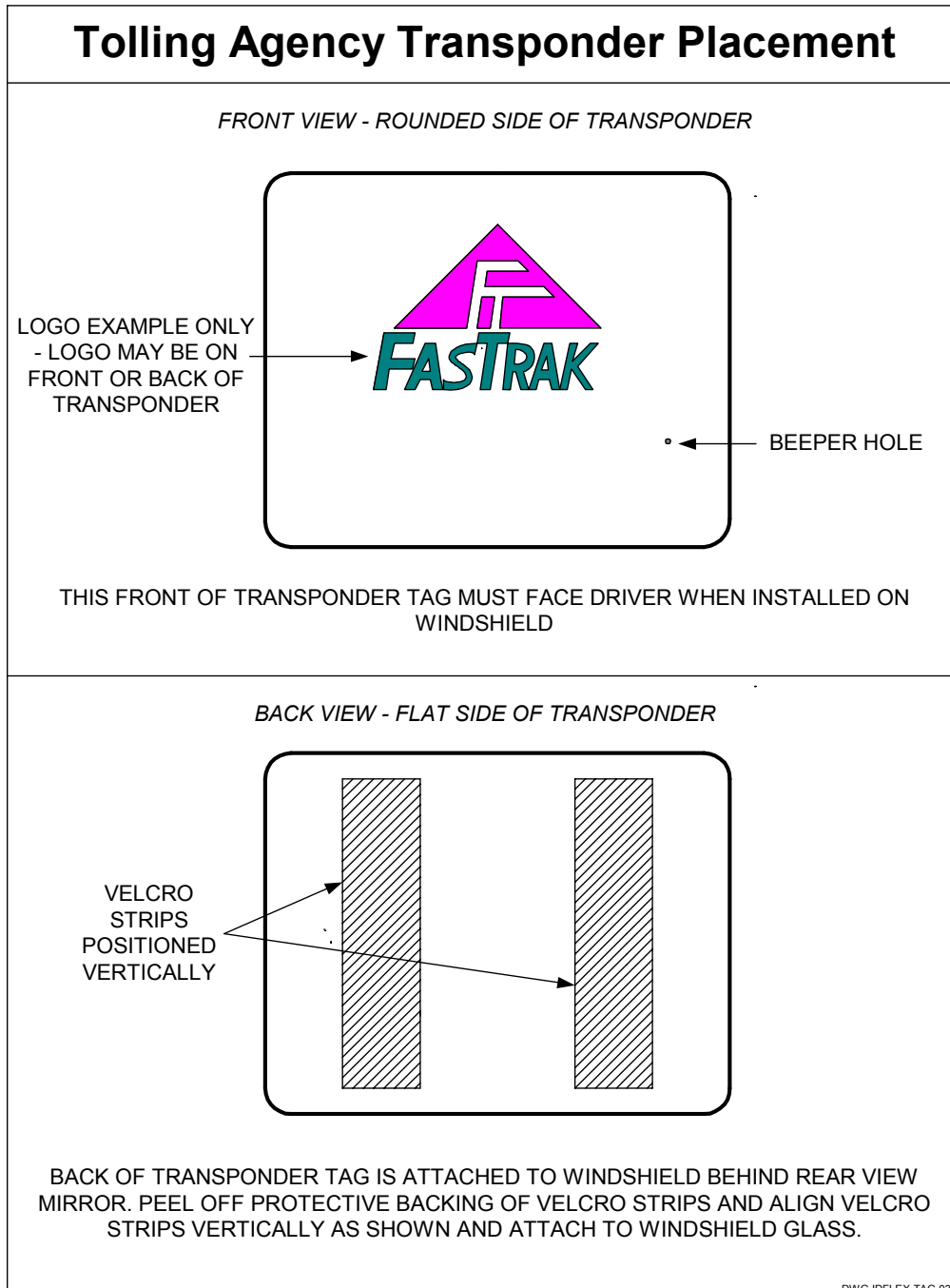


Figure 4.2 – External Mount Transponder Installation

# IDENTITY TITLE 21 TOLLING APPLICATION TRANSPONDER

Follow the mounting instructions below for the Title 21 transponder.



**Figure 4.3 – Title 21 Transponder Installation**



## **Notice**

Several vehicle models equipped with metal oxide windshields prevent the transmission of RF energy and may affect or inhibit the performance of certain devices such as cell phones, garage door openers, and in-vehicle transponders. This is not limited to just SIRIT transponders, it affects any RF transmission.

Based on SIRIT's field experience metal oxide is present only in 0.5% to 1% of vehicles. In the small percentage of vehicles with metal oxide windshields SIRTl recommends the use of exterior-mounted license plate transponders to work around any problems reading the transponder.

SIRIT recommends that prior to affixing the transponder to the windshield that users test the transponder by following these steps:

### **Testing the transponder to see if the windshield contains metal oxide**

#### **Transponder inside the vehicle**

1. Hold the transponder by hand on the inside of the windshield in the position and orientation shown on the mounting instructions.
2. Drive through the appropriate lane under the SIRIT antenna.
3. If the system reads your transponder (i.e. the gate opens), your vehicle's windshield does not contain metal oxide in the windshield and you can proceed with the transponder mounting as described on the mounting instruction sheet.
4. If the system does not read your transponder (i.e. the gate does not open), your vehicle's windshield may contain metal oxide in the windshield and should not be mounted on the windshield.

#### **Next Step – Transponder outside the vehicle**

- Hold the transponder outside the vehicle, overhead on the driver's side, in the orientation shown on the mounting instructions. Drive through the lane under the SIRIT antenna. If the gate opens your windshield contains metal oxide.
- Contact your reseller (IEM) who will replace your transponder with an exterior-mount transponder

## **Storing and keeping of transponders**

Please allow for one-inch (1") air space between adjacent transponders. If the air space is less than recommended the security feature will engage and the transponders will deactivate. Transponder contact must be avoided. This includes contact with a FasTrak transponder.