

## 9.2.1 Design Requirements

### 9.2.1.1 Normal Mode Application Note

When using the TLIN1431x-Q1 in systems which are monitoring the RXD pin for a wake-up request, special care should be taken during the mode transitions. The output of the RXD pin is indeterminate for the transition period between states as the receivers are switched. The application software should not look for an edge on the RXD pin indicating a wake-up request until  $t_{\text{MODE\_CHANGE}}$ . This is shown in [Figure 7-5](#). When transitioning to normal mode, there is an initialization period shown as  $t_{\text{NOMINIT}}$ .

### 9.2.1.2 Standby Mode Application Note

If the TLIN1431x-Q1 detects an under-voltage on  $V_{\text{SUP}}$ , the RXD pin transitions low, and signals to the software that the device is in standby mode and should be returned to sleep mode for the lowest power state.

### 9.2.1.3 TXD Dominant State Timeout Application Note

The minimum dominant TXD time allowed by the minimum  $t_{\text{TXD\_DTO}}$  limits the minimum possible data rate of the device. The LIN protocol has different constraints for commander and responder node applications. Thus, there are different maximum consecutive dominant bits for each application case and thus different minimum data rates.

## 9.2.2 Detailed Design Procedures

Commander node applications require an external 1 k $\Omega$  pull-up resistor and serial diode.