

closed window, the total open window is 22.4 ms. The trigger event needs to happen at  $46.4 \text{ ms} \pm 11.2 \text{ ms}$ . The same method is used for the other window values. [Figure 7-8](#) provides the above information graphically.

### 8.3.23 Channel Expansion

The TLIN1431x-Q1 has the ability to control an external LIN or CAN FD transceiver or a general purpose LIN or CAN FD SBC. The processor controls the mode of the external transceiver by using the FSO pin from the TLIN1431x-Q1 to the external transceiver. This is accomplished using the TLIN1431-Q1 SPI port, controlling the FSO pin as an EN/STB/nSTB/S output pin to the external transceiver. This capability allows the system designer to develop nodes with many different configurations, for example:

- Two LIN transceivers by using a simple eight pin LIN transceiver (see [Figure 8-19](#))
- Two LIN transceivers with two WAKE and INH capability by using an enhanced eight pin LIN transceiver (see [Figure 8-20](#))
- Two LIN transceivers with two LDO outputs by using an eight pin LIN SBC (see [Figure 8-21](#))
- One LIN and one CAN FD transceiver by using a simple eight pin CAN FD transceiver (see [Figure 8-22](#))
- One LIN and one CAN FD transceiver with two LDO outputs by using a CAN FD SBC (see [Figure 8-23](#))

#### 8.3.23.1 Channel Expansion for LIN

The TLIN1431x-Q1 has the ability to control an external LIN transceiver like the TLIN1039-Q1 or TLIN1021A-Q1 or a general purpose LIN SBC like the TLIN1028x-Q1. The FSO pin is configured as a general purpose output pin. The FSO output level can be changed to meet the needs of the transceiver. The supply voltage of this transceiver can be connected to  $V_{SUP}$  or controlled by the HSS pin from the TLIN1431x-Q1. To configure the device to support an external LIN device the following registers and bits need to be configured:

- Register 8'h29[3:1] = 110b sets the FSO pin to a general-purpose output pin.
- Register 8'h29[4] sets the voltage level of the FSO pin when configured as a general-purpose output pin and can be used to control the EN pin of an external LIN transceiver or SBC.
- To use the high-side switch (HSS) as the power to the external transceiver, turn on HSS. Note that when the device enters sleep mode, the HSS pin is turned off.