

Translate Voltages for a SIM Card



Subscriber Identity Modules, commonly called SIM cards, are used to store secure information in mobile devices for use in communications. This type of voltage translation applies to SIM, USIM, and UICC.

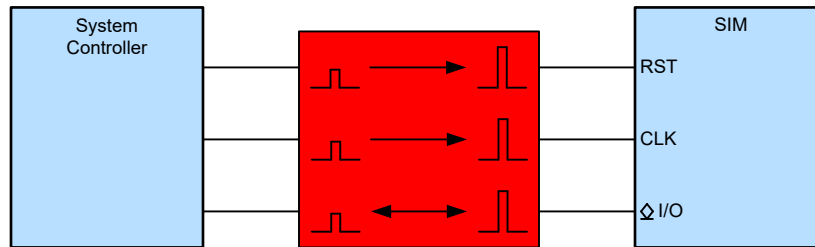


Figure 1. Example SIM Card Voltage Translation Block Diagram

Design Considerations

- Clock signals can be up to 5 MHz
- Translators enable communication when devices have mismatched logic voltage levels
- Prevent damage to devices that cannot support higher voltage inputs
- Improve data rates over discrete translation solutions
- Protect controller while peripheral is not connected
- [\[FAQ\] How does a slow or floating input affect a CMOS device?](#)
- Need additional assistance? Ask our engineers a question on the [TI E2E™ Logic Support Forum](#)

Table 1. Recommended Parts

Part Number	Automotive Qualified	Supported Card Types			Features
		Class A 5 V	Class B 3 V	Class C 1.8 V	
TXS0104E		✓	✓	✓	Auto-bidirectional voltage translation for all channels Supports all voltages and frequencies for SIM/UICC Increased ESD protection on B ports
TXS0104E-Q1	✓	✓	✓	✓	
TXS4555			✓	✓	Complete SIM/UICC translator solution Integrated LDO regulator Increased ESD protection on card-side
TXS02326A			✓	✓	Complete dual SIM/UICC translator and multiplexer solution Dual integrated LDO regulators I ² C communication with baseband processor Increased ESD protection on card-side

For more devices, browse through the [online parametric tool](#) where you can sort by desired voltage, channel numbers, and other features.

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