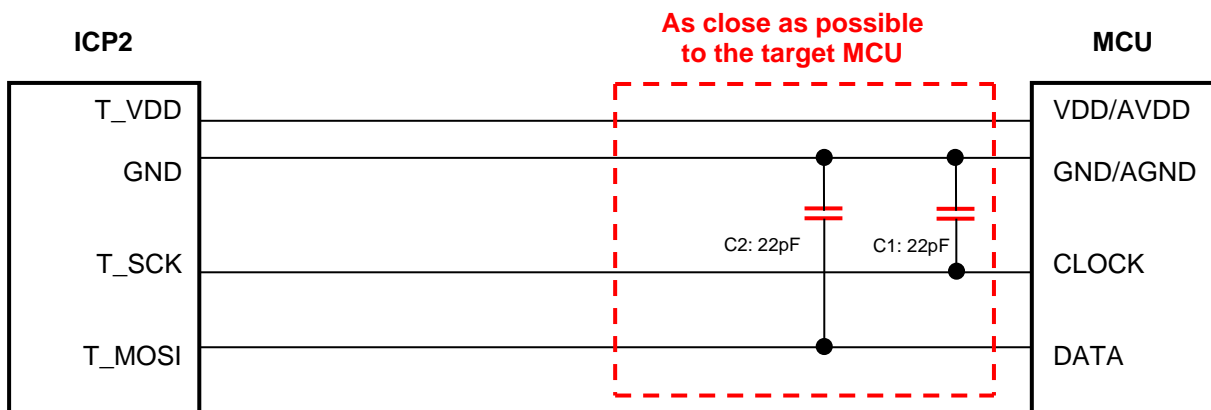


Feb-2024

Filter for Long Cables

1 Most of MCUs (excluding UART-based Protocols)



Try the following steps (in order below, check results in full PC-driven mode after every step):

1. If possible: use separated unshielded wires in order to reduce capacitance and crosstalk
2. Add small capacitor 18-27F between CLOCK and GND on the *****MCU side***** of the cable
3. Keep the capacitor but try to add a pull-**down** 1K-2.2K in parallel to the capacitor
4. Add small capacitor 18-33pF (the same value as for the CLOCK) between DATA and GND on the *****MCU side***** of the cable
5. Keep the capacitor but try to add a pull-**down** 1K-2.2K in parallel to the capacitor

2 UART-based Protocols (UPDI, etc.)

Try the following steps (in order below, check results in full PC-driven mode after every step):

1. If possible: use separated unshielded wires in order to reduce capacitance and crosstalk
2. Add small capacitor 18-27F between DATA and GND on the *****MCU side***** of the cable
3. If it doesn't help then keep the capacitor but try to add a pull-**up** 1K-2.2K between DATA and T_VDD on the *****MCU side***** of the cable
4. If the issue persists then place pullups of 2.2K between DATA and T_VDD on the **both sides** of the cable (total R value should be >1K)

3 Contact

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