UFT3G EEPROM Pull-up Recommendations

This document provides guidance on how to adjust the pull-up resistor to enable a successful EEPROM load on the 8T49N28x, 8T49N24x and 8T49N1012 product families.

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1. Issue: EEPROM Halt on UFT3G Devices

Symptom: A UFT3G device (8T49N28x, 8t49N24x, 8T49N1012) halts the EEPROM reads after the first 6 bytes. Instead of continuing to read the rest of the EEPROM, it starts reading from byte 0 again. This repeats until all the retries are exhausted.

Explanation: The issue occurs when additional loading on the I^2C bus slows down the SDA rising edge rate to >136ns from 0 to 1.8V. The extra loading could be due to the presence of an LED, an I^2C extender, an I^2C level translator, or similar devices.

2. Pull-up Recommendations

Adjust the pull-up resistor on SDA using the following guidance:

- **Maximum Pull-Up Resistor Valu**e: Set the pull-up resistor so that the SDA pin transitions from 0 to 1.8V in less than 136ns. If the transition time is >136ns, reduce the value of the pull-up resistor.
- **Minimum Pull-up Resistor Value**: Make sure that all drivers can pull the SDA pin below 0.4V (V_{OL} minimum I^2C specification). If the measured min SDA value is >0.4V, increase the value of the pull-up resistor.
- A good starting point is a 1kΩ pull-up resistor

3. Revision History

Revision	Date	Description
1.00	May 16, 2022	Initial release.

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