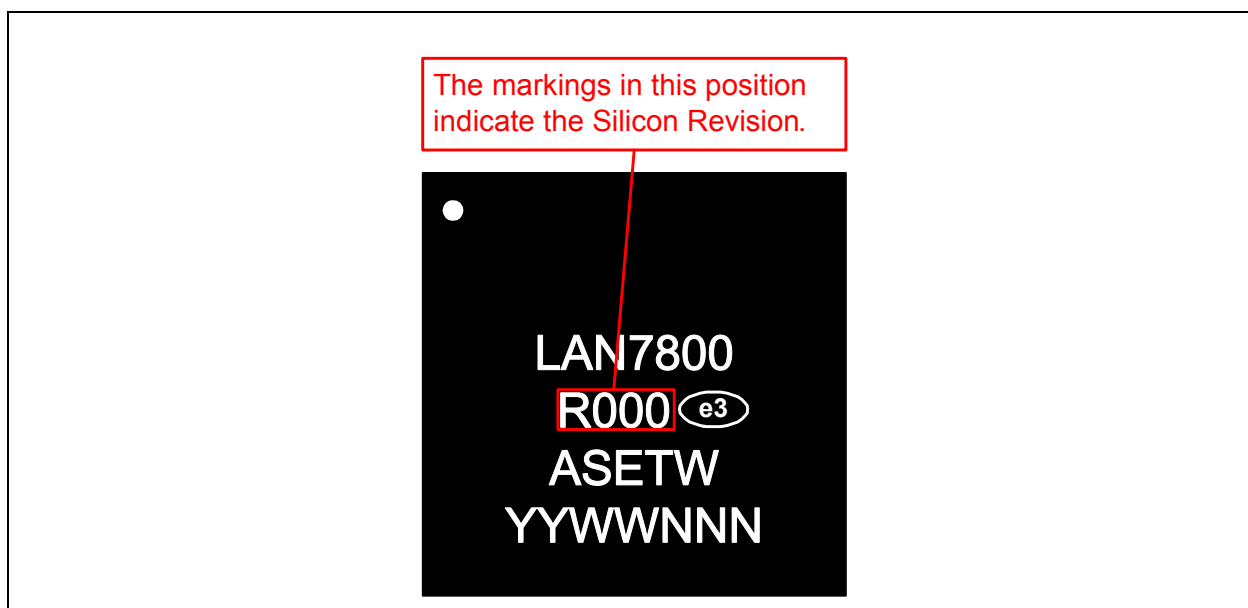


LAN7800 Silicon Errata and Data Sheet Clarification

This document describes known silicon errata for functional revisions B0 and B1 of the LAN7800. The silicon revision can be determined by the device's top marking as indicated in [Figure 1](#). A summary of LAN7800 silicon errata is provided in [Table 1](#).

FIGURE 1: TOP MARKING SILICON REVISION INDICATION



Note: The purpose of [Figure 1](#) is to detail the top markings of an example part and highlight the location of the silicon revision. Other top marking values may differ (lot codes, location of manufacture, etc.).

TABLE 1: SILICON ISSUE SUMMARY

Item Number	Silicon Issue Summary	Affected Silicon Revisions
1.	Default unprogrammed bcdUSB descriptor value causes USB-IF Chapter 9 Compliance Test failure and potential USB host error	B0, B1
2.	1000BASE-T Transmitter Distortion fails to meet IEEE compliance specification	B0, B1

Silicon Errata Issues

Module 1: Default unprogrammed bcdUSB descriptor value causes USB-IF Chapter 9 Compliance Test failure and potential USB host error

DESCRIPTION

When using a part where One Time Programmable (OTP) and EEPROM memories are unprogrammed, the GetDescriptor(Device) request returns the value of 0x0300 in the **bcdUSB** field, instead of the expected value of 0x0310.

END USER IMPLICATIONS

When OTP and EEPROM are unprogrammed, the device will fail the USB-IF Chapter 9 Compliance Tests, which expect a **bcdUSB** value of 0x0310. This issue may also cause the connected USB host to flag an error.

Work around

This can be fixed by using the device OTP or an external EEPROM. Note that this may also require updating the driver for the USB host used, as older USB host drivers may look for 0x0300 instead of 0x0310. In Windows, the Protouch Configuration and Programming Utility can be used for programming the LAN7800 OTP or external EEPROM. In Linux, standard ethtool commands can be used for programming the LAN7800 OTP or external EEPROM. Additional information can be found at:

<http://www.microchip.com/wwwproducts/en/lan7800>

PLAN

This erratum will not be corrected in a future revision.

Module 2: 1000BASE-T Transmitter Distortion fails to meet IEEE compliance specification

DESCRIPTION

The device's 1000BASE-T Transmitter Distortion is in the 15-30mV range, versus the <10mV indicated in the IEEE specification.

END USER IMPLICATIONS

It is unlikely this specification failure will impact system performance. The following link to the Gigabit Transmit Distortion Testing document on the IEEE802.org website also questions the validity of this measurement:

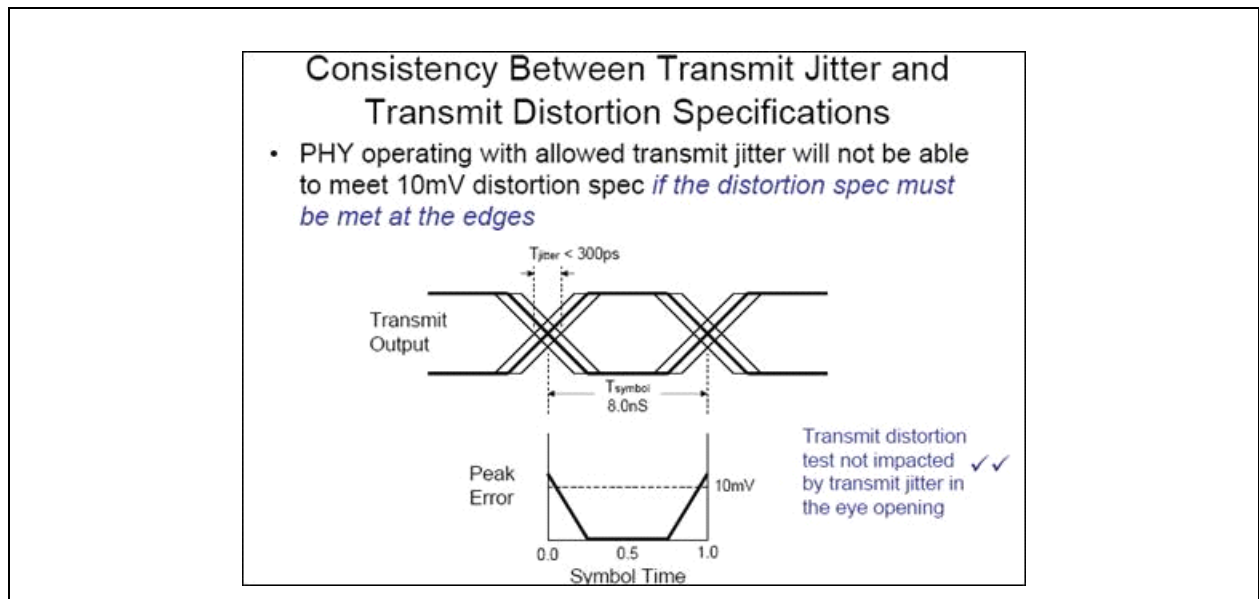
http://www.ieee802.org/3/axay/public/may_07/sefidvash_1_0507.pdf

IEEE testing calls for <10mV peak transmitter distortion for at least 60% of the UI within the eye opening. However, this measurement might not be valid, as the transmit distortion test is sensitive to transmit jitter. Refer to the explanation below, taken from the aforementioned IEEE document.

The Gigabit Transmit Distortion Testing document indicates:

- On page 6, a contradiction between Transmit Jitter and Transmit Distortion requirements:

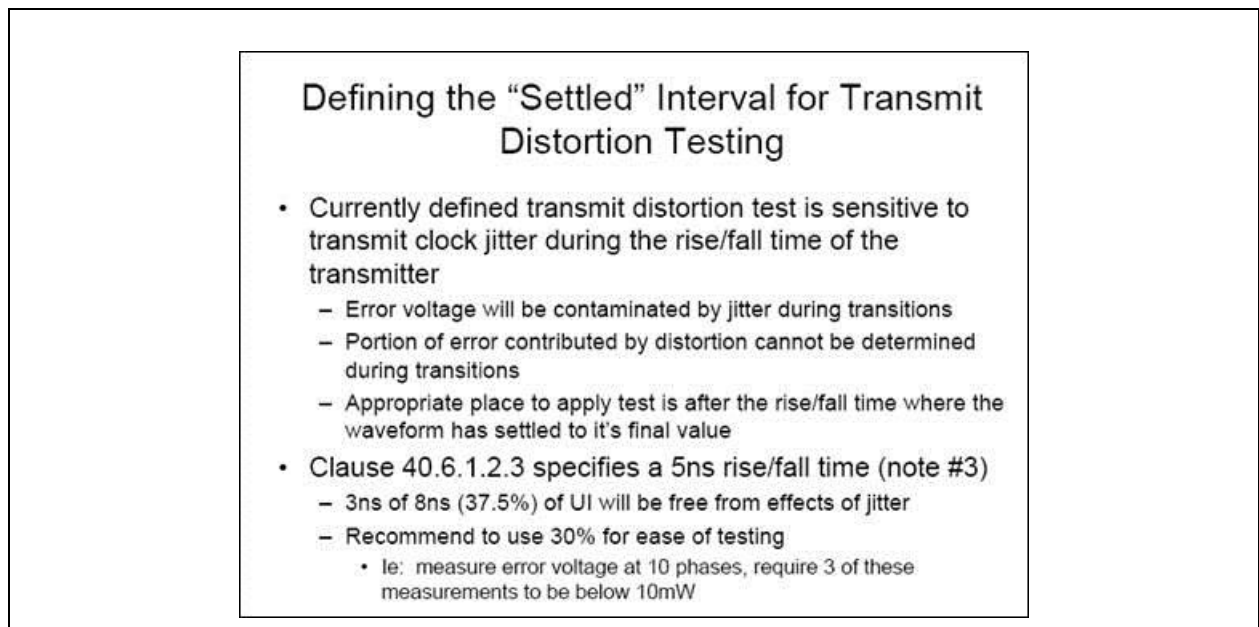
FIGURE 2: IEEE DOCUMENT PAGE 6



- On page 7:
 - The transmit distortion test is sensitive to transmit clock jitter during the rise/fall time.

It is recommended to change the requirement to use at least 30%, instead of at least 60%, of the UI within the eye opening for the <10mV peak transmitter distortion.

FIGURE 3: IEEE DOCUMENT PAGE 7



Work around

None.

PLAN

Microchip has seen no empirical failures resulting from this issue. This erratum will not be corrected in a future revision.

APPENDIX A: DOCUMENT REVISION HISTORY

Revision Level & Date	Section/Figure/Entry	Correction
DS80000734A (02-28-17)	All	Initial release.

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LAN7800

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