

Silicon Errata and Data Sheet Clarification

This document describes known silicon errata for functional revisions A and B of the LAN7500/LAN7500i device. The functional revision can be determined by its top marking as indicated in [Figure 1](#). A summary of the silicon errata issues is provided in [Table 1](#).

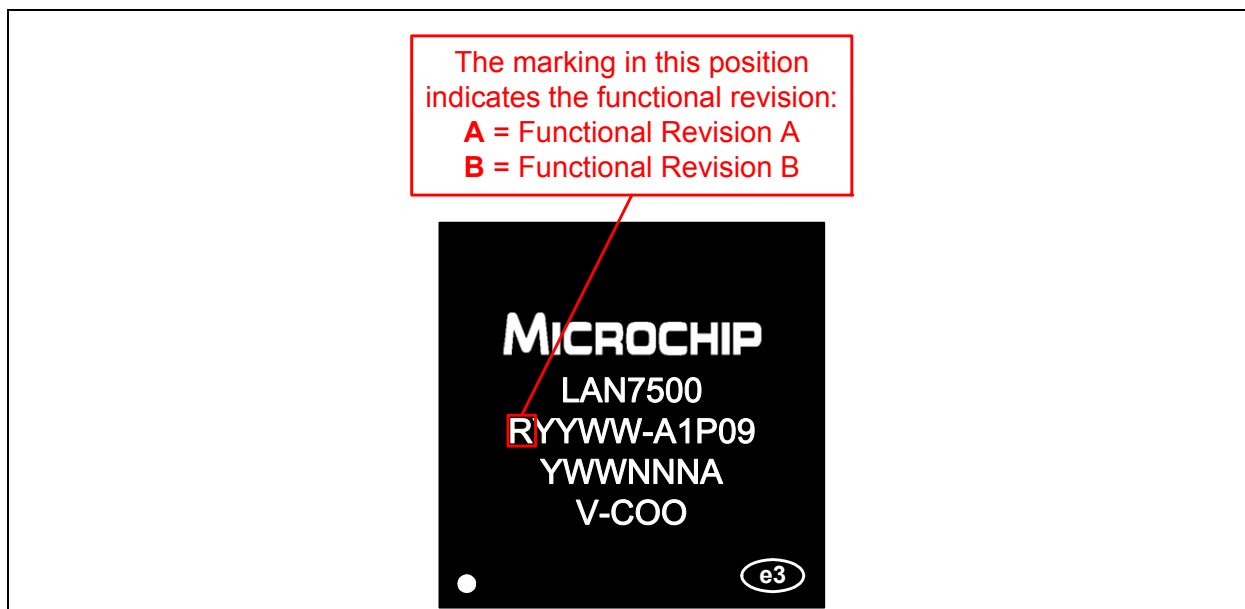
Note: This document summarizes all silicon errata issues from all revisions of silicon, previous as well as current. Only the issues indicated in the last column of [Table 1](#) apply to the current silicon functional revision (**B**). X = applicable to the functional revision.

TABLE 1: SILICON ERRATA SUMMARY

Issue Summary	Affected Functional Revisions ⁽¹⁾	
	A	B
Device enumeration issue after multiple plug/unplug cycles	X	
USB D+/D- terminator enabled when VBUS_DET is low (self-powered mode)	X	
Device exceeds USB suspend current limitations	X	
Auto-MDIX functions only when auto-negotiation is enabled	X	X
EDPD mode disabled when auto-negotiation disabled	X	X
UDP TX checksum of zero is not transformed to FFFFh	X	X
Ethernet port may not be able to link in Gigabit mode	X	X

Note 1: Only those issues indicated in the last column apply to the current silicon revision.

FIGURE 1: TOP MARKING FUNCTIONAL REVISION INDICATION



Note: [Figure 1](#) details the top markings of an example part. Other than the highlighted revision marking, other top marking values may differ (manufacturer date, lot codes, industrial temperature part, etc.).

LAN7500/LAN7500i

Silicon Errata Issues

Module 1: Device enumeration issue after multiple plug/unplug cycles

DESCRIPTION

When configured for self-powered mode, the device may enumerate incorrectly after several (50+) USB plug/unplug events. When this anomaly occurs, the LAN7500/LAN7500i incorrectly reports as a low-speed device with a PID of 0x0000.

END USER IMPLICATIONS

None. It is unlikely that an end-user would cause this situation to occur.

Work Around

The device is recoverable via a power cycle.

PLAN

This anomaly has been fixed in functional revision B.

Module 2: USB D+/D- terminator enabled when VBUS_DET is low (self-powered mode)

DESCRIPTION

When the device is configured for self-powered mode and the USB cable is unplugged, the D+/D- termination remains enabled. According to the USB specification, the D+/D- termination should be disabled when the VBUS_DET signal deasserts (cable unplugged).

END USER IMPLICATIONS

None.

Work Around

None.

PLAN

This anomaly has been fixed in functional revision B.

Module 3: Device exceeds USB suspend current limitations

DESCRIPTION

When the device is configured for bus-powered mode and placed in the suspend state, current consumption exceeds the USB specification's allowable limit.

END USER IMPLICATIONS

None.

Work Around

None.

PLAN

This anomaly has been fixed in functional revision B.

Module 4: Auto-MDIX functions only when auto-negotiation is enabled

DESCRIPTION

The devices auto-MDIX functionality can only be used when auto-negotiation is also enabled.

END USER IMPLICATIONS

When operating the device with speed forced to 10Mbps or 100Mbps (auto-negotiation disabled), the correct Ethernet cable must be used.

Work Around

When using the auto-MDIX feature, operate the device with auto-negotiation enabled.

PLAN

This anomaly will not be fixed in a future revision of the device.

Module 5: EDPD mode disabled when auto-negotiation disabled

DESCRIPTION

When the device is configured with auto-negotiation is disabled, Energy Detect Power Down (EDPD) mode will be disabled. Under these conditions, the device will send Idles for 256ms, shut off the transmitter for 255us, and then resume sending Idles.

END USER IMPLICATIONS

EDPD mode cannot be used when the device is configured with auto-negotiation is disabled.

Work Around

Operate the device with auto-negotiation enabled.

PLAN

This anomaly will not be fixed in a future revision of the device.

Module 6: UDP TX checksum of zero is not transformed to FFFFh

DESCRIPTION

When a UDP TX checksum is calculated, if the result is zero, it should be transformed into FFFFh. In IPv4, a checksum of zero erroneously tells the receiver that no checksum was calculated, but may be accepted by the receiver. In IPv6, a UDP packet with a checksum of zero is not permitted and will be dropped by the receiver.

END USER IMPLICATIONS

The TX checksum offload cannot be used in IPv6 UDP applications. In IPv4, an application may optionally control whether UDP packets without checksums should be discarded or passed to the application. In applications where the receiver does not accept IPv4 UDP packets with checksums of zero, the TX checksum offload cannot be used.

Work Around

None.

PLAN

This anomaly will not be fixed in a future revision of the device.

LAN7500/LAN7500i

Module 7: Ethernet port may not be able to link in Gigabit mode

DESCRIPTION

In certain conditions and on certain parts, the device may report all normal functionality, but not be able to link in Gigabit Ethernet mode when connected to a Gigabit Ethernet partner. In this mode, 100BASE-TX and 10BASE-T modes will remain functional. The possibility of encountering this state depends on the power supply ramp rates along with the device temperature when powering up the device.

END USER IMPLICATIONS

Serious - In the affected state, if a Gigabit partner is connected, the Auto-Negotiation process will continually restart and no Ethernet link will be achieved.

Work Around

A software update is available, which resolves the possibility of entering this affected mode on all devices.

PLAN

This anomaly will not be fixed in a future revision of the device.

APPENDIX A: DOCUMENT REVISION HISTORY

Revision Level & Date	Section/Figure/Entry	Correction
DS80000636A (11-18-14)	All	Converted document to Microchip template. Rev. A replaces previous Rev. 1.2 (05-26-11).
	Section Module 7 : , Ethernet port may not be able to link in Gigabit mode	Added new silicon issue: Ethernet port may not be able to link in Gigabit mode.
Rev. 1.2 (05-26-11)	Section Module 6 : , UDP TX checksum of zero is not transformed to FFFFh	Added new silicon issue: UDP TX Checksum of Zero is Not Transformed to FFFFh.
Rev. 1.1 (03-01-11)	All	Added functional revision B to the document.
Rev. 1.0 (02-19-10)	All	Initial release.

LAN7500/LAN7500I

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ISBN: 9781632768124

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