



Product Change Notification / SYST-140DIZ453

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18-Feb-2022

Product Category:

Ethernet PHYs

PCN Type:

Document Change

Notification Subject:

ERRATA - KSZ9131MNX Silicon Errata and Data Sheet Clarification

Affected CPNs:

[SYST-140DIZ453_Affected_CPN_02182022.pdf](#)

[SYST-140DIZ453_Affected_CPN_02182022.csv](#)

Notification Text:

SYST-140DIZ453

Microchip has released a new Product Documents for the KSZ9131MNX Silicon Errata and Data Sheet Clarification of devices. If you are using one of these devices please read the document located at [KSZ9131MNX Silicon Errata and Data Sheet Clarification](#).

Notification Status: Final

Description of Change: Initial release of document

Impacts to Data Sheet: None

Reason for Change: To Improve Productivity

Change Implementation Status: Complete

Date Document Changes Effective: 18 Feb 2022

NOTE: Please be advised that this is a change to the document only the product has not been changed.

Markings to Distinguish Revised from Unrevised Devices: N/A

Attachments:

[KSZ9131MNX Silicon Errata and Data Sheet Clarification](#)

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Silicon Errata and Data Sheet Clarification

This document describes known silicon errata for the Microchip KSZ9131MNX device family, which includes the following variants:

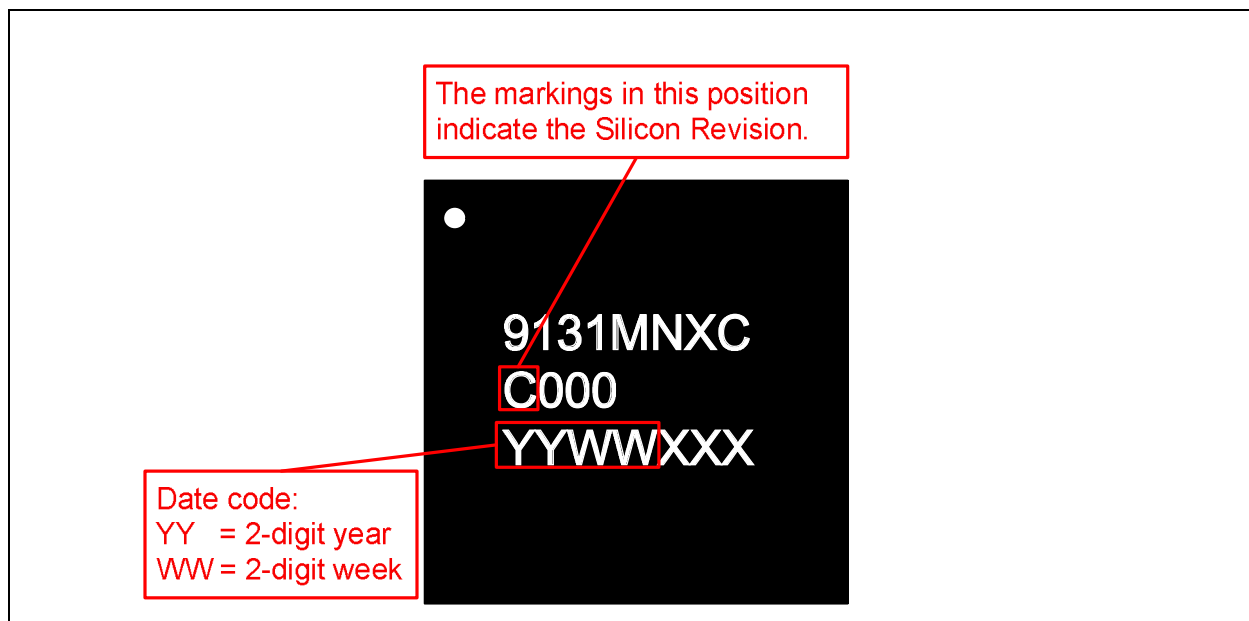
- KSZ9131MNXC
- KSZ9131MNXI

The silicon errata discussed in this document are for silicon revisions as listed in [Table 1](#). The silicon revision can be determined by the device's top marking as indicated in [Figure 1](#). A summary of KSZ9131MNX silicon errata is provided in [Table 2](#).

TABLE 1: AFFECTED SILICON REVISIONS

Part Numbers	Silicon Revision
KSZ9131MNXC, KSZ9131MNXI	C

FIGURE 1: TOP MARKING DATE CODE 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 code. Other top marking values may differ (lot codes, location of manufacturer, etc.).

TABLE 2: SILICON ISSUE SUMMARY

Item Number	Silicon Issue Summary	Affected Silicon Revisions
1.	LED1 in Single-LED Mode Behaves Incorrectly	C

KSZ9131MNX

TABLE 2: SILICON ISSUE SUMMARY

Item Number	Silicon Issue Summary	Affected Silicon Revisions
2.	1000M EEE needs 100M Advertisement Enabled	C

Silicon Errata Issues

Module 1: LED1 in Single-LED Mode Behaves Incorrectly

DESCRIPTION

LED1 is in the ON state (LED1 low) when KSZ9131MNX has no link. This state is invalid based on the expected Single-LED mode values from Table 4-9 of the *KSZ9131MNX Data Sheet*.

END USER IMPLICATIONS

LED1 should be turned off when the KSZ9131MNX has no link. However, LED1 is turned on in a No-Link condition. The user may think there is a link due to LED1 being switched on. For KSZ9131MNX link indication, the user should look at LED2 for a true link (ON) or not (OFF).

Workaround

To fix this, Register 0x1E (30d), bit 9 must be set to 1. Consequently, LED1 will behave as specified in Table 4-9 of the *KSZ9131MNX Data Sheet* (LED1 Off – No Link, LED1 On/Toggle – Link/Activity). LED1 will be high, which will turn off the LED associated with LED1 when there is no link.

PLAN

This erratum will not be corrected in a future revision.

Module 2: 1000M EEE needs 100M Advertisement Enabled

DESCRIPTION

The device needs both 100M advertisement and 100M EEE advertisement enabled to enter the 1000M EEE Low-Power mode.

END USER IMPLICATIONS

Without both 100M advertisement and 100M EEE advertisement enabled, the device will only operate at normal power in 1000M when no traffic is present (Idle mode).

The IEEE802.3az specification states that 1000M EEE and 100M EEE shall operate independently of each other. However, the 100M Advertisement in the Auto-Negotiation Advertisement register and the 100M EEE Advertisement in the EEE Advertisement register must be enabled for 1000M EEE Low-Power mode. Also, the 1000M Advertisement in Register 0x04 and the 1000M EEE Advertisement in MMD Address 0x07, Register 0x3C (MMD 7.60 decimal) must be enabled.

Workaround

No configuration from default values is necessary to enable 1000M EEE. However, if these register values are changed, then these register bits must be set to enable 1000M EEE.

Register 0x04, bits[8:7] = 01, 10, or 11

Register 0x09, bit 9 = 1

MMD Address 7 Register 3C, bits[2:1] = 11

PLAN

This erratum will not be corrected in a future revision.

APPENDIX A: DOCUMENT REVISION HISTORY

TABLE A-1: REVISION HISTORY

Revision Level & Date	Section/Figure/Entry	Correction
DS80000997B (02-18-22)	Table 1 , Table 2 , and Figure 1	Changed the silicon revision marking from "C0" to "C."
DS80000997A (02-14-22)	All	Initial release

KSZ9131MNX

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SYST-14ODIZ453 - ERRATA - KSZ9131MNX Silicon Errata and Data Sheet Clarification

Affected Catalog Part Numbers(CPN)

KSZ9131MNXC
KSZ9131MNXC-TR
KSZ9131MNXI
KSZ9131MNXI-TR