



## Product Change Notification / SYST-23UFEG663

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**Date:**

24-Feb-2022

**Product Category:**

Ethernet PHYs

**PCN Type:**

Document Change

**Notification Subject:**

ERRATA - KSZ9131RNX Silicon Errata and Data Sheet Clarification

**Affected CPNs:**

[SYST-23UFEG663\\_Affected\\_CPN\\_02242022.pdf](#)

[SYST-23UFEG663\\_Affected\\_CPN\\_02242022.csv](#)

**Notification Text:**

SYST-23UFEG663

Microchip has released a new Product Documents for the KSZ9131RNX Silicon Errata and Data Sheet Clarification of devices. If you are using one of these devices please read the document located at [KSZ9131RNX Silicon Errata and Data Sheet Clarification](#).

**Notification Status:** Final

**Description of Change:** 1) Added Module 3: 1000M EEE needs 100M Advertisement Enabled 2) Changed silicon revision letter from "C0" to "C."

**Impacts to Data Sheet:** None

**Reason for Change:** To Improve Productivity

**Change Implementation Status:** Complete

**Date Document Changes Effective:** 24 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:**

[KSZ9131RNX Silicon Errata and Data Sheet Clarification](#)

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Affected Catalog Part Numbers (CPN)

KSZ9131RNXC

KSZ9131RNXC-TR

KSZ9131RNXI

KSZ9131RNXI-TR

KSZ9131RNXU-TRVAO

KSZ9131RNXU-VAO

KSZ9131RNXV-TRVAO

KSZ9131RNXV-VAO

## Silicon Errata and Data Sheet Clarification

This document describes known silicon errata for the Microchip KSZ9131RNX device family, which includes the following variants:

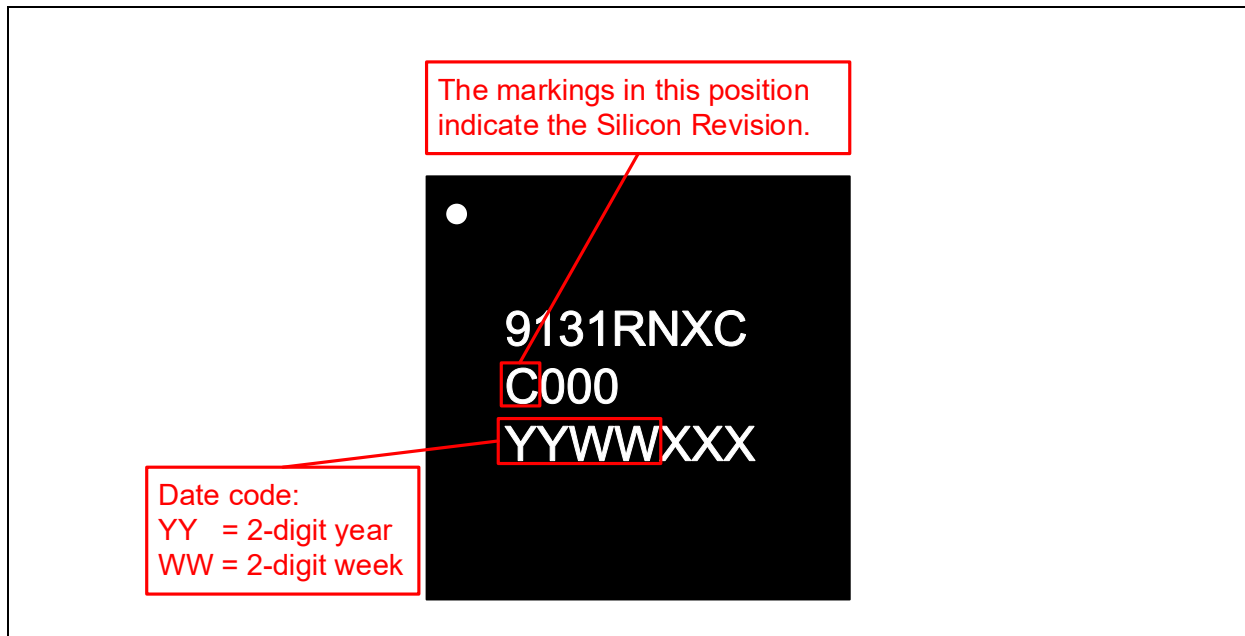
- KSZ9131RNXC
- KSZ9131RNXI
- KSZ9131RNXU
- KSZ9131RNXV

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 KSZ9131RNX silicon errata is provided in [Table 2](#).

**TABLE 1: AFFECTED SILICON REVISIONS**

Part Numbers	Silicon Revision
KSZ9131RNXC, KSZ9131RNXI, KSZ9131RNXU, KSZ9131RNXV	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 manufacture, etc.).

# KSZ9131RNX

**TABLE 2: SILICON ISSUE SUMMARY**

Item Number	Silicon Issue Summary	Affected Silicon Revisions
1.	<a href="#">RXER Counter Does Not Increment</a>	C
2.	<a href="#">LED1 in Single-LED Mode Behaves Incorrectly</a>	C
3.	<a href="#">1000M EEE needs 100M Advertisement Enabled</a>	C

## Silicon Errata Issues

### Module 1: RXER Counter Does Not Increment

#### DESCRIPTION

The RXER Counter in register 0x15 does not increment in the presence of receive errors.

#### END USER IMPLICATIONS

The RXER counter register does not record the number of errors detected on the receiver path.

#### Workaround

An alternative to the RXER counter is to monitor the idle error count register (register 0x0A) for idle errors.

#### PLAN

This erratum will not be corrected in a future revision.

### Module 2: LED1 in Single-LED Mode Behaves Incorrectly

#### DESCRIPTION

LED1 is in the ON state (LED1 low) when KSZ9131RNX has no link. This state is invalid based on the expected Single-LED mode values from Table 4-9 of the *KSZ9131RNX Data Sheet*.

#### END USER IMPLICATIONS

LED1 should be off when the KSZ9131RNX has no link. However, LED1 is on in a No-Link condition. The user may think there is a link due to LED1 being on. For KSZ9131RNX link indication, the user should look at LED2 for true link (ON) or not (OFF).

#### Workaround

To fix this, Register 0x1E (30d), bit 9 must be set to 1. Then LED1 will behave as in Table 4-9 of the *KSZ9131RNX 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 3: 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 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 registers 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
DS80000693C (02-23-22)	Module 3	Added <b>Module 3 : 1000M EEE needs 100M Advertisement Enabled</b>
	Table 1, Table 2, and Figure 1	Changed silicon revision letter from "C0" to "C."
DS80000693B (07-19-21)	Module 2	Added <b>Module 2 : LED1 in Single-LED Mode Behaves Incorrectly</b>
DS80000693A (10-21-19)	All	Initial release

NOTES:



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