



**Avnet SOM/SBC Kingston DDR
Errata
V1.0
01 November 2018**

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1 Introduction

Thank you for your interest in the Avnet System-On-Modules (SOM) and Single-Board-Computers (SBC). Although Avnet has made every effort to ensure the highest possible quality, these kits and associated software are subject to the limitations described in this errata notification.

2 Identifying Affected Modules

The modules affected by these errata can be identified by the Product, Revision, and DDR memory type on the units. The following units are potentially affected:

- MicroZed, Rev F
- PicoZed, Rev C
- Zynq MMP, Rev C
- Zynq Mini-ITX, Rev E

The DDR memory type can be identified as shown in the images below.

- Figure 1 shows “Kingston” stamped on the top for Kingston DDR. This is DDR on an affected module.
- Figure 2 shows the Micron Logo for Micron DDR. The memory on this module is NOT affected.



Figure 1 – Affected Module with Kingston DDR Identified with “Kingston”



Figure 2 – Unaffected Module with Micron DDR Identified with the Micron M Logo

3 Errata

3.1 Description

In Avnet Product Change Notice PCN16002 (March 10, 2016), Avnet announced that EOL Micron DDR3 SDRAM was being replaced. Two of the possible replacement options were Kingston D2516EC4BXGGB and D2516EC4BXGGBI. These memories were used as alternatives until March 2017. In some memory-intensive applications, the Kingston memories may operate improperly when physical interface is operated at 533 MHz clock speed.

3.2 Applications Affected

Some memory-intensive applications have been found to cause some memories to operate improperly for memory storage and retrieval operations. Note that while some memory-intensive applications are more demanding than others and thus more sensitive to the improper memory storage operations, some memory-intensive applications have been demonstrated to not be effected by all Kingston memory devices.

Random operating system crashes have been attributed to these memories when the operating system is manipulating the memory interface in an intensive fashion. Note that even Avnet's basic functional test with Linux does not demonstrate any symptoms of this improper memory operation condition.

3.3 Workaround

Lower the memory clock rate to the memory devices to 466 MHz to allow for additional operational and timing margin of the memory interface.

3.4 Resolution

If you are in possession of any of the affected products with Kingston memories and those products are exhibiting the memory issue, you have two options:

1. Lower the memory clock speed to 466 MHz for your application
2. Discuss other options with your local Avnet office

Additionally, since Avnet's functional test does not exhibit the problem, the MicroZed Evaluation Kit may be populated with MicroZed Rev F (Kingston) boards. For basic learning and experimentation, this should not be an issue. However, if you find it is a hindrance to your development work, please consult with your local Avnet office.

As of this date, no additional MicroZed 7020, PicoZed of any variety, Zynq MMP 7045, or Zynq Mini-ITX 7100 remain in Avnet stock with Kingston memory.

The remaining Zynq MMP 7100 and Zynq Mini-ITX 7045 products will be offered as a 466 MHz only option at a discount as follows:

- AES-MINI-ITX-7Z045-G-466, Resale \$1281 (Reduced from \$1950)
- AES-MMP-7Z100-SOM-G-466, Resale \$854 (Reduced from \$999)

4 Additional Support

For additional support, please review the discussions and post your questions to the Avnet Zynq Forums at:

<http://zedboard.org/forums/zed-english-forum>

You may also contact your local Avnet FAE.

5 Revision History

Date	Version	Revision
01 Nov 2018	1.0	Initial revision