Overview
The purpose of this notification is to inform you of a revision to undershoot threshold for inputs for 1.8V HP I/O, 3.3V HR I/O, PL I/O, and PS I/O banks for all Xilinx® 7 series FPGAs and Zynq®-7000 All Programmable SoCs.

Description
The undershoot and overshoot thresholds for inputs for 1.8V HP I/O, 3.3V HR I/O, PL I/O, and PS I/O banks are described in Note (2) of “Vin Maximum Allowed AC Voltage Overshoot and Undershoot for 1.8V HP I/O Banks,” “Vin Maximum Allowed AC Voltage Overshoot and Undershoot for PL 1.8V HP I/O Banks,” “Vin Maximum Allowed AC Voltage Overshoot and Undershoot for 3.3V HR I/O Banks,” and “Vin Maximum Allowed AC Voltage Overshoot and Undershoot for PS I/O and 3.3V HR I/O Banks” tables. Undershoot occurs when an input is below the undershoot threshold and overshoot occurs when an input is above the overshoot threshold. For all 7 series FPGAs and Zynq-7000 AP SoC devices, the undershoot threshold for inputs is changing from GND – 0.30V to GND – 0.20V. The note is revised as Table 1 and Table 2 for the affected products:

Table 1: Revision of undershoot threshold for inputs in 1.8V HP I/O, 3.3V HR I/O, PL I/O, and PS I/O banks for Artix®-7, Kintex®-7, Virtex®-7T/-7XT, Zynq-7000 AP SoC (Z-7030, Z-7045, and Z-7100) devices:

<table>
<thead>
<tr>
<th>Prior Note</th>
<th>Revised Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>The peak voltage of the overshoot or undershoot, and the duration above $V_{CCO} + 0.20V$ or below GND – 0.30V, must not exceed the values in this table.</td>
<td>The peak voltage of the overshoot or undershoot, and the duration above $V_{CCO} + 0.20V$ or below GND – 0.20V, must not exceed the values in this table.</td>
</tr>
</tbody>
</table>

The revision shown in Table 1 appears in the following data sheets on, or after, June 2, 2014:
- **DS181**, Artix-7 FPGAs Data Sheet: DC and AC Switching Characteristics
- **DS182**, Kintex-7 FPGAs Data Sheet: DC and AC Switching Characteristics
- **DS183**, Virtex-7 T and XT FPGAs Data Sheet: DC and AC Switching Characteristics
- **DS191**, Zynq-7000 All Programmable SoC (Z-7030, Z-7045, and Z-7100): DC and AC Switching Characteristics

Table 2: Revision of undershoot threshold for inputs in PS I/O and 3.3V HR I/O banks for Zynq-7000 AP SoC (Z-7010, Z-7015, and Z-7020) devices:

<table>
<thead>
<tr>
<th>Prior Note</th>
<th>Revised Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>The peak voltage of the overshoot or undershoot, and the duration above $V_{CCO} + 5%$ or below GND – 0.30V, must not exceed the values in this table.</td>
<td>The peak voltage of the overshoot or undershoot, and the duration above $V_{CCO} + 0.20V$ or below GND – 0.20V, must not exceed the values in this table.</td>
</tr>
</tbody>
</table>

The revision shown in Table 2 appears in the following data sheet on, or after, June 2, 2014:
- **DS187**, Zynq-7000 All Programmable SoC (Z-7010, Z-7015, and Z-7020): DC and AC Switching Characteristics
**Products Affected**

This change affects all speed, package, temperature, and SCD variations of the Commercial (C), Industrial (I) grade, Automotive (XA), and Defense-grade (XQ) devices. Affected part numbers are included in the Table 3:

**Table 3: Affected Devices**

<table>
<thead>
<tr>
<th>Xilinx Product</th>
<th>Affected by This Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Zynq-7000 AP SoCs</td>
<td>Yes</td>
</tr>
<tr>
<td>All 7 series FPGAs</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Response**

No response is required. For additional information or questions, please contact [Xilinx Technical Support](https://www.xilinx.com/support).

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**Additional Documentation**

- **DS181**, Artix-7 FPGAs Data Sheet: DC and AC Switching Characteristics  

- **DS182**, Kintex-7 FPGAs Data Sheet: DC and AC Switching Characteristics  

- **DS183**, Virtex-7 T and XT FPGAs Data Sheet: DC and AC Switching Characteristics  

- **DS187**, Zynq-7000 All Programmable SoC (Z-7010, Z-7015, and Z-7020): DC and AC Switching Characteristics  

- **DS191**, Zynq-7000 All Programmable SoC (Z-7030, Z-7045, and Z-7100): DC and AC Switching Characteristics  

**Revision History**

The following table shows the revision history for this document:

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Description of Revisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/02/2014</td>
<td>1.0</td>
<td>Initial release.</td>
</tr>
</tbody>
</table>
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Automotive Applications Disclaimer

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