

# Design Advisory: USB connection with xCORE Array Microphone

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## 1 Background

A small number of customers have experienced problems when using xCORE-200 USB devices with long USB cables (>1.5m). In rare cases, inductive effects can cause the failure of the xCORE-200 USB device.

For USB bus powered designs, X MOS recommends that the xCORE-200 USB\_VBUS is not connected. A design advisory giving more details of this recommendation can be found here:

<https://www.xmos.com/doc/XM-011201-DA/>

## 2 Problem

The xCORE Array Microphone platform (XK-USB-MIC-UF216) design has been updated to comply with these recommendations. However, the USB audio application `app_usb_aud_mic_array` distributed in the current release of the USB Audio 2.0 Reference Software package `sw_usb_audio` (6.15.2rc1) will not work with this latest design because it performs a check that VBUS is present before enabling the USB connection.

## 3 Workaround

The `sw_usb_audio` distribution uses the precompiled module `sc_xud` to manage low level USB functionality. The version of `sc_xud` distributed with 6.15.2rc1 is 2.4.1, which is the source of the issue.

Customers should manually replace the `sc_xud` directory in the `sw_usb_audio` tree with the latest release of the `sc_xud` module (version 2.6.0 or higher), which can be downloaded as a zip archive from the following location:

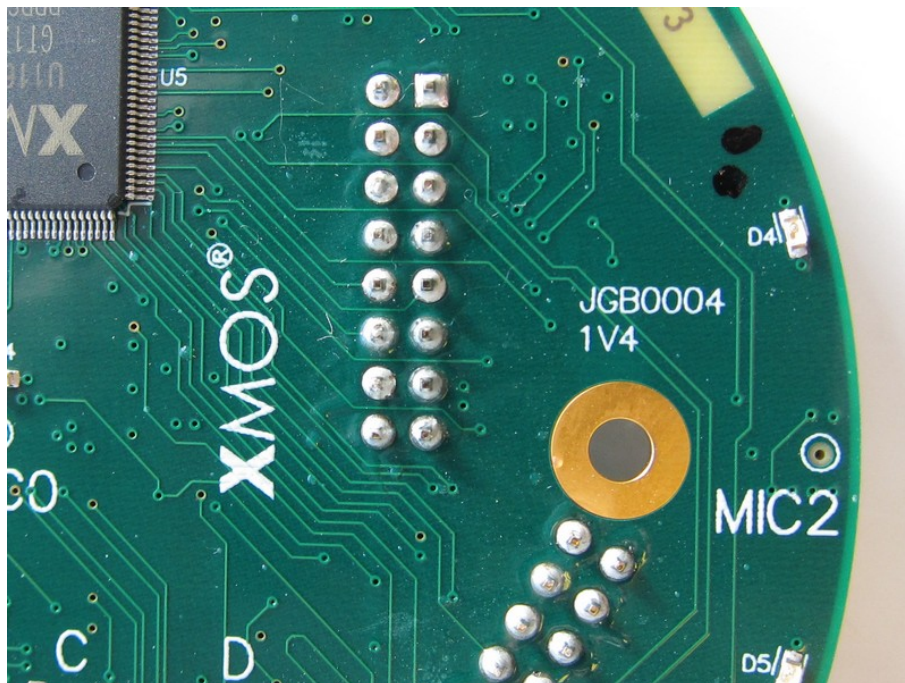
[https://www.xmos.com/published/sc\\_xud.zip?version=all](https://www.xmos.com/published/sc_xud.zip?version=all)

The `app_usb_aud_mic_array` application should be cleaned and rebuilt from scratch to ensure the updated `sc_xud` module is used.

## 4 Impacted XMOS Part Numbers

This design advisory applies to the XK-USB-MIC-UF216 kit. Impacted kits can be identified from the revision number of the XP-USB-MIC-UF216 board: boards with a version number of 1V4 or greater have USB\_VBUS disconnected and are affected therefore this design advisory applies; earlier versions of the board are unaffected and will work with both revisions of `sc_xud`.

The version number of the board is shown in figure 1.



**Figure 1:**  
Location of  
Array  
Microphone  
board version  
number



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