

X16/X16GS modification for SB16 compatibility

25.08.24 Serdaco BV

Summary

This document describes a modification for Serdaco X16/X16GS to improve compatibility with certain legacy soundcards. X16/X16S works fine with most soundcards. This modification is only needed if you have an X16/X16GS ordered before August 25th 2024, and an incompatible soundcard such as SB16 CT2230. All X16 and X16GS shipped from Serdaco starting from August 25th 2024 will already include this modification.

Problem description

Recently, I was notified that X16GS was not compatible with some soundcards such as CT2230 soundblaster 16. A friend borrowed me his CT2230 card, so I could now investigate and solve the issue :



Figure 1: X16GS on SB16 CT2230

The problem seemed to happen when pin 7 from the SB16 is connected to pin 7 on the X16. It seems some sound cards such as CT2230 pull this pin high at bootup. The Dream CPU detects this pin status during bootup, and as a result , uses the wrong memory configuration, and the bootloader doesn't start. This is the cause of the incompatibility.

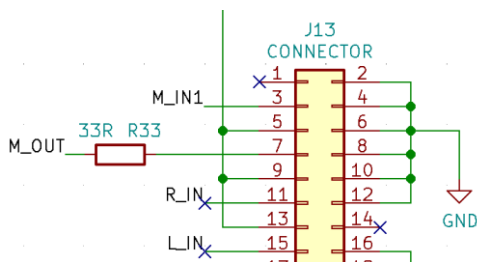


Figure 2: Waveblaster connector pinout with pin 7 and R33 on X16/X16GS

X16/X16GS had pin 7 connected for possible future use (sending midi data back to the interface), but this has remained unused, as no soundcards support this. So pin 7 has no useful function.

Solution

The solution is to disconnect pin 7 on the X16/X16GS. This can be done simply by removing R33. Alternatively, the trace between R33 and pin 7 can be cut. See the images below for illustration of both modification options.

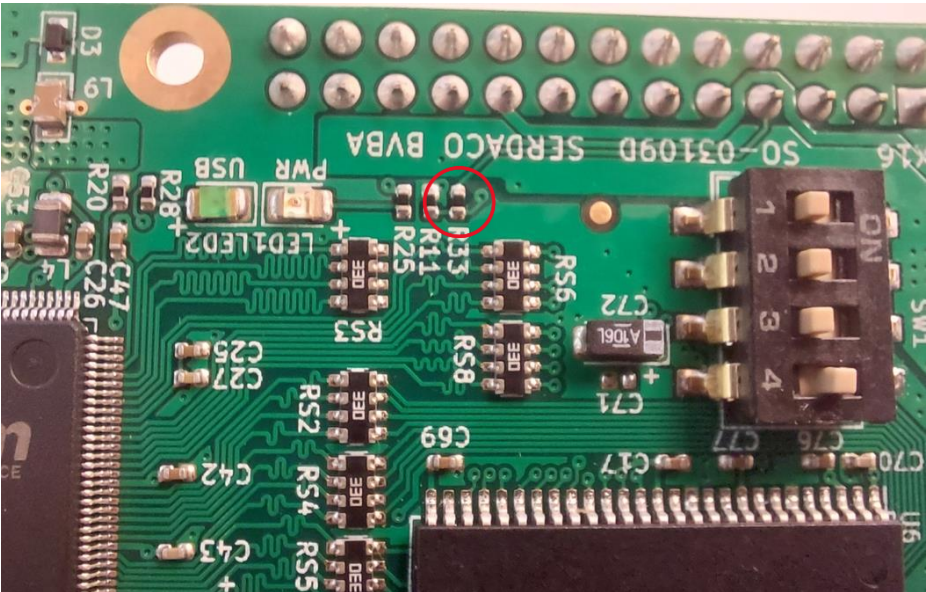


Figure 3: X16GS before modification

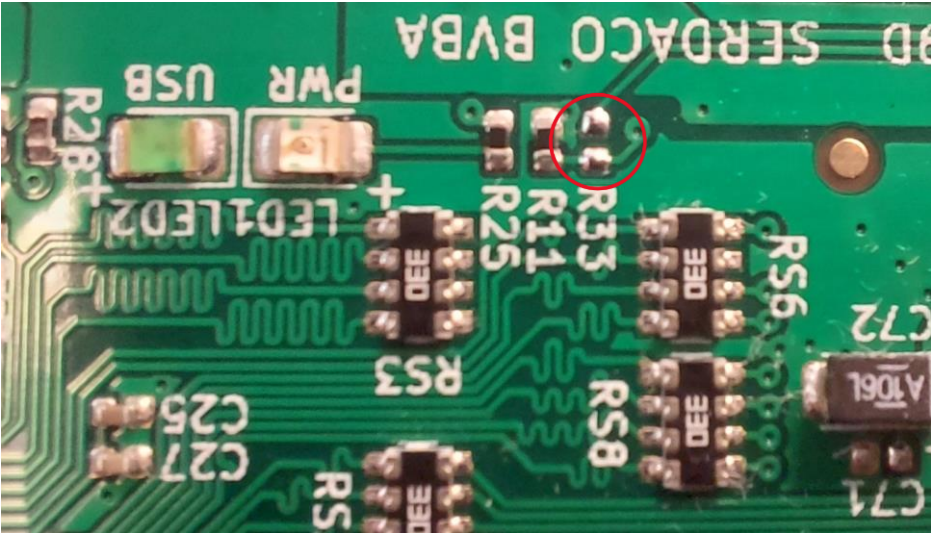


Figure 4: X16GS after modification: R33 is removed

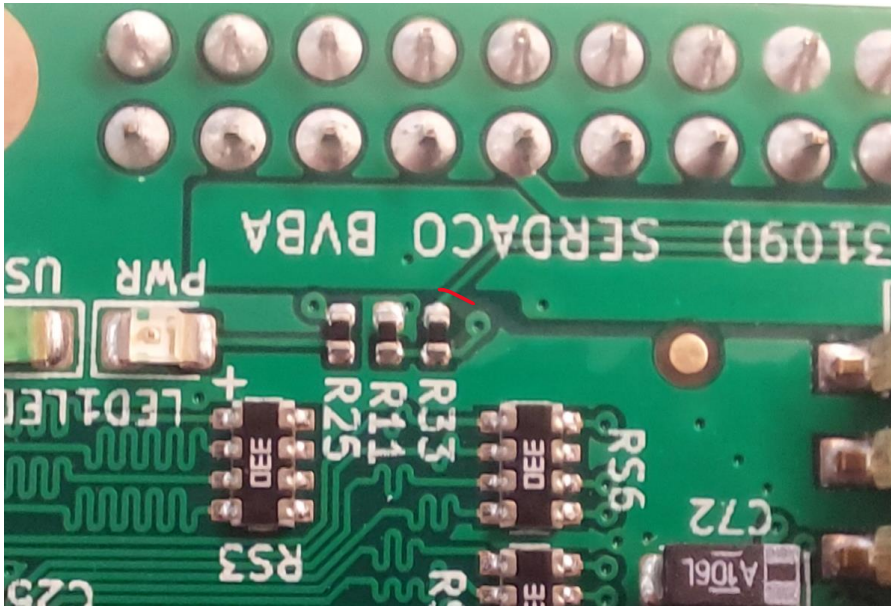


Figure 5: Alternative modification: Cut trace to pin 7 at indicated location on the X16GS PCB

This modification is only needed if you have an incompatible soundcard, and an X16/X16GS ordered before August 25th 2024.

I wish you good luck with the modification, and your X16/X16GS 😊.

Thanks for supporting my projects !

Serge

Serdaco BV