



Mod5213 RS-232/CAN Transceiver

Application Note

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Document Status: Initial Release

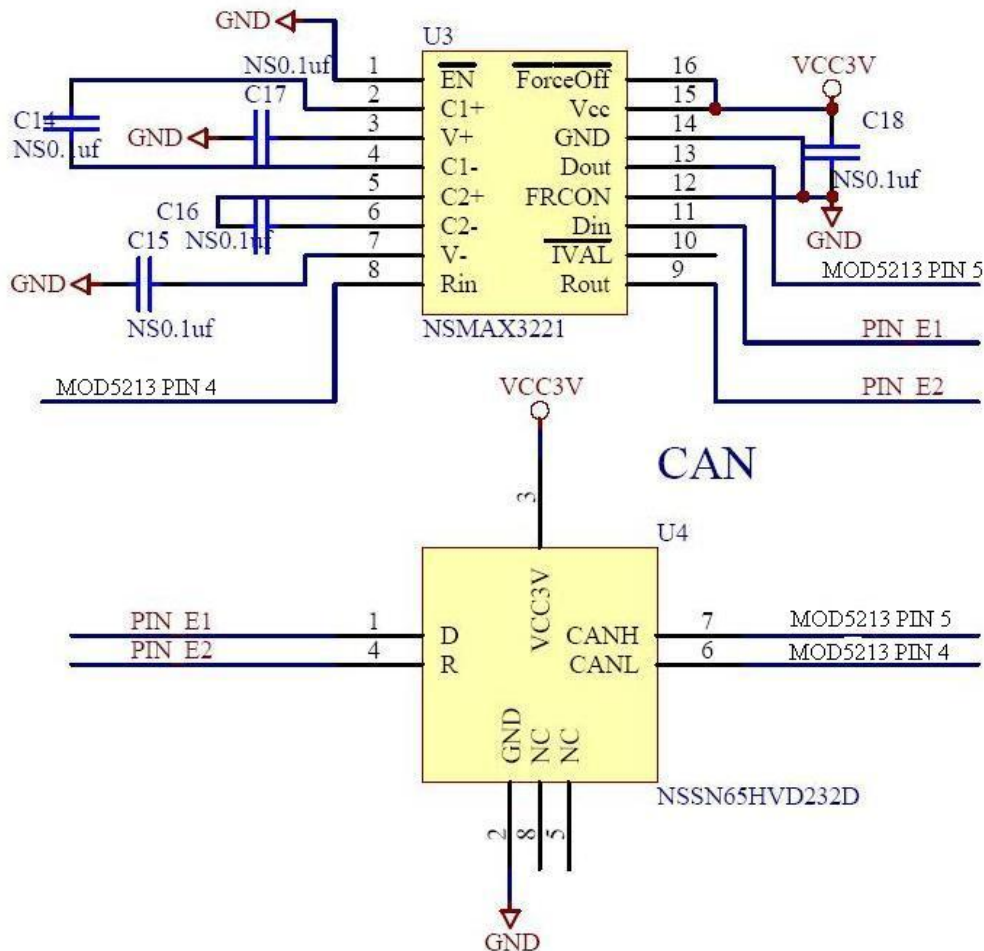
Introduction

The NetBurner Mod5213 has PCB footprint locations for the addition of a CAN transceiver or a RS-232 level shifter (but not both) on the module itself. The intention of this feature is to accommodate high volume custom factory orders, but it is also possible to add these components yourself. However, modifications to the Mod5213 hardware will void the hardware warranty.

This application note shows how these additional ICs can be placed on the MOD5213. Two processor signal pins, designated as PIN_E1 and PIN_E2, can be routed to either a CAN transceiver or RS-232 level shifter. The outputs from either of these devices will be on Mod5213 pins 4 and 5.

Schematic of Un-Stuffed ICs

Parts not Stuffed in Production.



Parts Required

Bill of materials to stuff CAN transceiver

PCB Part Name	Manufacturer/Distributor	Part Number	Part Description
U4	TI/Digikey	SN65HVD232 / 296-12282-5-ND	IC CAN TRANSCEIVER 3.3V 8-SOIC

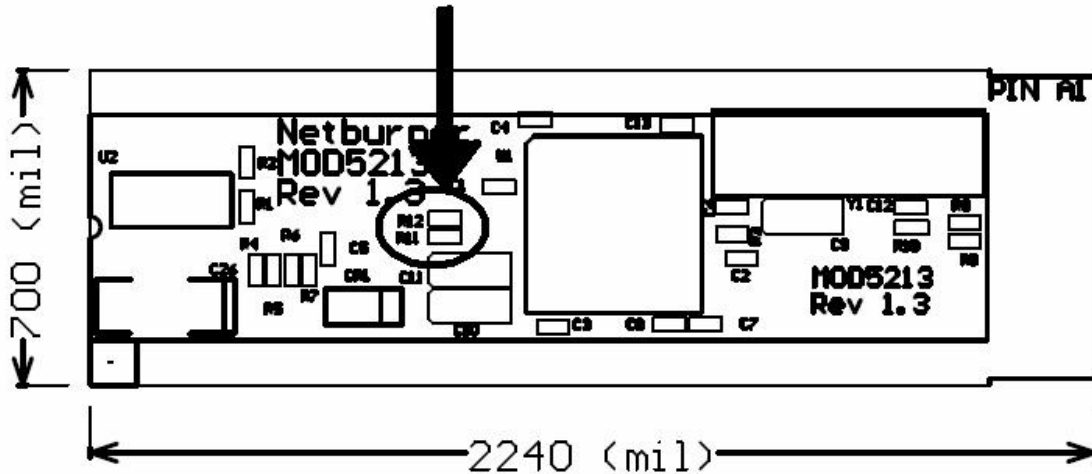
Bill of materials to stuff RS-232 driver

PCB Part Name	Manufacturer/Distributor	Part Number	Part Description
C14 C15 C16 C17 C18	Generic	0.1uf 0402	0.1uf 0402 Ceramic bypass Cap
U3	MAXIM/Digikey	MAX3221PWR / 296-9596-1-ND	IC DRVR/RCVR RS-232 1-CH 16TSSOP

Assembly

The first step is two remove R11 and R12 on the top side of the PCB located to the left of the processor. These resistors connect pins 4 and 5 of the MOD5213 to the CPU pins E1 and E2. Removing these resistors allow the CPU pins and MOD5213 pins to interface with separate pins on the IC to be stuffed.

Resistors R11 and R12 must be removed to enable unstuffed IC pins



The footprints to place these parts are located on the bottom side of the MOD5213 PCB. The overlay is not printed on the bottom side of the PCB but the correct IC orientation is as follows:

8-SOIC footprint (U4) - Looking at the bottom of the PCB with the BDM header to the right, the top left pad (closest pad to PIN 1 of the MOD5213) is pin1 of the footprint

16-TSSOP footprint (U3) - Looking at the bottom of the PCB with the BDM header to the right, the bottom left pad (closest pad to PIN 36 of the MOD5213) is pin1 of the footprint

The 5 0402 footprints located directly around the 16-TSSOP pads are for capacitors C14, C15, C16, C17 and C18. These capacitors only need to be placed when installing a RS-232 driver and not the CAN transceiver.

Bottom Overlay of MOD5213

