

BC95 Reference Design

NB-IoT Module Series

Rev. BC95_Reference_Design_Rev.A

Date: 2016-10-11



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About the Document

History

Revision	Date	Author	Description
A	2016-10-11	Bryant CHEN	Initial

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1 Reference Design

1.1. Introduction

This document provides the reference design for Quectel BC95 module.

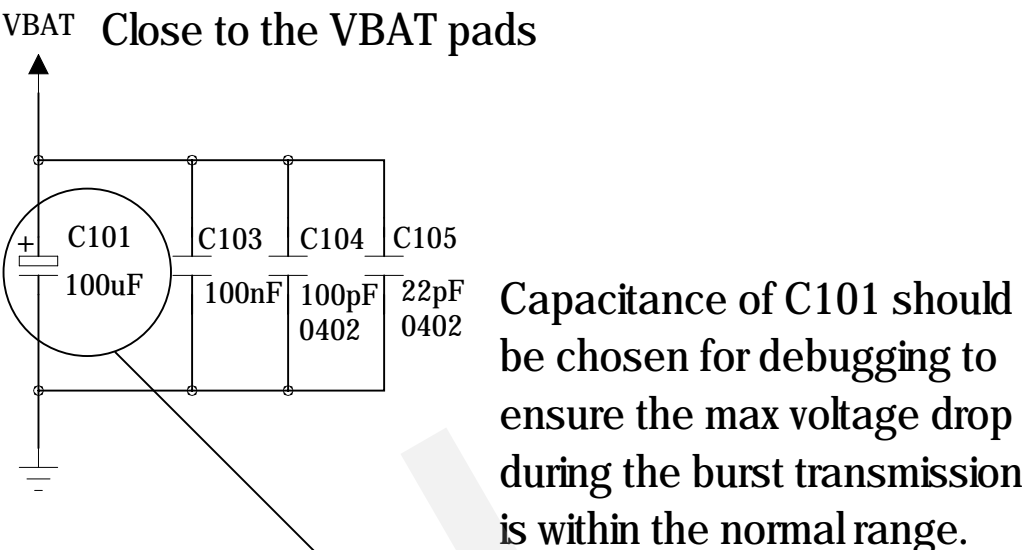
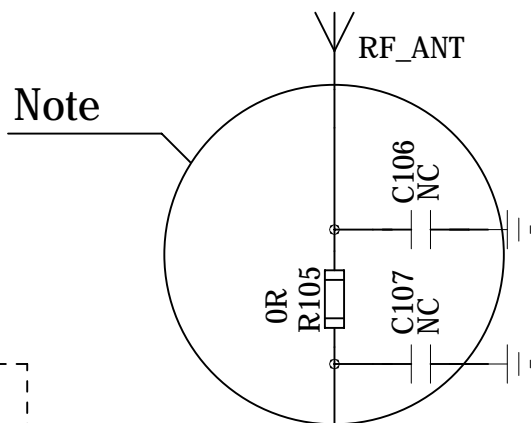
1.2. Schematics

The schematics illustrated in the following pages are provided for your reference only.

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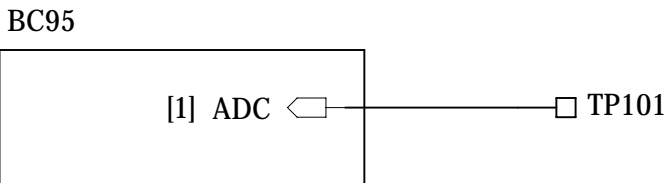
Module Design

Note:
For RF layout, please refer to Quectel_RF_Layout_Application_Note.
A Pi-type match circuit is recommended to be added.

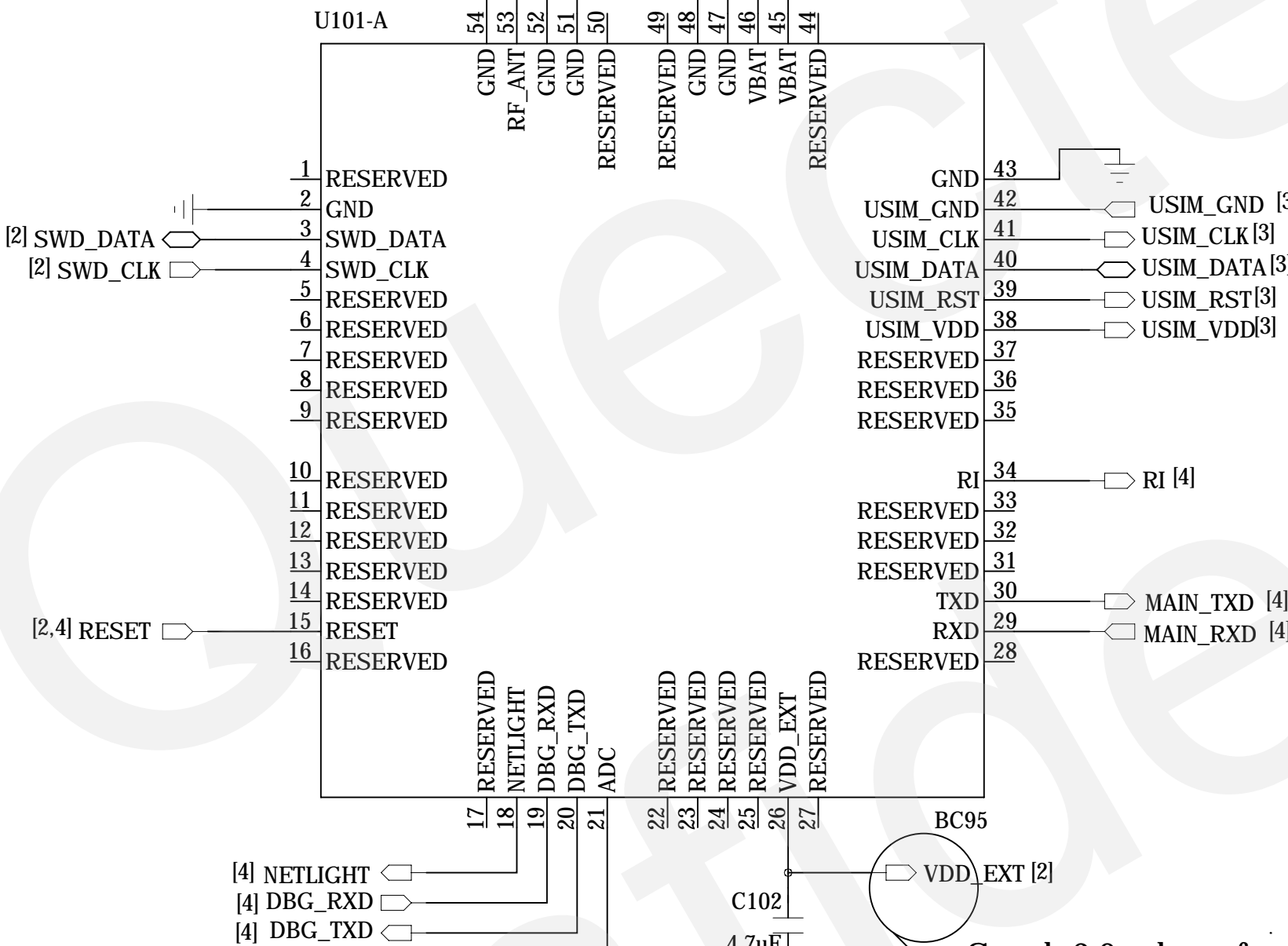
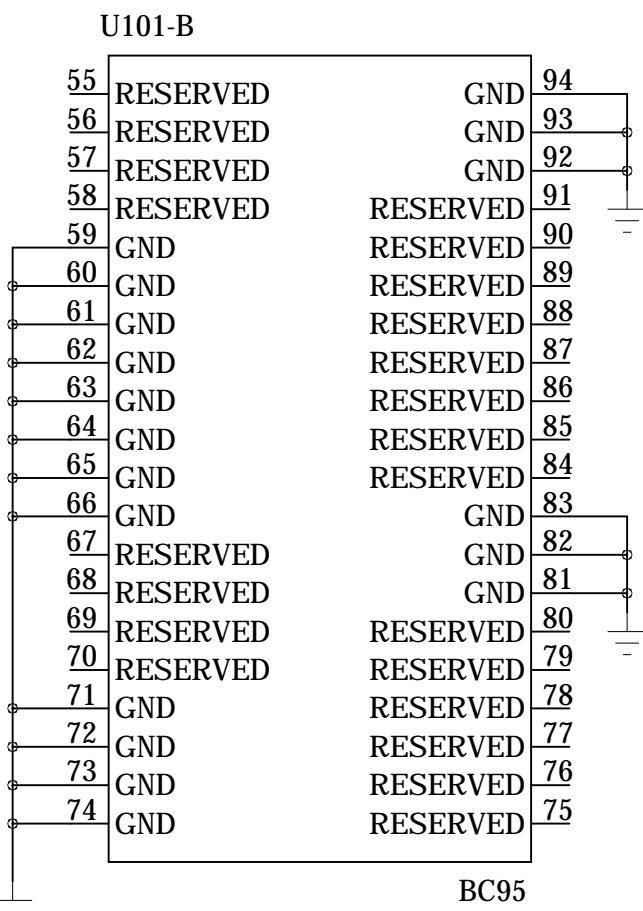


- 1. VBAT ranges from 3.1V to 4.2V.
- 2. The width of VBAT trace is recommended to be as wider as possible.
- 3. These capacitances are arranged in ascending order, with the smallest one closing to the VBAT pads and keep all capacitances as close to the VBAT pads as possible.

It is recommended to reserve these test points for ADC port.



General purpose analog to digital converter.



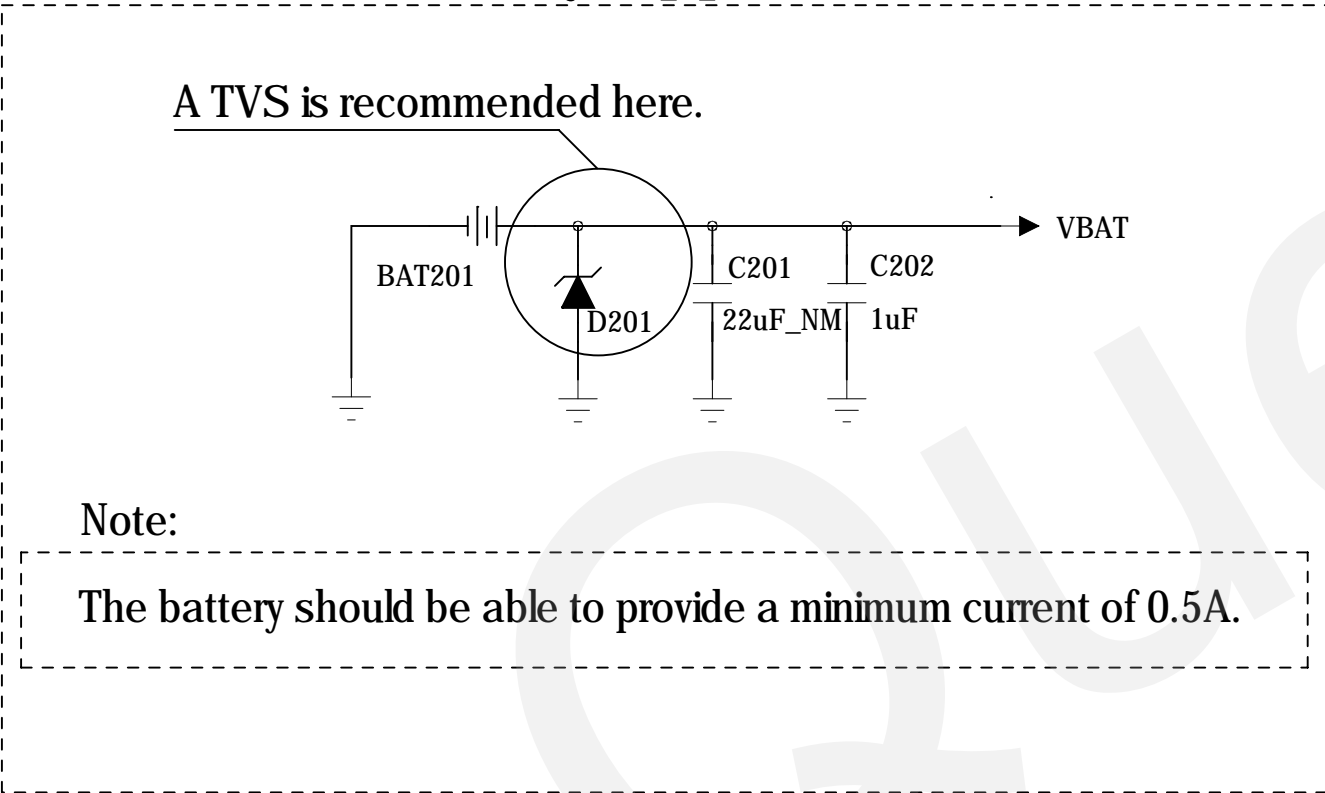
Supply 3.0 voltage for external circuit.

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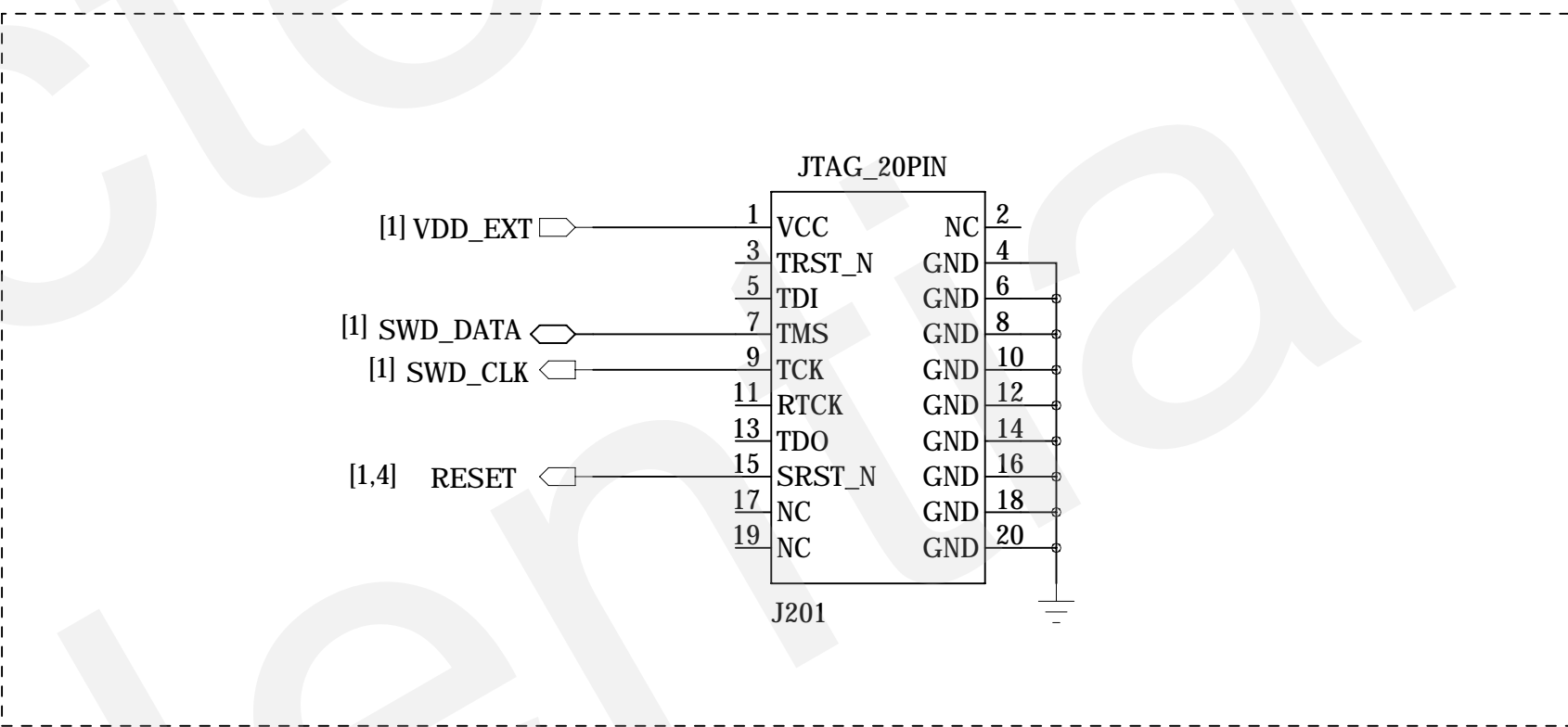
DRAWN BY Bryant CHEN	PROJECT BC95	TITLE Reference Design
CHECKED BY Vae LIU	SIZE A2	VER A
SHEET	1 OF 4	DATE 2016/10/11

Power Supply

Battery Application



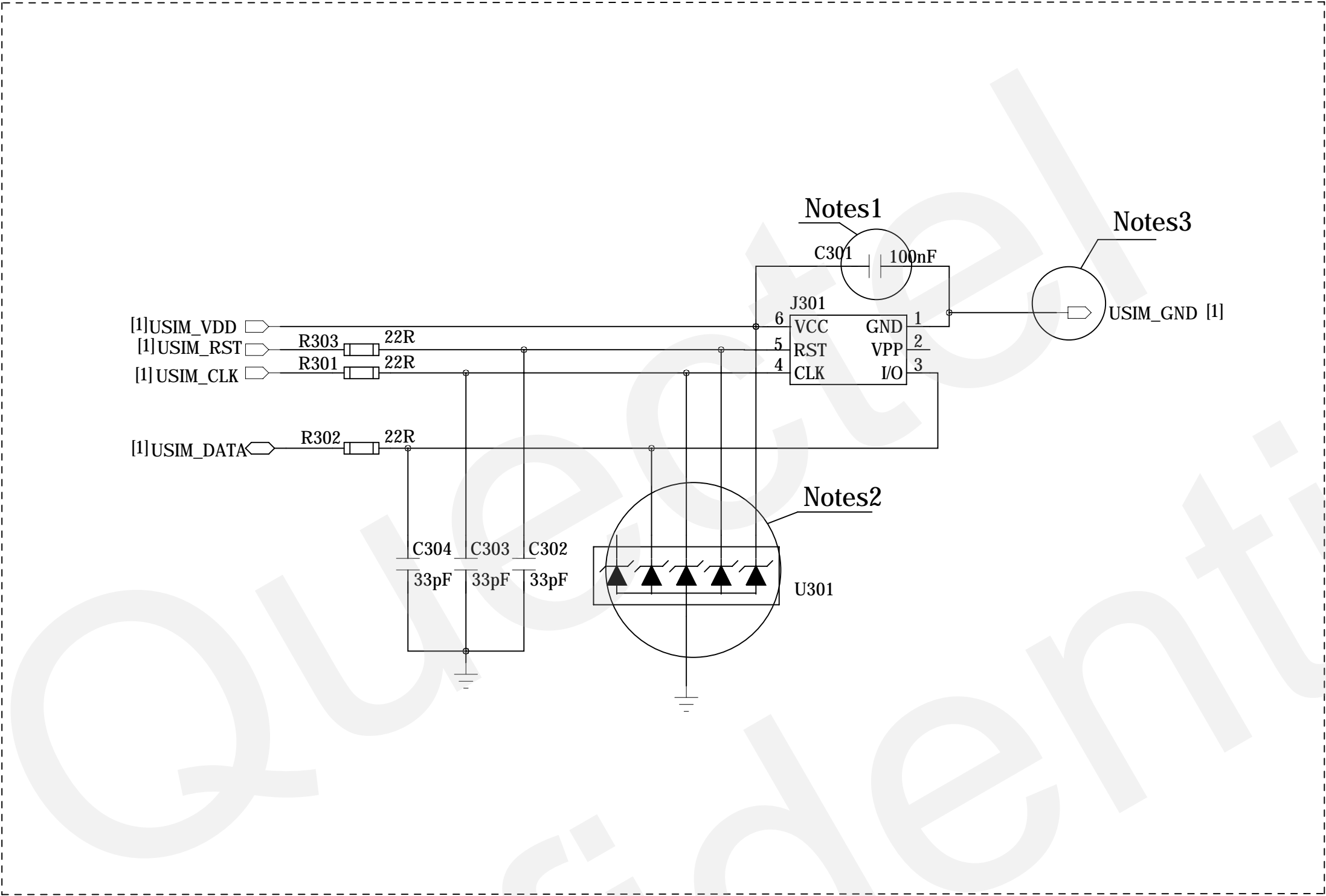
Reference Circuit of Download



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USIM Card

USIM Card Interfaces



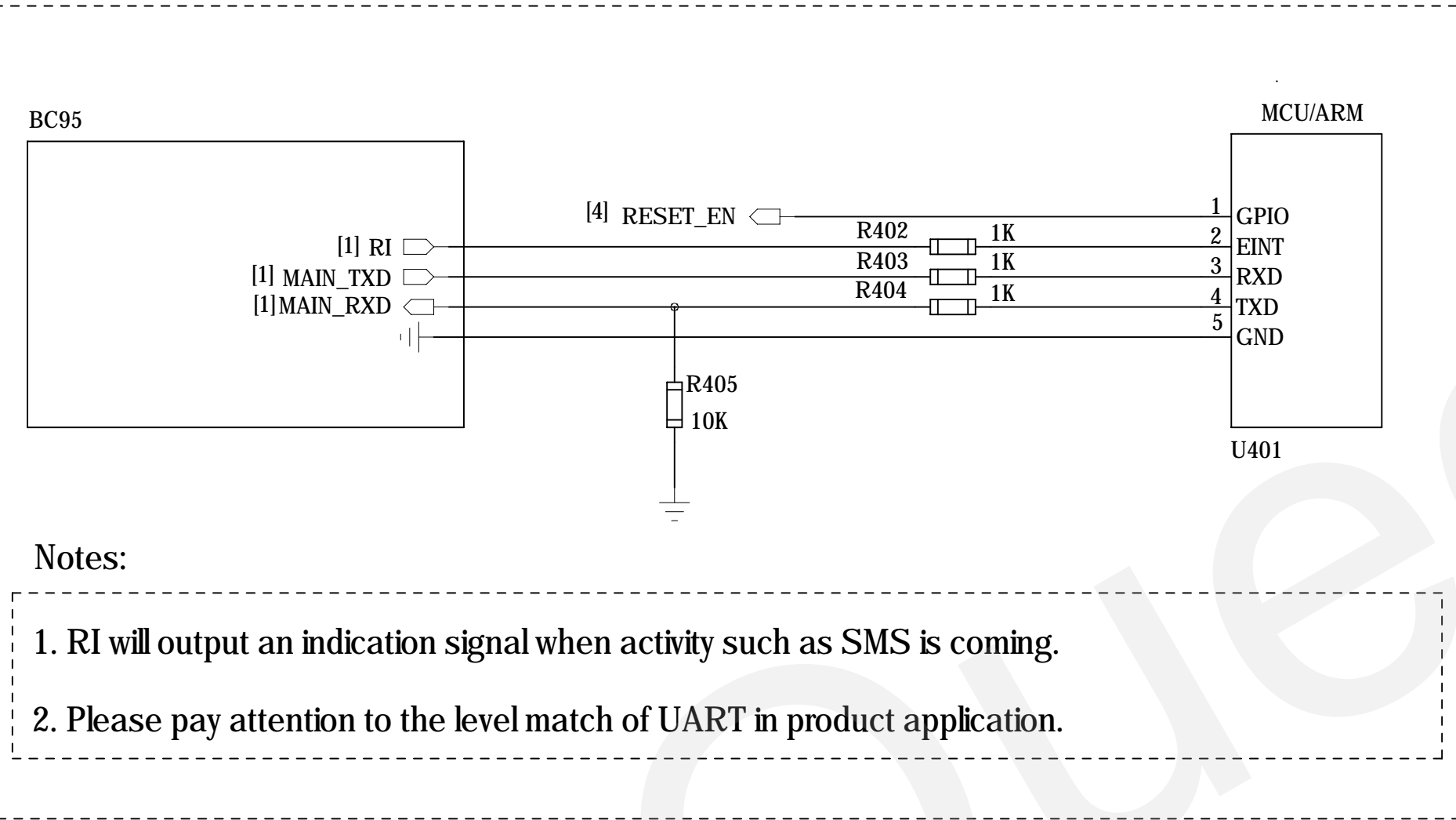
- Notes:
- 1. The value of C301 should be less than 1uF.
 - 2. U301 is used for protecting USIM card against ESD and the junction capacitance should be less than 50pF. It should be placed nearby USIM card holder.
 - 3. For BC95 module, ground line of USIM card is recommended to be routed to the Pin 42 ("USIM_GND") of the module separately.

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MCU Connection

UART Interface

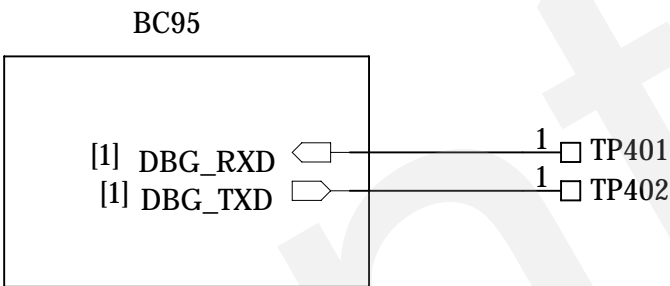
Connection for 3.3V system



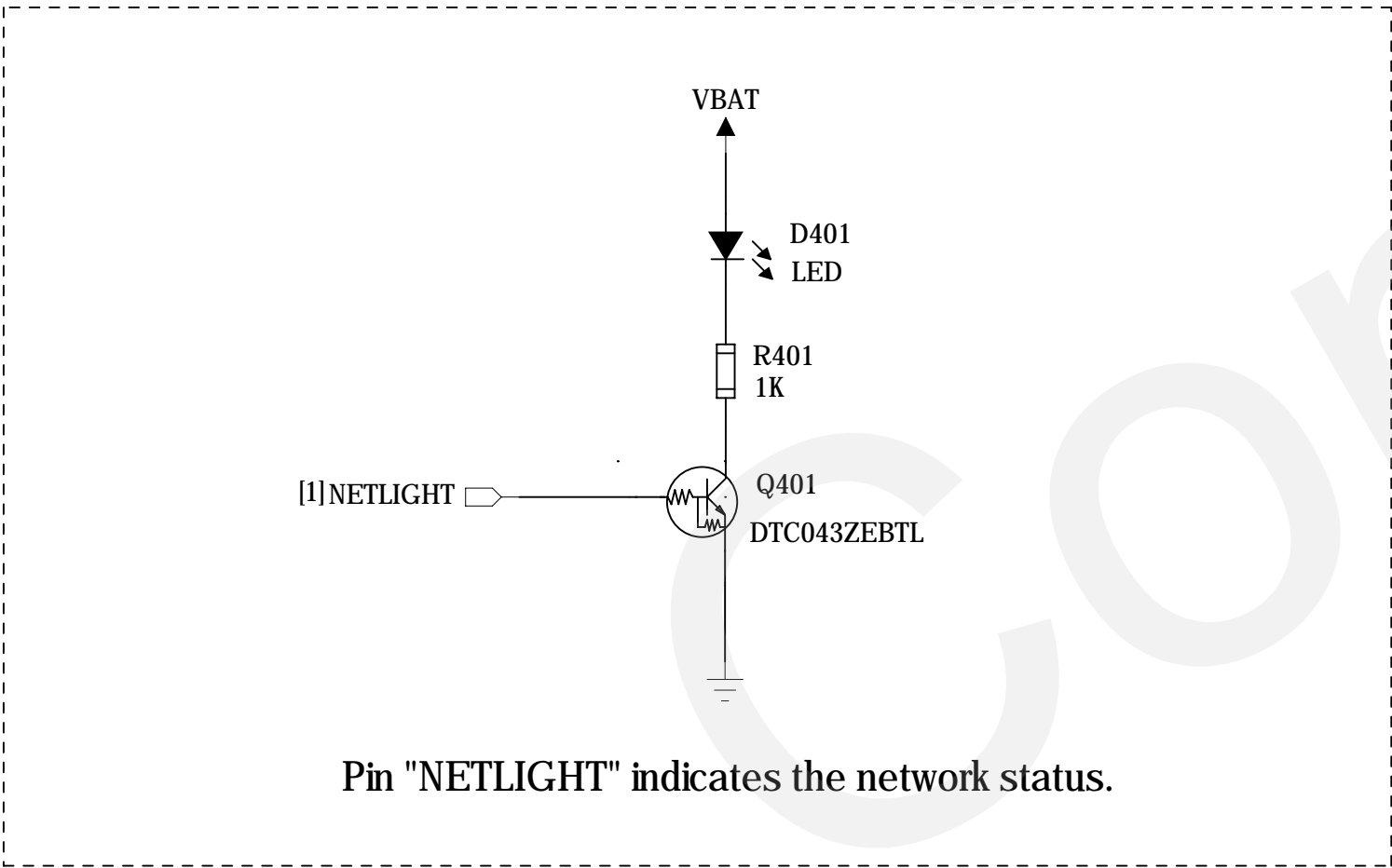
Electric characteristics of the module's input and output ports:

- VOHmin=2.4V
- VOLmax=0.4V
- VILmin=-0.1*VDD_EXT
- VILmax=0.2*VDD_EXT
- VIHmin=0.7*VDD_EXT
- VIHmax=1.1*VDD_EXT
- VDD_EXT=3.0V (typical value)

It is recommended to reserve the points for debug port.



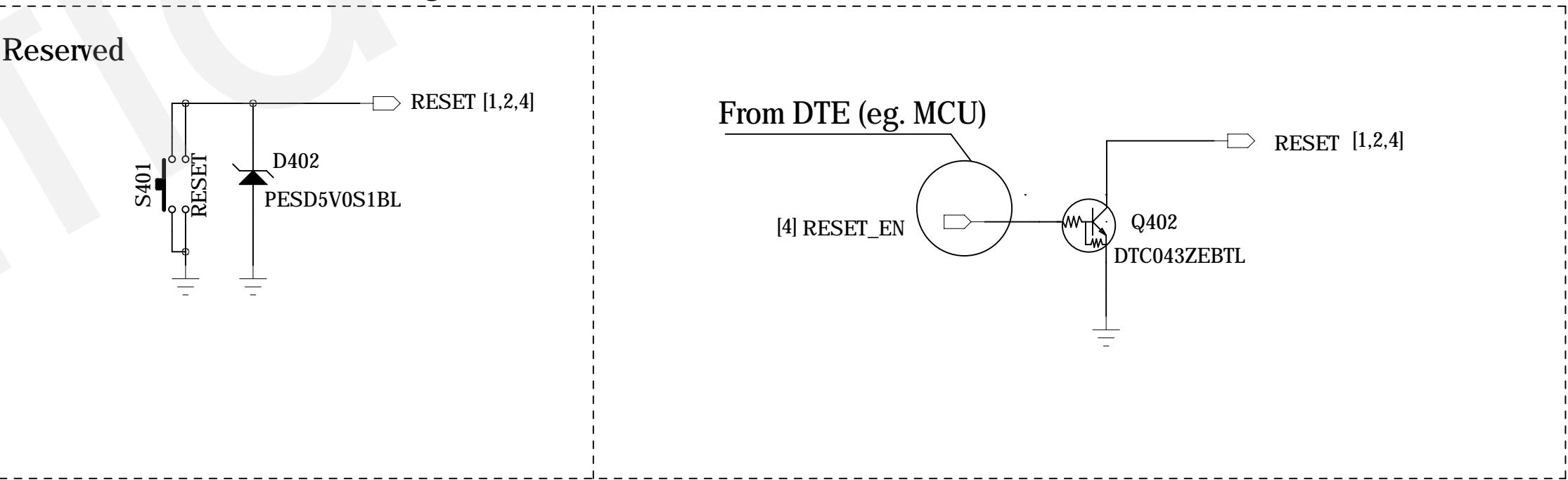
Indication



Pin "NETLIGHT" indicates the network status.

Reset Function

Recommended circuit for resetting module.



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