C64 WiFi-Modem for User Port Rev. 2

Functional Description

J1 is connecting to the C64 user port. The logic levels are TTL (5V)-levels. The NodeMCU v3 (M1) contains all functionality, WiFi included. Its signal level is 3.3V, so level shifters are required. Those are implemented in the MOSFETs (Q1 – Q5).

The modem signals are active low. The inverters (IC1) are used to drive LEDs. The RxD and TxD lines might toggle often. To obtain a good LED brightness, the output of the inverters IC1D and IC1E are buffered in a capacitor, which is charged via a diode and discharged via the base resistor and the base of a transistor, which is then driving an LED.

The last LED (LD6) is driven by the signal EXLED from the NodeMCU. It serves as a status LED for the NodeMCU software. According to the comments in the software, a LOW on this output should switch the Status-LED on, thus the inverter IC1F is required.

J2 is a spare SPI bus connection. The functionality is not implemented in the software, the pin header may stay not populated.

SW1 serves as a RESET switch for the C64. It is a standard 6mm tact switch.

A LOW level on the C64’s signal pulls the NodeMCU’s LOW via the Schottky diode D3. This way, the NodeMCU is reset together with the C64.