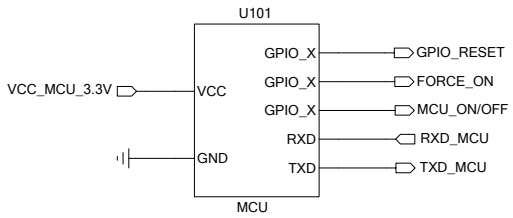
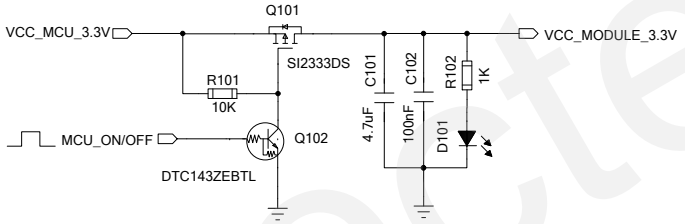
# Power Suppply and UART Circuit

## For 3.3V MCU

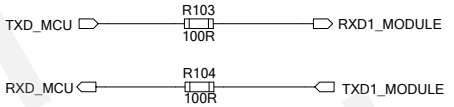
### Customer's MCU




### Power ON/OFF Circuit



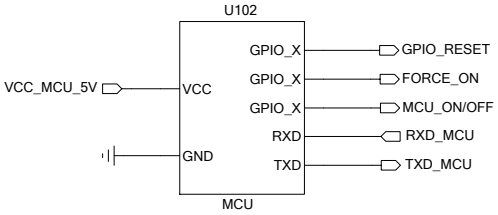

### UART Circuit



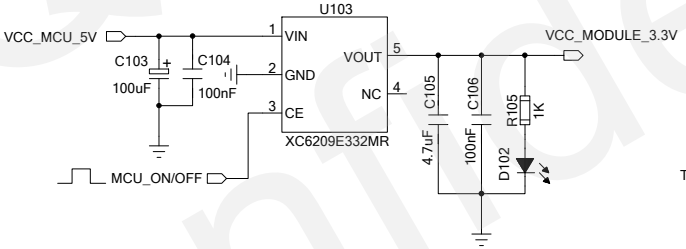

R103 and R104 are resrved for debugging the waveform of UART, and they are also beneficial for ESD protection.
Generally, 100R for R103 and R104 is recommended, but 0R also works well.

## For 5V MCU

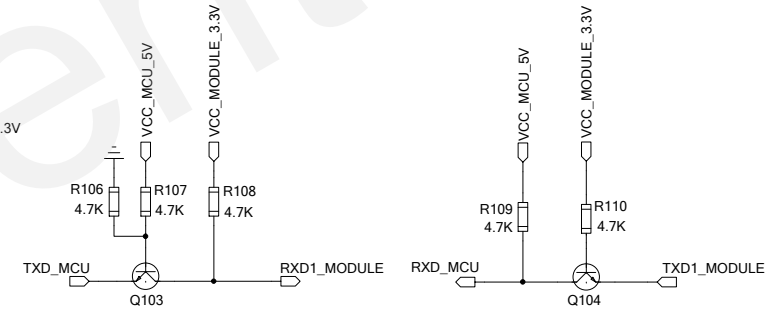
### Customer's MCU




### LDO Circuit




### Level Shifting for UART




The transistor circuit will realize the voltage level shifting between VCC_MCU_5V and VCC_MODULE_3.3V, and block the current from leaking from one power-on device to another power-off device.

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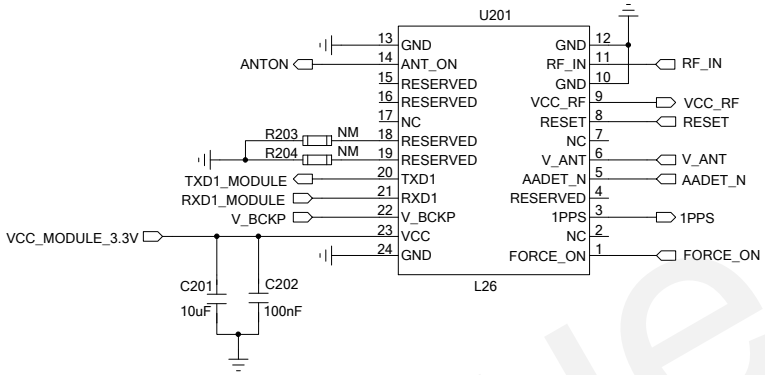
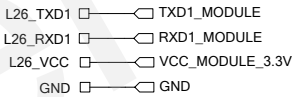
# Module Interface

## Module Interface

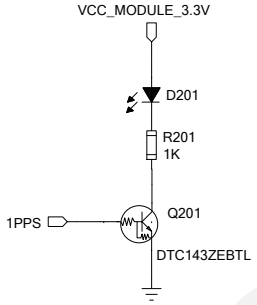



## Test Points



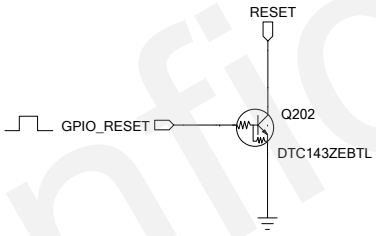

1. UART1 can be used to output NMEA message and upgrade firmware.
2. R203 and R204 are reserved to modify baud rate for future.
   Keep R203 and R204 unmounted on L26 module.
3. The test points are reserved for module debugging.

## Indicating Circuit



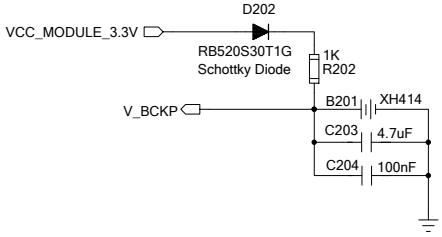

The 1PPS indicator will blink at 1Hz frequency after fixing the position.

## Reset Circuit




1. If the reset function is unused, the RESET pin can be connected to the VCC directly.
2. RESET has been pulled up internally.

## Charging Circuit for RTC logic




V_BCKP is designed to supply power for L26 RTC logic circuit when VCC_MODULE_3.3V is powered off.

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# Antenna Interface

## Passive Antenna

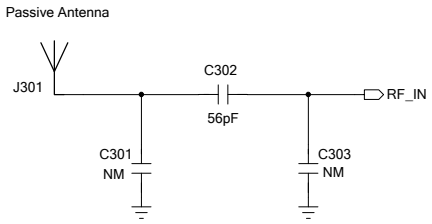
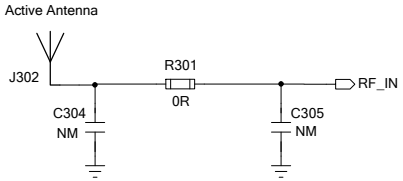



Figure 1

## Active Antenna




The most simplified power supply circuit is as follows:


Figure 2

## Reference Design for Detection Circuit

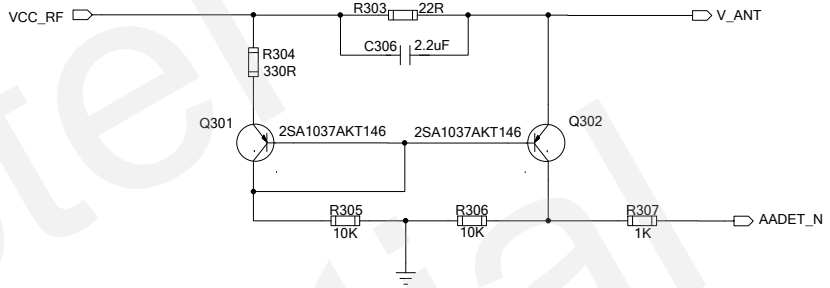



Figure 3

## Reference Design for ANTON Circuit

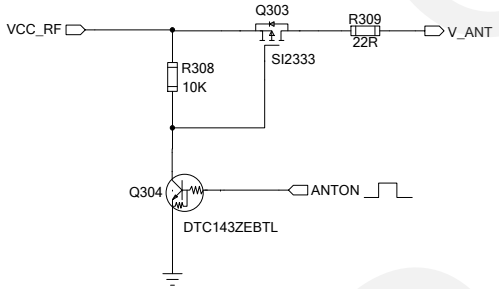



Figure 4

1. Figure 1 shows the passive antenna circuit, Pi circuit (C301,C302,C303) is reserved for antenna impedance matching. By default, C301 and C303 are not mounted, C302 is 56pF.
2. Figure 2 shows the basic active antenna circuit, Pi circuit (C304, R301, C305) is reserved for antenna impedance matching. By default, C304 and C305 are not mounted, R301 is 0R. A 22R resistor (R302) is needed between VCC_RF and V_ANT to supply power. When using active antenne, the R301 can not be capacitance, because the current flows through R301 to the antenna.
3. Figure 3 shows the reference design for detection circuit. When active antenna is removed or not connected well, AADET_N will keep a high level to indicate the absence of active antenna. AADET_N will change to a low level when active antenna is connected well.
4. Figure 4 shows the active antenna with ANTON circuit. The voltage level of ANTON will be pulled down in sleep mode.
5. The typical value of VCC_RF is 3.3V, ranging from 2.8V to 4.3V. If it is not suitable for the active antenna, it can be replaced by an external LDO.
6. Impedance of RF trace should be controlled by 50 ohm and the length should be kept as short as possible.

For more details, please refer to L26 Hardware Design.

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