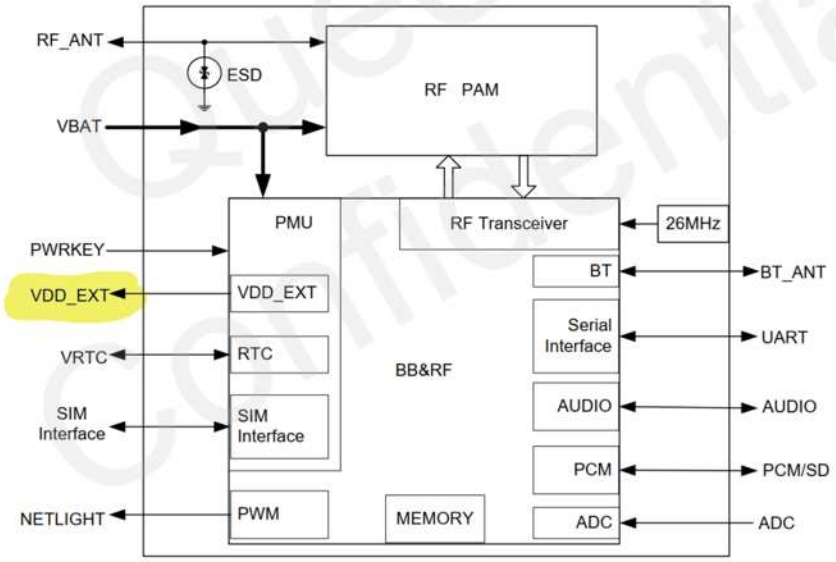
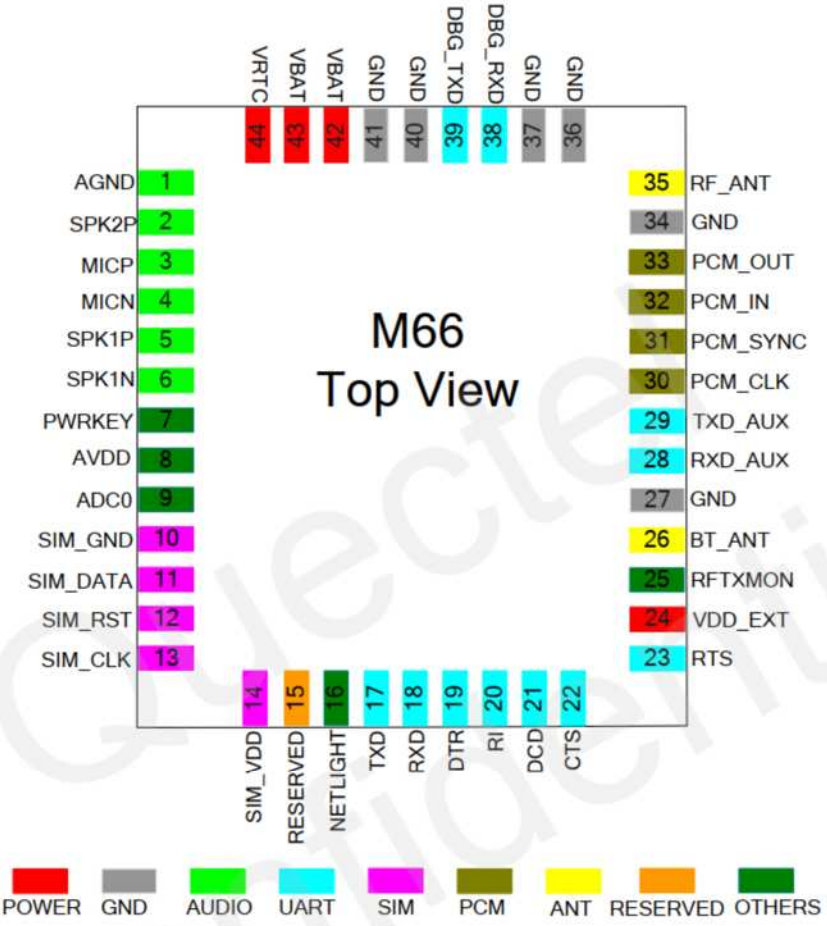
SIM800 Series_MQTT_Application Note_V1.03.pdf
sim800_hardware_design_v1.10.pdf
SIM800_Series_AT_Command_Manual_V1.09.pdf
SIM800_SIM808_ROHS_2016.pdf
Quectel_M66(R1.0)_Firmware_Release_Notes_V0209.pdf
Quectel_M66_GSM_Specification_V1.4.pdf
Quectel_M66_Hardware_Design_V1.2.pdf
Quectel_M66_Series_AT_Commands_Manual_V2.1.pdf





3.9. PCM Interface

M66 supports PCM interface. It is used for digital audio transmission between the module and the device. This interface is composed of PCM_CLK, PCM_SYNC, PCM_IN and PCM_OUT signal lines.

Pulse-code modulation (PCM) is a converter that changes the consecutive analog audio signal to discrete digital signal. The whole procedure of Pulse-code modulation contains sampling, quantizing and encoding.

Table 4: Pin Description

Power Supply					
PIN Name	PIN No.	I/O	Description	DC Characteristics	Comment
VBAT	42,43	PI	Main power supply of module: VBAT=3.3V~4.6V	$V_I$max=4.6V $V_I$min=3.3V $V_I$norm=4.0V	Make sure that supply sufficient current in a transmitting burst typically rises to 1.6A.
VRTC	44	IO	Power supply for RTC when VBAT is not supplied for the system. Charging for backup battery or golden capacitor when the VBAT is applied.	$V_I$max=3.3V $V_I$min=1.5V $V_I$norm=2.8V $V_O$max=3V $V_O$min=2V $V_O$norm=2.8V $I_O$max=2mA Iin=10uA	If unused, keep this pin open.
VDD_EXT	24	PO	Supply 2.8V voltage for external circuit.	$V_O$max=2.9V $V_O$min=2.7V $V_O$norm=2.8V $I_O$max=20mA	1. If unused, keep this pin open. 2. Recommend to add a 2.2~4.7uF bypass capacitor, when using this pin for power supply.
GND	27,34 36,37 40.41		Ground		

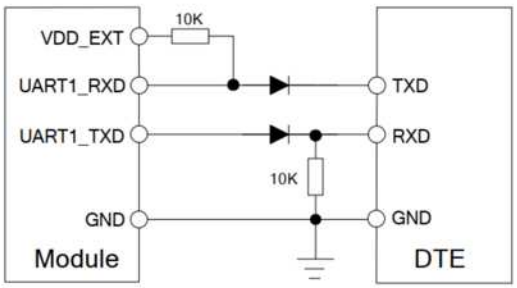


Figure 21: Isolation circuit by diodes

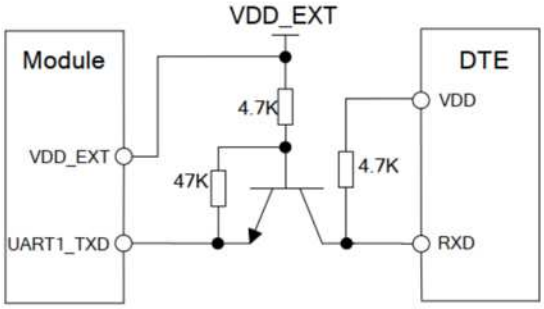


Figure 22: TX level converting by transistor

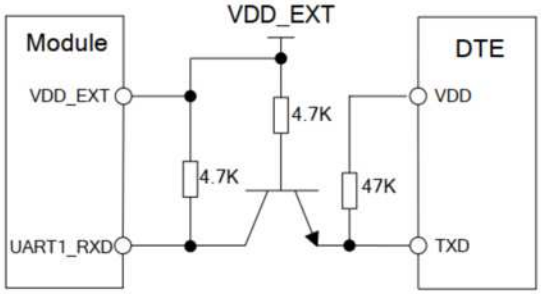


Figure 23: RX level converting by transistor

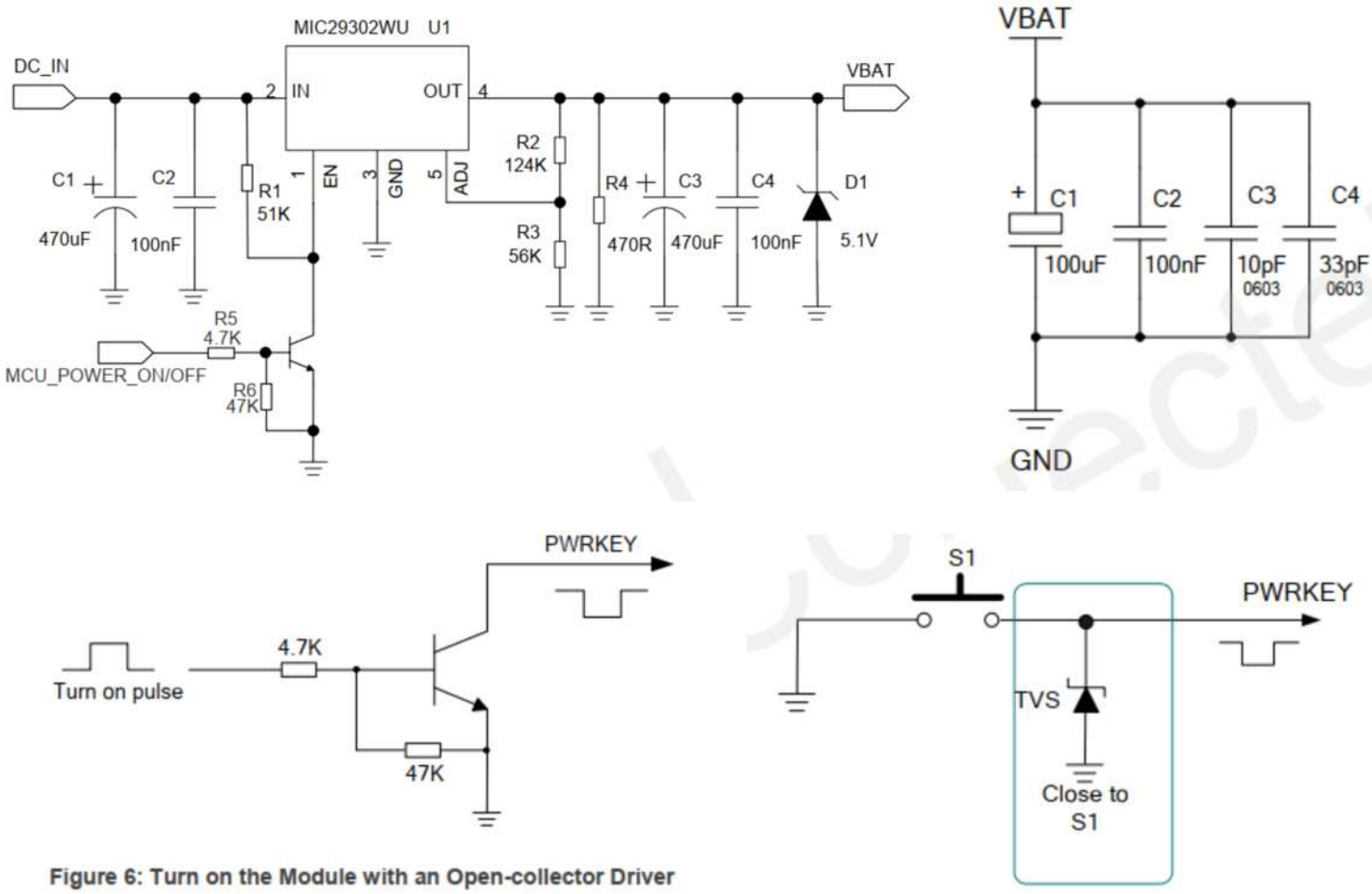


Figure 6: Turn on the Module with an Open-collector Driver

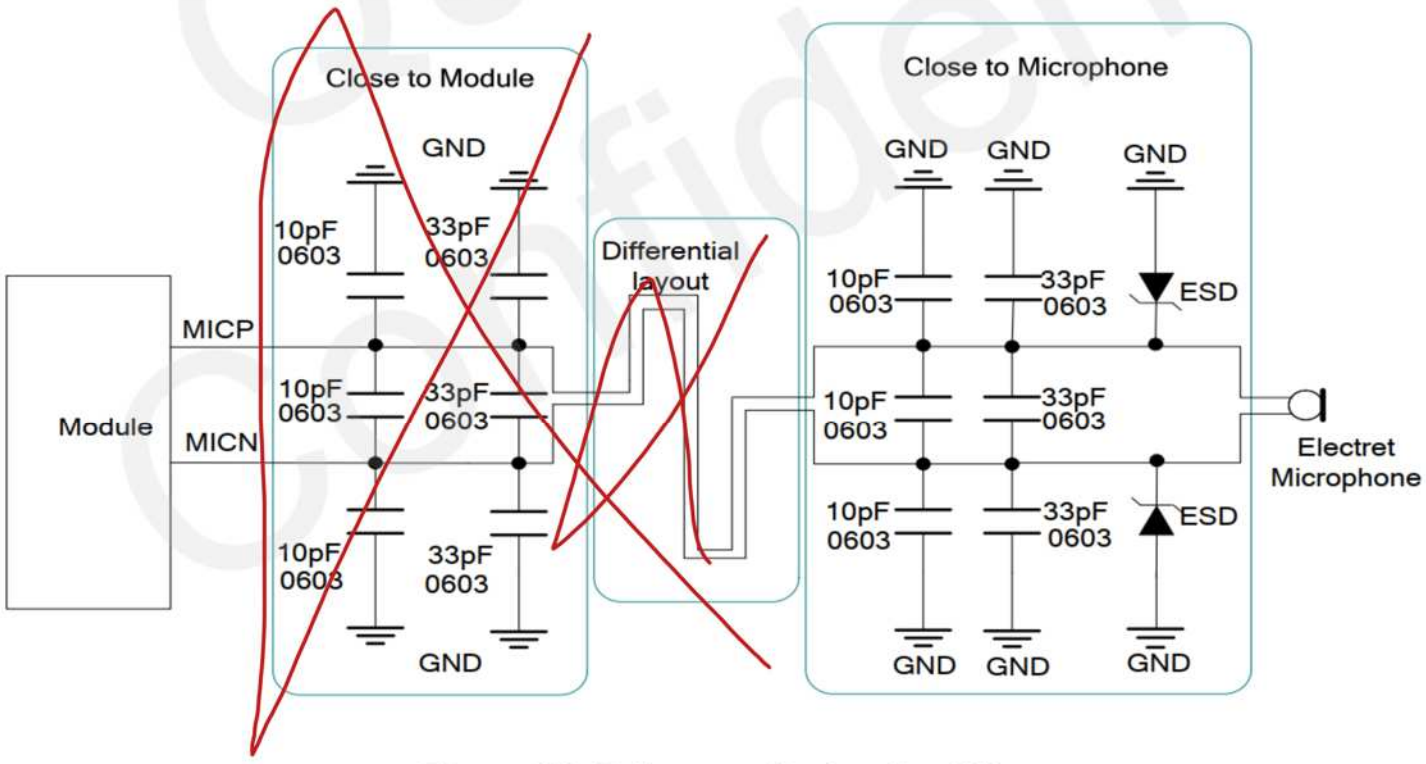


Figure 22: Reference Design for AIN

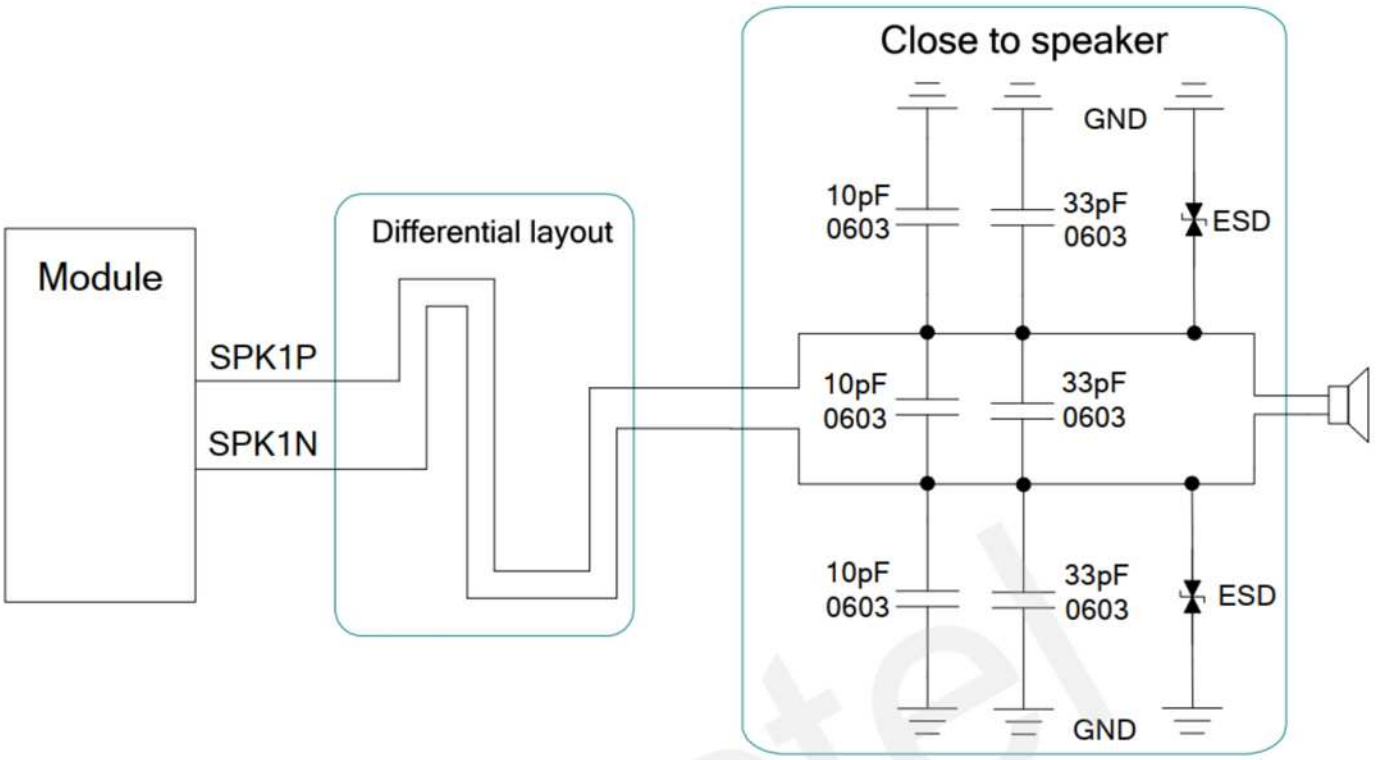


Figure 23: Handset Interface Design for AOUT1

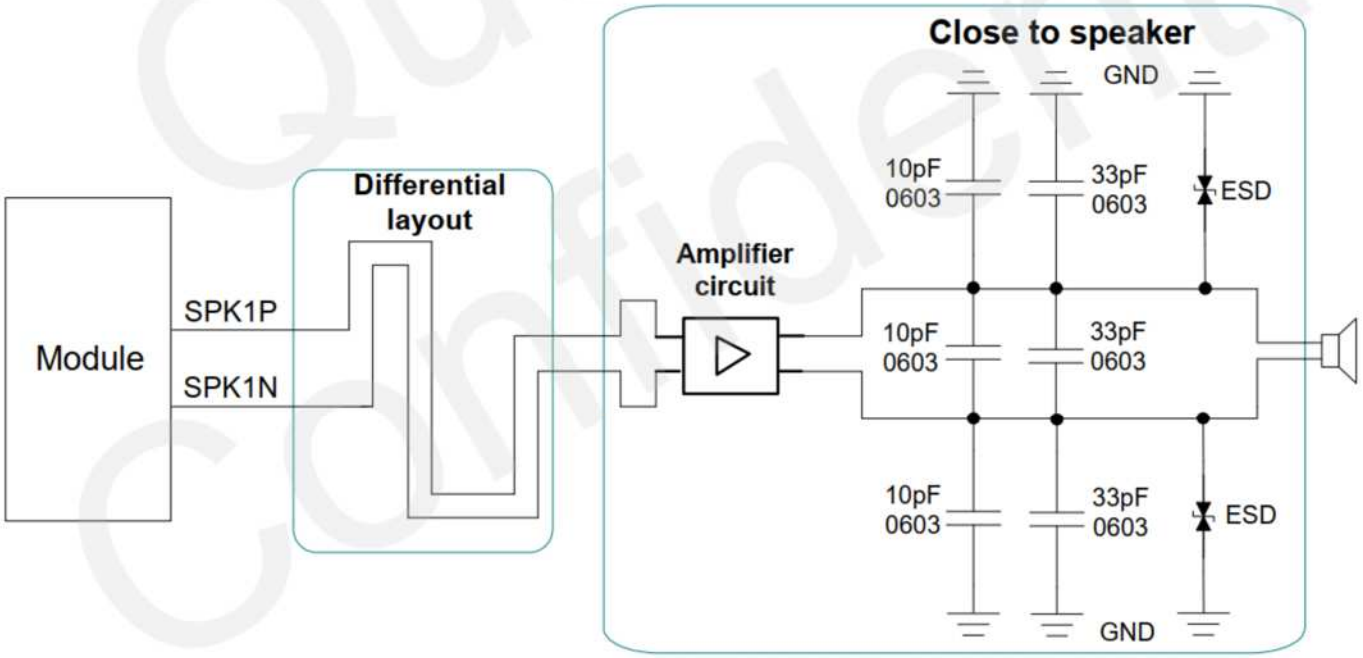


Figure 24: Speaker Interface Design with an Amplifier for AOUT1

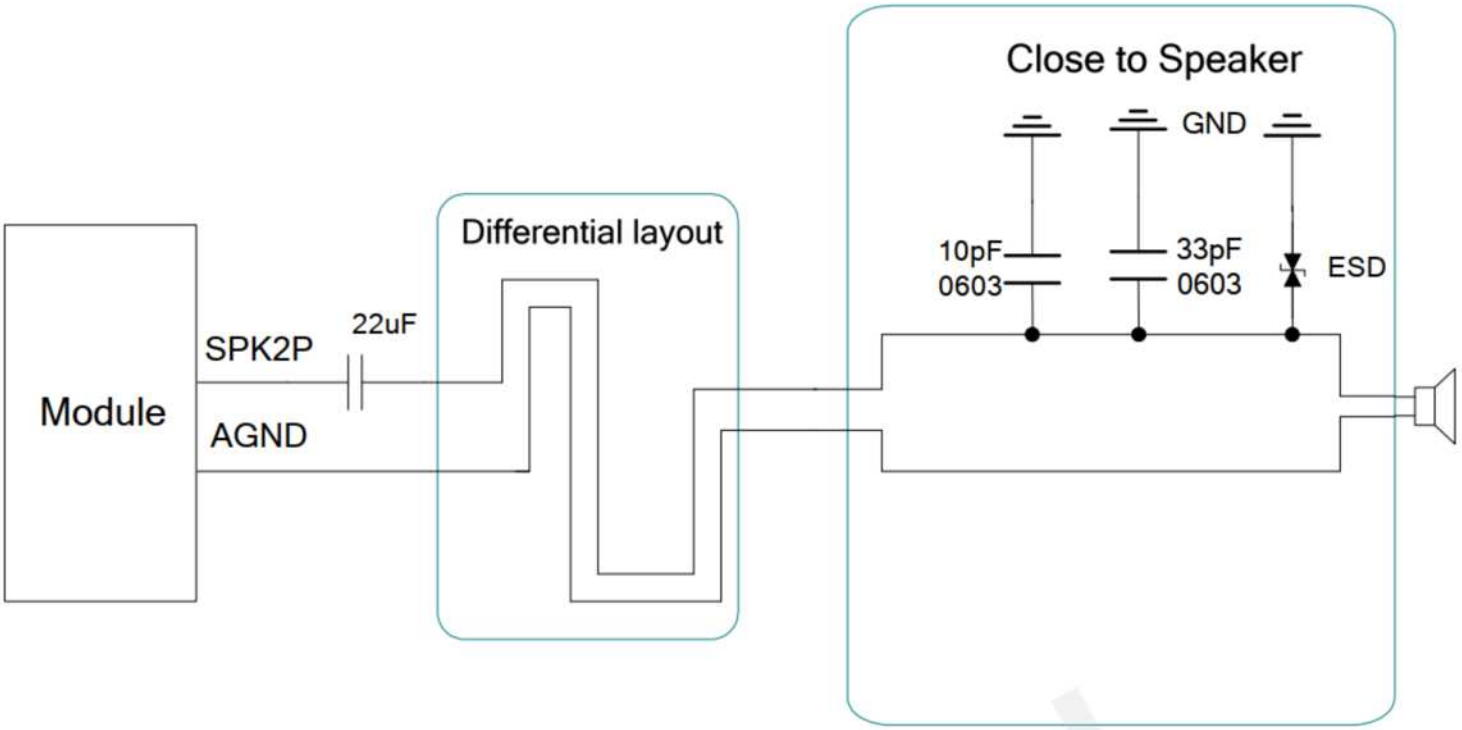


Figure 25: Handset Interface Design for AOUT2

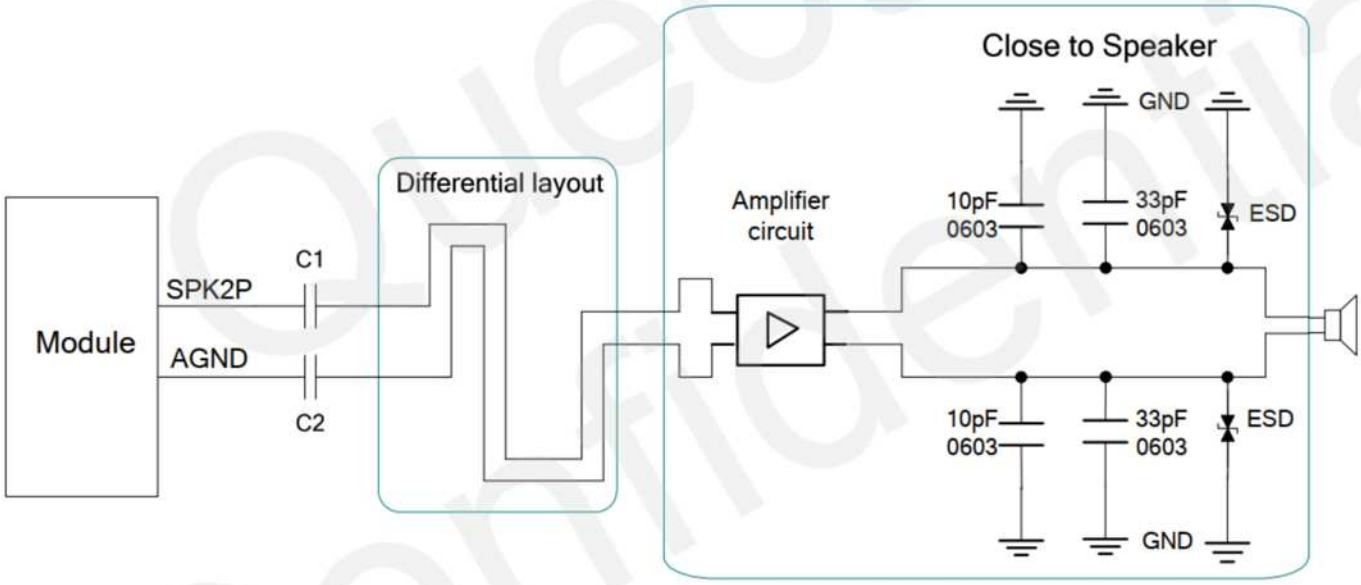


Figure 26: Speaker Interface Design with an Amplifier for AOUT2

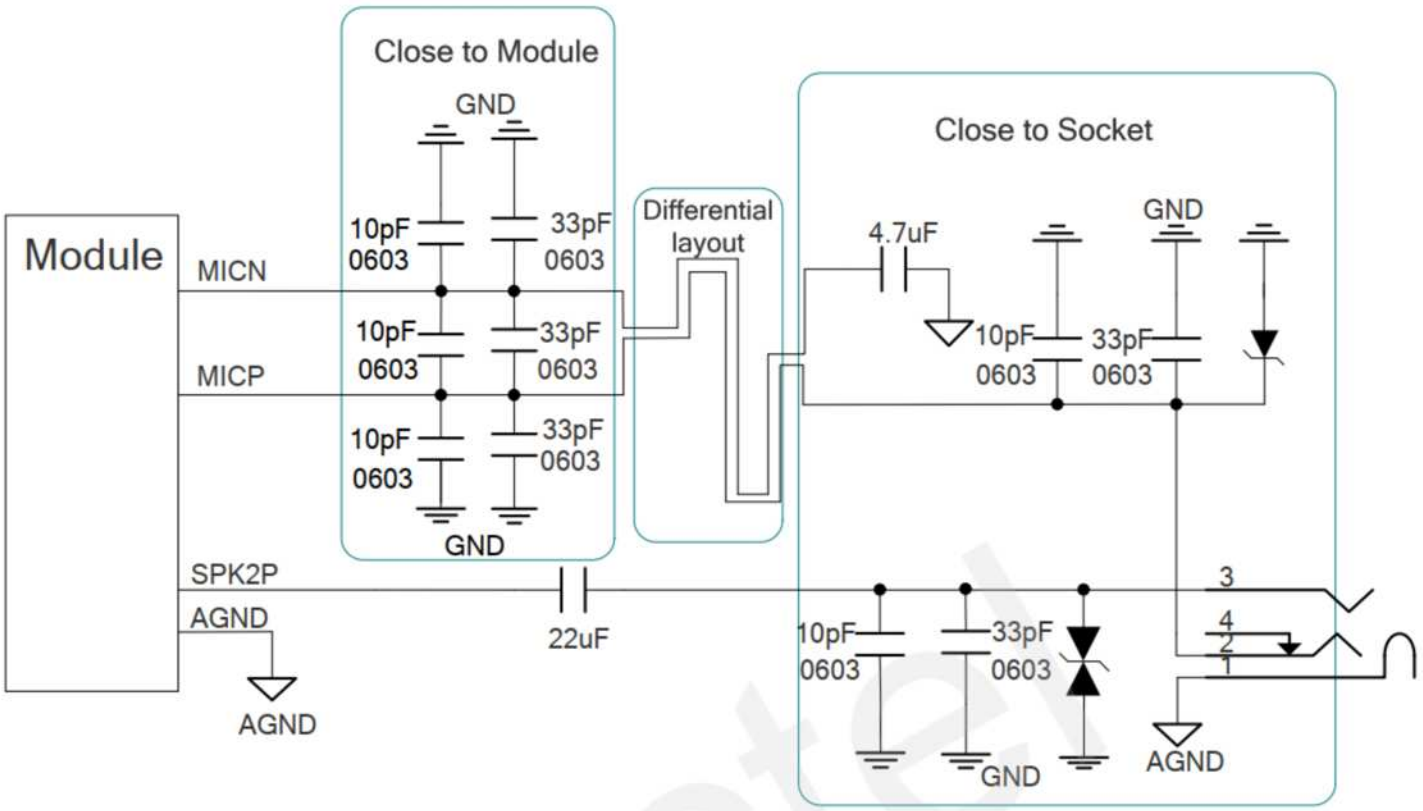
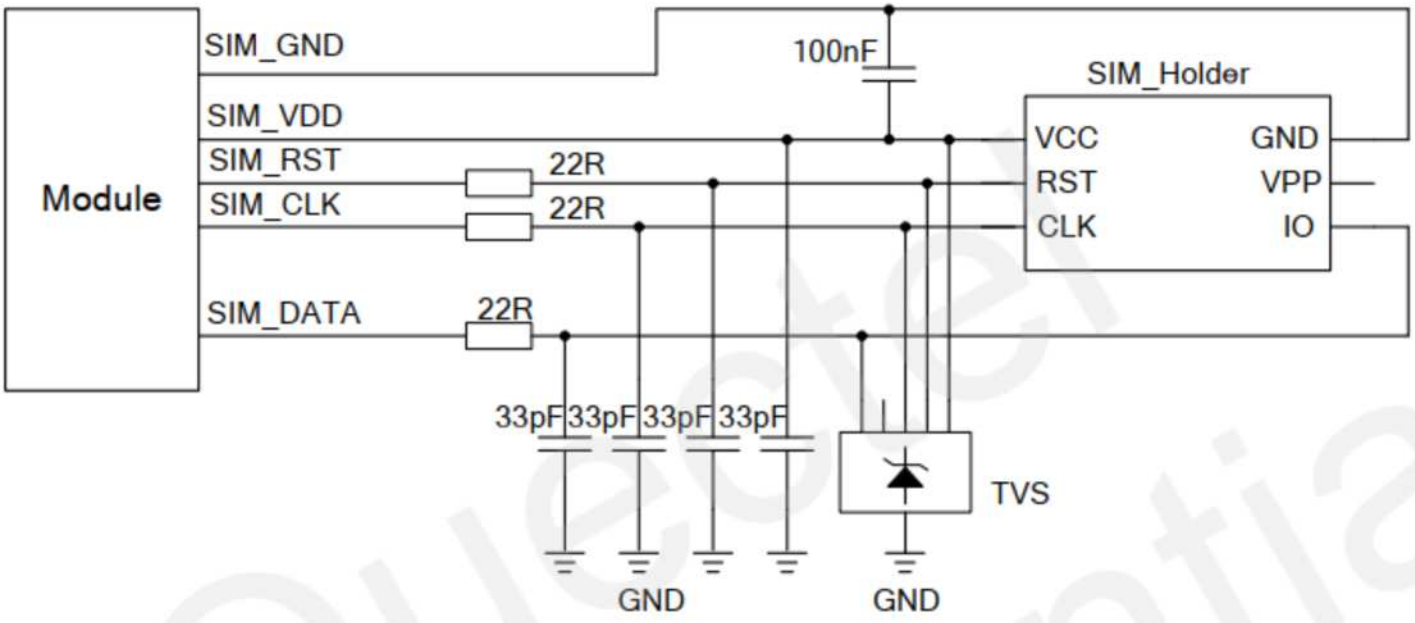


Figure 27: Earphone Interface Design



3.11. SD Card Interface

The module provides an SD card interface that supports many types of memory, such as Memory Stick, SD/MCC card and T-Flash or Micro SD card. The following are the main features of SD card interface.

- Only support 1bit serial mode
- Not support the SPI mode for SD memory card
- Not support multiple SD memory cards
- Not support hot plug
- The data rate up to 48MHz in serial mode
- Up to 32GB maximum memory card capacity

With the SD card interface features and reference circuit shown as below, you can easily design the SD card application circuit to enhance the memory capacity of the module. The users can store some high-capacity files to external memory card. Such as in the automotive application system, the module can record and store the audio file to the SD card, and also can play the audio files in SD card.

Table 17: Pin Definition of SD Card Interface

Pin Name	Pin No.	Description	Alternate Function [1)]
SD_CMD	32	Command signal of SD card output	PCM_IN
SD_CLK	33	Clock signal of SD card output	PCM_OUT
SD_DATA	31	Data output and input signal of SD card	PCM_SYNC

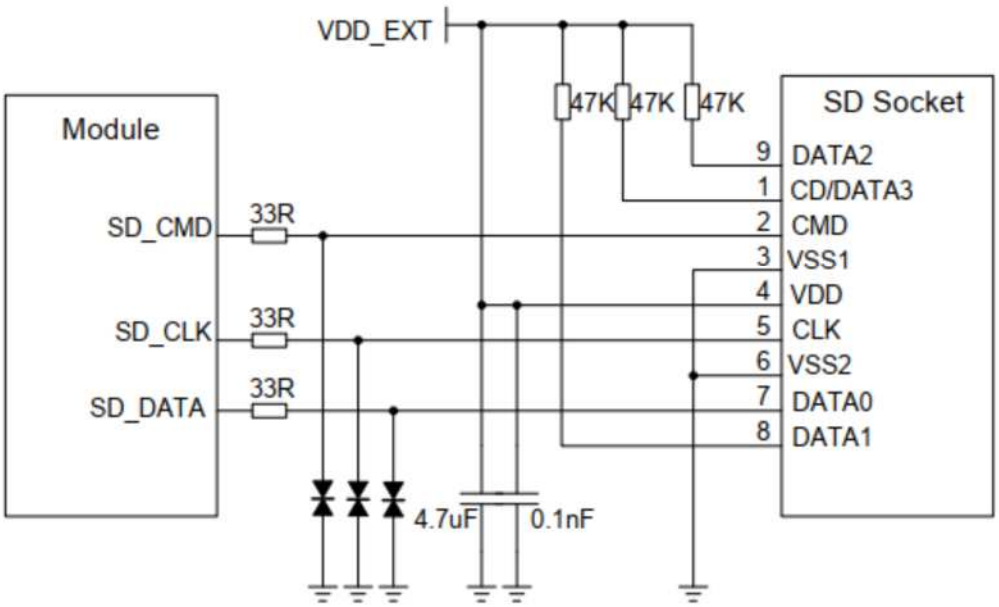


Figure 32: Reference Circuit for Micro SD Card

3.14. Network Status Indication

The NETLIGHT signal can be used to drive a network status indicator LED. The working state of this pin is listed in the following table.

Table 22: Working State of the NETLIGHT

State	Module Function
Off	The module is not running.
64ms On/800ms Off	The module is not synchronized with network.
64ms On/2000ms Off	The module is synchronized with network.
64ms On/600ms Off	The GPRS data transmission after dialing the PPP connection.

3.15. RF Transmitting Signal Indication

The M66 provides a RFTXMON pins which will rise when the transmitter is active and fall after the transmitter activity is completed.

Table 23: Pin Definition of the RFTXMON

Pin Name	Pin No.	Description
RFTXMON	25	Transmission signal indication

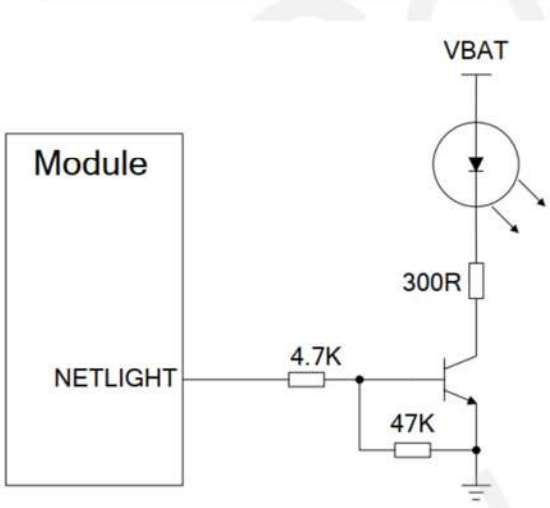


Figure 36: Reference Design for NETLIGHT

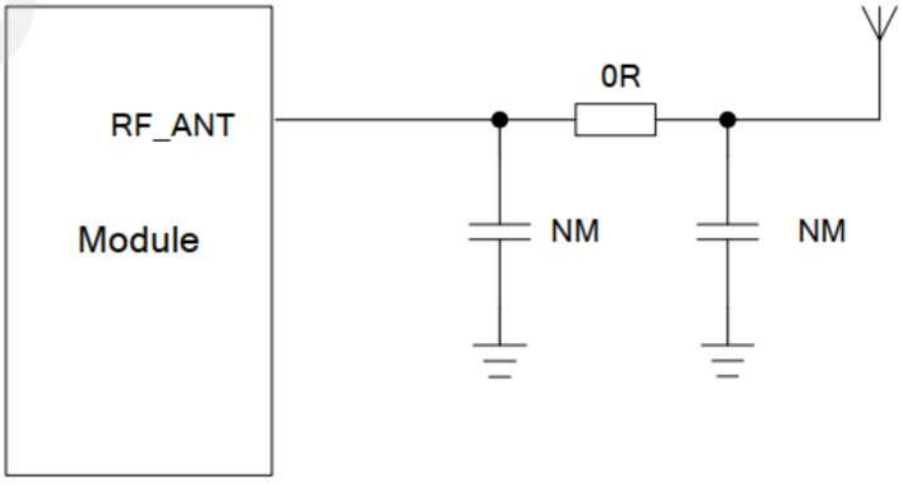
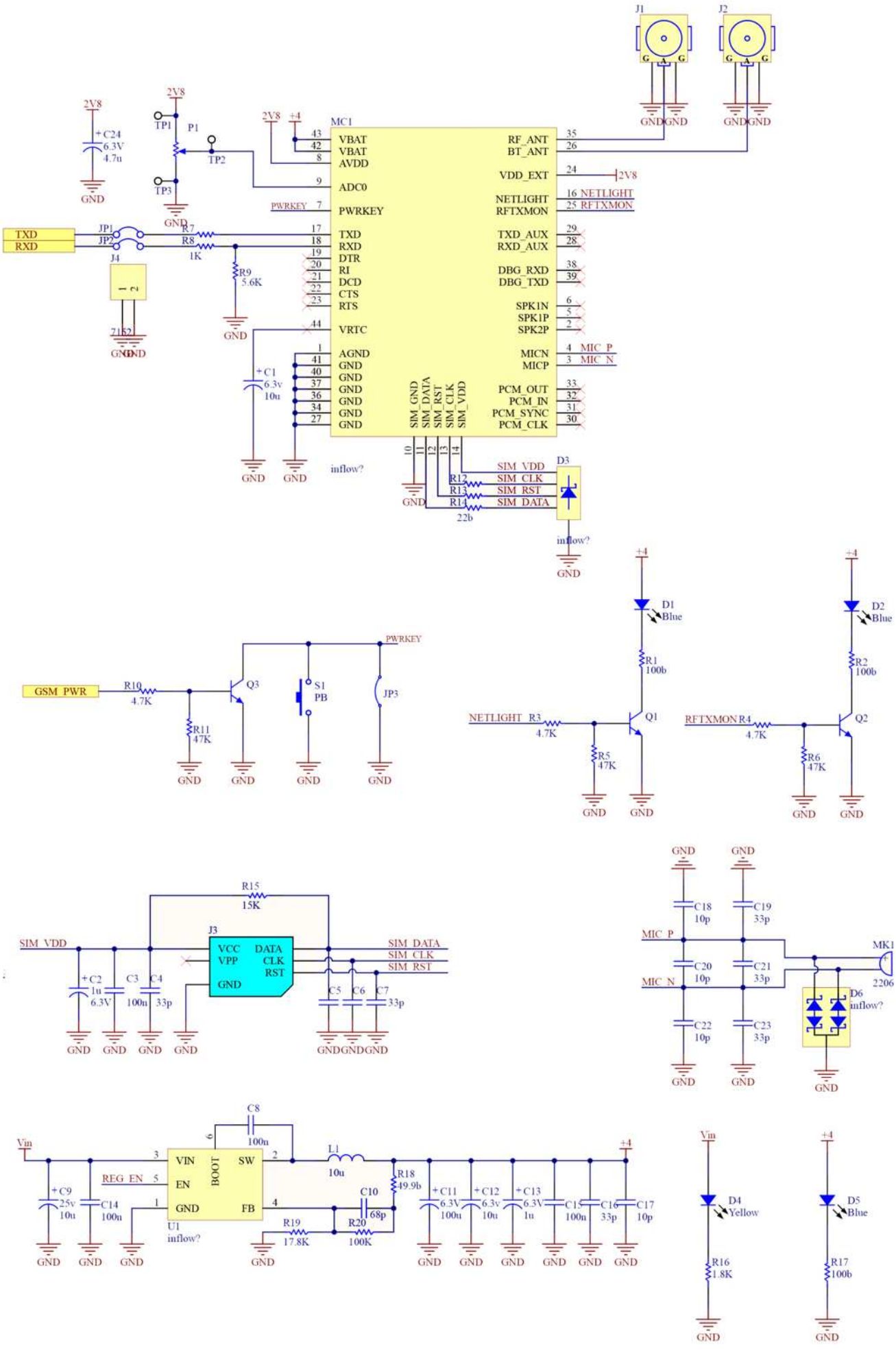


Figure 39: Reference Design for GSM Antenna


J1
J2
MC1
VBAT
VBAT
AVDD
ADC0
PWRKEY
TXD
RXD
DTR
RI
DCD
CTS
RTS
VRTC
AGND
GND
RF_ANT
BT_ANT
VDD_EXT
NETLIGHT
RFTXMON
TXD_AUX
RXD_AUX
DBG_RXD
DBG_TXD
SPK1N
SPK1P
SPK2P
MICN
MICP
PCM_OUT
PCM_IN
PCM_SYNC
PCM_CLK
SIM_GND
SIM_DATA
SIM_RST
SIM_CLK
SIM_VDD
2V8
+4
P1
TP1
TP2
TP3
JP1
JP2
J4
R7
R8
1K
R9
5.6K
C1
6.3v
10u
C24
6.3V
4.7u
inflow?
D3
R12
R13
R14
22b
D1
Blue
R1
100b
D2
Blue
R2
100b
NETLIGHT R3
4.7K
R5
47K
Q1
RFTXMON R4
4.7K
R6
47K
Q2
GSM_PWR
R10
4.7K
R11
47K
Q3
S1
PB
JP3
PWRKEY
R15
15K
SIM_VDD
J3
VCC
VPP
GND
DATA
CLK
RST
SIM_DATA
SIM_CLK
SIM_RST
C2
1u
6.3V
C3
100n
C4
33p
C5
C6
C7
33p
C18
10p
C19
33p
MIC_P
MIC_N
C20
10p
C21
33p
C22
10p
C23
33p
MK1
2206
D6
inflow?
Vin
C8
100n
VIN
BOOT
SW
EN
GND
FB
REG_EN
U1
inflow?
L1
10u
R18
49.9b
C10
68p
R19
17.8K
R20
100K
C9
25v
10u
C14
100n
C11
6.3V
100u
C12
6.3v
10u
C13
6.3V
1u
C15
100u
C16
33p
C17
10p
D4
Yellow
R16
1.8K
D5
Blue
R17
100b