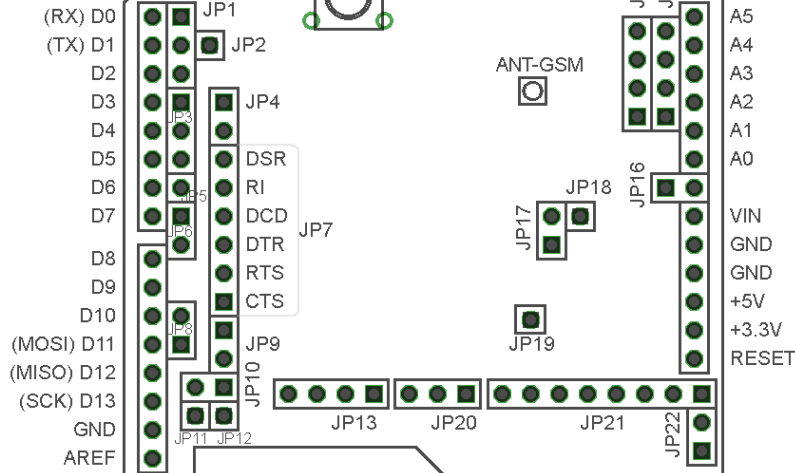
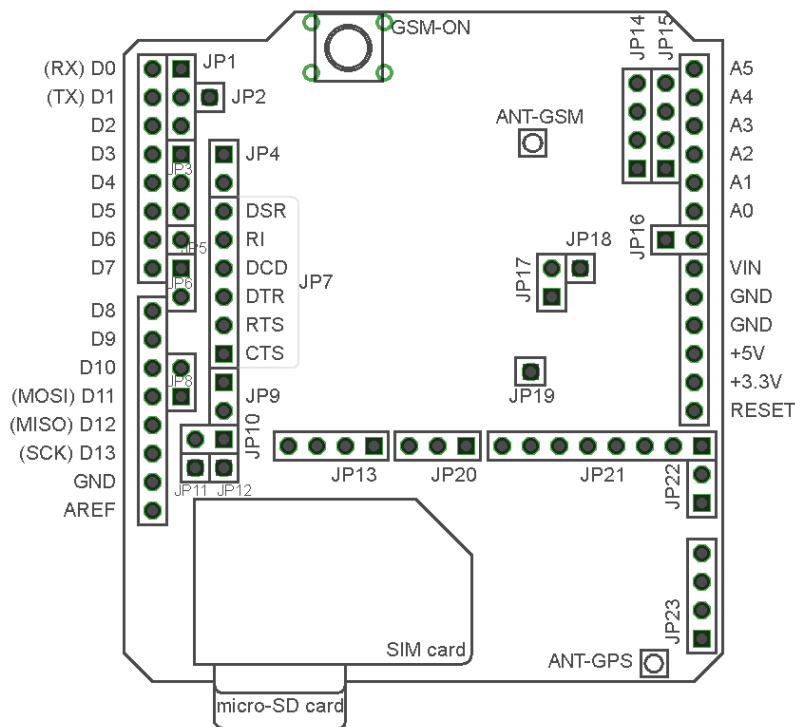
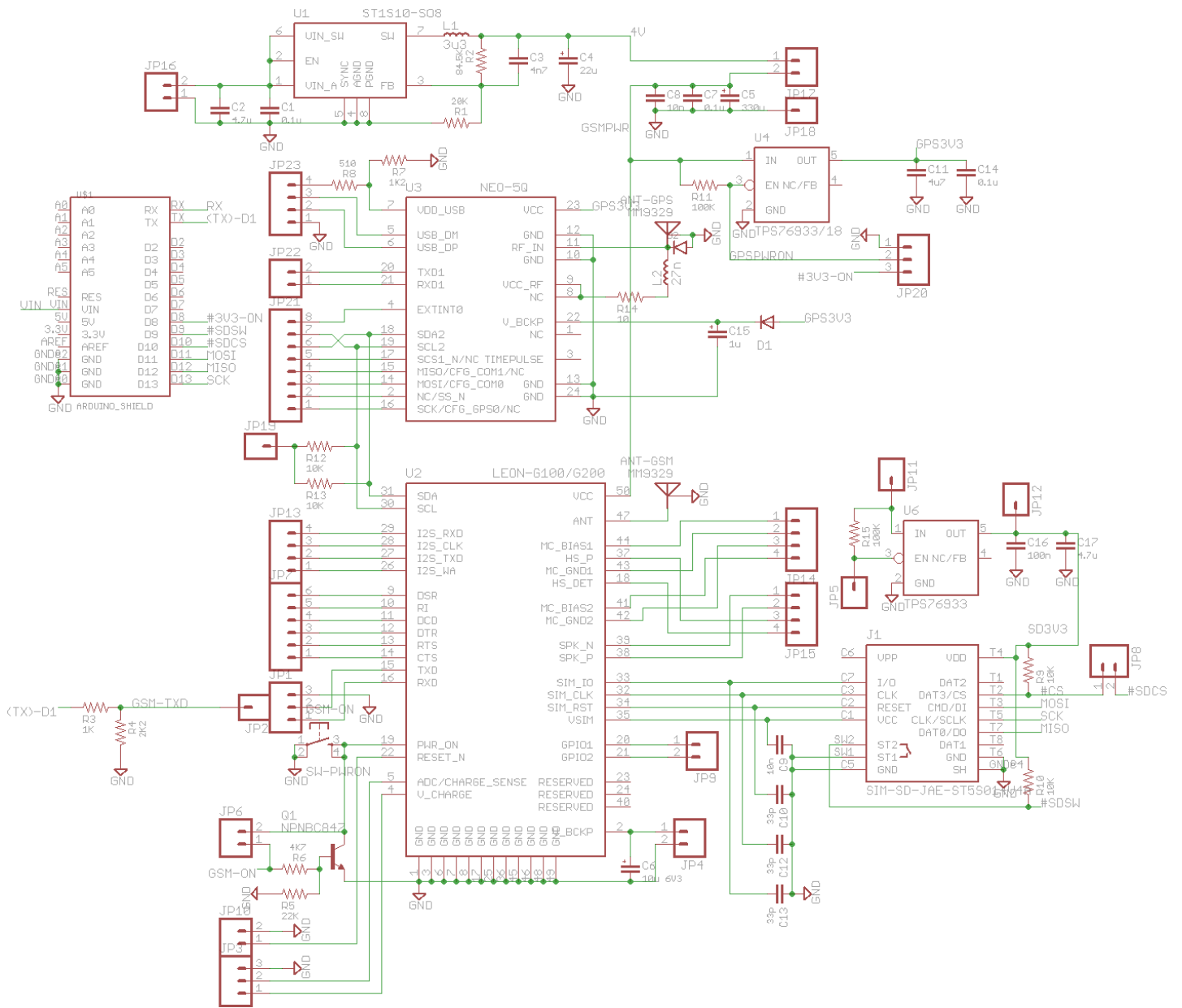


## Contents

GSM/GPS/microSD Shield for Arduino.....	2
Power configuration.....	3
GSM Power – JP16, JP17, JP18.....	3
LEON-G200 Charger – JP3 .....	3
LEON-G200 Backup Power – JP4 .....	3
GPS Power Control - JP20.....	3
microSD Power and Control – JP5, JP11, JP12.....	4
GSM module connectors.....	4
Power On/Off - JP6 .....	4
Serial interface – JP1, JP2, JP7 .....	5
GPIO1/2 connector – JP9 .....	5
RESET connector – JP10 .....	5
I2S Interface Connector – JP13 .....	6
Audio connector – JP14, JP15 .....	6
DDC Power Connector – JP19.....	6
GPS Module Connectors.....	6
GPS Control Connector – JP21 .....	6
GPS Serial Connector – JP22.....	7
GPS USB Connector – JP23.....	7
microSD module Connectors .....	7

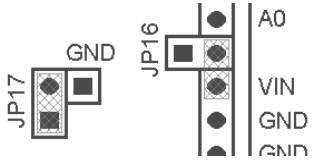
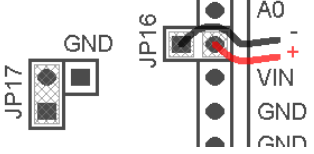
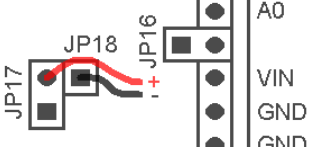
# GSM/GPS/microSD Shield for Arduino



## Power configuration

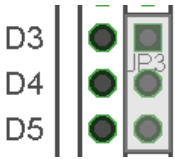
Module contains internal voltage regulator from input 7V - 12V to 4.2V output for GSM and GPS modules.

### GSM Power – JP16, JP17, JP18

	<p>Use VIN (external power from Arduino) for internal voltage regulator (up to 2A)</p>
	<p>Use external power supply from 7V to 12V (up to 2A) for internal voltage regulator</p>
	<p>Use external 4.2V power supply (up to 2A) or Li-Po Battery (more than 500mA capacity)</p>

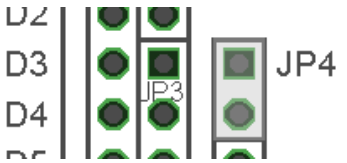
### LEON-G200 Charger – JP3

If Li-Po battery connected as GSM power source – use JP3 connector to connect external power for charging. See LEON- G200 datasheet for detail information about charge battery via this pins.

	<p>V_CHARGE pin (4) ADC/CHARGE_SENSE pin (5) Ground</p>
--	---

### LEON-G200 Backup Power – JP4

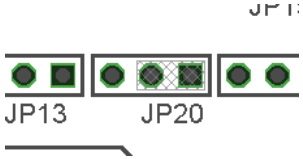

Jumper JP4 can be used for connect backup voltage. Capacitor 10uF x 6.3V connected to this pin. See LEON- G200 datasheet for detail information about backup power.

	<p>V_BCKP pin (2) Ground</p>
---	----------------------------------

### GPS Power Control - JP20

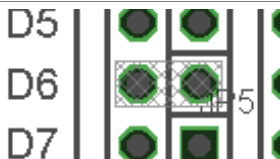
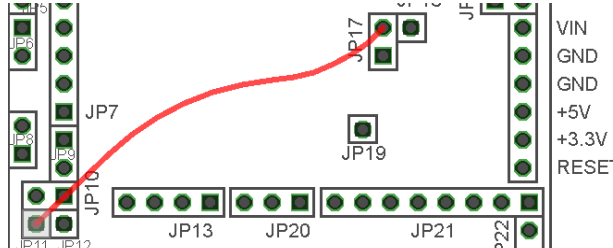
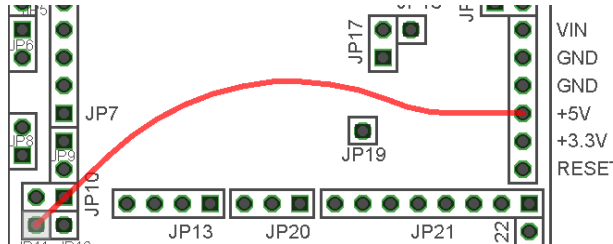
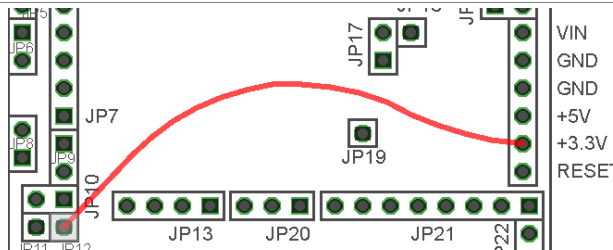
GPS voltage regulator use GSM power as input and convert it to 3.3V (for NEO-5Q) or 1.8V (for NEO-5G) voltage.

This regulator can be controlled from Arduino (D8 pin).

	<p>GPS power always present</p>
	<p>GPS power controlled by D8 from Arduino (low level ON, high level OFF)</p>




## microSD Power and Control – JP5, JP11, JP12

microSD voltage regulator can use various inputs for +3.3V output voltage. Need flexible wire to connect. This regulator can be controlled from Arduino pin (D6 pin). Also microSD power line can be directly connected to +3.3V power line from Arduino. Input voltage for regulator must be from 3.6V to 6V.

	<p>Use Arduino D6 pin to control microSD voltage regulator (low level ON, high level OFF)  <b>Caution: This jumper must be removed if regulator not used.</b></p>
	<p>Use GSM power as input</p>
	<p>Use Arduino +5V power pin as input</p>
	<p>Use Arduino +3.3V power for directly microSD power  <b>Caution: Remove jumper from D6 to JP5</b></p>

## GSM module connectors

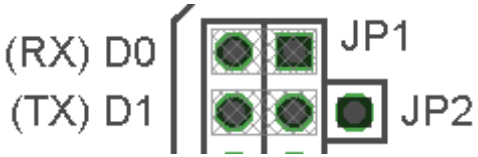
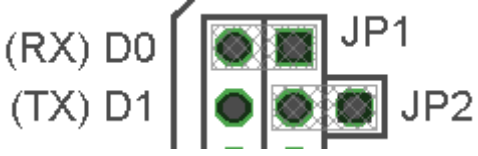
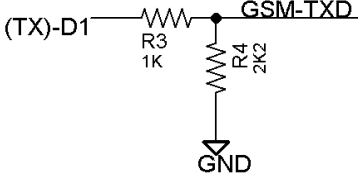
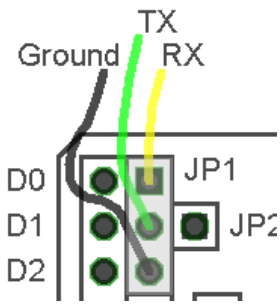
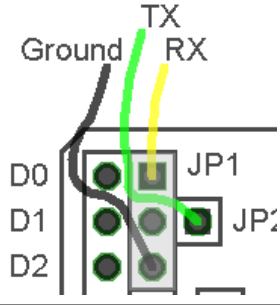
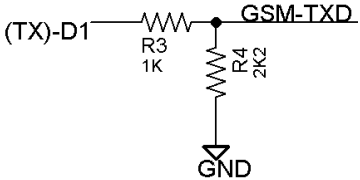
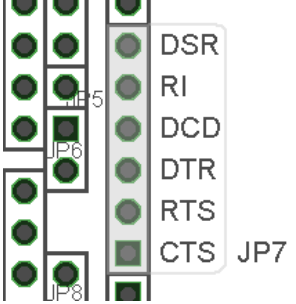
### Power On/Off - JP6

	<p>Use Key for manual power on/off GSM module. Press at least 2 seconds.</p>
	<p>Use Arduino D7 pin to control power on/off line (pin 19 on G200). High level set power on/off line to low level.</p>
	<p>Use external connection to control power on/off line. This pin directly connected to pin 19 of GSM module. Can be used with previous jumper.</p>


## Serial interface – JP1, JP2, JP7

RXD and TXD pins from GSM module can be directly connected to Arduino pin D0 and D1.


Other serial interface pins from GSM module connect to JP7.

	<p>Connect RXD and TXD to Arduino with 3.3V level</p>
	<p>Connect RXD and Arduino with 5V level RXD line output TXD line connect divider</p>  <p>TXD to pin 2.8V via</p>
	<p>Connect GSM RXD and TXD to external adapter with 2.8V - 3.3V pin level</p>
	<p>Connect RXD and external adapter 5V pin level RXD line output TXD line connect divider</p>  <p>TXD to with 2.8V via</p>
	<p>Other serial interface pins (2.8V) <b>Caution:</b> This signals means host interface names – see G200 datasheet for details.</p>

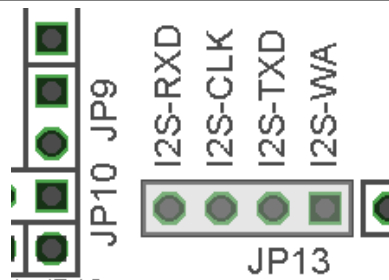
## GPIO1/2 connector – JP9

	<p>GPIO1 (pin 20) and GPIO2 (pin 21) from G200</p>
---	--

## RESET connector – JP10

	<p>RESET_N (pin 22) from G200</p>
---	-----------------------------------

## I2S Interface Connector – JP13



I2S interface pins 26-29 from G200

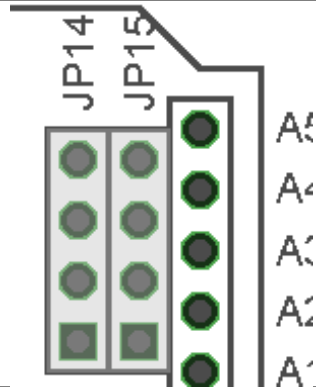
## Audio connector – JP14, JP15

MC\_BIAS2 (pin 41)

MC\_GND2 (pin 41)

MC\_GND1 (pin 43)

MC\_BIAS1 (pin 44)



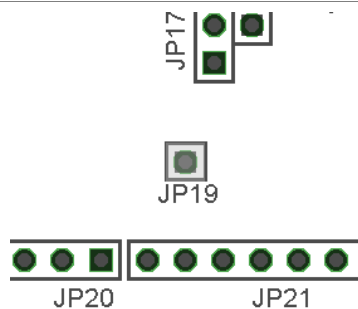
HS\_DET (pin 18)

HS\_P (pin 37)

SPK\_P (pin 38)

SPK\_N (pin 39)

## DDC Power Connector – JP19

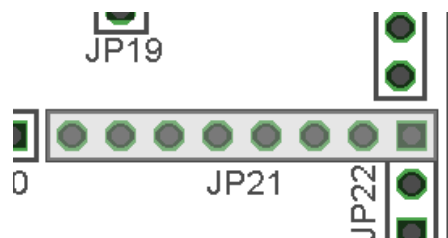


This pin must be connected to correct voltage. See G200 and NEO5 integration manual. Two resistors with 10K connect from this connector to SDA (GSM pin 31, GPS pin 18) and SCL (GSM pin 30, GPS pin 19) lines.

## GPS Module Connectors

### GPS Control Connector – JP21

See NEO-5 module datasheet for detail.



1 – SCK/CFG\_GPS0/NC (pin 16)

2 – NC/SS\_N (pin 2)

3 – MOSI/CFG\_COM0 (pin 14)

4 – MISO.CFG\_COM1/NC (pin 15)

5 – SCS1\_N/NC (pin 17)

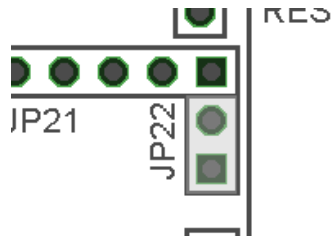
6 – SDA2 (pin 18), SDA (GSM pin 31)

7 – SCL2 (pin 19), SCL (GSM pin 30)

8 – EXTINT0 (pin 4)

## GPS Serial Connector – JP22

See NEO-5 module datasheet for detail.

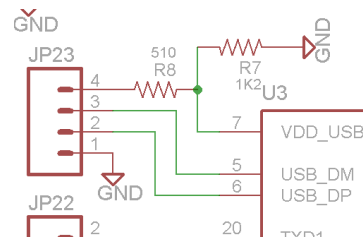


TXD1 (pin 20)

RXD1 (pin 21)

## GPS USB Connector – JP23

See NEO-5 module datasheet for detail.



Connect via divider to VDD\_USB (pin 7)

USB\_DM (pin 5)

USB\_DP (pin 6)

Ground

## microSD module Connectors

microSD data in/out, clock and insertion switch directly connected to Arduino pins.

microSD select signal (active low) can be connected via jumper JP8 to D10 line or use external connection.

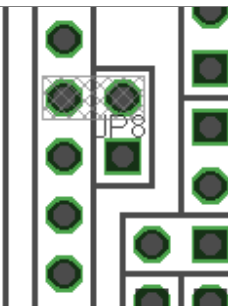
(SDSW) D9

D10

(MOSI) D11

(MISO) D12

(SCK) D13



Insertion switch (pull-up), low if microSD insert

Use D10 (active low) to select microSD (CS)

microSD data input (DI)

microSD data output (DO)

microSD clock (SCLK)