Integration Guidance

1. Hardware installation.

a) The recommended soldering pad is shown as following:
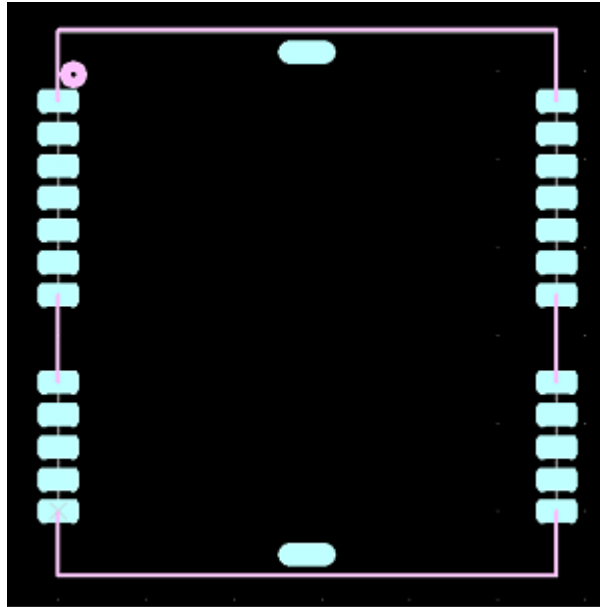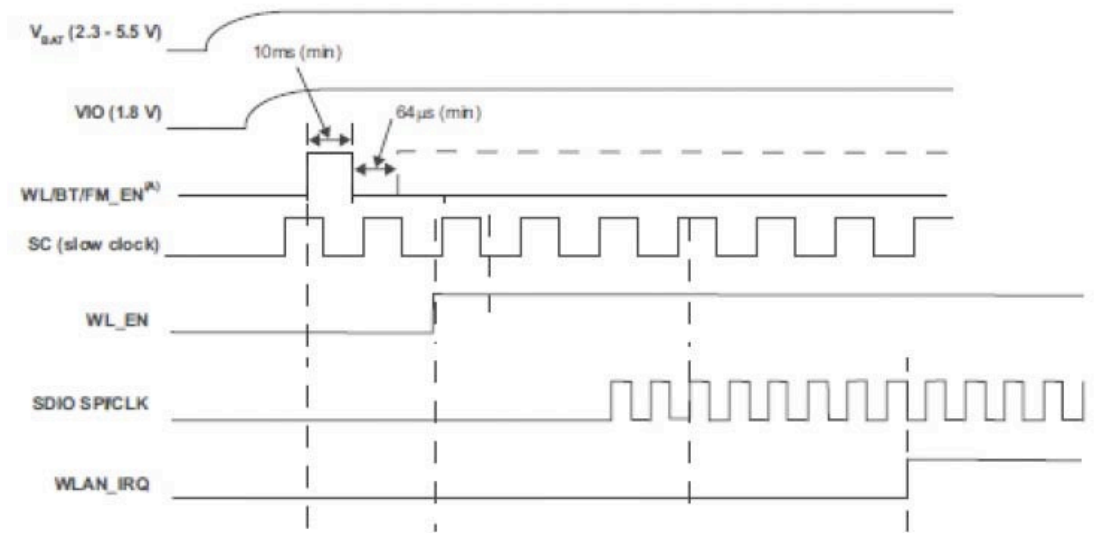

Figure 1 Soldering pad recommendation

Figure 2 Pin definition

b) RF antenna

Antenna, GEO ANT01 V1.1, of which antenna gain is 0dBi. It is needed to use the antenna with test or similar antenna with the antenna gain less than 0dB

c) Power up sequence

Notes for WiFI power up:

i. No signals are allowed on the IO pins if no IO power supplied, because the IOs are not 'fail safe'.
ii. Exceptions are SLEEP_CLK, XTALP and AUD_xxx, which are failsafe and can tolerate external voltages with no VIO
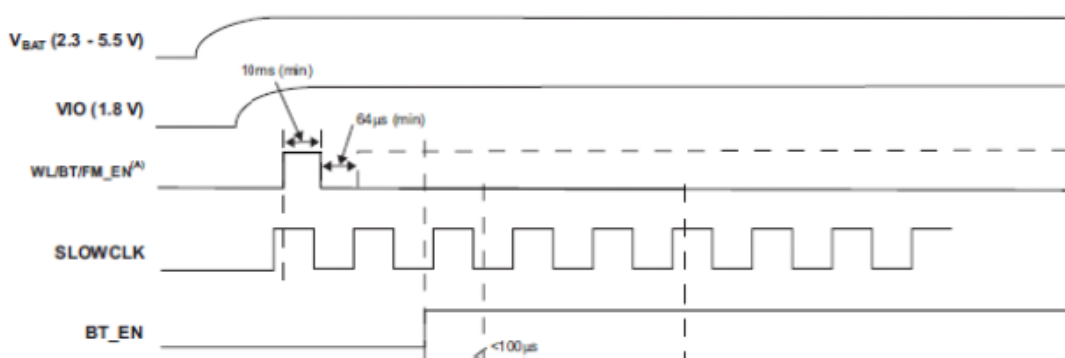iii. VBAT, VIO and SLEEP_CLK must be available before WLAN_EN.

Figure 4Bluetooth power up sequence

Notes for power up requirements:
i. No signals are allowed on the IO pins if no IO power supplied, because the IOs are not 'failsafe'.
ii. Exceptions are SLEEP_CLK, XTALP and AUD_xxx, which are failsafe and can tolerate external voltages with no VIO and DC2DC.

iii. VIO and SLEEP_CLK must be stable before releasing BT_EN.

iv. Fast clock must be stable maximum 55ms after BT_EN goes HIGH.
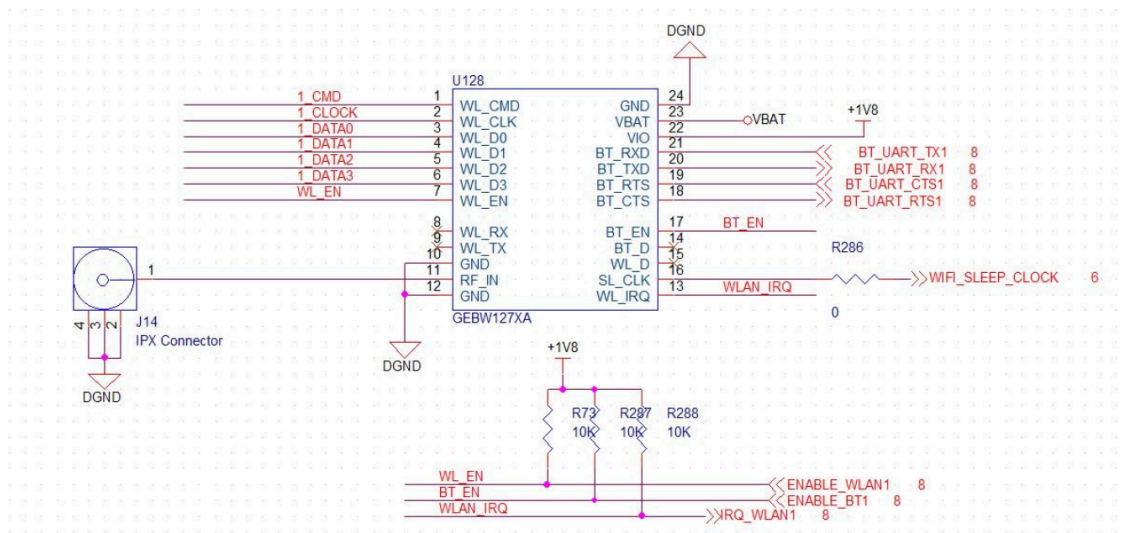
2. Software installation.

Software driver for Linux is provided. The integrator need to confirm that the Linux kernel version is 3.2.0 or above.
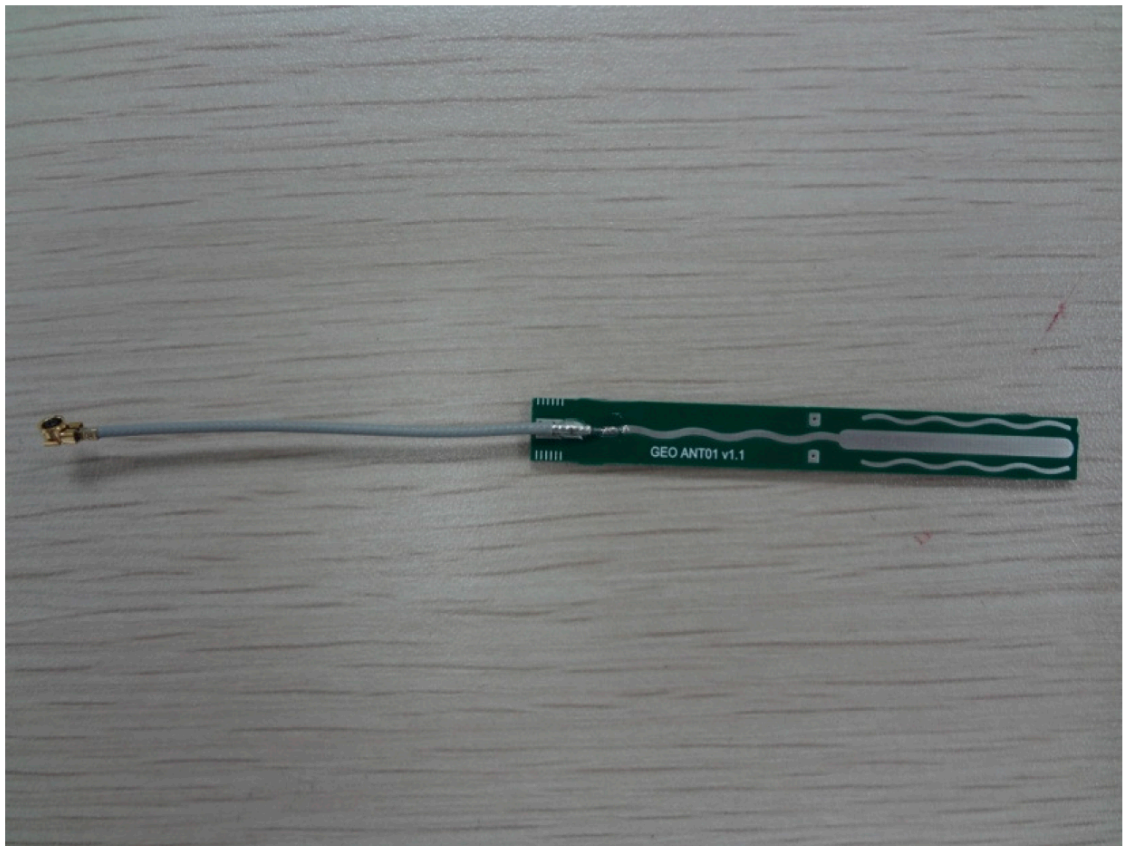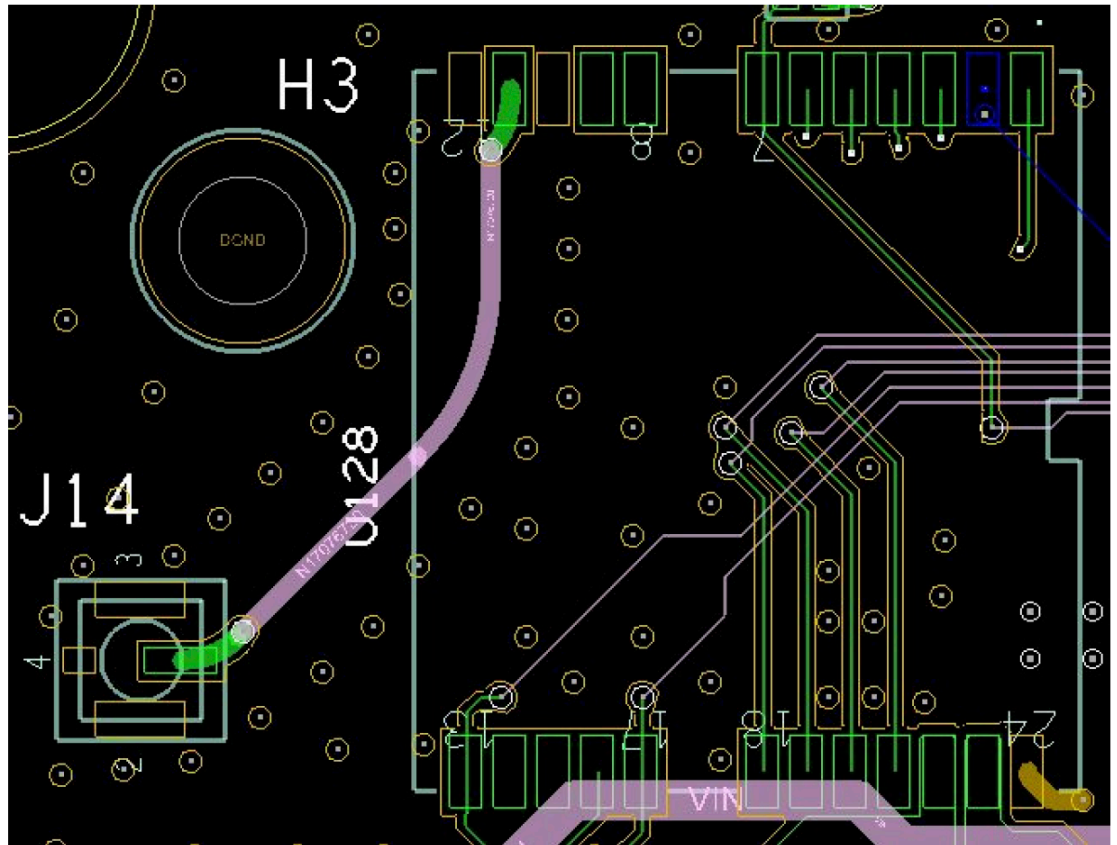
3. Installation notes regarding regulations:

a) Before installation, please check the power supply voltage first, to ensure regulated power supply to the module is 4.2VDC and IO power is 1.8VDC

b) The 32.768KHz clock must be provided to ensure UART communication.

c) Make sure the module pins correctly installed (VCC; WL_CMD; WL_CLK; WL_D0; WL_D1; WL_D2; WL_D3; WL_EN; WL_RX; WL_TX; GND; RF_IN; WL_IRQ; SL_CLK; WL_D; BT_D; BT_EN; BT_CTS; BT_RTS; BT_TXD; BT_RXD; VIO; VBAT);

d) Make sure that the antenna does not allow users to replace or demolition;

e) Make ensure the module shield completeness;

4. Antenna Installation notes:

a) Connect RF_in (pin 12) to a IPX male connector with a wire not longer than 40mm on the PCB. Coaxial cable is preferred.

b) Measure the output power of the antenna terminal of the IPX connector to make sure the transmission power is not greater than 0.0542W for Bluetooth and 0.0640W for WiFi

c) Install the antenna, GEO ANT01 V1.1 to the IPX connector.

d) After RF module and Antenna is installed in the host unit, the radiated emission

verification shall be done to make sure the radiated emission of host unit and RF module still comply the radiated emission of FCC rule. If the host unit is connected to AC mains, the conducted emission shall also be done to comply FCC rule.

e) During production, the transmission power the antenna connector, IPX connector, shall be verified to make sure the power still comply the FCC rule.

Special note for Industry

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée quivalente (p.i.r.e.) ne dépassepas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This radio transmitter (IC: 11648A-G01) has been approved by Industry Canada to operate with the antenna types, listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Approved antenna type: GEO   ANT01   V1.1

Le présent émetteur radio (IC: 11648A-G01) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Approuvé type d'antenne: GEO   ANT01   V1.1