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# Sierra Wireless BC-127 module in product

## 001\_F

### Table of Contents

<b>1. BC-127 module</b> .....	<b>1</b>
<b>2. Design recommendations</b> .....	<b>2</b>
<b>3. FCC recommendations</b> .....	<b>3</b>

### 1. BC-127 MODULE

The main board of the product 001\_F has a Sierra Wireless BC-127 Bluetooth module. Such a module has the following characteristics:

Specification	Notes
Transmit Power	BER/EDR Class 2 < 4 dBm, BLE < 10 dBm
RF Sensitivity	0.1% BER at -88 dBm GFSK
Operating Range	20–30 m
Supply Voltage	3.3–4.7V DC (supports Li-ion battery voltage range)
Modulation	8 DPSK, PI/4 DQPSK, GFSK
Maximum Data Rate	3 Mbps (typical 1.6 Mbps)
Audio DAC Resolution	16 bits
Audio DAC Output Sample Rate	8–90 kHz
Audio DAC SNR	96 dB
Audio Stereo Separation	-87.7 dB
Typical Current	15 mA (music streaming)
Typical Current (Idle)	< 1 mA (connectable)

The exact module code is BC127 1104323 (or following), and such a code has a on board chip antenna:

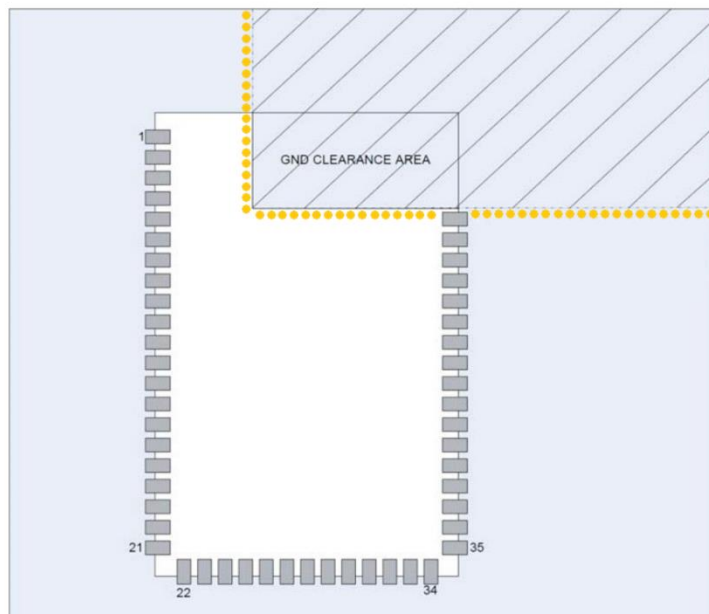


It is also FCC certified, FCC ID **SSSBC127-X**.

## 2. DESIGN RECOMMENDATIONS

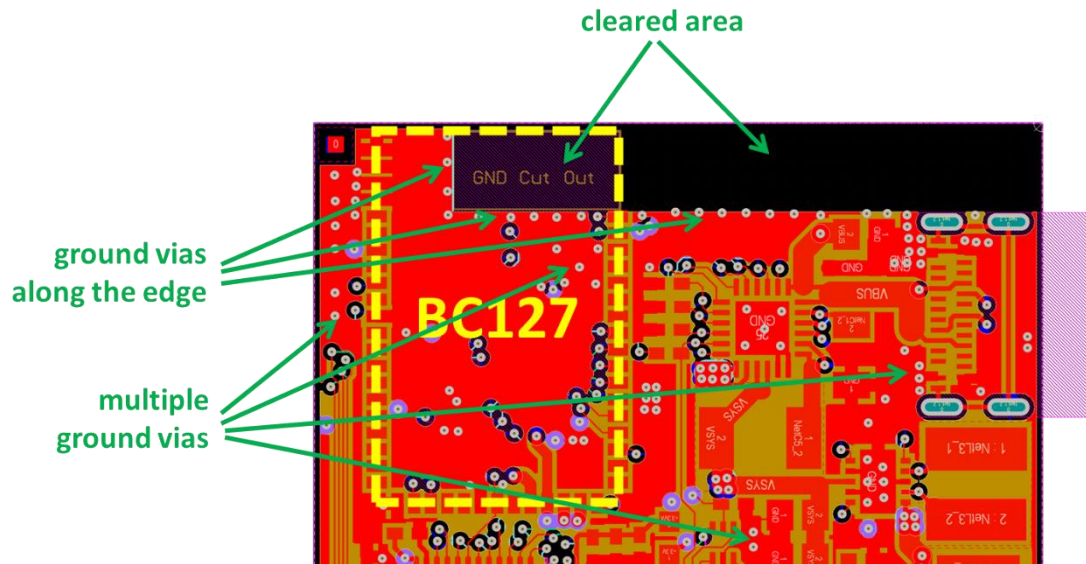
Accordingly to manufacturer's recommendations, the module is designed to be placed on the edge or corner of the application PCB, with the following constraints:

- The area under adjacent to the right-hand side of the module should have all ground and tracking removed and the antenna area should be cleared to the edges of the application PCB in the top right-hand corner



- Ground vias should be placed along the edge of the cleared area to secure the ground planes on all layers together
- The application PCB should have multiple ground vias throughout the entire are, tying ground planes together
- Any housing used to encapsulate the application PCB should not have any metal or metal coatings close to the antenna

The application board PCB fulfill the above mentioned constraints:



Moreover the external enclosure of the application board is completely made by non-conductive material and there are no metal coatings or shields closed to the antenna.

### 3. FCC RECOMMENDATIONS

Since the application uses a FCC certified module, accordingly to the modular approval process and the KBD 996369 document, the host product must be compliant to the BC-127 manufacturer's conditions. Such conditions are:

The BC127/BC127-HD/BC127-EXT/BC127-HD-EXT module, upon commercial release, will have been granted modular approval by the FCC. Integrators may use the BC127/BC127-HD/BC127-EXT/BC127-HD-EXT module in their end products without additional FCC certification if the following conditions are met.

- At least 5 mm separation distance between the antenna and the user's body must be maintained at all times.
- The BC127/BC127-HD/BC127-EXT/BC127-HD-EXT module must not be collocated with any other transmitter within a host device.
- The regulatory label on the end product must include the text "Contains FCC ID: SSSBC127-X" and the following compliance statement:

*This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

A user manual with the end product must clearly indicate the operating requirements and conditions to ensure compliance with current FCC RF exposure guidelines.

The end product with an embedded BC127/BC127-HD/BC127-EXT/BC127-HD-EXT module may also need to meet the FCC Part 15 unintentional emission requirements and be properly authorized per FCC Part 15 Subpart B.

The above reported conditions are met in the product 001\_F.

Moreover, all testing requirements pointed out in the KBD 996369 are fulfilled, as reported in the Test Report n. R22034601.