



# Parrot®

**FC6050B**

-

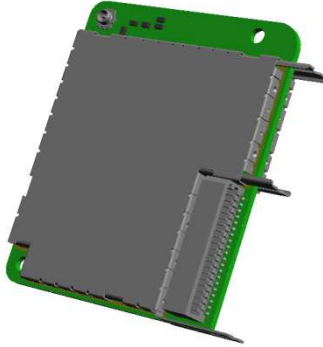
**PRODUCT PRESENTATION**

## TABLE OF CONTENTS

<b>1</b>	<b>PRODUCT OVERVIEW</b> .....	<b>4</b>
<b>2</b>	<b>RATING – SPECIFICATION - CHARACTERIZATION</b> .....	<b>7</b>
2.1	STORAGE PERIOD AND CONDITIONS .....	7
2.2	POWER SUPPLY .....	7
2.3	POWER CONSUMPTION.....	7
2.4	BLUETOOTH .....	7
<b>3</b>	<b>DIMENSIONS AND STRUCTURE</b> .....	<b>8</b>
3.1	STRUCTURE.....	8
3.2	BLOCK DIAGRAM .....	8
3.3	DIMENSIONS.....	9
3.3.1	<i>Horizontal version</i> .....	9
3.3.2	<i>Vertical version</i> .....	10
3.4	PCB FOOTPRINTS .....	11
3.4.1	<i>Horizontal version</i> .....	11
3.4.2	<i>Vertical version</i> .....	12
3.5	CONNECTORS.....	13
3.5.1	<i>Host Connection – Horizontal Version</i> .....	13
3.5.2	<i>Host Connection – Vertical Version</i> .....	14
3.5.3	<i>BT connector (External Antenna version only)</i> .....	14
<b>4</b>	<b>MARKING</b> .....	<b>16</b>
4.1	MODULE MARKING.....	16
4.1.1	<i>Internal Antenna Modules</i> .....	16
4.1.2	<i>External Antenna Modules</i> .....	16
<b>5</b>	<b>CAUTION FOR USE</b> .....	<b>17</b>
5.1	ESD COMPLIANCE .....	17
5.2	SAFETY .....	17
5.3	ASSEMBLY .....	17
5.4	DROP .....	17
<b>6</b>	<b>APPROVAL / CERTIFICATIONS</b> .....	<b>18</b>
6.1	NORMATIVE CERTIFICATES.....	18
6.2	CE DECLARATION.....	19
6.3	FCC AND IC REQUIREMENTS FOR MODULE APPLICATION .....	20

## Parrot FC6050B

Full connectivity platform  
Bluetooth 3.0



### Application:

- Telephony
- Bluetooth 3.0
- Audio streaming
- USB, SD
- iPod management

The FC6050B includes the latest version of the Parrot Bluetooth software stack (Blues). Blues provides a very high level of compatibility with most of the phones available on the market today. It also provides phonebook and call list synchronization.

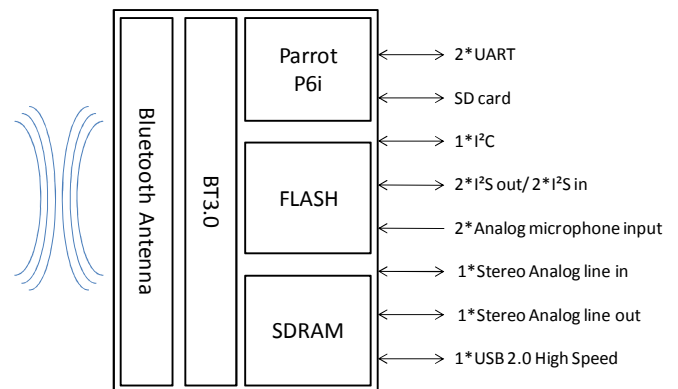
The FC6050B also includes Concertos, a Parrot proprietary database management library used for the management of audio files. Concertos facilitates management of audio from all available storage media such as USB/IPOD, SD, PHONE/A2DP. Concertos manages the media devices, builds a database with metadata, browses the compressed audio files by artist/genre/title and plays them. FC6050 offers the possibility to use a Speaker Independent Voice Recognition (SIVR) and a Text To Speech algorithm (TTS). The FC6050B software is built upon the Linux operating system. The library RAP gives the possibility to recognize song titles or artist name

### Description:

## FEATURES

Bluetooth 3.0 qualified module  
iPod chip management,  
SD card management  
Piconet and scatternet support  
Standard single 3.3V supply  
UARTs, I<sup>2</sup>C,  
USB 2.0 High Speed,  
Digital audio input and output  
Analog audio input and output  
Module dimension 34.5 x 41.35 mm x 4.60mm  
Automotive qualified.

The Parrot FC6050B is a complete connectivity solution. It offers a large variety of interfaces for easy integration in most applications.



# 1 PRODUCT OVERVIEW

The FC6050B is a full connectivity platform designed to ease the integration of connectivity applications in car audio systems, car telematics systems or any system requiring a complete embedded connectivity solution.

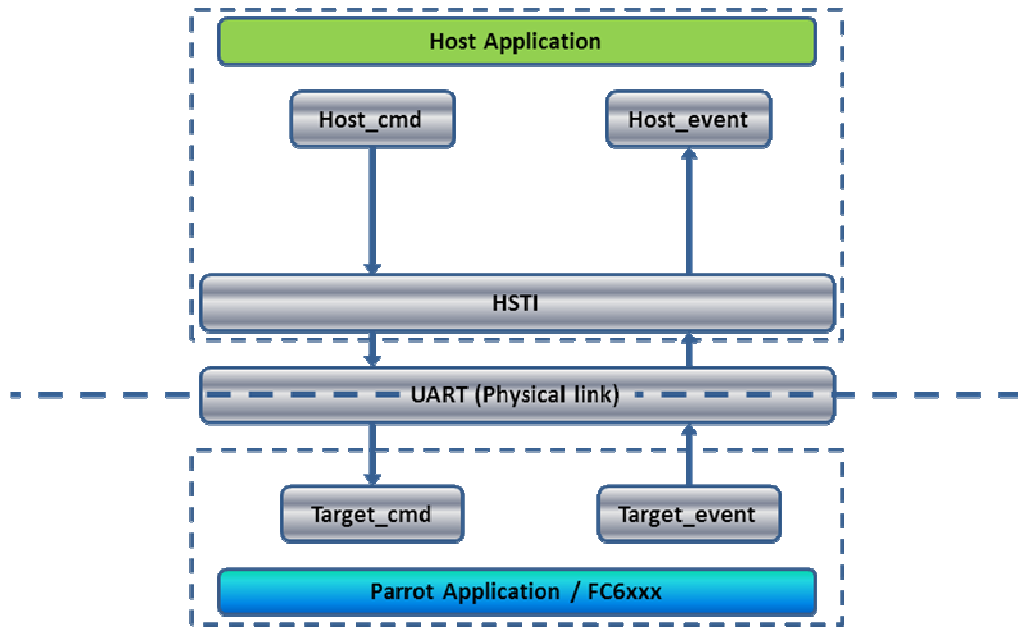


## FC6050B features:

- **Bluetooth connectivity**
  - Bluetooth Power Class 2 Radio
  - Embedded Bluetooth V3.0
  - Multiple profiles running in parallel.
  - Pairing and connection with all Bluetooth Devices: Phones, Smartphones, PDA, etc. Multiple user support: Up to 15 paired phones
- **SD card management**
- **Full internet access**
  - Internet Access via HSDPA using USB Dongle or modules or Bluetooth
- **Phone**
  - Pick-up, Hang-up, Redial
  - Automatic answer (from host via dial command)
  - Send DTMF during calls
  - Private Mode
  - Multiparty call
- **Phone Book**
  - Automatic Phone book synchronization over Bluetooth (up to 15 paired phones, more than 10,000 contacts per phone, depending on memory available)
  - Call history (dialed number, received calls, missed calls)
  - All Synchronization Methods Supported
  - Specific behaviors applied for the best possible interoperability
  - Full Unicode for compatibility with numerous characters sets (European, Russian, Chinese, Japanese...)
- **Digital Signal Processing**
  - Microphone(s): the module can manage two configurations:

- Single microphone
- Two microphones with AMS (Automatic Microphone Selection): 1 for the driver and 1 for the front seat passenger. The best microphone is automatically selected during the call.
- Noise Reduction (NR)
  - Maximal NR is 25dB.
  - Typical NR is 15dB.
  - No musical noise
  - No fluctuation of the residual noise level
  - Automatic adaptation of the Noise Reduction to the Signal-to-noise ratio (SNR) to keep the best voice quality in idle and remove more noise in noisy conditions.
- Acoustic Echo Cancellation (AEC)
  - The level of echo attenuation, called ERLE is 45dB (measured according to the VDA process).
  - Comfort Noise feature so that the background noise is adjusted after AEC algorithm, in order to keep it constant for enhanced communication experience.
  - Possibility to accept up to 100ms of delay in the speaker path for digital amplifiers.
  - Full duplex
- Automatic Level Control (ALC)
  - Different phones can have different Speaker volumes (up to 20dB of difference). It adapts the signal level received from the phone to the target level, quickly and precisely.
- Equalizer
  - 9 bands equalizer for microphones and speaker paths.
- Tuning
  - Car independent tuning if the microphone position and specifications are the same.
  - Possibility to tune all parameters of the audio algorithms according to Customer preferences.
- **Audio Streaming**
  - Embedded SBC decoder
  - Embedded MP3 decoder from Thomson Licensing (optional)
  - Embedded AAC decoder from Via Licensing (optional)
  - Stereo audio output
- **Concertos**
  - Concertos is a software Library which acts as a multi-source media player.
  - Concertos enables DISCO playlist browsing on USB, iPod, SD and AVRCP1.4 devices
- **Speaker Independent Voice Recognition (SIVR)**
- **Miscellaneous**
  - Provides Phone Battery Level, Network Signal Level and Carrier Name (depends on phone) to host
  - Embedded test pattern (test commands)
- **Software Update**
  - Full standard software available (free upgrade from Parrot homepage)
  - Software can be updated via Bluetooth, USB, UART
  - Software updates provide long term compatibility with latest Phones, Smartphones, PDAs and Music players
- **External Bluetooth Antenna diagnostic**
- **HSTI**

Parrot provides a library called "HSTI" that facilitates the integration and communication with FC6050B.



*Communication between the host and the FC6050B over UART*

## 2 RATING – SPECIFICATION - CHARACTERIZATION

### 2.1 Storage Period and Conditions

Our DV test plan usually allows our customers to determine their own storage conditions according to their experiences.

Therefore, the following chart is given for information purpose only.

Storage condition	In original carton box
Storage temperature range	-20°C / +50°C
Humidity	40% - 80%
Duration	3 months
Un-operating temperature range (*)	-40°C / +125°C

(\*) This Temperature range relates to Automotive Customers requirement regarding the following phase of the product life cycle: Vehicle parked outdoor in very hot or cold countries, before shipment to car dealers.

### 2.2 Power Supply

	Value	Unit
Typical Power Supply	3.3	V
Operating voltage range	3.1 to 3.6	V
Max voltage rating	3.6	V
Operating temperature range	-40 / +85	°C

### 2.3 Power Consumption

Feature	Min	Typ	Max	Unit	Comment
Stop mode	-	10	20	mA	NReset active
Run/Standby mode	-	120	200	mA	
Hands Free and Audio streaming mode	-	160	300	mA	
Peak current at startup	-	200	300	mA	
Peak current at startup (duration)	-	200	-	us	

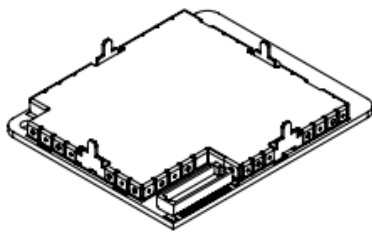
### 2.4 Bluetooth

Features	Description
Frequency Band	2.4000 – 2.4835 GHz (2.4 GHz ISM Band)
Number of channels	79 channels (f=2402+k MHz, k=0,...,78)
Modulation	FHSS (Frequency Hopping Spread Spectrum), GFSK
Supported rates	1, 2, 3 Mbps
Maximum receive level	- 3dBm
Output Power	- 6dBm~4dBm

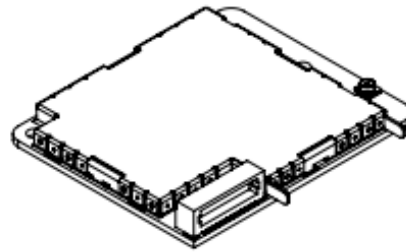
### 3 DIMENSIONS AND STRUCTURE

#### 3.1 Structure

Pictures below are given for information only.

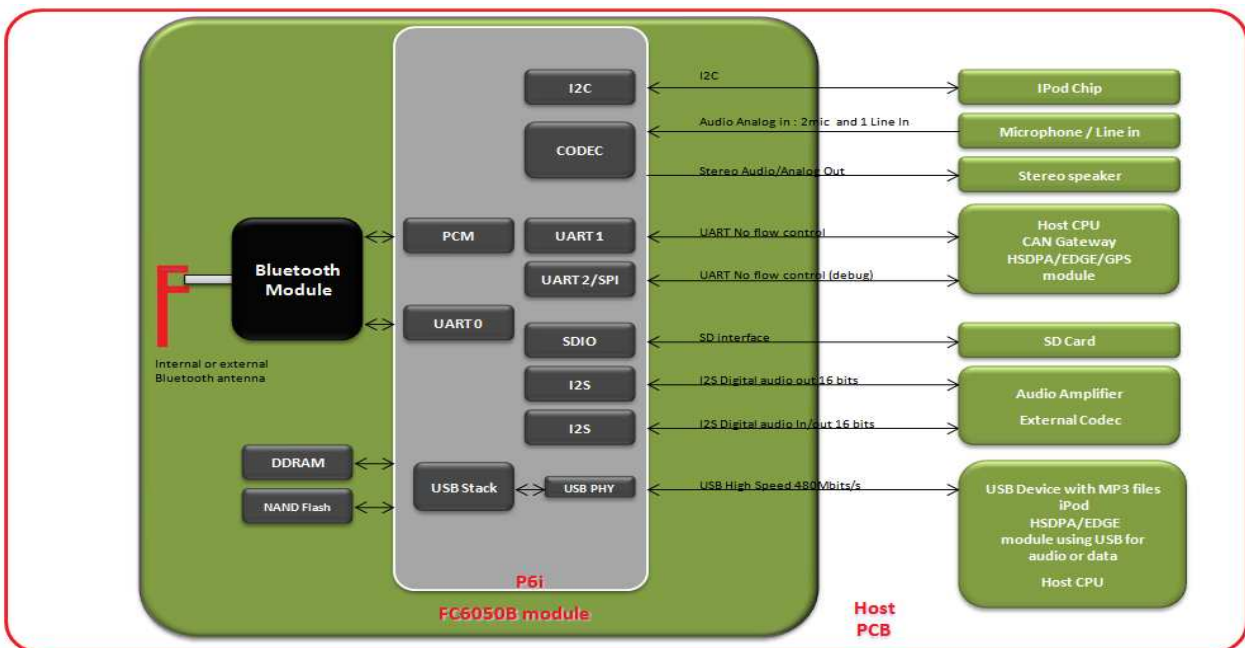


Internal BT antenna, Horizontal version



External Antenna, Vertical version

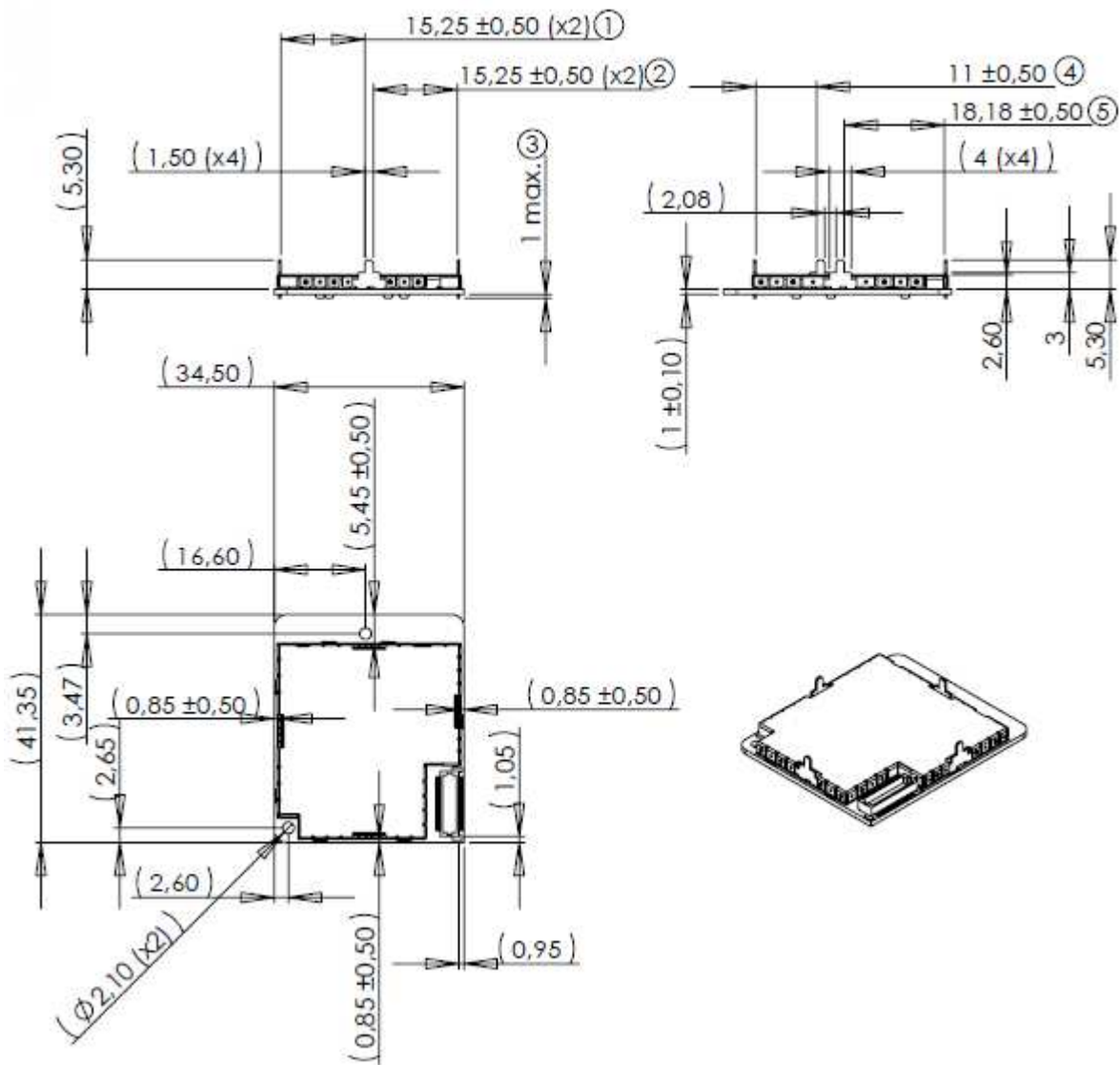
#### 3.2 Block Diagram



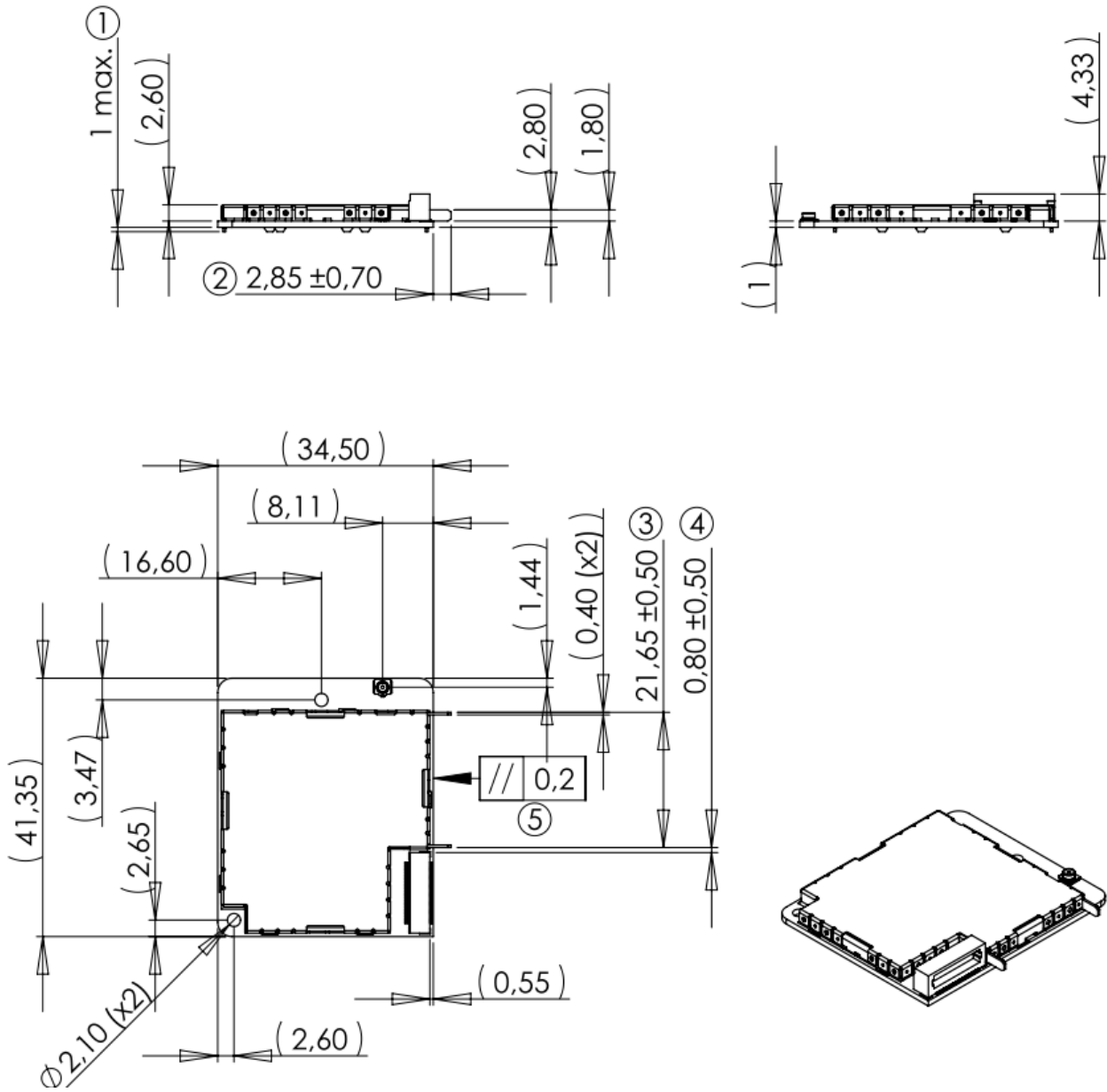


### 3.3 Dimensions

#### 3.3.1 Horizontal version

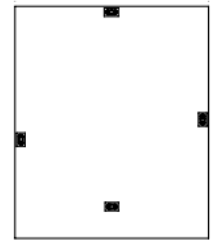
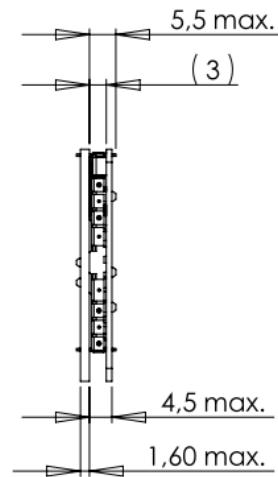
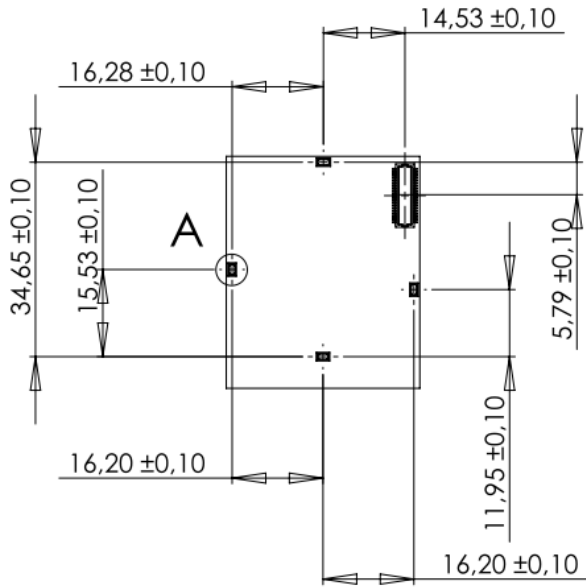


3.3.2 Vertical version

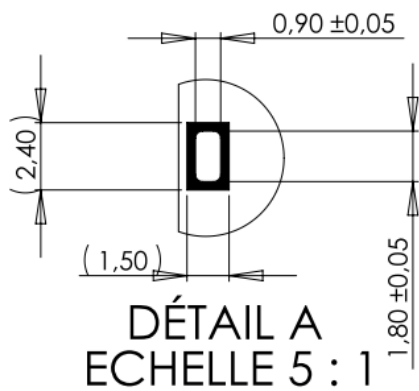


### 3.4 PCB Footprints

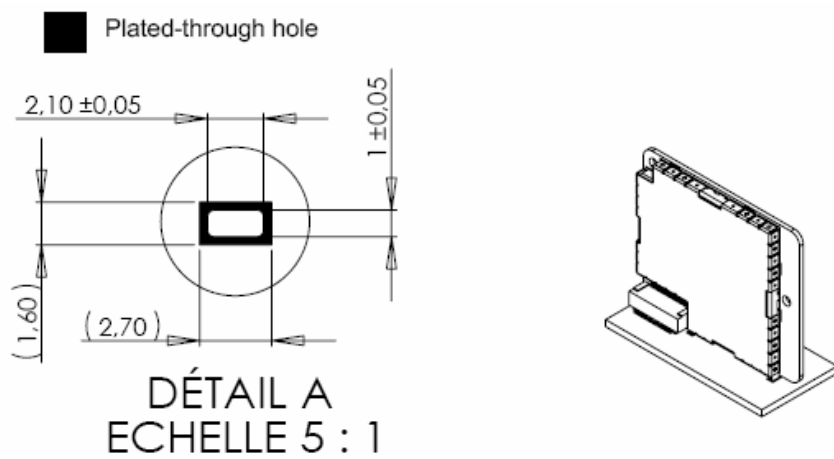
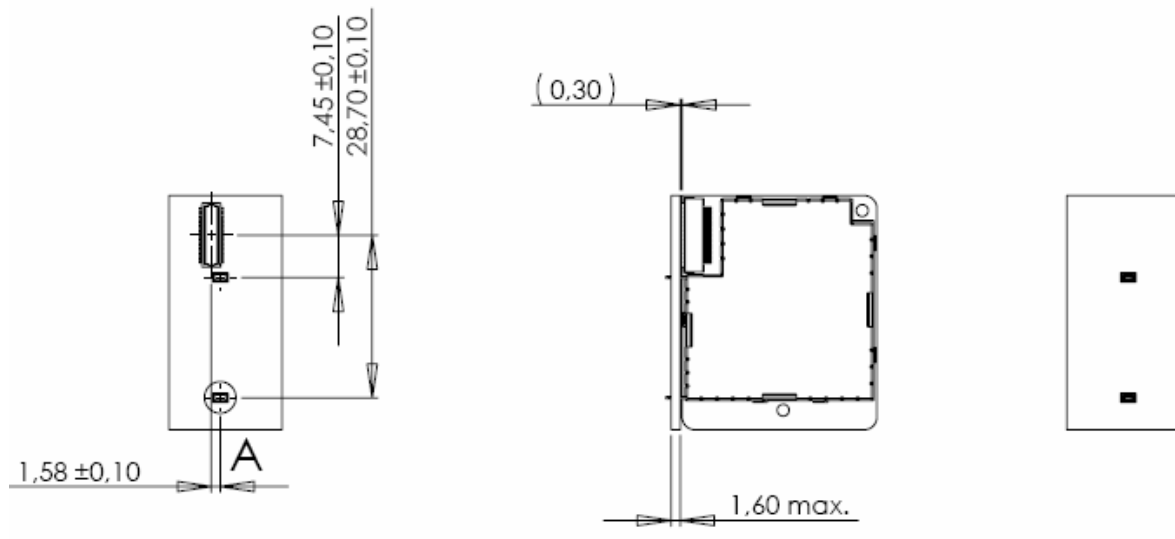
#### 3.4.1 Horizontal version



■ Plated-through hole



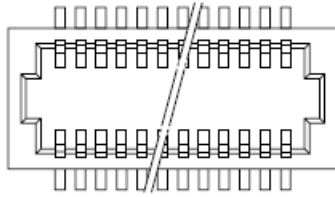
### 3.4.2 Vertical version



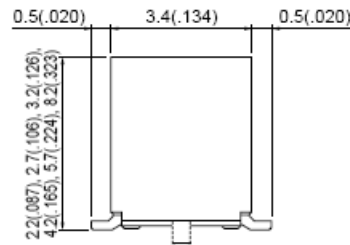
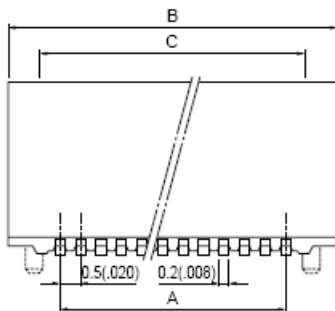
### 3.5 Connectors

#### 3.5.1 Host Connection – Horizontal Version

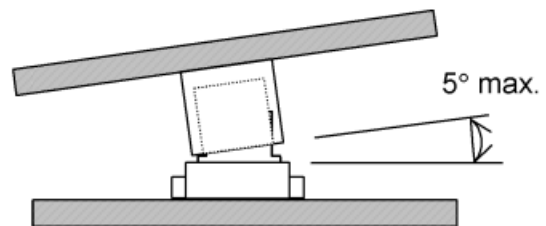
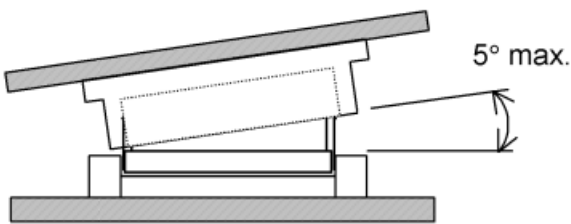
Dimensions below are given in mm



A	B	C	D
9.5(.374)	11.9(.469)	10.4(.409)	10.7(.421)



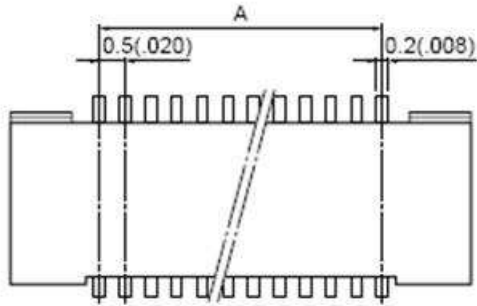
Maximum mating angle:



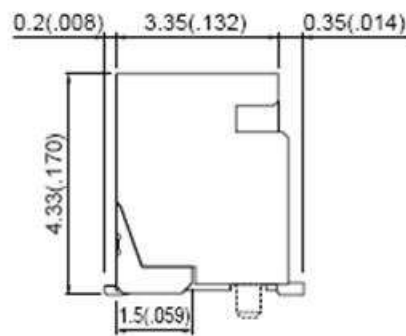
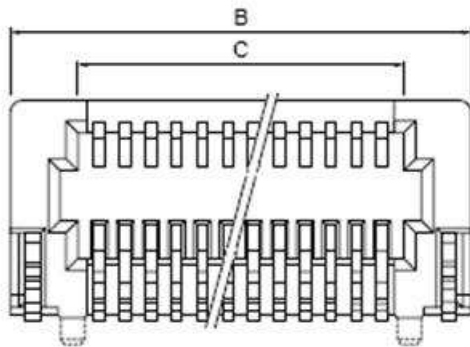
Maximum insertion force : 50N

### 3.5.2 Host Connection – Vertical Version

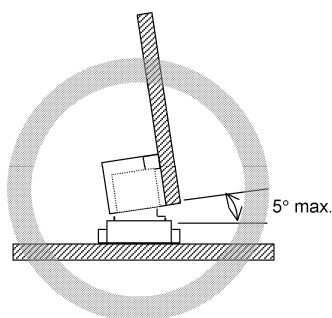
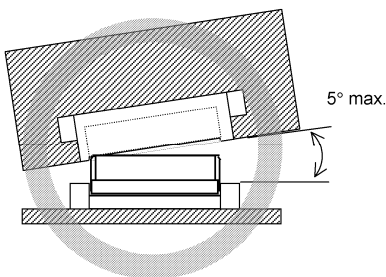
Dimensions below are given in mm



A	B	C	D
9.5(.374)	12.9(.508)	10.4(.409)	10.55(.415)



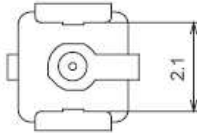
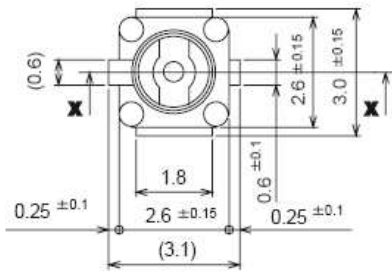
Maximum mating angle:



Maximum insertion force : 50N

### 3.5.3 BT connector (External Antenna version only)

BT antenna is connected to the module through an ultra-small coaxial connector:



## 4 MARKING

### 4.1 Module Marking

#### 4.1.1 Internal Antenna Modules



The telec certification number is not the relevant one. It is just an example for placement on the label. It will be printed and updated when final number is available. **Until that time, neither the logo nor the number will be printed**

#### 4.1.2 External Antenna Modules





## **5 CAUTION FOR USE**

---

### **5.1 ESD Compliance**

Operator must use ESD protection gloves for Module Manipulation. In case of electrical discharge, Module must be scrapped.

### **5.2 Safety**

Mechanical shield is made of metal and have several draft angle which can cause Human injuries. Operator must be trained on how to manipulate it.

### **5.3 Assembly**

Key mechanical dimensions are tested before shipment.

In case of manual handling or operation, to avoid any issue with mechanical distance between legs and ensure a good insertion in the host side, packaging has been designed to ensure that operator will pick up the part by the most adequate area of the module. Operator should be trained and alerted about this specific behavior.

### **5.4 Drop**

In case the part drop to the floor, Parrot doesn't warrant the part. Part has to be scrapped. Same process applies in our manufacturing site.

## 6 APPROVAL / CERTIFICATIONS

---

### 6.1 Normative Certificates

FC6050B module certifications numbers:

CE : CE 0700  
FCC : RKXFFC6050B  
IC : 5119A-FC6050B  
Telec : Not yet available  
BT : QDID B019291

## 6.2 CE Declaration

# DECLARATION OF "CE" CONFORMITY

## "PARROT FC6050B"

We, PARROT SA, 174 quai de Jemmapes - 75010 PARIS, FRANCE, declare under our sole responsibility that our product Parrot FC6050B complies with the essentials requirements and other relevant provisions of the "Directive 1999/5/CE of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity", and complies with the following standards listed below :

Essential requirements:	Standards:
3.1-a) Electrical Safety User health / EMF	EN 60950-1:2006 / A11:2009 / A12:2011 / A1:2010 EN 50371:2002
3.1-b) EMC	EN 301 489-1 v1.8.1 EN 301 489-17 v2.1.1
3.2 Radio	EN 300 328 v1.7.1

Paris, 2012, September 18

Arezki Guerrab

Qualification Manager



PARROT RCS Paris B 394149496 – S.A. au capital de 1 968 527,52 € - NAF : 2630Z

174, quai de Jemmapes - 75010 PARIS, France - Tel: +33 1 48 03 60 60 - Fax: +33 1 48 03 06 66

Internet : [www.parrot.com](http://www.parrot.com)

N° ID-TVA : FR 70 394 149 496 000 25



## 6.3 FCC and IC requirements for module application

**FCC ID: RKXFC6050B**  
**IC : 5119A-FC6050B**

In accordance with FCC Part 15, the FC6050B is listed as a limited Modular Transmitter device.

### **USA – User information**

This intends to inform how to specify the FCC ID of our module “FC6050B” on the product. Based on the Public Notice from FCC, the host device should have a label which indicates that it contains our module. The label should use wording such as: “Contains FCC ID: RKXFC6050B”.

Any similar wording that expresses the same meaning may be used.

The label of the host device should also include the below FCC Statement. When it is not possible, this information should be included in the User Manual of the host device :

*“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*
- (2) This device must accept any interference received, including interference that may cause undesired operation.*

*Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.”*

### **CANADA – User information**

This intends to inform how to specify the IC ID of our module “FC6050B” on the product. According to Canadian standards “RSS-210” and “RSS-Gen”, the host device should have a label which indicates that it contains our module. The label should use wording such as: “Contains IC ID: 5119A-FC6050B”.

Any similar wording that expresses the same meaning may be used.

The label of the host device should also include the below IC Statement. When it is not possible, this information should be included in the User Manual of the host device :

*“Operation is subject to the following two conditions:*

- (1) This device may not cause interference, and*
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.”*

*« Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :*

- (1) L'appareil ne doit pas produire de brouillage, et*
- (2) L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement »*