CC&C 晶訊科技股份有限公司
CC&C Technologies, Inc.

User's Manual

BT5.0 Dongle

BT-500

Manufacturer ： Kunshan CC&C Technologies, Co., LTD.

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Bluetooth 5 Dongle

Description

BT-500 is a Bluetooth 5 Low Energy class 1 dongle that provides a complete solution from various interfaces to different sensors to BLE protocol stack and applica-tions. It includes 32MHz crystal and a sys-tem-on-chip Nordic nRF52840. The mini-mal parts count and small footprint of the BT-500 is ideally suited for the re-quirement of high integration Bluetooth Low Energy technology in portable devices and consumer electronics.

The system-on-chip architecture design of the module makes a much smaller space and minimal cost and simplifies the whole system design.

Features

- Small footprint: 11.3×20×1.8mm
  26-pin perforated hole.
- Bluetooth 5 ready multiprotocol radio
- Bluetooth 5 data rate support: 2 Mbs, 1Mbs, 500 kbs, 125 kbs
- Bluetooth 5 support for long range and high throughput
- AES 128-bit ECB/CCM/AAR hardware accelerator
- -96 dBm Sensitivity for Bluetooth low energy
- 12 bit /200K SPS ADC

Application

- Advanced wearables
  - Connected watches
  - Advanced personal fitness devices
  - Wearables with wireless payment
  - Connected health
  - Virtual/Augmented Reality applica-tions
- Internet of Things (IoT)
  - Smart home sensors and controllers
  - Industrial IoT sensors and control-lers
- Interactive entertainment devices
  - Advanced Remote controls
  - Gaming controllers

Revision History

Version	Date	Change Description
1.0	11/3, 2017	Initial release

Note： All electrical and mechanical specifications may be changed by CC&C Technologies, Inc. without notice.

Pin Definition

Pin	Signal	Function	Description
1	GND	Ground	Ground
2	P0.17	I/O	Programmable I/O
3	P0.12	I/O	Programmable I/O
4	VBUS	Power	Operating supply voltage 4.35~5.5V
5	P0.29	GPIO.	Programmable I/O , Analog input
6	GND	Ground	Ground
7	VDD	Power	Operating supply voltage 1.7~3.6V
8	P0.26	I/O	Programmable I/O
9	P0.04	I/O	Programmable I/O, Analog input
10	P0.01	I/O	Programmable I/O
11	P0.02	I/O	Programmable I/O, Analog input
12	P0.00	I/O	Programmable I/O
13	P1.15	I/O	Programmable I/O
14	DCC	I/O	DC/DC converter output
15	DEC4	I/O	1.3 V regulator supply decoupling
16	SWDIO	Debug	Debug serial data
17	SWDCLK	Debug	Serial wire debug clock input for debug and programming
18	P1.00	I/O	Programmable I/O
19	P0.24	I/O	Programmable I/O
20	P0.03	I/O	Programmable I/O, Analog input
21	P1.14	I/O	Programmable I/O
22	P1.13	I/O	Programmable I/O
23	P1.11	I/O	Programmable I/O
24	P0.10	I/O	Programmable I/O
25	P0.09	I/O	Programmable I/O
26	P1.06	I/O	Programmable I/O
27	P0.18/RESET	I/O	Programmable I/O ,Configurable as system RESET
28	P1.02	I/O	Programmable I/O
29	P1.04	I/O	Programmable I/O
30	P0.20	I/O	Programmable I/O
31	P1.10	I/O	Programmable I/O
32	RFIO_OUT	RF	BT RF port
33	GND	Ground	Ground
34	VBUS	Power	Operating supply voltage 4.35~5.5V
35	USB_DP	I/O	USB D+
36	USB_DN	I/O	USB D-
37	GND	Ground	Ground

SPECIFICATION

Product Name	Bluetooth 5.0 Dongle
Model Number	BT-500
Operating Frequency	2402-2480GHz
Tx power(max)	6dBm
Receiver sensitivity	-96dBm

Power Voltage Range

Symbol	Description	Min.	Typ.	Max.	Units
VBUS	System power voltage	4.3	5	5.5	V
VCC_IO	I/O power voltage	-0.3		3.9	V
Current Consumption	Tx mode 0dBm		11.6		mA
	Tx mode 6dBm		27.6		mA
	Rx mode		12.9		mA
	Storage Temperature	-40	25	125	^{o}C

FCC Warning

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.

FCC Caution

Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment causes harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by doing one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC exposure compliance requirement, please follow operation instruction as documented in this manual.