

LGT185 Module Datasheet

Version: V1.0

LGT185 is a low-power embedded Bluetooth module that LGT has developed. Embedded with the Bluetooth communication protocol stack and rich library functions, it mainly consists of a highly integrated Bluetooth chip (PHY6222QC) and a few peripheral circuits.

1 Product overview

LGT185 contains a low-power 32-bit MCU, 512-KB flash memory, 64-KB SRAM, and 11 reusable I/O ports.

1.1 Features

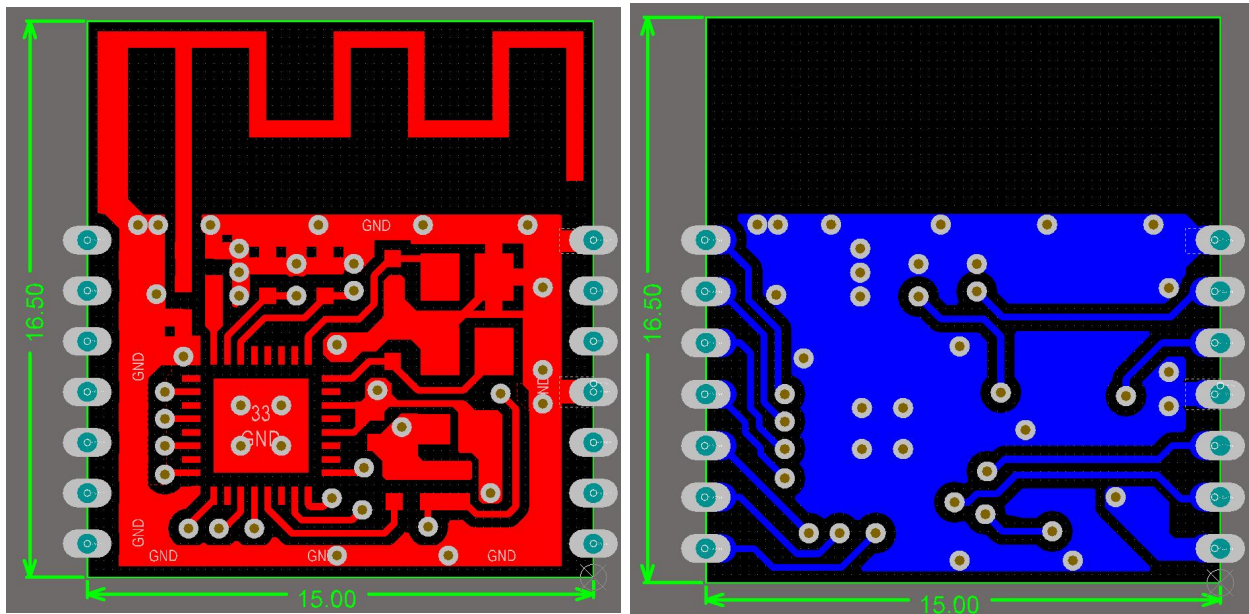
- Embedded with a low-power 32-bit MCU, which can also function as an application processor.
- Rated input voltage: DC 3.3 V
- Peripherals: 5 PWMs, 1 ADC, 4 GPIOs, and 1 UART
- Bluetooth RF features
 - Bluetooth 5.2
 - The RF data rate can be up to 2 Mbps.
 - RX sensitivity: -96 dBm@ 2 Mbps
 - Embedded hardware AES encryption
 - Operating temperature: -40°C to +105°C

2 Module interfaces

2.1 Dimensions and footprint

LGT185 has two lines of 14 pins with a spacing of 1.5 mm.

The LGT185 dimensions (H x W x L) are $(3 \pm 0.15 \text{ mm}) \times (15 \pm 0.35 \text{ mm}) \times (16.5 \pm 0.35 \text{ mm})$. The following figures show the top and bottom views of LGT185.



2.2 Pin definition

The definitions of pins are shown in the following table:

PIN NO.	Symbol	IO Type	Function	Remark
1	N/A	N/A	N/A	
2	N/A	N/A	N/A	
3	N/A	N/A	N/A	
4	N/A	N/A	N/A	
5	N/A	N/A	N/A	
6	N/A	N/A	N/A	
7	N/A	N/A	N/A	
8	V3V3	POWER	POWER SUPPLY	
9	TX	I/O	USART_TX	
10	RX	I/O	USART_RX	
11	GND	POWER	POWER GND	
12	SW	I/O	Bluetooth chip programming pin	
13	RST	I	Reset pin	
14	GND	POWER	POWER GND	

3 Electrical parameters

3.1 Absolute electrical parameters

Parameter	Description	Minimum val	Maximum val	Unit
TS	Storage temperature	-65	150	℃
VCC	Power supply voltage	-0.3	3.9	V
ESD voltage (human body model)	TAMB-25℃	-	2	KV
ESD voltage (machine model)	TAMB-25℃	-	0.5	KV

3.2 Working conditions

Parameter	Description	Minimum value	Typical value	Maximum value	Unit
Ta	Operating temperature	-40	-	105	°C
VCC	Operating voltage	1.8	3.3	3.6	V
V _{IL}	I/O low-level input	VSS	-	VCC*0.3	V
V _{IH}	I/O high-level input	VCC*0.7	-	VCC	V
V _{OL}	I/O low-level output	VSS	-	VCC*0.1	V
V _{OH}	I/O high-level output	VCC*0.9	-	VCC	V

3.3 Power consumption in working mode

Symbol	Conditions	Maximum value (Typical value)	Unit
I _{tx}	Constantly transmit with the output power of 0 dBm	21	mA
I _{rx}	Constantly receive	17	mA
IDC	Average value in mesh networking state	11	mA
IPK	Peak value in mesh networking state	25	mA

4 RF parameters

4.1 Basic RF features

Parameter	Description
Working frequency	2.4GHz ISM band
Wireless standard	Bluetooth 5.2
Antenna type	PCB antenna

FCC WARNING:

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

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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the 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 does cause 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 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 RF EXPOSURE STATEMENT:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM

2.2 List of applicable FCC rules

CFR 47 FCC PART 15 SUBPART C/E has been investigated. It is applicable to the modular.

2.3 Specific operational use conditions

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

2.4 Limited module procedures

Not applicable

2.5 Trace antenna designs

Not applicable

2.6 RF exposure considerations

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance of 20cm from your body.

2.7 Antennas

This radio transmitter FCC ID: 2BOJX-LGT185 has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

No.	Antenna Type	Antenna Gain	Impedance	Frequency Range
1	PCB antenna	-2.92dBi	50Ω	2.4-2.5GHz

2.8 Label and compliance information

The final end product must be labeled in a visible area with the following " Contains

FCC ID: 2BOJX-LGT185”

2.9 Information on test modes and additional testing requirements

Host manufacturer is strongly recommended to confirm compliance with FCC requirements for the transmitter when the module is installed in the host.

2.10 Additional testing, Part 15 Subpart B disclaimer

Host manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 B
