LK8620B Specification - Design Based on TELINK-SEMI TLSR8250

Overview

LK8620 is a Bluetooth LE5.0 (Low Power Bluetooth) module designed and produced by Shenzhen Lianke Intelligent Technology Co., Ltd. It is based on TELINK-SEMI Bluetooth LE chip TLSR8250 and supports BLE5.0, standard SIG MESH.

The module pins can be led out through peripheral stamp holes and pins, and the installation method is flexible.

The module is equipped with onboard antennas, greatly simplifying the difficulty of terminal product design and application, shortening the product design cycle, thereby reducing the cost of terminal product design, and ensuring product reliability and stability.

Item ID	name	specifications
105-18620-004	Bluetooth module	LK8620B V3.0/20*15MM/H=2.4

Main characteristics (brief description):

1.8-3.6V power supply, typical value 3.3V

Low power consumption mode:

Full chip mode TX: 4.8mA@0dBm

RX: 5.3mA

Deep sleep: 0.4uA (external wake-up)

Built in 32-bit high-performance processor

Rich external interfaces (I2C, I2S, SPI, PWM, ADC, USB)

Temperature working range of -40~85 ° C

512KB FLASH

48KB SRAM

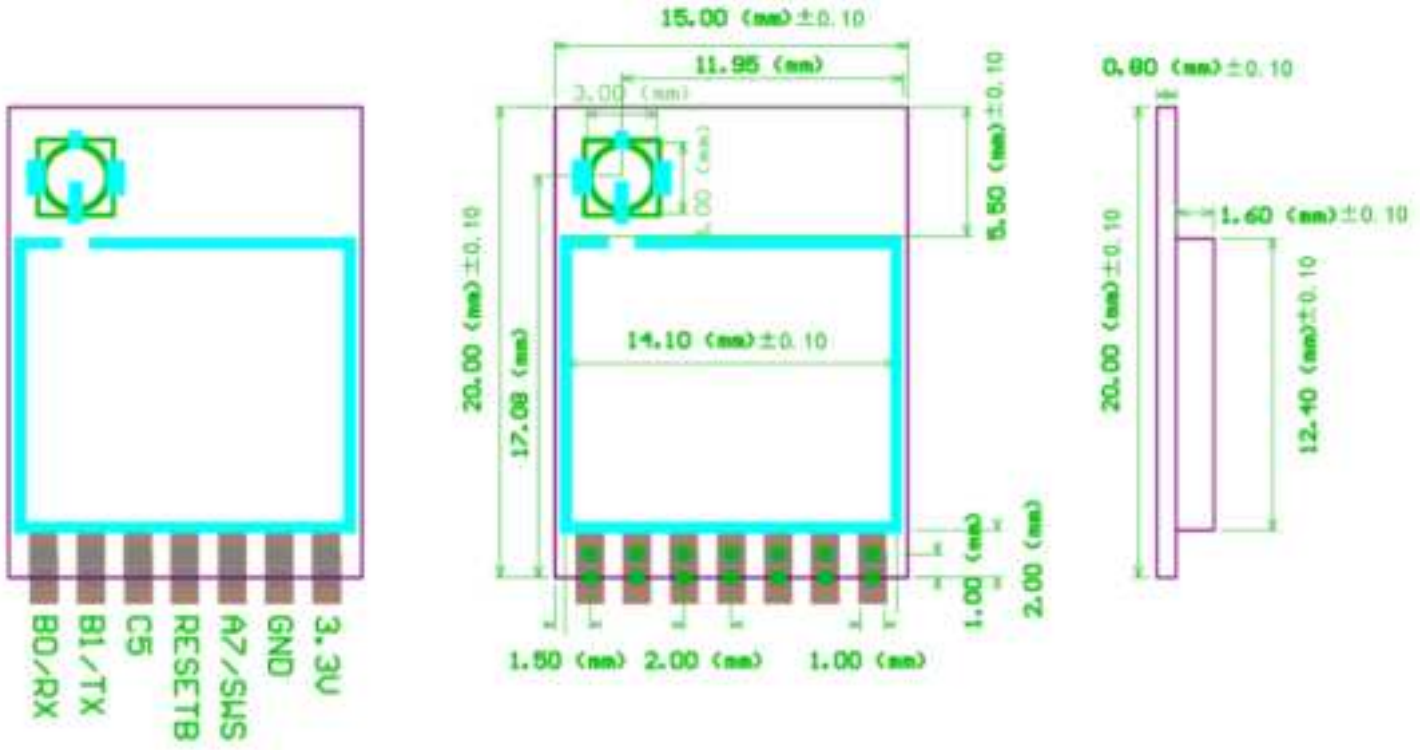
Bluetooth 5.0 protocol

Receiving sensitivity: -96dBm @ BLE 1Mbps

Transmission power: up to 10dBm

Supports standard SIG MESH

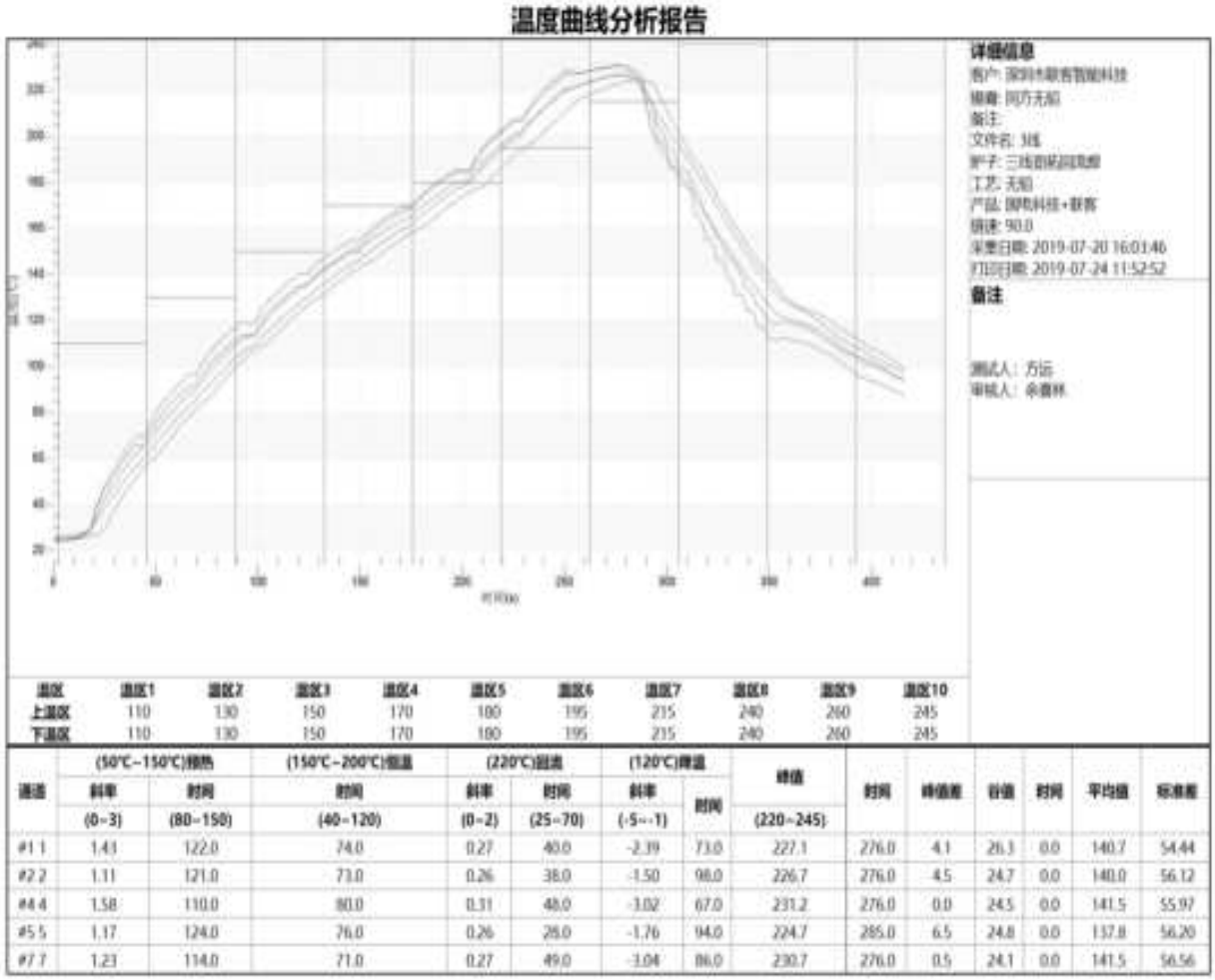
Module size



Pin description:

LK8620B Pin	Pin name	Pin function	
1	UART-RX	Serial port reception	
2	UART-TX	Serial port transmission	
3	I/O	Digital I/O	
4	Reset	reset	
5	SWS/UART_RTS/PA<7>	Burn foot	
6	GND	Ground	
7	VCC	1.8-3.6V	

Schematic diagram of temperature control for secondary reflow soldering:



温区	温区1	温区2	温区3	温区4	温区5	温区6	温区7	温区8	温区9	温区10
上温区	110	130	150	170	190	195	215	240	260	245
下温区	110	130	150	170	190	195	215	240	260	245

通道	(50℃~150℃)预热		(150℃~200℃)恒温	(220℃)回流		(120℃)降温		峰值	时间	峰值差	谷值	时间	平均值	标准差
	斜率	时间	时间	斜率	时间	斜率	时间							
	(0~3)	(80~150)	(40~120)	(0~2)	(25~70)	(-5~-1)		(220~245)						
#1 1	1.41	122.0	74.0	0.27	40.0	-2.39	73.0	227.1	276.0	4.1	26.3	0.0	140.7	54.44
#2 2	1.11	121.0	73.0	0.26	38.0	-1.50	98.0	226.7	276.0	4.5	24.7	0.0	140.0	56.12
#4 4	1.58	110.0	80.0	0.31	48.0	-3.02	67.0	231.2	276.0	0.0	24.5	0.0	141.5	55.97
#5 5	1.17	124.0	76.0	0.26	28.0	-1.76	94.0	224.7	285.0	6.5	24.8	0.0	137.8	56.20
#7 7	1.23	114.0	71.0	0.27	49.0	-3.04	86.0	230.7	276.0	0.5	24.1	0.0	141.5	56.56

Precautions for use:

The usage environment and wireless signal applications of Bluetooth are greatly affected by the surrounding environment, such as trees, metals, and other obstacles that can absorb wireless signals to a certain extent, thus affecting the distance of data transmission in practical applications;

Due to the fact that Bluetooth modules need to be paired with existing systems and placed in a metal casing, which has a strong shielding effect on wireless RF signals, it is recommended not to install them in a metal casing;

PCB layout: The antenna part of the Bluetooth module, due to metal weakening the performance of the antenna, is strictly prohibited from laying or wiring under the module antenna (the surrounding area of the antenna, i.e. left, right, and front end) when laying the PCB layout. It would be better if it could be hollowed out.

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference, and

This device must accept any interference received, including interference that may cause undesired operation.

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

Note: 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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

- English: "
This device complies with Industry Canada licence-exempt RSS standard(s). 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."

- French:"
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 nedoit 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."

Integration instructions for host product manufacturers according to KDB 996369 D03 OEMManual v01

Conditions on using GODOX PHOTO EQUIPMENT CO.,LTD regulatory approvals:

A. Customer must ensure that its product (the"CUSTOMER Product") is electrically identical to GODOX PHOTO EQUIPMENT CO.,LTD reference designs. Customer acknowledges that any modifications to GODOX PHOTO EQUIPMENT CO.,LTD reference designs may invalidate regulatory approvals in relation to the CUSTOMER Product, or may necessitate notifications to the relevant regulatory authorities.

B. Customer is responsible for ensuring that antennas used with the product are of the same type, with same or lower gains as approved and providing antenna reports to GODOX PHOTO EQUIPMENT CO.,LTD.

C. Customer is responsible for regression testing to accommodate changes to GODOX PHOTO EQUIPMENT CO.,LTD reference designs, new antennas, and portable RF exposure safety testing/approvals.

D. Appropriate labels must be affixed to the CUSTOMER Product that comply with applicable regulations in all respects.

E. A user's manual or instruction manual must be included with the customer product that contains the text as required by applicable law. Without limitation of the foregoing, an example (for illustration purposes only) of possible text to include is set forth below:

2.2 List of applicable FCC rules and RSS rules

FCC Part 15 Subpart C 15.247 & 15.207 & 15.209& 15.205
RSS-Gen Issue 5 Amendment 2, February 2021
RSS-247 Issue 2, February 2017

2.3 Specific operational use conditions

Operation Frequency:2402~2480MHz
Number of Channel:40 Channels
Modulation Type:GFSK
Antenna Type:PCB antenna
Antenna Gain(Peak):2.32 dBi (Provided by customer)
The module can be used for mobile or portable applications with a maximum 2.32 dBi antenna. The host manufacturer installing this module into their product must ensure that the final composit product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation. The host manufacturer has to be aware not to provide informationto the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

2.4 Limited module procedures

Not applicable. The module is a Single module and complies with the requirement of FCC Part 15.212.

2.5 Trace antenna designs

Not applicable. The module has its own antenna, and doesn't need a host's printed board microstriptrace antenna etc.

2.6 RF exposure considerations

The device can be used in portable exposure condition without restriction and if RF exposure statement or module layout is changed, then the host product manufacturer required to take responsibility of the module through a change in FCC ID or new application. The FCC ID of the module cannot be used on the final product. In these circumstances, the host manufacturer will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

2.7 Antennas

Antenna Specification are as follows:
Antenna Type:PCB antenna
Antenna Gain(Peak):2.32 dBi (Provided by customer)

This device is intended only for host manufacturers under the following conditions: The transmitter module may not be co-located with any other transmitter or antenna;
The module shall be only used with the External antenna(s) that has been originally tested and certified with this module. The antenna must be either permanently attached or employ a 'unique'antenna coupler.

As long as the conditions above are met, further transmitter test will not be required. However, the host manufacturer is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheralrequirements, etc.).

2.8 Label and compliance information

Host product manufacturers need to provide a physical or e-label stating "Contains FCC ID 2ABYN-LK8620B"/" "Contains IC: 20034-LK8620B" With their finished product.

2.9 Information on test modes and additional testing requirements

Operation Frequency:2402~2480MHz
Number of Channel:40 Channels
Modulation Type:GFSK
Antenna Type:PCB antenna
Antenna Gain(Peak):2.32 dBi (Provided by customer)

Host manufacturer must perfom test of radiated & conducted emission and spurious emission, etcaccording to the actual test modes for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.
Only when all the test results of test modes comply with FCC requirements, then the end product canbe sold legally.

2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for FCC Part 15 Subpart C 15.247 & 15.207 & 15.209 & 15.205 and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.