ECARE AST6Q38 Bluetooth Module User Guide

Contents

E-CARE

ECARE AST6Q38 Bluetooth Module

Product Information

Specifications:

- Model: AST6Q38
- Bluetooth specifications: Bluetooth 5.0
- Supply voltage: 1.8~3.3V
- Working current: TBD
- Sleep current: TBD
- Temperature range: -40°C to 85°C
- Transmit power: -20~7dBm
- Module size: 22.8*17.0MM

Application Fields:

This module is suitable for connecting to Bluetooth devices of digital products such as mobile phones, tablets, notebooks, etc. It enables command control of the product through wireless data transmission in the following applications:

- Smart home appliances
- Smart toys
- Bluetooth control

Module Size Diagram:

(Diagram not provided)

Module Function Pins:

PIN	Definition	Function
1	GND	GND
2	VDD	Power supply
3-7	P29-P16	Digital and Analog GPIO
8-9	P02-P03	Digital GPIO/UART_TX, Digital GPIO/UART_RX
10-11	P04-P05	Digital GPIO/UART_TX, Digital GPIO/UART_RX
12-32	P17-P20, P22-P28, P00, P19-P21, P07-P12, Res, P10	Digital and Analog GPIO

End Product Labeling:

The final end product must be labeled in a visible area with the following information: Contains FCC ID: 2AATP-TP902

Manual Information to the End User:

The OEM integrator must not provide information to the end user on how to install or remove this RF module in the user's manual of the end product. The end user manual should include all required regulatory information/warnings as shown in this manual.

1. Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01r01:
2. List of applicable FCC rules – CFR 47 FCC PART 15 SUBPART C has been investigated and is applicable to the modular transmitter.
3. Specific operational use conditions – This module is a stand-alone modular. If the end product will involve multiple simultaneous transmitting conditions or different operational conditions for a stand-alone modular transmitter in a host, the host manufacturer must consult with the module manufacturer for the installation method in the end system.
4. Limited module procedures – Not applicable
5. Trace antenna designs – Not applicable
6. RF exposure considerations – The device has been evaluated to meet general RF exposure requirements. The device can be used in portable exposure conditions without restriction.
7. Antennas – This radio transmitter FCC ID: 2AATP-TP902 has been approved by the 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.
8. Label and compliance information – (Information not provided)

Product Usage Instructions

Step 1: Power Supply

Connect the VDD pin of the module to a power supply with a voltage range of 1.8V to 3.3V.

Step 2: Connection to Bluetooth Devices

Pair your Bluetooth-enabled device (e.g., mobile phone, tablet, notebook) with the AST6Q38 Bluetooth module. Follow the instructions of your device to establish a Bluetooth connection.

Step 3: Command Control

Once the Bluetooth connection is established, you can use wireless data transmission to control the product. Refer to the corresponding firmware and application product instructions for specific control commands.

Step 4: Firmware Update (if applicable)

If a firmware update is required, consult the firmware update instructions provided by the module manufacturer.

FAQ

Q: What is the supply voltage range for the AST6Q38 module?

A: The supply voltage range is 1.8V to 3.3V.

Q: Can this module be used in smart home appliances?

A: Yes, this module is suitable for use in smart home appliances.

Q: What is the FCC ID for this module?

A: The FCC ID for this module is 2AATP-TP902.

1. Product Overview

The AST6Q38 Bluetooth module is an intelligent wireless data transmission Bluetooth module independently developed by our company. It has the characteristics of low cost and low power consumption. In actual applications, customers only need to cooperate with the corresponding firmware, access the application product, and quickly connect to control the product through instructions.

Application fields

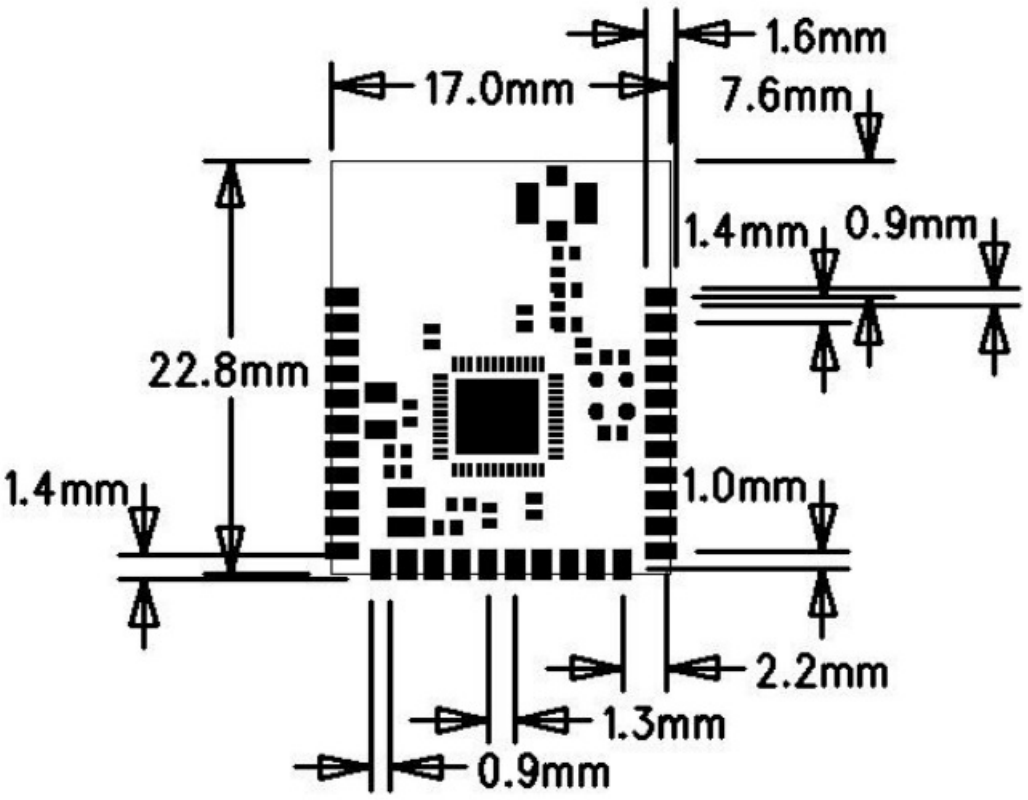
This module is very convenient to connect to Bluetooth devices of digital products such as mobile phones, tablets, notebooks, etc., and realizes command control of the product through wireless data transmission.

- Smart home appliances
- Smart toys
- Bluetooth control

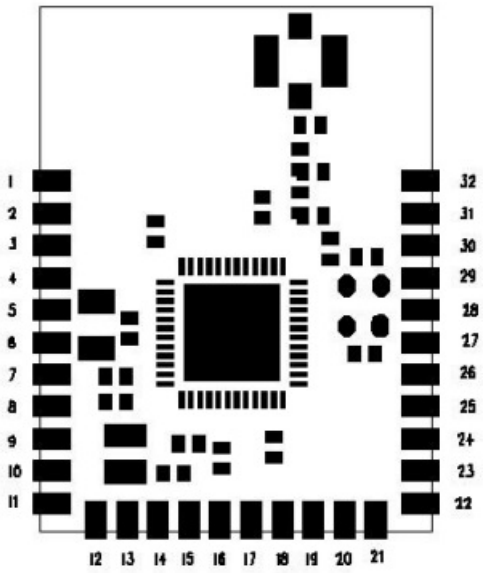
Module performance parameters

- **Model** AST6Q38
- **Bluetooth specifications** Bluetooth 5.0
- **Supply voltage** 1.8~3.3V
- **Working current** TBD
- **Sleep current** TBD
- **Temperature range** -40℃~85℃
- **Transmit power** -20~7dBm
- **Module size** 22.8*17.0MM

Module size diagram



Module function pins



PIN	definition	function
1	GND	GND
2	VDD	Power supply
3	P29	Digital and Analog GPIO
4	P23	Digital and Analog GPIO
5	P24	Digital and Analog GPIO
6	P15	Digital and Analog GPIO
7	P16	Digital and Analog GPIO
8	P02	Digital GPIO/UART_TX
9	P03	Digital GPIO/UART_RX
10	P04	Digital GPIO/UART_TX
11	P05	Digital GPIO/UART_RX

12	P17	Digital and Analog GPIO
13	P18	Digital and Analog GPIO
14	P25	Digital and Analog GPIO
15	P26	Digital and Analog GPIO
16	P08	Digital and Analog GPIO/ADC1
17	P09	Digital and Analog GPIO/ADC2
18	P13	Digital and Analog GPIO/ADC3
19	P14	Digital and Analog GPIO/ADC4
20	P28	Digital and Analog GPIO
21	P27	Digital and Analog GPIO
22	P21	Digital and Analog GPIO
23	P22	Digital and Analog GPIO
24	P07	Digital and Analog GPIO
25	P06	Digital and Analog GPIO
26	P11	Digital and Analog GPIO
27	P12	Digital and Analog GPIO
28	P00	Digital and Analog GPIO
29	P19	Digital and Analog GPIO
30	P20	Digital and Analog GPIO
31	Res	RST
32	P10	Digital and Analog GPIO

Notes

1. Regarding the usage environment of wireless Bluetooth, wireless signals including Bluetooth applications are greatly affected by the surrounding environment. Obstacles such as trees and metals will absorb wireless signals to a certain extent. Therefore, in practical applications, the distance of data transmission is affected by Certain impact.
2. Since the Bluetooth module must be matched with the existing system and placed in the casing, the metal casing has a shielding effect on wireless radio frequency signals. So it is not recommended to install it in a metal enclosure.

FCC 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. 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, pursua nt to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful inte rference in a residential installation. This equipment generates uses and can radiate radio frequency energy a nd, if not installed and used in accordance with the instructions, may cause harmful interference to radio com munications. 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 turn ing 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 with important announcements Important Note:

Radiation Exposure Statement
The device has been evaluated to meet general RF exposure requirements. The device can be used in portable exposure conditions without restriction.

End Product Labeling
The final end product must be labeled in a visible area with the following" Contains FCC ID: 2AATP-TP902

Manual Information to the End User
The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product that integrates this module.
The end user manual shall include all required regulatory information/warnings as show in this manual.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01r01

List of applicable FCC rules
CFR 47 FCC PART 15 SUBPART C has been investigated. It is applicable to the modular transmitter

Specific operational use conditions
This module is stand-alone modular. If the end product will involve Multiple simultaneous transmitting conditions 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.

Limited module procedures
Not applicable

Trace antenna designs
Not applicable

RF exposure considerations
The device has been evaluated to meet general RF exposure requirements. The device can be used in portable exposure conditions without restriction.

Antennas
This radio transmitter FCC ID:2AATP-TP902 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.

Antenna No.	Model No. of antenna:	Type of antenna:	Gain of the antenna (Max.)		Frequency range:
			Antenna 1 (TJ068-N040003-01)	Antenna 2 (TJ068-N050006-01)	
Bluetooth	/	PIFA Antenna	3.0	3.0	2402-2480MHz

Label and compliance information
The final end product must be labeled in a visible area with the following" Contains FCC ID:2AATP-TP902.

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.

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.

Note EMI Considerations
Host manufacture is recommended to use D04 Module Integration Guide recommending as "best practice" RF design engineering testing and evaluation in case non-linear interactions generate additional non-compliant limits due to module placement to host components or properties.

How to make changes
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. According to the KDB 996369 D02 Q&A Q12, that a host manufacture only needs to do an evaluation (i.e., no C2PC required when no emission exceeds the limit of any individual device (including unintentional radiators) as a composite. The host manufacturer must fix any failure.

Documents / Resources

	ECARE AST6Q38 Bluetooth Module [pdf] User Guide AST6Q38 Bluetooth Module, AST6Q38, Bluetooth Module, Module

References

- User Manual