



User Manual

ATBM6062-CU USB Module

1T1R 2.4GHz Wi-Fi6+BLE

WRITTEN	CHECKED	APPROVED

Document Rev. 1.0
Released: 2025-08-04
AltoBeam Inc.

DISCLAIMER

Information in this document is provided in connection with AltoBeam products. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document. Except as provided in AltoBeam's terms and conditions of sale for such products, AltoBeam assumes no liability whatsoever, and AltoBeam disclaims any express or implied warranty, relating to sale and/or use of AltoBeam products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right.

AltoBeam may make changes to specifications and product descriptions at any time, without notice.

Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." AltoBeam reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them.

Unauthorized use of information contained herein, disclosure or distribution to any third party without written permission of AltoBeam is prohibited.

ALTOBEAM is the trademark of AltoBeam. All other trademarks and product names are properties of their respective owners.

Copyright © 2007~2025 AltoBeam Inc., all rights reserved

CONTACT INFORMATION

AltoBeam Inc.

Address: B808, Tsinghua Tongfang Hi-Tech Plaza, Haidian, Beijing 100083

Tel: (8610) 6270 1811

Fax: (8610) 6270 1830

Website: www.altobeam.com

Support: support@altobeam.com

REVISION HISTORY

TABLE OF CONTENTS

1	OVERVIEW	1
2	GENERAL SPECIFICATIONS.....	1
3	MECHANICAL SPECIFICATION.....	2
3.1	PIN DEFINITION	2
4	WI-FI ANTENNA.....	3
5	FCC WARNING STATEMENT	3
6.0.	INTRODUCTION	4
7.0.	INTEGRATION INSTRUCTIONS FOR PRODUCT MANUFACTURERS ACCORDING TO KDB	
996369 D03		5
7.1.	LIST OF APPLICABLE FCC RULES	5
7.2.	SPECIFIC OPERATIONAL USE CONDITIONS	5
7.3.	LIMITED MODULE PROCEDURES	5
7.4.	TRACE ANTENNA DESIGNS	5
7.5.	RF EXPOSURE CONSIDERATIONS	5
7.6.	ANTENNAS	5
7.7.	LABEL AND COMPLIANCE INFORMATION	6
7.8.	INFORMATION ON TEST MODES AND ADDITIONAL TESTING REQUIREMENTS	6
7.9.	ADDITIONAL TESTING, PART 15 SUBPART B DISCLAIMER	6

1 Overview

ATBM6062-CU module is a highly integrated 1T1R 2.4GHz 802.11b/g/n/ax Wireless LAN (WLAN) device with USB interface (USB 2.0 compliant), based on AltoBeam's ATBM6062-CU Wi-Fi6 chip.

2 General specifications

Main chipset		AltoBeam ATBM6062-CU Wi-Fi6 chip
Wi-Fi	Operating frequency	2412MHz-2462MHz
	Standard	IEEE 802.11b/g/n/ax 1T1R
	Modulation	DSSS, OFDM, OFDMA
	Bandwidth	802.11b/g/n/ax 20MHz: $\leq 20\text{MHz}$ 802.11n/ax 40MHz: $\leq 40\text{MHz}$
	PHY data rates	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0~7, up to 150Mbps 802.11ax: MCS0~11, up to 286.8Mbps
	Max. input power	27.67dBm
Bluetooth	Frequency range	2.402 ~ 2.480 GHz
	Standard	BLE v5.0
	PHY data rates	1Mbps, 2Mbps
	Max. output power	8.97dBm
Host interface		USB 2.0
RF antenna		External antenna (2.4GHz 50Ohm Resistance)
Security		WPA, WPA2, WPA3 personal
Power consumption		3.3VDC Max.400mA
Operating temperature		-20 ~ +70°C ambient temperature
Storage temperature		-50~ +125°C ambient temperature
Humidity		5% to 90% maximum (non-condensing)
Dimension		Typical L13.00*W12.20*H1.70mm ($\pm 0.2\text{mm}$)

3 Mechanical Specification

3.1 Pin definition

Pin Number	Pin Name	Pin Description
1	3.3V	3.3V DC power supply input
2	U-	USB Data DM
3	U+	USB Data DP
4	GND	Ground
5	RF GND	RF ground
6	ANT1	External Antenna (2.4GHz 50Ohm)

4 Wi-Fi Antenna

This module needs to connect with an external Wi-Fi antenna supporting 2.4GHz band. The microstrip line of PCB layout between the module's antenna pin and IPEX antenna connector, the length of the microstrip line is required to be less than 20mm, and it should be as straight as possible. If there must be a corner, the angle is required to be greater than 120 degrees. The impedance of the microstrip line must be 50ohm for 2.4GHz, and there is a complete reference ground plane under microstrip line. In order to optimize RF performance, the ground under IPEX antenna connector needs to be removed.

5 FCC warning statement

Important Note

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.

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.

Radiation Exposure Statement

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

6.0. Introduction

The ATBM6062-CU (WiFi and BLE module) establishes a uniform interface from the computer to the smart card for a wide variety of cards. By taking care of the card specific particulars, it releases the software programmer of getting involved with the technical details of the smart card operation, which are in many cases not relevant for the implementation of a smart card system.

This document serves as a guide for product manufacturers according to KDB 996369 D03 OEM.

7.0. Integration instructions for product manufacturers according to KDB 996369 D03

7.1. List of applicable FCC rules

CFR 47 FCC PART 15 SUBPART C has been investigated.

7.2. Specific operational use conditions

This module is certified connecting to specific for indoor application.

7.3. Limited module procedures

The module does not have its own RF shield. The input voltage is DC 3.3V. RF power is pre-configured and is tested.

7.4. Trace antenna designs

Not applicable.

7.5. 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.

7.6. Antennas

This radio transmitter FCC ID: 2BAVS-AB6062CU has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. The antenna is permanently fixed. It cannot be replaced.

No.	Antenna Type	Antenna Gain	Impedance	Frequency Range
1	Dipole antenna	2.25dBi	50Ω	2412~2462MHz 2402~2480MHz

7.7. Label and compliance information

The product must be labeled in a visible area with the following "Contains FCC ID: 2BAVS-AB6062CU"

7.8. Information on test modes and additional testing requirements

Module manufacturer tested ATBM6062-CU in specific condition.

Any change should be tested against specific FCC rule parts.

For every host integrating this module, the grantee, AltoBeam Inc., must ensure that the host is tested by an FCC-recognized laboratory with the module installed. A Class II or Class III Permissive Change (C2PC or C3PC) equipment authorization application must then be filed. Refer to FCC guidance KDB 996369 D01 Module Certification Guide, Appendix C, which applies to modules without shielding and outlines the requirements for such changes.

Test item	Requirement
Fundamental*note 1	The fundamental should continue compliance with the rule part.
Band edge*note 2	The band edge should continue compliance with the rule part.
Spurious radiated emission*note 2	The spurious radiated emission should continue compliance with the rule part.

Note 1: An increase in measured field strength over the module's tested field strength is the result of host installation, such as signal reflections, and this increased field strength value remains compliant with the rules. In that case, a statement is required in the C2PC report indicating that "an increase in field strength". And the manufacturer, lab, and TCB must investigate to determine if the initial module tested in a standalone module was improperly granted. The module may require a new FCC ID. An inquiry can be submitted to review a specific case, but the C2PC can only be given once the issue is resolved.

Note 2: Any radiated emission and band edge that does not comply with regulations must be corrected then the C2PC can only be granted once resolved.

Note 3: The test method is accordance with the ANSI C63.10-2020.

7.9. Additional testing, Part 15 Subpart B disclaimer

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