



USER MANUAL
77GHz TA BSD Radar Module

Model Name: A009-007



1.1 GENERAL SPECIFICATIONS

Item	Parameters	Value	
1	Operation voltage	9 ~ 36 V	
2	Operation frequency	76-77 GHz	
3	Occupied Bandwidth	400 MHz	
4	EIRP	27dBm	
5	ADC sampling rate	20 MSPS	
6	MCU RAM SIZE	768 kB	
7	MCU flash size	1 MB	
9	Power consumption	< 220mA @ 13.5V < 110mA @ 27V	
10	Update rate (Frame rate)	20Hz	
11	Detection range	longitudinal	0.5-80m
		Lateral	0.5-45m
12	Detection range	Accuracy	+0.25m~-0.25m
		Resolution	1.5m
13	Velocity range	longitudinal	±50m/s
		Lateral	±20m/s
14	Velocity range	Accuracy	±0.175m/s
		Resolution	1 m/s
15	FOV	Horizontal	±60°
		Vertical	±6°
16	Angle accuracy	±0.25 deg	
17	Angle resolution	±20°	



REGULATORY STATEMENTS

FCC Statement

Federal Communication Commission Interference Statement

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 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 Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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 device and its antenna(s) must not be co-located with any other transmitters except in accordance with FCC multi-transmitter product procedures.

Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without C2PC.

IMPORTANT NOTE:

FCC 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 **20cm** between the radiator & your body.

IMPORTANT NOTE:

This module is intended for OEM integrator only and limited to host with brand: Cub and model: B122-009NA1-A2, B122-009NA1-A3, B122-010NA1-A2, B122-010NA1-A3, **B122-073NA1-A0, B122-072NA1-A0, B122-075NA1-A0, B122-074NA1-A0** . This module is only FCC authorized for the specific rule parts listed on the grant, 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.

The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.



USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

The FCC part 15.19 statement below has to also be available in the manual: This device complies with Part 15 of 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: ZPNUNIVERSALTABSD".

Ant. list

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
1	Cub	CUBT76500	array	N/A	11.71	TX
2					13.9	RX

IC ISSED STATEMENT:

THIS DEVICE CONTAINS LICENCE-EXEMPT TRANSMITTER(S) THAT COMPLY WITH INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA'S

LICENCE-EXEMPT RSS(S). OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

- (1) THIS DEVICE MAY NOT CAUSE INTERFERENCE,
- (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION OF THE DEVICE.

L'ÉMETTEUR EXEMPT DE LICENCE CONTENU DANS LE PRÉSENT APPAREIL EST CONFORME AUX CNR D'INNOVATION, SCIENCES ET DÉVELOPPEMENT

ÉCONOMIQUE CANADA APPLICABLES AUX APPAREILS RADIO EXEMPTS DE LICENCE.

L'EXPLOITATION EST AUTORISÉE AUX DEUX CONDITIONS SUIVANTES :

- (1) L'APPAREIL NE DOIT PAS PRODUIRE DE BROUILLAGE;
- (2) L'APPAREIL DOIT ACCEPTER TOUT BROUILLAGE RADIOÉLECTRIQUE SUBI, MÊME SI LE BROUILLAGE EST SUSCEPTIBLE D'EN COMPROMETTRE LE FONCTIONNEMENT.

IMPORTANT NOTE:

IC RADIATION EXPOSURE STATEMENT:

THIS EQUIPMENT COMPLIES WITH IC RSS-102 RADIATION EXPOSURE LIMITS SET FORTH FOR AN UNCONTROLLED ENVIRONMENT. THIS EQUIPMENT SHOULD



BE INSTALLED AND OPERATED WITH MINIMUM DISTANCE 20CM BETWEEN THE RADIATOR & YOUR BODY.

CET ÉQUIPEMENT EST CONFORME AUX LIMITES D'EXPOSITION AUX RAYONNEMENTS IC ÉTABLIES POUR UN ENVIRONNEMENT NON CONTRÔLÉ. CET ÉQUIPEMENT

DOIT ÊTRE INSTALLÉ ET UTILISÉ AVEC UN MINIMUM DE 20 CM DE DISTANCE ENTRE LA SOURCE DE RAYONNEMENT ET VOTRE CORPS.

This module is intended for OEM integrator only and limited to host with brand: Cub and model: B122-009NA1-A2, B122-009NA1-A3, B122-010NA1-A2, B122-010NA1-A3, B122-073NA1-A0, B122-072NA1-A0, B122-075NA1-A0, B122-074NA1-A0. The OEM integrator is still responsible for the IC compliance requirement of the end product, which integrates this module.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.


USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the IC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. Operation is subject to the following two conditions: (1) this device may not cause harmful interference (2) this device must accept any interference received, including interference that may cause undesired operation.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains IC: 9959A-VEC20BA20DA ". The Host Model Number (HMN) must be indicated at any location on the exterior of the end product or product packaging or product literature which shall be available with the end product or online

Taiwan requirements

1. 取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。
2. 本模組於取得認證後將依規定於模組本體標示審驗合格標籤，並要求平台廠商於平台上標示「本產品內含射頻模組  CC XX xx LP yyy Z z」。
3. 本公司於說明書中提供所有必要資訊以指導使用者/安裝者正確的安裝及操作。