



DRO BEA-T4 USER GUIDE

1. Document History

Date	Comment	Ver./Rev.	Author	Approval
2021/03/09		01.01	ATO	JPL
2021/05/11	Canadian Regulatory information	01.02	JPL	JPL
2021/06/21	FCC & IC instruction	01.03	ATO	JPL

Description

The BEA T4 is a 24GHz K-band Doppler transceiver with active antenna. Based on an advanced oscillator with low power consumption. This dual channel transceiver enables the detection of moving object with direction information. Thanks to its unique transmit and receive antenna, it offers a symmetrical radiation pattern. With its active switch it allows to electrically change the radiation pattern from wide to narrow field.

General

Frequency band	K
Sensor type	Doppler
Radar type	Continuous wave
Modulation	Unmodulated
Antenna type	Active
Detection mode	Motion
Weight	15gr

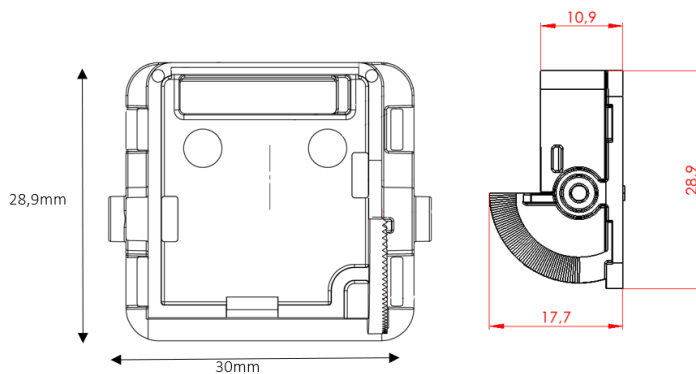
Technical characteristics

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Operating conditions						
Supply voltage		V _{cc}		5		V
Supply current		I _{cc}	25	35	40	mA
Operating temperature		T _{op}	-30		70	°C
Transmitter						
Transmit frequency	25°C	F	24.125	24.150	24.175	GHz
Tx output power	EIRP	P _{out}			< 20	dBm
Frequency drift in temperature	-30°C to 70°C	ΔF		1		MHz/°C
IF output						
I/Q phase				90		°
IF output resistance				5		kΩ
Antenna						
Antenna switch logic	Horizontal Wide		3.3	5		V
	Horizontal Narrow			0		V

Interface

PIN #	DESCRIPTION	IN / OUT	COMMENT
1	VCC	Input	Supply voltage
2	IF1	Output	Doppler signal
3	GND	Input	Ground
4	IF2	Output	Doppler signal
5	SWITCH	Input	Antenna sw command

Mechanical outlines



Housing material : Zamak coated with Lami

Regulatory Compliance

This device has been tested and approved to be compliant with Part 15 of the FCC Rules and with RSS-210 of Industry Canada.

Operation is subject to the following conditions:

- (1) This device may not cause harmful interferences, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Canadian Regulatory Information

L'émetteur/récepteur 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.

FCC & IC Instructions

List of applicable FCC rules

The module has been tested following FCC 47 CFR part 15.245 and RSS-210.

Summarize the specific operational use conditions

The module is considered as a field disturbance sensor. It will be used as doppler sensors to detect low speed moving targets (such as pedestrian, vehicules,...) in industrial environment.

The module must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Power supply of the module must be conform to the electrical specifications as described in § "Technical characteristics" of the current user manual.

Limited module procedures

Not applicable

Trace antenna designs

Not applicable

RF exposure considerations

Applicable conditions:

The module is made to be used in fixed applications.

The following information is required to be incorporated in the user manual of the final system:

- This device has been tested and approved to comply with FCC 47 CFR part 15.245 and RSS-210
- The antenna of the module may not be removed, replaced nor modified. The antenna must not be co-located or operating in conjunction with any other antenna or transmitter. No additional antenna must be used.
- This device may not cause harmful interferences, and this device must accept any interference received, including interference that may cause undesired operation.

Antennas

The module has build-in antennas. Modification on the antenna can not be operated and no additional antennas can be used.

Label and compliance information

A label with the words 'Contains FCC ID:G9B-100606' and 'Contains IC:4680A-100606' shall be applied and visible from the outside of the end product.

Information on test modes and additional testing requirements

Not applicable

Additional testing, Part 15 Subpart B disclaimer

Changes or modifications made to the equipment not expressly approved by BEA Inc. may void the FCC & IC authorization to operate this equipment.



OEM integrator is responsible for ensuring that after the module is installed and operational into the host, it continues to be compliant with the listed FCC rules