

# USER GUIDE

ANTENNA MODULE REV1-3B

Elan. Cité





## FCC APPROVAL

FCC 2-parts warning statement under 15.19

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.

Modification statement 15.21

The user manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



## IC APPROVAL

**(EN)** Warning: This device complies with Industry Canada's licence-exempt RSSs. 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.

**(FR)** Attention: 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 ne doit 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.

# WARNING

## RF Emission

**(EN)** Warning: This module contains radio-frequency transceivers and antennas which emits and receive in the 24GHz frequency band. This module can interfere with and its functionality can be impacted by other nearby equipment operating in the same frequency band.

**(FR)** Attention: Ce module contient des émetteurs-récepteurs et antennes qui émettent et reçoivent dans la plage fréquentielle de 24GHz. Ce module peut interférer et ses fonctionnalités peuvent être altérées par de l'équipement avoisinant opérant dans la même plage fréquentielle.

## RF Exposure

**(EN)** Warning: Exposure to Radio Frequency Energy: The radiated power output of the radar module is below the RF exposure limits for uncontrolled exposure. This device should be operated with a minimum distance of at least 20 cm between the antenna and a person's body.

**(FR)** Attention: Évaluation d'exposition aux RF: L'intensité de champ RF émis par la carte radar est inférieure aux limites d'intensité de champ RF prévues pour l'environnement non contrôlé. Les dispositifs à un élément rayonnant fonctionnant normalement à des distances de séparation entre l'utilisateur et le dispositif supérieures à 20 cm.

## Other warnings

Manufacturers of mobile or fixed devices incorporating **ANTENNA MODULE REV1-3B** modules are authorized to use the FCC Grants and IC Certificates of the **ANTENNA MODULE REV1-3B** modules for their own final products according to the conditions referenced in these documents. In this case, the FCC label of the module shall be visible from the outside, or the host device shall bear a second label stating, "Contains FCC ID: **2AF46DSPREV1-3B**".

Label also mentions "Contains IC ID: 20796-DSPREV13B"

**(EN)** Warning: Changes or modifications made to this equipment not expressly approved by ELANCITE TECHNOLOGIES may void the FCC authorization to operate this equipment,

**(FR)** ATTENTION : Toute modification sur ce produit, n'étant pas expressément validée par ELANCITE TECHNOLOGIES peut annuler l'autorisation FCC d'utiliser cet équipement.

## 1. Description

The « ANTENNA MODULE REV1-3B » is dedicated to speed measurement of various moving objects. Its high-quality antenna permits to measure speeds with a range of 250 meters and an average angle of 30° (Azimut and Elevation @-3dB)

Especially studied for cars speed measurement, the firmware offers reliable and easy to use communication protocol. High quality French manufacturing.

The antenna module consists in an antenna for measurements and a high-speed DSP processor for fast calculation. On board power regulation.

For an ease of use : unique connector for power and data.

As the product uses IPS-937 antenna from manufacturer INNOSENT, it is labelled as follow :

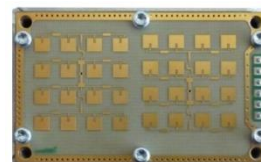
**Contains:**

**FCC ID: UXS-IPS937**

**IC: 6902A-IPS937**

## 2. Antenna informations

The product uses INNOSSENT IPS-937 ANTENNA, specs as follows :  
 FCC ID: UXS-IPS937  
 IC: 6902A-IPS937



PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
<b>Transmitter</b>						
transmit frequencies	delivery conditions	$f_{IPS937}$	24.050	24.125	24.250	GHz
	US-frequency band	$f_{IPS937\_F}$	24.075	24.125	24.175	GHz
	UK-frequency band	$f_{IPS937\_UK}$	24.150	24.200	24.250	GHz
output power (EIRP)	@ 25 °C	$P_{out}$		19	20	dBm
power drift over temp.		$\Delta P_{temp}$		-0.01		dB/°C
<b>Receiver</b>						
I/Q  balance		amplitude	-1.5	0	1.5	dB
		phase	70	90	110	°
IF-output		voltage offset		1.65		V
IF-amplifier	gain			40		dB
	bandwidth			30-10k		Hz
<b>Power supply</b>						
supply voltage		$V_{cc}$	4.75	5.0	5.25	V
supply current		$I_{cc}$		55	65	mA
<b>Environment</b>						
operating temperature		$T_{op}$	-40		+85	°C
storage temperature		$T_{storage}$	-40		+85	°C
<b>Mechanical Outlines</b>						
outline dimensions		height length width		9.0 61.6 37.0		mm

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
full beam width @ -3 dB	azimuth	horizontal		33		°
	elevation	vertical		33		°
full beam width @ -10 dB	azimuth	horizontal		59		°
	elevation	vertical		61		°
side-lobe suppression	azimuth	horizontal	20	25		dB
	elevation	vertical	20	25		dB
antenna gain		gain		15		dBi

### 3. Powerspecifications

Power source : DC

Power voltage : 9 – 15 (V)

Max power consumption : 2,7 (W)

See part4 for cable connection specs.

### 4. Cable specifications

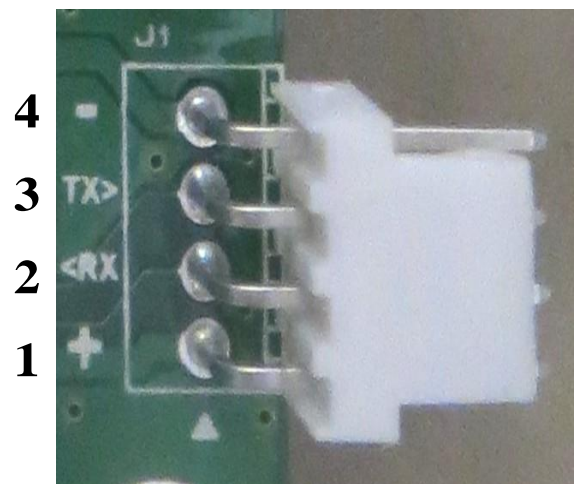
ANTENNA MODULE REV1-3B uses only one connector for data and power.

Ground	4
TX signal	3
Rx signal	2
Power	1

*Onboard connector*

Cable connector references ;

BOITIER CST 100 4 PTS	RS: 2930048
CONTACT ETAME CST 100	RS: 2930098



5. Mechanical specifications

