



Tin Can
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hello@tincan.kids

Contact point: hello@tincan.kids

Product Marketing Name: Tin Can Model 1
HVIN: TCM1
FCC ID: 2BR2I-TCM1
IC: 34701-TCM1

This module is not for sale to third parties. This module is for the exclusive use for and by Tin Can. Requests for any modifications to this module, to approve additional hosts into which this module is integrated or update antennas used with this module shall be submitted to the contact point listed above.

Specs:
Espressif ESP32-S3
WiFi 802.11 b/g/n20/n40
BLE 5.4 (1 and 2 Mbps)

Approval Rules
FCC 47 CFR 15.247
ISED RSS-247



For solder masking, technical specifications and programming guidelines, see Espressif ESP32-S3 module manual.

Integration guidelines:

The equipment certifications are valid only for the integral antenna on the module. Modifications of this antenna, or attachment of a new external antenna are subject to additional approvals.

The integrator is responsible for performing complete testing to ensure compliance with unintentional emissions requirements and for conducting verification testing to confirm that the intentional emissions of this modular transmitter, when installed in the final product (host), do not exceed applicable limits. This requirement applies to both United States (FCC) and Canadian (ISED) equipment authorization schemes. If the host product is authorized under only one of these schemes, then only the corresponding requirements apply. For the purposes of this manual, references to FCC KDB 996369 are applicable to both FCC and ISED equipment authorization requirements.

RF Exposure considerations

<i>Mobile RF Exposure Category: Approach distances >20cm</i>	<i>Portable RF Exposure Category Approach distances <20cm</i>
The certifications remain valid for any mobile RF exposure configuration when used with approved antennas, including integrations of the module into host products with typical approach distances >20cm.	The certifications are also valid for the host-specific configuration as listed below. This module is not approved for collocation with simultaneous transmission with any other transmitter in portable configurations. All other configurations (e.g. hand held or body worn) require separate approval.
	Approved portable configuration(s): 

Testing Requirements

This modular transmitter is only authorized for the specific rule parts (i.e., FCC and ISSED transmitter rules) listed above. The host product manufacturer (integrator) is responsible for compliance to any other rules that apply to the host not covered by the modular transmitter grant of certification. The integrator is responsible for testing the final host product to applicable requirements for the combined product including host and module. For example, US 47 CFR Part 15 Subpart B and/or CA ICES-003 (or ICES-001) compliance testing is required with the modular transmitter installed.

The integrator is responsible for verifying emissions of this modular transmitter in the host do not exceed applicable requirements. For additional requirements, see FCC KDB 996369 D04 Module Integration Guide.

For confirmation testing, use the ESP32S3 RF Testing Tool available from Espressif and the esp-prog serial port connector (Baud 115200. Set chip type to ESP32S3. The appropriate bin file for setting RF test modes is available from contact point listed above.

Integrator is recommended to use FCC KDB 996369 D04 Module Integration Guide 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. For standalone mode, reference the guidance in D04 Module Integration Guide and for simultaneous mode; see D02 Module Q&A Question 12, which permits the host manufacturer to confirm compliance.

Link to modular transmitter requirements:

<https://apps.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?switch=P&id=44637>

Declarations

Changes or modifications not expressly approved by Tin Can 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.

This device contains licence-exempt transmitter(s)/receiver(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 undesired operation of the device.

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

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.

Host Product Labelling Requirements

Completed host products must include an ID label which displays the certification numbers of the module. If using electronic labelling requirements, the electronic labelling scheme shall display the content within 3 steps of the associated application's main menu, and shall be accessible without passwords or other access credentials. When using electronic labelling, a temporary label is required to be attached to the host product, or the product's packaging.

When not using electronic labelling, the host product shall include a physical label with the following text:

Contains FCC ID: 2BR2I-TCM1

Contains IC: 34701-TCM1

The prefix contains may be replaced by any text conveying similar meaning, such as 'This device contains'. If the host product is separately subject to certification, the host product's certification number shall not utilize the "Contains" prefix text (only this module's certification number need include the prefix).

The host product label shall also include the following 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.

If the product is too small or of a design which precludes the addition of this statement, then it may be included in the host product's users manual.

At the discretion of the integrator, the following statement may be placed either on the host product label, or in the users manual. In any case, the statement shall be provided in both English and French:

This device contains licence-exempt transmitter(s)/receiver(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 undesired operation of the device.*

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*

Host product's Users Manual Requirements

In addition to general operating instructions and SDoC contact information required by 47 CFR 2.1077 (e.g. Name, Address and contact information), the host product's users manual shall include the following required legal statements:

FCC Required Statements:

When to include:	Statement to include:
Always	Responsible party company name (e.g. Tin Can), address and email. Web address should also be included.
Always	<i>Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.</i>
Always	<i>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.</i>
15.109 Class B hosts only.	<i>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:</i> <i>—Reorient or relocate the receiving antenna.</i> <i>—Increase the separation between the equipment and receiver.</i> <i>—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.</i> <i>—Consult the dealer or an experienced radio/TV technician for help.</i>
15.109 Class A hosts only	<i>Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.</i>

Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors, are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, *i.e.*, shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge, at the time of purchase.

For additional information on host requirements see 47 CFR 15.27

The host product's users manual shall include the following required legal statements:

Note in accordance with ICES-GEN Clause 6.3.4, the Canadian SDoC statement is not required, however may be placed on the ID label or in the manual if so desired.

ISED Required Statements:

When to include:	Statement to include:
When not provided on host product label	<i>This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:</i> <i>1. This device may not cause interference.</i> <i>2. This device must accept any interference, including interference that may cause undesired operation of the device.</i> <i>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 :</i> <i>1. L'appareil ne doit pas produire de brouillage;</i> <i>2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement</i>
Optional - SDoC Statement is voluntary	NOTE: Host integrator is to replace the * below with appropriate class designation for host equipment (e.g. "A" for Class A or "B" for Class B): <i>CAN ICES(*)/NMB(*)</i>