

Bevi SBC, Gen 2

User Manual & Antenna Specification for
FCC / IC



Overview

The Bevi Single Board Computer (SBC), Gen 2 is the 2nd generation main control board for use in Bevi's all-in-one beverage machines. The SBC features a SC680A-NA system-on-module (SOM) from Quectel Wireless Solutions Company Limited. The SC680A features the Qualcomm QCM4290 64-bit Arm octa-core processor, ethernet connectivity over USB, built-in WiFi 802.11 a/b/g/n/ac/ax-ready (only b/g/n/ac are enabled), and built-in LTE Cat 6 cellular connectivity. WiFi supports both 2.4 and 5 GHz WiFi. Standard data rates for WiFi 802.11 b/g/n/ac are used. The SOM also hosts a Qualcomm® KryoTM GPU 610 graphics processing unit graphics processor to drive an LCD touchscreen. The SBC is powered by an external 12V DC power supply.

FCC / ISED IDs

	FCC	ISED
Bevi SBC Gen 2	2AMTV-4000029	22810-4000029

1.0 Summary of specific operational use conditions

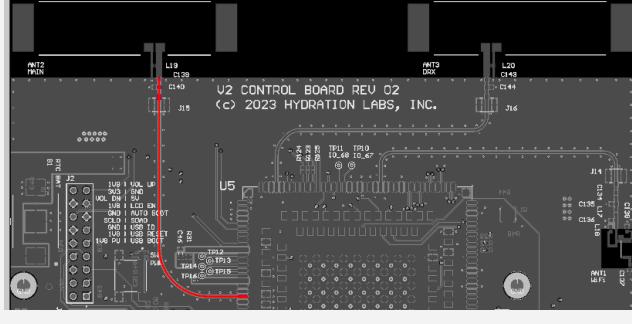
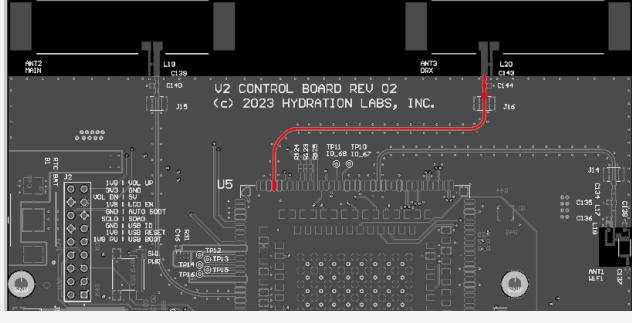
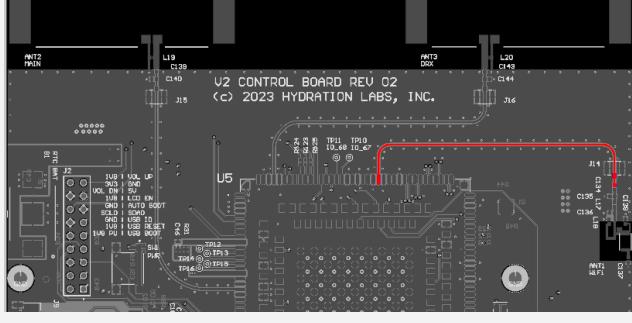
The Bevi Single Board Computer (SBC), Gen 2 is currently only intended for use within Bevi machines designed by Hydration Labs, Inc. Usage is restricted to indoors only. Simultaneous transmission of the WiFi radio and LTE radio are NOT permitted.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2.0 Trace Antenna Designs

For WiFi, the SBC features an on-chip WLA.10 WiFi antenna from Taoglas. For cellular LTE, the SBC features two on-chip antennas from Taoglas: the PCS.06.A and PCS.06.M. The SBC uses specific antenna traces with details provided in the table below.

Antenna Trace	Notes	Image
Cellular LTE 1 (Main)	<ul style="list-style-type: none"> Length: 38.55 mm Width: 0.41 mm Thickness: 0.017 mm Dielectric Constant: 4 Impedance: 50 ohm Isolation: Ground stitching vias 3 mm apart Components: Taoglas PCS.06.A 	
Cellular LTE 2 (Diversity)	<ul style="list-style-type: none"> Length: 47.02 mm Width: 0.41 mm Thickness: 0.017 mm Dielectric Constant: 4 Impedance: 50 ohm Isolation: Ground stitching vias 2.5 mm apart Components: Taoglas PCS.06.M 	
WiFi	<ul style="list-style-type: none"> Length: 50.41 mm Width: 0.41 mm Thickness: 0.017 mm Dielectric Constant: 4 Impedance: 50 ohm Isolation: Ground stitching vias 2.5 mm apart Components: Taoglas WLA.10 	

Any deviation(s) from the defined parameters of the antenna trace, as described by the instructions, require that the host product manufacturer must notify Hydration Labs, Inc. that they wish to change the antenna trace design.

3.0 RF exposure considerations

The Bevi Single Board Computer (SBC), Gen 2 is currently only intended for use within Bevi machines designed by Hydration Labs, Inc.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, this equipment should be installed and operated with a minimum distance of 20 cm between the radiator and all persons / human body.

This equipment complies with ISED radiation exposure limits set forth in an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and all persons / human body.

Cet équipement est conforme aux limites d'exposition aux rayonnements d'ISDE établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé en maintenant une distance minimale de 20 cm entre le radiateur et toute personne ou corps humain.

4.0 Antennas

The following on-chip antenna types from Taoglas are required for use with the Bevi Single Board Computer (SBC) Gen 2:

Antenna Type (links to datasheets)	<i>WiFi</i> : Taoglas WLA.10 <i>LTE</i> : 1x Taoglas PCS.06.M 1x Taoglas PCS.06.A
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5.0 Label and compliance information

A host product shall use a physical label stating “Contains Transmitter Module FCC ID: 2AMTV-4000029” or “Contains FCC ID: 2AMTV-4000029” or shall use e-labeling.

The following FCC statement is included here in the user manual as it would be too small to be included on the device:

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.*

The following ISED statement is included here in the user manual as it would be too small to be included on the device:

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.*

6.0 Information on test modes and additional testing requirements

The Bevi Single Board Computer (SBC), Gen 2 is currently only intended for use within Bevi machines designed by Hydration Labs, Inc. As such, no additional test modes are provided.

7.0 Additional testing, Part 15 Subpart B disclaimer

The host product manufacturer is responsible for compliance to any FCC rules that apply to the host not covered by the modular transmitter grant of certification.

8.0 EMI Considerations

The Bevi Single Board Computer (SBC), Gen 2 is currently only intended for use within Bevi machines designed by Hydration Labs, Inc. As such, no additional EMI considerations are provided.

9.0 How to make changes

The Bevi Single Board Computer (SBC), Gen 2 is currently only intended for use within Bevi machines designed by Hydration Labs, Inc. For any inquiries for permissive changes, please reach out to support@bevi.co.