

A decorative horizontal bar consisting of an orange segment followed by a black segment.

Ollee Watch

Compliance Testing Instructions

Version 2

Product Information

Company name: Ollee Watch Inc. (in Canada)

Product name: Ollee Watch One

PCB reference: OW-1

Contact: Gregor Simeonov (contact@olleewatch.com)

Website: www.olleewatch.com

Product description: Ollee Watch is an aftermarket replacement circuit board (PCB module) for digital watches. It replaces the old circuit board of a watch and introduces smartwatch capabilities including Bluetooth Low Energy connectivity. The module operated by a 3V coin cell battery (CR2016). It is compatible with several brands of watches.

FCC ID:2BUXV-OW-1

IC:35248-OW1

HVIN:OW-005

Device under test (DUT)



Front



Back

FCC 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.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following:
"Contains Transmitter Module FCC ID: 2BUXV-OW-1 Or Contains FCC ID: 2BUXV-OW-1"

When the module is installed inside another device, the user manual of the host must contain below warning statements;

1. 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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

Any company of the host device which install this modular with Limited Single Modular Approval should perform the test of radiated emission and spurious emission according to FCC part 15 C : 15.247 and 15.209 requirement, Only if the test result comply with FCC part 15 C : 15.247 and 15.209 requirement, then the host can be sold legally.

OEM INTEGRATION INSTRUCTIONS:

This device is intended only for OEM integrators under the following conditions:

The module shall only be installed in host equipment with the original certified internal on-board antenna matched to this module; external antennas are not supported. This transmitter module shall not be co-located or operated in conjunction with any other transmitters or antennas unless multi-transmitter coexistence testing has been completed. When used in accordance with the antenna specification certified for this module, no additional transmitter testing is required for the host product.

However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.). The end-product may need Verification testing, Declaration of Conformity testing, a Permissive Class II Change or new Certification. Please involve a FCC certification specialist in order to determine what will be exactly applicable for the end-product.

Validity of using the module certification:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC/IC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID/IC of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization. In such cases, please involve a FCC/IC certification specialist in order to determine if a Permissive Class II Change or new Certification is required.

Upgrade Firmware:

The software provided for firmware upgrade will not be capable to affect any RF parameters as certified for the FCC/IC for this module, in order to prevent compliance issues.

End product labeling:

This transmitter module is authorized only for use in device where the antenna may be installed such that 5mm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: 2BUXV-OW-1".

Information that must be placed in the end user manual:

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

2.2 List of applicable FCC rules

List the FCC rules that are applicable to the modular transmitter. These are the rules that specifically establish the bands of operation, the power, spurious emissions, and operating fundamental frequencies. DO NOT list compliance to unintentional-radiator rules (Part 15 Subpart B/ICES-003) since that is not a condition of a module grant that is extended to a host manufacturer. See also Section 2.10 below

concerning the need to notify host manufacturers that further testing is required.

Explanation: This module meets the requirements of FCC part 15C(15.247).

2.3 Summarize the specific operational use conditions

Describe use conditions that are applicable to the modular transmitter, including for example any limits on antennas, etc. For example, if point-to-point antennas are used that require reduction in power or compensation for cable loss, then this information must be in the instructions. If the use condition limitations extend to professional users, then instructions must state that this information also extends to the host manufacturer's instruction manual. In addition, certain information may also be needed, such as peak gain per frequency band and minimum gain, specifically for master devices in 5 GHz DFS bands.

Explanation: EUT is equipped with an antenna

OEM Integration Instructions for Limited Module

- 1.This module is a Limited Module without shielding.
- 2.Integration must follow the test plan provided by the module grantee.
- 3.Each new host model requires a Class II permissive change (C2PC) to the original grant.
- 4.The host must maintain a minimum 5mm distance between the antenna and user.
- 5.Only the original certified chip antenna (permanently soldered) is allowed; no external antennas.
- 6.Final host must be labeled with: Contains FCC ID:2BUXV-OW-1 / Contains IC:35248-OW1.

Limited Module Host Test Plan (C2PC)

- 1.Confirm fundamental compliance for 2402 – 2480 MHz (DTS, BLE).
- 2.Verify band edge compliance.
- 3.Perform OOB radiated testing.
- 4.Confirm no parasitic emissions/oscillations in host.
- 5.Comply with CISPR/C63.10, C63.26.
- 6.Full testing required if test reduction is not defined.

2.4 RF exposure considerations

It is essential for module grantees to clearly and explicitly state the RF exposure conditions that permit a host product manufacturer to use the module. Two types of instructions are required for RF exposure information: (1) to the host product manufacturer, to define the application conditions (mobile, portable – xx cm from a person's body); and (2) additional text needed for the host product manufacturer to provide to end users in their end-product manuals. If RF exposure statements and use conditions are not provided, then the host product manufacturer is required to take responsibility of the module through a change in FCC ID/IC (new application).

Explanation: This module complies with FCC RF radiation exposure limits set forth for an uncontrolled environment, This equipment should be installed and operated with a minimum distance of 5 millimeters between the radiator and your body." This module is designed to comply with the FCC statement, "Contains Transmitter Module FCC ID: 2BUXV-OW-1 Or Contains FCC ID: 2BUXV-OW-1".

2.5 Antennas

A list of antennas included in the application for certification must be provided in the instructions. For modular transmitters approved as limited modules, all applicable professional installer instructions must be included as part of the information to the host product manufacturer. The antenna list shall also identify the antenna types (monopole, PIFA, dipole, etc. (note that for example an "omni-directional antenna" is not considered to be a specific "antenna type").

The module is equipped with a certified Antenova SMD chip antenna, model SR4W035.

Frequency: 2.4–2.5 GHz, Peak gain::3.50dBi

Only this permanently soldered on-board antenna is permitted; external antennas are prohibited per FCC requirements.

2.6 Label and compliance information

Grantees are responsible for the continued compliance of their modules to the FCC/IC rules. This includes advising host product manufacturers that they need to provide a physical or e-label stating "Contains FCC ID" with their finished product. See Guidelines for Labeling and User Information for RF Devices – KDB Publication 784748.

Explanation: The host system using this module, should have label in a visible area indicated the following texts: "Contains Transmitter Module FCC ID: 2BUXV-OW-1 Or Contains FCC ID: 2BUXV-OW-1".

2.7 Information on test modes and additional testing requirements⁵

Additional guidance for testing host products is given in KDB Publication 996369 D04 Module Integration Guide. Test modes should take into consideration different operational conditions for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.

The grantee should provide information on how to configure test modes for host product evaluation for different operational conditions for a stand-alone modular transmitter in a host, versus with multiple, simultaneously transmitting modules or other transmitters in a host.

Grantees can increase the utility of their modular transmitters by providing special means, modes, or instructions that simulates or characterizes a connection by enabling a transmitter. This can greatly simplify a host manufacturer's determination that a module as installed in a host complies with FCC/IC requirements.

Explanation: Top band can increase the utility of our modular transmitters by providing instructions that simulates or characterizes a connection by enabling a transmitter.

2.8 Additional testing, Part 15 Subpart B/ICES-003 disclaimer

The grantee should include a statement that the modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC/IC transmitter rules) listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC/IC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B/ICES-003 compliant (when it also contains unintentional-radiator digital circuitry), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B/ICES-003 compliance testing with the modular transmitter installed.

Explanation: The module without unintentional-radiator digital circuitry, so the module does not require an evaluation by FCC Part 15 Subpart B. The host should be evaluated by the FCC Subpart B.

2.9 OEM Integration Guide

This module is classified as Limited Modular Approval (LMA) because it does not meet the shielding requirement for modular approval. The RF circuitry of the module is not shielded, which is the only reason for failing to meet the standard modular approval requirements.

The applicant/manufacture maintains control over the end products into which this module is installed to ensure full compliance at all times as follows:

The module is only allowed to be used with the specific host design verified and approved by the module manufacturer.

Each new host model requires a Class II Permissive Change (C2PC) to the original grant before marketing.

The module manufacturer provides a clear integration instruction and host test plan, and will review host design, test data and integration status to confirm compliance.

Only the certified built-in chip antenna (permanently soldered) is permitted; no external antenna or antenna change is allowed.

The module is limited to portable use, and the host must be designed to ensure the antenna is within 5mm from the user's body.

The final host product must be labeled with the required FCC ID and IC ID statements, and the user manual must include all regulatory compliance information.



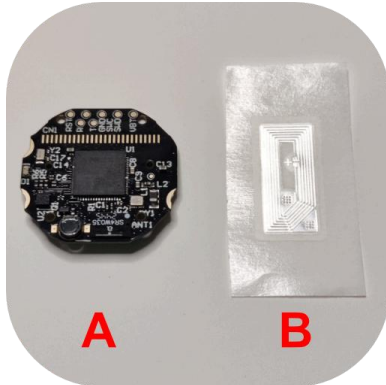
Installation Guide

Version OW1-KIT

Thank you for purchasing the Ollee Watch circuit board kit for the Casio **F91W** and **A158** watches! Installation takes about ten minutes to complete.

Package contents:

- [A] Ollee Watch circuit board (PCB)
- [B] NFC tag sticker



What you will need:

- Casio watch for which you will swap the circuit board with the Ollee Watch PCB
- [A] Small Phillips screwdriver (#00)
- [B] Small flat-head screwdriver (1.4 mm)
- [C] Tweezers



STEP 1 - Remove the bottom cover

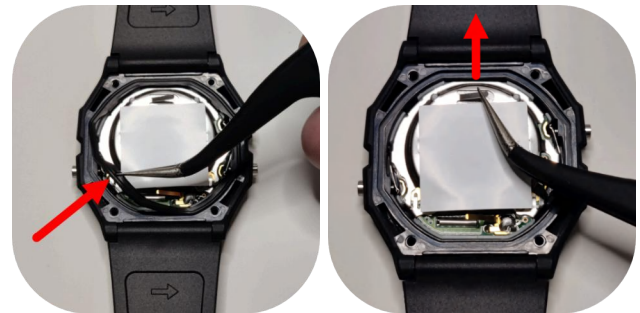
Using the Phillips screwdriver unscrew the bottom cover of the watch and set the screws and cover aside.



STEP 2 - Remove the watch movement

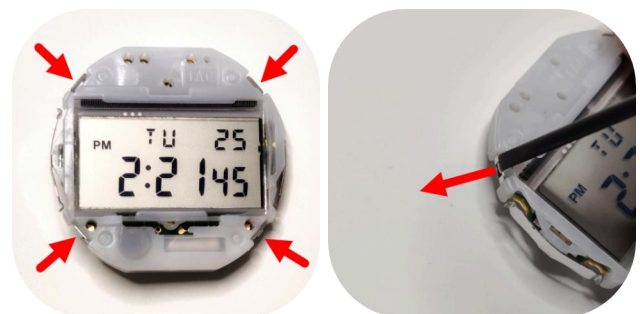
Using the tweezers remove the gasket from the watch. Set the gasket aside as you will need it later.

Using the tweezers pull out the watch movement.



STEP 3 - Disassemble the watch movement

Using the flat-head screwdriver, carefully but firmly unclip the four retention clips of the metal bracket on the watch movement. Start with one side and work your way around.



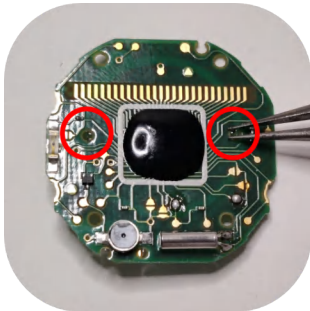
Remove the battery and the original circuit board from the watch movement. Set the battery aside as you will need it later.



Using the tweezers remove the battery spring contact from the original circuit board.



Peel and stick the NFC tag on the **non-glossy** side of the light diffuser. Now re-assemble the display assembly following the steps in reverse. Remember to re-insert the conductive rubber strip!



STEP 4 [OPTIONAL] - Install the NFC tag

If you don't wish to install the NFC tag, you can skip to STEP 5. Using the tweezers remove the conductive rubber strip from the display assembly. Be careful not to lose it!



STEP 5 - Install the Ollee Watch PCB

Install the battery spring contact onto the Ollee Watch PCB. You can just snap it in with your fingers.

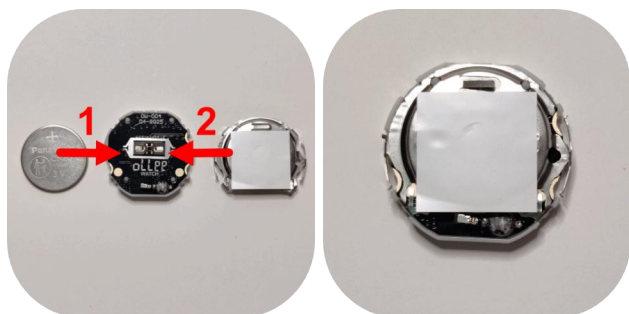


Place the Ollee Watch PCB into the display assembly.

Using your finger nail, gently shift the display retention feature on the top of the display assembly [1]. From the bottom use another finger to gently tilt the display and light diffuser to easily remove them [2].



Place the battery onto the spring contact with the **negative (-)** terminal touching the PCB [1], then place the metal bracket to hold the battery [2], board and display assembly together. Using your finger clip the four retention clips back into place.



STEP 6 - Assemble the movement and watch

Before you re-assemble the movement and watch, give the display a light wipe with a cotton cloth to remove any fingerprints and dust.

Using the flat-head screwdriver, gently push the buttons on the watch outwards in case they have moved. This will make inserting the movement easier.



Insert the movement into the watch housing, then re-apply the gasket.



STEP 7 - Bottom cover and test

Finally, screw on the bottom cover. Take a look at the picture to make sure you get the orientation right!



Press all three buttons at once to bring up the display test screen to check the display. Hold the **MODE** button to exit. You're all done and ready to go!



IC Warning

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.

Cet appareil contient des émetteurs/récepteurs exemptés de licence qui sont conformes aux RSS exemptés de licence d'innovation, sciences et développement économique Canada. Le fonctionnement est soumis aux deux conditions suivantes:

- (1) ce dispositif ne peut pas causer d'interférence.
- (2) ce dispositif doit accepter toute interférence, y compris l'interférence qui peut causer un fonctionnement indésirable du dispositif.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

L'appareil a été évalué pour répondre aux exigences générales en matière d'exposition aux RF. L'appareil peut être utilisé en condition d'exposition portable sans restriction.

For a host manufacture's using a certified modular, if (1) the module's IC number is not visible when installed in the host, or (2) if the host is marketed so that end users do not have straightforward commonly used methods for access to remove the module so that the IC number of the module is visible; then an additional permanent label referring to the enclosed module: "Contains Transmitter Module IC: " 35248-OW1 " or "Contains IC: 35248-OW1" must be used.

Pour un fabricant hôte utilisant un modulaire certifié, si (1) le numéro d'ic du module n'est pas visible lorsqu'il est installé dans l'hôte, ou (2) si l'hôte est commercialisé de sorte que les utilisateurs finaux ne disposent pas de méthodes d'accès simples et couramment utilisées pour supprimer le module de sorte que le numéro d'ic du module soit visible; Ensuite, une étiquette permanente supplémentaire se référant au module inclus: "contient le module émetteur IC:" 35248-OW1" ou "contient IC: 35248-OW1" doit être utilisée.

2.9 OEM Integration Guide

This module is classified as Limited Modular Approval (LMA) because it does not meet the shielding requirement for modular approval. The RF circuitry of the module is not shielded, which is the only reason for failing to meet the standard modular approval requirements. The applicant/manufacture maintains control over the end products into which this module is installed to ensure full compliance at all times as follows:

The module is only allowed to be used with the specific host design verified and approved by the module manufacturer.

Each new host model requires a Class II Permissive Change (C2PC) to the original grant before marketing.

The module manufacturer provides a clear integration instruction and host test plan, and will review host design, test data and integration status to confirm compliance.

Only the certified built-in chip antenna (permanently soldered) is permitted; no external antenna or antenna change is allowed.

The module is limited to portable use, and the host must be designed to ensure the antenna is within 5mm from the user ' s body.

The final host product must be labeled with the required FCC ID and IC ID statements, and the user manual must include all regulatory compliance information.

The logo is centered within a light beige rounded rectangle. It features the word "dleep" in a dark blue, digital-style font where the letters are composed of rectangular segments. Below it, the word "WATCH" is written in a bold, orange, sans-serif font.

dleep
WATCH

End.