



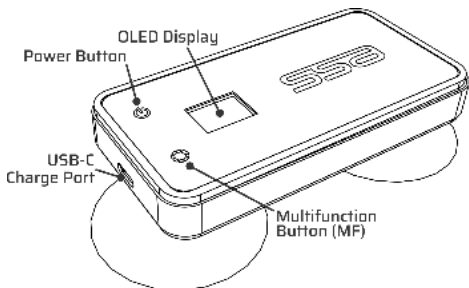
# APM-X

Wireless SPL Meter

User Manual

Powered by





#### 1. How to connect to your sensor for the first time:

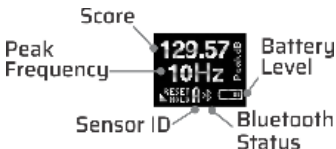
- Get the **SSA Studio** app from the App Store or Play Store
- Turn on your SSA APM-X sensor
- Make sure Bluetooth is turned on, on both the sensor and your smartphone
- Grant all necessary permissions to the app
- Click the connect button in the app Devices view
- **Sensor will display a 6 character PIN code for 30 seconds**
- **Enter PIN code in your phone's pairing dialog**
- App should connect and display data

## 2. Alternative pairing method:

- In case pairing with the sensor does not work from the app, especially on Android devices, please pair de sensor manually
- Navigate to Settings > Bluetooth on your Android device
- If your APM-X has previously paired unsuccessfully, please manually Un-Pair/Forget it from the Bluetooth Devices list
- Tap on Scan for devices or Pair a device
- Tap on your APM-X device
- Enter pairing code displayed on the APM-X screen
- Sensor should be paired successfully
- Open SSA Studio and connect to your sensor

### 3. Display

- Screen layout



- Display modes

- Peak Hold View: Hold the **MF** button to reset
- Realtime view
- Sensor information screen
  - Battery state and charge information
  - Sensor temperature
  - Sensorname
- Use the **MF** button to navigate through screens

- Screensaver

Starts after 15s of inactivity in order to protect the OLED screen from burn-in

Press **MF** button to cancel at any time

New peak score or Bluetooth activity cancels the screensaver

### 4. Settings Menu

To enter the menu, go to the info screen and hold the **MF** button.

Press the **MF** button to scroll through menu items. Hold to select menu item.

**Toggle BT**: for standalone low-power use, sensor will reboot after toggle

**About**: display sensor firmware version

## 5. Factory Reset

To perform a factory reset on your sensor:

1. Turn the sensor OFF
2. Press and hold the **MF** button
3. Press the Power button once - screen should remain blank
4. Keep holding the **MF** button down for another 8-10 seconds
5. Release the **MF** button
6. Sensor should start up with default factory firmware

**NOTE:** After performing a factory reset make sure to unpair your device from your phone's Bluetooth settings.

## 6. Battery recalibration

- In order to reset the battery monitoring system, please do the following:
- Charge the sensor overnight, or for at least 4 hours
- Disconnect the charger
- Turn the sensor on, while the APM-X splash screen is being displayed, press the **MF** button 3 times in rapid succession
- Battery state should be restored to ~95%-99%
- It is recommended to allow for another 15 minutes of charging after a recalibration, until the battery reads 100%, also, you should allow for the sensor to discharge to around 10% after performing a recalibration.

## 7. Warnings

1. Do not leave in direct sunlight for extended periods of time.
2. Do not leave in freezing temperatures. Battery life will be significantly reduced.
3. Do not puncture, disassemble or mechanically stress the sensor in any way
4. Use only standard, approved USB or USB-C chargers. Sensor can charge from any USB-compatible charger with >500mA output
5. Make sure no water or debris enter the sensor through the USB or sensor ports
6. Don't attempt to replace the battery yourself — you may damage the battery, which could cause overheating, fire, and injury. The lithium battery in your device should be serviced or recycled by an authorized service provider, and, must be recycled or disposed of separately from household waste. Dispose of batteries according to your local environmental laws and guidelines.

## 8. Troubleshooting

App can not find sensor	Make sure the BT radio is ON - both on the sensor and phone
Can connect to the device but I cannot see any data in the app	Unpair the sensor from your phone's Bluetooth menu
Sensor is stuck at splash screen	Perform a factory reset
No PIN dialog on Android devices	Check the notifications drawer

## 9. Features

- Rechargeable battery with up to 7h battery life
- USB-C reversible connector
- Bluetooth 4.0 connectivity
- Multiple sensors can be connected to the app
- Two clients can connect to one sensor at the same time
- Graphical OLED screen
- Auto-shutdown after period of inactivity
- Screen auto-rotation
- Individually calibrated to  $<0.01\text{dB}$  error over the entire operating temperature range, with calibration reports for each sensor
- Tamper-proof calibration tables and firmware
- Sensor spoof protection
- Improved connectivity compatibility
- Less than half the size of the previous version
- Secure Over the Air updates for future improvements and features
- Separate digital and analog power supply circuitry for low noise operation

## 10. Specifications

- Frequency range: 5-100 Hz
- Frequency precision: 1 Hz
- Measurement report rate: 2 Hz
- Amplitude range: 100 dB - 177 dB
- ADC Resolution: 24bit
- Battery capacity: 500mAh
- Battery charge time: ~2.5h,
- Battery life with BT connected: ~6h, with BT off/Power Saving: ~10h
- Bluetooth range: ~10m
- Power supply: 5V 500mA USB-C reversible connector
- 12V Adapter: Dual 2.1A USB supply, with 12V and 5V voltmeter and USB current monitor
- Display: 0.66" Monochrome Graphical OLED
- Operating temperature: 0-60C
- Weight: 75 grams
- Sensor dimensions: 48.6mm x 15.5mm x 93.6mm (without suction cups)

## 11. Legal notices

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.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Industry Canada license-exempt RSS standard(s). 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. 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. Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that necessary for successful communication. Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

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