



PRODUCT DATASHEET

Airnote Datasheet

Airnote v3.0

As described in Ray Ozzie's blog post, *Soul of a New Machine*, the Airnote was born as a part of a global volunteer response to the Fukushima nuclear disaster. It is a self-contained, cellular-connected air quality monitoring device, designed to be rapidly and broadly deployed.

Blues Airnote® Datasheet: Airnote v3.0

As described in Ray Ozzie's blog post, [Soul of a New Machine](#)[🔗], the Airnote was born as a part of a global volunteer response to the Fukushima nuclear disaster. It is a self-contained, cellular-connected air quality monitoring device, designed to be rapidly and broadly deployed. The Airnote can be easily installed within minutes; with no software setup required.

Functional Description

The Airnote continuously monitors local atmospheric conditions. The device will continuously show the PM2.5 count on its display and periodically upload [detailed atmospheric data](#) including temperature, humidity, pressure, and detailed particulate counts to the cloud.

Historical data from your Airnote, as well as any device in the Airnote community is available by scanning the QR code printed on the device.

Features

- **Deploy and Forget.** Airnote is compact, wireless, portable, and autonomous.
- **Self Configuring.** Automatically connects over cellular to the Notehub.io cloud service.
- **Low Power Consumption.** Optimized to provide long, unattended operation using a rechargeable capacitor, recharged by a solar panel.
- **Connected.** Automatically connects to LTE Cat-1 bis or GSM cellular service in [over 135 countries](#) using its built-in SIM.
- **Atmospheric Monitoring.** Samples particulate counts, temperature, humidity, and barometric pressure.
- **Rugged.** Designed for long-term outdoor use.
- **Compact.** At 90mm x 88mm x 126mm, it can be installed almost anywhere.
- **Position Aware.** Reports both GPS and cell tower positions to the backend cloud service.
- **Automatic Firmware Updates.** Updates are performed over-the-air, so it's always up-to-date, with zero hassle.

Package Configuration

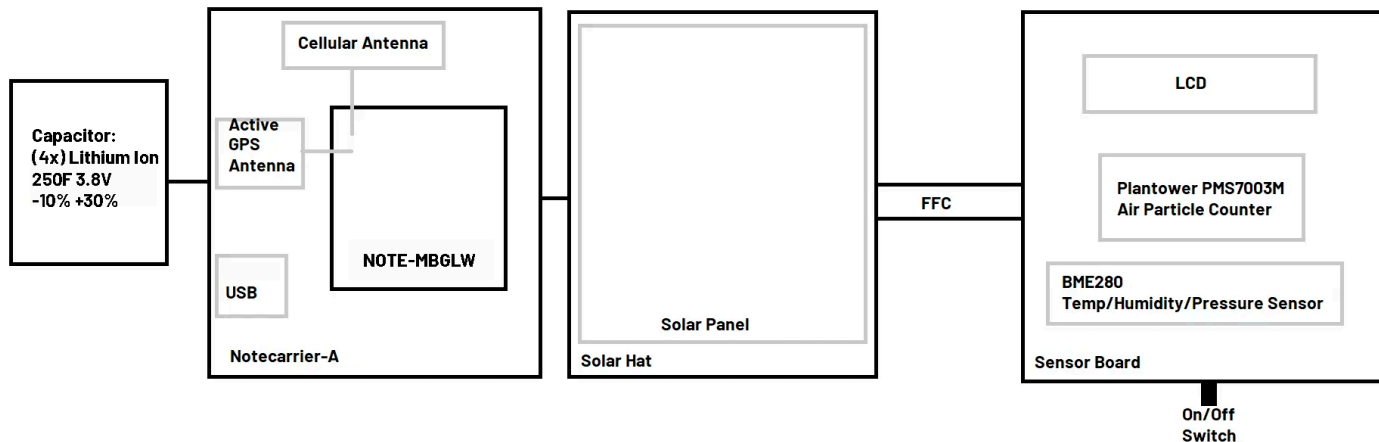
Airnote Enclosure

Designed with the outdoors in mind, the Airnote's rugged construction allows it to remain outdoors, indefinitely, in almost all conditions.

[View in Store](#)



Hardware Composition



The Airnote is composed of five key components:

- Notecard - Midband Global - [NOTE-MBGLW](#)
- [Notecarrier A](#)
- Sensor Board
- Solar Hat
- Capacitor: (4x) Lithium Ion 250F 3.8V -10% +30%

Power Information

What do I do if the capacitor dies?

Airnote's capacitor is capable of powering the unit for weeks of normal operation. If the rear display of airnote is blank for more than 15 seconds after turning on the power switch, you can either wait for the sun to recharge the capacitor or follow this procedure to power the unit and recharge the capacitor via USB:

1. Remove the two screws on the bottom of the Airnote with a Phillips screwdriver.
2. Remove the bottom cover.
3. Attach a USB cable to the port near the front of the unit.
4. The Airnote will power up and the capacitor will begin charging.
5. If you wish to leave the USB cable permanently attached, you can break off the tab covering the USB Access Port in the corner of the bottom case and feed the USB cable through this port when you reinstall the bottom cover.
6. To reinstall the bottom cover:
 1. Position the bottom cover tabs above the rib along the back wall of the unit.
 2. Pivot the cover on these tabs until the tab on the front of the bottom cover snaps into the front of the top case.
 3. Reinstall the two screws on the bottom of Airnote.

Voltage can be monitored via the cloud service. The capacitor may also be charged via internal USB charging port and a USB cable may be threaded through the access slot in bottom cover.

Operation Instructions

Installation

You can deploy Airnote anywhere there's cellular service and direct sunlight by following these simple steps, or visit <https://start.airnote.live> for detailed instructions.

1. **Charge** your Airnote overnight by removing the back panel and plugging in a USB cable.
2. **Turn on** Airnote using the power switch on the bottom.
3. **Deploy** your Airnote by mounting it on the outside of a window with plenty of sunlight, and airflow around the mesh on the underside of Airnote.
4. **Watch** as Airnote's built-in display shows the current PM2.5 reading at your location.
5. **Scan** the QR code with a mobile phone to customize your Airnote and see your personal air quality dashboard.
6. **Visit** <https://airnote.live> to view graphs of your historical fine particulate matter, temperature, barometric pressure, and humidity readings.

Note

The cloud service must be aware of the Airnote before it can be assigned to you. Therefore, you must ensure the device has been powered on and given ample time to connect to Notehub.io before scanning the QR code.

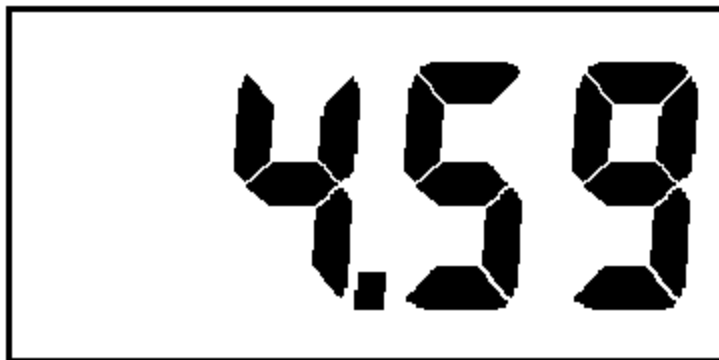
Self Testing Sequence

When the Airnote is powered on, it will cycle through the following screens:

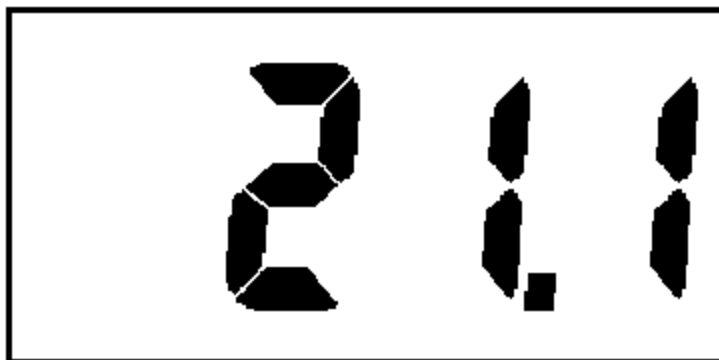
- After a few seconds, a **Hi** message will appear that indicates the device is initializing.
- After approximately 10 seconds, the screen will update with a visual self-test of the "LOBAT" warning and number segments. This is a visual check *ONLY*. If any of these items does not appear on the display, then there is a failure in the LCD screen.



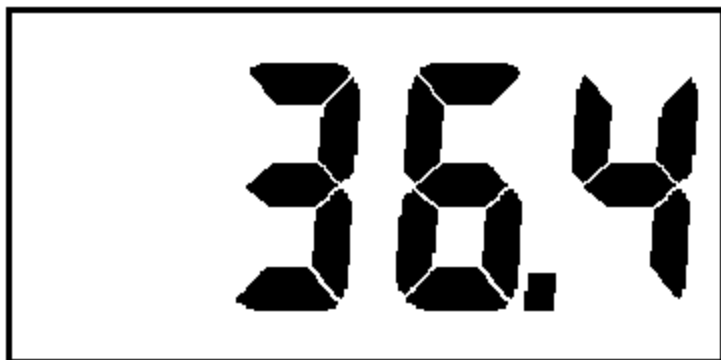
- After 5 seconds, the screen will display the Notecard voltage in Volts:



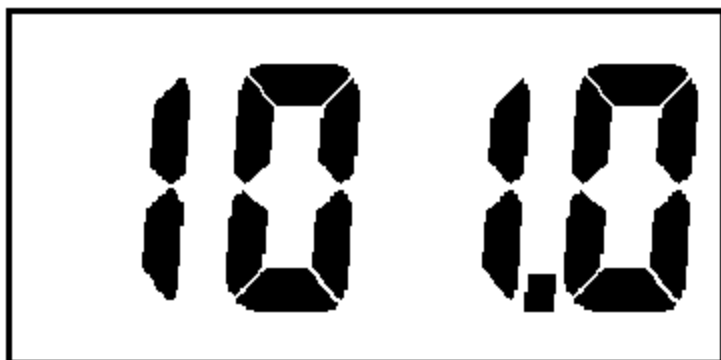
- After 1 second, the screen will display the sensor board BME280 temperature in degrees Celsius:



- After 1 second, the screen will display the sensor board BME280 relative humidity in %RH:



- After 1 second, the screen will display the sensor board BME280 air pressure in kPa:



- Once all the tests have passed, the Airnote will display the unique identifier for the device. This is the same ID printed on the QR code and can be used in case the sticker is damaged or removed.
- The word `Go` is displayed to indicate that all tests have passed, and the Airnote will then enter its normal operational mode.
- Finally, the Airnote will display `CL` or `CL+` while it is syncing its clock with GPS. The display will then show an incrementing number that counts up as the Airnote establishes a cloud connection.

Warning

If a failure occurs at any of the above test steps (except for the visual display check), an error code will be displayed for 60 seconds. If this occurs, please [visit the Blues forum](#) for assistance.

Sensor Capability

Air Quality/Device Metrics Collected

- Particulate matter 1.0µg/m³ ([PM](#))
- Particulate matter 2.5µg/m³ ([PM](#))
- Particulate matter 10.0µg/m³ ([PM](#))
- Count of particles 0.3µm in diameter per 100cm³ ([PM](#))
- Count of particles 0.5µm in diameter per 100cm³ ([PM](#))
- Count of particles 1.0µm in diameter per 100cm³ ([PM](#))
- Count of particles 2.5µm in diameter per 100cm³ ([PM](#))
- Count of particles 5.0µm in diameter per 100cm³ ([PM](#))
- Count of particles 10.0µm in diameter per 100cm³ ([PM](#))
- Samples collected for particulate count values
- Relative Humidity ([%RH](#))
- Absolute barometric pressure ([kPa](#))
- Air temperature (°C)
- Duration of tests (in seconds)
- Motion events since last report
- Capacitor voltage (V)
- Capacitor charging state
- USB connection state

Sensor Information

- [Plantower PMS7003M](#)
- [Bosch BME280](#)

Note

If any sensor in the sensor array were to fail, the Airnote will continue to function, but will no longer report values for that particular sensor.

Specifications

Cellular Coverage

[View Notecard Coverage Table](#)

Electrical Characteristics

DC Characteristics

Description	Minimum	Maximum	Unit
Supply Voltage	2.5	5.5	V
Supply Current	500	2000	mA

Absolute Maximum Ratings

Description	Minimum	Maximum	Unit
Storage temperature	-35	70	°C

Note

Actual values may vary based on local conditions such as atmospheric conditions and distance to the cell tower.

Ordering Information

Please visit the [Airnote product page](#) for ordering information.

Design Files

Open source hardware designs for the Airnote are maintained in the [note-hardware](#)  GitHub repository.

Terms and Conditions

Visit [Blues Hardware Terms & Conditions](#)[↗].

Revision History

Author	Date	Summary
Ray Ozzie	2019-2020	Document drafted
John Wiedey	18 FEB 2020	Various improvements
Zachary J. Fields	03 MAR 2021	Updated information and translated to markdown
Rob Lauer	31 JAN 2023	Updated datasheet for Airnote v2.0
Rob Lauer	11 MAY 2026	Updated datasheet for Airnote v3.0

Contact Information

For other questions about the Airnote, visit the [Blues Forum](#).

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