PRODUCT DATASHEET

Airnote Datasheet

Airnote v1.0

Technical description of Blues Airnote 1.0, the cellular air quality monitor: hardware specifications, power, connectivity, and setup details.

Last Revised November 10, 2026

Blues Developer Center

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Blues Airnote® Datasheet: Airnote v1.0

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.

Scanning the QR code printed on an Airnote opens its page on airnote.live, where you can configure device settings and view recent readings.

Features

- **Deploy and Forget.** Airnote is compact, wireless, portable, and autonomous.
- **Self Configuring.** Automatically connects over cellular to the Notehub cloud service.
- **Low Power Consumption.** Optimized to provide long, unattended operation using a rechargeable battery, recharged by a solar panel.
- **Connected.** Automatically connects to LTE-M, NB-IoT, 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.

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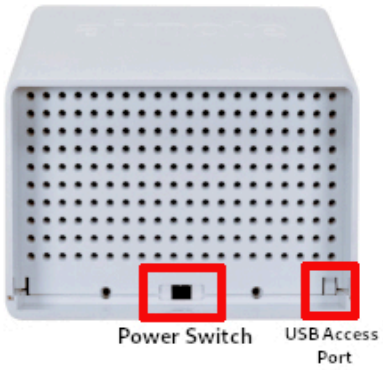
Package Configuration

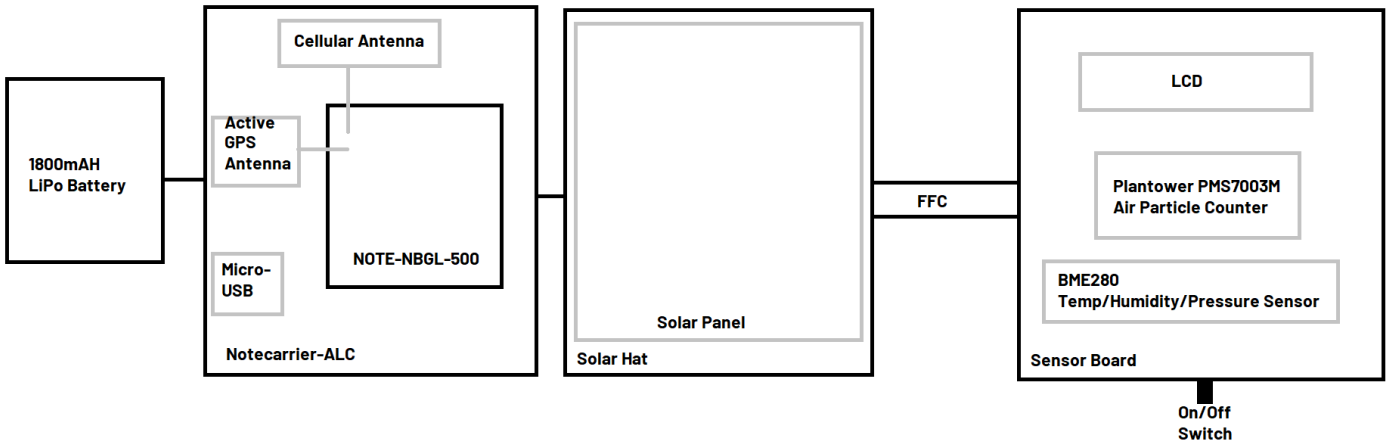
Airnote Enclosure

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



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The Airnote is composed of five key components:

- Notecard - Narrowband Global - NOTE-NBGL
- Notecarrier ALC *(adapted from Notecarrier AL)*
- Sensor Board
- Solar Hat
- 1800mAh LiPo Battery

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Power Information

What do I do if the battery dies?

Airnote's battery 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 battery or follow this procedure to power the unit and recharge the battery 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 battery 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 battery may also be charged via internal USB charging port and a USB cable may be threaded through the access slot in bottom cover.

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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 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, three dots (…) will appear to indicate that the device is initializing:

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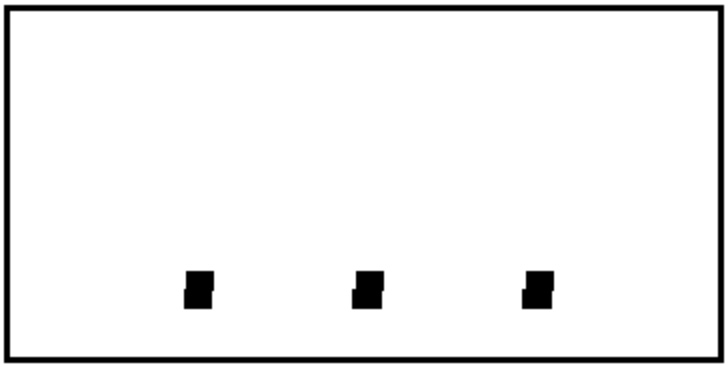
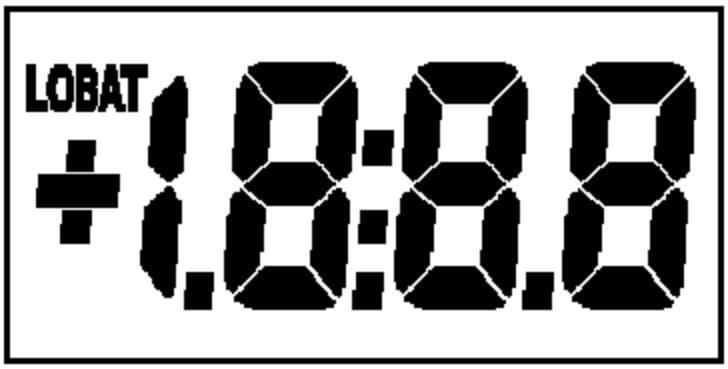
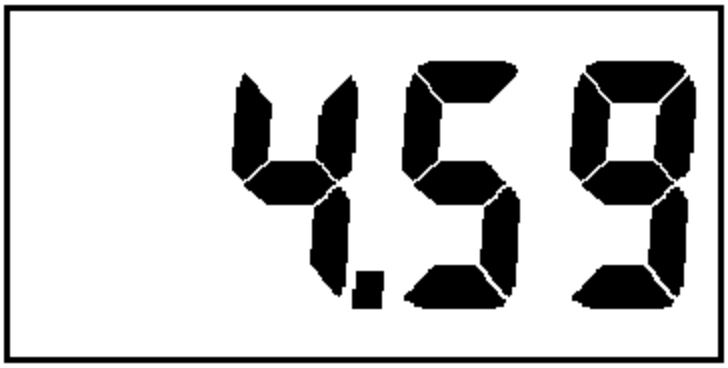


- After approximately 10 seconds, the screen will update with a visual self-test of the "LOBAT" warning and number segments. This is a visual check *ONLY*. If any of these items does not appear on the display, then there is a failure in the LCD screen.



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



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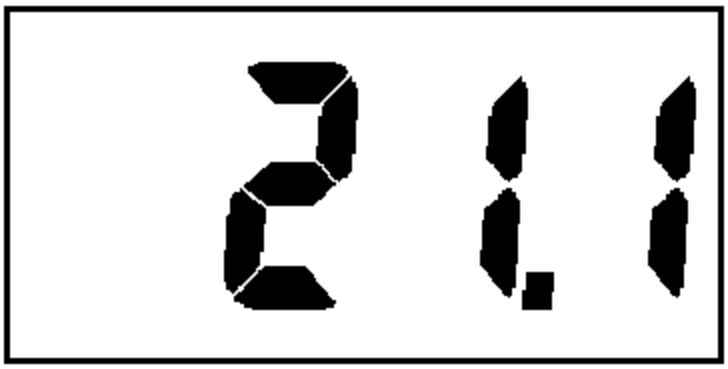
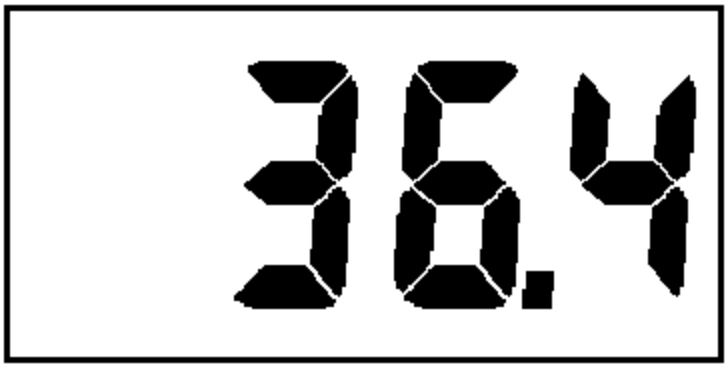
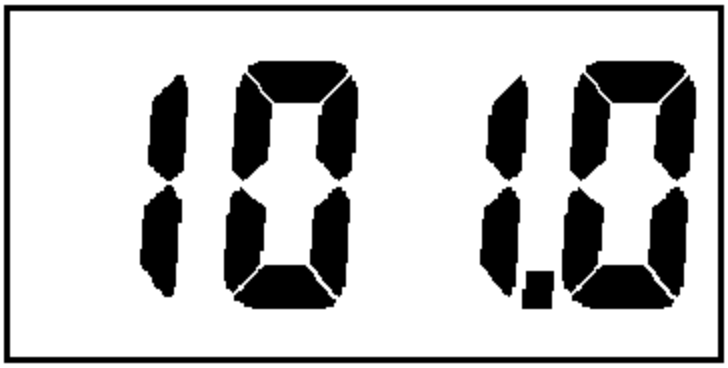
- After 1 second, the screen will display the sensor board BME280 temperature in degrees Celsius:



- 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:



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- After 1 second, the screen will count down from 5. Each decrement of the counter corresponds to a frame received from the Plantower air particle sensor. The Airnote will report a sensor error if it does not receive 5 frames within 30 seconds, but it typically takes less than 5 seconds.

- 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.
- Finally, the word "Go" is displayed to indicate that all tests have passed, and the Airnote will then enter its normal operational mode.

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.

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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
- Battery voltage (V)
- Battery 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.

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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.

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Ordering Information

Please visit the Airnote product page for ordering information.

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Design Files

Open source hardware designs for the Airnote are maintained in the note-hardware GitHub repository.

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Terms and Conditions

Visit Blues Hardware Terms & Conditions.

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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
Rob Lauer	10 NOV 2026	Corrected Airnote v3.0 details

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Contact Information

For other questions about the Airnote, visit the Blues Forum.

Blues Inc.
https://blues.com
50 Dunham Ridge Suite 1650
Beverly, MA 01915
support@blues.com

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