

IOT

AIR MONITORING

DO I REALLY NEED THIS?

It depends ...

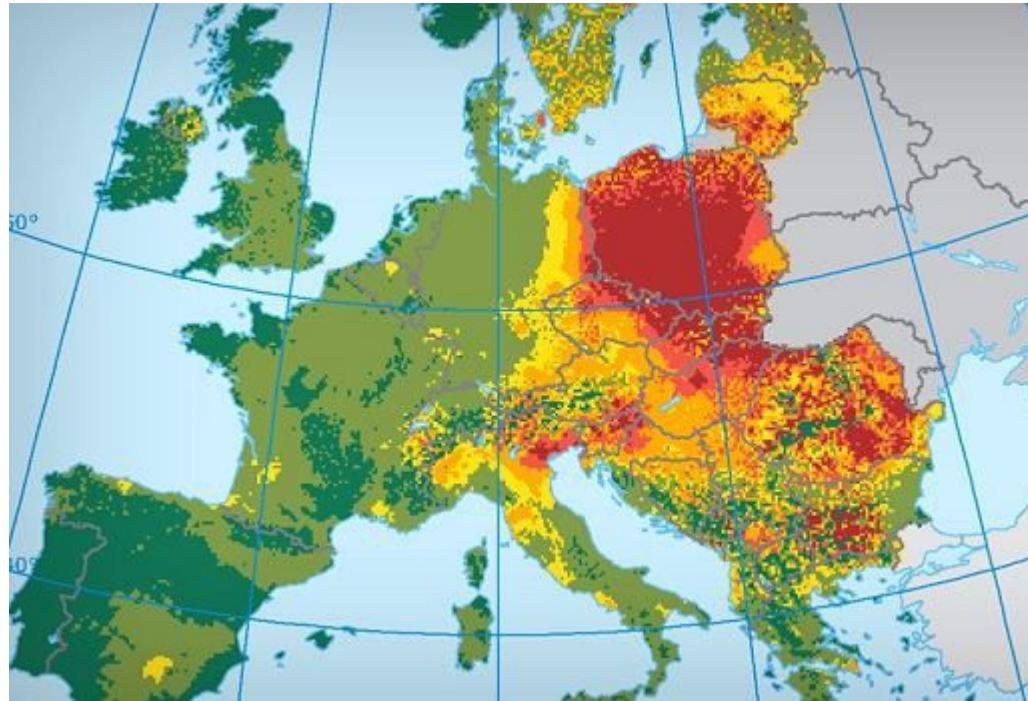
Yes and no ...

I CARE ABOUT OUTDOOR AIR QUALITY ..

. Pomiary metali ciężkich i wwa (w tym benzo(a)pirenu) są prowadzone wyłącznie metodami manualnymi, co oznacza, iż wyniki są uzyskiwane po wykonaniu analiz chemicznych pyłu PM10 czyli z ok. dwumiesięcznym opóźnieniem. Natomiast pyły PM10 i PM2,5 są mierzone zarówno metodami automatycznymi jak i metodą manualną, która jest referencyjną metodą pomiaru pyłu.

gios.gov.pl

Występują w dymie podczas spalania niecałkowitego, m.in. w dymie tytoniowym (dym z 1 papierosa zawiera 0,16 µg tej substancji), w smogu powstającym w wyniku niskiej emisji - przede wszystkim wskutek spalania węgla, w mniejszym stopniu - śmieci (najczęściej tworzyw sztucznych) oraz także częściowo jako emisje transportowe

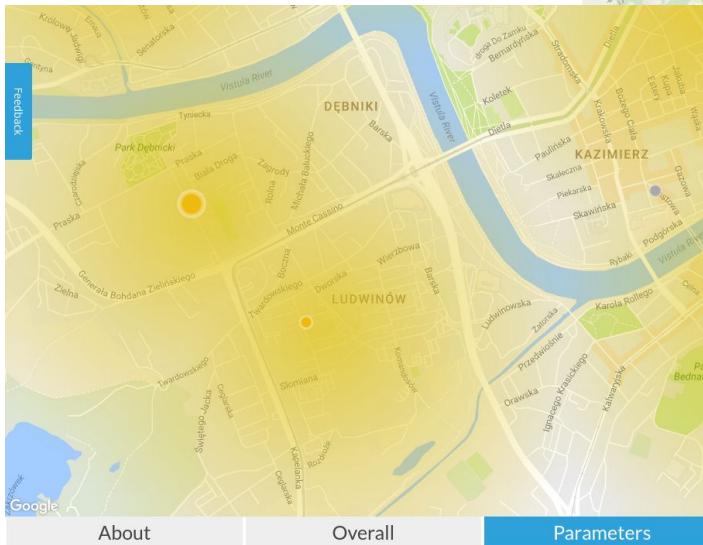


PM / Cracow ↗



I CARE ABOUT OUTDOOR AIR QUALITY ...

map.airly.eu

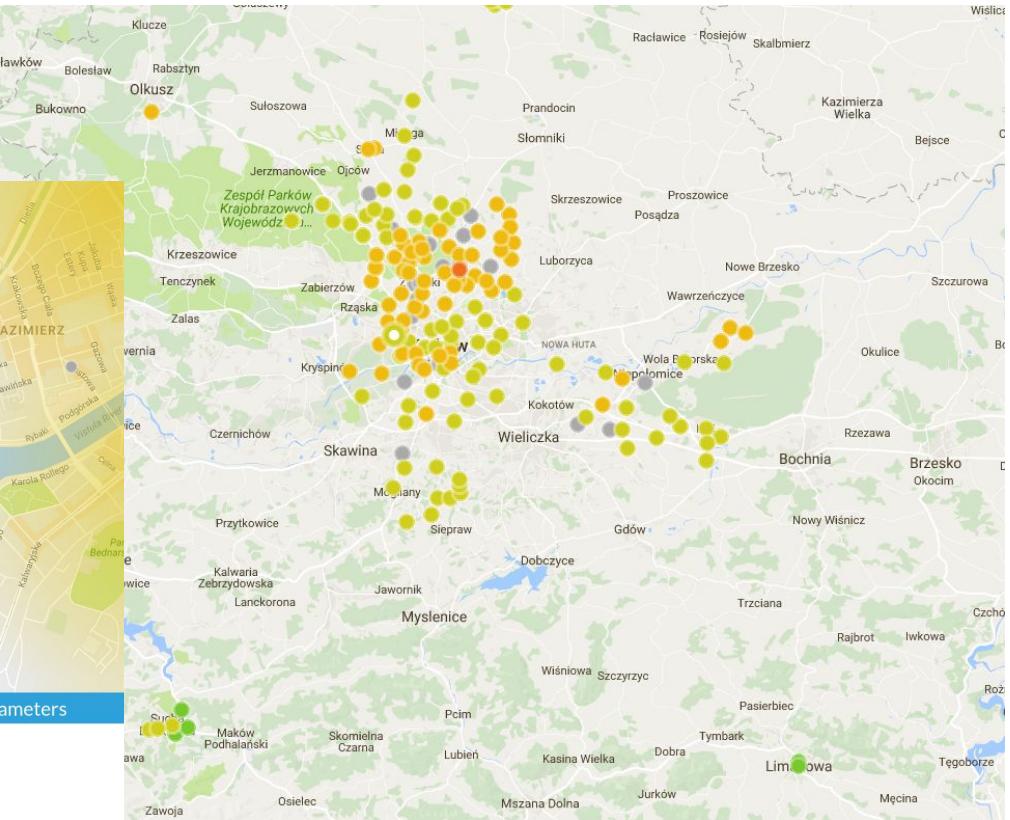


Measurement values for nearest sensor

PM_{2.5} 31 µg/m³

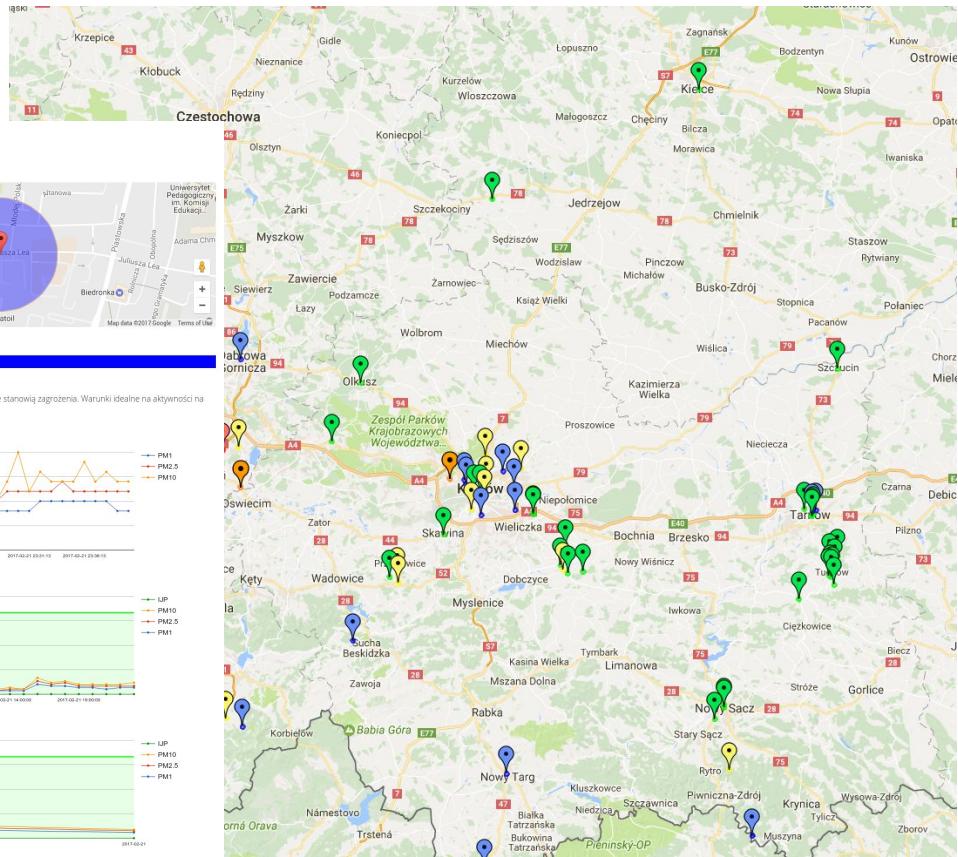
PM₁₀ 53 µg/m³

TEMP 5 °C



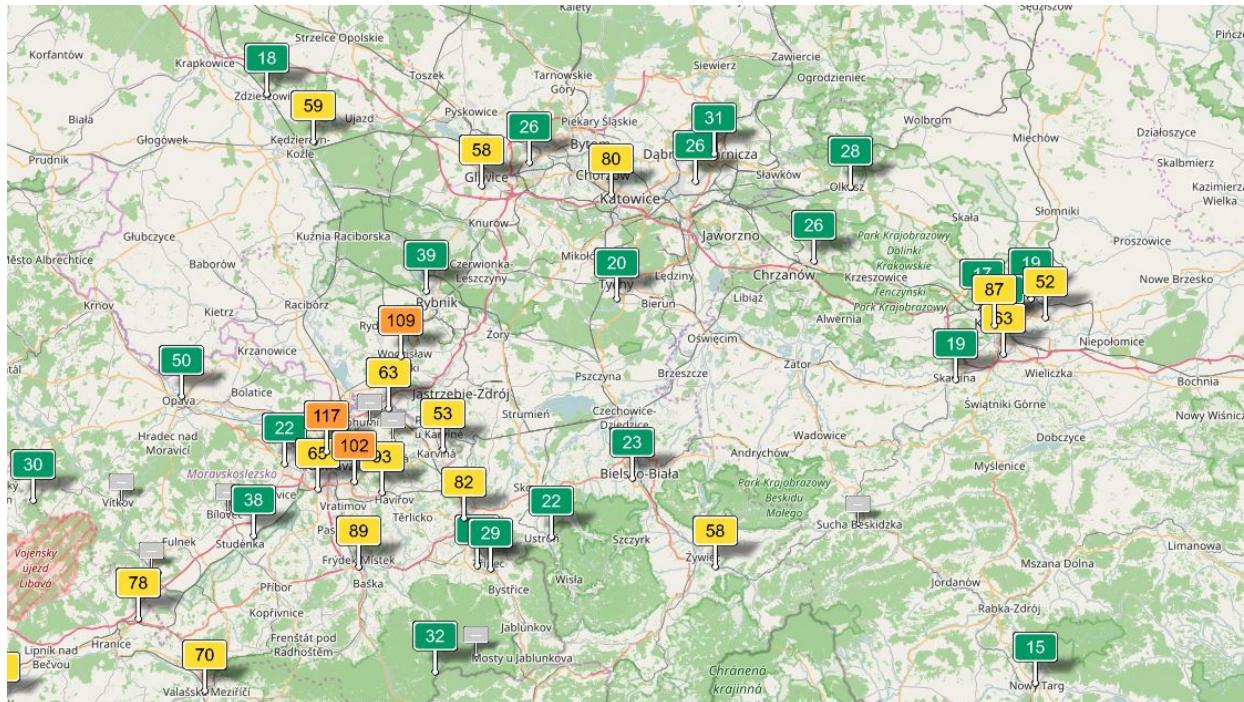
I CARE ABOUT OUTDOOR AIR QUALITY ..

looko2.com/heatmap.php



I CARE ABOUT OUTDOOR AIR QUALITY ..

aqicn.org/here/



I CARE ABOUT INDOOR AIR QUALITY ..

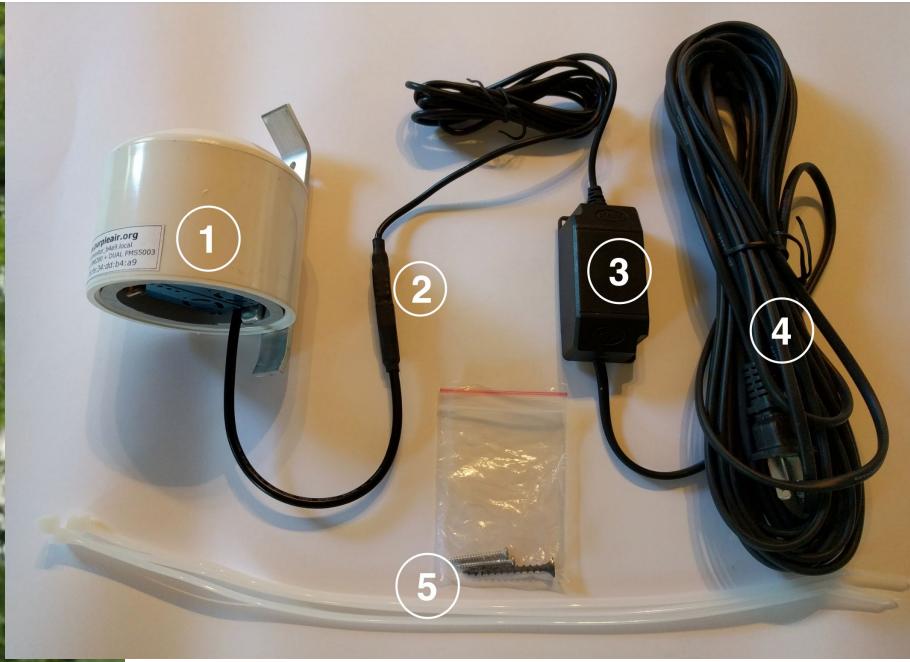


I CARE ABOUT INDOOR AIR QUALITY ..

airly.eu 900/1000zł



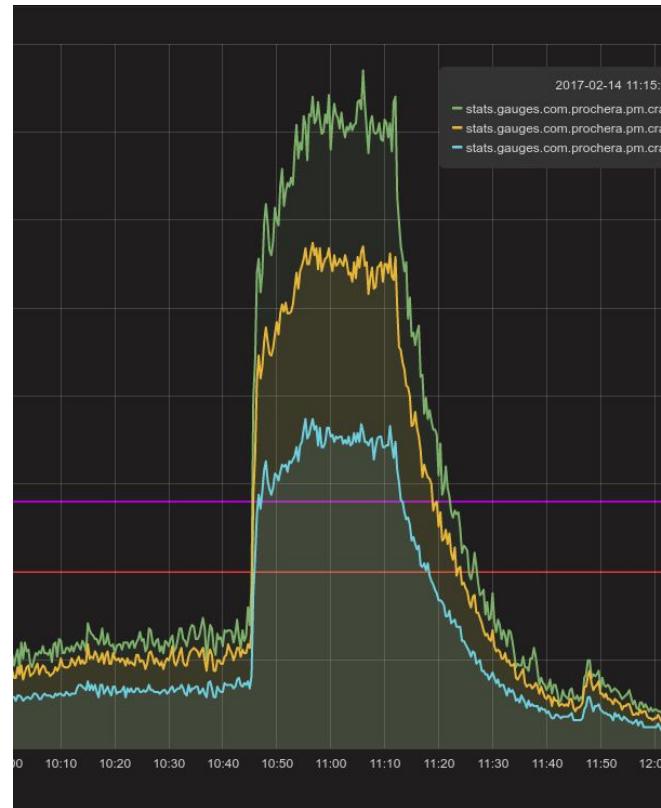
PurpleAir.org 180\$



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I CARE ABOUT INDOOR AIR QUALITY ..



I CARE ABOUT INDOOR AIR QUALITY ..

No concrete PM, TEMP , HUM 484 EUR

PM 2.5 VOC CO2 TEMP HUM 217 EUR

PM 2.5 438 EUR



Consumer IAQ Monitor Sensors and Calibration Comparison

Detection Sensitivity & Accuracy

Product	Cost	Temp	RH	PM0.5	PM2.5	VOC	CO2	CO	Overall (Sensors)
Air Mentor 6 in 1	\$219	A-	A-	-	F	A-	A	-	C-
Awair	\$199	A-	D	-	B	B	A	-	C**
Dylos DC1100	\$260	-	-	A	A	-	-	-	A-***
Hobo MX1101	\$135	A	A	-	-	-	-	-	B-
Foobot	\$199	A	B+	-	B	A	D*	-	A
NetAtMo	\$149	A	A	-	-	-	B	-	A-
Speck	\$149	A-	A-	-	B+	-	-	-	B-

- = Not Available

* Foobot derives CO2 from VOC sensor using an algorithm. It's frustratingly inaccurate.

** The humidity monitor being out of calibration drastically threw off Awair's 0-100 score. This degraded the usefulness of the device a great deal, putting my focus on a faulty reading rather than something that was actually wrong.

*** The Dylos is the only monitor with a PM0.5 sensor, which senses the very small and very nasty stuff. This fact overrides it's lack of other sensors.

Ali...



Darmowa wysyłka Kryty 4 w 1 pm2.5 pm10 HCHO TVOCparticle

US \$120.00 / częśćć
Darmowa dostawa

Zamówienia (0)



Darmowa wysyłka pm 2.5 czujnik I PM10 Miernik PM2.5

US \$120.00 / częśćć
Darmowa dostawa

Zamówienia (0)



Darmowa wysyłka osobistego użytku domowego PM2.5

US \$102.00 / częśćć
Darmowa dostawa

Zamówienia (0)



Darmowa wysyłka 2016 Hot sprzedazy Profesjonalne

US \$120.00 / częśćć
Darmowa dostawa

Zamówienia (0)



www.ohmeka.com

Darmowa wysyłka pm10 pm2.5 domowego użytku osobistego

US \$120.00 / częśćć
Darmowa dostawa

Zamówienia (0)

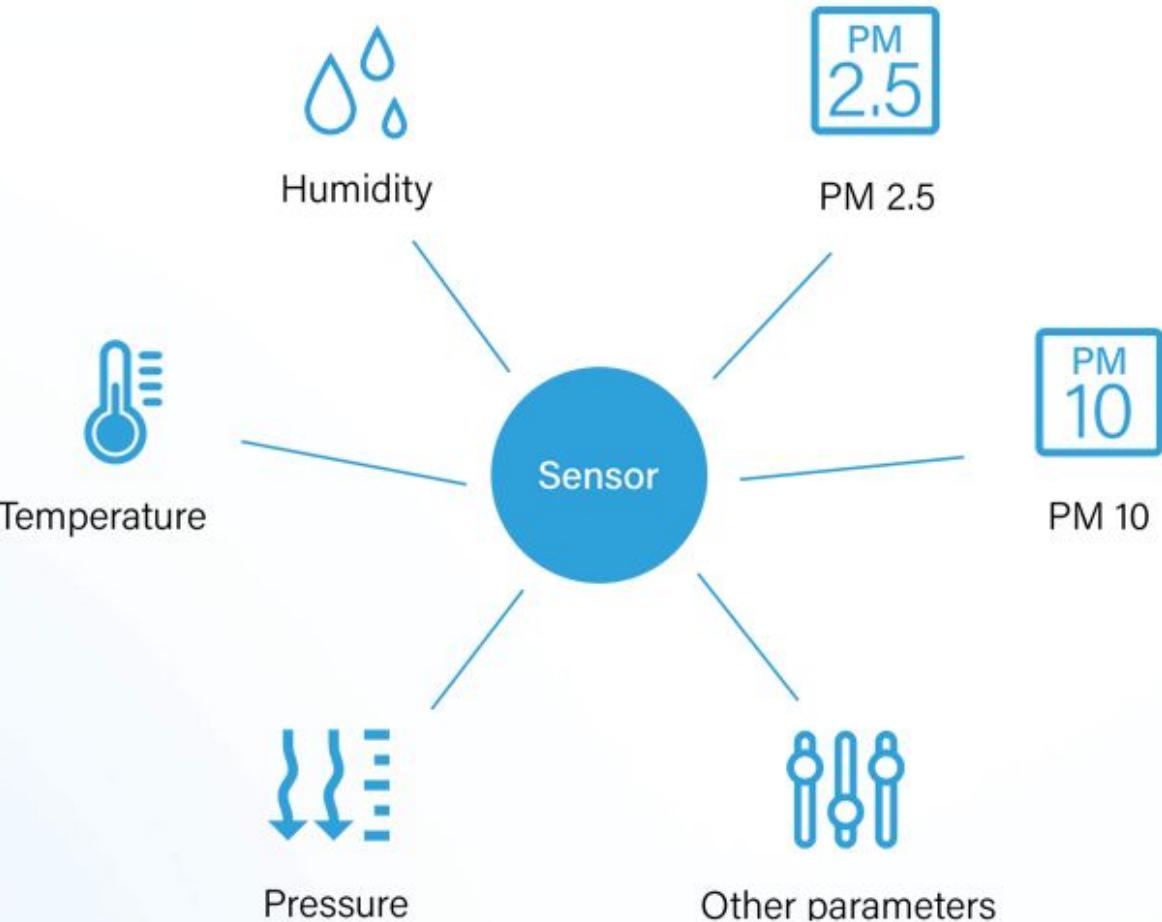


Chiny PM 2.5 detektor czujnik jakości powietrza do użytku w

US \$120.00 / częśćć
Darmowa dostawa

Zamówienia (0)

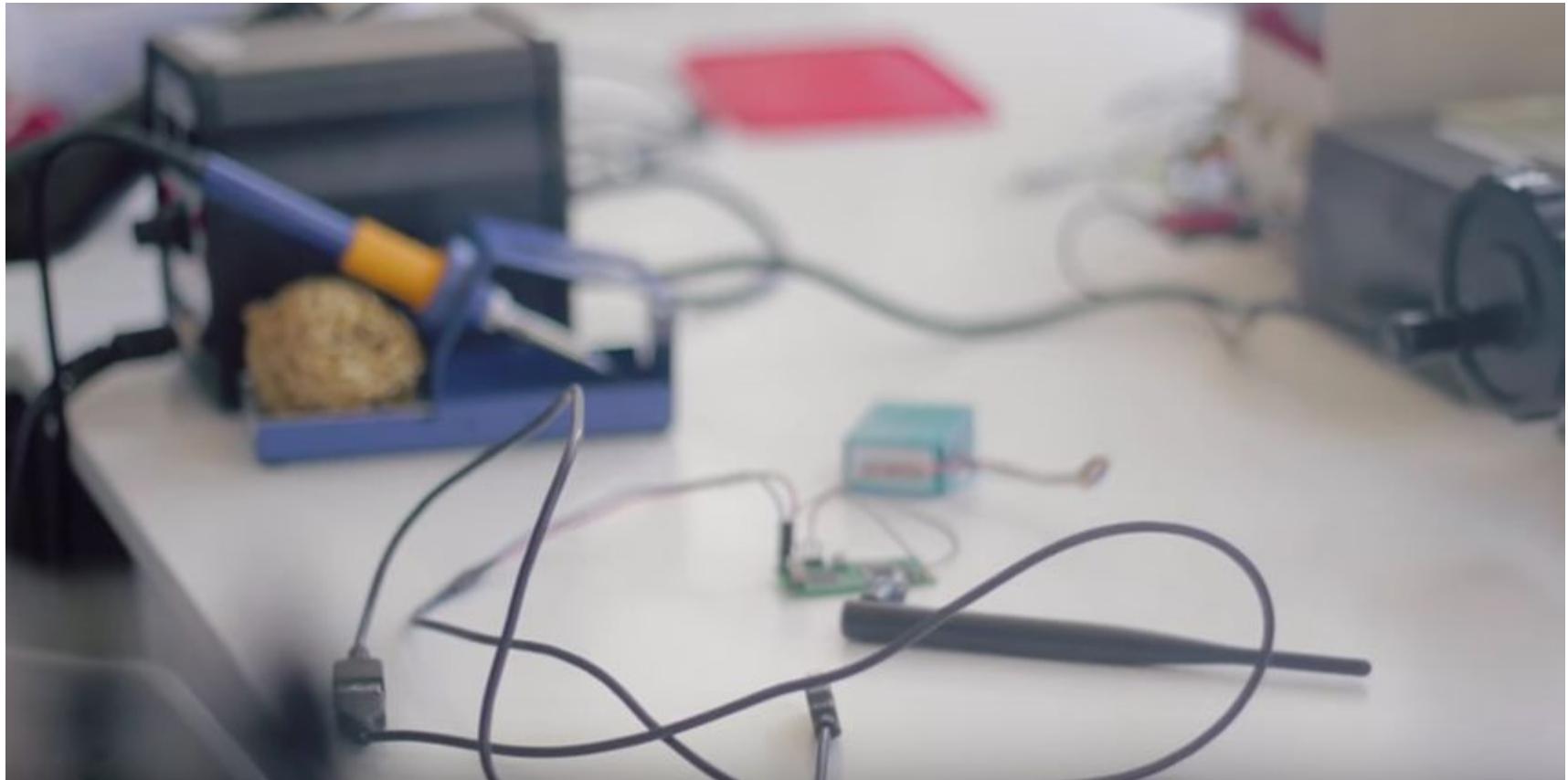
LET'S DO IT



LET'S DO IT



LET'S DO IT



LET'S DO IT

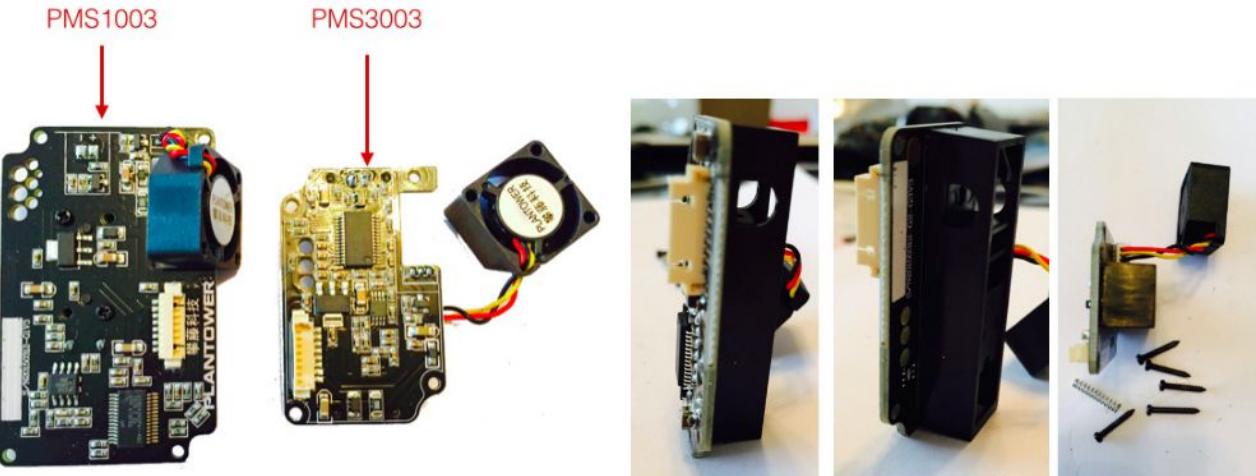


LET'S DO IT

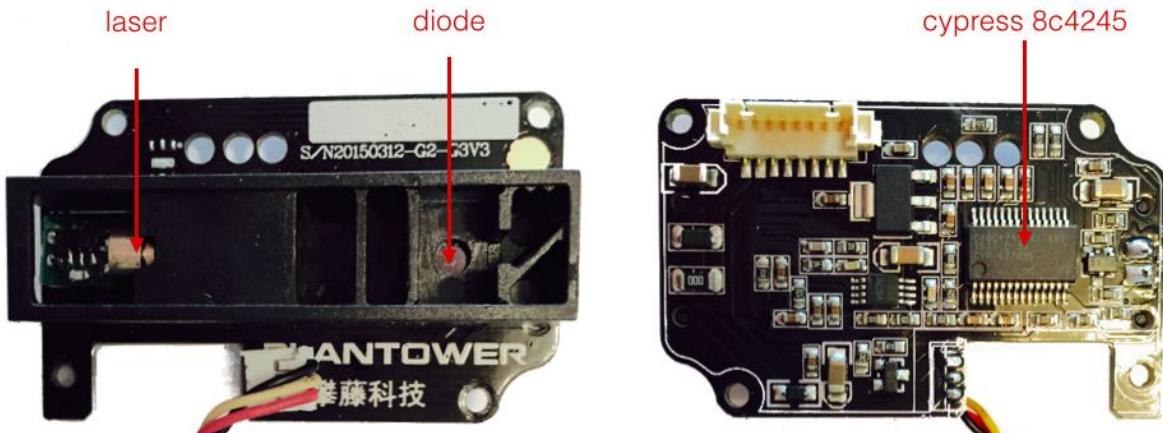


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aqicn.org/sensor/pms3003/



The electronic components are the same, at least for the main CPU, a [Cypress CY8C4245](#). That's a bit disappointing since a higher frequency CPU/ADC could help for the advanced processing so much needed for better understand the air quality. Hopefully this is something we will find in the 7th generation sensor, which is comming quite soon. Stay tunned!



LET'S DO IT

aqicn.org/sensor

Particle Sensors

The particle sensors can detect the amount of dust in the Air. While the first generation was just able to detect the amount of opacity, most recent sensors can now detect not PM_{2.5} and PM₁₀ but also up to 7 different particle size (aka bins).

Plantower PMS 7003

Laser based PM_{2.5}/PM₁₀ sensor

20USD (130CNY)



Plantower PMS 5003

Laser based PM_{2.5}/PM₁₀ sensor

18USD (120CNY)



Plantower PMS 3003

Laser based PM_{2.5}/PM₁₀ sensor

14USD (90CNY)



Plantower PMS 1003

Laser based PM_{2.5}/PM₁₀ sensor

14USD (90CNY)



Plantower PMS A003

Laser based PM_{2.5}/PM₁₀ sensor

24USD (160CNY)



Comming Soon

Novafitness SD011

Laser based PM_{2.5}/PM₁₀ sensor

23USD (150CNY)



Novafitness SD018

Laser based PM_{2.5}/PM₁₀ sensor

19USD (128CNY)



Comming Soon

Novafitness SD021

Laser based PM_{2.5}/PM₁₀ sensor

23USD (155CNY)



Yuntong YT-001

Laser based PM_{2.5}/PM₁₀ sensor

20USD (130CNY)



Sharp DN7C3JA001

Virtual Impactor for Sharp GP2Y1051AUOF

20USD (135CNY)

Soon

Shinyei PPD42NS

LPO Optical PM sensor

5USD (35CNY)



Samyoung DSM501

LPO Optical PM sensor

4USD (24CNY)



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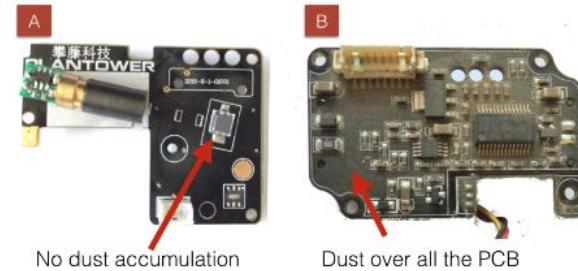
aqicn.org/sensor

Sensor tear-down

The following pictures are taken from a PMS5003 running for several months outdoor in continuous mode.



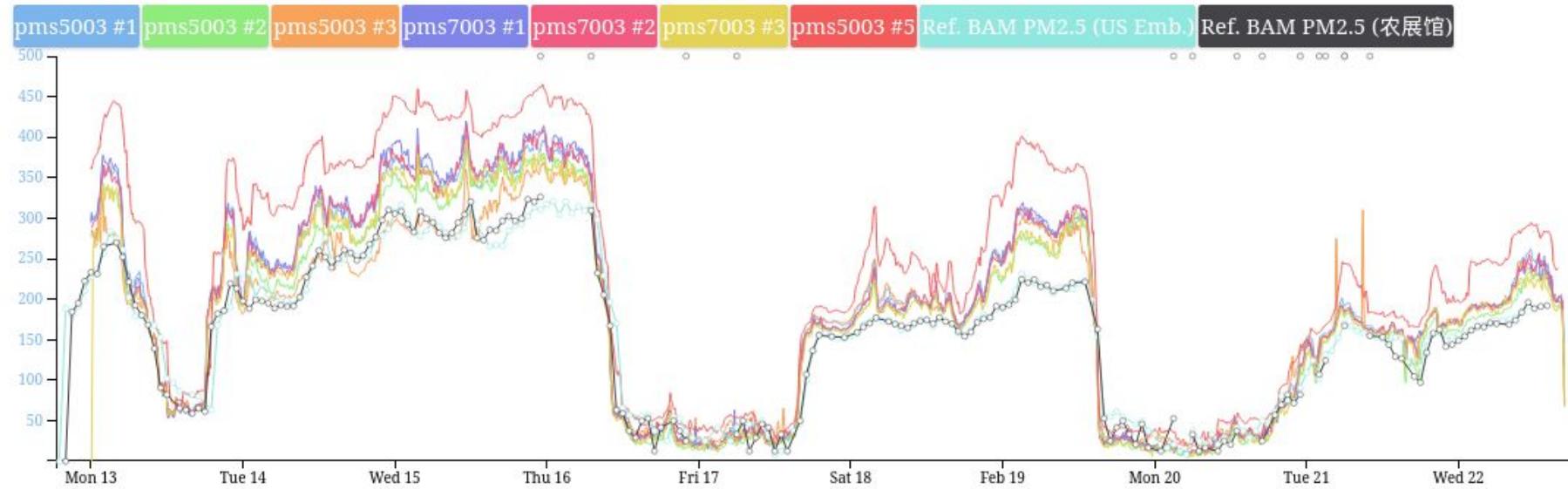
The good news is that Plantower managed to do a pretty good mechanical design which prevents dust accumulation on the front-side of the PCB (see image A on the right), where laser and diode are mounted. Compared to the dust accumulation on the [Dylos](#), that guarantees a much better lifetime and data accuracy over time.



In terms of electrical and electronic components, the PMS5003 is not quite different from the initial PMS1003 design. The CPU is still a [Cypress CY8C4245](#), which is a combined ARM Cortex-M0 running at 48Mhz with dedicated ADC, used to sample the output from the diode.

LET'S DO IT

Measurement: PM2.5 (AQI)



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PM2.5 Powietrza cząstek/czu kurzu, laser wewnętrzny, cyfrowy moduł wyjściowy oczyszczac powietrza G5/czujnik pm2.5 **PMS5003** Wy...

US \$17.50 / część
Darmowa dostawa

★★★★★ (16) | Zamówienia

Double lung electronic



♥ Dodaj do listy:



Laserowy czujnik pyłu / stężenia cząstek PM2.5

Czujnik mierzy współczynnik PM2.5, czyli ilość tzw. pyłu zawieszonego w powietrzu. Są to szkodliwe dla środowiska i zdrowia człowieka zanieczyszczenia. Urządzenie zasilane jest napięciem 5 V, dana przerwa powoduje ponowne uruchomienie interfejs

Indeks: DFR-03943

299,00 zł
Oczekiwanie na dostawę

Czujnik pyłu / czystości powietrza PM2.5 PMS5003 - 5V UART

Czujnik pyłu umożliwia monitorowanie czystości powietrza, mierzy współczynnik PM2.5. Wyposażony w sensor pozwalający wykryć cząstki o średnicy powyżej 0,3 µm, np. dym papierosowy. Układ zasilany jest napięciem od 4,5 V do 5,5 V, komunikuje się poprzez interfejs UART.

Indeks: MOD-06797

149,00 zł
Oczekiwanie na dostawę



Gravity: Laser PM2.5 Air Quality Sensor For Arduino

SKU:SEN0177 Brand:Other
Reward Points:45

Tags:

SEN0177 PM2.5 PM1.0

air quality sensor PM10



NOTIFY ME ADD TO WISHLIST

\$46.90

Out Of Stock
Price in reward points: 4690

Qty

1

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Dodaj



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your package Seller shipped your order

Poland Destination Country		2017-02-09	00:00:00	Package in transportation
	.	2017-02-08	20:35:00	Accepted in Poland
	.	2017-01-09	15:59:00	Package sent
	.	2017-01-09	11:03:00	Posted
China Original Country	.	2017-01-09	14:45:14	【广州】Export customs clearance complete
	.	2017-01-09	10:46:09	【广州】arrive export exchange

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Raspberry Pi Model A+ 256MB RAM

Najnowsza wersja popularnego minikomputera Raspberry Pi w wersji A+. Płyta posiada procesor Broadcom SoC 700 MHz, 256 MB RAM, jedno gniazdo USB, 40 GPIO, wejście jack oraz złącze na kartę microSD. Podobnie jak w modelu B+ ulepszony został tor zasilania.

Indeks: RPI-02903

Ilość:

1

Oczekiwanie na dostawę

twoj@email.com

Powiadom mnie kiedy będzie dostępny

109,00 zł

Dodaj do koszyka



Karta sieciowa WiFi USB Nano N 150Mbps TP-Link TL-WN725N - Raspberry Pi

Bezprzewodowa karta sieciowa TP-Link TL-WN725N v2 USB standard N pracująca z prędkością do 150 Mb/s. Może służyć jako adapter WiFi w minikomputerach Raspberry Pi.

Indeks: RPI-01316

Ilość:

1

Dostępny, wysyłka 24h!

29,90 zł

Dodaj do koszyka



SANDISK EXTREME MICRO 32GB 90MB/s U3 SDHC PROMOCJA

Nowy

76,40 zł

kup teraz

82,90 zł z dostawą

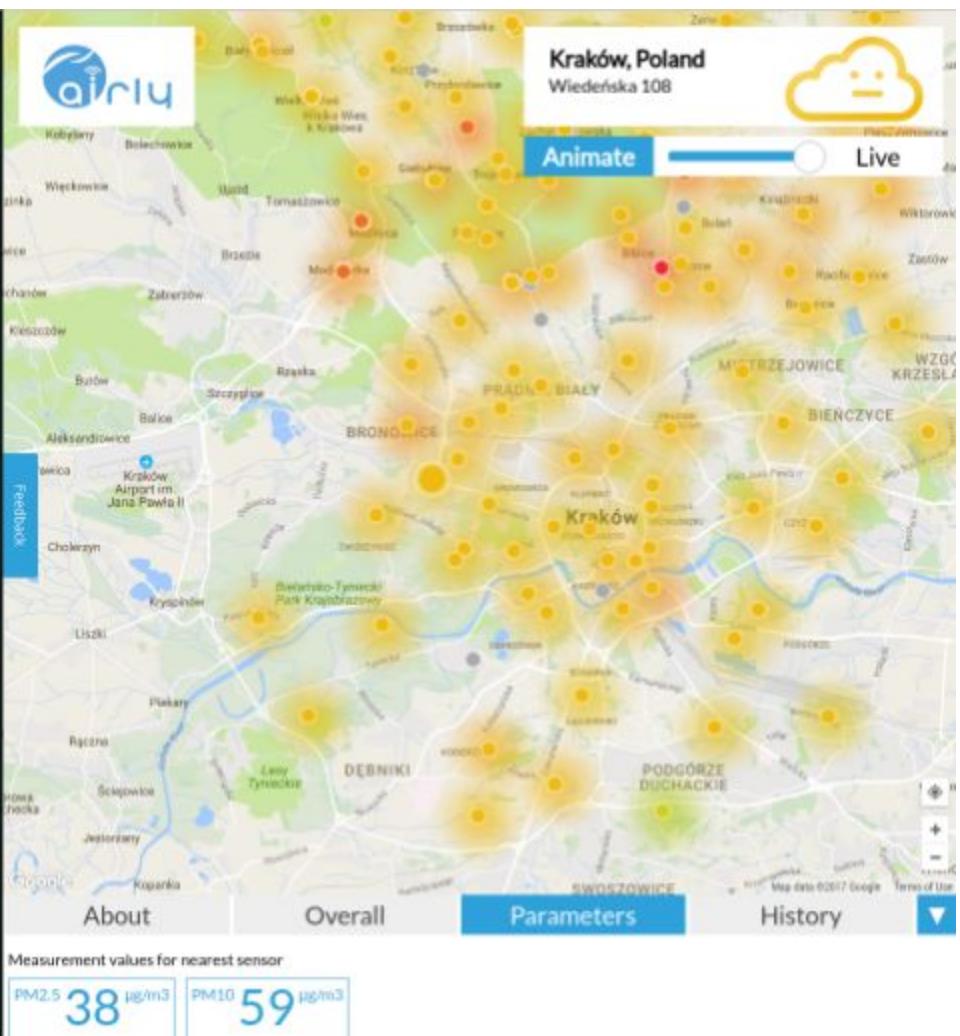


zasilacz 5v 3a micro USB Raspberry Pi 3B RH-PS003

32,00 zł

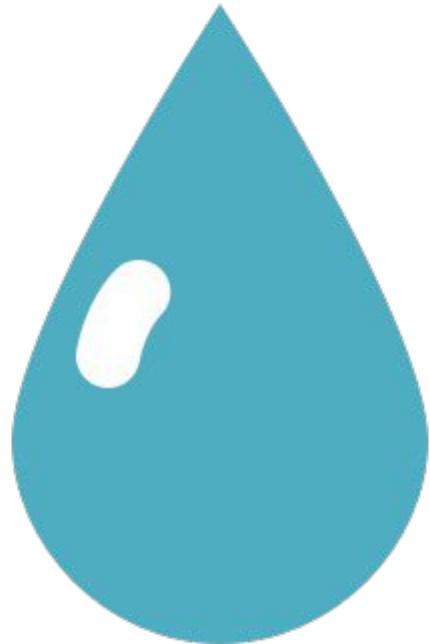
kup teraz

41,00 zł z dostawą



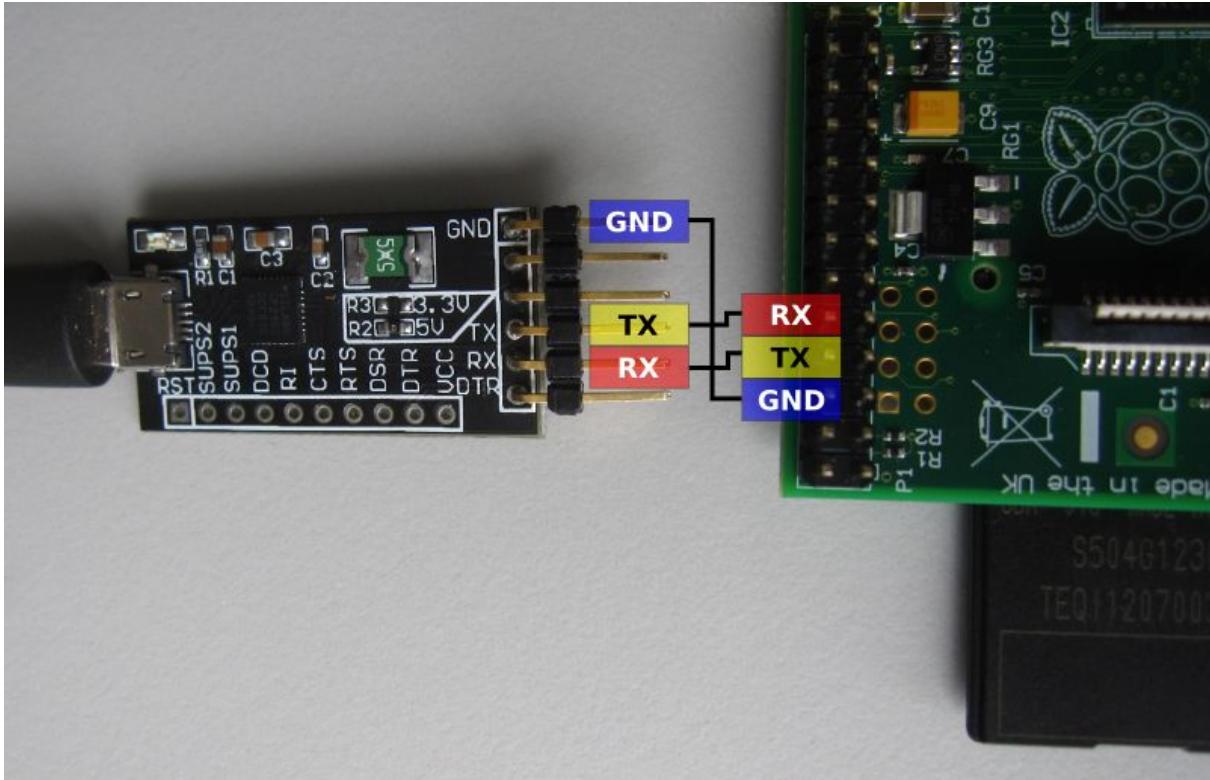


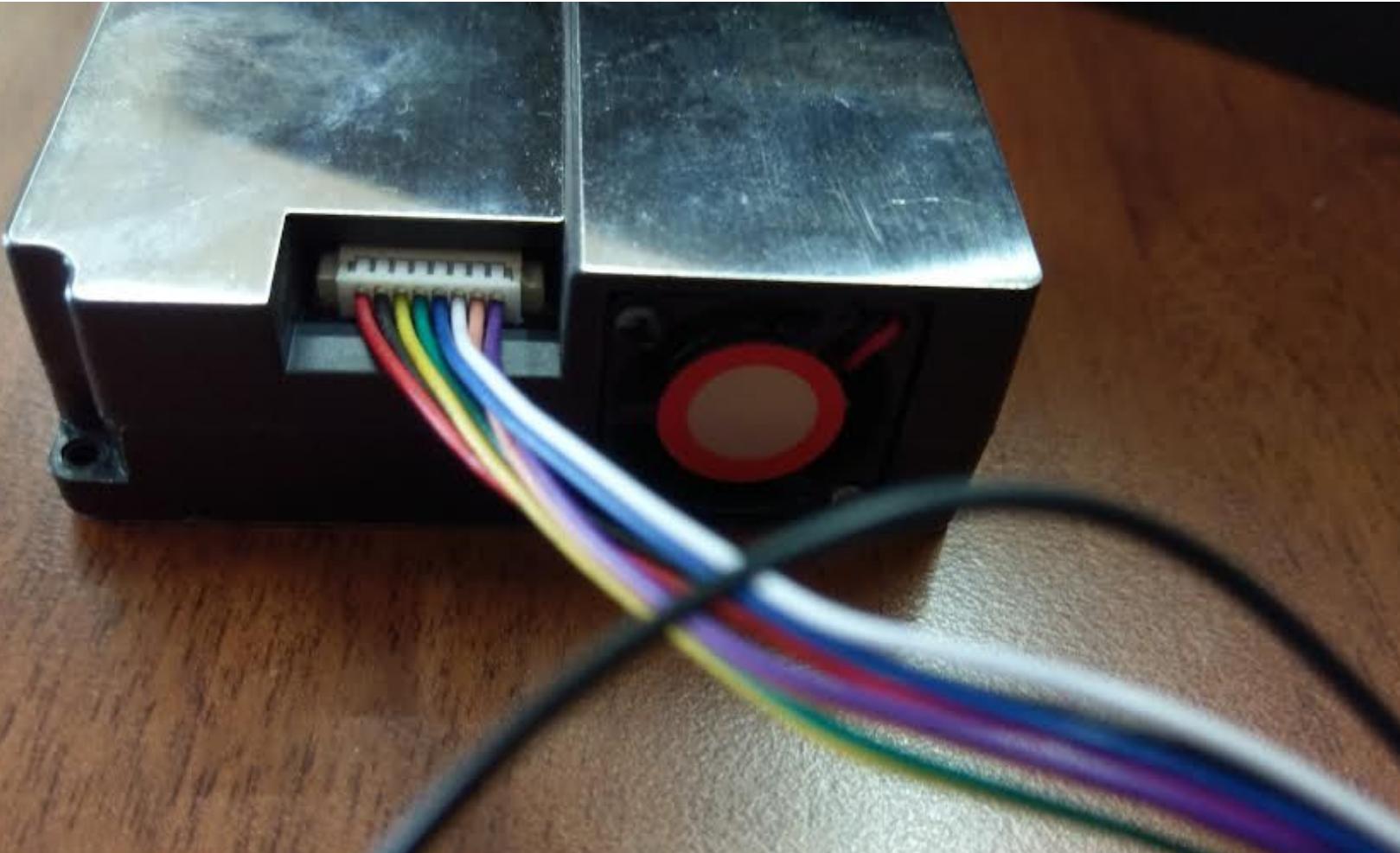
LET'S DO IT

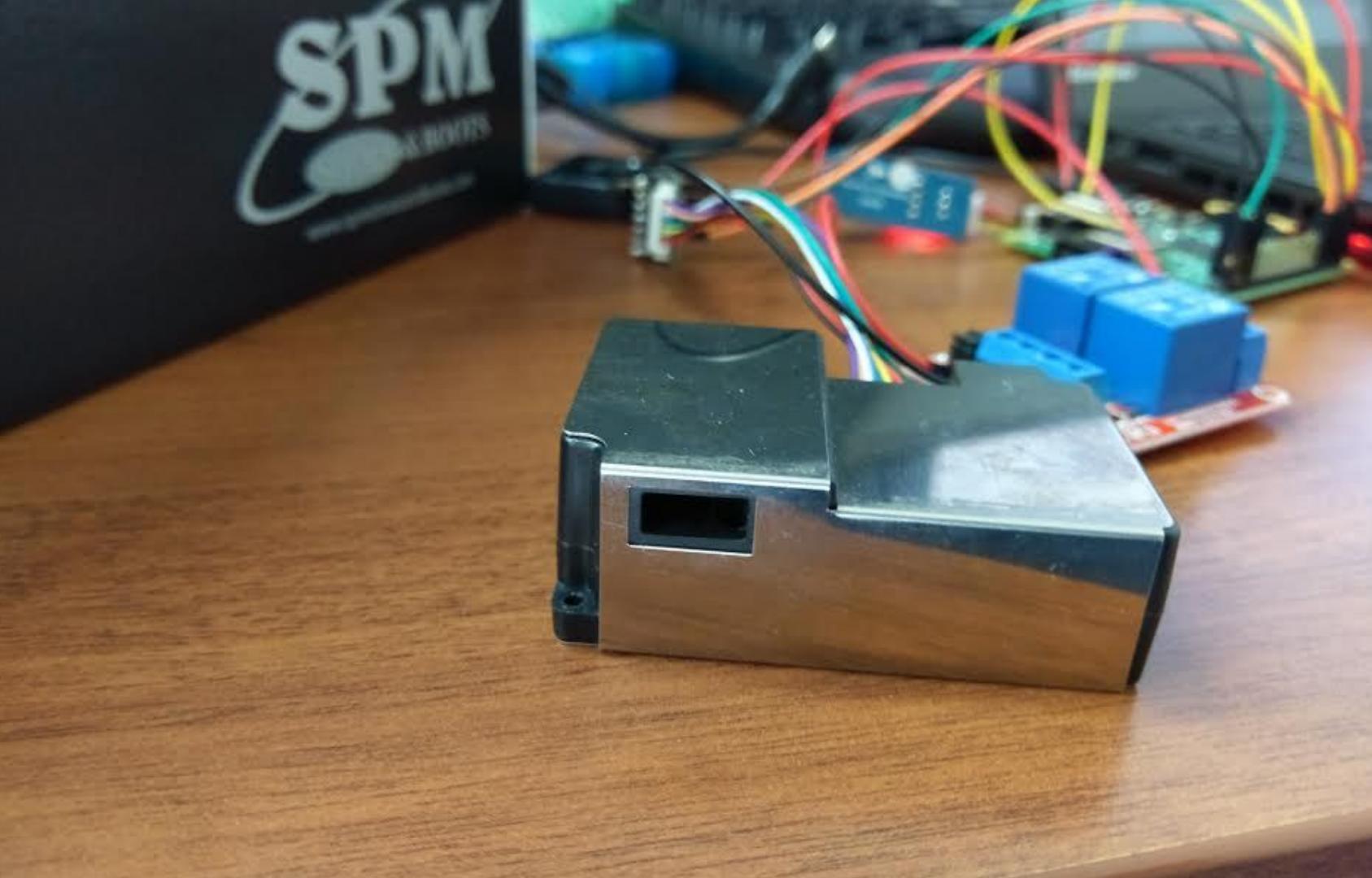


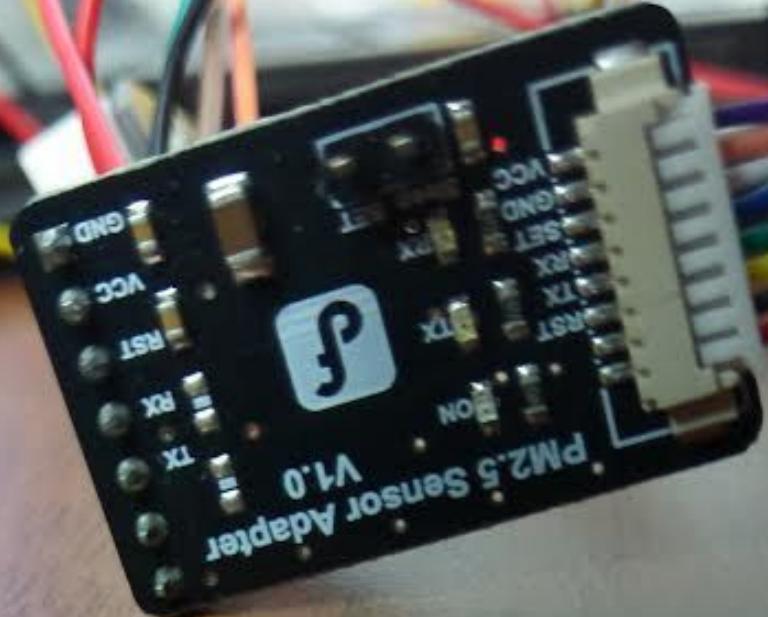
LET'S DO IT

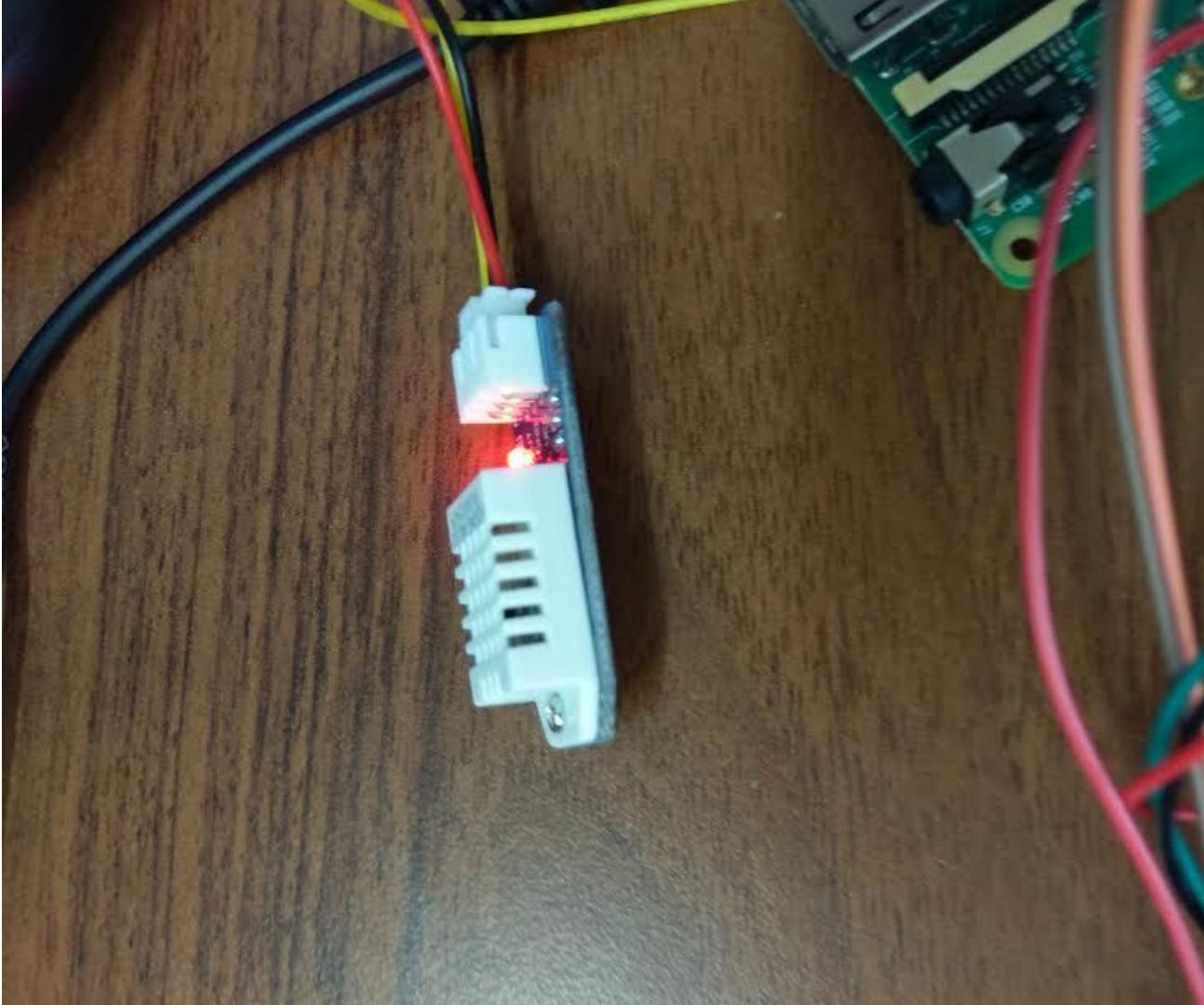
The Raspberry Pi serial port consists of two signals (a 'transmit' signal, TxD and a 'receive' signal RxD) made available on the GPIO header. To connect to another serial device, you connect the 'transmit' of one to the 'receive' of the other, and vice versa. You will also need to connect the Ground pins of the two devices together.

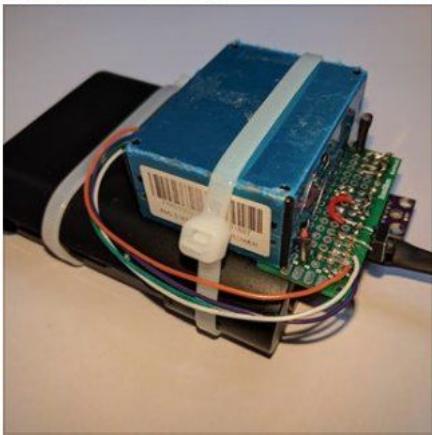
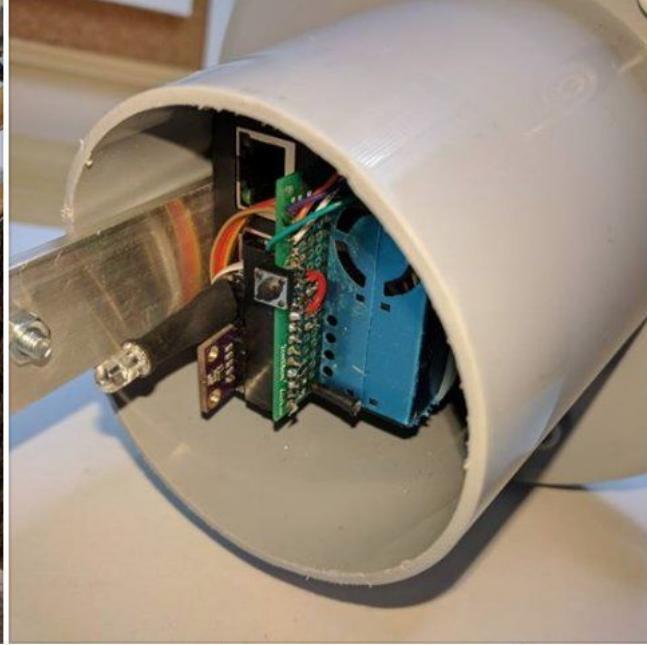












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- raspi-config -> serial, openssh ..
- /etc/network/interfaces
- pmda=air.read("/dev/ttyAMA0")
- crontab -e / @reboot

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How to Buy

ThingSpeak pricing is based on a count of messages to be processed per project (<3 million messages/year or ~8200 messages/day). For Academic, and Standard. See the table and Pricing Calculator and stored in a one-year period (~90,000 messages/day). See [here](#)

License Option	Free	
Use	For small non-commercial projects and for evaluation of the service	For
Scalable for larger projects	No. Annual usage is capped.	Yes
Number of messages	3 million/year (~8,200/day) ⁽³⁾	33 (–9)
Message update interval limit	Every 15 seconds	Ever
Compute Timeout	20 seconds	20
Technical Support	Forum	For
...		

Cracow

Channel ID: **230659**

Author: [hicolour](#)

Access: Private

Private View

Public View

Channel Settings

API Keys

Data Import / Export

+ Add Visualizations

Data Export

MATLAB Analysis

MATLAB Visualization

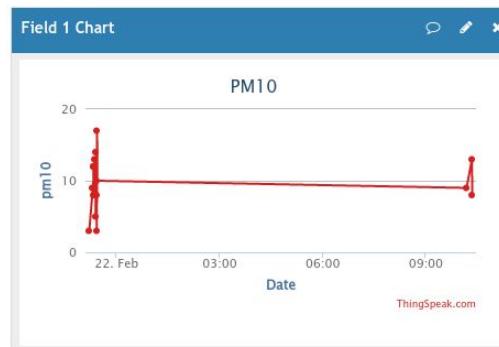
Channel Stats

Created: about 12 hours ago

Updated: less than a minute ago

Last entry: less than a minute ago

Entries: 27



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github.com/openairproject/sensor-esp32

