Państwowy Instytut Badawczy

EMAG-SERWIS



A detailed picture of what you're breathing

Using GPS, the Dust Air application on the smartphone shows a map of air quality of all the places where a given dust sampler was present, while the dustair.gig.eu website displays information taken from all the active personal dust samplers in the field. Together, the Dust Air Personal Controler and the Dust Air Sampler application give a full picture of the pollutants that the user was exposed to throughout the day, measuring and presenting the following measurement parameters:
- PM1
- PM2.5
- PM10
- Additionally: air temperature, atmospheric pressure, humidity

These data are used as the basis to determine the IAQ index (Indoor Air Quality). The index refers to a specific measuring point, and its value can be as follows:

0-50 Good. Air quality commonly accepted as satisfactory. Air pollution on this level has negligible or no influence on health.
51-100 Moderate. The air quality is acceptable for most people. However, the most sensitive population group may experience discomfort.
101-150 Poor. Adverse health effects may occur in the sensitive part of the population. The major part of the population should feel relatively well.
151-200 Unhealthy. The entire population begins to experience adverse health effects. This level can be very hazardous to the health of the most sensitive part of the population.
201-300 Very unhealthy. Staying under these conditions may result in serious health problems in the entirety of the population.
301-500 Harmful. Serious health hazard. Staying under these conditions is considerably harmful to health.
500+ Toxic. Living under such conditions is impossible. It is unwise, unhealthy and unsafe.

personal controler
Dust Air

The Dust Air Personal Controler dust sampler is a smart device fit for the challenges of the modern world!



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Technical specifications of the Dust Air Personal Controler dust sampler

Dimensions:

Diameter:	83 mm, Height: 27 mm
Weight:	150 g
Connection:	Bluetooth
Charging:	via a USB-C cable (charging with a computer)

Note: a separate adapter must be purchased to charge the device from a regular power outlet

Package contents:
Dust Air dust sampler
User manual
Lanyard
USB-microUSB cable

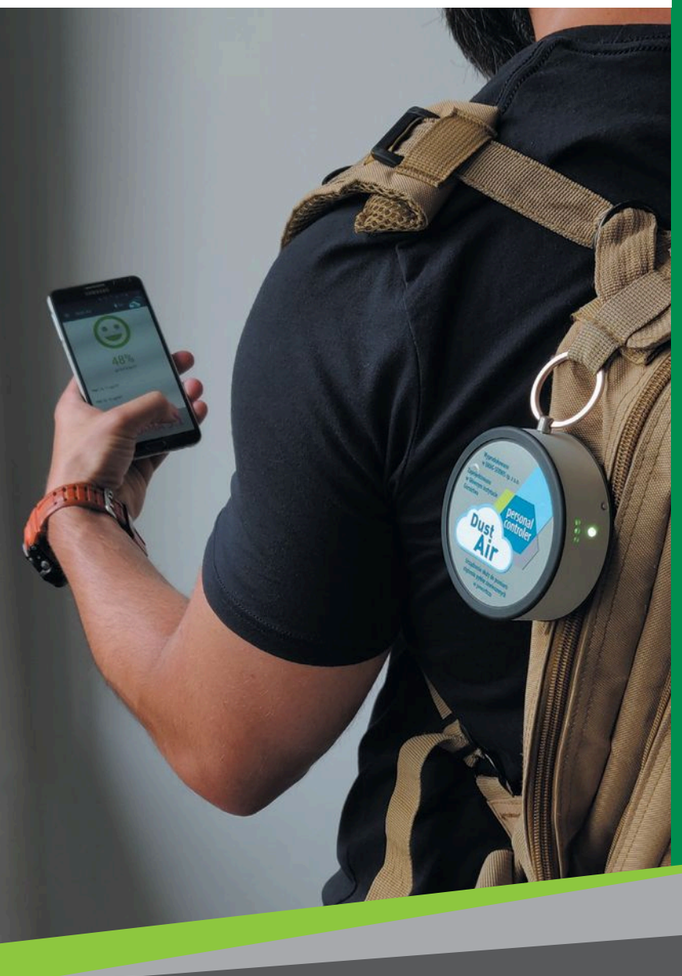
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Something's in the air!

Our health depends a lot on the quality of the air we breathe. It might be a platitude, but as a matter of fact, each year the increasing air pollution becomes the cause of millions of premature deaths. Of course, as a society we understand the importance of the issue, as the numbers illustrating its scale, which we come across every now and again, are deeply shocking – however, daily awareness of the problem seems to quickly vanish... into thin air – it's simply hard to see.
But just because it's out of sight, it doesn't mean that it doesn't exist. Its scent lingers on the air quite clearly for all of us. We try to protect ourselves from it in various ways, most often on a very random, chaotic and, unfortunately, short-term basis.

A shift in quality

To ensure systematic, consistent and thus also efficient action in terms of improving air quality, it's necessary to have stable access to data about its condition in every place we find ourselves in. Such knowledge, available to the local community, makes it possible to clearly define the problem, and thereby make the fundamental step on the road to solving it. That's because a shift in quality occurs when a sufficient number of people are connected by a common understanding of the underlying causes in order to come up with a remedy



The mission of the Dust Air program

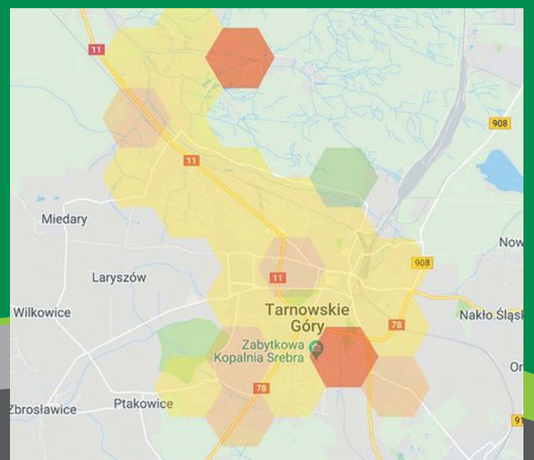
The basic function of the Dust Air program is to share and expand information about the environment,
and particularly to provide local communities and administration with access to full and diverse information concerning smog hazards. Constant monitoring and systematic expansion of the Dust Air program measuring network is accomplished thanks to a steadily growing community of personal dust sampler users. The expected result of these actions is to greatly increase awareness among residents and local administration, to locate polluted areas and to facilitate the identification of the causes of the hazards as well as to help in combating them.

The Central Mining Institute and the Polish manufacturer EMAG-SERWIS Sp. z o.o. guarantee a solid and innovative structure of the dust sampler itself, the high quality, reliability and accuracy of the measurements as well as the correct functioning of the entire system.

The Public Air Monitoring Network

Unlike stationary measuring points, the Dust Air program can accommodate vast and dense measuring networks by taking measurements in every location where any personal dust sampler was present. All the results are depicted in the form of measuring points on a Google map with access to full data history.
We would like to invite all Dust Air sampler users to a "healthy competition in the name of clean air" in the form of the Public Air Monitoring Network. As part of this initiative, local administration units registered on dustair.gig.eu that perform the greatest number of measurements in different locations on their territory through their facilities (schools, government offices, etc.) using the Dust Air samplers will be placed in the ranking available on the website. We will establish a pollution map there (updated once a month) with an applied hexagon grid presenting areas with the most dense measuring networks as well as current and archive values of pollution levels.

Pollution map
"HAJCUJYMY NIE TRUJYMY" - Tarnowskie Góry



Elements of the Dust Air program

- The Dust Air Personal Controler personal dust sampler
- The Dust Air Sampler mobile application
- The dustair.gig.eu website

The Dust Air Personal Controler personal dust sampler

The Dust Air Personal Controler is a small device capable of taking real-time measurements and informing the user about the air quality in a given location, as well as alarming the user about the need to take preventive measures should such an event occur. Fastened to a belt, a handbag, a school bag or a bike, it makes it possible to take an unlimited number of measurements in any location. The dust sampler is intended to work together with the free Dust Air Sampler application (available for download from Google Play store).
- When the dust sampler alone is active, consecutive measurements are taken automatically, and the user is informed only about exceeded air pollution alarm levels.



- When both the dust sampler and the mobile application are active, consecutive measurements are taken automatically, while the data is transferred both to the mobile application and the dustair.gig.eu website server.

The data is depicted both on the smartphone screen and the website in the form of measuring points on a Google map, with access to the full measurement history of a given dust sampler user.

The Dust Air Sampler mobile application

This dedicated application can pinpoint the location of a personal sampler by means of GPS, transfer measurement data to the server, apply the results to the measurement map and depict them on the smartphone screen. As the administrator of the Dust Air system, The Central Mining Institute collects information from all the active dust samplers in the field, while its complex presentation is available through the dedicated website dustair.gig.eu in the "Ranking" tab.

Installing the Dust Air application and reading the data

Step 1
Download the free Dust Air Sampler application from Google Play store and install it on your smartphone.

Step 2
Run the application and register your free account, then configure the application's settings and gain access to all your taken measurements.

Step 3
Log in to your account using your registered login and password. To begin the configuration process, first activate your dust sampler, then Bluetooth and the application in your smartphone, select the correct device, click "Log in" and go through the configuration steps in the "Settings" tab to manage your own dashboard.

Step 4
Once the application is active, a single push of the dust sampler's "Start" button will make two LED diodes flash on both sides of the device, and one of them will immediately give feedback on the air quality at the dust sampler's location. The data from the current measurement will be applied to the Google map and depicted both in the application and on the dustair.gig.eu website in the "Ranking" tab.

