



Reference Manual

eRuido Monitor Sonometric Software for Windows

Version R10.3.x

Fixed Noise Monitoring Stations, eNoise

Series U20 / U21 / U22

Reference Manual

Version History

Versión Inicial	R7	2016 01 10 / AVP
Versión	R8	2019 01 10 / AVP
Versión	R91	2019 04 10 / AVP
Versión	R92	2019 05 07 / AVP
Version	R93	2021-04-30 / AVP
Version	R10.1	2022-02-24 / AVP
Version	R10.2	2024-03-11 / AVP
Version	R10.3	2026-06-26 / AVP / ENG

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Our Company

More than 25 years of experience in Sonometría endorse our effort to design a friendly, valuable and reliable product.

Executive Summary

Welcome and thank you for using dBAMonitor R10. Our latest sonometric software update. A package composed of many simple and productive modules to turn your Mini PC, NUC or Notebook into a professional Sound Level Meter, a continuous noise monitoring station or a mobile online measurement station.

dBAMonitor –

R10 is a SOFTWARE-BASED SOUND LEVEL METER FOR WINDOWS and allows

1. Display noise level in public or private environments by means of computer screens or screens or digital signage.
2. Perform Permanent Noise Monitoring by capturing Leq, LMax, LMin, Ln in A, Lz, LCPeak,
3. Perform audio recording by thresholds with differentiated schedules.
4. Perform data logging in CSV text files and SQL databases.
5. Sending data logs and audios to the cloud for online publication

Typical Uses

dBAMonitor is a centerpiece of complex noise monitoring systems, which we tailor for industries and cities, however it can also be used by people in the community – not specialists – without any complications. The software is the same, and only the ways of implementing it change.

All it takes is a Windows 10 computer, a microphone connected to your computer, and some time to get it working the first time. Then, it will operate autonomously without major intervening required.

dBAMonitor Technical Features

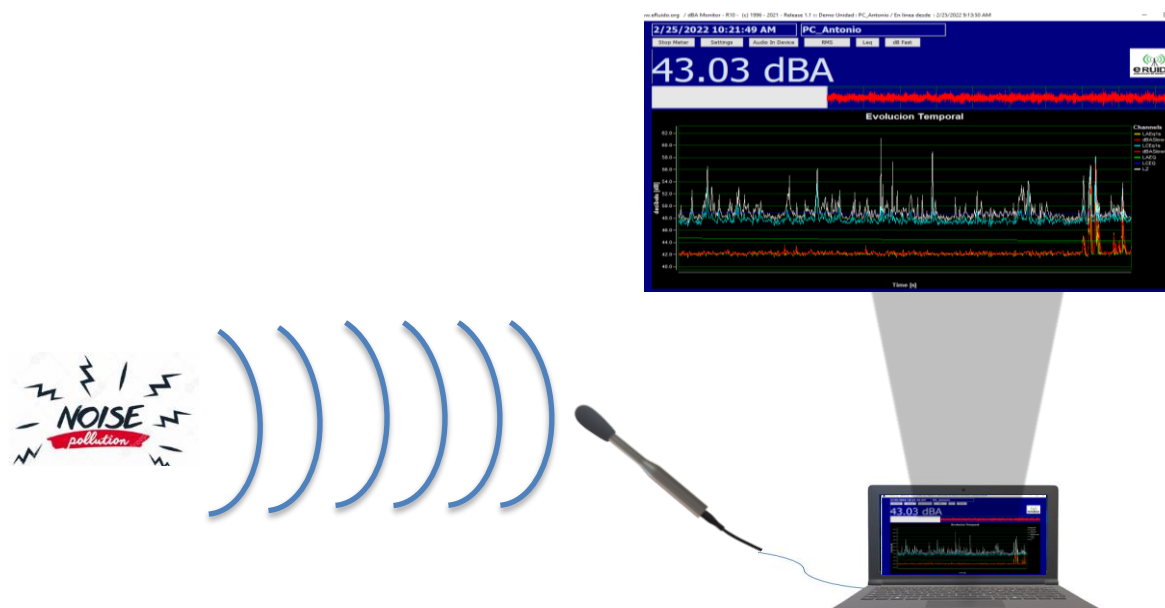
1. A,C, Z, Fast and Slow decibel calculation routines validated by Independent Laboratory.
2. Audio capture, according to thresholds defined for Day/Night hours. In this way, only events that may cause non-compliance with the current regulation are recorded.
3. Free assistant programs to compress audio and send them to the cloud.
4. Calculation of equivalent sound pressure level every 1 second with type A, Z and type C frequency filter. LAEq1s, LZEQ1s and LCEQ1s.
5. LASlow slow sound pressure level recording, every one second in a text file.
6. Recording LASMax1s, LCMax1s, LAMin1s, LCMin1s levels every second.
7. Calibration configuration by piston, background noise, or fixed speaker* (remote field self-calibration)
8. Log File Rotation Settings
9. Setting App Colors and Logos
10. Automatic adjustment for different screen sizes
11. Demo version, measures 24 hours. Then you will have to restart the measurement and registration manually.
12. Perpetual Licensing for each PC
13. Low maintenance and operation cost. It runs on a regular Windows PC.
14. It does not require software modules or additional licenses to operate. Microsoft ©'s SQL Server Express database is free to use up to 10GBytes of data. This is enough to store two years of data second by second.
15. Open data formats. You can access all your data. Its open.
16. eRuido Cloud service allows you to publish data online on the Internet
17. Audio streaming system available at no cost on the LAN network. Charges apply for transmission to the Internet.

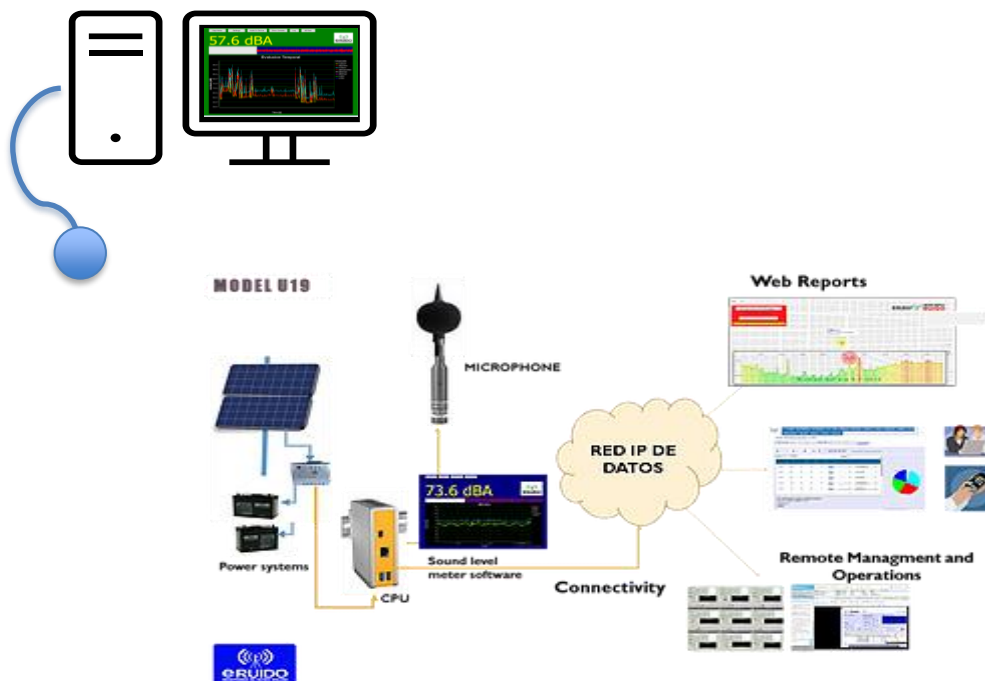
Requirements

Computer

To run dBAMonitor R10 requires a PC with

1. Windows 10/11 – Linux via Wine
2. 2GHz / 4 CPU cores (Celeron J4125 or higher).
3. From 128 GBytes SSD hard drive preferably 256GBytes
4. 8G RAM.
5. Free USB port for connecting USB interface measurement microphone





Microphone

The audio signal is captured from a microphone and/or sound card with a sample rate of 44.1KHz or 48KHz preferably and from 16-bit resolution upwards. For microphones compatible with eRuido, consider that depending on the microphone, a simple noise monitor can be used up to a certifiable type 1 sound level meter. It will all depend on the microphone used. The software is the same and the calculations are performed with type 0 tolerance.

Compatible microphones include

Marca	Modelo	Clasificación	Acreditado IEC61672-3
eRuido	UM19	Clase 2	No
AWA	ISV1611	Clase 1	Possible
PLACID	PMNU21	Class 1	Possible
Dr Jordan	ATD42	Clase 1	Possible
Noise Sentry	MK3Dev	Clase 1	No
Mini Dsp	Umik-1	Clase 2	No
Mini Dsp	Umik-2	Clase 2	Possible
Dayton Audio	UMM6	Clase 2	No
Behringer	CM80, etc.	Clase 2	No

Measurement rating based on the microphone used,

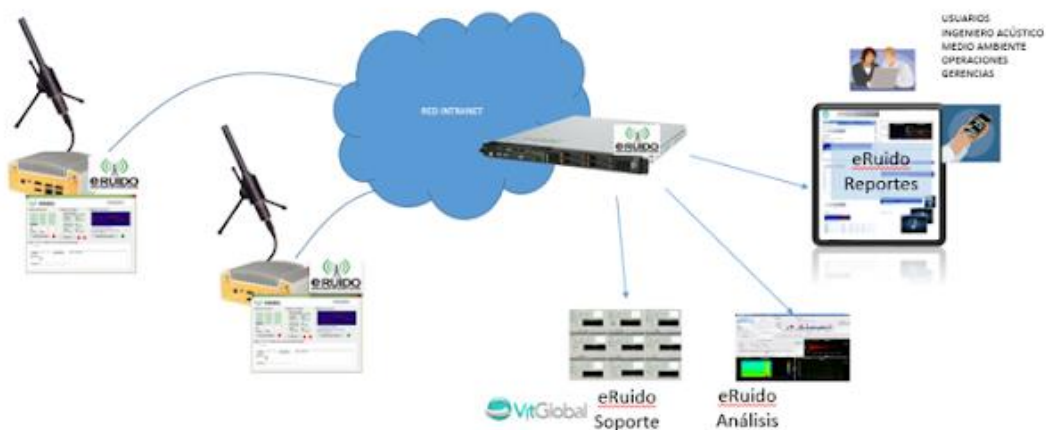
Tier	Microphones	Typical Use	Example	I
1	Electret microphone connected to PC's internal sound card	Qualitative detection and presence of annoying noises. Typical use: Home measurement.	Measurement in a community home with CP near the window.	
2	Electret microphone connected to external USB sound card . Examples: Sound Blaster XFi	Community monitoring, field measurement, industry monitoring, noise maps.		
3	Measurement microphone connected to acquisition card	XLR Microphone + Zoom 1 Channel Audio Interface Professional noise monitoring. Professional noise measurement.		
4	USB Measurement Microphone	Professional noise monitoring. Professional noise measurement.	Dr Jordan Design UMik-1 eRuido Mems Mic	
5	AC output of certified sound level meter via USB sound card	Professional noise monitoring. Professional noise measurement.	Example: AC output of professional sound level meters. With professional capture card.	

dBAMonitor Application Architectures for Noise Measurement and Monitoring

Modo estación Standalone



Modo Estacion con Servidor Central



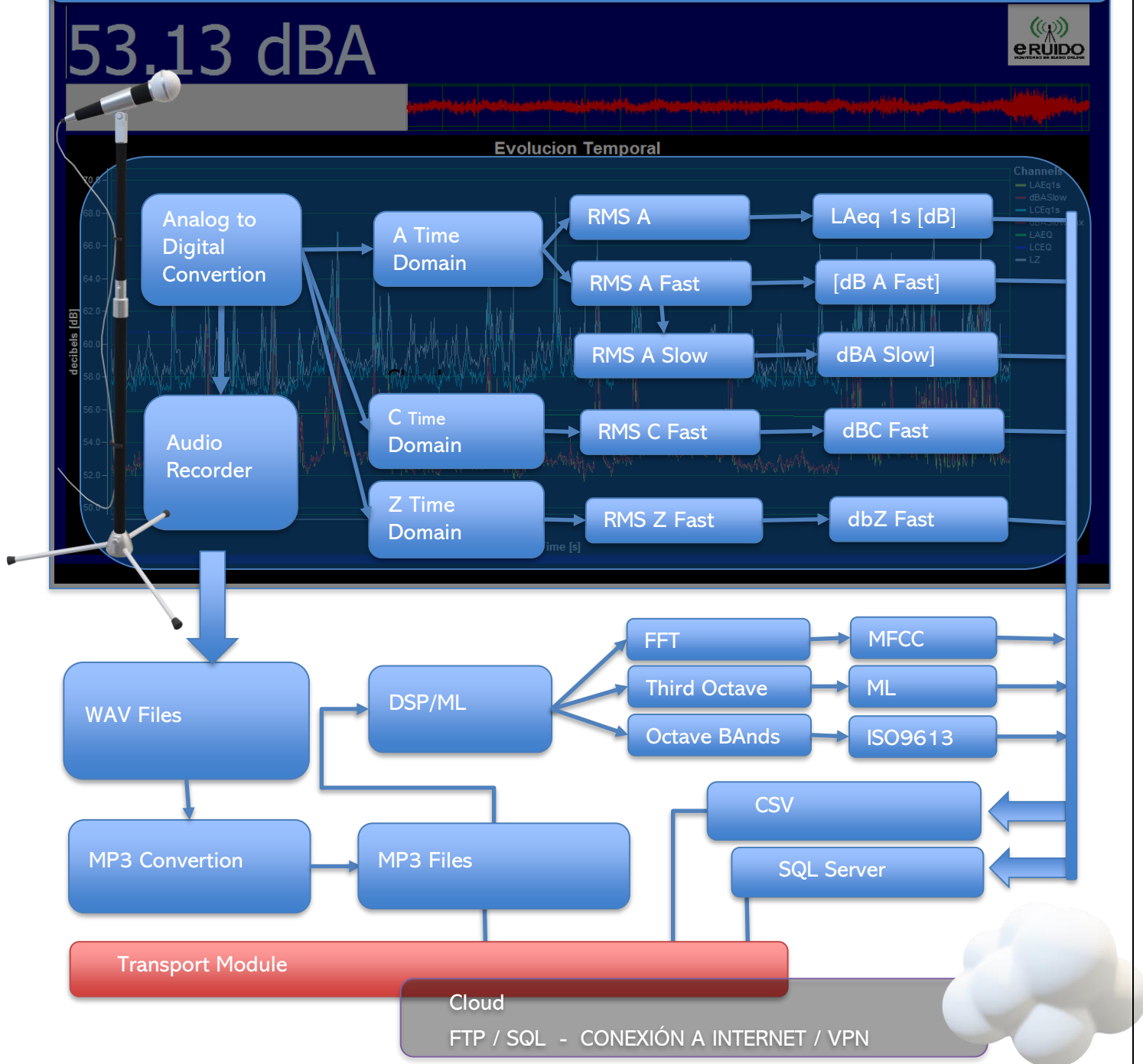
As long as you have your Windows computer connected to your USB measurement microphone, you can create a measurement system.

Different ways of creating measurement networks will depend on each project and its needs.

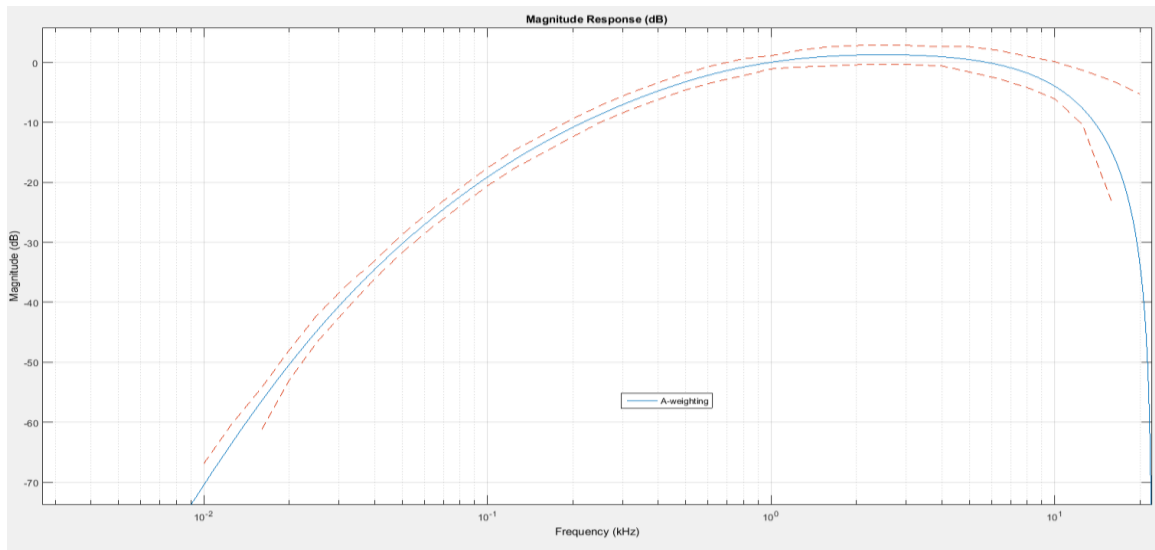
How do you calculate decibels of acoustic noise?

The digitized signal from the microphone is captured at 44.1KHz or 48khz, and after applying class 0 tolerance A and C filters, in the time domain, it is calculated according to IEC61672 standard: LAeq1S, LAS, LASMax, LASMin, LAF, LCeq1S, LCS, LASMax, LASMin, LCF. All values in decibels.

FLUJO ESQUEMA DE CALCULO DE DECIBELES

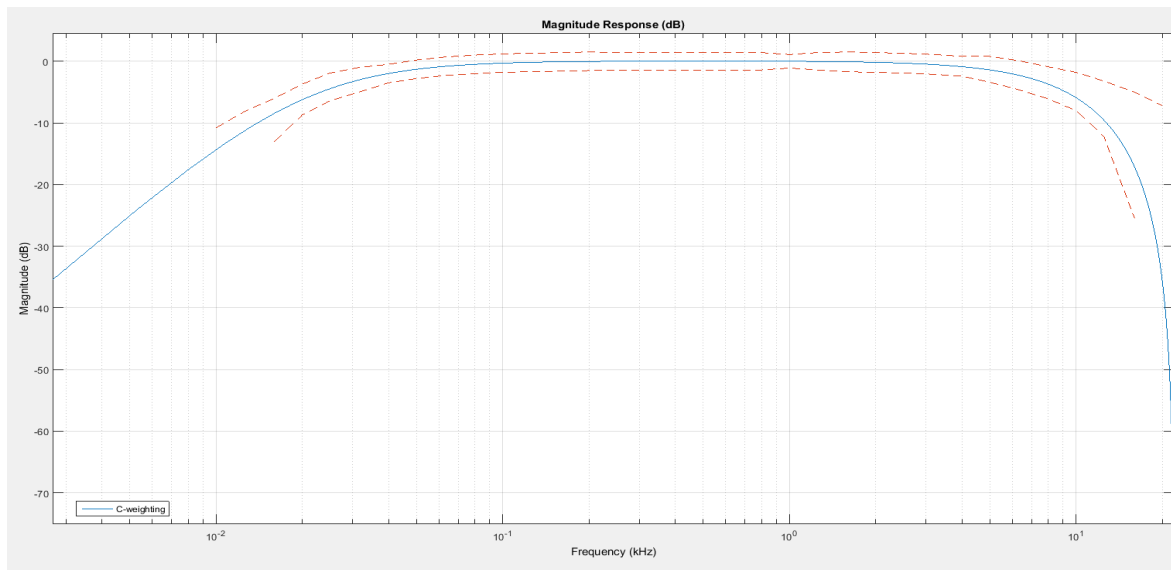


Ejemplo de respuesta de Filtros Frecuencias A y C



A-Weighted Filter Frequency Response

Its objective is to measure the loudness of a sound, according to the frequency response of the human ear.



C-weighted filter frequency response

Its objective is to measure the possible hearing damage of the level of noise present.

User Manual

Version R10.32

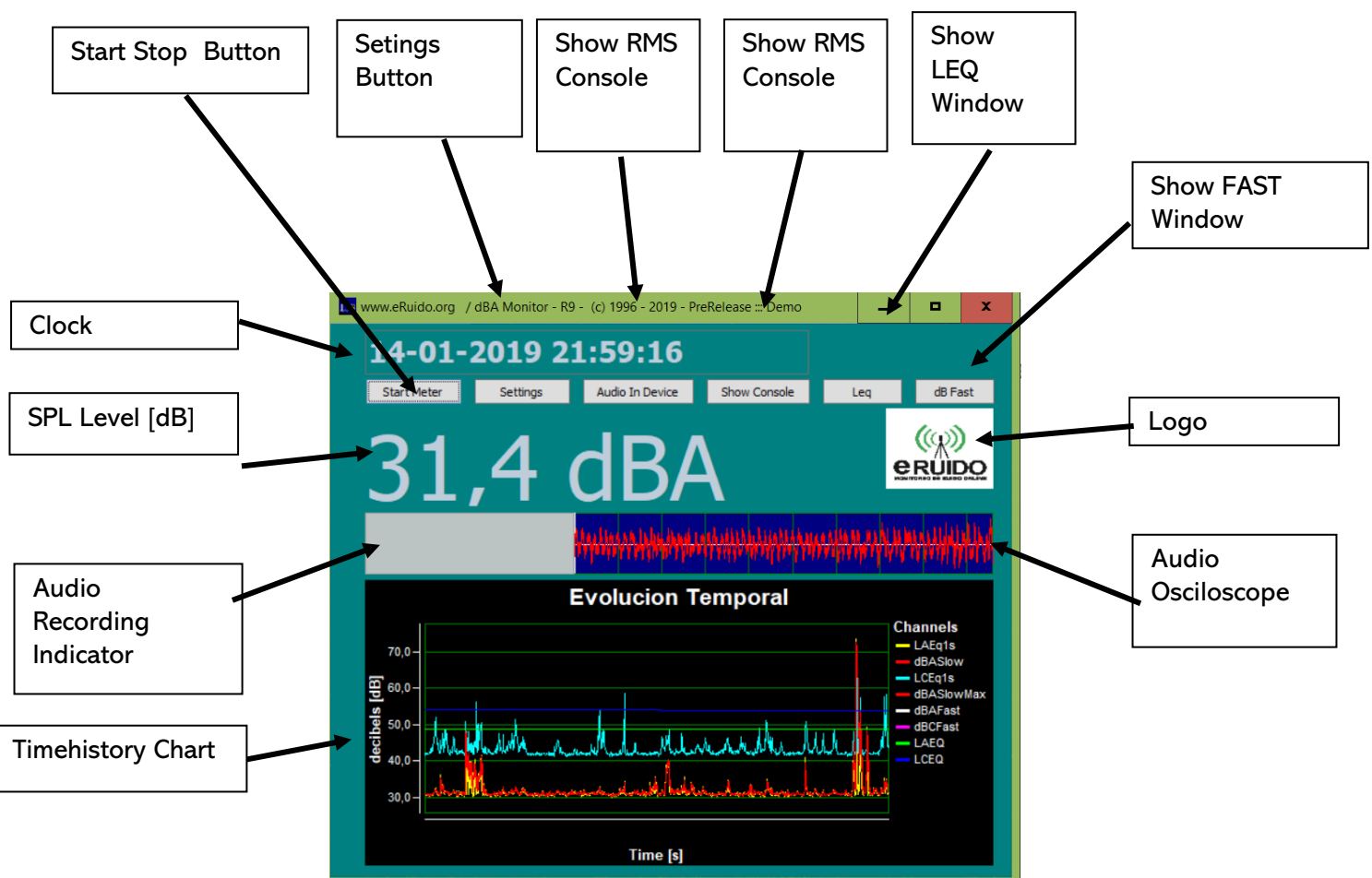
2026 June

User Interface

The dBAMonitor interface is made for Windows 10. It is responsive, that is, it adapts to the size of the screen.

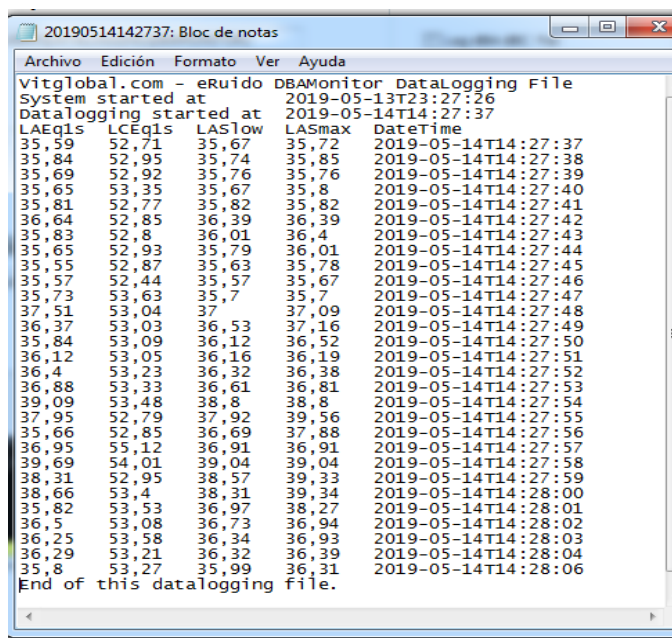
You have all the functions just a click away, and all the functions are documented in this manual.

Funciones en la Interfaz de Usuario



CSV datalogging

dBAMonitor writes all recorded data in the /datalogging folder to text files. The rotation of these files is configurable, and the name includes the date and time. Each row of the text file includes the timestamp in ISO8601 format, the LCEq1s, LAEq1S, LASlow, and LASMax values every one second.



LCEq1s	LAEq1s	LASlow	LASmax	DateTime
35,59	52,71	35,67	35,72	2019-05-14T14:27:37
35,84	52,95	35,74	35,85	2019-05-14T14:27:38
35,69	52,92	35,76	35,76	2019-05-14T14:27:39
35,65	53,35	35,67	35,8	2019-05-14T14:27:40
35,81	52,77	35,82	35,82	2019-05-14T14:27:41
36,64	52,85	36,39	36,39	2019-05-14T14:27:42
35,83	52,8	36,01	36,4	2019-05-14T14:27:43
35,65	52,93	35,79	36,01	2019-05-14T14:27:44
35,55	52,87	35,63	35,78	2019-05-14T14:27:45
35,57	52,44	35,57	35,67	2019-05-14T14:27:46
35,73	53,63	35,7	35,7	2019-05-14T14:27:47
37,51	53,04	37	37,09	2019-05-14T14:27:48
36,37	53,03	36,53	37,16	2019-05-14T14:27:49
35,84	53,09	36,12	36,52	2019-05-14T14:27:50
36,12	53,05	36,16	36,19	2019-05-14T14:27:51
36,4	53,23	36,32	36,38	2019-05-14T14:27:52
36,88	53,33	36,61	36,81	2019-05-14T14:27:53
39,09	53,48	38,8	38,8	2019-05-14T14:27:54
37,95	52,79	37,92	39,56	2019-05-14T14:27:55
35,66	52,85	36,69	37,88	2019-05-14T14:27:56
36,95	55,12	36,91	36,91	2019-05-14T14:27:57
39,69	54,01	39,04	39,04	2019-05-14T14:27:58
38,31	52,95	38,57	39,33	2019-05-14T14:27:59
38,66	53,4	38,31	39,34	2019-05-14T14:28:00
35,82	53,53	36,97	38,27	2019-05-14T14:28:01
36,5	53,08	36,73	36,94	2019-05-14T14:28:02
36,25	53,58	36,34	36,93	2019-05-14T14:28:03
36,29	53,21	36,32	36,39	2019-05-14T14:28:04
35,8	53,27	35,99	36,31	2019-05-14T14:28:06

Built-in features in dBAMonitor R10.x

Database and cloud services configuration window

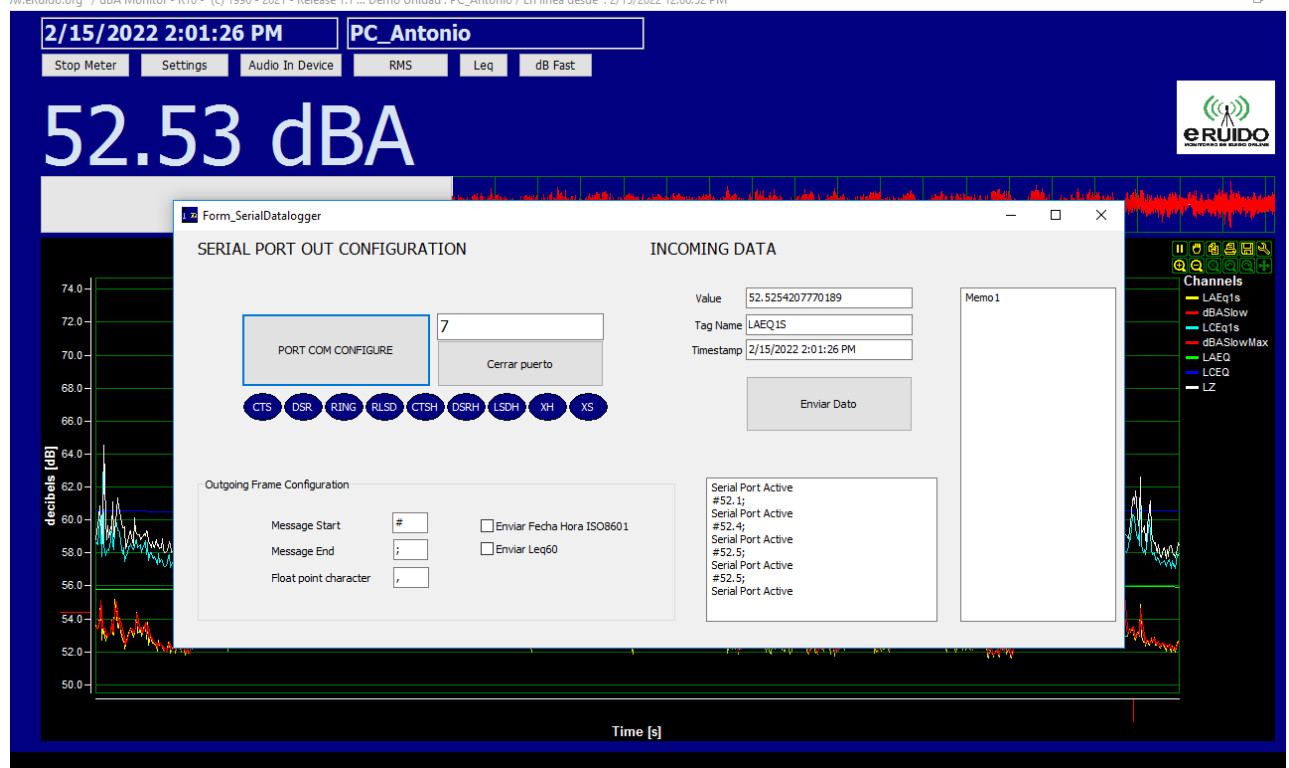
A wizard window located in Right-Button->Database Configuration) provides access to a help module to quickly generate local database and cloud database scripts.

Wind speed and direction measurement with Arduino open source module

A serial gate reading module was developed in the menu

Settings->Show Serial SPLM Input

rw.eRuido.org / dBAMonitor - R10 - (c) 1996 - 2021 - Release 1.1 :: Demo Unidad : PC_Antonio / En línea desde : 2/15/2022 12:06:52 PM



Wind speed and direction measurement with Arduino open source module

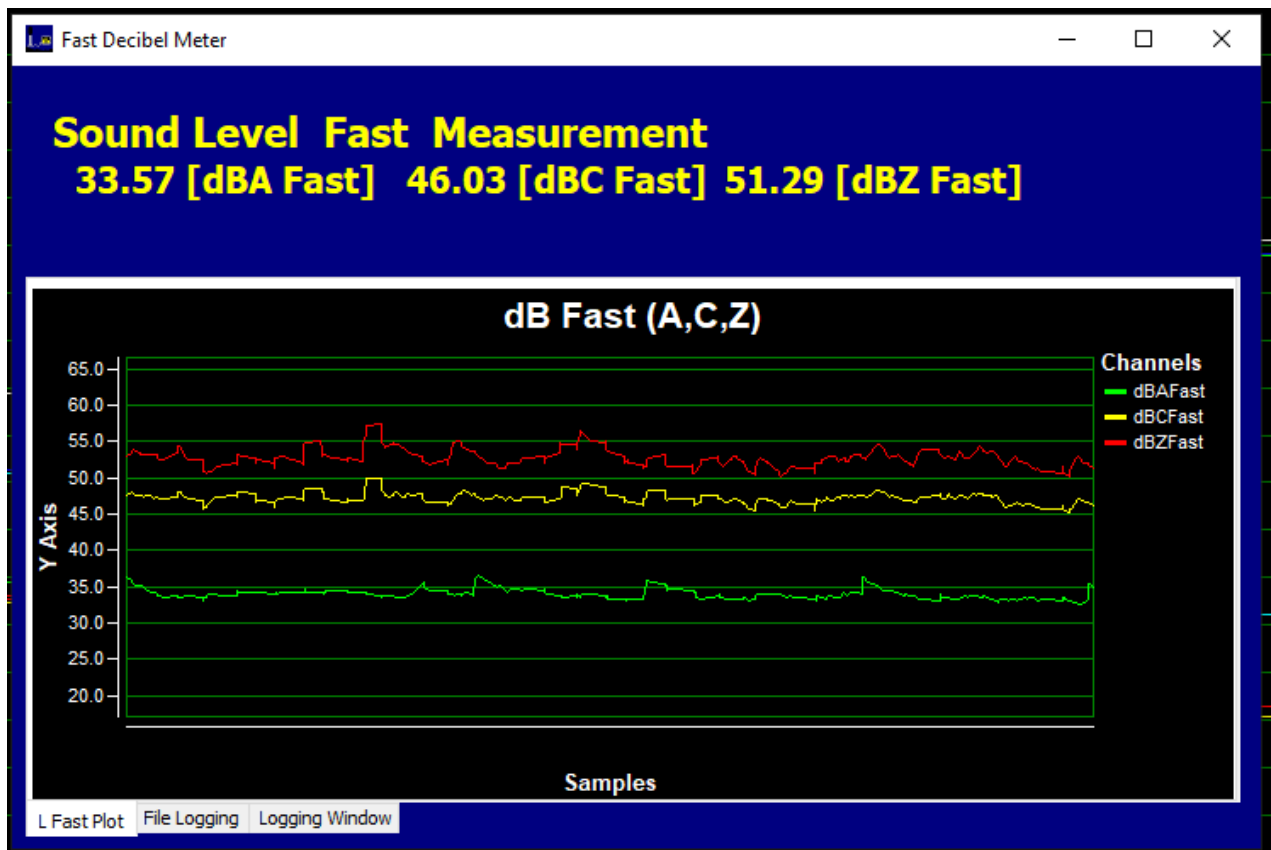
A serial gate reading module was developed in the menu

Settings->Show Serial SPLM Input

Features in dBAMonitor

dB Fast Visor. At the request of the ISP Chile certification laboratory

The dB Fast viewer allows you to see the evolution of the noise up to 10 times per second. This allows you to speed up calibration activities, look at engine starting behaviors, among other applications.



Fast Decibel Meter

Sound Level Fast Measurement

33.67 [dBA Fast] 46.01 [dBC Fast] 50.52 [dBZ Fast]

Sound Level Fast Measurement Datalogging Window

☒ Enable Datalogging

Datalogging File
dBAMonitor__Fast_20260626183727.txt

DataFolder
E:\ERUIDO\Fast\

Datalogging File Template
Fast_Datalogging_#timestamp#.txt

File Minutes
4

Rotate Now

36.81 [dBA Fast]	46.99 [dBC Fast]	51.82 [dBZ Fast]	6/26/20266:39:06PM
36.81 [dBA Fast]	46.99 [dBC Fast]	51.78 [dBZ Fast]	6/26/20266:39:06PM
36.81 [dBA Fast]	46.99 [dBC Fast]	51.63 [dBZ Fast]	6/26/20266:39:06PM
36.81 [dBA Fast]	46.99 [dBC Fast]	51.56 [dBZ Fast]	6/26/20266:39:06PM
36.81 [dBA Fast]	46.99 [dBC Fast]	51.43 [dBZ Fast]	6/26/20266:39:06PM
36.81 [dBA Fast]	46.99 [dBC Fast]	50.91 [dBZ Fast]	6/26/20266:39:06PM
36.81 [dBA Fast]	46.99 [dBC Fast]	50.36 [dBZ Fast]	6/26/20266:39:06PM
33.94 [dBA Fast]	45.83 [dBC Fast]	50.07 [dBZ Fast]	6/26/20266:39:07PM
33.94 [dBA Fast]	45.83 [dBC Fast]	49.54 [dBZ Fast]	6/26/20266:39:07PM
33.94 [dBA Fast]	45.83 [dBC Fast]	50.14 [dBZ Fast]	6/26/20266:39:07PM
33.8 [dBA Fast]	45.19 [dBC Fast]	50.13 [dBZ Fast]	6/26/20266:39:07PM
33.61 [dBA Fast]	45.22 [dBC Fast]	50.3 [dBZ Fast]	6/26/20266:39:07PM
33.67 [dBA Fast]	45.33 [dBC Fast]	50.49 [dBZ Fast]	6/26/20266:39:07PM
33.65 [dBA Fast]	45.3 [dBC Fast]	50.56 [dBZ Fast]	6/26/20266:39:07PM
33.45 [dBA Fast]	45.44 [dBC Fast]	50.52 [dBZ Fast]	6/26/20266:39:07PM

L Fast Plot File Logging Logging Window

Fast Decibel Meter

Sound Level Fast Measurement

33.79 [dBA Fast] 47.29 [dBC Fast] 52.55 [dBZ Fast]

Datalogging Folders

E:\ERUIDO\Fast\ Change

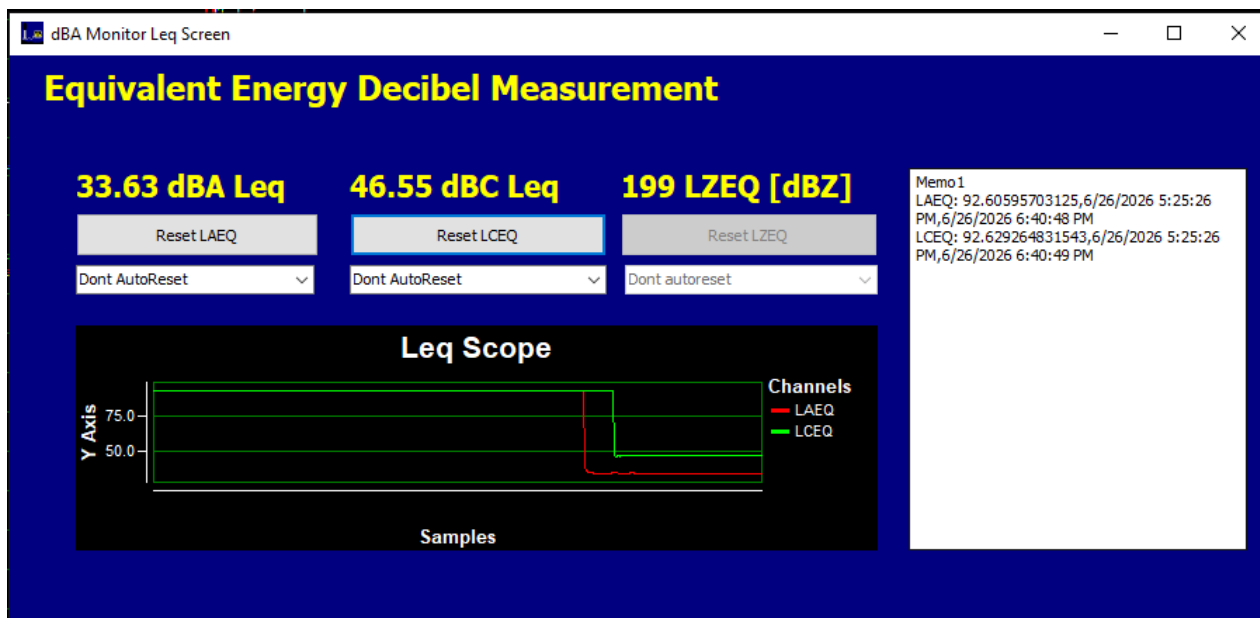
List Logged Files - Refresh

E:\ERUIDO\Fast\dBAMonitor__Fast_20260324155107.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324155507.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324155907.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324160307.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324160707.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324161107.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324161507.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324161907.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324162307.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324162707.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324163107.txt
E:\ERUIDO\Fast\dBAMonitor__Fast_20260324163507.txt

LAF,LCF,LZF,TIME,UNIT
47.1 [dBA Fast], 55.03 [dBC Fast], 58.96 [dBZ Fast]
3/24/20264:03:07PM
47.03 [dBA Fast], 54.98 [dBC Fast], 59.02 [dBZ Fast]
3/24/20264:03:07PM
47.03 [dBA Fast], 54.98 [dBC Fast], 58.75 [dBZ Fast]
3/24/20264:03:07PM
47.23 [dBA Fast], 54.81 [dBC Fast], 59.09 [dBZ Fast]
3/24/20264:03:07PM
47.2 [dBA Fast], 55.09 [dBC Fast], 59.18 [dBZ Fast]
3/24/20264:03:07PM
47.32 [dBA Fast], 55.01 [dBC Fast], 58.98 [dBZ Fast]
3/24/20264:03:07PM
47.18 [dBA Fast], 54.83 [dBC Fast], 59.41 [dBZ Fast]
3/24/20264:03:07PM
46.99 [dBA Fast], 54.86 [dBC Fast], 59.21 [dBZ Fast]
3/24/20264:03:07PM
47.01 [dBA Fast], 54.92 [dBC Fast], 59.07 [dBZ Fast]
3/24/20264:03:07PM

L Fast Plot File Logging Logging Window

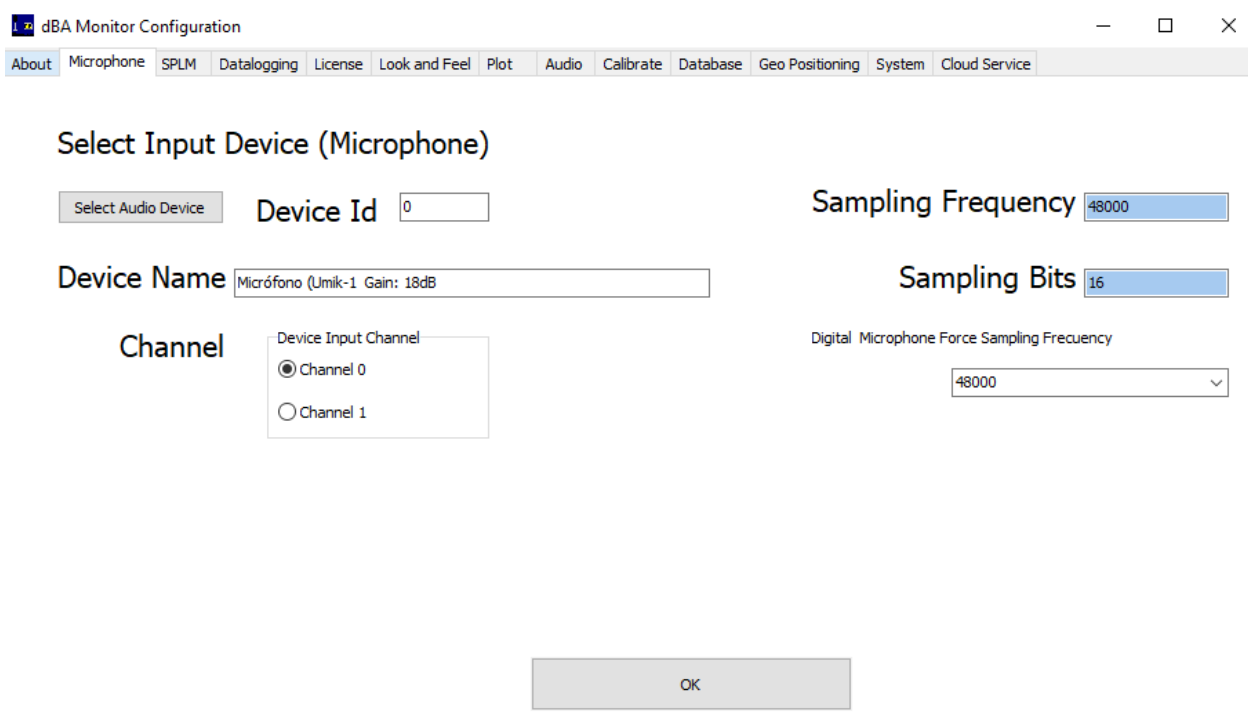
Leq Viewer with Reset and Register Button for LAeq and LCEq



Microphone Settings

New supported sample rate. Can work at 44.1KHz or 48KHz¹

*Defined in the Microphone tab of the SETTINGS window



dBA Monitor Configuration

About | Microphone | SPLM | Datalogging | License | Look and Feel | Plot | Audio | Calibrate | Database | Geo Positioning | System | Cloud Service

Select Input Device (Microphone)

Select Audio Device Device Id: 0 Sampling Frequency: 48000

Device Name: Micrófono (Umk-1 Gain: 18dB) Sampling Bits: 16

Channel: Device Input Channel
☒ Channel 0
☐ Channel 1

Digital Microphone Force Sampling Frequency: 48000

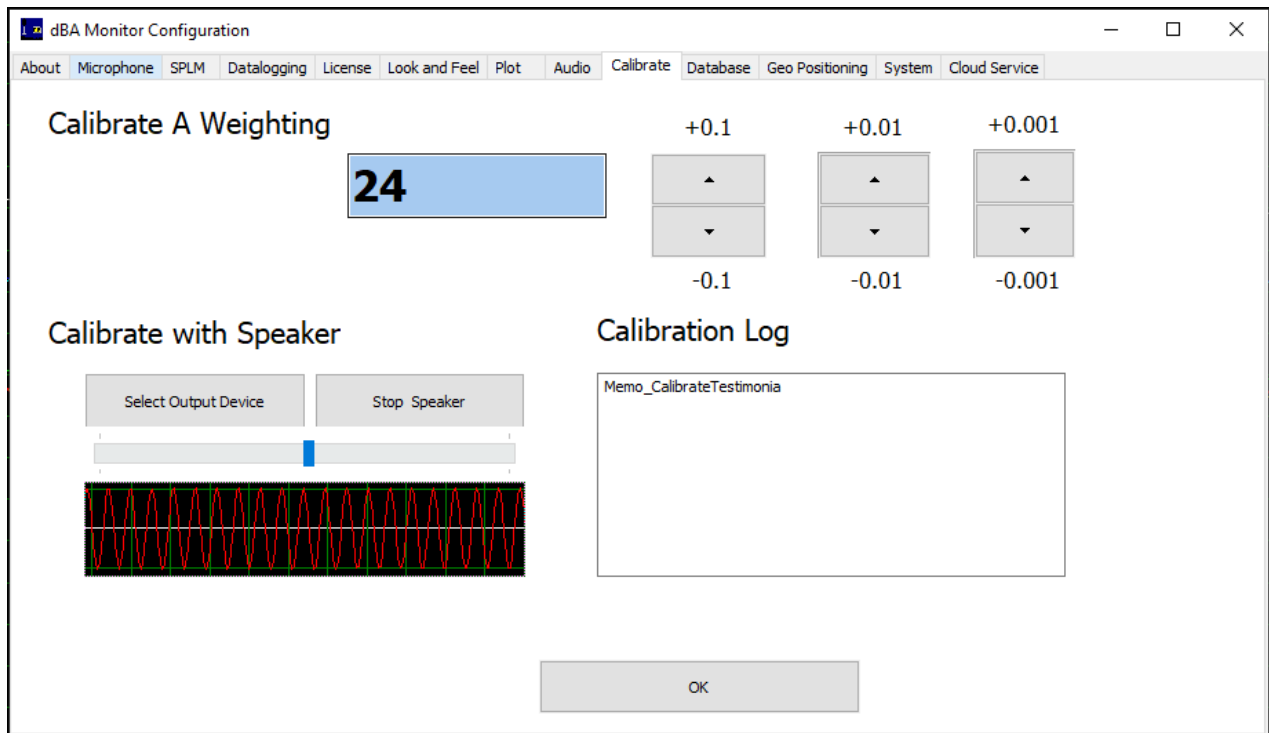
OK

¹ The eRuido UM19 microphones run at 44.1 kHz. UM21 class 1 condenser microphones run at 48KHz.

Calibration utility via speaker.

*Defined in the CALIBRATION tab of the Settings window

It allows you to use an external speaker connected to the PC. This speaker is fixed to perform calibration check remotely without climbing the microphone pole to put a piston-type calibrator. This reduces the risk of climbing a pole to be calibrated, avoids tampering with the microphone and also allows the offset to be adjusted remotely.

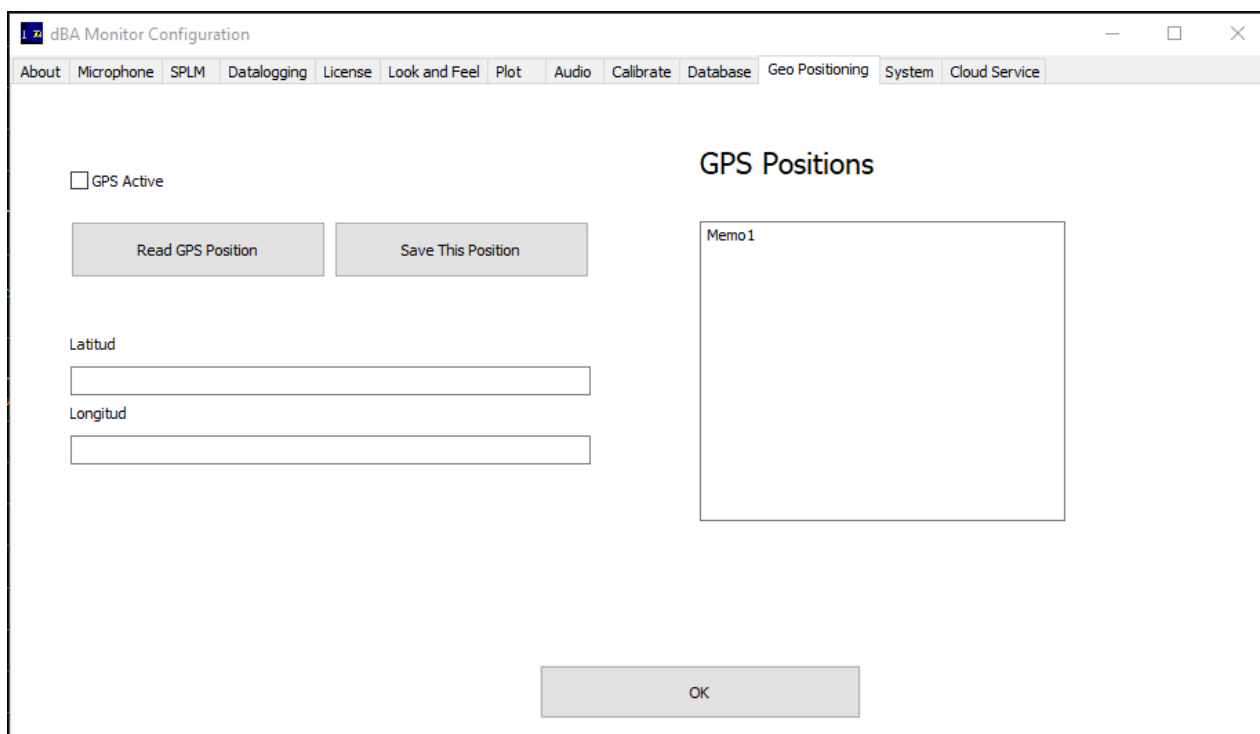


Usefulness of GEO Positioning

* Used in the GEOLOCATION tab in SETTINGS window

It allows you to get the location using the system's GPS. The feature depends on your PC having the Location service activated and having GPS sensor available.

We are in the process of homologating low-cost USB GPS drives to complement our offering of devices compatible with eBAMonitor noise.

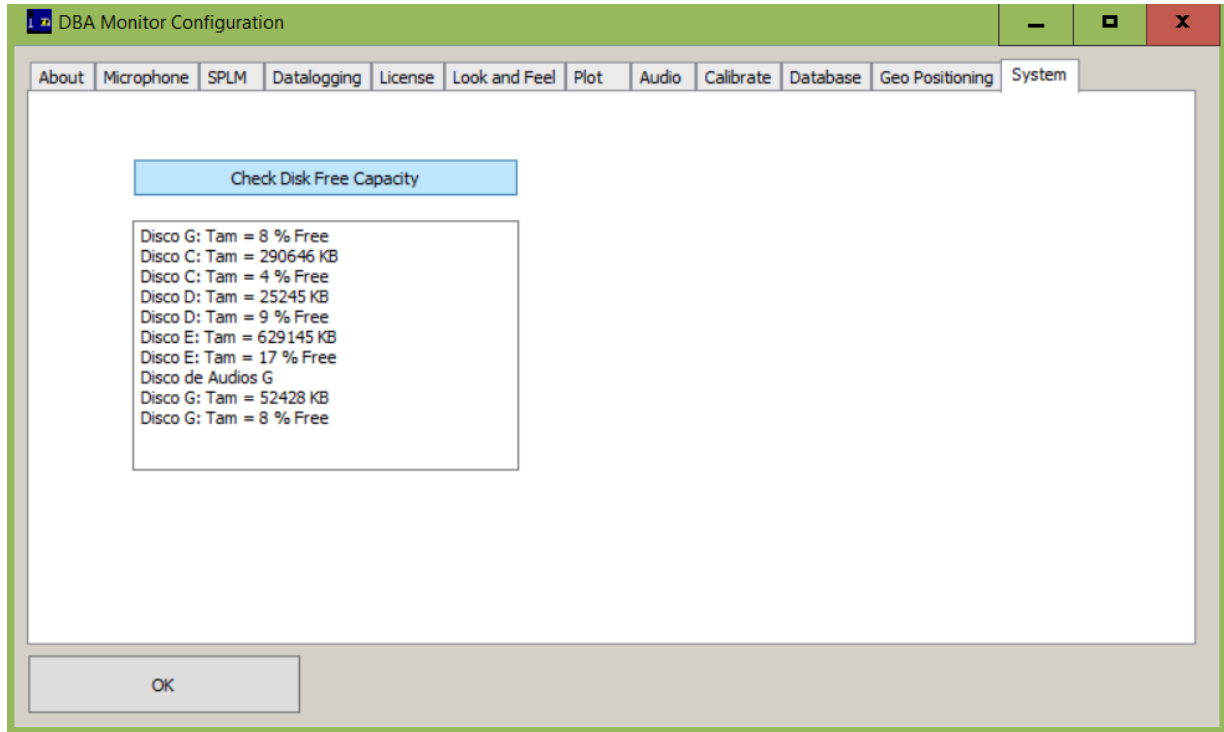


The screenshot shows the 'dBAMonitor Configuration' window with the 'Geo Positioning' tab selected. The window has a menu bar with options: About, Microphone, SPLM, Datalogging, License, Look and Feel, Plot, Audio, Calibrate, Database, Geo Positioning, System, and Cloud Service. The main content area is divided into two sections. On the left, there is a checkbox labeled 'GPS Active' which is currently unchecked. Below this are two buttons: 'Read GPS Position' and 'Save This Position'. Further down are two text input fields labeled 'Latitud' and 'Longitud'. On the right, there is a section titled 'GPS Positions' containing a large text area labeled 'Memo1'. At the bottom center of the window is an 'OK' button.

Disk Check Utility

* Used in the SYSTEM tab in SETTINGS window

Allows you to check the free space of each disk in the system



Important: In case the audio disc is 90% used, the station will stop taking audio samples to avoid system collapse due to a full disc.

Starting dBAMonitor

To get started with dBAMonitor, run the

`c:/ERUIDO/ dbamonitor_r10.exe`

Once started, click on the "Start Meter" button to start the measurement.

To calibrate your microphone with a calibrator, open Settings->Calibrate

To set audio folders and thresholds, open Settings->Audio

Automatic Start

dBAMonitor can start automatically when you start your computer.

For this, you must leave a direct access to

`C:/ERUIDO/dbamonitor_r10.exe`

in the folder that opens when you run

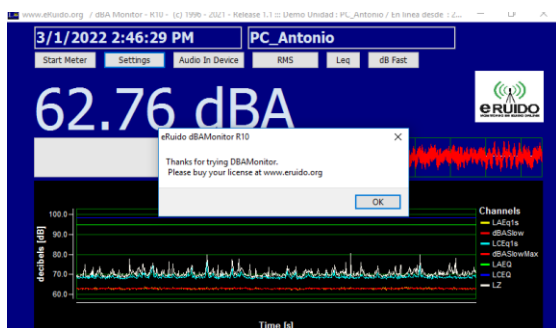
`start->run->Shell:startup <ENTER>`

With auto-start, you can set up permanent monitoring, even with PC reboots by windows update, power outage, or manual restart. ²

License

If you. It has unlicensed dBAMonitor, the program will run 24 hours and then it will broadcast the following window

² In W10/11, **shell:startup**,. This folder should be opened from the W10/11 run command, which is invoked with Window+x



Press Ok, and resume to continue measuring.

The use of unlicensed dBAMonitor is permitted for particular measurements and monitoring.

And the use of companies for evaluation purposes or demonstrations of a maximum of 24 hours is allowed.

Trading with dBAMonitor is not permitted unless you have its license. Purchase your license in www.eruido.org

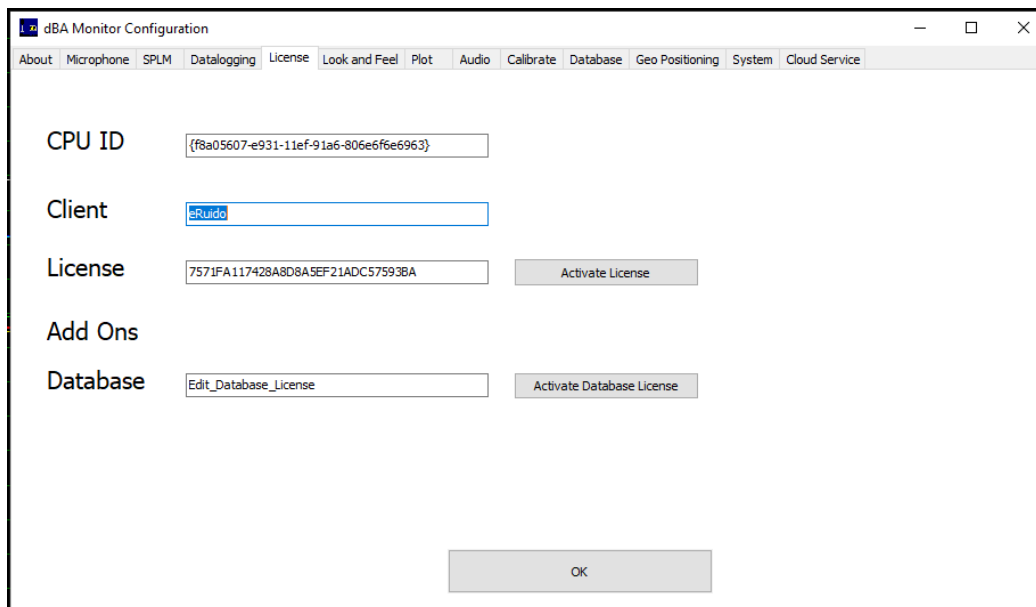
Activate your license

If you purchased your license, follow the instructions below.

If you do not have a license please purchase one in www.eruido.org.

If you do not have a License, please read the rest of the manual as the functionalities explained in this manual are valid for the demo version.

1. Click the Settings button
2. Select the License panel
3. Copy the CPU ID text and send it to soporte@vitglobal.com
4. We will send you your license to activate your software on your PC by return of the mail.
5. The License code received must be put in the License Text
6. Press the Activate button
7. Now your software is activated.



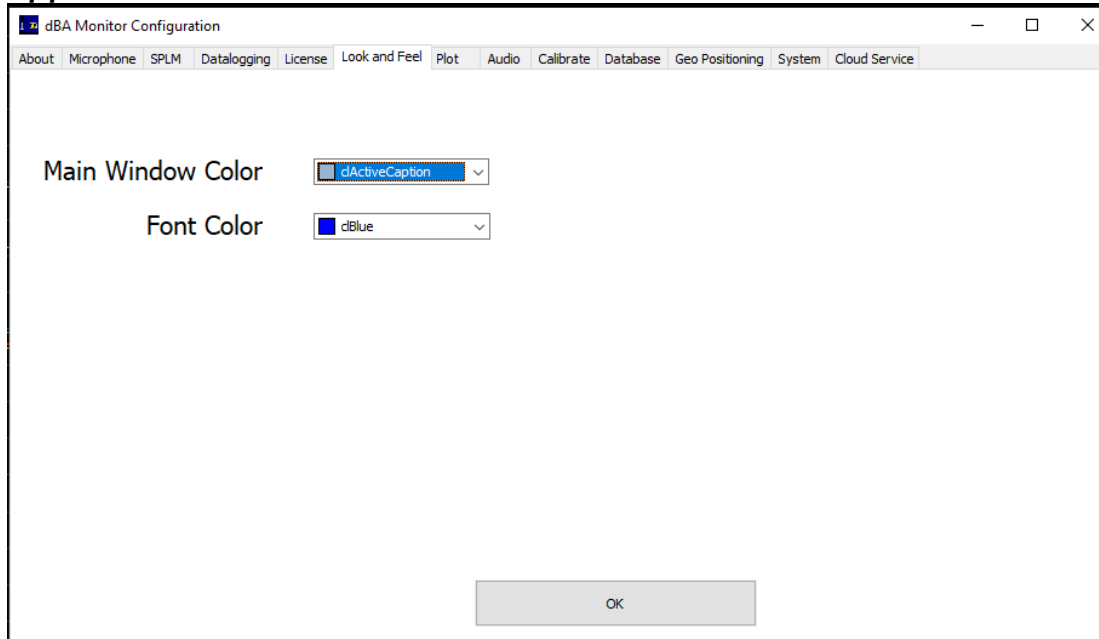
When running once with your license activated, you will be able to modify the logo of the program.

Customizing eRuido for your company

Logo modification

1. To do this, double-click on the eNoise icon
2. A file selection dialog box opens.
3. Select a JPG image file with your company logo
4. Accept. The program will continue to operate with its new logo. It will start each time with the new logo.
5. It is recommended that your company logo be placed in the same dBAMonitor installation folder.
6. Do not delete the logo file or it will not be displayed.

App Colors



dBAMonitor can be configured with your company's colors. To do this, press the Settings button and select the "Look and Feel" panel

Select your preferred colors for the window and text.

FEATURE REFERENCE

1. Datalogging

dBAMonitor can keep a record of the measured values. These logs are saved in a text file in the Data folder.

The Datalogger function will write to the specified folders the data logs in TXT format, 100% compatible with Excel.

Data Logger Folder:

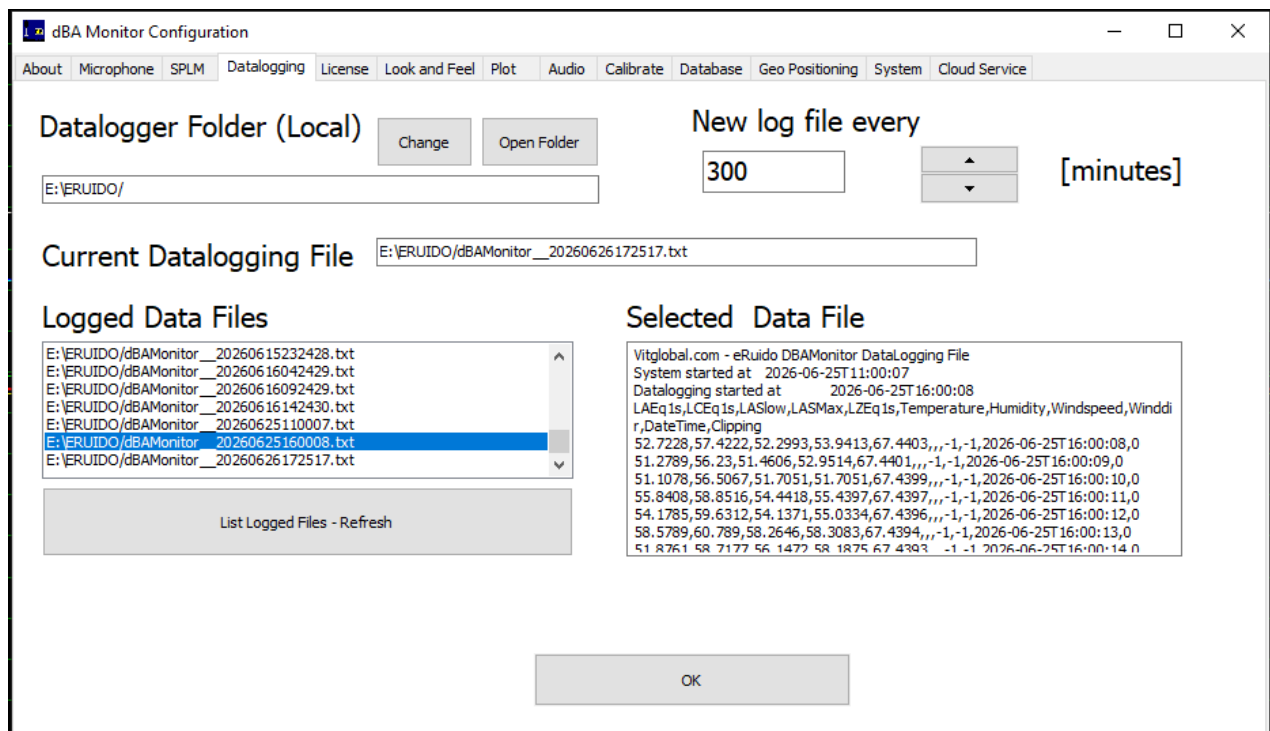
You can change the path of the registry folder by pressing the Change button and selecting the folder in the pop-up box. The new folder will be used when a new log file is opened.

New Log file every:

You can change the rotation time of each log file. It can be changed in multiples of 5 minutes. A new file is set up every 30 minutes in the image.

Current Datalogging File:

File currently being registered.



The screenshot shows the 'dBAMonitor Configuration' window with the 'Datalogging' tab selected. The window has a menu bar with options: About, Microphone, SPLM, Datalogging, License, Look and Feel, Plot, Audio, Calibrate, Database, Geo Positioning, System, and Cloud Service.

Datalogger Folder (Local): A text field shows 'E:\eRUIDO/'. There are 'Change' and 'Open Folder' buttons.

New log file every: A numeric input field shows '300', with up and down arrow buttons and the label '[minutes]'.

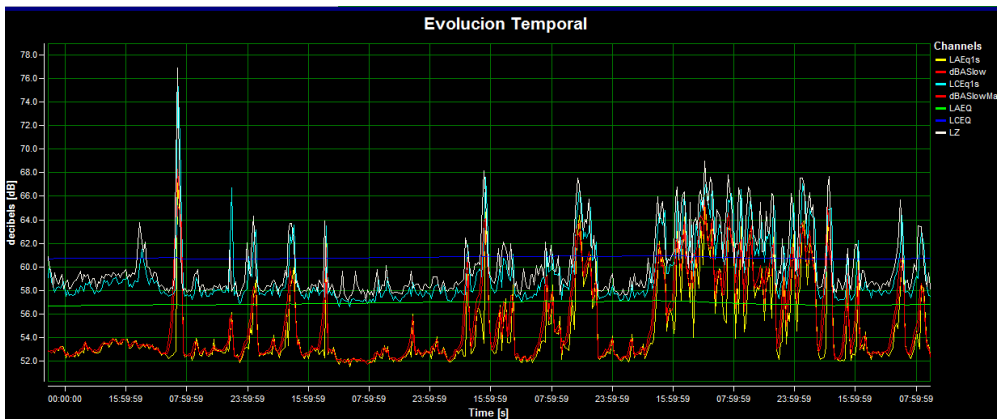
Current Datalogging File: A text field shows 'E:\eRUIDO\dBAMonitor__20260626172517.txt'.

Logged Data Files: A list box contains several files, with 'E:\eRUIDO\dBAMonitor__20260625160008.txt' selected. Below the list is a button labeled 'List Logged Files - Refresh'.

Selected Data File: A text area displays the contents of the selected file, starting with 'Vitglobal.com - eRuido DBAMonitor DataLogging File' and showing system and datalogging start times, followed by a long list of numerical data points.

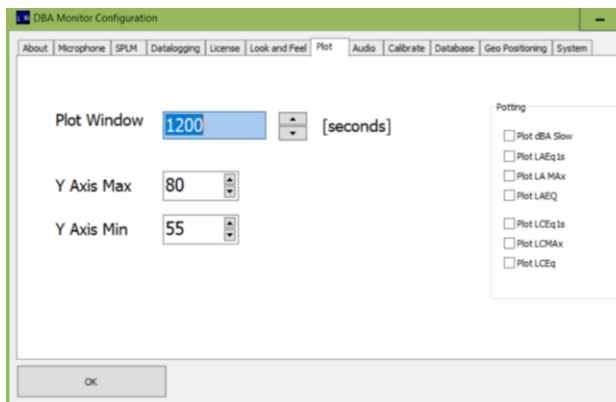
An 'OK' button is located at the bottom center of the window.

2. Level Chart



< ----Chart time in seconds -->

DBAMonitor can modify the time displayed in the level chart.



Plot Window:

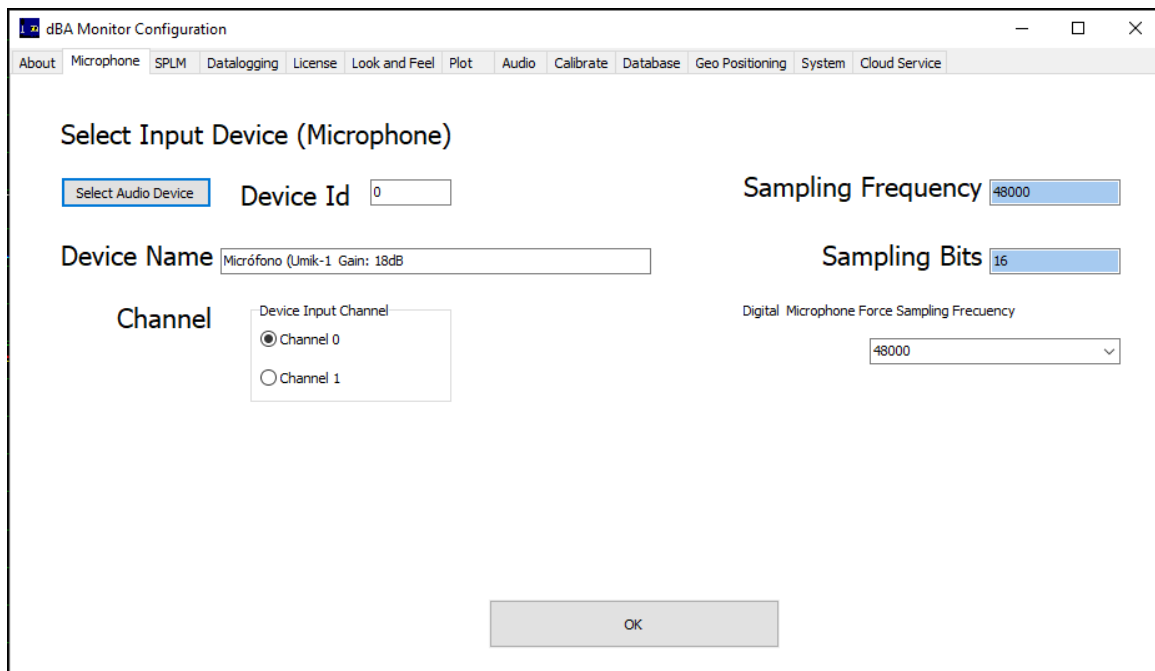
You can change the duration in seconds of the dBA Monitor graphical display.

If you increase the time lapse, dBA Monitor will adjust immediately.

If you decrease it, the chart will be reset.

3. Audio Device

DBA Monitor will always start the measurement with the default Windows recording device, however, DBA Monitor allows you to select the audio device used and use a different one from the default device.



The screenshot shows the 'dBA Monitor Configuration' window with the 'Microphone' tab selected. The window contains the following fields and controls:

- Select Input Device (Microphone)**: A section header.
- Select Audio Device**: A button.
- Device Id**: A text box containing '0'.
- Device Name**: A text box containing 'Micrófono (Umk-1 Gain: 18dB)'.
- Channel**: A section header.
- Device Input Channel**: A group box containing two radio buttons: 'Channel 0' (selected) and 'Channel 1'.
- Sampling Frequency**: A text box containing '48000'.
- Sampling Bits**: A text box containing '16'.
- Digital Microphone Force Sampling Frequency**: A text box containing '48000' with a dropdown arrow.
- OK**: A button at the bottom center.

Microphone:

Select Input Device (Microphone)

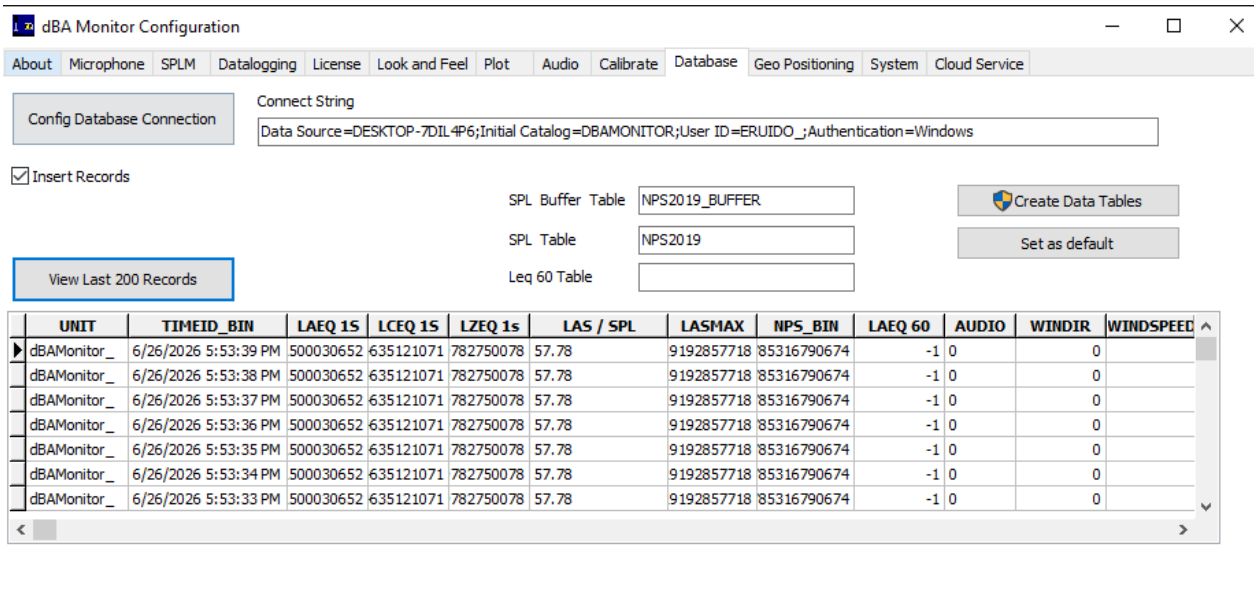
By selecting the device you will be able to modify the microphone that dBA Monitor uses to measure.

Sampling Frequency: System Sampling Rate / **Sampling Bits:** Digital Audio Resolution

Digital Microphone Sampling Frequency: Define here the Sample Rate for the correct application of digital filters in the time domain.

4. Database

DBA Monitor allows you to send data to a SQL Server database.



dBAMonitor Configuration

Connect String
Data Source=DESKTOP-7DIL4P6;Initial Catalog=DBAMONITOR;User ID=ERUIDO;Authentication=Windows

☒ Insert Records

SPL Buffer Table: NPS2019_BUFFER

SPL Table: NPS2019

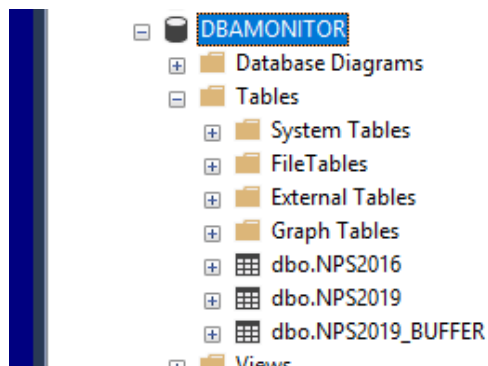
Leq 60 Table:

View Last 200 Records

Create Data Tables

Set as default

UNIT	TIMEID_BIN	LAEQ 1s	LCEQ 1s	LZEQ 1s	LAS / SPL	LASMAX	NPS_BIN	LAEQ 60	AUDIO	WINDIR	WINDSPEED
dBAMonitor_	6/26/2026 5:53:39 PM	500030652	635121071	782750078	57.78	9192857718	85316790674	-1 0	0	0	
dBAMonitor_	6/26/2026 5:53:38 PM	500030652	635121071	782750078	57.78	9192857718	85316790674	-1 0	0	0	
dBAMonitor_	6/26/2026 5:53:37 PM	500030652	635121071	782750078	57.78	9192857718	85316790674	-1 0	0	0	
dBAMonitor_	6/26/2026 5:53:36 PM	500030652	635121071	782750078	57.78	9192857718	85316790674	-1 0	0	0	
dBAMonitor_	6/26/2026 5:53:35 PM	500030652	635121071	782750078	57.78	9192857718	85316790674	-1 0	0	0	
dBAMonitor_	6/26/2026 5:53:34 PM	500030652	635121071	782750078	57.78	9192857718	85316790674	-1 0	0	0	
dBAMonitor_	6/26/2026 5:53:33 PM	500030652	635121071	782750078	57.78	9192857718	85316790674	-1 0	0	0	



Connect String

Database connection configuration.

Config Database Connection

Configure the database connection.
Requires restarting dBAMonitor.

Insert Records

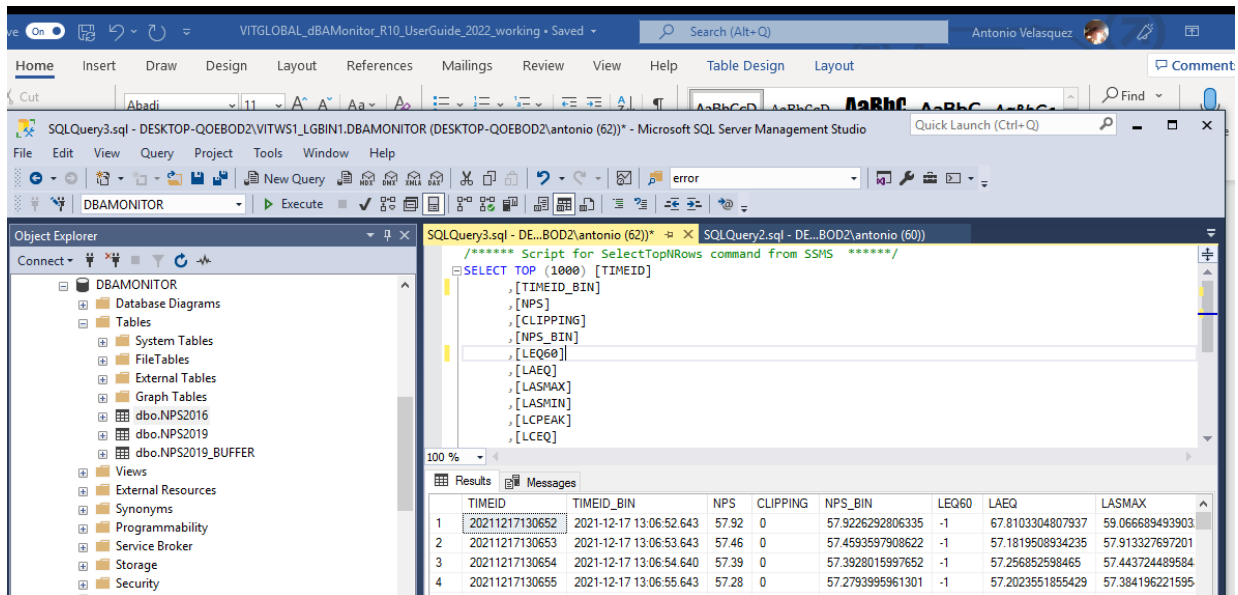
If checked, eRuido will save the database logs every second.

Data Table

Database table for inserting noise logs. The database must be in the format dBAMonitor.

Create Data Table

Create table to record data.



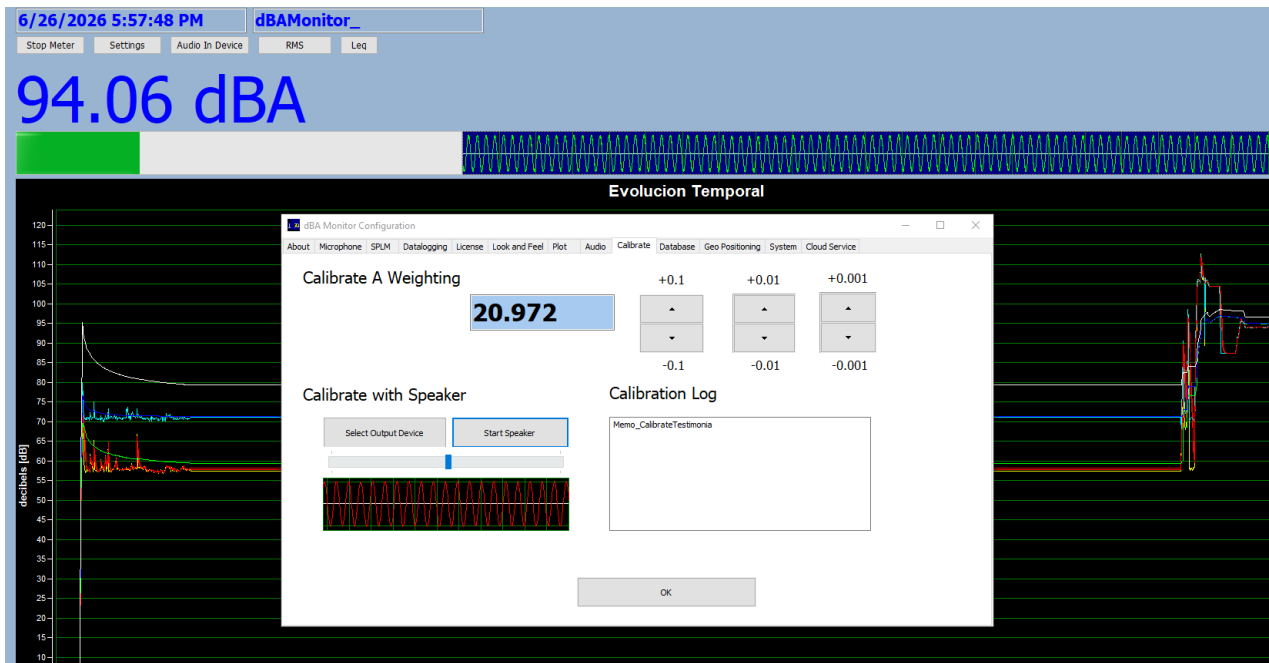
The screenshot shows the Microsoft SQL Server Management Studio interface. The Object Explorer on the left displays the database structure for 'DBAMONITOR', including tables like 'dbo.NPS2016', 'dbo.NPS2019', and 'dbo.NPS2019_BUFFER'. The main window shows a SQL query being executed, and the Results pane displays the following data:

	TIMEID	TIMEID_BIN	NPS	CLIPPING	NPS_BIN	LEQ60	LAEQ	LASMAX
1	20211217130652	2021-12-17 13:06:52.643	57.92	0	57.9226292806335	-1	67.8103304807937	59.066689493903
2	20211217130653	2021-12-17 13:06:53.643	57.46	0	57.4593597908622	-1	57.1819508934235	57.913327697201
3	20211217130654	2021-12-17 13:06:54.640	57.39	0	57.3928015997652	-1	57.256852598465	57.443724489584
4	20211217130655	2021-12-17 13:06:55.643	57.28	0	57.2793995961301	-1	57.2023951855429	57.384196221595

5. Calibration Procedure

With 1KHz / 94dB Calibrador Microphone

1. Connect a 94dB 1KHz calibrator to the DBAMonitor microphone
2. Pulse Settings y seleccione el panel Microphone
3. Adjust the Calibrate values until the reading reads 94 dBA



With external fixed speaker

If you have an external speaker and you place it in the open field at a fixed distance from your microphone you can have a reference signal to adjust when you don't have the calibrator, or when you connect remotely to your noise monitoring station.

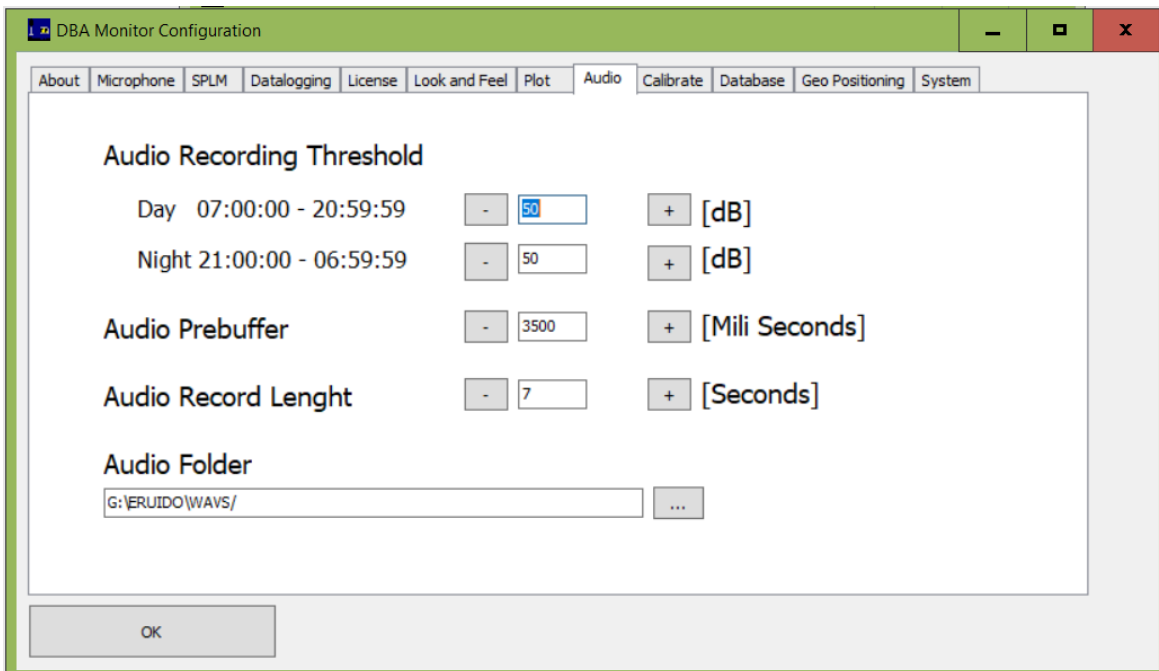
This helps especially when calibrating equipment located at height. The speaker can be Line Out, USB Out or Bluetooth Speaker.

This feature is experimental, and information will be added as soon as user experiences are made.

6. Audio Recorder / Grabadora de Audio

dBAMonitor records Audio by thresholds.

1. Audio Recording Threshold: Set max and min thresholds for day and night
2. Audio Prebuffer: Define pre-buffered audio prior to the threshold event
3. Audio Record Length: Define seconds of duration for each audio.
 1. Audio Folder: Indicate audio folder for recordings



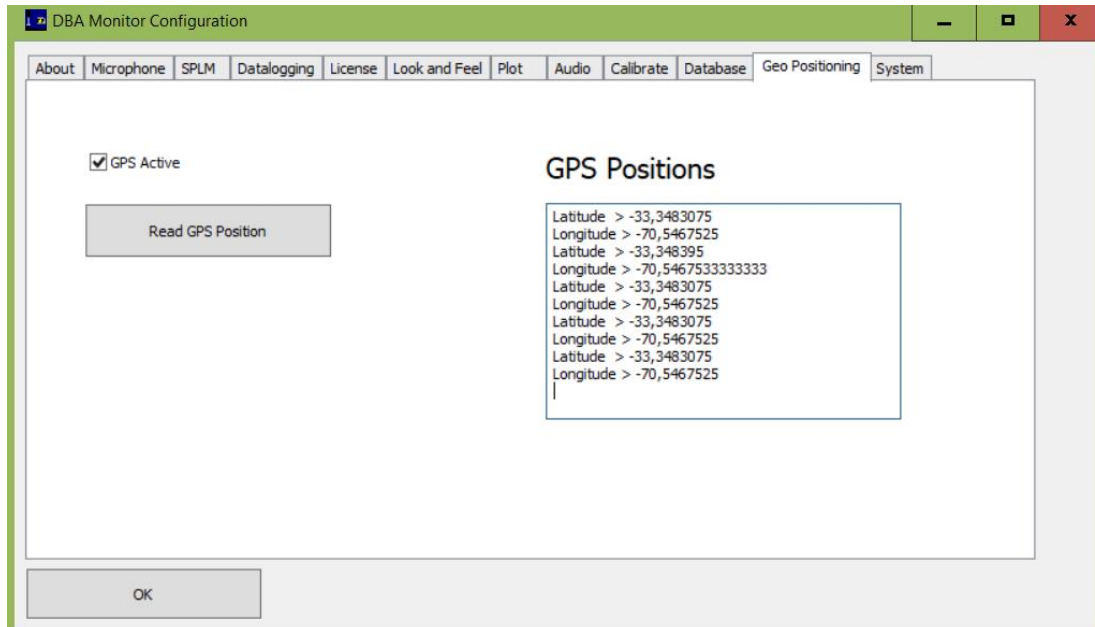
The screenshot shows the 'DBA Monitor Configuration' window with the 'Audio' tab selected. The window has a green title bar and a menu bar with options: About, Microphone, SPLM, Datalogging, License, Look and Feel, Plot, Audio, Calibrate, Database, Geo Positioning, and System. The main content area is titled 'Audio Recording Threshold' and contains the following settings:

- Day 07:00:00 - 20:59:59**: A numeric input field with the value '50' and a unit label '[dB]'. It has minus and plus buttons for adjustment.
- Night 21:00:00 - 06:59:59**: A numeric input field with the value '50' and a unit label '[dB]'. It has minus and plus buttons for adjustment.
- Audio Prebuffer**: A numeric input field with the value '3500' and a unit label '[Mili Seconds]'. It has minus and plus buttons for adjustment.
- Audio Record Length**: A numeric input field with the value '7' and a unit label '[Seconds]'. It has minus and plus buttons for adjustment.
- Audio Folder**: A text input field containing 'G:\ERUIDO\WAVS/' and a browse button (three dots).

An 'OK' button is located at the bottom left of the window.

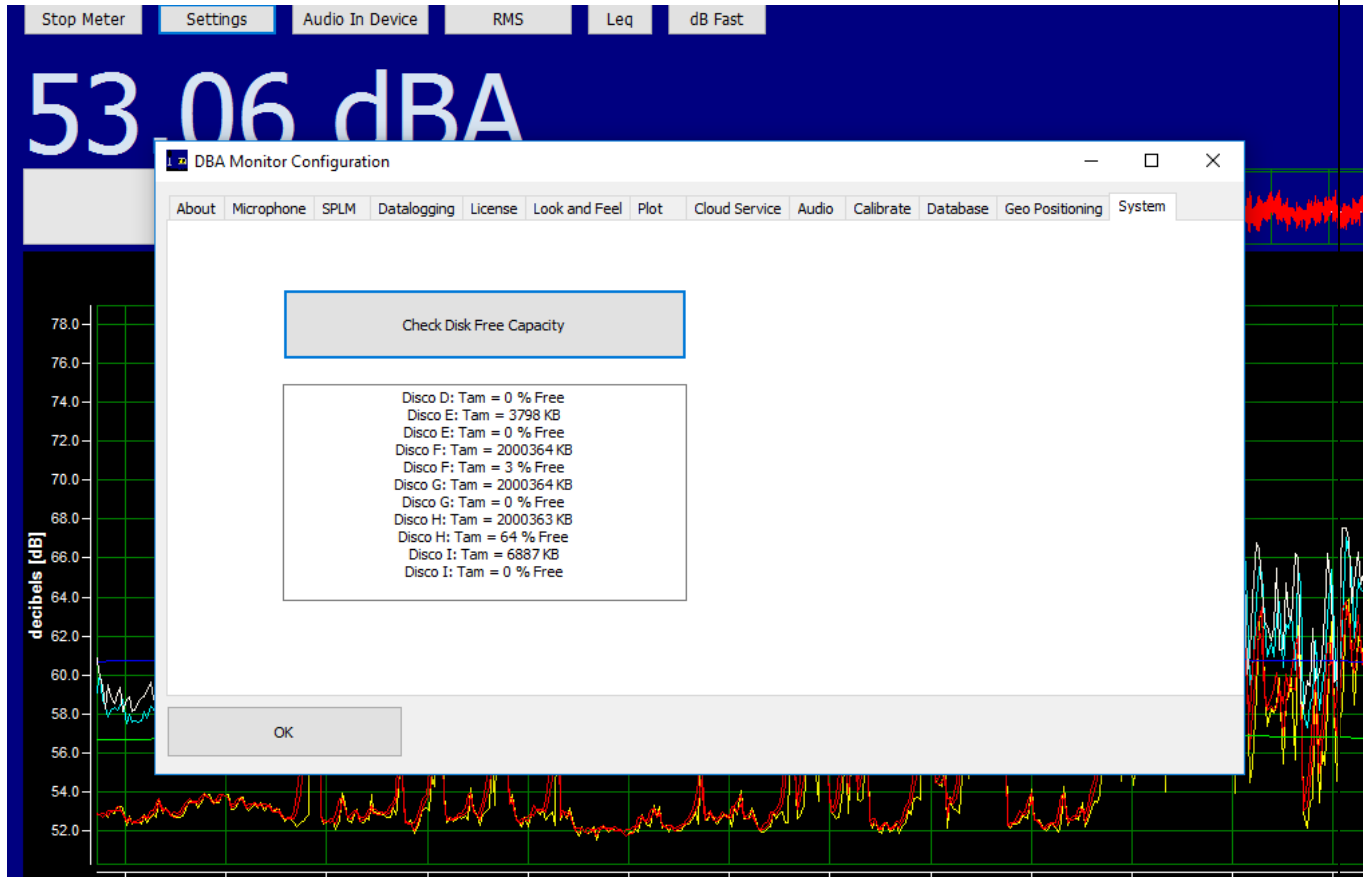
7. Geo Referencing

dBAMonitor will detect the GPS position using the compatible sensor present.



8. System Info

dBAMonitor will detect the available size on the computer's hard drives.



Installation

Installing an executable

To install just create a dBAMonitor folder on your hard drive or unzip the ZIP file you downloaded from our website.

If you have an older version of dBAMonitor, the Settings will be automatically taken over by dBAMonitor.

c:\ERUIDO

Copy dBAMonitor_R10.x.exe in this folder.

You must also create a Data folder

Open cmd in c:/eruido/

Run the following to create folders

```
mkdir _audios
```

```
mkdir audio
```

```
mkdir _Database
```

```
mkdir _Database/sql
```

```
mkdir _Datalogging
```

```
mkdir _Datalogging/Ingest
```

```
mkdir _Datalogging/Ingest/Ingested
```

Double-click dBAMonitor_R10.x.exe

dBAMonitor will start

Connect your USB microphone, select it with the "Audio In Device" button, type it in the "Settings"->Calibrate button, define the datalogging folders in the "Settings"->Datalogging button, define audio folders in the "Settings"->Audio button, set the recording thresholds in "Settings"->Audio

Press, "Start Meter"

You can measure and record 24 continuous hours. The licensed version never stops and you can register permanently.

Install with SQL Server

Installation of any part of the SQL Server configuration must be done with dBAMonitor stopped. Do not do this with the monitoring server running, for this, press the "Stop Meter" button before starting work in the database configuration.

When the database processes are terminated, DO NOT START MONITORING. You must close dBAMonitor and restart it to take the new database contexts.

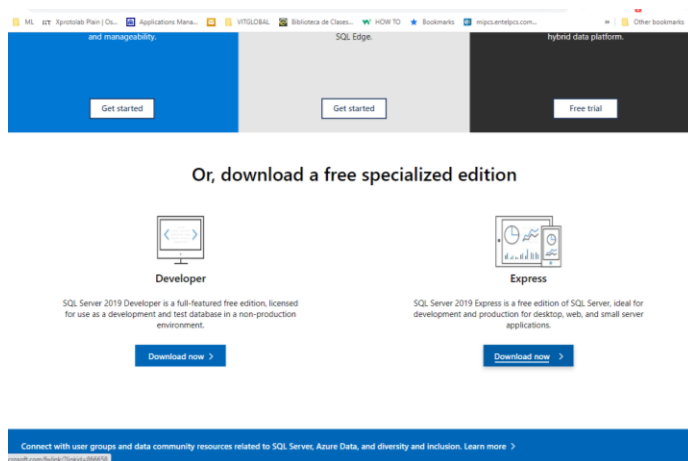
Do not perform database work on the screens below while the computer is with monitoring enabled. It can produce unexpected effects and crash the application. If this occurs, open the Windows Task Manager and terminate the locked task.

dBAMonitor, and can also store data in SQL Server database. For this feature, it is suggested to install SQL Server. Using the eRuido Cloud Tools, you can transmit this data to the cloud of your choice. Examples of Codes for sending data to the cloud: <https://www.github.com/eruido>

To manage the SQL Server database on your PC you need to install sql Server Express + Sql Server Management Studio

Free download: <https://www.microsoft.com/en-us/sql-server/sql-server-downloads>

Feel free to use SQL Server Express, or SQL Server Developer if you may want to develop your own SQL solutions.



After SQL Server is installed on your PC, and SQL Server Management Studio, follow the steps below

Installing SQL Server Database for DBAMONITOR

There are two ways to set up the database on your PC for dBAMonitor

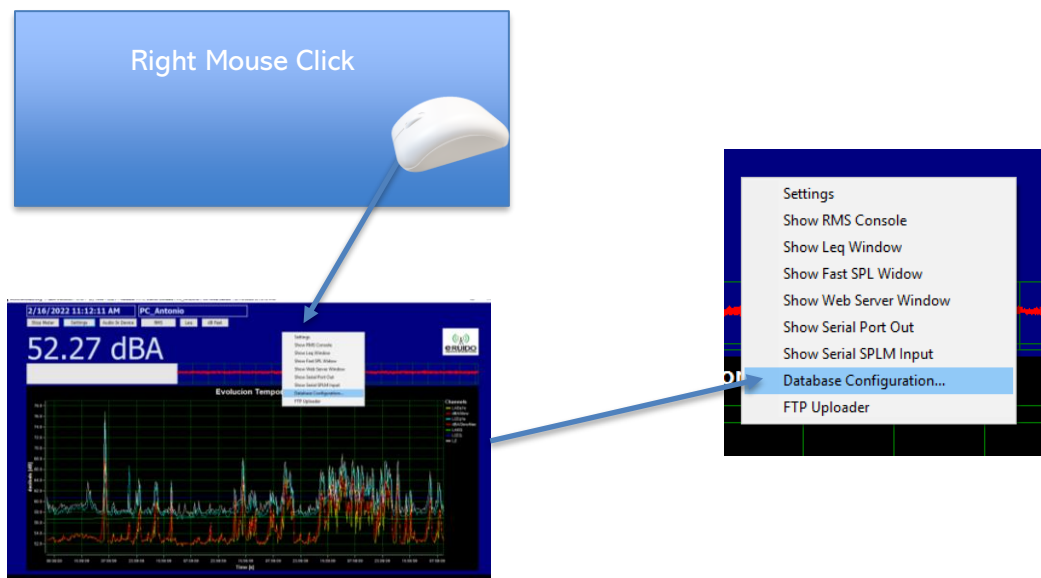
The first is in the menu by right-clicking on the dBAMonitor background, selecting the "Database Configuration" menu and entering the "Local Database Settings" palette

Installing SQL Server Database for DBAMONITOR

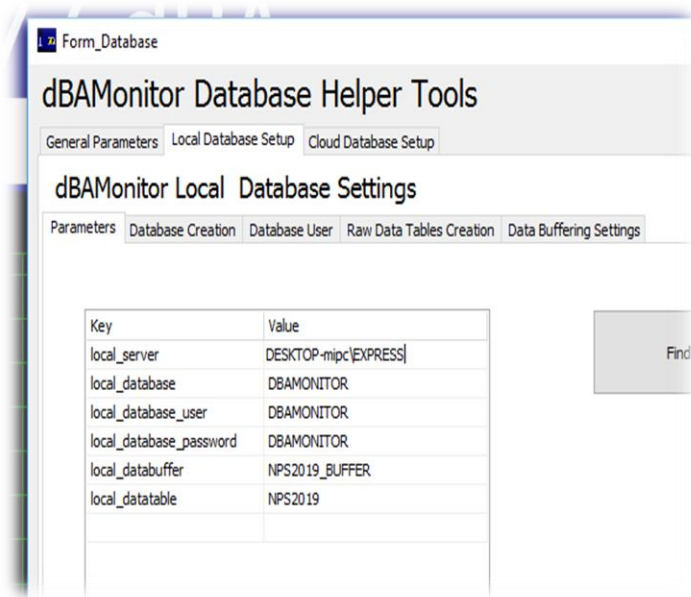
This is advanced system administration task. If you feel worried about it, just give us a call and we will set it up for you.

There are two ways to set up the database on your PC for dBAMonitor

The first is in the menu by right-clicking on the dBAMonitor background, selecting the "Database Configuration" menu and entering the "Local Database Settings" palette

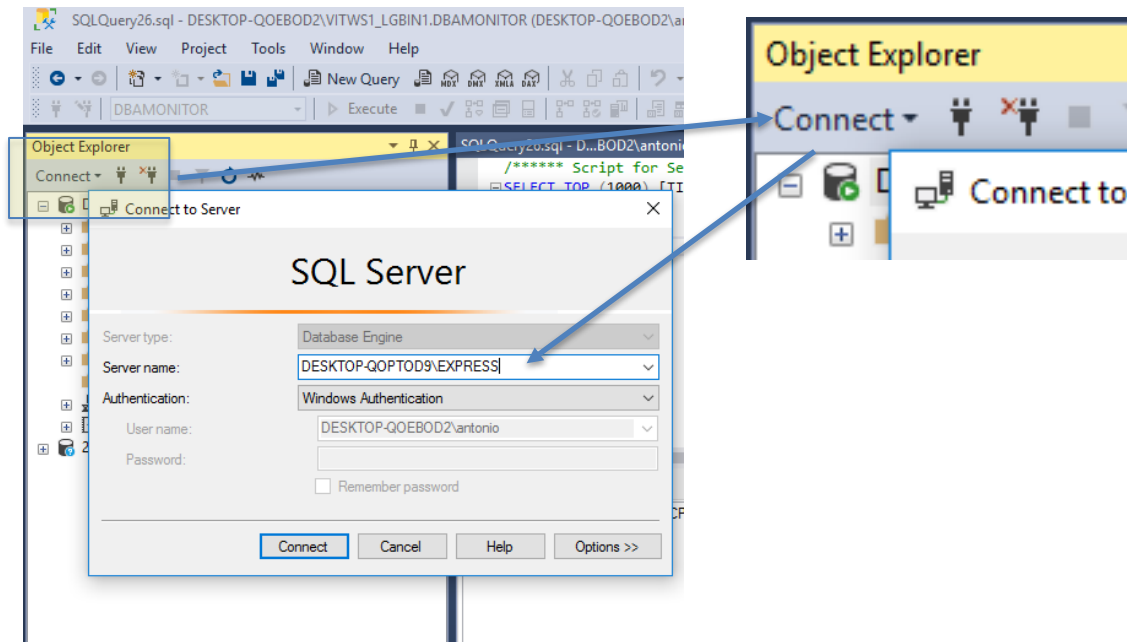


Select the Local Database Setup palette and open the "Parameters" palette"



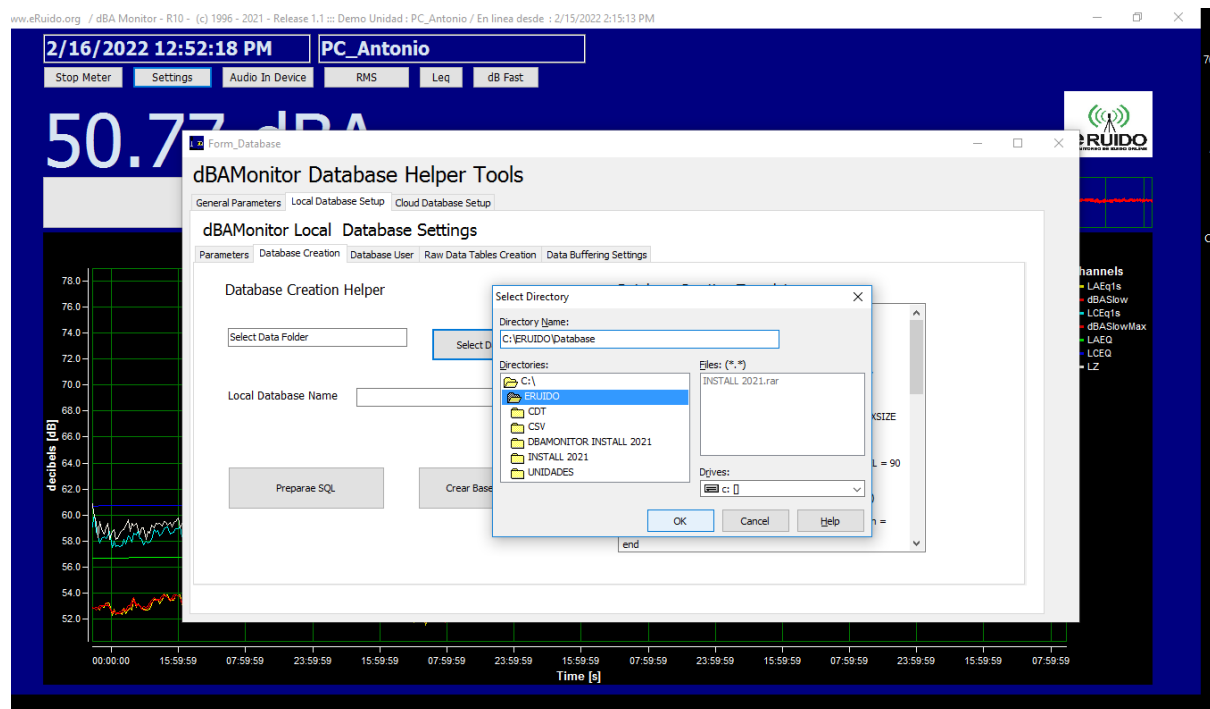
In the Key local_server Value, type the name of your SQL Server Express server installed on your computer or local network

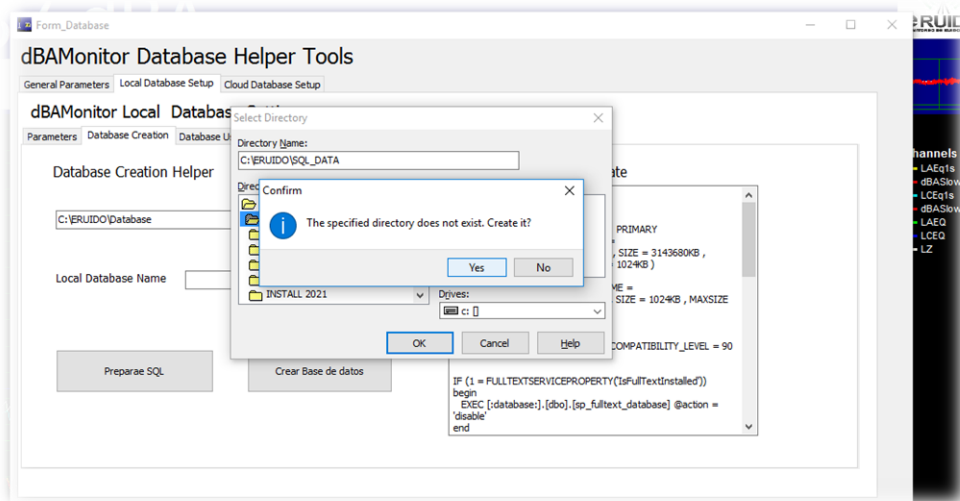
The way to know that name is by opening SQL Server Management Studio and copying the name from the properties window that opens when you right-click on the local server icon, in the Object Explorer window of SQL Server Management Studio.



Forma de conocer el nombre de SQL Server 1

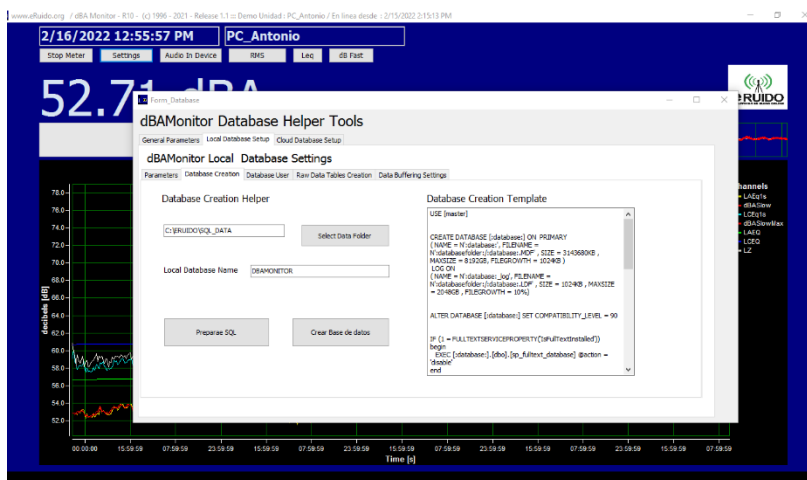
Follow the steps below, if you have already connected your local SQL Server





If the folder does not exist, press "Yes" when the dialog box to create it is displayed.

All the tasks in the next steps can be executed as SQL sentences using dBAMonitor helper, or SQL Server Management Studio if you prefer. Just copy and paste to SQL Server Management Studio New Query and run it.

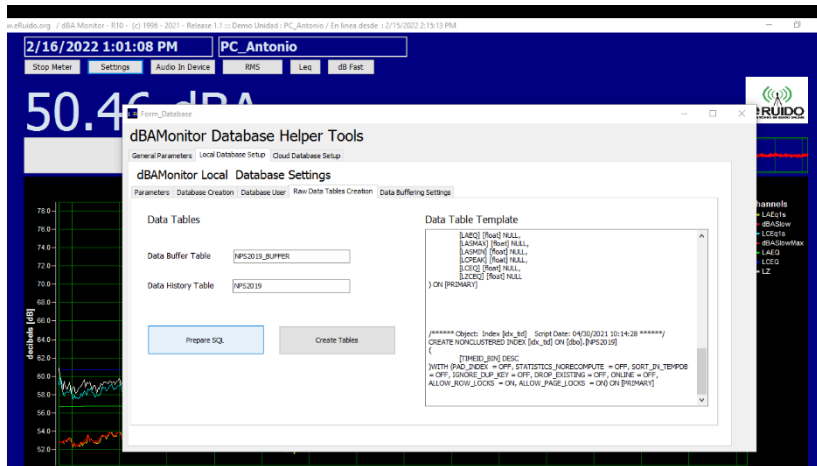


at "Local Database Name," type DBAMONITOR

Click on "Prepare SQL"

Click on "Create Database"

Select the "Database User" palette, click on "Prepare SQL" and then "Create User".



Seleccione la paleta "Raw Data Tables Creation"

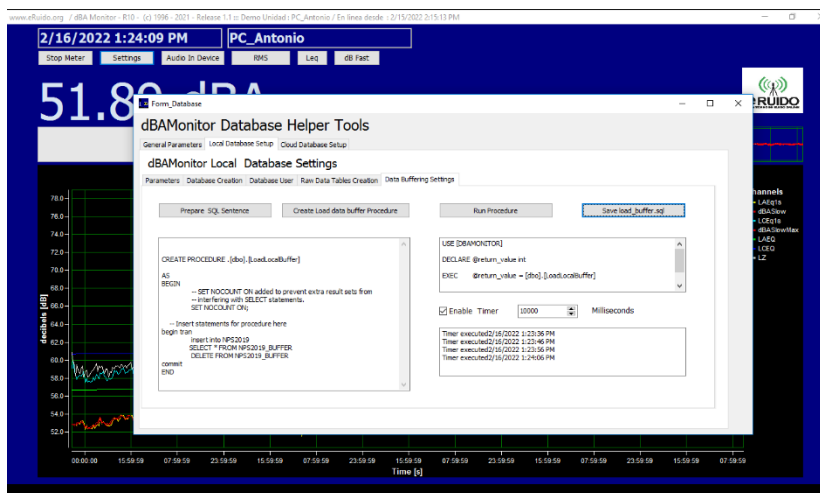
Here you define the names of the SQL Server input tables

NPS2019 _buffer

And the storage table

NPS2019

We use a buffer table to insert quick records to database. Then this records are stored and indexed in the permanente storage table.



Finalmente seleccione la paleta "Data Buffering Settings" con la finalidad de activar la entrada de datos a la plataforma. Finally, select the "Data Buffering Settings" palette in order to activate data entry to the platform.

Presiones "Prepare SQL Sentence", "Create Load Data Buffers Procedure"

"Run Procedure"

"Save load_buffer.sql" This SQL file

can be run on computer startup so that it runs outside of the dbamonitor process. If you don't

want to use the external script, you can enable the "Enable Timer" timer and leave a repeated execution time every nnnnn milliseconds³

Presiones "Prepare SQL Sentence", "Create Load Data Buffers Procedure"

"Run Procedure"

It should start moving records from buffer table to permanente storage table.

Crear Manualmente una base de datos nueva en su PC.

The second method is straightforward in SQL Server Management Studio, following the following steps.

Open SQL Server Management Studio, select your server from the Connect button in the Object Explorer window.

Right-click on the "Databases" folder, and select "New Database", Create a new database on your local SQL Server on your PC. Call it DBAMONITOR

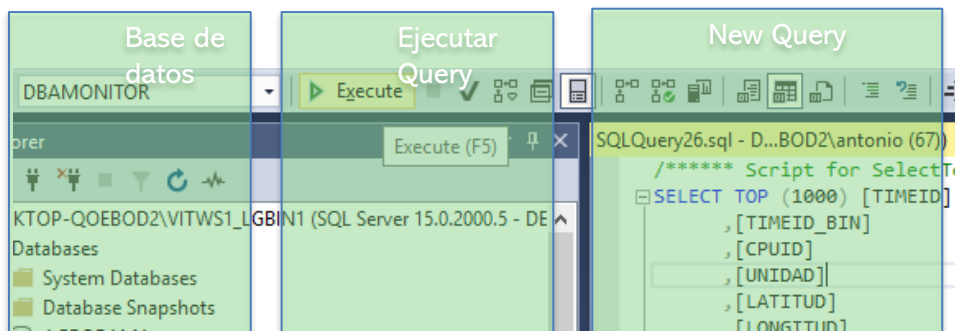
Once the database is created, right-click on the DBAMONITOR database and select the New Query menu,

In the "New Query" window, you can paste the SQL language scripts that we have included below, and install the elements (TABAS, Stored Procedures) of the database manually.

In the New Query window, paste the scripts one by one, and when you have each one pasted, press the Execute or F5 button.

Abrir ventana de New Query 1

³ . This function does not start automatically. It is for diagnosis, it is not for production. It is available to test database accesses, but it runs on the main thread, so a failure in SQL Server access can block the entire dBAMonitor.



Open New Query 2

Run the following SQL language scripts to create the database objects (tables and fields) in this way

Database Installation SQL Codes

Create Ruid Level Log Table

```
CREATE TABLE [dbo]. [NPS2019](  
  
    [TIMEID] [varchar](32) NOT NULL,  
  
    [TIMEID_BIN] [datetime] NULL,  
  
    [CPUID] [varchar](64) ZERO,  
  
    [UNIT] [varchar](64) NULL,  
  
    [LATITUD] [float] NULL,  
  
    [LONGITUD] [float] NULL,  
  
    [TEMP] [float] NULL,  
  
    [HUM] [float] NULL,  
  
    [WINDIR] [float] NULL,  
  
    [WINDSPEED] [float] NULL,  
  
    [NPS] [varchar](16) NULL,  
  
    [CLIPPING] [varchar](8) NULL,  
  
    [NPS_BIN] [float] NULL,  
  
    [LEQ60] [float] NULL,  
  
    [LEQ60CLIPPING] [varchar](8) NULL,  
  
    [LEQ300] [float] NULL,  
  
    [LEQ180] [float] NULL,  
  
    [LMAX] [float] NULL,  
  
    [LAEQ] [float] NULL,  
  
    [LASMAX] [float] NULL,  
  
    [LASMIN] [float] NULL,  
  
    [LCPEAK] [float] NULL,  
  
    [LCEQ] [float] NULL,  
  
    [LZCEQ] [float] NULL  
  
    ) ON [PRIMARY]
```

Create Fresh Records Receiving Table

```
CREATE TABLE [dbo]. [NPS2019_BUFFER](  
    [TIMEID] [varchar](32) NOT NULL,  
    [TIMEID_BIN] [datetime] NULL,  
    [CPUID] [varchar](64) ZERO,  
    [UNIT] [varchar](64) NULL,  
    [LATITUD] [float] NULL,  
    [LONGITUD] [float] NULL,  
    [TEMP] [float] NULL,  
    [HUM] [float] NULL,  
    [WINDIR] [float] NULL,  
    [WINDSPEED] [float] NULL,  
    [NPS] [varchar](16) NULL,  
    [CLIPPING] [varchar](8) NULL,  
    [NPS_BIN] [float] NULL,  
    [LEQ60] [float] NULL,  
    [LEQ60CLIPPING] [varchar](8) NULL,  
    [LEQ300] [float] NULL,  
    [LEQ180] [float] NULL,  
    [LMAX] [float] NULL,  
    [LAEQ] [float] NULL,  
    [LASMAX] [float] NULL,  
    [LASMIN] [float] NULL,  
    [LCPEAK] [float] NULL, [LCEQ] [float] NULL,    [LZCEQ] [float] NULL  
    ) ON [PRIMARY]
```

Create Log Table Index

```
CREATE NONCLUSTERED INDEX [idx_tid] ON [dbo].[NPS2019]
(
    [TIMEID_BIN] DESC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, SORT_IN_TEMPDB
= OFF, IGNORE_DUP_KEY = OFF, DROP_EXISTING = OFF, ONLINE = OFF,
ALLOW_ROW_LOCKS = IS, ALLOW_PAGE_LOCKS = IS) IS [PRIMARY]
```

Create Data Upload Procedure

```
CREATE PROCEDURE [dbo].[LoadLocalBuffer]
AS
BEGIN
    -- SET NOCOUNT ON added to prevent extra result sets from
    -- interfering with SELECT statements.
    SET NOCOUNT ON;

    -- Insert statements for procedure here
begin tran
    insert into NPS2019
        SELECT * FROM NPS2019_BUFFER
    DELETE FROM NPS2019_BUFFER
commit
END
```

Run Data Load

DECLARE @return_value int

EXEC @return_value = [dbo].[LoadLocalBuffer]

Connecting dBAMonitor to the database

To connect dBAMonitor to the database you must use the Settings-Database menu

Create Noise Level Log Table

```
CREATE TABLE [dbo].[NPS2019](  
  
    [TIMEID] [varchar](32) NOT NULL,  
  
    [TIMEID_BIN] [datetime] NULL,  
  
    [CPUID] [varchar](64) NULL,  
  
    [UNIDAD] [varchar](64) NULL,  
  
    [LATITUD] [float] NULL,  
  
    [LONGITUD] [float] NULL,  
  
    [TEMP] [float] NULL,  
  
    [HUM] [float] NULL,  
  
    [WINDIR] [float] NULL,  
  
    [WINDSPEED] [float] NULL,  
  
    [NPS] [varchar](16) NULL,  
  
    [CLIPPING] [varchar](8) NULL,  
  
    [NPS_BIN] [float] NULL,  
  
    [LEQ60] [float] NULL,  
  
    [LEQ60CLIPPING] [varchar](8) NULL,  
  
    [LEQ300] [float] NULL,  
  
    [LEQ180] [float] NULL,  
  
    [LMAX] [float] NULL,  
  
    [LAEQ] [float] NULL,  
  
    [LASMAX] [float] NULL,  
  
    [LASMIN] [float] NULL,  
  
    [LCPEAK] [float] NULL,  
  
    [LCEQ] [float] NULL,  
  
    [LZCEQ] [float] NULL  
  
    ) ON [PRIMARY]
```

Create Fresh Records Receiving Table

```
CREATE TABLE [dbo].[NPS2019_BUFFER](  
    [TIMEID] [varchar](32) NOT NULL,  
    [TIMEID_BIN] [datetime] NULL,  
    [CPUID] [varchar](64) NULL,  
    [UNIDAD] [varchar](64) NULL,  
    [LATITUD] [float] NULL,  
    [LONGITUD] [float] NULL,  
    [TEMP] [float] NULL,  
    [HUM] [float] NULL,  
    [WINDIR] [float] NULL,  
    [WINDSPEED] [float] NULL,  
    [NPS] [varchar](16) NULL,  
    [CLIPPING] [varchar](8) NULL,  
    [NPS_BIN] [float] NULL,  
    [LEQ60] [float] NULL,  
    [LEQ60CLIPPING] [varchar](8) NULL,  
    [LEQ300] [float] NULL,  
    [LEQ180] [float] NULL,  
    [LMAX] [float] NULL,  
    [LAEQ] [float] NULL,  
    [LASMAX] [float] NULL,  
    [LASMIN] [float] NULL,  
    [LCPEAK] [float] NULL, [LCEQ] [float] NULL, [LZCEQ] [float] NULL  
) ON [PRIMARY]
```

Create Log Table Index

```
CREATE NONCLUSTERED INDEX [idx_tid] ON [dbo].[NPS2019]
(
    [TIMEID_BIN] DESC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, SORT_IN_TEMPDB
= OFF, IGNORE_DUP_KEY = OFF, DROP_EXISTING = OFF, ONLINE = OFF,
ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
```

Crear procedimiento de carga de datos

```
CREATE PROCEDURE [dbo].[LoadLocalBuffer]
AS
BEGIN
    -- SET NOCOUNT ON added to prevent extra result sets from
    -- interfering with SELECT statements.
    SET NOCOUNT ON;

    -- Insert statements for procedure here

begin tran

    insert into NPS2019

        SELECT * FROM NPS2019_BUFFER

    DELETE FROM NPS2019_BUFFER

commit

END
```

Run Data Load

```
DECLARE      @return_value int
```

```
EXEC  @return_value = [dbo].[LoadLocalBuffer]
```

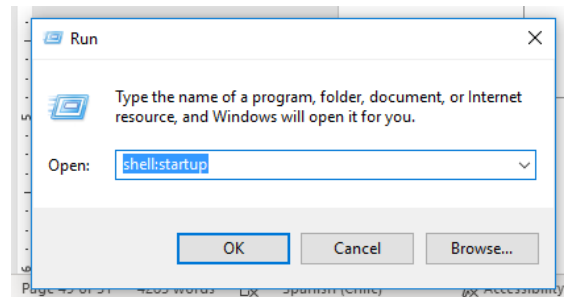
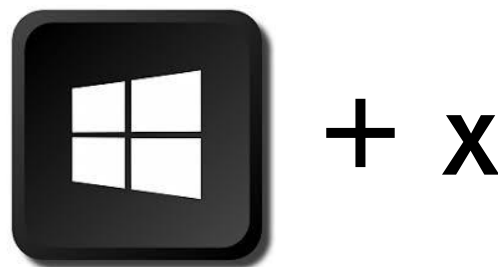
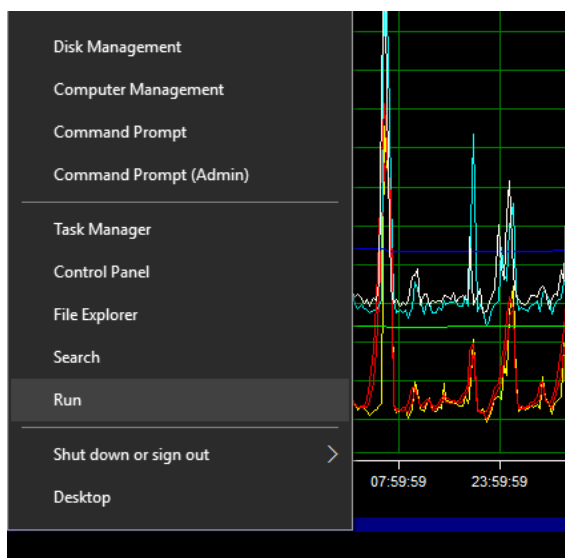
Connecting dBAMonitor to the database

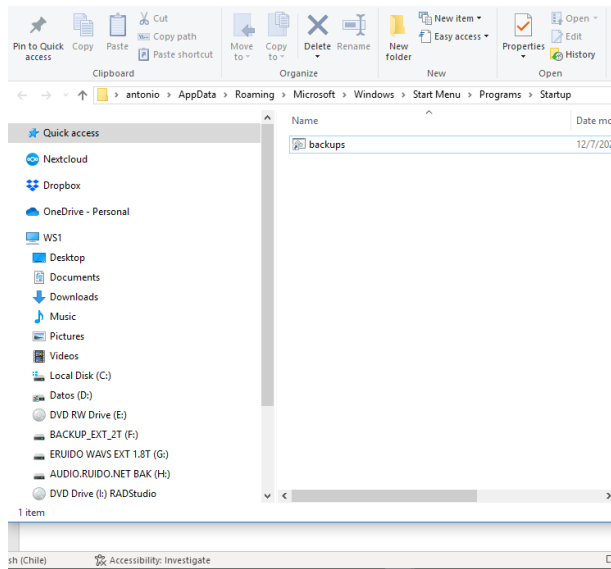
To connect dBAMonitor to the database you must use the Settings-Database menu

AUTO-START

In order for dBAMonitor to start automatically when you start your computer, you must put shortcuts to dBAMonitor_R10.1.exe in the Shell:startup folder

This folder can be accessed with the shortcut Window + X, then type shelol:startup in the "Run" box and the Windows autostart folder will open. Any shortcut, script, or program installed there will start automatically when Windows starts.





Copy in this folder, shortcuts to dBAMonitor_R10.1.exe, in the path you take. You have defined for installation. Normally c:\ERUIDO\dBAMonitor_R10.x.exe

Contact & Support

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ANNEX 1

Plan Based on dBAMonitor R10

Backups:

The most important backups are to the folder

C:\ERUIDO\

Especially where SQL Server backups are being stored. In case SQL Server is sending data to the cloud, the cloud can perform the data backups.

Plain text data must be backed up from the folder

C:\ERUIDO_Datalogging

Audio files must be backed up from

C:\ERUIDO_audios

Energy

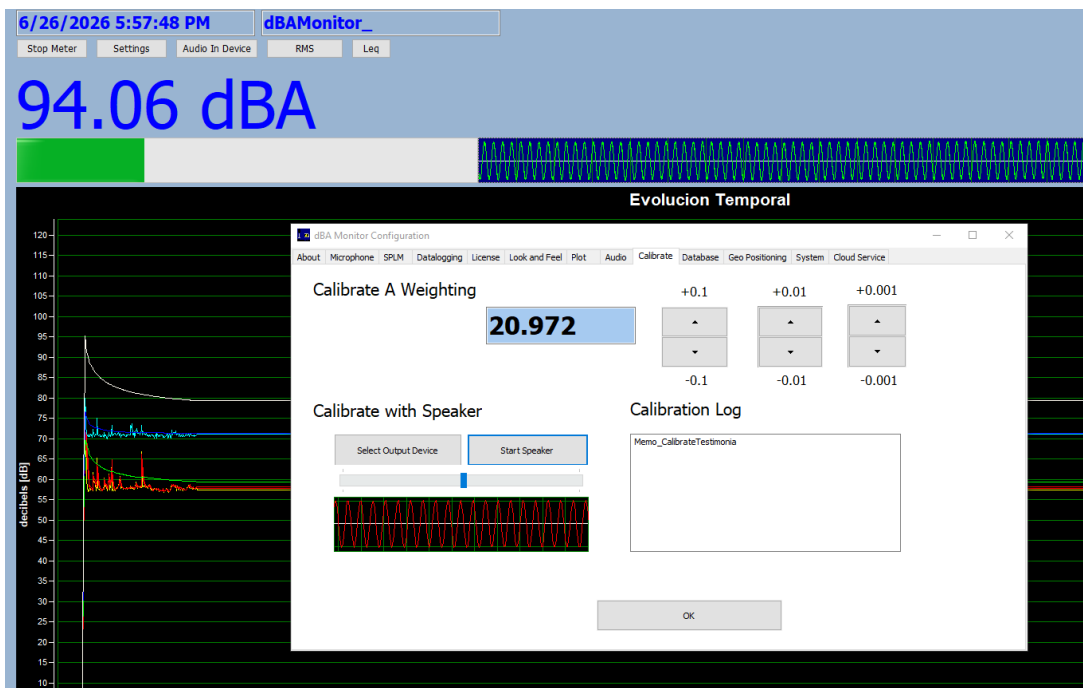
The monitoring station must be permanently powered via a sine wave on-line UPS system.

The equipment has a micro-UPS that allows operating for 2 hours with backup power.

Calibration

Calibration by Pistonphone Standard

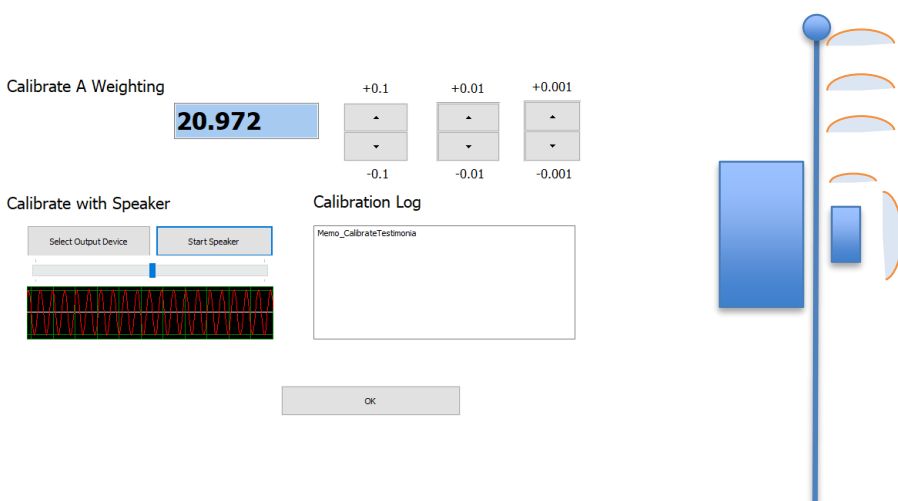
It must be performed at regular intervals by a qualified technician. It consists of applying a mobile piston of 94 decibels at 1 kilohertz to check the measurement offset of the equipment.



Calibration by air standard

It should be performed at regular intervals by the monkey's management team. For this purpose, the power supply of the reference source must be activated, which can be a fixed-level white noise back-up alarm type equipment.

In both cases, you must adjust the Offsets on the "Settings"->"Calibrate" screen so that the measured value averages 94 dBA in the case of the piston-tone calibrator and the archived measurement of the reference white noise pattern.



Notes