ACOUSTIC CHARACTERISTICS OF THE SDR-500 and 500R

Technical Features of the SDR-500R Sonometer-Integrator RION NL-31

- Sonometer Integrator. It conforms to the UNE 60651/60804 type 1 normative and the new normative IEC 61672-1, class 1.
- Frequency weighting A,C or FLAT.
- Time weighting: fast and slow.
- Measurement range: Leq. 23-138 dB(A); Peak 141 dB(C); Dynamic Range: 100 dB.
- Measurement intervals: 10secs, 1, 5, 10, 15, 30 mins., 1, 8, 24 hrs.
- Outlet for comparator device.

Acoustic Features of the SDR-500

- Measurement Margin: 42-105 dB(A).
- Measurement type: level equivalent to 60" Leq. 60".(Leq $_{60"}$)
- Type II measurement accuracy according to the IEC 651 (UNE-EN 60651).
- Protection level of the Anti-wind system of the microphone IP45.
- Measurement recorder programmable according to set-up.
- Sending of information: every 84 samples saved.
- Storage of information in the internal recorder: 2000 samples.

Weatherproof Rack SDR-500 and DSR-500R

- Weatherproof equipment with IP 66 CEI-529 protection level.
- Communications module for sending data in SMS of GSM format.
- A/C supply and reserve battery (24hrs).
- Microphone protection system WS-03-S01.

Data Management Software

- GESTION SDR. Management software package. Includes: Data reception module, message processing module, module for storage and export of data to MS EXCEL.

Other equipment which can be integrated in the SDR-500R

Any measuring equipment can be integrated: sonometer, spectrum analyser and/or vibration recorder which has the RS-232 port. Metereological instruments for weather parameters measurement.

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Proceso Digital de Audio

SDR-500 & 500R

EcuDap

SDR-500 & 500R

Noise pollution is recognised as one of the principle environmental problems. As well as affecting the surrounding environment in which we live, it is the cause of physical and psychological damage whose costs account for between 0.2% and 2% of the European Union GNP.

This fact resulted in the publication of the European Directive 2002/49/EC regarding the Evaluation and Management of Environmental Noise which urges authorities to create noise maps of urban areas, major roads and airports and to put the results at the disposal of the public.

The new Spanish Noise Law incorporates the essence of the European Directive and obliges local Town Halls and the Regional Governments to put the following into effect:

- Monitoring and Control Systems necessary to establish the true situation in each zone and to verify the degree of fulfilment or not of the quality parameters stipulated in the Law.
- Public awareness schemes so that the environmental situation is fully known.

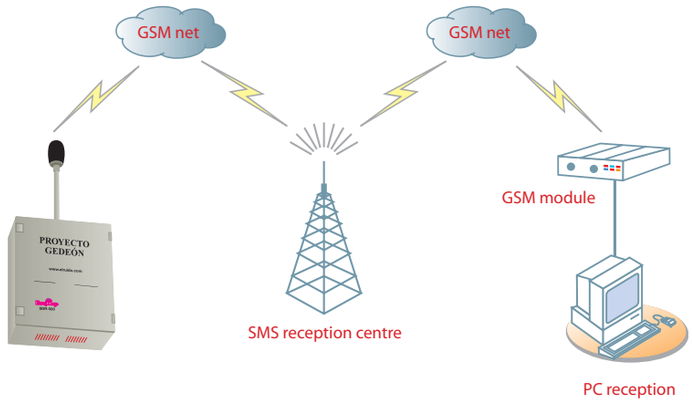
The SDR-500R Environmental Noise Monitoring System is capable of serving as a back-up for environmental noise management policies, both for Public Authorities as well as Private Enterprises.

General Characteristics

- Permanent outside environmental noise measurement system with the possibility of incorporation to the SSMmR of Proceso Digital de Audio.
- System Components:
  - **RION NL-31** sonometer, type 1 in accordance with the UNE 60651/60804 normative type 1 (model approved in Spain No 1-128-16-02021). It conforms to the new normative IEC 61672-1, class1.
  - Weatherproof rack SDR-500R, with weatherproof microphone system incorporated, data adaptation device, communications module, fastening accessories and A/C supply and batteries.
  - Software set-up and management system.
- Measurement set-up from PC:
  - Measurement intervals: 10secs, 1,5,10,15 and 30mins, 1,8 and 24hrs.
  - Measurement parameters: Leq, Lmax, Lmin and Ln (5 values).
- Data sending to PC receiver via SMS of GMS, GPRS Ethernet or WI-FI.

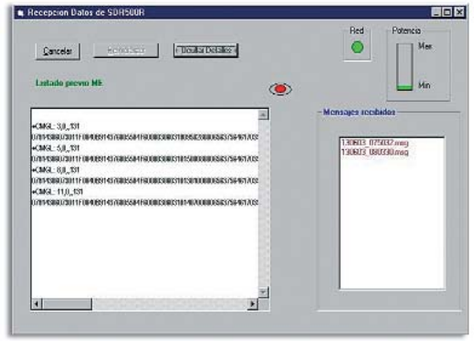
System Operation

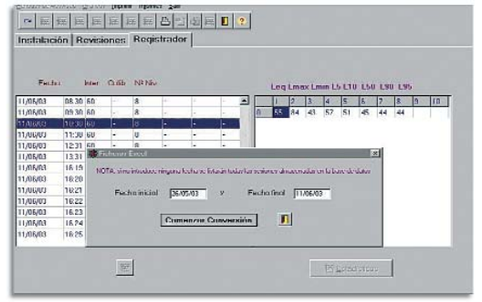
- The running of a network composed of various SDR-500R measuring stations is very simple. After placing the stations at the control points, the type of measurement to be carried out is set up from the control PC and via the adapter device.
- Once the measuring period has finished, the stations send the data via SMS of the GSM or GPRS.
- The messages received are stored as files in the work folder. The messages received can be integrated in a SSMrR network.
- The messages are processed and stored in the data base and indexed in such a way that the data are stored corresponding to the station which sent them and to its position.



Support Software

- The SDR-500R support software includes two programmes:
  - **Ecurion:** set-up software for the device with the possibility of setting up the sonometer measurements.
  - **GestionSDR:** data management software which includes:
    - **Data reception (sms).** The SMS module remains in the PC receiver, receiving the data from the stations connected to the network. At each measuring point, one or several stations can be located, which can be active or inactive. The data are sent from the active stations.
    - **Message processing module and permanent storage of the data** in bases connected to the measuring points. The data which is inserted corresponds to the positions of the active equipment. One processed, the data is stored permanently, corresponding to its position.
    - **Data exportation** for management by spreadsheet.
    - **GestionSDRnet:** data reception, processing and presentation software on the Internet (SSMrR).





Municipal Noise Management

- Various options exist which serve as a complement to the permanent monitoring of the urban centres and transport infrastructures with the aim of achieving an integrated system which complies with the requirements of the new legislation. The presentation of the data is based on the use of the internet with public access:
  - **Public awareness and data consulting system:** This allows the public and authorities to know the environmental situation from the point of view of the noise in the city. The presentation is based on indicating the position of the stations. With the information stored in the files and data base, illustrated graphs are created of the sessions in real time.
  - **Dynamic noise maps:** The data provided by the system is incorporated in a noise predicting computerised model based on the algorithms recommended by the Directive. This allows us to obtain a dynamic noise map of the municipality in time and space which allows control of the present and future sources of noise as well as defining the strategies for decreasing the noise before the acoustic situation changes.
- The creation of dynamic noise maps is compatible with the reception of data via acoustic prediction programmes and with the exit of data to any Geographical Information System (GIS) for obtaining and improving the dose/effect and cost/profit relation.