HD2011NMT

NOISE MONITORING STATION WITH REMOTE CONTROL

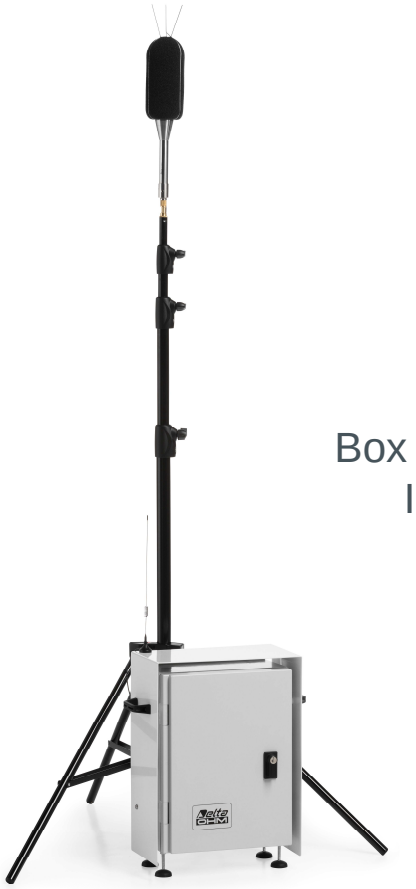
Gianni Mossa

APPLICATION FIELDS

Noise Monitoring Station with Meteo parameters acquisition

- stand alone use or in a network of NMT
- Type of installation
  - Permanent
  - Semi-permanent
  - portable

Suitcase Version
IP67



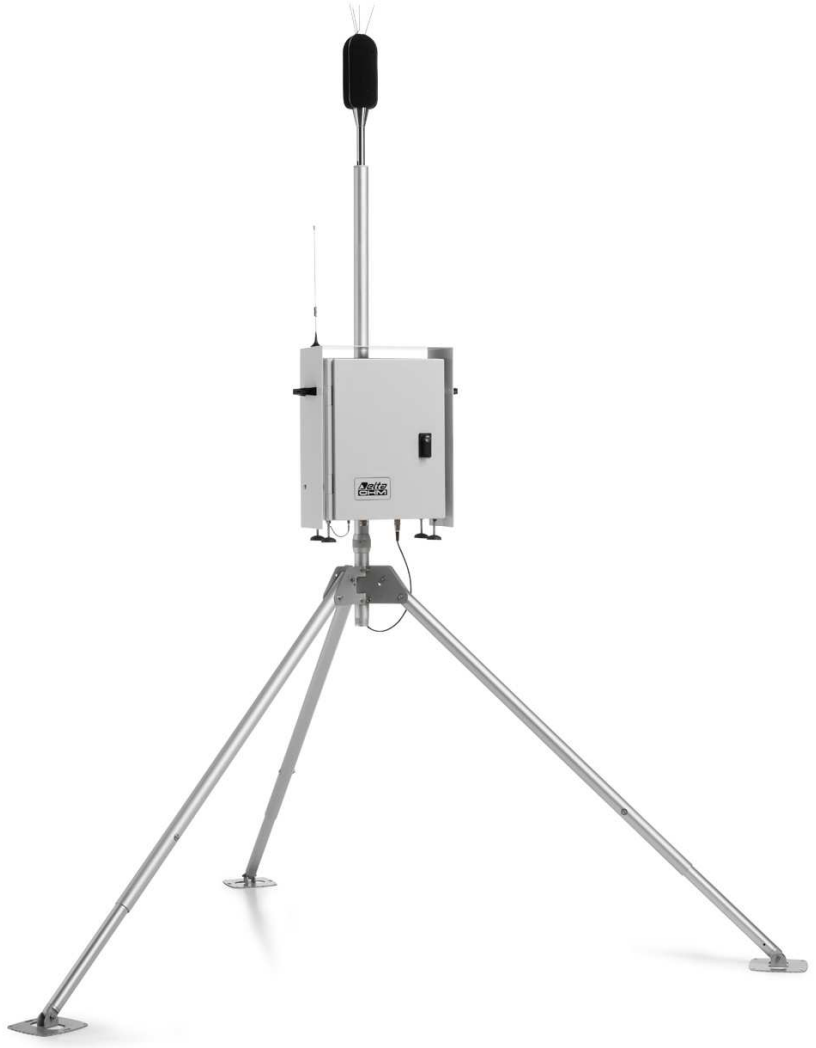
Box Version
IP65

APPLICATION FIELDS

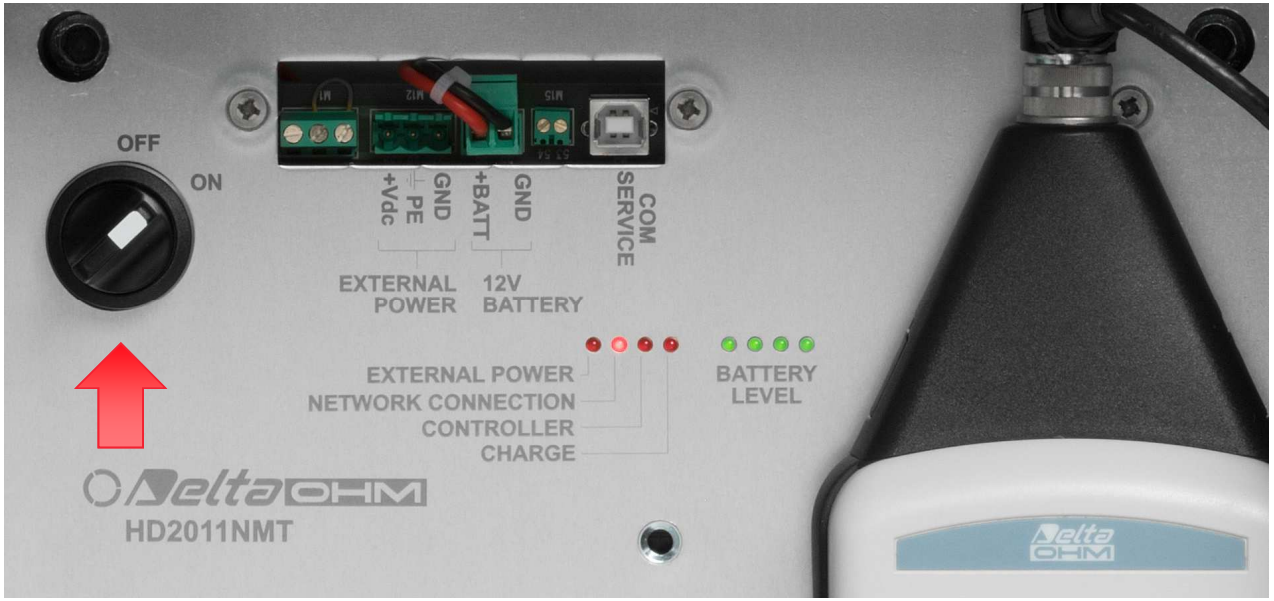
- Outdoor long and medium term Noise measurements

- Monitoring of:
  - o Road traffic noise
  - o Railway traffic noise
  - o Airport noise
  - o Wind turbine noise
  - o Construction sites noise
  - o Industrial plant noise

- City Noise Mapping



INSTALLATION AND PUT IN USE

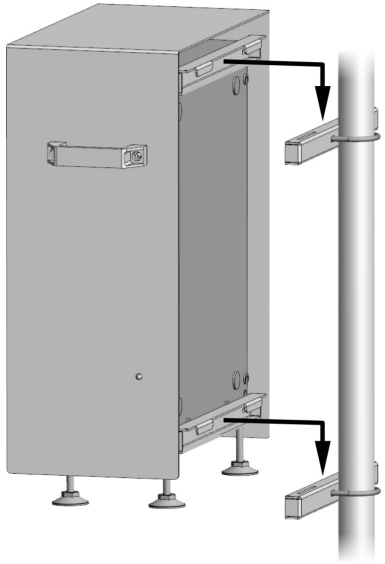


- Put in use with a simple ON/OFF switch
- Auto inizialization
- Battery level LED status (can be checked remotely also)

- LED for 3G modem status and correct communication verification

INSTALLATION AND PUT IN USE

- Pole mount
- Tripod mount for **permanent** installation h=4mt
- Pole mounting system
- System for meteo sensors mounting



- Positioning of outdoor microphone protection on **portable** tripod h=4mt
- Bracing system (option)

OUTDOOR MICROPHONE PROTECTION AND CALIBRATION

OUTDOOR MICROPHONE PROTECTION WITH WINDSHIELD, RAIN PROTECTION AND BIRDSPIKES

- Protection can be easily dismounted to access the microphone for acoustic calibration purposes
- CIC **electric calibration system** (can be automatically managed using NS4 software)
- Preamplifier including internal heater to avoid condensation

POWER SUPPLY

Permanent installation

- **Mains 220V** with backup lead-acid battery
- **Solar panel** with backup battery in case of absence of insolation
  - ➢18 Ah
  - ➢55 Ah *
  - ➢70 Ah *
  - ➢100 Ah *

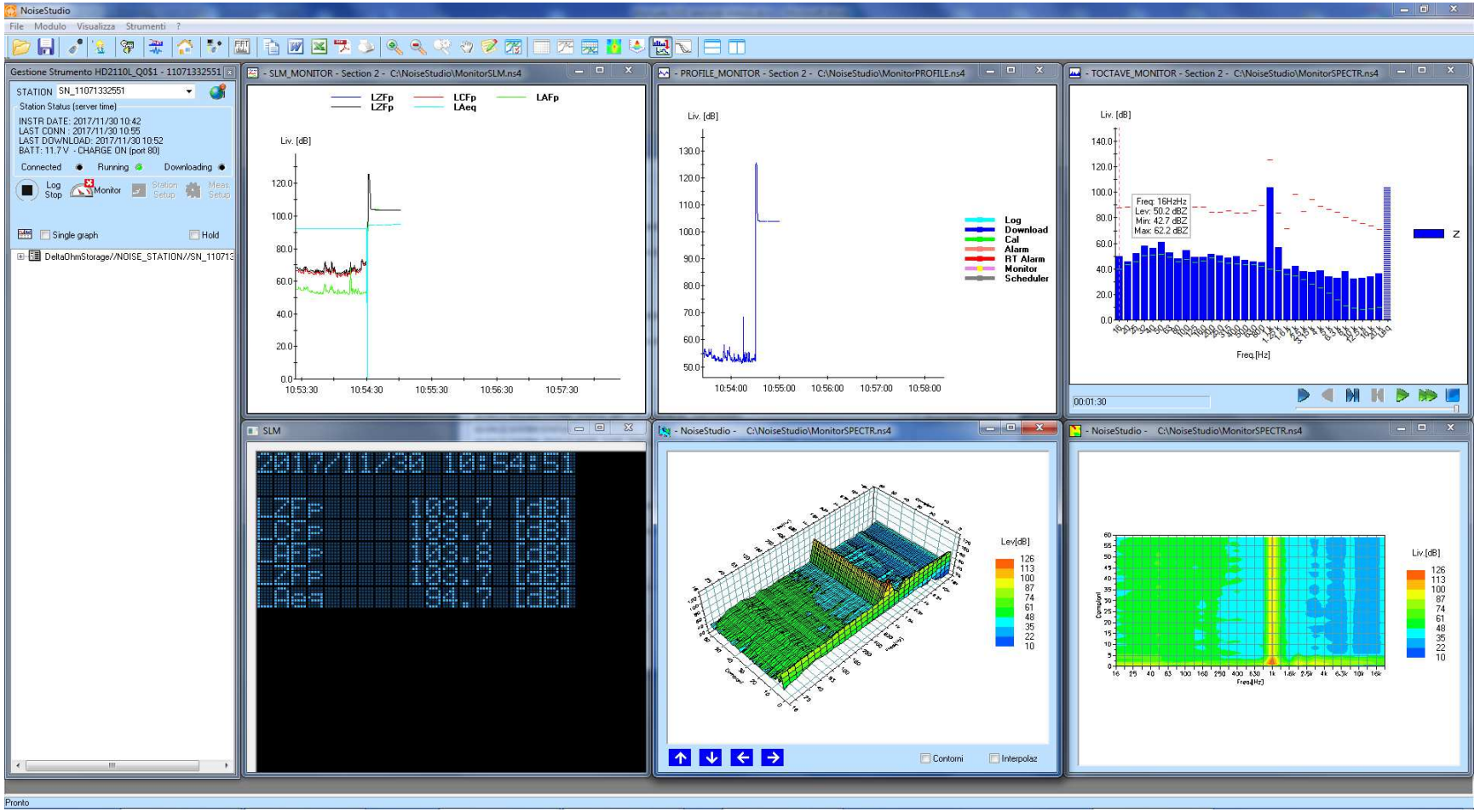
Portable installation

- Rechargeable Lithium battery
  - ➢Autonomy > **48 hours**
  - ➢Autonomy > **7 days**

* Can only be installed outside the box

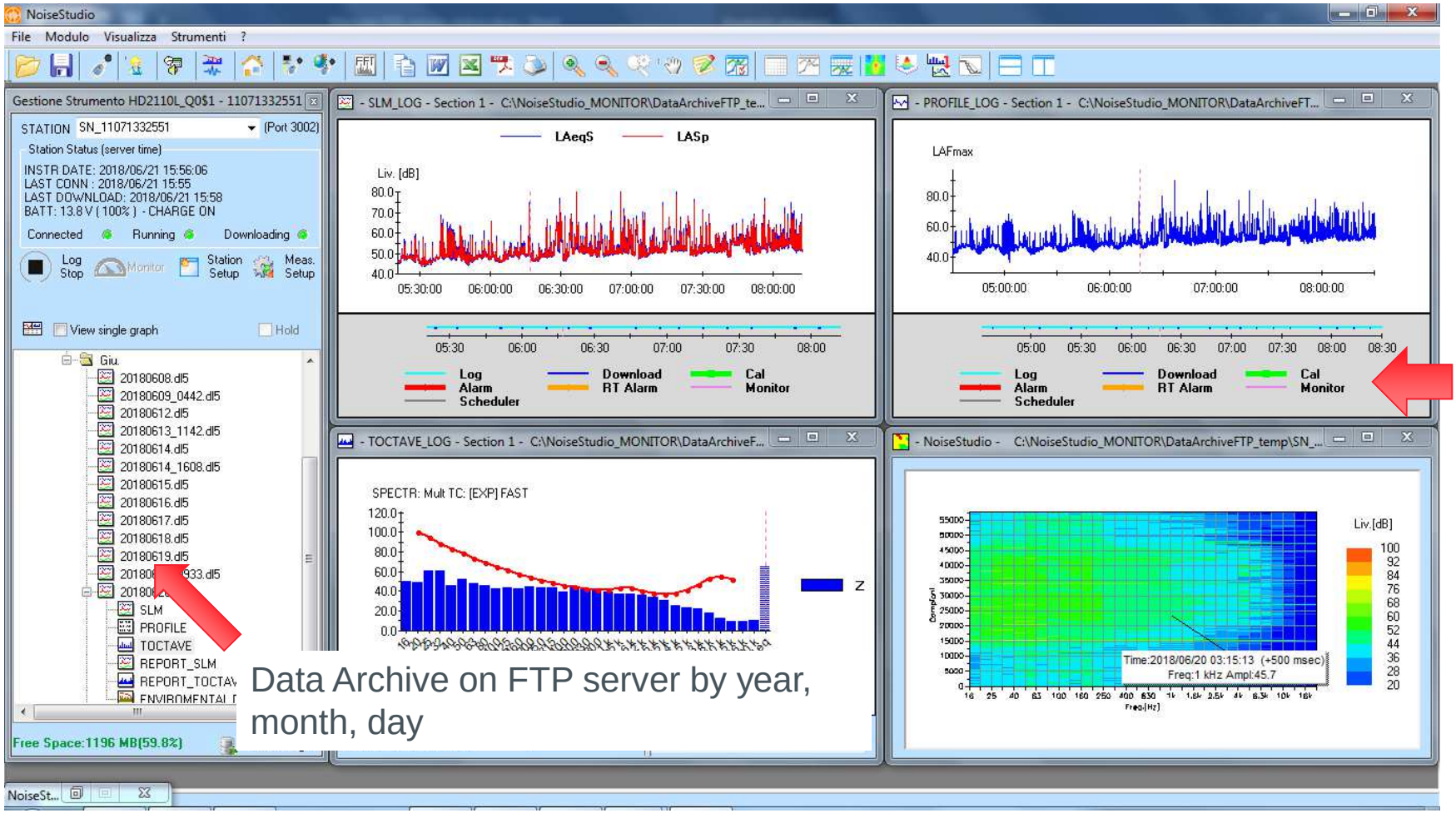
REMOTE MANAGEMENT: SOFTWARE NS4 “MONITOR”

REAL TIME DISPLAY: MONITOR MODE



REMOTE MANAGEMENT: SOFTWARE NS4 “MONITOR”

STORED DATA DISPLAY



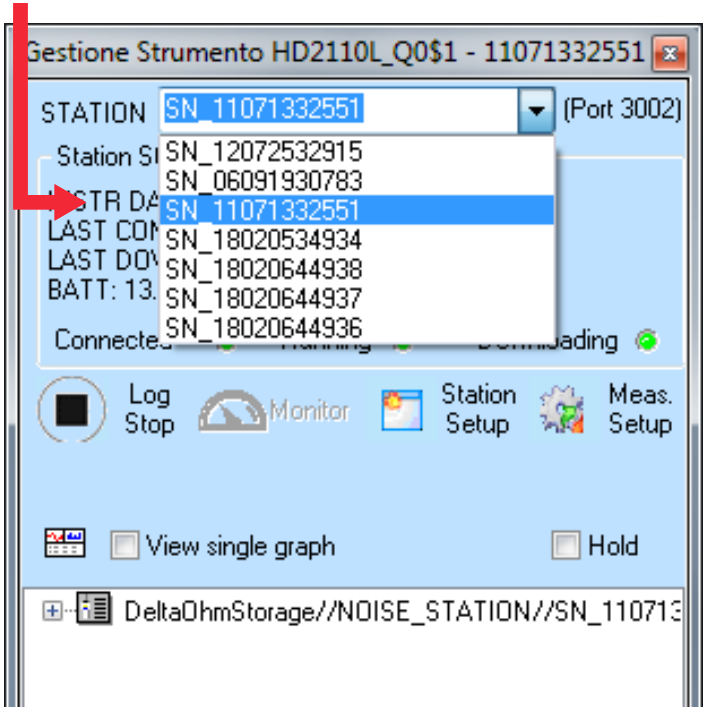
Data Archive on FTP server by year, month, day

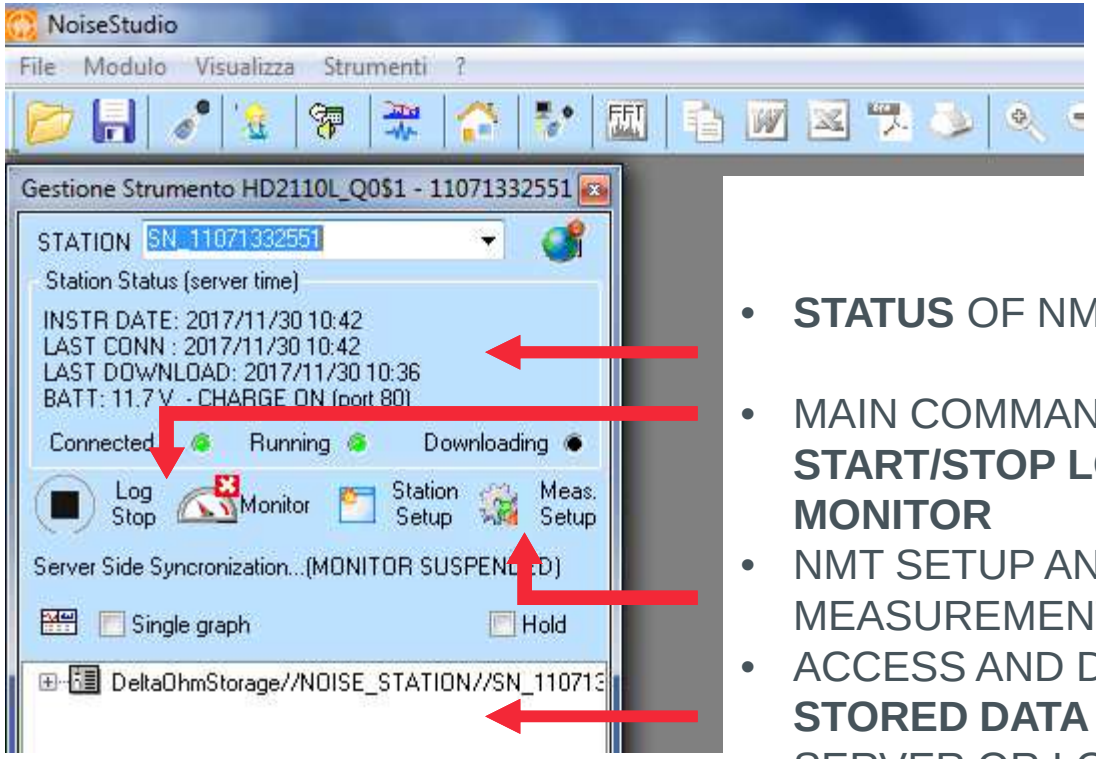
Status bar with indication of:

- Log
- Download NMT>server
- Alarm
- Real Time Alarm
- Scheduler active
- Auto Calibration active
- Monitor active

REMOTE MANAGEMENT: SOFTWARE NS4 “MONITOR”

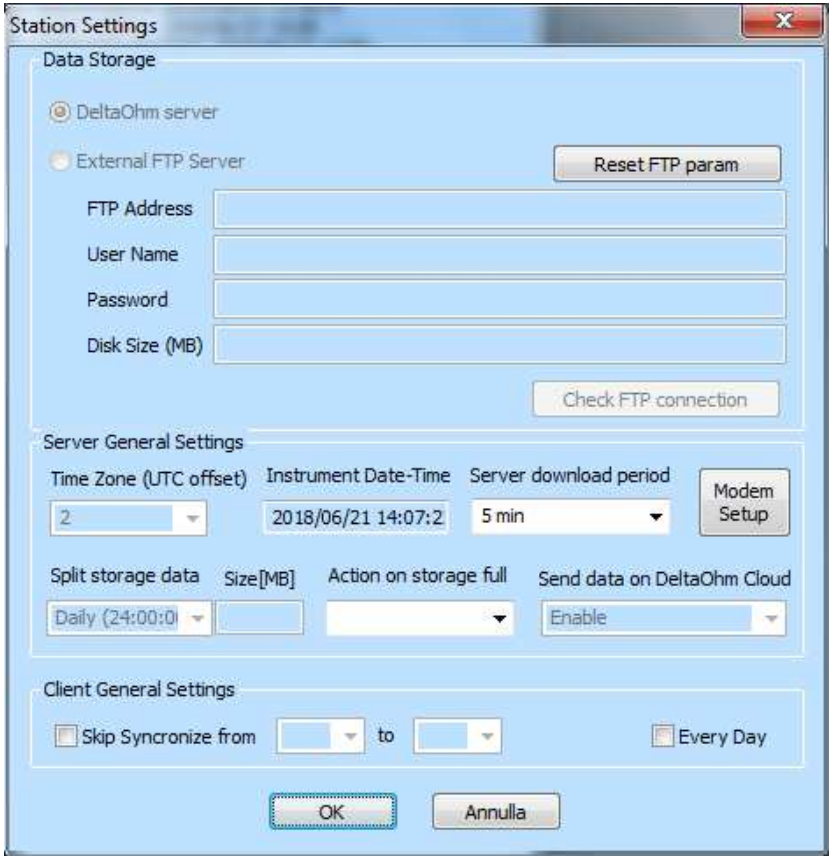
SELECTION AND MANAGEMENT OF NMT INSTALLED ON THE NETWORK





- **STATUS** OF NMT
- MAIN COMMANDS: **START/STOP LOG** AND **MONITOR**
- NMT SETUP AND MEASUREMENT SETUP
- ACCESS AND DISPLAY OF **STORED DATA** ON FTP SERVER OR LOCALLY

REMOTE MANAGEMENT: SOFTWARE NS4 “MONITOR”



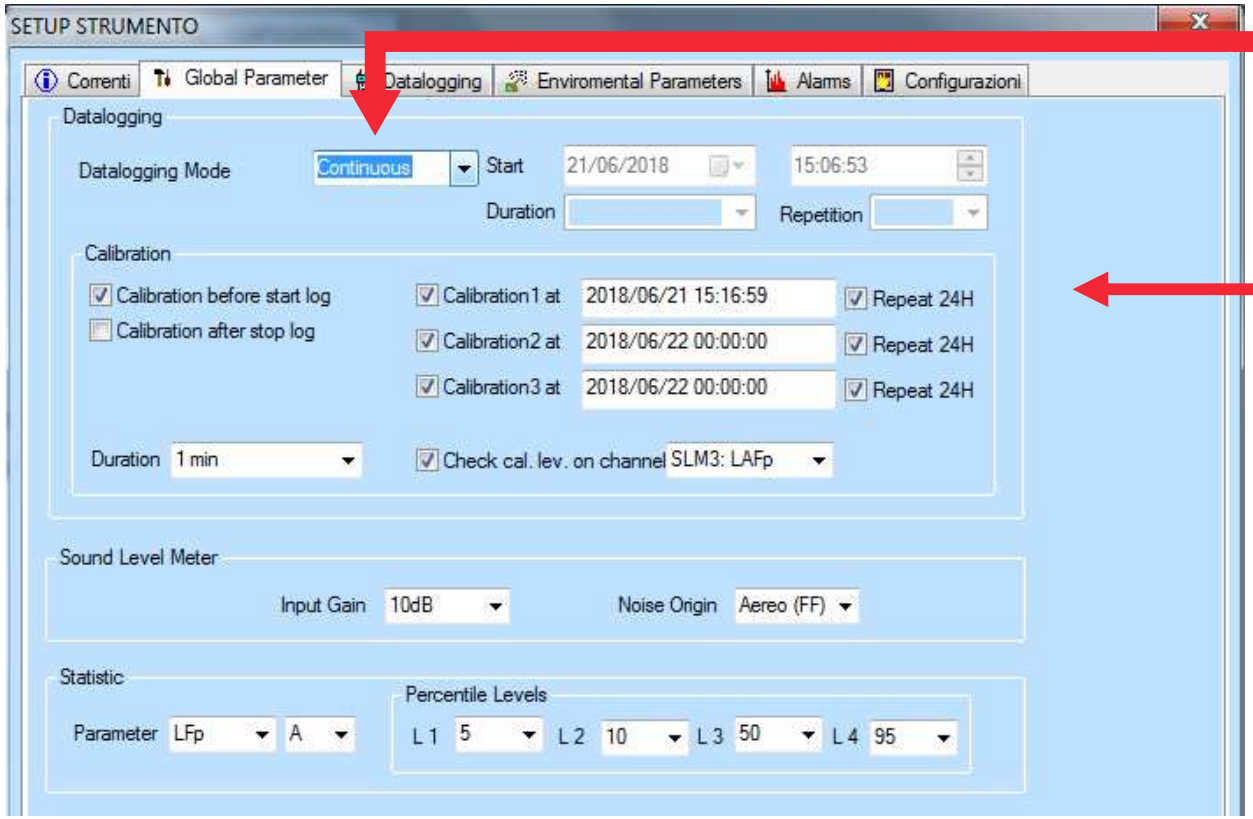
SETUP DATA STORAGE SERVER

- On **Delta Ohm server** (FOC 200MB for about10dd continuous recording)
- On **custom external FTP server**

- Remote 3G modem setting via SMS commands
  - Connection interval
  - APN

- Automatic data upload on Cloud Server

REMOTE MANAGEMENT: SOFTWARE NS4 “MONITOR”



DATALOGGING SETTING

- Continuous
- Single
- Time intervals

AUTOMATIC CALIBRATION SETTING (CIC)

- 3 time slices with daily repetition
- Selection of acoustic descriptor for calibration check

REMOTE MANAGEMENT: SOFTWARE NS4 “MONITOR”

SETTING OF MEASUREMENT PARAMETERS *

- Time and frequency parallel weightings
- Time history log with differentiated time sampling from 1/32s to 1h
- Acquisition of 1/3oct frequency spectra with 1/2s sampling
- Acquisition of ‘Report’ integrated parameters with sampling from 1s to 1h
- Statistics with sampling from 1s to 1h

* Depending on installed sound level meter

MEASUREMENT PARAMETERS (Depending on sound level meter installed)

	INTEGRATION TIME	PARAMETER	
TIME HISTORY	1/32 s	1 “Short” Lx,eq	x = A, C o Z
	1/8 s	1 parameter selectable[1]: • Lxyp • Lxpk • “short” Lx,eq 1) Only LAFp for HD2010UC e HD2010UC/A	x = A, C o Z; y = F, S o I x = A o C x = A, C o Z
	1/2 s	5 selectable parameters: (3 for HD2010UC and HD2010UC/A): • Lxyp • Lxpk • “short” Lx,eq • Lx,eq	x = A, C o Z; y = F, S or I x = A o C x = A, C o Z x = A, C o Z
	1/2 s	Third octave spectrum 16 Hz ÷ 20 kHz (25 Hz÷ 12,5 kHz for HD2010UC and HD2010UC/A)	Averaging LIN, Exp FAST or SLOW

	INTEGRATION TIME	PARAMETER	
REPORTS	1s ÷ 1h	5 selectable parameters : • Lxyp,max • Lxyp,min • Lxpk,max • Lxpk,min • Lx,eq • L1 ÷ L4 • Overload	x = A, C o Z; y = F, S o I x = A, C o Z; y = F, S o I x = A o C x = A o C x = A, C o Z 1% ÷ 99%
		Third octave spectrum 16 Hz ÷ 20 kHz (25 Hz÷ 12,5 kHz for HD2010UC and HD2010UC/A)	Averaging LIN
		Statistical distribution	
EVENTS	Event duration	5 selectable parameters: • Lxyp,max • Lxyp,min • Lxpk,max • Lxpk,min • Lx,eq • L1 ÷ L4 • Overload	x = A, C o Z; y = F, S o I x = A, C o Z; y = F, S o I x = A o C x = A o C x = A, C o Z 1% ÷ 99%
		Third octave spectrum 16 Hz ÷ 20 kHz (25 Hz÷ 12,5 kHz for HD2010UC and HD2010UC/A)	Averaging LIN
		Statistical distribution	

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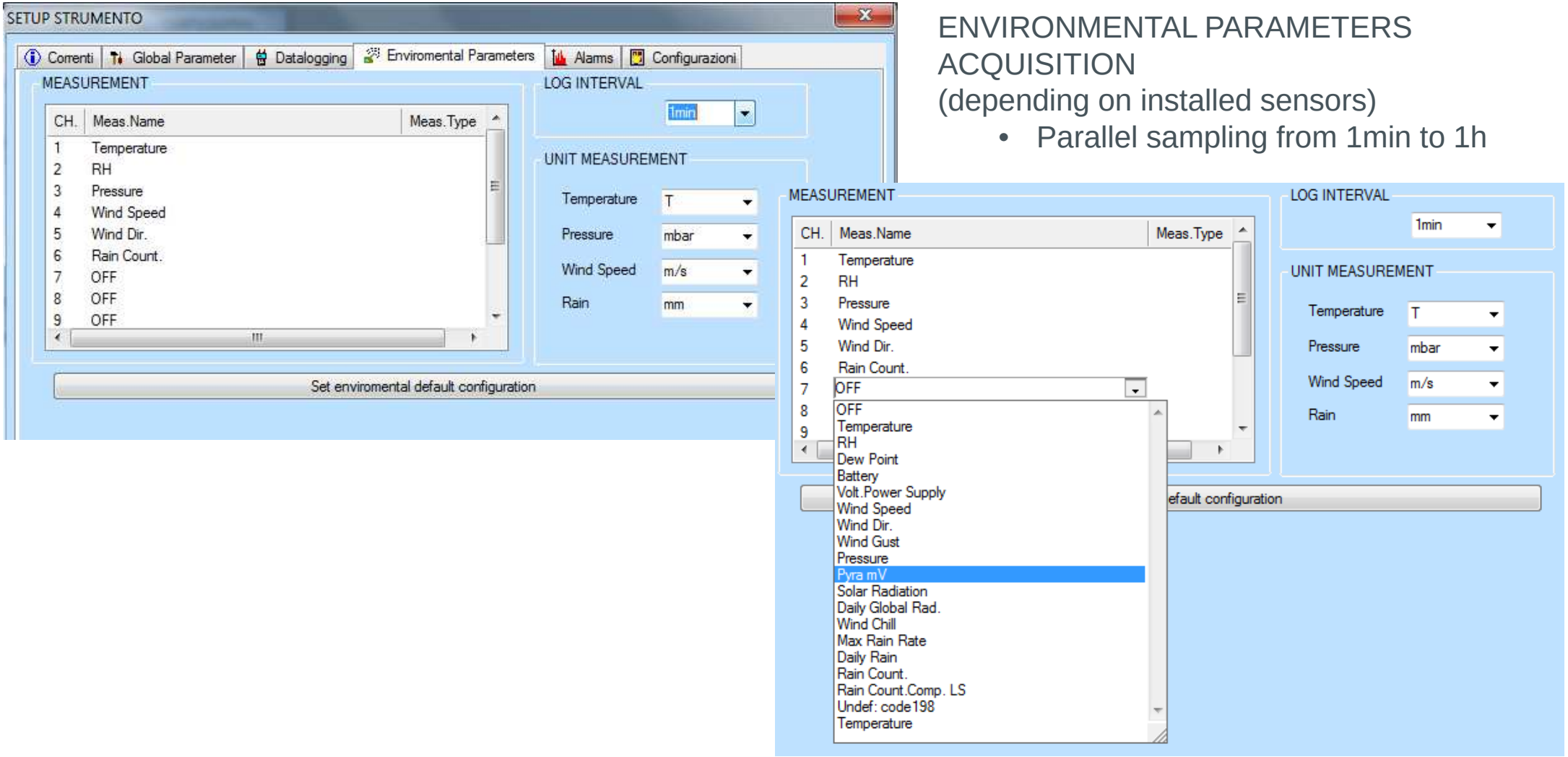


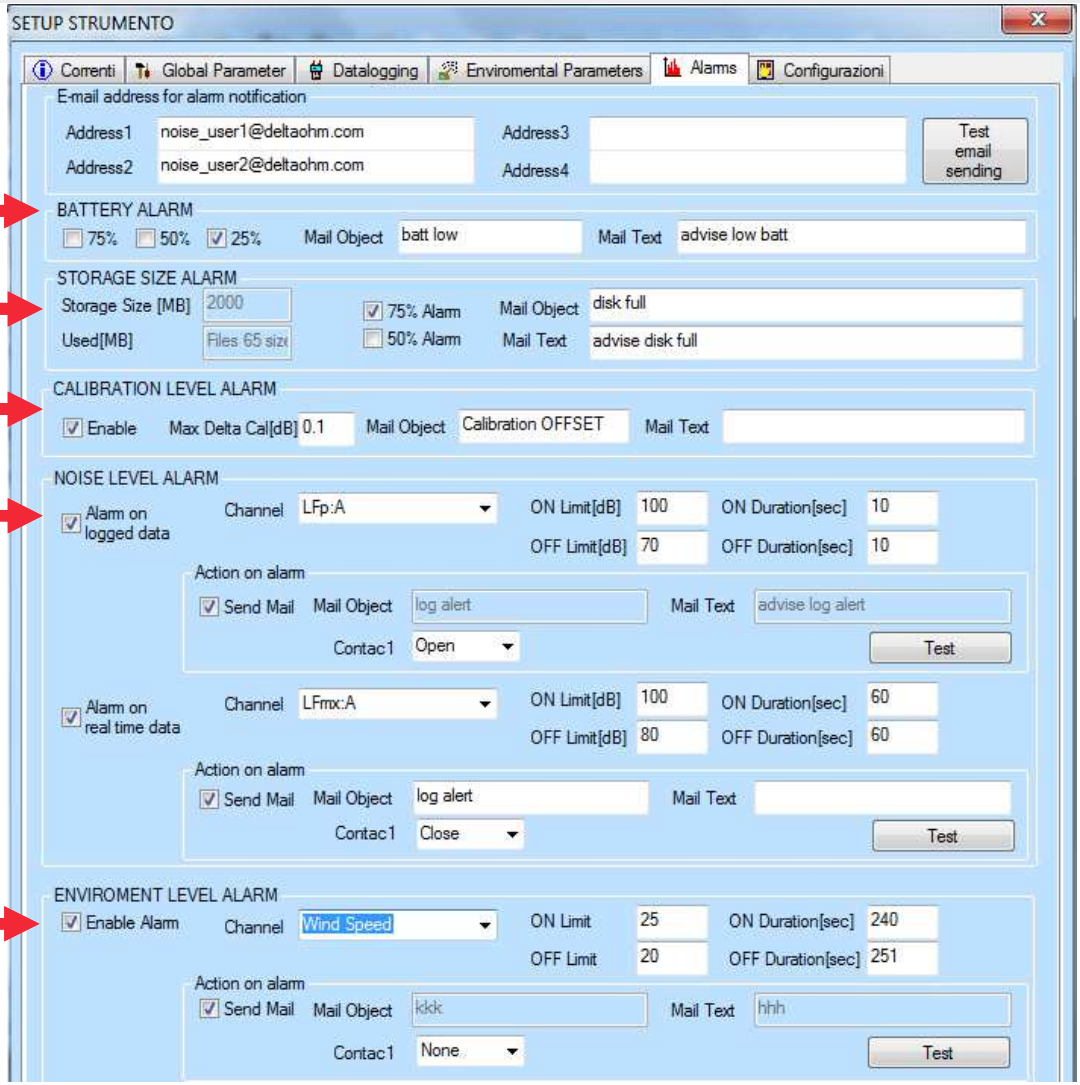
ENVIRONMENTAL PARAMETERS ACQUISITION
(depending on installed sensors)

- Parallel sampling from 1min to 1h

REMOTE MANAGEMENT: SOFTWARE NS4 “MONITOR”

MANAGEMENT OF **ALARMS** : AUTOMATIC EMAIL NOTIFICATION

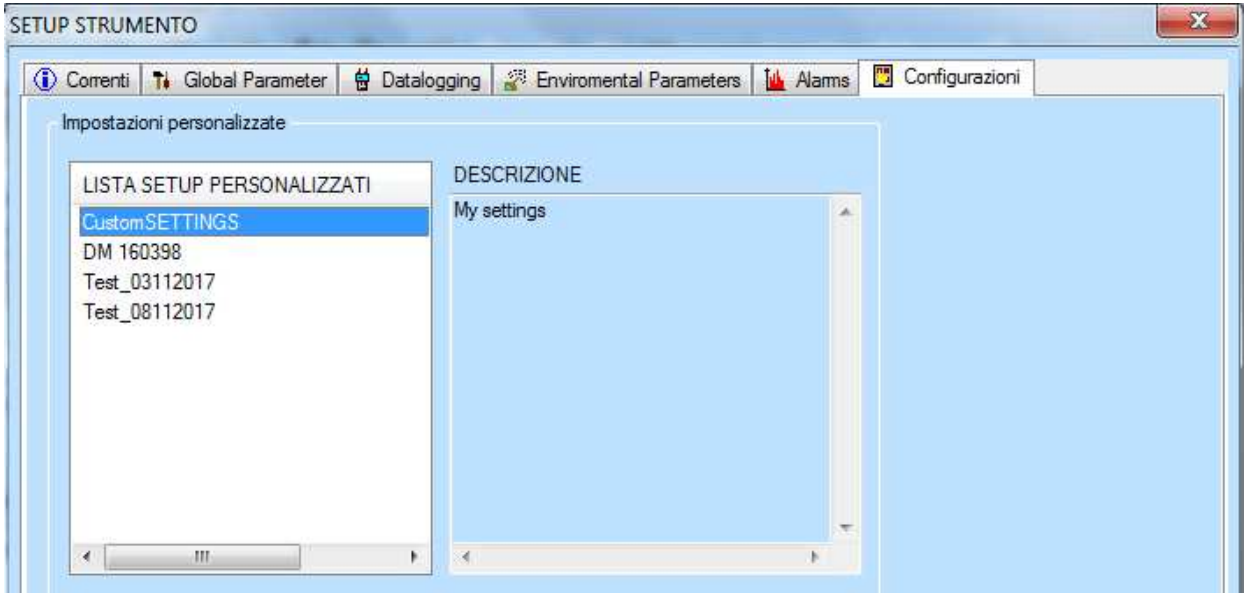
- Remaining **battery capacity**
- Remaining **storage size**
- Initial calibration **OFFSET**
- **Noise Threshold** exceedings
  - Alarms on levels calculated on stored data
  - Alarms real time with relais activation
- **Environmental parameters** exceedings



REMOTE MANAGEMENT: SOFTWARE NS4 “MONITOR”

CUSTOM SETUP MANAGEMENT

- Creation, storage and upload of custom setups to NMT



METEO SENSORS

HD52.3D ULTRASONIC ANEMOMETER

- No rotating parts / Reduced Maintenance
- Possibility to detect the following parameters:
  - Wind speed
  - Wind direction
  - Temperature
  - Relative humidity
  - Atmospheric pressure
  - Solar radiation

HD2013.2 CAPACITIVE RAIN SENSOR *

* Other sensors available (please contact factory)

OTHER SENSORS

GPS SENSOR

- Time syncronization
- NMT position

INTERNAL TEMPERATURE SENSOR

- To check compatibility of enclosure internal temperature with correct operation of electronic devices conteined inside

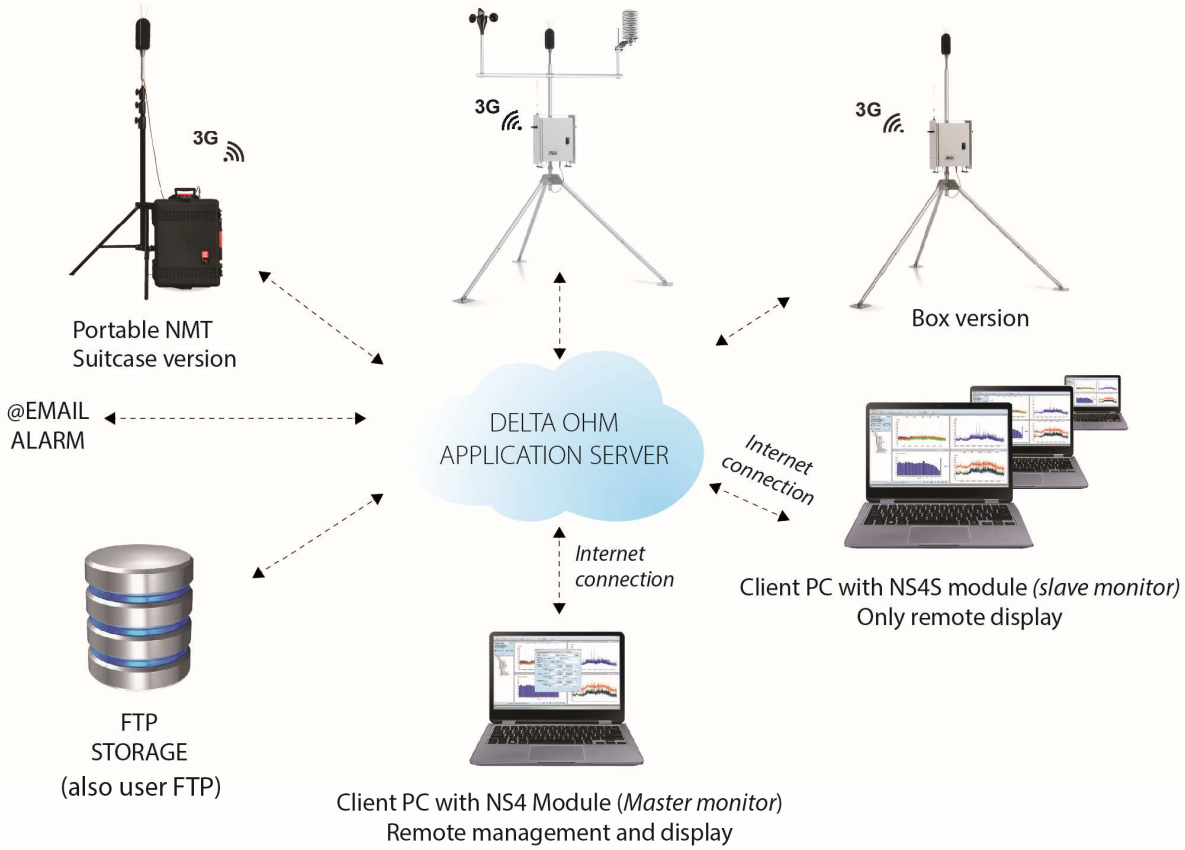
NETWORK ARCHITECTURE

APPLICATION SERVER
- Located at DO

NETWORK ACCESS
- Any NS4 client having an internet connection

STORAGE
- On Delta Ohm FTP (200MB included storage space) or on customer's FTP

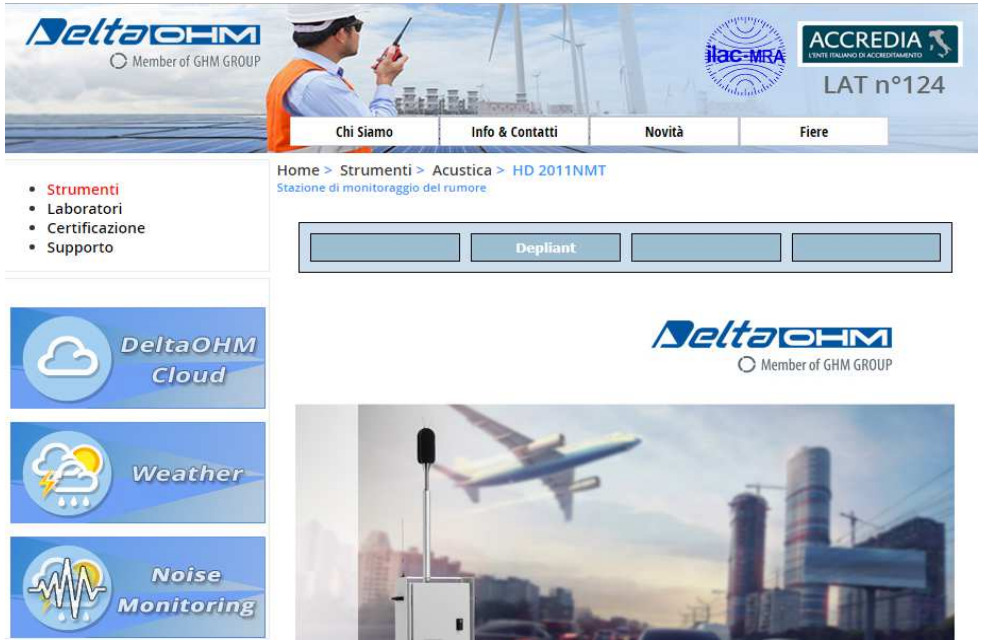
COMMUNICATION
- 3G/TCP-IP with integrated modem.



CLOUD INTERFACE

DELTA OHM CLOUD

DEMO NOISE



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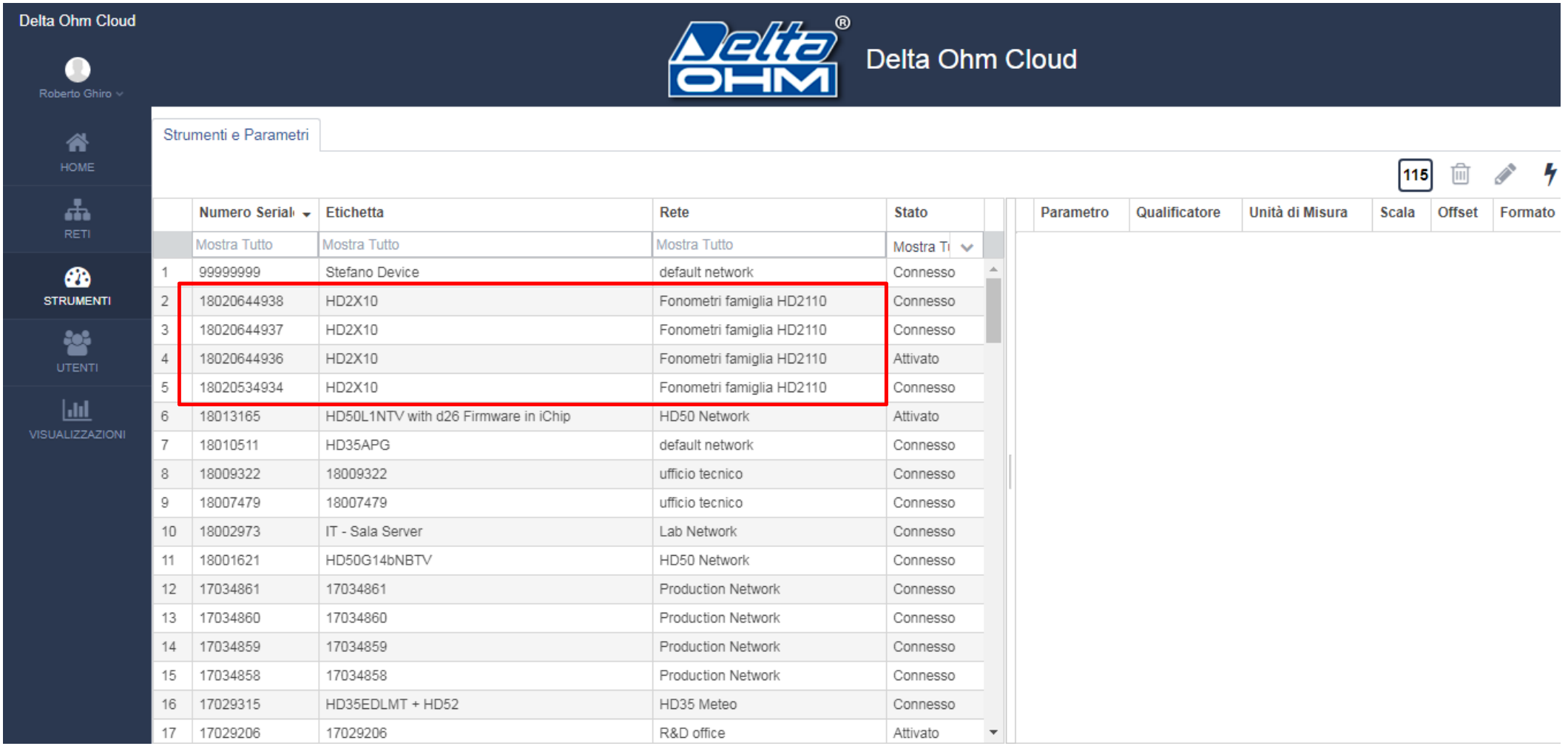
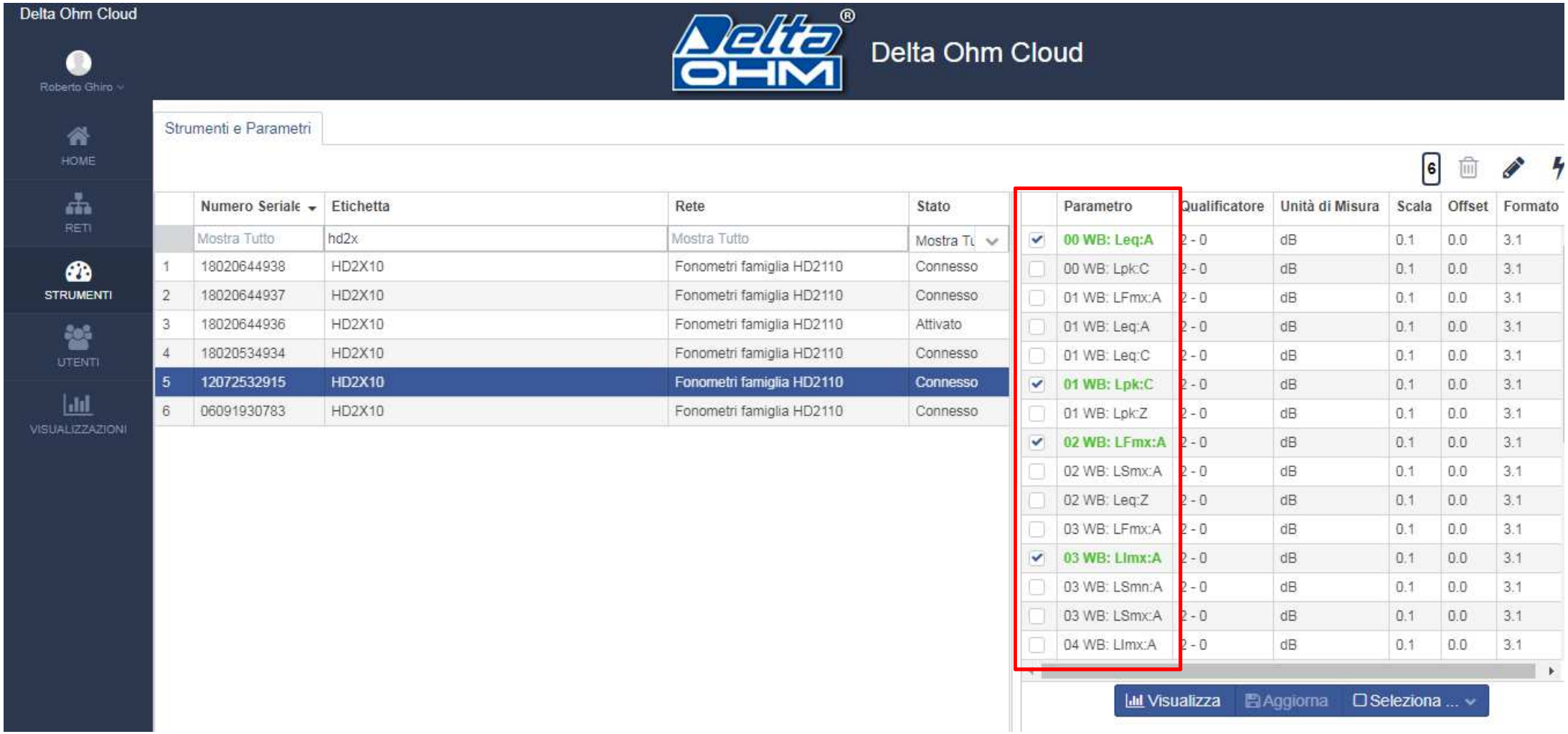


CLOUD INTERFACE



CLOUD INTERFACE