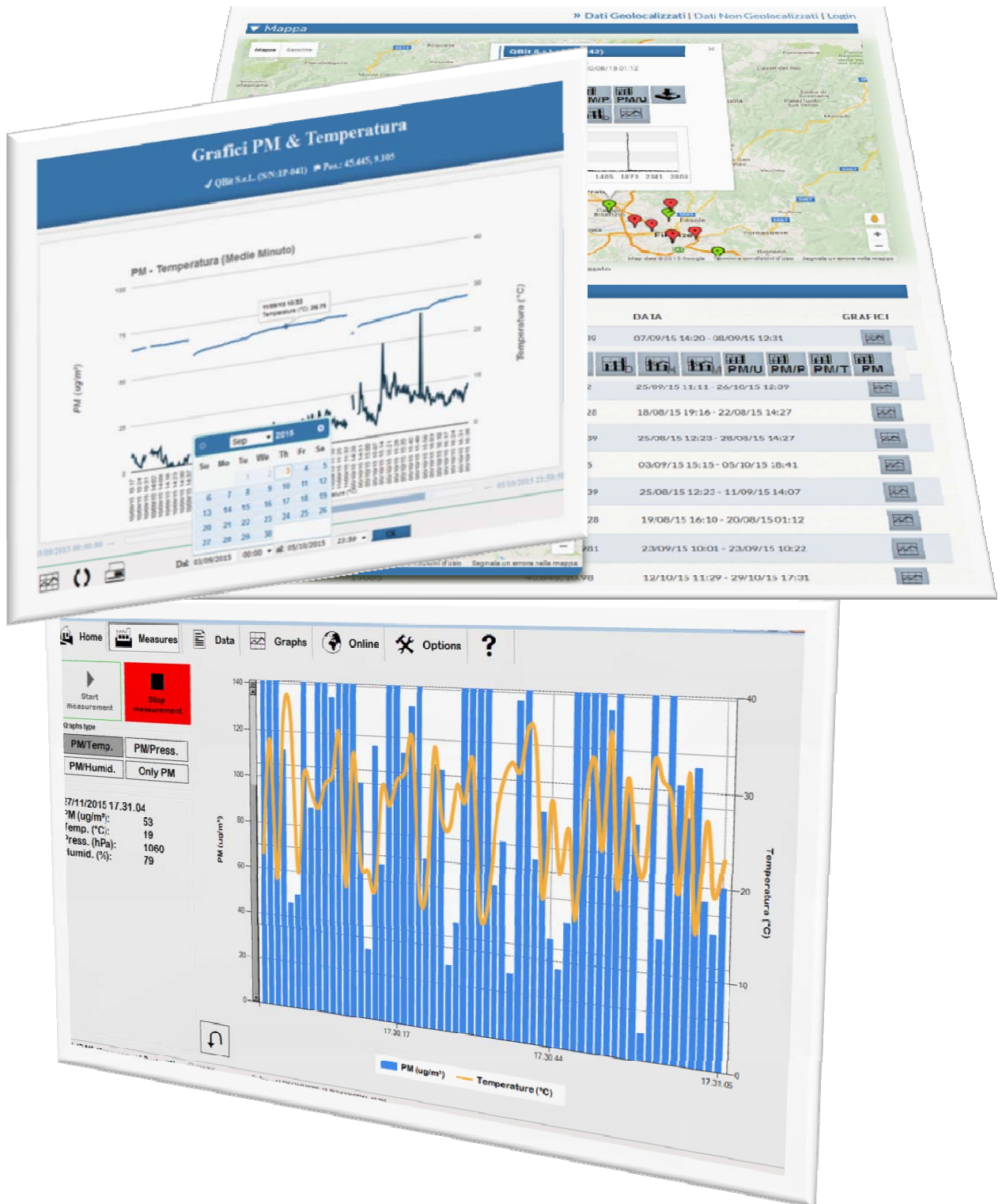


APPENDIX

Qbit Software



The Qbit Software



HOME

The screenshot shows the Qbit-Optronics software interface. The top navigation bar includes icons for Home, Measures, Data, Graphs, Online, and Options. The main content area is titled 'Environmental measurements' and features the Qbit logo. Below the logo, there is a call to action to visit the website www.qbit-optronics.com for more information. A status bar at the bottom displays the serial number 'S/N: 1P-045', the mode 'M', and the 'ONLINE' status. The interface also includes a footer with technical details like 'Fix Pos.: 43.7764349740708; 11.2131623687744; 40.386'.

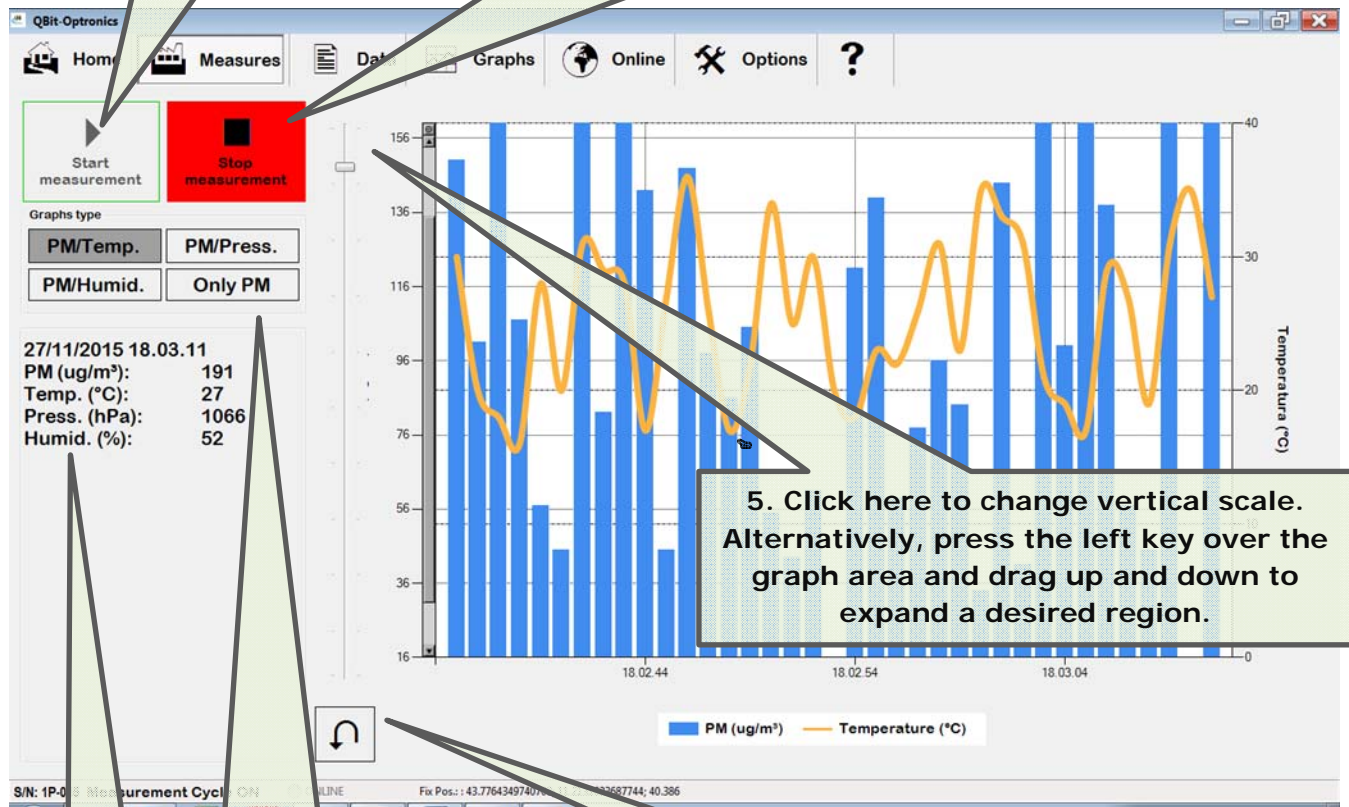
1. When the computer is connected to internet, news and infos from Qbit are reported in this section (including availability of new SW versions).
2. Allows the instrument to perform measurements and to record data.
3. Shows collected data using tables.
4. Shows collected data using graphs.
5. When connected (and registered in www.qbit-optronics.com), allows managing online data, shows graphs and position with GoogleMaps.
6. Options and instrument settings.
7. When the instrument is correctly set up, the serial number is displayed here.
8. In this area the SW messages are displayed (including GPS coordinates – when active).



MEASUREMENTS

1. When the instrument is correctly set up, hit 'Start' to begin measurements.

2. Hit 'Stop' to conclude measurements.



5. Click here to change vertical scale. Alternatively, press the left key over the graph area and drag up and down to expand a desired region.

4. Selects the graph format with real time data. The graph contains the last 60 measurements.

6. Click here to recover the previous graph setting.

3. Last acquired data are shown in this area.

7. In the contextual graph menu (right click or 3 sec touch on the graph), choose graph format: bars, line, smoothed line. The maximum value of the vertical PM scale ($100\mu\text{g}/\text{m}^3$) can be changed.



DATA

1. Files are saved in the 'QBITOptronicsLog' folder, opened by the SW in the user Documents folder. In order to change path or save the file in another folder, click right key over the file name.

2. A table shows recorded data files. Select the file name in the list (left column) to overview the data.

The screenshot displays the QBIT-Optronics software interface. The top menu bar includes 'Home', 'Misure', 'Dati', 'Grafici', 'Dati Online', 'Opzioni', and a help icon. The main window is titled 'QB_1P-045_000061a' and contains a table of recorded data. The table has columns for 'Data/Ora', 'PM', 'Temp.', 'Pressione', 'Umidità', 'SN', 'Latitudine', 'Longitudine', and 'Altitud'. The data rows show various sensor readings over time. On the left side, there is a list of files with names like 'QB_1P-045_000140', 'QB_1P-045_000139', etc. At the bottom, there are navigation buttons and a status bar with error messages.

	Data/Ora	PM	Temp.	Pressione	Umidità	SN	Latitudine	Longitudine	Altitud
1854	30/07/2015 17.58.47	9	32.98	99276.00	57.75	1P-041	43.8272936568545	11.2521295013428	265.291
1855	30/07/2015 17.58.52	3	33.00	99277.00	57.72	1P-041	43.8272936568545	11.2521295013428	265.291
1856	30/07/2015 17.58.57	0	33.01	99275.50	58.08	1P-041	43.8272936568545	11.2521295013428	265.291
1857	30/07/2015 17.59.02	7	33.01	99278.25	57.15	1P-041	43.8272936568545	11.2521295013428	265.291
1858	30/07/2015 17.55.49	8	32.81	99278.75	58.44	1P-041	43.8272936568545	11.2521295013428	265.291
1859	30/07/2015 17.55.54	7	32.82	99282.00	58.54	1P-041	43.8272936568545	11.2521295013428	265.291
1860	30/07/2015 17.55.59	7	32.82	99283.00	58.14	1P-041	43.8272936568545	11.2521295013428	265.291
1861	30/07/2015 17.56.04	3	32.83	99281.25	58.32	1P-041	43.8272936568545	11.2521295013428	265.291
1862	30/07/2015 17.56.10	9	32.83	99281.25	58.32	1P-041	43.8272936568545	11.2521295013428	265.291
1863	30/07/2015 17.56.15	0	32.83	99285.25	57.99	1P-041	43.8272936568545	11.2521295013428	265.291
1864	30/07/2015 17.56.20	7	32.84	99279.75	58.09	1P-041	43.8272936568545	11.2521295013428	265.291
1865	30/07/2015 17.56.25	8	32.84	99279.50	58.44	1P-041	43.8272936568545	11.2521295013428	265.291
1866	30/07/2015 17.56.30	5	32.84	99279.00	58.71	1P-041	43.8272936568545	11.2521295013428	265.291
1867	30/07/2015 17.56.35	2	32.85	99277.50	59.22	1P-041	43.8272936568545	11.2521295013428	265.291
1868	30/07/2015 17.56.40	8	32.86	99279.50	58.29	1P-041	43.8272936568545	11.2521295013428	265.291
1869	30/07/2015 17.56.45	7	32.86	99279.00	58.23	1P-041	43.8272936568545	11.2521295013428	265.291
1870	30/07/2015 17.56.50	4	32.88	99280.75	58.23	1P-041	43.8272936568545	11.2521295013428	265.291
1871	30/07/2015 17.56.56	4	32.88	99280.25	57.90	1P-041	43.8272936568545	11.2521295013428	265.291
1872	30/07/2015 17.57.01	8	32.88	99280.75	57.45	1P-041	43.8272936568545	11.2521295013428	265.291
1873	30/07/2015 17.57.06	5	32.88	99279.75	57.69	1P-041	43.8272936568545	11.2521295013428	265.291
1874	30/07/2015 17.57.28	9	32.89	99279.75	57.66				
1875	30/07/2015 17.57.35	2	32.89	99278.25	58.14				
1876	30/07/2015 17.57.40	2	32.89	99280.75	57.90				

4. When older than 10 days, files are saved in the folder "Archive". See "Data Options" to change this setting.

3. Run among different records with the mouse or the right bar. To choose a record group, write the first and hit enter.

The screenshot shows the QBit-Optronics software interface. The top navigation bar includes 'Home', 'Misure', 'Dati', 'Grafici', 'Dati Online', and 'Opzioni'. The main area displays a list of data files on the left and a central panel for file management and visualization. The central panel includes icons for graph formats (PM/T, PM/P, PM/U, PM/T/U, PM), file operations (save, refresh, delete), and location settings (GPS, manual settings, Google Maps). Numbered callouts provide detailed instructions for each icon.

5. To open the selected file menu, run the mouse or touch over the file name.

6. Selects the graph format: PM and temperature (PM/T), PM and pressure (PM/P), PM and umidity (PM/U) or PM alone.

7. Opens the sub-menu with the geo-localization options.

8. Exports the selected file in .csv format.

9. Starts data upload by the user.

10. Writes selected data in the notes.

11. Reloads the file.

12. Turns on and off the geo-localization.

13. Turns on and off the GPS (when available).

14. Manual setting of latitude, longitude and altitude.

15. Localizes the instrument by GoogleMaps (when connected).

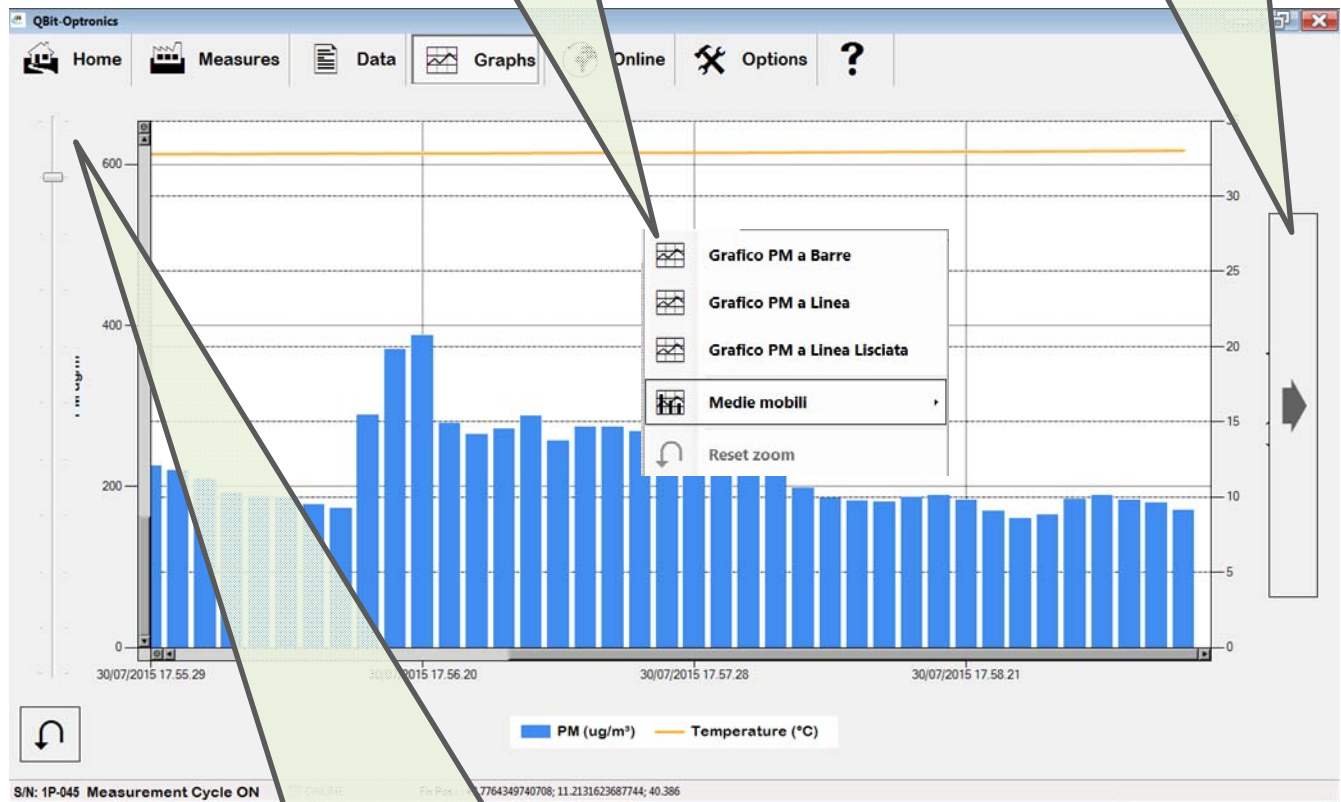
All the above settings are also available in the contextual menu.



GRAPHS

1. In the contextual graph menu select the graph format: bars, line, smoothed line or running average.

2. In order to change the temporal window, run the mouse (or touch) the right or left side of the graph (arrow key). The graph can show 3.000 data at most.



3. As for the real-time data graph, click here to change the vertical scale. Alternatively, press the left key over the graph area and drag up and down to expand a desired region. Click on the graph to exit this setting.



ONLINE DATA

1. This section opens the web page 'Graphs and Data' from www.qbit-optronics.com

2. When an account is active, online data can be saved. The user can select his own instruments and measurements.

The screenshot shows the QBit-Optronics web interface. The top navigation bar includes Home, Measures, Data, Graphs, Online, Options, and a help icon. Below the navigation is a map of Tuscany, Italy, with several red and green location pins. A legend below the map indicates: a green pin for 'Grafici/Dati resi disponibili dall'utente', a red pin for 'Dati non resi pubblici', and a blue pin for 'Dati utente loggato'. Below the map is a table titled 'Elenco Completo' with the following columns: N, UTENTE, S/N, MISURE PUNTUALI, POS., DATA, and GRAFICI. The table contains two rows of data. At the bottom of the interface, there is a status bar showing 'S/N: 1P-045', 'M', 'ONLINE', and 'Fix Pos.: 43.7764349740708; 11.2131623687744; 40.386'.

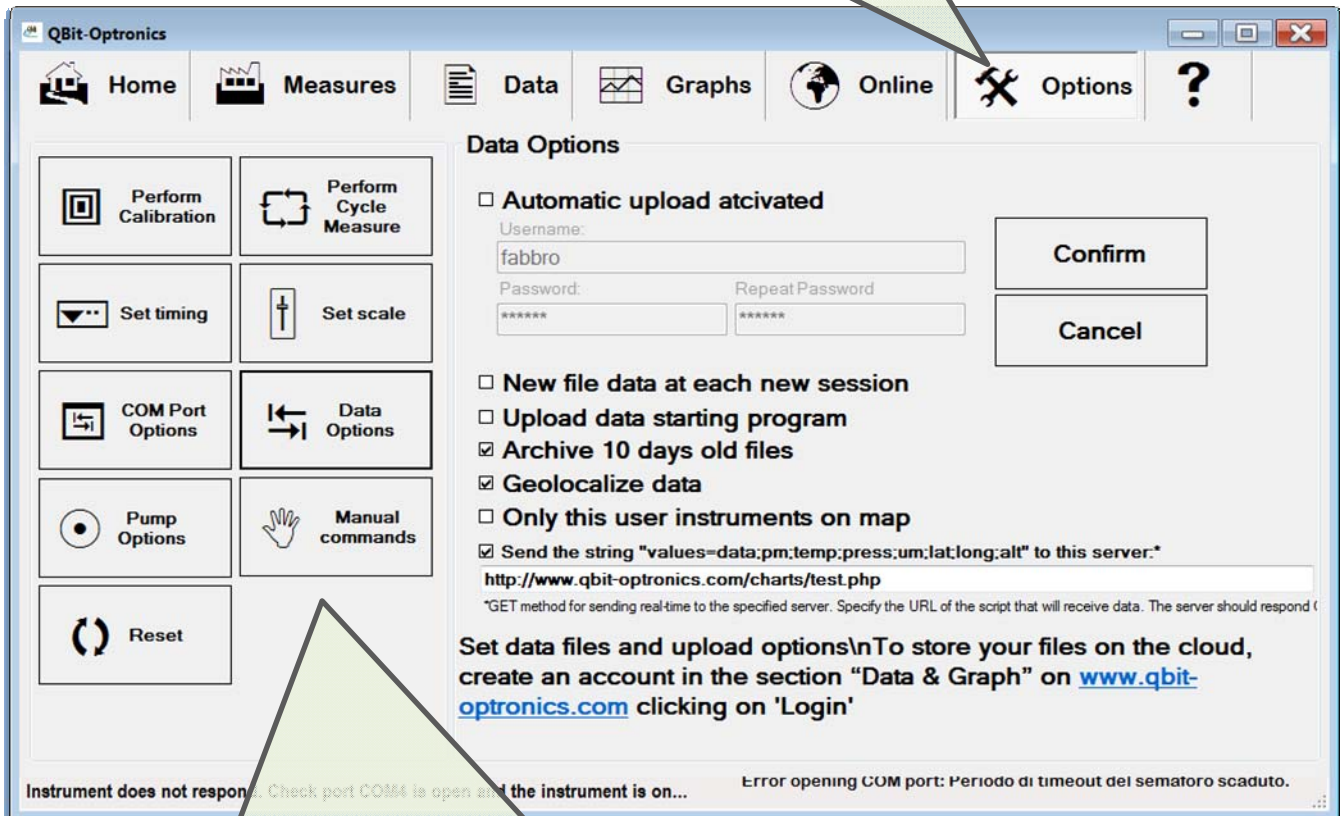
N	UTENTE	S/N	MISURE PUNTUALI	POS.	DATA	GRAFICI
1	QBit S.r.L.	1P-038	1086	43.708, 11.339	07/09/15 14:20 - 08/09/15 12:31	
2	QBit S.r.L.	1P-039	2580	43.708, 11.339	25/08/15 15:22 - 07/09/15 14:10	

3. The internet connection is shown here. When orange, the instrument is uploading data to the server (files are uploaded every 10 minutes when the automatic procedure is selected). If a measurement is running, the corresponding file will be uploaded later or when the file dimension reaches 1Mbyte. Data uploaded on the server are typically available within 30 minutes.



OPTIONS

1. This section contains tools for instrument setting (including serial port communication, and set up of user account required for online data recording or transmission to client server via GET command).



2. Available settings:

- Perform Calibration;
- Perform Cycle Measure;
- Set timing: this key allows to define the calibration and measurement time intervals (in seconds and minutes, respectively);
- Set scale: this key allows to redefine the gain factors of any measured quantities (PM, temperature, pressure and umidity);
- COM Port Options: sets connection parameters of the serial port;
- Data Options: sets automatic data upload;
- Pump Options: turns on and off the pump in order to allow flow calibration;
- Manual commands: allows manual commands;
- Reset: instrument reset.

Section “Graphs and Data” in the web-site www.qbit-optronics.com

» [Dati Geolocalizzati](#) | [Dati Non Geolocalizzati](#) | [Login](#)

▼ **Mappa**

1. Geo-localized instruments are identified on the map.

2. The green marker identifies data available in graph format.

3. A complete list of measurements is shown in this table.

N	UTENTE	S/N	MISURE PUNTUALI	POS.	DATA	GRAFICI
1	QBit S.r.L.	1P-03	1006	43.708, 11.339	07/09/15 14:20 - 08/09/15 12:31	
2	QBit S.r.L.	1P-039	2580	48.859, 2.482	25/09/15 11:11 - 26/10/15 12:39	
4	QBit S.r.L.	1P-041	6737	43.823, 11.128	18/08/15 19:16 - 22/08/15 14:27	
5	QBit S.r.L.			43.847, 10.981	25/08/15 12:23 - 28/08/15 14:27	
6	QBit S.r.L.					
7	QBit S.r.L.					
8	QBit S.r.L.			43.823, 11.128	19/08/15 16:10 - 20/08/15 01:12	
9	QBit S.r.L.			43.781, 11.128	23/09/15 10:01 - 23/09/15 10:22	
10	QBit S.r.L.			43.798, 11.128	12/10/15 11:29 - 29/10/15 17:31	

4. Click on the graph icon to open the graph tools.

5. Click over longitude and latitude values for identifying the position on the map.

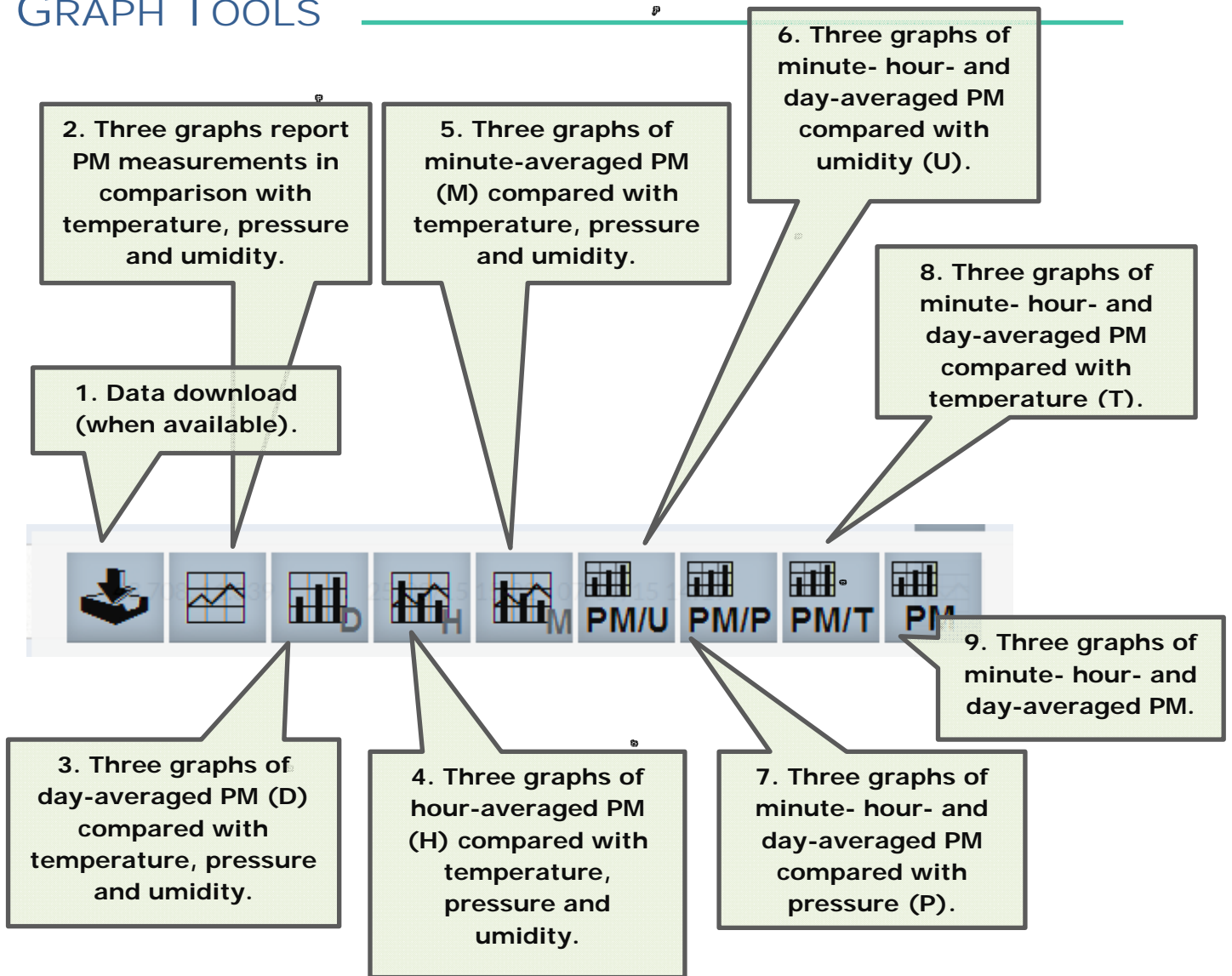
Dati Geolocalizzati | » Dati Non Geolocalizzati | Login

▼ Elenco Completo

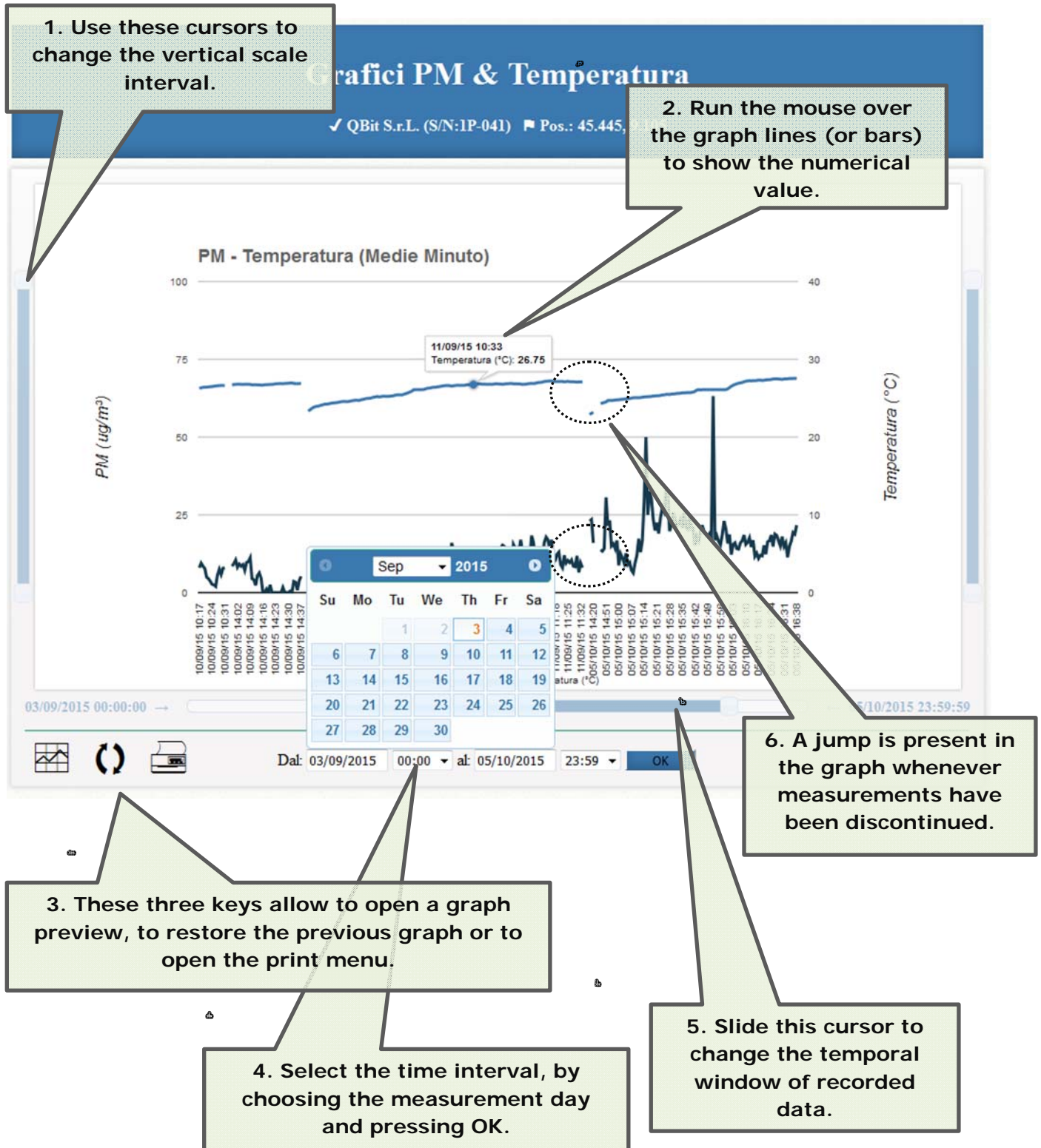
N	UTENTE	S/N	MISURE PUNTUALI	PERIODO	GRAFICI
1	QBit S.r.L.	1P-039	1332	12/08/15 10:18 - 25/09/15 14:38	
2	QBit S.r.L.				
3	QBit S.r.L.			18/11/15 16:50 - 22/11/15 05:18	

5. Non geo-localized measurements are shown in this menu.

GRAPH TOOLS



WORKING WITH GRAPHS



USER AREA

1. Login here to access user private area.

» [Dati Geolocalizzati](#) | [Dati Non Geolocalizzati](#) | [Login](#)

Acesso Area Utente

Username: Password:

[Non hai un account? Clicca Qui](#) | [Hai perso password o username? Clicca qui](#)

Creando un account avrai la possibilità di archiviare gratuitamente i tuoi dati online, visualizzarne facilmente le rappresentazioni grafiche e georeferenziarli su mappe.

2. Fill in the form to register.

1 Crea un username che userai per identificarti:

2 Scegli una password di almeno 8 caratteri che contenga sia lettere maiuscole, sia minuscole, sia numeri:

3 Ripeti la password:

4 Inserisci un indirizzo e-mail valido.
Riceverai un mail di conferma per attivare l'account:

5 Ripeti l'indirizzo e-mail:

6 Indica il Serial Number di una delle centraline in tuo possesso:

7 Verifica antispam: quanto fa 61 sommato a 63?

1. Manage user account: change email or the name on the map, modify the password, remove the account.

2. Allow publication of instrument position and measurements on the map.

3. Allow graph publication.

Account Info

Consenso alla geolocalizzazione

Pubblicazione dei grafici

Consenso al download dei dati

Gestione dati

In questa sezione è possibile scegliere di rendere disponibili i grafici per singole centralina o per singola posizione geografica.

Dati geolocalizzati

4. Allow measurement download.

Dati rilevati per centralina

N	SERIAL NUMBER	MISURE PUNTUALI	PRIMA RILEVAZIONE	ULTIMA RILEVAZIONE	PUBBLICI
<input checked="" type="checkbox"/>	1P-045	8416	2015-07-19 17:47:22	2015-11-26 01:34:54	<input type="checkbox"/>

Dati rilevati per centralina e posizione geografica (precisione al 3' decimale)

N	S/N	LATIT./LONG.	MISURE PUNTUALI	PRIMA RILEVAZIONE	ULTIMA RILEVAZIONE	PUBBLICI
<input checked="" type="checkbox"/>	1P-045	43.749/11.251	539	2015-08-13 11:04:16	2015-08-19 10:09:14	<input type="checkbox"/>
<input checked="" type="checkbox"/>	1P-045	43.749/11.252	528	2015-08-19 10:07:12	2015-08-19 10:07:12	<input type="checkbox"/>
<input checked="" type="checkbox"/>	1P-045	43.757/11.299	32	2015-07-17 10:00:17	2015-07-17 10:00:17	<input type="checkbox"/>
<input checked="" type="checkbox"/>	1P-045	43.776/11.213	2807	2015-09-21 14:23:10	2015-11-26 01:34:54	<input type="checkbox"/>
<input checked="" type="checkbox"/>	1P-045	43.786/11.179	3158	2015-09-20 16:44:28	2015-09-21 11:00:19	<input type="checkbox"/>
<input checked="" type="checkbox"/>	1P-045	43.827/11.252	1322	2015-07-19 17:47:22	2015-07-30 17:37:02	<input type="checkbox"/>

5. Allow publication of a single measurement session.

6. Remove data measured by a specific instrument or in a specific location.

Download

7. Download data in .csv format.