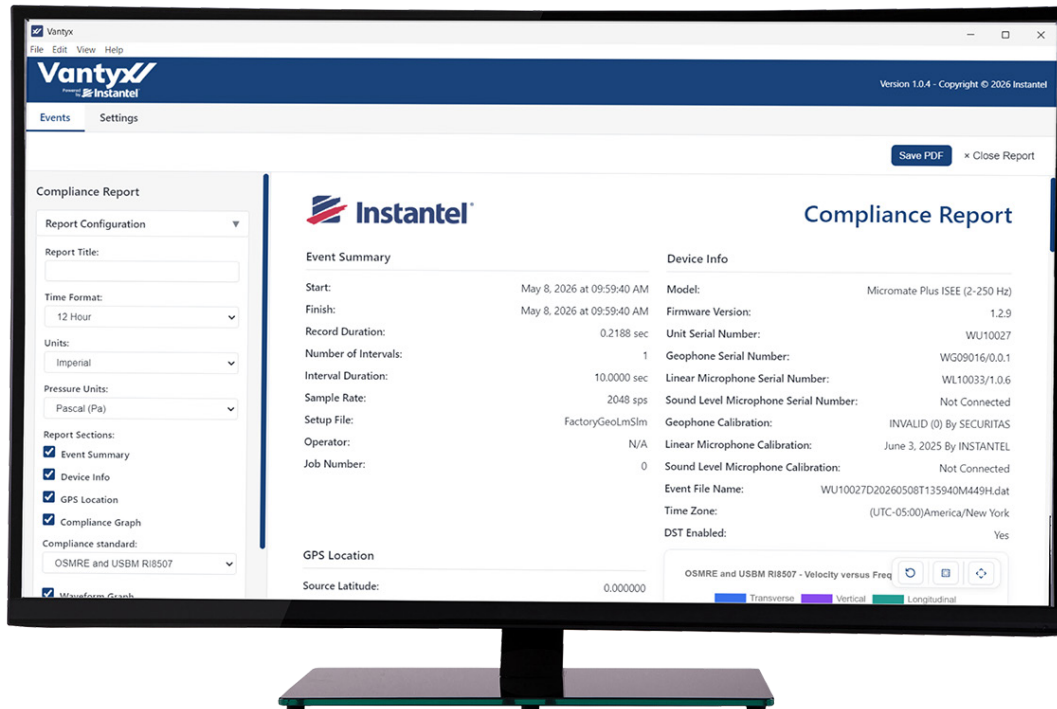




Operator Manual

980-727004-000

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Vantyx is a tool for reviewing and reporting monitoring data that was recorded by an Instantel monitoring unit. Compliance results shown by Vantyx are calculated from the recorded data against the standard you select. They do not replace the professional judgement of a qualified person, and they do not replace the requirements of any regulation, permit or contract that applies to your project. You are responsible for choosing the right standard and for interpreting the results.

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Vantyx includes third-party open-source components that are provided under their own licences. See Appendix C, Third-party software notices.

Privacy

Vantyx works offline. Event files you import, and the reports and exports you create, stay on your computer. Vantyx does not collect usage analytics or send your monitoring data anywhere. Its only network connection is a check for software updates, described in section 2.4.

About This Manual

This manual describes Vantyx software version 1.1.0 for Microsoft Windows. Screens shown are representative and can differ slightly from your version. Sample data shown in the screen captures is illustrative only.

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1. Introduction

1.1. About Vantyx

Vantyx is Instantel's desktop application for reviewing the events recorded by Instantel Micromate Plus monitoring units. Import the event files, review the vibration, overpressure and sound data, check the results against common compliance standards, and produce reports and data exports to share with your clients and regulators.

Vantyx runs entirely on your own computer. You do not need an account, a licence key or an internet connection to view and report on your data.

1.2. Key Features

- Event library. Import Micromate Plus event files by browsing or by drag-and-drop. Vantyx keeps a copy of each file in its own library, so the events are still there the next time you open the application.
- Powerful event list. Search, sort, filter, pin and rearrange more than fifty columns of event information, from peak particle velocity to job notes.
- Compliance reports. Review each event against OSMRE, USBM RI8507 or DIN 4150, using zerocrossing frequency, FFT or a combination of both.
- Interactive graphs. Zoom and pan through geophone, linear microphone and sound level microphone waveforms, FFT spectra and histogram intervals.
- Sensor check results. See the geophone and microphone sensor check results recorded before and after monitoring.
- Audio playback. Listen to the audio recorded with a sound level microphone and save it as an MP3 file.
- Export. Save reports as PDF, and save event data as JSON or CSV for use in spreadsheets, databases and other software.
- Automatic updates. Vantyx checks for new versions and installs them when you choose.

1.3. Supported Equipment and Data

Vantyx reads event files recorded by Instantel Micromate Plus monitoring units. It supports data from these sensors:

Sensor	What Vantyx Shows
Triaxial or uniaxial geophone	Peak particle velocity (PPV), zero-crossing frequency, acceleration, displacement, peak vector sum (PVS), ponderated peaks, FFT, and sensor check results
Linear microphone	Peak pressure level (Pa or psi, and optionally dB(L)), zero-crossing frequency, FFT, and sensor check results
Sound level microphone	LMax, LMin, Leq and Ln statistics (dB), time-history graph, and audio playback
GPS	Unit coordinates, entered blast and sensor coordinates, distance and scaled distance

Vantyx supports the waveform, histogram, histo-combo and manual record modes. See section 4.1 for the file types it imports.

1.4. Conventions Used in This Manual

Bold blue text	A button, tab, menu or field name in Vantyx, for example Import Events .
Help ›	Download Log Files A menu path. Open the Help menu, then choose Download Log Files .
C:\Folder\file.dat	A file name, folder or text you type.
Esc	A key on your keyboard.

NOTE

Notes give extra information or a useful detail.

TIP

Tips describe a faster or easier way to work.

IMPORTANT

Important notes warn you about something that could cause lost data or an incorrect result.

2. Installing Vantyx

2.1. System Requirements

Item	Requirement
Operating System	Microsoft Windows 11, 64-bit (x64)
Processor	64-bit (x64) processor, dual-core 2 GHz or faster recommended
Memory	8 GB RAM recommended
Disk Space	About 500 MB for the application, plus space for your imported event files
Display	1280 × 800 or higher resolution. The Vantyx window is at least 1200 pixels wide.
Internet Connection	Only needed to download Vantyx and to receive updates. Not needed to view or report on events.
Permissions	A standard Windows user account. Administrator rights are needed only if you install Vantyx into a protected folder such as C:\Program Files .
Event Files	A way to copy event files from your Micromate Plus unit to the computer, such as the unit's USB connection

2.2. Installing

1. Download the Vantyx installer, Vantyx Setup 1.1.0.exe , from the Instantel website.
2. Close Vantyx if an older version is open. The installer closes it for you if you forget.
3. Double-click the installer. If Windows asks whether you want to allow the app to make changes, check that the verified publisher is XMark Corporation, Instantel's parent company, and choose **Yes**.
4. Follow the steps in the setup wizard. You can keep the suggested installation folder, or choose your own.
5. When setup finishes, start Vantyx from the desktop shortcut or from the Windows Start menu.

IMPORTANT

Download Vantyx only from Instantel. The installer is digitally signed. If Windows reports an unknown publisher, do not run the file. Contact Instantel instead.

2.3. Starting Vantyx for the First Time

Vantyx opens on the **Events** page. The event list is empty until you import your first events (see Chapter 4). The first start can take a few seconds while Vantyx prepares its data folder.

Vantyx shows measurements in metric units by default. To work in imperial units, open the **Settings** tab and change **Default Units** (see Chapter 8).

2.4. Updating Vantyx

When your computer is online, Vantyx checks for a new version each time it starts, and again every two hours while it runs. A new version downloads in the background without interrupting your work. The status bar at the bottom of the window shows its progress.

When the download is complete, Vantyx displays the message *A new version of Vantyx has been downloaded*.

- Choose **Restart now** to close Vantyx, install the update and reopen it.
- Choose **Later** to keep working. The update installs the next time you close Vantyx.

To check for an update yourself, open Settings and choose Check for Updates under Application Information.

NOTE

Updating keeps your imported events and your settings.

2.5. Uninstalling

1. Close Vantyx
2. Open Windows **Settings > Apps > Installed apps**.
3. Find Vantyx in the list, choose the ...menu, then **Uninstall**.

Uninstalling leaves your imported event library and settings on the computer, so they are there if you reinstall. To remove them too, delete these folders after you uninstall:

- %LOCALAPPDATA%\Vantyx (imported events and application logs)
- %APPDATA%\Vantyx (settings)

IMPORTANT

Deleting these folders permanently removes Vantyx's copies of your event files. Make sure you have the original files, or an export, before you delete them.

3. Getting Started

3.1. The Vantyx Window

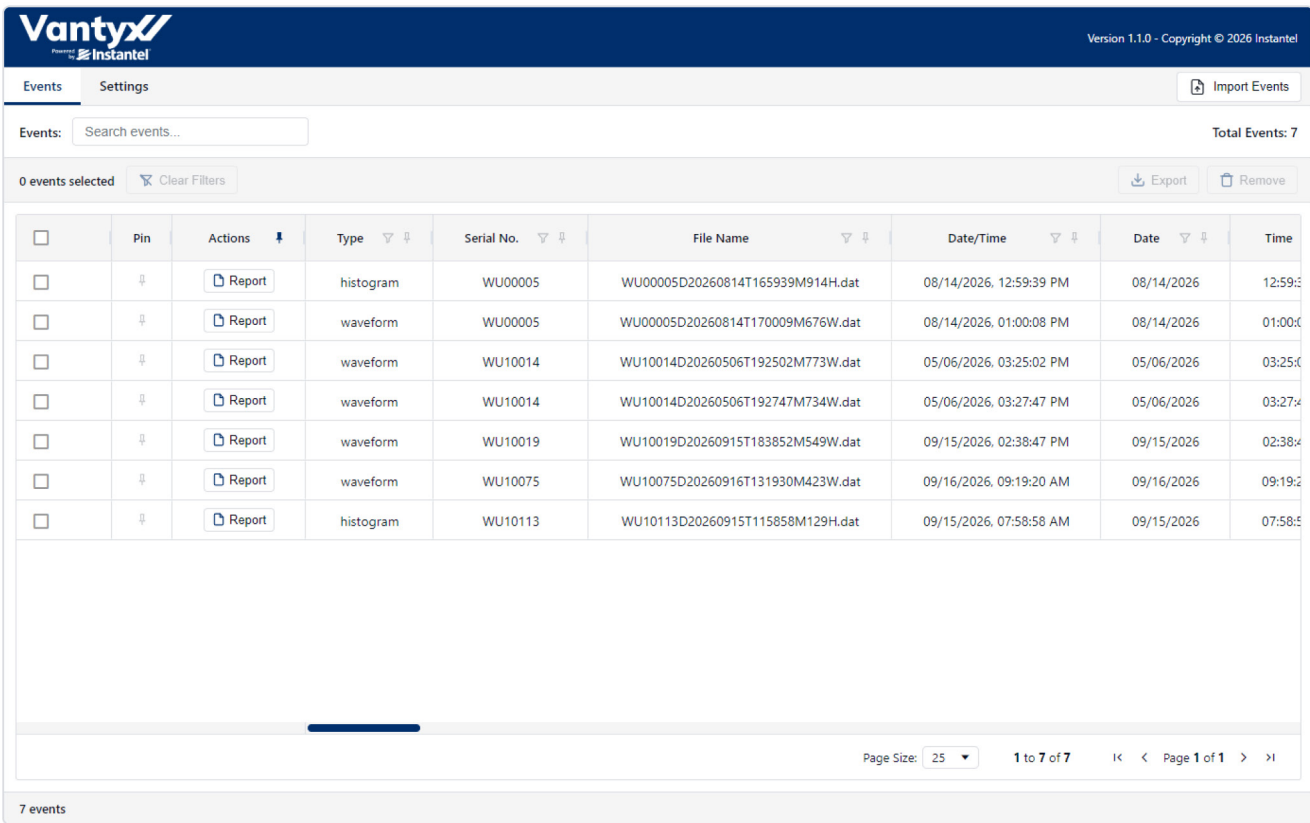


Figure 3-1. The Vantyx window, showing the Events page with seven imported files.

Area	Purpose
Title Bar	Shows the Vantyx logo, the installed version number and the copyright notice.
Tabs	Events shows your event library and reports. Settings holds your preferences and application information.
Import Events	Opens the import dialog so you can add event files to the library.
Search and Toolbar	Search the list, see how many events are selected, clear filters, and export or remove the selected events.
Event List	One row for each imported event. Choose Report on a row to open its report.
Paging and Status Bar	Move between pages of events, change how many rows a page shows, and see update status.

3.2. Menus

Menu	Commands
File	Exit closes Vantyx.
Edit	Cut, Copy, Paste, Delete and Select All , for text fields such as the search box and report title.
View	Reload, Actual Size, Zoom In, Zoom Out and Toggle Full Screen . Zoom changes the size of everything in the window. Toggle Developer Tools is a diagnostic tool and is used only when Instantel support asks for it.
Help	Download Log Files... saves the Vantyx log files into a single zip file you can send to Instantel support (see section 9.2).

3.3. Quick Start

These steps take you from a Micromate Plus unit to a finished compliance report.

1. Copy the event files (.dat) from your Micromate Plus unit to a folder on your computer.
2. In Vantyx, choose Import Events, then Browse Files, and select the files. Or drag the files from File Explorer onto the Vantyx window.
3. Find the event in the list. Use the search box, or sort by Date/Time.
4. Choose Report on the event's row, or double-click the row.
5. In the Compliance Report panel, choose your compliance standard, units and the sections you want in the report.
6. Choose Export Report, select PDF, and save the report.

4. Importing Events

4.1. Supported Files

Vantyx imports Micromate Plus event files, which have the extension .dat . The last letter of the file name, before the extension, shows the kind of record:

Ends In	Event Type	Example
W.dat	Waveform	WU10019D20260915T183852M549W.dat
H.dat	Histogram	WU10113D20260915T115858M129H.dat
M.dat	Manual	An event started by hand on the unit

The rest of the name identifies the unit's serial number (for example WU10019) and the date and time the event was recorded.

NOTE

A unit recording in histo-combo mode writes two files for each recording period: a waveform file and a histogram file. Import both to see all of the data.

4.2. Copying Events from a Micromate Plus Unit

Vantyx does not connect to the monitoring unit directly. Copy the event files from the unit to your computer first:

1. Connect the Micromate Plus unit to your computer with its USB cable. The unit appears in File Explorer.
2. Open the unit's event folder and copy the .dat files to a folder on your computer.
3. Import them into Vantyx, as described in the next section

See your Micromate Plus operator manual for full instructions on connecting the unit and finding its event files.

TIP

Windows sometimes adds [1] to a file name when it copies from a USB device. Vantyx recognizes this and removes it, so the event keeps its original name.

4.3. Importing Event Files

Using the Import Events dialog:

1. On the **Events** page, choose **Import Events** at the top right.
2. Choose **Browse Files** and select one or more .dat files. You can also drag files into the dialog.
3. Check the **Selected Files** list. To leave a file out, choose the remove icon next to it.
4. Choose **Import Events**. A progress bar shows Importing x of y events.

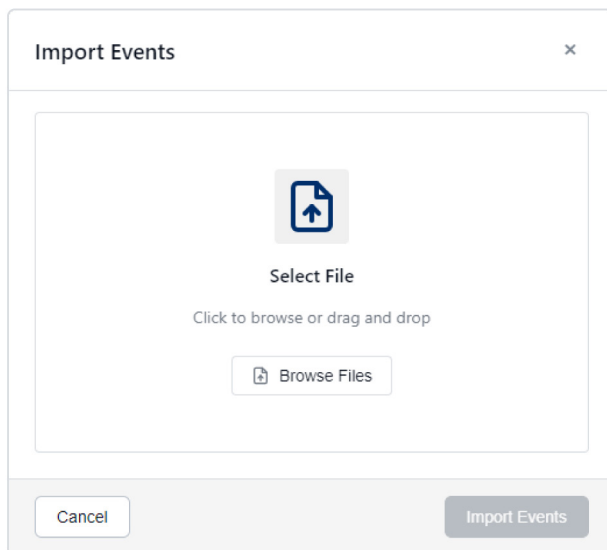


Figure 4-1. The Import Events Dialog

Using Drag-and-Drop

Drag .dat files from File Explorer and drop them anywhere on the Events page. Vantyx shows Drop to import while you drag, and starts importing as soon as you release the files.

What Happens When You Import

- Vantyx copies each file into its own library. Your original files are not changed or moved.
- If an event with the same file name is already in the library, Vantyx skips it, so you can import the same folder again without making duplicates.
- Files that are not .dat event files are not imported, and Vantyx tells you which ones it skipped.

5. Working with the Event List

The event list shows one row for each event in your library. Total Events at the top right shows how many events the library holds, and the status bar shows how many rows are visible after searching and filtering.

5.1. Searching, Sorting and Filtering

- **Search.** Type in the **Search events...** box to show only events that contain that text in any column, such as a serial number, job number or location name.
- **Sort.** Click a column heading to sort by that column. Click again to reverse the order.
- **Filter.** Choose the filter icon ▾ in a column heading to show only rows that match a value or a range.
- **Clear filters.** Choose **Clear Filters** in the toolbar to remove every filter at once.

5.2. Arranging Columns

The event list has more than fifty columns. Scroll sideways to see them all. Appendix A describes each column.

- **Resize** a column by dragging the edge of its heading.
- **Move** a column by dragging its heading to a new place.
- **Pin** a column to the left or right edge, so it stays in view as you scroll, by choosing the pin icon in its heading.

Vantyx remembers your column layout and page size the next time you open it.

5.3. Pinning Events

Choose the pin icon in an event's **Pin** column to keep that event at the top of the list, whatever the sort order. Choose it again to unpin the event.

5.4. Selecting Events

Select an event with the check box at the start of its row. Select every event on the page with the check box in the heading row. The toolbar shows how many events are selected, and lets you **Export**, **Remove** or **Clear Selection**.

Events:

Total Events: 7

2 events selected

Clear Filters

Export

Remove

Clear Selection

	Pin	Actions	Type	Serial No.	File Name	Date/Time	Date	Time
☒		Report	histogram	WU00005	WU00005D20260814T165939M914H.dat	08/14/2026, 12:59:39 PM	08/14/2026	12:59:39
☒		Report	waveform	WU00005	WU00005D20260814T170009M676W.dat	08/14/2026, 01:00:08 PM	08/14/2026	01:00:08

Figure 5-1. Two events selected. The toolbar shows the actions for the selection.

5.5. Removing Events

1. Select the events you want to remove.
2. Choose **Remove** in the toolbar.
3. Confirm when Vantyx asks *Are you sure you want to remove...?*

IMPORTANT

Removing an event deletes Vantyx's copy of the event file from the library. It does not delete your original file on the computer or on the unit. Keep your original files, or export the events first, if you might need them again.

5.6. Paging

Use the paging controls below the list to move between pages. Choose how many events a page shows with **Page Size**: 25, 50, 100 or 200.

6. Viewing Event Reports

6.1. Opening a Report

Choose **Report** on an event’s row, or double-click the row. The report opens in place of the event list. To return to the list, choose **× Close Report** at the top right.

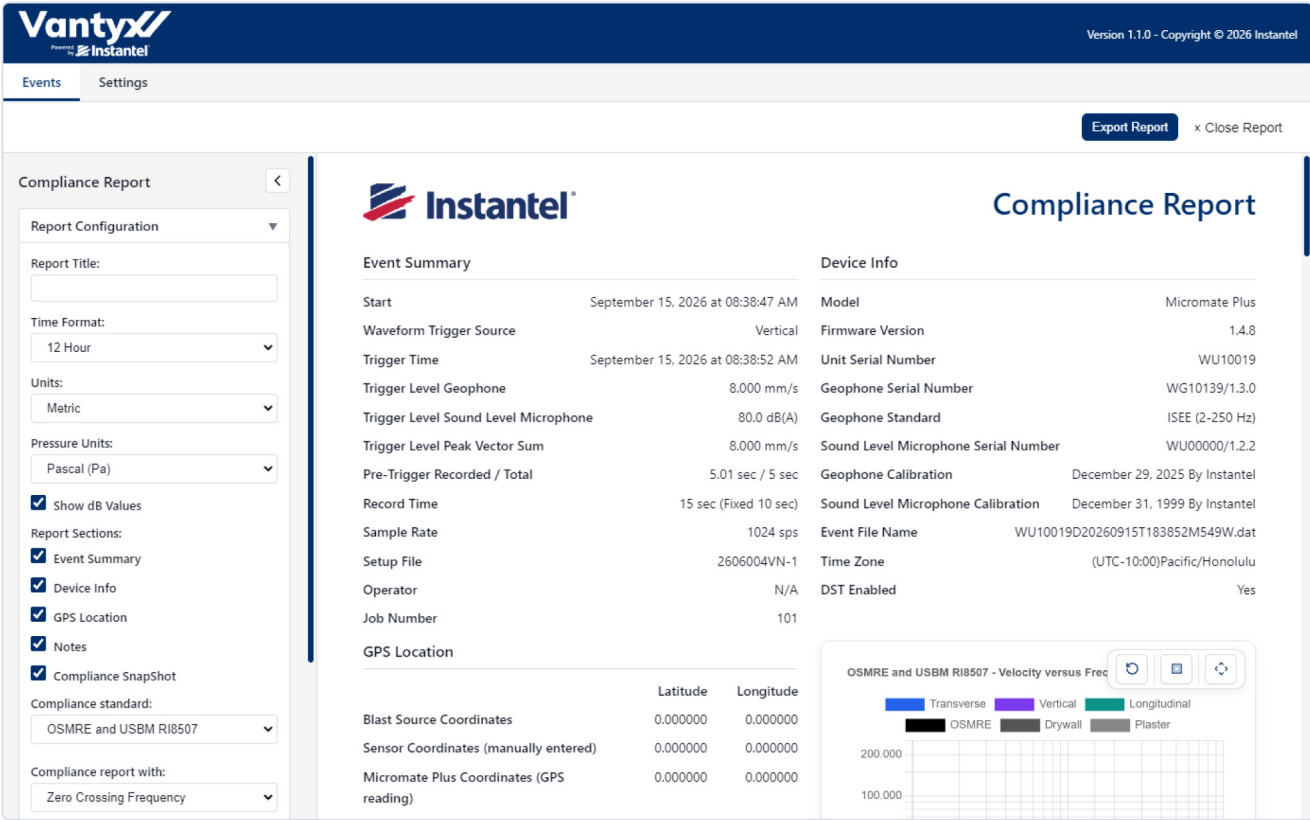


Figure 6-1. A waveform event report. The configuration panel is on the left and the report preview on the right.

The report window has two parts:

- **Compliance Report panel** (left). Settings for this report. Collapse it with < to give the preview more room.
- **Report preview** (right). Exactly what will be in the exported PDF report. It updates as soon as you change a setting.

6.2. Configuring the Report

Compliance Report

Report Configuration

Report Title:

Time Format:

12 Hour

Units:

Metric

Pressure Units:

Pascal (Pa)

☒ Show dB Values

Report Sections:

☒ Event Summary

☒ Device Info

☒ GPS Location

☒ Notes

☒ Compliance SnapShot

Compliance standard:

OSMRE and USBM RI8507

Compliance report with:

Zero Crossing Frequency

Optional title printed on the report. Press **Enter** to apply it.

12 Hour or 24 Hour

Metric (mm/s, mm) or Imperial (in/s, in)

Pascal (Pa) or PSI, for linear microphone values

Also show linear microphone pressures in dB(L)

Choose which sections to include: Event Summary, Device Info, GPS Location, Notes, Compliance SnapShot, Waveform Graph and Ponderated Peaks.

The standard the event is judged against (see Section 6.3)

How the frequency of each peak is found (see Section 6.4)

Figure 6-2. Report Configuration.

FFT Report Configuration

For waveform events, expand **FFT Report Configuration** to add FFT graphs to the report. Turn on **Show FFT**, give the FFT section a title (the default is FFT Report), and set the frequency range to show, anywhere from 1 Hz to 315 Hz. The default range is 2 Hz to 100 Hz.

6.3. Compliance Standards

Vantyx plots each geophone axis on a velocity-versus-frequency graph against the limit lines of the standard you choose.

Standard	Limit Lines Drawn
OSMRE and USBM R18507	OSMRE together with the USBM RI8507 drywall and plaster curves. This is the default
OSMRE	U.S. Office of Surface Mining Reclamation and Enforcement blasting level criteria
USBM R18507 - Drywall	U.S. Bureau of Mines RI 8507 curve for drywall construction
USBM R18507 - Plaster	U.S. Bureau of Mines RI 8507 curve for plaster construction
USBM R18507 Drywall & Plaster	Both USBM RI 8507 curves
DIN-4150	German DIN 4150-3 guideline curves L1, L2 and L3, drawn on linear axes

6.4. Frequency Analysis Methods

Zero Crossing Frequency

Finds the frequency of each peak from the time between the zero crossings around it. This is the method most standards expect, and the only method available for histogram events.

Fast Fourier Transform (FFT)

Plots the dominant frequency and its amplitude from the FFT of each axis.

ZC-PPV with FFT-Dominant Frequency

Plots each axis's zero-crossing peak particle velocity at the dominant frequency found by the FFT.

6.5. Compliance SnapShot

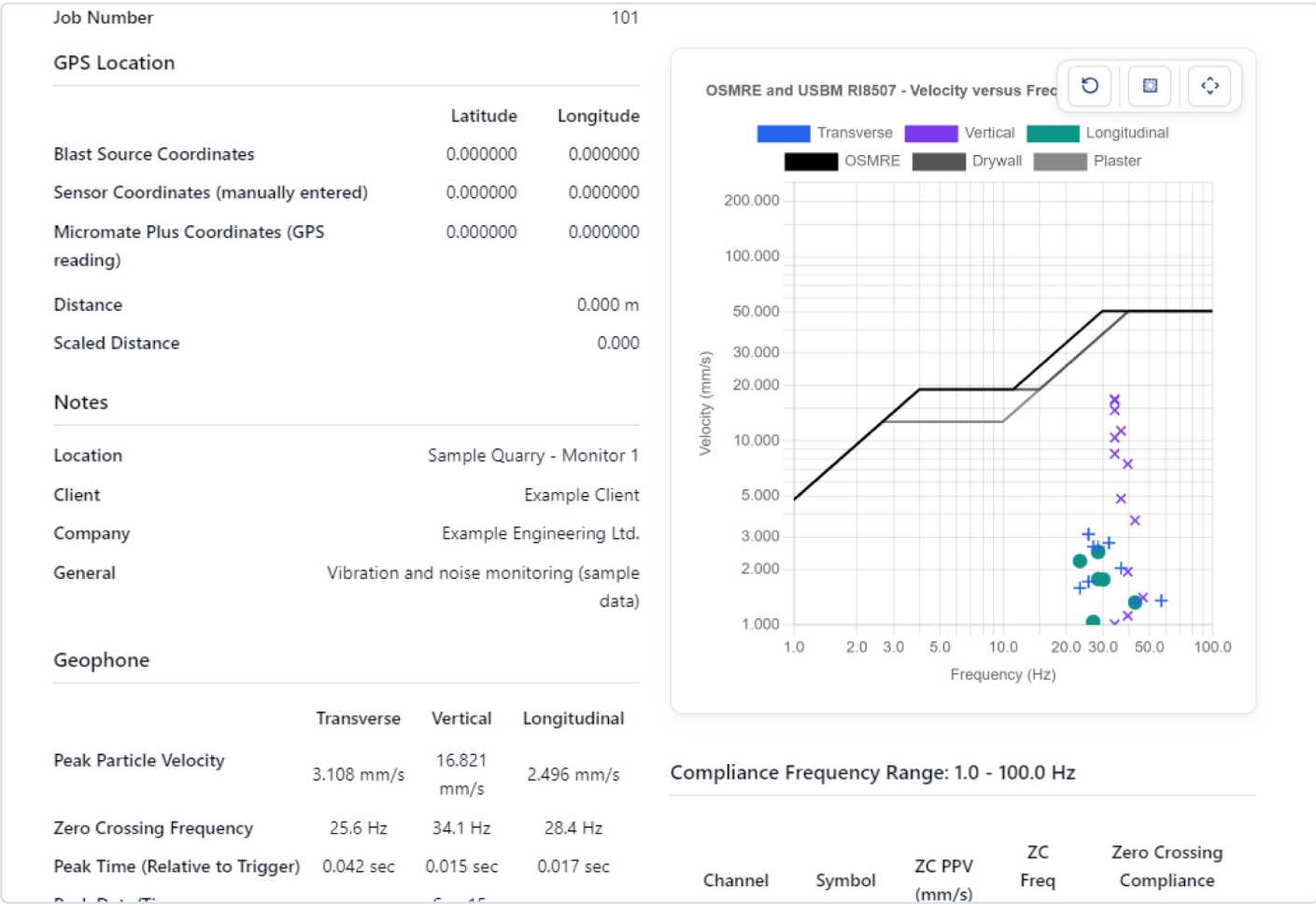


Figure 6-3. The compliance graph (right) plots each axis against the OSMRE and USBM R18507 curves.

Below the graph, the **Compliance SnapShot** table lists the peak and frequency for each axis, and its result for the standard's frequency range:

Result	Meaning
Below	Every point for the axis inside the standard's frequency range is below the limit line.
Exceeded	At least one point for the axis is at or above the limit line.
Outside Frequency Range	The axis has no points inside the standard's frequency range, so it could not be judged. The axis is still listed, so you can see its values.

IMPORTANT

Outside Frequency Range does not mean the axis complies. Review its peak and frequency yourself, against the requirements that apply to your project.

6.6. Event Details and Sensor Check

The report's tables give the full details of the event:

- Event Summary. Start and finish times, trigger source and levels, record time, pre-trigger and sample rate.
- Device Info. Unit model, firmware version, unit and sensor serial numbers, geophone standard and calibration dates.
- GPS Location and Notes. Coordinates, distance and scaled distance, and the location, client, company and general notes entered on the unit.
- Geophone. PPV, zero-crossing frequency, peak time, maximum acceleration and displacement, and peak vector sum for each axis.
- Linear Microphone and Sound Level Microphone. Peak pressure level, or LMax and LMin, with their times.

Maximum Acceleration	0.072 g	0.377 g	0.058 g
Maximum Displacement	0.033 mm	0.086 mm	0.018 mm
Sensor Check Before Monitoring	Passed	Passed	Passed
Before Monitoring Frequency	7.4 Hz	7.3 Hz	7.4 Hz
Before Monitoring Tilt Angle	0°	1°	0°
Overswing Ratio	4.700	4.600	4.200
Peak Vector Sum	17.141 mm/s at 5.020 sec		

Sound Level Microphone (A-Weight Slow)

LMax	54.7 dB(A)
Peak Time (Relative to Trigger)	-2.579 sec
Peak Date/Time	Sep 15, 2026, 08:38:49 AM
LMin	44.6 dB(A)
Sensor Check Before Monitoring	Passed

Figure 6-4. Geophone results, with the sensor check recorded before monitoring.

Sensor check results show whether each sensor passed the unit's self-test before monitoring began and, where recorded, after it ended. For geophones, Vantyx also shows the test frequency, tilt angle and overswing ratio. Not Connected means the unit did not detect that sensor.

6.7. Graphs

The Time domain section shows the recorded waveform for each geophone axis and microphone. The peak is marked with a red dot.



Figure 6-5. Geophone time-domain graphs.

Graph Controls

Control	What It Does
Zoom to Rectangle	Drag a box on the graph to zoom in on that area.
Pan	Drag the graph to move along it.
Reset Axes	Return to the full view.
Lock Horizontally	Zoom and pan all time-domain graphs together, so their time axes stay line up.
Lock FFT Horizontally	Zoom and pan all FFT graphs together.

FFT Graphs

When **Show FFT** is on, the **FFT Report** section shows the frequency spectrum of each channel over the range you set. The title of each graph gives the dominant frequency and its amplitude.

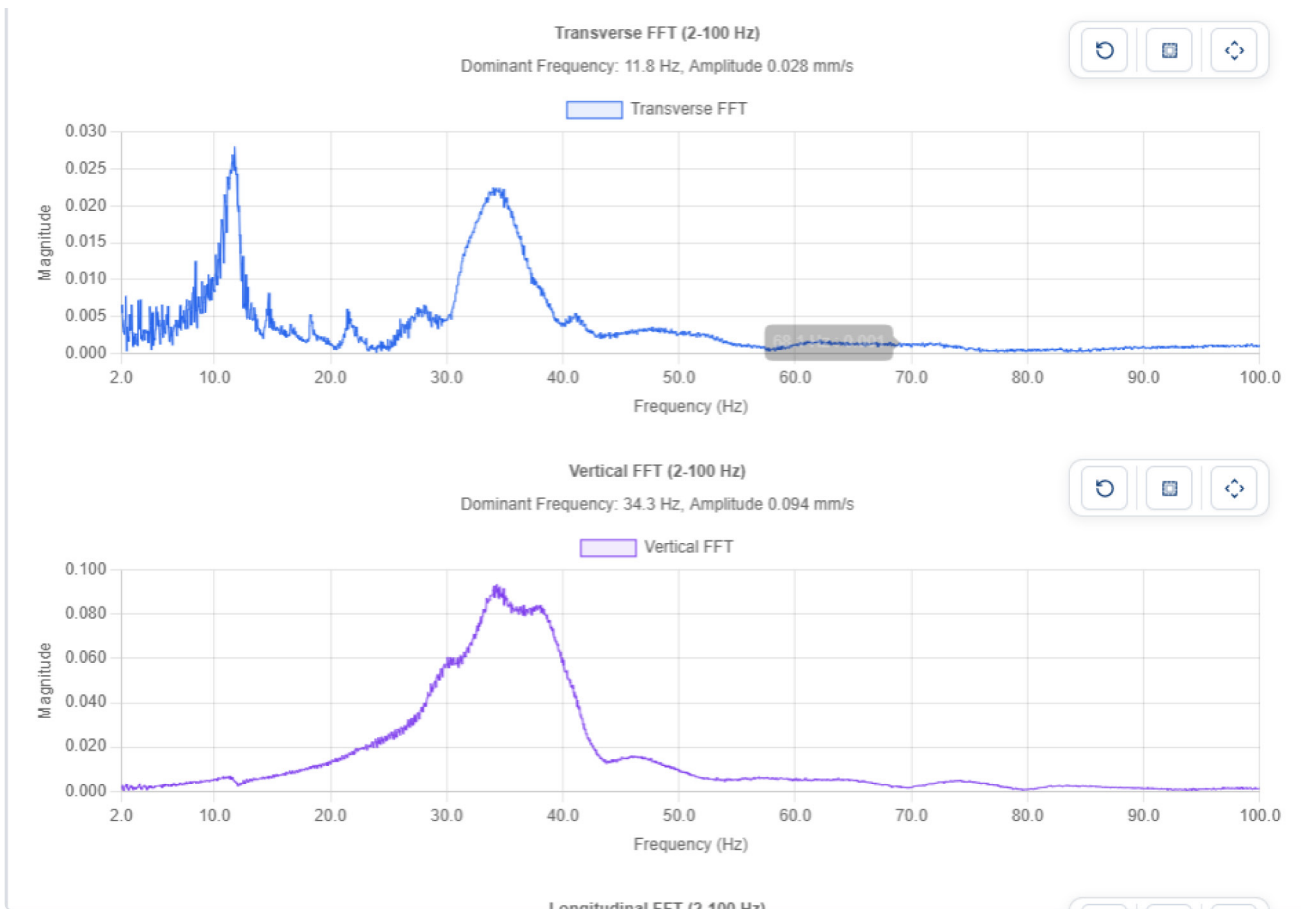


Figure 6-6. FFT graphs, 2 Hz to 100 Hz

Ponderated Peaks

Turn on **Ponderated Peaks** in **Report Sections** to add the ponderated (frequency-weighted) peak velocity for each geophone axis. Vantyx weights the waveform using the curve of the French Circular of 23 July 1986, and reports the largest weighted value.

6.8. Sound Level Microphone Audio

If the event includes an audio recording from a sound level microphone, the Sound Level Microphone Audio Recording player appears at the end of the report.

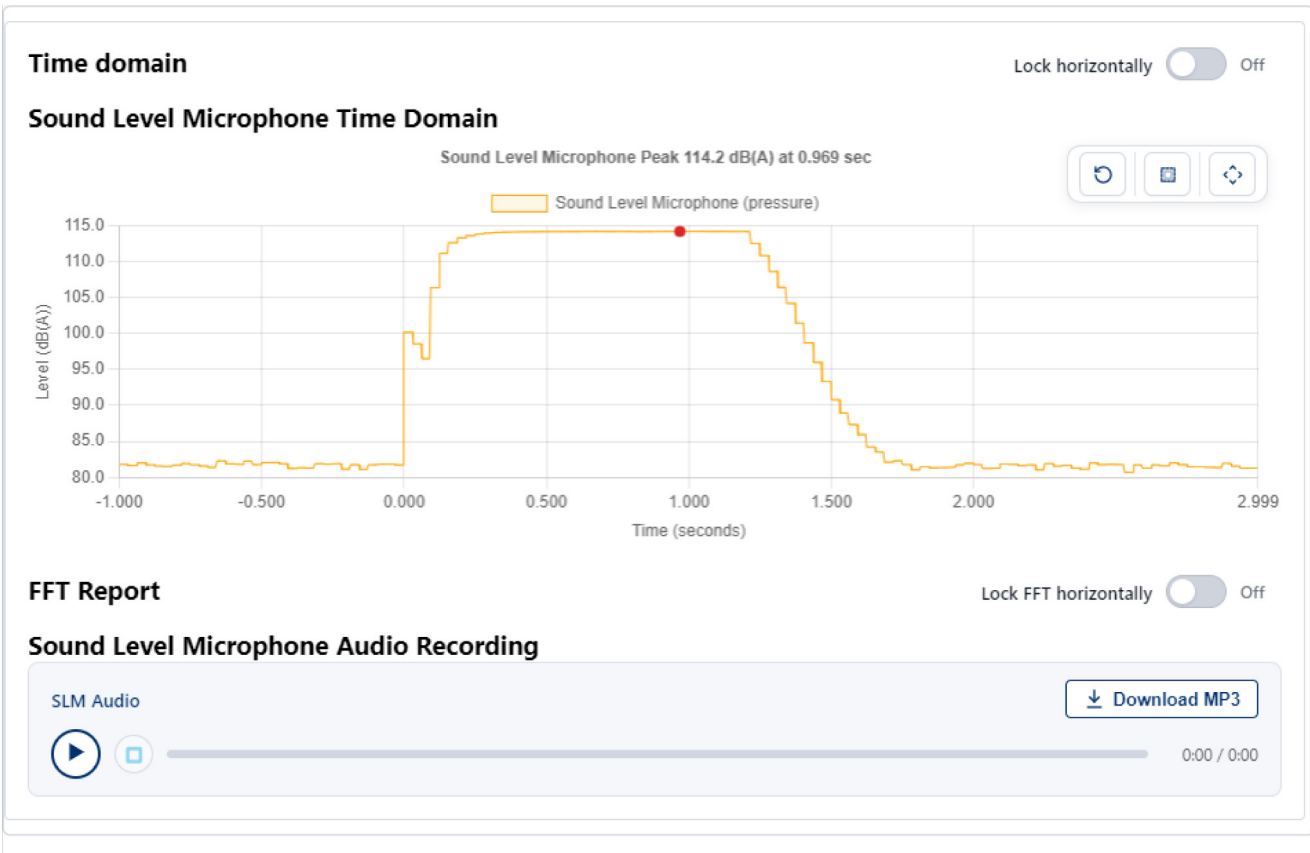


Figure 6-7. Sound level microphone time history and audio player.

Use ► to play and pause the recording, and ■ to stop. **Download MP3** to save the recording as an MP3 file.

6.9. Histogram Reports

A histogram event records the peak values for each interval over a long monitoring period. Its report shows the same summary tables as a waveform event, using the largest peak of the whole recording. In place of time-domain graphs, the **Histogram Interval Statistics** section shows a bar for every interval, for each geophone axis and microphone.

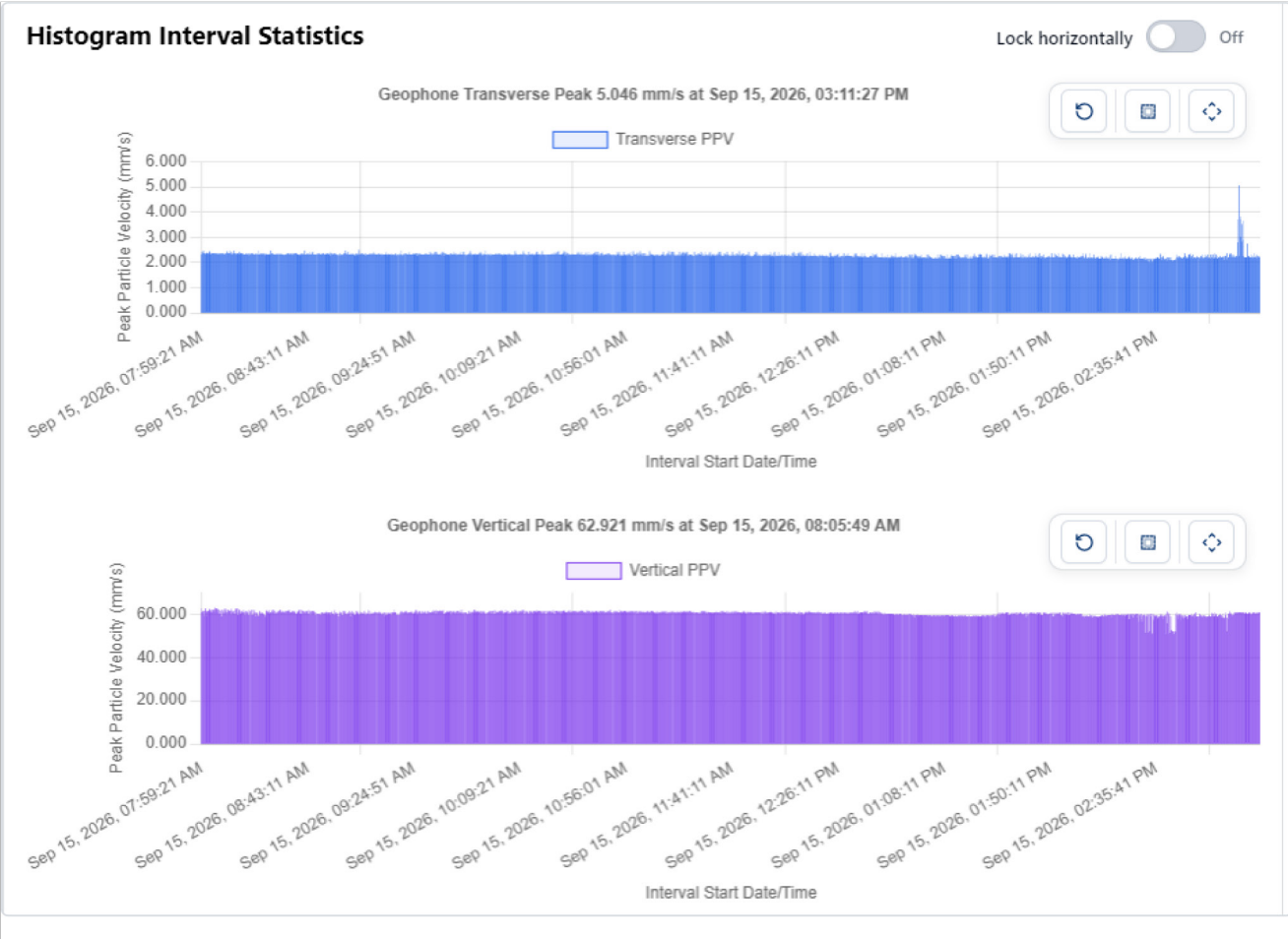


Figure 6-8. Histogram Interval Statistics for a geophone.

Compliance for a histogram event uses the peak and zero-crossing frequency of each interval.

7. Exporting Reports and Data

7.1. Exporting a Report

1. Open the event's report and set it up the way you want it.
2. Choose **Export Report** at the top right.
3. Select one or more formats: **PDF**, **JSON** or **CSV**.
4. Choose **Export**, and choose where to save the file.

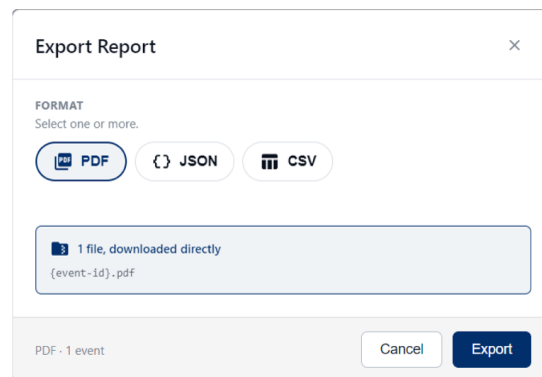


Figure 7-1. The Export Report dialog.

7.2. Exporting Events from the List

You can export many events at once from the event list.

1. Select the events on the **Events** page.
2. Choose **Export** in the toolbar.
3. Select one or more formats. The dialog shows the files that will be created.
4. Choose **Export**, and choose where to save.

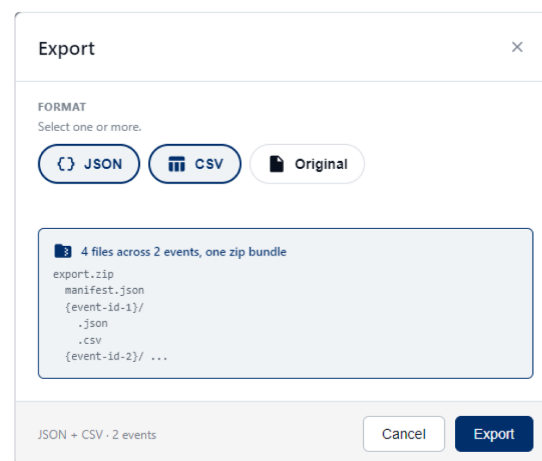


Figure 7-2. Exporting two events as JSON and CSV.

Format	Contents
JSON	All of the event's information and recorded data, in a structured format for databases and other software.
CSV	The event's information as label, value and unit rows, followed by a table of the waveform samples or histogram intervals. Opens in Microsoft Excel and other spreadsheets.
Original	An exact copy of the original .dat event file, for archiving or for use in other InstanTel software.

How the Files are Saved

- One event in one format is saved as a single file.
- Several events or formats are saved as one export.zip file. It contains a folder for each event and a manifest.json file that lists everything in the bundle.
- If you select only Original, the event files are copied into a folder you choose.

NOTE

JSON and CSV exports use the units currently set on the Settings tab. A value the unit did not record is left empty.

8. Settings

The Settings tab sets the defaults used throughout Vantyx. Changes are saved as soon as you make them.

8.1. Measurement Units

Settings

Measurement Units

Default Units:

Metric ▼

This setting controls the default unit system used throughout the application. You can override this setting for individual reports in the report view.

Pressure Unit:

Pascal (Pa) ▼

This setting controls the units for the linear microphone pressure displayed throughout the application. Choosing a default unit system also selects its pressure unit — Imperial uses PSI, Metric uses Pascal — which you can change here afterwards.

☒ Show dB Values

When enabled, linear microphone pressures are also shown as their dB(L) equivalent. You can override this setting for individual reports in the report view.

Figure 8-1. Measurement Unit Settings

Setting	Options	Contents
Default Units	Metric (default), Imperial	The unit system used for velocity, displacement and distance throughout Vantyx. You can change it for one report in the report view.
Pressure Unit	Pascal (Pa), PSI	The unit for linear microphone pressure. Changing Default Units also selects its matching pressure unit: Pa for metric, PSI for imperial. You can change it afterwards.
Show dB Values	On (default), Off	Also shows linear microphone pressures as dB(L).

8.2. Application Information and Licence

Application Information shows the installed Vantyx version. Choose **Check for Updates** to look for a newer version now. If an update has already downloaded, choose **Restart to Install**.

License Agreement shows the licence terms for Vantyx.

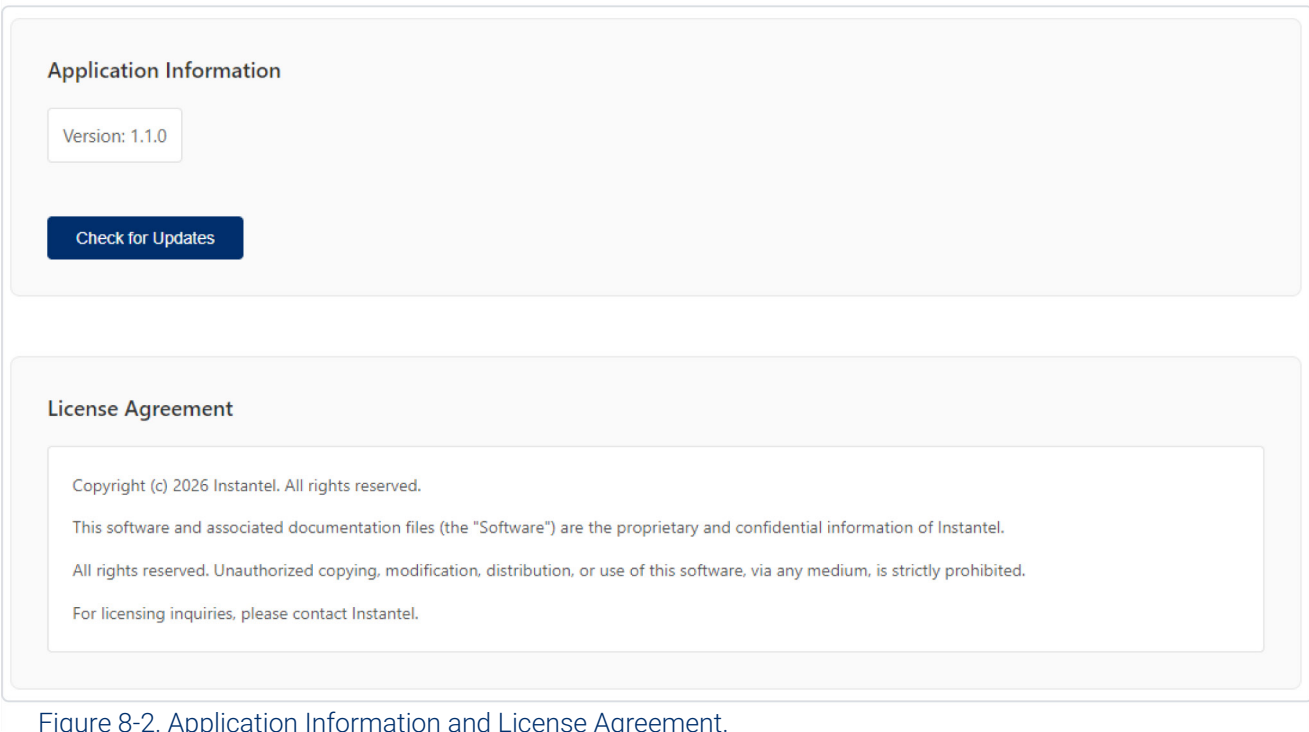


Figure 8-2. Application Information and License Agreement.

9. Troubleshooting and Support

9.1. Common Questions

Problem	What to Do
A file was not imported	Vantyx imports only Micromate Plus .dat event files. A file with the same name as an event already in the library is skipped as a duplicate.
The event list says it could not reach the Vantyx service	Vantyx uses a background service on your computer. Close Vantyx completely and open it again. If the message comes back, restart the computer. Security software that blocks local connections on port 8000 can also cause this
The event list is empty after an update	Wait a few seconds for the list to load. Your events are kept when Vantyx updates.
Values are the wrong units	Check Default Units and Pressure Unit on the Settings tab, and the Units setting in the report panel.
An axis shows <i>Outside Frequency Range</i>	The axis has no points inside the standard's frequency range. See section 6.5.
A sensor shows <i>Not Connected</i>	The unit did not detect the sensor when it ran the sensor check. Check the sensor's connection to the unit before the next recording.
The window content is too large or too small	Choose View > Actual Size , or use Zoom In and Zoom Out .
Updates are not arriving	Make sure the computer can reach the internet. Your network may block the update server; ask your IT department, or download the latest installer from Instantel.

9.2. Collecting Log Files for Support

If you need help from Instantel support, send the Vantyx log files with your request:

1. Choose **Help** > **Download Log Files...**
2. Save the file. Its name is: **Vantyx-logs-YYYY-MM-DD.zip**.
3. Attach the zip file to your support request, with the event file that shows the problem if there is one.

9.3. Where Vantyx Stores Data

Data	Location
Imported event library	%LOCALAPPDATA%\Vantyx\data\imported_events
Application logs	%LOCALAPPDATA%\Vantyx\logs
Settings	%APPDATA%\Vantyx

To open one of these folders, paste its location into the address bar of File Explorer.

9.4. Contacting Instantel

For technical support, sales and licensing inquiries, contact Instantel:

- Website www.instantel.com
- Technical Support support@instantel.com
- Sales sales@instantel.com

When you contact support, please have ready your Vantyx version (shown in the title bar and on the **Settings** tab), your Windows version, and a description of what you were doing when the problem happened.

Appendix A

Event List Columns

Units in brackets follow your unit settings. Columns that do not apply to an event, such as microphone values for a geophone-only recording, are blank.

Column	Description
Pin	Keeps the event at the top of the list.
Actions	The Report button, which opens the event's report.
Type	Waveform, Histogram, Histogram-Combo, or Manual
Serial No.	Serial number of the unit that recorded the event.
File Name	Name of the event file
Date/Time, Date, Time	When the event was recorded or triggered, in the unit's local time.
Trigger	What triggered the recording: a geophone axis, vector sum, sound level microphone, linear microphone, manual trigger or external (auxiliary I/O).
Enabled Sensors	The sensors that were recording.
Sample Rate (SPS)	Samples per second.
Record Length (Seconds)	Length of waveform recording.
Number of Intervals	Number of intervals in a histogram recording.
Start and End Date/Time	Start and end of a histogram recording, also shown as separate date and time columns.
Location Name, Client Name, Company Name, General Notes	Notes entered on the unit.
Job, Operator, Setup File Name	Job number, operator and the setup file used for the recording.
Timezone, DST	The unit's time zone, and whether daylight saving time was in effect.
Tran / Vert / Long Peak (mm/s or in/s)	Peak particle velocity on the transverse, vertical and longitudinal axes.
PVS	Peak vector sum
Tran / Vert / Long Freq (Hz)	Zero-crossing frequency of the peak on each axis.
Tran / Vert / Long Accel (g)	Peak acceleration on each axis.
Tran / Vert / Long Displ (mm or in)	Peak displacement on each axis.
Linear Mic Peak (Pa or PSI)	Peak air overpressure.
Sound Mic Peak, Min, LN1, LN2, Leq (dB)	Sound level microphone maximum, minimum, statistical levels and equivalent continuous level.
Location	GPS coordinates of the unit.
Audio	Whether the event includes an audio recording.

Appendix B

Glossary

Air overpressure

The pressure wave in the air from a blast or other source, measured with a linear microphone.

dB(A), dB(C), dB(L)

Sound levels in decibels with A, C or linear (no) frequency weighting.

Dominant frequency

The frequency with the largest amplitude in an FFT.

Event

One recording made by a monitoring unit, saved as an event file.

FFT

Fast Fourier Transform. A calculation that shows how much of a signal is at each frequency.

Geophone

A sensor that measures ground vibration velocity, usually on three axes.

Histogram

A record mode that saves the peak values for each interval over a long monitoring period.

Histo-combo

A record mode that records a histogram and, when triggered, a waveform at the same time.

Leq

Equivalent continuous sound level over a period.

LMax, LMin

Highest and lowest sound level in a recording or interval.

Ln (LN1, LN2)

Statistical sound level that was exceeded n percent of the time.

Longitudinal, Transverse, Vertical

The three geophone axes. Longitudinal points toward the vibration source; transverse is

horizontal at right angles to it; vertical is up and down.

Overswing ratio

A sensor check measurement that shows how a geophone responds to its test pulse.

Ponderated peak

A frequency-weighted peak velocity used by some European standards.

PPV

Peak particle velocity. The largest ground vibration velocity on an axis.

Pre-trigger

Data recorded just before the trigger.

PVS

Peak vector sum. The largest combined velocity of the three axes at the same instant.

Scaled distance

Distance from the blast divided by the square root of the charge weight per delay.

Sensor check

The self-test a monitoring unit runs on its sensors before and after monitoring.

Sound level microphone (SLM)

A microphone that measures weighted sound levels, and can record audio.

Trigger

The level or input that starts a waveform recording.

Waveform

A record mode that saves every sample for a fixed time after a trigger.

Zero-crossing frequency

The frequency of a peak, found from the time between the points where the signal crosses zero.

Appendix C

Third-Party Software Notices

Vantyx includes the open-source software listed below. Each component is used under the licence shown, and is the copyright of its authors. The Electron and Chromium licence texts are installed with Vantyx, in the files **LICENSE.electron.txt** and **LICENSES.chromium.html** in the installation folder. The full text of every licence is available from Instantel on request.

Component	License	Project
Electron	MIT	electronjs.org
Chromium (included in Electron)	BSD 3-Clause and others	chromium.org
Node.js (included in Electron)	MIT	nodejs.org
electron-updater	MIT	electron.build
React, React DOM	MIT	react.dev
React Router	MIT	reactrouter.com
MUI Materials, MUI Icons	MIT	emotion.sh
AG-Grid Community	MIT	ag-grid.com
Chart.js, react-chartjs-2, chartjsplugin-zoom	MIT	chartjs.org
jsPDF, jsPDF-AutoTable	MIT	github.com/parallax/jsPDF
JSZip	MIT (dual-licensed MIT or GPLv3)	stuk.github.io/jszip
html-to-image	MIT	github.com/bubkoo/html-to-image
axios	MIT	axios-http.com
fft.js	MIT	github.com/indutny/fft.js
Python	PSF License	python.org
FastAPI	MIT	fastapi.tiangolol.com
Uvicorn	BSD 3-Clause	uvicorn.org
Pydantic	MIT	pydantic.dev
python-multipart	Apache 2.0	github.com/Kludex/python-multipart
Requests	Apache 2.0	requests.readthedocs.io
NumPy	BSD 3-Clause	numpy.org
pytz	MIT	pythonhosted.org/pytz
platformdirs	MIT	github.com/tox-dev/platformdirs
imageio-ffmpeg	BSD 2-Clause	github.com/imageio/imageio-ffmpeg
FFmpeg (used to create MP3 audio files)	LGPL 2.1 or later / GPL, depending on the build	ffmpeg.org
Roboto typeface (used in this manual)	Apache License 2.0	fonts.google.com/specimen/Roboto

Where a licence such as the LGPL requires it, Instantel will provide the corresponding source code of that component on request

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