



OmniBlast™ Sensor Manager

Operation Manual

Revision 1.0

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OPERATIONS

1.1 OVERVIEW

The OmniBlast™ Sensor Manager (OSM) is an android application designed to manage sensors and review events in the field. The OSM is designed to be run on Android devices and is compatible with ATAK. On the landing screen, sensors with event files downloaded to the Android device are shown. Aggregates of blast metrics are presented in the sensors table and the metrics for the events are listed with each event. Rapid reconfiguration of the

1.2 DOWNLOAD AND INSTALLATION

Obtain the latest version of the application at www.amadinc.com/support.

1. Locate the .APK file containing the latest release of the app on a PC (in downloads, documents, desktop, etc.)
2. Connect the Android device to the PC.
3. Select the Android device in the file explorer and paste the .APK into the downloads folder of the Android device. (**Figure 1**)

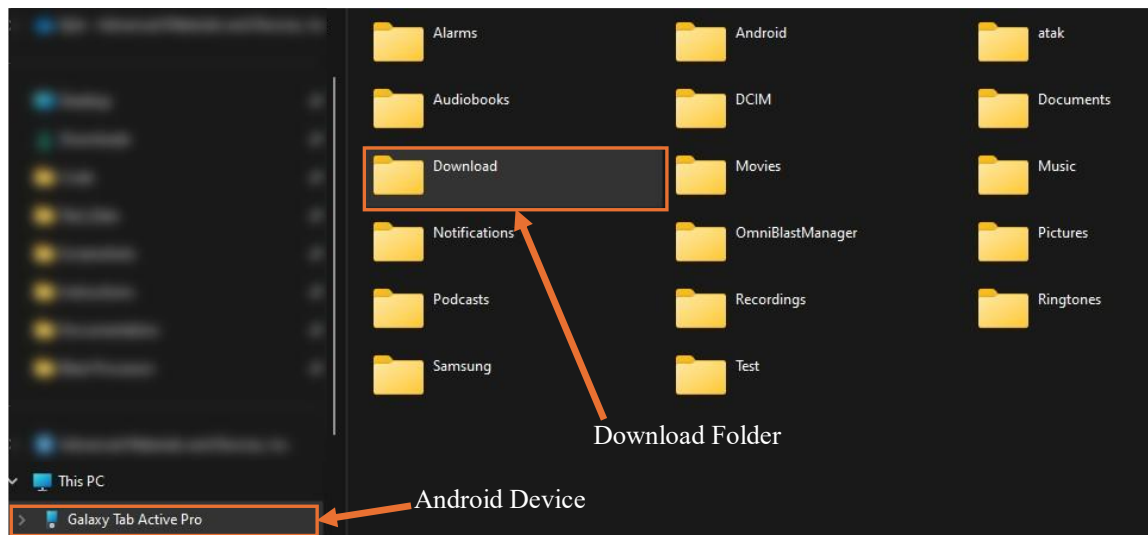


Figure 1. Android device connected to a Windows PC and displaying the download folder.

4. On the Android device open the downloads folder and select the OSM_version1.0.0.apk. Select 'Install' when the pop-up appears (**Figure 2**).

Note: A prompt that says it won't download because of an untrusted source may appear. Click more options and "install anyway" if this is accepted.

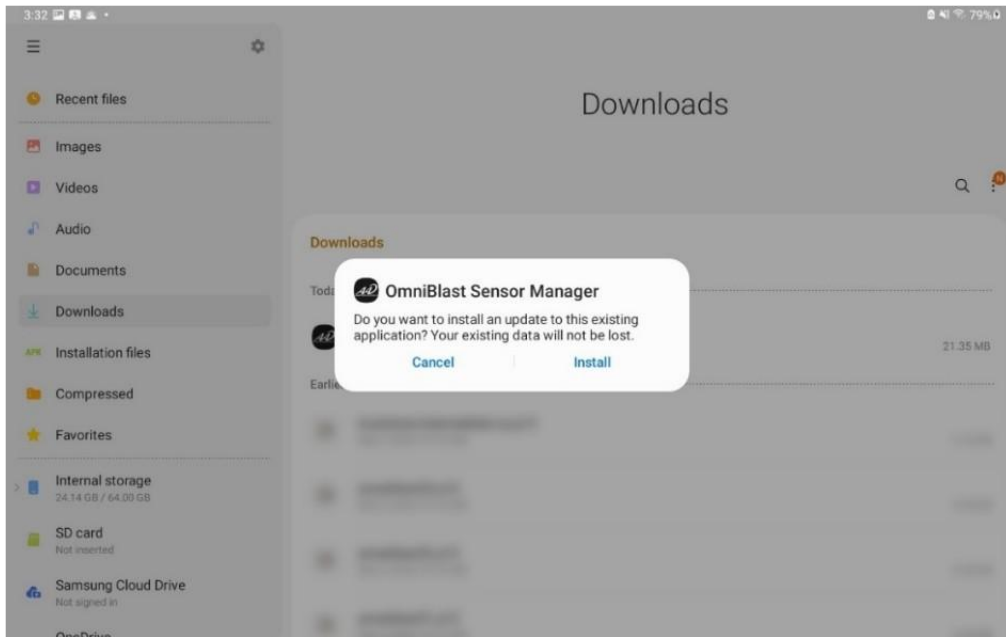


Figure 2. Selecting and installing the OSM .apk from the downloads folder.

5. Once downloaded, open the OSM and the main page will appear (**Figure 3**).

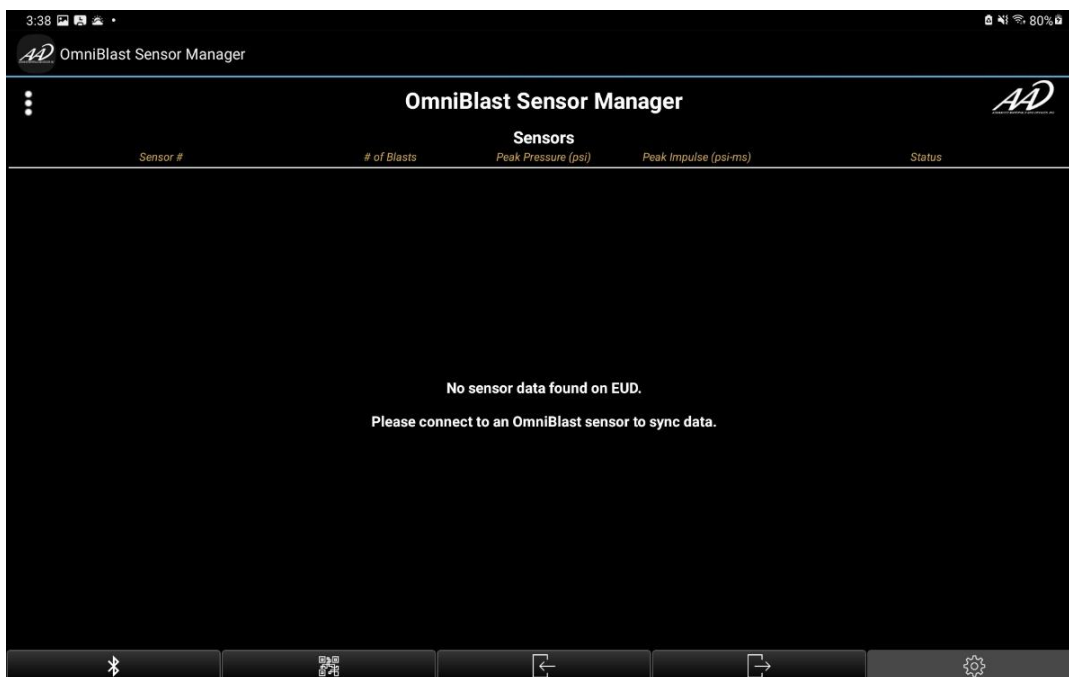


Figure 3. Main page of the OSM on a new installation.

1.3 MANAGING SENSORS

1.3.1 Scanning for Sensors

To scan for nearby OmniBlast™ sensors, select the Bluetooth button in the bottom left corner of the user interface (Seen in **Figure 3**). If OmniBlast™ sensors are found, they are displayed tabularly (**Figure 4**).



Figure 4. Available sensors listed on the Bluetooth page of the OSM and the functions on the toolbar when a sensor is selected.

To search again, select the re-scan button. The list will be updated with newly found sensors and remove sensors no longer visible. Select the back button to clear the list of sensors.

Sensors must be in a Bluetooth-viewable state to show up on the sensors list.

OBA: The sensor must be awake and in a normal operational state.

1.3.2 Connecting to a Sensor

Connect to a sensor by selecting it in the menu. Once connected, the sensor will update its date and time to reflect the date and time of the Android device. If new events are on the sensor, it will ask to pull them (**Figure 5**). Files can be pulled at any time using the download button on the toolbar when connected to a sensor (**Figure 4**).

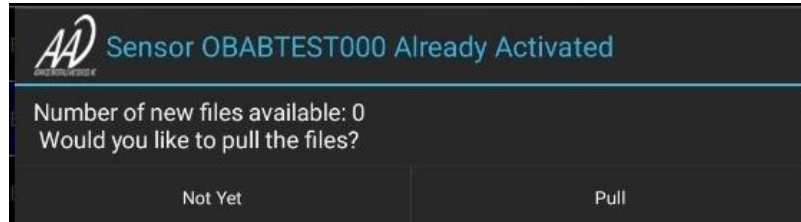


Figure 5. Prompt for pulling files from the sensor.

After selecting 'Pull', a loading screen will appear as the new events are pulled from the sensor and stored. After all files are synced, the main page will open, and event data can be accessed.

To disconnect from the sensor, select the disconnect button in the center of the toolbar.

1.3.3 Changing Settings of a Sensor

While connected to a sensor, select the settings button in the bottom right-hand corner of the user interface, on the toolbar (**Figure 4**). When selected, a settings menu will pop up (**Figure 6**). The menu contains 5 buttons. 'User ID', 'Sensor Settings', and 'Network Settings' open dedicated menus described below. 'Back' closes the settings menu without applying any changes to the settings. 'Apply Settings' applies the introduced settings and closes the settings menu.

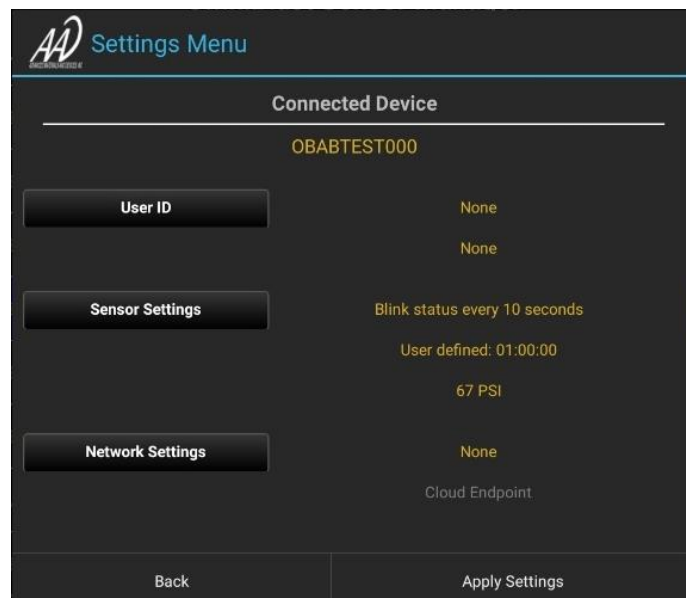
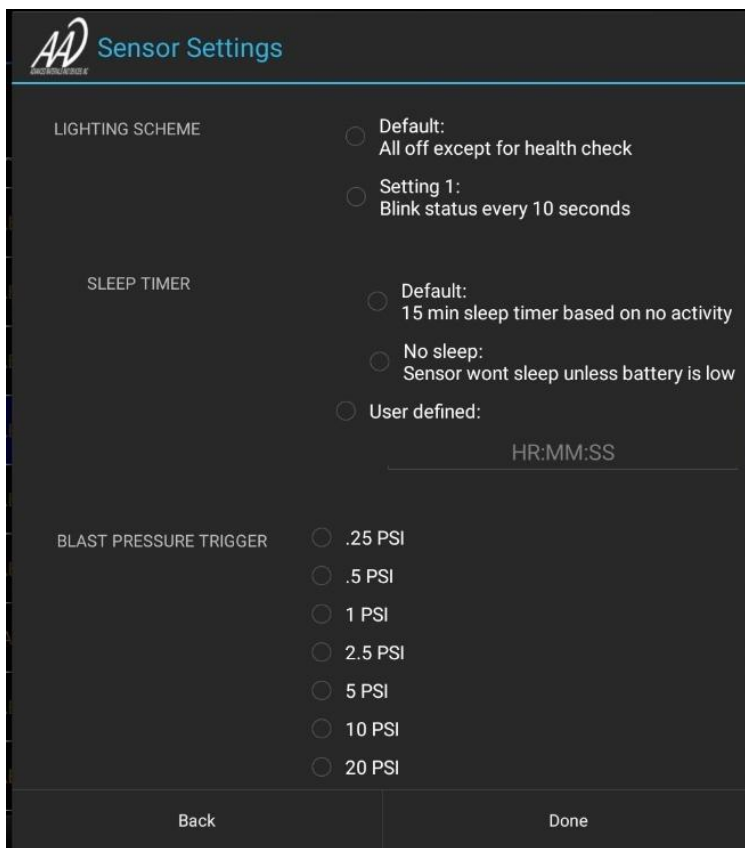


Figure 6. The settings menu for the connected sensor to the OSM.

After selecting 'User ID', a pop-up containing two text boxes will appear, requesting the user ID and installation location. These entries can be populated with any valid string of characters. Select 'Done' to confirm the changes or back to revert any changes.

After selecting ‘Sensor Settings’, a sensor settings menu will appear (**Figure 7**). In the pop-up, the lighting scheme, sleep timer, and triggering pressure can be adjusted. Select ‘Done’ to apply any introduced changes to the settings or select ‘Back’ to revert to the previous settings.



Sensor Settings

LIGHTING SCHEME

- ☐ Default: All off except for health check
- ☐ Setting 1: Blink status every 10 seconds

SLEEP TIMER

- ☐ Default: 15 min sleep timer based on no activity
- ☐ No sleep: Sensor wont sleep unless battery is low
- ☐ User defined:

BLAST PRESSURE TRIGGER

- ☐ .25 PSI
- ☐ .5 PSI
- ☐ 1 PSI
- ☐ 2.5 PSI
- ☐ 5 PSI
- ☐ 10 PSI
- ☐ 20 PSI

Back Done

Figure 7. The sensor settings menu, containing the lighting scheme, sleep timer, and triggering pressure settings for adjustment.

After selecting ‘Network Settings’, a network settings menu will pop up. The network settings are only applicable to OmniBlast™ Air+ sensors; OmniBlast™ Air sensors do not have access to this settings options. In the pop-up, all the Wi-Fi ID’s that the sensor is permitted to connect to are listed. Add additional Wi-Fi terminals using the add button and provide necessary credentials. Remove any unwanted Wi-Fi connections using the removal button. Adjust the priority of the listed Wi-Fi connections by dragging them up and down the list. Select ‘Done’ to apply the changes and ‘Back’ to revert to the current settings.

1.4 REVIEWING EVENTS

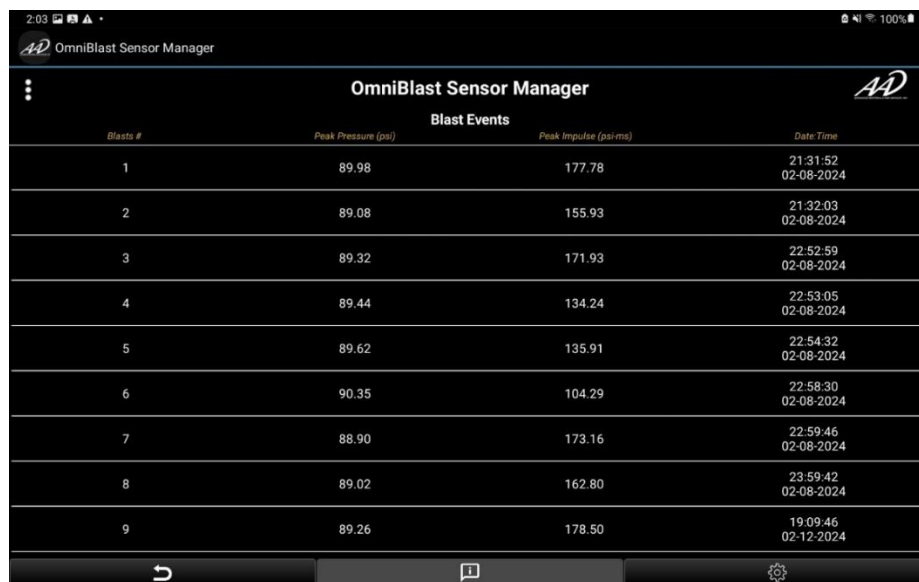
To view data pulled from sensors, go to the home page. If the Bluetooth page is selected, click the back arrow to go to the home page. Sensors with events that have been pulled to the OSM will be listed (**Figure 8**). Each sensor will show the number of events the sensor has captured, as well as the average peak pressure and impulse.



OmniBlast Sensor Manager				
Sensor #	# of Blasts	Peak Pressure (psi)	Peak Impulse (psi-ms)	Status
OBA0000001	3	2.81	5.72	Disconnected
OBA0000011	11	278.99	693.66	Disconnected

Figure 8. The app's landing page, which lists the sensors that have data stored on the device.

To view the events captured by that sensor, select a sensor. Notably, the sensor does not have to be connected to review data. The list of events that have been downloaded from that sensor will be displayed (**Figure 9**). Metrics regarding the peak overpressure and impulse as well as the date and time of the event are displayed.



Blasts #	Peak Pressure (psi)	Peak Impulse (psi-ms)	Date/Time
1	89.98	177.78	21:31:52 02-08-2024
2	89.08	155.93	21:32:03 02-08-2024
3	89.32	171.93	22:52:59 02-08-2024
4	89.44	134.24	22:53:05 02-08-2024
5	89.62	135.91	22:54:32 02-08-2024
6	90.35	104.29	22:58:30 02-08-2024
7	88.90	173.16	22:59:46 02-08-2024
8	89.02	162.80	23:59:42 02-08-2024
9	89.26	178.50	19:09:46 02-12-2024

Figure 9. List of events for a given sensor.

Selecting an event gives the option to plot data (**Figure 10**). The sensors capture an array of data related to the blast event. The most notable is the pressure trace, recording the change in gauge pressure over time. Select 'Cancel' to return to the events list (**Figure 9**).

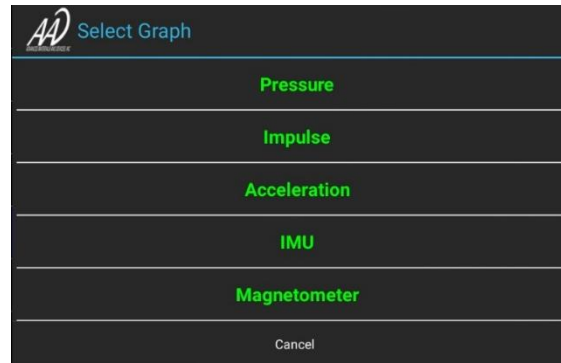


Figure 10. Plotting menu for an event.

Select any of the five sensors recorded over the course of the event. Once selected, a plot will be displayed like the ones in **Figure 11**. Zoom in and out by pinching two fingers together and spreading two fingers apart, respectively. Toggle the traces at the top to view different combinations of traces. Once done, select the 'Close' button below the graph. This will return you to the plotting menu shown in **Figure 10**.

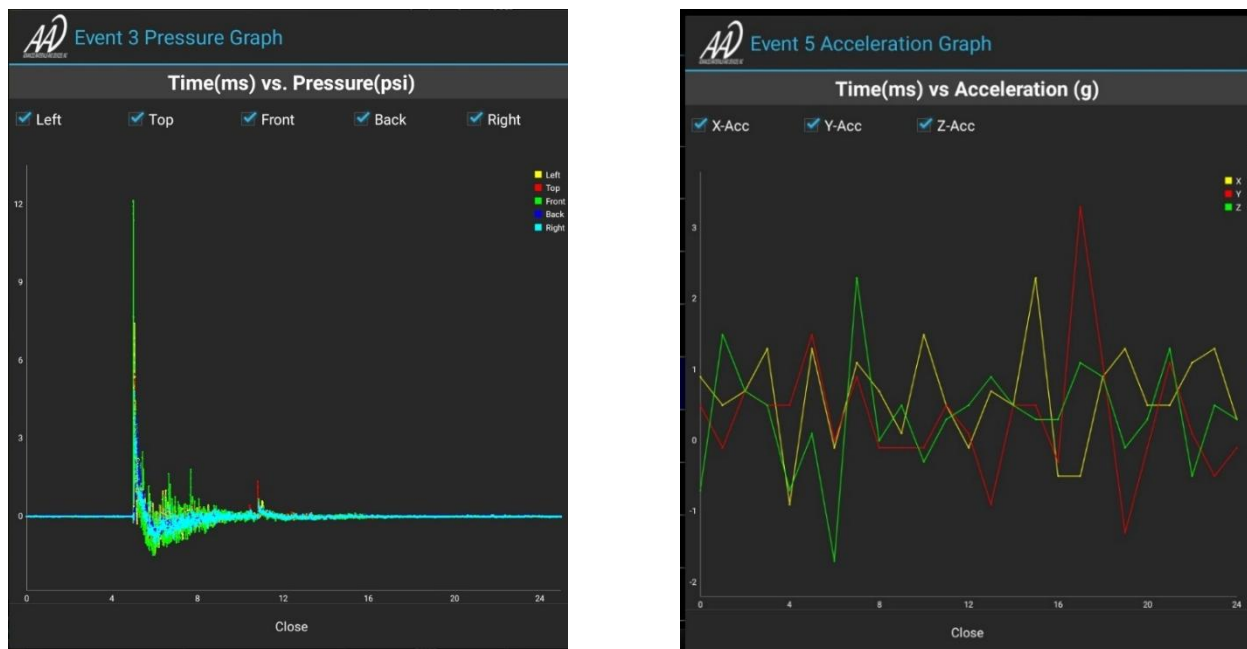


Figure 11. Plots for a blast event in the OSM. A pressure waveform is displayed with each of the 5 channels shown (left) and the acceleration in all 3 dimensions is shown (right).



2 CONTACT INFORMATION

Website	www.amadinc.com
Company Telephone	(775) 826-8878
	4750 Longley Lane
Physical Address	Ste. 104
	Reno, NV 89502
Email Address	info@amadinc.com
Normal Business Hours	Monday to Friday, 8 am - 5 pm PST

3 REVISION HISTORY

Revision	Date	Description
1.0	06/20/2025	Initial OmniBlast™ Sensor Manger Operation Manual release.