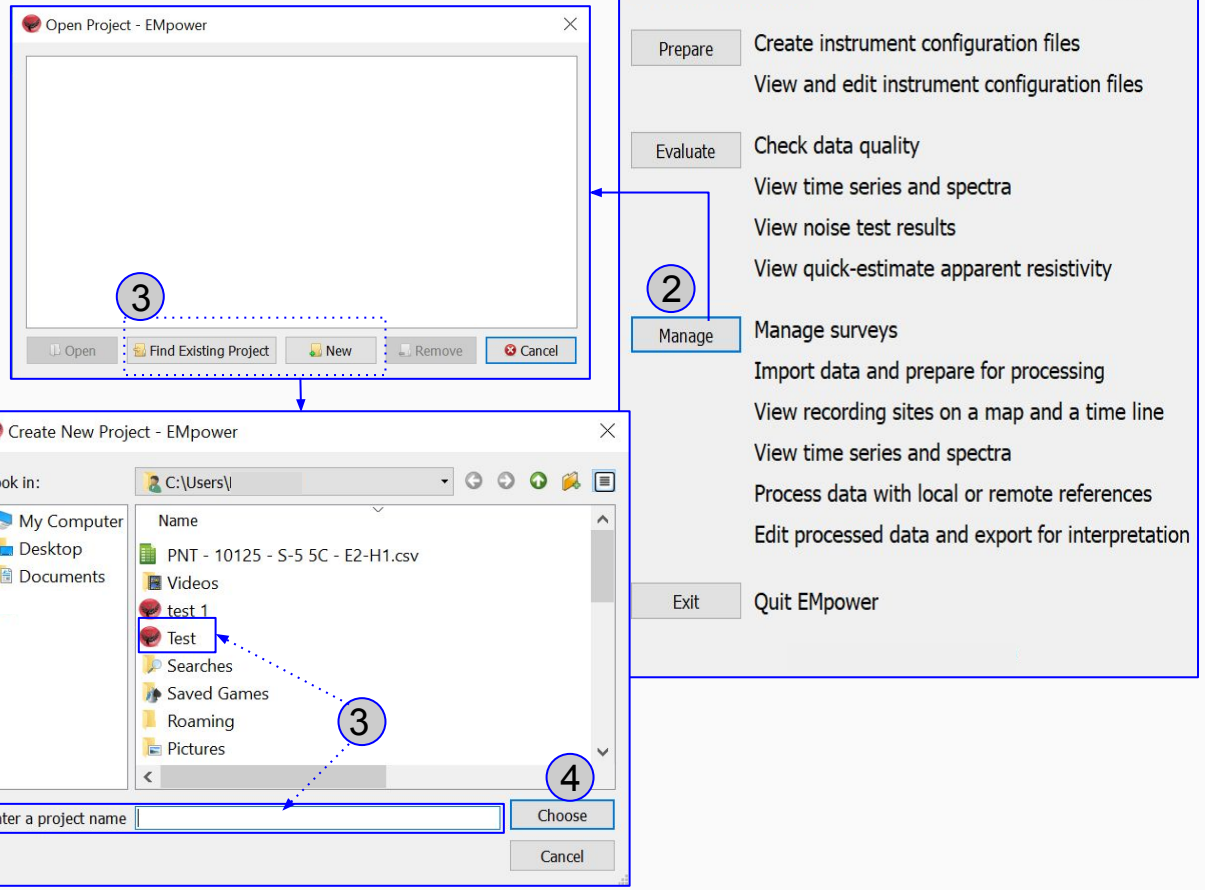
EMpower
Data Management

- Creating or Opening a Project
- Importing Data
- Visual Representation of Sites
- Verifying/Editing Recording Information
  - View Recording Details
  - Recording Details and QC
- Processing Data
  - Processing Data Local / Remote References
- Visualizing Processed Data
  - Exporting Processed Data
- Editing Cross Powers

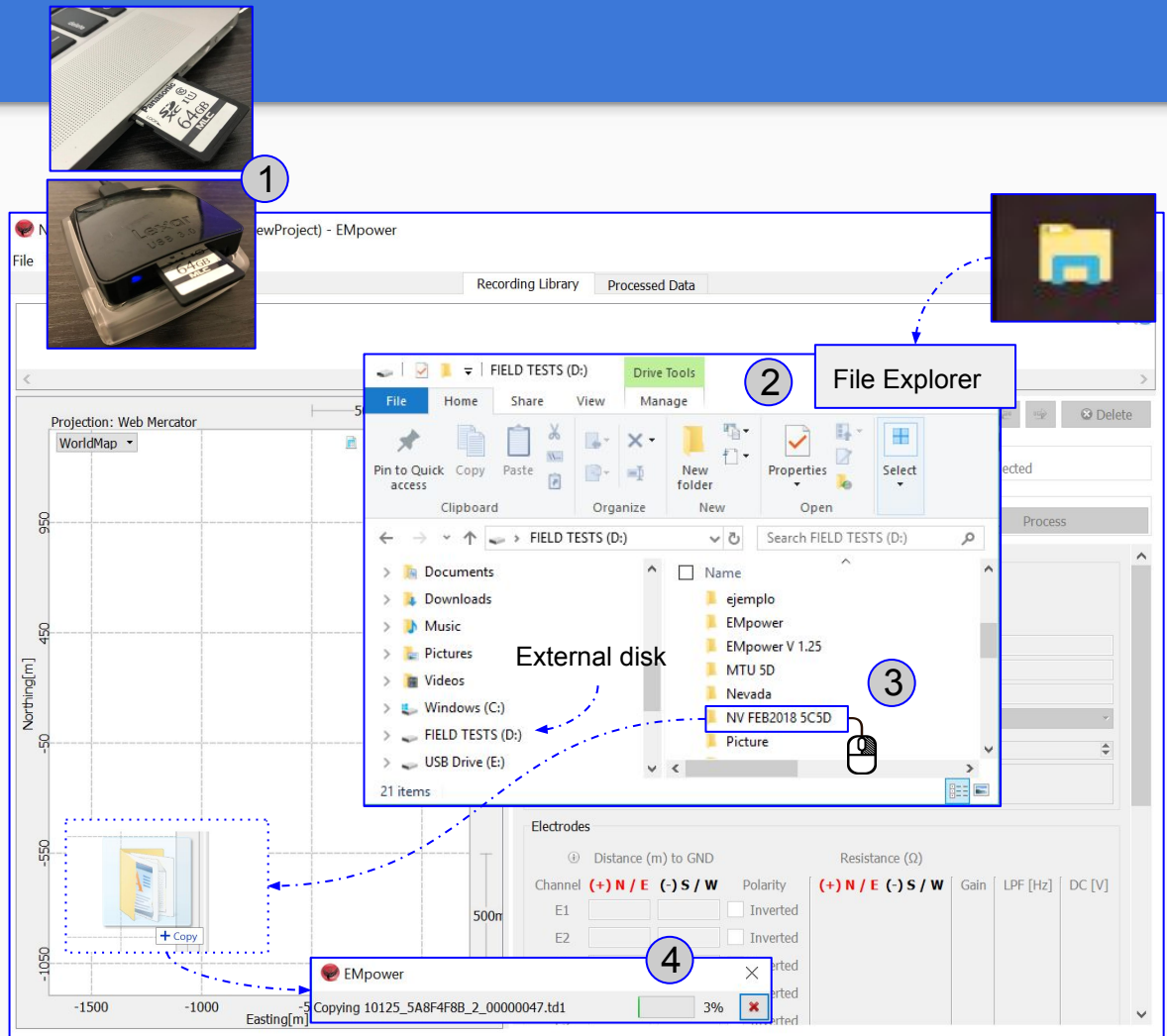
Creating or Opening a Project

1. Start **EMpower**
2. Click **Manage**
3. **Open or Create a New Project**
   - **To Open an Existing Project**
     - Click **Find Existing Project**
     - Select the Project
   - **To create a New Project**
     - Click **New**
     - Type the Project Name
4. Click **Choose**



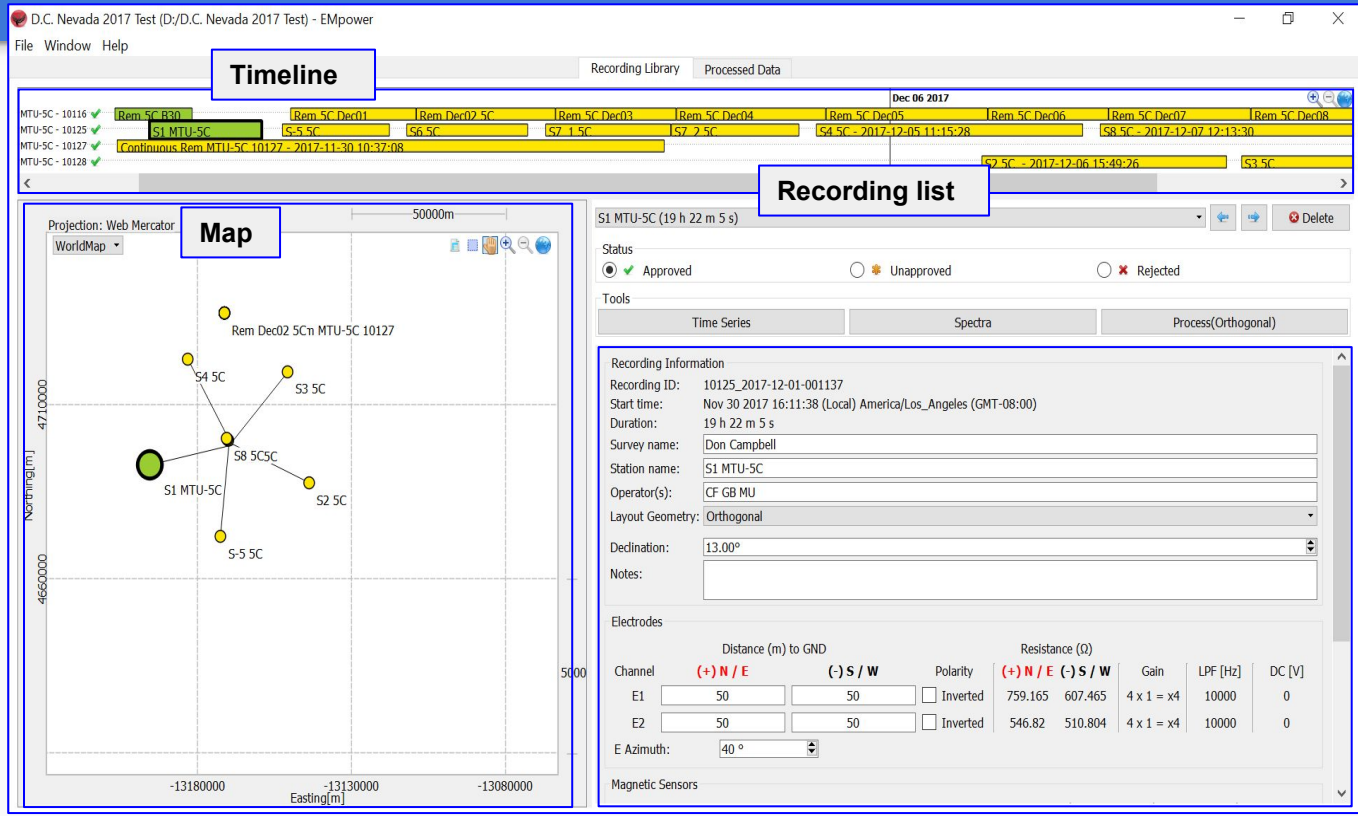
Importing Data (Drag and Drop)

1. To add a new recording from the **SD Card**
   - Insert **SD card** in the computer slot or use a USB memory card reader
2. Select the file in the **File Explorer** window
3. Drag and drop the **Recording data** to the Timeline or Map
4. Wait for the import progres to finish



Visual Representation of Sites

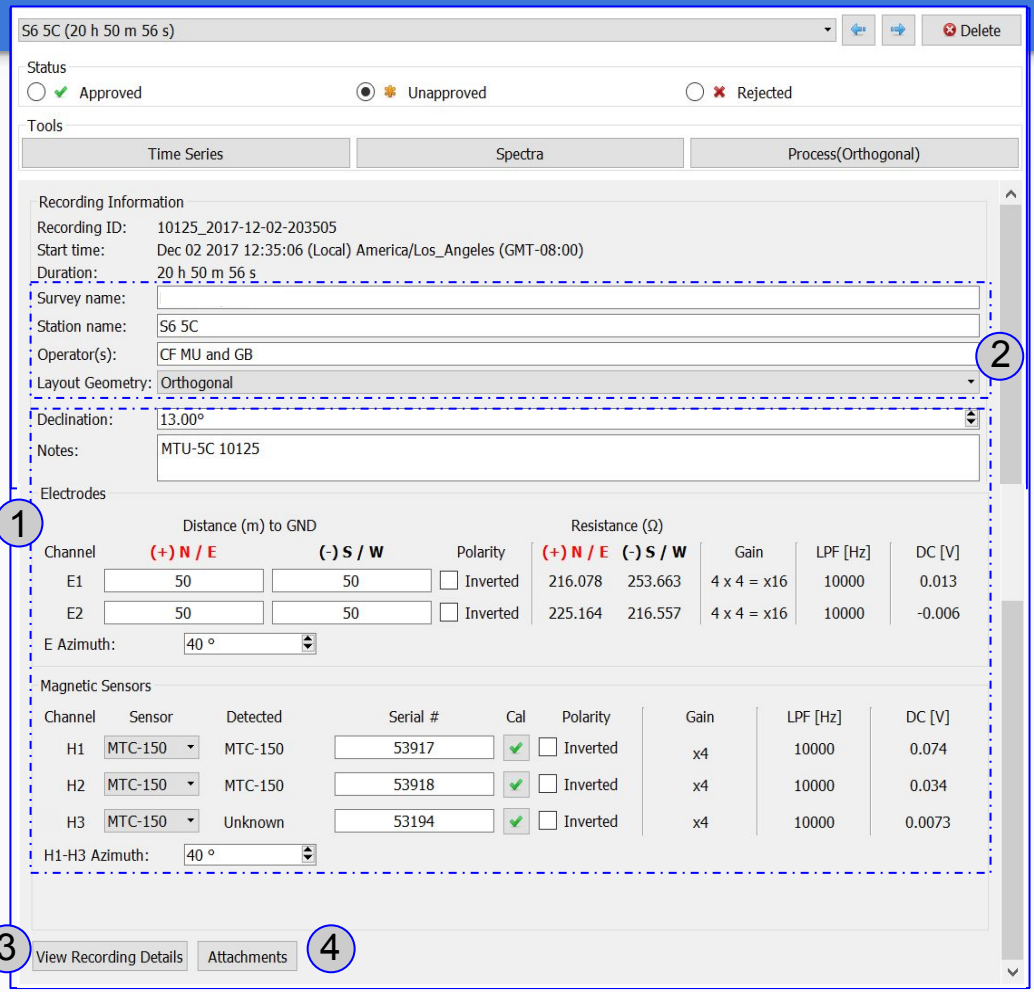
- **Imported Recordings are shown in synchronized views**
  - Timeline
  - Map
  - Recording list
- **Visual tracking**
  - Green - Approved
  - Yellow - Unapproved
  - Red - Rejected



Selecting recording in any of the views will automatically show update to others views

Verifying/Editing Recording Information

1. Verify that the following information is correct:
   - Dipole length
   - **Declination**
   - The inclination (**Azimuth**) of the layout
   - Calibration checkbox
2. Review the recording information and edit the enabled fields
3. Review the information on **View Recording Details** (see next page)
4. To add more information (such as pictures, documents etc.) click the **Attachments** button

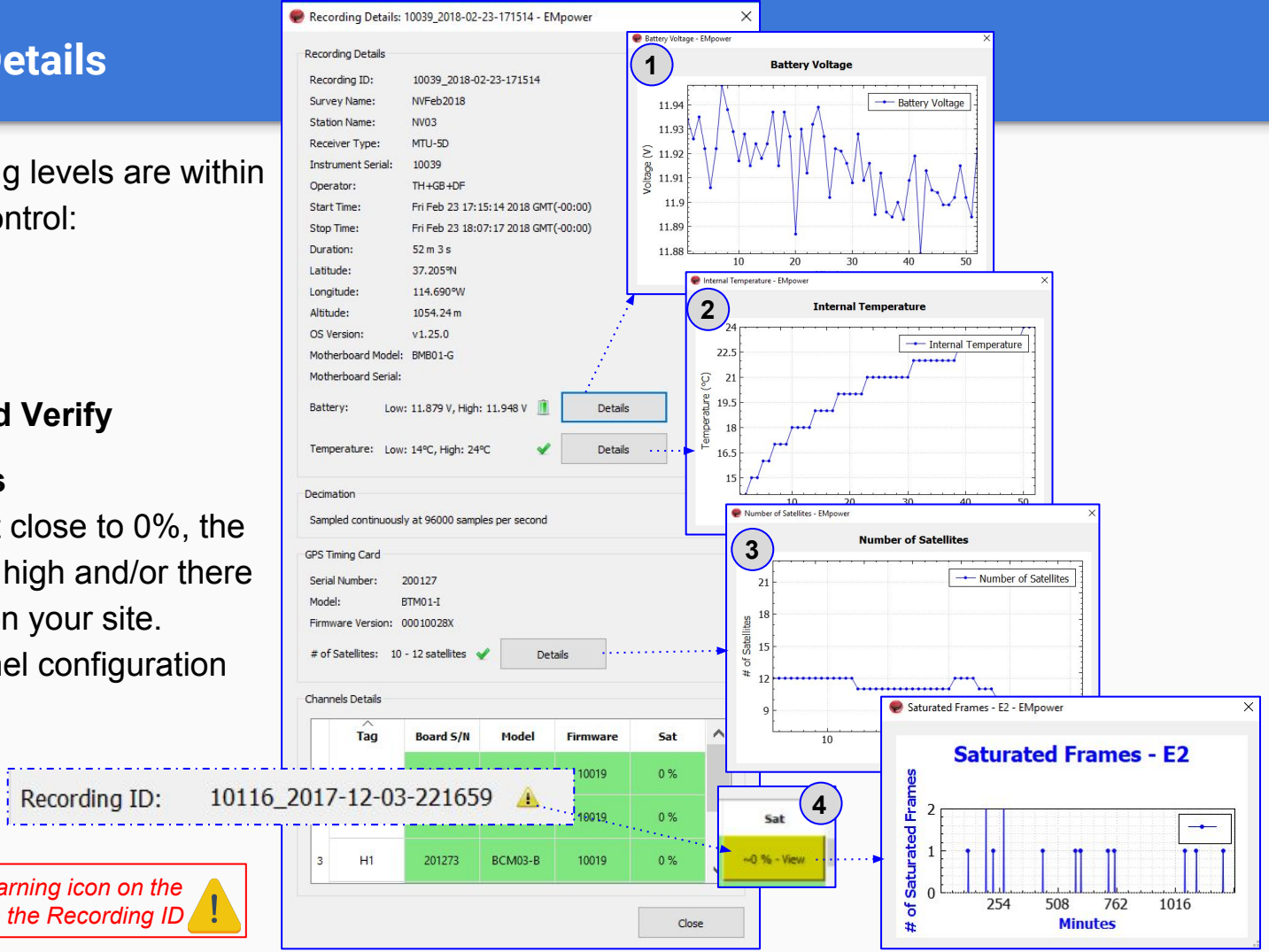


Verify that there was not a warning icon on the left of the channels or next to the Recording ID

View Recording Details

Review that the following levels are within valid limits for quality control:

1. **Battery**
2. **Temperature**
3. **GPS Timing Card Verify**
4. **Channels Details**
   If saturation is not close to 0%, the gain might be too high and/or there is artificial noise on your site.
   Review the channel configuration (see pages 4,5)



Verify that there was not a warning icon on the left of the channels or next to the Recording ID

Recording Details and QC

1. The **Time Series** and **Spectra** vies of the data available for QC
2. **Data Type** allow to switch between different rates (96K / 24K / 150 Hz)
3. The **Unify Vertical Scale by,** allows to visualize by Channel scale
4. **Exporting** plot using the right-click on the plot to export to PNG

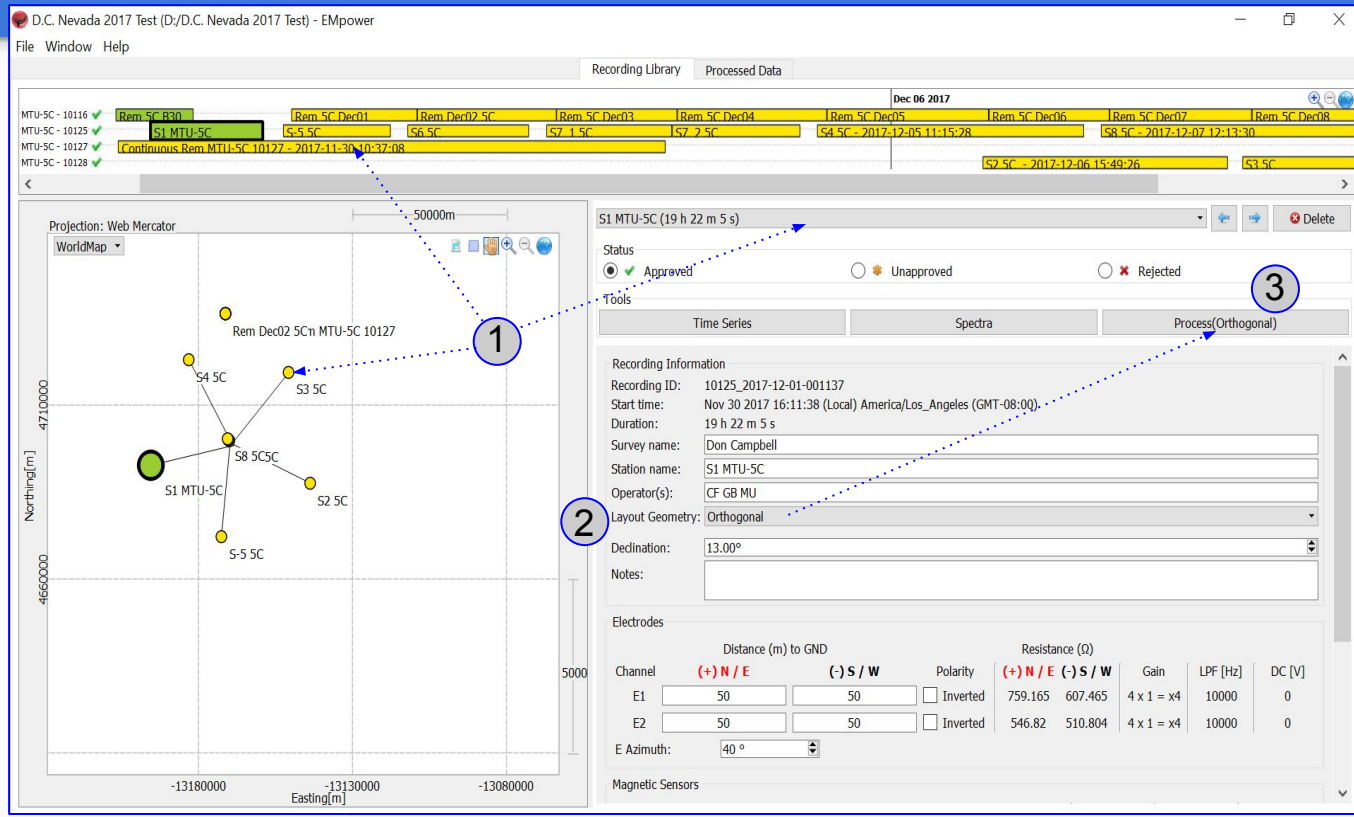
**This features Apply for Time Series and Spectra mode*

Processing Data

From the Recording Library tab:

1. Choose the **Recording** to be processed
2. Review the **Layout Geometry**
3. **Process Site Creation Wizard*:**
   - Electric Components
   - Magnetic Components
   - Reference Channels
   - Processing Timeframe
   - Processing Parameters

**These steps will be explained in the next pages*



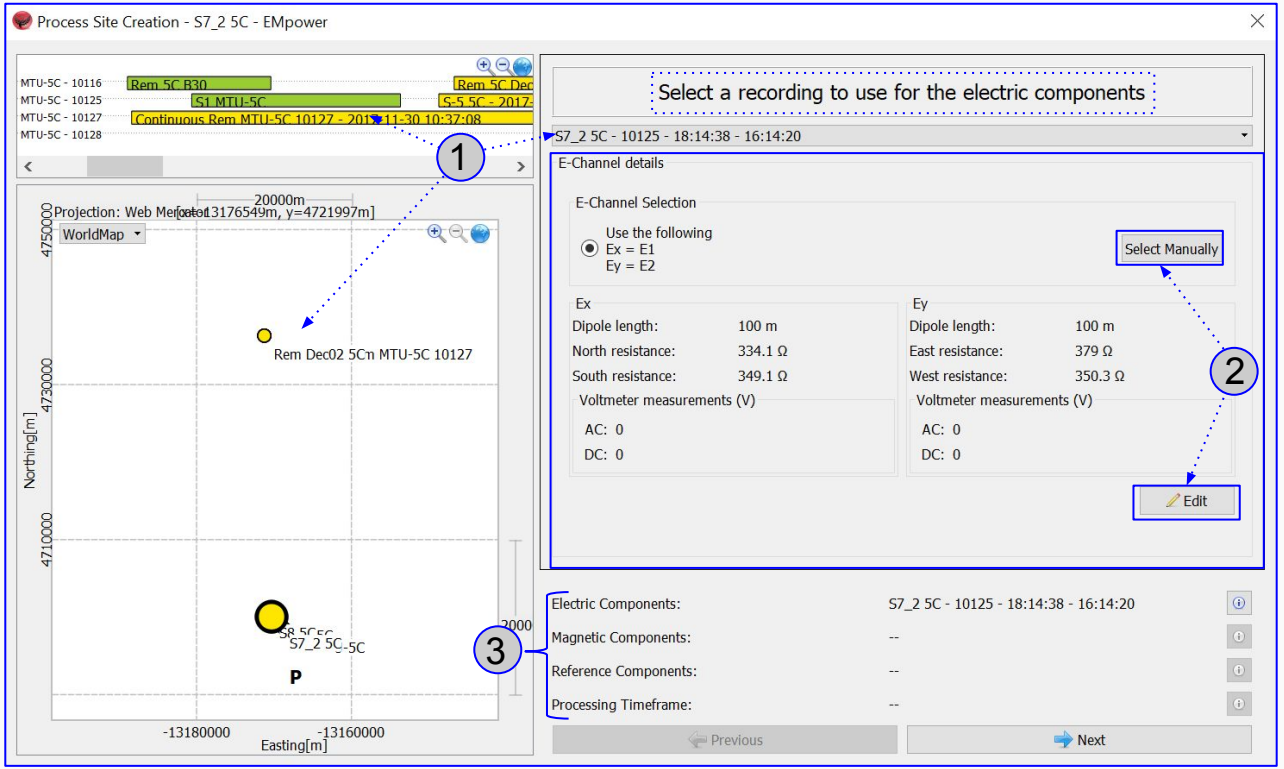
Verify that there was not a warning icon on the left of the channels or next to the Recording ID

Process Site Creation wizard - Electric components

1. Select the recording clicking on the Map, Timeline or drop-down list

2. **Review / Edit** the E-Channel details

3. **Navigation bar** Display the components of the processed site being created



When a recording is selected, the letter **P (Primary)** will appear next to the channel name

Process Site Creation wizard - Magnetic Channels

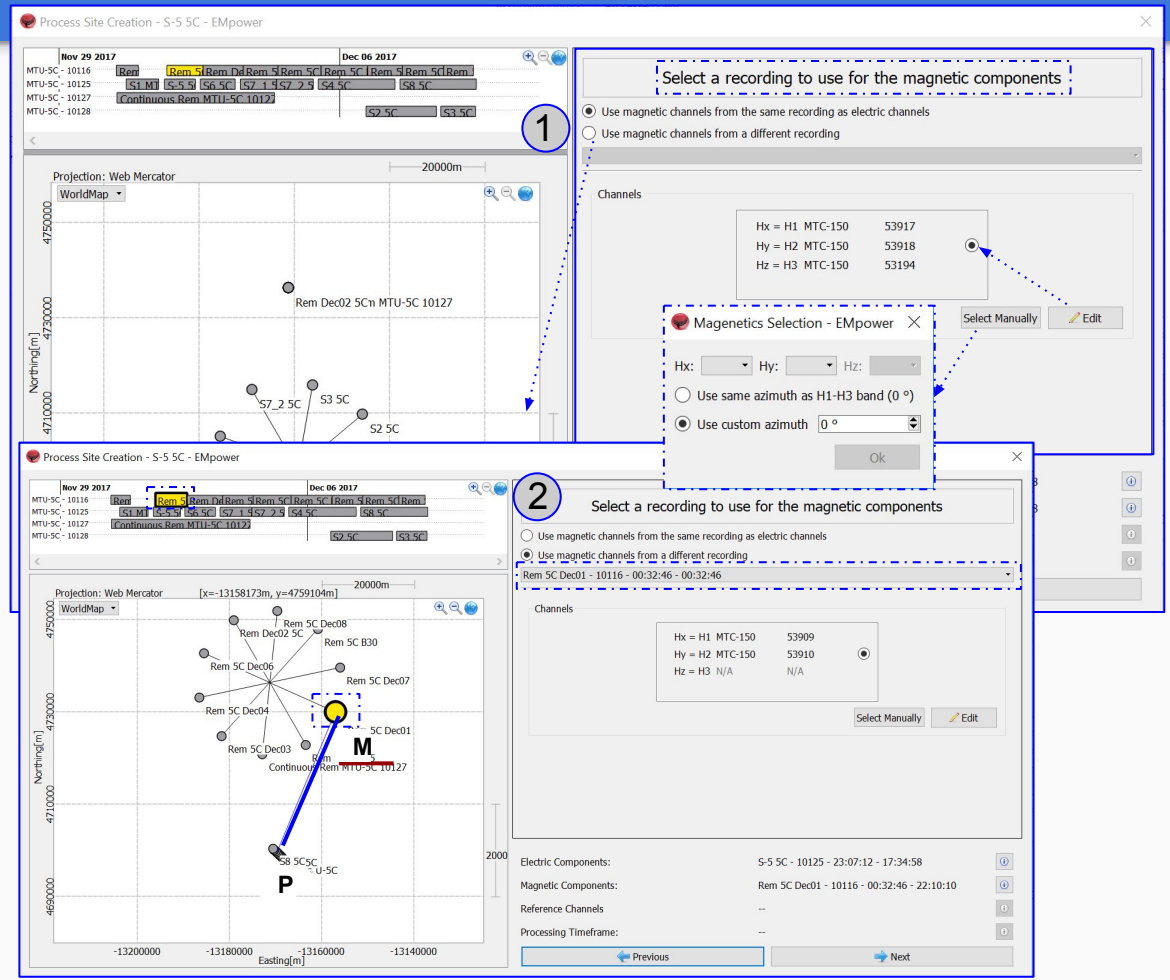
Local

1. Use the the same recording as electric channels, use Select Manually / Edit
   - Click Next

Remote

2. To use another concurrent recording magnetic channels select **“Use magnetic channels from a different recording”**

3. Simultaneous recordings with valid magnetic sensors will appear (yellow / green) in the Map / Timeline or using the drop-down
   Click Next



When a magnetic channel is selected from a different record, this records will be connected on the map and the letter **M (Magnetic)** appears next to the channel name

Process Site Creation wizard - Reference Channels

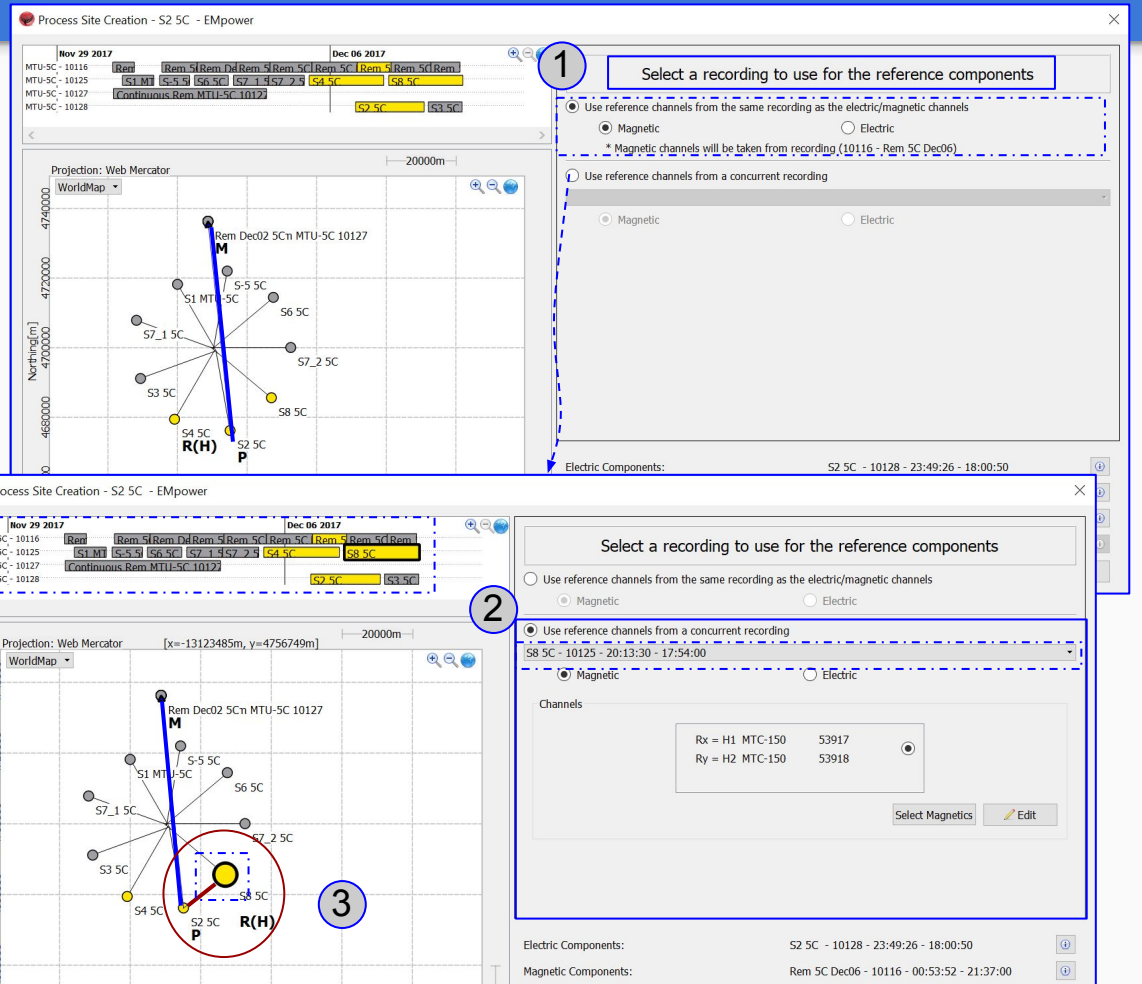
Local

1. Select Magnetic or Electric Channel
   - Click Next

Remote

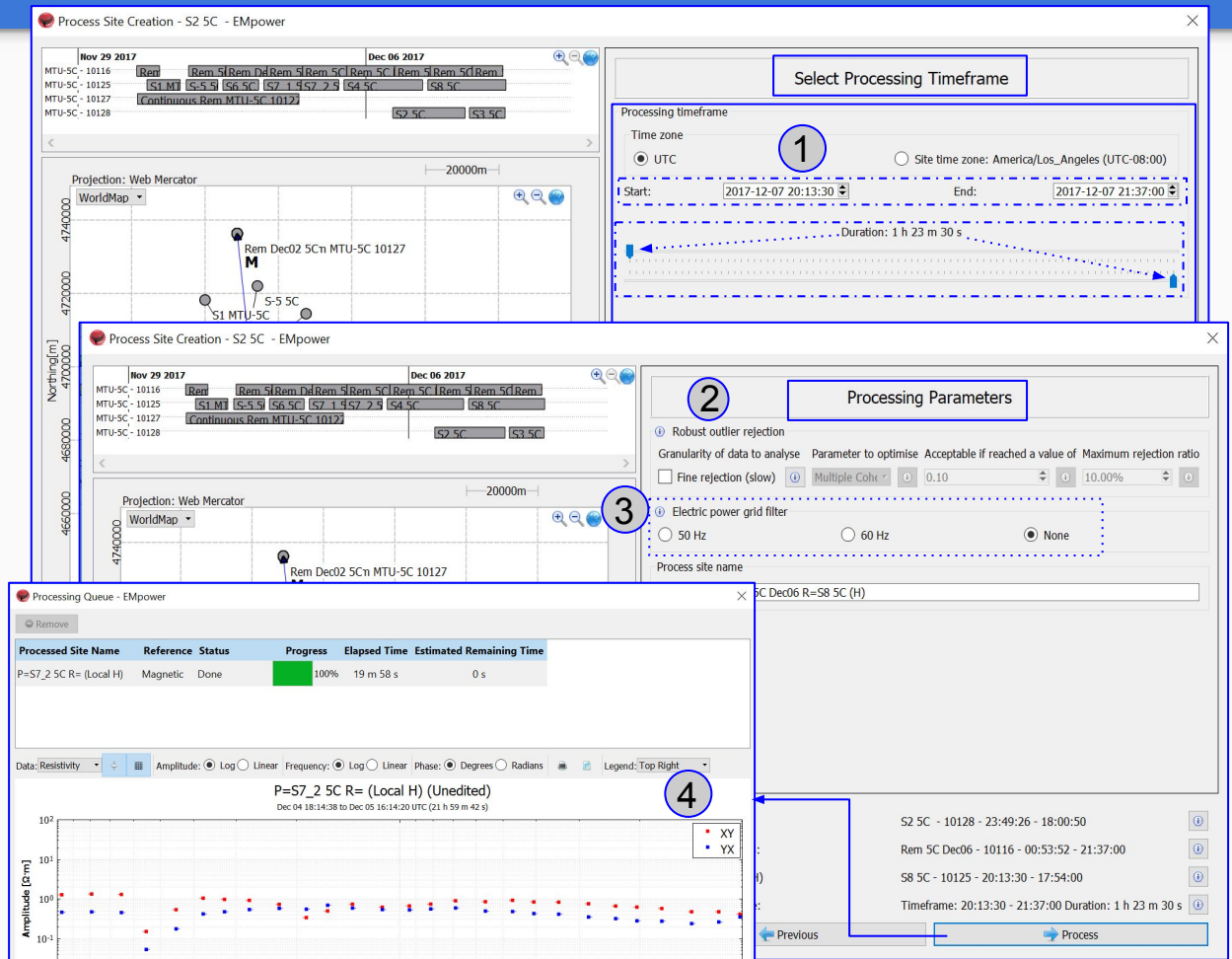
2. To use Reference channels from a concurrent recording select **“Use reference channels from concurrent a recording”**
   - Concurrent recording with valid magnetic or electric will appear (yellow or green) in the Map / Timeline and the drop-down list
   - Click Next

When a channel (**H** magnetic / **E** electric) is selected from a concurrent recording the letters **R(H)/R(E)** appears next to the channel name



Process Site Creation wizard

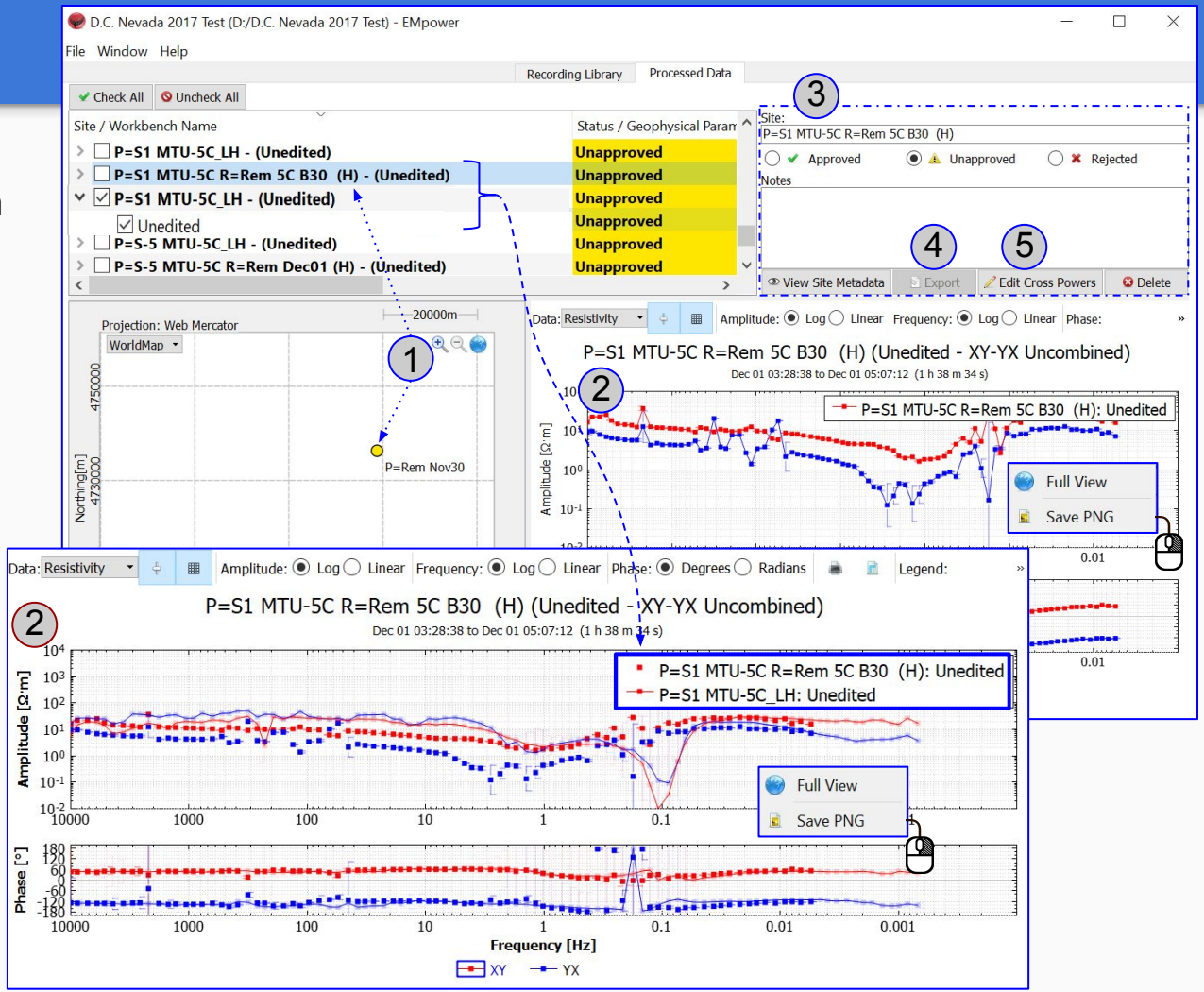
1. **Processing Time Frame,** allow to select the time segment that will be processed using the **Start - End** or by moving the blue indicators in the **Duration** timeline
   - Click Next
2. In the last step the **Processing Parameters** window
   - **Robust outlier rejection** is used for making corrections on the Processed data *(see Troubleshooting guide)*
3. To reduce the effect of noise, select the frequency of the **Electric power grid filter** (North 60 Hz/ Rest of the world 50 Hz)
   - Click Process
4. The **Processing Queue** shows the processing of the site(s) selected



Visualizing Processed Data

Processed data tab

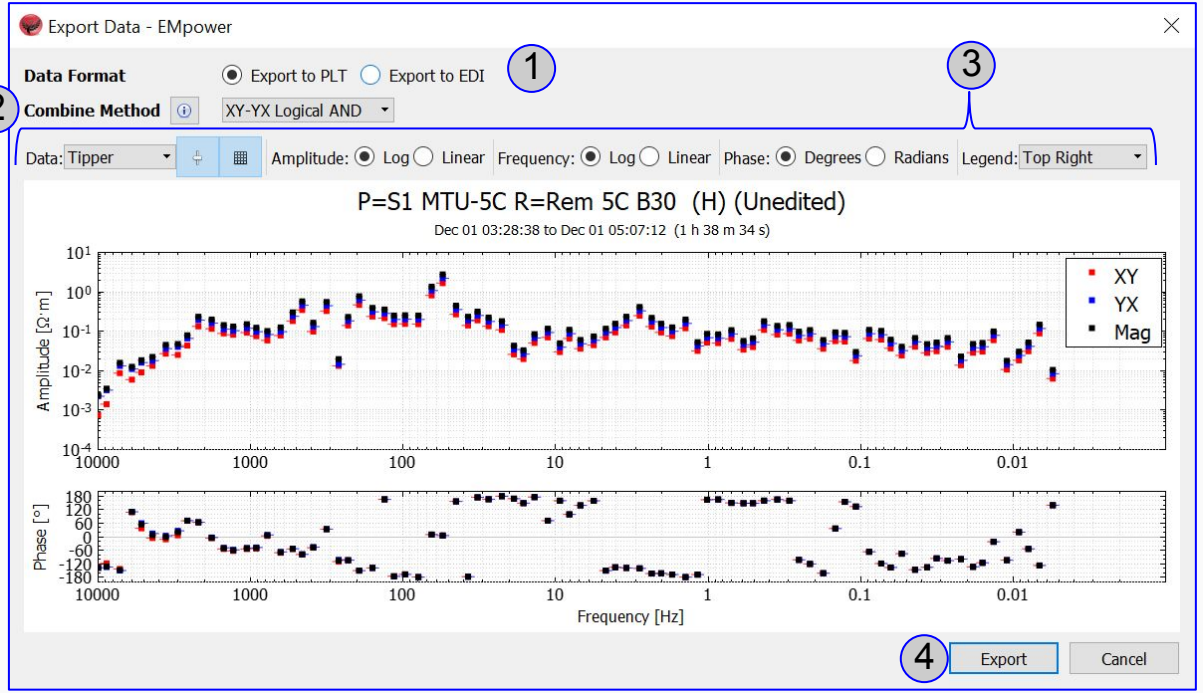
1. Select the **Processed Site** from the Site / Workbench list or Map.
2. The **Plot** shows the Amplitude and Phase from the Processed Site selected
   - Use the **Toolbar plot** for additional features
   - Add Processed Site(s)
3. **Edit** Processed Site (Name, Status and Notes)
4. **Exporting Data** (page 14)
5. The **Edit Cross Powers** removes outlying cross powers from the calculation of resistivity, phase, and other geophysical parameters (see pages 15-17)



Exporting Processed Data

Processed Data

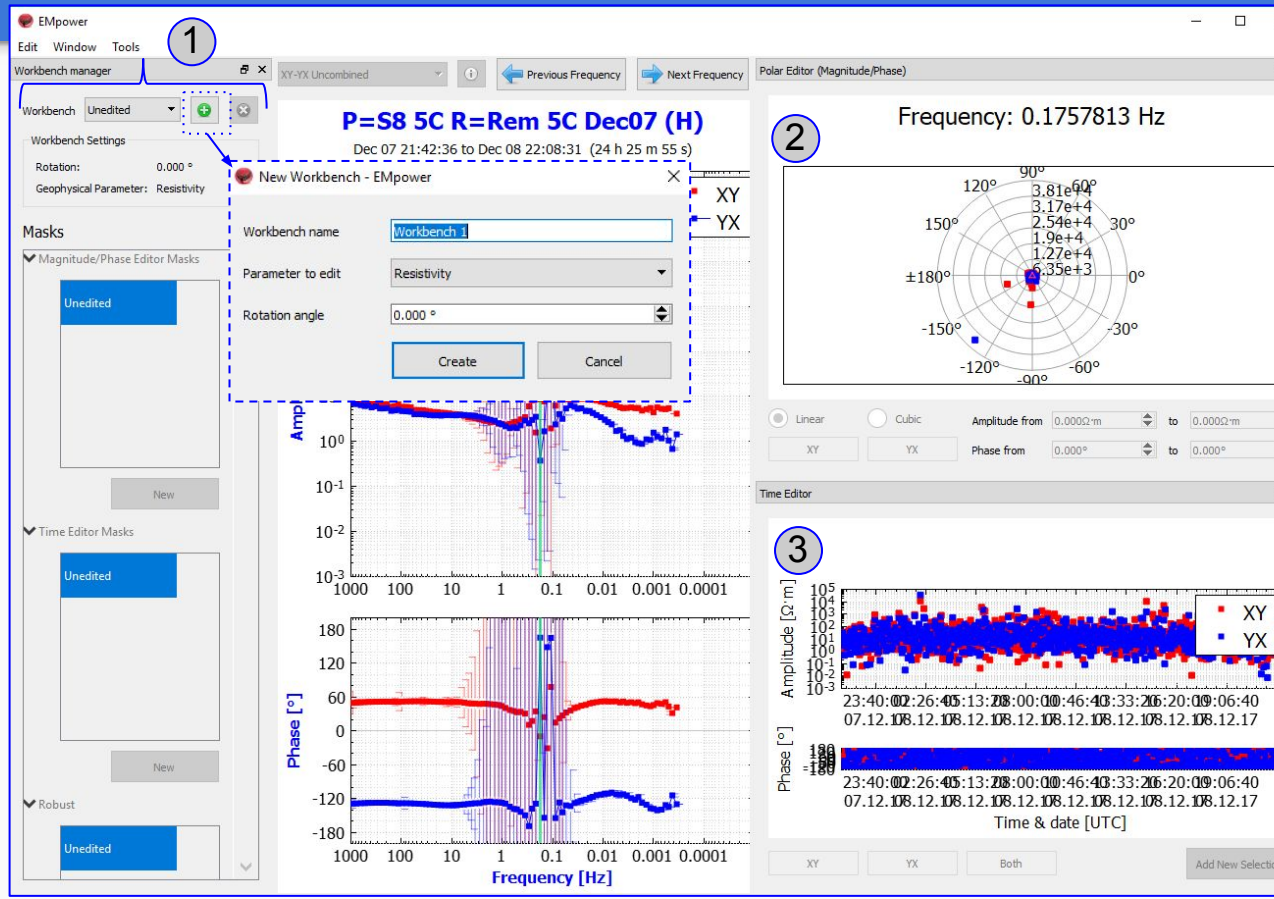
1. **Select the Data Format**
   PLT or EDI
2. Use the **Combine Method**
   Uncombined or Logical
3. Use the Toolbar plot for additional changes
4. **Export** the processed site



Editing Cross Powers

Edit Cross Powers, is a tool to create multiple edition masks without changing the original (Unedited) Data to clean noisy sites

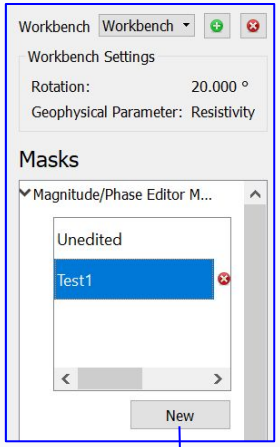
1. To create a new **Workbench** click the green (+) icon, complete the information and click **Create**
2. **Polar Editor**
   - Create a **Polar Editor Mask**(see page 16)
3. **Time Editor**
   - Create a **Time Editor Mask**(see page 17)

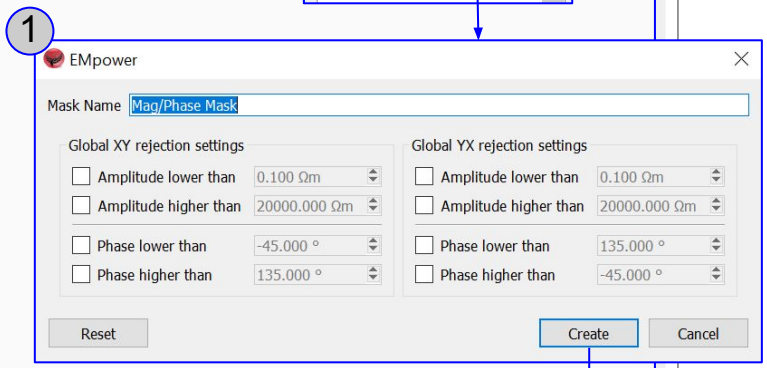


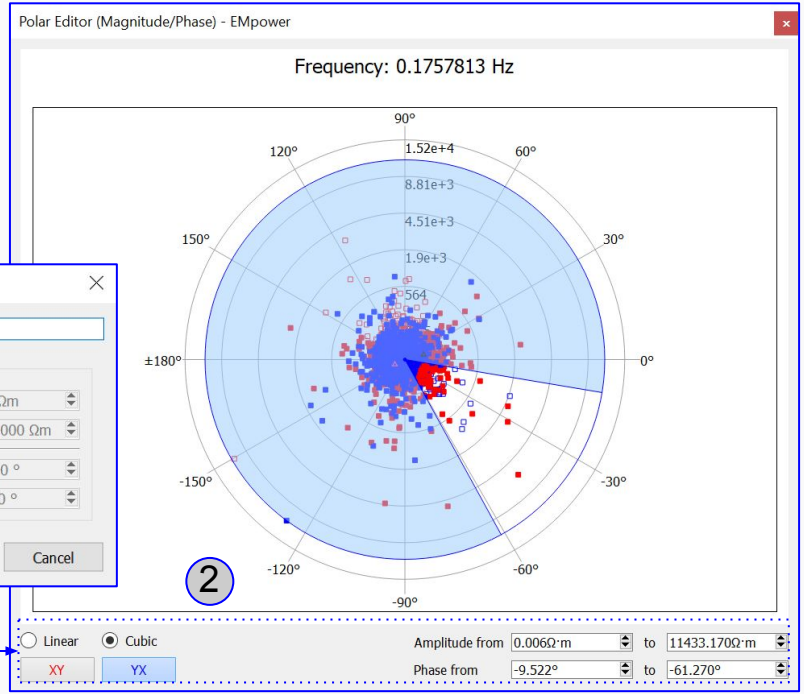
Polar Editor

1. **Create a New Magnitude/ Phase Editor Polar Masks,** define a Mask Name, choose the Amplitude and Phase ranges
   - Click Create button

2. The polar editor plot has been created. Use the differents tools to obtain the desired information
   - Linear / Cubic
   - XY / YX
   - Amplitude range
   - Phase rage







Time Editor

1. When a polar editor plot has been created **XY / YX** will be reflected on the Time Editor

2. **Create a New Time Editor Masks**
   - Mask Name (click right)

3. To **Add New Selection**
   - Click, drag and drop