

EMpower Data Management



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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** or select from the list (*previously used*)
- Select the Project

To create a New Project

- Click **New**
- Type the Project Name

4. Click **Choose**

The image displays a sequence of four screenshots from the EMpower software interface, illustrating the process of creating or opening a project. The screenshots are annotated with numbered circles (1-4) and dashed blue arrows indicating the flow of the process.

Screenshot 1: Shows the main EMpower window. The 'Manage' button is highlighted with a blue circle and a dashed arrow pointing to the next screenshot.

Screenshot 2: Shows the 'Open Project - EMpower' dialog box. The 'Find Existing Project' button is highlighted with a blue circle and a dashed arrow pointing to the next screenshot.

Screenshot 3: Shows the 'Create New Project - EMpower' dialog box. A file explorer view is shown with the 'Test' folder selected. A blue circle and dashed arrow highlight the selection.

Screenshot 4: Shows the 'Create New Project - EMpower' dialog box. The 'Enter a project name' field is highlighted with a blue circle and a dashed arrow.

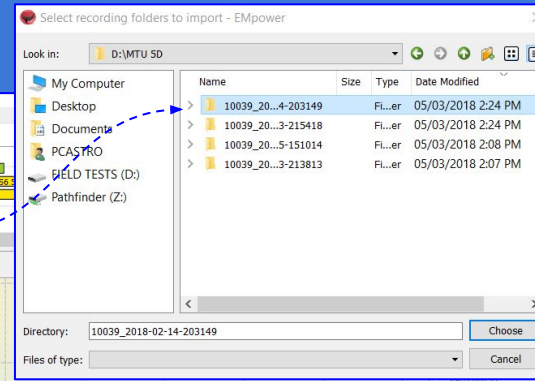
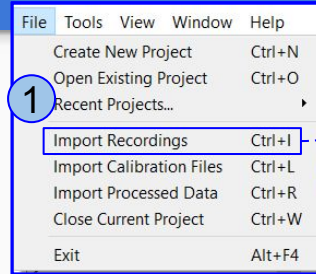
The EMpower main window (Screenshot 1) includes the following menu items:

- Prepare**: Create instrument configuration files, View and edit instrument configuration files
- Evaluate**: Check data quality, View time series and spectra, View noise test results, View quick-estimate apparent resistivity
- Manage**: Manage surveys, Import data and prepare for processing, View recording sites on a map and a time line, View time series and spectra, Process data with local or remote references, Edit processed data and export for interpretation
- Exit**: Quit EMpower

Importing Data / Drag and Drop

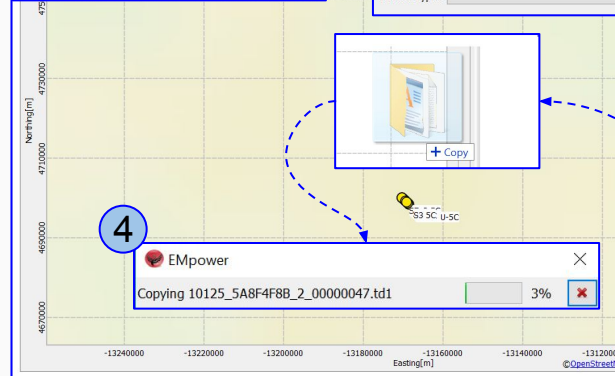
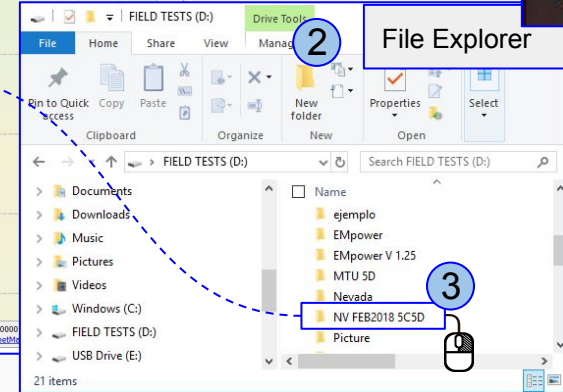
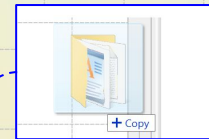
Importing Data

1. Select **Importing Recordings** from **File** menu
 - Select the recording and click **Choose**



Drag and drop

2. Select the **recording file** in the **File Explorer** window
3. Drag and drop the **Recording data** to the Timeline or Map
4. Wait until charging is completed



To add a recording from the **SD Card**

- Insert **SD card** in the computer SD Card slot or use an external USB memory card reader

Visual Representation of Sites

- Imported recordings are shown in three synchronized views

- Timeline
- Map
- Recording list

- Visual tracking

Green	Approved
Yellow	Unapproved
Red	Rejected

The screenshot displays a software interface with three main views: Timeline, Map, and Recording list. The Timeline view at the top shows a list of recordings with colored bars representing their status: green for approved, yellow for unapproved, and red for rejected. The Map view in the center shows a grid with a yellow dot labeled 'Rem 5C B30' and another yellow dot labeled 'Remote'. The Recording list view on the right shows detailed information for a selected recording, including recording ID, start time, duration, survey name, station name, operator, and channel configurations.

Timeline

Station name	Groups	Filters
MTU-5C - 10116	Rem 5C B30	Rem 5C Dec01
MTU-5C - 10125	S1 MTU-5C	S-5 5C S6 5C S7 1 5C S7 2 5C
MTU-5C - 10127	Continuous Rem MTU-5C 10127 - 2017-11-30 10:37:08	
MTU-5C - 10128		

Map

Projection: Web Mercator

WorldMap

Remote

Rem 5C B30 MTU-5C 10127

Recording list

Rem 5C B30 (13 h 18 m 27 s)

Status: Approved Unapproved Rejected

Tools: Time Series Spectra Process (Orthogonal)

Recording Information

Recording ID: 10116_2017-11-30-181344

Start time: Nov 30 2017 10:13:45 (Local) Pacific Standard Time (GMT -08:00)

Duration: 13 h 18 m 27 s

Survey name: Don Campbell

Station name: Rem 5C B30

Operator(s): Caro George B Murat

Company name:

Layout Geometry: Orthogonal

Declination: 13.00°

Notes: Stopped recording @ 23h32 local time

Electric Channels

Channel	(+) N / E	(-) S / W	Polarity	(+) N / E	(-) S / W	Gain	LPF [Hz]	DC [V]
E1	0.00	0.00	<input type="checkbox"/> Inverted	N/A	N/A	N/A	N/A	N/A
E2	0.00	0.00	<input type="checkbox"/> Inverted	N/A	N/A	N/A	N/A	N/A

E Azimuth: 0.00 External Filter: None

Magnetic Channels

Channel	Sensor	Detected	Serial #	Cal	Polarity	Gain	LPF [Hz]	DC [V]
H1	MTC-150	MTC-150	53909	<input checked="" type="checkbox"/>	<input type="checkbox"/> Inverted	x4	10000	0
H2	MTC-150	MTC-150	53910	<input checked="" type="checkbox"/>	<input type="checkbox"/> Inverted	x4	10000	0
H3		N/A		<input checked="" type="checkbox"/>	<input type="checkbox"/> Inverted	N/A	N/A	N/A

H1-H3 Azimuth: 0.00°


View Recording Details Attachments Export Time Series

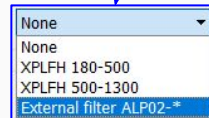


Selecting a recording in any of the views will automatically update the recording information in the other views

Verifying/Editing Recording Information

Data management (*Recording Library*)

1. Review the Recording Information
 - Edit the enabled fields, if required
 - Verify that there was not a warning icon  on the left of the channels or next to the Recording ID
2. Review the following information:
 - Dipole length
 - The **Azimuth** at which the E and H sensors were laid out
 - Use the External filter selector to indicate if an accessory was used during the recording. For details about each specific accessory, consult the manual of such accessory.
 - The correct **Calibration** sensor will show a green mark
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



The screenshot shows the 'Recording Information' and 'Electric Channels' sections of a software interface. The 'Recording Information' section includes fields for Recording ID, Start time, Duration, Survey name, Station name, Operator(s), Layout Geometry, Declination, and Notes. The 'Electric Channels' section includes a table for Electric Channels and a table for Magnetic Channels. The 'Attachments' button is highlighted with a blue box and a dashed arrow pointing to it from the 'Attachments' button in the bottom right corner.

1 (Recording Information): A blue box highlights the 'Recording Information' section, which includes fields for Recording ID, Start time, Duration, Survey name, Station name, Operator(s), Layout Geometry, Declination, and Notes.

2 (Electric Channels): A blue box highlights the 'Electric Channels' section, which includes a table for Electric Channels and a table for Magnetic Channels. The 'External Filter' dropdown is highlighted with a dashed blue box.

3 (View Recording Details): A blue box highlights the 'View Recording Details' button.

4 (Attachments): A blue box highlights the 'Attachments' button.

Channel	(+) N / E	(-) S / W	Polarity	(+) N / E	(-) S / W	Gain	LPF [Hz]	DC [V]
E1	50.00	34.50	<input type="checkbox"/> Inverted	5335	3894.07	4 x 1 = x4	10000	-0.021
E2	50.00	49.00	<input type="checkbox"/> Inverted	3623.18	4096.92	4 x 1 = x4	10000	-0.021

Channel	Sensor	Detected	Serial #	Cal	Polarity	Gain	LPF [Hz]	DC [V]
H1	MTC-150	MTC-150	53731	<input checked="" type="checkbox"/>	<input type="checkbox"/> Inverted	x4	10000	-0.011
H2	MTC-150	MTC-150	53880	<input checked="" type="checkbox"/>	<input type="checkbox"/> Inverted	x4	10000	-0.029
H3				<input type="checkbox"/>	<input type="checkbox"/> Inverted	N/A	N/A	N/A

View Recording Details

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

1. Battery Voltage
2. Internal Temperature
3. Number of Satellites
4. Saturated Frames
5. Time Series Level

- If saturation is not close to ~0%, review the channel configuration (see pages 4 - 6), the gain might be too high and/or there is artificial noise on your site

Recording Details: 10155_2019-04-24-085903 - EMpower

Recording ID: 10155_2019-04-24-085903
Survey Name: 10155 MT
Station Name:
Company Name:
Receiver Type: MTU-5D
Instrument Serial: 10155
Operator:

Timing Details
Start Time: Wed Apr 24
Stop Time: Thu Apr 25 0
Duration: 22 h 58 m 50
Latitude: 37.679°N
Longitude: 123.792°E
Altitude: 1119.23 m

Instrument Info
OS Version: v1.27.1
Motherboard Model: BMB01-G
Motherboard Serial: 031008
Battery: Low: 12.44 V, High: 12.869 V Details
Temperature: Low: 20°C, High: 38°C Details

Decimation
Recorded 0.1 seconds at 96000 samples/s every 60 seconds,
1 second at 24000 samples/s every 60 seconds,
and continuously at 150 samples/s

GPS Timing Card
Serial Number: 200188
Model: BTM01-I
Firmware Version: 00010029X
of Satellites: 7 - 12 satellites Details

Channels Details

Tag	Board S/N	Model	Firmware	Sat	Signal Ranges	
1	E1	201462	BCM03-B	1001a	0 %	<input type="button" value="View Levels"/>
2	E2	201427	BCM03-B	1001a	~0 % - Yellow	<input type="button" value="View Levels"/>
3	H1	201423	BCM03-B	1001a	0 %	<input type="button" value="View Levels"/>
4				1001a	0 %	<input type="button" value="View Levels"/>

4 Saturated Frames - E2 - EMpower

1 Battery Voltage - EMpower

2 Internal Temperature - EMpower

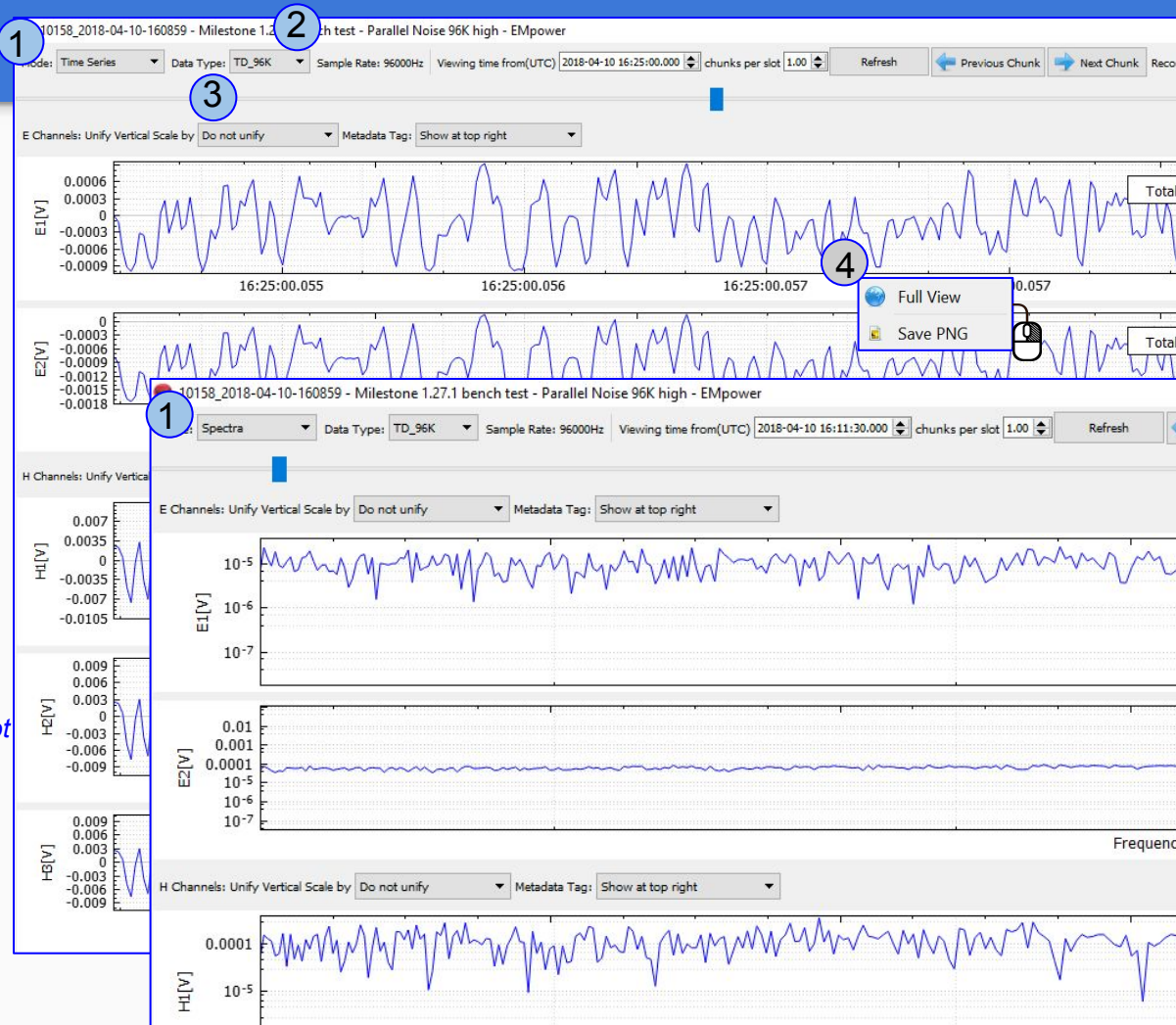
3 Number of Satellites - EMpower

5 Time Series Level - E1 - EMpower

Recording Details and QC

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

**This feature applies to the Time Series and Spectra plot*



Processing MT Data

From the Recording Library tab:

1. Choose a recording to process
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 Following pages*

Station name: Groups: None Filters: None

Recording Library | Processed MT Data | Processed PNT Data

Dec 05 2017

MTU-5C - 10116 ✓ Rem SC B30 Rem SC Dec01 Rem SC Dec04 Rem SC Dec05 - 2017-12-05 12:56:59 Rem SC Dec06

MTU-5C - 10125 ✓ S1 MTU-5C S5 5C S6 5C S7 1 5C S7 2 5C

MTU-5C - 10127 ✓ Continuous Rem MTU-5C 10127 - 2017-11-30 10:37:08

MTU-5C - 10128 ✓ S2 5C - 2017-12-06 15:49

Projection: Web Mercator

WorldMap

1000000m

7000000

6000000

5000000

4000000

Northing[m]

Calgary

Remote

Un Stal Am

10000

San José

S1 MTU-5C

Los Angeles

Phoenix

San Diego

Ciudad Juárez

S1 MTU-5C (19 h 22 m 5 s)

Status: Approved Unapproved Rejected

Tools: Time Series Spectra Process (Parallel)

Recording Information

Recording ID: 10125_2017-12-01-001137

Start time: Nov 30 2017 16:11:38 (Local) Pacific Standard Time (GMT -08:00)

Duration: 19 h 22 m 5 s

Survey name: Don Campbell

Station name: S1 MTU-5C

Operator(s): CF GB MU

Company name:

Layout Geometry: Parallel

Declination: 0.00°

Notes:

Electric Channels

Channel	(+) N / E	(-) S / W	Polarity	(+) N / E	(-) S / W	Gain	LPF [Hz]	DC [V]
E1	50.00	50.00	<input type="checkbox"/> Inverted	759.165	607.465	4 x 1 = x4	10000	0
E2	50.00	50.00	<input type="checkbox"/> Inverted	546.820	510.804	4 x 1 = x4	10000	0

E Azimuth: 0.00 External Filter: None

Magnetic Channels

Channel	Sensor	Detected	Serial #	Cal	Polarity	Gain	LPF [Hz]	DC [V]
H1	MTC-150	MTC-150	53917	<input checked="" type="checkbox"/>	<input type="checkbox"/> Inverted	x4	10000	0
H2	MTC-150	MTC-150	53918	<input checked="" type="checkbox"/>	<input type="checkbox"/> Inverted	x4	10000	0
H3	MTC-150	MTC-150	53191	<input checked="" type="checkbox"/>	<input type="checkbox"/> Inverted	x4	10000	0

H1-H3 Azimuth: 0.00 °

View Recording Details Attachments Export Time Series

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

Process Site Creation wizard

Electric components

1. Select a recording from the Map, Timeline or Drop-down list
2. **Review / Edit** the E-Channel details
 - Use the **Select Manually** button to change the Channel Selection (Ex/Ey)
 - To change or add details use the **Edit** button
3. **Navigation bar** display the components of the processed site being created
4. Click Next to continue



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



Process site is not available in network projects



The recording is good to process



The recording does not have an available calibration file

Process Site Creation wizard

Magnetic Channels

Same recording

1. Keep the option **Use magnetic channels from the same recording as electric channels**
2. Use **Select Manually** to modify as needed and click **Next**

Different recording

3. Select **Use magnetic channels from a different recording**
 - Select a valid recording/magnetic sensors from the Map / Timeline or using the Drop-down and click **Next**
4. Use **Select Manually / Edit**
5. Click **Next**



When a magnetic channel is selected from a different recording, an arrow will be pointing to that recording on the map and the letter **M (Magnetic)** will appear next to that recording

Process Site Creation - S-5 SC - EMpower

Projection: Web Mercator

WorldMap

Channels

Use magnetic channels from the same recording as electric channels

Use magnetic channels from a different recording

S-5 SC - 10125 - Dec 01 15:07:12 - Dec 02 09:34:58 - (Primary component station)

Channels

Hx = H1 MTC-150 53917

Hy = H2 MTC-150 53918

HZ = H3 MTC-150 53194

Source recording of Hz: 10125_2017-12-01-230711

Select Manually

Magnetics Selection - EMpower

Hx: [dropdown] Hy: [dropdown] Hz: [dropdown]

Use HI-H3 band azimuth: 0°

Use custom azimuth [input] 0°

Hx and Hy are mandatory channels

OK

Electric Components: S-5 SC - 10125 - Dec 01 15:07:12 - Dec 02 09:34:58

Magnetic Components: S-5 SC - 10125 - Dec 01 15:07:12 - Dec 02 09:34:58 - (Primary component station)

Reference Channels (H) ...

Process Site Creation - S-5 SC - EMpower

Projection: Web Mercator

WorldMap

Channels

Use magnetic channels from the same recording as electric channels

Use magnetic channels from a different recording

Rem SC Dec01 - 10116 - Dec 01 16:32:46 - Dec 02 14:10:10

Channels

Hx = H1 MTC-150 53909

Hy = H2 MTC-150 53910

HZ = H3 MTC-150 53194

Source recording of Hz: 10125_2017-12-01-230711

Select Manually

Magnetics Selection - EMpower

Hx: [dropdown] Hy: [dropdown] Hz: [dropdown]

Use HI-H3 band azimuth: 0°

Use custom azimuth [input] 0°

Hx and Hy are mandatory channels

OK

Electric Components: S-5 SC - 10125 - Dec 01 15:07:12 - Dec 02 09:34:58

Magnetic Components: Rem SC Dec01 - 10116 - Dec 01 16:32:46 - Dec 02 14:10:10

Reference Channels (H) --

Processing Timeframe: --

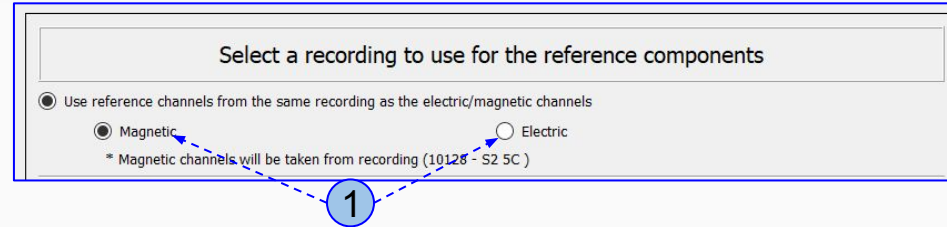
Previous Next

Process Site Creation wizard

Reference Channels

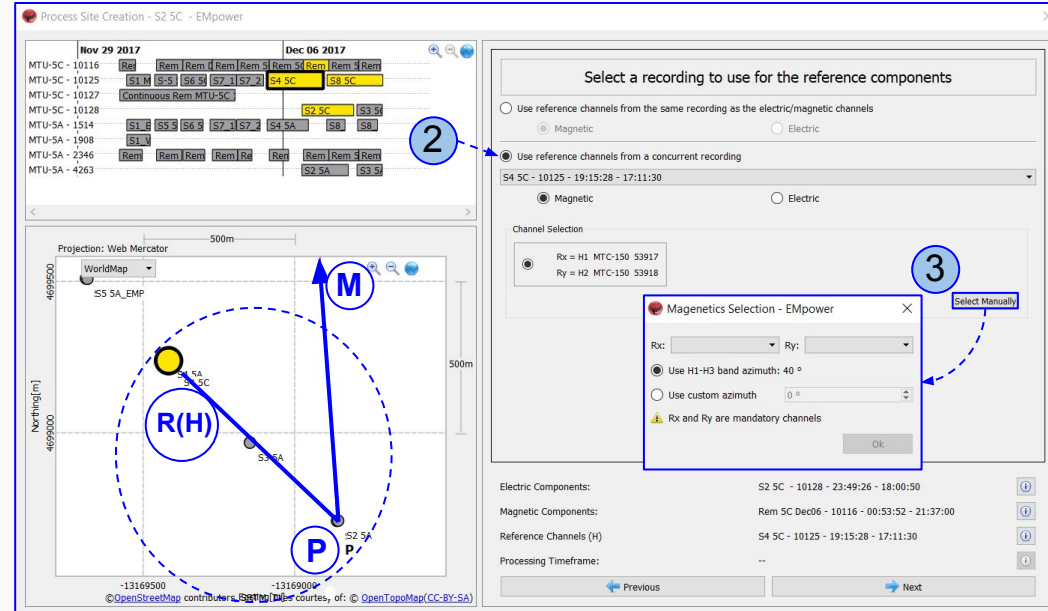
Same recording

1. To use reference channels from the same recording as the electric/magnetic channels
 - Select either the Magnetic Channels or Electric Channels
 - Click **Next**



Remote reference

2. To use Reference channels from a concurrent recording select **“Use reference channels from concurrent a recording”**
 - A concurrent recording with valid magnetic or electric channels will appear as non-gray in the Map / Timeline and in the drop-down list
3. Use **Select Manually** as needed
 - Click **Next**



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

Process Site Creation wizard

1. The **Select Processing Timeframe**, allows to select the time segment of the recording that will be processed
 - Use the **Start - End** fields or move the blue indicators in the **Duration** selectors
 - Click Next
2. In the **Processing Parameters** window
 - Robust **outlier rejection** is used to reject outliers in the Processed data at high granularity
3. To reduce the effect of power line noise
 - Select the frequency of the **Electric power grid filter** that corresponds to the frequency carried by the power lines in the region
4. Type the **Process site name**
5. Click the **Process** button
6. The **Processing Queue** shows the processing of the site(s) selected

1. Select Processing Timeframe

2. Processing Parameters

3. Processing Parameters

4. Processing Parameters

5. Processing Queue

6. Processing Queue

Prefer to use robust in the editor instead of this first-pass robust, it will normally yield better results

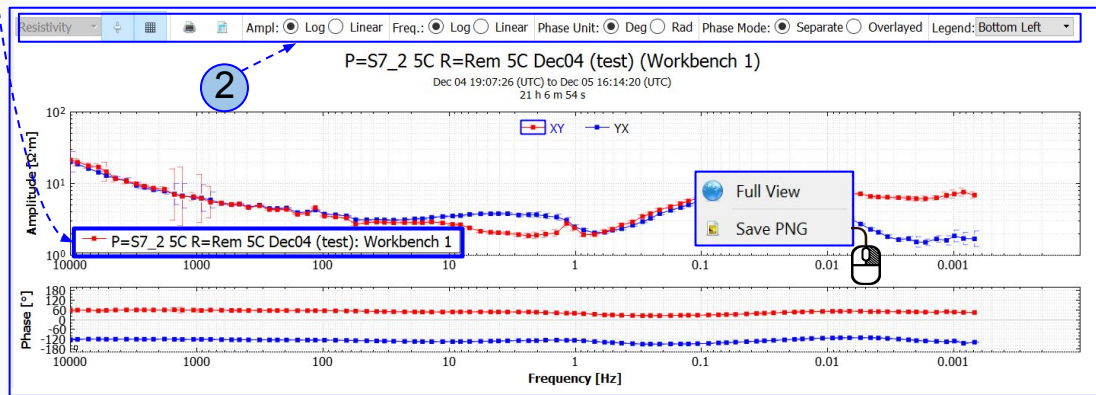
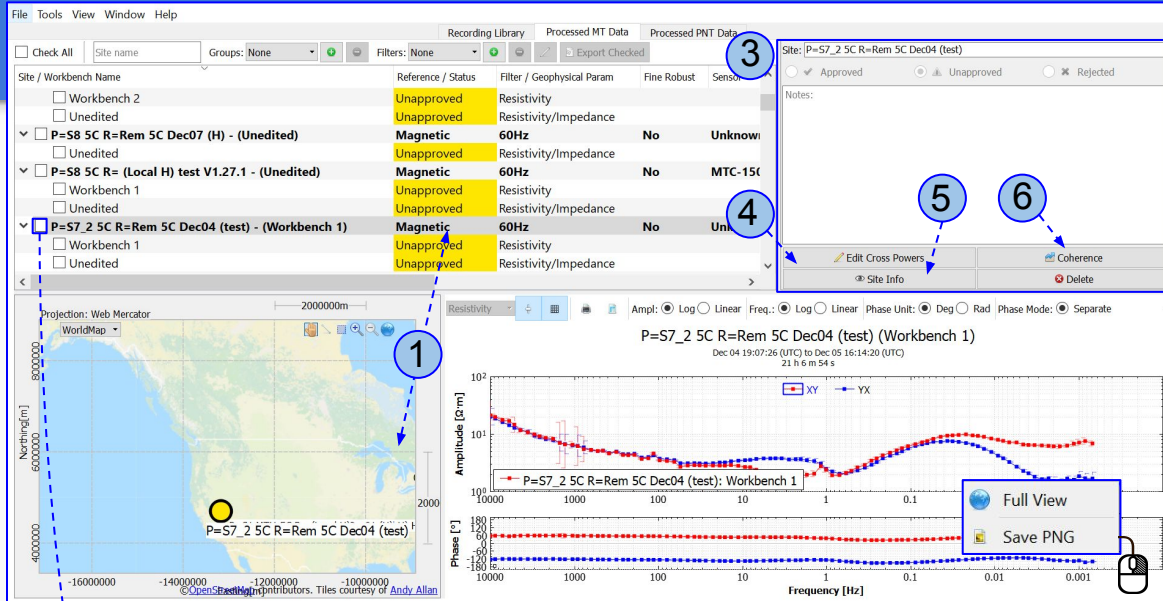
Processed Site Name	Reference	Status	Progress	Elapsed Time	Estimated Remaining Time
P=S7_2 SC R= (Local H)	Magnetic	Done	100%	19 m 58 s	0 s

Amplitude [Cm]

Phase [°]

Visualizing Processed Data

1. Select the **Processed Site** from the Workbench list or Map
2. The **Plot** shows the Amplitude and Phase of the selected Processed Site
 - Use the **Plot toolbar** to access additional plot features
 - Add Processed Site(s) by selecting the checkbox beside the site in the Workbench list
3. **Edit** the Processed Site (Name, Status and Notes)
4. The **Edit Cross Powers** feature removes outlying cross powers from the calculation of resistivity, phase, and other geophysical parameters (see pages 19-21)
5. Site Info (see pages 18)
6. Coherence (see pages 18)

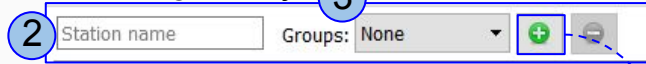


Toolbar (Sites list)

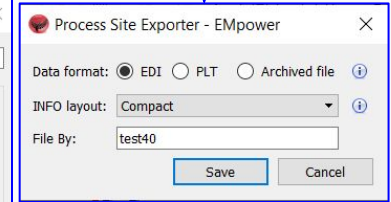
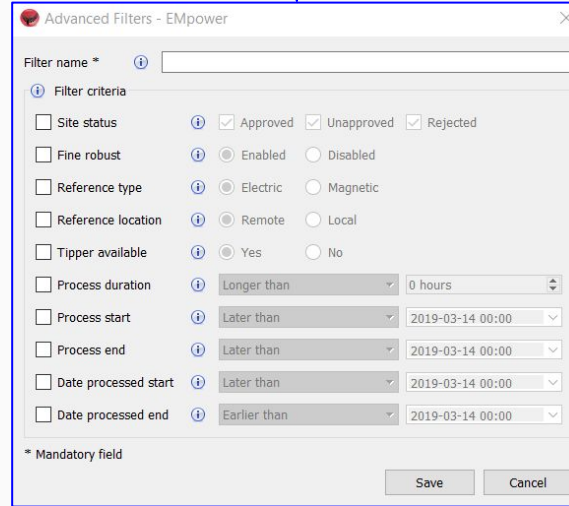
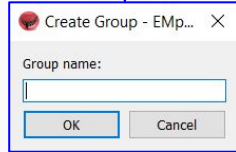
Processed MT Data




Recording Library

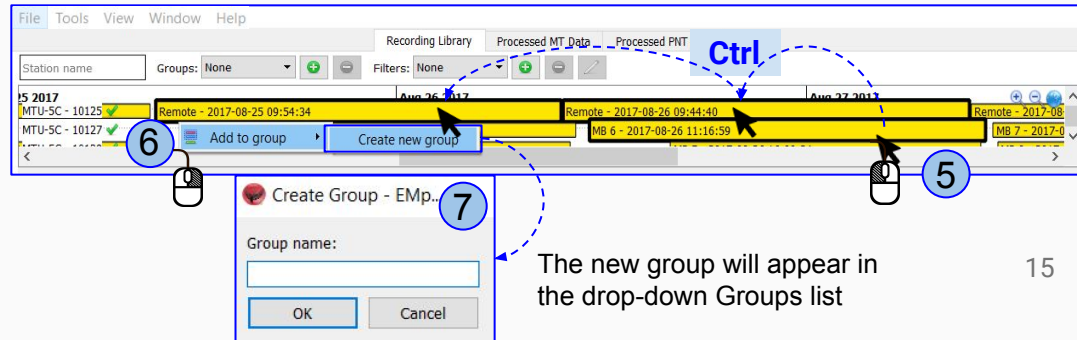
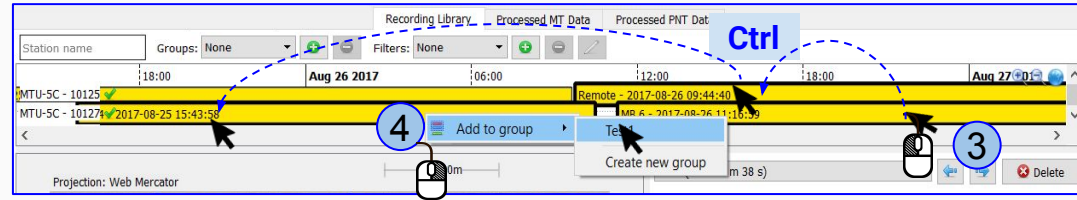
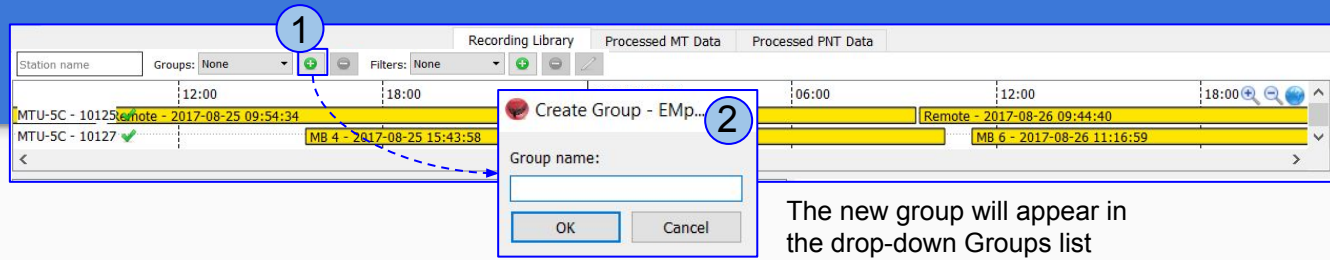


1. **Check All** the Sites
2. Quick search by **Site name**
3. **Groups** (Slide 15-16)
4. **Filters** (Slide 17)
5. **Export Checked**, export the site(s) selected in the Workbench list to EDI/PLT or to an archive compressed file



Groups (Timeline)

1. Create new group 
 2. Type the **Group Name**
 3. Select the sites
 - Use left-click to select the site and hold down the "Ctrl" key to select multiple sites (release the buttons)
 4. Use the Right-click menu
 - **Add to group**
 - Select the group
- OR
5. Select the sites
 - Use left-click to select the site and hold down the "Ctrl" key to select multiple sites (release the buttons)
 6. Use the Right-click menu
 - **Add to group**
 - **Create new group**
 7. Type the **Group Name**



Groups (Map)

Select the sites using one of two options:

1. Use the **Line Selection** tool for specific sites
 - Hold down the left-click and draw the line over the sites on the map
2. Use the **Rubberband** for large ranges
 - Hold down the left-click and drag over the sites on the map (*ensure to cover entirely all the sites needed*)

Create a group

3. Create a Group
 - Use the Right-click menu on the Map
 - **Add to group**
 - **Create new group**
 - Type the **Group name**


The image contains three numbered screenshots of a map application interface:

- 1 Line Selection:** Shows a map with a blue line drawn across several yellow circular site markers. A callout box labeled 'Line Selection' points to the line. The map shows topographic contours and a river labeled 'Meagher Creek'. A scale bar indicates 5000m.
- 2 Rubberband:** Shows a map with a blue rectangular selection box (rubberband) covering several yellow circular site markers. A dashed yellow line indicates the selection path. A callout box labeled 'Rubberband' points to the selection box. The map shows topographic contours and a river labeled 'Meagher Creek'. A scale bar indicates 1000m.
- 3 Map:** Shows a map with a right-click context menu open over a yellow circular site marker. The menu includes options: 'Add to group', 'Full View', 'Show grid', 'Show Site Names', 'Export to...', 'Fetch Background Map', and 'Re-fetch Background'. A callout box labeled 'Map' points to the menu. A sub-callout box labeled 'Create new group' points to the 'Create new group' option in the menu.


To the right of the '3 Map' screenshot, there is a text box: "The new group will appear in the drop-down Groups list". Below this text is a screenshot of a dialog box titled "Create Group - EMP...". The dialog box has a "Group name:" label and a text input field. At the bottom are "OK" and "Cancel" buttons.

Filters (Processed MT Data)


The Advanced Filter can work with individual sites or with Groups


1. Name the **Filter** (**mandatory field*)
2. Select the **Filter criteria**
3. Save the **Filter**
4. The new **Filter** will be added to the drop down list
5. Use the Edit  button to add or change **Filter criteria**


Advanced Filters - EMpower


Filter name **1**  approved


2 Filter criteria


Site status  Approved Unapproved Rejected


Fine robust  Enabled Disabled


Reference type  Electric Magnetic


Reference location  Remote Local


Tipper available  Yes No

Process duration  Longer than 0 hours

Process start  Later than 2019-04-02 00:00

Process end  Later than 2019-04-02 00:00

Date processed start  Later than 2019-04-02 00:00

Date processed end  Earlier than 2019-04-02 00:00

* Mandatory field

3 Save Cancel

4 5

Site / Workbench Name	Reference / Status	Filter / Geophysical Param	Fine Robust	Sens
<input type="checkbox"/> Test - (Workbench 1)	Magnetic	None	No	MTC
<input type="checkbox"/> Workbench 1	Approved	Resistivity		
<input type="checkbox"/> Unedited	Approved	Resistivity/Impedance		
<input type="checkbox"/> P=Remote R= (Local H) - (Test)	Magnetic	60Hz	No	MTC
<input type="checkbox"/> Unedited	Approved	Resistivity/Impedance		
<input type="checkbox"/> Test	Approved	Resistivity		
<input type="checkbox"/> P=MB 3 R=Remote (H) - (Unedited)	Magnetic	60Hz	No	MTC

Site Info - Coherence

1. General Processing Metadata information
2. Robust (Fine Rejection) Parameters
3. Recording Metadata
 - Primary Station
 - Local Magnetics
 - Local Reference (H)
4. Channel Details
5. Coherence

Metadata Viewer: P=S1 MTU-5C R= (Local H) - EMpower

1 General Processing Metadata

Process Site ID: (8b13f3e9-1134-4990-ad8a-f96e0631aa12)
 Process Site Name: P=S1 MTU-5C R= (Local H)
 Survey Name: Don Campbell
 Company Name:
 Processing Version: v1.35.4.3
 Processing Date: Fri Sep 13 18:59:02 2019 GMT
 Process Site Status: **Unapproved**
 Processing Type: Orthogonal
 Tipper Source: From Local Magnetics
 Reference Type: Magnetic
 Power Grid: None
 Has Remote: No
 Start Time: Fri Dec 1 00:11:38 2017 GMT
 Stop Time: Fri Dec 1 19:33:43 2017 GMT
 Duration: 19 h 22 m 5 s
 Frequency Range Displayed: 0.00001 Hz to 10000 Hz

2 Robust (Fine Rejection) Parameters

Robust Enabled: No
 Robust Quality: Not available
 Robust Rejection Ratio: Not available
 Robust Algorithm: Not available

Notes

3

Primary Station Local Magnetics Local Reference (H)

Recording Metadata

Recording ID: 10125_2017-12-01-001137
 Site Name: S1 MTU-5C
 Survey Name: Don Campbell
 Operator(s): CF GB MU
 Start Time: Fri Dec 1 00:11:38 2017 GMT
 Stop Time: Fri Dec 1 19:33:43 2017 GMT
 Duration: 19 h 22 m 5 s
 Latitude: 38.8374 °
 Longitude: -118.295 °
 Altitude: 1261 m
 Azimuth: 40 °
 Declination: 13 °
 External Electric Filter: None

Receiver Metadata

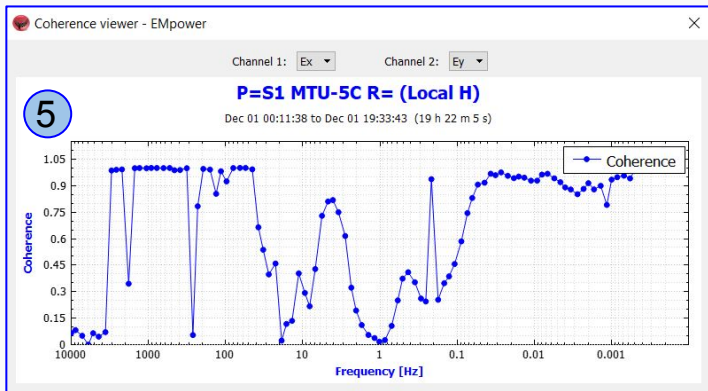
Receiver Type: MTU-5C
 Receiver ID: 10125
 Receiver Firmware: v1.22.0.1
 Receiver Calibration: [View](#)

Notes

4 Channel Details

Tag	Polarity Inverted	Gain	LPF	DC	Saturated Frames	Dropped Frames	Sensor Range	Sensor Type	Sensor Serial	View Calibration
Hx	H1	No	x4	10000 Hz	0 v	0	0.00001 Hz to 10500 Hz	MTC-150	53917	View
Hy	H2	No	x4	10000 Hz	0 v	0	0.00001 Hz to 10500 Hz	MTC-150	53918	View
Hz	H3	No	x4	10000 Hz	0 v	0	0.00001 Hz to 10500 Hz	MTC-150	53191	Not Available


[Close](#)



Editing Cross Powers

Edit Cross Powers, is a tool to create multiple edition masks without changing the original (Unedited) data. Masks can be used to clean noisy sites

1. To create a new **Workbench**

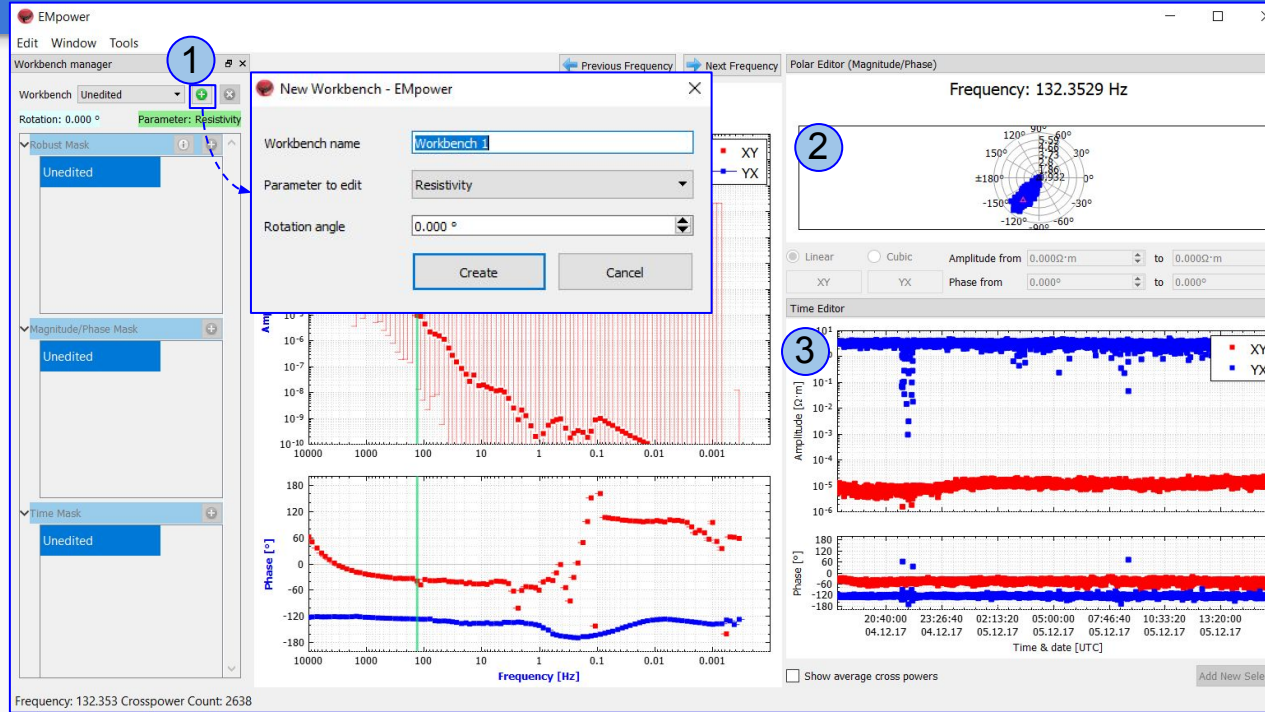
- Click the icon 
- Type the **Workbench name**
- Complete the information as needed
- Click the **Create** button

2. **Polar Editor**

- Create a **Polar Editor Mask**(see page 16)

3. **Time Editor**

- **Create a Time Editor Mask**(see page 17)

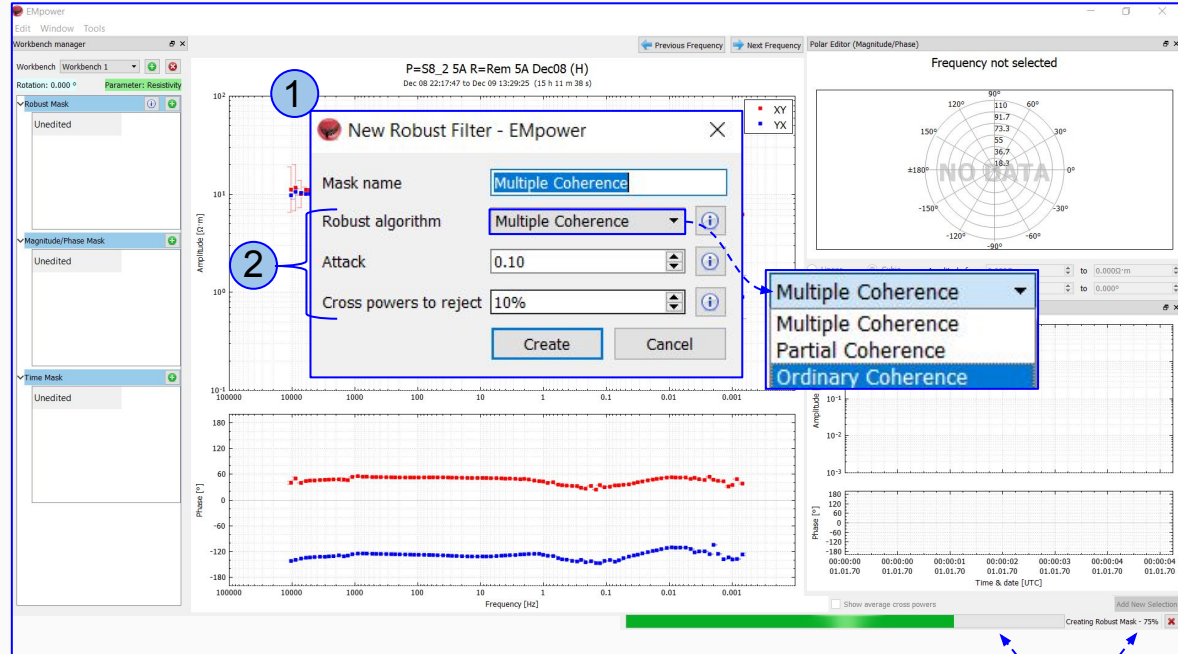


**For more details see the [Crosspower Editor manual](#)*

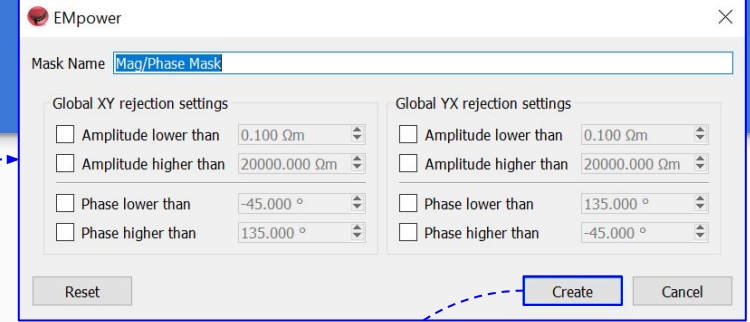
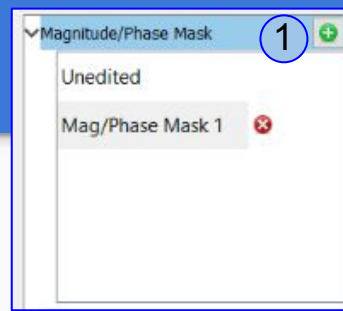
Robust Mask

The Robust Mask algorithm fixes the most common problems

1. Create a **Robust Mask**
 - Type the **Mask Name**
2. Use the different options to obtain the desired information
 - Select the **Robust algorithm**
 - Define the **Attack**
 - Select the percent of **Cross powers to reject**
3. Wait until the process is completed



**For more details see the [Crosspower Editor manual](#)*



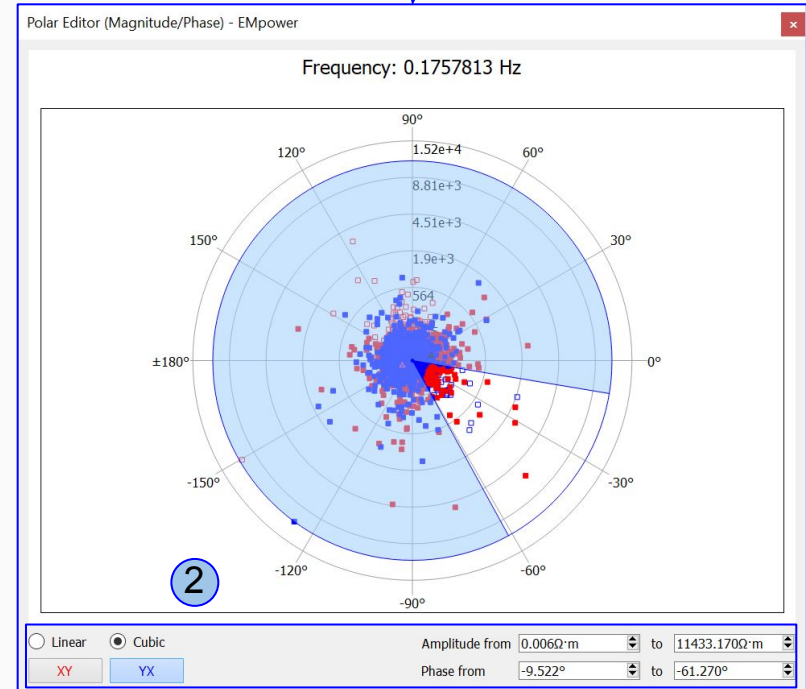
1. Create a New Magnitude/ Phase Editor Polar Masks

- Type the **Mask Name**
- Edit the **Global XY rejection settings** as needed
- Click the **Create** button

2. Use the different tools to obtain the desired information

- Linear / Cubic
- XY / YX
- Amplitude range
- Phase range

**For more details see the [Crosspower Editor manual](#)*



Time Editor

1. Create a New **Time Editor Mask**

1.1. The Mask Name can be edited by right-clicking on it

2. To add a new rejection area

2.1. Click the **Add New Selection** button

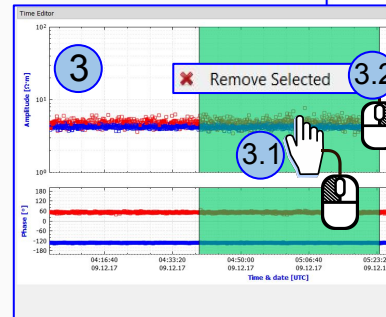
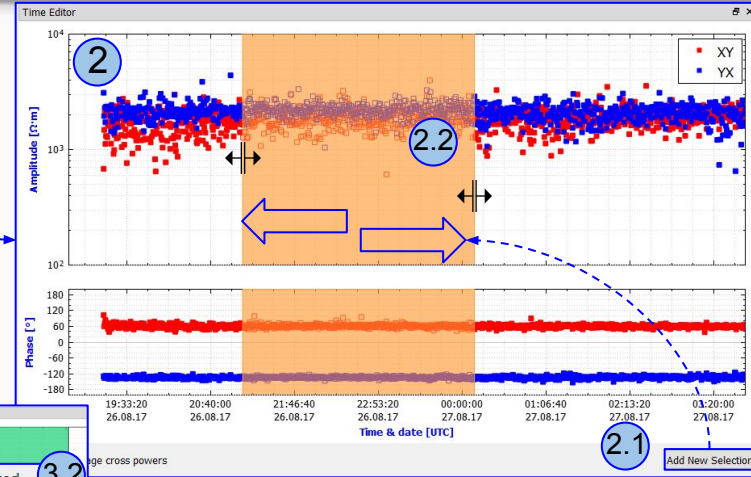
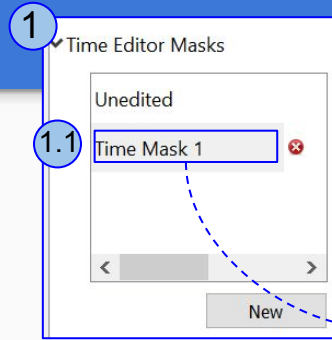
2.2. Left-click and hold, and start dragging to the left or right to select the area of crosspower rejection

3. To remove an existing rejection area:

3.1. Left-click on the area to be deleted

3.2. Then right-click the option **Remove Selected** that appears on the screen

** The crosspowers rejected in the polar editor will be shown in the time editor and vice versa.*

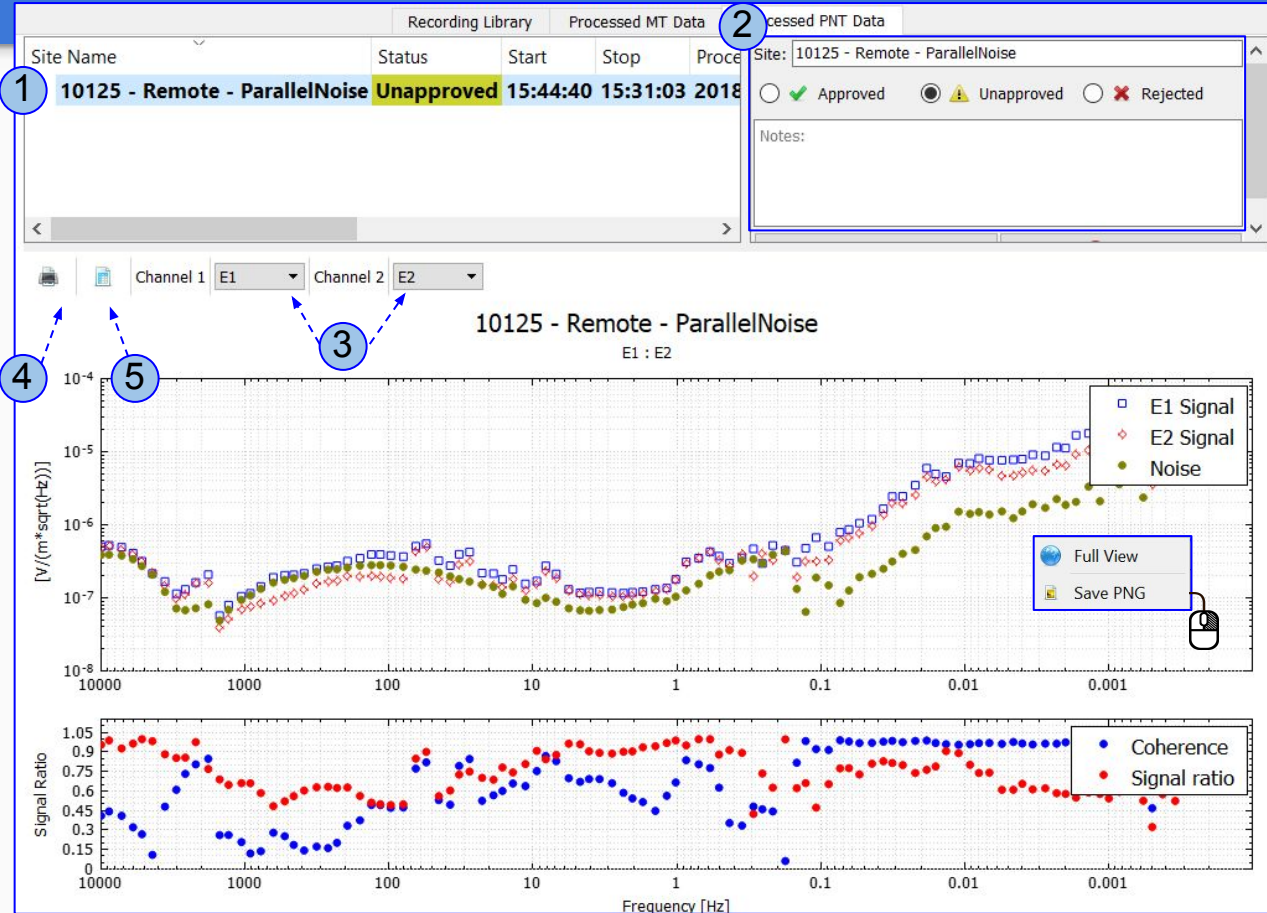


**For more details see the [Crosspower Editor manual](#)*

Processed PNT Data

This tab shows processed Parallel Noise data

1. Area to Select the Site of interest and view its metadata
2. Area to edit information of the selected Processed **Site**
 - Site Name
 - Mark the site as Approved, Unapproved or Rejected
 - Relevant Notes for the processing
3. Selectors to choose the **Channels** to be analysed and displayed
4. **Print** tool
5. CSV (excel) **Export** tool



Multi-Site PNT

1. Use the **Multi-Site PNT (Ctrl+T)** tool to process Parallel Noise data using specific channels from different sites
2. Select the recording(s)
 - 2.1. Select the first Recording and define the channels
 - 2.2. Select for another recording(s) the channels that will be used (no more than 7)
3. **Apply calibration to magnetic channels**
 - 3.1. When the selected sensor does not have associated calibration available in the project **EMpower** will apply a generic calibration
 - 3.2. Click **Next**
4. Define the Name and Duration, the time available depends on the overlapped time between all the recordings selected
5. To begin processing click the **Process** button

The screenshot shows the 'Multi Site PNT Setup - EMpower' application. At the top, a menu bar includes 'File', 'Tools', 'View', 'Window', and 'Help'. The 'Tools' menu is open, showing 'Calibration Viewer' (Ctrl+M), 'EDI Merger' (Ctrl+G), and 'Multi-Site PNT' (Ctrl+T), with the latter highlighted by a blue circle labeled '1'. Below the menu, a grid of recordings is displayed with columns for dates: 'Nov 07 2018', 'Nov 14 2018', 'Nov 21 2018', 'Nov 28 2018', and 'Dec 05 2018'. A recording '10181 - E59-066U - 10181_2018-11-11-074327' is selected, and a dialog box (callout 2.1) shows 'Selected Channels' with checkboxes for 'E1 - [100 m]', 'E2 - [100 m]', 'H1 - (MTC-150 - 54269)', 'H2 - (MTC-150 - 54305)', and 'H3 - (MTC-150 - 54308)'. Another recording '10175 - E59-067U - 10175_2018-11-11-081029' is selected, and a second dialog box (callout 2.2) shows 'Selected Channels' with checkboxes for 'E1 - [100 m]', 'E2 - [100 m]', 'H1 - (MTC-150 - 54216)', 'H2 - (MTC-150 - 54215)', and 'H3 - (MTC-150 - 54214)'. A 'Next' button is visible at the bottom right of the main window. A checkbox labeled 'Apply calibration to magnetic channels' (callout 3) is checked. The 'Name' field is set to 'Multi Site PNT(test2)'. The 'Processing Timeframe' section shows 'Time zone' set to 'Site time zone: America/Los_Angeles (UTC-08:00)', 'Start: 2017-11-30 16:11:38', 'End: 2017-12-01 11:33:43', 'Sunrise: 06:51', 'Sunset: 16:32', and 'Duration: 19 h 22 m 5 s'. A 'Process' button (callout 5) is at the bottom right, and a 'Previous' button is at the bottom left.