

# Automap Control Surface plug-in for Reaper

## User's Guide

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# 1. Introduction

This plug-in is aimed at Novation Automap users who wish to use their controller as a Control Surface within Reaper. It has been successfully tested on 32-bit and 64-bit versions of Windows (XP/Vista/7) with the following devices:

- Novation Remote SL (ZeRO) (first series & MKII)
- Novation Nocturn
- Apple iPhone

The latest stable versions are available for download at these locations:

[http://www.p-c-m.org/temp/reaper\\_csurf\\_automap.dll](http://www.p-c-m.org/temp/reaper_csurf_automap.dll)

[http://www.p-c-m.org/temp/reaper\\_csurf\\_automap\\_x64.dll](http://www.p-c-m.org/temp/reaper_csurf_automap_x64.dll)

You can keep up-to-date with the latest stable and beta versions of the plug-in through the Reaper forum hosted by Cockos:

<http://forum.cockos.com/showthread.php?t=42928>

# 2. Web resources

A list of useful links to keep your system up to date:

<http://www.novationmusic.com/>

<http://www.cockos.com/reaper/>

<http://www.novationmusic.com/automap/>

<http://www.cockos.com/reaper/download.php>

<http://forum.cockos.com/showthread.php?t=42928>

Novation Home Page

REAPER Home Page

Automap Downloads Page

REAPER Downloads Page

Automap CSurf Forum Thread

# 3. System Requirements

Before installing the plug-in, make sure your system is up-to-date:

- Microsoft Windows XP/Vista/7
- Novation Automap 3.2+ (Standard or Pro)
- Cockos Reaper 3.14+
- SWS Extension Plugin for Reaper (optional)

Mac OS: although both Software Development Kits from Novation and Cockos are available for Mac OS X, I don't have one myself. Therefore I can't maintain a Mac version of the plug-in at this time. This project is Open Source and licensed under the GNU Lesser General Public License

(LGPL); hopefully somebody will take over Mac development in a near future.

## 4. Installation

To install the plug-in, please read the procedure explained below and follow the instructions very carefully:

1. Forget about the HUI installation procedure described by Novation in their manuals and make sure the **Use Automap HUI** option remains unchecked in the Automap Server
2. Make sure all MIDI input/output ports dedicated to Automap protocols are disabled within Reaper<sup>1</sup>
3. Close Reaper
4. Copy the plug-in file `reaper_csurf_automap*.dll` to `<Reaper path>\Plugin` (e.g. `C:\Program Files\REAPER`)
5. Launch Reaper
6. In **Options**→**Preferences**→**Control Surfaces**→**Add**, a new **Novation Automap** entry should be available now
7. Select **Novation Automap** and click **Ok**. The Automap Server should show up if it hasn't already
8. Make sure the "Automap" template is selected on your device
9. Select the appropriate mapping for your device (RemoteSL, Nocturn, iPhone, *etc.*), adjust the settings to your liking and click **Ok**. Don't worry too much about the above setting: you can change these anytime through **Options**→**Preferences**→**Control Surfaces**→**Edit**

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<sup>1</sup> On Remote SL series, these ports are named **RemoteSL Port 2** and **RemoteSL Port 3**. **RemoteSL Port 1** is dedicated to standard MIDI protocols and can/should remain enabled depending on how you intend to use the device. For a full understanding of Automap ports vs. MIDI ports, I suggest you read the Novation manuals very carefully.

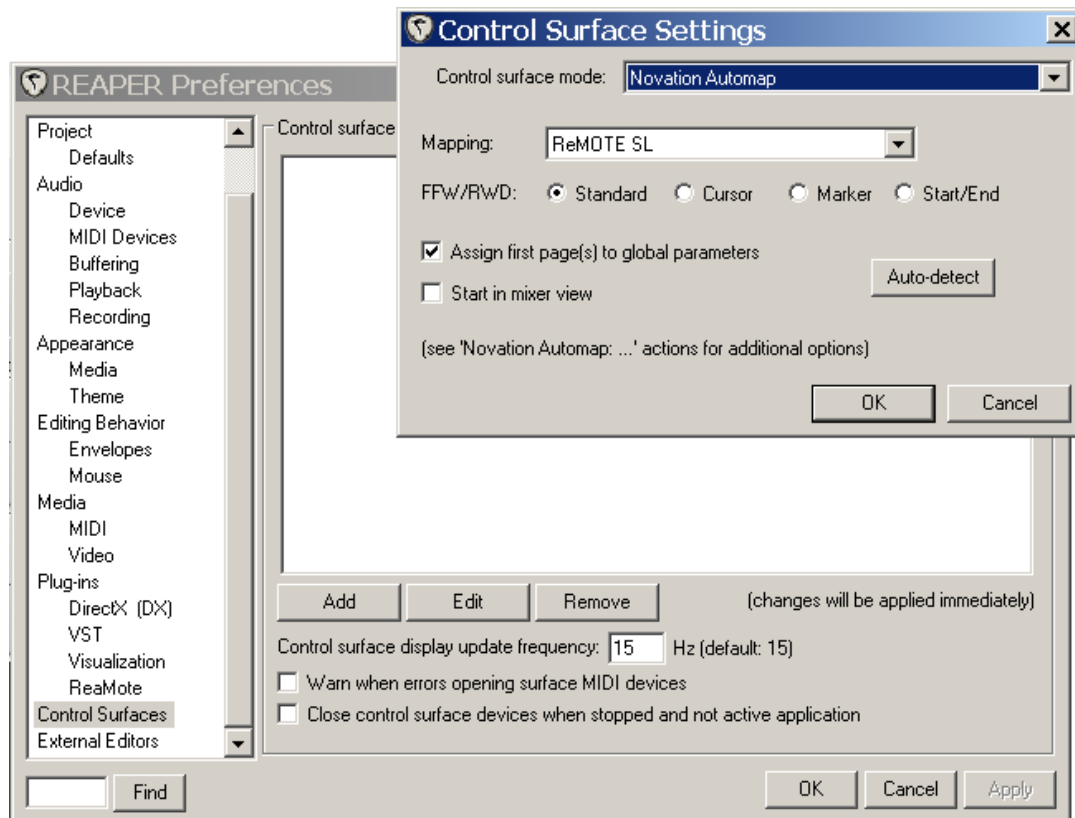


Figure 1: Add the 'Novation Automap' control surface in Reaper preferences

## 5. Configuration

As mentioned in the previous section, Surface settings can be changed anytime using the **Options**→**Preferences**→**Control Surfaces**→**Edit** command. Several options are available:

- **Mapping** sets up different controller mappings. Select a mapping that fits best your device
- **FFW/RWD** provides you with four different behaviors for the << and >> transport bar buttons
  - **Standard**: standard Forward/Rewind commands
  - **Cursor**: play/edit cursor Forward/Rewind commands (relative to grid)
  - **Marker**: marker-based Forward/Rewind
  - **Start/End**: Go to Start/Go to End commands
- **Assign first page(s) to global parameters** removes all global/edit controllers from the mapping and leaves a single standard track/mixer control map when unchecked
- **Start in mixer view** sets the CSurf in MCP mode at startup
- **Auto-detect** is only useful on the Remote SL series for the **t:Name** controller. It will scan your MIDI input/output ports by sending Universal Device Inquiry (UDI) SysEx messages. If a Remote SL is found, the MIDI ports are registered and the **t:Name** controller will work properly

If the above options are not enough, you can also use the **Novation Automap: ...** Reaper action set to fine-tune your CSurf, as explained in the next section.

## 6. Operation and Usage

### 6.1 Reaper Actions

Adding the Automap Control Surface to your Reaper setup brings up a new set of actions:

- **Novation Automap: toggle track/mixer view** sets the surface mixer in either TCP mode (all tracks available) or MCP mode (only tracks shown in the MCP)
- **Novation Automap: change ffw/rwd mode** toggles between **FFW/RWD** modes
- **Novation Automap: increase zoom factor** multiplies **H/VZoom** precision by 2
- **Novation Automap: decrease zoom factor** divides **H/VZoom** precision by 2
- **Novation Automap: increase ffw/rwd range factor** multiplies **FFW/RWD** precision by 2 (**Cursor** mode only)
- **Novation Automap: decrease ffw/rwd range factor** divides **FFW/RWD** precision by 2 (**Cursor** mode only)
- **Novation Automap: increase Speed Dial factor** multiplies the **Speed Dial** precision by 2
- **Novation Automap: decrease Speed Dial factor** divides the **Speed Dial** precision by 2
- **Novation Automap: set Fn\* MIDI channel** sets the default MIDI channel for assignable controls
- **Novation Automap: set alias for Fn<index>** sets an alias for said assignable button
- **Novation Automap: set alias for Fnpot<index>** sets an alias for said assignable pot
- **Novation Automap: set alias for FnEnc<index>** sets an alias for said assignable encoder
- **Novation Automap: clear all Fn\* aliases** clears all assignable controller aliases

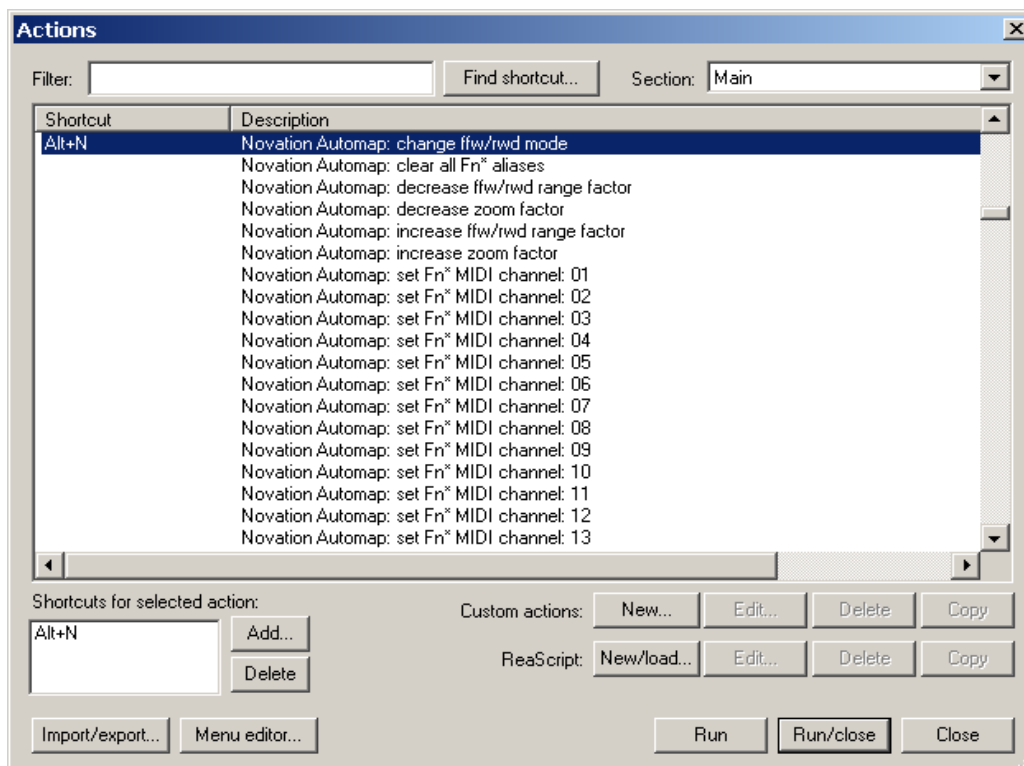


Figure 2: New Reaper actions

## 6.2 Controllers

Controller names are often (but not always) prefixed depending on the type of action they relate to:

- *No prefix*: Global action
- **t**: Track action
- **i**: Item action
- **tk**: Take action
- **e**: Envelope action
- **M**: Midi item action
- **m**: Midi editor action
- **Fn** Assignable controller

### 6.2.1 Global controllers

- **T/MCP** toggle track and mixer view: TCP mode = all tracks available / MCP mode = only tracks shown in the MCP
- **Play** play/pause
- **Stop** stop
- **Record** record
- **<<, >>** rewind/forward
- **|<<, >>|** go to start/end
- **Loop** loop/repeat
- **Ffw/Rwd** (encoder) rewind/forward
- **Scrub** perform Scrub/Jog wheel action
- **Cursor** (encoder) move play cursor left/right
- **HZoom** (encoder) perform horizontal zoom
- **VZoom** (encoder) perform horizontal zoom
- **HScroll** (encoder) perform horizontal scroll
- **Vscroll** (encoder) perform horizontal scroll
- **SetLpStrt**: set loop start
- **SetLpEnd**: set loop end
- **<<-Mkr, Mkr->>** go to previous/next marker
- **Markers** (encoder) go to previous/Next marker
- **Add Mrkr** add a new marker
- **Del Mrkr** delete current marker
- **Add Rgn** add a new region
- **ClrRecArm** clear all Rec Armed tracks
- **Grid** (encoder) adjust grid size
- **Grid** toggle grid lines on/off

- **Group** toggle grouping override on/off
- **Metronome** toggle metronome on/off
- **Snap** toggle snap on/off
- **Mixer** show/hide mixer
- **Perf** show/hide performance
- **GrpMat** show/hide track grouping matrix
- **RtgMat** show/hide routing matrix
- **Navig** show/hide navigator window
- **Metro Vol** set metronome volume value
- **SoloFnt** set solo in front dimming value
- **Undos** show/hide undo history
- **Actions** show action list

### 6.2.2 Global controllers (SWS extension-based)

You have install the SWS extension plug-in for Reaper in order to use these controllers.

- **Tracks** show/hide track list
- **Markers** show/hide marker list
- **SnpShots** show/hide snapshots list
- **NewSnap** new snapshot
- **SavSnap** save over current snapshot
- **ZoomSel** toggle zoom to selected items

### 6.2.3 Track controllers

- **<Track name> Vol** controls the volume value of said track
- **<Track name> Pan** controls the pan of value said track
- **<Track name> Mute** controls the mute status of said track
- **<Track name> Phase** controls the phase status of said track
- **<Track name> Solo** controls the solo status of said track
- **<Track name> Arm** controls the RecArm status of said track
- **<Track name> Select** change current track selection
- **<Track name>** (encoder) change current track selection
- **T<Track index> Vol** controls the volume value of current track selection
- **T<Track index> Pan** controls the pan value of current track selection
- **T<Track index> Mute** controls the mute status of current track selection
- **T<Track index> Phase** controls the phase status of current track selection
- **T<Track index> Solo** controls the solo status of current track selection
- **T<Track index> Arm** controls the RecArm status of current track selection

- **T<Track index> FX** controls the FX Bypass status of current track selection
- **t:Name** show name of current track selection (Remote SL only / **Auto-detect** validation required)
- **t:Env** show envelope settings for current track selection
- **t:FX** show FX settings for current track selection
- **t:IO** show I/O settings for current track selection
- **t:Groups** show parameter grouping settings for current track selection
- **FX** (encoder) select FX to edit for current track selection
- **FX Param** (encoder) select FX or M/TCP FX parameter to edit for current track or track/FX selection (acts as an offset when multiple slots are available for FX parameter control)
- **Send** (encoder) select Send destination track to edit for current track selection (acts as an offset when multiple slots are available for Track Send control)
- **HSend** (encoder) select Hardware Send destination device to edit for current track selection (acts as an offset when multiple slots are available for Hardware Send control)
- **Control** (encoder) select the kind of track parameter you want to control (FX, T/MCP FX, Track Sends, etc.)
- **<FX parameter name>, FX Param <index>** modify value of said FX or T/MCP FX parameter
- **Send<index> Vol** set volume value of said Send destination track for current track selection
- **Send<index> Pan** set pan value of said Send destination track for current track selection
- **Send<index> Mute** set mute status of said Send destination track for current track selection
- **Send<index> Mode** set send mode of said Send destination track for current track selection
- **HSend<index> Vol** set volume value of said Hardware Send destination device for current track selection
- **HSend<index> Pan** set pan value of said Hardware Send destination device for current track selection
- **HSend<index> Mute** set mute status of said Hardware Send destination device for current track selection
- **HSend<index> Mode** set send mode of said Hardware Send destination device for current track selection

#### 6.2.4 Item controllers

- **t:FrPos** free item positioning on/off
- **i:SelPrvTr** select and move to item in previous track
- **i:SelNxtTr** select and move to item in next track
- **i:<<-** select and move to previous item
- **i:->>** select and move to next item
- **Item** (encoder) select previous/next item
- **i:v** move item down
- **i:^** move item up
- **i:<-** move item left
- **i:->** move item right



- **i:Group** group items
- **i:SelGrp** select all items in group
- **i:UnGrp** remove item from group
- **i:SelTim** select all items in time selection
- **i:SelTrk** select all items in track selection
- **i:Pitch-** adjust pitch -1 cent
- **i:Pitch+** adjust pitch +1 cent
- **i:Pitch-1** adjust pitch -1 semi-tone
- **i:Pitch+1** adjust pitch +1 semi-tone
- **i:Pitch-12** adjust pitch -1 octave
- **i:Pitch+12** adjust pitch +1 octave
- **i:PitCnt** (encoder) adjust pitch +/- 1 cent
- **i:Pitch** (encoder) adjust pitch +/- 1 semi-tone
- **i:PitOct** (encoder) adjust pitch +/- 1 octave
- **i:Mute** mute item
- **i:LpSrc** loop source media
- **i:LpSec** loop section of item source
- **i:Prop** show item properties
- **i:Glue** glue selected items

### 6.2.5 Take controllers

- **tk:<<**- select previous take
- **tk:->>** select next take
- **Take** (encoder) select previous/next take
- **tk:Crop** crop active take
- **tk:Del** delete active take
- **tk:Rev** reverse active take

### 6.2.6 Envelope controllers

- **e:Mode** toggles automation modes for current track selection
- **e:Show** show all active envelopes for current track selection
- **e:Bypass** bypass current envelope selection
- **e:Arm** rec arm current envelope selection
- **e:Insert** insert to current envelope selection at cursor position
- **e:DShape** change default shape of current envelope selection
- **e:Shape** change shape of current selection
- **e:Volume** show volume envelope for current track selection

- **e:Pan** show pan envelope for current track selection
- **e:p-Vol** show pre-FX volume envelope for current track selection
- **e:p-Pan** show pre-FX pan envelope for current track selection
- **e:Clear** clear current envelope selection
- **e>Delete** delete selected envelope points
- **e:Hide** hide current envelope selection
- **e:Lane** toggle display all visible envelopes in lane for selected tracks
- **e:Fader** set active fader

### 6.2.7 Midi item controllers

- **M:Ins** insert MIDI item
- **M:Open** open items with built-in MIDI editor
- **M:Next** cycle to next secondary MIDI item (use in MIDI editor)

### 6.2.8 Midi editor controllers

- **m:HZoom** (encoder) perform horizontal zoom
- **m:VZoom** (encoder) perform horizontal zoom
- **m:HScrol** (encoder) perform horizontal scroll
- **m:Vscrol** (encoder) perform horizontal scroll
- **m:FitCnt** size to fit content
- **m:FitLp** size to fit loop
- **m:View** toggle view mode between Piano Roll, Note Names and Event List
- **m:Snap** toggle snap on/off
- **m:Grid** toggle grid on/off
- **m:Grid** (encoder) adjust grid size
- **m:^** move edit cursor up
- **m:v** move edit cursor down
- **m:<<** move edit cursor left
- **m:>>** move edit cursor right
- **m:VMove** (encoder) move edit cursor vertically
- **m:HMove** (encoder) move edit cursor horizontally
- **m:Insert** insert note at current cursor position
- **m:<<-** select previous note
- **m:->>** select next note
- **m:<<-Val** select previous note with same note value
- **m:Val->>** select next note with same note value
- **m:<-** move note left

- **m:->** move note right
- **m:Prop** show note properties
- **m:Length** (encoder) adjust note length
- **m:Vel:+1** increase note velocity +1
- **m:Vel:-1** decrease note velocity -1
- **m:Vel:+10** increase note velocity +10
- **m:Vel:-10** decrease note velocity -10
- **m:VelFn** (encoder) adjust note velocity (fine: +/- 1)
- **m:VelCrs** (encoder) adjust note velocity (coarse: +/- 10)
- **m:+1** transpose current note +1 semi-tone
- **m:-1** transpose current note -1 semi-tone
- **m:+12** transpose current note +1 octave
- **m:-12** transpose current note -1 octave
- **m:Human** humanize selected note(s)
- **m>Delete** delete current note selection
- **m:CC Lane** select CC Lane

### 6.2.9 Assignable controllers

3 types of assignable controllers are available: **Fn<index>**, **FnPot<index>**, and **FnEnc<index>**. These controllers will send standard MIDI Control Change messages to Reaper. You can freely assign them to Reaper actions using the **Show action list** → **Add Shortcut for selected action command** → **Add** command and rename them using the **Novation Automap: set alias for Fn\*<index>** actions. Keep in mind that the **FnEnc<index>** encoders are sending endless control values in **Relative mode 2** (0x3F/0x41).

### 6.2.10 Speed dial controller

The **Speed Dial** controller acts as a mouse wheel clone. A dedicated Speed Dial function was introduced in Novation Nocturn/RemoteSL MKII series. This one is available for all Automap devices and will do anything you can do with the mouse wheel in Reaper. Enjoy!

## 7. Known bugs

This is a list of known bugs. Some of them are related to the plug-in, some are related to either Reaper or to the Automap Server. In most cases Bug Reports and/or Feature Requests have been suggested to Cockos or Novation:

- Plug-in leaves empty Automap pages when reducing number of tracks during a session, This is a dirty trick to prevent Automap Server from crashing when an active page is supposed to be deleted by remapping. Bug has been reported to Novation
- Automap cannot allocate more than 2048 parameters per preset. With current mappings, 2048 parameters means: 202 (iPhone), 328 (Remote SL), or 504 (Nocturn) tracks max
- Surface won't refresh on several Reaper events such as Track FX Bypass, Track Send

Changes (vol, pan, mute, mode, *etc.*)

- Reaper won't refresh on several control changes such as Track Send Mode
- **t:FX**, **t:I/O**, **t:Env**, **t:Grp** buttons will open their associated windows but a second push won't close them
- The **t:Name** controller has to be pressed twice for track names to appear: this controller is a very special one that competes with the Automap Server (use of Sysex messages). The buggy behavior results from that.

## 8. Troubleshooting

This section aims to help you resolve problems that are sometimes encountered by new users.

Installation	
Problem	Diagnosis and Possible Solution
The .dll file is not recognized by Reaper as a proper plug-in.	Are you sure you are using a good Reaper x32/x64 + Automap CSurf x32/x64 combination?
In <b>Options</b> → <b>Preferences</b> → <b>Control Surfaces</b> → <b>Add</b> , I don't see any <b>Novation Automap</b> entry.	Are you sure you put the .dll at the right location? Remember this is <u>not</u> a VST plugin!
I've checked <b>Use Automap HUI</b> in the Automap Server and added the <b>Automap HUI</b> surface in Reaper but I can't find any of the actions or controllers listed in section 5.	Please read section 3 <u>very carefully</u> .
Operation and Usage	
Problem	Diagnosis and Possible Solution
My installation is correct, but I can't find some of the controllers listed in section 6.	Some controllers are only available on certain mappings. As a matter of fact, a lot of them are only available on Remote SL mappings because this is the only Automap device I have.
I changed the Control Map in Automap Server but when I hit some of the controllers it always reload the default Control Map	Because of the dynamic nature of the plugin (track names, number of tracks, sub-menus, etc.), you cannot use the Automap Server remapping options anymore. I'm sorry about that but this is just the way it is: I can't combine both.

## 9. Open Source Project

This plug-in is licensed under the terms of the GNU Lesser General Public License (LGPL). For complete license information, please see <http://www.gnu.org/copyleft/lesser.html>

The latest stable version of the source code is available here:

[http://www.p-c-m.org/temp/reaper\\_csurf\\_automap.src.zip](http://www.p-c-m.org/temp/reaper_csurf_automap.src.zip)

You will also need the Automap and Reaper Software Development Kits, which are available here:

<http://www.focusrite.com/developer/doku.php?id=automapsdk>

<http://www.reaper.fm/sdk/plugin/plugin.php>

At this time the plug-in source code is version controlled (SVN) but only locally. If more people care to join the project I may set up a public SVN server but this is not a priority, especially if Cockos intend to set up a public server for the complete Reaper SDK (do they?)