



**THE BEGI XEDE INSTALLATION
AND TUNING SUPPLEMENT**

**INSTALLATION AND OPERATIONS MANUAL
APPLICABLE TO ALL MIATAS**



**REVISED 8-29-07
REV 1.1**



Thank you for purchasing the XEDE Engine Management System. We regard your installation as a mutual project and will be pleased to offer help at any time. If clarification of these instructions is required, please call BEGi at 830-438-2890.

These instructions and the operational requirements for this system must be reviewed with the owner-driver prior to delivery of the vehicle to the end user. Please read the statement of warranty at the end of these instructions prior to starting the installation.

**THE INSTALLER SHOULD PASS THESE INSTRUCTIONS
ON TO THE OWNER-DRIVER.**

**THIS IS INTENDED TO BE A HELPFUL AND PRACTICAL
GUIDE ONLY. IT IS THE OPINION OF BEGI, AND BEGI ONLY.**

Contained in this manual is answers to frequently asked questions and short cuts we have pick up on in the last few years.

Topics Covered:

1. Connecting to the Xede
2. Loading a Map
3. Loading a Timing Pattern File
4. Viewing current timing pattern file
5. Short cut keys
6. Maps missing off the screen
7. If the title of the map is missing.
8. Highlighting Maps
9. Checking offset value
10. Viewing 3D maps
11. Adding offsets
12. What interpolate does
13. Adding load points & rpm points.
 - a. Window off screen.
14. What the live data display tells you.
15. Wideband map
16. Recovery Console
17. The Car Will Not Start
18. How to intentionally disable the car.



Connecting to the XEDE to load a new map

Attached to the Xede harness is a serial port. Plug a serial cable or a Serial/USB adapter in here. If you are going to use a Serial/ USB adapter cable, ***WE STRONGLY RECOMMEND*** that you go to **Radio Shack** and buy cable # 26-183 or # 260-0183. **If you do not have a good cable with the proper drivers installed, you will corrupt the map you are working on!**

Version 3.0

Download and install the correct version of XMAP to your computer. Visit <http://www.xede.com.au/software.php> to download version 3.0.3.8 Pre-release version. Place a shortcut on your desktop.

Version 3.2

This version will come on a CD with the Xede unit. Install the version 3.2.0.7 from the CD. Or it can be downloaded from <http://www.bellengineering.net>. Copy the version 3.2.0.16 zip file from the CD to your desktop. Double click on it and extract all files. Extract the folder and place it on your desktop. Open the folder and move the XMAP 3.2.0.16.exe file icon to the desktop. Double click the following icons: my computer >> C: drive >> program files >> Xede. Leave the Xede folder open and move it off to the side. On your desktop: click and hold on the XMAP 3.2.0.16.exe icon and drag it into the Xede folder. Right click on the icon just moved, and place a shortcut on your desktop. Delete the zip file and zip folder from the desktop.

Serial Cables

Plug in serial cable to Xede harness and computer. Open XMAP. Turn the ignition key to the “ON” position. The Xede status will display in the lower left hand corner of the XMAP window. Once the key is turned on the status should read connected. If not, turn key off and back on. If still not connected, reboot computer, double check that all cables are plugged in, turn key on and open XMAP. If this does not work, please call for assistance.

USB / Serial Cables

Plug it into the Xede and laptop. Open XMAP. If any other USB cables are plugged in you will get an error message said the COM port is in use. Click on okay and ignore for now.

You need to determine which COM port your USB is plugged into. To get to the device manager: Start >> control panel >> switch to classic view (on blue bar) >> system >> hardware tab >> device manager >> + sign next to “Ports”. The USB / Serial cable will be listed here with the recognized COM port at the end. (For now we will use the example COM5). Close the device manager and control panel. Go back to XMAP window. Click on Options >> Comm Port Setup. From the drop down menu click on the appropriate COM port. (For example, COM5.) Click on Okay.

Turn the ignition key to the “On” position. Look to the lower left hand corner of the XMAP window for the Xede status. It should read connected. If not, turn key off and back on. If still not connected, reboot computer, double check that all cables are plugged in, turn key on and open XMAP. If it is still not connected, you will need to manually reset your COM port. Turn key off.



Go back to the device manager from the directions above. Right click on the USB to Serial Comm. Port. Click on properties. Click on port settings tab >> advanced. In the advanced settings window at the bottom there is a drop down menu at COM port number. From the drop down menu choose COM1. Click OK here and at the serial cable properties window. Close device manager and control panel. Open XMAP. Click on Options >> Comm Port Setup. From the drop down menu click on COM1 port. Click on Okay. Turn key back on and check Xede status in lower left part of the window. It should now read connected. If not, please call for assistance.

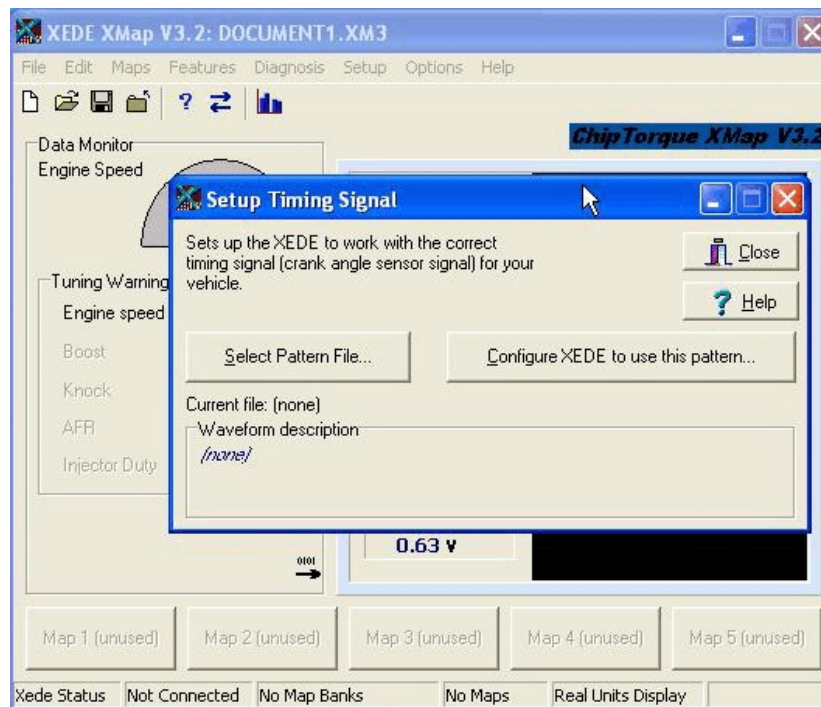
Loading Map

Once connected click on File >> open. Find and click on the new map you want to upload. Click on “CTRL” and “U” at the same time to upload the new map. If it takes longer than two minutes to upload the new map, you have a bad cable. Stop the transfer and go buy a RADIO SHACK cable! Once uploading is complete, Click on “CTRL” and “B” at the same time to burn the new map. When you get a ‘store okay’ message, click okay and close XMAP.

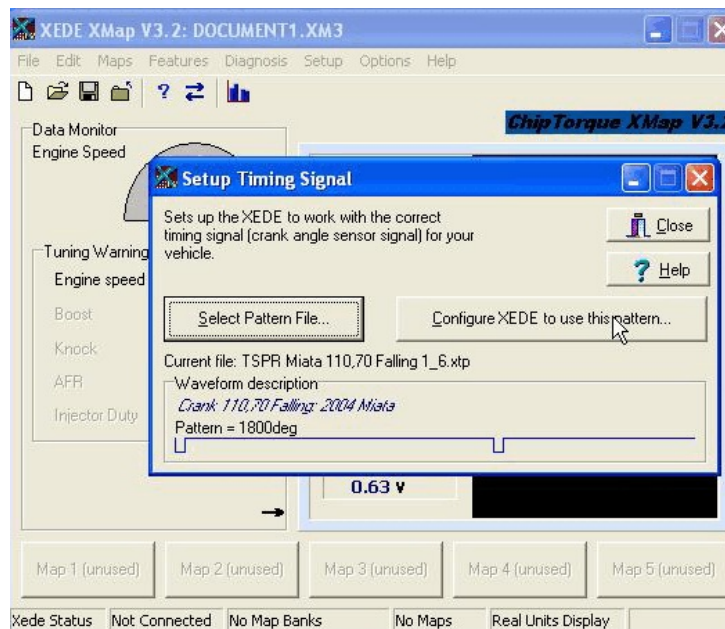
Connecting to the XEDE to load a Timing Pattern File

This is not the Timing Map. It does not retard or advance timing. It is a waveform pattern file that the Xede recognizes so that it can control the ignition timing.

From XMap screen click on Setup and Configure Timing Signal. This screen will appear.



Click on Select pattern file. Open the pattern file for your car. If you are unsure, please verify with the office prior to using. Once the pattern file has been selected, click on ok. XMap will return to this screen.



Notice the name of the file now displays in the lower portion of the window. Also there is a waveform pattern displayed also. Click on 'Configure Xede to use this Pattern'. Another window will pop up asking if you want to continue. Select 'Yes'. It will tell you if the configuration was successful or if the data was not stored.

VIEWING THE CURRENT TIMING PATTERN FILE

If you want to verify that the pattern file being used is correct, there a few methods of doing so.

First Method: Connect the Xede to the computer via cable and turn the ignition key to the 'On' position. When you open XMap look at the first screen that pops up. In **RED** or **YELLOW** letters it will display the timing pattern file being used. See the photo below for the approximate location.





Second Method: From the main Xmap screen, click on Diagnosis and Xede Information. The serial number, map name, and timing pattern file will be displayed.

SHORTCUT KEYS

While you do not have to use the shortcut keys, using this software will be much easier if you do.

Ctrl + U = Upload a Map

Ctrl + B = Burn Map to EEPROM

F8 = Download and Show all Maps loaded on the Xede unit.

F10 = Tile Maps. Use this if a map does not display on the screen.

Less and More Buttons

** the best shortcut you will use!!**



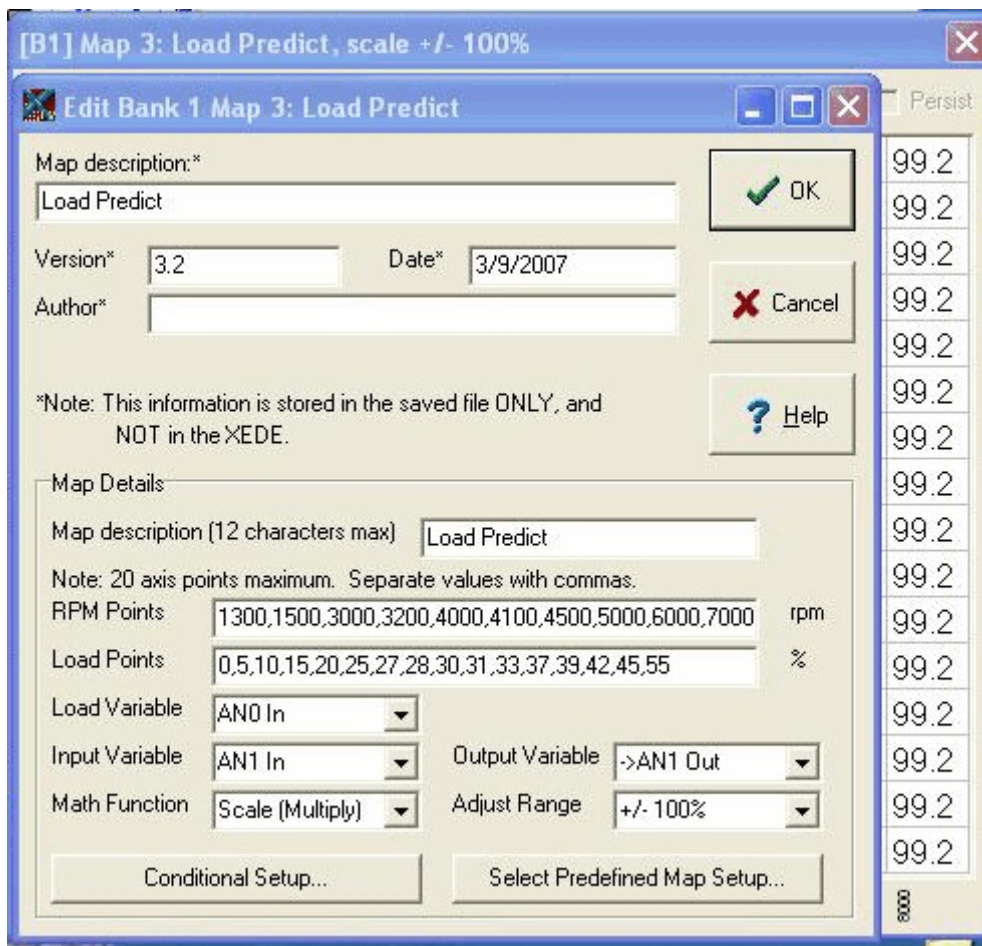


MAPS MISSING OFF THE SCREEN

If you are missing maps off the screen, press 'F10' to tile maps. This will arrange all of the maps for view within the desktop area.

IF THE TITLE OF THE MAP IS MISSING.

For use if the Menu Bar does not contain the name of the map and only the map number. Click on the map in question. Right click on this map. Click on 'Edit the Map'. In the first and fifth tabs, type in the Map description (MAF, Timing, O2 Offset, Load Predict, Boost) in two places. Click on 'Ok'.



HIGHLIGHTING MAPS

To highlight the map, click and hold the mouse button over one corner of the map. Drag it to the opposite corner. The active cells are yellow. As the active cells move throughout the table, the text in the cells will remain yellow. This is called 'tracing'. What to know exactly where the lean spot was? Highlight the map. Make a run. Make note of the rpm at the onset of the lean condition. If the lean spot is at about 4000 rpm, see which cells remained yellow in



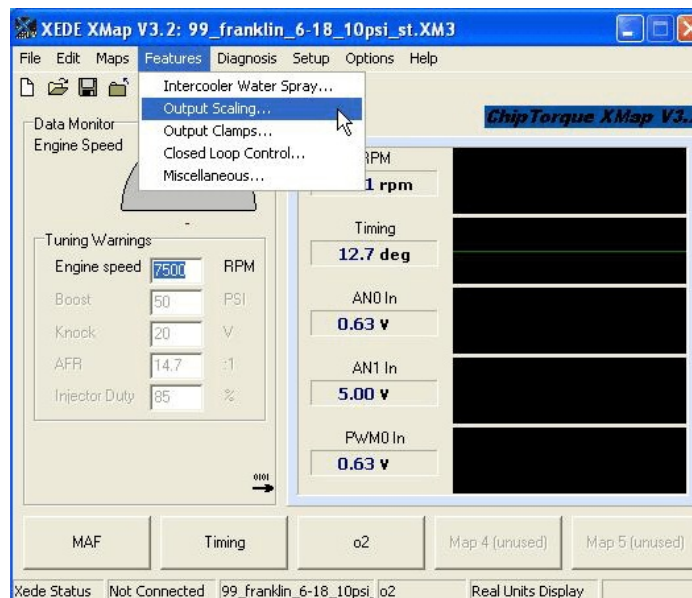
the 4000 rpm range on the table. Alter those cells.

Tracing is your friend! Use it frequently and on all maps at the same time. Just make sure that the XMAP is the active program on the desktop.

CHECKING OUTPUT SCALING VALUE

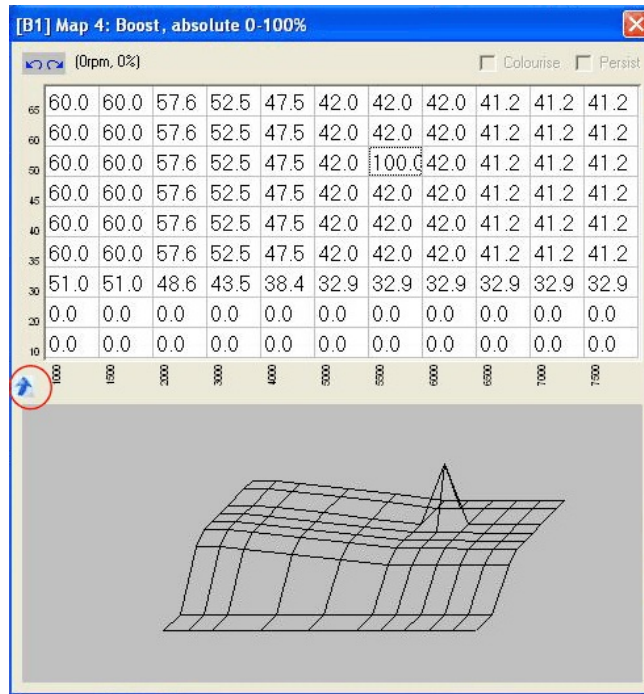
If you call for assistance with the Xede, we WILL ask you what the offset value is. We need to verify that it is correct prior to making any changes in the map.

Click on 'Features' then 'Output Scaling'. AN0 should be set to '0.891' and AN1, AN2 and Freq should display '1.0'.



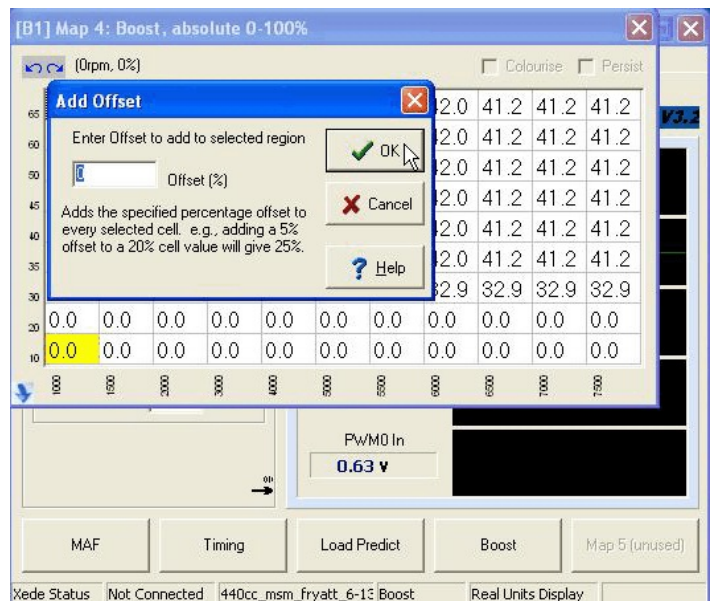
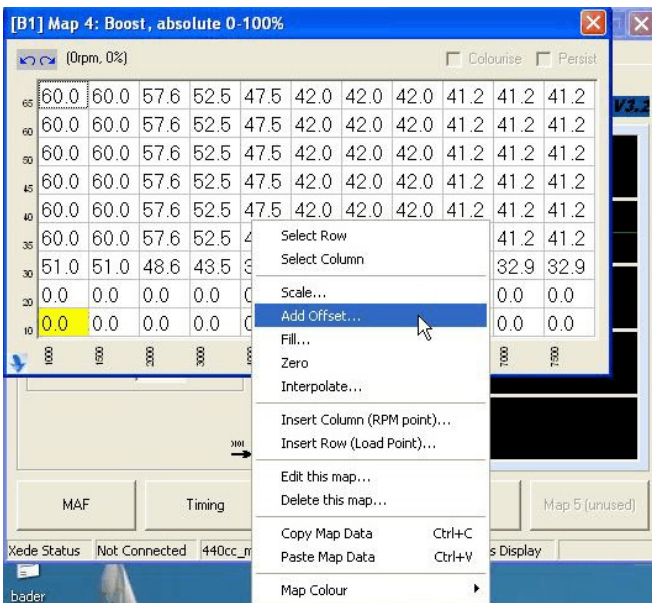
VIEWING 3D MAPS

To view the 3D graph of the Map, click on the Blue arrow in the bottom left corner of the map. See the red circle in the picture below. To return the map to normal, click on the same arrow. As you can see, the map below shows a spike in it. Find the spike (incorrect content in a cell) and fix as needed.



ADDING OFFSETS

If a cell, or block of highlighted cells, currently reads “0” and you want it to read ‘9’. There are two ways of changing the contents. Click on the cell and hit the number ‘9’ button. This will automatically change all highlighted cells to ‘9’. If you are changing more than one cell, I would recommend the second method. That is to right click on the map and click on add offset. Type in the amount of offset you want to ADD. If you want to subtract, remember you need to add in a negative number.

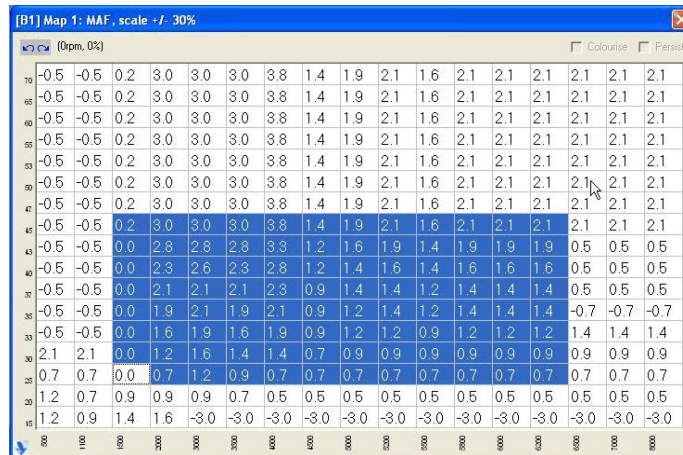
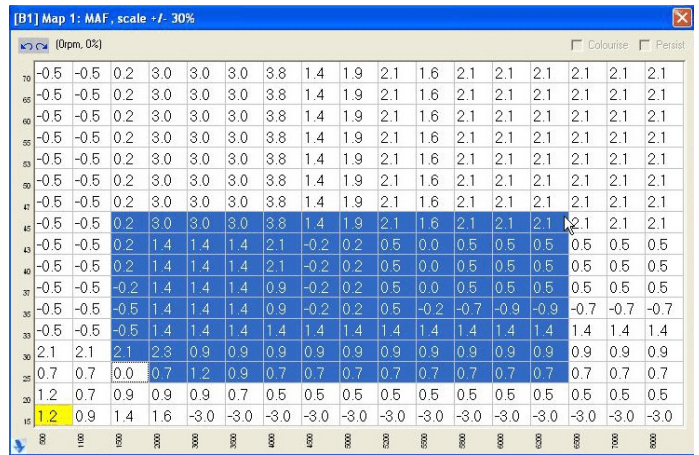
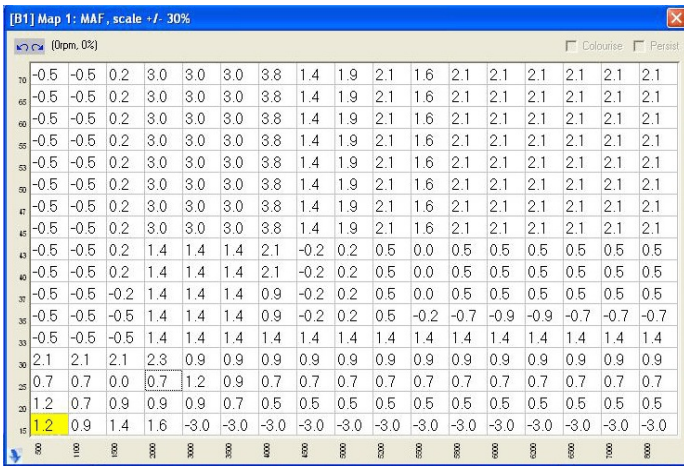




WHAT INTERPOLATE DOES

Interpolate will average the cells, on either axis, to be even gaps between the selected cells. The interpolation works independently in each direction. So if you interpolate on the y-axis it interpolates only in the y direction (bottom to top) and if you interpolate on the x-axis it interpolates only in the x direction (left to right).

Take a look at the map below. It has been interpolated on the 'y' axis. The first is normal, the second is highlighted area to be interpolated on the y axis. The third is the interpolation result. It will average between the lower left and upper right cell contents.

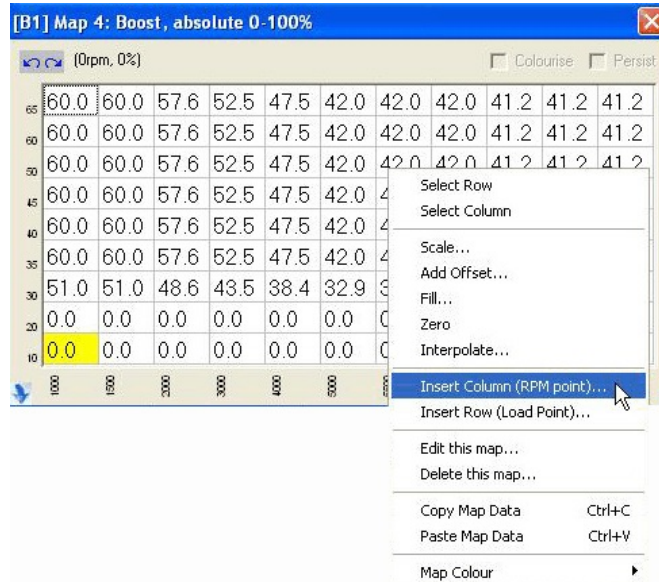


ADDING LOAD POINTS & RPM POINTS

There are two ways of adding rpm and load values/points into a map. The first is to right click on the map. Click on 'edit this map'. There is a line for RPM points and Load Points. You can change them here, add in or subtract values, then click on ok. See the picture on page 7.



The second method is to right click on the map, and click on 'Insert Column' or 'Insert Row'. If the small window does not show up on the screen, move the map window up to view the new point window.



WHAT THE LIVE DATA DISPLAY TELLS YOU

The Live Data Window will visually tell you the changes being made by the Xede.

For regular Miatas:

AN0 = MAF

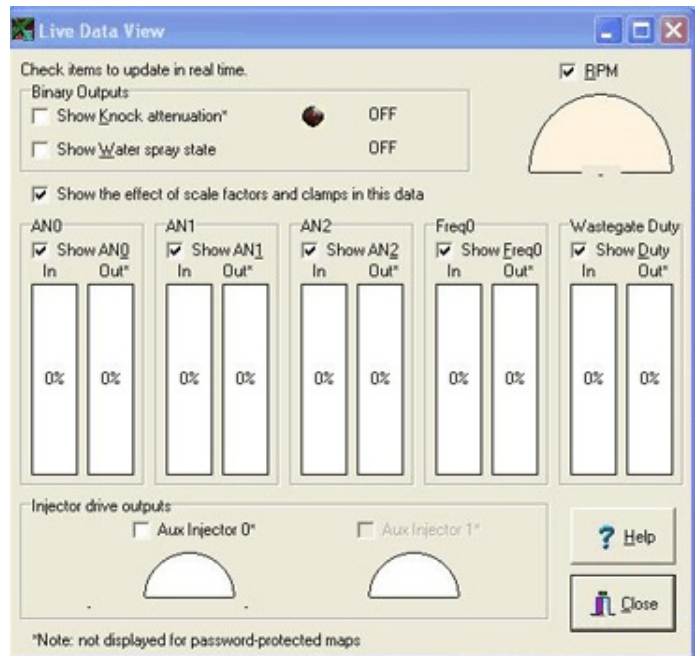
AN1 = O2 Sensor

For MazdaSpeed Miatas:

AN0 = MAF

AN1 = TPS

It will show the incoming voltage and the outgoing voltage. For example if the incoming signal is 10%. The map indicates a change of -7%. So the live data display of AN0 Out should read 3%.





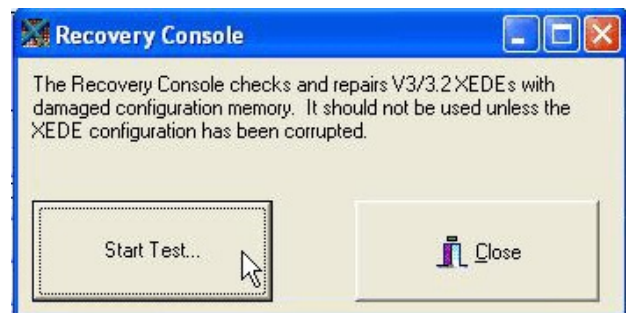
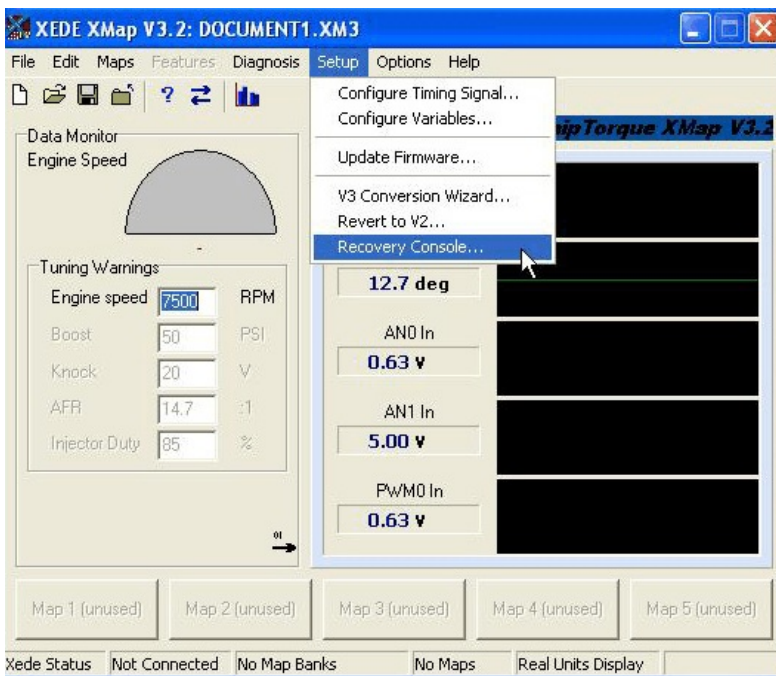
WIDEBAND MAP

If your wideband O2 sensor has an Analog Out wire, it can be wired into the Xede to make additional corrections. However, the car **MUST** be tuned very well prior to doing this. It does it thru a nested map feature and makes corrections based off of the voltage from the wideband O2 sensor.

Please call us for help with this feature.

RECOVERY CONSOLE

If you experience problems w/ loading, saving or making changes to a map, use the recovery console.



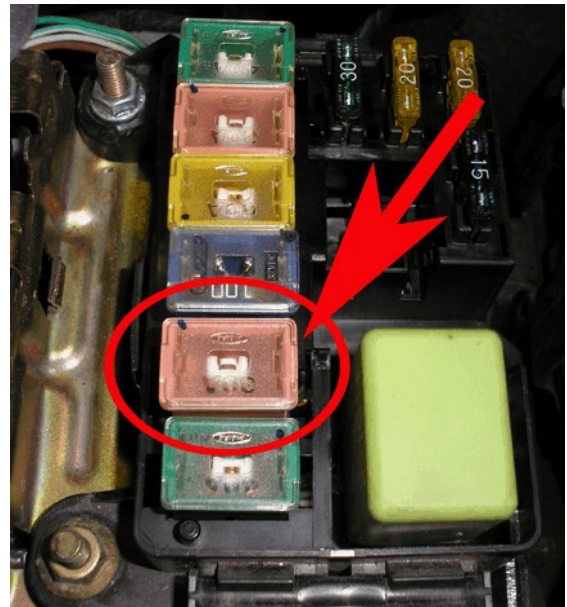
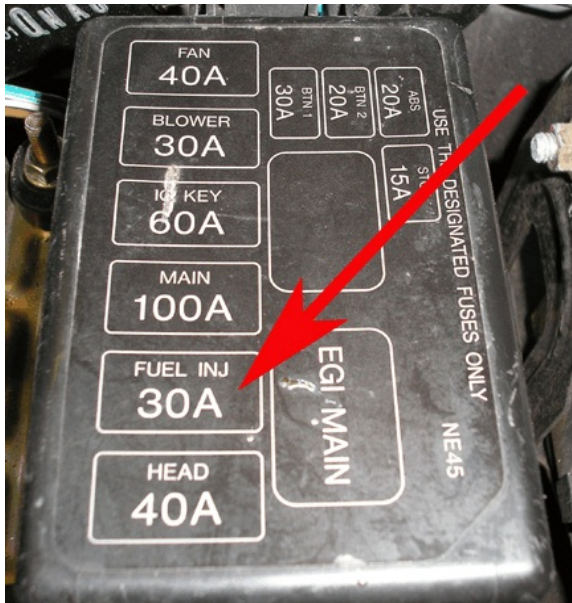
When it is done doing the “self test” it will tell you if any anomalies were found and fixed.

THE CAR WILL NOT START

The engine is cold, and will not turn over. Check the Fuel Injection fuse under the hood. Chances are it has blown and needs to be replaced. It is a 30 amp, pink fuse. It would not be a bad idea to have one of these in the glove box just in case.

If the fuse is intact, look at a mechanical reason the car will not work. Only 1% of the time will it be the Xede.

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HOW TO INTENTIONALLY DISABLE THE CAR

It is very easy to intentionally disable the car. This comes in handy if you are parking the car at the airport. Unplug the Xede unit from the wire harness. The car will crank but will never start.

If you come across some other short cuts or handy tips, please let us know!

TROUBLESHOOTING

- If the red light does not illuminate, recheck all connections at ECU.
- If the car stalls frequently, check the LED light on the Xede Unit and/or replace the O2 Sensors.
- If the car starts to act differently, remember that the stock ECU still reads and compensates for environmental and some driving conditions. If the problem persists for a few days, please call for assistance.
- Some check engine light codes are normal. If illuminated, have the codes read to see if it is a mechanical problem or the *XEDE*. Most problems with the car will not be Xede related.

GENERAL RULES OF OPERATION

- Do not remove the Xede unit unless absolutely necessary.
- If your car quits operating normally, please take note of the lights & patterns illuminated on the Xede unit.
- Also, if your car quits operating normally, it is usually do to a mechanical failure not an Xede failure. Getting the codes read off of the OBD II port can help to diagnose the problem. Certain MIL codes are normal with the Xede unit. If any other codes exist, please call for assistance or clarification.



WARRANTY INFORMATION

- All items made by BEGi are warranted for workmanship and function for one year from the date of receipt. All other items are subject to manufacturer's warranty.
- If problems arise from using a BEGi part in a manner other than intended, or a part is installed incorrectly, BEGi reserves the right to refuse warranty coverage for damages.
- BEGi will not warranty any kits, parts or items purchased thru an online auction that is not purchased from an authorized dealer. The customer must be able to provide proof of purchase for any warranty repairs.
- BEGi reserves the right to inspect any item before any warranty will be granted. BEGi will not reimburse for any labor charges on warranty items that occur without prior, written consent.
- BEGi extends no warranty nor accepts liability to any original, stock, or replacement components on the vehicle.
- BEGi does not pay any towing expenses.
- Warranty may transfer. BEGi must be notified within twenty days of sale to continue warranty coverage.
- Shipping / freight charges are the responsibility of the end user for all warranty consideration.

TERMS OF SALE

- All shortages from the parts list must be reported to BEGi within 20 days of receipt.
- BEGi does not pay any towing expenses.
- All returned items are subject to a 25% re-stocking fee.
- BEGi accepts no liability for death or injury to any person or persons under any circumstance.
- The re-seller assumes all responsibility for the end user's knowledge of this warranty.
- BEGi does not guarantee that turbo kits will pass smog tests. For California residents, some BEGi kits have been provided a C.A.R.B. Executive Order Number. However, BEGi does not guarantee that the end user's car will pass.
- Acceptance, re-sell, or use of any BEGi part constitutes full agreement by the re-seller/end user, that the terms of sale and warranty are fully understood and accepted in full.