

CONTEXTUAL CONDITIONING

MED-STATE NOTATION™ PROCEDURE

SOF-700RA-16

USER'S MANUAL

DOC-207

Rev. 1.2

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notes

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CHAPTER 1 | INTRODUCTION

The latest version of MED-PC® IV and off-the-shelf programs such as the SOF-700RA-16 Contextual Conditioning Application make it easier than ever to run experiment protocols without developing a separate MedState Notation program. This manual explains the process of running the standard protocol and provides examples of editing and modifying the code. The manual also includes detailed explanations of all the elements in the raw data.

Refer to the **MED-PC IV User's Manual** for the installation of the MED-Associates interface drivers, the MED-PC IV Software, and the Delphi® Compiler, and for instructions on "Hardware Configuration." Hardware Configuration is a software utility that comes with MED-PC and is used to assign the inputs and outputs in the interface cabinet. Data file structure, file saving format, and other related options are also determined by this utility. Refer to the **MED-PC IV Programmer's Manual** for detailed instructions on translating and compiling an application. Trans IV must be run on the file Contextual Conditioning protocols (all .mpc files) supplied for SOF-700RA-16 before launching MED-PC for the first time.

Before proceeding with this manual, print a copy of the .mpc files (Bar Press Shape.mpc, Mag Train.mpc, Pavlovian VI.mpc, VI-90 Test.mpc, and VI-90 Training.mpc). In the protocols, lines beginning with a backslash "\" indicates comments that help identify key elements of the code and explain the function of each program step.

Software Installation

Please refer to the **MED-PC IV User's Manual** for a complete guide to installing the MED-PC IV software, building a valid Hardware configuration with the Hardware Configuration utility, and opening and compiling a MSN procedure in the Trans-IV utility.

To install the Contextual Conditioning Procedures, insert the CD into the CD-ROM drive and click **Install the Contextual Conditioning Software**. The procedures are copied into the C:\MED-PC IV\MPC folder.

Backing up the Software

Med Associates strongly encourages creating backup copies of the programs in case of disk failure. Having copies of the original programs may be useful in the future should modifications be made to the existing programs.

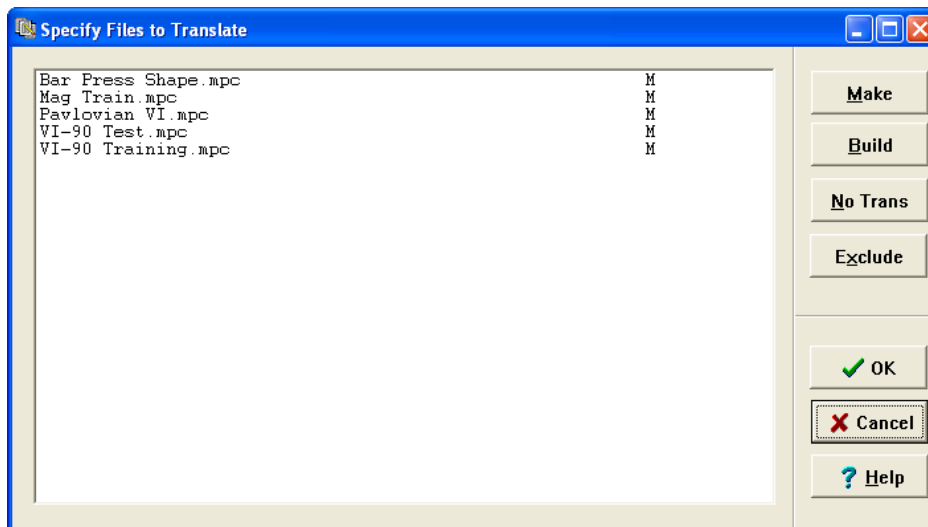
CHAPTER 2 | BEGINNING & RUNNING AN EXPERIMENT

Translating the MED-PC IV (.mpc) File

Programs written in MedState Notation must be translated using Trans IV before they can be executed in this application. Be sure that a copy of the file being translated is present in the directory "C:\MED-PC IV\MPC\." Open Trans IV icon and select **Translation | Translate and Compile**.

Select the program(s) to use for the experiment and click **Make**. Click **OK** to start the translator, and it will automatically parse the MedState Notation and then open to a DOS screen to compile the Pascal code. Depending on the speed of the computer, each of these steps may not be seen. If any problems are encountered during this process, refer to the on-screen help menu or the **MED-PC Version IV User's Manual**, or contact MED Associates, Inc. for assistance.

Figure 2.1 - Trans IV Control Panel for Translating and Compiling MedState Notation Code



Using the MED-PC IV Load Wizard

MED-PC IV is designed to help the researcher run an experiment by guiding selection choices through its Experiment Loading Wizard. This section will describe how to initiate the Bar Press Shape.mpc application, however the following steps that will also apply to all other .mpc procedures.

Open MED-PC IV and the MED-PC Experiment Loading Wizard's Welcome screen, shown in Figure 2.2 will appear.

Figure 2.2 - The MED-PC IV Loading Wizard Welcome Screen



To avoid this load wizard, deselect the checkbox labeled **Run this experiment automatically when starting MED-PC**. Close this screen by clicking the **Close** button. Closing this screen immediately reveals the MED-PC Run-Time Screen shown in Figure 2.9. If the choice to continue with the Loading Wizard is made, then click the **Next** button.

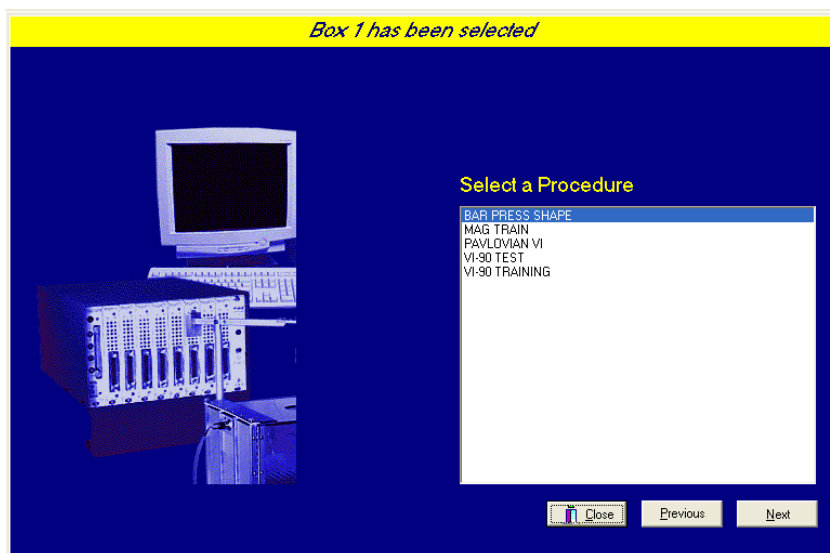
The Box Selection screen will appear next, as shown in Figure 2.3. From this screen the researcher chooses which boxes will be used in the experiment. Select the boxes that will run the experiment by clicking in the radio button next to the box number. The figure shows that the Hardware Configuration included only 1 box, which was selected. Click **Next** to continue.

Figure 2.3 - The Box Selection Screen



The Select a Procedure screen appears next, as seen in Figure 2.4. This is where the application to be run is selected. The screen displays a list of all the currently compiled procedures. Select the desired procedure and then click **Next**.

Figure 2.4 - The Select a Procedure Screen



The Enter Experiment Data Screen should display next, as shown in Figure 2.5. The purpose of this screen is to allow annotations to be added to the data file that is produced by MED-PC IV. These annotations will help identify the Subject, Experiment, and Experiment Group upon which data was collected. Comments can be added here as well, and the data file can be given a customized file name to help identify it from other data files. Enter the information desired, and click **Next**.

Figure 2.5 - Enter Experiment Data Screen



The screenshot shows a software window titled "Box 1 and BAR PRESS SHAPE have been selected". On the left is a 3D illustration of a computer monitor and a multi-channel signal recorder. On the right is a form with the following fields:

Subject	Subject_1
Experiment	Bar_Press_Experiment_1
Group	Group_1
Comments	Bar_Press_Shaping
Optional Custom Filename	BP_Subject1_Group1

At the bottom right are three buttons: "Close", "Previous", and "Next".

The next screen to appear is the Review Choices screen, as seen in Figure 2.6. This is a method of confirming that the information received from the Box/Procedure Selected is correct. If it is not correct, select **Previous**, and edit the data. If it is correct, select **Next**.

Figure 2.6 - Review Choices Screen



The screenshot shows a software window titled "Review Choices". On the left is the same 3D illustration of a computer monitor and a multi-channel signal recorder. On the right is a form with the following text:

Review the data below.

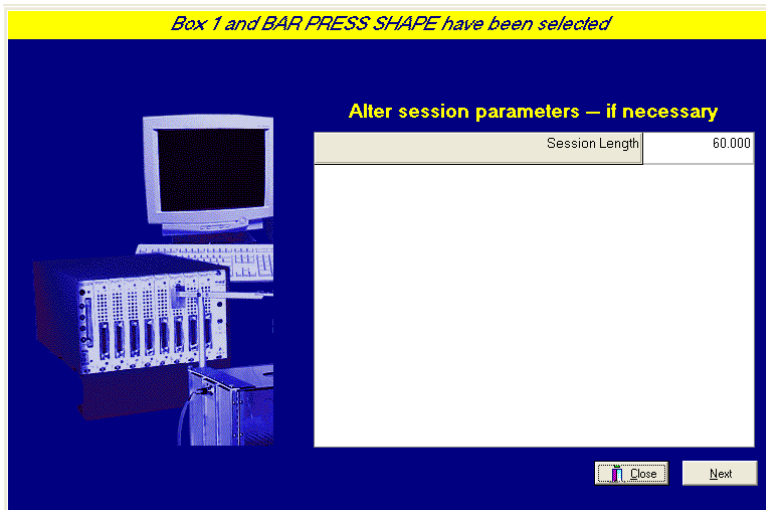
Box:	1
Procedure:	BAR PRESS SHAPE
Subject:	Subject_1
Experiment:	Bar_Press_Experiment_1
Group:	Group_1
Comment:	Bar_Press_Shaping
Filename:	BP_Subject1_Group1

Below the table, it says: "Click *Next* to finish loading the box or *Previous* to correct errors."

At the bottom right are three buttons: "Close", "Previous", and "Next".

The Alter Session Parameters Screen, shown in Figure 2.7, is the next screen to appear, and is an important screen for the researcher. The Alter Session Parameters screen allows the researcher to alter the parameters by which a procedure executes. The Send Start Command Screen appears next. The options available on the screen vary depending upon how many boxes are described in the Hardware Configuration.

Figure 2.7 - Alter Session Parameters Screen

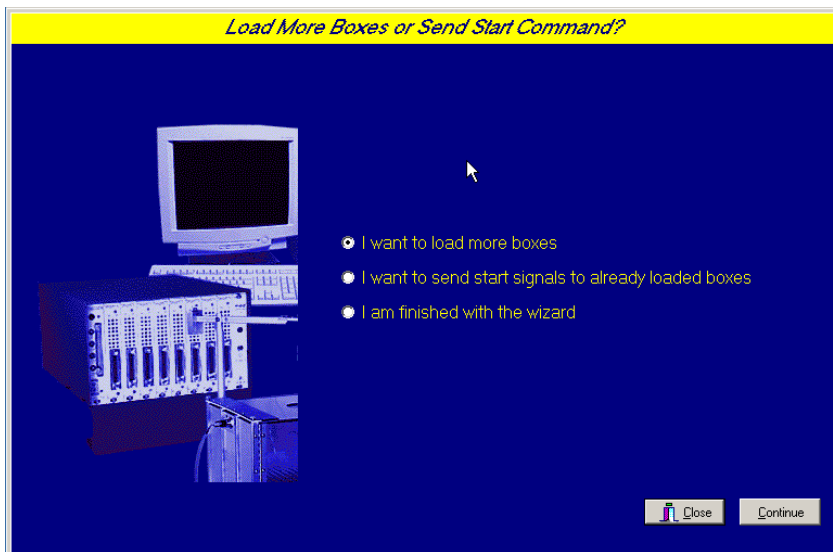


In this example only 1 box is described in the Hardware Configuration, so Figure 2.8 will appear next. If more than 1 box is in the Hardware Configuration, then Figure 2.9 will appear.

Figure 2.8 - Send Start Command Screen for Single Box Configuration

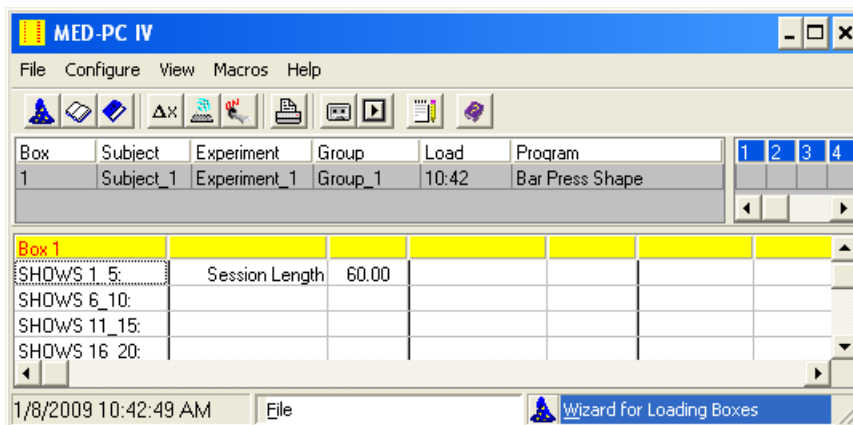


Figure 2.9 - Send Start Command Screen for Multiple Box Configuration



In both cases (Figure 2.8 and Figure 2.9), the screens are where the researcher decides to either load more boxes, send a start signal to boxes that are already loaded, or enter the MED-PC IV run-time environment without sending a start signal by selecting “I am finished with the wizard”. This option results in the screen shown in Figure 2.10.

Figure 2.10 - The MED-PC IV Run-Time Screen



Viewing/Changing Variable Values

Before a “start command” has been issued, any variable may be changed on the MED-PC IV run-time screen. Simply highlight the value to change, and then enter the new value. Once a session is in progress, change variables by selecting **Configure | Change Variables**, or click the 4th tool bar item **ΔX**. In the lower left hand corner of the Change Variables window, find the “Display Data from Box” display, and choose the chamber(s) to modify. By clicking additional boxes in the “Additional Boxes to Update” section, changes made to a single box are automatically loaded to all of the selected boxes.

Figure 2.11 - Changing Variables Screen

Displaying Variables from Box 1				
A: 60.000	B: 0.000	C: 0.000	D: 0.000	E: 0.000
F: 0.000	G: 0.000	H: 0.000	I: 0.000	J: 0.000
K: 0.000	L: 0.000	M: 0.000	N: 0.000	O: 0.000
P: 0.000	Q: 0.000	R: 0.000	S: 0.000	T: 0.000
U: 0.000	V: 0.000	W: 0.000	X Array	Y Array
Z Array				

Display Data from Box
☒ 1

Additional Boxes to Update
☐ 1

Select All Deselect All

A from Box 1
60.000

Named Vars
Vars
Refresh
Issue
Close
Help

To change a value, simply highlight and replace the value in the lower right hand box or use the up/down arrows to increment by 1. Click the **Issue** button for the change to take effect. Click **Named Variables** to produce the display in Figure 2.12. Change variables here as needed.

Figure 2.12 - Displaying Named Variables from Box 1

Displaying Named Variables from Box 1

Session Length 60.000

Named Vars
Vars
Refresh
Issue
Close
Help

Display Data from Box
☒ 1

Additional Boxes to Update
☐ 1

Select All Deselect All

Modifying the MedState Notation™ Code

Permanent changes to the Contextual Conditioning procedures can be made to the MedState Notation code. Open Trans IV and select **File | Open** and select the desired procedure to place into the text editor. Scroll down to the desired line (note the line counter in the lower right hand corner of the editor) and make the necessary changes.

Save the changes with the same or a new file name. Remember, if creating a new .mpc file name and are using a macro to load boxes, the file name in the macro also must be changed. Translate and compile the new or changed file as described previously and run MED-PC IV. Use the “Change Variables” screen to view/confirm the new values.

CHAPTER 3 | UNDERSTANDING THE DATA FILES

Unless otherwise specified, data will be saved to C:\MED-PC IV\DATA. Data can be saved manually by selecting **FILE | SAVE DATA MANUALLY** or **FILE | SAVE DATA (FLUSH)**. The file name that is used to save the data in depends on the option that was chosen in the Hardware Configuration Utility and may also be dependent on the Subject, Experiment, and Group name provided in the MED-PC IV load wizard. Within each data file, the headings are created for each Subject, Experiment, Group, Box, etc., (see below). Data files may be opened with note pad, word pad, or any word processor or spreadsheet; however, be sure they are always saved “unformatted” in case a data extraction utility such as MED-PC to Excel might ever be used. Data file formats are explained in detail in the **MED-PC IV User’s Manual**.

Appendix A | Contact Information

Please contact MED Associates, Inc. for information regarding any of our products.

Visit our website at www.med-associates.com for contact information.

For technical questions, email support@med-associates.com.