

EMS-XL VERSION 1.39

Mennen Medical Ltd. has upgraded its software of the EMS-XL system for Cardiac Electrophysiology Testing and Performing.

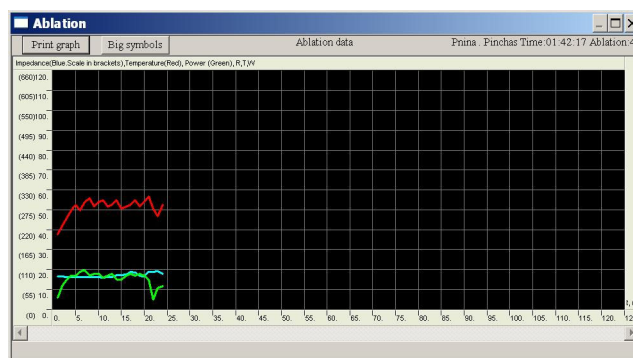
This document describes the changes and additions to the EMS-XL electrophysiology system as has been performed in the updated version V 1.39.

Note: In the Help Menu of the EMS-XL application you can see the software version you are holding.

Revised User Manuals will be provided to owners of EMS-XL systems.

V 1.39 List of changes and features

1. Adjustable size and location of Ablation Graph



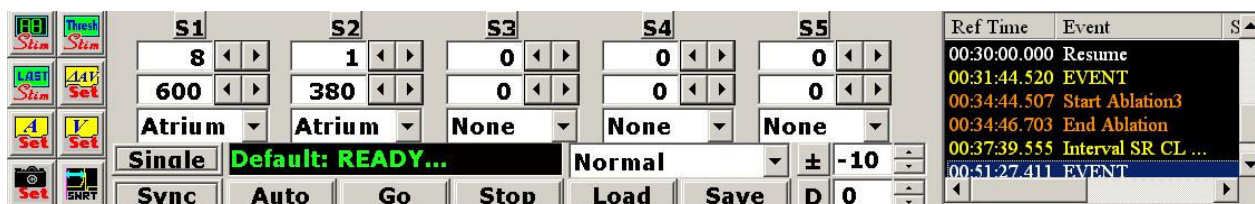
- 1.1 Size and placement of the window with ablation graph or big symbols can be changed by using the click and drag of the mouse.
- 1.2 Possibility of the full screen view of the ablation graph and big symbols.
- 1.3 Scale changes automatically after changing size of window.

2. Big Number View for Stimulator Activation

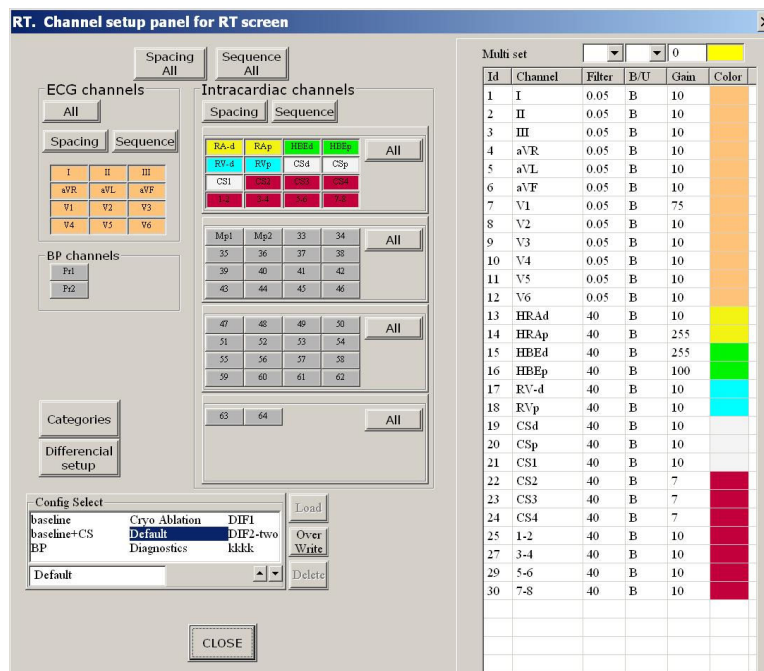
Stimulator setup dialog can be increased in size.

Pressing the key "B" – will increase the Stimulation panel.

A second push on "B" button will return the stimulator dialog to the default size.



3. Changes to “Channel Setup” Dialog



- 3.1 Channel Setting Panel is updated automatically after adding or deleting one of channels or loading configuration. The Button “Update” was deleted.
- 3.2 Color selection is provided in the “channel setup” dialog. A New column was added for color selection of the channel. Right click of the mouse opens a dialog for selection color of the channel.
- 3.3 Multi selection mode in the “channel setup” dialog was added. This enables to set a group of channels with a common setting in one click. Filter, B/U, Gain and color can be set with the "Multi-set" function

There are three ways to group Channels:

- Pushing on the left mouse in the “ID” column, and dragging the mouse will select a set of channels .
- Select one row, Push the “Shift” button and click on another Row. All rows between the two will be selected (Blue background)
- Push on the “CTRL” button and clicking on the “ID” column of another channel will select each of the channels.

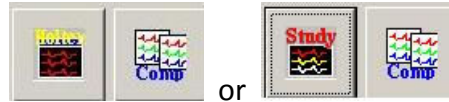
| Multi set | | | | | |
|-----------|---------|--------|-----|------|-------|
| | | | | 0 | |
| Id | Channel | Filter | B/U | Gain | Color |
| 13 | HRAd | 40 | B | 10 | |
| 14 | HRAp | 40 | B | 255 | |
| 15 | HBEd | 40 | B | 255 | |
| 16 | HBEP | 40 | B | 100 | |
| 17 | RV-d | 40 | B | 10 | |
| 18 | RVp | 40 | B | 10 | |
| 19 | CSd | 40 | B | 10 | |
| 20 | CSp | 40 | B | 10 | |
| 21 | CS1 | 40 | B | 10 | |
| 22 | CS2 | 40 | B | 7 | |
| 23 | CS3 | 40 | B | 7 | |
| 24 | CS4 | 40 | B | 7 | |
| 25 | 1-2 | 40 | B | 10 | |
| 27 | 3-4 | 40 | B | 10 | |
| 29 | 5-6 | 40 | B | 10 | |
| 30 | 7-8 | 40 | B | 10 | |

4. “Apply” buttons have been deleted

On all dialog panels changes are applied automatically thus all “Apply” buttons were deleted from the dialog panels.

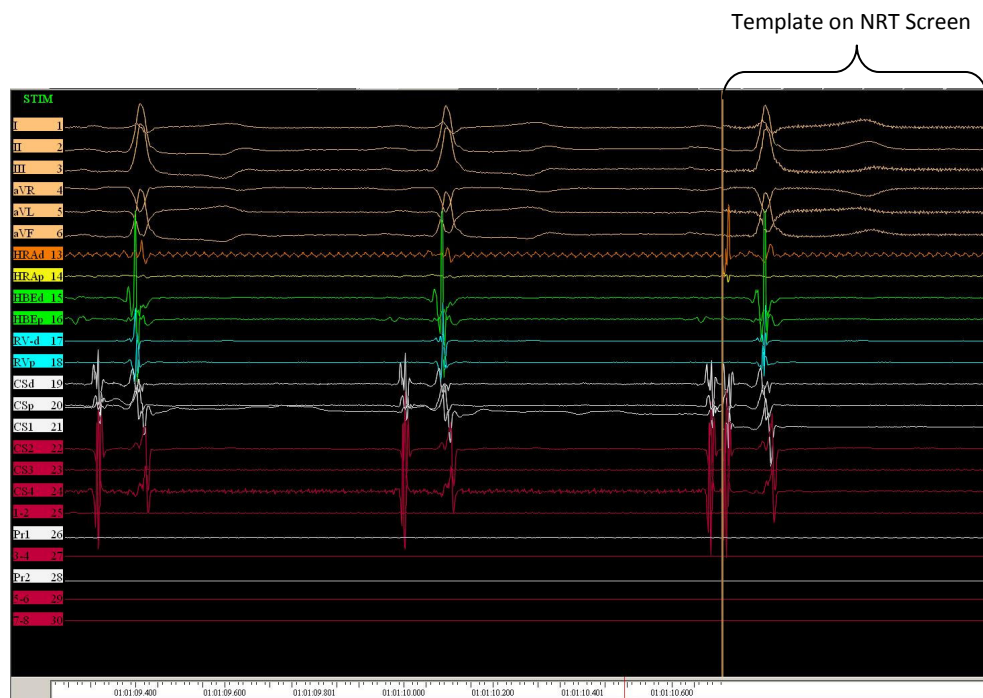
5. Toggle button for “Holter” and “Study”

“Holter” and “Study” buttons have been combined to one toggle button:



6. Template mode on the NRT screen

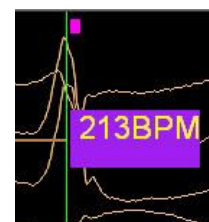
- 6.1 A possibility to review and Compare templates (600 msec data row) on the NRT screen was added. This can be done in both “Study” and “Holter” mode.
6.2 A Comparison key was added to the NRT screen for the upload of saved comparisons



7. Caliper mode

Caliper control was modified for ease of use:

- 7.1 Left click and drag– Start new pair of the calipers. (Right click for starting new pair of calipers has been disabled)
7.2 Right click on the gray line between calipers - to delete selected pair of calipers.
7.3 Right click on the label (measurement value in the blue rectangle near the caliper) – converts measurement value from mSec to BPM (beats per minute). Blue background of the label will change to magenta. The value will be marked as “BPM”. Note: Values, above 999 bpm will not be seen.



8. "QRS settings" button added in the NRT screen

"Notes" button was replaced by "QRS" button that activates the "QRS setting" panel



9. Information buttons converted to active buttons

Atrium & Ventricle stim channel, and "Sound" buttons were converted into active buttons. The mA and mSec button remain information buttons only.



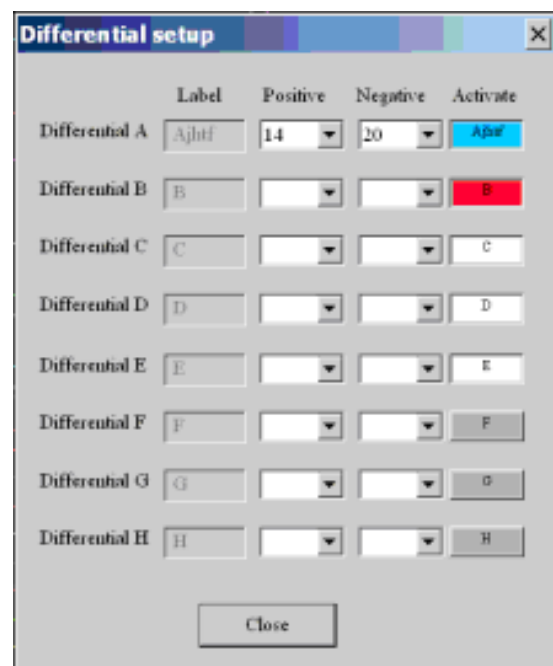
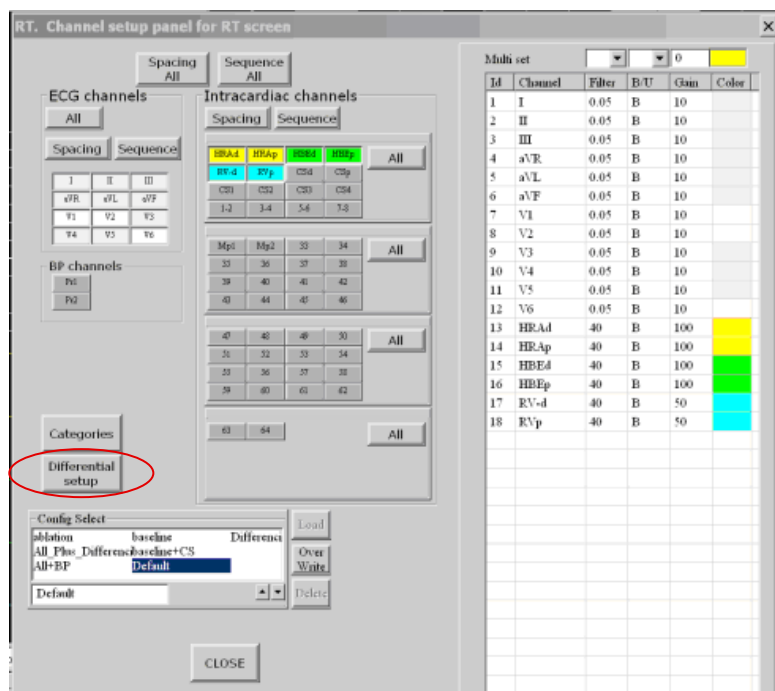
10. "All" was added to the event view combo box on the NRT screen

On the NRT screen in the "Scroll" mode it is possible to view : "Markers", "Stimuli", and "All".



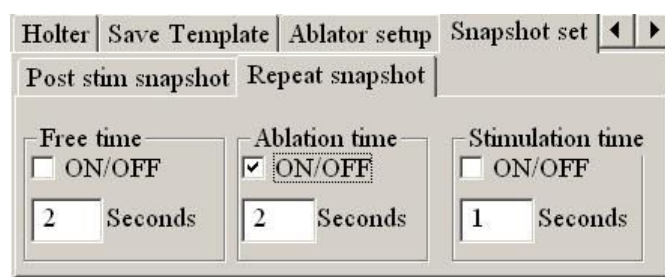
11. Differential channels

- 11.1 Eight (8) differential channels were added to the physical Bipolar/Unipolar channels by subtracting any two positive (+) inputs
- 11.2 The physical channels used for differentiation must be set to Unipolar
- 11.3 The differential channels are marked as 'A' to 'H'
- 11.4 To open the Differential setup panel use the DIF Set icon



12. Automatic snapshot during ablation, stimulation or at selected time Intervals

- 12.1 Possibility to enable automatic snapshot of RT to NRT screen during ablation or/and stimulation or/and at selected time intervals
- 12.2 Snapshot will be repeated at intervals set in the Repeat Snapshot panels
- 12.3 This is in addition to the post stimulation snapshot
- 12.4 During a threshold procedure, snapshots will occur at the selected interval for "Stimulation time"



13. Auto events of NIBP from the CFE

NIBP Readings from the CFE will be entered as Events and will be written on the events list in the format: HH:MM:SS:MS BP Sys-Dia-Mea.

14. Checking connection with Ablator

- 14.1 After connecting Stockert or EPT1000 ablator to the EP system the signs of the ablation data in the ablation window on the RT will be in green color.
- 14.2 If connection is wrong, ablation data will be in red color

15. PDF help file

In the "Help dialog" a new button "Open PDF help file", will open the EMS-XL User manual.

16. SNRT mode

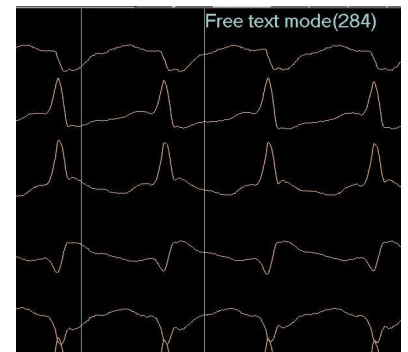
- 16.1 Pushing on the "SNRT" button opens stimulation panel, loads SNRT config and calculates number of bits.
- 16.2 SNRT is accessible only if a patient is admitted.
- 16.3 Exiting from SNRT will return to the stimulation configuration that were before SNRT

17. Free Text Labeling of a measurement interval

- 17.1 Added Free Text for labeling interval



- 17.2 Typed text will appear immediately on the NRT screen during typing. Pressing on the "Enter" button will confirm typed text and will close a dialog. After labeling of the interval, the pair of calipers will stay fixed on the NRT screen at that time position. Near the pair of the calipers the label and measured interval value will appear



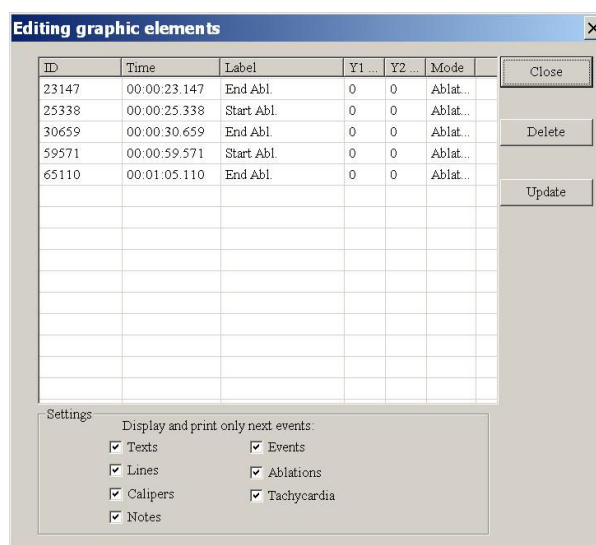
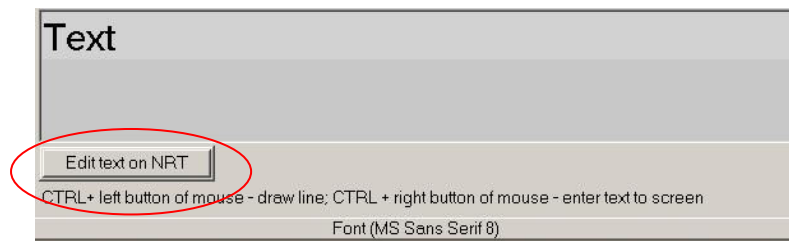
18. Text and lines on the NRT screen

- 18.1 Text and lines drawn on the NRT screen will be saved and not be erased.
- 18.2 Printing of the text and lines in the report is as appears on the screen.
- 18.3 All graphic elements can be edited Using the new dialog for editing/removing of the graphic elements
- 18.4 Texts, lines, events will be in yellow color, calipers will be in Pale-Turquoise color , notes will be in blue, ablation will be in orange, tachy events will be in red.
- 18.5 Editing/Removing graphic elements dialog on NRT
 - 18.5.1 On the Text panel an "Edit text on NRT" was added.
 - 18.5.2 On "Editing Graphic Element" panel, click on the selected cell to change the record
 - 18.5.3 To delete a record select the Row and click "delete"

18.5.4 Click "Update" to accept the changes

18.5.5 Tic the required element for Display and Printing at the bottom of the Editing panel
seven check boxes are provided: Text elements, Lines elements, Caliper elements, Note elements, Event elements, Ablation elements, Tachycardia elements

18.5.6 To exit the dialog and accept the changes, click on "Close" button



19. Text and calipers in print mode

In MultiPage print mode all graphic data (text, calipers, lines) will be printed on the relevant pages.

20. "Close" button in the "channels settings" dialog on the RT screen



An X button was added for closing "Channel settings" dialog on the RT screen.