



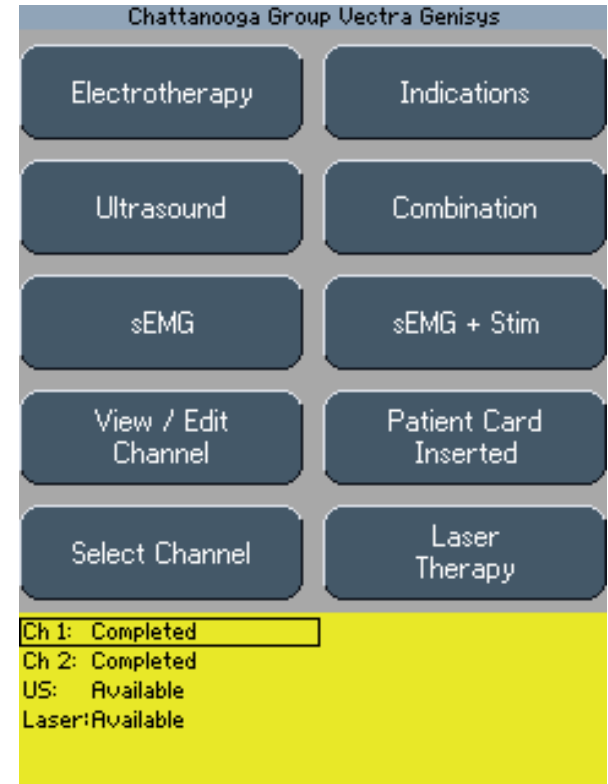


# Basic “Knobology”

 button – No matter where you are in the device, when you press this button you will return to the “Home” screen. So if you decide to begin a treatment all over again or choose a different modality, by pressing the  button you will return to this screen

 button – when you press this button you will return to the previous screen. Unlike the Home button, the  button will only take you back to the screen from which you came. So do not panic if you arrive on a screen you do not want, just press the back button



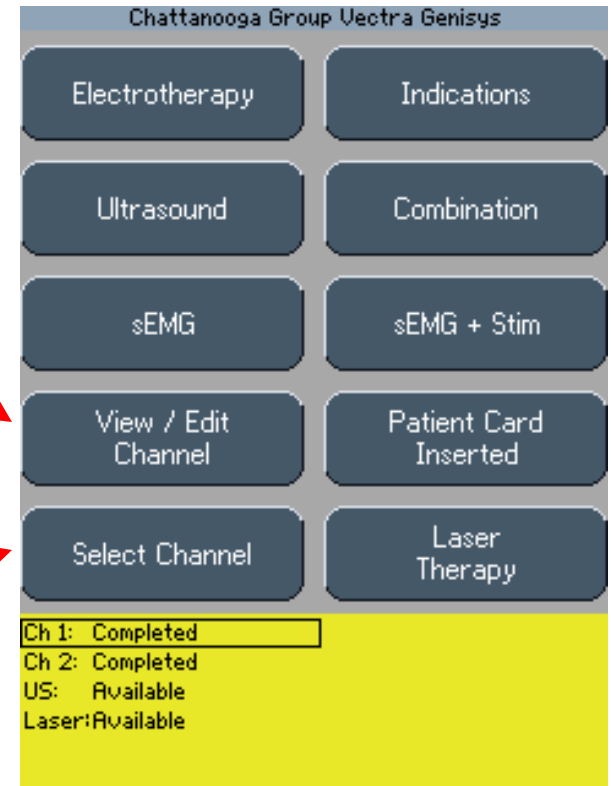
“Home” Screen

# Basic “Knobology” cont’d

From the **Home Screen** -

The **View/Edit Channel** button will pull up the channel selected and allow for you to **Edit** any and all parameters available

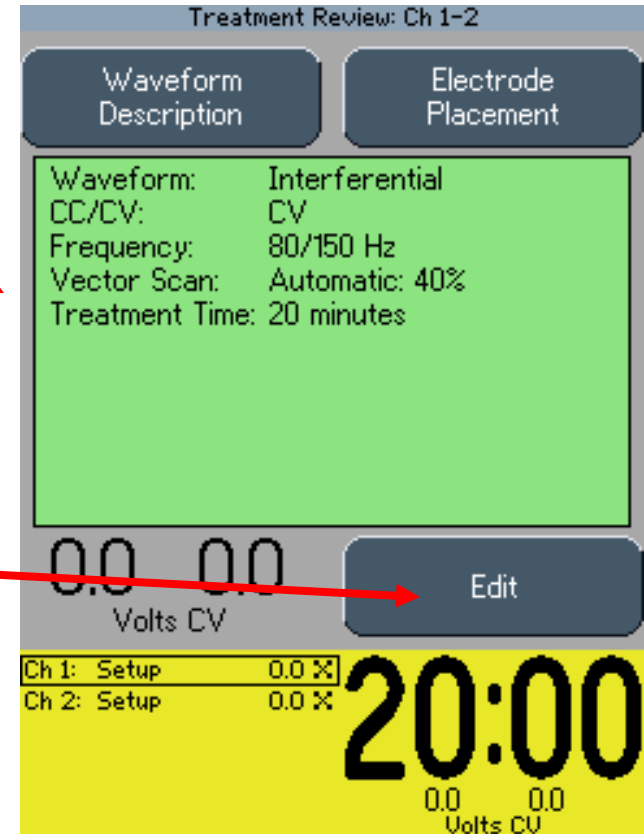
The **Select Channel** button will move the outlined box down to highlight the channel you want to edit. You can adjust intensity from the Home screen by outlining the channel you wish to adjust and turning the Intensity Wheel



# Landing Page

Once a modality has been chosen, this is the page that will appear. Regardless of what modality you choose the “**Landing Page**” will look the same. The only difference will be the parameter list inside the green box.

From this screen you can press the **Edit** button to enter the parameter screen to make any and all adjustments to your parameters



Landing Page

# Edit Screen

Once in the **Edit** screen, you can adjust your parameters to your desired setting. Depending on the parameter, your options will either toggle through the choices, or a new window will open up allowing you to raise or lower a setting with **↑** **↓** arrows.

When toggling, if you miss your option, just continue to press the button until it cycles back around to your desired setting.

The screenshot shows the 'Interferential' edit screen with the following controls and displays:


- Sweep**: On
- Vector Scan**: Off
- Beat Low**: 80 Hz
- Carrier Freq.**: 4000 Hz
- Beat High**: 150 Hz
- CC/CV**: CV
- Treatment Time**: 20 min.
- Volts CV**: 0.0 0.0

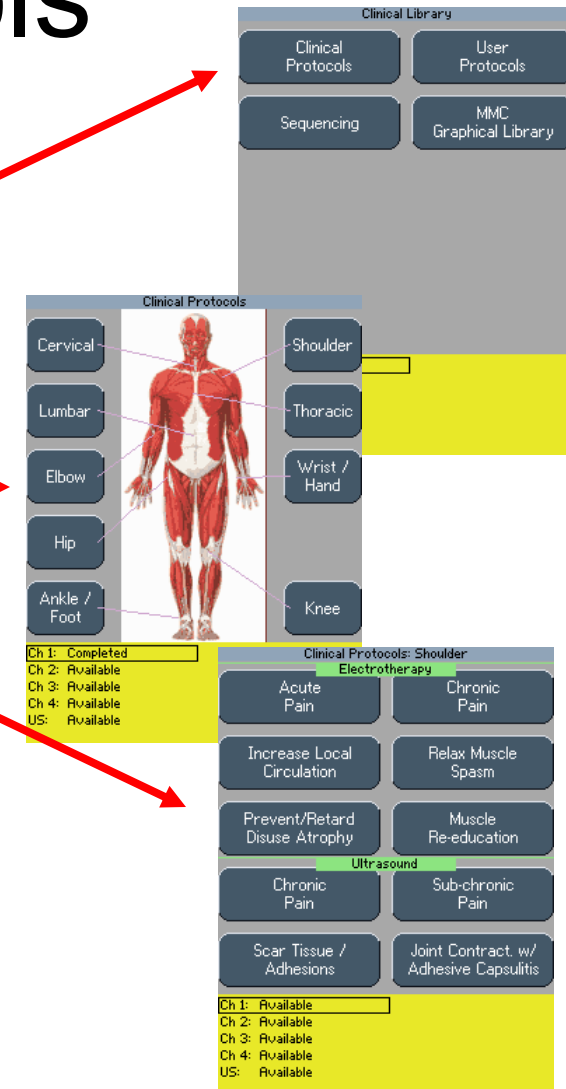
At the bottom, a yellow bar contains a status table and a large digital display:

Ch 1:	Setup	0.0 %
Ch 2:	Setup	0.0 %
Ch 3:	Available	
Ch 4:	Available	
US:	Available	




**20:00**  
0.0 0.0  
Volts CV

# Clinical Protocols



1. To begin a treatment using Clinical Protocols, press the  button (the button with the folder icon on it in the center of the unit below the screen)
2. Press the **Clinical Protocols** button
3. Based on your treatment area, choose the part of the body that meets your need
4. Next, choose the indication you need based on the modality you desire to use (notice the top half of the screen is electrotherapy and the bottom half is ultrasound)
5. Once selected, if no changes are desired, increase your intensity using the intensity wheel and press **Start**
6. If changes are needed, press the **Edit** button and make your changes
7. Increase your intensity to the desired level and press **Start**

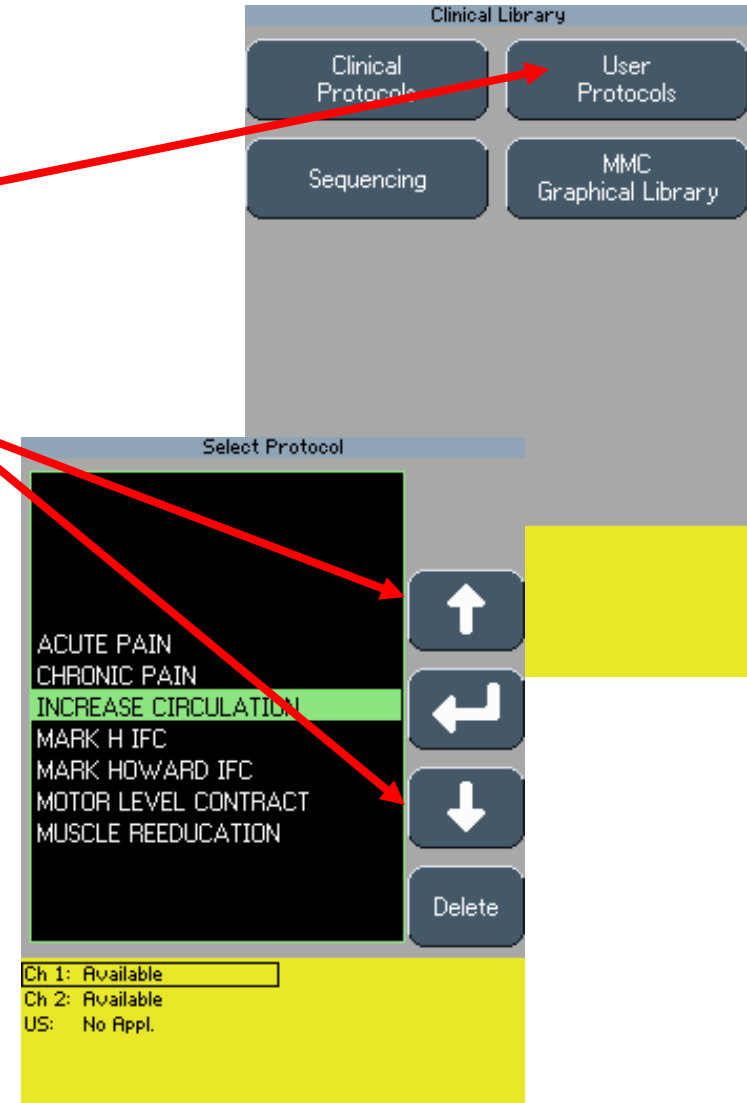


# Storing a User-Defined Protocol

1. Select the modality by choosing **Electrotherapy, Ultrasound** or **Combination**
2. Select the waveform desired (if choosing Electrotherapy)
3. Press the **Edit** button in the lower right hand corner.
4. Make the changes you want
5. After you have completed your parameter adjustments, Press the  button (the big button with the folder icon located in the center below the screen)
6. A labeling system with “**Protocol Name**” at the top will pop up
7. If you are creating this protocol to be your “**Default Protocol**” then simply hit the **Save** button; if you want to name the protocol continue to step 8
8. Toggle through the letters of the alphabet with the silver buttons alongside the display screen. Press the  when it gets to the letter you want. Press the  when the open box is in the top left of the screen for a space
9. The title you are creating will appear at the top of the screen
10. Press the **Save** button on the lower right hand side
11. The unit will go back to the **Edit** screen, at this time you can run the treatment or press the home button to return to the home screen

# Retrieving a User-defined Protocol

1. Press the  button (the button with the folder icon on it) located in the center below the screen
2. Press the **User Protocols** button
3. A list with items in alphabetical order will appear
4. Using the up and down arrow key, highlight the one you desire and then press the  key to pull the protocol up on the screen
5. If no changes are desired, simply increase your intensity to the desired level and press **Start**
6. If changes are desired, press the **Edit** button and begin to make your parameter adjustments



# Indications

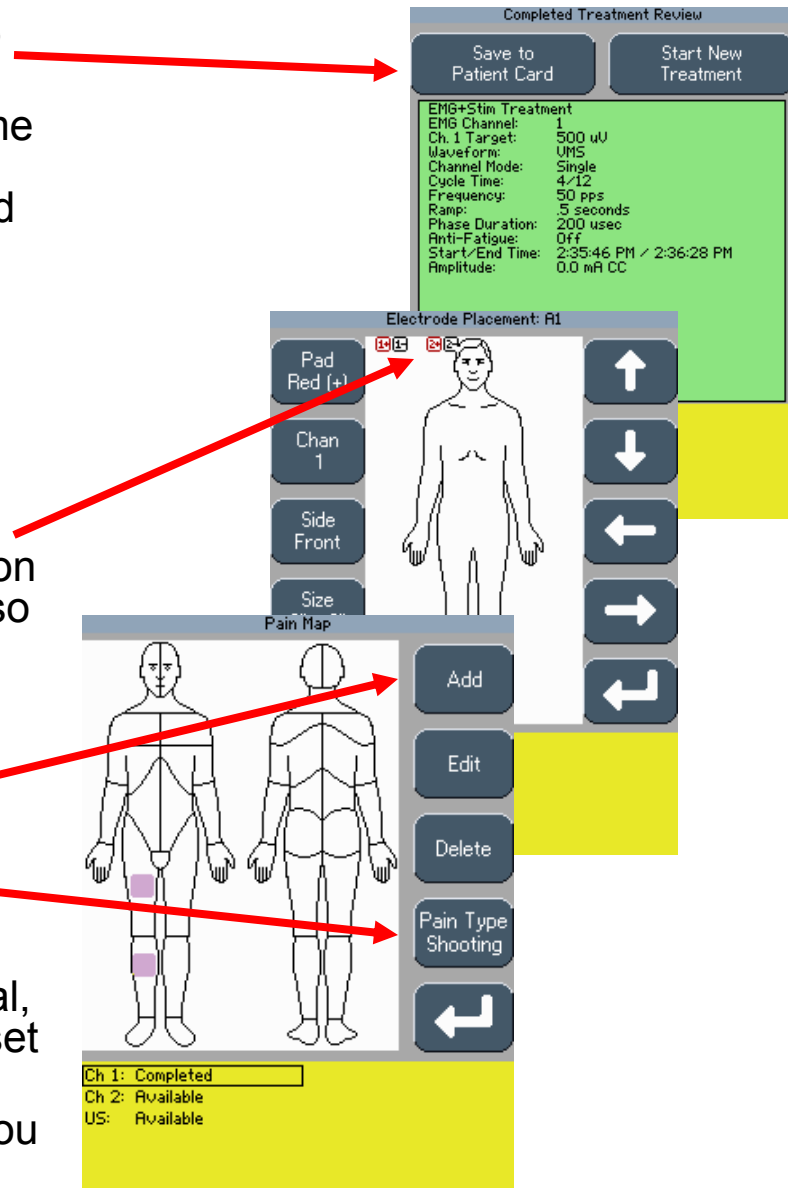
1. To begin a treatment through **Indications**, press the **Indications** button
2. You can also access **Indications** from the waveforms screen within **Electrotherapy**
3. From the electrotherapy indications screen you can now select from the list of FDA cleared indications what you are treating
4. Once selected, the unit will display the FDA's cleared protocol for the indication chosen
5. To begin the treatment as is, increase your intensity using the intensity wheel and then press **Start**
6. To make any adjustments, press the **Edit** button to make your parameter changes
7. Once all parameters are set to the desired setting, increase your intensity and then press **Start**

The image displays three screenshots of the Chattanooga Group Vectra Genesis device interface. The top screenshot shows the main menu with buttons for Electrotherapy, Indications, Ultrasound, Combination, sEMG, sEMG + Stim, View / Edit Channel, Patient Card None Inserted, and Select Channel. A red arrow points from the 'Indications' button in this menu to the 'Indications' button in the middle screenshot. The middle screenshot shows the 'Electrotherapy' screen with various waveform options: Interferential, Premod, Asymmetrical Biphasic, Microcurrent, VMS / VMS Burst, Russian, High Volt, Symmetrical Biphasic, and DC. A red arrow points from the 'Indications' button in this screen to the 'Electrotherapy Indications' screen in the bottom screenshot. The bottom screenshot shows the 'Electrotherapy Indications' screen with buttons for Acute Pain, Increase Local Circulation, Chronic Pain, Muscle Re-education, Relax Muscle Spasm, Stroke Muscle Re-ed, Prevent/Retard Disuse Atrophy, Range of Motion, and Waveforms. All three screenshots show a status bar at the bottom with channel availability: Ch 1: Available, Ch 2: Available, Ch 3: Available, Ch 4: Available, and US: Available.





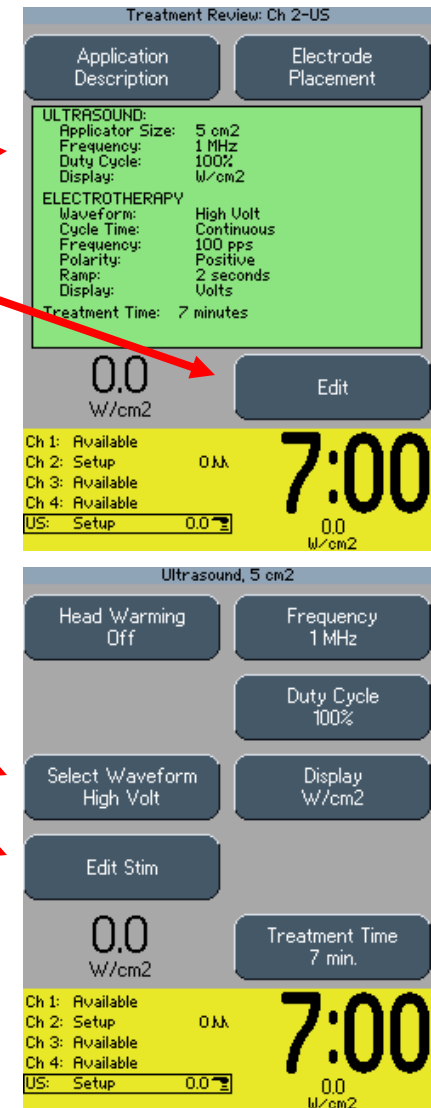
# Saving Information to the Patient Card

1. Once a treatment is completed, select **Save to Patient Card**
2. If it is a new card you will now be asked to name the card, once named, a menu tree will now appear to the right, if the card is already named you will be given the menu tree to the right immediately
3. The choices are: **Electrode Placement, Pain Map, Numeric Pain Scale, Visual Pain Scale and Save to Patient Card**
4. From the menu tree you will first choose **Electrode Placement**
5. Move the electrodes shown, using the arrows on the right, to the area of placement. You can also choose the size electrode used
6. The next set-up is **Pain Map**, a body chart will show up, choose **Add New** to add a new pain area. Using the arrows provided, highlight the area(s) that reference pain sites; you can now label the **Pain Type** by toggling through the choices offered
7. The last step is to store the Pain Scale, you have two options to do this: Visual or Numerical, you only need to set up one (the other will be set for you) by using the left/right arrows provided
8. After you have set these items to your liking, you need only to press the **Save to Patient Card** button to complete the process







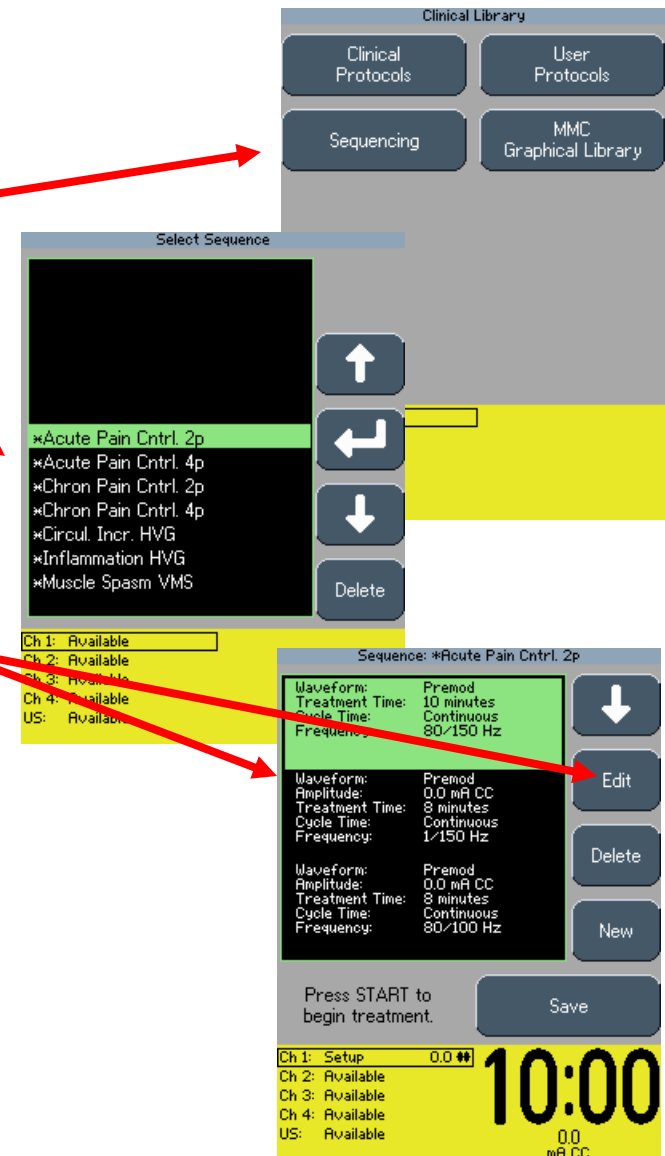
# Combination Set-up

1. From the  screen, press the **Combination** button
2. A combination default screen will appear
3. Press the **Edit** button in the lower right hand corner
4. The Ultrasound parameters page will appear; from this page you will set your Ultrasound parameters and choose your desired waveform for combination
5. To change the waveform selection, press **Select Waveform** and highlight your desired waveform and press the  to accept
6. Once you have set your Ultrasound parameters you can now toggle to edit your stim parameters by pressing the **Edit Stim** button
7. Once all parameters for both E-stim and Ultrasound have been made you can now increase your intensities; do this from the **Edit Stim** or **Edit Ultrasound** pages
8. Once the desired intensities have been set, press start to begin treatment









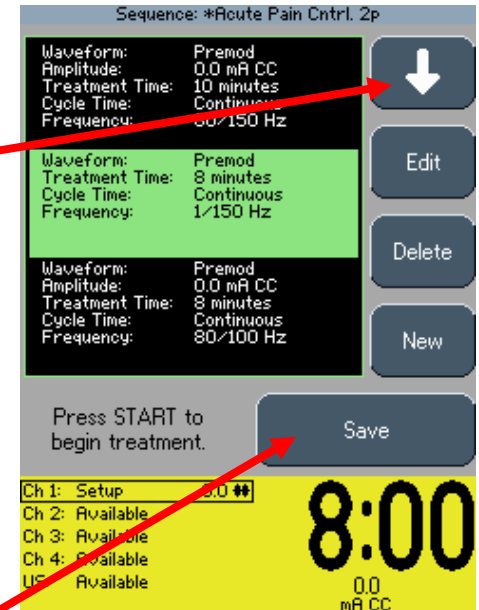
# Sequencing Protocol Set-up

1. Press the  button (the button with the folder icon on it) located in the center below the screen
2. Press the silver button that corresponds to **Sequencing**
3. A list of pre-programmed sequence protocols will appear (these are starting points only)
4. Select the one that most fits your need to begin
5. A box will appear with three protocols listed with the top one highlighted in green; to make any changes to any of the three, simply highlight the one desired using the  button and press the **Edit** button
6. If you choose to select a new waveform all together, press the **New** button on the bottom right; a list of “Default” waveforms will appear; choose the waveform desired by highlighting it with the  buttons and press the  button to accept
7. This will now replace the one you highlighted before pressing the **new** button






# Sequencing Set-up cont'd

8. Once you have edited each protocol to your desired parameters you are now ready to set the intensities
9. Starting with the first protocol raise your intensity to the desired output by turning the Intensity wheel; once you have done this with the first protocol, without turning down the intensity, press the  button (the current flow will stop to the one you just set)
10. The next protocol will now be highlighted, meaning you can set the intensity for it now; repeat step number 9 for the second and the third protocol if needed
11. To save the Sequencing protocols you just press the **Save** button in the lower right of the screen. The labeling screen will now appear allowing you to name this protocol just as you have the others
12. Once saved, the edit screen will appear and you can press **Start** to begin the treatment or hit the  button to return to the home screen
13. To retrieve a sequencing protocol, press the  button from the Home screen and press **Sequencing**. A list of protocols now appears, using the   arrows, highlight your protocol and press the  button






# sEMG Set-up

(Remember to use the lead wire with the additional green colored pin)



1. Press **sEMG** button on unit
2. Press **Edit** button in bottom right hand corner of screen
3. Determine whether you want **1, 2, or 1+2channels** of EMG by toggling through the **Channel** button in the top left corner
4. Determine where you want the alarm to sound, if at all, by toggling through the **Alarm** button (the open bubble in the center of each channel signifies the target)
5. Choose what type of sound you want the alarm to make (**constant, pulsed, or dynamic**)
6. Determine how you want to capture the target. The **Target** button allows you to use **Max, Avg or Manual**. (**Electrodes should already be in place at this time**)
  1. **Max** – allows you to set the target at the maximum contraction level of your patient. Select **Max**, hit **Capture Target**, (the screen will change) hit **Begin Capture**, a timer will count down (at this time have the patient contract as many or as few times as you would like) the unit will now store the patient's maximum contraction in microvolts. Now you will be asked to set the level at a percentage of Maximum contraction. Do this by pushing the   buttons to select a percentage, once you are at the desired percentage hit the  button. Begin treatment.
  2. **Average** – set-up the same way as Max except once you begin capture the unit will take the average of all the contractions done during the given time. You will then be asked again to set a percentage level in which you would like the patient to work. Begin treatment.
  3. **Manual** – you simply put in the number of microvolts you want the target to represent by using the up/down arrows and hitting the accept arrow once completed.

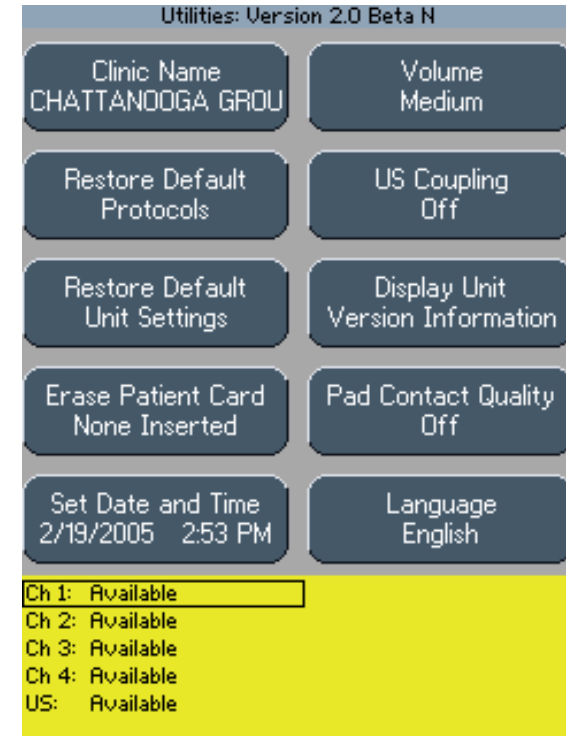
# sEMG + Stim Set-up

(Remember to use the lead wire with the additional green colored pin)

1. Press **sEMG + Stim** Button
2. Press **Edit** Button
3. You can only do one channel of sEMG + Stim so choose either channel **1 or 2**
4. Set up sEMG portion the same as the above instructions for sEMG only. Keep in mind that the Stim will kick in once the target you set is achieved.
5. You can change the waveform by pressing the **Stim** button and selecting a waveform using the   buttons and highlighting the waveform desired, once chosen press the  button
6. You can Edit the parameters for the Stim by pressing the **Edit Stim** button. From this page you will not only adjust parameters for the waveform, but you will also set the intensity level for the stim. Using the intensity knob, turn up the intensity until it reaches the desired level of contraction. Once you have reached the desired level of muscle contraction then press the **Edit sEMG** button to return to the sEMG page, do not turn the stim off. The stim will stop once you push this button.
7. If you choose to turn the **Auto** button to On the unit will lower the level (target) as the patient contracts to help prevent fatiguing.
8. Press **Start sEMG+Stim** button
9. The unit will indicate for the patient to **Go** (contract), once the set target level is achieved the stim will kick in and complete the maximum contraction. The Stim will hold for a brief period of time and then the unit will ask the patient to **Rest**.

# Utilities Page

1. Press the  button and  button simultaneously (the left and right blue buttons under the screen)
2. From this page you can do a variety of functions
3. To adjust volume, press the volume button to toggle through the options
4. To change clinic name, press the **Clinic Name** button and the labeling screen will appear; after naming the clinic, press save; the new name will display at the top of the screen on the **Home** screen
5. Set the date and time by pressing the **Set Date and Time** button and following the steps listed
6. If/when needed, you can restore the default settings and protocols
7. Turn the **Pad Contact Quality** meter off or on by pressing the button
8. You can change the language to Spanish/English by pressing the **Language** button
9. You can toggle through your Ultrasound Coupling options by pressing the **US Coupling** button
10. To check your software versions of the stim board, ultrasound board and control board, press the **Display Unit Version Information** button



Utilities Page

# IFC Analgesia Sensory

<b>Waveform:</b>	IFC
<b>Sweep:</b>	Off
<b>Beat Frequency:</b>	100 Hz
<b>Vector Scan:</b>	Off
<b>Carrier Frequency:</b>	4,000 Hz
<b>CC/CV:</b>	CV
<b>Treatment Time:</b>	20:00



# IFC Analgesia Motor

<b>Waveform:</b>	IFC
<b>Sweep:</b>	Off
<b>Beat Frequency:</b>	2 Hz
<b>Vector Scan:</b>	Off
<b>Carrier Frequency:</b>	4,000 Hz
<b>CC/CV:</b>	CV
<b>Treatment Time:</b>	20:00

# IFC Sensory/Motor Level Analgesia

## **Sensory**

<b>Waveform:</b>	IFC
<b>Sweep:</b>	Off
<b>Beat Frequency:</b>	100 Hz
<b>Vector Scan:</b>	Off
<b>Carrier Frequency:</b>	4,000 Hz
<b>CC/CV:</b>	CV
<b>Treatment Time:</b>	15:00

## **Motor**

<b>Waveform:</b>	IFC
<b>Sweep:</b>	Off
<b>Beat Frequency:</b>	2 Hz
<b>Vector Scan:</b>	Off
<b>Carrier Frequency:</b>	4,000 Hz
<b>CC/CV:</b>	CV
<b>Treatment Time:</b>	15:00

**\*Use Sequencing Program**

# IFC Motor/Sensory Level Analgesia

## Motor

**Waveform:** IFC  
**Sweep:** Off  
**Beat Frequency:** 15 Hz  
**Vector Scan:** Off  
**Carrier Frequency:** 4,000 Hz  
**CC/CV:** CV  
**Treatment Time:** 8:00

## Motor

**Waveform:** IFC  
**Sweep:** Off  
**Beat Frequency:** 2 Hz  
**Vector Scan:** Off  
**Carrier Frequency:** 4,000 Hz  
**CC/CV:** CV  
**Treatment Time:** 7:00

## Sensory

**Waveform:** IFC  
**Sweep:** Off  
**Beat Frequency:** 100 Hz  
**Vector Scan:** Off  
**Carrier Frequency:** 4,000 Hz  
**CC/CV:** CV  
**Treatment Time:** 15:00

\* Use Sequencing Program

# IFC Chronic Pain

<b>Waveform:</b>	IFC
<b>Sweep:</b>	On
<b>Beat Low Frequency:</b>	5 Hz
<b>Beat High Frequency:</b>	15 Hz
<b>Vector Scan:</b>	Off
<b>Carrier Frequency:</b>	4,000 Hz
<b>CC/CV:</b>	CV
<b>Treatment Time:</b>	20:00

# IFC Nerve Block

<b>Waveform:</b>	IFC
<b>Sweep:</b>	Off
<b>Beat Frequency:</b>	100 Hz
<b>Vector Scan:</b>	Off
<b>Carrier Frequency:</b>	4,000 Hz
<b>CC/CV:</b>	CV
<b>Treatment Time:</b>	20:00

# Premod Nerve Block

<b>Waveform:</b>	Premod
<b>Sweep:</b>	Off
<b>Beat Frequency:</b>	100 Hz
<b>Cycle Time:</b>	Continuous
<b>CC/CV:</b>	CV
<b>Treatment Time:</b>	20:00

# NMES Muscle Spasm

<b>Waveform:</b>	VMS
<b>Channel Mode:</b>	Co-Contract/Single
<b>Phase Duration:</b>	200 $\mu$ sec
<b>CC/CV:</b>	CC
<b>Anti-Fatigue:</b>	Off
<b>Cycle Time:</b>	10/10
<b>Frequency:</b>	80 pps
<b>Ramp:</b>	2 sec
<b>Treatment Time:</b>	15:00

# High Performance MFAC Strength

<b>Waveform:</b>	Russian
<b>Channel Mode:</b>	Single
<b>Duty Cycle:</b>	50%
<b>CC/CV:</b>	CV
<b>Anti-Fatigue:</b>	Off
<b>Cycle Time:</b>	10/50
<b>Burst Frequency:</b>	75 bps
<b>Ramp:</b>	2 sec
<b>Treatment Time:</b>	10 minutes



# High Performance MFAC Power

<b>Waveform:</b>	Russian
<b>Channel Mode:</b>	Single
<b>Duty Cycle:</b>	50%
<b>CC/CV:</b>	CV
<b>Anti-Fatigue:</b>	Off
<b>Cycle Time:</b>	10/50
<b>Burst Frequency:</b>	70 bps
<b>Ramp:</b>	.5 sec
<b>Treatment Time:</b>	10 minutes

# Increase Local Circulation Negative

<b>Waveform:</b>	High Volt
<b>Polarity:</b>	Negative
<b>Ramp Time:</b>	2 sec
<b>Display:</b>	Volts
<b>Sweep:</b>	Off
<b>Frequency:</b>	100 pps
<b>Cycle Time:</b>	Continuous
<b>Treatment Time:</b>	45 minutes

# Increase Local Circulation Positive

<b>Waveform:</b>	High Volt
<b>Polarity:</b>	Positive
<b>Ramp Time:</b>	2 sec
<b>Display:</b>	Volts
<b>Sweep:</b>	Off
<b>Frequency:</b>	100 pps
<b>Cycle Time:</b>	Continuous
<b>Treatment Time:</b>	45 minutes

# Ultrasound

- Need thermal response to increase collagen extensibility
- Apply US longitudinally along the contracted tissue (small joints)
- Stretch immediately after application, tissue will cool significantly within **2-3 minutes**
- Treat only 2x E.R.A. (effective radiating area) of the sound head, otherwise US loses its effectiveness and research does not support its use.
- **1 MHz gives 0.2° C ↑ for every minute (ie 5 min = 1 ° C ↑) DEEP**
- **3MHz gives 0.6 ° C ↑ for every minute (ie 5 min = 3° C ↑) SUPERFICIAL**

Therefore “know” your machine  
and purpose in using the ultrasound

	1 MHz: 1.0 W/cm <sup>2</sup>	3 MHz: 1.0 W/cm <sup>2</sup>	1 MHz: 1.5 W/cm <sup>2</sup>	3 MHz: 1.5 W/cm <sup>2</sup>
<1 C Sub-chronic pain	5 minutes	2 minutes	3 minutes	1 minute
2 C Chronic pain	10 minutes	3 minutes	7 minutes	2 minutes
4 C ↑ Tissue extensibility	20 minutes	7 minutes	13 minutes	4 minutes

# US Sub-thermal Deep Pain

<b>Applicator Size:</b>	5 cm
<b>Head Warming:</b>	On/Off
<b>Frequency:</b>	1 MHz
<b>Duty Cycle:</b>	20%
<b>Display:</b>	W/cm <sup>2</sup>
<b>Treatment Time:</b>	7 Minutes

# US Sub-thermal Superficial Pain

<b>Applicator Size:</b>	5 cm
<b>Head Warming:</b>	On/Off
<b>Frequency:</b>	3.3 MHz
<b>Duty Cycle:</b>	20%
<b>Display:</b>	W/cm <sup>2</sup>
<b>Treatment Time:</b>	7 Minutes

# US Chronic Deep Pain

<b>Applicator Size:</b>	5 cm
<b>Head Warming:</b>	On/Off
<b>Frequency:</b>	1 MHz
<b>Duty Cycle:</b>	Continuous
<b>Display:</b>	W/cm <sup>2</sup>
<b>Treatment Time:</b>	7 Minutes

# US Chronic Superficial Pain

<b>Applicator Size:</b>	5 cm
<b>Head Warming:</b>	On/Off
<b>Frequency:</b>	3.3 MHz
<b>Duty Cycle:</b>	Continuous
<b>Display:</b>	W/cm <sup>2</sup>
<b>Treatment Time:</b>	7 Minutes