BrainMaster Setup ~ Mini-Q & Full Q Set-Up and Mapping Instructions

10 Point Mini-Q for New Mind Apps

1) Open BrainMaster
2) Click on **Folder Selection**
3) Click on **Create New Folder**
4) Enter patient/client name/information
5) If you plan to use the patient name for the file ID, click on **Use Name for File ID**
6) Click **OK**
7) Click **OK**
8) Select **MINI-Q New Mind Format [Richard Soutar]** and DOUBLE click on it.
9) Click on **Data Channels**
10) If not already set, select **2 Channel**
11) Click on **Electrodes Trainee Information**
12) Click on **Use Session Wizard to control session [Use for *MINI-Q]***
13) Do not enter age
14) Click **eyes closed**
15) Click **OK**
16) Click on **Save EEG to Disk - ON**
17) Click **OK**
18) Click on **Display Options**
19) Under **Viewed Panels**, click on ***Raw Wave***, ***Filtered Wave***, **Brain Mirror [FFT],** or the displays you wish to monitor during your QEEG session *(these should be set later, however, if you want to check your impedance prior to running your Mini-Q or Full Q and then once you have started the assessment you can click on DISPLAY in the Training/Control Screen and selecting the displays you want to monitor – see the section on Running the Mini-Q or Running the Full-Q below).*
20) Under **Viewed Components**, click on Delta, Theta, Alpha Beta (click on Lobeta and HiBeta if you want to view either or both separately) however, *(these should be set later, however, if you want to check your impedance prior to running your Mini-Q or Full Q and then once you have started the assessment you can click on Freq. Bands in the Training/Control Screen and selecting the bands you want to monitor – see the section on Running the Mini-Q or Running the Full-Q below).*
21) Click on **OK**
22) Click on **Session Control**
23) If you want to get a baseline reading before you start set the number of seconds you wish to you for your baseline.
24) **Run Length** should be pre-set at **60** seconds
25) **Number of Runs [Trials]** should be pre-set at **6**

26) **Session Type** should be preset for **Assessment**
27) For **Number of Sessions**, enter a minimum number of **4** (in case you have to redo an eyes closed or eyes open session) but you can set a higher number, i.e., 20
28) The **Use Session Wizard to control session** [Use for ***MINI-Q]*** should be checked.
29) Click **OK**
30) Click on **Use these Settings**

You are now ready to run the Mini-Q
NOTE: When preparing for a Mini-Q; taking a history of presenting problems is important. Have the patient fill out all the information you want to have on New Mind Apps, BEFORE you do the actual Mini-Q

QEEG Preparation Checklist
The following instructions to the patient before they come in for a Mini-Q or Full Q will help assure that you get the best results possible.

1) If the patient is taking stimulant medication (i.e., ADHD medication), it is preferable to do the QEEG recording after the patient has stopped taking the medication for up to 48 hours prior. The patient MUST check with his/her prescribing physician to determine if it is possible to stop taking the stimulants 48 hours prior to the QEEG. If 24 hours is not advisable 12-24 is the next preferred length of time.

2) Do not make changes in any other medication

3) If the patient is sick, instruct them to call to reschedule; even if he/she only has a cold.

4) The patient should ***NOT*** drink coffee, tea, red bull, caffeinated soft drinks, or any other substance with caffeine for at least 15 hours prior to the QEEG.

5) Patients should avoid taking any over the counter medication or supplements for three or four days prior to the QEEG.

6) The patient should be instructed to wash his/her hair the night before the QEEG by doing the following: a) wash your hair 3 times with a ph neutral shampoo, such as Neutrogena non-residue shampoo, b) do not use crème rinse or any other hair product until after your QEEG appointment, and c) do not wash your hair again in the morning of your appointment. ***Make sure your hair is completely dry before coming for the QEEG.***

7) The patient should be instructed to get a good night's sleep before the QEEG (let us know if you have any sleep problems or disturbances).

The Day of the QEEG, the patient should:

1) Eat a high protein breakfast.

2) Drink plenty of water the day before the QEEG recording.

3) Use the restroom to prior to the start of the QEEG.

Patient Prep for Mini-Q or Full Q (you can view a video of Dr. Soutar, prepping a patient at:
http://www.youtube.com/watch?v=aWTrK1g5e0Q&feature=PlayList&p=5A883BD075F552D9&index=0&playnext=1

1) Use Alcohol Prep-Pads or cotton pads with alcohol to clean skin on earlobes and forehead (Fp1 & Fp2).
2) Measure patient's head with custom measuring tape to select the correct Electro-Cap™ size.
3) Select proper size Electro-Cap™ and place on patient's head, fitting cap to head with proper 10/20 placement
4) Use sponges for Fp1 & Fp2 electrodes to avoid Electro-Gel™ dripping into the patient's eyes.
5) Fill a 5 CC syringe with blunted needle with the Electro-Gel™
6) Using the syringe with Inject Electro-Gel™ into each electrode (you can use Electro-Gel™ or Ten20 Conductive™ for ear clip electrodes)
7) When you place the blunted needle into each electrode, gently use the blunted end and move in a circular motion on the scalp. This helps to abrading/exfoliation/clean the skin at the electrode sites below the electrode.
8) Gently hold each electrode to the scalp while filling it with Electro-Gel™
9) After filling each electrode with Electro-Gel™ use the wooden end of a single tip wooden Q-tip to work the Electro-Gel™ to the scalp by placing the wooden end of the Q-tip into each electrode and gently twisting it back and forth against the scalp.
10) Now place the syringe with blunted needle into each electrode and while gently holding the electrode to the scalp, make sure each electrode is filled and topped off with Electro-Gel™
11) When the cap has been prepped as above, plug the Electro-Cap™ plug into the back of the **ATLANTIS MINI-Q box** or **MINI-Q II** (for both 10 point and 19 point QEEG).

12) Plug the **ATLANTIS MINI-Q box** or **MINI-Q II** into your **BrainMaster Atlantis** unit.
13) Check your impedance (lights should be flashing green).
You are ready to run your MiniQ or Full Q

Running the Mini-Q
After you have prepared the patient for the Mini-Q, the QEEG assessment process is outlined below:

1) Click on BrainMaster
2) Select the proper patient **FOLDER**
3) Click on **Data Channel**
4) Click on **Electrodes and Trainee Info**
5) Make sure you have checked **Eyes Closed**
6) Click on **OK**
7) Click on **Use These Settings**
8) Tell patient to relax, sit still, to keep his/her eyes closed until you tell him/her to open them, and try not to blink or move; KEEP BOTH FEET ON THE FLOOR.
9) Tell patient to close eyes and relax
10) Click on **RUN NEXT SESSION**
11) Click on **GO (read and follow directions in the pop up window)**
12) Click on **GO**
13) Now check for good impedance and artifact:
- Anxiety & twitching and muscle tension/bracing, eye blinking, etc.
- Beta at F3 & F4 (frontalis muscle) muscle tension
- Beta at T3 & T4 is present if jaw grinding (TMJ)
- If eyes are fluttering we will see increased Delta

14) **Do not click on OK yet!**
15) If you are using the Mini-Q box, with the box set at Position #1 ~ FZ, CZ check your ***Raw Wave*** data at both sites (this is most easily done by **NOT** checking any items in the Viewed Panels section of the **Display Options** settings except for ***Raw Wave***, and under ***Viewed Components,*** **NOT** checking any items/waves.

NOTE: If you are using the BrainMaster Mini-Q II box, for a Mini-Q make sure the button in the back (next to where you plug the Electro-Cap™ in) is in the **OUT** position and when you look at the digital display, you will note that there is **NO** decimal point ***after*** the position number.

16) Make sure you have good clean Raw Waves.
17) Now switch the dial on the **Mini-Q box** to position #2 ~ F3, F4. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.
18) Now switch the dial on the **Mini-Q box** to position #3 ~ C3, C4. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.
19) Now switch the dial on the **Mini-Q box** to position #4 ~ P3, P4. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.
20) Now switch the dial on the **Mini-Q box** to position #5 ~ T3, T4. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.
21) Now switch the dial on the **Mini-Q box** to position #6 ~ O1, O2. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.

22) If for any reason you do not have good impedance and clean Raw Wave data at any site(s) use the wooden Q-tip to work the Electro-Gel™ down to the scalp, and if need be add a little more Electro-Gel™ to the site electrode until you have improved the impedance and Raw Wave signal. It is best to get the problems resolved now instead of having to stop the Mini-Q to correct problems mid way.

23) Switch the Mini-Q box back to position #1 ~ Fz Cz (the window says PZ, LE, GRD, LE, Cz)
24) Now click on OK in the Master30 window to start your session.
25) In **Display** you can select any of the options you want to use to monitor the QEEG assessment by clicking on them.
26) In **Freq. Bands** you can select any of the options you want to use to monitor the QEEG assessment by clicking on them.
27) After 60 seconds/one minute the computer will PLAY A "Windows" sound and stop recording data at this site. Switch the Mini-Q box to position #2 ~ F3, F4 (the window says F3, LE, GRD, LE, F4)
28) Click "Yes" in the master 30 window that appears on the Training Control Screen
29) After 60 seconds/one minute the computer will PLAY A "Windows" sound and stop recording data at this site. Switch the Mini-Q box to position #3 ~ C3, C4 (the window says C3, LE, GRD, LE, C4)
30) Click "Yes" in the master 30 window that appears on the Training Control Screen
31) After 60 seconds/one minute the computer will PLAY A "Windows" sound and stop recording data at this site. Switch the Mini-Q box to position #4 ~ P3, P4 (the window says P3, LE, GRD, LE, P4)
32) Click "Yes" in the master 30 window that appears on the Training Control Screen
33) After 60 seconds/one minute the computer will PLAY A "Windows" sound and stop recording data at this site. Switch the Mini-Q box to position #5 ~ T3, F4 (the window says T3, LE, GRD, LE, T4)

34) Click "Yes" in the master 30 window that appears on the Training Control Screen
35) After 60 seconds/one minute the computer will PLAY A "Windows" sound and stop recording data at this site. Switch the Mini-Q box to position #6 ~ O1, O2 (the window says O1, LE, GRD, LE, O2)
36) Click "Yes" in the master 30 window that appears on the Training Control Screen
37) After the eyes closed portion of the Mini-Q is complete, click on **"Close"**
38) Make a written note for run #1, i.e., Run #1 ***Eyes Closed***

Check your Data
39) Click on **Review Session Results**
40)The **Breview** chart comes up and you should see 6 minutes of data for all band widths.
41) With the Breview window open click on **Settings** tab
42) Under **Components** click on Delta, Theta, Alpha, & Beta
43) Under **Full Scale**, start with and click on 20 uV.
44)Click on OK
45) All four Frequency bands should appear on the Breview screen. If you cannot see all four bands on the Breview screen, (some are too high), click on **Settings** again, and under **Full Scale**, click on 30uV.
46) Click on OK
47) Continue to increase the uV following the same procedure until you can clearly see all four bands.
48) Next, on the Breview screen, click on the **Quick-File** tab
49) Scroll down to verify that you have 69 rows of data.

Note: If you have more than 69 rows, highlight all the rows and columns after 69 and hit your delete button. Under **File** click on **Save as** and label the file as **qat00001r** (you do not want to delete the original data; and the file you save as **qat00001r** indicates that this file is the revised corrected file which you will use to upload to *New Mind Apps* as the eyes closed version of your assessment.

50) **Close** the **Excel** screen/window and **close** the **Breview** screen/window.

Now prepare to run the eyes open part of the Mini-Q

51) Click on **View or Change Settings**
52) Click on **Data Channel**
53) Click on **Electrodes and Trainee Info**
54) Make sure you have checked **Eyes Opened**

55) Click on **OK**
56) Click OK
57) Click on **Use These Settings**
58) Click on **Run The Next Session**
59) Tell patient to relax, sit still, keep their eyes open and try not to shift their eyes back and forth, but rather to focus on some object in the room, and try not to blink or move; KEEP BOTH FEET ON THE FLOOR.
60) Tell the patient to keep his/her eyes OPEN and relax
61) Click on **RUN NEXT SESSION**

NOTE: you will now follow the same procedure as you did with the eyes closed portion of the QEEG assessment (see items 11-50 above)

62) After eyes open session is complete Click on **"Close"**
63) Make note of run #, i.e., Run #2 ***Eyes Open***
64) Tell patient to relax
65) Check your data as outlined above
66) Remove cap
67) Clean paste and gel off patient's head and ears
68) Cleanse Electro-cap and syringe as per manufacturer's instructions.

Conducting a Full-Q, QEEG Assessment

Conducting a Full-Q, QEEG assessment is very similar to conducting the Mini-Q. There are three major differences between the Mini-Q and Full-Q. 1) You are measuring at 4 sites in each position (instead of 2 ~ see below) for a total of 19 points, 2) You only do five runs versus six for eyes closed and/or eyes opened, and 3) the total number of rows of data when you go into Breview - Quick-File is 113 rows of data.

Full-Q positions (NOTE: the order of these positions when running a Full-Q may be different than is indicated on the top of the Atlantis Mini-Q II box.).

Running the Full-Q
After you have prepared the patient for the Mini-Q, the QEEG assessment process is outlined below:

1) Click on BrainMaster
2) Create the proper patient **FOLDER**
3) When you have created the folder, click on **View or Change Settings**

4) Click on **Read/Write Settings File**
5) Scroll down and double click on **MINI-Q II 4-channel 60-second runs**.
6) Click on **OK**
7) Click on **OK**
8) Click on **Data Channels**
9) If not already set, select **Four Channels**
10) Make sure of the following:

- **Sum-Channel Mode** is **OFF**
- 4 Channel Sum Method is Combined
- Save EEG to Disk is ON
- 60Hz Notch Filter is checked
- EEG Data Sampling Rate is set at 256

11) Click on **Electrodes & Trainee Info**
12) Click on **Use Session Wizard to control session [Use for *MINI-Q]***
13) Do not enter age
14) Click **eyes closed**
15) Click **OK**
16) Click **OK**
17) Click on **Use These Settings**
18) Tell patient to relax, sit still, to keep his/her eyes closed until you tell him/her to open them, and try not to blink or move; KEEP BOTH FEET ON THE FLOOR.
19) Tell patient to close eyes and relax
20) Make sure the Mini-Q II box is set to 4 Channels ~ the button in the back (next to where you plug the Electro-Cap™ in) is in the **IN** position and when you look at the digital display, you will note that there is **a decimal point *after*** the position number.
21) Click on **RUN NEXT SESSION**
22) Click on **GO (read and follow directions in the pop up window)**
23) Click on **GO**
24) Now check for good impedance and artifact:

- Anxiety & twitching and muscle tension/bracing, eye blinking, etc.
- Beta at F3 & F4 (frontalis muscle) muscle tension
- Beta at T3 & T4 is present if jaw grinding (TMJ)
- If eyes are fluttering we will see increased Delta

25) **Do not click on OK yet!**
26) Turn the position dial to Position #1 Fz, Cz, F3, F4 and check your ***Raw Wave*** data at both sites (this is most easily done by **NOT** checking any items in the Viewed Panels section of the **Display Options** settings except for ***Raw Wave***, and under ***Viewed Components*, NOT** checking any items/waves.
27) Make sure you have good clean Raw Waves.

28) Now switch the dial on the **Mini-Q box** to Position #2 C3, C4, P3, P4. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.
29) Now switch the dial on the **Mini-Q box** to Position #3 T3, T4, O1, O2. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.
30) Now switch the dial on the **Mini-Q box** to Position #4 F7, F8, T5, T6. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.
31) Now switch the dial on the **Mini-Q box** to Position #5 Fp1, Fp2, Pz, Oz. Check your ***Raw Wave*** data at both sites. Make sure you have good clean Raw Waves.

NOTE: The Mini-Q box at Position #5 measures at Fp1, Fp2, Pz, Oz. Since there is no **Oz** electrode site on the standard Electro-Cap™, use may see what appears to be poor signal at site Oz. Do not worry about this. Continue with preparing for the Full Q assessment.

32) If for any reason you do not have good impedance and clean Raw Wave data at any site(s) use the wooden Q-tip to work the Electro-Gel™ down to the scalp, and if need be add a little more Electro-Gel™ to the site electrode until you have improved the impedance and Raw Wave signal. It is best to get the problems resolved now instead of having to stop the Mini-Q to correct problems mid way.

33) Switch the Mini-Q box back to Position #1 ~ Fz, Cz, F3, F4.
34) Now click on OK in the Master30 window to start your session.
35) In **Display** you can select any of the options you want to use to monitor the QEEG assessment by clicking on them.
36) In **Freq. Bands** you can select any of the options you want to use to monitor the QEEG assessment by clicking on them.
37) After 60 seconds/one minute the computer will play a "Windows" sound and stop recording data at this site. Switch the Mini-Q box to Position #2 ~ C3, C4, P3, P4.
38) Click "Yes" in the master 30 window that appears on the Training Control Screen
39) After 60 seconds/one minute the computer will PLAY A "Windows" sound and stop recording data at this site. Switch the Mini-Q box to Position #3 ~ T3, T4, O1, O2.
40) Click "Yes" in the master 30 window that appears on the Training Control Screen
41) After 60 seconds/one minute the computer will PLAY A "Windows" sound and stop recording data at this site. Switch the Mini-Q box to Position #4 ~ F7, F8, T5, T6.
42) Click "Yes" in the master 30 window that appears on the Training Control Screen
43) After 60 seconds/one minute the computer will PLAY A "Windows" sound and stop recording data at this site. Switch the Mini-Q box to Position #5 ~ Fp1, Fp2, Pz, Oz.
44) Click "Yes" in the master 30 window that appears on the Training Control Screen
45) After the eyes closed portion of the Mini-Q is complete, click on **"Close"**
46) Make a written note for run #1, i.e., Run #1 ***Eyes Closed***

Check your Data
47) Click on **Review Session Results**
48)The **Breview** chart comes up and you should see 5 minutes of data for all band widths.
49) With the Breview window open click on **Settings** tab
50) Under **Components** click on Delta, Theta, Alpha, & Beta
51) Under **Full Scale**, start with and click on 20 uV.
52) Click on OK
53) All four Frequency bands should appear on the Breview screen. If you cannot see all four bands on the Breview screen, (some are too high), click on **Settings** again, and under **Full Scale**, click on 30uV.
54) Click on OK
55) Continue to increase the uV following the same procedure until you can clearly see all four bands.
56) Next, on the Breview screen, click on the **Quick-File** tab
57) Scroll down to verify that you have 113 rows of data.

Note: If you have more than 113 rows, highlight all the rows and columns after 69 and hit your delete button. Under **File** click on **Save as** and label the file as **qat00001r** (you do not want to delete the original data; and the file you save as **qat00001r** indicates that this file is the revised corrected file which you will use to upload to *New Mind Apps* as the eyes closed version of your assessment.

58) **Close** the **Excel** screen/window and **close** the **Breview** screen/window.

Now prepare to run the eyes open part of the Full-Q

59) Click on **View or Change Settings**
60) Click on **Data Channel**
61) Click on **Electrodes and Trainee Info**
62) Make sure you have checked **Eyes Opened**
63) Click on **OK**
64) Click OK
65) Click on **Use These Settings**
66) Click on **Run The Next Session**
67) Tell patient to relax, sit still, keep their eyes open and try not to shift their eyes back and forth, but rather to focus on some object in the room, and try not to blink or move; KEEP BOTH FEET ON THE FLOOR.

68) Tell the patient to keep his/her eyes OPEN and relax
69) Click on **RUN NEXT SESSION**

NOTE: you will now follow the same procedure as you did with the eyes closed portion of the QEEG assessment (see items 21-58 above)

70) After eyes open session is complete Click on **"Close"**
71) Make note of run #, i.e., Run #2 ***Eyes Open***
72) Tell patient to relax
73) Check your data as outlined above
74) Remove cap
75) Clean paste and gel off patient's head and ears
76) Cleanse Electro-cap and syringe as per manufacturer's instructions.

General QEEG Assessment Information

- 2 electrodes is two separate patterns/readings
- The closer the electrodes, the more likely the patterns will look the same, when electrodes are further apart, you will see differences.
- To take a measure you need at least three sensors, ground plus two amplified for a one channel (active). One is inverting the other is non-inverting.
- Activities of ear lobe or mastoid … there is no measure… (referential montage).
- Only one ground is needed per channel
- Electrodes (sensors) have a cap 1.5 mm din connector
- Use the International 10-20 Electrode System
- Odd numbers always on LH
- Even numbers always on RH
- Z always on zenith

In general:

- Fz shows the highest amplitude of Theta
- HiBeta to LoBeta – similar (not much EMG)
- Theta Fz to Pz lower is normal
- Alpha Fz to Pz higher is normal
- Theta exceeds Alpha
- Alpha exceeds Beta
- Beta should be static front to back
- Anything more than 50% variability is of interest

Electrode location:
Fp = Prefrontal Cortex
F = Frontal Lobes
T = Temporal Lobes
P = Parietal Lobes
C = Cingulate
O = Occipital Lobes

The BrainMaster Mini-Q takes measures at 12 sites:
Position #1 Fz Cz
Position #2 F3 F4
Position #3 C3 C4
Position #4 P3 P4
Position #5 T3 T4
Position #6 O1 O2

The BrainMaster Full-Q takes measures at 19 sites:
Position #1 Fz, Cz, F3, F4
Position #2 C3, C4, P3, P4
Position #3 T3, T4, O1, O2
Position #4 F7, F8, T5, T6
Position #5 Fp1, Fp2, Pz, Oz (Oz shows on the screen but there is no electrode on the standard Electro-Cap™ at Oz)