Brain-Boy®-Universal

Main Manual

MediTECH
Electronic GmbH

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Brain-Boy®-Universal — Main Manual

This device corresponds to *DIN EN 60601.*

copy master

Please make a cross in the collom, if you used the „training function“ .

Name: ..... Gender: ..... Month/Year of birth: .....

Sync-Boy E			SpeedBoy F		TriplBoy G		Long-Boy H	
synchronized finger tapping			choice reactions-time		frequency pattern test		duration pattern test	
in ms	in ms		in ms		in ms		in ms	

5.3 Your Results

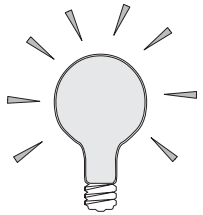
Write down your results in this table. Then you can see the progress of your training.

Hint: *Make a copy of this table.* Then you can write down and see the development of your results for an unlimited time.

Game ->	BrainB-v A		BrainB-a B		ClickBoy C		SoundBoy D	
Function ->	visual order threshold		auditory order threshold		spatial hearing		ditch discrimination	
Date	in ms		in ms		in µs		in %	

1. Background Information

In this chapter you will find some general information about the "*Brain*-Boy® Universal".



Introduction

1. 1 Introduction

The *Brain*-Boy® Universal has been developed to test and train the central processing and perception of the human brain. The brain is a wonder of the human body. It controls important life-functions like the heartbeat or breathing. It also plays an important role in central perception of stimuli – not only the ears are involved in the hearing process!

Auditory nerves receive auditory stimuli and lead them to the brain where they will be processed. From than on, they can be understood "for the first time". This intense process requires a lot of brain work:

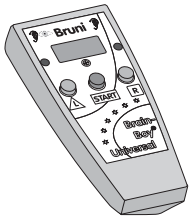
- sounds have to be recognized and to be combined to words
- word stresses have to be distinguished to be able to understand the meaning of a sentence.
- A single speaker has to be distinguished from a background murmuring.

This understanding has to be as quick and accurate as possible, so that the sentences can bei easily implemented and reacted upon This is also applicable for visual stimuli.

The better the brain is trained, the faster and the easier understanding will be. You can test and train your abilities with six easy games, combined in this *Brain*-Boy® Universal. The following two terms are very important for these games:

Auditory stimuli – tones or sounds which are heard and processed in the brain.

Visual stimuli – light signs or movements which are seen and processed in the brain.

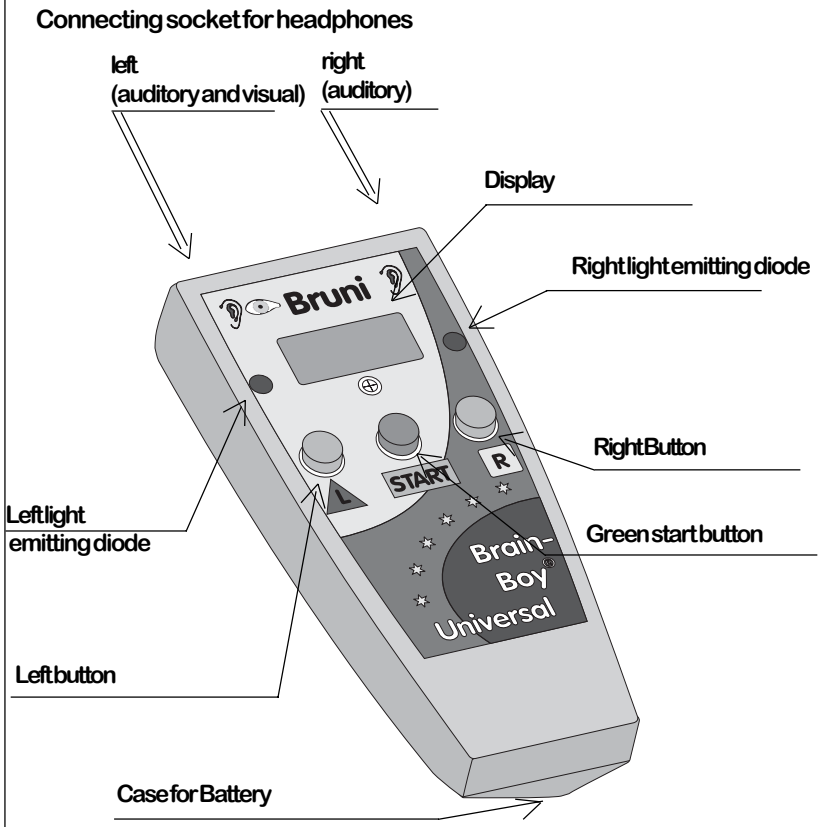


Product Overview

The proven concept behind the *Brain*-Boy Universal is to test and train the complicated elements of brainwork playfully. These instructions shall help you to use the device just as playfully.

1. 2 Product Overview

The following graphic shows all elements of the *Brain*-Boy Universal you need to play with it. Take your device into your hand and compare the elements.



The three buttons are used to operate a menu which offers you six different games.

EC - Declaration of Conformity

CE

***Medi*TECH Electronic GmbH**

(Issuer's name)

Langer Acker 7, 30900 Wedemark

(Issuer's address)

The designated product

***Brain*-Boy® Universal (Article-Number: 2222 / 2226 / 2228)**

made in Germany

(Product's name, Article-Number)

is in conformity with the Europeans Directive 93-42-EEC. The technical documentation as submitted and full compliance with the standards listed belos proves the conformity with the essential requirements of the above-mentioned EC Directive:

EN 60601-1:1990 + A1:1993 + A2:1995

EN 60601-1-2:1993

Wedemark, April 1999

(Place, Date)

(Legally bindeing signature of the issuer)

5. 2 Device and Service Guarantee

By purchasing the *Brain*-Boy®-Universal from

***Medi*TECH Electronic GmbH - Wedemark**

you have a full warranty period of 24 months from the purchasing date (batteries and any damage due to misuse excluded).

Supplementary, we offer you a hotline service for the whole period while working with our device.

This service includes:

Indications for the use of the *Brain*-Boy® Universal with different groups of persons

Help with possible user problems / malfunctions

Answers to questions about and around the *Brain*-Boy® Universal.

You can contact the telephone hotline under

0049 51 30 9 77 78-0

Of course you may send us your questions al well:

via **fax**: **0049 51 30 9 77 78-22**

via **Email**: **service@meditech.de**

* Except of disturbance of function or damages caused by improper use.

1. 3 Safety Instructions

Safety Instructions

The *Brain*-Boy Universal helps to train and test different elements of processing and perception of the human brain. Each use which does not serve this purpose is not intended and therefore not permitted!
With appropriate installation, correct usage according to the instructions and maintenance advice, safety or health of the user or third parties is not endangered. For this reason, this active medical product can be brought into circulation and be used for short time.

☝ Attention:
Do not use the *Brain*-Boy Universal inside rooms where you may find the following materials:
- inflammable gas mixtures combined with anesthesia and air
- inflammable gas mixtures combined with anesthesia and oxygen or laughing gas.

These materials could catch fire.

☝ Attention:
Use the device exclusively with provided *Medi*TECH-headphone, MT-HS 16.
The applied special design ensures the legal requirements for minimal electric distance. It prevents potentially dangerous currents from passing over to the ear.

☝ Attention:
Protect the device and the batteries against ultrasonic baths, significant humidity and chemical detergents The device could be destroyed.

☝ Attention:
Do not open the appliance on your own!
Do not repair defects on your own!
The device could be damaged permanently!

☝ Attention:
Protect the *Brain*-Boy Universal against rough shocks.
The device could be damaged!

Safety Instructions

Attention:
Store or transport the *Brain-B*oy Universal only in the original packaging in which it has been delivered.
Thus the equipment is sufficiently secured against vibrations during a transport.

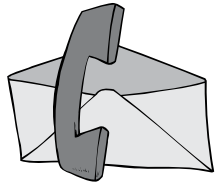
Attention:
The battery compartment should not to be opened by children!
If the wires are torn out, the device could be damaged!

Attention:
Clear the *Brain*-Boy Universal before the first use.
Follow the instructions in chapter 4.3.

Attention:
With too intensive training, a light headache or feeling of dizziness may occur.
These symptoms will disappear as soon as you choose a lower difficulty level or interrupt the training temporarily.

Attention:
For medical reasons the color red is necessary for the light emitting diodes (LED) for playing with the *Brain*-Boy Universal (even if according to DIN EN 60601-1 paragraph 6.7, this color is designated only to show danger or the necessity of urgent action). The *Brain*-Boy Universal does not contain any dangerous situation, which would have to be indicated in this way.

Attention:
We do not take any liability for damages caused by inappropriate use or breach of the safety indications.



Contact

5. Service

In our company, customer contact and service is very important. It goes without saying that we are open for your questions and ideas concerning working with our products and their use.

5. 1 Contact

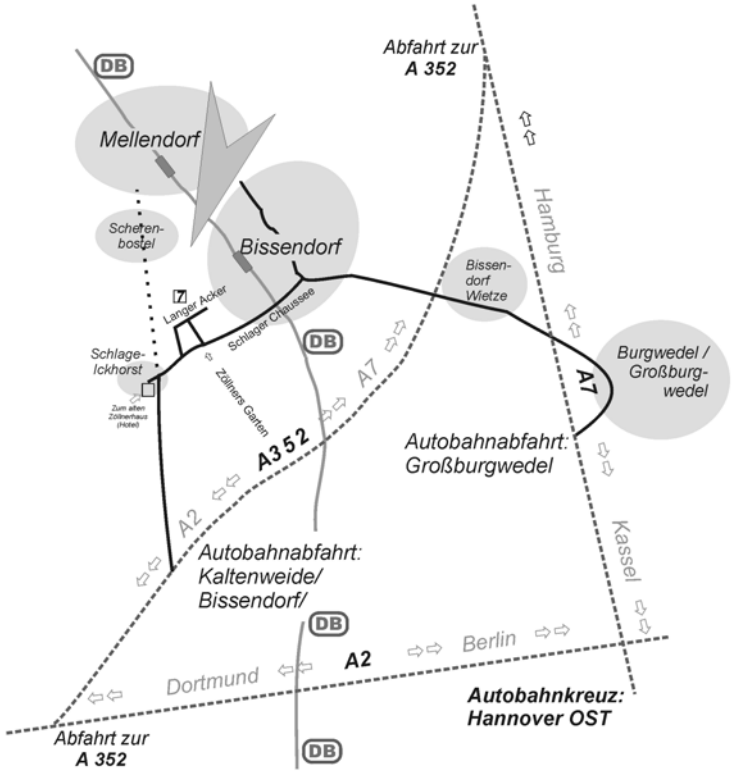
You may contact us in different ways:

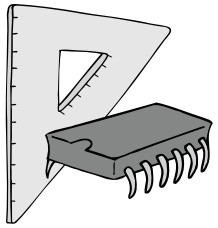
*Medi*TECH Electronic GmbH

-Customer Service-
Langer Acker 7
D-30900 Wedemark (Germany)

Telefon: 0049 51 30 9 77 78-0
Fax: 0049 51 30 9 77 78-22
Email: service @ meditech.de

PLEASE CHECK
http://www.meditech.de
OUR WEBSITE

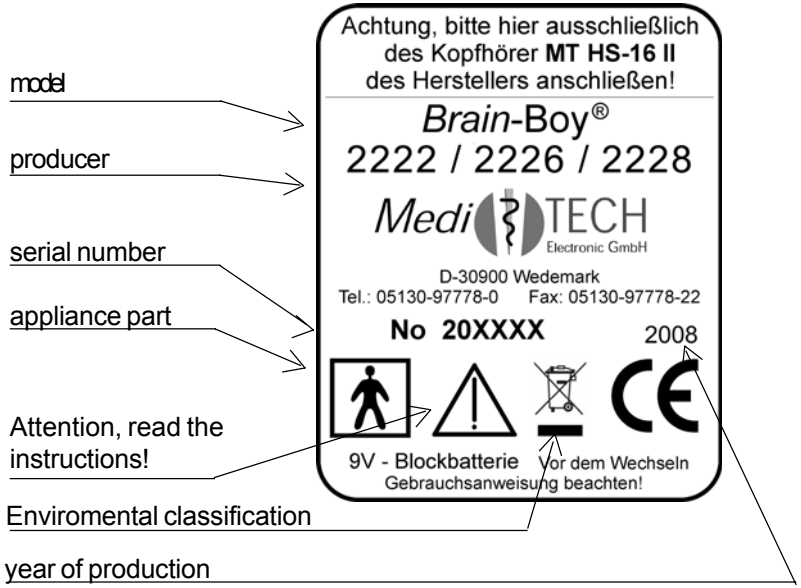




Technique

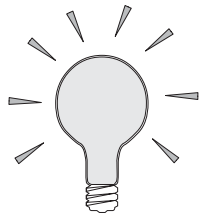
4. 7 Model identification plate

At the back of the *Brain*-Boy® Universal the following model identification plate is placed. The details and signs have the following meaning:



This sign means, that you need an additional part to use the *Brain*-Boy® Universal.
In this case it is the headphone **MT-HS-16 II** which is part of the delivery scope.

Have a look at the special plate.



In general

1. 4 General Training Information

The principal item of the *Brain*-Boy Universal is the menu with six independent games:
In each game you will hear clicks or tones over a headphone and/or see the flash of the LEDs. You have to react differently to these stimuli. Your answers will give information about:

- the temporal interval between stimuli which you recognize
- the pitch interval between tones you can distinguish
- time sequences which you can follow

If you are interested in further information about central perception the following books will allow you an extensive overview.

"Was Hänschen nicht hört..." (GERMAN) by Fred Warnke

"Der Takt des Gehirns" (GERMAN) by Fred Warnke

These books can normally be bought at your local book store as well as directly at *Medi*TECH Electronic GmbH. In addition to specialized literature, *Medi*TECH offers a two-day-seminar for beginners and a follow-up workshop with the aim to achieve practical knowledge of how to use the devices and methods.

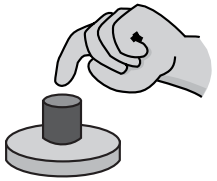
1. 5 Supplied Accessories

The scope of delivery contains:

- *Brain*-Boy®-Universal with 9V battery. There is a plastic foil which protects the BBU of scratches. Please remove this foil before first use.
- *Medi*TECH-headphones MT-HS-16-II - suitable for the training

Attention: The *Brain*-Boy Universal is only to be used with the delivered MT-headphone or an identically constructed ones, supplied by MediTECH.

- Main Manual



Start

2. Game Preparations

In this chapter we will explain the steps you should carry out and pay attention to before you begin to play.

Switch on ⇨ Choose ⇨ Go!

This general process is valid for any of the games.

1. Switch the device on.
2. Choose a game and decide upon the difficulty level.
3. Start the Game.

To train, you should always be concentrated and relaxed. Make sure that you can practice in a quiet room. where background noises can be avoided.
When using the headphones, make sure you put them on correspondingly to the description of the headphone. The side with the sticker has to be on your left ear.

When looking at the light signs while playing, please look at the circle above the green button.

2. 0 Speech on / off

This choice you just have to do, if you want to change the parameter “speech on / speech off”

1. Push the green button in the middle of the device **and hold it.**
2. Push the
   - **left** gray **button** in order to turn the **speech off**.
   - **right** gray **button** in order to switch the **speech on**.
3. Let the green button off to confirm your choice.

This choice will be actuell up to the next changing.

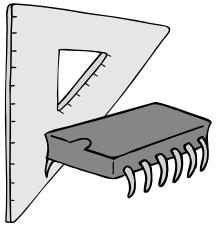
2. 1 Start of the Program

Push the green Button in the middle of the device and hold it for about 3 seconds.
The display shows the following:

Power on
5.xxxxxx

This is how you start the program. If you let go of the button, you already ”are” in the game selection area.
The display shows the following:

ABCDEFGH
BrainB-v



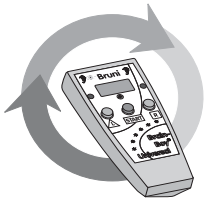
Technical Details

4. 6 Technical details

tension voltage running	9 V battery 30 mA
output level	≤ 110 dBA directly at the headphones
output signal	312 - 600 Hz, variable length
ISI (Inter-Stimulus-Intervall)	18 µs - 999 ms, var. steps
frequency difference	1 ... 75 %, variable steps
weight	150 g (incl. battery)
usage	
temperatur of surrounding	+10 °C to +40 °C
rel. atmospheric humidity	30% to 75%
air pressure	700 - 1060 hPA
storage and transport	
temperatur of surrounding	-20 °C to +50 °C
rel. atmospheric humidity	20 % to 95 %
air pressure	700 - 1060 hPa
Light emitting diodes	
case	5 mm round
colour	red
wavelength	626 nm to 635 nm
lense	diffuse coloured
radiate angle	60° to 65°
tension voltage (at a temperatur of 25 °C)	1,90 V
maximal voltage (at a temperatur of 25 °C)	2,40 V
light intensity	min. 35 mcd at i I_F=20 mA
$I_{F(max)}$	30 mA
reaction time (at a temperatur of 25 °C)	20 ns
temperature during usage	-40 °C to +100 °C
temperature during storage	-40 °C to +120 °C

***Medi*TECH-head phones MT-HS-16**

impedance	32 Ohm
response	40 bis 20.000Hz
power	100 mW
lead	1,15 m abgeschirmt
plug	3,5 mm Stereoklinke
weight	50 g



Technique

4. 3 Cleaning

Clean the *Brain*-Boy® Universal after using with a fluff free cloth. Moisten it with a customary desinfectant.

Attention: Pay attention to the using and safety instructions of the producer. Improper use may endanger your health and may damage the device.

Attention: Protect the device against ultra sound, running water and chemical detergents, like alcohol and thinner. The device could be damaged.

The foam material parts of the headphone have to be replaced when the user changes. Cleaning the foam material is not envisaged. You can purchase the upholstery in a specialised shop or at the *Medi*TECH Electronic GmbH (product number 8333).

4. 4 Storage

The *Brain*-Boy® Universal switches itself automatically off after 20 seconds if not in use.

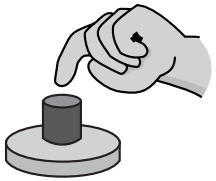
- Only keep the device in a dry and cool room at room temperature. You may keep it at a wall bracket which you can purchase at the MediTECH Electronic GmbH (product number B 00574)
- Only use the original wrapping for longer storage and transport.

4. 5 Sewage and Refuse Disposal

The *Brain*-Boy® Universal is a battery operated small device.
-Remove the battery and dispose it in especially put up collecting containers.

- Small devices of this kind may be completely put into the rubbish (without the battery)
- The wrapping of the device is completely made of paper and may be considered as paper rubbish.

If you do not simply want to throw away your *Brain*-Boy® Universal, you may give it back to us. We will make use of it in a convenient and environmentally sound way.



Sequence

2. 2 End of the Program

In order to keep the Brain-Boy-Universal as simple as possible, we decided to do without an off-button.
Instead, the device switches itself off automatically, therefore you do not have to do anything:

- If you do not push a button for about 10 seconds, the program will show the number 20: this number will be counted backwards to 1 before the device switches itself off.

- If you push a button within the 20 seconds, the program continues normally.

As you see, you will have enough time for your answer. You do not have to get nervous if the numbers appear suddenly in the display.

Hint: Read the instructions for a game completely and follow them step by step. This way you will get an extensive overview about the game and can concentrate on the game and the stimuli.

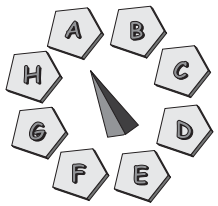
2. 3 Program Sequence

You will find an overview of the control program on the folded rear cover page. As the program is exactly explained on the following pages, you can use this overview for orientation. Simply open the back of the cover and compare the already described parts:

- The first column shows all the games in a certain order. You can choose them with the gray buttons.

The second column shows how many difficulty levels are available for each game. The numbers tell the starting value for the task. A low difficulty level means an easy starting value for the task. You choose these as well with the gray buttons. It will be shown which part of the program you are currently in by giving a small overview on the following pages at the side.

- In addition, the possible difficulty levels and the possible start value are shown on the right sides of the game descriptions.

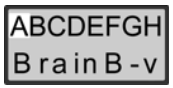


Desired Game Choice

2. 4 Desired Game Choice

To choose a game, the *Brain* –Boy Universal has to be switched on.

1. Push the green button in the middle of the device. Like this, you can start selecting the desired game.



You can see the following in the display:

Each letter in the top line of the display stands for a different game. The blinking frame shows the actual choice. The lower line shows the name of the chosen game, in this case it is **Brain-Boy**.

If the headphones are plugged in and you have put them on, the names of the games will be announced for you.

Would you like to start at once?

2. Push the green button and continue reading the chapter: difficulty level.

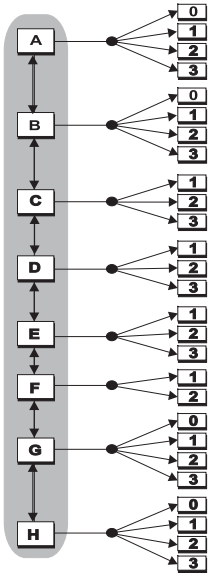
Or would you like to try another game?

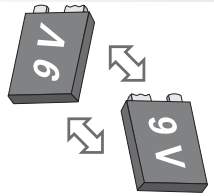
1. Mark a different game with the grey buttons on the left or on the right: (Have a look at the table)
   - Push the **grey** button **L.** The blinking frame goes one position to the **left**.
   - Push the **grey** button **R**. The blinking frame goes one place to the **right**.

Letter	Game
A	BrainB-v
B	BrainB-a
C	ClickBoy
D	SoundBoy
E	Sync-Boy
F	SpeedBoy
G	TriplBoy
H	Long-Boy

2. Push the grey buttons as often as needed until you have marked the desired game.
3. Push the green button. Like this you choose the game and can now fix the difficulty level. (Look at the following chapter difficulty level)

General hint: Take the *Brain*-Boy Universal that way into your hand, that you can use the grey buttons with two fingers. This will make operation easier.





Battery Change

4. 2 Battery Change

The *Brain*-Boy® Universal is delivered with an inserted and connected battery. This has to be changed after a few month of daily practice if:

- the volume of the clicks and the text is softer
- the details on the display are more difficult to see

You need a leak proof 9 V battery which you can purchase in any electronic department of a store.

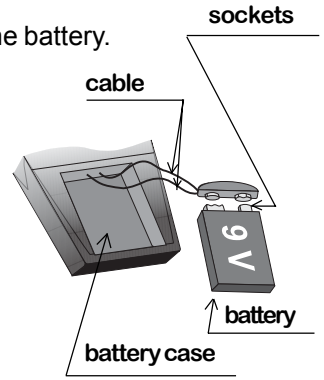
☝ **Attention:** Do not use a rechargeable battery. These are not suitable for the device.

The battery case is at the back of the case.

1. Turn the device so that you can well reach the back side. Look out that the connecting sockets of the headphone do not point toward your body.
2. Open the lock of the lid. Pull the slide into your direction.
3. Remove the lid. You can now see the battery.
4. Carefully take the battery out of the battery case.

   ☝ Attention: Do not tear at the wires. You may damage the device.
5. Unbutton the old battery of the connections.
6. Button the new battery onto the connection. Pay attention that the connections are inserted firmly.
7. Put the battery carefully into the battery case.

   ☝ Attention: Pay attention that the wires are completely inside the battery case. They must not loom about the rand, otherwise, they could be jamed.
8. Put the lid onto the battery chamber.
9. Shove the slide away from you. Doing so you close the case.



Trouble Shooting

4. Maintenance and Technique

In this chapter you will learn how to deal with possible difficulties with the device.

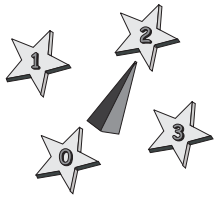
4. 1 Trouble Shooting

Problem	*Check this*
You can**not** hear the **sounds at all** or **only at one side**.	*The headphone might not be connected correctly*. Check if the headphones plug has been inserted firmly. *The headphone might be defective*. Please contact us because you are only allowed to replace the headphone by an approved one.
The **stimuli** and the **text** are **weaker** to hear than usual. The **display** is only showing **weakly**.	*The battery might be empty.* Change these by following the instructions in the chapter battery change. *This maintenance work must not be done by children*!
The device switches itself off automatically and shows the top value.	You made three mistakes during the last seven stimuli. This performance is intended to get a reliable test result.
Apparently you pressed the **right button**. But nevertheless no praise is given and the tasks get easier (higher values)	The headphone might be used the wrong way round. Turn it as described an continue the game. The side with the sticker has to be on your left ear.
The display shows the **number 20**. The device counts backwards to one and switches itself of.	For several seconds you did not push any button. If you would like to continue, press a button within the 20 seconds.

Are there other mistakes or problems while playing?
Contact our customer hotline
+49 - 0 51 30 - 9 77 78-0.

We can discuss further steps together!

2. 5 Difficulty Level



Difficulty Level

Before you can choose the difficulty level of a game, you have to choose the specific game. For that, follow the steps in the previous chapter: Selecting the desired game.

After having chosen a game, in this example Brain-Boy, the display shows the following.

The top line of the display shows the name of the chosen game, the lower line shows the possible difficulty levels. The BrainBoy, for example has four.

Here as well, the blinking frame shows the marked choice. The single difficulty levels have different meanings (have a look at the table):

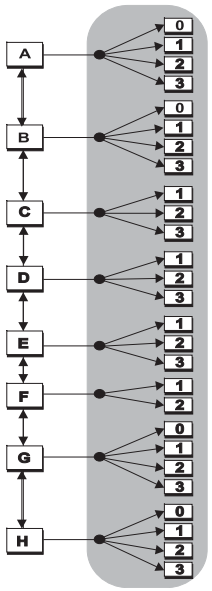
1. You choose another difficulty level with the grey buttons on the left or on the right.
- Push the **grey** button **L**. The blinking frame goes one place to the **left**.
- Push the **grey** button **R**. The blinking frame goes one place to the **right.**

Digit	Meaning
0	very easy
1	simple
2	difficult
3	very heavy

Which difficulty level stands for which starting level, you can see on the table at the back of the cover.

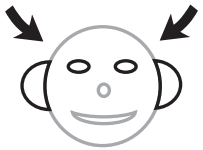
Hint: If you are trying a game for the first time, you should start with a lower difficulty level. The tasks within by the games will become more difficult automatically , if you give the right answer.

2. Push the grey buttons as often as necessary for choosing the suitable difficulty level for you.
3. Now push the green button to fix your choice and start the game. The first stimuli will follow as soon as you let go the button – so watch out!



3. Games

On the following pages you will find specific descriptions to learn how to practice with the different functions of the *Brain-Boy Universal*!



BrainB-v

3. 1 BrainB-v – Game

While playing with the Brain-B-v, you test and train the tact frequency of your brain at seeing (i.e. its processing speed) - the so called order threshold. It indicates the time measure of the ability to distinguish signals with only a brief pause interval and to put them in order. This ability is very important for digesting written information.

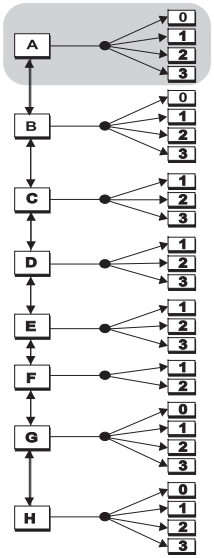
During the training you will perceive different stimuli:
-auditory order threshold: You hear two short clicks.
-visual order threshold: You see two short light signals.
-auditory and visual order threshold: You hear and see both kinds of sensual stimuli.

What is your training goal?
The long-term goal is to increase the speed of the brain´s capability to digest and process information.

How do you practice?

1. Put the plug of the headphones tightly into the following connecting socket.
   - visual training (with auditory help): left socket
   - visual testing: no headphones
2. For training put on the headphones corresponding to the description on the headphones. The headphone side with the sticker has to be on your left ear.

3. Start the game BrainBoy. Follow the instructions on page 10 and 11.
4. Exactly pay attention to the clicks and/or light signals – the order is important! You have 30 seconds time to give the answer. You may calmly decide at which side you perceived the first stimulus.
5. Push one of the grey buttons correspondingly to the order of the stimuli.



General Rule:

Weaker – in this case higher – values for single games are **in no case** an indication of less intelligence!

This is an important information which you should also give to your children. This does of course not imply that if there are weaker results than given in the norm data for that specific age, there would be no need for training. As already mentioned in the different game descriptions, for example directional hearing or pitch discrimination can be dealt with by the brain with spending less capacity, the better the functions have been trained.

Due to this, we propose you to aim at the percent rank 80 (refer to the table below) as mid-term training aim. Our experience shows that these values can usually easily be achieved when the *Brain-Boy®* Universal is used.

game	aim value *(mid-term-training / percent rank 80)*							
	five years old	six years old	seven years old	eight years old	nine years old	ten years old	eleven years old	twelve years old
BrainB-v	**77** ms	**52** ms	**29** ms	**24** ms	**22** ms	**22** ms	**22** ms	**20** ms
BrainB-a	**100** ms	**83** ms	**65** ms	**49** ms	**46** ms	**45** ms	**44** ms	**42** ms
ClickBoy	**85** µs	**68** µs	**53** µs	**42** µs	**33** µs	**29** µs	**26** µs	**22** µs
SoundBoy	**25** %	**18** %	**12** %	**8** %	**6** %	**6** %	**6** %	**6** %
Sync-Boy	**434** ms	**398** ms	**359** ms	**322** ms	**294** ms	**270** ms	**245** ms	**223** ms
SpeedBoy	**916** ms	**808** ms	**720** ms	**616** ms	**548** ms	**452** ms	**384** ms	**324** ms
TriplBoy	**355** ms	**230** ms	**145** ms	**90** ms	**60** ms	**46** ms	**30** ms	**30** ms
Long-Boy	**355** ms	**230** ms	**145** ms	**90** ms	**60** ms	**46** ms	**30** ms	**30** ms

Percent rank
Statistic value – percent rank **80** means:
79 percent of the children of the same age had worse values
1 percent had the same values
20 percent had better values

Result Analysis

3. 7 Result Analysis

Now compare your result reached in a **test** with the values on this page. In this table you will find the average normdata for children at the age of five to twelve years.
Normdata for adults will be available on the internet (www.forschung.meditech.de) mid-term. Until then, the data for the twelve-year-old children can bei takten as reference for adults. the below stated data are results drawn from a wide data collection with 382 test persons, in cooperation the the Medical School in Hanover. These are given as percent rank 50.
the valued should be achieved at least.

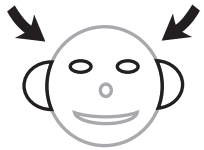
Important: Of course, the values can only be for orientation!

Game	Normdata *(average / percent rank 50)*							
	five years old	six years old	seven years old	eight years old	nine years old	ten years old	eleven years old	twelve years old
BrainB-v	**160** ms	**108** ms	**63** ms	**47** ms	**41** ms	**38** ms	**36** ms	**35** ms
BrainB-a	**260** ms	**190** ms	**136** ms	**99** ms	**83** ms	**73** ms	**68** ms	**65** ms
ClickBoy	**157** µs	**122** µs	**95** µs	**74** µs	**59** µs	**49** µs	**43** µs	**39** µs
SoundBoy	**50** %	**39** %	**31** %	**24** %	**21** %	**21** %	**21** %	**21** %
Sync-Boy	**528** ms	**487** ms	**444** ms	**403** ms	**372** ms	**345** ms	**316** ms	**292** ms
SpeedBoy	**1416** ms	**1284** ms	**1172** ms	**1040** ms	**952** ms	**820** ms	**732** ms	**648** ms
TriplBoy	**575** ms	**405** ms	**300** ms	**220** ms	**162** ms	**142** ms	**116** ms	**116** ms
Long-Boy	**575** ms	**405** ms	**300** ms	**220** ms	**162** ms	**142** ms	**116** ms	**116** ms

You will have noted that the values achieved with teh BBU cannot be found in this table exactly. The values which you will find on this page as well as on the following have been established by statistical means.

Did you see the first light at the **left side**? Then push the button **L.**

Did you see the first light at the **right side**? Then push the button **R.**



BrainB-v

If you answer correctly, the device will praise you and increase the difficulty level for the next pair of stimuli. The two stimuli will follow each other more quickly each time, so please pay attention!

30 ms
Great

If your answer was incorrect, you can try again on a lower difficulty level. The stimuli will follow each other more slowly.
In the topline the display the order threshold value you have reached is shown, then it changes to the next value. And you already see and/or hear the pair of stimuli.

End of Training

a. Early Program Termination

You may terminate the training any time and return to the next menu step.
-Push the green button approximately for one second. Doing so, the training will be interrupted at once and you will return to the main menu. In this case, the result reached so far will be shown as final result.

b.Automatic Program Termination

If you make three mistakes in a sequence of seven pairs of stimuli, the device terminates the program on its own. The display will show the accomplished value before the first wrong answer as the top value.

- Write this value into a copy of the result table at the back of the cover. Compare this value to the analysing table on page 28.

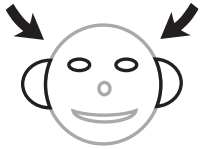
Furthermore, the device finishes the game automatically if: You fall short of 5 ms or exceed 800 ms. That is when you have reached one of the program boundaries The display shows the the words endvalue or topscore. After 30 seconds you return to the main menu. By pushing the green button you will reach the menu to select the desired game in advance.

0 : 400 ms

1 : 200 ms

2 : 100 ms

3 : 50 ms



BrainB-a

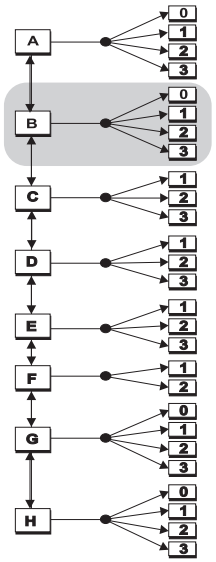
3. 2 BrainB-a – Game

While playing the BrainB-a you test and train the tact frequency of your brain at hearing (i.e. its processing speed) - the so called order threshold. It indicates the time measure of the ability to distinguish signals with only a brief pause interval and to put them in order. This ability is very important for spoken language information.

During the training you will perceive different stimuli:
-auditory order threshold: You hear two short clicks.
-auditory and visual order threshold: You hear and see both kinds of sensual stimuli.

What is your training goal?
The long-term goal is to increase the speed of the brain´s capability to digest and process information.

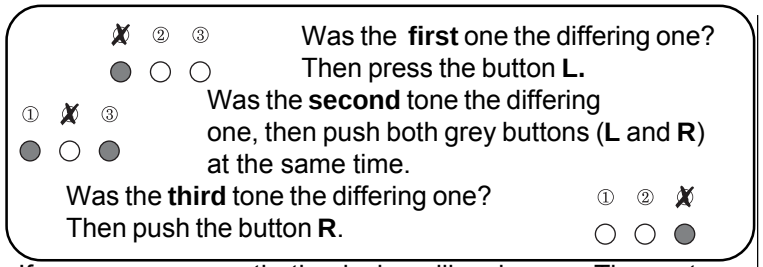
How do you practice?
1. Put the plug of the headphones tightly into one of the two connecting sockets.
   - auditory training (with visual help): left socket
   - auditory testing: right socket
2. For test and training put on the headphones corresponding to the description on the headphones. The headphone side with the sticker has to be on your left ear.

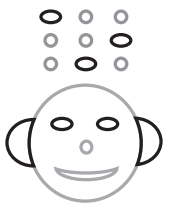


3. Start the game BrainBoy. Follow the instructions on page 10 and 11.

4. Exactly pay attention to the clicks and/or light signals – the order is important! You have 30 seconds time to give the answer. You may calmly decide at which side you perceived the first stimulus.

5. Push one of the grey buttons correspondingly to the order of the stimuli.





Long-Boy

If you answer correctly, the device will praise you. The next tones will be shorter and have smaller time intervals as the The difficulty level increases.
If your answer was incorrect, you may try again a lower difficulty level. The following tones will be longer and have grater time intervals as the difficulty level decreases.

75 ms
Yes

The display always shows the current length and time interval of each signal. Once you release the answering button(s) you immediately hear the next tone succession.

End of Training
a) Early Program Termination
You may terminate the training any time and return to the next menu.
- Push the blue button approximately for one second. Doing so will interrupt the training at once and return you to the main menu. In this case, no the result will be shown on the display.

b) Automatic Program Termination
If you make three mistakes in a sequence of seven pairs of stimuli, the device terminates the program on its own. The display will show the value accomplished prior to the first incorrect answer as the top value.
- Write down this value in a copy of the result table that you can find at the back of the manual. Compare this value to the normdata table at page 24.

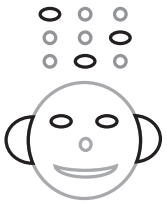
Furthermore, the device terminates the game automatically if you fall short of 10 ms or exceed 800 ms.
On either incident you have reached one of the program boundaries. The display will show “topscore” or “endvalue” plus the corresponding figure you accomplished.
After 30 seconds you return to the main menu. By pushing the blue button you will reach the menu to select the desired game immediately.

0 : 400 ms

1 : 200 ms

2 : 100 ms

3 : 50 ms



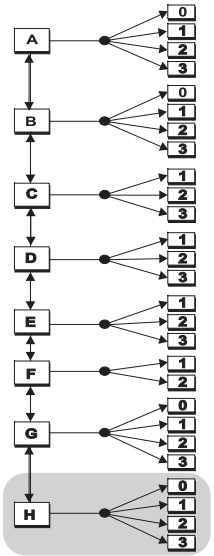
Long-Boy

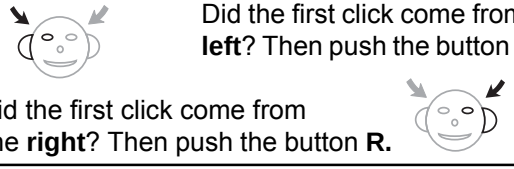
3. 8 Long-Boy – Spiel

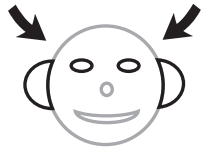
While playing the Long-Boy you test and train your ability to recognize minimal differences in a suite of tones and to distinguish them. This ability is very important to be able to discriminate auditory sound pattern clearly from others.
For each sound there is a distinct auditory representation within the brain. If very short sounds differ only slightly, some people can rarely distinguish them. The more accurate the inner representation can be accomplished, the better sounds and language patterns can be discriminated and perceived.
During the training you will hear a succession of three tones, two of which are identical and one is different in frequency.

What is your training goal?
The aim is to be able to distinguish between different sound patterns.

How do you practice?
1. Put the plug of the headphones tightly in one of the two connecting sockets.
   - auditory training (with visual help): left socket
   - auditory testing: right socket
2. Start the game Long-Boy. Follow the instructions on page 10 and 11.
3. Exactly listen to the three tones and pay attention to the order of the tones. The one that is different from the others is the one you need to find!
   You have up to 20 seconds for your answer. You may calmly decide which sound was the differing one.
   Advice: The signals in the particular function are louder in comparison, so please be aware of that.
4. Push one of the grey buttons correspondingly to the order of stimuli to give your answer:







BrainB-a

If you answer correctly, the device will praise you and increase the difficulty level for the next pair of stimuli. The two stimuli will follow each other more quickly each time, so please pay attention!

30 ms
Great

If your answer was incorrect, you can try again on a lower difficulty level. The stimuli will follow each other more slowly.
In the topline the display the order threshold value you have reached is shown, then it changes to the next value. And you already see and/or hear the pair of stimuli.

End of Training

a. Early Program Termination

You may terminate the training any time and return to the next menu step.
-Push the green button approximately for one second. Doing so, the training will be interrupted at once and you will return to the main menu. In this case, the result reached so far will be shown as final result.

b.Automatic Program Termination

If you make three mistakes in a sequence of seven pairs of stimuli, the device terminates the program on its own. The display will show the accomplished value before the first wrong answer as the top value.
- Write this value into a copy of the result table at the back of the cover. Compare this value to the analysing table on page 28.

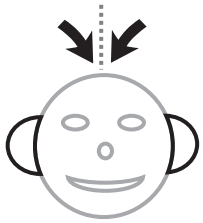
Furthermore, the device finishes the game automatically if: You fall short of 5 ms or exceed 800 ms. That is when you have reached one of the program boundaries The display shows the the words endvalue or topscore. After 30 seconds you return to the main menu. By pushing the green button you will reach the menu to select the desired game in advance.

0 : 400 ms

1 : 200 ms

2 : 100 ms

3 : 50 ms



Click-Boy

3. 3 ClickBoy – Game

While playing the ClickBoy you test and train your directional hearing. This is very important to be able to perceive directly sounds and especially language from different directions, to be able to assign them and to overhear them as well.
You will hear two stimuli – really. But if you perceive only one click it is absolutely normal. The temporal interval between the stimuli is so small that you really cannot hear them.
A sound in a room will be perceived temporarily separated by one's ears. The ClickBoy simulates this situation with two stimulies. The minimal temporal difference is enough for the brain to be able to ascertain the direction the sounds came from quite exactly.

What is your training goal?

The aim is to be able to locate sounds as exactly as possible in the room without any visual help.

How do you practice?

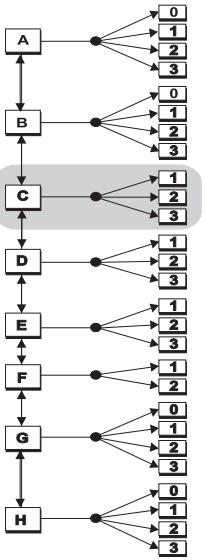
1. Put the plug of the headphones tightly into one of the two connecting sockets.
   - auditory training (with visual help): left socket
   - auditory testing: right socket

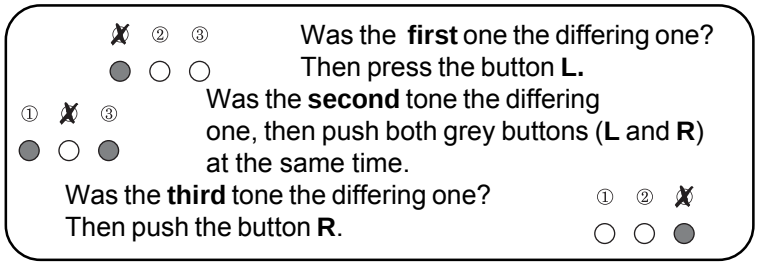
2. For test and training put on the headphones corresponding to the description on the headphones. The headphone side with the sticker has to be on your left ear.

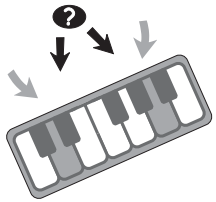
3. Start the game ClickBoy. Follow the instructions on page 10 and 11.

4. Pay exactly attention to the click – the side is important! You have 30 seconds time to give the answer. You may calmly decide at which side you heard the click.

Hint: The click seems to be very near to the centre of the head – please pay attention!







TriplBoy

If you answer correctly, the device will praise you. The next tones will be shorter and have smaller time intervals as the The difficulty level increases.
If your answer was incorrect, you may try again a lower difficulty level. The following tones will be longer and have grater time intervals as the difficulty level decreases.

75 ms
Yes

The display always shows the current length and time interval of each signal. Once you release the answering button(s) you immediately hear the next tone succession.

End of Training

a) Early Program Termination

You may terminate the training any time and return to the next menu.

- Push the blue button approximately for one second. Doing so will interrupt the training at once and return you to the main menu. In this case, no the result will be shown on the display.

b) Automatic Program Termination

If you make three mistakes in a sequence of seven pairs of stimuli, the device terminates the program on its own. The display will show the value accomplished prior to the first incorrect answer as the top value.

- Write down this value in a copy of the result table that you can find at the back of the manual. Compare this value to the normdata table at page 24.

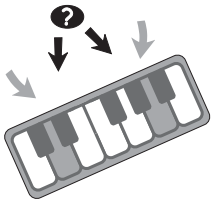
Furthermore, the device terminates the game automatically if you fall short of 10 ms or exceed 800 ms.
On either incident you have reached one of the program boundaries. The display shows "topscore" or "endvalue" plus the corresponding figure you accomplished.
After 30 seconds you return to the main menu. By pushing the blue button you will reach the menu to select the desired game immediately.

0 : 400 ms

1 : 200 ms

2 : 100 ms

3 : 50 ms



TriplBoy

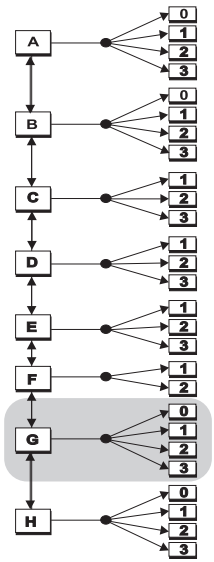
3. 7 TriplBoy – Spiel

While playing the TriplBoy you test and train your ability to recognize minimal differences in a suite of tones and to distinguish them. This ability is very important to be able to discriminate auditory sound pattern clearly from others.
For each sound, there is a distinct auditory representation within the brain. If very short sounds differ only slightly, some people can rarely distinguish them. The more accurate the inner representation can be accomplished, the better sounds and language patterns can be discriminated and perceived.
During the training you will hear a succession of three tones, two of which are identical and one is different in frequency.

What is your training goal?
The aim is to be able to distinguish between differnet sound patterns

How do you practice?

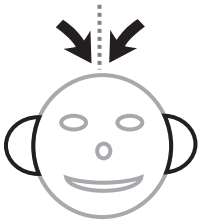
1. Put the plug of the headphones tightly into one of the two connecting sockets.
   - auditory training (with visual help): left socket
   - auditory testing: right socket
2. Start the game TriplBoy. Follow the instructions on page 10 and 11.
3. Exactly listen to the three tones and pay attention to the order of the tones. The one that is different from the others is the one you need to find!
   You have up to 20 seconds for your answer. You may calmly decide which sound was the differing one.
   Advice: The signals in the particular function are louder in comparison, so please be aware of that.
4. Push one of the grey buttons correspondingly to the order of stimuli to give your answer:



5.Press one of the grey buttons correspondingly to the side the click came from.

Did the click come from the **left**?
Then push the button **L.**

Did the click come from the **right**?
Then push the button **R.**



ClickBoy

If you answer correctly, the device will praise you. The following click seems to be nearer to the centre of the head. The difficulty level of the tasks increases.
If your answer was incorrect, you can try again at a lower difficulty level. The following click will be further away from the centre of the head.
The display shows shortly the reached temporal difference reached and continues with the following value.
And you already hear the next click.

55 µs
Super

End of training

a. Early Program Termination

You may terminate the training any time and return to the next menu step.
-Push the green button approximately for one second. Doing so, the training will be interrupted at once and you will return to the main menu. In this case, the result reached so far will be shown as final result.

b.Automatic Program Termination

If you make three mistakes in a sequence of seven pairs of stimuli, the device terminates the program on its own. The display will show the accomplished value before the first wrong answer as the top value.

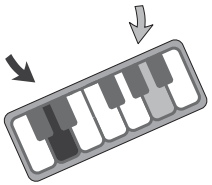
- Write this value into a copy of the result table at the back of the cover. Compare this value to the analysing table on page 28.

Furthermore, the device finishes the game automatically if: You fall short of 18 µs or exceed 600 µs. That is when you have reached one of the program boundaries The display shows the the words endvalue or topscore. After 30 seconds you return to the main menu. By pushing the green button you will reach the menu to select the desired game in advance.

1 : 280 µs

2 : 140 µs

3 : 75 µs



SoundBoy

3. 4 SoundBoy – Game

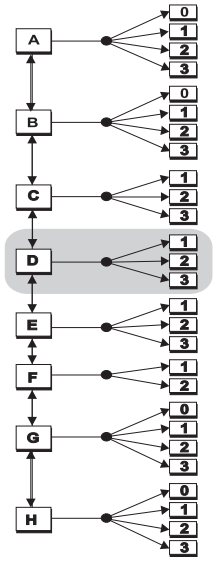
While playing with the SoundBoy you test and train the ability to distinguish between tones with very small pitch differences. This is extremely important for speaking as well as for understanding a language.
A decisive aspect of speaking is to recognise the word stress of the pronunciation. The most important prerequisite is of course to be able to recognise small tone differences.

Empfases in spoken speech transport ”hidden” messages. If these messages are overheard, there does not necessarily need to be a “mean intention” behind it. Frequently, emphases are simply not perceived.

In this game you will hear two sounds which differ only in their pitch.

What is your training goal?

The long-term aim is to be able to distinguish between the pitch of two tones as exactly as possible.



How do you practice?

1. Put the plug of the headphones tightly in one of the two connecting sockets.
   - auditory training (with visual help): left socket
   - auditory testing: right socket
2. Put the headphones on.
3. Start the game SoundBoy. Follow the instructions on page 10 and 11.
4. Listen to the tones, this time, the order is important, it depends on the deeper tone!
   For the answer, you have 30 seconds time. You may think calmly which of the tones has been the deeper one.
   Hint: The tones are quite loud compared to the other sounds, don´t be startled.

Did the first stimulus come from the **left**? Then push the button **L**.
Did the first stimulus come from the **right**? Then push the button **R**.

If you answer correctly, the display will show your time reached, for example: 167ms.

167 ms

If your answer is wrong, the device will ask you to try again the same pair of tones: again.

again

If you answer before hearing the second tone, the following will happen: The device will ask you to wait pair for the second tone before answering: Wait for sound.
The next pair will follow your answer directly. The difficulty level stays the same for each pair – it does not matter if you your answer was vorrect or wrong

Wait for sound

End of training

You may finish the training any time and return to the main menu. Push the green button for about one second.
To make an independent test possible, the game keeps the difficulty level of the task. As you cannot reach any boundaries, the device finishes the game automatically after 40 pairs of tones. The display shows the top value: 94 topscore

94 ms
topscore

1. Write this value into a copy of the result table at the back cover. Doing so, you will have a survey about you training progress. Compare these as well to the analysis table on page 28.

After 30 seconds you return to the main menu. By pushing the green button you will reach the main menu in advance.

SpeedBoy

1 : 300 ms

2 : 60 ms

SpeedBoy

3. 6 SpeedBoy – Game

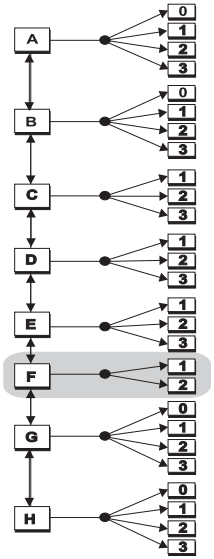
While playing the SpeedBoy you train and test your auditory reaction time. In many situations of everyday life it is very important to concentrate in dangerous situations.
The ability of reacting to something visual is usually very well distinct. Against that, there is frequently the difficulty to act in a special auditorial situation. Usually, these actions are innate reflexes.
In this game you hear two tones from different directions and react as fast as possible.

What is your training goal?

The long-term aim of the game is to react fast and to auditory stimuli, without being dependent of any help.

How do you practice?

1. Put the plug of the headphones tightly into one of the two connecting sockets.
   - auditory training (with visual help): left socket
   - auditory testing: right socket



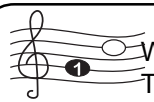
2. For test and training put on the headphones corresponding to the description on the headphones. The headphone side with the sticker has to be on your left ear.

3. Start the game SpeedBoy. Follow the instructions on page 10 and 11.

4. Pay exactly attention to the side the tones come from, the deeper tone is important!In this game you have to answer to the tones as fast as possible after hearing the tones.

5. Push one of the grey buttons corresponding to the order of the stimuli.

5. Push one of the grey buttons corresponding to the order of the tones:



Was the **first** tone deeper?
Then push the button **L.**
Was the **second** tone deeper,
then push the button **R**.

If you answer correctly, the device will praise you. The interval between the two tones will become smaller. The difficulty level increases.

10 %
Good

If your answer was incorrect, the interval will become a bit wider, you may try again at a lower difficulty level. The display shows the tone difference reached, and continues to the next value.
And you already hear the next pair of tones.

End of training

End of training

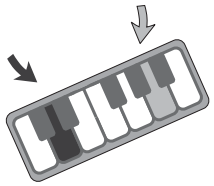
a. Early Program Termination

You may terminate the training any time and return to the next menu step.
-Push the green button approximately for one second. Doing so, the training will be interrupted at once and you will return to the main menu. In this case, the result reached so far will be shown as final result.

b.Automatic Program Termination

If you make three mistakes in a sequence of seven pairs of stimuli, the device terminates the program on its own. The display will show the accomplished value before the first wrong answer as the top value.
- Write this value into a copy of the result table at the back of the cover. Compare this value to the analysing table on page 28.

Furthermore, the device finishes the game automatically if: You fall short of 1% or exceed 65%. That is when you have reached one of the program boundaries The display shows the the words endvalue or topscore. After 30 seconds you return to the main menu. By pushing the green button you will reach the menu to select the desired game in advance.

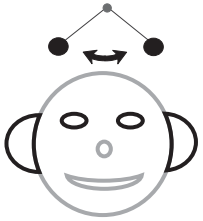


SoundBoy

1 : 40 %

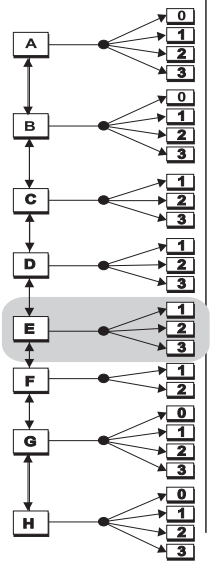
2 : 20 %

3 : 10 %



Sync-Boy

Hint: the training with Sync-Boy should not be started before reached values corresponding to the age at BrainBoy-Training



3. 5 Sync-Boy – Game

While playing the SyncBoy you test and train the ability to digest perceived stimuli and to convert them into movements as quickly as possible. Especially the temporarily assimilation of information plays a very important role for thinking, speaking and writing. Auditory and visual information have to be perceived, to be taken apart, erranged and to be analysed by the brain. To be able to react quickly to words information, a fast temporal assimilation in the brain is extremely important.
During the training, clicks in a constant order will be offered to you: left, right, left, ...
Auditory digestion: you will hear short clicks
Visual digestion: you see short light flashes.
Auditory and visual digestion: You see and hear both stimuli.

What is your training goal?

The aim is to locate auditory stimuli as exactly as possible without any visual assistance.

How do you practice?

1. Put the plug of the headphones tightly in one of the two connecting sockets.
   - auditory training (with visual help): left socket
   - auditory testing: right socket
   - visual testing: no headphones

2. For test and training put on the headphones corresponding to the description on the headphones. The headphone side with the sticker has to be on your left ear.

3. Start the game SyncBoy. Follow the instructions on page 10 and 11.

4. Pay attention to the stimuli, the clicks and / or the light signs.

5. Press synchronously to the respective stimulus one of the grey buttons.

Push the button **L** synchronously to the left stimulus.
Push the button **R** synchronously to the right stimulus.

Hint: To get used to the frequency, leave some stimuli out before starting to press the buttons. This is also helpful if you once play out of time. If you can follow the given time exactly, the time will get faster.
If you do not follow the time exactly enough, the speed will stay the same.
6. Always adapt your pushing to the given time.
The display shows the time speed which you should reach next.

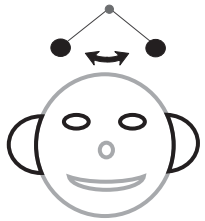
230 ms

End of Training

a)Early Program Termination
You may terminate the training any time and return to the main menu.
-Push the green button approximately for one second. Doing so, the training will be interrupted at once and you will return to the main menu. In this case, the result will not be shown.

b) Automatic Program Termination

In dependence to the chosen difficulty level, the program will break off the game after a set time:
Difficulty Level **1** (Starting Level 900 sec) → after 120 sec.
Difficulty Level **2** (Starting Level 600 sec) → after 80 sec
Difficulty Level **3** (Starting Level 300 sec) → after 40 sec
Furthermore the device will terminate the program if you reach one of the game boundaries.
The display shows the words endvalue or topscore. After 30 seconds you return to the main menu. By pushing the green button you will reach the main menu to select the desired game in advance.



Sync-Boy

1 : 900 ms

2 : 600 ms

3 : 300 ms