



ADScan

User's manual



Medi  **TECH**
Electronic GmbH



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1. Background information

In this first Chapter you will find general information about the ADScan unit.

1.1 Introduction

The ADScan unit allows you to measure the level of attention as well as the intensity of movement in children age 4 to 12. All gathered data can be stored correspondingly per client. The result analysis is conducted with the help of the ADScanalyzer software. Transmitting recorded data is done via a USB interface.

1.2 Scope of delivery

The scope of delivery of the ADScan unit (2520-SET-GB) includes

Product	Ident-Nr. (for follow up orders)
• ADScan unit including power adapter (type FW7556M/12)	2520
• USB-Isolator Connecting the ADScan unit to the computer	2548
• USB-Connection cable USB-A to USB-Mini-B (data transmission)	8748
• USB-Connection cable USB-A to USB-B (data transmission)	9897
• Push button for the CPT test Wooden ball on a cable (length 2.90 m)	9109
• Measuring tape length of 3 m – to measure the suitable distance between client and unit.	9120
• Tripod holding plate Connecting the ADScan unit to a tripod	7993
• ADScanalyzer* software on CD-ROM	2521
• Manual including CD-ROM	5021

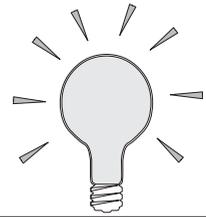
All components are provided in a hard-top case (Prod.-Nr. 9121). It is recommended to use this case for longer storing periods and for transportation of the unit.

The scope of delivery includes a tripod (Art.-Nr. 7992), which is transported separately.



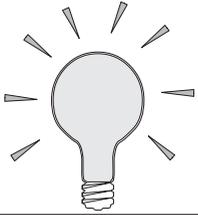
Attention! Use only the provided accessory or - in case of damage or loss - the spare parts listed above. Other articles may cause more powerful emission or reduce the immunity of the ADScan unit.

* The latest software version as well as software patches can be found at www.download.meditech.de. Please note that only clients with a valid service contract are eligible to receiving such updates.



Introduction

1. Background information



General notes

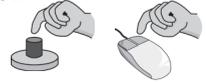


View on device

1.3 General usage instructions

You can enter a client directly on the ADScan unit or via remote control using the ADScanalyzer software. The analysis of gathered data is done solemnly in the ADScanalyzer software. You may select which ever process suits you better.

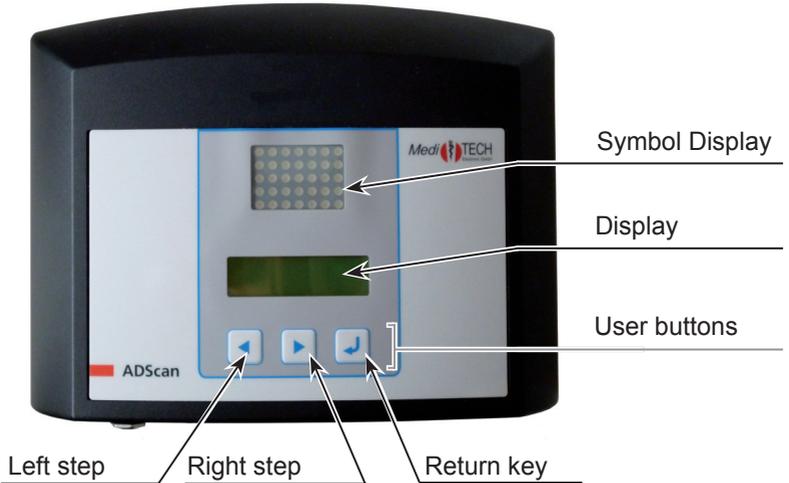
In the first part of this manual it is explained how to operate the unit, after that the. remote control function is described.



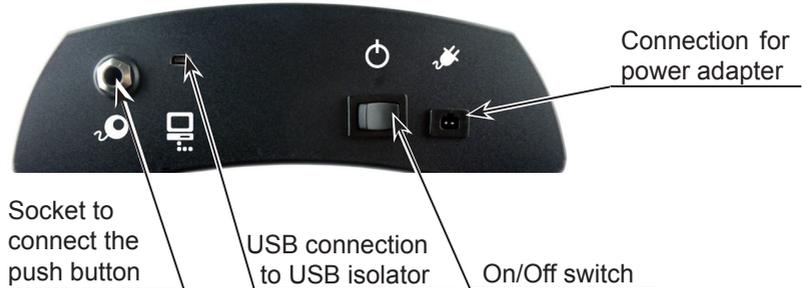
1.4 View on device

Operating the ADScan unit intentionally is limited to very few steps you need to take. Hence the number of buttons, switches and sockets is quite moderate. Nevertheless you are asked to take the time to get acquainted with all elements of the ADScan unit.

On the front panel you can find the following elements:



The rear side contains the following elements:



1.5 Safety instructions

The ADScan is designed to assess the level of alertness and corresponding controlled reactions towards specific stimuli as well as movement and movement intensity over an extended period of time. This process is intended to help professionals to determine the probability of a client being impacted by ADD/ADHD (attention deficit disorder with/without hyper activity). The device allows for a screening analysis and in particular to train and adjust the level of movement and alertness in the client.

Any usage directed to a different objective is prohibited. As long as the installation is done properly, all instructions and warning notices are followed, the health and safety of the user and third parties are fully safe. Correspondingly, this active medical device can be put into circulation and operated for short-term usage in accordance with medical law standards.



Safety instructions

- 
Attention! Do not use the ADScan unit in rooms containing inflammable mixtures, such as mixtures of anesthetic mixtures or oxygen or laughing gas. Such mixtures may be ignited.
- 
Attention! During the test, movement is measured using double radar waves.
- 
Attention! Use only the provided accessory or – in case of damage or loss – the spare parts listed above. Other articles may cause more powerful emission or reduce the immunity of ADScan.
- 
Attention! *Protect the unit from ultrasound baths, severe humidity as well as chemical detergents.* The device could be destroyed.
- 
Attention! *Do not open the unit on your own! Do not attempt to self-repair the unit. The device could be severely damaged. Important:* By opening the unit all and any warranty claims are nil and void.
- 
Attention! *Protect the ADScan unit from severe blows.* The device could be damaged.
- 
Attention! *Store and transport the ADScan unit only in the special hard-top case in which the unit was provided to you.*
 Doing so, the unit is suitably protected from shocks during transport or storage.

1. Background information



Safety instructions

-  **Attention!** Clean the ADScan prior to first usage. Strictly follow the instructions provided to you in the chapter dealing with “Cleaning”.
-  **Attention!** The ADScan must not be arranged stacked directly next to or with other devices. Just in case that a stacked arrangement of the operation is required, the ADScan should be monitored to verify its proper operation in the used configuration.
-  **Attention!** The ADScan may be disturbed by other devices, even if they match the external connection requirements valid for CISPR.
-  **Attention!** For medical reasons the color RED is needed in the LEDs in the ADScan unit, even though DIN EN 60601-1 paragraph 7.9 solemnly limits this color to danger or the projection of an immediately needed action. There are no dangerous situations in the use of the ADScan that would require a corresponding warning signal.
-  **Attention!** Note that you use the ADScan unit only with the frequency range permitted and specified for your respective country.
-  **Attention!** *The manufacturer is not liable for damage due to improper usage of the device or due to neglect of the safety instructions.*
-  **Hint** The *ADScan* is a medical electrical device and, hence, subject to special precautions concerning electromagnetic compatibility. The device may be put into operation only according to the notes given in this manual (page 41 +)

2 Test preparations

In this Chapter you learn how to prepare working with the ADScan unit. This includes: Selecting an adequate test environment, setting up the unit, starting the device, client entry and test selection as well as how to handle the functionality of the built-in menu structure.

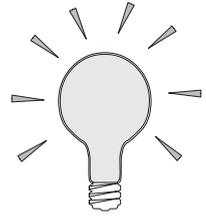
2.1 Requirements for the application environment

- Quiet. Ensure to avoid: telephones, loudly ticking clocks or similar sources of potential noise and disturbances that could reduce the clients level of concentration.
- Relatively dark / with the option of closing out external lights
- Comfortable temperature without draft at approximately 20 °C. To high or low temperatures may impact the measurements.
- Room must be at least 4 m long.
- 230V power socket immediately next to the unit's placement
- Comfortable seat for the client
- Table and chair for the tester.

Important: Ensure that your seat is not within a 90° radius in front of the ADScan unit. The same holds true for all and any movable parts (i.e. plant leaves or curtains). Otherwise such movement could be likewise measured and impact the overall measurement

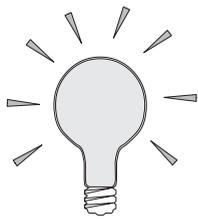


Attention! Ensure that the cables connecting the ADScan with the power supply or the computer create no tripping hazards. Place the tripod in such a way that you or others cannot trip over the tripods legs to avoid the danger of injury or damage to the unit.



Test preparations

2. Preparation



Setting

2.2 Setting up the ADScans

1. Connect the holding plate of the ADScan to the upper end of the tripod. In order to do so, position the holding plate on the screw thread and turn it clockwise until it is securely positioned on the tripod without reeling.
2. Preferably position the tripod closely to a wall. Spread the tripod's legs to ensure a greater level of stability.
3. Adjust height and gradient of the unit by loosening the tripod thread, adjusting the respective positions and re-tightening the tripod thread.

Hint: If you wish to control the ADScan device with the ADScana-lyzer software or transmit data, connect the unit to the computer as described in the following:



- Connect your USB-Mini-B-jack of the connection cable into the corresponding socket of the ADScan device.
- Insert the USB-A-jack (on the other end of this cable) into the respective USB-isolator socket.
- Connect the USB-B-jack of the other connection cable with the remaining free socket of the USB-Isolator.
- Insert the USB-A-jack (on the other end of the second cable) into one of the USB-plugs of your computer.

4. Connect the small jack of the power adapter into the corresponding socket on the ADScan unit.
5. Place the actual power adapter into the power socket outlet.



6. Position the client's seat three meters directly in front of the ADScan unit.

Take notice of the following further recommendations:

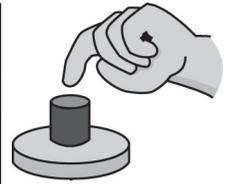
- Your client should not be blinded by sunlight or lights in your room. If needed make sure to cover / blend out the corresponding light source.
- No light should reflect either from the display or the LED dot matrix. Ensure to avoid direct light emittance onto the unit.
- The client must be able to easily see the LED dot matrix displaying the various symbols without having to turn the head at all.



2.3 Starting the ADScan

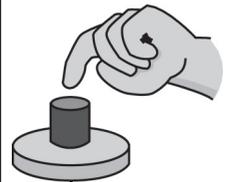
1. Turn the on/off key to the left .

In the display you will see a short sequence of information. Please do not press any buttons during this start-up phase (for about 10 seconds).



Start device

If you prefer to use the remote control functionality for the ADScan unit, please continue with chapter 4



Operating with menu structure

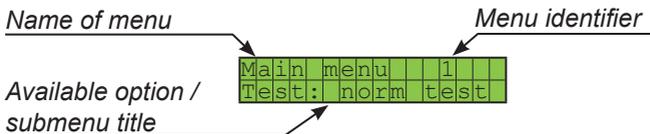
***** * ADScan *	Entry screen
Firmware version x.xxx	Current Firmware Version – You may be requested to provide this information when seeking support.
15.02.2011 13.28 HELLO	Date and time
***** Client: Mueller	Currently selected client. Change selection as needed.
Main menu 1 Test: norm test	Main menu (final screen after initialization)

3. Operating the ADScan unit with the built-in menu structure

In this Chapter you learn how to use the different menus offered by the ADScan unit.

General display information:

After turning on the device you are in the main menu. Menu entries are explained hereafter

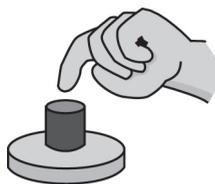


General information on the menu structure:

The ADScan unit is menu-based. The menu has different levels and the following structure:

1 Test	2 Select test	3 Client menu	4 Options
1-1 Start test	2-1 Norm test	3-1 Client:	4-1 Date
1-2 demo test	2-2 Norm test long	3-2 Select client	4-2 Summer time
1-3 demo test (long)	2-3 REST-Scan	3-3 Change client	4-3 Time
1-4 << back	2-4 REST-Scan (long)	3-4 Create Client	4-4 LED-Dot-Matrix
	2-5 CPT-V	3-5 Delete client	4-5 unit temperature
	2-6 CPT-V long	3-6 Delete all	4-6 Memory capacity
	2-7 << back	3-7 << back	4-7 Menu language
			4-8 Quickselect keys
			4-9 Firmware version
			4-0 << back

3. Operating the ADScan via user menu



Test menu

How to move within the menu:

- Press  respectively , to switch options within the menu and to select the desired submenu.
- Press , in order to switch to the marked submenu. If **<< back** is highlighted you can switch to the next menu level above by pressing .

How to handle each option is based on the menu sequence.

1 Test
2 Select test
3 Client menu
4 Options

3.1 Test menu

From within the main menu you launched the submenu test. In this menu the following options are available:

	Name	Meaning
1-1	Start test	Startet the test which was chosen in the sub-menu Select test
1-2	Demo-Test	10 sec. demo of the CPT-V-test sequence (figure in the symbol display)
1-3	Demo-Test long	15 sec. Demo of the CPT-V-test sequence (figure in the symbol display)
1-4	<< back	back to main menu

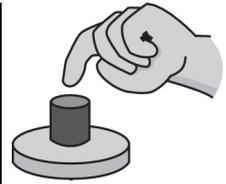
1. Press  respectively  until the option you wish to choose is highlighted.
2. Press , to confirm your preselection and to launch the selected menu option.

Advice:

- Tests start immediately after a 4-second Countdown indicated by five beeps.
- You may abort tests by pressing  No recorded data will be stored when aborting.
- You cannot abort test demos.

3.2 Test selection

You have launched the submenu test selection from within the main menu. Here you can choose from the available test options which test you wish to conduct with the current client:



Test selection

	Name	Meaning
2-1	Norm test	<ul style="list-style-type: none"> Procedure: Client presses push-button whenever the symbol sequence  ->  appears. After completion of this step, movement is measured again during the rest scan. Duration: approx. 20 min. (10 min + 10 min.) Consists of CPT-V + rest scan
2-2	Norm test long	<ul style="list-style-type: none"> Procedure: Client presses push-button, whenever the symbol sequence  ->  appears. After completion of this step, movement is measured again during the rest scan. Duration: approx. 26 min. (13 min. + 13 min.) Consists of CPT-V lang + rest scan long
2-3	REST-Scan	<ul style="list-style-type: none"> Procedure: Movement / movement intensity are measured during a rest phase (during which the client is asked to sit still). Duration: approx. 10 min.
2-4	REST-Scan long	<ul style="list-style-type: none"> Procedure: Movement / movement intensity are measured during a rest phase (during which the client is asked to sit still). Duration: approx. 13 min.
2-5	CPT-V	<ul style="list-style-type: none"> Procedure: Client presses push-button, whenever the symbol sequence  ->  appears. Duration: approx. 10 min
2-6	CPT-V lang	<ul style="list-style-type: none"> Procedure: Client presses push-button, whenever the symbol sequence  ->  appears. Duration: approx. 13 min.
2-7	<< back	Back to main menu

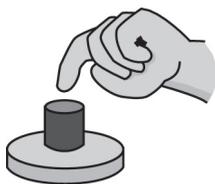
1. Press  respectively  until the test is pre-selected which you wish to conduct.
2. Press  twice to confirm your selection and then launch the test in the test menu.

Advice:

- Tests start immediately after a 4-second Countdown indicated by five beeps.
- You may abort tests by pressing  abbrechen. No recorded data will be stored when aborting. You cannot abort test demos.

CPT =
Continuous
Performance
Test (repetitive
task combined
with scanning
the movement
index)

3. Operating the ADScan via user menu



Client menu

3.3 Client menu

You launched the client menu from the main menu. Here you can administrate all data concerning your client. You can choose from the following options:

	Name	Meaning
3-1	Client:	Shows the currently selected client (surname, first name)
3-2	Select client	Select the client from the pre-stored client list for which you wish to conduct a test.
3-3	Change client	Edit saved client data.
3-4	Create client	Enter new client.
3-5	Delete client	Delete an existing client. Careful: You will erase all personal and test data connected to this set of data!
3-6	Delete all	Delete all client data. Careful: You will erase all personal and test data connected to this set of data!
3-7	<< back	Back to main menu

1. Press respectively until you highlighted the option which you wish to start.
2. Press , to confirm your selection and to launch the desired option.

3.3.1 Menu Client

From within the client menu you chose the option client:. In the display you see:

The name behind client:, fully visible in the ticker display shows the currently active client.

```
Client menu 3-1
Client: Testinge
```

This is information on display which you cannot change here. In order to select a different client, switch to Select client or New client.

1. Press , to close the display of the client name. You are back in the client menu.

3.3.2 Menu Select client

From within the client menu you chose Select client. The Display reads:

```
Select client
001:XXXXXXXX, XXXXX
```

You wish to select this client?

1. Press  to return to the client menu.

You wish to select a different client?

Here all clients are listed including their device ID in the sequence of how they were entered into the device.

1. Select the desired client: Press  respectively , to find the client in question.
2. Press . The display shows the currently selected client.

You cannot find the desired client?

Maybe the client was not yet created or was delete.

1. Press  respectively , until you get to << End search.
2. Press . This will end the search and you return to the client menu. Now you can add the desired client in the New client menu.

3.3.3 Menu Edit Client

From within the Client menu you chose Edit client. Here you can client settings, i.e. if the client's name changes or there was a mistake in the original entry.

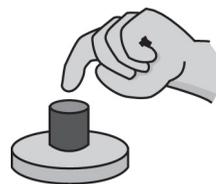
The display shows:

```
Surname:
XXXXX
```

Changing the surname

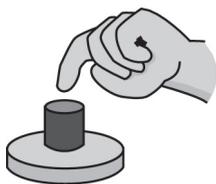
1. Press  until you reach the letter you wish to change. The small black line underneath the letter indicates which letter is currently highlighted.
2. Press  respectively , until you entered the letter you seeked.
3. Press , if you want to change further letters and report top 2.

Overview on functions and key combinations



Client menu

3. Operating the ADScan via user menu



Client menu

Press ...	Leads to
	Jump to next letter or insert a new letter at the end.
	Replace the currently highlighted letter with the previous one in the alphabet (t turns into s).
	Replace the currently highlighted letter with the next one in the alphabet (s turns into t).
+ (at the same time)	Delete the highlighted letter. All further letters move forward by one.
+ (at the same time)	Jump one step to the left. The letters remain unchanged.
5 seconds!	End and confirmation of entry.

Tip: If you press respectively for a longer period of time, you can scroll through the letters of the alphabet faster.

1. When you are done with your entry: Press for about 5 seconds until you read First name in the display.

Changing the First name

1. Press until you see First name in the display.
2. Change the desired letters as described in Changing the surname.
3. Then press for about 5 seconds, until you see Date of birth in the display.

Changing Date of birth and/or Gender

1. Press as needed for 5 seconds, until Date of birth shows on the display.
2. Press respectively , until the right day shows. The small black line underneath the numbers shows that you can enter the date.
3. Press , to be change the month.
4. Use respectively to change the month and then press to set the year.
5. Change the year as needed pressing respectively then press , to confirm the settings made. The display shows Gender.
6. Press for male respectively for female.
7. Press , to confirm the gender settings.
8. Press for yes, to confirm the changes made respectively for no to revoke the changes.

3.3.4 Menu New Client

From within the Client menu you chose New client. In this menu you can create a new client – fully independent from the computer. If the respective client is selected, the session recordings will be allocated to this client.

Surname ...

1. Press  respectively , until you entered the desired letter.
2. Press . To insert another letter.
The little black line underneath the letter indicates, which letter is currently selected.
3. Repeat steps 1 and 2 until inserting the client's surname is completed.

Overview on functions and key combinations

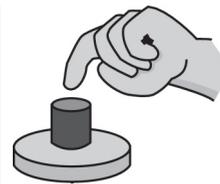
Press ...	Leads to
	Jump to the next letter or insert a new letter at the end
	Replace the currently highlighted letter with the previous one in the alphabet (t turns into s).
	Replace the currently highlighted letter with the next one in the alphabet (s turns into t).
 +  (at the same time)	Delete the highlighted letter. All further letters move forward by one.
 +  (at the same time)	Jump one step to the left. The letters remain unchanged.
 5 Seconds!	End and confirmation of entry.

Hint: If you press the keys for a longer period of time, you can scroll through the letters of the alphabet faster.

4. Press  for about five seconds until you read First name in the display. Hereby you confirm the surname entered.

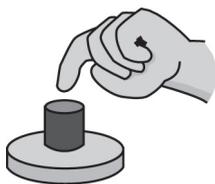
First name ...

5. Press  respectively , until you entered the desired letter.
6. Press . Doing so you insert a new letter.
7. Repeat steps 5 and 6 until you fully entered the client's first name.
8. Press  for about 5 seconds until the display reads date of birth.



Client menu

3. Operating the ADScan via user menu



Client menu

Date of birth ...

9. Press respectively , until you entered the day.
10. Press . The small black line now highlights the month digits.
11. Repeat steps 10 and 11 for month and year
12. Press . The display now reads Gender.

Gender ...

13. Enter the client's gender:
 - Press , for a male client.
 - Press , for a female client.
14. Press . After a few seconds the complete set of data is being displayed in full.

Save data ...

15. Decide if you wish to save or to discard the changes:
 - Press for yes in order to save the changes.
 - Press for no in order to discard the changes.This will lead you back to the Client menu.

3.3.5 Menu Delete client

From within the Client menu you select Delete client. Here you can delete client data including corresponding test results. Use this command with caution.

Here all previously entered clients are listed with their IDs in the sequence of how they were entered.

1. Select the desired client: Press dazu respectively , to highlight the corresponding client.
2. Press . You see a security query:
 - Press for yes in order to permanently delete the data.
 - Press for no in order to keep the data.This will take you back to the Client menu.

3.3.6 Menu Delete all

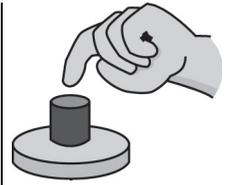
From within the Client menu you choose the Delete all option. Here you can delete all client data and the corresponding test records. Use this menu with caution.

1. Press . You see a security query:
 - Press for yes in order to permanently delete the data.
 - Press for no in order to keep the data.This will take you back to the Client menu.

3.4 Options

From within the Main menu you opened the Options menu. Here you can adjust general settings. You may choose from the following options:

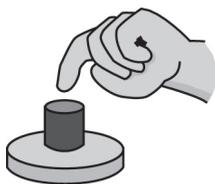
	Name	Meaning
4-1	Date	Setting/adjusting the system data – usually not necessary.
4-2	Summer time	Shows if summer time or winter time is selected
4-3	Time	Display and settings / adjustment of the time – usually not necessary. Required when travelling into different time zones or when switching between summer and winter time.
4-4	LED-Dot-Matrix	Contrast of the symbol display (LED dot matrix). Depending on the room's brightness and the client's light sensitivity the contrast may be adjusted. The LED lights must be easily visible for the client.
4-5	Unit temperature	Displays the current device temperature. Ensure that the device has an operating temperature of 15°C to 30°C (ideal: 20 °C), in order to ensure comparability of all recordings.
4-6	Memory Capacity	Shows how much free memory is still available. Recommendation: Upon a percentage lower than 25 % ensure to free a significant amount of memory space - see chapter 3.3.5 or 5.5.
4-7	Menu language	Here you can change the menu language.
4-8	Quickselect keys	Here you can change the key's sensitivity.
4-9	Firmware version	Shows the current firmware version active in the device – You may be asked to provide this information when seeking our technical customer support.
4-0	<< back	back to main menu



Options

1. Press ◀ respectively ▶ until you highlighted the option which you wish to start.
2. Press ↵, to confirm your selection and to launch the desired option.

3. Operating the ADScan via user menu



Options

3.4.1 Submenu time / submenu date

These two menus are operated identically so that they will be explained in parallel.

Show	time																		

From within the Options menu you selected the Time / Date option. The display reads:

Show	date																		

Show Time / Date

1. Press . This is for information only – you settings available.
2. Press again. You return to the Time / Date menu.

Change Time / Date

Display and settings / adjustment of the time – usually not necessary. Required when travelling into different time zones or when switching between summer and winter time. Usually there is no need to change the date once it was set correctly!

1. Press . The display shows Set Time / Set Date.

Change	time																		
12:	10:	00																	
2. Press . In the upper half of the display you read Set Time / Set Date. In the lower half you see the current time / the current date. The small black line underneath the number indicates that you are in the process of changing it.

Change	date																		
28.	02.	2011																	Mo
3. Press respectively , until the correct hour / the correct date is showing.
4. Press , to switch to minutes / months The small black line moves on along.
5. Press respectively , until the correct minute / the correct month is showing.

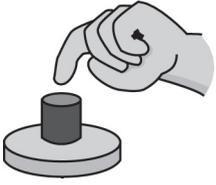
For date:

- Press , to switch to year.
 - Press respectively , until the correct year is showing.
6. Press , to confirm the new time / the new date. You return to the Time / Date menu.

You wish to exit the Time menu?

1. Press , until you see << **back** in the display.
2. Press . You now are in the menu Options.

3. Operating the ADScan via user menu



Options

3.4.5 Firmware-Version menu

From within the Options menu you select the Firmware version option. The display shows the currently installed firmware version number

F	i	r	m	w	a	r	e		v	e	r	s	i	o	n
		X	.	x	x										

This display automatically returns to the menu options after a few seconds.

Option << back

In the menu options menu **Options** you now see the << back option.

1. Press . This closes the Options menu and you return to the Main menu.

3.5 Execution

In this chapter you learn how to conduct tests with the ADScan after

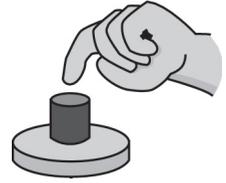
- selecting the requested test.
- selecting or creating the corresponding client.
- preparing the test environment.

3.5.1 Test instruction

Below you find recommendations as to how to instruct your client.

1. Please take a seat on this chair and make yourself comfortable.
2. The test will take quite a bit of time.
3. (only when referring to normtest and CPT)
 - Please hold this push button. (pass the push button on to your client)
 - In a moment you will see a sequence of symbols here (point to the LED matrix on the ADScan unit. Those symbols will appear at random, i.e. in no perceivable order).
 - Only press the push button, when you see a square and then right afterwards a plus sign.
 - ONLY when these two symbols appear in this order right after one another, you press the push button as fast as you possibly can.
 - If you only see one of those two symbols, do NOT press the push button.
 - This device registers your entries and counts your score. If you press the button when the two symbols were not in the right sequence or if you miss pressing the button when the correct sequence appeared, the ADScan unit will notice and record this also. I will tell you your result later. Once the first test is complete you will hear a beeping sound.
4. At that point, I will press this button, and you get to relax and are asked to sit as still as possible. You no longer need to monitor the signals from there on.
5. Do you have any questions about the test? (answer all questions suitable for your client's age). Now we shall proceed.
6. Let's do a demo round first to make sure everything is clear and working)

Important: Do not notify your client about the fact that his movement / movement index is being monitored by the device. Else this could have a falsifying effect on the data and corresponding evaluation!) The neutral suggestion to sit as still as possible should be very suitable.



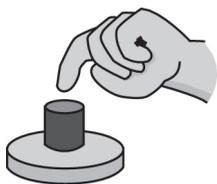
Execution



then



3. Operating the ADScan via user menu



Execution

3.5.2 Test execution

After making sure in the demo round that your client has fully understood what to do, you now launch the actual test sequence.

```
Main menu 1
test: norm test
```

1. Press . This will take you to the menu option Test.

```
Test 1-1
Start test
```

2. Press erneut . once more. This will launch a test.

```
Normtest
is running
```

The ADScan unit will now launch the test. After a sequence of four short and one long beeps the actual recording starts.

If you chose norm test or CPT-V in the LED dot matrix the different symbol are briefly on display.

The Client must notice the and then symbol and then press the push button. The ADScan device registers correct and incorrect responses as well as missed sequences. In addition the unit records movement and motion intensity.

Important: In order to prevent the test from being distorted, ensure to stay clear of the ADScan unit and well outside a 90° angle in front of the device. Otherwise your movement will also be recorded, impacting the overall data and tainting the test results.

The first part of the test (CPT-V) takes 10 min. If you chose the long option it will take 13 min.

Once done the unit will beep for one second to indicate the end of the recording. The display reads:

If you chose Norm test press , in order to continue with a Rest scan. The Rest scan yet again starts after another 4 seconds countdown (a total of five beeping sounds).

```
Normtest
Go on with start
```

If you chose Rest scan the recording will take 10 min. If you chose Rest scan long the recording of motion intensity will take a total of 13 min.

End of test – independent from the type of test you chose –

The test ends with a one-second beep. The display shows the Main menu and indicates that another recording can be initiated.

4 Operating the ADScan via ADScanalyzer

In this Chapter you learn, how to operate the ADScanalyzer software and how to control the ADScan unit via computer.

If you connect the ADScan unit to a PC prior to starting a test (see Chapter Connecting the ADScan unit to the computer) the software recognizes the device and deactivates the integrated unit menu and awaits commands from the ADScanalyzer software.

The analysis itself always is done via ADScanalyzer software, no matter if the unit was self controlled or run via the software.



Install
ADScanalyzer

4.1 Installing the ADScanalyzer software

Do not connect the ADScan unit to the computer or leave it turned off. A setup assistant guides you through the software installation routine of the ADScanalyzer software. It is quite like other installation routines that you are familiar with from other software solutions.

1. Insert the ADScanalyzer CD in the corresponding CD/DVD drive on your computer.
2. Select the desired installation language and press OK.
 - If the setup assistant does not autostart, select Start --> Run.... Click on Search. The search window now opens.
 - Select the path of your CD/DVD drive.
 - Click on the Setup.exe file and then click OK.
3. The setup assistant starts. Click on continue and follow the steps offered by the setup assistant.
4. After a few steps you see the window Select target folder. Choose the folder in which you wish to store the program and the corresponding recordings.

Recommendation: Wählen Sie für die Installation den vom Programm vorgeschlagenen Pfad. Das erleichtert im Falle eines telefonischen Supports die Suche nach gespeicherten Daten.

5. Select the installation path suggested by the program. This will make all and any technical support easier when searching for existing recordings.



4. Operating the ADScan via ADScanalyzer

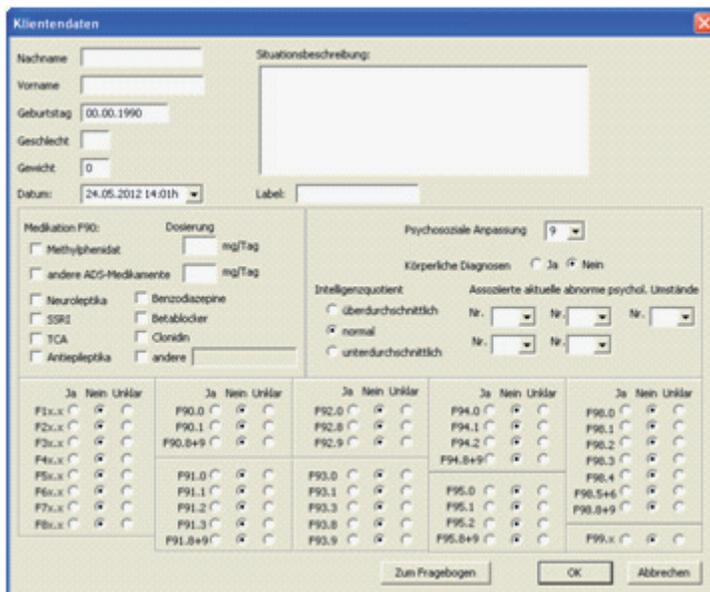


How to create a Client

4.2 How to create a Client

In this Chapter you learn how to create a new Client in the database.

1. In the Files menu click on New Client. The Client data window opens up.



The screenshot shows the 'Klientendaten' window with the following fields and options:

- Nachname** (Surname): Text input field.
- Vorname** (First name): Text input field.
- Geburtsdag** (Date of birth): Text input field with value '00.00.1990'.
- Geschlecht** (Gender): Radio buttons for 'm' (male) and 'f' (female).
- Gewicht** (Weight): Text input field with value '0'.
- Datum** (Date): Dropdown menu with value '24.05.2012 14.01h'.
- Label**: Text input field.
- Situationsbeschreibung**: Large text area for notes.
- Medikation P90**: Section with checkboxes for various medication classes (Methylphenidat, andere ADG-Medikamente, Neuroleptika, SSRI, TCA, Antiepileptika, Benzodiazepine, Betablocker, Clonidin, andere) and a **Dosierung** field (mg/Tag).
- Psychosoziale Anpassung**: Dropdown menu with value '9'.
- Körperliche Diagnosen**: Radio buttons for 'Ja' and 'Nein'.
- Intelligenzquotient**: Radio buttons for 'überdurchschnittlich', 'normal', and 'unterdurchschnittlich'.
- Assoziierte aktuelle abnorme psychol. Umstände**: Three dropdown menus for 'Nr.' with values.
- Medication grid**: A grid of radio buttons for codes P1.x to P99.x, each with 'Ja', 'Nein', and 'Unklar' options.
- Buttons**: 'Zum Fragebogen', 'OK', and 'Abbrechen'.

2. Click into the entry field behind Surname. Enter the client's surname via keyboard.
3. Press the tab key on your keyboard or click into the the entry field behind First name after completely entering the surname. You will now see the cursor blinking in the First name entry field.
4. Enter the client's first name. After completing the entry, continue in the same way with the Date of birth.
5. Enter the client's date of birth. Please note the entry format MM/DD/YYYY (i.e. 02/15/2004 for Feb. 15th, 2004). Then continue with Gender.
6. Enter m for male or f for female for the corresponding client gender, then switch to +.
7. Enter the client's weight in kilogram (kg). This enables you to compare clients of similar age, weight and gender.

8. In the entry field Background information you can record comments, recommendations and likewise information.
9. Click into the label field and enter the Client number / Identification number you have assigned to your client in your client software.
10. If your client is taking prescribed medication that could impact the test you can document that under Medication.
11. Click on the Questionnaire button. The standard questionnaire which was also used during the tryout and data acquisition phase of the ADScan unit, pops up.
12. Fill out the questions one after the other by selecting Never/ rarely, occasionally, often or very often depending on your client's feedback. Click OK once the questionnaire is filled out completely. Should you have missed any questions, the program will alert you correspondingly.
13. Click OK once all data has been entered. This completes entering a new client.
14. This client is now active, so that you can conduct a test with him. The program displays the active client in the main window (Menu View option Results or Remote control).



How to create a Client

Name	ID	Medikation	Status	Aktiv
Klient 1	1			
Klient 2	2			
Klient 3	3			
Klient 4	4			
Klient 5	5			
Klient 6	6			
Klient 7	7			
Klient 8	8			
Klient 9	9			
Klient 10	10			

Entering additional Client documentation

You can add a more extensive client documentation on psychological constitution as well as documentation based on ICD-10 (Revision 10). (ICD = International Catalogue of Diseases, an international statistic classification of diseases and related health issues – further information on ICD-10 can i.e. be found on the internet at the following link: <http://www.dimdi.de/static/de/klassi/icd-10-gm/kodesuche/onlinefassungen/htmlgm2013/index.htm>

4. Operating the ADScan via ADScanalyzer



How to select /
change a Client

4.3 Selecting a client and changing client data

After successfully entering all client data you can change the entries at any time. Current client situation, medication etc. can be adjusted as needed. Simply first select the client whose data you wish to modify.

If the client is not yet selected, go to the Files menu and select the Open database option, then double-click on the desired client.

1. Now select Client data sheet from the Files menu. The client data sheet, which you already know from the Create New Client menu, now pops up.
2. Conduct all required modifications, then close the window by clicking OK.

4.4 Conducting a test via Remote control

- Step 1: Select client
- Step 2: Technical preparations
- Step 3: Client preparations
- Step 4: Main CPT
- Step 5: Rest Scan



Conducting a test

Step 1: Select client

Choose the client you wish to test. To do so, read Chapter Selecting a client.

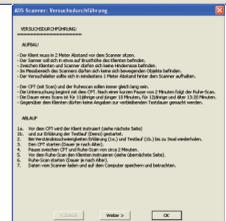
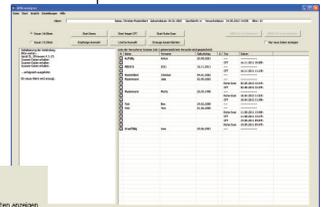
Step 2: Technical preparations

In order to run a test via ADScanalyzer remote control it is necessary to connect the ADScan unit to the computer on which the ADScanalyzer software is installed. How to connect the corresponding components you learn in chapter Setting up the ADScans.

In addition the ADScan unit must be turned on.

Step 3: Client preparations – Explanation and Demo

1. Click onto New test in the Files menu. Alternatively you may also select Remote control in the View menu. The following window appears
2. Click onto Start demo. On the screen you see instructions on how to set up and conduct the test.
3. Check if your setup meets the described requirements. The normative data was obtained based on those exact settings.
4. Click on Continue > when the settings are adequate. The explanation for the CPT appears. Instruct your client in a way suitable for your client's age. Instructions are being displayed on the screen.
5. Once the client has understood the instructions for the CPT, click on Continue >. The instruction card for the Rest Scan appears. Instruct your client in a way suitable for his age. Suggestions are included in the instruction card.



4. Operating the ADScan via ADScanalyzer



Conducting a test

6. Once the client has understood the instructions for the CPT, click on Continue >. The instruction sheet on Save data appears
7. Once the instruction are fully clear to you click OK. The Demo-CPT starts directly and takes up to 30 seconds: The demo starts with a countdown which consists of four short and one long beeping sound.

The CPT symbols appear in the LED dot matrix above the ADScan display.

Monitor your client's actions. If they are in line with the given task, you can launch the main CPT. If the client obviously did not fully grasp the task, repeat the Demo CPT up to three times and then launch the Main CPT.



Step 4: Main CPT

The following window appears:



Follow the instructions. How to contact the test is thoroughly explained.

- Once you checked the settings and your client's understanding of the test you can abort the instructions by clicking OK and start the Main CPT directly.

The test starts with a countdown (four short and one long beeping sound).

The client auto-determines the test duration depending on your client's age:

- Up to 10 years of age: 10:00 min.
- Older than 10 years: 13:20 min.

The client is asked to sit relaxed and press the push button whenever the symbol sequence ( then ).

You can assess the remaining time until the end of the test from the time that has passed already.

Note: Do not indicate to the client how much longer the test will take.

Once the test has been completed a long beeping sounds indicates the end of the test.

Wait for about 2 minutes before starting the Rest scan. Your client may relax or i.e. drink something during this short brake.

Step 5: REST-Scan

Launch the Rest scan after 2 minutes. During this time the client shall sit still without being told that his level of movement intensity is being measured.



Note:

Please use the instructions provided to you with your ADScan system: „Now we conduct a second test. Please sit still for a duration of 10 min / 13:20 min. and move as little as possible. There will be a beeping sound once the test is complete.“

As before it is important that you do not indicate to you client how much test time remains.

You can assess the remaining time until the end of the test from the time that has passed. Once the test is complete a long beeping sound will occur and the Rest scan and the overall test phase for this client is completed. All recorded data will be saved.

Premature test termination

You can abort the test if unforeseen events occur.

Click on the suitable button



ABORT with saving: The test / scan will be aborted, all recorded data will be saved.

ABORT without saving: The test / scan will be aborted, all transmitted data will be rejected..



Conducting a test



Transmitting the results

5. Results

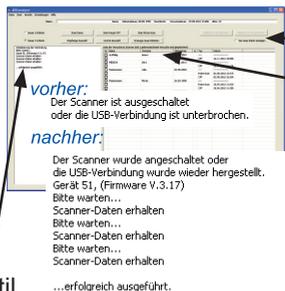
The results obtained with the ADScan unit (test and scans) can be transmitted to the ADScanalyzer software where they can be reviewed, analyzed, saved and deleted from the ADScan unit's memory.

5.1 Transmitting the results

No matter how you controlled the test – via ADScan unit or computer software you can now review the data in the ADScanalyzer software.

After completing the tests / scan, all data is still saved on the device. In order to review and analyze them, they must be transmitted onto the ADScanalyzer software:

1. Start the ADScanalyzer software.
2. Connect the ADScan unit to the computer.
3. Start the ADScan unit and wait until the ADScanalyzer software recognizes the device.
4. In the View menu select the Remote control option.
5. Click-select the data from the Scanner trial list which you wish to transfer to the ADScanalyzer software. The checkmark  in front of the corresponding set of data turns into .



Hint: If you already did conduct several tests, some of which you already transmitted, you can limit the recordings on display to the new recordings that have not yet been transmitted. To do so, activate the checkmark in front of Only show new data



6. Click on the button Receive selection once all sets of data you wish to transmit have been selected. The window Transmit test records pops up.
7. Click Yes to start the transmission.



Note: Depending on the amount of data stored the transmission may take some time.

Hint: We recommend transmitting your recorded data frequently to the ADScanalyzer software. This way you save the data on your computer and are able to delete data on the ADScan unit to create more room for further test records. How to delete data is described in chapter Deleting test results.

Once the data was transmitted from the ADScan unit onto the ADScanalyzer software they are saved in the program and ready for review and analysis.

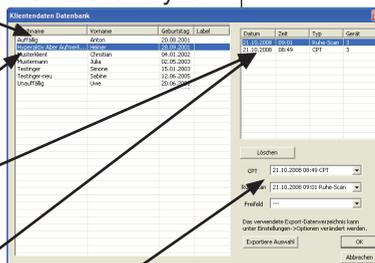


Reviewing results

5.2 Reviewing results

After transmitting the results you can review the data of the active client in the ADScanalyzer software.

1. Select Open database in the Files menu. On the left hand side you can see all clients registered in the ADScanalyzer database.
2. Left-click on the client listed there whom you wish to review. This client now is highlighted in blue. On the right hand side you now see all the tests conducted with this client.
3. Left-click on the CPT scan and the Rest scan which you wish to review. They will then appear in the lower right hand corner of this window, indicating them being the selected tests.



Note: Once you select a test (i.e. a CPT scan) the ADScanalyzer software automatically adds the corresponding test (i.e. Rest scan). You can change the selection as needed. Under Free field you may add additional test run for comparison.

4. Click OK when all data is selected as intended. The result window pops up, and you see the test analysis..



Result review and analysis

5.3 Reviewing and analyzing the results



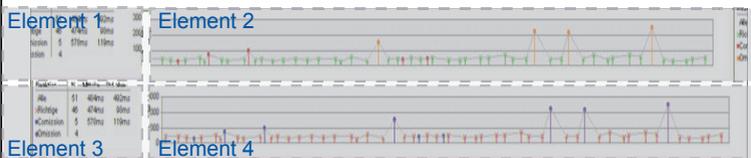
The graphical presentation of results is to be reviewed as follows:

Presentation of the currently selected results:



As needed you can include / exclude specific elements. Simply select / deselect the corresponding checkbox.

Results of the selected CPT:



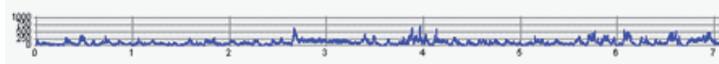
Element 1

Duration, date, test time and serial number of the ADScan unit used for the test

Scan mit CPT Dauer: 600.00s
 21.10.2008 08:49
 Gerät 3
 Mittelw. Std.abw.
 Beweg.ind.: 126.70 96.21

Element 2

The blue line represents the movement intensity throughout the duration of the CPT.



Element 3

The table file indicates how the client responded to the symbol sequence:

Reaktion	N	Mittlere.	Std.abw.
All	51	464ms	492ms
→Richtige	46	474ms	98ms
→Comission	5	571ms	119ms
→Omission	4		

Line by line the following information is provided:

Reaction (see below) -> Quantity (see below) -> reaction time in average -> Reaction time as standard deviation

Reaction and Quantity:

All = Occurance of the relevant symbol combination – here 51 x

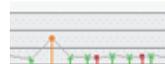
Correct = Number of correct keystrokes after the relevant symbol combination – here: 46 x (green indicator)

Comission = Number of random or incorrect keystrokes – here: 5 x (red indicator)

Omission = Missed keystrokes after the relevant symbol combination – here 4 x (orange indicator)

Element 4

The statistic data (see display element 3) are represented in their respective color in the graphic on the screen. The height of the colored lines indicates the corresponding response time.



Rest Scan results



The illustration of the Rest Scan is very similar to the display elements 1 and 2 for the CPT.

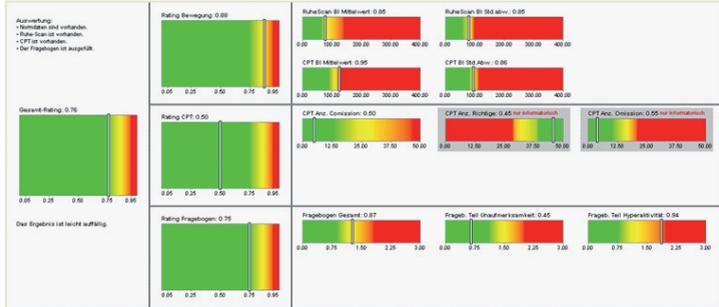
Result review and analysis

5. Results



Result review and analysis

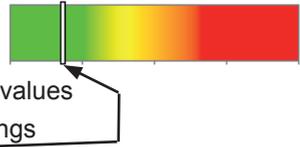
Analysis and evaluation



The colored segments provide visual referential data for clients of the same age and gender.

Segment interpretation (legend):

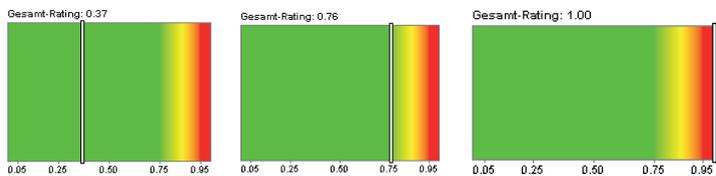
- Green = no pathological findings
- Yellow / Orange = with borderline values
- Red = potential pathological findings



The vertical white bar represents the client's score. Hence you can easily see how well he or she performed in comparison to the respective age group.

The ADScanalyzer software calculates the position of the white bar from the normative data, the CPT data, the Rest Scan as well as the questionnaire, displaying the different scores and the overall result.

Examples:



Das Ergebnis ist unauffällig.

Das Ergebnis ist leicht auffällig.

Das Ergebnis ist stark auffällig.



Deleting data

5.5 Deleting data on the ADScan unit

You may delete data stored on the ADScan unit with the help of the ADScanalyzer software. Deleting data from time to time is recommended to clear memory capacity on the device and speed up the system. Please take note of the potential risk of losing data by accident.

Note: Save your data frequently. Transmit your recorded data from the ADScan unit into the ADScanalyzer database prior to deleting it from the device. Follow the instructions given in chapter Transmitting results.

1. Select Remote control in the View menu.
2. Highlight the data you wish to delete:
3. Click on Delete selection:



The window **delete clients** appears .

4. Answer the pop-up questions depending on your needs:
 - Yes = Delete data. The client deletion process starts – you will receive a message once the process is completed.
 - No = No data is deleted, the process is aborted.

Note: The button Delete all will erase all clients and recordings from the ADScan unit. Use this button with extreme caution.

5.6 Data import and export

You can import data from other databases, respectively export and exchange it with other software ADScanalyzer databases.

a) Import:

Select Open file list / Import in the Files menu.

- Highlight the data you wish to import and click on „import selection into database“.
- Click on „Import all“ if you wish to import all existing sets of data.

b) Export:

Highlight the option Open database in the Files menu and select the sets of data that you wish to export.

The files will be stored in the file path predefined under Settings in the Options menu. You can change this path as needed.

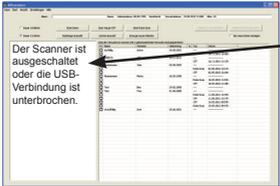
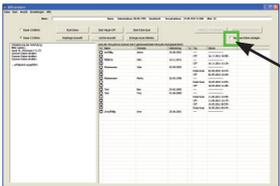


Fault location

6. Maintenance and technique

In this Chapter you learn what to do to overcome obstacles when using the ADScan unit.

6.1 Fault location

Fault	Proposal for a solution
<p><i>In the remote control window there are no client or test data on display.</i></p>  	<ol style="list-style-type: none"> 1. The connection with the AD-Scan unit may be disconnected. Check the control window on the left hand side on a corresponding note (this window documents all actions around the ADScanalyzer software). „The scanner is switched off or the USB-connection is interrupted“ should be visible. If this is the case, reconnect the ADScan device to the computer using the USB isolator. 2. The checkmark for „Only show new test results“ (see below) is active. Remove the checkmark in the box by clicking on it. 3. No new tests were stored on this unit since existing data was last removed.
<p><i>The ADScan cannot be operated using the integrated buttons on the device and the display reads „Remote control“.</i></p>	<p>Once connected to the computer the integrated menu structure of the ADScan unit is deactivated.</p> <p>Decide if you wish to</p> <ul style="list-style-type: none"> • remote control the ADScan via your computer– then use the AD-Scanalyzer interface accordingly (see chapter 4 for reference) • use the buttons on the ADScan unit to control the system – if so, remove the USB connection between your computer and the ADScan device to regain access to the unit’s keyboard.



 Fault location

Starting the device or initializing the connection with the ADScanalyzer software takes too long.	<ol style="list-style-type: none"> 1. Turn the device off and then back on. Try to restart the test. 2. Too many tests are stored on the device. The corresponding processing time is too extensive. Delete a larger number of tests from the ADScan unit prior to starting another recording.
A test does not start / upon the start there are five instead of four beeping sounds audible.	<ol style="list-style-type: none"> 1. Turn the device off and then back on. Try to restart the test. 2. The internal memory of the AD-Scan unit might be full. Check the remaining free data memory. Delete a larger number of tests from the ADScan unit in order to free up data storage capacity.
<i>The ADScan ist turned on but is not being recognized by the software.</i>	<ol style="list-style-type: none"> 1. Check the connection between computer and USB isolator respectively between USB isolator and ADScan unit. Are the USB cables connected properly on each end? If NOT: Re-insert cable to establish the connection. 2. Turn unit off; wait 10 seconds; now turn unit back on; If there is no improvement: 3. Turn unit off again; close the AD-Scanalyzer software; wait for 10 seconds; turn device back on and start the software. If still there is no functionality: 4. Turn off unit and close the software. Reboot your computer. Turn unit back on and restart the software.

Did any other questions, faults or problems occur when working with the ADScan unit?

Please, contact our technical customer support:

+49-(0) 5130-97778-55

We will discuss further measures together!





Maintenance

6.2 Maintenance and Calibration

Maintenance of the ADScan unit may only be done by technical service personal or correspondingly trained staff.

Manufacturer requirements: An annual calibration is mandatory to ensure reliability of all recordings and their respective evaluation.

The manufacture recommends to sign a maintenance- and service contract for the ADScan system.

6.3 Cleaning

After usage clean the ADScan unit and the push button using a commercially available disinfection cloth.

⚠ Attention: *By all means take not of the safety and usage instructions provided by the cloth's manufacturer. Failure to do so may cause health issues or damage the device.*

⚠ Attention: *Protect the device from ultrasound baths, running water and chemical detergents such as diluting agents and alcohol. The device may be damaged.*

6.4 Storage

To store the ADScan unit turn it off using the power switch and disconnect the power adapter and the USB cable.

- Only store the device in a dry closed room at room temperature.
- For long term storage or transportation use the hard-top case provided to you with the ADScan system.

6.5 Disposal

The ADScan unit and its components are part of the power-adapter driven small electronic devices.

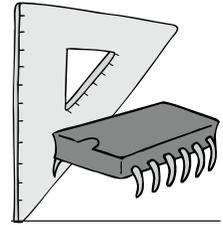
- You can return the ADScan, the power adapter and the USB-Isolator to your local collection station (if so applicable in your respective country). Device category: Small electrical appliance.
- The hard-top case and the remaining accessories may also be turned over to the local collection station.

If you do not want to simply dispose of your ADScan system, we will be happy to take it back. We will utilize it in a sensible and environmentally sound way.

6.6 Technical data

ADScan

Power supply	12 V (über mitgeliefertes Netzteil)
Power consumption	ca. 400 mA
Weight	440 g
Size in cm (Height x width x depth)	16 x 20 x 7
Radar module	
Power supply	5 V
Power consumption	40 mA (typ.)
Transmission frequency	D, A, PL: 9.35 GHz JP: 10.525 GHz FR: 9.9 GHz
Effectrive radiated power	10 dBm EIRP
Stimulus diode	
Form	LED-Dot-Matrix 5 x 7
Colour	rot
Wavelength	640 nm (dom.)
Power consumption	max. 5 V
Luminous intensity	36.000 lv (typ.)
Conditions for operation	
Ambient temperature	15 ° C to 30 ° C (20 ° C ideal)
Relative air humidity	45 % to 70 %

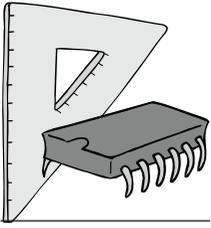


Technical data

Computer Requirements (minimum)

CPU	1,8 GHz Dual Core Prozessor – or higher
RAM	1 GB at Windows XP / 2 GB at Windows Vista respectively 7
Hard disk	1 GB
Operating system	Windows® XP / Vista / 7
Screen	1024 x 768 dots
Graphic card	S-VGA (compatibel)
Others	USB-Port, CD/DVD-drive mouse, keyboard

6. Maintenance and technique



Type Plate

6.7 Type plate

On the back of the ADScan there is the following type plate. The entries and symbols on it have the following meaning.

Manufacturer

Article number

Type

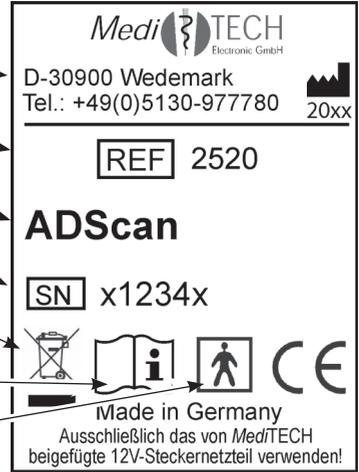
Serial number

Environment disposal classification

Attention, read and understand the instructions before use!

Applied part

Year of manufacturing



This icon means that the usage of the ADScan requires additional ,applied parts' which are not included in the scope of supply. This means a computer and the push button.

Warning - use only in dry rooms allow, since it might cause electric shock.

Adapter – depends on the country

Protection class codes (class 2)

Manufacturer's specifications

Environment disposal classification

Insert the appropriate adapter for your mains before you use the AC adapter.

Technical specification for input and output voltage

Suitable for use with medical devices

Cable to ADScan



6.8 Electromagnetic compatibility – Guidance and manufacturer's declaration

Electromagnetic compatibility
DIN EN 60601-1-2:2011 (IEC 60601-1-2:2011)
Medical electrical devices are subject to special precautionary measures in particular regarding the EMC with the installation and the operation.
Portable and mobile HF-communication devices e.g. mobile phone can affect medical electrical devices.
A use of other accessories and lines than the indicated, can lead to an increased sending or a reduced noise immunity of the equipment. The equipment has to be operated exclusively with original accessories.
The device should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the device should be observed to verify normal operation in the configuration in which it will be used.

Electromagnetic emissions		
<i>ADScan</i> is intended for use in the electromagnetic environment specified below. The customer or the user of the <i>ADScan</i> should assure that it is used in such environment.		
Emission test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The <i>ADScan</i> uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The <i>ADScan</i> is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	not applicable	
Voltage fluctuations / flicker emissions IEC 61000-3-3	passed	

6. Maintenance and technique

Electromagnetic immunity I			
The <i>ADScan</i> is intended for use in the electromagnetic environment specified below. The customer or the user of the <i>ADScan</i> should assure that it is used in such environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity shall be at least 30 %.
Electrical fast transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input / output lines	± 2 kV for power supply lines ± 1 kV for input / output lines	Mains power quality should be similar to that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV common mode ± 2 kV differential mode	± 1 kV common mode ± 2 kV differential mode	Mains power quality should be similar to that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5 % U_T (> 95% dip of U_T) for 1/2 cycle 40 % U_T (60 % dip of U_T) for 5 cycle 70 % U_T (30 % dip of U_T) for 25 cycle <5 % U_T (> 95 % dip of U_T) for 5 s	% U_T (> 95% dip of U_T) for 1/2 cycle 40 % U_T (60 % dip of U_T) for 5 cycle 70 % U_T (30 % dip of U_T) for 25 cycle <5 % U_T (> 95 % dip of U_T) for 5 s	Mains power quality should be similar to that of a typical commercial or hospital environment. When the user of the <i>ADScan</i> continued function also calls in the event of disruption of supply, it is recommended the <i>ADScan</i> form an uninterruptible power supply.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Note: U_T is the ac mains voltage prior to application of the test level.

Electromagnetic immunity II			
The ADScan is intended for use in the electromagnetic environment specified below. The customer or the user of the ADScan should assure that it is used in such environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 V eff 150 kHz to 80 MHz	3 V eff 150 kHz to 80 MHz	Portable and mobile RF communication equipment should be used no closer to any part of the ADScan, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m 80 MHz to 2,5 GHz	Recommended separation distance: $d = 3,5/3 \sqrt{P}$ $d = 3,5/3 \sqrt{P}$ 80 MHz to 800 MHz $d = 7/3 \sqrt{P}$ 800 MHz to 2,5 GHz
			Where P is the maximum output power rating of the transmitter in watts (W) according to the recommended separation distance in meters (m). Field strength from fixed RF transmitters, as determined by an electromagnetic site survey ^A , should be less than the compliance level in each frequency range ^B . Interference may occur in the vicinity of equipment marked with the following symbol: 

Note 1: At 80 MHz and 800 MHz the higher frequency range applies.

Note 2: These guidances may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

A Field strengths from fixed transmitters, such as base stations for radio (cellular / cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy.

To access the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the ADScan is used exceeds the applicable RF compliance level above, the ADScan should be observed to verify normal operation.

If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the ADScan.

B Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10 V/m.

6. Maintenance and technique

Recommended separation distances for portable and mobile RF communication equipment and the ADScan			
The ADScan is intended for the use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the ADScan can help to prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communication equipment (transmitters) and the ADScan as recommended below, according to the maximum output power of the communications equipment.			
Rate maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = 3,5/3 \sqrt{P}$	80 MHz to 800 MHz $d = 3,5/3 \sqrt{P}$	800 MHz to 2,5 GHz $d = 7/3 \sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,37	0,37	0,74
1	1,17	1,17	2,33
10	3,69	3,69	7,38
100	11,67	11,67	23,33

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be determined using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80 MHz and 800 MHz the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

7 Service

7.1 Manufacturer and contact

Med/TECH Electronic GmbH
Langer Acker 7
D-30900 Wedemark
Tel.: +49-(0)5130-97778-0
Fax: +49-(0)5130-97778-22
Mail: service@meditech.de
Internet: www.meditech.de

7.2 Warranty

After acquiring the ADScan unit from *Med/TECH* Electronic GmbH you are granted a warranty claim for faultless operation of the device that will expire after two years. Malfunction and damage from improper use are excluded.

Beside this warranty, we are supplying a hotline service for any questions and problems for all the time you will be working with the system.

You may call the hotline at the phone number:

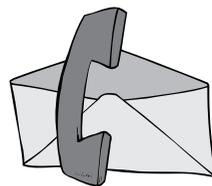
+49-(0) 5130 - 97778-0

Of course you may also send your questions in written form:

by fax: +49-(0)5130 - 97778-22
by email: service@meditech.de

7.3 EC declaration of conformity

Please, find the current EC declaration of conformity of this product at www.ce.meditech.de.



Contact

<http://www.adscan.meditech.de>