

Software manual

CEETIS Diagnostics

Doc.-No.: 600016EN (3. Edition, Revision A), 06.05.2019, FH

This manual contains instructions on how to install and operate the described WEETECH product. The data and information for this manual has been compiled with absolute care and attention to detail. However, no guarantee can be given for a flawless set of instructions. The content of the manual may be altered at any time without prior notice. We also reserve the right to make alterations to the described software. For editorial reasons, it is possible that the software supplied may on rare occasions feature functions that are not yet described in this manual. All alterations and further developments made up to the point at which *CEETIS* was supplied are therefore given in the file "*WhatsNew.pdf*", in the folder "*Documentation*".

The screenshots and figures used in this manual are only used for the purposes of explanation and may differ from the actual screen displays and figures that appear in the product itself. We would like to emphasize that any guarantee or liability on our part will be rendered invalid if the instructions in this manual or in any authorized supplementary documentation are ignored or if the appliance is used in any way other than described. Most of the company names and brands mentioned in this manual are registered trademarks and are subject to the associated legal restrictions. This manual may only be reproduced or duplicated, wholly or in part, with the written permission of WEETECH.

CEETIS

Diagnostics Software manual

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Remark:

⇒ This manual is a translation of the German edition:
 3. Ausgabe, Revision A

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1 Diagnostics

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1.1 What does the diagnostics do?

The *CEETIS* diagnostics function tests the functioning of the generators, measurement devices and the switching matrix.

If the diagnostics reveals variations from the default values, calibration or adjustment by customer service or a replacement^I of this component may be necessary. Clarify this by contacting WEETECH GmbH customer service or an authorised agent.

If you require **calibration with a calibration certificate** contact WEETECH GmbH customer service.

The measurement devices used by WEETECH GmbH for calibration are calibrated on a regular basis. They comply with national standards "Physikalische Technische Bundesanstalt (PTB)", the German national metrology institute, or other national standards.

When performing an internal **generator calibration** the accuracy of the generators is tested using built-in precision resistors.

The intervals for automatic generator calibration can be specified in the *CEETIS* configuration. WEETECH Germany recommends a full calibration each year for the W 454.

If required, a generator calibration can be performed manually at any time, in addition to the specified intervals (see *Calibration* on page 15).

In addition, diagnostics can be performed on the *switching units*, the *matrix* and the *warning lights* (optional).

Observe cal	Observe calibration intervals!					
	Experience has shown that the test system maintains its measur- ing accuracy for several years.					
	⇒ Nevertheless, calibration of the test system should be carried out every six months and after every change of location.					
	When switching to a location with a different ambient tempera- ture, you should not recalibrate the system until after an ad- justment time of approximately one hour.					

¹ The replacement of defective components is described in the chapter replacement of system components of the service manual.

1.2 Menu bar of the CEETIS Diagnostics window

1.2.1 Test system

ſ		CEETIS E	Diagnostics				- 0	_ ×
	Tes	t system	Generatores and measu	ring devices	Switching units	Matrix	Extras	Help
		Warnin	g lights					
	Low level configuration							
	Quick selection							
		Exit						

Fig. 1-1: The Test system menu

1.2.1.1 Warning light diagnostics (optional)

Warning lamp diagnostics tests the functioning of the warning light(s).

Method:

- 1. In the CEETIS Diagnostics window, click on Test system → Warning lights...
 - > The *Warning light status* window opens.
 - If you have not connected a warning light, the status Light not connected is displayed.
- 2. Connect the warning light and then click on *Repeat* to update the status.



If a warning light is defective, a message is displayed to indicate which warning light segment is defective (e. g. Light defective: Top).



1.2.1.2 Low level configuration

The *low level configuration* informs you about the current configuration of your test system.

- ⇒ In the CEETIS Diagnostics window, click on Test system → Low level configuration...
 - > The *Low level configuration* window opens.

🜉 Low level con	figuratio	n						x
🗸 ок	X	Cancel	Adapter cables	🔉 🛢 🖨				
				02.05	2019 10:17:57			ŀ
5								
CEETIS Versi	on: 4.0	7-05						
CEETIS Optic	ons							
W454				W444				
W434				W484	anant library			
Test result archivit	iy			Comp	ment library			
Box 0, Ty	pe: S	TE						
Block 0	IP: 192.	168.215.10	, Firmware version: 4	4.31, Box type: S	TE			
Generators								
Address	Туре	Name [Re	evision]					
1	51	UI 51 (HVI	DC) [418.520r01]					
2	52	UI 52 (HVA	AC) [418.521r01]					
3	53	UI 53 (LV)	[418.528r02]					
4	54	UI 54 (RLC) [418.529r01-26-47]				
Line Powe	rsupply							
	Out	Power		Out	Power			
	Α			В				
	С			D				
Warning lig	ght card	ls						
Address	Туре	Name						
1	1	AL71						
Rack: AE 4	5-4, Ado	Iress: 0						
Slot		N	latrix cards		Front	plate modules	3	
0	\$0036	TK 5-C16-	18	\$0070	FPM 5-I Han M	OD1 16C 8I F U4	14 ID	
1								
2								
4								
5								
6								
7								
8								

Fig. 1-2: The Low level configuration window

				04.05.2010 15:43:47		
ox: 0						
lock 0	IP: 192	<i>:</i>				
Generators						
Address	Туре	Name [Revision]				
1	51	UI 51 (HVDC) [418.520r02]				
2	52	UI 52 (HVAC) [418.521r01]				
Remote car	rds					
Address	Туре	Name				
0	2	AL70-0				
Rack: AE 45	i-4, Ado	dress: 0				
Slot		Matrix cards		Front plate modules	ID Chip 0	ID Chip 1
0	\$0033	TK 5-B64-U8-K8	\$0040	FPM 5-AB DIN41618 HD 64p F ID	\$0000080BF2BA	
1	\$0033	TK 5-B64-U8-K8	\$0040	FPM 5-AB DIN41618 HD 64p F ID	\$0000080C00D1	
2						
3						
4						
3 4						

Fig. 1-3: Configuration of a test system with adapter cables connected

Buttons in the Low level configuration window:

A.	Close Closes the <i>Low level configuration</i> window.
Adapter cables	Adapter cables Clicking on this button allows you to show the values of the ID chips (ID) for all connected adapter cables.
30	Name of selected file type (*.extension) Opens a browser window in which you can select and open a configura- tion file.
•	Save Saves the configuration file currently displayed.
3	Print Prints the content of the <i>Low level configuration</i> window.

1.2.1.3 Quick Selection

This item opens the Quick Selection window. Here you can select all the diagnostics and calibrations you require.

Quick Selection					X
🗸 ок	X Cancel		🥩 Select all	None 🛇	
 Calibration Generators Measuring devic. HV Switching Ur Matrix: Measurin Matrix: Continuity Matrix: DC leaka Matrix: Relay glu Matrix: Transient Warning lights 	es it g Line Diagnostics / diagnostics ge current diagno e diagnostics protection diagno	s stics ostics			

Fig. 1-4: The Quick Selection window

Meaning of the buttons:

🗸 ок:

Accepts the current selection and closes the window.



X Cancel:

Closes the window without accepting the current selection.

Select all:

Selects all displayed points.

None:

Removes the current selection.

1.2.1.4 Exit

This item closes the CEETIS Diagnostics window.

1.2.2 Generators and measurement devices



Fig. 1-5: The generators and measurement devices window

1.2.2.1 Generators

This Item is used to test the current and voltage ranges of the generators of your test system by the aid of a multimeter.

- 1. In the *Generator selection* window, select the generators for which you want to perform diagnostics.
 - The generators displayed in this window depend on the configuration of your test system.



- 2. Confirm your selection with OK
- 3. The window for the first diagnostics step opens:



Fig. 1-6: Instructions for the first diagnostics step (left image W 454, right image W 444)

- 4. Connect the voltmeter to the two *Force* jacks as specified.
 - Make sure that you connect the multimeter to the correct measurement jacks in line with the instructions.
 - For the individual diagnostics steps, make sure you have always set an appropriate measuring range on your multimeter.
- 5. Click on *Generator on*.
- 6. Read off the measured value on the connected multimeter and enter it in the *Measured value [V]* field.
- Click on *OK* to confirm your entry. The window for the next diagnostic step opens.
- 8. For all subsequent diagnostic steps, follow the instructions on the screen. Continue to the end of the diagnostics in this way.
 - > The *Skip* button can be used to skip a diagnostics step (not recommended).
 - > The *Cancel* button can be used to exit the diagnostics.
- 9. At the end of the diagnostics, the *Diagnostics Result* windows opens with the diagnostics report.
 - In the text viewer, you can browse the diagnostics report for particular entries and print it out.

🧱 Diagnostices Result							
🕕 Close	i Print	🙌 Find					
Generator diagnos	tics						
Date + Time CEETIS version		: 15.04.2019 1 : 4.07-05	7:42:38				
Tested Devices							
- HVAC generator	(UI52) [418.5	21r01]					
Generator		: HVAC generat	or (UI52)				
Voltage ranges	Voltage ranges						
Expected value External measured	Expected value = 750V +/-37,5V [HVAC generator (UI52)] External measured value= 750V						
Current ranges							
Result: Diagnosti	Result: Diagnostics passed						
		F	PASSED				

Fig. 1-7: The diagnostics report in the text viewer

Meaning of report results:

⇒ Reference value:

Default value with the permitted tolerances. In square brackets: Name of the generator tested.

⇒ External measured value:

Actual value measured using the multimeter and entered in the *Measured value* field in the diagnostics window.

1.2.2.2 Measurement devices

This item tests the measuring ranges of the generators. This is done by comparing the internally determined measured values with the external measured values of the multimeter.

- 1. In the *Generator selection* window, select the generators for which you want to perform diagnostics.
 - The generators displayed in this window depend on the configuration of your test system.

Calenting and antes		X
selecting generator		
HVG 4300 (H' RLC generato LV generator Extended HVG diagn	VDC+HVAC) ır (UI54) (UI53) ostics	
All	None 🚫	
🗸 ок	X Cancel	

- 2. Confirm your selection with **OK**
- 3. The window for the first diagnostics step opens:



Fig. 1-8: Instructions for the first diagnostics step (left image W 454, right image W 444)

- 4. Connect the voltmeter to the two *Force* jacks as specified.
 - Make sure that you connect the multimeter to the correct measurement jacks in line with the instructions.
 - For the individual diagnostics steps, make sure you have always set an appropriate measuring range on your multimeter.

- 5. Click on *Generator on*.
- 6. Read off the measured value on the connected multimeter and enter it in the *Measured value [V]* field.
- 7. Click on **OK** to confirm your entry. The window for the next diagnostic step opens.
- 8. For all subsequent diagnostic steps, follow the instructions on the screen. Continue to the end of the diagnostics in this way.
 - > The *Skip* button can be used to skip a diagnostics step (not recommended).
 - > The *Cancel* button can be used to exit the diagnostics.
- 9. At the end of the diagnostics, the *Diagnostics Result* windows opens with the diagnostics report.
 - In the text viewer, you can browse the diagnostics report for particular entries and print it out.

Meaning of report results:

Measuring range:	Default value with the permitted tolerances. In square brackets: Designation of the checked generator.
External measured value:	Measured value measured using the multimeter and entered in the <i>Measured value</i> field in the diagnostics window.
Internal measured value:	Measured value measured by the generators.

- 10. To perform the diagnostics again, click on *Retry*.
 - ➤ To repeat the diagnostics with changed parameters, click on Generators and measurement devices → Measuring devices....

1.2.2.3 Calibration

The *generator calibration* guarantees the measuring accuracy of the generators by internal calibration. The measuring accuracy of the generator is checked using built-in precision resistors and recalibrated if necessary.

In the *Test system configuration* you can specify the calibration intervals for the **automatic generator test**.

Generator calibration is carried out automatically according to the set calibration interval. If you want to perform a generator calibration independently of the set calibration interval:

- 1. On the Calibration and measuring devices click on Calibration
- 2. In the *Generator selection* window, select the generators for which you want to perform diagnostics.
- 3. Confirm your selection with OK.
- 4. At the end of the calibration, a text viewer opens with the calibration report.
 - Here, you can browse the calibration report for particular entries and print it out.

Message: Generator calibration failed					
	If an error occurs during automatic generator calibration, an error message is displayed. This prompts you to check the generator calibration values.				
	\Rightarrow To do this, click on <i>Calibration</i> \rightarrow <i>Retrieve values</i>				
	The text viewer containing the values from the last genera- tor calibration opens				
	Generator -> HVG5000 (HVDC+HVAC) -> Generator calibration failed				
	Fig. 1-9: Error message for failed generator calibration				

1.2.2.4 Detected generators

This menu item displays all generators that are available in the test system. For each generator the bus address, the ID and the serial number are displayed.

EETIS Diagnostics									
Test system Generators and measuring devices	Switching Units	Matrix F	<u>Extras</u> <u>H</u> e	elp					
🛛 🔞 Retry 🚳 Abort									
	EH								W 444
1			Bus	address	Idi	entifier	Serial number	1	
HV Switching Unit (WA07)			1	9	1	7	418.694r03	1	-
RLC generator (UI54)			1	4	1	54	418.529r01-26-47	1	100 A
LV generator (UI53)			1	3	1	53	418.528r02	1	
HVAC generator (UI52)			1	2	1	52	418.521r01	1	
HVDC generator (UI51)			1	1	1	51	418.520r01	1	-
٠ III.									•
Select diagnostics: Ready					Danger	ous voltage	0 0	0	No errors

Fig. 1-10: The "CEETIS Diagnostics" window with all generators present in the test system

1.2.3 Switching units

EETIS D	iagnose					×
Test system	Generators and switching units	Swit	ching units	Matrix	Extras	Help
			HV-Switch	ing unit		

Fig. 1-11: The Switching units menu

This Item allows you to test the switching units of your test system.

- 1. In the Switching Units menu, click on HV-switching unit....
 - The diagnostics tests the functioning of the relays on the switching unit and the test result is displayed in the *Diagnostics Result* window.

1.2.4 Matrix

Matrix diagnostics checks the functioning of the switching matrix (test point modules, racks).

Matrix diagnostics is divided into several individual diagnostics operations. .

EETIS Diagnose		
Test system Generators and measuring devices Switching units	Matrix Extras Help	
	Continuity diagnostics	
	DC leackage current diagnostics	
	Relay glue diagnistics	
	Transient protection diagnostics	
	Relay Control Diagnostics	
	Measuring line diagnostics	
	Optical fibre diagnostics	Transmitter
	W484 PLUS	Receiver

Fig. 1-12: The *Matrix* menu

1.2.4.1 Continuity diagnostics

Continuity diagnostics tests all relays on the cards for continuity. To do this, a current is impressed with the relays closed and the resistance is calculated from the measured voltage. For a relay to be classified as error free, the calculated resistance must be below the specified threshold.

- 1. Click on *Matrix* → *Continuity diagnostics...*.
- 2. The *Matrix diagnostics wizard* opens. You can call up the matrix configuration if required, to update any changes made to the test system matrix.
 - > Click on *Continue* to continue the diagnostics.

Matrix diagnostics wizard	
Read matrix configuration Click the button below to switch to the	matrix configuration screen.
Matrix configuration	
Cancel	Continue

Diagnostics

- 3. Select the card range to be tested.
 - To do this, enter the numbers of the first and last card to be tested in the fields and click on *Continue*.

Select the range of the	e matrix to be checked.	t card or click the button
elow to switch to the	e selection screen.	st card of click the button
ır		
n latrix boxes: Select o	ne or more matrix boxes	
irst card	Last card	
1	3	Select range
lox selection		
Box 0 (Index 0)		
	-	
🎺 All	🚫 None	
		No. 1997

- You can also specify the card range using the Select range window. For this open the window using the Select range button.
- This window shows which slot is occupied by which card type. If your system is equipped with different card types, this provides you with an easy method of selecting a particular card type.

Box	Rack	Slot	Card
0	1	1	TK 5-C
	2	1	TK 5-B64-U8-K8
		2	TK 5-B64-U8-K8
		3	TK 5-B64-U8-K8
		4	TK 4-B

- 4. Select the relays to be tested.
 - > Not all relays are present in every test system.
 - > Only select the *U1/U4* relay if no voltage sources are connected.
 - If you are testing a system with a distributed matrix, for the power relay test all matrix cases (MCs) must be connected with the U2/U3 cables.

Matrix diagnostics wizard			×
Select the relays to be tested	i		
Test pin relays			
Power U relays			
🔲 U2 / U3 power rail			
U1 / U4 relays (short)	rts connected vol	tage source)	
Power I relays			
Canaal)	A Baak		Continue
 Cancer 	Dack		Continue

CEETIS

- 5. In this window, you can set the values for the test pin parameters.
 - > The default values are displayed when the window is opened.

Matrix diagnostics wiza	rd 💽
Setup the parameters for	r the continuity diagnostics of the test pins
Changing the current car	n effect threshold limits.
Current	Threshold
1.5 A	500 <u>mOhm</u>
X Cancel	Back Continue

- 6. In this window, you can set the values for the power pin parameters.
 - > This window is only displayed if your test system contains power pins.
 - > The default values are displayed when the window is opened.
 - Click on *Continue*.

Matrix diagnostics wiza	rd	×
Setup the power pin para Changing the current can	meters effect threshold limits.	
Current	Threshold Ohm	
X Cancel	A Back	Continue

A message notifies you that all UUTs have to be removed from the tester and all external voltage sources turned off.



- 7. Follow this message and click on OK to start the diagnostics.
 - > In the status bar, a progress bar indicates the progression of the diagnostics.
 - The number of errors found during diagnostics is displayed in the right-hand field in the status bar.
- 8. If diagnostics is finished the *Diagnostics Result* window opens with the diagnostic report.
 - > You can search the diagnostic report for entries and print it out.
 - If all measured values are within the specified tolerances, the message *Passed* appears at the end of the report. If errors occurred during diagnostics, the message *Failed* is displayed.

- 9. To perform the diagnostics again, click on *Retry*.
 - To repeat the diagnostics with changed parameters, go to the menu bar and click on *Matrix* -> *Continuity diagnostics...*.

1.2.4.2 DC leakage current diagnostics

DC leakage diagnostics tests the electrical strength of the relays on the cards. This is done by applying a voltage to the opened relays and measuring the flowing current. The resistance determined must be above the specified threshold value.

Method:

- 1. Click on *Matrix* \rightarrow *DC leakage diagnostics...*
- 2. The *Matrix diagnostics wizard* opens. You can call up the matrix configuration if required, to update any changes made to the test system matrix.
 - > Click on *Continue* to continue the diagnostics.

-	
lead matrix configuration	
lick the button below to switch to the r	matrix configuration screen.
Matrix configuration	
Manut)	Continue
	Continue

- 3. Select the card range to be tested.
 - To do this, enter the numbers of the first and last card to be tested in the fields and click on *Continue*.

Select the range of Card range: Enter t below to switch to	the matrix to be checked. he number of the first and the la the selection screen.	ist card or click the button
or Natrix boxes: Selec	t one or more matrix boxes	
First card	Last card	
1	3	Select range
Box selection		
Box 0 (Index 0)		
🖌 Ali	None None	

You can also specify the card range using the Select range window. For this open the window using the Select range button.

This window shows which slot is occupied by which card type. If your system is equipped with different card types, this provides you with an easy method of selecting a particular card type.

Box	Rack	Slot	Card
0	1	1	TK 5-C
	2	1	TK 5-B64-U8-K8
		2	TK 5-B64-U8-K8
		3	TK 5-B64-U8-K8
		4	TK 4-B

- 4. Setup the parameters for the *DC leakage current diagnostics*. If your test system has several card types, you can set the parameters for each card type separately. To do this, click on the appropriate tab to set the parameters for the required specification (e. g. *C* or *D*).
 - > The default values are displayed when the window is opened.

Setup the para	ameters for	the DC leakage	diagnostics	of the test pi	ns
t is possible t	o use differ	ent parameters	for cards w	ith different	
specifications					
C	-				
Voltage		Threshold			
1500	V	500	MOhm		
Measuremen	t time			Wait time	
400	ms			100	m
		10 M		C	

- 5. Click on *Continue*.
 - A message notifies you that all UUTs have to be removed from the tester and all external voltage sources turned off.



- 6. Follow this message and click on OK to start the diagnostics.
 - > In the status bar, a progress bar indicates the progression of the diagnostics.
 - The number of errors found during diagnostics is displayed in the right-hand field in the status bar.

- 7. If diagnostics is finished the *Diagnostics Result* window opens with the diagnostic report.
 - > You can search the diagnostic report for entries and print it out.
 - If all measured values are within the specified tolerances, the message *Passed* appears at the end of the report. If errors occurred during diagnostics, the message *Failed* is displayed.

Buttons in the text viewer:

- **Print:** Prints out the diagnostics report.
- Find...: Opens a search screen.
 - Enter a value you want to find in the report.
- **Close:** Closes the text viewer and returns to the diagnostics result window.
- 8. To perform the diagnostics again, click on *Retry*.
 - ➤ To repeat the diagnostics with changed parameters, click on Matrix → DC leakage diagnostics....

1.2.4.3 Relay glue diagnostics

Relay glue diagnostics tests the power pins on the cards. All relays are first closed and then opened again. The test measures whether all relays have opened again.

Method:

- 1. Click on *Matrix* \rightarrow *Relay glue diagnostics...*.
- 2. The *Matrix diagnostics wizard* opens. You can call up the matrix configuration if required, to update any changes made to the test system matrix.
 - > Click on **Continue** to continue the diagnostics.

Matrix diagnostics wizard	
Read matrix configuration Click the button below to switch to the	e matrix configuration screen.
Matrix configuration	
X Cancel	Continue

- 3. Select the card range to be tested.
 - > To do this, enter the numbers of the first and last card to be tested in the fields and click on *Continue*.

Select the range of	the matrix to be checked.	
Card range: Enter t below to switch to or Matrix boxes: Seler	he number of the first and the la the selection screen.	ist card or click the button
First card	Last card	
1	3	Select range
Box selection		
Box 0 (Index 0)		
V AI	None None	
	1	

You can also specify the card range using the Select range window. For this open the window using the Select range button.

This window shows which slot is occupied by which card type. If your system is equipped with different card types, this provides you with an easy method of selecting a particular card type.

Select rar	nge		
Box	Rack	Slot	Card
0	1	1	TK 5-C
	2	1	TK 5-B64-U8-K8
		2	TK 5-B64-U8-K8
		3	TK 5-B64-U8-K8
		4	TK 4-B
	V Ok		TK 4-B

- 4. In the **Setup the parameters** window, the current and the threshold for the relay glue diagnostics are set.
 - > The default values are displayed when the window is opened.
 - Click on *Continue*.

Changing the current can effect threshold limits. Current Threshold	Setup the param	eters for the relay glue d	liagnostics	
Current Threshold	Changing the cu	rrent can effect threshok	d limits.	
200 mA 10 Ohm	Current	Threshold		
	200	10	Ohm	

A message notifies you that all UUTs have to be removed from the tester and all external voltage sources turned off.

Confirma	tion	×
?	Before running t - the UUT is disc - all external pov	his diagnostics make sure that onnected from the tester ver supplies are disconnected or switched off
	V Ok	X Cancel

- 5. Follow this message and click on OK to start the diagnostics.
 - > In the status bar, a progress bar indicates the progression of the diagnostics.
 - The number of errors found during diagnostics is displayed in the right-hand field in the status bar.
- 6. If diagnostics is finished the *Diagnostics Result* window opens with the diagnostic report.
 - > You can search the diagnostic report for entries and print it out.

If all measured values are within the specified tolerances, the message *Passed* appears at the end of the report. If errors occurred during diagnostics, the message *Failed* is displayed.

Buttons in the text viewer:

- **Print:** Prints out the diagnostics report.
- Find...: Opens a search screen.
 - Enter a value you want to find in the report.
- **Close:** Closes the text viewer and returns to the diagnostics result window.
- 7. To perform the diagnostics again, click on *Retry*.
 - > To repeat the diagnostics with changed parameters, click on $Matrix \rightarrow Relay$ glue diagnostics....

1.2.4.4 Transient protection diagnostics

Transient protection diagnostics tests the overvoltage protection of the cards. All pins are tested with two different voltages. While the low voltage can be interconnected, interconnection of the higher voltage is prevented by the overvoltage protection.

On cards without transient protection the diagnostics returns no measured values.

Method:

- 1. Click on *Matrix* → *Transient protection diagnostics...*.
- 2. The *Matrix diagnostics wizard* opens. You can call up the matrix configuration if required, to update any changes made to the test system matrix.
 - Click on *Continue* to continue the diagnostics.

Matrix diagnostics wizard	
Read matrix configuration Click the button below to switch to the	e matrix configuration screen.
Matrix configuration	
Const.	Continue

- 3. Select the card range to be tested.
 - To do this, enter the numbers of the first and last card to be tested in the fields and click on *Continue*.

Select the range o	f the matrix to be checked.	
Card range: Enter below to switch to	the number of the first and the la the selection screen.	st card or click the button
or		
Matrix boxes: Sele	ct one or more matrix boxes	
First card	Last card	
h'	3	Select range
Box selection		
Box 0 (Index 0)		
V All	None None	
A	4	N Continue

You can also specify the card range using the Select range window. For this open the window using the Select range button.

This window shows which slot is occupied by which card type. If your system is equipped with different card types, this provides you with an easy method of selecting a particular card type.

Box	Rack	Slot	Card
0	1	1	TK 5-C
	2	1	TK 5-B64-U8-K8
		2	TK 5-B64-U8-K8
		3	TK 5-B64-U8-K8
		4	TK 4-B

> A message notifies you that all UUTs have to be removed from the tester and all external voltage sources turned off.

Confirma	tion	×
?	Before running this diagnostics make sure - the UUT is disconnected from the tester - all external power supplies are disconnec	that cted or switched off
	V Ok	

- 4. Follow this message and click on OK to start the diagnostics.
- 5. If diagnostics is finished the *Diagnostics Result* window opens with the diagnostic report.
 - > You can search the diagnostic report for entries and print it out.
 - If all measured values are within the specified tolerances, the message *Passed* appears at the end of the report. If errors occurred during diagnostics, the message *Failed* is displayed.

Buttons in the text viewer:

- **Print:** Prints out the diagnostics report.
- **Find...:** Opens a search screen.

Enter a value you want to find in the report.

- **Close:** Closes the text viewer and returns to the diagnostics result window.
- 6. To perform the diagnostics again, click on *Retry*.

1.2.4.5 Measuring line diagnostics

Measuring line diagnostics tests the internal connections in the matrix and the lines connecting the matrix to the generators and measurement devices.

- 1. Click on *Matrix* → *Measuring line diagnostics...*.
- 2. The *Matrix diagnostics wizard* opens. You can call up the matrix configuration if required, to update any changes made to the test system matrix.
 - > Click on *Continue* to continue the diagnostics.

hatrix diagnostics wizard	
Read matrix configuration	
Click the button below to switch to th	e matrix configuration screen.
Matrix configuration	
	6
Connel	Continue Continue

- 3. Select the test steps you want to perform.
 - If you are testing a system with a distributed matrix, for the U2/U3 measurement connection diagnostics all matrix cases must be connected with the U2/U3 cables.
 - > Click on *Continue*. The following windows depend on your choice.



- 4. Setup the parameters for the *continuity diagnostics* of the test pins.
 - > Click on **Continue**.

Matrix diagnostics wizard	X
Setup the parameters for the continuity diagnostics of the test pins	
Changing the current can effect threshold limits.	
Current Threshold Line Model 1.3 A	
X Cancel ABack Continue	

- 5. Setup the parameters for the *DC leakage current diagnostics*. If your test system has several card types, you can set the parameters for each card type separately. To do this, click on the appropriate tab to set the parameters for the required specification (e. g. *C* or *D*).
 - Click on *Continue*.

Matrix diagnostics wizard	×
Setup the parameters for the DC leakage diagnostics	of the test pins
It is possible to use different parameters for cards w specifications.	vith different
вС	
Voltage Threshold Voltage Threshold 1500 V	
Measurement time	Wait time 100 ms
Cancel Back	Continue

- 6. In the next window, the parameters for the U2/U3 measurement connection diagnostics are set.
 - Click on *Continue*.

Matrix diagnostics wizar	d	—
Setup the power pin para Changing the current can Current	meters effect threshold limits. Threshold	
	1 Ohm	
X Cancel	A Back	Continue

A message notifies you that all UUTs have to be removed from the tester and all external voltage sources turned off.

Confirma	tion		×
?	Before running t - the UUT is disc - all external pov	his diagnostics make sure that onnected from the tester ver supplies are disconnected o	r switched off
	V OK	X Cancel	

- 7. Follow this message and click on OK to start the diagnostics.
 - > In the status bar, a progress bar indicates the progression of the diagnostics.
 - > The number of errors found during diagnostics is displayed in the right-hand field in the status bar.

- 8. If diagnostics is finished the *Diagnostics Result* window opens with the diagnostic report.
 - > You can search the diagnostic report for entries and print it out.
 - If all measured values are within the specified tolerances, the message *Passed* appears at the end of the report. If errors occurred during diagnostics, the message *Failed* is displayed.

Buttons in the text viewer:

- **Print:** Prints out the diagnostics report.
- **Find...:** Opens a search screen.
 - Enter a value you want to find in the report.
- **Close:** Closes the text viewer and returns to the diagnostics result window.
- 9. To perform the diagnostics again, click on *Retry*.
 - > To repeat the diagnostics with changed parameters, click on $Matrix \rightarrow Measuring line diagnostics...$

1.2.4.6 Optical fibre diagnostics

Optical fibre diagnostics tests the functioning of the optical test point modules. This is done by comparing the values from the factory calibration with the current measured values.

Optical fibre	diagnostics depends on the temperature!
	The measured values for the optical test point modules depend on the temperature.
	Do not start the diagnostics immediately after starting the system.
	Wait until the optical test point modules have reached their operating temperature.

1.2.4.6.1 Optical fibre diagnostics for transmitters

- 1. Click on *Matrix* \rightarrow *Optical fibres* \rightarrow *Transmitter*.
- 2. The *Matrix diagnostics wizard* opens. You can call up the matrix configuration if required, to update any changes made to the test system matrix.
 - > Click on *Continue* to continue the diagnostics.

Matrix diagnostics wizard	
Read matrix configuration Click the button below to switch to the	e matrix configuration screen.
Matrix configuration	
X Cancel	Continue

- 3. Select the pins to be tested.
 - To do this, click on the relevant pins in the left-hand field. If you select a card in the *Cards* field, all pins on this card are selected automatically. The *All* button selects all pins. Click on *None* to cancel your selection.

S	Cards	
Pin: 1 (Card: 1) Pin: 2 (Card: 1)	✓ Ca	rd: 1 rd: 2
Pin: 3 (Card: 1)		
Pin: 4 (Card: 1)		-
Pin: 5 (Card: 1)		
Dias C /Cards 43		
Pin: 6 (Card: 1)		
Pin: 6 (Card: 1) Pin: 7 (Card: 1)		
Pin: 6 (Card: 1) Pin: 7 (Card: 1) Pin: 8 (Card: 1)		
Pin: 6 (Card: 1) Pin: 7 (Card: 1) Pin: 8 (Card: 1) Pin: 9 (Card: 2)		
Pin: 6 (Card: 1) Pin: 7 (Card: 1) Pin: 8 (Card: 1) Pin: 9 (Card: 2) Pin: 15 (Card: 2)		
Pin: 6 (Card: 1) Pin: 7 (Card: 1) Pin: 8 (Card: 1) Pin: 9 (Card: 2) Pin: 15 (Card: 2)	None	

CEETIS Menu bar of the CEETIS Diagnostics window

- 4. Click on *Continue* to start the diagnostics.
 - > In the status bar, a progress bar indicates the progression of the diagnostics.
 - The number of errors found during diagnostics is displayed in the right-hand field in the status bar.
- 5. If diagnostics is finished the *Diagnostics Result* window opens with the diagnostic report.
 - You can search the diagnostic report for entries and print it out.
 - If all measured values are within the specified tolerances, the message *Passed* appears at the end of the report. If errors occurred during diagnostics, the message *Failed* is displayed.

Buttons in the text viewer:

- **Print:** Prints out the diagnostics report.
- **Find...:** Opens a search screen.

Enter a value you want to find in the report.

- **Close:** Closes the text viewer and returns to the diagnostics result window.
- 6. To perform the diagnostics again, click on *Retry*.
 - ➤ To repeat the diagnostics with changed values, click on Matrix → Optical fibres → Transmitter.

1.2.4.6.2 Optical fibre diagnostics for receivers

- 1. Click on *Matrix* \rightarrow *Optical fibres* \rightarrow *Receiver*.
- 2. The *Matrix diagnostics wizard* opens. You can call up the matrix configuration if required, to update any changes made to the test system matrix.
 - > Click on *Continue* to continue the diagnostics.

Read matrix configuration	
Click the button below to switch to the	e matrix configuration screen.
Matrix configuration	

- 3. Select the pins to be tested.
 - To do this, click on the relevant pins in the left-hand field. If you select a card in the *Cards* field, all pins on this card are selected automatically. The *All* button selects all pins.

Pin: 1 (Card: 1)	Card	S and 1
Pin: 2 (Card: 1)		ard: 2
Pin: 3 (Card: 1)		-
hn: 4 (Card: 1) Pin: 5 (Card: 1)		
Pin: 6 (Card: 1)		
Pin: 7 (Card: 1)		
Sat 9 (Card: 4)		
hill, o (Card: 1)		
Se: 9 (Card: 2)		
2in: 15 (Card: 2)		

- 4. A **warning message** notifies you that the optical fibre adaption must be removed from the tester and that all optical pins must be covered with the corresponding caps.
 - > Follow this warning message and click on OK to start the diagnostics.

	Before running this diagnostics make sure that
3	- the optical fiber adaption is removed from the test system
	- all optical pins are covered with the provided caps

- > In the status bar, a progress bar indicates the progression of the diagnostics.
- The number of errors found during diagnostics is displayed in the right-hand field in the status bar.

- 5. If diagnostics is finished the *Diagnostics Result* window opens with the diagnostic report.
 - > You can search the diagnostic report for entries and print it out.
 - If all measured values are within the specified tolerances, the message *Passed* appears at the end of the report. If errors occurred during diagnostics, the message *Failed* is displayed.

Buttons in the text viewer:

- **Print:** Prints out the diagnostics report.
- Find...: Opens a search screen.
 - Enter a value you want to find in the report.
- **Close:** Closes the text viewer and returns to the diagnostics result window.
- 6. To perform the diagnostics again, click on *Retry*.
 - ➤ To repeat the diagnostics with changed values, click on Matrix → Optical fibres → Receiver.

1.2.5 Extras

CEET	TIS Di	agnose					• 🗙	Ì
Test sys	stem	Genarators and measurement devices	Switching units	Matrix	Extr	as	Help	
						En	vironment da	ata

Fig. 1-13: The Extras menu

1.2.5.1 Environment data

In the *Environment data* you can enter information about the tester and the ambient conditions.

- 1. Click on *Extras* → *Environment data...*
 - > The *Environment data* window opens.
- 2. Enter the environmental data in the input fields.
- 3. Click OK to save your entries.
 - > The window is closed and your entries are accepted.

Environment data Serial number of the test	system
Test Equipment 1	
Test Equipment 2	
Inspector	
Temperature	Humidity
🗸 ок	X Abort

Fig. 1-14: The Environment data window

1.2.6 Help



Fig. 1-15: The Help menu

1.2.6.1 Information

This Item opens the CEETIS Information window. It displays the version number of the installed software

- 1. Clock $Help \rightarrow Informationen...$
 - The CEETIS window opens showing the version of the installed CEETIS software.



Fig. 1-16: The CEETIS window

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