KURTH ELECTRONIC

Operating manual

KE7200
KE7100

Network and LAN cable tester

Version 2.06.0

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Documentation and software

Current operating manuals and software updates can be found at www.kurthelectronic.de in our download area. Under *Service and Support* > *Downloads* you will find the corresponding files such as current firmware and operating manuals for downloading.

The KE7200 / KE7100 is essential for:

- Inspection and commissioning of LAN networks with 10/100/1000 Mbit
- Approval of the new installation
- Inspection of existing installations
- Amount of cables
- Troubleshooting
- PoE performance measurement
- Length measurement, cable search for cabling of all kinds, coaxial cabling, etc.

KE7200 only:

- IP tests static or with DHCP
- Ping and stress test
- Acceptance report

Measurement and display of:

Cable test

- Miswiring
- Short
- Interruption
- Split pair
- Bridge Tap – optional
- Cable / wire length with TDR up to 200 m
- External voltage

Power over Ethernet

- PoE/PoE+/PoE++ version A or B
- Available power in Watt according to IEEE802.3af/at/bt

Cable / Port search

- Link Blink with Normal Link Pulse
- Sending 4 different search tones

KE7200 only

- Test on active network 10/100/1000 Mbit
- Information of service type 10/10/1000 Mbit
- Static IP or DHCP
- Network scan
- Listing of all found participants
- Display name, IP address, MAC address
- Targeted ping of individual addresses
- Display lost responses, response times min / max / average
- Stress test of devices by continuous ping
- Ping frame sizes adjustable from 32 – 1024 byte
- Save results in the device and PC
- Printout via PC with KE-Manager software
- Preparation of acceptance reports

General

- 15 different wiring versions pre-defined
- Own versions can be created
- Predefined cable types with VF value
- Own cable types can be created
- Graphical backlit display
- Time for automatic switch-off adjustable
- Adjustable time for display backlighting

Remote unit KE7010

- Active remote unit with microprocessor
- Pass/Fail indication with green LED
- Remote ID freely programmable from 1 – 32
- Max. 32 Remotes

Power supply

- 4x AA mignon battery (IEC: R6, UM-3) or 4x rechargable battery of the same form

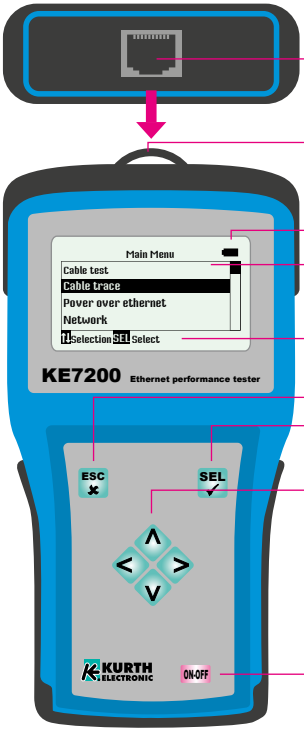
Battery life with good battery quality

Measurement always with display backlighting
➔ Switched on - no test approx. 40 hours
➔ Cable test without remote approx. 35 hours
➔ Cable test with remote approx. 18 hours
➔ IP test approx. 15 hours

The available measuring time can be extended by switching off or limiting the time of the display backlight.

Important – this is the test time duration. Due to differences in the quality of the batteries, other times may apply. Always use only batteries of the same make and capacity. Remove the batteries if they have not been used for a longer period of time. If the battery shell is still damaged by leaking batteries, it can be replaced.

Keypad / Display / Connections



RJ45 Ethernet test port 10/100/1000 Mbit

Attachment for wrist strap

Battery status

Graphical, backlit display

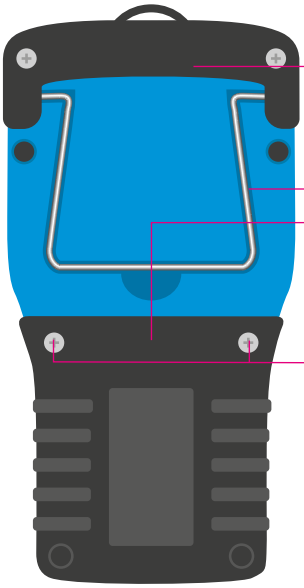
Menu-related operating actions

Return key

Select key

Navigational UP - DOWN / LEFT - RIGHT keys

ON / OFF key



Upper edge protection

Retractable support bracket

Under edge protection / battery compartment lid

Replacing the batteries

First loosen the two lower screws of the edge protector. Remove the edge protector by pulling it downwards.

The 4 AA batteries are in a holder.

Remove empty batteries and insert the new ones.
Pay attention to polarity.

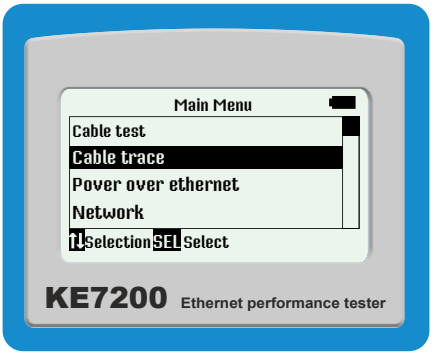
Do not mix new and old batteries.

Only use batteries of the same type and production time.

Keypad

During the development of the KE7200/7100, emphasis was placed on fast and simple operation. For this reason, the KE7200/7100 has only seven keys, despite a wide range of testing possibilities.

ESC	Based on PC functions, the ESC key is used to step backwards.
ON/OFF	On and off button. This key has a delay of approx. 1 sec. when switching off.
Arrow keys	The arrow keys are used to scroll UP ▲ / DOWN ▼ and LEFT ◄ / RIGHT ►.
SEL	SELECT key. This key is used to select a function or start a test.



Test

Setup >

> Wiring

Here you can select the appropriate type of wiring from the list (which PIN for which wire). However, this can also be changed during the cable test. The specification of the correct type of wiring is important, as all information on the wire pair and PIN assignment is based on this. Without this information there is no OK statement possible from the test. Also, only the correct wiring definition can provide a split pair error message.

15 common variants are predefined.
The following abbreviations are used:
UTP = Unshielded Twisted Pair
STP = Shielded Twisted Pair
CR = Cross Connect

> Velocity

Here the propagation velocity of the signal is entered in the cable as a percentage of the speed of light. This information is required for length measurements with the TDR function. For correct measurements please make sure that the VF value is as accurate as possible. The data can be obtained from the cable manufacturer. If no information is available on the cable, the VF factor can also be determined with a piece of cable of known length.

Determination of VF value

First carry out the cable test on this cable section without a remote. After completion go to the Velocity menu, here the measured length is displayed for the set VF. Now adjust with the keys ▲ or ▼ until the known cable length is displayed. The VF value to be read is the propagation velocity of this cable. You can use it to create your own cable definition in the **Test Settings > Cable definition** menu.

> Cable type

Various frequently used cable types with corresponding VF values are predefined here, see page 13.

> Device settings >

All device settings are made in the menu: **Setup > Device settings >** are made. These are preset to empirical values; there is also a **Reset to factory settings** if something does not work as intended when creating cable or wiring functions. The possible operating actions are displayed in the respective menu in the lower status line.

> Language: Choose between German (Default) or English

> Unit: m (meter) or ft (foot)

> Battery type: The KE7200/7100 can be powered by four mignon batteries type AA or four rechargeable batteries type A. Since the voltage of the battery is lower, the capacity information can be switched between battery and rechargeable battery here.

> Backlight: Switch-on time after each button press in seconds. Set the time with the ▲ or ▼ button, select with **SEL**.

> Auto power off: Time of automatic device switch-off after the last keystroke. Set with button ▲ or ▼, select with **SEL**.

> Key beep: On or off

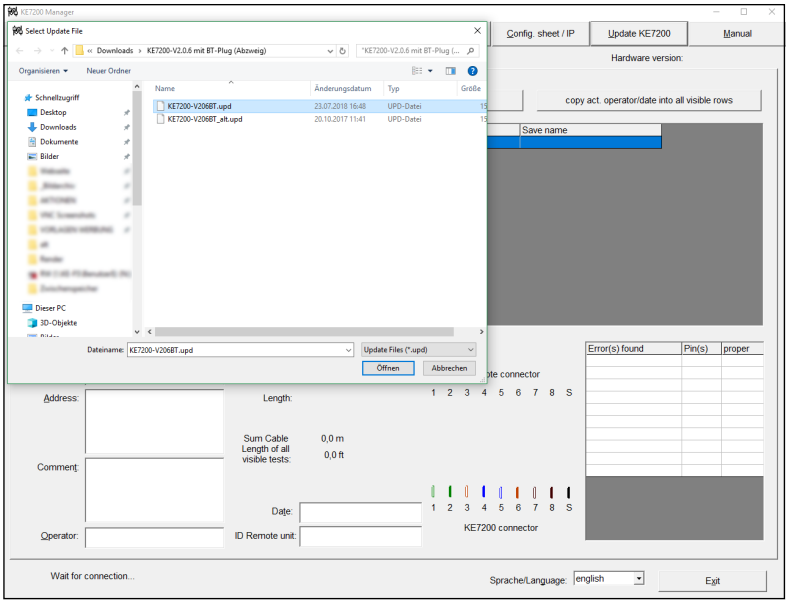
> Sound: On or Off. The acoustic signal is given after the cable measurement.

> Contrast: LCD contrast setting, value 7 is default. Set with ▲ or ▼, confirm with **SEL**.

> Reset to factory setting: Here, all settings are overwritten with the factory default values.

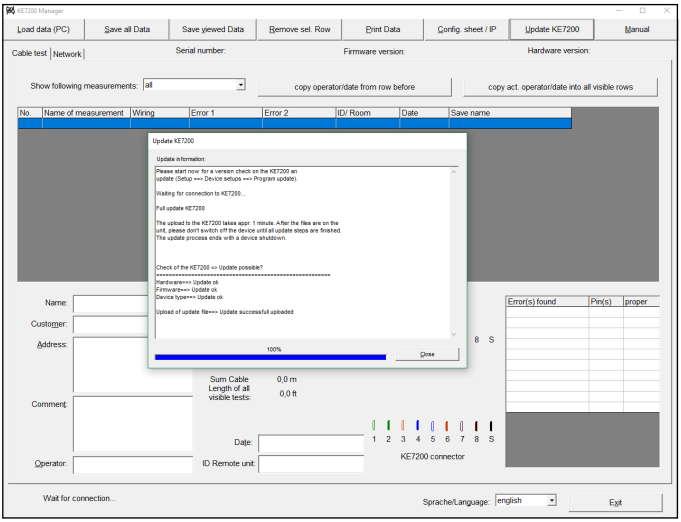
> Program Update: Which firmware version you need for your KE7200 can be found in the table at *www.kurthelectronic.de/ke7200-downloads*. After receiving the required .upd file, connect the KE7200 to the PC, then start the KE7200 Manager and select the Update KE7200 tab. Select the .upd file to be installed in the dialog and click on '**Open**'.

Now you are guided through the process with the window '**Update information:**'. In the KE7200 select **Settings > Device Settings > Program Update.**



Then press the ◄ and ► keys **simultaneously**.

The update process starts. After approx. 1 minute the update process is finished and the KE7200 switches off.



Configurations: The KE7200 / KE7100 is supplied with 15 predefined wiring definitions and 16 predefined cable variants. New definitions can be created or existing ones revised at any time in the setup.

> Test settings >

> Cable definition

Here you can select the cable to be used from the list of different cables. The name and the corresponding VF value are assigned to the respective cable type, the VF value is required for length measurement. The cable type only appears in the stored or printed result. It is useful to enter the cable with which the work was carried out here. You can create your own definitions. See page 13.

> Wiring definition

There are 15 different pre-defined wiring variants to help you make the selection. The correct selection of the wiring version to be tested is essential for the good/bad information. Only if this (pin to pair assignment) matches, can crosstalk be checked reliably. With the KE7200 / KE7100 not only a wire-to-pin assignment is checked, but also the correct pair assignment. This is done with a high frequency in order to obtain relevant information. Here, too, you can create your own variants. However, an existing definition must be overwritten.

> Remote ID

The KE7010 remote units required for correct and quick cabling verification are included with No. 32 to simplify inventory management. Under **Main Menu > Setup> Test Settings > Remote Unit**, a connected remote unit can simply be reprogrammed to the desired number. We recommend writing the new number in the designated field after changing the number.

> MAC address (KE7200 only)

The KE7200 is shipped with a predefined MAC address. In order to be able to work in networks with MAC address verification, the address can be freely defined here.

> *IP address (*KE7200 only)
The IP address of the KE7200 is set here. This address is always used as device address, also for an IP test e.g. as static network address. It can be changed at any time. Simply use the ▲ and ▼ / ◄ and ► keys to set the address and save it with **SEL**. However, the change can also be made directly in the same way, e.g. during an IP test.

Performing the tests

The KE7200 / KE7100 checks the connected line for external voltage before each start of one of the four test options. If present, the test is not started and the voltage level is displayed in volts. The test can only be performed after the external voltage has been switched off. External voltage has nothing to do with PoE for this detection. For PoE systems that operate correctly, the supply of voltage must always be activated.

Cable test >

The cable test can be performed with or without the KE7010 remote unit. If it is performed without Remote 7010, only field length measurement and crosstalk check by overdrafts will be performed.

When the remote unit is connected at the end, the length measurement using the TDR method is sufficiently accurate to determine whether the field is in the 90 m range. This test measures up to a maximum of 200 m. For the measurement of installed cables, we recommend carrying out the length measurement separately without remote. This measurement is more accurate with regard to the length, since a unique end can be detected without a remote.

Performing tests

Up to 32 remote units can be connected simultaneously to the ports to be measured using the included patch cables. If only one remote is used, the remote must be taken to the next port after the test has been completed. If a remote assistant is used, it can detect whether the test resulted in an error by the flashing rhythm of the LED after the test has been completed. If no error has been detected (slow flashing every 1 second) it can proceed to the next port.

However, we recommend the use of several remotes, one for each room. With the 32 possible remotes, a patch field area with up to 32 ports can be easily covered, even with somewhat larger systems. The main advantage is clearly time saving, as only one person is needed. At the same time there is a conclusive assignment of the measurements with the Remote ID in the documentation.

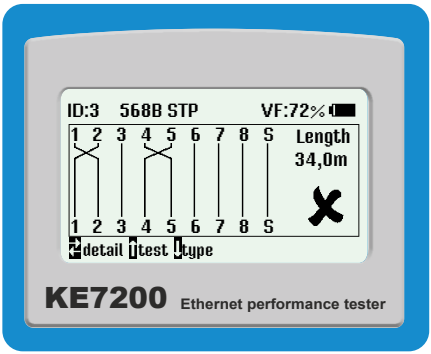
Connect the KE7200 / KE7100 with the 0.5 m patch cable (included) to the port to be tested on the patch panel.

Start the test with the scroll bar for **Cable test** by pressing the **SEL** button. The p**rogress information** runs with the cable test and the progress is displayed in %. If the test was free of errors, a long beep sounds and the OK checkmark is shown in the display. The LED on the Remote flashes evenly every 1 second.

If an error is detected, two short beeps will sound, the LED on the remote unit will flash: 4x briefly (0.5 seconds), then a pause of 1 second, then again 4x briefly and so on.

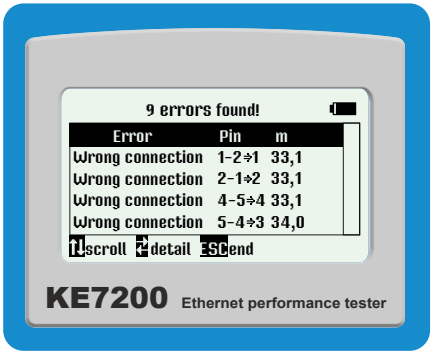
The KE7200 / KE7100 always shows the number of the remote unit in the upper left corner of the display, followed by the type of wiring. This can be changed by pressing the ▼ key, after which the set VF value is displayed. This is set either by selecting a cable type or by setting it directly beforehand.

In the main window the so-called wiremapping is displayed. Here the possibly existing wiring errors can be easily identified. Split Pair is displayed with a branching to the connected wire and back again, the measured field length appears in the right field. Lengths below 2 m are not displayed – The measurement is too inaccurate in this close range. The maximum length measurement is approx. 200 m, but this also depends on the cable itself.



The lower display line is the dialogue line. Possible operating actions for the respective test are displayed here.

With the ◄ and ► keys, the calculated details per wire can be displayed. Thus, for example, an interruption or a short circuit can be clearly assigned to the near or far end. If the error is somewhere in between, the value can be read in meters. The ◄ key shows the wire lengths, the ► key the number of faults, the type of fault, the affected pin, where it should be if swapped and where it is now as well as the length of the fault.



By its nature, only the linked pair can be defined for split pairs. In some cases, individual interconnections between other wires are also detected. This is due to the fact that crosstalk also affects other neighbouring wire pairs due to the split pair.

It must also be ensured that the configured wiring variant (e.g. 568A) corresponds to the actual wiring.

Storing data (KE7200 only)

After the measurement has been completed, it can either be exited with **ESC** or the *Save data* menu can be opened by pressing the **SEL** key. The preset name of the measurement, "Default", followed by a number is displayed here. If the data should be assignable later, you must enter a unique name here. We recommend customer name or number. The entry is made by pressing the keys ▲ or ▼, which allows scrolling through the alphabet and the numbers from 0 - 9. Press **SEL** to insert the desired character. The cursor position can be changed with the buttons ◄ and ►.

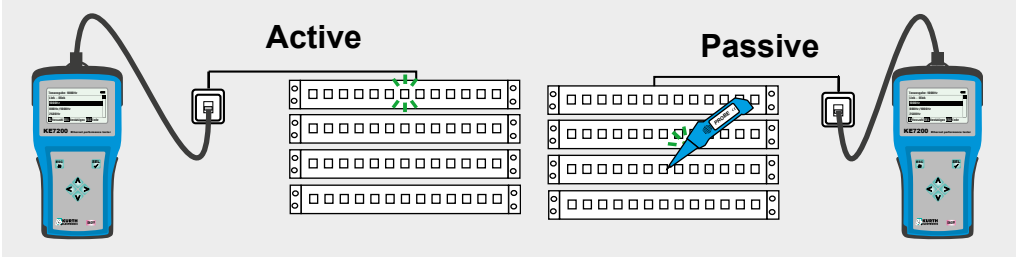
This name remains entered until it is overwritten again. This means that when saving the next measurement, if it is still the same customer, nothing has to be changed. The number of the measurement counts up automatically. You can then sort, print and save the data in the manager according to the customer number or the name. It should be noted that the memory setting must be adjusted at the start of a new measurement series in another installation.

In the second line the available memory space is displayed. A total of about 14,000 entries are possible.

Cable trace >

The KE7200/KE7100 has two methods of identifying a known socket at the patch panel, switch or hub: Plug the test cable of the KE7200/KE7100 into the socket located in the room and select the **Link-Blink** test in the **Cable trace** menu. The system now checks whether the socket is active in the network and displays this in the status line. If the connection is active, the **Ethernet 10/100/1000 Mbit** connection information is displayed, whereby only the speed detected in each case is displayed.

If the port is not active, **No connection** is displayed. Then you can switch to one of the four tone transmission modes (1000 Hz; 880/1000 Hz; 2600 Hz and 2600/1900 Hz). Here, the search tone is transmitted on all wire pairs. The optional PROBE can then be used to uniquely identify the assigned port on the patch panel.



PoE/PoE++ Test > (according to IEEE802.3af/at/bt)

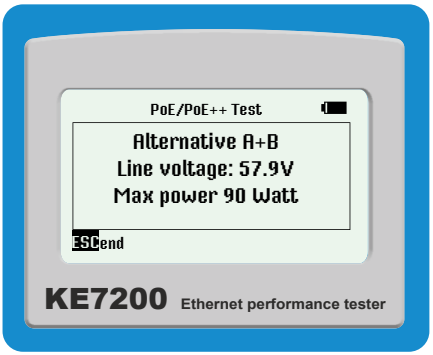
Start the test with the **SEL** key. The KE7200/KE7100 activates the PoE port and outputs the corresponding information in the display, whether PoE/PoE+/PoE++ is present or not. If PoE can be activated, this is done so. Then the maximum load is first applied to remove the charge from the cable, then the maximum available power is measured according to the IEEE802.3af/at/bt standard. There it is regulated which voltage must be present on the line when a certain current flows. If this voltage is below the standard value, the KE7200/KE7100 switches the load back until the voltage is within the normal range again.

PoE standard		*Power per port*	*Usable power*
PoE	*IEEE 802.3af*	*15.4 watt*	*12.95 watt*
PoE+	*IEEE 802.3at*	*25.4 watt*	*21.90 watt*
PoE++ / 4PPoE	*IEEE 802.3bt*		*70 to 100 watt*

This power is calculated and then displayed. The test must be restarted for each measurement.

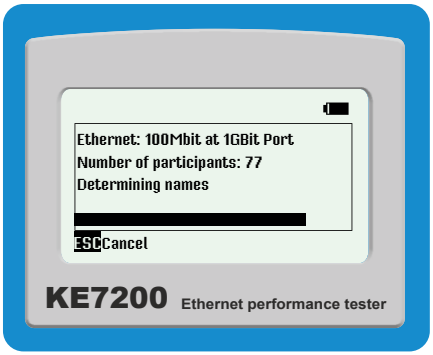
This information is important in any network with PoE subscribers, as disturbances occur again and again due to the load on the power supply in the switch being at the limit. If a small additional load is added, e.g. due to changed operating conditions such as switching on infrared lighting, the network breaks down and the switch only provides emergency power. This cannot be detected without appropriate test equipment.

Some PoE switches also provide 30 watts per port. These then work outside the specification.



Network test (KE7200 only)

During the network test, the KE7200 can search the network for IP addresses and thus participants. This can be done in DHCP mode or with a fixed IP address. If the network also monitors MAC addresses, the MAC address of the KE7200 can be adapted (see page 8).



First the DHCP mode is activated by selecting **Network test > DHCP Request**. As soon as a network connection is established, it is displayed in the status line and the IP address assigned to the KE7200 by DHCP is displayed. The request for occupied IP addresses in the assigned address space starts immediately. The number found is also displayed. The KE7200 now queries all addresses for information and lists them. If names are available, they are displayed, if not, only the IP address.

This process can take some time, especially if there are many participants in the network. You can see the progress by the change of the found IP addresses. At the top of the screen, "Network" is displayed. Selection with **SEL** shows general network information such as connection speed, own IP address and network mask. The ▼ key scrolls to the next page. This will be displayed:

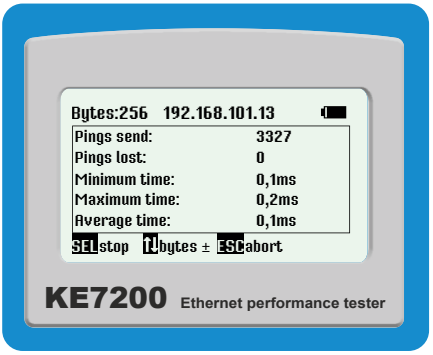
- *Domain name of the network*
- *IP of the DNS server*
- *IP of the DHCP server*
- *IP of the router*

Press the **SEL** key to save this data.

Attention – it can happen that not all computers in a network always respond within the query time of the test device, as they may be occupied with other tasks. This is due to the system-specific nature and does not represent an error. The query can be repeated as often as desired.

The subscriber list is opened with **ESC**. By selecting a subscriber, the IP and MAC address are displayed in addition to the name. This address can then be pingled in this menu.

Selecting with **SEL** opens the ping menu. The frame size is displayed in the upper left corner. The buttons ▲ and ▼ can be used to set the frame size between 32 and 1024 bytes.



Start of the ping test with *SEL*

The KE7200 now continuously sends pings to the selected address. This is done at maximum speed so that a stress test for all components is performed at the same time.

The success of the test is indicated by the number of pings sent and the number of pings lost. You can also see the maximum, minimum and average response times.

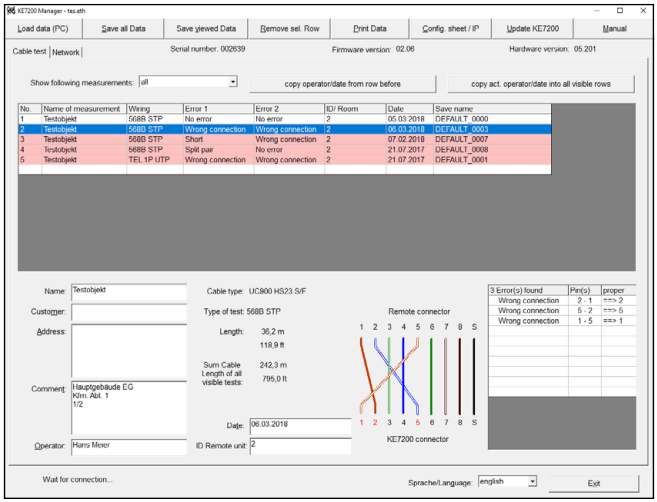
> *Upload Measurements*

The stored measurements can be transferred to the KE-Manager for further analysis.

Start the manager on the PC, then connect the KE7200 to the PC with an Ethernet cable and finally select *Upload measurements* in the main menu.

The stored data are transferred immediately after synchronization and appear in the manager window. The KE7200 can now be disconnected from the network.

If no stored measurement data are available, this is displayed. The data on the KE7200 can now be deleted or aborted with **ESC**.



Creating the > Test settings

> *Cable definition* >

The different cable types used can be created here. Profiles that have already been created can also be overwritten.

After selecting the cable type to be edited, or alternatively a position without an entry, select it with **SEL**. "*Name:*|" is displayed. A unique cable name can be entered here, 15 characters are available. At the flashing cursor position it is now possible to scroll through the alphabet, all digits 0–9 and an empty position with the ▲ and ▼ keys. The digit or letter to be positioned at the cursor position is selected **with SEL**. If the name is entered, confirm with **SEL**. The following appears: "*Velocity: xx%*". This is the velocity of propagation in the cable as a percentage of the speed of light, the VF value. Enter either the value specified by the cable manufacturer, the previously determined value or an approximate value.

- Phone and Cat3 cables have approx. 64–68
- Cat5/6 cables have approx. 72
- Cat6/7 cables have approx. 77

Please note: Only with the correct VF will the cable lengths be determined correctly!

After entering the VF value, save with **SEL**. This allows you to quickly and easily predefine the cable types you use.

Predefined cable types and associated VF values

Beld Datatwist	72%	Beld 3600 PB29	72%	UC300 HS24 S/F	67%	LEONI E5-70 S/	80%
Beld Mediatwist	72%	Beld 4800 PB29	70%	UC500 AS23 F/F	79%	LEONI F6-80 S/	80%
Beld 10 GX	68%	Draka UC300	67%	UC900 HS23 S/F	79%		
Beld 1200 NP28	72%	Draka UC500-15	79%	UC900 SS23 S/F	77%		
Beld 2400 PB28	72%	IS Profinet	66%	LEON D1-20 SF/	75%		

>Wiring definition >

Here you can supplement the wiring variants used by you. It is useful to note the pin/pair assignment of the wiring variant to be created in advance.

15 common variants are already predefined. The abbreviations UTP, STP, and CR are described on page 6. After selecting the menu item *Wiring definition*, the list appears. The first item is "*NO TEST*" – please do not revise this entry.

After selecting a wiring definition to be changed, you will be in the *Name* menu. A unique wiring name, e.g. *568C*, can be entered here. There are 15 characters available. At the flashing cursor position, the ▲ and ▼ keys can now be used to scroll through the alphabet, all digits 0–9 and an empty position. The digit or letter to be positioned at the cursor position can be selected with **SEL**.

When the name has been entered, confirm with **SEL**. The *Connections* menu opens, where the PIN is assigned to the PIN and wire pair as corresponding to the wiring variant. This assignment is necessary both for the recognition of the correct assignment in the tested cable and of overdrafts (split pair) with regard to crosstalk and for good/bad information after a successful test. The scroll bar is set to Pin1.

Select with **SEL** and you reach the menu *Connection to Pin 1*. Now the possible selections of all 8 pins which could be assigned to Pin 1 appear. Use the ▲ and ▼ keys to select the correct pin with **SEL**. The next step is the *Pair* menu, where you can assign the selected pins to a pair with **SEL**.

You are now back in the *Connections* menu, where you can see the assignment of the first pin. Use the ▼ key to move the scroll bar to the next position and continue with the assignment as before.

Predefined wiring definitions

Name	Pin to	Pin	Wire pair	Name	Pin to	Pin	Wire pair
568A UTP	1	1	3	**568A STP**	1	1	3
	2	2	3		2	2	3
	3	3	2		3	3	2
	4	4	1		4	4	1
	5	5	1		5	5	1
	6	6	2		6	6	2
	7	7	4		7	7	4
	8	8	4		8	8	4
	S	NC			S	S	
568A UTP CR	1	3	3	**568A STP CR**	1	3	3
	2	6	3		2	6	3
	3	1	2		3	1	2
	4	7	4		4	7	4
	5	8	4		5	8	4
	6	2	2		6	2	2
	7	4	1		7	4	1
	8	5	1		8	5	1
	S	NC			S	S	
568B UTP	1	1	2	**568B STP**	1	1	2
	2	2	2		2	2	2
	3	3	3		3	3	3
	4	4	1		4	4	1
	5	5	1		5	5	1
	6	6	3		6	6	3
	7	7	4		7	7	4
	8	8	4		8	8	4
	S	NC			S	S	

Name	Pin to	Pin	Wire pair	Name	Pin to	Pin	Wire pair
568B UTP CR	1	3	2	**568B STP CR**	1	3	2
	2	6	2		2	6	2
	3	1	3		3	1	3
	4	7	4		4	7	4
	5	8	4		5	8	4
	6	2	3		6	2	3
	7	4	1		7	4	1
	8	5	1		8	5	1
	S	NC			S	S	
USOC UTP	1	1	4	**USOC STP**	1	1	4
	2	2	3		2	2	3
	3	3	2		3	3	2
	4	4	1		4	4	1
	5	5	1		5	5	1
	6	6	2		6	6	2
	7	7	3		7	7	3
	8	8	4		8	8	4
	S	NC			S	S	
ISDN S BUS	1	1	none	**TEL 2P UTP**	1	NC	none
	2	2	none		2	NC	none
	3	3	2		3	3	2
	4	4	1		4	4	1
	5	5	1		5	5	1
	6	6	2		6	6	2
	7	7	none		7	NC	none
	8	8	none		8	NC	none
	S	NC			S	NC	
TEL 1P UTP	1	NC	none	**PROFINET**	1	1	1
	2	NC	none		2	2	1
	3	NC	none		3	3	2
	4	4	1		4	NC	none
	5	5	1		5	NC	none
	6	NC	none		6	6	2
	7	NC	none		7	NC	none
	8	NC	none		8	NC	none
	S	NC			S	S	
PROFINET CR	1	3	1				
	2	6	1				
	3	1	2				
	4	NC	none				
	5	NC	none				
	6	2	2				
	7	NC	none				
	8	NC	none				
	S	S					

S = Shield
NC = not connected

The assignments cannot be deleted. If you created incorrect assignments during creation, you can only overwrite them again. Alternatively, you can select **Device settings > Reset to factory settings**. All user-defined definitions are then reset.

Bridge Tap > Bridge Tap detection (optional)

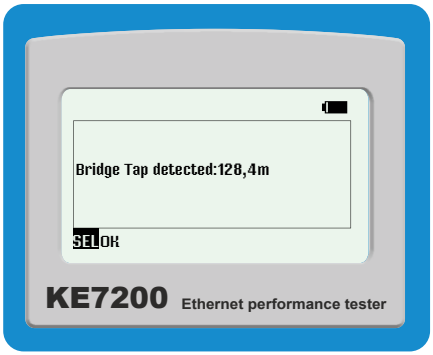
Detection and localization of a Bridge Tap

With the software option, bridge taps can be accurately located up to a cable length of 150 meters. The bridge taps, which are difficult to detect, cause signal reflections (echoes) which have a negative effect on the signal and lead to DSL network problems.

Start the test with the scroll bar on *Bridge Tap* by pressing the **SEL** key. The progress information is displayed with '*Branch detection running*' and progress in %. If the test was free of errors, a long beep will sound and the OK checkmark will be displayed. The LED in the remote flashes evenly every 1 second.

If errors are detected, two short tones will sound and the LED on the remote unit will flash: four times short (0.5 seconds), then a pause of 1 second, again four times short, etc.

The result is displayed in the main screen. Here the branch is easily visible with the exact distance. Lengths below 2 m are not displayed, the measurement is too inaccurate in this close range.



KE-Manager (KE7200 only)

Installaing the KE-Manager

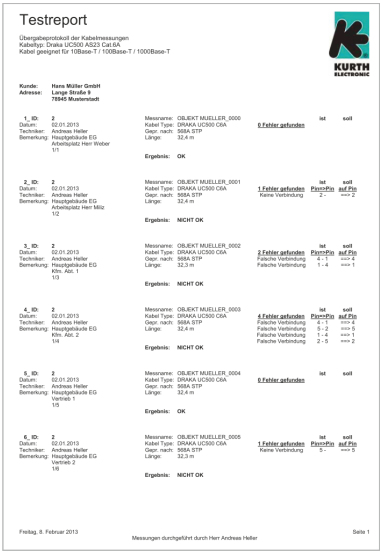
Run the KE-Manager, delivered as *Ethernet_Manager_Setup_1_2_3.exe*, on the PC. This installs the program and creates a screen link on the desktop with which the manager can be called, and a *Kurth_Electronic* directory is created in the *program files* folder. KE-Manager is only available for Windows versions Windows 95 and newer.

Features

The KE-Manager is a flexible tool for configuring the KE7200 and for downloading measurement data.

It provides the following features:

- Configuration of the manager
- Language settings
- Display the hardware version of the KE7200
- Display the current device Software version
- Display the operating instructions
- Downloading saved tests
- Completing the downloaded data
- Print and save tests
- Retrieval of stored tests
- Up/Download to KE7200 and PC
- Firmware update of the KE7200


Testreport

Übergabeprotokoll der Kabelmessungen
Kabeltyp: Draka UC500 AS2/3 Cat.6A
Kabel geeignet für 10Base-T / 100Base-T / 1000Base-T

KURTH ELECTRONIC

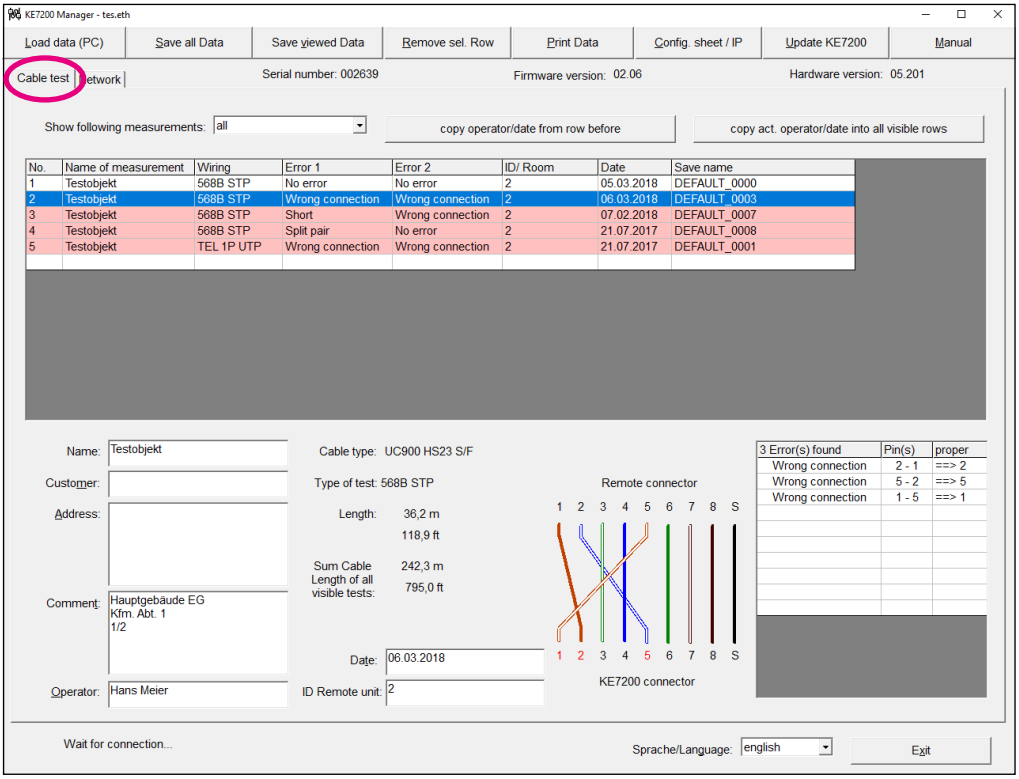
Kunde: Hans Müller GmbH
Adresse: Lange Straße 9
78945 Musterstadt

1_ID:	2	Messname:	OBJEKT MUELLER_0000	0 Fehler gefunden		ist	soll
Datum:	02.01.2013	Kabel Type:	DRAKA UC500 C6A				
Techniker:	Andreas Heller	Gepr. nach:	568A STP				
Bemerkung:	Hauptgebäude EG Arbeitsplatz Herr Weber 1/1	Länge:	32.4 m				
		Ergebnis:	OK				
2_ID:	2	Messname:	OBJEKT MUELLER_0001	1 Fehler gefunden		ist	soll
Datum:	02.01.2013	Kabel Type:	DRAKA UC500 C6A	Keine Verbindung		2 - -	auf Pin === 2
Techniker:	Andreas Heller	Gepr. nach:	568A STP				
Bemerkung:	Hauptgebäude EG Arbeitsplatz Herr Milz 1/2	Länge:	32.4 m				
		Ergebnis:	NICHT OK				
3_ID:	2	Messname:	OBJEKT MUELLER_0002	2 Fehler gefunden		ist	soll
Datum:	02.01.2013	Kabel Type:	DRAKA UC500 C6A	Falsche Verbindung		4 - 1	auf Pin === 4
Techniker:	Andreas Heller	Gepr. nach:	568A STP	Falsche Verbindung		1 - 4	=== 1
Bemerkung:	Hauptgebäude EG Kfm. Abt. 1 1/3	Länge:	32.3 m				
		Ergebnis:	NICHT OK				
4_ID:	2	Messname:	OBJEKT MUELLER_0003	4 Fehler gefunden		ist	soll
Datum:	02.01.2013	Kabel Type:	DRAKA UC500 C6A	Falsche Verbindung		4 - 5	=== 4
Techniker:	Andreas Heller	Gepr. nach:	568A STP	Falsche Verbindung		5 - 2	=== 5
Bemerkung:	Hauptgebäude EG Kfm. Abt. 2 1/4	Länge:	32.4 m	Falsche Verbindung		1 - 4	=== 1
		Ergebnis:	NICHT OK	Falsche Verbindung		2 - 5	=== 2
5_ID:	2	Messname:	OBJEKT MUELLER_0004	0 Fehler gefunden		ist	soll
Datum:	02.01.2013	Kabel Type:	DRAKA UC500 C6A				
Techniker:	Andreas Heller	Gepr. nach:	568A STP				
Bemerkung:	Hauptgebäude EG Vertrieb 1 1/5	Länge:	32.4 m				
		Ergebnis:	OK				
6_ID:	2	Messname:	OBJEKT MUELLER_0005	1 Fehler gefunden		ist	soll
Datum:	02.01.2013	Kabel Type:	DRAKA UC500 C6A	Keine Verbindung		5 - -	auf Pin === 5
Techniker:	Andreas Heller	Gepr. nach:	568A STP				
Bemerkung:	Hauptgebäude EG Vertrieb 2 1/6	Länge:	32.3 m				
		Ergebnis:	NICHT OK				

Freitag, 8. Februar 2013 — Seite 1

Messungen durchgeführt durch Herr Andreas Heller

Running the KE-Manager
After calling up the program, the manager starts and displays its version number. After connecting the KE7200 via the Ethernet interface of the PC and stelecting *Transfer measurements*, the data is transmitted to the manager.



You can switch between the cable tests and network tests via the tab (see marking in the screenshot). The selection tabs on the top are the same for both test screens.

Load data (PC)
Tests that have already been saved can be opened for display here.

Save all data
Here the tests transmitted by the KE7200 are selected for saving.

Show saved data
Once the data has been selected, it is saved as a separate list.

Delete marked line
This deletes a complete line of test results.

Print data
A print version of the measurements is created. You can store your company logo here for display in the test report. A graphics file (.bmp, .dip, .jpg, .gif, .wmf, .emf, .ico, .cer) is displayed at the top right edge of the sheet. We recommend a maximum size of 400 px in width and 250 px in height at a resolution of 300 dpi. You can also select further settings for the appearance of the test report here.

Configuration table / IP
The presentation of the displayed data can be changed here.

Update KE7200
This menu item is used to install firmware updates, see page 7.

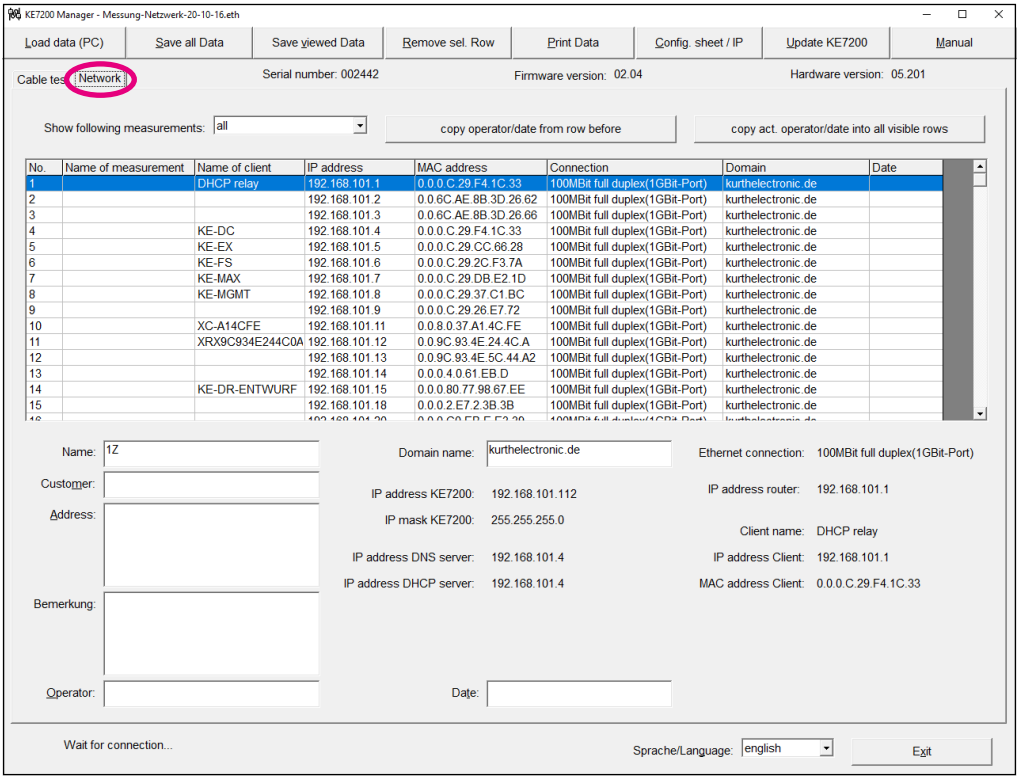
Tips
After all data records have been downloaded from the KE7200, it is possible that these are data or measurements from different customers. However, this assignment must already be done when saving on location.

Selection / Sort by customer
In the upper left area the selection *Show following measurements* is available. A list with all saved data sets is opened here. You can then select the customer you want to summarise, comment on and print out as a report.

This selection can then be saved with *Save shown data* by entering their data (customer name, number, etc.).

Customer address
In the lower section you have the possibility to enter the customer address, the technician and any comments.

The address entered in the first dataset is shown as the first position in the report. Technician, location name and comments can be entered separately for the individual data sets.

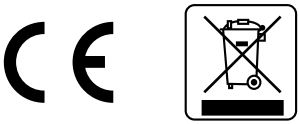


	KE7200 / KE7100
Wiring test Copper	Check of data line assignment with pin and pair assignment - Wiremap Detection of split pair (overdraft) from 2 m 16 connection versions preset - easy creation of own definitions starting from 2 cores 16 cable types preset with VF, creation of own cable types possible Clear graphical display for fast error identification Measurement of individual wire lengths with TDR and display in m or ft. from 2 m to 200 m
Power over Ethernet test	Activation of PoE/PoE+/PoE++ functions Measurement of voltage in V and calculation of available power in watts acc. to IEEE802.3af/at/bt
Port identification	Link-blink function with NLP Search tone for cable search with capacitive Probe (optional PROBE310) 4 search frequencies selectable
IP netzwork test **KE7200 only**	Connection via DHCP or static IP Detection of network speed 10 / 100 / 1000 Mbit Own IP and MAC address configurable List of active participants with name, IP and MAC address Ping test to selected addresses, ping frame adjustable from 32 – 1024 bytes Display of ping results for receive / lost and times min / max / average Constant ping mode to generate traffic
Bridge Tap **KE7200 only (optional)**	Accurate localization of branch lines and branches with TDR function
Overvoltage protection	Up to 100 Volt
Housing	Stable, impact-resistant, weatherproof ABS housing
Batteries	4x 1.5 V alkaline (AA), > 40 h service life
Dimensions	195 x 100 / 78 x 45 mm
Weight	380 g without batteries
Menu languages	
Operation environment	Working temperature 0 – +50 °C Storage temperature -25 – +75 °C Humidity 90% non-condensing

	KE7010 Remote Unit
Features	ID programmable 01 – 32 LED for good / bad indication Can be used with any KE network tester (except KE6000)
Housing	Stable, impact-resistant, weatherproof ABS housing
Dimensions	61 x 41 x 26 mm
Weight	30 g

The device was manufactured according to the following guidelines:

Electromagnetic Compatibility Directive 2014/53/EC
LVD Directive 2014/53/EC
IEC/CISPR: 11:2009 + A1:2010, 16-1-2:2006 Edition 1.2, 16-2-1:2008 + A1:2010, 16-2-3:2008 + A1:2010
IEC: 61000-4-1:2016, 61000-4-2:2008 Edition 2, 61000-4-3:2006 + A1:2007 + A2:2010, 61000-4-8:2009, 61326-1:2012, 61326-2-1:2012



If you have further questions regarding the operation and use of this device, please contact the following address:

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72800 Eningen u.A.
Germany
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Fax: +49-7121-9755-56
Email: sales@kurthelectronic.de
www.kurthelectronic.de

Safety instructions

The KE7200/KE7200 may only be operated with the accessories originally provided. Using the device with accessories that are not original or for applications for which it was not intended can lead to incorrect measurements and may damage the device. The relevant safety regulations in VDE 0100, 0800 and 0805 must be adhered to.

- The usage of connections other than those provided can damage the device. The device should not be used with high-voltage current. Kurth Electronic assumes no liability for damage resulting from improper use.
- Never apply external voltage to the device.
- Open the device only to change the batteries. There are no other parts in the device that need to be serviced or calibrated.
- The measuring device is protected from splashing water and dust by the front film covering. However, it is not water proof.
- Never pull unnecessarily on the cables connected to the device.
- Only use the included or purchasable KE7010 as remote units.

Last revision: 09/2018