
# NET-SCALE V13

## Technical Manual

# Table of content

# Explanation to the manual

In this technical manual you will find the necessary information for operating the **Net-Scale V13.**

► Always keep this manual in a place where employees, service personnel etc. can read it.

### Design features of this manual

Various elements of this manual have fixed design features. This allows you to easily distinguish the following elements:

Normal text

● Enumerations

► Action steps

***Table titles*** and ***illustrations*** are printed in bold.

ⓘ Tips contain additional information.

### Design features of illustrations

If a reference is made to elements of an illustration in a legend or in the running text, they are given a number (1). The numbers in the running text always refer to the figure shown.


***Figure 1 – Explanation of design features***

# Technical data

| | |
|---|---|
| **Input voltage** | +8-16V DC / 1,0W |
| **Frequency range** | 433 MHz band |
| **Network connection** | 10/100 base-T with TCP/IP Stack |
| **Protocol format** | UDP or TCP selectable |
| **Housing** | Aluminium housing |
| **Dimensions** | 13 x 8 x 4 cm |
| **Weight** | 0,4 kg |
| **Nominal temperature range** | -10°C...+40°C |
| **Protection class** | IP 54 |

*Table 1- Technical data*

# Declaration of conformity

## Declaration of conformity

Manufacturer: EHP- Wägetechnik GmbH

Address: Dieselstrasse 8

D-77815 Bühl (Baden)

Hereby declares that the product: **Data receiver Type Net-Scale V13**

with the options:

complies with the following harmonized standards.

EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6,
EN 61000-4-11 according to directive 2014/30/EU (elektromagnetic compatibiltiy)

EN 60950-1:2006 in accordance with Directive 2014/35/EU (Low Voltage Directive)

The radio equipment complies with Directive 2014/53/EU

This product is marked with the CE mark.

Bühl, March 2022

Markus Ebel / Technical Manager

This declaration is in accordance with DIN EN ISO/IEC 17050-1.

# Safety instructions

## TO NOTE

- **Device should only be opened by a qualified technician!**
- **Device must be protected from heat and moisture!**

## ⚠ IMPORTANT SAFETY INSTRUCTIONS ⚠

► To avoid exposing yourself to the risk of an electric shock, do not open the housing for general use. There is a certain risk to get in contact with non-insulated parts inside the housing that carry a high voltage.

Opening the housing is only permitted to perform the initial configuration if the power connection has been disconnected beforehand. Repairs should only be performed by qualified customer service.

► This devise is not waterproof. To avoid the risk of electric shock protect the device from dripping water, splashing water, rain and moisture.

► Do not place any fire source on this device (e.g. burning candles).

► Avoid installing the device in an insufficiently ventilated, very humid or hot place.

To completly disconnect the device, all plugs must be pulled out. To avoid any damage disconnect the Net-scale when not in use for a longer periode of time.

► When disposing, do not mix the product with ordinary household waste. There is a separate collection system for used electronics which ensures that the materials are proper recycled according to legislation rules.

# Scope of delivery

- **Net-Scale V13**

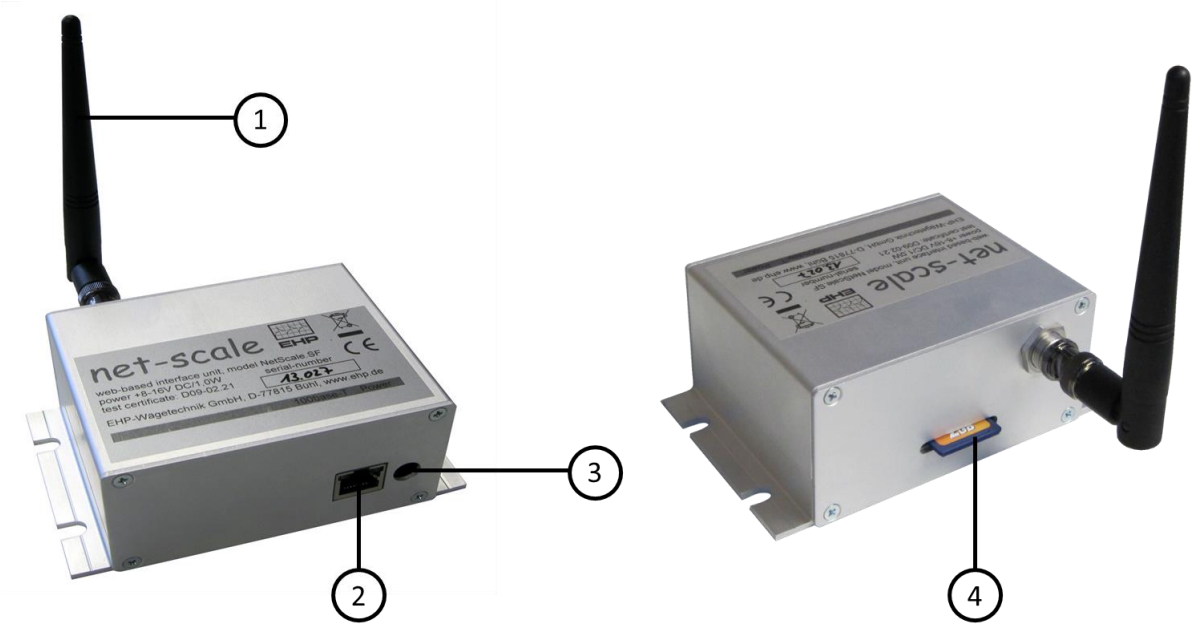



***Figure 2 - Overview Net-Scale V13***

1. BNC angle antenna
2. Network connection (LED status: green = processor in use; yellow = network connected)
3. Power supply connection socket
4. Slot for SD-card

**The following accessories are included in the scope of delivery:**

- 12 V power supply unit
- BNC angle antenna
- SD card
- Installation CD

# INI-File

The Net-Scale must be configured to operate with the scale. This is done via entries in the “NSC.INI” file on the SD card. A operation without an INI-file is not possible!

| Entry | Explanation |
|---|---|
| FREQ=x | Frequency channel for communication with the scale (1-28) |
| DIMZ=kg | Dimension sign (double digits) |
| NKOM=0 | Amount of decimals;<br>If this entry is deleted, the amount of decimals set at the scale is used |
| IPAD=xxx.xxx.xxx.xxx | IP address FIX (without DHCP) |
| MASK=255.255.255.xxx | Subnet Mask (without DHCP) |
| GATE=xxx.xxx.xxx.xxx | Gateway |
| PORT | Port for the assignment of the service. Selectable from 1 to 65535 (Default port is 187, ensure that it does not collide with any other service) |
| WDHL=1…5 | Amount of communication attempts between Net-Scale and scale |
| ACT= 1.....16<br>(from firmware 2.12) | Activate communication to scales permanently<br>By entering the scale number in the INI file, a permanent connection is established, independent of the configuration of the network interface. A separate entry must be created for each scale.<br><br>This facilitates the integration of the Netscale in order to be able to use commands such as "Register weight - 10" (see page 11) without programming effort or to establish communication with an EHP large display if no permanent IT connection of the network interface is intended.<br><br>Note: When using a large display, the Netscale is limited to use with one scale. |

***Table 2 - INI-file entries***

**NOTE**

The SD-card is mounted as an ftp drive as soon as the Net-Scale is power connected. If the SD card is removed during operation, it must be mounted again. Therefore disconnect the Net-Scale from power supply and reconnect it after a few seconds.

**INI File must be named in capital letters (Dateiname: NSC.INI)!**

# UDP- / TCP-Protocol

## General

- The electronic is equipped with a 100base T Ethernet port with TCP/IP stack.

- This description is limited to the protocol variant UDP and the data sets of the module required for weighing operation.

- Data traffic is handled via a selectable UDP- or TCP port (default=187). A basic understanding of the IP (UDP or TCP) protocol is assumed.

- Several commands can be lined up in a data record (separated by semicolon „;“). Only the last command may generate a feedback. For example: select scale #9 in a data record and make a registration „0509;10“.

## Configuration

To configure the network interface the 6-pole DIP switch (1) inside the module is used. Therefore the Net-Scale housing must be opened on the side of the Ethernet connection.

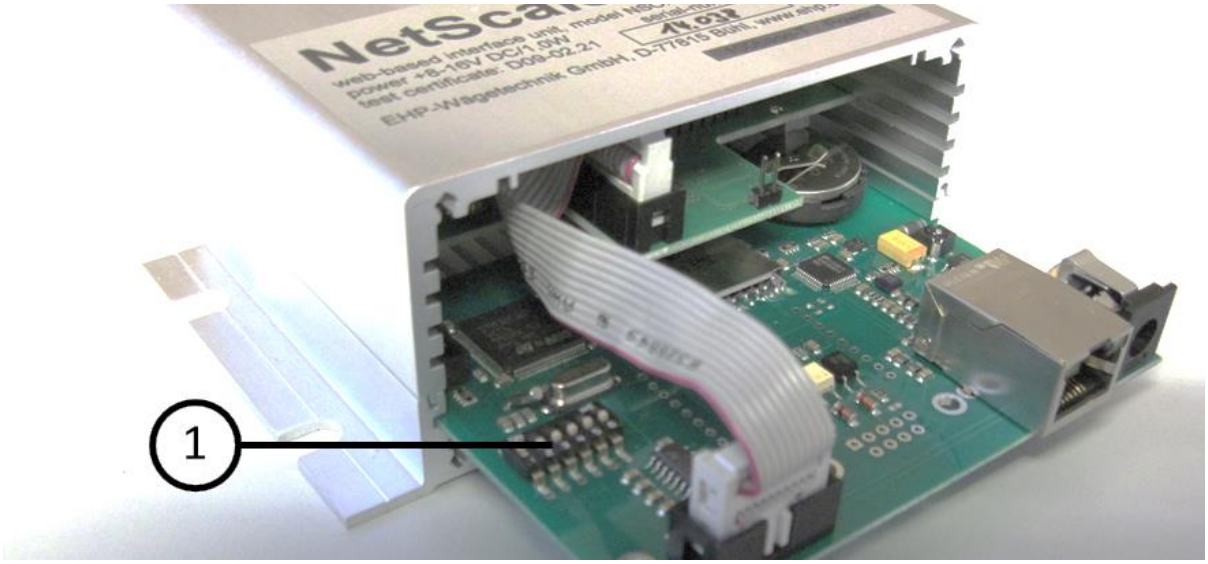



*Figure 3 - Position DIP-Switch*

| NSC. | S1/1 | S1/2 | S1/3 | S1/4 |
|---|---|---|---|---|
| 1 | 1 | 0 | 0 | 0 |
| 2 | 0 | 1 | 0 | 0 |
| 3 | 1 | 1 | 0 | 0 |
| 4 | 0 | 0 | 1 | 0 |
| 5 | 1 | 0 | 1 | 0 |
| 6 | 0 | 1 | 1 | 0 |
| 7 | 1 | 1 | 1 | 0 |

***Table 3 - NSC-setting***

● The first 3 DIP switches (1-3) give a unique network name to the module. The name always starts with „NSC“ and a digit „0“ to „7“ - depending on switch position.

● Attention: the network name can be replaced by a specific name with the Netscale demo tool.

● The fourth DIP switch is used to switch the protocol type between UDP and TCP. 0= UDP protocol; 1 = TCP protocol. The connectionless, packet-oriented UDP protocol is activated ex works. Advantage of UDP-protocol is that several hosts have simultaneous access to the Netscale. With activated DIP switch 4 = 1, the TCP protocol is activated, which guarantees connection security. An automatic timeout of 120 seconds is stored for the TCP protocol. When the TCP protocol is activated, connection security is guaranteed. An automatic timeout of 120 seconds is stored for the TCP protocol. When TCP protocol is activated , a rudimentary TELNET protocol is simultaneously available on port 23.

**Notice**
**With activated TCP protocol the „test Software NetScale.exe Demotool“ does not work!**

● The fifth DIP switch activates the DHCP mode (=1). If activated it gets the IP address from DHCP host.

● The sixth DIP switch sets the IP-address to “192.168.0.1" (used for service purpose).

● Attention: IP address can be replaced temporary by a special address with the help of the Net-Scale Demo Tool. DHCP options must be disabled via DIP switch 5.

# Data sets for weighing operation

### Set Zero "01"

| | |
|---|---|
| **Host to Scale** | "01" |
| **Scale to Host** | No feedback |

### Set Tare "02"

| | |
|---|---|
| **Host to Scale** | "02" |
| **Scale to Host** | No feedback |

### Delete Tare "03"

| | |
|---|---|
| **Host to Scale** | "03" |
| **Scale to Host** | No feedback |

### Set Fixtare "04"

| | |
|---|---|
| **Host to Scale** | "04 vnnnnn"<br>vnnnnn = Tare with sign |
| **Scale to Host** | No feedback |

### Select scale "05"

| | |
|---|---|
| **Host to Scale** | "05 ww“<br><br>ww = scale-No. (01-16) |
| **Scale to Host** | No feedback |

### Register weight at stability "10"

This command is only available with active communication with the scale (see "F8" page 13). Alternatively, a scale can also be activated automatically by means of INI file parameter ACT (see "ACT" page 8).

Host to scale: "10“

Scale to host: "w rrrrr ddmmjjjj hhmmss ssnnnnn dd sstttttt dd iii.iii.iii.iii c"

| Entry | Explanation |
|---|---|
| w | Scale number (A-P, where A=1 … P=16) |
| rrrrr | Register number (5-digits) |
| ddmmjjjj | Date |
| hhmmss | Time |
| ss | Space |
| nnnnn | Net weight (5-digits) |
| ss | Space |
| ttttt | Tare weight (5-digits) |
| dd | Dimension |
| iii.iii.iii.iii | IP-address |
| c | Block check character |
| „E1“ | Error: Alibi memory full |
| „E2“ | Error: no standstil, overload, negative weight etc. |
| „E4“ | Error: Communication with scale is interrupted or scale is not connected, the checksum on the data set was incorrect. |

### Manual registration "12"

| | |
|---|---|
| Host to scale | "12“ |
| Scale to host | See above – record „10“<br>„E0“ – Error: no manual registration available |

# Data sets for service

### Firmware-version "F0"

| | |
|---|---|
| Host to scale | "F0“ |
| Scale to host | “ – FONSC-5.G2.11 – “ (firmware version) |

### Set date/time "F1"

| | |
|---|---|
| Host to scale | "F1 jj mm tt hh nn ss" |
| Scale to host | No feedback |

| Entry | Explanation |
|---|---|
| **jj** | Year |
| **mm** | Month |
| **tt** | Day |
| **hh** | Hour |
| **nn** | Minute |
| **ss** | Second |

### Select frequency channel "F3"

| | |
|---|---|
| **Host to scale** | "F3 ff“<br>ff = frequency channel (01..28 see also frequency table) |
| **Scale to host** | No feedback |

**Notice:**

It is recommended to change the channel via INI file. See also chapter INI file. The channel changeover may only be carried out once for initialization of the Net Scale module. If the channel change is permanently combined with other commands, the function of the unit is significantly restricted!

### Query for measured value "F8"

| | |
|---|---|
| **Host to scale** | "F8 [T]" |
| **Scale to host** | "F8 x f ssnnnnn dd [ ssttttt ee ] c" |

| Entry | Explanation |
|---|---|
| x | Status byte<br><br>$0^0$ = Stability indication<br>$0^3$ = tared<br>$0^4$ = Weighing range<br>$0^6$ = always active |
| f | Errorcode<br><br>$1^0$ = Overload<br>$1^1$ = Test<br>$1^4$ = battery empty<br>$1^6$ = always active |
| ss | Space |
| nnnnn | Measured value (5-digits) |

| | |
|---|---|
| ttttt | Tare value (5-digits) |
| dd | Dimension |
| ee | Dimension (or „PT“ at Fix tare) |
| c | Block check character |
| E4 | Error: Communication with scale is interrupted or scale is not connected, the checksum on the data set was incorrect. |

## Query for measured value once "F9"

This setting is relevant for systems where multiple Netscale units operate on the same radio frequency.

| | |
|---|---|
| **Host to scale** | "F9 [T]" |
| **Scale to host** | "F9 x f ssnnnnn dd [ ssttttt ee ] c" |

| Entry | Explanation |
|---|---|
| x | Status byte<br><br>$0^0$ = Stability indication<br>$0^3$ = tared<br>$0^4$ = Weighing range<br>$0^6$ = always active |
| f | Errorcode<br><br>$1^0$ = Overload<br>$1^1$ = Test<br>$1^4$ = battery empty<br>$1^6$ = always active |
| ss | Space |
| nnnnn | Measured value (5-digits) |
| ttttt | Tare value (5-digits) |
| dd | Dimension |
| ee | Dimension (or „PT“ at Fix tare) |
| c | Block check character |
| E4 | Error: Communication with scale is interrupted or scale is not connected, the checksum on the data set was incorrect |

**Notice:**

If the character „T“ is added to the command codes, the response data set will also contain the current tare weight.

**Examples status byte**

| | $0^7$ | $0^6$ | $0^5$ | $0^4$ | $0^3$ | $0^2$ | $0^1$ | $0^0$ | ASCII |
|---|---|---|---|---|---|---|---|---|---|
| **Binary** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **@** |
| Stability indication = no<br>Tare = no<br>Weighing range = Range 1 (corresponds to 0) | | | | | | | | | |

| | $1^7$ | $1^6$ | $1^5$ | $1^4$ | $1^3$ | $1^2$ | $1^1$ | $1^0$ | ASCII |
|---|---|---|---|---|---|---|---|---|---|
| **Binary** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **A** |
| Stability indication = no<br>Tare = no<br>Weighing range = Range 1 (corresponds to 0)) | | | | | | | | | |

# Data security

Data records with OIML-approved information are secured with an blockcheck character.

This block check character is formed by exclusive OR nexus of all characters of the data set and then OR with 0x40.

When receiving such a secured data set, the integrity of the data must be ensured by checking the block check character.

# Data protocol 28 byte EHP scales

The extended data protocol (28 byte) has the following data format which is the original protocol of the scale. This is only required if other weighing data receivers are operated parallel to the Net-Scale.

| Byte # | ASCII | Meaning |
|---|---|---|
| 1. | S | Start byte |
| 2. | 0<br>1<br>2<br>3<br>4 | No comma (e.g. 19520)<br>One decimal (e.g. 1952.0)<br>Two decimals (e.g. 195.20)<br>Three decimals (e.g. 19.520)<br>Four decimals (e.g.. 1.9520) |
| 3. | Blank (20H)<br>+<br>- | No sign<br>Plus<br>Minus |
| 4. | Digit 5 | 5th digit of weight indication (e.g. 10320 kg) |
| 5. | Digit 4 | 4th digit of weight indication (e.g. 10320 kg) |
| 6. | Digit 3 | 3rd digit of weight indication (e.g. 10320 kg) |
| 7. | Digit 2 | 5nd digit of weight indication (e.g. 10320 kg) |
| 8. | Digit 1 | 1st digit of weight indication (e.g. 10320 kg) |
| 9. | B<br>N<br>P | Scale Tare OFF (Gross-weight)<br>Scale Tare ON (Net-weight)<br>Scale Pre Tare Active (Net-weight) |
| 10. | E<br>1<br>2 | Single-range-scale<br>In weighing range I<br>In weighing range II |
| 11. | 0<br>1 | No stability indication<br>Stability indication |
| 12. | 0 | free |
| 13. | V<br>H<br>L | Accumulator of scale is charged completly<br>Accumulator of scale – forewarning<br>Accumulator of scale – Discharged/Empty |
| 14. | (1 – 99) | Digit 1 of Scale number |
| 15. | (1 – 99) | Digit 2 of Scale number |
| 16. | Blank (20H) | free (space HEX20) |

| Byte # | ASCII | Meaning |
|---|---|---|
| 17. | N<br>J<br>G | No overload<br>Overload<br>Preload too high |
| 18. | + | Sign, always plus |
| 19. | Digit 5 | 5th digit of Tare |
| 20. | Digit 4 | 4th digit of Tare |
| 21. | Digit 3 | 3rd digit of Tare |
| 22. | Digit 2 | 2nd digit of Tare |
| 23. | Digit 1 | 1st digit of Tare |
| 24. | x | Checksum |
| 25. | x | Checksum |
| 28. | 03 H | End of block - character (03 Hex) |

***Table 4 – Data protocol***

# Channel frequency

It is necessary to use a free frequency for a correct connection between scale and Net-Scale. Other radio transmitting devices like the crane control may massively impair the data exchange

Please note: The radio frequency of the scale is shown on the name plate of the scale. This can be changed in scale setup menue (see chapter „Change frequency and scale number“).

| Channel No.. | Frequency in MHz | Channel No.. | Frequency in MHz |
|---|---|---|---|
| 00 | - | | |
| 01 | 433,075 | 15 | 434,000 |
| 02 | 433,125 | 16 | 434,075 |
| 03 | 433,175 | 17 | 434,150 |
| 04 | 433,225 | 18 | 434,225 |
| 05 | 433,275 | 19 | 434,300 |
| 06 | 433,325 | 20 | 434,375 |
| 07 | 433,400 | 21 | 434,425 |
| 08 | 433,475 | 22 | 434,475 |
| 09 | 433,550 | 23 | 434,525 |
| 10 | 433,625 | 24 | 434,575 |
| 11 | 433,700 | 25 | 434,625 |
| 12 | 433,775 | 26 | 434,675 |
| 13 | 433,850 | 27 | 434,725 |
| 14 | 433,925 | 28 | 434,775 |

***Table 5 - Frequency table IR500 radio (500m) 433MHz band***

# Change frequency and scale number

The Net-Scale protocol requires that Scale number and frequency are matching. Receiving scale data is only possible if both values are identical with call-up commands of Net-Scale.

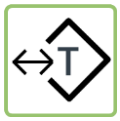
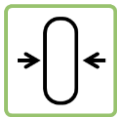
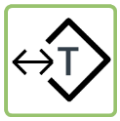
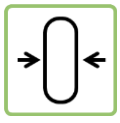

► By pressing the „TEST“-Button, the crane scale display shows the current setting parameter in following sequences Parameter No.4 and No.5 are relevant.

| Nr. | Anzeige | Erläuterung |
|---|---|---|
| 1 | 88888 | LED segment test |
| 2 | LAH | Release |
| 3 | 12.21 | Version |
| 4 | xx | **Scale number (01-16)** |
| 5 | Cxx | **Channel number (01-28)** |
| 6 | Hxx | Remote control number (01-12) |

***Table 6 – Parameter settings***

To change the scale and channel number proceed as followed:

| Key combination | Function |
|---|---|
|   | Press ON and TEST key simultaneously, EEEEE appears in the display. |
|   | Press TEST key repeatedly until P13 (frequency channel) appears in the display. |

| | |
|---|---|
|  <br>  | Activate the parameter by pressing Tare button.<br><br>Then use the TEST key to select a desired value between 01 - 28 (corresponds to channel 01 - 28). |
|  | Confirm and close the parameter by pressing the ZERO key.<br><br>The display alternately shows P13 and xx, where xx corresponds to the newly set channel number. |
|  | Press the TEST key until P14 appears in the display.<br><br>Parameter P14 is used to set the scale number. |
|  <br>  | Press the TARE key to activate the parameter.<br><br>Then use the TEST key to select a desired value between 01 - 16 (corresponds to channel 01 - 16). |
|  | Confirm and close the parameter by pressing the ZERO key.<br><br>The display shows P14 and xx alternately, where xx corresponds to the new scale number set. |
|  | Press the TEST key repeatedly until P99 appears in the display.<br><br>Parameter P99 is used to store the changed values |

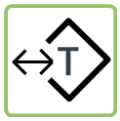
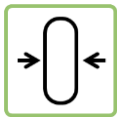
| | |
|---|---|
|  | Press the TARE key to activate the parameter. |
| | Confirm and close the parameter by pressing the ZERO key. |
|  | Sto (Store) flashes several times on the display. This indicates that the parameter change has been successfully stored. |
|  | To exit the SETUP menu, press the Power-On and Power-Off buttons simultaneously or interrupt the power supply by disconnecting the round connectors on the battery. |

***Table 7 -Change radio frequency and scale number***

# Test Software NetScale.exe Demotool

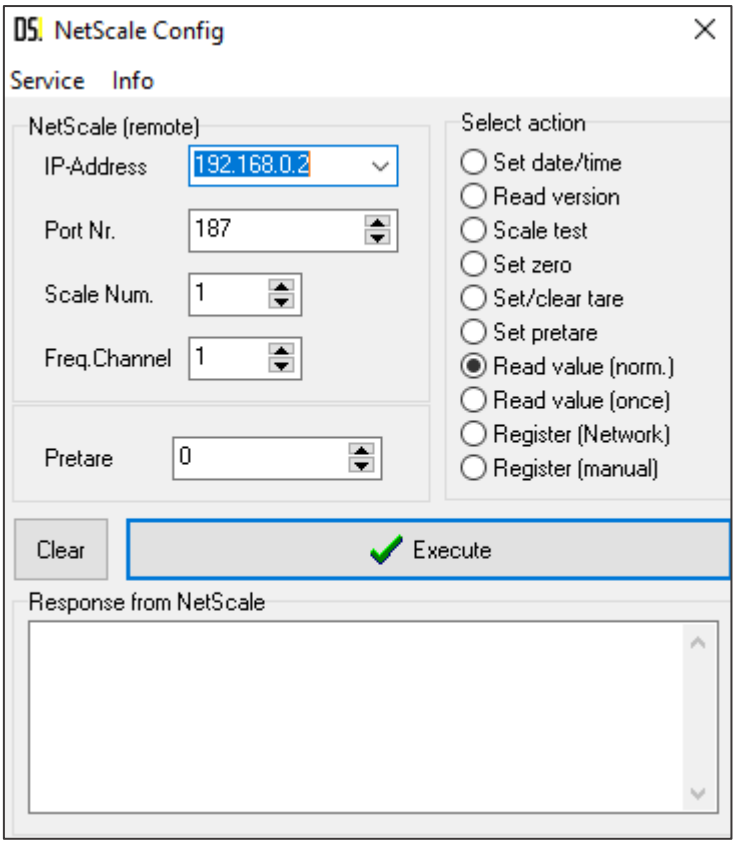



***Figure 4 Net-Scale User interface***

The Demotool helps to check and configurate the Net-Scale parameters. To run this tool no installation is necessary. Simply start the NetScaleG2.3.exe from any data folder. Main usecases are:

- Assign an IP-address
- Control the scale communication

ⓘ Please only change the IP address of the Net-Scale if you are familiar with the setting changes. In the event of an error, it may no longer be possible to reach the net-scale via the network.

The demo tool automatically finds all available device blocks in the network. Therefore DHCP needs to be activated or the static IP address within the the address range is set. Choose your Net-Scale via pull-down menue IP address.

To receive data from a scale, it is necessars to enter the correct scale number and frequency channel in the software. Use the data fields Scale-No. and Frequency channel.

| Function | Explanation |
|---|---|
| Set date / time | Adjusts the internal clock of the block to PC system time. |
| Read version number | Read the version number of Net Scale firmware. |
| Test scale | Start display test at scale. |
| Zero: | Set the corresponding scale to zero |
| Set/delete Tare | Moves display value of scale to tare memory. When tare is set, the value is written from memory back to the display. |
| Send fix tare | Fix tare input field is written to the tare memory. „0“ deletes the tare memory. |
| Read measured value | Reads the value from scale and writes it to the response field. |
| Registration network | Reads the measured value and stores a data record in the verifiable memory. |
| Registration manual | Registration of a weight for old net scale systems with only one scale (not in use with new systems). |
| Clear | Deletes content from „Response from Net-Scale“ field. |
| Execute | Transmit the settins to Net-Scale. |

***Table 8 – Functions***

## „Service“ Tab

Via service tab the IP-address and INI-file can be changed.

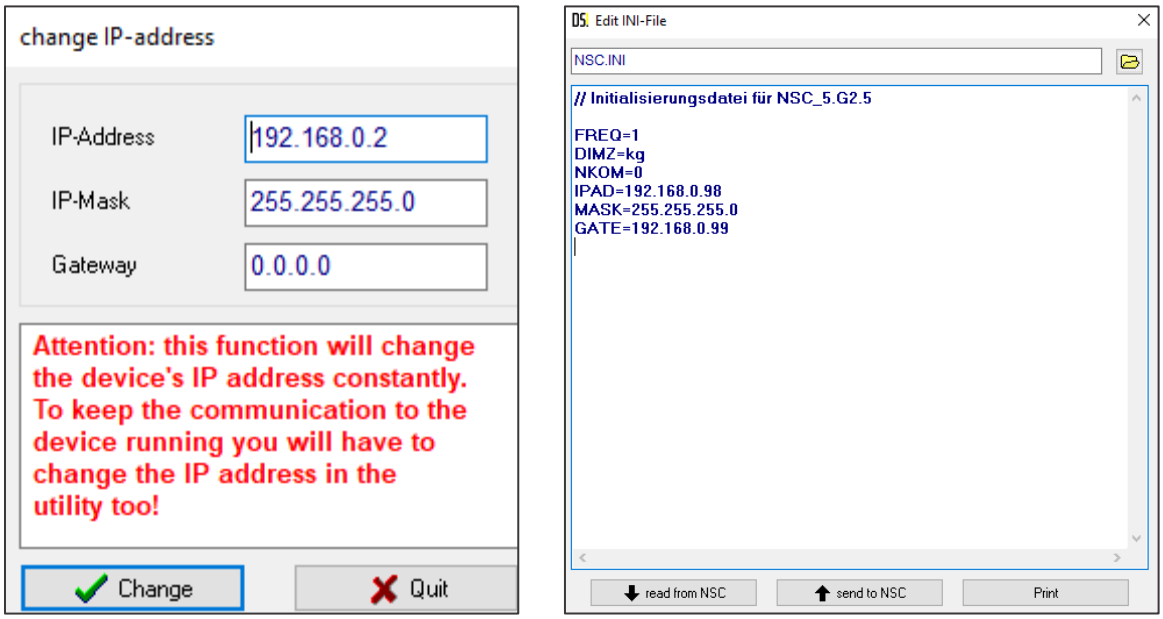



***Figure 5 - Service settings***

## Change of IP address

Overwrite IP-address and confirm with „Change“ button (only works if DHCP is disabled, see also section UDP Protocol configuration).

# Scale 99 Software

The included program Scale 99 allows to view the Alibi-data from SD-card. Data is transfered via ftp to your PC and stored in installation folder of Scale 99 Software. Ensure that port 21 is available for ftp communication at your network.

The file S99_mem.exe can be saved in any folder and started directly.

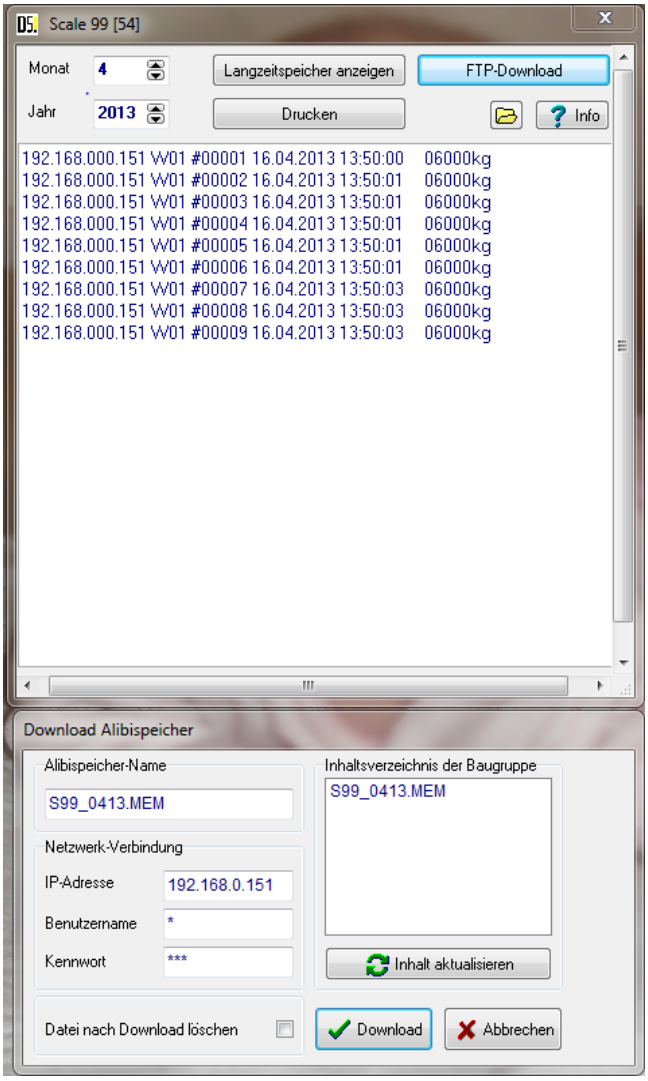



***Figure 6 - Scale 99 Tool***

| Function | Explanation |
|---|---|
| FTP Download | Window “download alibi memory” opens |
| Table of contents of assembly | List of the stored alibi datasets, for every month one dataset |
| Update contents | Download the SD content to the window “Table of content of the assembly” |
| Name of alibi memory | Only download the SD card content to the window “Table of content of the assembly” with exactly the data stored here. If the contents are empty all SD card data is loaded |
| IP address | Enter the IP address of the Net-Scale you would like to query |
| User name | B (stored) |
| Password | nsc (stored) |
| Delete file after download | If the check mark is set, the selected alibi file will be deleted immediately after download |
| Download | Download the file contens to the editor window of the Scale 99 interface, in parallel the alibi memory file is stored in the installation folder of Scale 99 |
| Cancel | Cancels the action |
| Print | Prints the contents of the alibi memory |
| Month | Selection of month for the long term memory |
| Year | Selection of year for the long term memory |
| Long term memory | Opens the file with the respectively entered data from month and year, if these were stored in the installation folder. |
| Folder symbol | Opens any alibi file stored via the explorer. |

***Table 9 - function table***

The alibi files S99_xxxx.MEM stored to the SD card or downloaded from the Net-Scale, can be viewed with an editor. Manipulation of the files is not possible as they are secured by a checksum. The Scale 99 software would detect such a manipulated file as corrupted.

| Byte # | ASCII | Bedeutung |
|---|---|---|
| 1. | A-P | Scales number A=scales 01……P16=scales 16 |
| 2. | 0-9 | Ten thousands alibi reference number |
| 3. | 0-9 | Thousands alibi reference number |
| 4. | 0-9 | Hundreds alibi reference number |
| 5. | 0-9 | Ten alibi reference number |
| 6. | 0-9 | Unit alibi reference number |
| 7. | Day | 0-3 |
| 8. | Day | 0-9 |
| 9. | Month | 0-1 |
| 10. | Month | 0-9 |
| 11. | Year | 2 |
| 12. | Year | 0-1 |
| 13. | Year | 0-9 |
| 14. | Year | 0-9 |

| Byte # | ASCII | Bedeutung |
|---|---|---|
| 15. | Hour | 0-2 |
| 16. | Hour | 0-9 |
| 17. | Minute | 0-5 |
| 18. | Minute | 0-9 |
| 19. | Second | 0-5 |
| 20. | Second | 0-9 |
| 21. | Blank (20H) | free (space HEX20) |
| 22. | Blank (20H) | free (space HEX20) |
| 23. | Digit 5 | Ten thousands of the weight |
| 24. | Digit 4 | Thousands of the weight |
| 25. | Digit 3 | Hundreds of the weight |
| 28. | Digit 2 | Tens of the weight |
| 29. | Digit 1 | Unit of the weight |
| 30. | k | k |
| 31. | g | g |
| 32. | Blank (20H) or 0 | |
| 33. | | free (space HEX20) |
| 34. | Blank (20H) or 0 | free (space HEX20) |
| 35. | Digit 5 | Ten thousands tare |
| 36. | Digit 4 | Thousands tare |
| 37. | Digit 3 | Hundreds tare |
| 38. | Digit 2 | Ten tare |
| 39. | Digit 1 | Unit tare |
| 40. | k | k |
| 41.-55. | g | g |
| 56.-60. | IP | IP address of Net Scales |

***Table 10 - data format S99***

# Functions: Important notes

Before the Net-Scale can receive data from scales, the communication between scales and Net-Scale has to be started. The first query using the command 05xx;f8 to scales always receives the response “E4” (also see “datasets for weighing operation”).

If the scales are within the radio range, switched on, have the correct scales number and the correct channel, they are taken in to a “scales pool” and maintained there. The Netscale now automatically queries the data of the scales in a continuous rhythm.

- In this way, further scales can be taken in to the scales pool.
- Each scales taken in to the scales pool is now queried in a rhythmic sequence.

Scales have to be and will be automatically removed from the scales pool, if they are operated outside the radio link, switched off or if the checksum of the scales dataset has an error. The latter happens quite often if the radio link is disturbed by a different radio link or atmospheric influences.

• Scales lost in the scales pool can be taken in to the query routine again using the method described above.

• To improve the radio connection an antenna with higher gain can be ordered (Article no.: 77979). In many cases, this significantly improves communication between scales and Net-Scale.

• Only positive weight values can be registered. If you try to register a negative weight, the Net-Scale responds with error “E2”.

**• For use in Germany, the delivery notes or invoices have to carry a certain note: “Measured weights originate from a non-calibrated additional device. The measured weights of the calibrated scale can be viewed”. The operator of the scales carries the sole responsibility for a safe archiving of the files.**

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