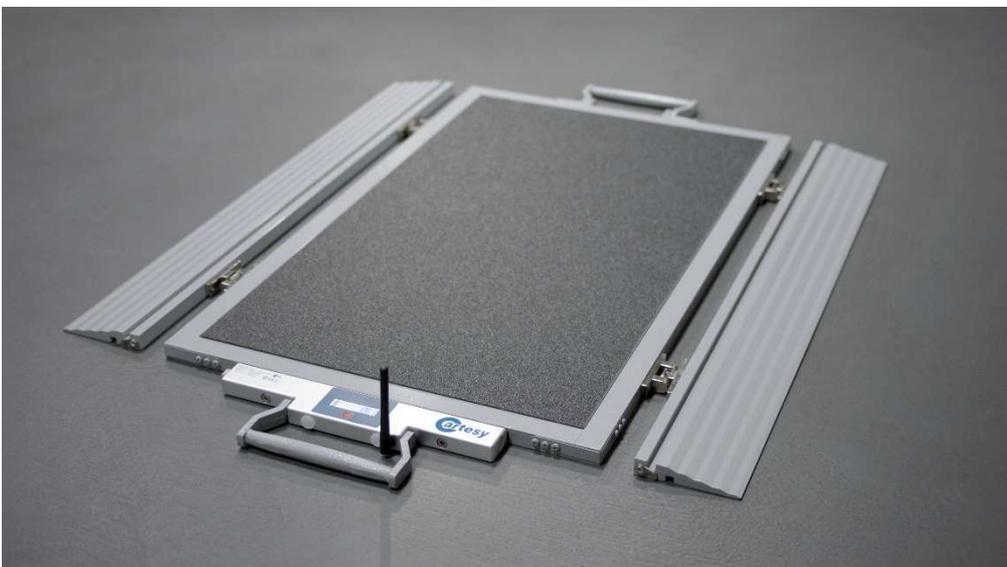


Operation Manual



Mobile Vehicle Scale & Accessories

Product series: IFX and BFX

Despite a thorough review, mistakes in this manual cannot be entirely excluded. This manual is intended for users with technical background knowledge in weighing technology.

Valid for:

IFX / BFX - Scales, Version V3.08 and higher

MHT-601 - Mobile terminal, Version V3.08 and higher

SUB-1020 - USB radio receiver, Version V2.2 and higher

SUB-2020 - USB radio receiver, Version V2.4 and higher

inno!weight® - Windows PC Software, Version V1.4 and higher

inno!weight® - iOS/Android Apps, Version V1.0 and higher

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Table of contents

1.	Basic information.....	4
1.1	Scope of delivery	4
1.2	Identification / type label.....	4
1.3	Technical data.....	4
1.4	Short description.....	4
1.5	Safety.....	4
2.	Handling.....	5
2.1	Installation surface.....	5
2.2	Safety measures.....	5
2.3	Disposal.....	5
3.	Technical components	6
3.1	Scale structure (IFX type as example)	6
3.2	Optional accessories.....	6
4.	Scale operation	7
4.1	Switch on and off	7
4.2	Manual zero point setting	8
4.3	Retrieve current software version and settings.....	8
4.4	Charge the scale.....	8
5.	Assemble a set of several scales	9
5.1	Radio set configuration	9
5.2	Configuration menu.....	9
5.3	Configuration structure.....	10
5.3.1	Radio channel (1 st position).....	10
5.3.2	Radio address (2 nd position).....	10
5.3.3	Contrast (3 rd position).....	11
5.3.4	Automatic power-off timer (4 th position).....	11
5.3.5	Not used (5 th position)	11
5.3.6	Not used (6 th position).....	11
5.3.7	Store / restart the configuration (7 th position).....	11
6.	Sample configuration for a radio set.....	12
7.	Radio Receiver incl. inno!weight® PC an Apps (accessories)	13
8.	Mobile radio hand-held terminal (accessories).....	15

1. Basic information

1.1 Scope of delivery

- Vehicle scales IFX / BFX (BFX-100-LCD-F with drive-on/-off ramps)
- Power supply unit with connecting cable (230V AC / 5V DC)
- Information sheet

1.2 Identification / type label

On the upper side of the scale there is a type label, containing the following information:

- Product name
- Product number
- Serial number
- Maximum load
- Graduation
- CE and disposal notes

1.3 Technical data

Technical data of the different scale models can be found in the corresponding data sheets and product information.

1.4 Short description

Cartesy vehicle scales are precise weighing pads / weighing systems in an extremely flat design. An optimal weighing result is achieved when all wheel contact points of the vehicle are at the same height. The easiest way to do this is to use a scale for each wheel. Alternatively, height compensation elements (sold separately) must be used.

If the weighing result is transferred via radio, radio sets of up to 10 scales can be configured. If the weighing result is read off the integrated display, the number of scale sets is not limited.

1.5 Safety

- Cartesy scales are only to be used for weighing vehicles with air tires within the permissible load limits (see data sheet).
- Measurements may not be carried out in public road traffic, but only in test areas intended for this purpose.
- Read the operation manual carefully before using the scale(s).

2. Handling

2.1 Installation surface

In order to ensure reliable measurements and to avoid damage to the scale, the surface for the scales must be solid and level (incline max. 5%). Make sure that there are no large objects such as stones under the scales and that they are flat and full-surface on the ground.

2.2 Safety measures

- When using the scales, be careful not to drop them or drive a vehicle over the display unit. This could damage the integrated display.
- If you transmit the weighing results by radio, do not fold up the antenna until the vehicle has been positioned on the scale(s). Otherwise there is a risk that the antenna will be damaged by the vehicle. The greatest possible radio range is achieved in a vertical antenna position.
**After weighing the antenna must be folded down for protection.*
- A soft, slightly damp cloth is best for cleaning the scales (use lukewarm water). Then wipe the surfaces dry
- Do not expose the scale(s) to impermissible heat sources (the operating temperature range can be found in the data sheet)
- Use the scale(s) only in a vibration-free environment
- Use the scale(s) only within the permissible specifications (see data sheets)
- Make sure that when the scales(s) is(are) positioned in front of the wheel contact areas, the vehicle is secured against rolling away (parking brake applied, ignition key removed, etc.)

Please note!

Any attempt to repair or change the device can expose the user to the risk of an electric shock and leads to our warranty being voided. The device is subject to a 1 year warranty, provided that it was not opened by the user. This also applies to the integrated accumulator. If a problem occurs with the device or system, please notify the manufacturer or the dealer from whom the device was purchased.

2.3 Disposal

Cartesy vehicle scales and all electronic parts included in the delivery as well as the installed accumulator may not be discarded with general household waste as per the European Directives and the German Electrical and Electronics Equipment Act (ElektroG) as well as the Battery Law (BattG).

You as a consumer are obliged to dispose of these parts at the end of their lifetime by returning them to the manufacturer, to the point of sale or public collection points installed for this purpose. The crossed-out waste bin symbol on the type label of the product refers to this regulation.

With this kind of material separation, recovery and disposal of the named components, you make an important contribution to the protection of our environment.

3. Technical components

The Cartesy wheel load scales are identical with the exception of the dimensions and load limits with regard to electronic components and the operating concept.

3.1 Scale structure (IFX type as example)



3.2 Optional accessories



Radio hand-held terminal (MHT-601)



USB radio receiver (SUB-1020)



USB radio receiver (SUB-2020)

USB radio receiver SUB-1020 / SUB-2020 (accessories)

The USB radio receiver can transmit the weight of up to 10 scales via radio transmission (configured in a radio set) to a PC via a USB connection. A USB stick is also included in the scope of delivery of the SUB-1020/-2020 with the **innolweight® PC** software including Windows drivers. The SUB-2020 USB radio receiver also offers a 2,4GHz BLE connection to mobile devices in order to be able to use the **innolweight® apps** (for up to four connected scales).

For more information see chapter 7.

Radio hand-held terminal MHT-601 (accessories)

The radio hand-held terminal can add up the weight of up to 10 scales via radio transmission (configured in a radio set) and display it on the built-in display.

For further information see chapter 8.

4. Scale operation

All functions of the scale such as switching on and off as well as configuration are carried out via the operating button (hereinafter referred to as "key").

Always position the scale(s) with the display facing outwards (away from the vehicle). This position reduces the risk of damage to the display unit and the antenna and enables easy reading of the integrated LCD display.

4.1 Switch on and off

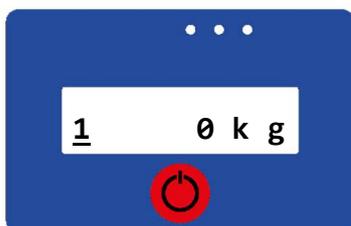
To switch on, press the key briefly (approx. 1 second). The scale switches on and starts initialization.

Please note!

The scale must not be loaded during the initialization process! As soon as the process is completed and the scale has set the zero point, the weighing process can begin!

Manufacturer:	CARTESY
Model:	e.g. IFX-20
Software Version:	e.g. V3.08
Current configuration:	e.g. - 113300 -
Zero point is set:	0 kg

➔ The scale is now ready for operation



In the first position in the display, the radio address of the scale is shown in the unloaded state (at 0kg) (for explanations see Chapter 5). If the scale is member in a radio set, this position also flashes. In measuring mode, only the current weight is displayed!

To **switch off**, press the key for about 5 seconds. As soon as the display shows the text „**PowerOff**“, you can release the key. The scale is off now.

4.2 Manual zero point setting

In case the display does not show 0 kg when the scale is unloaded, the scale can be reset to 0 manually. For this purpose press the key 2 times in quick succession.

The display shows: >> -- **0** -- <<

The scale resets the zero point and the display shows 0 kg afterwards.

4.3 Retrieve current software version and settings

Press the key 4 times in quick succession. The display shows:>> **Show**-- <<

Afterwards software version and current settings are displayed for about 5 seconds.

4.4 Charge the scale

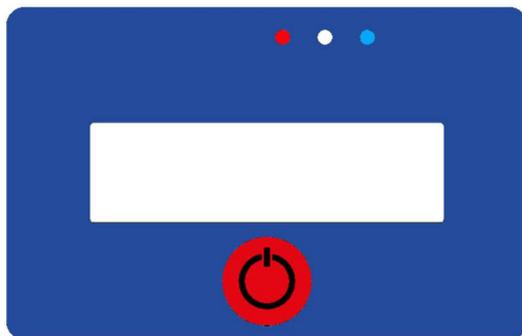
Cartesy scales of the series IFX and BFX are equipped with a rechargeable LiPo-battery. As soon as the voltage drops below 5%, the display shows the following hint: **Low-Bat**

To charge the battery, only use the supplied power supply unit including connecting cable.

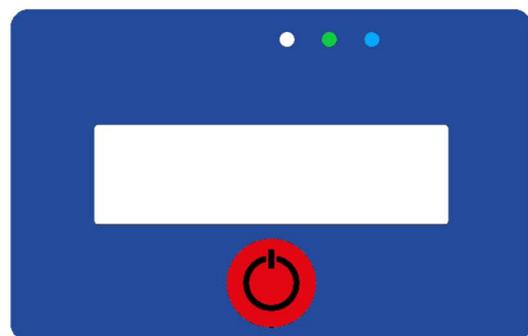
First connect the power supply unit with the charging cable (USB) and then the 5-pin connector with the scale. At last connect the power supply unit to a socket.

The LEDs show the following conditions:

Charging procedure active, voltage ok



Charging procedure finished



Please note!

If the blue LED does not light up, this indicates that the charging voltage is too low or too high. Make sure you are using the included connecting cable and charger. If necessary, contact the dealer or manufacturer.

5. Configuring a set of several scales

If you do not use a radio receiver unit (such as SUB-1020 and / or MHT-601), you can put together a set from any number of scales. The individual weight of each scale is shown on the built-in display.

Please note!

For this application, the radio operation can be deactivated in the configuration menu (see also chapter 5.3.1) in order to extend the battery life.

If the weighing result is to be transmitted by radio, up to 10 scales can be used per set. The corresponding functions of the optional display and evaluation units are described in Chapter 7 and Chapter 8.

5.1 Radio set configuration

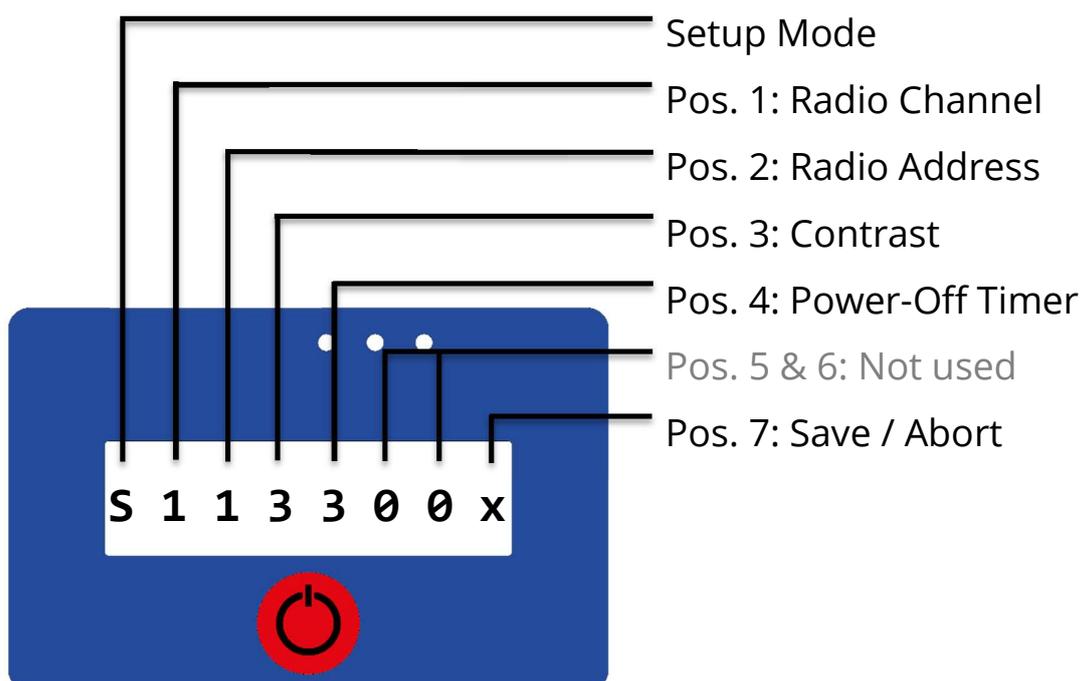
A radio set can consist of 1 - 10 scales. The radio hand-held terminal (optional) or the USB radio receiver including inno!weight® PC (optional) can also be used in combination if required. Please note that the same radio channel must be set for all scales and radio receivers per set.

5.2 Configuration menu

In the configuration menu (setup mode) the scale can be configured as a radio member in a radio set.

Start configuration:

To do this, switch off the scale. Switch the scale on by pressing the key and hold it down for 5 seconds. This takes you to the setup mode. This is shown in the display by an "S" on the left side, followed by the current configuration. You can edit, save or abort the configuration.



The cursor is automatically in the first digit.

- By pressing the key **briefly**, you can increase the value in this digit.
- By pressing the key **longer**, you move one digit further.

5.3 Configuration structure

The configuration structure of the single digits is set up as follows:

S	1	2	3	4	5	6	7
Set-up mode	Radio channel	Radio address	Contrast	Auto power-off	Not used	Not used	Store
S	0	0	0	0			x
	1	1	1	1			A
	2	2	2	2			
	3	3	3	3			
	4	4	4	4			
	5	5	5	5			
	6	6	6	6			
	7	7	7	7			
	8	8	8	8			
	9	9	9	9			
	A	A	A	A			

5.3.1 Radio channel (1st position)

All participants of one set need to be adjusted on the **same** channel. Factory setting is on channel 1.

- Possible settings: 0 1 2 3 4 5 6 7 8 9 A
- Equal to channel: 1 – 10
- With the selection "0" the radio transmission is deactivated.

5.3.2 Radio address (2nd position)

All scales in one set need to be given a unique address. **No address may be assigned twice!**

- Possible settings: 0 1 2 3 4 5 6 7 8 9 A
- Equal to address: 1 – 10
- If you select "0", the lowest setting (address 1) is automatically set
- **Address 1 must be assigned 1x per set**

Please note!

The scale with address 1 takes on the so-called master function, i.e. it coordinates the transmission of results for all weighing plates in the radio set. The addresses between 2 and 10 can basically be freely selected. However, it is urgently recommended to address the scales continuously, as this significantly simplifies positioning on the vehicle (see figure in Chapter 6).

5.3.3 Contrast (3rd position)

With this setting, the display contrast can be adjusted:

- Possible settings: 0 1 2 3 4 5 6 7 8 9 A
- Equal to contrast: weak (0) – strong (A)

5.3.4 Automatic power-off timer (4th position)

The power-off timer serves to automatically switch off the scale when not in use.

- Possible settings: 0 1 2 3 4 5 6 7 8 9 A
- Equal to power-off time: 10 – 100 minutes
- The setting „0“ deactivates the power-off timer – the scale does not turn off automatically any more.

5.3.5 Not used (5th position)

5.3.6 Not used (6th position)

5.3.7 Store / restart the configuration (7th position)

The 7th digit is to store the entered selection or restart from the beginning.

- Possible settings: x and A
- Equal to: (A) store selection, (x) abort/restart configuration

When you confirm the configuration by selecting A and a long press on the key, the display shows the following: **setup**

The scale is configured in accordance with the new settings and moves into the measuring mode.

When you confirm the configuration by selecting x and perform a long press on the key, the configuration selection jumps back to its initial state, the last entries made are discarded and the current configuration is displayed again.

If you want to leave the set-up mode during the configuration, press the key for 5 seconds. The scale turns off and the configuration is discarded.

6. Sample configuration for a radio set

The following example shows a sample configuration of a radio set consisting of 10 scales, one radio hand-held terminal and/or one USB radio receiver

- All radio participants are set to radio channel 1
- The 10 scales are set to address 1 – 10
- Contrast is set at level 3
- Power-off timer for all scales is set on 30

Position of the scales (based on address)

Scale 1: S 1 1 3 3 0 0 A

Scale 2: S 1 2 3 3 0 0 A

Scale 3: S 1 3 3 3 0 0 A

Scale 4: S 1 4 3 3 0 0 A

Scale 5: S 1 5 3 3 0 0 A

Scale 6: S 1 6 3 3 0 0 A

Scale 7: S 1 7 3 3 0 0 A

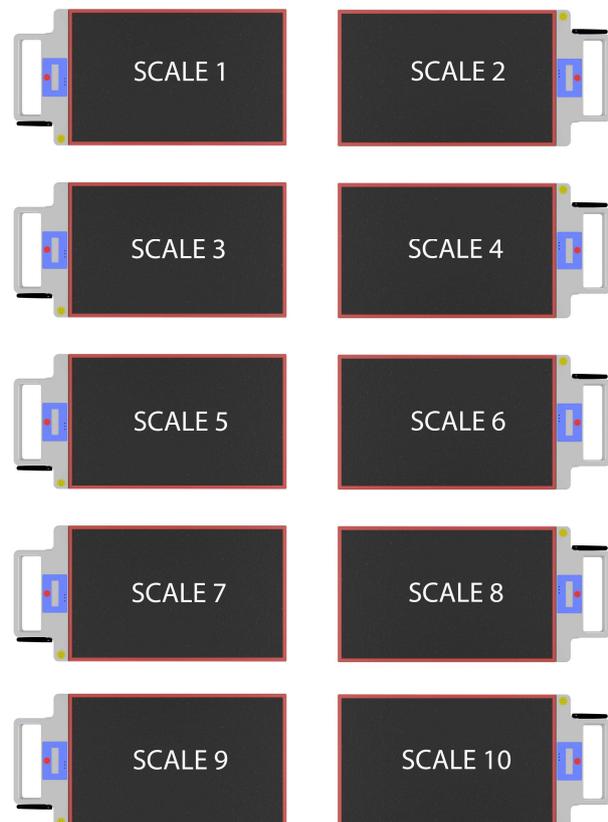
Scale 8: S 1 8 3 3 0 0 A

Scale 9: S 1 9 3 3 0 0 A

Scale 10: S 1 A 3 3 0 0 A

MHT-601: S 1 0 3 3 0 0 A

SUB-X020: Channel 1



7. Radio Receiver incl. inno!weight® PC and Apps (accessories)

With the optionally available USB radio receiver (SUB-1020/SUB-2020), the measurement data from the scales can be transferred live to a Windows PC / Laptop (compatible with Windows 7 or higher). The intuitive PC software inno!weight® is included with the USB radio receivers. With inno!weight® you have the possibility to display and evaluate the measurement data of up to 10 connected scales (per radio receiver) and to save test reports permanently.

Several radio receivers can be connected to the software at the same time. The SUB-2020 has an additional 2.4GHz BLE interface (BLE-Bridge) for connecting up to four scales (addr. 1-4) to mobile iOS/Android devices. The inno!weight® apps are available in the Google Play Store and Apple App Store.

Radio channel:

With inno!weight® the radio channel of the USB radio receiver can be changed (1 -10). For this you have to switch off all connected scales and set the desired channel in the software under Settings / Parameters / USB radio receiver channel.

Please note!

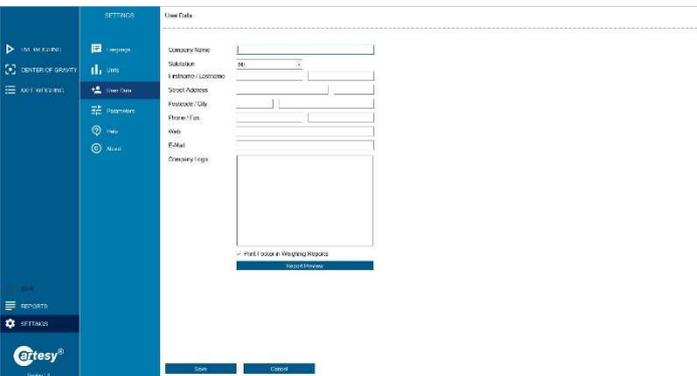
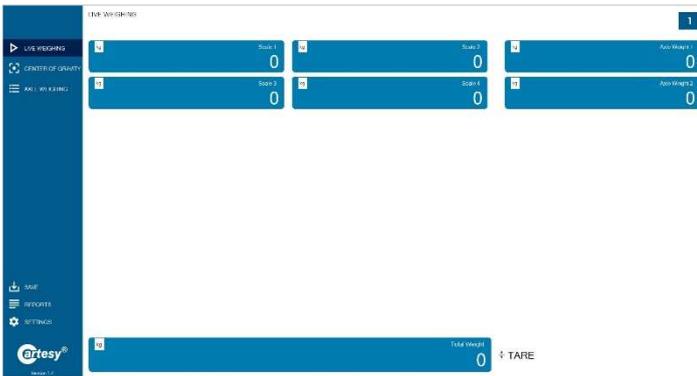
Same radio channel must be set for all scales and radio receivers / hand-held terminals in a radio set.

Weighing modes:

- LIVE WEIGHING: Live visualization of up to 10 scales with axle and total weight
- CENTER OF GRAVITY: Determination of the center of gravity with 4 scales (addr. 1-4)
- Cross weight: Determination of cross weight/ wedge with 4 scales (addr. 1-4)
- AXLE WEIGHING: Recording of up to 10 axles with two scales (addr. 1-2)

Installation of inno!weight® PC:

1. Copy all folders from the USB drive to your desktop and remove the USB drive
2. Install the appropriate driver (suitable for your operating system) from the first folder (1. Windows driver). You can find the version and system type of your operating system as follows: Click on the Windows key (bottom left), enter "System Information", press Enter. You can find the information under Operating System Name and System Type.
3. Insert the USB radio receiver (SUB) into a free USB port on your PC
4. Switch on your scale(s) and fold up antenna(s)
5. Start the "innoweight" application from the second folder (inno!weight PC)
6. The software will automatically search for a weighing system
7. When using the software for the first time, you can select your weighing system from the drop-down menu (top right corner). As soon as a weighing system has been found, a "1" appears in the drop-down menu.
8. Choose your weighing system - you can now work with your scales
9. Your weighing system will be automatically recognized the next time the program is started



Weighing Report

02.12.2020 - 13:35

Customer
 Cartesy GmbH
 John Doe
 Maker/Model: Audi A5
 VIN: XYZ1234567
 License plate: MU CT 100
 Comment: Test Vehicle

Weighing Result

Scale	1	Weight	0 kg
Scale	2	Weight	0 kg
Scale	3	Weight	0 kg
Scale	4	Weight	0 kg
Total Weight			0 kg

8. Mobile radio hand-held terminal (accessories)

With the optionally available mobile hand-held terminal (MHT-601), the measurement data from up to 10 scales can be summed and the total weight is displayed.

Operating condition:

If the hand-held terminal is member in a radio set, the first position in the display flashes. The number of connected scales is also displayed in the first position. In the configuration menu (setup mode), the mobile hand-held terminal can be configured as a radio member in a radio set.

Configuration:

To do this, switch off the hand-held terminal. Turn it on by pressing the key and holding it for 5 seconds. This takes you to the setup mode. This is indicated in the display by an "S" on the left, followed by the set configuration. You can edit, save or abort the configuration.

The setup mode is equivalent to the setup mode of the scales, see Chapter 5.

