



**WS-650**

denver.eu

11/2022



**FR**

Cet appareil et  
ses cordons sont  
recyclables

À DÉPOSER  
EN MAGASIN



À DÉPOSER  
EN DÉCHÈTERIE



OU

Points de collecte sur [www.quefairedemesdechets.fr](http://www.quefairedemesdechets.fr)  
Privilégiez la réparation ou le don de votre appareil !

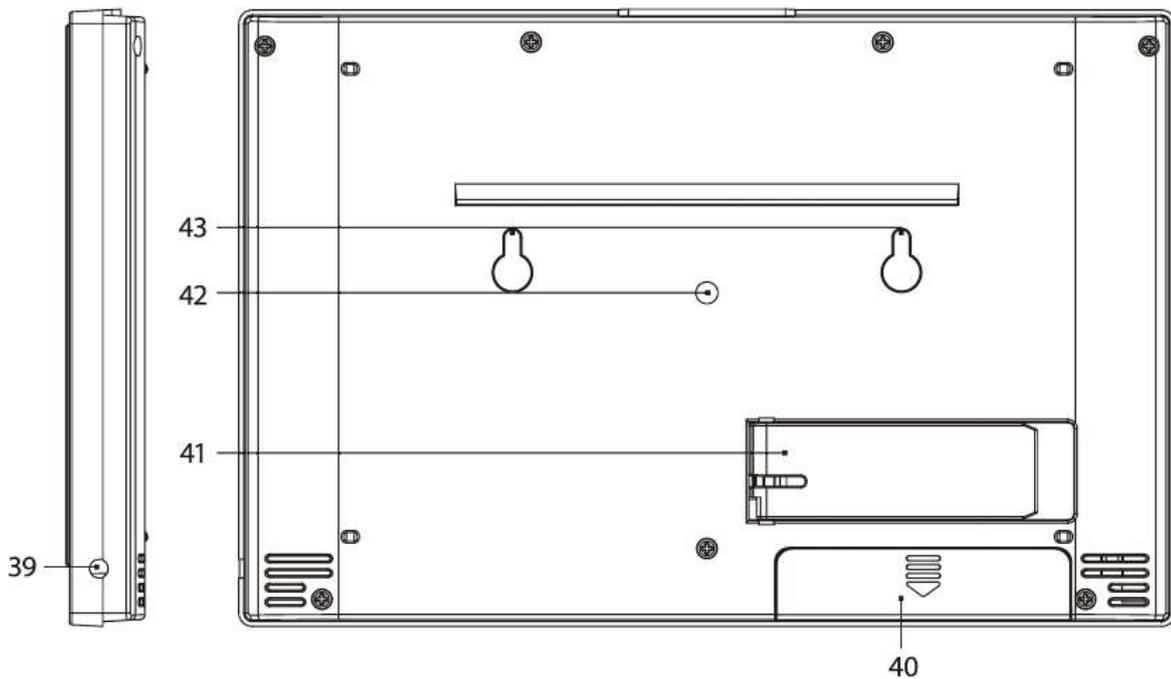
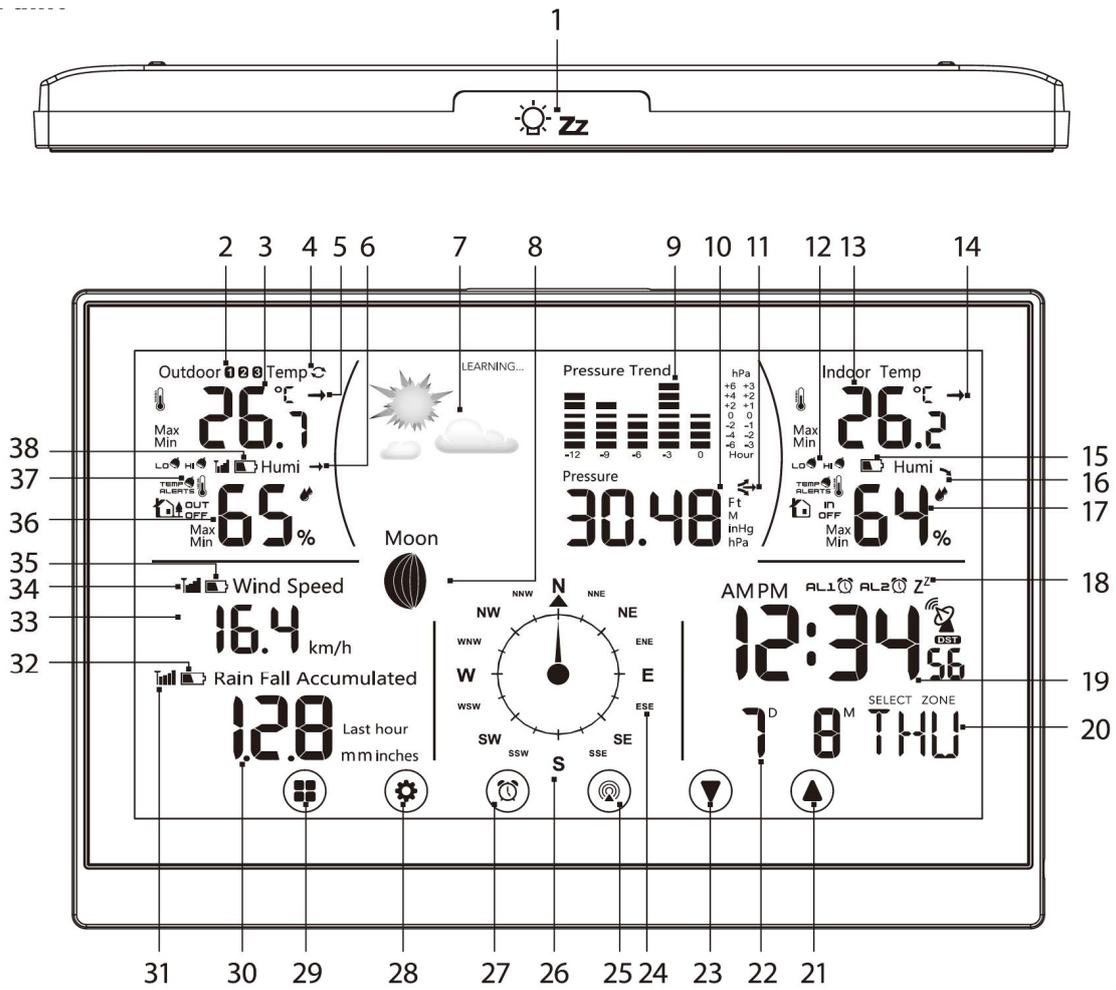
## Safety information

Please read the safety instructions carefully before using the product for the first time and keep the instructions for future reference.

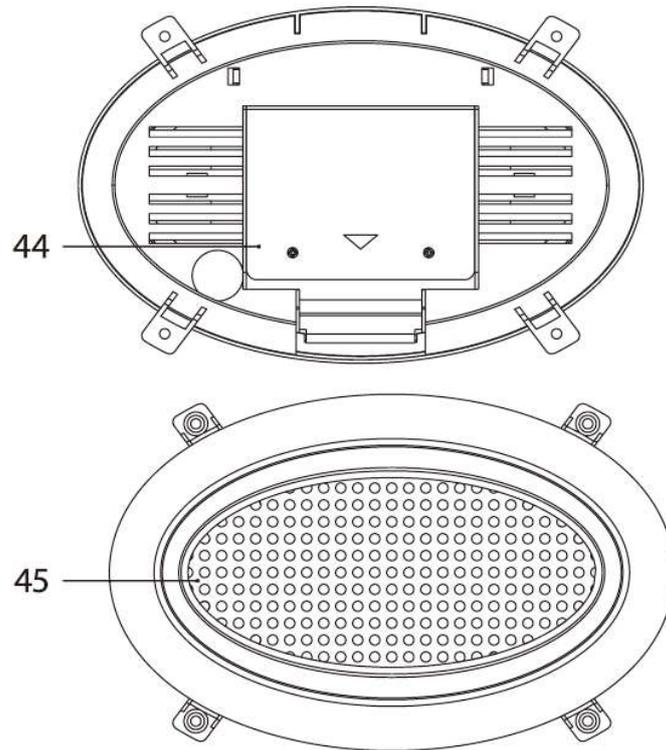
1. This product is not a toy. Keep it out of reach of children.
2. Keep product and batteries out of the reach of children and pets to avoid chewing and swallowing.
3. Never use old and new batteries or different types of batteries together. Remove the batteries when you are not using the system for a longer period of time. Check the polarity (+/-) of the batteries when inserting them in the product. Wrong positioning can cause an explosion.
4. Product operating temperature: Main unit: 0°C~+50°C / Sensor: -40°C~+70°C and storage temperature is from -10°C~+60°C Celsius. Under and over this temperature might affect the function.
5. Never open the product. Touching the inside electrics can cause electric shock. Repairs or service should only be performed by qualified personnel.
6. Do not expose to heat, water, moisture, direct sunlight!
7. The unit is not waterproof. If water or foreign objects enter the unit, it may result in fire or electric shock. If water or a foreign object enters the unit, stop use immediately.
8. Do not use non original accessories together with the product as this can make the product functionality abnormal.

# Overview

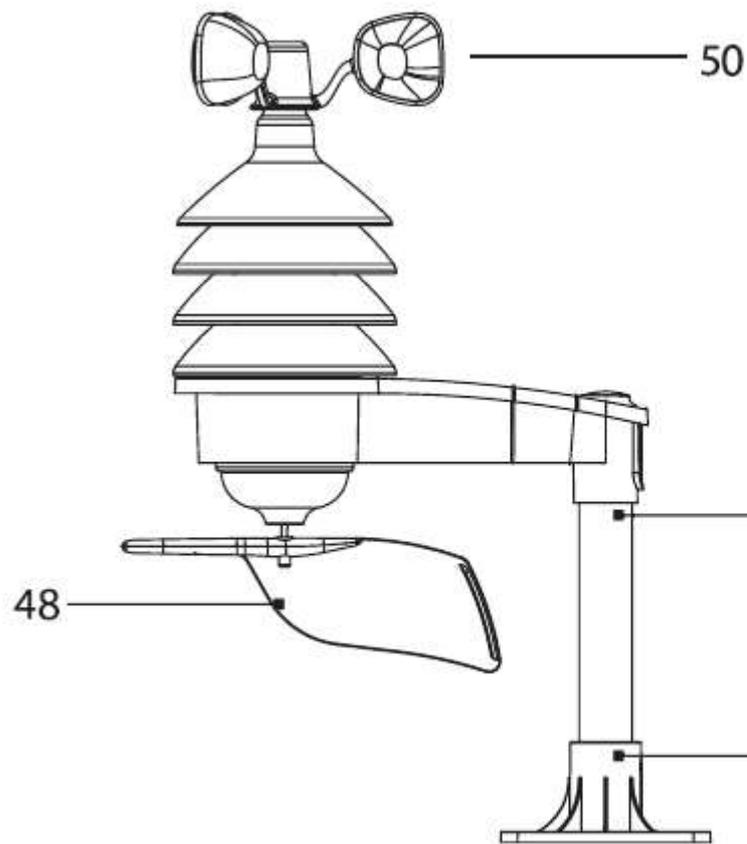
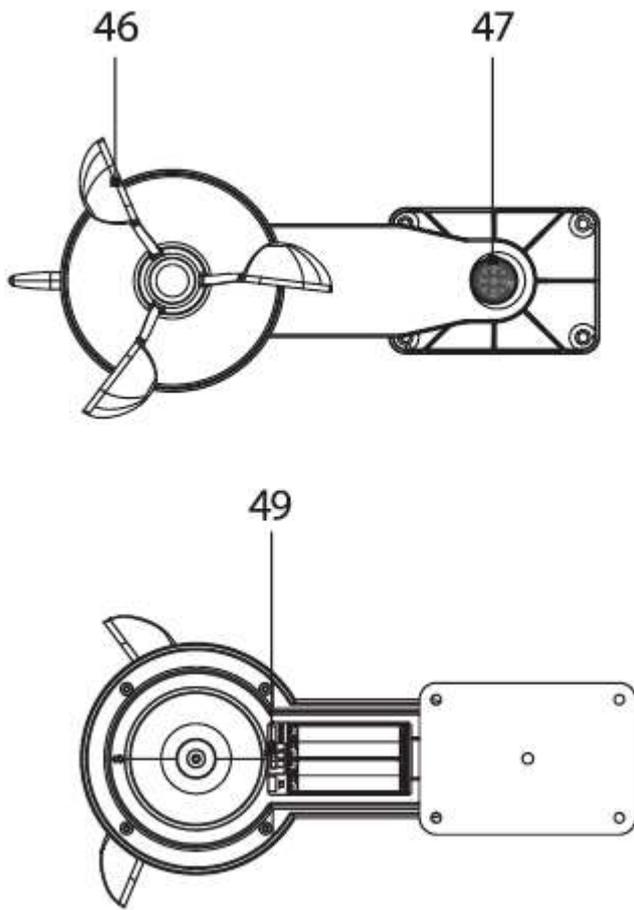
## Weather Station



## Rain gauge sensor



## Temperature/humidity/Wind sensor



### Main unit

1. Snooze/light button
2. Number of temperature/humidity /  
Wind sensor 1/2/3
3. Outdoor temperature
4. Cycling through data from connected sensors
5. Outdoor humidity trend
6. Outdoor humidity trend
7. Weather forecast
8. Moon phase
9. Pressure history
10. Pressure value
11. Pressured trend
12. Indoor temperature alert
13. Indoor temperature
14. Indoor temperature trend
15. Station batteries low
29. MODUS button: switch display mode
30. Data from precipitation sensor
31. Signal from precipitation sensor
32. Low batteries in precipitation sensor
33. Wind speed
34. Signal from temperature/humidity/wind sensor
35. Low batteries in temperature/ humidity/wind  
sensor
36. Outdoor humidity
37. Outdoor temperature alert
38. Low batteries in temperature/  
Humidity/wind sensor
39. Power adaptor socket
40. Battery compartment
41. Stand
42. Alarm speaker

- 16.** Indoor humidity trend
- 17.** Indoor humidity
- 18.** Alarm no.1/no.2
- 19.** Time DCF signal reception,  
daylight savings time (DST)
- 20.** Day of the week
- 21.** UP button: go forward in settings.Memory of  
Max/min temperature and humidity.
- 22.** Date.
- 23.** Down button: go back in settings
- 24.** Wind direction indicator
- 25.** Channel button: search for sensor signal or  
Switch through information from connected  
sensors
- 26.** Wind direction: S- south. W-west, N-north  
E-east
- 27.** ALARM Button: alarm activation/deactivation
- 28.** SET button: switch between  
°C/°F , function settings
- 43.** Mounting holes
- Rain gauge sensor**
- 44.** Rain gauge battery sensor
- 45.** Rain gauge sensor grille
- Temperature/humidity/Wind sensor**
- 46.** Wind sensor cups
- 47.** Compass
- 48.** Wind direction paddle
- 49.** Temperature/humidity/wind sensor battery  
Compartment.  
Buttons: TX: send Signal from Sensor to Station  
1/2/3: switch sensor channel number.  
WAVE: manually activate/deactivate DCF
- 50.** Singal reception
- 51.** Wind sensor cups
- 52.** Mounting rod (26 mm Diameter)
- 53.** Mounting base

## Specifications

Clock control:	DCF77-radio signal
Time format:	12/24 h
Indoor temperature:	0 °C to +50 °C, 0,1 °C resolution
Outdoor temperature:	-40 °C to +60 °C, 0,1 °C resolution
Temperature measurement accuracy:	±1 °C for range 20 °C to 24 °C ±2 °C for range 0 °C to 20 °C and 24 °C to 40 °C ±3 °C for range -20 °C to 0 °C and 40 °C to 50 °C
Indoor and outdoor humidity:	25 - 90 % RH, 1 % resolution
Humidity measurement accuracy:	5 %
Barometric pressure measurement range:	850 hPa to 1050 hPa
Wind sensor measurement range:	0 to 127,5 km/h
Rain gauge sensor measurement range:	0 to 2.999 mm
Radio signal range:	Up to 50 m in free sight
Connected sensors:	Max. 3 temperature/humidity /Wind sensors Max. 1 rain gauge sensor

## Power supply

Main unit	3 x AAA-Batterien ( not included) and AC 230 V/DC 5 V, 300 Ma adapter (included)
Rain gauge sensor	2 x AA batteries (not included)
Temperature/humidity/Wind sensor	4 x AA batteries (not included)

## The buttons



Mode button



Set button



Clock button



Channel Button



Up/down buttons



## Installation

### Power and Batteries

Plug the power adaptor into the main unit and insert batteries (3 x 1.5V AAA). Continue with inserting batteries into the wireless temperature/humidity /wind sensor(4 x 1.5V AA) and the wireless rain gauge Sensor (2 x 1.5V AA). The battery compartment of the rain gauge sensor is protected by screws, so you need a suitable screwdriver. Low battery levels will be indicated on the display (see 15,32 and 38).

### Backlight

The weather station display is backlit. When you press the Sleep/Light button (1), the display lights up for five seconds. When the weather station is powered by the power supply, the backlight is always on. You can reduce the brightness of the display in two stages by pressing the snooze/light button. A third press puts the display into standby mode.

### Connecting the units

Place all units next to each other. The main unit will automatically detect the signals from the sensors usually within 3 minutes. If the main unit does not detect the signals press and hold the channel button on the main

unit's display

To repeat the search, or press and hold the TX button(49) on the temperature/humidity/ wind sensor. You find the TX button under the battery cover.

### Placement of sensors

To ensure correct measurements, the temperature/humidity /wind sensor and the rain gauge sensor must be placed at least 1.5m above the ground on a horizontal surface without buildings and structures nearby.

### Mounting

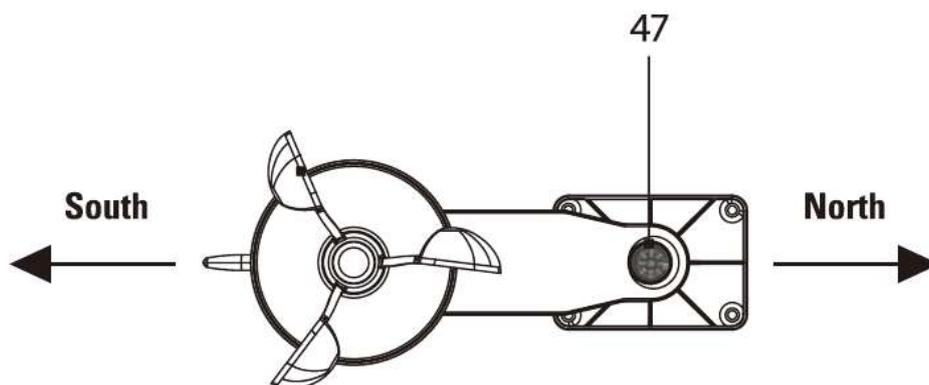
Both sensors must be firmly attached to prevent them from falling and being damaged. Do not place the sensors onto metal objects as this will reduce their transmission range.

To assemble and mount the temperature/humidity/wind sensor, begin with screwing the mounting base (51) onto a level surface. Place the mounting rod(50) in the base and fasten it with two screws. Put the temperature/humidity/wind

Sensor on top of the rod. Before fastening it, make sure that the wind can flow freely around the wind sensor from all sides. Check that the wind cups and wind paddle(48) for measuring wind speed and direction can rotate freely.

**Important.** To make sure that the wind direction is measured correctly, it is important that you install the temperature/ humidity/wind sensor in north-south direction using the built-in compass(47).The part with the wind cups and wind

Cups and wind direction paddle should face south. See picture.



When you have aligned the temperature/ humidity wind sensor in north-south direction, fasten the sensor to the mounting rod with two screws. Lastly, mount the rain gauge sensor by screwing it onto a suitable surface and place the grille (45) in the sensor.

### Weather forecasts

The weather station will start a 14- day learning process once turned on and set up. This learning process is necessary for the weather station to be able to make weather forecasts. The display will show "LEARNING..." at the top of the display during this time.

---

### Changing channel and connecting additional sensors

1. Press the channel button on the main unit's display repeatedly to select the desired channel 1, 2 or 3 for the sensor. Then press and hold the channel button until the icon starts to flash.
2. Remove the battery cover of the temperature/humidity/wind sensor and set the sensor switch to the corresponding channel you just selected. Data from the sensor will be loaded within 3 minutes.  
If you press the channel button until the cycling symbol shows, data from all three sensors will be shown automatically, sensor by sensor
3. If the sensor signal is not found, remove the batteries and proceed again, or press the TX button (49) to reset.

### Radio controlled clock (DCF77)

When turned on the first time, the base station automatically starts to search for a DCF signal for the time setting. If no signal is found, the search stops and you need to set the time manually. It may take some time for the station to receive the signal. The main unit will update the DCF signal every night at 1, 2 and 3 o'clock. Note! The main unit only receives the DCF77 signal on channel 1. Therefore, make sure that there is at least one sensor on channel 1.

You can also activate a search for the DCF signal manually. Press and hold the wave button located in the battery compartment of the temperature/humidity/wind sensor to initiate a search. To end the search long-press the wave button again.

### Time, date and forecast settings

Press the mode button on the display, then hold the set button for 3 seconds to enter the time setting mode. The current value starts to blink. The values are changed in this order: time zone > language > year > month / day order > month > date > 12/24 hr > hour > minute > second > exit. Change the values with the up/down buttons and confirm and move to the next value with the set button.

### Alarm settings and features

Press the clock button on the display to select one of the two alarms, on the display indicated with AL 1 or AL 2. Both alarms can be active at the same time. To set the alarms, press the mode button twice and then hold the set button for 3 seconds until the hour value starts to blink. Change the values with the up/down buttons and confirm with the set button.

When the alarm goes off, the display lights up and the alarm sounds for three minutes before it is turned off. Press the snooze/light button on top of the base unit to snooze the alarm for 5 minutes.

Press any other button to turn off the alarm for the day.

### Settings for altitude and atmospheric pressure

The weather station shows atmospheric pressure in hPa or in Hg and keeps a history of pressure readings for the last 12 hours. To achieve more accurate calculations of pressure values you should manually

Set the altitude for the place where the weather station is being used:

1. Press the mode button on the display 3 times.
2. Press the set button for 3 seconds and use the arrows to set altitude between -90 m to +1990 m (10m increments).
3. Press the mode button to switch between M/hPa and Ft/inHg units.
4. Press the set button to quit settings.

### Setting the unit for precipitation

1. Press the mode button 5 times, then press the set button for 3 seconds.
2. Use the up and down arrows to set mm or inches as units
3. Press the set button to quit settings

### Setting the unit for wind speed.

1. Press the mode button 6 times, then press the set button for 3 seconds.
2. Use the up and down arrows to set km/h or mph as units.
3. Press the set button to quit settings

### Temperatur alert

The weather station can alert you of temperature changes indoors and outdoors. To change alert settings, press the mode button on the display 4 times, then hold the set button for 3 seconds. You change the settings with the set button in the following order: outdoor low temp> outdoor low alarm on/off> outdoor temp high> outdoor high alarm on /off> indoor low temp> indoor low alarm on /off > indoor high temp> indoor temp alarm on/off . Change the values with the up/down buttons.

### Temperature, humidity und pressure trends

- Rising 
- Constant 
- Falling 

### Moon phases

							
1	2	3	4	5	6	7	8

1. New moon
2. Waxing crescent
3. First quarter
4. Waxing gibbous
5. Full moon
6. Waning gibbous
7. Last quarter
8. Waning crescent

Note: In the period between 18:00 and 06:00 , the moon icon will be surrounded by stars

### Min./Max.-Temperature memory

The base station saves the min/max temperature and humidity settings for each day and deletes the values at midnight. Press the up button once to display the maximum values and press it again to display the minimum values. A third press takes you back to the standard display.

### Displaying and deleting measured values from the rain gauge sensor

Pressing the down button repeatedly shows measured precipitation values in various time periods in the following steps:

Accumulated

---

Today  
Last hour  
Yesterday  
This week

**Note:** To delete the value being displayed, you press and should the down button.

EN	
Manufacturer's name or trade mark, commercial registration number and address	Xiamen Innore Chongyuan Electronics Co., Ltd No. 943, Tonglong Second Road, Tong'an District, Xiamen,Fujian, <b>91350200568403208H</b>
Model identifier	YT60160
Input voltage	100-240VAC
Input AC frequency	50/60HZ
Output voltage	5VDC
Output current	300mA
Output power	1.5W
Average active efficiency	$\geq 70\%$
Efficiency at low load (10%)	$\geq 65\%$
No-load power consumption	$\leq 0.1 \text{ W}$

Please notice - All products are subject to change without any notice. We take reservations for errors and omissions in the manual.

ALL RIGHTS RESERVED, COPYRIGHT DENVER A/S



denver.eu



Elektrische und elektronische Geräte enthalten Materialien, Komponenten und Substanzen, welche für Sie und Ihre Umwelt schädlich sein können, wenn mit den Abfallmaterialien (entsorgte elektrische und elektronische Altgeräte) nicht korrekt umgegangen wird.

Elektrische und elektronische Geräte sind mit einer durchkreuzten Mülltonne gekennzeichnet. Dieses Symbol bedeutet, dass die elektrischen und elektronischen Geräte nicht mit dem restlichen Haushaltsmüll sondern getrennt davon entsorgt werden müssen.

In allen Städten befinden sich Sammelstellen, an denen elektrische und elektronische Geräte entweder kostenlos bei Recyclingstellen abgegeben werden können oder auch direkt eingesammelt werden. Weitere Informationen erhalten Sie bei der Umweltbehörde Ihrer Stadt/Gemeinde.

Hereby, Denver A/S declares that the radio equipment type WS -650 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: [denver.eu](http://denver.eu) and then click the search ICON on topline of website. Write model number: WS-650. Now enter product page, and RED directive is found under downloads/other downloads.

Operating Frequency Range: 433.05 MHz- 434,79MHz

Max Output Power: 3,21dBm

DENVER A/S

Omega 5A, Soeften

DK-8382 Hinnerup

Denmark

[www.facebook.com/denver.eu](https://www.facebook.com/denver.eu)