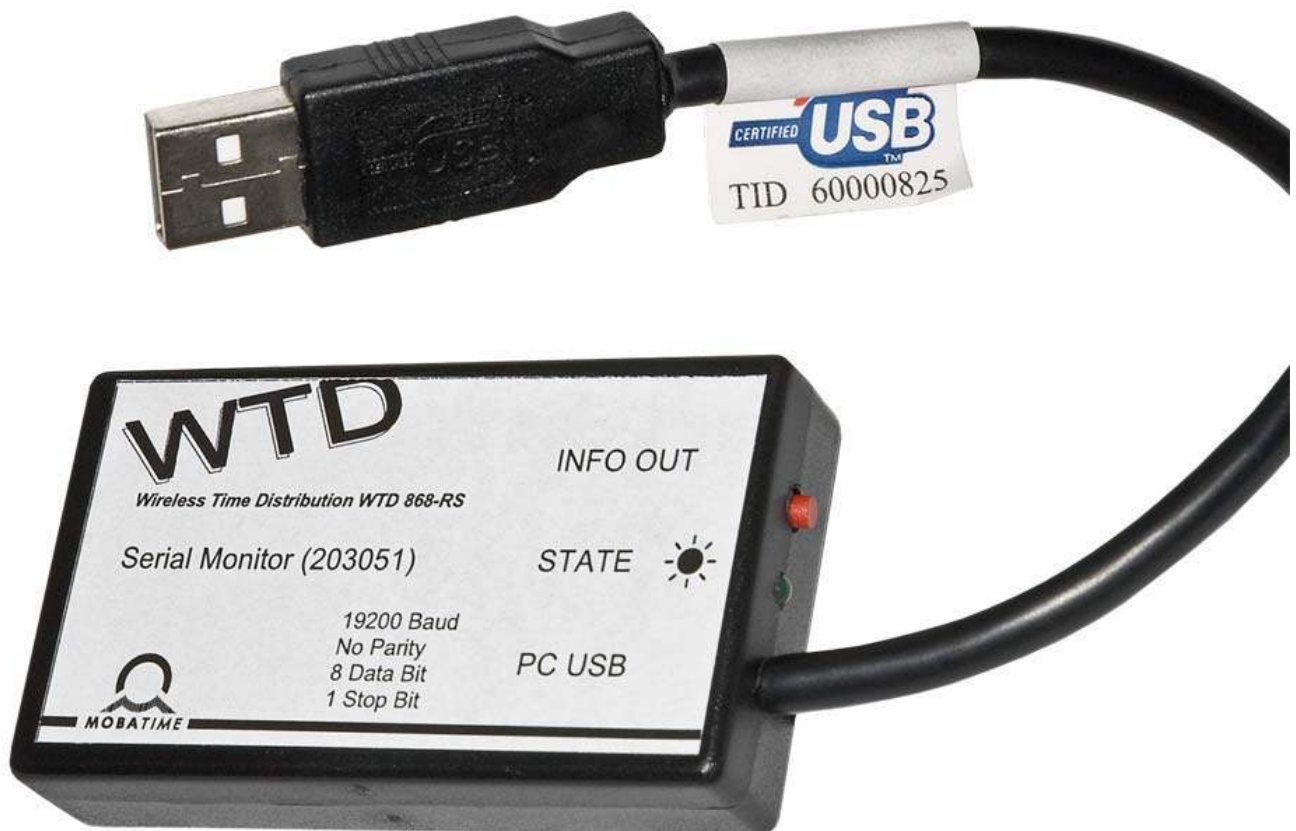# INSTRUCTION MANUAL

Wireless Time Distribution
Monitor Radio Receiver Interface WTD 868-RS

Manufacturer's Certificate

STANDARDS

The WTD 868-T time signal transmitter was developed and produced in accordance with the EU guidelines.
  73 / 23 / EWG
  89 / 336 / EWG $C\epsilon$
  1999 / 5 / EWG

Notes to the Instruction Manual

1. The information contained in this instruction manual can be changed at any time without prior notice. The current version is available for downloading under www.mobatime.com.
2. This instruction manual was compiled with the utmost care to provide all the details regarding the use of this product. However, should you have any queries, or find any errors in the instructions, please contact us.
3. We will not accept any liability for any damages resulting, directly or indirectly, from the use of this instruction manual.
4. Please read these instructions carefully and only use the product when all the instructions on installing and operating have been correctly understood.
5. Installation may only be carried out by qualified personnel.
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Contents

1   Introduction

1.1   Description

The WTD 868-RS is a wireless receiver interface with serial reception data output. It serves to record transmitter data received and determine reception quality in an installation for wireless time distribution. The interface is used for preliminary information and troubleshooting in new or existing installations.

1.2   Product Overview

Wireless time distribution product range.

Art. No.	Designation	Description
203051	WTD 868-RS	Monitor wireless receiver Interface
202841	WTD 868-RM	MOBALine wireless receiver interface
202842	WTD 868-RD	DCF wireless receiver interface
202606	WTD 868-T	Time signal radio transmitter
701182	WTD Repeater	Time signal radio repeater
701143	WTD 868-T MPS	Radio transmitter mains power unit
701263	SEW 00	Movement for hour, minute & second display, battery powered (2xAA)
701272	SAW 00	Movement for hour & minute display, battery powered (2xAA)
701264	SEW 00 MPS	Movement for hour, minute & second display, mains powered (80..250 V 50/60 Hz), IMPS 12 included
701372	IMPS 12	Mains power unit for SEW 00 MPS movement (110..240 V 50/60 Hz ➔ 12VDC)
701373	IMPS 24	Mains power unit for WTD 868-RM / -RD (110..240 V 50/60 Hz ➔ 24VDC)

2 Function Description

2.1 Dimensions / Installation

The WTD 868-RS is housed in a 70x40x15.5 mm black plastic casing. The interface has a USB connection in the form of a 0.5 m long cable. It is directly supplied from a USB and becomes a portable analysis device when used together with a laptop.
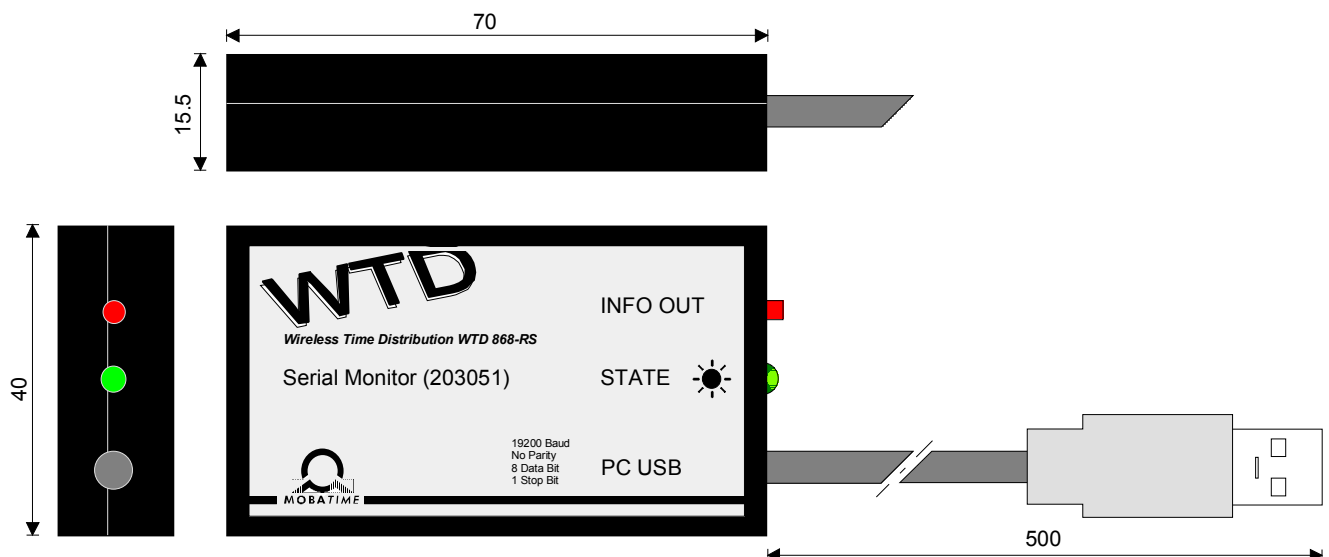
2.2 Control elements

The status LED lights as soon as the interface is supplied and ready for operation. If transmitter data are received and outputted, the LED will be extinguished for the duration of data transmission (can be assessed as indicator for receiving data).

If the operating key is pressed, the WTD 868-RS will send out a data packet with the name of the device, the article number, software version and the last time of reception.

2.3 Communication

Communication occurs unidirectionally from the interface to the connected computer. Data is outputted as an ASCII telegram via the USB interface and can be displayed for reading and recorded with a simple terminal program.

Transmission parameters: 19200 baud, no parity, 8 data bits, 1 stop bit, no flow control.

2.4 Start up

A USB driver (Virtual Com Port Driver) must be installed once for the WTD 868-RS to work correctly at a computer and to be recognized as serial COM-Port in the terminal program. The driver for the corresponding operating system can be downloaded from the company FTDI:

http://www.ftdichip.com/Drivers/VCP.htm

Select the driver type FT232B and follow the manufacturer's installation instructions for the driver.

As soon as the driver has been successfully installed, the WTD 868-RS can be connected to the computer and is then ready for use.

2.5 Structure of the output data

Description	Format	Supplements
Info string	`<CR><LF>WTD868RS INFO: 203051 203052.01.00 09-10-25.360 01-10-07<CR><LF><CR><LF>`	Output when pressing the operating button (article number, SW version, last reception)

Description	Format	Supplements
Header	`<CR><LF>WTD868RS DATA:<CR><LF>`	Start signal
Telegram type	`CD: xx<CR><LF>`	01: DHF/WTD
Transmitter address	`SA: xx<CR><LF>`	00..15
Operating mode	`MO: xx<CR><LF>`	00: Normal, 01: Init
Frame number	`FN: xx<CR><LF>`	00..15
Time slot	`TS: xx<CR><LF>`	00..03 (250ms-Versatz)
Time	`TM: xx-xx-xx.xxx<CR><LF>`	Hour-minute-second.millisec.
Date	`DT: xx.xx.xx<CR><LF>`	Day.month.year
Day of the year	`DY: xxxx<CR><LF>`	0001..0365 / 0366
Local time	`LT: xx<CR><LF>`	00: Local time, 01: UTC
12:00 command	`PC: xx<CR><LF>`	00: Normal, 01: 12:00
CRC8 transmitter	`CS: xx<CR><LF>`	CRC received (hexadecimal)
CRC8 receiver	`CR: xx<CR><LF>`	CRC calculated (hexadecimal)
RSSI base	`UB: xxxx<CR><LF>`	Base voltage (hexadecimal)
RSSI peak	`UP: xxxx<CR><LF>`	Peak voltage (hexadecimal)
Raw data 1	`R1: xx xx xx xx xx xx xx xx xx <CR><LF>`	Raw data 1st frame (hexadecimal)
Raw data 2	`R2: xx xx xx xx xx xx xx xx xx <CR><LF><CR>`	Raw data 2nd frame (hexadecimal)

2.6   Important indicators:

Transmitter address SA:

With this information, it can be determined whether the required transmitter can be received, and whether further active senders are possibly located in the reception area. The same address may never be used by more than one transmitter at a time!

Mode of operation MO:

Shows whether the received transmitter is in initialization mode (start up of WTD end devices). Only one transmitter at a time may send out in initialization mode!

Time, date, day of the year TM, DT, DY:

On the basis of this information, it can be determined whether the required time is distributed by the transmitter. (UTC will also be displayed in the LT field).

12:00 Command PC:

Shows whether the transmitter is sending out a position command (forces clocks to run at the 12:00 position).

CRC8 Transmitter / Receiver CS, CR:

These values must be identical (data received correctly).

RSSI Base / Peak UB, UP:

The greater the difference between base voltage and peak voltage, the greater the field strength of the signal received. Minimal difference: 0x0022 (100 mV), overmodulation at UP = 0x0199 (1.2 V: reduce transmitter power / increase distance to transmitter).