Quick Start Guide
TouchMonitor TM7/TM9

EN

Software Version 4-00 and higher | 12.2013

Quick Start Guide for

RTW TouchMonitor TM7/TM9 series

Manual Version: 2.8
Issued: 15.12.2013
Software Version: 4-00 (12.2013)

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WEEE Reg.-no.: DE 90666819
RoHS Conformity: These instruments comply with and fall under category 9 Monitoring and control equipment of the regulations of the directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment 2011/65/EU of the European Parliament and Council from June 8th, 2011.

- TouchMonitor has been CSA certified for US and Canada: Certificate of Compliance, No. 2453470, April 10, 2012
- TouchMonitor has been KC certified for Korea:
  Reg.-no. TM7: KCC-REI-LA1-TM7
  Reg.-no. TM9: KCC-REI-LA1-TM9

Please note:
The external power supply is UL Listed for CAN/US, model STD-2427PA, manufactured by Adapter Technology Co Ltd., Class II double insulated, rated:
Input: 100 - 240 V, 47 - 63 Hz, 1 A Max.
Output: 24 Vd.c., 2.7 A.

The figures in this operating manual are carefully created and are used to illustrate the descriptions. However, they may differ a little bit from the displays of your unit.

The current version of this manual and the available firmware/firmware updates can be found under Audio Monitors/TouchMonitor TM7 resp. Audio Monitors/TouchMonitor TM9 in the download area of our web site: http://www.rtw.de/en/sales-support/manuals-software.html (Login page).

The package contains a USB flash device source by a third party company. The device is certified by Shenzhen BSE Technology Co., Ltd. to be CE conform (E07002566) and RoHS compliant (R0808179).
A detailed RoHS declaration of conformity about TouchMonitor TM7/TM9 series will be found in the appendix.

Safety Instructions

The following symbols may be marked on the panels or covers of equipment or module and are used in this manuals with these terms:

WARNING!

This symbol alerts you to a potentially hazardous condition, such as the presence of dangerous voltage that could pose a risk of electrical shock. Refer to the accompanying Warning Label or Tag, and exercise extreme caution.

ATTENTION!

This symbol alerts you to important operating considerations or a potential operating condition that could damage equipment. If you see this marked on equipment, consult the operating manual for precautionary instructions.

NOTE

This symbol points your attention to specific characteristics that are no malfunctions.

Important Safety Instructions

- Read these instructions. Study carefully and understand all safety and operating instructions before you install and operate the unit!
- Keep these instructions. Keep all safety and operating instructions for future reference!
- Heed all warnings on the unit and in the safety and operating instructions before you install and operate the unit!
- Follow all instructions to ensure against injury to yourself and damage to the unit or other objects connected to the unit.

To prevent possible electrical shock, death, fire, injuries and malfunctions, use this product only as specified.
Only use attachments and accessories specified by the manufacturer.
The units of the TouchMonitor series are designed for indoor use only and may only be operated with a power supply unit provided for it.

WARNING!

Always follow the safety precautions below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire, or other hazards. These precautions include, but are not limited to, the following:

- Do not open the housing. Inside, there are no user-serviceable parts. Any necessary servicing shall be performed by a properly qualified technician.
- Do not attempt to repair any part of the unit. Repairs shall only be carried out by qualified personnel.
- Never remove any parts from the unit and do not make any modifications to the unit without the express written consent of RTW. Modifications can cause both safety hazards and affect the unit's conformity and certifications.
- Only use the power cord and power supply specified for this product and certified for the country of use.
- Use with power supply model STD-2427PA, manufactured by Adapter Technology Co Ltd. (RTW 1168-R).
- The power cord of the external power supply disconnects the product from the power source. Do not block the power cord or power supply; it must remain accessible to the user at any time.
- Connect and disconnect properly. Use only connectors specified for this product and fix them tight before use.
- Observe all terminal ratings and markings on the product. Consult the operating manual for further ratings information before making connections to this product.
- Do not apply a potential to any terminal that exceeds the maximum rating of that terminal.
- Avoid exposed circuitry. Do not touch exposed connections and components when power is present.
- Turn off and disconnect the power supply immediately it the unit produces unusual smells, noises or smoke, or if foreign substances (e. g. liquids) or foreign objects enter the unit.
- Because of the installed battery the unit shall not be exposed to excessive heat such as sunshine, fire, or similar.
- Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
- Do not cover the unit and do not place any objects or anything containing liquids on it.
- Do not insert your fingers or any other objects into the housing.
- Do not operate without cover plates or panels.
- Do not operate with suspected failures. If you suspect there is damage to the unit, have it inspected by qualified service personnel.
- Do not use this apparatus near water.
- Do not operate in wet/damp conditions.
- Do not operate in explosive atmosphere.
- Do not operate in dusty environments.

⚠ ATTENTION!

Always follow the safety precautions below to avoid the possibility of physical injury to you or others, or damage to the unit or other property. These precautions include, but are not limited to, the following:

- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions to prevent the internal temperature from becoming too high.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Also keep away the unit from direct incident solar radiation.
- Keep product surfaces clean and dry. Clean only with dry cloth.
- Never use any solvent based liquids for cleaning the housing surfaces and the display.
- Do not place the unit in an unstable position where it might accidently fall over.
- Before connecting any devices to the unit make sure that the power supply is disconnected.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Before moving the unit, remove all connected cables.
- When transporting or moving the unit, always take care not to scratch or damage the housing surfaces and the display.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

EN

Information on installed battery

The pcb features a battery socket with a 3 V Li/Mn coin cell battery, type CR 1225. It must be inserted from the side with its positive pole on top and its negative pole towards the pcb surface.

Environmental Considerations

Observe the following information about the environmental impact of the product and the following guidelines when recycling an instrument or component (product end-of-life handling):

- **Equipment Recycling**
  Production of this equipment required the extraction and use of natural resources. The equipment may contain substances that could be harmful to the environment or human health if improperly handled at the product's end of life. In order to avoid release of such substances into the environment and to reduce the use of natural resources, we encourage you to recycle this product in an appropriate system that will ensure that most of the materials are reused or recycled appropriately.

- **Battery Recycling**
  This product contains a lithium manganese dioxide (Li/Mn) battery, which must be recycled or disposed of properly according to your local government regulations.

- **Restriction of Hazardous Substances**
  These instruments comply with and fall under category 9 Monitoring and control equipment of the regulations of the directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment 2011/65/EU of the European Parliament and Council from June 8th, 2011. This product may contain lead, cadmium and/or mercury in slight quantities. Please dispose of or recycle the electronic parts or devices according to your local government regulations.

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Before You Begin

Introduction

Thank you for purchasing a model of the TouchMonitor series. With the TouchMonitor range you are able to meet the growing requirements in today's production, post-production, and broadcast world. Equipped with high-grade 7" or 9" touch screens and an easy-to-use GUI, TouchMonitor enters a new level of professional audio metering in terms of precision, performance, efficiency and flexibility.

Simple and flexible

The graphical user interface used in the TouchMonitor range is controlled simply by using your finger or a mouse. Instruments can be scaled, randomly positioned and combined in almost every way for optimized use of available screen space. Even multiple instruments of the same type, assigned to different input channels and configurations, can be displayed simultaneously. A context-sensitive, on-screen help feature and the intuitive operatable menu system supports the user, allowing him to make setup changes with ease.

Audio I/O options

The TouchMonitor perfectly integrates into today's analog and digital audio and video studio environments. It handles input signals of various formats: analog, AES3, and AES3id. TouchMonitor units can be equipped with an interface to accept 3G SDI signals. This interface works as an audio deembedder for mixed use with other audio interfaces displaying additional input channels simultaneously.

Licences

A totally modular software concept means that you only have to purchase features that you actually require. This puts you in control, defining the functionality of a TouchMonitor that suits your needs best. New instruments and functions can be added as software modules to the device at any time. Simply purchase and activate the corresponding licence.

Many display functions are available to choose from: the unique RTW Surround Sound Analyzer, the Real-Time Analyzer (RTA), EBU R128-, ITU BS.1770-3/1771-1-, ATSC-A/85-, and ARIB-compliant loudness meters, and the Radar Loudness display acc. to the Loudness Radar Meter of TC electronic®.

Scope of Delivery

Unpack the instrument, find your version below, and check, if you received all items listed. If components are missing, please contact your dealer. Recommended accessories, options and software licences are also listed.

TouchMonitor TM7

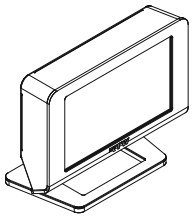
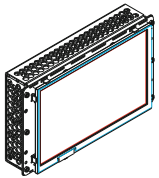
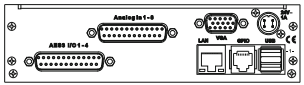


Table-top unit 20700 >

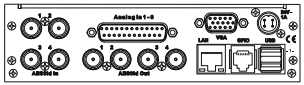


OEM version 20700OEM >

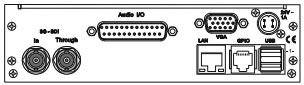
> Audio Interface as ordered



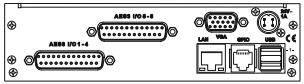
4 x AES3
8 x analog
HW20711



4 x AES3id
8 x analog
HW20712



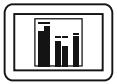
4 x AES3
3G-SDI
HW20714



8 x AES3

HW20715

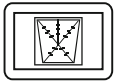
> Software Licence, if ordered



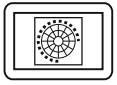
Multichannel mode
SW20001

Loudness and SPL display
SW20002

RTA - Real Time Analyzer
SW20003

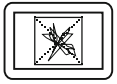


SSA - Surround Sound Analyzer
SW20004

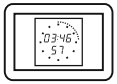


Radar Display

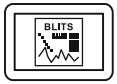
SW20005



Premium PPM + Vectorscope
SW20006



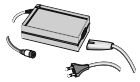
Timecode Reader
SW20008



BLITS

SW20013

Logging Data Server
SW20014



Power supply

USB stick

> Short manual

USB stick

> Short manual

TouchMonitor TM9

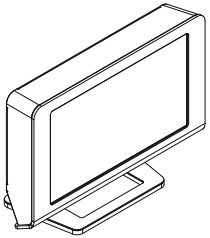
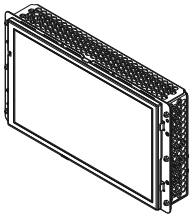
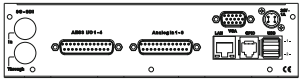


Table-top unit 20900 >

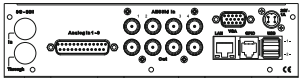


OEM version 20900OEM >

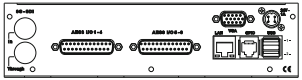
> Audio Interface as ordered



4 x AES3
8 x analog
HW20911

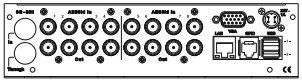


4 x AES3id
8 x analog
HW20912



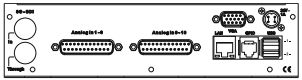
8 x AES3

HW20913



8 x AES3id

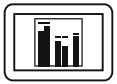
HW20914



16 x analog
HW20915

3G-SDI-
Option
HW20930

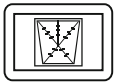
> Software Licence, if ordered



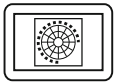
Multichannel
mode
SW20001

Loudness and
SPL display
SW20002

RTA - Real Time
Analyzer
SW20003

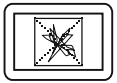


SSA - Surround
Sound Analyzer
SW20004

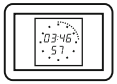


Radar Display

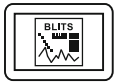
SW20005



Premium PPM
+ Vectorscope
SW20006



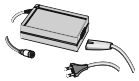
Timecode
Reader
SW20008



BLITS

SW20013

Logging Data
Server
SW20014



Power supply

USB stick

> Short manual

USB stick

> Short manual

Installation

The TouchMonitor **TM7** and **TM9** table-top units (**20700**, **20900**) are designed for free positioning on tables, desks, et. al. The **OEM** versions (**20700OEM**, **20900OEM**) are designed for panel-mounting e. g. into mixing consoles. The **20700OEM** version also can be mounted into common 19"/3U racks using optional mounting adapter **TM7-MA3U** or into standard 19" rack-mount cabinets for video racks using optional mounting adapter **TM7-MAVID**. All necessary power supply voltages are supplied through the +24 V DC - 1 A connector. Use with power supply model **STD-2427PA**, manufactured by Adapter Technology Co Ltd. (which is the external power supply unit RTW **1168-R** wide voltage power supply, included in 20700 and 20900 packages, optional for 20700OEM and 20900OEM). The units feature a 7" resp. 9" VGA 16 : 9 touch screen.

Optional an external standard16 : 9 VGA monitor can be connected for external reading of the display.
Optional an external computer mouse or a Wacom® graphics tablet can be connected to one of the USB interfaces.

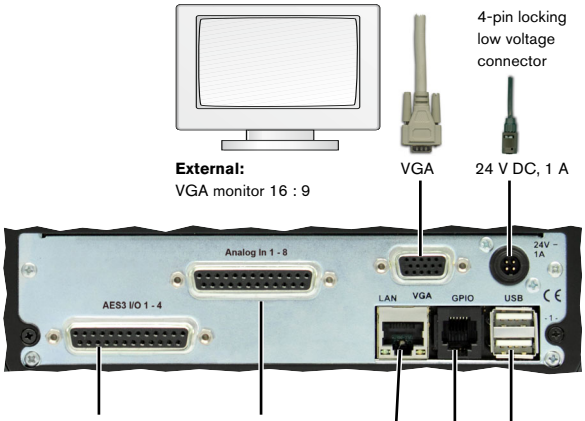
The other ports and interfaces are connected with the appropriate standard connection cables.

ATTENTION – Please read before installing:

- Before installing the unit please study the safety instructions and the information on connection and pin assignment.
- An external overcurrent protective device (2 A max.) shall be installed when using an external 24 V DC power supply!
- Make sure that the delivered power supply unit is not connected.
- Place the unit at a suited place or mount it acc. to the system requirements.
- Connect your signal sources and all your other components to the appropriate connectors, using the correct standard connection cables for the components. Take care about the pin assignment!
- Optionally, connect an external standard 16 : 9 VGA monitor to the VGA output, using a standard VGA connection cable. The VGA cable shall be of 15 m maximum length.
- Finally, connect the locking 4-pin low voltage connector of the external power supply to the +24 V DC - 1 A connector on the rear. Connect the external power supply to mains.
- The TouchMonitor will initiate its system startup sequence. After the boot-up the unit is ready for use.

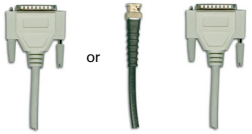
Connection

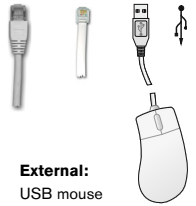
TouchMonitor TM7



HW20711 (pictured):	AES3 In/Out 1 - 4 (Sub-D)	Analog In 1 - 8 (Sub-D)
HW20712:	AES3id In/Out 1 - 4 (8 x BNC)	Analog In 1 - 8 (Sub-D)
HW20714:	3G-SDI In/Through (2 x BNC)	Audio I/O (Sub-D)
HW20715:	AES3 In/Out 1 - 4 (Sub-D)	AES3 In/Out 5 - 8 (Sub-D)

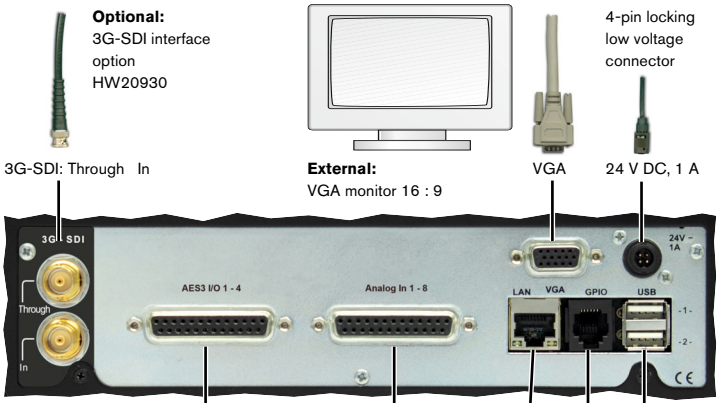
LAN (RJ-45) GP IO (RJ-11) USB A 2.0 (Full Speed)





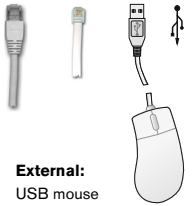
External:
USB mouse
Wacom® graphics tablet

TouchMonitor TM9



HW20911 (pictured):	AES3 In/Out 1 - 4 (Sub-D)	Analog In 1 - 8 (Sub-D)
HW20912:	Analog In 1 - 8 (Sub-D)	AES3id In/Out 1 - 4 (8 x BNC)
HW20913:	AES3 In/Out 1 - 4 (Sub-D)	AES3 In/Out 5 - 8 (Sub-D)
HW20914:	AES3id In/Out 1 - 4 (8 x BNC)	AES3id In/Out 5 - 8 (8 x BNC)
HW20915:	Analog In 1 - 8 (Sub-D)	Analog In 9 - 16 (Sub-D)

LAN (RJ-45) GP IO (RJ-11) USB A 2.0 (Full Speed)

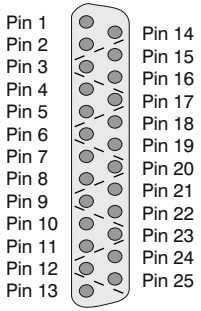


External:
USB mouse
Wacom® graphics tablet

Pin Assignment

Analog In 1 -8, Analog In 9 - 16 (electr. balanced, 25-pin Sub-D-F)

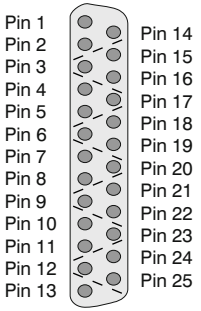
Pin:	Function:
1	Analog input 8 resp. 16 (+, hot)
14	Analog input 8 resp. 16 (–, cold)
2	Shield/chassis
15	Analog input 7 resp. 15 (+, hot)
3	Analog input 7 resp. 15 (–, cold)
16	Shield/chassis
4	Analog input 6 resp. 14 (+, hot)
17	Analog input 6 resp. 14 (–, cold)
5	Shield/chassis
18	Analog input 5 resp. 13 (+, hot)
6	Analog input 5 resp. 13 (–, cold)
19	Shield/chassis
7	Analog input 4 resp. 12 (+, hot)
20	Analog input 4 resp. 12 (–, cold)
8	Shield/chassis
21	Analog input 3 resp. 11 (+, hot)
9	Analog input 3 resp. 11 (–, cold)
22	Shield/chassis
10	Analog input 2 resp. 10 (+, hot)
23	Analog input 2 resp. 10 (–, cold)
11	Shield/chassis
24	Analog input 1 resp. 9 (+, hot)
12	Analog input 1 resp. 9 (–, cold)
25	Shield/chassis
13	not used



(External view of the connector)

AES3 I/O 1 - 4, AES3 I/O 5 - 8, Audio I/O (transf.-bal., 25-pin Sub-D-F)

Pin:	Function:
1	Digital output 4 resp. 8 (+, hot)
14	Digital output 4 resp. 8 (–, cold)
2	Shield/chassis
15	Digital output 3 resp. 7 (+, hot)
3	Digital output 3 resp. 7 (–, cold)
16	Shield/chassis
4	Digital output 2 resp. 6 (+, hot)
17	Digital output 2 resp. 6 (–, cold)
5	Shield/chassis
18	Digital output 1 resp. 5 (+, hot)
6	Digital output 1 resp. 5 (–, cold)
19	Shield/chassis
7	Digital input 4 resp. 8 (+, hot)
20	Digital input 4 resp. 8 (–, cold)
8	Shield/chassis
21	Digital input 3 resp. 7 (+, hot)
9	Digital input 3 resp. 7 (–, cold)
22	Shield/chassis
10	Digital input 2 resp. 6 (+, hot)
23	Digital input 2 resp. 6 (–, cold)
11	Shield/chassis
24	Digital input 1 resp. 5 (+, hot)
12	Digital input 1 resp. 5 (–, cold)
25	Shield/chassis
13	not used



(External view of the connector)

NOTE - The AES3 inputs are permanently terminated with 110 Ω.

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AES3id In/Out 1 - 4, AES3id In/Out 5 - 8, 3G-SDI (unbal., BNC-F)

Pin:	Function:
Pin:	Signal
Ring:	Shield/chassis

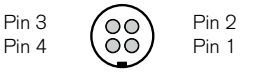
(External view of the AES3id connector)

(External view of the 3G-SDI connector)

NOTE - The AES3id inputs and the 3G-SDI inputs are permanently terminated with 75 Ω.

24 V - 1 A (4-pin locking low voltage connector, Typ Binder 710)

Pin:	Function:
1 - 2	+24 V DC
3 - 4	0 V



(External view of the mounted connector)

NOTE - An external overcurrent protective device (2 A max.) shall be installed when using an external 24 V DC power supply!

GP IO (RJ-11 6P6C socket)

External control of functions defined in the Global Keyboard menu. The inputs defined as „active low“ have to be switched against 0 V (Pin 1).

Pin:	Function:
1	GND (0 V)
2 - 6	Function acc. to definition in the menu

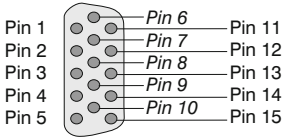
(External view of the connector)

USB-A

2 Full Speed USB 2.0 interfaces for the connection of USB sticks (Licence handling, presets, updates) and an external mouse or Wacom® tablet.

VGA (15-pin Sub-D-F)

Pin:	Function:	
1	R	| Video signal
2	G	|
3	B	|
4 - 8	GND	
9	+5 V	
10 - 11	GND	
12	SDA	
13	H-sync	
14	V-sync	
15	SCI	



(External view of the connector)

NOTE - The VGA cable shell not exceed 15 m lenght!

LAN

RJ-45 standard network connector (10/100 MBit)

Getting Started

System Start-up

Before connecting the TouchMonitor to the power supply, please make sure, that the following connections are made according to your unit (TM7, TMR7, TM9) and to your individual needs:

- Analog and/or digital audio input signals (depending on the hardware configuration of your unit)
- Digital outputs (if available)
- Optional external standard 16 : 9 VGA monitor
- Optional USB mouse
- LAN/Ethernet (if needed)
- Power supply

When the TouchMonitor is connected to the power supply, it will initiate its system startup sequence. After the boot-up the unit is ready for use.

We assume that you are starting your TouchMonitor for the first time. You now should make some global settings to adopt the unit to your audio system. After this short procedure you can create your first preset to work with.

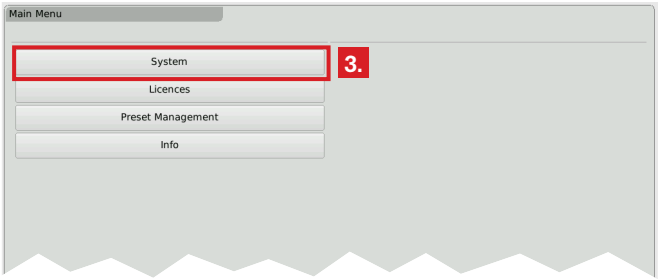
⚠ **NOTE -** The figures in the following paragraphs may show some options that are not available on your unit. The scope of available options depends on model (TM7, TMR7, TM9), hardware configuration, and activated licences.

Adapt the TouchMonitor to your Audio System

The description below leads you through the main steps of the global settings to configure the TouchMonitor once for the use with your audio system. These settings are not altered by loading new presets.

1. If not visible, touch the empty space of the screen to display the control bar.

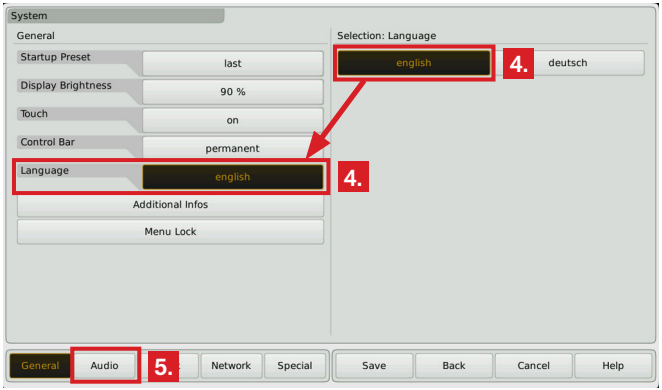
2. Touch the **Menu** key in the right section of the control bar to access the menu system showing the **Main Menu**.



3. Touch the **System** key. This will access the **System Menu**. The **General** sub menu will be active (marked in the control bar).

4. If needed, touch **Language** and select your language in the right half of the menu. The selection will be shown on the **Language** key.

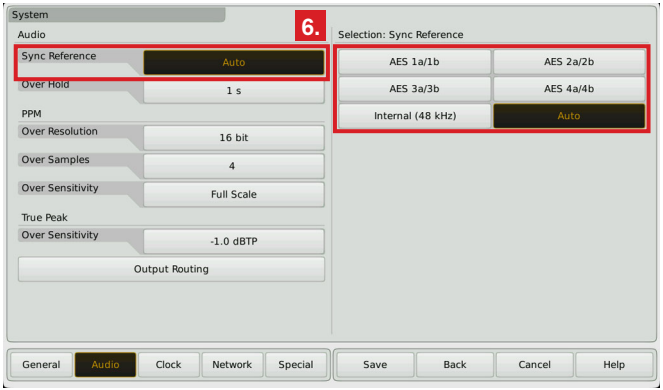
The new language will be available after reboot.



5. Touch the **Audio** button in the left section of the control bar to open the **Audio** sub menu.

6. If your TM unit should use a defined reference source, touch the **Sync Reference** key and select from the items in the right half of the menu.

   Number and type of available sync reference sources depends on model and scope of the installed audio interfaces.



7. Touch the **Clock** key, if you want to set the current date and time. Start the internal clock with touching the **Set time** key.

8. Touch the **Save** key to store your global settings. The unit turns back to normal display mode.

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Create Your Own Preset

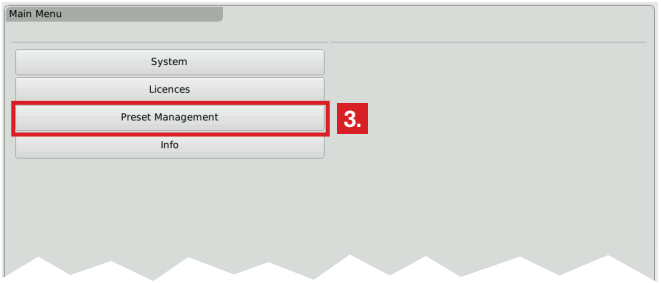
Presets are used to define and edit all the specific settings for your work flow. So you can create audio groups containing a defined signal source selection and one or more instruments sharing this domain and showing parameters of audio signals. Also you can create non-audio groups containing intruments, that are not related to audio input signals, like clock, hardware status monitor, or global keyboard.

If you want to create a preset from scratch, please proceed as follows:

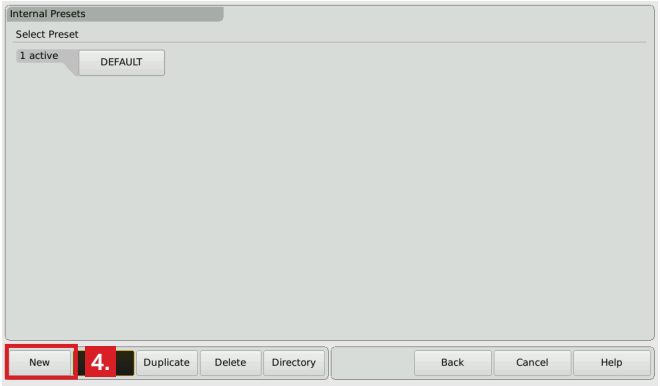
1. If not visible, touch the empty space of the screen to display the control bar.

2. Touch the **Menu** key in the right section of the control bar to access the menu system starting with the **Main Menu**.

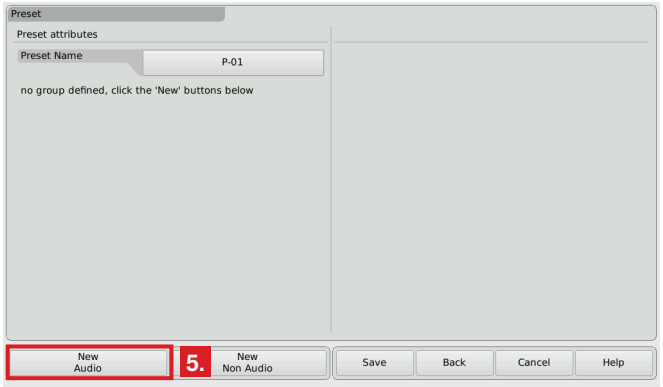
3. Touch the **Preset Management** key. The **Internal Presets** menu appears.



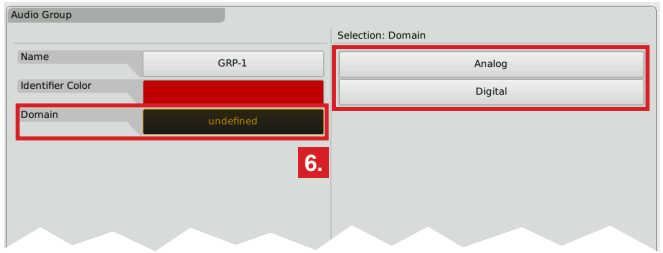
4. Touch the **New** button to create a new preset. A preset with an editable default name is created (see next figure, touch Preset Name to edit).



5. Touch the **New Audio** key to create the first audio group.

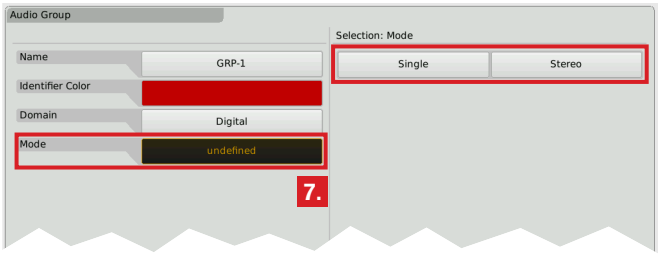


6. The **Domain** key is marked, select the domain of the required signal source in the right half of the menu.

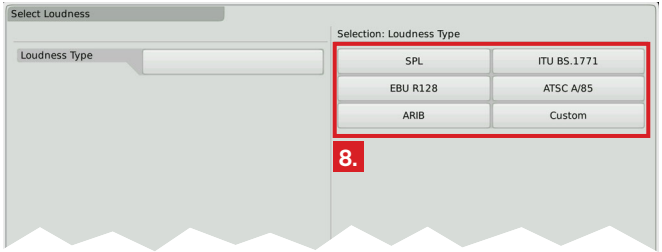


7. The **Mode** key appears and is marked, select your channel mode in the right half of the menu.

The number of modes depends on your model and the activated software licences.



8. If the **Loudness and SPL display** software licence (SW20002) is activated, the **Select Loudness** sub menu appears. Select the loudness type you prefer.



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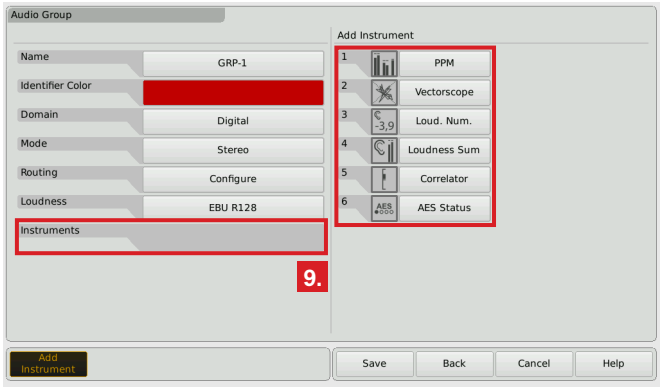
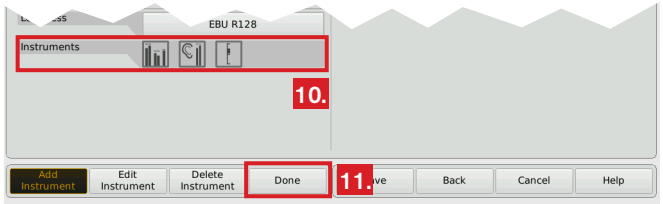
9. The **Instruments** field appears on the left, and a list of the available instruments is shown on the right.

   The number of instruments depends on the activated software licences.



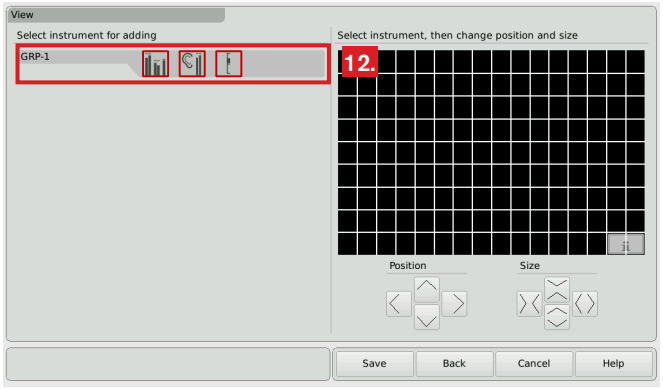
10. Touch the keys of the instruments you want to use. The icon of every selection is placed on the **Instruments** field on the left.



11. If you have done all your selections, touch the **Done** key. This returns you to the **Preset** menu.

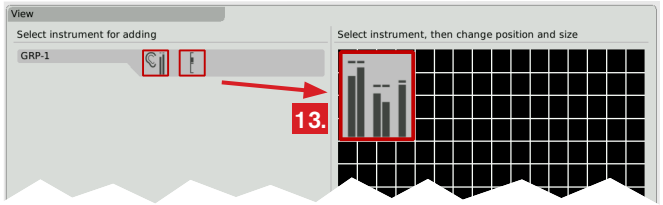
The Preset menu now shows the audio group you just created, marked with a small colored triangle in the upper left edge. In normal operation, all instruments of this group will always be identified by this color. The identifier colors make it easy to distinguish the group an instrument belongs to, if you have created several groups.

12. Touch the **View** key to start arranging the instruments on the screen. The defined groups containing the instruments are shown on the left (see next figure).

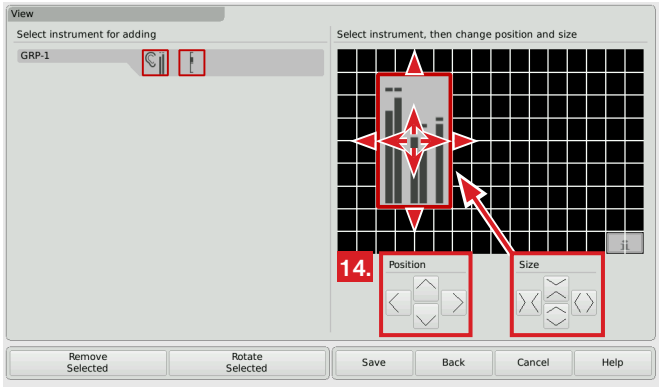


The View Screen is a comprehensive editor used to position and size the instruments defined in the current preset. All instruments needed must be positioned before you can watch them in normal display mode.

13. Touch an instrument icon. It will be applied to the upper left edge of the graphical screen representation.

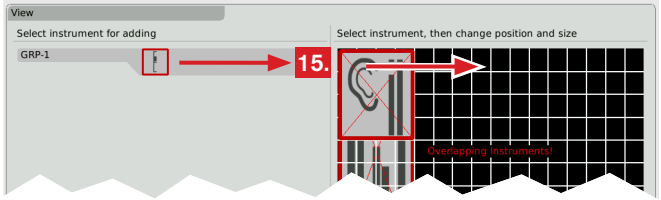


14. Use the **Position** and **Size** keys to resize the instrument and place it to another position.



15. Do so with the other instrument icons.

In case of two or more instruments overlapping, a warning will be displayed. Move the overlapping instrument icon to an unused area. Use the **Position** and **Size** keys.



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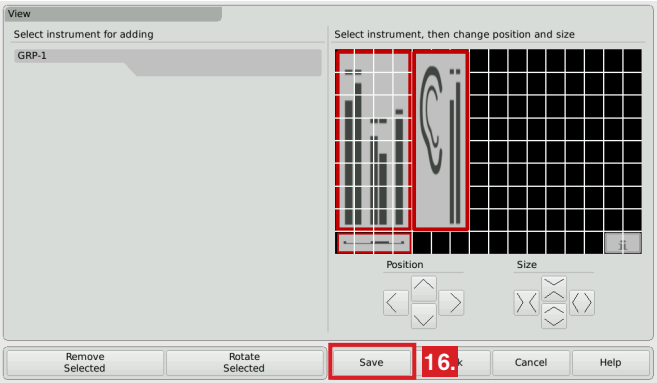
16. When the screen layout satisfies your demands (you also can rotate instruments), touch the **Save** key below in the control bar.



17. This will return you to normal display mode showing the new screen layout resp. the new preset you created.

Working with Instruments and Presets

In normal display mode the TouchMonitor shows the instruments and the screen layout defined in the currently loaded preset. You can use the control bar keys to operate a selected instrument or to load a new preset.

ℹ If the control bar is not visible, just touch the screen. Then it will be displayed for some seconds to make your selection.

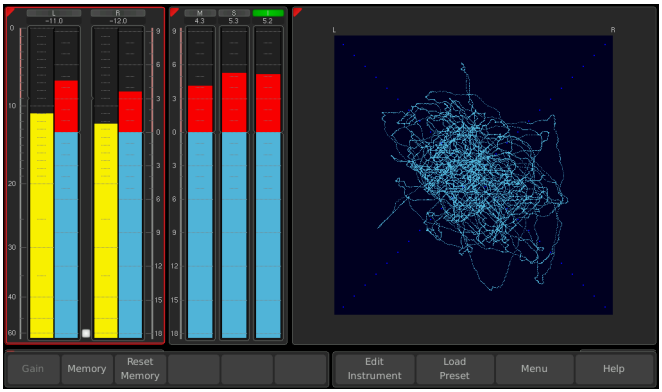
If you want to use the functions of an instrument, please proceed as follows:

1. Touch the screen area of the instrument you want to use. It will be put into focus. The left section of the control bar now shows the specific functions of the focused instrument.

   ℹ The current selected instrument is marked with a colored frame around. It represents the identifier color like the colored triangle.

2. Select the desired function.

   ℹ If there are more than 6 functions, use the **More** key.
   If a function key opens another level of functions, then use the **Close** key to get back to the previous level.



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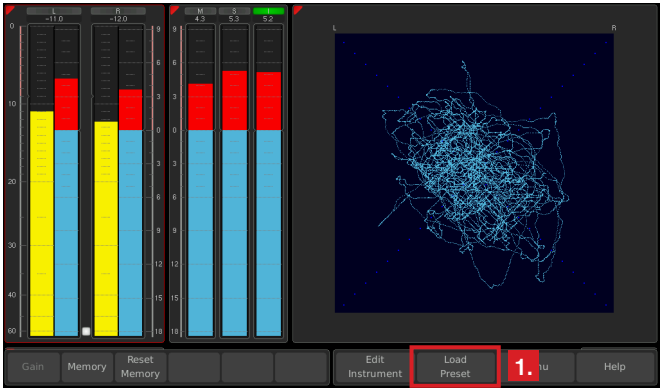
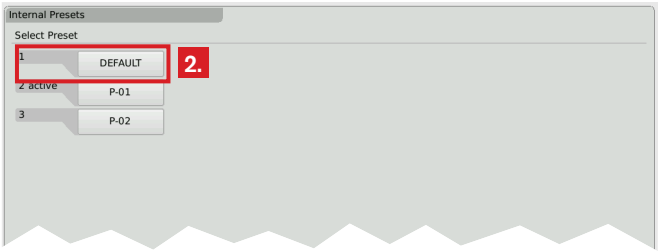
If you want to load another preset, please proceed as follows:



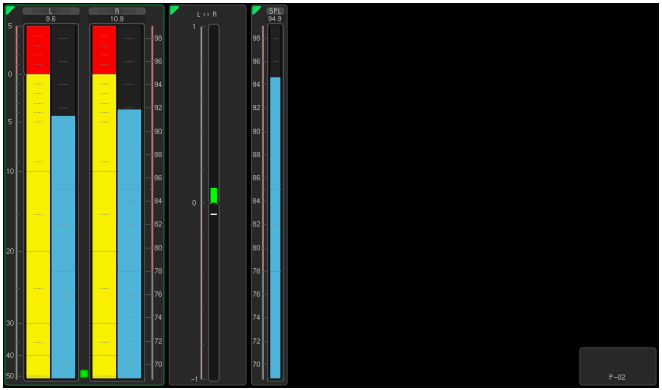
1. Touch the **Load Preset** key in the right section of the control bar. A menu page with a list of presets available is shown.



2. Touch the preset you want to use.

   The current selected and used preset is marked as active. In normal display mode, the name of the active preset is displayed in the lower right edge of the screen.

3. The selected preset is loaded. The unit automatically switches back to normal display mode and displays the selected preset.



Depending on the unit's type the functions like Loudness or Vectorscope shown on the screenshots require further software licences being activated (for details please see next chapter).

Software Modules (Licences Handling)

The TouchMonitor features a modular software concept that enables you to add new functions and instruments to your unit at any time. The **Licences** menu is used to view the licences currently installed on the TouchMonitor and to acquire new licences. Instruments and functions already activated are marked with an **Installed** sign. Instruments and functions that are not installed have an **order** key. On the **Licences** menu you only will find licencing options that are provided for your model and were already available at the release date of the software version installed on the unit.

⚠ **NOTE -** Some licences require others to be installed first before you can aquire them. Please note the corresponding information while purchasing licences.

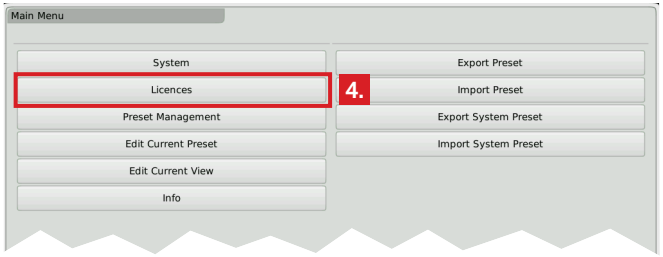
⚠ **NOTE -** The figures in the following paragraphs may show licences that are not available on your unit depending on model (TM7, TMR7, TM9), and hardware configuration.

If you want to acquire new licences, please proceed as follows:

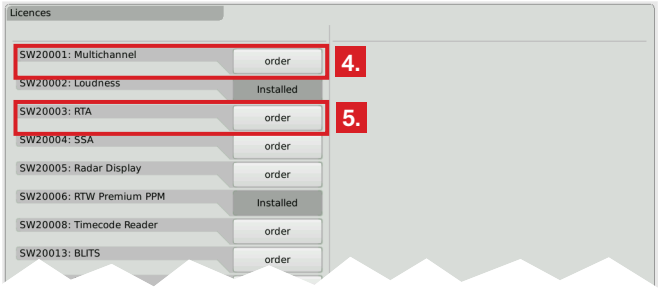
1. Insert a USB memory stick to one of the USB ports on the rear panel.

2. Touch the empty space of the screen or one of the displayed instruments, the control bar appears.

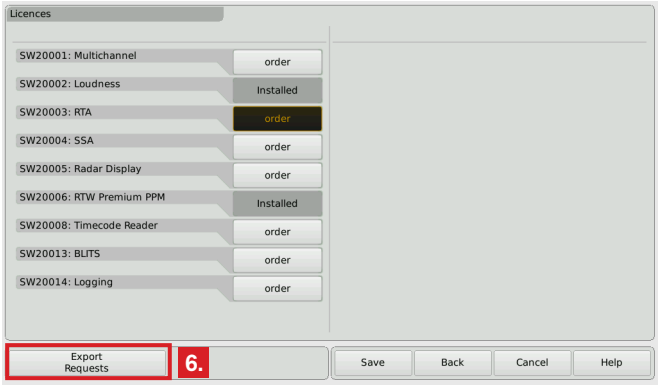
3. Touch the **Menu** key in the right section of the control bar to access the menu system showing the **Main Menu**.



4. Touch the **Licences** key. The available software licences are displayed, the activated ones marked with **Installed**.



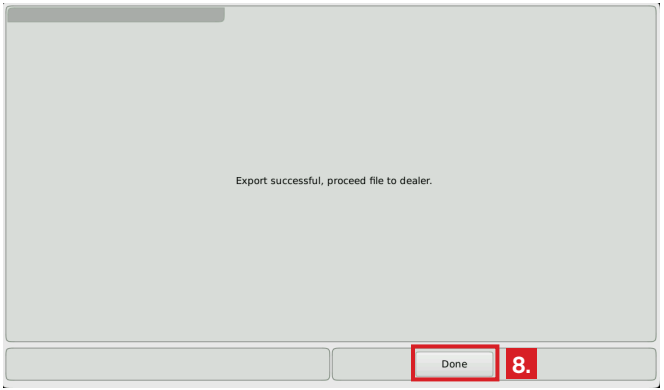
5. Touch the **order** keys of the licences you want to acquire.



6. Touch the **Export Requests** key displayed in the left section of the control bar.

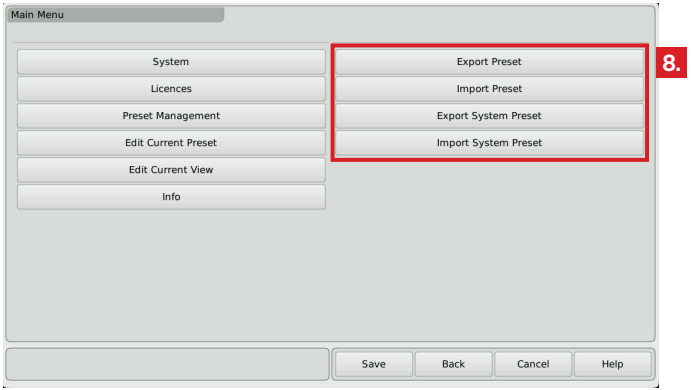
   The TouchMonitor will establish a folder structure on the USB stick named **/rtw/licence**. An encrypted licence request file (nnn_nn.lrf) depending on the individual serial number of the hardware unit is stored to this folder.

7. Wait until the menu page confirming the successful export of the licence request file is displayed.



8. Touch the **Done** key. This turns you back to the **Main Menu**.

   With the USB stick inserted, there are additional keys on the right to export or import individual presets or the global settings to the resp. from the USB stick.



9. Remove the USB stick from the TouchMonitor, insert it to a USB port of your computer and send the licence request file to your sales representative.

   Alternatively to the information of step 6, in single cases this file may also be found in folder **/rtw/tm7h/licence** resp. **/rtw/tm9h/licence**.

10. After purchasing the licence, a new file (nnn_nn.lf) containing the licence request file will be sent to you.

    The returned licence file is only valid for the individual unit the licence request file was created on.

11. The licence file (nnn_nn.lf) shall be stored to the same folder as the licence request file on the USB stick.

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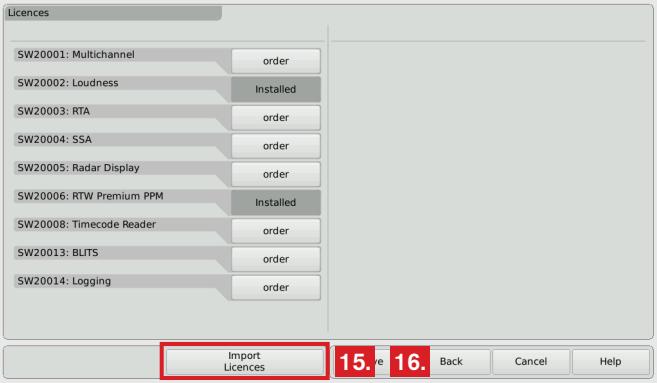
12. **Unmount** the USB stick from the computer system! Not till then remove it from your computer!

    ATTENTION! - Unmounting from the computer system shall be performed to avoid damage of the copied update file!

13. Remove the unmounted USB stick from your computer and insert it to one of the USB ports on the rear panel of the TouchMonitor.

14. Access the **Licences** menu as described in steps 2. to 4.



15. The licence file will be recognized, and an **Import Licences** key will be shown in the left section of the control bar.

16. Touch the **Import Licences** key to import the licence file to the unit.

17. When the import is finished, reboot the TouchMonitor by touching the **Back** key.

18. The licenced instrument or function is now permanently available.

Software Update

If you want to add new functions and instruments to your unit at any time, periodic maintenance of the system software is neccessary, because you only will find options and licences that were provided for your model and were already available at the release date of the software version installed on the unit.

Software updates are available from your sales partner or at members area of our web site (login page: http://www.rtw.de/en/sales-support/manuals-software.html). After log-in click „Audio Monitors“, then choose the option corresponding to your model.

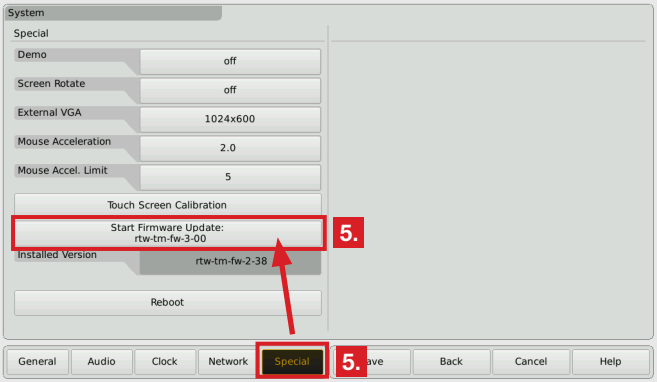
If you want to update your software, please proceed as follows:

1. Copy the update file (rtw-tm-fw-n-n.bin, n-n: firmware version) into the main directory of a USB stick.

2. **Unmount** the USB stick from the computer system! Not till then remove it from your computer!

   ATTENTION! - Unmounting from the computer system shall be performed to avoid damage of the copied update file!

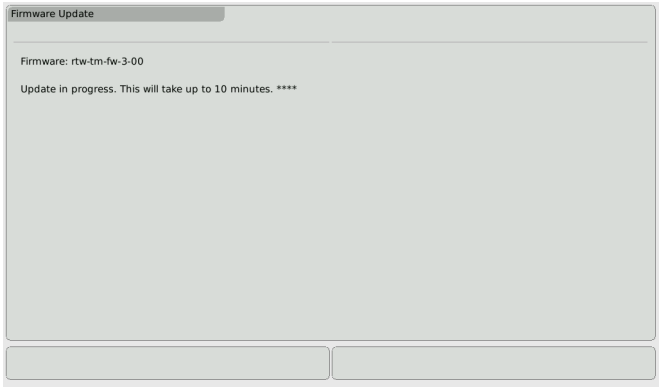
3. Remove the unmounted USB stick from your computer and insert it to one of the USB ports on the rear panel of the TouchMonitor.



4. If not visible, touch the empty space of the screen to display the control bar.

5. Touch the **Menu** key in the right section of the control bar, then the **System** key in the **Main Menu**.

6. Touch the **Special** key. The additional **Start Firmware Update: rtw-tm-fw-n-n** key is displayed.



7. Touch the key. The update starts and takes about 10 minutes.

8. When the update is finished, the TouchMonitor reboots automatically.

Specifications (Extract)

System

General

Power requirements:	+24 V DC (2 A overcurrent protective device shall be installed!)
Current drain:	1 A nominal current, 2.5 A power-up current (10 µsec.)
Power dissipation:	TM7: appr. 8.5 W/11 W; TM9: appr. 12.5 W/15 W (w/o/with SDI)
Display:	7“ (TM7) or 9“ (TM9) TFT touch screen 16 : 9
Connectors:	1 x 15-pin Sub-D-F; VGA output with 800 x 480 pixel (TM7)/ 1024 x 600 pixel (TM9), 65,536 colors, 60 Hz, for connection of an external 16 : 9 VGA monitor, internal selectable 4 : 3 mode 1 x 4-pin locking low voltage typ 710 (DC) 2 x USB A; USB 2.0 Full Speed connectors for: ▪ USB sticks for licence handling, preset export and import, software updates ▪ external computer mouse or Wacom® graphics tablet 1 x GPIO (RJ-11-6P6C, for remote control of defined functions) 1 x LAN (RJ-45)
with HW20711:	2 x 25-pin Sub-D-F (analog and digital)
with HW20712:	1 x 25-pin Sub-D-F (analog), 8 x BNC-F (digital)
with HW20714:	1 x 25-pin Sub-D-F (digital), 2 x BNC-F (3G-SDI)
with HW20715:	2 x 25-pin Sub-D-F (digital)
with HW20911:	2 x 25-pin Sub-D-F (analog and digital)
with HW20912:	1 x 25-pin Sub-D-F (analog), 8 x BNC-F (digital)
with HW20913:	2 x 25-pin Sub-D-F (digital)
with HW20914:	16 x BNC-F (digital)
with HW20915:	2 x 25-pin Sub-D-F (analog)
Dimensions TM7:	▪ 20700: 198 x 163 x 46 mm (W x H x D) ▪ 20700OEM: 188 x 109 x 45 mm (W x H x D)
Dimensions TM9:	▪ 20900: 245 x 185.5 x 46.5 mm (W x H x D) ▪ 20900OEM: 235 x 135 x 45 mm (W x H x D)
Weight:	approx. 2,7 kg (TM9 table-top unit without power supply)
Operating temperature:	in the range from +5° to +40° C

Functions (with all licences activated)

- Operating using a finger (touch screen), mouse, or tablet
- Instruments can be freely scaled and randomly positioned
- PPM: Surround (3.1, 5.0, 5.1, 7.1), 2-channel, multichannel
- Loudness-Meter: EBU R128, ITU-R BS.1770-3/1771-1, ATSC A/85, ARIB, and customer specific, SPL meter
- Loudness Range instrument (LRA)
- Logging Data Server
- Radar Loudness Meter (TC electronic®)
- Moving Coil instrument (BR, VU, Loudness scales)
- Surround Sound Analyzer
- 10-fold Multi-Correlator with LFE mode, Stereo correlator
- 31 and 61 band spectrum analyzer
- 2-channel audio vectorscope
- BLITS, Gain reduction instrument
- AES3 statusmonitor, Numerical displays, Timecode

Analog Inputs

HW20711:	8 analog inputs, 25-pin Sub-D-F connector
HW20712:	8 analog inputs, 25-pin Sub-D-F connector
HW20911:	8 analog inputs, 25-pin Sub-D-F connector
HW20912:	8 analog inputs, 25-pin Sub-D-F connector
HW20915:	16 analog inputs, 2 x 25-pin Sub-D-F connectors
Reference level:	adjustable in the range from 0 dBu to +10 dBu
Max. input level:	+24 dBu
Impedance:	> 10 kΩ, electronically balanced
Frequency range:	20 Hz to 22 kHz at 48 kHz

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Digital Inputs

HW20711:	4 AES3 inputs (transformer balanced, 110 Ω), 25-pin Sub-D-F connector with 4 inputs and 4 outputs
HW20712:	4 AES3id inputs (unbalanced, 75 Ω), 8 BNC-F connectors with 4 inputs and 4 outputs
HW20714:	4 AES3 inputs (transformer balanced, 110 Ω), 25-pin Sub-D-F connector with 4 inputs and 4 outputs and 3G-SDI interface with BNC-F connectors In and Through
HW20715:	8 AES3 inputs (transformer balanced, 110 Ω), 2 x 25-pin Sub-D-F connector with 4 inputs and 4 outputs each
HW20911:	4 AES3 inputs (transformer balanced, 110 Ω), 25-pin Sub-D-F connector with 4 inputs and 4 outputs
HW20912:	4 AES3id inputs (unbalanced, 75 Ω), 8 BNC-F connectors with 4 inputs and 4 outputs
HW20913:	8 AES3 inputs (transformer balanced, 110 Ω), 2 x 25-pin Sub-D-F connector with 4 inputs and 4 outputs each
HW20914:	8 AES3id inputs (unbalanced, 75 Ω), 16 BNC-F connectors with 8 inputs and 8 outputs
HW20930:	3G-SDI interface with BNC-F connectors In and Through
Sampling rates:	44.1, 48, 96 kHz, synchronisation via digital input signal

Digital Outputs

HW20711:	4 AES3 outputs, 25-pin Sub-D-F connector (4 in, 4 out)
HW20712:	4 AES3id outputs, 8 BNC-F connectors (4 in, 4 out)
HW20714:	4 AES3 outputs, 25-pin Sub-D-F connector (4 in, 4 out) and 3G-SDI interface with BNC-F connectors In and Through
HW20715:	8 AES3 outputs, 2 x 25-pin Sub-D-F connector (4 in, 4 out each)
HW20911:	4 AES3 outputs, 25-pin Sub-D-F connector (4 in, 4 out)
HW20912:	4 AES3id outputs, 8 BNC-F connectors (4 in, 4 out)
HW20913:	8 AES3 outputs, 2 x 25-pin Sub-D-F connector (4 in, 4 out each)
HW20914:	8 AES3id outputs, 16 BNC-F connectors (8 in, 8 out)
Sampling rates:	referenced to digital inputs or internal clock

Basic Stereo PPM (Standard Software)

General

Input sources:	analog, digital, 3G-SDI, depending on mounted audio interface
2-ch. peakmeter:	for one installed Stereo channel pair L/R
Displays:	▪ Peak level ▪ Peak hold ▪ Numerical value of the display
Functions:	▪ Gain (+20 dB, +40 dB depending on selected standard) ▪ Peak hold on/off, Memory, Reset

Analog Peakmeter

Analog scales:	▪ DIN5: +5 .. -50 dB, ▪ Nordic: +12 .. -42 dB, ▪ BR IIa: 7 .. 1 (British), ▪ BR IIb: +12 .. -12 dB (British),
Integration time:	according to standard or 20 ms, 10 ms, 1 ms, 0.1 ms
Peak hold display:	1 s, 2 s, 4 s, 10 s, 20 s, 30 s, manual reset or off

Digital Peakmeter

Word width: 24 bit	
Digital scales:	▪ TP60: +3 .. –60 dB ▪ Dig60: 0 .. –60 dB ▪ DIN5: +5 .. -50 dB, ▪ Nordic: +12 .. -42 dB, ▪ BR IIa: 7 .. 1 (British), ▪ BR IIb: +12 .. -12 dB (British),
Headroom/Headr. Ref:	adjustable in 1 dB steps in the range from 0 to –20 dB
Operation range:	adjustable in 1 dB steps in the range from 0 to –20 dB
Attack time:	as standard or selectable: Sample, 20 ms, 10 ms, 1 ms, 0.1 ms British scales also 150 ms selectable
Gain:	+20 dB, +40 dB depending on selected standard
High-pass filter:	Off, 5 Hz, 10 Hz, 20 Hz
Peak hold display:	1 s, 2 s, 4 s, 10 s, 20 s, 30 s, manual reset or off
Over display hold time:	1 s or manual
PPM Over threshold:	Full Scale, Full Scale -1LSB, Full Scale -2LSB, –0.1 dBFS, –0.5 dBFS, –1 dBFS, –2 dBFS, –3 dBFS
PPM Over attack time:	1 to 15 samples
PPM Over word width:	16 to 24 Bit, selectable
True Peak Over threshold:	–1.0 dBTP, –2.0 dBTP, –3.0 dBTP, –4.0 dBTP

EC Declaration of Conformity

EC Declaration of Conformity | Directive 2004/108/EG and Directive 2006/95/EG

We, RTW GmbH & Co.KG, Elbeallee 19, 50765 Köln, Germany, declare under sole responsibility that the products of the

RTW TouchMonitor 20900 Series and 20700 Series
(OEM units / table-top and plug-in units with mains adapter)

meet the intend of the Directive 2004/108/EG and the Directive 2006/95/EG. Compliance was demonstrated to the following specifications as listed in the official Journal of the European Communities:

EMC 2004/108/EG
EN 61000-6-3: 2007-10-01 Emissions:
EN 55022: 2007-06-01 Class B, radiated
EN 55022: 2007-06-01 Class B, conducted

EN 61000-6-1: 2007-12-01 Immunity:
EN 61000-4-2 + A1 + A2: 2002-02-01
EN 61000-4-4: 2005-09-01
EN 61000-4-5: 2007-08-01

Safety 2006/95/EG
EN 60950-1: 2007-01-01

Tested and documented by the following companies:

SERCO GmbH, Bonn, accredited EMC laboratory
RTW GmbH & Co.KG, Cologne

Date and signature of the responsible person:

2010-12-01

on behalf of RTW

RoHS Declarations of Conformity

RoHS Declaration of Conformity for TM7 | Directive 2011/65/EU

We, RTW GmbH & Co.KG, Am Wassermann 25, 50829 Köln, Germany, declare under sole responsibility that the products of the

RTW TouchMonitor TM7 Series

consisting of the components:

- 20700 (TM7 main unit in a table-top frame)
- 20700OEM (TM7 main unit, OEM)
- 20700-3U (TM7 main unit in a 19“/3U/42HP rack-mount frame)
- 20700VID (TM7 main unit in a half-19“/3U module for video racks)
- HW20711 (Audio interface: analog/digital AES3)
- HW20712 (Audio interface: analog/digital AES3id)
- HW20714 (Audio interface: digital AES3/3G-SDI)
- HW20715 (Audio interface: digital AES3)
- TM7-MA3U (Mounting adapter: OEM in 19“/3U/42HP)
- TM7-MAVID (Mounting adapter: OEM in 19“ video racks)
- TM7-MADT (Mounting adapter: OEM in table-top frame)
- 1167 (Snake cable, 25p. Sub-D/4 x XLR-F/M each)
- 1168-R (Power supply 100 - 240 V AC/24 V DC, 2.7 A)
- 1186 (Snake cable, 4 m, 25p. Sub-D/8 x XLR-F)

meet the intend of the Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment of the European Parliament and Council from June 8th, 2011.

Tested and documented by the following companies:

RTW GmbH & Co.KG, Cologne

Date and signature of the responsible person:

2013-07-11

on behalf of RTW 

RoHS Declaration of Conformity for TM9 | Directive 2011/65/EU

We, RTW GmbH & Co.KG, Am Wassermann 25, 50829 Köln, Germany, declare under sole responsibility that the products of the

RTW TouchMonitor TM9 Series

consisting of the components:

- 20900 (TM9 main unit in a table-top frame)
- 20900OEM (TM9 main unit, OEM)
- HW20911 (Audio interface: analog/digital AES3)
- HW20912 (Audio interface: analog/digital AES3id)
- HW20913 (Audio interface: digital AES3)
- HW20914 (Audio interface: digital AES3id)
- HW20915 (Audio interface: analog)
- HW20930 (Audio interface: 3G-SDI)
- HW20930UPG (Retrofittable Audio interface: 3G-SDI)
- TM9-MADT (Mounting adapter: OEM in table-top frame)
- 1167 (Snake cable, 25p. Sub-D/4 x XLR-F/M each)
- 1168-R (Power supply 100 - 240 V AC/24 V DC, 2.7 A)
- 1186 (Snake cable, 4 m, 25p. Sub-D/8 x XLR-F)

meet the intend of the Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment of the European Parliament and Council from June 8th, 2011.

Tested and documented by the following companies:

RTW GmbH & Co.KG, Cologne

Date and signature of the responsible person:

2013-07-11

on behalf of RTW 

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Licenses of the Implemented Software

In addition to the hardware the RTW TouchMonitor 7“ and 9“ Series products also include a software package for which a variety of licenses apply:

A. Software produced by RTW GmbH & Co.KG, which may only be used for the proper operation of the product as described in the documentation (application, DSP programs, boot loader). This software is the property of RTW GmbH & Co.KG and is protected by German and international copyrights.

B. Open source software, released under the GPL (General Public License) of the Free Software Foundation (FSF):

   1. Linux Kernel
   2. TinyLogin
   3. Busy Box
   4. MTDTools
   5. GDBServer

The GPL is located at http://www.gnu.org/licenses/gpl.html.
Only the original English version is legally binding, however.

C. Software, released under the LGPL (Lesser General Public License) of the Free Software Foundation (FSF):

   Qt® library of Nokia Corporation

   The LGPL is located at http://www.gnu.org/licences/lgpl-2.1.html.
   Qt® is registered trademark (brand) of Nokia Corporation, Finland.

D. Software, released under the license of the OpenSSL Project:
   „This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)“

   This license is located at http://www.openssl.org/source/license.html.

Some changes have been made to the software packages as listed under B. On request you can have the source code of the altered software sent to you within three years of purchasing the product.

Cologne, January 2013

Depending on the model the start screen of the TouchMonitor contains an adapted image based on the photography “Cologne_CathedralNight-6.jpg” of Lukasz Kryger, Edingburgh, Scotland. The images fall under the Creative Commons Attribution 2.0 Generic License (http://commons.wikimedia.org/wiki/File:Cologne_CathedralNight-6.jpg, http://creativecommons.org/licenses/by/2.0/deed.en).