Jungheinrich WMT

WMT110 / WMT115
Manual
Inhaltsverzeichnis

1. Change History ................................................................. 4

2. Comments ........................................................................ 5
   2.1 General Comments ......................................................... 5
   2.2 Manufacturer ............................................................... 5
   2.3 Data, Images, Changes .................................................. 5
   2.4 Trademark .................................................................... 5
   2.5 Copyright .................................................................... 5

3. Handling ............................................................................. 6
   3.1 Users ............................................................................. 6
      3.1.1 Windows Embedded Standard 7 .................................. 6
      3.1.2 User: “User” .......................................................... 6
      3.1.3 User: “Admin” ...................................................... 6
   3.2 Front Buttons (default) .................................................... 7

4. Configuration ..................................................................... 8
   4.1 Jungheinrich WMT Setup Wizard ...................................... 8
   4.2 WMT Configuration Center ............................................. 9
      4.2.1 System Information ................................................... 10
      4.2.2 USB Lock ............................................................. 10
      4.2.3 Front Buttons ......................................................... 11
      4.2.4 On-Screen Keyboard ............................................... 12
      4.2.5 Serial Port Wedge ................................................... 13
      4.2.6 File-Based Write Filter (FBWF) / Unified Write Filter (UWF) .................................................. 14
      4.2.7 Volume and Brightness ............................................. 16
      4.2.8 Ignition Key .......................................................... 17
      4.2.9 Power Button ......................................................... 19
   4.3 Configuration deviations from Windows Standard .............. 20
   4.4 Windows Updates (valid for Windows 10) ......................... 20
   4.5 Preinstalled 3rd-Party-Software ...................................... 20
      4.5.1 Elo Touchscreen (resistive displays) .......................... 20
      4.5.2 eGalax Touchscreen (capacitive displays) .................. 21
      4.5.3 Wavelink Telnet Client ............................................ 21

5. BIOS .................................................................................. 23
   5.1 Navigation in BIOS ....................................................... 23
      5.1.1 Enable / Disalbe interfaces ..................................... 24

6. Reinstall / Backup & Clone / Restore .................................. 25
   6.1 WMT USB Creator ......................................................... 26
      6.1.1 Requirements: ...................................................... 26
      6.1.2 Creating an Install USB stick: .................................. 26
6.1.3 Boot from Install USB stick ................................................................. 28
6.2 Create a Device Image Backup .............................................................. 29
6.3 Reinstall / Restore System from Backup ............................................... 31
6.4 Creation of a Clone Master Image ........................................................ 32

7. WMT Operating System ..................................................................... 36

8. Elo Touchscreen – Calibration (resistive Touch) ............................. 38
# 1. Change History

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.12.2016</td>
<td>• First Version</td>
<td>0.9</td>
</tr>
<tr>
<td>20.03.2017</td>
<td>• Release 1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>27.03.2017</td>
<td>• Change Nomenclature / Screenshots</td>
<td>1.1</td>
</tr>
<tr>
<td>07.11.2017</td>
<td>• Roundup according to german version 1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>10.09.2018</td>
<td>• Adaptations for SparkLAN Refresh</td>
<td>1.4</td>
</tr>
<tr>
<td>02.06.2019</td>
<td>• Update for Windows 10 2019 LTSC</td>
<td>1.5</td>
</tr>
</tbody>
</table>
2. Comments

2.1 General Comments

This manual is about administration and usage of the Jungheinrich WMT series 110/115. You can find further information for mounting, cabling and safety-relevant aspects in the separate available quick installation guide. The original version of this manual is in German. Every non-german version of this manual is a translation.

2.2 Manufacturer

Manufacturer of this product is the Jungheinrich AG, in the following called Jungheinrich.

2.3 Data, Images, Changes

All data, images and changes have been created to the best of one’s knowledge and belief. There is no assurance for any specification. There is no guarantee for integrity and topicality. Subject to change without prior notice.

2.4 Trademark

All mentioned (soft-/hardware, brands) descriptions are protected by the general trademark right. Other used foreign brand names are acknowledged. Jungheinrich reserves the right to assert all rights in the event of a breach of the trademark rights.

2.5 Copyright

This manual is protected by copyright. All entiteld users can use this document as part of the purpose regarding the contract. Every change in usage or recycling of the supplied contents, especially multiplication, changes or publication needs to be approved by Jungheinrich. Jungheinrich reserves the right to assert rights concerning events of a breach of the copyright.

The copyright of this manual belongs to JUNGHEINRICH AG.

Jungheinrich Aktiengesellschaft
Friedrich-Ebert-Damm 129 - 22047 Hamburg - Deutschland
Telefon: +49 (0) 40/6948-0 - www.jungheinrich.com
3. Handling

3.1 Users

3.1.1 Windows Embedded Standard 7

If the terminal was started for the first time it will straight come up with the onboard administrator user „Admin” and start with the „4.1 WMT Setup Wizard”. As long as the „WMT Setup Wizard” hasn’t been completed once the WMT will boot with the „Admin” user every time.

3.1.2 User: “User”

Loginname: User
User Group: Users
Password: user

Note

Change Autologon User:
To change the „autologon user” i.e after an Active-Directory domain integration, the changes need to be configured by the following registry options:

<table>
<thead>
<tr>
<th>Registry-Path</th>
<th>[HKLM\Software\Microsoft\Windows NT\CurrentVersion\winlogon]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Typ</td>
</tr>
<tr>
<td>AutoAdminLogon</td>
<td>REG_SZ</td>
</tr>
<tr>
<td>DefaultUserName</td>
<td>REG_SZ</td>
</tr>
<tr>
<td>DefaultPassword</td>
<td>REG_SZ</td>
</tr>
<tr>
<td>DefaultDomainName</td>
<td>REG_SZ</td>
</tr>
</tbody>
</table>

3.1.3 User: “Admin”

For any changes regarding the configuration please use the „Admin” user:

Loginname: Admin
User Group: Administrators
Password: jhwmt

When the USB barcode scanner is connected, the default password can also be entered using the following barcode (Barcode type: Code 128):
3.2 Front Buttons (default)

By default, the front buttons of the WMT are assigned to the following presets:

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Power" /></td>
<td>On / Off button. Operating System will shut down or start. Power supply will not be disconnected</td>
</tr>
<tr>
<td><img src="image" alt="FN" /></td>
<td>Toggle key for the second keyboard layer. Press and hold, then use the function keys.</td>
</tr>
<tr>
<td><img src="image" alt="Cancel" /></td>
<td>Layer 1: Cancel (ESC) Layer 2: Decrease display brightness</td>
</tr>
<tr>
<td><img src="image" alt="Navigation Up" /></td>
<td>Layer 1: Navigation upwards Layer 2: Increase display brightness</td>
</tr>
<tr>
<td><img src="image" alt="Navigation Down" /></td>
<td>Layer 1: Navigation downwards Layer 2: Decrease volume</td>
</tr>
<tr>
<td><img src="image" alt="Accept" /></td>
<td>Layer 1: Accept (Enter) Ebene 2: Increase volume</td>
</tr>
</tbody>
</table>

All buttons are individually configurable, except “FN” and the ON / OFF button.

**Note**

The front button configuration in the operating system differs from the one in BIOS setup. Please refer to chapter 5 BIOS.
4. Configuration

The following chapter explains the necessary steps for setting up the WMT as well as other individual software configurations.

4.1 Jungheinrich WMT Setup Wizard

Jungheinrichs WMT Setup-Wizard can be used to set up the WMT and starts automatically at the first boot. The „WMT Setup Wizard“ can set up the following configurations.

- Language and region
- Date, time and timezone
- Computer name
- Network configuration (TCP/IPv4)
- WLAN profiles

The Setup Wizard will always be restarted until it has been completed once.

It is possible to start the „WMT Setup Wizard“ later on by using the following path: “C:\Program Files\Jungheinrich\Setup Assistant\setupass.exe”

**Note**

A system reboot is necessary to complete the device configuration.
Note

The WMT Setup Wizard supports preconfiguring the following WLAN profiles: WEP or WPA / WPA2 encryption with a Pre-Shared-Key (PSK) authentication. WLAN-Profiles using EAP-authentication must be configured manually by using the Windows network configuration center.

4.2 WMT Configuration Center

Differences between WMT Configuration Center and WMT Info Center:

The “WMT Configuration Center” is necessary for device specific configurations. Please look for the desktop icon to start the application. Administrator rights are needed. Further explanation is given in the following chapter.

The “WMT Info Center” is able to display system information. Please look for the desktop icon to start the application. No device configuration changes can be made.
4.2.1 System Information
Displays system specific information:

- Computer name
- Device type
- Serial number
- Feature number
- BIOS version
- Firmware version
- Image version
- Network information
- Hardware equipment

Screen “WMT Configuration Center” and "WMT Info-Center" are equal.

4.2.2 USB Lock
Tool to disable USB ports.

Note
Only data traffic is blocked. Charging of USB devices is still possible. For a complete lock of the front USB ports please go to the BIOS menu.
To disable a USB port activate the checkbox of the appropriate USB port and save your changes by clicking on the floppy disk symbol in the upper right hand corner.

4.2.3 Front Buttons

Allows user specific configurations of the front buttons underneath the display. (default config look at 3.2)
Changing Button Assignment:

1. Select required front button and click on change.

![Front Button Configuration](image)

2. Choose an action.

![Change Button](image)

3. Follow the instructions of the wizard then click on the disk symbol. The changes will now affect the front button.

The front button configuration is saved under the following registry path:

"[HKEY_LOCAL_MACHINE\SOFTWARE\Jungheinrich\FkCommProxy]"

4.2.4 On-Screen Keyboard

Beside Windows On-Screen-Keyboard (osk.exe) there is another preinstalled keyboard available for the WMT. This keyboard can be configured further and its icon can be found on the taskbar.
Standard layout On-Screen-Keyboard:

The „Configuration Center” enables the following setups:

- Input language / keyboard layout (alphanumeric / numeric)
- Display (colour / transparency)
- Automatic fade out after inactivity timeout (in seconds)
- Enable key combination
- Lock control keys

4.2.5 Serial Port Wedge

By using the „Serial Port Wedge” tool it is possible to interpret data traffic from a COM port as keyboard input. Optionally, a Pre-resp. Postcode can be configured. Application example: Barcode scanner with serial connector.
How to configure Serial Port Wedge:
1. Select the appropriate COM port
2. Enable the checkbox „Enable port for Serial Wedge”
3. Configure the transmission settings according to the requirements of your serial device
4. Optional: Configure a Precode (inserted before entry)
5. Optional: Configure a Postcode (inserted after entry)
6. Save config with disk symbol

Note
Only one process can use a COM portbe at a time.

4.2.6 File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.

File-Based Write Filter (FBWF) / Unified Write Filter (UWF)

FBWF (Windows 7 Embedded) / UWF (Windows 10 IoT) is a Microsoft driver that saves all I/O operations and redirects them to a special storage cache. By rebooting the operating system on the WMT all savings and changes will be deleted. For permanent savings it is needed to disable the FBWF/UWF. Switch dropdown to „disable” then click on save and restart the WMT.

Exceptions causing loss of savings / changes are possible by choosing a folder which will not get affected by the FBWF. By default is „C:\DATA” not affected. For adding a new / additional folder or file click on „Add folder” / „Add file”.
It is recommended to enable the FBWF/UWF to avoid unintended changes to the system.

Note
All changes according to FBWF/UWF will affect after restarting the WMT.

For Windows 7 the current FBWF status is permanently visible on the desktop background, for Windows 10 only an active UWF state is displayed.
4.2.7 Volume and Brightness

Allows regulation of display brightness and sound volume. Optionally, an automatic brightness control can be activated. The brightness sensor is mounted above the power LED. „Switching threshold” indicates the brightness sensor value, which triggers switching between „Night mode” and „Day Mode”.

„Night mode brightness“- as well as „Day mode brightness“ - value indicates how many percent of the maximum display brightness is used.

Default values:

- Switching threshold: 20
- Night mode brightness: 20 %
- Day mode brightness: 100%
4.2.8 Ignition Key

The WMT is able to be turned on/off or its screen to be blocked via an additional signal input, the so called Ignition key. This function is intended for securing the device from unauthorized access and as well for saving energy on all battery operated vehicles or other mobile usage sites (see Device install guide).

Activate Ignition Key functionality

Enables Ignition Key feature. If no ignition voltage is supplied to the WMT, the device will carry on with the configured action under “Action:” i.e. Block screen

Note

If there is no ignition voltage on the WMT, the WMT can be rendered unusable by activating the Ignition function, since the WMT is immediately blocked or shut down depending on the configuration.

Invert activation logic

Changes logic for the execution of the Ignition Key function. Performs the function selected under “Action” only if the ignition voltage is applied to the WMT

Ignore initial ignition signal state (edge triggering)

If a (low) voltage is already present on the ignition pin when the forklift is still switched off, the WMT ignores it if the option is activated accordingly. Only a voltage edge will trigger a state change (start or stop).
Show text
Possibility of individual text display if Ignition function is executed

Block screen: Locks / protects screen

Block screen and power off backlight: Locks / protects screen and switches display off

Lock workstation: Locks current user session

Shutdown: WMT will shutdown

Sleep: WMT will go to sleep mode

Timeout in seconds: Specifies the timespan in seconds until the specified action is performed

Background color: Specifies background colour

Background color transparency (%): Specifies transparency of background colour

Text Color: Specifies font colour

Text Color transparency (%): Transparency of font colour

Font family: Font type

Font point size: Font size

Image file: Possibility to display an image file

Thumbnail: Shows selected image under image file

Image alignment: Defines image position
4.2.9  Power Button
Adjusts the behavior when pressing the power button

Use Power-On delay
Specifies the time in seconds that the power button must be pressed to turn on the WMT.

Use power button to turn the device off
If the power button is pressed during operation, the WMT switches off.

Use Power-Off delay
Specifies the delay after which the selected action is performed.

Note
If the power button is pressed for more than 5 seconds, the WMT is switched off (not shut down) independently of the configuration. These settings are stored permanently in the system controller of the device. A change of the power options in the operating system concerning the power button has no influence on the behavior.
4.3 Configuration deviations from Windows Standard

Deviations from Windows Standard configuration:

- Windows Remote Desktop (RDP) connections are enabled for both accounts „Admin“ and „User“.
- Automatic Windows updates are disabled and their installation can only be triggered manually.
- Windows Action-Center messages are disabled.
- Windows Firewall is disabled for network locations home or business as well as public.
- Auto-Play options are disabled.
- Display of file extensions has been activated.
- Energy settings are adjusted for long term usage.
- Internet-Explorer standard home page is changed to: [https://support-rdt.jungheinrich.com/support/](https://support-rdt.jungheinrich.com/support/)
- All icons and symbols are displayed all the time in the system tray.

4.4 Windows Updates (valid for Windows 10)

For both Windows 10 versions (2016 LTSB and 2019 LTSC), Windows updates are deactivated in the delivery state. It is recommended to install the monthly updates (also for use in isolated networks with activated write protection).

To do this, the write protection must be deactivated and then manually searched for updates via "Windows Update"; then the write protection can be reactivated.

4.5 Preinstalled 3rd-Party-Software

Following 3rd party software is included in the WMT1XX image:

<table>
<thead>
<tr>
<th>Product</th>
<th>Manufacturer</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sumatra PDF</td>
<td>Krzysztof Kowalczyk</td>
<td>PDF Viewer</td>
</tr>
<tr>
<td>UNEX driver</td>
<td>Qualcomm-Atheros</td>
<td>WiFi network driver + configuration</td>
</tr>
<tr>
<td>BGInfo</td>
<td>Sysinternals</td>
<td>Display Write Protection Status</td>
</tr>
<tr>
<td>Elo Touchscreen driver</td>
<td>Elo Touch Solutions</td>
<td>Touchscreen configuration</td>
</tr>
<tr>
<td>Intel Wireless driver</td>
<td>Intel</td>
<td>WiFi network driver + configuration</td>
</tr>
<tr>
<td>Microsoft .Net Core 2.2.5</td>
<td>Microsoft</td>
<td>.Net Core Laufzeitumgebung</td>
</tr>
<tr>
<td>SparkLAN driver</td>
<td>Qualcomm-Atheros</td>
<td>WiFi network driver + configuration</td>
</tr>
<tr>
<td>Wavelink Telnet Client</td>
<td>LANDesk Software</td>
<td>Telnet connections</td>
</tr>
</tbody>
</table>

4.5.1 Elo Touchscreen (resistive displays)

The software is used to configure the resistive touch screen and can be accessed via the system control panel. Depending on the operating system (WES7 or W10IoT) two
different drivers are in use. In the following the left pictures refer to WES7 and the right pictures to W10IoT:

The following functions are available:
- Handling touch control
- Define double click behaviour
- Define acoustical touch feedback
- Perform the calibration
- Disable touch function

In the calibration mode “normal”, a 3-point calibration is performed. In the “enhanced” mode, a more precise, 29-point calibration is performed.

---

**Note**

Under Windows 10 the multitouch driver is pre-installed, under Windows 7 the singletouch driver (mouse emulation). In contrast to Windows 7, Windows 10 offers much better support for touch inputs, hence the choice of this driver. The 29-point calibration is only available for the Singletouch driver. Thus, should the mouse emulation be necessary or an insufficient pointing accuracy occur, the use of the Singletouch driver and the 29-point calibration is recommended.

4.5.2 eGalex Touchscreen (capacitive displays)

The capacitive touchscreens are controlled and configured both under WES7 and W10IoT with the driver integrated in Windows (accessible via system control - pen and finger input). The calibration of the touch screen can also be reached via the system control.

4.5.3 Wavelink Telnet Client

Wavelink Telnet Client is one of the leading emulation clients to display emulation connections to host servers with VT, 5250, 3270, and HP connection protocols. The
client is pre-installed on every Jungheinrich WMT11X-WMT. Wavelink can be started by default from the Start menu or via the following path:

“C:\Program Files\Wavelink\Telnet\TelnetWin\TelnetWin.exe”

**HINWEIS**

The Wavelink client can be used for testing and demonstration purposes for one hour without restrictions. For full use, the client must be licensed. After one hour, all connections are disconnected and the client must be restarted. Wavelink licenses can be obtained via Jungheinrich.

For more information, as well as the Wavelink Telnet client user guide, please refer to the manufacturer’s web page.
5. BIOS

**Note**
By default, the BIOS setup menu, as well as the BIOS One-Time boot menu, is protected with the default BIOS administrator password “jhwmt”.

When a USB barcode scanner is connected, the standard password can also be scanned using the following bar code (barcode type: code 128):

![Barcode](http://example.com/barcode.png)

To start the BIOS menu, please press the Delete / Return key (external keyboard) directly after switching on the WMT.

The one-time boot menu can be opened via the ESC key (external keyboard) or via the “X” front button when the Jungheinrich boot logo is displayed:

„Enter Setup” starts the BIOS setup menu.

5.1 **Navigation in BIOS**

**HINWEIS**
The front key assignment differs in the BIOS from that in the operating system.

| FN | Layer 1: Change the tabs to the left  
|    | Layer 2: No function  
|    | Layer 1: Navigate upwards  
|    | Layer 2: Cancel the respective action (ESC)  
|    | Layer 1: Shift key (SHIFT) for the second key level. Keep holding the button and then the corresponding function key can be pressed.  
|    | Layer 1:  
|    | Layer 2:  

23 v1.6 08.10.2019
Layer 1: Navigate downwards
Layer 2: Change the tabs to the right

Layer 1: Confirm the action
Layer 2: No function

5.1.1 Enable / Disalbe interfaces

**BIOS-Menu: Advanced & Chipset**
Enables the configuration of performance, hardware and interface properties. The settings are factory-set to the Jungheinrich WMT 11X and should only be changed by experienced staff. Via the following menu path, selected interfaces can be activated / deactivated:

<table>
<thead>
<tr>
<th>Interface</th>
<th>Path</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>PXE-Boot</td>
<td>Advanced → System Settings → PXE ROM</td>
<td>Disabled</td>
</tr>
<tr>
<td></td>
<td>Or: Advanced → Network Stack Configuration</td>
<td></td>
</tr>
<tr>
<td>Front USB</td>
<td>Advanced → System Settings → Front USB</td>
<td>Enabled</td>
</tr>
<tr>
<td>Bluetooth®-Modul</td>
<td>Advanced → System Settings → Bluetooth</td>
<td>Enabled</td>
</tr>
<tr>
<td>WLAN-Card</td>
<td>Advanced → System Settings → EC-Firmware Configuration → EC-Firmware Device Enables → WLAN</td>
<td>Enabled</td>
</tr>
<tr>
<td>Audio-Card</td>
<td>Chipset → South Bridge → Azalia HD Audio → Audio Controller</td>
<td>Enabled</td>
</tr>
</tbody>
</table>
6. Reinstall / Backup & Clone / Restore

The following chapters describe the installation, the creation of a WMT backup and the restoration of a backup (restore).

- Installation / Restore
  During the new installation or a restore, the WMT is reset to factory defaults or to a backup level

- Backup
  A backup of the WMT and can be restored in the event of an error or the configuration of a new WMT. Two different types of backups are distinguished:

  o Clone Master Image:
    A clone master image represents a backup of an already configured WMT, which can be played back on any number of Jungheinrich WMTs. It is needed to reconfigure the following settings manually:
    (Setup Wizard)
    - Network configuration (LAN, WiFi)
    - Device name
    - Language / Keyboard input / Current location

  o Device Backup Image:
    A device backup image represents a 1:1 backup of a WMT, which can only be restored to the same WMT (same serial number). A device backup image must not be restored on multiple WMTs. To restore a backup to multiple WMTs, please use the Clone Master Image.

---

Note

For a new installation as well as a "backup" and "restore", the creation of an installation USB stick required
6.1 WMT USB Creator

6.1.1 Requirements:

- USB-Stick with 16 GB memory
- Administrative privileges

**Note**
The size of the USB stick depends on the memory space occupied by the WMT or the size of the backup image file (.wim). For a new installation, a USB stick with a size of 16 GB is sufficient. For creating a backup image, eventually more space is needed.

- PC with Windows 7 (or higher)
- Bootable USB Wizard for creating an install USB stick:
  Download the latest „Bootable USB Creator“ from:
  [https://support-rdt.jungheinrich.com/support/](https://support-rdt.jungheinrich.com/support/)

**Note**
Execute the „Bootable USB Creator“ from a local filesystem on your computer and not from a network attached storage.

6.1.2 Creating an Install USB stick:

Download latest „Bootable USB Creator“ and extract the compressed file. Then start „bootusbcreator.exe“ with administrative privileges.
Commit the „Welcome Page” with „Next“.

Connect the USB stick to the computer and select the USB stick from the drop-down menu. Then select the image file to be installed on the WMT. If only a „Device image backup” is to be performed, set the checkbox to “Do not want to copy a image file to the flash drive”. To reset the WMT to factory settings, download the latest image from http://www.support-rdt.jungheinrich.com.

![Bootable USB Wizard](image)

Select the USB memory stick that should be used as terminals boot device during installation phase. That device will be setup as a Windows boot medium. All data will be removed. USB flash drive with at least 7 GB is required.

Note: USB sticks with a less capacity than 7 GB are not listed.

The image will be copied onto USB boot device.

Image file:

Don’t want to copy a image file to the flash drive.

Make bootable only (use for backup mode)

![Clone Wizard](image)

Continue with “Next” and check the settings before you finish the process with “Finish”. The USB stick is then formatted and prepared for installation.

**Note**

All data on the USB stick will be deleted after confirming the “Finish” button and can not be restored.
6.1.3 Boot from Install USB stick

Before switching on the WMT, connect the installation USB stick to one of the USB ports. Switch on the WMT and start the one-time boot menu with the “ESC” button (see chapter 5 BIOS) and select the USB stick. The admin password is required, so a USB-Keyboard is required.

**Note**

At the time of the new installation, only the boot USB stick should be connected to the WMT. Do not use a USB hub, but connect the boot USB stick directly to one of the available USB ports.

The WMT loads the setup files from the USB stick and starts the “Backup and Restore System” tool. Continue with the desired installation.

The “Create System Backup” and “Restore System from Backup” options are dealt with in the following chapters.

**Command Prompt**

Opens a command line window. This option is only required for troubleshooting purposes.

**Shutdown**

WMT will shutdown
Restart
WMT will restart

6.2 Create a Device Image Backup

Create an installation USB stick and boot from it (see previous chapter). Select “Create System Backup” from “Backup and Restore System”.

Requirements for a Device Image Backup:
- Prepared installation USB flash drive without operating system
- Enough space on the USB stick depending on the occupied memory space on the WMT
- Deactivated Write Filter (FBWF or UWF)
- No additional language packs must have been installed under Windows 10, otherwise the clone process will fail.

Note
Note that this is not a Clone Master Image Backup. The creation of a Clone Master Image is discussed in the following chapter. A device image backup represents a backup of a WMT and can only be restored on the same device. (same serial number).

Note
Note that the “File Based Write Filter” resp. “Unified File Writer” must be deactivated before performing a backup. In case of non-compliance, a faulty backup is created.
A command line window opens which automatically executes the backup. The progress is displayed during the backup. After completion, the WMT is automatically restarted and booted from the internal memory card.

The backup is stored on the USB stick under “X: \ images \ install.wim” where X: is the drive letter of the USB stick. To restore the backup, select this image file during the installation of the installation USB flash drive. (See previous chapter)
6.3 Reinstall / Restore System from Backup

The Backup Image which was selected in the Wizard will be restored to the WMT (See previous chapter).

When pressing the „Restore System From Backup“ button, a command line window opens automatically, which performs the new installation of the WMT. The progress is displayed during installation.
After completion, the WMT will restart automatically and boots from the local storage of the WMT.
### 6.4 Creation of a Clone Master Image

A Clone Master Image is a backup of an already configured WMT (including all settings and installed applications), which can be restored to any number of Jungheinrich WMT. To restore the backup to several WMTs, some device-specific settings are removed during the Clone process, e.g. Computer name, IP configuration. These settings must be performed manually after the clone process has been completed.

**Requirements:**
- Administrative privileges
- Disabled File-Based Write Filter (FBWF) resp. Unified Write Filter (UWF)
- USB-Stick with at least 8 GB – Depending on the size of the occupied storage on the WMT
- No additional language packs must have been installed under Windows 10, otherwise the clone process will fail.

The “Clone Master Image” is created using the “Clone Wizard”. It can be started via the link on the desktop or in the start menu of the “Admin” user or via the following path: „C:\Program Files\Jungheinrich\Clone Assistant\cloneass.exe”

With enabled FBWF resp. UWF the following message appears:

If you confirm this with “Yes”, the WMT is automatically restarted and the Write Filter is deactivated. If you want to disable the FBWF/UWF manually and restart the WMT select “No”. Then restart the Clone Wizard to continue with the Clone Master Image.
Choose an appropriate name for the backup file and connect a USB stick (8GB or more).
Note
The size of the USB stick depends on the memory space occupied by the WMT and can be larger depending on the storage space requirement.

Note
Note that only one USB storage device may be connected to the WMT during the Clone process.

Note
The “Next” button is only available if all conditions are met.

If all conditions are fulfilled, continue with “Next”.

Select the language and regional settings for the Clone master image and confirm with “Next”. To save disk space, the “Other languages shall be removed” option can be used to exclude unneeded languages from the backup.
Read the overview page carefully and then start the Clone process with “Finish”.

**Note**
All data on the USB stick will be deleted and can not be restored.

The WMT automatically restarts and boots the “Jungheinrich Backup and Recovery System”, which automatically performs the backup of the Clone master image. After completion of the Clone master backup the WMT is automatically restarted and booted from the internal memory card.
The master clone image is created under “X:\images\WMT1XX-WS7P - << filename >>. Wim” where << filename >> corresponds to the previously entered name and “X:” is the drive letter of the USB stick.

To restore the image, use this file when creating the USB installation stick (see previous chapter).
7. WMT Operating System

WMT 110 / WMT115

Explanation:

All Jungheinrich WMTs have a feature number on the back. This number can be used to draw conclusions on the preinstalled operating system. An embedded operating system (WES7, Windows 10 IoT) installed on a WMT contains a customized Jungheinrich image with additional software.

<table>
<thead>
<tr>
<th>Feature-Nummer</th>
<th>OS and driver</th>
<th>Partitions-Scheme</th>
<th>Storage</th>
<th>Install process</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMT11x-xxxxxxxxxxSx</td>
<td>Windows Embedded Standard 7 (32 bit)</td>
<td>Yes</td>
<td>1 Partition</td>
<td>10 GB</td>
</tr>
<tr>
<td>WMT11x-xxxxxxxxxx7x</td>
<td>Windows 7 Ultimate</td>
<td>No</td>
<td>Self scalable</td>
<td>16 GB (32 bit) und 20 GB (64 bit)</td>
</tr>
<tr>
<td>WMT11x-xxxxxxxxxxEx</td>
<td>Windows 10 IoT Enterprise</td>
<td>Yes</td>
<td>1 Partition</td>
<td>15 GB</td>
</tr>
</tbody>
</table>

Note: Only the pre-licensed operating system may be used. If a customer wants to run a different operating system that deviates from the pre-licensed operating system, the customer is responsible for a valid license. The license sticker can be viewed in the service bay.

What is the difference between the Windows Embedded operating system and a “full” Windows operating system?
The Windows Embedded operating system is designed for industrial use and provides additional features for example, the write protection function or special driver handling. Manufacturers of so-called embedded devices can select in detail the software components which are to be included in the operating system image. This allows hardware manufacturers of microPC’s that have limited storage capacity to fine-tune your operating system to the hardware without installing unnecessary software components while benefiting from lower licensing costs. Jungheinrich has decided to install almost all the features for the WMT110 / WMT 115, thus providing an operating system that is comparable (or nearly identical) to a “full” Windows operating system. The following list gives an overview of the included software components.

Included Software Components in the WMT WES7 Installation Image:

Removed software components in the WMT WES7 installation image:
MSMQ, Sensor and Location Platform, Dialog Box Filter, Hide Boot Screens, Keyboard Filter, Message Box Default Reply, SD Boot, WSDAPI for.Net, Licensed Decoders such as Microsoft DTV-DVD Audio Decoder (MPEG-2, AAC & MPEG-2, H.264), MPEG ayer-3 Audio Codes (MP3), MPEG-2 Audio and Video Encoder, MPEG-4 Decoders, Windows Media Video Codecs (VC-1), Parental Control, Media Center, Telnet Server, AntiMalware, Bitlocker Secure Startup, TPM Management, DVD Maker, Microsoft Speech API
Windows 10 IoT vs Windows Embedded Standard 7:

In comparison to Windows Embedded Standard 7, Windows 10 IoT Enterprise is not a component-reduced operating system. It contains all the components as the standard Windows 10 LTSB.

Additional Software components included in WMT Win 10 IoT Enterprise


WMT Win 10 IoT Enterprise deviates from WMT 10 Enterprise (component not included or disabled):
Cortana (Windows Assistant); Windows Store; Windows Edge (Browser) Windows Updates (disabled) Allow edge swipe (disabled)
8. Elo Touchscreen – Calibration (resistive Touch)

WMTs, which are delivered with a resistive touchscreen, use an external driver to allow use of the touchscreen. In this case, the WMT must be manually calibrated. Affected WMTs can be identified by the following feature number:

WMT11x-xRxxxxxxxxxx

**Note**

All resistive devices are calibrated before initial delivery and must be recalibrated only after a clone operation or a new installation.

This does not apply to WMTs running the Windows 7 Ultimate operating system. Devices with this operating system must be manually calibrated after initial commissioning.

The following steps describe the manual touchscreen calibration:

1. Open the Control Panel:
2. Go to the “small icons” view and select the “Elo Touchscreen” entry:

![Image of Control Panel with Elo Touchscreen selected in small icons view]

3. Select the desired calibration mode and start by clicking the button “Align”

![Image of Elo Touchscreen Control Panel with Align button highlighted]

- Video alignment enables the computer to convert touchscreen coordinates into image coordinates.
- Align the touchscreen whenever you:
  - Initially install the touchscreen drivers.
  - Change the touchscreen or touchscreen hardware.
  - Notice the cursor isn’t lined up with your finger.
- Calibration mode:
  - Normal
  - Enhanced