Rugged Industrial PC
JLT8404
Manual

Note! ──

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by JLT Mobile Computers could void the user's authority to operate the equipment.

Content

General

Rugged Industrial PC

--- **Note!** ---

This User Manual cover the use of a Rugged Industrial PC with Microsoft Windows operating system installed, but other operating systems can also be used. Please contact your supplier for further information.

The JLT8404 Rugged Industrial PC is a compact high performance, low weight rugged Tablet PC designed for fieldwork. The Rugged Industrial PC can withstand severe environmental conditions including vibration, shock, moisture and temperature variations.

The Rugged Industrial PC is suitable for use in harsh environments such as construction sites, warehousing, defense, manufacturing and field service.

The Rugged Industrial PC is delivered with a battery and an AC adapter.

1. Rugged Industrial PC
2. AC adapter

Features

- USB
- Docking Connector with Power and USB
- Function buttons
- Lithium/Ion Battery 5200 mAh, hotswap

Accessories

1. Vehicle docking (not in picture)
2. AC/DC Adaptor
3. DC/DC Adaptor (not in picture)
4. Battery charger
5. Port replicator (not in picture)
6. Desk mount (not in picture)

Function buttons

	Function	+ Shift function
⏻	Power on/off	
🔒	Ctrl-Alt-Delete	
↵	Enter	Escape
↑	Arrow up	Increase brightness
→	Arrow right	Tab
←	Arrow left	Shift+Tab
↓	Arrow down	Decrease brightness
Fn	Fn	Reset Fn
F1	Pre-set as Alt-Tab	No pre-setting
F2	Pre-set as Internet Explorer	No pre-setting
F3	Pre-set as E-mail client	No pre-setting

Status indication LEDs

LED	State	Description
Green/ yellow	Continuous green	The Rugged Industrial PC is in full function.
	Flashing green	The Rugged Industrial PC is in standby mode, notice that the touch screen is inactive.
	Continuous yellow	The Rugged Industrial PC is in full function and the Fn key is activated.
	Flashing yellow	The Rugged Industrial PC is in standby mode and the Fn key is activated, notice that the touch screen is inactive.
	Off	Rugged Industrial PC is off or in suspend mode.
Red	Continuous	Battery is charging.
	Flashing	Battery capacity is low.
	Off	The battery is fully charged or no external power is available.

Audio

The Rugged Industrial PC is equipped with a microphone (1) and two loudspeakers (2) integrated in the front panel.

Using the Rugged Industrial PC

This chapter covers information about using the Rugged Industrial PC. The use of the Rugged Industrial PC does not differ from normal PC use.

Turning on the Rugged Industrial PC

To turn on the Rugged Industrial PC press the power on button for one second, see chapter "Function buttons" on page 5. The green power LED lights up.

Shutting down the Rugged Industrial PC

Before shutting down the system, save your work and close all running programs.

To shut down the system press the power button or choose Shut Down from the Start menu.

Reset

If the Rugged Industrial PC is not responding to commands, the system or application may have crashed. To reset the system press the Ctrl-Alt-Delete button described in the chapter "Function buttons" on page 5.

Power settings

To be revised

The Rugged Industrial PC is equipped with an ACPI BIOS which enables the operating system to conserve energy and prolong battery life. For the system to work properly make sure the Power Option Properties have the correct settings according to the steps below.

To access the Power Option Properties:

1. Open the **Control Panel** from the Windows Start menu.
2. Select **Performance and Maintenance**.
3. Select **Power Options**.

Enable Hibernation (Suspend to disk mode):

1. Select the **Hibernate** tab.
2. Place a check mark in the checkbox to enable hibernation.
3. Click **Apply** to save the settings.

— **Note!** —————————————————————————

Hibernation requires sufficient disk space.

Power buttons:

1. Select the **Advanced** tab.
2. Under **When I press the power button on my computer:** select **Ask me what to do** from the drop down list.
3. Under **When I press the sleep button on my computer:** select **Hibernate** (Suspend to Disk mode). If there is not enough disk space for Hibernation select **Shut down**.

— **Note!** —

This action will occur when the battery is running critically low.

4. Click **Apply** to save the settings.
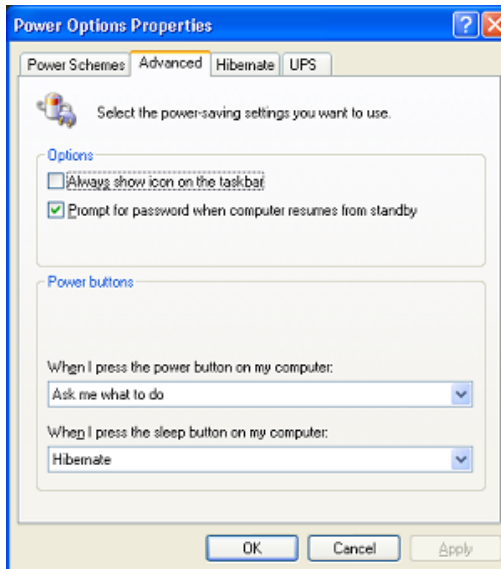
Screen brightness

The screen brightness has 16 brightness levels and can be adjusted for indoor or outdoor use.

To increase or decrease the screen brightness first activate the Fn button, then press the Arrow up or Arrow down buttons on the front.

When the brightness is at the lowest level the backlight will be completely turned off.

Note!

Battery life is dependent of screen brightness. To prolong battery life, lower the screen brightness as much as possible.

Touch screen

The Rugged Industrial PC is equipped with a resistive 4-wire Touch Screen for easy integration, which allows the user to work with gloves.

WARNING!

Do not use sharp objects when operating the touch screen.

Selecting

To select an object on the screen, tap the object once.

Double click

To double click tap the object twice.

Right click

To right click an object, place the pointer over the object. Then press the Shift + Tab button on the front.

Drag object

To drag an object on the screen, press and hold down on the object while dragging it to the new position. Release the object when it is in place.

Calibrate

When used for the first time or when users work in different angles, the touch screen may require calibration.

To calibrate the touch screen do the following:

1. Open the Control Panel from the Windows Start menu.
2. Double-tap the Pointer Devices icon.
3. Select the Calibration tab and click the Calibrate button to start calibration.
4. Follow the instructions on the screen.

To test the new settings click the Test button.

Battery handling

When the Rugged Industrial PC is not connected to external power it runs on battery power.

An internal bridge battery will keep the Rugged Industrial PC running during battery replacement.
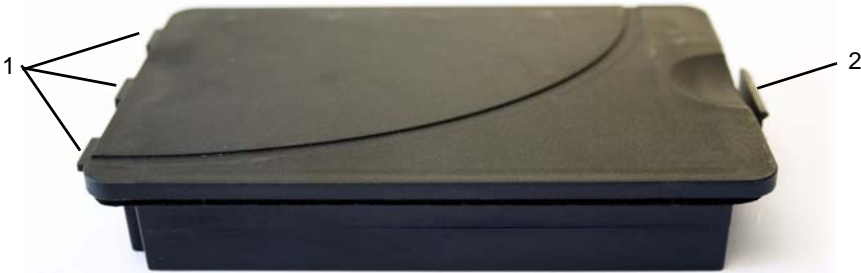
Low-battery warning

The red status LED will start to flash when the Rugged Industrial PC battery is running low. The operating system will also show the Shut Down Windows dialog box.

When the dialog appears select Cancel and continue to work, change the battery or connect to external power. The system will repeat to display the Shut Down Windows dialog every 60-70 seconds.

When the battery is running critically low the system will send a sleep signal to the operating system. This is repeated every 30-40 seconds. The action of the sleep signal is described in the chapter " Power settings" on page 7.

Remove a battery pack

To remove the battery from the Rugged Industrial PC:

1. Turn the Rugged Industrial PC with the backside up.
2. To release the battery press and lift the release latch (2) until the battery slides out from the slot.

Insert a battery pack

To insert a battery pack from the Rugged Industrial PC:

1. Turn the Rugged Industrial PC with the backside up.
2. Slide the three tabs (1) on the battery pack into the three slots in the battery slot.
3. Press the battery pack into the slot until the latch (2) snaps and holds the battery pack in place. The latch (2) may require some additional pressure to snap into place and firmly secure the battery

Charge a battery pack

The battery pack is being charged when the Rugged Industrial PC is connected to any of the specified power sources. The Rugged Industrial PC can charge the battery pack while in use. While the battery is charging, the red LED on the front is lit.

The first time, or after a long time in storage, the Rugged Industrial PC takes up to 12 hours to be fully charged. Normaly the battery is charged in 6 hours.

— **Note!** —

A new battery may require up to five charging cycles until it reaches full capacity.

Conserve battery power

An easy method to prolong battery life is to lower the screen brightness. To adjust the brightness use the function buttons described in the chapter "Function buttons" on page 5.

Bridge battery

The Rugged Industrial PC is equipped with a bridge battery, which is located inside the Rugged Industrial PC. The purpose of the bridge battery is to supply power when the battery pack is replaced and provide power to some components when the Field Tabled PC is turned off.

— **Note!** —

The bridge battery is designed for short-term use only.

The bridge battery is charged when the AC power source is connected. It is also charged with power from the battery pack.

Replacement of hard disc

Tools needed: screwdriver Torx T8 and Torx T10.

1. Unscrew the screw (T8) and remove the upper left corner protector.
2. Unscrew the two screws (T8) and remove the left computer grip.
3. Unscrew the two screws (T10) and remove the lid.
4. Release the lever and remove the hard disc.

Assemble in reverse order.

Replacement of SIM card
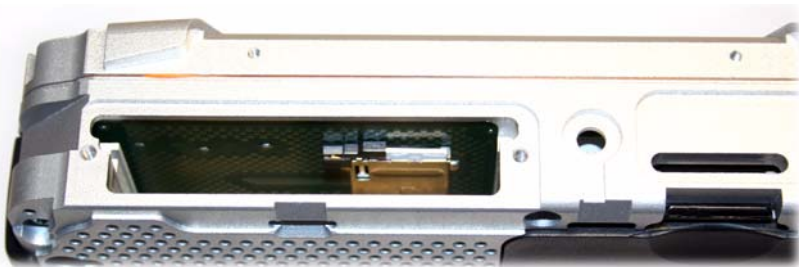
Tools needed: screwdriver Torx T8 and Torx T10.

1. Remove the hard disc, see chapter "Replacement of hard disc".
2. Slide the latch over the SIM card holder to the side.
3. Push down the SIM card and let it spring out from the slot.

Assemble in reverse order.

External device connections

Docking connector

The Docking Connector located at center bottom, is used to connect the different docks available. The Docking Connector is also used to connect the AC power source, only connect JLT approved AC adaptor. The connector offers connection support for power and a second USB device.

⚠️ **Caution!**

The Power connector and the Docking connector must not be used at the same time.

Power connector
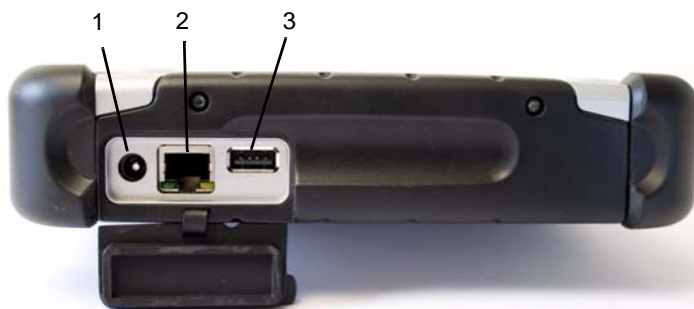
The Power connector (1) is located under the lid on the left side of the Rugged Industrial PC. It is used to connect an external power source to the Rugged Industrial PC.

⚠️ **Caution!**

The Power connector and the Docking connector must not be used at the same time.

Ethernet

The Ethernet connector (2) is located under the lid on the left side of the Rugged Industrial PC. It is used to connect the Rugged Industrial PC to a network.

USB 2.0

The USB connector (3) is located under the lid on the left side of the Rugged Industrial PC. It is used to connect different external devices.

Suspend modes

The operating system makes it possible to suspend system operation of the Rugged Industrial PC without closing programs. The suspend modes is used to conserve battery power.

The Rugged Industrial PC can be configured to suspend operation automatically when inactive.

Standby mode

The use of standby mode can increase operation time up to 8 hours. In standby mode power to unnecessary functions is turned off. It takes approximately 10 seconds for the Rugged Industrial PC to resume operation when in standby mode.

Turn off monitor

By use of the turn off monitor function, operation time can increase up to 3.5 hours. The Rugged Industrial PC resumes operation instantly, from standby mode, when the Power button is pressed.

Note!

Use of touch screen will not resume operation.

Suspend to Disk mode

In the suspend to disk mode, the current data is saved to the disk and the Rugged Industrial PC is powered off. When the Rugged Industrial PC is in suspend to disk mode the battery consumption is the same as in the off state.

Note!

Since the suspend to disk mode stores information on the disk, make sure there is sufficient disk space available.

Resume from suspend mode

To resume from the suspend modes, press the Power button described in the chapter "Function buttons" on page 5.

Maintenance

The Rugged Industrial PC is maintenance-free, except for normal cleaning. All setting, i.e. date and time etc, should be done through the interface of the operating system, just like on any non-rugged PC.

Cleaning

The display/touch screen should be cleaned with glass cleaning agent, made for that purpose.

⚠️ **Caution!**

You must avoid oil on the Touch Screen because it can be difficult to remove.

Keep the Rugged Industrial PC clean and free from dust and dirt by using a soft, lint-free cloth regularly. If available, you can also use compressed air (maximum pressure 2 bar) but some caution is to be observed.

⚠️ **WARNING!**

No sharp objects or tools should be used when cleaning.

Technical specification

Base system

Operating system:	Microsoft Windows XP Pro or XP Embedded
Display:	8.4" colour TFT SVGA 800x600, 320Nits
Processor:	Intel Celeron M ULV 373 1.0 GHz
Chipset:	Intel 855
Memory:	Standard 256 MB (max 1 GB) Note: Up to 32 MB of graphic memory can be reserved for processor usage.
Graphics:	Intel Extreme Graphics 2 with shared memory
Audio:	Built-in loudspeakers, built-in microphone
Pointing device:	High resolution resistive touch screen
Storage:	Up to 2 Compact Flash type II One 2.5" HDD 40 GB or one 2.5" ATA IDE Flash
Interfaces:	Wireless LAN, 802.11 a/b/g Bluetooth 2.0 + EDR, Class 1 One USB 2.0 One RJ45 Ethernet (10/100 Base-T) One DC power connector, Voltage range 9-21 V One docking connector with USB interface and power One internal expansion slot, i.e. for extra communication module One expansion slot for grip-integrated module using USB interface
11 Control buttons with the following functions:	Increase brightness Arrow-Up Decrease brightness Arrow-Down Tab Arrow-Right Shift + Tab Arrow-Left Escape Enter Ctrl-Alt-Delete) Fn (Function) 3 programmable buttons with 2 functions each. 3 functions are pre-defined; Alt-Tab, IE and Mail. 3 functions are free to program for the user.
Battery:	Primary 5300 mAh, 7.5 V (40 Wh), hot swappable
Power Supply:	60 W External Power 18,5V ± 10% Vehicle Dock 9-36 V 65 W (isolated)* AC/DC Power adaptor 115/230 V 50/60 Hz* *Optional accessories

Housing:	Aluminum with shock absorbing handles
Dimensions:	261 mm (w) x 199 mm (h) x 45 mm (d)
Weight:	1.9 kg
Stand-alone Power Requirements:	18,5V ± 10% 40 W (not charging batteries)
Charging Battery Power Requirements:	18,5V ± 10% 20 W (Powered off) 50 W (Powered on) Voltage regulator required for vehicles 9.0 V to 11.0 V unit is powered but not charged
Temperature:	Storage -20°C to 60°C (battery dependent) Operating (from battery) -20°C to 50°C Operating (charging) -10°C to 50°C Non-operating (charging) -20°C to 60°C
Environment:	IP65 with all lids closed
Vibration	5 - 500 Hz/4.5 g RMS 3 hours X Y Z Meets Mil Std 810F-514.4 (with rotating drive - 1.0 g RMS)
Drop test:	3 feet on plywood over concrete, 26 directions (drops)
Option:	Vehicle Docking AC/DC Adaptor GPS W-LAN GSM Port replicator with 2 serial ports and 3 USB connectors

⚠️ **WARNING!**

Storage above 75°C will permanently destroy the batteries.