

# JLT6012™



## **User Manual**

JLT6012™

## **Because it Works!**™

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### First startup

On first startup of a JLT unit with a JLT OS image preloaded, Windows setup starts. During the initial Windows setup the picture will disappear for shorter periods or up to a few minutes, do <u>not</u> turn off or restart the unit, wait for the picture to reappear for the setup to be completed.

Do <u>not</u> shut down the unit until the setup is fully completed, otherwise the operating system may be corrupt or damaged beyond recovery.

If the system already has been damaged or corrupted, a disk restore can be made from a JLT OS image, contact your supplier for information and guidance.

#### Note:

If the unit is supplied without a mounted disk or if the disk needs replacement, see page 5. If the unit is ordered with a non-JLT or customer-specific image, previous instruction may be left.

#### **Touch Screen**

JLT6012<sup>™</sup> is equipped with JLT PowerTouch<sup>™</sup>, Projected Capacitive Touch screen technology. The touch screen is calibrated from factory and needs no further calibration. It has a resistant glass surface that can be cleaned with a damp cloth, ordinary soap or hand-dish washing fluids. Purpose made cleaning fluids may also be used. It's normally operated with fingers, and may also be used with purpose designed styles for PCT or PCAP. A stylus designed for resistive touch screens will not work.

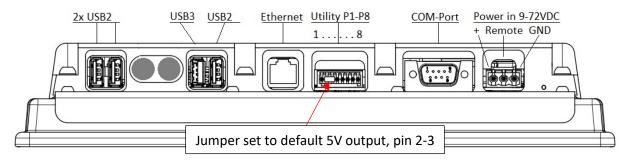
**NOTE:** As the surface is made of glass it will withstand most common substances, but DO NOT use fluids like bleach or any strong alkali cleaning agents such as Sodium or Potassium hydroxide for cleaning as it may etch the glass and leave grey permanent marks. Also avoid strong solvents such as Acetone or paint thinner as it may damage plastic materials, surface treatment of the unit and peripheral devices.

#### **Interfaces**

#### Connectors

#### From left to right:

- USB2.0 USB2.0
- USB3.0 USB2.0
- Ethernet 10/100/1000, RJ45
- Utility Port Pin 1 = 12V/500mA Pin 2 = COM-Port Pin 9 \* Pin 3 = 5V/1A
- COM-Port RS232C, user configurable in utility port for 5V or 12V output on Pin 9 Important:
- \* Picture showing jumper in factory default setting Pin 2-3 = 5V output. Jumper on Pin 1-2 = 12V.
- Power input, 9-72VDC Pin 1 = Positive Pin 2 = Remote On/Off Pin 3 = Power Ground or negative supply.



#### Power cable

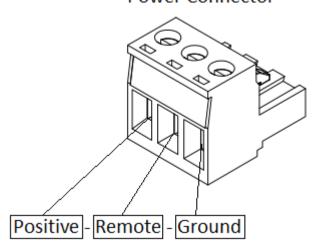
Connect cable as shown in the picture below:

Remote On/Off signal may be connected to a vehicle ignition or power on switch for automatic On/Off control where high is on and low is off.

The power cable must be dimensioned to handle up to 40 Watts, or use cable supplied by JLT. The cable need to have multiple strands for flexibility and withstand the environment.

For 24V supply, recommended 0.75 mm2, AWG 20 or larger.

#### **Power Connector**



Important: <u>DO NOT</u> apply any solder to the cables. It <u>WILL</u> eventually make the connection unreliable and become loose during use with and even without any movement of the unit.

#### **Control Buttons**

There are six control-buttons in the unit

From top to bottom there are:

- 1. Keyboard button F1
- 2. Keyboard button F2
- 3. Keyboard button F3
- 4. Display Brightness increase, +
- 5. Display Brightness decrease, -
- 6. On/Off button \*

Pressing Brightness + and – simultaneously will send a keyboard CTRL-Alt-Delete to the system.

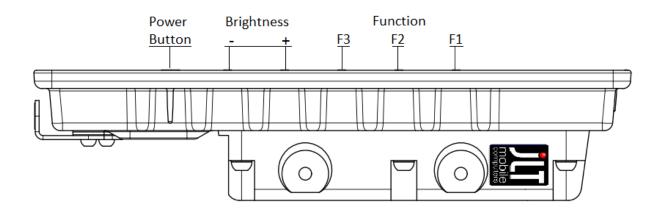
\*6: Four seconds press, for system controlled power down.
Eight seconds press, hard power off, meaning it will power off even there are operations pending,

The recommended way to turn off the system is always by a controlled way. Use:

- 1. Remote key (Pin 2 in power-connector)
- 2. Turn on/off in OS\*, by using OS control, or by pressing the power button 4 seconds.
- 3. JLT may have specific solutions going further this user guide may explain. Please ask for advice.

F1, F2 and F3 can be assigned in OS to start a program or process.

As an example: Create a shortcut for the program, right click and select properties, Enter F2 in shortcut key field, click apply.
When F2 button is pressed the program will start.

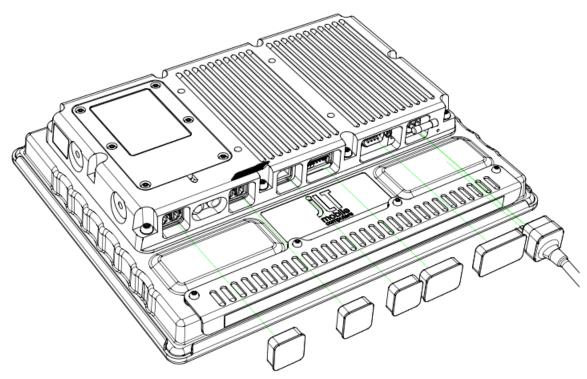


## Mounting

#### Cable strain relief and rubber sealing plugs

Use included cable ties to attach cables to the strain relief plate that has multiple holes for applying cable ties.

All unused ports should have rubber sealing plugs installed. Please contact your JLT reseller or your JLT representative if additional plugs are needed at later time. Sealing is one of the most important parts to achieve a long lifetime of the JLT computers.



#### JLT provided mounting kits: RAM®

RAM® Mount -> Computer: Use included screws and washers.

For alternative mounting, please make sure length of screws are of a length not to damage the depth or threads of the VESA mounting holes. 8.5 mm is a maximum allowed of screw length intrusion into the metal chassis of the unit.

Usage of thread locking products like Loctite® is recommended.

RAM® Arm 212 mm UAMPS: D-BALL VESA: 75mm D-BALL

#### Mounting with other brands and parts

When mounting a JLT unit to a VESA bracket, use M6 screws with correct length. The inserting part of the screw should be minimum 5mm and <u>MUST NOT exceed 8.5mm.</u> (That is 8 complete turns on the screw).

If screws are too long, build up with washers to adjust the inserting part of screw. If this is not done and the screws are too long, they will deform the aluminum case inwardly when applying great force.

Torque: Maximum 6Nm

#### Important:

The vehicle computer and bracket must be firmly secured to a surface that can support the vehicle computer's weight and include optional accessories such as keyboard and scanners. Computer weight = 2.9 kg or 6.4 lb

#### **Keyboard mount**

An accessory keyboard mount is available from JLT that mounts towards the two M6 screw holes on each side. Fasteners are included with the mount. If other fasteners or screws are being used the depth of mounting holes are maximum 8mm.

The keyboard mount has multiple mounting hole alternatives and comes with a Velcro® adhesive tape to adapt to any keyboard. It's adjustable to allow different keyboards and size. Mounting screws comes with the selected keyboard, if supplied from JLT Mobile.

#### JLT P/N 101812





#### Routing electrical cables

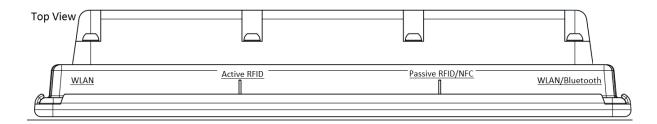
- Establish a neat route for the cables, staying clear of moving parts or hot surfaces whenever is possible
- Start from the vehicle computer and work towards the power source
- Fix the cables to existing cable runs inside the vehicle using cable ties approximately every 30cm
- Ensure that cables do not have any tight bends that can create tension, cracks or cable brakes
- Ensure that there is enough slack in the cable to accommodate movement without putting tension on the cable
- Use correct length and do not wind cable around in a heap
- Ensure that fuses for the cable installation are as close as possible to the power source
- The computer itself has a fused power input

## Wireless communication

WLAN 802.11 ac/a/b/g/n 2x2 Dual band MU-MIMO Dual mode Bluetooth 4.2 2x Integrated Antennas 2.4Ghz / 5Ghz Active and passive RFID

For best performance, make sure antennas are not obstructed, especially by conductive material such as any metal.

The RFID / NFC are for close range >10mm, make sure these are not mechanically obstructed.



## LED indicators and ambient light sensor

#### LED<sub>1</sub>

- Green, slow blink every 10 sec.
   Power is connected, unit is turned OFF
- Green, fast blink every 1.sec.
   Power is connected, unit is in SLEEP mode
- Green, constant lit Power is connected, unit is in normal operation
- Orange, constant lit
   Unit is running on battery, preparing shutdown

#### LED 2

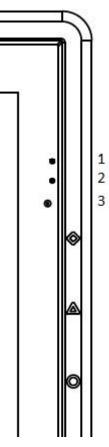
- Yellow
   Disk activity
- Green
   WLAN is connected

#### LED 1 and LED 2

 Simultaneous blink Buttons are in use



The ambient light sensor gives the internal microcontroller readings of the amount of surrounding light. The microcontroller can automatically control the brightness of the display to a comfortable level. For further info. please see chapter "ALS - Ambient Light Sensor adjustment", on page 12. This is a powerful tool for users in varying light conditions, such as moving from indoors to outdoors or moving in or out of tunnels under ground, without having to manually adjust the brightness each time.



## **Bios**

Default Settings is set to work for common users.

## **Boot Options**

Press F7 at start to select alternative boot device

#### Bios menu

Press <Del> or <Esc> when BIOS logo shows on startup.

## Operating Systems (OS)

JLT6012<sup>™</sup> can operate with 32 and 64-bits OS.
JLT6012<sup>™</sup> can have Windows 10, 64-bit preinstalled from JLT.

The boot disk is set to operate in AHCI mode in BIOS by default.

## Wireless communication setup introduction

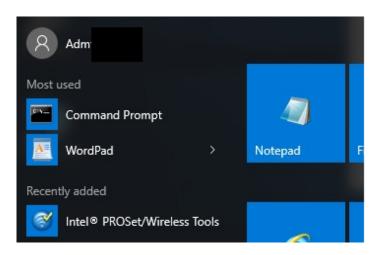
#### Alter settings for WLAN

Setting up a WLAN professionally is a complex task which is not covered in this manual. In many cases it requires specialists to install, setup and configure. The following examples is to illustrate how the WLAN settings in clients can be used and modified.

#### Setup with Intel® PROSet / Wireless Tools

Intel®PROSet / Wireless is a powerful tool for connecting and managing the WLAN connection and settings. The setup-file can easily be deployed to multiple units once created.

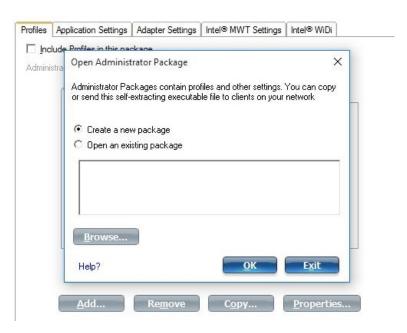
1. Start Intel® PROSet/Wireless Tools



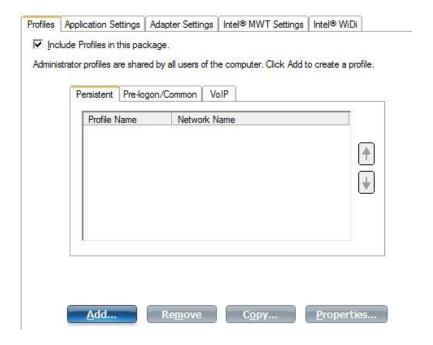
2. Select Administer, and create an administrator password



3. Select Create a new package

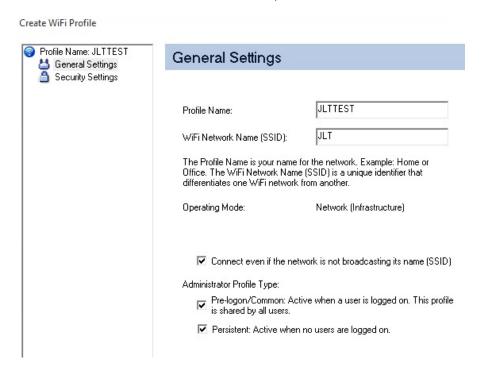


4. To add a new package, check the box "Include Profiles in this package"



5. Create a name for your profile; this will be shown as the name of your connection, in this example JLTTEST, or any other useful name.

Enter the SSID and tick the checkboxes as preferred.

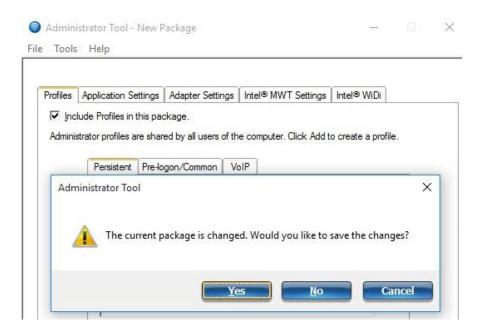


6. Select the appropriate security setting and enter your encryption key

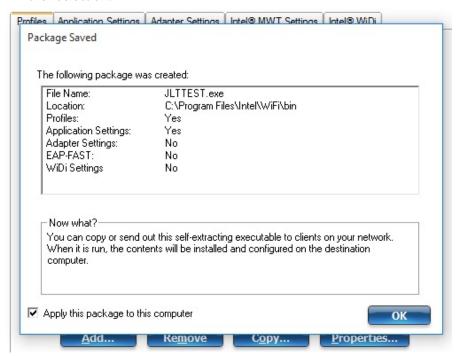


7. Go through each tab and adjust the settings applicable to your network. Default values may work in many cases but for optimal performance the settings should be adjusted to comply with the infrastructure of the network. Consult your network manager for correct settings.

When all the settings are set, save the package.



8. Once the package is saved, check the box: "Apply this package to this computer" and then select OK.

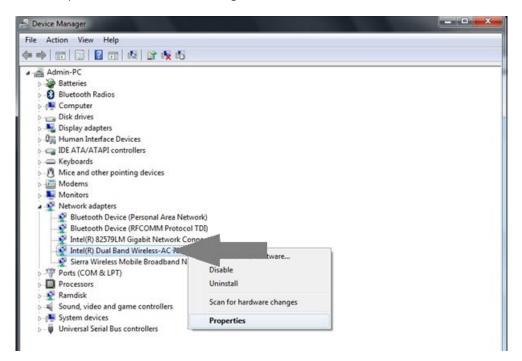


- 9. The package and network is now set for this specific computer.
- 10. All settings, passwords, etc. are saved to the package-file and can easily be copied to other computers that have the network installed.

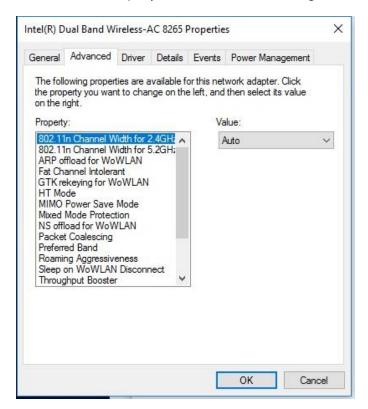
#### WLAN settings in Windows™

If Intel® PROSet wireless / tools is not used, settings and connections may be utilized through Windows Wireless Service.

1. Device Manager->Network Adapters->Intel® Dual Band Wireless AC-8265, select "Properties" to alter various settings for WLAN.



2. In <Advanced> menu the global WLAN settings can be changed. Choose Property then it's Value can be changed.

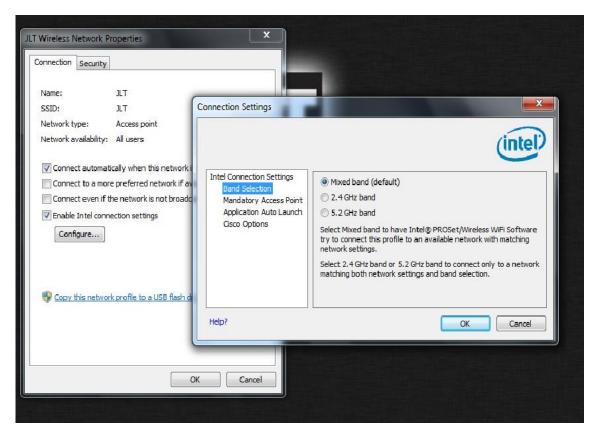


#### **Network Properties**

1. Right click for <**Properties**> and status of the network of choice in Activity Center in right lower corner.



2. Tick "Enable Intel connection settings" and click < Configure > to set network specific settings as 2,4/5 GHz band selection, Cisco options as an example.



#### **Bluetooth**

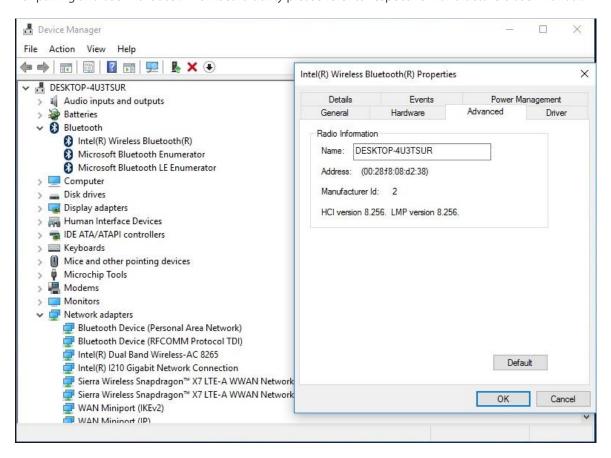
The picture shows how to find the Bluetooth MAC address.

- 1. Select < Properties > for Generic Bluetooth Adapter
- 2. Select < Advanced > Menu
- 3. The MAC address is shown, in this example: 00:28:f8:08:d2:38

#### JLT Forkbeard™

A software utility for easy pairing and data wedge supporting various common Bluetooth barcode scanners is available from JLT. Please contact your JLT representative for more information.

For pairing and use without JLT Forkbeard utility please refer to respective manufacturers user manual.



Tip: To keep active when accessories become inactive untick Power Management for Bluetooth.



#### Software and Firmware

- 1. For correct operation the JLTService is required to be installed in Windows OS.
- 2. To operate and adjust the ALS, RFID-programming, firmware upgrade and settings export/import the JLT ControlPanel is required to be running.
- 3. For having the buttons Charm bar activated, the charmbar application have to be running.

The applications are available from JLT and JLT representatives. For further explanation, please read following sections.

#### JLT Control Panel

JLT Control Panel have three main functions in each of the tabs.

RFID. ALS and Firmware

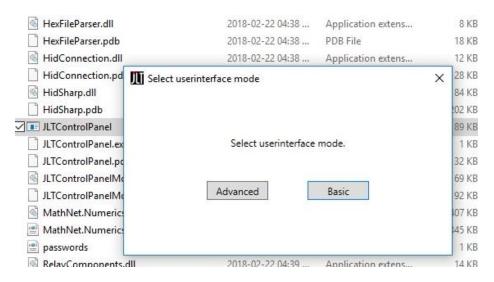
When application starts it can be opened in basic or advanced mode.

Basic mode is for the end user or operator.

The IT-administrator can select advanced mode to enable the programming and reading the RFID login card.

The default password for advanced mode is: ADMread1234

The password can be changed by administrator.



#### **RFID**

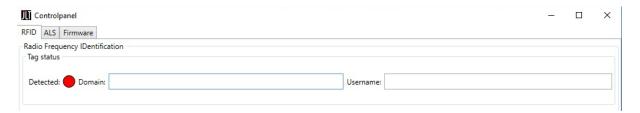
RFID tab is used for programming and reading a RFID chip used for a very simplified logon to the system and network. It's a helpful tool to have a complex password without having to remember and typing it in at logon.

The user just holds a RFID device, such as card/button or another tag towards the RFID antenna to be automatically logged in to the network and system.

#### RFID-tab in basic mode

Only domain and username can be read from RFID card.

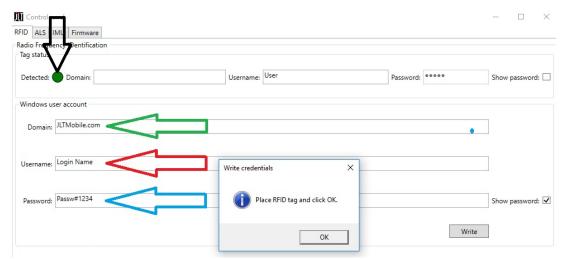
This use is only intended to find the owner of an unknown card.



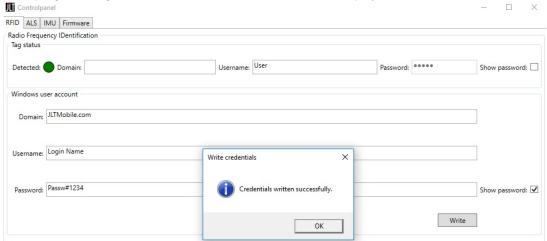
#### RFID-tab in advanced mode

Program a RFID device, tag/card/button

- 1. Open application JLTControlPanel, default password is: ADMread1234
- 2. Select RFID tab.
- 3. Type domain name at Domain, green arrow. If local logon, not domain logon, just leave empty.
- 4. Type User name at Username, red arrow.
- 5. Type password at Password, blue arrow
- 6. Click Write button, a sign will pop up telling to place the RFID device to the antenna. The RFID antenna for this purpose is located between the middle and left top corner of the unit.
- 7. When the control lamp, black arrow, turns green you are in reach of the antenna. Press OK.



8. If the programming of the RFID device is successful it will be displayed like this:



9. To read out the RFID information from an already programmed device, just hold the device near the antenna and the login information will be displayed at the top row.
Note: It is not advised to have the JLTControlPanel application installed to multiple clients as it is possible to read login details from a RFID device forgotten or left behind. Also, it's not secure to let users locally create login devices.



## RFID login, system preparation

To use the advantage of simple login to the system and/or network with a RFID Card/button the card and system need to be prepared.
Supported card is ISO15693

#### Preparing the system:

Use the JLT supplied files in package RFID Credentials.zip

- 1. Copy file "RFIDCredentialProvider.dll" to C:\WINDOWS\SYSTEM32 folder.
- 2. Run, double click the file "Register.reg
- 3. Run, double click the file "vc\_redist.x64.exe

Now your system is prepared for a login by RFID device.

## ALS - Ambient light sensor adjustment

For daily use:

- 1. Press the + or button on the side of unit to meet a satisfying brightness.
- 2. When used in the same amount of surrounding light, the screen brightness will return to the level it was set at last use of the unit.

For advanced operators:

First select Active, to enable the ALS function.

The ambient light sensor control is a function to compensate the amount of screen brightness to adapt automatically to the ambient or surrounding light for a pleasant operation. It can be used to automatically decrease the screen brightness when the operator is moving in to a weaker light such as a tunnel or parking garage, or increase when the operator comes into bright daylight or any other events of changes of ambient light conditions.

The ALS operation consists of three individual steps of brightness settings.

- 1. Level one: This is the level for low ambient light. Adjust by side buttons to a desired brightness.
- 2. Level two: This is the medium and most frequent light condition. Adjust by side buttons to a desired brightness.
- 3. Level three: This level is to compensate for high ambient brightness, such as outdoor sunlight. Adjust to desired brightness.
- The threshold settings for brightness levels are intended to be set when the unit is being installed or if the use of the unit is altered.

The adjustment of each of the three individual brightness levels are easily set by operator to desired level. All settings for ALS operation can be saved to file and copied to multiple units for easy deployment.

The brightness settings for each individual ambient light condition will be automatically retrieved when the operator returns to the same or similar amount of surrounding light.

The individual settings for each brightness level can always be adjusted by side buttons + and – at any time by the operator.

In picture below:

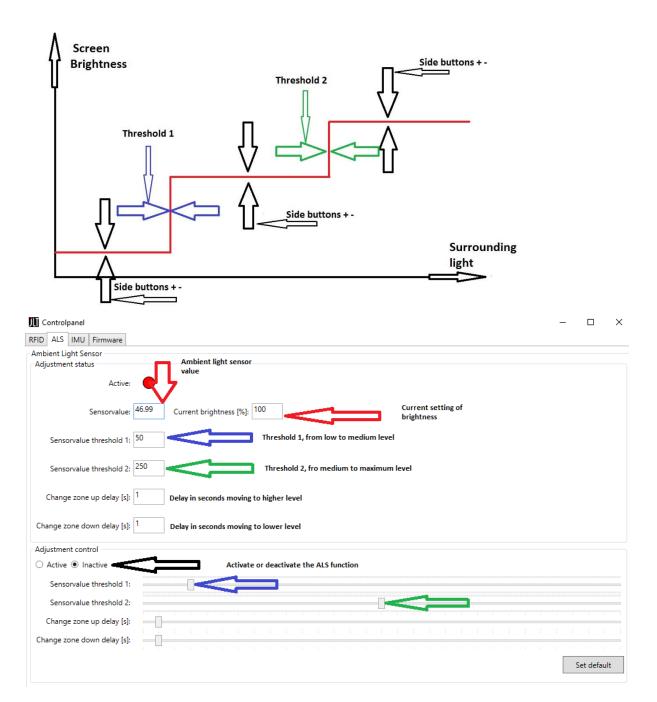
Black vertical arrows: Brightness level is controlled by the side buttons + and - at any time by the operator.

Blue horizontal arrows: The threshold level 1 is set in the JLTControlPanel application. Green horizontal arrows: The threshold level 2 is set in the JLTControlPanel application. These settings are to set the threshold of the three steps of brightness.

The user or operator can always set the brightness level to an appropriate level in any condition by simply touching the + or – button on the left side of unit.

The brightness level will be automatically stored for the next event of same or similar surrounding light. If the brightness level changes unwillingly at a certain light condition, then adjust thresholds to a level that is not close to the current light condition.

The ALS operation can be set to have a certain individual delay both for moving to an upward level as well to a downward level. Adjust to desired operation.



The three independent brightness levels will be automatically stored to their last setting. Meaning, if an operator adjusts the brightness to a certain level, the setting will be saved and applied the next time the unit is used in similar light conditions.

Normally, the user will not interact with the JLTControlPanel, but may be needed to dial in the settings of thresholds initially when a unit is being installed.

Once installed and applied it will work autonomically with or without the JLTControlPanel.

Settings are kept persistent in the unit flash memory.

Settings may be stored and deployed to several units, see section Export and import settings.

#### Setup guide:

There are three possible light conditions the unit can adapt or be set to.

Such as, indoor poor light, indoor bright light and outdoor sunlight, as examples.

If needed, adjust thresholds for the surrounding light. Do not set to a level that is close to the normal operating surrounding light as the regulation may be disturbing to the user by changing the brightness up or down in regular use.

Take notice of the sensor value reading to find out what the current surrounding value is. It's widely varying from one site to another.

Examples of surrounding light, sensor value reading: Indoor with limited light is probably between 10-150. Indoor with bright lightening, it is probably around 100-250. Indoors in a roofed vehicle 10-150. Outdoor is probably over 500 which is the top limit of the meter.

Figures given are very approximate and varies widely depending how and where the unit is mounted. A rooftop on any vehicle will drastically decrease the values of incoming light widely. Please take notice what the sensor value reading are at occasions where the brightness adjustment is best applied.

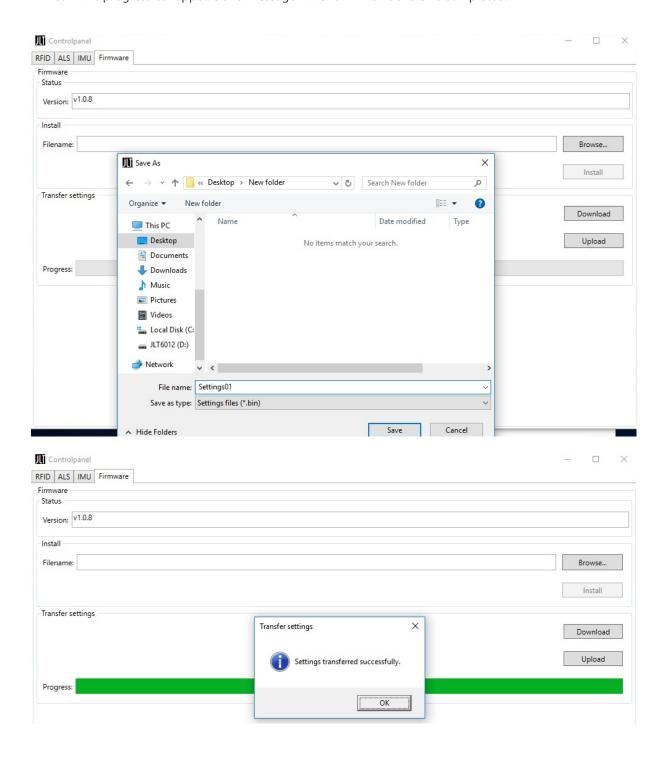
Activation or inactivation setting will be stored and not activated without user interactivity.

## **Export and import settings**

#### Export settings to file

The settings for ALS functionality can be exported from one system to another in following way.

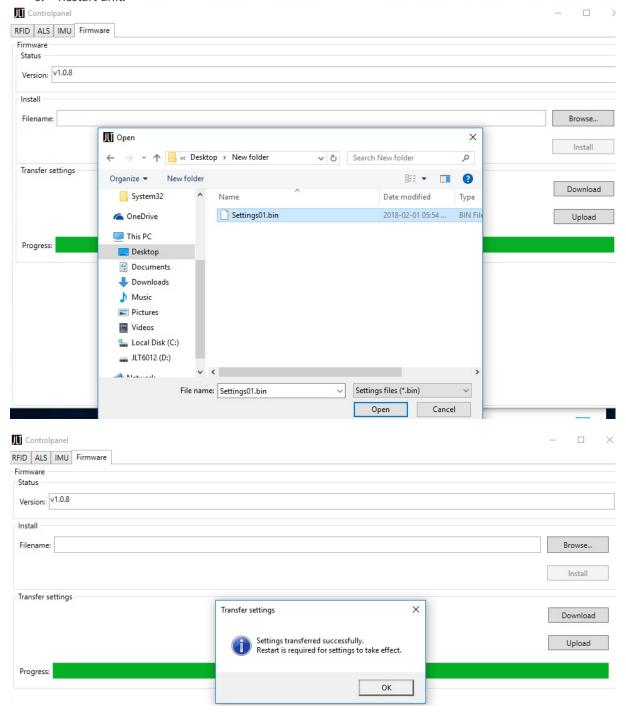
- 1. Start JLTControlpanel and select tab Firmware.
- 2. Click "Download".
- 3. Give the file a name to remember for the export to other systems.
- 4. Once Save is pressed the transfer to file will start.
- 5. The progress bar appears and message will show when transfer is completed.



#### Import settings from file

The settings for ALS functionality can be imported or deployed from one system to another in following way.

- 1. Start JLTControlpanel and select tab Firmware.
- 2. Click "Upload".
- 3. Select the previously saved file.
- 4. Once Open is pressed the transfer to file will start.
- 5. When progress bar and message transfer completed the settings are exported.
- 6. Restart unit.



## Charmbar

When Charmbar application is active a description of the side buttons will show up in the screen when any button is pressed. It disappears when buttons are released.



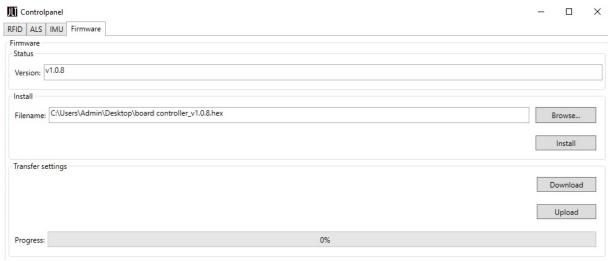
## Firmware update

#### For advanced users only

To update the unit from a selected file, follow the procedure:

A sequence will follow. Do <u>NOT</u> perform any actions until the sequence is completed as the system may be totally dead or useless and would require service action to be working again. The update procedure will take about 10 minutes to complete. When initiated the side buttons will not respond at all.

- 1. Click "Browse"
- 2. Select the firmware file distributed from JLT.
- 3. Click "Install"



- 4. Do <u>NOT</u> perform any actions until the sequence is completed as the system may be totally dead or useless and would require service action by JLT authorized service personal to be working again.
- 5. During process the picture will go away and return for periods of time and unit may also restart one or several times.

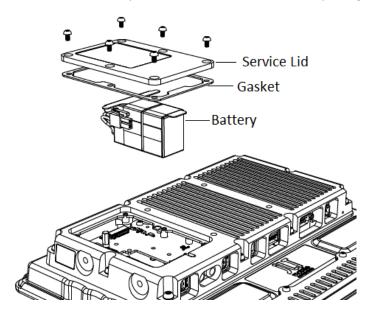
At present time the process follow this sequence, but may change over time depending on what and how much the update will affect the system.

- 1. Unit is restarting
- 2. LED 1 and LED 2 is constantly green
- 3. LED 1 will shift to orange
- 4. LED1 will start rapid blinking green
- 5. After around 8 minutes LED 1 turns red and LED 2 turns yellow.
- 6. After 2 more minutes the unit is shutting down and stays off, the LED1 is blinking with 10 seconds interval, the update process is completed and unit is ready for use.

## Maintenance

## **Battery Replacement**

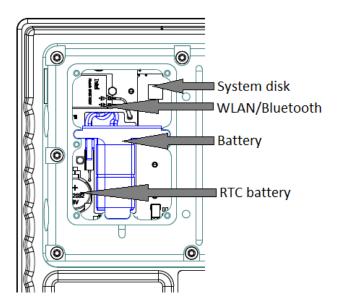
- Unscrew the six Torx 10 screws.
- Lift the lid and gasket.
- Lift the battery and unplug cable.
- Mount battery in reverse order make sure battery and gasket are in correct position.



#### Service lid overview

#### Accessible parts are:

- System disk
- WLAN/Bluetooth
- UPS battery
- Real time clock battery



## **Power Management**

#### **UPS-function**, default operation

The UPS function is to back up the power supply at power glitches and short interruptions of power failure.

If power supply is re-established within 70 seconds it will continue to work without interruptions. When power supply is lost for more than 70 seconds, the unit will perform a controlled shutdown. If a controlled shutdown fails a forced shutdown will follow after 3 minutes.

The timing and sequence is the same when the remote input is connected or disconnected from power. Remote is typically connected to a remote switch, ignition switch, or anything else for remote operation. The remote input has the same voltage range as the power input.

If a jumper cable is mounted from power input to remote, the unit will start automatically when power is applied.

The power loss setting in BIOS is overridden and has no effect.

#### System logging for power and remote key events.

The JLT Service is creating events in Windows Event log.

This can be utilized in the Task scheduler to trigger on events and perform actions before the unit has been shut off. As an example, save data or current operation.

Windows event log Log: Application Source: JLTMobile

EventId	Message	Explanation
10	Line On	Entering On Line (cable)
11	Line Off	Leaving Line (no cable)
20	Key On	Ignition Key high (ON)
21	Key Off	Ignition Key low (OFF)
30	Battery On	Entering On Battery (no cable)
31	Battery Off	Leaving Battery (got cable)
40	Power Button Pressed	
41	Shutdown init	Shutdown process initiated
42	Shutdown hard	Shutdown event sent
43	Shutdown force	Shutdown force event sent
49	Shutdown aborted	Shutdown sequence aborted On Line and OK power source
90	JLT Mobile Service Started	
91	JLT Mobile Service Stopped	

## **Drivers and Software Download**

(JLT Portal, available for registered JLT Partners only)

#### http://portal.jltmobile.com

See: Downloads - JLT6012

#### **Hardware Information**

#### JLT system controller

Install JLTService, required for functionality Install Charmbar, optional Install JLTControlPanel, required for administrators

#### **WLAN**

Intel® AC-8265 IEEE 802.11 a/b/g/n/ac, 802.11 d/e/h/i/w/r/k/v

#### **Bluetooth**

Intel® AC-8265 Dual Mode Bluetooth® 4.2

#### Touchscreen

PCT – Windows USB HID

#### CPU / Chipset

Intel® Atom™ E3845 Chipset: Integrated in SoC Graphics: Intel® HD Graphics Generation 7

#### **Audio**

**HD** Audio

#### **COM-Port**

FTDI® FT4232H

#### System disk

M.2 SATA Size 2242, 2260 and 2280, key B M

#### **RFID-card**

ISO/IEC 15693-2 13.56 MHz 2048 bit, 24 x 32 Bit Blocks Texas Instruments

Contact your JLT representative for supply