



CAN2WIFI
configurator for
iris series

User guide



CAN2WIFI

configurator

User's manual
(version 1.0)

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Part One - introduction

1.1. Overview

CAN2WIFI device is a configuration device for your iris series devices. The device is essential for pilots and manufacturers with special needs for configuration. Airplane manufacturers can now stock the units and configure them along the way, by their needs and specification. You can **easily** connect via CAN2WIFI device to your iris device and set different airspeed values, colours, units etc. You can use any smart device or PC/MAC to establish connection with website interface.

1.2. What is in the box

The following items are contained in the box:

- CAN2WIFI device
- CAN BUS cable
- WiFi antenna

1.3. Technical specification

Power

Power consumption: 40 mA @ 12 V DC via CAN BUS cable only

Input power: 12 V DC via CAN BUS cable only

Enclosure

- Housing: Black aluminum
- Dimensions (width x height x depth): 62 x 41 x 27 mm (2.44 in x 1.61 in x 1.06 in)
- Weight: 60 g (0.13 lbs.)
- Operating temperature: -30°C to 85°C (-22°F to 185°F)
- Humidity: 30 % to 90 %, non-condensing

Part Two - setup

2.1. Connecting devices

Note: Use only manufacturer provided accessories and parts.

Installation requires iris series device and a CAN2WiFi device. Use the provided CAN BUS cable to connect CAN port on iris series device to CAN port on CAN2WIFI device.

Once the units are successfully connected with provided CAN BUS cable, power up the iris device (refer to iris series manual). CAN2WiFi device receives power from IRIS device through CAN cable.

2.2. Connect to WiFi

Right after CAN2WIFI is connected to iris device, it starts to act as a wireless access point (AP). Connection can be made using any mobile device. AP is configured as follows:

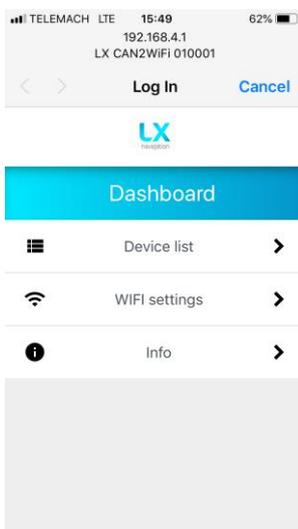
SSID: LX CAN2WIFI XXXXXX, where XXXXXX is serial number of CAN2WIFI device,
Key: lxnavigation

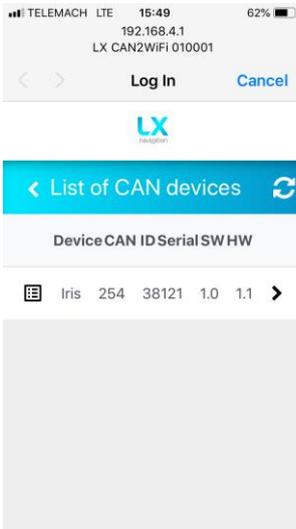
A default system web browser opens and redirects us to website user interface. If this does not happen, we can manually navigate there with url: 192.168.4.1

Website user interface is described in details below.

2.3. Website user interface

First page shows main menu.





Device list

This is a list of connected CAN devices. List is refreshed when page is loaded and on every press of refresh button in upper right corner. For each device we can check device type, CAN ID, serial number, software version and hardware version. With click we enter the device submenu.

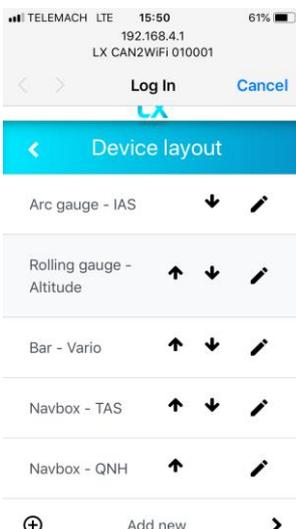


Set indicator role

Because iris series is designed to support wide specter of indicators using different hardware configurations, the principle of roles was introduced. With role we tell the software what hardware is present and how it should behave on different user inputs.

Exp. On Altimeter rotary knob changes QNH, while sets local time offset on chrono.

Available roles: General, Altimeter, All-in-one, Horizon (not yet finished), Chrono, G-force, Angle-of-Attack.



Edit layout

Each iris device can be configured to show different kinds of information on the screen. This is done using customizable graphic components called widgets. Each iris device can display maximum of 7 widgets. This is called layout.

Available widgets are: Background, Text, Navbox, Arc gauge, Rolling gauge, Bar, Double bar, Stripe. Each widget will be described in details later.

New widget can be added with button "add new". Widget can then be edited by clicking on pencil icon. Order of widgets can be changed with up/down arrow icons.

Widget order is of great significance. This is a sequence in which widgets will be put on screen. Widget that is shown on the top of the website will be put on

screen first and the one being in the bottom, the last. If their positions coincide the one from the bottom will overlay the one from top.

Each widget can be deleted by going into edit mode (clicking on pencil icon) and then selecting "Delete".

Editing individual widgets:

After attributes are set to desired values, they are instantaneously sent to iris device by selecting "Save".

The following pages explains individual widget's attributes.

Each widget has common positional attributes:

Attribute	Description
X	distance from left end of the display in pixels.
Y	distance from the top end of the display in pixels.
Width	width in pixels.
Height	height in pixels.

Widgets that show value also have CAN attributes:

Attribute	Description
Can Id	value to be shown – (Altitude, IAS, TAS, G-force, etc.)
Unit	unit of the value (km/h, kts, mph, etc.)
Decimals	number of decimal places.
Round	step to which the value is rounded. This can be either less or greater than 1. Exp. 1.: Round=0.01; possible values are: 0.00, 0.01, 0.02... Exp. 2.: Round=5; possible values are: 0, 5, 10, 15...

- **Background**

Has positional attributes (see above) + additional:

Attribute	Description
Color	background color

○ Text

Has positional attributes (see page 5) + additional:

Attribute	Description
Title	title text (maximum 19 characters).
Font size	10-50 px.
Alignment	left, right or center.
Text color	color of the text.

○ Navbox

Has positional and CAN attributes (see page 5) + additional:

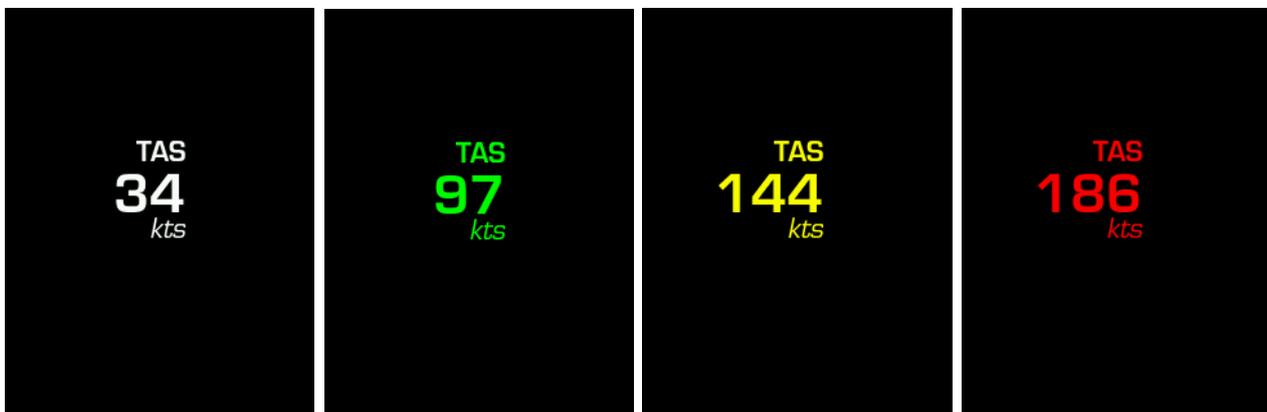
Attribute	Description
Title size	title font size (10-50 px).
Value size	value font size (10-50 px).
Behavior	<ul style="list-style-type: none"> - Normal - current value is shown, - Min - minimum of the value since last reset is shown, - Max - similar as Min, but show maximum. <p>(The last two are used in G-force indicator.)</p>
Display unit	<p>defines how the unit is displayed:</p> <ul style="list-style-type: none"> - None - unit not shown, - In line - in line with value, - Below - under the value.
Title	title text (maximum 10 characters).
Alignment	left, right or center.
Color	default text color.
Min green, Max green, Min yellow 1, Max yellow 1, Min yellow 2, Max yellow 2, Red 1, Red 2	<p>the color of all navbox text is determined:</p> <ul style="list-style-type: none"> - If value below Red 1 or above Red 2 => red color, - between Min yellow 1 and Max yellow 1 or Min yellow 2 and Max yellow 2 => yellow color, - between Min green and Max green => green color, - all other cases => color defined with Color attribute.

All value attributes are in unit selected in Unit attribute.

Each color attribute can be disabled by entering value 999999 if it's not desired.

Example:

X coordinate	Y coordinate	Width	Height
<input type="text" value="50"/>	<input type="text" value="100"/>	<input type="text" value="90"/>	<input type="text" value="80"/>
Can Id	Unit	Decimals	Round
<input type="text" value="TAS"/>	<input type="text" value="kts"/>	<input type="text" value="0"/>	<input type="text" value="1"/>
Title size	Value size	Behaviour	Display unit
<input type="text" value="20"/>	<input type="text" value="40"/>	<input type="text" value="Normal"/>	<input type="text" value="Below"/>
Title	Alignment	Color	
<input type="text" value="TAS"/>	<input type="text" value="Right"/>	<input type="text"/>	
Min green	Max green	Min yellow 1	Max yellow 1
<input type="text" value="50"/>	<input type="text" value="110"/>	<input type="text" value="110"/>	<input type="text" value="180"/>
Min yellow 2	Max yellow 2	Red 1	Red 2
<input type="text" value="999999"/>	<input type="text" value="999999"/>	<input type="text" value="999999"/>	<input type="text" value="180"/>



o Arc gauge

Has positional and CAN attributes (see page 5) + additional:

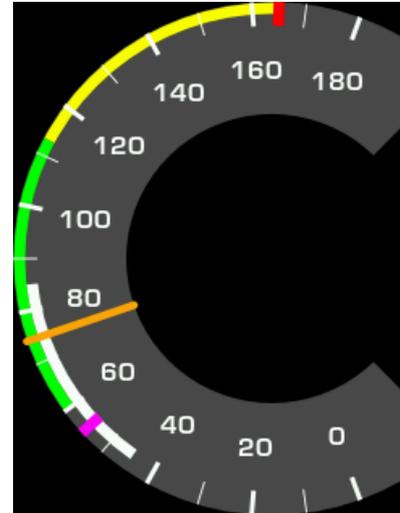
Attribute	Description
Min angle, Max angle	arc start (Min) and end (Max) position in degrees, where 0 represents top center position (12 o'clock) and 90 represents right middle position (3 o'clock). <u>Note:</u> those angles correspond to Min and Max value positions. Actual limit of arc background extends a couple a bit further.
Min value, Max value	minimum and maximum value to be shown on arc. This values corresponds to the Min and Max angle position.
Small step	interval in which marks are shown on arc (thin lines without numbers).
Big step	interval in which marks with numbers are shown on arc. Those lines are also wider. For correct display Big step should be a multiple of Small step.
Divider	used for displaying numbers on arc besides Big step lines. Divider tells with what number the value is divided to be shown on arc. Exp.: we want to show altitude. Max value is 10 000 (ft). We set divider to 1000, so the arc reads maximum value of 10, not wasting space showing obvious zeros.
Arc width	width of the arc background in pixels.
Font size	10-50 px.
Background color	arc background color.
Foreground color	text and lines color.
Min green, Max green, Min white, Max white, Min yellow 1, Max yellow 1, Min yellow 2, Max yellow 2, Red 1, Red 2, Magenta	4 color arcs and 3 color lines can be shown on main arc. Each arc is defined by it's maximum and minimum value. Each line is defined by a single value.

All attributes correlating to value are in the unit selected with Unit attribute.

Each color attribute can be disabled by entering value 999999 if it's not desired.

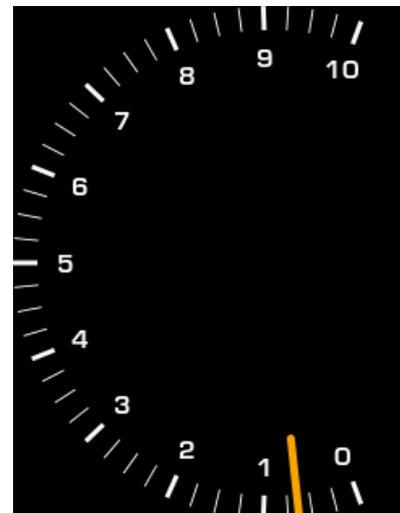
Example 1:

X coordinate	Y coordinate	Width	Height
0	0	240	320
Can Id	Unit	Decimals	Round
IAS	kts	0	0
Min angle	Max angle	Min value	Max value
-200	20	0	180
Small step	Big step	Divider	Arc width
10	20	1	70
Font size	Background color	Foreground color	
15			
Min green	Max green	Min white	Max white
60	113	45	85
Min yellow 1	Max yellow 1	Min yellow 2	Max yellow 2
113	165	0	0
Red 1	Red 2	Magenta	
999999	165	55	



Example 2:

X coordinate	Y coordinate	Width	Height
0	0	240	320
Can Id	Unit	Decimals	Round
Altitude	ft	0	0
Min angle	Max angle	Min value	Max value
-200	20	0	10000
Small step	Big step	Divider	Arc width
250	1000	1000	50
Font size	Background color	Foreground color	
15			
Min green	Max green	Min white	Max white
999999	999999	999999	999999
Min yellow 1	Max yellow 1	Min yellow 2	Max yellow 2
999999	999999	999999	999999
Red 1	Red 2	Magenta	
999999	999999	999999	



○ Rolling gauge

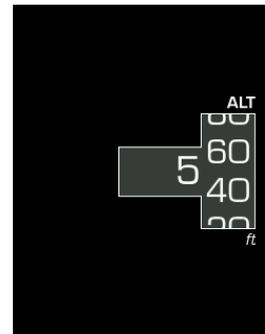
Has positional and CAN attributes (see page 5) + additional:

Attribute	Description
Static part font size	font size of the left part of value, that does not roll.
Rolling part font size	as the name suggests.
Rolling places	number places to roll at the right part of the value.
Rolling step	interval of values to be represented on the virtual rolling wheel.
Background color	polygon background color.
Foreground color	text and border color.
Title	title in the widget's top right corner. Unit is shown in the bottom right corner in italic.

Important: Widget height is being automatically adjusted according to given static and rolling part font sizes. Height attribute defines available space for widget to populate. If set lesser than font size, the lower part of widget will be cut away.

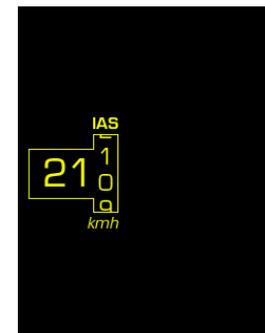
Example 1:

X coordinate	Y coordinate	Width	Height
<input type="text" value="100"/>	<input type="text" value="80"/>	<input type="text" value="130"/>	<input type="text" value="160"/>
Can Id	Unit	Decimals	Round
<input type="text" value="Altitude"/>	<input type="text" value="ft"/>	<input type="text" value="0"/>	<input type="text" value="1"/>
Static part font size	Rolling part font size	Rolling places	Rolling step
<input type="text" value="35"/>	<input type="text" value="30"/>	<input type="text" value="2"/>	<input type="text" value="20"/>
Background color	Foreground color	Title	
<input type="text" value="Black"/>	<input type="text" value="White"/>	<input type="text" value="ALT"/>	



Example 2:

X coordinate	Y coordinate	Width	Height
<input type="text" value="10"/>	<input type="text" value="80"/>	<input type="text" value="85"/>	<input type="text" value="160"/>
Can Id	Unit	Decimals	Round
<input type="text" value="IAS"/>	<input type="text" value="km/h"/>	<input type="text" value="0"/>	<input type="text" value="1"/>
Static part font size	Rolling part font size	Rolling places	Rolling step
<input type="text" value="35"/>	<input type="text" value="20"/>	<input type="text" value="1"/>	<input type="text" value="1"/>
Background color	Foreground color	Title	
<input type="text" value="Black"/>	<input type="text" value="Yellow"/>	<input type="text" value="IAS"/>	



○ Bar

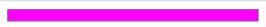
Is used mainly for showing parameters with limiting values, like temperatures, pressures etc. Besides that, it can be also used to show vertical speed indicator.

It has positional and CAN attributes (see page 5) + additional:

Attribute	Description
Min value	minimum value to be shown in widget.
Max value	maximum value to be shown.
Foreground line step	interval with which foreground lines are shown.
Numeric value	defines whether the numeric representation of current value is shown above the bar or not. Possible values are Shown or Hidden.
Min yellow line, Max yellow line, Min red line, Max red line	define the color of the bar according to its value: <ul style="list-style-type: none"> - if value below Min red or Max red => red color, - if between Min red and Min yellow or between Max yellow and Max Red => yellow color, - all other cases => color as defined with Bar color attribute.
Background color	as the name suggests.
Foreground color	text and foreground lines color.

Each color attribute can be disabled by entering value 999999 if it's not desired.

Example 1:

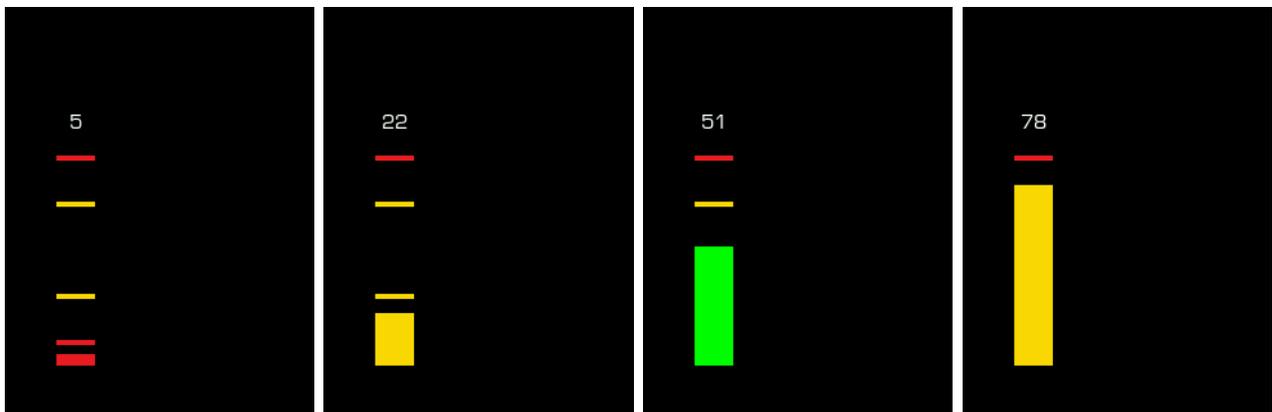
X coordinate	Y coordinate	Width	Height
230	60	10	200
Can Id	Unit	Decimals	Round
Vertical speed		0	0
Min value	Max value	Foreground line step	Numeric value
-5	5	1	Hidden
Min yellow line	Max yellow line	Min red line	Max red line
999999	999999	999999	999999
Background color	Foreground color	Bar color	
			



Find another example on the next page.

Example 2:

X coordinate	Y coordinate	Width	Height
40	80	30	200
Can Id	Unit	Decimals	Round
OAT	°C	0	1
Min value	Max value	Foreground line step	Numeric value
0	100	999999	Shown
Min yellow line	Max yellow line	Min red line	Max red line
30	70	10	90
Background color	Foreground color	Bar color	



- Double bar

Is used mainly for showing correlating values like CHT/EGT indicators. It has positional and CAN attributes (see page 5) + additional:

Attribute	Description
Min value	minimum value to be shown in widget.
Max value	maximum value to be shown.
Right bar Can Id	value to be shown in right bar. Can Id attribute represent value shown in left bar.
Left red line	position of a red line for left bar.
Right red line	position of a red line for right bar.
Value font size	font size of the value shown above each bar.
Numeric value	defines whether the numeric representation of current value is shown above the bar or not. Possible values are Shown or Hidden.
Left bar color	color of the left bar. Important: when value reaches Red line value, bar color automatically changes to red.
Right bar color	similar as Left bar color, but for right bar.
Background color	as the name suggests.
Foreground color	text color.

○ **Stripe**

Is used mainly for showing engine parameters and can be vertically or horizontally oriented. It has positional and CAN attributes (see page 5) + additional:

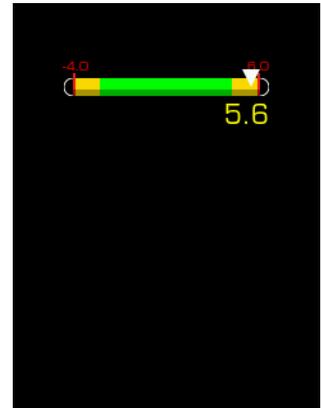
Attribute	Description
Min value	minimum value to be shown in widget.
Max value	maximum value to be shown.
Orientation	Horizontal or Vertical.
Numeric value	defines whether the numeric representation of current value is shown above the bar or not. Possible values are Shown or Hidden.
Min yellow line, Max yellow line	separate interval between Min and Max value into three intervals: <ul style="list-style-type: none"> - Below Min yellow line -> low yellow interval - Between Min yellow line and Max yellow line -> green interval - Above Max yellow line -> high yellow interval - If value is within any yellow interval number representation of value is colored in yellow, otherwise is in color defined with Foreground color attribute.
Min red line, Max red line	despite the names, they define at which value numeric representation of the value will be colored in red (below Min red and above Max red). The position of graphical lines as shown on display are always at values defined with Min value and Max value attributes or not shown at all if value 999999 is selected.
Background color	as the name suggests.
Foreground color	text color.
Value font size	as the name suggests.
Label font size	not used at the moment.

Each color attribute can be disabled by entering value 999999 if it's not desired.

Find examples on the next page.

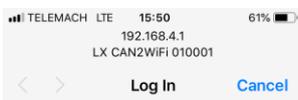
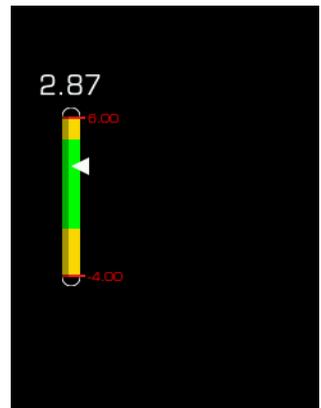
Example1:

X coordinate	Y coordinate	Width	Height
20	40	200	60
Can Id	Unit	Decimals	Round
G-force	no unit	1	0.1
Min value	Max value	Orientation	Numeric value
-4	6	Horizontal	Shown
Min yellow line	Max yellow line	Min red line	Max red line
-2.5	4.5	-4	6
Background color	Foreground color	Value font size	Label font size
		20	10



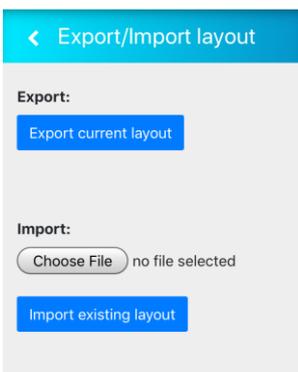
Example2:

X coordinate	Y coordinate	Width	Height
20	40	70	200
Can Id	Unit	Decimals	Round
G-force	no unit	2	0.01
Min value	Max value	Orientation	Numeric value
-4	6	Vertical	Shown
Min yellow line	Max yellow line	Min red line	Max red line
-1.0	4.5	-4	6
Background color	Foreground color	Value font size	Label font size
		20	10



Export/Import layout

Current layout can be exported into a file and saved to local data storage. This is done by clicking "Export current layout".

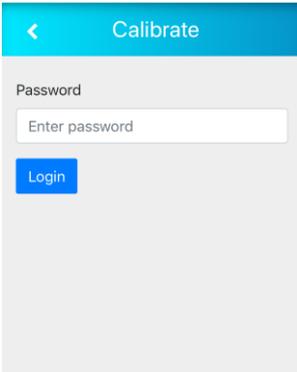


Then such exported file can be imported on another device. This is done by selecting file and clicking "Import existing layout".



Calibrate

Calibration is intended for manufacturing and support purposes only. To access the submenu password authorization is required.



Update

Coming soon.



WiFi settings

Here we can check SSID (it's not editable).



Info

Here we can see versions and release date of software currently loaded to CAN2WIFI device.



2.4. Maintenance

No special maintenance is required. Keep it in dry and dark conditions when not used. We recommend you to periodically send the unit to the company or authorized representative for an inspection every 5 years.

NOTE!

The instrument has no serviceable parts inside. In the case of malfunction, it must be sent to LX navigation for a repair. Please contact LX navigation prior sending.

Part Three - End user license agreement

End user license agreement

This agreement is made between the Customer (the person and/or company that bought the End Product, and all subsequent users and owners) and LX navigation d.o.o., Tkalska ulica 10, SI-3000 Celje, Slovenia (hereinafter "LXN").

Terms and termination of agreement

This agreement shall commence when the Customer receives the product.

By buying and using the End Product, the Customer has accepted the following terms and conditions.

If the Customer does not agree with the said terms and conditions, he can return the product if it is undamaged and without any sign of use, within 30 days of receiving it, and receive a full refund, thus terminating this agreement.

Warranty

End product, software, firmware, license keys, and data are provided on an "as is" basis without warranty of any kind — either expressed or implied — including, without limitation, any implied warranties of merchantability or fitness for a particular purpose. LXN does not warrant the performance of the device, software, firmware, license key, or data or that the device, software, firmware, license key, or data will meet your requirements or operate error free.

LXN warrants this device for a period of two (2) years after the original date of purchase against defects due to faulty workmanship or materials arising from normal use of the device. The warranty covers working parts that affect the function of the device. It does NOT cover cosmetic deterioration caused by fair wear and tear, or damage caused by accident, misuse or neglect. Any attempt to open or take apart the device (or its accessories) will void the warranty.

Limitation of liability

In no event shall LXN be liable to the Customer or any party related to the Customer for any indirect, incidental, consequential, special, exemplary, or punitive damages (including, without limitation, damages for loss of business profits, business interruption, loss of business information, loss of data or other such pecuniary loss), whether under a theory of contract, warranty, tort (including negligence), products liability, or otherwise, even if LXN has been advised of the possibility of such damages. In no event will LXN's total aggregate and cumulative liability to the Customer for any and all claims of any kind arising hereunder exceed the amount of fees actually paid by the Customer for the device, license keys or data giving rise to the claim in the twelve months preceding the claim. The foregoing limitations will apply even if the above stated remedy fails of its essential purpose.

Indemnification

The Costumer will, at their own expense, indemnify and hold LXN, and all officers, directors, employees and resellers thereof, harmless from and against any and all claims, actions, liabilities, losses, damages, judgments, grants, costs, and expenses, including reasonable attorneys' fees (collectively, "Claims"), arising out of any use of the End product, software, firmware, license key, or data by the Costumer, any party related to the Costumer, or any party acting upon their authorization.

Amendments

LXN reserves the right, in its sole discretion, to amend this Agreement from time to time by posting an updated version of the Agreement on www.lxnavigation.com, provided that disputes arising hereunder will be resolved in accordance with the terms of the Agreement in effect at the time the dispute arose. We encourage you to review the published Agreement from time to time to make yourself aware of changes. Material changes to these terms will be effective upon the earlier of (I) your first use of the End product, software, firmware, license key, or data with actual knowledge of such change, or (II) 30 days from publishing the amended Agreement on www.lxnavigation.com. If there is a conflict between this Agreement and the most current version of this Agreement, posted at www.lxnavigation.com, the most current version will prevail. Your use of the End product, software, firmware, license key, or data after the amended Agreement becomes effective constitutes your acceptance of the amended Agreement. If you do not accept amendments made to this Agreement, then it is your responsibility to stop using the End product, software, firmware, license key, and data.

Return and maintenance address:

LX navigation d.o.o.
Tkalska ulica 10
SI-3000 Celje
Slovenia

For all information contact us at info@lxnavigation.com.
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Part Four - Questions and answers

Q: How to Turn on the device?

A: CAN2WIFI device will power up itself once you power up the iris series device which is connected via provided CAN BUS cable.

Q: CAN2WIFI WiFi signal is weak. What can I do?

A: Please check if the provided WiFi antenna is correctly installed and firmly fixed.

Q: I can not connect to the CAN2WIFI WiFi signal. What can I do?

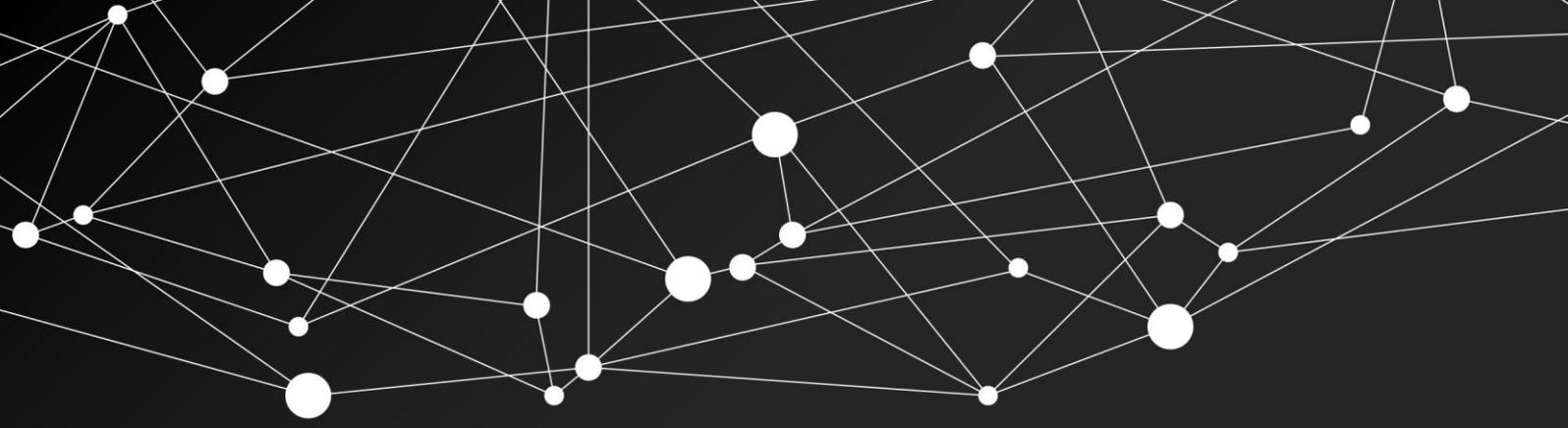
A: Disconnect the devices from power supply for 10 seconds. After 10 seconds reconnect the devices and repeat the procedure for connecting.

Q: After connecting to CAN2WIFI WiFi I don't get redirected to website user interface.

A: Open your web browser and try to manually navigate to url: 192.168.4.1

Q: My device is damaged and in need of repair. What can I do?

A: Send the device to: LX navigation d.o.o., Tkalska ulica 10, SI-3000 Celje, Slovenia.



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