Signal Strength Tester RSSI T2

Dimensional drawings:

71mm

110mm

USB CHA LOW CUT SYS

RSSI TESTER

28mm
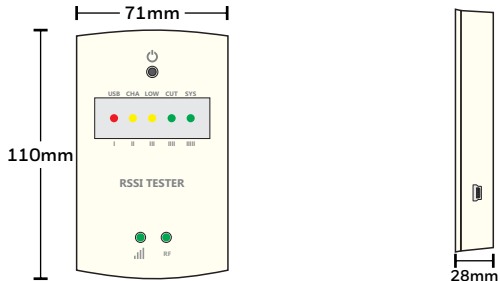
The **138091.5** multifunctional device has **4** operating modes:
- **RSSI Tester**
- **Installation Tool**
- **USB Gateway**
- **Spectrum Analyzer**

Signal Strength Tester (RSSI) mode operates handheld, powered by internal rechargeable battery. Installation Tool, USB Gateway and Spectrum Analyzer modes need an active USB connection with a PC running the "Wireless Installation Tool" software application (included in Honeywell Tela).

1. SIGNAL STRENGTH TESTER (RSSI)

Signal Strength Tester (RSSI) mode is used to check the received signal level at any position of the installation area, before installing a wireless device (wireless luminaire, wireless network extender etc.)

There are 7 LED indicators on the front of the device. Two LEDs are located at the lower part (RF and signal markings) and the remaining 5 are hidden behind the semi-transparent opening on the upper part of the device. These hidden 5 LEDs are performing in two different modes: **System** mode and **Signal Level** mode. In order to check the signal level (or RSSI), the Signal Level mode is used. Swapping between modes is done by clicking the multifunctional button.

The device is powered by a Ni-MH 3.6V/240mAh rechargeable battery, which gives at least 2 hours of autonomy when fully charged. The battery is non-replaceable. When connected to USB, the battery will be charged with a maximum current of 60mA approximately. 5 hours of charge will achieve at least 90% of full charge.

POWERING ON-OFF THE DEVICE

Power on the device by holding down the power button for at least 2 seconds, until the cutoff indication is gone. To power off the device, hold down the power button for at least 2 seconds until cutoff indication is lit. Then after a few seconds the device will power off.

While the device is USB powered, it will never power off. Power off is possible only when the device is battery powered. While the device is inactive, no power is drawn from the batteries.

The device will power off for the following reasons:

- The button is pressed for more than 2 seconds, until the CUT indication is lit.

- Empty battery. An indication of low battery is followed by an automatic power off after a few minutes. So a LOW LED indication will not be instantly followed by power off.

- Auto shutdown. To avoid unintended battery discharge, the device will power itself off, after 10 minutes of button inactivity. Auto shutdown is inactive when USB powered.

SWITCH BETWEEN INDICATION MODES (SYSTEM - LEVEL)
When used as a Signal Strength Tester, this device has 2 different indication modes for LED bar. Switching between **SYSTEM** and **SIGNAL LEVEL** indications is achieved by a short press of the button. While in SYSTEM mode, the far right green LED will blink continuously. While in SIGNAL LEVEL mode, the far left red LED (very low, or no signal) will always be lit and the other 4 LEDs will fill a "signal level graph" in accordance with the RSSI.

I. SYSTEM INDICATION MODE
The power status of the device is visualized when LEDs are in system mode. The device offers 5 LEDs for the system status. System mode is explained with the text markings above the LEDs.
**USB:** USB Powered (red LED) ON when the device is connected to a USB port.
CHA: Charger On (yellow LED) ON when the battery charger is on.
LOW: Battery Low (yellow LED) ON when battery is low. Always off when USB powered.
CUT: Cut off indication (green LED) When ON, the device will be powered off within the next 20 seconds. Always off when the device is normally operating.
SYS: System Mode Indication (green LED) Always blinking with 1Hz (0.5s off/0.5s on) when in system mode.
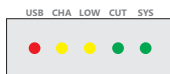
II. SIGNAL LEVEL METER INDICATION MODE
The device offers 5 LEDs for the RSSI, which means that 5 different signal strength levels are visualized. Levels are printed on the plastic enclosure of the device.
I: No signal (red LED) Do not install any wireless luminaires (or other device) in this area.
II: Poor signal (yellow LED) Avoid installing wireless luminaires (or other device) in this area, communication losses might exist.
III: Medium signal (yellow LED) It is safe to install a wireless luminaire (or other device) in this area.
IIII: Good signal (green LED) It is safe to install a wireless luminaire (or other device) in this area.
IIIII: Excellent signal (green LED) It is safe to install a wireless luminaire (or other device) in this area.
In cases where the Signal Level is not stable, but slides between 2 levels, the only rule is to select a better spot when the Signal Level slides between "poor" and "medium" (II – III). This means that the signal sometimes falls below "medium" level, so installing a device at this spot is not recommended.
The two LEDs at the bottom of the device are always on when the device operates as RSSI tester.

CONFIGURING SID AND RF CHANNEL SETTINGS
When adding new wireless devices into an existing wireless network, it is recommended to use the RSSI Tester to check signal level at the installation points. If the SID, RF Channel and NKey parameters of the wireless network have been changed, you will have to apply the same parameters to the RSSI Tester e device in order to be able to detect signal.
For this task, connect the device to a PC via USB and run "Wireless Installation Tool" app. While the device is connected, click on "Scan" and the USB identity of the 138091.5 appears on the box on the right as selected. Then click on "Connect". When "UID" value of the device appears, click on "RSSI Tester". Under the "New Values" area, write the wireless parameters of the wireless network to be scanned and click "Change". Disconnect the device from USB cable and wait 10' until it powers off. Now, when powered on, the 138091.5 will be able to detect signal from that specific wireless network.
IMPORTANT: SID, RF Channel and NKey values are stored permanently in the device's memory. Custom SID, RF Channel and NKey settings will be maintained in every operating mode. To measure a new wireless network with default values, you must restore the SID, RF Channel and NKey values back to default (00000001 / 2 / 00000000).
Every time the device is powered on handheld, starts in RSSI Tester mode.

2. INSTALLATION TOOL

Installation Tool is used to set specific wireless devices (luminaries, other) to join an existing wireless network with configured SID, RF Channel and NKey settings.

Reasons can be:

Commissioning of multiple wireless networks in parallel.

Replace, or add new wireless devices (luminary / other) to an existing wireless network with custom SID and RF Channel settings.

Restore communication of wireless devices (luminary / other) which were unresponsive during commissioning.

To use a 138091.5 as Installation Tool, connect the device with a PC via USB and run **"Wireless Installation Tool"** app.

While the device is connected, click on **"Scan"** and the USB identity of the 138091.5 appears on the box on the right as selected. Then click on **"Connect"**. When **"UID"** value of the device appears, click on "**Manual Installation Tool"**.

To keep data organized, you are advised to create a spreadsheet of the wireless network(s) including SID, RF Channel(s), NKey(s), IP Addresses (if any), UID's of the devices per network, etc.

Create a profile for each of the existing wireless networks, by clicking **"Profiles"**. Enter SID, RF Channel and NKey and then click **"Add"** to add a wireless network profile into memory. If you want to delete a profile, select the entry within the dropdown list below and click **"Delete"**. Close the window when you have finished entering the profiles.

In order to scan a wireless network for "not hosted" wireless devices, enter the SID, RF Channel and NKey parameters of this network, in the top area of the main window and click on **"Scan"**. In the meantime, if there are other Network Masters (Gateways) transmitting with the same parameters, you will have to deactivate them to avoid data collision.

In most cases, the wireless devices are on f**actory default parameters** (SID=00000001, RF Channel=2, NKey=00000000).

Within the first 5 minutes the wireless devices will appear on the list. If you are missing any, click on **"Re-Scan"** button to scan again.

To apply new settings on an entry, **right click** on it and select one of the previously set profiles. You can apply different profiles to other wireless devices. To apply a profile into multiple entries quickly, you can use the copy-paste functionality with "Ctrl+C" / "Ctrl+V" keys within the "Parameters" cell.

To apply the selected profiles into the selected devices, click "Change Network" button. The procedure might take a while to finish (20' per 100 selected).

The "Phase" column indicates the progress for each unique selected device.

3. USB NETWORK MASTER (GATEWAY)

This mode sets the 138091.5 as a Network Master (Gateway) of a Wireless Network. To enable this mode, connect the device to the master PC running Honeywell Tela2 software via USB.

The device is detected by the system and is automatically registered as a "Gateway" (Network Master).

Active wireless devices that operate with the same wireless parameters (SID, RF Channel and NKey) will be detected by the Gateway. You can change the parameters of the Gateway (e.g. to default) by editing the Gateway under "Wireless Devices > Gateways" tab.

Then proceed into network configurations (according to the Commissioning Guide).

IMPORTANT: A single USB Network Master (Gateway) can support up to 250 connected wireless devices. Only one Network Master can exist in a Wireless Network. Multiple nearby Wireless Networks can co-exist, when separated by SID value. It is recommended to use different RF Channels for neighbor wireless networks when available.

4. SPECTRUM ANALYZER

The Spectrum Analyzer mode scans the available frequency range of the pre-set channels to select a suitable RF Channel, free of nearby RF transmissions, for a Wireless Network.

To use this function, connect the device with a PC via USB and run **"Wireless Installation Tool"** app. While the device is connected, click on **"Scan"** and the USB identity of the 138091.**5** appears on the box on the right as selected. Then click on **"Connect". When "UID" value of the device appears, click on "Spectrum Analyzer".**

Click on **"Start"** and the system starts a process where the available RF Channels are being scanned for nearby transmissions (analog or digital). RF Channels with frequent data traffic will have high average value. Maximum value indicates the highest received transmission from a channel. RF channels with both low average and maximum values are preferred to be used during commissioning of wireless networks. When finished, click stop and close the window.

USB cable connection:
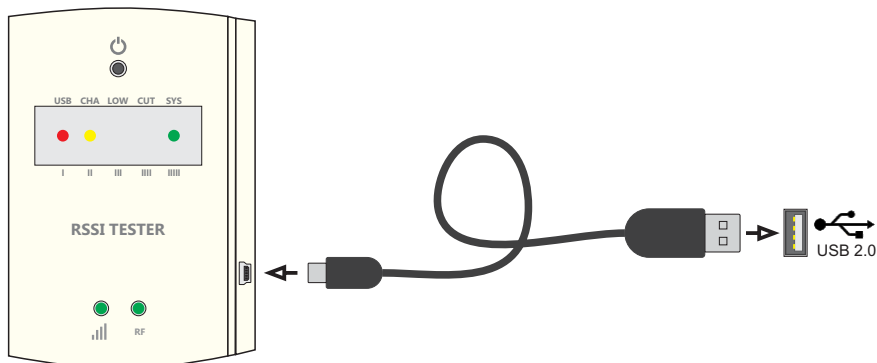
Technical description	Wireless Signal Strength Tester RSSI T2
Part no.	138091.5
Operating voltage	4.9 - 5.1V (USB)
Battery (Ni-MH)	3.6V / 240mAh
Maximum Power consumption	0.7W
Ambient temperature range	0 to 50 °C
Relative humidity	Up to 95%
Degress of cover protection	IP20
Weight	119gr

At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre.
Do not dispose of with your normal household waste.
Do not burn.

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