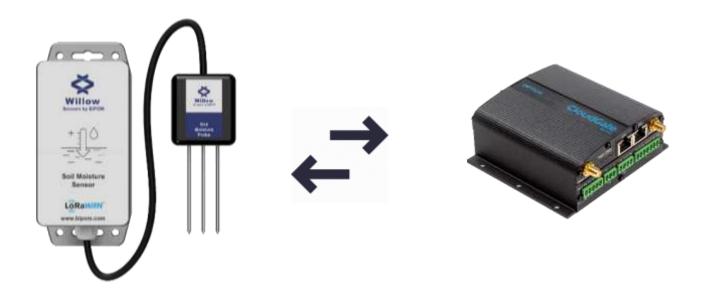




Willow Sensors Outdoor Soil Moisture Sensor Quick Start Guide

Document Revision: 1.00



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Overview

The quick start guide explains the steps that should be followed by the user to realize the integration of $\ensuremath{\mathsf{WS-O-8-AE-SM-1}}$ to Cloudgate and start to use the sensor.





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Integration Steps

Cloudgate Configurations

Cloudgate requires one time setup for the LuvitRED installation to enable LoRaWAN functionality. After the one time setup, user can skip Cloudgate Configuration steps.

To realize configurations, go to <u>https://cloudgateuniverse.com/library</u> and download the latest firmware and LuvitRED application. Choose which firmware to download according to your Cloudgate model.

1. View firmware and download it according to your Cloudgate model.

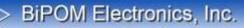
	Firmware 9 firmwares View firmware
$ \begin{bmatrix} t_1 & t_2 & t_3 \\ (t & t_1) \\ p & p & p \end{bmatrix} $	Radio Firmware 8 radio firmwares View radio firmware
\odot	Configurations 2 configurations View configurations
B	Applications 12 applications View applications

2. View applications and click on Option LuvitRED 2.0

Ξ	Option LuvitRED 2.0 Easy-to-use graphical, "drag and drop & visual wiring" configuration environment for design and deployment of smart M2M and IoT Solutions on CloudGate. This version of LuvitRED has to be used together with Option CloudGate firmware 2.x.xl
-	Available for: All groups
	View details

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3. Download the latest version

Ξ	Option LuvitRED 2.0 Easy-to-use graphical, "drog and drop & visual wiring" configuration environment for design of smart M2M and IoT Solutions on CloudGate. This version of LuvitRED has to be used toget CloudGate firmware 2.x.xl	her with Option
Versions		Release notes
2.27.1	±	<u>What's new</u>
2.27.0	±	What's new
2.26.1	<u>*</u>	<u>What's new</u>

4. Now we are ready to complete configurations of Cloudgate. Once you open the Home Page of Cloudgate go to Provisioning tab and upload files we have downloaded.

Theck for updates		Device Provisioning	
pload device provision	ing fila 👂		
lettings	5	Check for updates	
		Note: this will automatically install updates to the galaxies, even when automatic provisioning has been disabled. "C updates" can cause data walls as your winders operator subarciption.	heck for
		Cha	k for updates
		Upload device provisioning file	
		Select fin Dosya Seg Dosya seçlimed	

Once the process done, you should be able to see related files on the home page.

Firmware version: Option mini micro Firmware - 2.98.2 Image version: Option LuvitRED 2.0 - 2.27.0



After completing one time setup, "LuvitRED" option will be shown under the "Plugins" tab. The user can access to LuvitRED by clicking "Plugins -> LuvitRED". A new screen appears after clicking "Plugins -> LuvitRED". Click on the "Advanced Editor" to access LuvitRED.

loudGate	Connecting THINGS to the cloud		Se Log out OPTION
A Home Interfaces - Firewall	Connection Persistence Provisioning System	Phigins - VPN	
	LuvitRED	LuonRED SNMP	
	Adviation(Tritlin)		
	Serial port to TCP local or remote	a server	
	Enable 985 00		
	GPS to TCP local or TCP/UDP re	amote server	
	Enable yes no		
	Save Reset		

The following screen will appear after opening LuvitRED.

4 the	Sheet 1 ×		+ info	rindung	
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D: red v					
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and and the					
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1 4mm					
0 02					
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	• •				



Import the application that we provide you by following the below steps. Download the application by using the embedded document below.



The user can only import JSON files, by clicking menu icon at the top right side and click "Import -> From File" then choose the file we provide you.

		- Deploy
+	info	Undo (Ctrl-Z)
		✓ View
From File		Import
From Clipboard		Export
		Configuration nodes
		Example flows
		Subflows
		Workspaces
		Set logging levels
		Keyboard Shortcuts
		CloudGate Universe

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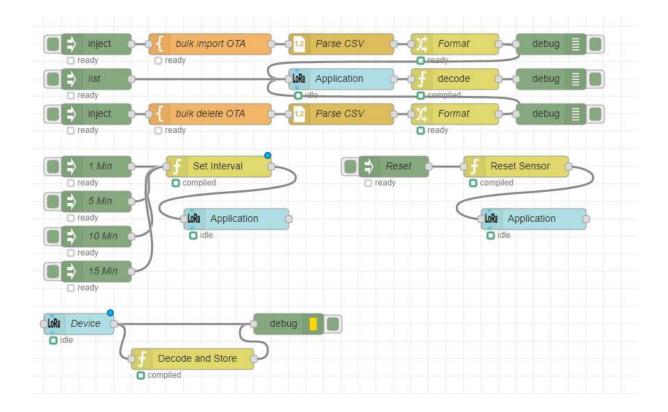
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imp	ort nodes				
	Choose a file				
			Close	Ok	

import nodes	[
Choose a file	Soil Moisture_v2.27.1.json	
	Close Ok	

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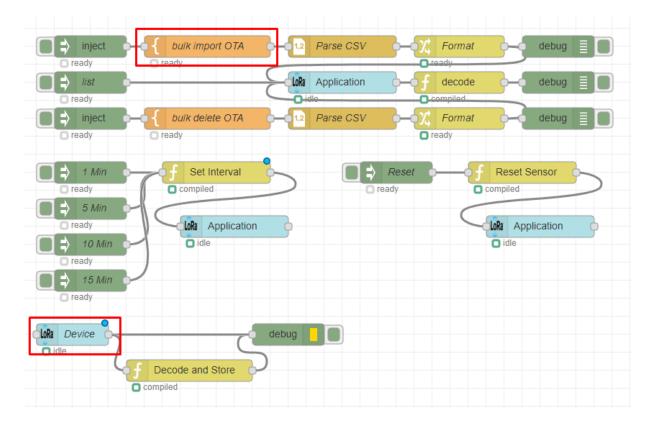
Application should look like the following flow.





As a next step we will enter "Device EUI" and "App Key" to connect our sensor.

Firstly, double click on "bulk import OTA" node and enter name, device EUI, and application key, as string.



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211

Here is an example

	E	dit tem	plate node				
		Delete				Cancel	ОК
		🗣 Nam	ne	bulk import OT	Ą		
		👌 Tem	plate				
		1 2 3	name,DevEU "deviceNam	I,AppKey e", "123456",	"654321"		
l							
l							

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Once it is done click "OK" and double click "Device" node and enter Device EUI and Application Key into related sections.

Edit lora device node					
Delete	Cancel				
Name Name					
¢ [®] Application	LoRa Application 🗸				
🞤 Class	A ~				
JC Activation	Over the Air 🗸				
Sev EUI	******				
🕰 App Key	******				
FPort	1				
	□ Send confirmed downlink data				
	Enable Adaptive Data Rate				
🛍 Delete node	type delete here and push trash				

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inject bulk import OTA Parse CSV Format debug -O ready readv ready 🚽 list loRa Application decode debug ready o 0 inject ⇒ bulk delete OTA Parse CSV Format debug ready ready ready ₿ 1 Min Set Interval Reset Sensor ⇒ Reset ready ready 5 Min • 🗌 ready lora Application lora Application ⇒ O idle O idle 10 Min readv 🗦 15 Min ready lora Device debug O idle Decode and Store C compiled

Lastly enter your Device EUI to the following functions.



Enter your Device EUI to the following section.

Name Reset Sensor 1 -- Create a payload 2 local data = msg.payload 3 p(data) 4 - msg.app = { 5 que<u>ue = {</u> 6 -['645367566B597033'] = { 7 data=data, 8 fport = 0X0A, 9 confirmed = false 10 * } 11 * } 12 ^ } 13 return msg Call with empty message on startup ? ٠ X Outputs 1 •



Enter your Device EUI to the following section.

Name Set Interval 1 -- Create a payload 2 local data = msg.payload 3 p(data) 4 * msg.app = { 5 queue = { 6 -['645367566B597033 = { 1 7 data=data, 8 fport = 0X08, 9 confirmed = false } 10 -11 * } 12 ^ } 13 return msg Call with empty message on startup ? ۰ X Outputs 1 •

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Now you can deploy the application by pressing the "Deploy" button which is located on the top right of the page. Once you activate your sensor, it will join to the network and start to send data.

From now on, user can use debug screen to see payload.

20.06.2022 12:49:54 [Decode and Store] "Sensor Battery Level (%): 100"
20.06.2022 12:49:54 [Decode and Store] "Internal Temperature (C): 18.4"
20.06.2022 12:49:54 [Decode and Store] "Moisture: 0"
20.06.2022 12:49:54 [Decode and Store] "Temperature: 24.7"