

# UC11 Series LoRa Remote I/O Quick Start Guide



## Welcome

Thank you for choosing Ursalink UC11 series remote LoRa I/O.

This guide describes how to install the UC11 series remote LoRa I/O and how to connect to Ursalink LoRaWAN gateway. Once you complete the installation, refer to the Ursalink UC11 User Manual for instructions on how to perform configurations on the device.

#### **Related Documents**

This Start Guide only explains the installation of Ursalink UC11 series remote LoRa I/O. For more functionality and advanced settings, please refer to the relevant documents as below.

Document	Description
Ursalink UC11 Datasheet	Datasheet for the Ursalink UC11 series remote LoRa I/O.
Urselink UC11 User Cuide	Users could refer to the guide for instruction on how to configure
Orsamik OCTT Osel Guide	all the settings.

The related documents are available on Ursalink website: <u>http://www.ursalink.com</u>.

#### **Declaration of Conformity**

Ursalink UC11 series remote LoRa I/O is in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.





For assistance, please contact Ursalink technical support: Email: support@ursalink.com Tel: 86-592-5023060 Fax: 86-592-5023065



# 1. Packing List

Before you begin to install the UC11 series remote LoRa I/O, please check the package contents to verify that you have received the items below.

## **1.1 Package Contents**











1 × UC11

1 × Stubby LoRa

1 × Warranty Card

Setscrews

Antenna

Terminal

1 × 12-Pin Pluggable

#### **Optional Accessories**

E S

1 × Power Adapter (Optional)



If any of the above items is missing or damaged, please contact your Ursalink sales Representative.



#### 2. Hardware Introduction

#### 2.1 Overview

A. Front Panel



- LED Indicator Area
   System: System Indicator
   ACT: Network Indicator
- 2 LoRa Antenna Connector
- ③ Micro USB Interface

B. Rear Panel



① 12-Pin Pluggable Terminal

# 2.2 Dimensions (mm)





# 2.3 Pinouts

PIN	Models									
	UC1114	UC1122	UC1152							
1	GND	GND	GND							
2	VIN	VIN	VIN							
3	IN1	NC	RXD							
4	IN1_COM	AIN1+	TXD							
5	IN2	AIN1-	GND							
6	IN2_COM	AIN2+	А							
7	OUT1_COM	AIN2-	В							
8	OUT1_NC	IN	IN							
9	OUT1_NO	IN_COM	IN_COM							
10	OUT2_COM	OUT_COM	OUT_COM							
11	OUT2_NC	OUT_NC	OUT_NC							
12	OUT2_NO	OUT_NO	OUT_NO							

## **2.4 LED Indicators**

LED	Indication	Status	Description
		Solid On	System booting
System	System Status	On for 500ms, off for 500ms	Working properly
		On for 100ms, off for 100ms	Failed to send data
	Network Status	Off	Failed to join network
ACT		On for 75ms, off for 3000ms	Join the network successfully
		On for 500ms, off for 500ms	Sending/Receiveing data



#### 3. Hardware Installation

#### **Environmental Requirements**

- Power Input: 5-24 VDC
- Operating Temperature: -40°C to 70°C (-40°F -158°F)
- Relative Humidity: 0% to 95% (non-condensing) at 25°C/77°F

#### **3.1** Antenna Installation

Rotate the antenna into the antenna connector accordingly.

The external LoRa antenna should be installed vertically always on a site with a good signal.



## 3.2 Connect the UC11 to a Computer



#### 3.4 Mount the UC11

Use 2 pcs of flat head Phillips screws to fix the UC11 onto the wall mounting.





#### **Getting Started**



#### 4.1 Configure UC11 via Toolbox

Power on the UC11, connect PC USB port to micro USB port of UC11 series remote LoRa I/O directly, PC Setup the Toolbox.

① Select Serial port and input the login password, default "123456", then click "Save"

Ursalink ToolBox V4.16	Θΰ
Serial informa	
Serial Port Settings	
Serial port COM5 • Login password •••••• Baud rate 115200 • Data bits 8 • ting Parity bits None • Stop bits 1 • lease wait Save Cancel	
Firmware Version: Hardware Version	

2 Click "Status" to check status of the Remote I/O

	Ursalink ToolB	sox V4.16	Θ	
	Status >			
Status	Model:	UC1152		
E)	Serial Number: Partnumber:	612291376914 AU915-0080		
General	Firmware Version:	01.02		
(•)) LoRaWAN	Hardware Version: Local Time: 2019 Join Status: RSSI/SNR:	V2.0 -04-15 17:31:37 Monday De-Activate 0/0		
Ŗ	Channel:	13		
Channel	Datarate: Rx2DR:	0-SF12		
£	Channel Name			
Command	Input: Output:	Low/Low		
o o ninana	Uplink Frame-counter:	0		
企	Downlink Frame-count	ter: 0		
Upgrade				
		Firmware Ver: 01.02 Hardware Vers V2.0		

③Click "General" configure report interval, data polling interval and serial parameters



	Ursalink ToolBox V4.16	Θ	ወ
Status	General >		
General	Basic RS485 RS232		
(რ) LoRaWAN	Reporting Interval   1800   s     Data Polling Interval   360   s     Change Password		
Channel	Save		
<b>H</b> Command			
습 Upgrade			
	Firmware Ver: 01.02 Hardware Vers V2.0		
	Ursalink ToolBox V4.16	Θ	
CURSALINK	Ursalink ToolBox V4.16 General >	Θ	Ċ
CURSALINK Status	Ursalink ToolBox V4.16 General > Basic RS485 RS232	Θ	Ċ
CORSALINK Status General	Ursalink ToolBox V4.16 General >	Ξ	Ċ
CORSALINK Status General	Ursalink ToolBox V4.16 General > Basic RS485 RS232 Enable Baud Rate 9600 •	Θ	()
CORSALINK Status General ((0) LoRaWAN	Ursalink ToolBox V4.16 General >        Basic     RS485     RS232       Enable        Baud Rate     9600       Data Bit     8 bits	Θ	U
CORSALINK Status General ((0) LoRaWAN	Ursalink ToolBox V4.16 General >        Basic     RS485     RS232       Enable     Image: Compare the second sec	Θ	U
CREALINK Status General (0) LoRaWAN	Ursalink ToolBox V4.16 General >        Basic     R\$485     R\$232       Enable        Baud Rate     9600       Data Bit     8 bits       Stop Bit     1 bits       Parity     None	Θ	Ċ
Command	Ursalink ToolBox V4.16 General >        Basic     RS485     RS232       Enable     ✓       Baud Rate     9600     •       Data Bit     8 bits     •       Stop Bit     1 bits     •       Parity     None     •       Save     •     •	Θ	Ċ
Creations Status General (0) LoRaWAN Channel Channel	Ursalink ToolBox V4.16 General >        Basic     RS485     RS232       Enable        Baud Rate     9600       Data Bit     8 bits       Stop Bit     1 bits       Parity     None	$\overline{\ }$	Ċ

(4) Click "LoRaWAN" configure the LoRaWAN parameters, Including the EUI, channels.



	Ursa	Θ	Ċ					
	LoRaW							
Status	E	Basic		Channel	Advanced			
General			EUI	1152612291376	914			<b>^</b>
((•)) LoRaWAN		Applicat	tion Port	55				
R Channel		Join Typ Applicat	pe tion Key	OTAA 96e6b4c6f526132	-			
Command		Datarat Save	e	5-SF7	<u></u>			_
습 Upgrade	•			Firmware \	/er: 01.02 Hardware Vers \	/2.0		-
	Ursa	link	Tool	Box V4.16	;		Θ	
	Ursa LoRaW	link /AN >	Tool	Box V4.16	)		Θ	ሳ
<b>CURSALINK</b> Status	Ursa LoRaW	link /AN > Basic	Tool	Box V4.16 Channel	Advanced		Θ	Ċ
CRSALINK	Ursa LoRaW	link /AN > Basic	Tool	Box V4.16	Advanced		Θ	ڻ •
CRSALINK Status General	Ursa LoRaW	link /AN > Basic	Inde	Box V4.16 Channel Supported Frequ Frequency.	Advanced AU915 Max Data	Min Date	Θ	ڻ •
CRSALINK Status General ((0) LoRaWAN	Ursa LoRaW	link //AN > Basic	Tool Inde 0	Box V4.16	Advanced AU915 Max Data 5-SF7BW125 - 5-SF7BW125 -	Min Date         0-SF12BW125 -/         0-SF12BW125 -/	Θ	<u>ل</u>
CRSALINK Status General ((0) LoRaWAN	Ursa LoRaW	link /AN > Basic	Tool	Channel Supported Frequ Frequency 916.8 917 917.2	Advanced AU915 Max Data 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 -	Min Date 0-SF12BW125 - 0-SF12BW125 - 0-SF12BW125 -	Θ	ڻ 1
Cresalink Status General (0) LoRaWAN	Ursa	link /AN > Basic	Inde 0 1 2 3	Channel Supported Frequ Freauencv. 916.8 917 917.2 917.4	Advanced AU915 Max Data 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 -	Min Date         0-SF12BW12ξ -         0-SF12BW12ξ -         0-SF12BW12ξ -         0-SF12BW12ξ -         0-SF12BW12ξ -	Θ	<u>ل</u>
CRSALINK Status General (0) LoRaWAN	Ursa	link AN > Basic C C C C C C C C C C C C C	Inde 0 1 2 3 4	Channel         Supported Frequency.         916.8         917         917.2         917.4         917.6	Advanced AU915 Max Data 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 -	Min Date 0-SF12BW125 - 0-SF12BW125 - 0-SF12BW125 - 0-SF12BW125 - 0-SF12BW125 -	Θ	<u>ل</u>
Command Command	Ursa	link /AN > Basic //	Tool Inde 0 1 2 3 4 5	Channel         Supported Frequency.         916.8         917         917.2         917.4         917.6         917.8	Advanced AU915 Max Data 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 -	Min Data         0-SF12BW12٤ -         0-SF12BW12٤ -         0-SF12BW12٤ -         0-SF12BW12٤ -         0-SF12BW12٤ -         0-SF12BW12٤ -         0-SF12BW12٤ -	Θ	<u>ل</u>
Command Command	Ursa	link /AN > /AS > // // // // // // //	Tool Inde 0 1 2 3 4 5 6	Channel         Supported Frequency.         916.8         917         917.2         917.4         917.6         917.8         918	Advanced AU915 Max Data 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 - 5-SF7BW125 -	Min Date 0-SF12BW12&- 0-SF12BW12&- 0-SF12BW12&- 0-SF12BW12&- 0-SF12BW12&- 0-SF12BW12&- 0-SF12BW12&-		

(5) Click "Channel" configure RS485 modbus master channels

	Ursalink ToolBox V4.16	Θ	
	Channel >		
Status	Execution Interval 50 ms Max Resp Time 500 ms Max Retry Times	3	
	Channel IE Name ilave II Address Quantity Type 3igr ecim	nal Pla	
General	1 Test 1 0 1 Input Register(INT16)	$\otimes$	) <del>(</del>
((0))	Save Up to	8 chann	els
LoRaWAN			
R			
Channel			
H			
Command			
숱			
Upgrade	Firmware Ver: 01.02 Hardware Vers V2.0		



## 4.2 Configure LoRaWAN Gateway

#### ① Log in the Gateway

A. Start a Web browser on your PC (Chrome and IE are recommended), type in the IP address, and press Enter on your keyboard.

B. Enter the username and password, click "Login".

C URSALINK × +			-		×
$\leftrightarrow$ $\rightarrow$ D 192.168.1.1/loginhtml	□ ☆	=	ø	۵	
192.168.1.1	🌐 🛛 English				
<b>SURSALINK</b>					
Lusemanne					
A Password					
Loan					

(2) Click "LoRaWAN  $\rightarrow$  Packet Forwarder  $\rightarrow$  General", disable General Setting.

	JK								💄 admin	Ð
				For your de	vice security, please	change the default pa	assword			
Status		General	Radios	Advanced	Custom	Traffic				?
LoRaWAN	-	General Setting	3							
Packet Forwarder		Enable Mode		Packet Forwa	arder					
Network Server		Gateway EUI		24E124FFFE	F01348					
Network	•	Gateway ID		24E124FFFE	F01348					
		Server Address		mydevices.th	ethings.industries					
System	×.	Server Up Port		1700						
Industrial	•	Server Down Por	rt	1700						
Maintenance	•	Save & Apply								
APP	۲									



	IK								💄 admin 🔁
				For your devic	e security, please c	hange the default password			
Status		General	Radios	Advanced	Custom	Traffic			?
LoRaWAN	•	Radio Char	nnel Setting						
Packet Forwarder		Supported F	requency			AS923	•		
Network Server				Name				Center Frequency/MHz	
				Radio 0				923.6	
Network	×			Radio 1				922.6	
System	Þ	Multi Chanı	nels Setting						
			Enable	Index		Radio		Freq	Jency/MHz
Industrial			۲	0		Radio 0	v	923.2	
Maintenance	•		•	1		Radio 0	T	923.4	
			V	2		Radio 0	Ţ	923.6	
APP	×		•	3		Radio 1	v	922.2	
			۲	4		Radio 1	Ŧ	922.4	
			•	5		Radio 1	T	922.6	
			•	6		Radio 1	v	922.8	
				7		Radio 1	v	923.0	
		LoRa Chan	nel Setting						

(4) Click "LoRaWAN  $\rightarrow$  Network Server  $\rightarrow$  General", enable embedded Network Server

	IK							1	admin 🔁
				For your device	e security, please cl	hange the default password	d		
Status		General	Applications	Profiles	Device	Packets			?
LoRaWAN	-	General Setting							
Packet Forwarder		Enable	✓	Server					
Network Server		NetID	010203						
Network	۲	Join Delay	5		sec				
<u>.</u>		RX1 Delay	1		Sec				
System		Lease Time	744-0-0		hh-mm-ss				
Industrial	•	Log Level	info		•				
Maintenance	•	Channel Plan S	etting						
		Channel Plan	AU915		T				
APP	۲	Channel Mask							
		Save & Apply	l.						

(5) Click "LoRaWAN  $\rightarrow$  Network Server  $\rightarrow$  Applications", add applications



		For your device security, please change the default password								
Status		General	Applications	Profiles	Device	Packets				
LoRaWAN	-	Applications								
Packet Forwarder		Name	U	JC1152						
		Description	L	Jrsalink						
Network Server		Payload Codec	1	None	•					
Network	×	Data Transmission								
System	►									
				Туре			Operation			
Industrial	×									
Maintenance	×	Save	Cancel							

6Click "LoRaWAN  $\rightarrow$  Network Server  $\rightarrow$  Profiles", add profiles

					For your dev	ice securi	ity, please o	change the de	ault password		
Status		General	Application	S	Profiles	D	evice)	Packe	ts		
LoRaWAN	-	Device Profiles									
Packet Forwarder		Name		UC1152			]				
Network Server		Max TXPower Join Type		0 OTAA							
Network	×	Class Type		Class C		Ŧ	]				
System	×	Advanced Save	Cancel								
Industrial	×										

 $(\overline{)}$ Click "LoRaWAN  $\rightarrow$  Network Server  $\rightarrow$  Device", input the device EUI and application key of end node

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			For your device s	security, please ch	ange the default password	
Status	General App	lications	Profiles	Device	Packets	
LoRaWAN	Device					
Packet Forwarder	General					
Network Server	Device Name	UC11	52			
	Description	Ursali	nk			
Network •	Device EUI	11526	12291376914			
Svstem	Device-Profile	UC11	52	¥		
	Application	UC11	52	•		
Industrial 🕨	Frame-counter Validation					
	Activate Device(OTAA)					
Maintenance	Application Key	55724	04c696e6b4c6f5261	3230		
	Device Address					
	Network Session Key					
	Application Session Key					
	Uplink Frame-counter	0				
	Downlink Frame-counter	0				
	Save Ca	ncel				

(8) Check device active status and packets

				For your	device secur	ity, please	e chang	e the default	password						
Status		General	Applications	Profiles		Device		Packets							
LoRaWAN	•	Device													
Packet Forwarder			Device Name	Device EU	II	D	evice-P	rofile		Applicat	ion	Last Seen	Actived	Operation	
Network Server		UC1152		1152612291376914		UC1152		UC115	2	2 minutes ago	~	ℓ ×			
														Ŧ	
				For your o	device securit	y, please	change	the default p	bassword						
Status		General	Applications	Profiles	De	evice	0	Packets							
LoRaWAN	-	Network Serv	rer												
Packet Forwarder		Clear											Search		O,
Network Server		Devi	ice EUI	Frequency	Datarate	s	SNR	RSSI	Size	Fcnt	Туре		Time	Detai	ils
Network	•	1152612	291376914	917000000	SF7BW125		1.0	-92	30	3	UpUnc	2019-04-	-15T18:51:10+08:00	0	)
		1152612	291376914	917600000	SF7BW125		1.8	-92	83	2	UpUnc	2019-04-	15T18:51:05+08:00	0	)
System	×	1152612	291376914	917400000	SF7BW125	1 9	0.8	-95	83	1	UpUnc	2019-04-	-15T18:51:00+08:00	0	
		1152612	291376914	925700000	SF12BW500	)	-	-	17	0	JnAcc	2019-04-	15T18:50:47+08:00	0	)
Industrial		1152612	291376914	917600000	SF12BW125	5	1.2	-92	18	0	JnReq	2019-04-	-15T18:50:47+08:00	0	)
Maintenance	×	Showing 1 to 5	of 5 rows												



(9) Click "LoRaWAN  $\rightarrow$  Network Server  $\rightarrow$  Applications", configure sending data from Network Server to Application Server via HTTP or MQTT

	IK								admin	€
				For your device	security, please ch	ange the default pass	word			
Status		General A	Applications	Profiles	Device	Packets				?
LoRaWAN	•	Applications								Î
Packet Forwarder		Name		UC1152						- 1
Network Server		Payload Codec		None	<b>_</b>					- 1
Network	×	Data Transmission	L							- 1
System	×									- 1
Industrial	•	Туре		HTTP	¥					- 1
Maintenance	•	HTTP Header								- 1
APP	•			Header Nan	ne		Header Value	Operation		
								<b>H</b>		
		URL								
				Data Type			URL			
				Uplink data						
	IK								2 admin	€
				For your device	security, please ch	ange the default pass	word			
Status		General A	Applications	Profiles	Device	Packets				?
LoRaWAN	-	Applications								ĺ
Packet Forwarder		Name		UC1152						- 1
Network Server		Description		Ursalink						- 1
Network	×	Payload Codec	L	None	¥					- 1
System	•	Data Transmission								- 1
		Туре	Γ	MQTT	¥					
Industrial	•									- 1
Maintenance	•	General								
APP	١.	Broker Address								
		Broker Port								
		Client ID								
		Connection Timeout/s		30						
		Keep Alive Interval/s		60						
		User Credentials								
		Epoble	-							-

# [END]