# **Quick Start Guide for R-UHF-R700 reader**

This guide explains how to start integrating the UHF RFID reader in your laundry.

## A. Reader connectors and indicators

Refer to the following pictures to identify reader's connectors and LED indicators.





#### B. Power the RFID reader

The R700 reader is powered exclusively through Power over Ethernet (PoE or PoE+) via Ethernet port. If your local network doesn't support PoE/PoE+ or in case you want to connect the reader to your local PC, you can power it simply adding a PoE/PoE+ power injector (sold separately) to add inline power to a standard network connection.



## C. Connect the reader through Ethernet interface

The RFID reader has DHCP client enabled by default. It can be connected to the laundry network or directly to your PC for first setup. Follow the next steps if you want to connect it to your PC directly.

1. Make sure your Local Area Connection adapter is set to obtain an IP address automatically.

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tocol Version 4 (TCP/IP)	/4) Propertie	25		×
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et IP settings assigned au ility. Otherwise, you need propriate IP settings.	tomatically if to ask your i	your n networ	etwork suppor k administrato	ts r
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BSS:			1. Contract (1997)	
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- 2. Connect the output port of the PoE/PoE+ power injector to the RFID reader and the input port to your local PC.
- 3. Plug in the power cord of the power injector and wait until System LED is solid blue

### D. Check if Cloudburst SW is already installed

Before proceeding to the next chapters, it is important to check if Cloudburst SW is already installed, therefore please proceed as described in the following steps.

- Connect to the reader management interface using a Web browser (e.g. Google Chrome), type <u>http://169.254.1.1</u> address in the address bar or use url like <u>http://impinj-XX-XX-XX.local/</u> for the R700 reader where last 6 digit of the MAC address replaces XX in the url. After that press enter to login with the default credentials. User name: root. Password: impinj.
- 2. In the reader's details, check if an application SW is installed.

TAILS		ANTENNA
Model Name	Speedway R120	Feature St
Regulatory Region	ETSI 302-208 v1.4.1	Press to E
MAC Address	00:16:25:13:E3:7E	
Software Version	7.6.1.240 (Build 9b2266927f9)	READER R
Hordware Version	260.006.006	Deboot St
Application SW Version	2.4.0.42	Press to B
	010 10 110 16	11033101
TWORK		QUICK LIN

Note: In readers with newer firmware version (Octane firmware), the UI is different and you would be able to find the installed Cloudburst version under the "CAP version", as shown below:



IMPINJ			Read	er 🖲 MQTT
Home			Home	Event Rep
R700 Reader	0	Firmware and CAP	0	
Operating Region: ETSI 302-208 v1.4.1 RFID Interface: LLRP Interface	<ul> <li>Change Region</li> <li>Change Interface</li> <li>ord</li> <li>C Reboot</li> </ul>	Firmware Version 8.2.2	p image or select.	
Hostname impinj-14-02-11 IPV4 Address 10.40.2.146 IPV6 Address fe80::151c:da6:fd53:c477	ļ	CAP Version 3.1.2.21 ① CAP Certificates 1 Certificate installed ④	CAP Authentication () Open * Change CAP Authentication	
Hardware Address		Power Source	0	

3. <u>If the "Application SW Version" or "CAP Version" is shown it means that Cloudburst SW is already</u> installed, so please proceed directly to chapter F.

# E. Install Cloudburst software to start operating the reader

Cloudburst is a Datamars software that allows to manage the RFID reader and it allows to quickly deploy the RFID system with no need for software development and deep RFID knowledge.

- 1. Download Cloudburst clicking the Download button at the following address <u>https://www.textile-id.com/cloudburst</u> and unzip the downloaded file.
- Connect to the reader management interface using a Web browser (e.g. Google Chrome), type <u>http://169.254.1.1</u> address in the address bar or use url like <u>http://impinj-XX-XX-XX.local/</u> for the R700 reader where last 6 digit of the MAC address replaces XX in the url. After that press enter to login with the default credentials. User name: root. Password: impinj.
- 3. Click the Browse... button in the Reader upgrade section. Select the .upgx file (e.g., Cloudburst\_1\_0\_0.upgx) in the unzipped folder of the previously downloaded file and click Open.

READER UPGRADE	
Upgrade Status	Ready
Last Operation Status	N/A
Select Upgrade File	Browse Cloudburst_1_0_0_0.upgx
Upgrade Now	Upgrade [†]

a. Note: In readers with newer firmware version (Octane firmware), the UI is different and you would have to upload the .upgx file where it says "Drag and drop image or select". After uploading the file, it will automatically be processed and the reader UI would ask to reboot or show error messages in case file is not correct:

R700 Reader	Firmware and CA	P (?
Operating Region: ETSI 302-208 v1.4.1	egion Firmware Version 8.2.2 •	B
Hostname impinj-14-02-11 IPV4 Address 10.40.2.146 IPV6 Address fe80::cebd:9240:a347:6d57	CAP Version 3.1.2.0 CAP Certificates 1 Certificate installed	g and drop image or select.

- 4. Click on the Upgrade [↑] button. The reader uploads Cloudburst and then commits the SW image, the process lasts about 30 seconds. When the Last Operation Status turns to Waiting for manual reboot click on the Reboot ♂ button in the Reader Reboot section. The installation and reboot process take about 60 seconds. If the software is successfully installed the System LED is solid blue and the Inventory LED blinks blue.
  - a. Note for newer reader management versions the interface would be shown like below and would notify & ask user to reboot reader. When you click on the reboot, the interface would again show a pop up, you would need to click on the "Reboot" button again and the reader would proceed with restarting.

R700 Reader	⑦ Firm	ware and CAP		(?
Operating Region: ETSI 302-208 v1.4.1	Change Region     Firmwa     8.2.2	e Version		
RFID Interface: LLRP Interface Change Pass	Change Interface Word C Reboot	Drag and drop im	age or select.	
Hostname impinj-14-02-11 🌶		ade has been installed. load another upgrade file or reboot to en	able it 🧭 Reboot	
IPV4 Address 10.40.2.146				
IPV6 Address fe80::4306:975:f8e7:1712	C CAP Ve	rsion	CAP Authentication (	0
Hardware Address 00:16:25:14:02:11	CAP Ce 1 Cert	rtificates ificate installed	Change CAP Au	thentication
Reader Time				

# F. Start operating the reader with Cloudburst

- 1. Connect an antenna to the ANT1 connector on the RFID reader and put an RFID tag on the antenna.
- 2. Connect to the Cloudburst Web GUI using a Web browser (e.g. Google Chrome), type <u>https://169.254.1.1:8443/</u> address in the address bar or use url like <u>https://impinj-XX-XX-XX.local:8443</u> for the R700 reader where last 6 digit of the MAC address replaces XX in the url. After that press enter to login with the default credentials. Type the default password: password and click the Login button.



- 3. Click on the LiveRead button on the right side of the page and then click on the Start button. The EPC (Electronic Product Code) of the RFID tag on the antenna is shown on the LiveRead window. You successfully read the tag!
- 4. Cloudburst allows to set-up all the parameters included the network interface of the reader to connect it to the laundry network and start getting EPCs in the laundry management software.

+ → C ▲ Nots	secure   https://169.254.1.1/rfid-setti	ngs			☆
CLOUGDUIST	Antenna settings Antenna mode Standard TX Power Antenna 1 16.00 dBm	Sensitivity MAX_dBmAntenna 2	TX Power Sensitivity dBm	LiveRead Total EPC read: 22 Sourt Stop Montport Stoneward LiverC	Reset counter Clear In
	TX Power	Sensitivity dBm Antenna 4	TX Power Sensitivity	300ED09733500040011168EC 300ED09733500040011168EC 300ED09633500040011168EC	
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RFID settings	Reader mode	III. Low duty cycle	Report size	300ED89F33500040011168EC 300ED89F33500040011168EC	
	Search mode	Empty field timeout	Operating fequency mode	300E009F33500040011168EC 300E009F33500040011168EC	
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	0 *	200 ms		300EC009F33500040011168EC 300EC009F33500040011168EC	
	Population estimate				
System	32			300ED89F33500040011168EC	
Network	<ul> <li>Start and stop conditions</li> </ul>			- <b>-</b>	
	Start condition Manual	Stop condition A Manual	Stop condition B		
	Start	Stop			
🔨 🗸 🔄					

### G. Updating the R700 firmware version via Reader management interface

- 1. Download the latest .upgx file sent by the support team on the PC
- 2. Unzip into a folder and remember the location for the .upgx file
- 3. Connect to the reader management interface using a Web browser (e.g. Google Chrome), type <u>http://169.254.1.1</u> address in the address bar or use url like <u>http://impinj-XX-XX-XX.local/</u> for the R700 reader where last 6 digit of the MAC address replaces XX in the url. After that press enter to login with the default credentials. User name: root. Password: impinj.
- Click the "Browse..." button in the "Reader Upgrade" section. Make sure to select the .upgx file (e.g., Impinj\_R700\_Firmware\_v8.2.2.upgx) in the unzipped folder of the previously downloaded file and click "Open".

ADER UPGRADE	
Upgrade Status	Ready
Last Operation Status	N/A
Select Upgrade File	Browse Cloudburst_1_0_0_0.upgx
Upgrade Now	Upgrade [↑]

Note: In readers with newer firmware version (Octane firmware), the UI is different and you would have to upload the .upgx file where it says "Drag and drop image or select". After uploading the file, it will be automatically processed and the reader UI would ask to reboot or show error messages in case file is not correct:

R700 Reader	3	Firmware and CAP		?
Operating Region: ETSI 302-208 v1.4.1	Change Region Change Interface rd C Reboot	Firmware Version 8.2.2 •	op image or select.	۲ – ۱ ۱
Hostname impinj-14-02-11 IPV4 Address 10.40.2.146 IPV6 Address fe80::cebd:9240:a347:6d57		CAP Version 3.1.2.0 <b>●</b> CAP Certificates 1 Certificate installed <b>④</b>	CAP Authentication ⑦ Open Change CAP Authentica	▼ tion

5. When successfully processed and uploaded, the interface would show the message accordingly to restart the reader. Click on the Reboot button and then confirm the pop up by clicking on the Reboot button again.

MPINJ			Read	er 🌒 MQTT 🗣 Kafka 🌒 Webhook (
lome			Home	Event Reporting Network Hel
R700 Reader	0	Firmware and CAP	0	
Operating Region: ETSI 302-208 v1.4.1	Change Region bange Interface C' Reboot	Famuer Version: 8.2.0 • I Drag and dr Upgrade has been installed. • Upload another upgrade tie or rebot	ap image or select.	
19V5.6ddmss 10.40.2.146 19V6.6dms fc80:223c:9adacce84xd22e 1ardware.6ddms 0.016/375.4d0211	Ļ	CAP Version 3.1.2.21 CAP Certificates 1 Certificate installed	CAP Authentication Open * Change CAP Authentication	
Reader Time 21/05/2024, 12:17:28 CEST				
15 days, 1 hours, 48 minutes, 22 seconds		Power Source	3	
Impinj R700 RAIN RFID Reader		Source		



6. In about 30-60 seconds, the page should refresh, and you should be able to see the new firmware version being displayed in the interface under the Firmware Version:

IMPINJ		Reader  MQTT Kafka Webbook
Home	Are you sure?	Home Event Reporting Network: Help
R700 Reader	Rebooting will stop any running processes or jobs. Rebooting during firmware installation could leave the reader in a failed state.	0
Operating Region: ETSI 302-208 v1.4.1  Charge Password Charge Password Charge Password Charge Password	Cancel Reboot	
Hostname Implinj-14.02-11 / IP94 Address	Upgrade has been installed. Upload another upgrade file or relocate enable is Re	
10-40-2,146 IPRI Alder fe80:2233:9adaxce84:d22e Mardiaure Aldress 00:14:25:14.02,11	CAP Version CAP Au 3.1.2.21 O Open CAP Centificates 1. Centificate installed O Cha	blentsukken
Reader Time 21/05/2024, 12:17:36 CEST		
Uptime 15 days, 1 hours, 48 minutes, 30 seconds	Power Source	0
Impinj K700 RAIN RED Reader	Saura	

I	MPINJ			Reader ●	N
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	R700 Reader	0	Firmware and CAP	0	
	Operating Region: ETSI 302-208 v1.4.1	e Region nterface Reboot	Firmware Version 8.2.2 <b>1</b> I <b>D</b> rag and drop image or <b>select</b> .	   	
	Hostname impinj-14-02-11 / IPV4 Address 10.40.2.146 IPV6 Address fe80::4306:975:f8e7:1712 Hardware Address	ļ	CAP Version CAP Authentication () () CAP Certificates 1 Certificate installed () Change CAP Authentication () CAP Certificates () Change CAP Authentication () CAP Certificates () Change CAP Authentication () CAP Certificates () CAP Certificates () CAP Certificates () CAP Certificates () CAP CAP CAP CAP () CAP	v	

### H. Updating the R700 firmware version via USB drive

The Impinj R700 firmware can be updated via USB drive. To do so, first obtain the firmware upgrade file sent by the support team. The upgrade file extension is **.upgx**. (Example: Impinj\_R700\_Firmware\_v8.2.0.upgx).

#### To prepare the USB drive for the upgrade:

- 1. Insert a USB drive into your computer.
- 2. Format the USB drive as FAT32.

3. Create a directory named impinj in the root of the USB drive, and create the subdirectories revolution, upgrade, and images. The names of these directories are case sensitive and must all be lower case. It is important to create the path correctly for the reader to correctly pick it up for updating. The path should look like:

Name	Date modified	Туре	Size		
Impinj_R700_Firmware_v8.2.2.upgx	21/05/2024 12:14	UPGX File	63,947 KB		

4. Copy the desired firmware upgrade *.upgx* file into the directory: impinj\revolution\upgrade\images. **Note:** If multiple *.upgx* files exist in the images directory, the reader will use the most recently modified file.

5. Remove the USB drive from your computer.

#### To use the USB drive to update the reader:

1. Confirm that the reader is ready for upgrade, and that the System LED is solid blue and the Upgrade LED is off.

2. Insert the USB drive into the "USB Host" port on the reader. Within 5-10 seconds, the reader will begin upgrading the reader and the Upgrade LED will blink blue. If the Upgrade LED remains off, the reader likely cannot locate the images directory and *.upgx* file on the USB drive.

3. The upgrade process completes in 20-60 seconds and then the Upgrade LED changes to solid blue.

4. Remove the USB drive from the "USB Host" port and reboot the reader.

During the upgrade process, the reader will attempt to append information to a status.log file in the impinj/revolution/upgrade directory. The status.log file is intended to provide an audit trail for the upgrade of one or more readers.

Name     Date modified     Type     Size       images     22/05/2024 10:43     File folder	~ <b>^</b>	D:\impinj\revolution\upgrade			
Limages 22/05/2024 10:43 File folder	Nam	e	Date modified	Туре	Size
	📕 ir	nages	22/05/2024 10:43	File folder	
■ status.log 22/05/2024 08:45 Text Document 1 KB	🗎 s	tatus.log	22/05/2024 08:45	Text Document	1 KB



If the firmware upgrade process fails, the System LED will blink red. Remove the USB drive, reboot the reader, and check the status.log file for the reason of the failure.

For additional information see the Cloudburst online help or the user manual at the following link: <u>https://www.textile-id.com/cloudburst</u>.

# Support

Contact Datamars Textile ID support team at <a href="mailto:support-tid@datamars.com">support at +41 91</a> 935 73 80.