

# RFID for Chicken




## Reseller

Company	Location	SDK	Chip Series	Remarks
FONKAN	Shenzhen	SDK not publically downloadable		
INVELION	Shenzhen	SDK downloadable		
CHAFON	Shenzehn	SDK downloadable		pw: chafonsdk
Chicken Wing Tags Plastic		Made-in-China		
Marc RFID Store		Aliexpress		

Chip	Product Link	Company
E710	<a href="#">Impinj E710 Reader Chip Product Brief</a>	impinj
Ennn Series	<a href="#">Impinj E910, E710, E510, and E310 RAIN RFID Reader Chip Datasheet v4</a>	impinj

- Press Release on Ennn SDK:  
<https://www.impinj.com/library/blog/speed-up-device-development-with-impinj-e-family-firmware-and-sdk-v20>

## Chafon Products

Purchased	Product	Chip	Company	Speed	Price	Datasheets
	<a href="#">CF811 Even UHF eight-channel Fixed Reader</a>		Chafon	200 tags per sec	USD180	<a href="#">cf811_en.pdf</a>
	<a href="#">CF815 Even E710 UHF four-channel Fixed Reader</a>	E710	Chafon	800 tags per sec	USD195	<a href="#">cf815_en.pdf</a>
	<a href="#">CF816 Even E710 UHF eight-channel (mux) Fixed Reader</a>	E710	Chafon	800 tags per sec	USD240	<a href="#">cf816_en.pdf</a>
	<a href="#">CF800 OS UHF 8 ports fixed reader</a>		Chafon	800 tags per sec	USD380	<a href="#">cf800_en.pdf</a>
	<a href="#">CF-RA8080 UHF RFID ceramic antenna</a>		Chafon	3-4m read range	USD20	<a href="#">cf-ra8080_en.pdf</a>
	<a href="#">CF-RA5005 UHF 5dBi Counter Antenna</a>		Chafon		USD27.5	<a href="#">cf-ra5005_cn.pdf</a>
	<a href="#">CF-RA6005 UHF Narrow Angle Beam Antenna</a>		Chafon			<a href="#">cf-ra6005_cn.pdf</a>
	<a href="#">CF661 Prime UHF 6dbi integrated reader</a>		Chafon	200 tags per sec	USD80	<a href="#">cf661_en.pdf</a>

## CF816 Multiplexing

- ~0.4s one cycle (Start from port1 to port8)

My suggestion is to buy **CF816** Fixed reader. **CF816** and **CF811** are basically the same, the main difference is that **CF816** is using impinj E710 chip, which is more sensitive in reading and has a higher reading speed. **CF816** also has more API commands than **CF811**. **CF800** is also using impinj E710 chip and has Android operating system additionally, which I think is

not necessary to us. The API of the **CF816** and **CF800** are the same.

And buying two to four **CF-RA8080** UHF RFID ceramic antennas to use with the Fixed reader, The gate size of the chicken house is around 30cm height and 27cm width. The ceramic has a size of 80\*80\*5mm, with circular polarization, its reading angle is 60 degrees forward. So it is possible to cover the gate size. But we can also go for a PCB antenna. For PCB antennas, I suggest **CF-RA5005** UHF 5dBi Counter Antenna, also with circular polarization (120\*120\*6.5mm).

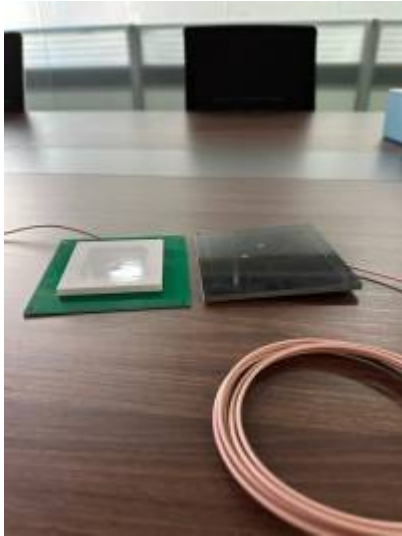




Fig.1 CF-RA8080 (Left) CF-RA5005 (Right)

**CF-RA6005** UHF Narrow Angle Beam Antenna fits the gate width perfectly, but it is not waterproof.

And two **CF661** integrated readers, with a read range 0-6 meters. Prime reader and Fast reader are using the same SDK.

## Wing Tags


Seller	Wing Tags	
<a href="#">Game and Poultry</a>	<a href="#">game_poultry_2022_flyer.pdf</a>	<a href="#">game_poultry_catalogue_2025_euro_direct_-_english.pdf</a>
	<a href="#">Wonderband</a>	
	<a href="#">CCC Tag</a>	
	<a href="#">Offset CCT Tag</a>	
<a href="#">Marc RFID Store</a>		
<a href="#">water washing tags</a>		
<a href="#">RFID UHF foot ring tags</a>		







<p>Made-in-China</p>		
<p>Made-in-China Customization</p>		
<p>Caisley</p>		
<p>National Band &amp; Tag Company</p>		

### UHF RFID tags set of various size

<p>860-960MHz ISO18000-6C UHF RFID tags samples 10pcs per kind *10kinds</p>	
<p>10PCS Sample Long Range 1-12M RFID UHF Tags Wet Inlay Adhesive Sticker EPC Gen2 6C 860-960Mhz For Asset Tracking Inventory</p>	
<p>Passive UHF RFID Anti Metal Sticker 18000-6c Ultra Thin RFID Metal Sticker Tag for Asset Tracking Management</p>	
<p>10PCS Long Range RFID UHF Tags Sticker Wet Inlay 860-960mhz Alien U7 EPC Global Gen2 ISO18000-6C</p>	
<p>860-960MHz ISO18000-6C UHF RFID anti metal tags RFID passive cards</p>	
<p>Hitachi UHF Ultra Small Package Tag (2.5mm x 2.5mm)</p>	<p><a href="#">hitachi_pkg_tag.pdf</a></p>
<p>Mini-UHF-RFID 8mm ø</p>	

### Tags size/range comparison CF816

Tag Type	Tag Photo	size	range (CF816)	range (CF661)	conditions
1		<p>7,08 * 1,6mm</p>	<p>0-3mm</p>	<p>~</p>	<p>few mm only at the edge of the antenna</p>
2.1		<p>12,28mm ø</p>	 <p>45cm</p>	 <p>37cm</p>	<p>Less curved surface</p>

Tag Type	Tag Photo	size	range (CF816)	range (CF661)	conditions
2.2		12,28mm ø	 14cm	 14cm	14cm for the more curved surface was measured in the condition that pointing the tag either to right or left. And the detection was very bad when pointing the tag upward or downward.
3		4 * 95,5mm	 ~180cm	 ~99cm	warpped to a surface area of 17mm * 9.22mm

## Geometry

Dicke der Außenwand ca. 30 cm.  
Abstand der Klappen

### Stall 1

- 1 zu 2: 1,60 m
- 2 zu 3: 5 m
- 3 zu 4: 3,56 m

### Stall 2

- 5 zu 6: 2,48 m
- 6 zu 7: 1,28 m
- 7 zu 8: 5,20 m

## More informations about wing band/tags

- [Kevin J.McGowan's Crow study](#)
- [Jane Robinson \(2022\): RFID in Turkey Breeding: A better path to progress](#)
- [GPS Pigeon Tracking Ring](#)
- [Friends of Red Kites in the North East of England](#)
- [Phil Littler and John Middleton \(2014\): Marsh Harriers strike out across Europe](#)
- [Rogier Poultry Supplies: Leg Bands, Wing Bands, and Zip Ties](#)

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