



## Group

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## Description

IP7020

### Applications

**Inlets to be used in applications where long range, multi-read, high-speed item identification is required:**

- § Supply Chain Management (item , case , container, roll-tainer, crate)
- § Transport Management (ENP / licensing, vehicles, trailers, tyres)
- § Textiles (Smart Labeling and Smart-EAS - Electronic Article Surveillance)
- § Assets Management (Office Furniture , equipment)
- § Document / Baggage Management (postal, certificates , files , courier, inventory, air line baggage)
- § Plastic Container Management (chemicals, hazardous waste)
- § Carton Packaging

### Chipset

iP-X2 / EM4222

### Tag Construction

- § Smartlabel inlet consists of a chip on a flexible printed antenna substrate (optional : adhesive strip)
- § Available in 50mm x 20mm , 110mm x 10mm standard enclosures
- § Custom form factors can be developed upon customer requests



### Key Features

- § Low cost single chip solution
- § Available for European, USA, AUS & RSA spectrum allocations
- § Long read range
- § Robust anti-collision protocol – up to 240 tags can be read simultaneously
- § Factory programmed 64 bit ID number
- § Fast moving tags can be read – up to 300km/h
- § High tag read rate – about 200 tags/sec in a multi-read application
- § Passive – no battery
- § Compatible with all iP-X Read/Write and Read-Only tags in mixed populations
- § Compatible with all iPico UHF readers
- § High tag data transmission rate – up to 256 kbit/sec
- § Frequency independent chip – (used at frequencies from 315 MHz to 2.45 GHz)
- § -40 to +85° C

## Programming for Tag Numbers & Speed

iP-X R-O UHF tags are available in five versions or speed grades (all are available in all enclosure formats and frequencies):

	Data Rate	Maximum Interval	Performance	
			Speed	Number of tags
V.1	64 kbit/s	4 kbits	144 – 14 km/h (40 - 4 m/s)	1 - 10
V.2	64 kbit/s	16 kbits	18 – 2 km/h (5 - 0.5 m/s)	5 - 60
V.3	256 kbit/s	4 kbits	360 – 36 km/h (100 - 10 m/s)	1 - 20
V.4	256 kbit/s	16 kbits	43 – 11 km/h (12 - 3 m/s)	10 - 60
V.5	256 kbit/s	64 kbits	18 – 4 km/h (5 - 1 m/s)	30 - 240

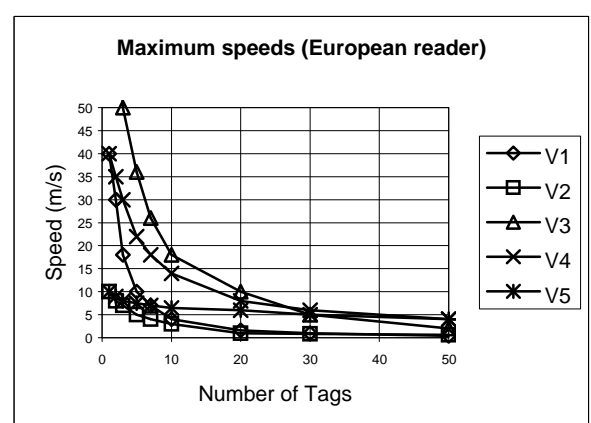
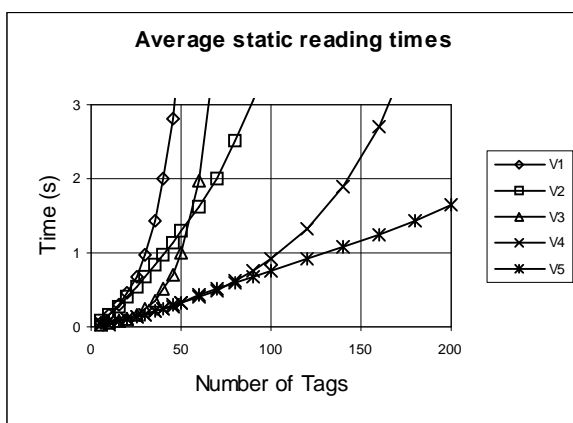
Performance depends on number of tags simultaneously present in reader beam



## Specifications

<b>Device name</b>	<b>iP-X UHF Thick Credit Card Tag</b>
<b>Part Number</b>	<b>iP-X X2-rff-Vn-C86x54x2.6-a</b>
Power requirements	No batteries (passive back-scatter)
Read Range	2 - 7 m (Depends on reader power output and configuration, as well as tag enclosure)
Data rate	Up to 256 kbit/s
Read speed	Depends on number of tags present simultaneously. See Programming Speed Table on page 1
ID Length	64 bits (16 bit CRC)
Protocol Saturation	<ul style="list-style-type: none"> <li>Protocol optimised for various applications (e.g. few fast moving tags vs. large numbers of slow moving tags)</li> <li>Four different interval settings available (1, 4, 16 and 64 kbits)</li> <li>Higher settings will take longer to read a small number of tags, but will take a larger number of tags to saturate the reader</li> </ul>
Multi-read rate	Up to 240 tags/s (Average ID reading rate is nearly 200 tags/s)
Antenna	Wires attached to chip module
Programmability	Factory programmed Read-only ID
Life Expectancy	Virtually indefinite
Environmental	Operating temperature range: -30 to +70C Storage temperature range: -40 to +85C Humidity: 5 to 95% non-condensing
Physical	T.B.D

Configuration	Regulatory Requirements		Read Performance (Reliable reading range)
	Frequency	Power output	Standard labels
<b>Japan</b>	UHF bandwidth allocation in Progress	N/A	N/A
<b>CE (Europe)</b>	Fixed frequency 869.4 - 869.65MHz	500mW ERP	1m – 2m
<b>ACA (Australia)</b>	Spread Spectrum 918 - 926MHz	1W EIRP	2m – 3m
<b>FCC (USA)</b>	Frequency Hopping 902 - 928MHz	(i) 4W EIRP unlicensed (ii) 30W EIRP licensed	(i) 4m – 5m (ii) Not tested
<b>ICASA (SA)</b>	Fixed frequency 915.2MHz	8W EIRP	5-6m



## Ordering Information

Part number: **iP-X2-rff-Vn-C86x54x2.6-a**

rff: Tag centre frequency in MHz (Typically 915 or 869)

n: iP-X / EM4222Chip version Number (1,2,3,4,5) (V3, V4 are standard; other versions available on request.)

a: LOG = with iPico Logo, PWH = white Lexan sticker