



Group

**iPico Holdings
(Pty) Ltd**
PO Box 73180
Lynnwood Ridge
Pretoria
0040
South Africa

Operations

**iPico Identification
(Pty) Ltd**
Building 43C
CSIR Campus
Meiring Naudé Rd.
Brummeria, Pretoria
South Africa

Tel: +27 12 349 0440
Fax: +27 12 349 0447
info@ipico.co.za
www.ipico.co.za

**iPico Australasia
(Pty) Ltd**
PO Box 19
Redcliffe 4020
Queensland
Australia

Tel: +61 7 3283 6566
Fax: +61 7 3283 6550
info@ipico.com.au
www.ipico.com.au

**iPico North Asia
(Pty) Ltd**
Level 21 HSBC Tower
101 Yin Cheng East
Road
Pudong
Shanghai
China
200120

Tel: +86 21 2890 3456
Fax: +86 21 2890 3131
info@ipico.cn
www.ipico.cn

Description

Doc: IP7019

Applications

Applications where long range, multi-read, high-speed item identification is required:

- § Transport Management (ENP / licensing, rolling stock, vehicles, trailers)
- § Supply Chain Management (item, pallet, container, roll-tainer, crate)
- § Marine applications – IP65
- § Access control and asset control
- § Industrial (machines, process control)

Chipset

iP-X2 / EM4222

Tag Construction

- § Consists of a chip attached to a printed antenna above a conducting ground plane which renders the tag independent of the surface to which it is attached
- § Housing made of UV resistant ABS with profiled inserts for covering screw recesses



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
- § Compatible with all iP-X Read/Write and Read-Only tags in mixed populations
- § Compatible with all iPico UHF readers
- § Factory programmed 64 bit ID number
- § High tag read rate – about 200 tags/sec in a multi-read application
- § Fast moving tags can be read – up to 300km/h
- § Passive – no battery
- § 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
- § IP 65

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

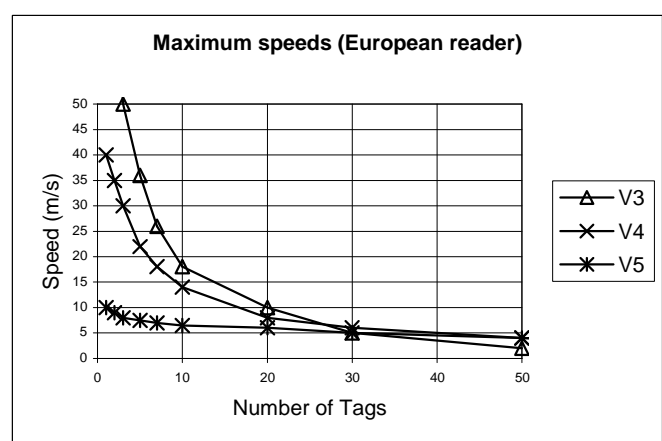
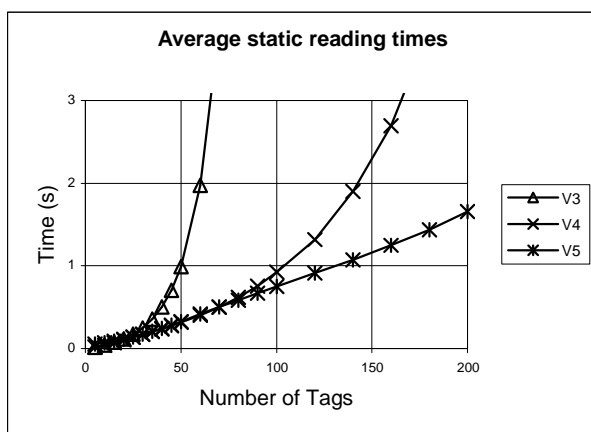
Versions V3 & V4 are available as standard devices, but other versions can be produced as custom products. Enquiries should be directed to iPico Identification Pty (Ltd).



Specifications

Device name	iP-UHF-Industrial Vehicle Tag
Part Number	iP-X X2-rff-Vn-V241x49x34-a
Power requirements	No batteries (passive back-scatter)
Read Range	2 - 20 m (Depends on reader power output and configuration)
Data rate	Up to 256 kbit/s
Max tag speed	Depends on number of tags present simultaneously. See Programming for tag numbers and speed table on page 1
ID Length	64 bits (16 bit CRC)
Protocol Saturation	<ul style="list-style-type: none"> • Protocol optimized for various applications (e.g. few fast moving tags vs. large numbers of slow moving tags) • Three different interval settings available (4, 16 and 64 kbits) • Higher settings will take longer to read a small number of tags, but will take a larger number of tags to saturate the reader
Multi-read rate	Up to 240 tags/s (Average ID reading rate is nearly 200 tags/s)
Antenna	Dipole, antenna on pcb substrate
Programmability	Read-only
Enclosure	UV resistant ABS
Life Expectancy	Virtually indefinite
Environmental	Operating temperature range: -30 to +85C Storage temperature range: -40 to +90C Waterproof IP rating: IP 65 UV resistant:
Physical	235 x 45 x 30 mm 300 g

Configuration	Regulatory Requirements		Reader Performance (Reliable reading range)
	Frequency	Power output	Industrial Vehicle Tag
Japan	UHF bandwidth allocation in progress.	Not available	Not available
CE (Europe)	Fixed frequency 869.4 - 869.65MHz	500mW ERP	3m – 5m
ACA (Australia)	Frequency Hopping 918 - 926MHz	1W EIRP	4m – 6m
FCC (USA)	Frequency Hopping 902 - 928MHz	(i) 4W EIRP unlicensed (ii) 30W EIRP licensed	(i) 7m – 10m (ii) 20 – 40 m Tested at 17W
ICASA (SA)	Fixed frequency 915.2MHz	8W EIRP	10m – 15m



Ordering Information

Part number: iP-X X2-rff-Vn-V241x49x34-a

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

n: iP-X / EM4222Chip version Number (1, 2, 3, 4, or 5) (Versions 3 & 4 are standard; other versions can be produced on request.)

a: LOG = with iPico logo on top of housing, BLK = without logo (Custom logos can be provided on request.)