



IPICO SPORTS

TAGS

For more information please contact:

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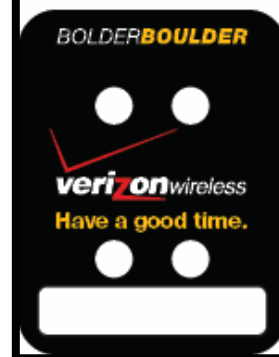
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IPICO SPORTS Shoe Tags – Current Design and Custom Design



Link http://www.ipico.com/site/iPico_100/pdf/

iP-PROD-DTRO-HalfCreditCard.pdf

Description IP7042

iPico's Dual Frequency RFID Technology uses the same iP-X multi-read protocol as its UHF products, but the low frequencies used, (125kHz powerup and 6.8MHz return signal), can penetrate through "lossy" media without the tag antenna detuning, and the high attenuation encountered with UHF systems. Because of the high tag transmit carrier frequency, high data rates are achievable (up to 256kbit/sec), resulting in fast reading of multiple tags in the beam. Dual Frequency technology allows for longer ranges to be achieved than single frequency low frequency technologies, e.g. 125 kHz or 13.56 MHz. This is because the tag data carrier frequency (6.8 MHz) is much higher than the power-up frequency (125 kHz).

Applications where DF RFID is the preferred technology

- § Supply Chain Management (wooden pallets, containers, crates)
- § Paper reel tracking
- § Paper and document management (files, library, inventory)
- § "FreeFlow" people tracking
- § Personalized card authentication
- § Access control and asset control
- § Animal tracking (sheep, cattle, pigs)
- § Mining tracers (ore, diamonds)
- § Marking of underground reticulations and routing (telecoms, electricity, water, fibre optic)
- § **Sport time-keeping (running, cycling, swimming, triathlon)**

Chipset

- iP-X3 / EM4322

Tag Construction

- § Consists of a chip module attached to 125kHz and 6.8MHz coil antennas, enclosed in a 2.4mm plastic card.
- § Custom enclosures can be developed upon customer requests



iP-X Read-Only Dual Frequency RFID Tag Half Credit Card

Key Features

- § Low cost single chip solution
- § Compliant with USA, European, Australian, and RSA spectrum allocations
- § Dual frequency (Transmit 125kHz / Receive 6.8MHz)
- § Long read range in electrically noisy environments: 0.7 m with “Medium Range” Reader or anywhere within a 1.4 m wide portal made up of two such Readers
- § Robust Anti-collision protocol (up to 120 tags read simultaneously)
- § Fast moving tags (8 m/sec) can reliably be read
- § Can be used in mixed populations of Read/Write and Read-Only Dual Frequency iP-X RFID tags)
- § Factory programmed 64 bit ID number
- § High tag transmission rate (128 kbits/sec)
- § High tag read rate – up to 155 tags/sec
- § On-chip oscillator and 6.8 MHz antenna driver
- § Low chip power consumption
- § Passive – no battery
- § -40 to +85 OC temperature range
- § Various standard enclosures, easily packaged in custom enclosures

Programming Speed

iP-X Read-Only Dual Frequency tags are available in a standard speed grade, V39. For other chip versions, contact iPico.

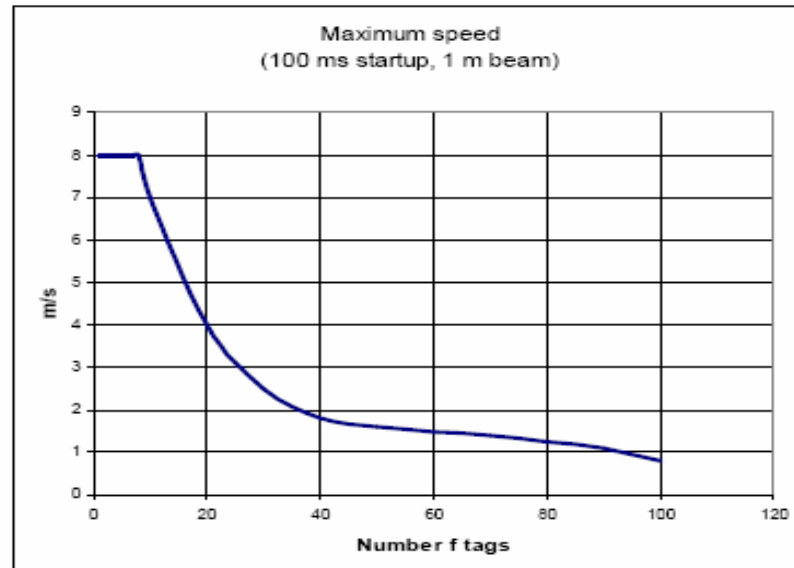
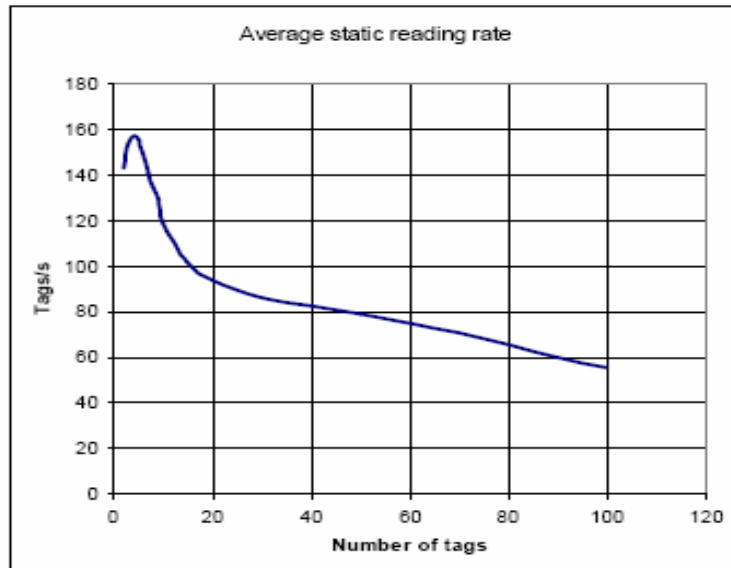
Maximum speed is not limited by the protocol, but rather by the start-up time (30 -100 ms) typical of low frequency tags.

Half Credit Card (57 x 46 x 2.4 mm)

Speed grade	Data Rate	Max interval	Performance (reliable reading)	
			Speed	No. of tags
V39	128 kb/sec	64 kb	8 m/sec	8
			2 m/sec	35

Specifications

Device Name	iP-Dual Frequency Tag: Half Credit Card Type	
Part Numbers	iP-X X3-V39-HC57x46x2.4	
Power requirements	Passive No batteries (inductive coupling at 125 kHz, which is received and rectified to generate a supply voltage for the chip)	
Read Range ("Medium Range" Reader)	0.7m from a single Reader; Can be read anywhere within a 1.4m portal bounded by two Readers	
Data rate	128 kbit/s	
Moving Tags, readability	10 tags @ 8m/sec; 20 tags @ 4 m/sec	Simulated
Multi-Read rate	20 tags in beam: 90 tags/sec; 100 tags in beam, 55 tags/sec	
Protocol Saturation	Time to read 20 tags = 0.2 sec; time to read 100 tags = 1.8 sec	
ID Length	64 bits (16 bit CRC)	
Antenna	Printed or air wound (125kHz and 6.8MHz coil / printed antenna)	
Programmability	Read-only, factory programmed ID, 64 bits	
Enclosure	Half Credit Card: 57 x 46 x 2.4 mm, with slots for mounting or tying tag	
Environmental	Operating temperature range: -30 to +70C Storage temperature range: -40 to +85C Humidity: 5 to 95% non-condensing IP rating: IP 68 UV resistant: Yes	
Physical	Material used : PVC, white	



IPICO SPORTS Shoe Tags – Future Design

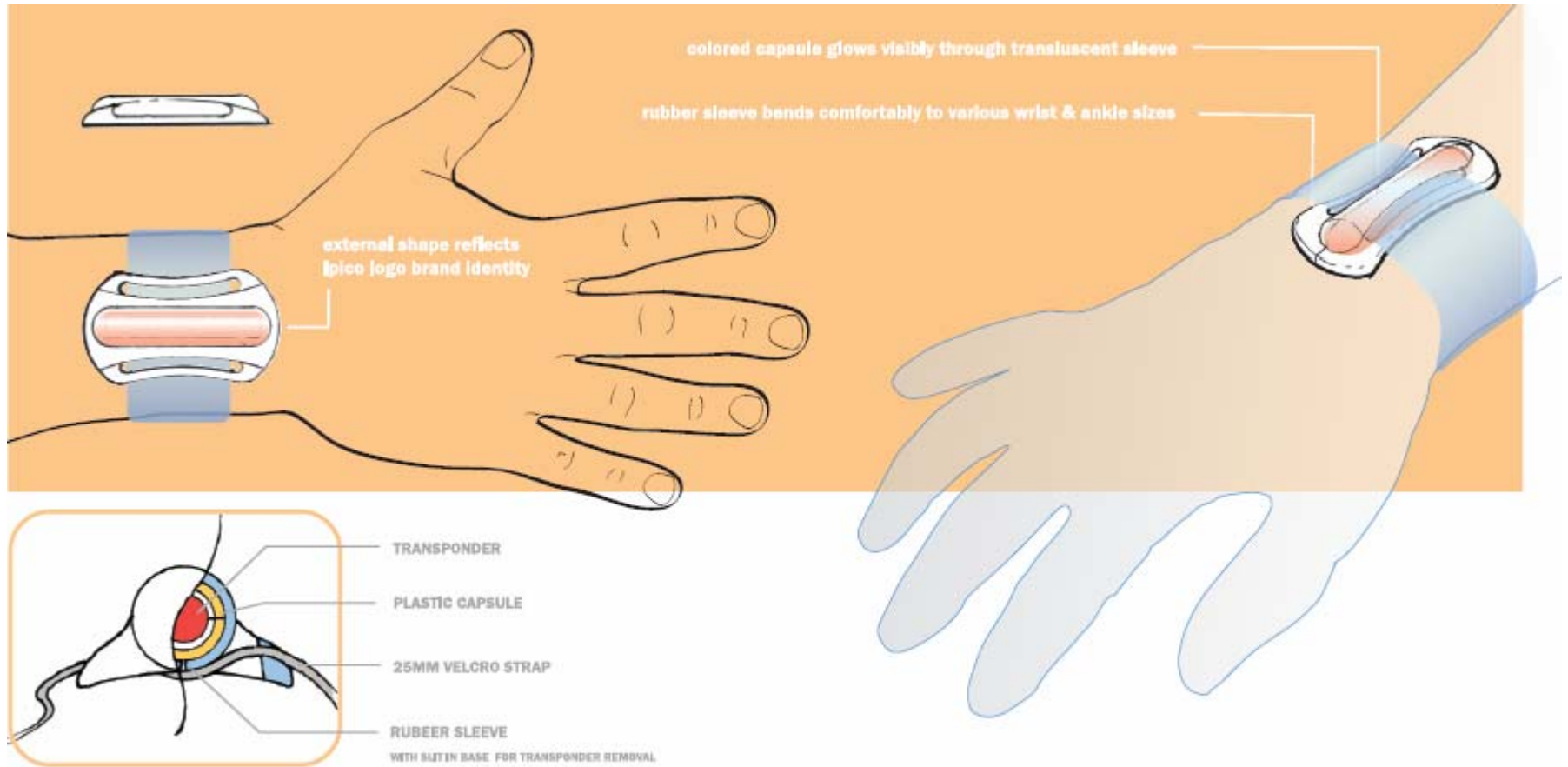


IPICO SPORTS Shoe Tags – Future Design - 3-D Tags



shoelace version

Flexible two part, ultrasonically welded plastic housing



wristband version

A translucent moulded rubber sleeve over a ultrasonically welded capsule

IPICO SPORTS Ankle Tags – Prototype Design



IPICO SPORTS ANKLE TAGS: SPECIFICATION SHEET

