

26 November 2001

Your latest copy of our regular newsletter keeping you up to date with developments. Contents

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- Commercialisation of Trolleyponder/EcoTag

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Trolley Scan have in the past month signed two major agreements providing manufacturing licences for their leading edge patented UHF RFID technology. The one licence will result in virtually unlimited supplies of low cost EcoTag transponders and is signed with a major corporation with the resources to impliment their goal of putting low cost UHF RFID on the map. The second licensee will produce readers in different configurations in large volumes, from portable to fixed installation types. Press announcements detailing the agreements will be issued in the next couple of months.

In addition three other commercial partners are progressing on their single chip implementation of EcoTag/Trolleyponder. In some cases the designers are fitting the full retail package meaning that their products will be suitable for use in retail situations such as featured in the Branders technology proposal providing an unmanned self service checkout for retail situations.

See <http://trolleyponder.com/branders.html>

Trolley Scan have also developed and supplied to numerous users around the world an evaluation system comprising 20 transponders and a reader (just needing power and a link to a computer to operate), for users to evaluate the performance of this technology in actual applications. Details of the evaluation system are at

<http://trolleyponder.com/demosys.html>

What is very important from these developments is that UHF RFID is about to become a reality. A lot has been written in the past about what the technology has to offer, and 2002 will see this becoming a reality.

Trolley Scan and their partners need additional partners to come and assist rolling out this technology. Primarily reader manufacturers, transponder converters (attaching a silicon chip to an antenna in a suitable protective package) and companies that can impliment systems for the end users are needed.

Credit card sized antennas for UHF RFID!

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Passive transponder antennas need to be very efficient to allow maximum operating range on the lowest power energizing fields from the reader. Typically this would result in a 160mm long antenna for a UHF RFID operating frequency. By cutting the length to 80mm, measurements show the efficiency drops to 5 to 10% of the full size antenna.

The patented EcoTag technology from Trolley Scan gives the manufacturers some additional degrees of freedom.

Trolley Scan have developed an 80mm by 27mm antenna that operates at nearly 90% efficiency!! - an important breakthrough in that suddenly credit card sized antennas for UHF RFID are practical.

Digital receiver developments

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Trolley Scan have been testing a DSP processor in their reader receiver to try to increase the dynamic range of the receiver. As a benchmark, the current design would allow a 4:1 operating range, that is it would detect correctly all transponders that fall say from 1 meter to 4 meters away. The new DSP version being tested works over a 50:1 operating range, that is say from 0.2 to 10 meters. Implimenting the DSP version has been challenging as the circuit has to calculate the square root of the sum of squares for two variables within a few microseconds.

Operating range versus frequency

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Users of RFID can choose to purchase systems from a number of suppliers. The most important criterion to decide on is the operating frequency, as the laws of physics mean that the operating frequency determines the range characteristics and in a manner the costing. The different frequency bands complement each other as in many applications features of one band might be desirable compared to others; short range might be preferable to long range for instance, or working in close proximity to lots of metal.

Basically there are four operating frequency bands for passive RFID. 125 kHz - very small transponders can be made but their antenna system is expensive due to its complexity, limiting the bottom pricing - read ranges limited to a few centimeters.

13.56 MHz - much simpler antenna system, credit card sized antennas, range typically 0.5 meters.

862-930 MHz - UHF RFID- emerging technology - very simple structure comprising single chip and foil/wire/ink antenna.

Ranges up to 10 meters

2450 MHz - like UHF very simple structure - needs 7 times the power of UHF for the same performance. Ranges typically 1 to 2 meters.

Marketing visit to Europe

A visit by one of the directors of Trolley Scan to visit potential purchasers of the Evaluation systems of the RFID module version in Europe is being planned for early in 2002. If you would like to be included in the itinerary, please let us know.

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More information about Trolleyponder technology can be found at the Trolley Scan website

<http://trolleyscan.com>

Interested parties are encouraged to join the User Group so that they can be kept informed of developments with the regular newsletter. (See forms at end of <http://trolleyscan.com/brochure/index.html>)

Trolleyponder(R) has been designed to be "A barcode replacement technology"

Regards

Mike Marsh

'Trolleyponder' & 'EcoTag' are the registered trademarks of Trolley Scan. "TinTag" is the trademark of Trolley Scan.

Should you not wish to monitor future developments of this technology click on the following link to send an email removing your details from the list:

<mailto:info@trolleyscan.com?subject=remove>

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Trolley Scan site detailing Trolleyponder(R)/EcoTag(R) RFID is located at <http://trolleyscan.com/>

Mirror sites in case of overload are also located at

<http://trolleyscan.co.za/> and

<http://rapidttp.com/trolley/> and

<http://rapidttp.co.za/trolley/>