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Progressive RFID Technologies Using All Verification Surveillance Systems

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ABSTRACT: The Radio frequency identification device technology which is being used in tracking and managing the asset , libraries things and so on ,basically Radio frequency identification device reader is read a tag with distance about 1 or 2 meters ,but this advance Radio frequency identification device technology with read distance about 30 meters distance. we can do easy management and tracking the asset and the tracking for an example libraries management ,jewelry shop, and etc.., in this advance Radio frequency identification device technology is more types Radio frequency identification device laundry tag, Radio frequency identification device mini tag, Radio frequency identification device metal tag, nano Radio frequency identification device and etc if the any object have any size or any shape to managing and tracking is easily to perform a advance Radio frequency identification device technology.

KEYWORDS: RFID antenna, RFID laundry tag, RFID mini tag, RFID Nano, RFID metal tag.

I. INTRODUCTION

RFID long range reader tracks vehicles, trolleys, pallets, or any assets. Organization like factories, offices, housing complex needs to monitor entry and exits of their assets. The reader is mounted on the pole at entry/ exit gates. Assets are fixed with RFID tags like tags are pasted to vehicles on the windscreen. Special tags are used on metals. When these assets pass through the entry/ exit gates they are detected by the RFID long range reader. The tags these long range readers are used to detect authorized vehicles at entry of housing complexes to unlock the boom barrier toll, parking. They are suitable for asset tracking, laptop tracking, trolley tracking and bullock cart tracking. Other applications are monitoring work in progress (WIP), warehouse, inventory etc

II. TYPES OF RFID

RFID le/hf/uhf/Active tag, laundry tag, clothing tag, RFID tiny tag, RFID inlay, RFID wristband, RFID on metal tag, rfid RFID key tag ,rfid 2.4ghz, RFID labels, RFID , nano RFID.

RFID INLAY:

The RFID tag in a smart label. It comprises the chip and aluminium, copper or silver antenna bonded to a polyethylene terephthalate (PET) layer that is delivered to the label maker "dry" (without adhesive) or "wet" (attached to a pressure sensitive liner). The inlay is adhered to the back side of the label and printed and encoded in an RFID printer. See RFID tag, RFID reader, RFID printer and RFID.Inlays are delivered to the label maker in a roll such as

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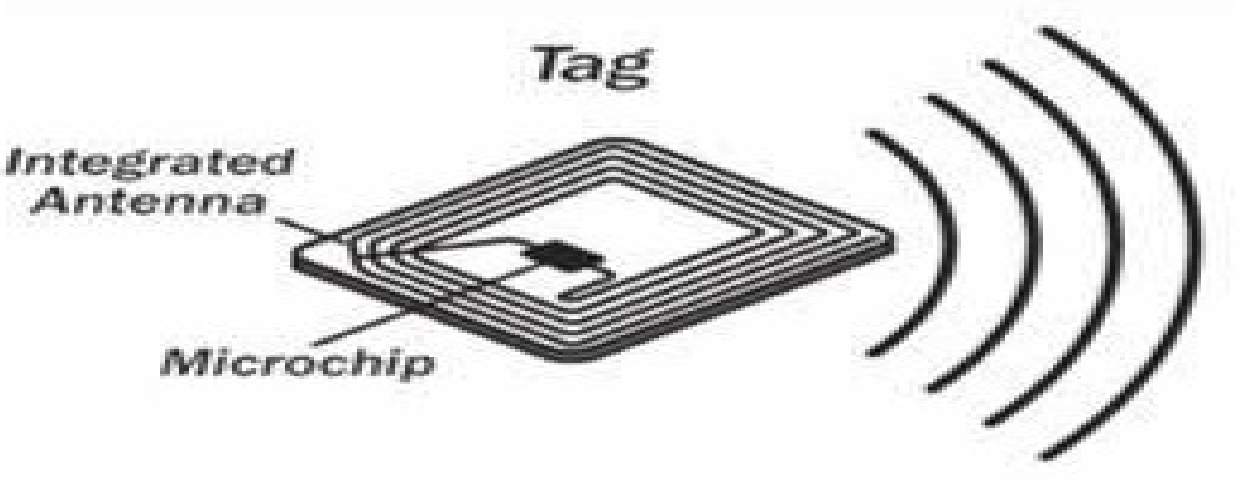
these dual dipole "Frog" inlays from UPM Reflate. They are adhered to the back of the smart label, which is then printed and encoded in an RFID printer.

A.RFID MINITAG:



B.LAUNDRY RFID TAG:

This button-sized RFID laundry tag is designed for long range laundry garment tracking. It is with four holes in the middle for easy attachment to garment. The small, rugged
RFID laundry tag is made of special material to basically meet all requirements in terms of heat, pressure and chemical resistance in the applications of contactless tracking garments in the textile rental and dry cleaning.

Waterproof IP 68 Simultaneous Identification of Tags:
Up to 50 tags per second Reading Distance: Up to 300cm~500cm Data retention time at +55ºC: > 10 years 100, 000 times reading & writing Exceptional temperature and harsh environmental performance RFID laundry is a button size identification tag

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C.RFID ON METAL:

Tags mounted on spacers, however, can be vulnerable to physical damage and may not be convenient nor realistic on a large scale deployment tags have a patented antenna design that are tuned to work properly directly on, or even embedded in, metal surfaces without bulky spacers.
RFID on metal (abbreviated to ROM) are radio- frequency identification (RFID) tags which perform a specific function when attached to metal objects.
The ROM tags overcome some of the problems traditional RFID tags suffer when near metal, such as detuning and reflecting of the RFID signal, which can cause poor tag read range, phantom reads, or no read signal at all.
The RFID-on-metal tags are designed to compensate for the effects of metal. There are several tag design methods to create ROM tags. The original method was to provide a spacer to shield the tag antenna from the metal, creating bigger tags. New techniques focus on specialized antenna design that utilizes the metal interference and signal reflection for longer read range than similar sized tags attached to non-metal objects.[1] RFID-on-metal transponders will continue to create new opportunities for users in a wide range of asset tracking and broader industrial applications. The main applications are asset tracking on servers and laptops in IT data centers, industrial manufacturing quality control and manufacturing, oil and gas pipeline maintenance, and gas cylinders.[2] The technology is evolving to allow transponders to be embedded in metal. The capability allows manufacturers to track small metal items from cradle to grave. The main focus for RFID inside metal is tool tracking, weapon tracking, and medical device quality control.

E.RFID wristband:

RFID wristband is the identification device RFID chips are placed in the inside of the wristband and the bracelets it reads the RFID readers and identify them.

F.NANO RFID:

It is the world's smallest and thinnest Radio Frequency Identification (RFID) chip. Measuring only 0.15 x 0.15 millimeters in size and 7.5 micrometers thick, the wireless chip is a smaller version of the previous record holder –

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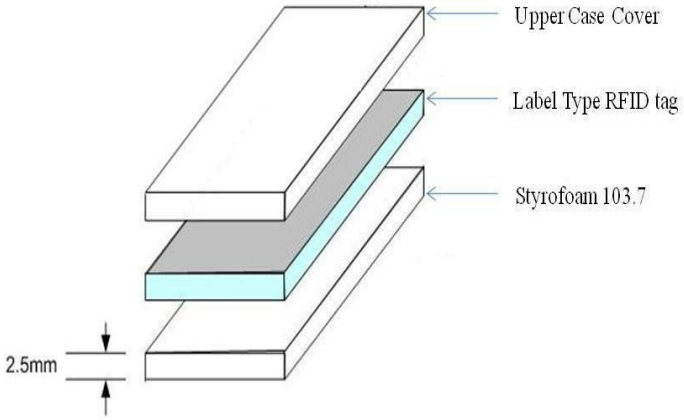
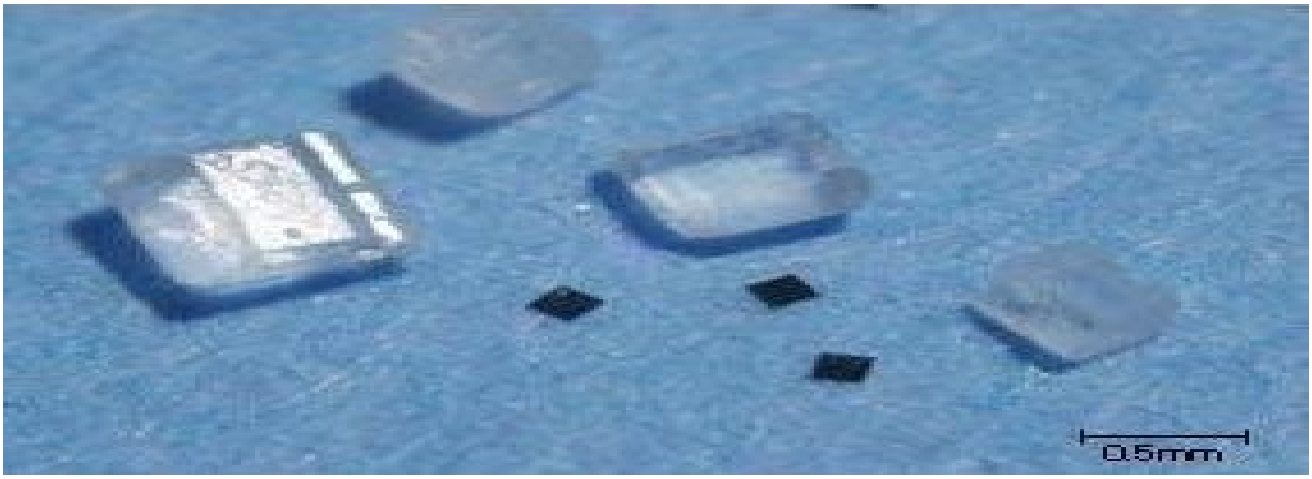
Hitachi's 0.4 x 0.4 mm "Micro-Chip". The company used semiconductor miniaturization and electron beam technology to write data on the chip substrates to achieve this decrease in size. The new chips have a wide range of potential applications from military to transportation, logistics and even consumer electronics. Nicknamed.





"Powder" or "Dust", these chips consist of 128-bit ROM (Read Only Memory) that can store a 38-digit number. Hitachi says the distance between each circuit element was reduced using the Silicon-on-Insulator (SOI) process, where an insulation layer and a mono crystalline silicon layer are formed upon the silicon base substrate, and the transistor is then formed on this SOI substrate. When compared to the conventional process where a transistor is formed directly upon the silicon substrate, this technology significantly reduces parasitic capacitance and current leakage, improving the transistor's performance. The SOI process also prevents the interference between neighboring devices, which often causes product malfunctions.

Thanks to an insulator surrounding each device, Hitachi experts say that even when the devices are in close proximity, higher integration is achieved on an even smaller area. The surface area of the new chips was reduced to a quarter of the original 0.3 x 0.3 mm, 60μm-thick chip developed by Hitachi in 2003. The company says that developments in thin chip fabrication technology enabled the significant decrease in width – to one-eighth of that of the previous model. With more chips that can be fabricated on a single wafer, productivity was increased by over four times, and Hitachi expects this will open the way to new applications for wireless RFID chips. The μ-Chip uses an external antenna to receive radio waves, which can be transformed and wirelessly transmitted as a unique ID number.

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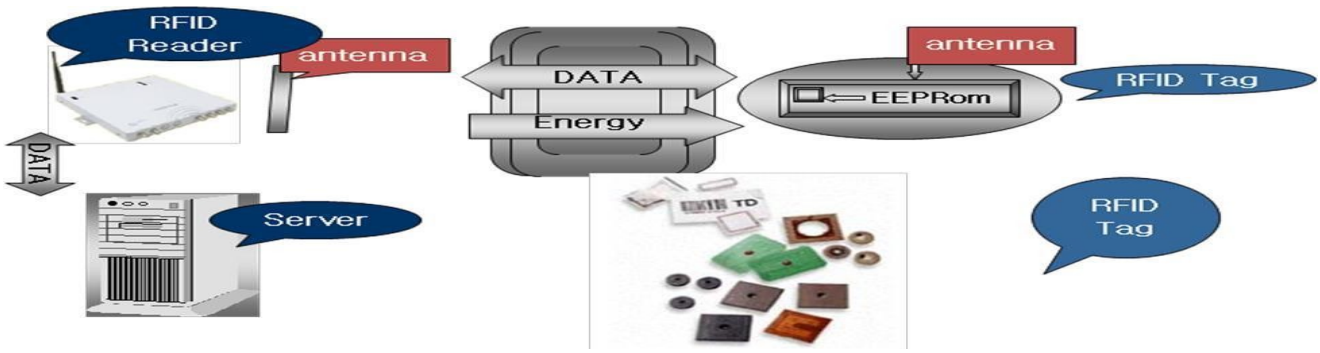
The data is written during the fabrication process, using ROM, and is therefore non-rewritable, providing a high level of authenticity. “By taking advantage of the merits of compactness, high authenticity and wireless communication, and combining it with Internet technology, the μ-Chip may be utilized in a broad range of applications such as security, transportation, amusement, traceability and logistics” – said Hitachi engineers who worked on the project. Hitachi is continuing to develop technologies that increase communication’s distance range and decrease antenna size, whilst preserving high reliability and aiming for improved productivity. The company said that the enhanced compactness and thinness of the new chip has further broadened the range of possible applications, including gift certificates that can be authenticated. The new RFID “powder” can also be incorporated into thin paper, such as currency, creating so-called “bugged” money.

RFID READER:
Specification of the RFID reader is the One of the reader device its reading distance is the 6-7m to read the RFID tag

III. RFID SYSTEM STRUCTURE:



In this section, we will discuss the inner workings of RFID systems. The first is the tag, which is affixed to the item that is to be tracked or identified within the supply chain by the RFID system. The reader, which has a number of varied responsibilities including powering the tag, identifying it, reading data from it, writing to it and communicating with a data collection application. The data collection application receives data from the reader, enters the data into a database, and provides access to the data in a number of forms that are useful to the sponsoring organization.

An RFID system communicates with electromagnetic waves. When designing RFID tag antennas mountable on metallic platforms, it is very important to understand the behavior of the electromagnetic fields near metallic surfaces since the antenna parameters (the input impedance, gain, radiation pattern, and radiation efficiency) can be seriously affected by metallic platforms. In this section, the behavior of electromagnetic fields near metallic surfaces will be considered.

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IV. CONCLUSION

Finally easy to managing and tracking in this article using the Advance RFID technology.

REFERENCES

1. Zhihua Wang; Xuguang Sun; Chun Zhang; Yongming Li, "Issues in Integrated Circuit Design for UHF RFID," Radio-Frequency Integration Technology, 2007. RFIT 007. IEEE International Workshop on , vol., no., pp.322-328, 9-11 Dec. 2007
2. Review Paper of various RFID standards:
3. Glidden, R.; Bockorick, C.; Cooper, S.; Diorio, C.; Dressler, D.; Gutnik, V.; Hagen, C.; Hara, D.; Hass, T.; Humes, T.; Hyde, J.; Oliver, R.; Onen, O.; Pesavento, A.; Sundstrom, K.; Thomas, M., "Design of ultra-low-cost UHF RFID tags for supply chain applications," Communications Magazine, IEEE , vol.42, no.8, pp. 140-151, Aug. 2004
4. Tag Circuit DesignUHF / Microwave:
5. Passive UHF Tag with 9.25-m range, no sensors
6. Karthaus, U.; Fischer, M., "Fully integrated passive UHF RFID transponder IC with 16.7-µW minimum RF input power," Solid-State Circuits, IEEE Journal of , vol.38, no.10, pp. 1602-1608, Oct. 2003
7. Semi-passive UHF Tag, low power analog section
8. Pillai, V.; Heinrich, H.; Dieska, D.; Nikitin, P.V.; Martinez, R.; Rao, K.V.S., "An Ultra-Low-Power Long Range Battery/Passive RFID Tag for UHF and Microwave Bands With a Current Consumption of 700 nA at 1.5 V," Circuits and Systems I: Regular Papers, IEEE Transactions on , vol.54, no.7, pp.1500- 1512, July 2007
9. Passive UHF Tag with Temperature Sensor
10. Hongwei Shen; Lilan Li; Yumei Zhou, "Fully integrated passive UHF RFID tag with temperature sensor for environment monitoring," ASIC, 2007. ASICON '07. 7th International Conference on , vol., no., pp.360-363, 22-25 Oct. 2007
11. Passive Tag with Temperature Sensor
12. Zhou Shenghua; Wu Nanjian, "A novel ultra low power temperature sensor for UHF RFID tag chip," Solid-State Circuits Conference, 2007. ASSCC '07. IEEE Asian , vol., no., pp.464-467, 12-14 Nov. 2007
13. Passive Tag with Temperature, Light sensors
14. Namjun, Cho, et al. "A 5.1-uW 0.3-mm2 UHF RFID Tag Chip Integrated With Sensors for Wireless Environmental Monitoring". IEEE European Solid State Circuits Conference (ESSCIRC), Sep. 2005, Grenoble, France.
15. Passive Tag with ADC, no sensor Kocer, F.; Flynn, M.P., "A new transponder architecture with on-chip ADC for long-range telemetry applications," Solid-State Circuits, IEEE Journal of , vol.41, no.5, pp. 1142-1148, May 2006
16. Man, A.S.W.; Zhang, E.S.; Chan, H.T.; Lau, V.K.N.; Tsui, C.Y.; Luong, H.C., "Design and Implementation of a Low-power Baseband-system for RFID Tag," Circuits and Systems, 2007. ISCAS 2007. IEEE International
17. Symposium on , vol., no., pp.1585-1588, 27-30 May 2007
18. Nakamoto, H.; Yamazaki, D.; Yamamoto, T.; Kurata, H.; Yamada, S.; Mukaida, K.; Ninomiya, T.; Ohkawa, T.; Masui, S.; Gotoh, K., "A Passive UHF RF Identification CMOS Tag IC Using Ferroelectric RAM in 0.35-µm Technology,".