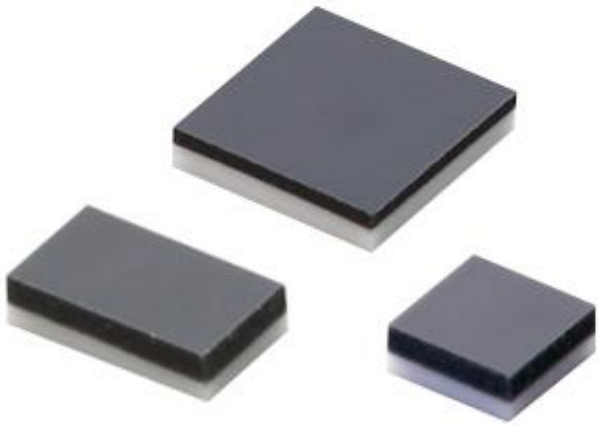
The Everlasting Function of RFID with Augmented Application



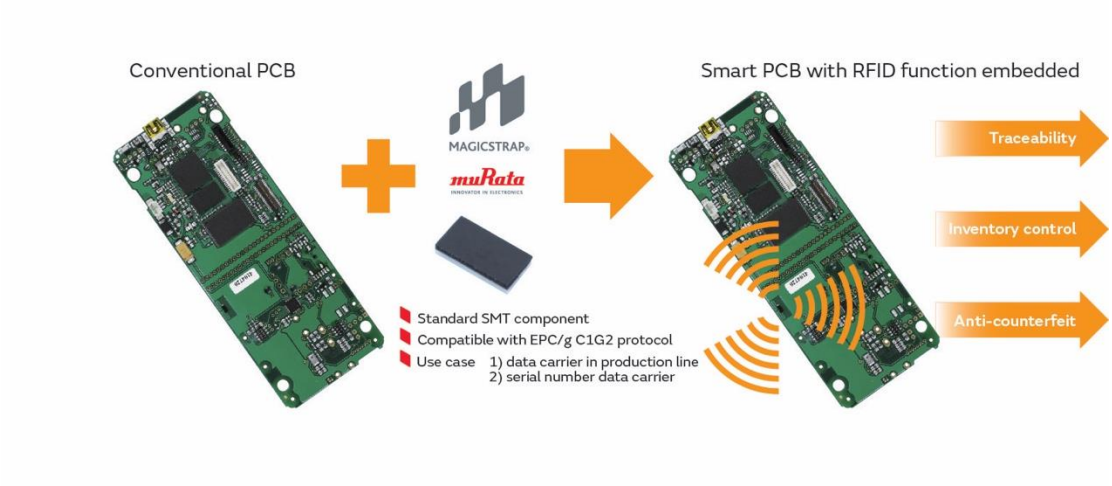
After decades of development and with the reinforcement of ceaseless improvement of materials, the streamlining in size and decreasing cost, RFID is extensively used even more. You will learn more about new RFID solutions and its areas of application in this essay. This may help you to broaden your horizon in thinking and the further development the market of application for RFID.

Washable, Compact and Low Cost RFID Label

RFID（Radio Frequency IDentification）is a type of wireless communication technology and could be used for identifying particular targets through radio frequency signals to read and write related data without the necessity of establishing mechanical or optical contact between the identification system and the target. Labels

may include information in electronic data, and could be identified within meters.

The advancement of material technology allows for the condensation of size for RFID labels and could even be washed without causing any damage to the label. This is the reason why the scope of RFID application gets wider and wider. Murata has developed many unique RFID labels, reader and writer devices, which could help to provide solutions or enhance customer operation efficiency. The scope of application covers the retailing industry, medical and health care, smart factory, laundromat, and entertainment venues.



The retailing industry is the main area of application of the RFID solutions. The RFID of Murata is very small in size and could be easily embedded into luxury items or jewels for verifying the source of the merchandise, which helps to prevent counterfeit items. In general, the retailers and warehouse dealers use a barcode or QR code on

each item to exercise control over the merchandise. If RFID is used, it could read the data of all products at one time that helps to reduce the workload significantly. In addition, there are more and more shopping centers using RFID for automatic billing in conjunction with the POS system. This helps to realize unmanned stores or automatic billing system. Furthermore, the RFID technology of Murata could also directly print the antennae of the RFID directly on the paper packing that converts the product packing into RFID label. Under this design, the antennae film is no longer needed and the cost of labeling is reduced.

The advancement of materials makes the RFID of Murata washable. With this development, laundromats can also use RFID to control their operation. They could quickly keep track on the bed sheets, towels and pajamas lent to and returned from hotels. The labels also survive rinsing and drying. In pharmaceutical and semiconductor plants, the demand for cleanliness is very strict. The installation of the RFID on the work uniform in these plants could help to keep track of the repetition of wearing and washing of the uniforms that help to keep the work environment clean.
The installation of the RFID labels in the cloakrooms of hotels or the hanging shelves of the laundromats, and link the data stored in the labels to the classification of packages or the automatic sorting of clothing could help to realize the automatic sorting and unloading of luggage and picking out the clothes and keeping track of the storage location of the clothes. This system could also provide matching between the information of the RFID label and the RFIF label of the customer to prevent customers from receiving the wrong package or clothes.
In the toy industry, RFID provides interesting application. An example is the embedding of “Portrait” into the RFID labels of toys and into the cards of the character dolls and then interacts with the APP of smart phones, game machines or family audiovisual gaming devices. In addition, RFID labels could be installed on mini cars. With the installation of a reading device on the racer lanes, it could give out different sounds and beams when the mini car passes through the location of the reading device, and also accurately measure the time of the mini cars from the starting point to ending point. Racing could be shared with participants over the Internet with tracing who could finish the race in the shortest time.
Murata also launched the RFID solutions fitting into the Industry 4.0 smart factories. The items in the factory (products, production equipment) could be linked to the IoT to enhance industry efficiency with innovation of new business. For example, the RFID labels could be linked to the employee ID, which allows for quick scanning of the person passing by the reading devices. This helps to properly enforce the entrance code to specific production zone.

RFID labels could also be applied to the production process. When an operator holds an IC card bearing an RFID label, the instruction of the tasks for the operator will automatically be displayed on the screen. If there is a product defect, this system can help to quickly locate the responsible operator. In addition, the conditions for application could also be preset and allows only specific operators to operate the machine.

In equipment control, RFID labels help to automatically read the data of the products and also setup and register the work procedures and conditions. If the wrong item is dispensed, the work process will stop to prevent further mistake. In addition, RFID labels could be installed at the fixture so that the reading device could proceed to product inspection to ensure all are in place. Or the product ID could be connected to the location of product shelf for full control of inventory at any location. This will make the pickup of goods for delivery simple and easy.

In the domain of medical and health care service, cross-inspection will be conducted by the physicians visually with the patients and matching with medication. With the use of RFID, the mistake in medications dispense could be avoided. In addition, a small label could be embedded into the test tube to note down the items for examination and the information on the patient. Data on special specimen test tubes in frozen compartment could also be easily and quickly located. RFID labels could also facilitate the control of medications on inventory, and can trace the expiration date and the status of inventory in real-time. You may also apply the label to supplies such as metallic surgery instruments and gauge, which are difficult to control with traditional label. It would be help for preparation for the surgery and tracking the items used in the surgery after it is performed. RFID could be applied extensively. If you are interested in the RFID products of Murata, please visit the following website: https://www.arrow.com/en/products/search?q=RFID&cat=&promoGroupLevel=man&filters=Manufacturer_name:Murata%20Manufacturing