THE IMPORTANCE OF RFID TECHNOLOGICAL SYSTEM

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Abstract: In this article, we have collected the main trends in the field of wireless communication for the present and the coming years. The latest innovations in the field of wireless communication, Radio Frequency Identification (RFID) the components, types, operating ranges, areas of application of the technological system, as well as existing problems and its role in society are covered in detail.

Keywords: Digitized society, wireless communication, technology, system, RFID.

As times change, progress, and develop, the role of "Information Communication Technologies" in the life of society is also increasing, that is, the developing "Information Communication Technologies" (ICT) are bringing significant changes to all aspects of our daily lives.

At this point, it is worth highlighting the positive aspects of the digitalization of society, that is, the automation of various spheres of social life, electronic payments, electronic databases, electronic digital signatures, and the use of wireless communication. The emergence of distributed data processing systems has led to the formation of a new approach to the issue of security. As is known, the role of wireless communication in such systems is invaluable. Therefore, the creation of systems for remote scanning, reading, and transmission of data is an important factor in the development of society.

One such technological system is RFID (radio frequency identification), a form of wireless communication that involves the use of electromagnetic or electrostatic coupling in the radio frequency portion of the electromagnetic spectrum to uniquely identify an object, animal, or person.

RFID technology systems are used in various fields: contactless identification of products in shopping malls, automatic access control to buildings, production process control, transport equipment control, and many other areas. main from the elements one chips is considered. Chips information transmission for is used.

The GPS system different as, employees only work on time control to be done possible. Students employee appearance was time, departure and excess work the load record. All information automatic accordingly accounting to the department Public at events participation Tags using you the movement to manage your automation and meetings and at the demonstrations participants number your calculation possible. Technology bracelets or badges, software supply and students in the form of from tags use own inside takes. Visit of the orderers coordinates online in a way is determined and analysis to do for to the server will be transmitted. Organizers stands and to sites visit to order about information they get and the most interesting segments separate show possible. The product storage RFID Transponders for biological products, weapons, valuables items

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 14 Issue: 06 in June-2025
https://www.gejournal.net/index.php/IJSSIR

and dangerous substances control to do and into account to take for usage possible. Software supply and hardware solution industry refrigerators and trade vending machines for current made. To the goods applicable tags is read, this of something availability, suitability deadline, take placed time, as well as storage from the system outside was time record to grow opportunity Technology also, user entrance also provides management.

Every an RFID system three from the component consists of: scanning antenna, reception doer and transponder. Scanner antenna and acceptance sender/receiver When combined, they are RFID Reader or It is called a tag. RFID Readers two type available-stationary Reader and Mobile Reader RFID Reader is portable or permanent accordingly connection possible was to the network connected device. This tag activating signals transmission from radio waves for uses Activated then, Tag to the antenna wave sends and there to the information translation (Figure 1).

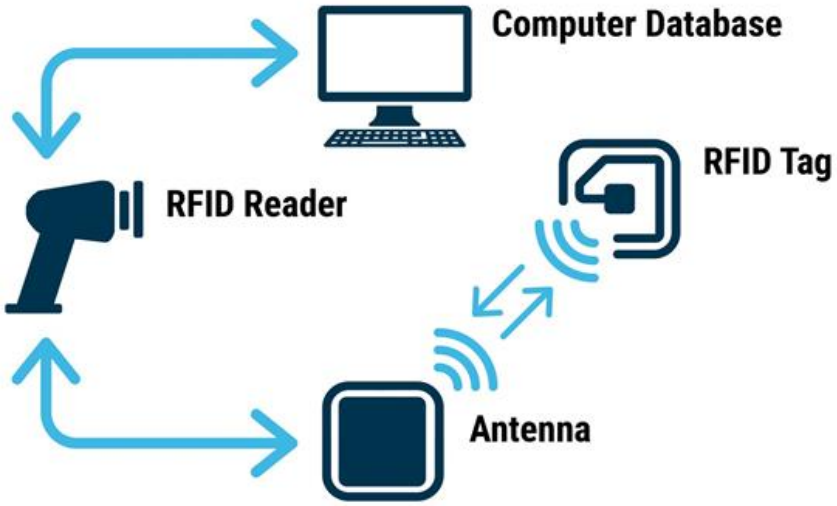

Figure 1. RFID system components

Transponder RFID tag in itself RFID tags are located for reading range tag Type, Reader Type, RFID Frequency and surrounding environment or other RFID tags and Reader's noise such as to factors looking at changes. Strong power to the source has the tags are even longer in the distance reading to the range RFID tags what kind types there is and what is it with to differentiate seeing Let's go out.

RFID tags consist of an integrated circuit (IC), an antenna, and from the chip RFID tag consists of identification information encoding The part is called RFID Inlay.

RFID tags two main type there is:

- Active RFID. Active RFID tag own power to the source has, often battery.
- Passive RFID. Passive RFID tag own strength reading from the antenna takes, its electromagnetic RFID tag on the antenna stream harvest does.

Half There are also passive RFID tags, i.e Communication by RFID Reader while charging battery contacts to rust take is coming.

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 14 Issue: 06 in June-2025
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Low power, built-in volatile not been memory every in an RFID system important role plays RFID tags usually from 2000 KB less information, that including unique identifier/serial number own inside takes. Tags only reading or literacy to be it is possible, this on the ground Information provided by Reader addition or there is of information on top of writing possible.

RFID tags for reading range tag Type, Reader Type, RFID Frequency and surrounding or other RFID tags and Reader's noise such as to factors looking at changes. Strong power source because of active RFID tags passive RFID tags than farther reading between has.

Smart tags are simple RFID tags. These tags adhesive label inside to the embedded RFID tag has and to the barcode They also have RFID and Also used by barcode readers possible. Smart tags RFID tags further advanced equipment demand to do work table printers using demand to be published by possible.

RFID systems Types of RFID systems three main type available: low frequency (LF), high high frequency (HF) and ultra high frequency (UHF) (Table 1). Microwave RFID is also available. Frequencies country and to the region looking at very difference does.

Low- frequency RFID systems: These range from 30 KHz to 500 KHz, although usual frequency 125 KHz LF RFID short transmission to the range has, usually every how in place one how many inch six up to feet.

High Frequency RFID system : They are 3 MHz from 30 MHz up to, typically HF frequency 13.56 MHz. Standard range one how many inch one how many to feet was every how in place.

UHF RFID systems: They are 300 MHz from 960 MHz up to, usually frequency 433 MHz and usually 25 feet remotely readability possible.

Microwave RFID systems: They operate at 2.45 GHz. works from 30 feet more than remotely readability possible.

Table 1. RFID technology system work frequency and range.

Band type	Frequency Range (in Hz)	Reading Range (in m)
Microwave busy	2.45 GHz	Minimum of 3 2m
UHF band	300MHz – 3GHz	Minimum of 3 m and up to 50 m or 100 m
HF band (Smart cards)	3-30MHz	1.5 m; high-end readers
LF busy	30 kHz –300 kHz	At best around 1 m
UHF - Ultra High Frequency; **HF –** High Frequency; **LF –** Low Frequency		

Current frequency RFID to the application related will be true taken distances sometimes than expected difference does. Example for, USA State department RFID chip with equipped electronic passports release announcement when you do, the chips only

ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 14 Issue: 06 in June-2025
https://www.gejournal.net/index.php/IJSSIR

about 4 inches remotely winter possible However, the State department fast meanwhile RFID Reader RFID on the tags data from 4 inches much farther – sometimes more than 33 feet higher remotely passed send possibility about evidence took.

If farther winter ranges need if so, additional to power has from tags use winter range up to 300 feet increase possible.

Conclusion instead of this to emphasize okay, RFID technologies modern business processes to automation opportunity gives, this and human error probability reduces and information again work speed increases. From tags use and wide opportunities the door open gives.

RFID technology system main from the shortcomings one his/her benefit of the scope is limited.

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ISSN 2277-3630 (online), Published by International journal of Social Sciences & Interdisciplinary Research., under Volume: 14 Issue: 06 in June-2025
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