

DOI: 10.5281/zenodo.12426709

## THE LEGAL VALIDITY OF ELECTRONIC SIGNATURES IN JORDANIAN LEGISLATION

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Received: 20/12/2025  
Accepted: 27/02/2026

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### ABSTRACT

*This study examines the concept, forms, and legal requirements of electronic signatures, with particular focus on electronic pen signatures as a form of electronic signature. Due to the absence of Court of Cassation rulings on electronic pen signatures, this research lacked relevant legal opinions and judgments from the Court of Cassation. The study examined the Jordanian legislator's regulation of electronic signatures and their granting of the same legal validity as ordinary documents, which require writing and a signature. However, the signing of transactions is not a traditional written document but rather an electronic signature. It is worth noting that the Jordanian legislator has not specified the types or forms of electronic signatures; therefore, parties are free to choose the electronic signature form they wish to use, provided it meets the legal requirements. The study also discussed how the Jordanian legislator, in the Electronic Transactions Law, grants legal validity to electronic signatures, limited to the parties involved if the electronic signature meets the required conditions. Its validity extends to third parties if it fulfills the necessary requirements for protection, in addition being linked to an electronic authentication certificate issued in accordance with the provisions of the law and it is implementing regulations.*

## INTRODUCTION

A signature is the traditional means of expressing the signatory's will and agreement to the content of the signed document. A signature is defined as "the written connection specific to the signatory that distinguishes them from other individuals, and whose placement on any document signifies their acknowledgment of its content" (Al-Ajarmeh, p. 151). From this definition, we can conclude that a signature identifies its owner and indicates their commitment to the document's contents.

With the emergence of modern communication methods and electronic transactions and documents, it became necessary to find a method that suited these developments. Traditional signatures are unsuitable for electronic documents and transactions, leading to the development of what is known as the electronic signature. Electronic signatures enhance security and privacy for those dealing with the internet, particularly in e-commerce. They also allow for the electronic identification of the sender and recipient, verifying the credibility of individuals and information. Furthermore, electronic signatures protect institutions from forgery and counterfeiting. In addition, electronic signatures facilitate the completion of transactions remotely, without the physical presence of the contracting parties, thus contributing to the growth and security of e-commerce. Electronic signatures take several forms, including electronic pen signatures, which will be the subject of this research.

### Importance of the study:

The importance of the study stems from the fact that after resorting to electronic transactions and documents, it is difficult to remain with the written means of signing. Therefore, it was necessary to recognize the electronic signature, and one of its forms is the electronic pen signature. So what is this signature, its advantages and disadvantages, and has Jordanian legislation recognized this signature and granted it legal validity, and has it distinguished it from other forms of electronic signature?

### Study problem:

The problem of the study lies in answering the question of whether a signature with an electronic pen is considered an alternative to a traditional signature, and whether Jordanian legislation has granted this signature its evidentiary value.

### Study objectives:

This study aims to achieve a set of objectives,

namely: to identify what is meant by electronic pen signature, its conditions, and its validity as evidence.

### Study questions:

This study attempts to answer the following questions:

1. What is an electronic signature?
2. What are the characteristics and forms of an electronic signature?
3. What is a signature made with an electronic pen?
4. What is the legal validity of an electronic pen signature under Jordanian legislator?

## RESEARCH METHODOLOGY

In my research, I adopted the analytical and descriptive approach, which is based on analysis and interpretation in order to reach the answer to the study questions. This is done by reviewing the concept of the electronic signature, its conditions and forms, and then researching the electronic pen signature as a form of electronic signature.

### Previous studies

First, the study by Al-Sabahain, Suha Yahya Yousef, "Electronic Signatures and Their Evidentiary Value," 2005, PhD dissertation, Amman Arab University.

It discussed electronic signatures and their forms, especially signatures using PINs on magnetic cards. My study focused specifically on signatures using electronic pens.

Second, the study by Gharaibeh, Abdullah Ahmed Abdullah, 2005, "The Evidentiary Value of Electronic Signatures in Jordanian legislator: A Comparative Study," Master's thesis, University of Jordan.

It examined the admissibility of electronic signatures in Jordanian legislator and in accordance with INSTAR (Institutional Standards of Legal Validation).

Third, the study by Hassan, Lina Ibrahim Yousef, 2007, "Electronic Authentication and the Responsibility of Competent Authorities in Jordanian legislator: A Comparative Study," PhD dissertation, University of Jordan.

It explored the importance of electronic authentication in maintaining security and confidentiality in electronic transactions, and the importance of obtaining an electronic authentication certificate for electronic signatures. My study discussed the types and characteristics of electronic signatures, particularly those using electronic pens, and also addressed the admissibility of electronic signatures in Jordanian legislator.

The study will be divided into the following sections and subsections:

Section 1: The Nature of Electronic Signatures.

Subsection 1: Definition of Electronic Signatures and Their Distinction from Traditional Signatures.

Subsection 2: Forms and Requirements of Electronic Signatures.

Section 2: Signatures Using Electronic Pens.

Subsection 1: Definition of Electronic Pen Signatures.

Subsection 2: The Legal Validity of Electronic Pen Signatures in Jordanian Legislation.

## **Section One: The Nature of Electronic Signatures**

Studying the nature of an electronic signature requires us to address its definition and distinguish it from a traditional signature in the first section. In the second section, we will discuss the forms of electronic signatures and their conditions.

### **First requirement: Defining electronic signatures and distinguishing them from traditional signatures.**

The electronic signature emerged to align with electronic transactions and e-commerce, and is considered one of their tools.

Legal scholars have defined the electronic signature as: "A set of electronic symbols, numbers, or letters that identify the signatory and distinguish them from others." It is any signature that clearly and precisely identifies its owner. Therefore, the signature is binding on its owner and is considered a legally valid signature. (Nahed Al-Hammouri, p. 79) In Jordanian legislation, Article 2 of the Electronic Transactions Law No. (15) of 2015 defines the electronic signature as: "Data that takes the form of letters, numbers, symbols, signs, or other elements, and is electronically recorded or added to or associated with the electronic register in order to identify the signatory, grant them exclusive use of the signature, and distinguish them from others."

We note that the definition of the electronic signature in Jordanian legislator emphasizes the necessity for the electronic signature to perform the same functions as a traditional handwritten signature, namely, identifying the signatory and expressing their consent. Thus, it defines the electronic signature in terms of its functions and the actions it performs. Article (2/a) of the UNCITRAL Model Law on Electronic Signatures of 2001 defines an electronic signature as: "Data in electronic form included in, attached to, or logically linked to a data message, which may be used to identify the signatory in relation to the data message and to indicate the

signatory's consent to the information contained in the data message." This definition does not specify the forms of electronic signatures, and the Jordanian legislator has done the same in its definition of an electronic signature, in order to allow for the use of any suitable method or one that may emerge in the future. This definition also clarifies that an electronic signature must include the identification of the signatory and an expression of their consent to the content of the data message. (Barham 170) Thus, an electronic signature can be defined as: "An electronic signal, symbol, or sound, logically linked to an electronic data message to identify the person creating the signature, confirm their identity, and indicate their consent to the information contained in the data message." (Muhammad Ismail 254) The electronic signature differs from the traditional signature in several ways, including:

1. A traditional signature is limited to a handwritten signature, fingerprint, or seal. An electronic signature, however, can take many forms, such as a symbol, icon, number, or gesture. The important thing is that it has a unique, distinctive character that identifies its owner and confirms their identity and consent to the legal transaction.

2. A traditional signature is usually on paper to make the document legally valid. An electronic signature, on the other hand, is created via the internet using a computer. Negotiations between the parties take place, and then the agreement is recorded in an electronic document, which is then electronically signed.

3. Both electronic and handwritten signatures serve to identify the signatory and their acceptance of the transaction. However, an electronic signature has an additional, distinctive function: verifying that the signature belongs to its owner. This verification confirms the owner's willingness to accept and abide by the transaction. Furthermore, the electronic document is protected from alteration or deletion by linking it to the electronic signature, ensuring that any subsequent action requires a new electronic signature. 4- A person has the freedom to choose the form of their written signature, such as a fingerprint, handwriting, or seal. However, with an electronic signature, the matter is different, as a secure technology is used that allows for the identification of the signatory and ensures the document's integrity against alteration and tampering. This necessitates the intervention of a third party who authenticates the signature and identifies its owner by issuing a certificate. This person is called the authentication authority or the authenticating body. (Doudin 247)

## The second requirement: Forms of electronic signatures and their conditions

Electronic signatures come in various forms, depending on the method used. These forms also differ in their issuance and security procedures, as well as the technologies employed. These technologies are constantly evolving to keep pace with technological advancements. This evolution aims to prevent shortcomings in internet security systems for e-commerce transactions, thereby preventing electronic fraud and minimizing losses resulting from hacking and cyberattacks.

The forms of electronic signatures include:

1. **Electronic Signature:** This involves scanning a handwritten signature, storing it on a computer, and then transferring the image to the file or contract to which the signature is to be added to give it the necessary legal validity. This will be the subject of the second section.
2. **Signature using Magnetic Cards with PINs:** This is the most common and widespread form of electronic signature. It requires no expertise or effort from the user and is accessible to everyone. Banks and institutions use these cards, as they are the issuers. Their use can be either bilateral (limited to the customer and the bank) or trilateral (involving the customer, the bank, and a third party). The magnetic card works by inserting it into an ATM and entering the PIN. If done correctly, the machine prompts the customer to specify the desired withdrawal amount. The money is then dispensed, and the card is returned to the customer. (Doudin 247-250)
3. **Digital Signature:** This signature is a secret number known only to the signatory. It is used in electronic correspondence between merchants and companies, as well as in credit cards and electronic contracts. (Barham 173) The owner of this signature uses a computer program to convert the message into an unintelligible format and then revert it to its original form. This signature is distinguished by its ability to accurately identify the parties involved in the relationship, and its use is also highly secure.
4. **Biometric signature,** also known as a signature based on personal characteristics or an electronic signature, utilizes a personal characteristic from the human body, such as a fingerprint, palm print, lip print, voiceprint, or iris scan. This characteristic is stored digitally as a code within the technology used to finalize the transaction. The stored image is then compared with a captured image, and if they match, the party concerned can authenticate the legal transaction. (Anis 148-149)
5. **Signing by pressing the key designated to express acceptance:** The contracting party views the contract through the computer screen, which includes boxes containing phrases indicating acceptance of the contract. The contract is concluded as soon as the contracting party presses the acceptance icon. This method reflects the direction of the contracting parties' wills to contract, as the offeror presents his offer via the Internet, and the acceptor presses the acceptance icon in the place that appears on the screen. This procedure is not considered sufficient to be considered an electronic signature, which prompts some websites to require a secret number for the contract, such as the secret number for a credit card. This form is still questionable regarding the extent to which this form of electronic signature can be adopted.

## Section Two: Conditions for Electronic Signature

Several conditions must be met for an electronic signature, as stipulated in Article (15) of the Jordanian Electronic Transactions Law. These include:

1. The signature must be unique to its owner and identify them personally.
2. It must be capable of being retained and read, whether directly or through an appropriate device.
3. The electronic signature must be directly linked to the electronic document, making it inseparable (Al-Hammouri 87), and preventing any alteration or modification to the document after signing. The private key must be under the control of the signatory at the time of signing.

These conditions, when met collectively, render the electronic signature secure. Furthermore, an electronic signature is considered authenticated if these conditions are fulfilled and the signature is linked to an authentication certificate issued by one of the entities specified in Article (16) of the Jordanian Electronic Transactions Law. These entities include either a licensed electronic authentication body in the Kingdom, an accredited electronic signature authority, or any entity approved by the Council of Ministers, provided it meets the requirements of the Telecommunications Regulatory Commission, the Ministry of Communications and Information Technology, and the Arab Bank with regard to electronic banking or financial transactions.

## Section Two: Signing with an Electronic Pen

The electronic pen signature is a form of electronic signature that emerged as a result of the

development of e-commerce and electronic transactions. It is considered a modern method suitable for electronic transactions conducted via the internet, replacing the traditional handwritten signature in these transactions, thus achieving speed, security, and confidentiality.

In this section, we will discuss, in the first subsection, the meaning of the electronic pen signature and the mechanism for signing with it. The second subsection will address the legal validity of the electronic pen signature under Jordanian legislation.

### **First requirement: Definition of electronic pen signatures**

Neither the Jordanian Electronic Transactions Law nor the UNCITRAL Model Laws restrict the use of electronic signatures to any specific form; they are optional for individuals. Furthermore, these laws do not specify any particular forms of electronic signatures, thus allowing individuals to choose any available method. In this section, we will examine electronic signatures using a pen. These signatures rely on the same fundamental principle as traditional handwritten signatures. An electronic pen is used to write on a computer screen with the assistance of specialized software that performs two functions: 1- Capturing the signature. 2- Verifying the signature's authenticity. (Ismail 270) The process of signing with an electronic pen begins when a person writes on the computer screen using the software designed for this purpose. The software receives the signatory's data, and the signatory then enters their signature using the electronic pen in a box on the screen. This program captures signatures by taking specific signature characteristics, such as the size and shape of curves, circles, lines, and so on. After the signatory approves their signature by viewing the approved format, the program encrypts and stores this data. Its second function is to verify the signature's authenticity by decrypting the data and comparing it to the signature. It then issues a decision as to whether the signature is valid or not. (Al-Ajarmeh 163)

The program that captures and verifies the signature stores the digital signature and related data using an encryption algorithm. The stored signature is then used whenever the user needs it. This is achieved by embedding the digital signature object within the document or file using an embedding technology that generates a series of unique codes assigned to each digital file. This process detects any attempt at alteration, forgery, or manipulation.

The signature's authenticity is verified by a

program that compares the signature displayed on the screen with the stored signature, relying on the signature's biological characteristics, such as writing direction and the speed at which the signature is written. (Barham 175)

Despite the flexibility and ease of use of electronic signatures, they have some drawbacks, including:

-1The high cost of the signature process. A computer with specifications that may not be available on all devices is required. (Ajarmeh 163)

-2This method lacks the necessary level of security for electronic signatures. The recipient could potentially save a copy of the signature received through any electronic document and later affix it to another document, claiming that the actual signatory was the one who created the document. (Doudin 250)

### ***The second requirement: The legal validity of electronic signatures in Jordanian legislation.***

The Jordanian Electronic Transactions Law does not specify particular forms or types of electronic signatures; therefore, all forms of electronic signatures are considered equally valid. Furthermore, they are optional, allowing individuals to choose any form of electronic signature. The Jordanian Electronic Transactions Law recognizes the legal validity and evidentiary force of electronic signatures, provided they meet the provisions stipulated in the law.

Article (17/A) of the Electronic Transactions Law states that an electronic record associated with a protected electronic signature has the same evidentiary weight as a regular document, and the parties to the transaction may rely upon it.

Paragraph (B) of Article (17) grants an electronic record associated with a certified electronic signature the same evidentiary weight as regular documents against the parties to the electronic transaction and third parties. In case of denial, the burden of proof rests with the party relying upon the electronic record.

Thus, an electronic signature has the same effect as a traditional signature, but under certain conditions:

1. The use of technical methods to identify the signatory, which is required for both electronic and traditional signatures.
2. The method used to indicate the signatory's agreement to the information contained in the electronic document must be agreed upon by the parties to the relationship or commercially accepted. (Barham 179)

As for an electronic document signed without a notarized signature, it has the same evidentiary

weight as unsigned documents. Thus, the Jordanian legislator has recognized that signatures made with an electronic pen have the same evidentiary weight as traditional signatures.

Article (15) of the Electronic Transactions Law stipulates the conditions that must be met for an electronic signature to be protected and therefore having evidentiary value against its parties:

1. The signature must be unique to its owner, distinguishing it from others.
2. It must identify the signatory.
3. It must be linked to the electronic record in a way that prevents any modification to that electronic record after it has been signed without altering the signature itself.

As for a notarized electronic signature, according to Article (17/b), its admissibility is not limited to the parties to the relationship; third parties may also invoke it. Article (16) stipulates that for an electronic signature to be considered authenticated, it must be linked to an authentication certificate issued in accordance with the provisions of the Electronic Transactions Law and the regulations and instructions issued thereunder. The authentication certificate must be issued by one of the entities specified in Article (16) of the Electronic Transactions Law.

Article (2) of the Electronic Transactions Law defines electronic authentication as the verification of the identity, validity, and validity of the user of an electronic authentication certificate.

The same article defines an electronic authentication certificate as a certificate issued by an electronic authentication authority to prove the attribution of an electronic signature to its owner, based on approved authentication procedures.

Article (13/3/a) of the Jordanian Evidence Law stipulates that: "Subject to the provisions of this paragraph, fax, telex, email, and similar modern means of communication shall have the evidentiary weight of ordinary documents if accompanied by a certificate from the sender confirming its issuance or a certificate from the recipient confirming receipt, unless proven otherwise." The law of evidence recognizes the validity and evidentiary strength of modern means of communication, such that they are equivalent to the validity of ordinary documents, but on the condition that they are accompanied by a testimony from the sender to confirm that they were issued by him, or that they are accompanied by a testimony from the recipient to confirm that he received them.

## CONCLUSION

This research examines the concept of electronic signatures and their various forms. It also discusses

the distinction between electronic and traditional signatures, as well as the requirements for valid electronic signatures. Furthermore, it explores electronic pen signatures as a form of electronic signature.

Due to the absence of Court of Cassation rulings on electronic pen signatures, this research does not include any relevant Court of Cassation opinions or rulings.

We also discuss the Jordanian legislator's treatment of electronic signatures, granting them the same legal validity as ordinary documents, which require both writing and a signature. However, the signature on transactions is not written but electronic, using one of the forms of electronic signatures. It should be noted that the Jordanian legislator has not specified the types or forms of electronic signatures; therefore, parties are free to choose the electronic signature form they wish to use, provided it meets the legal requirements. We also discussed how the Jordanian legislator, in the Electronic Transactions Law, granted the validity of the electronic signature, which is limited to the parties if the electronic signature meets the conditions, and its validity extends to third parties if it meets the conditions required to be considered protected, in addition to its connection with an electronic authentication certificate issued in accordance with the provisions of the law and the regulations issued thereunder.

## RESULTS

This research yielded the following results:

1. The Jordanian legislator has recognized electronic signatures.
2. Certain conditions must be met for an electronic signature to be accepted.
3. The legislator has not specified the types of electronic signatures nor restricted the parties to choosing a particular format.
4. An electronic signature is considered a protected electronic record with the same legal force as ordinary documents against the parties. If the electronic signature is authenticated, it has the same legal force as ordinary documents, and third parties, not just the parties involved, can invoke it.

## RECOMMENDATIONS

In conclusion, after discussing electronic signatures in Jordanian legislation, we can recommend the following:

1. Unifying the authority responsible for issuing electronic authentication certificates to prevent fraud and strengthen oversight to ensure the certificate's integrity.

2. Enacting a specific law to regulate electronic signatures, given their importance, including provisions governing their validity, types, and conditions, as well as penalties for misuse.

The study concluded that the legislator should enact a separate law specifically for electronic signatures, rather than including the relevant provisions within the Electronic Transactions Law.

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