

ABBREVIATIONS IN MODERN ELECTRONIC TERMINOLOGY: STRUCTURAL AND LINGUISTIC FEATURES

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АББРЕВИАТУРЫ В СОВРЕМЕННОЙ ЭЛЕКТРОННОЙ ТЕРМИНОЛОГИИ: СТРУКТУРНЫЕ И ЛИНГВИСТИЧЕСКИЕ ОСОБЕННОСТИ

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Abstract

This article examines abbreviations as an important means of linguistic economy in modern electronic terminology. The rapid development of electronics, computer technologies, telecommunications, and digital technologies has led to the emergence of a large number of complex technical terms. In such circumstances, abbreviations make professional communication more concise and efficient. The article analyzes the structural characteristics of abbreviations used in electronic terminology, with particular attention to acronyms and initialisms. Examples such as CPU, RAM, ROM, LED, LCD, USB, HDMI,

OLED, and MOSFET are considered. The article also discusses the transfer of English electronic abbreviations into other languages through borrowing, transliteration, translation, and adaptation. Special attention is given to hybrid combinations formed by the interaction of international abbreviations with lexical elements of other languages. The analysis shows that abbreviations have become an important part of international technical vocabulary. At the same time, their excessive or unexplained use may create difficulties for non-specialist readers.

Keywords: abbreviation, electronic terminology, acronym, initialism, technical vocabulary, terminology, translation, borrowing, transliteration, hybrid terms.

Аннотация

В данной статье рассматриваются аббревиатуры как важное средство лингвистической экономии в современной электронной терминологии. Быстрое развитие электроники, компьютерных технологий, телекоммуникаций и цифровых технологий привело к появлению большого количества сложных технических терминов. В таких условиях аббревиатуры делают профессиональное общение более лаконичным и эффективным. В статье анализируются структурные особенности аббревиатур, используемых в электронной терминологии, с особым вниманием к акронимам и инициализмам. Рассматриваются такие примеры, как CPU, RAM, ROM, LED, LCD, USB, HDMI, OLED и MOSFET. В статье также обсуждается перенос английских электронных аббревиатур на другие языки посредством заимствования, транслитерации, перевода и адаптации. Особое внимание уделяется гибридным сочетаниям, образующимся в результате взаимодействия международных аббревиатур с лексическими элементами других языков. Анализ показывает, что аббревиатуры стали важной частью международной технической лексики. В то же время их чрезмерное или необоснованное использование может создавать трудности для читателей, не являющихся специалистами в данной области.

Ключевые слова: аббревиатура, электронная терминология, акроним, инициализм, техническая лексика, терминология, перевод, заимствование, транслитерация, гибридные термины.

The development of science and technology is one of the major factors influencing the vocabulary of modern languages. This influence is particularly noticeable in the fields of electronics, computer engineering, telecommunications, microelectronics, and digital technologies. The constant appearance of new devices, technologies, processes, and concepts requires the creation of new terminological units capable of expressing complex scientific and technical information accurately and efficiently.

One of the characteristic features of scientific and technical language is the tendency toward linguistic economy. Specialists often need to refer repeatedly to complex concepts whose names may consist of several words. Constant repetition of such lengthy combinations makes professional communication less convenient. Abbreviation is therefore used as an effective linguistic mechanism for reducing the formal length of terminology while preserving its conceptual meaning.

In electronic terminology, abbreviations are especially widespread. Expressions such as *Central Processing Unit*, *Random Access Memory*, *Light-Emitting Diode*, *Liquid Crystal Display*, and *High-Definition Multimedia Interface* are normally used in their shortened forms: CPU, RAM, LED, LCD, and HDMI. These abbreviations are not limited to English-language texts. Many of them have become internationally recognizable elements of modern technical vocabulary.

The purpose of this article is to examine the role and structural characteristics of abbreviations in modern electronic terminology and to analyze the main ways in which English electronic abbreviations are transferred into other languages. The article also considers the formation of hybrid technical combinations and the communicative advantages and difficulties associated with the use of abbreviations.

Abbreviations in Electronic Terminology

Abbreviation is generally understood as the process of shortening a word or a word combination while preserving its essential semantic content. From the point of view of

terminology, abbreviation represents one of the mechanisms through which complex concepts acquire compact linguistic forms. D. S. Lotte emphasizes the importance of economy, precision, and systematic organization in scientific and technical terminology [1]. These principles are particularly relevant to electronic terminology, where complex multi-word expressions occur frequently.

The structure of electronic abbreviations varies considerably, but two major types can be distinguished: acronyms and initialisms. Acronyms are shortened forms that are pronounced as words, while initialisms are pronounced as individual letters. A well-known example of an acronym is LASER, originally formed from *Light Amplification by Stimulated Emission of Radiation*. The form has become so widespread that many speakers perceive *laser* as an ordinary lexical item rather than as an abbreviation. Similar processes can be observed with other technological terms that have moved from specialized terminology into general vocabulary.

Initialisms are even more common in electronics. CPU, meaning *Central Processing Unit*, RAM, meaning *Random Access Memory*, ROM, meaning *Read-Only Memory*, LCD, meaning *Liquid Crystal Display*, USB, meaning *Universal Serial Bus*, and HDMI, meaning *High-Definition Multimedia Interface*, are typical examples. Their widespread use demonstrates the productivity of abbreviation in technical communication.

The popularity of such forms can be explained by their practical function. Instead of repeating a long technical expression, specialists can use a short and standardized form. This reduces textual repetition and makes technical documentation, scientific articles, manuals, and professional communication more compact. In addition, internationally recognized abbreviations allow specialists from different linguistic backgrounds to identify the same technical concept.

At the same time, abbreviations are not completely independent of context. A sequence of letters can have different meanings in different scientific fields. Therefore, the meaning of an abbreviation must often be determined from the surrounding terminology. This is especially important in interdisciplinary communication, where the same abbreviation may be interpreted differently by specialists from different fields.

English Electronic Abbreviations and Their Transfer into Other Languages

The international development of modern electronics has contributed significantly to the spread of English technical terminology. English is widely used in scientific publications, international standards, technical documentation, software development, patents, and communication within the electronics and information technology industries. As a result, many English electronic abbreviations enter other languages together with the concepts they represent [3; 4].

The transfer of English abbreviations into another language can take several forms. In many cases, the original abbreviation is retained without any graphic modification. This is particularly common with highly internationalized forms such as USB, HDMI, CPU, LED, and OLED. Their international use makes it unnecessary to create a completely new abbreviated form for every language.

Another possibility is transliteration, in which the abbreviation is reproduced using the alphabet of the receiving language. Translation may also be applied to the complete terminological expression while the internationally recognized abbreviation is retained. Such an approach is especially useful in academic and educational texts because it provides readers with both the meaning of the concept and its internationally recognized short form.

For example, when a technical term first appears in an academic text, it is appropriate to provide the complete form followed by the abbreviation: *Central Processing Unit (CPU)*. After this explanation, the abbreviation can be used independently. This approach makes the text more accessible while preserving terminological precision.

The choice of an appropriate translation strategy depends on the status of the abbreviation, the terminology conventions of the target language, the type of text, and the intended readership. A highly internationalized abbreviation may be preserved, whereas a less familiar form may require additional explanation or adaptation. Therefore, the translation of electronic terminology should not be understood as a purely mechanical process. It involves both linguistic and conceptual adaptation.

Hybridization of Electronic Terminology

Another characteristic feature of contemporary electronic vocabulary is the formation of hybrid combinations. These combinations emerge when an international abbreviation is used together with a lexical element belonging to another language. Expressions such as *USB cable*, *HDMI cable*, *LED screen*, *OLED display*, and *SIM card* illustrate this tendency in English technical communication. Similar constructions are widely encountered in Russian and Uzbek technical discourse, where internationally recognized abbreviations are combined with national lexical elements.

Hybridization reflects the interaction between international terminology and the grammatical and lexical systems of individual languages. An abbreviation can remain unchanged because it has an internationally recognized form, while the accompanying noun is translated or adapted according to the rules of the target language. This process enables foreign terminology to become more naturally integrated into local communication.

The development of hybrid terminology is closely connected with the increasing role of electronic devices in everyday life. Terms that were previously used mainly by engineers and IT specialists are now familiar to ordinary users. People regularly encounter expressions related to USB devices, LED screens, SIM cards, HDMI connections, and other electronic technologies in product descriptions, advertisements, educational materials, and everyday communication.

This process demonstrates that technical terminology does not exist separately from the general vocabulary of a language. International electronic terms can gradually become common lexical units and may eventually lose some of their specialized character.

Communicative Function and Linguistic Economy

The main advantage of abbreviations is their ability to make communication more economical. A long terminological expression can be replaced by a short form without significant loss of meaning for specialists. This is especially important in texts where the same concept is mentioned many times. Abbreviations therefore reduce repetition and contribute to the compact organization of technical information.

Another important function is international communication. Because many electronic abbreviations originate in English and are used internationally, they can serve as common terminology among specialists who speak different languages. A technician, engineer, programmer, or student may recognize CPU, RAM, USB, or LED even when the surrounding text is written in another language.

However, linguistic economy can sometimes conflict with communicative accessibility. A reader who does not possess specialized knowledge may not understand an abbreviation immediately. A technical text containing a large number of unexplained shortened forms can therefore become difficult to understand. This problem is particularly relevant in educational materials and texts intended for a general audience.

For this reason, scientific and technical writing generally requires a balance between brevity and clarity. An abbreviation should normally be explained when it first appears, after which the shortened form can be used consistently. Such a practice allows the author to preserve the advantages of abbreviation without unnecessarily reducing the accessibility of the text.

Conclusion

Abbreviations represent an important and productive element of modern electronic terminology. Their widespread use is closely connected with the rapid development of electronics, computer technologies, telecommunications, and digital communication. By replacing lengthy terminological combinations with compact forms, abbreviations contribute to linguistic economy and increase the efficiency of professional communication.

The analysis of electronic terminology shows that acronyms and initialisms constitute the principal structural types of abbreviations. Forms such as LASER, RAM, ROM, CPU, LCD, LED, USB, HDMI, and OLED demonstrate how shortened technical expressions can become stable and internationally recognizable terms.

The international character of modern electronics has also contributed to the transfer of English abbreviations into other languages. Depending on the linguistic and communicative context, such abbreviations may be borrowed directly, transliterated,

translated, or adapted. In many cases, the original English abbreviation is retained because it functions as an international technical symbol.

An important tendency is the formation of hybrid combinations in which international abbreviations are combined with lexical elements of national languages. This process demonstrates the interaction between global technological terminology and individual language systems and contributes to the integration of new technical concepts into everyday vocabulary.

Thus, abbreviations should be regarded not simply as shortened forms but as significant units of modern terminology. They perform structural, communicative, and international functions. At the same time, their use requires consideration of the target audience, since excessive or unexplained abbreviations may reduce the comprehensibility of scientific and technical texts. The effective development of electronic terminology therefore depends on maintaining an appropriate balance between terminological economy, international standardization, and linguistic clarity.

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