

Pursuant to Article 14 paragraph 4 of the Law on Metrology (Official Gazette of Montenegro 79/08), the Ministry of Economy adopted

RULEBOOK

ON METROLOGICAL REQUIREMENTS FOR BASIC CLOCKS WITHIN THE TELEPHONE SWITCHBOARDS USED FOR COST CALCULATION BY METHOD OF RECORDING CALL DATA

(Official Gazette of Montenegro 06/10 of 2 February 2010)

Article 1

This Rulebook prescribes metrological requirements and the manner of determining fulfillment of the metrological requirements that must be met by basic clocks within the telephone switchboards and which are used for cost calculation by method of recording call data (hereinafter referred to as the “Basic clock”).

Article 2

The words and expressions used in this Rulebook shall have the following meanings:

- 1) the basic clock determines call start and end time as well as the duration of a call by method of recording call data (ticketing tool) and calculates telecommunication services;
- 2) the oscillator is an element of the basic clock, the output of which is a periodic signal on which the operation of the system calendar is based;
- 3) system calendar, software or hardware, provides data on real time, and is used for determining the duration of a phone call;
- 4) The call data record is a record in an electronic form containing the following information relevant for the calculation:
 - a) the number of the calling subscriber (A number),
 - b) the number of the called subscriber (B number),
 - c) the date and time of the beginning of the call,
 - d) the date and time of the end of the call,
 - e) the duration of the call,
 - f) the tariff,
 - g) the direction through which the call was received.
- 5) A correctly registered call is a call, the data record of which contains correctly entered information referred to in item 4 of this Article;
- 6) A correctly processed call is a call which was not ended by a forced termination of the connection.

Article 3

Reference conditions are:

- 1) ambient temperature: $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$;

- 2) relative humidity: $60\% \pm 15\%$;
- 3) supply voltage: $\pm 2\%$ of the nominal value;

Rated working conditions are:

- 1) ambient temperature: from 5°C to 45°C ;
- 2) Supply voltage: $\pm 5\%$ of the nominal value.

Article 4

Limits of the permitted error of the frequency of the periodic signal at the output of the oscillator (hereinafter referred to as the “Time base frequency”), under the conditions referred to in Article 3 of this Rulebook are:

- 1) $\pm 5 \times 10^{-6}$ for the relative error of the time base frequency in the reference conditions;
- 2) $\pm 8 \times 10^{-6}$ for the relative error of the time base frequency in the rated operating conditions.

Absolute time interval error between the beginning and the end of the call (hereinafter referred to as the “Call duration time”) is:

$$Dt = t - t_e \leq 1s,$$

where:

t – denotes the duration of the call measured at the telephone switchboard,

t_e - the duration of the call measured by the measurement standard - protocol analyzer.

The permitted rounding up of the call duration time by a telephone switchboard can be up to 1s per call.

Article 5

Determining fulfillment of the requirements concerning the relative error of the time base frequency of basic clocks is based on the mean value obtained from at least 100 results of the appropriate measurements.

The fulfillment of these requirements can also be determined on the basis of at least 10 values of consecutive measurements of the time base frequency, where each value must satisfy the set criterion. Measurements should be repeated after 24 hours.

The absolute error of the call duration time is determined by comparing the call duration time from the call data record generated in the telephone switchboard, with the corresponding data from the protocol analyzer.

The fulfillment of the requirements referred to in Article 4 of this Rulebook, for absolute error, shall be checked on a sample of at least 18,000 randomly selected calls, taking into account only those calls that are correctly registered and correctly processed.

It is permitted to register 0.09% of the calls from the total number of calls referred to in paragraph 4 of this Article for which the request referred to in Article 4, paragraph 2 of this Rulebook has not been fulfilled.

Article 6

The Rulebook on metrological requirements for basic clocks within the telephone switchboards that are used for calculation by method of recording call data (Official Gazette of Serbia and Montenegro 44/03) shall be repealed with effect from the date of entry into force of this Rulebook.

Article 7

This Rulebook shall enter into force on the eighth day from the date of its publication in the Official Gazette of Montenegro.

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Podgorica, January 27, 2010

Minister,

Branko Vujović, m.p.