The algorithm of automatic gain quadrature signal module's working[☆]

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Abstract

Here is a brief abstract describing the main problems of the research, as well as the most significant results.

Keywords: keyword 1, keyword 2, keyword 3

1. Introduction

The automatic gain control (AGC) - is a process where output signal of device, typically electronic amplifier, is automatically kept constant by some parameter. As a parameter may be the amplitude of a simple signal or the power of the composite signal. This process doesn't depend on the input signal.

It was concluded that currently for transmitting signals over long distances people use these signals in frequency. As a result, high-frequency signals are formed. It means, that signals' ratio of higher and lower frequency closes to the lower one in the narrow band.

The developed device (module) is designed for processing the quadrature signal to the communication channel. The quadrature signal is a dimensional signal whose value at a time can be set one complex number comprising two parts, called the real part and the imaginary part.

So, developed IP-module is a part of a data path for the incoming link.

Conventional completion of this section is the following:

The rest of the paper is organized as follows. In section **??** we consider the methodology of research. In section 3 the dataset used is described. Section 4 contains the discussion of results obtained. Section 5 concludes.

2. Methodology

This section describes the methodology of the study.

2.1. Subsection name

Example of a simple equation:

$$f(x) = ax + b \tag{1}$$

[☆] This article is a start for development IP- module of automatic gain quadrature signal, namely, the device, resulting in an average level is an arbitrary signal to the desired at a predetermined time interval. The device is intended for using in Vivado package and is focused on the implementation on the basis of FPGA logic programming company Xilinx family - 7.

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2.2. Subsection name

An example of a more complicated equation:

$$f_{GND}(0, \sigma, k) = \frac{\phi(y)}{\sigma - kP_t}, \tag{2}$$

$$y = \begin{cases} -\frac{1}{k} \log \left[1 - \frac{kP_t}{\sigma}\right], & k \neq 0 \\ \frac{P_t}{\sigma}, & k = 0 \end{cases},$$

3. Experiment

This section describes the data used in this work, justified their choice, as well as specify their sources. A common practice is to analyze the descriptive statistics, allows to make some assumptions even before the results of the study.

4. Results

This section presents the main results obtained in this research, as well as their detailed analysis is performed.

4.1. Subsection name

4.2. Subsection name

4.3. Subsection name

5. Conclusion

This section summarizes the results and draws the main conclusions of the study.

AppendixA. Appendix Name

Here is content of the work appendix. In the general case there are more than one appendixes.

References

Table 1: An example of a simple table containing descriptive statistics.

Parameter	Column Name	Column Name
Mean, μ	0.79	0.98

Note: There are explanations to the table.

Table 2: An example of more complicated table containing estimates of the model parameters.

Parameter	*Column Name*	*Column Name*	*Column Name*
Group Name			
μ	0.30^{***} (0.01)	0.30^{***} (0.01)	0.30^{***} (0.01)
ϕ	0.30^{***} (0.01)	0.30^{***} (0.01)	0.30^{***} (0.01)
Group Name			
μ	0.40^{*} (0.17)	0.40^{*} (0.17)	0.40^{*} (0.17)
ϕ	0.40^{*} (0.17)	0.40^{*} (0.17)	0.40^{*} (0.17)

Note: Standard errors of coefficients are given in parentheses. The levels of significance notation: *** – 1%, ** – 5%, * – 10%.