Simulator 1.0

For

DSP Raptor Core

By

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M.Sc. Computer Sciences

Submitted in partial fulfillment of the requirements for the Degree of Master of Computer Sciences.

Bahria Institute of Management and Computer Sciences (BIMCS)

Islamabad (Pakistan)

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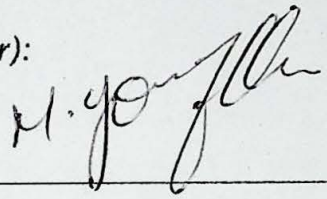
Certificate

This is to certify that we approve this Project Report submitted by Raja Omar Riaz for the partial fulfillment of the **M.Sc. Degree in Computer Sciences**:

1. Dr. Muhammad Yousuf Khan *(Project Supervisor)*:



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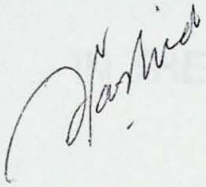

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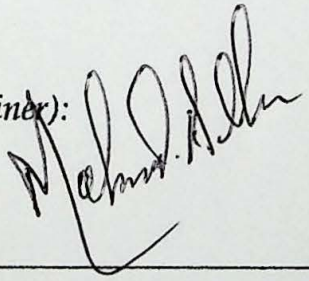

Department of Computer Sciences

Bahria Institute of Management and Computer Sciences (BIMCS)

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IN THE NAME OF

"ALLAH"

THE MOST BENEFICIENT & MERCIFUL

DEDICATED

TO

*My affectionate **Parents** & **Teachers**, whose encouragement, endless love and prayers have been a source of inspiration and guidance for me.*

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Acknowledgement

With lots of thanks to Almighty Allah from the depth of my heart for his blessings and providing me with the ability and potential to successfully get through my period of studies. Though it seems absurd to thank all the people involved in making this project happen in only a few paragraphs. However as this is arguably simpler than making the Simulator, so I am certainly willing to attempt it.

First of all, I offer my sincerest appreciation to my supervisor, *Mr. Dr. Muhammad Yousuf Khan*, for his skilled guidance, dynamic supervision and keen interest in solution of problem faced during the accomplishment of this dissertation. I am also grateful to my honorable teachers like *Mr. Dr. Saeed A. Bhatti* & *Mr. Zafar I. Malik* for their kind cooperation and real encouragement. And many thanks owed to all the teachers of Computer Sciences Department for their valuable advices and guidance throughout my learning period here in Bahria Institute of Management & Computer Sciences (BIMCS).

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Additionally, I had a supporting cast of family that made the amount of time and effort needed to make this project possible, and even enjoyable.

Raja Omar Riaz

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Abstract

The purpose of this documentation is to describe the design and implementation of a 16-bit Fixed-Point DSP (Digital Signal Processor) Simulator. It describes the importance and effects of digital technology on our world along with a brief introduction of my project and its significance with respect to Pakistan Software Exports. Then this documentation provides a comprehensive overview of DSP technology as well as the fundamentals of DSP Simulation along with the system architecture.

At the end I encompass the future aspects of DSP Simulation and goals achieved by this system.