M I R A C

The Minecraft Redstone Automatic Computer

Instruction Set
and Assembly Language

Redstone
Digital

Redstone
Digital

M I R A C

The Minecraft Redstone Automatic Computer

The MIRAC Instruction Set

Version 1.4

Table of Contents

Introduction

This document describes in detail the instruction set of the MIRAC Minecraft Redstone Automatic Computer as well as syntax and structure of the MIDAS Assembly Language.

Instruction Notation

Instructions are described as follows:

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Description					

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Abbreviations

The following abbreviations are used:

Abbreviation	Full Form
􀀀	Accumulator Register
􀀀􀀀	Program Counter Register
􀀀􀀀	ALU Operand Register
􀀀􀀀􀀀	Address Bus Register
􀀀􀀀􀀀	Data Bus In
􀀀􀀀􀀀􀀀	Data Bus Out
􀀀􀀀􀀀􀀀	Periphery Address Bus Register
􀀀􀀀􀀀􀀀	Periphery Data Bus In
􀀀􀀀􀀀􀀀􀀀	Periphery Data Bus Out
􀀀􀀀	Stack Pointer
􀀀􀀀􀀀􀀀􀀀􀀀􀀀􀀀	General Purpose Registers $0 - 7$
􀀀	Zero Flag
􀀀	Carry Flag
􀀀	Overflow Flag
􀀀	Negative Flag
􀀀􀀀􀀀	Arithmetic Logical Unit

Architecture

The Instruction Set

Section I: Program flow

𒀀𒀀𒀀𒀀	𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀	𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀	𒀀𒀀𒀀	𒀀	𒀀
𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀					
Do nothing and increment PC.					

𒀀𒀀𒀀𒀀	𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀	𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀𒀀	𒀀𒀀𒀀	𒀀	𒀀
𒀀𒀀𒀀𒀀𒀀𒀀					
Jump to memory location specified in Accumulator					

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The MIDAS Assembly Language