Crystal Technology, Inc.

AotfCmd Users Guide

Revision 1.1

2010/08/10

Document #60-00103-01

Crystal Technology, Inc.
A Group Company of TDK-EPC Corporation

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Revision History			
Revision	**Date**	**Who**	**Comments**
1.0	2008/12/05	Dale Gifford	Genesis. First Release 2008/12/05.
1,1	2010/08/10	Dale Gifford	Updated logo, fixed typos. Release 2010-08.

Table 1: Revision History

Table of Contents

List of Tables

List of Figures

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1. Introduction

1.1. Purpose

This document describes the *AotfCmd* utility, a new utility for communicating with AOTF Controllers. *AotfCmd* is a console application that can be used in a CMD window and within batch (BAT) files. *AotfCmd* is registered with Microsoft Windows as the application to execute when files with the ".aotf" extension are executed. *AotfCmd* sends the commands in aotf files to the AOTF Controller for execution.

1.2. Related Documents

The following references may be useful in fully understanding and utilizing the *AOTF Controller*:

- Octal Channel AOTF Controller Integration Guide, Revision 1.1, 2010/08/10, www.CrystalTechnology.com, Crystal Technology, Inc. 1040 East Meadow Circle, Palo Alto, CA 94303-4230.

- Quad Channel AOTF Controller Integration Guide, Revision 1.1, 2010/08/10, www.CrystalTechnology.com, Crystal Technology, Inc. 1040 East Meadow Circle, Palo Alto, CA 94303-4230.

- Single Channel AOTF Controller Integration Guide, Revision 1.1, 2010/08/10, www.CrystalTechnology.com, Crystal Technology, Inc. 1040 East Meadow Circle, Palo Alto, CA 94303-4230.

- AOTF Controller Command Reference, Revision 1.3, www.CrystalTechnology.com, Crystal Technology, Inc. 1040 East Meadow Circle, Palo Alto, CA 94303-4230.

- AOTF Controllers and Temperature Compensation, Revision 1.2, www.CrystalTechnology.com, Crystal Technology, Inc. 1040 East Meadow Circle, Palo Alto, CA 94303-4230.

- AOTF Controllers and FSK Operation, Revision 1.3, www.CrystalTechnology.com, Crystal Technology, Inc. 1040 East Meadow Circle, Palo Alto, CA 94303-4230.

- AOTF Controllers and Light Intensity Tracking, Revision 1.2, www.CrystalTechnology.com, Crystal Technology, Inc. 1040 East Meadow Circle, Palo Alto, CA 94303-4230.

- AotfManager User's Guide, Revision 1.1, www.CrystalTechnology.com, Crystal Technology, Inc. 1040 East Meadow Circle, Palo Alto, CA 94303-4230.

1.3. Notation

- Numbers with an "h" suffix or "0x" prefix are hexadecimal. All other numbers are decimal.

- Register and bit names ending in "**[#]**" and "**[#:#]**" signify selection of a subset of the register (e.g. **I2CS[0]** represents bit 0 of the **I2CS** register, and **I2CS[5:3]** represents bit 5

through 3 of the **I2CS** register).

- Signal names ending with '#' (e.g. **INT0#**) indicates an active low signal.

- N/A is an abbreviation for Not Applicable.

- Register bits are either set (1) or cleared (0).
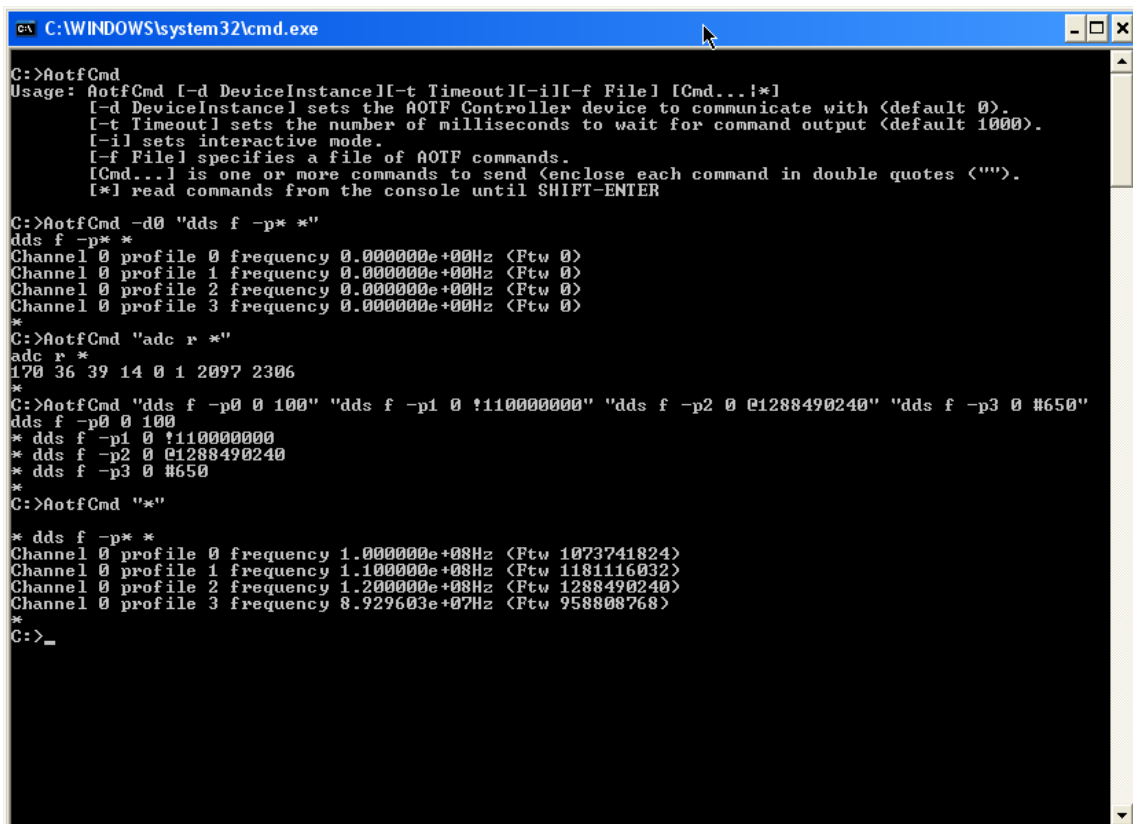
2. AotfCmd

AotfCmd is a convenient tool for issuing commands to AOTF Controllers, and easily executing scripts of AOTF Controller commands. *AotfCmd* is a command line utility that is most useful in a CMD shell or batch file.

2.1. Synopsis

The syntax for *AotfCmd* is:

```
AotfCmd [-d DeviceInstance][-t Timeout][-i][-f File] [Cmd...|*]
```

Command line arguments are executed sequentially from left to right. Arguments may be repeated, and settings persist until the next argument that changes the setting. Arguments in [] are optional. *Figure 1* shows a screen shot of *AotfCmd* executing a few commands:

Figure 1: AotfCmd Executing Commands

2.2. Command Line Arguments

The command line arguments are:

- `[-d DeviceInstance]`
  This establishes which AOTF Controller device to communicate with (default 0). Multiple AOTF Controllers can be accessed sequentially by changing this parameter.

  Example:

  ```
  AotfCmd –d 0 "dds frequency 3 100" –d 1 "dds frequency 5 110"
  ```

  This example will set the frequency of channel 3 for AOTF Controller 0 to 100Mhz. It will then set the frequency for channel 5 for AOTF Controller 1 to 110Mhz.

- `[-t Timeout]`
  This establishes the number of milliseconds to wait for command output (default 1000ms). *AotfCmd* does not know how much output a particular AOTF command will emit. It uses a timeout to detect that the command has completed and there is not going to be any more output from the AOTF Controller. Setting the timeout too low (i.e. short time) will result in some output being truncated, while setting the timeout too high (i.e. long time) will result in slowly executing sequences of commands. In practice 1000ms seems about right for most commands. Sweep and Peak commands may require a longer timeout.

  Example:

  ```
  AotfCmd –t 20000 "dds sweep 7 80 120"
  ```

  This example will use channel 7 of AOTF Controller 0 to sweep the frequency spectrum from 80MHz to 120MHz. The sweep command will take abut 10 seconds to execute. After 20 seconds of silence, where no additional output from the sweep command is received, the *AotfCmd* will terminate. The total time for this command to execute is about 30 seconds. After the command is initiated, the timeout period begins. 10 seconds into the timeout period the command completes and the AOTF Controller emits a new prompt for the next command. The prompt output causes *AotfCmd* to reset the timeout period and the 20 second timeout peid starts over. After 20 seconds the timeout period is completed without any additional output from the AOTF Controller.

- `[-i]`

  This places *AotfCmd* into interactive mode, which forces *AotfCmd* to enter an interactive phase at the end of each command. During the interactive phase *AotfCmd* acts as a bidirectional conduit between the console and the AOTF Controller. Any characters typed on the console are sent to the AOTF Controller, and any characters output from the AOTF Controller are displayed on the console. Interactive mode allows extremely long acting commands to execute until terminated by the user. Some AOTF commands, especially the commands that include a –f (forever) option can be executed by using *AotfCmd* in the interactive mode. Interactive mode is terminated by typing SHIFT+ENTER.

  Example:

  ```
  AotfCmd –i "adc read –f *"
  ```

  This example will read all of the ADC sensor inputs and display the result. With the –f option the command will read the ADC sensors and display the results continuously until the user presses a key. The interactive phase allows the command to execute as long as the user desires. Once the user types any character on the console the ADC Read command will terminate. At that time, *AotfCmd* is still in the interactive phase and the user can continue to type additional commands. When the user has completed the interactive phase they press SHIFT+ENTER to proceed to the next command.

- `[-f File]`

  This causes *AotfCmd* to open the file and begin reading AOTF commands from the file and sending them to the AOTF Controller for execution. Each command is executed as if it had been entered sequentially on the command line. After the last command in the file has competed execution the remainder of the command line is parsed and executed.

  Example:

  ```
  AotfCmd –f "Script 1.aotf" "dds frequency 3 100" –f "Script
  2.aotf"
  ```

  This example will execute all of the commands in the file named "Script 1.aotf". Then it will execute the command "`dds frequency 3 100`" from the command line, and finally it will execute each of the commands in the file named "Script 2.aotf".

- `[Cmd...]`

  This causes *AotfCmd* to send `Cmd` to the AOTF Controller. `Cmd` should be enclosed in double quotes. Multiple commands can appear on the command line, they will be executed sequentially.

  Example:

  ```
  AotfCmd "dds amplitude 1000" "adc read 2"
  ```

  This example will execute two commands. The first command, "`dds amplitude 1000`" is executed, and after it completes the second command, "`adc read 2`" is executed.

- [*]

    This causes *AotfCmd* to enter the interactive phase without sending a command to the AOTF Controller. This is a quick way to bypass the command execution phase and go immediately to the interactive phase.

    Example:

    ```
    AotfCmd *
    ```

    This example will immediately enter the interactive phase without sending a command to the AOTF Controller. This is extremely useful for invoking an interactive session with an AOTF Controller.

AotfCmd is also the registered application for executing files that have an "aotf" extension. Scripts of AOTF commands can be created by entering the commands into a text file and then double clicking on the file name to invoke *AotfCmd*.