



# PHOTONWARES Agiltron VOA Control GUI Interface Software User Manual

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## PHOTONWARES Agiltron VOA Control GUI Interface Software



**Product Information: Piezo VOA Manual**

The Piezo VOA Manual is a device that is used for controlling the voltage of a variable optical attenuator (VOA). The device can be controlled via Windows GUI or UART command (in HEX). It is used to set target DB value, DAC (VOA voltage), VOA channel, and manage tables in flash. The device has a maximum of five channels that can be enabled for different DB ranges. The Piezo VOA Manual has a table that contains addresses and hexadecimal values.

## **Product Usage Instructions**

### **Control via Windows GUI**

#### **Basic:**

1. Connect the device to the computer.
2. Choose the correct COM port in Figure 1. Test GUI, then click Connect button to connect with the device.
3. Type the DB value in the number box, then click Set button to set target DB value. The current DB value would change to the set value if successful.

#### **Advanced:**

4. Type the value of DAC (VOA voltage) in the number box, then click the Set button to set the value. The value should be between 0 and 4000.
5. Click on the button for different channels to set the channel. The green button shows the current channel of VOA.
6. Click Read From Flash button. A table.csv would be created or overwritten.
7. Click the Calibration Table button. A window would show as below.
8. Click the Read Table button. All the data from the table would be filled in the window.
9. Then the window would be ready for checking or modifying. If any changes are made, click the Generate button. The table.csv would be created or overwritten.
10. Click the downloadable button on the main window. The new table would be downloaded into the flash.

### **Control via UART command (in HEX)**

#### **Basic:**

1. Set DB num: 0x01 0x12 Return: None Example: 0x01 0x12 0x03 0xE8 -> set device to -10.00 DB
2. Check Current DB num: 0x01 0x1A 0x00 0x00 Return Example: 0x01 0x1A 0x00 0x00 RTN: 0x03 0xE8 -> The current DB is set to -10.00 DB

#### **Advanced:**

3. Check device version: This command can be used to check whether the correct COM port is used. 0x01 0x02 0x00 0x00 Return 0x41 0x30
4. Set/Read CH num:
  - Read CH num: 0x01 0x18 0x00 0x00 Return Example: 0x01 0x18 0x00

0x00 RTN: 0x01 -> The current CH is CH 1.

- Set CH num: 0x01 0x18 0x00 Return if new CH is set successfully (new CH is enabled) 0xFF if new CH is not set successfully (new CH is not enabled) if is greater than 5.

5. Set VOA voltage: This command directly controls the voltage applied to the VOA. This command is for testing. 0x01 0x13 (DAC is a value between 0-4095> Return
6. Read current VOA voltage: 0x01 0x14 Return
7. Read Flash address: This command can be used to read the value of the address in device flash. 0x01 0x1C Return

### Table

The table contains addresses and hexadecimal values. The addresses range from 0x000 to 0x027, and the corresponding hexadecimal values are listed in the table.

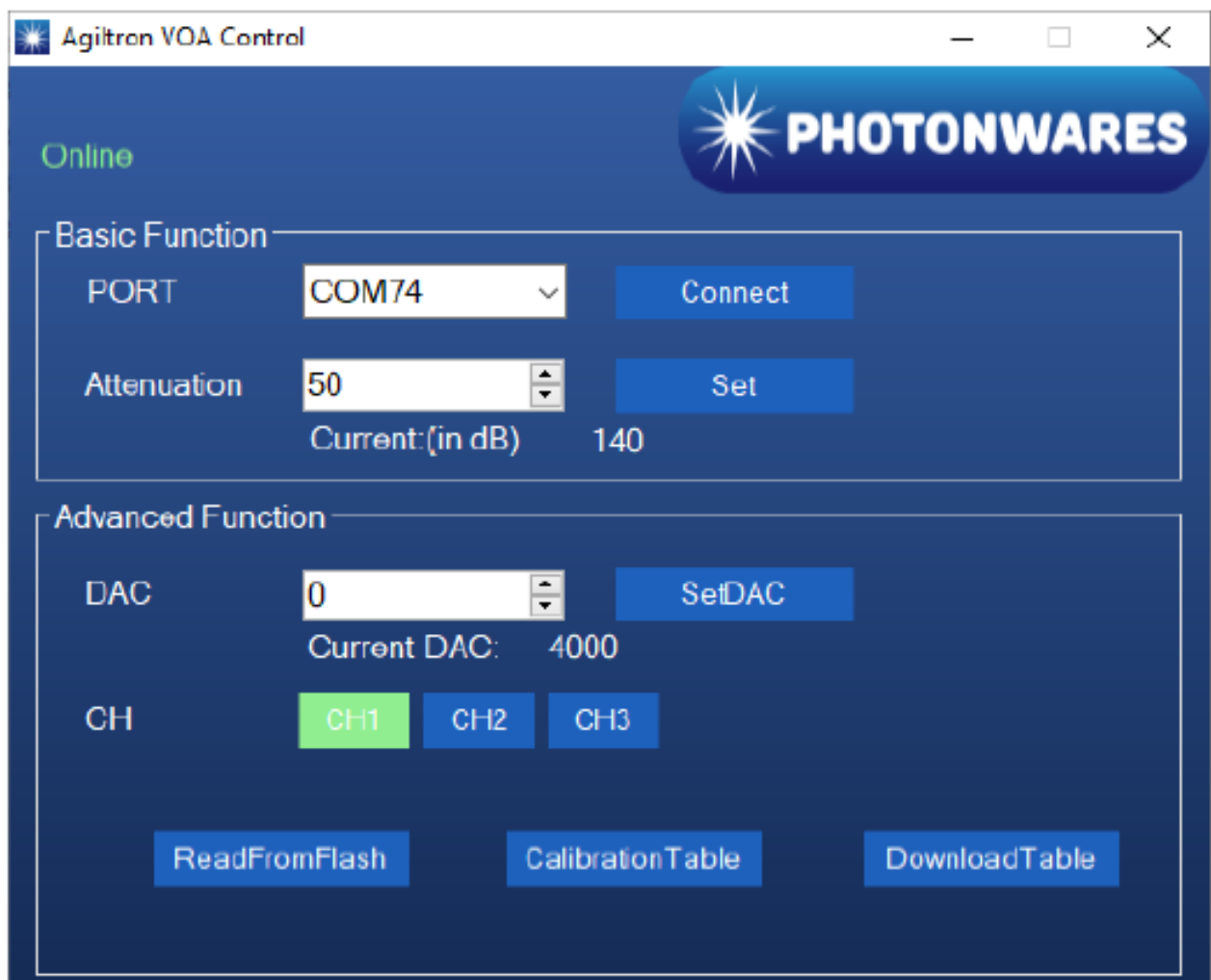
**15 Presidential Way, Woburn, MA 01801**

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<https://agiltron.com>

### Piezo VOA Manual



**Figure 1. Test GUI**

## Control via Windows GUI

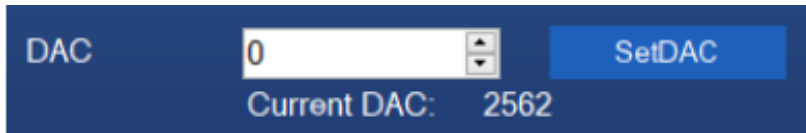
### Basic

1. Connect device



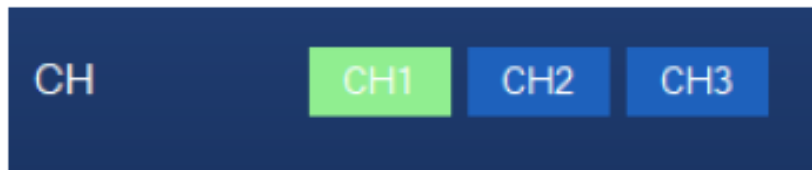
PORT COM57 Connect

2. Choose the correct COM port, then click “Connect” button to connect with the device.



DAC 0 SetDAC  
Current DAC: 2562

3. Set target DB for VOA



CH CH1 CH2 CH3

Type the DB value in the number box, then click “Set” button to set target DB value. The current DB value would change to the set value if successful DB value 1000 means -10.00 DB attenuation.

### Advanced

4. Set DAC (VOA voltage) for VOA

Click on the button for different channels to set the channel. The green button shows the current channel of VOA.

5. Manage Table in Flash

1. Click “Read From Flash” button. A “table.csv” would be created or overwritten.
2. Click the “Calibration Table” button. A window would show as below.

Calibration Table Generator

CH1:

|      |   |      |   |
|------|---|------|---|
| DAC: | 0 | DAC: | 0 |
| DB:  | 0 | DB:  | 0 |
| DAC0 | 0 | DB0: | 0 |
| DAC1 | 0 | DB1: | 0 |
| DAC2 | 0 | DB2: | 0 |
| DAC3 | 0 | DB3: | 0 |
| DAC4 | 0 | DB4: | 0 |
| DAC5 | 0 | DB5: | 0 |
| DAC6 | 0 | DB6: | 0 |
| DAC7 | 0 | DB7: | 0 |
| DAC8 | 0 | DB8: | 0 |
| DAC9 | 0 | DB9: | 0 |

CH2:

CH3:

ReadTable Generate

- Click the "Read Table" button. All the data from the table would be filled in the window.

Calibration Table Generator

CH1:

|      |   |      |   |
|------|---|------|---|
| DAC: | 0 | DAC: | 0 |
| DB:  | 0 | DB:  | 0 |
| DAC0 | 0 | DB0: | 0 |
| DAC1 | 0 | DB1: | 0 |
| DAC2 | 0 | DB2: | 0 |
| DAC3 | 0 | DB3: | 0 |
| DAC4 | 0 | DB4: | 0 |
| DAC5 | 0 | DB5: | 0 |
| DAC6 | 0 | DB6: | 0 |
| DAC7 | 0 | DB7: | 0 |
| DAC8 | 0 | DB8: | 0 |
| DAC9 | 0 | DB9: | 0 |

CH2:

CH3:

ReadTable Generate

4. Then the window would be ready for checking or modifying.
5. If any changes are made, click the “Generate” button. The “table.csv” would be created or overwritten.
6. Click the “downloadable” button on the main window. The new table would be downloaded into the flash.

### Control via UART command (in HEX)

The baud rate setting is 115200-N-8-1.

#### Basic

1. Set DB num:  
0x01 0x12 <DB higher byte> <DB lower byte>  
Return: None

Example: 0x01 0x12 0x03 0xE8 -> set device to -10.00 DB

2. Check Current DB num:

0x01 0x1A 0x00 0x00

Return <Current DB higher byte> <Current DB Lower byte>

Example: 0x01 0x1A 0x00 0x00 RTN: 0x03 0xE8 -> The current DB is set to -10.00 DB

3. Check device version:

Explain: This command can be used to check whether the correct COM port is used. 0x01 0x02 0x00 0x00

Return 0x41 0x30

## Advanced

1. Set/Read CH num:

Explain: The VOA uses different channels for different DB ranges. The maximum number of channels used is five, but it is possible that only one or several channels are enabled.

1. Read CH num:

0x01 0x18 0x00 0x00

Return <current CH num byte>

Example: 0x01 0x18 0x00 0x00 RTN: 0x01 -> The current CH is CH 1.

2. Set CH num:

0x01 0x18 0x00 <CH num byte>

Return <CH num byte> if new CH is set successfully (new CH is enabled)

0xFF if new CH is not set successfully (new CH is not enabled)

<original CH num byte> if <CH num byte> is greater than 5

2. Set VOA voltage:

Explain: This command directly controls the voltage applied to the VOA. This command is for testing.

0x01 0x13 <DAC higher byte> <DAC lower byte> (DAC is a value between 0-4095)

Return <DAC higher byte> <DAC lower byte>

3. Read current VOA voltage:

0x01 0x14 <DAC higher byte> <DAC lower byte>

Return <DAC higher byte> <DAC lower byte>

4. Read Flash address:

Explain: This command can be used to read the value of the address in device flash.

0x01 0x1C <address high byte> <address low byte>

Return <address byte>

## Appendix I. Full Table in Flash

### Table

| Address | Hex   | Description                                                              |
|---------|-------|--------------------------------------------------------------------------|
| 0       | 0x000 | If the device needs calibration. 0: Not calibrated 1: Already calibrated |
| 1       | 0x001 | 0xFF                                                                     |

|    |       |                                     |
|----|-------|-------------------------------------|
| 2  | 0x002 | Channel 1 Max DAC value – high byte |
| 3  | 0x003 | Channel 1 Max DAC value – low byte  |
| 4  | 0x004 | Channel 1 Max DB value – high byte  |
| 5  | 0x005 | Channel 1 Max DB value – low byte   |
| 6  | 0x006 | Channel 1 Min DAC value – high byte |
| 7  | 0x007 | Channel 1 Min DAC value – low byte  |
| 8  | 0x008 | Channel 1 Min DB value – high byte  |
| 9  | 0x009 | Channel 1 Min DB value – low byte   |
| 10 | 0x00A | Channel 1 ADC Table[0] – high byte  |
| 11 | 0x00B | Channel 1 ADC Table[0] – low byte   |
| 12 | 0x00C | Channel 1 ADC Table[1] – high byte  |
| 13 | 0x00D | Channel 1 ADC Table[1] – low byte   |
| 14 | 0x00E | Channel 1 ADC Table[2] – high byte  |
| 15 | 0x00F | Channel 1 ADC Table[2] – low byte   |
| 16 | 0x010 | Channel 1 ADC Table[3] – high byte  |
| 17 | 0x011 | Channel 1 ADC Table[3] – low byte   |
| 18 | 0x012 | Channel 1 ADC Table[4] – high byte  |
| 19 | 0x013 | Channel 1 ADC Table[4] – low byte   |
| 20 | 0x014 | Channel 1 ADC Table[5] – high byte  |
| 21 | 0x015 | Channel 1 ADC Table[5] – low byte   |
| 22 | 0x016 | Channel 1 ADC Table[6] – high byte  |
| 23 | 0x017 | Channel 1 ADC Table[6] – low byte   |
| 24 | 0x018 | Channel 1 ADC Table[7] – high byte  |
| 25 | 0x019 | Channel 1 ADC Table[7] – low byte   |
| 26 | 0x01A | Channel 1 ADC Table[8] – high byte  |
| 27 | 0x01B | Channel 1 ADC Table[8] – low byte   |



|    |       |                                    |
|----|-------|------------------------------------|
| 28 | 0x01C | Channel 1 ADC Table[9] – high byte |
| 29 | 0x01D | Channel 1 ADC Table[9] – low byte  |
| 30 | 0x01E | Channel 1 DB Table[0] – high byte  |
| 31 | 0x01F | Channel 1 DB Table[0] – low byte   |
| 32 | 0x020 | Channel 1 DB Table[1] – high byte  |
| 33 | 0x021 | Channel 1 DB Table[1] – low byte   |
| 34 | 0x022 | Channel 1 DB Table[2] – high byte  |
| 35 | 0x023 | Channel 1 DB Table[2] – low byte   |
| 36 | 0x024 | Channel 1 DB Table[3] – high byte  |
| 37 | 0x025 | Channel 1 DB Table[3] – low byte   |
| 38 | 0x026 | Channel 1 DB Table[4] – high byte  |
| 39 | 0x027 | Channel 1 DB Table[4] – low byte   |

|    |       |                                   |
|----|-------|-----------------------------------|
| 40 | 0x028 | Channel 1 DB Table[5] – high byte |
| 41 | 0x029 | Channel 1 DB Table[5] – low byte  |
| 42 | 0x02A | Channel 1 DB Table[6] – high byte |
| 43 | 0x02B | Channel 1 DB Table[6] – low byte  |
| 44 | 0x02C | Channel 1 DB Table[7] – high byte |
| 45 | 0x02D | Channel 1 DB Table[7] – low byte  |
| 46 | 0x02E | Channel 1 DB Table[8] – high byte |
| 47 | 0x02F | Channel 1 DB Table[8] – low byte  |
| 48 | 0x030 | Channel 1 DB Table[9] – high byte |
| 49 | 0x031 | Channel 1 DB Table[9] – low byte  |

|    |       |                                     |
|----|-------|-------------------------------------|
| 50 | 0x032 | Channel 2 Max DAC value – high byte |
| 51 | 0x033 | Channel 2 Max DAC value – low byte  |
| 52 | 0x034 | Channel 2 Max DB value – high byte  |
| 53 | 0x035 | Channel 2 Max DB value – low byte   |
| 54 | 0x036 | Channel 2 Min DAC value – high byte |
| 55 | 0x037 | Channel 2 Min DAC value – low byte  |
| 56 | 0x038 | Channel 2 Min DB value – high byte  |
| 57 | 0x039 | Channel 2 Min DB value – low byte   |
| 58 | 0x03A | Channel 2 ADC Table[0] – high byte  |
| 59 | 0x03B | Channel 2 ADC Table[0] – low byte   |
| 60 | 0x03C | Channel 2 ADC Table[1] – high byte  |
| 61 | 0x03D | Channel 2 ADC Table[1] – low byte   |
| 62 | 0x03E | Channel 2 ADC Table[2] – high byte  |
| 63 | 0x03F | Channel 2 ADC Table[2] – low byte   |
| 64 | 0x040 | Channel 2 ADC Table[3] – high byte  |
| 65 | 0x041 | Channel 2 ADC Table[3] – low byte   |
| 66 | 0x042 | Channel 2 ADC Table[4] – high byte  |
| 67 | 0x043 | Channel 2 ADC Table[4] – low byte   |
| 68 | 0x044 | Channel 2 ADC Table[5] – high byte  |
| 69 | 0x045 | Channel 2 ADC Table[5] – low byte   |

|    |       |                                    |
|----|-------|------------------------------------|
| 70 | 0x046 | Channel 2 ADC Table[6] – high byte |
| 71 | 0x047 | Channel 2 ADC Table[6] – low byte  |
| 72 | 0x048 | Channel 2 ADC Table[7] – high byte |
| 73 | 0x049 | Channel 2 ADC Table[7] – low byte  |
| 74 | 0x04A | Channel 2 ADC Table[8] – high byte |
| 75 | 0x04B | Channel 2 ADC Table[8] – low byte  |
| 76 | 0x04C | Channel 2 ADC Table[9] – high byte |
| 77 | 0x04D | Channel 2 ADC Table[9] – low byte  |
| 78 | 0x04E | Channel 2 DB Table[0] – high byte  |
| 79 | 0x04F | Channel 2 DB Table[0] – low byte   |
| 80 | 0x050 | Channel 2 DB Table[1] – high byte  |
| 81 | 0x051 | Channel 2 DB Table[1] – low byte   |
| 82 | 0x052 | Channel 2 DB Table[2] – high byte  |
| 83 | 0x053 | Channel 2 DB Table[2] – low byte   |
| 84 | 0x054 | Channel 2 DB Table[3] – high byte  |

|    |       |                                   |
|----|-------|-----------------------------------|
| 85 | 0x055 | Channel 2 DB Table[3] – low byte  |
| 86 | 0x056 | Channel 2 DB Table[4] – high byte |
| 87 | 0x057 | Channel 2 DB Table[4] – low byte  |
| 88 | 0x058 | Channel 2 DB Table[5] – high byte |
| 89 | 0x059 | Channel 2 DB Table[5] – low byte  |

|     |       |                                      |
|-----|-------|--------------------------------------|
| 90  | 0x05A | Channel 2 DB Table[6] – high byte    |
| 91  | 0x05B | Channel 2 DB Table[6] – low byte     |
| 92  | 0x05C | Channel 2 DB Table[7] – high byte    |
| 93  | 0x05D | Channel 2 DB Table[7] – low byte     |
| 94  | 0x05E | Channel 2 DB Table[8] – high byte    |
| 95  | 0x05F | Channel 2 DB Table[8] – low byte     |
| 96  | 0x060 | Channel 2 DB Table[9] – high byte    |
| 97  | 0x061 | Channel 2 DB Table[9] – low byte     |
| 98  | 0x062 | Channel 3 Max DAC value – high value |
| 99  | 0x063 | Channel 3 Max DAC value – low value  |
| 100 | 0x064 | Channel 3 Max DB value – high value  |
| 101 | 0x065 | Channel 3 Max DB value – low value   |
| 102 | 0x066 | Channel 3 Min DAC value – high value |
| 103 | 0x067 | Channel 3 Min DAC value – low value  |
| 104 | 0x068 | Channel 3 Min DB value – high value  |
| 105 | 0x069 | Channel 3 Min DB value – low value   |
| 106 | 0x06A | Channel 3 ADC Table[0] – high byte   |
| 107 | 0x06B | Channel 3 ADC Table[0] – low byte    |
| 108 | 0x06C | Channel 3 ADC Table[1] – high byte   |
| 109 | 0x06D | Channel 3 ADC Table[1] – low byte    |

|     |       |                                    |
|-----|-------|------------------------------------|
| 110 | 0x06E | Channel 3 ADC Table[2] – high byte |
| 111 | 0x06F | Channel 3 ADC Table[2] – low byte  |
| 112 | 0x070 | Channel 3 ADC Table[3] – high byte |
| 113 | 0x071 | Channel 3 ADC Table[3] – low byte  |
| 114 | 0x072 | Channel 3 ADC Table[4] – high byte |
| 115 | 0x073 | Channel 3 ADC Table[4] – low byte  |
| 116 | 0x074 | Channel 3 ADC Table[5] – high byte |
| 117 | 0x075 | Channel 3 ADC Table[5] – low byte  |
| 118 | 0x076 | Channel 3 ADC Table[6] – high byte |
| 119 | 0x077 | Channel 3 ADC Table[6] – low byte  |
| 120 | 0x078 | Channel 3 ADC Table[7] – high byte |
| 121 | 0x079 | Channel 3 ADC Table[7] – low byte  |
| 122 | 0x07A | Channel 3 ADC Table[8] – high byte |
| 123 | 0x07B | Channel 3 ADC Table[8] – low byte  |
| 124 | 0x07C | Channel 3 ADC Table[9] – high byte |
| 125 | 0x07D | Channel 3 ADC Table[9] – low byte  |
| 126 | 0x07E | Channel 3 DB Table[0] – high byte  |
| 127 | 0x07F | Channel 3 DB Table[0] – low byte   |
| 128 | 0x080 | Channel 3 DB Table[1] – high byte  |
| 129 | 0x081 | Channel 3 DB Table[1] – low byte   |

|     |       |                                   |
|-----|-------|-----------------------------------|
| 130 | 0x082 | Channel 3 DB Table[2] – high byte |
| 131 | 0x083 | Channel 3 DB Table[2] – low byte  |
| 132 | 0x084 | Channel 3 DB Table[3] – high byte |
| 133 | 0x085 | Channel 3 DB Table[3] – low byte  |
| 134 | 0x086 | Channel 3 DB Table[4] – high byte |
| 135 | 0x087 | Channel 3 DB Table[4] – low byte  |
| 136 | 0x088 | Channel 3 DB Table[5] – high byte |
| 137 | 0x089 | Channel 3 DB Table[5] – low byte  |
| 138 | 0x08A | Channel 3 DB Table[6] – high byte |
| 139 | 0x08B | Channel 3 DB Table[6] – low byte  |
| 140 | 0x08C | Channel 3 DB Table[7] – high byte |
| 141 | 0x08D | Channel 3 DB Table[7] – low byte  |
| 142 | 0x08E | Channel 3 DB Table[8] – high byte |
| 143 | 0x08F | Channel 3 DB Table[8] – low byte  |
| 144 | 0x090 | Channel 3 DB Table[9] – high byte |
| 145 | 0x091 | Channel 3 DB Table[9] – low byte  |

## Documents / Resources

|                                                                                     |                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b><a href="#">PHOTONWARES Agiltron VOA Control GUI Interface Software</a></b> [pdf] User Manual<br/> Agiltron VOA Control GUI Interface Software, Agiltron VOA Control GUI Interface, Software, Agiltron VOA Control Software</p> |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## References

-  [Home - Industry-leading Optical Switches/Attenuators - Agiltron Inc.](#)

Manuals+.