1 Introduction

The CleO-Speaker module is a speaker accessory for the CleO series –The Smart TFT Display for Arduino. It consists of a 0.5W 8 OHM speaker driver preinstalled inside a black speaker.

With the CleO-Speaker module, users can playback music/tones whenever the CleO application requires it. There is also an audio line in capability provided to allow users to input audio from an external source to CleO’s on board speaker amplifier.

2 Ordering Information

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CleO-SPK1</td>
<td>CleO-Speaker , 8 OHM 0.5 W speaker driver in black bezel</td>
</tr>
</tbody>
</table>
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3 Module Technical Specification

3.1 Technical Data

![CleO Speaker](image)

Figure 1 - CleO Speaker

<table>
<thead>
<tr>
<th>Pin No</th>
<th>Pin Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Speaker Negative Terminal</td>
</tr>
<tr>
<td>2</td>
<td>Speaker Positive Terminal</td>
</tr>
<tr>
<td>3</td>
<td>Ground</td>
</tr>
<tr>
<td>4</td>
<td>External Line In</td>
</tr>
</tbody>
</table>

Table 1 - Technical Data

<table>
<thead>
<tr>
<th>Part Number</th>
<th>CleO-SPK1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>63(W)X63(L)X23.8(D) MM</td>
</tr>
<tr>
<td>Norminal Impedance</td>
<td>8 OHM ± 15 %</td>
</tr>
<tr>
<td>Norminal power</td>
<td>0.5W</td>
</tr>
<tr>
<td>Rated Power</td>
<td>1W</td>
</tr>
<tr>
<td>Resonance Frequency (FO)</td>
<td>400Hz ±20% Hz</td>
</tr>
<tr>
<td>Output SPL</td>
<td>87dB ±3dB /1Watt 0.5Meter</td>
</tr>
</tbody>
</table>

Table 2 - Pin Out Definition

Note: A speaker cable is shipped together with CleO35 and CleO50 modules.
3.2 Typical Performance Characteristics

Figure 2 - SPL Vs Frequency Curve

Figure 3 - Impedance Vs Frequency Curve
4 Mechanical Dimensions

4.1 Speaker Module Dimension

Figure 4 - CleO Speaker Module Dimensions
4.2 Speaker Enclosure Dimension

Figure 5 - CleO Speaker Enclosure Drawing (Rear)
Figure 6 - CleO Speaker Enclosure Drawing (Front)
5 Contact Information

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Appendix A – References

Document References

NA

Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Terms</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>SPL</td>
<td>Sound Pressure Level</td>
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<tr>
<th>Revision</th>
<th>Changes</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Version 1.0</td>
<td>Initial Release</td>
<td>2016-04-21</td>
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<tr>
<td>Version 1.1</td>
<td>Dual branding to reflect the migration of the product to the Bridgetek name – logo changed, copyright changed, contact information changed</td>
<td>2016-09-16</td>
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<tr>
<td>Version 1.2</td>
<td>Document migrated from FTDI/BRT Dual branding to BRT; Removed Speaker Cable information from datasheet</td>
<td>2017-09-21</td>
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