MP3 Doorbell

ECE 396 – Senior Design I
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Group 3

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MP3 Doorbell

WHO

WHY ← → WHAT

DOWNLOAD
## Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>Appearance</th>
<th>LCD Interface</th>
<th>Cost</th>
<th>Functional Features (add-ons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>++</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
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</tbody>
</table>
Design Alternative: MP3 Decoder Block Diagram

Transmitter → Receiver → 68HC11 µC → Flash Memory

→ MP3 Decoder → D/A Converter → Amplifier → SPEAKER
Design Alternative: PC Doorbell

- Transmitter of Doorbell
- Receiver of Doorbell
- RS-232 Connection
- PC (MP3 Storage)
Design Alternative:
Wireless Doorbell MP3 Player
Evaluation Criteria
Technical Specifications

Principle of Operation

- Bedroom
- Office
- Kitchen
- Living Room

Mp3 Doorbell
START
User presses the doorbell button (transmitter)

Transmitted signal reach the receiver?

YES
The chime of the receiver goes off, triggering the logic gates (or some pertinent circuitry) to go "HIGH"

Once the "HIGH" logic gates trigger, it sends a pulse through RS-232 interface to the PC *(will need an RS-232 chip or a µC to interface this communication standard)*

Pulse received by PC?

YES
PC generates a hardware interrupt in order to launch an already user pre-generated mp3 playlist from an mp3 player

NO

Software commands to configure the particular mp3 player to "play" the mp3 clip from playlist

The mp3 clip is transferred to a transceiver

PC user must make sure the mp3 player such as Winamp's settings are set at the following instructions:

- Play → Advanced Playback → Stop After Current
- [Or just press Ctrl+V]

The purpose of this is for the clip to stop automatically and not keep on continuing, which defeats the purpose of a doorbell. Once the door is answered, there is no need for the mp3 to continue

Has the doorbell button been pressed more than once?

YES

END

NO
<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>COST</th>
<th>WEB SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-232 Chip</td>
<td>$4.43 (for 100)</td>
<td><a href="https://shop.maxim-ic.com/cgi-bin/Maximstorefront/1405379479/Product/View/MAX211ECAI">https://shop.maxim-ic.com/cgi-bin/Maximstorefront/1405379479/Product/View/MAX211ECAI</a></td>
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<tr>
<td>Wireless doorbell system:</td>
<td>$10.95</td>
<td><a href="http://store.yahoo.com/urdefense/doorwir.html">http://store.yahoo.com/urdefense/doorwir.html</a></td>
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<tr>
<td>Mounting Hardware (2 screws + 2 drywall brackets)</td>
<td>$.50</td>
<td>Home Depot, Menards, ACE Hardware</td>
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<tr>
<td>RS-232 Cable</td>
<td>$0.99</td>
<td><a href="http://search.ebay.com/search/search.dll?cgiurl=http%3A%2F%2Fcgi.ebay.com%2Fws%2F&amp;krd=1&amp;from=R8&amp;MfcISAPICommand=GetResult&amp;ht=1&amp;SortProperty=MetaEndSort&amp;q">http://search.ebay.com/search/search.dll?cgiurl=http%3A%2F%2Fcgi.ebay.com%2Fws%2F&amp;krd=1&amp;from=R8&amp;MfcISAPICommand=GetResult&amp;ht=1&amp;SortProperty=MetaEndSort&amp;q</a>...</td>
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<td>1'x1' Plastic Enclosure</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$21.57</strong></td>
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Questions?