

The logo for eMDee Technology, Inc. features a green grid pattern in the top-left corner. The word "eMDee" is written in a green, cursive font, and "Technology, Inc." is written in a black, sans-serif font to its right.

eMDee Technology, Inc.

Technical Reference Manual
for
Simulated Device, LS-671 Loudspeaker

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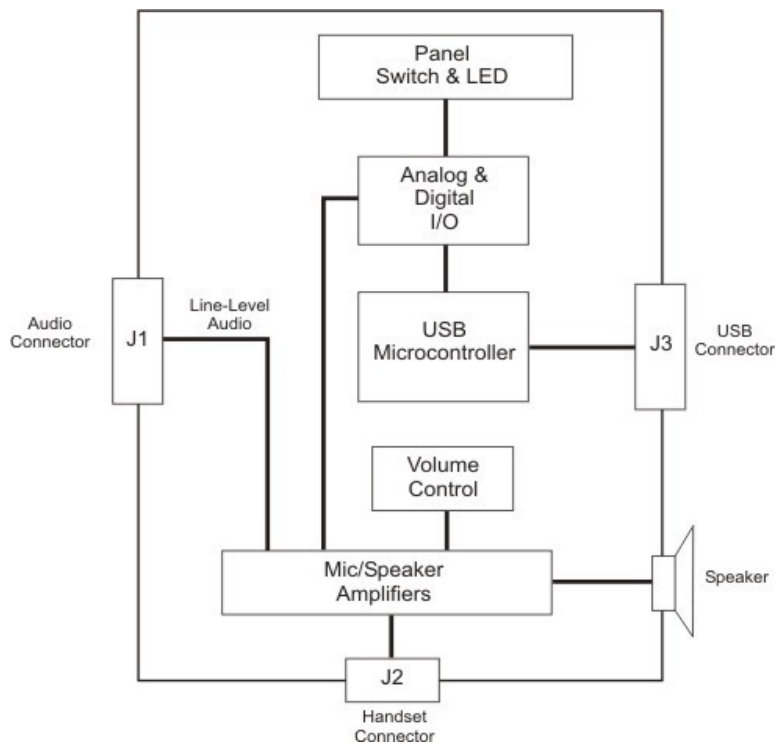
1. INTRODUCTION

The Simulated LS-671 Loudspeaker is a USB computer peripheral designed to support training and simulation of a tactical communications system.

1.1 Functional Overview

The basic design of the Simulated LS-671 is a USB 2.0 peripheral with a speaker and audio amplifiers that are compatible with tactical handsets. The USB portion of the device interfaces to the switches and indicators on the front panel of the device. More than one Simulated LS-671 and other simulated components can be connected to the same PC.

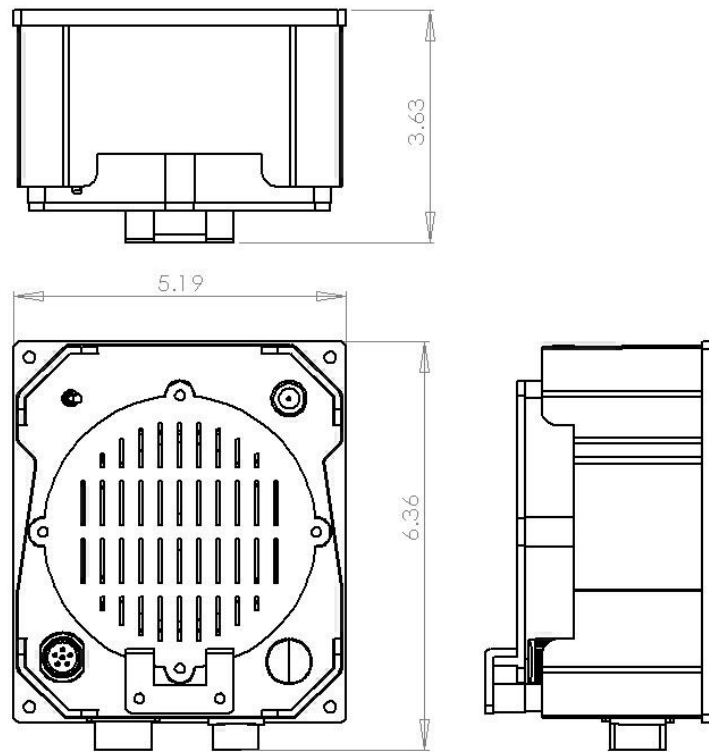
The following block diagram outlines the basic functionality of the Simulated LS-671 device:



2. PHYSICAL DESCRIPTION

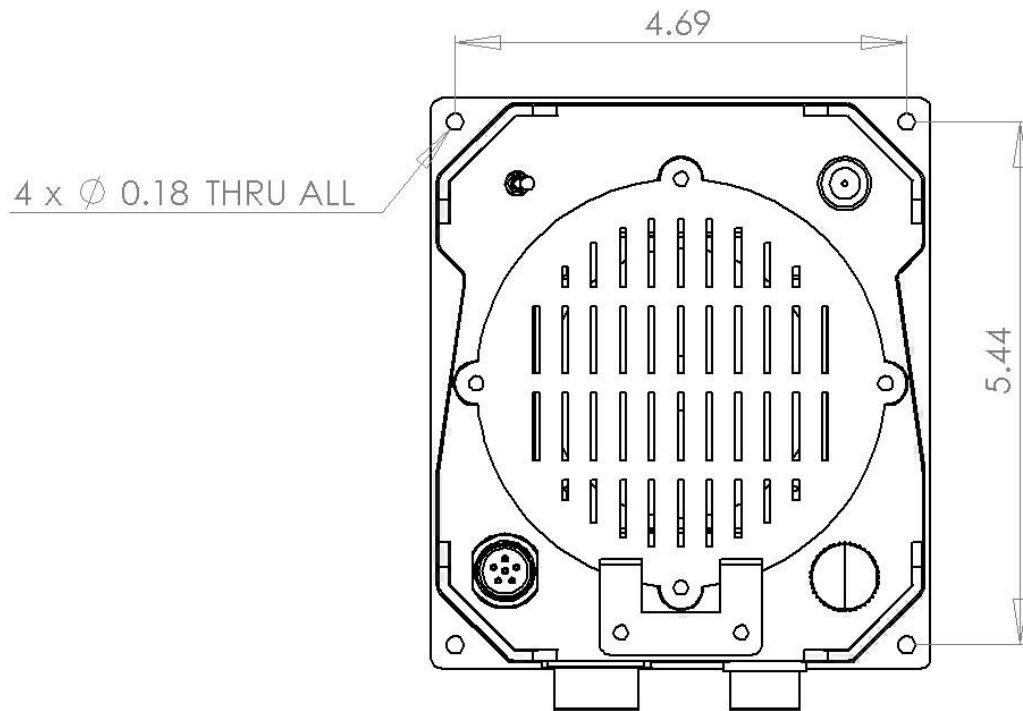
2.1 Envelope Dimensions

The drawing below shows the overall dimensions of the Simulated LS-671:



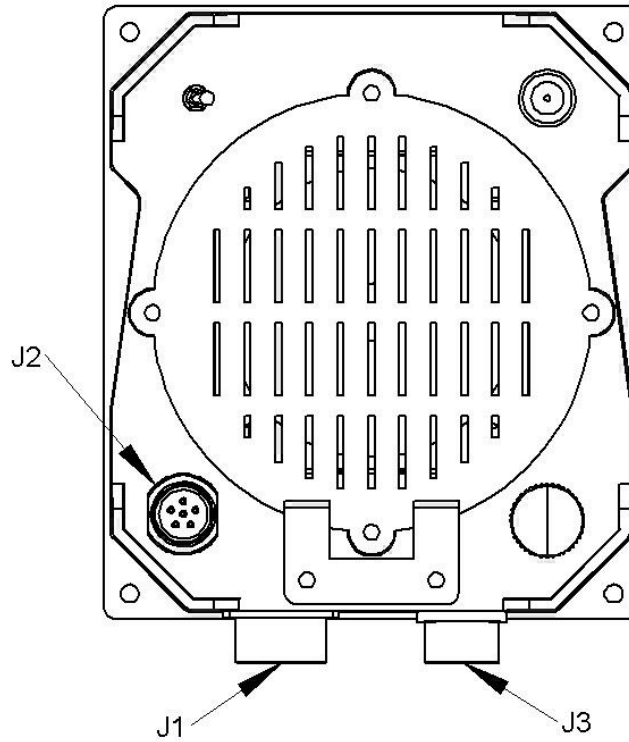
2.2 Mounting Holes

The drawing below shows the front view of the Simulated LS-671 and dimensions for mounting hole locations:



3. EXTERNAL CONNECTORS

The figure below shows the locations of the external connectors:



3.1 Handset Connector J2

J2 is a U-283/U connector and is compatible with a tactical H-250 handset.

The pinout of J2 is listed in the table below:

Pin	Signal
A	GND
B	Headphone (+)
C	PTT
D	Microphone (+)
E	Microphone (-)
F	N/C

3.2 Audio Connector (J1)

The audio connector (J1) on the Simulated LS-671 is a specialized connector that interfaces to the unit's line-level audio signals. J1 is a 19-pin circular locking connector with sockets (Amphenol part no: PT02A14-19S).

- Mating connector for J1: Amphenol part no: PT06E14-19P

The pinout for J1 is listed in the table below:

Pin	Signal
B	J2 Microphone (+)
A	J2 Microphone (-)
M	J2 Microphone Shield
C	N/C
P	N/C
N	N/C
D	J2 Headphone (+)
R	J2 Headphone (-)
V	J2 Headphone Shield
E	Speaker (+)
S	Speaker (-)
T	Speaker Shield
G	N/C
F	N/C
H	N/C
J	N/C
K	N/C
L	N/C
U	N/C

The microphone signals from J1 are amplified to line-level and the headphone/speaker signals to J1 should also be line-level. They are designed for connection to a Layla3G multi-channel audio interface. eMDee Technology provides a cable that connects directly from J1 to the Layla3G interface box. The recommended cable for this application is:

- eMDee PN 10533: Cable, Audio and Power, FFCS-L

3.3 USB Connector (J3)

The USB connector on the Simulated LS-671 is a standard mini USB Type “B” connector with a specialized circular locking mechanism. The unit can be operated with a standard cable with a mini Type B connector, but it is highly recommended to use a cable with the locking feature. The following cables are compatible with J3:

- Bulgin part no PX0441/2M00: USB A to mini USB B, 2.0 meters
- Bulgin part no PX0441/3M00: USB A to mini USB B, 3.0 meters (eMDee PN 10765)
- Bulgin part no PX0441/4M50: USB A to mini USB B, 4.5 meters (eMDee PN 10534)

4. DIP SWITCH CONFIGURATION

On the rear of the Simulated LS-671 is an 8 position DIP switch that controls the hardware configuration of the unit and allows the software to be able to communicate with multiple units of the same type. Each similar unit in the same system (connected to the same PC) should have a unique DIP switch setting.

The first 4 switch positions (1 - 4) should always be left in their factory default setting. For the Simulated LS-671, the first four switches should always be set to OFF, OFF, ON, OFF. The last 4 switch positions (5 – 8) are used to uniquely identify each unit in the system. This allows up to 16 of the same type of unit to be connected to the same PC and allows the software to identify each according to the DIP switch settings. The table below shows the possible settings for the DIP switch:

1	2	3	4	5	6	7	8	Unit ID
OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	0
				OFF	OFF	OFF	ON	1
				OFF	OFF	ON	OFF	2
				OFF	OFF	ON	ON	3
				OFF	ON	OFF	OFF	4
				OFF	ON	OFF	ON	5
				OFF	ON	ON	OFF	6
				OFF	ON	ON	ON	7
				ON	OFF	OFF	OFF	8
				ON	OFF	OFF	ON	9
				ON	OFF	ON	OFF	10
				ON	OFF	ON	ON	11
				ON	ON	OFF	OFF	12
				ON	ON	OFF	ON	13
				ON	ON	ON	OFF	14
				ON	ON	ON	ON	15

5. USB SOFTWARE DRIVERS

The software drivers for the Simulated LS-671 are included with the software application that will be used to control the simulated communications system. The following applications are compatible with the Simulated LS-671:

- eMDee PN 10492: Software, Communications System, Simulated VIC-3/L
- eMDee PN 10669: Software, Communications System, Simulated VIC-3

The USB drivers for the Simulated LS-671 are included in the installed files of the system application. Please refer to the software installation instructions for more detailed information about installing the drivers for this device.