eMDee Technology, Inc.

Technical Reference Manual

for

Simulated Device, Dual ASIP SINCGARS w/VAA, USB2.0

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## 1. INTRODUCTION

The Simulated Dual ASIP SINCGARS is a USB computer peripheral designed to support training and simulation of a tactical communications system. This device is intended to replicate the form and functionality of a tactical ASIP SINCGARS radio.

### 1.1 Functional Overview

The basic design of the Simulated Dual ASIP is a USB 2.0 peripheral with active keypads, LCD displays 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 Dual ASIP and other simulated components can be connected to the same PC.

The following block diagram outlines the basic functionality of the Simulated Dual ASIP device:
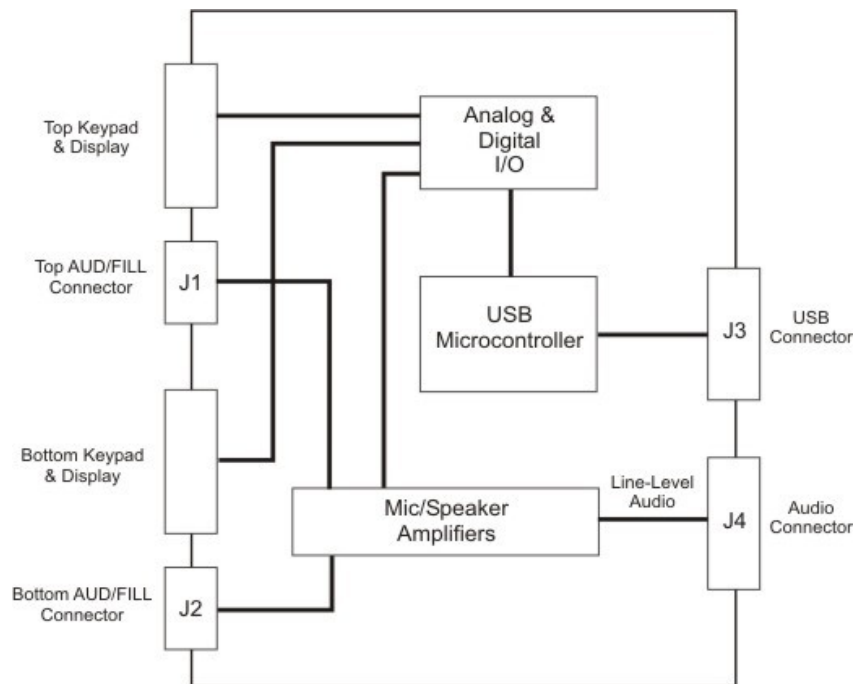


*Figure 1.1: Simulated Dual ASIP Conceptual Block Diagram*

## 2.  PHYSICAL DESCRIPTION

### 2.1  Envelope Dimensions

The drawing below shows the overall dimensions of the Simulated Dual ASIP:



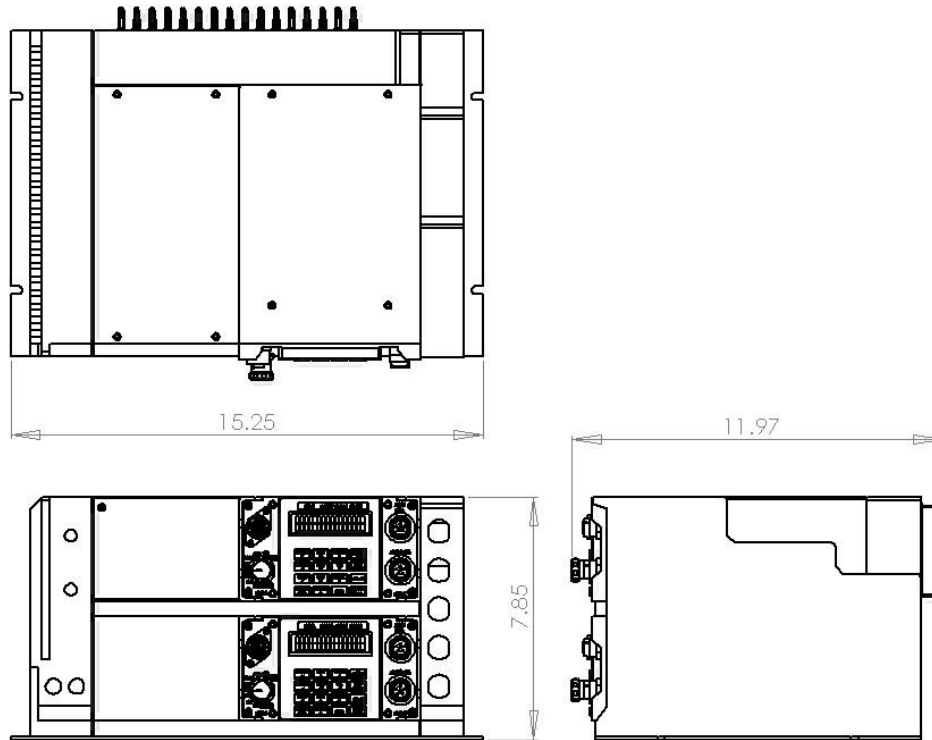*Figure 2.1: Physical Dimensions*

## 2.2  Mounting Holes

The drawing below shows the top view of the Simulated Dual ASIP and dimensions for mounting hole locations:
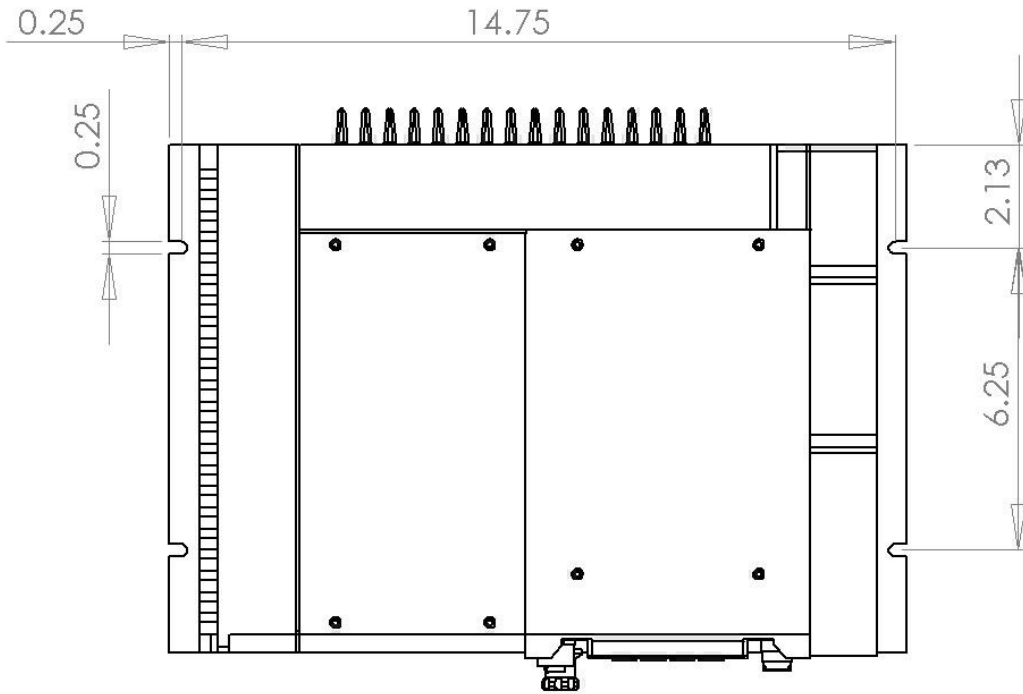


*Figure 2.2: Mounting Configuration (Top View)*

## 3. EXTERNAL CONNECTORS

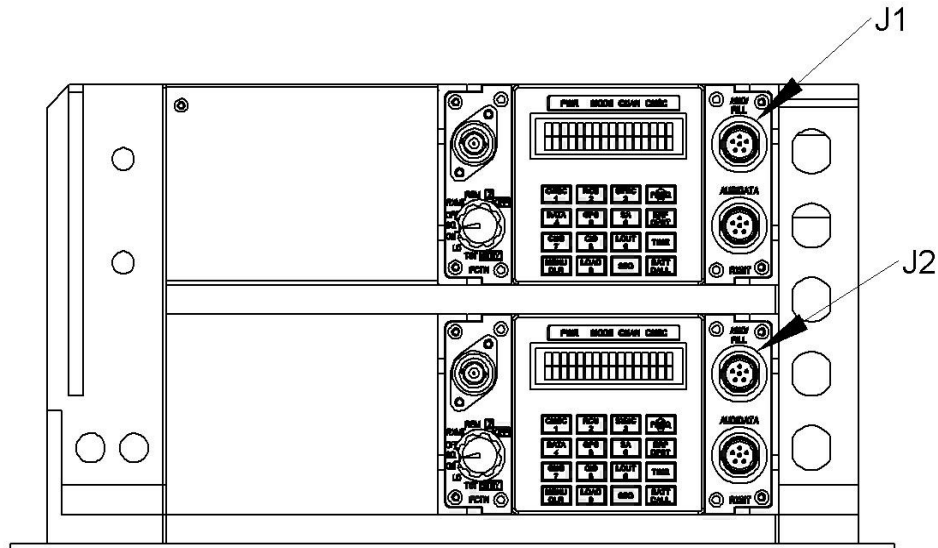The figure below shows the locations of the external connectors:

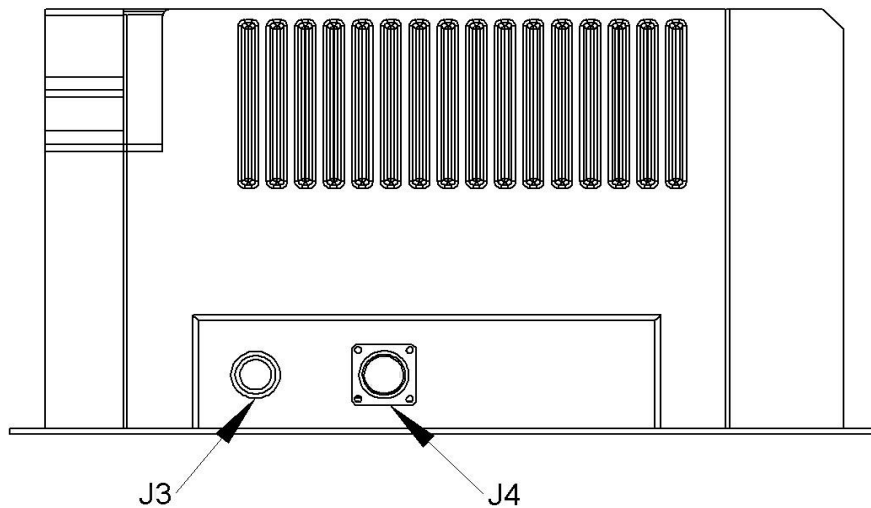

*Figure 3.1: External Connectors (Front View)*



*Figure 3.2: External Connectors (Rear View)*

## 3.1   Handset Connectors J1 & J2

J1 and J2 are U-283/U connectors and are compatible with a tactical H-250 handset.

The pinout of J1 and 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 (J4)

The audio connector (J4) on the Simulated Dual ASIP is a specialized connector that interfaces to the unit's line-level audio signals.  J4 is a 19-pin circular locking connector with sockets (Amphenol part no: PT02A14-19S).

- •   Mating connector for J4: Amphenol part no: PT06E14-19P

The pinout for J4 is listed in the table below:

| Pin | Signal |
|-----|--------|
| B | J1 Microphone (+) |
| A | J1 Microphone (-) |
| M | J1 Microphone Shield |
| C | J2 Microphone (+) |
| P | J2 Microphone (-) |
| N | J2 Microphone Shield |
| D | J1 Headphone (+) |
| R | J1 Headphone (-) |
| V | J1 Headphone Shield |
| E | J2 Headphone (+) |
| S | J2 Headphone (-) |
| T | J2 Headphone 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 J4 are amplified to line-level and the headphone signals to J4 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 J4 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 Dual ASIP 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

Inside the Simulated Dual ASIP 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.

To access the configuration DIP Switch, you will need to remove the top cover of the unit and locate the circuit board mounted on the bottom plate.

The first 4 switch positions (1 - 4) should always be left in their factory default setting. For the Simulated Dual ASIP, the first four switches should always be set to OFF, OFF, ON, ON. 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 | ON | 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 Sᴏғᴛᴡᴀʀᴇ Dʀɪᴠᴇʀs

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

- • eMDee PN 10469: Software, Simgars RTS ASIP

- • 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 Dual ASIP 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.