Vx Aviation
AMX-2A

10 Input Audio Mixer Amplifier

"Mini Audio Panel"

Installation Guide

Version B: 10-28 VDC Operation

www.vx-aviation.com

AMX-2A
10-Channel Audio Mixer and Amplifier
"Mini Audio Panel"

Description

The AMX-2A device is a 10-channel audio mixer and headphone amplifier for aircraft applications.

It functions as a mini audio panel for combining various communications, navigation, alarm, warning and other audio sources, amplifies them and provides a seamless interface into common intercom systems—all in a small package that takes no valuable panel space.

System wiring is greatly simplified and the unit occupies a very small footprint, with all of the circuitry contained in a standard 25-pin D-subminiature connector shell. A large number of signal ground pins are provided to simplify the connections of cable shields. All of the audio connections are made to the 25-pin connector built into the unit.

Four of the ten audio inputs have volume controls that are screwdriver adjustable, while the other six are fixed level for connection to instruments that have their own volume adjustment capability.

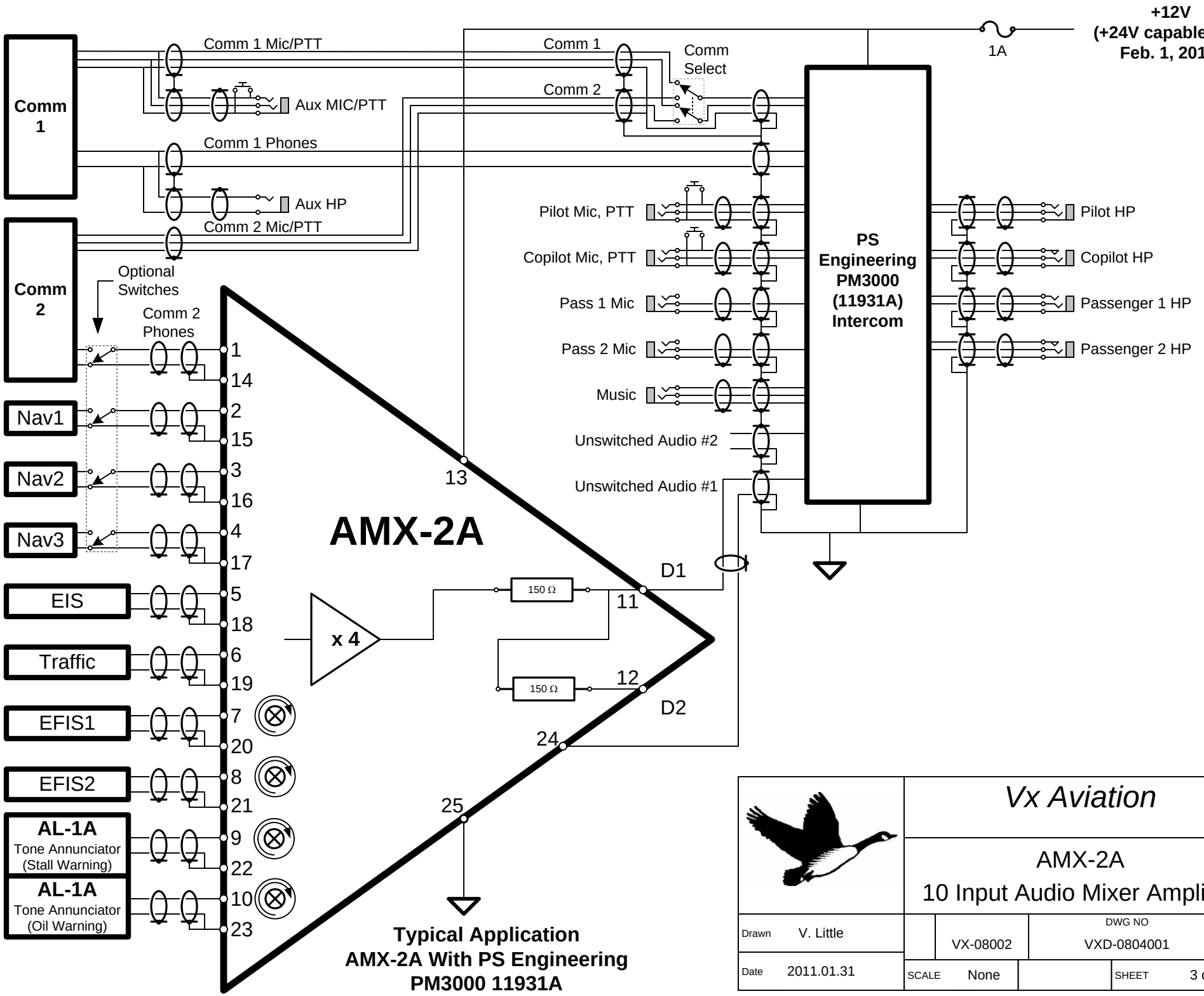
The output is designed to drive headphone busses directly and has a unique capability of combining the audio from a primary comm transceiver onto the output in a fail-safe fashion. It is compatible with all intercom systems, including those that do not provide an auxiliary input.

The wide bandwidth and robust output power provide high quality audio. The amplifier stage has a voltage gain of 4 for all inputs. When connected to a 150 ohm impedance load, this provides a 6 dB power gain, to a maximum of 32 milliwatts RMS over the frequency range of 50 Hz to 15 KHz.

The flexibility of the device allows for use as an audio mixer, as a headphone amplifier or as a combination of both as the application requires.

Technical Summary

- 10 audio inputs
  - 6 fixed-level with 560 Ω input impedance
  - 4 variable-level with 10 KΩ input impedance
- Audio output capable of driving 32 mW into 150 ohms (14.2 volt supply)
- Wide frequency range 50 Hz to 15 KHz (-3dB)
- Audio output provides fail-safe connection to primary commuications transceiver
- Less than 100 mA current drain, 10 to 16 volt operation. *Devices shipped after February 1, 2011 are capable of up to 30 volt operation.*



Typical Application
AMX-2A With PS Engineering
PM3000 11931A

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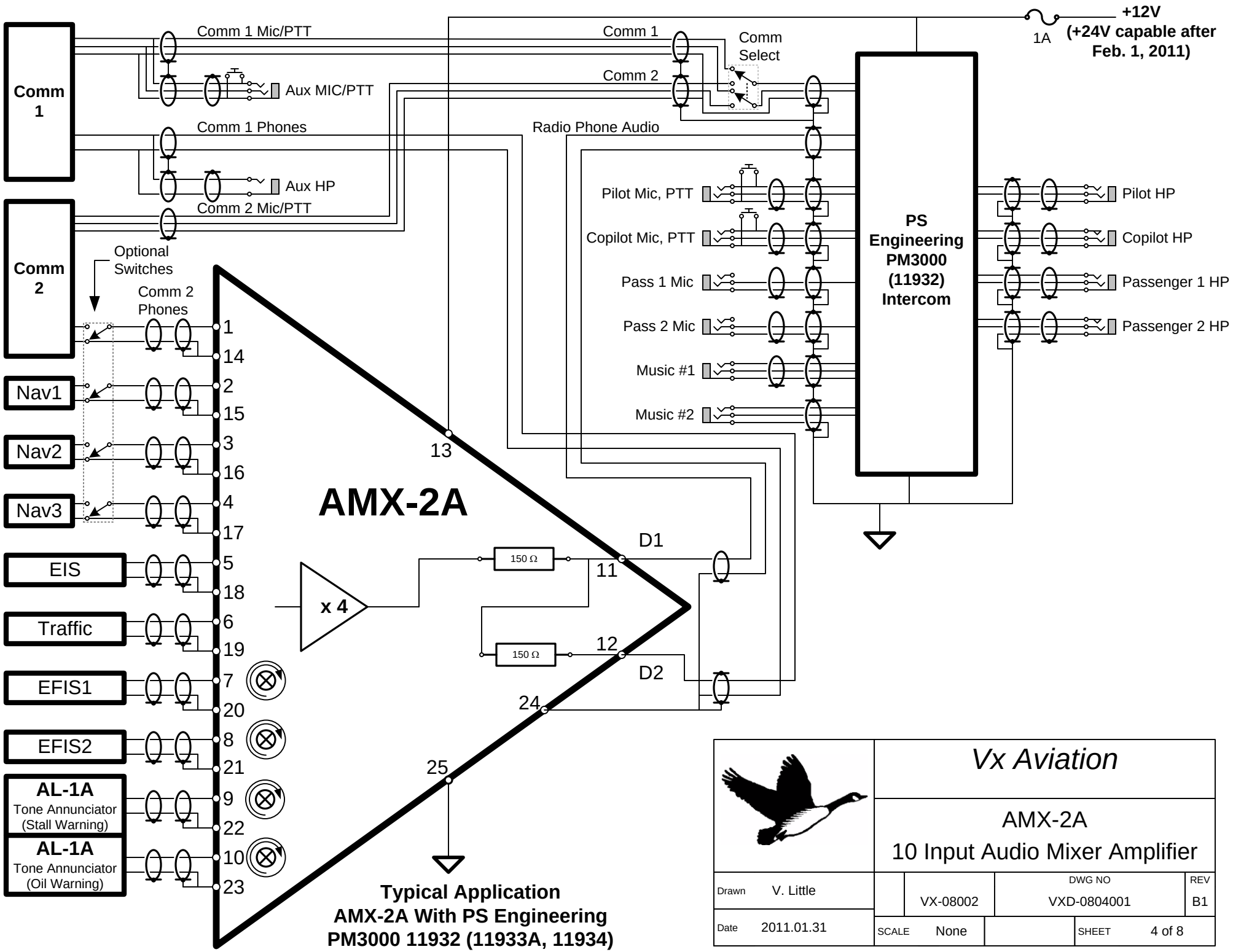
10 Input Audio Mixer Amplifier

Drawn V. Little		DWG NO VXD-0804001	REV B1
Date 2011.01.31	VX-08002	SCALE None	SHEET 3 of 8



Typical Application
AMX-2A With PS Engineering
PM3000 11932 (11933A, 11934)

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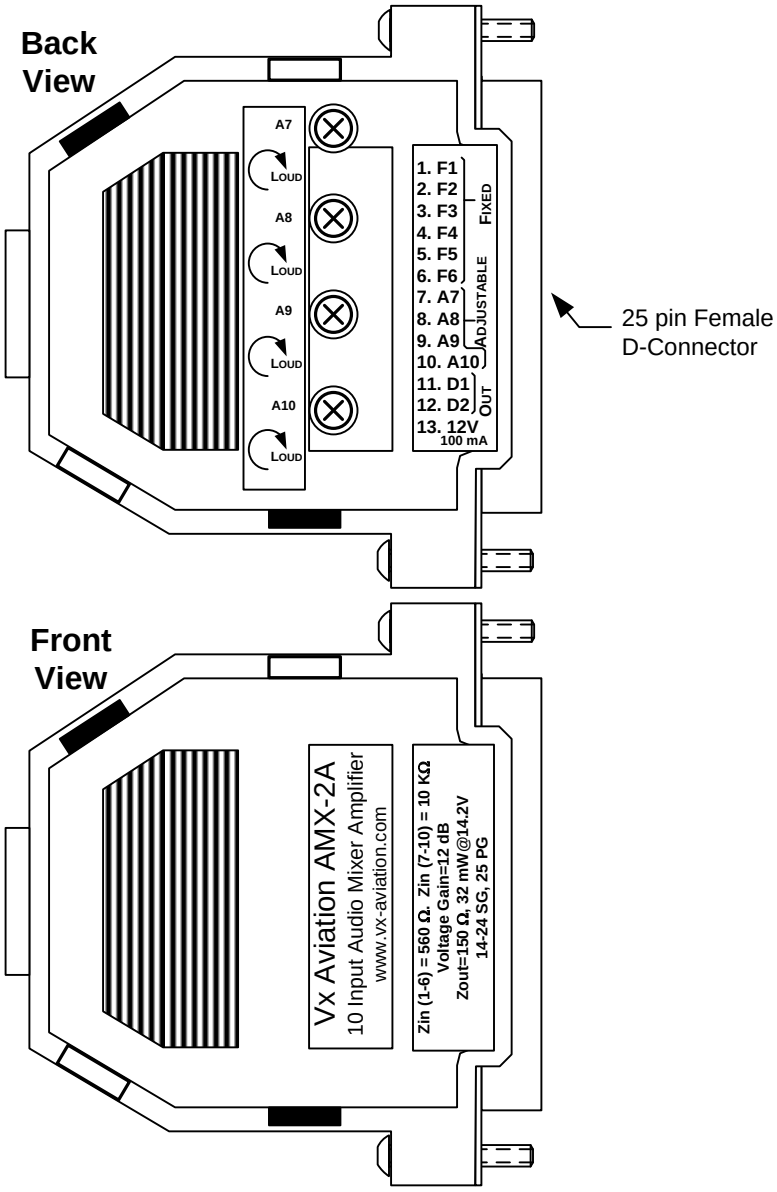
AMX-2A Audio Mixer Amplifier Pin Description

DB 25F Pin	Pin Name	Function	Connect To
1	F1	Fixed Level Input. 560 Ω nominal input impedance.	Audio sources that have their own volume controls. Connect using shielded wire, with shield connected to **SG**, AMX-2A end only. 560 Ω input impedance is compatible with most certified avionics sources.
2	F2		
3	F3		
4	F4		
5	F5		
6	F6		
7	A7	Adjustable Level Input. 10 KΩ nominal input impedance.	Any audio source. Connect with shielded wire, with shield connected to **SG**, AMX-2A end only. Audio volume is screwdriver adjustable.
8	A8		
9	A9		
10	A10		
11	D1	Primary Audio Output. 150 Ω source impedance.	Intercom AUX input. May instead be connected to the intercom *input* that is normally connected to the comm transceiver. Use shielded wire, with the shield connected to Intercom only.
12	D2	Secondary Audio Output. 300 Ω source impedance.	The *output* from the primary comm transceiver that is normally connected to the intercom. Audio from the primary comm is combined with the AMX-2A internal audio to produce intercom audio on D1 pin. No connection to D2 is required if the D1 pin is connected to an intercom AUX Input. Use shielded wire, with the shield connected to the AMX-2A only.
13	12V	Power Input.	10-14 volt power. **DO NOT EXCEED 16 Volts**. 100 mA maximum current consumption. **10-30 volt capable on all devices shipped after Feb. 1, 2011**
14-24	SG	Signal Ground.	Shield and Audio grounds.
25	PG	Power Ground.	Power Ground. Internally connected to SG.

Electrical Specifications Over Ambient Temperature Range

Parameter	Function	Min	Typ	Max	Units	Notes
T_A	Ambient Operating Temperature	-40	25	50	Degrees Celcius	Non-condensing
V_{CC}	Operating Voltage on 12V input	10	14.2	16 **(30 after Feb. 1, 2011)**	Volts DC	Protect VCC with 1 Amp Fuse or Breaker
I_{CC}	Current Drain		20	100	mA DC	
a_V	Voltage Gain (per input)		12		dBV	Output loaded with 10 KΩ
g_P	Power Gain (per input)		6		dB	Output loaded with 150 Ω
p_{OUT}	Power Output		32		mW	Output loaded with 150 Ω
f_C	Frequency Response	50		15K	Hz	-3 dB



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		VX-08002	VXD-0804001	B1
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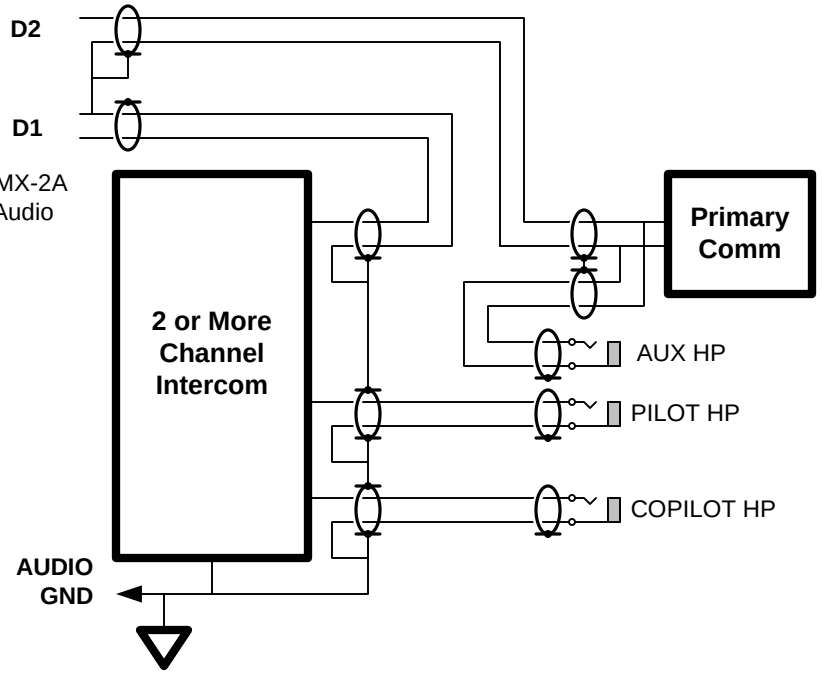
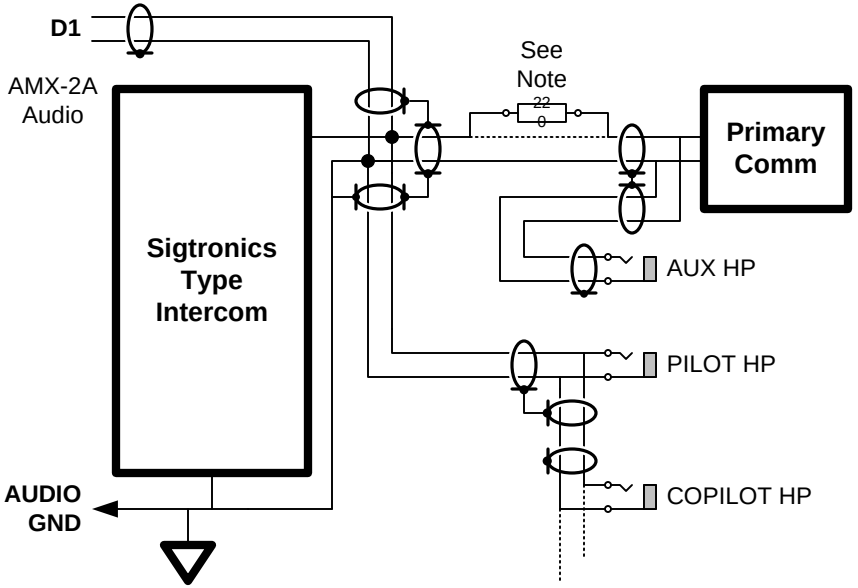
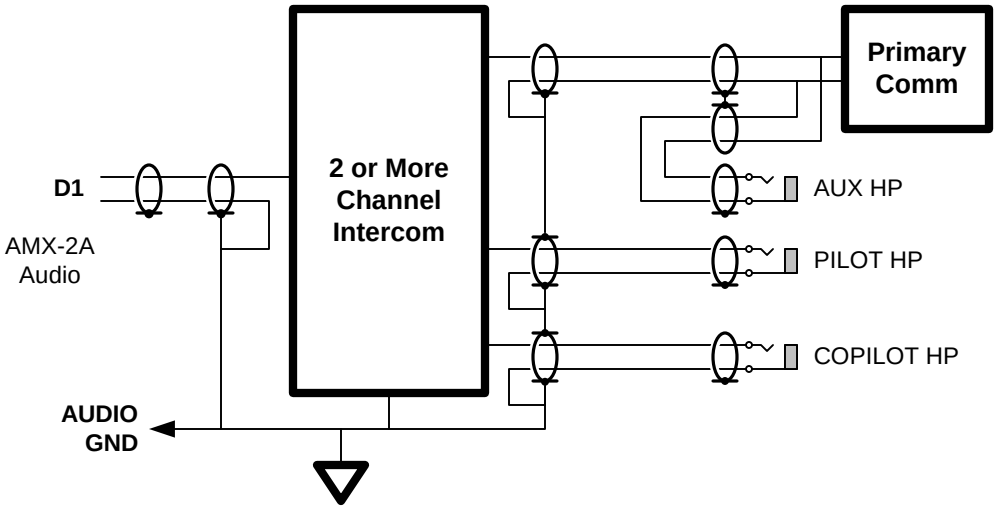
Applications (1)



A **Connection to Intercom with no Auxiliary Input. Works with all Intercom Types**



B **Connection to Intercom with no Auxiliary Input, Shared Bus Audio (Sigtronics Type)**



C **Connection to Intercom with Auxiliary Input**

Note: Resistor indicated may be required for proper operation. See www.sigtronics.com. If so, the AMX-2A to comm and intercom connection shown in Figure A may also be used.

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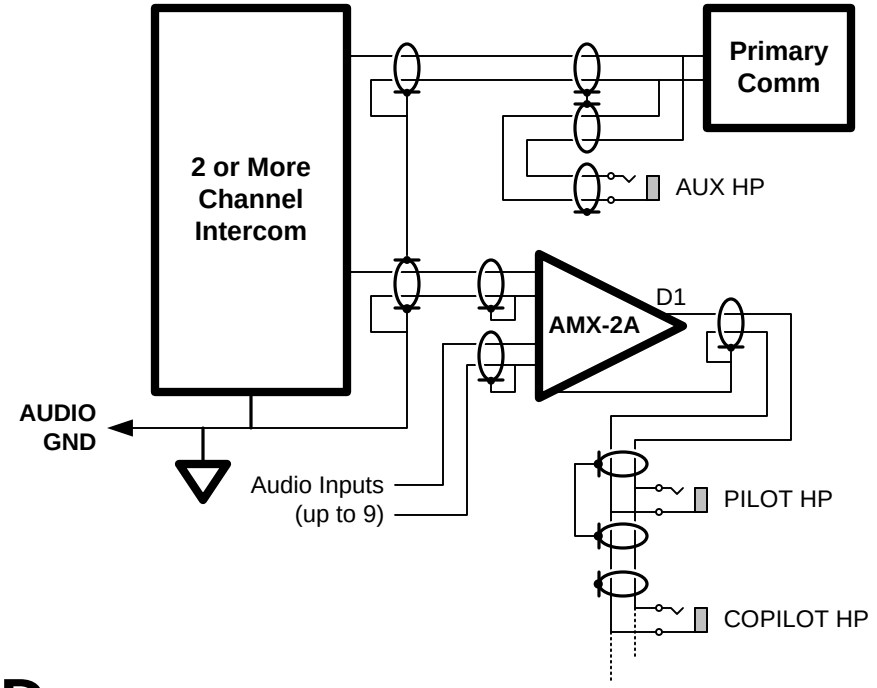
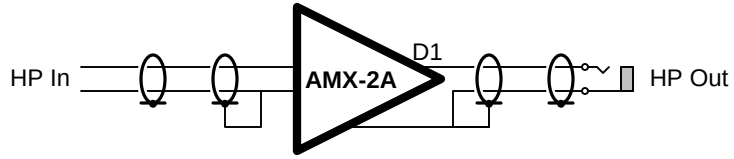
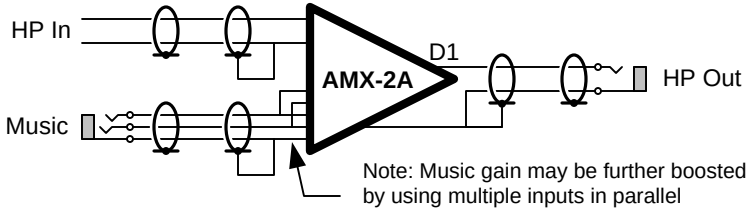
Applications (2)



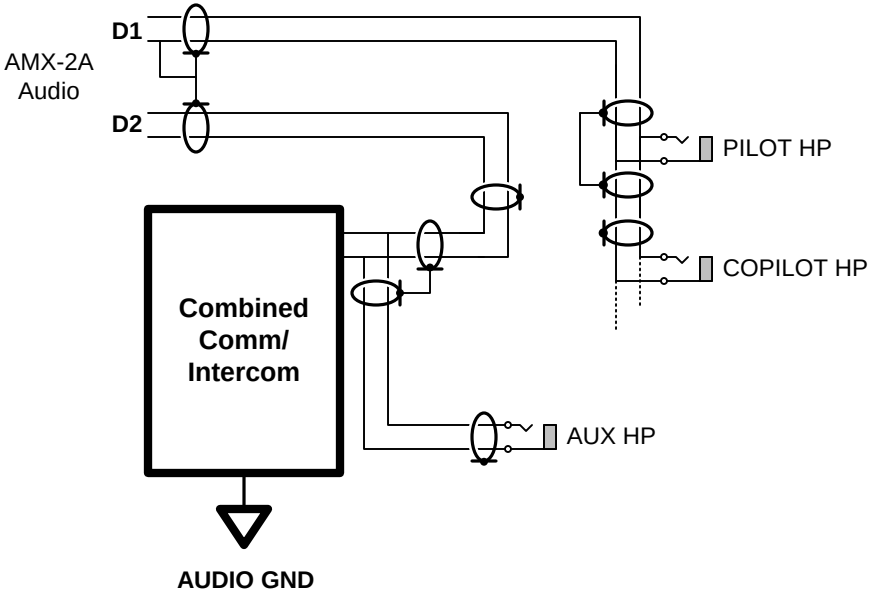
D **Headphone Audio Booster Plus 9 Extra Auxiliary Inputs**



E **Generic Headphone Amplifier**



F **Headphone Amplifier + Music (Mono)**



G **Connecting to Combined Comm/Intercom**

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