

REVISION HISTORY

Refer to the DCA and associated markups for a complete description of the changes incorporated in a revision.

REV	DCA	DATE	DRAWN	CHECKED	APPROVED	PUBLISHED
A	W14007	7/10/2014	Heath Flor	Jay Jensen	Robert Davis	Linda Andujo



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TEMPLATE 150-744545-01 REV. E



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 Prescott, AZ

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DOCUMENT TITLE
437 TO 438 CONVERSION INFORMATION

SIZE A	LRU 438	DOCUMENT NUMBER 150-843726	REV A
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SCALE: NONE DO NOT SCALE DRAWING

(Model 407 connector pinout is also identical to Model 437 and can be crossed to Model 438 in the same fashion as Model 437)

Table 1 - CONNECTOR PART NUMBERS

Model 437 P40 (37 pin)	Model 437 P50 (50 pin)	Model 438 P40 (37 pin)	Model 438 P50 (50 pin)
M23408/2-26 Uses Jackscrew Locks	M24308/2-27	D37SV-IKC Uses Quick Latch Locks	D50SV-IKC
Mounting (Screw Mount)		Mounting (Tray Mount)	
QTY 4, 10-32 stainless screws		Hawker Beechcraft 071-4004-00	

Table 2 - CONNECTOR P40 SIGNAL CROSS REFERENCE

437 Pin	437 PIN NAME	438 Pin	438 PIN NAME
P40-1	No Connection	None	N/A
None	N/A	P40-1	INPH SQ (Jump to P40-25)
P40-2	XMT PTT	P40-16	PTT MUTE SWITCH
P40-3	MIC HI	P40-2	MIC HI
None	N/A	P40-3	EMERG CONTROL (CONNECT THROUGH EMER SWITCH TO 28VDC. SEE P40-9)
P40-4	HDPH HI	P40-4	HDPH HI
P40-5	HDPH 28VDC	P40-8 ¹	28VDC
P40-6	HDPH LO	P40-23	HDPH LO
P40-7	HDPH 28VDC RETURN	P40-10 ²	POWER GROUND
P40-8	CVR HI	P40-5	CVR HI
P40-9	SPKR 28VDC	None ¹	N/A
P40-10	SPKR 28VDC	None ¹	N/A
P40-11	SPKR HI	P40-37	SPKR HI
P40-12	SPKR 28VDC RETURN	P40-10 ²	POWER GROUND
P40-13	AURAL WARNING LO	P50-8³	AUDIO COMMON
P40-14	AUX1 LO	P50-8³	AUDIO COMMON
P40-15	AUX2 LO	P50-8³	AUDIO COMMON
P40-16	AUX3 LO	None	N/A
P40-17	AUX4 LO	None	N/A
P40-18	AUX4 HI	None ⁵	N/A
P40-19	CHASSIS GROUND	P40-19	CHASSIS GROUND
P40-20	INPH AUDIO	P40-7, P40-26	INPH HI
None	N/A	P40-20 ⁴	INPH VOLUME
P40-21	SDTN ENABLE	None	N/A
P40-22	HDPH VOLUME	P40-21 ⁴	MASTER VOLUME
P40-23	INPH KEY	P40-6	INPH HOT SWITCH
P40-24	MIC LO	P40-22	MIC LO
P40-25	INPH/SPKR SWITCH	P40-14	INPH to SPKR SWITCH
P40-26	HDPH 28VDC RETURN	None ¹	N/A
P40-27	CVR LO	P40-24	CVR LO

437 Pin	437 PIN NAME	438 Pin	438 PIN NAME
P40-28	SPARE	None	N/A
P40-29	SPKR LO	P40-35	SPKR LO
P40-30	SPKR 28VDC RETURN	None ²	N/A
P40-31	SPKR 28VDC RETURN	None ²	N/A
None	N/A	P40-9	28VDC (ISOLATED, SEE P40-3)
None	N/A	P40-25	INTERNAL VAS POT (SEE P40-1)
P40-32	AURAL WARN HI	P50-35 ⁵	AURAL WARN HI
P40-33	SPKR SWITCH	P40-18	SPKR SWITCH
P40-34	SPKR VOLUME	None ⁴	None (SEE MASTER VOL)
P40-35	AUX1 HI	P50-34 ⁵	AUX AUDIO HI
P40-36	AUX2 HI	None ⁵	N/A
None	N/A	P40-36	PLT SEL COMM HI
P40-37	AUX3 HI	None ⁵	N/A
NONE	N/A		
		No Connection P40-13,15,17,27-34	

Table 3 - CONNECTOR P50 SIGNAL CROSS REFERENCE

437 Pin	437 PIN NAME	438 Pin	438 PIN NAME
P50-1	NAV2 HI	P50-31	NAV2 HI
P50-2	ADF2 HI	P50-15	ADF2 HI
P50-3	MKR1 HI	P50-30	MKR1 HI
P50-4	MKR2 HI	P50-16	MKR2 HI
P50-5	MKR1 SWITCH	P50-29	MKR1 SWITCH
P50-6	DME2 SWITCH	P50-28	DME2 SWITCH
P50-7	MKR2 SWITCH	P50-12	MKR2 SWITCH
P50-8	COMM1 SWITCH	P50-6	COMM1 SWITCH
P50-9	COMM2 SWITCH	P50-24	COMM2 SWITCH
P50-10	COMM3 SWITCH	P50-7	COMM3 SWITCH
P50-11	COMM4 SWITCH	P50-23	COMM4 SWITCH
P50-12	NAV1 LO	P50-8 ³	AUDIO COMMON
P50-13	COMM1 SDTN	P50-19	COMM1 SDTN
P50-14	COMM2 HI	P50-3	COMM2 HI
P50-15	COMM2 SDTN	P50-4	COMM2 SDTN
P50-16	COMM3 HI	P50-2	COMM3 HI
P50-17	COMM3 SDTN	P50-20	COMM3 SDTN
P50-18	NAV1 HI	P50-32	NAV1 HI
P50-19	DME1 HI	P50-17	DME1 HI
P50-20	DME2 HI	P50-33	DME2 HI
P50-21	DME1 SWITCH	P50-13	DME1 SWITCH
P50-22	NAV2 LO	P50-8 ³	AUDIO COMMON
P50-23	ADF2 LO	P50-8 ³	AUDIO COMMON
P50-24	MKR1 LO	P50-8 ³	AUDIO COMMON
P50-25	MKR2 LO	P50-8 ³	AUDIO COMMON
P50-26	ADF1 LO	P50-8 ³	AUDIO COMMON

437 Pin	437 PIN NAME	438 Pin	438 PIN NAME
P50-27	COMM3 LO	P50-8 ³	AUDIO COMMON
P50-28	COMM2 LO	P50-8 ³	AUDIO COMMON
P50-29	COMM1 LO	P50-8 ³	AUDIO COMMON
P50-30	COMM1 HI	P50-18	COMM1 HI
P50-31	SPARE2 SWITCH	None	N/A
P50-32	SPARE2 HI	None	N/A
P50-33	COMM4 SDTN	P50-21	COMM4 SDTN
P50-34	ADF1 HI	P50-14	ADF1 HI
P50-35	NAV2 SWITCH	P50-11	NAV2 SWITCH
P50-36	NAV1 SWITCH	P50-27	NAV1 SWITCH
P50-37	ADF1 SWITCH	P50-10	ADF1 SWITCH
P50-38	ADF2 SWITCH	P50-9	ADF2 SWITCH
P50-39	IDENT SWITCH	P40-12	IDENT SWITCH
P50-40	VOICE SWITCH	P40-11	VOICE SWITCH
P50-41	DME1 LO	P50-8 ³	AUDIO COMMON
P50-42	DME2 LO	P50-8 ³	AUDIO COMMON
P50-43	COMM4 LO	P50-8 ³	AUDIO COMMON
P50-44	SPARE2 LO	None	N/A
P50-45	SPARE1 LO	None	N/A
P50-47	SDTN VOLUME	P50-41	SDTN VOLUME
P50-48	SPARE1 SWITCH	None	N/A
P50-49	SPARE1 HI	None	N/A
P50-50	COMM4 HI	P50-5	COMM4 HI
None	N/A	P50-22	PA KEY
None	N/A	P50-1	PA SDTN
P50-46	No Connection	No Connection P50-25,26,36,37,38,39, 40,42,43,44,45,46,47,48,49,50	

Note¹ Model 437 has two 28VDC inputs, one for Headphone Amplifier Power and one for Speaker Amplifier Power. Model 438 has a single 28VDC power input that should be connected to the power supply using a 20 AWG wire. Verify that the aircraft 28VDC power supply to the Model 438 is capable of supplying 1.5 AMP maximum (recommended circuit breaker is 2 AMP)

Note² Model 437 has multiple power return inputs. The power return inputs are electrically common with each other internally within the Model 437. The Model 438 requires a single 20 AWG wire to be connected from the Model 438 power return input to the aircraft ground.

Note³ To transfer Audio input LO signals between the Model 437 and Model 438, the audio input LO signal wires that are connected to pins of Model 437 must be connected to a common audio ground mounted external to the Model 438. A single 22 AWG wire must be connected from the external common ground to connector pin P50-8 of the Model 438. The external audio common ground must be electrically isolated from the aircraft mounting.

Note⁴ The Model 437 has separate volume controls for Headphone Volume and Speaker Volume COMM/RCVR audio. Model 438 has a Volume control Input for Master Volume which controls the COMM/RCVR audio Headphone and Speaker Volumes with one control and a separate control input for Interphone Volume. When connecting a Model 438 in place of a Model 437, a single volume control potentiometer can be connected to the Headphone Volume and Interphone Volume inputs of the Model 438 to control them together. If connected in

parallel, the Master volume control potentiometer installed in the aircraft can either be changed from a 10K ohm potentiometer to a 5K ohm ½ Watt potentiometer, or a 10K ohm ½ resistor can be connected in parallel with the existing 10K ohm potentiometer, across the potentiometer's resistive element to obtain a 5K ohm potentiometer resistance.

Note⁵ The Model 437 has four Aux Audio Inputs and one Aural Warning Audio Input. The Aux and Aural Warning Audio Inputs of the Model 437 are unswitched to the Headphone and Speaker outputs of the Model 437. The Model 438 has 2 Audio Inputs, one for Aural Warning and one for Aux. If additional inputs to the Model 438 are needed in order for the installation to be compatible with the Model 437, the installer can use the Model 247 Audio Mixing Amplifier to mix the audio from multiple sources into the signal Aux Input that is available from the Model 438. The Model 247 has 3 independent 4 channel mixers within one enclosure. It can support mixing of alert audio for up to 3 individual Model 438 audio user stations. Refer to the Model 247 Installation Manuals for additional information on Model 247 electrical interfaces and performance characteristics. Refer to Figure 1 for details on the Model 247 interconnect for AUX audio mixing.

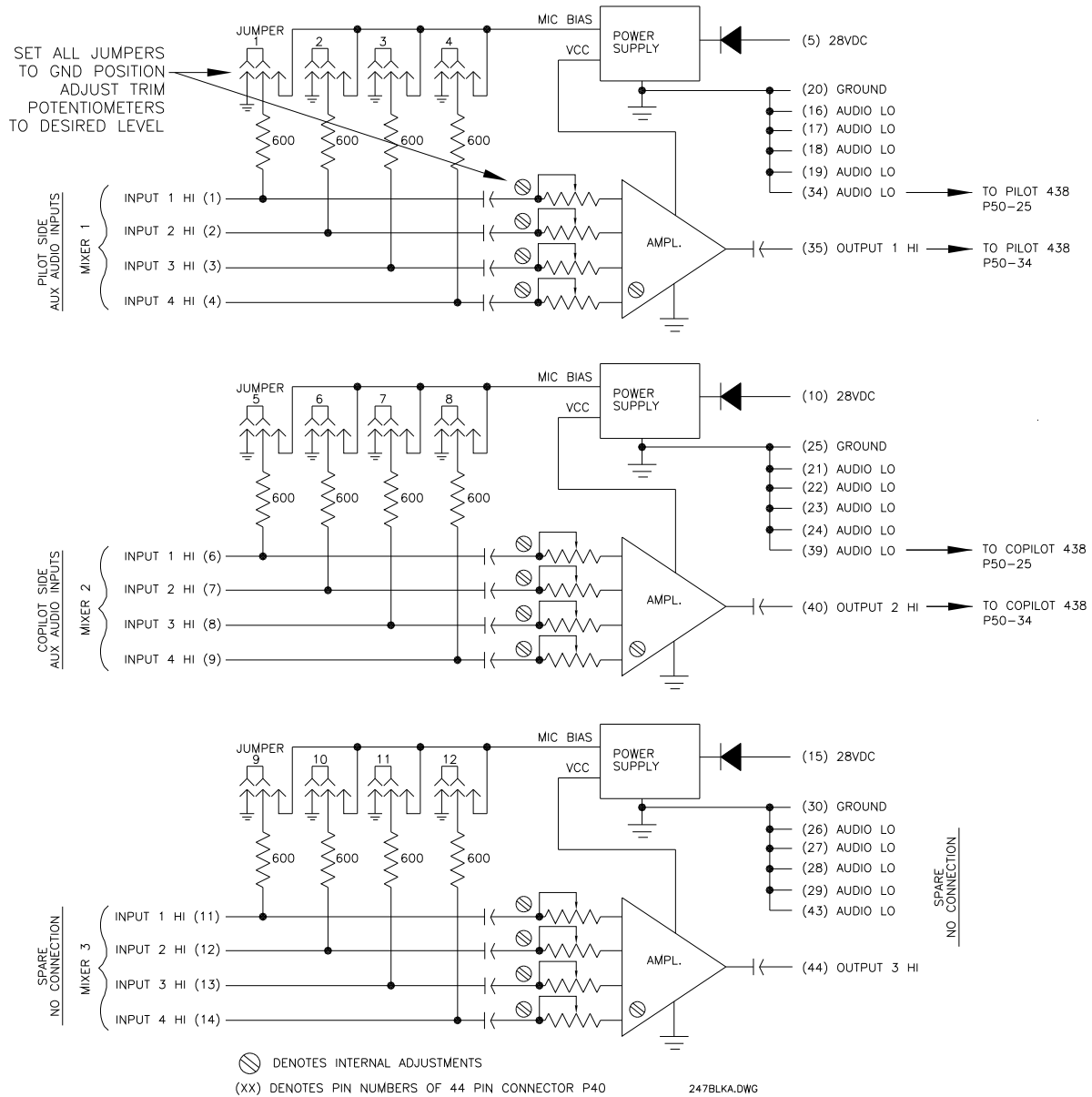
Note⁶ The Model 438 includes individual receiver volume controls for each of its COMM/RCVR (COMM and NAV, ADF, DME, etc) inputs. These control inputs can be left unconnected and the Model 438's individual receiver volumes will default to full volume. The volumes for all receivers will then be controlled collectively by the Master Volume input. If volume controls are connected to the Model 438's individual COMM/RCVR volume inputs, 1K ohm ½ potentiometers should be used and connected between the input pin and ground.

Mounting, mounting dimensions and weight also differ between the Model 437 and 438.

Refer to the Model 437 and Model 438 Installation Manuals for additional information on Model 437 and Model 438 electrical interfaces and performance characteristics.

Figure 1 - Model 247 AUX INPUT EXPANDER FOR MODEL 438

MODEL 247 AUDIO MIXER BLOCK DIAGRAM



END OF MODEL 437 TO MODEL 438 CONVERSION INFORMATION