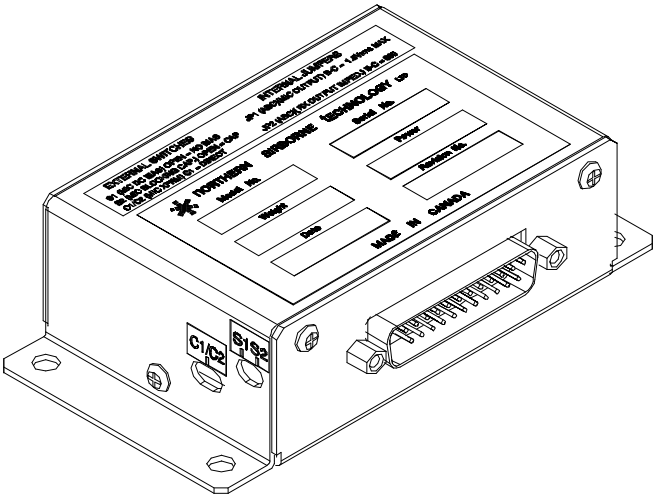
Installation and Operation Manual

AA34 Series
Universal Radio Interface



SM36

ISSUE 4.01

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Issued on the authority of Northern Airborne Technology Ltd.

Prepared By: NAT 226	Checked By: NAT 231 NAT 255	Certification: NAT 281	Approved By: NAT 114

The status of this installation and operation manual is controlled by issue shown on the title page. The status of each section is controlled by revision shown in the footer of each page. All revisions affecting sections of this manual have been incorporated into the latest issue.

ISSUE/REVISION RECORD

Manual Issue Number	Section Revision Number	Revision Description	Issue Date
4.01	Section 1 Rev: 1.00 Section 2 Rev: 1.00 Section 3 Rev: 1.00	Rewritten in latest format	Jan 11, 2010
4.00	n/a	Initial Release	Nov 10, 2003

Table of Contents

Section 1 Description

1.1 Introduction

Information in this section consists of product description, design features and specifications for the AA34-200, AA34-300 and AA34-301 Universal Radio Interfaces. All other derivative product information shall be contained in the applicable manual supplement, which may be obtained from Northern Airborne Technology Ltd. as required.

Review all notes, warnings and cautions.

1.2 Product Description

The AA34 Universal Radio Interface will handle the interface and switching requirements of mobile or CB radio systems when integrated into an aircraft audio system.

1.3 Design Features

The AA34 Universal Radio Interface units provide microphone excitation; relay keying, and sidetone generation, all fully isolated from airframe ground.

1.4 Specifications

1.4.1 Electrical Specifications

Input Power		+13.8 Vdc ± 10% or 27.5 Vdc ± 10% (Selected by appropriate pin)
	(AA34-200)	160 mA
	(AA34-300\301)	70 mA
Input Signals		
Mic		250 mVrms @ 150 Ω ±10%
Audio		2.5 Vrms @ 600 Ω ±10%
Output Signals		
Mic	(AA34-200)	Approx. 225 mVrms max into 150 Ω
	(AA34-300\301)	Adjustable to 1.5 Vrms max into 600 Ω or 178 mVrms into 8 Ω
Audio	(AA34-200)	200 mW into 150 or 600 Ω nominal
	(AA34-300\301)	100 mW into 8 or 600 Ω nominal
*Frequency Response		<3 dB from 350 Hz to 6 kHz
*Distortion		<10% @ rated output
*Noise level without signal		>50 dB down from rated output

*Regulation	<10% variation from 75% to 400% of load

* These signals have been determined for the AA34-300 and AA34-301 only

1.4.2 Physical Specifications

Height		1.30 inches (33.0 mm) max
Depth		2.71 inches (68.8 mm) max excluding connector
Width		4.54 inches (115.3 mm) max
Weight		
	AA34-200	0.63 lb (285 g) max
	AA34-300\301	0.40 lb (180 g) max
Mounting		Bulkhead mount with four 10-32 screws
Material/Finish		5052-H32 brushed aluminum chassis and cover with conversion finish
Connectors	AA34-200	25 pin male D-sub
	AA34-300\301	25 pin male filtered D-sub

1.4.3 Environmental Specifications

Temperature		
		-20 C to +55 C (Operating) -55 C to +85 C (Survival)
Altitude		
	AA34-200	15,000 ft (tested to 25,000 ft)
	AA34-300\301	35,000 ft
Humidity		95% non-condensing
Shock		6g (any axis)
Vibration (AA34-300)		RTCA/DO-160C categories (B,M,N)

Qualification of the AA34-300 Universal Radio Interface was completed in accordance with DO-160C Env. Cat. C1-BA[BMN]XXXXXXABABATAXXX

Qualification of the AA34-301 Universal Radio Interface was completed in accordance with DO-160C Env. Cat. C1-BA[MN]XXXXXXABABATAXXX

Note: Refer to Environmental Qualification Form located in Section 2 of this Manual for complete details of the environmental categories.

1.4.4 Product Approval

FAA: TSO-C50c (RTCA/DO-170 Class II, RTCA/DO-160C)

Applicable to AA34-300 units s/n 20,001 and up

1.5 Unit Nomenclature

Model	Description
AA34-200	Mobile/FM radio interface. Provides floating key lines. Internal RX & Sidetone Amplifier. Provides floating audio lines in and out. Internal mic exciter with adjustable output. Internally selectable functions and levels.
AA34-300	Mobile/FM radio interface. Provides floating key lines. Internal RX, Sidetone and Microphone Amplifiers. Provides floating audio lines in and out. Internal mic exciter with adjustable output. Internally selectable functions and levels. Designed to meet the requirements of TSO C50c.
AA34-301	Mobile/FM radio interface. Provides floating key lines. Internal RX & Sidetone Amplifier. Provides floating audio lines in and out. Internal mic exciter with adjustable output. Internally selectable functions and levels. External on/off control of mic output. Designed to meet the requirements of TSO C50c.

Section 1 ends

Section 2 Installation

2.1 Introduction

Information in this section consists of unpacking and inspection procedures, installation procedures, post-installation checks and installation drawings for the AA34 Series Universal Radio Interface.

Review all notes, warnings and cautions.

2.2 Unpacking and Inspection

Unpack the equipment carefully and locate the warranty card. Inspect the unit visually for damage due to shipping and report all such claims immediately to the carrier involved. Check that all items listed below are present before proceeding and report any shortage immediately to your supplier:

- Warranty Card
- Certificate of Conformity or Release Certification

2.2.1 Warranty

All Northern Airborne Technology Ltd. products are warranted for 2 years from date of installation by an authorized Northern Airborne Technology Ltd. dealer, to be free of defects in workmanship or performance. This warranty covers all materials and labour, but is exclusive of any transport to deliver the defective unit to and from Northern Airborne Technology Ltd. or its designated warranty repair center, or any labour to remove or re-install the defective unit in the aircraft. Contact Northern Airborne Technology Ltd. for any questions regarding this warranty, its applicability to your units and/or for return authorization. Northern Airborne Technology Ltd. is the final arbitrator concerning warranty administration. Units which have been physically damaged, burned, immersed in water or otherwise abused beyond the scope of normal use will not be considered for warranty. **WARRANTY IS VOID UNLESS THE PRODUCT IS INSTALLED BY AN AUTHORIZED NORTHERN AIRBORNE TECHNOLOGY LTD. DEALER**. Product for which a warranty card is not returned shall be warranted from date of manufacture.

2.3 Continued Airworthiness

Maintenance of the AA34 Series Universal Radio Interface is ‘on condition’ only. Periodic maintenance of this product is not required.

2.4 Installation Procedures

Installation Notice

This product must be installed in accordance with the installation instructions provided in the latest issue of this Installation and Operation Manual. Check the Publication Index at www.northernairborne.com for the issue status of the manual. The latest issue of the manual may be downloaded from the same website. All risk associated with installation of this product contrary to these instructions shall be the responsibility of the installing agency.

2.4.1 Warnings

N/A

2.4.2 Cautions

CAUTION:

Do not bundle **any lines from this unit** with transmitter coax lines. Do not bundle any logic, audio, or DC power lines from this unit with 400 Hz synchro wiring or AC power lines. Do not position this unit next to any device with a strong alternating magnetic field such as an inverter, motor or blower, or significant audio interference will result.

In all installations, use shielded cable exactly as shown, and **ground as indicated**. Significant problems may result from not following these guidelines.

Incorrect wiring and shielding, can seriously degrade audio installations and result in abnormal cross-talk, hum and ground-loop noise. Be especially careful with all microphone wiring, as these lines can carry the lowest level signals in the aircraft.

2.4.3 Cabling and Wiring

All wire shall be selected in accordance with the original aircraft manufacturer's Maintenance Instructions or AC43.13-1B Change 1, Paragraphs 11-76 through 11-78. Unshielded wire types shall qualify to MIL-W-22759 as specified in AC43.13-1B Change 1, Paragraphs 11-85, 11-86, and listed in Table 11-11. For shielded wire applications, use Tefzel MIL-C-27500 shielded wire with solder sleeves (for shield terminations) to make the most compact and easily terminated interconnect. Follow the interconnect drawing in Section 2.7 as required.

Allow 3" from the end of the shielded wiring to the shield termination to allow the connector hood to be easily installed. Refer to the interconnect drawing in Section 2.7 for shield termination details. Note that the hood is a "clamshell" hood, and is installed after the wiring is complete.

Maintain wire segregation and route wiring in accordance with the original aircraft manufacturers Maintenance Instructions.

Unless otherwise noted, all wiring shall be a minimum of 22 AWG, except power and ground lines, which shall be a minimum of 20 AWG. Reference the Interconnect drawing for additional specifications. Check that the ground connection is clean and well secured, and that it shares no path with any electrically noisy aircraft accessories such as blowers, turn and bank instruments or similar loads. Power to this unit must be supplied from a separate circuit breaker or fuse (fast blow), and not attached to any other circuit breaker without additional protection. Verify that the selected circuit breaker size and wire gauge are adequate for the installation using the techniques specified in AC43.13-1B Change 1, Paragraphs 11-47 through 11-51 and 11-66 through 11-69.

2.4.4 Post-Installation Checks

2.4.4.1 Voltage/Resistance Checks

Do not attach the AA34 until the following conditions are met.

Check the following:

a) (AA34-200, AA34-300 and AA34-301) P101 pin **<1>** for +28 Vdc relative to ground or P101 pin **<2>** for +14 Vdc relative to ground.

b) (AA34-200) P101 pins **<14> <15>** and **<23>** for continuity to ground (below 0.5 Ω).

c) (AA34-300\301) P101 pins **<8> <14> <15> <20> <21>** and **<23>** for continuity to ground (below 0.5 Ω).

2.4.4.2 Power On Checks

Power up the aircraft's systems and confirm normal operation of all functions of the AA34. Verify normal operation of all radio functions. Refer to the manual supplied with the mobile radio for specific operation details.

a) To verify proper operation, all functions and levels shall be checked in-flight.

b) Check preset adjustments are completed before aircraft departure.

Upon satisfactory completion of all performance checks, make all required log book entries, electrical load, weight and balance amendments and other documentation as required by your local regulatory agency before releasing the aircraft for service.

2.5 Adjustments and Connections

The AA34 permits many possible interfaces. To prevent loss of communications, ensure that any replacement unit is configured exactly the same as the one it is replacing.

2.5.1 External Adjustments

The unit is shipped from the factory with all external adjustments set to the normal test levels. Once installed in the aircraft, it may be desirable to change some of these settings to best suit the local operating environment. The external adjustments are accessible through the left side and rear of the unit.

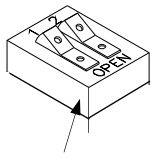
2.5.1.1 Rear Adjustments

The rear adjustments are potentiometers, accessed through holes in the cover. Rotating a potentiometer clockwise (cw) will increase the level, and rotating it counterclockwise (ccw) will reduce the level.

RX LEVEL Adjusts the signal level of the incoming radio audio.
MIC LEVEL Adjusts the signal level of the mic output.
S/T LEVEL Adjusts the signal level of the sidetone.

2.5.1.2 Left side Adjustments

Switches S1 and S2



S1 and S2 shown in OPEN position

S1 Provides mic bias to the MIC IN line when closed (default). Open if an external mic bias is present.

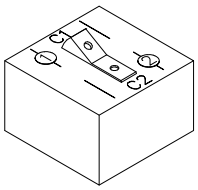
S2 Bypass switch for blocking capacitor in mic out circuit. 'Closed' when bias from the connected radio will be used for mic excitation. 'Open' (default setting) when internal bias is used or if there are any concerns about DC interaction between the AA34 and the connected radio.

Switch C1/C2

This switch determines whether the mic input is amplified. The C1 position provides a direct mic path from input to output. The C2 (default) position switches in the amplifier.

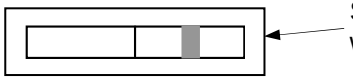
AA34-200 only

Switch shown with C2 Selected



The C1/C2 switch on the AA34-200 units is a rocker switch with the C1 position to the rear of the access hole, and the C2 position at the front.

AA34-300 and -301 only



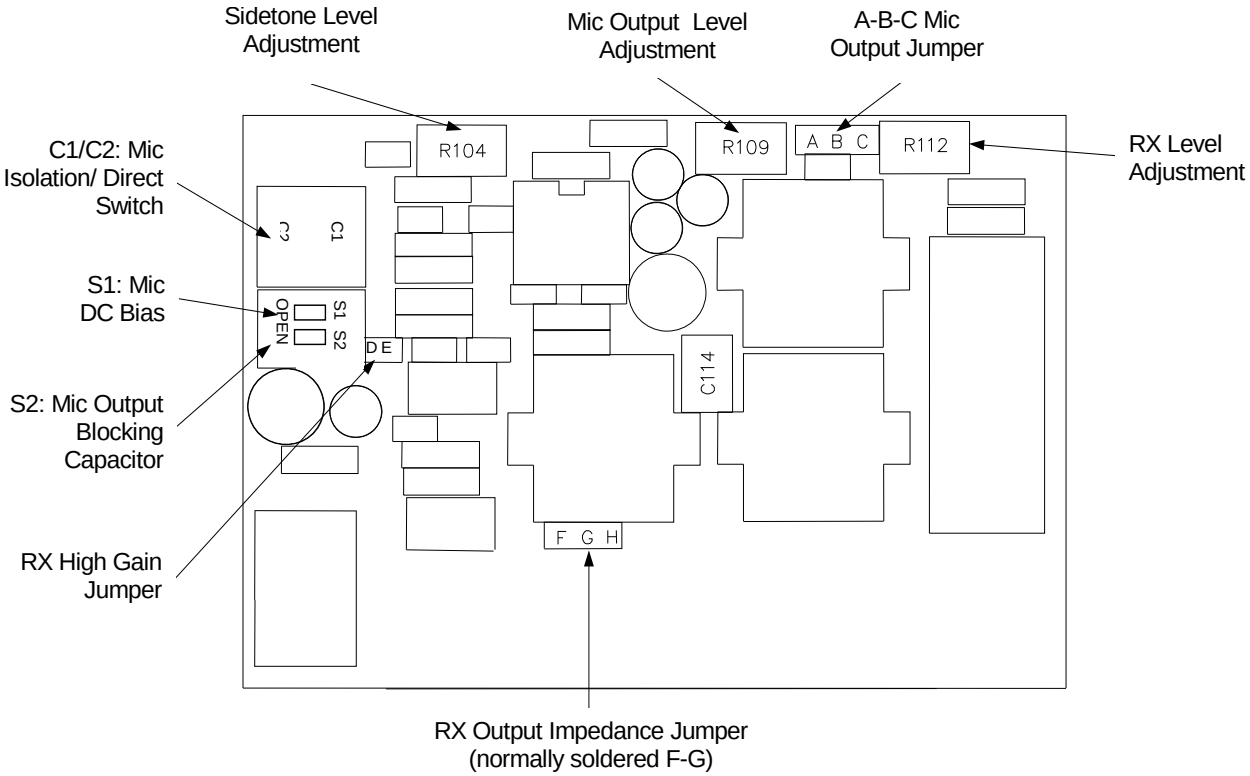
Switch shown with C2 Selected

The C1/C2 switch on the AA34-300 and -301 units is a slide switch with the C1 position to the left of the access hole and the C2 position to the right.

Note: If S1 is CLOSED (mic excited by the AA34), and the transformer isolation is NOT used (C1), the blocking capacitor should be used (S2 OPEN) if the radio's input circuitry is unknown. This will prevent any unwanted interaction with DC present at the radio. The DC blocking capacitor is connected right at the mic output from the AA34, and is used whenever there may be a problem with DC present at the radio. This capacitor can be used with or without microphone transformer isolation, which is used to float the microphone from ground.

2.5.2 Internal Adjustments (AA34-200 only)

CAUTION:
The AA34 Series Universal Radio Interface contains static sensitive devices.
Proper ESD handling procedures must be followed to prevent damage to the unit.



2.5.2.1 30/200 mV Mic Output Level Adjustment

Remove the cover from the AA34-200 and locate the Mic Output jumper. When the jumper is connected across pins A and B, the unit level is set at 200 mV. When connected across B and C, the unit level is set to 30 mV. (The default setting is A – B).

2.5.2.2 RX Gain Adjustment

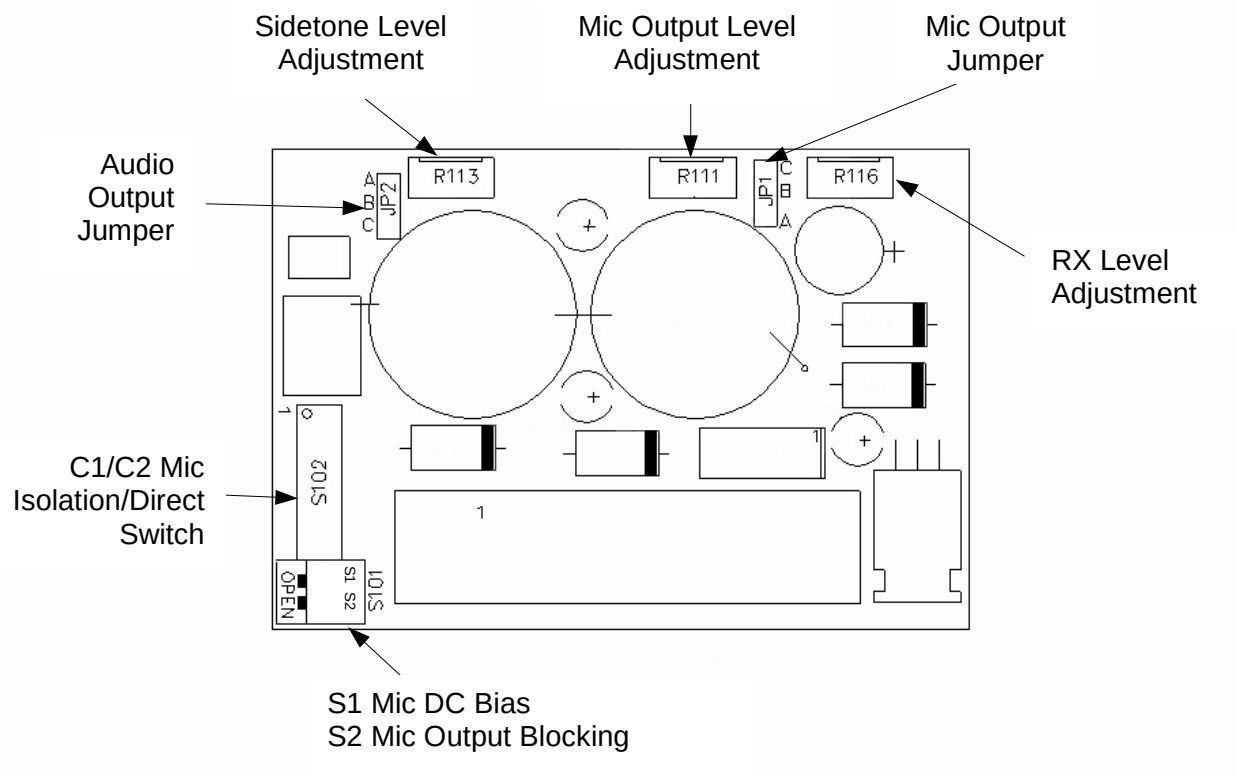
Remove the cover from the AA34-200 and locate the RX Gain jumper. When the jumper is connected across pins D and E, the unit is set to operate at high gain. When not connected, the unit is set to operate at low gain (default setting).

2.5.2.3 RX Output Impedance Adjustment

Remove the cover from the AA34-200 and locate the RX Output Impedance jumper. The factory default is 600 Ω (jumper soldered across F and G). If connected across G and H, the unit is set to 150 Ω.

2.5.3 Internal Adjustments (AA34-300 and AA34-301 only)

CAUTION:
The AA34 Series Universal Radio Interface contains static sensitive devices. Proper ESD handling procedures must be followed to prevent damage to the unit.



2.5.3.1 8/600 Ω Audio Output Impedance Adjustment

Remove the cover from the AA34 and locate the 8/600 Ω adjustment jumper JP2. When the jumper is connected across pins A and B, the unit is set to operate with an 8 Ω load connected. When connected across B and C, the unit is set to operate with a 600 Ω load connected. (The default setting is B – C).

2.5.3.2 8/150 Ω Mic Output Impedance Adjustment

Remove the cover from the AA34 and locate the 8/150 Ω adjustment jumper JP1. When the jumper is connected across pins A and B, the unit is set to operate with an 8 Ω load connected. When connected across B and C, the unit is set to operate with a 150 Ω load connected (The default setting is B – C).

2.6 Accessories Required But Not Supplied

Installation kit p/n AA34-IKC (crimp) is required to complete the installation. The kit consists of the following:

AA34-IKC 25 Pin D-min Female Crimp Kit (NAT Part No D25SL-IKC)

Quantity	Description	NAT Part No.
1	D-min 25 Socket Housing	20-21-025
25	MS Crimp Socket	20-26-901
1*	Jack Screw Set	20-27-002
1*	Lock Clip Set	20-27-004
1	25 Pin Connector Hood	20-29-026

* Use as required.

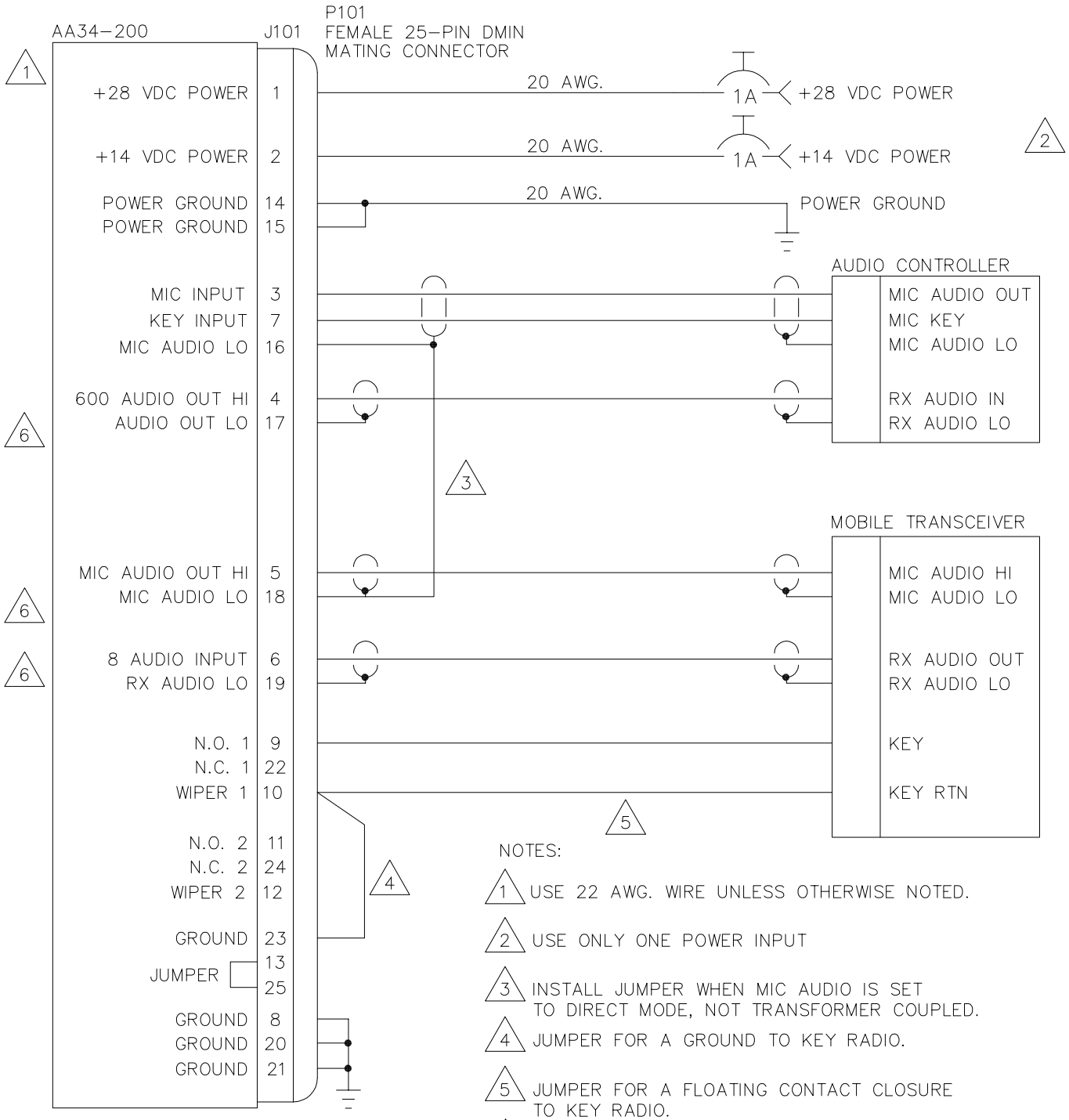
2.7 Installation Drawings

Use of the "#" symbol in the REV. column indicates that the document is listed elsewhere in the manual. Refer to the applicable NAT Part No. to locate the referenced document.

DOCUMENT	REV.	DESCRIPTION	TYPE	SERIAL No.
AA34-200				
AA34\200\403-0	1.03	Universal Radio Interface	Interconnect	All
AA34\200\405-0	1.02	Universal Radio Interface	Connector Map	All
AA34\200\922-0	1.02	Universal Radio Interface	Mechanical Installation	All
AA34-300				
AA34\300\403-0	1.00	Universal Radio Interface	Interconnect	All
AA34\300\405-0	1.00	Universal Radio Interface	Connector Map	All
AA34\300\521-0	1.00	Universal Radio Interface	Environmental Qual. Form	20001 and up
AA34\300\922-0	1.00	Universal Radio Interface	Mechanical Installation	Up to 20000
AA34\300\922-0	1.10	Universal Radio Interface	Mechanical Installation	20001 - 30859
AA34\300\922-0	1.20	Universal Radio Interface	Mechanical Installation	30860 and up
AA34-301				
AA34\301\403-0	1.00	Universal Radio Interface	Interconnect	All
AA34\301\405-0	1.00	Universal Radio Interface	Connector Map	All
AA34\300\922-0	#			

Section 2 ends following the above documents

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	ECR #590 FORMAT CHANGES	FEB 12/97	MWS
1.02	ECR #552 DRAWING CORRECTIONS	MAR 20/97	PGL
1.03	ECR #1600 – PINS 8, 20 & 21 WERE N/C, FORMAT CHANGES.	FEB 7/00	TAT



NOTES:

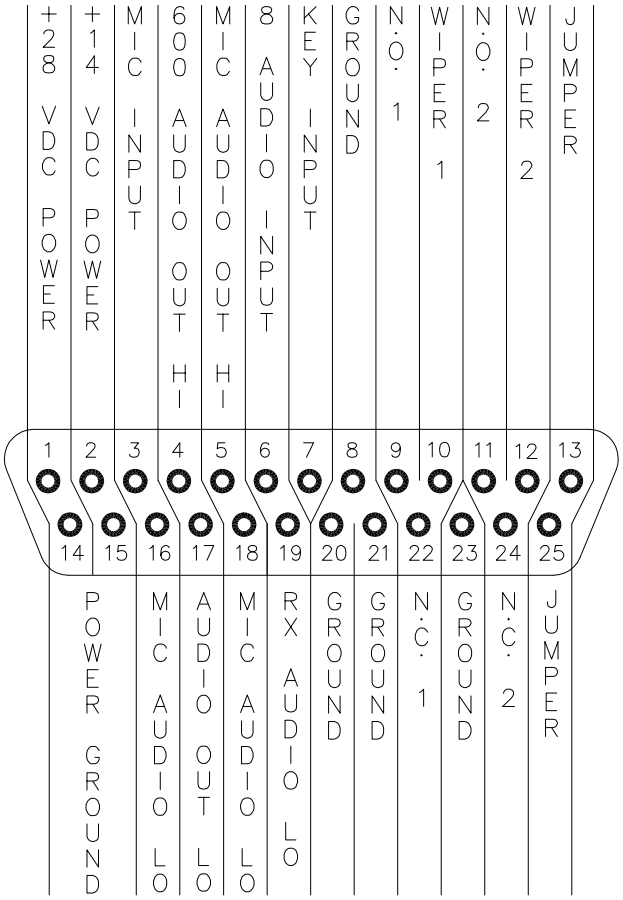
1. USE 22 AWG. WIRE UNLESS OTHERWISE NOTED.
2. USE ONLY ONE POWER INPUT
3. INSTALL JUMPER WHEN MIC AUDIO IS SET TO DIRECT MODE, NOT TRANSFORMER COUPLED.
4. JUMPER FOR A GROUND TO KEY RADIO.
5. JUMPER FOR A FLOATING CONTACT CLOSURE TO KEY RADIO.
6. INPUT/OUTPUTS ARE TRANSFORMER COUPLED (BALANCED), 'LO' WIRES REQUIRE TERMINATION.

DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.					
DRAWN	SRM						
DATE	JUL 26/90	TITLE	UNIVERSAL RADIO INTERFACE				
CHECKED	NAT PROD. 190						
APPROVED	NAT 107	SIZE A	CAGE CODE 3AB01	PART NO. AA34–200		REV. 1.03	SHEET 1/1
FILE 403–0103.DWG		DWG. TYPE INTERCONNECT		DWG. NO. AA34\200\403–0			

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	ECR #590 FORMAT, NOMENCLATURE CHANGES	FEB 12/97	MWS
1.02	ECR #1600 – PINS 8, 20 & 21 WERE N/C, FORMAT CHANGES.	FEB 7/00	TAT

P101

25 PIN FEMALE DMIN
MATING CONNECTOR



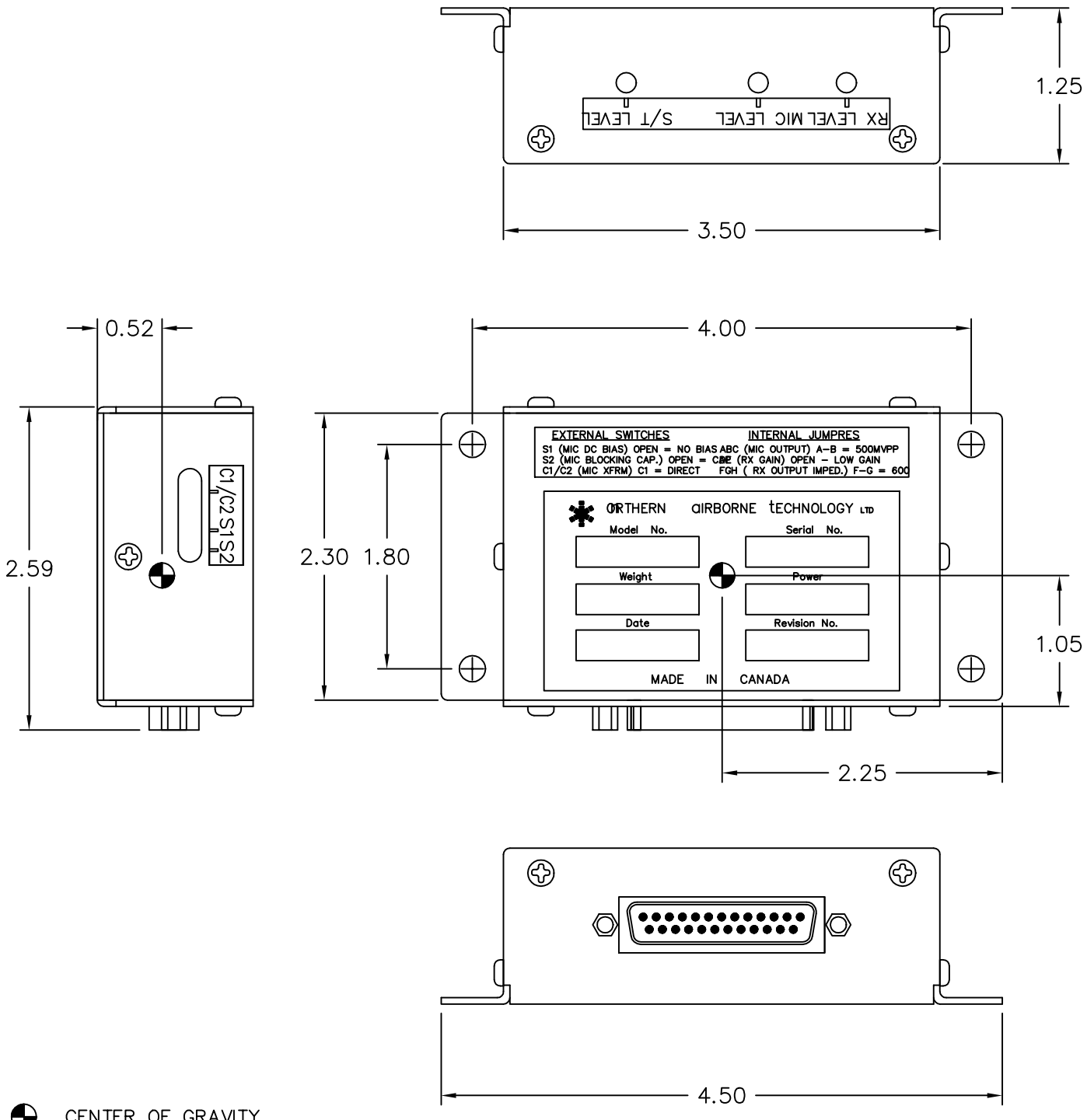
VIEW IS FROM REAR OF AIRFRAME CONNECTOR

ABBREVIATIONS:

N.O. – NORMALLY OPEN (RELAY CONTACT)
N.C. – NORMALLY CLOSED (RELAY CONTACT)

DESIGNED	KV	nat NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	KV					
DATE	APR 26/89	TITLE: UNIVERSAL RADIO INTERFACE				
CHECKED	NAT 214					
APPROVED	NAT 107	SIZE: A	CAGE CODE: 3AB01	PART NO.: AA34–200	REV.: 1.02	SHEET: 1/1
FILE: 405–0102.DWG		DWG. TYPE: CONNECTOR MAP		DWG. NO.: AA34\200\405–0		

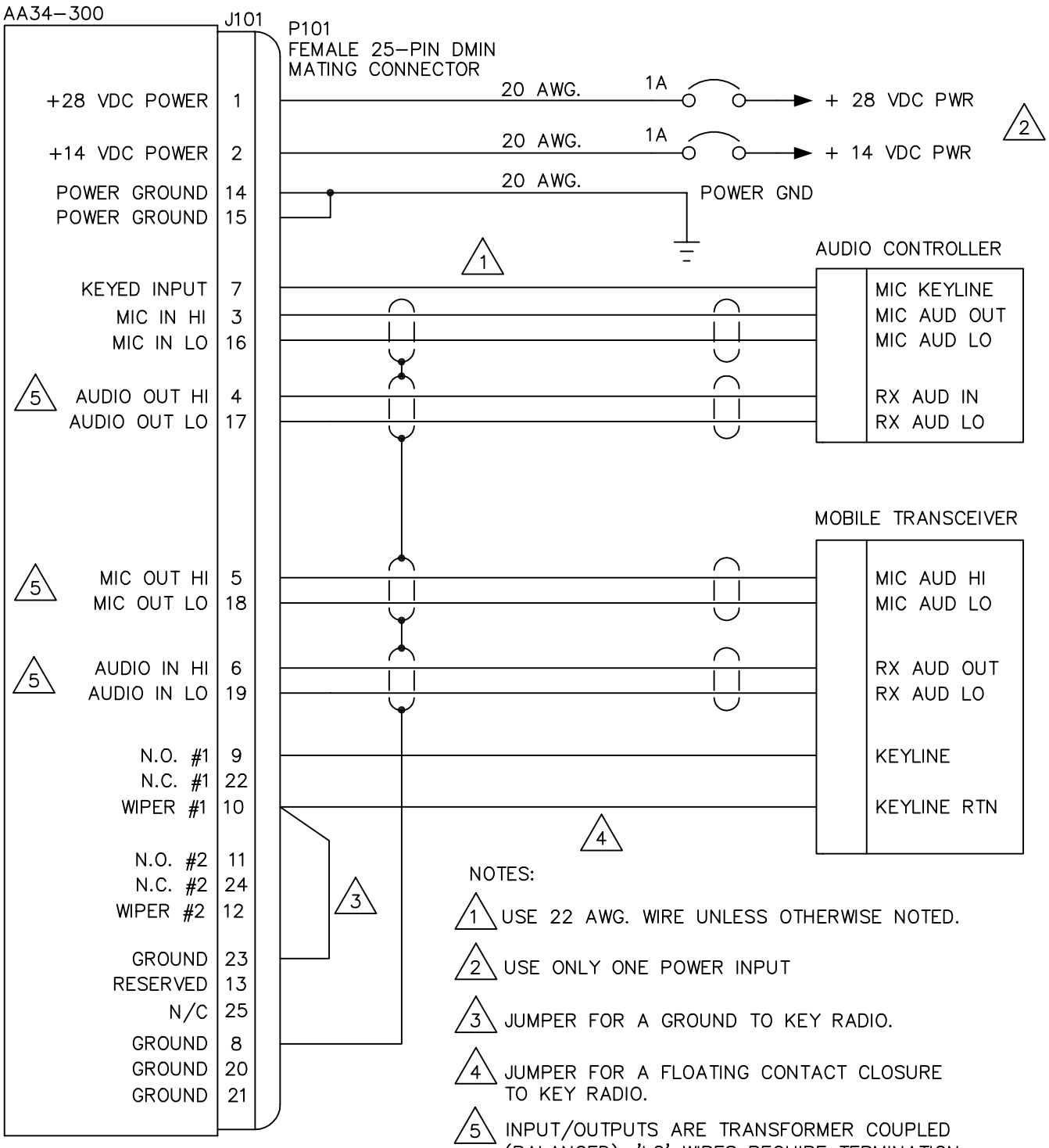
REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	FORMAT CHANGES, DRAWING UPDATED	FEB 11/97	MWS
1.02	ECR #954 – WEIGHT ADDED.	SEP 3/97	TGM



CENTER OF GRAVITY
WEIGHT 290g (0.63lb)

Confidential and Proprietary to NAT

TOLERANCES UNLESS STATED OTHERWISE 0.X=+/–0.030 0.XX=+/–0.010 0.XXX=+/–0.005 0.XXXX=+/–0.002 ANGLE=+/– 0.5 DEG.	DIMENSIONS IN INCHES THIRD ANGLE PROJECTION	DESIGNED	KV	nat NORTHERN AIRBORNE TECHNOLOGY LTD.			
		DRAWN	TAB				
		DATE	DEC 1/93	TITLE	UNIVERSAL RADIO INTERFACE		
		CHECKED	NAT 209				
MATERIAL		APPROVED	NAT 107	SIZE A	CAGE CODE 3AB01	PART NO. AA34–200	REV. 1.02 / SHEET 1/1
FINISH		FILE 922–0102.DWG		DWG. TYPE MECH. INSTALLATION		DWG. NO. AA34\200\922–0	

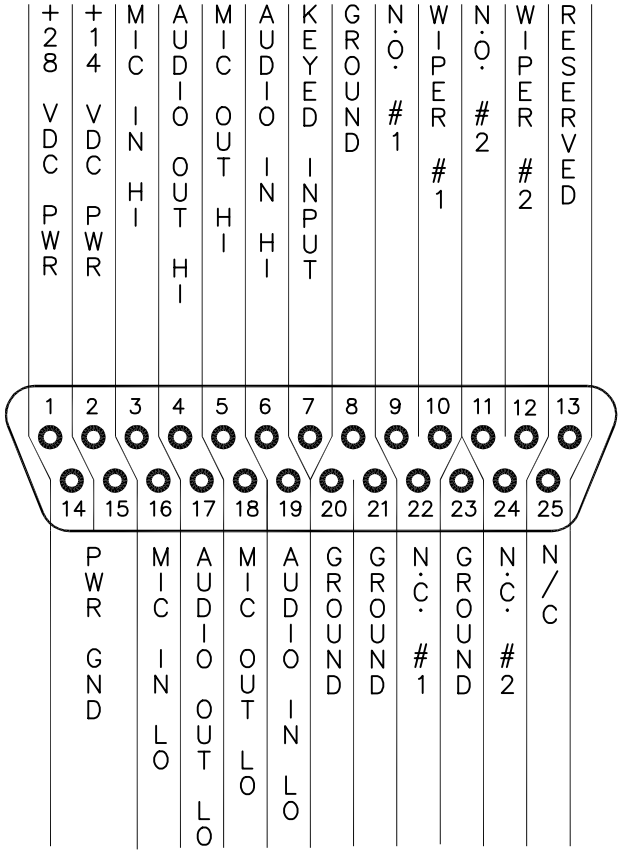


NOTES:

1. USE 22 AWG. WIRE UNLESS OTHERWISE NOTED.
2. USE ONLY ONE POWER INPUT
3. JUMPER FOR A GROUND TO KEY RADIO.
4. JUMPER FOR A FLOATING CONTACT CLOSURE TO KEY RADIO.
5. INPUT/OUTPUTS ARE TRANSFORMER COUPLED (BALANCED), 'LO' WIRES REQUIRE TERMINATION.

DESIGNED	SWT	NORTHERN AIRBORNE TECHNOLOGY LTD.					
DRAWN	SWT						
DATE	MAR 20/97	TITLE	UNIVERSAL RADIO INTERFACE				
CHECKED	NAT PROD. 190						
APPROVED	NAT 107	SIZE A	CAGE CODE 3AB01	PART NO. AA34-300		REV. 1.00	SHEET 1/1
FILE 403-0100.DWG		DWG. TYPE INTERCONNECT		DWG. NO. AA34\300\403-0			

P101
FEMALE 25 PIN D–MIN
MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

ABBREVIATIONS:

N/C – NO CONNECTION
N.O. – NORMALLY OPEN (RELAY CONTACT)
N.C. – NORMALLY CLOSED (RELAY CONTACT)

DESIGNED	SWT	NORTHERN AIRBORNE TECHNOLOGY LTD.					
DRAWN	SWT						
DATE	MAR 14/97	TITLE	UNIVERSAL RADIO INTERFACE				
CHECKED	NAT PROD. 130						
APPROVED	NAT 107	SIZE A	CAGE CODE 3AB01	PART NO. AA34–300		REV. 1.00	SHEET 1/1
FILE 405–0100.DWG		DWG. TYPE CONNECTOR MAP		DWG. NO. AA34\300\405–0			

ENVIRONMENTAL QUALIFICATION FORM

Description: **Mobile Interface** Document #: **AA34\300\521-0**

NAT Part #: **AA34-3xx** TSO #: **C50c**

Manufacturer's Specification and/or Other Applicable Specification:

RTCA DO-160C

Manufacturer: **Northern Airborne Technology Ltd.**

Address: **#14 - 1925 Kirschner Rd., Kelowna, BC, Canada. V1Y 4N7**

Prepared By: DE 01	Checked By: NAT 209	Approved By: NAT 125

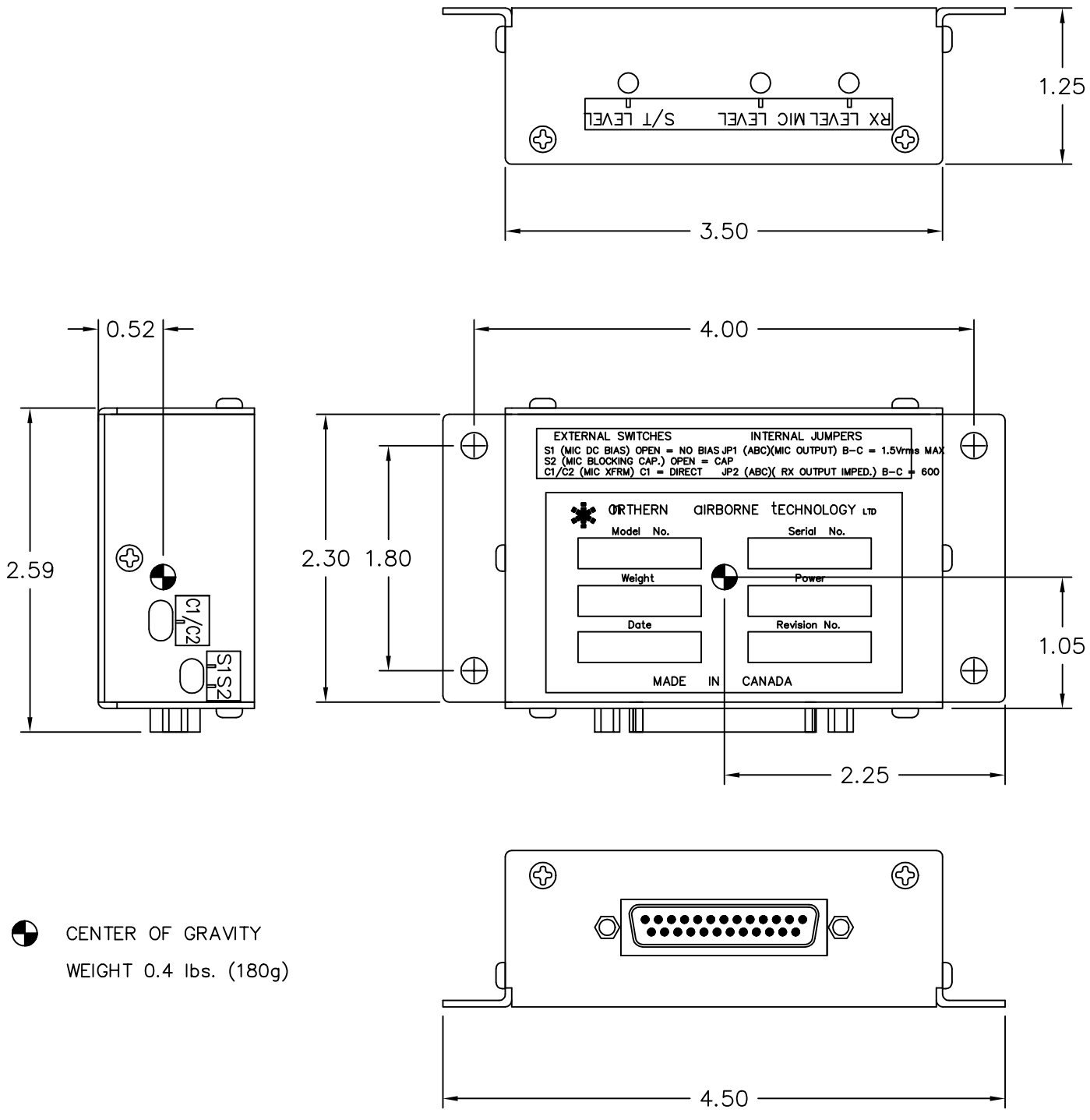
Conditions	DO-160C Section	Description of Conducted Tests
Temperature and Altitude	4.0	Equipment tested to Category C1
Low Temperature High Temperature	4.5.1 4.5.2 & 4.5.3	-20C Operating Low Temperature +55C Operating High Temperature +70C Short-term Operating High Temperature
Altitude	4.6.1	
Temperature Variation	5.0	Equipment tested to Category B
Humidity	6.0	Equipment tested to Category A
Shock	7.0	Equipment tested to performance requirements subsequent to Operational Shock test.
Operational Crash Safety	7.2 7.3	Test Procedure 1, Alternate Test Procedure (Impulse) Test Procedure 2 (Sustained), Unknown or Random orientation in aircraft.
Vibration	8.0	Equipment tested to categories B, M, N
Explosion Proofness	9.0	Equipment identified as Category X no test required
Waterproofness	10.0	Equipment identified as Category X no test required

Conditions	DO-160C Section	Description of Conducted Tests
Fluids Susceptibility	11.0	Equipment identified as Category X no test required
Sand and Dust	12.0	Equipment identified as Category X no test required
Fungus Resistance	13.0	Equipment identified as Category X no test required
Salt Spray	14.0	Equipment identified as Category X no test required
Magnetic Effect	15.0	Equipment is Class A
Power input	16.0	Equipment tested to Category B
Voltage Spike	17.0	Equipment tested to Category A
Audio Frequency Susceptibility	18.0	Equipment tested to Category B
Induced Signal Susceptibility	19.0	Equipment tested to Category A
Radio Frequency Susceptibility	20.0	Equipment tested to Category T
Radio Frequency Emission	21.0	Equipment tested to Category A
Lightning Induced Transient Susceptibility	22.0	Equipment identified as Category X no test required
Lightning Direct Effects test	23.0	Equipment identified as Category X no test required
Icing	24.0	Equipment identified as Category X no test required

REMARKS

- Tests were conducted at Northern Airborne Technology Ltd.

End of Environmental Qualification Form



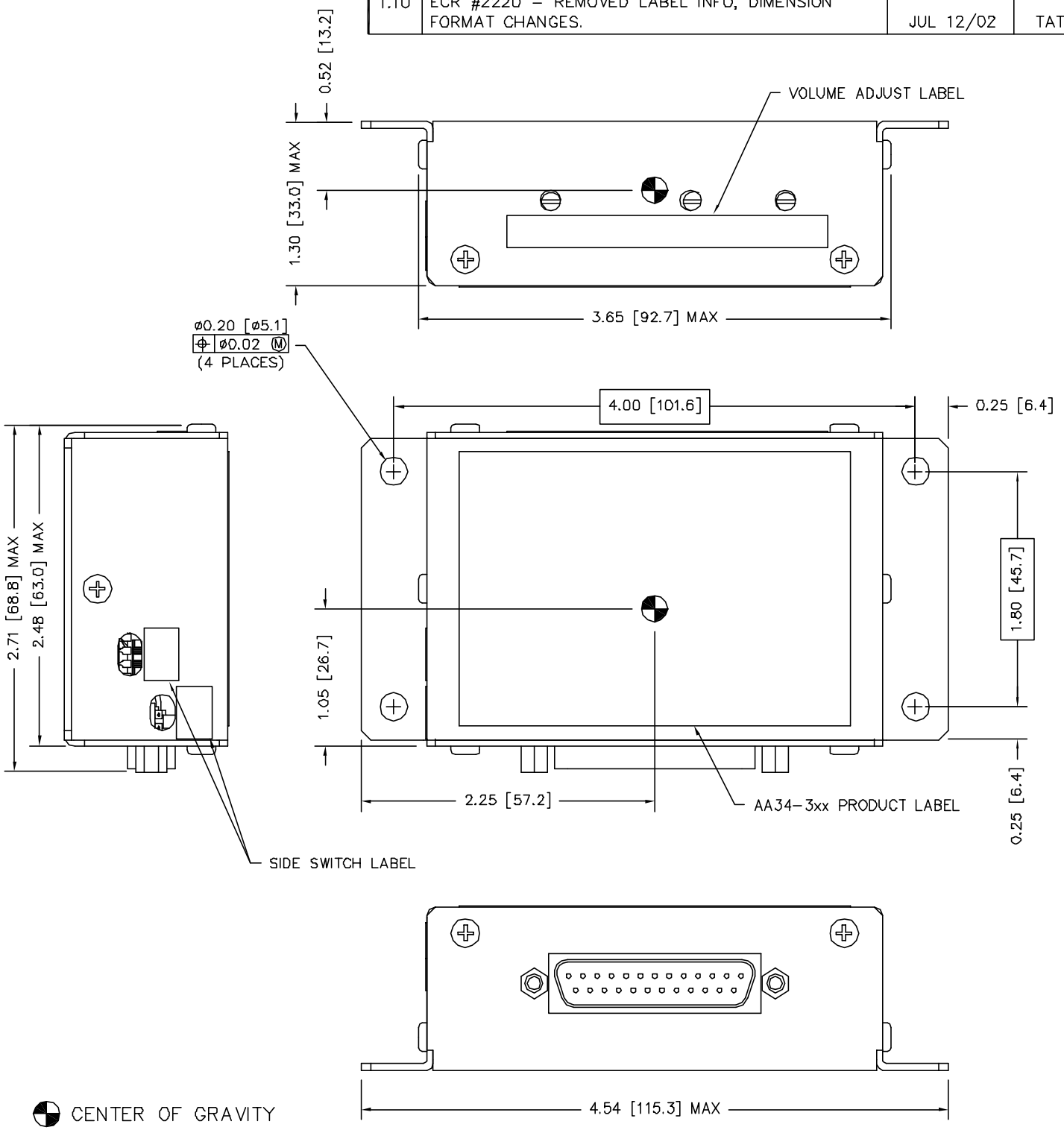
CENTER OF GRAVITY

WEIGHT 0.4 lbs. (180g)

Confidential and Proprietary to NAT

TOLERANCES UNLESS STATED OTHERWISE 0.X=+/-0.030 0.XX=+/-0.010 0.XXX=+/-0.005 0.XXXX=+/-0.002 ANGLE=+/- 0.5 DEG.	DIMENSIONS IN INCHES THIRD ANGLE PROJECTION	DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
		DRAWN	MWS					
		DATE	MAR 13/97	TITLE	UNIVERSAL RADIO INTERFACE			
		CHECKED	NAT PROD. 130					
MATERIAL		APPROVED	NAT 107	SIZE A	CAGE CODE 3AB01	PART NO. AA34-300	REV. 1.00	SHEET 1/1
FINISH		FILE 922-0100.DWG		DWG. TYPE MECH. INSTALLATION		DWG. NO. AA34\300\922-0		

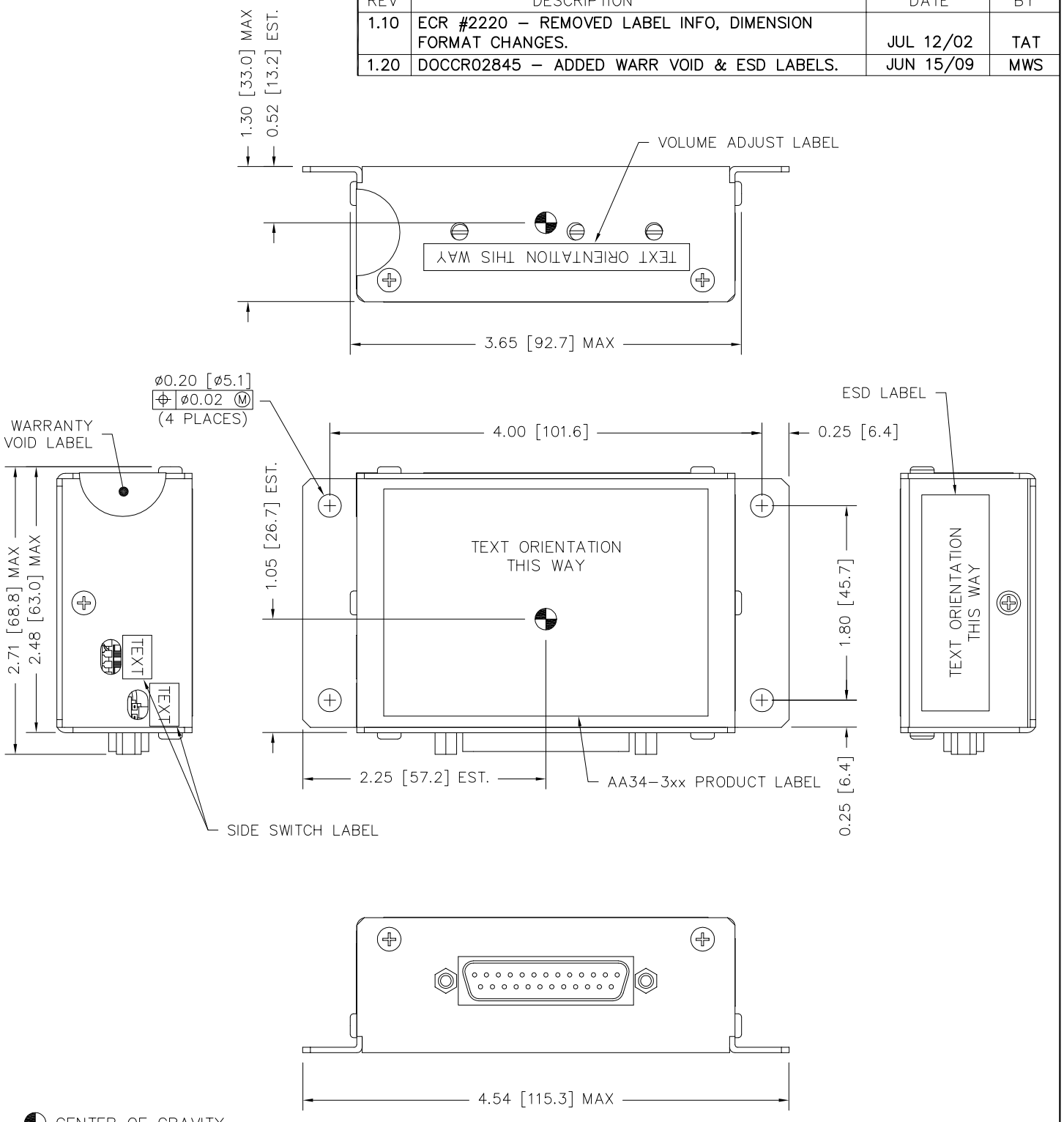
REVISIONS			
REV	DESCRIPTION	DATE	BY
1.10	ECR #2220 – REMOVED LABEL INFO, DIMENSION FORMAT CHANGES.	JUL 12/02	TAT



NOTES:
1. DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH ASME Y14.5M–1994

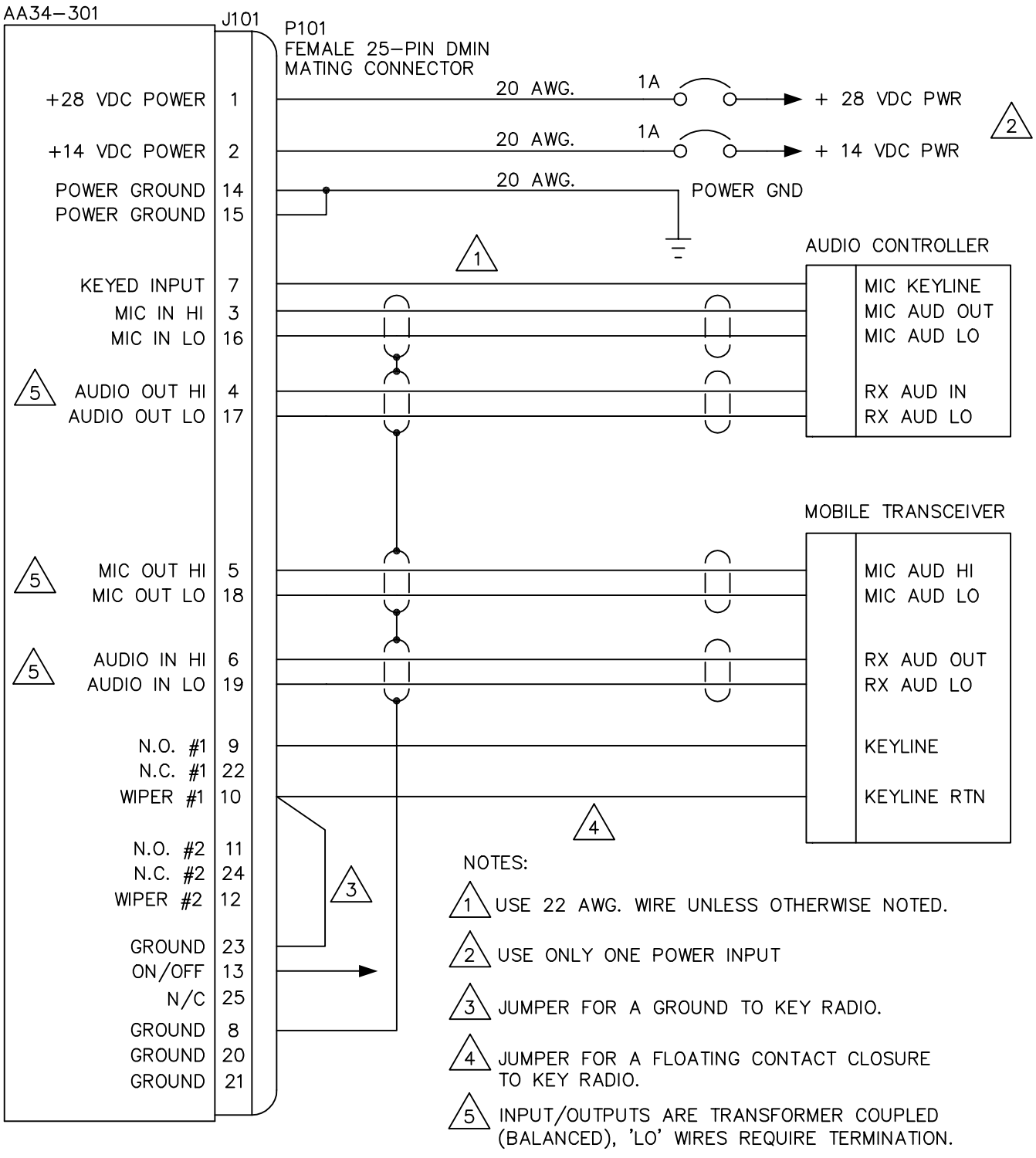
DIMENSIONS ARE INCHES [mm]	DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
THIRD ANGLE PROJECTION	DRAWN	MWS					
	DATE	MAR 13/97	TITLE	UNIVERSAL RADIO INTERFACE			
MASS: 0.40 lbs. (0.18 Kg) MAX	CHECKED	NAT 241					
MATERIAL:	APPROVED	NAT 113	SIZE A	CAGE CODE 3AB01	PART NO. AA34–300	REV. 1.10	SHEET 1/1
FINISH: CHROMATE CONVERSION	FILE 922–0110.DWG		DWG. TYPE MECH. INSTALLATION		DWG. NO. AA34\300\922–0		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.10	ECR #2220 – REMOVED LABEL INFO, DIMENSION FORMAT CHANGES.	JUL 12/02	TAT
1.20	DOCCR02845 – ADDED WARR VOID & ESD LABELS.	JUN 15/09	MWS



NOTES:
1. DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH ASME Y14.5M–1994

DIMENSIONS ARE INCHES [mm]	DESIGNED	KV	nat NORTHERN AIRBORNE TECHNOLOGY LTD.			
THIRD ANGLE PROJECTION	DRAWN	MWS				
	DATE	MAR 13/97	TITLE	UNIVERSAL RADIO INTERFACE		
MASS: 0.40 lbs. (0.18 Kg) MAX	CHECKED	NAT 231 / NAT 255				
MATERIAL:	APPROVED	NAT 114	SIZE A	CAGE CODE 3AB01	PART NO. AA34–300	REV. 1.20 / SHEET 1/1
FINISH: CHROMATE CONVERSION	FILE 922–0.DWG		DWG. TYPE MECH. INSTALLATION		DWG. NO. AA34\300\922–0	

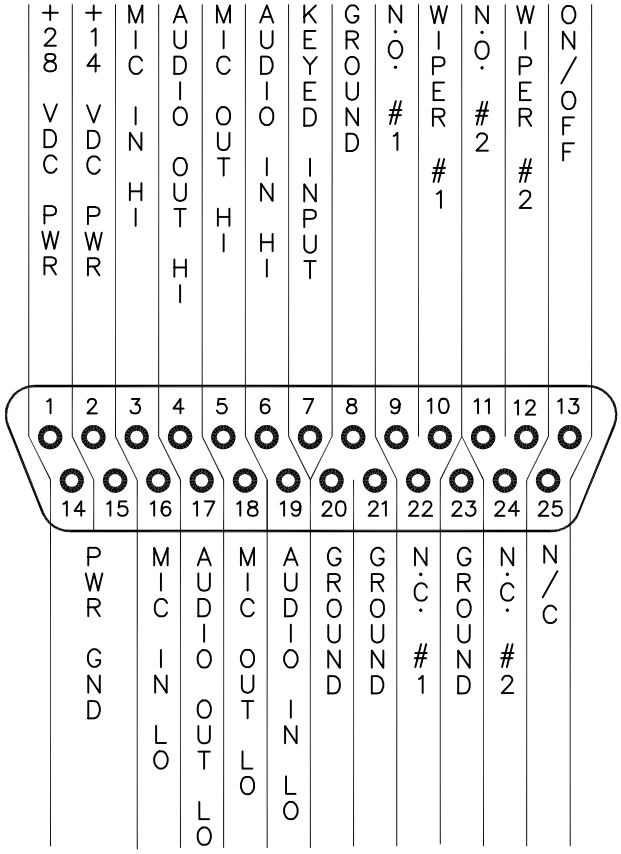


NOTES:

1. USE 22 AWG. WIRE UNLESS OTHERWISE NOTED.
2. USE ONLY ONE POWER INPUT
3. JUMPER FOR A GROUND TO KEY RADIO.
4. JUMPER FOR A FLOATING CONTACT CLOSURE TO KEY RADIO.
5. INPUT/OUTPUTS ARE TRANSFORMER COUPLED (BALANCED), 'LO' WIRES REQUIRE TERMINATION.

DESIGNED	SWT	NORTHERN AIRBORNE TECHNOLOGY LTD.					
DRAWN	SWT						
DATE	MAR 20/97	TITLE	UNIVERSAL RADIO INTERFACE				
CHECKED	NAT PROD. 190						
APPROVED	NAT 107	SIZE A	CAGE CODE 3AB01	PART NO. AA34-301		REV. 1.00	SHEET 1/1
FILE 403-0100.DWG		DWG. TYPE INTERCONNECT		DWG. NO. AA34\301\403-0			

P101
FEMALE 25 PIN D–MIN
MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

ABBREVIATIONS:

N/C – NO CONNECTION
N.O. – NORMALLY OPEN (RELAY CONTACT)
N.C. – NORMALLY CLOSED (RELAY CONTACT)

DESIGNED	SWT	nat NORTHERN AIRBORNE TECHNOLOGY LTD.					
DRAWN	SWT						
DATE	MAR 14/97	TITLE	UNIVERSAL RADIO INTERFACE				
CHECKED	NAT PROD. 130						
APPROVED	NAT 107	SIZE A	CAGE CODE 3AB01	PART NO. AA34–301		REV. 1.00	SHEET 1/1
FILE 405–0100.DWG		DWG. TYPE CONNECTOR MAP		DWG. NO. AA34\301\405–0			

Section 3 Operation

3.1 Introduction

Information in this section consists of functional and operational procedures for the AA34 Universal Radio Interface.

3.2 General Information

The AA34 Universal Radio Interface will handle the interface and switching requirements of mobile or CB radio systems when integrated into an aircraft audio system.

The AA34 Universal Radio Interface has no operator accessible controls. During installation, it may be determined that internal level adjustments are required. Qualified personnel only shall complete internal level adjustments.

Section 3 ends