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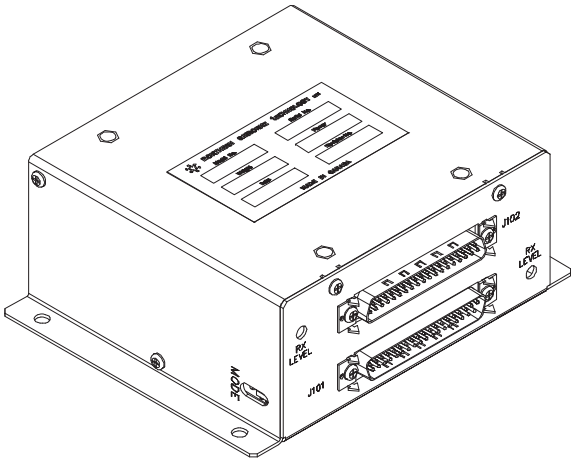
SM54

AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loop



INSTALLATION & OPERATION MANUAL

Rev: 2.00 May 26, 2012

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AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loop SM54 Installation and Operation Manual

Prepared By:	Checked By:	Approved By:
Tony Pearson Designer May 26, 2012	Loen Clement Designer Jun 26/12	Tom Betzelt Product Support Manager June 26, 2012

The status of this installation and operation manual is controlled by the revision 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.

ISSUE/REVISION RECORD

Manual Issue Number	Section Revision Number	Revision Description	Issue Date
4.11	Section 1 Rev: 1.01	Remove reference to Environmental Qualification Form.	Jan 13, 2010
4.10	Section 1 Rev: 1.00 Section 2 Rev: 1.00 Section 3 Rev: 1.00	Update to current templates.	Jun 9, 2008

AEM MANUAL REVISIONS

Section	Revision Number	Revision Description	Date
All	Rev 2.00	Updated template	May 26, 2012

Table of Contents

Section 1.0 Description

1.1 Introduction

Information in this section consists of product description, design features and specifications for the AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loop Manual. All derivative product information shall be contained in the applicable manual supplement, which may be obtained from AEM as required.

Review all notes, warning and cautions.

1.2 Purpose of Equipment

The AA38-5xx Series Local ICS Loops (not AA38-505) provide live, VOX or keyed ICS for 4 or 8 users (depending on model with low impedance headsets.

The AA38-6xx Series Local ICS Loops provide live, VOX or keyed ICS for 4 or 8 users (depending on model) with high impedance headsets.

The AA38-7xx Series Local ICS Loops provide an external ICS Volume Control, and live, VOX or keyed ICS for 8 users with high impedance headsets.

The AA38-503, AA38-603 and AA38-703 models have prioritized transmit capabilities for all users, with the highest priority given to user #1 and lowest to user #4.

The AA38-505 Series Local ICS Loops provide live, VOX or keyed ICS for 4 users with high impedance headsets.

1.3 Design Features

The AA38-5xx,-6xx, -7xx and -8xx Series Local ICS Loops are remote, bulkhead mounted units containing all the circuitry required to support a wide variety of ICS Loop applications, particularly isolation/ICS amplifier use, where the output is required to be headset or line level. A switch-selectable NAT/Andrea (AA38-5xx or-6xx) or NAT/SuperNAT ICS tie line (AA38-7xx or AA38-8xx) allows connection to larger audio systems, and an auxiliary input allows for audio input from an audio panel or transceiver.

The compact size and low weight of the AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loops allows mounting restricted locations and the mapped interconnect makes installation simple to carry out.

ICS level and VOX sensitivity adjustments are provided for each headset position and for the AUX level.

The operational performance of the AA38 unit can be enhanced for specific operating roles with the addition of in-line PTT drop cords. Drop cords can be configured to allow individual selection of headset volume, intercom operation VOX, LIVE or PTT mode, and independent TX PTT capability for those AA38 models equipped with TX functions.

1.4 Specifications

1.4.1 Electrical Specifications

Type		DC Linear
Input Voltage		Typically +24.8 to +30.3 Vdc Nominal +27.5 Vdc (with reverse & over voltage protection) Emergency +20.0 Vdc
Input Current		0.45 A Max. @ +27.5 Vdc (AA38-501, -503, -504, -505) 0.80 A Max @ +27.5 Vdc (AA38-502, -602) 0.41 A Max. @ +27.5 Vdc (AA38-601, -603) 0.35 A Max. @ +27.5 Vdc (AA38-703) 0.90 A Max. @ +27.5 Vdc (AA38-802)
Input Signals		
	Quantity (AA38-502, -602, and -802)	8 MIC channels 2 ICS tie channels, one for each group of 4 users 2 AUX RX channels, each driving 4 users
	Quantity (except AA38-502, -602 or -802)	4 MIC channels 1 ICS tie channel 1 AUX RX channel
	Audio level	250 µVrms for MIC inputs (AA38-5xx except -505, -7xx models). 1.1 mVrms for MIC inputs (AA38-505 model only) 250 mVrms for MIC inputs (AA38-6xx models only) 340 mVrms for NAT ICS tie input (s) 2.8 Vrms for Andrea ICS tie input(s) (AA38-5xx and -6xx models) 2.5 Vrms for AUX RX input 1.2 Vrms (typical) for SuperNAT ICS (AA38-7xx and -8xx)
	Circuitry Type	Tie lines are single ended inputs. All AA38-5xx model MIC's are differential inputs All AA38-6xx model MICs are single ended inputs. All AA38-7xx model MICs are differential inputs. All 38-8xx model MICs are balanced inputs. All AUX RX inputs are balanced.

	Keylines	4 ICS PTT active low (AA38-501, -504, -505, 601) 8 ICS PTT active low (AA38-502, -602, -802) 4 ICS PTT active low (AA38-503, -603, -703) 4 TX PTT active low
Output Signals		
	Quantity	4 Headphone outputs (AA38-501,-503,-504,-505,-601,-603,-703) 8 Headphone outputs (AA38-502, -602, -803)
	Rated level	Selectable between 8 and 600 Ω (except AA38-703 or -802) 7.7 Vrms or 100 mW (20 dBm) into 600 Ω (except AA38-703) 0.9 Vrms or 100 mW (20 dBm) into 8 Ω (except AA38-802)
	ICS Tie (except AA38-504, AA38-703 and AA38-802)	Output level selectable between 1.6 kΩ (NAT ICS tie) and 250 Ω (Andrea ICS tie) 140 mVrms ±10% for NAT ICS tie output (4 NAT loads) 2.8 Vrms ±10% for Andrea ICS tie output
	ICS Tie (AA38-504 only)	Output level selectable between 1.6 kΩ (NAT ICS tie) and 250 Ω (Andrea ICS tie) 300 mVrms ±10% for NAT ICS tie output (4 NAT loads) 2.8 Vrms ±10% for Andrea ICS tie output
	ICS Tie (AA38-703 only)	340 ±50 mVrms for NAT ICS tie output (1 NAT load) 1.2 ±0.1 Vrms for SuperNAT ICS tie output (1 to 8 SuperNAT loads)
	ICS Tie (AA38-802 only)	340 ±50 mVrms for NAT ICS tie output (2 NAT loads) 1.2 ±0.1 Vrms for SuperNAT ICS tie output (1 to 8 SuperNAT loads)
	Impedance / Output	1-4 x 600 Ω or 1-4 x 8 Ω 1-8 x 600 Ω or 1-8 x 8 Ω (AA38-502 and -602 only) 2±0.2 kΩ for NAT ICS tie line 2±0.2 kΩ for SuperNAT ICS tie line (AA38-703 and -802 only)
	Phone Circuitry Type	Balanced output for high common mode noise rejection
	ICS Tie Line Circuitry Type	Single ended
	Frequency Response	ICS: ≤3 dB from 350 to 3000 Hz MIC Input: ≤3 dB from 350 to 3000 Hz AUX RX Input: ≤3 dB from 350 to 60000 Hz
	Distortion	< 10% THD @ rated power output
	Audio Noise Level:	< -60 dB from rated output (without signal)

Coupling	< -50 dB input to output crosstalk
Output Regulation at 400% and 75% of rated load	≤ 10% distortion / Δ 3 dB max rated load output power for 600 Ω output ≤ 10% distortion / Δ 7 dB max rated output power for 8 Ω output

1.4.2 Physical Specifications

	AA38-501, -504, -505	AA38-502	AA38-503	AA38-601	AA38-602	AA38-603	AA38-703	AA38-802
Height Max.	**1.18“** (30.0 mm)	**2.26“** (57.4 mm)	**1.90“** (48.3 mm)	**1.18“ (30.0 mm)**	**2.26“ (57.4 mm)**	**1.90“ (48.3 mm)**	**1.94“ (49.3 mm)**	
Depth	4.88“ (124.0 mm) max. Including connector						4.95“ (125.7 mm)	
Width	5.91“ (150.1 mm) max. Including flanges						5.94“ (150.9 mm)	
Weight Max	**1.14 lbs** (0.52 Kg)	**2.00 lbs** (0.91 kg)	**1.40 lbs** (0.63 Kg)	**0.80 lbs** (0.36 Kg)	**1.37 lbs** (0.6 Kg)	**1.20 lbs** (0.54 Kg)	**1.60 lbs** (0.7 Kg)	**1.44 lbs** (0.69 Kg)
Mounting	**Bulkhead mount with four 10-32 screws**							
Material / Finish	**5052-H32 brushed aluminum with conversion coating finish**							
Connectors	**Filtered male 37-pin D-subminiature connector with V5 locking tabs** (Two in the AA38-502, -503, -602, -703 and -802)							

1.4.3 Environmental Specifications

Temperature	-45˚ C to +55˚ C (ambient) -55˚ C to +85˚ C (survival)
Altitude	35,000 feet max
Humidity	95% for 48 hours
Vibration/Shock	Conforms to DO-160C category B, M, N

Qualifications of the AA38-5xx Local ICS Loop was completed in accordance with DO_160C Env.Cat. A1C4-BA[BMN]XXXXXXABABBTBXXX.

Qualifications of the AA38-6xx Local ICS Loop was completed in accordance with DO_160C Env.Cat. A1C4-BA[BMN]XXXXXXABABBTBXXX.

Qualifications of the AA38-703 Local ICS Loop was completed in accordance with DO_160C Env.Cat. A1C4-BA[BMN]XXXXXXZBABBTB[1]XXX.
DO_160C Env.Cat XX-XXXXXXXXXXXXXXS[1]XXXXX.
[1]RF Susceptibility testing was performed to DO_160D, change 1, Sec. 20, Cat. S.

Note: The AA38-802 has not been tested for compliance to any DO-160 categories at this time.

1.5 Unit Nomenclature

AA38-501	LO Z Local ICS Loop – Four Place Intercom 4 MIC inputs – 0.250 mV / 5 Ω 1 ICS Tie line – 1.6 kΩ (NAT) or 250 Ω (Andrea) 1 AUX input – 1 kΩ 4 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation
AA38-502	LO Z Local ICS Loop – Eight Place Intercom 8 MIC inputs – 0.250 mV / 5 Ω 2 ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 2 AUX inputs – 1kΩ 8 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation
AA38-503	LO Z Local ICS Loop – Four Place Intercom with Transmit 4-MIC inputs – 0.250 mV / 5Ω 1-ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 1-AUX inputs – 1kΩ 4 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation Individual TX PTT for each user (ascending priority)
AA38-504	LO Z Local ICS Loop – Four Place Intercom, High Gain Microphones 4- MIC inputs – 0.250 mV / 5Ω 1-ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 1-AUX inputs – 1kΩ 4 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation
AA38-505	Hi Z Local ICS Loop – Four Place Intercom 4- MIC inputs – 0.250 mV / 5 Ω 1-ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 1-AUX inputs – 1kΩ 4 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation
AA38-601	Hi Z Local ICS Loop – Four Place Intercom 4-MIC inputs – 0.250 mV / 5 Ω 1-ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 1-AUX inputs – 1kΩ 4-headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation

AA38-602	Hi Z Local ICS Loop – Eight Place Intercom 8-MIC inputs – 0.250 mV / 5 Ω 2-ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 2-AUX inputs – 1kΩ 8 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation
AA38-603	Hi Z Local ICS Loop – Four Place Intercom with Transmit 4-MIC inputs – 0.250 mV / 5 Ω 1-ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 1-AUX inputs – 1kΩ 4 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation Individual TX PTT for each user (ascending priority)
AA38-703	LO Z Local ICS Loop – Four Place Intercom with Transmit, External ICS Volume 4- MIC inputs – 0.250 mV / 5 Ω 1-ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 1-AUX inputs – 1kΩ 4 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation Individual TX PTT for each user (ascending priority) External ICS Volume Control
AA38-802	Hi Z Local ICS Loop – Eight Place Intercom – with Master Volume 8-MIC inputs – 0.250 mV / 5Ω 2-ICS Tie lines – 1.6 kΩ (NAT) or 250 Ω (Andrea) 2-RX inputs – 1kΩ 8 headset outputs 100 mW @ 8 or 600 Ω Balanced output for high common mode noise rejection LIVE, VOX or PTT operation External ICS Volume Control

End of Section 1.0

Section 2.0 Installation

2.1 Introduction

Information in this section consists of unpacking and inspection procedures, installation procedures, post-installation checks and installation drawings for the AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loop.

Review all notes, warnings and cautions.

2.2 Unpacking and Inspection

Unpack the equipment carefully. Inspect the unit visually for damage due to shipping and report all such claims immediately to the carrier involved. Note that each unit should have the following:

- AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loop
- Product Information Card
- Certificate of Conformity or Release certification

Verify that all items are present before proceeding and report any shortage immediately to your supplier.

2.2.1 Warranty

All Anodyne Electronics Manufacturing Corp. (AEM) products are warranted for 2 years. See the website www.aem-corp.com/warranty for complete details.

2.3 Continued Airworthiness

Maintenance of the AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loop is ‘on condition’ only. Periodic maintenance of this product is not required.

2.4 Installation Procedures

2.4.1 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 connector map in Section 2.6 as required.

Coaxial cable shall be selected in accordance with MIL-C-17 unless otherwise specified. Do not use coax cable with PVC insulation. Teflon dielectric cable is encouraged at or above VHF frequencies or where cable runs exceed 8 feet. Note that at VHF frequencies, cables losses due to long cable runs and tight bends may reduce the ERP (Effective Radiated Power) by greater than 50%.

Allow 3" from the end of the shielded wiring to the shield termination to allow the connector hood to be easily installed. Reference the interconnect drawing in Section 2.6 for shield termination details. Note that the hood is a "clamshell" hood, and is installed after the wiring is complete. Aircraft harnessing shall permit the unit to be lowered from the panel for easy access to all side adjustments. Do NOT mount the unit until all adjustments have been performed.

Maintain wire segregation and route wiring in accordance with the original aircraft manufacturers Maintenance Instructions. Coaxial cables shall be routed separately from existing wire bundles in the aircraft to minimize electromagnetic coupling effects.

Unless otherwise noted, all wiring shall be a minimum of 24 AWG, except power and ground lines, which shall be a minimum of 22 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.

2.4.2 Post Installation Checks

2.4.2.1 Voltage/Resistance Checks

Do not attach the AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loop until the following conditions are met.

Check the following:

a) Check P101, pin 1 for +28 Vdc relative to ground.

b) Check P101, pin 20 for continuity to ground (less than 0.5 Ω).

c) Check P101 pins 3, 5, 7 and 9 for continuity to ground (less than 0.5 Ω) when relevant ICS PTT line is keyed.

For AA38-502, AA38-602 and AA38-802, repeat this process for the same pins in P102.
For AA38-503, AA38-603 and AA38-703, also check the following:

d) P102 pin 1 for +28 Vdc relative to ground.

e) P102 pin 20 for continuity to ground.

f) P102 pins 14, 15, 16 and 17 for continuity to ground when relevant TX PTT line is keyed.

For AA38-703, also check the following:

g) P102 pins 11 and 13 for continuity to ground when relevant ICS VOL switch is activated.

For AA38-802, also check the following:

h) P101 and P102 pins 11 and 13 for continuity to ground when relevant ICS VOL switch is activated.

2.4.2.2 Power On Checks

Power up the aircraft's systems and confirm normal operation of all functions of the AA38-5xx, -6xx, -7xx and -8xx. Refer to Section 3 (Operation) for specific operational details.

a) Check for correct radio and intercom audio and adjust for acceptable level.
b) Run through all installed functions, and check the ICS and TX functions for all users.
c) Check preset adjustments are completed before aircraft departure.

Notes: 1. Significantly different headsets may have different MIC characteristics.
2. The David Clark M 7 MIC is more active than the M 4 or M 1/DC MICs. Mixing different MICs may aggravate headset imbalance.

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 unit is shipped from the factory with all internal 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. See Section 2.4 for the specific unit under consideration.

The AA38-5xx/6xx/7xx/8xx can be set for up to four NAT tie line configurations, one Andrea tie line (AA38-5xx and -6xx) or up to four SuperNAT tie lines (AA38-7xx and AA38-802).

The internal adjustments that can be varied are located along the sides and at the rear of the unit. Refer to Mechanical Installation drawings AA38/**xxx**/922-0 in Section 2.6 of this manual, where **xxx** is the model number under consideration, ie. AA38/**503**/922-0.

2.5.1 Headset Volume and Sensitivity Adjustments

The headset volume and sensitivity controls are located on the rear of the unit as shown in Figure 1 below. Each headset position has a level trimpot (L) and a sensitivity trimpot (S) that controls MIC/VOX operation.

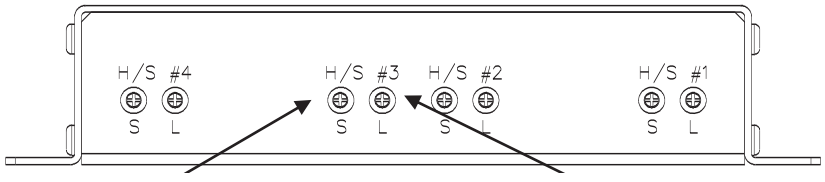


Figure 1: Headset Volume and Sensitivity Controls

The AA38-502, AA38-602 and AA38-802 have two banks of controls. The individual headset level (volume) controls provide up to 40 dB of dynamic range. For maximum headset power rotate the pot fully clockwise (cw) and for minimum headset power rotate fully counter-clockwise (ccw).

The individual sense control trimpots are used to select the required operating mode for the headsets. For KEYED ICS (PTT operation) the trimpot is set fully cw. For LIVE (Hot MIC operation) the trimpot is set fully ccw. For VOX (Voice Activated operation) the trimpot is set in the mid position.

To obtain the best setting for the ambient noise conditions and the quality and number of MICs connected in the system, set the trimpot fully ccw, then slowly rotate it cw until the intercom just becomes 'quiet'. Check this setting for both ground and flight operation.

2.5.2 Auxiliary Receive control(s)

The Auxiliary (AUX) receive (RX) level trimpot (RX LEVEL) is located on the front of the unit, and provides up to 40 dB of dynamic range. When rotated fully cw it gives maximum AUX RX input level, and fully ccw gives minimum level. The AA38-502, AA38-602 and AA38-802 have two of these controls.

2.5.3 Mode Control (AA38-5xx and -6xx)

The Mode Control switch is used for selecting the type of ICS tie line configuration required and is a quad piano DIP-switch accessible through the left side of the unit. To open a switch, place it in the 'up' position and to close it put it in the 'down' position as shown in Figure 2.

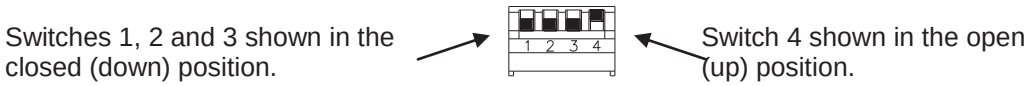


Figure 2: Mode Control DIP Switch

Tie Line Mode selection is accomplished by setting the Mode Control switch as shown in Figure 3 below.

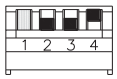
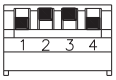
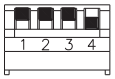
TIE LINE MODE Selection	Switch Position
ANDREA Tie Line	
3 NAT Tie Lines (Default)	
4 NAT Tie Lines	

Figure 3: Tie Line Mode Selection

Andrea Tie Line
Switch 2 and 3 closed (down)
Switch 4 open (up)
Switch 1 has no effect

3 NAT Tie Line
Switch 1 and 4 closed (down)
Switch 2 and 3 open (up)

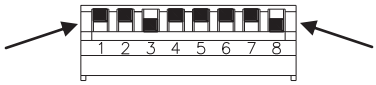
4 NAT Tie Line	Switch 4 closed (down) Switch 1, 2 and 3 open (up)

Note: All other switch combinations are invalid.

2.5.4 Mode control (AA38-7xx and AA38-8xx)

The AA38-7xx and AA38-8xx mode control is used in the same way as the AA38-5xx and -6xx models, but is an 8-position switch accessible through the left side of the unit. To open a switch, place it in the 'up' position and to close it put it in the 'down' position as shown in Figure 4.

Switch 1 shown in the open (up) position.



Switch 8 shown in the closed (down) position.

Figure 4: Mode Control DIP Switch

Tie Line Mode selection is accomplished by setting the Mode Control switch as shown in Figure 5 below.

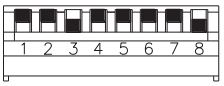
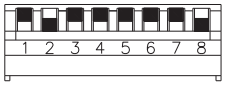
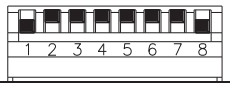
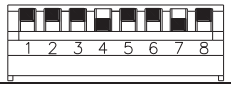
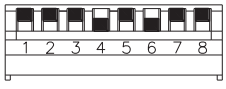
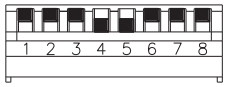
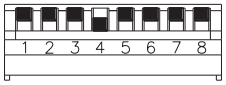
ICS TIE LINE MODE Selection	Switch Position
Super NAT (2 loads)	
Super NAT (2 loads)	
Super NAT (3 loads)	
Super NAT (4 loads)	
NAT (1 load) (Default)	
NAT (2 loads)	
NAT (3 loads)	
NAT (4 loads)	

Figure 5: Tie Line Mode Selection

Super NAT (1 load)	Switch 8 and 3 closed (down), all others open (up)
Super NAT (2 loads)	Switch 8 and 2 closed (down), all others open (up)
Super NAT (3 loads)	Switch 8 closed (down), all others open (up)
Super NAT (4 loads)	Switch 8 and 1 closed (down), all others open (up)
NAT (1 loads)	Switch 8 and 1 closed (down), all others open (up)
NAT (2 loads)	Switch 8 and 1 closed (down), all others open (up)
NAT (3 loads)	Switch 8 and 1 closed (down), all others open (up)
NAT (4 loads)	Switch 8 and 1 closed (down), all others open (up)

Note: All other switch combinations are invalid.

2.5.5 Remote ICS Master Volume Control (AA38-7xx and AA38-802)

The ICS volume is controlled by a remote-mounted, spring-loaded, centre-off toggle switch (installer supplied). The switch is installed to provide a ground on J101 pin 11 to increase the intercom volume, or on J101 pin 13 to decrease the intercom volume. The increase/decrease is in 32 discrete steps, by activating and releasing the switch control or by holding the switch control in the desired direction. When the switch is held in either direction, the change is slow initially, but after one second the control enters 'fast' mode. The ICS volume stops at its maximum or minimum value without 'wrapping around'. After a volume adjustment is made, the value is stored in non-volatile memory. The intercom master volume control provides 40 ±3dB of dynamic range.

2.6 Accessories Required But Not Supplied

Installation kit p/n AA35-IKC-1 (crimp) is required to complete the installation. The AA38-501, AA38-504, AA38-505 and AA38-601 require one kit. The AA38-502, AA38-503, AA38-602, AA38-603, AA38-703 and AA38-802 require two kits.

AA35-IKC-1 consists of

Quantity	Description	AEM Part No.
1	Connector, D-min 37 Socket Housing	20-21-037
50	MS Crimp Socket	20-26-901
37	37 Pin JVL Hood/Locklever	20-29-370

AA35-IKC-1 37-pin D-min Female Crimp Kit (Alternate Part No. D37SV-IKC).

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 AEM Part No. to locate the referenced document.

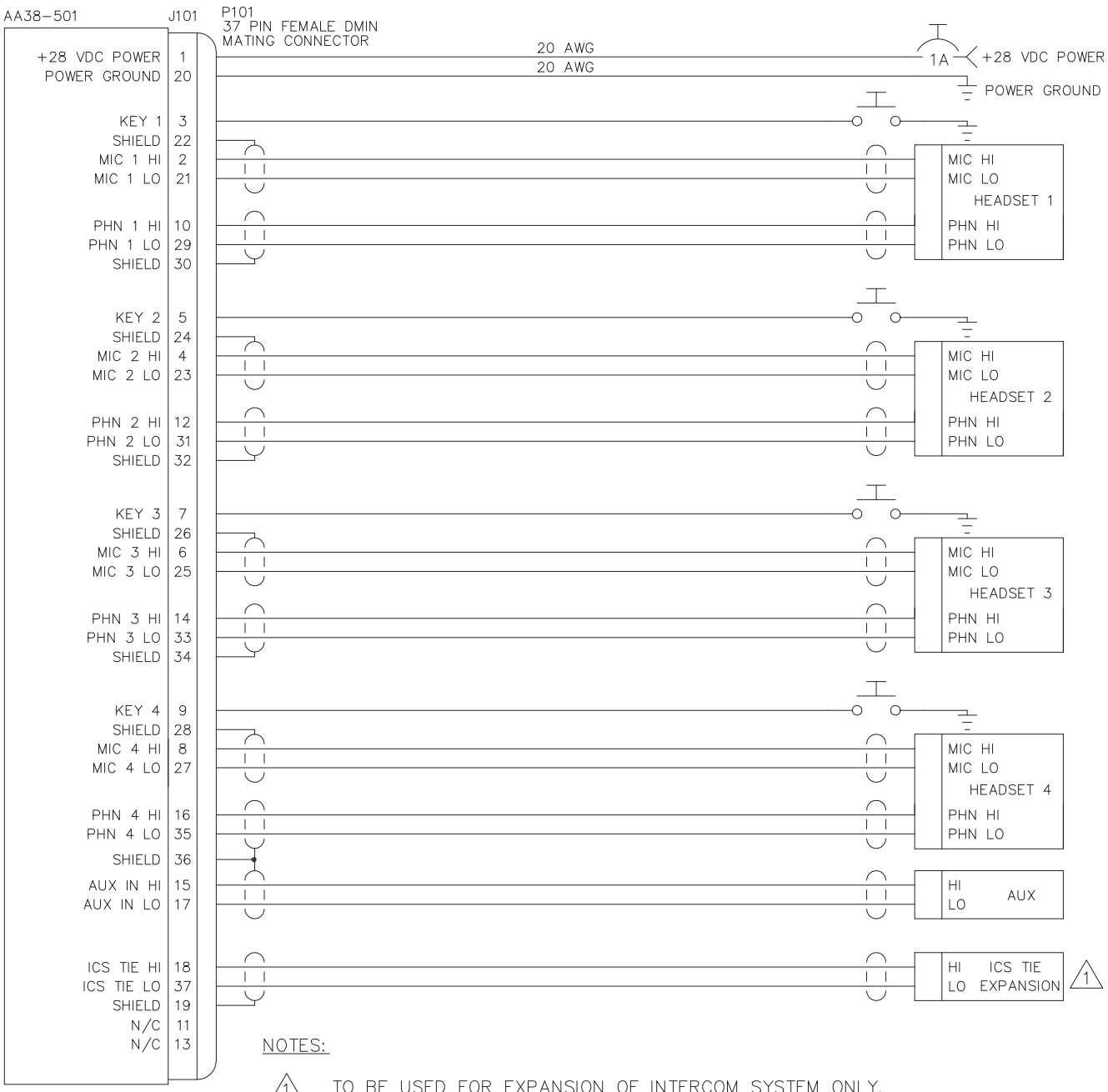
DOCUMENT	REV.	DESCRIPTION	TYPE
AA38-501			
AA38\501\403-0	1.01	Four Place Intercom	Interconnect
AA38\501\405-0	1.01	Four Place Intercom	Connector Map
AA38\501\922-0	1.00	Four Place Intercom	Mechanical Installation
AA38-502			
AA38\502\403-0	1.01	Eight Place Intercom	Interconnect
AA38\502\405-0	1.01	Eight Place Intercom	Connector Map
AA38\502\922-0	1.01	Eight Place Intercom	Mechanical Installation
AA38-503			
AA38\503\403-0	1.01	Four Place Intercom with Transmit	Interconnect
AA38\503\405-0	1.01	Four Place Intercom with Transmit	Connector Map
AA38\503\922-0	1.01	Four Place Intercom with Transmit	Mechanical Installation
AA38-504			
AA38\504\403-0	1.01	Four Place Intercom	Interconnect
AA38\504\405-0	1.01	Four Place Intercom	Connector Map
AA38\501\922-0	#	Four Place Intercom	Mechanical Installation
AA38-505			
AA38\501\403-0	#	Four Place Intercom	Interconnect
AA38\501\405-0	#	Four Place Intercom	Connector Map
AA38\505\922-0	1.00	Four Place Intercom	Mechanical Installation
AA38-601			
AA38\501\403-0	#	Four Place Intercom	Interconnect
AA38\501\405-0	#	Four Place Intercom	Connector Map
AA38\601\922-0	1.00	Four Place Intercom	Mechanical Installation
AA38-602			
AA38\602\403-0	1.01	Hi Z Eight Place Intercom	Interconnect
AA38\602\405-0	1.01	Hi Z Eight Place Intercom	Connector Map
AA38\602\922-0	1.00	Hi Z Eight Place Intercom	Mechanical Installation
AA38-603			
AA38\603\403-0	1.01	Hi Z 4 Place Intercom with Transmit	Interconnect
AA38\603\405-0	1.01	Hi Z 4 Place Intercom with Transmit	Connector Map
AA38\603\922-0	1.00	Hi Z 4 Place Intercom with Transmit	Mechanical Installation
AA38-703			
AA38\703\403-0	1.00	Four Place Intercom with Transmit	Interconnect
AA38\703\405-0	1.00	Four Place Intercom with Transmit	Connector Map
AA38\703\922-0	1.00	Four Place Intercom with Transmit	Mechanical Installation

AA38-802

AA38\802\403-0	1.00	Hi Z Eight Place Intercom	Interconnect
AA38\802\405-0	1.00	Hi Z Eight Place Intercom	Connector Map
AA38\802\922-0	1.10	Hi Z Eight Place Intercom	Mechanical Installation

Section 2.0 ends following above documents

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00438 – AUX IN WAS AUX.	NOV 14/03	MWS



NOTES:

1. TO BE USED FOR EXPANSION OF INTERCOM SYSTEM ONLY. REFER TO INSTALLATION MANUAL FOR DETAILS.
2. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL WIRE SHOULD BE IN ACCORDANCE WITH MIL-W-22759. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL-C-27500.

DEFINITIONS:

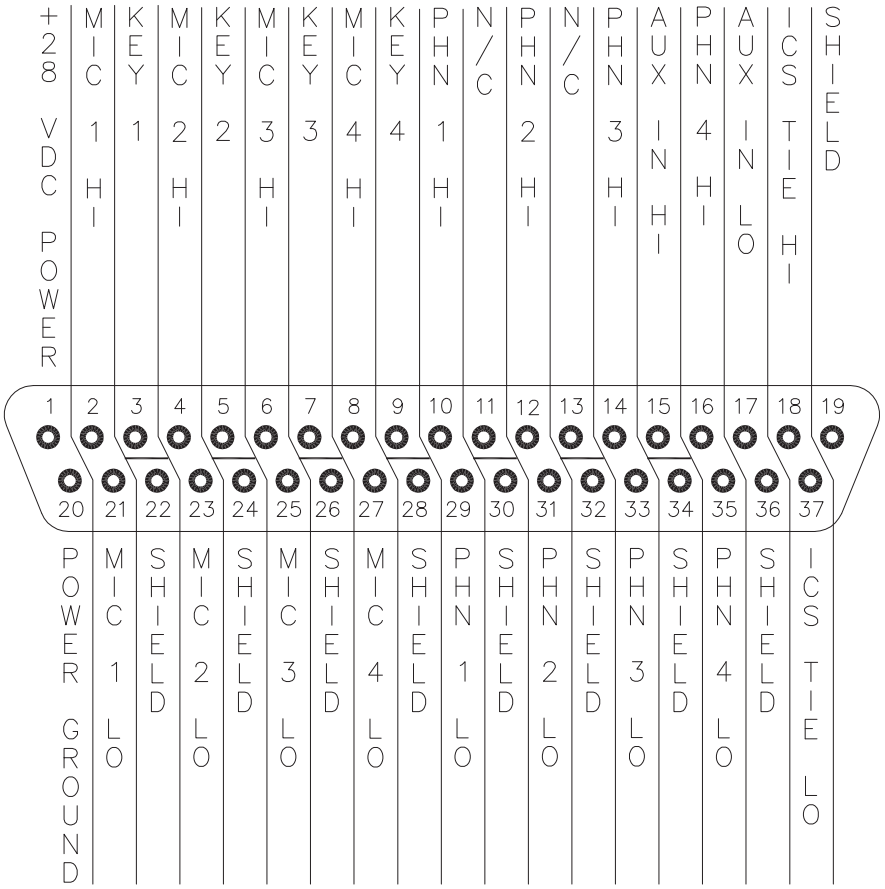
N/C: NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.

DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	SRK					
DATE	AUG 10/98	TITLE	FOUR PLACE INTERCOM			
CHECKED	NAT 255					
APPROVED	NAT 113	SIZE A	CAGE CODE 3AB01	PART NO. AA38-501	REV. 1.01	SHEET 1/1
FILE 403-0.DWG	DWG. TYPE INTERCONNECT			DWG. NO. AA38-501-403-0		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00438 – AUX IN WAS AUX, INPUT/OUTPUT LABELS REMOVED.	NOV 12/03	MWS

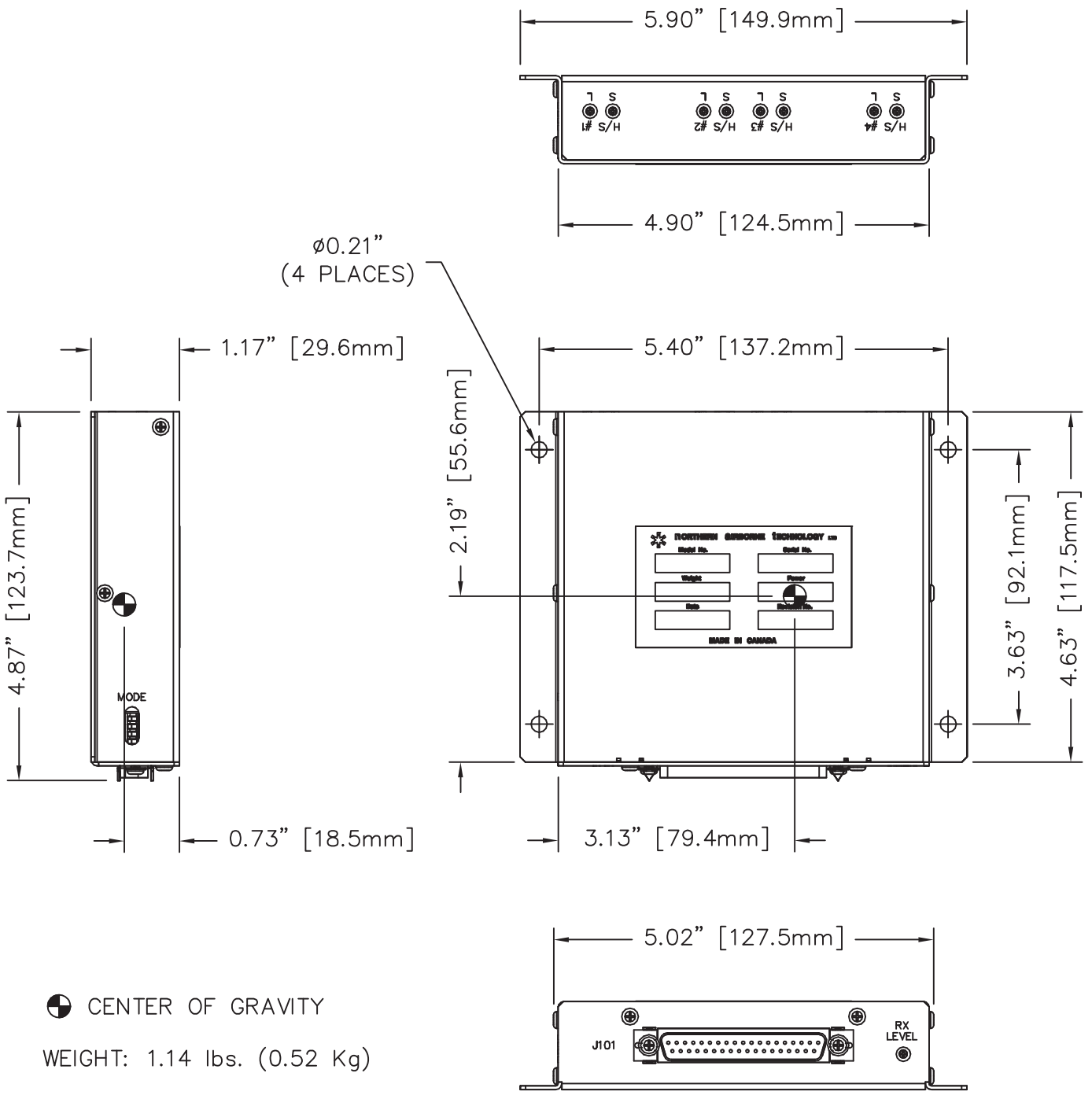
P101

37 PIN FEMALE DMIN
MATING CONNECTOR



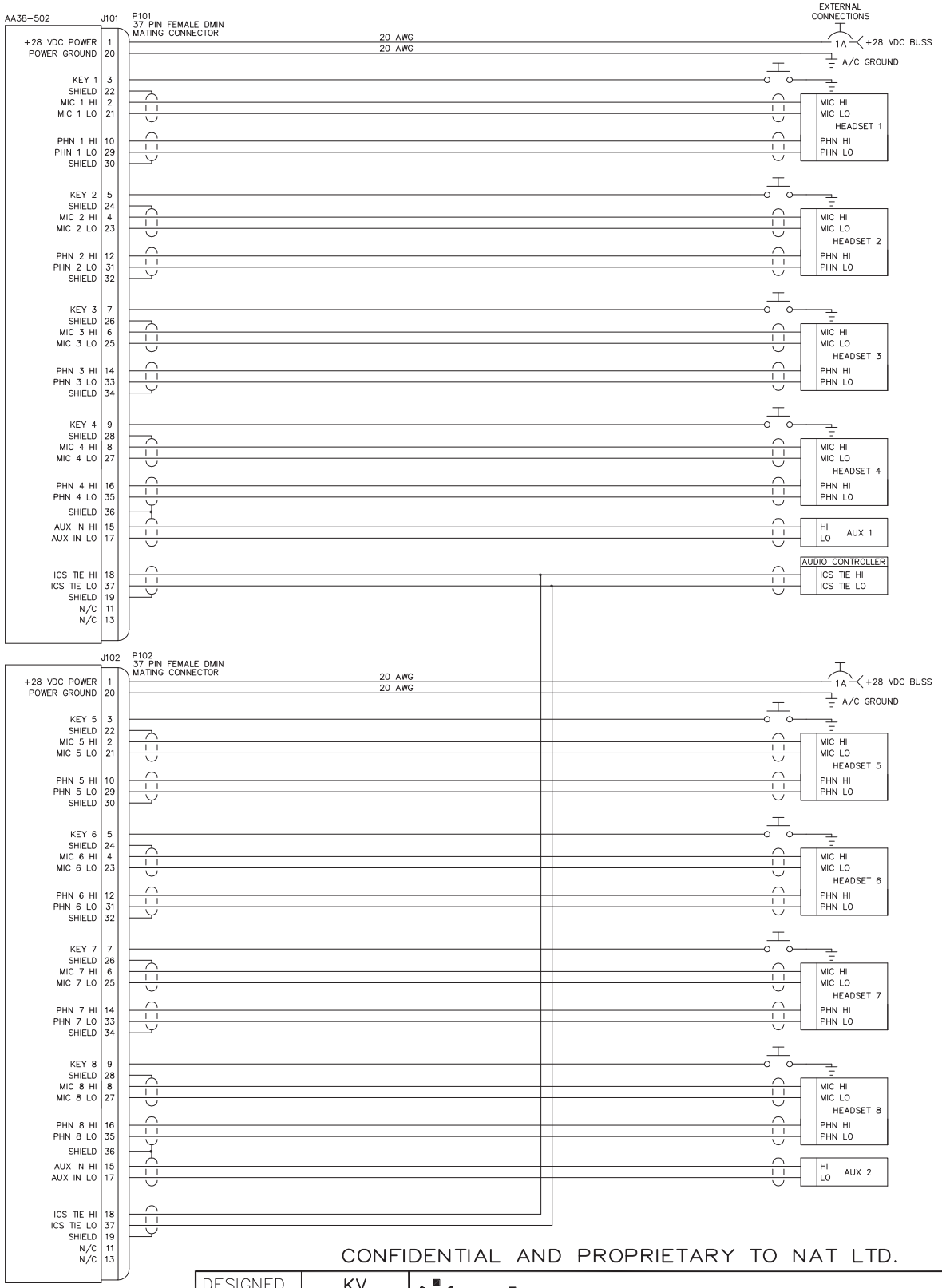
VIEW IS FROM REAR OF AIRFRAME CONNECTOR

DESIGNED	KV	nat NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	SRK					
DATE	AUG 6/98	TITLE	FOUR PLACE INTERCOM			
CHECKED	NAT 249					
APPROVED	NAT 113	SIZE A	CAGE CODE 3AB01	PART NO. AA38-501	REV. 1.01	SHEET 1/1
FILE 405-01.DWG		DWG. TYPE CONNECTOR MAP		DWG. NO. AA38-501-405-0		



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	SK	NORTHERN AIRBORNE TECHNOLOGY LTD.				
		DRAWN	MWS					
		DATE	AUG 12/98	TITLE: FOUR PLACE INTERCOM				
		CHECKED	NAT 205 / NAT 214					
MATERIAL		APPROVED	NAT 107	SIZE: A	CAGE CODE: 3AB01	PART NO.: AA38−501	REV.: 1.00	SHEET: 1/1
FINISH		FILE: 922−0100.DWG		DWG. TYPE: MECH. INSTALLATION		DWG. NO.: AA38\501\922−0		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX IN WAS AUX, FORMAT CHANGES.	NOV 21/03	MWS



NOTES:

1. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL WIRE SHOULD BE IN ACCORDANCE WITH MIL-W-22759. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL-C-27500.

DEFINITIONS:

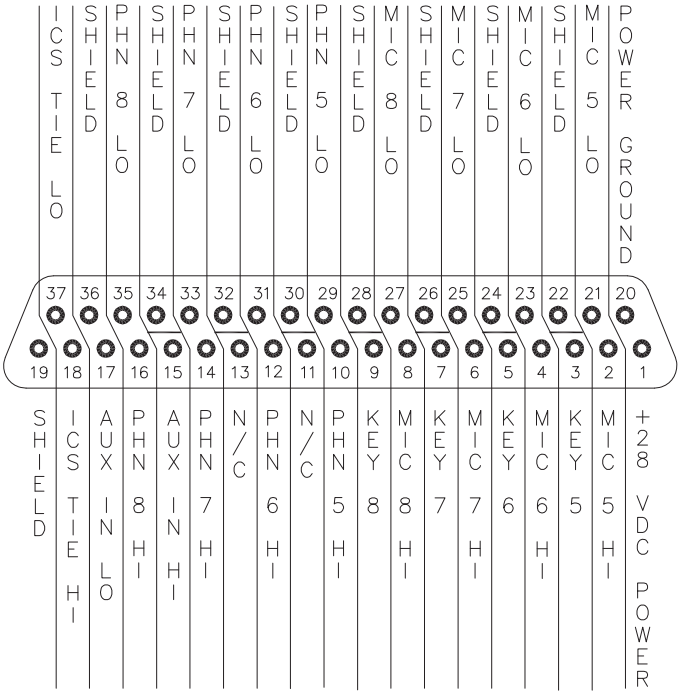
N/C: NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.

DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	MWS					
DATE	NOV 24/97	TITLE	EIGHT PLACE INTERCOM			
CHECKED	NAT 255					
APPROVED	NAT 500	SIZE A	CAGE CODE 3AB01	PART NO. AA38-502	REV. 1.01	SHEET 1/1
FILE 403-01.DWG	DWG. TYPE INTERCONNECT			DWG. NO. AA38\502\403-C		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX HI/LO WAS MISLABELED AS AN OUTPUT, FORMAT CHANGES.	NOV 21/03	MWS

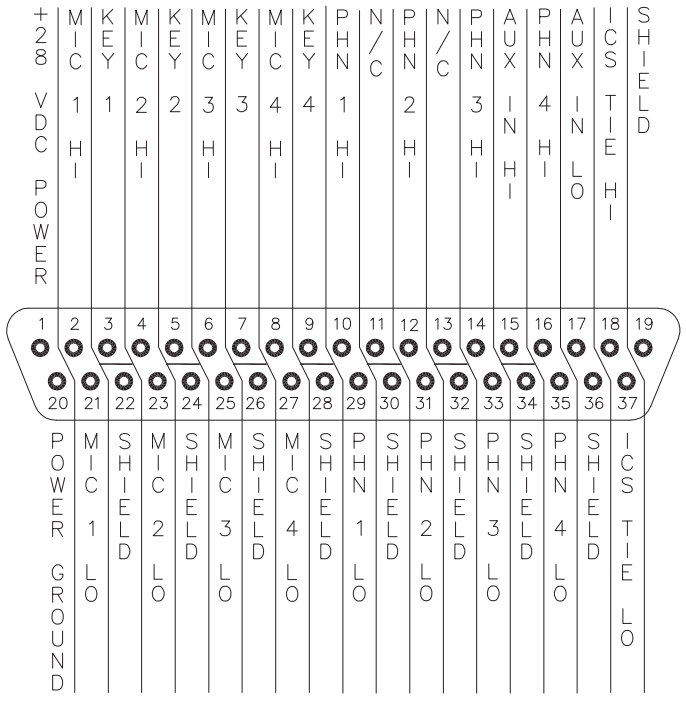
P102

37 PIN FEMALE DMIN MATING CONNECTOR



P101

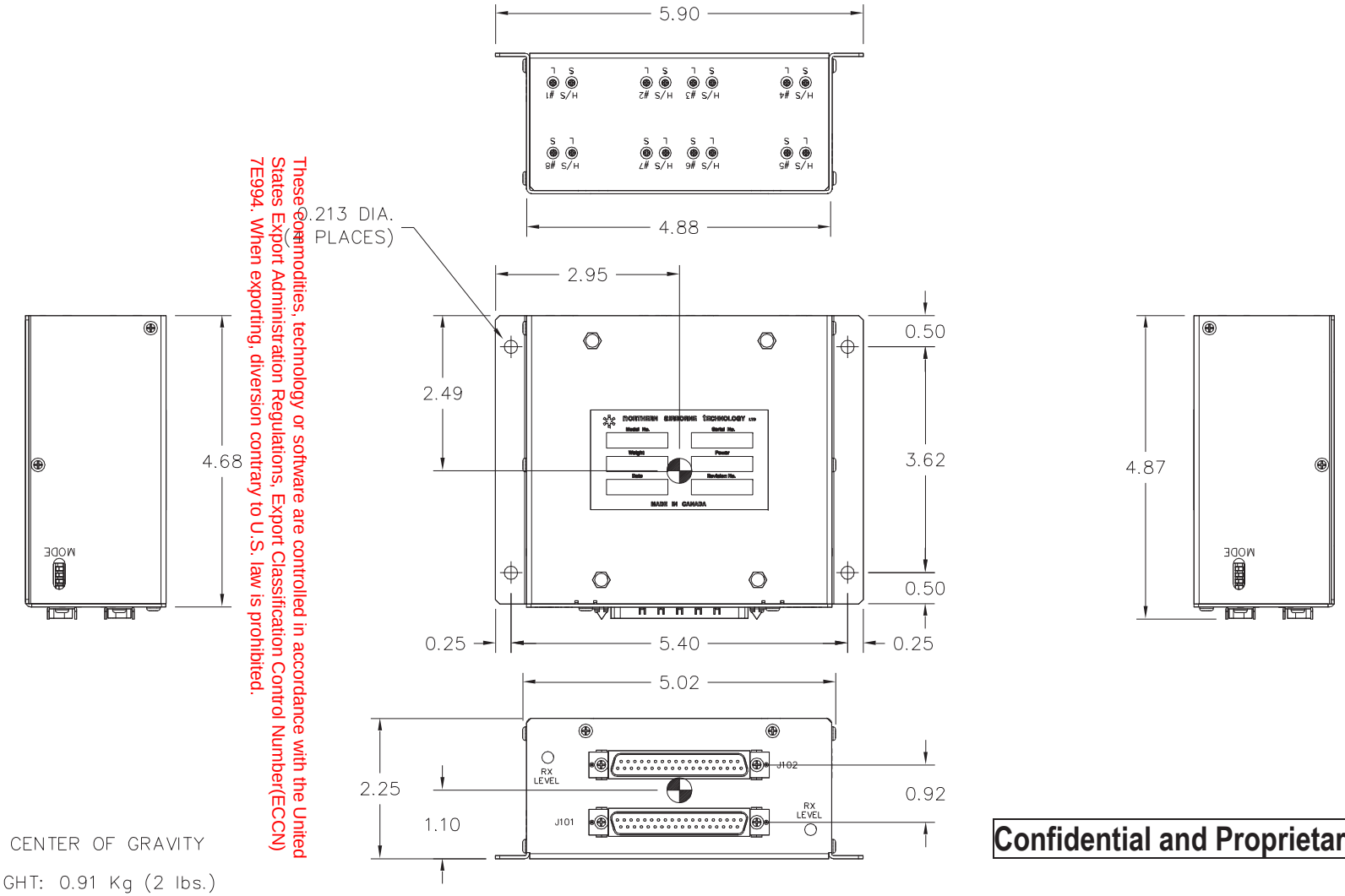
37 PIN FEMALE DMIN MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	MWS					
DATE	NOV 24/97	TITLE	EIGHT PLACE INTERCOM			
CHECKED	NAT 255					
APPROVED	NAT 500	SIZE A	CAGE CODE 3AB01	PART NO. AA38-502	REV. 1.01	SHEET 1/1
FILE 405-01.DWG	DWG. TYPE CONNECTOR MAP			DWG. NO. AA38-502-405-C		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	ECR #1299 ROTATED LABEL 180°	NOV 24/98	MWS



These commodities, technology or software are controlled in accordance with the United States Export Administration Regulations, Export Classification Control Number(ECCN) 7E994. When exporting, diversion contrary to U.S. law is prohibited.

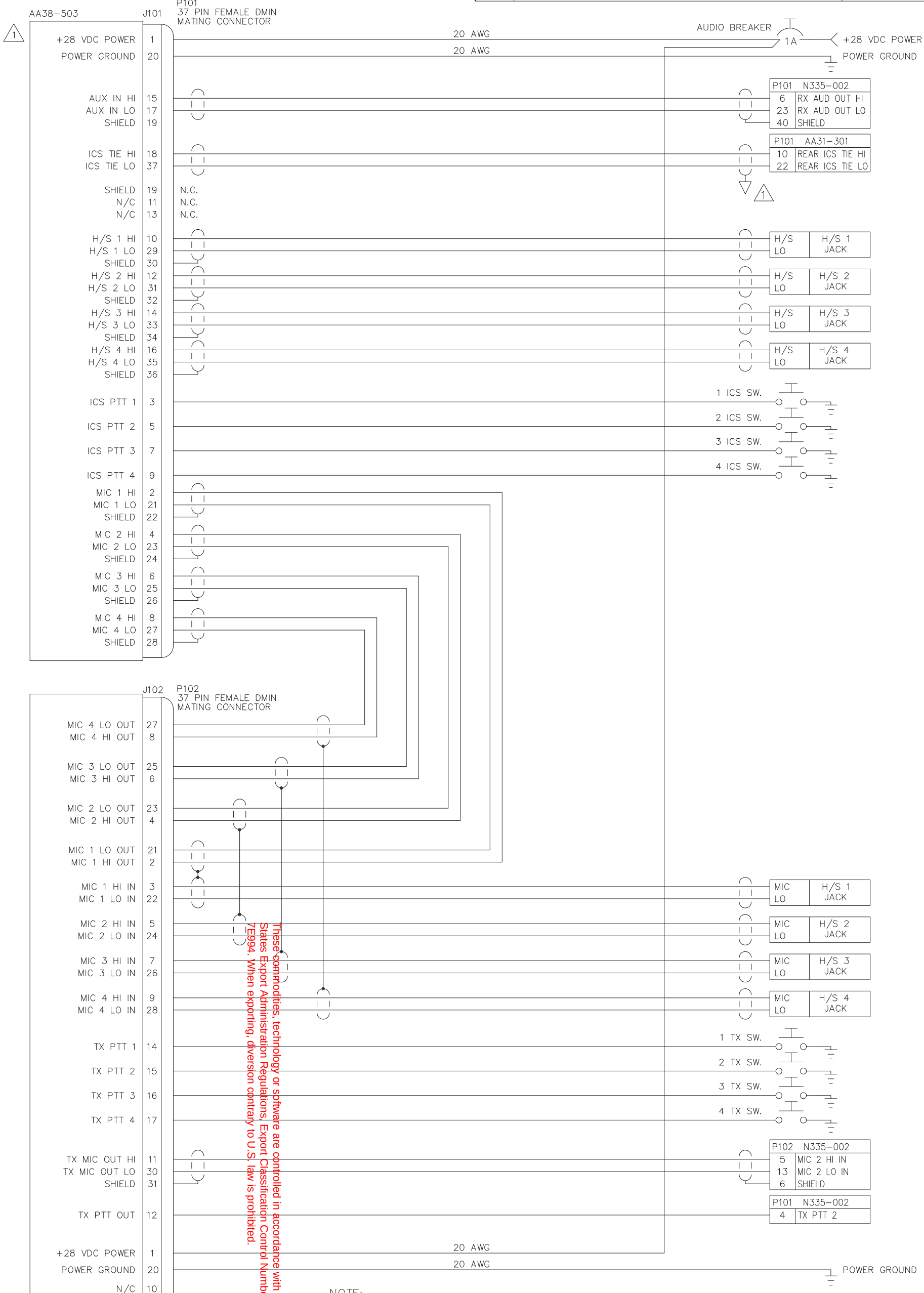
CENTER OF GRAVITY

WEIGHT: 0.91 Kg (2 lbs.)

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	MWS				
		DATE	NOV 26/97	TITLE	8 PLACE INTERCOM		
		CHECKED	NAT 205 PRODUCT 105 214				
MATERIAL		APPROVED	NAT 107	SIZE A	CAGE CODE 3AB01	PART NO. AA38−502	REV. 1.01 / SHEET 1/1
FINISH		FILE	922−0101.DWG	DWG. TYPE	MECH. INSTALLATION	DWG. NO.	AA38\502\922−0

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – FORMAT CHANGES.	FEB 11/04	MWS



NOTE:

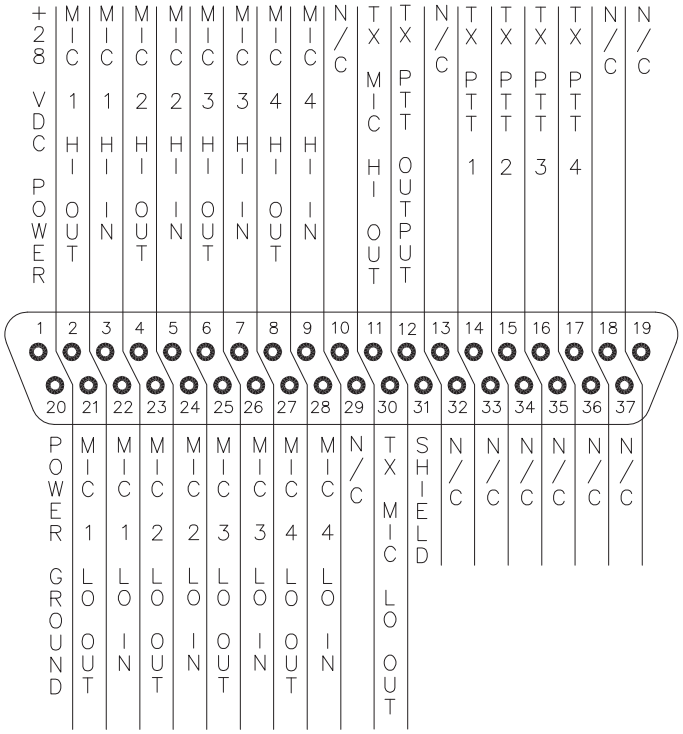
1. ALL AUDIO GROUNDS IN SYSTEM WILL BE TERMINATED @ ONE LOCATION ONLY. TO AIRFRAME GROUND.

DESIGNED	KV	nat NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	MWS					
DATE	~~OCT 27/97~~	TITLE	FOUR PLACE INTERCOM WITH TRANSMIT			
CHECKED	NAT 249					
APPROVED	NAT 501	SIZE B	CAGE CODE 3AB01	PART NO. AA38–503	REV. 1.01	SHEET 1/1
FILE 403–0.DWG		DWG. TYPE INTERCONNECT		DWG. NO. AA38\503\403–0		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX HI/LO WAS MISLABELED AS AN OUTPUT, FORMAT CHANGES.	NOV 21/03	MWS

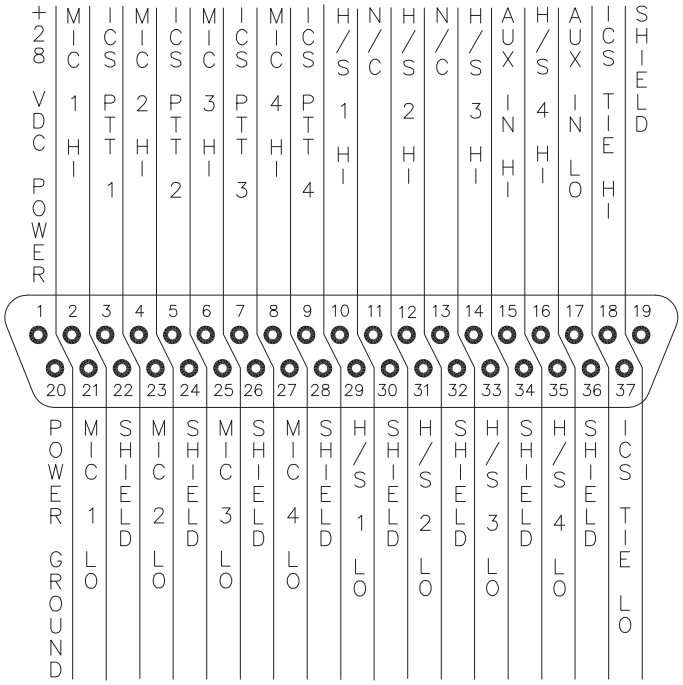
P102

37 PIN FEMALE D–MIN MATING CONNECTOR



P101

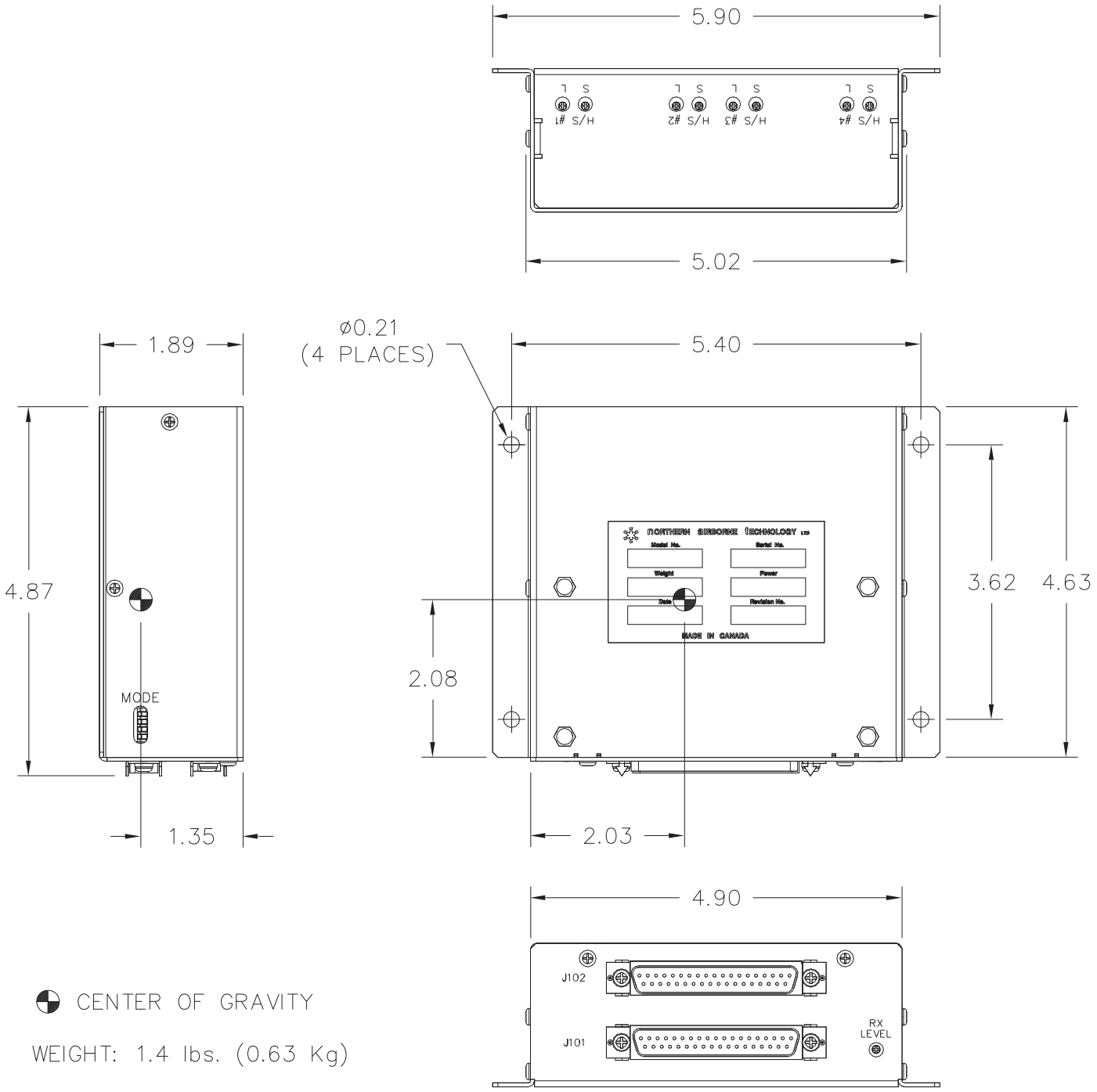
37 PIN FEMALE D–MIN MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	MWS					
DATE	OCT 21/97	TITLE: FOUR PLACE INTERCOM WITH TRANSMIT				
CHECKED	NAT 255					
APPROVED	NAT 500	SIZE: A	CAGE CODE: 3AB01	PART NO.: AA38–503	REV.: 1.01	SHEET: 1/1
FILE: 405-01.DWG		DWG. TYPE: CONNECTOR MAP		DWG. NO.: AA38-503-405-C		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	ECR #1201 – H/S TEXT ROTATED 180°.	JULY 1/98	TGM

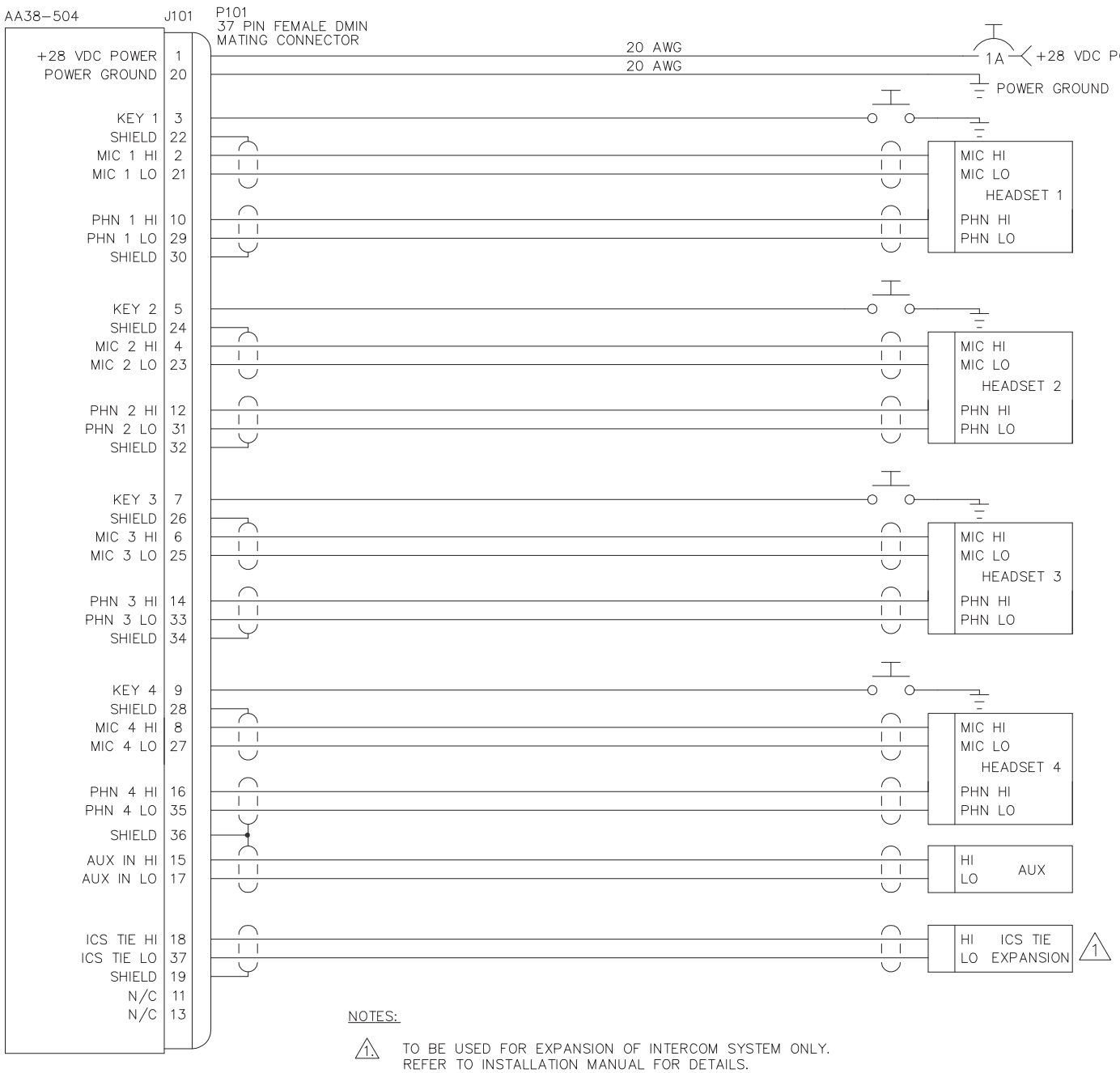


TOLERANCES UNLESS STATED OTHERWISE 0.X=+/−0.030 0.XX=+/−0.010 0.XXX=+/−0.005 0.XXXX=+/−0.002 ANGLE=+/− 0.5 DEG.	DIMENSIONS IN INCHES THIRD ANGLE PROJECTION	DESIGNED: KV DRAWN: MWS DATE: FEB 24/98 CHECKED: NAT PROD 112 / NAT 214 APPROVED: NAT 107	NORTHERN AIRBORNE TECHNOLOGY LTD.
MATERIAL			TITLE: 4 PLACE INTERCOM WITH TRANSMIT
FINISH			

SIZE	CAGE CODE	PART NO.	REV.	SHEET
A	3AB01	AA38-503	1.01	1/1

FILE	DWG. TYPE	DWG. NO.
922-0101.DWG	MECH. INSTALLATION	AA38\503\922-0

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX IN WAS AUX, FORMAT CHANGES.	NOV 21/03	MWS



NOTES:

1. TO BE USED FOR EXPANSION OF INTERCOM SYSTEM ONLY. REFER TO INSTALLATION MANUAL FOR DETAILS.
2. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL WIRE SHOULD BE IN ACCORDANCE WITH MIL–W–22759. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL–C–27500.

DEFINITIONS:

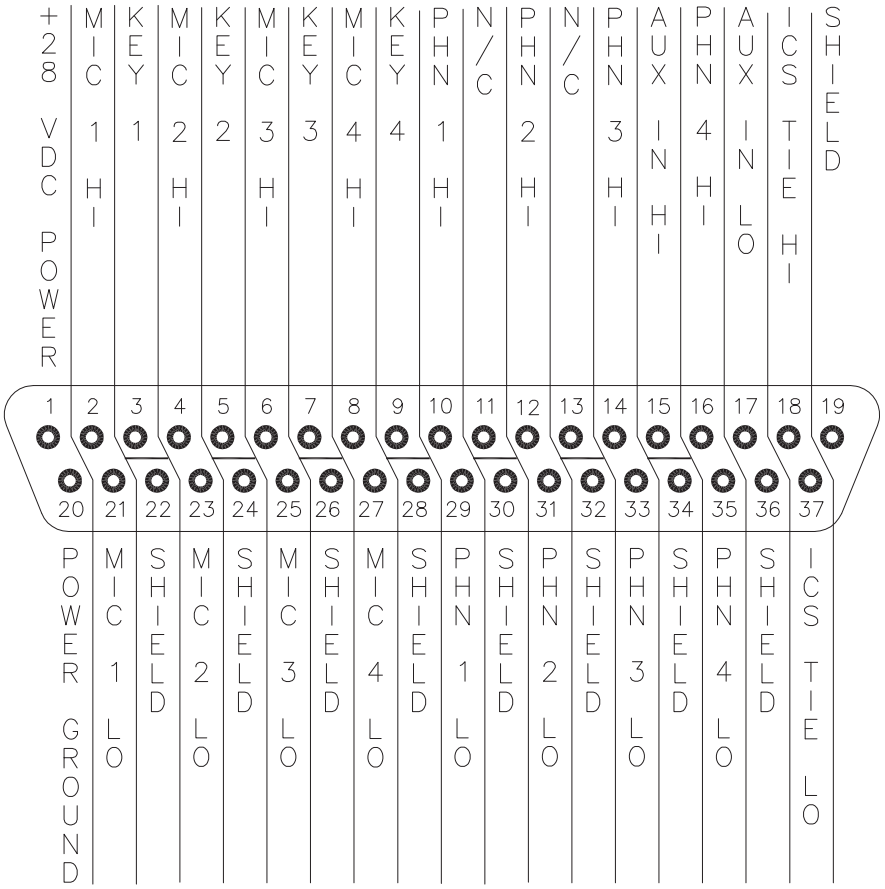
N/C: NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.

DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	SRK					
DATE	~~AUG 10/98~~	TITLE	FOUR PLACE INTERCOM			
CHECKED	NAT 255					
APPROVED	NAT 500	SIZE A	CAGE CODE 3AB01	PART NO. AA38–504	REV. 1.01	SHEET 1/1
FILE 403-01.DWG		DWG. TITLE INTERCONNECT		DWG. NO. AA38–504–403–G		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX HI/LO WAS MISLABELED AS AN OUTPUT, FORMAT CHANGES.	NOV 21/03	MWS

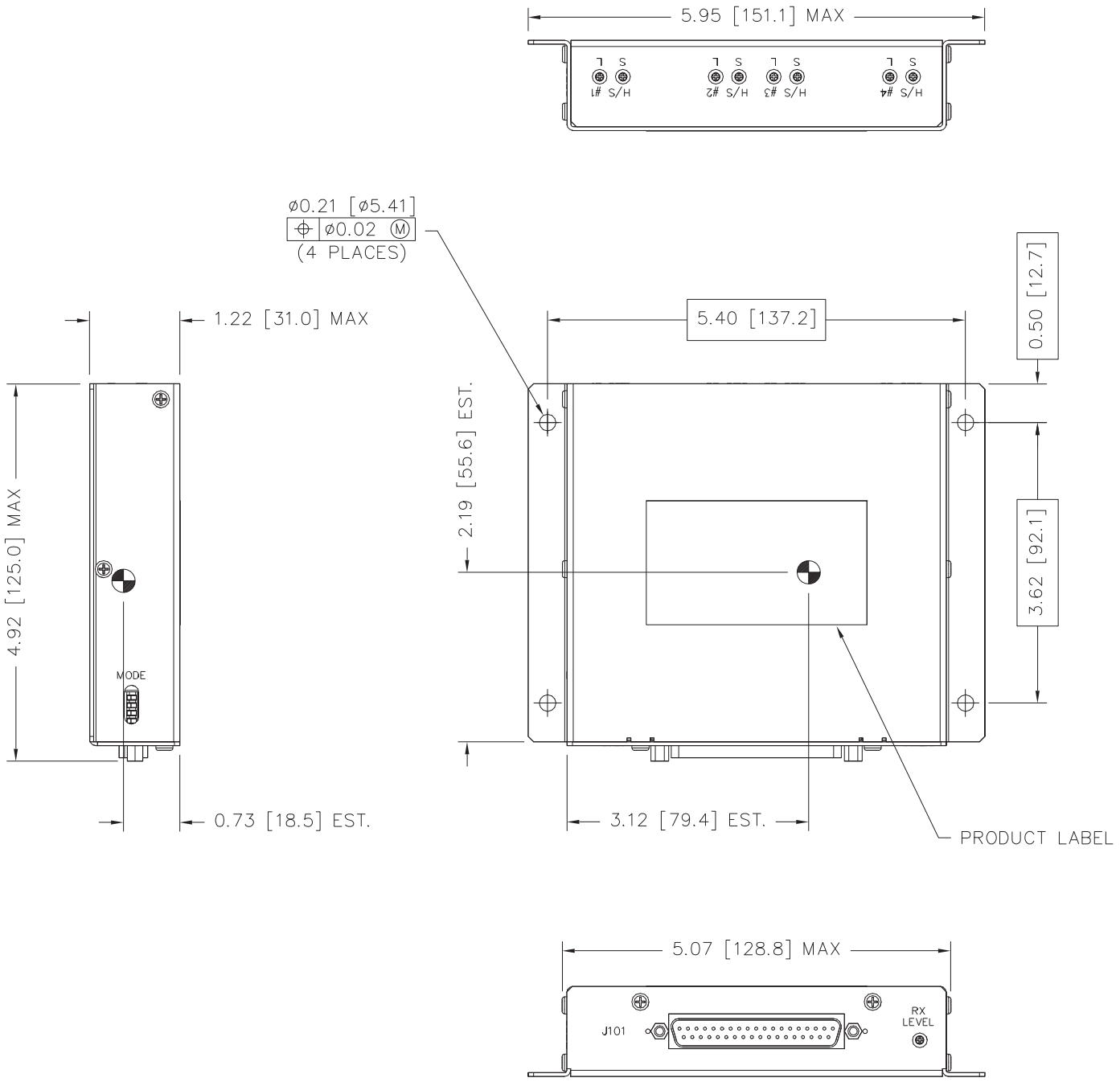
P101

37 PIN FEMALE DMIN MATING CONNECTOR



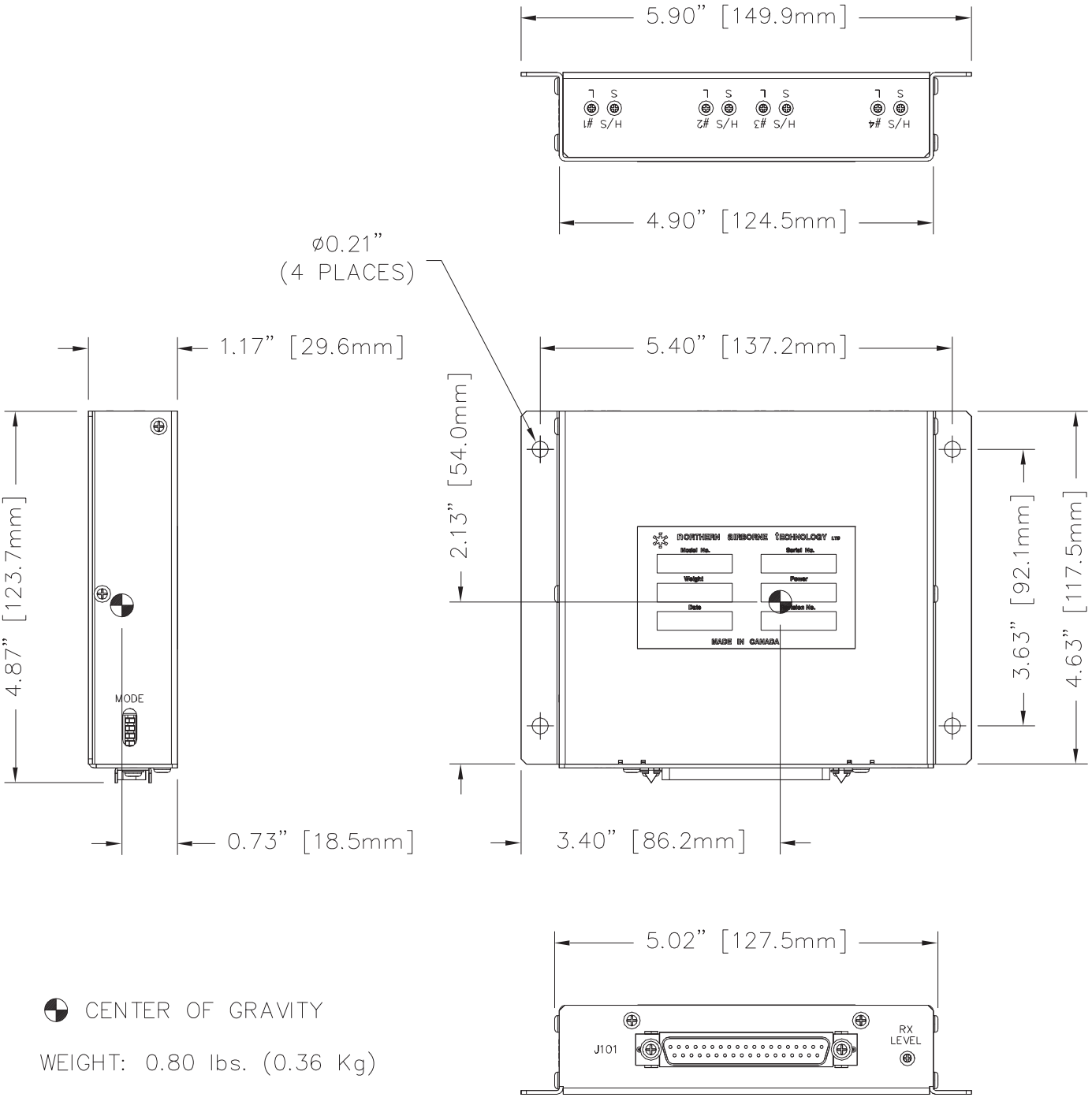
VIEW IS FROM REAR OF AIRFRAME CONNECTOR

DESIGNED	KV	nat NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	SRK					
DATE	~~AUG 6/98~~	TITLE	FOUR PLACE INTERCOM			
CHECKED	NAT 255					
APPROVED	NAT 500	SIZE A	CAGE CODE 3AB01	PART NO. AA38-504	REV. 1.01	SHEET 1/1
FILE 405-01.DWG		DWG. TYPE CONNECTOR MAP		DWG. NO. AA38\504\405-C		



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

DIMENSIONS ARE INCHES [mm]	DESIGNED	SK	nat NORTHERN AIRBORNE TECHNOLOGY LTD.				
THIRD ANGLE PROJECTION	DRAWN	TAT					
	DATE	MAY 7/03	TITLE	FOUR PLACE INTERCOM			
MASS: 1.25 lbs. (0.6 Kg) MAX	CHECKED	NAT 205 / NAT 255					
MATERIAL: NAT P/N 49-00-050	APPROVED	NAT 104	SIZE A	CAGE CODE 3AB01	PART NO. AA38-505	REV. 1.00	SHEET 1/1
FINISH: CHROMATE CONVERSION	FILE: 922-0100.DWG		DWG. TYPE: MECH. INSTALLATION		DWG. NO. AA38\505\922-0		

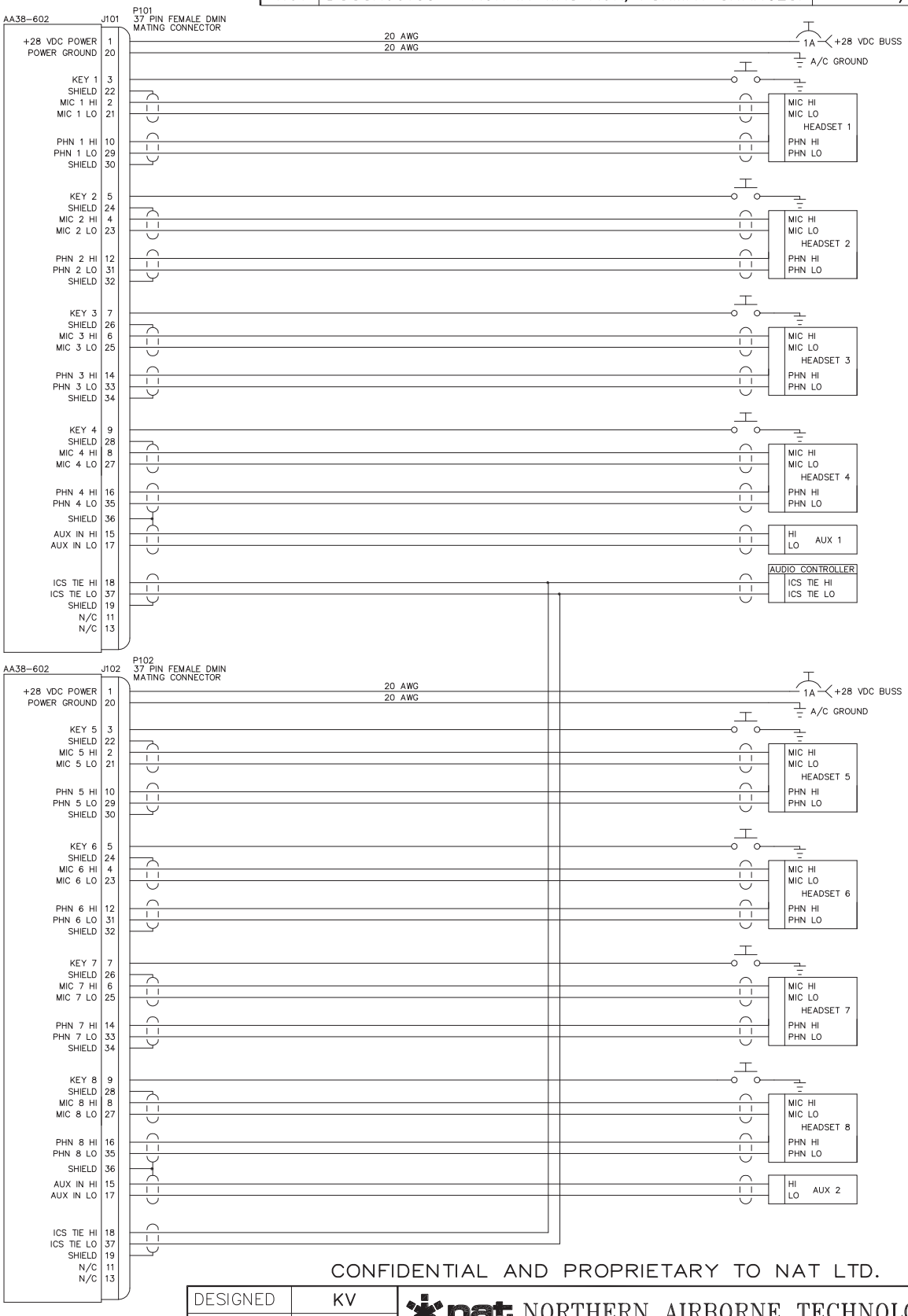


CENTER OF GRAVITY

WEIGHT: 0.80 lbs. (0.36 Kg)

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: SK DRAWN: MWS DATE: JUN 28/99 CHECKED: NAT 228 APPROVED: NAT 107	nat NORTHERN AIRBORNE TECHNOLOGY LTD. TITLE: FOUR PLACE INTERCOM
MATERIAL FINISH			SIZE: A | CAGE CODE: 3AB01 | PART NO.: AA38−601 | REV.: 1.00 | SHEET: 1/1
		FILE: 922-0100.DWG | DWG. TYPE: MECH. INSTALLATION | DWG. NO.: AA38-601/922-0	

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX IN WAS AUX, FORMAT CHANGES.	NOV 24/03	MWS



NOTES:

1. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL WIRE SHOULD BE IN ACCORDANCE WITH MIL-W-22759. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL-C-27500.

DEFINITIONS:

N/C: NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.

DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	TAT					
DATE	JUN 29/00	TITLE	Hi-Z EIGHT PLACE INTERCOM			
CHECKED	NAT 255					
APPROVED	NAT 500	SIZE A	CAGE CODE 3AB01	PART NO. AA38-602	REV. 1.01	SHEET 1/1
FILE 403-01.DWG		DWG. TYPE INTERCONNECT		DWG. NO. AA38-602-403-C		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX HI/LO WAS MISLABELED AS AN OUTPUT, FORMAT CHANGES.	FEB 11/04	MWS

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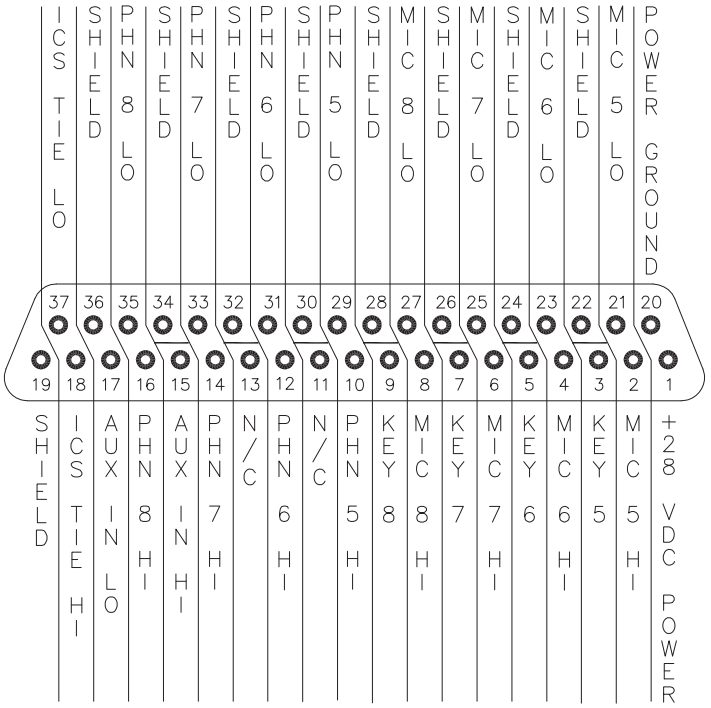
37 PIN FEMALE DMIN MATING CONNECTOR



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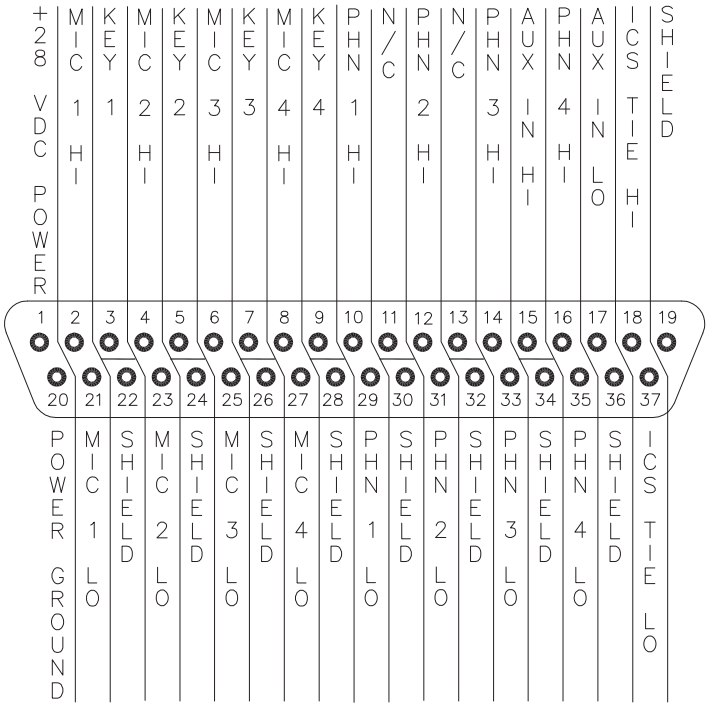
37 PIN FEMALE DMIN MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

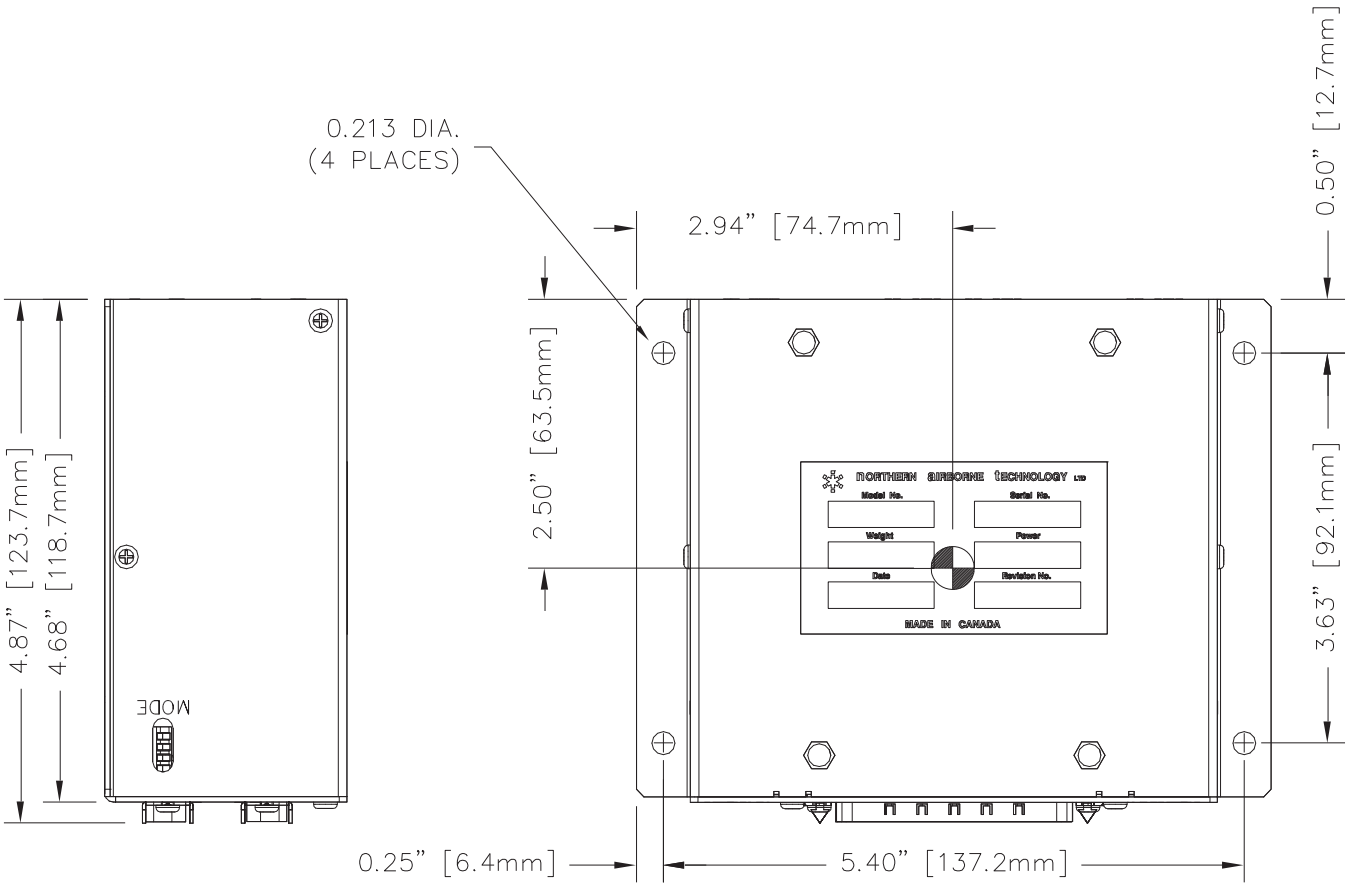
DESIGNED	KV
DRAWN	TAT
DATE	JUN 29/00
CHECKED	NAT 249
APPROVED	NAT 501

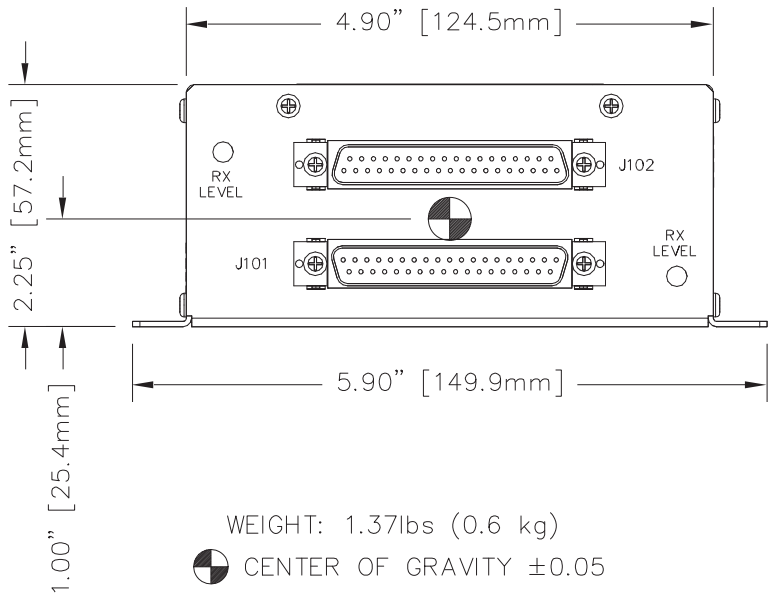
NORTHERN AIRBORNE TECHNOLOGY LTD.

TITLE: Hi–Z EIGHT PLACE INTERCOM

SIZE	CAGE CODE	PART NO.	REV.	SHEET
A	3AB01	AA38–602	1.01	1/1

FILE	DWG. TITLE	DWG. NO.
405-0.DWG	CONNECTOR MAP	AA38\602\405-0





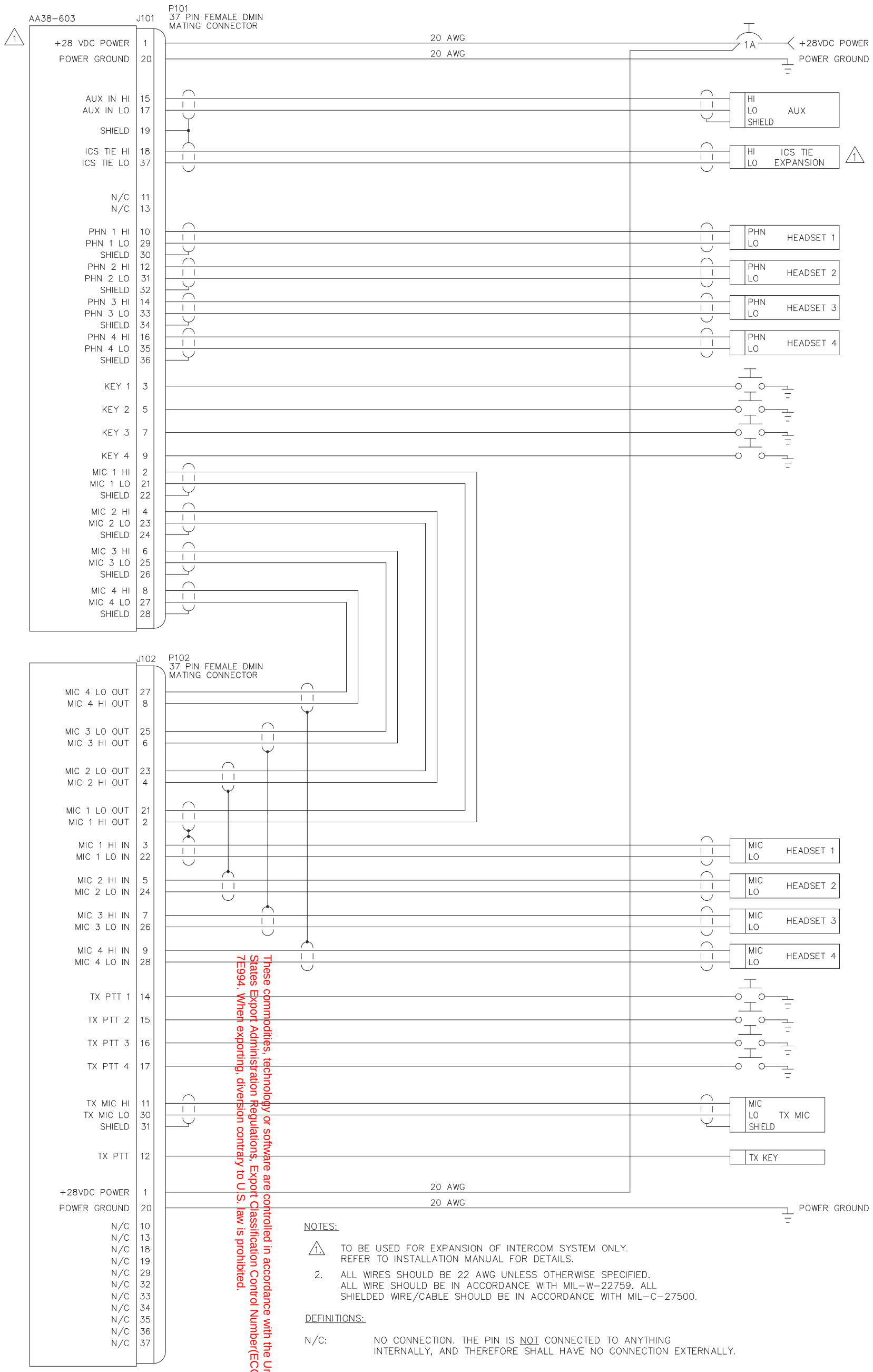
WEIGHT: 1.37lbs (0.6 kg)

CENTER OF GRAVITY ±0.05

PROPRIETARY AND CONFIDENTIAL TO NAT LTD.

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 DRAWN: TAT DATE: JUN 29/00 CHECKED: NAT 114 / NAT 223 APPROVED: NAT 113	NORTHERN AIRBORNE TECHNOLOGY LTD. TITLE: Hi−Z EIGHT PLACE INTERCOM
MATERIAL			SIZE: A · CAGE CODE: 3AB01 · PART NO.: AA38−602 · REV.: 1.00 · SHEET: 1/1
FINISH			FILE: 922−0100.DWG · DWG. TYPE: MECH. INSTALLATION · DWG. NO.: AA38−602−922−0

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX IN WAS AUX, FORMAT CHANGES.	NOV 21/03	MWS



NOTES:

1. TO BE USED FOR EXPANSION OF INTERCOM SYSTEM ONLY. REFER TO INSTALLATION MANUAL FOR DETAILS.
2. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL WIRE SHOULD BE IN ACCORDANCE WITH MIL-W-22759. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL-C-27500.

DEFINITIONS:

N/C: NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.

DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	SK					
DATE	SEP 14/98	TITLE HI Z 4 PLACE INTERCOM WITH TRANSMIT				
CHECKED	NAT 255					
APPROVED	NAT 500	SIZE B	CAGE CODE 3AB01	PART NO. AA38-603	REV. 1.01	SHEET 1/1
FILE 403-0.DWG		DWG. TYPE INTERCONNECT		DWG. NO. AA38\603\403-0		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR00153 – AUX HI/LO WAS MISLABELED AS AN OUTPUT, FORMAT CHANGES.	NOV 21/03	MWS

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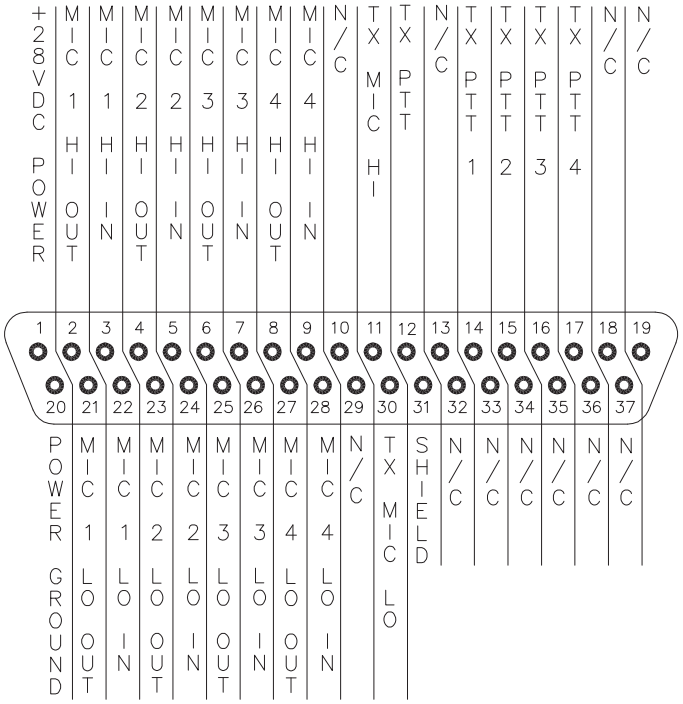
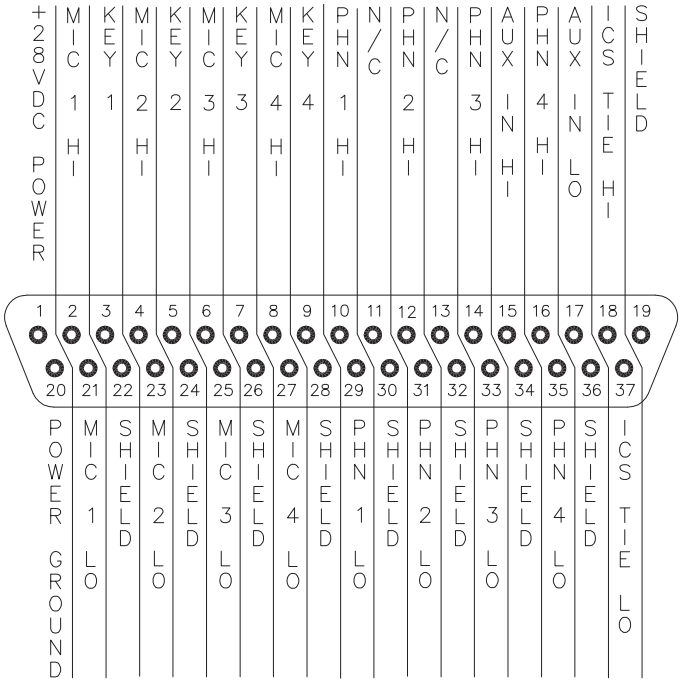
37 PIN FEMALE D–MIN MATING CONNECTOR



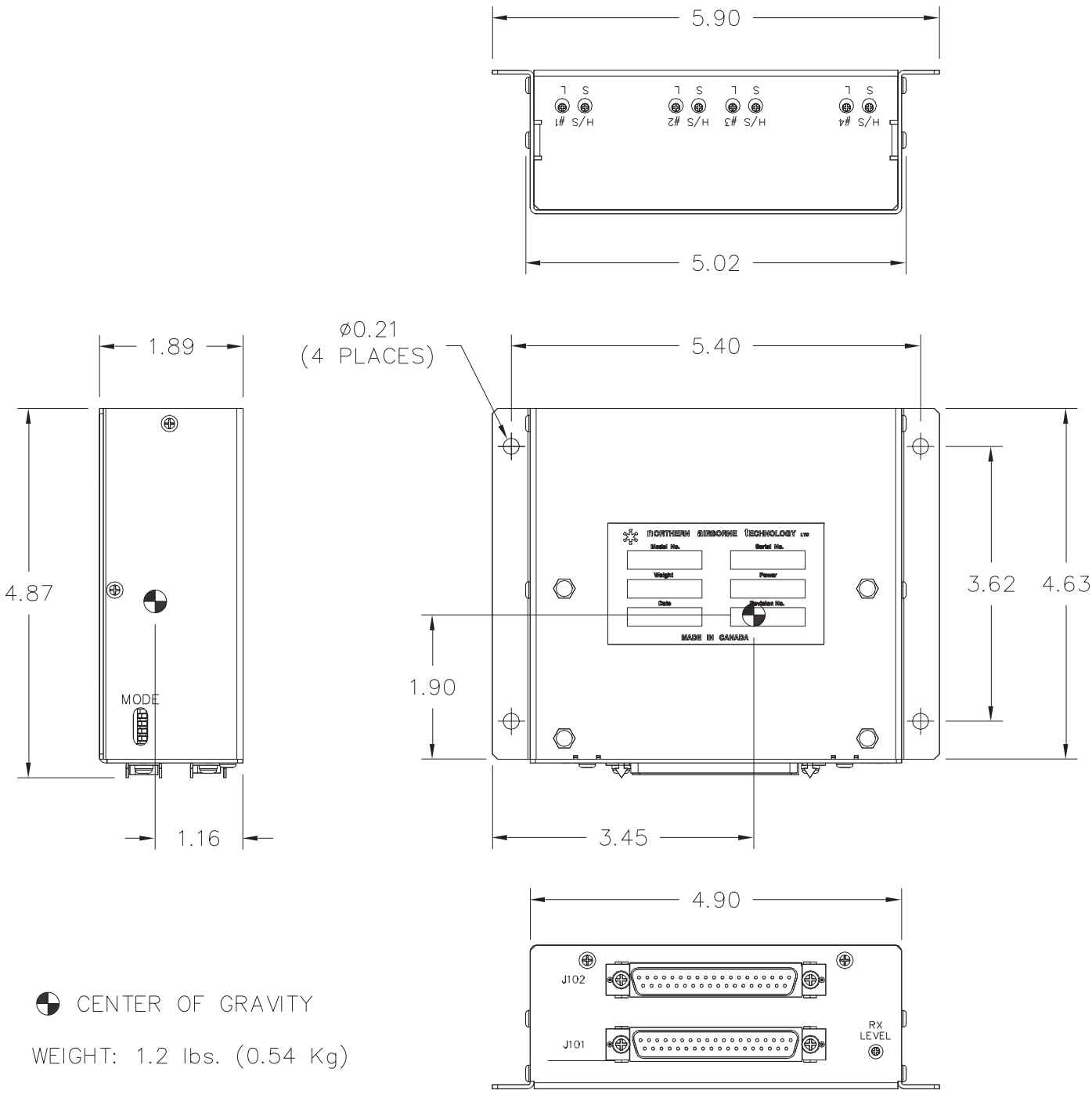
P101

37 PIN FEMALE D–MIN MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

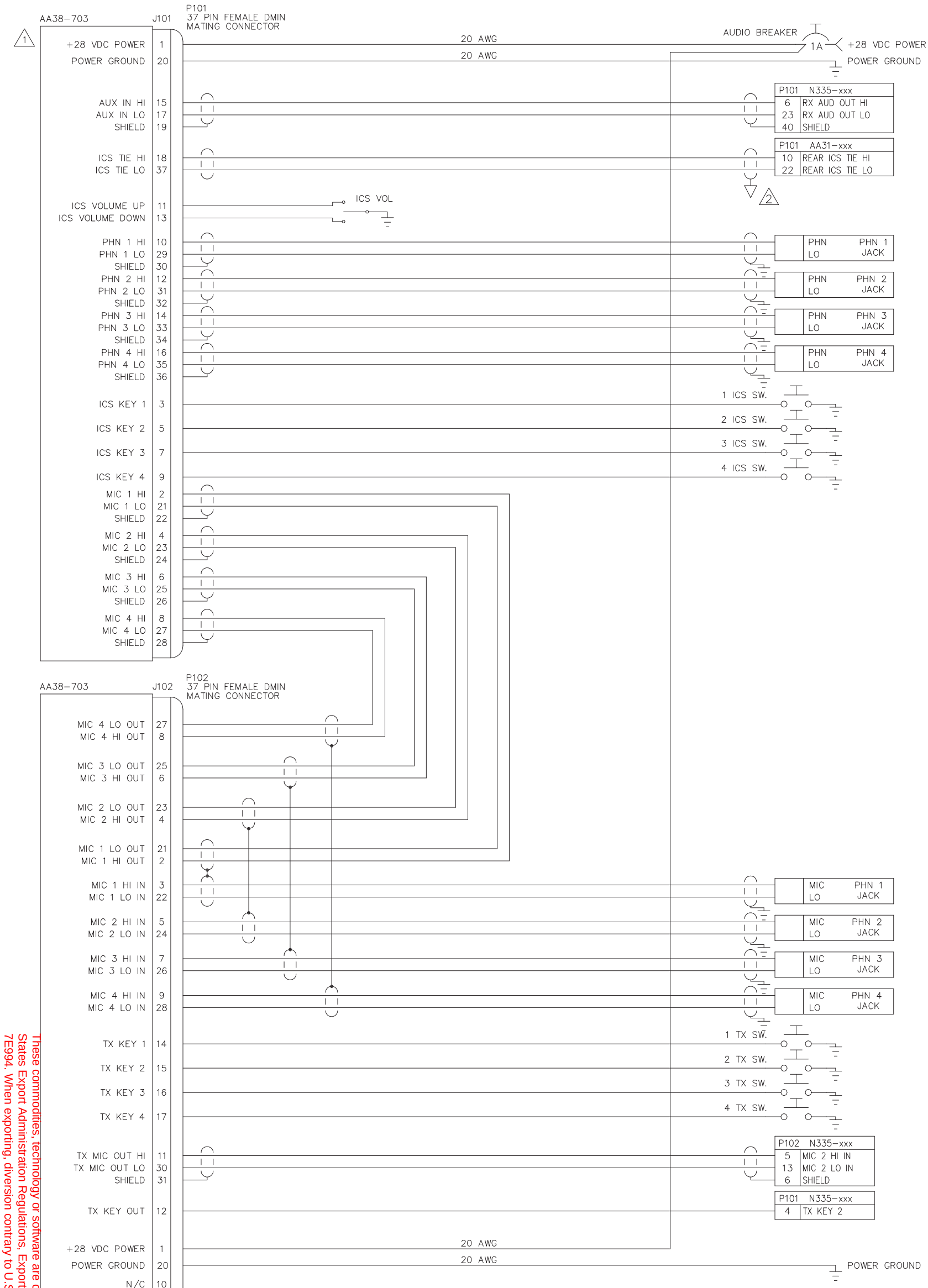
DESIGNED	KV	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	SK					
DATE	SEP 14/98	TITLE: HI Z 4 PLACE INTERCOM WITH TRANSMIT				
CHECKED	NAT 255					
APPROVED	NAT 500	SIZE: A	CAGE CODE: 3AB01	PART NO.: AA38–603	REV.: 1.01	SHEET: 1/1
FILE: 405–01.DWG		DWG. TYPE: CONNECTOR MAP			DWG. NO.: AA38–603–405–C	



CENTER OF GRAVITY

WEIGHT: 1.2 lbs. (0.54 Kg)

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 DRAWN TGM DATE SEP 4/98 CHECKED NAT 228 / NAT 214	nat NORTHERN AIRBORNE TECHNOLOGY LTD.			
MATERIAL		APPROVED NAT 107	TITLE: HI Z 4 PLACE INTERCOM WITH TRANSMIT			
FINISH			SIZE: A	CAGE CODE: 3AB01	PART NO.: AA38-603	REV.: 1.00 / SHEET: 1/1
			FILE: 922-0100.DWG	DWG. TYPE: MECH. INSTALLATION	DWG. NO.: AA38-603-922-0	



NOTE:

1. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL WIRE SHOULD BE IN ACCORDANCE WITH MIL-W-22759. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL-C-27500.
2. ALL AUDIO GROUNDS IN SYSTEM WILL BE TERMINATED AT ONE LOCATION ONLY. TO AIRFRAME GROUND.

DEFINITIONS:

N/C: NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.

CONFIDENTIAL AND PROPRIETARY TO NAT LTD.

DESIGNED	SRK	nat NORTHERN AIRBORNE TECHNOLOGY LTD.					
DRAWN	TAT						
DATE	JUN 25/02	TITLE	FOUR PLACE INTERCOM WITH TRANSMIT				
CHECKED	NAT 205 / NAT 255						
APPROVED	NAT 114	SIZE B	CAGE CODE 3AB01	PART NO. AA38-703	REV. 1.00	SHEET 1/1	
FILE 403-0100.DWG		DWG. TYPE INTERCONNECT		DWG. NO. AA38\703\403-0			

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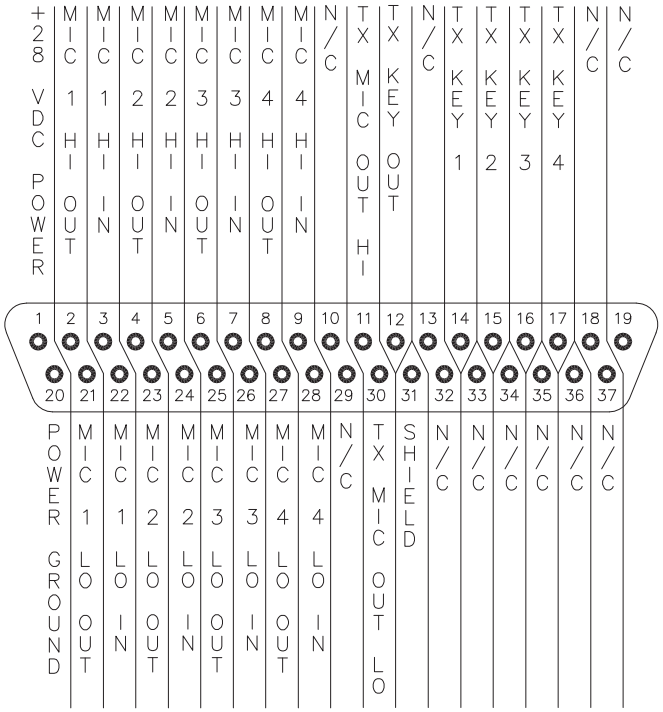
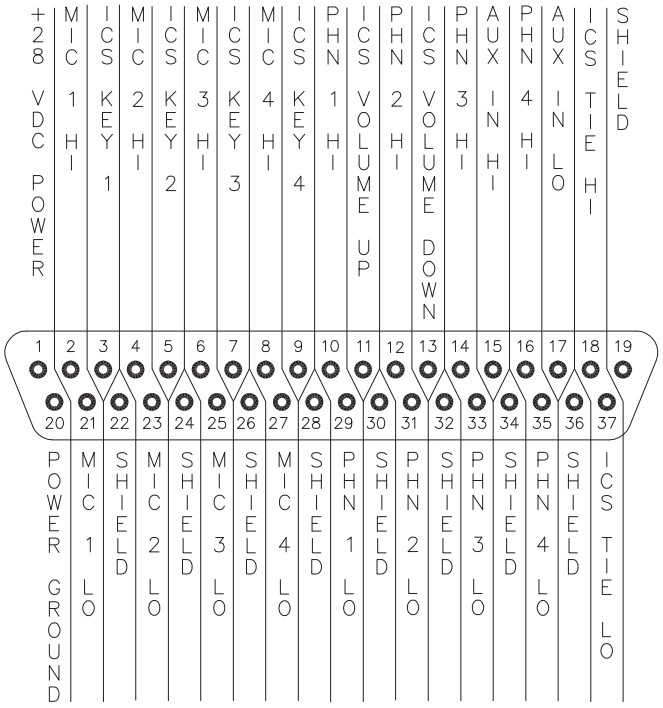
37 PIN FEMALE D-MIN
MATING CONNECTOR



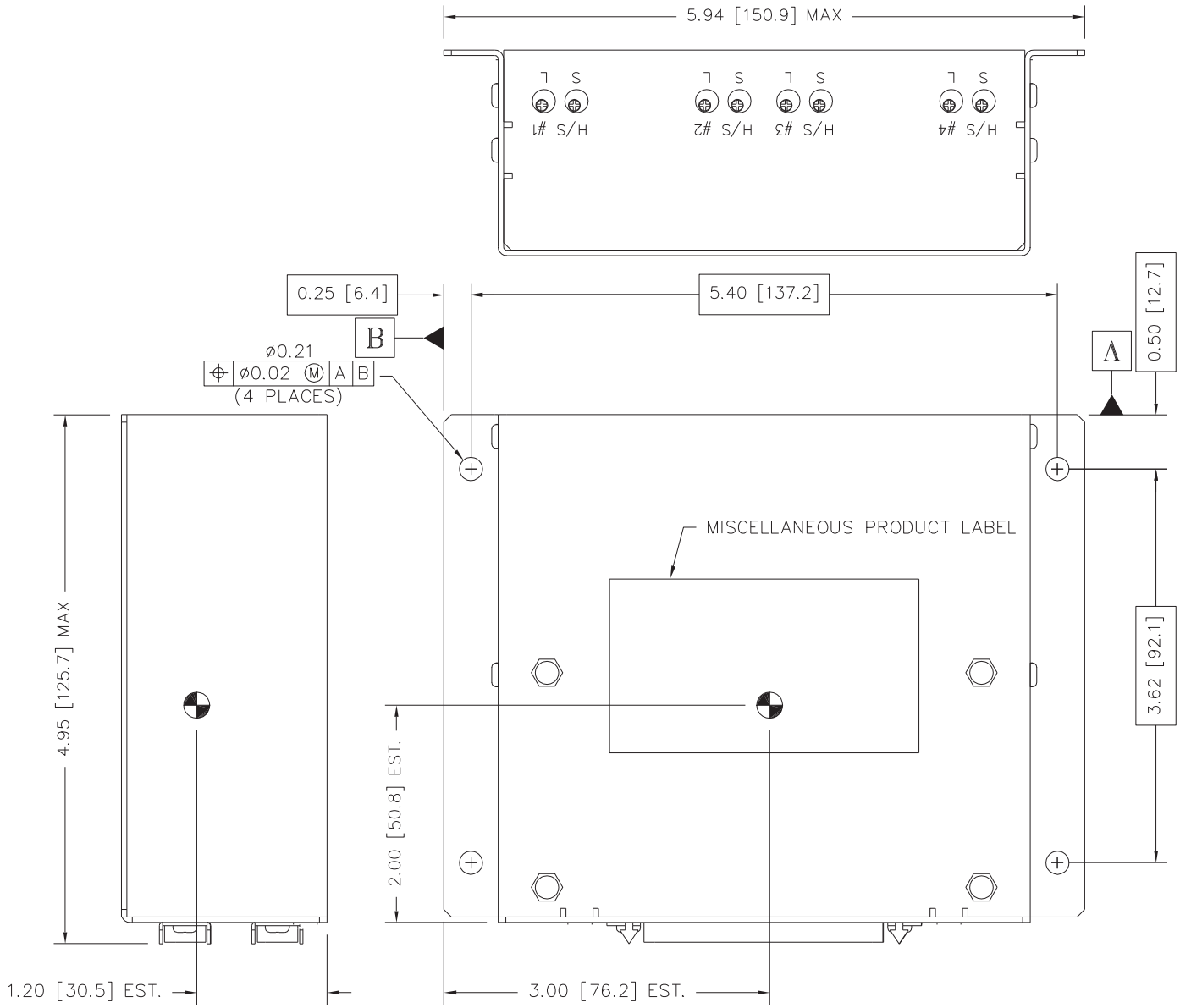
P101

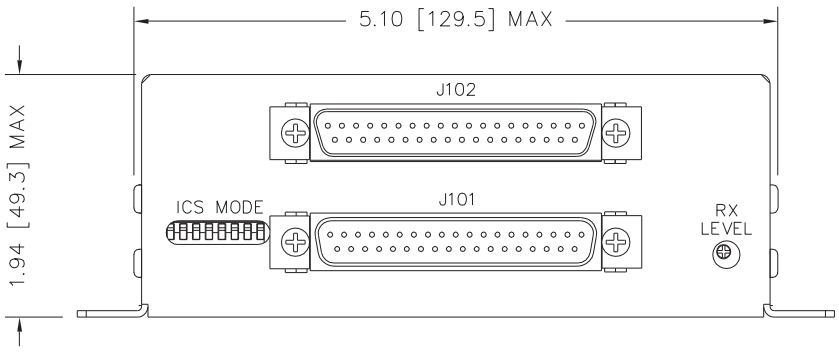
37 PIN FEMALE D-MIN
MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

DESIGNED	SK	nat NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	TAT					
DATE	JUN 10/02	TITLE: FOUR PLACE INTERCOM WITH TRANSMIT				
CHECKED	NAT 255					
APPROVED	NAT 114	SIZE: A	CAGE CODE: 3AB01	PART NO.: AA38-703	REV.: 1.00	SHEET: 1/1
FILE: 405-0100.DWG		DWG. TYPE: CONNECTOR MAP		DWG. NO.: AA38-703\405-0		

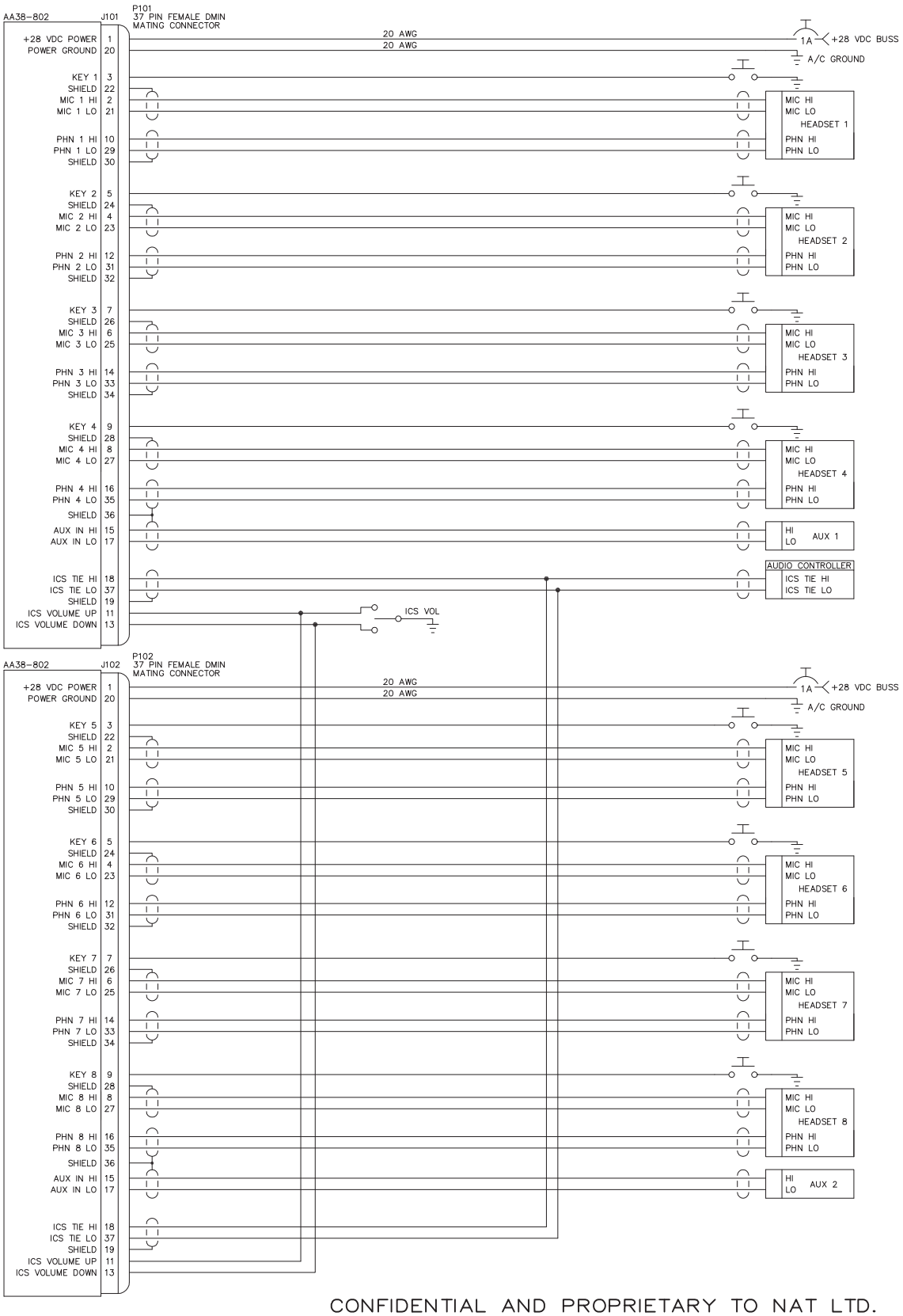




NOTES:
1. DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH ASME Y14.5M–1994

CONFIDENTIAL AND PROPRIETARY TO NAT LTD.

DIMENSIONS ARE INCHES [mm]	DESIGNED	SRK	nat NORTHERN AIRBORNE TECHNOLOGY LTD.				
THIRD ANGLE PROJECTION	DRAWN	TAT					
	DATE	JUN 12/02	TITLE	FOUR PLACE INTERCOM WITH TRANSMIT			
MASS: 1.60 lbs [0.7 Kg] MAX	CHECKED	NAT 205 / NAT 255					
MATERIAL: –	APPROVED	NAT 114	SIZE A	CAGE CODE 3AB01	PART NO. AA38–703	REV. 1.00	SHEET 1/1
FINISH: CHROMATE CONVERSION	FILE 922-0100.DWG	DWG TYPE MECH. INSTALLATION	DWG NO. AA38703-922-0				



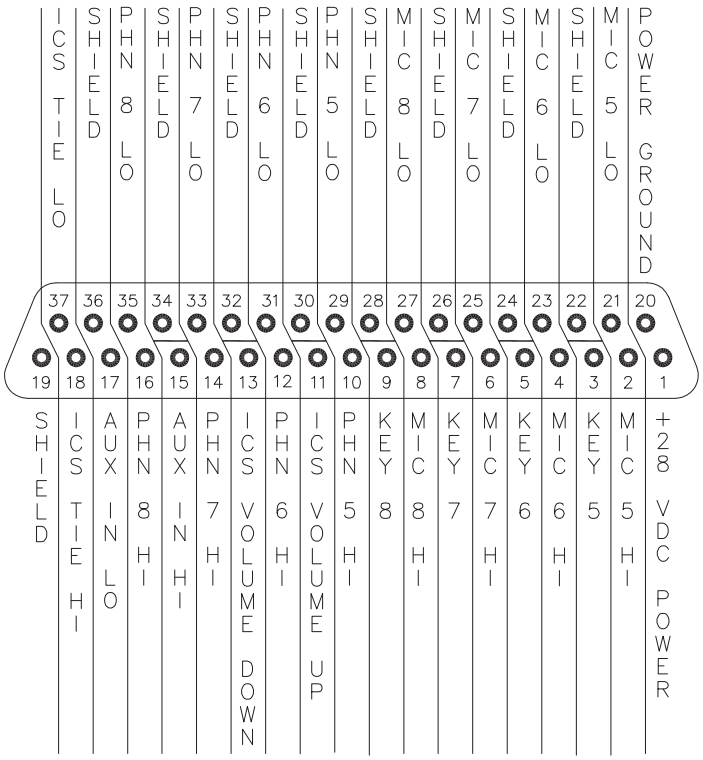
NOTES:

1. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL UNSHIELDED WIRE SHALL BE SELECTED IN ACCORDANCE WITH AC43.13-1B CHANGE 1, PARAGRAPHS 11-76 THROUGH 11-78. WIRE TYPES SHOULD BE TO MIL-W-22759 AS SPECIFIED IN AC43.13-1B CHANGE 1, PARAGRAPHS 11-85, 11-86 AND LISTED IN TABLE 11-11. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL-C-27500.

DESIGNED	SI	NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	TAT					
DATE	JUN 18/07	TITLE	HI-Z EIGHT PLACE INTERCOM			
CHECKED	NAT 255					
APPROVED	NAT 129	SIZE A	CAGE CODE 3AB01	PART NO. AA38-802	REV. 1.00	SHEET 1/1
FILE	403-0.DWG	DWG. TYPE	INTERCONNECT	DWG. NO.	AA38\802\403-0	

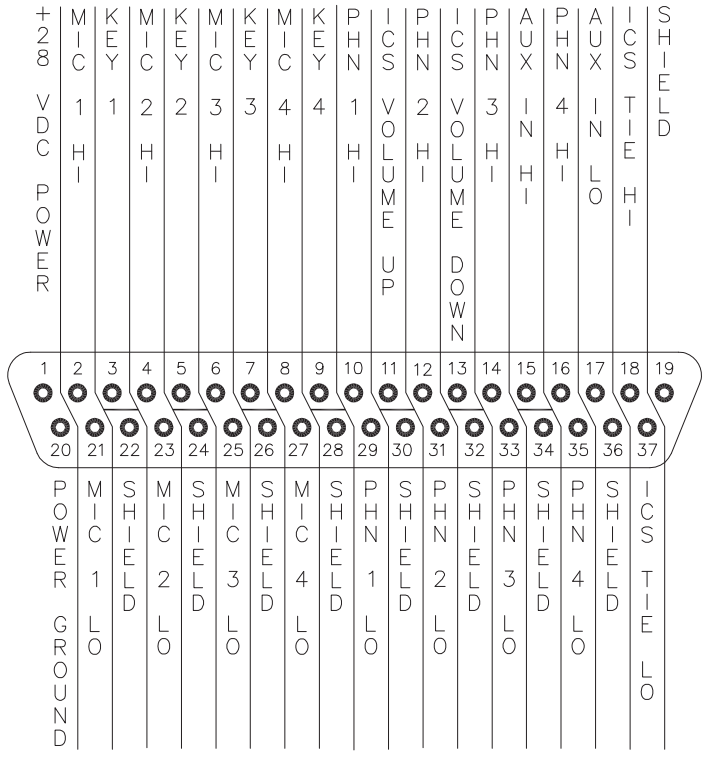
P102

37 PIN FEMALE DMIN
MATING CONNECTOR



P101

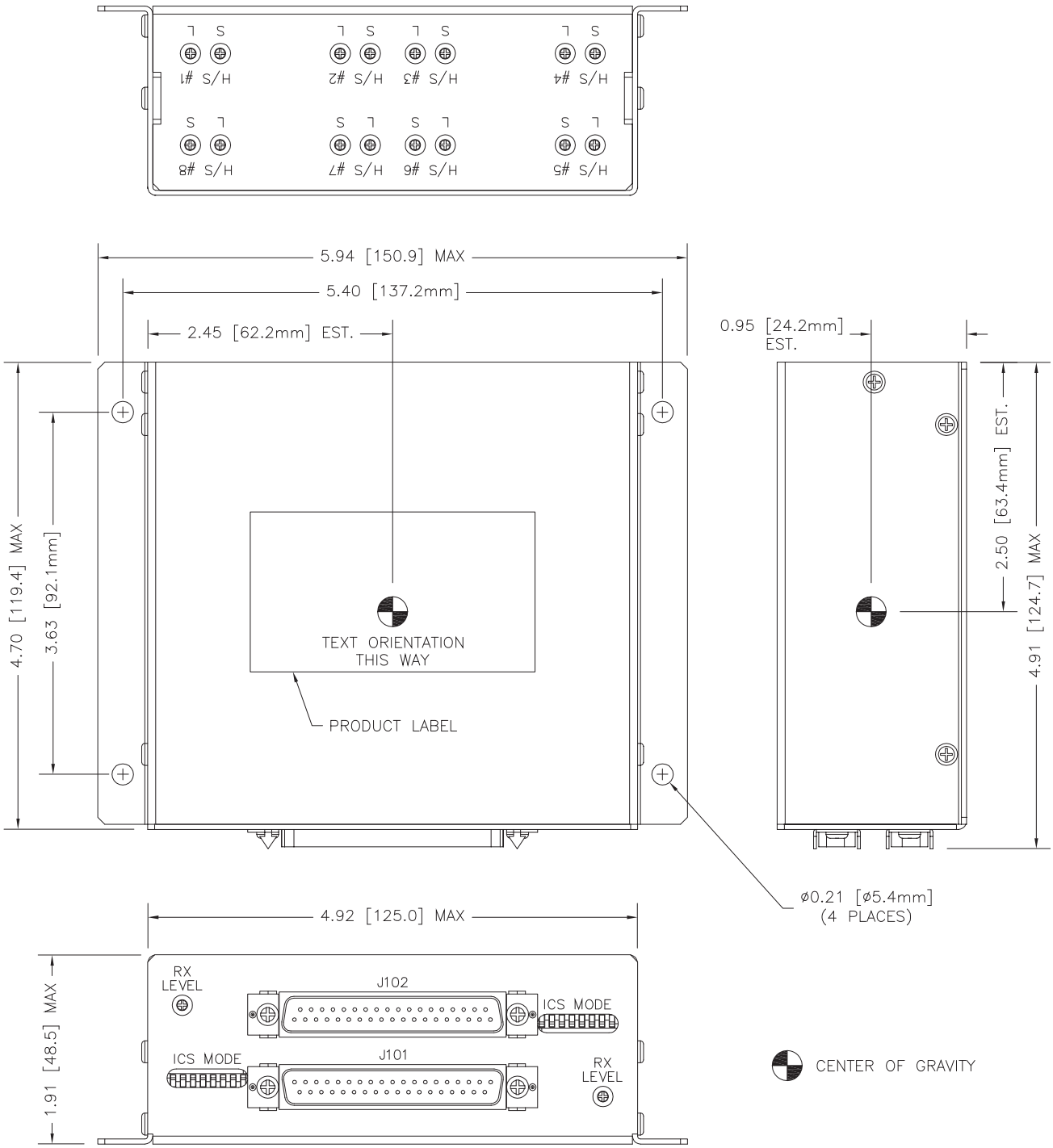
37 PIN FEMALE DMIN
MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

DESIGNED	SI	nat NORTHERN AIRBORNE TECHNOLOGY LTD.				
DRAWN	TAT					
DATE	JUN 18/07	TITLE HI–Z EIGHT PLACE INTERCOM				
CHECKED	NAT 255					
APPROVED	NAT 129	SIZE A	CAGE CODE 3AB01	PART NO. AA38–802	REV. 1.00	SHEET 1/1
FILE 405-0.DWG		DWG. TYPE CONNECTOR MAP		DWG. NO. AA38\802\405-0		

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.10	DOCCR02238 – UPDATED TO REFLECT PARTS CHG'S.	JAN 17/08	MWS



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

CONFIDENTIAL AND PROPRIETARY TO NAT LTD.

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: SI DRAWN: TAT DATE: AUG 30/07 CHECKED: NAT 255 APPROVED: NAT 131	NORTHERN AIRBORNE TECHNOLOGY LTD. TITLE: HI–Z EIGHT PLACE INTERCOM
MASS: 1.44 lbs. (0.65 Kg) MAX MATERIAL: FINISH:		FILE: 922-0.DWG	SIZE: A CAGE CODE: 3AB01 PART NO.: AA38–802 REV.: 1.10 SHEET: 1/1 DWG. TYPE: MECH. INSTALLATION DWG. NO.: AA38\802\922-0

Section 3.0 Operation

3.1 Introduction

Information in this section consists of functional and operational procedures for the AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loop.

3.2 General Information

The AA38-5xx, -6xx, -7xx and -8xx Series Local ICS Loops provide intercom functions for four or eight users with operation in HOT MIC or VOX mode. A switch-selectable NAT or Andrea tie line (except for 7xx and 8xx which is NAT Super tie line) allows connection to multi-unit systems and an Auxiliary (AUX) input allows radio or music to be connected to the AA38.

During installation, or if the unit has been exchanged, it may be a requirement to change internal adjustments. This should be done only by qualified personnel.

3.3 Controls and Indicators

3.3.1 AA38-5xx and AA38-6xx

The AA38-5xx and -6xx Series Local ICS Loops have no operator accessible controls.

3.3.2 Master ICS Volume Control (AA38-7xx and AA38-8xx)

The ICS volume is controlled by a remote-mounted, spring-loaded, centre-off toggle switch (installer supplied). The increase/decrease is made in 32 discrete steps, by activating and releasing the switch control or by holding the switch control in the desired direction. When the switch is held in either direction, the change will be slow initially, but after one second the control enters ‘fast’ mode. The ICS volume will stop at its maximum or minimum value without ‘wrapping around’. After a volume adjustment is made, the value is stored in non-volatile memory.

End of Section 3.0