



# PBS600

## Digital Passenger Briefing System

### Installation Manual

Part Number: PBS600-1-(XX)

Manual Number: PBS600-3

Approvals:

Engineering \_\_\_\_\_ Date \_\_\_\_\_

Program Manager \_\_\_\_\_ Date \_\_\_\_\_

Quality Assurance \_\_\_\_\_ Date \_\_\_\_\_

PBS600-3 Initial Issue: Aug 1/99

**23-32-00**

# PBS600


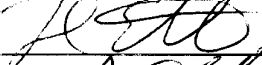
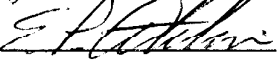
## Digital Passenger Briefing System

### Installation Manual

Part Number: PBS600-1-(XX)

Manual Number: PBS600-3

Approvals:

Engineering		Date	3-8-01
Program Manager		Date	3/8/01
Quality Assurance		Date	3/8/01

PBS600-3 Initial Issue: Aug 1/99

**23-32-00**



## Installation Manual

PBS600-1-(XX)

THIS PAGE IS INTENTIONALLY LEFT BLANK

**23-32-00**



## Installation Manual

**PBS600-1-(XX)**

THIS PAGE IS INTENTIONALLY LEFT BLANK

**23-32-00**



## Installation Manual

**PBS600-1-(XX)**

THIS PAGE IS INTENTIONALLY LEFT BLANK

**23-32-00**

**Installation Manual****PBS600-1-(XX)**LIST OF EFFECTIVE PAGES

<u>SUBJECT</u>	<u>PAGE</u>	<u>DATE</u>
Title Page	T-1	Mar 08/01
	T-2	Mar 08/01
Record of Revisions	RR-1	Mar 08/01
	RR-2	Mar 08/01
Record of Temporary Revisions	TR-1	Aug 31/00
	TR-2	Aug 31/00
Service Bulletin List	SB-1	Aug 31/00
	SB-2	Aug 31/00
List of Effective Pages	LEP-1	Mar 08/01
	LEP-2	Mar 08/01
Table of Contents	TOC-1	Aug 31/00
	TOC-2	Aug 31/00
	TOC-3	Aug 31/00
	TOC-4	Aug 31/00
Introduction	INTRO-1	Aug 31/00
	INTRO-2	Aug 31/00
	INTRO-3	Aug 31/00
	INTRO-4	Aug 31/00
Installation	500	Aug 31/00
	501	Aug 31/00
	502	Aug 31/00
	503	Aug 31/00
	504	Aug 31/00
Checkout	505	Aug 31/00
	506	Aug 31/00
	507	Aug 31/00
Limited Warranty	508	Aug 31/00
Notes	509	Aug 31/00
	510	Aug 31/00
	511	Aug 31/00
Appendix	512	Mar 08/01

**23-32-00**

## Installation Manual

**PBS600-1-(XX)**

THIS PAGE IS INTENTIONALLY LEFT BLANK

**23-32-00**



# Installation Manual

## PBS600-1-(XX)

### TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
INTRODUCTION.....	INTRO-1
1. SCOPE.....	INTRO-1
2. PRODUCT SUPPORT SERVICES .....	INTRO-1
3. USAGE GUIDE .....	INTRO-2
4. ADVISORIES .....	INTRO-3
5. REVISION SERVICE .....	INTRO-4
6. ABBREVIATIONS.....	INTRO-4
INSTALLATION.....	500
1. APPLICABLE DOCUMENTS .....	500
2. CONTENTS OF PBS600 PACKAGE.....	500
3. ENVIRONMENTAL .....	501
4. MECHANICAL INSTALLATION .....	501
5. ELECTRICAL INSTALLATION .....	501
CHECKOUT .....	505
1. PRIOR TO MATING CONNECTORS .....	505
2. OPERATIONAL CHECKOUT.....	505
3. IN CASE OF DIFFICULTY .....	506
LIMITED WARRANTY .....	508
NOTES.....	509
1. INSTRUCTIONS FOR ADJUSTING THE LCD CONTRAST LEVEL .....	509
2. INSTRUCTIONS FOR UPGRADING MEMORY CARD(S).....	510
3. INSTALLATION OF FERRITE FOR ENHANCED EMI PROTECTION.....	511
APPENDIX A.....	512

**Installation Manual**

**PBS600-1-(XX)**

LIST OF FIGURES

FIGURE	TITLE	PAGE
Figure 1.	Illustration of PBS600 and Connector Locations.....	502
Figure 2.	Illustration of PBS600 Control Face.....	506
Figure 3.	LCD Contrast Adjust .....	509

## Installation Manual

### PBS600-1-(XX)

#### LIST OF TABLES

<u>TABLE</u>	<u>TITLE</u>	<u>PAGE</u>
Table 1.	Documents Referenced in This Manual .....	500
Table 2.	Contents of PBS600 Installation Package .....	500
Table 3.	PBS600 Physical Dimensions .....	501
Table 4.	PBS600 Voltage and Current Requirements .....	503
Table 5.	Pre-Amp Audio Output Voltage .....	503
Table 6.	PBS600 Pinouts for DB-25 Connector (J1) .....	504

## Installation Manual

**PBS600-1-(XX)**

THIS PAGE IS INTENTIONALLY LEFT BLANK

## Installation Manual

### PBS600-1-(XX)

### INTRODUCTION

Flight crews are required by the FAR's to provide safety briefings to their passengers regarding such items as operation of safety belts, use of supplemental oxygen, location and operation of emergency exits, proper positioning of seat backs and tray tables, use of flotation devices, etc.

Unfortunately, pre-takeoff and pre-landing briefings are usually given when the flight crews' full attention could be better used performing other duties. Thus, the required passenger briefing can become a distraction.

Automatic passenger briefing systems can help reduce the workload by playing pre-recorded messages. Most passenger briefing systems use cassette or endless loop tapes, which are subject to wear and breakage. Heads Up Technologies' systems are digital. A real human voice is digitally recorded and stored for subsequent access by a computer. This technology greatly reduces the number of moving parts, eliminates tape heads that require cleaning, and eliminates tapes that break and stretch.

#### 1. Scope

- A. This Installation Manual describes the installation and the initial testing and checkout of the PBS600 Passenger Briefing System, hereinafter referred to as the PBS600.
- B. The document is for use by avionics equipment and system installers and users. It may be used to support initial Type or Supplemental Type Certification Programs for installation approvals. This document addresses the Environmental, Mechanical, Electrical, Initial Power Up, and Warranty issues.

#### 2. Product Support Services

Technical Support, Component Maintenance Manuals and Installation Manuals for the PBS600 are available from Heads Up Technologies.

Heads Up Technologies, Inc.  
2033 Chennault, Suite 100  
Carrollton, TX 75006-5097  
Telephone: 972-980-4890  
FAX: 972-980-4843  
<http://www.service@heads-up.com>

**23-32-00**

## Installation Manual

### PBS600-1-(XX)

### 3. Usage Guide

This Installation Manual is written to Air Transportation Association (ATA) Specification 100 requirements. Refer to the Table of Contents (TOC) to find the necessary installation features, instruction, or other data.

A. Descriptions of the Installation Manual Section content is outlined below:

- (1) **INTRODUCTION** A general introduction to the PBS600. Subjects covered are: Scope, Product Support Services, Usage Guide, Advisories, Revision Service, and Abbreviations.
- (2) **INSTALLATION** This Section provides a review of installation documentation, a description of the installation package, the equipment environmental standards, and the mechanical/electrical installation instructions.
- (3) **CHECKOUT** The checkout section provides guidance for performing testing and detailed operational checkout for the PBS600. It also includes information on problem resolution and the Heads Up Technologies Limited Warranty.
- (4) **NOTES** A page provided for recording manual holder's records, application notes, and system related information.
- (5) **APPENDIX A** This section provides copies of installation and testing related engineering drawings.

B. WARNINGS - CAUTIONS- NOTES

- (1) **WARNINGS** are provided before potentially dangerous procedures, materials, methods, and processes, which must be followed precisely to avoid injury.
- (2) **CAUTIONS** are provided before procedures, materials, methods, and processes, which must be followed precisely to avoid equipment damage.
- (3) **NOTES** are provided after applicable procedural steps, when necessary, to highlight or clarify information.

C. DEFINITIONS

The following definitions are applicable to the programming of the PBS600 system:

- (1) **MESSAGE** A collection of sentences and paragraphs forming a single announcement.
- (2) **MESSAGE GROUP** A collection of related messages.
- (3) **SCRIPT** A collection of related message groups.

**23-32-00**

## Installation Manual

### PBS600-1-(XX)

#### 4. Advisories

**CAUTION:** TURN OFF POWER BEFORE DISCONNECTING ANY COMPONENT FROM INTERCONNECTING WIRING. DISCONNECTING THE COMPONENT WITHOUT TURNING POWER OFF MAY CAUSE VOLTAGE TRANSIENTS THAT CAN DAMAGE THE COMPONENT.



**CAUTION:** ESD DEVICES ARE SUBJECT TO DAMAGE BY EXCESSIVE LEVELS OF VOLTAGE AND/OR CURRENT, JUST AS ARE MORE CONVENTIONAL SEMICONDUCTOR DEVICES. HOWEVER, THE PRECAUTIONS NORMALLY USED TO PROTECT SEMICONDUCTORS ARE NOT SUFFICIENT FOR THE PROTECTION OF ESD DEVICES BECAUSE OF THEIR VERY HIGH ELECTRICAL RESISTANCE. THE LOW-ENERGY SOURCE THAT MOST COMMONLY DESTROYS ESD DEVICES IS THE HUMAN BODY WHICH, IN CONJUNCTION WITH NONCONDUCTIVE GARMENTS AND FLOOR COVERINGS, GENERATES AND RETAINS STATIC ELECTRICITY. IN ORDER TO ADEQUATELY PROTECT ESD DEVICES, THE DEVICE AND EVERYTHING THAT CONTACTS IT MUST BE BROUGHT TO GROUND POTENTIAL BY PROVIDING A CONDUCTIVE SURFACE AND DISCHARGE PATHS. THE FOLLOWING PRECAUTIONS MUST BE FOLLOWED:

- A. DE-ENERGIZE OR DISCONNECT ALL POWER AND SIGNAL SOURCES AND LOADS.
- B. PLACE THE COMPONENT ON GROUNDED CONDUCTIVE SURFACE.
- C. GROUND THE INSTALLATION OPERATOR THROUGH A CONDUCTIVE WRIST STRAP OR OTHER DEVICE USING A 470-KILOHM OR 1-MEGOHM SERIES RESISTOR TO PROTECT THE OPERATOR.
- D. DO NOT HANDLE ESD DEVICES UNNECESSARILY OR REMOVE THEM FROM THEIR PACKAGES UNTIL ACTUALLY USED OR TESTED.
- E. TO PREVENT DAMAGE BY TRANSIENT VOLTAGES, ONLY SOLDERING IRONS HAVING ZERO VOLTAGE AT THE TIP SHOULD BE USED.

#### 5. Revision Service

- A. Revised pages will be issued when necessary to correct errors or to add new configurations.

**23-32-00**

## Installation Manual

### PBS600-1-(XX)

- B. The revised part of the page will be identified by a change bar or capital R in the left margin adjacent to the changed area.

## 6. Abbreviations

- A. When applicable, the following abbreviations, acronyms, and symbols are used. Additional abbreviations, acronyms, and symbols may be defined within the manual contents. Standard electronic terms and circuit signal names are not listed.

ESD	Electrostatic Discharge
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
ATA	Air Transportation Association
EAR	Export Administration Regulation
ITAR	International Traffic in Arms Regulation
LCD	Liquid Crystal Display
PA	Public Address
PCMCIA	Personal Computer Memory Card International Association
RTCA	Radio Technical Commission for Aeronautics
TOC	Table of Contents

## Installation Manual

### PBS600-1-(XX)

### INSTALLATION

#### 1. Applicable Documents

Table 1. Provides a listing of the documents referenced in the PBS600 installation manual.

DOCUMENT	TITLE
RTCA DO-160D	Environmental Conditions and Test Procedures for Airborne Equipment
PBS600-4	PBS600 User Manual
PBS600-5	PBS600 Outline Dimension Drawing
PBS600-6	PBS600 Generic Aircraft Interface Diagram
PBS600-9	PBS600 Mechanical Interface Drawing
PBS600-34	PBS600 Environmental Qualification Test Report

Table 1. Documents Referenced in This Manual

#### 2. Contents of PBS600 Installation Package

Before proceeding, please verify that the items listed in Table 2. are present in the PBS600 Installation Package.

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	PBS600-1-(XX)	Passenger Briefing System
2	1	PBS600-7	Installation Package includes the following parts: (4) 10-32 Thd 0.50" Socket Head Screw (4) 10-32 Thd 1.00" Socket Head Screw (1) Female DB-25 Connector (2) DB-25 Hardware (1) DB-25 Strain Relief (2) Retaining Support Rails (1) Support Ring (1) Ferrite, HUT P/N IND030 (Snap-on) (2) Tie-wraps (1) Installation Manual (PBS600-3) (1) User Manual (PBS600-4) (1) Placard for Circuit Breaker (1) Component Maintenance Manual (PBS600-8)

Note: Installation Kits may be pre-shipped upon customer request.

Table 2. Contents of PBS600 Installation Package

## 23-32-00

## Installation Manual

### PBS600-1-(XX)

#### 3. Environmental

The PBS600 has been designed and tested according to RTCA DO-160D. Heads Up Technologies Document PBS600-34, which is available upon request, provides a listing of all environmental tests performed, including temperature, vibration, electrical, and EMI.

#### 4. Mechanical Installation

##### A. Selection of Mounting Location

The PBS600 was designed for installation into existing aircraft bulkheads or other convenient mounting surface locations. A location should be chosen which allows easy access for flight attendants. The location should provide for ease of use for flight attendants.

NOTE: Before permanently installing the unit, power it up and verify the LCD contrast level is acceptable. If adjustment is required, see Note 1 on page 509 for instructions.

##### B. Physical Dimensions

The physical dimensions of the PBS600 are listed in Table 3. The PBS600 ICD (Outline Dimensions) drawing, PBS600-5, is supplied in APPENDIX A.

##### C. Mounting Hole Guide

The PBS600 Mechanical Interface drawing, PBS600-9, includes the aircraft bulkhead cutout dimensions which are used as a guide for cutting the bulkhead mounting holes. A copy of this drawing is provided in APPENDIX A.

<b>DIMENSION</b>	<b>PBS600-1-(XX)</b>
Height	5.38" (13.7 cm)
Width	7.00" (17.8 cm)
Depth*	3.38" (8.6 cm)
Weight	2.8 lbs. (1.22 kg)

\* Without connectors. Add 2.5" (6.4 cm) for connectors and wire routing

Table 3. PBS600 Physical Dimensions

#### 5. Electrical Installation

##### A. General

The following guidelines should be used when installing the PBS600 system electrical wiring:

- (1) All wiring to be installed in accordance with FAAAC-4313-1-A, Chapter 11, Section 2.
- (2) All wiring to be MIL-W-22759-16-22-9 unless otherwise specified.

# 23-32-00

## Installation Manual

### PBS600-1-(XX)

(3) The PBS600-6 Generic PBS600 Aircraft Interface Diagram, PBS00-6, provides guidance for the electrical installation.

#### B. Electrical Connections

The PBS600 is electrically connected to the following:

- (1) + 28 VDC power and aircraft ground
- (2) Aircraft PA system
- (3) Cockpit lighting (optional)
- (4) Pilot/Co-Pilot microphone key (optional)
- (5) Discrete trigger lines, e.g. Fasten Seat Belt Sign (optional)
- (6) Relay driver to mute stereos, etc. (optional)
- (7) Cockpit status indicator (optional)

C. See Figure 1. for the location of the PBS600 connector locations. The Generic Aircraft Interface Diagram, PBS600-6 is provided in APPENDIX A.

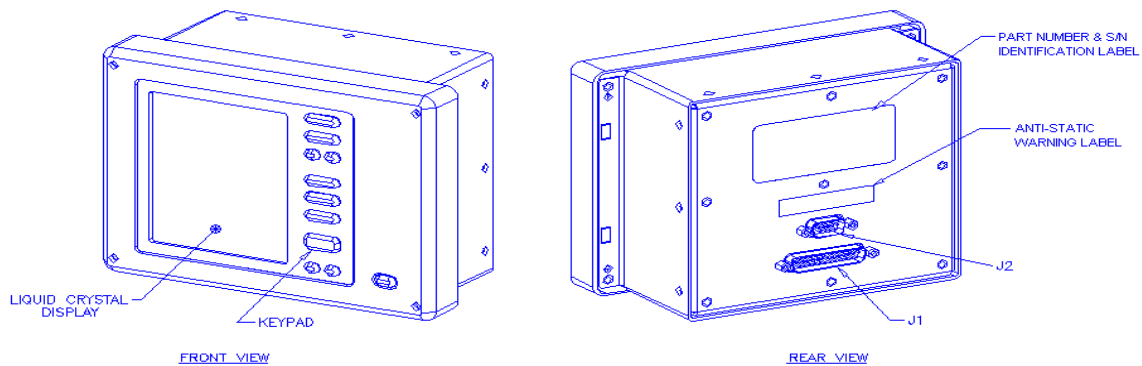


Figure 1. Illustration of PBS600 and Connector Locations

#### D. Power Requirements

Table 4. summarizes the power requirements of the PBS600 system.

PARAMETER	VALUE
Nominal Voltage	+28 VDC

**23-32-00**

## Installation Manual

### PBS600-1-(XX)

Minimum Voltage	+18 VDC
Maximum Voltage	+32 VDC
Nominal Current	.5 A @ 28 VDC
Minimum Current	.5 A @ 28 VDC
Maximum Current	1.5 A @ 28 VDC

Table 4. PBS600 Voltage and Current Requirements

**E. Fault Protection**

A 2.0 Amp circuit breaker should be installed in any available circuit panel location and wired to a 24-28 VDC bus.

Note: Failure to use the specified circuit breaker invalidates the warranty.

**F. Connection to PA Amplifier System**

The audio output lines of the PBS600 should be connected to the aircraft's existing PA audio system. An internal Triad SP-50 transformer or equivalent will provide DC isolation between the PBS600 and the aircraft PA system. The rated output voltage into a 600-ohm load is provided in Table 5. The Generic Aircraft Interface Diagram, PBS600-6, is provided in APPENDIX A

PARAMETER	VALUE
Nominal Voltage	0.7 V RMS*

\* At maximum volume setting

Table 5. Pre-Amp Audio Output Voltage

**G. Connection Of Backlight Control**

The LCD and Keypad are illuminated with long-life LED's and in the standard operational mode, they are illuminated at all times. Optionally, the level of the input from the aircraft backlighting may also be used to control the PBS600 backlighting. The Generic Aircraft Interface Diagram, PBS600-6, is provided in APPENDIX A.

**H. Summary of Electrical Connections**

The Generic Aircraft Interface Diagram, PBS600-6, is provided in APPENDIX A. Refer to Table 6. for the list of the male DB-25 connector pinouts.

## Installation Manual

### PBS600-1-(XX)

PIN	FUNCTION
1	Remote Start Input
2	Trigger Input # 4
3	Trigger Input # 2
4	Cabin Page Key Out
5	Keyline Input # 4
6	Keyline Input # 2
7	BGM Audio Low
8	Reserved
9	Reserved for External Diagnostics Connection
10	Primary Audio Output (Low)
11	"Announcement" Cockpit Indicator Out
12	Panel Lighting (Low) – Optional
13	28 VDC Power
14	Trigger Input # 5
15	Trigger Input # 3
16	Trigger Input # 1
17	Keyline Input # 5
18	Keyline Input # 3
19	Keyline Input # 1
20	BGM Audio High
21	Reserved for External Diagnostics Connection
22	Reserved for External Diagnostics Connection
23	Primary Audio Output (High)
24	Ext. Panel Lighting (High) – Optional
25	DC Power Return

Table 6. PBS600 Pinouts for DB-25 Connector (J1)

## Installation Manual

### PBS600-1-(XX)

#### CHECKOUT

#### 1. Prior to Mating Connectors

After wiring and installation is complete, verify that power is only on pin 13 and airframe ground is on pin 25 of connector J1 (bottom connector). Failure to do so could cause serious internal damage and void the Heads Up Technologies Warranty.

#### 2. Operational Checkout

To verify proper operation of the PBS600, perform the following steps:

(See Figure 2. for location of the control face display and controls).

- (1) Turn on aircraft PA system.
- (2) Apply power to the aircraft and the PBS600.
- (3) Switch the unit power on by pressing and releasing the PWR button. The unit will go through a “boot-up” process during which the current software version and script name will temporarily be displayed on the LCD display after which the main “Message Group” menu will appear on the display. The unit will also automatically begin performing a “self-test”. If is not necessary to allow the “self-test” to complete. Press the SELECT button to interrupt the “self-test” at any time.

**NOTE: DO NOT** press any other buttons during the “boot-up” process. Wait until the “Message Group” menu appears on the screen.

- (4) Scroll through the “Message Group” menu by pressing and releasing the UP or DOWN ARROW buttons as required. The selection arrow on the screen will scroll through the Message Groups as the buttons are pressed.
- (5) Press the SELECT button and the Message Group chosen will be selected and a darkened arrow will appear next to the activated selection.
- (6) Scroll through the language list by first pressing and releasing the LANGUAGE button and then the UP or DOWN ARROW SELECT buttons. A selection arrow will scroll through the language list.
- (7) Press the SELECT button and the language selected will appear in the middle of the display below the language list.
- (8) For multi-language scripts, repeat Steps (6) and (7). Exit LANGUAGE menu by pressing the MESSAGE key. NOTE: A maximum of four languages can be selected (activated) at one time.
- (9) To play the selected message in the selected language, press and release the Play/Pause button.

**23-32-00**

## Installation Manual

### PBS600-1-(XX)

- (10) While the message is playing, verify that the audio is heard from the aircraft PA system.
- (11) Verify that the volume is adjustable by pressing the UP or DOWN VOLUME ARROW buttons while the message is playing.
- (12) While playing a message, verify that the playing pauses when the Pilot/Co-Pilot microphone button is activated.
- (13) After the interruption, verify the unit continues to play the interrupted message.
- (14) If an automatic “trigger” option is installed, verify that the appropriate message is played when the trigger signal is activated. For example, when a Fasten Seat Belt light is illuminated by the Pilot/ or Co-Pilot, the associated safety message should be played.
- (15) This completes the basic operational checkout of the PBS600. Refer to the User Manual PBS600-4 for a complete functional check of all unit features.
- (16) When checkout is completed, power down the unit by pressing and releasing the PWR button.

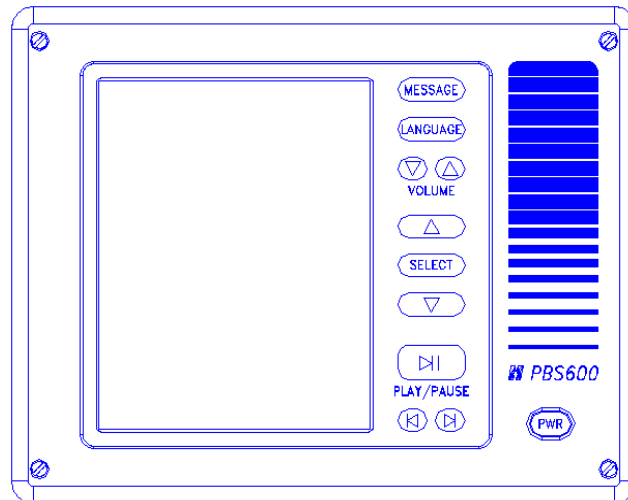


Figure 2. Illustration of PBS600 Control Face

### 3. In Case of Difficulty

**23-32-00**

## Installation Manual

### PBS600-1-(XX)

The installation technician can resolve many installation problems by following these procedural steps:

- (1) Turn the PWR button off.
- (2) Remove power to the unit from the aircraft power bus.
- (3) Remove and re-verify pin connections on cable connector.
- (4) Re-insert and firmly seat interface connector.
- (5) Apply power from aircraft bus.
- (6) Repeat steps (1) through (15) in Section 2. above.

If the problem is related to radio interference on any of the COM systems, please review Note 3 on page 511.

If the problem is not solved by the above method, call the Heads Up Technologies technical support department at:

Heads Up Technologies  
2033 Chennault, Suite 100  
Carrollton, TX 75006-5097  
Telephone: 972-980-4890  
Fax: 972-980-4843  
<http://www.service@heads-up.com>

## Installation Manual

### PBS600-1-(XX)

#### 1. Limited Warranty

##### HEADS UP TECHNOLOGIES

##### LIMITED WARRANTY

HEADS UP TECHNOLOGIES, Inc. hereby warrants that it will repair or replace, at its option, any part of the HEADS UP product with which this warranty is enclosed which proves defective by reason of improper workmanship and/or material, without charge for parts or labor, for a period of one (1) year. This warranty period commences on the date of original purchase by the buyer other than for purposes of resale, and this warranty applies only if such original purchase by the buyer was made in the United States. To obtain service under this warranty, you must return your HEADS UP product, packaged in the original shipping container or an equivalent, to the nearest authorized service center or the dealer from whom the

product was purchased. Any postage, insurance, shipping, and installation costs incurred in presenting your HEADS UP product for service and costs associated with the re-installation including but not limited to shipping, insurance, and installation costs are your responsibility.

The original bill of sale or other satisfactory proof of the date of the original purchase of your HEADS UP product must be made available to obtain service under this warranty. This warranty applies only if your HEADS UP product fails to function under normal use and within the manufacturer's specifications. This warranty does not apply if the HEADS UP label or logo, or the rating or serial number, has been removed from your HEADS UP product, or if, in the sole opinion of HEADS UP, your HEADS UP product has been damaged by accident, misuse, neglect, or improper packing, shipping modification or servicing, by other than a HEADS UP authorized service center.

This Heads Up product contains static-sensitive electronic circuitry. Do not open case! This warranty will become void if you attempt to modify or adjust any internal components or the contents of any EPROM, or if you add or insert another ROM or part of any other device. Failure to adhere to installation instructions voids this warranty.

The duration of any implied warranty of merchantability, fitness for a particular purpose, or otherwise, on your Heads Up product shall be limited to the duration of the expressed warranty set forth above. In no event shall Heads Up Technologies, Inc. or its affiliates be liable for any loss, inconvenience or damage whether direct, incidental, consequential or otherwise, or whether caused by negligence or other fault resulting from breach of any express or implied warranty of merchantability, fitness for a particular purpose, or otherwise, with respect to your Heads Up product, except as specified herein. Some states do not allow limitations on how long an implied warranty lasts and some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

**23-32-00**

## Installation Manual

### PBS600-1-(XX)

#### NOTES

#### 1. Instructions for Adjusting the LCD Contrast Level

**NOTE:** The LCD contrast level is preset at the factory to provide the best results for a typical mounting location and orientation.

To adjust the LCD contrast level, perform the following steps:

- (1) Before permanently installing the unit, power it up and observe the LCD in an orientation and/or location close to where it will actually be mounted.
- (2) If the contrast needs to be adjusted, there is an access hole located on the bottom of the unit as shown in the figure below. (It may be necessary to remove a sticker covering the hole.)
- (3) Using a small flat screwdriver, locate and turn the adjustment pot as required until the LCD contrast level is acceptable.
- (4) Once the adjustment is complete, installation of the unit can be completed.

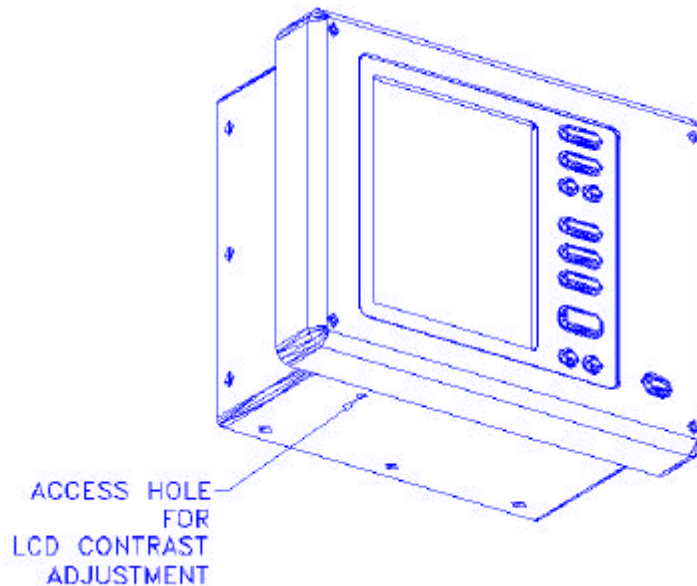


Figure 3. LCD Contrast Adjust

## Installation Manual

### PBS600-1-(XX)

#### 2. Instructions for Upgrading Memory Card(s)

Following is the procedure for physically changing the memory card(s) inside the PBS600 housing assembly:

**NOTE:** Performing this task without prior approval from Heads Up Technologies will void the warranty on the unit.

- (1) Take the PBS600 unit to an ESD approved work area.
- (2) Loosen the four (4) captive screws in the corners of the front bezel and remove the bezel.
- (3) Remove the four (4) self-tapping screws on the sides of the LCD mounting plate and carefully lift the LCD plate assembly upwards. Carefully unplug the keypad ribbon cable from the PBS600-42-1 PWB assembly. Then, unplug the ribbon cable from the back of the LCD. Next, remove the yellow and orange wires connected to the PBS600-42-1 assembly by unlocking the connectors and unplugging the wires. Remove the LCD assembly and temporarily place in an ESD safe area.
- (4) Remove the twelve (12) screws around the back of the housing assembly and slide the stacked PWB assembly out of the housing.
- (5) Remove the standoff that holds the existing memory card in place and then remove the card.
- (6) If the upgrade is only one (1) card, place it in the top slot. If there are two (2) cards, place each card in its respective slot (card #1 goes in the top slot). Replace the standoff used to hold the card(s) in place. **NOTE:** IF TWO (2) CARDS ARE USED, VERIFY CARD SIZES AND MANUFACTURERS ARE IDENTICAL. CONTACT HEADS UP TECHNOLOGIES IF CARDS ARE DIFFERENT.
- (7) Slide the stacked PWB assembly back into the housing (make sure the assembly is oriented with potentiometer access hole at the bottom of the unit). Re-install the twelve (12) screws to secure the back cover to the housing.
- (8) On the front side of the unit, plug the ribbon cable into the back of the LCD assembly, plug the yellow wires into the "LED1" connector, and plug the orange wires into the "CON5" connector.
- (9) Carefully, align and plug the keypad ribbon cable into J3. Make sure this cable is fully connected. Bend the keypad cable inward (away from the reprogramming card slot) and gently install the LCD assembly onto the housing. Re-install the four (4) self-tapping screws to secure the LCD assembly.
- (10) If necessary, the new memory card(s) can now be reprogrammed. Instructions for reprogramming can be found in the User Manual, HUT P/N PBS600-4. Otherwise, skip this step.
- (11) Replace the front bezel and tighten the four (4) screws in the corners to secure the assembly.

If technical assistance is required, please contact Heads Up Technologies engineering department.

**23-32-00**

## Installation Manual

### PBS600-1-(XX)

#### 3. Installation of Ferrite for Enhanced EMI Protection

While the PBS600 is compliant with RF emission levels as specified in RTCA DO-160D, some additional reductions were required during the installation of the briefing system on some aircraft. Specifically, the CRJ200, built by Bombardier, had some interference problems on a COM radio at a frequency of 118.80 MHZ.

The problem was resolved by adding a “snap-on” ferrite to the I/O cable attached to the 25-pin connector (J1) on the back of the unit. The ferrite is provided in the installation kit (Heads Up Technologies PN PBS600-7).

The ferrite is to be attached to the cable as close as possible (within 0.75 inches maximum) to the mating connectors at the back of the unit. Tie wraps (also provided in the installation kit) may be used to secure the ferrite to the cable to keep it from sliding.

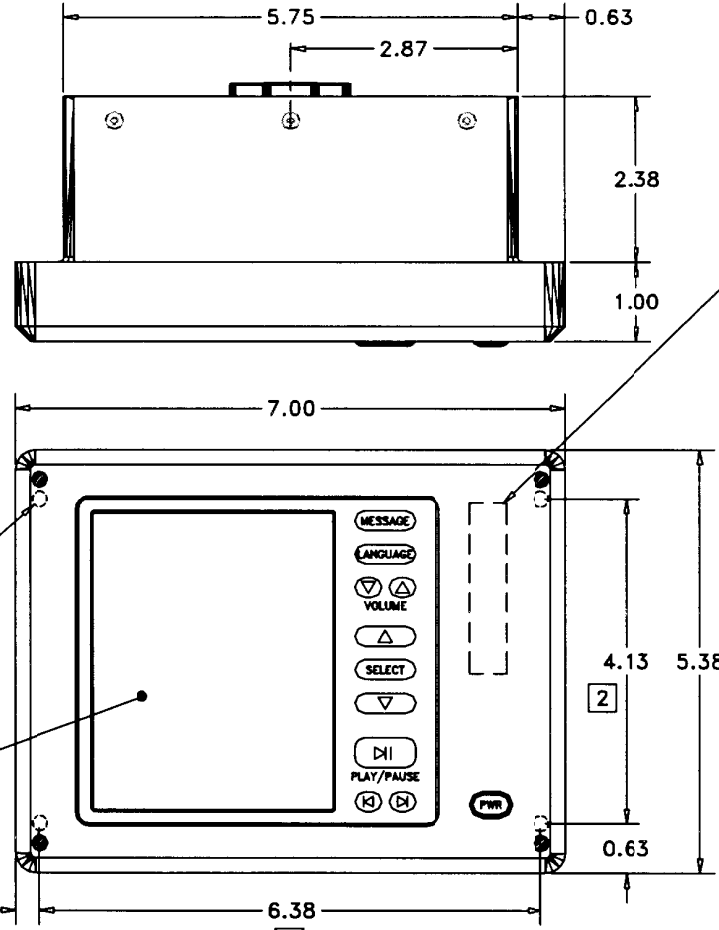
NOTE: Use of the ferrite is optional. The PBS600 has been installed on other aircraft without the ferrite and no interference problems existed with the radios. However, if you do not install the ferrite, it is recommended that the briefing system be tested with all of the COM radios at all frequencies to verify no problems exist.

If technical assistance is required, please contact Heads Up Technologies engineering department

## APPENDIX A

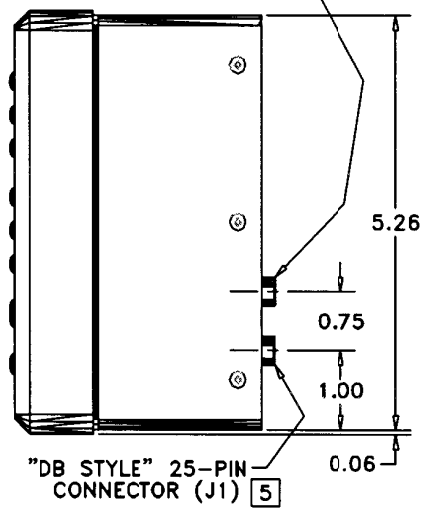
- NOTES: UNLESS OTHERWISE SPECIFIED:
- 1 PCMCIA PORT WILL BE ACCESSIBLE BY REMOVING THE FRONT BEZEL FROM THE UNIT.
  - 2 UNIT MOUNTING POINTS ARE ACCESSIBLE WHEN FRONT BEZEL IS REMOVED.
  3. UNIT WEIGHT SHALL BE 4.0 LBS MAXIMUM.
  4. THE BEZEL COLOR IS GRAY. THE KEYPAD COLORS ARE WHITE AND BLUE.
  - 5 RECOMMENDED MATING CONNECTOR SHALL BE M24308/2-3F AND IS PROVIDED IN THE PBS600 INSTALLATION KIT.
  - 6 THIS CONNECTOR (J2) IS NOT USED IN AIRCRAFT INSTALLATION (POSSIBLE FUTURE EXPANSION ONLY).

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	CHANGED MOUNTING SCREWS FROM #8-32 TO #10-32	02-16-99	F.ENTREKIN
B	CHANGED KEYPAD LEGEND	06-10-99	F.ENTREKIN
C	CORRECTED CONNECTOR SPECS	03-08-01	



LOCATION OF PCMCIA PORT FOR REPROGRAMMING  
1

"DB STYLE" 9-PIN CONNECTOR (J2)  
6



"DB STYLE" 25-PIN CONNECTOR (J1)  
5

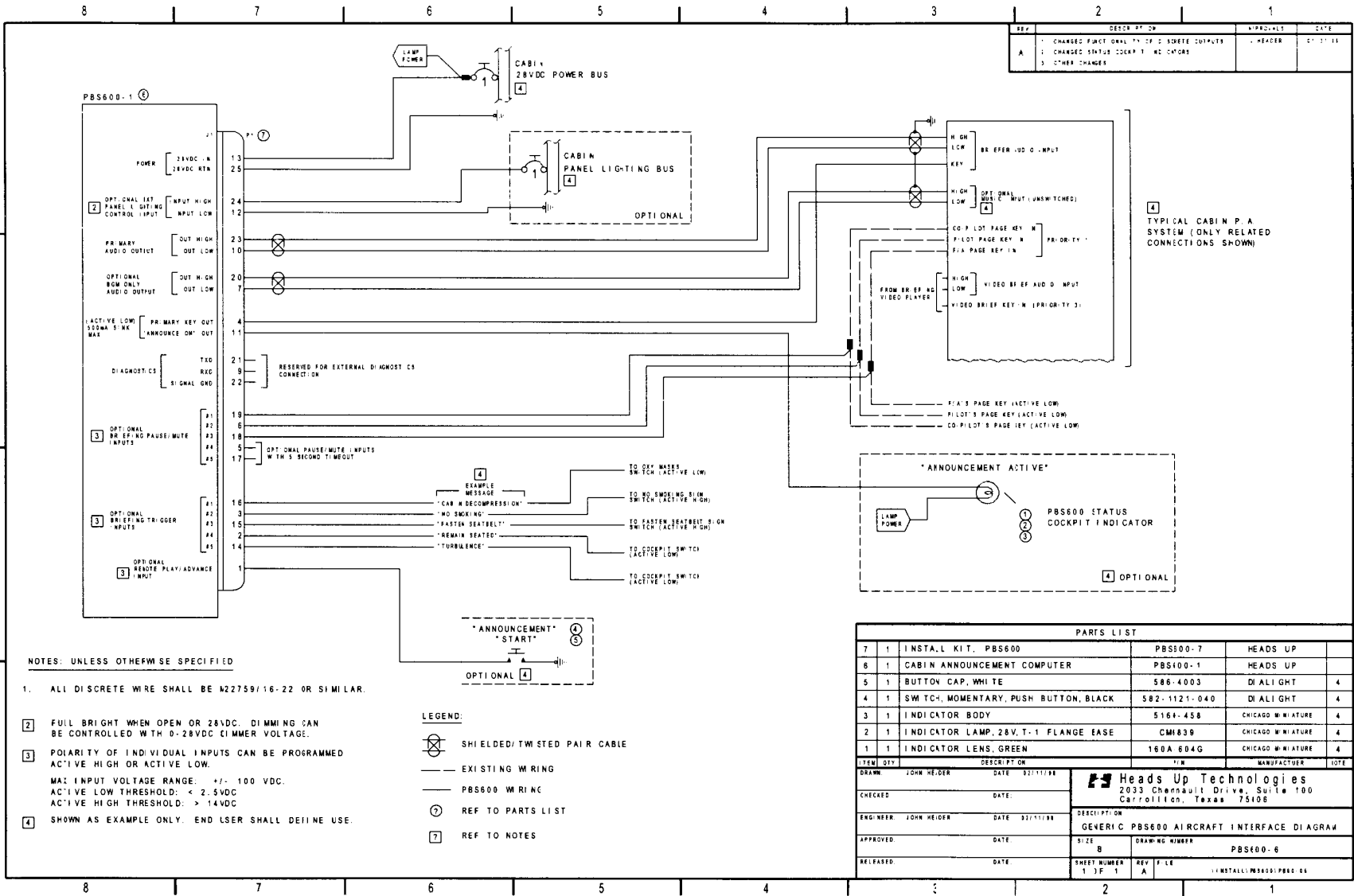
SEQ NO	PROCESS	ADDITIONAL	NOTES

QTY	ITEM NO	PART NUMBER	DESCRIPTION	SPECIFICATION	NOTES

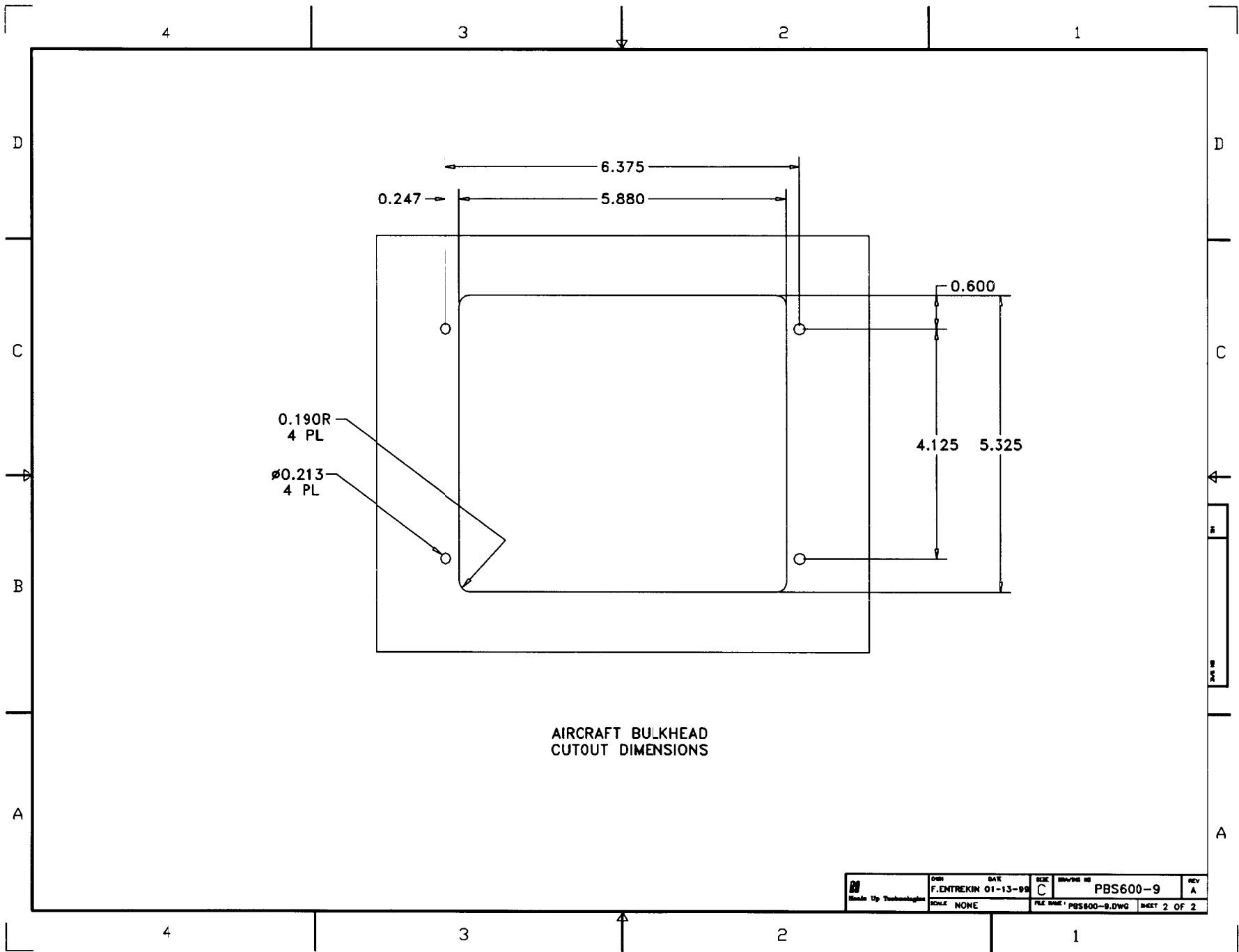
  

UNLESS OTHERWISE SPECIFIED: • MATERIAL: STEEL A 1 • FINISH: POLISHED • TOLERANCES: DIMENSIONS UNLESS OTHERWISE SPECIFIED • SURFACE FINISH: 32 RMS UNLESS OTHERWISE SPECIFIED • REMOVE ALL BURRS AND SHARP EDGES • CONDUCTIVITY: ALUMINUM: 30% IACS • DIMENSIONS: UNLESS OTHERWISE SPECIFIED		PARTS LIST DATE: 02-08-99 ORDER: 003-00000-000 DATE: 02-08-99 DATE: 02-12-99 DATE: 03-13-99		<b>Heads Up Technologies</b> 2003 Channing Way Houston, TX 77058 281-293-1134	
HEADS UP TECHNOLOGIES 2003 CHANNING WAY HOUSTON, TX 77058 281-293-1134			<b>PBS600 ICD (OUTLINE DIMENSIONS)</b>		
USED ON	NEXT ASSY	CONTRACT	PROJECT	SIZE: C FILENAME: PBS600-5.DWG DRAWING NO: PBS600-5 SCALE: NONE REV: C	SHEET NO: 1 OF 1

CAD GENERATED DRAWING







 Make Up Technologies	DWG	DATE	REV	REV
	F.ENTREKIN 01-13-99	C	PBS600-9	A
SCALE	NONE	FILE NAME	PBS600-9.DWG	SHEET 2 OF 2