

# **User Manual**

**ADS-14171**

**Honeywell Integrated Pressure Transducer (IPT)  
Demo Software**

**Version 1.10**

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## 1. Introduction

The Honeywell Integrated Pressure Transducer (IPT) Demo software application is used to retrieve the pressure and temperature readings from the IPT test system. A setup procedure should be completed before the IPT demo software application can be used.

## 2. Setup Procedure

### 2.1 Computer Setup

The Software Setup consists of

- a. Unzipping the file to the C drive.
- b. Install the software from the unzipped files by executing the “IPT Demo Interface Setup.exe”.
- c. The location where the software is installed is changeable inside the “InstallShield Wizard”.
- d. Then click “Install” to complete the installation

### 2.2 System Setup

The Hardware Setup consists of

- e. Host computer on which the IPT Demo Software will be executed.
- f. IPT Demo Board on which the IPT will be mounted.
- g. RS232 Cable to connect the IPT Demo Board to the COM port of the host computer.

Ensure that all jumpers are configured as shown below **BEFORE** applying power.

The hardware should be connected in the following order:

- a. Connect the RS232 cable from the computer to the IPT Demo Board.
- b. Connect the IPT to the Demo Board.
- c. Connect power to the Demo Board power supply jack.

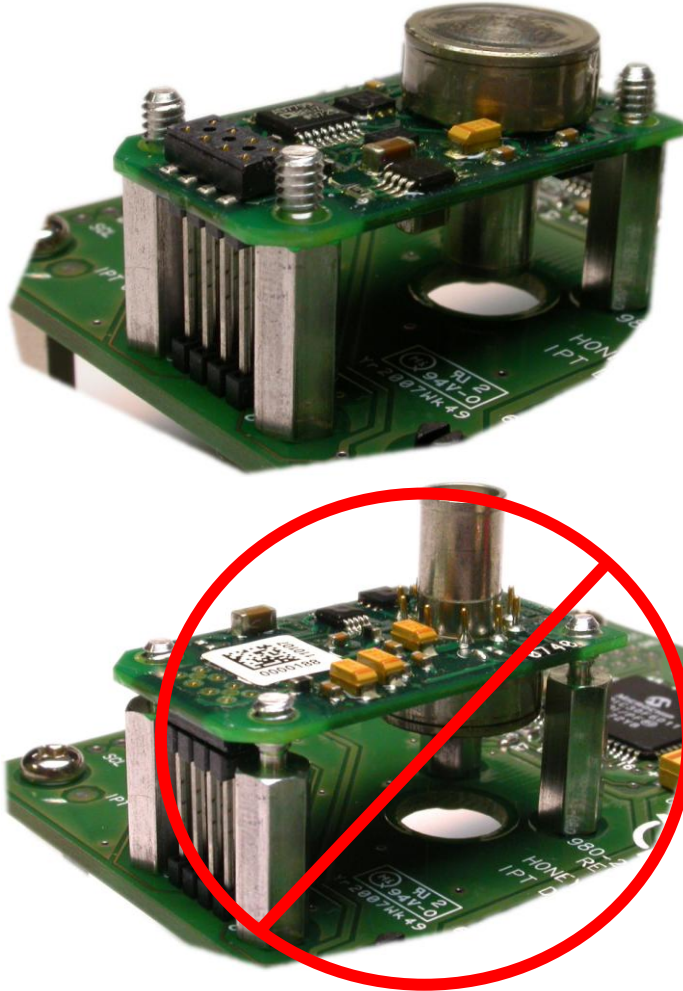
The demo board will appear like the following image upon completion of the hardware setup.



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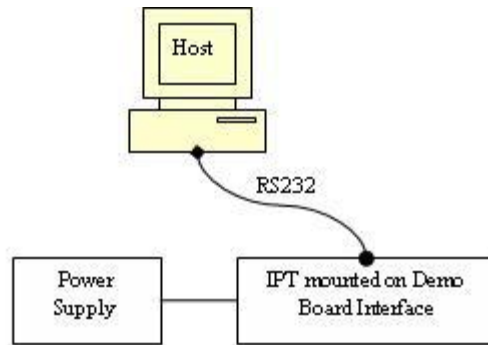
There is only 1 correct way for the IPT to be mounted to the IPT demo board; there are multiple ways that the IPT should not be connected to the demo board, the following images indicate these instances.

**IMPORTANT:** Failure to mount the IPT in the proper orientation will result in damage to either the IPT Demo Board or the IPT.



**IMPORTANT:** The Demo board should be handled with extra precaution for ESD to make sure the board is not damaged. (ESD class rating has not been determined)

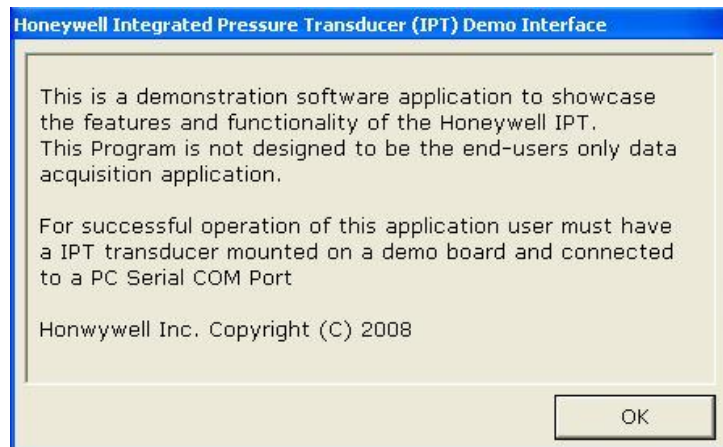
The Demo Board must be powered ON before executing the IPT demo software on the host machine.



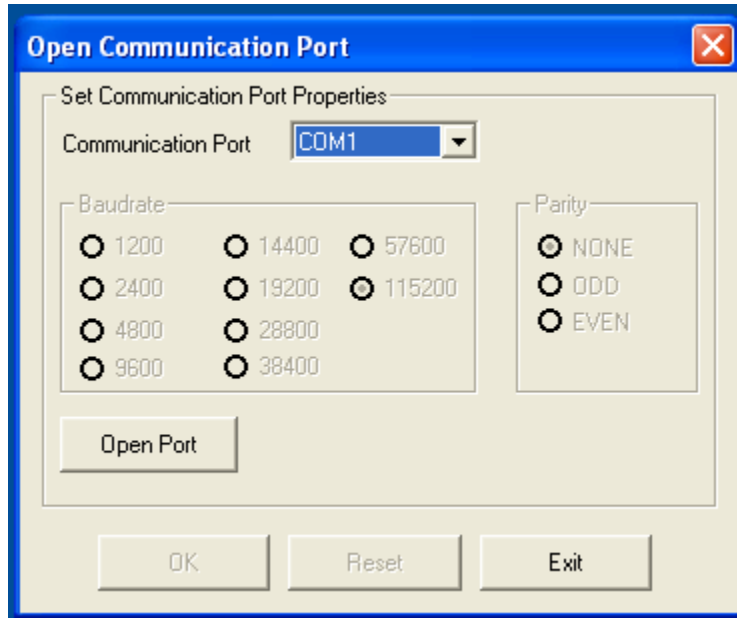
## 2.3 Executing IPT Demo Software Application

- 1) Step 1: Upon executing the IPT Demo Software on the host computer, a disclaimer will be displayed.

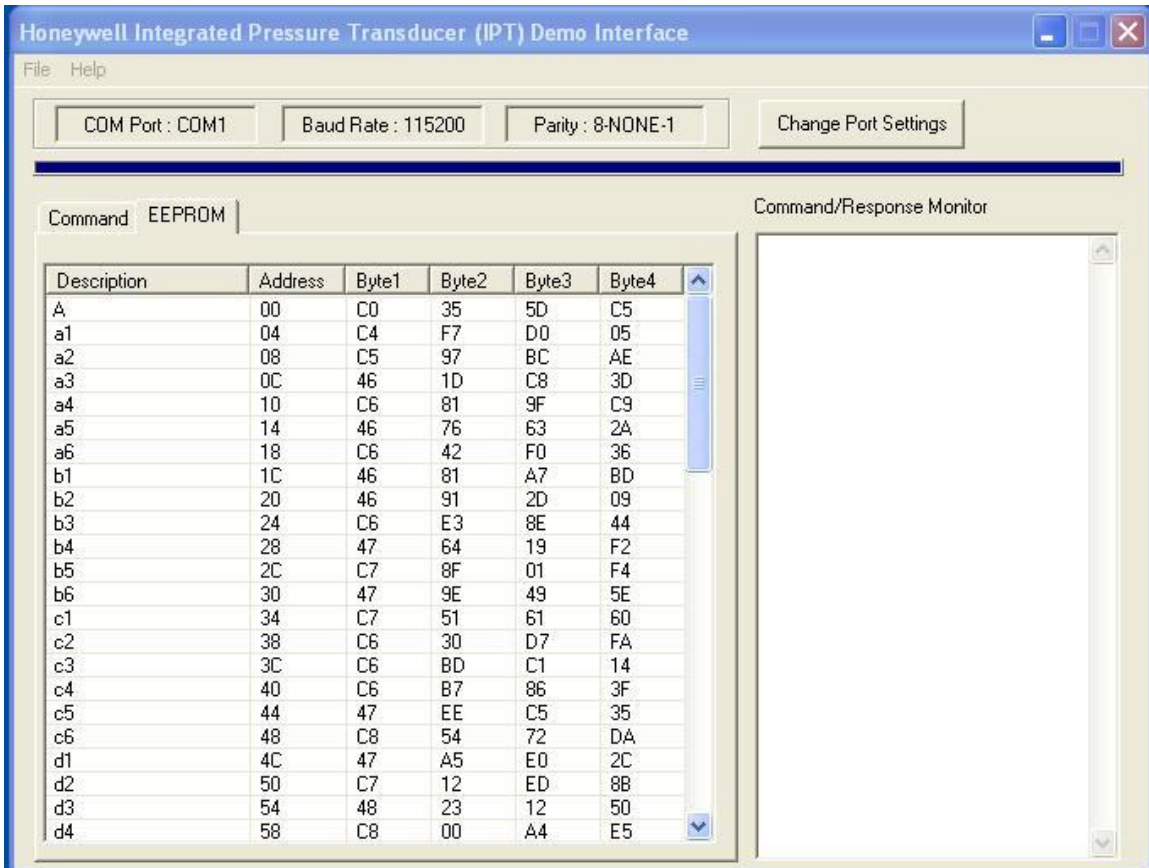
Press the “OK” button.



- 2) Step 2: Select the Communication Port to which the Demo Board is connected and click the “Open Port” button.



- 3) Step 3: Upon opening the port the IPT Demo Software retrieves EEPROM data from IPT for the calculation of pressure values in PSI . (Refer Section 3.2).  
The retrieved EEPROM data can be viewed in the EEPROM tab of the main window.



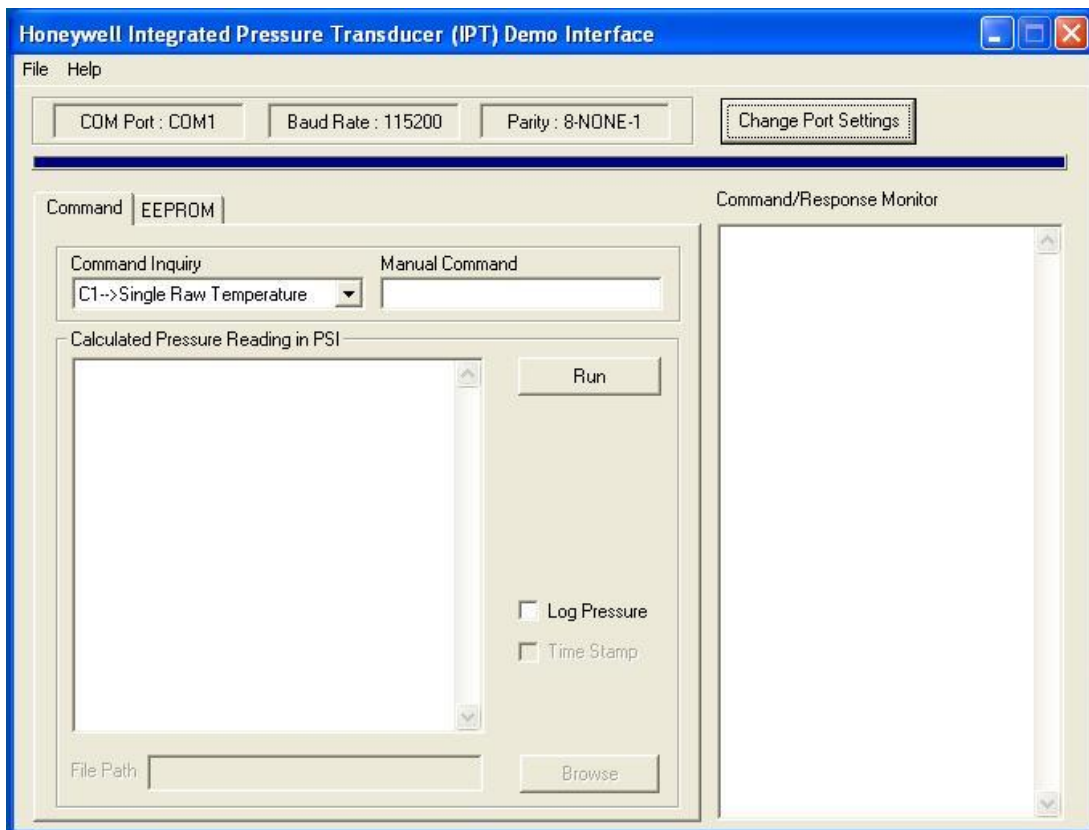
### 3. Using IPT Demo Software

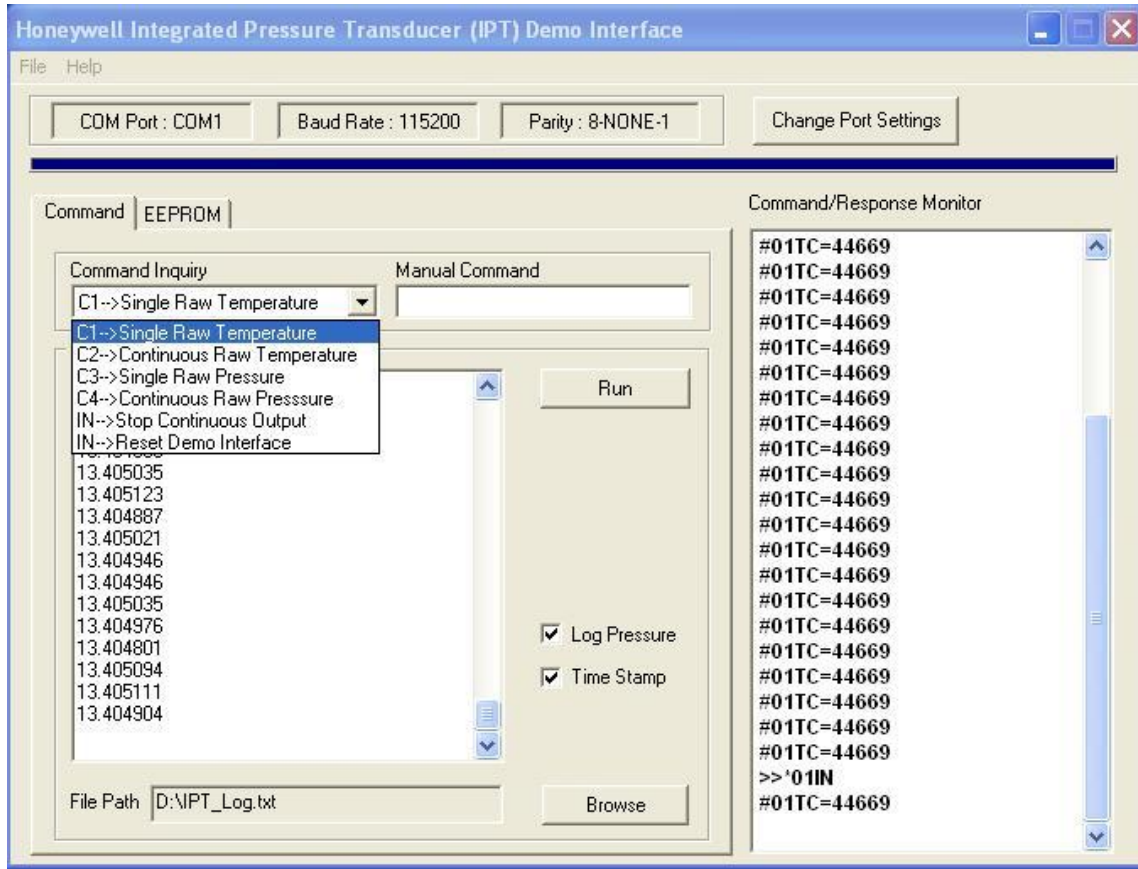
#### 3.1 *Commands*

The IPT Demo Board firmware implements a set of commands to send the pressure and temperature output from the IPT over a RS232 communication line.

In addition to these commands EEPROM read and write commands are supported to read –write EEPROM contents of the IPT.

The Command tab in the main window of the IPT demo software has a list box “Command Inquiry” to select commands to be sent to the IPT Demo Board. Alternatively the commands can also be sent manually by entering the command in the “Manual Command Entry” text box and pressing “Enter” on the keyboard of the host computer. The command from the IPT Demo Software and response from the IPT Demo Board interface are displayed in the “Command/Response Monitor” text box.





Following commands are supported by the IPT Demo Board firmware:

1. C1 (Single Raw Temperature)

“C1” command displays a single reading of the raw temperature in the Command/Response Monitor.

Command:

\*01C1

Example response:

#01TC=46998

2. C2 (Continuous Raw Temperature)

“C2” command displays continuous digital output of raw temperature in the Command/Response Monitor. Continuous output can be stopped by sending the “IN” (Stop Continuous Output) command.

Command:

\*01C2

Example responses:

#01TC=46998

#01TC=46998

#01TC=46998

#01TC=46998

3. C3 (Single Raw Pressure)

“C3” command displays a single digital output of the raw pressure in the Command/Response Monitor.

Command:

\*01C3

Example response:

#01PC=1991364

4. C4 (Continuous Raw Pressure)

“C4” command displays continuous digital output of raw pressure in the Command/Response Monitor. Continuous digital output can be stopped by sending the “IN” (Stop Continuous Output) command.

Command:

\*01C4

Example responses:

#01PC=1991364

#01PC=1991340

#01PC=1991221

#01PC=1991372

#01PC=1991265

5. IN (Stop Continuous Output)

“IN” command is used to stop continuous pressure and temperature digital output from the IPT.

Command:

\*01IN

Response: None

6. IN=RESET (Reset Demo Interface)

“IN=RESET” command is used to reset the demo interface

Command:

\*01IN=RESET

Response:None

7. RD ( Read EEPROM)

The “RD” command can be manually entered to read contents from the IPT EEPROM.

Command:

\*01RDdd // where *dd* is an EEPROM location of 0x00-0xFF

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Response:

```
#01RDddccc // where dd is an EEPROM location of 0x00-0xFF  
// and ccc is a value 0-255
```

### 8. WT (Write EEPROM)

The “WT” command can be manually entered to write to IPT EEPROM locations 0xB6 – 0xFF

Command:

```
*01WTddccc // where dd is an EEPROM location 0xB6-0xFF  
// and ccc is a value 0-255
```

Response: None

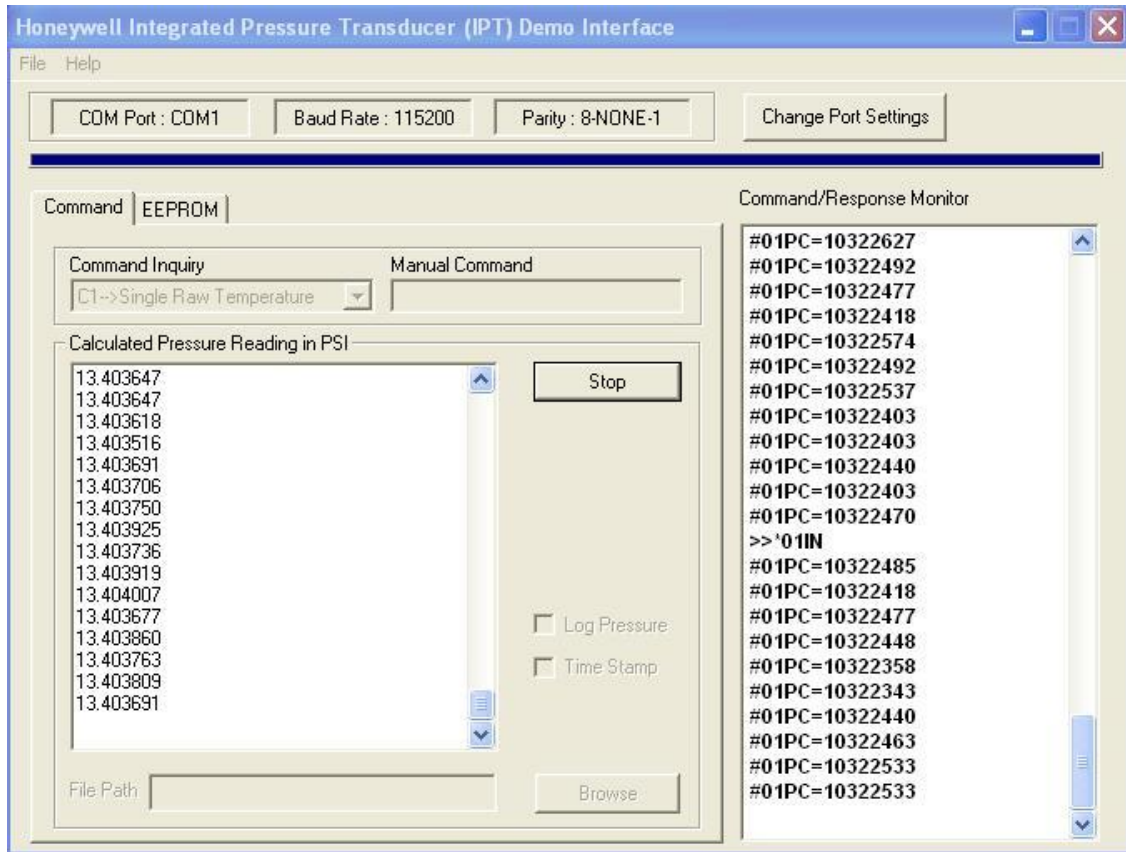
## 4. Digital pressure output in PSI

The digital pressure output can also be viewed in PSI (pounds per square inch). The digital pressure output in PSI is calculated from the raw temperature and pressure

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outputs using coefficients loaded from EEPROM of the IPT. (Refer Section 3.2 and 3.3 of IPT User's Guide).

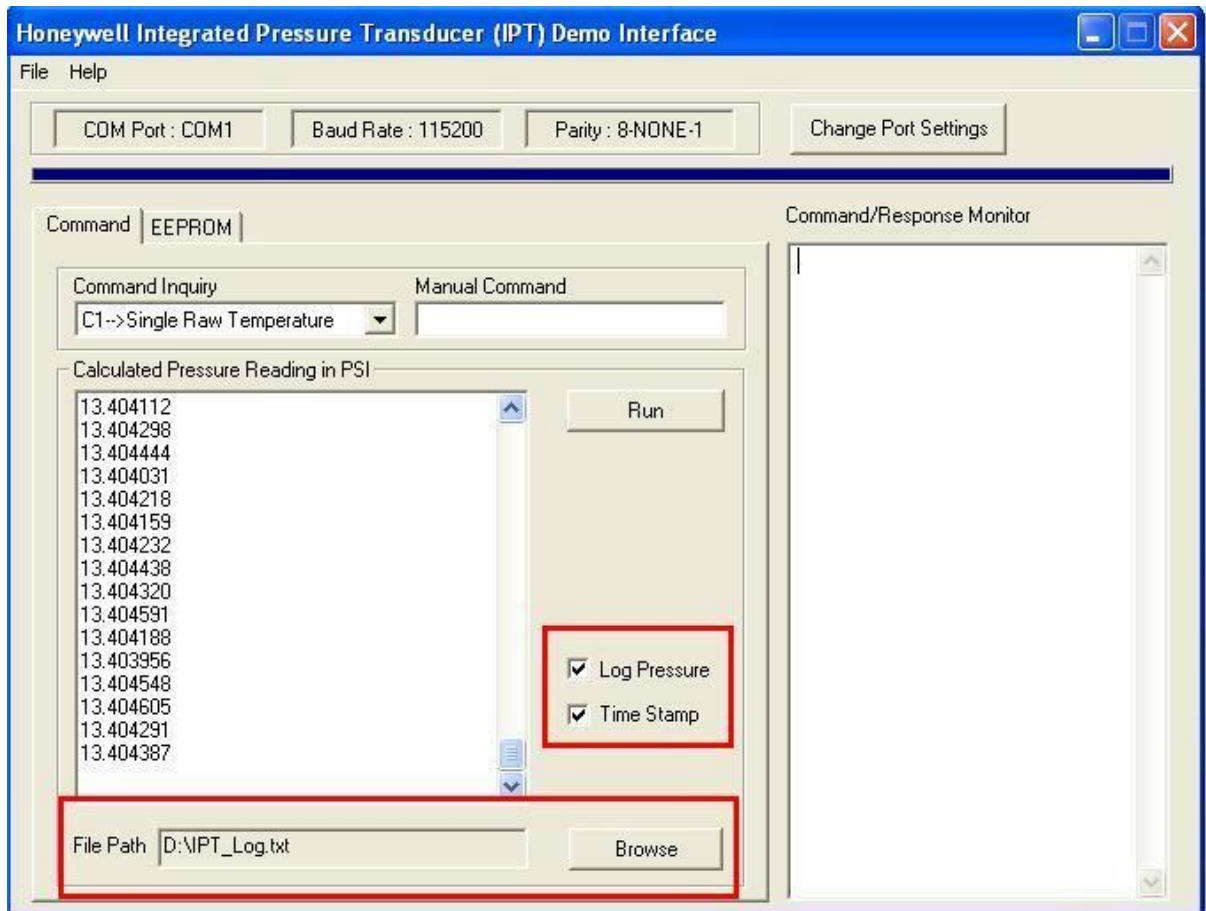
Press the "Run" button in the "Command" Tab to display digital pressure output in PSI units in the "Calculated Pressure Reading in PSI" Text Box.



*Note: The IPT Demo software currently only supports correction algorithm #1 as described in section 3.2 of the IPT User's Guide. Algorithm #1 is used by the vast majority of IPT's.*

*For IPT's using algorithm #2, the IPT Demo Software will calculate pressure readings in PSI, but those readings may not be accurate.*

#### 4.1 Data Logging

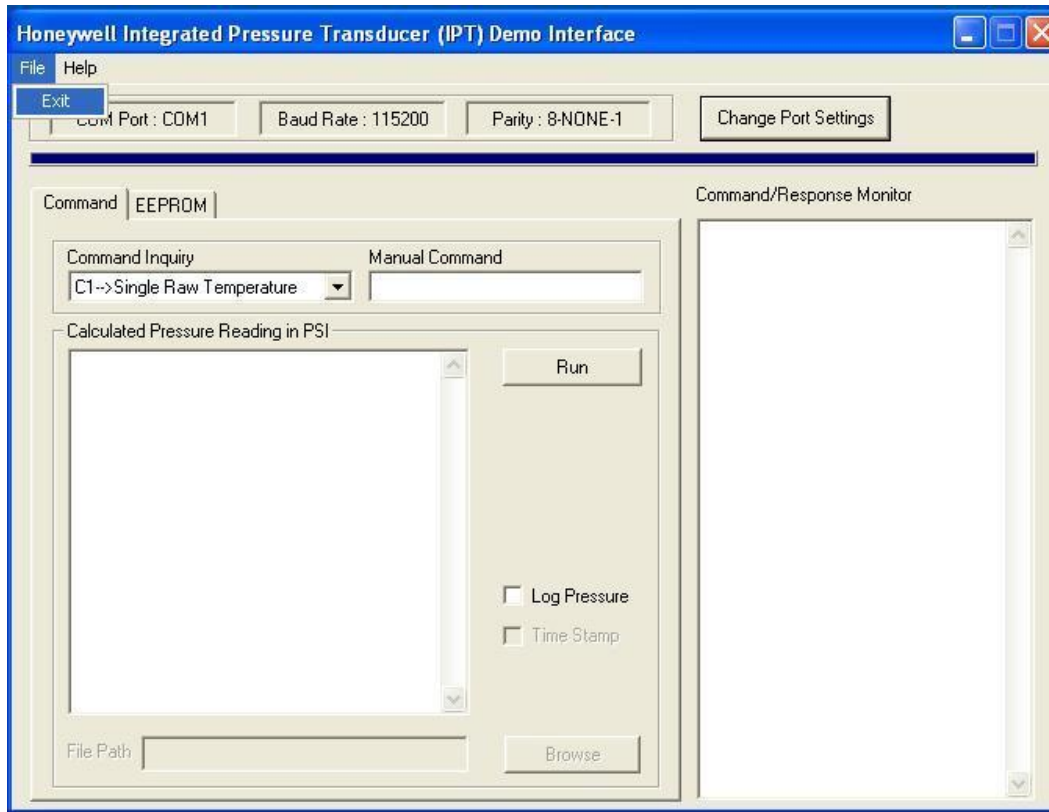


The pressure reading displayed in the “Calculated Pressure Reading in PSI” text box can also be logged to a text file by selecting the “Log Pressure” checkbox. The file path can be set by clicking on the “Browse” button. To log the time stamp along with the pressure output, select the “Time Stamp” checkbox.

## 5. Menu

### 5.1 File

File menu has one sub menu as “Exit”

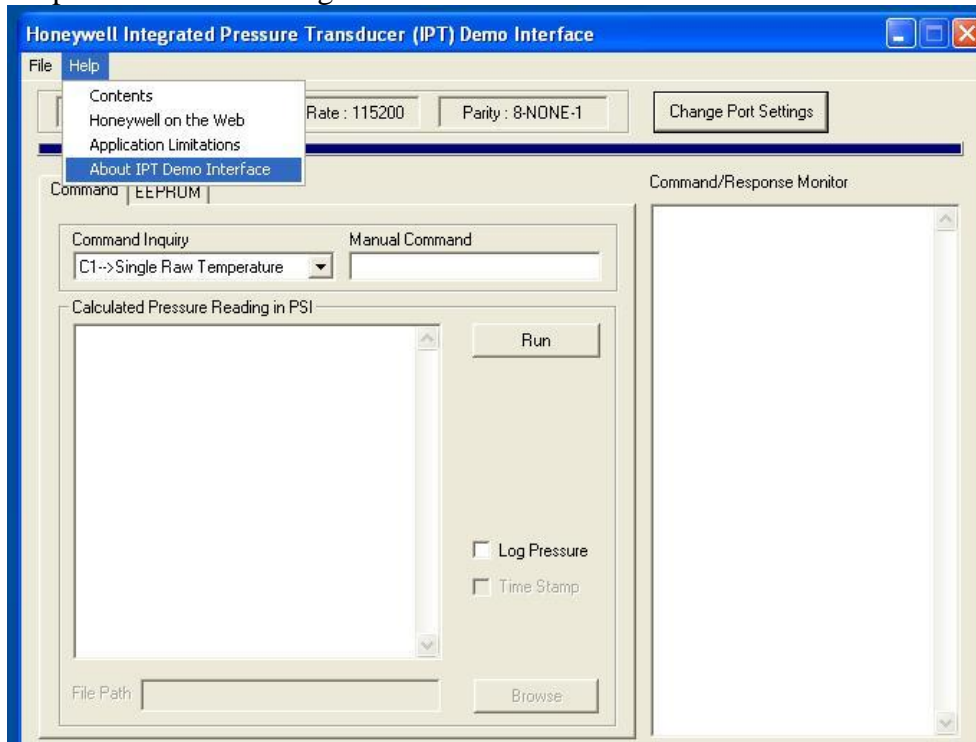


#### 5.1.1 Exit

Click on **Exit** to close the application.

## 5.2 **Help**

Help Menu has following contents



### 5.2.1 **Contents**

Upon Clicking “Contents” Help window is displayed.

### 5.2.2 **Honeywell on the Web**

Upon Clicking “Honeywell on the Web” link to Honeywell website is opened inside the default browser.

### 5.2.3 **Application Limitations**

Upon Clicking “Application Limitations” limitations of Demo Software are displayed.

### 5.2.4 **About IPT Demo Interface**

Upon Clicking “About IPT Demo Interface” About Box is displayed showing version information of the Demo Software.

## 6. Limitations

1. Communication with the IPT Demo Board Interface is 115200 baud (N-8-1) only.
2. Manual WT commands to EEPROM locations 0x00 to 0xB6 will be ignored.
3. Calculated Pressure Readings in PSI are displayed at a rate of ~150/sec.
4. While a C4 continuous command is executing, single commands may not be visible in the Command/Response Monitor.
5. EEPROM Tab contents are updated at the start of the application. Any user-changes to the EEPROM will not be visible until the application is restarted.

REVISION HISTORY	
Revision	Description
-	Initial Release
A	Add note to section 4 indicating that only 1 algorithm is supported by the IPT Demo Software