



## DATAIR - 400/M3 ARINC-429 TESTER User Manual



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## Revision History

| Date            | Changes Made  | Issue       | Initials  |
|-----------------|---|-------------|-----------|
| <b>24/03/15</b> | First Release   | <b>1.0</b>  | <b>GB</b> |
| <b>16/06/15</b> | 3.3.5.1 thru 3.3.5.3 added. Examples of entering differing engineering formats for BCD and BNR. | <b>1.1</b>  | <b>GB</b> |
| <b>12/07/15</b> | 1.5: Caution about not operating the unit whilst charging the battery pack in-situ.             | <b>1.1a</b> | <b>GB</b> |
| <b>14/08/15</b> | D9 ARINC 429 Tx+ and Tx- connections swapped. Firmware upgrade procedure added.                 | <b>1.2</b>  | <b>GB</b> |
| <b>13/10/15</b> | Declaration of Conformity title added.  | <b>1.2a</b> | <b>GB</b> |
|                 |   |             |           |
|                 |   |             |           |
|                 |   |             |           |
|                 |   |             |           |
|                 |   |             |           |

## **GENERAL WARNINGS AND CAUTIONS APPLICABLE TO THIS EQUIPMENT**

### **BATTERY CHARGING WARNING**

This equipment has a recharging circuit for rechargeable battery pack. Use only YED supplied battery packs and ONLY use the supplied charger. Do not operate the instrument whilst recharging the battery unless the battery pack is removed from the instrument.

### **CLEANING WARNING**

Keep the equipment dry to avoid electrical shock to personnel or damage to the equipment. To prevent damage, never apply solvents to the equipment housing. For cleaning, wipe the equipment with a cloth that is lightly dampened with water, mild detergent, or alcohol.

# Table of Contents

|   |           |
|---|-----------|
| <b>1. INTRODUCTION.....</b>   | <b>5</b>  |
| 1.1 GENERAL.....  | 5         |
| 1.2 EQUIPMENT DESCRIPTION.....  | 5         |
| 1.3 TECHNICAL SPECIFICATION .....                                       | 6         |
| 1.4 SUPPLIED ACCESSORIES .....  | 7         |
| 1.5 RECHARGEABLE BATTERY PACK.....                                      | 7         |
| 1.6 KEYPAD.....   | 7         |
| <b>2.0 OPERATION .....</b>  | <b>8</b>  |
| 2.1 POWERING ON/OFF SWITCH .....  | 8         |
| <b>3.0 MENU STRUCTURE .....</b>   | <b>9</b>  |
| 3.1 ROOT MENU .....   | 10        |
| 3.2 RECEIVE MENU & BINARY MONITOR SCREEN .....                          | 11        |
| Notes.....  | 11        |
| 3.2.1 <i>Receive Monitor &amp; Engineering units screen</i> .....       | 12        |
| Notes.....  | 12        |
| 3.3 TRANSMIT MENU .....   | 12        |
| 3.3.1 <i>CLEAR ALL TX LABELS</i> .....                                  | 13        |
| 3.3.2 <i>SELECT ALL TX LABELS</i> .....                                 | 14        |
| 3.3.2.1 <i>ERROR: Too many labels enabled.</i> .....                    | 14        |
| 3.3.3 <i>SELECT LABELS TO TX and Label rates</i> .....                  | 15        |
| 3.3.4 <i>SET GLOBAL TX RATE</i> .....                                   | 15        |
| 3.3.5 <i>SHOW / EDIT TX VALUES</i> .....                                | 17        |
| 3.3.5.1 <i>Entering values for BCD formatted words.</i> .....           | 19        |
| 3.3.5.2 <i>Entering values for BNR formatted words.</i> .....           | 19        |
| 3.3.5.3 <i>Entering values for BNR “Special” formatted words.</i> ..... | 19        |
| 3.3.6 <i>MODE: Setting the Transmitter mode</i> .....                   | 20        |
| 3.3.7 <i>TX IS: Starting / Stopping the Transmitter</i> .....           | 21        |
| 3.4 LOAD A DATABASE .....   | 22        |
| 3.4.1 <i>PROFILES</i> .....   | 23        |
| 3.5 CUSTOM LABEL DEFINITIONS .....                                      | 25        |
| 3.5.1 <i>VIEW / EDIT LABEL</i> .....                                    | 26        |
| 3.5.2 <i>SUSPEND CUSTOM LABEL</i> .....                                 | 27        |
| 3.5.3 <i>DELETE CUSTOM LABEL</i> .....                                  | 29        |
| 3.2 RS232 CABLE CONNECTIONS .....                                       | 30        |
| <b>4.0 PERFORMING A FIRMWARE UPDATE.....</b>                            | <b>31</b> |
| <b>FCC REGULATIONS .....</b>  | <b>36</b> |

## 1. INTRODUCTION

### 1.1 General

This manual provides operational information for the DATAIR-400/M3 handheld ARINC 429 Tester.

### 1.2 Equipment Description

The DATAIR-400/M3 is aimed at providing the user with an easy to use first line diagnostic tool for testing and troubleshooting ARINC 429 avionics systems. It allows the user to connect to an ARINC 429 data bus and easily view the active ARINC 429 Labels on the bus or to generate a series of test words to simulate a specific test.

The DATAIR-400/M3 ARINC 429 Tester is a Hand Held unit that comprises an 8 line by 21 character backlit LCD, an alphanumeric keypad, a microprocessor controlled ARINC 429 receiver, transmitter board with a detachable rechargeable battery pack.

#### Receiver features:

- Rx Independent internal ARINC 429 Engineering units definitions as per ARINC 429-16
- User definable and customised ARINC 429 label definitions – with save, suspend and delete.
- Selectable Hex Equipment ID for reception and display of received ARINC 429 data words
- Independent user configuration profiles for Tx operations
- Automatic preservation of setup between power downs
- Data display in Hexadecimal, binary and Engineering Units
- Individual display of bits 11 through 29,
- Display of SSM, SDI (with SDI filtering or don't care) and Parity
- Automatic reception of Lo or Hi ARINC 429 bit rates
- Display of received bit rate as "Hi" (100kHz) or "Lo" (12.5kHz)
- Display of interval of received label in mS.

#### Transmitter features:

- Tx Independent internal ARINC 429 Engineering units definitions as per ARINC 429-16
- User definable and customised ARINC 429 label definitions – with save, suspend and delete.
- Selectable Hex Equipment ID for transmission and data entry ARINC 429 data words
- Independent user configuration profiles for Tx operations
- Data entry in binary or Engineering Units
- On/Off toggling of individual data bits 11 through 29
- Editable SSM field values.
- Editable Parity
- Real time update of transmitted data
- Transmission of up to 150 labels at user selectable repetition rates.
- Individual label transmission interval (10,20,50,100,200,500 and 1000 mS) word rates
- Single shot mode
- Selectable (Lo or Hi speed) bit rate
- Non-volatile memory storage

**Other features:**

- An 8-line by 21 character backlit Liquid crystal display.
- Alpha-numeric keypad with navigation keys
- USB/RS232 Firmware update capability for future enhancements.
- Handheld portable Instrument.
- Detachable rechargeable NimH battery (4.8V @ 2100mAH). 8 Hour use from full charge
- Available with universal 110 V / 220 V ac battery charger
- Can be powered from external DC 6V DC power supply
- Standard D9 connector with test leads for connecting to ARINC 429 system

**1.3 Technical Specification**

**ARINC 429 Receiver**

|                                    |                                   |
|------------------------------------|-----------------------------------|
| Input:.....                        | Opto-coupler isolated input       |
| Voltage levels (Line A to B):..... | HI                    +6 to 12V   |
|                                    | NULL                +2.5 to -2.5V |
|                                    | LO                    -6 to -12V  |
| Bit rate: .....                    | Low Speed:    8 to 18kbps         |
|                                    | High Speed:   80 to 125kbps       |

**ARINC 429 Transmitter**

|                                    |                                  |
|------------------------------------|----------------------------------|
| Output:.....                       | Industry standard line driver    |
| Output impedance:.....             | 75 ±5 Ω (Line A to B)            |
| Voltage levels (Line A to B):..... | HI                    +10V ±1V   |
|                                    | NULL                0.0 to ±0.5V |
|                                    | LO                    -10V ±1V   |
| Bit rate: .....                    | Low Speed:    12.5kbps ±0.5%     |
|                                    | High Speed:   100.0 kbps ±0.5%   |
| Word rate:.....                    | 10 to 1000mS                     |
| Parity: .....                      | ODD                              |

**Mass**

|                  |                        |
|------------------|------------------------|
| Weight:.....     | 0.55kg                 |
| Dimensions:..... | 22.9H x 9.7W x 5.4D CM |

**Power requirements**

|              |  |
|--------------|--|
| Input: ..... | 6V DC external power OR<br>4.8V @ 2200mAH NiMH battery |
|--------------|--|

**Environmental**

|                             |                              |
|-----------------------------|------------------------------|
| Operating temperature:..... | 0 to 50 °C (Indoor use only) |
| Relative Humidity:.....     | 0% to 85%                    |

## 1.4 Supplied accessories

The DATAIR-400/M3 Tester is supplied with a universal 110VAC/240VAC battery charger. One ARINC 429 Test Lead pair for connecting to an ARINC 429 Tx system and one pair for connecting to an ARINC 429 Rx system. In addition there is a firmware update cable (D9 to D9) for updating the firmware when new a new upgrade is available via our website.

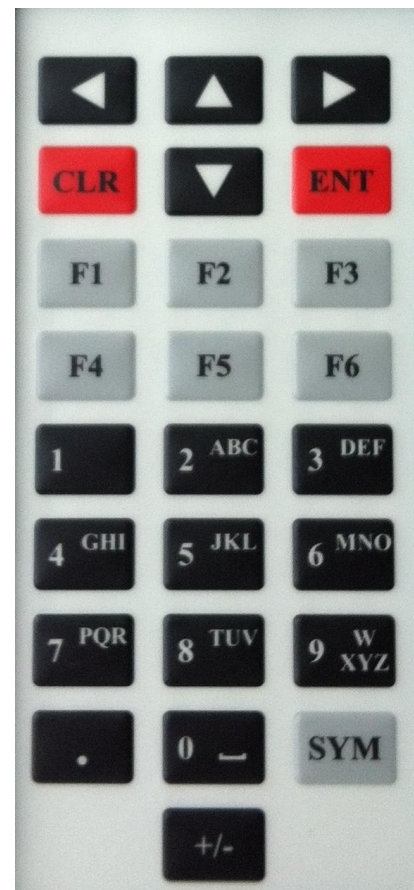
## 1.5 Rechargeable battery pack

The battery pack is supplied partially charged for safety reasons during transit. The battery pack should be fully charged using the supplied battery charger prior to first use. This should take no longer than 3 hours. The expected life of the battery from a full charge is 8 hours. **The unit should not be operated during charging** as this will greatly affect the charging procedure. However the unit can be run on an external 6V DC power supply if the battery pack is removed whilst it is being charged.

## 1.6 Keypad

The keypad is the method used to navigate the menu system, display selection of options and alpha-numeric data entry and comprises the following keys:

- Keys **0** thru **9** are for entering numeric data and also double for entering character entry.
- **ENT** key is for confirming the previous data entry.
- CLR key is used to abandon data entry and will usually return the user to the root of the menu.
- **↑↓←→** keys are used for navigating the menu and the various fields displayed on the LCD.
- The **□** key can be used to insert a space when entering character strings.
- The **+/-** is used to change the sign of an entered numeric value where supported. The polarity of certain ARINC 429 label data can only be changed by modifying the SSM field.
- The following keys are reserved for future use: **F1** thru **F6** and the **SYM** key.
- If you select an incorrect option then pressing the **←** key will move the Menu context back one level.
- Pressing the **CLR** key will always position the context at the root menu.

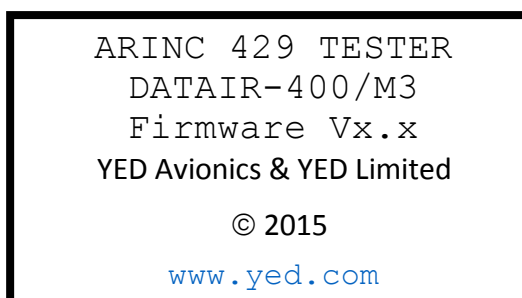


## 2.0 OPERATION

### 2.1 Powering On/Off Switch

The slide switch is situated at the top end of the unit. Positions for ON and OFF are marked on the end plate of the unit.

When the unit is powered on the following screen will be displayed:

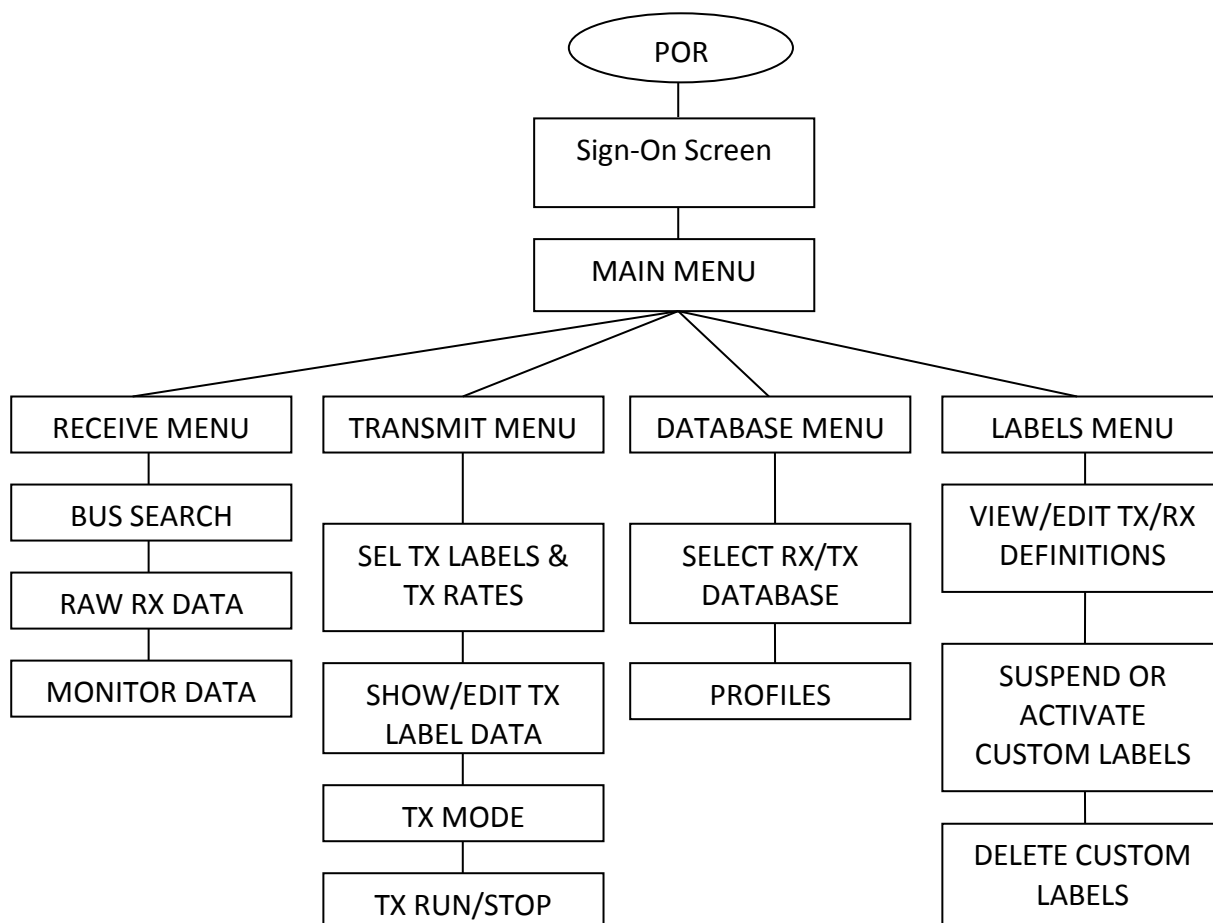


Press any key to advance to the Root of the menu.



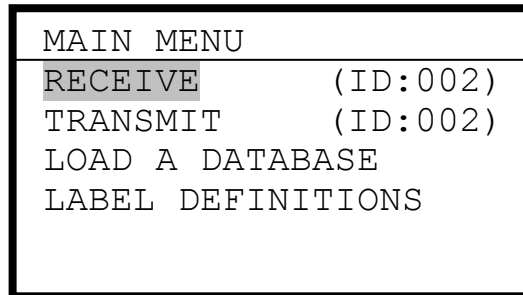
### 3.0 Menu structure

The design and layout of the menu is shown below. Navigation is via the use of the **↑↓←→**, **ENT** and **CLR** keys.



### 3.1 Root Menu



After advancing from the power on screen by pressing any key the root menu will be displayed where the four main menu options are presented as shown below.




Four main options are available from here:

- RECEIVE:                   Entry point into the receive menus
- TRANSMIT:                 Entry point into the transmit menus
- LOAD A DATABASE:        Select a standard ARINC 429 database or saved profile
- LABEL DEFINITIONS:     For creating, editing or suspending custom label definitions

The **(ID:002)** indicates the currently loaded standard ARINC 429 definition. In this case Hex ID 002 is loaded for both Tx and Rx.

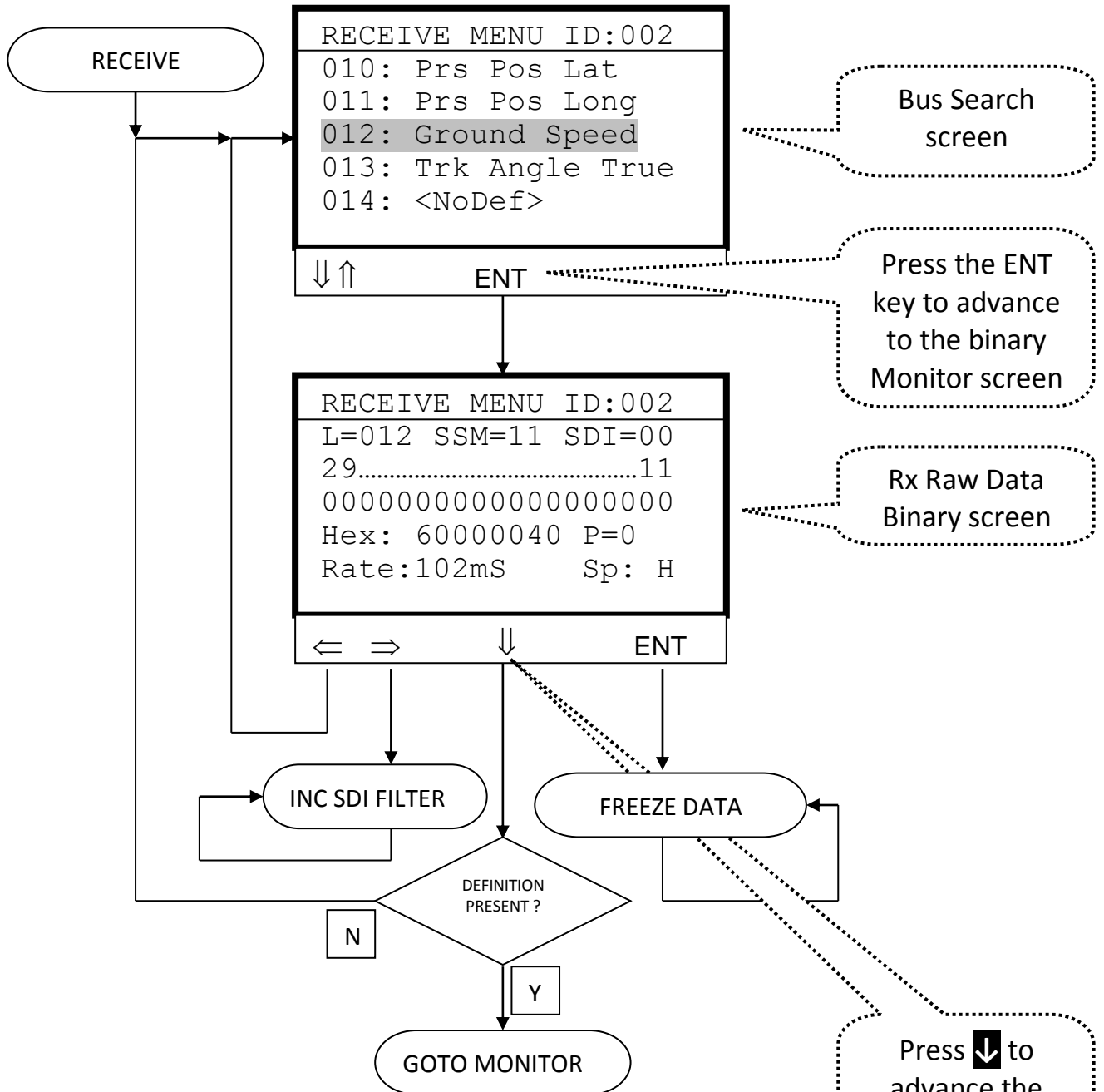
To access a display option, use the  and  keys.

If you select an incorrect option then pressing the  key will move the Menu context back one level.

Pressing the  key will always position the context at the root / top menu.

### 3.2 Receive Menu & Binary Monitor screen

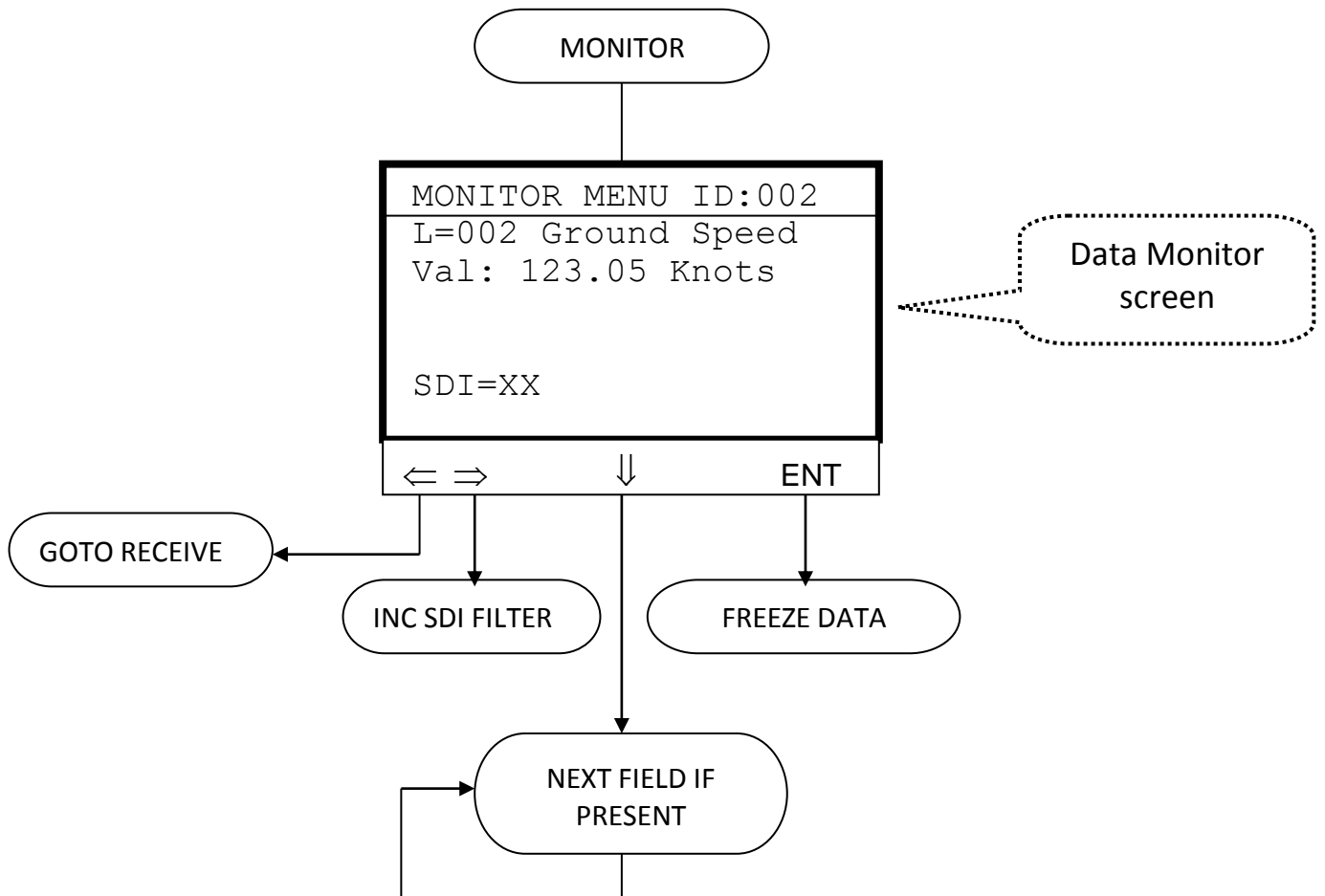
Pressing the **ENT** key whilst the [RECEIVE] option is high lit will cause the receive menu screen to appear. If the unit is connected to an active bus then a list of active Labels will be displayed as shown below. Pressing **ENT** selects a label to display in the Binary Monitor.



**Notes**  
 INC SDI FILTER: Increments SDI value: 00,01,10,11,XX = Don't care. SDI field is updated with current filter value. If SDI set to incorrect value then data will be displayed as "-----". If there is no data then "-----" will be displayed.  
 The SSM field is displayed here as '11'  
 The hexadecimal value and the binary values are displayed.  
 FREEZE DATA: Freezes display. Rate field is changed to "FROZEN" ENT Key toggles this mode. Speed is "H" or "L" for 100kHz or 12.5kHz respectively.  
 Repetition rate of the received ARINC label is shown in mS.

### 3.2.1 Receive Monitor & Engineering units screen

From the previous screen, pressing the **↓** key will advance to the engineering display for the selected ARINC 429 Label and display its data field in engineering units format according to the standard or customer definition. **This screen is only accessible for labels that have an engineering unit definition.**



**Notes**

INC SDI FILTER: Increments SDI value: 00,01,10,11,XX = Don't care. SDI field is updated with current filter value. If SDI set to incorrect value then data will be displayed as "-----". If there is no data then "-----" will be displayed.

FREEZE DATA: Freezes display. Rate field is changed to "FROZEN". **ENT** Key toggles this mode.

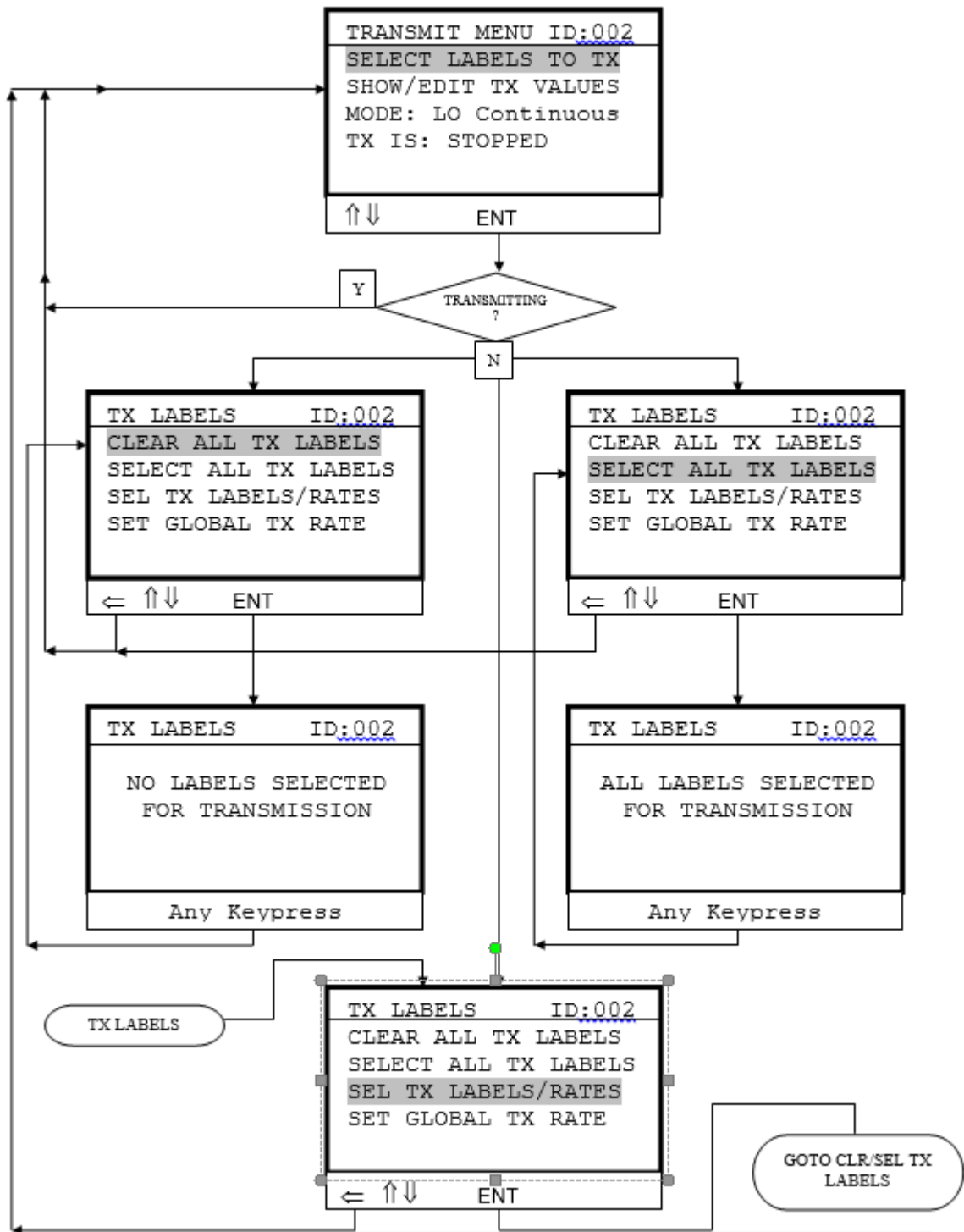
Monitor menu screen shows that the Hex ID engineering units definitions loaded is 002.

Pressing the **CLR** returns to the top (root) menu.

### 3.3 Transmit Menu

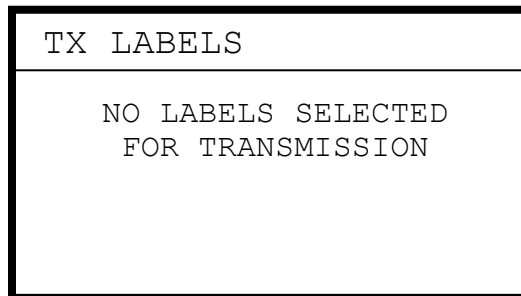
The transmit menu structure shown below comprises of four main options: SELECT LABELS TO TX, SHOW/EDIT TX VALUES, MODE: (Single shot, continuous Lo speed, etc.) and TX IS (Status is: Running or Stopped).

The Select Label to Tx menu option is ONLY available whilst the transmitter is not transmitting. Sub-menu options are provided for Selecting all or Clearing all Labels for transmission, Selecting individual Labels to transmit and their respective transmission rates or setting a Global rate for all the labels.



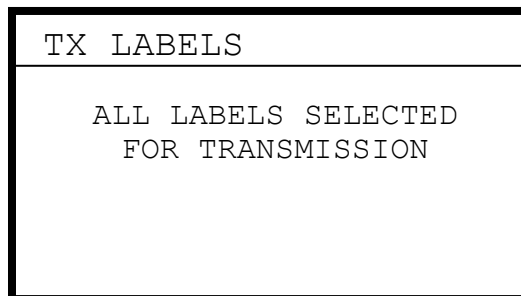
### 3.3.1 CLEAR ALL TX LABELS

Tx must be STOPPED. Selecting this option will unselect all Tx labels. This will be confirmed by the following screen.



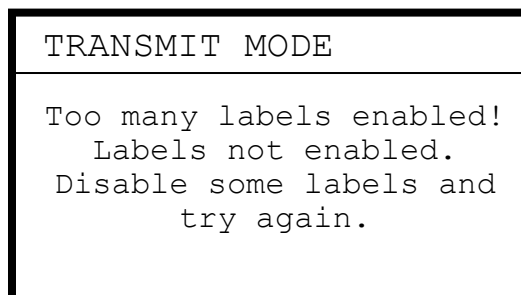
### 3.3.2 SELECT ALL TX LABELS

Tx must be STOPPED. Selecting this option will select all Tx labels in the active Engineering units database for transmission.



#### 3.3.2.1 ERROR: Too many labels enabled.

If however the rates of the combined Labels in the transmission table exceed the available time due to a Low transmit bit rate setting or too many labels enabled then the following screen will be displayed.



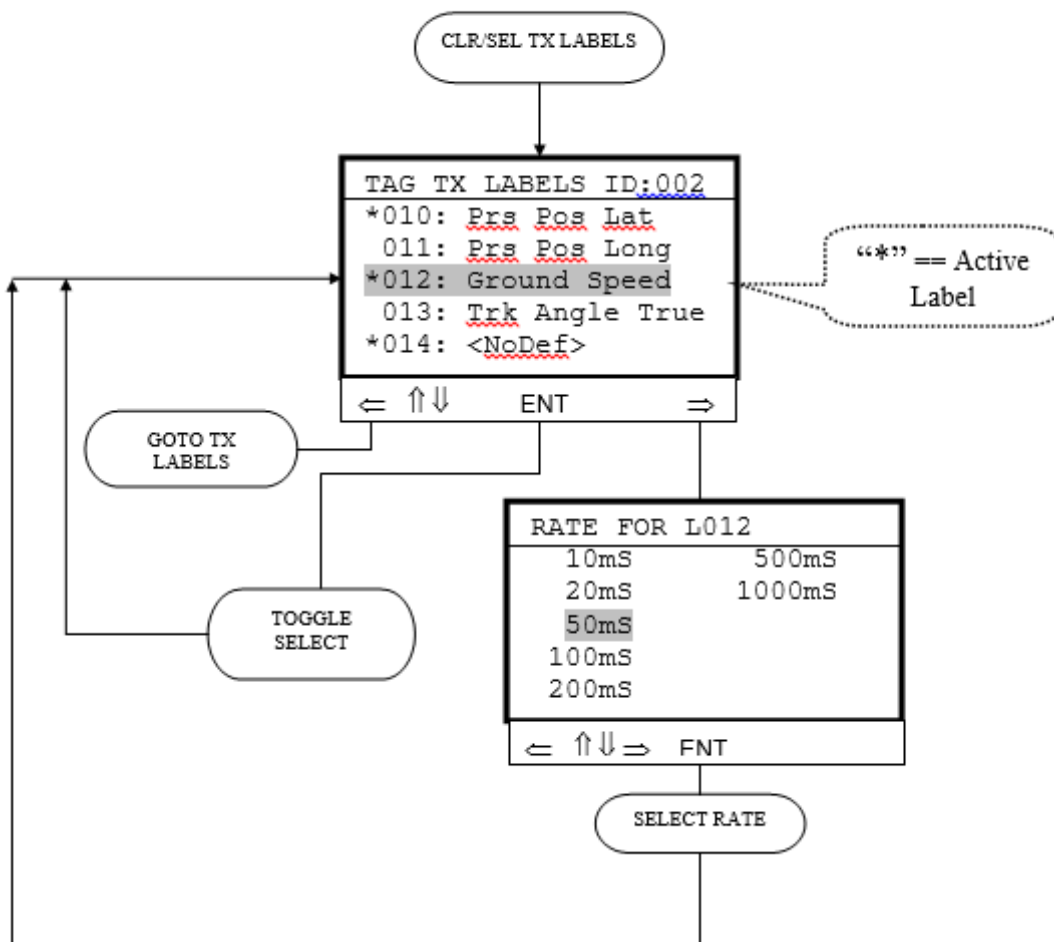
To remedy this problem use the "Set Global Tx Rate" menu option to set a slower Tx rate (greater gaps between transmitted labels).

### 3.3.3 SELECT LABELS TO TX and Label rates

Tx must be STOPPED. The purpose of this menu option is to select the labels to be transmitted and their transmission repetition rates. This option is only available when the transmitter is inactive.

The diagram below shows the screens for choosing which labels are to be selected for transmission. Highlight the required label and press the **ENT** key to toggle the selection denoted by the presence of the adjacent '\*' character. The '\*' adjacent to the label indicates that it is enabled. Pressing the **→** will allow the user to select the rate for the selected label. Press **ENT** to exit from this screen.

#### CLEAR / SELECT TX LABELS AND RATES TO TRANSMIT

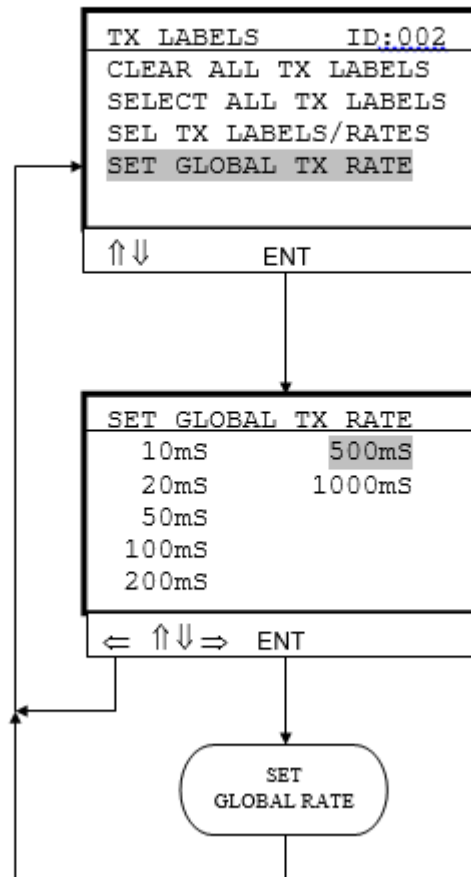


**Notes**  
 Scroll up and down list with ↑ ↓  
 Toggle selection (denoted by '\*') by using the '#' key.  
 ← goes to TX LABELS MENU.

### 3.3.4 SET GLOBAL TX RATE

Tx must be STOPPED. This option will allow the user to set ALL Tx Labels to a selected transmission rate. In this case 500mS as shown below.

#### SELECT GLOBAL TRANSMIT RATE FOR ALL LABELS



Press **ENT** to exit from the lower screen.



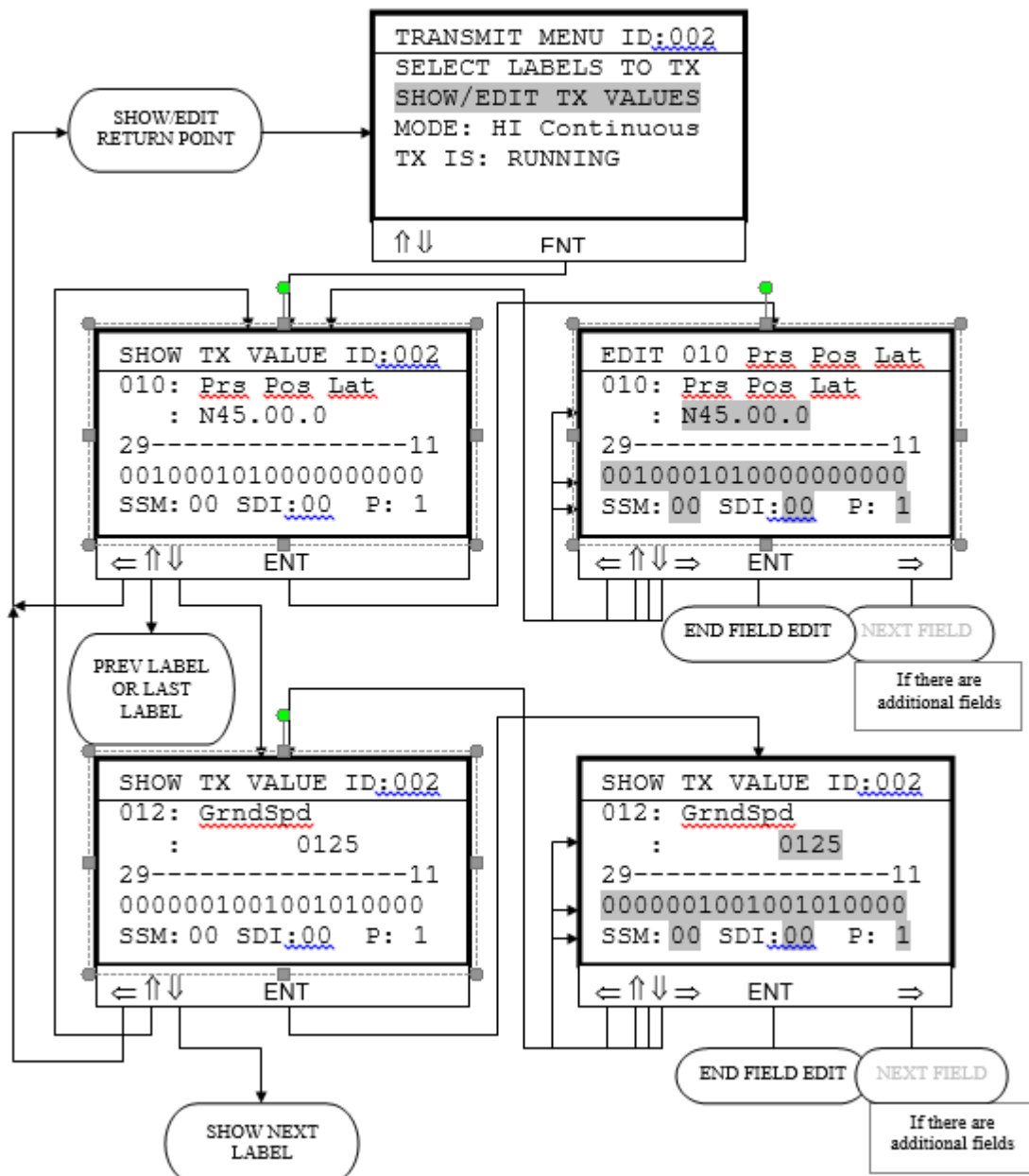
### 3.3.5 SHOW / EDIT TX VALUES

This menu option allows the user to enter real values for each label in the transmission list provided that it has an associated engineering unit definition. If a definition is not present for the selected label then it will only be possible to edit the binary value of the label being edited.

The Menu diagram is shown below.

#### EDIT TRANSMITTED LABEL DATA (Eng Units)

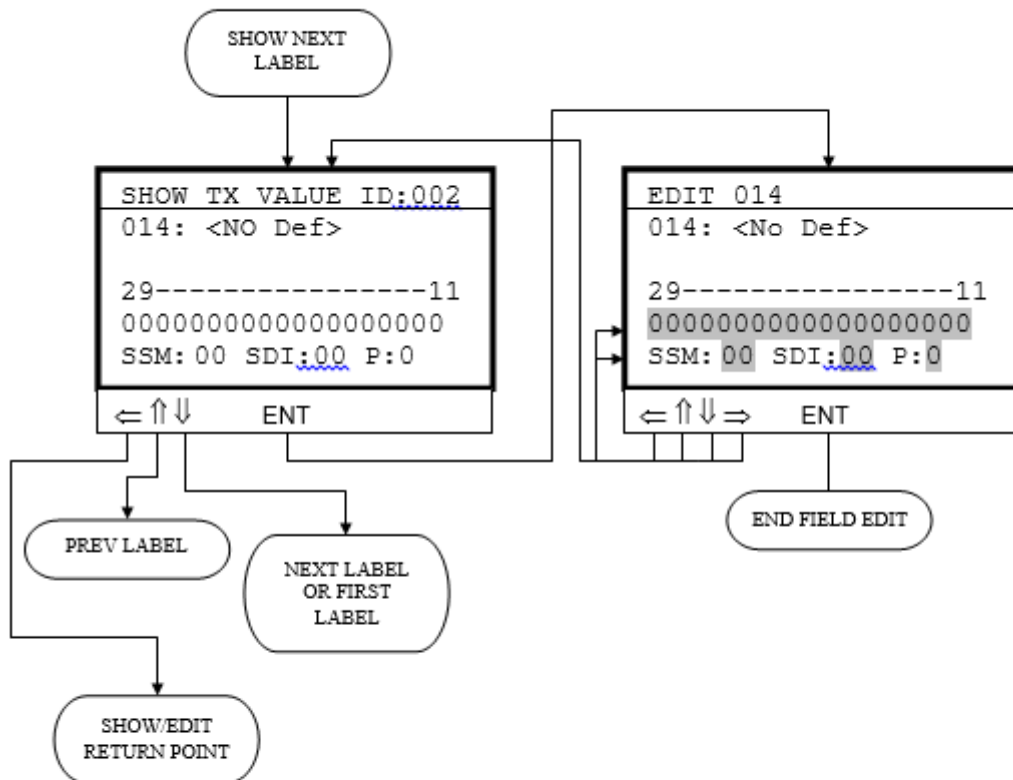
NB. Note only labels that have been tagged appear in this list.  
 In this example ONLY Labels 010 and 012 have been tagged / selected.



**NOTE:** Editing an engineering field will update the binary field and vice versa.


Pressing **ENT** when the cursor is on the SHOW / EDIT TX VALUES option will cause the SHOW TX VALUE screen to be presented. Using the **↑↓** keys scrolls the list of enabled labels for transmission. Once the label of interest is visible, pressing the **ENT** key will allow editing of the binary field. To toggle between the engineering edit field and the binary fields use the **↑↓** keys. Press the **ENT** key to fix the value. The SSM, SDI and Parity fields are also editable by use of the navigation keys **↑↓←→**.

**EDIT TRANSMITTED LABEL DATA (No Def.)**




← In Edit Label field, whilst editing a field ← may be used to move cursor to the left. If not editing a field then ← will cause return to the Show/Edit Return Point.

### 3.3.5.1 Entering values for BCD formatted words.

The “Sign” of an entered value for a BCD formatted words can be altered by pressing the  key. This key will toggle the value of the SSM between ‘11’ and ‘00’. This key changes the polarity of entered values including other variations such as N/S E/W where appropriate.


**PLEASE NOTE** When entering values for BCD formatted words, the exact number of required digits must be entered.

If a BCD field is defined as 5-digits wide then five digits must be entered to avoid rubbish being entered.

When accessing a data entry screen for a selected Label, press the  key to begin editing. For a 4-digit formatted field the initialised engineering field will be shown as “0000”. The user would enter 4-digits like “1234”.

If the BCD field were formatted as NNN.N then the user would still enter four digits – WITHOUT entering the decimal point. For this field format entering “1234” would result in “123.4”.

### 3.3.5.2 Entering values for BNR formatted words.


The “Sign” of an entered value for standard BNR formatted words can be altered by pressing the  key. This key will toggle the value of Bit-29 between a ‘0’ and a ‘1’.

Unlike BCD words above the user does not have to adhere to the number of digits entered. If you require to enter a value of “123.4” then you would press ‘1’ ‘2’ ‘3’ ‘.’ ‘4’. The decimal point button is active for BNR entry.

### 3.3.5.3 Entering values for BNR “Special” formatted words.

In the ARINC 429 specification, there are defined words that have to be treated in a special case. Example Labels are Labels 150 (GMT) 260 (date), 310 (Latitude) and 311 (Longitude).


**Label 150 : GMT** has three fields defined, Hours Minutes and Seconds.

Access the label in the usual way. Enter a time of “012359” will result in “1: 23.59” being displayed. The  keys allow individual editing of the Hours, Minutes or Seconds fields.

**Label 260 : Date** is similar to the description for Label 150 above.

**Label 310 and 311: Latitude and Longitude.**

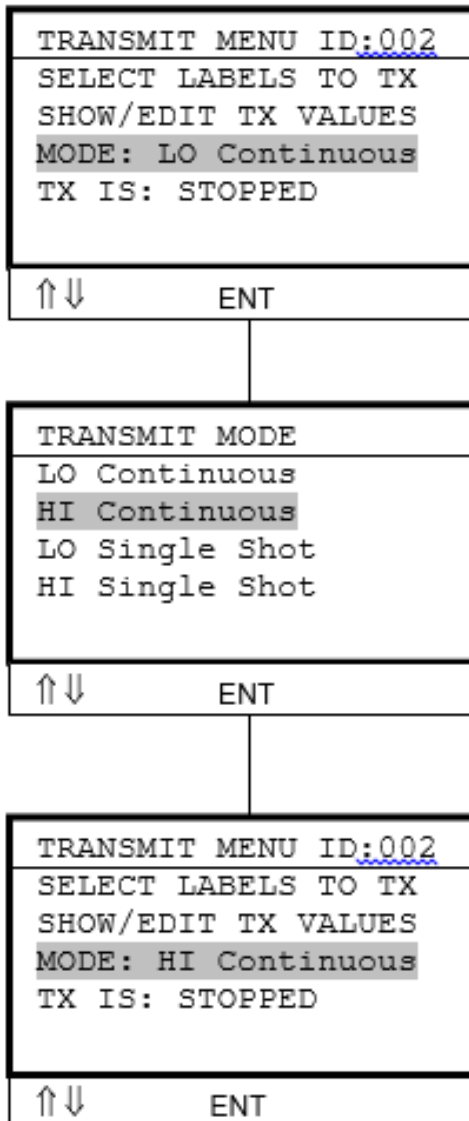
These two labels are special in that they are defined as degrees / 180.

If the user enters “45.5” degrees and presses  key the value displayed will be “N45.499920”. In order to change the “N” (“E” for L311) to a “S” (“W” for L311) the user must move the cursor to hover over Bit-29 (Sign bit). Entering a ‘1’ will result in the value changing to “S134.50024”

### 3.3.6 MODE: Setting the Transmitter mode

This menu option sets the mode of transmission. There are four possible modes:

#### TRANSMIT MODE

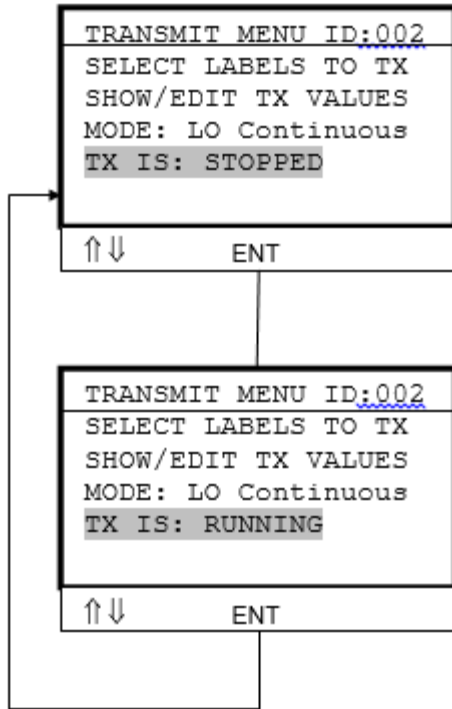


1. Continuous transmission at the High speed rate, 100kbp/s
  2. Continuous transmission at the Low speed rate, 12.5kbp/s
  3. Single Shot at the High speed rate, 100kbp/s
  4. Single Shot at the Low speed rate, 12.5kbp/s
- Continuous transmission means that it continue until the transmitted is switched off.
  - Single Shot mode means that every time the transmitted is set to "RUNNING" the transmitter will transmit one iteration of the currently enabled transmitter list and then stop.

### 3.3.7 TX IS: Starting / Stopping the Transmitter

This function sets the state of the transmitter to either transmitting or not transmitting.

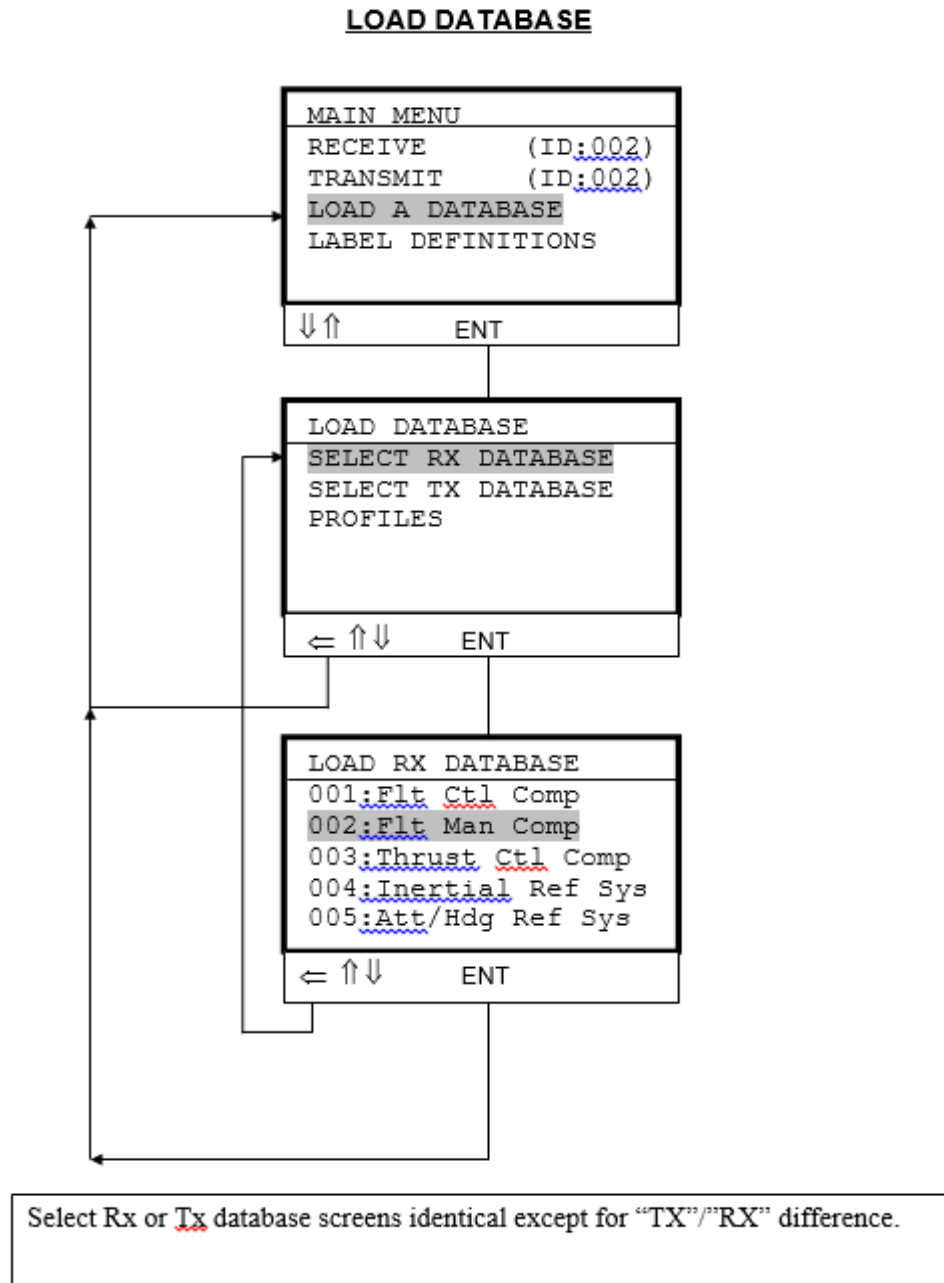
#### TRANSMIT RUN/STOP



- If the Mode is set to “continuous” then the transmission will continue transmitting all enabled Tx labels until the transmitter is switched off. The transmitter state is toggled by pressing the ENT key.
- If the Mode is “Single Shot” then each time the ENT key is pressed the transmitter will transmit one iteration of the enabled Tx Labels and then stop. The display will momentarily show “RUNNING” and then change back to “STOPPED”.

### 3.4 LOAD A DATABASE

This section loads the standard ARINC 429 Engineering Units Definitions files for Tx and Rx. There can be a different database loaded for Rx and Tx. This section is also the entry point to for managing Profiles (see later section).

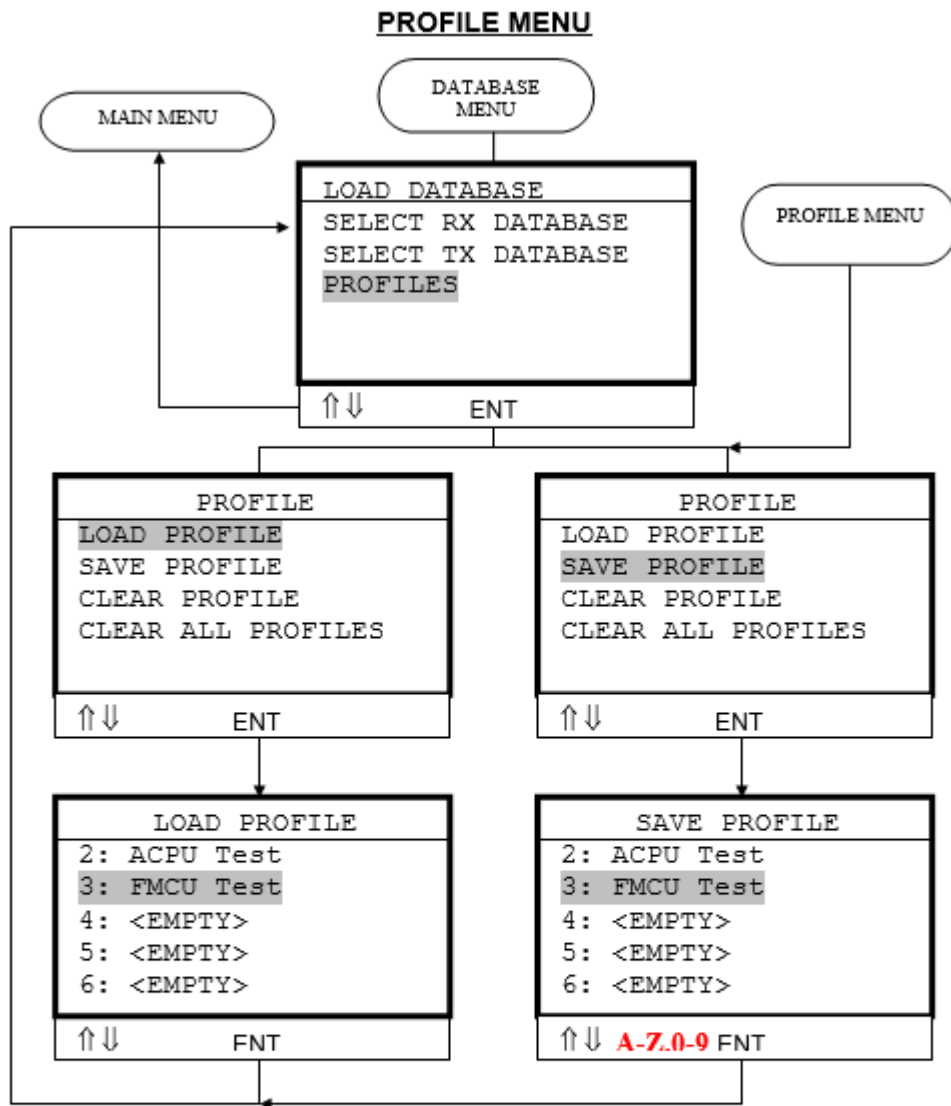


Using databases allows the user to interpret received data in meaningful engineering units formats such as Air speed in Knots, Altitude in Feet, etc. Otherwise the user would have to decode the raw binary data in order to decode the values. The same applies to entering real values for subsequent transmission.

The DATAIR-400/M3 is supplied with a compliment of standard definitions. Choose the definition in order to load the required definitions for your test requirements. For further information consult the ARINC 429 Specification. The "(ID:002)" shown in the screen refers to the loaded active definition.

### 3.4.1 PROFILES

Profiles are used to hold different configurations that may be required to be saved by different users. Databases for Tx and Rx and the Label list configuration (enabled Tx labels, etc.) are typically saved in profiles. This saves the user from having to set up the instrument each time they need to conduct a test. Options available are Load, Save, Clear and Clear All Profiles. When saving a new Profile the alpha-numeric keypad can be used to save a meaningful name (ie FMCU Test).

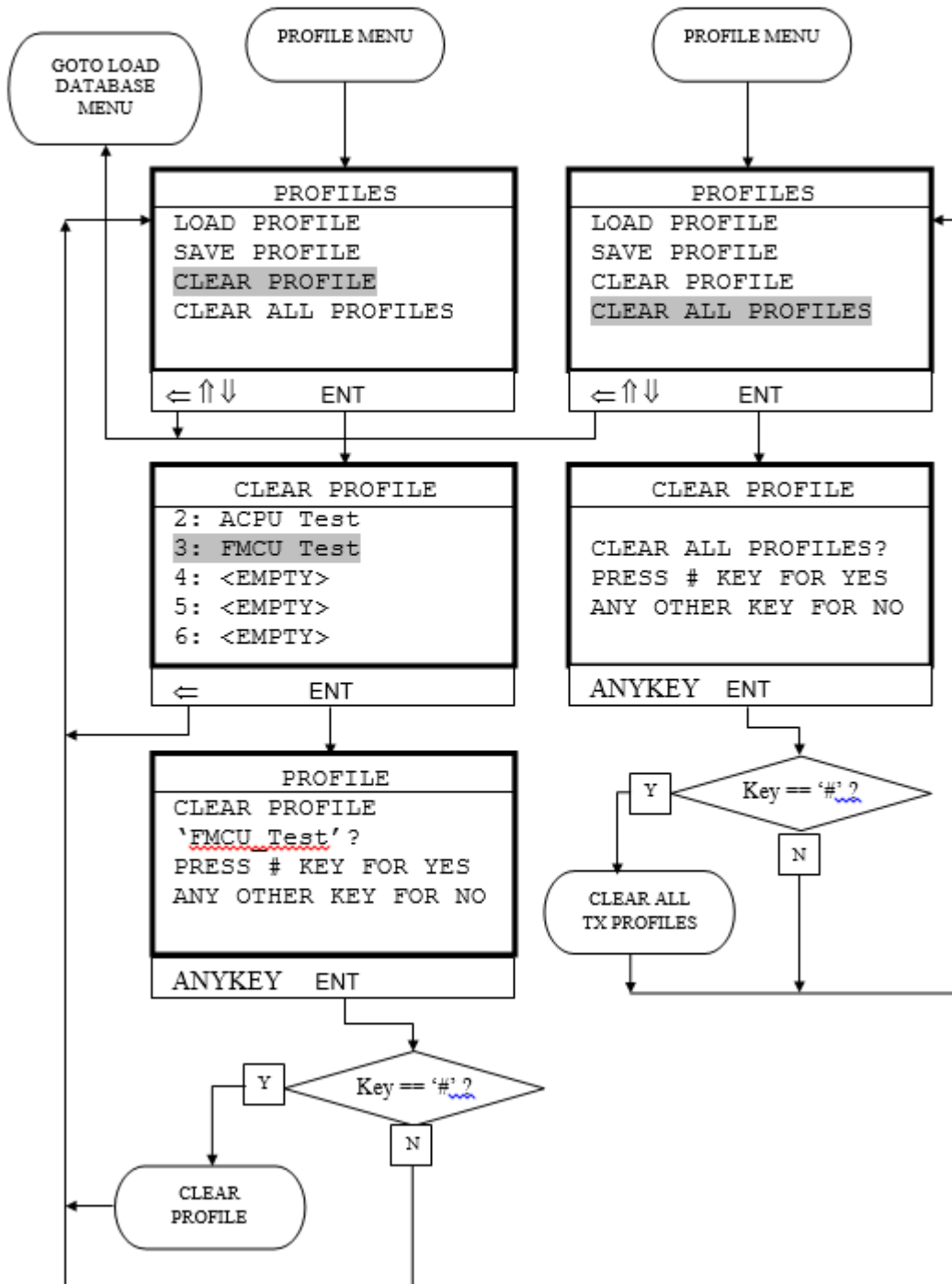


**Notes – Profile Menu**  
 PROFILES: Load, Save, Clear or Clear all saved profiles.

**Notes – Save Tx Profile**  
 Use **A-Z** and **0-9** characters for saving custom name.

The Clearing Profiles menu is shown below:-

**PROFILE MENU**



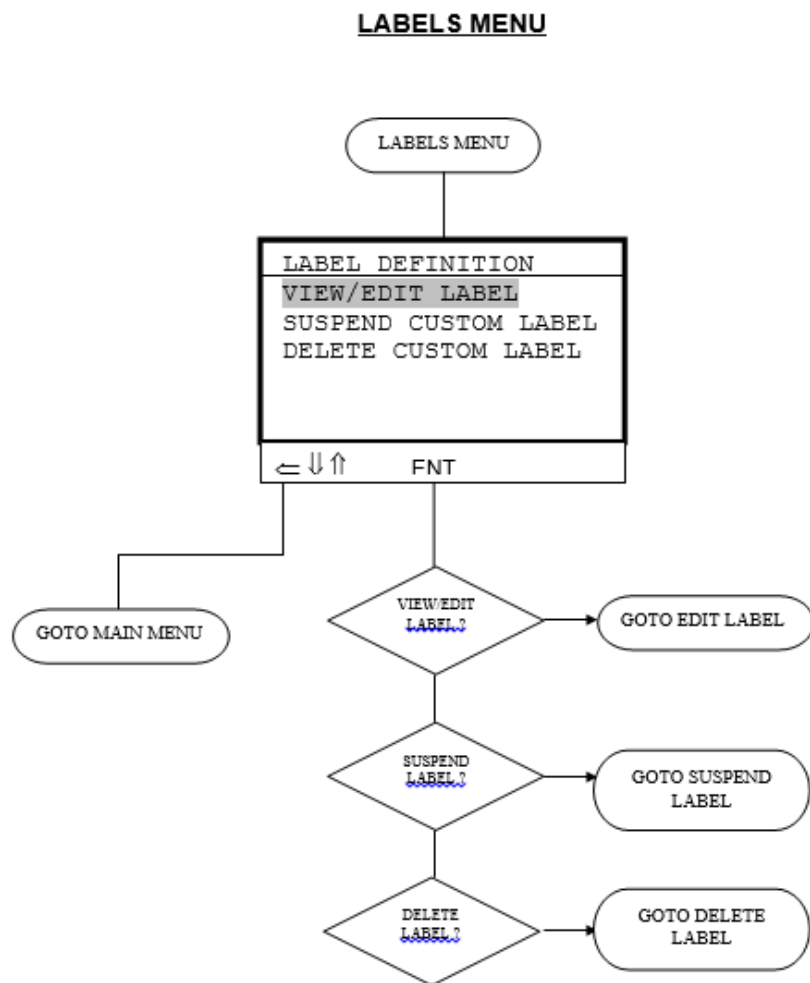


### 3.5 Custom Label Definitions

In addition to the standard engineering units databases contained with the DATAIR-400/M3 the user may also customise the standard labels or create custom definition where a standard definition is unavailable. Customising a standard Label may be required when the width of the data field or the value of the field needs to be altered.

Once a custom Label has been created it can be made 'Active' so that it has priority over the standard definition. The custom Label can also be suspended so that the Standard Label become active once again.

If the custom Label is not required for future use then it can be permanently deleted.



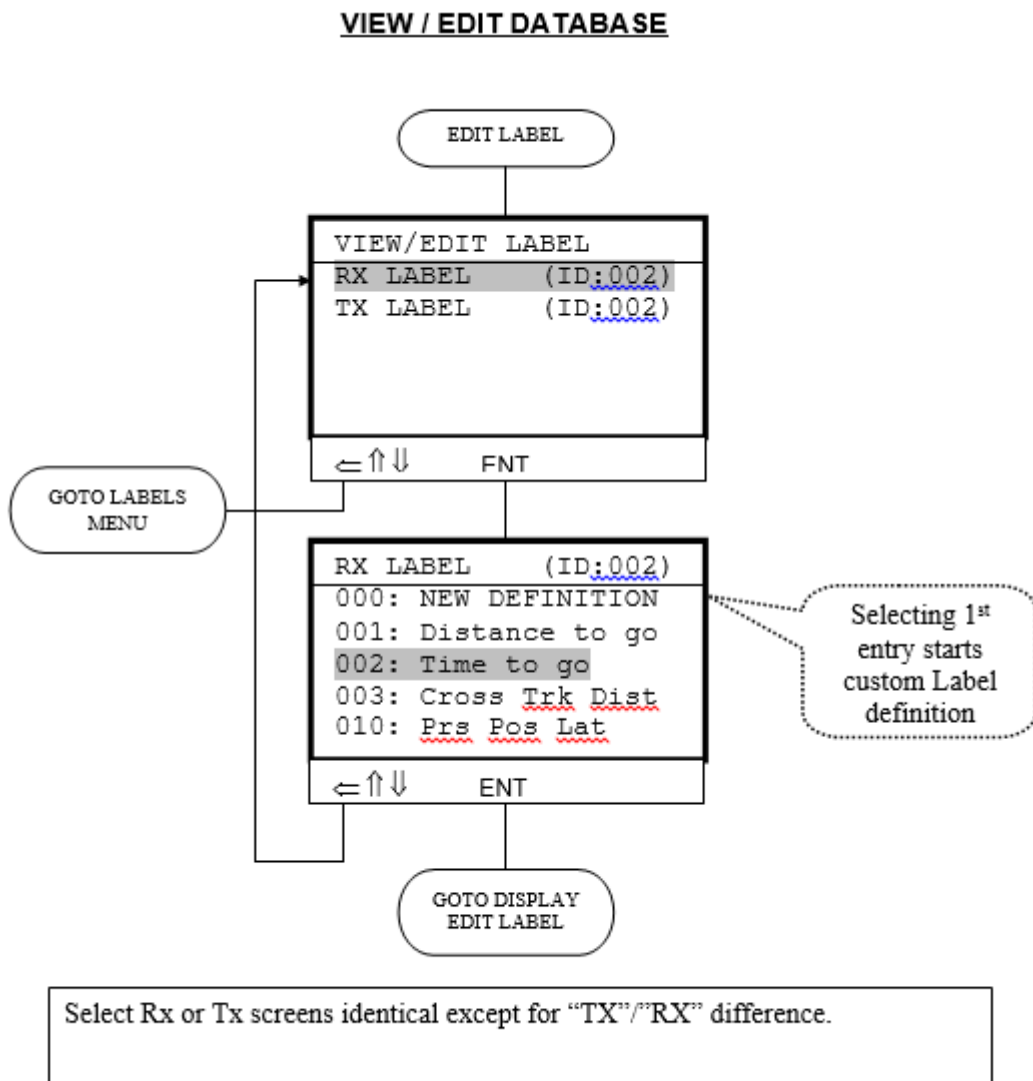
**VIEW/EDIT LABEL:** Allows View of a Label (Standard or Custom) and also modification of chosen Label.  
**SUSPEND CUSTOM LABEL:** Any modified Standard or Custom Label will be saved in NV RAM area. Suspending it will allow the Standard FLASH definition to come back into play again, but the Custom Label can be made active again if required.  
**DELETE CUSTOM LABEL:** Any modified Standard or Custom Label will be saved in NV RAM area. Deleting it will permanently delete it from NV RAM. If a Standard definition exists in FLASH then this will be used again.

### 3.5.1 VIEW / EDIT LABEL

This option allows the user to edit an edit or view an existing Label definition. Transmit or Receive Labels should be selected from the first two choices. The currently shown loaded databases are both from HEX ID 002. Making a selection will take the user to the next screen where a list of currently defined Label are defined.

Label 002 is shown highlighted and pressing the **ENT** key will take the user to the Label edit screen on the next page.

As usual the **←** key will move the menu context back one level and the **CLR** key will move the menu context to the top level.

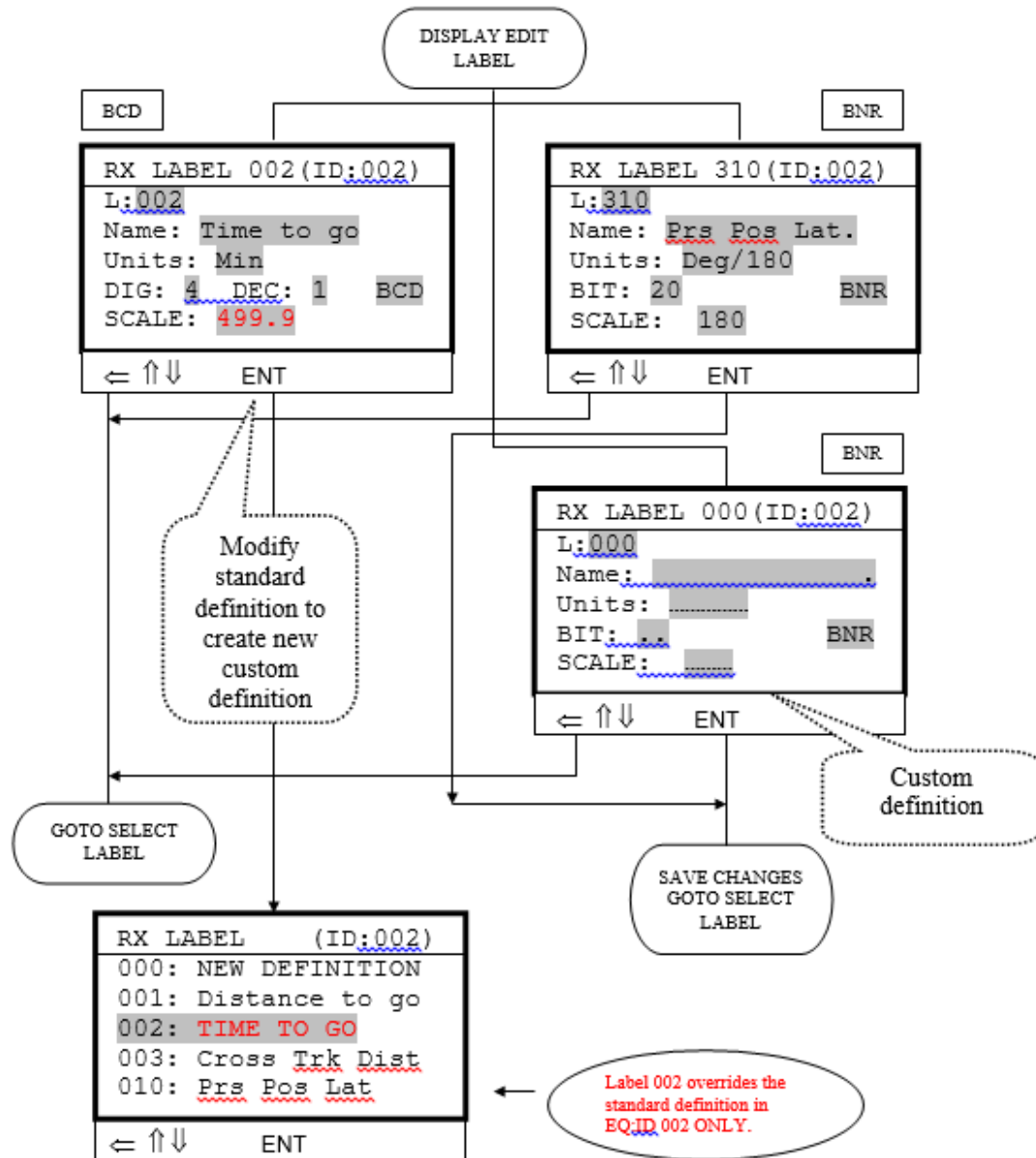


**VIEW / EDIT LABEL, continued**

Below two labels are shown for editing having first been chosen from the previous menu screen. The Label on the left depicts a BCD coded label and the one on the right depicts a BNR coded label.

If the user selected the "000: NEW DEFINITION" option from the previous menu screen then Custom screen will be presented for the user to define the new Label definition.

**PLEASE NOTE** that after a Label has been modified or created the Label name will be presented in UPPER CASE to differentiate it from standard original definitions.

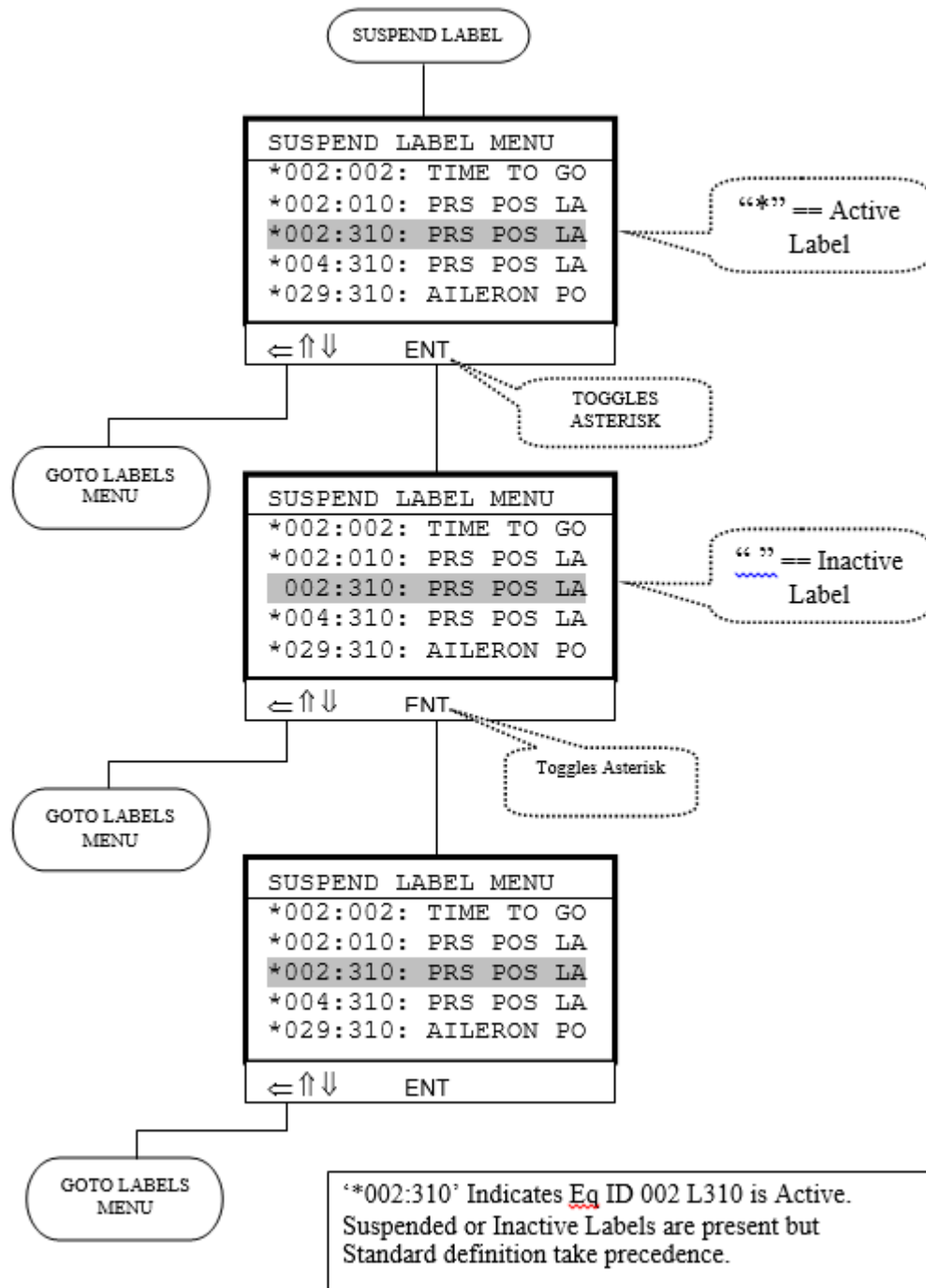


For BNR, SSM will be set to '11'.  
 For BCD, SSM will be set to '00'.  
 SDI will be set to '00'.  
 When a Standard label is modified in any way, it will become a Custom Label and the name will be displayed in CAPITALS. Custom Labels override Standard definitions unless they are Suspended or Deleted.

### 3.5.2 SUSPEND CUSTOM LABEL

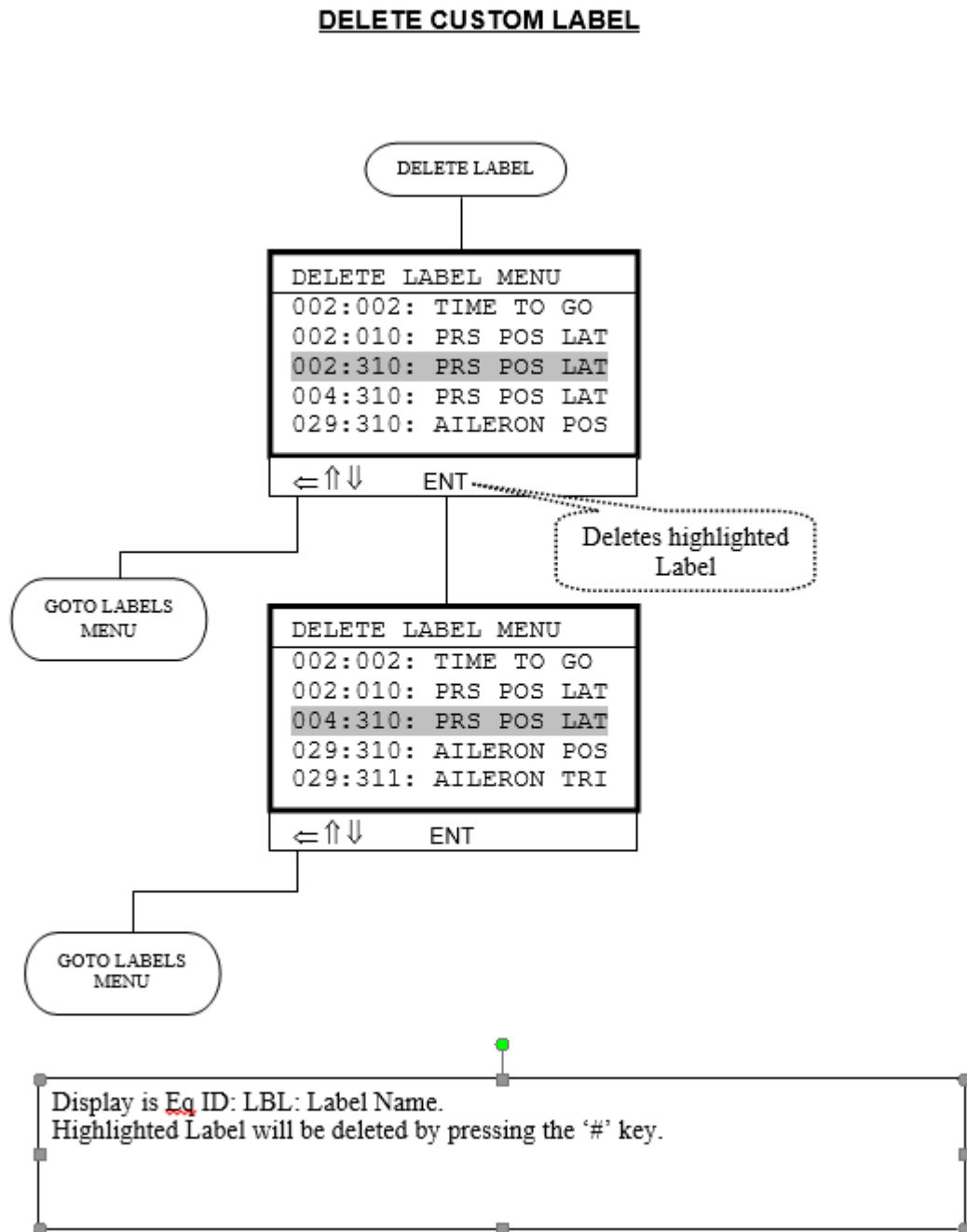
In this menu option a list of any custom or modified Labels and the option to suspend, but not delete them will be presented. The '\*' adjacent to each custom label in the list denotes that they are active in the system and therefore override the standard definition. The **ENT** key may be used to toggle the '\*' active status of each label.

#### SUSPEND CUSTOM LABEL



### 3.5.3 DELETE CUSTOM LABEL

In this menu option a list of any custom or modified Labels is presented that can be selected and permanently deleted from the system memory. Use the **ENT** keys to scroll up and down the list of defined custom label to locate the one(s) to delete. Use the **ENT** key to delete each Label no longer required.



### 3.1 ARINC 429 connections

The DATAIR-400/M3 unit is fitted with an industry standard D-9 plug.

There are five connections:

|                     |        |
|---------------------|--------|
| RX ARINC +Ve Data : | Pin 6  |
| RX ARINC -Ve Data : | Pin 7  |
| TX ARINC -Ve Data : | Pin 8  |
| TX ARINC +Ve Data : | Pin 9  |
| Ground :            | Pin 5. |

### 3.2 RS232 Cable Connections

The following table lists the necessary connections for a suitable RS232 cable.

|        | <b>D9 DATAIR-400/M3 (1)</b> | <b>D9 Host PC (2)</b> |
|--------|-----------------------------|-----------------------|
|        | <b>PIN</b>                  | <b>PIN</b>            |
| Wire 1 | 2 (Rx)                      | 3                     |
| Wire 2 | 3 (Tx)                      | 2                     |
| Wire 3 | 4                           | 6                     |
| Wire 4 | 5                           | 5                     |
| Wire 5 | 6                           | 4                     |
| Wire 6 | 7                           | 8                     |
| Wire 7 | 8                           | 7                     |

## 4.0 Performing a Firmware update

You will need to download the program “STMicroelectronics flash loader.exe” from our website at: [http://www.yed.com/Downloads/stm32-stm8\\_flash\\_loader\\_demo.zip](http://www.yed.com/Downloads/stm32-stm8_flash_loader_demo.zip) Locate this program in a folder of your choice.

This program will load the update file into the FLASH memory on the DATAIR-400/M3.

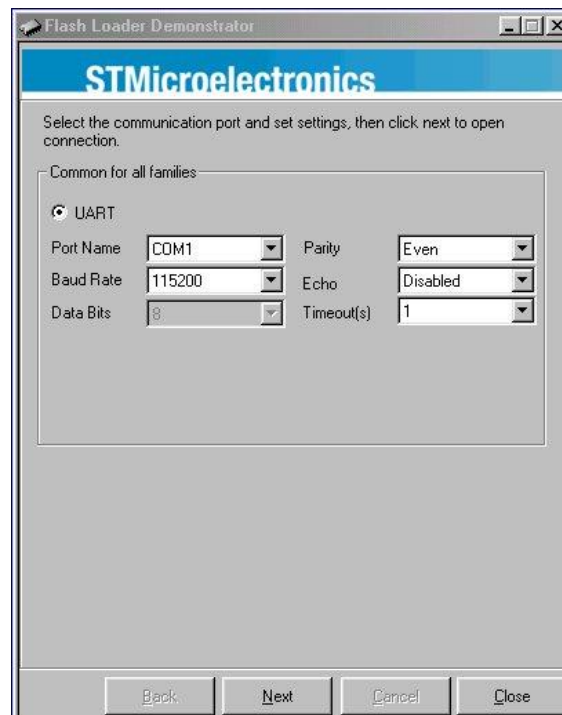
This utility will run on a PC and will allow the reprogramming of the STM32F103 processor firmware with firmware e-mailed or downloaded from our website. This feature alleviates the necessity of a customer having to return their hardware to YED in order to have the firmware updated or modified under contract. The download utility requires the use of an RS232 serial port on the host PC and this can include any suitable USB Serial port adapter.

Connection between the PC and the DATAIR-400/M3 unit is via the supplied D9 to D9 cable.

Procedure for updating the firmware is as follows:

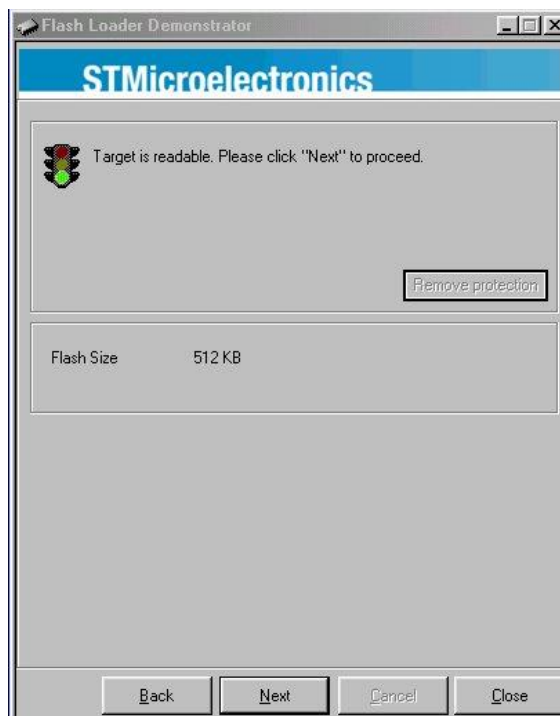
1. With the DATAIR-400/M3 powered OFF, connect the cable end marked “DAT400” on the D9 connector back shell to the DATAIR-400/M3 and the other end to your RS232 port.
2. Switch the unit to ON
3. Start the “STMicroelectronics flash loader.exe” utility and continue with the process below.

The first screen after executing the utility will be as shown below:-

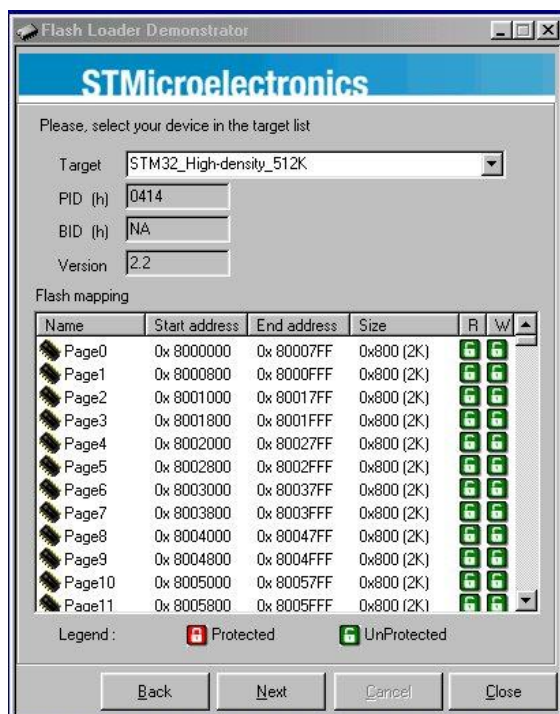


Select an available COM Port. Leave all other settings as they are above. Click <Next> to continue.

The next screen will then be presented:-

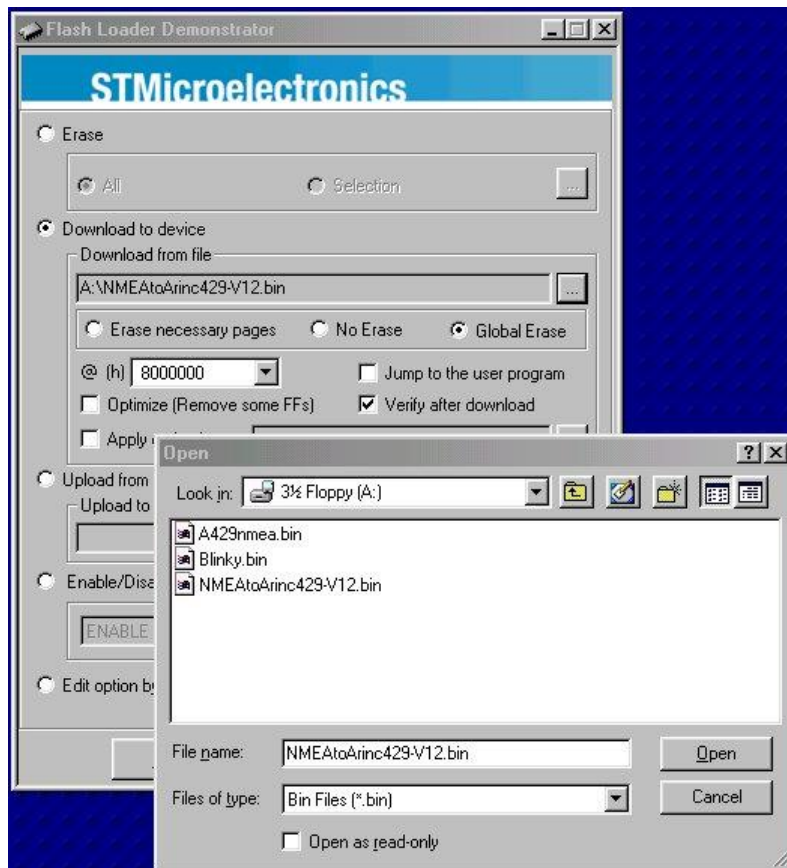


Press <Next> to continue.



Once again, leave the settings as they are presented and click <Next>

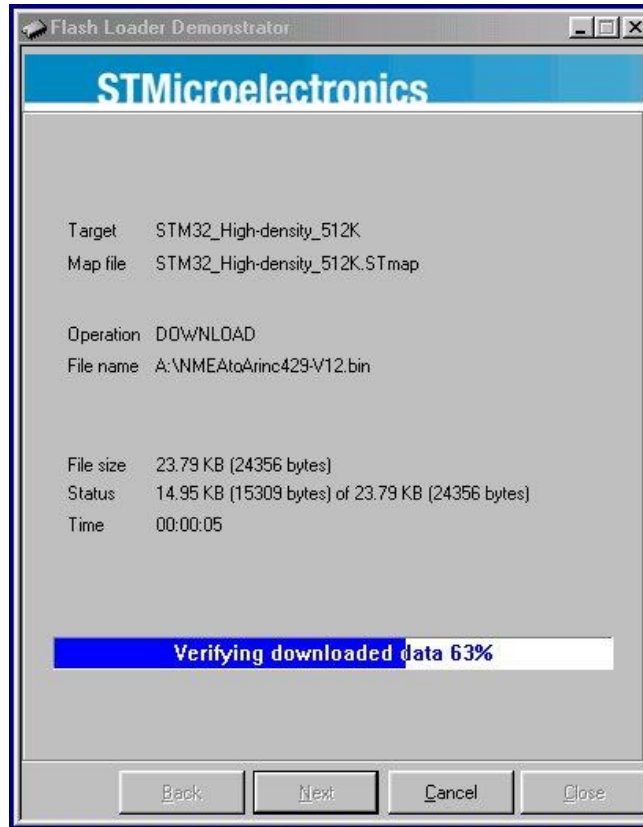




Click the “Download to Device” option and browse to the location of the file to be used to reprogram the processor and select the upgrade file to program. In our example this is shown above as “NMEAtoArinc429-V12.bin”. Click <Open> to load the file.

Click <Next> to program the new firmware.

During programming the following screen will be shown:-



After successful programming the final screen below will be presented:-



Click <Close> to exit the utility and remove the cable. Your DATAIR-400/M3 firmware has now been updated.

# DECLARATION OF CONFORMITY

**Manufacturer's Name:** YED Avionics Ltd

**Manufacturer's Address:** Park House  
10 Park Street  
Bristol  
Avon BS1 5HX  
UK

**Declares, that the product(s):**

**Product Name:** DATAIR-400/M3 ARINC 429 Monitor

**Model Numbers(s):** DATAIR-400/M3

**Product Options:** All

**Conforms to the following Product Specifications:**

**EMC:** EN 61326: EMC requirements for Class A electrical equipment for measurement, control and laboratory use.  
IEC 61000-4-2: Electrostatic discharge immunity.  
IEC 61000-4-3: RF electromagnetic field immunity.  
IEC 61000-4-4: Electrical fast transient / burst immunity.

**Supplementary Information:**

Emissions which exceed the levels required by this standard may occur when this equipment is connected to a test object.

Tested on: 12th November 2014

Result: The equipment fully complied with the requirements of the specified tests.

12th November 2014.



George Brownett,  
Managing Director,  
For and on behalf of YED Avionics Limited



## FCC Regulations

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by Yeovil Electronic Developments could void the user's authority to operate this equipment.