

**F7400**  
**CONFIGURATION MANUAL FOR**  
**DLBASE**

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# 1 INTRODUCTION

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This manual describes in detail how to use the F7400 application program called DLBASE. All of the options are explained and an example is given to demonstrate the use of this program.

## 1.1 PROGRAM DESCRIPTION

DLBASE was designed to assist you in configuring and using databases for data collection with your F7400. In addition to being easy to use and allowing you to program your database structure quickly, DLBASE allows you to design your database for a variety of configurations without having to be an expert programmer.

The program is structured and used in two different operating environments.

- **Configuration Environment**
- **User Environment**

The configuration environment allows you to develop the generic structure of the database through the definition of a series of parameters. These parameters are defined by responding to a series of questions proposed by the program itself. See chapter 2 for details.

The user environment allows you to collect, preview, transfer or delete data according to the configuration in the previous stage. The user environment is the actual database manager. See chapter 3 for details.

These two environments are separated by the Password command in the configuration environment. This is necessary for database security. The password must be entered to get from the user environment back to the configuration environment. See par. 2.1.1 for details.

There is an environment variable named DLBASE\_D which sets the path where all the files generated by the DLBASE program (CNF, .LOG, .DBS files) will be located. This variable by default is defined in NEWAUTO.BAT; SET DLBASE\_D=C:.

## 1.2 DATABASE STRUCTURES AND EXAMPLES

DLBASE can be configured to organize data entry according to the structure type. To help understand these structure descriptions the following terms are presented here for your reference and an example is given for each structure type.

**Data Field** A group of associated characters (words, symbols or numbers) that form information.

**Data Record** A group of associated data fields. In DLBASE, a data record can contain from 1 to 5 data fields.

**Data File** A group of associated data records. A data file can contain an indefinite number of data records.

The number of data records for each type of structure is only limited by the amount of RAM-Disk memory.

### 1.2.1 Data Fields Only

Data fields are grouped in blocks of memory called data records. Data records can be defined by 1,2,3,4 or 5 data fields.

Data records can be defined without any headers. This is the simplest database structure. The result is a database without any branches.

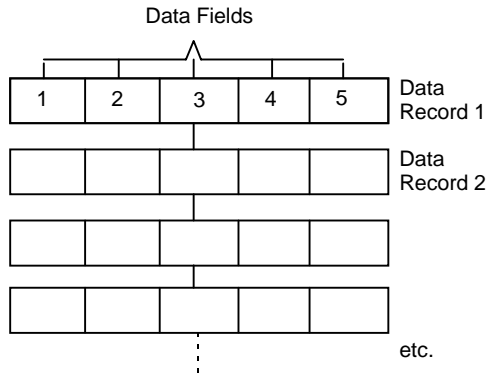


Figure 1 - Database without any Headers

### Example 1

A warehouse needs to record its inventory once a month. They need to record three types of information for each item.

A database structure can be defined by the DLBASE application program where three data fields are defined for each data record.

#### Data

- data field 1 style (indicated by barcodes on the boxes)
- data field 2 color (a two character identifier)
- data field 3 price

After all three fields have been entered, defining one data record, (or one item), the F7400 continues to prompt you for the next data record by presenting you with the same data entry prompts.

The data records can be grouped into data files by using the Closing command in between completed data record entries. These closing records however, act only as file separators and cannot contain any data.

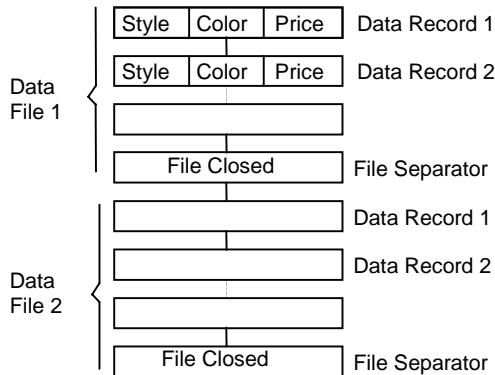


Figure 2 - Database with dummy closing records

### 1.2.2 Main Header With Data Files

The Main Header represents the first subdivision where the following data files are stored. It exists in the form of a record and can contain from 1 to 5 fields. The default value is 0 (no header).

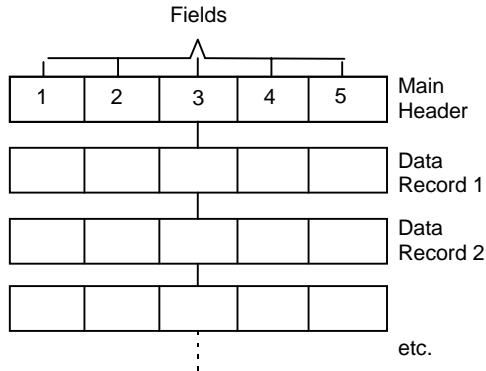


Figure 3 - Database with a Main Header

#### Example 2

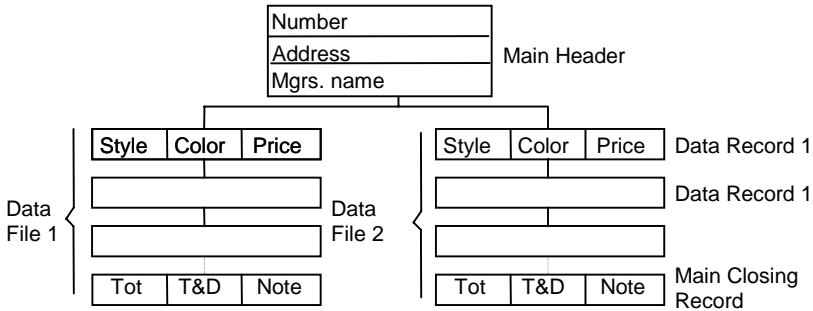
The warehouse in Example 1 has expanded and now has two locations. They both have the same inventory requirements. To indicate which inventory file belongs to which warehouse, a Main Header record can be defined with three data fields.

**Main Header**

- data field 1      warehouse number
- data field 2      warehouse address
- data field 3      warehouse manager's name

After these three fields are entered for the Main Header record, the F7400 prompts you for data entry according to the data record structure as in Example 1.

A Main Header can define several groups of data files. The result is a database structure with different data files associated with the Main Header.



**Figure 4 - Database with multiple Data Files in a Main Header**

This structure can be defined with a Main closing record that contains data file details to be associated with the Main Header, or without a Main closing record in which case closing the file serves only as a file separator without any associated information.

If a Main closing record is chosen, each data file in this structure will have a Main closing record associated with the Main Header.

A Main closing record can include information such as: total number of records, time and date of closure or comments.

The file must be closed in order to return to the Main Header to define a new data file or select a new Main Header.

After closing the file, the next time data is entered the prompt will be for the Main Header record. By entering the same information in the Main Header record, a new data file will be created under the same Main Header (as in Figure 4).

By entering new information for the second warehouse in the Main Header record, a new Main Header will be created and the data files will be associated with their respective warehouses.

### 1.2.3 Main Header, Secondary Header and Data Files

The Secondary Header represents the second subdivision of data storage; it exists only if a Main Header has been chosen. It exists in the form of a record and can contain from 1 to 5 fields. The default value is 0 (no header).

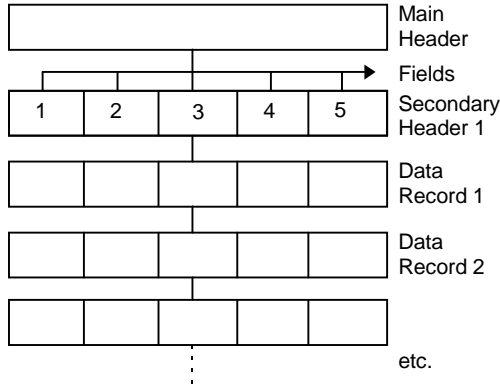


Figure 5 - Database with a Main Header and Secondary Header

A Secondary Header can define several groups of data files and the Main Header can define many Secondary Headers with their associated data files. This results in the fully extended database structure.

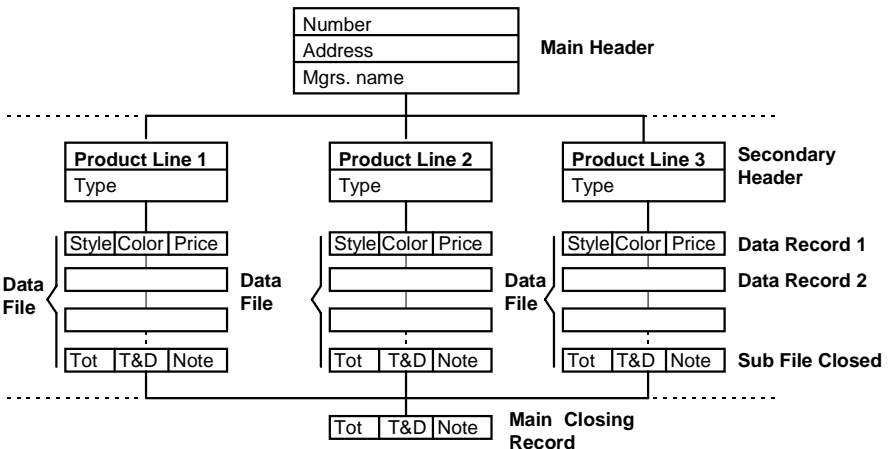


Figure 6 - Schematic illustration of fully extended database structure

### Example 3

The warehouses in the previous examples now have two additional lines of products. They desire to keep track of these inventories separately. Here Secondary Headers can be defined with one data field for type of product.

#### Secondary Header

data field 1      item type

Now the data for each product line will be recorded in a separate data file under a Secondary Header, and all product lines will be associated with the same Main Header for the individual warehouse.

In this case, Secondary closing records can be chosen to include information about each data file (product line). These act like Sub-file closing records. They can contain the same type of information as the Main closing record.

The Main file closing record information can now refer to all of the Secondary Headers with their respective data files.

## 1.3 RUNNING DLBASE

The F7400 comes with the DLBASE application program installed on disk C:. To run it, simply type **DLBASE** from the DOS prompt on the F7400 terminal. There are some options that can facilitate use of the program at run time. These are described below.

### Options

When running DLBASE without any options, the application recognizes numeric-only fields and automatically enables the NORMAL mode for data entry. For 37-key models, this facilitates the input of numeric data from the keyboard since you don't have to toggle the alpha key. However, this can create some problems for 24-key models or if the keyboard has been remapped.

< -n > option

**This option should be used with 24-key models or when the keyboard has been remapped.**

For 24-key models, this option assures numeric input is always valid.

For 37-key models, automatic input of numeric data is disabled. You must force the NORMAL mode by toggling the alpha key. The syntax of this option follows:

```
C:\dlbase -n
```

< -c > option

Through this option DLBASE can be launched directly into the User Environment mode (see par 1.1) by loading a pre-existing configuration.

**Example:** create a configuration "test.cnf" then launch DLBASE as follows:

```
C:\dlbase -c test
```

without the extension **.cnf**.

## 2 CONFIGURATION ENVIRONMENT

---

The configuration environment allows you to develop and/or change the generic structure of the database.

### 2.1 CREATING A NEW DATABASE CONFIGURATION

It is best to decide what type of database structure is needed for your application before you begin configuring it. However, if the first configuration you try doesn't satisfy your needs, you can modify it or create a new one very easily.

To enter the configuration environment proceed as follows.

- 1) Launch DLBASE from the DOS prompt .
- 2) Select the **Configure** option. Four more options will be displayed:  
**New, Modify, Delete and Conf. COM Port.**
- 3) Select **New**. The display will now prompt you for a filename for the configuration file.
- 4) Enter a filename of up to 8 characters and press **<enter>**. The extension .CNF will automatically be appended to the configuration file. The following characters cannot be used in the filename and will return an error message if input:

'\*', '■', '+', '/' '<sp>'

## 2.1.1 Parameter Entry

The F7400 display now shows you the DLBASE Configure menu from which you can develop your database structure. The menu is as follows:

```
Prompt
Main H.
Sec. H.
Data
Main C.
Sec. C.
Lines
Password
```

You may choose any of the following options to begin configuring your database with the following exceptions:

- While you can configure a database that contains only data records, if you decide to use Headers, you must select and configure a Main Header before choosing a Secondary Header. If you select a Secondary Header before having configured a Main Header, the error message "First Insert Main H." will be displayed.
- The Main Closing and Secondary Closing records are always present, but if selected before having inserted a Main H. or a Sec. H. the error messages "First Insert Main H." or "First Insert Sec. H." will be displayed. The closing records don't have any significance without the Headers.
- - When you have completed configuring your database, press **<BS>** or **<ESC>** to exit this menu saving the configuration and returning to the DLBASE Configure selection menu (New, Modify, Delete, Conf. Com. Port).

Press **<BS>** or **<ESC>** again to return to the DLBASE operations menu.

The following is a description of each of the options.

### Prompt

This allows you to select the style of the prompt that will be displayed on the F7400 when you are entering data. The available selections are:

Prompt Type:

·  
^  
—

The following options show the ^ (carat) prompt.

### Main H.

This allows you to select a primary division (Main Header) under which you can store data files with or without Secondary Headers. The default value is 0 (no header). You can select from 1 to 5 fields within the Main Header record. If you select Main Header from the menu, you are provided with a series of questions to define that Header.

**For selections 1, 2, 3, and 5, pressing <ESC> clears the line and pressing < ▲ > aborts the operation and returns to the DLBASE Configure menu.**

- 1) Main H. fields  
min 0, max 5  
Actual number: 0  
New number: ^

You must choose at least one field in order to select a Main Header record. Data can be entered in the fields to indicate the associated data files or Secondary Headers.

- 2) Field number 1  
min 0, max 64  
Actual length: 1  
New length: ^^

This refers to the number of characters in the *first* field. Steps **2** through **8** will be repeated for as many fields as you have chosen for the Main Header record (up to 5).

- 3)           Message           \*1\*  
               Actual:  
               \*\*\*\*\*  
               New:  
               ^~^~^~^~^~^

This allows you to program a fixed message (up to 9 characters) that will be associated with this Main Header field. This is helpful to the user to determine the current stage of data acquisition.

- 4)                               \*1\*  
               Format:  
               Fixed  
               Variable

This choice determines if the field must be completely full or if partial compilation is possible. Fixed format requires that the field be completely filled with characters before proceeding to the next entry. Variable format allows a number of characters less than the actual field length to be entered as valid data. **For this selection, pressing <ESC> aborts the selection and returns to the DLBASE Configure menu.**

- 5)           Min. length       \*1\*  
               Actual min.:     0  
               New min.:       ^  
                                   \_

This option only appears if the **Variable** format has been chosen. This allows you to choose the minimum number of characters that must be entered in the field in order to be accepted as valid data. The default value is 0 (no entry). The program will not allow you to enter a number for minimum length that is larger than the actual field length.

**For selections 6, 7, and 8, pressing <ESC> aborts the selection and returns to the DLBASE Configure menu.**

- 6)                               \*1\*  
               Type:  
               Alphanum.  
               Numeric

This option determines whether the field is alphanumeric or numeric.

- 7) \*1\*  
     Barcode:  
     No  
     Yes

This option allows the reader to be enabled for barcode reading as a form of valid data entry. Answering Yes enables the reader and the keyboard. Answering No enables the keyboard only.

- 8) \*1\*  
     Verify:  
     No  
     Yes

With this option you can select several data verification routines that allow you to control data entry.

If you do not select this option, pressing **<enter>** will return you to the next field or to the DLBASE Configure menu depending on the number of fields you have selected.

When you select this option the following menu is provided:

- Required
- Default
- Pattern
- Limits
- Set in
- Set out

After choosing the desired options, press **<BS>** or **<ESC>** to exit this menu and return to either the next field or to the DLBASE Configure menu.

The following is a description of each of the options:

**REQUIRED**

This option forces the operator to enter data into the current field. You can not enter blank records into this field when this option is enabled.

If you attempt to enter a blank record, the F7400 presents you with an error message and a repeated data entry prompt until valid data is entered. Minimum length fields can be used with the exception that the **Required** option overrides a minimum length value of 0. At least one character has to be entered for valid data.

The **<BS>** or **<ESC>** key allows you to exit from this menu.

## DEFAULT

This option allows you to enter a common value to be used during data entry. When you select **Default** and then **Yes** you will be presented with the following menu:

```

Default          *1*
Actual:
*

New:
^
_

```

Enter the data that you want to have displayed as a default data entry.

When data entry is performed this common data will be presented as part of the prompt. To select this data simply press **<enter>**.

If you want to enter different data, you must backspace (**<BS>**) over the default data or press **<ESC>** to clear the line and then type the desired data. Then press **<enter>**.

## PATTERN

This option allows you to control the format of data entry. It is selectable only if the Alphanumeric option has been chosen. If you chose the Numeric type the error message "not for numeric field" will be displayed.

You can select alphabetic, numeric or both character formats for each character position in the data field.

When you select **Pattern** and then **Yes** you will be presented with the following menu:

```

Pattern          *1*
Actual:
**

New:
^
_
    
```

The following values will determine what kind of data can be entered at each character position.

A = Alpha      9 = Numeric      \* = Both

Pressing any other key besides **<A>** or **<9>** will select both.

If data is not entered according to the format you have specified, the F7400 presents you with an error message and a repeated data entry prompt until the correct data format is entered.

### LIMITS

This option allows you to select a minimum and maximum range that the data must fall between to be considered valid. It is always selectable but valid for Numeric data fields only. If the field is Alphanumeric, then selecting Limits presents you with the error message “not for alfanum. field”.

When you select **Limits** and then **Yes**, you will be presented with the following menu:

```

Min value       *1*
Actual:
0

New:
^
_
    
```

Enter a number for the minimum value.

Max value        \*1\*  
 Actual:  
 0

New:  
 ^^  
 \_

Enter a number for the maximum value.

The following are acceptable data entry formats:

- One decimal point may be entered in any position.
- A <+> or <-> may be entered in the first character position only.

The software checks to make sure you don't define a maximum value that is less than the minimum value.

After selecting the minimum value and pressing **<enter>**, the actual maximum will also be set to this value. The program will not allow you to define a value for maximum that is less than the minimum, and if defined, it will return to the maximum value menu until a valid number is entered.

Data will only be accepted if it falls between the minimum and maximum values inclusive. If data is not entered within the range you have specified, the F7400 presents you with an error message and a repeated data entry prompt until the correct data format is entered.

## SET IN

This option allows you to verify data entry in the selected data field against known values in an external data file that has been downloaded onto the F7400 RAM-Disk.

Data will only be considered valid if it can be matched in this check file.

When you select **Set in** and then **Yes**, you will be prompted to set the check file:

```

Check file      *1*
Actual:
*****●***
New:
~~~~~
    
```

Enter the name of the data file and extension (if any) that will be used as the check file. Remember this is a data file that you have already downloaded onto the F7400 RAM-Disk to the same directory set in the NEWAUTO.BAT file of the environment variable.

The check file can be created and/or edited on a PC and must meet the following criteria:

- It must contain only ASCII data.
- Each data string must be terminated by a Carriage Return (CR) and Line Feed (LF). These characters are normally added by all text editors when you press the Enter key.

Data files created through the F7400 DLBASE program (.DBS files) cannot be used as check files because they contain non-ASCII data.

**Example:**

If you have a field named "Type" that contains information on the color of your products and you want to make sure only valid data (colors) are entered into this field, you can create a data file, say "VALID.DAT" on a text editor and download it to the F7400 where it can be used as the check file for field "Type".



**Figure 7 - Example check file VALID.DAT**

During data entry, only colors that match those in the VALID.DAT file will be accepted as valid input for the "Type" field. Therefore, **Red**, **Green**, etc. are valid entries, but if the color **Yellow** is entered it will not be accepted.

In this case the F7400 will give the error " \* Invalid value ! \* " and prompt again for a valid data entry.

## SET OUT

This option allows you to verify data entry in the selected field against previously entered data values in that field.

It prevents the entry of duplicate data into the database for the particular field wherever that field occurs.

If you attempt to enter duplicate data, the F7400 presents you with an error message and a repeated data entry prompt until valid data (non-duplicate data) is entered.

## Sec. H.

You must select and configure a Main Header before a Secondary Header can be chosen, otherwise an error message is displayed.

This allows you to select a secondary division (Secondary Header) under which you can store data files. The default value is 0 (no header). You can select from 1 to 5 fields within the Secondary Header record. If you select a Secondary Header from the menu, you are provided with the same series of questions as the Main Header in order to define it. (See **Main H.**)

## Data

This is where the actual blocks of data will be defined. The default value is 1. You can select up to 5 separate data fields to define a data record. After choosing the number of data fields, you will be prompted with the same series of questions as the Main and Secondary Headers in order to define them. (See **Main H.**)

**Main C.**

This allows you to select a closing record for the Main Header. If you select a closing record, you are provided with a series of questions to define that record.

The following configurations are available and will be displayed:

- 1) Note:  
No  
Yes

This allows you to enter a comment in the closing record.

- 2) Tot. records:  
No  
Yes

This option reports the total number of data records in the file. The number reported includes the Main Header record, all Secondary Header records, and all Secondary closing records. The Main closing record is not reported in this total.

- 3) Time & Date:  
No  
Yes

This option reports the Time and Date of the closing of the file from the Real Time Clock.

- 4) Sum F1xF2:  
No  
Yes

This option allows you to choose two separate data fields and perform a multiplication of the corresponding data for each. It then sums all the multiplied data to give you a total.

It is your responsibility to choose data fields that have significance for this operation. For example the data fields 'quantity' and 'price' can be used to give a total value of inventory.

If you choose not to use a closing record, closing the file serves only as a file separator without any associated information.

### **Sec. C.**

This allows you to select a closing record for the Secondary Header. If you select a closing record, you are provided with a series of questions to define that record. The same configurations are available as in the Main Closing record. (See **Main C.**)

### **Lines**

This allows you to select the number of lines on which data will be displayed. Your choices are one or two lines.

### **Password**

This allows you to change the password that is used to return to the DLBASE Configure menu from the user application menu. The password is always enabled. This is necessary for database security.

In order to exit the DLBASE user environment you must press **<BS>** or **<ESC>** from the user application menu. You are then prompted to enter the password. You cannot get back to the configuration environment until you enter the correct password. You can press **<enter>** to return to the user environment.

The default password is 9999.

To choose a new password you must select the Password option. The display prompts you:

```
Ins. password:  
~~~~  
_
```

You must enter the current password before you can choose a new one. After entering the current password, you are prompted:

New password:  
^  
^  
^  
\_

You can enter any combination of characters. The password can contain from 1 to 4 characters.

## 2.2 MODIFYING A DATABASE CONFIGURATION

You may desire to change some of the parameters that you have chosen in the original configuration of a particular database.

The DLBASE Configure menu allows you to modify some of these parameters. Typically, modification is done during database development. Once defined, it is usually not necessary to reconfigure a database.

In order to modify an existing database, do the following:

- 1) Launch DLBASE from the DOS prompt . (If you are already in the User application environment you will need to get back to the configuration environment by pressing **<BS>** or **<ESC>** and using the password.)
- 2) Select the **Configure** option. Four more options will be displayed: **New, Modify, Delete, Conf. COM Port.**
- 3) Select **Modify**. The display will now present you with a list of configuration files to choose from.

When you select a file to modify, you will be presented with the DLBASE Configure menu. The original selections will be presented as the default values, however you may only be able to change some of them.

If you have already inserted data into the configured database, then the parameters that would require the reconfiguration of the RAM-Disk memory are not available for modification. These parameters are shown with their original values, but the prompt to change them is not available.

If you need to modify these parameters, you must delete the data file (.DBS) or you can create a new configuration.

(See par. 2.1 "Creating a New Database Configuration" and par. 2.3 "Deleting a Database Configuration".)

If you have not entered data into the configured database (created a .DBS file), then all the options can be reconfigured.

The following parameters marked with an asterisk can be modified in a configuration file that already has data associated with it.

- \* 1. Prompt.
- \* 2. Main Header:
  - a). No. of fields
  - b). Field length
  - \* c). Message
  - \* d). Fixed/Variable
  - \* e). Min. len. *(if variable)*
  - \* f). Alpha/Numeric
  - \* g). Barcode
  - \* h). Verify
    - \* i. Required
    - \* ii. Default
    - \* iii. Pattern
    - \* iv. Limits
    - \* v. Set in
    - \* vi. Set out
- \* 3. Secondary Header: *(same as Main Header)*
- \* 4. Data fields: *(same as Main Header)*
- \* 5. Main Closing record:
- \* 6. Secondary Closing record:
- \* 7. Lines
- \* 8. Password

It is not necessary to go through an entire list of parameters for example in the Header or Data field selections. You can modify the ones you desire and after pressing **<enter>** to record them, press **<BS>** or **<ESC>** to exit the list and save the changes. When you have finished modifying all of the desired parameters, press **<BS>** or **<ESC>** to save the

configuration and return to the DLBASE Configure selection menu (New, Modify, Delete, Conf. COM Port).

Press **<BS>** or **<ESC>** again to return to the DLBASE operations menu.

## 2.3 DELETING A DATABASE CONFIGURATION

Two cases can be distinguished here.

- If no data has been entered into the database.
- If data has already been entered into the database.

For the first case, to delete an existing database configuration, do the following.

- 1) Launch DLBASE from the DOS prompt .
- 2) Select the **Configure** option. Four more options will be displayed: **New, Modify, Delete, Conf. COM Port.**
- 3) Select **Delete**. You will be given a list of .CNF files to choose from.
- 4) Choose the file you wish to delete and press **<enter>**. You will be prompted with the filename and a decision to delete it or not.
- 5) Select **Yes** and press **<enter>**. The database configuration file selected is now deleted from the RAM-Disk.

For the second case, in order to delete a database configuration, you must first delete the data from the database with the **Delete** command in the DLBASE user application menu (see chapter 3 "User Environment"). Then you must return to the DLBASE Configure menu by pressing **<BS>** or **<ESC>** and using the password.

From here, use the same procedure as case 1 starting with step 2.

## 2.4 COMMUNICATION PORT CONFIGURATION

The configuration parameters chosen in this menu are saved on the C: in the **dlbcom.cfg** file and are used for transmission of the databases. These parameters are used for DLBASE in general and not for a particular database.

If DLBASE does not find **dlbase.cfg** during start-up, it creates another file according to the standard communication parameters. In this case the menu **Conf. COM Port** is displayed instead of the starting menu.

- 1) Launch DLBASE from the DOS prompt.
- 2) Select the **Configure** option. Four more options will be displayed:  
**New, Modify, Delete, Conf. COM Port.**
- 3) Select **Conf. COM Port.**

A menu with the following entries will be displayed:

- Baud: allows the selection of the transmission baud rate;
- Parity: allows the selection of the parity (even, odd, none);
- Len: allows the selection of the data bit length (7 or 8);
- Stop: allows the selection of the stop bit (1 or 2);
- Com: allows the selection of the serial port to be used; optical communication (infrared communication with the cradle) or electrical communication (through a cable to be connected at the bottom of the terminal).

Select an entry with the < ▼ > key, then press <enter> to see and choose all the configuration parameters.

At the bottom of the display the selectable baud rate range is shown. The serial optical port baud rate can only be selected from 9600 to 115200.

If you select a baud rate lower than 9600 and try to select the optical port, an acoustic error message is produced and the baud rate is automatically set to 9600.

### 3 USER ENVIRONMENT

---

After exiting and saving the database configuration, you are ready to select it and begin data entry.

To enter the user environment proceed as follows.

- 1) Launch DLBASE from the DOS prompt. (If you have just finished configuring a database you will already be in this menu.)
- 2) Select the **Database** option. You are now presented with a list of available databases.
- 3) Choose the name of the database you desire to use and press **<enter>**.

After this you will be presented with the user application menu. The menu is as follows:

Insert  
Close  
View  
Search  
Tx  
Delete  
Time

The following is a description of each of the commands:

#### **Insert**

This command determines the beginning of the data collection cycle. By selecting **Insert**, you can begin entering data from the keyboard or using the barcode reader.

To read a barcode, you have to point to it with the F7400 head, then press the scan button to turn on the laser. The green LED lights and a short beep signals a good read.

Three cases can be distinguished at this point, depending on the structure of the database in use and if the database has been closed at the File or Subfile level.

### Data Fields Only

In this case, all of the field(s) that are part of the data record are repeated continually. At the top of each data record, the display shows the record indicator as a four digit number:

---Data 0001 ▼--

This number increases with each new record added to the database and is re-initialized to 1 every time a file or subfile is closed. If data records are deleted from the database, the record indicator number is recalculated.

If a data record has been defined with more than one data field, then the record will only be stored if all of the fields have valid data entered into them.

By pressing **<enter>** at the beginning of a data field, a blank will be entered into this field.

To interrupt this continual cycle of data entry, press **< ▲ >** in reply to the first data field of the next data record. If you press **< ▲ >** prior to entering a complete data record, this current data record will not be stored.

A file with a .LOG extension is created to manage the record indicator number so that if you exit and re-enter DLBASE, the correct record indicator number is displayed. If all the data records are deleted from the database, the record indicator number is reset to 1, and if the database configuration is deleted (see par. 2.3), the .LOG file is automatically deleted together with the .CNF file.

### Main Header With Data Fields

In this case, the program first asks for the field(s) relative to the Main Header. The display shows the indicator for the Main Header as:

-----Main ▼-----

When the Main Header record is input, the F7400 proceeds with the data records as in the previous case.

Once a data file has been closed with the **Close** command, a new branch (data file) can be created by using the **Insert** command again. The prompt will return you to the Main Header.

By entering the identical information into the Main Header record, a new data file can be created under that same Main Header. In this way an indefinite number of data files can be created in association with the same Main Header. (See Figure 4.)

By entering different information in the Main Header record, a new database of the same structure type can be created.

### Main Header, Secondary Header and Data Fields

In this case, the program first asks for the fields relative to the Main Header (as above), then similarly, those relative to the Secondary Header. The display shows the indicator for the Secondary Header as:

-----Sec. ▼-----

When the Secondary Header record is input, the F7400 proceeds with the data records as in the previous cases.

Once a data file has been closed with the **Close** command, a new branch (data file) can be created by using the **Insert** command again.

The prompt will return you to the Secondary Header.

By entering the identical information into the Secondary Header record, a new data file can be created under that same Secondary Header. In this way an indefinite number of data files can be created in association with the same Secondary Header.

By entering different information in the Secondary Header record, a new Secondary Header of the same structure type can be created. (See Figure 6.)

Depending on what File closing operation was performed, The next **Insert** command will allow you to create: a new data file under the same Secondary Header, a new Secondary Header under the same Main Header, or a new database of the same structure type.

## Close

This command closes the open data fields, Main Headers or Secondary Headers. If a closing record has been chosen for either the Main Header or the Secondary Header, you will be prompted with the selections that were configured for this record.

Three cases can be distinguished at this point, depending on the structure of the database in use and if any closing records were chosen.

### Data Fields Only

Data records can be separated by closing the file with the **Close** command. In this case the closing record acts only as a file separator and cannot contain any data.

The next **Insert** command will return you to data record entry.

### Main Header With Data Fields

The data files must be closed to return to the Main Header.

If a Main closing record has been chosen, the prompts for these options will appear. After all the data of the Main closing record has been entered, the data records are closed. This now represents a data file which includes the closing record. This data file is associated with the Main Header.

The prompt will return you to the Main Header.

### Main Header, Secondary Header and Data Fields

The secondary file must be closed to return to the beginning of the Secondary Header; close both files to return to the Main Header. In this way an indefinite number of Secondary Headers can be created in association with the Main Header and an indefinite number of data files can be created in association with the Secondary Headers.

In the case of a Secondary Header, the F7400 prompts you to:

Close File/Subf

Close Subfile

The **Close File/Subf** command allows you to begin a new Main Header with the next consecutive **Insert** command.

The **Close Subfile** command allows you to begin a new Secondary Header with the next consecutive **Insert** command.

After choosing one of the previous selections, if no closing record was chosen, the message 'Close File' is displayed.

If a Secondary closing record has been chosen, the prompts for these options will appear. After all the data of the Secondary closing record has been entered, the data records are closed. This now represents a data file which includes the closing record. This data file is associated with the Secondary Header.

If a Main closing record has been chosen, the prompts for these options will appear. After all the data of the Main closing record has been entered, the Secondary Header records are closed. This now represents a database file which includes the Secondary Headers, data records and Secondary closing records. This database file is associated with the Main Header.

## View

This command allows you to view the data that has been entered into a particular database. It always begins at the first entry, either the Main Header, Secondary Header or first Data Record depending on the database structure. It then moves sequentially through the data (line by line) with the < ▼ > or < ▲ > keys.

For data fields that fill various lines this could be a long process. Therefore by using the < ◀ > or < ▶ > it is possible to step sequentially through each record (each record can contain up to 5 fields).

The names of the record fields are displayed in reverse, and the data wraps on the display depending on its length (the max. record length is 64 characters).

To exit this command press any key.

If you press **<Esc>**, you will be prompted to delete the current record. The default value is **No**. Pressing **<enter>** here returns you to the data at the point you left off.

## Search

This command allows you to look for particular data entries either in the Main Header, Secondary Header or Data fields. When you select this command, you are presented with the following display:

```
Main H. record
Sec. H. record
Data record
```

Select the desired **Header** or **Data** field to search. You will be prompted to enter the data (message) to search for:

*message:*

Enter the header message or data to search for and press **<enter>**. If the data is found it will be displayed. At this point you are in the same position as the **View** command. You can move sequentially through the data (line by line) with the **< ▼ >** or **< ▲ >** keys.

By using the **< ◀ >** or **< ▶ >** it is possible to step sequentially through each record (each record can contain up to 5 fields).

The names of the record fields are displayed in reverse, and the data wraps on the display depending on its length (the max. record length is 64 characters).

To exit this command press any key.

If you press **<ESC>**, you will be prompted to delete the current record. The default value is **No**. Pressing **<enter>** here returns you to the data at the point you left off.

If you press **<enter>** at this point, the following display will prompt you:

Next

Return

You can choose **Next** which will cause the F7400 to search for the next occurrence of the data being searched for. If there is no other occurrence, the message 'Rec. not found!' is displayed.

You can choose **<enter>** which will return you to the user application menu.

## **Tx**

This command provides for the uploading of data collected in the DLBASE program to a host computer.

When you select this command you must choose the type of serial connection:

Dedicated

Keyboard emul.

This type of communication is Translated since configuration parameters are sent prior to the data.

The configuration information is contained in the first block of data and enables the data file to be displayed in a readable format on the PC.

This data can be printed out or viewed on the host system display.

The only type of files that can be uploaded are .DBS files.

## DEDICATED

To transfer data collected in DLBASE using Dedicated RS232 communications:

- If you use the F7400 electrical port, follow the instructions in the F7400 manual for connections. Choose **Dedicated** and press **<enter>** to start transmission.
- If you use the optical serial port (F970 cradle) follow the instructions in the F7400 manual for connections. While the terminal is out of the cradle, choose **Dedicated** and press **<enter>** to start transmission. When the message "Insert!" is displayed, insert the terminal into the cradle.

If for some reason the terminal is in the cradle, when transmission is started as described above, the message "Extract!" is displayed together with a regular beep signal. Extract the terminal from the cradle. The message "Insert!" will then be displayed, re-insert the terminal into the cradle.

The F7400 prepares to transfer the current data file (.DBS) to the host PC using the configuration parameters set in the **Conf. COM Port** menu.

Data file uploading can be accomplished using the MSCOMM host utility program with the dedicated RS232 option.

It is possible to abort the transmitting session at any time by pressing **<ESC>**. In this case the F7400 responds with the message 'Abort !' and no data will be sent.

## KEYBOARD EMULATION

The F7400 offers an alternative way to transfer data collected in the DLBASE program to a host PC through the Keyboard emulation option.

The hardware setup details are given below.

Keyboard emulation requires the DATAPLUS 8000. The connections are made according to the following diagram:

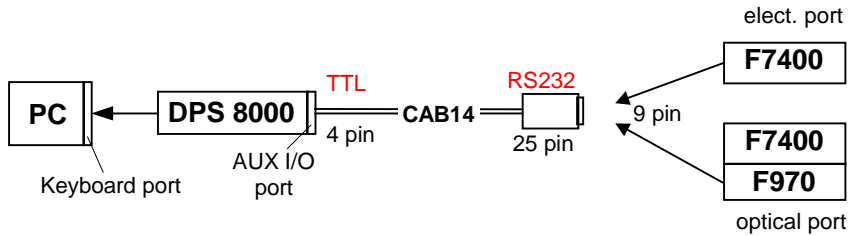


Figure 8 – Keyboard emulation

The data strings from the F7400 are sent through the serial port to the AUX I/O port of the DATAPLUS 8000 decoder, and from there to the PC keyboard port. The DATAPLUS 8000 must be set for ACK/NACK PC32 protocol to control the format of the data strings sent to the PC. (See the DATAPLUS 8000 Operator's manual for more details).

Since the data from the F7400 interface is at RS232 levels, and the input on the DATAPLUS 8000 is at TTL levels, it is necessary to convert the signals. This can be done using the CAB14 cable available from Datalogic.

In addition, connection from the CAB14 cable (25-pin connector) must be made to the 9-pin RS232 port cable of the F7400 (the connection can be made either to the cradle or to the terminal) making sure that the RX and TX signals are crossed and GND is connected. Refer to specifications for the CAB14 cable and to the F7400 terminal cables.

**CAUTION**  
DO NOT wire directly from the F7400 interface to the DATAPLUS 8000 as the different voltage levels will damage the devices.

By default, DATAPLUS 8000 receives data in the auxiliary port (Aux I/O) at 2400, n, 8, 1, without any protocol type.

- If you use the F7400 electrical port, it is possible to use the DATAPLUS default communication parameters, 2400, n, 8, 1; however the ACK/NAK 32 protocol must be set.

- If you use the optical serial port (F970 cradle) connected to the DATAPLUS, it is necessary to follow the instructions below:

In DLBASE select the optical port with the following parameters:

- Baud: 9600
- Parity: none
- Len: 8
- Stop: 1
- Com: optical

Set the DATAPLUS with the following parameters:

- Baud: 9600
- Parity: none
- Len: 8
- Stop: 1
- Protocol: ACK/NAK 32

The data are sent in strings rather than blocks and are in text format without null or carriage return characters.

Choose **Keyboard emul.** The F7400 prepares to transfer the data strings from the current .DBS file to the application.

### **NOTE:**

Only the data strings are sent to the application, the file itself is not uploaded.

Keyboard emulation does not use the MSCOMM utility program.

The application can now receive the data strings from the F7400. It is the responsibility of the software running on the PC to manage the incoming data.

It is possible to abort the transmitting session at any time by pressing **<ESC>**. In this case the F7400 responds with the message 'Abort !' and no data will be sent.

**Delete**

This command allows deletion of all the data records in the given database from the RAM-Disk.

It doesn't matter what the structure of the database is. Main Headers, Secondary Headers and data will all be deleted in one operation.

**Time**

This command displays the current date and time in the following format:

20/07/00  
15:30:00

The time and date are active in this display.

Press any key to return to the DLBASE user application menu.

## 4 DLBASE MESSAGES

---

### 4.1 ERROR MESSAGES

#### 4.1.1 Data Entry

- \*Required !\*

This message is presented if you try to enter a blank record or skip a required field. See the Required command in this manual.

- \*Pattern error !\*

If the data entered doesn't match the configured field pattern. See the Pattern command in this manual.

- \*Limits error !\*

If the data entered is outside of the range specified by the configuration. See the Limits command in this manual.

- \*Invalid value !\*

If the data entered doesn't match any of the data contained in the check file. See the Set-in command in this manual.

- \*Duplicate !\*

If the data entered has already been inserted into the database file. See the Set-out command in this manual.

- \*Too short!\*

When barcode reading, if the code read is shorter than the Minimum value for Variable length codes, or shorter than the Field length for Fixed value codes.

- \*Too long!\*

When barcode reading, if the code read is longer than the Field length.

- \*Not numeric!\*

When barcode reading, and a numeric field has been declared, if the code read contains non-numeric characters.

## 4.1.2 File Management

- Cannot open file:  
XXXX.CNF

This message is displayed if you try to create a database configuration file with non-valid characters in the filename. XXXX refers to the filename. You must use only valid characters in the filename (see par. 2.1 for details).

- Cannot delete:  
XXXX.CNF  
Data Base present!

This message is displayed if you try to delete an existing database configuration when it contains data files. XXXX refers to the filename. First you must delete all existing data files in that database before you can delete the configuration (.CNF) file.

- Main Header not  
inserted!

This message is displayed if you try to close a Main Header structure file that has no data entered into the main header field.

- File empty!

This message is displayed if you try to close a file that has Data fields only before any data records have been entered. In this case, a closing record defines a data file which must contain at least one data record.

- No configuration!

This message is displayed for two reasons.

One is if you try to select **Database** from the DLBASE operations menu before any databases have been configured.

The second is if you select the **Modify** or **Delete** options from the Configure menu before any databases have been configured.

- Error in configuration file !

This message is displayed when attempting to load or modify a database configuration file that has been corrupted or is incomplete.

- No records!

This message will be displayed in either the View or Search commands when no data records have been stored in the database.

- Rec. not found!

This message is displayed in the Search command when the data you specified was not located in the database.

### 4.1.3 Transmission

- Abort!

This message will be displayed if serial transmission of data has been aborted by the **<ESC>** key.

- Timeout!

A timeout is provided to avoid hanging the system when for example the host computer is off, or there is a fault with the communication setup between the host and the F7400. When the timeout interval has expired without any host reply, the transmission attempt is aborted and the F7400 displays this message.

- Too many NACK!

This message will be displayed when there is bad communications or wrong communication parameters have been used.

Press any key after any of these messages to return to the respective operations menus.

## 4.2 NATIONALITY CONFIGURATION

DLBASE offers the possibility to rewrite all the messages it displays in a different language.

To do this, follow the instructions below:

- 1) edit the file **edlbase.msg** in **C:\**;
- 2) translate each line of this file into the desired language;
- 3) save the translated file in the DLBASE working directory as indicated in the environment variable **dlbase\_d** (the default is **C:\**);
- 4) rename the file as **dlbase.msg**.