
Additel/ Cal Calibration Management Software

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Chapter 1 Introduction

Additel/Cal is designed for ADT22XA series and ADT761 references to manage the instruments, references, calibration tasks, calibration schedule and calibration result. This manual will introduce you to how to install, register and use the **Additel/Cal**. All screens have a uniform look with similar speed buttons and menus, making it easy for you to adapt to the system quickly. Each subsequent chapter individually addresses one of the program's screens or major functions. In each of these chapters you will find a full description and explanation of the screens features, as well as detailed, hands-on operating instructions.

Chapter 2 Installation

2.1 System Requirements

To use the **Additel/Cal**, it is recommended that you have the following hardware and software:

- A Pentium class 667 MHz or higher computer with a minimum of 256 MB of RAM (512 MB or more recommended)
- Windows XP or later operating system versions
- A hard disk with at least 500 MB of free space
- Microsoft Office 2003 or later versions

For reference communication:

- RS232 serial asynchronous communication port
- ADT22XA series references (the version of references is DPC2.10 or higher) or ADT761 series references
- Suitable communications cable (supplied)

2.2 Procedures

Insert the Additel/Cal CD into your computer's CD-ROM drive. If the program does not autostart, Run "**setup.exe**". Follow the prompts on your screen to complete installation.

Chapter 3 Starting the Program

To start Additel/Cal, double-click on the **Additel Cal** icon located in the Additel Group. (Multiple instances of Additel/Cal may not be run concurrently on the same machine.)

3.1 Licensing

The first time you run Additel/Cal, you will see the “**Product Activation**” screen See figure 3.1 below. Enter the activation code that you buy, you can enter the HOME SCREEN.

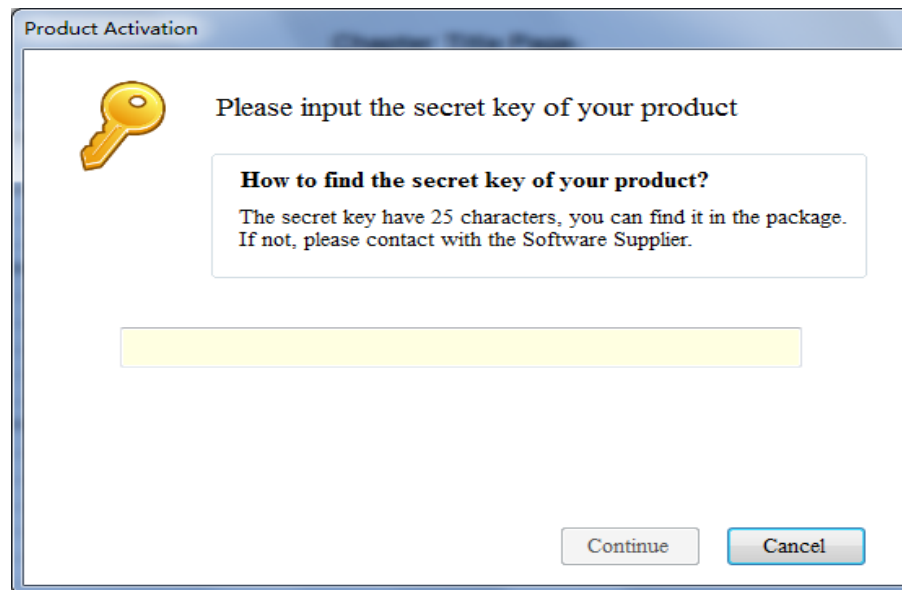


Figure 3.1

Chapter 4 Home Screen

4.1 Using the Home Screen

Figure 4.1 below, is the system's **HOME SCREEN**. This is the main screen you work from when you are using Additel/Cal. It has the buttons and menu items used to activate every other branch and/or function of the system. Keep in mind that the buttons and menu items that are available to a user at any given time are strictly dependent upon the level of system access that they have been granted. An overview of this screen's sections is provided below. However, for more detailed information on any of the items mentioned, please refer to the pages dedicated to those topics in the other sections of this manual.

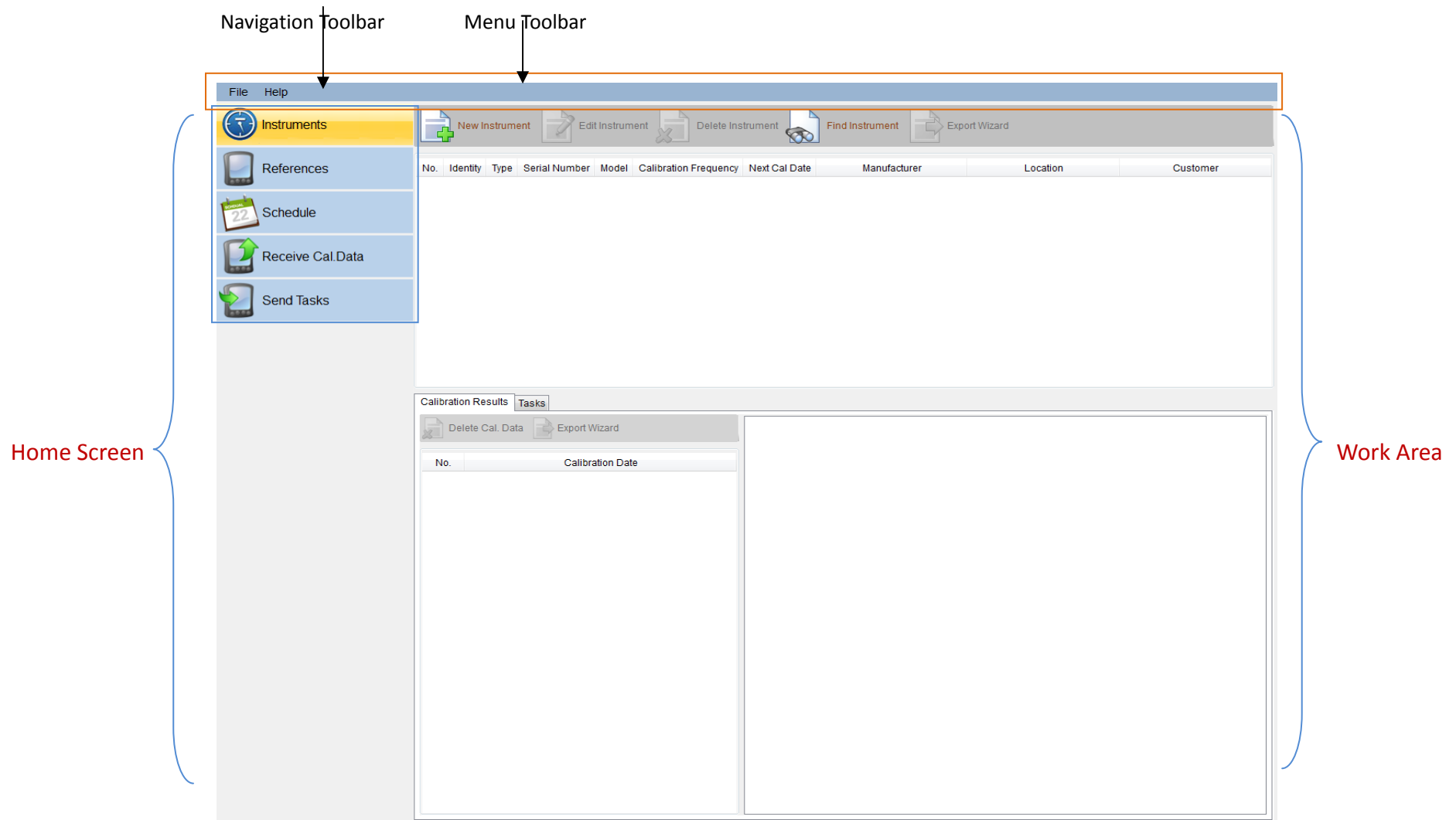


Figure 4.1

4.2 Menu Toolbar

The menu toolbar contains two (2) menus, File and Help, each of which enables you to perform a number of different actions or functions related to the system.

4.2.1 File Menu

Opening the File menu when the HOME SCREEN is displayed provides you with the following options: (See Figure 4.2.1 below)

4.2.1.1 Instruments

This will open the Instruments Screen on the Work Area. For a more detailed explanation, see Chapter 5.

4.2.1.2 References

This will open the Equipment Screen on the Work Area. For a more detailed explanation, see Chapter 6.

4.2.1.3 Schedule

This will open the **Schedule** Screen on the Work Area. For a more detailed explanation, see Chapter 7.

4.2.1.4 Receive Cal.Data

This will open the **Receive Cal.Data** Screen on the Work Area. For a more detailed explanation, see Chapter 8.

4.2.1.5 Send Tasks

This will open the **Send Tasks** Screen on the Work Area. For a more detailed explanation, see Chapter 9.

4.2.1.6 Exit

This will close the Additel/Cal.

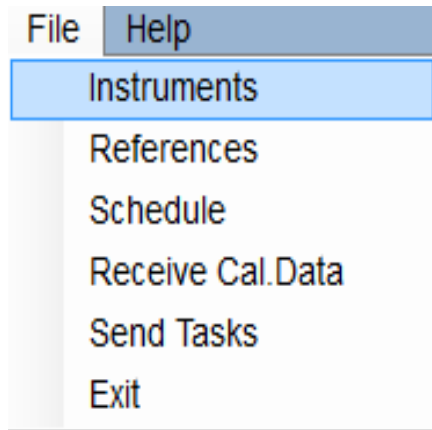


Figure 4.2.1

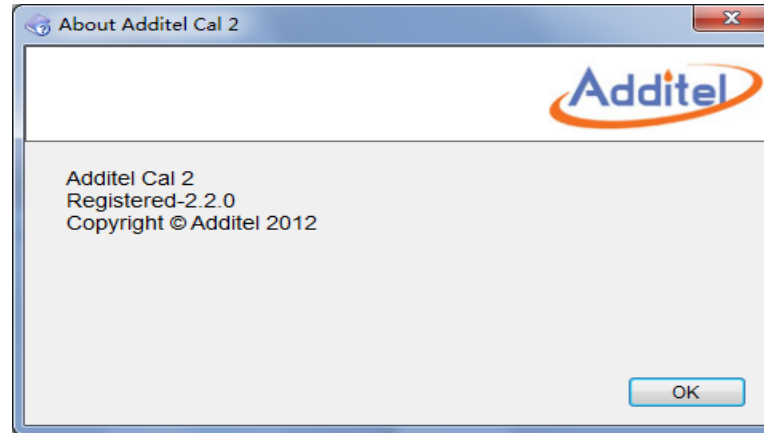


Figure 4.2.2

4.2.2 Help Menu

This will open the About **Additel Cal** Screen.

The **Help** menu displays the "**About**" box, which will give you specific details regarding the Additel/Cal system you are working with. See Figure 4.2.2 above.

4.3 Navigation Toolbar

4.3.1 Instruments

This will open the Instruments Screen on the Work Area. For a more detailed explanation, see Chapter 5.

4.3.2 References

This will open the References Screen on the Work Area. For a more detailed explanation, see Chapter 6.

4.3.3 Schedule

This will open the **Schedule** Screen on the Work Area. For a more detailed explanation, see Chapter 7.

4.3.4 Receive Cal.Data

This will open the **Receive Cal.Data** Screen on the Work Area. For a more detailed explanation, see Chapter 8.

4.3.5 Send Tasks

This will open the **Send Tasks** Screen on the Work Area. For a more detailed explanation, see Chapter 9.

4.4 Work Area

This is the large section of the HOME SCREEN with the Additel/Cal background (see Figure 4.1 on the first page of this section). When you invoke any of the screens by clicking the appropriate button on the Navigation Toolbar, it will be displayed in this area.

Chapter 5 Instruments

The Instruments Screen is used to add, modify and, if necessary delete Instrument records. It is where you could manage the Instrument's information that includes the general information, calibration results and tasks. You also could query the instruments by the specified conditions. When you selected the calibration results as needed, you could also export them to a specified path by excel file. See Figure 5 below

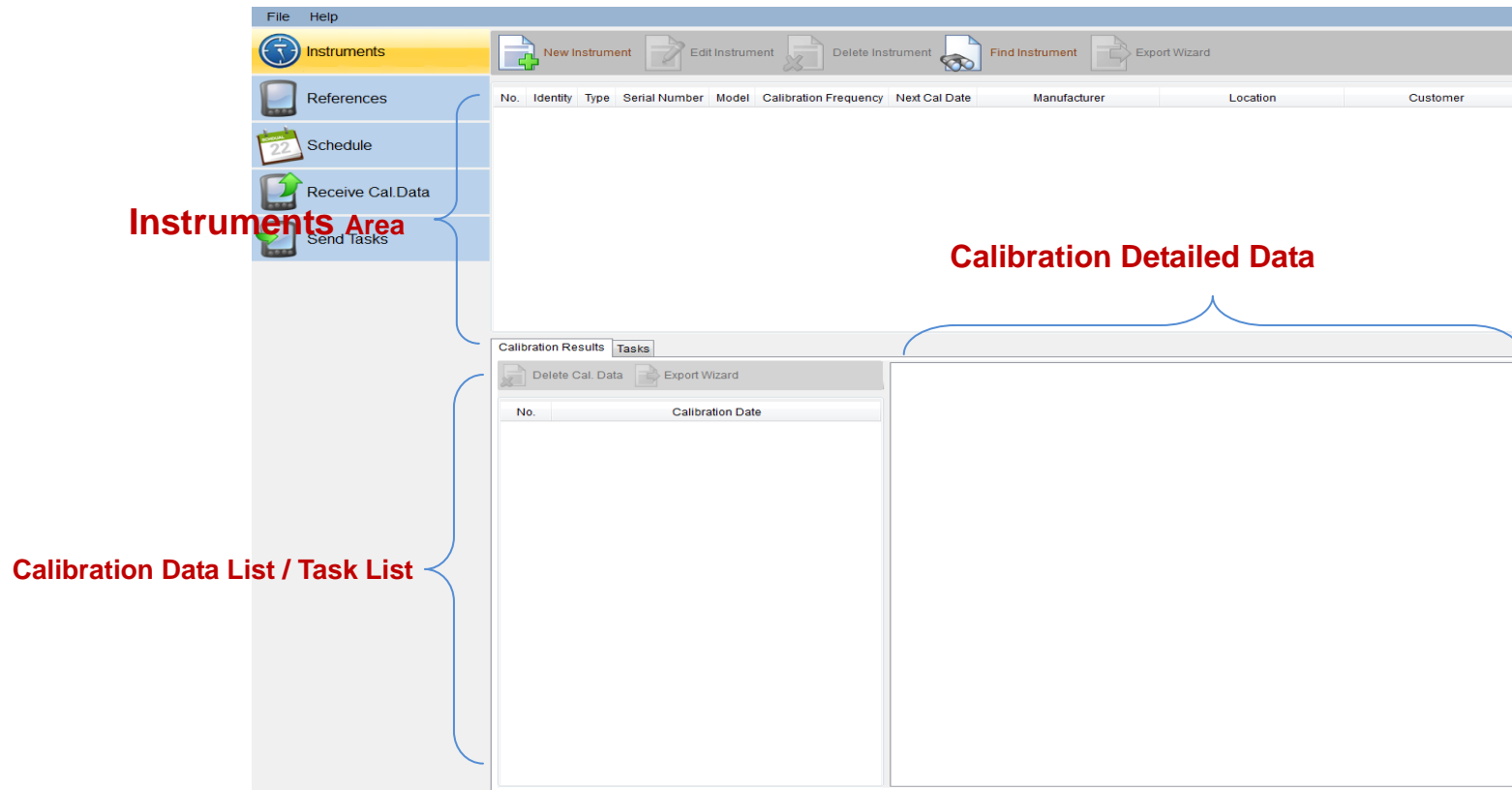


Figure 5

5.1 Instruments Area

When you open this screen, all the instruments data will be reloaded and displayed. Each record in this list represents a instrument, and the modified record is displayed at the top of the list. When you select the different record in list, the calibration results in the **Calibration List Area** and tasks in the **Tasks List Area** will be loaded.

5.1.1 New Instrument

To add a instrument, you must specify the Instrument Type (For a more detailed explanation, see chapter 11.5) by clicking the tool strip button labeled "**New Instrument**" on the Instruments Toolbar.

For example, if you want to add a 'Digital Pressure Gauges ' Instrument, click the "**Digital Pressure Gauges**", see figure 5.1.1.1 below

	el	Calibration Frequency	Next Cal Date
RTDs Instruments ▶		Annual	2013-12-31
Thermocouples Instruments ▶		Annual	2013-12-31
Flowmeters ▶			
Loop Instruments ▶			
Pressure Instruments ▶			
Isolator/Converters			
Indicators			
Meters/Vortex Meters			
Volume Totalizers			
		Dial Pressure Gauges	
		Digital Pressure Gauges	
		Pressure Transmitters	
		I/P Converters	
		Pressure Switches	

Figure 5.1.1.1

Next, the **New Instrument –Digital Pressure Gauges** Screen will be shown, See figure 5.1.1.2 below

Add New Digital Pressure Gauge

Save Cancel

Identity *

Description

Enter the information about the Digital Pressure Gauge, and the 'Identity' must be unipue. Once you finish to enter the information, click 'Save' button on the toolbar.

General Info

Pressure Form * G

Pressure Range * 0.00 ~ 0.00 Pa

Tolerance * 0.100 %FS

Calibration Frequency * Annual

First Cal Date 2012/ 6/26

Last Cal Date 2012/ 6/26

Next Cal Date * 2013/12/31

Additional Info

Model

Serial Number

Manufacturer New

Location New

Customer New

Operator

Remarks

Figure 5.1.1.2

Note: Fields contains the "*" on the left must be filled.

(1).Identity

This field is the unique name of the instrument, and limited to 12 characters.

when you input the characters in the field, it will real-time verify the existence of the input values in the database.If there is Identity(input characters) in the database, you will see the message(see figure 5.1.1.3 below) displayed on the right and be not allowed to click the “Save” button.

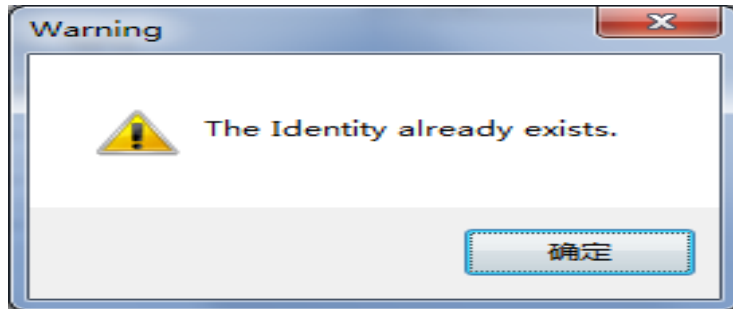


Figure 5.1.1.3

(2).Pressure Form, Pressure Range, Tolerance

These fields are the instrument's fixed property ,so they must be filled in.

(3).Calibration Frequency

This field can filled in from the drop down list. For more information see Chapter 11.1

(4).First Cal Date, Last Cal Date, & Next Cal Date

The **Next Cal Date** field must be filled in, other fields do not have to be filled in when entering a new Instrument. The **Last Cal Date** and **Next Cal Date** fields will populate when a passing Calibration is entered.

(5).Description, Model, Serial Number, Manufacturer, Location, Customer, Operator, & Remarks

These fields can be filled in as needed.

5.1.2 Edit Instrument

To modify a instrument, you must select the Instrument record by clicking the tool strip button labeled “**Edit Instrument**” on the Instruments Toolbar.

The Identity field can not be modified.

5.1.3 Delete Instrument

To delete an instrument, you must select the Instrument record by clicking the tool strip button labeled “**Delete Instrument**” on the Instruments Toolbar.
Note: The Calibration Results, Tasks and Send tasks associated with the instrument also will be removed.

5.1.4 Find Instrument

To query instruments, you must set up query conditions by clicking the tool strip button labeled “**Find Instrument**” on the Instruments (See figure 5.1.4.1 below).

5.1.4.1 Find Instrument Screen

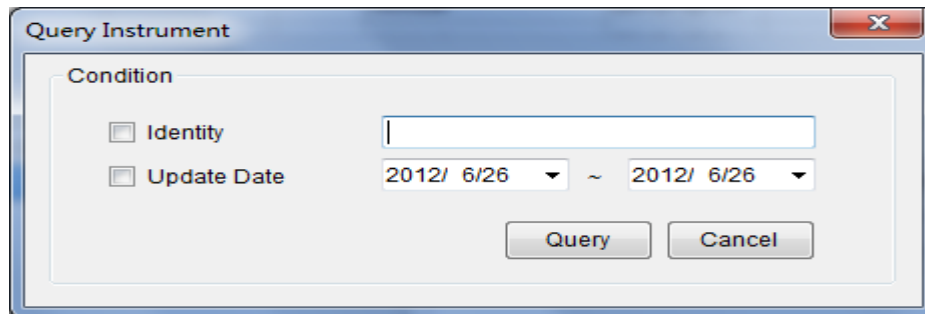


Figure 5.1.4.1

Identity: You can enter part or all of the information.

Update Date: You can set up the timespan of the record which was updated.

Note: If you need the field to query, please set up it checked.

5.1.5 Export Wizard

To export all the instruments displayed in the Instrument Area, by clicking the tool strip button labeled “**Export Wizard**” on the Instruments

5.2 Calibration Results Area

When you select a instrument in the *Instrument Area*, all the calibration results will be loaded and displayed. You could see that in the *Calibration Data tab*. Each record in this list represents a calibration result. Each modified record is displayed at the top of the list. When you select the different record in list, the detail calibration results in the *Detailed Data Area* will be refresh.

5.2.1 Delete Cal. Data

To delete one or more Calibration result, you need to keep it or them selected at first and then, click the tool strip button labeled “**Delete Cal. Data**” on the Calibration Results Toolbar.

5.2.2 Export Wizard

To export one or more Calibration result, you need to keep it or them selected at first and then, click the tool strip button labeled “**Export Wizard**” on the Calibration Results Toolbar.

The default name format : *Identity-XXX1_XXX2_XXX3.xls*

Identity : the fixed name.

XXX1 : the unique name of instrument(Identity) selected in the Instrument Area.

XXX2 : the calibration result update date.

XXX3 : the current system date time.

5.2.3 The Detailed Calibration Data

- if the selected calibration data uploaded from *ADT22XA series* reference in the *Calibration Results Area*, it displays *Calibration Data(As Found)* tab page and *Calibration Data(As Left)* tab page.
- if the selected calibration data uploaded from *ADT761* reference in the *Calibration Results Area*, it displays *Calibration Data* tab page.

5.3 Tasks Area

When you select a instrument in the *Instrument Area*, all the tasks will be loaded and displayed. Each record in this list represents a task and, the lastest record is displayed at the top of the list.

5.3.1 New Task

To add a task, you can click the tool strip button labeled “**New Task**” on the Task Toolbar, when the instrument was selected in the **Instrument Area**. For example, if you want to add a task for “**Digital Pressure Gauge**” instrument. See figure 5.3.1.1 below

The 'Add New Task' dialog box is titled 'Add New Task' and features a blue header bar with 'Save' and 'Cancel' buttons. The main area is divided into two sections: 'CALIBRATION GENERAL DATA' on the left and 'CALIBRATION POINTS' on the right.

CALIBRATION GENERAL DATA

- Task Name: digital1
- Temperature: 25.00 °C
- Humidity: 45.00 %RH
- Operator: (empty)
- Resolution: 1
- Cycles: 1
- Pressure Range: (0~600)kPa
- Calibration Points: 5

CALIBRATION POINTS

No	Point	Unit
1	0	kPa
2	150	kPa
3	300	kPa
4	450	kPa
5	600	kPa

Figure 5.3.1.1

(1).**Name, Operator**

This **Name** and **Operator** fields are limited to 12 characters, but do not have to be filled in when entering.

(2).**Temperature, & Humidity**

The range of **Temperature** is from -10 to 50°C .

The range of **Humidity** is from 0 to 90% .

(3). **Calibration Points**

This field can be filled in from the drop down list

5.3.2 Edit Task

To modify a Task, you could click the tool strip button labeled “**Edit Task**” on the Task Toolbar when the task as needed was selected in the Task Area.

5.3.3 Delete Task

To delete a Task, you could click the tool strip button labeled “**Delete Task**” on the Task Toolbar when the task as needed was selected in the Task Area.

5.3.4 Add To Send Tasks

To add a Task to the Send Tasks list, you could click the tool strip button labeled “**Add To Send Tasks**” on the Task Toolbar or sign the record checked on the first column. Then you could find the task in the Send Tasks Screen. So as other task as needed.

5.3.5 Remove From Send Tasks

To Remove From Send Tasks list, you could click the tool strip button labeled “**Remove From Send Tasks**” on the Task Toolbar or sign the record unchecked on the first column. Then you could not find the task in the Send Tasks Screen. So as other task as needed.

Chapter 6 References

The References screen is used to add, modify and delete reference records. See figure 6 below.

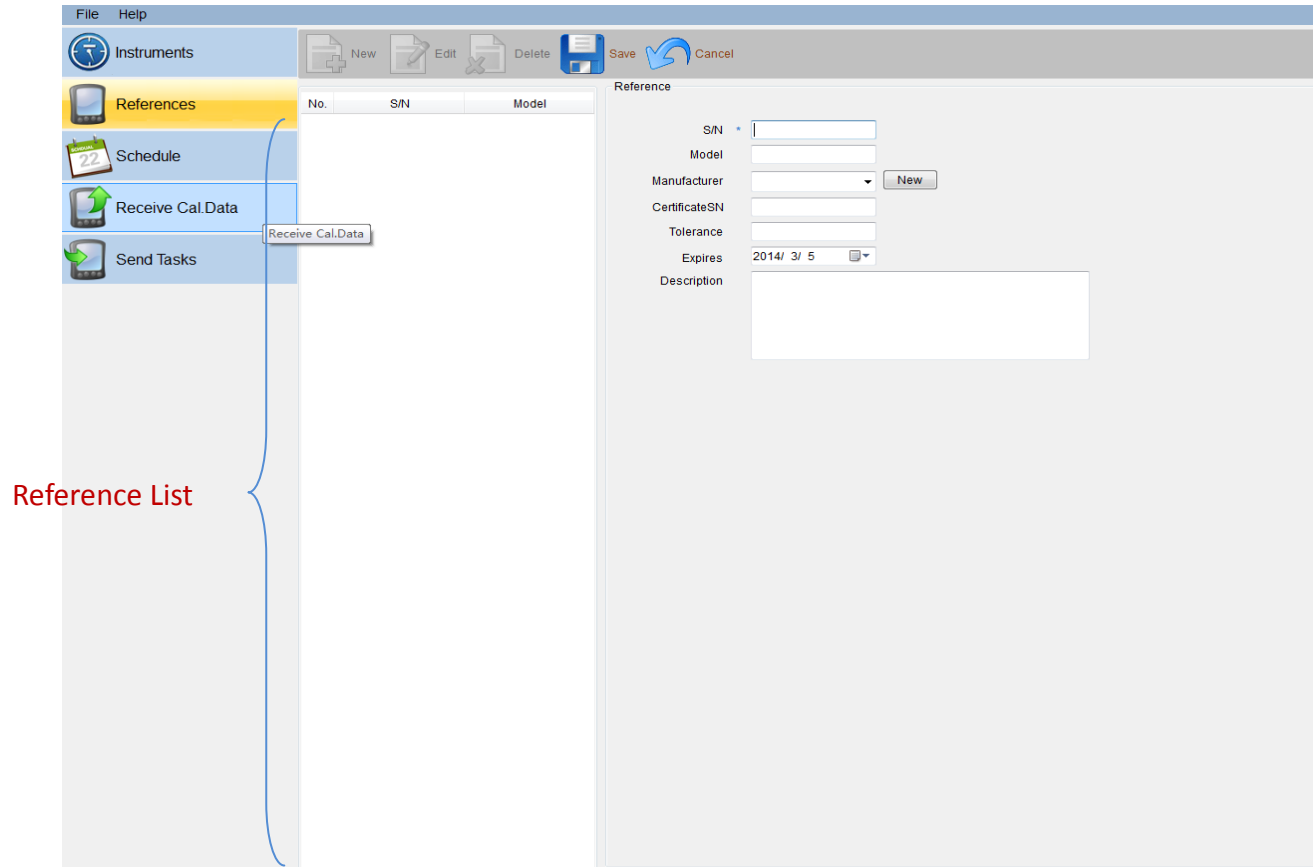


Figure 6

6.1 New Reference

The **S/N** and **Model** fields must be entered before you can save it.

6.2 Edit Reference

To modify a reference, you could click the tool strip button labeled “**Edit Reference**” on the toolbar when the reference as needed was selected in the reference list.

6.3 Delete Reference

This button will allow you to delete the reference record.

6.4 Save

Selecting this button will save reference data, after you complete to add a new reference or edit a selected reference.

Chapter 7 Schedule

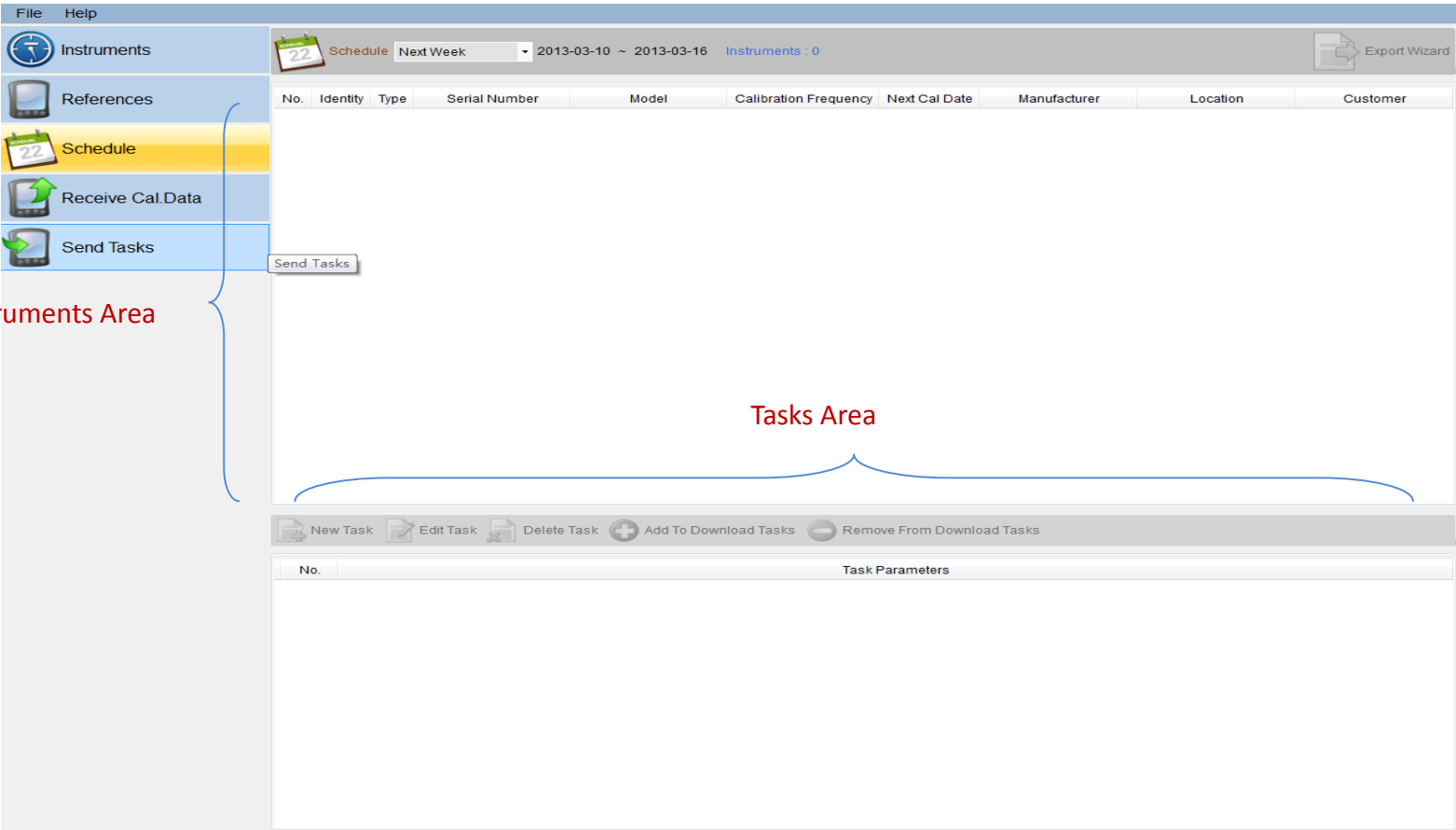


Figure 7

7.1 Schedule Options

This field can be filled in from the drop down list, See figure 7.1 below

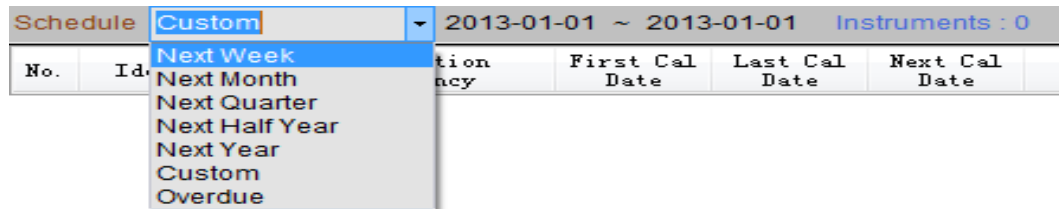


Figure 7.1

For example:

The current date is **2012-3-15**.

- (1). Selecting the **Next Week** option indicates that the **Next Cal Date** for filtering the instruments between is **2012-3-18** and **2012-3-24**.
- (2). Selecting the **Next Month** option indicates that the **Next Cal Date** for filtering the instruments is between **2012-4-1** and **2012-4-30**.
- (3). Selecting the **Next Quarter** option indicates that the **Next Cal Date** for filtering the instruments is between **2012-4-1** and **2012-6-30**.
- (4). Selecting the **Next Six Months** option indicates that the **Next Cal Date** for filtering the instruments is between **2012-7-1** and **2012-12-31**.
- (5). Selecting the **Next Year** option indicates that the **Next Cal Date** for filtering the instruments is between **2013-1-1** and **2012-12-31**.
- (6). Selecting the **Custom** option indicates that you could set up the timespan at will.
- (7). Selecting the **Overdue** option indicates that the **Next Cal Date** for filtering the instruments is between **2011-3-15** and **2012-3-14**.

7.2 Export Wizard

For a more detailed explanation, See Chapter 5.1.5

7.3 Tasks Area

For a more detailed explanation, See Chapter 5.3

Chapter 8 Receive Cal.Data

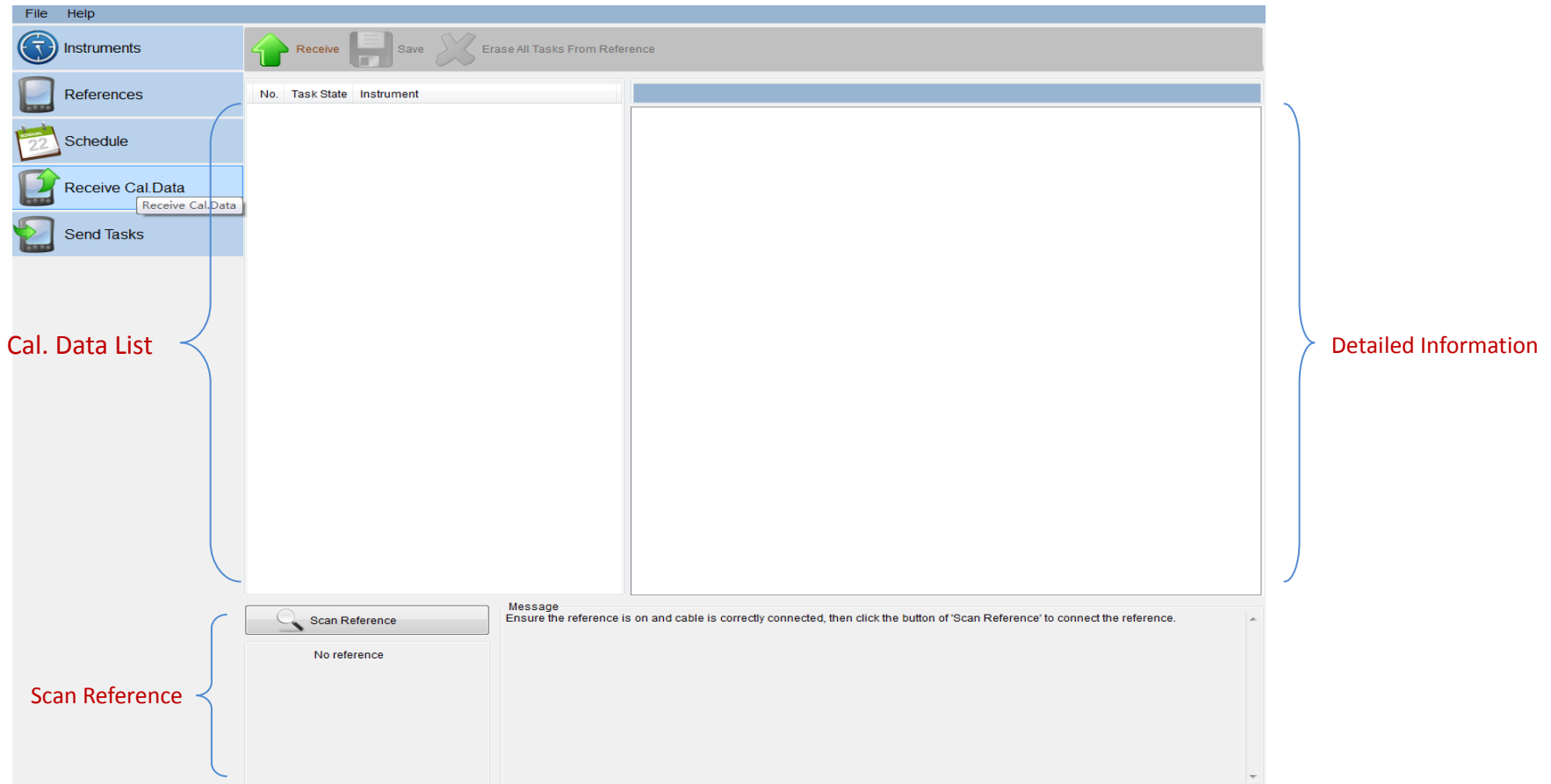


Figure 8

8.1 Scan

For a more detailed explanation, See Chapter 10

8.2 Receive

After building the connection with the reference, you could load the calibration results shown in the **Result List** by clicking the “**Receive**” button on the Toolbar. See figure 8.2 below.

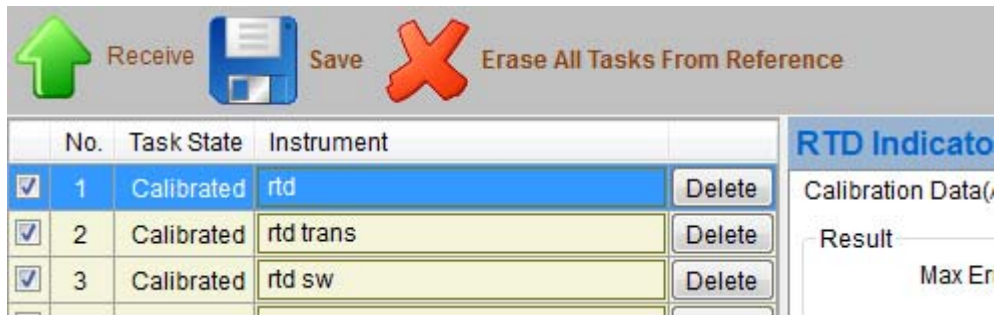


Figure 8.2

8.2.1 Result List

Identity Field : This is the unique name of the instrument.

Type Field : For a more detailed explanation, see chapter 11.5.

TaskState Field : If the calibration process has been performed, so this field displays "Calibrated" , otherwise, it displays "Not Calibrated";

Instrument Field : If the instrument has exist in the database, so this field displays "Instrument : **XXXX**"(**XXXX**: the Identity of instrument) , otherwise you must add a new instrument by clicking the "**Add New Instrument**" button on this field.

Delete Field : You can delete the data from the reference by clicking the "**Delete**" button on this field.

8.2.2 Result Detailed Explanation

When you select the different record in the list on the left, the detail calibration results in the Result Detailed Explanation Area will be refresh.

8.3 Erase All Tasks From Reference

After building the connection with the reference, you could delete all the calibration results displayed in the **Result List** from the reference by clicking the "**Erase All Tasks From Reference**" button on the Toolbar.

Note:Before you perform the deletion, you must keep the reference's operating screen out of task manager if the model of reference is ' **ADT223A**'.

8.4 Save

After building the connection with the reference, you could receive the calibration results which must be checked on the first column of the **Result List** by clicking the "**Save**" button on the Toolbar.

Note: Before the receiving, the calibration process must been performed, and the instrument must exist in the database.

Chapter 9 Send Tasks

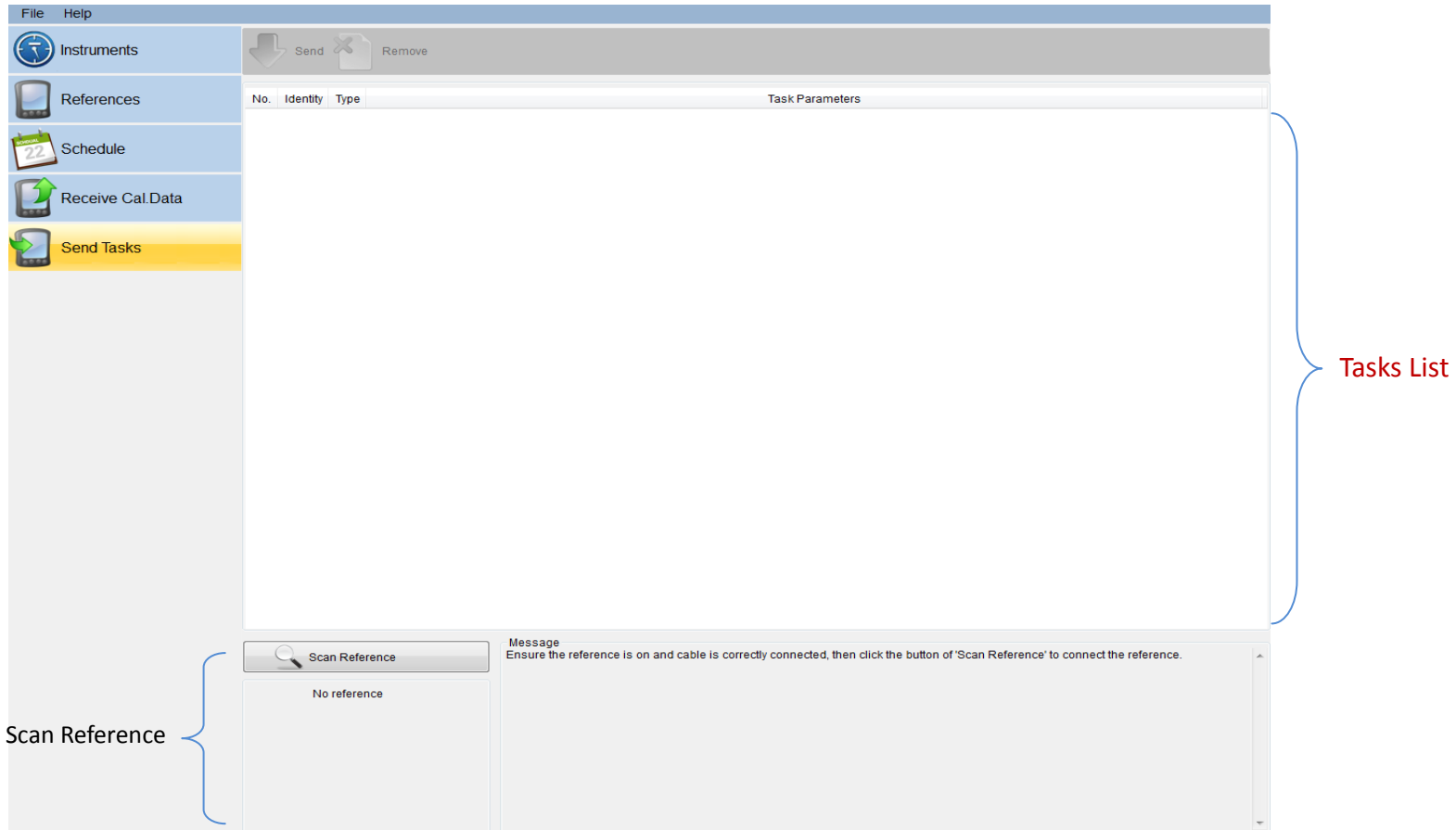


Figure 9

9.1 Scan

For a more detailed explanation, see Chapter 10

9.2 Send

After building the connection with the reference, you could send all the tasks in the **Result List** for performing the calibration by clicking the “**Send**” button on the Toolbar.

Note: Before you perform the deletion, you must keep the reference's operating screen out of task manager if the model of reference is ' **ADT223A**'.

9.3 Remove

You could delete one/more tasks used to send in the List by clicking the “**Remove**” button on the toolbar.

Chapter 10 Scan Ports

10.1 Possible communication problems

? Be sure the cable is connected to the reference properly, and to your PC's serial port as well. Consult your reference's documentation for the correct method of connection.

? Programs that use a serial port to connect to other external devices, such as Palm Pilots, should be shut down when using this program with that same serial port. The computer needs to recognize that the COM port is free, and can be used for communication with the reference.

10.2 Procedures

To communicate with the reference, you could manually build the connection by clicking the “**Scan Reference**” button on the left bottom of the screen. See figure 10.2 below.

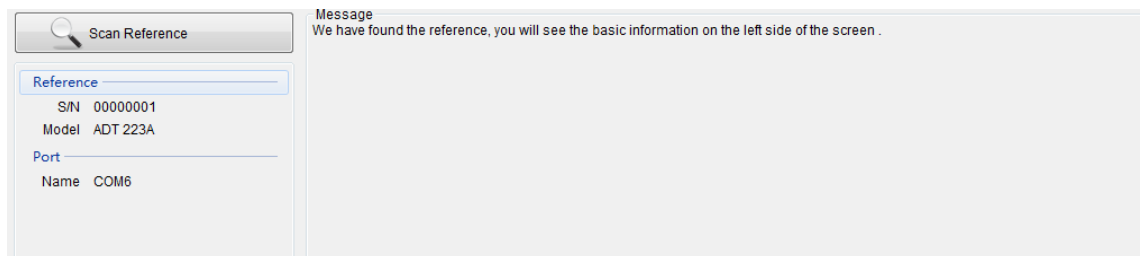


Figure 10.2

10.3 Serial Port Parameters

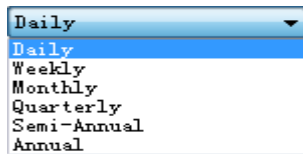
Port : Auto-scan the port connected with the reference.

BaudRate : 9600.

Chapter 11 Standard Lists

11.1 Calibration Frequency

This list option allows you to define and set up specific frequencies that can be applied to all items that get calibrated. Calibration frequencies help the program calculate due dates for item calibrations. Common ones would be “**Yearly**”, “**Semi-Annually**”, “**Quarterly**”, etc. There are several options with regard to the setup of a frequency that are outlined and discussed in detail below.



11.1.1 Frequencies Based on “Monthly” or “Annual”

For frequencies based upon “*Monthly*” or “*Annual*” (“*Monthly*” or “*Annual*” is selected from the screen’s drop-down list), the system always use the last day of the month that the item will be due for calibration as its actual due date, when calculating a due date based upon the frequency.

11.1.2 Frequencies Based on “Weekly”

Frequencies based upon “Weekly” has similar setting options to those based on “Monthly” or “Annual”. For frequencies based upon “Weekly” (“Weekly” is selected from the screen’s drop-down list), the system always use the last day of the week in which the item will be due for calibration as its actual due date, when calculating a due date based upon the frequency.

11.2 Manufacturer

The **MANUFACTURER** screen provides you with fields in which to enter a manufacturer’s name, address, phone number, fax number and contact person, however the only information required to save a new record is the manufacturer’s name. You can add them by clicking the **New** button next to the Manufacturer fields in various screens throughout the program.

11.3 Location

The **LOCATION** screen provides you with fields in which to enter a location's name, description, however the only information required to save a new record is the location's name. You can add them by clicking the **New** button next to the Location fields in various screens throughout the program.

11.4 Customer

The **CUSTOMER** screen provides you with fields in which to enter a customer's name, description, however the only information required to save a new record is the customer's name. You can add them by clicking the **New** button next to the Customer fields in various screens throughout the program.

11.5 Instrument Type

This list option allows you to create different device types, See table 11.5 below.

Instrument types are useful in creating task that can be used for particular calibrations.

RTD	RTD Indicators/Recorders RTD Transmitters RTD Switches/Thermostats	TC	TC Indicators/Recorders TC Transmitters TC Switches/Thermostats
Flow	Delta-Pressure Flowmeters Instantaneous Flowmeters Flow Volume Totalizers Tachometers/Vortex Meters	Loop	Loop Indicators Signal Isolator/Converters Sensors/Transmitters Limit Switches/Alarms
Pressure	Dial Pressure Gauges Digital Pressure Gauges Pressure Transmitters I/P Converters Pressure Switches		