MaintScape Documentation - Bar Code Process

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Introduction

MaintScape uses Unitech Portable Data Collection Terminals (PDT) as its bar code device. Unitech's web site is: www.ute.com .

This document covers the PT600, PT630 and HT630 devices. The PT600 and PT630 units are both discontinued. The HT630 is their successor.

Documentation herein that applies to all devices refers to the device as "Unitech PDT", while documentation applying to one of the devices refers to the specific device name (i.e. PT600, PT630, or HT630).

The MaintScape program for the Unitech PDT supports the following transactions:

1. Issue Parts to Work Orders
2. Part Inventory Counts
3. Receiving Parts
4. Direct Issuing Parts from Inventory

The Unitech PDT builds a transaction file of commands which is then uploaded onto a PC running MaintScape. The transaction file is then processed within MaintScape, implementing the transactions.

MaintScape PDT transactions can be performed in any sequence and intermingled with each-other. For example, you can perform a set of Part to Work Order assignments, then perform some Inventory Counts, then continue with more Part to Work Order assignments, etc.

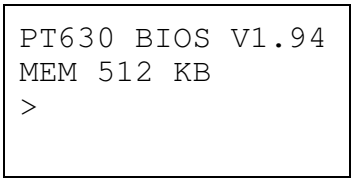
Starting the MaintScape PDT Program

Please consult your Unitech User's Guide for basic instructions. The PT630 and HT630 ships with the User Guide on CD-ROM only.

Your Unitech PDT will come pre-loaded with the MaintScape PDT program if you acquired the device from GrandRavine Software. If this is not the case, or you wish to re-load the MaintScape PDT program, please consult documentation section *Installing the MaintScape PDT Program* (page 15).

To run the MaintScape PDT program, first power on the Unitech PDT by holding the inset power key for approximately 2 seconds.

If the Unitech PDT powers on with a display similar to:



… Then hold down the [CMD] key for approximately 2 seconds.

You should now be at the Unitech PDT main user menu, which looks like:

```
1. RUN 2. TER
3. COM 4. DIR
5. ERA 6. TYP
7. CPY 8. SET
```

Press '1' on the numeric keypad. Your display should look like:

```
< RUN PROGRAM >

MAINTSCP.EXE
```

If a program file other than 'maintscp.exe' is displayed, press the ➔ key until MAINTSCP.EXE is displayed. Press the [ENT] key to run the MaintScape PDT program.

Please bear in mind the following important key sequence:

- When prompted for a Yes/No response, '1' is YES and '2' is NO.

Stopping the MaintScape PDT Program

The only way to exit the MaintScape PDT Program is to "warm start" or "cold start" the Unitech PDT. Please see documentation section *Warm-Starting and Cold-Starting the Unitech PDT* (page 16) for instructions.

Using the MaintScape PDT Program

Main Menu

The Main Menu of the MaintScape PDT Program looks like:

```
1. Part to WO
2. Inventory
3. Part Loc
4. Erase Last
5. Utility
F2 Upload

?
```

The main menu functions are summarized below, and then described in detail further below:

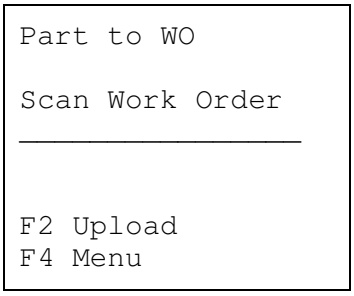
Part to WO	Start the module for issuing Parts to Work Orders.
Inventory	Access the Inventory menu for performing Part Inventory transactions, including: inventory count, receiving parts, direct issuing parts.

Part Loc	Display the parent Part Location currently in effect, and allows you to clear the value.
Erase last	Erase the last transaction.
Utility	Access the Utility menu of less often used utility functions.

See documentation section *Uploading the Transaction Data File to a PC* (page 11) for more information on the "F2 Upload" function.

Part to Work Order

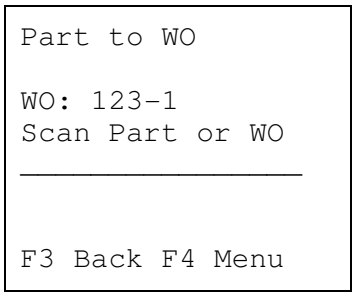
The first screen of the Part to Work Order function looks like:



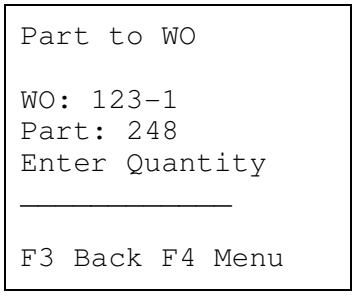
At this point, you may now scan the bar code on a printed MaintScape Work Order.

The bar code text contains the same information as coded into the bar code - for example, '40-123-1'. '40' indicates 'Work Order', '123' is the internal MaintScape identifier for the Work Order, which is also the work order number, and '1' is the internal MaintScape identifier for the work order task. Work Orders may have multiple tasks, and parts are issued to a particular task. Therefore, if your work order is multi-task, ensure you are scanning the bar code associated with the correct task.

If you successfully scanned a Work Order, your PDT screen will look similar to:

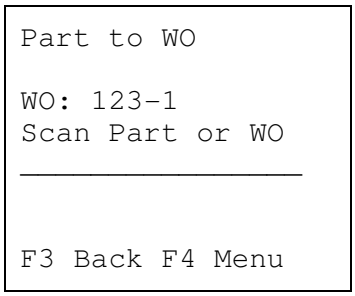


As indicated, you may now scan either a Part bar code label or another Work Order bar code. If you successfully scan a Part bar code, your PDT screen will look similar to:



The Part identifier '248' above is an internal MaintScape identifier for the part, not the Part Code. The Part Code is usually too large to be bar coded. The MaintScape bar code label for the above Part would have subtext '24-284' which, as was the case with the Work Order bar code, is the same information as coded into the bar code. In this example, '24' indicates 'Part', and '248' is the internal Part identifier.

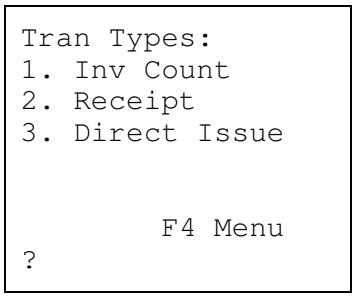
You may now key a quantity into the PDT and press the [ENT] key to accept. The quantity should be in the part's unit of measure. The PDT screen will then prompt for another Part to issue to the Work Order - e.g. look similar to:



This is the same display presented when adding the first Part to Work Order 123, task 1. You may now either scan another Part to issue to Work Order 123, task 1, or you may scan another Work Order bar code. Scanning another Work Order bar code is a convenient shortcut for exiting 'add part to WO 123' back to the Scan Work Order prompt (F3), then scanning the next Work Order.

Inventory Menu

The Inventory Menu of the MaintScape PDT Program looks like:



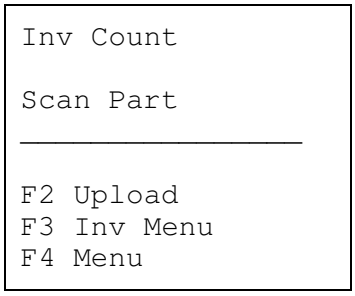
The inventory menu functions are summarized below, and then described in detail further below:

Count	Start the module for performing inventory counts.
Receipt	Start the module for receiving parts into inventory.
Direct Issue	Start the module for direct-issuing parts from inventory.

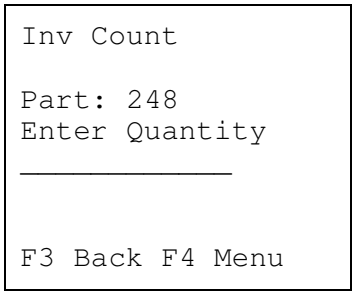
Inventory Count

An Inventory Count transaction record will become an inventory transaction of type “Count” when processed into MaintScape.

The first screen of the PDT Inventory Count function looks like the following:



At this point, you may now scan a Part bar code label. If successful, your PDT screen will look similar to:



The Part identifier ‘248’ above is an internal MaintScape identifier for the part, not the Part Code. The Part Code is usually too large to be bar coded. The MaintScape bar code label for the

above Part would have subtext '24-284' which is the same information as coded into the bar code. In this example, '24' indicates 'Part', and '248' is the internal Part identifier.

You may now key a quantity into the PDT and press the [ENT] key to accept. The quantity should be in the part's unit of measure. The PDT screen will then prompt for another Part for which to enter an inventory count.

Receipt

A Receipt transaction record will become an inventory transaction of type "Receipt" when processed into MaintScape.

The first screen of the PDT Receipt function looks like the following:

```
Inv Receipt

Scan Part
_________________

F2 Upload
F3 Inv Menu
F4 Menu
```

At this point, you may now scan a Part bar code label. If successful, your PDT screen will look similar to:

```
Inv Receipt

Part: 248
Enter Quantity
* Unt of Meas *
_____________

F3 Back F4 Menu
```

For an explanation of the identifier '248', please consult documentation section *Inventory Count*, above.

You may now key a quantity into the PDT and press the [ENT] key to accept. The quantity should be in the part's unit of measure. The PDT screen will then prompt for another Part to receive.

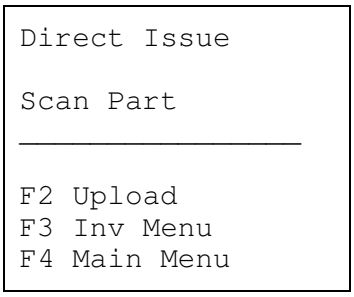
Important: You must enter the received quantity in the part's unit of measure, not the unit of order for the receipt. For example, if the part's unit of measure in MaintScape is "each", and you receive 2 boxes of 10 units, you must enter quantity "20".

Direct Issue

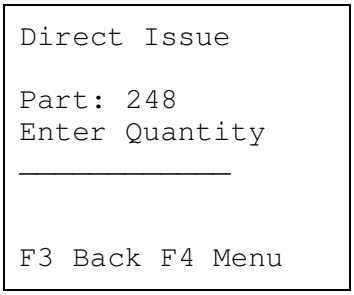
A Receipt transaction record will become an inventory transaction of type "Direct Issue" when processed into MaintScape.

You create a Direct Issue inventory transaction when you want to remove parts from inventory without assigning the part to a work order. Note that when a work order with an inventory-controlled part is closed, MaintScape creates an inventory transaction of type "Issue to Work Order".

The first screen of the PDT Direct Issue function looks like the following:



At this point, you may now scan a Part bar code label. If successful, your PDT screen will look similar to:



For an explanation of the identifier '248', please consult documentation *Inventory Count*, above.

You may now key a quantity into the PDT and press the [ENT] key to accept. The quantity should be in the part's unit of measure. The PDT screen will then prompt for another Part to direct-issue.

Part Location

MaintScape Part Inventory Transactions always occur at a Part Location. When a Part is recorded in MaintScape as stored at more than one Part Location, it may not be clear which Part Location applies to a particular transaction recorded by the PDT program.

Transaction-Specific Part Location

Part bar codes may optionally include Part Location information. You can determine this by inspecting the bar code label subtext. For example:

24-27	This bar code represents the Part with internal identifier "27". The prefix "24" identifies the following token as a Part.
24-10-29-31	This bar code represents the Part with internal identifier "10" at the Part Location with internal identifier "31". The prefixes "24" and "29" identify the following tokens as a Part and Part Location respectively.

The Part Location specified for a Part applies to the current transaction only. If none is specified, the Default Parent Part Location will apply if one is set (see below).

Default Parent Part Location

A Part Location bar code label may be scanned any time the bar code Scanner is active when running the MaintScape PDT program. For example, whenever prompted to scan a Part or Work Order. When a Part Location is successfully scanned, the PDT will issue a distinctive half-second beep, then prompts again for the object originally prompted for. The Part Location scanned is 'remembered' as the 'default parent' for subsequent transactions until the value is cleared or replaced by scanning another Part Location.

How this works is best illustrated by Example. Say you enter a part warehouse assigned Part Location \Building_1\warehouse_1 in MaintScape, and then you scan a label for the Part Location at the warehouse door. Then all subsequent Inventory Transactions for Parts are assumed to be at the Part's Part Location within that warehouse. In other words, at the Part's Part Location below the warehouse in the MaintScape Explorer tree. This clears up the uncertainty of which Part Location to use if a Part is recorded in MaintScape as stored in multiple warehouses.

Note: There is no need to scan Part Locations unless Parts scanned are recorded in MaintScape as stored in multiple Part Locations. Even if Parts scanned are stored in multiple Part Locations, you can also specify the default Parent Part Location when processing the PDT transaction file. You will want to scan Part Locations, however, if Parts are stored in multiple Part Locations, and you are moving between warehouses for those Part Locations.

There is also no need to scan Part Locations if the Part labels you scan contain a Part Location component (see *Transaction-Specific Part Location*, above).

If you are running MaintScape multi-site functionality, the only part locations that will be considered are those within the active site in effect when processing the transaction file created by the MaintScape PDT program. Therefore there may be multiple part locations for the part at the various sites, however if there is only one part location at your active site, you do not have to worry about scanning part locations.

The 'Part Location' Main Menu function presents a screen which tells you the internal MaintScape identifier for the parent Part Location currently in effect, and gives you the option to clear its value. Remember - to change the parent Part Location, scan a Part Location bar code label any time prompted by the MaintScape PDT program to scan a bar code label.

Erase Last Record

For all the MaintScape PDT program transactions described above, a transaction file record is created after entering a Part Quantity, and pressing the [ENT] key. The Erase Last Record function lets you erase that last record.

Use the MaintScape transaction file processing window on an uploaded transaction file to erase records other than the last record.

When erasing the last record, you will be prompted "Erase Last?". '1' indicates Yes, '2' indicates No.

Utility

The Utility Menu provides the following functions:

Edit	Invokes the Unitech PDT data file edit program. This program lets you edit the transaction file created using the MaintScape PDT program. Be very careful - your modifications could make the data unusable. Please consult documentation section *Unitech PDT Data File Edit* Program, below, for more details.
Erase All	This function will completely erase the transaction file. This should be done after it has been successfully uploaded to a PC for processing. Otherwise, further transactions will simply be tacked onto the end of the existing file, and you may end up performing the same actions more than once. You typically erase the data file within the Communication Manager program that you use to upload the data file to a MaintScape computer. This is described in documentation section *Uploading the Transaction Data File to a PC* (page 11).

Unitech PDT Data File Edit Program

The Unitech PDT data file edit program can be used to modify the data file created by normal operation of the MaintScape PDT program. Be very careful - your modifications could make the data unusable.

The Unitech PDT data file edit program operates in one of 3 different modes: Edit, Browse and Search.

The program starts in browse mode. Initially it displays “Browse R1,F1” indicating browse mode displaying row 1 and field 1. Following this is displayed the data in the row and field.

Press the ➔ or ← arrow keys to navigate through the fields in a row, and the ↑ or ↓ arrow keys to navigate through the rows.

Press the [F3] key to enter row and field coordinates to jump to directly. When prompted to enter a row number, the number in parentheses after “R” indicates the total number of records in the file.

There is a problem with the Edit program in that you cannot use the ➔ arrow key to scroll past an empty field to a non-empty field. If necessary, you can browse the non-empty field by using the [F3] “jump” function described above.

Enter edit mode from browse mode by pressing [ENT] when browsing a particular row and field. Note that the top word “Browse” changes to “Edit”. The coordinates and data are displayed as before. The ← key acts as a backspace in edit mode and the ➔ key recovers backspace-deleted characters. Press [ENT] to accept changes and return to browse mode.

Press the [F4] key to enter into search mode. Search mode defaults the search value to the value in the current row and field. You can erase or modify this value using the ← key as a backspace. Press [ENT] after entering a search value to search for data values starting with the search value in the current column in rows after the current row.

The [Exit] action will cancel from edit or search mode to browse mode, and exit from the data file edit program when in browse mode. The [Exit] action is performed by pressing the [CMD] key followed by the [ESC] key.

You need to understand the structure of the data file in order to edit it. The first row is a "marker" that identifies the file as coming from the MaintScape PDT program. It should not be modified. Subsequent rows represent MaintScape PDT program actions – i.e. "Part to Work Order" or Inventory transactions. The fields are defined as follows:

Field	Description
1) wk_ord_id	Database ID of work order when the row represents a "part to work order" function. Currently this value is the same as the work order number.
2) wk_ord_prt_key_no	Database identifier of the work order task. This value is only specified when a value is specified for wk_ord_id. Work orders are usually single task, and this value is usually "1".
3) prt_id	Database ID of part involved in the current action. This value is always specified.
4) quantity	Quantity of part for the current action. This value is always specified.
5) prt_loc_id_rltve	Database ID of Part Location bar code scanned as described in documentation section *Part Location* (page 8). A scanned part location appears in the current transaction record, and all subsequent transaction records until a new part location is scanned or the in-effect part location value is cleared.
6) Action Type	Each row in the data file represents a MaintScape PDT program action type. This column identifies the type, and the valid values are: 1. Part to Work Order 2. Inventory Count 3. Receipt 4. Direct Issue

Uploading the Transaction Data File to a PC

Your transaction data file is uploaded from the Unitech PDT to a PC using the Unitech PTComm Manager program. If not provided by GrandRavine Software, you may download this program from the Unitech web site. Presently this program may be downloaded from the following web site (look for "PTComm Manager – 32 bit" at the bottom of the downloads list):

http://www.ute.com/downloads.php?product_id=29

If the above link does not work, navigate to the product web site for the HT630 at http://www.ute.com and look for a "Downloads" link.

IMPORTANT: You must press "F2 Upload" from a MaintScape PDT program screen that displays this option prior to uploading data. Your MaintScape PDT program screen will then look like the following:

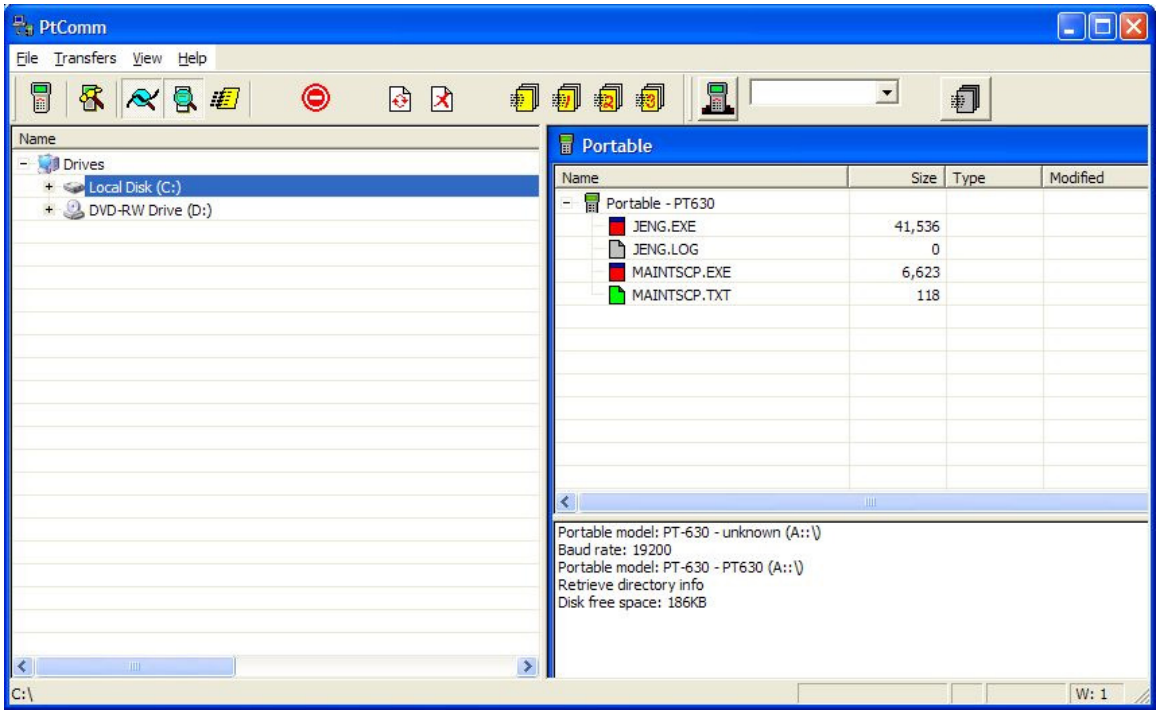
```
Upload
Maintscp.txt
using PTComm
Manager then
delete
using same.

F1 Done F4 Canc
```

In order to communicate from your PC to the Unitech PDT, you must do the following:

- Connect the cable supplied with your Unitech PDT to a serial port on your PC and to the Unitech PDT. A serial adapter to USB adapter can be used if your computer does not have a serial port.
- Within the PTComm Manager program, use menu item 'Transfers/Connect Portable…' to establish a connection. Adjust "Com Port" and settings values if necessary.

If connection is successful, you will see a screen similar to:



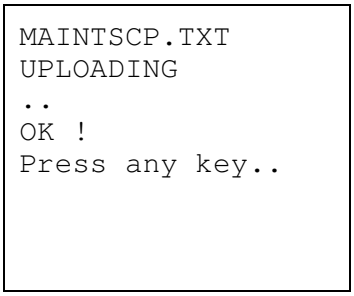
The left panel shows files on your PC and the top-right panel shows files on the Unitech PDT. The file MAINTSCP.TXT in the top-right panel is the transaction file created by the MaintScape PDT program. Simply drag it from the top-right panel and drop it on a directory (folder) in the left panel.

You will be prompted with a confirmation window when dropping the file. At this time you may rename the copied file if you choose – e.g. modify "To:" destination from "c:\my directory" to

"c:\my directory\PT 2007-08-13 – jb.txt". We suggest you adopt a directory and/or naming convention which reminds you who created the file and when.

IMPORTANT: You should erase the transaction file on the Unitech PDT after it has been uploaded. Otherwise, further transactions will simply be tacked onto the end of the existing file, and you may end up performing the same actions more than once. Erase the transaction file within PTComm Manager by hilighting "maintscp.txt" in the top-right panel and clicking menu bar action "File"/"Delete Portable File…".

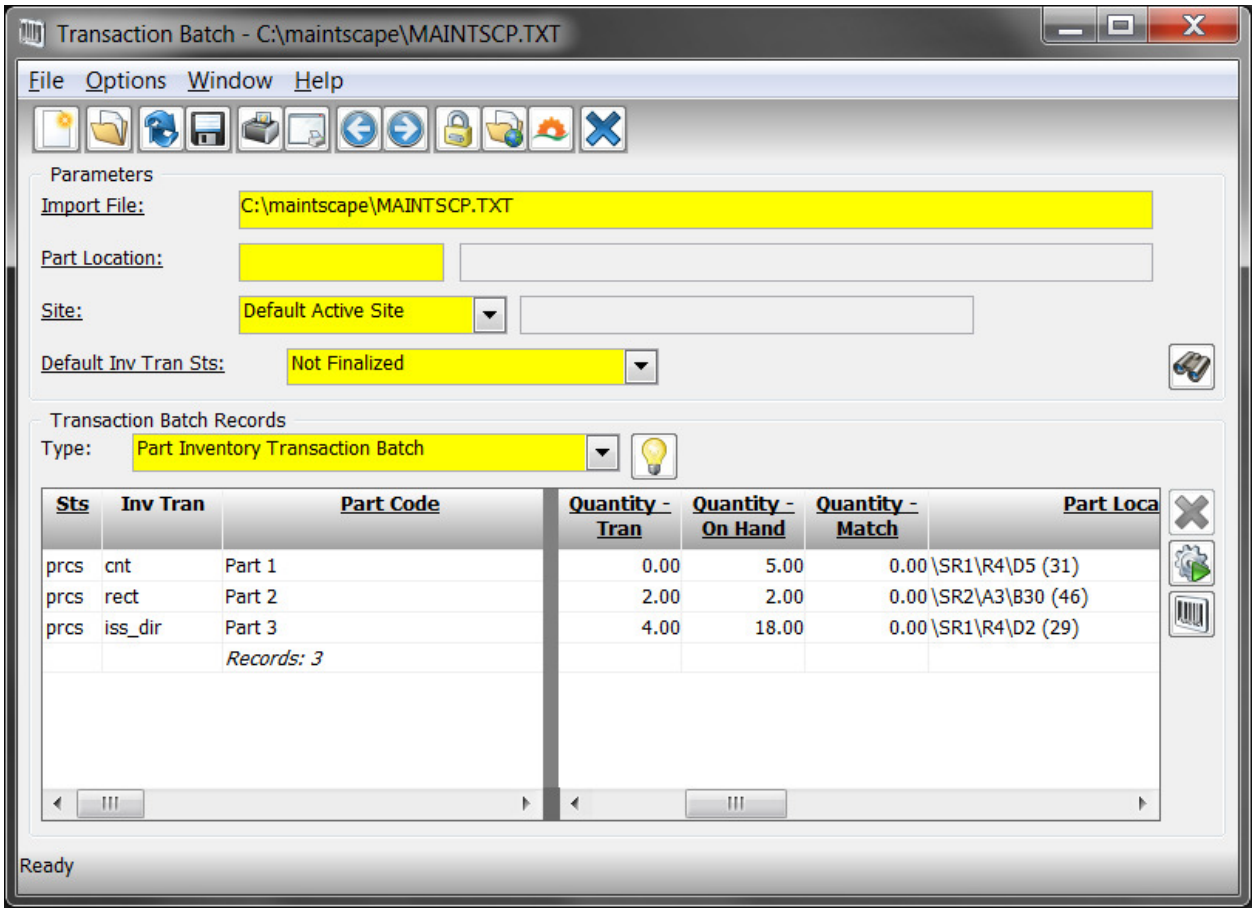
Your MaintScape PDT program screen should now look like the following:



Press any key on the Unitech PDT device (e.g. [ENT] key). Your MaintScape PDT program screen should now revert back to displaying, "Upload Maintscp.txt using PTComm Manager then delete using same.". Press the [F1] key to indicate the upload is done. The MaintScape PDT Program will then create a new transaction file (you deleted the prior one), and you will be able to continue creating transactions.

Processing the Transaction Data File within MaintScape

The uploaded transaction data file is processed using the Transaction Batch window accessed by clicking main menu icon 'Utilities', then selecting option 'Transaction Batch (bar code)'. An example of this window is as follows:



The Transaction Batch window lets you:

- Browse the pending transactions and scan for errors.
- Apply all or part of the batch transactions.
- Delete batch transactions.

To use this window, enter parameter values in the top part of the window and then click the (search) button. Parameter fields are as follows:

Import File	This field is mandatory. It identifies the file uploaded from the Unitech PDT that you wish to process into MaintScape. You can identify an import file either by right-mouse clicking on the Import File field and clicking pop-up action "Search…", or by dragging an import file from a folder or Windows File Explorer and dropping it on this Transaction Batch window.
Part Location	This field is useful if parts referred to in the batch transactions are stored at more than one part location. If so, MaintScape will only consider those part locations in the subtree below the part location specified here. See documentation section *Part Location* (page 8) for more details on the issue of multiple candidate part locations and for another possible solution.

Site	This field is only applicable when you are running the MaintScape multi-site module and when multi-site functionality is enabled. It indicates the site that the batch transactions were recorded at. This helps MaintScape compute a part location for a part referenced in a transaction, as MaintScape will only consider part locations at the identified site(s).
Default Tran Sts	**This field is an important consideration if you are processing Part Receipt transaction records.** The Default Part Inventory Transaction Status value is only meaningful when processing transaction records for part inventory transactions that can be created into more than one status - typically 'Receipts'. MaintScape can only assign a price to a processed receipt if it can match the received part to a single Purchase Order or Purchase Requisition. Otherwise the receipt will be created with a price of zero. If you specify default status 'planned', you can later edit the generated inventory receipt transaction to specify a receipt price in cases where MaintScape could not calculate it. You should then finalize the transaction by saving it as status 'issued'. This is more work, however it ensures that MaintScape maintains an accurate average price for the part. MaintScape Today's Status functionality can easily help you identify receipt transactions that are status 'planned' and waiting accurate price data.

Important: Each batch transaction type must be processed separately. Select **each** transaction type in the "type" drop-down list box, review the transactions pending if necessary, and then initiate processing by clicking the  (generate) button. The generate button works on the records that are selected, or all records if none are selected.

The batch transaction process is designed to prevent the same transaction from being applied more than once. You may wish to keep old transaction files for audit purposes: they contain audit data which can be viewed within the same MaintScape window. You can re-display processed transaction files in this window to view the processing results, and when doing so, you can also print the old results.

Installing the MaintScape PDT Program

Refer to the documentation section *Uploading the Transaction Data File to a PC* (page 11) to perform the following steps:

1. Install the Unitech PTComm Manager program on a PC.
2. Run Unitech PTComm Manager and connect it to your Unitech PDT.

If the top-right panel of PTComm Manager lists programs 'maintscp.exe' and 'jeng.exe', then the MaintScape PDT program is already loaded. You may delete these files from your Unitech PDT by highlighting them in the top-right panel of PTComm Manager and clicking menu bar action "File"/"Delete Portable File…".

The MaintScape PDT programs 'maintscp.exe' and 'jeng.exe' are found in the PT600, PT630 or HT630 directory of your MaintScape CD-ROM. Navigate to these files in the left panel of

PTComm Manager, then drag and drop them one-at-a-time onto the PDT name in the top-right panel of PTComm Manager (i.e. onto the top item of the name tree). **Important:** Drag-and-drop 'maintscp.exe' before 'jeng.exe'.

If you want to install the MaintScape PDT program on a fully reset Unitech PDT, perform a "cold-start" as described in documentation section *Warm-Starting and Cold-Starting the Unitech PDT*, below.

Warm-Starting and Cold-Starting the Unitech PDT

The difference between warm-starting and cold-starting is as follows:

- Warm-starting restarts the Unitech PDT returning you to the main user menu without erasing any data (programs or data files). This is the only way to non-destructively exit the MaintScape PDT program.
- Cold-starting erases all non-system files from the Unitech PDT (programs and data), and ensures you start from a clean state. You may wish to cold-start your Unitech PDT prior to loading the MaintScape PDT Program.

Both warm-start and cold-start are initiated from the same screen First, ensure the Unitech PDT is turned off. If it is on, hold the inset power-on key until the unit turns off. When the Unitech PDT is turned off, hold down the [CMD] and ← keys, and then press the power-on key. The Unitech PDT display will then show:

```
<START MENU>
1.SUPERVISOR
2.WARM START
3.COLD START
```

A warm-start will occur immediately upon pressing key [2]. If you press key [3] to select a cold-start, you will then be asked to press key [1] to confirm all data will be lost.

After the warm or cold start, the Unitech PDT will power on with a display similar to:

```
PT630 BIOS V1.94
MEM 512 KB
>
```

Hold down the [CMD] key for approximately 2 seconds to access the Unitech PDT main user menu.