Control Point PC Tools Software
INTRODUCTION

Control Point Software 7.28 or higher and the CP Tools Software upgrade is compatible with the following:

- Wireless Switch Module and Wireless Base Station
- Laptop connection direct to Control Point
- djDART® module

Offering:

- Downloadable Control Point system programs:
  - For wireless communication from computer to truck fleet.
  - Uploading Control Point system enhancements (Pause feature and Automatic Granular Rate Reduction)
- Upgrade computer reporting tool with user-friendly interface screen that packages previous software reporting functions.

The CP Tools Software is compatible with Windows 7 and 8 operating systems.

IMPORTANT: Computer settings must be configured to match the settings of the CP Tools software for proper communication.

COMPUTER SETTINGS

To change the computer’s settings to communicate with the CP Tools software upgrade, use the following path to check the computer’s port settings:

1. Control Panel/Systems/Device Manager/Ports/Communications Port/Port Settings
2. Verify and/or change the settings to:
   - Data Bits: 8
   - Parity: None
   - Stop Bits: 1
   - Baud Rate: 19200
CONTROL POINT WIRELESS UPGRADE

The following are Wireless Upgrade Requirements:

- Control Point with 7.28 or higher software
- Wireless base station
- Wireless switch module
- DB9 RS 232 cable
  - Computers without a DB9 port will require either a PCMCIA card to DB9 RS232 adapter (preferred option) or a USB to DB9 RS232 adapter.
- DICKEY-john CD with CP Tools software

OPTIONAL EXTERNAL ANTENNA KIT

An external antenna kit provides reliable reception when a signal is compromised between trucks and base station, i.e. brick buildings, no windows.

Optional kit includes:

- Antenna
- 100’ cable
- (2) mounting brackets

Contact DICKEY-john Corporation for ordering information at 1-800-637-3302.
TO INSTALL

1. Insert the DICKEY-john Control Point Tools CD into the computer's CD drive.
2. Run setup.exe.
3. At the Select Installation Folder window, select the desktop folder as the destination as depicted in (Figure 2).
4. Install the 32-bit version of Java Runtime. The 32 bit version is required even if a 64-bit edition of Windows is currently installed.

NOTE: The JRE installer download is available at:
http://www.oracle.com/technetwork/java/javase/downloads/java-se-jre-7-download-432155.html

5. Set the path variable for Java.
   – For a 64-bit system, add C:\Program Files (x86)\Java\jre7\bin
   – For a 32-bit system, add C:\Program Files\Java\jre7\bin
   – Ask a system administrator for assistance, if necessary, to perform this step.
6. Click the ControlPoint Tools icon on the desktop to run the program.
   – Reports and configuration files downloaded from the CP console are stored in the ControlPoint Tools directory on the desktop.
CP TOOLS WORK AREA

The CP Tools Work Area is divided into 5 areas:

**Truck Spread Reports**
Used for downloading truck data to prepare Spread, Summary and Configuration reports.

**Truck Configuration**
Sends Control Point truck configuration data to be stored and saved on the PC for uploading back to the truck at a later date. Because each truck has its own ID and address each Control Point configuration data should be saved to the computer.

**Utilities**
Setup reporting formats, identify Truck ID and addresses, and program Control Point with compatible software, if required.

**Standard Tab**
Non-wireless applications using the Control Point Tools reporting features.

**Wireless Tab**
Communicates with truck fleet via wireless base station and wireless switch module.

*Figure 3
CP Tools Work Area*
VERIFY CONTROL POINT SOFTWARE VERSION

The Control Point must have software version 7.28 or higher for:

- Wireless communication with the Base Station
- To communicate with the CP Tools software

The current software version will display on the Control Point’s lower left screen during initial power up or can also be viewed at the Miscellaneous screen.

To View Control Point Software Version:

1. Press F12 Miscellaneous Menu
2. Select 5 Service Menu
3. Select 2 Display Software Version

TO UPGRADE CONTROL POINT SOFTWARE

A Control Point software upgrade can be uploaded to the Control Point using the Control Point Tools software.

Connection Requirements:

- DB9 RS232 Cable
  - Computers without a DB9 port will require either a PCMCIA card to DB9 RS232 adapter (preferred option) or a USB to DB9 RS232 adapter.
- Null Modem

CP Tools Software

A serial port must be identified in the Control Point Tools software before a valid connection can occur.

1. At the Utilities section, open Setup.
2. Select the Serial Port tab.
3. Select an available serial port to connect the RS232 cable.
   – Click the down arrow box to display all available ports.

**Figure 5**

**Serial Port Selection**

Wireless Applications

1. For wireless applications, remove the RS232 cable from the Base Station.
2. Attach Null Modem to the RS232 cable and connect to the Control Point.
3. Attach the RS232 cable, PCMCIA card or USB connector to the computer.

**Figure 6**

**Control Point Software Upgrade Connection Requirements**

4. Open the Control Point Tools software.
5. At the Utilities section, select **Program Control Point**.
6. Select to highlight the cpx_xx.rs file and click **Open**.
7. A screen displays to **Retrieve CP Configuration**.
   – Selecting **Yes** (recommended) downloads the Control Point configuration data to the computer’s hard drive and automatically uploads to the Control Point after the Control Point software has been upgraded.
   – Selecting **No** requires manual keyboard entry of the configuration data at the Control Point.
8. The Control Point will indicate the software upgrade is programming and the **Blast** button will flash continuous until complete. After a successful software upload, the Control Point data configuration automatically begins loading back to the Control Point (if Yes was selected at the **Program Control Point** screen as shown in (Figure 7).

**IMPORTANT:** Do not power down the Control Point during the upgrade.

9. After download, verify the software version on the Control Point at the F12 Miscellaneous screen.
   - Software version 7.28 or higher should now be installed.
10. Remove cable and null modem from Control Point.

For wireless applications, reconnect the cable to the Wireless Base Station and computer before using the Control Point Tools software.
CUSTOMIZING CP TOOLS

UTILITIES

SERIAL PORT

A serial port must be identified on the computer that will be communicating with the base station. By clicking the down arrow box, all available ports display. Refer to (Figure 5).

Connection Requirements:

- DB9 RS232 Cable
  - Computers without a DB9 port will require either a PCMCIA card to DB9 RS232 adapter (preferred option) or a USB to DB9 RS232 adapter.
- Null Modem (not required for connection to Base Station)

Baud, Message, and Flow Control are automatically set to communicate with the Base Station and cannot be changed.

PC MODEM

The PC Modem Channel and the Control Point must be configured to the same channel for communication. Channel setup in Control Point Tools defaults to 10.

All trucks should be set on the same channel to communicate with the Base Station.

Figure 8

Setting PC Modem Channel

NOTE: Standard Module users refer to page 25 for Control Point download instruction. djDART® users refer to page 27 for Control Point Download instruction.
PC MODEM STATUS

1. Under the Wireless tab, click on **PC Modem Status**.
2. The PC Modem status information will populate.
3. Write down the Channel # and PC Address. Both are required entries into the Control Point for communication with the wireless base station.
4. The channel setting only needs to be changed if there is more than one base station at a given location.

**IMPORTANT:** If multiple base stations are used, verify each is set at different channels to avoid communication issues.

_Figure 9

<table>
<thead>
<tr>
<th>PC Modem Status</th>
<th>PC Address</th>
<th>Truck Address</th>
<th>Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>400898A9A</td>
<td>4008D710</td>
<td>10</td>
</tr>
</tbody>
</table>
CONTROL POINT PREPARATION

1. Connect the Control Point keyboard to the Control Point.
2. Press F12 Misc key.
3. Select 4 Serial Port Configuration.
4. Select 4 Modem Setup.
5. Type in Channel and PC Address obtained from the PC Modem Status section of the CP Tools software.
6. Write down the Truck ID and Truck Address. This information is used to create a Truck List into the CP Tools software.

Figure 10
Control Point Modem Setup

CREATING A TRUCK LIST (CP TOOLS SOFTWARE)

A Truck List can be created in the CP Tools software with all truck addresses and Truck ID’s obtained from each Control Point as shown in (Figure 11).

1. Select the Create a Truck List button found under the Utilities heading.
2. Position cursor in the Truck ID input field to add applicable truck ID, then tab over to the Truck Address input field to enter the address.
3. Click ADD after each entry and the Truck ID and address will automatically input into the above truck list.
4. When finished, click Save Changes and Close to save the updates.
   – The Truck List can be modified at any time to add or delete a truck by selecting from the truck list.
Figure 11
Adding Truck ID and Addresses to Truck List Editor
NOTE: Standard Module users refer to page 23 for Control Point download instruction. djDART® users refer to page 25 for Control Point download instruction.

TRUCK DATA DOWNLOAD

The CP Tools program is now ready to begin wireless download of truck data to the computer. Data download can occur for those trucks identified in the Truck List or by a specific truck.

CP TOOLS SOFTWARE PREPARATION

LOOPING THRU TRUCK LIST

1. From the Wireless window, click the Loop thru Truck List button.
2. Looping will begin for all trucks identified in the Truck List looking for a Truck (Control Point) that is ready to send data. The truck modem status indicates download status and a status screen indicates percentage completion.
3. Press Stop Looping button to end looping through the Truck List.

TRUCK OPERATOR PREPARATION (WIRELESS)

Trucks must observe the following before a wireless download can occur:

1. Trucks must be within 400’ from the base station for a solid signal to communicate with the Control Point.
2. Truck must be stationary at 0 mph to activate Control Point Download to PC screen.
3. Master switch must be in the OFF position.

The Switch Module Blast button on the switch module flickers when the base station is waiting to communicate.

4. Press and release the Console button until Download to PC screen displays.
5. One or both of the decrement switches must be in the ON position (granular and/or liquid).
6. Press the liquid or granular decrement switch to begin download to the base station.
7. During the looping mode, **Waiting for PC** will display while waiting to communicate with the base station and downloads are occurring with other trucks. **In Progress** displays once communication is established and download begins.

8. Signal status indicates reception quality as either Poor, OK, Good, Unknown.

**Signal Status Indicators**

OK- Strong signal intensity able to communicate with the base station.

Good-Strong signal intensity able to communicate with the base station.

Poor-Weak signal due to a possible obstruction between the truck and base station or distance is too far away to communicate.

Unknown-An unknown signal could indicate truck is completely out of reception range for a download or an invalid truck or PC address could be entered in the CP Tools software or Control Point.

**IMPORTANT:** Do not power off the Control Point when truck data is downloading.

9. When download is finished, status will indicate **Download Complete**.

10. Continue to press the **Control Point Console** button until returning to the main operate screen.
DOWNLOAD BY INDIVIDUAL TRUCK

Individual truck data can be downloaded when looping is not active and no truck operator intervention is required.

1. Choose a truck number from the Select Truck ID drop down list.

Figure 13
Selecting a Truck ID

2. From the Truck Spread Report section, click Download Spread Report from Truck.

3. A download screen with status bar indicates a download is occurring. When complete, the download screen disappears. Once the data is downloaded, a new file folder is created named date (YYMMD).

Figure 14
Truck Download Status Screen
REPORTING FUNCTIONS

SELECTING A REPORT FORMAT

Two file types are available to generate reports.

- *PDF* should always be selected in order to create the Summary, Full Spread, and Fleet Summary reports.
- *MTO* creates a .csv file for users who contract with the Ontario government.

To Select a File Type:

1. Under the Utilities heading, select **Setup**.
2. Click the Reports tab and choose file format.

![Output File Report Screen](image)

CLEARING ACCUMULATORS

Clearing Accumulators will reset season accumulator totals to zero in the Control Point after a successful data download to the computer. This option must be selected before starting the download if reset of season totals is desired.

Current Accumulator totals will always reset to zero after a download regardless if season accumulators is selected.

**IMPORTANT:** Remember to unselect Season Accumulators to prevent clearing of new season totals.

To Clear Season Accumulators:

1. Under the Utilities heading, select **Setup**.
2. Click the **After Download** tab and select Clear Season Accumulators.

![After Download](image)
CREATING SPREAD REPORTS

Reports generated from downloaded truck data are available in six formats (Figure 17):

1. Download Spread Report from Truck allows download of truck data for an individual truck (refer to Truck Data Download section).
2. Create Summary Spread Report provides a truck summary of material usage and miles driven totals.
3. Create Full Spread Report provides a detailed description of material usage, rates applied, quantities, miles driven, switch on/off history, and alarm messages based on start and end events.
4. Create Fleet Summary Report summarizes all fleet truck data from a start date to an end date and provides a summary total.
5. Create Fleet MTO Reports (file requirements for Ontario government) only appears when the MTO Report option is selected under the Setup tab (Figure 15).
   - This file output type can be used when truck data has been downloaded over a period of time but the MTO report option was not selected under the Setup tab.
   - Fleet MTO reports are created based on the start and end dates entered.
   - If the MTO report option (csv file) is selected before creating the reports, the files are automatically created and saved by date in the Control Point Tools/Reports folder.
6. Download Spread Report from djDart® applies to downloading truck data using a djDart® only (without wireless capabilities). Refer to page 25 for djDart® download instructions.

Figure 17
Truck Spread Reports
SUMMARY AND FULL SPREAD REPORTS

NOTE: To create MTO reports, select the Create MTO reports option found under the Setup tab.

1. Select the Summary or Full Spread button.
2. Highlight the appropriate date folder and click Open.

3. Select Truck ID and click Open.

4. Select Data (Truck ID) file and click Open to generate report. File name consists of the Truck ID, date, and time created.
FLEET SUMMARY REPORTS

By selecting a beginning date folder and an end date folder, the CP Tools software will search all trucks. Repeating trucks within these dates are summarized with spread date on one line in a summary report.

1. Select the **Fleet Summary Report** button.
2. Select a date file that the report should begin compiling data and click **Open**.

**Figure 21**

*Select a Start Date*

3. Select a date file that the report should end compiling data and click **Open**.

**Figure 22**

*Select an End Date*
VIEWING REPORTS

Reports are generated and stored in the directory selected during software installation.

1. To view reports, minimize the CP Tools software window.
2. Open Windows Explorer and locate the Control Point Tools folder per below.

FULL, SUMMARY, AND MTO SPREAD REPORTS

*Figure 23*

**Spread Report File Structure**

- Desktop
  - Control Point tools
    - Date folder
    - Reports folder
      - PDF File
      - Full Summary
      - Summary
      - MTO (CSV)
      - MTO Report

FLEET SUMMARY REPORTS

*Figure 24*

**Fleet Summary Report File Structure**

- Desktop
  - Control Point tools
    - Fleet_Reports
      - PDF File
        (Fleet_Summary_from_
        Start Date to End Date)

CONFIGURATION REPORTS

*Figure 25*

**Configuration Report File Structure**

- Desktop
  - Control Point tools
    - Config folder
      - Truck ID
      - Date
        - Reports
          - PDF files
            saved in
          Reports folder
            File (Truck ID_Date_Time)
STANDARD SWITCH MODULE

The CP Tools software can be used with a standard Switch Module to:

• Download truck data
• Upload configuration files
• Upload Control Point software version 7.28 or higher

Connection Requirements:

• RS-232 cable
• Null Modem

Figure 26

Standard Switch Module

IMPORTANT: When downloading data to the PC using a Standard Switch Module, the Standard tab must be highlighted in the CP Tools Software.
DJ DART® TOOL

The djDART® module is an easy-to-use, pocket-size device used for retrieving truck data from a Control Point console and transferring it to a computer.

Connect the djDART® to the RS-232 port of the Control Point and select the BULLSEYE to start the download. Connecting the djDART® to a computer’s RS-232 serial port and selecting the BULLSEYE again transfers the data to the computer. The data is then viewable on the computer using the CP Tools software.

Data collected for records includes:

• Quantity of granular and liquid material dispensed during spreading operation.
• Total vehicle miles driven and miles spreading granular and liquid materials.
• Application rates selected while spreading granular and liquid materials were spread.
• Time and data records indicating when granular and liquid materials were spread.
• Alarm history that includes when the control system operated in an error condition.

The CP Tools Software can be used with a djDART® tool to:

• Download Control Point data from the djDART® to the computer
• Create reports

IMPORTANT: There is no configuration download/upload capability or Control Point programming capability with the djDART®.

DOWNLOADING TRUCK DATA FROM CONTROL POINT TO DART

To download truck data from the Control Point console into the djDART® (Figure 27):

1. Connect the djDART® to the RS-232 connector.
2. Turn ON the Control Point console.
3. To begin download, press the Bullseye button on the djDART® (Figure 28).

Refer to DICKEY-john DART® Operator’s Manual for setup and configuration. The djDART® PC software is only used for setup and troubleshooting.
4. The DART will flash all LEDs 3 times. Truck data will then be copied from the Control Point. The TX RX LED will flash as truck data is transferred. This process may take up to 40 seconds if the truck’s event logs (ALARM, ON/OFF, and RATE CHANGE) are full (a maximum of 100 events each).

5. After truck data has been transferred, the TX RX LED will stop flashing and the POWER LED will remain on for 5 seconds. The unit will then power down automatically.

6. Disconnect the DART and turn off the console if required.

UPLOADING TRUCK DATA FROM DART TO PC

To download truck data from the djDART® to the PC:

1. Connect the RS-232 extender cable between the djDART® and the PC COM port (typically marked COM1 or 10101).
2. Connect the djDART® DC power supply to the DART.
3. Open the CP Tools software.
4. Press the djDART® Bullseye to begin the download to the computer. The djDART® will flash all LEDs 3 times. When only the red LED error light is blinking, press the Download Spread Report from djDart® button (CP Tools software).

5. The TX RX LED will flash as truck data is transferred. This process may take up to 40 seconds if the truck’s event logs (ALARM, ON/OFF, and RATE CHANGE) are full (a maximum of 100 events each).

6. After truck data has been transferred, the TX RX LED will stop flashing and the POWER LED will remain on for 5 seconds. The unit will then power down automatically.

7. Disconnect the djDART®.

Refer to Viewing Reports for file locations.
### TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Issue</th>
<th>Probable Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error 26 - Download Spread Report Error</td>
<td>Lost connection between computer and Control Point Module (base station).</td>
<td>Verify cables are securely connected to computer and base station.</td>
</tr>
<tr>
<td>PC Modem Error</td>
<td>Lost communication with the base station.</td>
<td>1. Verify cables are securely connected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Verify serial port and PC Modem are configured correctly in the CP Tools Software</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and the computer settings match the CP Tools software settings.</td>
</tr>
<tr>
<td>Configuration Download Error</td>
<td>Communication has been lost.</td>
<td>1. Verify the PC modem, Control Point, and power cables are securely connected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. If wireless, check PC, truck address, and range.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Verify correct Com port setting is correct in the CP Tools software and the computer settings.</td>
</tr>
<tr>
<td>File Missing</td>
<td>1. Dj Config executable file is missing.</td>
<td>Reinstall the CP Tools Software program.</td>
</tr>
<tr>
<td></td>
<td>2. PCdjDaRT executable file is missing.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Djflash-Djpublicworks executable file is missing.</td>
<td></td>
</tr>
<tr>
<td>Error Adding Truck ID or Address</td>
<td>Truck ID and/or Address already exists.</td>
<td>Correct the Truck ID or Address value.</td>
</tr>
<tr>
<td>Error during download from DjDaRT module</td>
<td>Lost connection.</td>
<td>Verify cables are securely connected and the DaRT module power.</td>
</tr>
<tr>
<td>Download Spread Report Error using DaRT</td>
<td>Lost connection between DaRT and computer.</td>
<td>Verify cables are securely connected.</td>
</tr>
</tbody>
</table>