



DESTRON[®] FEARING

Digital Angel Corporation

DTR READER
(ISO Compliant)
OPERATING MANUAL



Reads RFID Tags On:

- Livestock
 - Pets
 - Fish
- Custom Applications

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I. Components

The following DTR Reader components are available and can be ordered separately.

800.8001.00
Reader/Standard



802.1312.22
Test Tag



110.0060.00
Battery Pack



228.0230.00
Standard Cable



228.0049.00
Serial Coil Cable



Also available but not pictured: DTR Holster (DTRH-01), IR5760 Charger.

To order additional accessories and for kit information, please contact Digital Angel at 1-800-328-0118.

II. Getting Started

Features of the reader

- Can read up to 18,000 tags on a single battery charge
- Wired (serial) or wireless (Bluetooth) operation
- Capable of storing 510 RFID tags (DTR3 only)
- Configurable using either a utility program or a communications program (DTR3 only)

Battery information

Type

The battery in the kit is custom designed for the reader. The use of other commercial batteries WILL NOT activate the reader and could cause permanent damage.

Installation

To install the battery, remove the thumb screw and slide open the door on the end of the reader handle. After inserting the battery, close the door and tighten the thumb screw.

Important: Only one end of the battery is designed to enter the chamber. If battery does not fit easily, turn it over and re-insert. Forcing the incorrect end of the battery into the chamber could damage the components.

Charging

The battery should be fully charged before the first use and should only be charged with the supplied charger. The battery may be charged either within or outside the battery chamber. When leaving the battery within the battery chamber, loosen the battery door thumbscrew one turn and then slide the cover to expose the charging receptacle.

- 1) Plug the charger into a standard AC outlet.
- 2) Plug the charger cord into the battery receptacle.

The charger will disconnect power to the reader. The reader cannot be used while the battery is charging.

- 3) Periodically monitor the progress.

The *Status* light on the charger indicates the state of the battery.

- Yellow = the battery needs charging.
- Green = the battery is fully charged.

The battery should fully charge in about two hours. It is not possible to overcharge the battery.

- 4) When the battery is charged, remove the charger and close the battery door.

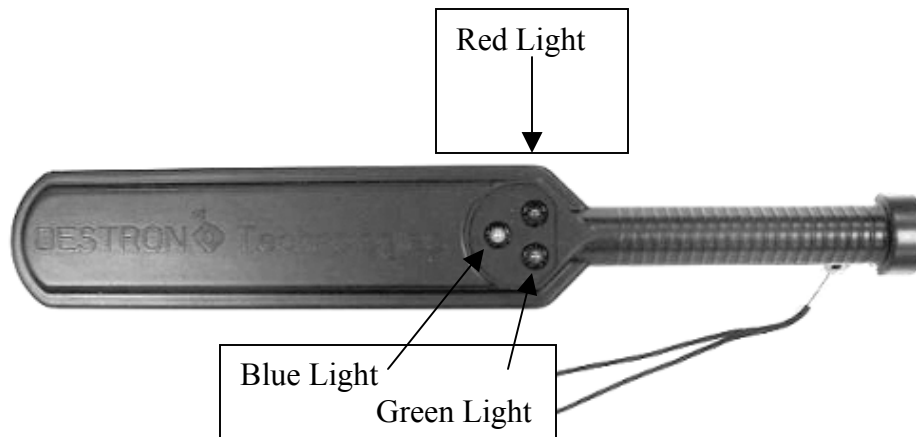
The reader is now ready for operation.

III. Operation

Activate the reader

Push the activation switch on the bottom of the reader to turn power on (allow five seconds for startup to complete). The red light on the top of the reader will be lit and will remain on while the reader is active.

The reader will stay active for 60 minutes. After 60 minutes the reader will automatically shut down.



Steady red: Power is on.

Flashing red: Reader memory is more than 90% full (applies to DTR3 Readers only).

Flashing blue: Reader is searching for wireless connection.

Steady blue: Reader is connected to host.

One green flash: A tag has been read.

Reading tags

Press the scanning switch and hold it until the tag has been successfully scanned. You must pass the reader within six inches of the ID tag. Be sure to release the switch before scanning the next tag. This allows the reader to return to scan mode.

DTR3 Reader

On a DTR3 Reader the tags are stored by default in memory on the reader. If a tag is successfully read and saved, the green indicator light will flash twice and the reader will beep twice. If the same tag is read twice in a row, the green indicator light will flash once and the reader will beep once but the tag will not be saved in memory.

The tags are downloaded from the reader using the InfodexM utility. If the memory function is disabled the DTR3 Reader will operate the same as the DTR1 reader.

DTR1 Reader

The DTR1 reader does not contain any memory and the tags are immediately downloaded to a host device via either a serial or Bluetooth connection.

Pre-test before scanning animals

A test tag is been provided with the reader. Hold this tag in the palm of your hand and pass the reader over the tag.

Storage

Be careful that the power switch is not accidentally held in the “on” position during storage. If it is held on the reader battery will deplete and need to be re-charged.

IV. Installing Infodex®M (DTR3 Readers only)

Infodex®M is a utility that enables you to:

- Configure the reader
- Download tags from the reader to the utility
- Export tag IDs to your computer

Requirements

- Windows 2000 or Windows XP
- .NET Framework 2.0 or later (automatically installed for you during the utility installation process)
- RS-232 serial port or Bluetooth connectivity

Installation

To install InfodexM:

- 1) Insert the InfodexM CD into the CD drive.

The *Welcome* dialog should automatically appear. If it doesn't, simply double-click the *Setup.exe* file on the CD.

- 2) Click *Next*.

The *Select Installation Folder* dialog is displayed.

- 3) If you accept the default folder and user values, click *Next*. Otherwise, modify the values and then click *Next*.

The *Confirm Installation* dialog is displayed.

- 4) To begin the installation process, click *Next*.

- 5) When the *Installation Complete* dialog is displayed, click *Close*.

V. Connecting To A Host

Serial cable connection

1) Turn on the reader and then connect it to your host data collection device (PDA, computer, etc.) using the serial communication cable provided with the reader.

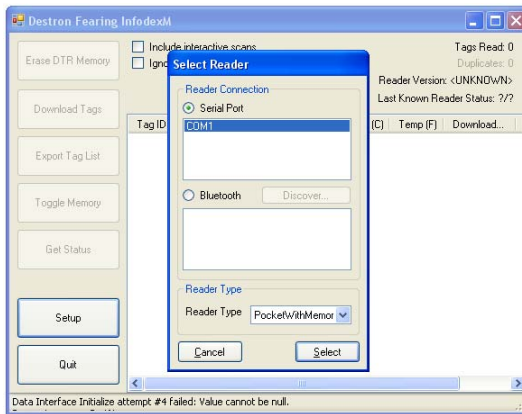
2) Configure the data collection software.

If using a communications program such as HyperTerminal, use the following RS232 settings:

- Baud rate: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow: None

If using InfodexM (DTR3 models only), start the utility by selecting *Start > All Programs > Destron Fearing > InfodexM*. The utility should automatically connect to the reader. If it doesn't:

a) Click *Setup*.



b) Enable the *Serial Port* option, in the *Reader Type* box select *DTR*, and then click *Select*.

Bluetooth connection to a computer

DTR1 Readers (using a comm program)

- 1) Turn on the reader and wait for the blue light to begin flashing.
- 2) Open the Bluetooth manager and initiate a communication session with the reader.

Make sure the COM (serial) port service is enabled for the device.

- 3) When prompted, type the proper passcode.

The passcode is the last five digits of the serial number located on the handle of the reader.

- 4) Wait for the flashing blue light to change to a steady blue light (indicating the connection is made).
- 5) On your computer, start your communications program and verify its configuration: 9600 baud, 8 data bits, no parity bits, 1 stop bit, no flow control.

DTR3 Readers (using InfodexM)

- 1) Turn on the reader and wait for the blue light to begin flashing.
- 2) On your computer, start the utility by selecting *Start > All Programs > Destron Fearing > InfodexM*.
- 3) Click *Setup*.
- 4) Enable the *Bluetooth* option and select *DTR* in the *Reader Type* box.

Note: Your Bluetooth COM port may appear in the *Serial Port* box. If so, select it and then click *Select* (and skip Step 5 and Step 6).

- 5) Click *Discover*.
- 6) Select your reader from the list of discovered devices and then click *Select*.

Bluetooth wireless connection to a PDA (DTR1 and DTR3 Readers)

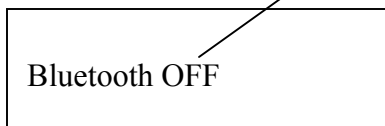
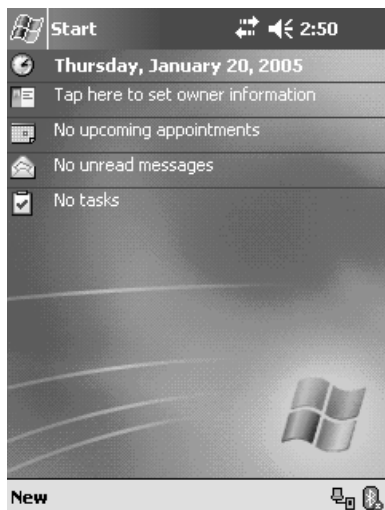
There are many different ways to establish a Bluetooth connection. Please consult your device's user manual for directions on how to connect to the reader.

A sample PDA connection

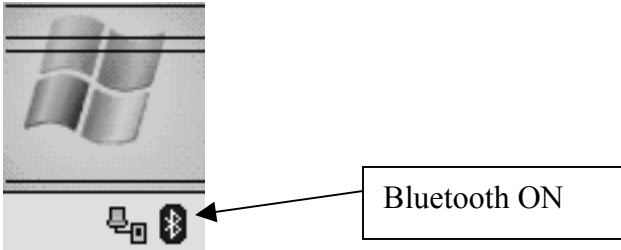
If you are using a Windows CE device (Pocket PC 2003), set up the device as follows:

1) Turn on Bluetooth functionality

- a) Turn on the PDA and allow a few seconds for the device to turn on the Bluetooth function. A Bluetooth icon should appear in the lower right hand corner of the screen. If a red circle with a white "x" appears next to the Bluetooth icon, then the Bluetooth device is sleeping and must be turned on.

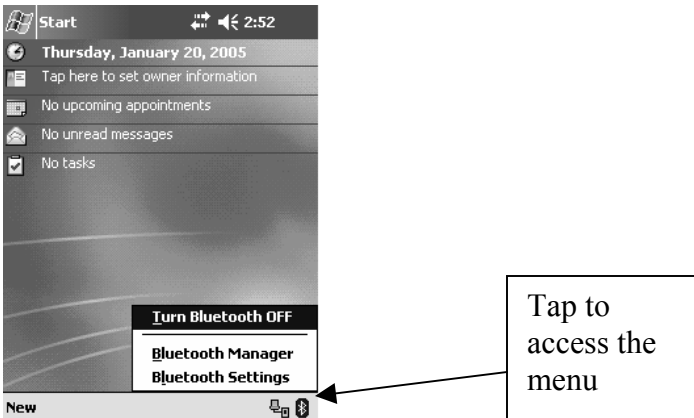


b) To turn on the Bluetooth function, tap the Bluetooth icon located in the lower right corner of the PDA screen and then select Turn Bluetooth ON. This will turn on the wireless connection and the red circle “X” will disappear.



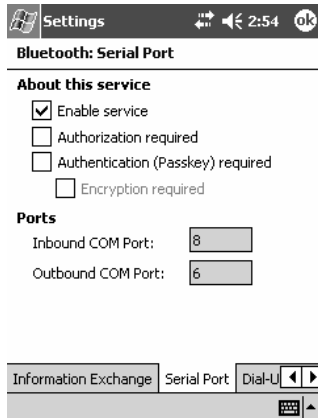
2) Configure the PDA serial port.

a) To verify the proper setup of the Bluetooth device, tap the Bluetooth icon again to display the menu. Select “Bluetooth Settings” to display the settings window.



b) On the bottom of the *Settings* window, tap on the right arrow and scroll until the *Serial Port* tab appears.

c) Select the *Serial Port* tab and verify that the *Enable service* check box is enabled. The other check boxes should not be checked. In the top right-hand corner of the screen click *OK*.

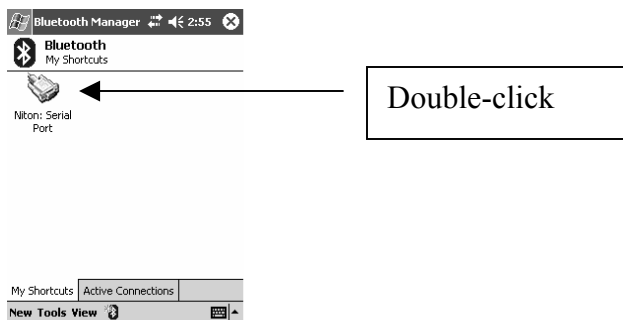


3) Enable the serial connection.

a) Turn on the DTR Reader.

b) On the PDA, tap the Bluetooth icon and select the *Bluetooth Manager* menu. This will display a list of all previously configured devices.

c) Double-click the serial port icon to enable the connection to the reader.



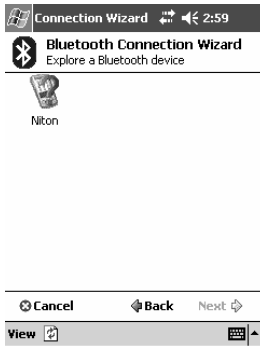
Note: If this is your first time in the Bluetooth Manager screen, you must get it to “discover” the reader. To do this:

- In the lower left corner tap *New*.
- Tap on *Connect* and then double-tap *Explore a Bluetooth device*.

- Click inside the No device selected box. The Bluetooth Browser will appear while the PDA is searching for a device.

Important: The DTR Reader must be on when the browser is in a search mode.

- When the browser detects the reader, the *Serial Port* icon will appear on the PDA. Tap the reader icon to open the Bluetooth Connection Wizard.



- The available services will be displayed in the *Service Selection* box. Tap *Serial Port* and then in the lower right corner of the PDA tap *Next*.

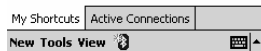


- Tap *Finish*.

4) Pair the device.

a) Highlight the serial connection and then tap *Tools*. At the top of the screen tap *Add*. The *Bluetooth: Device pairing* dialog will appear.

b) Tap the *Search* icon and the device name will appear with identification numbers. In the *Passkey* window, type the last five digits of the device ID number and then tap *OK*.



The wireless serial cable icon will remain available in the Bluetooth Manager for future use.

VI. Using InfodexM (DTR3 Readers Only)

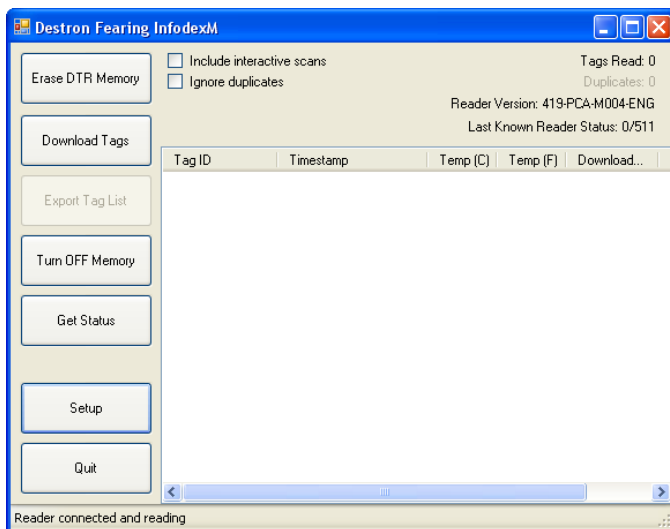
InfodexM is used to:

- Erase tags from the reader's memory
- Download tags from the reader's memory
- Export tags to a spreadsheet program
- Enable and disable the reader's memory
- Establish a serial or a Bluetooth connection with the reader
- Configure how the reader manages interactive scans and duplicate tags.

Note: You can also use a communications program to perform these tasks. See page 20 for details.

Starting InfodexM

To start the utility you select *Start > All Programs > Destron Fearing > InfodexM*. The following window is displayed.



Erasing DTR memory

To erase all tags currently in the reader's memory, click *Erase DTR Memory*. Erasing tags from memory does not clear the list of tags currently stored within the utility.

Downloading tags from memory

To download all tags currently stored in the reader's memory, click *Download Tags*. The tags are downloaded to the utility and displayed within the tag list. For example:

Tag ID	Timestamp	Temp (C)	Temp (F)	Download...	File Number
985120010344010	4/27/2006 10:16:35 AM	0	0	Yes	0
985120020558336	4/27/2006 10:16:35 AM	0	0	Yes	0
985152000355869	4/27/2006 10:16:35 AM	0	0	Yes	0

Information displayed about each downloaded tag includes:

- Tag ID: The 15 digit code that uniquely identifies each tag.
- Timestamp: The date and time that the tag was downloaded from memory.
- Temp (C) and Temp (F): Reserved for future use.
- Downloaded?: Either Yes or No.

Yes = the tag was downloaded from memory

No = the tag was scanned interactively (directly into the utility's tag list).

- File Number: Reserved for future use.

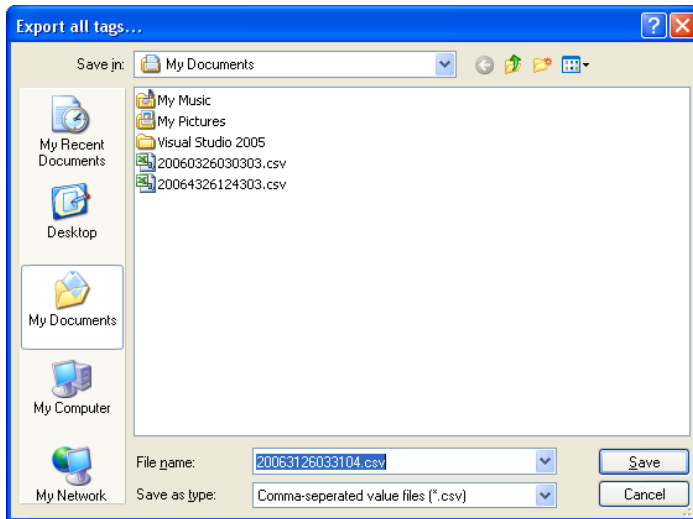
Note: Downloading tags from memory does not erase the tags from memory.

Exporting tags to your computer

Tags that have been downloaded to the utility can be exported and saved to a file on your computer. This enables you to use a spreadsheet program to evaluate your tag data. To export the tags:

1) Click *Export Tag List*.

The *Export all tags* dialog is displayed.



2) Specify a folder, a file name, and a file type, and then click *Save*.

There are two possible file types:

- *Comma-separated value files*: Readable by most popular spreadsheet programs but some cells may require formatting.
- *Excel Comma-separated value files*: Designed for use with Microsoft Excel.

Note: Exporting the tag list does not erase the tags from the utility tag list.

Enabling and disabling memory

The DTR3 Reader contains internal memory capable of storing up to 510 RFID tags. You can enable and disable the use of the memory feature using the *Turn ON Memory / Turn OFF Memory* button. The name of the button changes depending on whether memory is currently enabled or disabled.

Note: The utility must be connected to the reader in order to enable or disable memory.

When memory is enabled

Tags scanned by the reader will be stored in memory. To get the tags you must download them using the Download Tags button.

When memory is disabled

The reader will function exactly like a DTR1 Reader. Tags scanned by the reader will be sent directly to your computer via a serial or Bluetooth connection.

If there are tags in memory when memory is disabled, those tags are saved, but no additional tags will be saved.

Managing interactive scans and duplicate tags

InfodexM contains two check boxes that enable you to specify how the utility should manage interactive scans and duplicate tags.

Note: The following two options apply only to the utility. They do not apply to the reader.

- *Include interactive scans:* If enabled, scanned tags will be sent directly to the utility's tag list. This happens regardless of whether reader memory is enabled or disabled. If this option and reader memory are both enabled, the tags are sent to both the utility and to memory.

Note: The tags displayed within the utility are not saved unless they are exported to a .csv file using the *Export Tag List* button.

- *Ignore duplicates:* If enabled, duplicate tags are ignored by the utility. Duplicate tags will continue to be accepted and stored in reader memory.

Tip: To see how the duplicates are ignored, enable both this option and *Include interactive scans*. When a duplicate tag is read the status message in the lower left corner of the utility will indicate it has been read but the tag ID will not be added to the utility's tag list.

InfodexM statistics

The following statistics are displayed in the upper-right corner of the utility. To update this list, click *Get Status*.

```
Total Tags: 4
Duplicates: 2
Reader Version: 419-PCA-M002-ENG
Last Known Reader Status: 0/510
```

- *Total Tags*: The total number of tags read by the utility since it was started. This includes tags read directly to the utility using the Include interactive scans option as well as those tags downloaded from memory. Downloading the same tags from memory multiple times will increase the total value.
- *Duplicates*: The total number of duplicate tags identified by the utility.
- *Reader Version*: The version of software currently running on the reader.
- *Last Known Reader Status*: The number of tags currently saved in memory. The memory can store 510 tags.

Communications program commands

If you prefer, you can use a communications program (such as HyperTerminal) rather than the utility to manage the DTR3 Reader's memory and tags. The available commands are:

- Esc: Enter console mode
- S: Reader status
- V: Reader version #
- E: Erase memory
- D: Download tags
- M: Enable/disable memory
- ?: Display help menu
- X: Exit

VII. Troubleshooting

PROBLEM

- Reader power light does not come on.

ACTION

- The battery must be fully charged. Charge battery.
- Inspect and clean terminals on the battery if needed.
- Make sure battery is fully inserted and door is closed and sealed.

PROBLEM

- Reader has reduced read range or is not reading the tags.

ACTION

- The battery may be getting low. Recharge the battery.

Important: Metal objects, computer monitors, video screens, or other readers or microchip tags within 18” of the scanning area (check pockets) may distort the read range.

- If using a laptop computer, make sure it is properly grounded, using a three-prong plug.
- To see if the host device is the problem, disconnect the reader and scan the test tag.

PROBLEM

- Host device will not accept data.

ACTION

- Check cable connections to reader and the host device.
- Verify communications setup on host.

PROBLEM

- Reader's green light stays on continuously.

ACTION

- Remove the battery and replace or reinstall. Then, re-test the system. If the problem continues, disconnect the reader from the host device and test. If the reader now works properly, verify the settings on the host device.

PROBLEM

- Can't make a serial port connection to the reader using the InfodexM utility.

ACTION

- The COM port may be busy, possibly due to an existing serial port connection. Check to see if you have an existing serial port connection using a communications program such as HyperTerminal.

VIII. Proper Use and Care

While the reader is designed to perform in harsh conditions, it IS NOT to be used as an animal paddle, tool, or as an instrument for anything other than scanning animal tags. Use of the reader for non-scanning functions could permanently damage the components and replacement/repair WILL NOT be covered under the warranty.

Clean the reader when needed with either soap and water or with a mild cleaning solution. DO NOT immerse the reader in water or clean with strong chemical solutions.

IX. Specifications and Warranty

Weight (with batteries):

- 1.6 lbs.

Length/width:

- 19.5 inches / Length
- 3 inches / Width

Batteries (custom pack provided):

- 2.5 hour fast charge
- 2100mA capacity
- Battery Life – 500 charge/discharge cycles

Charger/Adapter:

- 110/240 volt compatible

Storage Temperature:

- -25 to 45 degrees C

Operating Temperature:

- -25 to 45 degrees C

Operating Frequency:

- 134.2 Khz

Read Range:

- 6 inches

Warranty Information

The Reader is warranted against defects in materials and workmanship, under normal use and service for One (1) year from date of purchase. This warranty will not apply if adjustments, repair or parts replacement is required because of accident, neglect, damage during transportation or by causes other than ordinary use.

Digital Angel Corporation's sole responsibility under this warranty shall be, at its option, to either repair or replace any product which fails during the warranty period. In no event shall Digital Angel Corporation be liable for any indirect or consequential damages or loss of profit.

X. FCC Statement

Digital Angel Corporation
South St. Paul, MN 55075-2443
Phone: 1-800-328-0118
Fax: 1-800-328-4565
FCC ID: P8F800100

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference, and,
- 2) This device must accept any interference received including interference that may cause undesired operation.

Caution to the user:

Any changes or modifications to the reader other than specified by this manual or Digital Angel Corporation could void the user's authority to operate the reader.

Industry Canada Registration ID
IC: 4284A-800100