



BRAYDER
TECHNOLOGIES INC.

ROM Imager™

A Component of ROM Crafter

Version 2.2

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Contact Information

Brayder Technologies Inc. is an innovative software firm, focused on providing top quality software for the Palm Computing platform. We have a great depth of talent in software design and anticipate bringing many exciting products to you in the future.

Brayder now partners with HandEra in the development and marketing for ROM Crafter. All Sales and Marketing and Level 1 and 2 support for ROM Crafter will be provided by HandEra.

If you need to contact us regarding ROM Crafter, please use one of the following:

- www.handera.com for information on ROM Crafter functions and downloadable files
- kit.mcdowall@handera.com or 515-710-8584 for questions or support for ROM Crafter

Conventions

This guide uses the following text formats:

- Command buttons appear in all capitals. For example, tap OK.
- Menu, Dialog, and Pick List names appear capitalized. For example, the Options menu.
- Menu and Pick List items, and System prompts appear in quotations. For example, choose "Preferences" from the Options menu.
- References to other applications and other sections appear in italics. For example, see *About* on page 5.
- Notes appear in a smaller font. For example:

Note: *This is an example of a note.*

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About ROM Imager

ROM Imager captures and restores ROM Images from PalmOS devices. **ROM Imager** can be used to backup an original ROM and restore it to a device later, or to backup a customized ROM and install it on a set of target devices.

ROM Imager provides two tool sets to backup and restore ROMs:

- SD Card Based Backup and Restore
- PC Based USB or Serial Backup and Restore

The ROM Imager PC based USB or serial tools must be used to backup or load custom ROM Crafter ROMs if the device to be backed up or loaded is not operational. However if the Palm OS on the device to be backed up or loaded is operational, the ROM Crafter SD Card Backup and Restore tools should be used, since they are much faster.

Supported Devices

ROM Crafter currently supports the devices listed in the following table. If a device is not listed here, please contact us as to availability of support for the desired device.

Palm Solutions

- m500
- m505
- m515
- i705
- Tungsten C
- Tungsten T
- Tungsten T2
- Tungsten W

Handspring

- Treo 90
- Treo 180
- Treo 270
- Treo 300

Kyocera

- 7135

Using SD Card Based ROM Imager

ROM Crafter provides two Palm OS programs (prc's) to backup and restore ROMs to supported device types.

After installation of ROM Crafter, the **ROM Backup.prc** and **ROM Restore.prc** programs can be found in the following directory:

c:\Program Files\Brayder Technologies\ROM Crafter\Backup and Restore

To use the SD card based backup and restore programs, the device Palm OS must be operational.

Installation of Backup and Restore

To install **ROM Backup.prc** and **ROM Restore.prc** for use on a PalmOS device, the two programs must be placed in RAM or in the SD card "\Palm\Launcher" directory. Backup or Restore can be run by tapping the Backup or the Restore icon, shown in the SD Launcher directory, or the RAM directory.

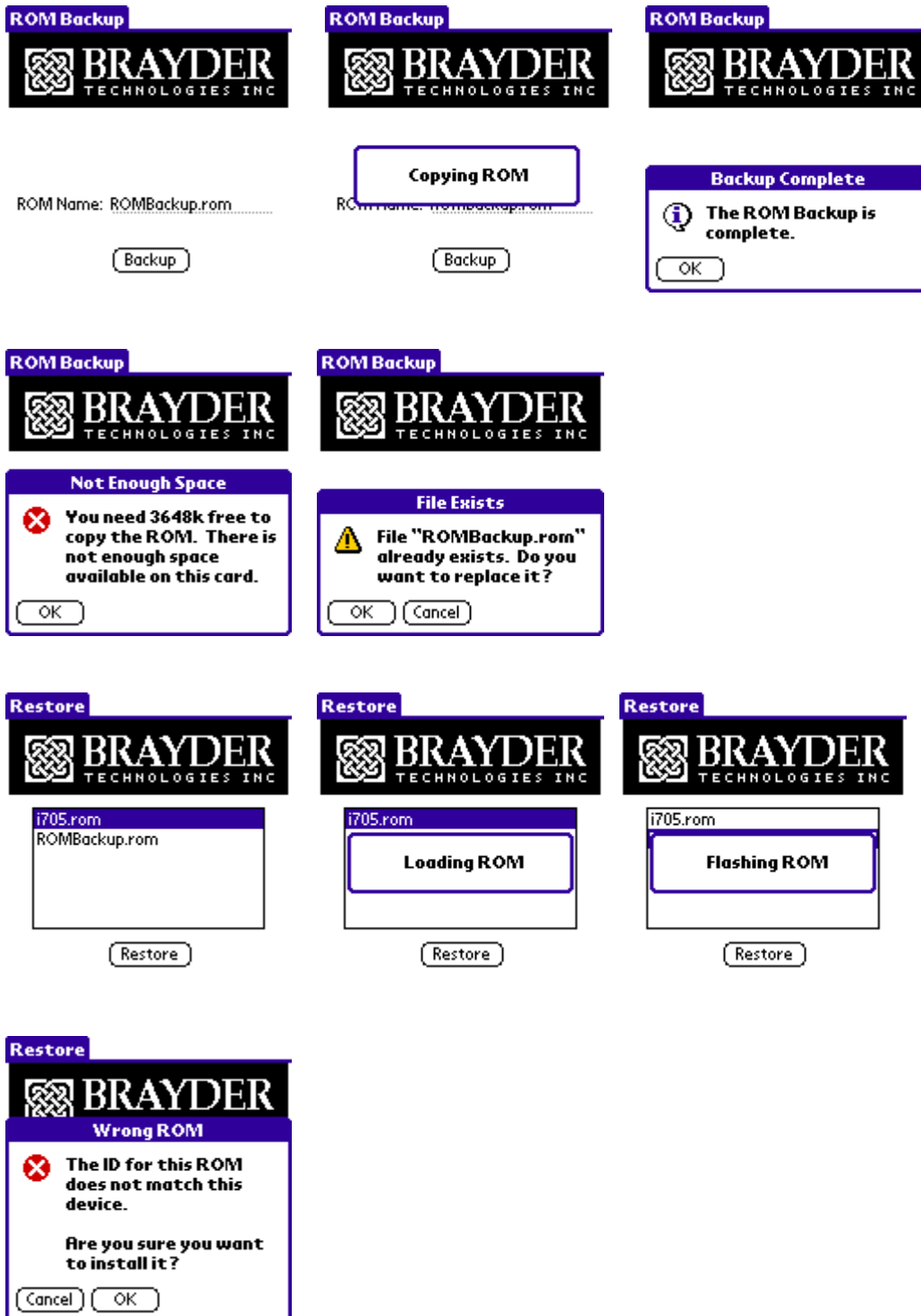
After installing **ROM Backup.prc** and **ROM Restore.prc** to an SD card, insert the SD card into an operational and supported device. The first step should be to run a Backup operation. This will create the appropriate directory ("\Palm\ROM") for housing ROMs to be restored later.

Custom ROMs built by ROM Crafter can be placed on SD cards by:

1. Performing a Backup operation with the ROM Crafter supplied Backup.prc
2. Loading a ROM file to the SD card \Palm\ROM\ directory with a PC utility such as Windows Explorer

To Restore a ROM file, tap the Restore icon and select the desired ROM file to be loaded.

The following are some of the **ROM Backup.prc** and **ROM Restore.prc** UI screens.



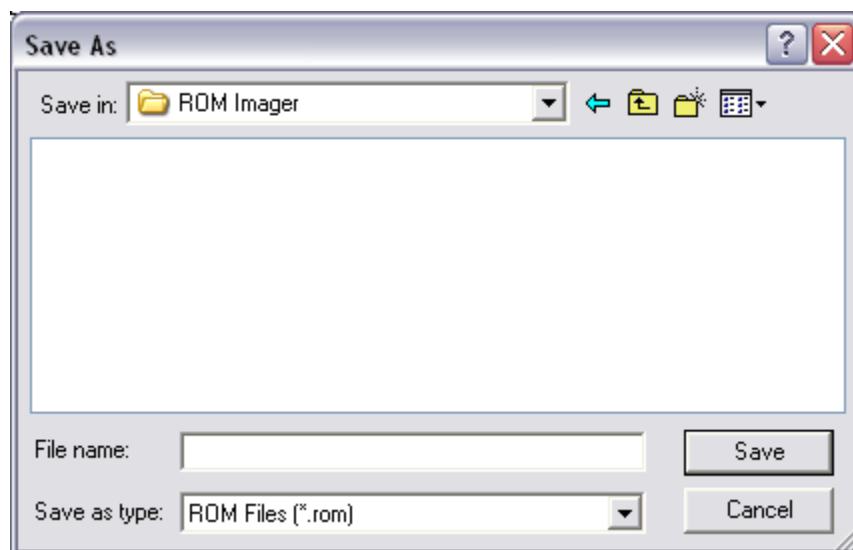
Using PC Based ROM Imager

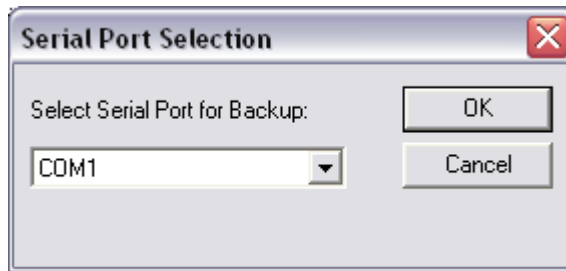
ROM Image Backup



To make a backup of a ROM image to a PC file, launch **ROM Imager**, and then choose a connection type for the device that is being backed up. Most devices have USB connections and if possible, a USB connection should be used, as a USB connection is significantly faster than a serial connection. After choosing the connection type, click the "Backup" button.

Next choose a name for the ROM image using the File Save dialog.





If a serial connection is being used, select the correct COM port from the selection list.



ROM Imager now listens on the selected connection for a PalmOS device in debug mode. See more on "Placing Devices In Debug Mode" in a later section.

To place a PalmOS device in debug mode, hold down the scroll-down button, while doing a reset. Continue holding down the scroll-down button for about five seconds. Most devices can be placed in debug mode outside of the cradle and then placed into the cradle. Some types of devices must be in the cradle while performing the debug-reset operation for the connection to be correctly recognized. In these cases it may be easier to use a HotSync cable rather than a cradle.

Once the device has connected, **ROM Imager** will begin backing up the ROM. A progress bar is displayed to track the backup. When it is complete, **ROM Imager** exits and the device is automatically reset.

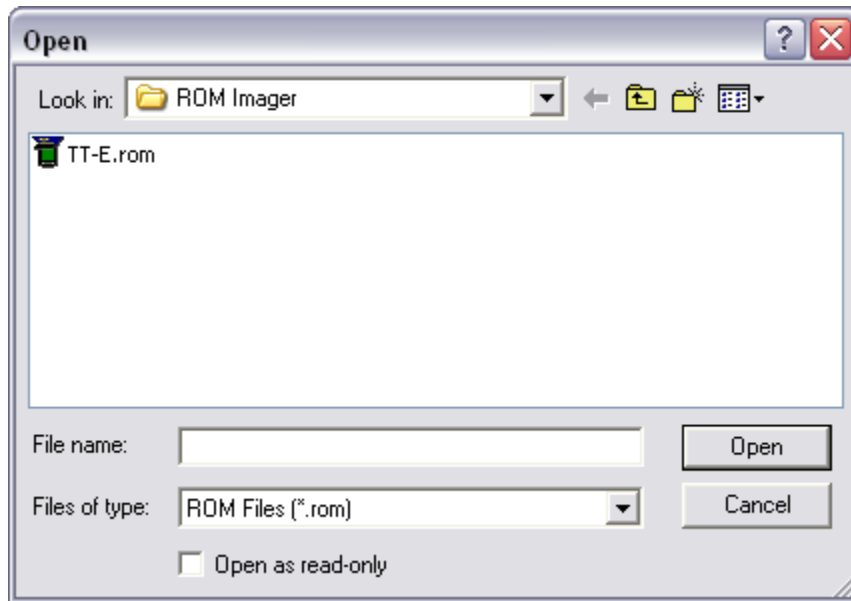
ROM Imager will not find a device in debug mode if the device in debug mode is placed in the cradle (or attached to a cable) before ROM Imager screen says it is “waiting” for devices in debug mode.

ROM Image Restore

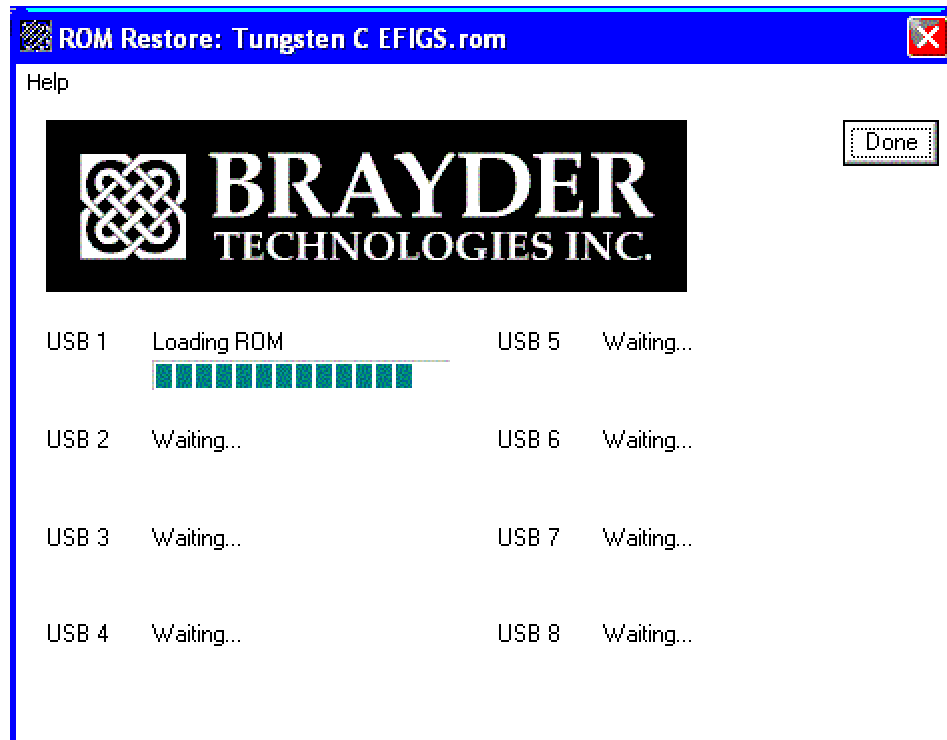


To restore a ROM image to one or more devices, launch **ROM Imager** and then choose a connection type for the device or devices being restored. After choosing the connection type, click the “Restore” button.

Next select an existing ROM image using the File Open dialog.



ROM Imager now listens on the selected connections for a PalmOS device in debug mode. See more on “Placing Devices In Debug Mode” in a later section. If a serial connection was selected, all available serial ports will be used to listen for connecting devices. If a USB connection was selected, **ROM Imager** will accept up to eight simultaneous USB connections.



Once a device has connected, **ROM Imager** will begin restoring the ROM. A progress bar is displayed to track the restore. When a device is finished restoring, it will be automatically Hard Reset.

PalmOS 4 devices use the progress bar to track the entire progress. PalmOS 5 devices only track loading the new ROM image into RAM. Once the image is loaded, flashing is started. The device can be removed at this point. When the flashing is complete, the device will finish with a Hard Reset.

Placing A Device In Debug Mode

To place a PalmOS device in debug mode, hold down the scroll-down button, while doing a reset. Continue holding down the scroll-down button for about five seconds. Most devices can be placed in debug mode outside of the cradle and then placed into the cradle. Some types of devices must be in the cradle while performing the debug-reset operation for the connection to be correctly recognized. In these cases it may be easier to use a HotSync cable rather than a cradle.

If a device has been password protected using the security panel, the device will not be able to enter debug mode. Either remove the password using the security panel or hard reset the device to enable the device to enter debug mode.

Each device type exhibits unique screen characteristics when in debug mode. For Palm M500/M505/M515 devices, you must press and hold both the **PageUp** and **PageDown** keys and then press **reset**. The device can be placed in debug mode without being in a cradle or being connected to a cable. The m500/i705 displays a small blinking square in the upper left corner of the screen when in debug mode.

The m505/m515 show a single gray line at the bottom of the screen when in debug mode.

The Tungsten series devices must be in a cradle or attached to a cable at the time of placing them in debug mode, or they will not be recognized. The screen will be blank in debug mode.

Use of a cradle is especially tricky for the Tungsten C device, since the reset hole in the back is in the middle of the device. If you use a bent paper clip, you can put a Tungsten C device in a cradle so that the power light is on, and then lean the device forward slightly such that the bent paper clip can be used to do the reset. While this is difficult at first, with a little practice, this is an acceptable approach. However use of a cable is much preferred. Note the potential performance difference between cables and cradles in the Performance section of this manual. The Tungsten C device shows a completely blank screen when in debug mode.

The Treo 180 displays a short black line at the top left corner of the screen when it is in debug mode.

Performance

The performance for backing up and restoring ROM images will vary dramatically depending on whether USB or Serial connectivity is used.

The following benchmark will give an idea of the time to load specific custom ROMs. The elapsed time to load (or backup) a ROM is directly proportional to the file size of the ROM image file.

ROM Restore.prc

- Load from SD card
- Device: Palm Solutions Tungsten C
- ROM Size: 9.5MB (English only)
- Total load time: 1:25

ROM Imager USB

- Load via USB cradle
- Device: Palm Solutions Tungsten C
- ROM Size: 9.5MB (English only)
- Total load time: 4:05

ROM Imager Serial

- Load via serial cradle
- Device: Palm Solutions Tungsten C
- ROM Size: 9.5MB (English only)
- Total load time: About 30 minutes

Note that for the OS V4 supported devices, the image will be loaded directly to flash memory. For OS V5 devices, the image is first loaded to RAM, and then from RAM to flash.

If multiple devices are loaded concurrently, the performance of each load will be degraded somewhat.

Most if not all USB **cables** provide much slower Backup/Restore times than USB **cradles**. USB cables may take 2 to 5 times as long to perform a given ROM backup or restore when compared to a USB cradle. Older PCs may also provide slower USB performance than newer PCs.

The ROM Imager PC based USB or serial tools must be used to backup or load custom ROM Crafter ROMs if the device to be backed up or loaded is not operational. However if the Palm OS on the device to be loaded is operational, the ROM Crafter SD Card Backup and Restore tools should be used.