Service Manual

Canon BW
Universal Send PDF Encryption Kit-B1

Canon

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

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Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
Error	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.

   In the diagrams, ▬■▬■▬ represents the path of mechanical drive; where a signal name accompanies the symbol , the arrow ⟶ indicates the direction of the electric signal.

   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.

2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.

   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

Chapter 1   Specifications

Contents

1.1 Product composition

1.1.1 Product Components

This kit consists of:

- License access number certificate sheet

Memo:

Manual for users is not packaged with this product. The functions of this product are described in Sending and Facsimile Guide as the optional functions of the Send function which is packaged with the Universal Send Kit.

Using this kit, you can get a license key from the License Management System (LMS) and register it in an iR/imageRUNNER to activate the specific feature included in the System Software.

Note:What's LMS?

A license server system to activate software options of iRs/imageRUNNERs, provided by Canon Inc. Collectively manages options in the form of licenses and protects copy rights of optional products. The options are activated with license keys being different from conventional activation measures that use dongles and PCs. Whereas the details of its management differ among countries and regions, it is designed assuming the users access it and activate licenses by themselves respectively. Per optional product, the license access number certificate sheet is supplied. Per license access number, a user can get a license key and activate the feature on an iR/imageRUNNER. To get a license key, a user accesses the Web server of the LMS.

URL for LMS:

http://www.canon.com/lms/ir/

When a user enters the license access number and the serial number for an iR/imageRUNNER in the LMS, 24-digit figure of a license key is generated. The license key includes the information of serial number for the iR/imageRUNNER so that the key cannot be used for iRs/imageRUNNERs. Once the option is activated, the option information is saved as the backup in the iR/imageRUNNER. Parts replacement will not deactivate the feature.

The staff in each regional headquarters can access the administrator's pages of the LMS. They can view the license number issued for each iR/imageRUNNER and can reissue the license. The procedures are the same as license management system for MEAP except for the point the license key is used instead of the license file.

Transfer of a License

An optional function that has been enabled by the LMS may be used on a different device by transferring its license,

as when the original iR device needs to be replaced, say at the end of its lease arrangement. Specifically, individual licenses registered for optional functions must first be invalidated in user mode before transfer may take place. Doing so will invalidate the optional functions on the source iR device and, at the same time, proof of invalidation will be generated within the device in the form of an invalidation license key. The user may then communicate the indicated invalidation license key, the serial number of the original iR device, and the serial number of the new iR device to the Sales Company, which in turn may issue a new license key for the new iR device. The user now may register the new license key to the new iR device in user mode, thereby enabling the optional function on the new iR device. For details of transferring a license in service mode, see the descriptions of service mode that come later.

Important Note:

To use the encrypted PDF feature, Universal Send Kit is required to attach to the iRs/imageRUNNER as required as the license key. An attempt to register the license to an iR/imageRUNNER without attaching the Send kit results in the error message saying the functions required to install the license is missing and fails in activating the feature.

1.2 Specifications

1.2.1 Specifications(PDF Encryption)

The installation of the Kit will bring about the following additional functions to the PDF generation mechanism:

- encryption PDF function

Specifications Associated with the Encryption PDF Function

Encryption Level

Sets the encryption level for the PDF document. The options for Allow Printing and Allow Changes vary according to the encryption level.

Low:

(40-bit RC4)

High:

(128-bit RC4)

Password Required to Open a Document

Sets the password to open the PDF document. Accepts up to 32 alphanumeric characters.

Password Required to Change Permiss.

Sets the password to change the permissions. A PDF document having the password set through this control will have a permission option. Accepts up to 32 alphanumeric characters.

Allow Printing

Sets up the permission on printing.

For Low (40-bit RC4):

Do Not Allow

 Allow

For High (128-bit RC4):

Do Not Allow

 Allow (Low Res. Only)

 Allow

Allow Changes

 For Low (40-bit RC4):

Do Not Allow

 Add Comments and Digital Signature

Changes except Comment Add / Page Extract

Doc. Changes except Page Extraction

For High (128-bit RC4):

Do Not Allow

Insert, Delete, or Rotate Pages

Add Digital Signature

Add Comment and Digital Signature

Doc. Changes except Page Extraction

Enable Copying and Extraction of Image

Option to allow to copy or extract images in the PDF document.

Memo:

If Searchable PDF is Enabled

The following items are displayed only if the searchable PDF function is enabled:

Enable Accesibillity, Copy, Extraction of Image

- low (40-bit RC4)

If the searchable PDF function is enabled, the indication will change from

"Enable Copying and Extraction of Image" to

"Enable Accesibillity, Copy, Extraction of Image"

When it is enabled, not only images may be copied/extracted, but also transparent text may be copied or extracted and accessibility-related functions of the operating system (e.g., high-contrast display or data output to a scan reader) may be made available.

Enabling Copying and Extraction of Images and Text

- Accessibility may be enabled.

high (128-bit RC4)

It is displayed only when the searchable PDF function is enabled. Unlike a low encryption level (40-bit RC4), the setting "enable accessibility" may be selected independently of other settings.

1.3 User Environment

1.3.1 Limitations(PDF Encrvyption)

Applications Required to View or Change Permissions of Encrypted PDF

Any PDF file that is generated by an iR device to which the Kit has been installed is prepared in keeping with general PDF specifications. Not all viewer applications, however, support particular specifications used by the iR device, not permitting browsing of the file. Furthermore, a viewer may not permit viewing of PDF files of specific versions. An encryption PDF file is in keeping with the requirements of version 1.3 if its level of encryption is set to 40-bit RC4, while it is compatible with the requirements of version 1.4 if set to 128-bit RC4. (If not intended for transmission in encryption PDF, the PDF version will be 1.3.) In a practical situation, a viewer will not be able to open a PDF file encrypted to 128-bit RC4 unless it supports the applicable specifications whether or not it is designed to support encryption PDF in general.

EX:

Acrobat 4.0 supports up to 40-bit RC4, and thus is not capable of opening a PDF file encrypted to 128-bit RC4, which requires Acrobat 5.0 or later. Third party applications call for specifications of their own, and there is no guarantee that they will operate normally.

Attention:

If it is only encryption PDF inspection, even only Adobe Reader (It was Acrobat Reader) is possible inspection. When the authority option is changed, it is necessary to note it because Acrobat is needed. Because the application made of 3rd Party must depend on the specification on the application side, operation is unwarrantable.

Chapter 2　Functions

Contents

2.1 New Function

2.1.1 Encrypted PDF

When sending a PDF file to an e-mail address or to a file server, the file may be encrypted and a password may be assigned to it for security. Once a password is assigned, the recipient must type in the correct password to open or print/edit the file. A PDF file may be turned into an encryption PDF file by clicking a button in the course of making settings for transmission. For particulars of settings, see the specifications given previously.

Caution:

The target of transmission of an encryption PDF file must be an e-mail address or a file server. For instance, the target must not be a group of addresses that include an i-fax or Box address.

Notes:

A license key may be registered by making the following selections: Additional Functions>System Settings>License Registration. To prevent cracking of a license key, the use of a remote user interface is not considered.

Chapter 3   Installation

Contents

3.1 Installation procedure

3.1.1 Overview of the Installation Procedure

As a rule, the user is expected to obtain a license key and register it to the device. Detailed instructions are found in the User's Guide. The following is an outline of the instructions:

1. Using the following URL, access the LMS, and obtain the license key by following the instructions shown on the screen:

  http://www.canon.com/LMS/iR

Memo:
  A license key is issued in exchange for the 24-digit number indicated on the License Access Number Certificate and the serial number of the device (e.g., ABC01234) to which the license will be registered. The device serial number will be indicated in response to a press on the Counter key on the iR device (under [Serial Number]).

2. Copy the 24-digit number shown on the Web browser screen in the space given for the purpose on the License Access Number Certificate sheet.

Caution:
  Be sure to double-check the number to avoid an error. Be sure that the user is aware of the importance of the License Access Number Certificate and that it must be stored away in a safe place.

3. Make the following selections: Additional Functions>System Settings>License Registration. Then, type in the 24-digit number, and click [Start]. In response, the license key will be registered and the appropriate functions will be enabled. Otherwise, any of the following error messages will appear:

"Some functions required for installation are missing."
 >> Make sure that the SEND Function Expansion Kit license has been properly installed. Otherwise, installation cannot be performed.

"The number of the license key is not correct. Check the license key."
 >> Make sure that the license key is not issued for a different device.
 >> Make sure that the number has been correctly typed in.
 >> Make sure that the license key is the correct one.

"The function has already been enabled."
 >> Make sure that the Kit has not already been enabled.

4. Hold down the control panel power switch for 3 sec or more. Follow the instructions shown on the screen for shut-

down sequence so that the main power switch may be turned off. Turn off the main power switch, wait for 10 sec, and turn it back on.

5. The registered license will become valid when the device is turned back on. When it has started normally, press the Counter key, and click the Device Configuration button to make sure that the Kit is indicated as part of the options.

Chapter 4 Maintenance

Contents

4.1 Related Service Mode

4.1.1 Invalidating the License for Transfer to a Different Device (Level 2)

Service Mode Item Used to Invalidate a License for Transfer to a Different Device (Level 2)

Possible Situation

A license may be used on a different device through transfer, as when replacing the device at the end of a lease agreement. To do so, the user must first invalidate the existing license by performing a set of steps referred to as "invalidation of a license" using service mode. At times, both source and target of transfer may be the same device, and a license therefore may also be invalidated only temporarily. It is important to note that the user must contact the Sales Company to make a license good regardless of whether it has been invalidated intentionally or inadvertently.

Invalidation Procedure

Invalidation consists in invalidating the license in service mode and generating an invalidation certificate that proves the completion of invalidation. Invalidation may take place for individual optional functions, and a specific function becomes no longer available as soon as an invalidation certificate is issued. The user contacts the Sales Company and provides the following: the invalidation certificate, the device serial number of the source of transfer, the device serial number of the target of transfer, reason of transfer. In response, the Sales Company may issue a license key for new installation on a different device. The user must take note of the new license key in writing, and keep it as a record after registering it to the target device.

Installation Procedure

1. Start service mode, and activate Category 2 so that the following is true:
COPIER>OPTION>LCNS-TR
The following screen appears, showing the current status of various options:
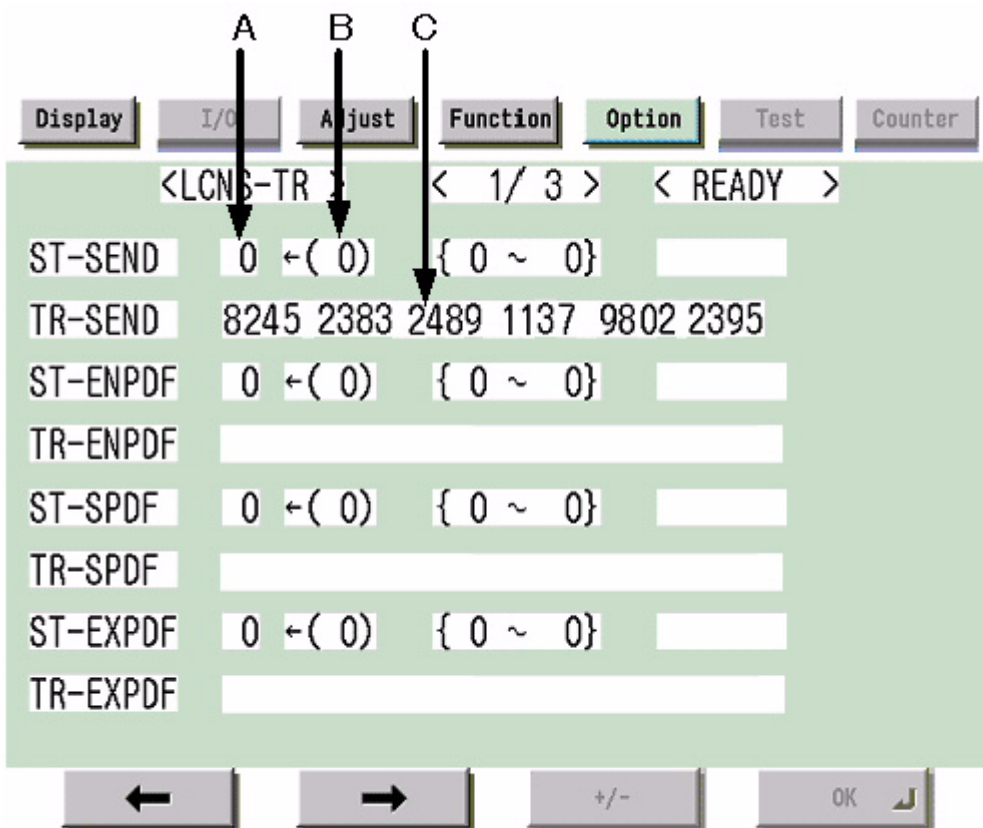
F-4-1

Screen Design:

SET-xxxx: indicates the license status. If installed, the option is identified as '1' under A.

To invalidate an option for transfer, select it, and type in '0' under B; then, click [OK] so that the option will be invalidated and an invalidation certificate will be issued.

TR-xxxx: indicates any invalidation certificates that have been generated under C.

xxxx may be any of the following:

SEND: SEND function

ENPDF: encryption PDF

SPDF: searchable PDF

EXPDF: PDF function expansion (encryption PDF + searchable PDF)

LIPS: LIPS function

PDFDR: PDF Direct print function

SCR: encryption secured printing (for future use)

HDCLR: HDD encryption + full deletion (Security Kit)

BRDIM: BarDIMM (for future use)

Memo:

Not all foregoing options are available in all countries and regions.

2. If an option has already been installed, '1' will be indicated under A. If you want to invalidate it, select it, and type in '0' so that the indication under B will change to '0'.

3. Thereafter, when [OK] is pressed, the indication under A will change to '0' and, at the same time, an invalidation certificate will be indicated in the form of a number. Take note of it in writing together with the serial number of the target device.

4. When the target device is ready, check its serial number.

5. Contact the Sales Company, and provide the following: invalidation certificate for transfer, serial number of the source device, serial number of the target device. The Sales Company, in response, may issue a new license key that may be registered on the target device.

6. Register the new license key to the target device, and check to make sure that the function has been enabled.

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