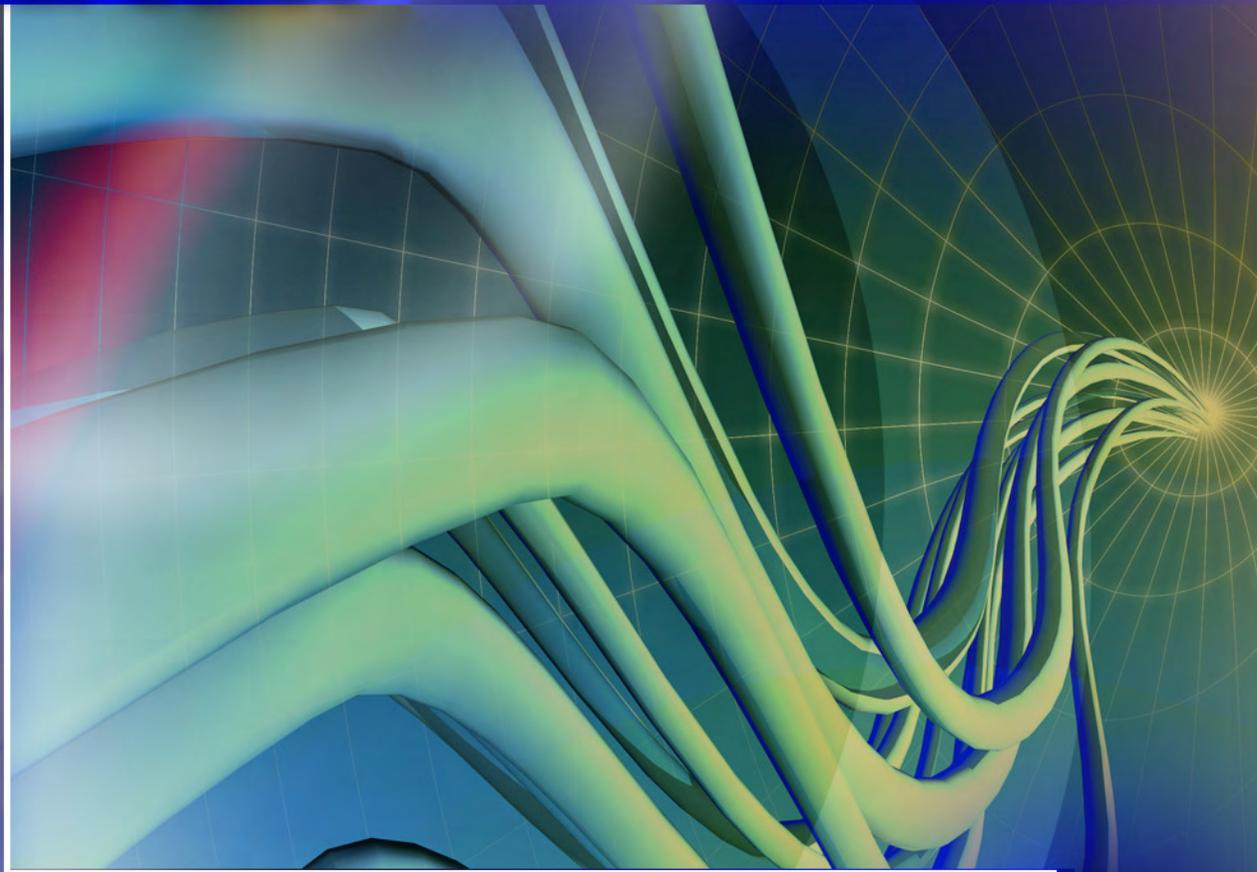


MASSTM

Technical Guide



**2007-2008
cycle**

**MLOCR
RVE
Encoding Station
Flat
4-State Customer Barcode**

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Purpose

MASS™ certification is a process designed for certification for Multiline Optical Character Readers (MLOCs), Remote Video Encoding (RVE), Local Video Encoding (LVE), and encoding stations.

MASS/RVE is an extension of the CASS™ system. The MASS certification cycle is designed to evaluate the ability of MLOCs and encoding stations to process address information and apply an accurate delivery point barcode (DPBC) to a mailpiece. However, the RVE is designed to evaluate the ability of the entire remote video encoding operation to process address information and apply an accurate DPBC to a mailpiece. The MASS/RVE certification cycle is comprised of the following phases:

1. Software manufacturer certification
2. Hardware manufacturer certification
3. RVE manufacturer certification
4. User certification

Overview

All MASS/RVE tests are similar to CASS Stage II tests in that the performance of address-matching software and barcode application hardware is evaluated after it has processed a test file. If the required accuracy is achieved, MASS or RVE certification is issued.

MASS/RVE certification is an annual requirement and remains valid from the certification date until the end of any current period (i.e., from August 1 of one year through July 31 of the next). Customers must reapply for certification and meet the accuracy requirements each year to remain certified and avoid interrupted service to their customers. MASS certification is mandatory for mailers using MLOCs/RVE or encoding stations to print DPBCs on mailpieces submitted for mailing at discount automation rates (see *Domestic Mail Manual (DMM) 708* Section 3.0).

MERLIN (Mailing Evaluation, Readability and Look-Up Instrument) verifies nine-digit ZIP Code information at the points of acceptance and has established zero tolerance for ZIP + 4 codes of '0000' and '9999'. To maintain consistency, the return of '0000' in the ZIP + 4 add-on, or the return of an **invalid** '9999' in the ZIP+4 add-on, will continue to be a fatal add-on error for CASS/MASS certification and will require retesting.

Certification Requirements

The Certification Department understands that customers who purchase a new system often have legitimate reasons for wanting to operate it immediately: waiting for MASS™ certification is often impractical and costly. To address this issue, a 45-day courtesy certification period is provided for systems that are newly installed, moved, relocated, upgraded or reassembled. During this 45-day window, the customer can use the system to produce and submit mail and qualify for automation rates after receiving clearance from the Certification Department. The customer must receive MASS certification during this 45-day period; if the customer

fails to MASS certify within this 45-day period, the system becomes ineligible to submit mail at automation rates after the 45th day.

Systems used for automation rates must be certified annually. In addition, recertification outside the normal annual testing periods may be required if changes are made to the following:

- The address-matching software utilized by the MLOCR
- The operating system (e.g., migrating from DOS to Windows NT) associated with the Address Recognition System and the Directory Retrieval System
- The camera configuration (e.g., from ATR to RAF), including switching from a single to a dual camera configuration
- Speed
- Model

Demonstration machines will require MASS certification and will be eligible for the 30-day courtesy. The MASS Department must be notified by customer and manufacturer within ten days of the final disposition of the machine.

Likewise, recertification may be required when a MASS certified system is moved, relocated, upgraded, or reassembled. The customer must notify the Certification Department within seven days of the change to be eligible for the 45-day courtesy. The customer must also complete and submit the MASS order form, with the installation date to the Certification Department.

Moving a system involves **any** movement from one position/place within the same area to another, while relocating a system involves movement from one floor or building to another. An upgrade is considered to be **any** change in the host computer's operating system, cameras, or software used to operate the system, unless a waiver has been granted at the manufacturer level.

Change of Ownership: End User

If an MLOCR or an encoding station is sold or ownership is transferred, the new owner must notify the Certification Department in writing or email (cassman.ncsc@usps.gov). The notification must include the following:

- Equipment model number, serial number and MASS ID
- Previous owner's name and address
- New owner's name, address, phone number, and FAX number

If the machine is not physically relocated, a new MASS certificate may be issued. If the machine is physically relocated, the customer must follow the machine relocation guidelines. (See Certification Requirements above)

Change of Ownership: Manufacturer

All manufacturers who enter into a purchase agreement with a customer to enhance/upgrade a MLOCR machine (hybrid) currently being supported by another manufacturer must provide a Letter of Agreement signed by both parties to the MASS Department.

The MASS Department will not process any MASS requests for certification of machines containing a hybrid system unless the Letter of Agreement has been signed by both parties and is on file in the MASS Certification Department.

Hardware and Software Revisions, Upgrades, and Patches

If an MLOCR or encoding station software manufacturer issues a revision, upgrade, or patch to existing address-matching software or hardware, the manufacturer must submit written notification to the Certification Department before distributing the software or hardware. The written notification must include a brief description of the changes being made and the expected results of those changes. The NCSC will evaluate the documentation and determine an appropriate course of action, which may include recertification of all users, a sample of the user base, hardware manufacturers only, or software manufacturers only. It is possible that no action will be taken following notification.

The MASS Process

A Note to Returning Customers

New MASS requirements are introduced each year, and the changeover from one cycle to the next typically occurs on April 1. For Cycle L, the changeover will occur on February 1, 2007. After the changeover, the MASS Department cannot test customer compliance with the previous cycle, which creates difficulties for customers completing MASS testing under the previous cycle's requirements after February 1st. In this case, a courtesy MASS certification is granted to help these customers maintain normal operations between February 1st and the time at which they can comply with the new cycle requirements. However, these customers must be recertified by July 31 to continue receiving automation discounts.

ZIP + 4[®] Certification/ LACS^{Link}™ Certification

For Cycle L (2007-2008), ZIP + 4 certification and LACS^{Link} certification are **required** for **all** users. A ZIP + 4 can only be assigned when the primary number DPV confirms. The software can only make a ZIP + 4 match when the DPV confirmation code is Y, S, or D. ZIP + 4 certification will not allow software to return the +4 code from the ZIP + 4 file when the primary number and/or secondary number (when present) **does not** DPV confirm. When an address does not DPV confirm, the address-matching software can only return the 5-digit ZIP Code, Carrier Route, LACS^{Link} return code, LACS^{Link} indicator, DPV/DSF codes and footnotes, SuiteLink[™] return code (if performing SuiteLink), and correct address components. Please refer to the Annual MASS Meeting Minutes Cycle L 2007-2008 located at <http://ribbs/usps/gov/files/vendors> for additional information.

The first step in the MASS[™] certification process is to notify the Certification Department of the Manufacturer's interest to become MASS certified by providing a list or matrix of the configurations under which their equipment is running and the model numbers. The configuration is a 3-character alphabetic identifier associated with the model and camera/reader type of the MLOCR, RVE, LVE and encoding stations. Configuration 'STD' can be used when all MLOCR machines within the inventory use the same camera type or to represent one specific camera type. It is acceptable to use STD if the MASS manufacturer elects to use the model to identify the camera types. The Manufacturer must also provide the name of the software, version number, serial number, and manufacturer MASS identifier code.

Software Manufacturer Certification

CASS™ certification of the address-matching software is the second step in MASS certification.

1. Before a software manufacturer distributes new or revised address-matching software to customers, the manufacturer must process a CASS Stage II file.
2. The NCSC evaluates the Stage II file and returns the results to the software manufacturer. Once the software displays the required level of accuracy, the NCSC issues the software manufacturer a CASS certificate.

Once Cass Certified, the software manufacturer will distribute software to MLOCR/RVE and encoding station manufacturers.

Hardware Manufacturer Certification

The third step in the MASS certification cycle is hardware manufacturer certification, which takes place after the manufacturer receives and installs CASS Certified™ address-matching software. During this phase, a manufacturer's hardware is tested to determine if it can 1) correctly read the address block on a test mailpiece, 2) process the address information through address-matching software, and 3) spray a machine-readable, accurate DPBC on the test mailpiece using software that has already been tested in a stand-alone environment.

1. The hardware manufacturer orders a MASS test deck from the NCSC using the MASS Order Form (see page 15).
2. The manufacturer processes the test deck on a representative model of MLOCR or encoding station and returns it to the NCSC for evaluation.
3. If the manufacturer passes certification testing, the NCSC issues a MASS certificate and allows the manufacturer to distribute software to users.

Remote Video Encoding/Local Video Encoding Manufacturer Certification

The fourth step in the MASS certification cycle is RVE manufacturer certification. RVE system certification is a customized process. The equipment used in the process determines the number of test decks needed for certification and how they are handled. If an MLOCR is used to capture mailpiece images or to apply DPBCs, the MLOCR must be MASS certified before RVE/LVE system certification can be attempted.

RVE System Certification With MLOCR

- Deck 1 One test deck is processed with all systems (including MLOCR) turned on.
- Deck 2 One test deck is processed entirely to remote coding via Remote Character Recognition (RCR) or RVE/LVE. MLOCR coding must be deactivated during this part.

The RVE/LVE Order Form has been combined with the MASS Order form. Complete only those sections that apply to your certification.

Note: Successful scores are required on all test decks to attain RVE system Certification.

4-State Customer Barcode Manufacturer and User Certification

Beginning with 2007-2008 Cycle L, MASS certification will offer an optional 4-State Customer Barcode test.

As the next generation of USPS barcode technology, the 4-State Customer Barcode is used to sort and track letters and flats. It combines the capabilities of the POSTNET barcode and the PLANET Code® barcode into one unique barcode. The 4-State Customer Barcode is a height-modulated barcode using four different vertical bar types.

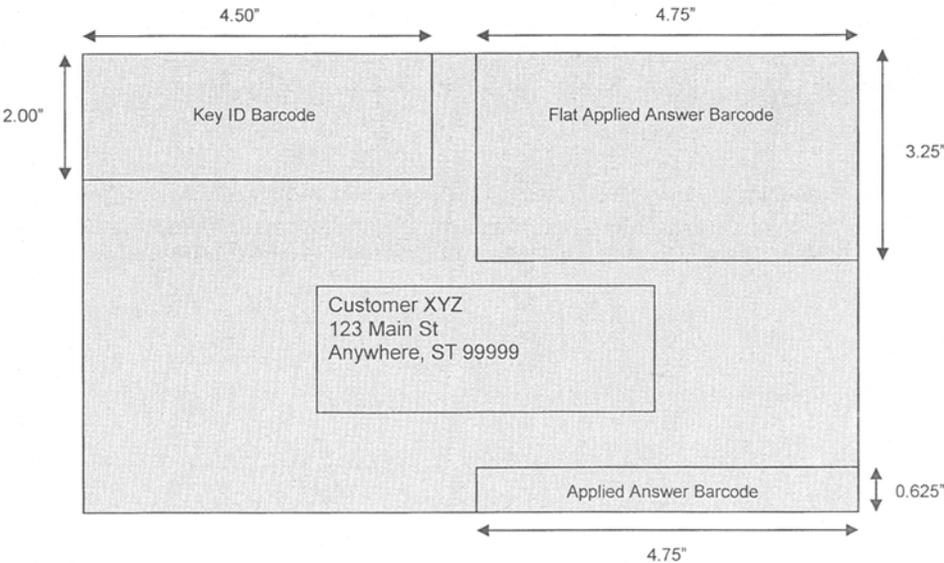


Visit the RIBBS website at <http://ribbs.usps.gov/onecodesolution> for additional information on the 4-State Customer Barcode.

4-State Customer Barcode certification follows the same process as hardware manufacturer certification. The hardware is tested to determine if it can 1) correctly read the address block on a test mailpiece; 2) process the address information through address-matching software, and; 3) spray a machine-readable, accurate 4-State Customer Barcode on the test mailpiece using software that has already been CASS Certified.

For MASS testing, the Certification Department will follow the “Top Choice Barcode Priority.” The top choice barcode is defined by the current USPS guidelines for DPBC as the physically lowest and longest decodable barcode in a particular type (PLANET, POSTNET, 4-State Customer Barcode). For example, if a 4-State Customer Barcode exists in the address block and a second 4-State Customer Barcode exists in the barcode clear zone, the 4-State Customer Barcode in the clear zone will be read as the barcode answer because it is physically lower on the mailpiece.

For Flat testing, the barcode answer can be returned above the address block, within an area 4.75 inches from the right edge and 3.25 inches from the top of the mailpiece, or in the barcode clear zone.



- The **USPS Key ID Barcode** read zone is referenced from the top left corner of the mailpiece.
- The **Applied Answer Barcode** read zone is referenced from the lower right corner of the mailpiece.
- The **Flats Applied Answer Barcode** read zone is referenced from the top right corner of the mailpiece (activated by the “Flats” option on Transport Control). This will be an additional read zone to the current Applied Answer Barcode.

User Certification

1. Upon receipt of updated address-matching software, the user must order a separate test deck for each MLOCR or encoding station via the MASS Order Form.
2. The user processes the test deck and returns it to the NCSC for evaluation.
3. If the user passes certification testing, the NCSC issues a MASS certificate. Upon receipt of the certification, the user may begin processing mail with the new software to obtain automation discounts.

MASS Certification Processes

The NCSC sends a letter to all MASS customers announcing the beginning of the manufacturer and end user certification period. Certified letters are sent to customers who were MASS certified during the previous cycle, to each customer’s postal account representative, and to all postal managers of customer service support at the area and district levels. The MASS Technical Guide is posted on the Rapid Information Bulletin Board System (RIBBS) at <http://ribbs.usps.gov/files/cass/MASSTECH.pdf>.

Software Vendor Certification

The software manufacturer certification process is documented in the CASS™ Technical Guide. When a new certification cycle begins, the NCSC offers a CASS Stage I test for self-evaluation and software development. Following software development, manufacturers can order a CASS Stage II file by completing the CASS Order Form located in the CASS Technical guide. The manufacturer processes the Stage II test file and returns it to the NCSC for evaluation. Results are returned to the manufacturer. If the product meets current CASS requirements, the NCSC issues the manufacturer a CASS certificate. Upon receipt of the certificate, the manufacturer may begin distributing upgraded, certified software to customers.

Manufacturer Certification

MLOCR, RVE, LVE, and encoding station manufacturers are first to receive updated software and must achieve MASS™ certification before distributing software to end users. Manufacturers must follow the user certification process below and the MASS test deck ordering steps.

User Certification

Upon receipt of updated software, all encoding stations, RVE, LVE, and MLOCR users must submit a completed MASS Certification Order Form to the Certification Department.

The Certification Department will verify the information on the order form, which must be the most current CASS Certified™ version. Once the information is verified, a test deck is printed. Each test deck is assigned a unique customer tracking number specific to the equipment serial number. (See “Test Deck Specifications”) Production of a MASS test deck normally requires three working days; however, during peak fulfillment periods, it may require as many as 10 working days. The NCSC recommends that customers order tests as soon as they receive updated software from their manufacturer. Orders are processed in the order in which they are received.

All test decks are trayed and placed in corrugated cardboard boxes. Each box is tagged with a bright red label that reads “TEST DECK—DO NOT OPEN.” The customer tracking number is attached to a document on the top of each tray and printed on the Express Mail® label on each box. Also included on at least one of the trays is a computer printout that identifies the company name, machine manufacturer, model number, and serial number. The customer must verify this information before running the test deck.

Note: Every test deck MUST be opened and processed in the presence of a postal representative.

Upon receipt of the test deck, end users must notify their postal representative of their intention to attempt MASS certification and schedule a specific day and time with their postal representative to process the test. After processing, users must return test decks to the Certification Department. Test decks returned by other commercial carriers will be rejected.

The NCSC receives, evaluates, and grades processed test decks and will make results available to the customer within ten working days.

Note: All tests are processed in the order in which they are received.

The NCSC sends a certificate to all users who meet current certification requirements. Users who fail to certify will receive a copy of their error report and a second test deck for all machines that failed the first certification attempt.

Test Deck Specifications

MASS™ test decks are designed to exercise MLOCR/RVE/LVE and encoding station address-matching software look-up capabilities emulating the CASS™ Stage files. The input addresses represent the same type and approximate mix of questions in the CASS Stage files.

For the 2007-2008 cycle, all MLOCR test decks will contain 2,000 test mailpieces, while all encoding station tests contain 350.

The test deck used to complete RVE system certification are printed in two fonts; half of the deck is printed in a Gothic text and half in a cursive script font designed to be rejected from MLOCR processing.

Each test mailpiece consists of one piece of 8 1/2 x 11 inch white, 20 pound paper folded and inserted into a 24-pound, white-wove, 5 3/4 x 9 inches window envelope. The envelope has two windows – one upper and one lower. The upper window measures 1 1/4 x 4 inches and is located 3/8 inch from the left edge and 3 11/16 inches from the bottom edge. The bottom window measures 1 3/8 x 4 1/2 inches and is located 2 1/16 inches from the left edge and 11/16 inch from the bottom edge.

Data elements internal to the Postal Service are printed on the insert and appear in the upper window. These elements identify the specific deck to which any test mailpiece belongs, the customer tracking number, and the exact question key number appearing on that mailpiece. The test address appears in the lower window.

RVE test decks are designed to exercise all portions of the RVE systems address-matching software look-up capabilities by emulating the CASS Stage II files. The addresses printed on the test mailpieces represent the same types of addressing anomalies found in the CASS Stage II test. Although the actual address represented on the test mailpiece may differ from one test deck to another, the type and number of anomalies are similar.

Test Deck Processing Procedures

All MASS™ certification tests must be conducted in a “normal operations” state, meaning that the system must be configured as it would be when it is used to produce mail for automation discounts.

For systems that are *FASTforward*® equipped, the *FASTforward* interface must be operational because the MASS test deck may include addresses that are forwardable. If processing does not forward any of the forwardable pieces, the graders will assume that the *FASTforward* system was not operational, and the test will be invalid. If at least one forwardable mailpiece appears to have been produced by the *FASTforward* interface, the test deck will be considered valid and submitted for grading. MASS grading will not evaluate the accuracy of the *FASTforward* answers, only the fact that the interface was functioning. Any answer on forwardable mailpieces that are not assigned a new address will be graded based on the accuracy of the response to the input question.

Note: Where a MASS-certified system would normally spray a 5-digit ZIP Code on a production mailpiece, it must also spray a 5-digit ZIP Code on the MASS test mailpiece.

MLOCR Setup

The actual processing for a MASS test deck varies between manufacturers of MLOCR equipment and model types; therefore, these guidelines are general. To achieve optimum results from a MASS certification attempt, consult the equipment manufacturer regarding all processing-related issues.

Clean the equipment according to the manufacturer’s instructions. Pay particular attention to the optics, and run the manufacturer’s diagnostic routine to optimize the character-recognition software. Run several pieces with the barcode turned off to verify the setup and ensure that the address block is reading properly.

Because the NCSC processes each test deck on a barcode reader, the quality of the barcode returned on the test mailpieces is important. If more than 2.5 percent of the mailpieces generated contain unreadable barcodes, these mailpieces will be rejected, which will decrease the chance of certification.

Ensure the MLOCR has been prepared according to the manufacturer's instructions regarding sort schemes, pick-off settings, vacuum system and belt speed adjustments.

There is a 1% tolerance on the 3553 counts where total ZIP+4/DPBC records must not exceed total records coded in the customer's test. This requirement will be enforced for Cycle L. End-users must verify that rejected mailpieces are run in reject mode.

It is the End-user's responsibility to ensure the CASS Summary Report (PS Form 3553) reflects the revised version number for the 2007-2008 cycle. Any other version number on the PS Form 3553 will render the test invalid.

Note: MLOCR/RVE/LVE certifications must be attempted by the end user. No one besides the end users or his/her employee(s) may complete an MLOCR/RVE/LVE system test. If it is determined that unauthorized individuals completed the MLOCR/RVE/LVE test, the test deck will be disqualified.

MLOCR Test Deck Processing

Verify that the test deck corresponds to the machine manufacturer's model and serial number. This information is listed in the computer-generated documents provided with the test deck.

Process each test deck in a manner that ensures every test mailpiece that should receive a DPBC is coded. Be aware that by design not all test mailpieces can be coded, and some input addresses should not be coded. After processing the entire test deck, all rejects may be reprocessed. If bad barcodes are sprayed, up to 100 pieces can be over labeled. After completely processing the test deck, create a computer-generated facsimile of the PS Form 3553, CASS™ Summary Report, and return it with the test deck to the NCSC for evaluation. All appropriate fields must be completed in PS Form 3553.

The MASS Department will compare and analyze the hardcopy PS Form 3553 against the answer field information returned in the test deck. Computation of PS Form 3553 values must be based on the answers returned during the matching process—never from input fields. In normal operations, if a user chooses to overwrite input fields with output information, production of the PS Form 3553 must be able to discern between processed and unprocessed records. If any errors are identified in the comparison, the grading process will continue; however, certification cannot be issued until a valid PS Form 3553 is submitted to the MASS Department.

Note: The Postal Service™ representative observing the test must verify that PS Form 3553 is signed and dated by the customer and should attach one of the rejected test mailpieces to the form. PS Form 3553 must comply with the requirements outlined in the most current Domestic Mail Manual (DMM) and must represent the test deck processed.

Encoding Station Setup

The processing of mail or a MASS™ test deck varies between manufacturers of encoding station equipment and model types. To achieve optimum results, consult the equipment manufacturer regarding all processing-related issues.

Verify that the encoding station is in proper operating order before processing a MASS test. The NCSC processes each test deck on a barcode reader—its quality is vital. If more than 2.5 percent of the mailpieces generated contain unreadable barcodes, all mailpieces with unreadable barcodes will be rejected, decreasing the possibility of certification. After processing the entire test deck, all rejects may be reprocessed. If bad barcodes are sprayed, up to 50 pieces can be over labeled.

Note: Encoding station certification must be attempted by the end user: no one besides the end users or his/her employee(s) may complete an encoding system test. If it is determined that unauthorized individuals completed the encoding system test, the test deck will be disqualified.

Encoding Station Test Deck Processing

Before beginning the MASS test, the encoding station operator should be properly trained by the equipment manufacturer or the equipment owner. For any operational or processing issues, consult the equipment manufacturer.

Process each test deck in a manner that ensures every test mailpiece that should receive a DPBC is coded. Be aware that by design not all test mailpieces can be coded, and some input addresses should not be coded. After completely processing the test deck, create a computer-generated facsimile of PS Form 3553 and return it along with the test deck to the NCSC for evaluation. **All appropriate fields must be completed in PS Form 3553.**

There is a 1% tolerance on the 3553 counts where total ZIP+4/DPBC records must not exceed total records coded in the customer's test. This requirement will be enforced. End-users must verify that rejected mailpieces are run in reject mode.

It is the End-user's responsibility to ensure the CASS Summary Report (PS Form 3553) reflects the revised version number for the 2007-2008 cycle. Any other version number on the PS Form 3553 will render the test invalid.

Note: The Postal Service™ representative observing the test must verify that PS Form 3553 is signed and dated by the customer and should attach one of the rejected test mailpieces to the form. PS Form 3553 must comply with the requirements outlined in the most current Domestic Mail Manual (DMM) and must represent the test deck processed.

You must return the entire test deck, including all rejected, damaged, and non-coded mailpieces.

Shipping Instructions

The National Customer Support Center (NCSC) in Memphis, Tennessee, sends all test decks to customer sites by Express Mail[®] service. Return shipment of a completed test deck is the customer's responsibility.

Please return completed test decks to the following address:

MULTILINE ACCURACY SUPPORT SYSTEM
 NATIONAL CUSTOMER SUPPORT CENTER
 UNITED STATES POSTAL SERVICE
 6060 PRIMACY PKWY STE 201
 MEMPHIS TN 38188-0001

Note: Test decks returned by other commercial carriers will be rejected.

Evaluation and Grading

RVE/LVE User Certification

RVE system certification is a customized process. The equipment used in the process determines the number of test decks needed for certification and how they are handled. If an MLOCR is used to capture mailpiece images or to apply DPBCs, the MLOCR must be MASS[™] certified before RVE/LVE system certification can be attempted.

RVE System Certification With MLOCR

- Deck 1 One test deck is processed with all systems (including MLOCR) turned on.
- Deck 2 One test deck is processed entirely to remote coding via Remote Character Recognition (RCR) or RVE/LVE. MLOCR coding must be deactivated during this portion.

Passing scores are required on all test decks to attain RVE system certification. If the user passes certification testing, the NCSC issues a RVE certificate. Upon receipt of the certification, the user may begin processing mail with the new software to obtain automation discounts.

Mailpiece Design Analyst

The Mailpiece Design Analyst (MDA) is an official representative observing the process of certifying MASS test decks. The MDA's role is essential as a neutral observer, not as an active participant. The MDA should not recommend any actions which would affect the results of the customer's test without our approval.

MASS Grading

Grading for Standardization

The CASS test for hardware manufacturers will continue to grade for address standardization to verify that software does not lose or modify critical address elements. This issue is especially critical in *FASTforward*[®] equipped MLOCRs.

Grading for Customer 3553 Information

There is a 1% tolerance on the 3553 counts where total ZIP+4/DPBC records must not exceed total records coded in the customer's test. This requirement will be enforced for Cycle L. End-users must verify that rejected mailpieces are run in reject mode.

It is the End-user's responsibility to ensure the CASS Summary Report (PS Form 3553) reflects the revised version number for the 2007-2008 cycle. Any other version number on the PS Form 3553 will render the test invalid.

Note: MLOCR/RVE/LVE certifications must be attempted by the end user. No one besides the end users or his/her employee(s) may complete an MLOCR/RVE/LVE system test. If it is determined that unauthorized individuals completed the MLOCR/RVE/LVE test, the test deck will be disqualified.

Penalty for Misread/Miscodes

In an attempt to reduce the number of miscodes caused by variances in optical character recognition systems, the penalty for misreads/miscodes is 1.5 percent, and the allowance for rejects is 7.5 percent. A misread/miscode is defined as an inaccurate barcode applied to the test piece caused by an erroneous interpretation of the primary address number (i.e. 100 Main St is incorrectly read as 10 Main St). Accurate character recognition is becoming a critical factor in successfully obtaining MASS certification.

Character recognition systems are challenged to improve their capabilities to accurately discern characters, and to not spray barcodes when clearly ambiguous conditions are present. By increasing the allowance for reject pieces in the MASS test, MASS is relaxing the number of pieces required to be coded to facilitate this approach.

Penalty for Default Matches in Keying Environments

MASS[™] will assess penalties for default matches in keying environments only. Depth of code is an issue when an operator fails to key the entire address, particularly when the secondary address information is excluded. The penalty will be doubled for each depth of code error.

Mail Evaluation Readability Lookup Instrument (MERLIN)

The MERLIN system is used to grade MASS[™] test decks that exceed the 2.5 percent unreadable barcode allowance. When more than 2.5 percent of the returned test deck's mailpieces contain an unreadable barcode, all mailpieces with an unreadable barcode will be checked on the MERLIN system. If the system reports that a barcode is unreadable, the mailpiece will be graded as an automatic failure. If the system reports that the barcode is readable, the mailpiece will be manually graded and scored.

To assist MASS users in evaluating MERLIN performance, the Certification Department will offer a free, 100 piece test deck for system evaluation. The

test deck can be graded on a MERLIN system by the Certification Department. The free MERLIN evaluation will not affect existing MASS certification status.

**Delivery Point
Error Allowance**

A delivery point error is assessed only if the ZIP Code and add-on are correct but the delivery point values are incorrect. The delivery point error allowance is 0.5 percent of the total number of mailpieces available for grading.

**Perfect Address
Error Allowance**

Perfect Addresses are defined as having 100 percent accurate content and format, fully spelled-out or abbreviated. Only valid perfect addresses are included in the testing, and a score of 100 percent correct coding is required. Perfect addresses are pure and may not contain aliases, alternates, or highrise default alternate addresses. In addition, MASS will only include perfect addresses in which no other address record on the database affects or influences the outcome of the match.

**Fatal Add-On
Error**

To maintain consistency, the return of '0000' in the ZIP + 4 add-on, or the return of an **invalid** '9999' in the ZIP + 4 add-on, will continue to be a fatal add-on error for CASS/MASS certification and will require retesting.

Each test deck received at the NCSC is scanned by a barcode reader. A customer grading file is created and uploaded to the mainframe, where it is processed against the current MASS™ grading scheme outlined later in this section (see "Appendix 3: Translation of Errors Codes and Special Flags"). The NCSC grades the test, generates a grading report, and mails a copy of the report to the customer. A certificate is mailed when the customer achieves certification (see "Appendix 4: Sample MASS Certificate").

Grading is based on the barcode sprayed by the MLOCR onto the test mailpiece and is deemed either correct or incorrect. If no answer is the correct answer, then the correct answer is blank (or spaces). In situations where the input causes a multiple-response condition and all candidate records share the same 5-digit ZIP Code, the vendor may elect to apply a 5-digit barcode or leave spaces on the test piece.

There are several types of records to consider when grading:

1. Must answer (i.e., special flag A5). These records must be barcoded correctly. If the record is barcoded incorrectly or left blank, it is added to the total number of incorrectly barcoded records.
2. Optional answer (i.e., special flag A9, where no answer is bypassed). It is not mandatory to code these records. If the records are barcoded correctly, they are added to the total number of correctly barcoded records. If they are not barcoded correctly (left blank), they are not added to the total number of correctly or incorrectly barcoded records. Optional answer categories are identified by the single asterisk on the "Customer No Match Translation of Error Codes \$ Special Flags" in Appendix 3.
3. Must not answer (i.e., special flag KO, where no answer is the only correct answer unless using DPV as tiebreaker). If these records are barcoded (not left

blank), they are added to the number of incorrectly barcoded records. Must Return input records are identified by the double asterisk on the “Customer No Match Translation of Error Codes & Special Flags” (Appendix 3). DPV enabled software may elect to code where input address ambiguities (i.e., missing suffixes, misspelled street name, etc.) and data anomalies exist within the ZIP + 4 file.

4. Grading for mail standardization records may or may not contain an input ZIP Code, may have a misspelled city name, and may contain a nonmailing name. The address also may contain a numeric street name, misspelled street name, or street names that could possibly contain a pre- or post-directional. Address-matching software must be able to correctly match the input address with the appropriate carrier route, 5-digit or ZIP + 4 record and return a properly standardized answer along with the ZIP Code, +4 add-on code, delivery point code, and the check digit. CASS accepts and grades the answer as correct in the standard abbreviated format, completely spelled out, exactly as presented in the USPS AIS product or the input record for non-matched records. These categories are identified by the three asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.
5. Normalization is required for subcategory MA. Some PO Box, Rural Route and Highway Contract input addresses often appear on a mailing list with the following words and must be converted as shown: This category is identified by the four asterisks on the “Customer No Match Translation of Error Codes & Special Flags” in Appendix 3.

INPUT	OUTPUT
Drawer 10	PO Box 10
Drawer A	PO Box A
Caller 10	PO Box 10
Lockbox 10	PO Box 10
Firm Caller A	PO Box A
Bin A	PO Box A
Rural Route 1	RR 1
FDR Route 1	RR 1
Star Route 1	HC 1
Highway Contract 1	HC 1

	Answer = NCSC Answer	Answer = Other Answer
Must Answer	Add 1 to correct count	Add 1 to incorrect count
Optional Answer	Add 1 to correct count	Add 1 to incorrect count
Must Not Answer	Add 1 to correct count	Add 1 to incorrect count

$$\frac{\text{Correct}}{\text{Correct} + \text{Incorrect}} = \%$$

Note: The score required to achieve certification for MLOCRs, RVE, LVE, and encoding stations is 98.5 percent or higher.

Fee Schedules

Annual Certification Fees

Fee schedule listed below applies to machines seeking annual recertification for Cycle L 2007-2008.

Fee-Based Certification	Aug/Oct (New Cycle)	NOV/ DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	After July 31, for Current Cycle
CASS	\$200	\$200	\$200	\$500	\$500	\$600	\$700	\$800	\$900	\$1,000
MASS MFG (MLOCR)		\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$1,000	\$1,500
MASS End- Users (MLOCR)								\$500	\$1,000	\$1,500
MASS MFG (Encoder)		\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$750	\$1,000
MASS End- Users (Encoder)								\$300	\$750	\$1,000

For CASS certification, customers will be billed based on the number of separate software configurations certified, not on the number of Stage II files ordered. In contrast, MASS customers will be billed for each test deck ordered regardless of the number of decks needed to achieve certification. Billing procedures are coordinated with our Accounts Receivable Department. Essentially customers will be billed as certification is awarded.

**Fee Policy for
New, Upgraded
or Transferred
Machines**
(After July 31st)

New systems initially deployed from a MASS™ manufacturer to an end-user at any time during a current MASS cycle will be charged a flat fee of \$750 for Multiline Optical Character Readers (MLOCs) and \$500 for Encoding Stations if order is received after July 31st. These fees also apply to any barcoding equipment transferred, upgraded or sold to one company from another of which association between the companies does not exist. A new system is defined as barcoding equipment that is not in use or is not operational during the time for which certification is requested or during any previous MASS cycle.

**Fee Policy for
New, Upgraded
or Transferred
Machines**
(Prior to July 31st)

All systems are required to be MASS certified by August 1 of each calendar year. Systems may be eligible for no-fee certification when the applicant promptly notifies the MASS Department that a new, transferred or upgraded system has been received, installed and is operational under the 45 day grace period prior to or during the month of February. After February, new, transferred or upgraded systems will be charged a certification fee of half of the regular scheduled fee.

Ordering a MASS Test Deck

To ensure the customer understands the requirements of the MASS program, the Terms and Conditions document will be sent to all customers. The document must be signed and returned to the Certification Department. It can be faxed or mailed to the Certification Department prior to sending or along with the MASS Order Form. The Certification Department will not process a MASS Order Form request unless the Terms and Conditions document is on file.

The MASS and Remote/Local Video Encoding order forms have been combined for your convenience. You can now request the MLOC, RVE and LVE tests from the same order form. We have also added the option for Flat and 4-State Customer Barcode tests.

To order a MASS certification test deck, complete the MASS order form located on page 17.

Customers are responsible for ordering test decks. One test deck is required for each machine to be certified. The NCSC automatically sends a second test deck for any machine that fails to certify.



MASS™ Order Form

Customer Information (Please print)

Company Official Contact Name		Email Address	
Company Name			
Street Address, P.O. Box, Rural/Hwy Contract, or Route Number			Apt/Suite
City		State	ZIP + 4®
Telephone Number (Include area code)		Fax Number (Include area code)	
Company Salesperson	Telephone Number (Include area code)	Salesperson Email Address	

Billing Address (If different from Customer Information)

Street Address, P.O. Box, Rural/Hwy Contract, or Route Number			Apt/Suite
City		State	ZIP + 4®

U.S. Postal Service® Representative Information

Attention			
Street Address, P.O. Box, Rural/Hwy Contract, or Route Number			Apt/Suite
City		State	ZIP + 4®
Telephone Number (Include area code)		Fax Number (Include area code)	

Equipment Information

I request that my certification be maintained in US Postal Service documents and records as:

- Service Bureau
 Mailer
 Manufacturer
 I do not wish to be listed in USPS pubs.

- All MLOCR machines connected to a *FASTforward*® black box **MUST** process the MASS test deck with *FASTforward* mode turned on. Check here if a *FASTforward* black box is installed and this machine is operating with *FASTforward* turned on.

If the matching software/hardware has optional parameters, you **MUST** return a list of the parameters used to process the MASS Stage II file with this form. You **MUST** return a hardcopy of PS Form 3553, *CASS Summary Report*, with the MASS test deck.

User Acknowledgement Statement

I hereby certify that all information on this application is accurate and correct. I also certify that the responses provided on the MASS certification test deck will be obtained using the same configuration as used in the processing of customer/client address files and that any modification to the products used to process this test will require retesting and recertification prior to use or release. The MASS test deck will be processed in-house with company-owned or leased software/hardware. I further certify that this address-matching product contains technology that disables access to outdated U.S. Postal Service® data as stated in the DMM 708.3.

CASS™/MASS™ certification scores are confidential information and the applicant agrees not to disclose scores achieved on their passing test for the purpose of marketing their software or hardware product.

Company Official Contact Signature	Date
------------------------------------	------

Return Order Form To	NCSC Use Only
MULTILINE ACCURACY SUPPORT SYSTEM NATIONAL CUSTOMER SUPPORT CENTER UNITED STATES POSTAL SERVICE 6060 PRIMACY PKWY STE 201 MEMPHIS TN 38188-0001 Fax: 901-681-4440	Customer Number
	Date
	PRDT Code

Note: This page may be copied for multiple MLOCR systems. A completed form must be submitted for each MLOCR system.

Type of Certification

Indicate the type of certification requested.

<input type="checkbox"/> Annual Certification	<input type="checkbox"/> New Certification	<input type="checkbox"/> Moved/Relocated	<input type="checkbox"/> Upgraded	Installation date (Not required for annual certification.)
<input type="checkbox"/> Reassembled	<input type="checkbox"/> Demonstration	<input type="checkbox"/> Hybrid/Conversion		

Type of MASS Test

Indicate the type of MASS test requested.

MLOCR MLOCR with RVE Encoder RVE LVE Flat 4-State

MLOCR

Software Product	Version Number	Configuration	MASS ID
Equipment Manufacturer	Model Number	Serial Number	

Encoding Stations

Software Product	Version Number	Configuration	MASS ID
Equipment Manufacturer	Model Number	Serial Number*	

* List all serial numbers for networked systems and indicate which one is the server.

Remote/Local Video encoding Site Information

Company Official Name

Street Address, P.O. Box, Rural/Hwy Contract, or Route Number

Apt/Suite

City

State ZIP + 4®

Telephone Number (Include area code)

Fax Number (Include area code)

Software

Version Configuration

Equipment Information

Image Capturing Equipment Manufacturer	Model Number	Serial Number	MASS ID
Barcoding Equipment Manufacturer	Model Number	Serial Number	MASS ID

MASS Certification Date (If applicable)

Hybrid Equipment Information Before Conversion

Equipment Manufacturer	Model Number	Serial Number
------------------------	--------------	---------------

Change of Ownership

Equipment Model Number	Serial Number	MASS ID
------------------------	---------------	---------

Previous Owner's Name

Previous Owner's Address

If the machine is not physically relocated, a new MASS certificate may be issued. If the machine is physically relocated, the customer must follow the machine relocation guidelines.

**Appendix 1:
PS Form 3553,
*CASS™ Summary Report***



This form may be generated as the output of address matching processing using CASS-Certified™ software in conjunction with current USPS® address database files. Any facsimile must contain the same information in the same format as the printed form.

CASS™ Summary Report

See DMM Section 708 for more information.

A. Software

CASS A1	1. CASS-Certified Company Name	2. CASS-Certified Software Name & Version	3. Configuration
	4. Z4Change Certified Company Name	5. Z4Change Certified Software Name & Version	6. Configuration
	7. eLOT Certified Company Name	8. eLOT Certified Software Name & Version	9. Configuration
MASS A2	1. MASS™ Certified Company Name	2. MASS Certified Software Name, Version & Model No.	3. Configuration
			4. MLOCR Serial No.

B. List

1. List Processor's Name	2. Date List Processed		3. Date of Database Product Used	
	a. Master File		a. ZIP + 4® File	
	b. DPV		b. DPV	
	c. Z4Change		c. Z4Change	
	d. eLOT		d. eLOT	
	e. CRIS		e. CRIS	
4. List Name or ID No. (If using ID No., number must start with ID #)	5. Number of Lists	6. Total Records Submitted for Processing		

C. Output

Output Rating	1. Total Coded	2. Validation Period		Output Rating	1. Total Coded	2. Validation Period	
a. ZIP + 4/DPV Confirmed ▶		From	To	d. 5-Digit Coded ▶		From	To
b. Z4Change/Direct DPV Processed ▶				e. CRRT Coded ▶		From	To
c. DPBC Assigned ▶		From	To	f. eLOT Assigned ▶		From	To

D. Mailer

I certify that the mailing submitted with this form has been coded (as indicated above) using CASS-Certified software meeting all of the requirements listed in the DMM Section 708.		3. Name and Address of Mailer
1. Mailer's Signature	2. Date Signed	

E. Qualitative Statistical Summary (QSS)

For informational Purposes Only: QSS is solely made available for the list processor's review and analysis. This information is not to be considered by the Postal Service™ personnel in determining rate eligibility under any circumstances. See reverse for a detailed explanation.

High Rise Default	High Rise Exact	RR Default	RR Exact	LACSLink	EWS	SuiteLink
-------------------	-----------------	------------	----------	----------	-----	-----------

Privacy Notice: For information regarding our Privacy Policy, visit www.usps.gov.

Instructions

A. Software

A1.1, 1.4, 1.7, & A2.1 – Company Name: Enter the name for *each kind of software* as it appears on the CASS/MASS certificate.

A1.2, 1.5, 1.8, & A2.2 – Software Name and Version: Enter name and version for *each kind of software* as it appears on the CASS/MASS certificate.

A1.3, 1.6, 1.9, & A2.3 – Configuration: Enter the specific software configuration parameter settings as it appears on the CASS/MASS certificate.

A2.4 – MLOCR: Enter the MLOCR Serial Number as it appears on the MASS Certificate.

NOTE: If information entered in this section represents the list processing of more than one certified company, attach a list of company names, software names and versions, as well as the configuration to code the address information used in the mailing.

B. List

1. List Processor's Name: Enter the company name that coded the address list(s) and/or performed ZIP + 4/DPV confirmation using CASS-Certified software. Attach a list if additional space is required.

2. Date List Processed: Enter the processing date for each list. If multiple lists, enter the oldest date from the list.

3. Date of Database Product Used: Enter the version date of each database package used for processing. If multiple lists, enter the oldest version date from the lists.

4. List Name or ID No.: Print the name or identification number of the address list. If more than one list is used, leave blank. If the identification number is used, the number MUST be preceded by "ID#".

5. Number of Lists: Enter the number of lists used to produce the mailing.

6. Total Records Submitted for Processing: Enter the total number of address records (*from all lists in item B5*) submitted at the time the list(s) was coded.

C. Output

1. Total Coded: Enter the total number coded.

2. Validation Period: Enter the effective dates as shown below:

Product Name	From Date	To Date
ZIP + 4/DPV Confirmed	30 days before (<i>the 15th of each month or bi-monthly</i>) or no later than 105 days after the file date.	180 days after the ZIP + 4 valid "From" date.
Total Delivery Point Barcoded	30 days before (<i>the 15th of each month or bimonthly</i>) or no later than 105 days after the ZIP + 4 product file date.	180 days after the DPBC valid "From" date.
Five-Digit Coded	30 days before (<i>the 15th of each month or bimonthly</i>) or no later than 105 days after the ZIP + 4, Five-digit ZIP, or the Carrier Route product date.	365 days after the Five-Digit Valid "From" date.
Total Carrier Route Coded	30 days before or up to 105 days after the ZIP + 4, Five-Digit ZIP, or the Carrier Route product date (<i>the 15th of each month or bimonthly</i>) or up to 105 days after the file date.	90 days after the Carrier Route Valid "From" date.
eLOT™ Sequence No. Assigned	30 days before or up to 105 days after the eLOT file product date (<i>the 15th of each month or bimonthly</i>).	90 days after the eLOT valid "From" date.

D. Mailer

1. Signature: Signature of individual who processed the list, or the mailer's representative.

2. Date Signed: Enter the date this form is signed.

3. Name & Address of Mailer: Enter the name and address of the individual whose signature appears in item D1.

E. Qualitative Statistical Summary (QSS)

This information allows mailers and list processors to evaluate the quality of their address list processed through CASS software before its contents enter the mailstream. A significant number of Highrise default/rural route default matches, although these addresses remain eligible for postal automation rate discounts at this time, increase the costs and reduce the efficient delivery of this mail. Mailer's should research to obtain secondary unit designator address information or highrise addresses and specific box number information for rural route addresses which are coded to default records on the National ZIP + 4 File.

Highrise Default/RR Default

Entries in this box show the number of addresses that were default matched. Defaults are matches made to addresses that contain invalid/missing secondary address or box information. A highrise default contains the building street address in the primary range field and spaces in the secondary range field. A rural route default contains the route number in the primary name but also has spaces in the primary address range.

LACSLink™ System

Entries in this box show the number of addresses which have been converted through the LACSLink process. LACSLink is a data product provided by the Postal Service to allow addresses that have been converted due to USPS changes or for 911 emergency systems to be linked with their new address.

Early Warning System (EWS)

Entries in this box show the number of addresses on the processed address list that are new addresses not in the current US Postal Service ZIP + 4 File. These addresses are, however, valid addresses as formatted and should not be changed in any way since the Postal Service will assign ZIP + 4's to these addresses on the next monthly ZIP + 4 File.

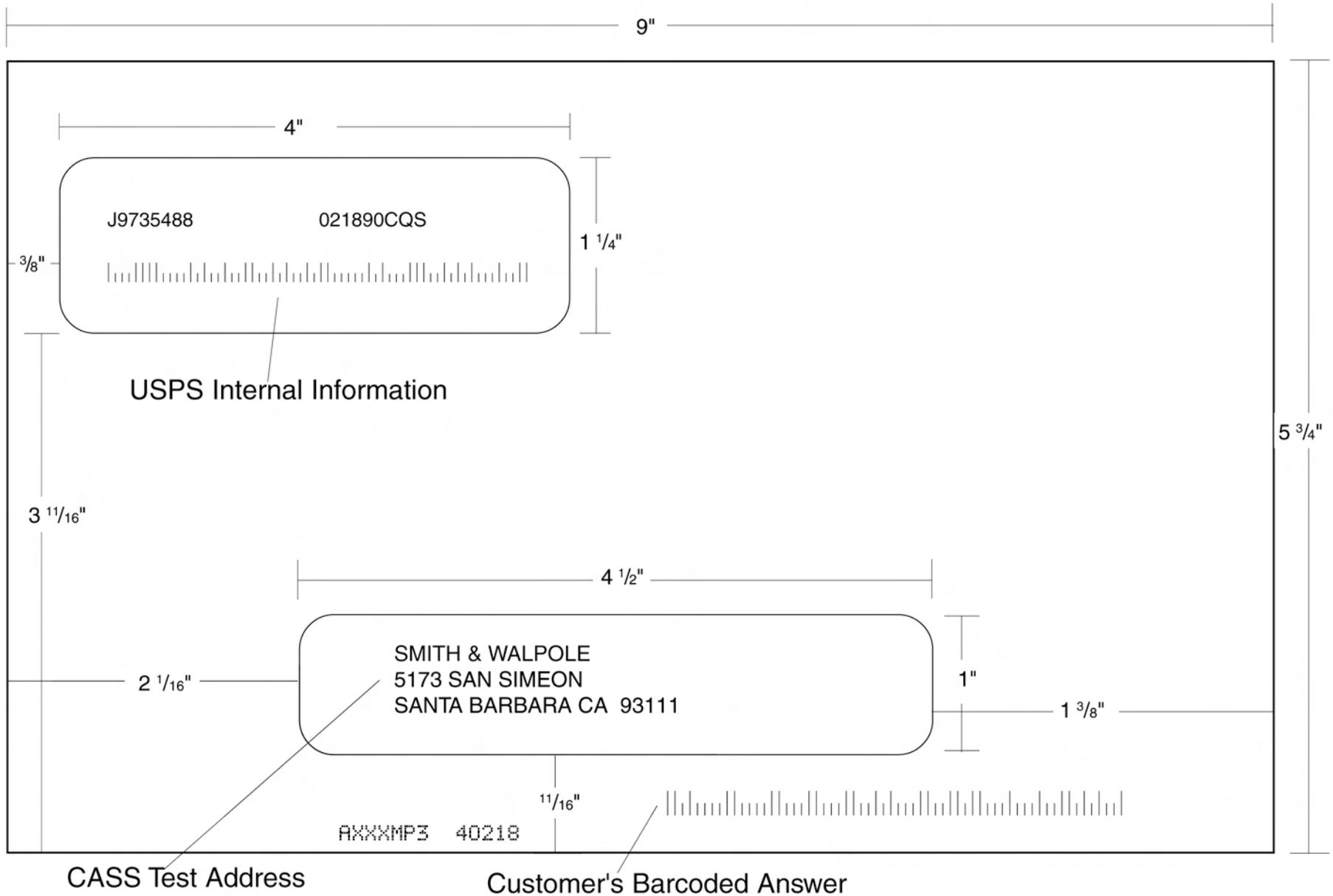
SuiteLink™ System

Entries in this box show the number of ZIP+4/DPV confirmed addresses that matched to a highrise default, and the SuiteLink process returned the appropriate suite number. Only SuiteLink enabled software will return a value in this box (*Check with your software vendor for obtaining this option*). These address records are valid delivery points by the US Postal Service. Addresses that are not confirmed by DPV are either new addresses not available on the current Delivery Sequence File, or are not valid and the list holder should further investigate to determine the accuracy of these addresses. Mailers should make every effort to ensure the quality of their address list(s).

Appendix 2:

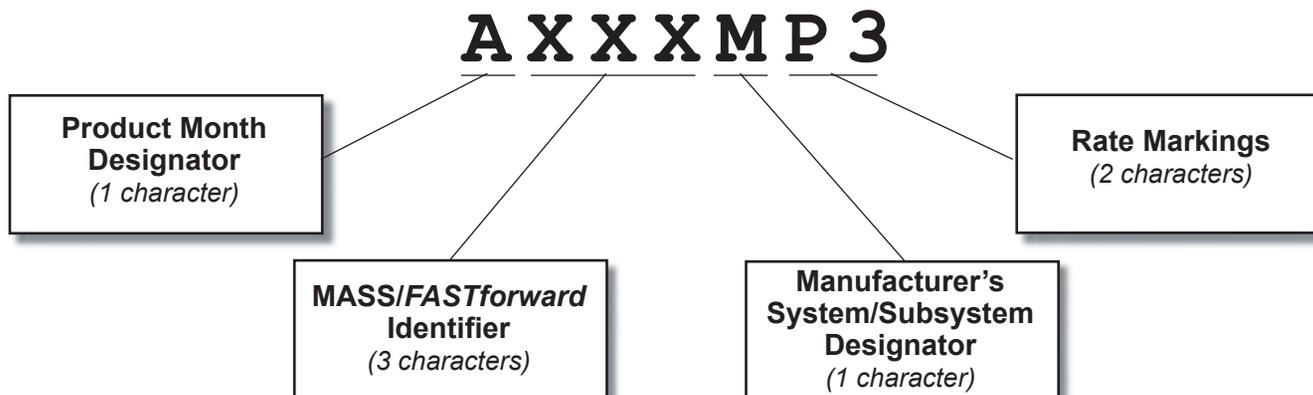
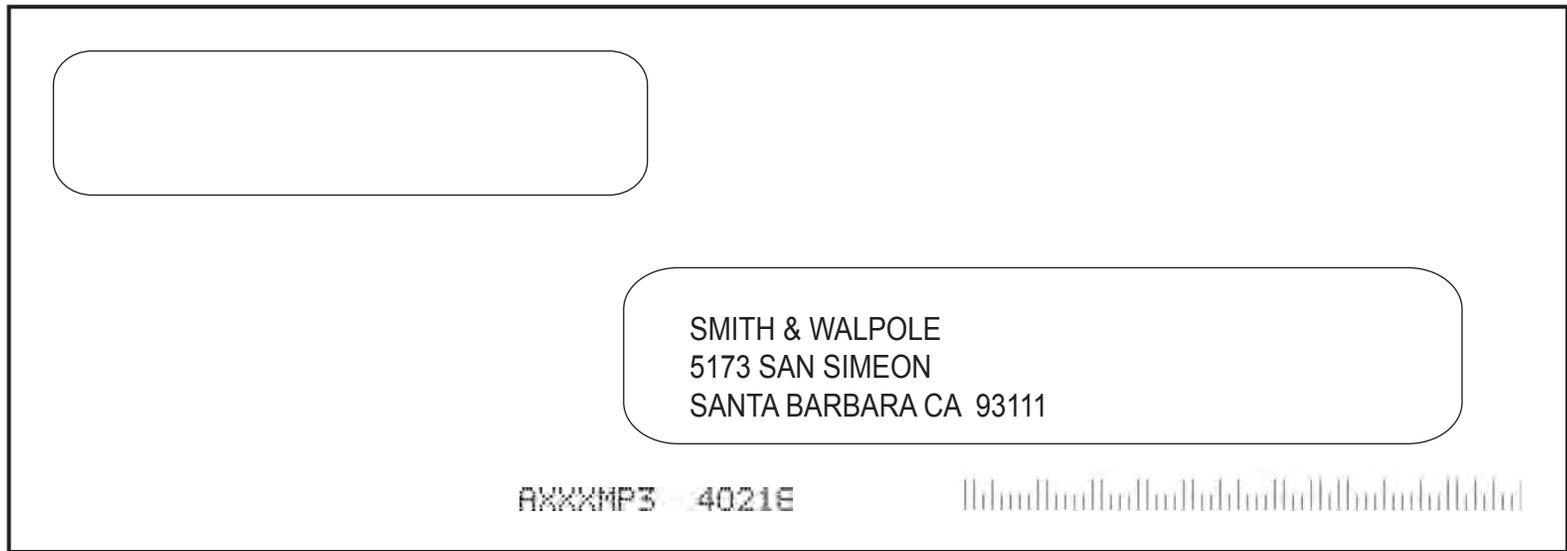
Test Mailpiece Examples

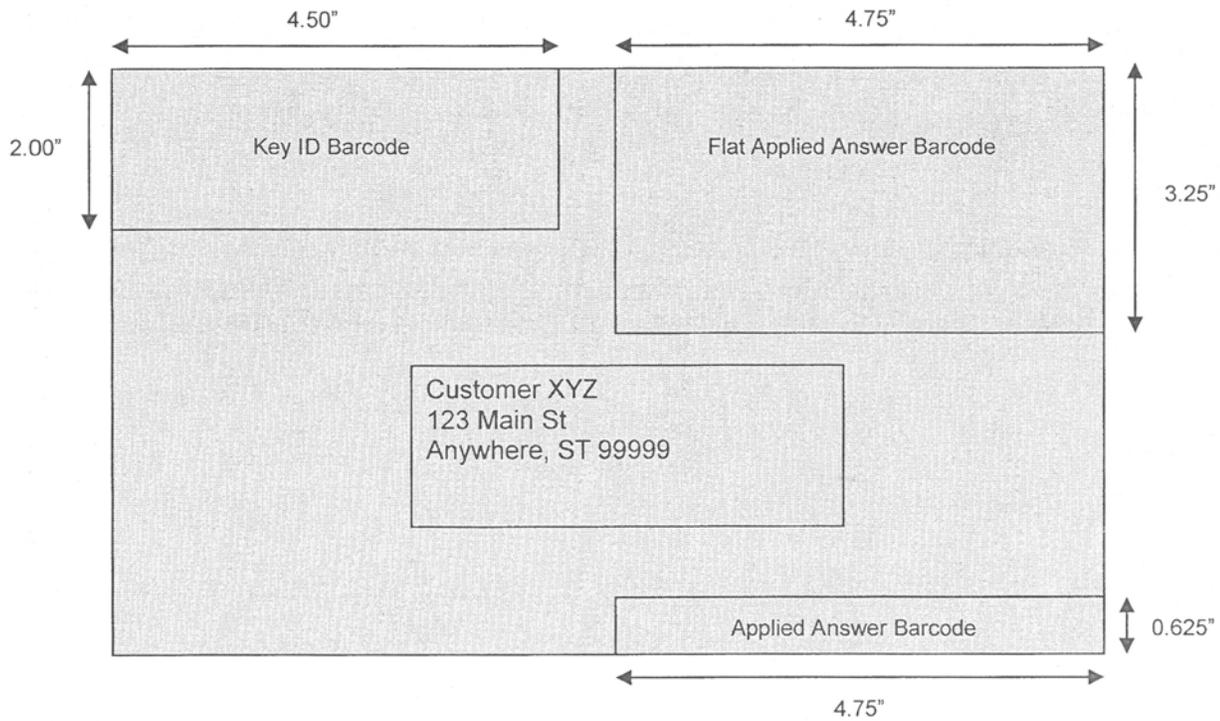
Test Mailpiece Example



Identifier/Rate Code

The Identifier/Rate code consist of seven characters representing the product month, system identifier, manufacturer code and rate markings. All MASS™ certified equipment and systems must print the identifier together with the appropriate rate marking on each processed mailpiece bearing a ZIP + 4 Delivery Point Barcode. The *FASTforward*® platform Identifier is printed in place of the MASS Identifier for MASS certified systems *FASTforward* equipped and licensed. The MASS Identifier provides for an audit trail and combined with the *FASTforward* platform, the Identifier signifies whether the mailpiece has met Move Update requirements.





Read Zones

- The **USPS Key ID Barcode** read zone is referenced from the top left corner of the mailpiece.
- The **Applied Answer Barcode** read zone is referenced from the lower right corner of the mailpiece.
- The **Flats Applied Answer Barcode** read zone is referenced from the top right corner of the mailpiece.

Appendix 3:

Translation of Error Codes and Special Flags

Customer No Match Record Translation of Error Codes & Special Flags

All categories except L are required. Address-matching software must obtain a minimum accuracy rate of 98.5% in each required category to obtain CASS Certification.

Error Codes	
01	5-digit ZIP not match
02	ZIP+4 not match
03	Carrier ID not match
04	City name not match
05	State abbreviation not match
06	Out of range
07	Address is non-deliverable
08	Unique ZIP Code not finest level of code
09	LACS indicator
10	Perfect address
11	General standardization error
12	eLOT sequence
13	eLOT A/D code
14	RDI
15	Fatal Error
16	LACS ^{Link} Indicator
17	LACS ^{Link} Return Code
18	Suite ^{Link} Return Code
19	Incorrect delivery point barcode (Non-Fatal)
20	Incorrect delivery point barcode
21	PMB
22	Default flag error/Record type error
30	History
DO	Confirmation
DC	CMRA
DF	False-positive
DT	Delivery type
DN	No stats
DB	Business
DD	Drop
DK	Drop count
DW	Throwback
DS	Seasonal
DV	Vacant
DL	LACS
FT	Footnote Code Error

Record Type	
S	Street
P	PO Box
R	Rural Route
H	Highrise
F	Firm
G	General Delivery

Standard Address with Elements (Spelled out or Abbreviated)	
AA	Firm Name - Abbreviation
AB	Firm Name - Noise words
AC	Firm Name - Address similar to firm name
AD	Firm Name - Swap firm name and Address field
AE	Normalized street name
AF	Street Name - Spelling variation
A0	5-digit
A1	Dropped 5-digit
A4	5-digit with non-mailing name
A5	Dropped 5-digit with non-mailing name
A8	5digit misspelled city
* A9	Dropped 5-digit with misspelled city

Standard Address (Includes Reversed Alphanumeric Primary/Secondary Numbers, Reversed Pre/Post Directionals, and Secondary Number Combined with Primary Number)	
B0	5-digit
B1	Dropped 5-digit
* B2	5-digit with misspelled street
* B3	Dropped 5-digit with misspelled street
B4	5-digit with non-mailing name
B5	Dropped 5-digit with non-mailing name
* B6	5-digit with misspelled street and non-mailing name
* B7	Dropped 5-digit with misspelled street and non-mailing name
B8	5-digit with misspelled city
* B9	Dropped 5-digit with misspelled city
BE	Normalized street names

Standard Address with Post-Directional Dropped or Incorrect	
CC	Post-directional changed to a non-cardinal directional - no match
C0	5-digit
C1	Dropped 5-digit
* C2	5-digit with misspelled street
* C3	Dropped 5-digit with misspelled street
C4	5-digit with non-mailing name
C5	Dropped 5-digit with non-mailing name
* C6	5-digit with misspelled street and non-mailing name
* C7	Dropped 5-digit with misspelled street and non-mailing name
C8	5-digit with misspelled city
* C9	Dropped 5-digit with misspelled city

Standard Address with Pre-Directional Dropped or Incorrect	
DC	Pre-directional changed to a non-cardinal directional - no match
D0	5-digit
D1	Dropped 5-digit
* D2	5-digit with misspelled street
* D3	Dropped 5-digit with misspelled street
D4	5-digit with non-mailing name
D5	Dropped 5-digit with non-mailing name
* D6	5-digit with misspelled street and non-mailing name
* D7	Dropped 5-digit with misspelled street and non-mailing name
D8	5-digit with misspelled city
* D9	Dropped 5-digit with misspelled city

Standard Address with Suffix Dropped	
E0	5-digit
E1	Dropped 5-digit
* E2	5-digit with misspelled street
* E3	Dropped 5-digit with misspelled street
E4	5-digit with non-mailing name
E5	Dropped 5-digit with non-mailing name
* E6	5-digit with misspelled street and non-mailing name
* E7	Dropped 5-digit w/misspelled street & non-mailing name
E8	5-digit with misspelled city
* E9	Dropped 5-digit with misspelled city

Dual Address	
F0	Street address
F1	Box record
F2	Dual Address on separate line
F4	Street address with non-mailing name
F8	Street address with misspelled city
F9	Box record with misspelled city

Aliases	
G0	5-digit - Base
G1	5-digit - Alias
G2	Dropped 5-digit - Base
G3	Dropped 5-digit - Alias
** G4	5-digit - Out of range
G5	30 char abbreviation alias

Alias/Mult Response	
** H0	5-digit - Base
** H1	5-digit - Alias

Small Town Default	
I0	Exist in ZIP+4
** I1	No match in ZIP+4 P&G records exist
** I2	General Delivery match in ZIP+4/ G rec only - no match
** I3	No match in ZIP+4/City State

Last Line	
JA	Input city/ZIP Code correspond; exact match in ZIP Code
JB	Input city/ZIP Code correspond; Input City is non-mailing name, exact match in ZIP Code
JC	Input city/ZIP Code don't correspond; inexact match in ZIP Code
JD	Input city/ZIP Code don't correspond; inexact match in city
JE	Input city equals 5-digit PLL, ZIP+4 PLL is different
JL	Input city/ZIP Code don't correspond; best candidate is inexact match in finance number, but not in either City or ZIP Code. No Match.
J0	5-digit
J1	Dropped 5-digit
* J2	5-digit with misspelled street
* J3	Dropped 5-digit with misspelled street
J4	5-digit with dropped component
J5	Dropped 5-digit and component
* J6	5-digit with dropped component and misspelled street
* J7	Dropped 5-digit and component with misspelled street
J8	5-digit with misspelled city
* J9	Dropped 5-digit with misspelled city

Multiple Response*	
** K0	5-digit
** K1	Dropped 5-digit
** K2	5-digit with misspelled street
** K3	Dropped 5-digit with misspelled street
** K4	5-digit with dropped or incorrect component
** K5	Dropped 5-digit and/or incorrect component
** K6	5-digit with dropped/incorrect component & misspelled street
** K7	Dropped 5-digit and/or incorrect component with misspelled street
** K8	5-digit with misspelled city
** K9	Dropped 5-digit with misspelled city

Customer No Match Record Translation of Error Codes & Special Flags (cont.)

<p style="text-align: center;">Inexact/Questionable Matching Logic</p> <ul style="list-style-type: none"> * L0 5-digit * L1 Dropped 5-digit
<p style="text-align: center;">Key Elements Also Known As</p> <p>**** MA Out of range - no match M0 With 5-digit M1 Dropped 5-digit M8 5-digit with misspelled city M9 Dropped 5-digit with misspelled city</p>
<p style="text-align: center;">*** NDF Position Error</p> <p>N0 5-digit N1 Dropped 5-digit</p>
<p style="text-align: center;">Extra Information</p> <p>O0 5-digit O1 Dropped 5-digit O2 PMB on address line O3 PMB on secondary address line O4 Valid Secondary with '#' sign; exact match O5 PMB number is a valid PO Box Number - no match O6 Invalid secondary with '#' sign; default match O7 Double '#' signs at the end of address line – invalid O8 Double '#' signs at the end of address line, one valid value, one invalid value</p>
<p style="text-align: center;">Syndrome</p> <p>P0 Seattle Syndrome with 5-digit on Input P1 Seattle Syndrome with Dropped 5-digit on Input *** P2 Salt Lake Syndrome with 5-digit on Input *** P3 Salt Lake Syndrome with Dropped 5-digit on Input P4 Flushing NY Syndrome with 5-digit on Input P5 Flushing NY Syndrome dropped 5-digit on Input</p>
<p style="text-align: center;">ZIP Correction</p> <p>R0 Incorrect 5-digit within finance no. R1 Invalid 5-digit R2 Incorrect 5-digit within finance no. and incorrect +4 R4 Incorrect 5-digit within finance no. and blank city/state R5 Incorrect 5-digit not within finance no.</p>
<p style="text-align: center;">Highrise Default or Delivery Point Alternate</p> <p>S0 With 5-digit S4 With 5-digit highrise S5 "Chase the Base" – Delivery point alternate on input, return highrise exact ** S6 With 5-digit highrise multiple</p>
<p style="text-align: center;">Hyphenated Ranges</p> <p>T1 Numeric alpha no match to numeric/numeric alpha exists T2 Alphanumeric/numeric alpha-transpose to make match T3 Delete hyphen T4 Add hyphen T5 Secy alphanumeric insert hyphen and transpose – default T6 Add alpha to match to numeric range only ** T7 Add double alphas and validate no match to numeric ** T8 Transpose alpha to beginning/no match to numeric range TA Recombine hyphenated trailing primary alpha with secondary number TB Recombine non-hyphenated trailing primary alpha with secondary number TC Recombine hyphenated trailing primary numeric with secondary number</p>

<p>TD Recombine hyphenated trailing alphanumeric/numeric alpha with secondary number TE Recombine secondary values into one; exact match only</p>
<p style="text-align: center;">APO / FPO</p> <p>UA Bad org info in address line without ZIP Code UB Out of range records for PSC box numbers U0 Clean military addresses with 5-digit U1 Reversed box/PSC number with ZIP Code U2 Reversed box/PSC number without ZIP Code U3 Good address/ZIP Code with invalid city name *** U4 PSC box turned into PO Box with ZIP Code ** U5 Missing PSC, CMR, unit number with good box number U6 Good military address with invalid ZIP Code U7 Bad org info in Firm Name field with good ZIP Code U8 Bad org info in Firm Name field without ZIP Code U9 Bad org info in address line with ZIP Code</p>
<p style="text-align: center;">Delivery Address Line</p> <p>** V0 Contains firm name ** V1 Contains highrise name</p>
<p style="text-align: center;">Multiple Finance Number Matching</p> <p>** W0 Multiple response within finance no. - dropped 5-digit W1 Single response within finance no.- dropped 5-digit W2 Altered street name W3 No correlation between city & ZIP-Match in ZIP ** W4 City and ZIP Code from different finance numbers W5 City and State does not agree with ZIP Code W6 City and ZIP Code agree, state from different finance</p>
<p style="text-align: center;">Highrise</p> <p>X0 With a firm suite number * X2 With misspelled street X8 With a firm suite number and misspelled city</p>
<p style="text-align: center;">Split/Combined Elements</p> <p>Y0 Combine pre-directional with street name Y1 Split pre-directional words off street name Y2 Split suffix words off street name Y3 Drop suffix words off multi-word street names Y4 Combine suffix with street name Y5 Shift street name to pre-directional suffix to street name ** Y6 Invalid street name * Y7 Street name spelling variations</p>
<p style="text-align: center;">ZIPMove</p> <p>Z0 Valid match in new finance number/Match. Z1 Invalid match in ZIPMove/No Match. Z2 Valid ZIPMove match; invalid in new finance number/No Match.</p>
<p style="text-align: center;">Out of Range/Overlapping</p> <p>** 10 Bad PO Box for finance no./ZIP 11 Overlapping PO Box ranges/return lowest ZIP+4 ** 15 Bad rural route for finance no./ZIP ** 20 Invalid primary number 21 Invalid secondary number 22 "EWS" No match; Input is exact match to EWS record 23 LACSLink ** 24 LACSLink no match 25 SuiteLink (optional category) 26 SuiteLink no match (optional category)</p>

<p style="text-align: center;">Unique ZIP Codes</p> <p>4A Valid city and ZIP Code 4B Valid city and ZIP Code with valid add-on (match) 4C Valid city and ZIP Code - default match 4D Valid city and ZIP code with add-on (retain ZIP+4) 4E No correlation between city and ZIP Code; match to city ** 4F No correlation between city and ZIP Code (no match; delete ZIP Code) 4G Input address line taken from unique ZIP+4 record, match into non-unique</p>
<p style="text-align: center;">Puerto Rico</p> <p>** 5A Missing noise URB - end address/multiple with valid or invalid URB 5B Drop or abbreviate leading suffix 5C Alpha or numeric - end address 5D Numeric house number - end address preceded by "#," "No.," or "Num" 5E Alphanumeric house number - end address preceded by "Blq" 5F Alphanumeric house number - begin/end address space alphanumeric 5G Alphanumeric house number - begin/end address hyphen alphanumeric 5H Hyphen house number/"Blq" and "Casa," "Blq" and "#" ** 5J Address contains standalone word "Buzon" (no normalization) 5K No URB input - Match to address with blank URB 51 No URB input - single response ** 52 No URB input - multiple response 53 Valid URB on input - single response with valid/invalid URB ** 54 Valid URB on input - multiple response with valid/invalid URB 55 Missing noise URB - single response with valid/invalid URB ** 56 Missing noise URB-multiple response with valid/ invalid URB 57 Valid URB end address-single response with valid or invalid URB ** 58 Valid URB end address - multiple response with valid or invalid URB 59 Missing URB noise end address - single valid/invalid URB</p>
<p style="text-align: center;">Magnet Streets With Multiple Parse Variations</p> <p>** 6E Parsed street name or ZIP+4 street name contains directional or suffix 6F Variation in directional or suffix presentation 6G Suffix or directional dropped 6H Street name incorrectly split into multiple words 6K Trailing numeric/alpha value following a valid suffix</p>
<p style="text-align: center;">Multiple Address Lines and Perfect Addresses</p> <p>7A Address line split between two lines 70 Perfect address 7B Multiple field addresses with split-indicia</p>
<p>* No answer will be bypassed ** Return input record (Unless using DPV to break the tie) *** No grading for standardization **** Normalization required</p>

Appendix 4:

Sample MASS Certificate

MASSTM Quality Certification

for

ZIP + 4[®] Delivery Point Code Matching Software
System Certification

MLOCR MAILER / USER
TEST SAMPLE
COURTESY TEST
NCSC COURTESY TEST
KRIER-1

Serial Number: 123-123456

Configuration: ABC

This certificate is valid 11/2005 thru 07/31/2006.



Jamie E Caldwell

Manager
Address Management



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Appendix 5:

Sample Customer No Match Report

Customer No Match Report Reference Numbers

The reference numbers below provides a brief description of fields on the CASS Customer No Match Report located on the next page.

1. **CASS Record Given** is the address as it appeared on the mailpiece.
2. **CASS Key** uniquely identifies each test record on the mailpiece.
3. **Pre-Barcode** indicates if address is prebarcoded in the address block of the mailpiece.
Y = Yes,
N = No,
* = customer sprayed pre-barcoded as customer answer
4. **Z9** indicates the presence of an invalid ZIP + 4 Code on the mailpiece.
Y = Yes, N = No
5. **CASS Standardization Answer** is the expected return answer on the mailpiece.
6. **Special Flag** identifies the type of test address given.
7. **Customer Record Return** is the customer's answer with ZIP + 4 and bar-code.
8. **#** indicates fatal ZIP + 4 add-on error (i.e., '0000'/'9999')
* indicates delivery point error.
9. **'Y'** indicates misread/miscoded error for character recognition in street address information.
10. **ZIP + 4 Odd/Even/Both** indicates the ZIP + 4 range. 'Y' in this field indicates that the ZIP + 4 code has had transaction in the past 12 months as identified by Z4CHANGE.
O = Odd
E = Even
B = Both
Y = Z4CHANGE

US POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM
 NATIONAL CUSTOMER SUPPORT CENTER
 CUSTOMER NO MATCH REPORT
 ADDRESSES WHICH ARE GRADED AND SCORED

CUSTOMER NAME: USPS
 CUSTOMER ID: 000040DCF

CASS RECORD GIVEN					CASS STANDARDIZATION ANSWER					CUSTOMER RECORD RETURNED		
JAMES B RYAN INC (1) 600 N 30TH ST # 3924 # 1117 CAMDEN NJ 08105 (2)					JAMES B RYAN INC (5) 600 N 30TH ST # 3924 # 1117 CAMDEN NJ 08105-1363 99 (6) (10)					UNREA - DABL E		
CASS KEY B9806679	SIZE C	BARCODE N	Z9 N	CASE MIXED	FONT D	SPECIAL FLAG 07	RECORD TYPE H	ZIP+4 ODD/EVEN/BOTH Y		RECORD TYPE	ZIP+4 ODD/EVEN/BOTH	
INDIA GARMENTS (3) 404 HACKENSACK ST # 2F # 3643 CARLSTADT NJ 07072					INDIA GARMENTS 404 HACKENSACK ST APT 2F # 3643 CARLSTADT NJ 07072-1313 26					REJ		
CASS KEY B9806779	SIZE C	BARCODE N	Z9 N	CASE MIXED	FONT D	SPECIAL FLAG 08	RECORD TYPE H	ZIP+4 ODD/EVEN/BOTH E		RECORD TYPE	ZIP+4 ODD/EVEN/BOTH	
RADEY AND FULLER ASSOC (4) 905 KINGS HWY N # 9788 # 1 CHERRY HILL NJ 08034					RADEY AND FULLER ASSOC 905 KINGS HWY N STE 1 # 9788 CHERRY HILL NJ 08034-1536 01					08034 - 1536 99* (8)		
CASS KEY B9806780	SIZE A	BARCODE N	Z9 N	CASE UPPER	FONT A	SPECIAL FLAG 08	RECORD TYPE H	ZIP+4 ODD/EVEN/BOTH O		RECORD TYPE	ZIP+4 ODD/EVEN/BOTH	
DOBBS ANNEX GENERAL DELIVERY ROCKWALL TX 75032					DOBBS ANNEX GENERAL DELIVERY ROCKWALL TX 75087-9999 99					- GENERAL DELIVERY (8) 75938 - 9999 99#		
CASS KEY B9806877	SIZE C	BARCODE N	Z9 N	CASE MIXED	FONT B	SPECIAL FLAG R0	RECORD TYPE G	ZIP+4 ODD/EVEN/BOTH B		RECORD TYPE G	ZIP+4 ODD/EVEN/BOTH	
JUNGLE FOWL VACATIONS HC 69 BOX 206 GRADY OK 73561-4598					JUNGLE FOWL VACATIONS HC 69 BOX 206 GRADY OK 73569-9601 06					- HC 69 (7) 73561 - 9801 06		
CASS KEY B9806940	SIZE A	BARCODE N	Z9 N	CASE UPPER	FONT A	SPECIAL FLAG R2	RECORD TYPE R	ZIP+4 ODD/EVEN/BOTH B Y (9)		RECORD TYPE R	ZIP+4 ODD/EVEN/BOTH	

Appendix 6:

Customer Statistics

CUSTOMER NAME: USPS

CUSTOMER ID: 000010AAY

FASTFORW CUST:

SERIAL: 123456789

ID ASSIGNED: XXX

ID RETURNED: XXX

GRADING STATISTICS

COUNT

INITIAL TOTAL CASS RECORDS	2,000		
AVAILABLE FOR GRADING	1,998 (FF= 0)		
RECS BYPASSED	95 (FF= 0 / OLD= 0)		
Z4CHANGE/NON-DELIVERABLE	75		
MANUAL OVERRIDES	0		
REJECT < 7.5 %	20		
NO BARCODE SPRAYED	20		
ONLY CORRECT 5DIGIT SPRAYED	0		
BARCODE UNREADABLE (UNRD) < 2.5 %	0000000		
NO PLUS4 ON MAIL PIECE	0		
TOTAL RECORDS AVAILABLE FOR GRADING	1,903		100.00%
CORRECTLY CODED RECORDS	1,882 (FF= 0)		98.90%
PENALTY FOR MISREAD/MISCODE ERRORS	3 X .5	1.50	
PENALTY DEFAULT (KEYING) DEPTH/CODE ERR	0	0	
CORRECTLY CODED ADJUSTED FOR PENALTIES	1,880.50		98.82%
BONUS POINTS AWARDED (NOT ENOUGH BONUS QUESTIONS CORRECT)			0.00%
TOTAL RECORDS COUNTED INCORRECT		22.50	1.18%
INCORRECTLY CODED RECORDS	21		
BARCODE UNREADABLE (UNRD) > 2.5 %	0		
REJECTS > 7.5% COUNTED INCORRECT	0		
PENALTY FOR MISREAD/MISCODE ERRORS	1.50		
PENALTY DEFAULT (KEYING) DEPTH/CODE ERR	0		

INCORRECTLY CODED PERFECT ADDRESSES 0 (MAX= 3)

INCORRECTLY CODED FATAL ADDON 0

INCORRECTLY CODED DPBC 1 (MAX= 9)

FINAL SCORE (MINIMUM 98.5%): 98.82%

Appendix 7:

Electronic Data File Description

Electronic Data File Description

The electronic error report for MASS is shown below in COBOL copybook format. The first seven lines are HEADER information.

Header Information:

```
*****
USPS 47-2467

REPORT CII030P2
CUSTOMER NAME: ABC COMPANY
CUSTOMER ID:    051230AAG
*****
```

Header Record:

```
01 CII030P2-REPORT-HEADER.
   05 P2-LINE-1.
      10 FILLER                PIC X(300) VALUE ALL '*'.
   05 P2-LINE2.
      10 FILLER                PIC X(05) VALUE SPACES.
      10 FILLER                PIC X(12) VALUE 'USPS 47-2467'.
      10 FILLER                PIC X(73) VALUE SPACES.
      10 FILLER                PIC X(50) VALUE
      'US POSTAL SERVICE - CODING ACCURACY SUPPORT SYSTEM'.
      10 FILLER                PIC X(71) VALUE SPACES.
      10 FILLER                PIC X(06) VALUE 'DATE'.
      10 CII030P2-MM           PIC X(02).
      10 FILLER                PIC X(01) VALUE '/'.
      10 CII030P2-DD           PIC X(02).
      10 FILLER                PIC X(01) VALUE '/'.
      10 CII030P2-CC           PIC X(02).
      10 CII030P2-YY           PIC X(02).
      10 FILLER                PIC X(08) VALUE SPACES.
   05 P2-LINE-3.
      10 FILLER                PIC X(75) VALUE SPACES.
      10 FILLER                PIC X(50) VALUE
      '  NATIONAL CUSTOMER SUPPORT CENTER  '.
      10 FILLER                PIC X(71) VALUE SPACES.
      10 FILLER                PIC X(06) VALUE 'TIME'.
      10 CII030P2-HH           PIC X(02).
      10 FILLER                PIC X(01) VALUE ':'.
      10 CII030P2-MN           PIC X(02).
      10 FILLER                PIC X(01) VALUE ':'.
      10 CII030P2-SS           PIC X(02).
      10 FILLER                PIC X(01) VALUE SPACES.
   05 P2-LINE-4.
      10 FILLER                PIC X(05) VALUE SPACES.
      10 FILLER                PIC X(15) VALUE
      'REPORT CII030P2'.
      10 FILLER                PIC X(70) VALUE SPACES.
      10 FILLER                PIC X(50) VALUE
```

```

        ' ADDRESSES WHICH ARE GRADED AND SCORED '
        10 FILLER PIC X(95) VALUE SPACES.
05 P2-LINE-5.
        10 FILLER PIC X(05) VALUE SPACES.
        10 FILLER PIC X(16) VALUE
        'CUSTOMER NAME: '.
        10 CII030P2-NAME PIC X(40).
        10 FILLER PIC X(374) VALUE SPACES.
05 P2-LINE-6.
        10 FILLER PIC X(05) VALUE SPACES.
        10 FILLER PIC X(16) VALUE
        'CUSTOMER ID: '.
        10 CII030P2-NUM PIC X(9).
    
```

Data Record:

Data records will start in record 8 and follow this format:

```

01 ERR-RPT2-WORK-RECD.
    05 ERR-RPT2-CARR-CNTL PIC X(01).
    05 ERR-RPT2-CASS-KEY PIC X(08).

*----- ORIGINAL INPUT FIELDS -----
    05 ERR-RPT2-IFIRST-FIRM PIC X(40).
    05 ERR-RPT2-IZIP PIC X(10).
    05 ERR-RPT2-ICITY PIC X(28).
    05 ERR-RPT2-ISTATE PIC X(02).
    05 ERR-RPT2-ISEC-URB-FIRM PIC X(30).
    05 ERR-RPT2-IDELADDR PIC X(64).

*----- STANDARDIZED POSTAL ANSWER FIELDS -----
    05 ERR-RPT2-SFIRST-FIRM PIC X(40).
    05 ERR-RPT2-SSEC-URB-FIRM PIC X(40).
    05 ERR-RPT2-SADDRESS PIC X(64).
    05 ERR-RPT2-SCITY PIC X(28).
    05 ERR-RPT2-SSTATE PIC X(02).
    05 ERR-RPT2-SZIP PIC X(05).
    05 ERR-RPT2-SHYPHEN PIC X(01).
    05 ERR-RPT2-SADDON PIC X(04).
    05 ERR-RPT2-SDELPT PIC X(02).
    05 FILLER PIC X(01).

*----- MISCELLANEOUS REPORT FIELDS -----
    05 ERR-RPT2-MCONTROL.
        10 ERR-RPT2-MCNTL-SIZE PIC X(02).
        * Size values: A C
        10 ERR-RPT2-MCNTL-BARCODE PIC X(01).
        * Invalid BARCODE Present on mailpiece in WIDEAREA
        * Values: Y N
        10 ERR-RPT2-MCNTL-ZIP9 PIC X(01).
        * Invalid ZIP+4 Present on mailpieces:
    
```

```

*           Values:           Y   N
      10 ERR-RPT2-MCNTL-CASE           PIC X(05).
*           Case values:   Upper Mixed
      10 ERR-RPT2-MCNTL-FONT           PIC X(01).
*           Font values:   A   B   C   D
      05 ERR-RPT2-MRECTYPE             PIC X(01).
      05 ERR-RPT2-FILLER1              PIC X(01).
      05 ERR-RPT2-MSPECIAL             PIC X(02).
      05 ERR-RPT2-MODDEVEN            PIC X(01).

*----- CUSTOMER RETURNED ANSWER -----
      05 ERR-RPT2-CZIP                 PIC X(05).
      05 ERR-RPT2-CHYPHEN              PIC X(01).
      05 ERR-RPT2-CADDON               PIC X(04).
      05 ERR-RPT2-CDPBC.
      10 ERR-RPT2-CDPBC-ANS            PIC X(02).
      10 ERR-RPT2-CDPBC-CHKDGT        PIC X(02).
      05 ERR-RPT2-FILLER2             PIC X(12).

*----- DATA RELATING TO CUST RETURNED ZIP+4 ANSWER -----
* This is the parsed information associated with the returned ZIP+4 from
* the customer. It is taken from ZIP+4 information that may be different
* from the customer's due to timing of the ZIP+4 data.
      05 ERR-RPT2-LINE1.
      10 ERR-RPT2-FIRM                 PIC X(50).
      05 ERR-RPT2-LINE2.
      10 ERR-RPT2-PRIMLO              PIC X(10).
      10 FILLER                       PIC X(03) VALUE ' - '.
      10 ERR-RPT2-PRIMHI              PIC X(10).
      10 FILLER                       PIC X(27).
      05 ERR-RPT2-LINE3.
      10 ERR-RPT2-PREDIR              PIC X(02).
      10 FILLER                       PIC X(01) VALUE SPACE.
      10 ERR-RPT2-STRNAME             PIC X(28).
      10 FILLER                       PIC X(01) VALUE SPACE.
      10 ERR-RPT2-SUFFIX              PIC X(04).
      10 FILLER                       PIC X(01) VALUE SPACE.
      10 ERR-RPT2-POSTDIR             PIC X(02).
      10 FILLER                       PIC X(11) VALUE SPACE.
      05 ERR-RPT2-LINE4.
      10 ERR-RPT2-SECUNIT             PIC X(04).
      10 FILLER                       PIC X(01).
      10 ERR-RPT2-SECLO              PIC X(08).
      10 FILLER                       PIC X(03) VALUE ' - '.
      10 ERR-RPT2-SECHI              PIC X(08).
      10 FILLER                       PIC X(26).
      05 ERR-RPT2-CRECTYPE            PIC X(01).
      05 ERR-RPT2-CODDEVEN            PIC X(01).

```