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Publication 1098

# PART II

**Annual Requirements and Specifications  
for the Development of 2D Barcode**



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### What's New

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The following forms will become obsolete starting 2021 and will be transitioning to Absolute Positioning:

- 3514, California Earned Income Tax Credit
- Schedule CA (540), California Adjustments – Residents

For more information about absolute positioning, please refer to Pub. 1098, Part I.

### Introduction

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Pub. 1098, Part II, Annual Requirements and Specifications for the Development of 2D Barcode, is designed for the preparation of 2 dimensional (2D) barcode enabled forms. It is not a substitute for Pub. 1098, Part I, Annual Requirements and Specifications for the Development and Use of Substitutes, Scannable, and Reproduced Tax Forms. The 2D barcode specifications are fully compliant with "Tax Forms Processing, 2D Bar Coding Standards, Revision 2010v1, dated October 31, 2010," a standard issued by the Federation of Tax Administration (FTA) and accepted by the National Association of Computerized Tax Preparers (NACTP). The following requirements and specifications are used to create 2D barcodes and outlines the order and type of data expected in the various 2D barcodes.

For 2021, the Franchise Tax Board (FTB) will accept 2D barcodes for the following two forms:

- Schedule D (540), California Capital Gain or Loss Adjustment
- Schedule P (540), Alternative Minimum Tax and Credit Limitations

Computerized Tax Processors (CTPs) must ensure that printed data on the tax forms and encoded data in the 2D barcode are an exact match.

### Who Must Get Approval for 2D Barcode Tax Forms

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Any company that develops and uses 2D barcode tax forms must get approval from the FTB if it develops:

- 2D barcode tax forms using its own tax software programs.
- Tax software programs to be used with 2D barcode tax forms developed by another company.

The company must get forms approval from the FTB annually, **before** it releases or distributes 2D barcode tax forms to its customers or clients.

If your company is described above, your customers or clients do not need to get additional approval from the FTB to use your FTB-approved 2D barcode tax forms. However, they should verify that your 2D barcode tax forms have the FTB's approval.

Examples of customers or clients, who should verify approval, by asking you for a copy of your FTB approval letter(s), are:

- Tax practitioners who purchase software that produces 2D barcode tax forms.
- Software providers who sell the products of tax software developers who design 2D barcode tax forms.

### How Does the 2D Barcode Forms Approval Process Work?

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Submit all 2D barcode forms that require approval to the FTB for review before you distribute or release them, or related products, to your customers or clients. See the "**DO NOT FILE Message Requirements**", "**How Does the Forms Approval Process Work?**", "**Electronic Forms Review Process**" and "**Submitting Forms to FTB for Approval**" in Part 1 of the Pub 1098 for more information.

Do **not** submit 2D Barcode forms for review until the FTB posts the 2D Barcode Test Specifications on the State Exchange System (SES). Doing so will increase delays in the review process. Before a company submits any 2D barcode form to FTB for approval, we recommend a complete review of Pub. 1098, Parts I and II.

### What the Company Should do for its Customers and Clients

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Provide your customers and clients with all of the information and instructions they need to produce accurate 2D barcode tax forms. The information and instructions that you provide should clearly inform your customers and clients about:

- The importance of printing a new tax return after making changes. Any information written onto the tax form, but not in the barcode, may not be processed accurately.
- The hardware requirements they will need to successfully "run" your software product.
- The printer requirements necessary to print FTB approved forms (including a complete list of printers that your software does not support; the printer fonts they will need to print the required graphics, etc.; and how to use printer font cartridges, if applicable).
- How to get software enhancements and the importance of "loading" them to their PCs.
- The importance of registering their business name and address with your company, if applicable.
- The importance of complying with error messages and edit checks, that they may see as a "pop-up" message on their PC screen.
- All other information that helps to ensure they use your software products correctly.
- How to enter taxpayer name and address information in the entity area on all personal income tax returns.

Also, upon request:

- Provide your customers and clients with a copy of your FTB forms approval letter(s).
- Provide a copy of notice(s) of correction(s) to software sent to your customers and clients.

## Preparer Requirements

For those tax returns prepared by someone other than the taxpayer, the identifying fields for preparer name, phone, and PTIN/FEIN are mandatory. The tax professional software must ensure that paid preparer information has been entered prior to printing.

## Print Requirements

**PrintScaling = None Duplex = Simplex.**

There is a setting in the PDF specifications that can be set in each file that will force the document to print without being shrunk. When using PDF files to save and/ or print tax returns, the following PDF Viewer Preferences or properties must be set by the vendor application. Setting the Print Scaling property to none will override the local setting and force the document to print without scaling. Setting the Duplex property to Simplex will override local settings and force the documents to be printed single sided. Simplex printing is a requirement for 2D barcode tax returns. Include this setting in all instructions to the user for printing a tax return.

## Submitting 2D Barcode Forms to the FTB for Approval

FTB only approves the appearance of the printed substitute forms and the 2D barcode readability. We do not certify the logic of specific software, or the calculation of formulas entered on any forms. Nor do we approve specific equipment or the process used in producing the substitute and 2D barcode tax forms, but do require that the substitute and 2D barcode tax forms meet the FTB's standards.

For 2D Barcode Test Specifications, please refer to the State Exchange System (SES), FTA State Exchange System>CAST>CAST.TxYr2021>CAST.Forms>CAST.2D.

All forms are required to have a Document ID, CTP ID, and anchor marks. These items must be placed in accordance with FTB's exact positioning requirements for that form (refer to Pub. 1098, Part I). Each form must contain the exact number of tax data fields, taxpayer ID fields, line items, and keying symbols as the official FTB form.

In the event that a 2D barcode is unreadable, the exact positioning will allow software to capture and "read" the data.

The FTB will validate content in the 2D barcode to information printed on the tax form. For example:

On a married/RDP filing joint tax return, if the spouse/RDP name is reflected on the tax return but not present in the 2D barcode, it will be considered a fatal error and will be rejected.

## Submission

We will continue to accept electronic or paper for 2D barcode test package submissions as follows:

### First Submission

To avoid delays in the review process, follow these instructions:

1. Include a cover letter with every review package.
2. If your company's software product does not support a particular field or field size, etc., indicate this fact in the company's cover letter. This is important.
3. Sample pages should not be double sided. Do not submit any blank forms.
4. Use the Test Scenarios located on the State Exchange System (SES) for how to complete the test samples.
  - Original sample documents are required.
5. For electronic review process, send forms via SWIFT.
  - Select the "ToFTB" folder
  - Click "Upload"
6. For paper review process, send forms by courier, freight, or UPS to:

ATTN: Substitute Forms  
TAX FORMS DEV & DIST SECTION  
FRANCHISE TAX BOARD  
9646 BUTTERFIELD WAY M/S F 284  
SACRAMENTO CA 95827

The FTB highly recommends that you use a courier, freight, or UPS service when you submit your forms for paper review. This will help ensure that the Filing Methods Section receives your review package on the same day it is received at the FTB. If you prefer to use the U.S. Postal Service "regular mail service," see the FTB's PO Box address under "**How to Contact the FTB Regarding 2D Barcode Forms.**" Choosing to use USPS as method for submitting packages may delay the review of your package.

- Submit two original samples of each test specifications of each form. The samples must be generated from your tax engine and meet the requirements of the test specifications provided using the Publication 1098, Part II.

In most cases, the FTB will complete the first review of your 2D barcode form(s) within ten business days of receipt.

### Resubmission (Second review for approval)

#### Electronic Resubmission

When resubmitting a 2D barcode form, be sure to increment the Software Developer Version if there is a change to the 2D barcode programming. See “**Header Fields Definitions**” for more information. Include a cover letter with your resubmitted review package and indicate in caps, “**RESUBMISSION**” where it can be easily seen. This is critical. If your company’s software product does not support a particular field or field size, etc., indicate this fact in the company’s cover letter. Send all associated forms in the package, including the corrected form, via SWIFT within 3 business days.

- Select the “ToFTB” folder
- Click “Upload”

#### Paper Resubmission

When resubmitting a 2D barcode form, be sure to increment the Software Developer Version if there is a change to the 2D barcode programming. See “**Header Fields Definitions**” for more information. To avoid delays in any second review process, follow these instructions:

1. Make all corrections identified at first review.
2. Include a cover letter with your resubmitted review package, including all associated forms in the package, and indicate in caps, “**RESUBMISSION**” where it can be easily seen. **This is critical.** If your company’s software product does not support a particular field or field size, etc., indicate this fact in the company’s cover letter.
3. If you submit forms printed from different printers, identify the printer type with a removable note on the front of the form (or write the printer type on the back).
4. You must resubmit 2 hard copies of each test sample for us to review. We highly recommend you send your resubmission by courier, freight, or UPS to the address shown on this page within 3 business days.

In most cases, we will complete the review of your resubmission within three business days of receipt.

### Benefits of Following the Guidelines for the Development of 2D Barcode

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- The FTB will be able to complete its review and respond quickly (normally within ten business days from date received).
- The FTB will be able to process approved CTP tax forms which will result in fast, accurate processing and quick refunds for your customers’ clients.
- Software companies will have satisfied customers and clients who have confidence in the software product(s) they use.

### Consequences of Not Following the Guidelines for the Development of 2D Barcode

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The FTB will work with CTPs to correct any errors found on their tax forms during review. However, if a software company releases forms that fail to follow the “**Guidelines for the Development of 2D Barcode,**” the FTB:

- Will require the software company contact person to send proof (e.g., revised forms, excerpts from revised user manuals, release letters for new versions of software, etc.) that the company corrected all errors and notified their customers and clients of the corrections.
- Will publish the software company name in certain publications and on [ftb.ca.gov](http://ftb.ca.gov), stating that the software company did not follow the “**Guidelines for the Development of 2D Barcode.**” The FTB will publicize such a violation even if the software company subsequently corrects all errors.
- May notify taxpayers, if the software company fails to correct all errors, that their refund was delayed because the software company’s tax forms did not have the FTB approval.

### How to Contact the FTB Regarding 2D Barcode Forms

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For questions about the 2D Barcode Forms or Substitute Forms Program, contact your assigned account agent or send email to [substituteforms@ftb.ca.gov](mailto:substituteforms@ftb.ca.gov).

To mail correspondence regarding 2D barcode forms and related issues:

ATTN: SUBSTITUTE FORMS  
TAX FORMS DEV & DIST SECTION  
FRANCHISE TAX BOARD  
PO BOX 1468 M/S F 284  
SACRAMENTO CA 95812-1468

**General 2D Specifications**

|                             |  |  |
|-----------------------------|--|--|
| Encode type                 | Standard PDF417  | The 2D encode type is Standard PDF417.   |
| Error Correction Level      | 4  | The error correction level in the current market-provided DLL is set to level 4.   |
| Pixel shaving               | ON   | Pixel shaving improves read rates.   |
| Resolution                  | 600 dpi  | Dots per inch is 600.  |
| Code word count             | Variable   |  |
| Encryption                  | None   |  |
| Module-Aspect Ratio         | 3:1  | The Y/X element ratio is 3.  |
| Data Rows                   | Variable   |  |
| Data Columns                | 24   |  |
| X-module Dimension          | 15 mils Max  | The X dimension width is a maximum of 15.0 Mils.   |
| Reserved space              | 1.15" x 7.43" (h x w)  | The height of the barcode will vary according to the amount of information contained in the barcode. The size of the barcode cannot be greater than .95" high x 6.0" wide. |
| Data Rows                   | Variable   |  |
| Character Count per barcode | 1400 Max   |  |
| Field Delimiter             | Carriage Return  | Each field will be separated by a carriage return.   |
| End of File Delimiter       | "*EOD*"  |  |
| Location of Barcode(s)      | In the reserved areas indicated in the Record Layouts, on each form. | Do not print the box around the barcode.   |
| Dollar Amounts              | Round all figures to whole dollars, no commas                        |  |
| Alpha Characters            | Upper Case only  |  |
| Negative Amounts            | Use minus sign only  |  |
| Unused Data                 | No Zero fill   |  |

**Header Fields Definitions**

| Line                       | Definition  | Values   |
|----------------------------|---|--|
| Header Version Number      | NACTP standard  | Currently set at T1  |
| CTP ID                     | California CTP identification indicator                           | Numeric  |
| Tax Year                   | Calendar Tax Year   | 2021   |
| Form Type                  | Each barcode has a 3 to 6 character unique identifier             | See “ <b>Barcode Summary</b> ”   |
| Software Developer Version | Increment indicator when changes are made to barcode content only | 001. Increment plus 1 for every subsequent barcode change                |
| FTB Specification Version  | California barcode specification version                          | 001, FOR FTB USE ONLY. FTB will inform you if a new version is required. |

**How to Use the Software Developer Version Control**

The FTB requires software developers begin with the indicator set at 001. This version is the first submission to The FTB for approval.

For example:

If The FTB disapproves a 2D barcode form due to a programming error in the barcode, then the next submission is version 002. If approved, then version 002 is valid for production. If The FTB disapproves a 2D barcode form due to a formatting issue only (and no changes are made to the barcode programming), then the version number would not change upon resubmission.

According to the Tax Forms Processing 2-D Bar Coding Standards, software developers must inform The FTB of any software version control changes made after the approval issued at testing.

For example:

Your software version 002 is approved during forms testing.

If changes were made to the barcode content in production, then the software version must increment to 003 and you must notify the Substitute Forms Desk of this change to ensure your software version is valid for production.

Notify your assigned account manager of any software version changes or send email to **substituteforms@ftb.ca.gov**.

**Barcode Summary**

The two 2021 PIT return forms will be encoded in the following three 2D barcodes.

| Barcode | Description                | Fields designate in this barcode  | Sample Header Fields        | Description of Header Fields                      |
|---------|----------------------------|---|-----------------------------|---|
| 1       | Schedule D (540) Barcode 1 | From Entity "TP first name" to "Line 1oe "Gain"                             | T1<br>613<br>2021<br>776-01 | Header Version<br>CTP ID<br>Tax Year<br>Form type |
| 2       | Schedule D (540) Barcode 2 | From Line 1pa "Description of Property" to Line 12b "Capital Gain Addition" | T1<br>613<br>2021<br>776-02 | Header Version<br>CTP ID<br>Tax Year<br>Form type |
| 3       | Schedule P (540)           | All fields  | T1<br>613<br>2021<br>797    | Header Version<br>CTP ID<br>Tax Year<br>Form type |