# pdGeoTIGER – Getting Started Guide

**pdGeoTIGER** is a comprehensive United States national database developed to permit exceptionally precise assignment of geo location designations based on Address Range or ZIP+4 Code.

This product covers all 50 states, the District of Columbia and Puerto Rico and is drawn from the final edition of the U.S. Census Bureau *TIGER/Line Files*.

Assignable GeoCoding location designations include: Latitude, Longitude, State, County, County Subdivision, Puerto Rico Subbarrio, Census Tract, Census Block, Census Block Group, Place, FIPS codes, Congressional District, State Legislative Districts, School Districts, Voting District, 3-digit Zip Code Tabulation Area and 5-digit Zip Code Tabulation Area.

The primary files in this product are the Address Range databases set up for easy matching against address lists. Additionally, there are secondary ZIP+4 databases designed to allow matches not made with main files.

Note that Address Range matching is significantly more accurate than using a ZIP+4 database alone because USPS ZIP+4 boundaries have no relationship with U.S. Census lines, and many ZIP+4 Codes fall into multiple Census Geo locations or TIGER polygons.

## Included Database Files

Three different file formats are included to insure compatibility with any database system. Each of the file formats contains the same data. Separate Address Range and ZIP+4 files are provided for each state, the District of Columbia and Puerto Rico. The XX is the list below is a placeholder for the state abbreviation.

- XXar.csv (Address Range files; comma-delimited ASCII text—MS Excel compatible)
- XXz4.csv (ZIP+4 files; comma-delimited ASCII text—MS Excel compatible)
- XXar.txt (Address Range files; fixed length ASCII text)
- XXz4.txt (ZIP+4 files; fixed length ASCII text)
- XXar.dbf (Address Range files; dBase/FoxPro—easily imports into MS Access)



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- XXz4.dbf  (ZIP+4 files; dBase/FoxPro—easily imports into MS Access)

## Included User Documentation

- README.txt  (general information)
- This Getting Started Guide
- pdGeoTIGERar-Layout.pdf  (layout & data definitions)
- pdGeoTIGERz4-Layout.pdf  (layout & data definitions)
- Distance-Formulas.pdf  (distance calculation formulas & instructions)
- Site License  (see Licensing below)

## Version Number

The version number of each copy of *pdGeoTIGER* is written in the first row of the first column of the database files in **X.X.X** format. The first numbers is the version of the release. The number after the first dot is the update for the version indicated. The number after the second dot references a minor revision.

## Layout & Data Definitions

File specifications can be found in the included *pdGeoTIGER-Layout.pdf* file. This gives the name of each field, the character type (character/alphanumeric or numeric), the width (including any decimal points, the starting point and the ending point) and the definition of the field contents.

## Instructions

*pdGeoTIGER* is drawn from the final edition of the U.S. Census Bureau *TIGER/Line Files* released March 2007. Separate Address Range and ZIP+4 files are provided for each state, the District of Columbia and Puerto Rico. While coverage is very high, the *TIGER/Line Files* do not provide data for every field in every record. For example, Voter District numbers are not assigned when a state or locality does not follow Census Bureau guidelines when drawing ward and precinct lines.

The included ZIP+4 databases reflect Plus4 add-on assignments made at the time the source files were released. Information is not provided when a ZIP+4 falls into more than one TIGER polygon. Accordingly, the Address Range databases should be considered the primary source for matches.

ADDRESS RANGE FILES: These files are set up for easy matching. Users can simply match the **MATCHKEY**, **FRADD** and **TOADD** fields against their lists to append the geo location information contained in the fields beginning with

**STABBR**. Alternatively users can match directly against the parsed address fields: **FEDIRP**, **FENAME**, **FETYPE**, **FEDIRS**, **FRADD**, **TOADD** and **ZIP**.
ZIP+4 FILES: Users can match the **ZIP** and **ZIP4** fields (or the combination **ZIP9** field) against their lists to append the geo location information contained in the fields beginning with **STABBR**.

For the convenience of users, the state name, county name and place name are provided in both Mixed Case and UPPER CASE formats.

The **SUBMCD** field is only filled in the two Puerto Rico files. This is the Subbarrio code number.

Latitude and longitude coordinates are provided in three formats: six-decimal, degrees/minutes/seconds (DMS) and converted to radians (for use in trigonometry functions—15 decimal places). The decimal and radian formats are most useful when calculating distances and radiuses while the DMS format is ideal when printing out the coordinates in documents and on websites.

For those calculating distances and radiuses, formulas and instructions are contained in the included *Distance-Formulas.pdf* file.

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# pdGeoTIGER - Address Range GeoCoding Database

FIELD: name of the field. TYPE: field type; Chr = character or alphanumeric, Num = numeric. WIDTH: field width. DEC: number of decimal points. FROM: field starting point. TO: field ending point. Description: data definition of the field contents. Users can match the MATCHKEY, FRADD and TOADD fields against their lists to append the Geo location information contained in the fields beginning with STABBR. Alternatively users can match directly against the parsed address fields: FEDIRP, FENAME, FETYPE, FEDIRS, FRADD, TOADD and ZIP.

| Field | Type | Width | Dec | Start | End | Description |
|---|---|---|---|---|---|---|
| PEACOCK_ID | Chr | 10 | | 1 | 10 | Unique ID number assigned to each record |
| RT | Chr | 1 | | 11 | 11 | Source Record Type from the TIGER database |
| TLID | Chr | 10 | | 12 | 21 | Source code from the TIGER database |
| RTSQ | Chr | 3 | | 22 | 24 | Source code sequence add-on number from the TIGER database |
| MATCHKEY | Chr | 44 | | 25 | 68 | Match key preset for easy matching |
| FEDIRP | Chr | 2 | | 69 | 70 | Street pre-direction |
| FENAME | Chr | 30 | | 71 | 100 | Street name |
| FETYPE | Chr | 4 | | 101 | 104 | Street type |
| FEDIRS | Chr | 2 | | 105 | 106 | Street post-direction |
| FRADD | Chr | 11 | | 107 | 117 | From address |
| TOADD | Chr | 11 | | 118 | 128 | To address |
| ADDPARITY | Chr | 1 | | 129 | 129 | Address parity (key):<br>O = Odd<br>E = Even |
| ZIP | Chr | 5 | | 130 | 134 | 5-digit ZIP Code |
| STABBR | Chr | 2 | | 135 | 136 | State abbreviation |
| STNAME | Chr | 25 | | 137 | 161 | State name - Mixed Case |
| STNAMEUPR | Chr | 25 | | 162 | 186 | State Name - UPPER CASE |
| STNUM | Chr | 2 | | 187 | 188 | State 2-digit FIPS code number |
| COUNTY | Chr | 31 | | 189 | 219 | County name - Mixed Case |
| COUNTYUPR | Chr | 31 | | 220 | 250 | County name - UPPER CASE |
| COUNUM | Chr | 3 | | 251 | 253 | County 3-digit FIPS code number |
| TRACT | Chr | 6 | | 254 | 259 | Census Tract |
| TRBAS | Chr | 4 | | 260 | 263 | Census Tract base number (first four |



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| Field | Type | Width | Dec | Start | End | Description |
|---|---|---|---|---|---|---|
| | | | | | | digits) |
| TRSUF | Chr | 2 | | 264 | 265 | Census Tract suffix number (last two digits) |
| BLKGRP | Chr | 1 | | 266 | 266 | Census Block Group |
| BLOCK | Chr | 4 | | 267 | 270 | Census Block |
| BLKSUF | Chr | 1 | | 271 | 271 | Census Block Suffix |
| LAT | Num | 9 | 6 | 272 | 280 | Latitude coordinate - 6 decimal places |
| LATHEM | Chr | 1 | | 281 | 281 | Latitude Hemisphere (key):<br>N = Northern Hemisphere<br>S = Southern Hemisphere |
| LONG | Num | 10 | 6 | 282 | 291 | Longitude coordinate - 6 decimal places |
| LONHEM | Chr | 1 | | 292 | 292 | Longitude Hemisphere (key):<br>E = Eastern Hemisphere<br>W = Western Hemisphere |
| LATRAD | Num | 18 | 15 | 293 | 310 | Latitude coordinate converted to radians for use in trigonometry functions - 15 decimal places |
| LONRAD | Num | 18 | 15 | 311 | 328 | Longitude coordinate converted to radians for use in trigonometry functions - 15 decimal places |
| LATDMS | Chr | 14 | | 329 | 342 | Latitude coordinate - Degrees/Minutes/Seconds |
| LONDMS | Chr | 15 | | 343 | 357 | Longitude coordinate - Degrees/Minutes/Seconds |
| UR | Chr | 1 | | 358 | 358 | Urban/Rural indicator (key):<br>U = Urban<br>R = Rural |
| COUSUB | Chr | 5 | | 359 | 363 | County Subdivision |
| SUBMCD | Chr | 5 | | 364 | 368 | Puerto Rico Subbarrio |
| PLACENAME | Chr | 52 | | 369 | 420 | Place name - Mixed Case |
| PLACENMUPR | Chr | 52 | | 421 | 472 | Place name - UPPER CASE |
| PLACE | Chr | 5 | | 473 | 477 | Place 5-digit FIPS code number |
| CONG | Chr | 2 | | 478 | 479 | Congressional District |
| SLDUPR | Chr | 3 | | 480 | 482 | State Legislature - Upper Chamber |
| SLDLWR | Chr | 3 | | 483 | 485 | State Legislature - Lower Chamber |
| SDELM | Chr | 5 | | 486 | 490 | School District - Elementary |



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# pdGeoTIGER - Address Range GeoCoding Database

| Field | Type | Width | Dec | Start | End | Description |
|---|---|---|---|---|---|---|
| SDSEC | Chr | 5 | | 491 | 495 | School District - Secondary |
| SDUNI | Chr | 5 | | 496 | 500 | School District - Unified |
| VTD | Chr | 6 | | 501 | 506 | Voting District |
| ZCTA3 | Chr | 3 | | 507 | 509 | 3-digit Zip Code Tabulation Area |
| ZCTA | Chr | 5 | | 510 | 514 | 5-digit Zip Code Tabulation Area |



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FILE LAYOUT

# pdGeoTIGER - ZIP+4 GeoCoding Database

FIELD: name of the field. TYPE: field type; Chr = character or alphanumeric, Num = numeric. WIDTH: field width. DEC: number of decimal points. FROM: field starting point. TO: field ending point. Description: data definition of the field contents. Users can match the ZIP and ZIP4 fields (or the combination ZIP9 field) against their lists to append the Geo location information contained in the fields beginning with STABBR.

| Field | Type | Width | Dec | Start | End | Description |
|---|---|---|---|---|---|---|
| PEACOCK_ID | Chr | 10 | | 1 | 10 | Unique ID number assigned to each record |
| ZIP | Chr | 5 | | 11 | 15 | 5-digit ZIP Code |
| ZIP4 | Chr | 4 | | 16 | 19 | 4-digit Plus4 add-on |
| ZIP9 | Chr | 10 | | 20 | 29 | Combines the ZIP Code and Plus4 add-on in XXXXX-XXXX format |
| STABBR | Chr | 2 | | 30 | 31 | State abbreviation |
| STNAME | Chr | 25 | | 32 | 56 | State name - Mixed Case |
| STNAMEUPR | Chr | 25 | | 57 | 81 | State Name - UPPER CASE |
| STNUM | Chr | 2 | | 82 | 83 | State 2-digit FIPS code number |
| COUNTY | Chr | 31 | | 84 | 114 | County name - Mixed Case |
| COUNTYUPR | Chr | 31 | | 115 | 145 | County name - UPPER CASE |
| COUNUM | Chr | 3 | | 146 | 148 | County 3-digit FIPS code number |
| TRACT | Chr | 6 | | 149 | 154 | Census Tract |
| TRBAS | Chr | 4 | | 155 | 158 | Census Tract base number (first four digits) |
| TRSUF | Chr | 2 | | 159 | 160 | Census Tract suffix number (last two digits) |
| BLKGRP | Chr | 1 | | 161 | 161 | Census Block Group |
| BLOCK | Chr | 4 | | 162 | 165 | Census Block |
| BLKSUF | Chr | 1 | | 166 | 166 | Census Block Suffix |
| LAT | Num | 9 | 6 | 167 | 175 | Latitude coordinate - 6 decimal places |
| LATHEM | Chr | 1 | | 176 | 176 | Latitude Hemisphere (key):<br>N = Northern Hemisphere<br>S = Southern Hemisphere |
| LONG | Num | 10 | 6 | 177 | 186 | Longitude coordinate - 6 decimal places |
| LONHEM | Chr | 1 | | 187 | 187 | Longitude Hemisphere (key):<br>E = Eastern Hemisphere |



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# pdGeoTIGER - ZIP+4 GeoCoding Database

| Field | Type | Width | Dec | Start | End | Description |
|---|---|---|---|---|---|---|
| | | | | | | W = Western Hemisphere |
| LATRAD | Num | 18 | 15 | 188 | 205 | Latitude coordinate converted to radians for use in trigonometry functions - 15 decimal places |
| LONRAD | Num | 18 | 15 | 206 | 223 | Longitude coordinate converted to radians for use in trigonometry functions - 15 decimal places |
| LATDMS | Chr | 14 | | 224 | 237 | Latitude coordinate - Degrees/Minutes/Seconds |
| LONDMS | Chr | 15 | | 238 | 252 | Longitude coordinate - Degrees/Minutes/Seconds |
| UR | Chr | 1 | | 253 | 253 | Urban/Rural indicator (key):<br>U = Urban<br>R = Rural |
| COUSUB | Chr | 5 | | 254 | 258 | County Subdivision |
| SUBMCD | Chr | 5 | | 259 | 263 | Puerto Rico Subbarrio |
| PLACENAME | Chr | 52 | | 264 | 315 | Place name - Mixed Case |
| PLACENMUPR | Chr | 52 | | 316 | 367 | Place name - UPPER CASE |
| PLACE | Chr | 5 | | 368 | 372 | Place 5-digit FIPS code number |
| CONG | Chr | 2 | | 373 | 374 | Congressional District |
| SLDUPR | Chr | 3 | | 375 | 377 | State Legislature - Upper Chamber |
| SLDLWR | Chr | 3 | | 378 | 380 | State Legislature - Lower Chamber |
| SDELM | Chr | 5 | | 381 | 385 | School District - Elementary |
| SDSEC | Chr | 5 | | 386 | 390 | School District - Secondary |
| SDUNI | Chr | 5 | | 391 | 395 | School District - Unified |
| VTD | Chr | 6 | | 396 | 401 | Voting District |
| ZCTA3 | Chr | 3 | | 402 | 404 | 3-digit Zip Code Tabulation Area |
| ZCTA | Chr | 5 | | 405 | 409 | 5-digit Zip Code Tabulation Area |



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