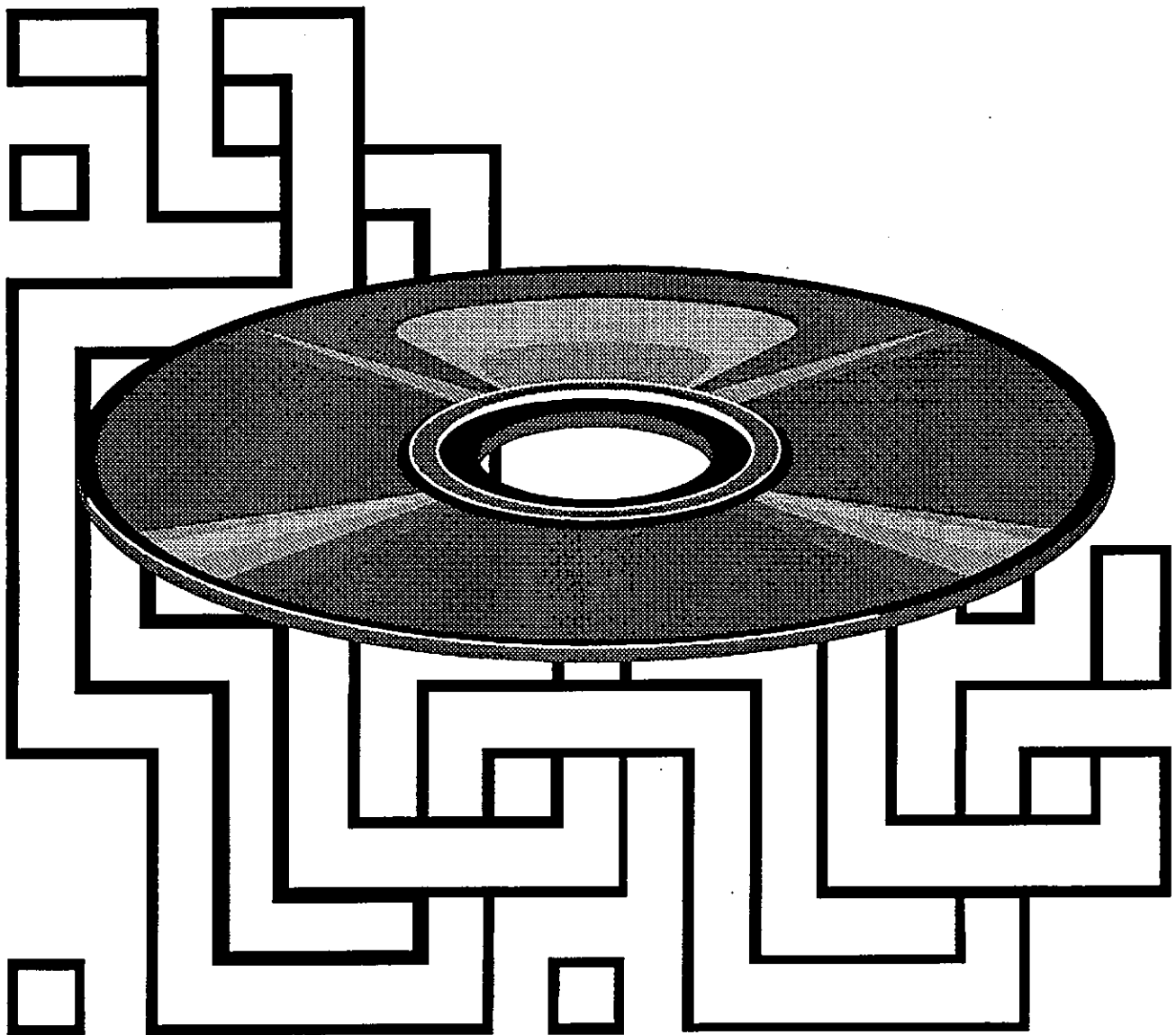


# Accessing Public Use Microdata Using QuickTab



# Accessing PUMS Data Using QuickTab

## Introducing QuickTab

**QuickTab** software was designed by the Census Bureau's International Statistical Program Center (ISPC) for use with microdata files. **QuickTab** is included on the Census Bureau's Public Use Microdata Sample compact discs. The software allows data users to design their own custom cross-tabulations and frequencies that can be viewed on-screen or printed to a wide variety of printers.

Designing custom cross-tabulations and frequencies with **QuickTab** is a relatively simple process once a minimal amount of time and effort is invested. An understanding of the PUMS file structure and some basic statistical terms will greatly facilitate your use of the software. Once mastered, **QuickTab** will allow you to produce custom data sets not available in any other Census Bureau product.

## Installing QuickTab

Before using **QuickTab**, you must install it on your computer. **QuickTab** will not work directly from the CD-ROM, because it cannot generate new files on the CD-ROM. **QuickTab** will work with almost any IBM or compatible personal computer.

To begin installation of **QuickTab** on your hard drive, please turn the page.



## What are PUMS?

The 1990 Public Use Microdata Samples (PUMS) show the full range of responses made on individual census questionnaires. The files contain records for a sample of all housing units, with information on the characteristics of each unit and the people in it. All identifying information is removed from the files to ensure the confidentiality of individual respondents.

These files allow data users, using the on-disc **QuickTab** software, to generate frequencies and cross-tabulations. For examples, with the PUMS files, you can design a cross-tabulation that details the number of persons 18 years and over that are not attending school by race, sex, Hispanic origin, or any of a variety of social characteristics.

The Public Use Microdata Samples were designed for areas of 100,000 or more persons, known as Public Use Microdata Areas (PUMAs). The standard PUMS products are the 5-percent and 1-percent samples for the United States and Puerto Rico, 10-percent samples for GUAM and the U.S. Virgin Islands, and a special 3-percent sample dealing specifically with the elderly population.

For more information on the PUMS files, refer to the *1990 Public Use Microdata Samples (PUMS) product profile*, available free of charge from Customer Services on 301/763-4100.

# QuickTab QuickStart

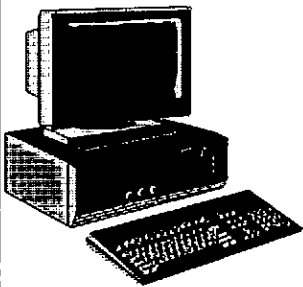
## Installing QuickTab

To begin installing QuickTab, place any PUMS compact disc into your CD-ROM reader. At the DOS prompt (C:\>), type the following three commands:

```
C:\> md QT
```

```
C:\> cd QT
```

```
C:\QT> copy D:\TOOLS\QUICKTAB\*.*
```



These commands create a subdirectory called "QT" on your hard drive and copy the QuickTab software from the PUMS compact disc to the QT directory. The QuickTab

software will take up about 1 megabyte of hard disk space. Now you are ready to start generating your own frequencies and cross-tabulations with QuickTab.

## Generating Frequencies

QuickTab allows data users to generate "*frequencies*." Frequencies are "...the number of measurements in an interval of a frequency distribution." A *frequency distribution* is "a set of intervals, usually adjacent and of equal width, into which the range of statistical distribution is divided, each associated with a frequency indicating the number of measurements in that interval." This QuickStart guide will demonstrate how QuickTab can generate frequencies. Understanding frequencies and frequency distribution is where QuickStart leaves off, and statistics kick in!

To begin generating frequencies, type:

```
C:\QT> FREQ [ENTER]
```

QuickTab prompts you for a User ID. Press [ENTER] without entering an identification. Next, QuickTab prompts you for a data dictionary name. Press [F2] to bring up a listing of data dictionaries. Select 90PUMS.dd and press [ENTER].

The following menu items appear across the top of the screen.

<b>RECORDS</b>	(Select population or housing data items or records)
<b>TABULATE</b>	(Produce frequencies)
<b>VIEW</b>	(View a file)
<b>PRINT</b>	(Print a file)
<b>DOS</b>	(Execute a DOS command)
<b>LOAD</b>	(Recall frequency settings)
<b>SAVE</b>	(Save frequency settings)
<b>END</b>	(Exit QuickTab)

You can navigate through the menu using the left and right arrow keys to "highlight" the menu item of your choice. Highlight the **RECORDS** menu item and press [ENTER] to begin generating a frequency.

In this example, we will determine the frequency of persons 18 years and over who are not attending school and live in housing units with more than four rooms. This involves using both **person** and **housing** records (see *What are PUMS?* inset on Page 1 for more information on PUMS content).

First, we will select the H-RECORD category, select and weight a data item, and then define its universe. Begin by highlighting the H-RECORD option:

```
H-RECORD [ENTER]
```

```
ROOMS [ENTER]
```

(The [ENTER] key is a toggle key. Each time it is pressed, it selects or de-selects a data item. Selected items are marked with a square.)

```
[ESC]
```

(Returns you to record menu once data items are selected.)

```
UNIVERSE (Y/N) (Highlight the "N" item).
```

```
[ENTER]
```

```
ROOMS [ENTER]
```

```
RELATION [ENTER] (Highlight the entry field).
```

# QuickTab QuickStart

< [ENTER]	(Not equal to).
FROM [ENTER]	(Highlight blank entry field. Note that a listing of options appear).
[ESC]	(You may either select one of the default relations, or design a custom relation by pressing [ESC]).
0 [ENTER]	(Enter "0" in the FROM field).
4 [ENTER]	(Enter "4" in the TO field).
[ESC]	(Returns you to record menu).
WEIGHT [ENTER]	(Highlight blank entry field and press [ENTER]).
HOUSWGT [ENTER]	(Choose HOUSWGT to inflate the counts to be representative of the actual population).
[ESC]	(Returns you to record menu).

In the above steps, you defined which housing records you wanted to include in your frequency; weighted the records; and defined a universe. Essentially, you requested housing units with more than 0 to 4 rooms to be included in your tabulation. In addition, you "weighted" the housing records to be more reflective of the actual data, as opposed to a simple summation of the sample data.

Let's check the H-RECORD field entries to make sure they were entered correctly. The entries should appear as follows:

## H-RECORD

Items available:	117
Items Chosen:	1
Universe:	Y
Weight:	HOUSWGT
Weight Decimals:	0

If the entries don't appear as displayed above, take a moment to correct them using the preceding instructions and then continue with the exercise.

Follow the instructions below to continue the frequency exercise.

<b>P-RECORD [ENTER]</b>	
AGE [ENTER]	(Select the AGE data item).
SCHOOL [ENTER]	(Select the SCHOOL data item).
[ESC]	(Returns you to record menu).
UNIVERSE (Y/N)	(Highlight the "N" item).
[ENTER]	(Highlight ITEM field and press [ENTER]).
AGE [ENTER]	(Select AGE from ITEM listing).
>= [ENTER]	(Select "greater than or equal" to from relation list).
18 [ENTER]	(Enter 18 in FROM entry field).
AND [ENTER]	(Select AND to begin defining second criteria: not attending school).
SCHOOL [ENTER]	(Select SCHOOL from ITEM listing).
= [ENTER]	(Select "equal to" from relation list).
notattendscho [ENTER]	(Select "notattendingscho" from list).
[ESC]	(Returns you to record menu).
WEIGHT [ENTER]	(Highlight blank entry field and hit [ENTER]).
PWGT1	(Select PWGT1 and hit [ENTER] to inflate the population counts to be representative of the actual population ).
[ESC]	(Return to to report menu).

At this point, you have finished defining your data items; weighting; and universe definition. The next step is tabulating the frequency.

# QuickTab QuickStart

Your P-RECORD field entry should appear as illustrated below:

## P-RECORD

Items Available: 132  
 Items Chosen: 2  
 Universe: Y  
 Weight: PWGT1  
 Weight Decimals: 0

The next step is to tabulate the selected records to generate the desired frequencies.

## Tabulation

- [ESC] (Returns you to main menu).
- TABULATE [ENTER]
- D:\ [ENTER] (Where "D:\:" is the designated CD-ROM drive).
- [F2] (Displays available \*.TXT files in current directory).
- PUMSAXss.TXT [ENTER] (Where "ss" equals the State postal abbreviation).
- [ENTER] (Accept the default file name, **FREQ.TBL** and begin processing. You may name the file any name at this point).

QuickTab will process the file and indicate the number of records processed. Once the processing is finished, your frequency table will be displayed onscreen. To view the table, use your arrow keys, [CTRL]-[PgUp], and [CTRL]-[PgDn]. Additional help is available by pressing the [F1] key.

See the sidebar, *QuickTab Frequencies* for a brief description of the headings in your QuickTab tabulation.

## QuickTab Frequencies

The headings in the QuickTab frequency tables (see sample below) contain valuable information about your generated frequency. These Frequency headings include:

**Total:** The total number of records which had the indicated value.

**Percent value:** The percentage of records which had the indicated value. The base of the percentage is all the selected records.

**% Def.:** The percentage of records which have defined values. The base of the percentage is all selected records excluding those which have values other than those defined in the Data Dictionary.

**%Valid:** The percentage of records which have an applicable response. The base of the percentage is all selected records excluding those which have values other than those defined in the Data Dictionary and those which have a not applicable (NA) response.

The Cumulative headings include:

**Total:** The cumulative number of records

**Percent:** The cumulative percentage calculated with total number of records selected.

For more information on column headings and specific naming conventions, refer to your QuickTab or PUMS documentation.

Data file: D:\PUMSAXCO.TXT

Record: H-RECORD

Universe: ROOMS <> 0:4

Weight: HOUSVGT

Item: ROOMS

Values	Frequency			Cumulative	
	Total	Percent	% Valid	Total	Percent
N-A-G0.....	-	-	..	0	.0
X1Room.....	-	-	..	0	.0
X2Rooms.....	-	-	..	0	.0
X3Rooms.....	-	-	..	0	.0
X4Rooms.....	-	-	..	0	.0
X5Rooms.....	261348	27.7	27.7	261348	27.7
X6Rooms.....	212616	22.5	22.5	473964	50.2
X7Rooms.....	171279	18.1	18.1	645243	68.3
X8Rooms.....	132957	14.1	14.1	778200	82.4
X9ormore rooms.....	166485	17.6	17.6	944685	100.0
Undefined.....	-	-	..	944685	100.0

# QuickTab QuickStart

## Viewing and Printing Tables

<b>[ESC]</b>	(Returns you to main menu).
<b>PRINT</b>	(Select Print from the main menu).
<b>FREQ.TBL [ENTER]</b>	(Select default table from table selection).
<b>NO</b>	(Select NO or YES, depending on printer. If in doubt, select NO).

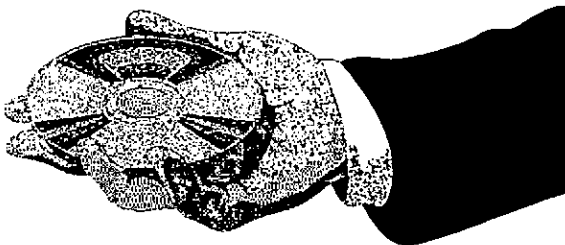
QuickTab will send the selected table to your printer. The resulting tables will match the tables you viewed a moment ago. Refer to your QuickTab documentation for information on printing to a file.

<b>VIEW</b>	(Select View from the main menu).
<b>FREQ.TBL</b>	(Select default table from table selection).

QuickTab will display the selected table onscreen. When you are finished viewing the table, press **[ESC]**.

## Saving a Table

To save a QuickTab table, select **SAVE** from the main menu screen. QuickTab will prompt you for a directory and file name, and automatically add the extension **\*.QTF**. The resulting file can be accessed by using the **LOAD** feature on the main menu. The file is then accessed by selecting the desired **\*.QTF** file from the displayed list.



## Cross Tabulations

QuickTab, when used with the 1990 Public Use Microdata (PUMS) files, allows data users to generate unique cross tabulations not available in any other Census Bureau product or report.

To begin using the Cross Tabulation program available within QuickTab, exit the Frequency program and return to the **C:\QT** subdirectory. At the **C:\QT**, type **CROSSTAB**.

**C:\QT> CROSSTAB [ENTER]**

When the software prompts you for a data dictionary, select **90PUMS.dd**.

**[F2]** (Brings up list of available data dictionaries).

**90PUMS.dd [ENTER]** (Selects the PUMS data dictionary).

Generating cross tabulations is a very similar process to generating frequencies. You may select either Housing and/or Person record types and define a column, row, and layer data item. In addition, these characteristics can be weighted. Just as with frequencies, cross tabulations can be printed to a file or printer, as well as saved and reloaded. To begin our sample cross tabulations:

**RECORDS** (Selects Records from the main menu).

**H-RECORD [ENTER]** (Selects record type).

**[ENTER]** (Press enter with row item column highlighted).

**UNITS1 [ENTER]** (Selects row item).

**[ENTER]** (Press enter with column item highlighted).

**ROOMS [ENTER]** (Selects column item).

**[ENTER]** (Press enter with layer item highlighted).

**KITCHEN [ENTER]** (Selects layer item).

# QuickTab QuickStart

- [ESC] (Returns you to Records menu).
- P-RECORD [ENTER]** (Selects record type).
- [ENTER] (Press enter with row item highlighted).
- RELAT1 [ENTER]** (Selects row item).
- [ENTER] (Press enter with column item highlighted).
- SEX [ENTER]** (Selects column item).
- [ENTER] (Press enter with row item highlighted).
- RELAT1 [ENTER]** (Select row item).
- [ENTER] (Press enter with column item highlighted).
- MARITAL [ENTER]** (Select column item).
- N** (Select NO by pressing the letter "N" in the Include in undefined (Y/N) column).
- [ENTER] (Press enter with row item highlighted).
- RELAT1 [ENTER]** (Selects row item).
- [ENTER] (Press enter with column item highlighted).
- MARITAL [ENTER]** (Selects column item).
- P** (Select Percentages by pressing "P" in the Count/Percent (C/P) column).
- At this point, you have defined three cross tabulation on person records, in addition to your housing record cross tabulation. The three housing tabulations differ in presentation. To generate the cross tabulations, [ESC] and select:
- TABULATE** (Select TABULATE from the main menu).
- PUMSAXss.TXT [ENTER]** (Select the correct data file for your area).
- CROSSTAB.TBL** (Accept the default name).

The generated table will show up on screen following processing. To print the tables, refer to the *Viewing and Printing Frequencies* section of this guide. Cross tabulations can also be saved and loaded like frequencies.

Count: RELAT1 by SEX

	Total:	Male:	Female
Total.....	170286:	84117	86169
Householder.....	65454:	45926	19528
Husband-wife.....	37297:	2748	34549
Son-daughter.....	49088:	25792	23296
Stepson-stepdaug.....	2763:	1426	1337
Brother-sister.....	1050:	598	452
Father-mother.....	721:	180	541
Grandchild.....	1748:	960	788
Otherrelative.....	1393:	658	735
Roomer-boarder-f.....	865:	511	354
Housemate-roomma.....	3189:	1854	1335
Unmarriedpartner.....	2496:	1016	1480
Othernonrelative.....	846:	429	417
Institutionalize.....	1404:	758	646
Otherpersonsingr.....	1972:	1261	711

A sample section of the generated cross tabulation is displayed above.

For more information on QuickTab, contact :

**System Software Group**  
 ISPC, Bureau of the Census  
 Washington, D.C. 20233-3600  
 (301) 763-4210  
 (301) 763-7589 (FAX)

For more information on PUMS, contact:

**Ms. Carmen Campbell**  
**Microdata Use Staff**  
 Data User Services Division  
 Bureau of the Census  
 Washington, D.C. 20233-3600  
 (301) 763-2005

For more information on Census Bureau training activities, or to comment on this guide, contact:

**Mr. Kevin Cross**  
**Training, Education, and Marketing Staff**  
 Data User Services Division  
 Bureau of the Census  
 Washington, D.C. 20233-3600  
 (301) 763-1510

# Accessing Public Use Microdata Areas Using QuickTab

## Public Use Microdata Areas

Public Use Microdata Sample data are available for geographic areas, known as Public Use Microdata Areas (PUMAs), each with at least 100,000 persons. The 5% PUMAs identifies every State and PUMAs primarily based on counties, groups of counties, and places. When these entities contain more than 200,000 persons, PUMAs can represent parts of counties, places, and so forth. None of these PUMAs on the 5% sample crosses State lines.

On the other hand, the 1% sample was based primarily on metropolitan/nonmetropolitan areas, and contains PUMAs which were made from whole central cities, whole metropolitan statistical areas (MSAs) or primary metropolitan statistical areas (PMSAs), MSAs or PMSAs outside the central city, groups of MSAs or PMSAs, and groups of areas outside MSAs or PMSAs. When the areas have more than 200,000 persons, 1% PUMAs can represent parts of central cities, MSA/PMSAs, and so forth. 1% PUMAs may cross State lines, in which case State codes are not shown. See the *Sample PUMAs Maps* on Pages 9 and 10.

## Accessing PUMAs Using QuickTab

QuickTab cannot directly access Public Use Microdata Areas (PUMAs) on compact disc. Only State level data can be directly accessed from the CD-ROM using QuickTab. Data users interested in accessing PUMA data must utilize a QuickTab utility called "PUMA2DSK.exe." PUMA2DSK copies a selected PUMA to your hard drive, which can then be accessed using QuickTab. To copy a PUMA to your hard drive, type the following commands:

**D: [ENTER]** (Where "D:\\" is your designated CD-ROM drive).

At the D:\ prompt, type the following command line, imputing the appropriate State abbreviation, PUMA code, sample size, and destination directory.

**D:\TOOLS\PUMAS\PUMA2DSK ss x ##### C:\**  
Where:

**D:\TOOLS\PUMAS** is the directory on the CD-ROM drive containing the executable file **PUMA2DSK.exe** and its associated index files.

**ss** is the State postal abbreviation where the PUMA you wish to use resides.

**x** equals the sample size you wish to use.

**A** equals 5% sample

**B** equals 1% sample

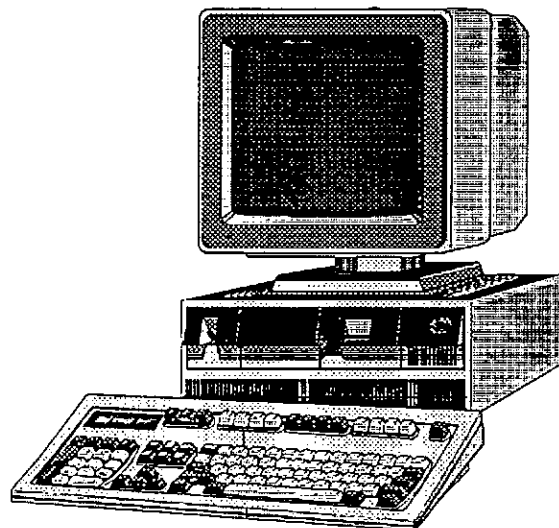
**#####** is the PUMA code for the PUMA you are copying to your hard drive. PUMA codes can be obtained from the PUMA boundary maps and equivalency files included with your technical documentation (see *User Note 1, PUMS Technical Documentation*).

**C:\** is the destination directory of the copied PUMA file. The file can be copied to the root directory or any subdirectory (eg: **C:\PUMS**). We recommended that you do not copy data files to your QuickTab subdirectory.

A completed line of code might appear as follows:

**D:\TOOLS\PUMAS\PUMA2DSK NC A 02800 C:\**

This command line would copy the 5% records for PUMA 02800 in North Carolina to your root directory. (See *North Carolina 5% PUMA Map*, page 9).



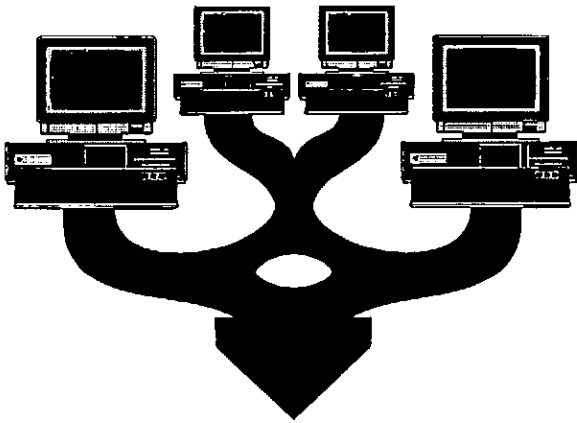


# Public Use Microdata Samples User Tips

## Accessing the New PUMS Data Dictionary

The Census Bureau has issued a revision of the Public Uses Microdata Sample (PUMS) data dictionary. The data dictionary (90PUMSX.dd) supercedes the original data dictionary (90PUMS.dd) issued with the Public Use Microdata Samples. The new data dictionary features more detailed breakouts of various data sets (eg: detailed race tabulations).

You can access the improved data dictionary by calling the Census Bureau's *electronic bulletin board* on (301) 763-7554. The new dictionary is under the *CD-ROM* submenu. If you have questions about accessing the new software, or are a new bulletin board user, contact Nancy Smith on (301) 763-1384. The bulletin board also contains several additional files that will help you use the PUMS data with QuickTab.

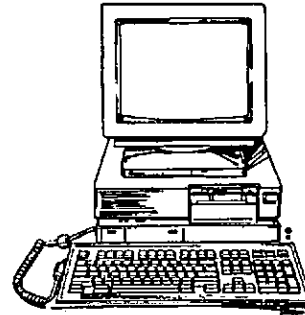


## Custom Distributions

QuickTab only gives distributions according to the values defined in the PUMSX.dd data dictionary. The data dictionary can be modified, however, with software available (at a cost) from the Census Bureau's International Statistical Program Center (ISPC). The software, *IMPS DATADICT*, will allow users to add or change an existing data dictionary. For example, the AGE data item can be modified to 5 and/or 10 year age groups.

To order the software, contact:

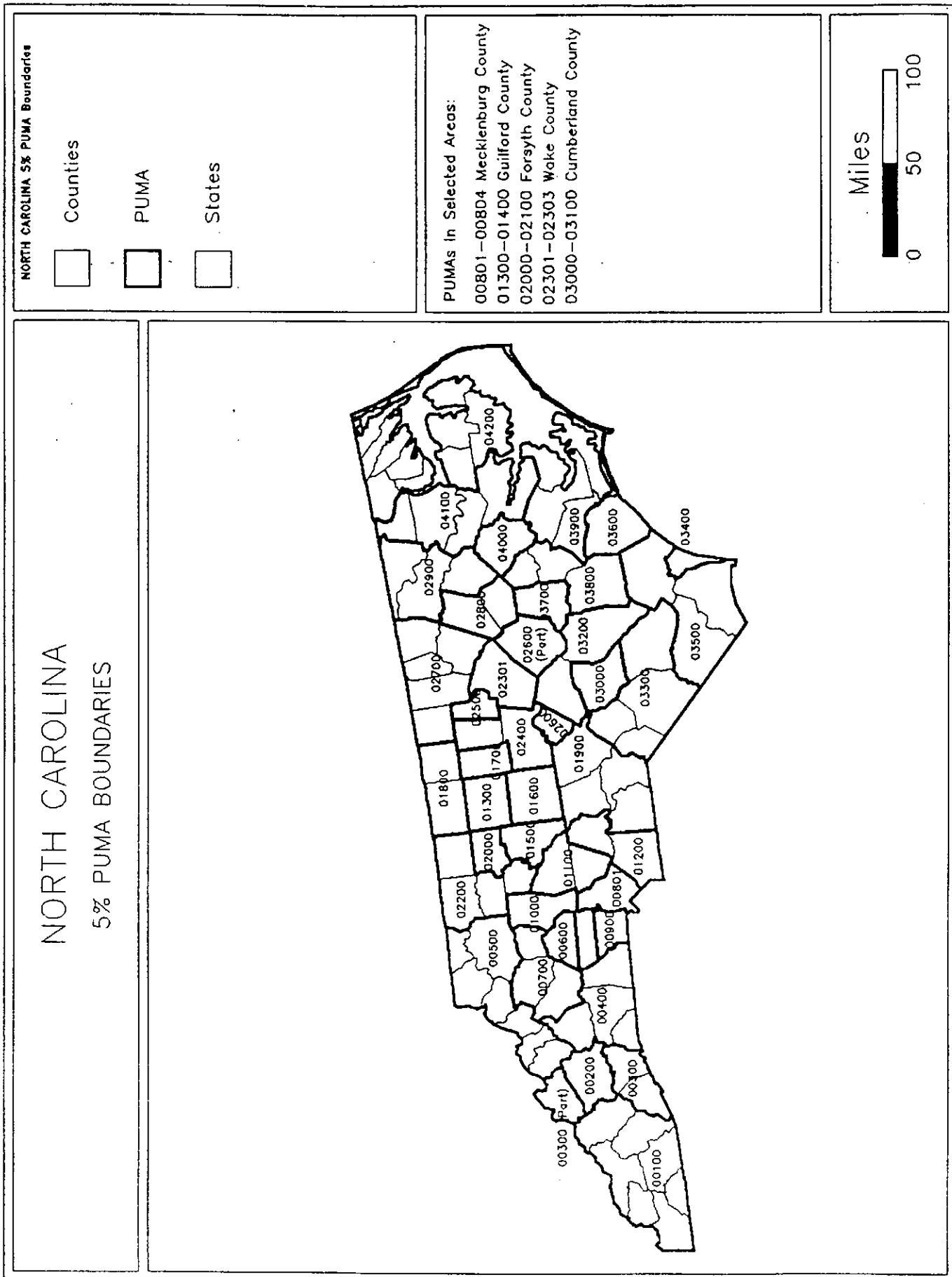
System Software Group  
ISPC, Bureau of the Census  
Washington, DC 20233-3600  
(301) 763-4210  
(301) 763-7589 (FAX)



## Accessing PUMS with Alternative Software Applications

In today's information processing environment, most standard statistical software packages are now capable of handling files in either hierarchical or rectangular formats. Most software packages, such as SAS, SPSS, BMDP, and some relational data base systems, will in fact rectangularize hierarchical files. Further, the manuals accompanying most packages contain samples of code showing how to process the files. Several of the packages also have extract procedures already coded in the software.

The 1990 PUMS files will be in an ASCII format, making them compatible with most software packages. However, the data user must be familiar with the processing system's limitations and the efficiencies of the procedures within the software packages. Certain software concerns will be addressed in the PUMS Technical Documentation, under the section, *How to Use This File*. Specific questions related to processing the PUMS files with private vendor software applications should be directed towards the vendor. Users may also write their own code to access the data and perform custom tabulations.



# NORTH CAROLINA 1% PUMA BOUNDARIES

## N. CAROLINA 1% PUMA Boundaries

- Counties
- PUMA
- States

PUMAs In Selected Areas:  
01000 Greensboro city  
01200 Winston-Salem city  
01901-01903 Wake County  
03901-03904 Mecklenburg County

