

You Can't  
Spell **RADIO R.O.I.**<sup>SM</sup>  
Without

# A Guide to Understanding and Using PPM Data

For PPM Radio Ratings  
Customers

August 2010



ARBITRON

# Introduction

The Portable People Meter™ service introduces a whole new era in radio ratings. It not only replaces paper and pencil diaries with electronic measurement, it also introduces new concepts and terms in audience measurement.

For example, the word “station” no longer refers to just what is being broadcast on the AM or FM radio dial. In the PPM™ service, “station” can also refer to digital broadcasts, including HD Radio®, HD multicasts and Internet streams.

**This guide introduces our radio and agency clients to this new vocabulary and provides an overview of how the PPM data can be used.** PPM terms and concepts are clustered together to provide a framework of how they relate and work together. An index is provided to help you quickly find specific words.

As an introductory overview, this guide should never be used in place of the *PPM Description of Methodology* (DOM). The DOM contains the most thorough and up-to-date information available about the PPM service, and you are urged to refer to it frequently. It is available to PPM subscribers at [www.arbitron.com](http://www.arbitron.com).

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# Basic PPM Vocabulary

This overview will help you understand PPM vocabulary and expanded definitions for long-established broadcasting and advertising terms in a digital age.

For precise definitions, please refer to the *PPM Description of Methodology* at [www.arbitron.com](http://www.arbitron.com).

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**Some commonly used terms in the Arbitron Diary service will continue to be used in the PPM service with no change in definition.**

## **Daypart**

A specific time period during the day when people could be exposed to a station's broadcast. For example, Monday-Sunday 6AM-Midnight, Monday-Friday 6AM-10AM, Weekend 6AM-7PM. With software that uses respondent-level data, clients can use industry-standard dayparts or create and analyze their own custom dayparts.

## **Demographic Groups (Demos)**

A segment of the population classified according to specific characteristics, such as sex, age, race, ethnicity, income, etc. A demographic group can be any one or any combination of these characteristics.

## **Metro (Metro Survey Area or MSA)**

The primary reporting geography of local radio. The Metro Survey Area usually includes the cities of license for the majority of the local radio stations and the counties where these cities are located. About half of the Arbitron radio Metros correspond to the federal government's market definitions (Metropolitan Statistical Areas); the other half deviate in some way from the government MSAs. These exceptions were made to take into account such factors as historical market definitions, local trade and commuting patterns and local radio listening patterns.

### **P1 (First Preference)**

A station to which a specific demographic listens a majority of its time. P1 listeners are vital to a station's ratings, as they usually constitute the majority of a station's Average Quarter-Hour audience.

### **Radio Market Report (RMR or Arbitron eBook<sup>SM</sup>)**

The radio audience estimates and other data that Arbitron gathers and compiles for specific markets. These reports are sold by Arbitron and the data can only be used by stations, agencies and advertisers that purchase the reports.

### **Subscribing Station**

Stations that are licensed to use Arbitron data.

### **Target Demo (Target Audience)**

The specific demographic group that is served by a radio station or sought out by agencies and advertisers.

### **Total Line Reporting**

The reporting of audience estimates for stations that simulcast 100% of its broadcast day—including commercials—under a single set of call letters (e.g., the "primary" station's call letters) throughout the survey period. It should also be noted that an over-the-air station and an Internet-streaming station can be combined to be reported as a single station.

**Some terms from the Arbitron Diary service will continue to be used in the PPM service, but certain features of the PPM service have changed the way they are used or defined.**

### **In-Tab (Usable Sample)**

The panelist's data that are included in the calculation of the PPM audience estimates. To be included, adults 18+ must carry the meter for a minimum of eight hours in a day and panelists aged 6-17 must carry the meter for a minimum of five hours in a day.

### **Minimum Reporting Standards (MRS)**

Criteria used to determine which encoded stations qualify for inclusion in Arbitron Radio Market Reports. For the PPM service, estimates can be reported for an encoded station if at least one In-Tab PPM panelist was exposed to a minimum of five minutes within one quarter-hour and the station had an average Weekly Cume Rating of at least 0.495, Monday-Sunday 6AM to Midnight during the weekly or monthly reporting period.

### **Listening Location**

Locations for which audience estimates are reported. The PPM reports whether exposure occurred at the panelist's home or out of the home. This differs from Diary measurement, which has four listening locations: at home, at work, in car and "other."

### **Metro Totals**

The total reported exposure to encoded media in the Metro. It can refer to AQH or Cume estimates. It is also referred to as Persons Using Measured Media (PUMM), and is comparable to Persons Using Radio in the Diary service.

**Station**

The introduction of digital technology and Internet has broadened the definition of a radio station. In the PPM ratings service, station refers to FCC-licensed AM and FM radio broadcasts in analog and digital formats, Internet streams of a licensed radio station, and HD Radio® primary or multicast broadcasts. It could also refer potentially to satellite radio broadcasts should the broadcasts be encoded.

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**Some terms are new as a result of the PPM service.****Average Weekly Time Exposed (AWTE) or Average Daily Time Exposed (ADTE)**

See “Time Spent Listening” in the “Audience Estimates” section.

**Average Daily In-Tab Panelists**

The average daily percentage of In-Tab persons in a given period. This is usually calculated for a survey week. Average Daily In-Tab is the basis for all PPM Average Quarter Hour calculations and Average Daily Cume calculations.

**Average Weekly In-Tab Panelists**

These are the panelists who meet the Average Daily In-Tab requirement at least six days out of the seven-day survey week. Average Weekly In-Tab is the basis for Average Weekly PPM Cume calculations.

**Exposure**

Because the PPM service is based on encoded audio broadcasts that are recognized by meters carried by panelists, the term “exposure” is sometimes used instead of “listening,” although certain terms such as “Time Spent Listening” continue to be used with PPM methodology.

**Encoded Station**

A station (FM/AM/HD Radio/Internet) whose broadcasts include unique inaudible codes that can be “heard” by the meters carried by PPM panelists. Only encoded stations can be measured in the PPM service. A station is not required to subscribe to the PPM data in order to encode.

**Install Size**

This is the target number of PPM panelists in a market that is available to measure.

**Panel**

A group of people in a radio market who have been recruited to carry the PPM. This term is comparable to “Sample” in the Diary service.

**Panelist**

A person who has agreed to participate in the PPM ratings service and has successfully installed his or her PPM equipment.

**PPM Monthly Data**

This is the basic survey period for data that is used in advertising transactions. The “monthly” PPM surveys are actually 28-day surveys conducted 13 times per year.

**PUMM (Persons Using Measured Media)**

The total reported exposure to encoded media in the Metro. It can refer to AQH or Cume estimates. It is also referred to as Metro Totals, and is comparable to PUR (Persons Using Radio) in the Diary service (also: PUMM Percent %—the percentage of people in a target population who are exposed to media being measured by the PPM).

### **PPM Weeklies™**

PPM data that are collected over a seven-day period, Thursday through Wednesday, and released weekly to subscribing PPM radio stations. PPM Weeklies are not released to advertising agencies, nor can they be loaded into software that conducts advertising transactions.

### **Time-Shifted Exposure**

Exposure that occurs at a time that is different from the original broadcast time. The PPM system can detect time-shifted listening of encoded stations (assuming the time-shifted program contains the originally broadcast PPM codes). Podcasts are one method that listeners use to shift the time they want to hear a broadcast.



# Audience Estimates

There are a number of ways to measure and evaluate a station's performance:

- Average Quarter-Hour Rating is the basic unit of measurement for advertising transactions. An AQH rating is comparable to other radio stations and broadcast media across dayparts.
- Cume indicates the total number of different people a station reaches in a given period and is comparable to "circulation."
- Time Spent Listening (TSL) indicates how long a panelist is exposed to a station in a given timeframe.

Arbitron reports three basic audience estimates.

*Persons:* the estimated number of persons listening.

*Rating:* the percent of the survey area population listening to a station.

*Share:* the percent of all radio listening that occurs with a particular station.

Here's a review of how these measurements are calculated and how they can be used.

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## Quarter-Hour

The basic unit and smallest time period for which listening is credited (the use of the quarter-hour as a standard in broadcast advertising research dates back to early days of radio when programs were typically 15 minutes long). Stations receive credit for a quarter-hour of listening when a station receives at least five minutes of exposure within one of the four 15-minute periods in the clock hour (:00-:15, :15-:30, :30-:45 or :45-:00). The five minutes of exposure do not have to be contiguous, but they do have to occur in the same quarter-hour.

### Average Quarter-Hour (AQH) Persons

The number of persons exposed to a station in an average 15-minute period within a given daypart. AQH Persons helps to estimate the number of listeners to a station.

### Average Quarter-Hour (AQH) Rating

The estimated number of people exposed to the station (AQH Persons) as a percentage of all of the people in the survey area, within a given demographic and daypart.

*How it is used:* This estimate indicates how popular each quarter-hour of a station's broadcast is among the entire population of a market. A rating of 1 represents 1% of the population. AQH ratings are used to determine Cost per Point and can be compared to TV ratings. It is calculated by dividing the number of Average Quarter-Hour Persons by the population within the same sex/age group.

$$\frac{\text{AQH Persons}}{\text{Population}} \times 100 = \text{AQH Rating (\%)}$$

### Average Quarter-Hour (AQH) Share

The percentage (or share) of radio listeners within a given demographic and daypart.

It is calculated by dividing the Average Quarter-Hour Persons by the Total number of Average Quarter-Hour Persons in the Metro.

$$\frac{\text{AQH Persons}}{\text{Metro AQH Persons}} \times 100 = \text{AQH Share (\%)}$$

### AQH Composition

The size of a station's AQH target audience relative to its total AQH audience.

To obtain AQH audience composition, divide target AQH Persons by total P6+ AQH Persons.

$$\frac{\text{Target AQH Persons}}{\text{Total P6+ AQH Audience}} = \text{AQH Composition}$$

## Turnover

Reflects the relationship between AQH and Cume. It can be measured using any time period during a week day.

*How it is used:* It provides insight into a station's audience. Lower turnover equates to longer Time Spent Listening. Turnover can be calculated using any time period, but most commonly Daily Cume Persons and Weekly Cume Persons.

It is calculated by dividing Cume Persons by AQH Persons.

$$\frac{\text{Cume Persons}}{\text{AQH Persons}} = \text{Turnover Factor}$$

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## Cume

Cume is an estimate of how many different people are exposed to a station in a given time period. (Cume is also sometimes referred to as "unduplicated audience," "reach" or "circulation.") a person must have qualified for at least one quarter-hour of credit (based on the AQH crediting rule described above) in order to be included in a Cume calculation.

### Cume Persons

The most basic cumulative calculation is Cume Persons. This is the estimated number of different persons exposed to an encoded station for at least five minutes in a quarter-hour. This estimate is expressed in hundreds (00).

### Average Daily Cume Rating

The number of different persons exposed to an encoded station for at least five minutes in a quarter-hour during an average day in a survey period.

*How it is used:* A Cume Rating of 20 means that a station reached 20% of the population in a given demographic.

To obtain Average Daily Cume Rating, divide the Daily Cume Persons by the total number of P6+ Cume Persons.

$$\frac{\text{Daily Cume Persons}}{\text{P6+ Cume Persons}} \times 100 = \frac{\text{Average Daily Cume Rating}}{\text{Population}}$$

### Average Daily Cume Composition

The size of an encoded station's Cume target audience relative to its total Cume audience.

*How it is used:* This calculation is similar to AQH and provides an indication of how efficiently a radio station is reaching its target audience.

Average Daily Cume Composition is calculated by dividing the target Cume Persons by total P6+ Cume Persons.

$$\frac{\text{Target Average Daily Cume Persons}}{\text{Total P6+ Average Daily Cume Audience}} = \text{Average Daily Cume Composition}$$

### Average Weekly Cume

The average number of different persons exposed to an encoded station for at least five minutes in a quarter-hour per week.

### Exclusive Cume

The number of different persons exposed to only one encoded station during a specific daypart or survey period.

## Cume Rating

The estimated percentage of a given demographic that is reached by a station.

It is calculated by dividing a station's Cume Persons by the population for the specified demographic.

$$\frac{\text{Cume Persons}}{\text{Population Group}} \times 100 = \text{Cume Rating (\%)}$$

## Cume Duplication

This estimate answers the question, "What percentage of my station's audience also listens to another station?" It is the percentage of Cume Persons for one station that was exposed to a second station.

*How it is used:* In selling advertising, stations that duplicate the least will add the most reach to a radio schedule while stations that share the most audience will yield a higher schedule frequency.

## Time Spent Listening (TSL)

It is an estimate of how long the average panelist was exposed to a particular station or stations for a specific time period. It is the equivalent of Average Time Exposed, Daily or Weekly.

*How it is used:* TSL trends are helpful in determining if programming decisions are having an effect on the audience.

It is calculated by dividing the total amount of listening in quarter-hours by the total number of listeners.

$$\frac{\text{Hours in a Time Period} \times \text{AQH Persons}}{\text{Cume Persons}} = \text{TSL in Hours}$$

# Buying and Selling

Here is an overview of the different ways audience estimates are put to use to buy and sell air time on a radio station, and the different calculations used by agencies and advertisers.

## **70=100 Target Rating Point Conversion**

The introduction of PPM measurement caused radio station AQH estimates to vary from the Diary system, yet the actual number of listeners to these radio stations didn't change. To help buyers and sellers of radio advertising adjust to this change in Target Rating Points, Arbitron created conversion grids for all PPM markets that account for the delivery differences. The average of these conversions (using the most popular sales demographics and different dayparts) is that 70 meter Target Rating Points equal 100 diary Target Rating Points. Of course this conversion will vary according to daypart, age cell, sex and market.

## **Cost per Point (Cost per Gross Rating Point)**

The average cost of one Gross Rating Point in a given advertising schedule.

It is calculated by dividing the total cost of the schedule by the total number of Gross Rating Points the schedule is expected to deliver.

$$\frac{\text{Cost of the Schedule}}{\text{GRPs in the Schedule}} = \text{Cost Per Point}$$

## **Cost per Thousand (CPM)**

The estimated cost of each 1,000 Gross Impressions delivered by a schedule.

It is calculated by dividing the Cost of the Schedule by the Gross Impressions and multiplying by 1,000.

$$\frac{\text{Cost of Schedule}}{\text{GI}} \times 1,000 = \text{CPM}$$

## Currency Data

Audience estimates that are to be used for the buying and selling of radio advertising.

## Frequency

The average number of times an individual is exposed to an advertising message.

It is calculated by dividing Gross Impressions by the reach of the advertising schedule.

$$\frac{\text{Gross Impressions}}{\text{Reach of Schedule (Persons)}} = \text{Frequency}$$

## Gross Impressions (GIs)

The total number of times a radio commercial/spot will be heard by a station's audience in a given schedule. This number could include people who have heard the commercial multiple times.

GIs are calculated by multiplying the AQH Persons estimate for a particular daypart by the number of spots to be run in that daypart. The GIs for the individual dayparts are then added together to obtain the total GIs that an advertising schedule will deliver.

$$\text{AQH Persons} \times \text{The Number of Spots in an Advertising Schedule} = \text{GIs}$$

## Gross Rating Points (GRPs)

The sum of all the rating points that an advertising schedule will deliver.

GRPs are calculated by multiplying the AQH Rating for each daypart by the number of spots to be run in a daypart.

$$\text{AQH Rating for Each Daypart} \times \text{The Number of Spots in an Advertising Schedule} = \text{GRPs}$$

## **Net Reach**

The number of different persons reached in an advertising schedule.

*How it is used:* Reach is one measure used to evaluate the effectiveness of an advertising schedule.

## **Pre-currency Data**

PPM audience estimates that are released to a market to allow clients to become familiar with the PPM ratings before they become the currency data for the market. Pre-currency data is usually released for the two survey months preceding the first release of currency data. Pre-currency data cannot be used for buying/selling until after the release of currency data.

## **Reach**

The number of people exposed to the airing of a commercial.



# Survey Research

The intricacies of survey research are too complex to be covered in this guide.

However, here are selected terms used in the PPM research methodology. Please refer to the *PPM Description of Methodology* for more information.

## **Random Sampling**

This form of research helps to eliminate biases and ensure that a survey properly reflects the listening habits of the market. To meet that standard, every household in the market should have a chance of being selected to be included in a survey. In statistical terms, the probability of selection has to be either equal or known for every member of the population.

## **Sample Frame**

The population within a defined geographic area from which potential respondent households are randomly selected. The sample frame can be stratified by age, sex and geography.

## **Sample Target**

The installed sample size goal for a particular Metro.

## **Sample Turnover**

Occurs when a household leaves the PPM panel and is replaced by another household. All households are phased out of the panel after two years, but they typically leave the panel earlier.

# Measuring the Performance of the Survey

The Portable People Meter™ ratings service is based on a research methodology that is different from the Diary service in several important ways. This means there are different ways of measuring how well a service is performing and how well the ratings reflect the marketplace.

The following overview highlights how Arbitron measures the performance of its PPM service. For more detailed information, please refer to the *PPM Description of Methodology*.

## **Compliance Rate**

The percentage of PPM panelists eligible to be included in the In-Tab sample. A panelist may be ineligible because he or she was away from home for an extended time, or for a number of other reasons.

A market's compliance rate is determined by dividing the number of In-Tab panelists by the number of In-Tab panelists plus the number of panelists who did not meet the minimum compliance standard.

## Designated Delivery Index (DDI)

A measure of sample delivery that indicates how the PPM service delivers specific demographic groups, such as race/ethnicity and age cells. It is based on how well Arbitron delivers on its In-Tab goals. A 100 DDI is considered ideal.

DDI is calculated as follows:

$$\frac{\text{Demo or Geo Average Daily In-Tab}}{\text{Demo or Geo Population Percent}} \times \text{Average Daily Target} = \text{Designated Delivery Index}$$

DDI reflects the extent to which the average daily In-tab sample aligns with “perfect” sample distributions based on the population universe and the P6+ In-Tab target. Unlike a traditional proportionality index (which measures share of In-Tab sample by demo compared to the universe), DDI is not a share statistic and is not affected by higher or lower actual In-Tab results for other demos.

## Household (Basic Household)

The first group of households selected for inclusion in the PPM panel.

## Household (Alternate Household)

A supplemental, or backup, group of households selected for inclusion in the PPM panel should any Basic Households decline to participate. Alternate households are within geographic proximity and have similar demographic characteristics to Basic Households. The use of alternates helps to ensure that the sample is representative and randomly selected. Alternate Households are selected using the same stratification and selection process used to select the Basic Households.

## **In-Tab Rate**

The percentage of installed PPM panelists who carry their meters for a sufficient amount of time to be included in the audience tabulations (In-Tab) for that day. To be considered "In-Tab," the minimum amount of time the meter must be in motion is eight hours for Adults 18+ and five hours for Children 6-17.

The In-Tab rate is calculated by dividing the number of In-Tab panelists by the total number of installed panelists.

$$\frac{\text{In-Tab Panelists}}{\text{Total Number of Installed Panelists}} = \text{In-Tab Rate}$$

## **Panel Performance**

Method of determining how well the PPM panel reflects the market. Panel Performance may be gauged with DDI, Average Daily In-Tab rate and compliance rate.

## **Proportionality Index**

A report that measures how the proportion of a specific PPM demo compares to the percentage of the population represented by that demographic.

## **Sample Performance Index (SPI)**

A measure used as a substitute for Response Rate in some panel design applications and for television meter panels. In a sample design that uses SPI, two random samples are drawn; the first is a sample of Basic Households. Ideally, we would want all eligible Basic Households to agree to be in the panel. When a Basic Household cannot be reached or refuses to participate, the household is replaced with an Alternate Household, one that comes from a separate random sample. In PPM, SPI is the percentage of persons in Basic Households who were In-Tab over a given period of time over the total number of persons In-Tab.

### **Target In-Tab Rate**

Not all PPM panelists can be expected to wear a meter every day or be counted every day in a survey period, so Arbitron has placed enough meters to ensure that a 75% Daily In-Tab Rate on a P6+ basis will create a statistically reliable sample.

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**PPM ratings are based on audience estimates and are the opinion of Arbitron and should not be relied on for precise accuracy or precise representativeness of a demographic or radio market.**



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