Measurement Functions User's Guide

(AT6030D)

ATTEN®
INSTRUMENTS

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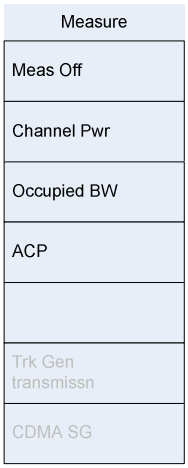
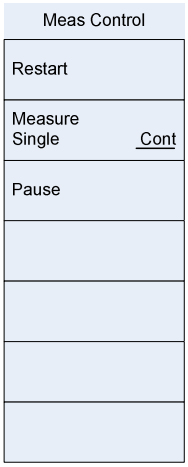
1. Menus

The Measure menus consist of the following ones. The Measurement Functions consist of Channel Power, Occupied Bandwidth, and Adjacent Channel Power.



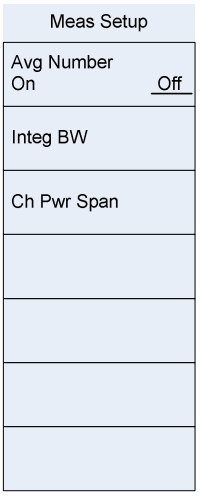
[Figure 2-1] Measure menus

The measure control menus consist of the following ones.

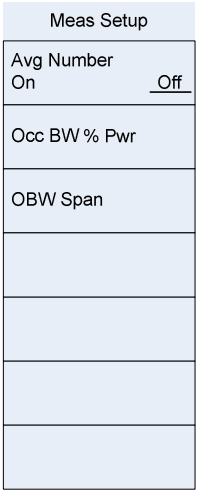


[Figure 2-2] Measure control menus

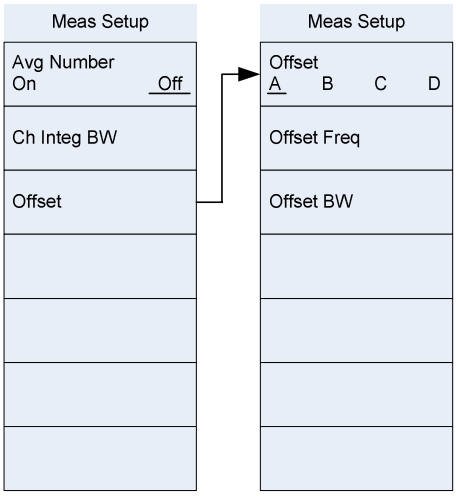
Each setup menu of the Measurement Function consists of the following ones.



[Figure 2-3] Measure setup menus (Channel Power)



[Figure 2-4] Measure setup menus (Occupied Bandwidth)



[Figure 2-5] Measure setup menus (Adjacent Channel Power)

The measure setup menus show different ones according to the measurement function currently chosen.

2. Operations

2-1. Channel Power

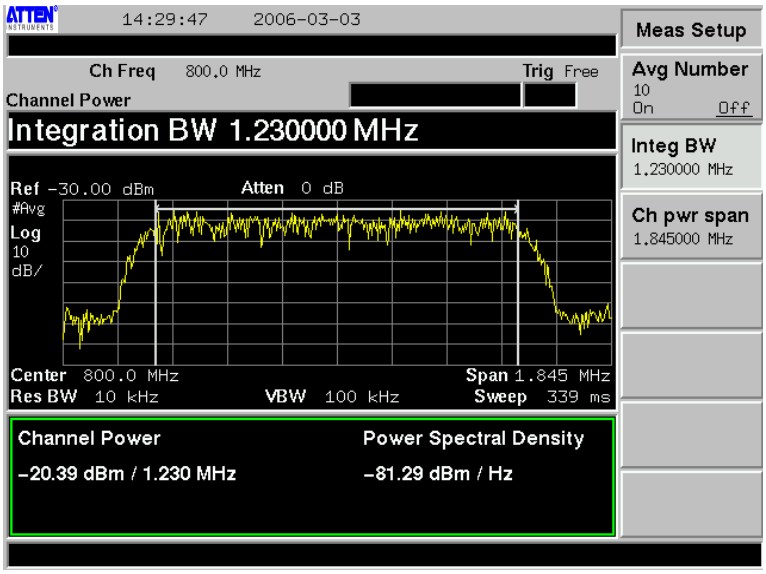
The channel power measurement is to measure channel power and power spectrum density within the channel bandwidth which is set by a user. Figure 2-6 shows the channel bandwidth currently set in a channel power measurement window.

In the Measure menu, when the Meas setup key is pushed after the selection of the channel power measurement, currently set channel bandwidth is displayed in the channel power measurement window.

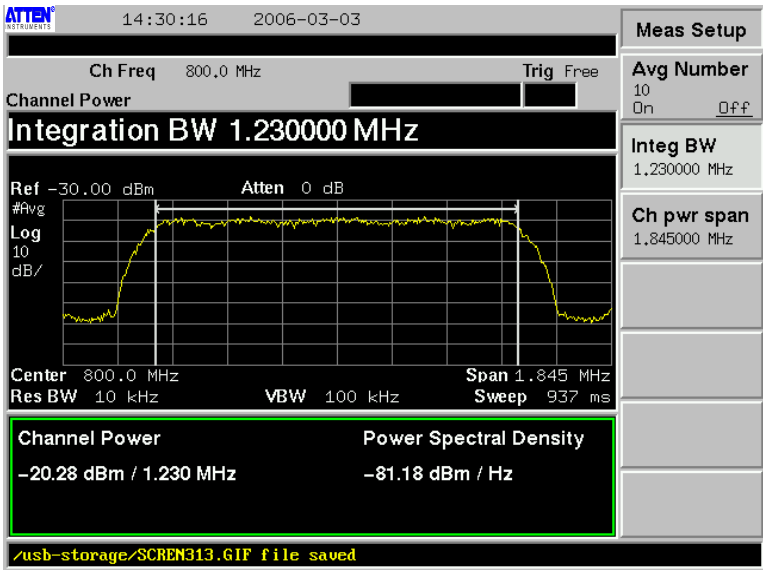
To calculate channel power, the Integration Bandwidth (IBW) method is used. This method uses the spectrum data basically, which is obtained from a spectrum analyzer. Accordingly, it is important to set correct RBW of a spectrum analyzer for the calculation of channel power.

$$RBW = k \times span / N$$

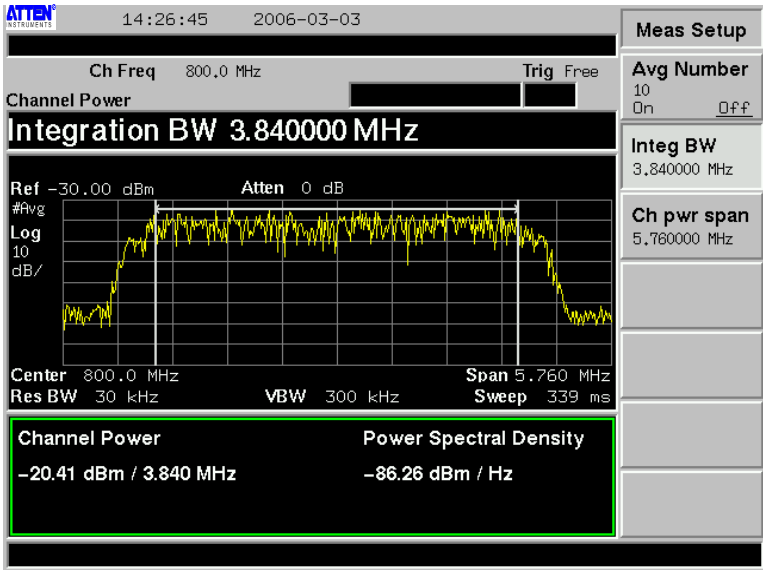
In the above formula, the k value is between 1.2 and 4.0. N is the number of trace pointers. The number of trace pointers in our spectrum analyzer is 400. Generally, VBW is set to more than 10 times of RBW in the power channel calculation.



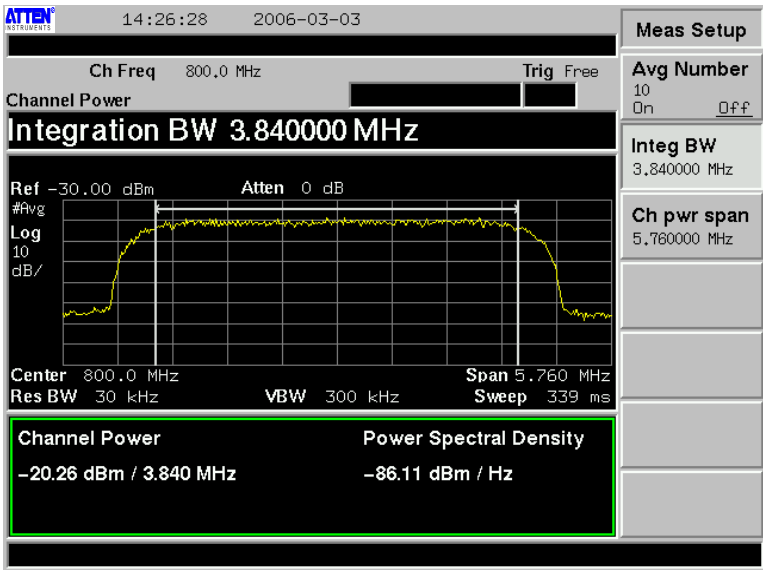
[Figure 2-6] Channel Power Measurement (CDMA 2000)



[Figure 2-7] Channel Power Measurement (CDMA 2000 Average Performance)



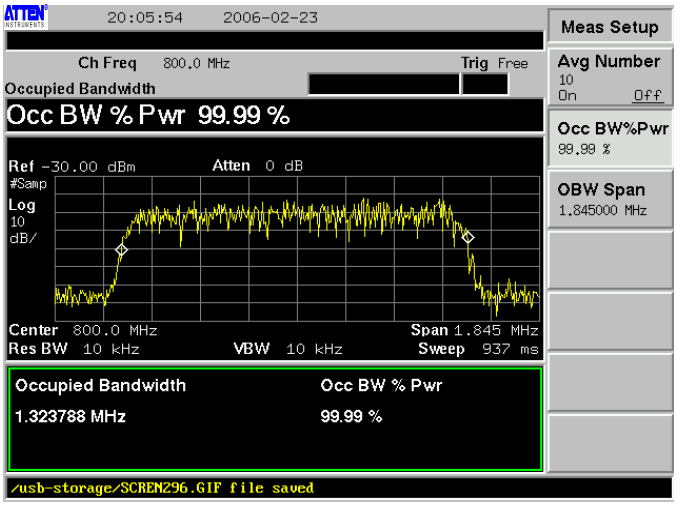
[Figure 2-8] Channel Power Measurement (WCDMA)



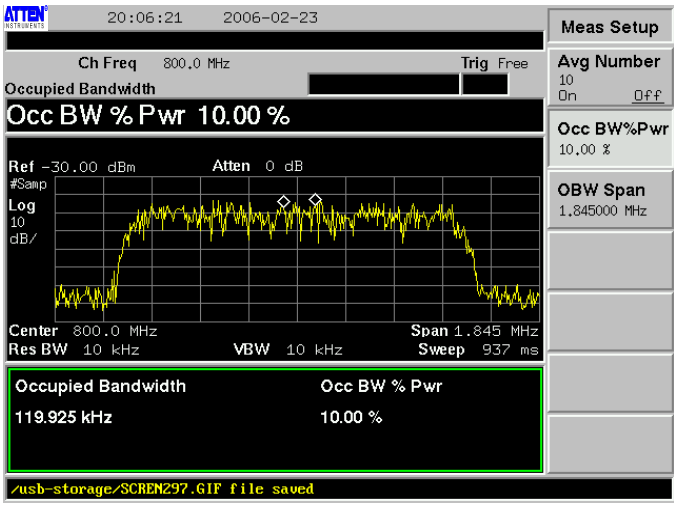
[Figure 2-9] Channel Power Measurement (WCDMA Average Performance)

2-2. Occupied Bandwidth

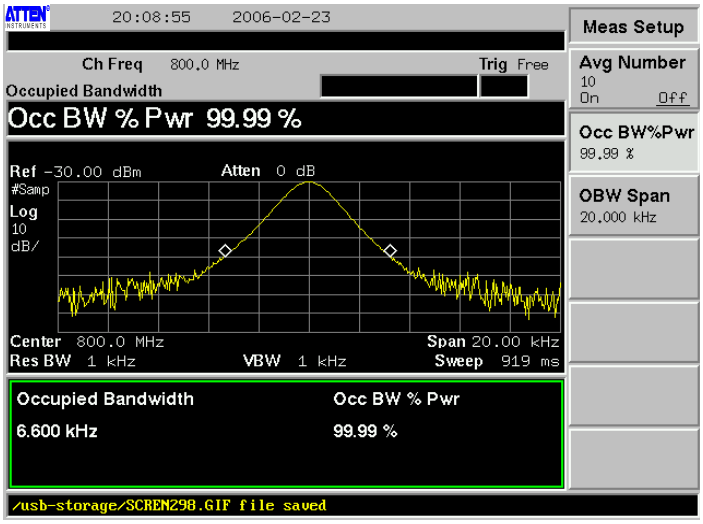
It measures the occupied bandwidth of the signal indicated in a window. Our spectrum analyzer has a feature of the occupied bandwidth measurement, which calculates based on the measurement data in a window. This feature is to calculate frequency bandwidth within an occupied rate set by a user out of the total power. The occupied rate range can be set between 10 and 99.99%.



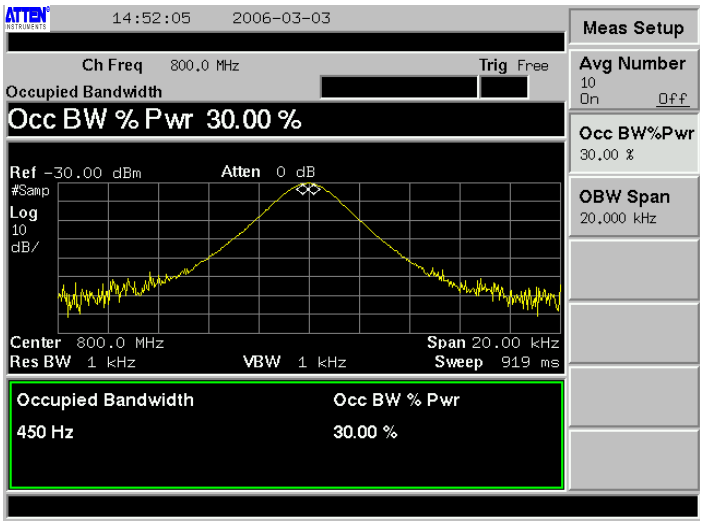
[Figure 2-10] Occupied BW Measurement (99.99%)



[Figure 2-11] Occupied BW Measurement (10.00%)



[Figure 2-12] Occupied BW Measurement (99.99%)



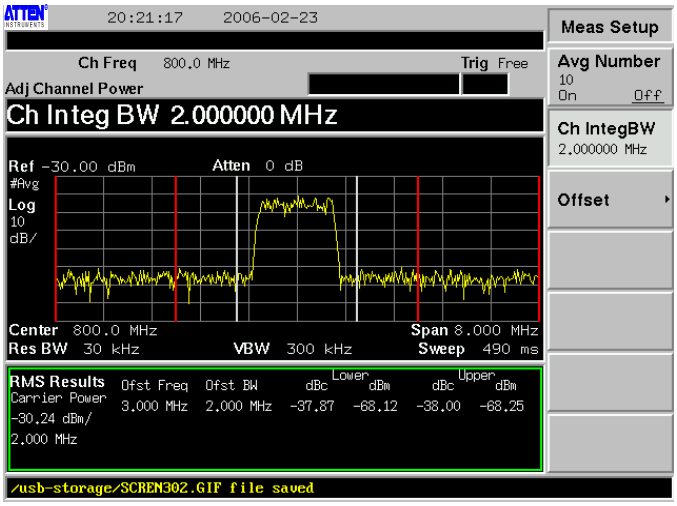
[Figure 2-13] Occupied BW Measurement (30.00%)

2-3. Adjacent Channel Power

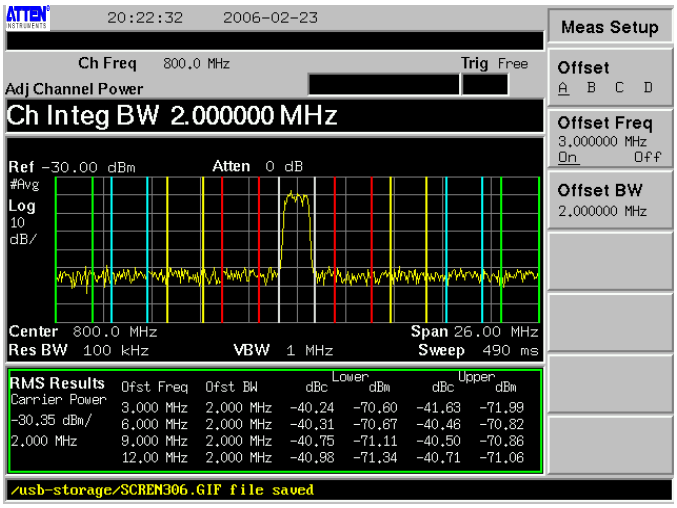
The ACP measurement is to measure power which is leaked from the main channel to the adjacent channel. By showing the both powers of the main channel and adjacent power at the same time for a user, it measures the power which is leaked to the adjacent channel. The number of adjacent channels can be set up to four simultaneously.

Ch IntegBW sets the channel bandwidth of the main channel.

In the Offset menu, the adjacent channel can be set. Four adjacent channels are represented as A, B, C and D respectively, and they can be distinguished by color in the ACP measurement window. The colors are adjacent channel A (Red), B (Yellow), C (Blue), D (Green). In Offset Freq, the frequency difference between the center of the main channel and center of the offset channel. From Offset BW, channel bandwidth of the Offset channel can be set.



[Figure 2-14] Adjacent Channel Power Measurement (Offset 1)



[Figure 2-15] Adjacent Channel Power Measurement (Offset 4)