

## Exhibit 14

### SECTION 2.1049 MEASUREMENT OF OCCUPIED BANDWIDTH

The occupied bandwidth of the **BCR/ FCC ID: AS5CMP-24** was measured using a Rohde & Schwarz ESMI EMI Test Receiver and the results recorded on a HP Model 7470A Plotter. The RF power level was measured and adjusted via the test setup in Figure 14A. The calibrated RF output from the transmitter was reduced (to an amplitude usable by the spectrum analyzer) by using a calibrated attenuator. This attenuation was offset on the display. The power of the signal was referenced to the top of the Limit mask by setting the resolution bandwidth to be  $\geq 1.23$  MHz (typically 1.3 MHz) and verifying that the signal peak was at the mask limit. The resolution bandwidth was then reduced to 30 kHz and the signal verified to be at the -16.12 dBc level which corresponds to the corrected RF power level for a 30 kHz resolution bandwidth. This power calibration method was performed for each carrier at the specific channel of interest. RF Power was simultaneously measured using a HP- RF Power Meter operated with a sufficient offset to ensure linearity for CDMA signals. The top of the mask therefore accurately corresponds to the specified power of 0.001 watts / 0.0 dBm for the **CBR** output.

#### Results:

*The attached plots document the BCR's compliance with FCC regulations. The frequencies and channels used are tabulated on the bottom of each plot. BCR output signals are plotted at each frequency/ channel. Plots are provided for Left Edge, Center and Right Edge of each Cellular band evaluated. These frequencies were chosen to show the occupied bandwidth in the channels in each of the Cellular Bands in which this radio can be operated, in compliance with Section 22.917 of the Commission code PN-3383 Section 4.5.1.3.1. There are no SAT or Wide band data signals associated with CDMA. The signal used to show the occupied bandwidth is defined in table 14.1. This is the signal recommended in IS-97. The power output level was adjusted to provide the documented power levels at the bottom of each chart.*

The applied signal met the recommended characteristics per PN-3383 Section 4.5.1.3.1 as defined below.

Type	Number of Channels	Fraction of Power (Linear)	Fraction of Power (dB)	Comments
Pilot	1	0.1490	-8.3	Walsh 0
Sync	1	0.015/p	-18.3	Walsh 32, always 1/8 rate
Paging	1	0.054	-12.7	Walsh 1, full rate only
Traffic	6	0.13 each	-8.8 each	Variable Walsh Assignments, full rate only

**TABLE 14.1 Base Station Test Model, Nominal**

## Exhibit 14 continued

### Derivation of Requirements

The minimum standard presented in PN-3383 Section 4.5.1.3.1 was followed.

“Suppression Inside the Licensee’s Frequency Block(s)”

For all frequencies within the base station transmit band of 869 – 894 MHz that are within the specific block(s) allocated to the operator's system, the total conducted spurious emissions in any 30kHz band greater than 750 kHz for the CDMA channel center frequency shall not exceed a level of -45 dBc....

Measurement at a Resolution Bandwidth of 30 kHz is based on our experience with Section 22.917 of The Code and lacking other guidance.

The spectrum analysis output plot Figure 14B shows the peak of the CDMA channel signal 16.12 dB below the Mask reference / “zero dBc line” of the spectrum analyzer for the following reason: For the CDMA system there is no carrier without modulation. The following relationship was used to provide the correct level for an unmodulated carrier vs. the modulated signal.

$$10 \cdot \log (\text{Resolution Bandwidth} / \text{Transmit Bandwidth}) = \text{Signal Offset} \quad (1)$$

For the peak of the CDMA signal measured with a resolution bandwidth of 30 kHz the signal offset is:

$$\text{Signal Offset} = 10 \cdot \log (30 \text{ kHz} / 1.23 \text{ MHz}) = -16.12 \text{ dB}$$

### Measurement

All of the tolerance lines for the output are referenced to the top of the Occupied Bandwidth mask, which is defined as 0.0 dBm/ zero dBc. For all measurements of the **BCR's** Occupied Bandwidth, the output power was measured / adjusted individually to the 0.001 W/ 0.0 dBm level for each carrier and this is the 0.0 dBm value at the 0 dBc reference line.

In order to depict the tolerance lines that are required by Sec 22.917 of the FCC Rules IS-97, all measurements were made with a resolution bandwidth of 30 kHz and the limits were adjusted using equation (1). An average detector was employed using minimum of 25 sweeps per trace.

### Mask Description

The Mask limits are identical for the left and right side of the Cellular Band and are as follows. Figure 14-B shows the Mask limit for Cellular channels 1019 which is the left most CDMA Channel operated at the “Left” Band edge for A Band. The Spectrum Analyzer reference level is set above the Signal Reference to allow for the necessary dynamic range of a three CDMA carrier presentation. The top of a typical 0.0 dBm single carrier CDMA signal viewed at a resolution bandwidth of 30 kHz is shown at the -16.12 dBm/ -16.12 dBc line. This line is based on equation 1, and the ratio of the nominal 1.23 MHz bandwidth and the 30 kHz resolution bandwidth of the spectrum analyzer. The vertical line from a to b (i.e. a-b) is at 750 kHz from the center of channel 1019 (i.e. Fc), per IS-97. The horizontal line b-c is 45 dB below the 0.0 dBm/ 0 dBc reference level.

For measurements 1 MHz or greater outside the Cellular band the limit is -13.0 dBm as measured with a 1 MHz resolution bandwidth. The adjusted level would be  $(-13 \text{ dBm} - 16.12 \text{ dB}) = -29.12 \text{ dBm/dBc}$  since this level is higher than the -45 dBm it is not shown. The same logic was used in determining the other block and band edge tolerances.

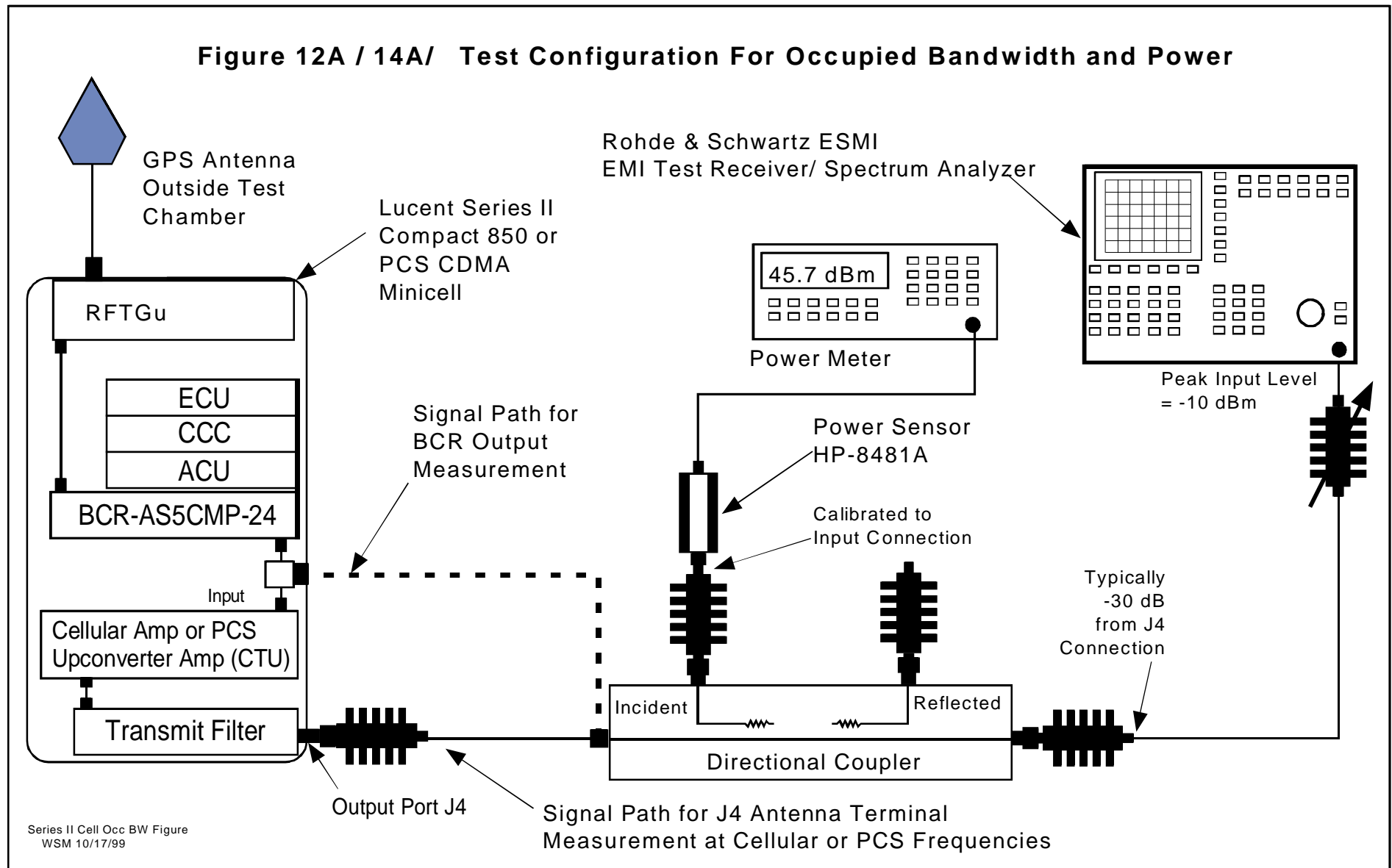
**Exhibit 14 continued****Test Equipment used in Figure 14A For Occupied Bandwidth Measurement**

<b>PCS Mini Cell:</b>	Fully Populated PCS Mini Cell
<b>RFTGu :</b>	Reference Frequency Timing Generator RFTGu or RFTGm
<b>BCR:</b>	CDMA Baseband Radio (FCC ID: AS5CMP-24)
<b>Transmit Filter:</b>	Cellular Transmit Filter appropriate for the investigated Band
<b>Directional Coupler:</b>	HP 778D and 772D Dual Directional Coupler
<b>Power Meter:</b>	HP E4419A Power Meter with EPC-E18A Power Head
<b>Test Cables:</b>	W.L. Gore; Low loss test cables custom mfg. for Lucent FCC Laboratory
<b>Plotter:</b>	HP Model 7470A Plotter
<b>Printer:</b>	HP Model 4500DN Printer
<b>Attenuator, Variable</b>	HP 8494B and 8495B DC-18 GHz digital attenuators
<b>Attenuator, Fixed</b>	Weinschel Corp DC-18 GHz, various values
<b>Spectrum Analyzer:</b>	Rohde & Schwarz ESMI EMI Test Receiver
<b>Computer Controller:</b>	EG Technology, Custom Mfg for FCC Laboratory Intel™ Pentium II& III, 450 and 550 MHz controllers with TILE™ software

**RESULTS:** The following exhibits illustrate the spectrums investigated and document compliance.

***W. Steve Majkowski NCE***

**Exhibit 14** *continued*      **Figure 14A**



**Exhibit 14** *continued*      **Figure 14 B Occupied Bandwidth Mask**