

**Exhibit 12****SECTION 2.1046****MEASUREMENT OF RADIO FREQUENCY POWER OUTPUT**

The test arrangements used to measure the radio frequency power output of the **ULAM / AS5CMP-36** Ultra Linear Amplifier Module is on the following page. Measurements were made respectively at each frequency where Occupied Bandwidth measurements were performed. The use of the ULAM requires that the J4 power level be calibrated for each specific channel of use. The test configuration, Figure 12a, allowed the measurement of output power for each channel investigated for Occupied Bandwidth. These included the "Left" and "Right Edge of Block" and a additional channel for each Block.

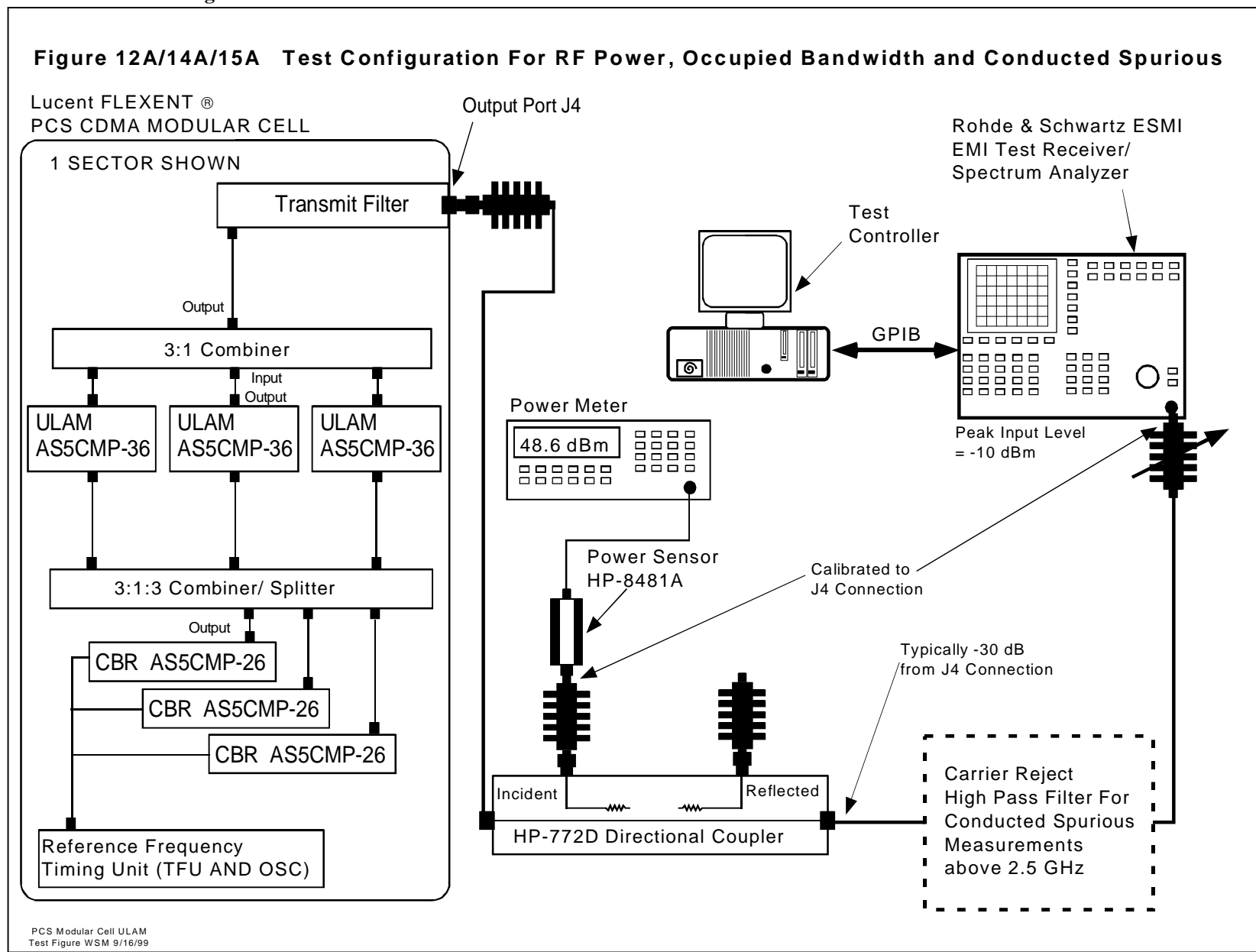
The ULAM system has a maximum power output at the antenna terminals of 24.0 Watts (43.8 dBm) +2 / -4 dB per Carrier or 72 Watts total for a three carrier **MCA**. It also has a minimum power output at the antenna terminals of 0.16 Watts (+2 / -4 dB), across the PCS down-link Band (1930.00-1990.00 MHz). The signal applied to the ULAM is defined in Table 12.1. The power was reset to 24.0 Watts/carrier at each measurement frequency to verify the spectral performance at that power level at each specific frequency of interest. The attenuation range was also verified. The specific Frequencies, channels and set power level was documented on each "Occupied Bandwidth" data sheet. These were performed for single dual and three carrier configurations.

The applied signal met the recommended characteristics per ANSI J-STD-008 section 3.1.4 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 12.1 Base Station Test Model, Nominal**

Exhibit 12 RF Power Test Configuration



## Exhibit 12

### Equipment used in Figure 12 For Measurement of RF Power

<b>PCS Modular Cell:</b>	Fully Populated PCS Modular Cell
<b>OM 1&amp;2 :</b>	Oscillator Module, 15 MHz Rubidium and Crystal types
<b>CBR: 1-9:</b>	CDMA Baseband Radio (FCC ID: AS5CMP-26)
<b>ULAM: 1-9:</b>	Ultra Linear Amplifier Module (FCC ID: AS5CMP-36)
<b>Transmit Filter:</b>	PCS Block Transmit Filter appropriate for the investigated Block
<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>Attenuators, Variable</b>	HP 8494B and 8495B DC-18 GHz digital attenuators
<b>Attenuators, Fixed</b>	Weinschel Corp DC-18 GHz, various values
<b>Spectrum Analyzer:</b>	Rohde & Schwarz ESMI EMI Test Receiver
<b>Band Pass Filters:</b>	Trialthic, 1-18 GHz, Custom manufactured for Lucent FCC Laboratory
<b>Computer Controller:</b>	EG Technology, Custom Mfg for FCC Laboratory Intel™ Pentium II& III, 450 and 550 MHz controllers with TILE™ software

**Exhibit 12****RESULTS:**

The **ULAM/ AS5CMP-36** was configured in the test setup shown in Figure 12A. For each of the PCS channels tested the **ULAM/ AS5CMP-36** delivered a minimum of 24.0 Watts per carrier  $\pm 2/0$  dB when measured at the J4 output connection.

This data is recorded on the Occupied Bandwidth Data Sheets for “Left edge”, and “Right Edge” channels for each frequency Block / Sub-Block.

For PCS Block C, the Sub-Block filter C1 is for the “Left Edge of Block” and is designed for as many as three carriers. Likewise the Sub-Block filter C4 is for the “Right Edge of Block” and will accommodate two carrier. Block Filters for PCS Blocks D, E and F are 5 MHz wide and are designed for three carriers without division.

Data is presented for PCS Blocks “C”, “D”, “E” and “F”. This completes the application for all PCS Blocks for the **ULAM/AS5CMP-36**.

Note: The **ULAM/ AS5CMP-36** can be operated as a single carrier or as a Multiple Carrier CDMA amplifier. The maximum power level are verified at each cell site during setup of the PCS CDMA Modular Cell and installation of the **CBR, FCC ID: AS5CMP-26**.