

Exhibit 11**SECTION 2.1033(c)(14)**

The data required by Section 2.1046 through 2.1057, inclusive, measured in accordance with the procedures set out in Section 2.1041.

Response:

The lowest clock frequency in the **PCS Outdoor Flexent OneBTS Modular Cell 4.0** is the 10 MHz rubidium reference oscillator. The highest transmit frequency is nominally 1990 MHz. Conducted spurious measurements were performed in compliance with 47CFR Section 2.1057 over the range of 10 kHz to 20GHz which is above the tenth harmonic of the transmit frequency range.

The following pages include the data required for the Class II change to the Product Certification of the **P2PAM / FCC ID: AS5ONEBTS-06**, measured in accordance with the procedures set out in Section 2.1041 of the Rules.

Each required measurement and its corresponding exhibit number are:

Exhibit 12	Section 2.1046	Measurement of Radio Frequency Power Output
Exhibit 13	Section 2.1047	Measurement of Modulation Characteristics
Exhibit 14	Section 2.1049	Measurement of Occupied Bandwidth
Exhibit 15	Section 2.1051	Measurement of Spurious Emissions at Antenna
Exhibit 16	Section 2.1053	Field Strength of Spurious Radiation

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

The test arrangements used to measure the radio frequency power output of the **P2PAM/ AS5ONEBTS-06** amplifier is on the following page. Power measurements were performed at the left and right edge of each PCS Block prior to Occupied Bandwidth measurements. The use of the **P2PAM** is for one to five CDMA carriers. This requires that the J4 power level be calibrated for the specific channel of use. Five carrier operation is only possible, without de-aggregation, in the 15MHz wide A, B and C Blocks. Likewise, one to three carrier operation is applicable for the D, E and F Blocks. The test configuration, Figure 12, allowed the measurement of output power for each channel investigated for Occupied Bandwidth. These included the upper and lower Block edges for each Block.

The **P2PAM** system has a maximum power output at the antenna terminals of 20.0 Watts (43.01 dBm) +2 / -4 dB, it also has a minimum power output at the antenna terminals of 0.010 Watts (10.01 dBm +2 / -4 dB, across the PCS downlink Band (1930.00-1990.00 MHz). The applied signal, from a **MCR-1900 FCC ID: AS5ONEBTS-09**, met the recommended characteristics per "**Table 6.5.2-1 Base Station Test Model, Nominal**" from **3GPP2 C.S0010-0, December 1999**, Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations, as defined below in table 12.1.

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

The power was reset to a minimum of 20.0 Watts 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 and channels and set power level was documented on each "Occupied Bandwidth" sheet.

RESULTS:

The **P2PAM/ AS5ONEBTS-06** was configured in the test setup shown in Figure 12. For each of the PCS channels tested the **P2PAM/ AS5ONEBTS-06** delivered a minimum of 20.0 Watts +2/-0 dB when measured at the J4 output connection using a calibrated RF power meter suitable for the amplitude, frequency and bandwidth of measurement. This performance was verified for the maximum number of carrier of each MCA configuration in this application. This data is recorded on the Occupied Bandwidth Data Sheets for "Left edge" and "Right Edge" of each frequency Block. Data is presented for all PCS Blocks.

Note: The **P2PAM/ AS5ONEBTS-06** is a multi channel linear amplifier and its maximum power level is verified at each cell site during setup of the Modular Cell and installation of the **UCR-1900, FCC ID: AS5ONEBTS-04** or **MCR-1900, FCC ID: AS5ONEBTS-09**.

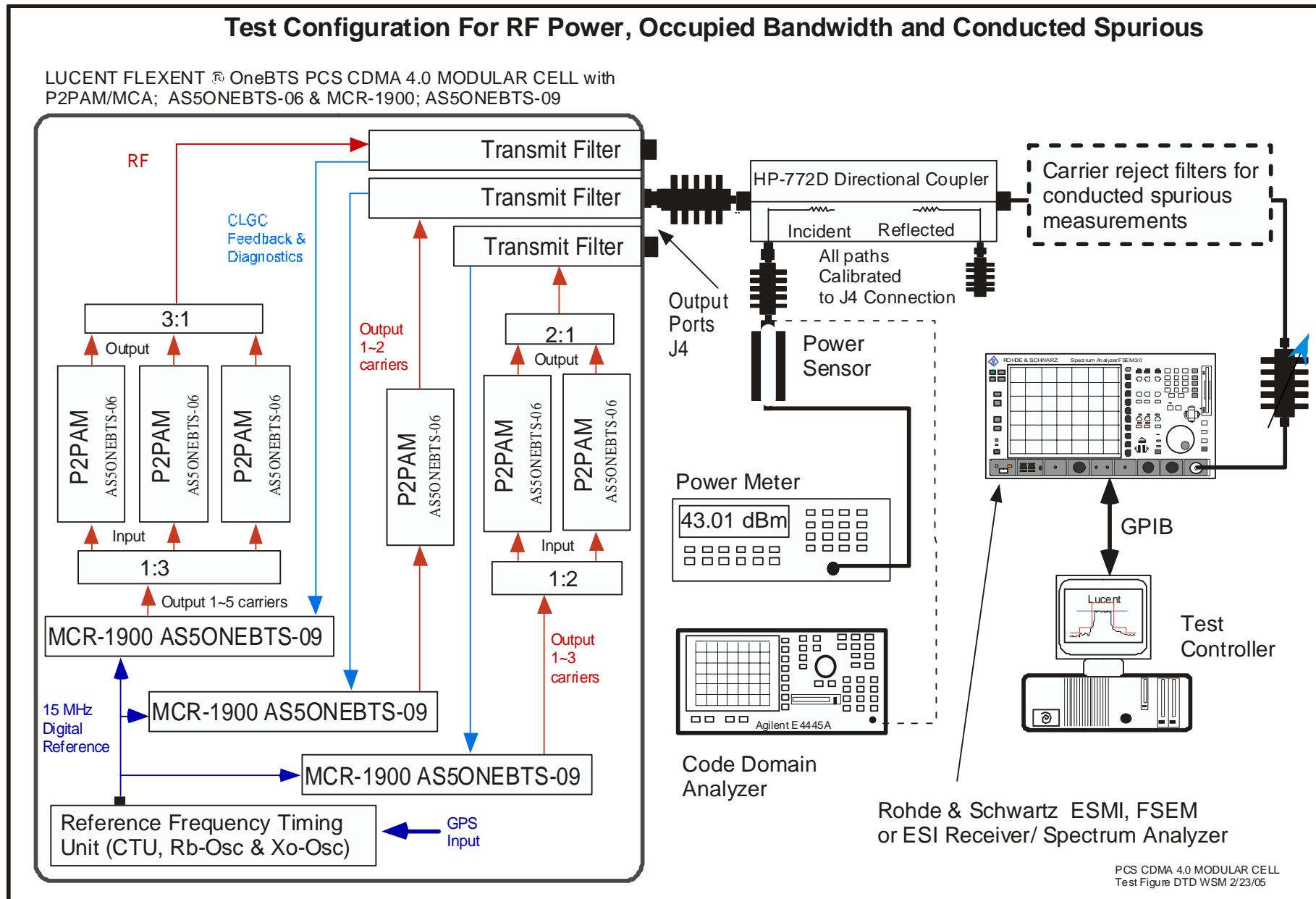
Exhibit 12 RF Power Test Configuration

Exhibit 12 *continued***Measurement Equipment used in Figure 12 For Measurement of RF Power**

<u>Equipment</u>	<u>Description</u>
Product Frame:	PCS Outdoor Flexent OneBTS Modular Cell 4.0 with 4 UCR-1900's and 8 P2PAMs
MCR1900	PCS Multi Carrier Radio (FCC ID: AS5ONEBTS-09)
P2PAM:	PCS 2 Power Amplifier Module (FCC ID: AS5ONEBTS-06)
Transmit Filter:	PCS Band Transmit Filter appropriate for the investigated Block
Directional Coupler:	Agilent 778D and 772D Dual Directional Coupler
Power Meter:	Agilent E4419B Power Meter with EPC-E18A or 8481A Power Sensor
Test Cables:	Low loss test cables custom mfg. for Lucent FCC Laboratory
Plotter:	HP Model 7470A Plotter
Printer:	HP Model 4500DN Printer
Attenuator, Variable	HP 8494B and 8495B DC-18 GHz digital attenuators
Attenuator, Fixed	Weinschel Corp DC-18 GHz, various values
Band Pass Filters:	Trialthic, Various 10 MHz-20 GHz, Custom manufactured for Lucent FCC Laboratory
Spectrum Analyzer:	Rohde & Schwarz ESI40 EMI Test Receiver or Rohde & Schwarz FSEM Spectrum Analyzer
Code Domain Analyzer	H-P and Agilent E4406A VSA Series Transmitter Tester
Computer Controller:	EG Technology, Custom Mfg for FCC Laboratory, Intel™ Pentium controllers with TILE™ software

Exhibit 13**SECTION 2.1047 MEASUREMENT OF MODULATION CHARACTERISTICS****Response:**

The P2PAM is a linear amplifier and does not generate or determine the modulation. The modulation characteristics are a function of the radio supplying the signal. For the Modular Cell 4.0 the radio can be either the **UCR1900, FCC ID: AS5ONEBTS-04**, granted 24 September 2002 or the **Multi Carrier Radio (MCR1900), FCC ID: AS5ONEBTS-09**, granted 22 February 2005.

The modulation and RF spurious performance of these radios are equivalent. The original data presented in the original filing was generated with a **UCR-1900** which is limited to three carriers maximum. The eleven carrier **MCR-1900** was therefore used to generate the one to five carrier signals necessary for certification of the **P2PAM / MCA**. The data presented below is identical to that provided in the filing for the **MCR-1900 FCC ID: AS5ONEBTS-09**.

The **MCR-1900 / AS5ONEBTS-09** was configured in the test setup shown in Figure 13A. The **MCR-1900** was configured with its pilot channel and the modulation quality measured with a Agilent -E4445A PSA Series Spectrum Analyzer.

Measurements were performed at the PCS Channels shown in table 13.1.

PCS Band	Transmit Channel(s)
A	25, 275
B	425, 675
C	925, 1175
D	325, 375
E	725, 775
F	825, 875

TABLE 13.1 P2PAM Channels for Modulation Characteristics Measurement

SECTION 2.1047- Modulation Description

The modulation methods used in CDMA drastically differ from those used in a FM analog system. The methods used in evaluating the PCS Multi-Carrier Radio (**MCR-1900**) are described in the pertinent standards documents which include **TIA/EIA-97-C** “recommended Minimum performance Standards for Base Stations Supporting Dual-Mode Wideband Spread Spectrum Cellular Mobile Stations” and **3GPP2 C.S0010-0**, December 1999, *Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations*,. The modulation quantify criteria are as follows:

13.1 Modulation Requirements – Section 4.2 of TIA/EIA-97-C and 3GPP2 C.S0010-0**4.2 Modulation Requirements**

Waveform quality is tested by measuring the waveform quality ρ , as defined in 6.4.2.1, and code domain power as defined in 6.4.2.2. The range of values for the transmit waveform quality is from 1.0 for a perfect CDMA waveform to 0.0 for a non-CDMA signal. As an example, a base station with a 0.5 dB degradation in its transmit waveform would have a quality, ρ , of $10^{-(0.5/10)} = 0.89$

13.2 Required Results

Per Section 4.2.2.3 of **3GPP2 C.S0010-0**

4.2.2.3 Minimum Standard

The normalized cross correlation coefficient, ρ , shall be greater than 0.912 (excess power < 0.4 dB). The test method and diagrams are shown in Figure 13.

Exhibit 13 continued

The applied signal, from a **MCR-1900 FCC ID: AS5ONEBTS-09**, met the recommended characteristics per "Table 6.5.2-1 Base Station Test Model, Nominal" from 3GPP2 C.S0010-0, December 1999, Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations, as defined below in table 13.2.

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 13.2 Base Station Test Model, Nominal**13.3 Minimum Standard**

The normalized cross correlation coefficient, ρ , shall be greater than 0.912 (excess power ≤ 0.4 dB).

13.4 Results

For each of the PCS channels tested, the **MCR-1900/ AS5ONEBTS-09** modulation quality factor, Rho (ρ), was measured to be ≥ 0.98 . The **MCR-1900** transmit signal modulation parameters and constellation for PCS channel 25 is shown in Figure 13B below. The data for channel 25 is representative of the data recorded for the remaining channels listed above and was taken utilizing the Agilent -E4445A PSA Series Spectrum Analyzer. It also verified that the frequency offset is less than (+0.05 PPM) of the frequency assignment.

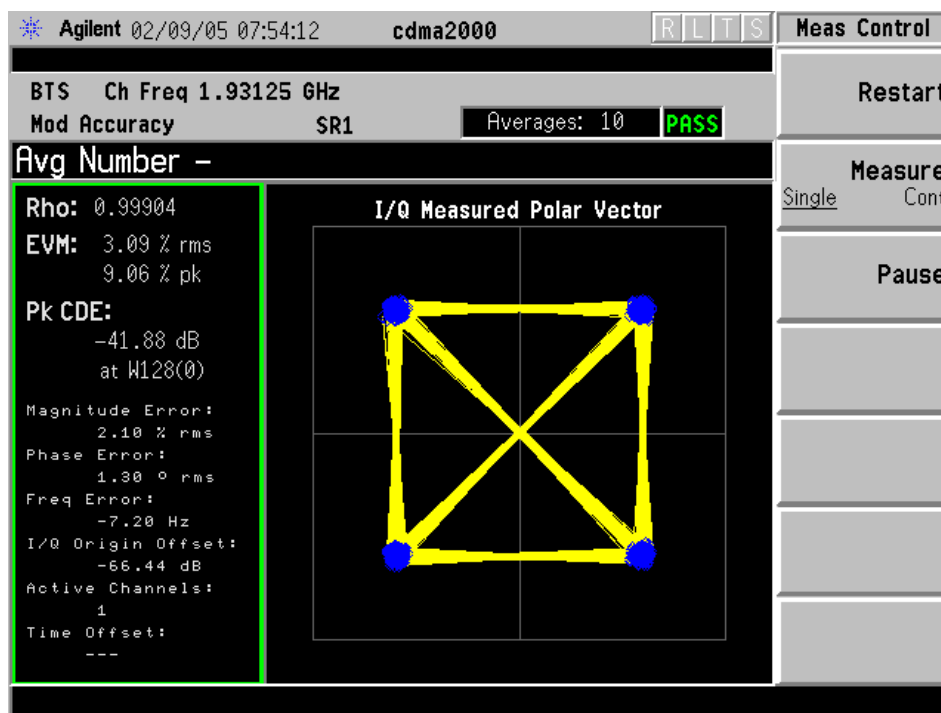
Figure 13B P2PAM Measured Transmit Signal Modulation Parameters for Channel 25

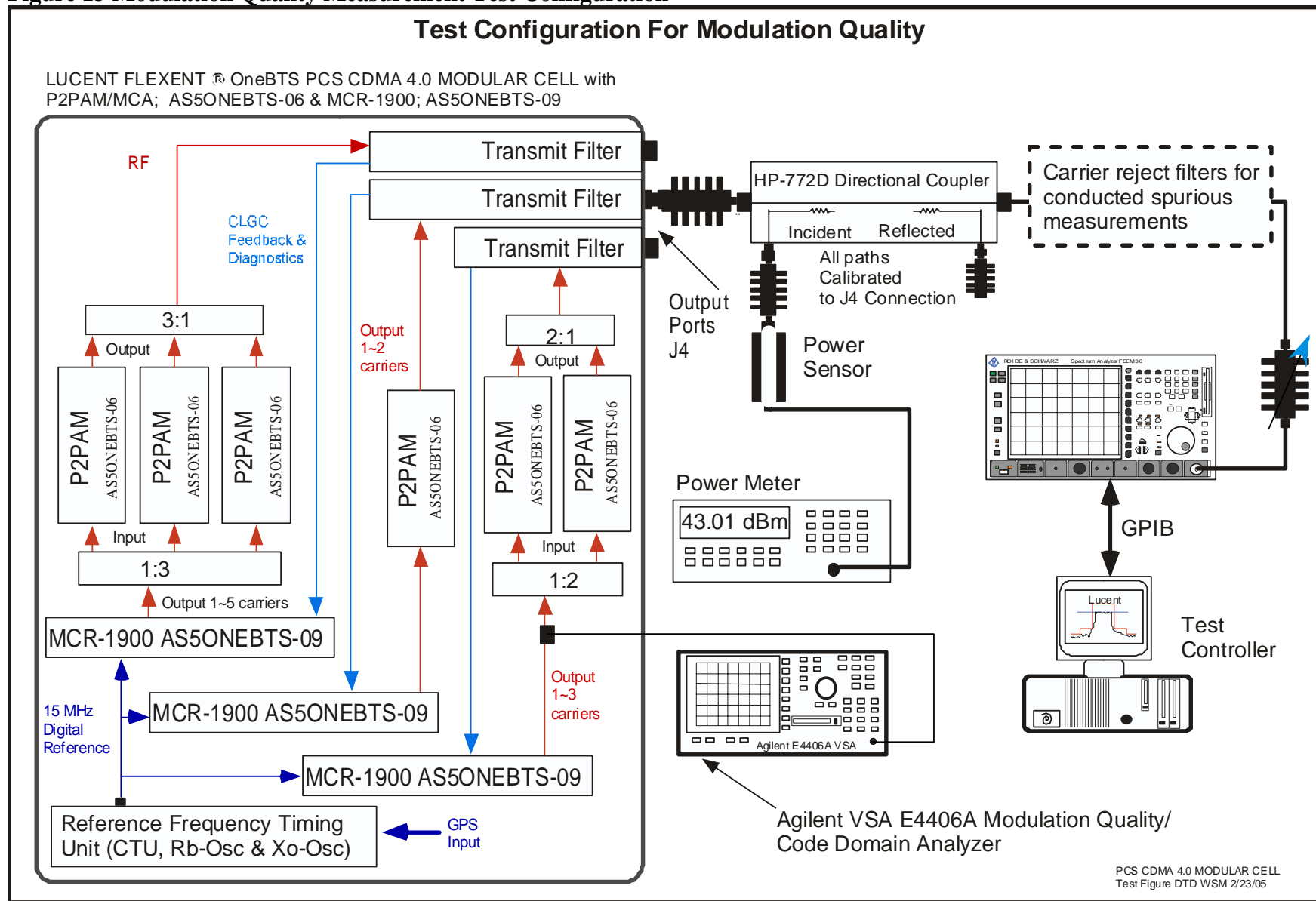
Exhibit 13 continued**Figure 13 Modulation Quality Measurement Test Configuration**

Exhibit 14**SECTION 2.1049 MEASUREMENT OF OCCUPIED BANDWIDTH**

Because of the Multi Carrier application of the **P2PAM**, occupied bandwidth measurements were performed for all of the **MCA** configurations. This exhibit documents the typical performance of the **P2PAM/ MCA** while supplied with single and dual CDMA carriers through a single **P2PAM** and for one to five carriers through a three amplifier **MCA**. Since the **P2PAM** is a fixed gain device all power adjustments were performed via the **MCR1900, FCC ID: AS5ONEBTS-09**.

The occupied bandwidth of the **P2PAMMCR-1900 / FCC ID: AS5ONEBTS-09** was measured using a Rohde & Schwarz FSEM-30 Spectrum Analyzer, a PC based instrumentation controller using TILE™ software and calibrated RF equipment. 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 broadband attenuator. This attenuation was offset on the display and the signal adjusted to the -16.2 dBc level corresponding to the corrected RF power level for a 30 kHz resolution bandwidth (RBW). This set-point was performed as follows:

The power calibration was individually measured and verified at each carrier using a power meter in the Figure 14A setup. Additionally a power calibration was performed to calibrate the setting of the transmits signals measured 30 kHz Occupied Bandwidth signal at the -16.2 dBc standard measurement offset line and its corresponding 3 MHz RBW measurement against the “Top of Mask” limit. The 3 MHz RBW measurement corresponds to the output power of a single carrier at an RBW setting of ≥ 1.25 MHz and allows for accurate calibration of the spectrum analyzer against the power meter. These measurements were performed as part of each Occupied Bandwidth measurement. The signals measured at RBW's of 3 MHz and 30 kHz were plotted and a digital attenuation was adjusted to place the 3 MHz RBW signal at the “Top of Mask”. The measurements of the carrier signals in both bandwidths are measured and addressed with the same attenuation. The two signals are co-plotted and an example is shown in Figure 14C, Typical Power Calibration. Since the top of mask reflects the power of a single carrier the measurement of multiple 1.25 MHz carriers requires a power calibration line above the “Top of Mask” limit. This is necessary to reflect the power level generated by greater than 1 carrier in a 3MHz bandwidth. The power calibration line for two carriers is calculated utilizing the following formula:

Power Calibration line = Composite Power Level (i.e. 46.02 dBm for two 20W carriers)

The power calibration line for \geq three carriers is calculated utilizing the following formula:

Power Calibration Value = Composite Power Level - $10 \cdot \log$ (Transmit Bandwidth/ Resolution Bandwidth)

The three 1.25 MHz carrier power calibration line is calculated as follows using the above equation:

$$47.78 \text{ dBm (60W)} - 10 \cdot \log (3.75\text{MHz} / 3\text{MHz}) = 46.81 \text{ dBm}$$

The test procedure above calibrates the carrier power to the “Top of Mask” and accurately places the 30 kHz RBW measured carrier at the -16.2 dBc line. This process also documents the carrier power at the specified power level of 20 watts per carrier / 43.01 dBm. A majority of the plots are presented with a 7.5 MHz span and the center frequency of the specific Sub-Block of interest. This allows for ease of comparison of the single, dual and three carrier performance. The remainder of the plots are presented with a 10MHz span for the utilization of five carriers. This data was electronically recorded using the TILE™ software and electronically placed in the Occupied Bandwidth Data Sheets. These sheets contain data for “Left Edge of Block”, and “Right Edge of Block” for each PCS frequency Block in the application.

Exhibit 14 *continued***Block Organization and Tests Performed**

The FLEXENT PCS Modular cell product line utilizes 15 MHz PCS Block transmit filters (A, B and C) and 5 MHz PCS Block transmit filters (D, E & F). The PCS transmit filters allow for compliance of the measurements performed at the edges of each standard PCS Block.

All of the new **P2PAM's** – filters combinations tests were performed in the required Blocks for the two carriers through one amplifier and the five carrier through three amplifier configuration of the **P2PAM**. Although all other combinations were tested, these configurations represent the most stringent performance criteria based upon the amplifier drive level. When a second source filter manufacturers is to be qualified for a granted block, the certification tests of this filing are performed and if compliant the source is approved via a Class I change to the applicable filings.

Applied Signal

The applied signal, from a MCR-1900 FCC ID: AS5ONEBTS-09, met the recommended characteristics per "**Table 6.5.2-1 Base Station Test Model, Nominal**" from **3GPP2 C.S0010-0, December 1999**, Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations, 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**Measurement Offset**

The spectrum analysis output plots shows the peak of the CDMA channel signal 16.19 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. Since the CDMA signal is Broadband and 1.25 MHz wide, all measurements performed at narrower resolution bandwidths need be adjusted for the reduction in signal energy. 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 1.25 MHz CDMA signal measured with a RBW of 30 kHz the signal offset is:

$$\text{Signal Offset} = 10 \cdot \log (30 \text{ kHz} / 1.25 \text{ MHz}) = -16.19 \text{ dB}$$

Limits which are specified as appropriate at a given RBW can be measured and evaluated at other RBW's if the limit is adjusted per equation (1)

Exhibit 14 *continued***Require Levels**

The minimum standard presented in **3GPP2 C.S0010-0**, Dec. 1999, ***Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations, Section 4.4.1.3*** was followed for Suppression Inside the Licensee's Frequency Block(s)

Signals that are within the base station transmit band of 1930.000 to 1990.000 MHz and are within the specific block(s) allocated to the operator's system, the total conducted spurious emissions in any 30 kHz band greater than 885 kHz from the CDMA channel center frequency shall not exceed a level of -45 dBc....

The Limit in 47 CFR 24.238(a)(b) for emissions in the 1 MHz band immediately outside and adjacent to a licensee's frequency block is:

Emissions ≤ 1 MHz outside the Block *when measured with a RBW of 1% of the emissions Bandwidth* shall be attenuated by :

$$-\{43+10\log(\text{mean power output in watts})\} = -13 \text{ dBm}$$

The Limit in 47 CFR 24.238(a) for emissions outside a licensee's frequency block is:

Emissions > 1 MHz outside the Block, *when measured with a RBW of 1 MHz*, shall be attenuated by :

$$-\{43+10\log(\text{mean power output in watts})\} = -13 \text{ dBm.}$$

Measurement at a Resolution Bandwidth of 30 kHz is based on our experience with 47 CFR 24.238 and lacking other guidance.

Adjusted Levels

The following levels apply when measurements of the above limits are performed with an RBW of 30 kHz.

Measurement at a Resolution Bandwidth of 30 kHz is based on our experience with 47 CFR 24.238 and lacking other guidance.

1. On any frequency removed from the carrier center frequency by greater than 885 kHz up to 1.25 MHz - at least 45 decibels below the carrier; and
2. On any frequency removed from the carrier center frequency by greater than 1.25 MHz to 2.25 MHz the level shall not exceed -9.2 dBm/-52.21 dBc when measured in a 30 kHz resolution bandwidth (Note 2 below); and
3. From the edge of the Block to the 10th harmonic of the carrier at least:

$$-\{43+10\log(\text{mean power output in watts})\} \text{ dBm,}$$

whichever is the lesser attenuation. For 20 Watts the required level is -71.24 dBc / -28.2 dBm as measured with a 30 kHz resolution bandwidth (see Note 3). This is equal to -13 dBm measured with a 1 MHz resolution bandwidth.

Note 2: The -9.2 dBm/-52.21 dBc level was computed as follows: The limit is specified as

$$-\{43+10\log(\text{mean power output in watts})\} \text{ dB} = -13 \text{ dBm}$$

When measured in a resolution bandwidth not less than 1% of the signal bandwidth.

Since the carrier is a 1.25 MHz bandwidth signal, the limit is adjusted to

$$-13 + 10\text{LOG}(30\text{kHz}/12.5 \text{ kHz}) \text{ dBm} = -9.2 \text{ dBm} / -52.21 \text{ dBc}$$

Note 3: The -28.2 dBm / -71.24 dBc level is computed from -13 dBm measured with a 1 MHz resolution bandwidth adjusted by :

$$-13 + 10\text{LOG}(30\text{kHz}/1.0 \text{ MHz}) \text{ dBm} = -28.2 \text{ dBm} / -71.21 \text{ dBc}$$

Exhibit 14 *continued***Mask Description for Single Carrier**

The Mask limits are identical for the left and right side of the PCS Blocks and are as follows.

Figure 14B shows the Mask limit for PCS channel 925 which is the left block edge for Block C and shows limits levels identical for the band edge of the PCS 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 43.01 dBm single carrier CDMA signal viewed at a resolution bandwidth of 30 kHz is shown at the 26.81 dBm/ -16.2 dBc line. This line is based on equation 1, and the ratio of the 1.25 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 885 kHz from the center of channel 925 (i.e. F_c), per 3GPP2 C.S0010-0. The horizontal line b-c is 45 dB below the 43.01 dBm/ 0 dBc reference level.
- The vertical line c-d is at 1.25 MHz from the center of the channel.
- The placement of line d-e is derived from evaluation of the signal and 12.5 kHz (1%) resolution bandwidth, using the suggested value in section 24.238 of the rules. The ratio of 30 kHz to 12.5 kHz in equation (1) gives 3.8 dB. Adjusting the tolerance line to reflect this difference puts the -13 dBm limit line at -9.2 dBm or -52.21 dBc below the reference line.
- The vertical line, e-f is at 2.25 MHz from the center of channel 925.
- The horizontal line f-g is drawn at -71.21 dBc below the 0 dBc / 43.01 dBm reference because the rules require a 1 MHz resolution bandwidth for measurements 1 MHz or greater outside the PCS band. Again, equation (1) and the ratio of 1 MHz to 1.25 MHz provides this value. The same logic was used in determining the other block and band edge tolerances.

Mask Description for Multiple Carrier

The mask for multiple carriers only adjusts the width of the carrier portion of the mask.

For the example given above...with multiple carriers there would be no adjustments made to the “Left Edge of Block” requirements. The specified “Right Edge Limit” is treated as an expansion of the non Block edge corner **bb** to be the required + 885 kHz from the center of the “right most” channel. The “Right Edge of Block” limits were derived consistently.

Measurement

All of the tolerance lines for the output are referenced to the top of the Occupied Bandwidth mask, which is defined as 43.01 dBm/ zero dBc. For all measurements of the **P2PAM's** Occupied Bandwidth, the output power was measured / adjusted individually to the 20 W level for each carrier and this is the 43.01 dBm value at the 0 dBc reference line.

In order to depict the tolerance lines that are required by Sec 24.238 of the FCC Rules and 3GPP2 C.S0010-0, 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.

Exhibit 14 *continued***Presented Results**

The Block designation, PCS channels, frequencies and Measured RF Power are tabulated on each plot. The signal used to show the occupied bandwidth is defined in table 14.1. This is the signal recommended in 3GPP2 C.S0010-0, December 1999, Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations, Paragraph 6.5.2, Test Model for Base Station. The power output level was adjusted to provide the documented value on each chart.

The carrier signal at the input of the **P2PAM** and the amplified and filtered output at the antenna terminal is presented for each frequency/ channel of interest. Plots are provided for Left Edge and Right Edge of each PCS Block evaluated. These frequencies were chosen to show the occupied bandwidth at the edges of each of the PCS Blocks in which this product can be operated, in compliance with Section 24.229 and 24.238 (c) of the Commission code. The data depicting five carriers each for sub-blocks A1/A2 and A3/A5 were transmitted from a single **MCR-1900** through a three amplifier **P2PAM/MCA** utilizing both radio transmit ports to demonstrate the 15MHz bandwidth of the MCR at the antenna port. Five A band Left Edge carriers were transmitted from port 1 for the A1/A2 sub-blocks, and five A band Right Edge carriers were transmitted from port 2 for the A3/A5 sub-blocks. The same methodology was utilized for the B band and C band five carrier test configurations. The tabulation of Occupied bandwidth data measured in support of this filing is shown in Table 14.2. The signal used to show the occupied bandwidth is defined in table 14.1. This is the signal recommended in 3GPP2 C.S0010-0, December 1999, Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations, Paragraph 6.5.2, Test Model for Base Station. The power output level was adjusted to provide the documented value on each chart.

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

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Exhibit 14 *continued*

PCS Block -Channel	Number of carriers	Number of P2PAM's MCA	Test Results Occupied BW
A- 25	1	1	Compliant
A-25, 50	2	1	Compliant
A- 25, 50, 75, 100	4	3	Compliant
A- 25, 50, 75, 100,125	5	3	Compliant
A-275	1	1	Compliant
A-250, 275	2	1	Compliant
A- 200, 225, 250, 275	4	3	Compliant
A- 175,200, 225, 250, 275	5	3	Compliant
B- 425	1	1	Compliant
B-425, 450	2	1	Compliant
B- 425, 450, 475, 500	4	3	Compliant
B- 425, 450, 475, 500,525	5	3	Compliant
B-675	1	1	Compliant
B-650, 675	2	1	Compliant
B- 600, 625, 650, 675	4	3	Compliant
B- 575,600, 625, 650, 675	5	3	Compliant
C- 925	1	1	Compliant
C-925, 950	2	1	Compliant
C- 925, 950, 975, 1000	4	3	Compliant
C- 925, 950, 975, 1000,1025	5	3	Compliant
C-1175	1	1	Compliant
C-1150, 1175	2	1	Compliant
C- 1100, 1125, 1150, 1175	4	3	Compliant
C- 1075,1100, 1125, 1150, 1175	5	3	Compliant
D- 325	1	1	Compliant
D-325,350	2	1	Compliant
D-350,375	2	1	Compliant
E- 725	1	1	Compliant
E-725,750	2	1	Compliant
E-750,775	2	1	Compliant
F- 825	1	1	Compliant
F-825,850	2	1	Compliant
F-850,875	2	1	Compliant

(1) The Single Amplifier configuration supports 1 and 2 carrier transmit configurations. The dual amplifier MCA supports 1, 2 and 3 carrier transmit configurations. The three amplifier MCA supports 4 and 5 carrier transmit configurations.

Exhibit 14 *continued***Test Equipment and Results****Table 14-2****Equipment used for Measurement of RF Transmit Power, Occupied Bandwidth and Conducted Spurious Emissions**

<u>Equipment</u>	<u>Description</u>
Product Frame:	PCS Outdoor Flexent OneBTS Modular Cell 4.0 with 4 UCR-1900's and 8 P2PAMs
MCR1900	PCS Multi Carrier Radio (FCC ID: AS5ONEBTS-09)
P2PAM:	PCS 2 Power Amplifier Module (FCC ID: AS5ONEBTS-06)
Transmit Filter:	PCS Band Transmit Filter appropriate for the investigated Block
Directional Coupler:	Agilent 778D and 772D Dual Directional Coupler
Power Meter:	Agilent E4419B Power Meter with EPC-E18A or 8481A Power Sensor
Test Cables:	Low loss test cables custom mfg. for Lucent FCC Laboratory
Plotter:	HP Model 7470A Plotter
Printer:	HP Model 4500DN Printer
Attenuator, Variable	HP 8494B and 8495B DC-18 GHz digital attenuators
Attenuator, Fixed	Weinschel Corp DC-18 GHz, various values
Band Pass Filters:	Trialithic, Various 10 MHz-20 GHz, Custom manufactured for Lucent FCC Laboratory
Spectrum Analyzer:	Rohde & Schwarz ESI40 EMI Test Receiver or Rohde & Schwarz FSEM Spectrum Analyzer
Code Domain Analyzer	H-P and Agilent E4406A VSA Series Transmitter Tester
Computer Controller:	EG Technology, Custom Mfg for FCC Laboratory, Intel™ Pentium controllers with TILE™ software

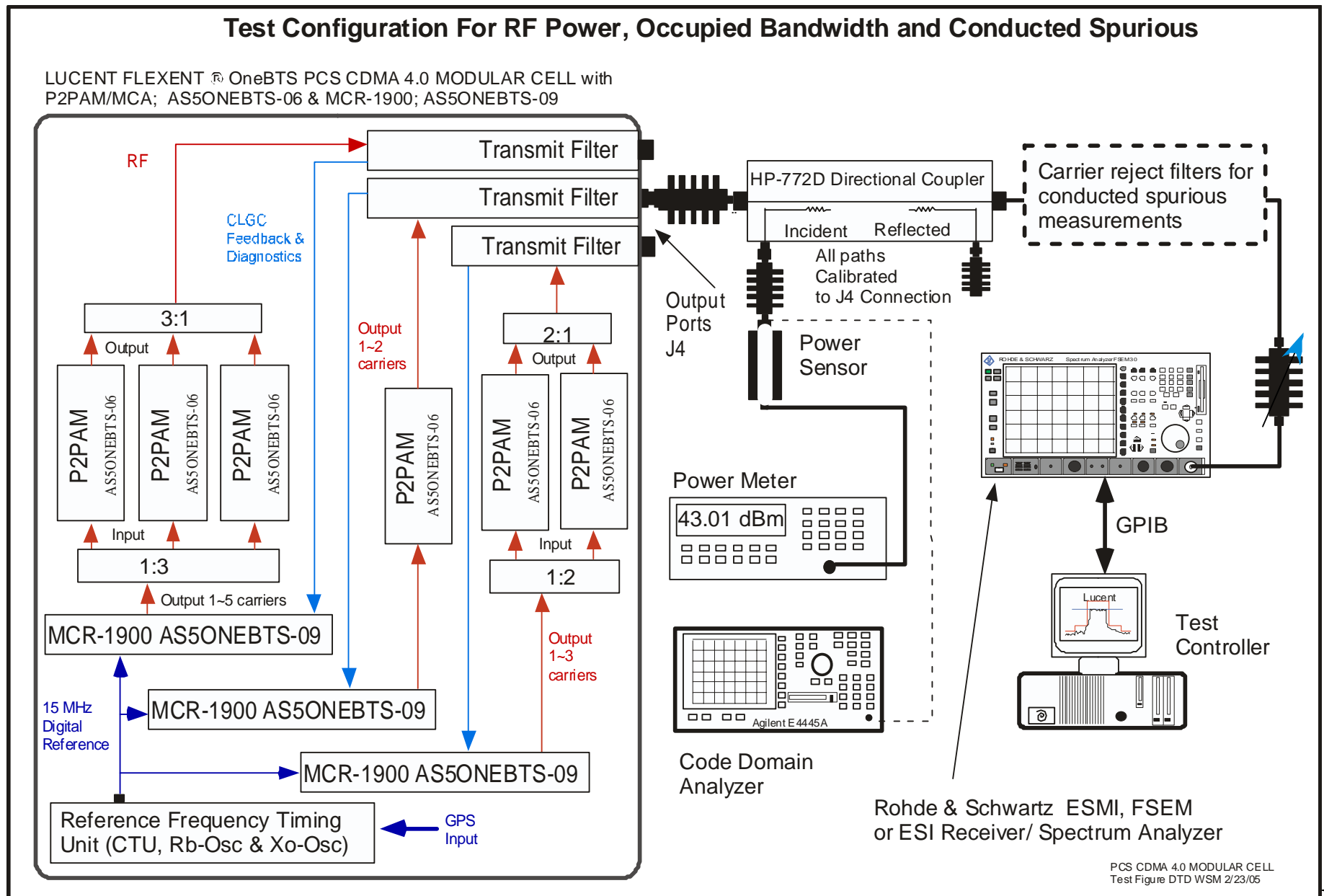
Figure 14A Test Setup for Antenna Port Measurement of Transmit Power, Occupied Bandwidth and Conducted Spurious Emissions

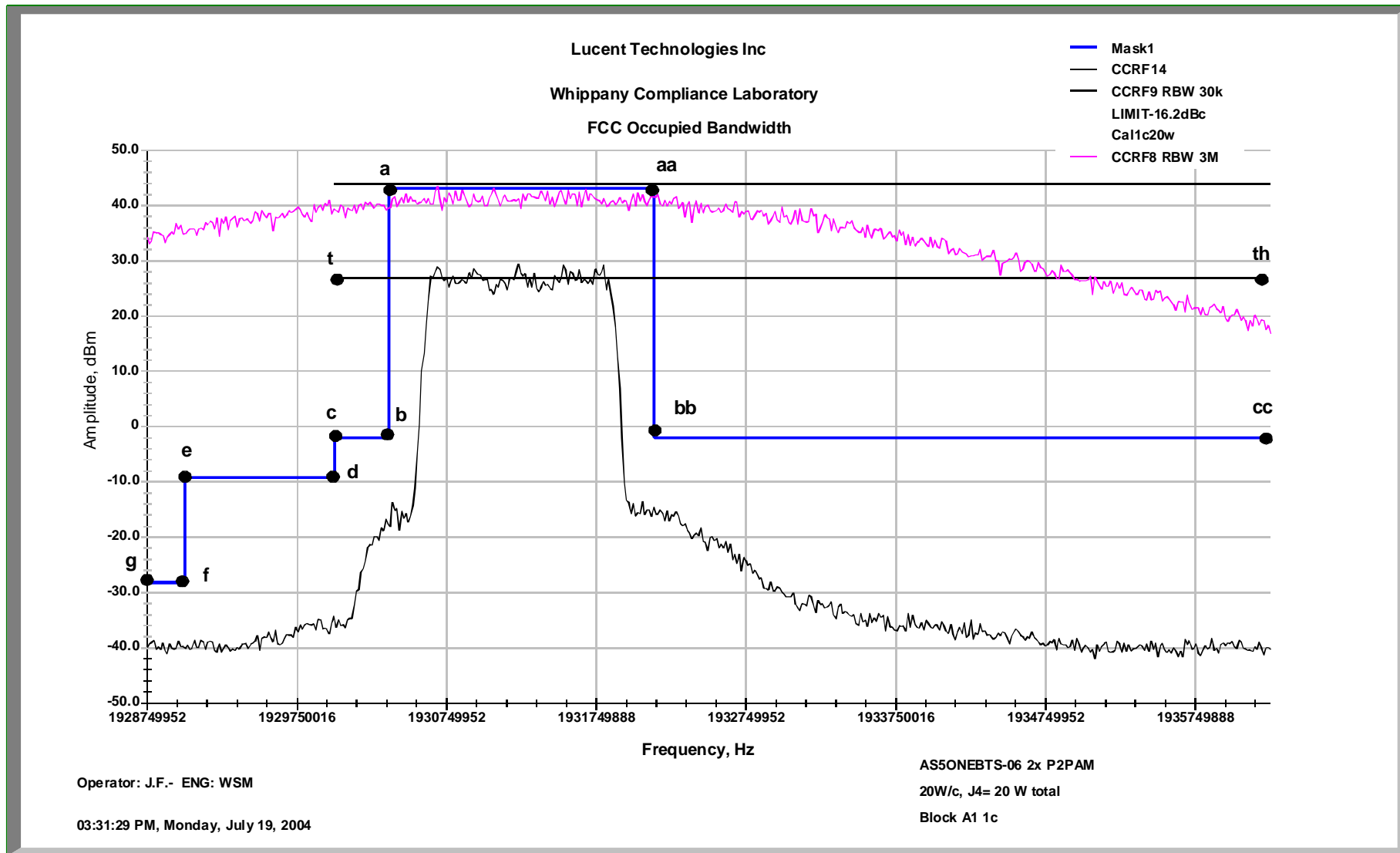
Figure 14B Occupied Bandwidth Mask and Power Calibration

Exhibit 15:**Section 2.1051 Spurious Emissions at Antenna Terminals**

Spurious Emissions at the antenna terminals were investigated over the frequency range of 10 MHz to 20 GHz which is beyond the 10th harmonic of the carrier frequency. The RF output from the transmitter was reduced, to an amplitude usable by the spectrum analyzer, by use of a broadband attenuator. The complete RF path was calibrated over the 10 MHz-20 GHz range. The RF power level was measured and monitored prior and during the test via the test setup in Figure 15A. The spurious measurements were made using an automated test system. The test system consists of a Rohde & Schwarz FSEM Spectrum Analyzer (or ESMI Test Receiver), a PC based computer test controller, calibrated test hardware and a TILE™ software program to acquire the test data. This system allows measurement and presentation of the data in an accurate and compact form for FCC review. The volume of collected data is greater than 2×10^5 data points over the frequency range of 10 MHz to 20 GHz.

The required emission limitation specified in Section 24.238 of the Code was applied to these tests. Based upon the criterion given in Section 24.238 of the Code and as developed in Exhibit 14, the required emission limit is -13 dBm when measured with a resolution bandwidth of 1 MHz. The measurements of the spurious signals were therefore made using a resolution bandwidth of 1 MHz. All spurious and harmonics of the CDMA Carrier was also shown to be lower than -13 dBm limit.

The carrier signal shown on these plots was measured at a resolution Bandwidths of 3 MHz. This was done so that the carrier plot correctly and accurately depicts the carrier output power in relation to the spurious signals and the defined limit.

The applied signal met the recommended characteristics per *3GPP2 C.S0010-0, December 1999, Recommended Minimum Performance Standards for cdma2000 Spread Spectrum Base Stations, Paragraph 6.5.2, Test Model for Base Station* 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 15.1 Base Station Test Model, Nominal**Test Results Summary:**

Measurements were performed while transmitting at the upper and lower channels in each PCS Block tested for each of the MCA transmit configurations. The range of measurements were limited in D, E and F Blocks to the maximum three carriers allowed by standard transmit filters. As three carrier performance has been previously certified for those Blocks only the two carrier through one amplifier data is attached for these blocks. Measurements were also performed for the one to five carriers through a three amplifier MCA configuration. Representative plots of input and output occupied bandwidth performance is attached for the single and five carrier P2PAM / MCA transmit configurations at each PCS Block Edge thus documenting the range of performance.

The attached spectral plots are samples which depicting the P2PAM's compliance for representative P2PAM / MCA transmit configurations. Table 15.2 documents the results of the performed measurements. The performance charts show that there are no harmonics or spurious emissions above the applicable limit of -13 dBm. The attached data plots document the results for single, dual and three carrier P2PAM / MCA test configurations for PCS sub-block A1. Table 15.2 lists the other PCS blocks that were tested and for which data is not attached. The data plots for these PCS blocks also show that there are no harmonics or spurious emissions above the applicable limit of -13 dBm, and demonstrate the P2PAM's compliance.

Exhibit 15: *continued*

PCS Block -Channel	Number of carriers	Number of P2PAM's MCA	Test Results Conducted Spurious
A- 25	1	1	Compliant
A-25, 50	2	1	Compliant
A- 25, 50, 75, 100	4	3	Compliant
A- 25, 50, 75, 100,125	5	3	Compliant
A-275	1	1	Compliant
A-250, 275	2	1	Compliant
A- 200, 225, 250, 275	4	3	Compliant
A- 175,200, 225, 250, 275	5	3	Compliant
B- 425	1	1	Compliant
B-425, 450	2	1	Compliant
B- 425, 450, 475, 500	4	3	Compliant
B- 425, 450, 475, 500,525	5	3	Compliant
B-675	1	1	Compliant
B-650, 675	2	1	Compliant
B- 600, 625, 650, 675	4	3	Compliant
B- 575,600, 625, 650, 675	5	3	Compliant
C- 925	1	1	Compliant
C-925, 950	2	1	Compliant
C- 925, 950, 975, 1000	4	3	Compliant
C- 925, 950, 975, 1000,1025	5	3	Compliant
C-1175	1	1	Compliant
C-1150, 1175	2	1	Compliant
C- 1100, 1125, 1150, 1175	4	3	Compliant
C- 1075,1100, 1125, 1150, 1175	5	3	Compliant

(1) The Single Amplifier configuration supports 1 and 2 carrier transmit configurations. The previously qualified dual amplifier MCA supports 1, 2 and 3 carrier transmit configurations. The three amplifier MCA supports 1 through 5 carrier transmit configurations.

TABLE 15.2 PCS Conducted Spurious Compliance Tabulation

Conducted Spurious tests on the Receiver antenna terminal additionally documented compliance with the 2 nW requirement of 47CFR Part 15 section 15.111.

Exhibit 15 *continued*

Test Equipment and Results

Table 15-2

Equipment used for Measurement of RF Transmit Power, Occupied Bandwidth and Conducted Spurious Emissions

<u>Equipment</u>	<u>Description</u>
Product Frame:	PCS Outdoor Flexent OneBTS Modular Cell 4.0 with 4 UCR-1900's and 8 P2PAMs
MCR1900	PCS Multi Carrier Radio (FCC ID: AS5ONEBTS-09)
P2PAM:	PCS 2 Power Amplifier Module (FCC ID: AS5ONEBTS-06)
Transmit Filter:	PCS Band Transmit Filter appropriate for the investigated Block
Directional Coupler:	Agilent 778D and 772D Dual Directional Coupler
Power Meter:	Agilent E4419B Power Meter with EPC-E18A or 8481A Power Sensor
Test Cables:	Low loss test cables custom mfg. for Lucent FCC Laboratory
Plotter:	HP Model 7470A Plotter
Printer:	HP Model 4500DN Printer
Attenuator, Variable	HP 8494B and 8495B DC-18 GHz digital attenuators
Attenuator, Fixed	Weinschel Corp DC-18 GHz, various values
Band Pass Filters:	Trialithic, Various 10 MHz-20 GHz, Custom manufactured for Lucent FCC Laboratory
Spectrum Analyzer:	Rohde & Schwarz ESI40 EMI Test Receiver or Rohde & Schwarz FSEM Spectrum Analyzer
Code Domain Analyzer	H-P and Agilent E4406A VSA Series Transmitter Tester
Computer Controller:	EG Technology, Custom Mfg for FCC Laboratory, Intel™ Pentium controllers with TILE™ software

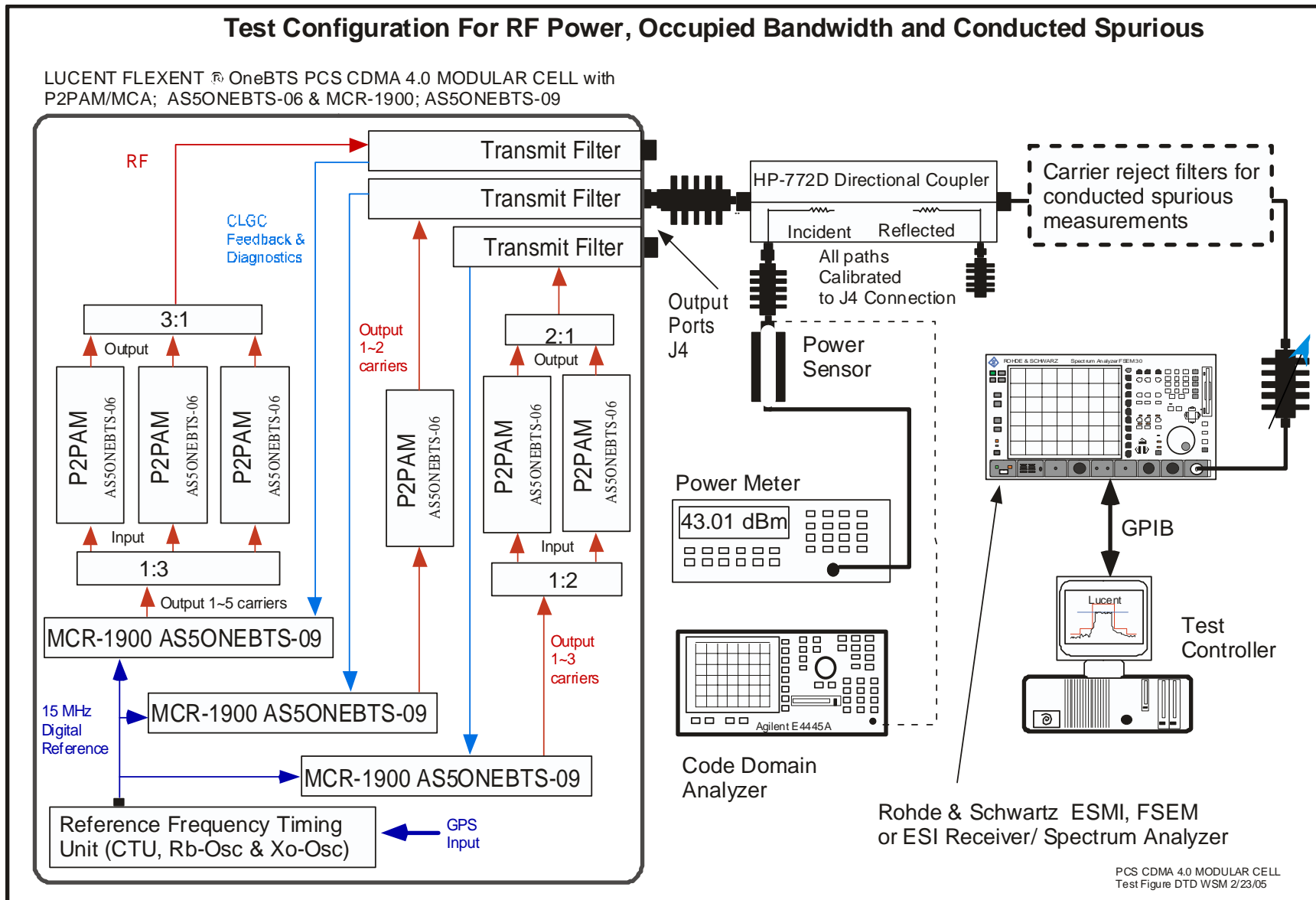
Exhibit 15 *continued*

Exhibit 16

SECTION 2.1053 FIELD STRENGTH OF SPURIOUS RADIATION

Field strength measurements of radiated spurious emissions were evaluated in a 3m anechoic pre-compliance chamber and verified as required at the ten meter Open Area Test Site OATS maintained by Lucent Technologies Bell Laboratories FCC Compliance Laboratory in Whippany, New Jersey. A complete description and full measurement data for the site have been placed on file with the Commission.

The **6 MCR1900s** were configured with **12 P2PAMs** and all other associated equipment in a **PCS Indoor FLEXENT ® OneBTS Modular Cell 4.0**. The **Modular Cell 4.0** was configured to operate with all **P2PAM's** at full FCC power in all PCS Blocks. The spectrum from 10 MHz to the tenth harmonic of the carrier was searched for spurious radiation. Measurements were made using both horizontally and vertically polarized broadband antennas. Per FCC regulations, the comparison of out of band spurious emissions directly to the limit is appropriately made using the substitution method. However, when the emissions are more than 20 dB below the specification limit, the use of field strength measurements for compliance determination is acceptable and those emissions are considered not reportable (Section 2.1053 and the FCC Interpretive database for 2.1053). For this case the evaluation of acceptable radiated field strength is as follows.

The calculated emission levels were found by:

$$\text{Pmeas (dBm)} + \text{Cable Loss(dB)} + \text{Antenna Factor(dB)} + 107 \text{ (dB}\mu\text{V/dBm)} - \text{Amplifier Gain (dB)} \\ = \text{Field Strength (dB}\mu\text{V/m)}$$

Section 24.238 and 2.1053 contains the requirements for the levels of spurious radiation as a function of the EIRP of the unmodulated carrier. The reference level for the unmodulated carrier is calculated as the field produced by an isotropic radiator excited by the transmitter output power according to the following relation taken from Reference Data for Radio Engineers, page 27-7, 6th edition, IT&T Corp.

$$E = (120\pi P)^{1/2} = [(30 * P)^{1/2}] / R$$

$$20 \log (E \cdot 10^6) - (43 + 10 \log P) = 71.77 \text{ dB } \mu\text{V/meter}$$

Where: E = Field Intensity in Volts/ meter R = Distance in meters = 10 m
P = Transmitted Power in watts = 20 W/ Carrier

RESULTS:

For this particular test, the field strength of any spurious radiation is required to be less than 71.8 dBμV/meter. Emissions equal to or less than 51.8 dBμV/meter are not reportable and may be verified using field strength measurements. Over the out of band spectrum investigated from 30 MHz to tenth harmonic of the carrier, no reportable spurious emissions were detected. This demonstrates that the **PCS P2PAM MCA** with the **Multi-Carrier Radio (P2PAM)**, the subject of this application, complies with Sections 2.1053, 24.238 and 2.1057 of the Rules.

Additional testing to 47CFR Part 15 documented compliance with the Class B requirements.

Conducted Spurious tests on the receiver antenna terminal documented compliance with the 2 nW requirement of 47CFR Part 15.