EXHIBIT 11

TEST REPORT

The following pages document the data required for the Class II Product Certification authorization of the 10M0F9W LTE emissions designator for the **Alcatel-Lucent 1900 MHz RRH 4x45W (65 MHz) / FCC ID: AS5BBTRX-05**, measured in accordance with the procedures set out in Section 2.1041 of the Rules. The equipment under test was a PCS 1900 CDMA-LTE 65MHz RRH 4x45W / FCC ID: AS5BBTRX-05 identified as serial number 12W327P10034. This Class II Permissive Change Test Report documents the FCC compliance of the transmitters LTE 10M0F9W emissions designators operation in PCS Band 25, Blocks A, D, B, E, F, C and G from 1930-1995 MHz.

The PCS 4x45W RRH supports multiple CDMA and LTE carriers by sharing available TX power and bandwidth between the air interface technologies at each antenna port. It also supports transmit diversity and/or 4x4 MIMO operation for LTE.

The PCS 4x45W RRH has 4 antenna ports with four independent transmitting paths. Each of these four paths can transmit up to 45W (46.53 dBm) for a total of 180W per RRH.

This report documents the compliant operation with the 10 MHz LTE emissions designator, 10M0F9W, at 40W (46dBm) per carrier at each transmit port. There was no hardware modification required and no change to the maximum power rating of the RRH 4x45W for this Class II change. As required for a Class II Change there was no changes to the Frequency Generating and Stabilizing circuitry of the PCS RRH 4x45W. Frequency stabilizing testing was therefore not required.

Multi-Technology operation of 10 MHz LTE + 1.25 MHz CDMA was also demonstrated.
The PCS 4x45W RRH is powered by -48VDC and is available in indoor and outdoor versions.

All testing results submitted in this report were performed on the -48VDC CDMA-LTE PCS 4x45W RRH outdoor with the 9928 BBU during the period of June 11-July 2, 2015.

The measurement results have demonstrated that Alcatel-Lucent CDMA-LTE PCS 4x45W RRH is in full compliance with the Rules of the Commission.

EXHIBIT 11.1

Section 2.1033 (c)(14) REQUIRED MEASUREMENT DATA

The required measurement data is presented in the following exhibits as follows:

Exhibit Section	47CFR Part 2/24 Section	Measurement Required
EXHIBIT 11.2	Section 2.1046	RF Power Output
EXHIBIT 11.3	Section 2.1047	Modulation Characteristics
EXHIBIT 11.4	Section 2.1049, 24.238	Occupied Bandwidth and Out-of-Band Emissions
EXHIBIT 11.5	Sections 2.1051, 24.238	Spurious Emissions at Antenna Terminals
EXHIBIT 11.6	Sections 2.1053, 24.238	Field Strength of Spurious Radiation
EXHIBIT 11.7	Section 2.947	List of Test Equipment Used
EXHIBIT 11.8		Photographs of the Test Setups

EXHIBIT 11.2

Section 2.1046 RF POWER OUTPUT

This test is a measurement of the total RF power level transmitted at the antenna-transmitting terminal (J4), as shown in the accompanying test set-up diagram. The radio was tuned to a channel which is transmitting in the 1930-1995 MHz B25 frequency band. Before the testing was started, the Base Station was given a sufficient "warm-up" period as required.

The power level of the base station was calibrated to allow the base station to operate at the manufacturer's maximum rated mean power level, i.e., +46dBm (40W) per 10MHz LTE carrier at the antenna-transmitting terminal. The RF power output of the 10MHz LTE carrier was measured with QPSK, 16QAM and 64QAM modulations respectively.

Power measurements were made with a Hewlett-Packard Power Meter with 8482A Power Sensor (0.01 – 4.2 GHz) in the average mode. The test set-up for conducting the RF power output measurement is shown in the following figure.

Results:
The measured RF power at each of the antenna transmitting terminals of the Alcatel-Lucent PCS RRH 4x45W was measured to be are 40W (+46 dBm $\pm$ 1 dB) per 10MHz LTE carrier. The power was measured across the 1930 – 1995 MHz PCS frequency band. This power was verified in each PCS Block as identified in the Table below. In 4x4 MIMO mode this is 160 W (+52 dBm) per RRH in 4x4 MIMO.

This power level is within the parameters as previously filed and is in full compliance with the Rules of the Commission.

The RF power output measured for each configuration was shown as "Ref Lvl" in the plots provided in SubExhibit 11.4.

The Peak-to-Average Power Ratio (PAPR) of the PCS RRH 4x45W was also verified per KDB 971168 procedures for 10MHz 40W LTE carriers. The PAPR values (0.1% probability) measured are all are below 7dB, which is below the 13dB requirement per 24.232 (d).

Table 11.2 Measured RF Power Performance

Block	Measured Carrier Frequency MHz	Measured Power Level W	Modulation
A	1935	40	QPSK, 16QAM, 64QAM
A	1940	40	16QAM
AD	1945	40	64QAM
B	1955	40	16QAM
B	1960	40	16QAM
EF	1970	40	64QAM
C	1980	40	QPSK
C	1985	40	16QAM
CG	1990	40	QPSK, 16QAM, 64QAM

FIGURE 11.2.1 TEST SET-UP FOR MEASUREMENT OF RADIO FREQUENCY POWER OUTPUT

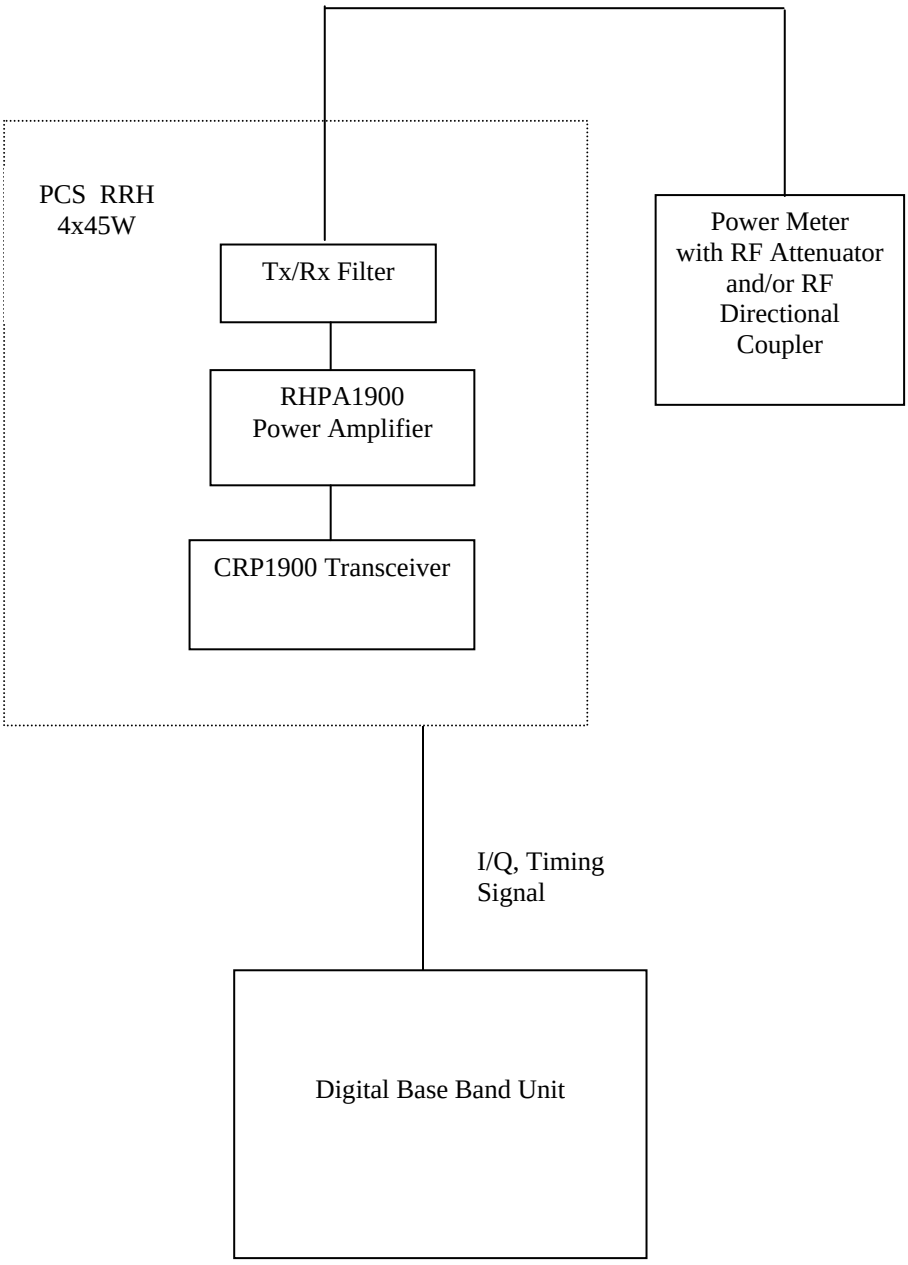


EXHIBIT 11.3

Section 2.1047 MODULATION CHARACTERISTICS

The PCS 4x45W RRH supports both CDMA and LTE technologies. The LTE utilizes Orthogonal Frequency Division Multiplex (OFDM) modulation techniques, where the data is distributed over a large number of closely spaced orthogonal subcarriers. The subcarriers are modulated with conventional modulation scheme, such as QPSK, 16QAM and 64QAM. The CDMA utilizes digital Quadrature Phase Shift Keying (QPSK) and Quadrature Amplitude Modulation (QAM) scheme.

The modulation accuracy measures the ability of the transmitter to generate the ideal signal.

In LTE, the modulation characteristics for QPSK, 16QAM and 64QAM modulations are measured, which measures the difference between the ideal symbols and the measured symbols after the equalization. The measurement was performed at the channel frequencies identified in the Table below. In each case the carrier power level was adjusted to the rated maximum mean power +46dBm (40W) at the output terminal.

The measurements were performed at the antenna transmitting terminal of the base station system with an Agilent N9020A MXA Signal Analyzer which was calibrated in accordance with ISO 9001 process.

The test set-up diagram is given in the Figure 11.3.1, where the Agilent N9020A MXA used the external signals from the base station as its trigger source and time reference.

Results:

The measurement was performed at the channel frequencies identified in Table 11.3 below. In each case the Modulation characteristics were as identified below.

Figure 11.3.2 shows three representative screen plots of the modulation measurement for a LTE carrier in QPSK, 16QAM and 64QAM modulations, respectively. The modulation characteristics of the CDMA-LTE PCS 4x45W RRH is in full compliance with the Rules of the Commission across the Frequency Band 1930 – 1995 MHz.

Table 11.3 Measured Modulation Characteristics

Block	Measured Carrier Frequency MHz	Modulation
A	1935	QPSK, 16QAM, 64QAM
A	1940	16QAM
AD	1945	64QAM
B	1955	16QAM
B	1960	16QAM
EF	1970	64QAM
C	1980	QPSK
C	1985	16QAM
CG	1990	QPSK, 16QAM, 64QAM

FIGURE 11.3.1 TEST SET-UP FOR MEASUREMENT OF MODULATION CHARACTERISTICS, OCCUPIED BANDWIDTH, OUT-OF-BAND EMISSIONS AND CONDCUTED SPURIOUS EMISSIONS

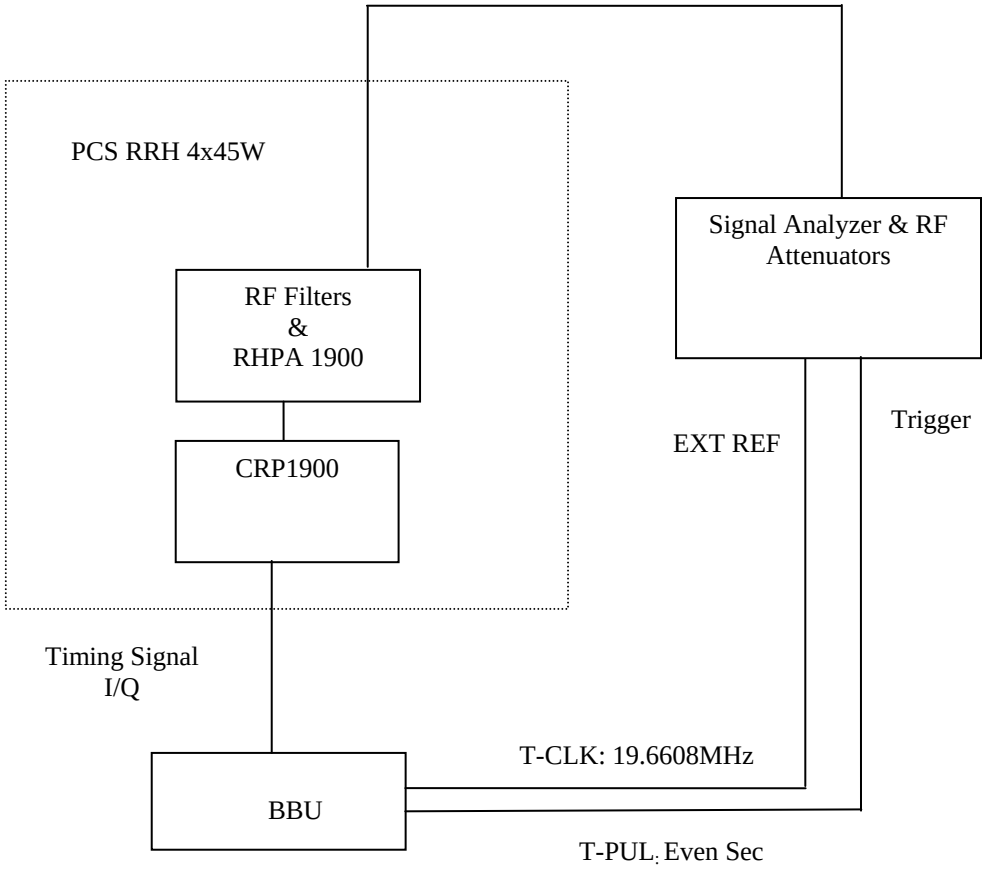
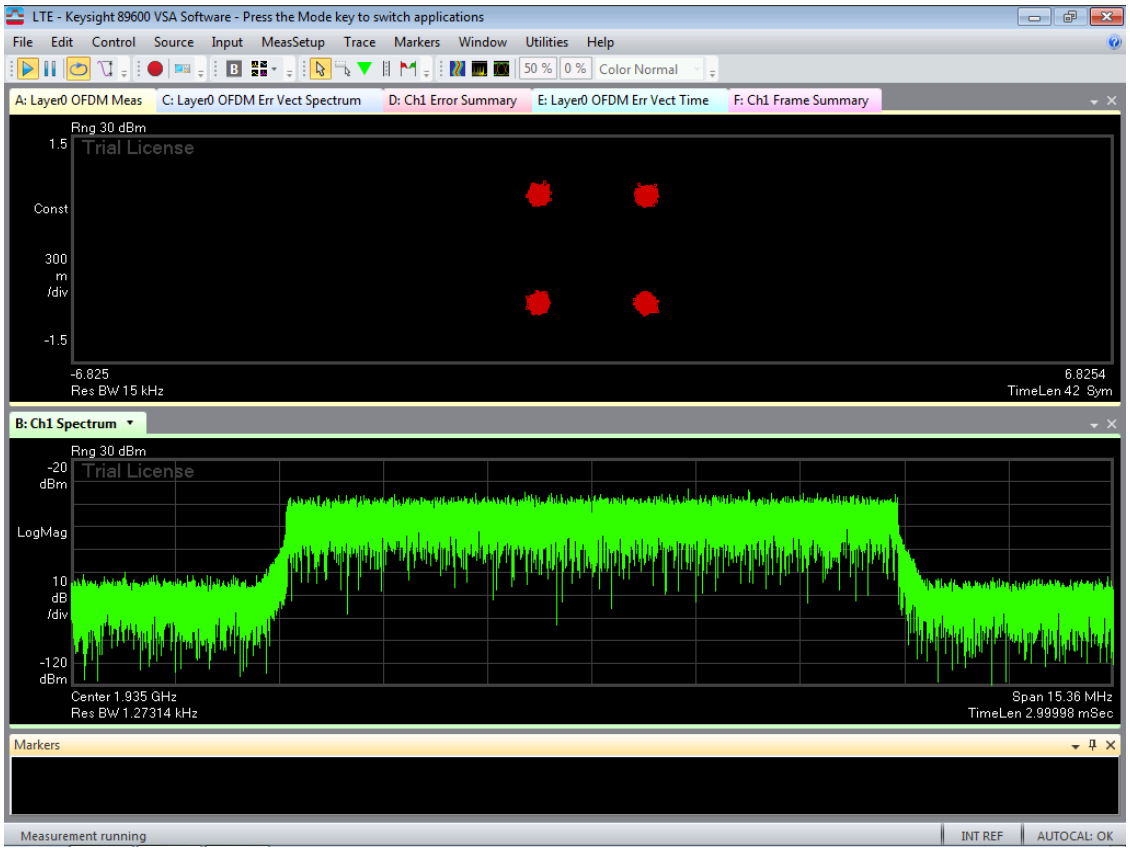
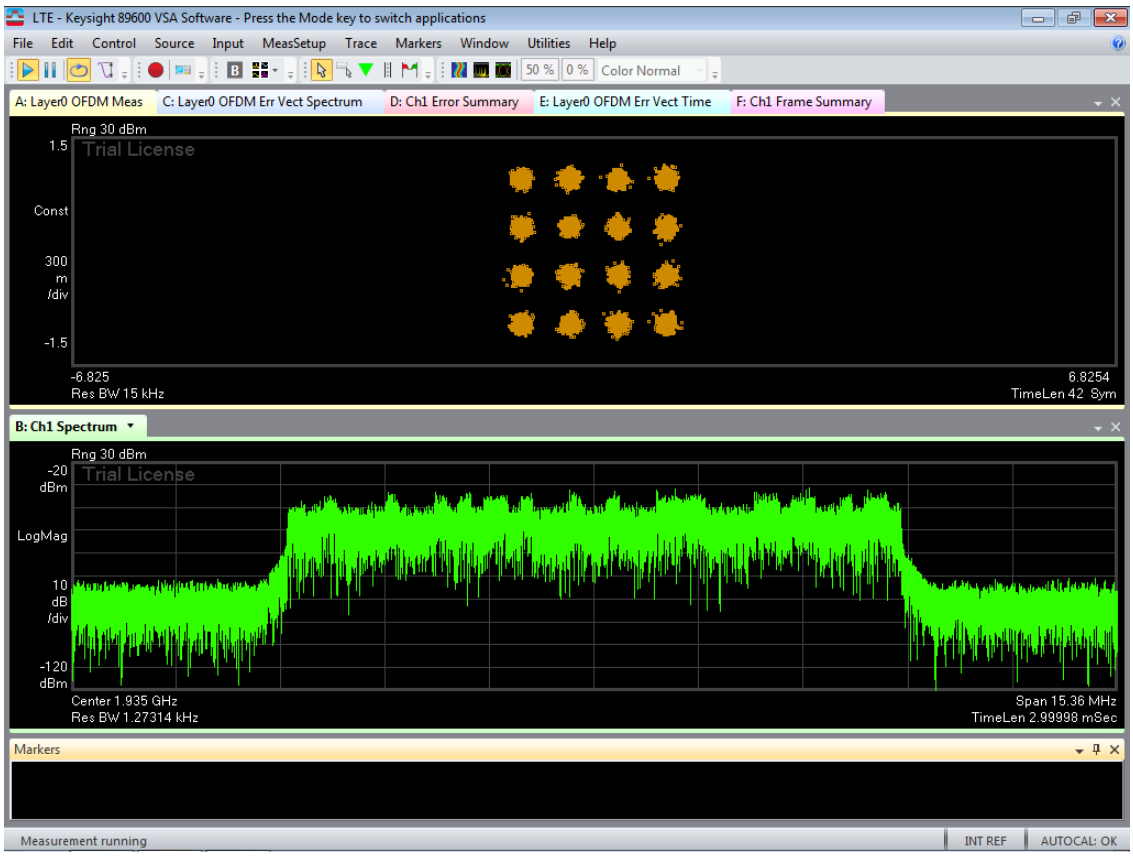


FIGURE 11.3.2 SCREEN PLOTS OF MODULATION MEASUREMENTAT CHANNEL 100, 1935 MHZ, 10MHZ LTE WITH QPSK, 16QAM AND 64QAM MODULATIONS





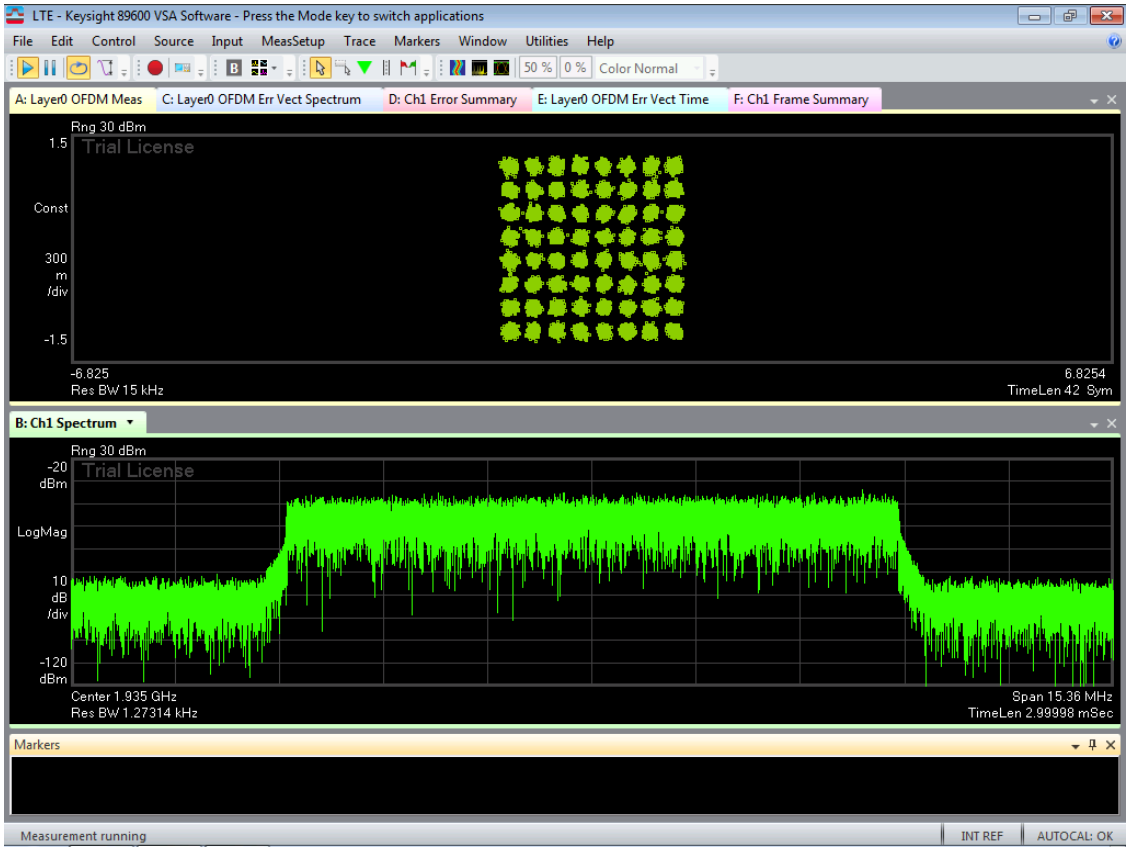


EXHIBIT 11.4

Section 2.1049 OCCUPIED BANDWIDTH AND OUT-OF-BAND EMISSIONS

In compliance with Section 2.1049, the appropriate E-UTRA test model specified in 3GPP TS 36.141 was used for configuring LTE carriers. All the CDMA voice carriers were configured with a combination of the Pilot, Sync, Paging and Traffic channels. The Pilot/Sync/Page channels were set up according to the recommended test model for base stations given in 3GPP2 C.S0010 with 37 traffic channels. All CDMA2000 data carriers were configured with time-division multiplexed Pilot Channel, the MAC Channel, and the Forward Traffic Channels at full data rate. The Pilot/MAC/Traffic/Control channels were setup according to the recommended test model for base stations given in 3GPP2 C.S.0032.

The 65MHz bandwidth PCS spectrum is divided into 7 blocks (A through G) as shown in the following table.

Table 11.4.1 List of PCS Blocks and Frequencies.

PCS Blocks	Tx Frequency (MHz)	Rx Frequency (MHz)	Bandwidth (MHz)
A	1930 - 1945	1850 - 1865	15
B	1950 - 1965	1870 - 1885	15
C	1975 - 1990	1895 - 1910	15
D	1945 - 1950	1865 - 1870	5
E	1965 - 1970	1885 - 1890	5
F	1970 - 1975	1890 - 1895	5
G	1990 - 1995	1910 - 1915	5

The PCS RRH 4x45W Distributed Base station system supports single-carrier and multiple-carrier configurations with CDMA and LTE technologies. The RRH can operate in an LTE-only mode or a CDMA-only mode or a CDMA and LTE mixed mode.

Requirements

The minimum emission requirements and the setting of measurement equipment for the occupied bandwidth measurement of a PCS carrier were specified in FCC Part 24. The FCC's requirements are tabulated in the following table:

Table 11.4.2 FCC Part 24.238 Transmitter Unwanted Emission Limits

Frequency	Required Minimum Attenuation below the Mean Carrier Power *P*	Minimum Resolution Bandwidth of Spectrum Analyzer
1MHz Bands Immediately Outside the Transmitting Frequency Band	(43 + *P* dBW) dBc	12.5kHz for a 1.25MHz carrier 50kHz for a 5MHz carrier
Outside the Above Frequency Band	(43 + *P* dBW) dBc	1MHz

The requirement of FCC Part 24.238 was used as the required emission limit mask in the LTE measurement.

The requirements for a CDMA carrier in a multiple carrier configuration specified in 3GPP2 C.S0010-D and C.S.0032-C Section 4.4. was followed for Suppression Inside the Licensee's Frequency Block(s)

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

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

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

When adjusted by the 10Log ratio of the measurement bandwidth / 1% bandwidth

$$3.8 \text{ dB} = 10 \text{ Log } (30\text{kHz}/12.5\text{kHz})) \quad \text{and}$$
$$9.2 \text{ dB} = -13 \text{ dBm} + 3.8 \text{ dB}$$

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

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

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

The mask of the emission limit displayed in the CDMA measurement plots is the requirement of 3GPP2 C.S0010/C.S0032 which is tighter than FCC Part 24.238. FCC Part 24.238 requirements start from the block edges only.

The measurements were performed with a Rohde & Schwarz EMI Receiver, which was calibrated in accordance with ISO 9001 process. The test set-up diagram is same as the one shown in the Figure 11.3.1.

For the LTE only and the CDMA & LTE combined measurements, the spectrum analyzer was set with a 100 kHz resolution bandwidth, as shown in the plots of the occupied bandwidth measurement attached in the following pages. The emissions outside the above spans were evaluated in Measurement Required: Out-of-block Spurious Conducted Emissions. The top of the carrier measured with a 100 kHz resolution bandwidth, thus, was 20 dB below the LTE carrier power measured with a resolution bandwidth greater than the carrier bandwidth 10 MHz (if available). This 20dB offset was due to the fact that 10 log (10000kHz/100kHz) = 20 dB. For CDMA carriers, the top of the carrier measured with a 100 kHz resolution bandwidth, was 11 dB below one CDMA carrier power measured with a 3MHz resolution bandwidth. This 11dB offset was due to the fact that 10 log (12.5kHz/100kHz) = 11 dB. The sampling average was used in all measurement. The limits were lowered by 6dB due to 4x4 MIMO operation for LTE carriers, where 10*log*4= 6dB.

Measurements.
For the 10 MHz LTE-only operation mode, the occupied bandwidth and out-of-band emissions measurements were made at the lowest and highest available LTE block edge channels for the 15MHz wide PCS Blocks A, B and C. For the narrower 5 MHz block the same measurements were made of combined block operation in (de-aggregation) Blocks AD, EF and CG.
The measurement was performed for QPSK, 16QAM and 64QAM modulations as identified in Table 11.4.2. At each of the carrier frequencies, the carrier power level at the antenna terminal was adjusted to the maximum rated mean power +46 dBm (40W).

For the multiple-carrier configuration with CDMA and LTE combination, the carrier placements which potentially give the worst emissions based on engineering judgment for available carrier configurations were evaluated with a 10 MHz LTE carrier and 1.25 MHz CDMA carriers whose total combined power was within the 45W maximum power rating.

Results
From the occupied bandwidth and out-of-band plots attached in the following, it can be seen that all the waveforms are under the required FCC emission mask with margins. The measurement results demonstrate the full compliance with the Rules of the Commission across PCS spectrum.

Presented Data
Table 11.4.4 below documents the measurements that were performed at the appropriate block edges and their compliance status.

The three 26dB Occupied Bandwidth plots with the maximum bandwidth were submitted for LTE one carrier with QPSK, 16QAM and 64 QAM, respectively. The maximum 26dB Bandwidth for 10MHz LTE signal is 9.4389MHz.

For the 40W 10M0F9W LTE carrier configuration, four plots are submitted which have the least margin for emissions among all PCS blocks. The Blocks were evaluated for QPSK, 16QAM and 64QAM modulations including Left and Right side of band.. The limits specified in FCC Part 24.238 for 4x4 MIMO operation are displayed in the plots.

A combined LTE and CDMA transmit configuration is presented with two emission plots. One shows the margin for the CDMA carrier and one shows the margin for the LTE carrier. The submitted plots show the least margin for the configurations of one 20W 10MHz LTE carrier + one 25W CDMA carrier across PCS spectrum evaluated. The limit specified in FCC Part 24.238 for 4x4 MIMO operation is displayed in the plot for the LTE carrier. The limit displayed for the CDMA carrier is the appropriate FCC CDMA mask.

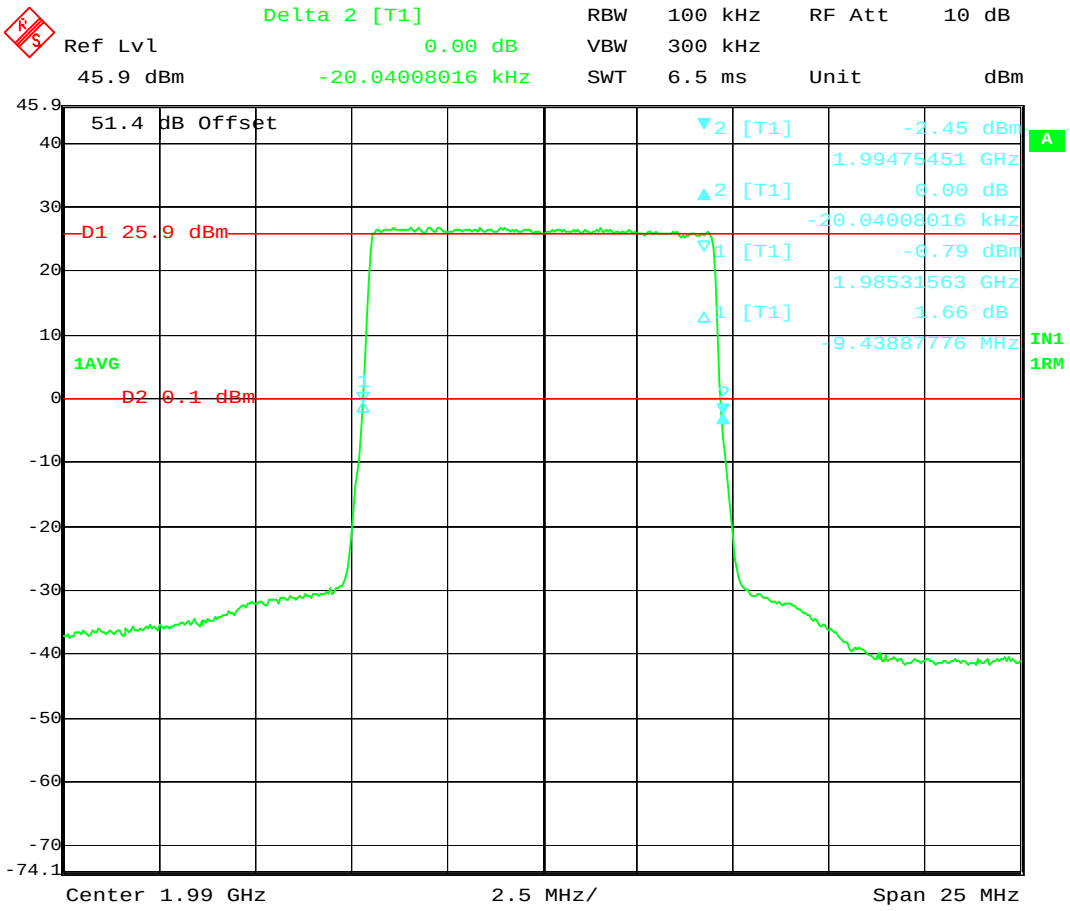
For the multiple-carrier configuration with CDMA and LTE combination, the carrier placements which potentially give the worst emissions based on engineering judgment for available carrier configurations were evaluated with a 20W 10MHz LTE carrier and a 25W CDMA carrier.

Table 11.4.4 Compliance Tabulation of Occupied Bandwidth Measurements.

Block	Center Frequency MHz	Emissions Designator	Modulation	RF Power Level W	Occupied Bandwidth and Out of Band Emissions Measurement	Compliance Status
A	1935	10M0F9W	QPSK, 16QAM, 64QAM	40	Yes	Compliant
A	1940	10M0F9W	16QAM	40	Yes	Compliant
AD	1945	10M0F9W	64QAM	40	Yes	Compliant
B	1955	10M0F9W	16QAM	40	Yes	Compliant
B	1960	10M0F9W	16QAM	40	Yes	Compliant
EF	1970	10M0F9W	64QAM	40	Yes	Compliant
C	1980	10M0F9W	QPSK	40	Yes	Compliant
C	1985	10M0F9W	16QAM	40	Yes	Compliant
CG	1990	10M0F9W	QPSK, 16QAM, 64QAM	40	Yes	Compliant

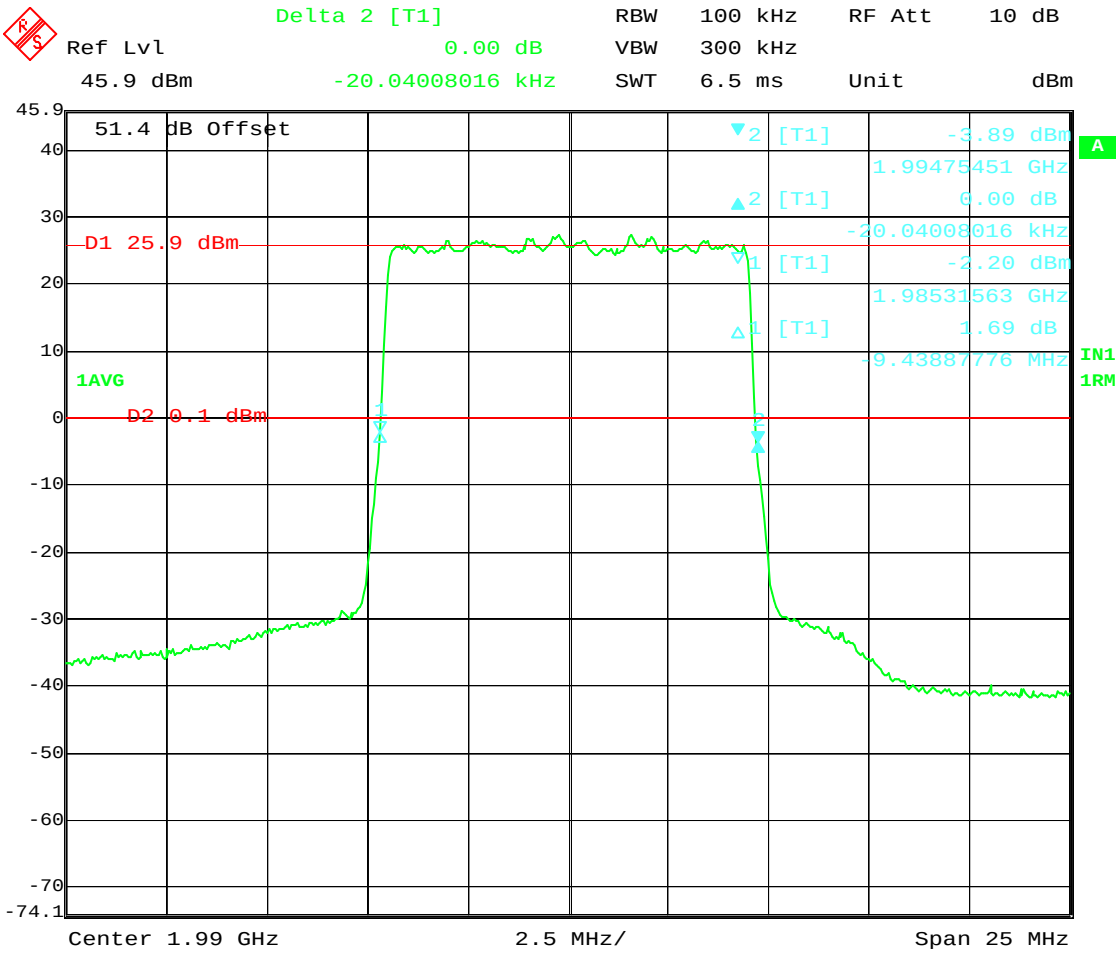
FIGURE 11.4.1 26dB OCCUPIED BANDWIDTH PLOTS

(a) 10MHZ LTE CHANNEL1200 (C+G BAND) AT 1990 MHZ WITH QPSK MODULATION — 9.4389MHZ



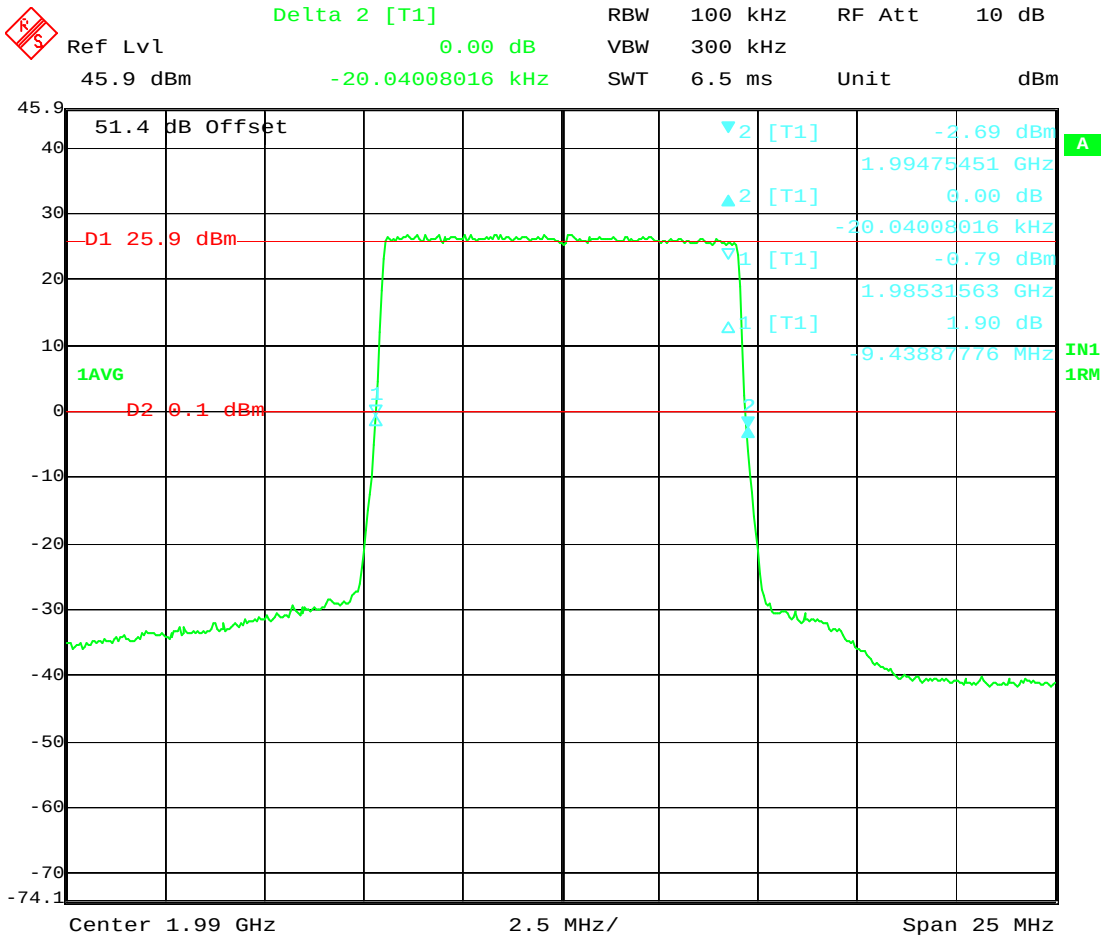
Title: 26dB BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; 10MHz BW; 1990 MHz
PWR: 40 Watts; QPSK; FCC PRT 24; FCCID: AS5BBTRX-05
Date: 12.JUN.2015 14:28:02

(b) 10MHZ LTE CHANNEL1200 (C+G BAND) 1990 MHz WITH 16QAM MODULATION — 9.4389MHZ



Title: 26dB BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; 10MHz BW; 1990 MHz
PWR: 40 Watts; 16QAM; FCC PRT 24; FCCID: AS5BBTRX-05
Date: 12.JUN.2015 14:34:01

(c) 10MHZ LTE CHANNEL1200 (C+G BAND) 1990 MHz WITH 64QAM MODULATION — 9.4389MHZ

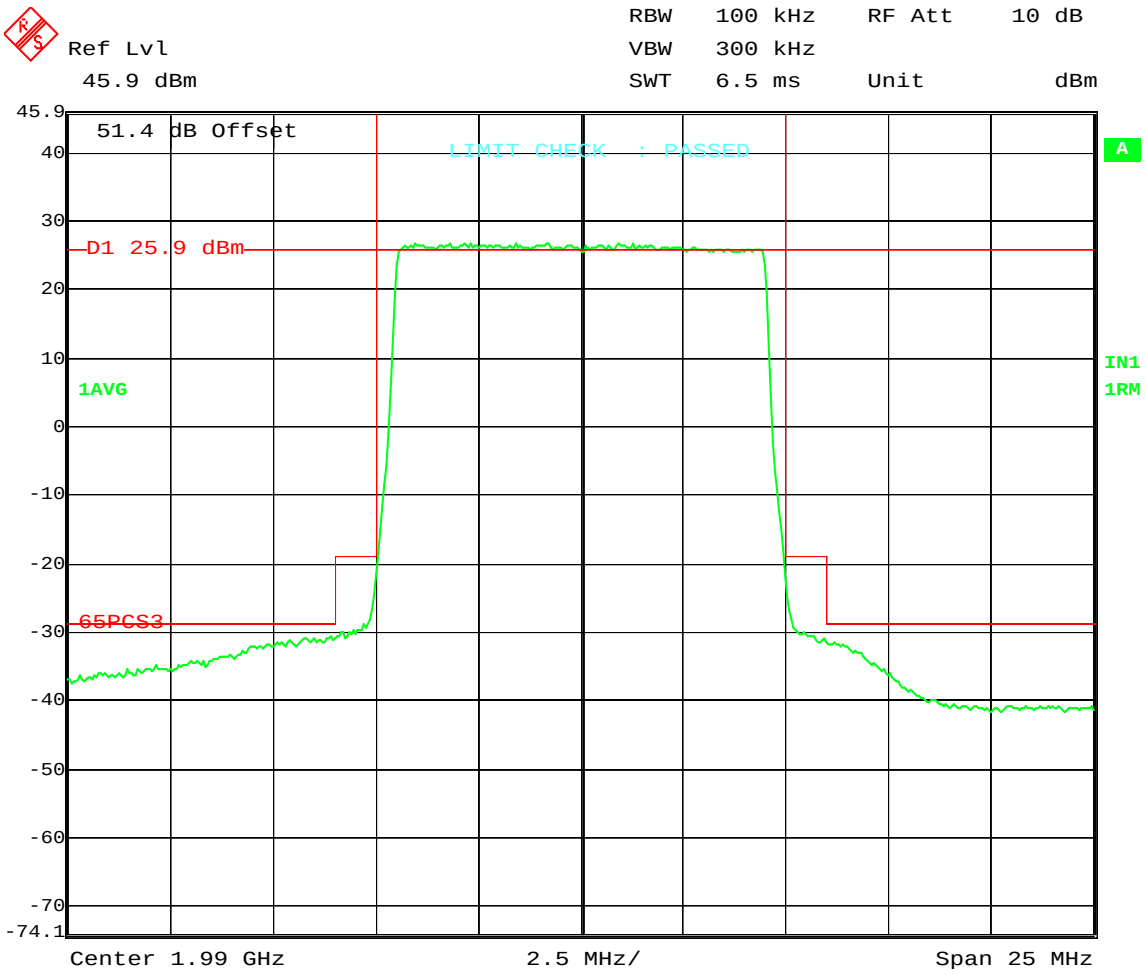


Title: 26dB BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; 10MHz BW; 1990 MHz
PWR: 40 Watts; 64QAM; FCC PRT 24; FCCID: AS5BBTRX-05
Date: 12.JUN.2015 14:39:20

0

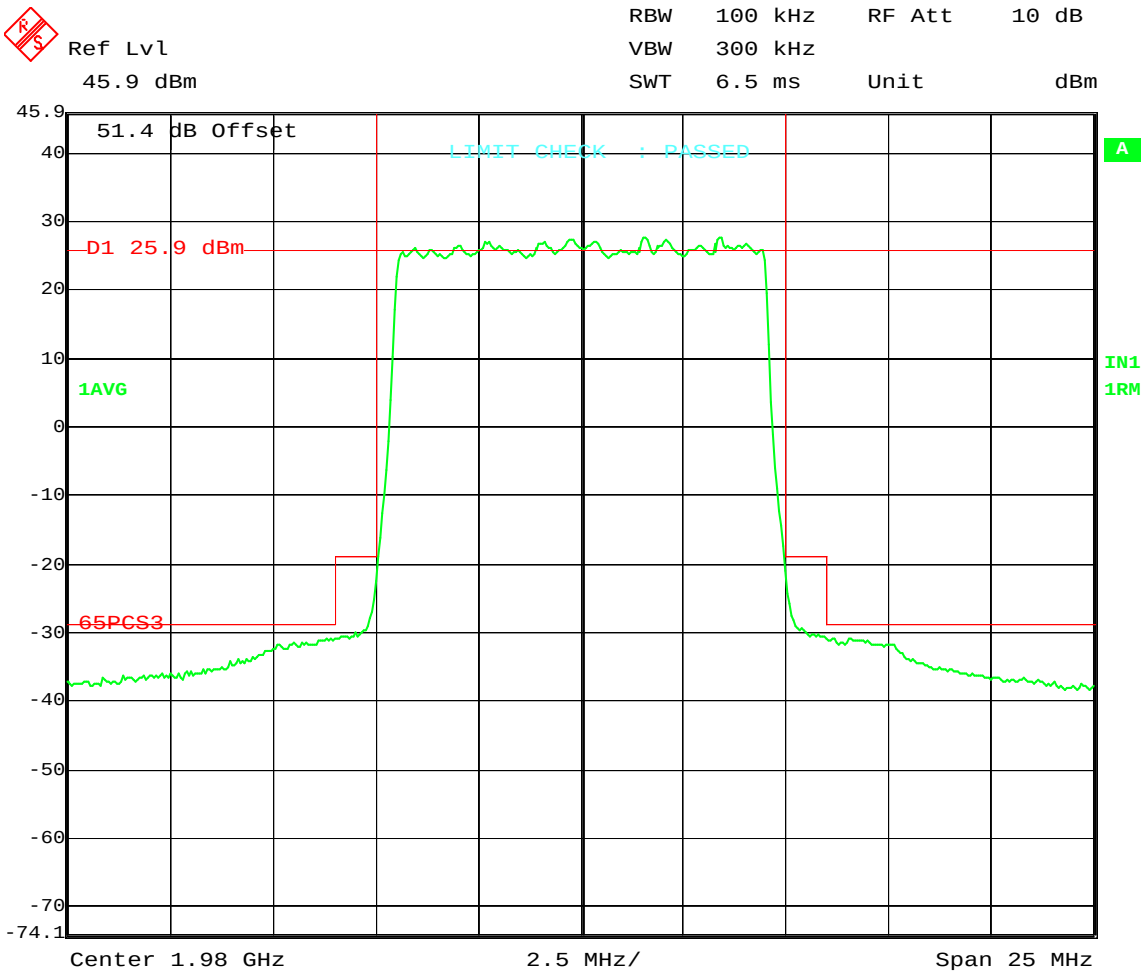
FIGURE 11.4.2 OCCUPIED BANDWIDTH AND OUT-OF-BAND EMISSIONS PLOTS

(a) LTE, CH 1200, 1990MHZ, 40W/C, QPSK



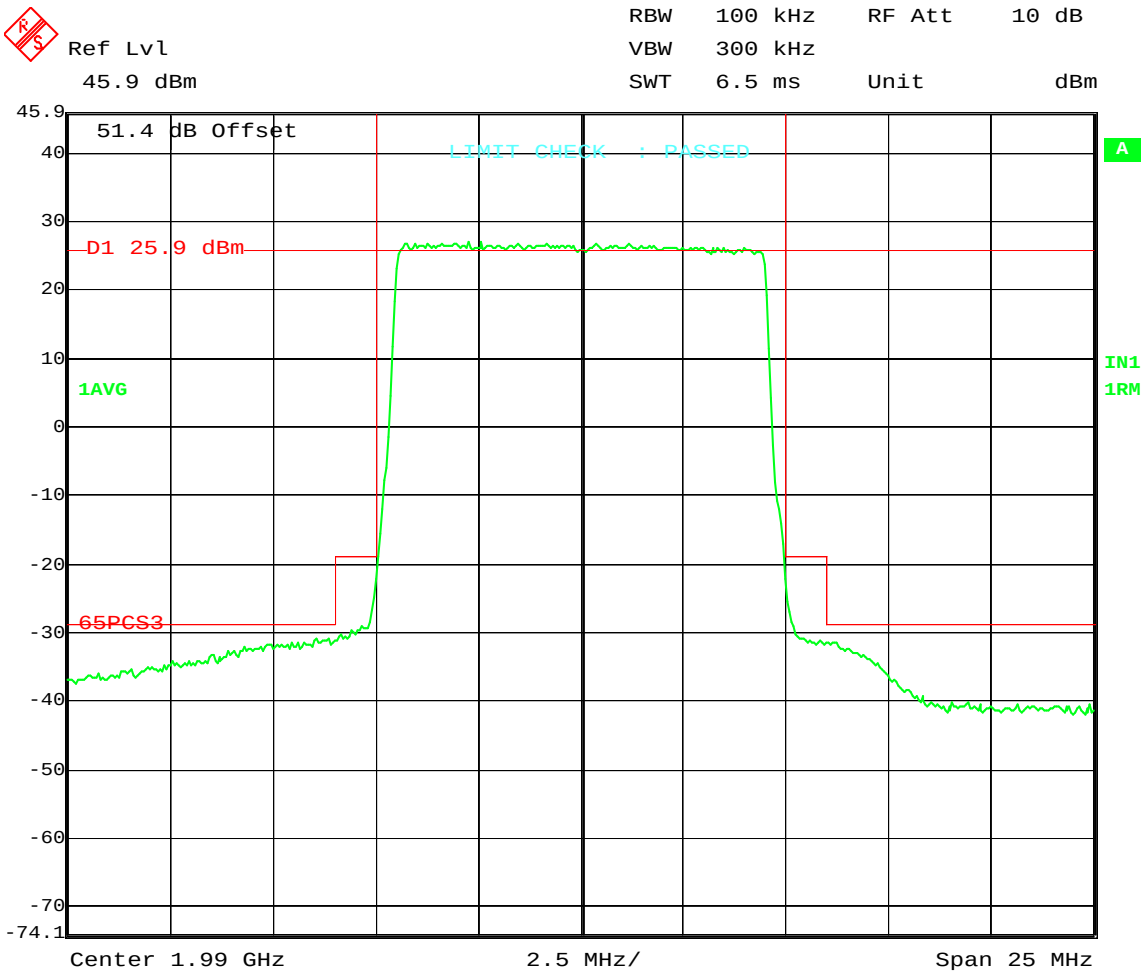
Title: OCCUPIED BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; 10MHz BW; 1990 MHz
PWR: 40 Watts; QPSK; FCC PRT 24; FCCID: AS5BBTRX-05
Date: 12.JUN.2015 09:06:02

(b) LTE, CH 1000, 1980MHZ, 40W/C, 16QAM



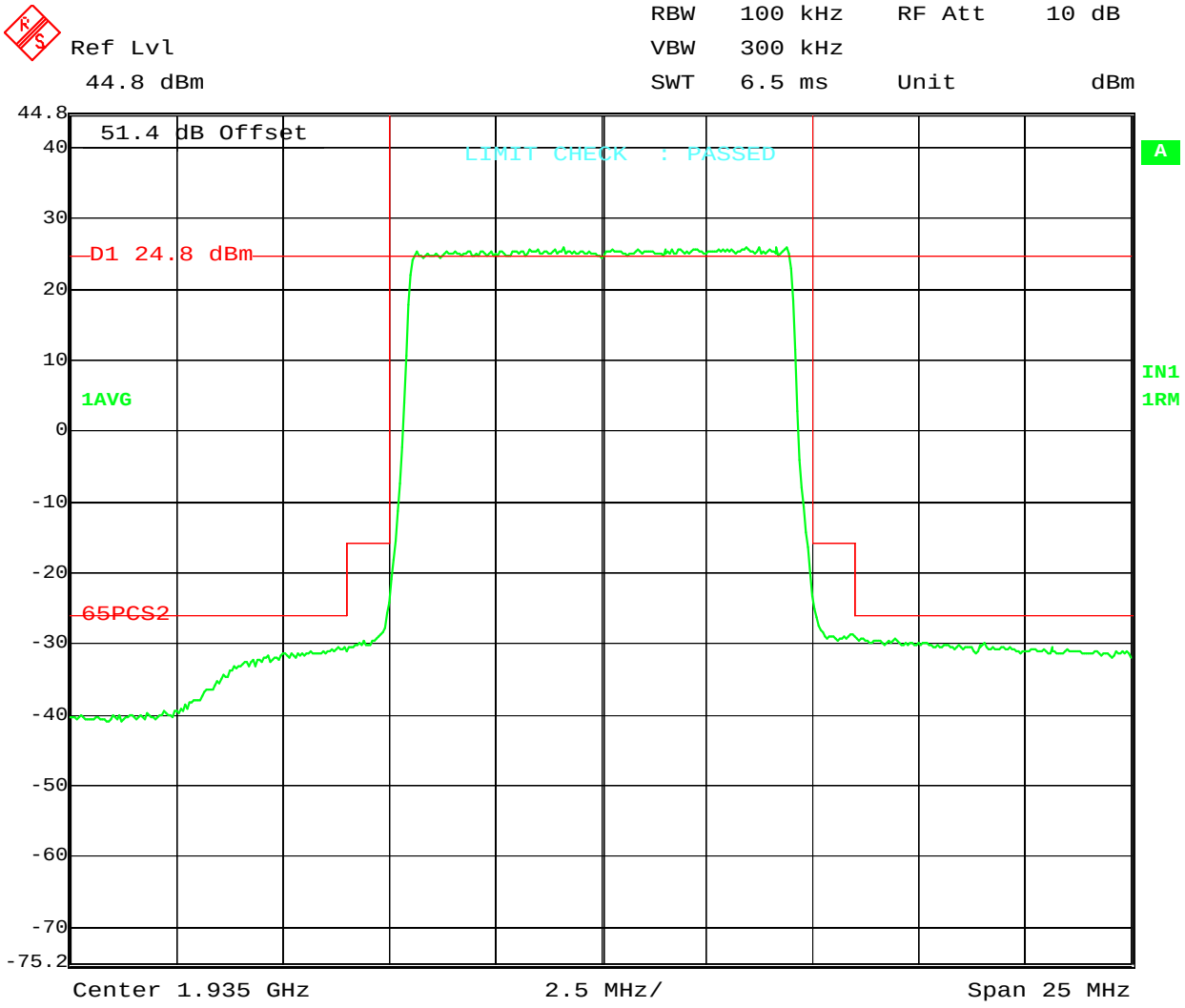
Title: OCCUPIED BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; 10MHz BW; 1980 MHz
PWR: 40 Watts; 16QAM; FCC PRT 24; FCCID: AS5BBTRX-05
Date: 12.JUN.2015 12:41:47

(c) LTE, CH 1200, 1990MHZ, 40W/C, 64QAM



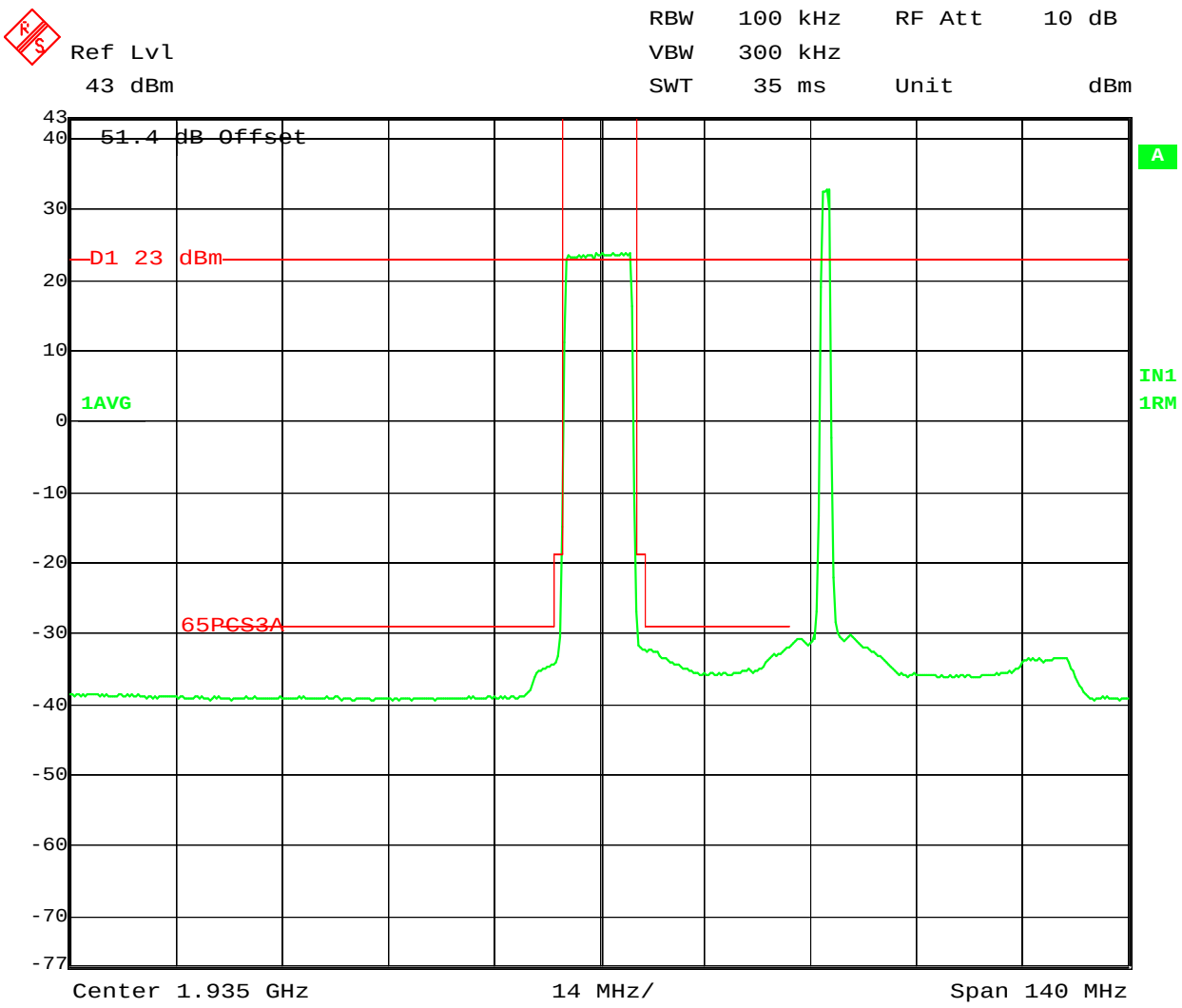
Title: OCCUPIED BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; 10MHz BW; 1990 MHz
PWR: 40 Watts; 64QAM; FCC PRT 24; FCCID: AS5BBTRX-05
Date: 11.JUN.2015 14:47:30

(d) LTE, CH 1200, 1990MHZ, 40W/C, 64QAM



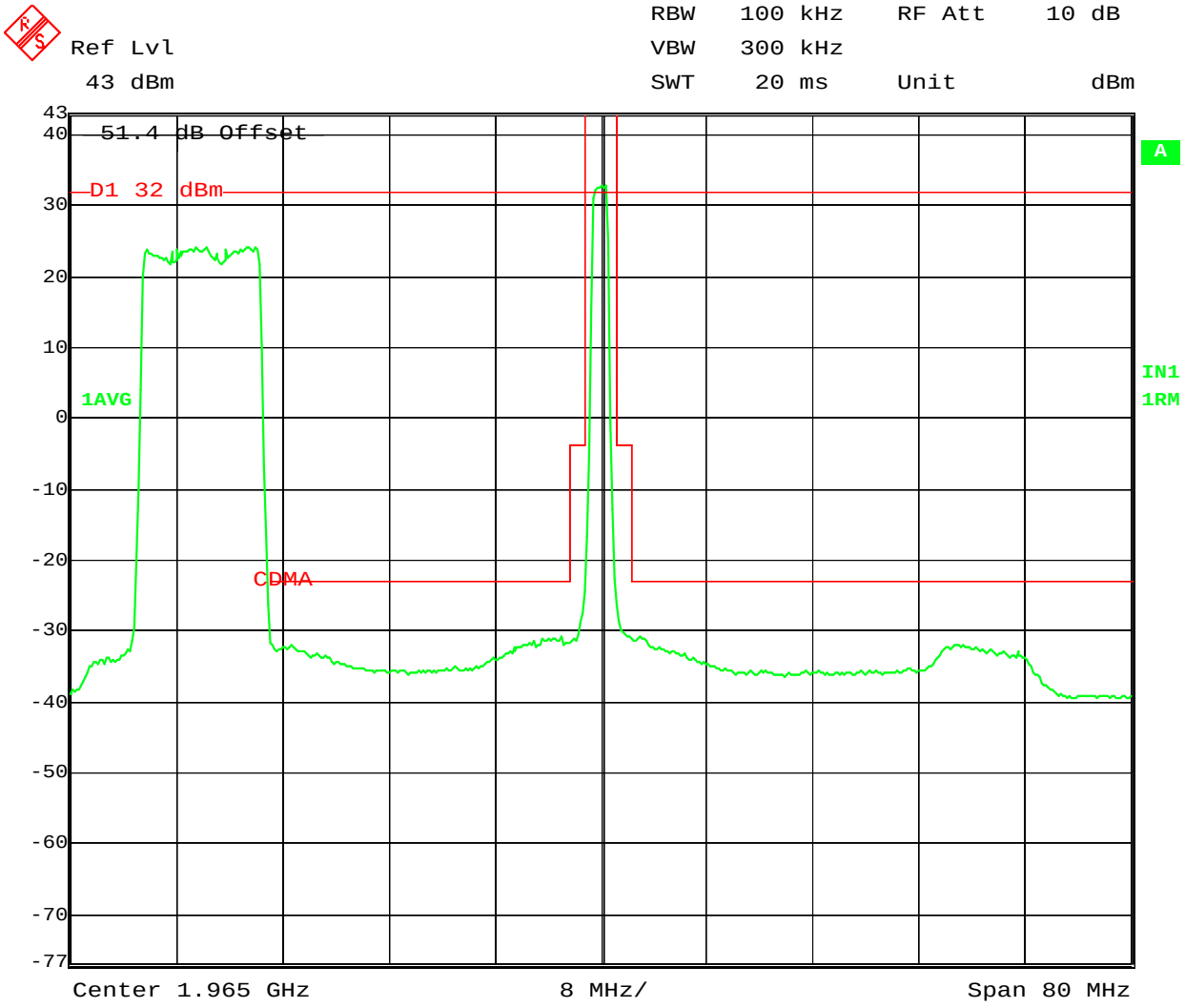
Title: OCCUPIED BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; 10MHz BW; 1935 MHz
PWR: 30 Watts; 64QAM; FCC PRT 24; FCCID: AS5BBTRX-05
Date: 5.JUN.2015 08:05:30

(e) 10 MHz 64QAM LTE carrier at 1935 MHZ and CDMA carrier at 1965 MHz 45W Total Power



Title: OCCUPIED BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; LTE_CDMA; CH:100 QPSK
CH:700 Voice; LTE PWR:20W; FCC PRT 24; FCCID:AS5BBTRX-05
Date: 30.JUN.2015 08:18:15

(f) 10 MHz 64QAM LTE at 1935 MHZ and CDMA at 1965 MHz 45W Total Power



Title: OCCUPIED BANDWIDTH; TEST ENGINEER: SEG; CLASS II CHANGE
Comment A: 65 MHz RRH PARITY RRH 4X45-1900 MHz; LTE_CDMA; CH:100 QPSK
CH:700 Voice; CDMA PWR:20W; FCC PRT 24; FCCID:AS5BBTRX-05
Date: 30.JUN.2015 08:25:27

CDMA Carrier

EXHIBIT 11.5

Section 2.1051 SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS

In compliance with Section 2.1051, the out-of-block spurious emissions at the antenna transmitting terminal were investigated from 10 MHz to the 10th harmonic of the carrier or 20 GHz, per Section 2.1057(a)(1). The PCS RRH 4x45W B25 was configured with carriers in the same test setup as in Sub-exhibit 11.4. The emission limitations and the setting of measurement equipment for the unwanted emissions measurement of the 10MHz LTE carrier were specified in 24.238 and as shown in Sub-exhibit 11.4. The carrier power level at the antenna transmitting terminal was calibrated before the conducted spurious emissions testing for each test.

For the mean output power of +46 dBm (40 W) at J4, the required spurious emissions attenuation per (43 + *P* dBW) dBc, is 59dBc. FCC CFR 47, Sections 2.1051 and 2.1057(c) specify that the spurious emissions attenuated more than 20 dB below the permissible value need not be reported. So the reportable limit is –79 dBc. With 4x4 MIMO operation, the reportable limit is -85dBc. For the mean output power of +43 dBm (20 W) at J4, the required spurious emissions attenuation is 56dBc. The reportable limit is –76 dBc. With 4x4 MIMO operation, the reportable limit is -82dBc. The limit required to show compliance with FCC Part 24.238 in accordance with KDB 662911 D1 v02r01 is displayed in the plots.

The measurements were performed with a Key Sight MXE EMI Receiver, which was calibrated in accordance with ISO 9001 process. The test set-up diagram is given in the Figure 11.3.1. The spectrum analyzer was set to a 1MHz resolution bandwidth. The sampling average was used.

Results:

The out-of-block Conducted Spurious Emissions of the Alcatel-Lucent PCS RRH4x45W are compliant for the spectrum investigated (10MHz to 20GHz). The measurement results demonstrate that the subject of the application is in full compliance with the Rules of the Commission. The compliance tabulation of Conducted Spurious Emissions measurements is documented in Table 11.4.1 below.

Three sample emissions plots are submitted which document the minimum margin is 8.35dB for all configurations evaluated, including 40W 10MHz LTE only configuration and the combined 10MHz LTE + 1.25 MHz CDMA configuration.

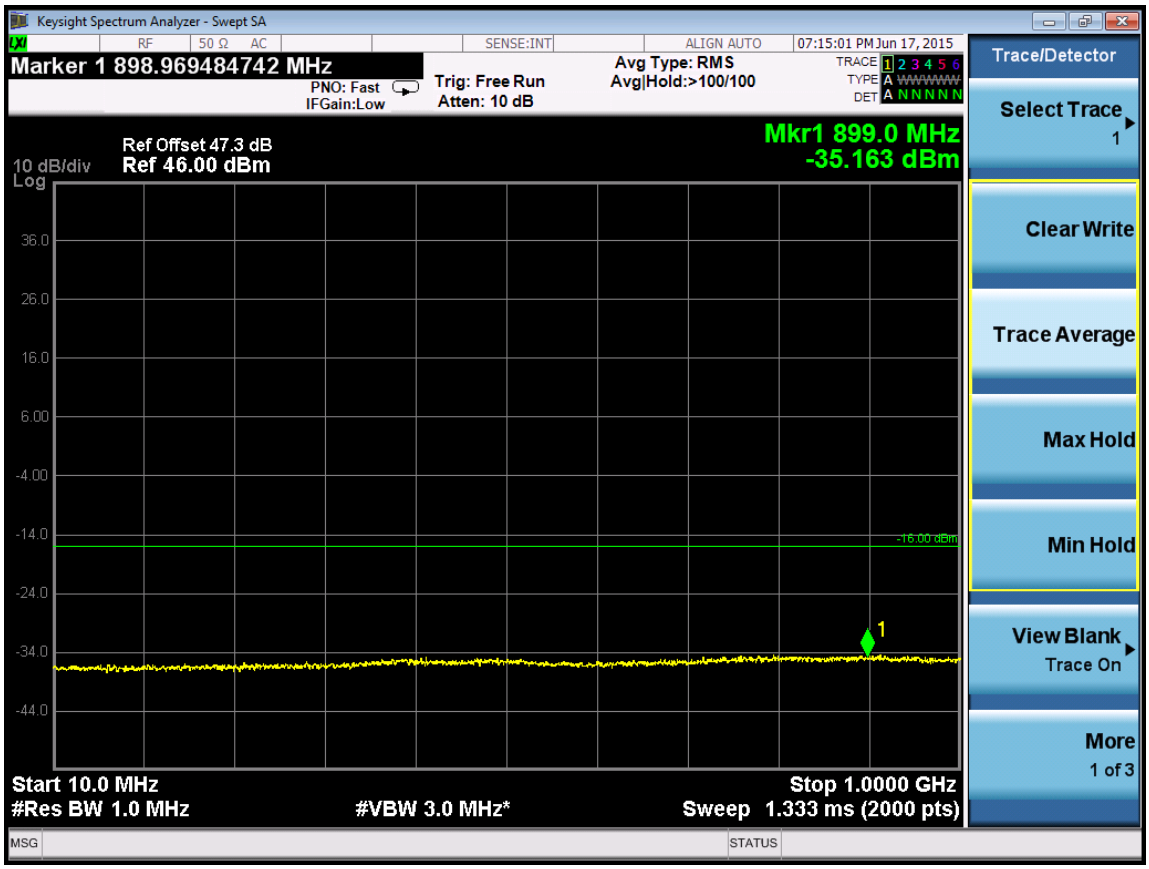
Table 11.4.1 Compliance Tabulation of Conducted Spurious Emissions Measurements

Block	Frequency MHz	Emissions Designator	Modulation	RF Power Level W	Conducted Spurious Emissions Measurement	Compliance Status
A	1935	10M0F9W	QPSK, 16QAM, 64QAM	40	Yes	Compliant
A	1940	10M0F9W	16QAM	40	Yes	Compliant
AD	1945	10M0F9W	64QAM	40	Yes	Compliant
B	1955	10M0F9W	16QAM	40	Yes	Compliant
B	1960	10M0F9W	16QAM	40	Yes	Compliant
EF	1970	10M0F9W	64QAM	40	Yes	Compliant
C	1980	10M0F9W	QPSK	40	Yes	Compliant
C	1985	10M0F9W	16QAM	40	Yes	Compliant
CG	1990	10M0F9W	QPSK, 16QAM, 64QAM	40	Yes	Compliant

FIGURE 11.5.1 OUT-OF-BOCK SPURIOUS EMISSIONS PLOTS

(a) **LTE 1C CHANNEL 800 (E + F BAND) AT 1970 MHZ, 40W/C, 64QAM**

Note: The limit line in the following plots is at -19dBm for 4x4 MIMO which is 3dB below the green line displayed.



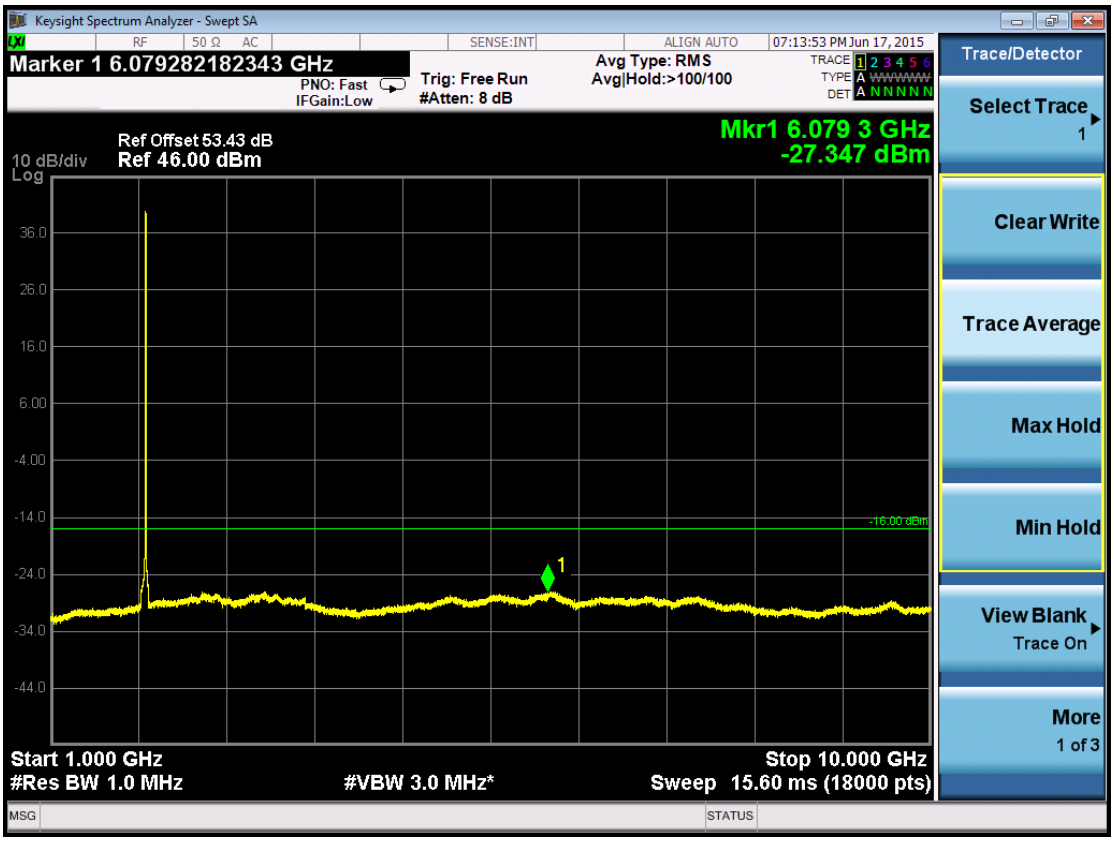


EXHIBIT 11.6

Section 2.1053 MEASUREMENT REQUIRED: FIELD STRENGTH OF SPURIOUS RADIATION

The field strength measurements of radiated spurious emissions were made in a FCC (Site Registration Number: 515091) and IC (Filing Number: 6933F-5) registered three meter semi-anechoic chamber AR-5 which is maintained by Alcatel-Lucent in Murray Hill, New Jersey.

The -48VDC CDMA-LTE PCS RRH 4x45W B25 (EUT) was configured in semi-anechoic chamber AR-5 as in the normal field installation and the recommendations of ANSI C63.4–2009 were followed for EUT testing setup and cabling. The EUT configured to operate per the E-UTRA test model specified in 3GPP TS 36.141 and as documented in Exhibit 11.4 for LTE carriers.

The base station was configured 1) to transmit a 4x MIMO 10 MHz LTE carrier in A Block at 1935 MHz with the maximum mean power of 40W at each antenna port of Tx1, Tx2, Tx3 and Tx4 respectively. All carriers were transmitting to non-radiating 50 Ω resistive loads.

The spectrum from 10 MHz to the tenth harmonic of the carrier (20 GHz) was searched for spurious radiation per Section 2.1057(a)(1). 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:

Pmeasured (dBm) + Cable Loss(dB) + Antenna Factor(dB) + 107 (dBμV/dBm) -Amplifier Gain (dB)
= Field Strength (dBμV/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.

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

$$20 \log (E*10^{6}) - (43 + 10 \log P) = 82.23 \text{ dB } \mu V/\text{meter}$$

Where: E = Field Intensity in Volts/ meter R = Distance in meters = 3 m
P = Transmitted Power in watts = 40 W

RESULTS:

For this particular test, the field strength of any spurious radiation, measured at 3m, is required to be less than 82.23 dBμV/meter. Emissions equal to or less than 62.23 dBμV/meter are not reportable and may be verified using field strength measurements and broadband antennas. Over the out of band spectrum investigated from 10 MHz to beyond the tenth harmonic of the carrier (20GHz), no reportable spurious emissions were detected. This demonstrates that the PCS LTE RRH 4x45W B25 / FCC ID: AS5BBTRX-05, the subject of this application, complies with Sections 2.1053, 24.238 and 2.1057 of the Rules.

FIGURE 11.6.1 EUT FOR MEASUREMENT OF RADIATED SPURIOUS EMISSIONS

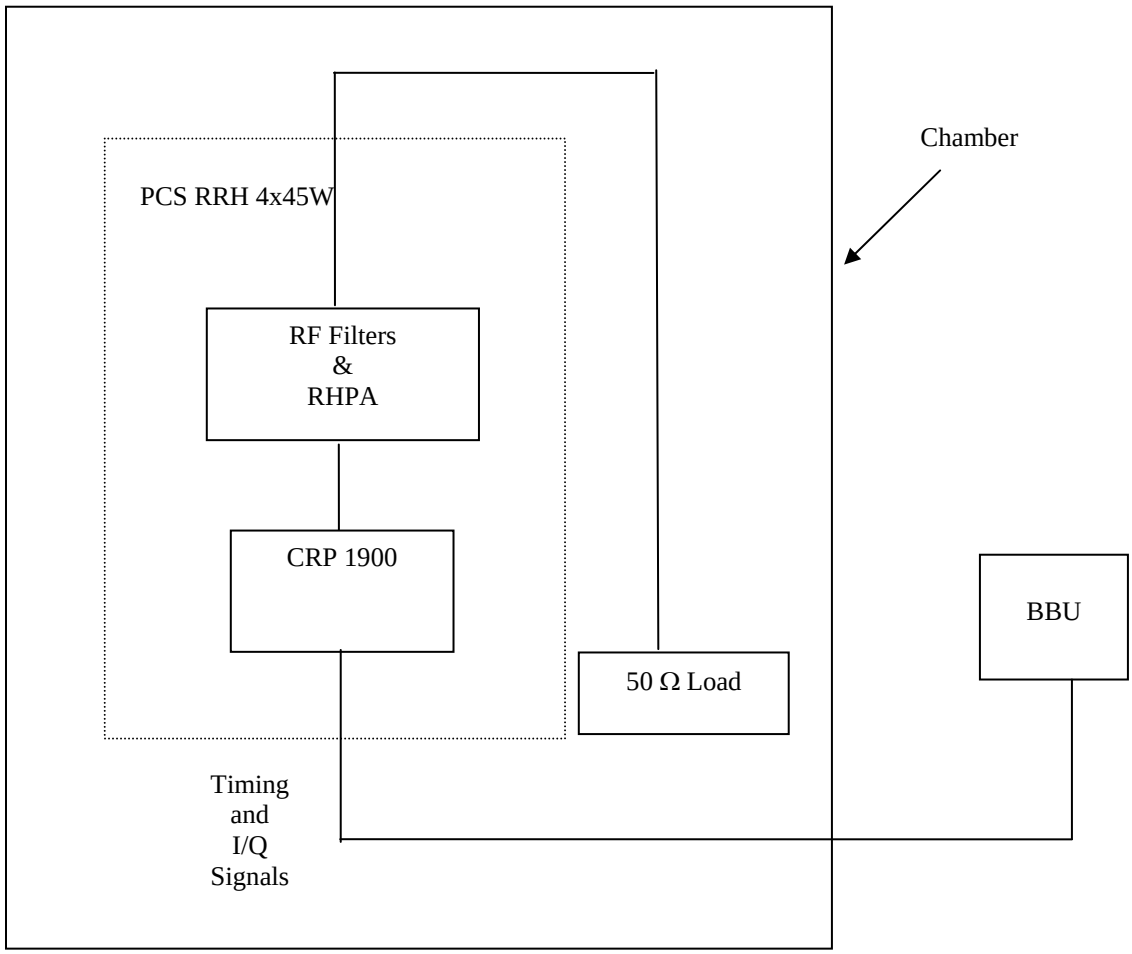


EXHIBIT 11.7

Section 2.947 LISTING OF TEST EQUIPMENT USED

Test Equipment List
For Radiated Spurious Emissions in 3m Anechoic Chamber AR-5

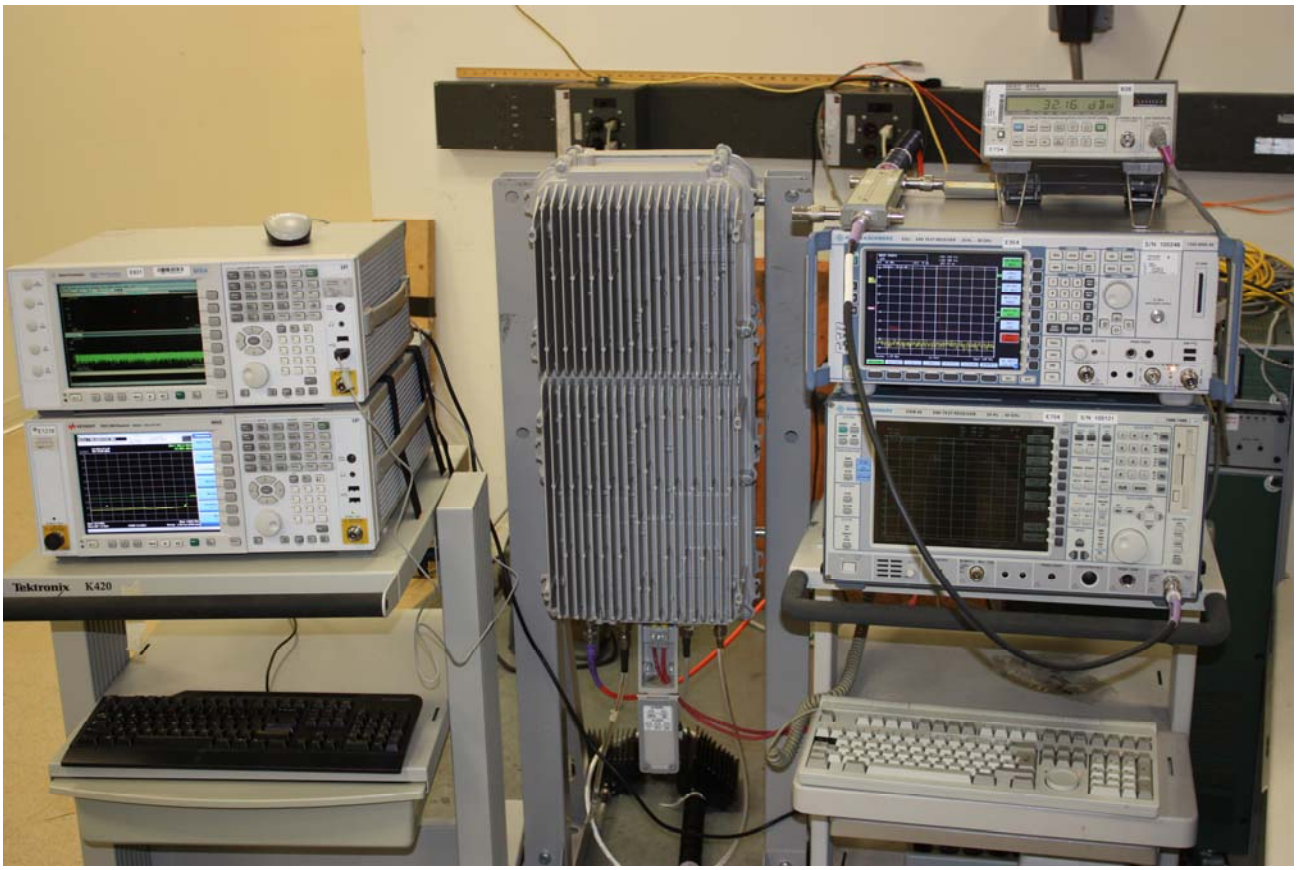
Type	Manufacturer	Model	Serial Number	Description	GPCL ID	Last Cal / Verification	Interval Months
Test Receiver	Rohde & Schwarz	ESIB40	100044	EMI 20Hz to 40 GHz	E567	2/7/2014	24
Amplifier	Sonoma Instrument Co.	310	185794	9KHz-1GHz	E507	6/17/2014	24
Amplifier	Agilent	8449B	3008A01740	Pre-Amplifier 1-26.5GHz	E1166	1/17/2014	24
Bilogical Antenna	AH Systems	SAS-521-2	408	25 - 2000 MHz	E601	2/13/2015	24
Attenuator	Weinschel	2-6	BX3438	6 dB DC-18GHz 5 Watt	E889	3/5/2014	24
Horn Antenna	ETS Lindgren	3117	135198	Double-Ridged Horn 1-18 GHz	E1073	12/10/2014	24
Horn Antenna	ETS	3116	2539	Double Ridged Horn 18-40 GHz	E513	3/19/2015	24
High Pass Filter	Trilithic	5HC2850/ 18050-1.8-KK	200113078	PCS 2.85GHz - 18.05GHz	E1116	1/6/2015	12
Multi-Device Controller	ETS	2090	1577	Multi-Device Controller	E555	N/A	

Test Equipment List For Antenna Port Measurements.

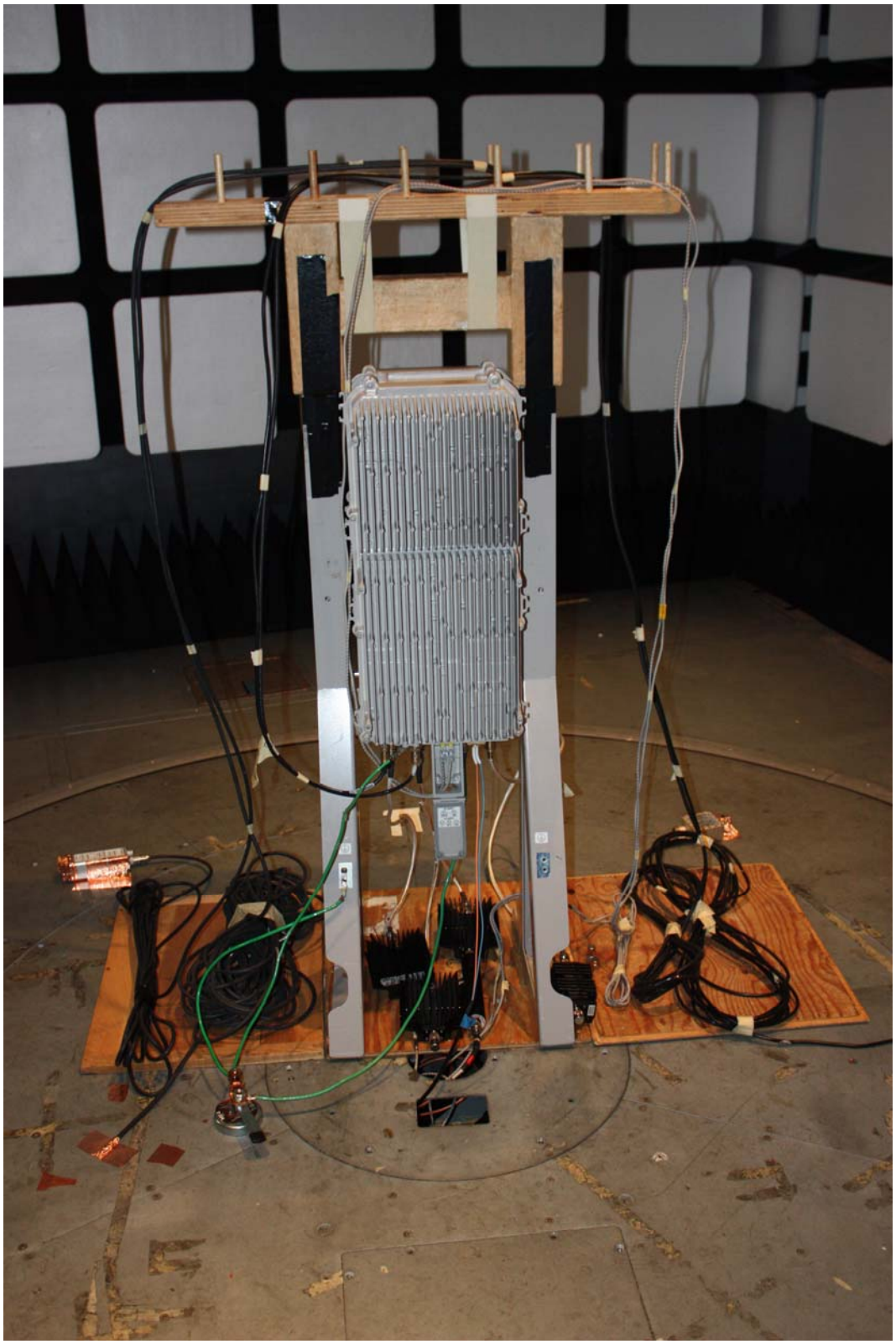
Type	Manufacturer	Model	Serial Number	Description	GPCL ID	Last Cal / Verification	Interval
Test Receiver	Rohde & Schwarz	ESIB40	100121	EMI 20Hz to 40 GHz	E704	4/8/2014	24
EMI Receiver	KeySight Technologies	MXE N9038A	MY54130037	EMI 20Hz to 26.5 GHz	E1218	1/20/2015	24
Signal Analyzer	Agilent Technologies	MXA N9020A	MY48011791	20Hz-26.5GHz	E831	1/10/2014	24
RF Power Meter	Hewlett Packard	437B	3737U26396	Single Channel Average Power Meter	E754	8/28/2013	24
Power Sensor	Hewlett Packard	8482A	3318A26143	100 KHz-4.2GHz	E173	8/15/2014	12
Attenuator	Weinschel	48-30-33	AY8323	DC - 18GHz 100 Watt	E961	6/26/2015	12
Attenuator	Weinschel	66-20-34	BW7319	20dB 150W DC-18 GHz	E816	1/13/2014	24
Directional Coupler	Hewlett Packard	778D	18655	Dual 0.1-2.0 GHz 20 dB	E1122	6/26/2015	12

EXHIBIT 11.8

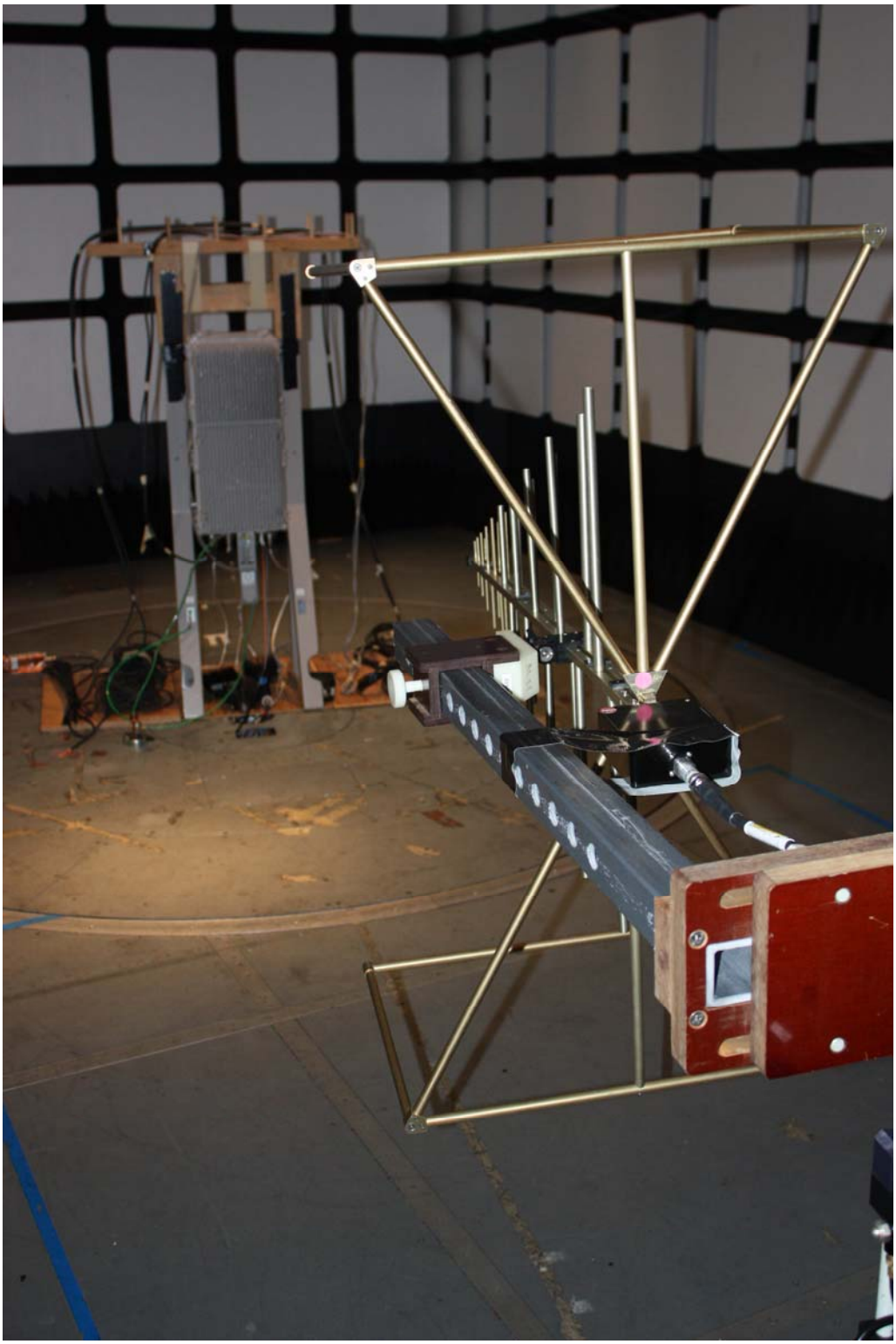
Photographs of the Antenna Port Test Setup



Photographs of the Radiated Emissions Test Setup



Photographs of the Radiated Emissions 30MHz-1 GHz Test Setup



Photographs of the Radiated Emissions -1-18 GHz Test Setup