EXHIBIT 12

TEST REPORT

This test report presents the measurement data required by the Commission for certifying the Nokia Flexi Zone Multiband Outdoor Micro Base Station RF Transceiver Module Band 2 (MBO B2) 2x5W, subject of this application, for operation in the PCS band with LTE technology.

As stated before, the MBO B2 2x5W, the EUT (equipment under test) has two antenna ports and supports MIMO with 2 transmit and 2 receive streams. The maximum output power is 37dBm (5W) per LTE carrier and per port and 10W per unit.

Applicant	Nokia Solutions and Network, OY 1455 W Shure Drive Arlington Heights, IL 60004
FCC ID	2AD8UFW2FMBOM1
Product Name	Flexi Zone Multiband Outdoor Micro Base Station RF Transceiver Band 2 Module
Model Names Used in Measurement	MBO B2 Module: FW2FMBOM1 MBO B66 Module: FW2IMBOM1 WiFi Module: FZCWMBOM1
Test Standard(s)	47 CFR FCC Part 24
Technology	LTE
Operation Frequency Band	PCS (Tx: 1930-1990MHz and Rx: 1850-1910MHz), E-UTRAN Band 2
Test Date	March 27 – April 21, 2017
Submission Type	Original Equipment
FCC Part 15 Subpart B Class B Complaince (Radiated Emissions and AC Power Port Conducted Emissions)	Yes (The evaluation was perfomred on the MBO Base Station with MBO B2 Transceiver Module, MBO B66 Transceiver Module and WiFi AP Module installed)
Test Report Number	2016-0155
Test Laboratory	Global Product Compliance Laboratory 600-700 Mountain Avenue Room 5B-108 Murray Hill, New Jersey 07974-0636 USA

CERTIFICATION OF TECHNICAL TEST DATA

2.911 (e) Technical test data submitted to the TCB and to the Commission shall be signed by the person who performed or supervised the tests. The person signing the test data shall attest to the accuracy of such data.

I hereby to certify that the evaluation of the subject product has been either performed or led by me in accordance with the Commission's Rules and Regulations set forth in the above standards. The data and the descriptions about the test setup, procedures and configuration presented in this report are accurate.

Steve Gordon

Steve E. Gordon

Lead Test Engineer
Member of Technical Staff
Global Product Compliance Laboratory
Nokia USA, Inc

SUBEXHIBIT 12.1

Section 2.1033 (c)(14) REQUIRED MEASUREMENT DATA

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

SUBEXHIBIT 12.2	Section 2.1046	Measurements Required: RF Power Output
SUBEXHIBIT 12.3	Section 2.1047	Modulation Characteristics
SUBEXHIBIT 12.4	Sections 2.1049 and 24.238	Measurements Required: Occupied Bandwidth and Out-of-Band Emissions
SUBEXHIBIT 12.5	Sections 2.1051 and 24.238	Measurements Required: Spurious Emissions at Antenna Terminals
SUBEXHIBIT 12.6	Sections 2.1053 and 24.238	Measurements Required: Field Strength of Spurious Radiation
SUBEXHIBIT 12.7	Sections 2.1055 and 24.235	Measurements Required: Frequency Stability
SUBEXHIBIT 12.8	Section 2.947	List of Test Equipment Used
SUBEXHIBIT 12.9	Section 2.948	Test Facilities

SUBEXHIBIT 12.2

Section 2.1046 MEASUREMENT REQUIRED: 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 1930-1990MHz PCS frequency band or E-UTRAN Band 2. 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., +37dBm (5W) per LTE carrier at the antenna-transmitting terminal.

Power measurements were made with a power meter in the average mode. The test set-up for conducting the RF power output measurement is shown in the following figure. Before the testing was started, the Base Station was given a sufficient "warm-up" period as required.

The maximum rated mean power at the antenna transmitting terminal was measured for a single LTE carrier (5MHz or 10MHz or 15MHz or 20MHz carrier) with QPSK, 16QAM, 64QAM and 256QAM modulation across the entire band, respectively.

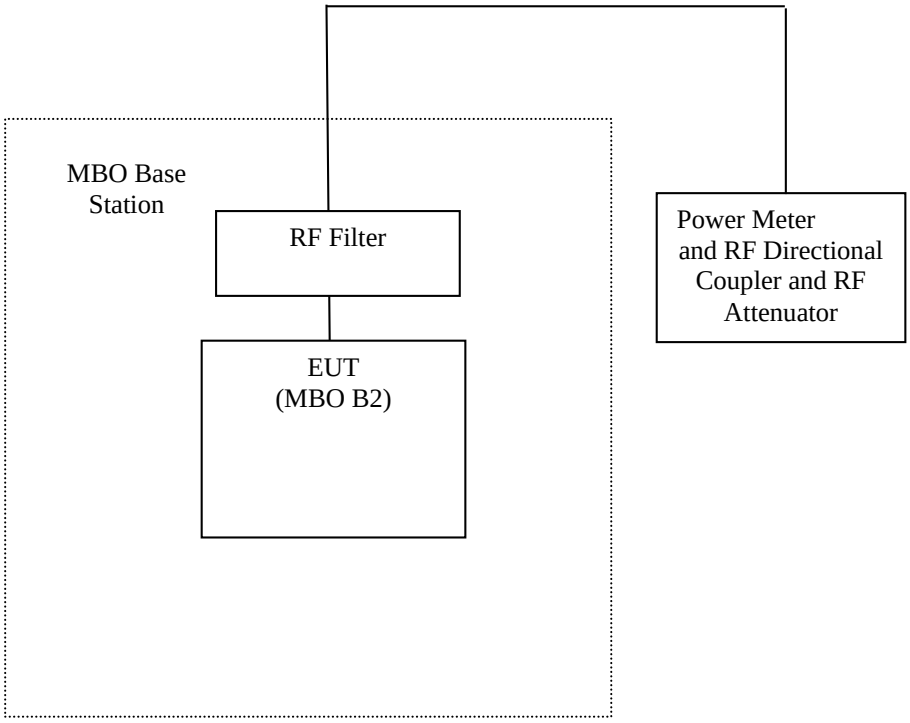
The RF power output measured for each configuration was shown as "Ref Lvl" in the plots provided in SubExhibit 12.4.

The Peak-to-Average Power Ratio (PAPR) has also been measured per KDB 971168 procedures for 5/10/15/20MHz carriers at the lowest, middle and highest available channels of the PCS band for 16QPSK, 64QAM and 256QAM, respectively. The PAPR values (0.1% probability) measured are all below 13dB with a maximum value of 6.95 dB.

Results:

The maximum rated mean RF power outputs of the EUT at its antenna transmitting terminals is 5W (+37 dBm) per 5MHz or 10MHz or 15MHz or 20MHz LTE carrier per port and 10 W (+40 dBm) per MBO, within ±1dB derivation, and are in full compliance with the Rules of the Commission.

FIGURE 12.2.1 TEST SET-UP FOR MEASUREMENT OF RADIO FREQUENCY POWER OUTPUT



SUBEXHIBIT 12.3

Section 2.1047 MEASUREMENT REQUIRED: MODULATION CHARACTERISTICS

The EUT supports LTE technology. 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, 64QAM and 256QAM.

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

In LTE, the modulation characteristics measurement measure the difference between the ideal symbols and the measured symbols after the equalization. The measurement was performed for QPSK, 16QAM, 64QAM and 256QAM, respectively, where the carrier power level was adjusted to the rated maximum mean power +37dBm (5W) at the output terminal.

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

The test set-up diagram is given in the Figure 12.3.1.

Figure 12.3.2 shows three representative screen plots of the modulation measurement at 1994 MHz for a 20MHz bandwidth LTE carrier in QPSK, 16QAM, 64QAM and 256QAM modulations, respectively.

Results:

The modulation characteristics of the EUT is in full compliance with the Rules of the Commission across the PCS Frequency Band.

FIGURE 12.3.1 TEST SET-UP FOR MEASUREMENT OF MODULATION ACCURACY, OCCUPIED BANDWIDTH AND OUT-OF-BAND EMISSIONS

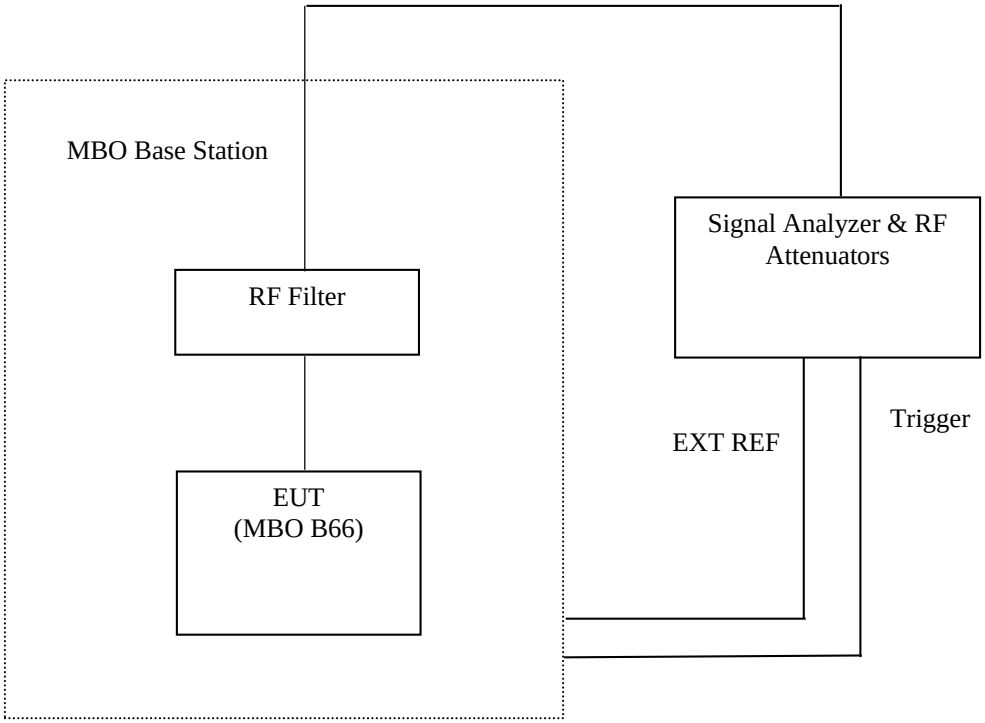
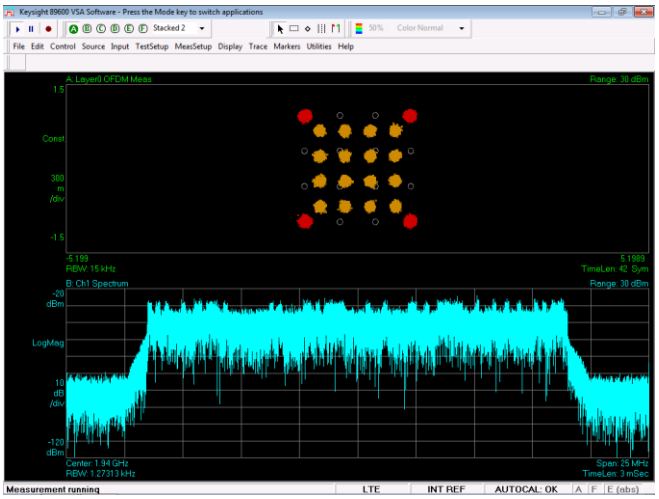
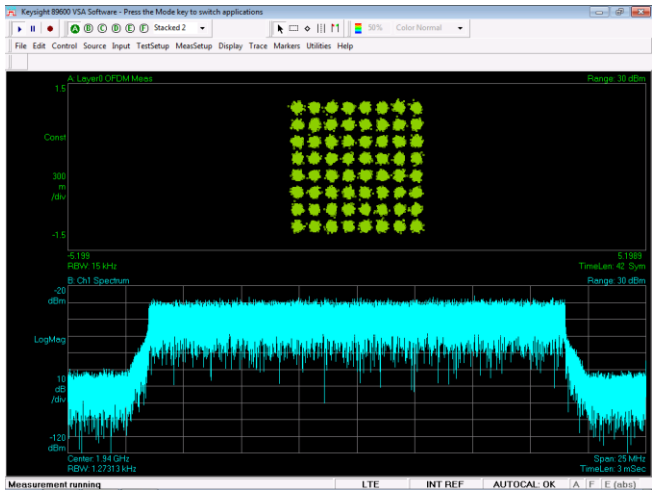
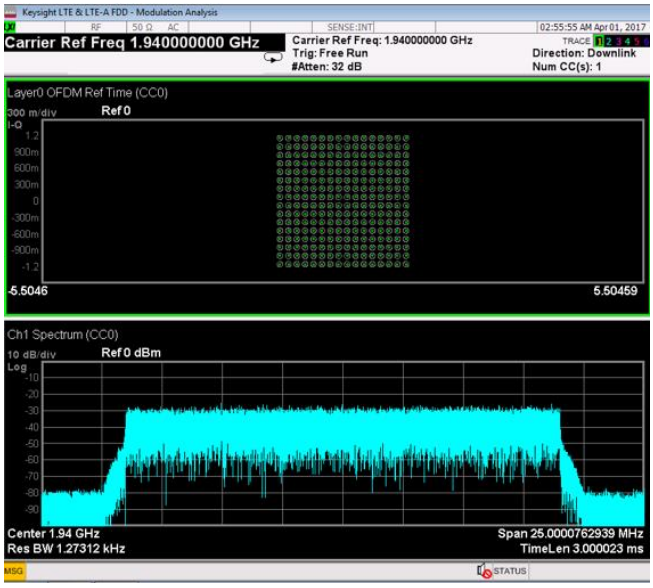


FIGURE 12.3.2 SCREEN PLOTS OF MODULATION MEASUREMENT AT 1940 MHZ, 20MHZ LTE WITH QPSK, 16QAM, 64QAM AND 256QAM MODULATIONS







SUBEXHIBIT 12.4

Section 2.1049 MEASUREMENT REQUIRED: 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 LTE carrier.

The EUT currently supports a single LTE carrier of either 5MHz or 10MHz or 15MHz or 20MHz in 1900 PCS band, (Tx: 1930-1990 MHz and Rx: 1850-1910 MHz) per transmitting path (see Table 12.4.1). The two 60MHz bandwidth PCS spectrum is divided into 6 blocks (A, B, C, D, E and F) as shown in the following table

12.4.1 EUTRAN 2, PCS Band

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

The occupied bandwidth and out-of-band emissions measurements were made at the antenna transmitting terminal (J4) for 16QPSK, 64QAM and 256QAM modulations, respectively. At each of the carrier frequencies, the carrier power level at the antenna terminal was adjusted to the maximum rated mean power +37.0 dBm (5W).

The minimum emission requirements and the setting of measurement equipment for the occupied bandwidth measurement of a 1900 carrier were specified in FCC Part 24.238. The FCC's requirements are tabulated in the following table, where MIMO requirement/margin is not included.

Table 12.4.2 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	50kHz for 5MHz carrier, 100kHz for 10MHz carrier, 150kHz for 15MHz carrier, 200kHz for 20MHz carrier
Outside the above Frequency Range	(43 + P dBW) dBc	1 MHz

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

The measurements were performed with a spectrum analyzer, which was calibrated in accordance with ISO 9001 process. The test set-up diagram is same as the one shown in the Figure 12.3.1.

The 26 dB occupied bandwidth measurement of an LTE carrier was measured per FCC KDB 971168.

For the out-of-band measurement, the spectrum analyzer was set with a resolution bandwidth which is equal to 1% of carrier bandwidth, a video bandwidth which is equal to at least 3xRBW and a 2xBW span, 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. For 5MHz, 10MHz and 20MHz carriers, the top of the carrier measured with a resolution bandwidth which is equal to 1% of carrier

bandwidth was 20 dB below the LTE carrier power measured with a resolution bandwidth greater than the carrier bandwidth (if available) or a wideband power meter. This 20dB offset was due to the fact that 10 log (BW/1% *BW) = 20 dB. For 15MHz carrier, the top of the carrier measured with a 200kHz resolution bandwidth was 18.75 dB below the LTE carrier power measured with a resolution bandwidth greater than the carrier bandwidth (if available) or a wideband power meter. This 18.75dB offset was due to the fact that 10 log (15000kHz/200kHz) = 18.75 dB.

The RMS average detector was used in all above measurement.

For the LTE carrier of each bandwidth, the measurements were made at the antenna transmitting terminal (J4) at the lowest, middle and highest available channels in PCS band. The measurement was performed for QPSK, 16QAM, 64QAM and 256QAM modulations, respectively. At the carrier frequency, the carrier power level at the antenna terminal was adjusted to the maximum rated mean power +37 dBm (5W) per carrier.

The four 26 dB Occupied Bandwidth plots which gave the widest occupied bandwidth for one for each 5MHz, 10MHz, 15MHz and 20MHz LTE carrier with QPSK, 16QAM, 64 QAM and 256 QAM were submitted, respectively.

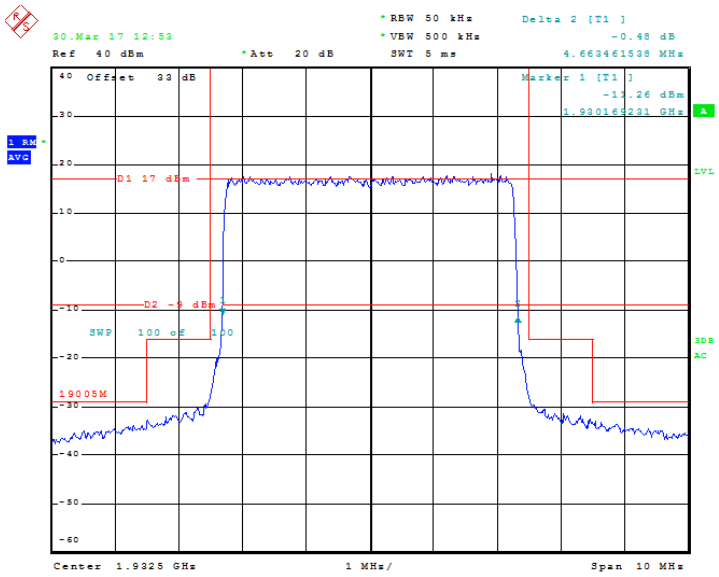
For one LTE carrier configuration, one emission plot for each carrier bandwidth is submitted which has the least margin among all PCS blocks evaluated for each QPSK, 16QAM, 64QAM and 256 QAM modulation. The limits specified in FCC Part 24.238 are displayed in the plots where 3dB adjustment for 2x2 MIMO is included.

Results:

The 26dB Occupied Bandwidth plots showed a maximum bandwidth of 4.66MHz, 9.31MHz, 14.28MHz and 18.85MHz for a 5MHz, 10MHz, 15MHz and 20MHz carrier, respectively. 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 masks for MIMO operation. The measurement results demonstrate the full compliance with the Rules of the Commission for PCS band.

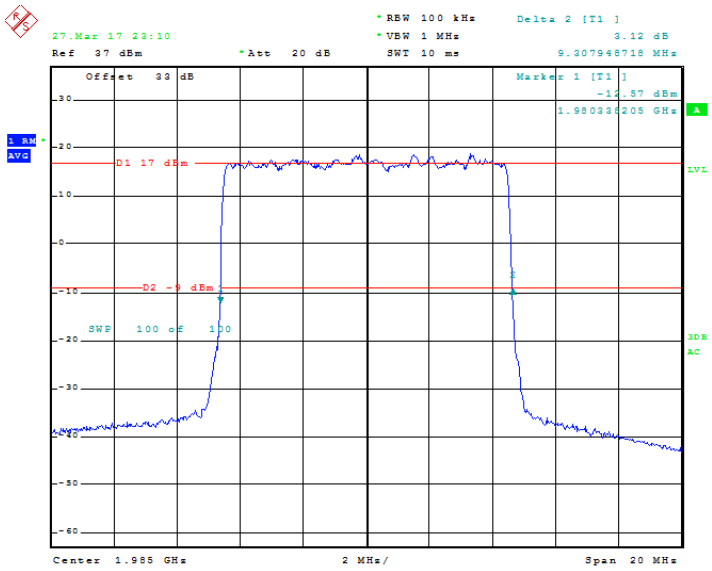
FIGURE 12.4.1 26dB OCCUPIED BANDWIDTH PLOTS

(a) 5MHZ LTE CHANNEL1932.5 MHz WITH 256QAM MODULATION – 4.66MHZ



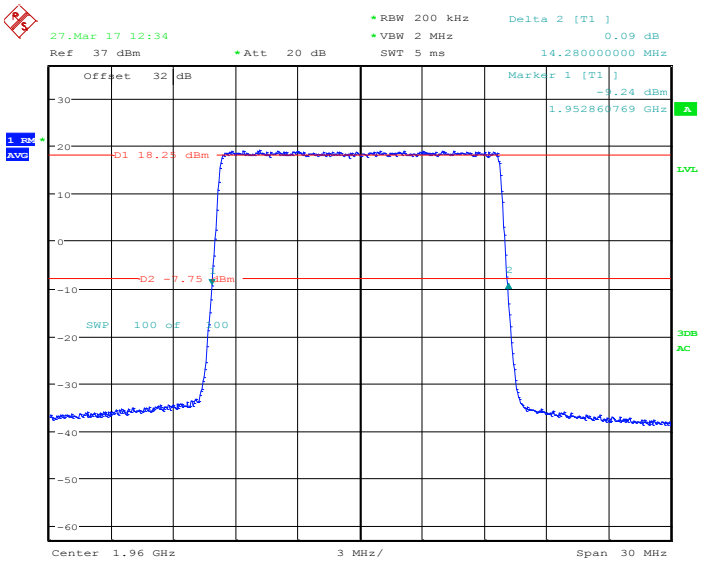
26dB BANDWIDTH; TEST ENGINEER: NP
MBO FW2FIWB; B2/B66; PART 24; BW5MHZ; 1932.5MHZ 256QAM
Date: 30.MAR.2017 12:53:23

(b) 10MHZ LTE CHANNEL1985 MHz WITH QPSK/16QAM MODULATION – 9.31MHZ



26dB BANDWIDTH; TEST ENGINEER: NP
MBO FW2FIWB; B2/B66; PART 24; BW10MHZ; 1985MHZ 16QPSK
Date: 27.MAR.2017 23:10:16

(c) 15MHZ LTE CHANNEL 1960MHz WITH 64QAM MODULATION — 14.28 MHz

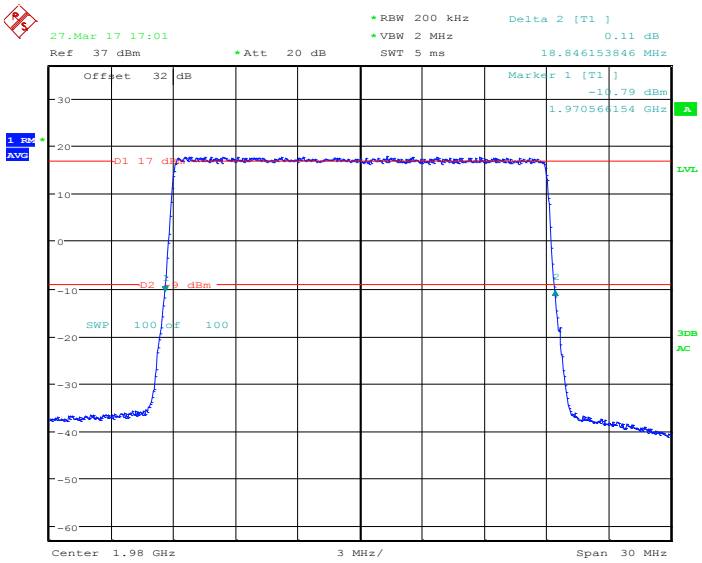


26dB BANDWIDTH; TEST ENGINEER: NP

MBO FW2FIWB; B2/B66; PART 24; BW15MHZ; 1960MHZ 64QAM

Date: 27.MAR.2017 12:34:49

(d) 20MHZ LTE CHANNEL 1980MHz WITH 64QAM MODULATION — 18.85 MHz



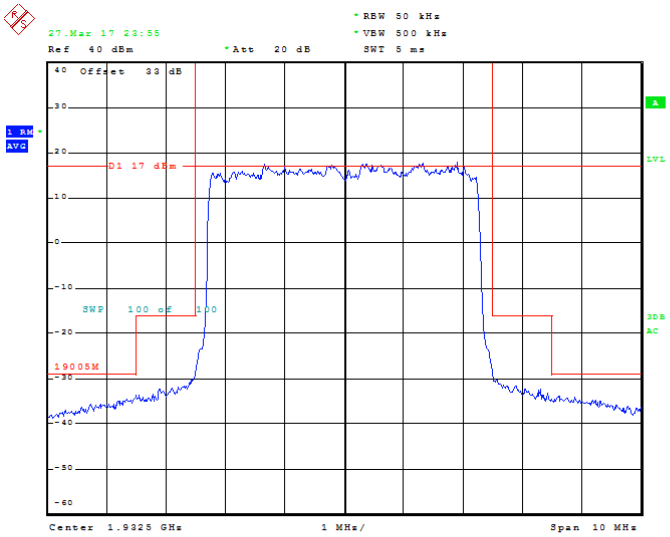
26dB BANDWIDTH; TEST ENGINEER: NP

MBO FW2FIWB; B2/B66; PART 24; BW20MHZ; 1980MHZ 64QAM

Date: 27.MAR.2017 17:01:47

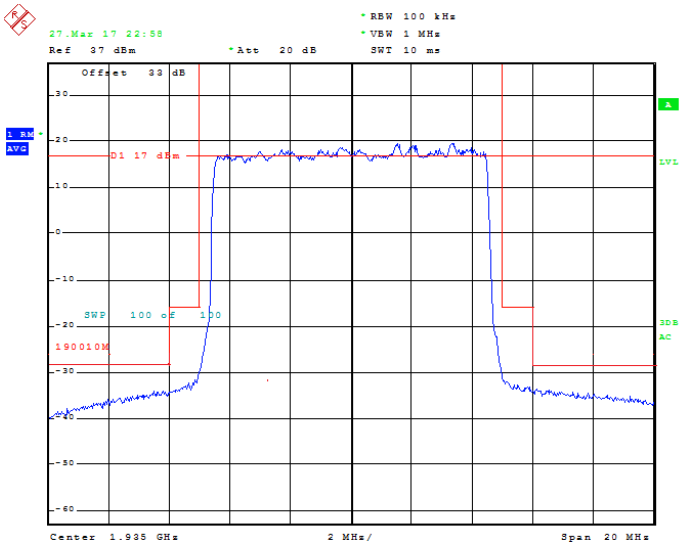
FIGURE 12.4.2 OUT-OF-BAND EMISSIONS PLOTS

(a) 5MHz LTE at 1932.5MHZ, 5W, QPSK/16QAM



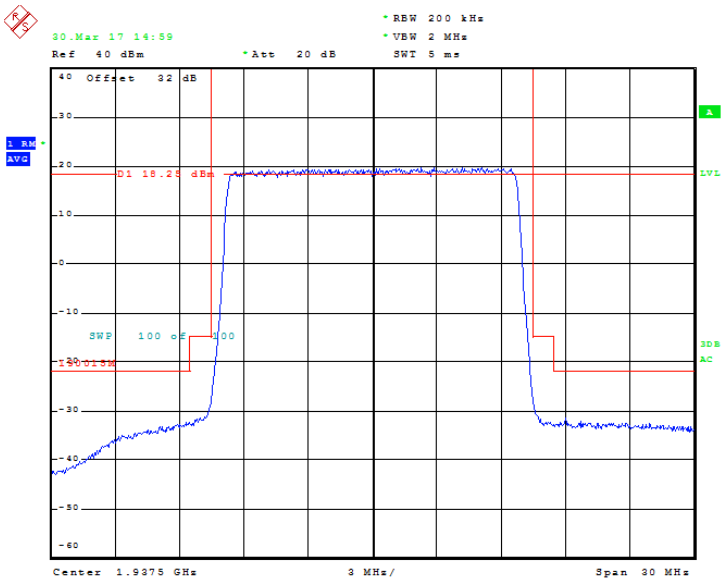
OCCUPIED BANDWIDTH; TEST ENGINEER: NP
MBO FW2FIWB; B2/B66; PART 24; BW5MHZ; 1932.5MHZ 16QPSK
Date: 27.MAR.2017 23:55:12

(b) 10MHz LTE at 1935MHZ, 5W/C, QPSK/16QAM



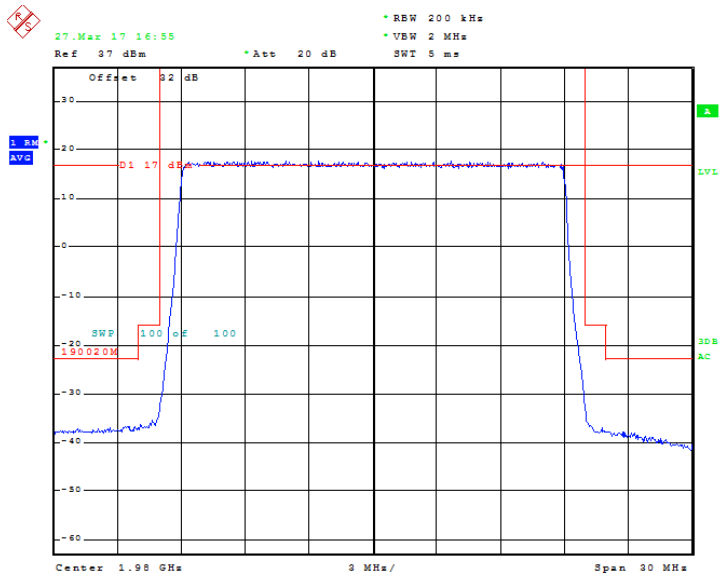
OCCUPIED BANDWIDTH; TEST ENGINEER: NP
MBO FW2FIWB; B2/B66; PART 24; BW10MHZ; 1935MHZ 16QPSK
Date: 27.MAR.2017 22:58:16

(c) 15MHz LTE at 1937.5MHZ, 5W/C, 256QAM



OCCUPIED BANDWIDTH; TEST ENGINEER: NP
MBO FW2FIWB; B2/B66; PART 24; BW15MHZ; 1937.5MHZ 256QAM
Date: 30.MAR.2017 14:59:32

(d) 20MHz LTE at 1980MHZ, 5W, 64QAM



OCCUPIED BANDWIDTH; TEST ENGINEER: NP
MBO FW2FIWB; B2/B66; PART 24; BW20MHZ; 1980MHZ 64QAM
Date: 27.MAR.2017 16:55:11

SUBEXHIBIT 12.5

Section 2.1051 MEASUREMENT REQUIRED: SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS

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 carrier setup and configurations were same as in Sub-exhibit 12.4.

The emission limitations and the setting of measurement equipment for the unwanted emissions measurement of LTE carriers were specified in 24.238 and shown in Sub-exhibit 12.4.

For the mean output power of +37 dBm (5 W) per carrier at J4, the required spurious emissions attenuation per (43 + *P* dBW) dBc is 50dBc per 24.238. 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. There the reportable limit is –73 dBc or -36dBm for 2x2MIMO.

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 given in the Figure 12.3.1.

The carrier power level at the antenna transmitting terminal was calibrated before the conducted spurious emissions testing for each test.

The spectrum analyzer was set to a 1MHz resolution bandwidth. The RMS detector was used.

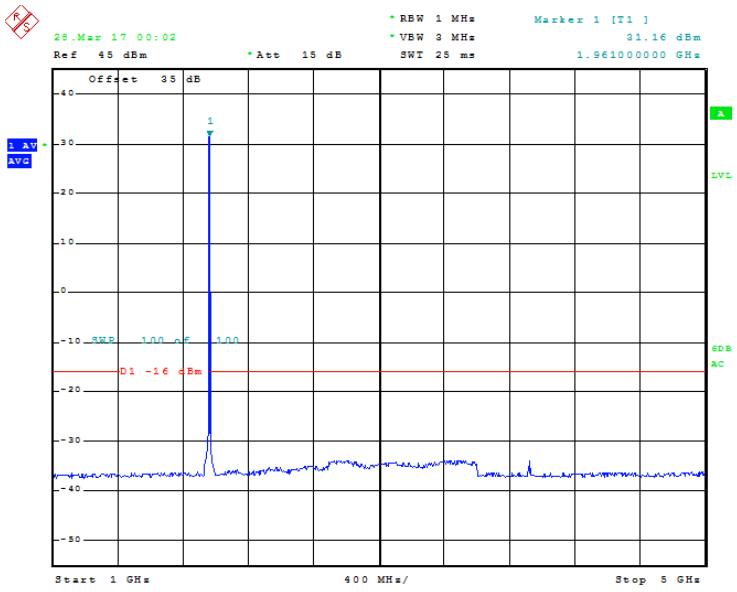
The spurious emissions in the frequency range of 10MHz to 20GHz are under the required emission limit for all carrier bandwidth with QPSK, 16QAM, 64QAM and 256QAM modulations evaluated. There are no reportable emissions below 1GHz. For the emissions above 1GHz, three plots for one LTE carrier configuration which has the least margin among all carriers evaluated for each QPSK, 16QAM, 64QAM and 256 QAM modulation and 5/10/15/20MHz bandwidth. The limits specified in FCC Part 24.238 are displayed in the plots.

Results:

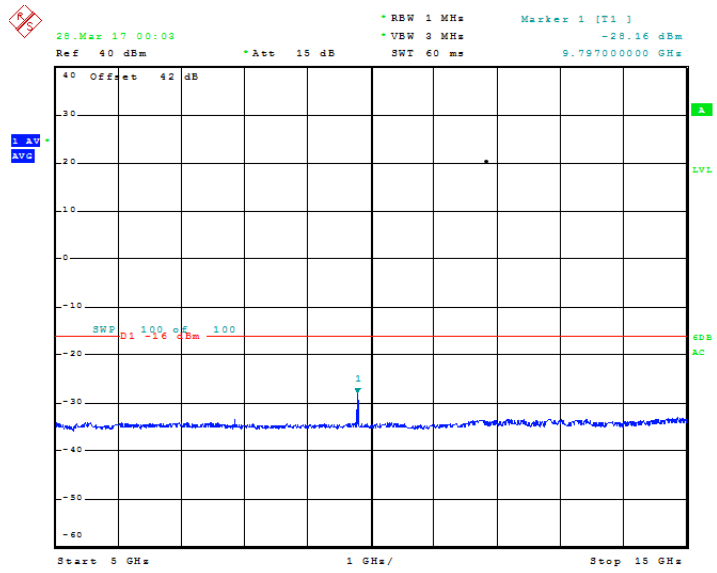
The out-of-block spurious emissions of the EUT are under the required emission limit over the frequency spectrum 10MHz to 20GHz. The measurement results demonstrate that the subject of the application is in full compliance with the Rules of the Commission.

FIGURE 12.5.1 SPURIOUS EMISSIONS PLOTS

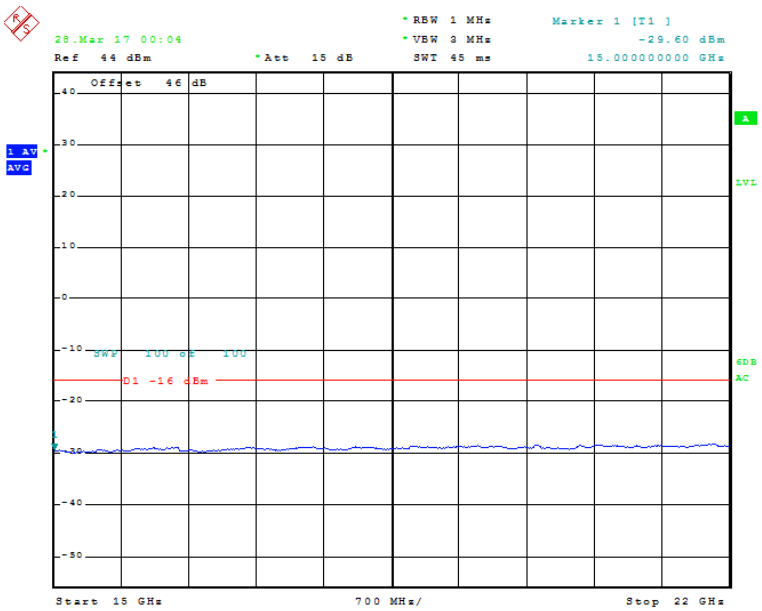
5MHz LTE at 1960MHZ, 5W, QPSK/16QAM



SPURIOUS EMISSIONS; TEST ENGINEER: NP
MBO FW2FIWB; B2/B66; PART 24; BW5MHZ; 1960MHZ 16QPSK
Date: 28.MAR.2017 00:02:54



SPURIOUS EMISSIONS; TEST ENGINEER: NP
MBO FW2FIWB; B2/B66; PART 24; BW5MHZ; 1960MHZ 16QPSK
Date: 28.MAR.2017 00:03:48



SPURIOUS EMISSIONS; TEST ENGINEER: NP

MBO FW2FIWB; B2/B66; PART 24; BW5MHZ; 1960MHZ 16QPSK

Date: 28.MAR.2017 00:04:28

SUBEXHIBIT 12.6

Section 2.1053 MEASUREMENT REQUIRED: FIELD STRENGTH OF SPURIOUS RADIATION

The EUT was investigated from 30 MHz to the 10th harmonic of the carrier, per Section 2.1057(a)(1). The EUT was configured as in the normal mode of the installation and operation. The recommendations of KDB 442401 was followed for EUT testing setup, cabling and measurement.

The MBO base station consists of two LTE RF transceiver modules (MBO B2 and MBO B66), one WiFi AP module and one DBM. The base station was configured to transmit one LTE carrier in Band 2 in MBO B2, one LTE carrier in Band 66 in MBO B66 and two WiFi carriers of 40MHz bandwidth in 2.442GHz and 5.55GHz, respectively. All carriers transmitting at their maximum rated mean power, where the maximum rate mean power is 5W (37dBm) at each antenna port of TX1 and TX2, respectively. The test model used for configuring the LTE carrier was described in Sub-exhibit 12.4. All carriers were transmitting to non-radiating 50 Ω resistive loads.

The emission limitations and the setting of measurement equipment for the conducted spurious emissions measurement were specified in 24.238 and shown in Sub-Exhibit 12.4.

By using the relation between the electric field strength of an ideal dipole and its excitation power given in Reference Data for Radio Engineers, page 676, 4th edition, ITT Corp., the emission limit calculated for equals

Table 12.6.1. FCC Part 24.238 Radiated Spurious Emission Limit in Electrical Field Strength at 3m Separation Distance

Frequency of Emission (MHz)	Separation Distance (m)	E (dBμV/m)	Detector/RBW
10-20,000	3	84.1	Average/1MHz

The field strength of radiated spurious emissions measured was determined by

$$E\ (\text{dB}\mu\text{V/m}) = V_{meas}\ (\text{dB}\mu\text{V}) + \text{Cable Loss (dB)} + \text{Antenna Factor (dB1/m)}.$$

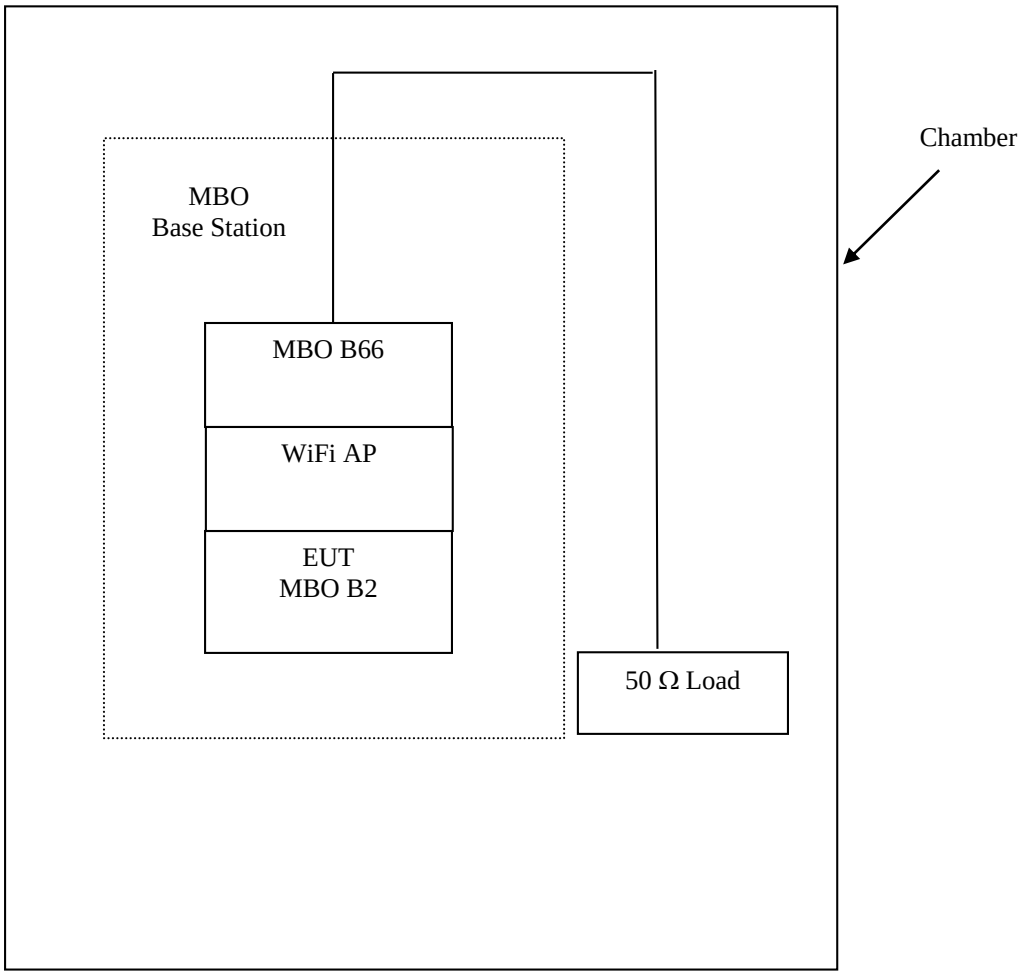
Sections 2.1051 and 2.1057(c) specify that the spurious emissions attenuated more than 20 dB below the permissible value need not be reported. Therefore, the reportable limits at 3 meter are 20dB below the above limits plus 3dB for 2x2 MIMO, i.e., 61 dBμV/m.

All the measurement equipment used, including antennas, was calibrated in accordance with ISO 9001 process. The EUT setup diagram is given in the Figure 12.6.1. The EUT was evaluated from 30MHz to 22 GHz for LTE 5MHz QPSK carriers and from 30MHz to 10 GHz for LTE 5MHz 256QAM carriers with both MBO B2 and MBO B66 transmitting at 1932.5MHz and 2112.5MHz, respectively, and WiFi transmitting 40MHz carriers at 2.442GHz and 5.55GHz. Additionally, the EUT was evaluated from 1GHz to 22 GHz with both MBO B2 and MBO B66 transmitting 20MHz 64QAM carriers at 5W/c per port at 1980MHz and 2117MHz, respectively, and WiFi transmitting 40MHz carriers at 2.442GHz and 5.55GHz.

Results:

Over the frequency spectrum investigated no reportable radiated spurious emissions were detected. The measurement results of the EUT demonstrate the full compliance with the Rules of the Commission.

FIGURE 12.6.1 EUT FOR MEASUREMENT OF RADIATED SPURIOUS EMISSIONS



SUBEXHIBIT 12.7

Section 2.1055 MEASUREMENT REQUIRED: FREQUENCY STABILITY

This test evaluates the frequency difference between the actual transmit carrier frequency and the specified transmit frequency assignment.

The EUT was designed to transmit an LTE carrier in the PCS frequency spectrum. The EUT supports 2x2 MIMO with 2 antenna ports with the maximum output power of 37dBm per carrier and per port.

The frequency stability testing was conducted on the EUT which is an outdoor AC version. The primary input power is 90 VAC to 264VAC 50/60Hz. The outdoor system was designed for a wider temperature range than the indoor frame. The stability of the output frequency of the EUT was measured at its antenna transmitting terminal 1) from –30 °C to +50 °C in 10 °C steps at the rated supply voltage; and 2) at 85% and 115% of the nominal supply voltage, per Section 2.1055. The primary supply voltage was varied from 85% to 115%. Both 115VAC and 208VAC supply voltage were evaluated. The EUT was set to transmit a 10MHz LTE 64QAM carrier at 1960 MHz at the rated RF power. The carrier frequency at 1960 MHz was measured at the antenna terminal (J4) at each temperature and each supply voltage by an Agilent MXA Signal Analyzer, respectively. In addition, the transmit power was monitored by the power meter to ensure proper cell performance throughout the test interval.

The EUT was installed in an environmental chamber. At each temperature and each supply voltage, the EUT was given sufficient time for its thermal stabilization. The testing was performed during the period of April 12~21, 2017.

FCC Section 24.235 specifies that the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation. The 3GPP TS 36.104 specify the minimum standard is ±0.050 ppm for LTE (observed over one period of one subframe (1 ms)) carriers.

The maximum frequency derivations (Δf) at the antenna terminal from the assigned carrier frequency at each temperature and supply voltage are summarized in the following tables. The ±0.05ppm of 1960MHz is ±98Hz.

TABLE 12.7.1 MAXIMUM FREQUENCY DERIVATION FOR LTE CARRIER AT 1960MHZ FROM -30°C TO +50°C

Stabilized Temp. (°C)	Δf 100% V_{norm} (Hz)
-30	5.4
-20	8.3
-10	6.7
0	5.0
+10	9.2
+20	6.4
+30	4.2
+40	7.0
+50	5.8

The maximum frequency derivations (Δf) at +25°C and 85% -115% of the supply voltage from the assigned carrier frequency are summarized in the following tables.

TABLE 12.7.2 MAXIMUM FREQUENCY DERIVATION FOR LTE CARRIER AT 1960 MHZ FROM 85% V_{norm} TO 115% V_{norm} AT +25°C

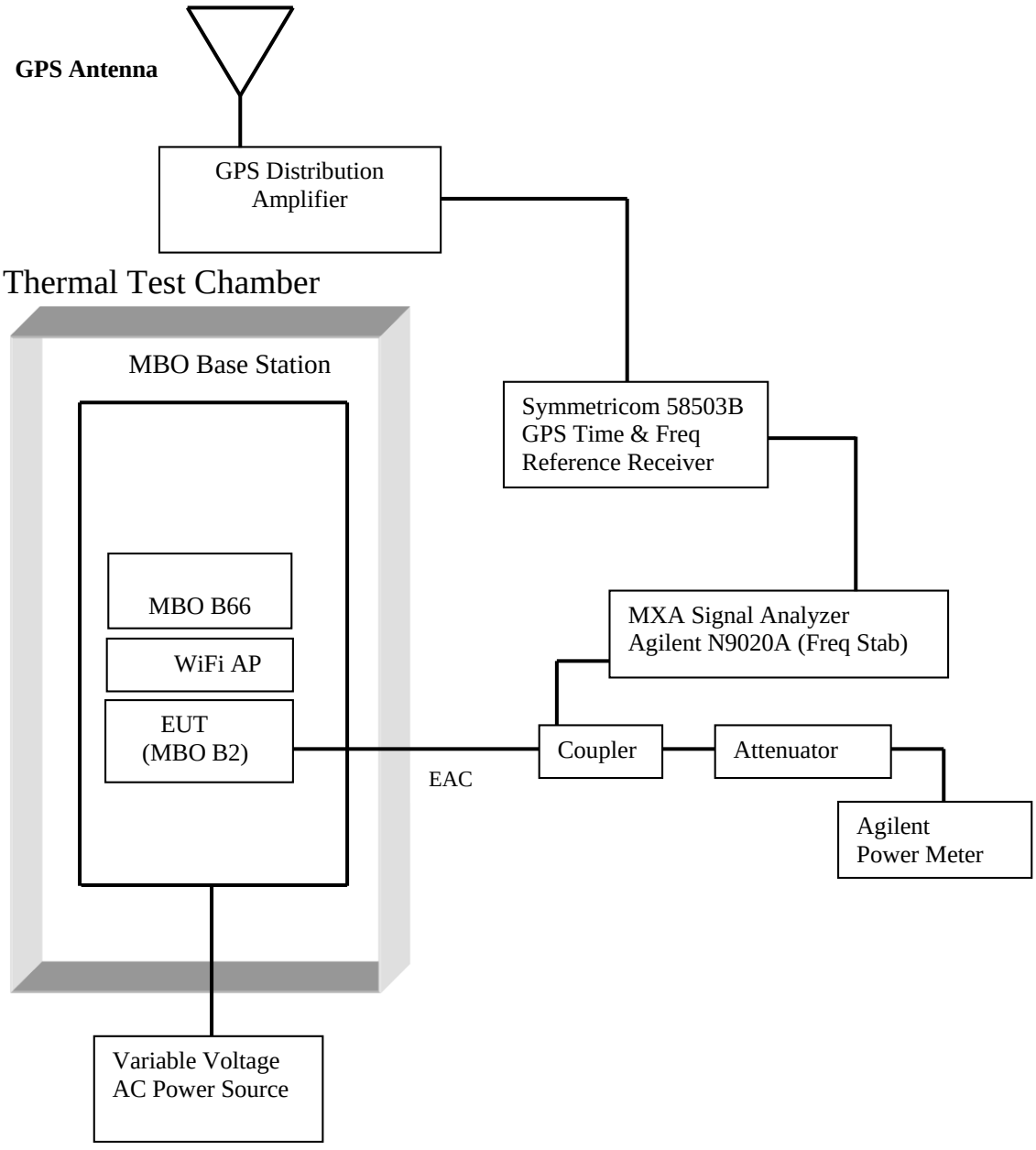
Voltage Derivation (%V_{norm})	Δ*f* (Hz)
85	5.27
88	7.11
91	7.43
94	5.70
97	-7.03
100	8.57
103	10.34
106	-5.22
109	9.37
112	6.14
115	10.2

All the measurement equipment was calibrated in accordance with ISO 9001 process. The test set-up diagram is given in the Figure 12.7.1

Results:

The maximum frequency drifts at the antenna terminal of the EUT at a LTE carrier frequency due to temperature and supply voltage changes are below ±0.05ppm requirement. The EUT demonstrated full compliance with the Rules of the Commission.

FIGURE 12.7.1 SET-UP FOR MEASUREMENT OF FREQUENCY STABILITY



SUBEXHIBIT 12.8

Section 2.947 LISTING OF TEST EQUIPMENT USED

Equipment	Manufacturer	Model	Serial No.	Calibrated Date	Due Cal. Date
Power Meter	Hewlett-Packard	437B	3125U06345	2016-03-04	2018-03-04
Power Sensor (10MHz-18GHz)	Hewlett-Packard	8481A	MY41090318	2017-03-06	2018-03-06
Power Meter	Agilent	E4419B	GB40201709	2017-03-23	2019-03-23
Power Sensor	Agilent	E9301A	MY41495990	2017-02-08	2018-02-08
Power Sensor	Hewlett-Packard	E4412A	US38484524	2017-04-03	2018-04-03
EMI Test Receiver (20Hz to 40 GHz)	Rohde & Schwarz	ESU40	100246	2015-10-22	2017-10-22
EMI Test Receiver (20Hz to 26.5 GHz)	Rohde & Schwarz	ESI	832692/005	2016-06-29	2018-06-29
Signal Analyzer, MXA, 20Hz-26.5GHz	Agilent	N9020A	MY48011791	2016-02-23	2018-02-23
Signal Analyzer, MXA, 20Hz-26.5GHz	Agilent	N9020A	MY53420147	2017-03-13	2019-03-13
Attenuator 6dB DC-18GHz (5W)	Weinschel	2-6	BX3438	2016-02-25	2018-02-25
Directional Coupler 2-18GHz	Hewlett-Packard	773D	2839A01398	NA	NA
Directional Coupler .1-2GHz	Hewlett-Packard	778D	18662	NA	NA
Attenuator (100 W)	Weinschel	48-30-33, E961	AY8323	N/A	N/A
Bilogical Antenna 25-2000MHz	A.H. Systems	SAS-521-2	410	2016-12-08	2018-12-08
Double Ridged Horn Ant. 1-18GHz	ETS Lindgren	3115	0001-6008	2016-10-26	2018-10-26
Double Ridged Horn Ant. 18-40GHz	ETS Lindgren	3116	2539	2015-03-19	2017-05-19
Pre-amplifier 1-26.5GHz	Hewlett-Packard	8449B	3008A01384	2015-12-17	2017-12-17
Pre-amplifier 9kHz-1GHz	Sonoma Instrument Co.	310	185794	2016-06-15	2018-06-15
High Pass Filter	Trilithic	5HC2850/18050-1.8-KK	200113078	NA	NA
Thermal Logger	Yokogawa	MV200S	12AC19877	2017-03-07	2019-03-07
Multimeter	Fluke	16	71520011	2017-03-07	2019-03-07
GPS Receiver	Symmetricom	58503B	KR93200773	NA	NA

SUBEXHIBIT 12.9

Section 2.948 TEST FACILITIES

All measurement facilities used to collect the measurement data under normal condition are Nokia Global Product Compliance Lab (GPCL) located at 600-700 Mountain Avenue, Murray Hill, New Jersey 07974-0636 USA. The GPCL has been accredited to the International Organization for Standardization/International Electrotechnical Commission International Standard ISO/IEC 17025 by NVLAP (NVLAP LAB CODE 100275-0) for performing electromagnetic compatibility and telecommunications measurement. All the measurement facilities utilized to make radiated emission measurement in the required frequency range used in this report comply with the site validation requirement of ANSI C63.4-2014.