Federal Communications Commission
Office of Engineering and Technology
Equipment Authorization Division
Application Processing Branch

7435 Oakland Mills Road
Columbia, MD 21046

Global Product Compliance Laboratory
MH 5A-115, Alcatel-Lucent
600, Mountain Avenue
Murray Hill, NJ 07974-0636

September 20, 2013

Dear Examiner:

In accordance with **Parts 2**, **27** and **OET Rules 662911 D01 and D02** of the Commission's Rules and Regulations, we are submitting herewith, statements and supporting data to show compliance with the requirements of the Commission for Product Certification of the Alcatel-Lucent " LTE AWS Transceiver Duplexer Unit 2X2", henceforth '**LTE TRDU2X120-AWS'**, **FCC ID: AS5BBTRX-13**. The **LTE TRDU2X120-AWS** is used in Alcatel-Lucent 9712 cabinet systems using the 3GPP standards Long Term Evolution (LTE) technology, for use in Domestic Miscellaneous Wireless Communication Services (WCS).

This application for the **LTE TRDU2X120-AWS** under FCC ID: AS5BBTRX-13 is for operation in the domestic WCS band with a LTE signal. The data summarized below is in the form presently used by the Commission's Radio Equipment List.

Manufacturer	**Alcatel-Lucent**
Equipment Identification	**AS5BBTRX-13**
Rules Part Number	**27.53 (h) and 27.50(d)(5) and OET Rules 662911 D01 and D02**
Frequency Range	**2110-2155 MHz (A, B, C, D, E and F Blocks)**
Output Power	**+3dBm (.002W) to +50.8dBm (120W) per Port Varied by Software and two transceivers can be externally combined to Net 240W power in MIMO mode**
Frequency Tolerance	**+/- 0.05 ppm**
Emission Designator	

BW (MHz)	**Emissions Designation**
5	4M72F9W
10	9M53F9W
15	14M2F9W
20	18M8F9W

The **LTE TRDU2X120-AWS**, under FCC ID: AS5BBTRX-13 is designed to be operated and marketed in Alcatel-Lucent 9712 cabinet systems. Each of the **TRDU2X120-AWS** contains two identical Transceiver paths and ports. Each transceiver port can either output 60W or 120W maximum at the External antenna connector (EAC) port. The 120W output per antenna port will be consisted of either 10+10 MHz or 10+5 MHz two non-contiguous bands. The power change is achieved at the installation phase using manufacturer supplied hardware and software. During 120W power mode, only one port will be operational and other port will be disabled. Therefore two **LTE TRDU2X120-AWS** can be externally combined to operate as 2x120W MIMO mode producing net 240W. The **LTE TRDU2X120-AWS** will be typically operated in Multiple input and Multiple output (MIMO) mode using multiple antennas. Each Transceiver path is supported by its own RF filter. The **LTE TRDU2X120-AWS** was evaluated in a 9712 cabinet with six TRDUs with a total of 12 transceiver ports. During all antenna port conducted emissions, the transceiver ports were randomly selected for each of the tests. The TRDU will be marketed in indoor/outdoor cabinets. The integrated cabinet shall continue to be compliant with **FCC** emissions requirements.

The **LTE TRDU2X120-AWS** is designed to operate a large number of sub-carriers which are modulated with QPSK, 16QAM, and 64QAM formats. The **LTE TRDU2X120-AWS** was evaluated and data is provided for all three modulation formats.

(a) QPSK
(b) 16QAM
(c) 64QAM

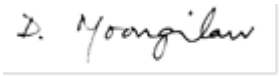
The actual power level delivered by the **LTE TRDU2X120-AWS** to transmit antenna is under the software control of the Switching and Control Center.

The **LTE TRDU2X120-AWS/AS5BBTRX-13** is produced by Manufacturer -1 for incorporation into Alcatel-Lucent products.

List of exhibits attached with this submission is indicated in the following page of this cover letter.

The attached exhibits contain the technical data, and the required statements and documents for Product Certification. The technical contact at Alcatel-Lucent will comply with any request for additional information should the need arise.

Sincerely,



Dheena Moongilan
Distinguished Member of Technical Staff
Global Product Compliance Laboratory
Phone: (908) 582 5539
Email: Dheena.Moongilan@alcatel-lucent.com

List of Exhibits

	COVER LETTER
	Cover Letter
	Product Configuration – Explained in test reports
	Letter for Confidential Treatment of Exhibits
	ATTESTATION STATEMENT
Section 2.911 (d)	**Qualifications and Certifications**
Section 2.1033 (c) (1,2)	**Manufacturers, FCC Identification**
Section 2.1033 (c) (4-7)	**Emissions, Frequency Range, Power Level**
	USERS MANUAL
Section 2.1033 (c) (3)	**Users Manual**
Section 2.1033 (c) (9)	**PARTS LIST/TUNE-UP PROCEDURE**
Section 2.1033 (c) (13)	**OPERATIONAL DESCRIPTION**
	Description of Modulation System and Block diagrams
Section 2.1033 (c) (10)	**SCHEMATICS**
	Schematic
Section 2.1033 (c) (11) and 2.925 (a) (1)	**ID LABEL/LOCATION INFORMATION**
Section 2.1033 (c) (12)	**EXTERNAL PHOTOS**
	INTERNAL PHOTOS
Section 2.1033 (c) (12)	**Internal Photos**
	TEST REPORT
Section 2.1033 (c) (8)	**Measurement of DC Power**
Section 2.1033 (c) (14)	**Listing of Required Measurements**
Section 2.1046	**Measurement of Radio Frequency Power Output**
Section 2.1047 and 27.50(d)(5)	**Measurement of Modulation Characteristics**
Section 2.1049, Section 27.53(h) and OET Rules 662911 D01 and D02	**Measurement of Occupied Bandwidth**
27.53 (h) and OET Rules 662911 D01 and D02	**Measurement of Spurious Emissions at Antenna**
Section 2.1053 and OET Rules 662911 D01 and D02	**Field Strength of Spurious Radiation**
Section 2.1055	**Measurement of Frequency Stability**
Section 2.1057	**Frequency Spectrum to be Investigated**
	Test Instruments Used for Test – See Test Reports
	RF Exposure Information
Section 24.51 (c)	**Human Exposure – Not performed**