



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

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

7435 Oakland Mills Road
Columbia, MD 21046

October 19, 2011

Dear Examiner:

In accordance with **Parts 2, 27 and 90** 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 “700 MHz Transceiver Duplexer Unit”, henceforth ‘**LTE 700 TRDU**’, **FCC ID: AS5BBTRX-04**. The **LTE 700TRDU** is used in **Alcatel-Lucent’s 9412 eNodeB Compact (700 MHz)** cabinet systems using the 3GPP standards Long Term Evolution (LTE) technology, for use in Domestic Miscellaneous Wireless Communication Services (WCS) and/or Public safety services.

This application for the **LTE 700TRDU** under FCC ID: AS5BBTRX-04, is for operation in the domestic WCS band and Public Safety 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-04
Rules Part Number	27.53 (d) and 90.543
Frequency Range	758 - 763 MHz WCS and 763 – 769 MHz Public Safety Bands
Output Power	+3 dBm (.002W) to +46dBm (40W) Varied by Software
Frequency Tolerance	+/- 0.001 ppm
Emission Designator	9M43F9W for 10 MHz Band and 4M71F9W for 5 MHz Bands

The **LTE 700TRDU**, under FCC ID: AS5BBTRX-04 is designed to be operated and marketed in Alcatel-Lucent’s 9412 eNodeB Compact (700 MHz) cabinet systems. Each of the 700TRDU contains two identical Transceiver paths and ports. Each transceiver ports outputs 40W maximum at the External antenna connector (EAC) port. The **LTE 700TRDU** 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 700TRDU** was evaluated in a 9412 eNodeB Compact (700 MHz) cabinet with three TRDUs with a total of six 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 700TRDU is designed to operate a large number of sub-carriers which are modulated with QPSK, 16QAM, and 64QAM formats. The LTE 700TRDU 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 700TRDU to transmit antenna is under the software control of the Switching and Control Center.

The LTE 700TRDU/AS5BBTRX-04 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: 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

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

Measurement of Modulation Characteristics

Section 2.1049 and

Measurement of Occupied Bandwidth

**Section 27.53(d) and 90.543
(f)**

Measurement of Spurious Emissions at Antenna

27.53 (d) and 90.543 (f)

Field Strength of Spurious Radiation

Section 2.1053

Measurement of Frequency Stability

Section 2.1055

Frequency Spectrum to be Investigated

Section 2.1057

Test Instruments Used for Test – See Test Reports

RF Exposure Information

Section 24.51 (c)

Human Exposure – Not performed