



**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**

September 15, 2010

Dear Examiner:

This request is for FCC Class II permissive change Certification of Alcatel-Lucent “LTE **9442 RRH2X40-07L**” **FCC ID: AS5BBTRX-03**, henceforth it is referred “RRH”. The RRH is a radio, amplifier and filter combination cabinet system which uses the 3GPP standards Long time Evolution (LTE) technology for use in Domestic Miscellaneous Wireless Communication Services (WCS). In order to improve product efficiency and reduce noise levels, the RRH is fine-tuned changing several resistors, capacitors and inductors. These changed values are highlighted in the submitted schematics for which confidential status is requested. The RRH also will use a final stage RF filter (placed between amplifier connector and external antenna connector) manufactured by a different vendor. Therefore, two sets of test data are submitted covering both original filter vendor and new filter vendor. The RRH will use a RF filter manufactured by either one of the vendors.

Similar to original filing, this application for the RRH under FCC ID: AS5BBTRX-03, 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.

<b>Manufacturer</b>	<b>Alcatel-Lucent</b>
<b>Equipment Identification</b>	<b>AS5BBTRX-03</b>
<b>Rules Part Number</b>	<b>27.5(c) (1) and 27.53(g)</b>
<b>Frequency Range</b>	<b>729 to 745 MHz (A, B, and C Blocks)</b>
<b>Output Power</b>	<b>+3 dBm (.002W) to +46dBm (40W) Varied by Software</b>
<b>Frequency Tolerance</b>	<b>+/- 0.001 ppm</b>
<b>Emission Designator</b>	<b>8M95F9W for 10 MHz Bands and 4M48F9W for 5 MHz Bands</b>

The RRH, under FCC ID: AS5BBTRX-03 is designed to be operated and marketed as RF cabinet system. Each RRH contains two identical Transceiver paths and ports. Each transceiver port has an output 40W maximum at the External antenna connector (EAC) port. The RRH will be typically operated in Multiple Input and Multiple Output (MIMO) mode using multiple antennas. Each Transceiver path is supported by its own RF path filter. The RRH was evaluated with two transceiver ports. During all antenna port

conducted emissions, the transceiver ports were randomly selected for each of the tests. The RRH will be marketed as either an indoor or outdoor cabinet.

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

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

The actual power level delivered by the **RRH** to transmit antenna is under the software control of the IP based Mobile Switching Center of the local Cellular system.

The **RRH /AS5BBTRX-03** is designed and manufactured by Alcatel-Lucent.

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  
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Global Product Compliance Laboratory  
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**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**

\*Tune-Up Procedure

Section 2.1033 (c) (13)

**\*OPERATIONAL DESCRIPTION**

Description of Modulation System

Section 2.1033 (c) (10)

**SCHEMATICS**

Schematic

Section 2.1043 (b) (2)

\*Block Diagrams

Section 2.1033 (c) (11) and  
2.925 (a) (1)

**\*ID LABEL/LOCATION INFORMATION**

Section 2.1033 (c) (12)

**\*EXTERNAL PHOTOS**

Section 2.1033 (c) (12)

**INTERNAL PHOTOS**

\*Internal Photos

Section 2.1033 (c) (8)

**TEST REPORT**

Section 2.1033 (c) (14)

\*Measurement of DC Power

Section 2.1046

Listing of Required Measurements

Section 2.1047

Measurement of Radio Frequency Power Output

Section 2.1049 and

Measurement of Modulation Characteristics

Section 24.238 (b) and 27.58 (g)

Measurement of Occupied Bandwidth

Section 2.1051

Measurement of Spurious Emissions at Antenna

Section 2.1053

Field Strength of Spurious Radiation

Section 2.1055

Measurement of Frequency Stability – Not required

Section 2.1057

Frequency Spectrum to be Investigated

Test Instruments Used for Test – See Test Reports

Section 24.51 (c)

**RF Exposure Information**

Human Exposure – Not performed

\* Same as original filing no additional information submitted

