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Timco Engineering Inc.
Telecommunication Certification Bodies
849 NW State Road 45
Newberry, Florida 32669

Subject: Application for Original Equipment Certification under FCC ID: AS5BBTRX-05 for RRH 4x45W Base Station, Operating in the Personal Communications Services, 1930-1995MHz, with LTE and CDMA Technologies

Dear Examiner:

In accordance with Parts 2 and 24 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 the certification of the Alcatel-Lucent Dual Technology PCS (Personal Communications Services) Multiple Input Multiple Output (MIMO) Remote Radio Head (RRH) 4x45W, henceforth PCS RRH 4x45W, under FCC ID AS5BBTRX-05, for operation in the domestic PCS A, D, B, E, F, C and G bands (1930-1995 MHz), i.e., E-UTRAN band 25, with Code Division Multiple Access (CDMA) and Long Term Evolution (LTE) technologies.

The distributed wireless RRH base station system is comprised of two separate modules 1) the digital Base Band Unit (BBU) and 2) the RRH. These two modules are interconnected by Common Public Radio Interface (CPRI) through optic fiber or metallic coax cables when the separation is less than 3m for indoor deployment. The RRH contains all RF (radio frequency) functionality, including transceiver, power amplifier and transmitting and receiving filters. The BBU provides the digital baseband signals, plus the timing reference signal to the RRH. The BBU can be a unit specially designed for the distributed application or utilize the digital baseband shelf of a non-distributed base station system. The BBU and RRH units can be co-located or remotely located.

The PCS RRH 4x45W supports multiple carriers and CDMA/LTE dual technology by sharing available TX power and bandwidth between two air interface technologies at each duplexed antenna port. It supports transmit diversity and/or MIMO operation for LTE. The hardware can support 4x4 MIMO for LTE. The software in the current release supports 2x2 MIMO only. The CDMA and/or 5MHz LTE carriers can be placed on all 4 TX/RX paths in a single sector. The PCS RRH 4x45W uses two 2x45W RRHs placed back to back inside a physical enclosure with two external CPRI interfaces: one from 3G BBU (CDMA) while the other one from 4G BBU (LTE). Internally, there is a daisy chaining of two CPRI ports enabling routing and managing the carriers (LTE and CDMA) across two logical halves of the RRH. Either CPRI port can be configured to be a Primary port. Each 2x45W RRH consists of one radio, one power amplifier and one transceiver filter with two Tx paths, dual PA pallet and dual Filter panel inside. Therefore, the PCS 4x45W RRH has four independent transmitting paths.

The PCS RRH 4x45W has 4 antenna ports. It can provide up to 25 Watts (44dBm) per CDMA voice carrier and 20 Watts (43dBm) per 5MHz LTE carrier, 45 Watts (46.5dBm) per port for multi-carriers and 180 Watts (49dBm) per RRH at the base station transmitting antenna terminals. The PCS RRH 4x45W is powered by -48VDC and currently is available in indoor and outdoor versions.

The data summarized below is in the form presently used by the Commission's Radio Equipment List.

Manufacturer	Alcatel-Lucent, Inc.
Equipment Identification	AS5BBTRX-05
Rules Part Number	Part 24
Frequency Range	Transmit: 1930-1995MHz, Receive: 1850-1915 MHz
Output Power	0-25W per CDMA Carrier and 0-20W per LTE carrier, 0-45W per Port, 0-180W per Sector
Frequency Tolerance	± 0.05 ppm
Emission Designator	1M25F9W and 5M00F9W

Enclosed in this application package are the FCC Application Form 731, letter of Request for Confidentiality, Table of Contents, List of Acronyms used in the application and the required exhibits. These exhibits contain the technical data and the required statements and documents for equipment certification. The technical contact at Alcatel-Lucent will comply with any request for additional information should the need arise.

The fees are submitted as required for radio equipment certification filing.

Sincerely,



R.J. Pillmeier
Technical Manager
FCC Compliance Test Group