



Subject: **Application for Certification under FCC ID:  
AS5ONEBTS-21, Covering the UMTS/W-CDMA  
9341 RRH 60W 850MHz System Operating in the  
Cellular Radiotelephone Service, 869-894 MHz.**

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**September 3, 2008**

Mr. Sid Sanders, President  
Timco Engineering, Inc.  
849 N. W. State Road 45, P. O. Box 370  
Newberry, Florida 32669

**Dear Mr. Sanders:**

Alcatel-Lucent's Universal Mobile Telecommunications System (UMTS) **9341 RRH 60W 850MHz** System is designed to operate in the North America Region (NAR) Cellular Frequency Spectrum 869-894 MHz, with bandwidth of 25 MHz over the A", A, B and B' Bands. The 850 MHz Remote Radio Head (RRH) can be configured for both single carrier (1S1C) operation at 60 Watts (+47.78 dBm) and for two carrier (1S2C) operation at 30 Watts (+44.77 dBm) per carrier with a total composite power of 60 Watts. The RF power rating is based the 3-second average, employing the Aggregate Overload Control (AOC) algorithm. Enhanced Digital Predistortion (EDPD) and Closed Loop Gain Control (CLGC) are features that are enabled for each carrier. The single UMTS carrier has a 5 MHz bandwidth, with an emission designator at 4M10F9W, based on measurement of the Necessary Bandwidth. The UMTS product is designed for compliance with, and as a guideline, the ETSI 3GPP TS 25.141 Technical Specification Standard. TS 25.141 test modulation (TM) capability demonstrated includes 1) TM1-64 with up to 68 active channels, consisting of 64 voice + 4 control, 2) TM5-44 with up to 44 active channels, which include 8 High Speed Downlink Packet Access (HSDPA) channels, and 3) TM4 a single active channel *Synchronization Channel (SCH)*.

The 60W Distributed Base Station (DBS) system, subject of this certification, is comprised of two separate modules interconnected by fiber optic cable: 1) the digital Base Band Unit (BBU), and 2) the Remote Radio Head (RRH). They have the flexibility of being installed either in close proximity (i.e., co-located) to or remotely located from each other. The BBU has the capability of controlling up to 3 remotely located RRH units, via fiber optic cable, and incorporates the digital channels cards, reference oscillator module, T1/E1 and alarm interface, and the RF-to-Optical and Optical-to-RF conversion circuitry. The 60W 850 MHz RRH incorporates the Future Technology Radio (FTR), power amplifier (PA) and passive filter with single transmit (Tx) and diversity receive functionality (Rx0, Rx1). This system complies both with the Federal Communication Commission (FCC) Rules and Regulations (47 CFR Part 22), and with the European Telecommunications Standards Institute (ETSI) 3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specifications TS 25.104 and TS 25.141.

UMTS functionality was developed in accordance to the guidelines of the ETSI TS 25.141 V7.4.0 (2006-06) standard: "Universal Mobile Telecommunications System (UMTS); Base Station Conformance Testing (FDD) (3GPP TS 25.141 version 7.4.0 Release 7)". The measurement exhibits attached to this application demonstrate full compliance with both FCC Part 22 Subpart H – Cellular Radiotelephone Service and with ETSI TS 25.141, following the procedural requirements specified in FCC Part 2 Subpart J – Equipment Authorization Procedures. The data summarized below is in the form presently used by the Commission's Radio Equipment List, Equipment Acceptable for Licensing.

Manufacturer	Lucent Technologies
Equipment Identification	AS5ONEBTS-21
Rules Part Number	Part 22, Subpart H – Cellular Radiotelephone Service
Frequency Ranges	Transmit 869–894 MHz
Output Power	60 Watts (+47.77 dBm) 3-second average at the Tx antenna terminal
Frequency Tolerance	± 0.05 ppm
Emission Designator	4M10F9W

Attached are the FCC Form 731 (Application for Equipment Authorization – Radio Frequency Devices) and the required measurement data and exhibits specific to this request for initial equipment authorization of the Alcatel-Lucent UMTS, 60W 850 MHz, Distributed Base Station. The technical contact at Lucent Technologies will comply with any request for additional information should the need arise. The attached exhibits are assembled and presented in the sequence recommended by Timco Engineering, in accordance with the *Table of Contents* attachment.

Confidentiality is requested for the following exhibits:

- Exhibit 6: Operational Description (Theory of Operation, Functional Description)**  
**File Name: 09-OpDes\_AS5ONEBTS-21\_CONFIDENTIAL.doc**
  
- Exhibit 8: Schematic Diagrams**  
**File Name: 11-Schem\_AS5ONEBTS-21\_CONFIDENTIAL.DOC**
  
- Exhibit 10: UMTS Distributed Base Station (850 MHz) Operation, Administration and Maintenance Documents**  
**File Name: 13-UserMan\_AS5ONEBTS-21\_CONFIDENTIAL.DOC**

Sincerely,

Rudolf J. Pillmeier  
 Technical Manager  
 FCC/EMC Compliance Test Group  
 Whippany, NJ

Att.

Table of Contents for the UMTS 60W 850 Hz Distributed Base Station System Certification Report

**TABLE OF CONTENTS**

01-Exhibit 1: 731 Form  
File Name: 01-TCB\_Form\_731\_AS5ONEBTS-21.doc

02-Cover Letter File Name: 02-Cover\_Letter\_AS5ONEBTS-21.DOC

03-Request for Confidentiality File Name: 03-Req\_Confidentiality\_AS5ONEBTS-21.DOC

04-Exhibit 2: FCC ID Label Sample and Location Information  
File Name: 04-Label\_AS5ONEBTS-21.DOC

05-Exhibit 3: FCC Required Information (Part 2.1033)  
File Name: 05-ReqInfo\_AS5ONEBTS-21.DOC

06-Exhibit 4A: External Photographs of the Equipment (Part 2.1033 (c)(12))  
File Name: 06-ExtPhoto\_AS5ONEBTS-21.DOC

07-Exhibit 4B: Internal Photographs of the Equipment (Part 2.1033 (c)(12))  
File Name: 07-IntPhoto\_AS5ONEBTS-21.DOC

08-Exhibit 5: Test Set Up Photographs  
File Name: 08-TSup\_AS5ONEBTS-21.DOC

**09-Exhibit 6: Operational Description (Theory of Operation, Functional Description) -  
ALCATEL-LUCENT CONFIDENTIAL  
File Name: 09-OpDes\_AS5ONEBTS-21\_CONFIDENTIAL.doc**

10-Exhibit 7: Block Diagrams - System  
File Name: 10-BlkDia\_AS5ONEBTS-21.doc

**11-Exhibit 8: Schematic Diagrams - ALCATEL-LUCENT CONFIDENTIAL  
File Name: 11-Schem\_AS5ONEBTS-21\_CONFIDENTIAL.DOC**

12-Exhibit 9: Test Report  
File Name: 12-TestRpt\_AS5ONEBTS-21.DOC

**13-Exhibit 10: UMTS – Operation, Administration and Maintenance Documents –  
ALCATEL-LUCENT CONFIDENTIAL  
File Name: 13-UserMan\_AS5ONEBTS-21\_CONFIDENTIAL.DOC**

14-Exhibit 11: Tuning Procedure, if Applicable  
File Name: 14-TunPro\_AS5ONEBTS-21.doc

15-Exhibit 12: Parts List, if Applicable  
File Name: 15-PartsLst\_AS5ONEBTS-21.doc