

**Southern Telecom, Inc.
Power Line Communications/
Broadband Over Powerline
Experimental License WC2XZG
Confirmation No. EL12333
File No. 0126-EX-PL-2002**

**Second Six Month Report
August 29, 2003**

Southern Telecom, Inc. ("STI") respectfully submits its second six month report pursuant to its Experimental License WC2XZG, File No. 0126-EX-PL-2002, for broadband over powerline ("BPL"), granted on August 29, 2002.

I. Description of Test Installations and Procedures

Equipment selected for testing:

During the last six month period, STI has continued limited testing of Access BPL equipment from one of its principal vendors, Ambient Corporation. Pursuant to a joint comprehensive testing and development agreement, Ambient and STI have continued to monitor the progress of Ambient's first generation products over STI's utility affiliates' test facilities and electrical power grid. Because underground testing has not yet commenced, STI's testing has been limited to the overhead systems.

Description of test installation:

STI's testing to date remains somewhat limited. As noted in the First Six Month Report, STI and Ambient have temporarily installed Access BPL equipment in the vicinity of Birmingham, Alabama, which so far is being used to evaluate applications relating to the core electric business. Testing continues in that area.

STI is in the early stages of planning a second trial system in the vicinity of metro-Atlanta, Georgia. In the Georgia trials, STI plans to install five nodes on a 15kV-class distribution system. These five nodes will provide connectivity across more than one-half mile of aerial distribution. The foregoing distribution system will be capable of providing service to more than a dozen customers.

This system will be integrated into STI's current BPL trial network using a wireless backhaul connection to the trial head-end (located in Birmingham, AL). Currently, STI anticipates the initial testing will characterize the performance between this backhaul connection point and the other PLC nodes installed as part of this portion of the trial. Assuming the successful outcome of this initial testing, STI expects to invite customers passed by this network to participate in the trial. As a result, STI will be in a position to gain customer feedback on the system's performance.

In addition to qualitative information related to the customer experience, there are a number of quantitative items which will be tested. STI will measure emissions to ensure compliance with Part 15 and the terms of this license. Moreover, STI will characterize network performance in terms of available bandwidth, how bandwidth is shared among multiple users, typical latency, the frequency of errors or dropped packets, and overall network availability.

In the near-future, STI plans to expand its testing to a sampling of residences and businesses. These trial participants will plug the BPL modems into electric outlets located within their homes or businesses, and connect the BPL modems to their computers using USB or Ethernet cables. The purpose of the trial will be to evaluate the ease with which such an installation may be accomplished, the performance of the equipment, ease of use, radiated emissions levels, and other important characteristics.

STI also expects to install new aerial deployments with additional vendors. Likewise, STI expects to deploy solutions for underground deployments, from vendors whose equipment is currently being used for aerial deployments.

As part of the Georgia trials, STI and Main.net plan to install equipment which employs spread spectrum technology. Main.net has indicated that its spread spectrum technology has completed all required testing and has obtained the necessary approvals/authorizations to be deployed without an experimental license of its own. In an effort to ensure compliance with Part 15 and the parameters of STI's experimental license, STI plans to perform independent testing of Main.net's technology.

II. Description of Tests

As set forth in the STI application, the purpose of testing is two-fold: (1) testing for customer acceptability (including core electric business applications such as control of capacitor banks) and (2) testing for FCC compliance.

Customer Acceptability Testing

The customer acceptability testing will seek to determine: 1) the acceptability of the BPL equipment to STI as a potential customer of Ambient and Main.net.; and, 2) the acceptability of the equipment and service to the end users as potential BPL customers of STI.

STI Customer Acceptability Testing

STI is testing the BPL equipment for electrical safety, installation, performance, and cost issues. STI is also testing the reliability and performance of the network, the ease of management of the network, and the amount of technical support required by end users.

Participants in the trial are asked to enter into a trial agreement that covers acceptable use, protects the confidentiality of vendor equipment, and makes it clear that this is a trial that may

end at any time. While an agreement will be in place between STI and its customers, the latter will not be asked to pay for the service.

FCC Compliance Testing

FCC compliance testing continues to be performed by the respective equipment vendors. In its deployment testing, Ambient has recorded measurements that may be above limits set forth in Part 15. However, due to the inherent difficulties associated with performing measurements in the field,¹ STI is currently unable to determine whether the equipment is, in fact, operating above the Part 15 limits.

In that regard, STI continues to refine its measurement techniques and address those instances where emissions *appear* to exceed the applicable limits. STI expects to hire an outside specialist to further assist in this area.

STI expects to have information related to Main.net's compliance testing in the next few months.

Interference Complaints

STI has not received any complaints of harmful (or non-harmful) interference from test participants or third parties (licensed or unlicensed) during the tests. Likewise, STI has not identified any such harmful interference pursuant to its own tests. In that regard, STI performed certain interference testing using its own equipment, such as AM/FM radios, shortwave receivers, ham radio equipment, and VHF/UHF scanners, and no significant interference was detected.

Vendor FCC Compliance Testing

STI continues to be in contact with its vendors, Ambient Corporation and Main.net, whose equipment is the subject of ongoing FCC compliance testing. This contact includes, among other things, weekly status meetings and related reports.

Low Voltage Lines

Thus far, the majority of connections to the low voltage lines have been made using HomePlug devices for In-House BPL. Although STI will evaluate the proprietary solutions offered by additional vendors, it appreciates the many benefits associated with the use of products that are already commercially available and widely deployed.

Radiated Emissions Testing

¹ Medium-voltage power lines often run parallel to roads and highways where traffic, fences, trees, dogs, etc. may impede the proper set-up and maintenance of measuring equipment. Moreover, in areas where traffic may not be a problem, measurements may be influenced by the presence of chain link fences, tin roof sheds and similar obstructions.

STI's radiated emissions testing procedures are still being refined. As noted above, testing takes place "in the field," outside of a controlled environment (e.g. laboratories), and employs a calibrated antenna and a spectrum analyzer to gather radiated emissions data. STI is especially interested in evaluating the equipment in light of the Commission's Part 15 restrictions, and determining whether higher speed or more reliable connections would result from modification of these restrictions.