# EXHIBIT 2

## Caly Corporation Application for Modification of Experimental Radio Service Authorizations

**FCC Form 442 -- Question 10**

### 10a) R&D Program with description

Caly Corporation dba Caly Networks ("Caly") is developing a radio system for outdoor broadband fixed-wireless communications that will be used by millimeter wave licensees to provide service for Internet access and other business communications. Currently, Caly holds experimental authorizations in Sunnyvale, California (callsign WB2XJW) and Bellingham, Washington (callsign WC2XQQ) to use the frequency bands 27.35 - 27.5 GHz and 40.5 - 42.0 GHz (callsign WC2XQQ only) to test the viability of its proposed wireless network. By filing a modification application pertaining to each callsign, Caly seeks to add the frequency band 28.35 - 28.5 GHz to each experimental authorization.

The design will be thoroughly tested in the laboratory, including environmental tests, such as a temperature range of –30 to +60 degrees Celsius and power supply variations. Once the laboratory testing is completed, the system will be placed outdoors in a local business district to technically demonstrate the equipment. See 47 C.F.R. §5.3(d). Once testing has been completed, Caly will place its system at other locations within the scope of its experimental authorizations to demonstrate it to prospective purchasers. See 47 C.F.R. §5.3(f).

### SYSTEM DESCRIPTION

The network proposed by Caly integrates the most advanced wireless transmission technology with the latest innovative networking algorithms for dynamic routing and quality of service. The technology functions as a spatially diverse distributed multipoint radio network, i.e., a multipoint-to-multipoint, or "any-to-any," configuration.

#### The Caly Network

Caly employs a unique topology in which every node serves as a customer access point and routing node simultaneously. There is no hierarchy: all units are identical in functionality and each can communicate with every other node. This eliminates expensive point-to-multipoint base stations or master radios, and their associated towers.

The network proposed by Caly is a distributed router, using the airwaves to connect the "router" ports, or "Nodes," much like a hardware router uses its backplane to interconnect its interface cards. Figure 1 illustrates Caly's any-to-any network topology. Each Node shown has a wide view of the surrounding buildings. Any number of Nodes that are within each other's view can communicate directly.

The main downtown branch of a business may be able to see some remote branches and send email or files directly to those branches. The branch nodes that can actually see other branch nodes can have peer to peer communications at the same time. Fast packet routing is a key attribute in time-sensitive network applications such as voice, video conferencing, and transaction processing.

**Installation**

There are several features that simplify the installation of a Caly Node.

First, the mechanical installation is simplified by the wide view of the antenna. Precision pointing of the antenna has been completely eliminated.

Caly's patent-pending multi-beam antenna technology enables the Node to find a neighboring Node. With multiple active links, the Node is usually mounted on the side of a building, or directly at roof level on a simple pipe. This eliminates expensive antenna towers.

Second, the Node is smart enough to find multiple neighbors. Each Node can support a single- or multiple-links to multiple neighboring Nodes.

**Spectral Efficiency**

Frequency bands are a limited resource and must be used efficiently. The Caly system uses Time Division Duplexing (TDD), that is, the same frequency channel is used to both transmit and receive packets. In this way, the entire band is used, maximizing revenue, and spectrum efficiency.

Each Node also selects the optimum modulation level to use on each link, so that the maximum number of bits are squeezed into the channel. Thus the bits per Hertz spectral efficiency is always the highest that the RF path environment will support for error free communications.

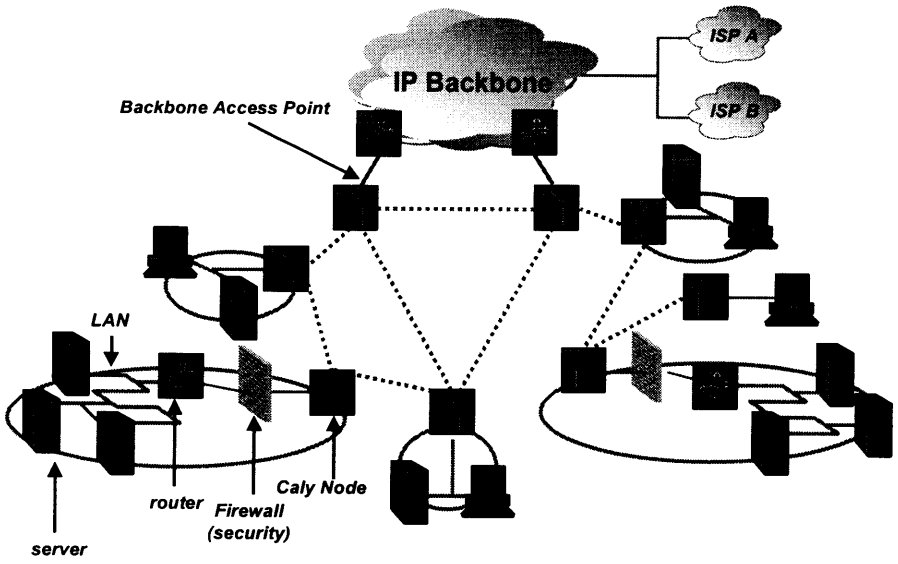


**Figure 1: Caly's Any-to-Any Network**

## Theory of Operation

Each Node has one or more links to other Nodes in the wireless network. At any instant in time, a Node may have one link active. That activity consists of a Time Division Duplex (TDD) RF burst lasting 1-4 milliseconds, which is one packet frame in one of several 50 MHz channels. The next frame may be transmitted over the same link or over another link, and over the same channel or another channel.

The product is designed to create 50 MHz channels within both the lower LMDS A-band, i.e., 27.50 to 28.35 GHz, and the 40.5 to 42.0 GHz band. By this application for modification, Caly seeks to test its product at the 28.35 to 28.5 GHz band in order to determine the viability of its operation in the upper portion of the lower LMDS A-band.

a) Each Node transmits over 128 Mbps within the 50 MHz channel.

b) The output power to the antenna is under 1 Watt and is automatically controlled. The automatic power control keeps the transmitter at the lowest level consistent with error free performance.

c) The antenna attached to the RF power amplifier has a gain of about 27 dBi.

d) The antenna is directional, with a beam less than 7.5 degrees vertical and 7.5 degrees horizontal. The antenna beam is steered over a 120 degree arc, for a better "view" of its neighbors. During the short RF transmission burst, both the transmitting and receiving antennas are focused with an 7.5x7.5-degree beam.

e) Frequency stability is better than 0.001%.

**10 b) The Objectives**

The objective of outdoor installations is to demonstrate that the system works well in a real live outdoor environment.

The second objective is to demonstrate to customers that the system works well at their location in their outdoor environment and with their data network.

**10c) Contribution to the utilization of the radio art**

Although Caly has stringent requirements on the RF stage, the design of the Caly product is based on well known RF technology.

What is new is the application of the multipoint-to-multipoint topology in a manner that enhances communications while keeping far below the allowed transmitter power for the frequency bands for which Caly seeks to operate under this experimental authorization. The typical maximum peak output power is 25 dBW EIRP vs. the permitted 55 dBW (47 C.F.R. §101.113) for LMDS operations.