EXHIBIT 1

The area of operation for Endgate's program of research and experimentation will be a rectangle bounded on the west by longitude 122° 30' W, on the south by latitude 37° 10' N, on the east by longitude 121° 45' W, and on the north by latitude 37° 50' N. Endgate's factory, located at 37° 23' 14" N, 122° 1' 45" W, lies approximately in the center if the southern half of this rectangle, and will serve as the location of at least one terminal for links established throughout the area. All of the short haul and production testing will be within the confines of Endgate's factory.

EXHIBIT 2

TEST PROGRAM

- Engineering development: In order to evaluate the performance of the Endgate 28 GHz transceiver, and the Endgate "FireBall™" Luneberg Lens antenna, a number of test links will be established between a fixed base terminal at Endgate Corporation's building in Sunnyvale and multiple sites within a 25 km radius. This effort will be ongoing for approximately 24 months.

- Customer Demonstrations: As the opportunity arises, the engineering test link established within the Endgate building will be used to demonstrate system performance to prospective customers. Demonstrations will be both of existing products, and of enhanced versions tailored to satisfy a specific customers requirements.

- Production Testing: The "FireBall™" antenna and the Endgate 28 GHz transceiver are expected to enter production in July, 1998 and will be continuously undergoing test. Some of the tests may allow low level incidental radiation of the type described in this application. A number of the final tests on the antenna will require radiation tests which will be performed in a shielded enclosure within the Endgate facility.

EQUIPMENT DESCRIPTION

- The equipment to be evaluated consists of pairs of an Endgate 28 GHz transceiver with an Endgate "FireBall™" Luneberg Lens antenna. Each transceiver will be transmitting a signal modulated with up to 20 subcarriers occupying a bandwidth of up to 500 MHz. Each transceiver is capable of full duplex operation and can supply up to +28 dBm to the antenna input port. The modulation used may be FM, QPSK or QAM with up to 50 Mbits/sec on a 25 MHz subcarrier. Up to 20 subcarriers can be multiplexed. The maximum occupied bandwidth will be 500 MHz.

- The antenna is a spherical Luneberg Lens with multiple feed elements which are capable of establishing multiple beams through one antenna. Only one feed element will be used at a time except for Customer Demonstrations as noted above. The directive gain of the antenna is 33 dBi, and it has a half power beamwidth of 3.5°, vertical and horizontal.

THEORY OF OPERATION

- The Endgate 28 GHz transceiver constitutes the microwave portion of a 28 GHz digital radio. It accepts a series of modulated subcarrier input signals to modulate a 28 GHz DRO oscillator using a single sideband mixer. This signal is amplified and fed to a diplexer connected to the antenna feed element. The receiving section accepts the incoming signal from the antenna through the diplexer and amplifies it in a low noise

amplifier. After amplification, the receive signal is downconverted through an image reject mixer to an intermediate frequency of 1.0 GHz. Further filtering and demultiplexing occur in a radio processing module supplied by the digital radio manufacturer. The transceiver local oscillator is a Dielectric Resonator Oscillator (DRO) operating at 28 GHz. It is common to both the transmit and receive modules.

- The Endgate FireBall™ antenna is a spherical Luneberg Lens with multiple dielectric lens feed elements. Each of the feed elements may be independently oriented in azimuth and elevation, resulting in a multiple independent beam directed array. One feed element serves as both the transmit and receive interfaces for an individual signal. The size of the spherical lens results in a directive gain of 33 dBi.

OBJECTIVES

- Test transceivers and antennas to determine performance margins and limits.
- Test transceivers and antennas to customer's specifications in a manufacturing environment.
- Test reliability and availability during continuous operation subject to fades due to weather, intermittent obstructions and multipath interference.
- Evaluate performance at maximum bandwidth to determine Bit Error Rate (BER) versus bit rate.
- Evaluate and characterize the performance of the antenna for gain, beamwidth and sidelobe characteristics.
- Develop a knowledge base from data gained from the above to facilitate future, higher performance, more cost effective transceiver and antenna designs.
- Demonstrate transceivers and antennas to prospective customers.

CONTRIBUTIONS TO RADIO ART

- Endgate Corporation is committed to applying state-of-the-art GaAs devices and millimeter wave design techniques to commercial microwave and millimeter wave products. The overall goal is to transform this previously expensive technology into cost-effective solutions for commercial applications. Lower cost, smaller and higher performance 28 GHz radios will allow expansion of the new LMDS market through more cost effective terminals. Endgate's contribution will be in bringing the benefits of lower cost advanced technology to this market.