

EXHIBIT 1
STATEMENT IN SUPPORT OF
EXPERIMENTAL LICENSE FOR
VIDEO MICROWAVE BOOSTER DEVELOPMENT

This application requests authority to operate experimental booster amplifiers and antenna systems in the 2150-2162 and 2500-2686 MHz frequency bands. Authority is requested for the entirety of the United States. Under this authority, LBA Technology, Inc. will pursue a program of testing to develop effective techniques of fill-in (boosting) of so-called "wireless cable" signals, and the development of appropriate antennas and transmission equipment to permit licensees in the wireless cable services to implement such systems on a wide-spread basis. A cooperative program of testing involving wireless cable licensees is planned.

The FCC has authorized several types of licensees to provide point-to-multipoint broadcasting of video services in the 2 GHz band. These services, provided on 33 six MHz channels have collectively come to be known as wireless cable^{/1}. The wireless cable service is analogous to cable television, and the Commission has recognized it as an element of effective competition for monopolistic cable services. In order to deliver wireless cable services, an operator aggregates a number of

^{/1} See 2nd Report and Order and Order on Reconsideration in Gen. Dockets 90-54 and 80-113, both adopted 26 September 1991. These services are the Multipoint Distribution Service (MDS) under Part 22, the Instructional Television Fixed Service (ITFS) under Part 74, and some "grandfathered" operations under the Operational Fixed Service (OFS) of Part 94.

different licensees, typically between 4 and 33 channels, at a single location. Normally using identical powers, antenna heights, and emissions, the wireless cable operator endeavors to service an area as much as 30 miles in radius^{/2}.

Because the nature of microwave transmission is line-of-sight, and because transmission sites and tower heights are limited by many constraints, uniform service around the wireless cable antenna is rarely, if ever, possible. These constraints, combined with terrain, foliage, and building obstruction problems within the desired service area can cause severe occlusion of large parts of the desired coverage area, impacting the economic viability of the wireless cable operation, limiting its effectiveness as cable television competition, and can result in less than optimum use of the frequency spectrum assigned.

Recognizing these problems, the Commission has provided for the limited use of so-called "booster amplifiers" within the service area of certain wireless cable stations^{/3}. However, it is our experience that very few booster installations have been implemented due to the lack of suitable equipment in the marketplace, and an incomplete

^{/2} Indeed, although licensed in different services and to different licensees, the transmitters for such installations are commonly shared in the same physical system, and are combined into the same waveguide and transmitting antenna.

^{/3} See *Report and Order* and in Gen. Dockets 90-54 and 80-113, adopted 11 October 1990.

understanding on the part of engineers, equipment suppliers, and wireless system operators as to the practical aspects of installing and operating booster systems.

Given these problems in implementing booster systems, LBA Technology, Inc. proposes to conduct a program of experimentation which will lead to the development of new equipment suitable for wireless cable booster service, and new information on the planning and operation of booster systems. This will assist both the public and the Commission in further encouraging appropriate booster implementation and in making wireless cable more effective in both its public service role, as well as its effective competition role. Under the proposed authority, LBA Technology, Inc. proposes to operate a test facility in the Greenville, North Carolina area, as well as a number of other areas to be specified within the remainder of the United States.

The Greenville facility will consist of a main test site and one or more booster amplifiers in the surrounding area. The test site will be located at the LBA Technology, Inc. manufacturing facility at 1214 Mumford Road in Greenville. From this site will be originated signals for the testing of booster configurations, as well as test signals for the development of suitable transmitters and antennas. Annex A provides additional details of the Greenville installation. It is noted that the maximum test antenna height will not exceed 75 feet. Under FAA guidelines^{/4}, such an antenna height does not require FAA

^{/4} 14 CFR 77.133(a), 47 CFR 17.7

notification. The maximum horizon distance from this height to a 30 foot receive antenna is 25 miles. There are no known licensed and operating MMDS, MDS, or ITFS receive stations within 50 miles of the Greenville site. Therefore, LBA requests that a maximum effective radiated power of 8000 watts be permitted, in any polarization, from this location. The booster stations associated with the Greenville operation will be located within a 25 mile radius of the test site and would operate with an effective radiated power of no more than 100 watts per channel and a height no greater than 199 feet above ground, and would not require FAA notification^{/5}.

In order to gain experience with a wide variety of terrain, land cover, and urbanization impacts, other experimental booster installations will be made in selected locations throughout the United States. It is anticipated that these installations will be made cooperatively with local wireless cable operators who will provide local support facilities for operational monitoring, test reconfigurations, and data collection. Additionally, since these installations will be made with the full knowledge and support of the local wireless participant, there will be no question of interference to existing operations. Typically, these field test installations will operate with an effective radiated power of less than 100 watts and an antenna height of less than 199 feet. In certain cases, greater facilities may be

^{/5} In any event, the height used at any location would not exceed that for which no FAA notification is required under the FARs and the FCC Rules.

required, and these will be requested on a case by case basis. In any event, the Commission will be notified by LBA Technology, Inc. of the full technical details for each field test installation proposed as well as a report of the results of an engineering investigation of interference protection to any non-cooperating licensees within 50 miles of the test site. This notification will be made prior to commencing each operation. The operating facilities at each test site will be so configured that no interference will be caused to any non-cooperating licensee.

It is anticipated that the duration of operation at each field test location will be at least one year. This period of time is required since microwave transmissions are affected by various environmental variations which change from season to season. Therefore, where possible, test operations will be so scheduled as to encompass a full cycle of seasonal variations.

Wireless cable is by nature a subscriber-based business. The field test sites will normally be located in areas where subscribers of the existing system have difficulty in receiving high grade service from the wireless cable operator. As part of the testing program, experience will be documented of the difference between subscriber services via the main station and the booster station. The cooperative wireless cable operator will do business with the subscriber on his normal basis, regardless of whether serviced by the field test booster, or not. No subscriber revenues will accrue to LBA Technology, Inc. in any of these operations, although the cooperating operator will

continue to collect his normal service fees from the subscribers. LBA Technology, Inc. may collect from the cooperating wireless operator expense reimbursements, or other incidental financial or operational assistance in the operation of the test facility, but no compensation related to subscriber payments.

LBA Technology, Inc. is a manufacturing and systems integration company which has been providing services to the broadcast industry for 20 years. It presently manufactures a wireless cable antenna system, and is a dealer in transmission line and other wireless cable systems components. It has underway a research effort to develop additional proprietary wireless cable transmitting equipment.

LBA Technology, Inc. is being supported in this project by Lawrence Behr Associates, Inc. Both are sister companies in the LBA Group, Inc. Lawrence Behr Associates, Inc. is a consulting engineering firm which has been providing services to the broadcast, wireless cable, and microwave industries for over 25 years. Lawrence Behr Associates, Inc. has extensive experience in the field engineering of microwave engineering; in FCC application preparation for the wireless services; and in wireless cable interference evaluation, prediction, and remediation. The firm will prepare all interference investigations and showings required to support the field test operations, and will assist in securing cooperating wireless cable operators and preparing reports of test performance for the Commission. It will also assist LBA Technology, Inc. in monitoring compliance with the terms of its

experimental authorization and the FCC and FAA Rules.

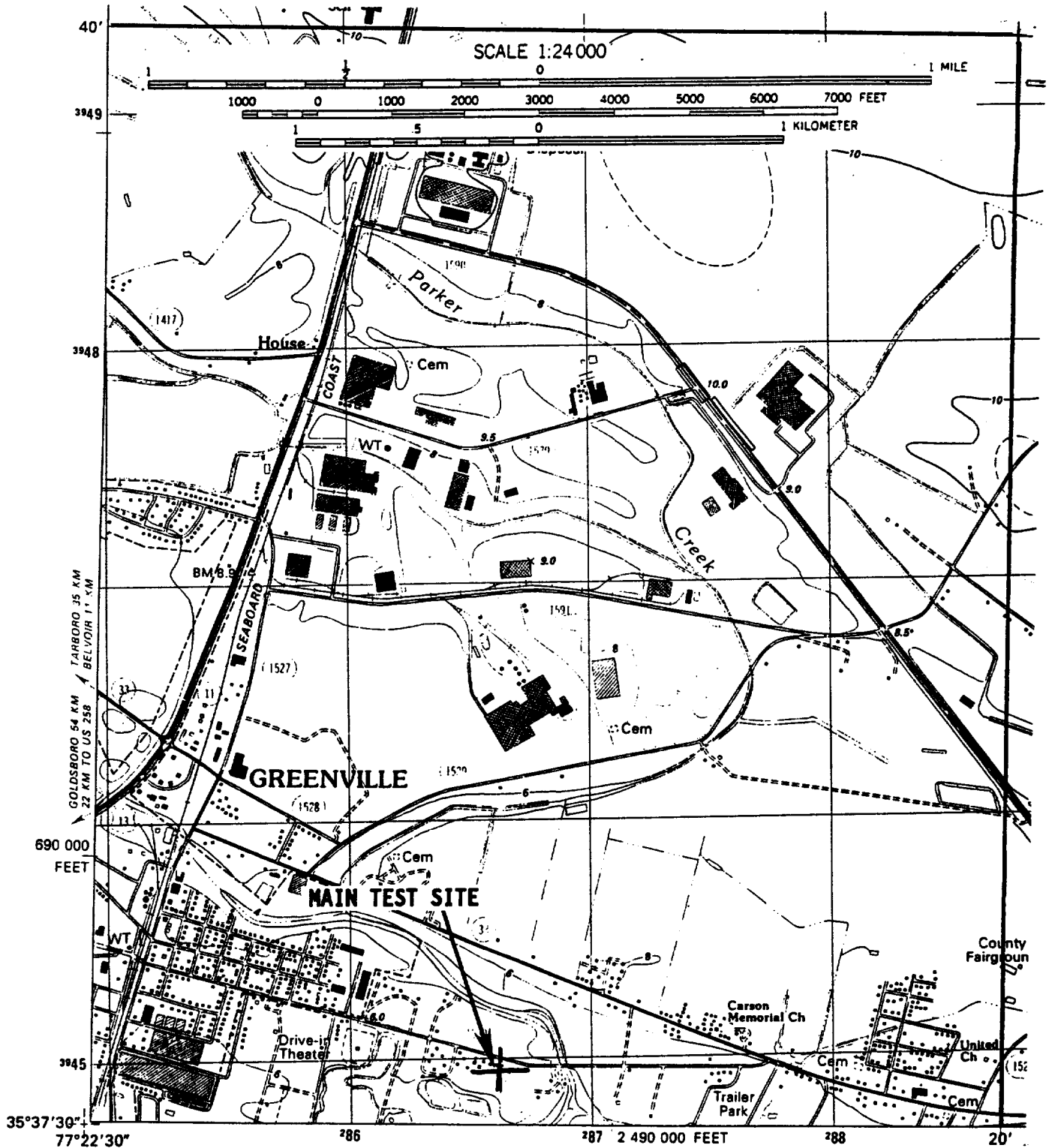
LBA Technology, Inc. also anticipates enlisting the support and participation of other relevant providers of equipment and services to the wireless cable industry. However, all operations under the proposed experimental authorization will be controlled solely by LBA Technology, Inc.

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ANNEX A

PAGE 1

LOCATION OF MAIN TEST SITE

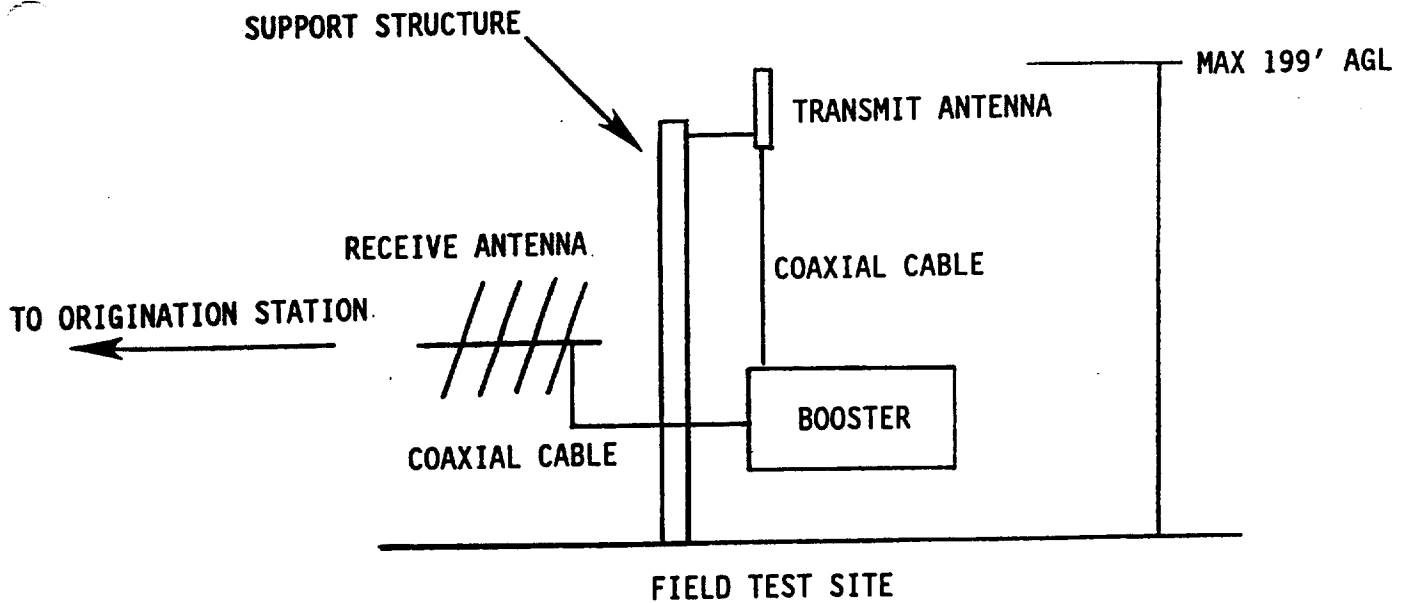
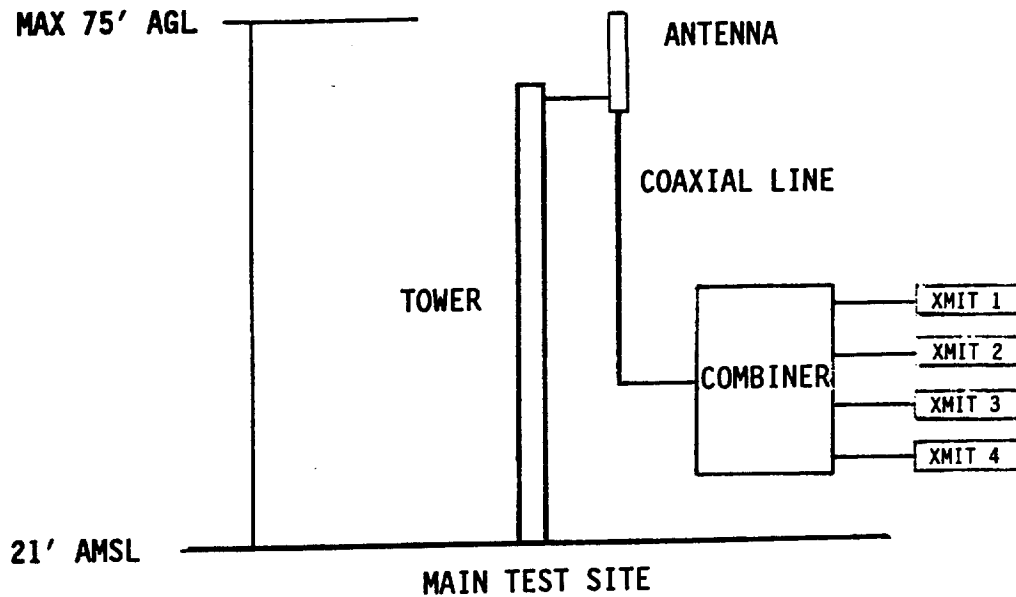


LBA Technology, Inc.

ANNEX A

PAGE 2

TYPICAL CONFIGURATION OF WIRELESS CABLE SYSTEMS AT TEST SITES



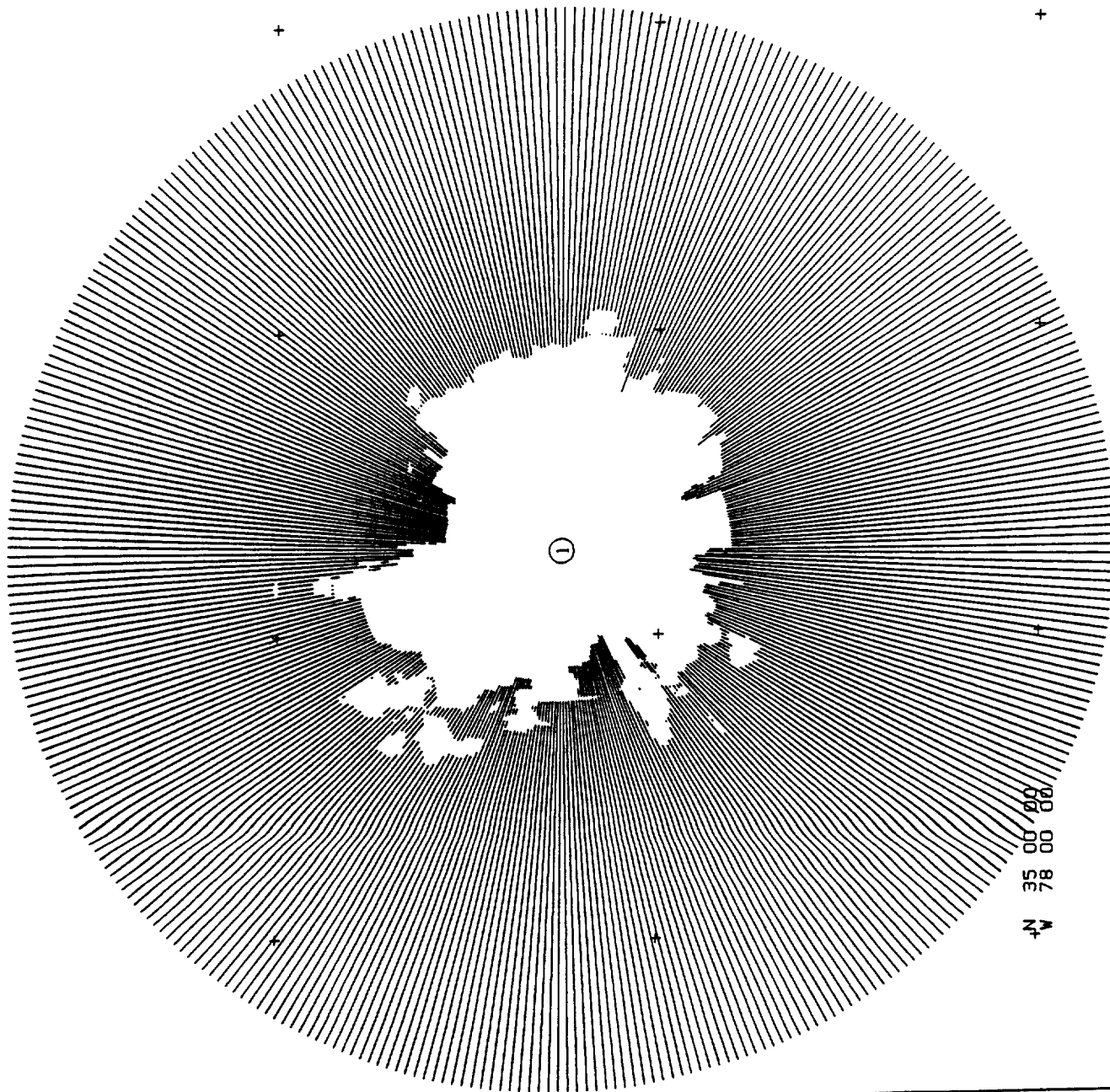
LBA Technology, Inc.

RADIO SHADOW MAP

K Factor: 1.333

RX Ant. Height: 30.0 feet AGL

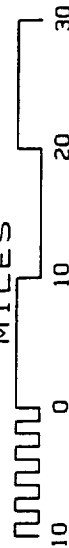
Site	Ant Elv (feet)	ERP (dBW)	Ant. Type	Ant. Orient	Latitude & Longitude	
					(degs)	
1	97.0	.00	OMNI		N 35 37 37	W 77 21 21



N 35 00 00
W 78 00 00

Tic mark interval: 30'

MILES



LBA TECHNOLOGY TEST

50 MILE RADIUS, 75' RC AGL

APRIL 30, 1992

Application for Experimental Radio License

*LBA Technology, Inc.
Greenville, North Carolina*

Introduction

This statement is filed in response to a letter from the Federal Communications Commission regarding LBA Technology, Inc.'s pending application for an experimental radio license, file number 3158-EX-PL-91.

That letter requested indicated that information appeared to be incomplete in the Commission's files and requested supplemental information be submitted if the applicant still wished to pursue the application. LBA Technology, Inc. does still wish to pursue the application, and is submitting the requested information.

Copies of Material

Attached is a copy of the original FCC form 442 filed in 1992, as well as a copy of the original FCC form 155 and a copy of the fee payment check. These materials are provided in response to the Commission's inquiry.

Also requested is a new Form 442. The new edition of the form has been filled out as requested. In several places the form refers to Exhibit 1. All information regarding the program of experiments contained in the original Exhibit 1 still applies. However, due to the passage of time, the nature of the desired experiments has expanded slightly. Supplemental information is provided in the Exhibit 1 Supplement attached.

The original request was for authorization to test booster equipment in the "Wireless Cable" band. This testing was to be done on a non-interference basis, working in conjunction with local holders of conventional licenses for frequencies in this band. Now there may be several holders of grandfathered licenses, as well as BTA holders and holders of conditional licenses. LBA Technology, Inc. contemplates working with any of the "Market Operators" on a non-interference basis, as described in the original application.

In 1992 when the original application was filed only one-way analog transmissions were contemplated. The need was for equipment that could provide "fill-in" service without creating interference to the primary transmitter. There is still a need for fill-in transmission equipment. However, the market has changed and various forms of digital modulation are often used. In addition, there is a great need for two-way operations. The application is being supplemented to specify multiple emission types and two-way transmissions. As previously specified, the Commission will be

notified before any site is activated and operations will cease should they cause interference to authorized primary users of the band.

If the cooperative party has not yet been granted digital authorization, LBA Technology may establish a temporary digital base station as described in the original application. Should this be the case, the Commission will be so informed in the notification process.

8 September 1997

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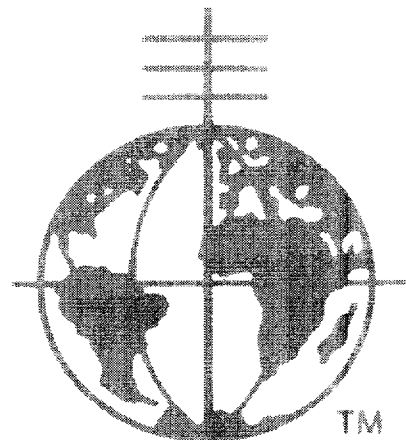
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Application for Experimental Radio License

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*LBA Technology, Inc.
Greenville, North Carolina*

8 September 1997



LBA

.....
LAWRENCE BEHR ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTANTS

.....

Exhibit 1 Supplement

LBA Technology, Inc.
Greenville, North Carolina

Type of signal	Mean or Peak Power	Emission Designator
NTSC	Peak	6000A9B,5750A5C,250F3,6000F94
64QAM	Mean	6M00D7W,5M75C3F

LAWRENCE BEHR ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTANTS