



MDS AMERICA

• Bringing Wireless Broadband to Earth •

Introduction and Objectives

The objective of this experimental license is to demonstrate for the Commission the non-interference characteristics of MDS America transmitter systems as they impact the reception of DBS satellite signals. MDS America transmitters are extremely low power devices capable of 60 MPBS asymmetric data broadcast. Each transmitter is capable of transmission of 15 broadcast quality television signals. These transmitter systems provide line-of-sight and near-line-of-sight signal delivery to the curve of the earth from the transmitter.

MDS International systems identical to this one are already functional in many places around the world where there exist ubiquitous DBS satellite customers. In years of commercial operation MDS International has not faced interference problems with existing DBS systems.

This experimental transmitter will consist of a low power transmitter (<4W) being fed by a video source (probably test pattern generator or video server) and placed on the FCC registered tower (FCC Antenna Structure Registration Number: 1028335) of US Sugar Corporation outside of Clewiston Florida. US Sugar has agreed to allow MDS America to conduct the test described in this application on US Sugar's property and utilizing US Sugar's facilities. US Sugar's land holdings in Florida are large and sparsely populated and in many areas totally unpopulated. Because the tower is presently in use by US Sugar it is compliant with all FCC and FAA regulations. Although the tower has a height of 181.0 meters (AGL) or 186.0 meters (AMSL), it is not anticipated that MDS America would use more than about 30 m of tower height to eliminate any possibility of signals reaching possible DBS customers in far removed locations.

Objectives:

1. Demonstrate in the US that MDS America's systems can reliably deliver full bandwidth signals to customer sites via both line-of-sight and near-line-of-site methods using the engineering methods developed and used in MDS International's many systems worldwide.
2. Demonstrate to the satisfaction of the Commission that MDS America's systems pose no interference to incumbent DBS systems in the US.
3. Demonstrate the above in both a uni- and omni-directional configuration.

Contribution to the Radio Art

At the present time, MDS's technology is the only commercially functioning MVDDS system in the world with more than 20 installations worldwide. MDS's technology has allowed MDS to develop turn-key Internet and video distribution systems using terrestrial transmission technology.

As is well known to anyone involved with this technology, questions have been raised as to whether this spectrum is usable concurrently with DBS downlink. Part of the reason for this debate is that until just recently the terrestrial arguments were being made by those with *no*



operational MVDDS experience in the field and using “off-the-shelf” equipment. This experimental license will allow MDS America to utilize the extensive experience and expertise developed by MDS International to add authority to arguments currently being made, as well as establish the viability of the unique MDS International technology.

Detailed Testing Plan

The MDS America testing will be conducted in the cane fields of US Sugar. MDS America engineers will travel at various vectors and distances from the transmit antenna and set up DBS receivers that have been acquired at random from the US market. After establishing baseline readings of DBS signals with our transmission system shut down, MDS America will then take the same readings with our system transmitting. This will then be repeated at different times and days and under as varied atmospheric conditions as possible. In addition these tests will be conducted using a unidirectional antenna (see exhibit 1) and progressing on to an omnidirectional antenna in the later stages of the tests. In spite of the fact of that MDS America is certain that we will cause no interference in this area, MDS America will place large newspaper ads informing any possible DBS subscribers of our plans and giving these people a telephone number to report reception problems.

To forestall any criticism that its testing is biased in any way, MDS America has elected to retain an independent engineering firm to devise and implement separate confirmation testing independently of MDS America. Since this firm is to provide an unbiased assessment of MDS America’s technology and systems it is inappropriate for MDS America to mandate a testing plan for the independent verification company. This firm is presently working on a detailed plan for testing and MDS America will submit this plan to the Commission as soon as it is presented to us for review.

Concurrently with the independent verification testing MDS America will be conducting our own tests, both for concurrent submission to the Commission and to add to our already extensive understanding of the Radio Art.

MDS America’s tests and the tests of our contractor will be open, public, and observable. MDS America plans to send invitations to all the interested parties to come and act as observers on the ground. In this and all other aspects of our testing we would like to remain as open as possible.

Below we have included virtual coverage surveys of the area around the US Sugar tower.

TRANSMISSION POINTS LOCATION:

The coverage prediction for Florida is based on the following parameters:

U.S. Sugar Corporation tower	26°42’35” North – 80°54’00” West	20 ft AMSL
------------------------------	----------------------------------	------------

PARAMETERS:

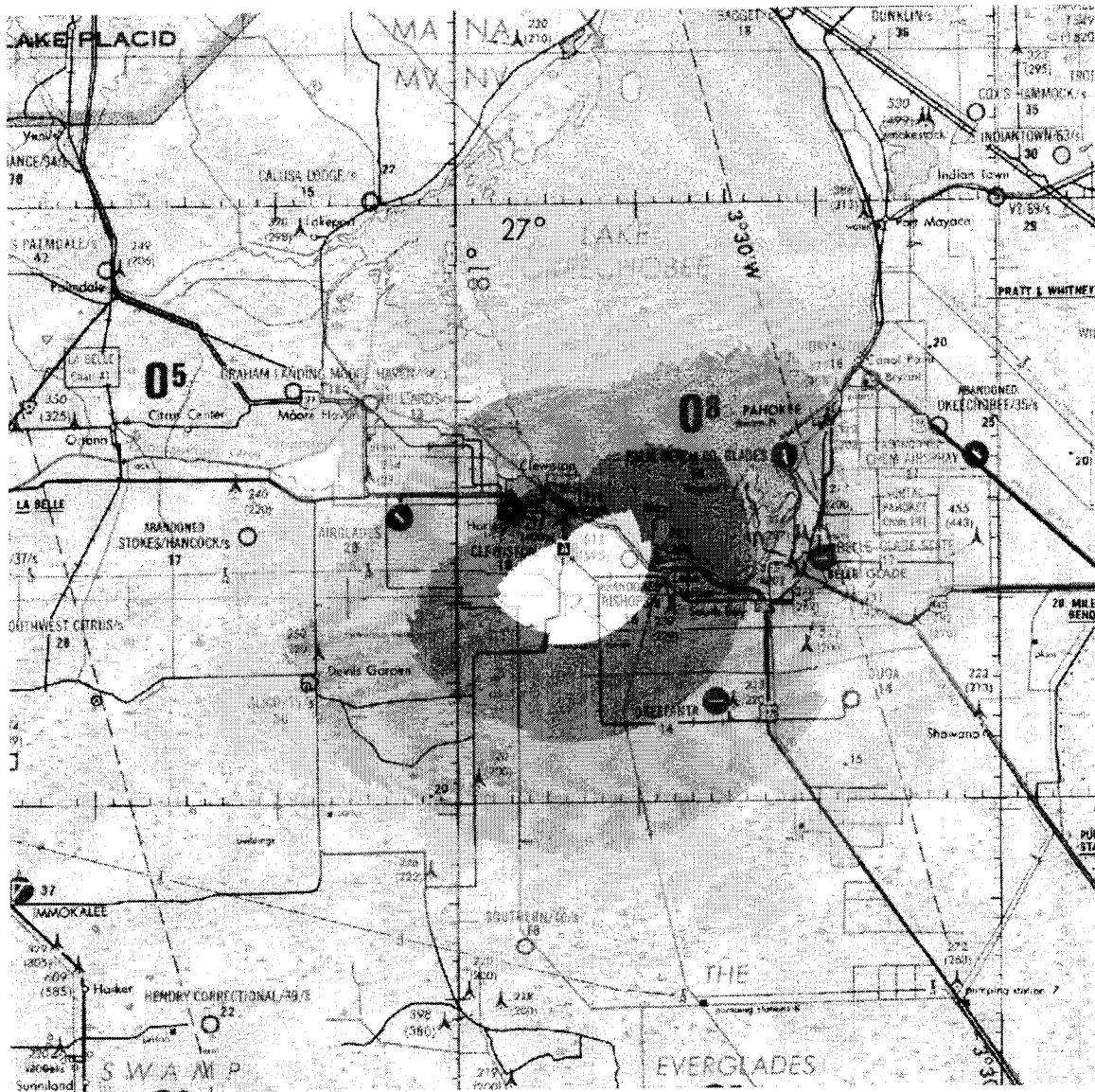
Transmission site:	
Mast Height	90 ft AGL
Transmitter power	36dBm
Transmitter frequency	12 GHz
Transmitter antenna Gain	10 dBm omnidirectional
	24 dBm directional



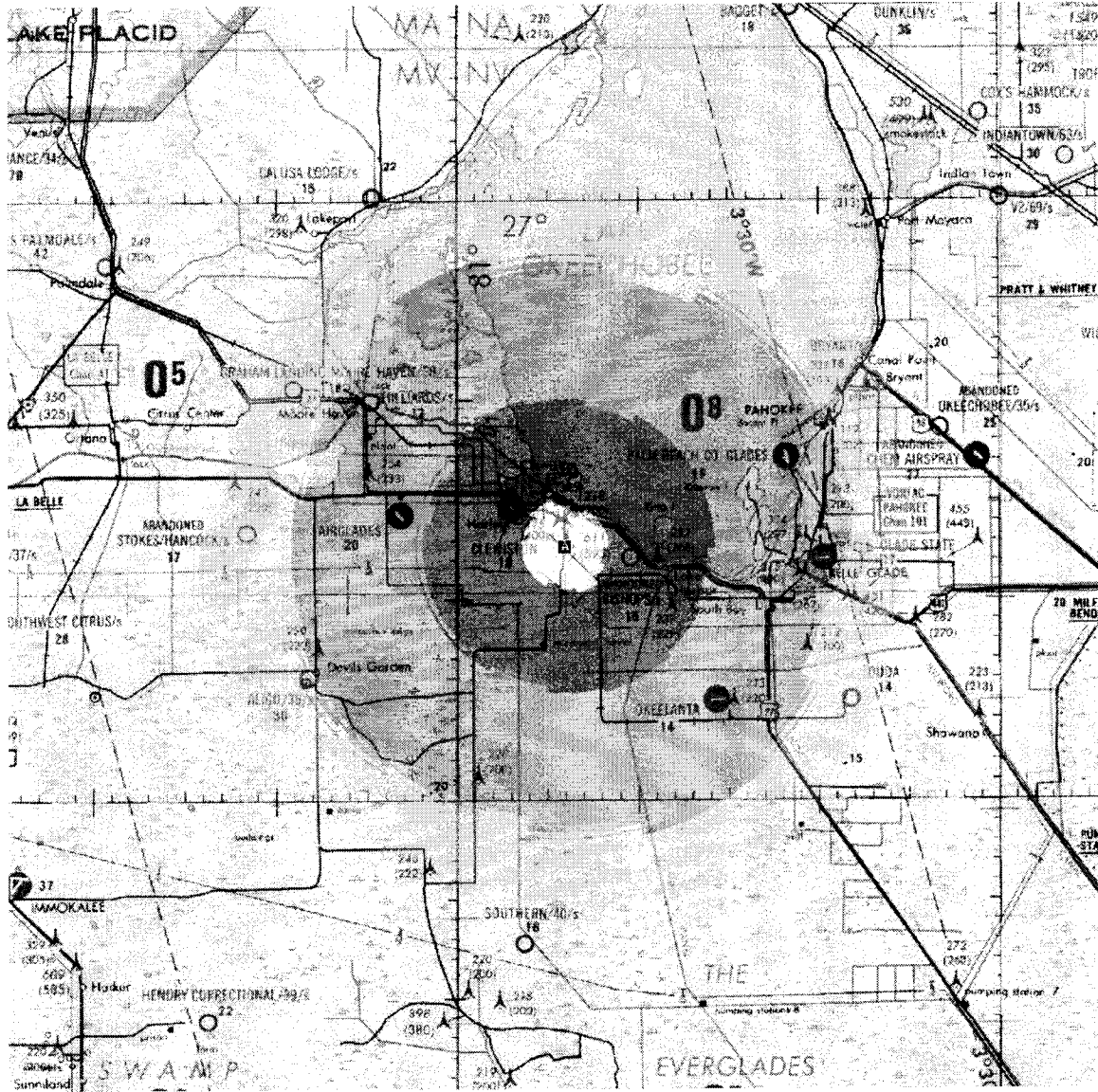
Exhibit 2

• Bringing Wireless Broadband to Earth •

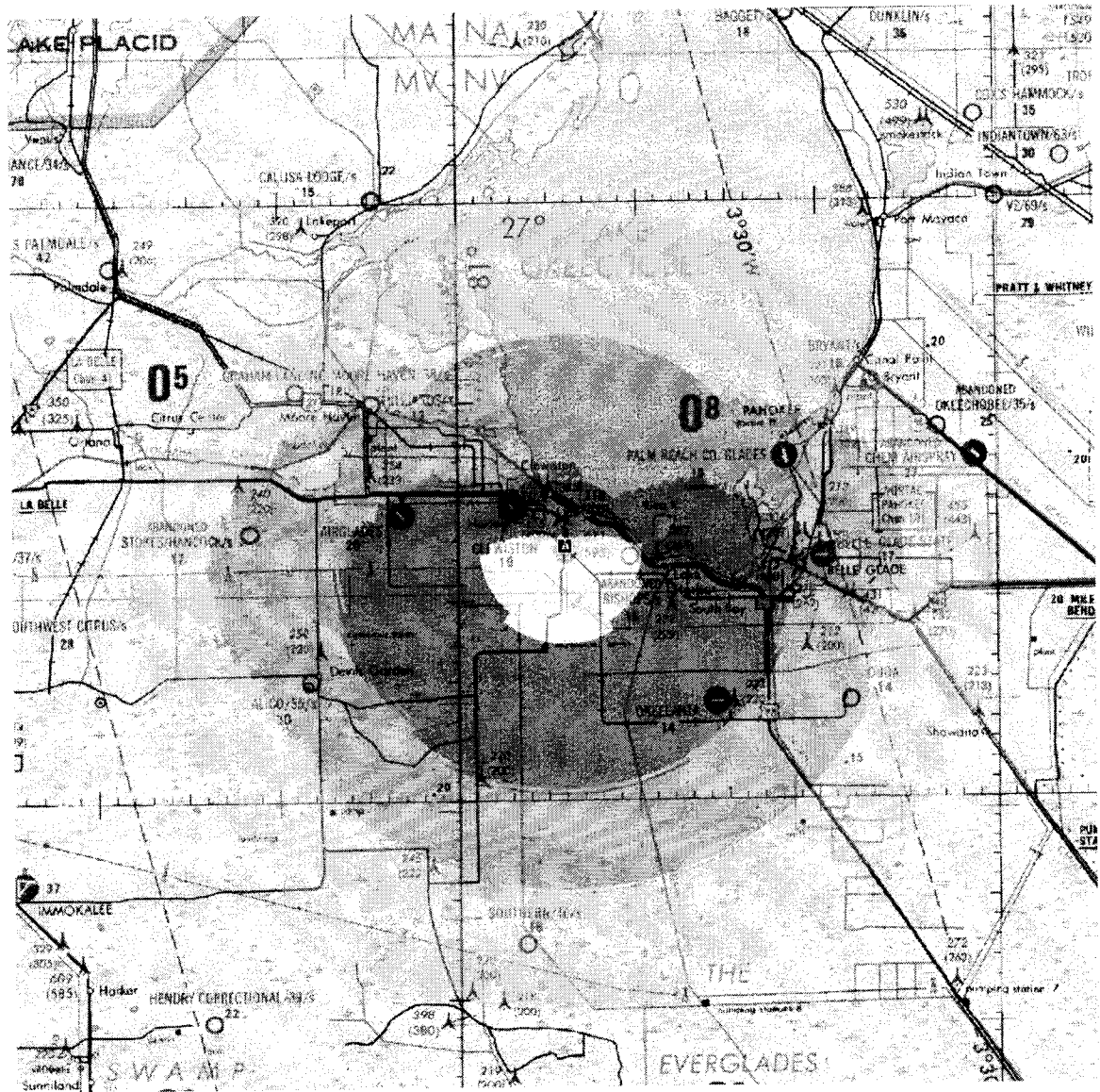
Reception site:	
Antenna Height	2 Meters above ground
Antenna Gain	20 dBm
Converter gain	70 dBm
Digital Receiver threshold	-60 dBm
Reception threshold	-110 dBm (value for coverage prediction)
(Real Threshold value	-140 dBm)
Map Grid:	
Resolution grid	100 meters



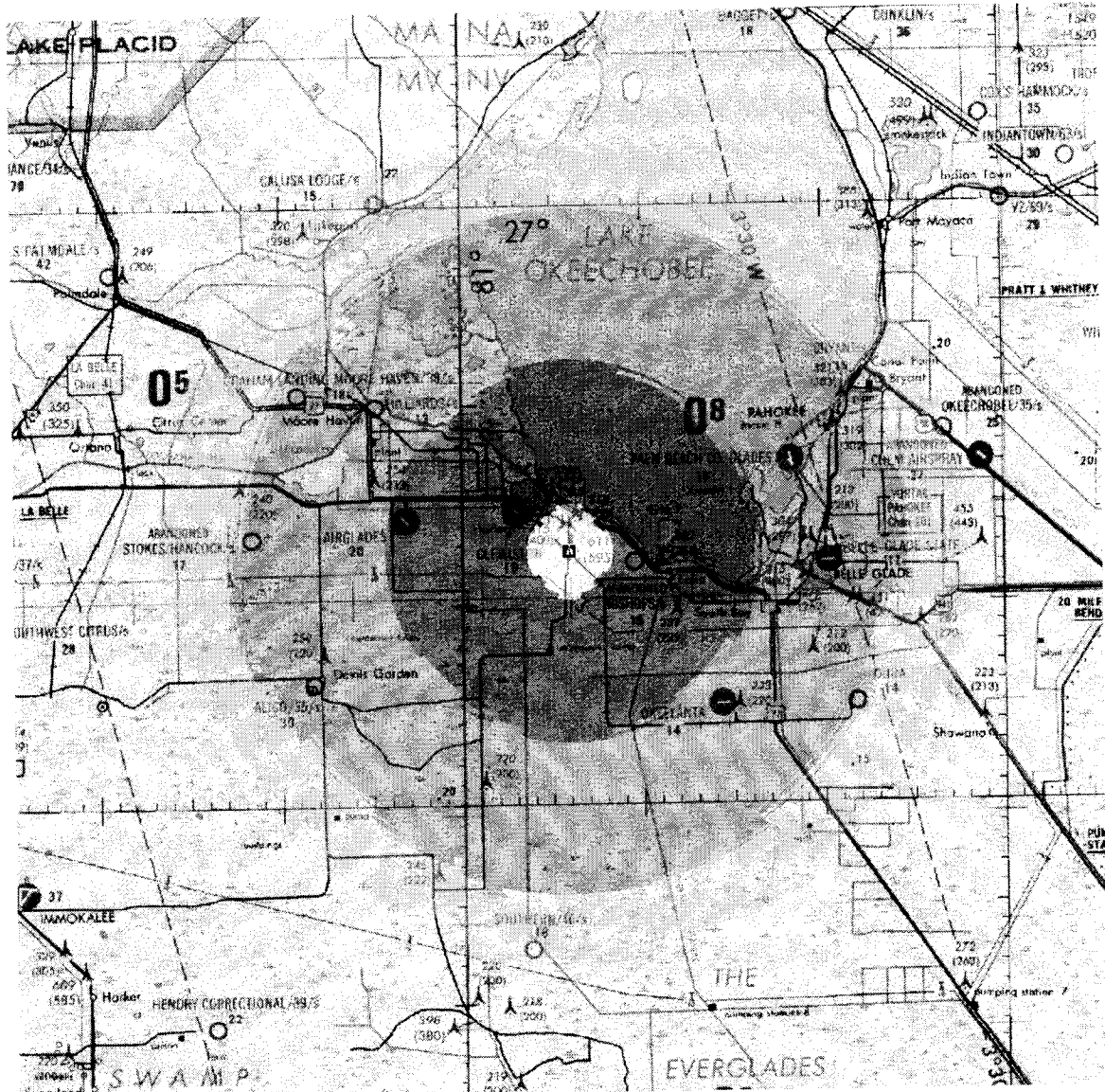
Coverage Survey at 20 m AGL with uni directional antenna oriented at 160° (SW)



Coverage Survey at 20 m AGL with Omni-directional antenna

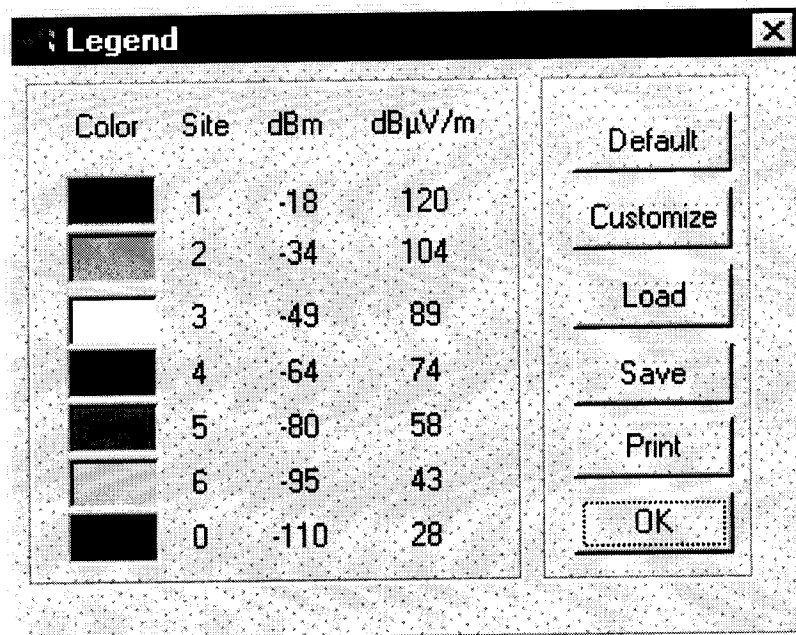


Coverage Survey at 30 m AGL with uni directional antenna oriented at 180° (S)



Coverage Survey at 30 m AGL with Onmi directional antenna oriented at 180° (S)

Legend:



Color	Site	dBm	dBμV/m
[Dark Blue Swatch]	1	-18	120
[Medium Blue Swatch]	2	-34	104
[Light Blue Swatch]	3	-49	89
[Dark Blue Swatch]	4	-64	74
[Dark Blue Swatch]	5	-80	58
[Light Blue Swatch]	6	-95	43
[Black Swatch]	0	-110	28

Buttons: Default, Customize, Load, Save, Print, OK

All the colored areas (1-2-3-4-5) can receive the signal with different strength level.

The light blue area (6) is Not a guaranteed reception area, it is mainly a diffraction reception signal zone.

The black area (0) is NO Signal, the black color is not shown on the map, and is corresponding to the transparent color (No color).