Technical Description

Exhibit 1
FCC Experimental License Application 051216

Version 1.1
December 12, 2005

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1. Introduction

This document has been created as an exhibit to support an experimental license application by VSL Networks, Inc. ("***VSL***") to conduct testing of a new mobile, satellite communications that will support public safety and Homeland security requirements for broadband, mobile communications. The satellite link tests will be conducted within the continental United States ("***CONUS***") on a ***non-conforming, non-interference basis***. The testing scenario has been carefully planned and will be fully compliant with the non-interference protection rules of the Federal Communications Commission ("***FCC***").

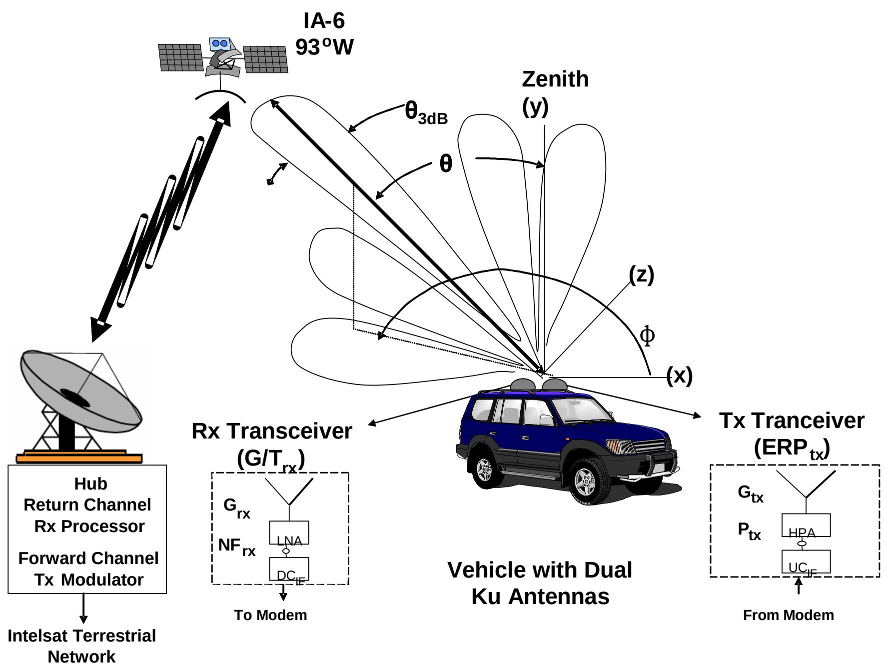


Figure 1-1 VSL Ku-Band Satellite Link

The VSL testing involves a two-way, wideband communications link between a mobile vehicle and the terrestrial network via a ground station ("***hub***") at Intelsat's Mountainside, MD teleport, and utilizes a transponder on Intelsat's IA-6 Ku-payload located in a geostationary orbital slot of 93°W. A block diagram of the test configuration is shown in Figure 1-1.

The purpose of the experimental testing is to verify the performance of the low profile vehicle antenna system and show that "in-motion" broadband two-way communications with peak data rates in the 128-512 Kbps can be maintained while the vehicle is in motion. This type of communications would be used in future public safety services to transmit two-way data to and from the vehicle while it is moving at highway speeds. The vehicle will also employ standard terrestrial communications equipment for voice and low-speed data, but the satellite link will serve as a back-up for these services as well in the event of an emergency which disrupts terrestrial communications.

In the following discussion, the data channel from the vehicle to the hub will be referred to as the ***return channel***, and the data channel from the hub to the vehicle as the ***forward channel***. VSL equipment at the hub facility contains the modems associated with the unique waveforms being transmitted over the satellite link. These will be described in the next section of this document.

To support this important application and the current testing, Intelsat Limited ("***Intelsat***") has assigned uplink and downlink frequencies for the return and forward channels sufficient to support up to a 4 MHz operating bandwidth. These frequency assignments and other parameters associated with the IA-6 satellite link are shown in Appendices 1&2.

This document provides further technical detail on the critical components that comprise the system, in particular the low profile tracking antenna and its impact on the satellite communication links in Section 2. In Section 3, the special properties of the forward and return channel waveforms are described. In Section 4, link budgets for the Intelsat IA-6 transponder are provided. Finally, Section 5 describes the measures that are built into the experimental testing program to ensure that the tests are conducted in a manner which are fully compliant with the rules of the Commission.

2. System Description and Critical Components

The present testing program supports an important segment of the emerging communications infrastructure, namely the communication of broadband data to vehicles "on the move", referred to as "Communications on the Move" (***COTM***). COTM is a system enabling high-speed satellite data, voice and video communications to/from a moving vehicle using very small aperture tracking (VSAT) antennas. The principal challenges for COTM are achieving adequate signal levels for broadband communications while simultaneously operating to mitigate adjacent satellite interference. Mitigation of interference to adjacent satellites normally associated with small apertures is accomplished by advanced forward error correction coding in combination with spread spectrum techniques. Direct Sequence Spread Spectrum technology provides the ability to acquire and process the received signals at levels that are lower than would ordinarily be possible. This is essential in dealing with the performance of small, low profile antennas. The spreading code involved with these type of antennas operating in a Ku-band modern satellite system with CONUS coverage typically has a value between 1 (no spreading) and 32, and the nominal data rates vary from 32 Kbps to 1.544 Mbps depending on the composite system parameters. Modulation types which are supported for these tests include BPSK, QOSK, and OQPSK. The spreading code does not cause the local spectral density (before spreading) to deviate by more than $\pm$0.5 dB from any region to another across the signal passband over which the FCC spectral density limits apply (<40KHz).

2.1 Satellite Network Overview

The VSL Network will employ a multiple frequency/time division multiple access ("***MF/TDMA***") scheme for assigning users access to the system. Since initial system testing will be done with only one user present on the network, the multiple access scheme for single user testing simplifies to a basic SCPC "always-on" channel.

In the MF/TDMA multiple access to many users which is being developed, a user must acquire the forward link and then wait until frequency assignment and other status information is received. The forward channel will then be activated after a login sequence is completed.

In the initial system testing, the forward channel will support a minimum of 512 Kbps using several different combinations of coding and spreading factors, in all cases keeping the emissions from the terminal within FCC limits required for non-interference (as further described in detail in Sections 3, 4 and 5). The forward and return channels run on separate transponders, meaning that their parameters can be set totally independently of each other.

When spreading is incorporated at the remote terminal or the hub, a spreader on the transmit side of the modem is inserted between the transmit FIR filter and the upsampler. In burst mode, the spreader is synchronized to the start of burst and the spreading sequence restarts for each burst. In continuous mode, the SS restarts periodically at the beginning of a TDM frame or multi-frame boundary. In both cases, the periodicity of the spreading sequence aids synchronization and acquisition of the signal.

On the receive side of the modem, a despreader is inserted between the downsampler and the receive FIR filter. The estimator operates on the preamble and is modified to provide a spreading sequence phase metric to the local sequence generator to initialize the despreader. A DLL tracking loop maintains code lock during the burst. A block diagram is shown in Figure 2-1.

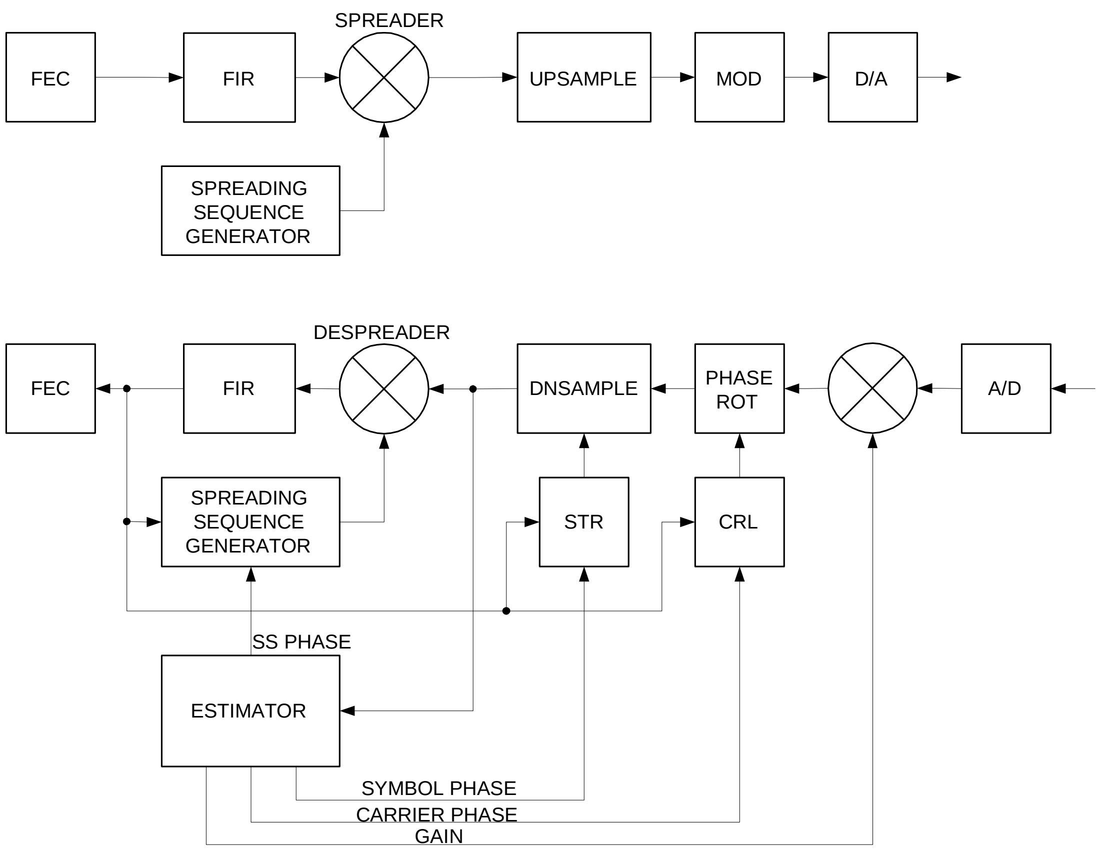


Figure 2-1 Block diagram of Insertion of Spreading Sequence into MF/TDMA Modem

As previously discussed, the return channel waveform employs a TDMA multiple access scheme. As a result there is only one simultaneous user on at any given time in its assigned frequency range. There are, therefore, no complicated system requirements for user transmit power control (other to preset each user to a maximum transmitter power level) that are required in CDMA or CRMA systems. The forward channel is also a TDMA system, so that it also does not need complicated power control scheme to ensure compliance with FCC limits. Each user does have the capability to be assigned different coding and spreading parameters by the Network Management System, but these parameters are preset to ensure that FCC compliance is assured.

2.2 Hub Equipment

The modem equipment and multiple access methods have been described in the previous section. This section describes the forward channel and return channel equipment in the rf chain at the hub which have an impact on spectral power density, and therefore control of emissions.

2.2.1 Return Channel

Appendix 1 shows the power allocations for the Intelsat hub return channel uplink, and the initial testing which is designed to support a 128 Kbps user throughput. Since the satellite downlink EIRP is only 16 dBW and a minimum bandwidth of 2.9 MHz is used, the peak downlink EIRP spectral power density is only -12.6 dBW/4KHz, well below the level of +6 dBW/4KHz limit for coordination requirements established by 25.134(b), and therefore qualifies by 25.134(a) for routine licensing. In this situation, the forward channel spectral density dominates the allocated downlink power.

The return channel ***emissions*** from the moving terminal require a much more detailed discussion, as will be deferred to Section 3, 4 and 5. However, it should be stated at this point that the terminal EIRP levels, coupled with its antenna pattern, will always be constrained so that the emissions lie within the limits specified in 25.134(b).

2.2.2 Forward Channel

Appendix 2 shows that the peak satellite downlink EIRP within the operating bandwidth is 35.8 dBW, providing an EIRP spectral flux density of +5.95 dBW/4KHz, again under the limit requiring coordination as defined in 25.134(b). The hub uplink uses a standard multicarrier IA-6 signal level in this transponder, and has been used since the launch of the satellite years ago. Since the spread spectrum modem will not introduce any additional spectral power density variation over +-0.5 dB, there should be no issue on the forward channel uplink.

2.3 Remote Terminal (Vehicle) Equipment

2.3.1 Vehicle Mounted Antenna Subsystem

The development of a mobile satellite communications system for an "in-motion" public safety vehicle (a police cruiser, for example) requires an antenna suite that can be mounted in a low-profile configuration and fit within the roof constrains of the vehicle (an antenna foot-print of roughly 32" wide x 20" deep x 3.5" high). These dimensional constraints rule out the typical steered dish solution that has been used in many "nomadic" applications which do not provide "in-motion" service. Figure 2-2 illustrates the typical installation constraints for such a vehicle in the VSL service model. The VSL antenna suite employs a separate transmit and receive antenna, each optimized for its appropriate satellite band.

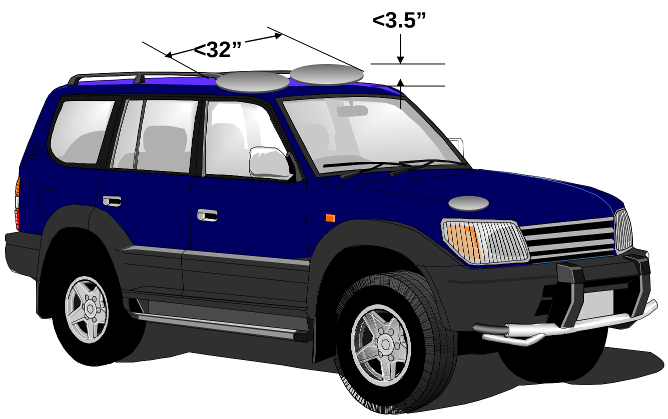


Figure 2-2 Typical Installation Requirements for "In-Motion" Low Profile Antennas

The use of standard "dish" antennas is not compatible with the vehicle installation shown in Figure 2-3. VSL is evaluating a range of antenna solutions of this type with antenna diameters between 12" and 24". This range of antenna gains provides a variety of system solutions which are useful, and adaptable to the particular system requirements and traffic models. The antennas that have been developed by VSL for this application are part of an overall system solution involving the modem, tracking antenna, transceiver, and the satellite parameters.

It is obvious from Figure 2-2 that a "flat plate" antenna solution is required to meet the installation constraints. VSL has developed such a solution and the experimental license application described herein relates to the testing of this antenna solution in a mobile environment, ensuring that the Commission rules for 'non-interference" are followed. The measured antenna pattern of the Ku-band transmit "flat antenna" used in this testing is shown in Figure 2-3.

For this test, the antenna has been mechanically adjusted into a fixed setting appropriate to an elevation angle of 43^{o} (representing a user in Washington, DC pointing at the IA-8 satellite at 89^{o}W. The measured data shows the addition of a fixed polarizer which further reduces the cross-polarization emissions and makes the control of the co-polarization component the major issue in dealing with the FCC interference rules.

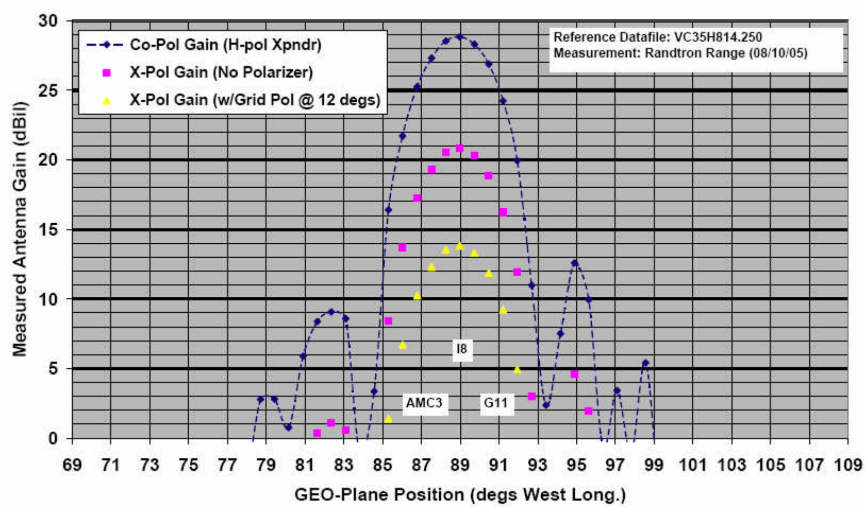


Figure 2-3 Measured Antenna Pattern of Ku-Band Transmit Antenna

The measured antenna very closes matches the antenna pattern of a uniformly illuminated aperture with a slightly broadened elevation beamwidth. It is important to have an accurate analytical model with parameters that can be experimentally determined form antenna measurements at one setting that can be used to reliably predict patterns for nearby adjusted settings. The dissipative losses can be accurately modeled from the peak gain at boresight. The model used to predict antenna patterns is shown in Figure 2-4 in comparison to the measured results. In the figure the standard Ku-band "routinely licensed" antenna (pattern 29-25*log(Θ)) is also shown.

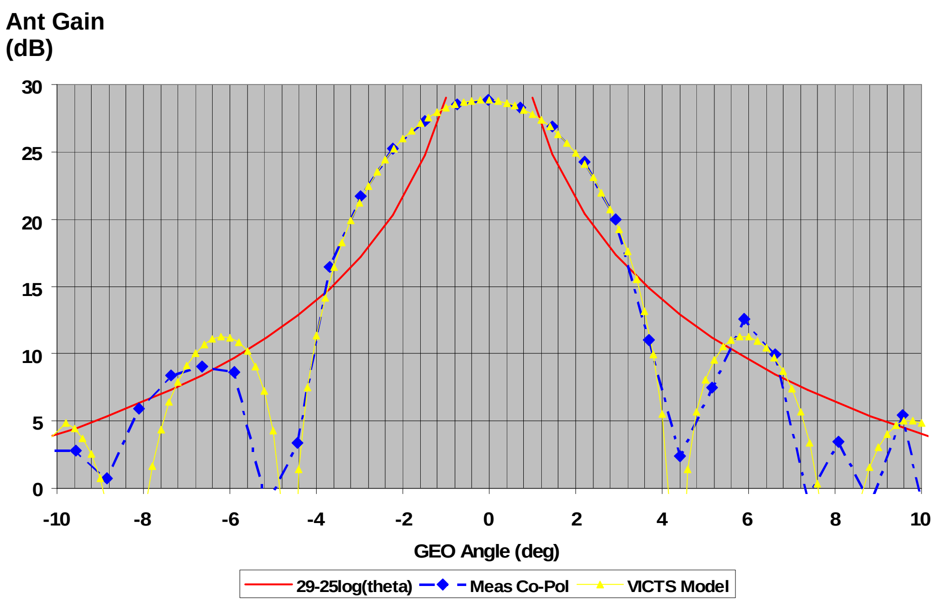


Figure 2-4 Measured Transmit Antenna Data and Theoretical Model

It is clear from the above figure that any pointing error in the antenna boresight will increase the amount by which the pattern exceeds the standard curve. This pointing error effect will be discussed in detail to determine its effects on the control of emissions from the mobile terminal.

2.3.2 Antenna Control Circuitry

During the experimental testing program carried out under this experimental license, two types of mechanical positioning control systems will be utilized. Both are designed to keep the antennas pointed at the satellite while the vehicle is in motion, but in very different circumstances:

1. The first control system is an "open-loop" pointing system based on precision GPS heading sensors, and is designed for constant velocity periods on level terrain. VSL has constructed a tracking platform based on precision GPS sensors which will provide a pointing accuracy less than 0.25^o plus the accuracy of the initial alignment. The overall pointing accuracy will be less than 0.5^o in a near constant velocity comdition ("no bumps") on relatively level terrain (less than 10^o change in elevation angle).

2. The second system is a "closed-loop" pointing system that is representative of the final system and can deal with dynamic movements of the vehicle and acceleration as well as velocity conditions. This tracking platform has been previously demonstrated in operational testing to provide pointing accuracy less than 0.5^{o}. The closed-loop tracking system is being developing to hold a pointing accuracy of 0.5^{o} under velocity and acceleration conditions that describe the actual tracking environment on board the vehicle.

3. Spectrum Management

3.1 Transmit Antenna Patterns

The transmit antennas to be tested under this experimental license do not meet the requirements for "routine licensing" as defined in 25.209(a). In order to use these "non-conforming" antenna in a transmit application, the power into the antenna input must reduced ("backed-off") by an amount sufficient to reduce the EIRP spectral density across the geostationary arc to below the level which would be allowed for a standard antenna by the combination of paragraphs 25.209(a) and 25.134(a). This same approach to "streamlined licensing" of VSAT terminals is being formalized in a new FCC ruling (FCC document FCC 05-62 Sixth Report and Third Further Notice of Proposed Rule Making has been released for comment to formalize the licensing approach around the EIRP requirements and eliminate the antenna parameters by themselves as a separate requirement).

From the measured data of Figure 2-3 we obtain the antenna gain excess over the FCC "standard" 25.209 antenna, as shown in Figure 3-1. This is the amount that the transmitter power spectral density must be reduced compared to the maximum value (-14 dBW/4KHz) for routine licensing of Ku VSATs. Figure 3-2 illustrates the effect of pointing error when the EIRP across the geostationary arc is compared to maximum "non-interfering" levels.

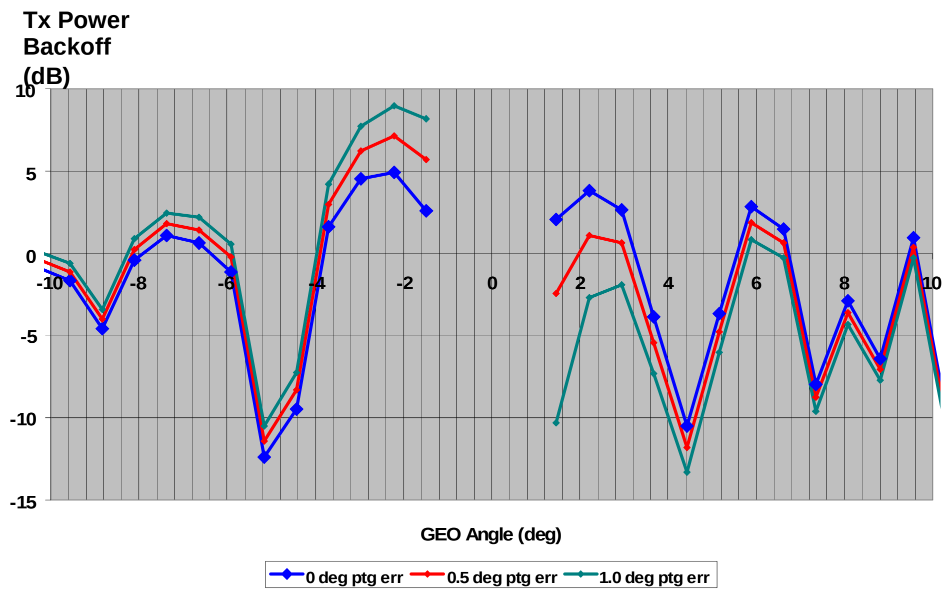


Figure 3-1 "Backoff" of Transmitter Power due to Small Antenna Parameters

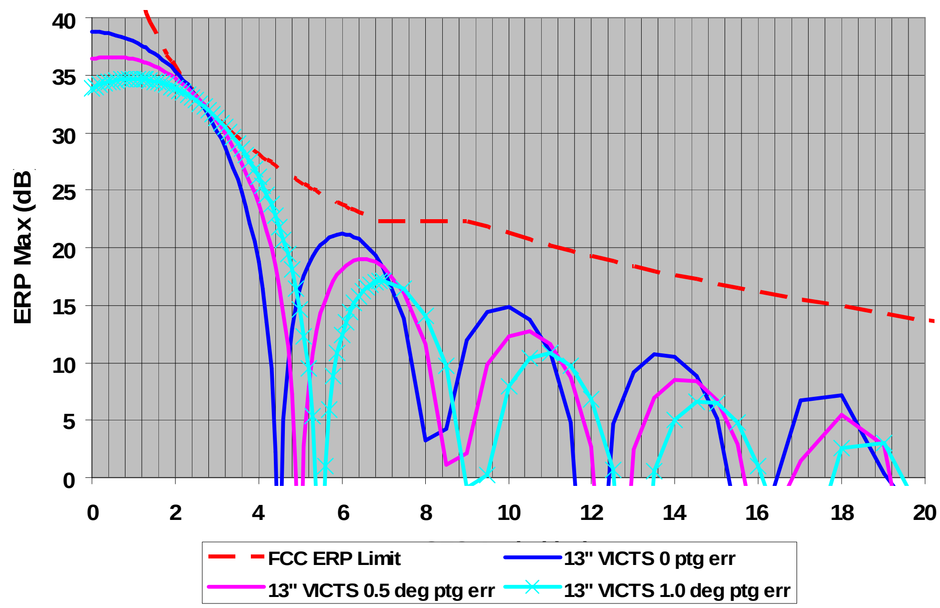


Figure 3-2 Effect of Pointing Error on Maximum Allowed EIRP

These calculations together define the maximum value that the transmit power at which the EIRP can exceed the maximum allowed EIRP for non-interfering operation (Figure 3-3). there is a particular point (in this case at an GEO angle of ~ -2.3 where this value has a minimum. This is the maximum allowed transmitter power, which when combined with antenna gain pattern with its associated pointing error, that can be tolerated for non-interfering operation. Note that a 1^o pointing error can be tolerated with a 4W transmitter, and a 6W transmitter with a 0.5^o pointing error. The allowed pointing error is significant greater than "standard" antennas (typically 1.2m at Ku-band) because of the low gain of the small antennas, coupled with the spread spectrum mode of operation which allows a low power transmitter to be utilized.

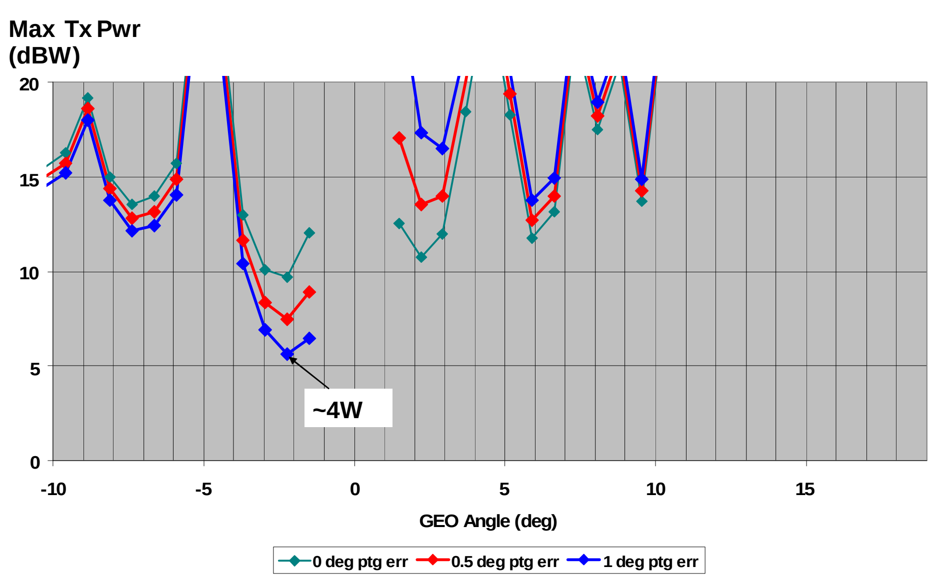


Figure 3-3 Maximum Transmitter Power for the 13" Antenna

3.2 Summary of Emissions Limit for the Demonstration

The demonstration antennas discussed in the previous section will be operating with a backoff level of ~ -7dB in the demonstration if a 6W transmitter and 0.5^o pointing error is used. Alternatively, a 4W transmitter can tolerate a 1^o tracking error without exceeding the EIRP mask. The latter power level will be used in the following sections.

4. Link Budgets

The testing carried out under the experimental license will be in the vicinity of Washington, DC - specifically within a 100 mile radius of the coordinates of Braddock Heights, MD (where the VSL facility is located). The coordinates of this location are:

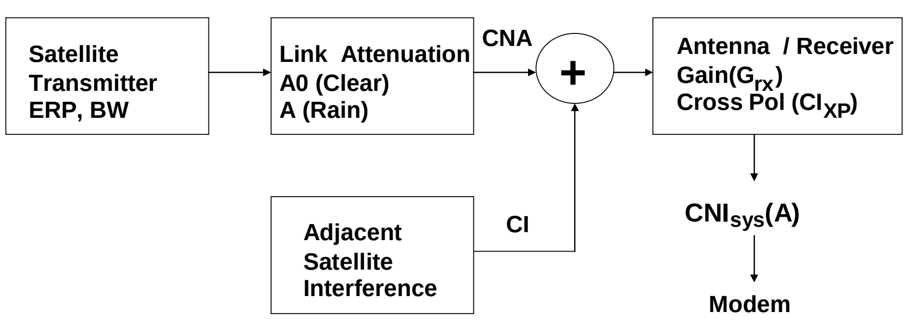
Latitude: 39 degrees 25' 06.90"
Longitude: 77 degrees 30' 14.20"

All testing will be carried out using the Intelsat IA-6 satellite at 93 ^{o}W.

4.1 Forward Channel (Downlink): Satellite to Vehicle

4.1.1 Model for Adjacent Satellite Interference (ASI)

Adjacent satellite interference is modeled as a "noise-like" broadband signal which has the same effects as an increase in the noise temperature of the receiving system. The model used is shown below in Figure 4-1:



$$CNI_{sys}(A) = -10 \log\{ 10^{-CNA/10} + 10^{-CI/10} + 10^{-CIxp/10} \}$$

$$CNA = ERP - L_{space} - A - L_{ptg} - L_{xp} + G_{rx} - k - 10 \log T_A - 10 \log BW_{rx}$$

Figure 4-1 Link Margin Model Including Interference

The specific figures of the interference levels associated with adjacent satellites can be derived from their location, EIRP levels, and the antenna pattern of the mobile antenna (including pointing error). The results of this calculation for the Ku-band demonstration antenna are shown in Figure 4-1. The link margin uses the downlink satellite parameters provided by Intelsat and an interference model in which all adjacent satellites at are operating in a multicarrier downlink mode with equal EIRP. Because the satellite downlink is operating below the EIRP spectral power density of 6.0 dBW/4KHz, there is no requirement for further coordination on the downlink assuming the downlink utilizes a minimum of 2.9 MHz of bandwidth. The Intelsat allocation allows 5 MHz to be available, so the downlink EIRP spectral density should require no waiver or coordination. With these downlink C/N parameters VSL expects to achieve >512 Kbps throughput in the 2.9 MHz bandwidth with a spreading factor of ~4x.

FORWARD CHANNEL (DOWNLINK)

Freq(GHz)	**12.194**	
Ant dia (in)	**16**	
Wavelength	**0.968**	
	Clear Sky Peak G/T	**Max rain Min G/T Max OBO**
Bandwidth(MHz)	**2.90**	**2.90**
Filter Roll-Off	**0.35**	**0.35**
Sat'd EIRP (dBW)	**50.60**	**50.60**
Sat OBO	**3.80**	**3.80**
%BW (dB)	**-10.94**	**-10.94**
EIRP(dBW)	**35.86**	**35.86**
EIRP(dBW/4KHz)	**5.95**	**5.95**
Ant Pat Var (dB)	**0.00**	**-1.00**
Grx (dB)	**30.43**	**30.43**
T_A (^{o}K)	**100.90**	**192.00**
$R_{point(Km)}$	**38744**	**38744**
L_{space}	**205.93**	**205.93**
Atten A	**0.00**	**2.70**
k	**-228.60**	**-228.60**
-10*log(BW)	**-64.62**	**-64.62**
-10*log(T_A)	**-20.04**	**-22.83**
$CN_{sys(}$dB)	**4.30**	**-2.18**
C/I (dB)	**1.11**	**1.11**
CNAI(dB)	**-0.59**	**-3.85**

Table 4-1 Downlink Link Budget Using IA-6

4.2 Return Channel (Uplink): Vehicle to Satellite

To avoid harmful interference to other authorized FSS users from the vehicle terminal emissions, VSL will limit the EIRP spectral density as discussed in the previous section. Because the multiple access method is MF/TDMA, the emissions will be the same for a single user operating in an SCPC mode as well as multiple users sharing the channel in time in a TDMA mode. The transmitter input power density will be limited to a value <6W with a minimum operating bandwidth of 2.9 MHz while maintaining an antenna pointing accuracy of 1^{o}. The Intelsat bandwidth allocation has allowed up to 6 MHz of available bandwidth, so this margin has ample reserve. The return channel link margin is shown in Table 4-2.

RETURN CHANNEL (UPLINK) MARGIN

Freq(GHz)	**14.24**	
Ant dia (in)	**13**	
Wavelength	**0.829**	
	Clear Sky	**Max rain**
	Peak G/T	**Min G/T**
Bandwidth(MHz)	**2.90**	**2.90**
Filter Roll-Off	**0.35**	**0.35**
Min Sat Allocated BW	**3.92**	**3.92**
Sat G/T (dB/^{o}K)	**4.60**	**4.60**
Ant Pat Var (dB)		**-1.00**
Tx EIRP (dBW)	**36.80**	**36.80**
Tx Pwr (W)	**5.45**	**5.45**
Tx Pwr (dBW/4KHz)	**-21.24**	**-21.24**
Elev Angle	**42.10**	**42.10**
$R_{point(Km)}$	**38,744**	**38,744**
L_{space}	**207.27**	**207.27**
Atten A	**0.00**	**3.68**
k	**-228.60**	**-228.60**
-10*log(BW)	**-64.62**	**-64.62**
CNA	**-1.89**	**-6.57**

Table 4-2 Return Channel Link Margin (6W Tx Case)

If the uplink transmitter power is limited to 4W, then the link margin is correspondingly lower as shown in Table 4-3.

RETURN CHANNEL (UPLINK) LINK MARGIN

Freq(GHz)	14.24	
Ant dia (in)	13	
Wavelength	0.829	
	Clear Sky	Max rain
	Peak G/T	Min G/T
Bandwidth(MHz)	2.90	2.90
Filter Roll-Off	0.35	0.35
Min Sat Allocated BW	3.92	3.92
Sat G/T (dB/^{o}K)	4.60	4.60
Ant Pat Var (dB)		-1.00
Tx EIRP (dBW)	34.72	34.72
Tx Pwr (W)	4.00	4.00
Tx Pwr (dBW/4KHz)	-22.58	-22.58
Elev Angle	42.10	42.10
$R_{point(Km)}$	38,744	38,744
L_{space}	207.27	207.27
Atten A	0.00	3.68
k	-228.60	-228.60
-10*log(BW)	-64.62	-64.62
CNA	-3.98	-8.66

Table 4-3 Return Channel Link Margin for 13" Demonstration Antenna (4W Case)

5. Protection of Fixed Satellite Services

5.1 Protection of Users in the 11.7-12.2 GHz Band

For the testing performed under the experimental license, the EIRP Spectral density levels will be less than 6 dBW/4KHz, and there should be adverse impact to authorized users receiving signals from adjacent satellites in the 11.7-12.2 GHz frequency band. Furthermore, the service will not require additional waivers or coordination at this level.

5.2 Protection of Users in the 14.0-14.5 GHZ Band

To avoid harmful interference to users from the vehicle terminal emissions, VSL will manage the EIRP spectral density in the plane of the GEO arc to below the level for routinely processed VSAT network terminals. The maximum EIRP transmitter spectral density of -14 dBW/4KHz will be reduced to a level below -21dBW/4KHz under all conditions of the testing. This transmitter power reduction will keep the composite EIRP spectral density across the GEO arc below the level required by FCC rules when controlling the antenna pointing as described earlier.

5.3 Protection to Other Government Services

The 14.47-14.5 GHz portion of the spectrum has been allocated to the US Government for space research and radio astronomy. Because the mobile terminals operate within a narrow 2.9 MHz band centered at 14.24 GHz, there should be no impact to these services.

6. CONCLUSION

VSL Networks, Inc. seeks an experimental license to permit testing of a new mobile satellite network service employing small, low-profile antennas. VSL is requesting no waivers to the FCC rules for licensing of the small VSL antennas, and requests approval for an experimental license to conduct the testing described herein on a non-conforming, non-interference basis.

Intelsat

Transmission Plan for VSL Networks IED

IA-6/KH11/KV11

Subject: Intelsat IA-6 @ 93.00 W Transmission plan for activation of new services

Date: 9-DEC-05

Intelsat Access Center (IAC)

1 877.442.2666 or +1 240-527-6540

Please contact the Intelsat Access Center before transmitting, unless special arrangements have been made. For new carrier line-ups, please give the Access Center 24 hours advanced notice.

For easy and quick service, always use your carrier id (listed below)

	Parameter	Add	Add
CARRIER	Status	Scheduled	Scheduled
	Carrier ID:	**1067672**	**1067675**
	Designation	LEASE BLOCK	CARRIER
	Transponder	KH11/KV11	KH11/KV11
	Service	Block	REMOTE TO MOUNTAINSIDE
UPLINK	Uplink Location & [size]		Braddock Heights [0.33 m]
	Uplink Frequency & [pol]	14240.0000 MHz [H]	14240.0000 MHz [H]
	Uplink EIRP from station		34.4 dBW
DNLINK	Downlink Location & [Size]		INT MTN SIDE TEL 33 [4.8 m]
	Downlink Frequency & [pol]	11940.0000 MHz [V]	11940.0000 MHz [V]
	Downlink EIRP@ Beam Peak	16.0 dBW	16.0 dBW
DATA	Information Rate		128.0 kbps
	Modulation Type		BPSK
	Coding (FEC & RS)		49/99 & 1/1
CAPACITY	Block Output Backoff	-11.10 dB	-33.0 dB
	Allocated Bandwidth	5000.00 kHz	4942.0 kHz
	Power Equivalent Bandwidth	5000.00 kHz	32.2 kHz
MISC	Old Carrier ID		
	New Carrier ID		
	Duplex Pair		
	Start Date/End Date	09-DEC-05/31-JAN-06	09-DEC-05/31-JAN-06
	Contract number	IED	
	Notes		

Appendix 1 Intelsat Return Channel Parameters

Intelsat.

Transmission Plan for VSL Networks IED

IA-6/KV28/KH28

Subject: Intelsat IA-6 @ 93.00 W Transmission plan for activation of new services

Date: 9-DEC-05

Intelsat Access Center (IAC)

1 877.442.2666 or +1 240-527-6540

Please contact the Intelsat Access Center before transmitting, unless special arrangements have been made. For new carrier line-ups, please give the Access Center 24 hours advanced notice.

For easy and quick service, always use your carrier id (listed below)

	Parameter	Add	Add
CARRIER	Status	Scheduled	Scheduled
	Carrier ID:	1067663	1067666
	Designation	LEASE BLOCK	CARRIER
	Transponder	KV28/KH28	KV28/KH28
	Service	Block	MOUNTAINSIDE TO VSL REMOTE
UPLINK	Uplink Location & [size]		INT MTN SIDE TEL 33 [4.8 m]
	Uplink Frequency & [pol]	14494.0000 MHz [V]	14494.0000 MHz [V]
	Uplink EIRP from station		55.0 dBW
DNLINK	Downlink Location & [Size]		Braddock Heights [0.33 m]
	Downlink Frequency & [pol]	12194.0000 MHz [H]	12194.0000 MHz [H]
	Downlink EIRP@ Beam Peak	35.6 dBW	35.6 dBW
DATA	Information Rate		1024.0 kbps
	Modulation Type		BPSK
	Coding (FEC & RS)		47/99 & 1/1
CAPACITY	Block Output Backoff	-10.30 dB	-13.0 dB
	Allocated Bandwidth	6000.00 kHz	2812.0 kHz
	Power Equivalent Bandwidth	6000.00 kHz	2750.0 kHz
MISC	Old Carrier ID		
	New Carrier ID		
	Duplex Pair		
	Start Date/End Date	09-DEC-05/31-JAN-06	09-DEC-05/31-JAN-06
	Contract number	IED	
	Notes		

Appendix 2 Intelsat Forward Channel Parameters

Technical Description

Exhibit 2

VSL will utilize this experimental license to complete a demonstration for the USAF in fulfillment of its Phase II SBIR contract under SBIR Contract #F30602-03-C-0061 from Rome Laboratories under the Fast Track Program. VSL is funding the demonstration effort. The contract calls for an "over-the-air" demonstration using a geostationary satellite using the modem technology developed on the above contract.