Exhibit A – Concept of Operation

KVH On-Site Linear Satellite TV Live Test Setup

Introduction

KVH would like to set up a test transmitter to simulate European satellite TV signals using the proper frequency, power level, modulation and polarization. This would involve setting up a transmitter in the north parking lot of the KVH building. This would allow for antenna system testing on the first floor of the KVH building near the north windows. The set-up would allow KVH to test antenna system units to acquire and lock onto the "satellite" signal, perform tracking tests, and some, limited, signal quality verification tests.

Test Set-Up

The test system is designed to operate over the 10.7-12.75 GHz range. The system diagram is shown below:

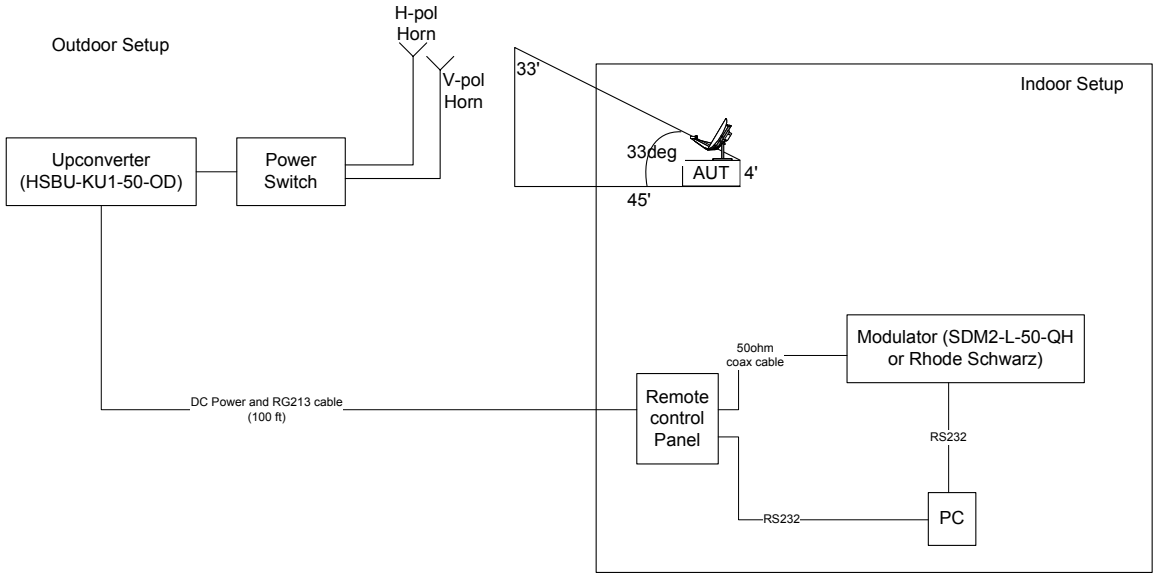

Figure 1 – Satellite TV Test Setup Layout

The main equipment in the test setup is a high performance customized outdoor upconverter. It has an L-band input of 950-1450 MHz and upconverts the signal to an RF output of 10.7-12.75 GHz, using an LO of 9.75-11.3 GHz. The frequency stability of the upconverter is 10^{-7} over temperature. The optional remote control panel provides front panel manual control in addition to the remote access port.

The two antennae to be used are 10 dB standard gain horns from Pasternak (PE9855-10). The 3dB beamwidth is 50.2 degrees in the E plane and 49.2 degrees in the H-plane. They will be placed at a 33 degree elevation angle to the antenna under test (AUT) in order to mimic the noise

background of the satellite. For the size of antennas to be test, in the 15" range, 45 ft is sufficient for the far field distance.

Link Analysis

The operational link budget is shown in the table below:

	KVH Test Set-up Link Budget	unit	Value	Formula, source
A	Modulator Output Power	dBm	-15.0	given
B	100' cable + attenuator Loss	dB	-30.0	given
C	Upconverter Gain	dB	20.0	given
D	Power Divider + attenuator loss	dB	-26.0	given
E	Power at Antenna Feed Flange	dBm	-51.0	=(A+B+C+D)
F	Gain of Transmit Antenna	dB	10.0	Gt, given
G	Transmitted EIRP	dBm	-41.0	=E+F
H	Frequency	GHz	12.8	f, given
I	wavelength	m	0.024	λ=c/f
J	Transmit Path Length	ft	53.50	R, given
K		m	16.31	
L	Free Space Loss	dB	-78.8	=20Log(4πR/λ)
M	Receive Carrier Level at Rx Site	dBm	-119.8	=G+L
N	Receive Antenna Size	in	14.5	D, given
O		m	0.368	
P	Receive System Noise Temperature	K	125.9	Tsys, given
Q		dB-K	21.0	
R	Signal Bandwidth	**MHz**	**29**	**BW, European**
S	Earth Station Gain	dBi	31.4	Gr
T	Rx Circuit Losses	dB	-0.2	LL, assumed
U	Rx Carrier Level with Gr and LL included	dBm	-88.61	=G+L+S+T
V		dBW	-118.61	=T-30
W	Rx Noise Level:	dBm	-102.98	=kTsysBW
X		dBW	-132.98	=V-30
Y	C/No (down)	dB-Hz	88.99	
	C/N(down)	**dB**	**14.4**	

Table 1 – Link Budget for KVH Test Setup

Operation

The AUT tests will be a comparison test against a "golden" unit. The input L-band signal level will be lowered or the input signal-to-noise ratio will be adjusted to reduce the whole system C/No until it reaches the threshold of the AUT receiver (for example, pixilated TV picture

received). At this threshold, setup criteria will be developed to determine pass/fail units in production. Other tracking, receiver, and operational functions can be tested using this setup.

Interference Analysis

The transmitted RF power is -51 dBm and the EIRP is -41 dBm for a broadband modulated carrier (29 MHz). The resulting RF power density will be less than -119 dBW/4kHz.

Keeping the emitted RF power low is very critical since the proposed operational spectrum is used by a variety of satellite and terrestrial users. A breakdown of the users of the band is as follows:

- 10.7 – 11.7 GHz: Terrestrial Point-to-Point microwave and international Fixed Satellite Services (FSS) downlink
- 11.7 – 12.2 GHz: Domestic FSS Ku-band downlinks
- 12.2 – 12.7 GHz: Broadcast Satellite Services (BSS) downlinks
- 12.7 – 12.75 GHz: Auxiliary Broadcast Services (BAS) and Cable Access Relay Services (CARS) fixed and mobile links

The maximum permissible levels of interference for each type of system are provided below, along with other interference calculation assumptions:

- Satellite Downlinks in the 10.7-11.7 GHz Band: -155 dBW/MHz long term, 10 dBi gain to the horizon (7 degree discrimination angle)
- Terrestrial Pt-to-Pt Microwave Relays in the 10.7-11.7 GHz Band: -140 dBW/MHz long term, 40 dBi gain to the horizon (1m at 0 deg. tilt angle)
- Satellite Downlinks in the 11.7-12.2 GHz Band: -155 dBW/MHz, 10 dBi horizon gain
- Satellite Downlinks in the 12.2-12.7 GHz band: -155 dBW/MHz, 10 dBi horizon gain
- Terrestrial CARS Relays in the 12.7-12.75 GHz band: -140 dBW/MHz, 40 dBi hor. gain

A search of the FCC's databases indicated that no licensed facility was within a 5 km radius of the proposed transmitter. Within a 10 km radius there were no satellite earth stations identified using the FCC's IBFS database and see Annex A for summary of the terrestrial stations identified.

The signal coverage plots shown in Figures 2 and 3 below show the transmitter setup's signal strength to the surrounding area. It should be noted that there is a small airport about 1 km to the east of the KVH site, see site layout drawing. This airport is located in the exact opposite direction of transmission, 43 degrees azimuth to the airport versus a 250 degree azimuth of transmission. A small plate will be positioned to the rear (east) of the transmit antennas to further ensure that no signal emissions can be seen near the airport (attenuation effects of this plate are not considered in this analysis).

The signal coverage plots show those areas where the satellite and terrestrial maximum permissible levels of interference may be exceeded. As can be seen the worst case interference levels will not extend beyond 30 meters for the satellite signal and 100 meters. There are no satellite terminals within the 30 meter zone (which covers the KVH parking lot) and no microwave facilities within 100 meters, the closest microwave link is 8.5 km away (see Annex A).

This means that the potential for interference into any surrounding satellite or terrestrial system is very remote.

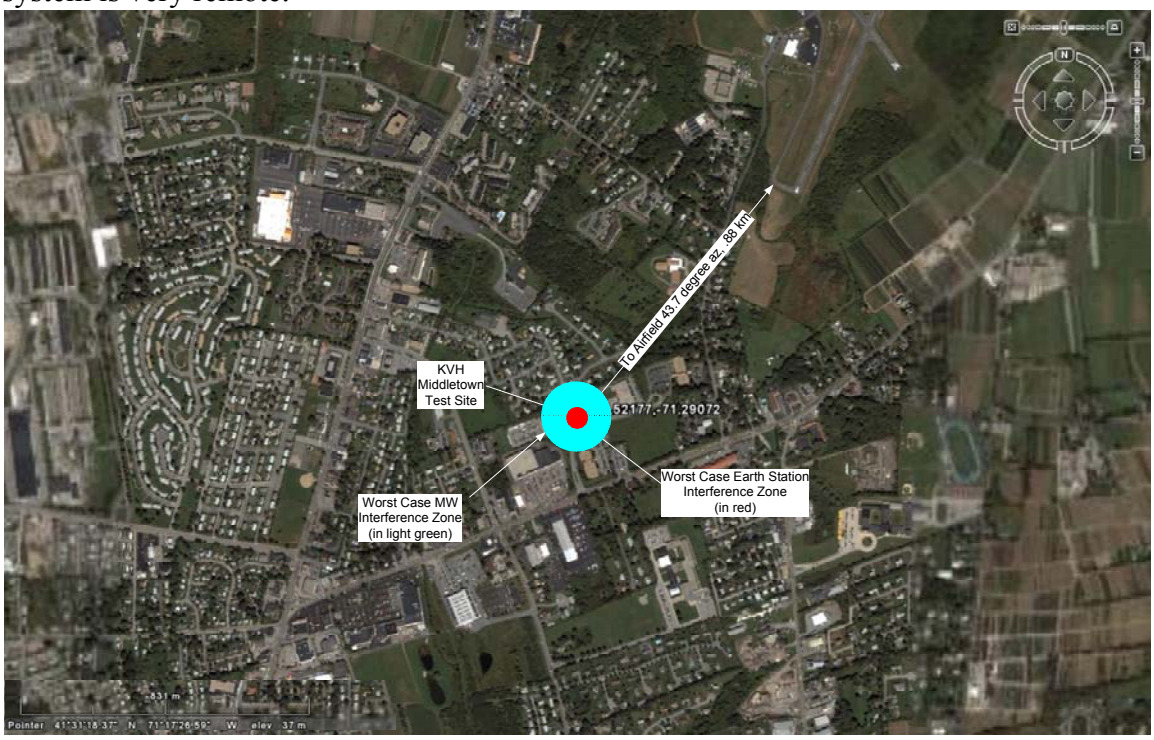

Figure 2 – Middletown Test Setup Site Location. Microwave interference zone shown in green and satellite interference zone shown in red.

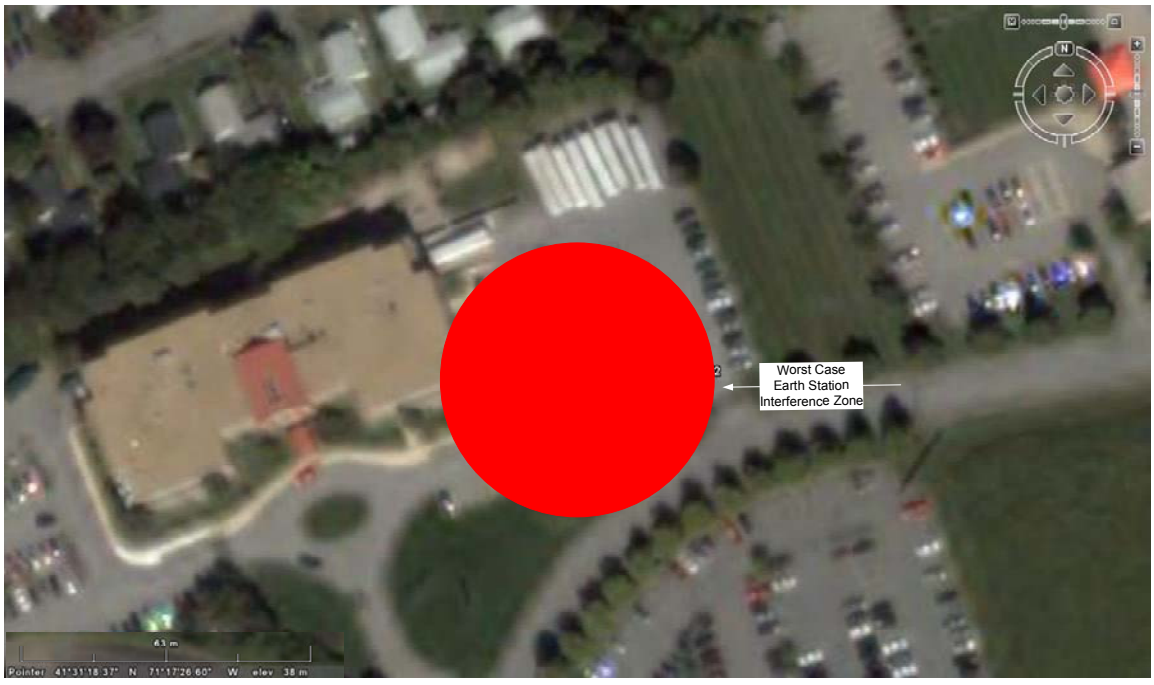

Figure 3 – Close-up view of Satellite Earth Station interference zone

Engineering Certificate

CERTIFICATION OF PERSON RESPONSIBLE FOR PREPARING ENGINEERING INFORMATION SUBMITTED IN THIS APPLICATION FOR EXPERIMENTAL AUTHORIZATION

I hereby certify that I am the technically qualified person responsible for preparation of the engineering information contained in this Experimental Authorization request. I am familiar with Parts 2, 5, 25, 76, 78, and 101 of the Commission's Rules (47 CFR), that I have either prepared or reviewed the engineering information submitted in this application, and that it is complete and accurate to the best of my knowledge.

By:_____

Kenneth G. Ryan, P.E.
Vice President
Skjei Telecom, Inc.

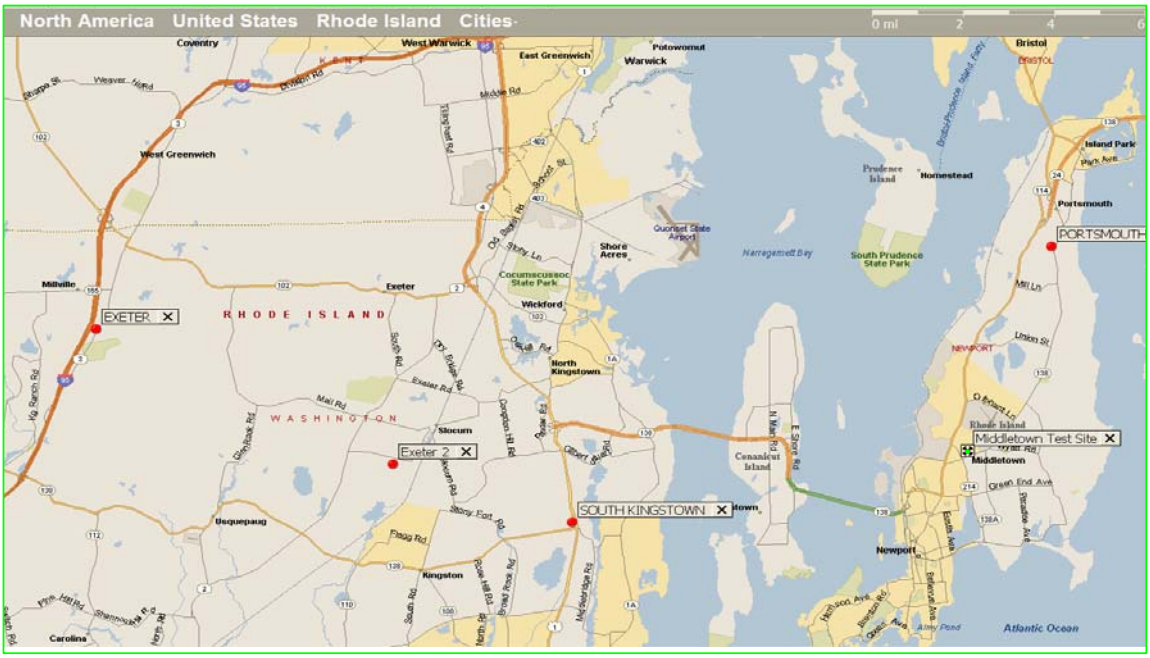

Figure A1 – Location of Point-to-Point and CARS Microwave (shown in red circles) relative to KVH Test Setup. The small area in green shows the interference zone.

Table A1 – Summary of 10700-12750 MHz Microwave Links near Middletown

Tx Call Sign	Tx Site	Tx Site Coordinates	Rx Site	Rx Site Sign	Rx Site Coordinates	Frequencies (MHz)	Distance to KVH Transmitter (km)
WLU214	N KINGSTOWN	41-33-03.3 N , 071-30-54.2 W	PORTSMOUTH	WMN424	41-35-35.3 N , 071-15-18.1 W	10563.13	8.46
WLU214	N KINGSTOWN	41-33-03.3 N , 071-30-54.2 W	SOUTH KINGSTOWN	WLV801	41-29-48.3 N , 071-27-31.2 W	11285.000	14.29
WLU214	N KINGSTOWN	41-33-03.3 N , 071-30-54.2 W	EXETER	WLU215	41-33-51.4 N , 071-39-39.2 W	11605.00	31.24
WLU214	N KINGSTOWN	41-33-03.3 N , 071-30-54.2 W	Exeter 2		41-31-01.1 N , 071-32-05.2 W	11698.13	20.37