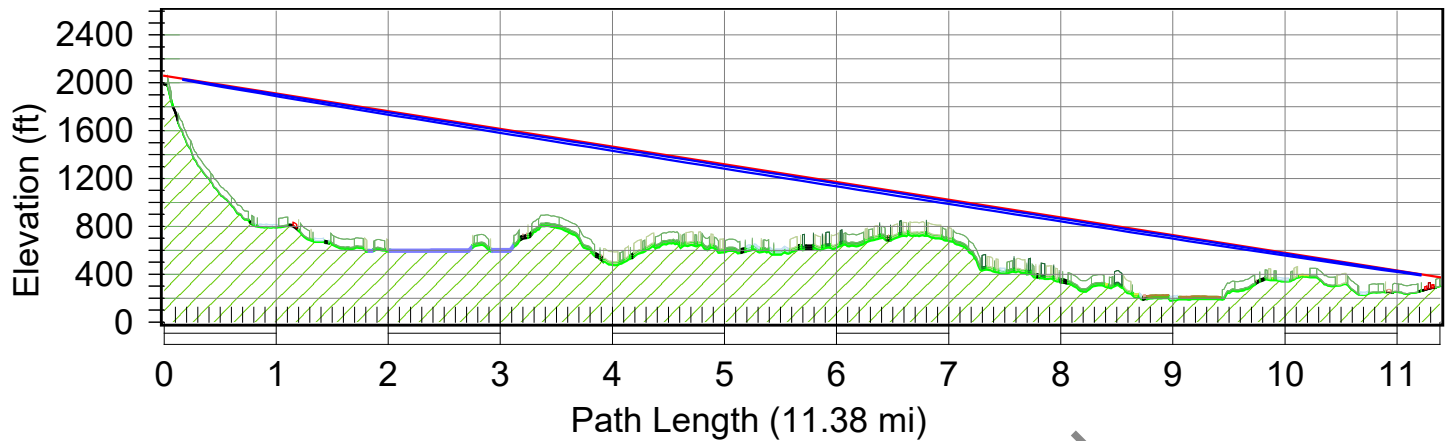


Exhibit 4

Microwave Path Study Rosendale to Sams Point and Tonche

**Tonche**

Latitude 42 00 04.40 N
Longitude 074 11 29.76 W
Azimuth 157.98°
Elevation 1988 ft ASL
Antenna CL 70.0 ft AGL

Frequency (MHz) = 11200.0

K = 1.33 FH = 10.0 ft

%F1 = 100.00, 30.00

Rosendale

Latitude 41 50 53.99 N
Longitude 074 06 32.04 W
Azimuth 338.03°
Elevation 300 ft ASL
Antenna CL 75.0 ft AGL

Preliminary Not Field Verified

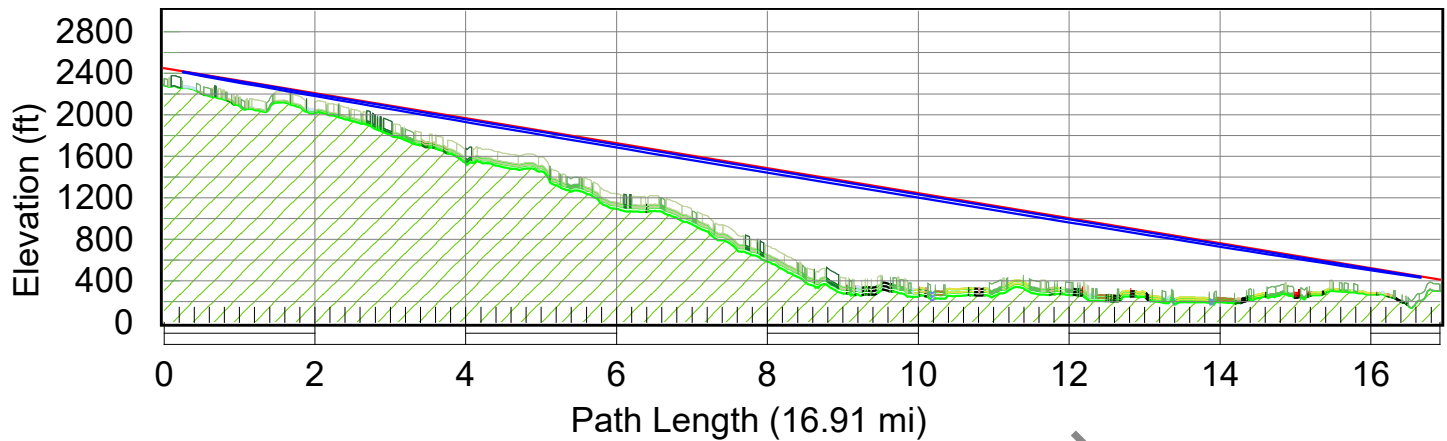
Transmission details (Tonche-Rosendale.pl6)

	Tonche	Rosendale
Latitude	42 00 04.40 N	41 50 53.99 N
Longitude	074 11 29.76 W	074 06 32.04 W
True Azimuth (°)	157.98	338.03
Vertical Angle (°)	-1.67	1.54
Elevation (ft)	1988.19	300.38
Tower height (ft)	135.00	190.00
Tower Type	Guyed	
Antenna Model	VHLP3-11W (TR)	VHLP3-11W (TR)
Antenna Filename	7166	7166
Antenna Gain (dBi)	38.40	38.40
Antenna Diameter (ft)	0.00	0.00
Antenna 3 dB Beamwidth H (°)	2.00	2.00
Antenna Height (ft)	70.00	75.00
Orientation Loss (dB)	0.00	0.00
TX Line Model	EW90	EW90
TX Line Unit Loss (dB/100 ft)	3.06	3.06
TX Line Length (ft)	120.00	125.00
TX Line Loss (dB)	3.68	3.83
Connector Loss (dB)	0.45	0.45
Frequency (MHz)	11200.00	
Polarization	Vertical	
Path Length (mi)	11.386	
Free Space Loss (dB)	138.71	
Atmospheric Absorption Loss (dB)	0.32	
Diffraction loss	0.00	
Net Path Loss (dB)	70.64	70.64
Configuration	NP	NP
Radio Model	I6V4U_11_80M_32QAM_302Mb_R70	I6V4U_11_80M_32QAM_302Mb_R70
Radio Filename	i6v4u_11_80m_302mb_r70	i6v4u_11_80m_302mb_r70
TX Power (dBm)	37.50	37.50
TX Power at Top of Rack (dBm)	37.50	37.50
Emission Designator	80M0D7W	80M0D7W
EIRP (dBm)	71.77	71.62
RX Threshold Criteria	1E-6 BER	1E-6 BER

	Tonche	Rosendale
RX Threshold Level (dBm)	-72.50	-72.50
RX Threshold at RX Input Port (dBm)	-72.50	-72.50
RX Signal at Top of Rack (dBm)	-33.14	-33.14
RX Signal at RX Input Port (dBm)	-33.14	-33.14
Receive Signal (dBm)	-33.14	-33.14
Thermal Fade Margin (dB)	39.36	39.36
Dispersive Fade Margin (dB)	54.00	54.00
Dispersive fade occurrence factor	1.00	
Effective Fade Margin (dB)	39.21	39.21
Climatic factor	1.00	
Terrain roughness (ft)	140.00	
C factor	0.26	
Average annual temperature (°F)	43.36	
Fade occurrence factor (Po)	1.084E-02	
Worst month multipath availability (%)	99.99987	99.99987
Worst month multipath unavailability (sec)	3.41	3.41
Annual multipath availability (%)	99.99997	99.99997
Annual multipath unavailability (sec)	8.88	8.88
Annual 2 way multipath availability (%)	99.99994	
Annual 2 way multipath unavailability (sec)	17.77	
Polarization	Vertical	
Rain Region	Pittsfield, Massachusetts	
Critical Rain Rate (mm/hr)	155.99	
Flat Fade Margin - rain (dB)	39.36	
Rain Attenuation (dB)	39.36	
Annual rain availability (%)	99.99989	
Annual rain unavailability (min)	0.60	
Annual rain + multipath availability (%)	99.99983	
Annual rain + multipath unavailability (min)	0.89	

Multipath fading method - Vigants - Barnett

Rain fading method - Crane

**SAMS POINT**

Latitude 41 41 08.00 N
Longitude 074 21 13.00 W
Azimuth 48.30°
Elevation 2283 ft ASL
Antenna CL 168.0 ft AGL

Frequency (MHz) = 11200.0

K = 1.33 FH = 10.0 ft

%F1 = 100.00, 30.00

Rosendale

Latitude 41 50 53.99 N
Longitude 074 06 32.04 W
Azimuth 228.46°
Elevation 300 ft ASL
Antenna CL 110.0 ft AGL

Preliminary Not Field Verified

Transmission details (SAMS POINT-Rosendale.pl6)

	SAMS POINT	Rosendale
Latitude	41 41 08.00 N	41 50 53.99 N
Longitude	074 21 13.00 W	074 06 32.04 W
True Azimuth (°)	48.30	228.46
Vertical Angle (°)	-1.40	1.22
Elevation (ft)	2283.46	300.38
Tower height (ft)	155.00	190.00
Antenna Model	VHLP4-11W (TR)	VHLP4-11W (TR)
Antenna Filename	rpe 7183	rpe 7183
Antenna Gain (dBi)	40.80	40.80
Antenna Diameter (ft)	4.00	4.00
Antenna 3 dB Beamwidth H (°)	1.50	1.50
Antenna 3 dB Beamwidth E (°)	1.50	1.50
Antenna Height (ft)	168.00	110.00
Orientation Loss (dB)	0.00	0.00
TX Line Model	EW90	EW90
TX Line Unit Loss (dB/100 ft)	3.06	3.06
TX Line Length (ft)	218.00	160.00
TX Line Loss (dB)	6.68	4.90
Connector Loss (dB)	0.45	0.45
Frequency (MHz)	11200.00	
Polarization	Vertical	
Path Length (mi)	16.919	
Free Space Loss (dB)	142.15	
Atmospheric Absorption Loss (dB)	0.48	
Diffraction loss	0.00	
Net Path Loss (dB)	73.51	73.51
Configuration	NP	NP
Radio Model	I6V4U_11_80M_32QAM_302Mb_R70	I6V4U_11_80M_32QAM_302Mb_R70
Radio Filename	i6v4u_11_80m_302mb_r70	i6v4u_11_80m_302mb_r70
TX Power (dBm)	37.50	37.50
TX Power at Top of Rack (dBm)	37.50	37.50
Emission Designator	80M0D7W	80M0D7W
EIRP (dBm)	71.17	72.95
RX Threshold Criteria	1E-6 BER	1E-6 BER

	SAMS POINT	Rosendale
RX Threshold Level (dBm)	-72.50	-72.50
RX Threshold at RX Input Port (dBm)	-72.50	-72.50
RX Signal at Top of Rack (dBm)	-36.01	-36.01
RX Signal at RX Input Port (dBm)	-36.01	-36.01
Receive Signal (dBm)	-36.01	-36.01
Thermal Fade Margin (dB)	36.49	36.49
Dispersive Fade Margin (dB)	54.00	54.00
Dispersive fade occurrence factor	1.00	
Effective Fade Margin (dB)	36.41	36.41
Climatic factor	1.00	
Terrain roughness (ft)	140.00	
C factor	0.26	
Average annual temperature (°F)	44.13	
Fade occurrence factor (Po)	3.556E-02	
Worst month multipath availability (%)	99.99919	99.99919
Worst month multipath unavailability (sec)	21.36	21.36
Annual multipath availability (%)	99.99982	99.99982
Annual multipath unavailability (sec)	56.55	56.55
Annual 2 way multipath availability (%)	99.99964	
Annual 2 way multipath unavailability (sec)	113.09	
Polarization	Vertical	
Rain Region	Pittsfield, Massachusetts	
Critical Rain Rate (mm/hr)	129.96	
Flat Fade Margin - rain (dB)	36.49	
Rain Attenuation (dB)	36.49	
Annual rain availability (%)	99.99969	
Annual rain unavailability (min)	1.61	
Annual rain + multipath availability (%)	99.99934	
Annual rain + multipath unavailability (min)	3.49	

Multipath fading method - Vigants - Barnett

Rain fading method - Crane