812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: A1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Kotzebue, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC TECK ALASKA INCORPORATED/TECK AMERICA INCORPORATED UNICOM, INC. WIRELESS APPLICATIONS CORP

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: A1917809

TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION

Company: Site Name, State: Call Sign:	Alaska Commu Kotzebue, Ak	nications Int K	cernet, LLC
Latitude Longitude Elevation AMSL	(NAD83)	66 51 162 36 108.00	50.4 W
Receive Frequency Range Transmit Frequency Range Range of Satellite Orbital Long.	(MHz) (MHz)	5925-6108	.1/6301.19-6360.14
Range of Azimuths from North Antenna Centerline Antenna Elevation Angles	(deg) (ft/m)	129.02 6.56	130.01 2.00
Equipment Parameters			
Antenna Gain, Main Beam 15 DB Half Beamwidth			
Antennas Transmit: GENERAI	L DYNAMICS 12	241 (2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) r DIGITAL	5M60G7W	-18.76 23.24
Coordination Parameters		Transmit	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Term Max Interference Power Short Ter Rain Zone / Radio Zone	(km) n (dbW)	100.00 -154.80	А

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: L1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Kotzebue, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: L1917809

TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION

Alaska Communications Internet, LLC Company: Site Name, State: Kotzebue, AK Call Sign: (NAD83)665129.6 N(NAD83)1623650.4 W(ft/m)108.0032.92(MHz)3700-4200 Latitude Longitude Elevation AMSL Receive Frequency Range Transmit Frequency Range (MHz) Range of Satellite Orbital Long.(deg W)114.00115.00Range of Azimuths from North(deg)129.02130.00Antenna Centerline(ft/m)5.911.80Antenna Elevation Angles(deg)6.436.74 _____ Equipment Parameters Receive _____ Antenna Gain, Main Beam(dbI)15 DB Half Beamwidth(deg) 38.00 4.90 Antennas Receive: GENERAL DYNAMICS 1241 (2.4M) Max Transmitter Power(dbW/4KHz)Max EIRP Main Beam(dbW/4KHz) Modulation / Emission Designator DIGITAL 72M0G7W _____ Coordination Parameters Receive _____ Max Greater Circle Distances(km)Max Rain Scatter Distances(km) 494.09 407.56 Max Interference Power Long Term (dbW)-158.60Max Interference Power Short Term (dbW)-149.90 Rain Zone / Radio Zone 3 А

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Kotzebue State: AK Latitude: 66 51 29.6 Longitude: 162 36 50.4 (NAD83) 08-06-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m	
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2	
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m	
Transmit Power at Flange (P)	= 20.0000 Watts	
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10))
pi	= 3.1415927	,,
Antenna Aperture Efficiency (n)	= 0.6000	

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to	Ground	Power	Density	=	=	P	=	4.4210	W/m**2
						Sa			
							=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

Controlled Safety Margin = 5.0 - Calculated Zone Value (mW/cm**2)				
	Zones	Safety Margins (mW/cm**2)	Conclusions	
	Far Zone	4.5032		
2.	Near Zone	3.9390	Complies with ANSI	
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI	
4.	Main Reflector Surface	4.1158	Complies with ANSI	
5.	Main Reflector to Ground	4.5579	Complies with ANSI	
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)	
	Zones	Safety Margins (mW/cm**2)	Conclusions	
	Far Zone	0.5032	Complies with ANSI	
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS	
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI	
4.	Main Reflector Surface	0.1158	Complies with ANSI	
5.	Main Reflector to Ground	0.5579	Complies with ANSI	

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: B1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Notak, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC TECK ALASKA INCORPORATED/TECK AMERICA INCORPORATED UNICOM, INC. WIRELESS APPLICATIONS CORP

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: B1917809

TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION

Company: Site Name, State:	Alaska Commun Notak, AK	ications In	ternet, LLC
Call Sign: Latitude		67 34	17.0 N
Longitude Elevation AMSL		162 58 89.00	
Receive Frequency Range Transmit Frequency Range	(MHz)		
Range of Satellite Orbital Long	. (deg W)	114.00	115.00
Range of Azimuths from North Antenna Centerline	(ft/m)	6.56	2.00
Antenna Elevation Angles	(deg)	5.87	6.17
Equipment Parameters		Transmit	
Antenna Gain, Main Beam 15 DB Half Beamwidth	(dbI) (deg)		
Antennas Transmit: GENERA	L DYNAMICS 124	1 (2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) r DIGITAL	5M60G7W	-18.76 23.24
Coordination Parameters		Transmit	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Terr Max Interference Power Short Ter Rain Zone / Radio Zone	(km) (km) n (dbW)	186.09 100.00 -154.80	A

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: M1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Notak, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: M1917809

TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION

Company: Site Name, State: Call Sign:	Alaska Commu: Notak, AK	nications Int	cernet, LLC
Latitude Longitude	(NAD83) (NAD83)	67 34 162 58	17.0 N 14.5 W
Elevation AMSL Receive Frequency Range	(ft/m) (MHz)	162 58 89.00 3700-4200	27.13
Transmit Frequency Range Range of Satellite Orbital Long	(MHz) . (deg W)	114.00	115.00
Antenna Centerline	(deg) (ft/m)	5.91	1.80
Antenna Elevation Angles	(deg)		6.1/
Equipment Parameters		Receive	
Antenna Gain, Main Beam 15 DB Half Beamwidth	(dbI) (deg)		
Antennas Receive: GENERAL	L DYNAMICS 12	41 (2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) r DIGITAL	72M0G7W	
Coordination Parameters		Receive	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Terr Max Interference Power Short Ter Rain Zone / Radio Zone	(km) n (dbW)	413.59 -158.60	A

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Notak State: AK Latitude: 67 34 17.0 Longitude: 162 58 14.5 (NAD83) 08-06-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m
Transmit Power at Flange (P)	= 20.0000 Watts
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10)
pi	= 3.1415927
Antenna Aperture Efficiency (n)	= 0.6000

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to	Ground	Power	Density	=	=	P	=	4.4210	W/m**2
						Sa			
							=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

Controlled Safety Margin = 5.0 - Calculated Zone Value (mW/cm**2)					
	Zones	(mW/cm**2)			
	Far Zone	4.5032	Complies with ANSI		
2.	Near Zone	3.9390	Complies with ANSI		
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI		
4.	Main Reflector Surface	4.1158	Complies with ANSI		
5.	Main Reflector to Ground	4.5579	Complies with ANSI		
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)		
	Zones	Safety Margins (mW/cm**2)	Conclusions		
	Far Zone	0.5032	Complies with ANSI		
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS		
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI		
4.	Main Reflector Surface	0.1158	Complies with ANSI		
5.	Main Reflector to Ground	0.5579	Complies with ANSI		

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: E1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Ambler, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: E1917809

TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION

	Alaska Commun Ambler, AK	ications Int	ernet, LLC
Latitude Longitude Elevation AMSL	(NAD83) (NAD83) (ft/m)	67 5 157 51	11.5 N 40.7 W
Receive Frequency Range Transmit Frequency Range	(MHz) (MHz)		
Range of Satellite Orbital Long. Range of Azimuths from North	(deg)	133.78	134.79
Antenna Elevation Angles		7.70	
Equipment Parameters		Transmit	
Antenna Gain, Main Beam 15 DB Half Beamwidth	(dbI) (deg)		
Antennas Transmit: GENERAI	DYNAMICS 124	1 (2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) DIGITAL	5M60G7W	-18.76 23.24
Coordination Parameters		Transmit	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Term Max Interference Power Short Ter Rain Zone / Radio Zone	(km) n (dbW)	100.00 -154.80	A

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: P1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Ambler, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: P1917809

TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION

Alaska Communications Internet, LLC Company: Site Name, State: Ambler, AK Call Sign: (NAD83)67511.5N(NAD83)1575140.7W(ft/m)134.0040.84(MHz)3700-4200 Latitude Longitude Elevation AMSL Receive Frequency Range Transmit Frequency Range (MHz) Range of Satellite Orbital Long.(deg W)114.00115.00Range of Azimuths from North(deg)133.78134.79Antenna Centerline(ft/m)5.911.80Antenna Elevation Angles(deg)7.707.99 _____ Equipment Parameters Receive _____ Antenna Gain, Main Beam(dbI)15 DB Half Beamwidth(deg) 38.00 4.90 Antennas Receive: GENERAL DYNAMICS 1241 (2.4M) Max Transmitter Power(dbW/4KHz)Max EIRP Main Beam(dbW/4KHz) Modulation / Emission Designator DIGITAL 72M0G7W _____ Coordination Parameters Receive _____ Max Greater Circle Distances(km)Max Rain Scatter Distances(km) 487.87 397.23 Max Interference Power Long Term (dbW)-158.60Max Interference Power Short Term (dbW)-149.90 Rain Zone / Radio Zone 3 Α

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Ambler State: AK Latitude: 67 5 11.5 Longitude: 157 51 40.6 (NAD83) 08-09-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m
Transmit Power at Flange (P)	= 20.0000 Watts
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10)
pi	= 3.1415927
Antenna Aperture Efficiency (n)	= 0.6000

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to	Ground	Power	Density	=	=	P	=	4.4210	W/m**2
						Sa			
							=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

Controlled Safety Margin = 5.0 - Calculated Zone Value (mW/cm**2)					
	Zones	(mW/cm**2)			
	Far Zone	4.5032	Complies with ANSI		
2.	Near Zone	3.9390	Complies with ANSI		
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI		
4.	Main Reflector Surface	4.1158	Complies with ANSI		
5.	Main Reflector to Ground	4.5579	Complies with ANSI		
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)		
	Zones	Safety Margins (mW/cm**2)	Conclusions		
	Far Zone	0.5032	Complies with ANSI		
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS		
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI		
4.	Main Reflector Surface	0.1158	Complies with ANSI		
5.	Main Reflector to Ground	0.5579	Complies with ANSI		

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: F1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Noorvik, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC UNICOM, INC. WIRELESS APPLICATIONS CORP

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: F1917809

TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION

Company: Site Name, State: Call Sign:	Alaska Commun Noorvik, AK	ications Int	ternet, LLC
Latitude Longitude Elevation AMSL		66 49 161 2 44.00	44.8 W
Receive Frequency Range Transmit Frequency Range Range of Satellite Orbital Long		5925-6425 114.00	
Range of Azimuths from North	(deg) (ft/m)	130.56 6.56	131.55 2.00
Equipment Parameters		Transmit	
Antenna Gain, Main Beam 15 DB Half Beamwidth	(dbI)	42.00	
Antennas Transmit: GENERA	L DYNAMICS 124	1 (2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designato:	(dbW/4KHz) r DIGITAL	5M60G7W	-18.76 23.24
Coordination Parameters		 Transmit	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Terr Max Interference Power Short Te: Rain Zone / Radio Zone	(km) m (dbW)	100.00 -154.80	A

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: R1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Noorvik, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: R1917809

TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION

	laska Communi oorvik, AK	cations Inte	rnet, LLC
Latitude Longitude Elevation AMSL Receive Frequency Range	(NAD83) (ft/m) (MHz)	66 49 5 161 2 4 44.00 3700-4200	4.8 W
Transmit Frequency Range Range of Satellite Orbital Long. Range of Azimuths from North Antenna Centerline Antenna Elevation Angles	(deg W) (deg) (ft/m)	130.56 5.91	131.55 1.80
Equipment Parameters		Receive	
Antenna Gain, Main Beam 15 DB Half Beamwidth			
Antennas Receive: GENERAL	DYNAMICS 1241	(2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) DIGITAL 7		
Coordination Parameters		Receive	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Term Max Interference Power Short Term Rain Zone / Radio Zone	(km) (dbW)	403.04 -158.60	A

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Noorvik State: AK Latitude: 66 49 59.4 Longitude: 161 2 44.8 (NAD83) 08-09-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m
Transmit Power at Flange (P)	= 20.0000 Watts
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10)
pi	= 3.1415927
Antenna Aperture Efficiency (n)	= 0.6000

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main t	to Ground	Power	Density	=	P	=	4.4210	W/m**2
						-		
					Sa			
						=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

C	Controlled Safety Margin =	5.0 - Calculat	
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	4.5032	
2.	Near Zone	3.9390	Complies with ANSI
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	4.1158	Complies with ANSI
5.	Main Reflector to Ground	4.5579	Complies with ANSI
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	0.5032	Complies with ANSI
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	0.1158	Complies with ANSI
5.	Main Reflector to Ground	0.5579	Complies with ANSI

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: G1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Kiana, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC UNICOM, INC. WIRELESS APPLICATIONS CORP

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: G1917809

TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION

	alaska Commun: Giana, AK	ications Int	ernet, LLC
Latitude	(NAD83)	66 58	24.3 N
Longitude	(NAD83)	66 58 160 25	49.3 W
Elevation AMSL	(ft/m)	107.00	32.61
Receive Frequency Range			
Transmit Frequency Range			
Range of Satellite Orbital Long.			
Range of Azimuths from North			
	(ft/m)		
Antenna Elevation Angles	(deg)	7.02	7.32
Equipment Parameters		Transmit	
Antenna Gain, Main Beam	(dbT)	42.00	
15 DB Half Beamwidth	(deg)	3.10	
Antennas Transmit: GENERAL	DYNAMICS 1243	1 (2.4M)	
Max Transmitter Power	(dbW/4KHz)		-18.76
Max EIRP Main Beam			23.24
Modulation / Emission Designator			
Coordination Parameters		Transmit	
Max Greater Circle Distances	(km)	167.27	
Max Rain Scatter Distances			
Max Interference Power Long Term			
Max Interference Power Short Term			
Rain Zone / Radio Zone		3	А
- ,		-	

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: S1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Kiana, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: S1917809

TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION

	Alaska Commu Kiana, AK	nications In	ternet, LLC
Latitude Longitude Elevation AMSL Receive Frequency Range	(NAD83) (ft/m) (MHz)	66 58 160 25 107.00 3700-4200	49.3 W 32.61
Transmit Frequency Range Range of Satellite Orbital Long. Range of Azimuths from North Antenna Centerline Antenna Elevation Angles	(MHz) (deg W) (deg) (ft/m) (deg)	131.20 5.91	115.00 132.20 1.80 7.32
Equipment Parameters		Receive	
Antenna Gain, Main Beam 15 DB Half Beamwidth	(dbI) (deg)	38.00 4.90	
Antennas Receive: GENERAL	DYNAMICS 12	41 (2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) DIGITAL	72M0G7W	
Coordination Parameters		Receive	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Term Max Interference Power Short Terr Rain Zone / Radio Zone	(km) (km) (dbW)	487.87 402.28 -158.60	A

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Kiana State: AK Latitude: 66 58 24.3 Longitude: 160 25 49.3 (NAD83) 08-09-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m	
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2	
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m	
Transmit Power at Flange (P)	= 20.0000 Watts	
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10))
pi	= 3.1415927	,,
Antenna Aperture Efficiency (n)	= 0.6000	

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to	Ground	Power	Density	=	=	P	=	4.4210	W/m**2
						Sa			
							=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

Controlled Safety Margin = 5.0 - Calculated Zone Value (mW/cm**2)					
	Zones	Safety Margins (mW/cm**2)	Conclusions		
	Far Zone	4.5032			
2.	Near Zone	3.9390	Complies with ANSI		
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI		
4.	Main Reflector Surface	4.1158	Complies with ANSI		
5.	Main Reflector to Ground	4.5579	Complies with ANSI		
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)		
	Zones	Safety Margins (mW/cm**2)	Conclusions		
	Far Zone	0.5032	Complies with ANSI		
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS		
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI		
4.	Main Reflector Surface	0.1158	Complies with ANSI		
5.	Main Reflector to Ground	0.5579	Complies with ANSI		

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: H1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Deering, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC UNICOM, INC. WIRELESS APPLICATIONS CORP

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: H1917809

TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION

Company: Site Name, State: Call Sign:	Alaska Commun Deering, AK	ications Int	ternet, LLC
Latitude Longitude Elevation AMSL	(NAD83) (NAD83) (ft/m)	66 4 162 43 12.00	22.0 W
Receive Frequency Range Transmit Frequency Range Range of Satellite Orbital Long	(MHz) (MHz) . (deg W)	5925-6425 114.00	115.00
Range of Azimuths from North Antenna Centerline Antenna Elevation Angles	(ft/m)	6.56	2.00
Equipment Parameters		Transmit	
Antenna Gain, Main Beam 15 DB Half Beamwidth	(dbI) (deg)		
Antennas Transmit: GENERAL	L DYNAMICS 124	1 (2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) r DIGITAL	5M60G7W	-18.76 23.24
Coordination Parameters		Transmit	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Terr Max Interference Power Short Ter Rain Zone / Radio Zone	(km) n (dbW)	100.00 -154.80	A

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: T1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Deering, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: T1917809

TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION

	laska Communi eering, AK	cations Inter	net, LLC
Latitude Longitude Elevation AMSL Receive Frequency Range	(NAD83) (ft/m)	66 4 32 162 43 22 12.00 3700-4200	.0 W
Range of Satellite Orbital Long. Range of Azimuths from North	(deg W) (deg) (ft/m)	128.74 5.91	129.73 1.80
Equipment Parameters		Receive	
Antenna Gain, Main Beam 15 DB Half Beamwidth			
Antennas Receive: GENERAL	DYNAMICS 1241	(2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) DIGITAL 7		
Coordination Parameters		Receive	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Term Max Interference Power Short Term Rain Zone / Radio Zone	(km) (dbW)	403.32 -158.60	A

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Deering State: AK Latitude: 66 4 32.7 Longitude: 162 43 22.0 (NAD83) 08-09-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m	
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2	
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m	
Transmit Power at Flange (P)	= 20.0000 Watts	
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10))
pi	= 3.1415927	,,
Antenna Aperture Efficiency (n)	= 0.6000	

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to	Ground	Power	Density	=	=	P	=	4.4210	W/m**2
						Sa			
							=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

C	Controlled Safety Margin =	5.0 - Calculat	
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	4.5032	
2.	Near Zone	3.9390	Complies with ANSI
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	4.1158	Complies with ANSI
5.	Main Reflector to Ground	4.5579	Complies with ANSI
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	0.5032	Complies with ANSI
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	0.1158	Complies with ANSI
5.	Main Reflector to Ground	0.5579	Complies with ANSI

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: I1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Buckland, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC UNICOM, INC. WIRELESS APPLICATIONS CORP

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: I1917809

TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION

	Alaska Commun: Buckland, AK	ications Int	ernet, LLC
Latitude Longitude Elevation AMSL	(NAD83)	65 58 161 7 23.00	29.5 W
Receive Frequency Range Transmit Frequency Range	(MHz) (MHz)	5925-6425	
	(deg) (ft/m)	130.30 6.56	131.29 2.00
Antenna Elevation Angles	(deg)		7.79
Equipment Parameters		Transmit 	
Antenna Gain, Main Beam 15 DB Half Beamwidth	(dbI) (deg)		
Antennas Transmit: GENERAL Max Transmitter Power		. ,	-18.76
Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) DIGITAL S	5M60G7W	23.24
Coordination Parameters		Transmit	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Term Max Interference Power Short Terr	(km) (dbW)	100.00 -154.80 -130.80	
Rain Zone / Radio Zone		3	A

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: U1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Buckland, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: U1917809

TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION

Alaska Communications Internet, LLC Company: Site Name, State: Buckland, AK Call Sign: (NAD83)655842.0 N(NAD83)161729.5 W(ft/m)23.007.01(MHz)3700-4200 Latitude Longitude Elevation AMSL Receive Frequency Range Transmit Frequency Range (MHz) Range of Satellite Orbital Long.(deg W)114.00115.00Range of Azimuths from North(deg)130.30131.29Antenna Centerline(ft/m)5.911.80Antenna Elevation Angles(deg)7.477.79 _____ Equipment Parameters Receive _____ Antenna Gain, Main Beam(dbI)15 DB Half Beamwidth(deg) 38.00 4.90 Antennas Receive: GENERAL DYNAMICS 1241 (2.4M) Max Transmitter Power(dbW/4KHz)Max EIRP Main Beam(dbW/4KHz) Modulation / Emission Designator DIGITAL 72M0G7W _____ Coordination Parameters Receive _____ Max Greater Circle Distances(km)Max Rain Scatter Distances(km) 487.87 398.83 Max Interference Power Long Term (dbW)-158.60Max Interference Power Short Term (dbW)-149.90 Rain Zone / Radio Zone 3 А

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Buckland State: AK Latitude: 65 58 42.0 Longitude: 161 7 29.5 (NAD83) 08-09-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m	
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2	
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m	
Transmit Power at Flange (P)	= 20.0000 Watts	
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10))
pi	= 3.1415927	,,
Antenna Aperture Efficiency (n)	= 0.6000	

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to	Ground	Power	Density	=	=	P	=	4.4210	W/m**2
						Sa			
							=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

C	Controlled Safety Margin =	5.0 - Calculat	
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	4.5032	
2.	Near Zone	3.9390	Complies with ANSI
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	4.1158	Complies with ANSI
5.	Main Reflector to Ground	4.5579	Complies with ANSI
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	0.5032	Complies with ANSI
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	0.1158	Complies with ANSI
5.	Main Reflector to Ground	0.5579	Complies with ANSI

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: J1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Selawik, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC UNICOM, INC. WIRELESS APPLICATIONS CORP

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: J1917809

_____ TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION _____ Alaska Communications Internet, LLC Company: Site Name, State: Selawik, AK Call Sign: (NAD83)663624.4N(NAD83)160052.7W(ft/m)18.005.49 Latitude Longitude Elevation AMSL Receive Frequency Range (MHz) Transmit Frequency Range(MHz)5925-6425Range of Satellite Orbital Long.(deg W)114.00115.00Range of Azimuths from North(deg)131.54132.53Antenna Centerline(ft/m)6.562.00Antenna Elevation Angles(deg)7.407.70 Transmit Frequency Range (MHz) _____ Equipment Parameters Transmit _____ Antenna Gain, Main Beam 15 DB Half Beamwidth 42.00 (dbI) (deg) 3.10

Antennas Transmit: GENERAL DYNAMICS 1241 (2.4M)

Max Transmitter Power	(dbW/4KHz)	-18.76
Max EIRP Main Beam	(dbW/4KHz)	23.24
Modulation / Emission Designator	DIGITAL 5M60G7W	

Coordination Parameters Transmit

Α

Max Greater Circle Distances	(km)	167.27	
Max Rain Scatter Distances	(km)	100.00	
Max Interference Power Long Term	(dbW)	-154.80	
Max Interference Power Short Term	(dbW)	-130.80	
Rain Zone / Radio Zone		3	

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: V1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Selawik, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: V1917809

TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION

Company: Site Name, State: Call Sign:	Alaska Commu Selawik, AK	nications In	ternet, LLC
Latitude Longitude Elevation AMSL Receive Frequency Range	(NAD83) (ft/m) (MHz)	66 36 160 0 18.00 3700-4200	52.7 W 5.49
Transmit Frequency Range Range of Satellite Orbital Long Range of Azimuths from North Antenna Centerline Antenna Elevation Angles	. (deg W) (deg) (ft/m)	131.54 5.91	132.53 1.80
Equipment Parameters		Receive	
Antenna Gain, Main Beam 15 DB Half Beamwidth	(dbI) (deg)	38.00 4.90	
Antennas Receive: GENERAL	L DYNAMICS 12	41 (2.4M)	
Max Transmitter Power Max EIRP Main Beam Modulation / Emission Designator	(dbW/4KHz) c DIGITAL	72M0G7W	
Coordination Parameters		Receive	
Max Greater Circle Distances Max Rain Scatter Distances Max Interference Power Long Terr Max Interference Power Short Ter Rain Zone / Radio Zone	(km) (km) n (dbW)	487.87 399.38 -158.60	А

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Selawik State: AK Latitude: 66 36 24.4 Longitude: 160 0 52.6 (NAD83) 08-09-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m	
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2	
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m	
Transmit Power at Flange (P)	= 20.0000 Watts	
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10))
pi	= 3.1415927	,,
Antenna Aperture Efficiency (n)	= 0.6000	

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to	Ground	Power	Density	=	=	P	=	4.4210	W/m**2
						Sa			
							=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

C	Controlled Safety Margin =	5.0 - Calculat	
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	4.5032	
2.	Near Zone	3.9390	Complies with ANSI
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	4.1158	Complies with ANSI
5.	Main Reflector to Ground	4.5579	Complies with ANSI
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	0.5032	Complies with ANSI
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	0.1158	Complies with ANSI
5.	Main Reflector to Ground	0.5579	Complies with ANSI

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: K1917809 5.93 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Kivalina, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC TECK ALASKA INCORPORATED/TECK AMERICA INCORPORATED UNICOM, INC. WIRELESS APPLICATIONS CORP

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: K1917809

TECHNICAL CHARACTERISTICS OF TRANSMIT ONLY EARTH STATION _____ Alaska Communications Internet, LLC Company: Site Name, State: Kivalina, AK Call Sign: (NAD83)674334.9N(NAD83)1643215.8W(ft/m)15.004.57(MHz) Latitude Longitude Elevation AMSL Receive Frequency Range (MHz) Receive Frequency Kange(MHZ)Transmit Frequency Range(MHZ) Transmit Frequency Range(MHz)5925-6425Range of Satellite Orbital Long.(deg W)114.00115.00Range of Azimuths from North(deg)127.30128.28Antenna Centerline(ft/m)6.562.00Antenna Elevation Angles(deg)5.305.60 _____ Equipment Parameters Transmit _____ Antenna Gain, Main Beam(dbI)15 DB Half Beamwidth(deg) 42.00 3.10 Antennas Transmit: GENERAL DYNAMICS 1241 (2.4M) Max Transmitter Power(dbW/4KHz)Max EIRP Main Beam(dbW/4KHz) -18.76 23.24 Modulation / Emission Designator DIGITAL 5M60G7W _____ Transmit Coordination Parameters _____ Max Greater Circle Distances(km)173.96Max Rain Scatter Distances(km)100.00 Max Interference Power Long Term (dbW) Max Interference Power Short Term (dbW) -154.80 -130.80 Rain Zone / Radio Zone 3 А

812 Lexington Dr Plano, Texas 75075 972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: W1917809 3.70 GHz Licensee: Alaska Communications Internet, LLC

Page 1

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

Kivalina, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

07/17/2019 Original PCN There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

COMSEARCH INC

Respectfully Submitted,

Jeremy B. Lewis

Jeremy Lewis Systems Engineer

File: W1917809

Rain Zone / Radio Zone

_____ TECHNICAL CHARACTERISTICS OF RECEIVE ONLY EARTH STATION _____ Alaska Communications Internet, LLC Company: Site Name, State: Kivalina, AK Call Sign: (NAD83)674334.9N(NAD83)1643215.8W(ft/m)15.004.57(MHz)3700-4200 Latitude Longitude Elevation AMSL Receive Frequency Range Transmit Frequency Range (MHz) Range of Satellite Orbital Long.(deg W)114.00115.00Range of Azimuths from North(deg)127.30128.28Antenna Centerline(ft/m)5.911.80Antenna Elevation Angles(deg)5.305.60 _____ Equipment Parameters Receive _____ Antenna Gain, Main Beam(dbI)15 DB Half Beamwidth(deg) 38.00 4.90 Antennas Receive: GENERAL DYNAMICS 1241 (2.4M) Max Transmitter Power(dbW/4KHz)Max EIRP Main Beam(dbW/4KHz) Modulation / Emission Designator DIGITAL 72M0G7W _____ Coordination Parameters Receive _____ Max Greater Circle Distances(km)Max Rain Scatter Distances(km) 506.08 421.03 Max Interference Power Long Term (dbW)-158.60Max Interference Power Short Term (dbW)-149.90

3

А

ANALYSIS OF NON-IONIZING RADIATION for Alaska Communications Internet LLC Site: Kivalina State: AK Latitude: 67 43 34.9 Longitude: 164 32 15.8 (NAD83) 08-09-2019

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:

Antenna Diameter, (D)	= 2.4000 m	
Antenna Surface Area (Sa)	= pi(D**2)/4 = 4.5239 m**2	
Wavelength at 6.1750 GHz (lambda)	= 0.0485 m	
Transmit Power at Flange (P)	= 20.0000 Watts	
Antenna Gain at Earth Site (GES)	= 42.0000 dBi = 15848.9319 Power Ratio: AntiLog(GES/10))
pi	= 3.1415927	,,
Antenna Aperture Efficiency (n)	= 0.6000	

1. FAR ZONE CALCULATIONS

Distance to the Far Zone	(Df) =	(n) (D**2) lambda	= 71.2577 m
Far Zone Power Density	(Rf) =	(GES)(P)	= 4.9677 W/m**2
		4*pi*(Df**2)	= 0.4968 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone	(Dn) =	D**2	= 29.6907 m
		4*lambda	
Near Zone Power Density	(Rn) =	16.0(n)P pi(D**2)	= 10.6103 W/m**2
			= 1.0610 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density	=	2(P)	= 8.8419 W/m**2
		Sa	
			$= 0.8842 \text{ mW/cm}^{*2}$

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to	Ground	Power	Density	=	=	P	=	4.4210	W/m**2
						Sa			
							=	0.4421	mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY AND EVALUATION

C	Controlled Safety Margin =	5.0 - Calculat	
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	4.5032	
2.	Near Zone	3.9390	Complies with ANSI
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	4.1158	Complies with ANSI
5.	Main Reflector to Ground	4.5579	Complies with ANSI
 U		= 1.0 - Calcul	Lated Zone Value (mW/cm**2)
	Zones	Safety Margins (mW/cm**2)	Conclusions
	Far Zone	0.5032	Complies with ANSI
2.	Near Zone	-0.0610	POTENTIALLY HAZARDOUS
3.	Transition Zone	Rf < Rt < Rn	Complies with ANSI
4.	Main Reflector Surface	0.1158	Complies with ANSI
5.	Main Reflector to Ground	0.5579	Complies with ANSI

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
The NEAR ZONE does not comply with the ANSI standards!
The system will be FENCED so that no one can enter the affected Zone while
the system is in use. Additionally, the system will be shut down for
servicing.