Approved by OMB
3060–0678

# APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATIONEnter a description of this application to identify it on the main menu:
Special Temporary Authority for a 3.8 meter Ku–band T/R earth station

**1. Applicant**

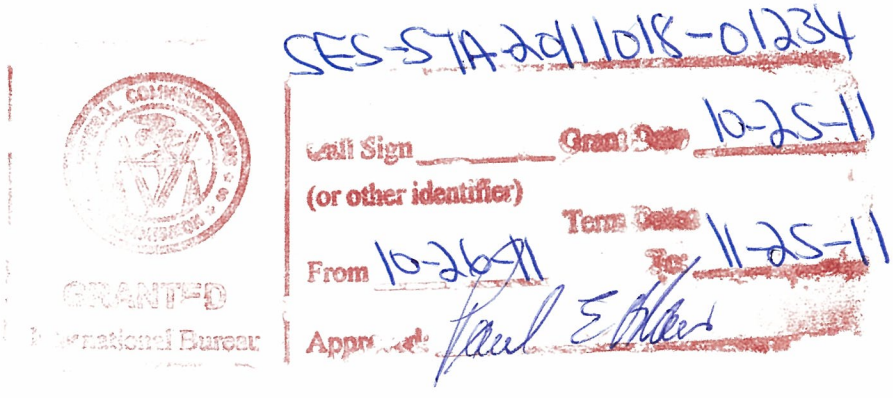
| | | | |
|---|---|---|---|
| **Name:** | DNETGROUP INC. | **Phone Number:** | 786–515–9796 |
| **DBA Name:** | | **Fax Number:** | |
| **Street:** | 3381 NW 168th Street | **E–Mail:** | renatodias@disitron.com |
| City: | Miami Gardens | **State:** | FL |
| **Country:** | USA | **Zipcode:** | 33056 – |
| **Attention:** | Mr Renato G Dias | | |

SES-STA-20111018-01234
Call Sign _____ Grant Date 10-25-11
(or other identifier)
From 10-26-11 Term Dates To 11-25-11
Approved
with Conditions

Condition

DNETGROUP INC.
SES-STA-20111018-01234

No harmful interference can be caused to any lawfully operating satellite network or radio communication system and DNETGROUP INC's operations must cease immediately upon notification of harmful interference. Further, DNETGROUP INC shall notify the Commission in writing that it has received such a notification within 14 days of receipt.



**2. Contact**

| | | | |
|---|---|---|---|
| **Name:** | Mr Renato G Dias | **Phone Number:** | 786-515-9796 |
| **Company:** | DNETGROUP INC | **Fax Number:** | |
| **Street:** | 3381 NW 168th Street | E-Mail: | renatodias@disitron.com |
| **City:** | Miami Gardens | **State:** | FL |
| **Country:** | USA | **Zipcode:** | 33056 - |
| **Attention:** | | **Relationship:** | |

(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)
3. Reference File Number or Submission ID

4a. Is a fee submitted with this application?
(●) If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R.Section 1.1114).
( ) Governmental Entity ( ) Noncommercial educational licensee
( ) Other(please explain):

4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station

5. Type Request

( ) Use Prior to Grant ( ) Change Station Location (●) Other

| | |
|---|---|
| 6. Requested Use Prior Date<br>10/26/2011 | |
| 7. CityMiami Gardens | 8. Latitude<br>(dd mm ss.s h) 25 55 39.4 N |

| 9. State FL | 10. Longitude<br>(dd mm ss.s h) 80 15 27.4 W |
|---|---|

11. Please supply any need attachments.

Attachment 1: Operating Data  Attachment 2: RadHaz  Attachment 3:

12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)

Applicant requests Special Temporary Authority to transmit at a new building location to provide support of services and avoid interruption to their client base while waiting to prepare and file for a new antenna. That application will be filed once the equipment has been finalized.

13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti–Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.

(●) Yes ( ) No

| 14. Name of Person Signing<br>Renato Dias | 15. Title of Person Signing<br>COO |
|---|---|

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# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

| | |
|---|---|
| Date: | 10/18/2011 |
| Job Number: | <PCNJobCode> |

### Administrative Information

| | |
|---|---|
| Status | ENGINEER PROPOSAL |
| Call Sign | <PCNCallSign> |
| Licensee Code | |
| Licensee Name | DNETGROUP INC |

### Site Information — MIAMI GARDEN, FL

| | |
|---|---|
| Venue Name | |
| Latitude (NAD 83) | 25° 55' 39.4" N |
| Longitude (NAD 83) | 80° 15' 27.4" W |
| Climate Zone | B |
| Rain Zone | 1 |
| Ground Elevation (AMSL) | 2.2 m / 7.2 ft |

### Link Information

| | |
|---|---|
| Satellite Type | Geostationary |
| Mode | TO - Transmit-Only |
| Modulation | Digital |
| Satellite Arc | 15° West Longitude Only |
| Azimuth Range | 101.4° |
| Corresponding Elevation Angles | 13.7° |
| Antenna Centerline (AGL) | 3.66 m / 12.0 ft |

### Antenna Information — Transmit - FCC32

| | | |
|---|---|---|
| Manufacturer | | Prodelin ✓ |
| Model | | 1383 |
| Gain / Diameter | | 53.2 dBi / 3.8 m |
| 3-dB / 15-dB Beamwidth | | 1.00° / 2.00° |
| Max Available RF Power | (dBW/4 kHz) | -14.0 |
| | (dBW/MHz) | 10.0 |
| Maximum EIRP | (dBW/4 kHz) | 39.2 |
| | (dBW/MHz) | 63.2 |
| Interference Objectives: | Long Term | -151.0 dBW/4 kHz 20% |
| | Short Term | -128.0 dBW/4 kHz 0.0025% |

Ku

### Frequency Information — Transmit 14.0 GHz

| | |
|---|---|
| Emission / Frequency Range (MHz) | 6M00G7D / 14000.0 - 14500.0 |
| Max Great Circle Coordination Distance | 177.4 km / 110.2 mi |
| Precipitation Scatter Contour Radius | 100.0 km / 62.1 mi |

# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

| **Coordination Values** | **MIAMI GARDEN, FL** |
|---|---|
| Licensee Name | DNETGROUP INC |
| Latitude (NAD 83) | 25° 55' 39.4" N |
| Longitude (NAD 83) | 80° 15' 27.4" W |
| Ground Elevation (AMSL) | 2.2 m / 7.2 ft |
| Antenna Centerline (AGL) | 3.66 m / 12.0 ft |
| Antenna Model | Prodelin 1383 |
| Antenna Mode | Transmit 14.0 GHz |
| Interference Objectives: Long Term | -151.0 dBW/4 kHz 20% |
| Short Term | -128.0 dBW/4 kHz 0.0025% |
| Max Available RF Power | -14.0 (dBW/4 kHz) |

Transmit 14.0 GHz

| Azimuth (°) | Horizon Elevation (°) | Antenna Discrimination (°) | Horizon Gain (dBi) | Coordination Distance (km) |
|---|---|---|---|---|
| 0 | 0.00 | 101.07 | -10.00 | 125.11 |
| 5 | 0.00 | 96.21 | -10.00 | 125.11 |
| 10 | 0.00 | 91.36 | -10.00 | 125.11 |
| 15 | 0.00 | 86.50 | -10.00 | 125.11 |
| 20 | 0.00 | 81.64 | -10.00 | 125.11 |
| 25 | 0.00 | 76.79 | -10.00 | 125.11 |
| 30 | 0.00 | 71.94 | -10.00 | 125.11 |
| 35 | 0.00 | 67.10 | -10.00 | 125.11 |
| 40 | 0.00 | 62.27 | -10.00 | 125.11 |
| 45 | 0.00 | 57.47 | -10.00 | 125.11 |
| 50 | 0.00 | 52.68 | -10.00 | 125.11 |
| 55 | 0.00 | 47.92 | -10.00 | 125.11 |
| 60 | 0.00 | 43.20 | -8.89 | 128.76 |
| 65 | 0.00 | 38.54 | -7.65 | 132.92 |
| 70 | 0.00 | 33.96 | -6.27 | 137.63 |
| 75 | 0.00 | 29.49 | -4.74 | 143.01 |
| 80 | 0.00 | 25.21 | -3.04 | 147.26 |
| 85 | 0.00 | 21.22 | -1.17 | 154.83 |
| 90 | 0.00 | 17.72 | 0.79 | 163.57 |
| 95 | 0.00 | 15.06 | 2.56 | 172.18 |
| 100 | 0.00 | 13.73 | 3.56 | 177.37 |
| 105 | 0.00 | 14.12 | 3.25 | 175.77 |
| 110 | 0.00 | 16.10 | 1.83 | 168.55 |
| 115 | 0.00 | 19.19 | -0.08 | 159.60 |
| 120 | 0.00 | 22.94 | -2.01 | 151.31 |
| 125 | 0.00 | 27.08 | -3.81 | 144.35 |
| 130 | 0.00 | 31.45 | -5.44 | 140.54 |
| 135 | 0.00 | 35.97 | -6.90 | 135.47 |
| 140 | 0.00 | 40.59 | -8.21 | 131.02 |
| 145 | 0.00 | 45.28 | -9.40 | 127.08 |
| 150 | 0.00 | 50.02 | -10.00 | 125.11 |
| 155 | 0.00 | 54.79 | -10.00 | 125.11 |
| 160 | 0.00 | 59.59 | -10.00 | 125.11 |
| 165 | 0.00 | 64.41 | -10.00 | 125.11 |
| 170 | 0.00 | 69.24 | -10.00 | 125.11 |
| 175 | 0.00 | 74.08 | -10.00 | 125.11 |
| 180 | 0.00 | 78.93 | -10.00 | 125.11 |
| 185 | 0.00 | 83.79 | -10.00 | 125.11 |

# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5662 http://www.comsearch.com

| **Coordination Values** | **MIAMI GARDEN, FL** |
|---|---|
| Licensee Name | DNETGROUP INC |
| Latitude (NAD 83) | 25° 55' 39.4" N |
| Longitude (NAD 83) | 80° 15' 27.4" W |
| Ground Elevation (AMSL) | 2.2 m / 7.2 ft |
| Antenna Centerline (AGL) | 3.66 m / 12.0 ft |
| Antenna Model | Prodelin 1383 |
| Antenna Mode | Transmit 14.0 GHz |
| Interference Objectives: Long Term | -151.0 dBW/4 kHz 20% |
| Short Term | -128.0 dBW/4 kHz 0.0025% |
| Max Available RF Power | -14.0 (dBW/4 kHz) |

| | | | Transmit 14.0 GHz | |
|---|---|---|---|---|
| Azimuth (°) | Horizon Elevation (°) | Antenna Discrimination (°) | Horizon Gain (dBi) | Coordination Distance (km) |
| 190 | 0.00 | 88.64 | -10.00 | 125.11 |
| 195 | 0.00 | 93.50 | -10.00 | 125.11 |
| 200 | 0.00 | 98.36 | -10.00 | 125.11 |
| 205 | 0.00 | 103.21 | -10.00 | 125.11 |
| 210 | 0.00 | 108.06 | -10.00 | 125.11 |
| 215 | 0.00 | 112.90 | -10.00 | 125.11 |
| 220 | 0.00 | 117.73 | -10.00 | 125.11 |
| 225 | 0.00 | 122.53 | -10.00 | 125.11 |
| 230 | 0.00 | 127.32 | -10.00 | 125.11 |
| 235 | 0.00 | 132.08 | -10.00 | 125.11 |
| 240 | 0.00 | 136.80 | -10.00 | 125.11 |
| 245 | 0.00 | 141.46 | -10.00 | 125.11 |
| 250 | 0.00 | 146.04 | -10.00 | 125.11 |
| 255 | 0.00 | 150.51 | -10.00 | 125.11 |
| 260 | 0.00 | 154.79 | -10.00 | 125.11 |
| 265 | 0.00 | 158.78 | -10.00 | 125.11 |
| 270 | 0.00 | 162.28 | -10.00 | 125.11 |
| 275 | 0.00 | 164.94 | -10.00 | 125.11 |
| 280 | 0.00 | 166.27 | -10.00 | 125.11 |
| 285 | 0.00 | 165.88 | -10.00 | 125.11 |
| 290 | 0.00 | 163.90 | -10.00 | 125.11 |
| 295 | 0.00 | 160.81 | -10.00 | 125.11 |
| 300 | 0.00 | 157.06 | -10.00 | 125.11 |
| 305 | 0.00 | 152.92 | -10.00 | 125.11 |
| 310 | 0.00 | 148.55 | -10.00 | 125.11 |
| 315 | 0.00 | 144.03 | -10.00 | 125.11 |
| 320 | 0.00 | 139.41 | -10.00 | 125.11 |
| 325 | 0.00 | 134.72 | -10.00 | 125.11 |
| 330 | 0.00 | 129.98 | -10.00 | 125.11 |
| 335 | 0.00 | 125.21 | -10.00 | 125.11 |
| 340 | 0.00 | 120.41 | -10.00 | 125.11 |
| 345 | 0.00 | 115.59 | -10.00 | 125.11 |
| 350 | 0.00 | 110.76 | -10.00 | 125.11 |
| 355 | 0.00 | 105.92 | -10.00 | 125.11 |

# Analysis of Non-Ionizing Radiation for a 3.8-Meter Earth Station System

This report analyzes the non-ionizing radiation levels for a 3.8-meter earth station system. The analysis and calculations performed in this report comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65 first published in 1985 and revised in 1997 in Edition 97-01. The radiation safety limits used in the analysis are in conformance with the FCC R&O 96-326. Bulletin No. 65 and the FCC R&O specifies that there are two separate tiers of exposure limits that are dependant on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. The Maximum Permissible Exposure (MPE) limits for persons in a General Population/Uncontrolled environment are shown in Table 1. The General Population/Uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less. The MPE limits for persons in an Occupational/Controlled environment are shown in Table 2. The Occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less. The purpose of the analysis described in this report is to determine the power flux density levels of the earth station in the far-field, near-field, transition region, between the subreflector or feed and main reflector surface, at the main reflector surface, and between the antenna edge and the ground and to compare these levels to the specified MPEs.

Table 1. Limits for General Population/Uncontrolled Exposure (MPE)

| Frequency Range (MHz) | Power Density ($mW/cm^2$) |
|---|---|
| 30-300 | 0.2 |
| 300-1500 | Frequency (MHz)*(0.8/1200) |
| 1500-100,000 | 1.0 |

Table 2. Limits for Occupational/Controlled Exposure (MPE)

| Frequency Range (MHz) | Power Density ($mW/cm^2$) |
|---|---|
| 30-300 | 1.0 |
| 300-1500 | Frequency (MHz)*(4.0/1200) |
| 1500-100,000 | 5.0 |

Table 3. Formulas and Parameters Used for Determining Power Flux Densities

| Parameter | Symbol | Formula | Value | Units |
|---|---|---|---|---|
| Antenna Diameter | D | Input | 3.8 | m |
| Antenna Surface Area | $A_{surface}$ | $\pi D^2 / 4$ | 11.34 | $m^2$ |
| Subreflector Diameter | $D_{sr}$ | Input | 19.0 | cm |
| Area of Subreflector | $A_{sr}$ | $\pi D_{sr}{}^2/4$ | 283.53 | $cm^2$ |
| Frequency | F | Input | 14250 | MHz |
| Wavelength | $\lambda$ | 300 / F | 0.021053 | m |
| Transmit Power | P | Input | 60.00 | W |
| Antenna Gain (dBi) | $G_{es}$ | Input | 53.2 | dBi |
| Antenna Gain (factor) | G | $10^{Ges/10}$ | 208929.6 | n/a |
| Pi | $\pi$ | Constant | 3.1415927 | n/a |
| Antenna Efficiency | $\eta$ | $G\lambda^2/(\pi^2D^2)$ | 0.65 | n/a |

## 1. Far Field Distance Calculation

The distance to the beginning of the far field can be determined from the following equation:

Distance to the Far Field Region

$$R_{ff} = 0.60\ D^2 / \lambda \quad (1)$$
$$= 411.5\ m$$

The maximum main beam power density in the far field can be determined from the following equation:

On-Axis Power Density in the Far Field

$$S_{ff} = G\ P / (4\ \pi\ R_{ff}^2) \quad (2)$$
$$= 5.890\ W/m^2$$
$$= 0.589\ mW/cm^2$$

## 2. Near Field Calculation

Power flux density is considered to be at a maximum value throughout the entire length of the defined Near Field region. The region is contained within a cylindrical volume having the same diameter as the antenna. Past the boundary of the Near Field region, the power density from the antenna decreases linearly with respect to increasing distance.

The distance to the end of the Near Field can be determined from the following equation:

Extent of the Near Field

$$R_{nf} = D^2 / (4\ \lambda) \quad (3)$$
$$= 171.5\ m$$

The maximum power density in the Near Field can be determined from the following equation:

Near Field Power Density

$$S_{nf} = 16.0\ \eta\ P / (\pi\ D^2) \quad (4)$$
$$= 13.750\ W/m^2$$
$$= 1.375\ mW/cm^2$$

## 3. Transition Region Calculation

The Transition region is located between the Near and Far Field regions. The power density begins to decrease linearly with increasing distance in the Transition region. While the power density decreases inversely with distance in the Transition region, the power density decreases inversely with the square of the distance in the Far Field region. The maximum power density in the Transition region will not exceed that calculated for the Near Field region. The power density calculated in Section 1 is the highest power density the antenna can produce in any of the regions away from the antenna. The power density at a distance $R_t$ can be determined from the following equation:

Transition Region Power Density

$$S_t = S_{nf}\ R_{nf} / R_t \quad (5)$$
$$= 1.375\ mW/cm^2$$

## 4. Region between the Main Reflector and the Subreflector

Transmissions from the feed assembly are directed toward the subreflector surface, and are reflected back toward the main reflector. The most common feed assemblies are waveguide flanges, horns or subreflectors. The energy between the subreflector and the reflector surfaces can be calculated by determining the power density at the subreflector surface. This can be determined from the following equation:

Power Density at the Subreflector

$$S_{sr} = 4000\ P / A_{sr} = 846.475\ mW/cm^2 \quad (6)$$

## 5. Main Reflector Region

The power density in the main reflector is determined in the same manner as the power density at the subreflector. The area is now the area of the main reflector aperture and can be determined from the following equation:

Power Density at the Main Reflector Surface

$$S_{surface} = 4\ P / A_{surface} = 21.162\ W/m^2 = 2.116\ mW/cm^2 \quad (7)$$

## 6. Region between the Main Reflector and the Ground

Assuming uniform illumination of the reflector surface, the power density between the antenna and the ground can be determined from the following equation:

Power Density between Reflector and Ground

$$S_g = P / A_{surface} = 5.290\ W/m^2 = 0.529\ mW/cm^2 \quad (8)$$

## 7. Summary of Calculations

Table 4. Summary of Expected Radiation levels for Uncontrolled Environment

| Region | | Calculated Maximum Radiation Power Density Level ($mW/cm^2$) | Hazard Assessment |
|---|---|---|---|
| 1. Far Field ($R_{ff}$ = 411.5 m) | $S_{ff}$ | 0.589 | Satisfies FCC MPE |
| 2. Near Field ($R_{nf}$ = 171.5 m) | $S_{nf}$ | 1.375 | Potential Hazard |
| 3. Transition Region ($R_{nf} < R_t < R_{ff}$) | $S_t$ | 1.375 | Potential Hazard |
| 4. Between Main Reflector and Subreflector | $S_{sr}$ | 846.475 | Potential Hazard |
| 5. Main Reflector | $S_{surface}$ | 2.116 | Potential Hazard |
| 6. Between Main Reflector and Ground | $S_g$ | 0.529 | Satisfies FCC MPE |

Table 5. Summary of Expected Radiation levels for Controlled Environment

| Region | | Calculated Maximum Radiation Power Density Level ($mW/cm^2$) | Hazard Assessment |
|---|---|---|---|
| 1. Far Field ($R_{ff}$ = 411.5 m) | $S_{ff}$ | 0.589 | Satisfies FCC MPE |
| 2. Near Field ($R_{nf}$ = 171.5 m) | $S_{nf}$ | 1.375 | Satisfies FCC MPE |
| 3. Transition Region ($R_{nf} < R_t < R_{ff}$) | $S_t$ | 1.375 | Satisfies FCC MPE |
| 4. Between Main Reflector and Subreflector | $S_{sr}$ | 846.475 | Potential Hazard |
| 5. Main Reflector | $S_{surface}$ | 2.116 | Satisfies FCC MPE |
| 6. Between Main Reflector and Ground | $S_g$ | 0.529 | Satisfies FCC MPE |

It is the applicant's responsibility to ensure that the public and operational personnel are not exposed to harmful levels of radiation.

## 8. Conclusions

Based on the above analysis it is concluded that the FCC MPE guidelines have been exceeded (or met) in the regions of Table 4 and 5. The applicant proposes to comply with the MPE limits by one or more of the following methods.

Radiation hazard signs will be posted while this earth station is in operation.

The earth station is located in an area with secured access. All individuals having access to the area will be aware of the Radiation Hazard from the antenna, thus creating a controlled environment.

Means of Compliance Controlled Areas

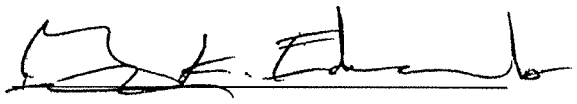
The earth station's operational staff will not have access to the areas that exceed the MPE levels while the earth station is in operation.

The transmitters will be turned off during antenna maintenance

The applicant agrees to abide by the conditions specified in Condition 5208 provided below:

> *Condition 5208 - The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for worker.*

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE RADIATION HAZARD REPORT, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: _ 

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: October 18, 2011