PB

SES-STA-20121217-01117 IB2012002863
CTV Television, Inc.

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:
Newton, Connecticut STA

1. Applicant

Name:	CTV Television, Inc.	**Phone Number:**	4163846441
DBA Name:		**Fax Number:**	4163846339
Street:	9 Channel Nine Court	**E–Mail:**	brian.learoyd@bellmedia.ca
City:	Toronto	**State:**	
Country:		**Zipcode:**	–
Attention:	Brian Learoyd		

File # SES-STA-20121217-01117
Call Sign N/A Grant Date 12/20/2012
(or other identifier)
Term Dates
From 12/20/2012 To: 12/27/2012
Approved:

Bell Media Inc.
9 Channel Nine Court
Toronto, ON M1S 4B5

December 14, 2012

N/A **SES-STA-20121217-01117** **IB2012002863**
CTV Television, Inc.

Federal Communication Commission
International Branch – Satellite Earth Station
445 12th Street S.W.
Washington, DC 20554
Office of the Secretary

Re: STA Request
Ku-Band Transmit Earth Station
Newton, Connecticut

To Whom It May Concern:

This STA is being requested to allow **CTV Television** (a division of Bellmedia), to provide News coverage of the school shooting in Newton Connecticut using a CTV owned and operated SNG truck. The earth station will transmit News coverage from the Newton, Connecticut site and downlink the signal to the studio location in Toronto, Canada. The signal will be distributed on the applicant's TV broadcast system. All traffic will be on the Galaxy 17K satellite located at 91 degrees West Longitude. The STA is requested for a period of 7 days starting on Friday December 14, 2012. This time frame will allow for the news coverage the shooting at Sandy Hook Elementary School.

If you have any questions, please contact the following

Brian Learoyd

Brian Learoyd
Senior Director of Mobile Engineering
Bellmedia – CTV Television (CFTO)

9 Channel Nine Court
Toronto, Ontario
M1S 4B5

Phone: 416-384-6441
Cell: 416-702-1162
Fax: 416-384-6339
Email: Brian.Learoyd@bellmedia.ca

2. Contact

Name:	Brian Learoyd	**Phone Number:**	4167021162
Company:	Bellmedia	**Fax Number:**	4163846339
Street:	9 Channel Nine Court	E-Mail:	Brian.Learoyd@bellmedia.ca
City:	Toronto	**State:**	
Country:	Canada	**Zipcode:**	M1S -4B5
Attention:		**Relationship:**	Same

(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 12/14/2012	
7. CityNewton	8. Latitude (dd mm ss.s h) 41 25 13.73 N

9. State CO	10. Longitude (dd mm ss.s h) 73 16 38.4 W

11. Please supply any need attachments.

Attachment 1: Newton Letter Attachment 2: Sat Truck Tech Specs Attachment 3: RF Hazard Report

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.)

TV News coverage of the Sandy Hook Elementary School Shooting in Newtwon Connecticut.

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 Brian Learoyd	15. Title of Person Signing Senior Director of Mobile Engineering

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ATTACHMENT B - Page 1 of 1

SATELLITE EARTH STATION TECHNICAL EXHIBIT

14-Dec-12

Company:	CTV Television Inc. (CFTO)
Class of Station:	Temporary Fixed Earth Station (News Satellite Truck)
CTV Vehicle Name:	"Phoenix"
Operator Cell Phone Number:	(647) 222-2132
Earth Station Name, State	**NEWTON, CONNECTICUT**
Latitude: (DMS)	**41 25 13.73 N**
Longitude: (DMS)	**73 16 38.40 W**
Ground Elevation AMSL (m)	78
Antenna Center: (m)	3
Transmit Antenna Type:	ANDREW CORP. ESA24SNG-LTE
14.5 Ghz Gain (dBi) / Diameter (m)	45.9 / 1.8
Operating Mode:	TRANSMIT ONLY
Modulation:	DIGITAL
Frequency Band:	Ku
Frequency Bands:	14000.0000 - 14500.0000
Antenna Polarization:	H, V
Emission Designator:	36M0G7W
Maximum EIRP per Carrier: (dBw)	71.3407
Maximum EIRP Density per Carrier: (dBw/4 kHz)	31.7983
Description of Modulation and Services:	One 36 Mbit MCPC digital carrier for voice/data with an emission designator of 36M0G7W
Total Input Power at Antenna Flange: (watts)	350
Total EIRP for All Carriers: (dBW)	71.3407
Range of Satellite Arc - East:	60 degrees W
Range of Satellite Arc - West:	140 degrees W
Antenna Elevation Angle - East:	5 degrees
Antenna Elevation Angle - West:	5 degrees
Radio Climate:	A
Rain Zone:	2

RADIATION HAZARD STUDY

For CFTO-TV

This report is to analyze the non-ionizing radiation levels for a Transportable KU Uplink utilizing an Vertex C180M, 1.8 meter 4-port Earth Station Antenna. The Office of Science and Technology Bulletin, No. 65, August 1997, specified that the maximum level of non-ionizing radiation that a person may be exposed to over a .1 hour (6 minute) period is an average power density equal to 5mW/cm^2 (five milliwatt per centimeter squared). It is the purpose of this report to ascertain the power flux densities of the earth station in the far field, near field, transition region, the main reflector surface, and between the antenna edge and the ground.

The following parameters were used to calculate the various power flux densities for the earth station:

Antenna Diameter, (D) = 1.8 meters

Antenna Surface Area, (Sa) = pi(D^2)/4 = 2.5447 m^2

Wavelength at 14.25 Ghz, (lambda) = 0.0211 meters

Transmit Power at Flange, (P) = 350 watts

Antenna Gain, (Ges) = 38904.5145
Antenna gain at 14.25GHz = 45.9dBi, converted to a power ratio given by: Ges=10 ^ dBi/10

pi = 3.1415927

Antenna Aperture Efficiency, (n) = 0.65

ANSI Safe Power Density, (Ws) = 5.0mW/cm^2

I. Far Field Calculations

The distance to the beginning of the far field region can be found by the following equation:

Distance to the Far Field Region, (Rf) = (0.6(D^2))/lambda

= 92.3400 meters

The maximum main beam power density in the far field can be calculated as follows:

Far Field On-axis power density, (Wf) = ((Ges)(P))/(4 pi (Rf^2))

= 127.0804 W/m^2

= 12.7080 mW/cm^2

II. Near Field Calculations

Power flux density is considered to be at a maximum value throughout the entire length of the defined region. The region is contained within a cylindrical volume having the same diameter as the antenna. Past the extent of the near field region, the power density decreased with distance from the transmitting antenna.

The distance to the end of the near field can be determined by the following equation:

Extent of Near Field, (Rn) = D^2/4(lambda)

= 38.4750 meters

The maximum power density in the near field is determined by:

Near Field On-axis power density, (Wn)

= (16(n)P)/(pi(D^2))

= 357.6074 W/m^2

= 35.7607 mW/cm^2

III. Transition Region Calculations

The transition region is located between the near and far field regions. As stated above, the power density begins to decrease with 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 in the near field region, as shown above, will not exceed 35.7607 mW/cm^2.

IV. Far Field On-axis Distance to ANSI 5 mW/cm^2 Calculations - (Dsafe)

Since the power density decreases inversely with the square of the distance in the far field region, the distance to the On-axis Power Density of 5 mW/cm^2 can be calculated from the following:

$$(Dsafe) = Rf((Wf / Ws)^{.5})$$

$$= 147.2123 \text{ meters}$$

V. Main Reflector Region Calculations

Transmissions from the feed horn are directed toward the main reflector surface. The power density in the main reflector region can be calculated by the following:

Main Reflector Surface Power Density $= 4(P)/Sa$

$= 550.1652 \text{ W/m}^2$

$= 55.0165 \text{ mW/cm}^2$

VI. Off-axis Evaluation

For off-axis calculations in the near-field and in the transition region, it can be assumed that, if the point of interest is at least one antenna diameter removed from the center of the main beam, the power density at that point would be at least a factor of 100 (20dB) less than the value calculated for the equivalent distance in the main beam.

Near Field On-axis power density,

$$Wn = 35.7607 \text{ mW/cm}^2$$

Near Field Off-axis power density, 1.8 meters from main beam center

$$Wn(off) = 0.01 \text{ Wn}$$

$$= 0.3576 \text{ mW/cm}^2$$

Therefore, the area around and behind the dish at a distance of one dish diameter (1.8 meters) from the center of the main beam will be equal to or less than 0.3576 mW/cm^2.

For off-axis calculations in the far-field, the calculated main-beam power density of (Wf) can be multiplied by the appropriate relative power density factor obtained from the antenna gain pattern to obtain a more realistic estimate.

The proposed antenna meets or exceeds the performance specifications under part 25.209 of the FCC rules. The off-axis gain of this antenna, therefore, is equal to or greater than 10dBi less than the on-axis gain in any direction of 48 degrees or more removed from the center line of the main beam.

Far Field On-axis power density

$$Wf = 12.7080 \text{ mW/cm}^2$$

Far Field Off-axis power density

$$Wf(off) = .1 \text{ Wf}$$

$$= 01.2708 \text{ mW/cm}^2$$

VII. Summary of Expected Radiation Levels

Region		Calculated Maximum Radiation Level (mW/cm^2)	Hazard Assessment
Far Field Region:	= 92.3400 meters	12.7080	Potential Hazard
Near Field Region:	= 38.4750 meters	35.7607	Potential Hazard
Transition Region:		35.7607	Potential Hazard
Reflector Surface Region:		55.0165	Potential Hazard
Far Field off-axis Region:		1.2708	Satisfies ANSI
Near Field off-axis Region:		0.3576	Satisfies ANSI
Area around dish equal to dish diameter:		0.3576	Satisfies ANSI

VIII. Conclusions

Based on the above analysis it is concluded that the ANSI standards of 5 mW/cm^2 or greater would not exist in regions normally occupied by the public or the earth station's operating personnel.

In the area of the Main Reflector, personnel would only enter that area to perform maintenance functions and the transmitter would not be operational at that time, so the ANSI standard of 5 mW/cm^2 would be met.

In the area of the Near Field and Transition Region, since the antenna is mounted at a height of 3 meters above the ground, and will not be pointed in the direction of populated areas, the ANSI standards would again be met. Warning signs are attached to the vehicle to warn individuals of the potential for hazardous radiation.

Because this is a mobile unit and conditions vary from operating site to operating site, procedures have been established for the operating personnel to verify that the antenna is not pointing in the direction of populated areas.

In addition, the transmit power used in these calculations is greater than that which will typically be utilized by the earth station. During normal operation, the typical power level would generally not be more than 100 watts. A transmit power of 350 watts would only occur in conditions of extreme fade.