



October 24, 2024

Mr. Abraham Teck  
Director, Regulated Services  
Specialist Telecommunications  
Public Utilities Commission  
2<sup>nd</sup> Floor, Marina Towers  
4 Princess Margaret Drive  
Belize City  
Belize

**Re: Speednet's Application For Frequency Spectrum For Various Point to Point Microwave Radio Links.**

Dear Sir,

Enclosed please find Speednet's application for radio backhaul channel spectrum assignments in the 7 (seven) GHz, Band 8 (eight) GHz Band and 11 (eleven) GHz Band.

The submitted application is for spectrum needed to install a high capacity radio link between Belize City to Caye Caulker, Caye Caulker to San Pedro and Caye Caulker to Caye Chapel. We are seeking to expand on the current links to meet the current demand with a bit of room for growth and supply another planned site at Caye Chapel.

Attached to this letter please find the manufacture's product description of the proposed equipment.

We remain open to address any questions or queries on the above at your earliest convenience.

Yours sincerely,

Victor M. Torres  
Manager – O&M and Transmission

- C: Mr. Miguel Ruiz – HOD – Network Services, Speednet Communications Limited  
Mr. Ernesto Torres – CEO, Speednet Communications Limited  
Mr. William Samuels – Specialist Telecommunications, Public Utilities Commission

## Public Utilities Commission

**Note for the guidance of Applicants for a Spectrum Authorization under the (Licensing Classification, Authorization and Fee Structure) Regulations, 2002 as amended from time to time.**

1. Unless the Commission states otherwise, two copies (one clearly marked **CONFIDENTIAL INFORMATION which will be for PUC use only and one excluding confidential information for public scrutiny**) of the completed application form should be provided in addition to a completed soft copy submission to [telecom@puc.bz](mailto:telecom@puc.bz). The application forms should be submitted in an envelope clearly marked "Application for Spectrum Authorization" addressed to:

The Public Utilities Commission  
2<sup>nd</sup> Floor, Marina Towers  
P.O. Box 300  
Belize City, Belize  
Central America

2. If any question is considered not applicable, please mark 'N/A' with further explanation if necessary.
3. The application fee for the License, and where appropriate, for the necessary Spectrum Authorization, must accompany an application in the form of a cheque made payable to the Public Utilities Commission in accordance with the Telecommunication (Licensing Classification, Authorization and Fee Structure) Regulations 2002 as amended from time to time.
4. Please note that the applicant is required to publish a notice of this application within 14 days after the making of the application in accordance with the Telecommunication (Licensing Classification, Authorization and Fee Structure) Regulation 2002 as amended from time to time.
5. Failure to comply with any of these requirements may render the application liable to disqualification without refund of the application fee(s).

APPLICATION FOR SPECTRUM AUTHORIZATION

1. PART I – THE APPLICANT

(Please complete fully in type or block letters)

1.1 Contact Details

1.1.1 Name and business address of applicant

**Speednet Communications Ltd.**  
**2 ½ Miles Northern Highway Belize City, Belize**

1.1.2 Designated contact person Victor Torres

1.1.3 Telephone Number 670 0090

1.1.4 Fax Number 223 1919

1.1.5 E-mail address (if available) vtorres@speednet-wireless.com

1.2 Business Details

1.2.1 If the applicant is a company, partnership, or other body please give the name(s) and private address (es) of each of the current directors, company secretary, or partners:

1.2.2 Name under which applicant proposes to trade, and registered office address if different to above:

**Not Applicable**

\_\_\_\_\_  
\_\_\_\_\_

1.2.3 In the case of a company or other body corporate, please attach a copy of the company's Registration Certificate.

**Certificate included along with this application**

1.2.4 Address in Belize for service of process or other notices (in case of overseas applicant)

**Not Applicable**

\_\_\_\_\_  
\_\_\_\_\_

**1.3 History of the Applicant**

1.3.1 Has the applicant ever applied for a Frequency Authorization or registration under any Act in Belize and been refused?

(YES) **NO** (NO)

\_\_\_\_\_

1.3.2 Has the applicant ever been issued a Frequency Authorization under the Telecommunications Act 2002?

(YES) (NO)

**YES**

1.3.3 If the answer to question 1.3.2 is YES, has any such Frequency Authorization been revoked?

(YES) (NO)

**NO**

\_\_\_\_\_  
\_\_\_\_\_

1.3.4 Has any Affiliate of the applicant previously been granted a Frequency Authorization under the Telecommunications Act 2002, which was revoked?

(YES) (NO)

NO

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1.3.5 Is the applicant the holder of a frequency authorization in any other country? If yes, please specify the country.

(YES) (NO)

NO

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1.3.6 Has the applicant or any Affiliate been refused a frequency authorization mentioned in question 1.3.5 above, or had a frequency authorization revoked?

(YES) (NO)

NO

1.3.7 Has the applicant operated under or carried on business under any name other than in this application?  
(If yes please attached company details)

(YES) (NO)

NO

2. PART II- THE APPLICANT'S BUSINESS AND THE PROPOSED NETWORK AND/OR SERVICE(S)

2.1 The Applicant

2.1.1 Please provide a diagrammatic representation of the applicant's group structure, including the percentage of shares held. Please indicate which affiliates have, or intend to apply for, other telecommunications licenses or frequency authorizations.

2.1.2 Does the applicant have any shareholdings in any other licensed telecommunications provider or frequency authorization holder in the Belize or elsewhere?

YES) (NO)

**NO**

2.1.3 Has any member of the applicant's managerial staff been bankrupt, or been a director of a company which has been insolvent?

(YES) (NO)

**NO**

If the answer is YES, please attach a certified copy of the discharge.

- 2.1.4 Has the applicant or any member of the applicant's managerial staff ever been the defendant or respondent in any proceedings in any court in any jurisdiction involving dishonesty, fraud, theft or violence, or is the applicant or any member of the applicant's managerial staff currently the subject of a charge or indictment under the law of any country for (contravention of any law or for) any conduct involving dishonesty, fraud, theft or violence?

(YES)                      (NO)  
NO

## 2.2 Applicant's Current Activities

Please provide answers to the following questions in relation to (a) the applicant's activities in Belize; (b) the applicant's activities elsewhere in the Caribbean; and (c) the applicant's activities elsewhere in the world.

### Networks

- 2.2.1 Please provide a summary of any radio-based infrastructure, which the applicant currently has in place.

*A Huawei supplied CDMA wireless network comprising a softswitch, one BSC, one packet data node, AAA platform, system management and 68 base stations that is providing Voice, SMS and EVDO Rev A services.*

*A ZTE supplied LTE wireless network comprising a EPC core, one RAN, system management and 80 base stations that is providing 4G Data services*

*A ZTE supplied UMTS wireless network comprising a core network, one RNC, system management and 95 base stations that is providing Voice, SMS and 3G Data services*

**Multiple microwave PTP licensed spectrum radio backhauls countrywide as listed in 2.2.2 below**

**A Cambium and Mimosa supplied FWA network operating in the RPUS band to provide Broadband services countrywide**

2.2.2 If the applicant is using radio frequency spectrum, please provide details of any frequency authorizations held, including the number of frequency authorizations and the reference number of each frequency authorization.

**CDMA Carriers 283, 241, 199, approved on 16<sup>th</sup> September 2004.**

**CDMA Carrier 157 approved on 15<sup>th</sup> April 2010.**

**Point to Point 7 GHz Radio Links approved 2<sup>nd</sup> August 2010 Ref PUC/TELECOM/DT/S25 (05) 2010**

**Point to Point 7 GHz Radio Links approved 4<sup>th</sup> June 2012 Ref PUC/TELECOM/DT/S25 (01) 2012**

**Point to Point 7 GHz Radio Links approved 12<sup>th</sup> October 2012 Ref PUC/TELECOM/DT/S25 (02) 2012**

**LTE Carrier approved 29<sup>th</sup> July 2013**

**Point to Point 7 GHz Radio Link approved 30<sup>th</sup> October 2013 Ref PUC/TELECOM/DT/S25 (02) 2013**

**Point to Point 7 GHz Radio Links approved 30<sup>th</sup> December 2013 Ref PUC/TELECOM/DT/S25 (03) 2013**

**Point to Point 7 GHz Radio Links approved 6<sup>th</sup> July 2015 Ref PUC/TELECOM/DT/S25 (01) 2015**

**UMTS Carrier approved 17<sup>th</sup> February 2016**

**Point to Point 7 GHz Radio Links approved 2<sup>nd</sup> October 2017 Ref PUC/TELECOM/DT/S25 (01) 2017**



**Point to Point 7 GHz Radio Links approved 7<sup>th</sup> May 2019 Ref  
PUC/TELECOM/DT/S25 (04) 2019**

**Point to Point 7 GHz Radio Links approved 5<sup>th</sup> August 2019 Ref  
PUC/TELECOM/DT/S25 (008) 2019**

**Point to Point 7 GHz Radio Links approved 7<sup>th</sup> October 2019 Ref  
PUC/TELECOM/DT/S25 (010) 2019**

**Point to Point 7 GHz Radio Links approved 26<sup>th</sup> March 2020 Ref  
PUC/TELECOM/DT/S25 (005) 2020**

**Point to Point 7 GHz Radio Links approved 19<sup>th</sup> December 2022 Ref  
PUC/TELECOM/DT/S25 (009) 2022**

**Point to Point 7 GHz Radio Links approved 26<sup>th</sup> September 2023 Ref  
PUC/TELECOM/DT/S25 (018) 2023**

**LTE Carrier approved 5<sup>th</sup> June 2024  
PUC/TELECOM/DRS/S25 (012) 2024**

## Services

2.2.3 Please provide details of the services currently being provided by the applicant through its existing radio-based infrastructure.

***Voice postpaid and prepaid (national and international), SMS, Voicemail, mobile Internet, inbound international roaming, dedicated internet, private lines and wireless broadband Internet***

## Obligations

2.2.4 Please provide details of how the applicant currently complies with any other emissions of electromagnetic radiation from equipment of any description.

- **Adherence to Manufacturer's recommended and documented scheduled preventative maintenance activities inclusive of:**
  - **Antenna and Line System Sweeps**
  - **Antenna azimuth and tilt field verifications**

### 2.3 Applicant's Proposed Activities

#### Radio communication Station

2.3.1 Is the frequency authorization for which the applicant is applying to be used in relation to a satellite earth station?

(YES)                      (NO)  
**NO**

2.3.2 If the answer to question 2.3.1 is YES, please provide the following information: (Not Applicable)

(a) A letter from the satellite provider, indicating its contact person and any assigned frequencies for the proposed service and the station to be communicated with.

(b) A copy of the manufacturer's technical specification for the transmitter, receiver and antenna.

(c) The following information in respect of the satellite earth station receiving characteristics:

(i) Make and model

- (ii) Assigned frequencies (downlink)
  - (iii) Assigned frequency band
  - (iv) Date of bringing into use
  - (v) Location of station, including country and geographic coordinates
  - (vi) Class of emission
  - (vii) Antenna size, antenna gain and receive G/T
  - (viii) Horizontal elevation angle and min/max elevation angle
  - (ix) Azimuth
  - (x) Altitude
  - (xi) Polarization
  - (xii) Receive noise temperature
  - (xiii) Regular hours of operation
  - (xiv) Maintenance of system
- (d) The following information in respect of the satellite earth station transmitting characteristics:
- (i) Make and model
  - (ii) Assigned frequencies (uplink)
  - (iii) Assigned frequency band
  - (iv) Proposed date of bringing into use

- (v) Transmitter power, including saturated transmitter power and maximum radiated power
- (vi) Antenna gain
- (vii) Polarization
- (viii) Modulation (including FDM-FM, PCM/PSK, TV, and other)
- (ix) Regular hours of operation
- (x) Agreements with satellite provider
- (xi) Operating satellite
- (xii) Name of receiving earth station
- (xiii) Location of receiving earth station.

2.3.3

Please provide a summary of the radio-based infrastructure that the applicant is planning to put in place within the next (three) years. In particular, please provide details of the proposed Radiocommunication Station, including:

**Purpose of application (what is being applied for)?**

Expanding the capacity to Caye Caulker, the hub to San Pedro and Caye Chapel, for projected demand and future developments (additional sites).

**Notes:**

**These are point to point radio links; so it is used for the Transmission Backhaul and transport all the Services that are provide by SPEEDNET in these Sites. There is no coverage map applicable. We do not have any immediate plans to expand radio based infrastructure.**

(a) Geographical location (GPS Coordinates and Coverage Map )

| Link # | Location A   | Coordinates A                   | Location B   | Coordinates B                   |
|--------|--------------|---------------------------------|--------------|---------------------------------|
| 1      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 2      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 3      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 4      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 5      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 6      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 7      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 8      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 9      | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 10     | Belize City  | 17°30'31.92"N;<br>88°12'55.68"W | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W |
| 11     | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W | San Pedro    | 17°56'8.64"N;<br>87°57'14.10"W  |
| 12     | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W | San Pedro    | 17°56'8.64"N;<br>87°57'14.10"W  |
| 13     | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W | Caye Chapel  | 17°42'33.39"N;<br>88° 2'24.28"W |
| 14     | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W | Caye Chapel  | 17°42'33.39"N;<br>88° 2'24.28"W |
| 15     | Caye Caulker | 17°44'36.24"N;<br>88° 1'34.44"W | Caye Chapel  | 17°42'33.39"N;<br>88° 2'24.28"W |

**Notes:**

These are point to point radio links; so it is used for the Transmission Backhaul and transport all the Services that are provide by SPEEDNET in these Sites. There is no coverage map applicable. We do not have any immediate plans to expand radio based infrastructure.

- (b) Type of equipment and system (including manufacturer, model number, FCC Certificate & Current/Valid Type Approval).

Brand and Model of radio unit.

*Belize City- Ceragon IP20N radios*  
*Caye Caulker – Ceragon IP20N radios*  
*Caye Chapel – Ceragon IP20N radios*

Note: Applicant must include in soft copy the Vendor provided Technical Description Documentation of the equipment and system.

- (c) Radio frequency and direction of frequency (whether link applied for is uni-directional or bi-directional, and relevant transmission details?)

Requesting Adjacent Channel use following  
 ITU-R F.385-10 Recommends 6 for Links 1 – 4, 11-12 and  
 ITU-R F.386-9 Recommends 4 for Links 5 -10 as per below table.

| Link # | Location A  | Transmit Freq A (MHz) | Recommends 6 | Location B   | Transmit Freq B (MHz) | Recommends 6 | Channel Spacing |
|--------|-------------|-----------------------|--------------|--------------|-----------------------|--------------|-----------------|
| 1      | Belize City | 7438.5                | 7452.5       | Caye Caulker | 7599.5                | 7613.5       | 56              |
| 2      | Belize City | 7466.5                |              | Caye Caulker | 7627.5                |              |                 |
| 3      | Belize City | 7494.5                | 7508.5       | Caye Caulker | 7655.5                | 7669.5       | 56              |
| 4      | Belize City | 7522.5                |              | Caye Caulker | 7683.5                |              |                 |
| Link # | Location A  | Transmit Freq A (MHz) | Recommends 4 | Location B   | Transmit Freq B (MHz) | Recommends 4 | Channel Spacing |
| 5      | Belize City | 7803                  | 7817         | Caye Caulker | 8086.5                | 8100.5       | 56              |
| 6      | Belize City | 7831                  |              | Caye Caulker | 8114.5                |              |                 |
| 7      | Belize City | 7859                  | 7873         | Caye Caulker | 8142.5                | 8156.5       | 56              |
| 8      | Belize City | 7887                  |              | Caye Caulker | 8170.5                |              |                 |

|               |                   |                              |      |                   |                              |        |                        |
|---------------|-------------------|------------------------------|------|-------------------|------------------------------|--------|------------------------|
| 9             | Belize City       | 7915                         | 7929 | Caye Caulker      | 8198.5                       | 8212.5 | 56                     |
| 10            | Belize City       | 7943                         |      | Caye Caulker      | 8226.5                       |        |                        |
| <b>Link #</b> | <b>Location A</b> | <b>Transmit Freq A (MHz)</b> |      | <b>Location B</b> | <b>Transmit Freq B (MHz)</b> |        | <b>Channel Spacing</b> |
| 11            | Caye Caulker      | 7438.5                       |      | San Pedro         | 7599.5                       |        | 28                     |
| 12            | Caye Caulker      | 7466.5                       |      | San Pedro         | 7627.5                       |        | 28                     |
| <b>Link #</b> | <b>Location A</b> | <b>Transmit Freq A (MHz)</b> |      | <b>Location B</b> | <b>Transmit Freq B (MHz)</b> |        | <b>Channel Spacing</b> |
| 13            | Caye Caulker      | 10835                        |      | Caye Chapel       | 11365                        |        | 40                     |
| 14            | Caye Caulker      | 10875                        |      | Caye Chapel       | 11405                        |        | 40                     |
| 15            | Caye Caulker      | 10915                        |      | Caye Chapel       | 11445                        |        | 40                     |

*Note: Request for Point-to-Point authorizations must conform to the 2020 Order:*

*Belize Radio Frequency Channelization for Point-to-Point links. <https://www.puc.bz/2020-belize-radio-frequency-channelization-for-point-to-point-links/>*

*Applicant is required to identify the Lower and Upper edge frequencies applicable to requested range, transmitter location name and coordinates.*

| Link # | Location A   | Start Freq. (MHz) | Transmit Freq A (MHz) | End Freq. (MHz) | Location B   | Start Freq. (MHz) | Transmit Freq B (MHz) | End Freq. (MHz) |
|--------|--------------|-------------------|-----------------------|-----------------|--------------|-------------------|-----------------------|-----------------|
| 1      | Belize City  | 7424.5            | 7438.5                | 7452.5          | Caye Caulker | 7585.5            | 7599.5                | 7613.5          |
| 2      | Belize City  | 7452.5            | 7466.5                | 7480.5          | Caye Caulker | 7613.5            | 7627.5                | 7641.5          |
| 3      | Belize City  | 7480.5            | 7494.5                | 7508.5          | Caye Caulker | 7641.5            | 7655.5                | 7669.5          |
| 4      | Belize City  | 7508.5            | 7522.5                | 7536.5          | Caye Caulker | 7669.5            | 7683.5                | 7697.5          |
| 5      | Belize City  | 7789              | 7803                  | 7817            | Caye Caulker | 8072.5            | 8086.5                | 8100.5          |
| 6      | Belize City  | 7817              | 7831                  | 7845            | Caye Caulker | 8100.5            | 8114.5                | 8128.5          |
| 7      | Belize City  | 7845              | 7859                  | 7873            | Caye Caulker | 8128.5            | 8142.5                | 8156.5          |
| 8      | Belize City  | 7873              | 7887                  | 7901            | Caye Caulker | 8156.5            | 8170.5                | 8184.5          |
| 9      | Belize City  | 7901              | 7915                  | 7929            | Caye Caulker | 8184.5            | 8198.5                | 8212.5          |
| 10     | Belize City  | 7929              | 7943                  | 7957            | Caye Caulker | 8212.5            | 8226.5                | 8240.5          |
| 11     | Caye Caulker | 7424.5            | 7438.5                | 7452.5          | San Pedro    | 7585.5            | 7599.5                | 7613.5          |
| 12     | Caye Caulker | 7452.5            | 7466.5                | 7480.5          | San Pedro    | 7613.5            | 7627.5                | 7641.5          |
| 13     | Caye Caulker | 10815             | 10835                 | 10855           | Caye Chapel  | 11345             | 11365                 | 11385           |

|    |              |       |       |       |             |       |       |       |
|----|--------------|-------|-------|-------|-------------|-------|-------|-------|
| 14 | Caye Caulker | 10855 | 10875 | 10895 | Caye Chapel | 11385 | 11405 | 11425 |
| 15 | Caye Caulker | 10895 | 10915 | 10935 | Caye Chapel | 11425 | 11445 | 11465 |

(d) Transmission power level

**Maximum 37 dBm**

(e) Preferred polarization of emissions (i.e. vertical, horizontal, co-channel dual polar)

**Horizontal & Vertical (XPIC)**

(f) Preferred equipment carrier frequency range for channel assignment  
Equipment tuning range: lower frequency to upper frequency

**Equipment can operate within the following range:**

**7.093 GHz – 8.500 GHz  
10.125 GHz – 11.700 GHz**

(g) Is system intended to be duplicated? (If Yes, please Specify)

**No**

(h) Type of antenna, including details of antenna height

| Link No. | Location A  | Antenna A                     | Location B   | Antenna B                     |
|----------|-------------|-------------------------------|--------------|-------------------------------|
|          |             | Model; Gain (dBi); Height (M) |              | Model; Gain (dBi), Height (M) |
| 1        | Belize City | USX10-7W-2GF; 44.4 dBi; 38:   | Caye Caulker | USX10-7W-2GF; 44.4 dBi; 42:   |
| 2        |             |                               |              |                               |





|    |              |                                |             |                                |
|----|--------------|--------------------------------|-------------|--------------------------------|
| 3  |              | USX10-7W-2GF; 44.4 dBi; 28     |             | USX10-7W-2GF; 44.4 dBi; 32     |
| 4  |              |                                |             |                                |
| 5  |              |                                |             |                                |
| 6  |              |                                |             |                                |
| 7  |              |                                |             |                                |
| 8  |              |                                |             |                                |
| 9  |              |                                |             |                                |
| 10 |              |                                |             |                                |
| 11 | Caye Caulker | WTC18-W71S (TR): 40.6; 25:     | San Pedro   | WTC18-W71S (TR): 40.6; 25:     |
| 12 |              | WTC18-W71S (TR): 40.6; 15:     |             | WTC18-W71S (TR): 40.6; 15:     |
| 13 | Caye Caulker | VHLPX4-11W-6WH/A; 40.7 dBi; 19 | Caye Chapel | VHLPX4-11W-6WH/A; 40.7 dBi; 13 |
| 14 |              |                                |             |                                |
| 15 |              |                                |             |                                |

**Note: Applicant must include in soft copy the Vendor provided Technical Specifications for the proposed antenna(s)**

(i) Station ID (if applicable)

| Site No. | Station      | Station ID |
|----------|--------------|------------|
| 1        | Belize City  | BEN_01     |
| 2        | Caye Caulker | CCK_01     |
| 3        | San Pedro    | SPVC_01    |
| 4        | Caye Chapel  | CCH_01     |

(j) Address of location from where equipment is to be operated (if different from Radiocommunication Station's location).

**Not Applicable**

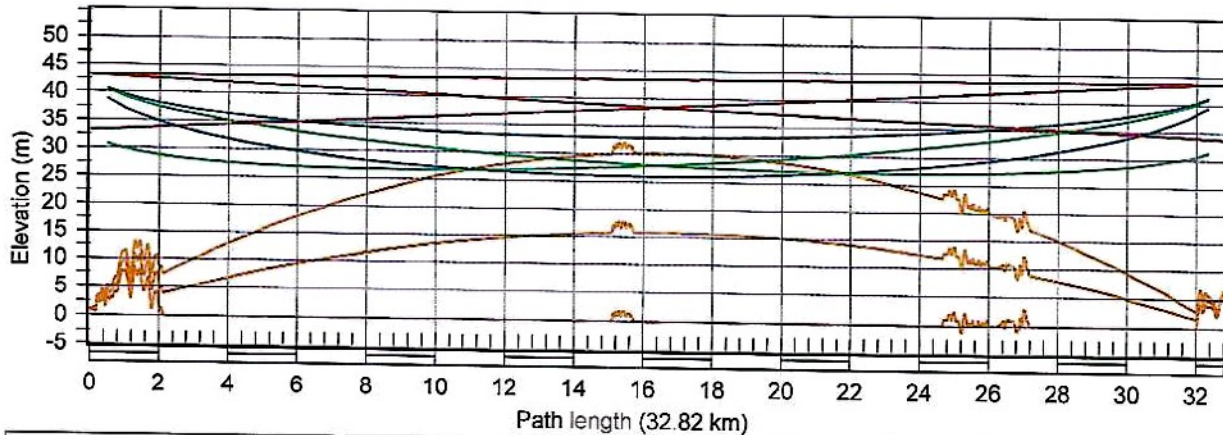
(k) Radio frequency feeder loss and hot-standby loss, rounded up to nearest dB. Any radio frequency feeder loss over 10 dB or hot-standby loss over 4 dB must be justified.

**Not Applicable – split mount unit using IF cable and not RF feeder loss**

- (l) Guaranteed maximum boresight gain relative to an isotropic radiator for any antenna specified rounded up to nearest dB.

**Not Applicable**

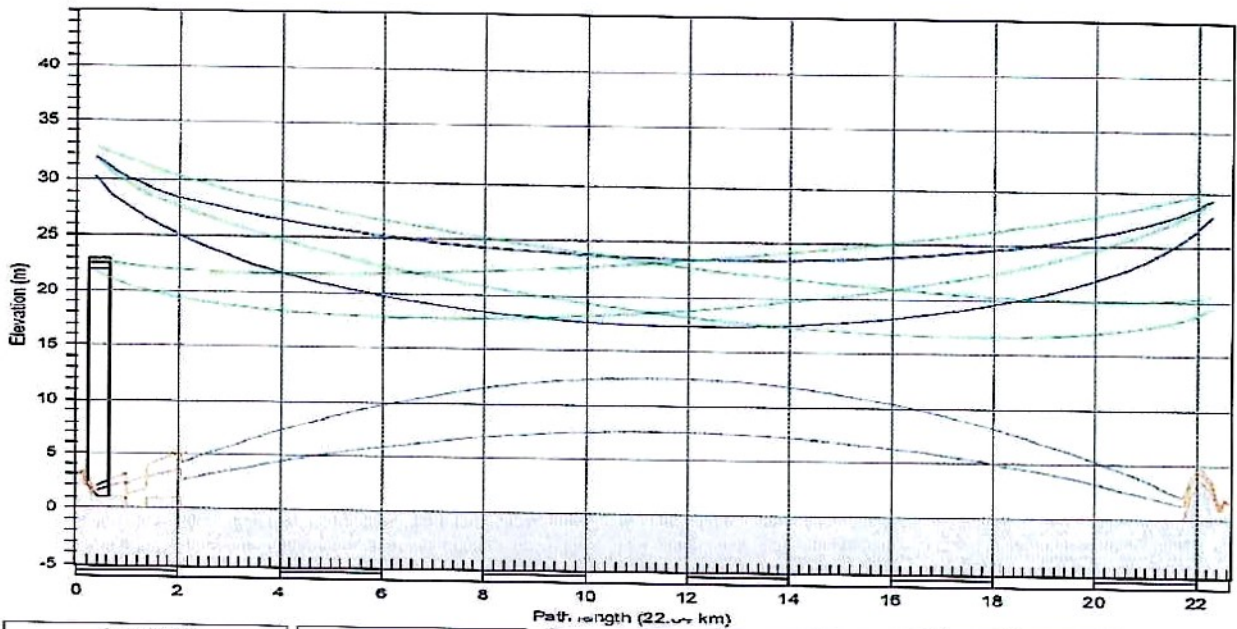
- (m) Path profile for the proposed point-to-point link(s).



| Caye Caulker |                  |
|--------------|------------------|
| Latitude     | 17 44 36.24 N    |
| Longitude    | 088 01 34.44 W   |
| Azimuth      | 217.76°          |
| Elevation    | 1 m ASL          |
| Antenna CL   | 42.0, 32.0 m AGL |

|                 |                        |
|-----------------|------------------------|
| Frequency (MHz) | = 8042.0               |
| K               | = 1.33, 0.70           |
| %F1             | = 100.00, 60.00, 60.00 |

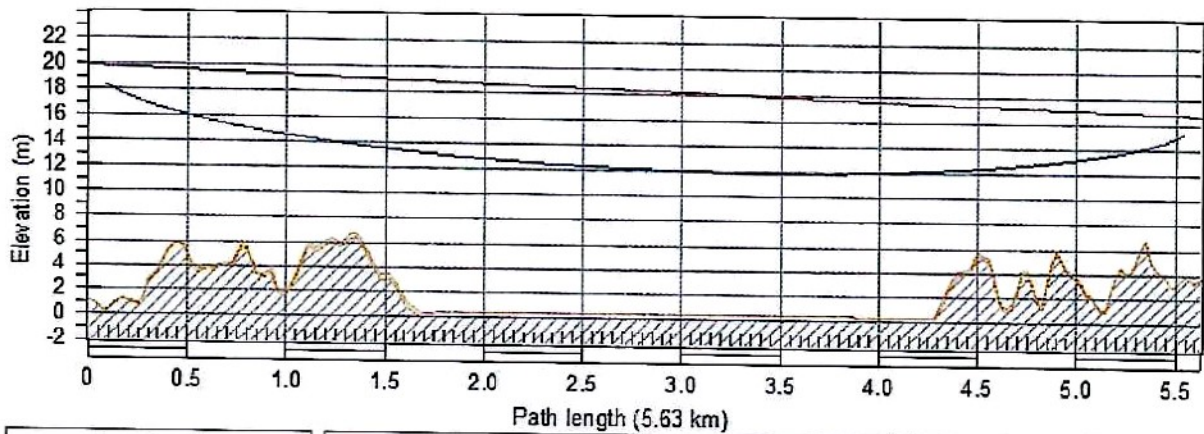
| Bennys     |                  |
|------------|------------------|
| Latitude   | 17 30 31.92 N    |
| Longitude  | 088 12 55.68 W   |
| Azimuth    | 37.70°           |
| Elevation  | 6 m ASL          |
| Antenna CL | 38.0, 28.0 m AGL |



**San Pedro**  
 Latitude 17 56 09.17 N  
 Longitude 087 57 14.01 W  
 Azimuth 199.81°  
 Elevation 3 m ASL  
 Antenna CL 31.0, 21.0 m AGL

Frequency (MHz) = 7200.0  
 K = 1.33, 0.80  
 %F1 = 0.00, 60.00, 60.00, 30.00

**Caye Caulker**  
 Latitude 17 44 36.24 N  
 Longitude 088 01 34.44 W  
 Azimuth 19.79°  
 Elevation 1 m ASL  
 Antenna CL 30.0, 20.0 m AGL



**Caye Caulker**  
 Latitude 17 44 36.24 N  
 Longitude 088 01 34.44 W  
 Azimuth 199.13°  
 Elevation 1 m ASL  
 Antenna CL 18.8 m AGL

Frequency (MHz) = 11020.0  
 K = 1.33  
 %F1 = 100.00

**Caye Chapel**  
 Latitude 17 41 43.25 N  
 Longitude 088 02 37.04 W  
 Azimuth 19.12°  
 Elevation 4 m ASL  
 Antenna CL 13.0 m AGL

(n) Throughput capacity for the proposed link(s).

|                           | TX power (dBm) |              | RX threshold level (dBm) |               | EIRP (dBm)   |              | Receive signal (dBm) |               | Thermal fade margin (dB) |              | Flat fade margin - multipath (dB) |              |
|---------------------------|----------------|--------------|--------------------------|---------------|--------------|--------------|----------------------|---------------|--------------------------|--------------|-----------------------------------|--------------|
|                           |                |              |                          |               |              |              |                      |               |                          |              |                                   |              |
| 4KQAM 503-615Mbps         | 35.00          | 35.00        | -49.35                   | -49.35        | 72.90        | 72.90        | -30.32               | -30.32        | 19.53                    | 19.53        | 19.42                             | 19.42        |
| 2KQAM 467-571Mbps         | 37.00          | 37.00        | -53.05                   | -53.05        | 74.90        | 74.90        | -28.32               | -28.32        | 25.23                    | 25.23        | 25.01                             | 25.01        |
| <b>1KHQAM 448-547Mbps</b> | <b>38.00</b>   | <b>38.00</b> | <b>-54.85</b>            | <b>-54.85</b> | <b>75.90</b> | <b>75.90</b> | <b>-27.32</b>        | <b>-27.32</b> | <b>28.03</b>             | <b>28.03</b> | <b>27.68</b>                      | <b>27.68</b> |
| 1KLQAM 421-515Mbps        | 38.00          | 38.00        | -55.95                   | -55.95        | 75.90        | 75.90        | -27.32               | -27.32        | 29.13                    | 29.13        | 28.76                             | 28.76        |
| 512QAM 396-485Mbps        | 39.00          | 39.00        | -59.45                   | -59.45        | 76.90        | 76.90        | -26.32               | -26.32        | 33.63                    | 33.63        | 32.55                             | 32.55        |
| 256QAM 354-433Mbps        | 39.00          | 39.00        | -61.75                   | -61.75        | 76.90        | 76.90        | -26.32               | -26.32        | 35.93                    | 35.93        | 34.23                             | 34.23        |
| 128QAM 309-378Mbps        | 41.00          | 41.00        | -64.95                   | -64.95        | 78.90        | 78.90        | -24.32               | -24.32        | 41.13                    | 41.13        | 36.88                             | 36.88        |
| 64QAM 259-317Mbps         | 41.00          | 41.00        | -67.85                   | -67.85        | 78.90        | 78.90        | -24.32               | -24.32        | 44.03                    | 44.03        | 37.84                             | 37.84        |
| 32QAM 220-269Mbps         | 43.00          | 43.00        | -70.75                   | -70.75        | 80.90        | 80.90        | -22.32               | -22.32        | 48.93                    | 48.93        | 38.61                             | 38.61        |
| 16QAM 166-202Mbps         | 43.00          | 43.00        | -74.35                   | -74.35        | 80.90        | 80.90        | -22.32               | -22.32        | 52.53                    | 52.53        | 37.88                             | 37.88        |
| 8QAM 119-145Mbps          | 43.00          | 43.00        | -77.35                   | -77.35        | 80.90        | 80.90        | -22.32               | -22.32        | 55.53                    | 55.53        | 38.55                             | 38.55        |
| 4QAM 74-91Mbps            | 43.00          | 43.00        | -81.25                   | -81.25        | 80.90        | 80.90        | -22.32               | -22.32        | 59.43                    | 59.43        | 39.00                             | 39.00        |
| BPSK 30-37Mbps            | 43.00          | 43.00        | -88.30                   | -88.30        | 80.90        | 80.90        | -22.32               | -22.32        | 66.48                    | 66.48        | 44.26                             | 44.26        |

Expected Throughput – Belize City to Caye Caulker (7 & 8GHz) per Channel (56MHz)

|                           | TX power (dBm) |              | RX threshold level (dBm) |               | EIRP (dBm)   |              | Receive signal (dBm) |               | Thermal fade margin (dB) |              | Flat fade margin - multipath (dB) |              |
|---------------------------|----------------|--------------|--------------------------|---------------|--------------|--------------|----------------------|---------------|--------------------------|--------------|-----------------------------------|--------------|
|                           |                |              |                          |               |              |              |                      |               |                          |              |                                   |              |
| 4KQAM 259-317Mbps         | 35.00          | 35.00        | -52.15                   | -52.15        | 69.60        | 69.60        | -33.55               | -33.55        | 19.10                    | 19.10        | 17.45                             | 17.45        |
| 2KQAM 239-292Mbps         | 37.00          | 37.00        | -55.65                   | -55.65        | 71.60        | 71.60        | -31.55               | -31.55        | 24.60                    | 24.60        | 21.72                             | 21.72        |
| 1KHQAM 222-271Mbps        | 38.00          | 38.00        | -58.15                   | -58.15        | 72.60        | 72.60        | -30.55               | -30.55        | 28.10                    | 28.10        | 24.38                             | 24.38        |
| 1KLQAM 203-248Mbps        | 38.00          | 38.00        | -59.05                   | -59.05        | 72.60        | 72.60        | -30.55               | -30.55        | 29.00                    | 29.00        | 24.76                             | 24.76        |
| <b>512QAM 180-220Mbps</b> | <b>39.00</b>   | <b>39.00</b> | <b>-61.95</b>            | <b>-61.95</b> | <b>73.60</b> | <b>73.60</b> | <b>-29.55</b>        | <b>-29.55</b> | <b>32.90</b>             | <b>32.90</b> | <b>27.94</b>                      | <b>27.94</b> |
| 256QAM 177-217Mbps        | 39.00          | 39.00        | -64.55                   | -64.55        | 73.60        | 73.60        | -29.55               | -29.55        | 35.50                    | 35.50        | 29.56                             | 29.56        |
| 128QAM 155-189Mbps        | 41.00          | 41.00        | -67.55                   | -67.55        | 75.60        | 75.60        | -27.55               | -27.55        | 40.50                    | 40.50        | 31.13                             | 31.13        |
| 64QAM 126-154Mbps         | 41.00          | 41.00        | -70.65                   | -70.65        | 75.60        | 75.60        | -27.55               | -27.55        | 43.60                    | 43.60        | 31.59                             | 31.59        |
| 32QAM 103-126Mbps         | 43.00          | 43.00        | -73.75                   | -73.75        | 77.60        | 77.60        | -25.55               | -25.55        | 48.70                    | 48.70        | 32.86                             | 32.86        |
| 16QAM 76-93Mbps           | 43.00          | 43.00        | -77.25                   | -77.25        | 77.60        | 77.60        | -25.55               | -25.55        | 52.20                    | 52.20        | 34.20                             | 34.20        |
| 8QAM 55-67Mbps            | 43.00          | 43.00        | -80.15                   | -80.15        | 77.60        | 77.60        | -25.55               | -25.55        | 55.10                    | 55.10        | 35.92                             | 35.92        |
| 4QAM 35-43Mbps            | 43.00          | 43.00        | -84.05                   | -84.05        | 77.60        | 77.60        | -25.55               | -25.55        | 59.00                    | 59.00        | 32.96                             | 32.96        |
| BPSK 15-18Mbps            | 43.00          | 43.00        | -91.10                   | -91.10        | 77.60        | 77.60        | -25.55               | -25.55        | 66.05                    | 66.05        | 38.72                             | 38.72        |

Expected Throughput – Caye Caulker to San Pedro Link (7 GHz) per Channel (28 MHz)

|                       | TX power (dBm) |       | RX threshold level (dBm) |        | EIRP (dBm) |       | Receive signal (dBm) |        | Thermal fade margin (dB) |       | Flat fade margin - multipath (dB) |       |
|-----------------------|----------------|-------|--------------------------|--------|------------|-------|----------------------|--------|--------------------------|-------|-----------------------------------|-------|
| 4KQAM 369-451Mbps     | 29.00          | 29.00 | -51.45                   | -51.45 | 66.70      | 66.70 | -24.01               | -24.01 | 27.44                    | 27.44 | 27.44                             | 27.44 |
| 2KQAM 349-427Mbps     | 31.00          | 31.00 | -54.55                   | -54.55 | 68.70      | 68.70 | -22.01               | -22.01 | 32.54                    | 32.54 | 32.54                             | 32.54 |
| 1KHQAM<br>323-394Mbps | 31.00          | 31.00 | -56.85                   | -56.85 | 68.70      | 68.70 | -22.01               | -22.01 | 34.84                    | 34.84 | 34.84                             | 34.84 |
| 1KLOAM 303-371Mbps    | 31.00          | 31.00 | -57.55                   | -57.55 | 68.70      | 68.70 | -22.01               | -22.01 | 35.54                    | 35.54 | 35.54                             | 35.54 |
| 512QAM 267-327Mbps    | 32.00          | 32.00 | -61.05                   | -61.05 | 69.70      | 69.70 | -21.01               | -21.01 | 40.04                    | 40.04 | 40.04                             | 40.04 |
| 256QAM 244-298Mbps    | 32.00          | 32.00 | -63.85                   | -63.85 | 69.70      | 69.70 | -21.01               | -21.01 | 42.84                    | 42.84 | 42.84                             | 42.84 |
| 128QAM 227-277Mbps    | 33.00          | 33.00 | -66.15                   | -66.15 | 70.70      | 70.70 | -20.01               | -20.01 | 46.14                    | 46.14 | 46.14                             | 46.14 |
| 64QAM 187-228Mbps     | 34.00          | 34.00 | -69.15                   | -69.15 | 71.70      | 71.70 | -19.01               | -19.01 | 50.14                    | 50.14 | 50.14                             | 50.14 |
| 32QAM 152-185Mbps     | 35.00          | 35.00 | -72.25                   | -72.25 | 72.70      | 72.70 | -18.01               | -18.01 | 54.24                    | 54.24 | 54.24                             | 54.24 |
| 16QAM 114-140Mbps     | 35.00          | 35.00 | -75.65                   | -75.65 | 72.70      | 72.70 | -18.01               | -18.01 | 57.64                    | 57.64 | 57.64                             | 57.64 |
| 8QAM 83-102Mbps       | 35.00          | 35.00 | -78.55                   | -78.55 | 72.70      | 72.70 | -18.01               | -18.01 | 60.54                    | 60.54 | 60.54                             | 60.54 |
| 4QAM 55-67Mbps        | 36.00          | 36.00 | -82.55                   | -82.55 | 73.70      | 73.70 | -17.01               | -17.01 | 65.54                    | 65.54 | 65.54                             | 65.54 |
| BPSK 26-31Mbps        | 36.00          | 36.00 | -90.00                   | -90.00 | 73.70      | 73.70 | -17.01               | -17.01 | 72.99                    | 72.99 | 72.99                             | 72.99 |

Expected Throughput – Caye Caulker to Caye Chapel (11 GHz) per Channel (40 MHz)

### Services

#### 2.3.4

Please provide a description of the service, which the applicant proposes to provide using the frequency band for which it is applying. (Including an Architectural Diagram).

#### Ethernet and inter-site traffic backhaul

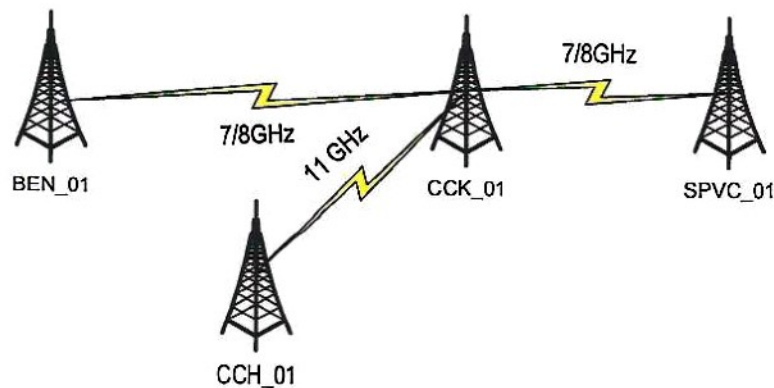


Figure 2.3.4a – Network Diagram of Belize City to Caye Caulker, Caye Caulker to San Pedro and Caye Caulker to Caye Chapel

## Obligations

- 2.3.5 Please provide details of how the applicant proposes to comply with the obligations in the frequency authorization (and in the Frequency Authorization Regulations) in respect of harmful interference, and any other technical regulations in respect of emissions of electromagnetic radiation from equipment of any description.

*The Frequency assignments being applied for are expected to be assigned by the PUC based on ITU or other designated channelization plan as part of the national spectrum plan. Licensed operators should thus not operate outside spectrum diminishing the possibility for harmful interference.*

*The equipment is also compliant with:*

- ETSI EN 301 489-1
- ETSI EN 301 489-4
- CISPR 22

PART III

DECLARATION BY THE APPLICANT

Application is hereby made on behalf of Speednet Communications Ltd. For the issue of an Authorization to install, hold and use wireless sending and receiving apparatus – as detailed above – for the purposes stated.

In accordance with the Belize Telecommunications Act, 2002 and any other Regulations thereunder, I accept responsibility for the installation, maintenance and operation of the system if approved.

I confirm that no change will be made in any of the foregoing without prior approval of The Public Utilities Commission.

Signature of applicant: \_\_\_\_\_



Name in Block Letters: VICTOR M. TORRES

Date: 24/10/2024

THE APPLICANT/LICENSEE SHOULD BE AWARE THAT HE/SHE IS RESPONSIBLE IN LAW FOR THE RADIO SYSTEM AND ITS OPERATION REGARDLESS OF WHO SUPPLIES THE EQUIPMENT OR WHO OPERATES IT ON HIS/HER BEHALF

The completed Application Form and the appropriate fee should be submitted to: Office of the Chairman of Public Utilities Commission, P. O. Box 300, Belize City, Belize.