



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. The application forms should be submitted in an envelope clearly marked "Application for Spectrum Authorization" addressed to:

The Public Utilities Commission
2nd 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 David Gibson

1.1.3 Telephone Number 670 5585

1.1.4 Fax Number 223 1919

1.1.5 E-mail address (if available) **dgibson@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

- 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

- 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 16th September 2004.

CDMA Carrier 157 approved on 15th April 2010.

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

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

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

LTE Carrier approved 29th July 2013

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

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

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

UMTS Carrier approved 17th February 2016

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

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

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

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

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

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

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

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

Radiocommunication 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)?

Speednet desires to expand its 4G mobile network by deploying 4G data service in band 5 using a 5MHz bandwidth

within the frequency range 829 MHz – 835 MHz for uplink and 874 MHz – 880 MHz for downlink.

This upgrade will allow Speednet to provide improved connections and data speeds to its customers countrywide.

Target Cell Sites for 4G Mobile Deployment

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

#	Site Name	Location	Coordinates	
1	Gales Point	Belize District	17°10'13.50"N	88°19'48.84"W
2	Crooked Tree Village	Belize District	17°46'57.88"N	88°32'10.88"W
3	Maskall	Belize District	17°52'33.68"N	88°18'48.71"W
4	Benque Viejo	Benque Viejo	17° 4'49.74"N	89° 7'50.82"W
5	Santander	Cayo District	17°20'4.73"N	88°44'16.52"W
6	Los Tambos	Cayo District	17°19'57.53"N	88°59'54.54"W
7	Bullet Tree	Cayo District	17°10'0.09"N	89° 6'46.08"W
8	Jaguar Paw	Cayo District	17°12'14.78"N	88°39'9.63"W
9	Santa Familia	Cayo District	17°11'18.93"N	89° 4'21.13"W
10	Sarteneja	Corozal District	18°21'9.25"N	88° 8'12.39"W
11	Little Belize	Corozal District	18°10'36.61"N	88°20'43.97"W
12	Chunox	Corozal District	18°17'20.39"N	88°21'29.19"W
13	Copper Bank	Corozal District	18°19'19.73"N	88°21'11.70"W
14	Patchakan	Corozal District	18°23'52.64"N	88°28'42.69"W
15	Xaibe	Corozal District	18°23'3.36"N	88°26'12.62"W
16	Consejo	Corozal District	18°27'8.51"N	88°18'28.49"W
17	Libertad	Corozal District	18°18'14.07"N	88°27'22.79"W
18	Caledonia	Corozal District	18°13'36.41"N	88°28'39.23"W
19	Progreso	Corozal District	18°14'31.97"N	88°23'56.05"W

20	Guinea Grass	Orange Walk District	17°57'59.77"N	88°36'10.62"W
21	San Felipe	Orange Walk District	17°52'28.21"N	88°46'36.16"W
22	San Roman Rio Hondo	Orange Walk District	18°11'31.53"N	88°38'33.76"W
23	Lamanai	Orange Walk District	17°45'6.46"N	88°39'17.44"W
24	De Stemm Radio	Orange Walk District	17°56'50.70"N	88°43'56.68"W
25	Shipyard	Orange Walk District	17°56'4.68"N	88°39'35.90"W
26	Indian Creek OW	Orange Walk District	17°45'7.61"N	88°44'24.56"W
27	Fire Burn	Orange Walk District	17°52'17.15"N	88°37'28.69"W
28	San Estevan	Orange Walk District	18° 8'42.42"N	88°30'54.36"W
29	Yo Creek	Orange Walk District	18° 5'3.85"N	88°37'59.67"W
30	Santa Martha	Orange Walk District	17°58'11.14"N	88°22'54.77"W
31	San Lazaro	Orange Walk District	18° 2'9.77"N	88°39'52.12"W
32	Cuatro Leguas	Orange Walk District	17°54'24.71"N	88°57'40.63"W
33	Tres Leguas	Orange Walk District	17°52'46.40"N	88°56'52.37"W
34	Blue Creek	Orange Walk District	17°53'42.15"N	88°54'11.90"W
35	San Ignacio	San Ignacio Town	17° 8'50.93"N	89° 4'30.37"W
36	Bedran	San Ignacio Town	17° 9'22.76"N	89° 4'11.20"W
37	San Ignacio North	San Ignacio Town	17° 9'26.46"N	89° 4'39.31"W
38	Santa Elena	Santa Elena Town	17° 9'25.26"N	89° 2'52.98"W
39	Maya Center	Stann Creek District	16°47'54.39"N	88°22'50.80"W
40	San Roman Stann Creek	Stann Creek District	16°39'38.53"N	88°27'53.93"W
41	Red Bank	Stann Creek District	16°37'3.89"N	88°33'29.05"W
42	San Antonio Toledo	Toledo District	16°14'21.86"N	89° 1'27.87"W
43	San Pedro Columbia	Toledo District	16°16'9.28"N	88°57'10.63"W
44	San Miguel	Toledo District	16°17'40.65"N	88°55'41.35"W
45	Silver Creek	Toledo District	16°16'50.20"N	88°53'26.06"W
46	Trio	Toledo District	16°30'50.94"N	88°38'9.22"W
47	Turneffe	Turneffe Atoll	17°10'40.88"N	87°54'5.80"W

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

Brand and Model of radio unit.

ZTE – ZXSDR BS8900A Outdoor Cabinet – The ZXSDR BS8900A is a multi-band, multi-mode macro base station which supports GSM, UMTS, LTE and NB-IoT simultaneously. It consists of the outdoor baseband cabinet BC8910A and battery cabinet PC8910A.

ZTE – ZXSDR B8200 Baseband Unit - The ZXSDR B8200 supports all kinds of wireless access technologies simultaneously, including GSM, UMTS, LTE and NB-IoT.

ZTE - ZXSDR R8862A S8500 Remote Radio Unit – The ZXSDR R8862A is the outdoor remote RF unit (RRU) with two transmitters. It is based on ZTE common RRU platform, and works in GSM, UMTS, LTE, NB-IoT and NR single mode or multi-mode through software configuration.

Antenna types in existing network to be used for LTE in band 5:

Amphenol HT4C6318M000

Twin Band | Panel Antenna | 2x X-Pol | 63° / 63° | 18.0 / 18.0 dBi | Variable Tilt

Commscope LNX-6515DS-VTM

2-port sector antenna, 2x 698–896 MHz, 65° HPBW

Rancom 7909F0BM200EX01

2-Port, Panel Sector Antenna, 65° HBW, 698-960 MHz, 17 dBi, 0-10°T

Kathrein 80010456V02

2-Port Antenna 790–960 30° 20.5dBi 0.5°–10°T

Rancom 7909F0X0901HX11

2-Port, Panel Sector Antenna,
30° HBW, 790-960 MHz, 20.5 dBi, 0-10°T

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?)

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.

ZTE RRU (ZXSDR R8862A S8500)

Provides 2-way transmission and 2-way reception to implement LTE 2T2R

Uplink operating frequency range: 814 MHz – 849 MHz.

Downlink operating frequency range: 859 MHz – 894 MHz.

Operational Bandwidths: 1.4 MHz / 3 MHz / 5 MHz / 10 MHz.

**UL Lower Edge: 829 MHz
UL Upper Edge: 835 MHz**

**DL Lower Edge: 874 MHz
DL Upper Edge: 880 MHz**

- (d) Transmission power level

Max Transmit Power = 2 x 20W = 40W.

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

Cross-Polarized

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

**Uplink frequency range: 829.1 MHz –
834.1 MHz.**

**Downlink frequency range: 874.1 MHz –
879.1 MHz**

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

Yes, same as 2.3.3 (a)

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

Amphenol HT4C6318M000

**Twin Band | Panel Antenna | 2x X-Pol | 63° / 63° | 18.0 /
18.0 dBi | Variable Tilt**

Commscope LNX-6515DS-VTM

2-port sector antenna, 2x 698–896 MHz, 65° HPBW

Rancom 7909F0BM200EX01

**2-Port, Panel Sector Antenna, 65° HBW, 698-960 MHz,
17 dBi, 0-10°T**

Kathrein 80010456V02

2-Port Antenna 790–960 30° 20.5dBi 0.5°–10°T

Rancom 7909FOX0901HX11

**2-Port, Panel Sector Antenna, 30° HBW, 790-960 MHz,
20.5 dBi, 0-10°T**

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

- (i) Station ID (if applicable)

Not Applicable

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

Same as 2.3.3 (a)

- (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

- (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).

Not Applicable

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

DL Throughput = 37 Mbps, UL Throughput = 18 Mbps.

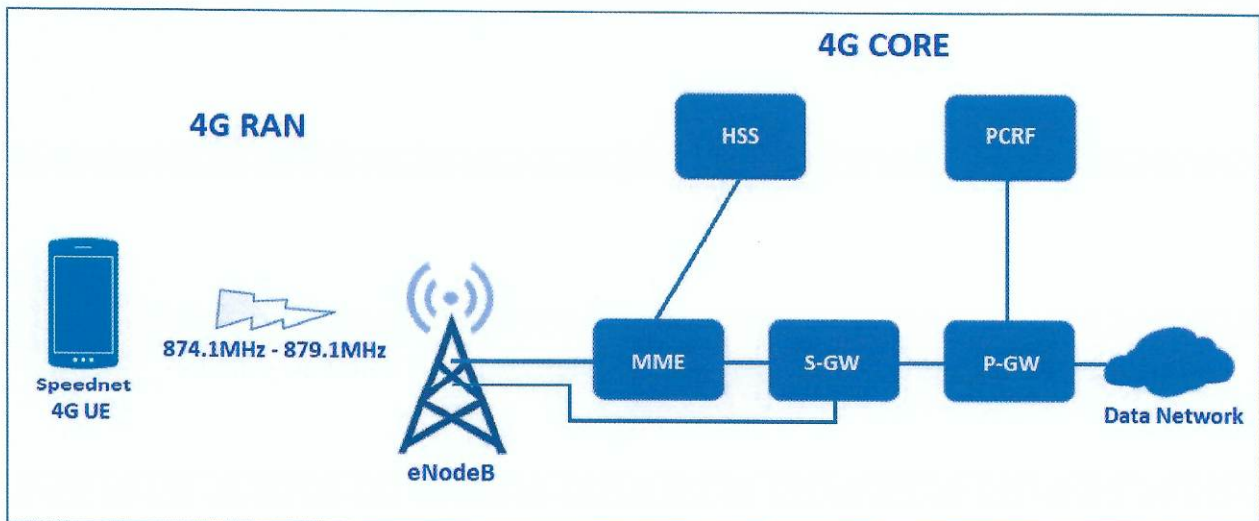
Services

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).

High speed 4G LTE mobile data service in Band 2 using 2x2 MIMO.

4G Mobile Architecture



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 based on the national spectrum plan. Speednet as a Licensed operator will operate the spectrum to comply with the Telecommunications (Licensing Classification, Authorization and Fee Structure) Regulations and its Amendment No. 2 of 2022.

Compliance with equipment technical specifications and PUC mandated requirements will drastically reduce harmful interference to other systems operating in the same or adjacent bands.

PART III

DECLARATION BY THE APPLICANT

Application is hereby made on behalf of Speednet Communications Ltd.

(Name of individual or company) for the issue of a 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: D. Gibson

Name in Block Letters: DAVID GIBSON

Date: April 11th, 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.